

Global Semiconductor Precision Parts Market Research Report 2025-2030

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Report description:

The global semiconductor precision parts market is expected to grow at a CAGR of 8.53% from 2024 to 2030.

Semiconductor Precision Parts Market News & Key Outlook

- Expanding global chip production capacity across APAC, North America, and Europe significantly contributes to the demand for precision parts for front-end and back-end equipment across the semiconductor industry.
- The increasing adoption of EUV lithography, 3D ICs, advanced packaging, and heterogeneous integration is accelerating technical requirements for parts used in deposition, etching, metrology, and material handling across the semiconductor industry.
- Increasing investments in semiconductor fabs by major players, including TSMC, Intel, Samsung, and other foundries, are expected to generate a strong demand for customized high-precision parts.

SEMICONDUCTOR PRECISION PARTS MARKET TRENDS & DRIVERS

Governments worldwide actively support the adoption of AI and ML through various initiatives to transform digitally empowered economies. For instance, the Indian government has implemented initiatives such as Digital India and Make in India aimed at transforming the country into a digitally developed economy, which surges the demand for GPUs, TPUs, and other chips, thereby supporting the demand for connector pins, sockets, and interposers, precision dies, spacers, and others to ensure efficiency and high reliability. Moreover, government support, including funding for AI research, infrastructure development, and policies such as the AI Action Plan 2025 across the US that encourage the adoption of cloud-based and advanced computing technologies, is expected to drive significant growth in demand for semiconductors and, consequently, their precision component.

The semiconductor manufacturing capacity across the world is gradually rising because of the rising demand for advanced chips across industries such as automotive, consumer electronics, and telecommunications industries, among others. For instance, in 2024, Tata Group and Taiwan's Powerchip Semiconductor Manufacturing Corp (PSMC) Fab in Dholera, Gujarat, has made a joint venture to establish India's first semiconductor fab, which focuses on high-performance computer chips for sectors. Additionally, it also aimed to bolster India's technological autonomy with a capacity of producing 50,000 wafers per month. Thus, such factors are

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likely to support the demand for semiconductor precision parts during the forecast period.

The semiconductor precision parts market is witnessing strong growth worldwide, driven by the rapid expansion of the gaming industry. The industry has emerged as one of the significant demand drivers for GPU & CPU, which is creating a direct need for advanced semiconductor technologies. Moreover, according to industry sources, video gaming content in the U.S. has generated nearly \$57.19 billion in 2023. This shows the massive scale of an ecosystem that depends on next-generation processors and GPUs, which rely on ultra-precise manufacturing components. Additionally, the gaming developers are also focusing on the competitive advantages and developing high-graphics games to match real-world scenarios, which need powerful processing units to deliver smooth, reactive user interfaces and immersive experiences, thereby supporting the demand for precision parts such as wafer chucks, vacuum chambers, and ceramic components to achieve nanometer-level accuracy and contamination-free processing.

SEMICONDUCTOR PRECISION PARTS MARKET SEGMENTATION INSIGHTS

INSIGHTS BY PRODUCT TYPE

The global semiconductor precision parts market by product type is segregated into CNC-machined parts, injection-molded parts, metal stamping, cold-formed parts, electroformed parts, and other products. In 2024, the CNC machined parts segment had the largest semiconductor precision parts market share of over 35%. Semiconductor components are often utilized in the electronics industry, which tends to be small and complex. CNC is a precision machining process offering micro dimensioning and intricate part production; this helps in ensuring accuracy and the tolerances required for crucial semiconductor applications. Moreover, during semiconductor fabrication, silicon wafers need care in handling to prevent breakage or contamination. These types of components are mainly designed and manufactured with high-accuracy processes such as CNC machining to ensure stable wafer support and contact-free manipulation.

- CNC Machined Parts
- Injection Molded Parts
- Metal Stamping
- Cold Formed Parts
- Electroformed Parts
- Other Products

INSIGHTS BY MATERIAL TYPE

Based on the material type, the plastic segment shows significant growth, with the fastest-growing CAGR of 9.49% during the forecast period. The segment has grown significantly with the rising demand for lightweight, corrosion-resistant parts across semiconductor systems. Utilizing plastic machining techniques, especially automated CNC processes, results in high-precision plastic parts in semiconductor manufacturing. These techniques provide accuracy and consistency of plastic parts, ensuring their reliability in the semiconductor manufacturing process.

- Metals
- Plastics
- Other Materials

INSIGHTS BY APPLICATION

By application, the lithography segment dominates the global semiconductor precision parts market share. The lithography application includes the equipment used to transfer intricate circuit patterns in semiconductor wafers using light and photomasks.

