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A STRONGER STANDARD

ROBOTIC FINISHING: **MORE THAN** PROGRAMMING A PATH

Manufacturing is enjoying a resurgence in the United States. That's the good news.

However, the United States – actually all of North America – continues to lag behind the rest of the world when it comes to manufacturing automation. It's even worse when you look specifically at finishing automation for general industry. As manufacturers, we must demand more. We must close the gap so finishing can keep up with the speed at which parts are made in other areas of the operation.

> FINISHING IS FAR MORE INTRICATE THAN JUST A PROGRAMMED PAINTING PATH. IN FACT, **THE PATH IS JUST THE BEGINNING.**

Unfortunately, most automated robotic finishing solutions only claim to generate a path for a robot. While that can be considered progress, it is not the end goal because finishing is far more intricate than just a programmed painting path. In fact, the path is just the beginning.

If any variable in production changes, can this automation technology be altered in real time to allow for continual production flow without shutting down the line for time-consuming changes to a program?

The answer for most solutions will likely be "no."

Lesta Self-Learning Robots make finishing automation possible.

The belief has always been that finishing automation makes perfect sense for manufacturers such as large automakers. In this environment, the same large parts such as doors, hoods, and quarter panels are painted over and over, so a painting robot only needs to be programmed to paint a limited variety of parts.

Self-learning robots break down the barrier to entry for general manufacturers. This type of robot is unique in that their motors can be easily disengaged to enter into a free-float mode. When in that mode, a person "teaches" the robot the action it needs to do. Unlike a collaborative robot that is programmed point-to-point, a self-learning robot records the uninterrupted human painting path along with the painter's spray patterns and techniques to create a program with human-like movement. These movements, and ultimately the painter's knowledge, are then replicated as a saved program on all future parts.

With Lesta Self-Learning Robots, a manufacturer no longer needs to shut down the entire finishing line every time a program needs to be created to paint a new part. With user-friendly controls, adjustments can be made to fan, atomization, flow, and path speed to adapt to variables that could affect the application program.

Variables happen. Can your solution adapt?

Think about your own finishing environment. How many different unique parts are you finishing? What material are these parts made of? How are these parts hung as they go through the line? Does temperature and humidity fluctuate during any given day? How fast are these parts moving? Do you have processes to control your application equipment and spray materials?

Creating a programmed path is great, but can the robot adapt to all these variables and more? You need to look past program and path generation. If you don't, you will not be able to adjust to changing conditions that happen on a regular basis and finishing will remain a bottleneck in the process.

For example, let's say you create a perfectly programmed path for a part. If you paint the same part with the same program a week later and any of the variables change, your part will likely have runs, uneven coverage and other defects. This, in turn, will result in parts needing to be re-painted or at least touched up at the cost of additional man hours and missed deadlines.

THREE THINGS TO KEEP IN MIND WHEN CONSIDERING FINISHING AUTOMATION.

While there are several options for robotic finishing, not all solutions are created equal. To ensure you are able to take finishing automation beyond just path generations, here are three must-haves:

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Make sure your solution is born in an actual production environment.
Industrial robots have never really been used in finishing for general industry. Collaborative robots are not designed for use in a Class 1 Div 1 hazardous environment. Autonomous robots are still in the conceptual phase and are mainly used for path generation or simple geometric parts. Self-learning robots, on the other hand, have been used successfully in finishing operations for decades and offer practical real-world solutions that are proven to work.

Make sure you take into account the requirements of the type of path.
A robot painting path often becomes very different than how a human painter would go about coating a part. What about gun angle and distance? Sequencing? How does part presentation change the approach? Path generation needs to be created in real time and be adaptable for it to be dynamic and successful.

Make sure your solution can adjust in real time.
Think about it. That automation solution you're bringing into your environment can no longer be considered to be automated if you're having to do a lot of things manually to adapt to changing variables. For example, is doing manual touch-up on an "automated line" or stopping production to make programming changes that could take hours, days, or even weeks really making you more efficient?

Don't forget about integration.

Another important consideration is integration. To be successful, choose an integrator with experience beyond just robotics to include manual real-world finishing production with knowledge of finishing equipment. If an integrator shows up and sees the equipment for the first time, chances are they don't have the background to make it all work seamlessly. Being a successful integrator means making sure all components of the system work well together from start to finish.

DeGeest Corporation began as a contract fabrication job shop. After first adding automation in welding, the company needed an automation solution for its overloaded manual paint line. It was after a worldwide search that DeGeest found Lesta in Milan, Italy. Today, DeGeest uses self-learning robotics in its production paint lines for OEM customers. This self-learning technology is available in North American under the name LestaUSA, which is distributed and integrated by DeGeest.

A painting path is only the beginning.

It's exciting to think about how automation changed the landscape of manufacturing. It's even more exciting to know there is now an automation solution that will allow finishing to keep up with the rest of the manufacturing process.

Self-learning robots do more than generate a painting path. They replicate the precise movements of even the most seasoned finisher. And, it's a solution that can adapt in real time to the ever-changing variables that present themselves in the manufacturing environment every day.

What can robotic finishing do for you? The answer starts with a conversation. ▮

> **SELF-LEARNING ROBOTS DO MORE** THAN GENERATE A PAINTING PATH.
>
> Derek DeGeest, President of DeGeest

Contact
Derek DeGeest, President

DeGeest Corporation
27191 470th Avenue, Tea, South Dakota 57064

www strongerstandard.com | derek@degeestmfg.com

ph 888/546.2800

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