Case Study

30% Productivity Boost

Investing in new bending, fiber laser cutting technology for a greenfield site boosts efficiency for Ontario custom job shop

2016 was a milestone for Integrated Metal Products (IMP), a full service contract manufacturer in Guelph, ON. After more than 29 years of steadfast growth, the company moved into a new 2,787 sq m (30,000 sq ft) greenfield manufacturing facility, investing in an Amada turret press, three press brakes equipped with new Mate Wila Trumpf style tooling, and an Amada fiber laser cutting machine with a material handling tower.

“We put a lot of planning into this expansion,” says Brian Heins, general manager for IMP. “We asked ourselves and our equipment suppliers what new equipment do we need to operate at the highest level? One of the main opportunities centered around IMP’s growing need for highly flexible and productive laser cutting, which then required more press brake operations. The Amada 6000 watt LCG 3015 fiber laser and new press brakes were key equipment additions that allowed us to change our fabrication processes for the better.”

Now more than a year in operation Heins couldn’t be more pleased with the production efficiencies IMP has achieved.

“By configuring the just-right combination of these new machines and software, we made a major technological leap forward. Since our move into this new facility with new equipment suppliers what new equipment do we need to operate at the highest level? One of the main opportunities centered around IMP’s growing need for highly flexible and productive laser cutting, which then required more press brake operations. The Amada 6000 watt LCG 3015 fiber laser and new press brakes were key equipment additions that allowed us to change our fabrication processes for the better.”

Brian Heins, IMP’s general manager, left, with Peter Visser of Mate Tooling. IMP improved fabricating efficiencies as a result of an investment in new Amada equipment and new Mate press brake tooling.
equipment, our capabilities expansion is proving out better than we expected. Our volume output and quality is greatly improved. Turnaround times are better. Also, we’re elevating IMP’s green sustainability program (CSSA) while being more cost competitive. The result is new customers in new markets.”

PRODUCTION RESTRAINTS
In addition to the new Amada fiber laser cutting machine, IMP also operates three CO2 Amada laser cutting systems.

As the company began to ramp up production, all four of its lasers were kept busy, but that necessitated more press brake operations to form and shape parts.

Press brake operations with long setup times slow downstream operations for welding, finishing, assembly and packing. So just-in-time commitments get pressured.

Several considerations went into improving IMP’s press brake setup time. With 12 years experience at IMP, Heins identified opportunities for improvement. Starting out as a laser operator, moving up to lead person, production manager and now general manager, he had the experience and insight to focus on the big picture. All aspects of the process were examined including how the tools were organized off-line for fast identification, and moving tools in and out of the press brakes. Systems put in place have resulted in improved implementation and downloading of new part programs, and the company has initiated new ways to adjust material parameters. And the new facility layout allows for more efficient tool organization, improving the location of tools.

But the single most important area of improvement has been the press brake tooling and the change from European style to Mate Wila Trumpf style press brake tooling.

“All of our new equipment is from Amada,” explains Heins. “We purchased an EG-6013 and two of the larger HG 1303 press brake models that have a 146 ton capacity. For the large variety of bending we do of aluminum, mild steel and stainless steel, they are ideal. They handle a full range of material thickness from 24 gauge up to one inch plate and can bend lengths up to 122 inches. They are fast, accurate and relatively easy to program and operate.

“But the key to their efficiency is in the tooling used. Before this major expansion and the purchase of these new Amada machines, we were using European style press brake tooling in our old press brakes. This is where Peter Visser, our area sales engineer for Mate Precision Tooling, really helped us.”

IMP achieved production efficiencies from the use of its new Amada laser and press brakes with European style tooling, but Visser encouraged Heins to try Mate’s Wila Trumpf style tooling in one of the new press brakes to improve bending performance.

The new press brakes are hydraulically operated. They position and clamp up much faster than earlier machines that required hand bolting.

“The Mate tooling just pops in quickly and clamps shut accurately in
the press brake’s hydraulic clamping system and then you’re ready to bend,” says Heins. “We do four or five part setups a day in each press brake. When we tried the new Mate Wila Trumpf style press brake tooling in the new machines, we saved a minimum of 20 minutes per setup. That’s just for positioning and clamping the tooling. Add to that the faster speed of the new benders and the productivity improvement was huge. Our operators adapted quickly to the new Mate tooling and really liked it. So we went to all Mate Wila Trumpf style tooling in the new three Amada press brakes.”

IMPROVING PART QUALITY
With more laser processed parts using the new Amada 6000 watt fiber laser, more of IMP’s parts required bending. With most laser processed components, part edges will often have dross and debris that impose wear on European style tools during the bending process. Mate uses a deep induction hardening process when manufacturing its press brake tooling, so the tooling resists the wear caused by laser cut parts with dross edges. This adds to tool life, furthering press brake productivity. “Also, we get cleaner bends and better looking products,” adds Heins.

30% EFFICIENCY BOOST
“Our fully integrated and precise fabricating operations have resulted in a 30 per cent increase in productivity,” says Heins. “Expanding with state-of-the-art machinery and tooling in our purpose-built facilities is really paying off. We’re really proud of that. Our improved productivity has really helped us land new customers. We’re getting more electrical enclosure work, especially the larger assemblies. We’re fabricating heavy off-road equipment assemblies and landing more vehicular projects. We’re really pleased with how our new facilities have made us one of the premier fabricators in Canada.”

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