

In-House Powder System Offers Flexibility For Fabricator

The installation of a new powder coating system brings speed, material savings and efficiency to this Midwestern steel and aluminum fabricating facility.

Edited By Sharon Spielman



Top: An integrated control system allows for closed-loop digital control of the system and is used in tandem with a PLC-based lean recipe selector (LRS) for automatic selection of spray settings. Bottom Left: Powder is applied using 20 automatic spray guns for precise, repeatable application. Bottom Right: Manual spray platforms on each side of the booth use two manual spray guns for touch up to Faraday cage areas.

When it comes to metal fabrication, L&W Engineering in Middlebury, Ind., is said to be one of the best in the business. With humble beginnings in 1975, L&W has experienced significant growth in the past 40 years, now building quality parts for a multitude of unique customers and earning annual sales in the \$40 million range. The company is able to assist customers in every stage of the process—from research and development (R&D) to packaging and delivery.

“The level of flexibility we have in our capabilities at this facility allows us to work with thousands of unique parts,” says Jamie Peck, director of engineering. “We really pride ourselves on building a quality product. You know what you are getting is going to be built with quality and integrity, and we can provide service for that product if need be.”

Braced for the RV Market

One of the largest industries that L&W serves is recreational vehicles (RVs). Here, among other products, they design functional and secure TV brackets of all types. The L&W team works with OEMs on a daily basis—with each OEM in search of different bracket styles based on their particular needs.

The typical production process begins with a schematic of what the part will look like, after which it is checked by the R&D team to ensure that it will meet the required performance characteristics. The L&W team then creates a part profile that is bent and welded by machine or by hand. Once the part is fabricated, it is powder coated, packaged and shipped— all done in-house at the L&W facility. The company powder coats more than 90 percent of the parts it manufactures, some of which are coated for aesthetics and some for durability.

“We like to think of our TV brackets as ‘earthquake proof,’” says L&W President Roger Huffman. “Our engi-



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neering team produces product that locks into place, so the customer is confident that when they head down the road, it is secure and will perform as expected.”

Improving Productivity

Powder coating is an integral part of the fabrication process at L&W. For years, the company went outside to have its powder coating needs met. In 2014, they began looking at ways to improve their overall process and the benefits of outfitting their facility with in-house powder coating capability.

“We were in search of better control of our lead time and response time moving products through.” Peck says. “Our industry is a very quick one. We don’t always have a lot of time to turn things around. Sometimes, our customers want their parts in a day. That was one of the key benefits we considered in-house powder coating—faster turnaround.”

No two days are the same at L&W’s 250,000-square-foot facility. L&W had several objectives in mind for its investment: reclaim powder, increase line speed, and achieve faster color change and repeatable coverage. They contacted Midwest Finishing Systems to help them put together a turnkey system that would suit their needs. They

went with a five-stage pretreatment process. Stage one is an alkaline cleaner; stages two and three are rinses; the fourth stage is a Zirconium spray; and the fifth and final stage is a Halo mist rinse using in-house RO water. Peck says all of their chemicals are purchased through Lincoln Chemical.

For the powder booth itself, Midwest worked closely with Nordson Corporation, Amherst, Ohio, to help L&W react to its customers request for various colors while keeping the changeover time to a minimum.

To help the fabricator reach its goals, Nordson recommended its latest automated booth system—the ColorMax® 2 quick color change powder spray system. A fully integrated system, it incorporates:

- An iControl® integrated control system for closed-loop digital control of the system, used in tandem with a PLC-based lean recipe selector (LRS) for automatic selection of spray settings.
- Twenty Encore® automatic spray guns for precise, repeatable application.
- An Encore powder feed center to maximize powder usage and recovery.
- Easy-to-clean steel twin cyclones to facilitate complete cleaning of all surfaces.
- Manual spray platforms on each side of the booth use two manual spray guns for touch up to Faraday cage areas.

The system is optimized for efficient, repeatable powder application and fast, contamination-free color change. Numerous system features help to minimize powder in process and aid in system cleaning—providing the ability to change colors quickly. The fully integrated design of the system substantially reduces downtime and material waste for improved productivity.

The integrated control system in combination with the LRS offers an automated method for identifying parts. It provides the control unit with a part preset number,



The company is able to change colors in a timely matter since installing its new powder coating system. These brackets for the RV market have been powder coated and are ready to be packaged for delivery.

without flagging every part type. This allows standard part presets to be associated with a user-configurable grouping of similar part sizes. This lets the operator select a color group manually to be used in conjunction with a recognized part type.

“That’s the thing about this industry,” says Huffman. “You never know what product will come down the line next. The flexibility of the Nordson system has allowed us to be prepared for anything.”

Midwest outfitted the line with a gas-fired oven for curing. Because L&W is a fabricator, they are able to design and manufacture specialized racking for some of their parts right in house, but Peck says they have been using Mighty Hook for their standard hooks and racks as well as their masks and plugs, as many of the parts they make need to be masked for finishing.

New System, New Opportunities

Since the installation of its new finishing system, L&W Engineering has seen substantial improvements in overall line flow. Prior to installation, suppliers worked with the fabricator to determine the cost based on their unique requirements and production line.

Before the system was installed, L&W sent drivers back and forth to outside powder coaters two to three times a week to deliver and collect parts. Having capabilities in-house allows the company to achieve 40 percent to 50 percent higher productivity. It has also resulted in better customer service and a quicker response time.

“The overall flow from powder coating to packaging and assembly has greatly improved. It’s less cumbersome for our workers,” says Peck. “We have seen about 20 to 30 percent time savings in comparison to outsourcing.”

Quick color change has been one of the biggest benefits of system, with the process of switching from black to white powder taking just 10 minutes. L&W is also impressed with the amount of material reclaim being achieved, which Huffman and Peck estimate to be about 95 percent.

Peck says that the great benefits provided by this system are far worth the cost. “When you buy a Nordson system, you are getting a whole lot more than what you think you’re

getting,” he says, referencing the company’s 24/7 customer service. “When expert advice is needed, (they are) always on-hand to help with any questions and concerns.”

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