



IN THE LOOP

When Australian clothing and household linen retailer Best & Less decided to move into a new distribution centre for its nationwide operation, it was plain that the time had come for the company to review its operations and implement the optimisation and automation that it had wanted for some years.

Before the installation of the new system, Best & Less' warehousing and cross-docking was a purely manual operation. As goods arrived, workers broke down the pallets and took the boxes to the appropriate floor area for each delivery destination using a hand trolley.

In the new system incoming stock is put directly onto the loop sorter at one of two induction points. The barcoded labels are scanned automatically, which acts as a receipt and tells the system which destination chute to deliver the box to. When the box reaches the correct chute, the BEUMER Group cross-belt sorter discharges it from the conveyor and it slides down to join the boxes that have already been delivered to that location.

HIGHLIGHTS

- › First time automation of warehousing and cross-docking functions
- › Chutes designed to hold sufficient cartons to make up an entire pallet with as few spaces as possible.
- › System designed with ergonomics in mind to reduce work-related injuries and fatigue.

SYSTEM OVERVIEW:

- › The maximum size of carton that can be handled is 1000mm long x 800mm wide x 500mm high with a weight up to 20kg.
- › The initial installation was with two induction lines and an LS-4000CB Cross-belt sorter running at 2.3m/s. The loop is approximately 265m long with 183 chutes. This provides a sorting capacity of approximately 4,000 items an hour.
- › Additional inductions lines and chutes can be added to cater to future growth as well as split case pick-and-pack operations.
- › The system has been designed to achieve a total of 10,800 items per hour with the addition of another four induction lines.



This is what makes the system so effective and distinct from other sortation systems. The chutes were designed so that they would hold more or less a whole pallet of boxes. Other sortation systems operate on a 'first in, first out' basis and the worker building the pallet has to use the boxes in the order in which they come down the line. This can be difficult and inefficient as the boxes come in a wide variety of shapes and sizes and have to be fitted onto the pallet as neatly as possible.

For this system, however, BEUMER Group designed the chutes to hold sufficient cartons to make up an entire pallet, and because the chutes are fairly wide the worker has a choice of 15 to 20 cartons from which to make up the pallet

with as few spaces as possible. This enables the pallets to be loaded to their maximum capacity, which is an essential factor in minimising transport costs.

Another effect of the system design is that because the chutes terminate at about waist height, the pallet builders no longer have to pick the carton up from the floor, so there is less chance of work-related injuries and much less fatigue – with a corresponding increase in productivity.

Being built around BEUMER Group's low-energy LS-4000CB cross-belt sorter, and controlled and supervised by a BEUMER Group Sorter Control system, the sortation system is ideally suited to Best & Less' low-cost, high-productivity

philosophy. The LS-4000 is distinguished by being powered by a linear synchronous motor, which typically uses 70 percent less energy than a conventional linear induction motor. It also features a user-friendly interface from the BEUMER Group software suite.