

INDUSTRY OVERVIEW

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OVERVIEW OF PRECISION MANUFACTURING INDUSTRY

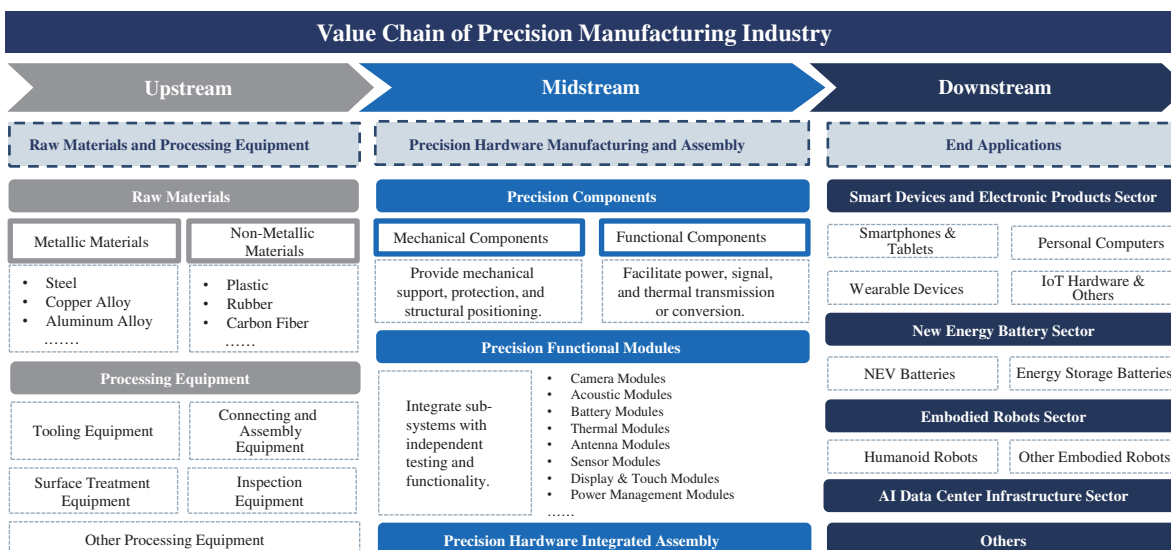
The precision manufacturing industry is a specialized manufacturing field centered on precision machining technology and automation control, serving high-tech sectors. It covers major downstream application scenarios such as smart devices and electronic products, new energy batteries, robotics, AI data center infrastructure, commercial satellite communication equipment, etc. The core processing technologies include micro-level tooling precision, ultra-thin-wall deep drawing, high-speed precision stamping, multi-color injection molding, and other techniques. Supporting solutions include intelligent returnable packaging, automated inspection, and logistics systems. The technological direction spans the design, production, and manufacturing of precision components, functional modules, and complete products, deeply integrating precision mechanical machining, precision electronic manufacturing, and precision optical processing to achieve high performance and high consistency in products.

Based on application areas, the smart devices and electronic products sector focuses on high-precision components for smartphones, personal computers, smart wearable devices, etc. The new energy battery sector primarily covers products related to the safety structure and high-voltage connection of new energy vehicle batteries and energy storage batteries. The robotics sector includes precision components, precision modules, assemblies, and complete robot assembly. The AI data center infrastructure sector mainly targets applications such as precision connectors and cooling components for high-density servers.

Value Chain of Precision Manufacturing Industry

The upstream segment of the precision manufacturing industry chain consists of basic materials and processing equipment. The midstream segment covers precision components, functional modules, and integrated assembly. The downstream applications are primarily concentrated in areas such as smart devices and electronic products, new energy batteries, robotics, AI data center infrastructure, and commercial satellite communication equipment. The industry chain is characterized as “technology-intensive and capital-intensive.” As the core of technology transformation, the midstream manufacturing level directly determines the performance and reliability of end products. For example, precision components play a critical role in the lightweighting of electronic products, the safety of new energy batteries, and the joint transmission and flexibility of humanoid robots. Midstream companies achieve process iteration by improving machining accuracy, optimizing surface treatment, and advancing material applications. At the same time, they provide upstream feedback on process requirements to promote customized equipment development, and engage in joint R&D with downstream customers to carry out process customization and solution design based on end-user needs.

