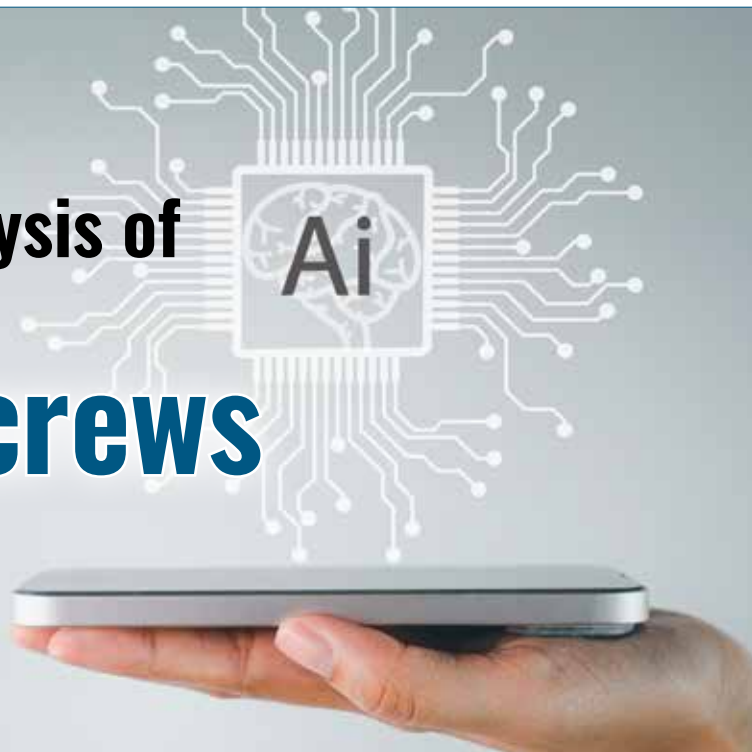


AI Mania - Demand Analysis of Electronics Screws in the U.S.



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Introduction

The rapid advancement of artificial intelligence (AI) technologies has significantly transformed various industries, with the electronics manufacturing sector being at the forefront of this revolution. As AI applications proliferate, there is an escalating demand for electronic components, including specialized fasteners like electronics screws. These components, though often overlooked, are critical in ensuring the structural integrity and functionality of electronic devices. **This article delves into the current trends, market dynamics, and future projections of the electronics screws market in the United States, highlighting the influence of AI-driven growth.**

The Surge of AI and Its Impact on Electronics Manufacturing

The integration of AI into electronics has led to the development of sophisticated devices requiring high-precision components. The AI hardware market, encompassing processors and other integral parts, is experiencing exponential growth. In 2024, the global AI hardware market was valued at approximately USD 25 billion and is projected to reach USD 76.7 billion by 2030, growing at a compound annual growth rate (CAGR) of 20.5%.

This surge is primarily driven by the increasing adoption of AI in various sectors, including IT and telecommunications, which accounted for a significant portion of AI hardware demand in 2024. Major tech companies are heavily investing in AI infrastructure. For instance, significant orders for AI chips have been placed to support the development of new data centers in Texas, aiming to deliver substantial power capacity and expected to be fully operational by mid-2026.

Electronics Screws: The Unsung Heroes

Electronics screws, particularly micro and machine screws, play a pivotal role in assembling electronic devices. **The micro screws market, essential for compact devices like smartphones and wearables, was estimated at USD 1.5 billion in 2024 and is projected to reach USD 2.8 billion by 2033, growing at a CAGR of 8.9%.**

Similarly, **the global machine screws market, vital for larger electronic assemblies, was valued at approximately USD 8.5 billion in 2024 and is projected to reach USD 12.3 billion by 2033, growing at a CAGR of 4.8%.** These figures underscore the significant demand for specialized fasteners in the electronics industry.

