



# Recipe for a Successful Powder Coating Line

By Sharon Spielman

**T**aking the time to do the research and planning every “ingredient” that is required to design and build the ultimate powder coating finishing line has paid off for this Kansas-based company. Read on to learn about how this shop can now cater to its clients and serve up exactly what they order—one load bar at a time.

It was roughly five years ago when JR Custom Metal Products (JRCMP) Inc. in Wichita, Kan., had been outsourcing so many parts for finishing that the company decided it made sense to put together a finishing system of its own. According to Jorge Martinez, vice president of sales and marketing at JRCMP, “Once we made the decision to build a powder coating finishing line, we wanted to do it right.” So, they started to attend industry events such as the Powder Coating Show (now called the Powder Coating Technical Conference and Tabletop Exhibition), PCI Hands-On

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Workshops and FABTECH. “We needed to learn a lot,” says Martinez. “We took everything to heart. We listened to all the speakers at all the events we attended. We learned about grounding, transfer efficiencies and line density. We learned about everything in general that we could about powder coating, and from there we figured out what kind of budget we would need to put in a new, ultimate system.”

After talking with all the major players, Martinez reveals that they chose Midwest Finishing Systems to build the system, and because JRCMP liked IntelliFinishing’s conveyor system, they incorporated that into the design as well.

## Up to a Ton at a Time

“Because we are a job shop, we needed a lot of flexibility. We wanted to blast on the line, not offline. I never understood why people do that—blast their parts offline—so we chose the local LS Industries for our blast system. As you load a load bar, you select the recipe, and part of that recipe will tell it if you want that load bar to be blasted, what kind of fpm (feet per minute) you want on the blast line so we can change the aggressiveness—how light or aggressive we want to go with the blast profile. For instance, to manually blast a 10-foot table would take 20-30 minutes. With the in-line system and a recipe selected for 10 fpm, say, it would only take 1 minute!”

Because JRCMP utilizes IntelliFinishing’s unique, smart, conveyor system, it really is the individual load bars—and not the line speed—that determine how each job is run. “We use load bars that can hold up to 2,000 lbs. each. So, we can select dual lanes and have multiple substrates running all at one time because we are selecting a recipe for each particular load bar—not for the whole line. There’s not very many in the industry that can do this,” Martinez reveals.

The system uses a human machine interface (HMI), and Martinez says this is where IntelliFinishing really shines. “It is a smart system, so we may have 10 different customers we are running on that shift and they are all intermixed—different sizes, different substrates—and it doesn’t matter. People don’t understand this concept because everyone tends to base things on line speed, but our system is really based on the recipe for that one load bar.” (See *Recipe-Based Smart Controls* in the sidebar on the left side of page 34.)

Each bar is loaded off-line with similar parts that can be finished using the same recipe. The operator selects the recipe for each load bar, loads it to the line, and the smart system will determine where that load bar is going. “Our system is a little taller than most systems,” Martinez says. “The window size of the system is four feet wide by five feet tall and 10 feet long.” Once the

## Recipe-Based Smart Controls

Have you heard the saying that humans only use 10 percent of their brains? Similarly, traditional finishing systems don't take advantage of the power and capability that a control system offers.

With the addition of recipe-based controls, parts are grouped by part families, with the recipe dictating the process times. Each carrier may be processed in a different way as they move through the system. In addition, a unique feature of this type of system is the ability to change speeds in a process—like blast, wash, or cure—allowing for extra time in a stage for extra processing.

These controls allow your complete finishing system to operate with maximum efficiency and do the following:

- Control each component of the system independently according to the part recipe.
- Adjust component variables, like wash time, wash pressure, oven temperature, oven air turns and oven part time depending on the part recipe.
- Track and record part data for product validation and analysis.
- Run dissimilar products back to back for "lean" product flow.
- Scale production up or down without sacrificing quality.
- Interface your finishing system to your MRP or ERP system, if desired.
- View your entire facility, part processes and productivity through single-point visibility from any HMI station and from any computer with web access.

recipe is selected, the load bar is directed through the line. If it will be blasted, it goes to that station. JRCMP uses the latest technology when it comes to pretreatment.

"We use an alkaline cleaner, two rinses, and a zirconium seal. We use Lincoln Chemicals, a subsidiary of Midwest Finishing Systems, and we have worked with them from the beginning. They really helped with building the right washer with the right chemicals. We went through a long period studying exactly how we wanted the system to operate." It's a four-stage washer and has two halo rinses. One is a chemical that prevents flash rust. "So, when we select a recipe, we just pick one of the two halos. The other halo is an RO rinse, and so we have the option to select either."



*Parts are manually sprayed with powder using Parker Ionics application equipment.*

After pretreatment, the parts on the load bar make their way to a dry-off oven for a selected dwell time. Post dry-off, the load bar enters a temperature and humidity controlled environmental room. The load bar indexes into the Parker Ionics application system, then two offset applicators use the Parker Ionics guns to coat the parts. From there, parts travel to a preselected lane within the dual-lane cure oven and then eventually off the line where, once cooled, parts are unloaded.