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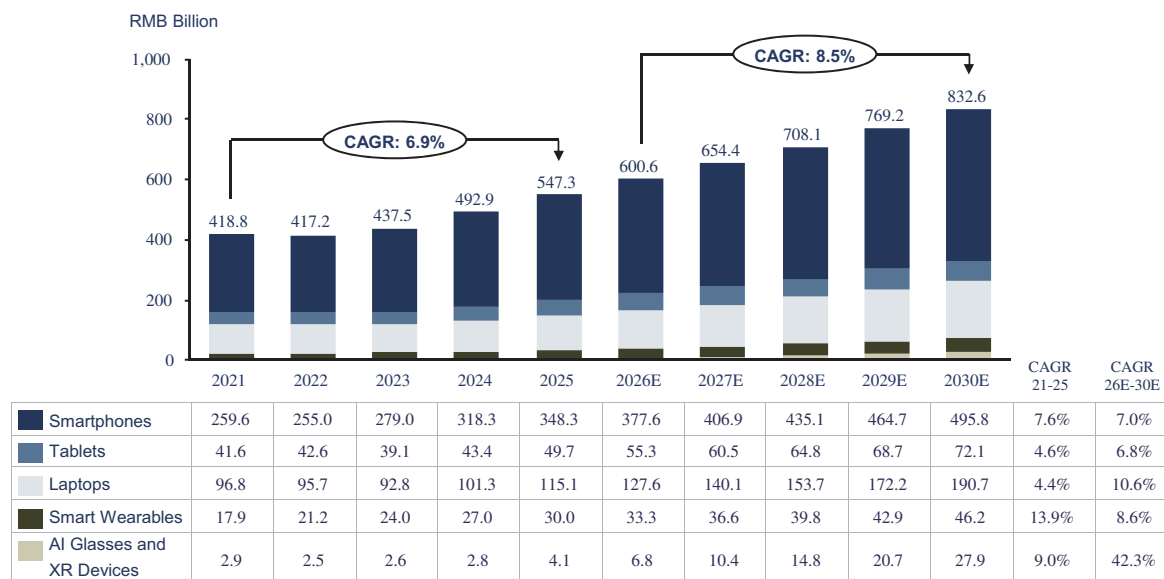
Source: Frost & Sullivan

Market Size of Precision Components in the Smart Devices and Electronic Products Sector

The ultimate pursuit of computing density and energy efficiency in smart devices demands that precision components deliver stronger functionality in smaller sizes, while new forms such as foldable and rollable designs pose challenges to their accuracy and reliability. Core technologies such as material lightweighting, flexible forming, and micro-nano machining essentially revolve around the iteration of components. Whether it is high-thermal-conductivity alloys, precision hinges, or miniature metal inserts with integrated sensing functions, components have become the central carriers of terminal innovation. Their continuously evolving functionality and formability will directly determine the future growth ceiling of the precision manufacturing industry. The global market size of precision components in the smart devices and electronic products sector grew from RMB418.8 billion in 2021 to RMB547.3 billion in 2025, representing a CAGR of 6.9%. It is expected to reach RMB832.6 billion by 2030, with a CAGR of 8.5% from 2026 to 2030.

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Market Size of Precision Components in the Smart Devices and Electronic Products Sector (by revenue), Global, 2021-2030E



Source: Frost & Sullivan

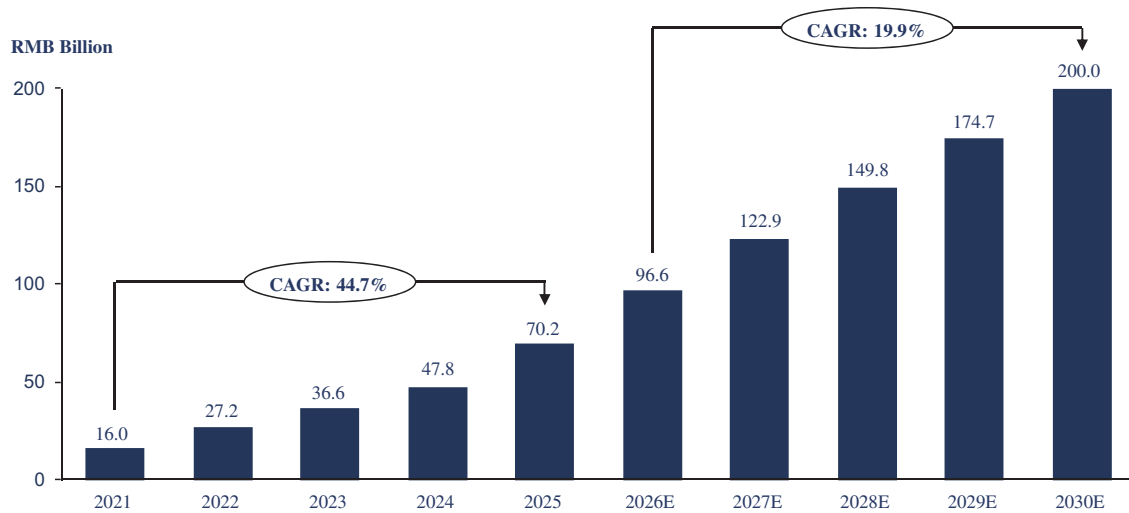
Note: The market size of smart wearables does not include AI glasses or XR devices in this chart.

