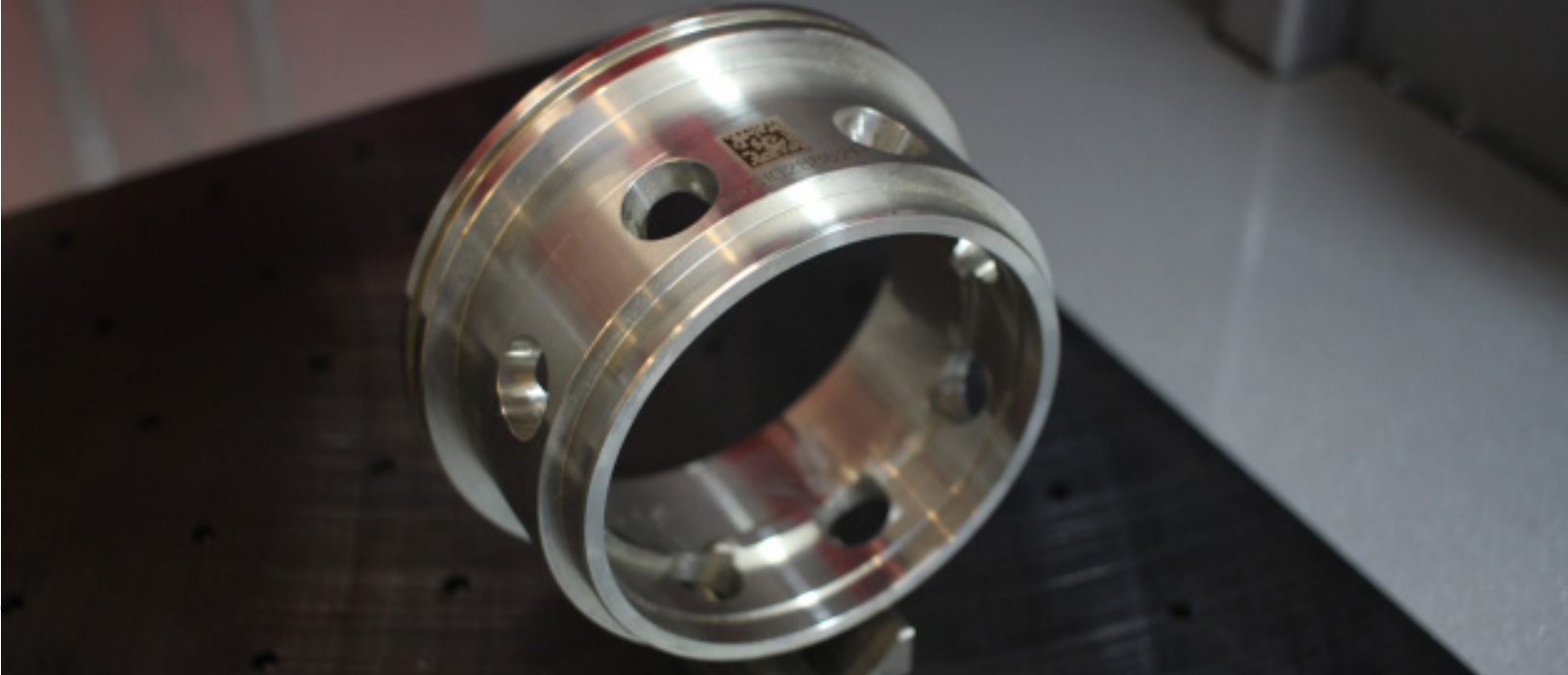


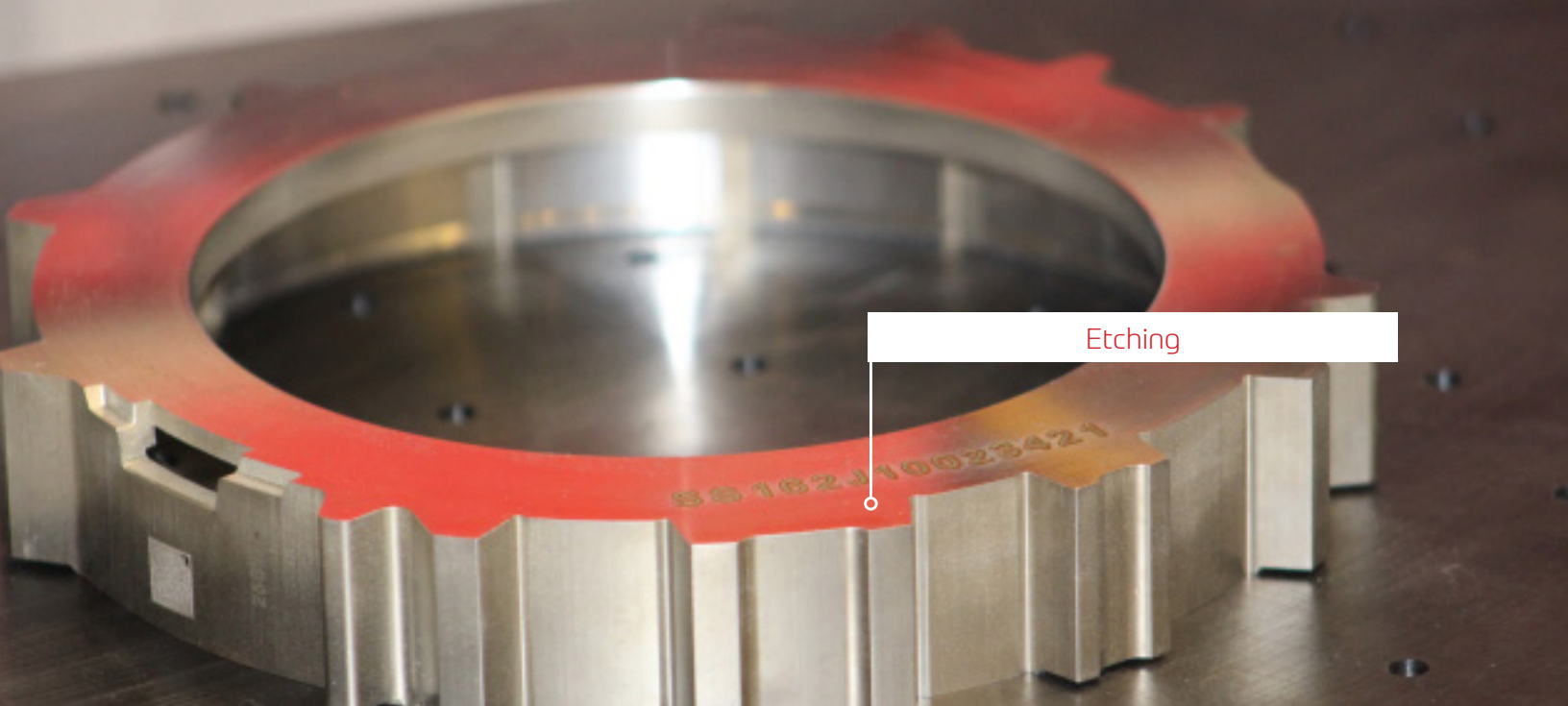


THE ULTIMATE LASER MARKING GUIDE

Maximize your marking capabilities with our Ultimate Laser Marking Guide—the all-in-one resource for exploring the full range of marks your Beamer laser machine can achieve. From etching and annealing to deep engraving, foaming, and charring, this guide provides essential insights into each marking technique.

Whether you're new to laser marking or looking to refine your process, this guide is packed with valuable information to help you get the most out of your laser system.





Laser Marking Vs. Etching

Fiber marking systems can laser etch a variety of materials, including metals, plastics, and ceramics. Contrast marking involves creating a permanent discoloration on the material, producing either lighter or darker marks on the substrate.



Oxidation

Oxidation microscopically raises the surface of a metallic material and oxidizes its top layer, creating a dark, often black, mark. This method is particularly effective on ferrous materials.



