

Hand in Hand





At Plant 2 in Waiblingen-Neustadt, people and robots literally work hand in hand. The assembly staff rely on the skills of their new green colleagues and vice versa. But how does the use of such robots change day-to-day work? What is made easier, what abilities does CR-35iA have? And who is CR-35iA anyway?



“The relief the robots provide is enormous, especially for your back. Plus, the whole process has become faster and more effective.”

WALDEMAR EIRICH,
ASSEMBLY

RELIEF IS AT HAND

The installation of CR-35iA was not an ad hoc initiative. Rather, it required a preparation time of just over a year. During this time, STIHL’s own production equipment team set up the green robot’s workstation. Since then, the automated helper has become indispensable on the cut-off machine packaging line. It certainly lightens the load for the on-site workers. In concrete terms, the day-to-day work of CR-35iA looks like this: Taking the cut-off machine from the overhead conveyor, it performs the shaking test to check for the correct position of the fuel pickup body – and it holds the device for the last quality inspection by its human colleague. Finally, the robot takes the finished device for packaging.

The Fanuc robot is the first collaborative robot at the STIHL founding company. Previously, the assembly staff took care of the corresponding production steps. Particularly the shaking test – a purely acoustic test, for which the cut-off machine really has to be shaken – demanded a lot from those responsible: A cut-off machine weighs around 10 kilograms. That means ev-

ery shift deals with around 8 tons. “The relief the robots provide is enormous, especially for your back,” says assembly employee Waldemar Eirich.

DO-IT-YOURSELF BRAND

Eirich and his colleagues were involved in the project right from the beginning, evaluating the test set-up and influencing the general design of the new workstation. Michael Hoger, Group Leader, Assembly, is enthusiastic about the cooperation: “Based on practical experience, the employees gave good and meaningful ideas.” Through this approach, the new workstation was accepted right from the start.

It is not only the CR-35iA workstation that is personalized for both robots and humans. Even the gripper with which the machine works is STIHL’s own design, and it incorporates a great deal of engineering skill. This simple gripper became a real interactive element. With LED lights, it indicates the mode in which the robot is working. The employee communicates with the robot via illuminated keys on the grip-

per: The green button means that the cut-off machine is working fine, while the red indicates an issue and resets the device.

ROBOTS AS COLLEAGUES

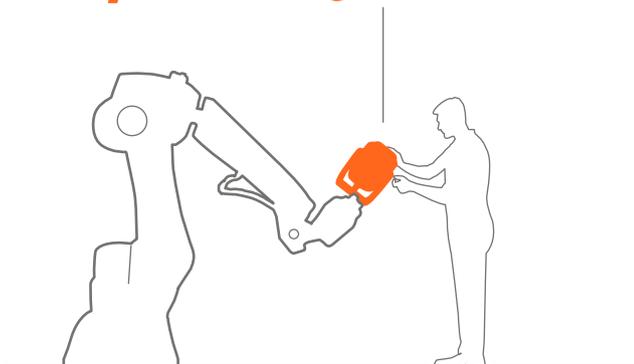
The use of robots in production is nothing new for the STIHL Group. Back in the 1990s, the company took up the then quite new technology – now there are several hundred robots at STIHL locations worldwide. “We even expect that in the future we will have more and more robots in the manufacturing processes,” explains André Lange, Group Leader, Technology Development, Service and Hardware. Previously, the automatic helpers worked in cages, clearly separated from the people who operate them. With collaborative robotics, a new level is reached, which offers many possibilities. “Now colleagues can actually work hand in hand with the robots. For us, this means that we can gain new experience in this field, which, in the end, will help us maintain our market position,” explains Lange.

Overall, the degree of automation in the production process at STIHL is already relatively high. Nevertheless, there is still further potential. “New concepts in robotics open up new scope for plant design,” says Hoger.

› WWW.FANUC.EU

8,000 kg

AMOUNT OF LIFTING RELIEVED BY THE COLLABORATIVE ROBOT PER PACKAGING LINE WORKER DURING ONE DAY SHIFT.



STRONG HELPERS

MR. HERMANN, WHAT MAKES COLLABORATIVE ROBOTS SO SPECIAL?

A collaborative robot is able to work directly with humans. The robot detects the person through special sensors and prevents them from being injured. In addition, the robot cannot run at full speed when working directly with a human colleague. This in turn affects the cycle time of the entire system.

WHAT CHALLENGES ARE THERE IN ROBOT DEVELOPMENT?

There are two main points. Keyword “Industry 4.0”: The robot system must provide production-relevant data. This allows for timely feedback about maintenance intervals. Keyword “Easy to use”: Operation and programming are intuitive.

WHAT ROLE DO ROBOTS PLAY IN THE INDUSTRIAL LANDSCAPE?

The number of collaborative robots in the industry is increasing. They usually perform tasks that present a high physical strain for the worker. Consistent quality also can be achieved with a robot.

NICO HERMANN,
Technical Manager for Robotics at the Tec
Center of FANUC Deutschland GmbH