## From Then 'Til Now

The 24,000 square-foot expansion cost JRCMP approximately \$5.3 million and has allowed the company to make a name for itself as a leading fabricator and custom powder coater in the Midwest. They have come a long way since 1974, when the company was founded in the garage of the late Jesus Raul Martinez Sr., and his equipment consisted of one welder, one press brake and his hand tools. In 1979, Martinez Sr. opened his first building, a 7,000 square-foot facility. By the end of 1990, he had five buildings, which consisted of 35,000 square-feet of manufacturing space. Initially, much of the work the company did was for the meat packing industry, though that has changed over time.

Today, four siblings—including Patty Koehler, the president and CEO; Jorge Martinez; Raul Martinez, Jr.; and Maria Kailer—all work together to run the



*JRCMP chose Midwest Finishing Systems to build its new powder coating line.*

## Giving Back

Learning life skills, building community, developing potential, sharing skills, offering support, creating possibility—all of these are goals that Starkey Inc., an organization in Wichita, Kan., strives to achieve for adults with disabilities. Their mission statement reads: "Starkey nurtures development and promotes independence of people with intellectual disabilities."

Starkey's Work Activity program provides training and in-house contract work for these individuals. Staff trainers help them develop and improve their skills and increase their earning potential. More than 70 local businesses contract with Starkey to complete a variety of jobs.

The Supported Employment program provides placement, training and ongoing support services to individuals with disabilities in regular and integrated employment settings within the community. This program assists individuals in choosing, obtaining and retaining employment that meets their individual needs.

It just so happens that Jorge Martinez serves on the board at this organization and he has been able to provide employment to some of Starkey's workforce.

"Our hooks and racks are run through only twice before they are cleaned. This allows for the best first-pass transfer efficiency," Martinez says. "So, we installed a burn-off oven to clean those hooks and racks, but once they are burned off, they have to be cleaned of the ash. We contract with Starkey for this part of the process. They are able to have the responsibility of working and we are able to help part of our community. I feel that it is important that we give back to our community in any way that we can—with our time, our money or our skills."

company, which now consists of 125,000 square-feet of facilities—and continues to grow. They make products targeted to many industries, including agriculture, aviation, construction and renewable energy.

It was 1998 when JRCMP built at its current location on West Street Ct. in Wichita, and when they knew they were going to expand its facility, they chose to stay in the Wichita area, despite having been offered land in Oklahoma. "We were offered land to go there," says Koehler. "It came down to our principles. We decided we needed to stay here. Wichita is our home, and these are our roots. It makes us feel proud when we have an opportunity to help our community move forward by expanding and creating jobs," she says.

Once they had a plan for the layout and what the footprint would look like,



The 24,000 square-foot expansion has allowed JRCMP to make a name for itself in the Midwest.

Martinez says they spoke with the local fire marshal and with the gas company—because of the gas-fired ovens—as well as with the city about water. “It just so happens that my brother-in-law is one of the head guys at the gas company, so we talked about delivery of gas because of all the ovens. We really delved into all the different requirements.” This was important when it came to water treatment, too. JRCMP already uses an “easier” chemical in its alkaline cleaners and zirconium, but it was attending all the conferences and really listening to the speakers, according to Martinez, that guided them from the beginning. “We wanted to do it right, right from the start.” And it seems that they did, because now the water department and the fire marshal are telling other coaters



Jorge Martinez talks with Open House attendees about the capabilities that JRCMP's new powder coating line offers.

in the area to use JRCMP as a model for their businesses.

So, after years of forethought and planning and performing their due diligence, JRCMP finished the multi-million-dollar installation in November 2016 and its testing by December. They were ready in January 2017 to show off their creation and opened the new facility to five of its biggest OEMs first. Then the next day they had an industry Open House. “We really made a big splash with everyone,” Martinez says. “And the new facility ended up being a showroom floor of sorts with all the new equipment. All that forethought and planning really was a recipe for success.”

They have been up and running for several months now, and except for “just a few hiccups, which is to be expected with any new installation,

things have been running like butter,” according to Martinez.

## Dessert, Anyone?

When asked what's next for JRCMP, Martinez says that the addition of the new building will allow for more expansion opportunities in the future. For instance, they left room for a reclaim booth.

“As we've grown, we've grown different sectors of the business,” Martinez says. “We've always been a company that's tried to stay up with technology, and this new facility has the latest technology out there.”

As the Martinez siblings have grown the business, Koehler says a plan to involve the family's third generation more in the company's management has taken shape. Part of that plan was for Eddie Koehler, Patty's son, to manage the powder coating facility. In this family-run operation, however, there are no handouts. All the necessary training and professional development has to take place before leadership positions are assigned.

Since expressing an interest to run the paint facility, Koehler, 33, has been under the tutelage of his Uncle Jorge, learning, watching and waiting, and



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when the facility opened in January, all the patience and hard work paid off—Koehler and Martinez have been running the powder coating facility together, “And it’s been great,” the mentor and teacher, Martinez, says.

“Our grandfather started the business, but the real growth came from the second generation,” Eddie Koehler says. “Seeing all the sweat equity and the hard work that went into it, there were times when they sacrificed for the good of the business. As kids growing up, we had to realize that they had to take time to grow the business. Following the second

generation, we have some big shoes to fill, but we have some of the best teachers to show us the way.”

Martinez adds, “For our third generation, they’re going to have skin in the game now.”

As the half-dozen members of the company’s third generation continue to grow into positions of leadership, Martinez said the possibilities are virtually limitless for JRCMP in Wichita in the coming years.

And that really is the icing on the cake.

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