



Powder Application Case Study

SMT, Inc. (Raleigh, NC)



Powder Proud

An innovative new powder coating booth brings speed, material savings and efficiency to central North Carolina's premier sheet metal job shop, who has affectionately dubbed the system its "peacock in the window."

When it comes to sheet metal fabrication, SMT, Inc. (Raleigh, NC) can handle anything. In business since 1969, SMT has grown exponentially over the years, now serving an array of blue-chip clients with products that range in size from a couple of ounces to thousands of pounds. This one-stop-shop walks customers through every stage of the process – engineering, fabrication, production, painting, coating, packing and delivery.

"We pride ourselves on being able to service all aspects of our customers' needs," explains Susan Rothecker, SMT's president and chief executive officer. "Lead time is the name of the game. People don't have



the vision they once did when it comes to forecasting. So to keep our customers costs down, we have to be nimble and sensitive to controlling what we can internally."

No two days are the same at the company's 200,000-square-foot facility, where its 100 employees can run up to 400 different parts per month. Powder coating is one of the key processes managed internally by

SMT, who is the only one in the area to offer such capability.

Recognizing that the powder line was their differentiator, Rothecker and her team took a hard look at their existing system in June of 2013, when customer demand for more colors, higher volumes and lower costs were escalating.

The company has a 30,000-square-foot conveyor line that can manage high-mix, high-volume production, which is a draw for customers. Within that line, SMT had a powder coating operation that was primarily manual, where air flow was poor and reclaim was impossible. To change colors quickly and reclaim powder would have taken the line down for hours. In addition, the booth lacked advanced automation, which is critical to gaining business from major agricultural and other equipment suppliers.

"Our old powder booth just wasn't up to the same standards as the rest of our line," says Randy Kremer, SMT's vice president. "We could do big things fast, but it was holding us back from some of the volume projects out there. We couldn't do





color changes fast enough and we weren't reclaiming material. As a result, our costs weren't lining up with the needs of the larger business we wanted."

Better, Stronger, Faster

When SMT decided to make a change, they turned to Nordson Corporation (Amherst, OH), one of the world's leading manufacturers of powder coating equipment. SMT had several key goals in mind for its investment: reclaim powder, change colors faster, increase line speed, incorporate recipe-based technology and achieve consistent, repeatable coverage.

To help SMT achieve its goals, Nordson recommended its newest automated booth system – the ColorMax® 2 quick color change powder spray system. A fully integrated system, the ColorMax 2 incorporates:

- An iControl® integrated control system for closed-loop digital control of the system
- 12 Encore® automatic spray guns for precise, repeatable application
- An Encore powder feed center to maximize powder usage and recovery.

- Uniquely designed, easy-to-clean, steel twin cyclones to facilitate complete cleaning of all surfaces.
- Prodigy® HDLV (high density, low volume) transfer pump to continuously evacuate powder from the twin cyclone for maximum efficiency.
- Spray decks on the front and back of the ColorMax 2 booth for touch-ups using Encore manual spray guns.

The ColorMax 2 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 ColorMax 2 system substantially reduces downtime and material waste for improved productivity.

"With the superior operating flexibility of the ColorMax 2 system, SMT can easily manage a broad range of colors, as well as both short and long runs to fit its lean production schedules," says Marty Vicens, Nordson powder systems specialist. "And the iControl offers the ability for SMT to pre-program up to 255 recipes by color or

part type for optimum repeatability of all application parameters."

New System Brings New Opportunities

SMT began running its new ColorMax 2 system in February. To say that they are pleased with the results is an understatement.

"The powder coating booth is our 'peacock in the window,'" says Rothecker. "It has attracted customers and allowed us to crank up our production and run so much more efficiently."

According to Mark Younce, SMT's Paint Business Manager, the company changes colors about five to seven times each day, and color change time has been reduced from 20 minutes to about five minutes. In addition, the ability to reclaim powder is resulting in significant material savings.

Younce notes a recurring job SMT recently ran for the first time on the ColorMax 2 system, where the company saved \$2,500 in material alone. "With our previous booth, we would have used 1,000 pounds of powder. This time, we required only 480 pounds," notes Younce. "So, we reduced material use by 50%.



“Plus, we nearly doubled the line speed because we can paint so much faster. When we ran the job before, we were at eight feet per minute. This time, we ran at about 15 feet.”

The new booth has also provided SMT with some unexpected opportunities in the form of a co-op with other sheet metal shops in the area. Since SMT invested in the new technology, many of the other shops are farming their powder coating work to them. In return, SMT uses the other shops for services that are not part of their core competencies.

“An investment in powder coating is a big one, and it requires some expertise,” notes Rothecker. “We have a hand-shake deal with many local partners on larger volume opportunities that have really opened doors for all of us.”

A Smooth Transition

The SMT system was installed in just five days, where a typical installation takes 10. “It helps to have your own sheet metal shop for the little bits and pieces,” says Rothecker.

She and her team are happy with all the bells and whistles, and the ease with which the system operates. With a vision system to measure part geometries and the iControl system providing pre-programmed recipes, it is less labor intensive for her powder coating operators.

“It’s all about keeping the line moving, and we need a lot of resources in the powder area to do that,” she says. “The machine is doing so much of the work for us now; we can assign resources who don’t necessarily have to be powder coating experts.”

And when expert advice is needed, Nordson remains on-hand to help with any questions and concerns. “Marty – our Nordson guy – is almost an extension of us. We are comfortable calling on him any time and know that there is always reliable local support.”

For more information on the Nordson ColorMax 2 system, contact them at 800.433.9319. For sheet metal fabrication and other information on SMT, contact them at 919.782.4804.

For more information, speak with your Nordson representative or contact your Nordson regional office.

United States

Amherst, Ohio
+1.800.433.9319 **Phone**
+1.888.229.4580 **Fax**

Canada

Markham, Ontario
+1.905.475.6730 **Phone**
+1.800.463.3200 **Phone**
+1.905.475.8821 **Fax**

Europe

Erkrath, Germany
+49.211.9205.141 **Phone**
+49.211.9252.148 **Fax**

Japan

Tokyo, Japan
+81.3.5762.2700 **Phone**
+81.3.5762.2701 **Fax**

Asia/Australia/ Latin America

Amherst, Ohio
+1.440.985.4000 **Phone**
24-hour message service:
+1.440.985.4797

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