

GROWING IT'S BUSINESS

Joining Technologies: Expanding with laser technology: Disk laser provides a wider range of work than electron beam — and improves the quality as well as reduces the costs.

"We have very aggressive growth plans for the next 12-24 months." When Joining Technologies CEO Michael Francoeur made that statement a little more than a year ago, his company – an ISO and AS9100 certified job shop specializing in the precision welding of miniature and micro-welded parts – had its sights set on entering the aerospace overhaul and repair market. With the June 2006 installation of a two-kilowatt continuous-wave disk laser from TRUMPF, those plans – and a lot more – have been accomplished.

"We bought the HLD 2002 disk laser because we wanted the latest in laser technology," says Joining Technologies President David Hudson, who joined the company a year-and-a-half ago after 20-plus years in the manufacturing world. "It has essentially been designed for us."

Two Joining Technologies workstations are currently tied into the disk laser at the company's East Granby, Connecticut production facility, including one dedicated to the aerospace overhaul and repair market. "We are using the new disk laser in tandem with a specialized workstation for the wire-applied resurfacing of aerospace components," Hudson adds. "It has enabled us to fully enter the overhaul and repair market, just as we planned." The disk laser also allows Joining Technologies' process development specialists to experiment with resurfacing various aerospace components made from high-end aerospace alloys, such as titanium, Waspoly and Inconel. "New engine parts are extremely expensive," says Hudson, who notes that Joining Technologies recently added 4,500 square-feet of space dedicated, primarily, to R&D for such aerospace OEMs as Boeing and Pratt & Whitney. "The airlines are always looking to cut costs, so this is a very important market for us."



"We are using the new disk laser for the wire-applied resurfacing of aerospace components." – Dave Hudson

More welding operations for new markets

According to Hudson, the disk laser, which also is tied into a four-axis workstation, allows Joining Technologies to do deep penetration welds that would otherwise be accomplished at an electron beam welding station – a more time-consuming and costly operation. "The disk laser is four times more powerful than our most powerful Nd:YAG pulsed laser," he says. "As a result, we can deliver deeper penetrations with smaller heat-affected zones. Furthermore, the disk laser increases our capacity to do laser welding for the medical device and sensor industries, as well as other industries that use small, delicate parts that require precise joining." Hudson pauses. "For a privately held job shop to have this kind of sophisticated, high-power laser capability is something that very much sets us apart."

In summarizing the benefits of the disk laser, Hudson emphasizes that the laser's intense, high-quality beam has allowed Joining Technologies to cover a "wider range of work" in a highly competitive manner. "The use of the disk laser widens the overlap between electron beam and pulsed laser beam welding. It enables us to be more energy efficient, improve quality of the work we do and reduce the cost of operation – all the things that tie into our core values and business model."

At Joining Technologies, that business model includes a dedication to emerging technology and strategic partnerships. "We consider TRUMPF to be an important strategic partner," Hudson says. "It's part of our commitment to finding creative solutions that go above and beyond the usual boundaries of joining." So what creative solutions are on the horizon? "We are looking to expand into the resurfacing market via powder applications," says Hudson. "In fact, we hope to bring powder technology in-house within a year." Joining Technologies also plans to install a fully integrated robotic workstation using the disk laser.

Laser technology will continuously gain in importance. "We see the laser taking on more work in what has traditionally been the electron beam world," says Hudson. "We have made a conscious decision to grow our business in laser technology."

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