

-ARCO

Solving picking errors with an intelligent or- der-picking system

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Efficient **pick-to-light** system

On average, orders that comprise more than one item take a long time to prepare for shipping. Not only does a box have to contain the right items, it also has to have the correct amount of each item. If an employee has to search for all these individual items, pick them, and put them in the box, this requires both a lot of manpower and a considerable amount of time. ARCO has proven that there is a better way to go about this – with an efficient and reliable pick-to-light system. The idea behind pick-to-light is that employees do not have to actively search for components themselves, but instead they can see at a glance which items they need, how much they need, and where they can find them.

ARCO supplied a section of an entire production line for a large food manufacturing company in the United States: a conveyor system that stops the right box at the right location so that an employee can quickly and easily fill it with the right product.

**A lot of manpower and
time per order**

Different employee for **each step**

A challenge that many large companies encounter when structuring their production process is the high number of employees required to prepare orders for shipment. In particular, the preparation of orders that include several items is a task that involves many employees. The process starts with preparing the boxes; for each box, an employee is needed to fold and tape the box and get it ready for use. Then, all the boxes need to be labelled so that everybody knows which orders they are for. For each order, a specific number of products must be placed in the box.

Employees determine what and how many items should go in the box, then they find these items and place them in the box. The box then needs to be closed and taken to the right location.



High average time per order

Companies want to ship their orders as efficiently and quickly as possible. Besides the many employees required to fill and prepare all boxes, the time it takes to complete this process is also a huge factor. Manually picking all the components of an order not only takes a lot of manpower, but also a lot of time. The more individual items an order contains, the longer it takes to prepare it for shipment. If an employee has to search for and pick each item separately, it takes a long time to gather everything.



Difficult to **check**

When orders are prepared manually, the risk of errors is much higher than with an automated system, and it is more difficult to check the orders. This means that incorrect orders regularly leave the warehouse. Besides costing the company both time and money, it can also damage their reputation. As such, it is important to keep incorrect orders to a minimum.



Zone picking with ARCO

Zone picking with ARCO

An order passes through many steps before the package is finally ready for shipment. ARCO designs production processes that enable all steps to be completed as quickly and efficiently as possible. Significant gains can be achieved in terms of both personnel and time by using automation and smart conveyor solutions. ARCO delivers exactly what the customer needs, either by developing an entire production process or by installing part of such a process.

ARCO has successfully streamlined the production process for a major food manufacturing company; boxes are now automatically taped and provided with a unique label, among other things. Thanks to the connection between the PLC and the WCS, the system simply scans the box to determine the correct location.

Previously, the company's employees performed every step of the production process manually – from unfolding the boxes to picking all the items and sealing and labelling the boxes. ARCO helped the company to design an automated system that can process more orders in less time, with fewer errors and less manpower.

The automation process starts at the beginning of the line. Instead of an employee unfolding each box individually, we installed an automatic box erector that unfolds, tapes, and labels the box. Then, a roller conveyor transports the prepared box along many flow racks equipped with pick-to-light displays, containing all kinds of products.

