

Rotary Actuator Market - Strategic Insights and Forecasts (2026-2031)

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Abstracts

The global Rotary Actuator market is forecast to grow at a CAGR of 5.4%, reaching USD 2.6 billion in 2031 from USD 2.0 billion in 2026.

The global rotary actuator market holds a strategically important position within the industrial automation, aerospace, marine, and agricultural machinery ecosystems. Rotary actuators convert energy into torque through controlled rotational motion, enabling precise mechanical operation across an exceptionally wide range of applications including robotic arms, flight control systems, steering mechanisms, and material handling equipment. Market growth is underpinned by accelerating industrial automation adoption, increasing investment in aerospace and defense capabilities, expanding robotic farming deployment, and growing shipbuilding activity. Asia Pacific is expected to account for a dominant share of the market, driven by industrial expansion, robotics integration, and rising marine vessel production.

Market Drivers

The increasing adoption of rotary actuators across end-user industries is a primary growth driver. In aerospace and defense, energy-efficient and lightweight rotary actuators contribute to reliable aircraft performance in flight control, landing gear, engine component management, and unmanned aerial vehicle operations. U.S. aerospace and defense industry sales reached \$955 billion in 2023, representing a 7.1% increase over the prior year. The U.S. Department of Defense budget stood at \$815.9 billion in 2023, with requested increases to \$842 billion in FY2024 and \$849.8 billion in FY2025, reflecting sustained defense procurement capacity that supports advanced actuator adoption. In the oil and gas sector, rotary actuators provide precise valve and process control, with U.S. average crude oil production reaching a record 12.9 million barrels per

day in 2023, growing further to 13,130 thousand barrels per day in January 2025.

The utilization of robotic farming equipment represents a second significant growth driver. Rotary actuators enable controlled rotational movement in robotic arms, grippers, harvesters, and planting systems, improving precision and consistency across labor-intensive agricultural tasks. New product launches are accelerating adoption, including Na?o Technologies' September 2023 introduction of a five-year warranty on its electric CE/FCC-certified agricultural robots, signaling growing confidence in robotic farming reliability. As farmers in both developed and emerging markets invest in automation to address labor shortages and yield optimization requirements, demand for high-performance rotary actuators in agricultural applications is set to expand steadily.

Increasing shipping and shipbuilding activity provides a third structural demand driver. Rotary actuators serve critical roles in marine steering systems, propulsion control, and valve management aboard vessels. China's total shipbuilding output reached 37.86 million deadweight tonnes, accounting for 47.3% of global production, with six Chinese shipbuilding enterprises ranked among the world's top ten. India's Pradhan Mantri Matsya Sampada Yojana program had approved 463 deep-sea fishing vessels and over 1,172 vessel upgrades as of April 2024, further contributing to marine actuator demand across the Asia Pacific region.

Market Restraints

The rotary actuator market faces competitive pressure from alternative motion control technologies, including linear actuators and direct-drive systems, in applications where rotational motion conversion adds complexity. Supply chain dependencies for precision-engineered components and specialized materials can create cost and lead-time variability. Additionally, the high performance requirements of aerospace and defense applications impose rigorous certification and testing standards that increase development timelines and costs for manufacturers entering or expanding within those segments.

Technology and Segment Insights

By type, the market encompasses manual, electric, fluid-powered, electrohydraulic, and other rotary actuators. The electric rotary actuator segment is projected to be the fastest growing, driven by industrial automation, eMobility, and energy efficiency requirements. In March 2024, Kongsberg Automotive secured a contract exceeding EUR 22 million for

an electric rotary actuator for plug-in hybrid electric vehicles, underscoring the segment's growing commercial momentum. Oriental Motors USA's May 2025 launch of the DH Series hollow rotary actuators, featuring a compact design and five-phase stepping motor for advanced motion control, reflects ongoing electric actuator innovation. By application, material handling equipment is expected to hold a significant share, as warehouse and logistics automation investment intensifies globally. By end-user, the industrial, aerospace and defense, marine, and agriculture segments each represent material demand pools across distinct operational requirements. Robotics installation in the European Union reached 73,534 units in 2023, a 3.8% increase over the prior year, with North American automotive sector robotics installation growing 10.7% in 2024, demonstrating the scale of automation-driven actuator demand.

Competitive and Strategic Outlook

The competitive landscape features specialized actuator manufacturers, diversified industrial automation suppliers, and defense-focused engineering firms. Product differentiation is centered on torque output, compactness, duty cycle capability, integration with sensors and control systems, and environmental durability. The integration of rotary actuators with remote monitoring, predictive maintenance platforms, and adaptive motion control systems is increasingly a source of competitive differentiation. Asia Pacific is expected to maintain market leadership, supported by China's Five-Year Plan for the robotics industry and India's marine and agricultural vessel development programs. North America presents strong growth in robotics-driven material handling and defense procurement channels.

Key Takeaways

The global rotary actuator market is on a consistent growth trajectory through 2031, supported by industrial automation expansion, aerospace and defense investment, agricultural robotics adoption, and marine vessel development. Manufacturers that advance electric actuator capabilities, deepen integration with smart automation platforms, and address the precision demands of aerospace and defense end users will be well positioned to capture value across both established and emerging market segments.

Key Benefits of this Report

Insightful Analysis: Gain detailed market insights across regions, customer segments, policies, socio-economic factors, consumer preferences, and industry

verticals.

Competitive Landscape: Understand strategic moves by key players to identify optimal market entry approaches.

Market Drivers and Future Trends: Assess major growth forces and emerging developments shaping the market.

Actionable Recommendations: Support strategic decisions to unlock new revenue streams.

Caters to a Wide Audience: Suitable for startups, research institutions, consultants, SMEs, and large enterprises.

What businesses use our reports for

Industry and market insights, opportunity assessment, product demand forecasting, market entry strategy, geographical expansion, capital investment decisions, regulatory analysis, new product development, and competitive intelligence.

Report Coverage

Historical data from 2021 to 2025 and forecast data from 2026 to 2031

Growth opportunities, challenges, supply chain outlook, regulatory framework, and trend analysis

Competitive positioning, strategies, and market share evaluation

Revenue growth and forecast assessment across segments and regions

Company profiling including strategies, products, financials, and key developments

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