PALLETIZING CASE STUDY

Becker Romania

Becker Romania increases productivity by automating glue dispensing and assembly process with UR10 Robots.

CHALLENGE

Becker Romania struggled to recruit suitable workers for the production procedures in its facility, which prompted the business to investigate automation. In order to boost productivity and efficiency in the assembly process, the organization desired a collaborative automation setup in which humans and newly integrated technologies cooperate. Additionally, Becker wanted to make the workplace better for workers who would be performing more interesting and imaginative activities.

SOLUTION

Becker Romania decided to automate with collaborative robots from Universal Robots because they can be swiftly deployed and are specifically made to safely share a workstation with people without the need for additional safety guarding. In order to assemble mirrors, two UR10 cobots are used. The first UR10 applies adhesive to the product frame, and the second UR10 adds another component—a ring segment—on top of the glue over the glass. The cobots were simple and quick to program. The business used the pre-built application CircleMove with a loose orientation towards the circle from the UR interface.

The technical support provided by Universal Robots also played an important role in the successful integration of the cobots. *"On the Universal Robot website you can find all the information you need, even backup files for the programs developed that are easy to save through the magic files on the website, and for the software updates. There is a whole community behind it, ready to help you with the answers you need,"* Remus Țopan added.

Currently, the business is assembling one of its products utilizing two collaborating robots and human operators. During the mirror assembly process, the operators install the frame, the glass, and empty the carousel. The first cobot applies adhesive where it is needed using a soldering gun. A unique software made with the help of a global variable and a consumption rule alerts one of the operators when it's time to change the glue. *"After calculating the consumption norm, we created a global "installation variable" that remains saved even if the robot is turned off. By checking it at the beginning of each program, the variable tells us if the adhesive in the tube has reached the end. When it reaches 0 the program calls a subprogram that moves the robot arm to a position that allows operators to easily change the adhesive,"* explained Remus.

The second UR10 uses a gripper with suction cups that is easy and quick to assemble and adjust with which it picks the second part from a semi-automatic feeding unit and places it over the adhesive. All automation and sensors have been added to the cobot's control box, making it very easy to program. Proximity sensors were used to detect the frame and photoelectric sensors to detect the ring segment in the warehouse. The interconnection with the UR10 cobots is made with the help of a PLC that also controls the operation of the carousel, through analog signals transmitted bidirectional.