

## Robots for improved quality and lower costs

**The advantages and disadvantages of robot use continue to give rise to discussions. For quality improvement and simultaneous cost reductions, the Swedish automotive supplier SMT relies on the use of coating robots. With success!**



What comes to mind when you hear Sweden? Huge furniture stores with delicious meat balls? Or durable cars and elks? One thing is for sure, Sweden has a reputation of approaching tasks in a pragmatic way. This also applies to the industry. No matter how complicated the problem might be, the solution has to be simple, clear and practical.

Swedish Metal Tech AB (SMT) based in Moheda, south Sweden, has had to cope with a special problem. The young company is specializing in the manufacturing of high-quality parts for the automotive industry. Every week, 100'000 parts are supplied to very demanding customers. STM set itself the goal not to stay at this already high level. The company wanted to significantly improve once again the quality of the products while simultaneously lowering the costs.

A contradiction? Well, maybe, at first sight. But SMT solved the problem in the mentioned Swedish pragmatic way. With the installation of a fully automated powder coating system.

## Flexible powder coating system

“The new powder coating system is designed to offer maximum flexibility and meets the highest quality standards of our demanding customers. And this is not only in Sweden, but for automotive suppliers all over Europe!” explains Michael Thitz, Managing Director at SMT.

Although the new line has been designed to meet the specific needs of the automotive industry, it also allows problem-free coating of any other powder coating job. The system is particularly suitable for the treatment of outdoor products.



Michael Thitz continues: “Our new powder coating plant allows us to deliver improved quality at a lower price. With this investment we proved that the high-cost country Sweden can keep abreast of low-cost countries by offering better and consistent quality. And this is paired with competitive prices and reliable delivery terms.”

## Compact powder coating system for quick color changes



The heart of the plant is the quick color change system MagicCylinder. The booth from ITW Gema no longer requires detailed explanations. More than 230 installed systems worldwide speak for themselves. The extremely compact coating booth has a ventilation performance of 20'000 m<sup>3</sup>/h. The powder is recovered via a mono cyclone and is directly conveyed to the powder center. The afterfilter blows the air back into the room.

22 automatic and 1 manual gun for touch-ups of complex parts allow the coating of workpieces measuring up to 2 meters and this with a conveyor speed of up to 4m/min. Both reciprocators are equipped with each 9 automatic guns in a vertical row and are positioned on automatic axes of motion. The object recognition is guaranteed by means of a light frame, which also triggers the guns on and off.

## Thinking robots

The MagicCylinder system is designed to allow fully automatic coating of all kinds of objects. To cover all parts, two ABB robots for precoating and touch-ups have been installed. The robots can be equipped each with one or two automatic guns. The configuration depends on the corresponding coating requirements. In addition, the robots take care of the cleaning of their own working places. To this end, a cleaning nozzle is integrated and a program autonomously carries out the cleaning action. Seeing this you might have the impression that the robot could even whistle to itself!



A coater should spend the least possible time on robot programming. At SMT, the robots are programmed via teach-in procedures. The coater takes the control unit of the robot and teaches the robot how and in what sequence it shall coat the workpiece. The robot then coats each part with the same motions achieving exactly the same quality. Simple programs as well as the cleaning program can also be set in the point-to-point mode by programming each point the robot shall travel to. Subsequently, the device calculates autonomously the connecting sections.



The robots are used for more than 80% of all jobs to either carry out touch-ups on difficult parts or to additionally improve the high coating quality. The reciprocators are assigned to coat the objects in an even film thickness. The robots in addition coat the corners, edges and recessed items. A manual coater is no longer needed and one person can supervise the entire powder coating system.

Due to uniform film thickness and consequently less powder on the parts, the configuration of reciprocators and robots significantly saves powder.

