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Laser-Powered Tube Cutting Machine Creates Stents and More

The Challenge

NPX Medical (Plymouth, MN) was founded in 2019 as a specialty contract manufacturer to provide design, engineering and precision laser cutting services to medical device manufacturers. Mike Brenzel, one of the NPX founders, explains, “Based on our long experience in the medical device field, my colleagues and I believed there was an excellent opportunity to differentiate NPX as a supplier of quality products with a fast response supporting a diverse range of devices, including stents, implants, valve scaffolds, and flex delivery tubes.” He adds that these devices are needed for a similarly diverse range of surgical interventions, including neurovascular, cardiac, renal, spinal, orthopedics, gynecology, and gastrointestinal procedures.

A key process requirement for NPX is flexibility. They typically are contracted to produce devices in small quantities, somewhere between 5 and 150 units, including a wide variety of materials such as nitinol, cobalt chrome, tantalum, titanium, and several types of medical stainless steels. The substrate thickness is similarly diverse from tubes with an internal diameter of only 0.012 inches, to thick wall tubes with outer diameters up to 1 inch for devices like heart valves. They thus required a machine that cuts with speed, precision and high edge quality. In addition, NPX’s customer diversity means they have a need for both wet and dry cutting.

The Solution

NPX acquired a StarCut Tube 2+2 equipped with a StarFiber 320FC laser to serve as their main cutting machine. Mike Brenzel explains the decision was fairly straightforward, “The founders brought years of experience in medical device design and manufacturing – over 90 years in total – and several of us had extensive previous experience with similar StarCut machines using fiber lasers. In particular, we knew that a fiber laser option was the best option for us in terms of the combination of speed and cut quality.”

The Result

The performance and throughput of their StarCut Tube has enabled NPX to be ever more successful and they recently took delivery of a second StarCut Tube machine to meet the fast-growing demand for their services. These services include the full gamut from design, through programming, cutting, forming, post processing and inspection. Brenzel concludes, “The StarCut Tube has proved itself to be a great workhorse machine for NPX, with not a single service call required in the past 18 months of near continuous operation.”

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—Mike Brenzel, President,
NPX Medical, Plymouth, MN