

Alfa Laval Astepo CAF Filler

Compact aseptic filler for use in the food and beverage industries



Introduction

The Alfa Laval Astepo compact aseptic filler (CAF) is designed for filling products into appropriate containers under aseptic conditions.

Application

The CAF filler is particularly well suited for the filling of liquids (such as ready-to-drink juices), dense, low-acid food and

beverage products (such as milk, flavoured milk, milk shakes and sundaes, vegetable and meat extracts) and viscous products containing particulates (such as fruit, citrus and tomato concentrates, syrups and extracts).

Benefits

Alfa Laval Astepo fillers are based on 30 years of experience in aseptic processing. A fail safe system is continuously controlling the sterile conditions. In case of an unexpected risk of sterility loss the equipment aborts production and notifies the operator. The PLC allows to return to production mode only after all the parameters necessary for sterility have been reset successfully.

Design

The CAF filler is pre-assembled and tested as a plug-and-play filler system. The hygienic performance of the dosing valve has the appropriate certification, and the moving parts are protected by hot or cold aseptic barriers.

The CAF filler is built on a strong AISI 304 stainless steel supporting mono-block frame for a 20 inch container and fitted with an operator platform.

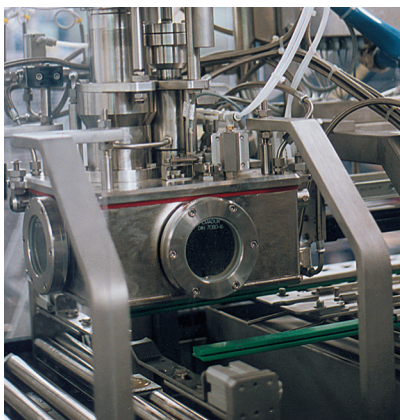
The CAF filler is designed with accessories suitable for filling 3–20 litre (1–6 gallons) bags, 200 litre (55 gallons) bags in drums, or 1000 litre (280/300 gallons) in carton boxes over pallets.

With the 1 inch filling head, and accessories for 1 inch caps, the CAF filler is ideal for the filling of liquid, dense and viscous products, and even low-acid products. With the 2 inch filling head, and accessories for 2 inch caps, the CAF filler is ideal for the filling of products containing particulates. The filling head is made of AISI 304 stainless steel.

Parts in contact with product are made of AISI 316 stainless steel. CIP circuit, sterilization circuit and product circuit made of AISI 304/316 stainless steel.

The electrical panel is made of IP55 stainless steel. It contains the PLC control and running system, operator panel, electrical and electro-pneumatic automation systems, as well as an option for remote maintenance.

The CAF filler is fitted with a magnetic flow meter and a diagnostic recorder with removable memory card.



Filling head

Options

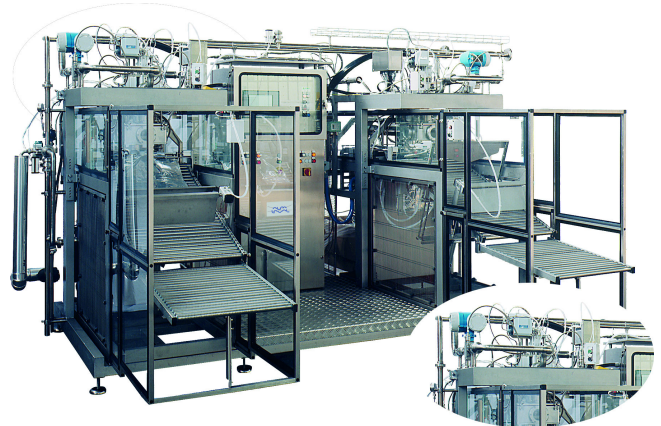
- Mass flow meter(s) or balance(s)
- Label printer.

Working principle

Before the filler is used it is automatically washed and sterilized. This procedure is fully automatic, consisting of a CIP phase followed by a sterilization phase, both featuring cyclic action of the valves in contact with the product, the circuit valves and jets of steam. In both phases the time counter is automatically set to zero if any alarm is set off, and does not restart until the condition that triggered the alarm has been reset.

The automatic cycle of opening, filling and closing begins once the bag neck has been manually inserted into the filling head. During this filling cycle, the temperatures of the jets of steam and of the filling valve are carefully monitored and controlled. For low-acid products disinfectant is added as an aerosol spray.

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.



CAF filler with dual heads and dual automatic bag feeder system.

Technical data

- Aseptic-type valves mounted on the product pipe.
- Control of the filling batch is carried out by the volumetric or ponderal measuring of the flow. This allows a final accuracy of less than $\pm 0.5\%$ when filling liquid, dense and viscous products.
- Alarm signals, which are numbered and described, are visible 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.

Aseptic tank/number of filling heads: The use of an aseptic tank is recommended for single-head CAF fillers and also double-head CAF fillers fitted with an automatic bag feeder for liquid, dense and viscous products.

Having the product accumulate in a special aseptic tank 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.

A) Automatic bag feeder for web-type bags from 3–20 litre (1–6 gallons): This is a mobile accessory that can be inserted under one or two filling heads for automatic filling of web-type bags with the 1-inch head. It is possible to reach filling speeds of up to 350 bags per hour (CPH) (3-litre bags) or 200 CPH (20-litre bags) without an operator.



