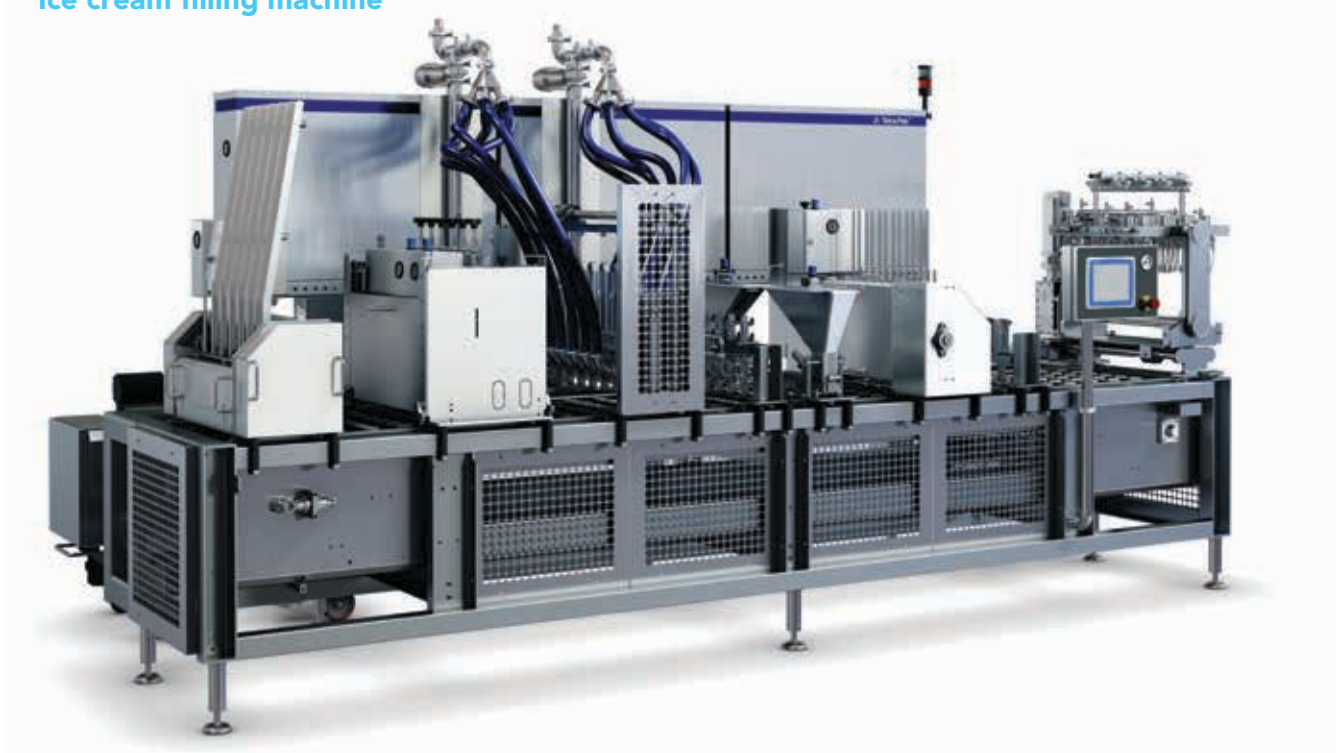




Tetra Pak® Ice Cream Filler A3

Ice cream filling machine



Highlights

The Tetra Pak® Ice Cream Filler A3 range of robust inline ice cream filling machines is based on hygienic design and the highest level of consistent product quality, enabling:

- Optimization of individual products
- Outstanding process repeatability
- Fast, safe cleaning
- Easy, flexible mounting and replacement of stations
- Very wide range of filling and decoration options
- Optional servomotor control

Application

The Tetra Pak® Ice Cream Filler A3 machines fill ice cream, sorbet and water-ice products into cups, cones, squeeze-up tubes and bulk containers of varying design, shape and size.

Operating principle

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 or extrusion filling.

For extruded ice cream, a cutting mechanism is also included.

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 is 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 or 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.

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Standard design

Basic machine

Tetra Pak® Ice Cream Filler A3 units are built on a robust stainless steel frame.

Each filling machine is designed to meet the highest hygienic standards, including a fully open frame which prevents water traps and allows efficient hose-down cleaning.

The machine is supplied as standard for the production of one product type. Optional equipment is available for other product types and sizes. An optional servomotor controls vertical filling motions for best shaping of tall fills as well as cup and cone filling without air voids, even with very different cup and cone angles and shapes.

