



CNC panel saw rips through backlog and improves operational efficiency

PLASTICS
MACHINING
AND EQUIPMENT

by Whitney Kenda Wiggin

Located in Billerica, MA, USA, Laminated Plastics has specialized in fabricating custom plastic products for over 40 years. Using materials such as acetal, UHMW-PE, nylon, PTFE and G-10, Laminated Plastics' facility can manufacture detailed prototypes to high volume runs. The company's capabilities have proven to be very diverse with fabrication processes that include assembly, bending, bonding, forming and CNC machining.

From the beginning, Laminated Plastics has embraced new technology to improve their bottom line, refine production and increase output. Almost 30 years ago, the company was one of the first to adopt CNC panel saw technology within its industry. Now, under the direction of their Vice President of Operations, Dan McCarthy, Laminated Plastics has implemented a plan to acquire at least one new piece of technologically advanced equipment each year. By doing so, the company has continually increased production as well as its machining capabilities. In turn, the cutting edge technology has continually had a positive impact on the bottom line.

Laminated Plastics' team has continued to implement its capital equipment strategy by recently upgrading to the latest CNC horizontal panel saw technology. In March of 2008, McCarthy and his team set out to research and meet with four of the top panel saw manufacturers

and distributors in the United States to assess their options. After months of research, the team decided upon a versatile machine that would bring them the improved accuracy and production required for the wide range of materials and a variety of shapes and sizes to be processed through their saw room.

With their increasing volume of work, it was essential that Laminated Plastics maintain the precision and quality upon which its reputation was built. As such, many factors played a part in the decision to upgrade the company's CNC panel sawing technology. Advances in linear motion control, optimization software, increased throughput and enhanced safety devices were all key components to the final decision. In addition, a lower overall cost of ownership for a machine that could provide them with the tightest tolerances was a "must-have" that promised an immediate return on their investment.

In December of 2008, the new machine was installed into Laminated Plastics' saw room. From the start, it had a large job to do. According to McCarthy, "The heart of the company is the saw room. It is what pays the bills, as every piece of material goes through that room. If it is inefficient, the entire company is inefficient. The configuration of the saw room is instrumental to the successful utilization of the machine, and the installation team was very attentive to carrying this planning out." Upon thorough training by the technician and a professional installation, the machine was hard at work.

Once fabrication began, the company was immediately able to reduce its saw operators to one and remove their older manual panel saw. The lead saw operator, a veteran within the plastics industry for over 20 years, admitted he was initially unsure about the return-on-investment period, but within six months of installation he quickly noted they would "make back their initial investment, if they haven't already." He also noted that,



Full-length electronic light curtain provides enhanced safety within the cutting area.

"production has changed, as everything has become more efficient, accurate and safer since day-one with the new machine in operation."

Laminated Plastics went from processing two sheets to 10 sheets in one pass. Jobs that routinely took three to four hours between the two older panel saws, were now taking only 20 to 30 minutes on the new machine. "There is a new velocity through the shop, on the upwards of six times faster depending upon the job," reported McCarthy. The advancement in productivity is partially attributed to the machine's unique plastics configuration, ability to stack cut materials, hold tighter tolerances, its increased processing speeds and power.

The company's increased productivity can also be attributed in part to the machine's operational efficiency. Prior to the addition of the new CNC panel saw, the operator had to manually move material across the cut line of their old panel saw. Increased safety features mean that operation is now safer and more hands-free on account of pneumatic material grippers in place on the company's new machine. The grippers allow for stacked sheets to be pulled onto the back table while securing material for accurate cutting. Narrow grooves on the lower grippers' jaws also allow for chip-free cutting of the thinnest materials, such as PETG.



Laminated Plastics' production has benefited from use of the Hendrick SRP 3200 PL panel saw designed specifically for plastics.



Unique solid pusher/gripper combination is ideal for cutting small parts, rod and tubing.

This is something their older manual panel saw could not do. "The cut quality of small parts on the new machine is unbelievably good," said McCarthy.

The company has also benefited from the machine's unique solid table, solid pusher/gripper combination. This preferred plastics configuration allows for precision cutting of small parts, narrow strips, thin material, rod and tubing. This set-up virtually eliminates any limitations in the saw room. Also, the one fixed and two moveable front tables equipped with air floatation and solid phenolic surfaces are ergonomically beneficial to the machine operator while manipulating heavy materials into position for the grippers to pull the material back to either regular cut or cross-cut position. Using the machine's improved vacuum and blade coolant systems, cutting a wide range of plastic materials delivers a "glass-like cut quality finish," according to McCarthy. The quick blade change feature is also an integral component for Laminated Plastics as cutting a vast array of materials requires different types of blades.



PC controller with onboard optimization software and LAN connectivity.

Lastly, the brain of the system, the software, ties the operational capabilities together. The machine's optimization software can be installed remotely and cut patterns can be saved on a shared network for executable access at the machine. This was one of many attractive capabilities to the Laminated Plastics team. Less than a month after installation, McCarthy reported, "Using the optimization software, we already see large process time reductions in our complex jobs." The company has also benefited from reduced material waste by utilizing the software to increase productivity for much higher material yield.

McCarthy noted, "The software makes every job easier with everything that arrives in the saw room." The advanced networking capabilities allow cut patterns to come from a host of designs and other file types, not only reducing production time, but eliminating operator error. Making sure things run smoothly, the user-friendly machine controller has on-board diagnostics that show the status of all machine I/O devices to minimize downtime. Diagnostics also provide "how-to" solutions that point to problems and provide corrective actions.

Having worked with this CNC machine since installation, Laminated Plastics now knows that, "this panel saw is a step above other machinery." Laminated Plastics' commitment and desire to remain on the cutting edge of equipment technology within their industry is now possible with this new computerized horizontal panel saw. The company took the necessary steps to improve the business' bottom line by investing in an advanced and operationally efficient panel saw.

Laminated Plastics' production is now streamlined with faster and more profitable results. McCarthy enthusiastically reported: "Our new equipment, coupled with the rapid and professional installation by a high touch technical team, has already proven to make our 2009 more successful." ■

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