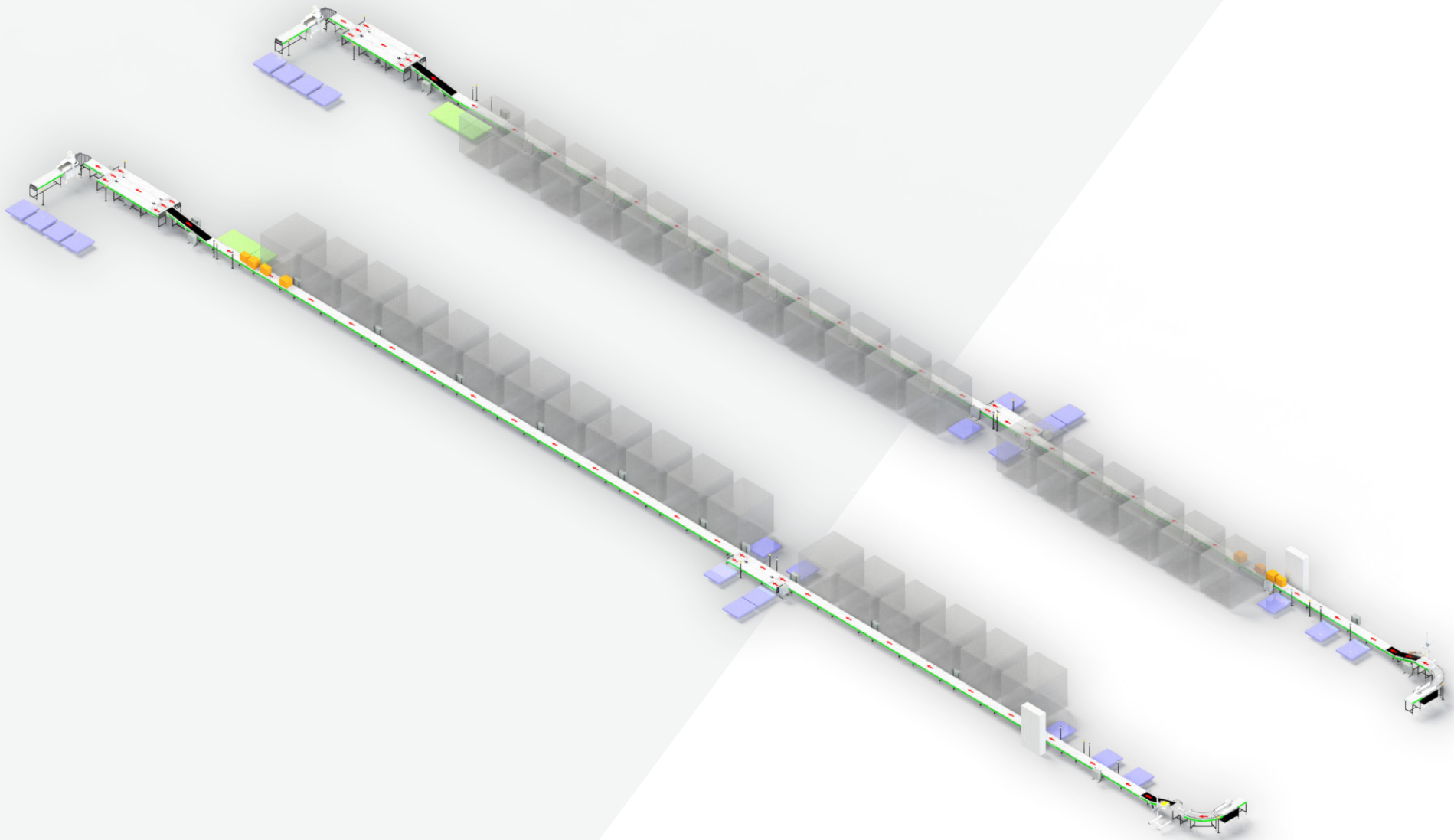
ARCO's PLC software system communicates with the WCS via the scanners to determine where the box needs to stop.

If a product stored on the flow racks needs to be placed in the box, the WCS indicates that the roller conveyor needs to stop. Thanks to the pick-to-light system, employees can quickly see what needs to go in the box and where the product is. This way, they no longer have to search for a product themselves; they just need to check which display lights up and collect the product.

When the correct products – and the correct quantity of products – have been retrieved from the rack and placed in the box, the employee switches off the display and the box continues its journey. The system knows exactly where the box needs to stop in order to make sure that all the required products actually end up in that box. The system also takes care of order balancing. Whenever a rack is almost empty, an employee receives a signal that the rack needs to be refilled from the back.

When boxes reach the halfway stage, a quality check takes place. Boxes are selected at random and checked by employees. Does the box contain the right products? Are there any open bags or damaged products? Following this check, the boxes are put back on the line. Once the boxes have passed all the racks, they are taped shut and the correct shipping label is attached.





More efficient order-picking

For the customer mentioned above, ARCO did not design and deliver the entire system, but rather the conveyor system and the equipment required to simplify the process, such as a tape machine and automatic labellers that connect seamlessly to the WCS. But ARCO does, of course, have the necessary expertise and experience in-house to design and deliver complete lines of this type. And these lines have a number of major advantages. Fewer operators are needed because many steps that used to be carried out by people are now done automatically. The boxes are still unfolded manually but taped automatically at the bottom. The boxes are then automatically transported along the roller conveyor to the product racks.

Employees no longer have to actively search for the right products themselves; instead, they can see on a display which and how many products need to go in which box.

The boxes also automatically stop at the right racks, ensuring that the whole system continues to run like a well-oiled machine. Fewer operators mean fewer errors, and a control check is also performed at the halfway point. As such, this line not only reduces the number of employees required, but also the number of incorrect orders.

Besides the fact that fewer operators are needed to achieve the same (and often better) result, there are also huge time savings. Operators no longer have to walk along the racks to find all the items for each order; instead, the products come to them. Furthermore, thanks to the seamless connection to the WCS, the line continues to run smoothly and delays due to human intervention are avoided.

Production processes like the ones described above can always be adapted to suit the customer's needs. Besides automating the process of labelling and sealing boxes, you can also choose to automate the palletizing process. In this case, the boxes are placed on pallets by a machine, thus automating another step in the process. ARCO helps its customers to develop the most efficient and effective production lines to achieve the best possible result.



In addition to pallet handling solutions, we also offer a range of other intelligent solutions designed to make your processes run better and faster:

- Vertical transport solutions, such as lifts and spiral conveyors
- Conveyor belt solutions, such as conveyors, roller conveyors, and chain conveyors
- Robotic solutions, such as cobots, delta robots, gantry robots, and industrial robots.



Need help with a technical issue?



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