CAF filler with 3–20 litre (1–6 gallons) automatic bag feeder (right head) and mobile roller conveyor (left head).

B) Mobile roller conveyor for 3–20 litre (1–6 gallons) bags:

This is installed on the supporting framework for the filling head. In the case of manual filling of 3–20 litre (1–6 gallons) bags, use of this conveyor is recommended to ensure better distribution of the product in the bag.

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

C) Accessories for the filling of 200 litre (55 gallons) bags in drums:

- Mobile filling head that can be lowered by 400 mm (15.7 inches) during the filling phase to ensure better distribution of the product within the bag and to reduce manpower costs. It also helps avoid exerting undue stress on the structure of the bag.
- Two clamps to support the bag and avoid excessive force on the weld between the bag and the neck.
- Motorized roller conveyor that makes it easier to replace the full bag with an empty bag.

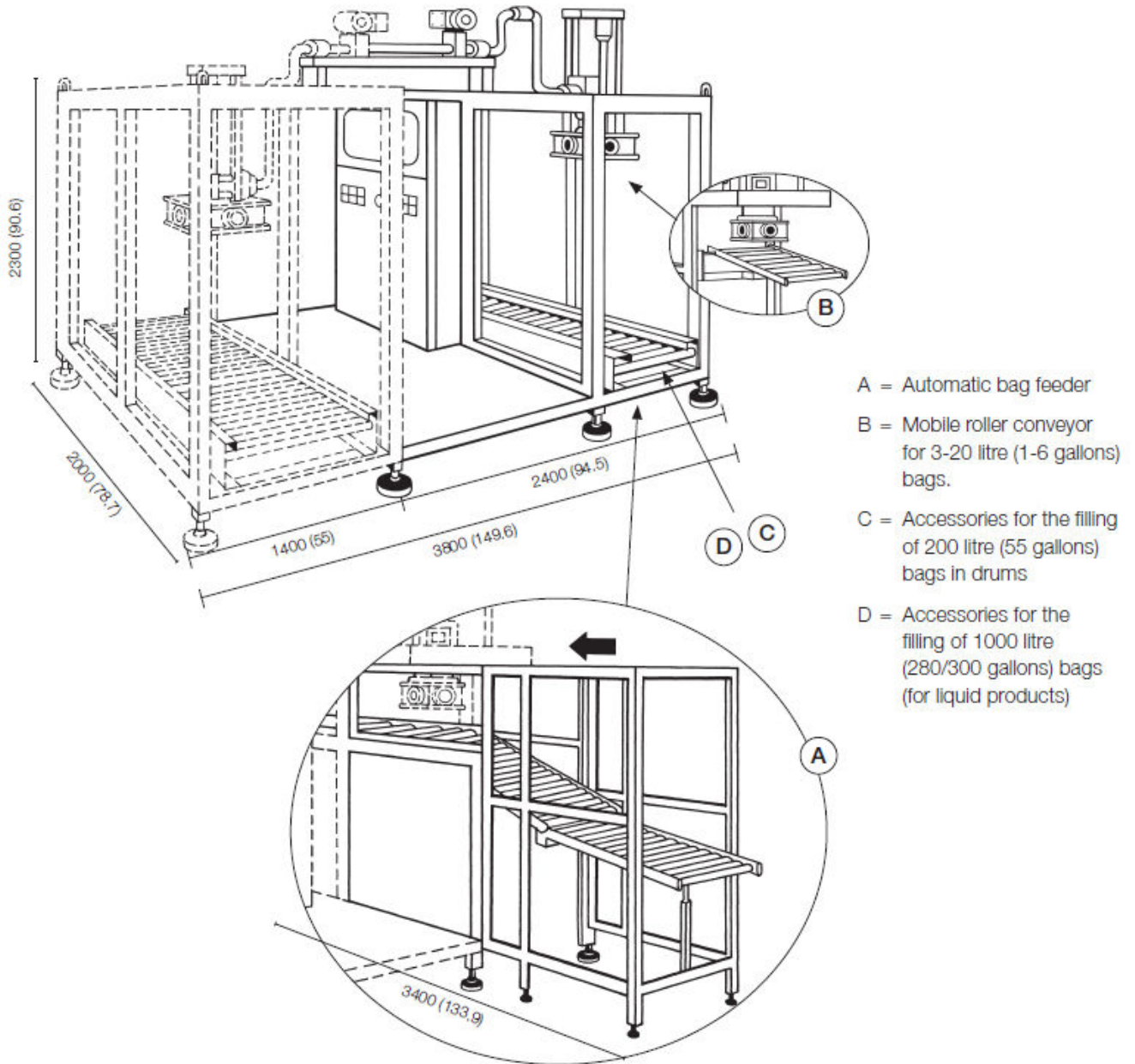
D) Accessories for the filling of 1000 litre (280/300 gallons) bags (for liquid products):

- Wider frame.
- Motorized roller conveyor (1300 mm [51.2 inches] wide) that makes it easier to replace the full container with an empty container on a pallet.



CAF filler with 200 litre (55 gallons) drums.

Dimensional drawing



Weight	kg (lb)
CAF single head / 1-2 inch	1200 (2645)
CAF single head / 1-2 inch + automatic bag feeder system	1500 (3307)
CAF dual heads / 1-2 inch	1800 (3968)
CAF dual heads / 1-2 inch + dual automatic bag feeder systems	2350 (5181)

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