

MAN automates production logistics with 12 Magazino SOTO robots

Automation of material supply at the engine plant in Nuremberg

Munich, 22 February 2024 - The Munich-based robotics company Magazino, which belongs to Jungheinrich, has won the MAN site in Nuremberg as a fleet customer for the SOTO robot. The SOTO mobile robot automates material supply between the warehouse and assembly line, transporting small load carriers (SLCs) completely autonomously. Following a one-year pilot project, the entire small load carrier supply process for engine assembly and future battery production will be automated with twelve SOTO robots starting in autumn of this year.

Magazino and MAN have been working together closely and in an application-oriented manner in the field of logistics automation since 2019 and have already pooled their specific expertise during the development phase of the SOTO robots. The functionality of the robots was extensively tested and optimised in live operation during a one-year pilot phase. Based on this positive trial, the MAN site in Nuremberg decided to deploy a fleet of twelve SOTO robots for the complete automation of small parts logistics.

Simon Becker, project manager at MAN, says: *"The introduction of SOTO marks a further step towards the future of logistics in the latest development of our plant in Nuremberg. Thanks to SOTO, the provisioning process with small load carriers is now also fully automated. These robots are, therefore, also exemplary for the ongoing digitalisation and automation of our plant logistics and thus contribute to our overarching strategy. It is impressive to see how efficiently and harmoniously humans and robots can work together. The decision to introduce the SOTO robots is the result of many years of trustful cooperation with Magazino, which reflects our commitment to technological excellence and continuous improvement."*

Markus Ruder, Magazino's project manager for the joint project with MAN, describes the target process as follows: *"The SOTO robots pick up the small load carriers independently at the automated miniload warehouse and each robot brings up to 18 containers at a time to the individual assembly lines. They work in the same environment as humans and other mobile robots. At the assembly line, the SOTO robots place the containers, which currently weigh 12kg, directly onto the shelves. The worker can then conveniently access the individual parts for assembly on the opposite side of the rack. The SOTO robot also picks up empties autonomously and takes them to the central collection point."*

The plant in Nuremberg uses standard container formats by the VDA standard, the German Association of the Automotive Industry. The robot's adaptive gripper automatically adjusts to the corresponding container size and, like humans, also flexibly moves to different heights of the transfer racks. The robot uses machine-readable codes on the shelves and labels on the containers for identification. It receives the transport orders directly from the warehouse management system.

While assembly lines in the manufacturing industry are highly automated today, replenishment in the vast majority of warehouses still takes place manually. Previous solutions, such as tugger trains or simple automated guided vehicles (AGVs), do not fully automate the process, as manual labor is required for loading and unloading. At MAN's Nuremberg site, the small load carriers are already automatically de-palletised after delivery and stored in the automated miniload warehouse. With SOTO, MAN is now automating the "last mile" in the small load carrier provision process with the aim that the first human action in the process is the transfer of the empty small load carriers from the full load chute to the empties chute of the rack by the assembly workers, from where the robot collects the small load carriers again.

The SOTO robot combines these elementary logistical process steps in a single, fully autonomous solution: picking up small load carriers of different sizes from a warehouse, autonomous transport of several small load carriers from source to sink and delivery to flow racks close to the line at different heights. Its capabilities include collecting empties and rotating small load carriers. In existing environments, the robot works safely in the same area as humans. These capabilities clearly set the SOTO robot apart from the market environment and enable genuine end-to-end automation in material supply with small load carriers for the first time.

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About Magazino

Magazino GmbH develops and builds intelligent, mobile robots that can perceive their environment, make their own decisions and grasp objects. The autonomous robots work in parallel to humans and make processes in the areas of e-commerce, fashion and production logistics more flexible and efficient. With 130 employees at its Munich site, Magazino is one of the largest advanced robotics teams in Europe. Magazino has been part of Jungheinrich AG since 2023.

About Jungheinrich

As one of the world's leading providers of intralogistics solutions, Jungheinrich has been advancing the development of innovative and sustainable products and solutions for material flows for 70 years. As a pioneer in the sector, the Hamburg-based family business is committed to creating the warehouse of the future. In 2022, Jungheinrich and its workforce of about 20,000 employees generated revenue of 4.76 billion euros. The global network comprises 12 production sites and service and sales companies in 42 countries. The share is listed in the MDAX.

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