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Laser Marking Machine Market Assessment, By Component [Hardware, Software, Services], By Product Type [Fixed, Portable], By Technology [Fiber Laser, Green Laser, UV Laser, CO2 Laser, Diode Laser, Mopa Laser, Others], By End-use [Automotive, Aerospace, Machine Tools, Electronics, Medical, Packaging, Oil and Gas, Others], By Region, Opportunities and Forecast, 2016-2030F

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Abstracts

Global laser marking machine market size was valued at USD 3.12 billion in 2022, expected to reach USD 5.36 billion in 2030, with a CAGR of 7% for the forecast period between 2023 and 2030.

The laser marking machine market is witnessing robust growth, primarily fueled by technological advancements, expanding applications across various industries, and a rising need for precise, permanent, contactless marking solutions. Sectors such as automotive, aerospace, electronics, and medical devices rely on laser marking for product traceability and branding. The market benefits from the increased adoption of laser marking within the packaging and labeling industry. The demand for fast and high-precision marking systems and a growing preference for customized solutions stimulate ongoing innovation in the market. Furthermore, the market is driven by the shift toward eco-friendly and sustainable marking methods.

The automotive sector significantly propels the demand for laser marking machines, which evolved from using lasers for welding to employing them in various applications like cutting, marking, and inspection. Modern lasers offer precision, ensuring quality by

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eliminating errors often caused by part positioning variations. Laser technology enables swift changeovers, drastically reducing downtime and enhancing productivity. Additionally, as the automotive industry embraces eco-friendly practices and electric vehicles, lasers play a vital role in sustainability. Their ability to reduce waste, eliminate consumables, and minimize tool wear aligns with the industry's green objectives, making lasers a crucial contributor to the laser marking machine market's growth.

For instance, in June 2023, Coherent Corp. introduced an industry-first pump laser diode, boasting an exceptional 65 W output power for fiber lasers in industrial and consumer applications. The innovation addresses the growing demand for cost-effective fiber laser designs, especially for handheld welding applications, by surpassing existing products with their lower operating current and compatibility with existing sub mounts.

Trend of Customization and Personalization Promote Market’s Growth

The growing demand for customized and personalized products in diverse industries drives the laser marking machine market. These machines offer a flexible product labeling and branding solution, enabling businesses to apply distinctive markings and tags to various items. For example, in the promotional products sector, companies can utilize laser marking to incorporate individual names, logos, or messages about their merchandise, elevating their appeal. This personalization aligns with consumer preferences and nurtures brand loyalty. Furthermore, in manufacturing, laser marking machines play a pivotal role in labeling components and parts with specific codes or symbols, ensuring product traceability and quality assurance. The capacity to tailor these markings based on distinct product requirements or customer specifications significantly propels their adoption.

For example, in April 2023, Epilog Laser responded to customer demand by extending its Fusion Maker Series with the Fusion Maker 24 and Fusion Maker 36, featuring larger work areas and higher laser wattages. These machines have the IRIS Camera System to enhance artwork positioning precision.

Non-Contact and Non-Destructive Marking Drive Demand for the Market

The laser marking machine market experiences significant growth due to its non-contact and non-destructive marking capabilities, particularly valuable in industries like medical devices. This feature ensures the preservation of delicate materials and products during marking, maintaining their integrity. Precision and product safety are paramount in medical applications, making laser marking's non-contact nature critical. Additionally,

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this process minimizes material waste, promoting environmental sustainability. Laser marking machines create high-quality, permanent markings while safeguarding product quality and structural integrity. These advantages drive the adoption of laser marking machines in industries prioritizing precision, reliability, and resource preservation.

For example, in February 2023, Coherent Corp unveiled the AP 530 S, a fully automated laser system designed for texturing and marking implantable medical devices. The contactless laser-based process offers high-quality manufacturing and scalability to meet the growing demand for these devices. The system is equipped with six-axis robotic handling, enhancing its versatility and precision for various medical device sizes.

Environmental Concerns Contributing to the Laser Marking Machine Market

The laser marking machine market is rising due to increasing environmental consciousness. Industries are shifting from conventional methods, such as inkjet, to embrace eco-friendly laser marking technologies. This change is powered by the growing recognition of environmental issues and the demand for sustainable manufacturing practices. Laser marking is considered more environmentally responsible as it eliminates the need for consumables, like inks and solvents, reducing waste production and environmental pollution. The non-contact feature of laser marking ensures minimal wear and tear on equipment, resulting in extended machine lifespans and reduced electronic waste. Additionally, laser marking systems are energy-efficient and leave a smaller carbon footprint. The move toward eco-friendly manufacturing practices aligns with stringent environmental regulations and corporate sustainability objectives, promoting the adoption of laser marking machines in various sectors.

