DeGeest
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EMPOWERING YOUR TEAM WITH
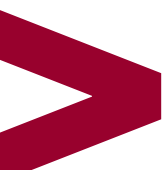# SELF-LEARNING ROBOTS

Bring up the subject of automation and many draw the conclusion that automation is killing jobs. On the surface, this level of alarmism is not surprising since many instantly think about robots on an auto assembly line, each doing the job of five or six workers.

If you dig a little deeper – especially in general manufacturing – you'll actually find the opposite is true. Yes, robots will be counted on to do more of the mundane tasks. But robots also bring about huge opportunities for people to develop deeper skills in other areas, leaving them more fulfilled.

How self-learning robots are different.

Any discussion about how robots lead to opportunity needs to start with an understanding of different robot types and their application to general manufacturing, particularly in a finishing environment.

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Collaborative Robots are a hot topic these days. To get collaborative robots to perform a particular action, you must program it to move point-to-point. These robots are smaller in size, move very slowly, and are not Class I, Division 1 rated. They are typically not used in finishing.

Industrial Robots are the most common. They're super-fast, super-efficient and have high payloads. They're also versatile in many different applications. But again, this type of robot is not often found in finishing outside of automotive and Tier 1 systems, and not all companies make a Class I, Division 1 hazardous robot model.

Self-Learning Robots are unique with motors that disengage into a free-float mode. Then, 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 creates its code of every path, gun angle and trigger pull simultaneously in real time so it has fluid, human-like movement. These movements are then replicated as a working saved program.

The unique needs of general industry.

A closer look at general industry reveals why the use of automation for finishing has lagged behind.

Unlike the automotive industry where a line of robots performs the same task over and over, general industry has complicated parts and a high-mix, low-volume environment. Painting these intricate parts often puts a lot of stress on the painter's wrists, shoulders, and knees as they work to coat all sides of parts. There are repetitive tasks, but there are also a variety of tasks with many obstacles and variables.

Add to this the issue of retaining workers. Baby boomers are retiring, and younger workers want to see a future in what they're doing. Therefore, they're interested in working in areas of the shop other than finishing because those areas tend to have more automation and technology, and therefore more perceived opportunity.

With automation in the finishing world seemingly at a standstill, companies are forced to think they have to turn away work because they can't keep up with demands.

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>
> Derek DeGeest, President of DeGeest

Making the case for self-learning finishing robots for general manufacturing.

Sometimes things happen out of necessity. DeGeest Corporation is a 3rd generation contract job shop located near Sioux Falls, South Dakota. The company has seen constant growth as a high mix, low volume shop.

Several years ago, the company added welding robots, which increased production capacity. But there still wasn't a way to keep up with finishing demand via manual painting unless another 8-10 finishers were added. As previously mentioned, traditional industrial automation wasn't going to work because there were too many uniquely different parts.

That led to a worldwide search and discovery of a company named Lesta in Milan, Italy. Lesta had created a self-learning painting and finishing robot that worked for liquid paint and powder applications on metal, wood, plastics, and even fiberglass.

Programs for these robots could be created in the same amount of time it took a painter to paint a part because the painter actually did the programming by disengaging the motors to teach the robot the precise movements and spray application technique it needed to make. All without having to know a single thing about programming.

What was even more remarkable than the technology itself was the empowerment that came from it. Employees felt more engaged. They felt part of the problem-solving process, and it freed them up to work on other things like improving operations.

Robots actually turn jobs into careers.

The best part of self-learning robotic technology is that companies already have the people and skills to automate their finishing operation. This puts them in a good position to take on whatever technology comes next because workers are already accustomed to automation.

In the case of self-learning robots in finishing, a painter is free to work on other things after he teaches the robot how to paint a part. This results in a greater feeling of worth, which leads to a greater feeling of job satisfaction, which then leads to higher employee retention.

It actually turned what used to be considered a job into a career.

Workers no longer have to spend their days crawling around on their knees. They spend more time improving quality and processes. This is especially important for attracting younger workers because it shows a clear path for the future. It gets them excited about a career in manufacturing.

Making technology part of the experience.

Self-learning robotic technology opens the door to many possibilities and is an investment in the future. There are upstream and downstream processes that have to be considered. And everything has to work together for the whole system to work well.

It's important to recognize that automation and robotics don't fix processes. They actually create more processes. There are variables that still require human decisions such as part prep, paint quality, equipment maintenance, and fixturing. All of these tasks are important and automation can create opportunities for people to problem solve around those areas.

Eliminate the worry that comes from an entire company's finishing capabilities being dependent on the tribal knowledge of key people and vulnerability of them eventually retiring, leaving, calling in sick or taking a vacation. Automate repetitive tasks and concentrate on improving processes to create a more sustainable paint system while simultaneously multiplying the efforts of its employees and turn jobs into careers.

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Self-learning robots can empower your team.

To keep a balance in production capacity, we have to invest in automation in finishing operations. As solutions are evaluated, we must add automation that empowers the people and knowledge we already have.

If a manufacturer has parts that eventually repeat, including high-mix low-volume parts, self-learning robots can empower teams to automate finishing of those parts so they can produce and achieve more.

It's time to think differently about finishing automation. If you do, opportunity awaits. Not only for your team, but also for your bottom line. ▮

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