Case Study

GUIDED CHANGEOVER SOLUTION REDUCED CAN LABELER CHANGEOVER DOWNTIME BY 50 %

- Reduce format change downtime.
- Improve ramp up of the production line after a completion of changeover.
- Reduce training requirements and the need for experienced personnel.
- Increase productivity and profitability.

A global leader in food manufacturing had a specific need to improve production efficiency. After evaluating and piloting they decided to implement the Balluff "Guided Changeover Solution" on a coffee can labeling machine.

The machine handles five different can sizes ranging from the smallest at 400 g to the largest at 1700 g. The substantial size variations make changing formats challenging, especially when moving between the smaller and larger can sizes.

This particular production line has a high commercial demand and requires operating 24 hours a day. The machine with its twelve change points had become a bottleneck during changeover process, making it vital to reduce downtime in order to produce the required demand.

The customer had previously implemented Single Minute Exchange of Die (SMED) exercises on other machines on the line and had observed significant improvements. Recognizing the additional increase in productivity possible, the Balluff solution was the next step in their ongoing improvement efforts.

It only required three steps for the customer to realize the full benefit of the Guideded Changeover Solution retrofit: Identify the changeover points or centerlines, select and install the appropriate sensors and create step-by-step instructions for the operators in the Guided Changeover Solution software.

After a short training session, the operators were able to work with it immediately. The Guided Changeover Solution software guides them step by step through the format change process (figure 1). Sensors provide immediate feedback about the change point positions and thus facilitate, accelerate and verify the correct settings of lengths, heights and widths.

With these instructions and the verification of the sensors, the required changeover time is now documented and consistent and not dependent on individual experience. Every change point is set correctly, fine tuning (tweaking) so no longer necessary. This not only significantly reduces the time for format changes, but also makes the ramp-up much faster. At the same time mistakes are avoided and less waste is produced (see figure 2).

The labeler in question is an older model from the 1980s, with limited automation capabilities. However, as the "Guided Changeover Solution" is a standalone solution that does not disrupt the original machine controls, it was easily retro-fitted, effectively extending the lifespan of the machine with minimal investment.

Thanks to the Balluff solution, the bottleneck in the format change process located in the labeler was successfully removed, resulting in a **significant decrease in format change downtime from 80 minutes to just 40 minutes.** As a result, the customer plans to implement the "Guided Changeover Solution" on additional machines to fully optimize the production line.

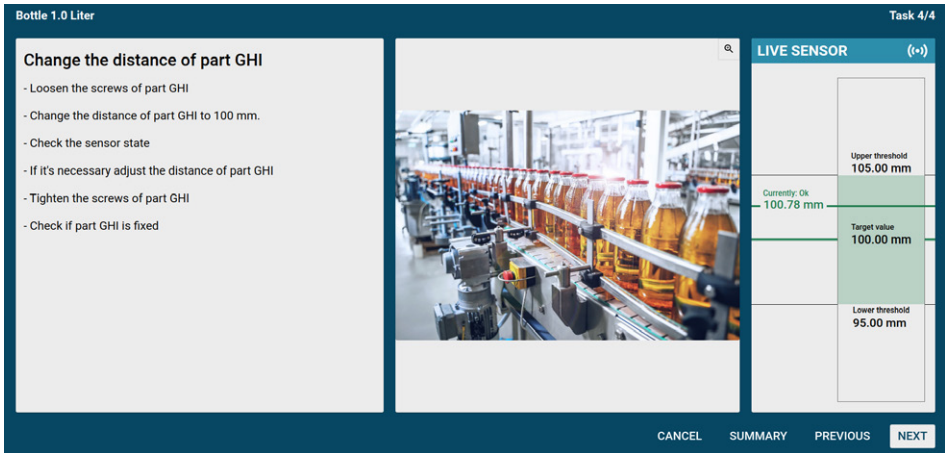

Figure 1
The Guided Changeover Solution operator guidance gives detailed instructions for each step during the changeover process.
The sensor feedback makes it very easy to set the distance correctly within the tolerances.

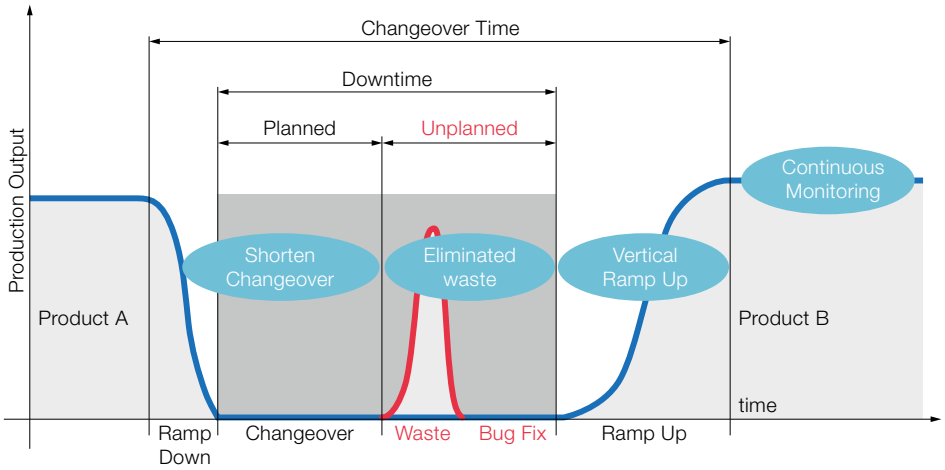

Figure 2
Typical format change process: With Guided Changeover Solution the customer decreased the planned and unplanned downtime, reduced waste and virtually eliminated the ramp-up time.

Customer statement

"We feel very comfortable with the solution and our operators have adapted well to it. The solution reduced the format change time from 80 minutes to 40 minutes. This was achieved through adequate training and coordination with Balluff. We will start implementing the solution in the next machine".

PRODUCTS




	BNI00EK	BNI0088	BTL1HWR	BOD002L
Description	Network block for Profinet	SmartLight, LED stack light	Linear position sensors	Photoelectric distance sensor




	BIP001F	BAE0116	BNI005E	BGS Software
Description	Inductive positioning systems	Power supplies for the control cabinet	Unmanaged switches	Guided Changeover Software