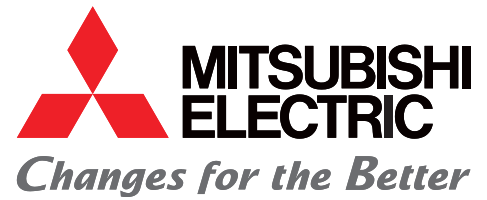




for a greener tomorrow



Unique Machine turns "100% Mitsubishi Electric" into a Profitable Competitive Edge

Case Study

Solution

- FR-D700 Series VFDs
- GT25 Series HMIs
- Q170M Motion Controller
- MR-J4 Series Servo Motors

Unique Machine and Tool Benefits

- Highly reliable even under tough factory conditions
- Easy to use, even by untrained operators
- Competitively priced

Mitsubishi Electric Value-added Advantages

- Extremely responsive, value-added service
- Robust, reliable products
- Full featured, easy to program components



"Bottom line, I think Mitsubishi Electric adds confidence for us. When we ship a machine out the door now, we're even more confident that we are delivering an outstanding product. And our customers have even more confidence in our products because Mitsubishi Electric products are inside them."

*– Jeremy Lutringer, President
Unique Machine & Tool Company Inc.*

BACKGROUND

Established in 1969, Unique Machine & Tool Company is an OEM specializing in manufacturing a variety of high quality automated woodworking machines, mostly used by cabinet shops and door manufacturers in the design of custom kitchens and similar architectural applications. Products include shapers and sanders, raised panel door machines, CNC machining centers, miter machines and dedicated cope and stick stations, all proudly manufactured in Phoenix, Arizona, USA, within sight of the Sky Harbor airport. Recently, building upon their strong core competencies in machine building, the company more aggressively expanded their efforts in a sister division, Unique Manufacturing, which offers custom equipment manufacturing expertise to a wide variety of other industries, including wastewater treatment, alternative fuels and production environments of all kinds.

THE UNIQUE MACHINE & TOOL – MITSUBISHI ELECTRIC PARTNERSHIP

Back in the mid 1990s, Unique Machine started moving from manufacturing mostly manual machines to innovating highly automated, extremely user friendly machines, pushing the limits on the technologies then available.

"We had a 'plug and play' vision that was relatively new at the time," explained company President Jeremy Lutringer. "To bring it to fruition, we found that we had to use a hodge podge of products from different automation manufacturers to get what we wanted, and that caused a lot of problems—whenever there was an issue, all the different manufacturers would point fingers at each other and not take responsibility. It was very frustrating."

In addition to lacking a single point of responsibility, the need to depend on a multitude of different manufacturers for different components was also adding complexities and driving up costs on the technical side.

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"We would have to continually write new drivers to make the different components talk to each other, and have custom cables designed as well," explained Software & Controls Engineer Jon Mattson. "In addition, our customers want everything to look beefy and sturdy inside and out, and we take pride in how robust our products are, even working to 'overbuild' them whenever possible. Having a mish-mash of different looking components stitched together under the hood certainly didn't help us emphasize that message."

The path forward for Unique Machine seemed to be clear—find and partner with an automation company that had as complete a product line as possible. After a search, they finally found a major automation supplier that seemed to fit the bill. But, they note, the service and attitude of their new partner left a lot to be desired.

"This supplier's business model was to lock you into software service and upgrade agreements and licensing fees that had to be paid on an ongoing basis," said Mattson. "That may be acceptable or even advantageous in some industries, but in the woodworking industry, our customers are accustomed to buying a sturdy, high quality machine, paying for it once, and having it run for 30 years. Demands for ongoing tech fees just don't fly."

But, Mattson notes, the real damage to Unique's reputation was yet to come.

"This automation company was not providing very good support—if we had a problem with one of their products they just put a band aid on it if they responded at all," he recalled. "Then, they suddenly dropped a couple of

products we were using in our machines and stopped all support service for them altogether. That left us in the lurch and really made us look bad to our customers."

Fed up, Unique decided to try yet another supplier solution, but were committed to proceeding conservatively.