Optional spray nozzles for lamella cleaning are recommended.

Lubrication-free, 70 mm pitch stainless steel conveyor chains carry the lamellas, which are mounted onto the chains with quick-locking screws for easy dismantling.

All the upper working stations are fitted on the conveyor frame, without fixing holes, which allows fast and easy positioning of the stations.

All filling, decorating and auxiliary equipment, including nozzles, hoses, drive station, etc., are designed for simple and quick disconnection – for easy product changeovers and effective cleaning.

The machines are available with two different indexing pitches: 140 mm for smaller products, and 210 mm, which can also handle larger family-size and bulk containers

Main drive

A frequency-controlled gear motor drives the main cam activating the vertical ejector movement. The linear movements of the lamella conveyors are mechanically synchronized from the main drive by an indexing mechanism.

An encoder provides a signal to the PLC for accurate control of the movements activated by air.

Control system

The unit 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.

The unit also allows pre-programming of up to 99 products.

Relevant production data is shown on the touch screen display on the control panel. The control panel is positioned to facilitate operation and supervision. 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.

Compressed air and vacuum system

For hygienic reasons, all pneumatic components are made from anti-corrosive, oil-free materials specially designed for use in the food industry. All valves are electrically activated seat valves and are built into stainless steel cabinets close to the equipment, above or next to the product zone.

The required vacuum for cup, container and lid dispensing is obtained through vacuum valves.

Standard equipment

The basic Tetra Pak Ice Cream Filler A3 can be provided with different sets of equipment for either cup, cone or container filling. The recommended configuration for each type of product is listed below:

Cone filling

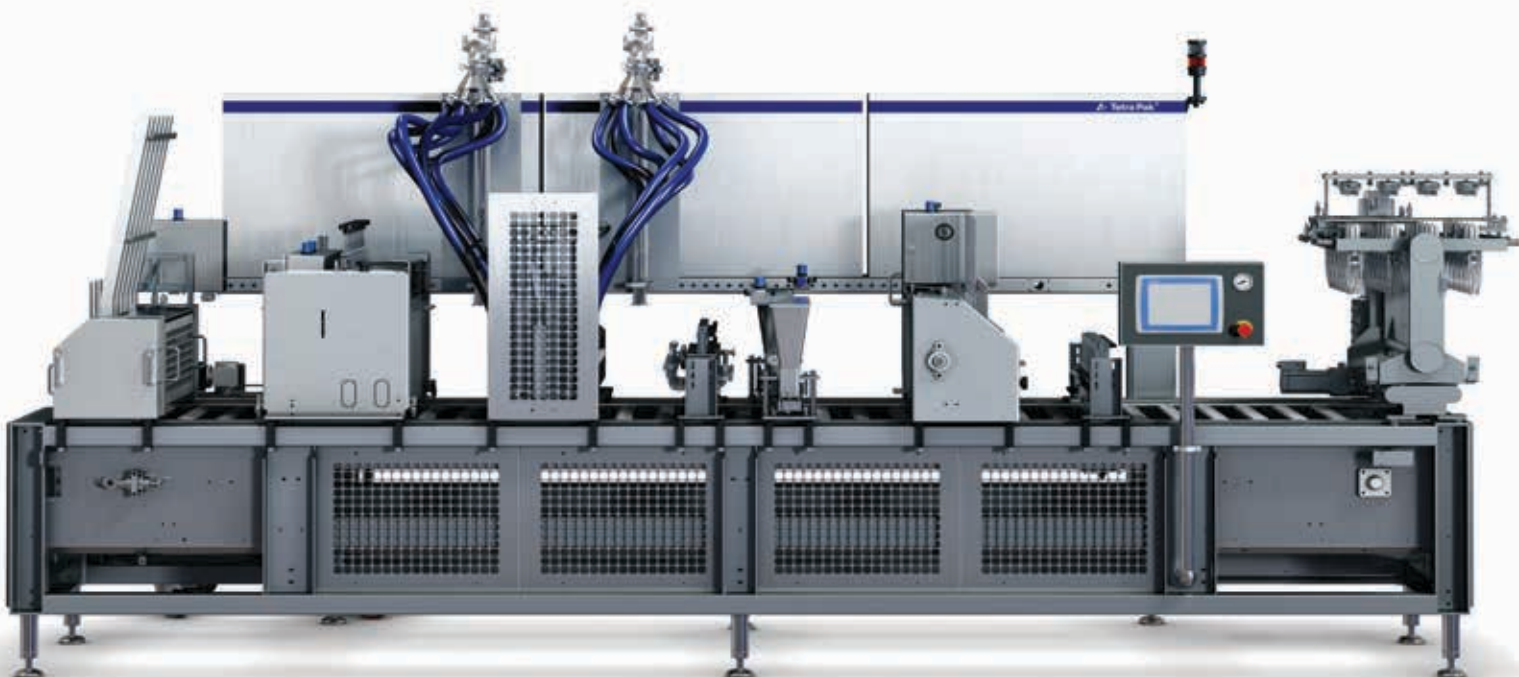
- 3-step cone dispenser
- Cone calibration
- Chocolate spray with tank and piston pump
- 2 flavour ice cream doser suitable for inclusions
- 2 by-pass valves
- Sauce topping
- Sauce pump station with double dosing pump
- Dry ingredients doser
- 2-side supported lid dispenser
- Paper cone pleating/crimping
- Vertical ejection
- Belt conveyor for cone transfer

