

Foodmek Change Parts Improve Filling Machine Efficiency for English Provender Company

Summary

The English Provender Company (EPC) contacted Foodmek to design, manufacture and install an improved container guidance system in their filling line.

The task was to help reduce filling machine downtime caused by container changeovers; and to reduce the number of container breakages.

Need Recognition and Evaluation

The English Provender Company, based in Berkshire, UK have been involved in the production of condiments since 1979.

They use Foodmek rotary filling machines to fill their products into containers.

These machines can accommodate containers of various shapes and sizes.

In order to ensure that the containers sit correctly during transition through the filling machine, guides are used; which must be re-positioned or changed-over when the container type is switched.

This arrangement results in machine downtime for each change of container type, and – in EPC's experience – misalignment of change-part guides led to breakages.

Existing change-part guides were designed to correspond with a specific set of hub-mounted starwheels.

These gave just enough clearance to allow for the transition of each container type/size, through the filling machine.

Each container changeover on the machine required bolting/unbolting and manual adjustment of the stainless steel guides via slotted mounting holes, by a trained engineer.

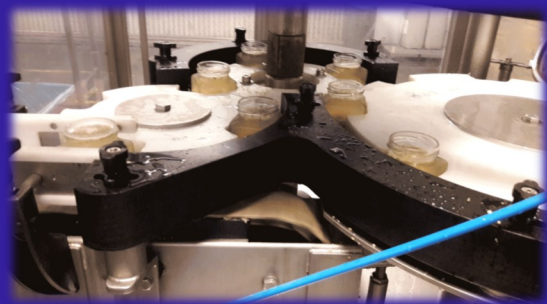
If the guide was incorrectly set, the containers could become trapped during the filling process, resulting in container breakages.

Carrying out this setting operation for six different container types/sizes, therefore, carried a significant resource cost for EPC, who subsequently made the decision that a new solution was required.

Solution

In December 2016, Foodmek Ltd undertook the design, manufacture and installation of six new sets of removeable plastic change-part guides.

The new interchangeable guides were designed to locate on pillars incorporating spring-loaded quick-release handles.



This solution allows the engineer to position the required guides onto the locating pillars, then lift and twist the handles to lock the guides in place.

While the radii of the guides around the starwheel vary according to the size of the container; the positions of the locating pillars remain at the same pitch diameter of the rotating turret.

Results

Changeover time between batches has been reduced by installing the new plastic guide system. The simple spring-loaded locking mechanism allows the engineers to secure the change-part guides by hand, without the need for tools.

Locating different guides onto common, fixed radially-positioned pillars gives the filling line more efficient container handling by eliminating setting errors.

The issue of misalignment causing container breakages inside the factory has thus been removed.