SUCCESS STORY FOOD

Economical solution for bakery production

Task

Fully automated dough scoring

Whereas the manual scoring of dough is still economically viable in small bakeries, such a procedure in the industrial production of baked items would soon prove to be prohibitive in terms of cost. A flexible robot cell from Dewilde Engineering in Belgium provides the perfect solution.

German rye bread, French baguettes, individual breakfast rolls – before they find their way into the oven, the dough has to be trimmed to size to prevent it deforming during baking. In the mass production of baked goods, such work cannot be done by hand.

For employees working on the production line, constantly cutting into moist dough would demand an inordinate amount of physical stamina and would involve associated health risks. For the company owner, manual labour of this kind is simply too time-consuming and therefore uneconomical.

Solution

Automation with high-speed robots

Belgian plant manufacturer Dewilde has developed a compact robot cell for this work with an ultra-responsive FASTpicker TP80 at its heart. The four-axis high performance machine from Stäubli manages up to 220 cuts per minute. Occupying only a three-metre stretch of the production line are

Customer benefits :

- Humanising the world of work
- Compact cell design with small footprint
- Superfast process with high-speed robots
- Outstanding productivity compared to manual processes

Automated cleaning and moistening of the knife.

STÄUBLI

The TP80 accurately slices the incoming items for baking according to predefined parameters.

the 3D position detector for the dough, an automatic changing station for the knives, a cleaning station and of course the robot itself.

The TP80 accurately slices the incoming items for baking according to predefined parameters. Data on the exact position of the dough is fed to the robot by an upstream laser scanner. The FASTpicker selects the right knife for each batch from the changing magazine. For applications where even 220 cuts per minute are not enough, Dewilde offers a cell with two TP80 robots which are then able to perform up to 440 cuts per minute.

Customer benefits

Economical production of bakery goods

The high-speed robots enable completely new plant designs in bakery production. The four-axis machine can handle large working spaces with a diameter of 1.6 meters and works at a precision of repeatability that clearly exceeds the plant specification of -/+0.05 millimetres in everyday practice. This high level of precision is guaranteed even after many thousands of hours of operation. These rigid-structure robots are designed to resist any signs of wear and tear – despite the constant exposure to this level of kinematics.

What is more, the wet room models easily meet the special requirements of the food industry. The HE models – HE stands for Humid Environment and refers to those robots specially modified for use in wet rooms or subject to spray water – are most suited for applications that require the highest hygienic standards. The liquids used in the food industry's daily cleaning processes cannot harm the sealed machines.

The HE option makes the TP80 ideal for food applications.

At the same time, it can be operated without loss of performance with NSF H1-class food-compatible oils. Another advantage of the globally unique kinematics: unlike delta robots, these models do not have to be positioned directly above the sensitive product, but can be set up at the side of the production line.

The FASTpicker selects the right knife for each batch from the changing magazine.

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