

Construction Robots Market Report by Type (Traditional Robot, Robotic Arm, Exoskeleton), Automation (Fully Autonomous, Semi-Autonomous), Function (Demolition, Bricklaying, 3D Printing, Concrete Structural Erection, Finishing Work, Doors and Windows, and Others), Application (Public Infrastructure, Commercial and Residential Buildings, Nuclear Dismantling and Demolition, and Others), and Region 2024-2032

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Abstracts

The global construction robots market size reached US\$ 150.4 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 504.9 Billion by 2032, exhibiting a growth rate (CAGR) of 14% during 2024-2032. The market is rapidly expanding driven by factors, such as the increasing labor shortages, rapid technological advancements in artificial intelligence (AI) and robotics, heightened focus on safety and precision, rising emphasis on sustainable practices, and growing recognition about the long-term cost-effectiveness of construction robots.

Construction Robots Market Analysis:

Market Growth and Size: The market is witnessing stable growth, driven by rapid technological advancements and the increasing demand for efficiency and safety in construction projects.

Major Market Drivers: Key drivers influencing the market growth include rising labor costs and scarcity of skilled workers, rapid technological advancements in robotics and artificial intelligence (AI), and the growing emphasis on safety and precision in construction.

Key Market Trends: The key market trends involve the ongoing shift towards the adoption of semi-autonomous and fully autonomous robots, with a focus on enhancing operational efficiency and reducing human involvement in hazardous tasks. Additionally, the increasing utilization of robots for environmentally sustainable construction practices is bolstering the market growth.

Geographical Trends: North America leads the market due to its advanced technological infrastructure and substantial investment in construction. Other regions are also showing significant growth, fueled by rapid urbanization and infrastructure development.

Competitive Landscape: The market is characterized by the active involvement of key players who are focusing on research and development (R&D) to enhance robot capabilities and explore new applications. Furthermore, companies are engaging in strategic partnerships and collaborations to leverage collective expertise and expand market reach.

Challenges and Opportunities: The market faces various challenges, such as the high initial cost of robots and the growing need for continuous technological upgrades to keep pace with the evolving construction demand. However, the increasing focus on addressing labor shortages, improving safety standards, and revolutionizing the utilization of robots in challenging or hazardous environments, are creating new opportunities for the market growth.

Construction Robots Market Trends:

Rising labor shortage and productivity enhancement

The rising labor shortages in the construction industry due to the physically demanding nature of the work and the fluctuation in demand for construction projects are providing a thrust to the market growth. Robots in construction can mitigate labor shortages by performing repetitive or dangerous tasks, thereby reducing the reliance on human labor. Moreover, they can work continuously without breaks, leading to increased productivity. Additionally, robots can operate in environments that are hazardous or inaccessible to humans, such as high-rise exteriors or toxic environments. In addition to this, the widespread integration of robots into construction for precise and high-quality work, as they perform tasks with greater accuracy and consistency, is enhancing the market growth.

Rapid technological advancements

The rapid advancement in technologies, such as artificial intelligence (AI), machine learning (ML), and the Internet of Things (IoT), enabling robots to perform complex

tasks with greater autonomy and adaptability, is creating a positive outlook for the market growth. In line with this, the widespread utilization of AI-powered robots to make real-time decisions based on environmental changes or unforeseen obstacles to enhance their functionality on construction sites is boosting the market growth. Furthermore, the rising integration of IoT technologies for seamless communication between robots and other digital systems on-site to facilitate coordinated efforts and data sharing is positively impacting the market growth

Increasing concern for safety

The heightened concern for safety in the construction industry, owing to the high risk of accidents and injuries, is one of the major factors propelling the market growth. In line with this, the introduction of construction robots that enhance human safety by taking over high-risk tasks, like working at heights, lifting heavy materials, or operating in unstable environments, is providing a considerable boost to the market growth. In addition to this, the widespread technology adoption to reduce the need for safety-related interventions and downtime, is acting as a growth-inducing factor. Additionally, robots can be equipped with advanced sensors and safety mechanisms that allow them to detect and avoid obstacles or unsafe conditions, further enhancing on-site safety.

