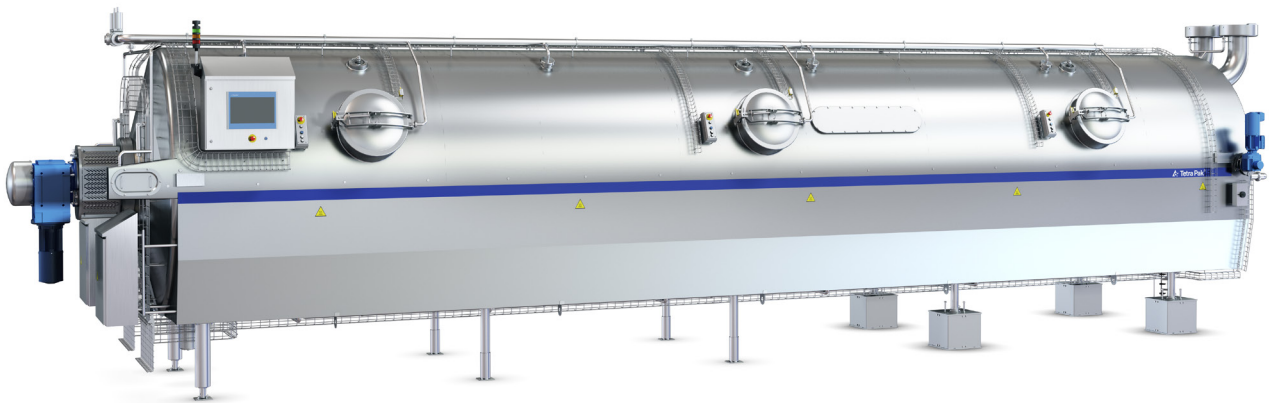




# Tetra Pak® Grainy Cheese Vat E4

Efficient production of grainy cheese



## Application

Tetra Pak® Grainy Cheese Vat E4 is advanced, highly automated equipment designed to perform process of curd making in cheese production lines. It is dedicated to diverse types of fresh and soft cheeses characterized by delicate curd and regular curd size, like for example cottage cheese.

The Tetra Pak® Grainy Cheese Vat E4 is focused to maximize production efficiency, protect high product quality, and lower labor cost.

## Highlights

- Completely automated/controlled production process
- Precise curd size
- High hygiene level and extended shelf life
- Gentle temperature treatment of cheese curd to prevent overheating
- Repeatable product quality
- Minimal operating cost
- Minimum loss of curd
- Possibility to upgrade recipes
- Minimum maintenance

## Working principle

Tetra Pak® Grainy Cheese Vat E4 is a unit used for the batch production.

The process can be divided into the following main steps:

- Filling
- Inoculation
- Coagulation
- Cutting
- Curd treatment - heating and stirring
- Emptying
- Cleaning-in-place (CIP)

Production starts by filling the unit with milk through the bottom tank valve to avoid foam creation. The amount of milk is measured by a volumetric flow meter. After filling, additives are introduced manually, with use of automatic agitation ensuring even distribution. The coagulation process starts. The cheese master is deciding when to start cutting the coagulum.

The vat is designed to cut curd into cubic shape. The longitudinal and transverse cut is made automatically.

After this rest of the production process is realized automatically according to parameters set in the production recipe. Production steps include:

- Heating by means of circulating hot water through the dimple jacket, there are three steps of heating with different  $\Delta T$  available to the user.
- Mixing, every production step can have a different speed and angle of mixing.

After the cheese curd is ready the cheese master ends the heating and mixing process. Ready curd is emptied from the Tetra Pak Grainy Cheese Vat E4. During the emptying process, the angle of mixing is regulated via a pressure transmitter installed in the bottom of the unit. During the end of emptying the back of the equipment is lifted to ensure that all the curd leaves the vat.

By applying the individual production parameters specified for a particular recipe, the Tetra Pak® Grainy Cheese Vat E4 can produce various types of products with distinct properties. These products may include cottage cheese and fresh (soft) cheese, for example.

## Single unit for multiple processes

Installing the option of whey draining screen allows to perform curd washing and curd cooling process steps in the vat. Option supports start small and expand later concept and can be used in limited floor space cases.

## Standard equipment

### Vat module

- Housing made of AISI 304 stainless steel
- Heating dimple jacket
- Rock wool thermal insulation with stainless steel coating
- Longitudinal and transverse cutting harps
- Steering paddles
- CIP nozzles with interconnecting pipework
- Prewired and tested sensors including temperature transmitters, position sensors, etc.
- Gearmotors
- Control panel in stainless steel including process controller (PLC) with integrated safety function, solenoid valves, touch panel, variable frequency drivers, etc.
- Safety system
- Pneumatic, remote-controlled sanitary valves
- PlantMaster
- USDA design

### Optional equipment

- Heating skid
- Whey draining screen
- Sterile air connection
- IO link

## Technical data

### Control system

The Tetra Pak Grainy Cheese Vat E4 is pre-programmed unit ready to communicate with supervisory systems.

The vat is operated by HMI touch panel located on the electrical cabinet. All process relevant parameters are accessible and can be easily adjusted by recipe manage.

### Capacity

- 6 000 l
- 12 000 l
- 18 000 l

### Curd cutting sizes

- 8 mm
- 10 mm
- 12 mm

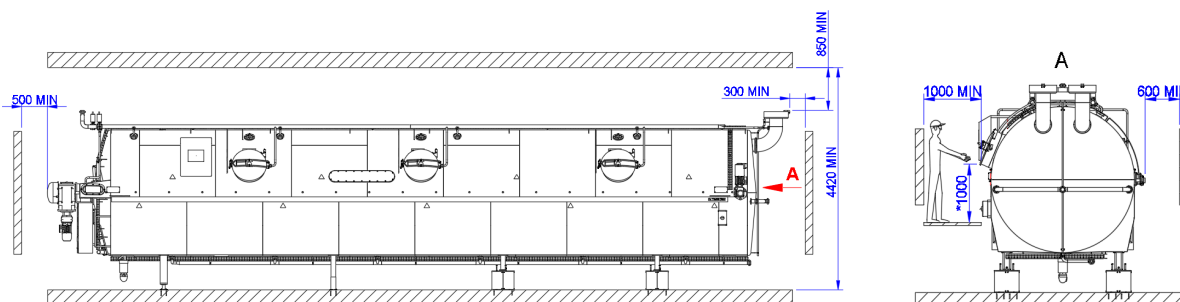
### Consumption data

Capacity, liters	18 000
CIP	25-30 m <sup>3</sup> /h
Electrical power	4 kW, 400 V, 50 Hz

Values are average and subject to process parameters.

## Dimensions and capacities

Capacity	Length	Width	Height	Weight net	Weight gross
6 000 l	6 460 mm	3 055 mm	3 570 mm	5 500 kg	11 500 kg
12 000 l	10 460 mm	3 055 mm	3 570 mm	8 500 kg	20 500 kg
18 000 l	14 460 mm	3 055 mm	3 570 mm	10 500 kg	28 500 kg



\*Keep the height of the platform to the manhole 1 000 mm the same for all manholes of the device.

Example layout of the Tetra Pak® Grainy Cheese Vat E4 with maintenance area.