

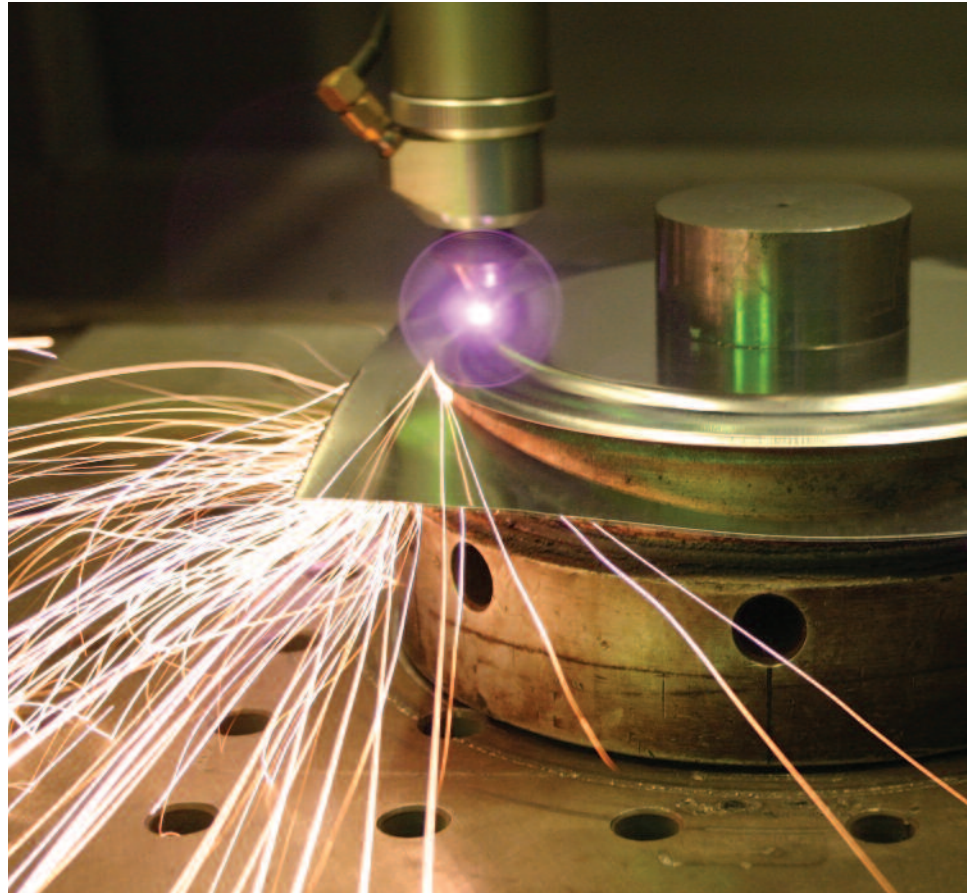
The Smart Factory

Laser
manufacturer
engineers
hardware and
software to give
fabricators custom
building blocks

When George Lucas wrote “Star Wars” in 1977, the technology he needed to bring his intergalactic universe to life didn’t exist. The enterprising entrepreneur established Industrial Light & Magic where he pioneered a new direction for computer animation and digital effects. Nearly 40 years later in an industry far, far away, cyber technology is also transforming the face of manufacturing and giving rise to the smart factory. One resourceful company has built its business on anticipating the future by equipping customers with laser solutions not readily available on the market.

“The days of one-size-fits-all are over,” says Mehdi Soghrati, CEO for Assembly Automation Alternatives Inc., based in Woodbridge, Ontario. “Smart solutions for production tasks and processes are the building blocks of a smart factory.”

But solutions have to be more than just “smart,” he adds. They also have to be customer-based. “A smart solution must be able to respond to and interpret special circumstances such as automation, for example,” Soghrati explains. “That means being able to determine the appropriate



level of automation by assessing and evaluating any number of conditions such as labor skills, cost and availability, market economy, competition and affordability of the solution for the customer.”

These building blocks also depend on technology’s all-important counterpart in this era of Industry 4.0 — the human element. “Each member of our engineering team is an expert in their field,” says Soghrati. “By listening to customers and understanding their needs, our team lays critical groundwork that we use to provide the customer with the best possible product. One that can solve the challenges

they are facing on the production floor today and down the road.”

Custom isn't costly

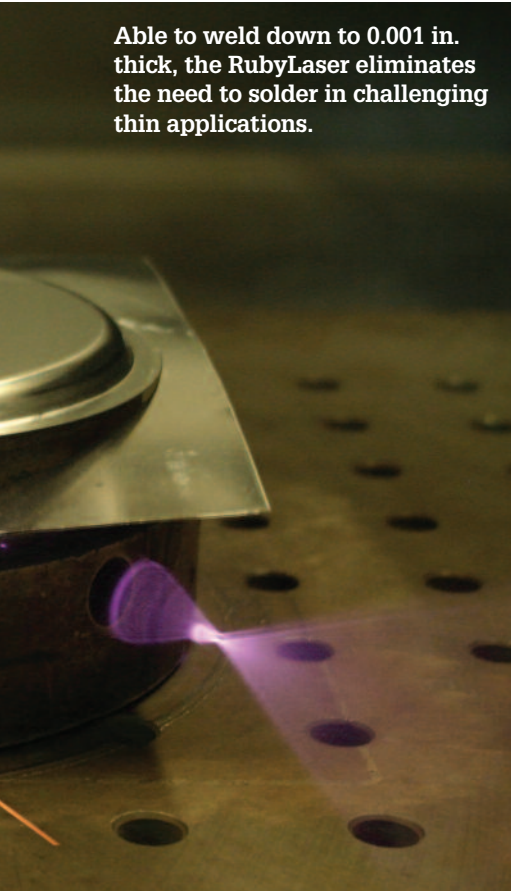
The business approach has been popular with customers, although some might worry that a custom package carries a higher price tag. “Quite the contrary,” says Soghrati. “Our extensive field experience in developing and improving processes for a large cross section of industries means we can engineer a package that is often more cost effective than an off-the-shelf product.”