Market Size of Precision Components in the New Energy Battery Sector

Rapid capacity expansion and technological upgrades in new energy batteries have elevated precision components from auxiliary parts to critical elements that determine battery performance and safety. As cell energy density continues to increase, components must achieve reliable electrical connections, insulation isolation, and mechanical fixation within increasingly compact spaces. Their precision of manufacturing directly affects battery internal resistance consistency, thermal management efficiency, as well as the stability of high-voltage connections and the effectiveness of thermal runaway management. Moreover, for new cell formats such as large cylindrical and solid-state batteries, conventional stamping and drawing processes are evolving toward high-precision laser welding and composite forming, while component structural design is moving toward extreme simplicity and functional integration. In addition, the popularization of the 800V high-voltage fast charging architecture has imposed stricter requirements on the current-carrying capacity, insulation and vibration resistance reliability of precision electrical connection components such as high-voltage busbars and flexible connectors. Continuous innovation in precision components is becoming a key enabler for the new energy battery sector to achieve higher performance and lower costs. The global market size of precision components in the new energy battery sector grew from RMB16.0 billion in 2021 to RMB70.2 billion in 2025, representing a CAGR of 44.7%. The global market size of precision components in the new energy battery sector is expected to reach RMB200.0 billion by 2030, with a CAGR of 19.9% from 2026 to 2030.

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Market Size of Precision Components in the New Energy Battery Sector (by revenue), Global, 2021–2030E



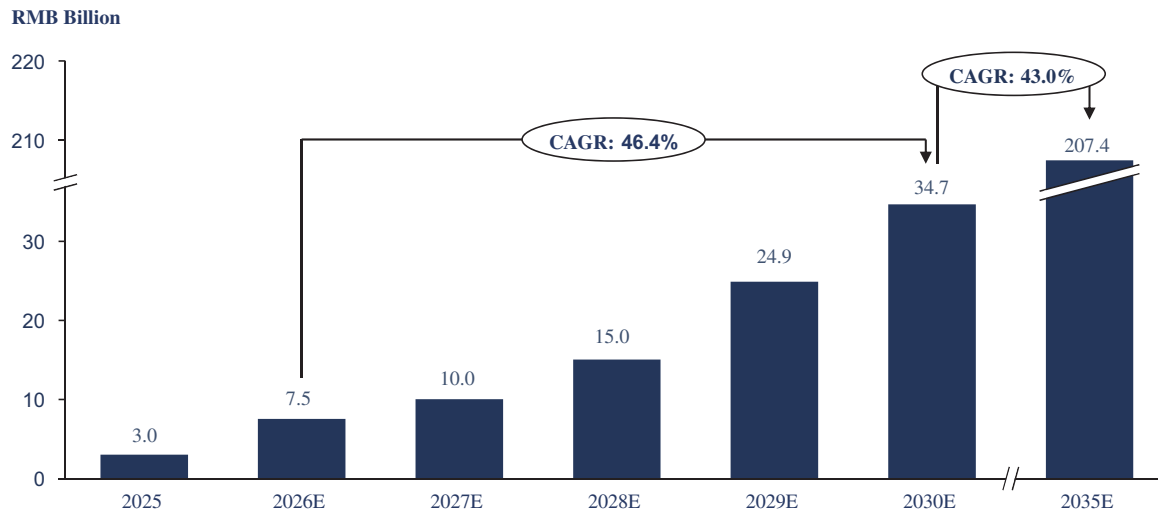
Source: Frost & Sullivan

Market Size of Precision Components in the Humanoid Robot Sector

The market for precision components for humanoid robots is rapidly rising, with its core characteristic being stringent requirements for extreme precision and miniscule dimensions. These components include micro-gears, flexible bearings, torque sensing units, and lightweight skeleton connectors, each of which must balance high strength, low friction, and long lifespan within a limited space. The combined effect of these components directly determines the response speed of robot joints, the dexterity of dexterous hands, and the structural stability of the entire robot. As humanoid robots move from laboratories to commercialization, the small-batch customized production of components is shifting toward high-consistency mass production, driving continuous upgrades in processes such as precision stamping, micro-injection molding, and laser micromachining. The expanding performance boundaries of components have become a key lever for reducing costs, improving efficiency, and achieving large-scale adoption of complete robots. As the humanoid robots market is growing rapidly on the early emerging stage, there is no distinguished boundary between precision components and functional modules manufacturing, and many players are extending business from precision components to functional modules in the humanoid robot sector. The global market size of precision components in the humanoid robot sector reached RMB3.0 billion in 2025, and is expected to grow at a CAGR of 46.4% from 2026 to 2030 to reach RMB34.7 billion in 2030, and further to RMB207.4 billion in 2035. The average value of precision components accounts for approximately 45% to 50% of the total value of a complete humanoid robot. The shipment volume of humanoid robots is expected to reach approximately 2.8 million units by 2035, with the market size reaching RMB418.2 billion.

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Market Size of Precision Components in the Humanoid Robot Sector (by product value), Global, 2025–2030E, 2035E



Source: Frost & Sullivan

Note: The market size of precision components in the humanoid robot sector includes the sum of components of the humanoid robot body plus the components within functional modules.

