

RobotStudio™

Case Study: Polynorm Automotive B.V.



Robot gluing a hood to a Mercedes CLKC208.

Polynorm is a leading Tier 1 supplier to the automotive industry. Polynorm's main activities are pressing, assembling and coating of bodywork components, such as panels, doors and hoods, both for line assembly and after-market service.

Stay ahead of competition

Polynorm supplies a wide range of different spare parts to the automotive industry. They have an impressive production line with 92 robots and are continuously increasing the number of robots. With RobotStudio they can switch to a new product faster since they create the programs in advance and test them offline. This makes their work much more flexible. "Before, we had to build one unique robot cell for every new car model to be able to meet our customers' requirements.

That was an expensive and inflexible working method. When it was time to change models or produce a new part we had to build up an entire new cell", explains Mario Smink, Manager of the Equipment and Infrastructure Design Department. "We wanted to move forward. We had to do this to stay ahead of the competition. With offline programming we saw an opportunity to reduce production costs", says Mario Smink.

World wide market comparison

Before the investment, Polynorm carried out a study of robotics suppliers world-wide. For offline programming three systems were tested: RobotStudio, Igrip and Robcad. The result of the study showed that RobotStudio was the best offline programming tool for Polynorm. "One of the reasons for picking RobotStudio is that it's designed for robot programmers and not for CAD designers. Another important function is that the verification is incorporated in RobotStudio, and that is a very user-friendly feature. RobotStudio is also a praiseworthy product and can be installed on a standard computer", establishes Mario Smink.

Polynorm Automotive B.V.



Raymond I. Buskens prepares a program for the gluing process.

Learning RobotStudio inside out

A student from a university in the neighbourhood was assigned to learn RobotStudio inside out and then teach it to Polynorm's robot programmers. The robot programmers also followed an inhouse training course at ABB. "At the moment the hemming and gluing robots are programmed offline. Now we can start the programming procedure in the office and import the mechanical design into RobotStudio. When the program is ready we transfer it to the robot cell to teach the robot and start up the production process", says Mario Smink.

Simply the best

Jan W. van Laar is a Robot Software Engineer at Polynorm: "Our customers, the car industry, are perfectionists. They appreciate that we work with tools like RobotStudio which gives better quality and lower costs. The investment in offline programming could be one of the explanations why Polynorm's market share keeps growing while the Dutch market is going down. We need to have the best tools to be able to offer the quality and price that our customers ask for. I also find RobotStudio extremely user-friendly and simple to operate." Mario Smink agrees: "Our customers are the West European car manufacturers such as Mercedes, Ford, Volkswagen and Peugeot. The time taken to switch from an existing product to a new product has been greatly reduced. We can now put a new product into production in two days. As a result, we are ultimately able to offer our customers a quicker delivery at a better price."

Quality robot hemming

"The decision to use offline programming has led to a shorter commissioning time for new robot cells. In the past, we had a commissioning period of two or three weeks and this has now been reduced to two or three days. Today the hemming and gluing cells don't remain inactive for any length of time", says Mario Smink.

"The quality of robot hemming has actually strongly improved. That is because you cannot really carry out robot hemming without offline programming. Now, we create a curve in a 3D drawing package, import that into RobotStudio, and we have exactly the right curve. Compared with what we used to do in the past, we can see an enormous improvement in the quality of the end product", explains Mario Smink. The next offline programming project will be the laser welding of bodywork components.



There was no other alternative to program the robot than offline.

Investment worth the money

Polynorm is a cost-minded company and base all their investments on pay-back time calculations. In the case of RobotStudio, pay-back time was less than six months. "Our productivity has risen enormously since we started to program offline. We have reduced the commissioning time for new products by 90%. This represents a huge improvement in productivity and the utilization of assembly cells. The investment in RobotStudio was really worth the money", concludes Mario Smink.

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