Domestic Manufacturing and Supply Chain Dynamics

The United States is witnessing a resurgence in domestic manufacturing, particularly in AI hardware production. **Companies have announced plans to invest significantly in building AI supercomputers entirely within the U.S., marking a significant shift towards domestic manufacturing. This move is expected to bolster the demand for electronics screws, as domestic production facilities will require a steady supply of high-quality fasteners.**



Moreover, the establishment of AI hardware factories by tech giants in various U.S. locations signifies a structural shift towards technology-oriented production in the country. These developments are anticipated to reshape the industrial landscape, increasing the demand for components like electronics screws.

Strengthening Materials Supply for Electronics Manufacturing

In April 2025, the United States and Ukraine established a joint investment initiative aimed at Ukraine's post-war recovery and the development of its vast reserves of critical minerals, particularly titanium, lithium, and graphite. These materials are essential for producing semiconductors, batteries, and structural components in AI hardware and electronics systems. With the U.S. gaining preferred access to these minerals through the agreement, domestic manufacturers are expected to benefit from more secure and diversified supply chains.

For the fastener industry, this is highly significant. Titanium and aluminum alloys, for example, are increasingly used in high-performance electronics screws due to their strength-to-weight ratio, corrosion resistance, and heat tolerance, qualities essential in AI servers, military electronics, and medical devices. As U.S. manufacturers ramp up electronics production in response to AI infrastructure demand, improved access to these materials ensures consistent production of precision screws that meet tight specifications for micro-assembly, thermal management, and vibration resistance in next-generation electronics.

Economic Catalysts from Strategic Partnerships

In parallel with domestic technology growth, **recent foreign investment commitments, most notably Saudi Arabia's pledge of over US\$600 billion in the United States, are poised to accelerate demand for U.S.-manufactured electronic components.** This includes a US\$20 billion initiative in AI data centers and billions allocated to defense, infrastructure, and health sectors.

These developments contribute directly to the expansion of manufacturing and assembly facilities, many of which require micro and machine screws in the construction of equipment ranging from AI servers to aerospace systems and medical devices. As such, fastener manufacturers are expected to face increasing orders and specifications for advanced, precision-engineered screws.

Furthermore, bilateral agreements on critical mineral sourcing and mining collaboration help stabilize raw material supply chains essential for screw production, especially alloys used in high-stress, precision assemblies. This positions the U.S. fastener industry to better meet growing demand amid global competition.

Challenges and Opportunities

While the demand for electronics screws is on the rise, manufacturers face challenges such as fluctuating raw material prices and supply chain disruptions. The implementation of tariffs on imported metals has led to increased material costs, affecting the pricing of screws and fasteners. For instance, tariffs on steel and aluminum imports into the U.S. have been reinstated, a measure aimed at bolstering domestic industries.

However, these challenges also present opportunities. Companies that source materials domestically and invest in automation and AI-driven manufacturing processes can mitigate these issues. For instance, the integration of AI in manufacturing has enabled companies to improve fabrication, assembly, and testing processes, enhancing efficiency and product quality. AI is reshaping electronic product design and manufacturing, streamlining processes to enhance speed, intelligence, and cost efficiency.

Future Outlook

The intersection of AI advancement and electronics manufacturing is poised to drive sustained growth in the electronics screws market. As AI technologies continue to evolve, the demand for high-precision, reliable fasteners will escalate. Manufacturers that adapt to these changes by embracing innovation and optimizing their supply chains will be well-positioned to capitalize on the burgeoning market.

The U.S. industrial fasteners market size was estimated at USD 16.2 billion in 2024 and was projected to reach USD 25.4 billion by 2034, with a growing CAGR of 4.7% between 2024-2034. This growth is indicative of the increasing demand for fasteners, including electronics screws, driven by advancements in AI and electronics manufacturing.

Conclusion

The AI revolution is not only transforming the digital landscape but also reshaping the physical components that underpin technological advancements. Electronics screws, though small, are integral to the functionality and reliability of AI-driven devices. As the United States continues to invest in AI and domestic manufacturing, the demand for specialized fasteners is set to soar, presenting both challenges and opportunities for manufacturers in the sector.

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