

Shuttle Storage

between paint line and assembly



UNIVEYOR Shuttle Storage

One of UNIVEYOR's major concept areas is automatic storage systems with automated cranes and conveyors linking the storage system to goods receiving, production/assembly and despatch area.

A specific UNIVEYOR developed storage system is Shuttle Storage, a flexible system, "tailored" from project to project depending of demands for storage capacity, flow capacity and access to single items in the store.

In this case story we present a system supplied to Volvo Truck in Umeå, Sweden. A 2-tier shuttle store forms the buffer between the paintshop running in 3 shift and the assembly shop running in 2 shift.

The shuttle store is a very compact and flexible system with high through put and full and rapid accessibility to all cabins in the store.

Shuttle Cars on two levels

Shuttle cars with built in lane shuttle are running on two levels. Cabins to the upper level are lifted and lowered via lifts in the infeed- and outfeed end.

In-Feed

Cabins are loaded by forklift onto a conveyor system (area 1) and conveyed into the shuttle storage, - to the lower level or via lift to the upper level. A shuttle car picks up the cabin via the in-built lane shuttle, which runs underneath the cabin. The shuttle car then runs to a dedicated free lane where the cabin is parked.

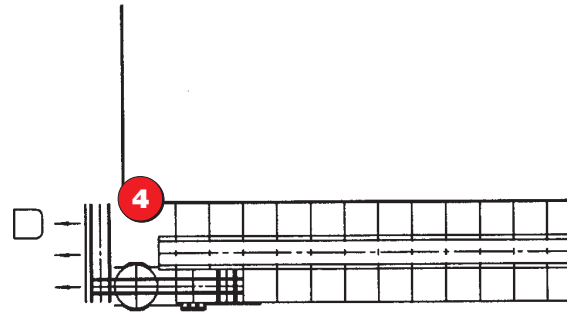
Out-Feed and Skid Change

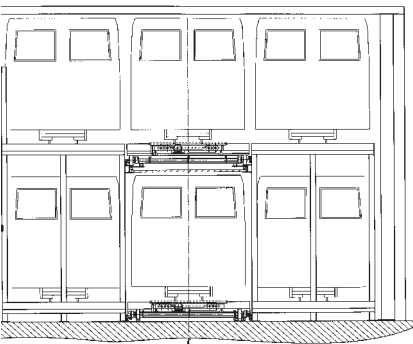
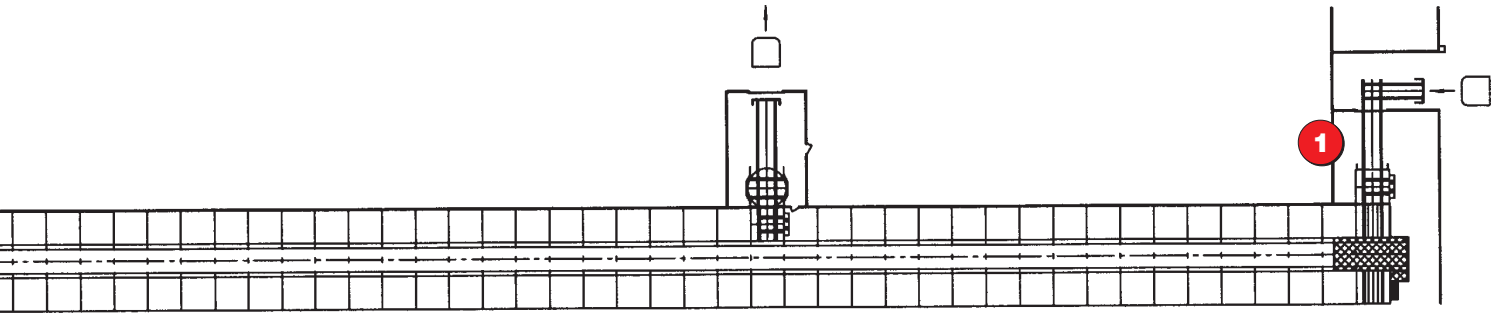
A cabin is taken out from the lane and brought to the outfeed area (area 4). Picture 2 shows the shuttle car at 2. level retrieving a cabin, which in picture 3 is lowered to the conveyor system on floor level and taken to despatch destination.

The cabin on the skid is automatically placed onto a trolley (picture 4-5) before it is delivered to the assembly area. Trolleys are loaded onto the system in stacks (picture 6). They are separated one by one before they are loaded with the cabin.

Control and Data System

All functions in the system are controlled by PLC's on the shuttles and by a stationary PLC. A PC storage control system keeps track of all motions and positions in the store. The storage control system holds a map of the cabin data which is transferred from the production control system when the bar code is read at infeed. A link to the production control system updates all relevant information on storage status.







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