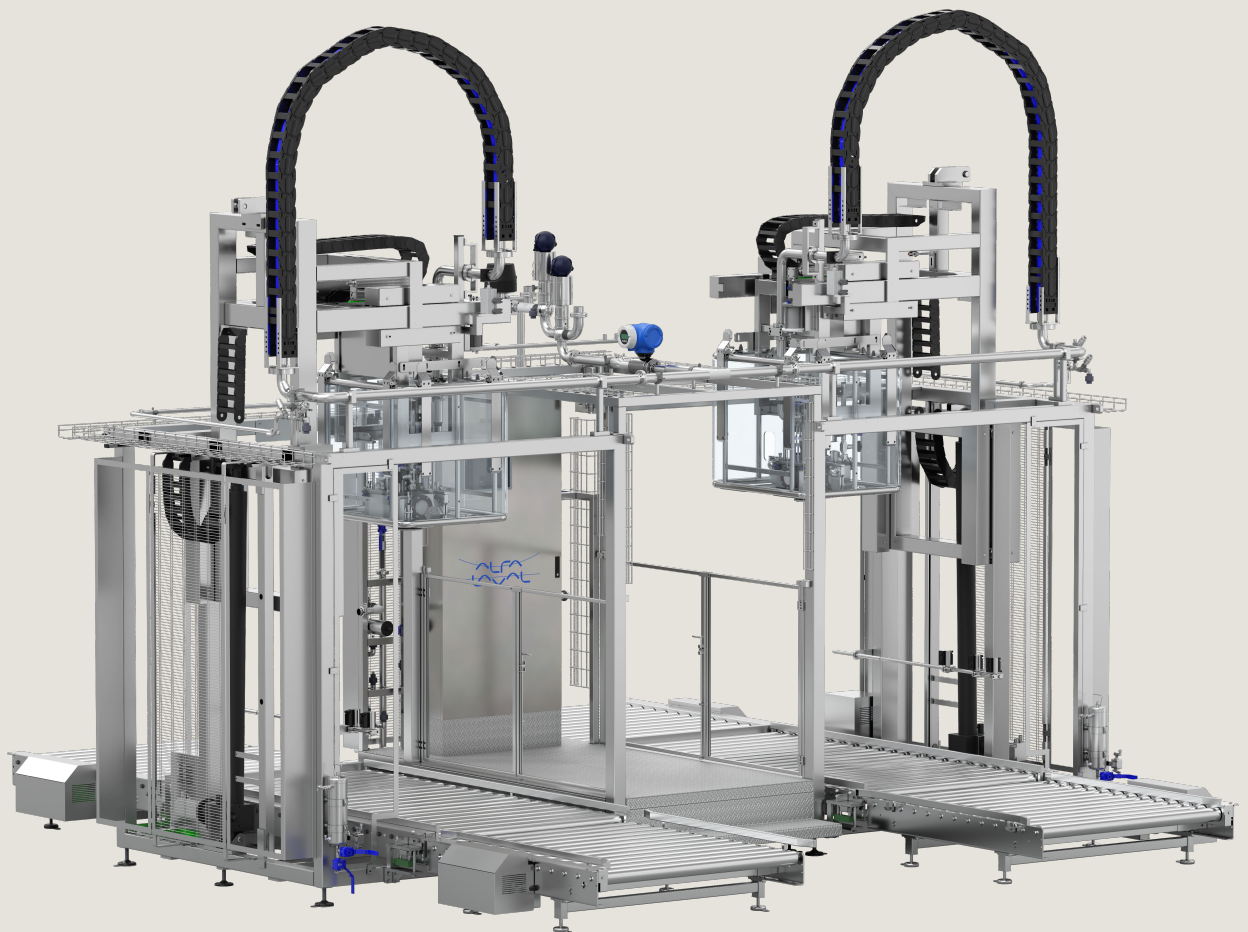




Alfa Laval Thousand-litre aseptic filler

Thousand-litre aseptic filler for the food and beverage industries



Introduction

The thousand-litre aseptic filler is a filling system designed for filling of a wide range of food and beverage products into appropriate containers under aseptic conditions.

Application

Thousand-litre aseptic fillers are particularly well suited for the filling of liquids as well as dense, low-acid and viscous products that contain particulates.