Cup filling

- Cup dispenser
- 2 flavour ice cream doser
- 2 by-pass valves
- 2-side supported lid dispenser
- Lid pressing
- Vertical lift and transfer
- Belt conveyor for cup transfer

Bulk container filling

- Bulk/container dispenser
- 2 flavour ice cream doser
- 2 by-pass valves
- 2-side supported lid dispenser, snap-on lids
- Lid pressing
- Vertical lift and transfer
- Belt conveyor for container transfer



Optional equipment

In addition to standard equipment, many different types of optional equipment are available for dispensing, filling and decorating.

This enables a wide range of products to be produced.

Cone filling

- Airless chocolate spray, volumetrically controlled
- Ripple device for filler
- Doser for ice cream with concentric pattern
- Ice cream doser for 2-flavour windmill pattern
- Dynamic distribution system
- Rotating nozzles
- Rotating nozzles with ripple injection
- Decoration unit
- Pencil filler
- Chewing gum dispenser
- Dispenser for dome lids
- Date coding
- O-belt conveyor system
- Pick-and-place device
- Servo controlled vertical motion on filling station

Cup filling

- Ripple device for filler
- Doser for ice cream with concentric pattern
- Ice cream doser for 2-flavour windmill pattern
- Rotating nozzles
- Rotating nozzles with ripple injection
- Decoration unit
- Pencil filler
- Volumetric filler
- Liqueur doser
- Dry ingredients doser
- Cocoa powder doser
- Chewing gum dispenser

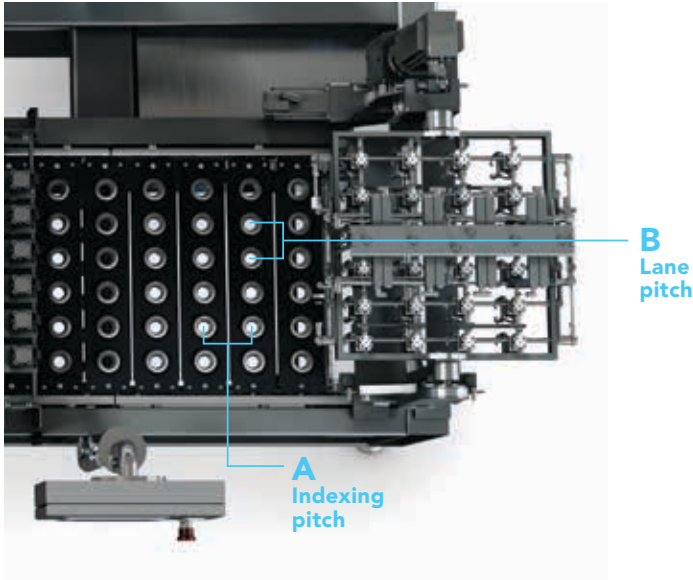
- Heat seal – pre-cut alufoil
- Lid dispenser for non-stackable lids
- Lid unscrambler for non-stackable lids
- Lid spinner
- Date coding
- Extended outlet conveyor
- Pick-and-place device
- Servo controlled vertical motion for filling station

