

FLC Handling Line

Köln – Germany



Automated folding container handling line

- Bespoke handling system
- Designed and engineered exclusively for Ford by Axiom
- Complex automation system complete with robotic systems
- Tipping systems
- Folding systems
- Lid fitting systems
- Stacking systems
- Turnkey solution



In a quest to increase productivity Ford recently installed an automatic container handling system at its Cologne plant that supports production of the Fiesta range.

The containers (known as FLCs) are used to supply parts to the assembly lines and once emptied, are returned to an area for processing before returning to the suppliers for replenishing. The containers are returned to the processing area often partially full of packing materials which have to be disposed of.

Axiom was awarded with the contract to design and manufacture a totally bespoke machine system to automatically remove the waste, fold the collapsible sides in the correct sequence, fit a dust cover and stack the containers ready for loading onto trucks. To complicate matters there was a need to handle both large full height as well as half height containers at random.

Containers are loaded onto the infeed conveyor where they queue before entering the tipping cycle. The containers are picked up by a hydraulically operated arm assembly and inverted over a conveyor hopper to allow waste to fall out.

Waste material is conveyed to a shuttle conveyor which moves to feed the material to one of two compactors. The emptied container is placed back on the conveyor where it travels to the folding machine where it is automatically unlatched and folded.

The units are positioned within clamps that hold the containers and lower each side in a particular sequence. Integral sensors check that the ends are folded correctly before the flat packed unit is released. As the machine is stationed adjacent to offices it was an important part of the project that this operation carefully placed the sides down without dropping them and causing unacceptable noise.

After folding the system divided into two routes. The half height containers do not require a dust cover fitting and therefore travel directly to their stacking station whereas the full height containers have to have a dust cover fitted before stacking.

An automatic machine stops the container and accurately positions it. Meanwhile, a dust cover is picked from the top of a magazine by vacuum pickups and placed on an intermediate table. Here the dust cover is squared up and accurately positioned ready for a second vacuum head to collect it and fit it to the waiting container.

Completed containers travel to stackers which build stacks of 7 containers ready for loading back into the trucks.