Heightened demand for sustainability and eco-friendliness

The escalating focus on environmental sustainability across the globe, prompting the adoption of eco-friendly practices in the construction industry, is favoring the market growth. In line with this, the widespread utilization of construction robots to ensure precise and efficient use of materials, thereby reducing waste, is acting as a growth-inducing factor. Moreover, the rising adoption of robots equipped with advanced sensors that can measure and cut materials with high accuracy, ensuring minimal excess, is favoring the market growth. Moreover, the burgeoning demand for energy-efficient robots powered by renewable energy sources, contributing to a lower carbon footprint of construction projects, is providing a considerable boost to the market growth.

Growing awareness about the cost-effectiveness of construction robots

The heightened awareness about the long-term cost savings of construction robots due to their ability to speed up construction timelines, reduce labor costs, and minimize errors and material wastage is strengthening the market growth. In addition to this, the efficiency and precision offered by robots, leading to substantial cost reductions while making projects more economically viable, is offering lucrative growth opportunities for

the market. Furthermore, the rising durability and low maintenance requirements of construction robots are fostering the market growth. In addition to this, the ability of robots to work in environments that are hazardous for humans, ensuring safety and mitigating potential delays and liabilities associated with workplace accidents, is supporting the market growth.

Construction Robots Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the global, and regional levels for 2024-2032. Our report has categorized the market based on type, automation, function, and application.

Breakup by Type:

- Traditional Robot
- Robotic Arm
- Exoskeleton

Traditional robot accounts for the majority of the market share

The report has provided a detailed breakup and analysis of the market based on the type. This includes traditional robot, robotic arm, and exoskeleton. According to the report, traditional robot represented the largest segment.

Breakup by Automation:

- Fully Autonomous
- Semi-Autonomous

Semi-autonomous holds the largest share in the industry

A detailed breakup and analysis of the market based on the automation have also been provided in the report. This includes fully autonomous and semi-autonomous. According to the report, semi-autonomous accounted for the largest market share.

Breakup by Function:

- Demolition
- Bricklaying
- 3D Printing
- Concrete Structural Erection

Finishing Work
Doors and Windows
Others

Demolition represents the leading market segment

The report has provided a detailed breakup and analysis of the market based on the function. This includes demolition, bricklaying, 3D printing, concrete structural erection, finishing work, doors and windows, and others. According to the report, demolition represented the largest segment.

Breakup by Application:

Public Infrastructure
Commercial and Residential Buildings
Nuclear Dismantling and Demolition
Others

Public infrastructure exhibits a clear dominance in the market

A detailed breakup and analysis of the market based on the application have also been provided in the report. This includes public infrastructure, commercial and residential buildings, nuclear dismantling and demolition, and others. According to the report, public infrastructure accounted for the largest market share.

Breakup by Region:

Asia Pacific
North America
Europe
Middle East and Africa
Latin America

North America leads the market, accounting for the largest construction robots market share

The market research report has also provided a comprehensive analysis of all the major regional markets, which include Asia Pacific, North America, Europe, the Middle East and Africa, and Latin America. According to the report, North America accounted for the largest market share.

The market research report has provided a comprehensive analysis of the competitive landscape. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

Brokk AB
Husqvarna AB
Komatsu Ltd.
Ekso Bionics Europe GmbH
Fujita Corporation
Conjet AB
Giant Hydraulic Tech Co., Ltd.
Automated Precision, Inc.
Alpine Sales and Rental Corporation
CyBe Construction BV
MX3D BV
Construction Robotics
Fastbrick Robotics Ltd.
TopTec Spezialmaschinen GmbH

Key Questions Answered in This Report

1. What was the size of the global construction robots market in 2023?
2. What is the expected growth rate of the global construction robots market during 2024-2032?
3. What has been the impact of COVID-19 on the global construction robots market?
4. What are the key factors driving the global construction robots market?
5. What is the breakup of the global construction robots market based on the type?
6. What is the breakup of the global construction robots market based on the automation?
7. What is the breakup of the global construction robots market based on the function?
8. What is the breakup of the global construction robots market based on the application?
9. What are the key regions in the global construction robots market?
10. Who are the key players/companies in the global construction robots market?

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