



Tetra Pak® Lid Unscrambler Unit A1



Application

The Tetra Pak® Lid Unscrambler unit A1 unscrambles, sorts and transfers unstackable lids for round containers.

Highlights

- Stainless steel design
- High level of automation
- Easy loading of lids

Working principle

The Tetra Pak® Lid Unscrambler unit A1 sorts unstackable lids in a random orientation out of a supply hopper into a defined orientation on a higher level. A continuously running conveyor has catch bars at the bottom of the hopper. Lids are carried out of the hopper and transferred into a vertical position. The lids are then sorted by a different centre of gravity, depending on their orientation on the conveyor. Lids with their backside facing the conveyor belt stay on the elevator, while all the others fall back into the

hopper. At the highest point of the conveyor the evenly oriented lids are transferred by an airstream to an exit gate. For short distances the lids are transferred to the lid chute of the filling machine by gravity. The unit is then placed beside the filling machine. For long distances, an air conveyor allows separation of the production and packaging areas.

There is a sensor in the conveyance between the lid unscrambler and the filling machine. If the sensor detects a backlog of lids, the unscrambler conveyor stops in a defined position without damaging lids, and starts automatically if lids are requested. The amount of lids in the hopper is detected by a sensor that indicates (optical, acoustic to operator or signal to upstream equipment for auto loading) the need of reloading.

Standard design

A robust stainless steel frame supports an L-shape plastic conveyor that carries the lids with catch bars to the highest position of the unit. The hopper in the lower part of the conveyor holds a large quantity of lids. It refills fast, to enable an automated supply of packaging material to the filling line. The main frame is swivel-mounted to adjust the inclination of the conveyor and, as a consequence, the tipping point of the lids onto the conveyor. An additional tool-free adjustable bump allows accurate fine-tuning to different lid qualities. On top of the unscrambler, several air nozzles create an airstream to transfer the lids through the exit gate into a connecting unit to the filling machine.

For an end-of-production clearance of the hopper, the blower can be turned off and lids discharged over the top into a box placed at the backside.

Layout

Machine Footprint

Length: 2,1m

Width: 1,2m

Height: 3,3m

Exit height: 2,8m

Main components

Optional equipment

- Polycarbonate cover for hopper
- Air conveyor for lids

Control panel

The Tetra Pak® Lid Unscrambler unit A1 can either be integrated in the filler PLC or equipped with its own PLC as a stand-alone unit.

Capacity

Up to 300 lids/minute (e.g. 6-wide filler)

Technical data

Electrical power

Connections 3 ~ 400 V, 50-60 Hz

Total consumption approx.- 1.5 kW

Main breaker 16 A