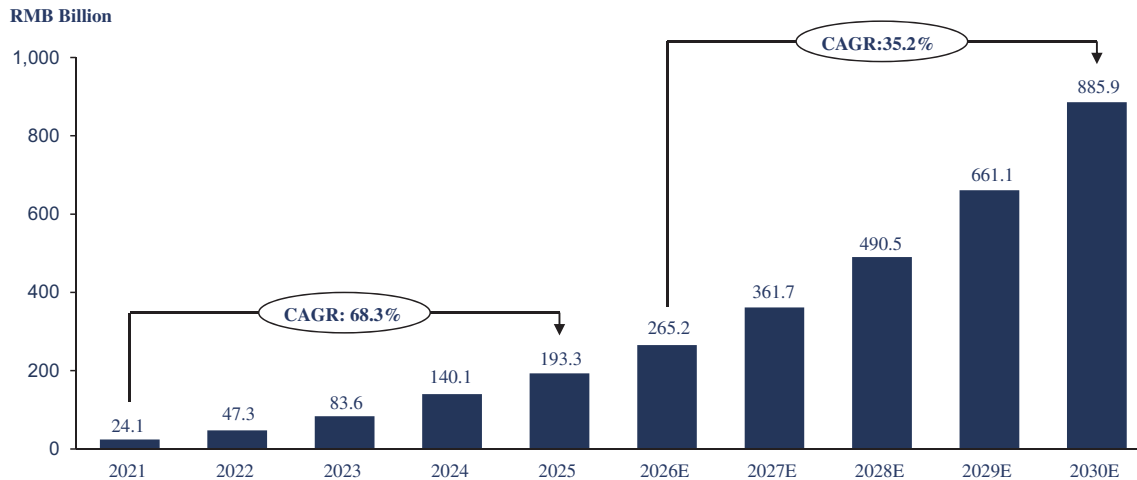
Market Size of Precision Manufacturing in the AI Data Center Infrastructure Sector

Over the past few years, explosive growth in demand for AI large model training and inference has driven the accelerated development of global computing power infrastructure. Servers, switches, and liquid cooling systems have imposed stringent requirements on high-precision components, high-speed connectors, and thermal management modules. As single-chip power consumption breaks through the kilowatt level and signal transmission rates approach hundreds of Gbps, conventional manufacturing processes struggle to balance heat dissipation efficiency and signal integrity. In the field of precision manufacturing, continuous breakthroughs in areas such as multi-layer PCB lamination alignment, tolerance control in precision metal processing, and thermal interface management in miniaturized packaging have significantly reduced transmission losses and thermal failure risks. The global precision manufacturing market for AI data center infrastructure grew from RMB24.1 billion in 2021 to RMB193.3 billion in 2025, representing a CAGR of 68.3% over that period.

In the future, as AI applications continue to proliferate and edge computing develops in tandem with data centers, computing infrastructure will evolve toward higher density and lower power consumption. Increasing rack power density will impose higher demands on precision manufacturing in terms of micro-machining capability, heterogeneous integration processes, and automated optical inspection. At the same time, the surge in demand for miniaturized, highly reliable precision components at edge nodes will drive manufacturing enterprises to shift toward flexible production lines and in-line quality monitoring. Furthermore, innovations in precision manufacturing in areas such as reducing contact resistance, optimizing fluid channel design, and improving seismic performance will directly support the large-scale adoption and energy efficiency optimization of computing infrastructure. The global precision manufacturing market for AI data center infrastructure is expected to grow from RMB265.2 billion in 2026 to RMB885.9 billion in 2030, representing a CAGR of 35.2% over that period.

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Market Size of Precision Manufacturing in the AI Data Center Infrastructure Sector (by revenue), Global, 2021–2030E



Source: Frost & Sullivan

Analysis of Key Downstream Application Sectors in the Precision Manufacturing Market

- Smart Devices and Electronic Products.** The global smart devices and electronic products market is experiencing steady expansion, driven by technological iteration and consumption upgrades. Global smart devices and electronic product sales increased from 2.7 billion units in 2021 to 3.2 billion units in 2025, representing a CAGR of 3.6%. Propelled by ongoing performance enhancement and the transformation of human-machine interaction, this sector is expected to maintain strong growth momentum, reaching 4.5 billion units in sales by 2030, with a CAGR of 7.4% from 2026 to 2030.
- New Energy Batteries.** Driven by rapid EV adoption and battery technology advancements, the global power battery market has experienced exponential growth, fueled by government carbon reduction policies, declining battery production costs, and rising consumer demand for sustainable transportation solutions. Total power battery shipments increased from 386.9 GWh in 2021 to 1,498.1 GWh in 2025, recording a CAGR of 40.3%, and are expected to further reach 4,386.1 GWh by 2030, with a CAGR of 22.2% from 2026 to 2030. Concurrently, with the expanding application of energy storage batteries in power consumption, generation, transmission and distribution, global annual energy storage battery shipments grew from 39.8 GWh in 2021 to 651.5 GWh in 2025, at a CAGR of 101.1%. Supported by the development of renewable energy, grid digitalization, and the adoption of distributed energy, the market is expected to reach 1,881.1 GWh by 2030, at a CAGR of 20.9% from 2026 to 2030.
- Humanoid Robots.** The global humanoid robot industry is undergoing a critical transition from laboratory research to commercial adoption. In terms of sales value, the global humanoid robot market reached RMB6.7 billion in 2025. Breakthroughs in embodied intelligence technology, the urgent demand for refined automation solutions from the manufacturing and service industries, and mass production plans of leading technology companies collectively form the core drivers of market expansion. From 2026 to 2030, the global humanoid robot market is expected to accelerate its expansion at a CAGR of 44.9%, with market size potentially exceeding RMB70 billion and shipments reaching around 300 thousand units by 2030. The shipment volume of humanoid robots is expected to reach approximately 2.8 million units by 2035, with the market size reaching RMB418.2 billion.

