



Solving Proprietary Process Problems

Custom Wire technologies, Inc. ("CWT") helps OEMs and medical device manufacturing customers solve process engineering and manufacturing challenges for their proprietary fine and ultra-fine wire parts and components for medical devices.

Micro Laser Welding

CWT offers diverse flexibility with their laser welding machines which offer rotary and stationary welding capabilities. **Stationary welding** is the typical option for custom prototypes and small orders; but **automated rotary welding** is utilized for larger production runs to ensure quality, consistency and turnaround times. Their in-house technicians program the rotary welding equipment to precisely feed, position and rotate the fine and micro-fine wire products within the treatment zone.

For CWT's client products that require welding, most typically start with a fine or ultra-fine wire (*similar in thickness to a human hair*). Achieving the desired weld outcome requires a combination of resources and skills. For the smallest wires, the settings on the selected laser welder can be adjusted to as low as an energy level of 0 joules, 0 kilowatts (KW) and a frequency as low as 0.1 meters per second. When fine-tuning the ideal laser weld parameters, that's where CWT's experience and expertise make the difference compared to other welding providers. Our expertise in this niche service brings elevated quality assurance through the meticulous assessment and implementation of all singular and integrated factors that may potentially be affected, such as wire material, diameter, pitch, coil specs and application.

Multi-Layered Construction

With consideration of the desired final wire thickness, medical device designs can take advantage of assembling multiple wires. For many projects, CWT will mechanically twist individual wires together. While their combined break-strength is greater than the sum of the individual wires, that's not the only advantage. Twisted wire construction also offers greater flexibility and torque transmission, plus it removes the bending stress from specific points during repetitive bending cycles.

Liquid Dip-Coating Technology

One aspect of custom wire manufacturing during the design process is the use of **insulating materials** for characteristics other than dielectric strength. The liquid dip-coating technology lends itself to using different insulating materials. By understanding the properties of different coating materials, designers can produce or enhance differing functionalities in the overall design.

To receive superior quality, exemplary service and phenomenal production turnaround, choose our field-proven expertise and quality assurance for your next custom medical fine wire component manufacturing.