



# Palletizing for the palate

Selecting ABB's IRB 460 robot stacks up for Orkla Foods in Örebro, Sweden



- Orkla Foods needed to build an additional production line for a new snack product.
- The line had to be fully automated, capable of performing an entirely new type of job, and very flexible.
- Their choice of an ABB IRB 460 was decisive for the success of the project.



## CASE STUDY ORKLA FOODS

# Palletizing for the palate

Orkla Foods in Örebro, Sweden, needed to build an additional production line to accommodate a new snack product range. The line had to be fully automated, capable of performing an entirely new type of job and very flexible. A further challenge arose when the startup date was brought forward by four months. Experts from ABB, Orkla Foods and Front Automation – a systems integrator specializing in the food industry – formed a team to take on this mission. Their choice of an IRB 460 – the world’s fastest palletizing robot – to perform the final operations in the line was decisive for the success of the project.

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01 ABB and system integrator Front Automation collaborated to install a new, fully automated production line in an Orkla Foods factory in Sweden. ABB’s IRB 460 – the world’s fastest palletizing robot – proved to be the most significant component in the new production line.

Traditionally, the food industry lags other industries when it comes to introducing new technology. However, advances in hardware technology and control capabilities, combined with a tighter regulatory environment and higher consumer expectations, mean that the food industry is now often at the forefront of new technology adoption.

Other changes in the industry are afoot too: Consolidation is becoming more common, companies

and factories are getting bigger and items are being produced around the clock.

To satisfy the demands imposed by this metamorphosis, many enterprises have transformed their operational approach in order to integrate isolated and islanded batch operations into a more coherent whole. A further key advance has been the rapid uptake of automation. Not only does automation improve quality and throughput, but it also



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improves the workplace environment and relieves employees of heavy, monotonous tasks.

Robotics form an important part of factory automation – a fact well recognized by the already heavily automated Orkla Foods factories. It was the implementation of ABB's IRB 460 palletizing robot that enabled the full automation of a new production line in Orkla Foods factory in Örebro, Sweden to be accomplished in record time. This line was the first at Orkla to be automated from end to end.

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#### Food processor

Orkla Foods Sweden, part of the Norwegian Orkla Group, has annual sales of approximately \$560 million and employs around 1,500 people. The Orkla Foods factory in Örebro, Sweden has been used since 2000 to produce Risifrutti – a two-component snack with rice or semolina and a fruit puree.

The Swedish food industry as a whole is completely dependent on automation to be able to compete – for reasons of greater efficiency, but also of greater control as automation enables incorrect marking to be reduced and quality increased. For these reasons, the Örebro factory always had a high degree of automation in place. Risifrutti became the best-known snack brand in Sweden. In Spring 2014, Orkla launched Yummifrutti, a two-component snack with a spoon and some ingredients in the lid. During the preparation for the Yummifrutti launch, Orkla Foods management decided that the product launch date should be moved up by four months,



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which posed a challenge that could only be met by installing an extra production line. System integrator Front Automation and ABB's IRB 460 robot – the world's fastest palletizing robot – were selected to accomplish this task.

#### The automation in front

Front Automation specializes in the automation of picking, packing and palletizing. The company delivers everything from simple palletizing applications to complete packing lines for customers all over Scandinavia. Front Automation in Jönköping, together with sister company Fröjd & Wester, is part of the industrial Fröjdia Group.

