

Malmar explores possibilities of cobot grinding

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Metalworking company Malmar wanted to find out whether one of its products could be automatically post-processed. This was done to improve working conditions and increase the quality of the pieces. Tests clarified the feasibility.

Malmar is a metal processing company with locations in Belgium, Lithuania and Latvia. The company manufactures a wide range of products for numerous customers and strives to relieve its customers of all their worries. Malmar consequently has a diverse set of processes at its disposal, such as laser cutting, bending, milling, welding, painting and assembly work.

Malmar recently visited the Sirris demonstration plant in Diepenbeek and saw the possibilities of cobots for sanding and grinding parts. This prompted them to work with the experts at Sirris to investigate the possibilities of cobot working for one of their products, namely the 'hoods'. After welding with a cobot, these components still require a manual finishing step for the welds. Grinding the weld seams is not only labour intensive, it is also fairly monotonous work, and the quality is somewhat dependent on the operator.



Welding of the hoods by a cobot at Malmar

Test set-up

Sirris was commissioned by Malmar to investigate whether a robot with power feedback would be able to finish the welding within the specified time. They also wanted to know whether the welding spatter could be removed. Malmar also wanted to get an insight into the programming effort. Malmar used the voucher support of the Interreg Machining 4.0 project for this project.

Sirris built a test rig with a UR10 cobot using the parts from Malmar, testing both an eccentric sander and an angle grinder. Both the visual quality of the finish and the processing time were evaluated. The video below shows the finishing process with the sander and the angle grinder.

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Speed and ease of use

The tests showed that finishing the welded hoods is quite feasible. The remains of the spot welds and weld spatter could be neatly removed. The combination of an angle grinder and eccentric sander was, as expected, considerably faster than the full finish with an eccentric sander and made it possible to finish the pieces within the predefined task time.

Ease of use is still one of the most important specifications when considering future automation. The feasibility test conducted by Sirris was therefore not only intended to assess the result after cobot working, but also to evaluate the deployability and ease of use. The UR (Universal Robot) cobot software, in combination with Robotiq's 'Finishing Copilot' add-on, proved sufficiently user-friendly to generate the paths and set the forces relatively quickly.

Based on these test results, Malmar finally decided to invest in cobot grinding after an initial investment in cobot welding. This will help the company increase productivity and continue its growth.

Do you also have a sanding or deburring process that you would like to automate, but are still unsure about the feasibility? Then be sure to contact us!

Do you just want to keep up to date with recent developments? Then take a look at the CoBoFin project page regularly!

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