



HEAVY LIFTINGS WERE ELIMINATED USING A ROBOT AND ROLLER CONVEYORS!



Q-TRANSPORT  
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# Lifting of heavy sacks was eliminated using a robot and roller conveyors

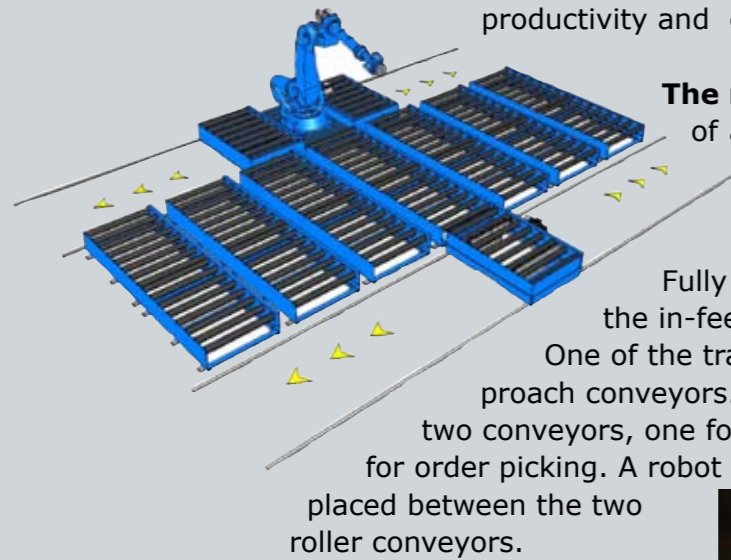


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Many companies encounter health and safety problems when employees are lifting goods which at the end of the day total many kilos – this possibly combined with awkward working postures as well.

Alfix of Denmark, which produces adhesives, grouts, and levelling compounds for the construction industry were having health and safety problems in connection with their order picking as the employees had to lift many 25 kg heavy sacs from the floor to a pallet placed on a pallet jack.

An automation of the order picking process has now solved the problems and led to increased productivity and accuracy in order picking.



The new system supplied by Q-System consists of a number of parallel roller conveyors of which one or more conveyors are allocated a specific product.

Fully automatic transfer carts are running along the in-feed and the out-let ends of these conveyors. One of the transfer carts will bring full pallets to the approach conveyors. The other transfer cart is equipped with two conveyors, one for a stack of empty pallets, the other one for order picking. A robot with catchers and a vision camera is placed between the two roller conveyors.

### The robot has "eyes"

The robot will automatically pick-up and place a stack of empty pallets and an "order picking pallet" on the two transfer cart roller conveyors. When the transfer cart receives an order from the order processing system it will drive to the conveyor where the first product of the order is located.

The robot is equipped with a vision camera enabling it to place the suction cups correctly and find the right suction point. This enables the robot to place the sacks correctly on the pick pallet so that a stable pallet pattern can be built up.

The transfer cart will drive to the relevant conveyors and the robot will pick the products ordered. When all the goods of the order have been placed on the pick pallet the transfer cart will bring the pallet to the outlet conveyor where a bar code label is automatically attached. The pallet will then



be transported by a pallet jack to the shipping dept.

Having delivered the pallet on the outlet conveyor the robot will pick another empty pallet from the stack of pallets on the transfer cart and place this pallet on the "pick conveyor". Now, it can start the picking of goods for the next order.

### Empty pallets on the approach conveyors are removed by the robot

The robot can "see" an empty pallet on an approach conveyor and it will pick this up and use it for an order.

When the robot has removed an empty pallet the pallet behind it will move forward. Simultaneously, a message is sent to the stock control system that another pallet with the product in question is to be sent in from the production.

### Prepared for future extensions

Today the order picking system starts up a few hours before the start of the working day meaning that pallets with orders are ready for removal when the staff shows up.



The transfer cart stands ready to receive another pallet to be fed into the order picking system.



Alfix, however, has prepared for future requirements: the system can work night and day and it has been placed strategically to the effect that it is possible to increase the capacity by doubling the number of approach conveyors.

The approach conveyors can all hold two pallets with one type of product.