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- ***AI Data Center Infrastructure.*** The global AI data center sector is undergoing a paradigm shift from general-purpose computing to intelligent computing. In 2025, global AI infrastructure investment grew from RMB218 billion in 2021 to RMB2,392.9 billion in 2025, at a CAGR of 82.0%. By 2030, investment is expected to further increase to RMB6,526.5 billion, with a CAGR of 22.2% from 2025 to 2030. The explosive growth in demand for large model training and inference, the deep penetration of AI applications across industries, and trillion-dollar investments by global technology giants in computing infrastructure serve as the core engines driving market expansion.
- ***Commercial Satellite Communication Equipment.*** Driven by large-scale deployment of low-orbit constellations and surging demand for broadband access, the global commercial satellite communication equipment market has entered a period of rapid expansion, with terminal devices continuously evolving toward miniaturization and higher integration. The global commercial satellite communication equipment market reached RMB339.7 billion in 2025. With growing demand for real-time, secure data transmission in satellite communication networks, the market is expected to grow at a CAGR of 17.3% from 2026 to 2030, reaching RMB747.1 billion by 2030.

Market Drivers of Precision Manufacturing Industry

- ***Technical Upgrade and Industrial Intelligence.*** Emerging sectors such as AI, 5G and IoT are driving precision components toward miniaturization and integration. For example, foldable screen hinges require micron-level grinding precision, and humanoid robots rely on high-precision sensors and joint modules, all of which propel the iteration of precision manufacturing technologies. Meanwhile, the trend toward lighter and thinner consumer electronics imposes stringent requirements on the machining precision of mid-frames and camera modules. Processes such as electrode coating and laser welding for new energy batteries are also upgrading toward higher precision and stability, driving continuous technological advancements in manufacturing and the intelligent development of the industry.
- ***Explosive Growth in Emerging Sectors Including Embodied Intelligence and AI Data Center Infrastructure.*** Explosive growth in emerging application areas such as embodied intelligence and AI computing power is directly driving the precision manufacturing market toward higher precision and greater integration. The former requires precision components to meet millimeter-level motion control and micro-nano-level sensing integration, such as robotic joint modules. The latter drives demand for high-density cooling components and high-speed connectors, exemplified by the precision forming of high-thermal-conductivity alloys for liquid cooling systems in AI servers, as well as the ultra-low-loss transmission requirements of high-speed backplane connectors in micron-level alignment and signal integrity control. Together, these factors are creating significant incremental market space and accelerating technological iteration along the industry.
- ***Continuous Product Iteration in Smart Devices and Electronic Products and New Energy Battery Sectors.*** In the smart devices and electronic products field (e.g., foldable screens, wearable devices), innovations in form, such as lighter/thinner designs and multi-functional integration, along with feature upgrades like increased camera and sensor density, are driving precision components toward ultra-thinness and high rigidity. In the new energy battery sector (e.g., battery CTP technology, integrated e-drive systems), efficiency optimization of the powertrain and intelligent upgrades (domain controllers, LiDAR) are pushing precision manufacturing to achieve breakthroughs in areas such as heat dissipation, sealing, and lightweighting. This creates a virtuous cycle of demand-driven technological innovation, accelerating the expansion of the precision manufacturing market and the shift toward high-value-added segments.

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- ***Policy Support and Supply Chain Reconfiguration.*** Policy support, including equipment upgrade subsidies and shift towards domestic procurement, such as “Notice on Implementing Large-scale Equipment Renewal and Consumer Goods Trade-in Policy in 2026” (《關於2026年實施大規模設備更新和消費品以舊換新政策的通知》), as well as continuously strengthened policies in the fields of artificial intelligence and embodied AI, including the expansion of equipment upgrade loans to cover AI data center infrastructure, the issuance of computing power vouchers and R&D subsidies by local governments, and the inclusion of embodied AI in the national “15th Five-Year Plan” forward-looking strategy, are driving technology upgrades and capacity expansion among precision manufacturing enterprises. Meanwhile, supply chain restructuring toward nearshoring and regional collaboration is accelerating the concentration of global production capacity in China. Together, these forces form a dual-driver model of “policy guidance + market expansion” helping local companies achieve import substitution and global footprint expansion in high-precision, high-value-added segments.

