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Global Frameless Torque Motors for Collabrative Robots Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Frameless Torque Motors for Collabrative Robots market size is expected to reach $ 835 million by 2032, rising at a market growth of 10.0% CAGR during the forecast period (2026-2032).

In 2025, global Frameless Torque Motors for Collaborative Robots production reached approximately 1,700 k units with an average global market price of around US$350 per unit. The frameless torque motor for collaborative robots is a motor without the traditional structures such as a motor casing, bearings, or a central shaft. It primarily consists of two major parts: the stator and the rotor. The frameless design allows for easier integration into the joints of collaborative robots, making the robot's joint design more compact and flexible. It can directly output torque and possesses high-precision torque control capabilities, enabling precise control over the torque output of the collaborative robot's joints. Due to its compact structure, high torque density, high precision, and rapid response characteristics, it has a wide range of application scenarios in multiple fields.

The future industry development trend for frameless torque motors for collaborative robots is entering a stage of scaled mass production. During its third-quarter 2025 earnings call, Kinco Automation disclosed that one of the main drivers of its robotics business growth is the rapid development of collaborative robots, with sales of frameless torque motors in the first three quarters showing significant year-on-year growth, pushing the revenue share of its robotics business to exceed half of total company revenue for the first time. Jiangsu Leili confirmed on its investor interaction platform that its self-developed frameless torque motors have been integrated with planetary gearboxes and encoders to launch intelligent rotary joint module products,

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which have entered the small-batch shipment stage and can be directly applied to collaborative robot joints. Leadshine Technology explicitly stated in its 2025 board of directors' work report that its core robotics components have entered the supply chains of mainstream domestic humanoid robot manufacturers, and its frameless torque motor business has begun explosive growth, with annual deliveries exceeding 120,000 units. The company is simultaneously constructing automated production capacity of two million units per year to meet downstream demand, including that from collaborative robots. Weiguang Holdings revealed during its 2025 earnings call that the robotic joint modules developed by its subsidiary have passed verification by individual complete machine manufacturers and have entered the small-batch delivery stage; these modules integrate frameless torque motors with components such as encoders. On the policy front, clear signals have also been released. The Science, Technology and Economy Commission of Shanghai Pudong New Area has issued a special application notice, providing rewards to enterprises undertaking the industrialization of humanoid robot core components, including frameless torque motors, at a certain percentage of the first batch sales contract value, with a clearly defined maximum cumulative support for a single enterprise. This provides policy guidance for the scaled supply of upstream motors for collaborative robots. In summary, the major trends in the frameless torque motor industry for collaborative robots are as follows: the demand driver is shifting from traditional industrial automation to highly flexible collaborative application scenarios; the profit model is upgrading from single motor sales to system solutions for joint modules integrating encoders and reducers; and a company's revenue growth and profit margins will depend on its progress in industrializing core areas such as magnetic circuit optimization design, process consistency control, and module integration capabilities.

This report studies the global Frameless Torque Motors for Collabrative Robots production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Frameless Torque Motors for Collabrative Robots and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Frameless Torque Motors for Collabrative Robots that contribute to its increasing demand across many markets.

Highlights and key features of the study
Global Frameless Torque Motors for Collabrative Robots total production and demand, 2021-2032, (K Units)
Global Frameless Torque Motors for Collabrative Robots total production value,

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2021-2032, (USD Million)
Global Frameless Torque Motors for Collabrative Robots production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (K Units), (based on production site)
Global Frameless Torque Motors for Collabrative Robots consumption by region & country, CAGR, 2021-2032 & (K Units)
U.S. VS China: Frameless Torque Motors for Collabrative Robots domestic production, consumption, key domestic manufacturers and share
Global Frameless Torque Motors for Collabrative Robots production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (K Units)
Global Frameless Torque Motors for Collabrative Robots production by Type, production, value, CAGR, 2021-2032, (USD Million) & (K Units)
Global Frameless Torque Motors for Collabrative Robots production by Application, production, value, CAGR, 2021-2032, (USD Million) & (K Units)

This report profiles key players in the global Frameless Torque Motors for Collabrative Robots market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Kollmorgen, Aerotech, Wittenstein, Parker, Sensata, Maxon Motor, Allied Motion, TQ Robodrive, Magnetic Innovations, Tecnotion, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Frameless Torque Motors for Collabrative Robots market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (K Units) and average price (US$/Unit) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Frameless Torque Motors for Collabrative Robots Market, By Region:

United States

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China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Frameless Torque Motors for Collabrative Robots Market, Segmentation by Type:

Inner Rotor Type

Outer Rotor Type

Global Frameless Torque Motors for Collabrative Robots Market, Segmentation by Peak Torque:

Below 100Nm

Above 100Nm

Global Frameless Torque Motors for Collabrative Robots Market, Segmentation by Drive Method:

Full Direct-drive

Quasi Direct-drive

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Global Frameless Torque Motors for Collabrative Robots Market, Segmentation by Application:

- Industrial Manufacturing
- Medical Rehabilitation
- Logistics Warehousing
- Others

Companies Profiled:

- Kollmorgen
- Aerotech
- Wittenstein
- Parker
- Sensata
- Maxon Motor
- Allied Motion
- TQ Robodrive
- Magnetic Innovations
- Tecnotion
- Moog
- Nidec
- Akribis

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Celera Motion

Shenzhen Mosrac Motor

Kinco Automation (Shanghai)

Guangzhou Haozhi Industrial

Chengdu Weijing Motor

Wolong Electric Group

China Leadshine Technology

Key Questions Answered:
1. How big is the global Frameless Torque Motors for Collabrative Robots market?
2. What is the demand of the global Frameless Torque Motors for Collabrative Robots market?
3. What is the year over year growth of the global Frameless Torque Motors for Collabrative Robots market?
4. What is the production and production value of the global Frameless Torque Motors for Collabrative Robots market?
5. Who are the key producers in the global Frameless Torque Motors for Collabrative Robots market?
6. What are the growth factors driving the market demand?

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