

Assembly

Case study: Containers, George Utz, Switzerland

Applications

- Injection Moulding
- Machine Tending
- Assembly

Products

- IRB 4400
- IRB 6600



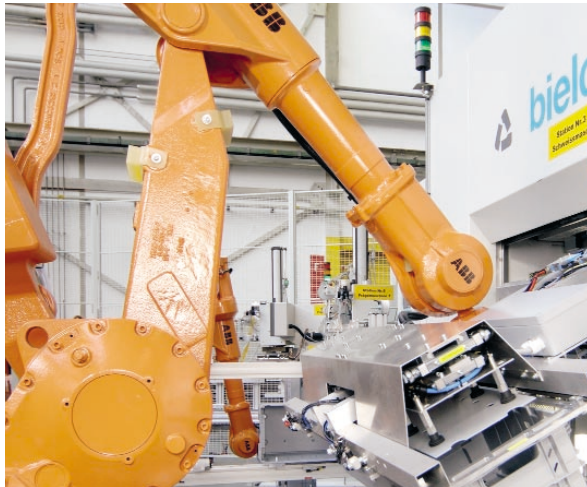
When the Swiss Post decided to further automate its letter handling and needed 2.4 million plastic containers as part of the process, it turned to materials handling specialist Georg Utz AG. The containers are not just strong, easy to stack and track, they are also ugly – the better to discourage thieves.

Since its founding in 1849, the Swiss Post has undergone a range of radical changes – everything from the first letters sent by train and airplane, to partial privatization in the late 1990s. The latest change, which started in 2006 and will continue to 2008, is the opening of three new postal centers as well as six sub-centers, where the processing of the letters will be mostly automated. The Swiss Post is investing around a billion Swiss francs in the redesign of its postal centers, and this major strategic project has become urgent due to the demands of the deregulation of postal mail. As part of the new plans, the Post has ordered 2.4 million letter containers from the plastics technology company Georg Utz AG, to be delivered within three years. In the future, the containers will replace the bags in which letters have traditionally been transported. “This is the largest order in our company’s history, which by now spans 60 years,” says Christoph Zimmermann,

production manager at Georg Utz AG, which is based in Bremgarten, Switzerland.

High demands

The 11-million-franc (eur 6.7 million) project will be quite a challenge for Utz. Along with the huge volumes ordered, several demands that pose special challenges for the company such as being to nest the empty containers to save space. They must also be capable of supporting loads of more than 15 kilograms for a long period without the plastic bottom sagging. In addition, every container must be equipped with a yellow marking that will serve as an orientation guide for stacking and with two barcode labels for unique identification. Last but not least, the Post made a highly unusual request: “The containers should be ugly, if possible,” Zimmermann says, smiling. There’s a very good reason for this, he says: “Dozens of containers are stolen every



day, because they're so useful in everyday life. In future, the Post would like to nip this in the bud."

Customization specialist

Meeting very specific customer requirements are a speciality for Utz. And so the Utz experts set out to design a "grey mouse" to join its other plastic container designs, albeit one with a sophisticated interior and stack and nest function. The post-processing of the production of the mail containers posed a new challenge for the team, however: The containers need to be fitted with the special requirements of the Post, i.e. double plastic bottoms, divider, yellow markings and barcodes in just a few seconds of cycle time. Whereas linear robots had been used by the company to execute rigid geometric workflows with any special fittings needed to be mounted by hand, for the new containers an articulated robot was capable of carrying out these complex tasks in the required time. Utz set the highest standard: The robots should have no more than 13 seconds to provide the injection-moulded containers with the specified functions. The answer was an ABB Robotic Unit, which was awarded the contract for the new robot system.

Off-line simulation

To solve the problems involved in the complex manufacturing of the containers, ABB project

manager Marcel Rieder conceived a sophisticated process using two IRB 4400 robots and one IRB 6600 robot using Robot Studio, ABB's simulation tool, which saved time and money. The task turned out to be relatively complicated. "We had to integrate many different functions and were only able to test the system onsite," Rieder explains. "The time requirement in particular turned out to be a tough nut to crack."

Tight cooperation for multiple tasks

The initial teething problems of integrating the robots into the overall system leave no trace today – the three ABB robots rub metal elbows in a small robot park: Robot No. 1 takes two reinforcement plates and two vessels from the conveyor belt and places them in the welding machine. Robot No. 2 takes the boxes and operates two stamping machines that apply yellow markings and the Swiss Post logo. Finally, robot No. 3 has its turn, inserting the divider, applying the barcodes that are later used by the sorting system to identify the containers, checking them and stacking the finished containers on the pallet. An Utz employee finally transports the pallets into the storage area in which the containers are stacked seven meters high until delivery. But not for long: since spring 2007, they are criss-crossing Switzerland filled with the mail of Swiss Post customers.

> FACTS

Facts about Georg Utz AG

The Georg Utz AG company in Bremgarten is one of eight subsidiaries of the company grouping contained under the umbrella of the Georg Utz Holding AG. One of the leading manufacturers of storage and transport containers and plastic pallets, Utz employs 750 staff worldwide, including 190 in Bremgarten, and had a turnover of 180 million Swiss francs in 2006.

Web site: www.georgutz.ch