Development Trends of Precision Manufacturing Industry

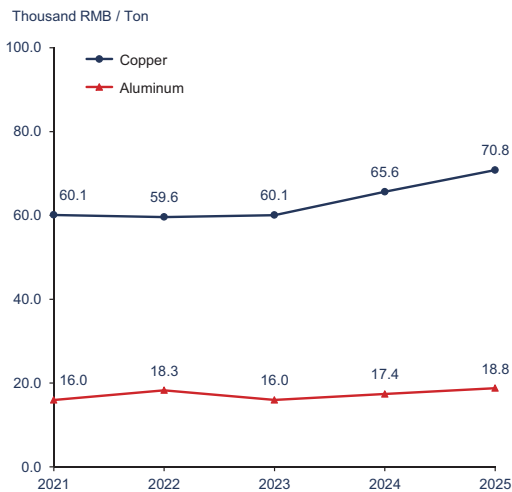
- ***Intelligent and Digital Manufacturing.*** With the deep penetration of Industry 4.0 technologies, precision manufacturing is rapidly transitioning toward intelligence and digitalization. Industrial internet platforms enable full lifecycle management of production processes through equipment connectivity and real-time data acquisition, for example, dynamically optimizing equipment parameters via sensor networks to reduce downtime and increase capacity utilization. Digital twin technology is widely used in the product R&D phase, allowing virtual simulations to verify the feasibility of design solutions in advance, thereby significantly shortening product iteration cycles and reducing trial-and-error costs. In addition, AI-powered quality inspection systems, combining machine vision with deep learning algorithms, can achieve micron-level defect detection, greatly improving product consistency and driving the evolution of precision manufacturing from labor-intensive to intelligent manufacturing models.
- ***Integration of New Materials and Innovative Processes.*** The synergistic breakthroughs in new material development and process innovation are reshaping the technological boundaries of precision manufacturing. High-performance composites, characterized by light weight, high-temperature resistance, and corrosion resistance, are gradually replacing traditional metals and are widely used in aerospace, new energy, and other sectors. Meanwhile, the application of environmentally friendly materials such as fluorine-free rubber, combined with precision forming and surface modification processes, has driven the development of eco-friendly wearable materials that meet the demanding requirements of non-toxicity, flexibility, and durability in consumer electronics and medical healthcare. Furthermore, nano-scale surface treatment processes can significantly enhance product wear resistance and electrical conductivity, satisfying the stringent reliability requirements of precision electronic devices. These technological integrations not only expand the application scenarios of precision manufacturing but also promote an industry-wide upgrade toward the integration of “material-design-process.”
- ***Globalization and Regional Synergies.*** Against the backdrop of global industrial chain restructuring, precision manufacturing enterprises are addressing challenges through a dual-track strategy of “global adoption + regional penetration”. On the one hand, leading companies in the industry are accelerating the construction of production bases in overseas markets, leveraging local labor cost advantages and tariff policies to get closer to end-customer needs. On the other hand, they rely on China’s well-established supply chain system and industrial cluster effects to strengthen local R&D and production capabilities, thereby developing the ability to respond rapidly to high-end markets in Europe and the Americas. The model of “global resource integration plus localized delivery” enhances enterprises’ risk resilience, and provides strategic support for them to secure advantageous positions in global competition.

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Cost Analysis of Precision Manufacturing Industry

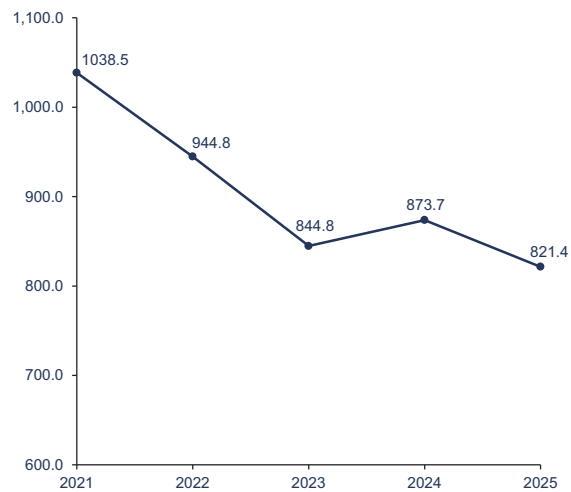
The cost structure of the precision manufacturing industry mainly consists of basic materials, labor expenses, and manufacturing expenses, among which metal raw materials account for a relatively large share, approximately 30% to 50%, while plastic raw materials account for 20% to 30%. In recent years, copper prices have fluctuated upward at high levels and broken through historical highs, while aluminum prices briefly surged due to geopolitical conflicts and then gradually retreated as new production capacity came online. The volatility of raw material costs is prompting companies to optimize pricing strategies and procurement timing, and to accelerate lightweight substitution, process cost reduction, and supply chain diversification.

