



## Locked in for the Long Game

### AMADA's Flexible Automation Drives LockersMFG Forward

CEO Keith Dunham reviewed a computer screen displaying a wide range of productivity metrics at LockersMFG, which operates facilities in Mississippi, Tennessee, and Texas. Those metrics came from the Batesville, Miss., plant. Detailing these key performance indicators, AMADA's Influx IoT platform doesn't just reveal machine uptime; it also helps detect and even prevent bottlenecks, from blanking to bending and beyond. It tracks setup times, run times, planned and unexpected downtimes, then correlates it all with job-specific data.



"This supports our traceability efforts to ensure every batch of material is tracked from raw stock to the shipping department. It also allows us to look at our process to

see where we could improve, where automation would fit, and where we could streamline production."

Dunham has made it his life-time goal to be the best locker storage security system manufacturer in the world. From the start, his goal was for LockersMFG to become a market disrupter: a custom, quick-response manufacturer of

lockers and secure enclosures for corporate environments, school institutions, athletics, health care, military installations, data centers, smart lockers, and other applications.



Keith Dunham (left) stands in front of the company's latest investment in flexible automation—a TK 3015L automated part sorting cell. The system automatically sorts and stacks parts according to their next production phase, reducing downstream labor and errors. Upstream, the TK is fed by an ORSUS 3015 Aje fiber laser and an AMS 3015 CLT automated tower material handling and storage system (above).

"We are the state of the art driving all innovation in this manufacturing arena," Dunham said.

A dozen years after the company's launch in 2014, Dunham's goal of market disruption has come to fruition. Walking to the assembly area, he opened a locker door. The diamond hole pattern had clean edges, the flanges formed just right to create a consistent fit, form, and function within the final assembly.

*Thump.* The door closed easily and solidly, with no rattling or sign of structural weakness or misalignment. Just as significant, the

locker looked entirely different from others in the assembly area. "Our customers aren't ordering standard parts from a catalog. We customize each order to meet exactly what the client or customer needs," Dunham said. "We take a consultative approach to go that extra mile, ensuring satisfaction for every customer and for every client."

He next pointed to all the automation that made such precision and customization possible: laser cutting with a material handling tower and part removal and stacking automation, an automated punch press, press brakes with sheet followers, robotic welding, resistance spot welding, roll formers, and powder coating.

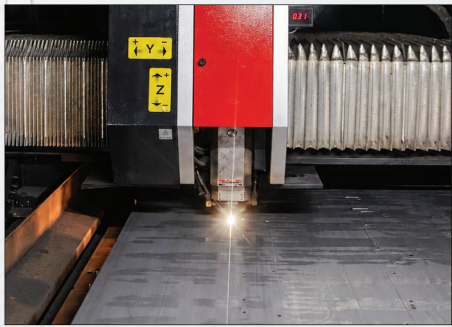
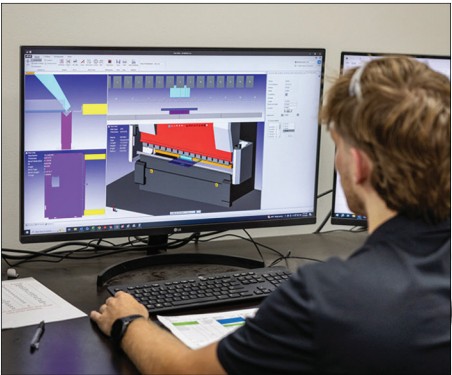
"Our manufacturing capability allows us to dive in and customize our products. It's the market we've been targeting over the past 12 years, and it's where we're going in the future."

#### A 50-Year Vision

"AMADA understands the challenges of manufacturing," Dunham said as he walked by the company's collection of blanking and bending machines. "They don't stop innovating, and we don't stop innovating either. Our core values match. We are both forward-thinking entities equipped to manage the future."

*Continued on page 12*

Located next to the new TK 3015L, the ENSIS 3015 AJ is paired with an AMS 3015 CLT multi-shelf automated material handling/storage tower, enabling 24/7 processing of parts for a wide variety of custom-designed secure storage solutions.



Offline programming with 3D bend simulation and an intuitive touch-screen control ensures precise, repeatable bending results across operators with varying skill levels.



