

Case Study

I-Cherng Refrigeration Ind. Co.

Highlights

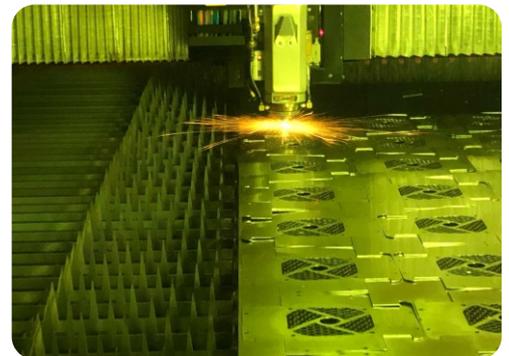
- ✓ Using the system since 1995
- ✓ Able to drive Amada fibre laser just by adding postprocessor
- ✓ Programming time reduced by 80%
- ✓ JET-Cut fly-cutting drastically reduces cutting time of suitable parts
- ✓ JET-Optimizer reduces possibility of collision
- ✓ Machine cycle time reduced by 13.2%
- ✓ ROI of upgrade in under 4 months
- ✓ Integrated with in-house ERP system
- ✓ Common cutting improves material yield between 5-30%
- ✓ User-friendly interface
- ✓ Excellent support
- ✓ JETCAM 'University' video library helps with staff training

I-Cherng Refrigeration Industrial Co, based in Taiwan, manufactures heat exchangers for refrigeration products. The company was founded in 1974, and in 1995 purchased JETCAM Expert alongside their Finn-Power Shear Genius punch press. Ian Yo, Senior Engineer said; *“Our first impression was that the JETCAM interface was very user-friendly.”*

Since the initial purchase of JETCAM, I-Cherng have purchased several further CNC punch and laser machines - Finn-Power SG6 and LP6 - each time adding a postprocessor to their JETCAM license, and in 2015 they added two additional seats of JETCAM Expert.

In July 2018 the company purchased an Amada FLC 4020AJ Fiber Laser, which was supplied with alternative programming software. The machine arrived in July, but immediately they encountered problems with the software. Ian explained; *“We chose the Amada Fiber to improve our quality and productivity, having had previous positive experience of their machines. However, the original software supplied with the machine did not consider the characteristics of fiber laser cutting, and still appeared to use CO2 laser*

logic. There were many unnecessary codes in the NC programs. Also, it was not use-friendly. Staff had to spend time deleting unnecessary codes, and some programs could not cut the parts well. We could easily spend over 4 hours to modify the NC code in order to get it to run on the machine.”



The following month I-Cherng contacted JETCAM, to ask if a postprocessor was available for their machine. It was, and the same month the post was installed remotely and the software upgraded to v20 across the company's three licenses.

Further tweaks were made remotely to the postprocessor in order to accommodate their specific requirements and machine configuration, with test parts cut using NC from both JETCAM and the

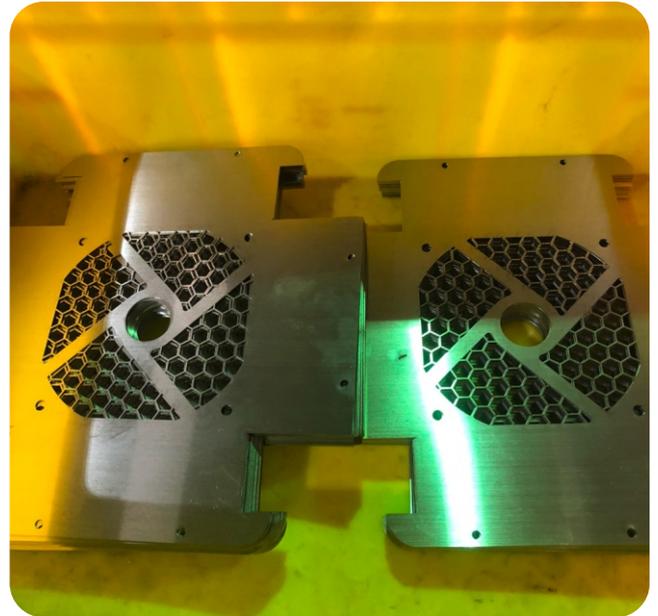


originally supplied software for comparison. Ian noted that the resulting NC generated automatically from JETCAM was much shorter.

