Press Release

NITRAS Safety Products in Bedburg expands AutoStore® small-parts warehouse

Since 1986, AS Arbeitsschutz GmbH has been specialising in supplying technical wholesalers with personal protective equipment and work clothes. The owner-managed company is dedicated to top quality and reliability. For over two decades, AS Arbeitsschutz GmbH has been working on successfully rooting its noted NITRAS manufacturer's brand in the industry.

In 2020, the company commissioned HÖRMANN Logistik to become the general contractor for building an AutoStore® system for storing small parts in an existing warehouse on-site its Bedburg headquarters in North Rhine-Westphalia, Germany. In a follow-on commission, HÖRMANN Logistik has now been asked to expand the modular system.

Initial implementation of AutoStore® small-parts warehouse at NITRAS

In order to design the custom-made AutoStore® system at the planning phase, HÖRMANN Logistik simulated the facility in various ways. Daily working hours (8 hours, 5 days a week), some other customer requirements and the simulation results merged into a system configuration of 13 levels comprising 9,200 bins of 649 mm x 449 mm x 330 mm (LxWxH) each. Five autonomous robots pick and place goods at the two carousel workstations, one of which is allocated to goods receipt, the other to goods outbound/order picking. If needed, both workstations can handle both inbound and outbound goods. The AutoStore® system consists of an aluminium grid clad on three sides and totalling a footprint of 22.8 m x 12.9 m x 5.4 m (LxWxH). Within the bounds of the grid, stacks of 13 bins each are located directly on the hall floor. Above them, the five autonomous battery-powered robots move along the grid of rails provided so that the robots can interactively pick and resort the bins and output them to the order picking modules. Each bin has a gross weight of 35 kg and carries a net payload of about 30 kg. To check for overloads, the bins are weighed at the ports. An optional insert in the bins allows their volume to be subdivided in order to carry any assortment of multiple items.

Four pairs of wheels are arranged at an angle to let a robot move in two directions to any place within the grid. The robots use Wi-Fi to communicate with the AutoStore® control unit, which provides each robot with its transport jobs. If there is little to do or if their battery is low, the robots automatically go to one of the chargers at the edge of the grid.

To enable the picking of articles, AutoStore® is ready to receive comprehensive picking orders made up of several items. Assuming a 30-minute lead time, AutoStore® and its optimisation algorithms warrant job handling at top-level efficiency. The WMS/ERP system and AutoStore® communicate via an XML interface. The initially installed AutoStore® small-parts warehouse was successfully put into service in the summer of 2020.

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AutoStore® system expansion in response to increased performance needs

In May 2022, an expansion to the above grid was commissioned. Its total capacity was advanced to 21,000 bins requiring 7 further robots plus chargers. To provide for goods inbound and order picking processes, the system was given an extra carousel port as well as a dummy frame for later use.

The total system is now designed for 480 transfers to stock a day or 60 transfers to stock per hour. The goods outbound station has a capacity of 960 retrievals a day or 120 retrievals per hour (at a single workstation).

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