Forward-thinking might be an understatement, considering what Dunham said next. “We’re constantly working to set the future standard for our industry. We’re calling it our ‘50-year vision.’ We want to build our organization so it will have lasting power in the industry. Our markets change quickly, and we need to ensure we build a manufacturing foundation that allows us to move with those changes over the coming decades. We’re playing the long game.”

That game started shortly after LockersMFG launched. Before starting his company, Dunham spent years in the lockers wholesale business, and he knew the baseline customer experience: Choose a locker from a catalog, place an order, and work with a distributor to get it installed. Manufacturers were hard-tooled to make specific products. Customization was limited, sometimes nonexistent. Launching with in-house

manufacturing, LockersMFG took an entirely new approach. From the start, clients could customize their orders to meet their specific design requirements.

That was just the first element of a foundation that helped shape how LockersMFG’s customer base grew over the past dozen years. Another foundational element involves the *wide range* of locker product categories the company now serves. A military-grade locker designed for securing weapons is much different than a locker for new school construction or a gym locker at a hospital or corporate headquarters.

LockersMFG also fabricates smart lockers—the kind you unlock with an app on your phone or other cloud-connected device. Amazon uses them in Whole Foods and elsewhere, as do a growing number of other companies. “We’re seeing double-digit

annual growth rates for smart lockers over the next 20 to 30 years,” Dunham said.

From the beginning, LockersMFG has offered products in steel. It also has incorporated wood, HDPE, phenolic and plastic laminate materials, though the largest segment of the product mix still involves sheet metal. Most are 14- to 18-gauge cold-rolled steel, but the shop also runs a fair amount of 14- to 16-gauge hot-rolled, pickled and oiled material.

“IT hardware enclosures are starting to be a huge market for us as well,” Dunham said. “These store key electronics for AI data centers, as well as at the power generation sites supporting them.”

Flexible manufacturing and automation have helped shape a wide-ranging customer mix

and a unique business model. LockersMFG isn’t a job shop, but it’s also far more than a traditional locker manufacturer. It provides “custom designed, secure storage solutions,” as Dunham put it, and they’re wide-ranging and broadly applicable to various sectors.

“And we can move fast into new market segments, because with all of our AMADA equipment, we’re not hard-tooled in a significant way. That makes our product development extremely quick.”

No one knows what the security storage solution market will look like in 50 years. But these elements—product diversification, flexible manufacturing, and quick product development and iteration—provide the foundation for LockersMFG’s 50-year plan, along with its relationship with employees and the community at large. As Dunham

put it, “We are also supported by a strong company culture that promotes success for our excellent team members, their families, and the American communities we serve.

He added that company leaders “know the market will change every year. Tastes change and technologies change. But you can’t build a factory every year. You build for the long term, and you build for flexibility. You need agility and resiliency to handle demand as the market changes.”

#### Automation and Customization

Dunham pointed to the company’s TK 3015L part picking and stacking gantry, connected to the ORSUS 3015 Aje 6kW fiber laser, both installed within the past year. “We’re running about 40 common units within that system. And we’re able to run lights out. The next morning, the parts are stacked, staged, and ready for the next process.”

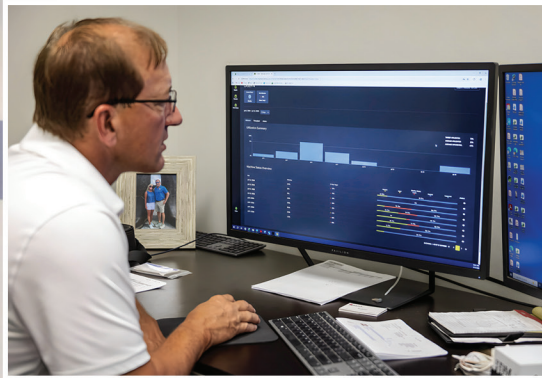
Those 40 common units involve multipart assemblies, each nested on a single sheet. Parts stacked on pallets move together downstream. The arrangement is a prime example of how product design influences the manufacturing automation strategy.

“What automation does is remove the constraint of physical labor and put the hard work between the ears,” Dunham said, tapping his forehead. “The real key is knowing how to optimize the equipment with our skilled personnel.”