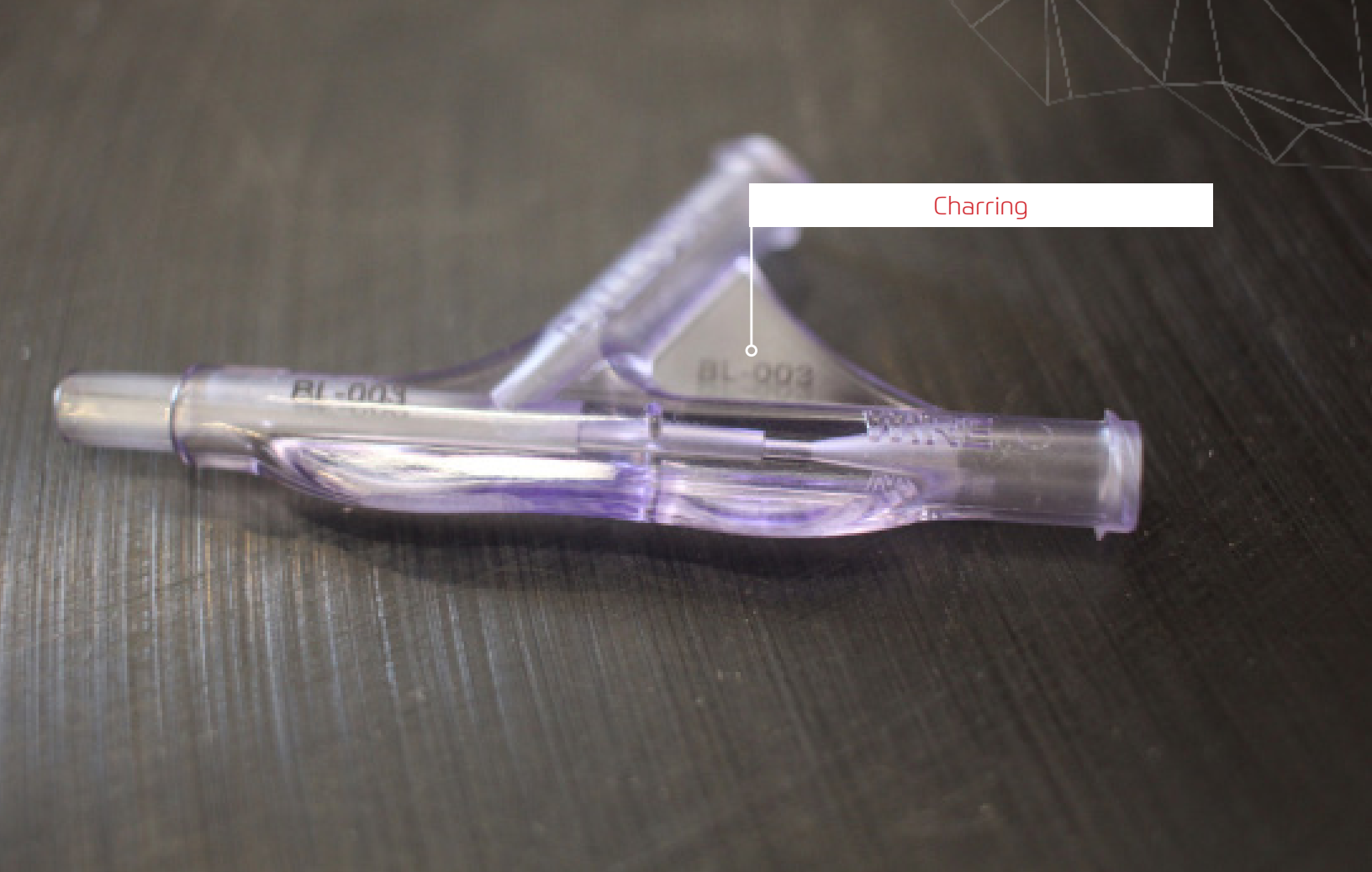
Annealing

Annealing ferrous metals creates a corrosion-resistant black mark below the material surface. And depending on the carbon content of substrate, the mark will not disturb the outermost layer or affect its anti-corrosive properties.



Deep Engraving

Deep engraving with a 1064nm fiber marking system, requires specific techniques to attain the desired depth.



Etching

Etching with a 1064nm fiber laser is a fast marking method used in various applications, often alongside oxidized marks.



Foaming

Using a marking process that precise and permanent microscopic bubbles, foaming creates a light mark on dark materials, including plastics, polymers, and resins.



Charring

Using a marking process that precise and permanent microscopic bubbles, charring creates a dark mark on light materials, including plastics, polymers, and resins.



Beamer Laser Marking Systems delivers American-made quality in a full range of fiber laser marking machines, providing an industry-leading 100,000+ working-hour lifespan. With simple point-and-click software, Beamer Laser has what your operation needs – whatever its focus. From tracking and traceability, serialization, 2D codes, and decorative laser marking; in industries from automotive to medical and many others. Save production time and boost productivity with these affordable solutions.

Beamer offers user-friendly Standalone Solutions, as well as custom Engineered Solutions and Inline Solutions – all provided with fast turnaround times to maintain productivity. Whatever your direct part marking needs, Beamer Laser has the solution that will enhance your product quality and assure your operation a competitive edge.



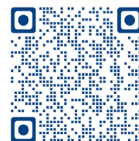
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