Assembly Automation Alternatives’

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(Right) Assembly Automation Alternatives CEO Mehdi Soghrati and Application Engineer Chris McDonald check work progress on a customized solution.

Able to weld down to 0.001 in. thick, the RubyLaser eliminates the need to solder in challenging thin applications.



RubyLaser cutting and welding systems use the latest fiber technology for accurate and fast processing of most metals on a heavy-duty, compact platform. From there the supplier works to match the right system configuration to the customer's work requirements.

"We don't want a manufacturer to over purchase and take on additional operational and maintenance costs," Soghrati says. Unlike most suppliers, Assembly Automation Alternatives can adapt its standard products for a higher level of integration because it controls its supply chain. "We can build in-line laser pro-

cessing with in-line testing/inspection capability or design a program for laser processing of parts on a palletized material transfer system at an affordable cost," he explains. "Because we are able to use our standard platform, in-house expertise and technologies we can reduce development and manufacturing costs along with the lead time normally associated with the procurement and installation of a specialized system."

Many integrators use third-party engineering to produce customers' systems. Assembly Automation Alternatives works with its customers from initial analysis of their processes to aftersales support using customer feedback to tweak a standard configuration or custom design a new system from the ground up.

"We are not always the least expensive option but we get the business because we work with customers to tailor processes to their needs," says Soghrati. And Assembly Automation Alternatives doesn't limit itself to the conventional definition of customization. "When we work with a customer it might also mean modifying their processes to improve efficiency and

possibly include a level of automation," he adds. "Sometimes we change our design to something that goes beyond the original scope of the project and terms of pricing to give customers what they need."

When aging equipment put Zook Canada in the market for a laser cutter and a laser welder, the custom sheet metal fabricator wanted more than just hardware.

"We had several lasers that were approaching their obsolescence dates," says President Scott Muddiman. "We needed to hedge our bets on one of those machines going down permanently. In addition, the older machines limited our welding capabilities." Zook considered several suppliers but chose Assembly Automation Alternatives' RubyLaser cutter and RubyLaser welder. The systems were installed in 2012.

No skill sets required

"Fiber laser cutting isn't new," says Muddiman. "Anyone can piece together a laser cutting workstation. The right software and programming is what you need. Assembly Automation Alternatives is an integrator with a reputation for extensive

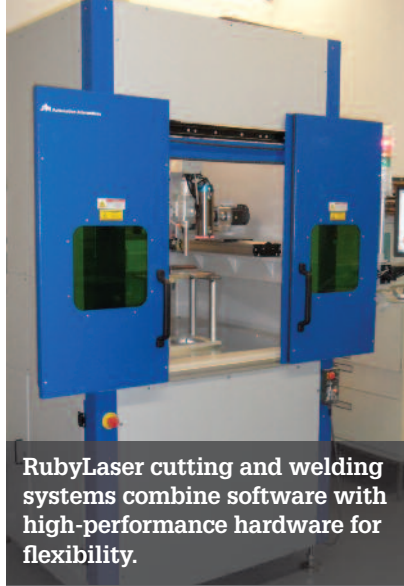
Laser Technology

industry knowledge. Their custom programming and tailored solutions make it easy for our operators to use the machines.”

“Most laser systems use generic machine language,” says Soghrati. “These types of systems are hard to program. You have to write every line of code and that takes proficiency. We gave Zook a windows-based program that can import CAD drawings and convert those into the type of data the machine needs to run the job. That makes programming very easy.”

Like many manufacturers these days, Zook is dealing with a skills gap. “With these systems operators just load parts into the machines and press go,” Muddiman says. “No skill sets are required because the interface is customized to the specific job.”

Based in Ontario, Zook processes a range of metals including stainless steel, Inconel, Monel, nickel and Hastelloy. “We make custom products every day and we needed the flexibility laser cutting offers,” says Muddiman. Zook fabricates



RubyLaser cutting and welding systems combine software with high-performance hardware for flexibility.

components used in safety products for a range of markets including aerospace, plastic extrusion and petrochemical.

With the laser welding system the fabricator has been able to eliminate a secondary operation.

“We deal with thin foils,” says Muddiman. “We could weld 0.003-in.-thick material on our old equipment. If we had to go thinner for certain applications we had to solder the part, which is not the preferred method. With the RubyLaser

we can weld down to 0.001 in. thick and eliminate the need to solder. In addition to thin foils, Zook welds thin membranes to small, threaded parts.

“The system we provided can also process multiple parts in a single run and is to some extent automated,” says Soghrati.

The machines run a shift and a half during a conventional work week and “still run the way they were designed to right from the start,” Muddiman says. “In our business it’s all about customization. We fill a niche in the marketplace. Finding a supplier that not only understands how to build, fit or alter hardware according to our needs but can anticipate and tailor the software made our choice an easy one.”

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Assembly Automation

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