

AUTOMATING INTRALOGISTICS

WHEN ROBOTS PITCH IN

WHAT DO ROBOTS DO?

Warehouse 4.0 – the future of logistics

Logistics centers' job is to sort and forward products quickly and efficiently. In this regard, they are increasingly reaching the limits of their capacity. The challenge: contending with a greater variety of parcels and increasing volumes. Trends such as e-commerce or 24 hour deliveries add an extra layer of complexity to these tasks. Additionally, many jobs in logistics are monotonous and tiring, and well-trained workers are scarce. The solution: automation. It significantly speeds up goods handling and dispatch. The goods reach the customer far faster.



Which logistics tasks can robots take on?

Depalletising

Robots automatically unload and sort pallets or different sizes of boxes / packages using AI and image processing (3D vision).

Sequencing

To make perfect use of capacities and avoid downtimes, robots forward goods in a targeted manner or store them temporarily for a short time.

Order picking

With the help of image processing, robots stack items and boxes so that they are packed as compactly as possible and are ready for shipping.

'Goods to the robot' order picking

Robots pack the ordered goods, even ones of different sizes and weights, thanks to AI-based technology.

Separating and sorting induction

AI-based technology helps robots to grasp and separate different sizes of objects.

Consolidating outgoing orders and goods

With the help of image processing, robots stack items and boxes so that they are packed as compactly as possible and are ready for shipping.

What are the benefits of automation?



Modularity

Modular automation solutions are particularly beneficial for the logistics sector. The smaller units make integrating individual systems into the process quicker and easier. If the task changes, individual stations can be replaced or adjusted while operation is ongoing.



Simplification

Thanks to artificial intelligence (AI), a single robot can take on tasks that several robots were previously needed for. AI enables robots to recognise patterns and correct errors on their own, allowing them to work in unstructured environments. This makes the likes of handling processes considerably easier.



Flexibility

With special software solutions, the robots in a logistics centre can be reprogrammed quickly and easily – and usually without any need for in-depth knowledge of programming. They can be used more flexibly and are also intuitive to operate.

WHICH ROBOTS ARE SUITABLE FOR LOGISTICS?

Whether they're classic industrial robots that lift heavy packages or collaborative robots that affix labels – many robots are perfect for pitching in within logistics.

How clever are robots? They have everything under control because they learn independently.

A robot is ideal for repetitive tasks. But there are usually tens of thousands of different products in an e-commerce fulfilment centre, which lacks the intelligence needed to recognise the appropriate products from the crowd and to pick or separate them. AI-based robotics solutions, such as self-learning gripping applications, have been developed to meet precisely this requirement.





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WHEN TIME IS OF THE ESSENCE (REDUCED DELIVERY TIMES)

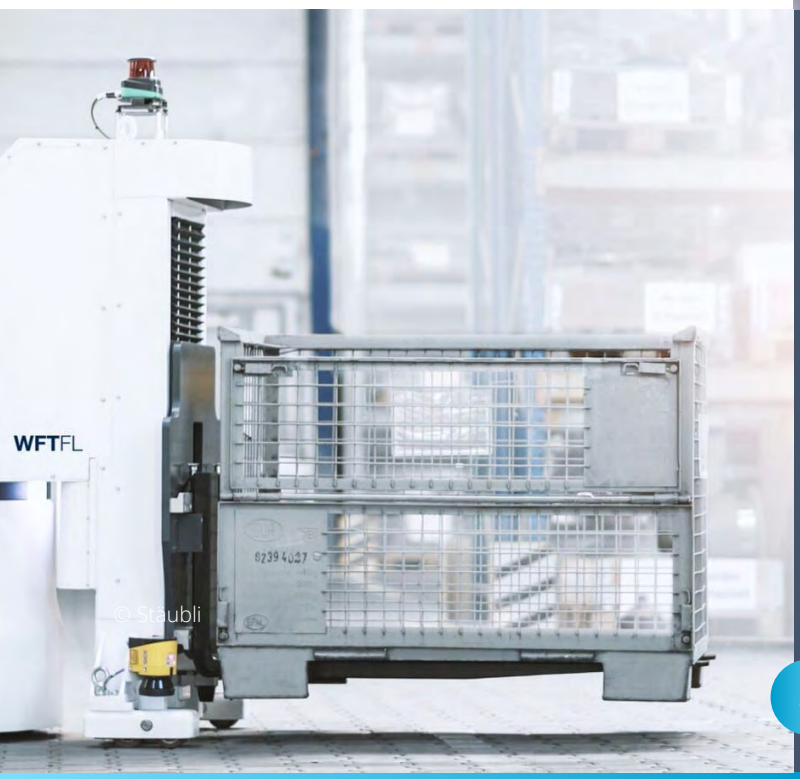
Pre-sliced fruit and vegetables and fresh salads that have to reach the customer's table as quickly as possible are just two examples of when just-in-time deliveries to supermarkets up and down the country are in demand. Since the fresh produce has a shelf life of just three to four days, it is crucial to shorten the amount of time the food spends in the supply chain. That way, it can be stocked on the supermarket shelf for longer, making a key contribution to waste prevention.

PACKAGING WITH FULL POWER – HIGH PRODUCTIVITY

The order volume of Sweden's largest online pharmacy has grown so much in recent years that the conventional management methods could hardly keep up. Since three industrial robots were introduced, productivity has risen by 30%. They guarantee a quick and efficient workflow.



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END-TO-END AUTOMATION IN LOGISTICS

The different automation solutions are smoothly intertwined, enabling end-to-end automation throughout the entire value creation chain – which integrates the upstream and downstream processes within the transport and supply chains.

About IFR / Go4Robotics

As a non-profit organization IFR's mission is to promote the use of robotics to address societal challenges and improve the quality of life for all. Our vision is that robotics will revolutionize various industries and create a better future for all. With almost 100 institutional members from more than 20 countries representing over 3000 robotics organizations worldwide, we offer the all-round view of the world of robotics across industries and countries. With our Go4Robotics campaign, we want to provide beginners with easily accessible and understandable information and experts with deeper insights into trends and innovations in the robotics industry.



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