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It further helps to create miniature features needed for building modern computer chips. As chips become smaller and powerful, lithography tools will help make sure that each layer is accurately formed.

Further, the packaging & assembly segment is significantly growing; it is estimated to register the highest CAGR during the forecast period. The application of precision parts in packaging and assembly equipment is essential for high-speed accuracy processes such as die bonding, wire bonding, and advanced 3D IC packaging. The rising demand for heterogeneous integration and miniaturization in consumer electronics and AI is surging the need for packaging and assembly tools.

- Lithography
- Packaging & Assembly
- Vacuum Chamber
- Wafer Handling
- Other Applications

GEOGRAPHICAL ANALYSIS

In 2024, the APAC accounted for the largest share of over 38% and is the fastest-growing region in the global semiconductor precision parts market. APAC is the global hub for electronics manufacturing, with strong growth in countries such as China and South Korea. Semiconductors are largely used for quality control and production monitoring in the sectors that rely heavily on precision parts, such as micro components, rotary motion components, sensors, and CNC-milled parts, to meet the high-performance and miniaturization requirements. Japan is the major contributor with the largest market share, and the Indian market is expected to grow at a high CAGR from 2024 to 2030, because of the increasing initiatives, such as Make in India, that are expanding the semiconductor market, owing to the rising adoption of smart manufacturing and Industry 4.0 efforts. This has encouraged industries to adopt automation and digital technologies, leading to the rising need for chips in industrial equipment, sensors, and AI-powered systems, thus supporting the market growth.

North America is the second-largest market, and the US dominates the market across the region and accounts for a significant share in 2024. The region remains a major hub for semiconductors owing to the significant investments in AI, cloud computing, and data centers. Leading firms are continuously upgrading toward high-performance CPUs and GPUs, among others, to support ML and AI models; this is further accelerating the need for semiconductor precision parts, such as electrostatic chucks, vacuum chamber parts, and gas nozzles, to achieve the nanometer-scale accuracy. The region has established the gaming industry with a high adoption of gaming devices; this is expected to surge the demand for efficient gaming GPUs and CPUs, as well as strengthen sales and innovations. This support is increasing semiconductor production, which relies on precision parts for manufacturing high-performance chips.

- APAC
 - o□Japan
 - o□South Korea
 - o□China
 - o□Taiwan
 - o□India
 - o□Singapore
- North America
 - o□The U.S.
 - o□Canada
- Europe
 - o□Germany
 - o□France
 - o□UK

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SEMICONDUCTOR PRECISION PARTS MARKET COMPETITIVE LANDSCAPE

The global semiconductor precision parts market is fragmented, with players such as Percimac, Elcon Precision, MW Components, and others that are specialized in niche applications such as wafer handling tools, vacuum components, photolithography equipment parts, and thermal management solutions. The competitive differentiation is often based on micro-tolerance capability, traceability, and vertical integration. Moreover, these market players have established a strong presence in semiconductor machining by specializing in multi-axis machining, ceramic-to-metal seals, and precision springs, along with certifications such as ISO 9001 and AS9100, which make them reliable partners for semiconductor equipment manufacturers. Emerging vendors, including Taiga and TDC Corporation, focus on CNC machining, rapid prototyping, and surface treatments, offering flexibility and moderate tolerances to address niche and fast-changing semiconductor applications.

Recent Developments in the Semiconductor Precision Parts Market

- In 2025, Semiconductor Solutions Inc. launches AI-powered cleanroom nozzles that dynamically adjust spray parameters based on wafer conditions. This optimizes etching and coating precision, improving chip quality and driving the semiconductor parts market toward smarter manufacturing technologies.
- In 2024, Precinmac was acquired by Centerbridge, which aims to accelerate Precinmac's growth, enhance its capabilities, and allow for further investment in people and infrastructure to support expansion in its specialized markets.

Key Company Profile

- Precinmac
- MW Components
- Elcon Precision LLC

Other Prominent Company Profiles

- SK Technologies
- Reeds Precision
- TDC Corp.
- MultiSource
- ELOS
- RCT MFG
- AccuRounds INC
- Shine Precision Engineering PTE Ltd

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- Abbott Interfast LLC
- ZELTWANGER
- G.V. Industries INC
- MJ Enterprise
- Shenzhen DEK Manufacturing CO., LTD.
- Taiga
- RapidDirect
- Texas Contract Manufacturing Group (TCMG)

KEY QUESTIONS ANSWERED:

- 1.□ How big is the global semiconductor precision parts market?
- 2.□ What is the growth rate of the global semiconductor precision parts market?
- 3.□ Who are the major players in the global semiconductor precision parts market?
- 4.□ What are the drivers of the global semiconductor precision parts market?
- 5.□ Which region dominates the global semiconductor precision parts market?

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