Bulk container filling

- Doser for ice cream with concentric pattern
- Ice cream doser for 2 flavour windmill pattern
- Dynamic distribution system
- Rotating nozzles
- Rotating nozzles with ripple injection
- Ice cream doser for large inclusions
- Extrusion filler including cutting wire for cold cutting
- Optional heating element for cutting wire
- Decoration unit
- Heat seal – pre-cut alufoil
- Dispenser for dome lids
- Lid dispenser for non-stackable lids
- Lid unscrambler for non-stackable lids
- Lid spinner
- Date coding
- Pick-and-place device
- Servo controlled vertical motion for filling station

Other options

- Spray nozzle for lamella cleaning



Lamella configurations

Capacity for version with 600 mm production zone

Number of lanes	6 lanes	4 lanes	2 lane	3 lanes	4 lanes
A: Indexing pitch, mm (in)	140 (5.5)	140 (5.5)	210 (8.3)	210 (8.3)	210 (8.3)
B: Lane pitch, mm (in)	100 (3.9)	150 (5.9)	300 (11.8)	200 (7.9)	150 (5.9)
Capacity up to (products/hour)*	18 000	12 000	4 800	7 200	9 600

Number of station positions available

Compact/standard/extended version	23/32/37	23/32/37	16/21/24	16/21/24	16/21/24
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Max. product dimensions

Diameter, mm (in)	80 (3.1)	110 (4.3)	190 (7.5)	180 (7.3)	130 (3.1)
Rectangular, mm (in)	80 x 115 (3.1 x 4.5)	130 x 115 (5.1 x 4.5)	280 x 180 (11 x 7.1)	180 x 180 (7.1 x 7.1)	130 x 180 (5.1 x 7.1)

Max. product height

Cup, mm (in)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)
Cone, mm (in)	200 (7.9)	200 (7.9)	200 (7.9)	200 (7.9)	200 (7.9)

Capacity for version with 400 mm production zone

Number of lanes	4 lanes	3 lanes	2 lanes	1 lane	2 lanes	3 lanes
A: Indexing pitch, mm (in)	140 (5.5)	140 (5.5)	140 (5.5)	210 (8.3)	210 (8.3)	210 (8.3)
Capacity up to (products/hour)*	12 000	9 000	6 000	2 400	4 800	7 200
Number of station positions available (standard/extended version)	23/32	23/32	23/32	16/21	16/21	16/21

Max. product dimensions

Diameter, mm (in)	80 (3.1)	110 (4.3)	120 (4.7)	190 (7.5)	185 (7.3)	110 (4.3)
Rectangular, mm (in)	80 x 115 (3.1 x 4.5)	110 x 115 (4.3 x 4.5)	190 x 115 (7.1 x 4.5)	380 x 180 (15 x 7.1)	185 x 180 (7.3 x 7.1)	110 x 180 (4.3 x 7.1)

Max. height of the product

Cup, mm (in)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)	130 (5.1)
Cone, mm (in)	200 (7.9)	200 (7.9)	200 (7.9)	200 (7.9)	200 (7.9)	200 (7.9)

* Actual capacity is dependant upon a number of factors, including shape and volume of the product as well as filling and sealing.

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Technical data

Power connections	
Standard	3 x 400 V /50-60 Hz
Optional	According to customer request

Consumption	
Main motor	1.5 KW
Outlet belt conveyor	0.37 KW
Total power	3.50 KW

Main breaker	67 AMPS
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Compressed air	
Working pressure	6 bar (87 psi)
Consumption	1 700 n l/min (60 ft ³ /min)

Chocolate equipment

Container volume	25 l (6.6 US gal)
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Dosing volume per unit	
Coating	35 ml per stroke
Decoration	35 ml per stroke

Main dimensions (Compact – 3.8 m version)	
Length	3 790 mm (149")**
Width	1 824 mm (72")
Height	2 637 mm (104")

Main dimensions (Standard – 5.0 m version)	
Length	5 050 mm (199")**
Width	1 824 mm (72")
Height	2 637 mm (104")

Main dimensions (Extended – 5.8 m version)	
Length	5 750 mm (227")**
Width	1 824 mm (72")
Height	2 637 mm (104")

Shipping data* (Standard – 5.0 m version)	
Volume	10 m ³ (353 ft ³)
Gross weight	2 780 kg (6 130 lbs)
Net weight	2 000 kg (4 410 lbs)

* Equipment is shipped in appropriate export packaging. The data listed above is for the Standard 5.0 m version and should be considered as a guide only as variations may occur.

** Length is exclusive conveyor.

