

Engelbrecht Grills & Cookers® puts the sizzle into fabrication and assembly



Robotic welding the grill hull for the 1000 Series Braten® grill using the System 40.

It is always good for a company to have a product that's in demand. The question then becomes: Can supply keep up with demand?

Chris Engelbrecht confronted this question as he watched what was originally a one-off project evolve into a hobby and eventually into a startup business with domestic and international sales. His company, Engelbrecht Grills & Cookers® of Paxton, Ill., fabricates custom-built wood-fired grills.

Craftsmanship for Generations

"We build grills that allow people to express their creativity in cooking," Engelbrecht says. "Our customers enjoy cooking. They want to ramp up and experiment with their outdoor cooking capabilities."

The company's reputation for craftsmanship, quality, attention to detail and aesthetics has captured the notice of hundreds of outdoor grillers who, like Engelbrecht, wanted a high-end product that produces a high-end experience. The increased interest meant orders were coming in faster than the small company could fill in a timely manner. Eventually, the gap between order and fulfillment grew to more than one year.

“We knew we had to substantially trim our lead time,” Engelbrecht points out. He faced a decision: hire new employees or go in an entirely different direction. He chose the latter.

Working with Lincoln Electric®, Engelbrecht implemented an automated solution that increased production and allowed employees to concentrate on the craftsmanship that Engelbrecht expects and his customers demand.

The origins of Engelbrecht Grills & Cookers go back to the early 2000s when Engelbrecht, tired of seeing and using the same generic grills, decided to build one for himself. His friends, seeing the craftsmanship of the finished product, began asking him to build grills for them. Soon, there was always at least one grill being built in his garage, and Engelbrecht was constantly changing his designs.

Several years later, the entrepreneur – he also owns a farm and farmstead wedding venue – decided to turn his hobby into a business when he built a workshop and added personnel to keep up with orders. As it became a business, Engelbrecht went from building a part here or part there to building 100 or 1,000 parts at a time. Yet, he wanted to maintain the craftsmanship - including the welds.

Engelbrecht has built a company that sets itself apart from the competition by taking a personal, hands-on approach to grill assembly, accentuated by craftsmanship. When customers call the shop, they talk to the employee who is working on their grill. For these customers, grilling is very personal. “There is a symbiotic relationship between customers and their grills, because they enjoy grilling and barbecuing so much,” Engelbrecht notes.

But customers can’t enjoy the experience if their grills are on backorder.

Engelbrecht refers to himself as an independent thinker. On his farm, he operates a tractor with auto-steer, which drives a precise course programmed into its system via a GPS signal. The automated tractor, while more expensive than its conventional counterpart, paid for itself



A completed 1000 Series Braten Grill.

in a year. He approached his grill-assembly business – and automating it – with the same logic.

Step Into Automation

He needed to address two major concerns: the backlog of current orders and new order lead time. To resolve these issues, he needed to minimize welding time, which meant taking the repetitive welding process out of his hands. As an experienced welder, Engelbrecht knows that hand welding is time intensive and can cause welder fatigue, especially with the amount of welding required for grill assembly. Fatigue decreases weld operator productivity.

Knowing this, Engelbrecht started to look at robotic automation.

Could a robotic welding solution be implemented to weld multiple parts in a fraction of the time it took to hand weld, thereby increasing efficiency and throughput, while reducing production time and lead time, all the while maintaining the craftsmanship and improving the company’s bottom line? The answer was yes.

Engelbrecht attended a fabrication trade show to look for a simple robotic solution and did a fair amount of research into the technology on his own. When the time came to make a decision, Engelbrecht knew what he wanted. He also knew where he was going to purchase the solution.

Throughout his professional welding career, Engelbrecht has relied on Lincoln Electric products. “I see a company that builds good equipment,” he stresses.



An Engelbrecht Grills & Cookers’ employee places a grill hull in a welding fixture.