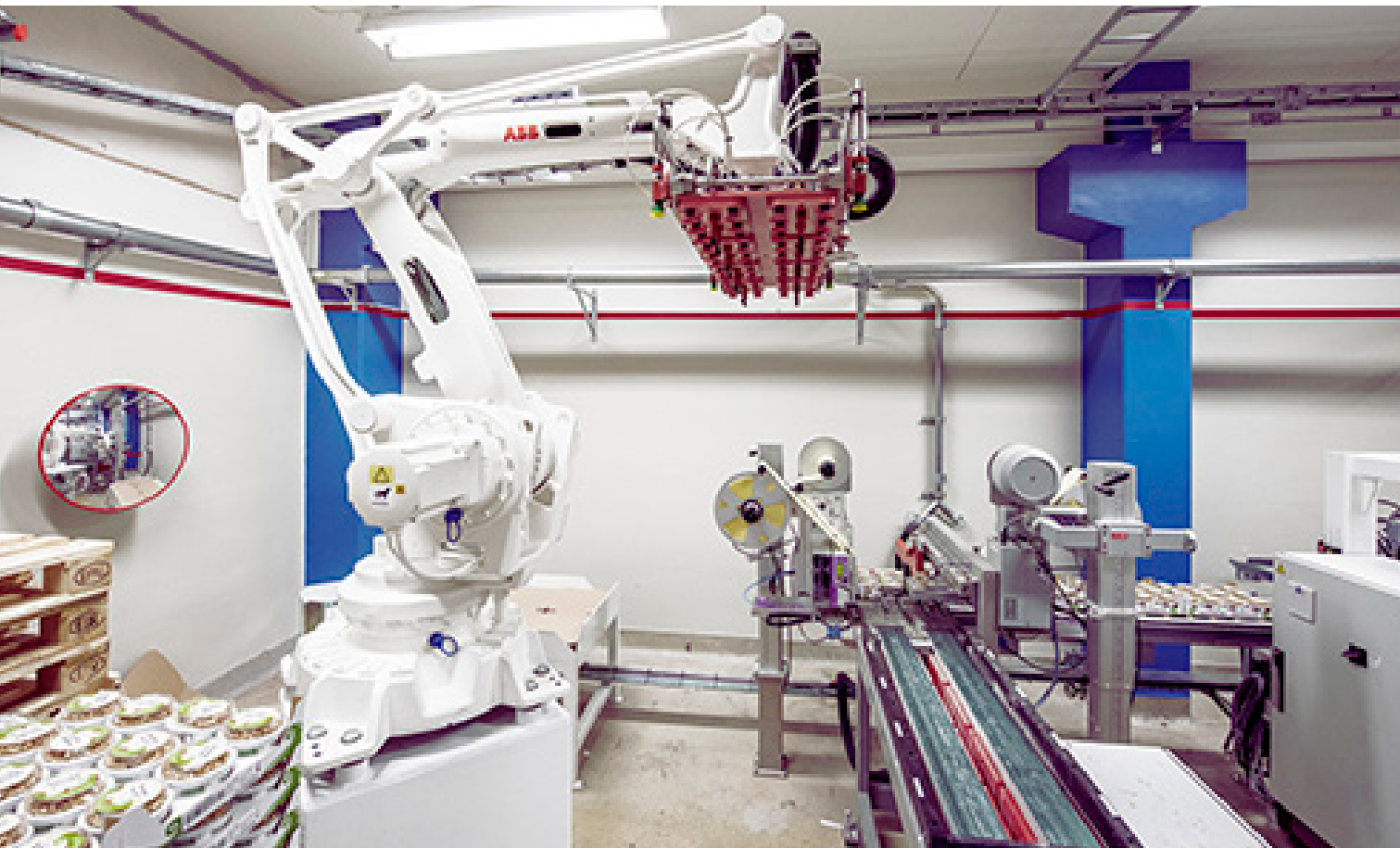
Front Automation works exclusively with robots from ABB, a choice that is due in part to the robots themselves and in part, perhaps more importantly, to the close collaboration and good support offered by ABB. Front Automation has installed roughly 100 robots in the past five years. The company can handle most applications and problems on their own, but sometimes they need to obtain support directly from the technical and development departments at the ABB robot factory. Production lines that use oatmeal, for example, cannot stop – oatmeal preparation continues no matter what – so if something malfunctions, the problem has to be resolved immediately, making rapid, effective technical assistance essential.

In addition to the tight schedule, the new product line had to be based on an existing product, Risifrutti, including the set dimensions and existing packaging. Usually, when a new production line is built, it is possible to influence the design of the product, but in this case, however, there was no such opportunity – the containers already existed and changing the factory to suit a new production line was not an option.

02 The IRB 460 takes the heavy lifting and repetition of many tasks away from workers.

03 The IRB 460 uses suction cups to lift the containers.

04 In 2015, Orkla Foods launched Havrefrutti, which also has a filled lid.



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The four-axis IRB 460 can lift 48 containers with their tray at a time, then stack the trays on the pallet with millimeter precision. One pallet fills in 10 mins, corresponding to a total of 8,500 products an hour.

#### IRB 460 – it all stacks up

The production line constructed at Orkla entails the containers being sent into a new cell where the lids are put on and the containers marked before being palletized such that they fit straight onto the grocery store's shelves. The machines also perform several other operations, so they need to be flexible enough to switch function easily and dependably.

The four-axis IRB 460, which can handle weights up to 110 kg, performs the final operations in the line. Using suction cups, it can lift 48 containers at a time, with their tray, then stack the trays on the pallet with millimeter precision.

When a pallet is full, the robot changes function and uses the gripper to lift the new pallet into place. The robot can fill one pallet in 10 minutes, corresponding to a total of 8,500 products/hour.

#### Flexible, experienced and local

Despite the challenging timescales and the technical hurdles that were presented, the line was successfully and safely installed and the product launch took place on time.

Yummifrutti never really found its place in the market, so, in its stead, in 2015, Orkla Foods launched Havrefrutti, which also has a filled lid. This is the product now being assembled, at a rate of two per second, in the line and stacked and palletized by the IRB 460. The switchover from Yummifrutti to Havrefrutti was achieved with minimal fuss thanks to the flexibility of the IRB 460 automation solution.

The collaboration between Front Automation, Orkla Foods, and ABB enabled the tight schedule to be met and the customer expectations to be fulfilled. The IRB 460 robot is by far the most significant component of the line and a major contributor to the success of the enterprise.

One important consideration was the cooperation between ABB and Front Automation, and the latter's experience in system integration. Further, the ready availability of suppliers located in Sweden with whom the customer can easily cooperate and who are available to provide support proved also to be a significant positive factor.

05 The containers are sent into a new cell where they are fitted with the plastic lid containing grains, labeled, palletized and retrieved. Everything is automated.



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