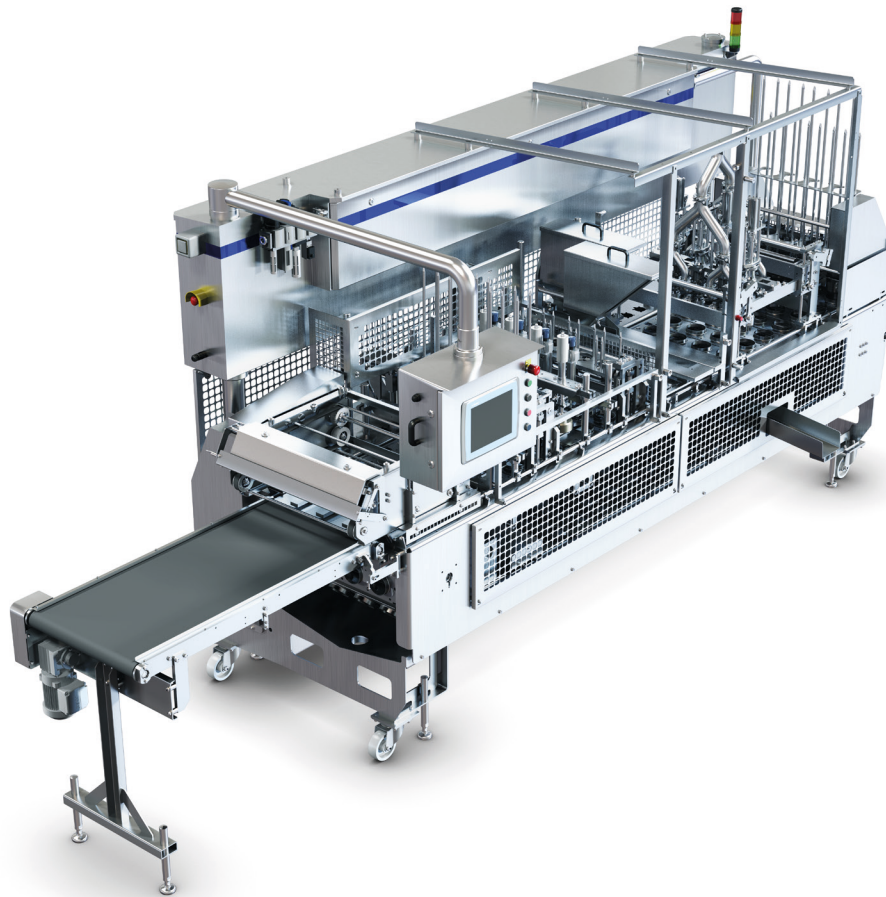


Tetra Pak® Ice Cream Smart Filler A1

Speedy, smart and small



APPLICATION

Tetra Pak® Ice Cream Smart Filler A1 fill ice cream, sorbet and water-ice products into cups, cones squeeze-up tubes and small bulk containers of varying design, shape and size.

HIGHLIGHTS

- Compact layout
- On-board control system
- Mobile for flexible use
- Solid and robust design

WORKING PRINCIPLE

The Tetra Pak® Ice Cream Smart Filler A1 has a robust, all-onboard frame which can be equipped with a variety of different stations to fulfil all ice cream production needs. Cups, cones, squeeze-up tubes or bulk containers are dispensed individually from bulk stacks and placed in the lamellas.

For cones, the chocolate sprayer sprays a precise amount of chocolate on the cone interior prior to filling.

Ice creams, sorbets and water-ices are filled by either time-lapse filling or by volumetric filling.

Decoration with a number of different viscous or solid ingredients is possible and a full range of optional decoration equipment is available.

A variety of lid-dispensers are available to match each product design. Heat sealing using pre-cut foil lids is also available.

After being fitted with lids and sealed, products are lifted up from the lamellas and transferred to an outlet conveyor belt or discharged in horizontal position on an outlet conveyor belt.

Automatic handling systems, such as a pick-and-place transfer unit for product transfer, e.g., to the trays of an extrusion hardener, are also available.

STANDARD DESIGN

Each filling machine is designed to meet the highest hygienic standards, including a one-piece stainless steel frame which prevents water traps and allows efficient hose-down cleaning. Different zones of the machine are separated to fulfil highest standards of product and operator safety. The drive system with cam driven lifting stations are located at the back side of the machine and sealed by large doors that can be removed for easy access and convenient maintenance. Also accessible from the back side is the electric cabinet, with all electric components to control the machine, on top of the basic frame. The cabinet for the pneumatic components is located back-to-back to the electric cabinet and accessible from the production zone. The routing for cables and hoses can be reduced due to the sidewise positioning of the cabinets were all connections are placed at the bottom. The reduced routing and short hoses support a precise timing and efficient cleaning. A lamella cleaning device is included in the standard setup.