"Mitsubishi Electric had been calling on us and we decided to give them a try, but we had been burned and didn't want to jump from frying pan to frying pan," said Lutringer. "We decided to try just their VFDs first. They're relatively simple components, and since we had used about ten different brands of VFDs before, we would be able to weigh the relative quality right away."

Almost immediately, according to Lutringer and Mattson, the Mitsubishi Electric VFDs showed themselves to be far superior to any brand they had used previously.

"The reliability of Mitsubishi Electric VFDs was far, far better than anything we had ever experienced, both out of the box and out in the field" said Mattson. "With the immediate incumbent supplier, we found that out of 15 or so machines, there might be 5-6 VFD failures. Some other suppliers' records were even worse. But, with Mitsubishi Electric I can't think of one single failure—and we've used many, many more Mitsubishi Electric VFDs."

"Other drives would throw up errors and stop working at the first hint of heat," added Lutringer. "Woodworking shops can run hot and that was a big problem, but the Mitsubishi Electric drives stand up to the harshest conditions and just keep on working."



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In addition to the huge improvements in reliability, the Mitsubishi Electric VFDs provided a number of other benefits to Unique and its customers as well.

"There were many things that really made the Mitsubishi Electric VFDs stand out from anything else we had tried," said Mattson. "The Mitsubishi Electric drives are very easy to program, with the interface on the front of the drive and an auto tune feature that lets you just plug in the characteristics of a new motor, which saves a lot of time. And, with other brands, we would have to put in separate braking resistors to stop the motor quickly in an emergency. But the Mitsubishi Electric VFDs do it on their own—in less than 10 seconds, and without the chance of overheating that can plague resistors. This integrated safety is a big plus—it helps us optimize the safety of our equipment while saving on cost and giving us a much neater, clutter-free cabinet that really projects 'trouble-free' to our customers."

With the success of the VFDs, Unique moved to evolve to an eventual 100% Mitsubishi Electric solution, incorporating Mitsubishi Electric servos, PLCs, cables, and, most recently, HMIs.

"We had been using Windows PCs for many years because we liked the flexibility and creativity they allowed for creating full featured interface screens, and, for a long time industrial HMIs just couldn't compare," said Lutringer. "But Windows devices come with a huge downside—they demand a lot of responsibility on behalf of the operators to always shut them down properly. If they get shut down quickly or if there is a power outage a lot of times they freak out and you lose data and get that 'blue screen of death.' And, over time, operation gets slower too.

"With Mitsubishi Electric HMIs, we have none of those issues, and a lot of flexibility and feature-rich functionality to boot. There was a smooth learning curve and we are very happy with the graphic capabilities, object actions, image sharpness and quality and other aspects of the Mitsubishi Electric HMIs, even as compared to full-featured PCs."

Now offering 100% Mitsubishi Electric components in most of their machines, Lutringer feels that their partnership with Mitsubishi Electric has given Unique a big advantage

"100% Mitsubishi Electric is definitely something that we play up in sales presentations—most customers know that having a single high quality brand of components onboard gives their equipment a superior ease of troubleshooting," noted Lutringer. "Also I think that the Mitsubishi Electric brand name carries a connotation of quality that no other brand in this space can match."

That quality, Lutringer notes, is something that Mitsubishi Electric has worked hard to maintain for them over the years.

"We've been very, very happy with the level of support that we get. Access to engineers, customer service, sales—whatever we need, it's always there," he said. "It's in stark contrast to what we've experienced with other automation suppliers in the past."

With Mitsubishi Electric by their side for several years now, Unique has enjoyed some of its greatest success in its nearly half a century in business, developing innovative new woodworking equipment and expanding into developing high quality custom machines for other industries as well.

"If we hadn't found a stable automation partner we probably wouldn't have had some of the good results we've been having," said Lutringer. "Bottom line, I think Mitsubishi Electric adds confidence for us. When we ship a machine out the door now, we're even more confident that we are delivering an outstanding product. And our customers have even more confidence in our products because Mitsubishi Electric products are inside them."

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