

Short-run blanking on a fiber laser cuts costs, turnaround time for stamping shop

Situation

All-New Stamping has been offering stamping and fabricating services in El Monte, Calif., since 1962. The 100-employee shop had found success using tried-and-true manufacturing methods—punching parts on about 60 punch presses from 5 to 150 tons and using two CNC fabricating machines.

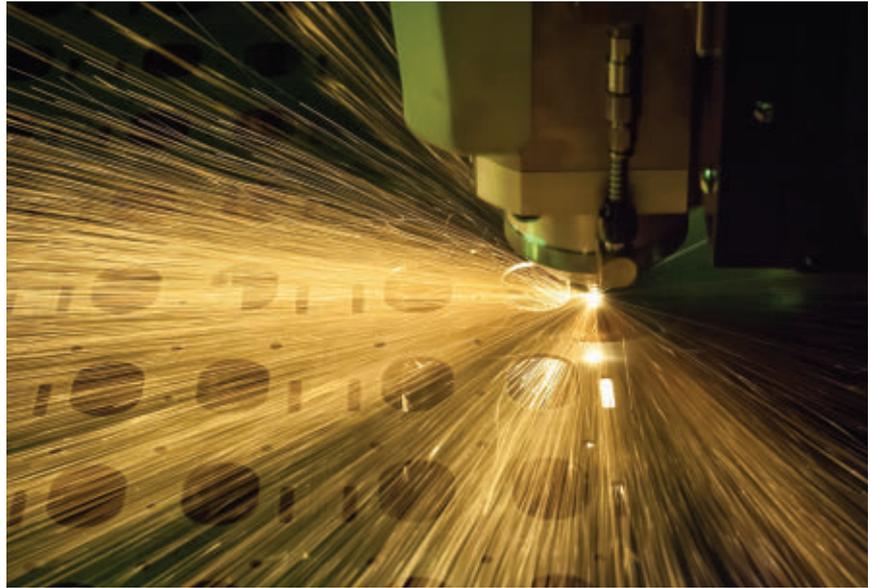
The company's quantities vary widely from one to 100,000 pieces; its niche is 25 to 5,000 pieces. Expenses kept rising for labor, design, and tooling production. Without knowing how often it would repeat the job, the company made its normal process to build or buy tooling for jobs large and small. Many of these custom tools were used only a few times—or worse—only once—making it hard to recoup the tooling investment. And there was a complication with storing all of those tools.

Customers were moving away from making big investments in development for first runs.

For short runs happening only once, or many once or twice every five or 10 years, it was difficult to recoup the investment in tooling.

The firm started looking at laser technology but decided that CO₂ lasers were not a good fit for its operations. All-New Stamping uses many different types of materials, and the consumables use and energy consumption were concerns. Company management determined that waterjet and plasma technologies could not hold the tolerances they needed.

Then the firm learned about fiber laser technology. Because the company specializes in processing materials about 0.25 inch and thinner while maintaining tight tolerances, a fiber laser seemed like a good fit. In addition, All-New Stamping liked the prospect of a fiber laser's energy efficiency and elimination of such consumables as mirrors, as well as the reduction of initial development costs for short-run products.



Resolution

Before committing to the purchase of a fiber laser, All-New Stamping first began outsourcing jobs to a laser house about 18 months ago. Management liked the convenience of being able to test initial flat patterns and make adjustments by pushing a few buttons rather than having to remake tooling.

After this testing period, the shop took the plunge and acquired an Amada FLCAJ 3015 fiber laser in 2014. "After the expected learning curve, the machine has totally shifted our manufacturing paradigm," said John Ford, sales manager.

While the machine has not completely replaced piercing, blanking, and stamping tooling and presses at the shop, it likely will replace production on runs of 200 pieces and fewer. The company has actually used the laser for some runs higher than 1,000 pieces.

One of its applications is to produce large aluminum solar panel parts that have traditionally been blanked. These panels measure about 1 ft. long by 9 in. wide, with a draw form in the center. The company uses the laser to cut out

the blank from 0.030-in. aluminum.

"Having the laser is a tremendous advantage, because we can decrease lead times," Ford said. "Everybody wants everything faster, cheaper, and of higher quality. This helps us improve that. Instead of having a toolmaker making pierce, blank, and form dies, we can have him focus on making form dies, and the programmer can handle the blanking on the laser."

The machine also is used to cut thin parts for tooling, such as stripper plates made of 0.200-in. cold-rolled steel. And, in some cases, the laser has replaced tooling altogether. "We've been around for 50 years, so we have some severely aged tooling," said Ford. "And we still run a lot of those older parts, so instead of upgrading that tooling, we can reprogram it in the laser."

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