



2,4 MIO HOTDOGS PER DAY!

BRANCH OF INDUSTRY

food-processing industry

ITEM

system for separating prebaked buns

THROUGHPUT

100,000 buns/hour

SPECIAL TECHNICAL FEATURES

- has a conveyor belt equipped with a “zipper”
- Carryine conveyor system
- uses four six-axis, articulated-arm robots with 2,010-mm reaches

TASK

A manufacturer of baked goods assigned ASA Automatisierungs- und Fördersysteme the task of designing and building a conveyor system, complete with bun-separation hardware, to be situated between a baking oven and a packaging line. The system was to have a daily capacity of 300 metric tons of dough, processed into around 100,000 hot-dog buns per hour.

IMPLEMENTATION

The total system, which consists of four lines, each of which is equipped with a six-axis, articulated-arm robot that picks up entire rows of prebaked buns from baking pans and sets them down on a conveyor belt such that individual buns may be fed to the packaging machine that follows. Buns are picked up off 1.2 m x 1.2 m baking pans, on each of which five rows of sixteen buns each have been baked.

The shape of the buns makes their automated pickup a bit difficult, since they never all lie in the same position and orientation on the conveyor belt. Buns are thus initially positioned and oriented in rows, ready for pickup, ahead of the robot stations. The robots then pick up the rows of buns and set them down on the conveyor belt leading to the “Flowpack” machine, where buns are positioned on the conveyor belt such that they may be transported directly to the individual-packaging stage via the flexible Carryline conveyor system from ASA.

The system’s design is applicable to other types of products that have comparable properties and are manufactured in similar quantities. The only system components that are specific to the type of product involved are the robot grippers. A central PLC controls the system. The robots’ 2,010-mm reach has been optimally utilized by mounting them on permanent bases. At ASA, such limitations are explored at the engineering stage by running computer simulations.

BENEFITS

This new type of system has proven its worth in actual practice. ASA has meanwhile implemented many more such systems whose performance capabilities were usually tested in advance through computer simulations. Mechanically elaborate testbeds are thus a thing of the past.

