A cut above the rest

Since its founding in 1996, Laser Dynamics Australia Pty Ltd, a steel service center and profiling company in Brisbane, has strategically worked to differentiate itself from its competitors. It’s done so with a forward-looking perspective and by investing in advanced metal fabricating equipment uniquely designed for special applications. Laser Dynamics was the first company of its kind in the region to process heavy armor plate for defense vehicles; the first to add large bed laser cutting capability to process plate sizes up to 12.5 metres long in materials up to 25 mm thick. Today, the company boasts the largest in-house capacity of any steel service center in Australia.

Laser Dynamics purchased its first laser in 1996, when laser cutting was new to the Australian market. After ten years of working with the technology, Bob Gaydon, Laser Dynamics’ general manager, looked to move beyond the standard 3 metre by 1.5 metre laser cutting capability and offer customers greater value added services. His vision included expanding the company’s reach to industries such as transportation, mining and heavy equipment. Gaydon wanted to keep the business dynamic by offering a niche service. That niche service came in the form of large plate laser cutting and bending.

Gaydon researched the available technology and chose to invest in the company’s first large bed laser machine, an LVD Impuls 12530 with 5 kW laser source. In 2008, an additional large bed Impuls 12530 was installed at Laser Dynamics’ 3000 square metre production facility. Gaydon and his team worked closely with LVD laser specialists to learn about large bed laser cutting technology and techniques that would set the company apart in the service center market.

“We looked for a machine that could give us the largest size metal plate cutting capability, 12.5 metre by 3 metre, far greater than the standard maximum size of two by four metres,” said Gaydon. “With the LVD equipment, we have the capability to cut the largest size plate that money can buy.”

In addition to its large table size, the Impuls 12530 can handle up to 16 sheets of 3 by 1.5 metre material for processing. The ability to load multiple workpieces increases Laser Dynamics’ cutting time and reduces time spent handling material. Using larger material sizes also improves sheet utilization and nesting efficiency.

The laser cutting systems allow the company to effortlessly handle materials in varying sizes and thicknesses, cutting flat plate up to 25 mm mild steel, 15 mm aluminum, and 20 mm stainless steel.

The company maximizes its equipment usage by operating the laser machinery around the clock. Advanced features such as a constant beam length axis, which ensures edge quality throughout the complete work envelope, allow Laser Dynamics to maintain high accuracy and high throughput.

“Customers have a shorter order book and as such what they are asking for is immediate response from us when they get an order,” said Gaydon. “We’re finding that everyone has an extreme demand on delivery, which means we need to continue to run 24 hours a day, 7 days a week to have a chance of supplying them.”

continued over
Because Laser Dynamics operates 24/7, equipment reliability was a key factor in defining the company’s laser cutting machinery. Familiarity with the highly reliable Fanuc components at the heart of the Impuls system coupled with a strong local service support network were key factors in Gaydon’s decision making process.

The Impuls system features an integrated Fanuc control, laser source and motor drive package. The integrated system offers a high degree of reliability, as well as superior processing speed.

“We were familiar with the Fanuc oscillator, drives and controller,” explained Gaydon. “Selecting the LVD lasers was a lot easier knowing that we had a very good run with Fanuc technology. We knew what we were in for. Familiarity with the Fanuc system means that all our operators, no matter what machine they are on, can run the laser equipment.”

Service support provided by Fanuc and LVD means Laser Dynamics is able to realize high uptime on its laser systems. Laser Dynamics’ machinery supplier, GWB, provides full service support, including installation, training, programmed maintenance and also stocks spare parts.

To further differentiate its operation, Laser Dynamics began providing forming operations as a value-added service. This work was largely subcontracted until the company invested in an LVD Easy-Form® Series 320/40 press brake to complement its laser cutting capabilities.

The combination of high accuracy, large table laser cutting systems and high tonnage press brake delivers a complete solution for Laser Dynamics and its customers.

“The armor plate material we work with has a very tight tolerance that you can easily over or under bend, depending on how you set up the machine,” said Gaydon. “It’s expensive specialty steel that you do not want to rework. A number of the parts that we were having bent outside, particularly those with very complex bends were not consistent. That was a problem for us. We wanted to have 100 percent control of the process.”

Laser Dynamics’ press brake is equipped with LVD’s patented Easy-Form® Laser in process angle correction and monitoring system. Easy-Form Laser uses a twin laser camera system mounted at the front and rear of the tooling set to monitor the angle of the bend in real time, providing instant feedback to the CNC control, thus ensuring that parts are formed to the correct angle from the first bend.

“The Easy-Form unit gave us exactly what we needed,” said Gaydon. “It takes the guesswork out of forming operations. Our operators can fold parts very accurately, consistently and quickly without experience.”

In many ways, Laser Dynamics is not your typical steel service center. Gaydon plans to keep it that way using the most advanced machinery and processes available to stay a cut above the field.

“We have the best laser cutting capability in Australia, without a doubt,” said Gaydon. “We have an enormous amount of advantage by having the LVD lasers because even though they are large-bed machines, they are really able to traverse and move around a plate like a small, high speed machine. Across the board, we’ve had a very good experience with LVD.”