Immediately, the company noticed significant benefits. Programming time was reduced by 80%, as pre-defined technology tables automatically applied cutting conditions based on material, thickness and quality settings. Tooling and profiling logic could be applied automatically to parts for both punching and laser technologies, ensuring that parts were available for nesting on either machine. Features such as S.C.A.P. (Single Component Automatic Processing) and S.C.A.N. (Single Component Automatic Nesting) allowed for multiple components to be imported, tooled and complete nests of each part to be created fully automatically in seconds.

Additional material savings have been achieved by employing common cutting to separate components with a single cut. Commented Ian; *“With the previous software we had to specify each common cut manually, but with JETCAM it’s fully automatic. We’ve seen material utilization improvements of between 5% and 30%.”*

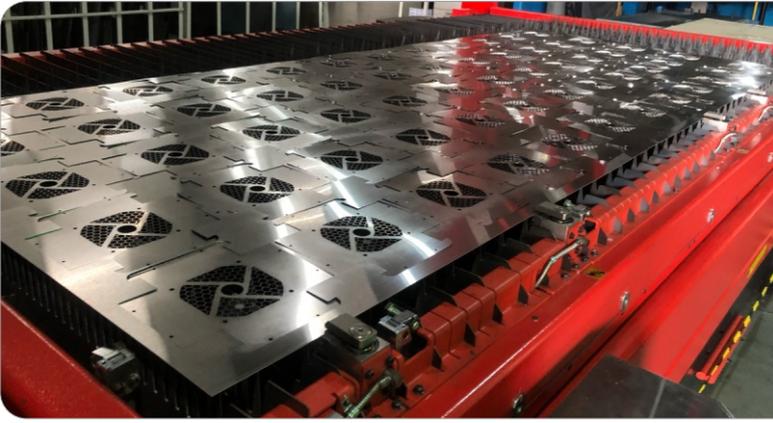
Expert v20 also included two new features - JET-Cut and JET-Optimizer. JET-Cut provides automatic fly cutting (also referred to as grid cutting) based on pre-determined parameters. It intelligently locates grids of internal holes and then splits the cutting into separate short line segments that lie on the same line or circle. The cutting head is kept down during movement and the laser beam is switched ON/OFF on the fly, which dramatically



reduces the cutting time of grids, etc. Rounded movement between cuts can be applied as the laser head moves to the next row, minimizing acceleration changes. Once configured, the entire process is automatic, and is applied with a couple of mouse-clicks.

JET-Optimizer highly optimizes the sequence of cutting internal holes to minimize machine movements, while also avoiding travel over previous cut areas. Noted Ian; *“This is a really worthwhile function that drastically reduces the risk of collision.”*

In comparison to the same nests generated with the originally supplied software, machine run time was reduced by 13.2% using JET-Cut, significantly improving the throughput available. Ian commented; *“Now, using JET-Cut, the full capabilities of the Amada Fiber laser can be realised, ensuring that we can achieve high*



Software: JETCAM Expert Premium
Rectangular Nesting
Right Angle Shear support

Machines: Finn-Power SG6
Amada FLC 4020AJ Fiber Laser

cutting speeds while maintaining quality.”

JETCAM Expert has seen significant advances in its user interface in recent years, but Ian felt that the ethos behind the interface had not change, with other staff agreeing; *“We’ve already been using JETCAM for over 20 years, and our engineers are familiar with JETCAM operating logic. The learning curve for the new interface was very short.”*

The company has written its own ERP system, and imports information to it from JETCAM’s automatically generated nest reports.

Ian cited that support has been excellent; *“It’s been fast and professional. I was really impressed with the speed of response, and I should emphasise*



the ability to solve any problems quickly - other vendors are far behind JETCAM in this regard. Also, we would often receive videos instructing us how to perform certain functions. We also have access to JETCAM’s ‘University’ of online video tutorials, which allows us to view short videos on specific functionality.”

I-Cherng is considering future investment in either more fiber lasers or Punch/Laser combination machines, and has already taken the decision that JETCAM will be driving their selected technology. Ian finalized; “With the combination of the massive reduction in programming time, material savings and additional throughput on the machine, we calculated our ROI on the upgrade of under four months.”