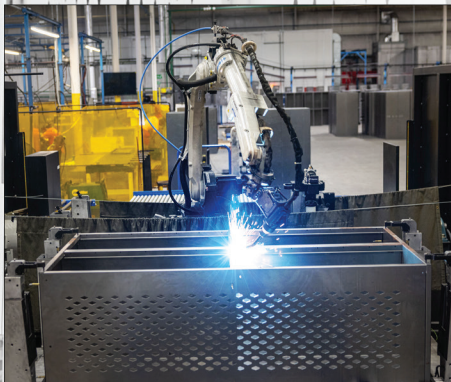
Dunham and other managers saw manual denesting as a constraint of physical labor. LockersMFG instead shifted that labor to product design and production planning. Product designs are still highly customizable, but engineers identified groups of subcomponents—each used on a wide variety of



Plant Manager Rodney Wolfe uses Influent to monitor machine performance, optimize workflow, and maximize shop floor utilization.



The bending department is equipped with several press brakes, ranging from the 40-ton, all-electric EG 4010 to the 220-ton HRB 2204. Each is equipped with productivity-enhancing features that accelerate part flow to downstream welding and painting operations.



lockers and enclosures—that share common attributes. Sizes might be slightly different, but their overall geometry remained consistent, and all were made with identical grades and sheet thicknesses. This allowed engineers to strategically group pieces in kits, which ultimately would be stacked and ready to go without any manual intervention.

Intelligence in the laser helps here, too, cutting relief sections and other geometries to allow the TK's grippers to lift pieces out of the nest reliably, time after time—stacked clean, with no microjoints to remove. Dialed in, the TK helps eliminate what used to be a significant manufacturing constraint.

**Flexible Part Flow**

The approach proves how flexible automation can handle even the most highly custom environments. To illustrate the point, Dunham again pointed to on-screen metrics

provided by the Influent platform. It showed the company's four AMADA cutting lasers, each connected to material handling automation, including 15-shelf towers and load/unload systems—and more machines are coming online.

The TK ran for much of the night, stacking those common workpieces. Meanwhile, the three other lasers ran dynamic nests of custom parts. Manual denesting remains, but the TK has automated the most repetitive part sorting within the product mix.

The same strategy applies to robotic welding, which was also implemented within the past year. Manual welding remains, including wire welding and resistance spot welding. The welding robot, though, helps automate some of the most ergonomically challenging work. In fact, precision cutting and bending—even with large and awkward

workpieces, thanks to sheet followers on its HRB 2204 and HRB 1003 press brakes—have made welding automation easier to implement.

Pointing back to the on-screen data from Influent, Dunham described how LockersMFG is using that information for future automation investments. Managers combine this with parts tracking to optimize subassembly and final assembly areas of the plant, each flexible enough to handle a range of products for different customers from disparate market segments.

Small components are pulled from what Dunham called “material fulfillment centers”—areas with controlled levels of work-in-process (WIP) inventory. Larger panels flow directly from cutting and forming. This strategy helps prevent bottlenecks in assembly.

“We try to take complexity out of the design and standardize where we can standardize,” Dunham said, looking again at the Influent screen. “This strategy helps accelerate our production velocity. At the same time, we still keep the customization that our clients want.

“We look at all these metrics with the customer in mind,” Dunham continued. “The customer really is guiding us,” adding that engineers ensure any standardization within the product mix does not work against what customers demand: quick development and delivery of customized, secure storage solutions.

“AMADA's the same way, really,” Dunham said. “They've been with us through the whole process. They make sure the installation experience goes as promised. And they continue to stand by us.”

From the assembly area, Dunham walked outside and pointed to another LockersMFG facility under development nearby. Mississippi remains the company's manufacturing hub, but as mentioned previously, it also operates locations in Texas and Tennessee. And according to Dunham, some major manufacturing developments are in the works, including projects that will involve significant automation investments. It's a far cry from LockersMFG's humble beginnings in 2014, a time when many questioned the reasoning behind a manufacturing startup concentrated on the quiet, entrenched market for metal lockers: *Was the locker market really ripe for disruption?*

Apparently yes. LockersMFG now employs more than 150 people. And as Dunham put it, considering the growth of certain product segments, including smart lockers and stor-

age systems for data centers, the company's growth has just begun.

“When I started this venture, few people thought we could get this off the ground. AMADA stood by us when, to be honest, not many would. That creates loyalty and trust.

“We know that AMADA will be with us for the long game,” Dunham continued. “This operation is a true partnership of leadership between two great organizations. Together, we are forging the bonds of success for the future with our great business camaraderie, our mutual respect, the honor we champion with our excellent products, and customer service. We are both rebuilding the manufacturing base and reigniting the American dream, one factory at a time.”