SIMOTION
Hygienic Handling

"It has to be hygienic and flexible!" According to this motto, MAJAtronic GmbH develops automation modules that are used wherever the highest degree of hygiene is of utmost importance – non-rusting materials, smooth surfaces and good cleanability.
This company, based in Kehl, Baden Württemberg, uses the SIMOTION motion control system and the proven SIMOTION Handling Toolbox software library for its innovative autonox24-HD robots.

MAJAtronic GmbH has been developing series machines since 2002 – especially for the meat industry. As response to the ever-increasing demand for flexible automation in the food industry, this company looked for a reputable mechanical robot supplier. However, the result was depressing: "...with annual sales of 500 units we could start to think about creating a special robot..." – was the standard response of the market leaders – and was enough motivation for MAJAtronic to tackle the issue themselves.

The engineers developed the autonox24-HD robots based on the SIMOTION control system and the SINAMICS S120 drive family. In spite of the fact that carbon fiber is not used, these unique hygienic design Delta robots fulfill the highest performance demands. Not only this, but this innovative piece of equipment offers some highlights for which patents have been applied – for instance, the media supply integrated in the fourth axis for the gripper or tools that the robot controls. As a consequence, open cables and hoses routed along the robot arms are a thing of the past.

Leading partner for the food industry
In order to provide OEM partners with an extensive product range, climate-controlled HD image processing units (2D. and 3D.) are offered in the meat industry. The software interface to the Siemens control is standardized. The results of the image processing regarding position, orientation, shape, volume or quality of the products can be very easily read and processed. "If the customer also requires an essentially indestructible operator panel that can be steam-cleaned in operation, then with the autonox24, he has come to precisely the right place" – explained Michael Heuberger, who played a decisive role in the development. The autonox24 robots are the first choice wherever extreme conditions prevail regarding contamination, humidity or temperature. Its hygienic design has already proven itself in the meat industry and in bakery systems. Work areas of 800 to 1400 mm are available to address the widest range of applications. For instance, these robots are used to put meat on skewers, portion endless lines of dough to form bread rolls that have a precise weight, or cut pretzels.

Lower engineering costs, higher degree of programming security
With the SIMOTION Handling Toolbox, Siemens offers an innovative software library to implement handling applications with the highest possible degree of efficiency – for use with all of the SIMOTION platforms. The standardized and tested software library significantly reduces the engineering time and costs and avoids programming errors. And what makes it especially interesting: several kinematics can be implemented together with software modules of other machines on one control system.
As a consequence, synchronization with proprietary control architectures can be eliminated – and real-time synchronization as well as standard and integrated

Handling

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data management can now be simply implemented. But the benefits don't end here – now it is no longer necessary to learn different programming languages for robot controls, which used to be a tedious and time consuming process: The system allows all functions to be programmed in a standard fashion according to IEC 61131-3.

With SIMOTION SCOUT there is a standard and integrated engineering system available for all applications and hardware platforms – which, in conjunction with the preconfigured SIMOTION Handling Toolbox library, facilitates efficient and flexible engineering with all of the required degrees of freedom.

## Simotion-based handling automation: Advantages at a glance

- Faster engineering with a higher quality using standardized, tested software and kinematics already integrated into the system
- Full flexibility by being able to integrate custom-specific kinematics through an open transformation interface
- Simpler implementation and data management by using a standard control and development environment
- Optimized dynamic performance by being able to flexibly enter the path velocity

- Ideal for each and every application as the SIMOTION platform can be freely selected (PC, Controller, Drive-based) – optimum scalable hardware and performance
- Work areas can be defined in 3 dimensions – blocked, watch or product zones – which can be individually activated
- Standardized interface for camera systems
- High-speed synchronization of up to 10 moving conveyor belts using the "Conveyor Tracking" function
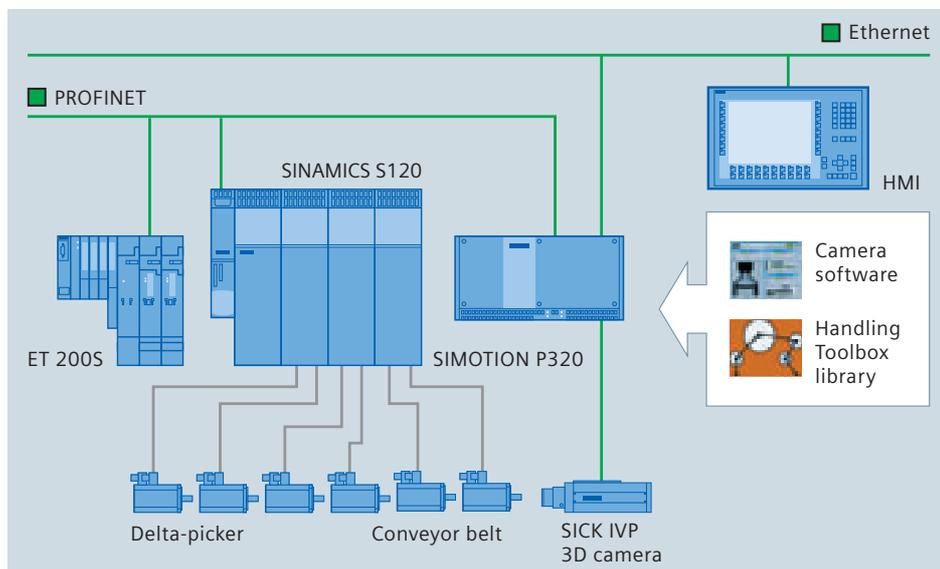
PC-based – automation concept Delta3-picker with camera system

Portioning bread rolls on a moving conveyor belt – precise down to a gram
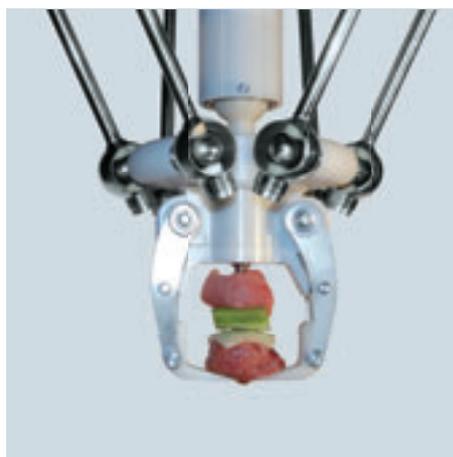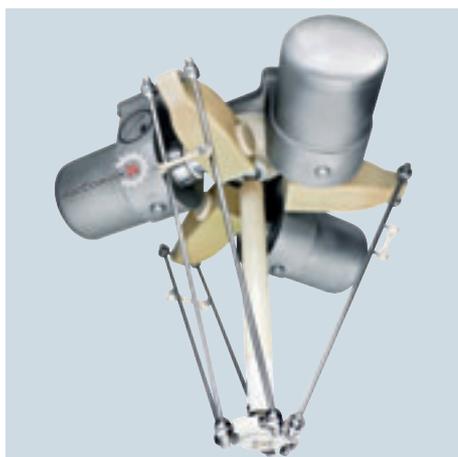
Skewering meat fully automatically

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