Main drive for lamella conveyor and lifting stations:

All drive components are located inside the sealed frame and accessible from the back side. The indexing lamella conveyor is driven by a servo drive directly mounted on the conveyor shaft. To reduce maintenance of mechanical components, the servo motor for the main shaft is also directly mounted. The main shaft passes the whole length of the frame to allow a flexible positioning of the lifting stations with a minimum distance of 4". This is in-line with the lamella position. All lifting stations that drive the equipment in the production zone are linked to the main shaft and mechanical synchronized. The cams are optimized for their respective function.

The safety guarding fulfils all requirements according to CE regulations for highest operator safety. All guards are made of perforated stainless steel to allow a visible inspection of the processes. Certain areas are fast accessible by opening a safety-switch controlled door. Sensors on operator interfaces, like the lid magazine, detect the presence of material. That gives process reliability and operator safety by avoiding pinch points inside the magazine.

The machine is supplied as standard for the production of one product type. Optional equipment is available for other product types and sizes.

MAIN COMPONENTS

CUP FILLING

- Cup dispenser
- Cup control system
- Filling valves in different designs
- Wet topping
- Dry topping
- Heat seal lid dispenser
- Point sealer to secure accurate placement of the heat seal lid
- Heat seal station with spherical balancer coupling
- Closure lid dispenser
- Lid tamper
- Upright discharge unit onto inline belt conveyor

CONE FILLING

- Cone&Sleeve dispenser
- Sleeve control system
- Airless chocolate spray
- Filling valves in different designs
- Wet topping
- Dry topping
- Lid dispenser
- Crimping station
- Vertical ejection onto a round belt conveyor

OPTIONAL EQUIPMENT

- Ripple equipment
- Rotating filling nozzle
- Chewing gum dispenser
- Spoon dispenser
- Date coding (laser or inkjet)
- Dust exhaust system
- Horizontal discharge (upside-down)
- Single lane crosswise conveyor
- Lid chute for un-stackable lids
- Drip shield
- Others on request

CONTROL PANEL

Tetra Pak® Ice Cream Smart Filler A1 is controlled by an Allen Bradley CompactLogix PLC. It is controlled via a central PLC control system, enabling more accurate control and easier product change-overs. The PLC allows automatic start-up and end-of-production shutdown.

All programs for the different products/SKUs can be stored as an individual program. Relevant production data is shown on the touch screen display on the control panel. The control panel can be positioned either at the front or back end of the machine to facilitate operation and supervision in all setups and configurations. It is equipped with a large, user-friendly touch panel and recipe set-ups required for the various product SKUs (stock-keeping units). The PLC and touch screen operator panel makes it easy to optimize all settings individually for each SKU. It enables maximum repeatability by storing the data, and retrieving and activating it again the next time you produce the same product.

CAPACITY

LAMELLA SETUP:

Indexing pitch: 4", 6", 8", 12"

300 MM PRODUCTION ZONE/LAMELLA WIDTH (TYPICALLY 2-WIDE CONFIGURATION):

4" index pitch: up to 3-wide cone setup

6" index pitch: up to 2-wide (500 ml cups)

620 MM PRODUCTION ZONE/LAMELLA WIDTH (TYPICALLY 4-WIDE CONFIGURATION):

4" index pitch: up to 6-wide (e.g. small/basic cups)

6" index pitch: up to 4-wide (e.g. 500 ml cups)

6" index pitch: up to 2-wide (e.g. 1 l tubs)

Lamella configurations with an index pitch above 6" have to be validated in relation to the product dimensions. Multi-format-lamellas for fast change-over to a different product format are available.

CAPACITY UP TO: (PRODUCTS/HOUR)

1-wide tub/cup setup: 3 000

2-wide cone setup: 7 200

2-wide cup heat seal setup: 6 000

4-wide cup heat seal setup: 12 000

LAYOUT

Different machine lengths can be selected according to machine setup and available space:

COMPACT 2.0 M VERSION:

Compact footprint for basic products and all benefits of an inline filling machine.

STANDARD 2.6 M VERSION:

First choice for many variations of cup/cone products.

EXTENDED 3.5 M VERSION:

Suitable for additional equipment for filling and decoration.

MACHINE FOOTPRINT:

Length: Compact / standard / extended

Width: 300 mm / 620 mm lamella

Height: 2.4 m

TECHNICAL DATA

ELECTRICAL POWER

Connections	3 ~ 400 V, 50-60 Hz
Total consumption	approx.- 5 kW
Main breaker	32 A

COMPRESSED AIR

Supply pressure	6 bar
Total consumption V_N	1 600 l/h

WATER (LAMELLA CLEANING DEVICE)

Consumption (during cleaning)	36 l/min
-------------------------------	----------