Prices of Metals, Global, 2021–2025



Source: World Bank, IMF, Frost & Sullivan

Plastics Price Index, China, 2021–2025



Source: China Plastics City, Frost & Sullivan

COMPETITIVE ANALYSIS OF PRECISION COMPONENTS MARKET

Competitive Landscape of Global Precision Components Market

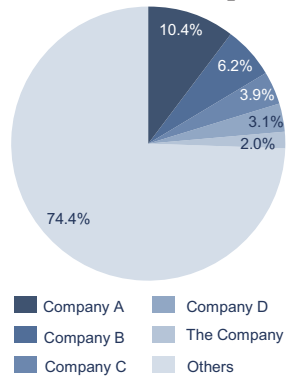
The global precision components market presents a competitive landscape dominated by Chinese enterprises. Leading Chinese companies are expanding from single precision components toward higher-value functional modules and have systematically extended their precision manufacturing capabilities accumulated in smart devices and electronic products into emerging sectors such as mechanical components for new energy battery, humanoid robot core components, AI data center high-speed connector modules, and liquid cooling thermal management components, establishing global leadership positions across multiple high-end segments. Currently, Chinese precision components companies have formed significant advantages in production capacity, supply chain completeness, technical responsiveness, and cost control, occupying a dominant position in global supply chains. The competitive landscape is expected to further focus on technological innovation speed and cross-sector process transfer capabilities, and under the wave of hardware innovation driven by AI and embodied intelligence, the global market share of Chinese domestic companies is expected to continue expanding.

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Ranking of Global Smart Devices and Electronic Products Precision Components Companies

In 2025, the global market size of precision components for smart devices and electronic products reached RMB547.3 billion. With revenue of RMB11.1 billion from precision components for smart devices and electronic products, the Company achieved a market share of 2.0%, ranking fifth among global companies.

Top 5 Smart Devices and Electronic Products Precision Components Companies (by revenue), Global, 2025



Rank	Company Name	Revenue (RMB Billion)	Market Share
1	Company A	56.7	10.4%
2	Company B	33.9	6.2%
3	Company C	21.4	3.9%
4	Company D	17.2	3.1%
5	The Company	11.1	2.0%
	Others	407.0	74.4%
Total		547.3	100.0%

Source: Company Annual Reports. Frost & Sullivan

Note: Company A is a subsidiary of a listed company engaged in comprehensive design, manufacturing, and supply chain solutions for consumer electronics, computing, and automotive industries.

Company B is a listed company engaged in cover glass, ceramic/sapphire parts, metal housings, and precision modules for smartphones and consumer electronics.

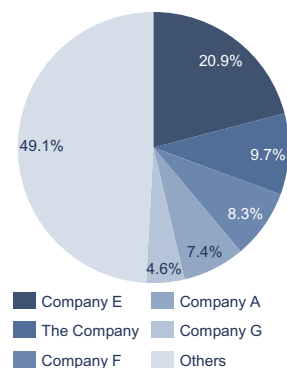
Company C is a listed company engaged in precision functional parts, mechanical components, modules, and intelligent manufacturing solutions for consumer electronics, new energy vehicles, robotics, and AI hardware.

Company D is a listed company engaged in connectors, cables, acoustic/optical transceivers, and precision components for consumer electronics, automotive electronics, and communications equipment.

Ranking of Global New Energy Battery Precision Components Companies

In 2025, the global market size of new energy battery precision components reached RMB70.2 billion. With revenue of RMB6.8 billion from new energy battery precision components, the Company achieved a market share of 9.7%, ranking second among global companies.

Top 5 New Energy Battery Precision Components Companies (by revenue), Global, 2025



Rank	Company Name	Revenue (RMB Billion)	Market Share
1	Company E	14.7	20.9%
2	The Company	6.8	9.7%
3	Company F	5.8	8.3%
4	Company A	5.2	7.4%
5	Company G	3.2	4.6%
	Others	34.5	49.1%
Total		70.2	100.0%

Source: Company Annual Reports. Frost & Sullivan

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Note: Company E is a listed company engaged in R&D and manufacturing of precision structural parts for lithium-ion batteries and automotive applications.

Company F is a listed company engaged in progressive stamping tooling and precision parts such as motor cores and lithium-battery mechanical components.

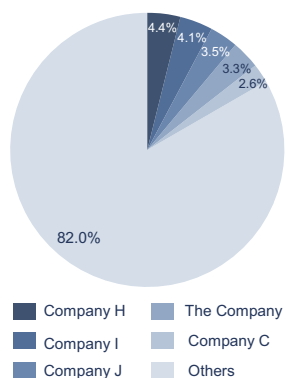
Company G is a listed company engaged in precision stamping tooling and metal structural parts for automotive, power-battery and energy-storage enclosures, photovoltaic equipment, and communications hardware.

Ranking of Global Humanoid Robot Precision Components Companies

The market remains dispersed as the industry is still transitioning from technical validation to large-scale application, with limited shipment volume and no absolute dominance. Diverse component types, differentiated advantages across segments, and OEMs’ preference for diversified procurement further fragment the market. As commercialization accelerates, leading players are expected to gain share through process standardization and modular design, gradually increasing industry concentration.

In 2025, the global humanoid robot precision components value reached RMB3,023.5 million. With a humanoid robot precision components value of RMB100.4 million, the Company achieved a market share of 3.3%, ranking fourth among global companies.