So when the time came to find the right solution, Engelbrecht turned to Lincoln Electric. The Lincoln Electric team met with Engelbrecht to evaluate all the parts being welded, determine which parts would be an ideal fit for robotic automation and design a system that would address his current needs and allow for future demands.

Engelbrecht implemented a Lincoln Electric System 40, a pre-engineered robotic welding system. It is an ideal cell for welding the variety of parts required for grill assembly and has a turntable allowing for one part to be welded while another is set in a fixture.

The System 40 is part of the Engelbrecht Grills & Cookers' total Lincoln Electric solution, which includes both MIG and TIG welders, Excalibur® 7018 MR® and SuperArc® L-56® consumables, and a Statiflex® fume extraction unit.

Lincoln Electric personnel were in the plant specifying the right solution, developing procedures, training employees and supporting the new system. This type of customer service was no surprise to Engelbrecht.

“People ask why I use Lincoln Electric,” he says. “It’s because I’ve never had an issue that wasn’t completely resolved. It goes back to the people behind the company.”



Engelbrecht Grills & Cookers achieves consistent and repeatable welds on every part.

Engelbrecht Grills & Cookers uses the System 40 to weld about 80% of the components for its popular 1000 series Braten® grills, plus the entire campfire grill, coal grates and dampers, allowing employees to concentrate on hand welding parts and components for other models.

As a small company with five employees, Engelbrecht wants to get the most production from his system, which meant robotically welding a variety of parts. Through program changes for each component, process development and modification to the weld sequence, the company achieves consistent, repeatable welds on each part every time.

Since implementation, Engelbrecht Grills & Cookers has doubled production, and there has been a 95% reduction in production welding time. What once took two weeks to hand weld is welded in one day by the automated solution. Prior to implementation, it took 28 hours of production time to build the 1000 series Braten grills. That time has been reduced to 15 hours thanks to the automated solution. On campfire grills, the automated solution has shaved production time from between 4 and 5 hours to 1 hour.

Lead times have been reduced from a year to as little as two months depending on the grill. That’s an 83% reduction, which means quicker time to market.



Robotic welding has reduced production time of the Campfire Grill by 80%.

Service and Reliability Are Essential

Engelbrecht keeps the focus of the company on welding and assembling high-end grills to a small target customer base. His motto is, “Do what you do best, and hire out the rest.” As a small company, efficiency is imperative and downtime must be avoided. “Downtime means you’re not getting paid,” Engelbrecht cautions.

Equipment needs to be dependable every time it’s utilized. Engelbrecht knows the robotic solution will work every time the button is pushed.

“You hang your whole company on the faith that the machine is going to work,” he says. “We need a good quality machine, and Lincoln Electric helps us get that machine.”



MIG welding a grill shelving unit.

Good companies separate themselves by their post-sale mindset, Engelbrecht stresses. Long after the robotic solution was operating, Lincoln Electric was in Engelbrecht's facility to address and fix any concerns.

"This is where Lincoln Electric excels," Engelbrecht says. "We were never abandoned. Our post-sale treatment was phenomenal."

Once a grill is delivered, Engelbrecht knows customers will conduct a visual inspection from every conceivable angle. Their guests will do the same at that first cookout. The grill's appearance, including the welds, must be topnotch from every point of view.

On this point, Engelbrecht has never fielded a customer complaint. His vision and attention to detail has helped Engelbrecht Grills & Cookers achieve a sterling reputation.

Because he operates a very small company, Engelbrecht took a risk on implementing a robotic solution – he says automation is unheard of in a small operation. In the end, the risk became a reward. "We've had our System 40 in place for two years," Engelbrecht says. "It's more than paid for itself."

And as the company grows and production increases, the robotic solution will grow as well. Engelbrecht foresees the robotic solution lasting for the next 10 to 15 years, using it for thousands of hours of welding on grills that Engelbrecht expects to endure for decades.

"We want to build a product that will be enjoyed for generations," he asserts.