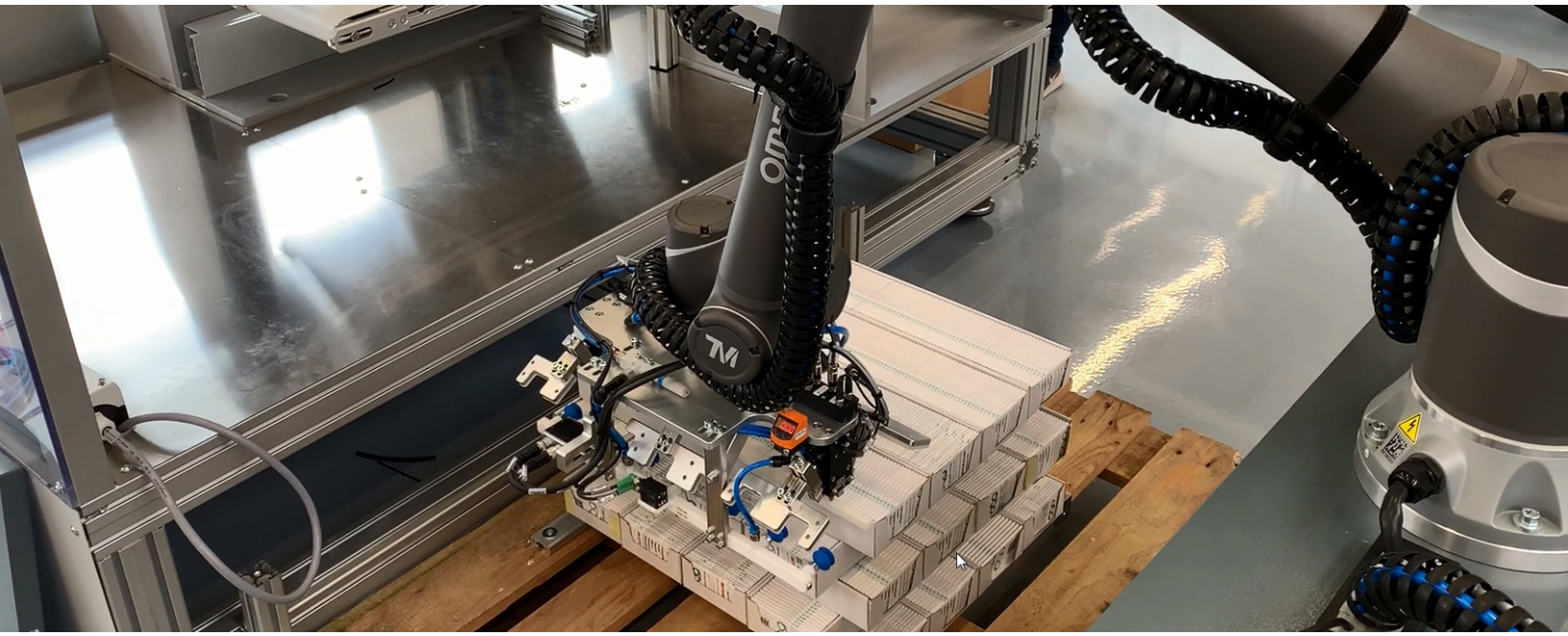
Success story



Omron TM12 cobot automates booklet feeding for Kraus Maschinenbau

Cobots streamline processes in medtech and packaging industry

The productivity and efficiency of packaging processes at Kraus Maschinenbau GmbH have been transformed by its close working relationship with Omron. The two companies are already exhibiting the high degree of collaboration that will be essential for workflows in the factory of the future.

As manufacturers progress towards Industry 4.0 (and Packaging 4.0), closer interactions will be needed between both development and technology partners and also between man and machine in the factory. This is why Kraus Maschinenbau has joined forces with Omron to develop an innovative collaborative robot (cobot) project for its packaging environment. A key element of this involves the Omron TM12 cobot, which is used to optimise the automatic feeding of booklets into pharmaceutical packages. The booklets are multi-page, quite extensive inserts that are added to packages for items such as insulin syringes or other medicines.

In the new solution, the booklets are stacked on approximately one-metre long rods (known as traces), and are taken over by the cobot and fed into the system. The Omron TM12 cobot was chosen as the most suitable solution as it has been shown to reduce the need for manual labour, whilst increasing efficiency and minimising any errors.

"Carton machines have become faster and faster in recent years, and this development will continue. There are now systems that can produce up to 500 packages a minute. At the same time, the booklets for some high-priced medical devices are getting thicker. Feeding them into the packages at a speed of three metres per minute can no longer be done manually and with a simple product magazine. That's why we've developed a system with Omron that significantly speeds up packaging processes in the pharmaceutical sector."

Joachim Kraus

Managing Director of Kraus Maschinenbau GmbH

The solution
Cobot boosts productivity

The need

Interact Analysis predicts that the cobot market will reach around US$5.6 billion by 2027, due to the ongoing development of new applications – as well as the impact of the coronavirus crisis. The TM12 illustrates the powerful potential of cobots: it's a state-of-the-art robot that was specifically designed to enhance the collaboration between people and machines. It can be easily transported and has an integrated image processing system, which enables fast start-ups and product changes. Due to its intuitive software, the cobot can learn almost any task. This enables it to take over recurring tasks, freeing employees for other work and helping to boost productivity.

The technology

Marc Schönenberger, Field Sales Engineer Automation and Drives at Omron, comments: "Thanks to our cobot's fully integrated image processing capability, it can implement even complex and changing tasks, such as the palletising of changing products. This means that an existing production system that was previously designed for manual filling can be seamlessly expanded to include full automation without needing any significant adjustments."

The camera of the Omron TM12, paired with modern lighting technology, enables objects to be detected in a wide field of view and ensures error-free detection under almost all conditions. The image processing system increases the reliability, consistency and precision of pick-and-place processes such as booklet feeding in the medtech environment. It also offers functions such as pattern recognition, barcode detection and colour recognition, which are essential for many inspection, measurement and sorting applications. The risk assessment in accordance with EN ISO 12100 helps to meet the requirements of the Machinery Directive 2006/42 / EC.

The outcome

The cobot project developed by Kraus Maschinenbau and Omron is expected to be presented at Achema 2021. Some companies have already expressed a great interest in the solution. Joachim Kraus praises the collaboration: "At Omron, I get the entire portfolio from a single source – including motion controllers, PLCs, touch screens, drives, sensors, cameras, robots and cobots and servo axes, as well as advice and much more. At the same time, we benefit from having a reliable partner at our side to help us to solve many problems. The technical competence and chemistry between us are very important for development projects in an industrial environment."