Top 5 Humanoid Robot Precision Components Companies (by product value), Global, 2025



Rank	Company Name	Product Value of Humanoid Robot Precision Components (RMB Million)	Market Share
1	Company H	131.8	4.4%
2	Company I	125.0	4.1%
3	Company J	106.5	3.5%
4	The Company	100.4	3.3%
5	Company C	80.0	2.6%
Others		2,479.8	82.0%
Total		3,023.5	100.0%

Source: Company Annual Reports. Frost & Sullivan

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Note: The ranking includes both humanoid robot precision components companies and humanoid robot functional module companies, ranked according to the product value of their humanoid robot components. Humanoid robot precision components product value includes both the components of humanoid robot body plus the components within functional modules.

Company H is a listed company engaged in the control components and thermal management solutions for new energy, robots, home appliances, etc.

Company I is a listed company engaged in high-precision gears and driveline components for vehicles, NEVs, industrial robots, rail, wind power, robots and industrial transmission.

Company J is a listed company engaged in industrial automation and motion control and electrification-related components for NEVs, robots and rail transit.

Entry Barriers of Precision Components Market

- ***High-Precision Equipment, Tooling, and Process Barrier.*** The precision components industry imposes stringent requirements on equipment accuracy, tooling precision, and process stability. The synergy between core equipment, tooling, and processes demands deep technical accumulation and significant investment from precision components enterprises. Furthermore, precision machining involves complex surface treatment technologies with narrow process windows, relying on long-term accumulation by experienced engineering teams. Leading players have broken their dependence on imports through a dual-path approach of equipment and tooling retrofitting combined with process innovation, thereby establishing significant entry barriers.
- ***Talent Barrier.*** Leading precision manufacturers have cultivated a large pool of experienced process engineers, designers, and quality control specialists over decades, building formidable talent moats. These core personnel possess substantial tacit process knowledge that is difficult to standardize or easily replicate. New entrants can only rely on inexperienced graduates lacking hands-on machining expertise or, constrained by weak brand recognition and limited career development pathways, struggle to attract seasoned technical professionals from established companies. This shortage of specialized technical talent severely restricts new entrants’ ability to troubleshoot production issues, optimize machining parameters, and achieve stable yields at scale. Without experienced technical personnel, new players face prolonged learning curves and persistent quality problems. Consequently, it is almost impossible for new entrants to match the production efficiency and precision stability of established competitors in the short to medium term.
- ***Customer Certification and Supply Chain Barrier.*** The downstream customer certification system in the precision components industry is highly rigorous, requiring multi-stage audits covering quality management systems and product performance testing, with certification cycles lasting 1 to 3 years. The supply chain must be deeply embedded into customers’ R&D systems through co-development models, establishing supply capabilities and inventory coordination mechanisms, and the costs of switching are prohibitively high. In addition, customer stickiness is extremely strong, with leading players deepening relationships through joint R&D, cross-shareholdings, and other means, creating formidable competitive barriers. New entrants must possess co-development capabilities and scalable delivery stability to overcome these access thresholds.

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- ***R&D Investment and Technological Barrier.*** Precision manufacturing components are technology-intensive, characterized by high R&D expense ratios and requiring continuous investment in cutting-edge technology reserves. Patent portfolios around core technologies create technological moats; breakthroughs require a long cycle from laboratory validation to pilot production to customer qualification, typically taking 3 to 5 years. Moreover, the industry experiences rapid technology iteration, demanding forward-looking adoption of next-generation technologies and high R&D investment requirements. Leading players build technological barriers through cross-disciplinary team collaboration and deep industry-academia-research integration.
- ***Global Business Coverage Barrier.*** The construction of precision components production lines involves high investment thresholds per project, encompassing high-precision equipment, clean workshops, and inspection systems, and typically requires maintaining 12 to 18 months of safety stock. Leading players, through global production capacity layouts and flexible manufacturing systems, can support rapid changeovers across multiple product types and variable batch sizes while maintaining high overall equipment effectiveness, effectively mitigating capacity underutilization caused by fragmented orders, and reducing unit costs through large-scale production. Furthermore, continuous investment is required for technology upgrades and equipment iteration, giving leading players significant advantages in capital, scale, and global coordination.

SOURCES OF INFORMATION

We engaged Frost & Sullivan, an independent market research consultant, to conduct an analysis of, and to prepare a report on global precision manufacturing industry for the use in this Document, which was commissioned by us for a fee of RMB550,000. In compiling and preparing the F&S Report, Frost & Sullivan adopted the following assumptions: (i) the social, economic and political conditions globally currently discussed will remain stable during the forecast period, (ii) global government policies on precision manufacturing industry will remain consistent during the forecast period, (iii) global precision manufacturing industry will be driven by the factors which are stated in the report in the forecast period. Except as otherwise noted, all of the data and forecasts contained in this section are derived from the F&S Report. The Frost & Sullivan Report has been prepared by Frost & Sullivan independently without any influence from us or other interested parties.

Frost & Sullivan is an independent global consulting firm founded in 1961 in New York and its services include, among others, industry consulting, market strategic consulting and corporate training. Frost & Sullivan conducted (i) primary research, which involved discussing the status of the industry with certain leading industry participants, and interviews with industry experts on a best-effort basis to collect information in aiding in-depth analysis; and (ii) secondary research, which involved reviewing company reports, independent research reports and data based on its own research database.