Benefits

- Alfa Laval Astepo fillers are proven solutions based on 30 years of experience in aseptic processing.
- A fail safe system continuously controls the sterile conditions.

Design

The thousand-litre aseptic filler is designed specifically to fill 1000 litre (300 gallons) bags in palletizable containers. With the appropriate optional equipment and accessories thousand-litre aseptic fillers can also be used to fill:

- 220 litre (55 gallons) bags in drums
- 5–20 litre (1–6 gallons) bags
- 4 bags 220 litre (55 gallons) in drums on pallets
- 240/400 litre (65/105 gallons) bags in carton boxes, double containers or in special designs.

With a 1 inch filling head the thousand-litre aseptic filler is ideal for filling liquid, dense and viscous products.

With a 2 inch filling head the thousand-litre aseptic filler is ideal for filling products containing particulates.

Standard configuration

- Supporting frame made of AISI 304 stainless steel
- AISI 304 stainless steel filling head
- Parts in contact with the product made of AISI 316 stainless steel
- CIP circuit and sterilization circuit made of AISI 304 stainless steel
- Steam treatment and distribution group
- Magnetic flow meter
- System for removal of any condensate from the filling head, using suction
- Motorized roller conveyor for loading pallets with empty drums and unloading pallets with full drums
- Operator platform and non-slip stainless steel access steps
- Electrical panel made of IP55 stainless steel. This contains the PLC control and running system, operator panel, electrical and electro-pneumatic automation systems, as well as a modem option for remote maintenance
- Diagnostics recorder with removable memory card.



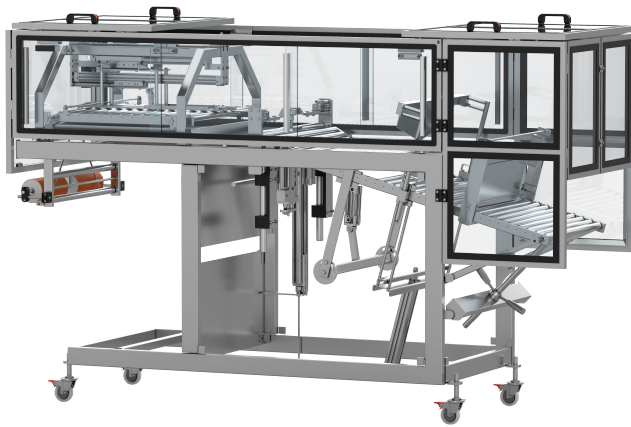
Steritank aseptic tank.

Options

Steritank: An aseptic tank 'Steritank' is recommended when thousand-litre aseptic fillers are installed as single-head and double-head fillers fitted with an automatic bag feeder for liquid, dense and viscous products. Having the product accumulate in a Steritank allows the sterilizer to operate continuously. This then makes it possible to avoid recycling the product while the full bag is being removed and a new, empty bag is being inserted.

Mobile head: The traverse of the head is synchronized with the roller conveyor for filling 4 drums on pallet.

Mobile table: For 5–20 litre (1–6 gallons) bags. The mobile table is installed on the supporting framework of the filling head. In the case of a small production of 5–20 litre (1–6 gallons) bags (less than 100/hour) the conveyor ensures better distribution of the product in the bag.



Automatic bag feeder (ABF).

Automatic bag feeder (ABF): For web type bags from 5–20 litre (1–6 gallons). Adding an ABF is necessary when the production in bags of 5–20 litre (1–6 gallons) is greater than 100/hour.

Weight dosing: Thousand-litre aseptic fillers can be equipped with a flowmeter or load cells for measuring the weight of the filling batch.

Label printing: Label printing system makes it possible to print both weights and customized data on standard adhesive white labels supplied from a continuous reel.

Working principle

Prior to filling, there is a fully automatic phase that features the cyclic action of the valves in contact with the product, CIP circuit valves and jets of steam. If an alarm is triggered during this automatic phase the time counter is automatically set to zero and does not restart until the condition that triggered the alarm has been reset.