For instance, in October 2022, FOBA unveiled a green laser marking system operating at 532nm, which provides an eco-friendly and effective solution for marking challenging materials like plastics, glass, and reflective metals. The technology delivers superior marking quality and speed, eliminating the necessity for additives on specific plastics and enhancing marking results on various substrates.

Asia-Pacific Dominates Laser Marking Machine Market

The laser marking machine market shows Asia-Pacific as a dominant force, primarily due to its robust industrialization, with a focus on the manufacturing and automotive sectors. It is further bolstered by the high demand for electronics and consumer goods, which has led to increased adoption of laser marking for product labeling purposes.

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Additionally, stringent government regulations concerning product traceability and safety add to the market's growth momentum. The presence of key manufacturers offering cost-effective solutions and proactive government initiatives aimed at advancing technology collectively contributes to the region’s strong position. Emerging economies, like China and India, play a significant role in the market due to their expanding industrial capacities, creating a dynamic environment with a skilled workforce that establishes Asia-Pacific as a frontrunner in the global laser marking machine market.

For instance, in June 2023, Coherent Corp., with a presence in Asi-Pacific, introduced the PowerLine PS 30 picosecond laser markers, catering to the rising need for corrosion-resistant black marking and precise micromachining in medical device manufacturing. These lasers offer efficient, reliable, and cost-effective solutions, ensuring permanent black marking on medical devices, even after passivation and autoclave cycling. These lasers enable rapid production scalability and meet traceability requirements while keeping costs in check.

Government Initiatives Acting as Catalyst to Laser Marking Machine Market

Governments around the globe are actively pushing the laser marking machine market through efforts that stress sustainability and technical advancement. For example, laws like RoHS and REACH in the European Union encourage using ecologically friendly and non-contact laser marking systems, driving market growth. Stringent regulation by organizations such as the Food and Drug Administration (FDA) in the United States mandates exact product labeling, particularly in the pharmaceutical industry. Laser marking provides a solid method for maintaining traceability and regulatory compliance. Furthermore, governments worldwide are investing in laser technology research and development, which encourages innovation and the development of cost-effective solutions, eventually adding to the growth of the laser marking machine market.

Impact of COVID-19

The laser marking machine market experienced the impact of COVID-19 in distinct phases. Before the pandemic, the market grew, with increasing demand for precise and non-contact marking solutions across various industries. However, the global outbreak disrupted supply chains, resulting in a temporary decline in manufacturing activities. Many businesses postponed or reduced investments in capital equipment, including laser marking machines.

In the post-pandemic period, the market rebounded as industries adjusted to the new

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normal. In particular, the medical and pharmaceutical sectors saw an increased need for traceability and anti-counterfeiting measures, driving the adoption of laser marking machines for marking essential medical equipment and packaging. Additionally, the growth of e-commerce and online shopping further accelerated the demand for laser marking in product identification and branding. This demonstrated the market's resilience and quick recovery, underscoring the vital role of laser marking technology in the evolving industrial landscape.

Impact of Russia-Ukraine War

The laser marking machine market experienced an impact due to the Russia-Ukraine war, particularly in the semiconductor industry. Ukraine is a significant player in the global semiconductor supply chain, with companies like PJSC Dnipro, one of Europe's major semiconductor manufacturers. The conflict disrupted the supply of crucial semiconductor components, resulting in shortages and price hikes. As a result, semiconductor manufacturers worldwide, heavily depending on laser marking machines for product identification and traceability, encountered difficulties. It led to increased demand for laser marking machines in the semiconductor sector as companies aimed to enhance traceability and security measures in response to supply chain disruptions, ultimately driving market growth.

Key Players Landscape and Outlook

Industry leaders play a significant role in the competitive laser marking machine market. Key players like TRUMPF Group, Epilog Corporation, Coherent Corp., MECCO, and Novanta Inc. are instrumental in shaping this dynamic landscape. These companies consistently innovate, providing advanced laser marking solutions and extending their global reach. The market prospects are optimistic, driven by increasing demand for laser marking across various sectors, including automotive, aerospace, and electronics. As manufacturers seek enhanced solutions for product identification and traceability, these major players are well-prepared to benefit from the market's continued growth.

In October 2023, FOBA unveiled its compact V-Series laser workstation, featuring integrated 3W UV, 5W UV, and 10W green lasers in one unit. This innovative solution addresses space-saving needs in production environments. Lasers are ideal for high-contrast marking on delicate materials like plastics, glass, and ceramics. FOBA also showcased the Mosaic software feature, enabling precise marking without fixtures. This event has already occurred.

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In June 2023, Videojet Technologies unveiled the Videojet 3350 and Videojet 3350 Smart Focus laser marking systems with 30-watt CO2 lasers, designed to efficiently mark complex codes on products for the food, beverage, cosmetics, pharmaceutical, packaging, and extrusion sectors.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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