

PRESS RELEASE

Weinsberg, 8 November 2019

Buffer storage for cold-rolled products

Fully automated cantilever warehouse for steel coils

At its headquarters in Hagen-Hohenlimburg, the BILSTEIN GROUP invested in a wide quarto reversing rolling mill and a new slitting line with a fully automated buffer store for steel coils with a width of up to 1,350 mm and a weight of up to 31 tonnes. For direct access, these are stored hanging from cantilevers. A fully automatic stacker crane from Vollert ensures smooth storage and retrieval.

When it is about handling heavy loads, Vollert's intralogistics specialists are the right people to turn to. For the aluminium and metal industry, the experts develop turnkey storage and material flow systems and move parts weighing up to 50 tons or more. But BILSTEIN's requirements were not an everyday occurrence: "Fully automated hanging storage of steel coils weighing up to 31 tonnes is a challenge in itself, but the coils also vary individually in size and width," explains Lars Strobel, Senior Sales Manager at Vollert. "We have already built similar storage systems several times, so the task was not new to us."

BILSTEIN was looking for a solution for an upstream buffer store with direct access to the individual coils to ensure optimum utilisation of the new slitting line. In Hagen, the cold-rolled strip specialist manufactures products for the automotive industry, among others, which are used in the drive train through to the seat system. The requirements of BILSTEIN customers are correspondingly varied. Pre-production provides customer-specific steel coils with different diameters and widths. These are then trimmed before delivery on the slitting line and pre-assembled to the desired length. Vollert installed a cantilever high bay warehouse with storage and retrieval equipment, including the rails and safety fences of the fully automated area. As a turnkey partner, Vollert also supplied the complete control technology. The new buffer high-bay warehouse now ensures optimum utilisation without idle times.

Storage in the eye of the coil

The installation of the two-storey cantilever bearing took place in an existing hall with low height. Two steel coils with a maximum total weight of 62 tons are stored hanging in the eye of the coil - the only fixed point, as the coil circumferences vary. A total of 10 shelves are arranged in parallel in two rows, operated by a centrally driven stacker crane with a

lifting height of 2.5 m. After the delivery of the man-size coils by forklift, the automatic measurement takes place first. "Here we determine the exact position of the eye as well as the width and depth of the coil. Depth measurement is important in order to be able to place the coil as far back on the cantilever arm as possible later during storage," explains Kevin Dietrich, Project Manager at Vollert. "This optimizes the load distribution and thus the load on the cantilever arms".

Stacker crane with lifting and turning function

Since the coils cannot be placed on the outer surface as usual during storage, the stacker crane had to be rotatably mounted on a chassis and equipped with an extension lift truck. When the coil is picked up, the extension lift truck travels to the coil rack, lifts it and returns to the travel frame of the crane. During longitudinal travel, the upper carriage of the crane then rotates either to the right or to the left to the storage location in the double-row warehouse and then deposits the coil on the cantilever arm. The retrieval takes place in reverse order. Here, too, a storage rack forms the mechanical and electrical interface, from which a transport carriage takes over the coil for further processing. Remaining residual quantities are returned to the buffer store after packaging. "We have thus achieved a robust continuous supply and service of the cutting line and at the same time the automated processes guarantee damage-free and smooth transport of the coils within the warehouse," says Dietrich. Despite the special requirements at BILSTEIN, Vollert only needed one year from planning to acceptance. Assembly took place in summer 2019.

About Vollert Anlagenbau GmbH

As specialists for heavy loads and large parts, Vollert Anlagenbau GmbH develops turnkey intralogistics concepts for the aluminum and metal industry. As a general contractor and full-service provider, the service range encompasses state-of-the-art material flow, storage and packaging technology as a stand-alone solution or integrated into a larger logistics environment.

Whether fully automated mega-high bay systems for aluminum coils, intelligent material flow systems for the leading aluminum extrusion press manufacturers, the world's most efficient stacker cranes for the storage of sheet metal plates, automatic crane systems for 50 tons and more or the most modern surface coating systems – Vollert is everywhere.

Vollert's plant and machine solutions are deployed in more than 80 countries around the world and in Asia and South America the company's own subsidiaries strengthen in addition the sales activities. Vollert employs more than 300 people at its company headquarters in Weinsberg. **www.vollert.de**

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Image 1

Mobile, rotatable, space-saving and unique: in BILSTEIN's new cantilever buffer store, a special Vollert stacker crane enables direct access to steel coils weighing up to 31 tonnes.



Image 2



Image 3