This is followed by a fully automatic phase in which overheated water (from a sterilizer) or steam (optional) is used for sterilization, with the cyclic action of the valves in contact with the product, sterilization circuit, and jets of steam. If an

alarm is triggered during this automatic phase the time counter is automatically set to zero and does not restart until the condition that triggered the alarm has been reset.

Once the bag neck (for bags with capacities of 5–1000 litre (1–300 gallons) is manually inserted into the filling head, the automatic cycle of opening, filling and closing begins. During this cycle the temperatures of the jets of steam and of the filling valve are carefully monitored and controlled.

For 1000 litre (300 gallons) bags the product begins entering the bag with the filling head in the down position. Particularly in the case of viscous products this solution guarantees that the bag is filled evenly, which helps prevent any folding of the corners.

If an automatic bag feeder (ABF) is used to load 3–20 litre (1–6 gallons) bags, the automatic loading, opening, filling and closing of the full bag and loading of the next bag begin after the “START CYCLE” button is pressed (only with 1-inch filling head).

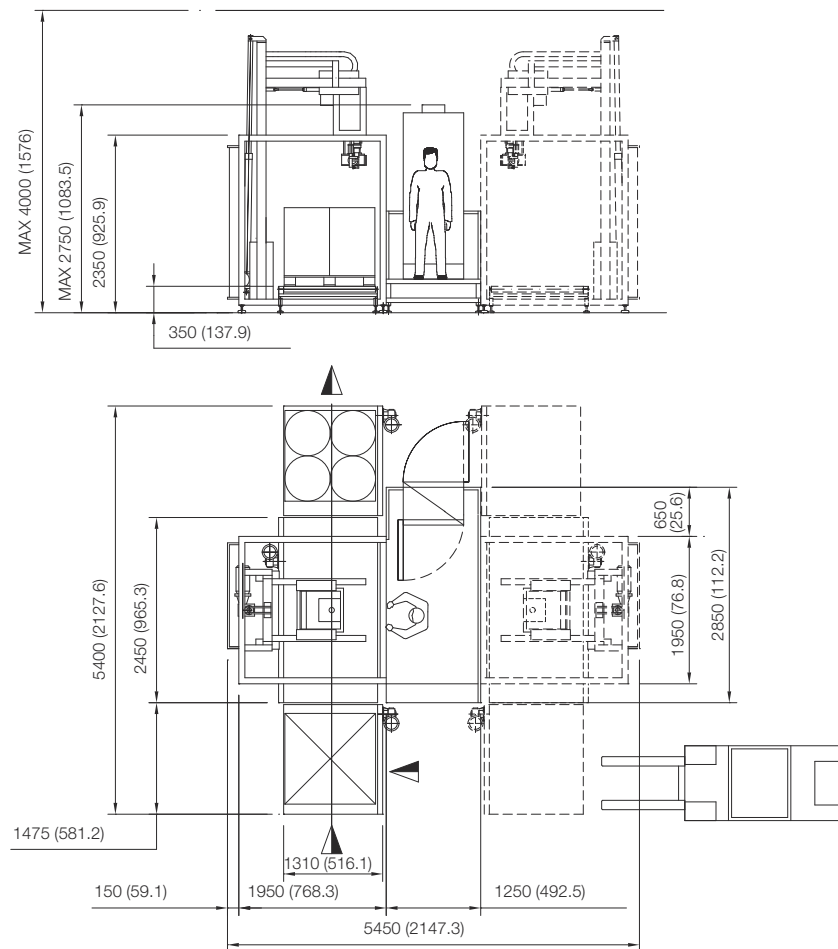
Technical data

- Aseptic valves mounted on the product pipe.
- The product pipe is equipped with articulated joints to allow for the up/down movement of the head.
- Control of the filling batch is carried out by the volumetric dosing of the flow. This allows a final accuracy of less than $\pm 0.5\%$ when filling liquid, dense and viscous products.
- Alarm signals are provided in visual form on the operator's screen.
- Temperature monitoring and controls are carried out by a PT 100 unit connected to the PLC, and the results are displayed on the operator's screen.

Note: If the thousand-litre aseptic filler is connected to an Alfa Laval sterilizer, the PLC and the operator's screen are installed on the control panel of the sterilizer so that the entire line can be controlled from a single central unit in real time.

Dimensional drawing

mm (inch)



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