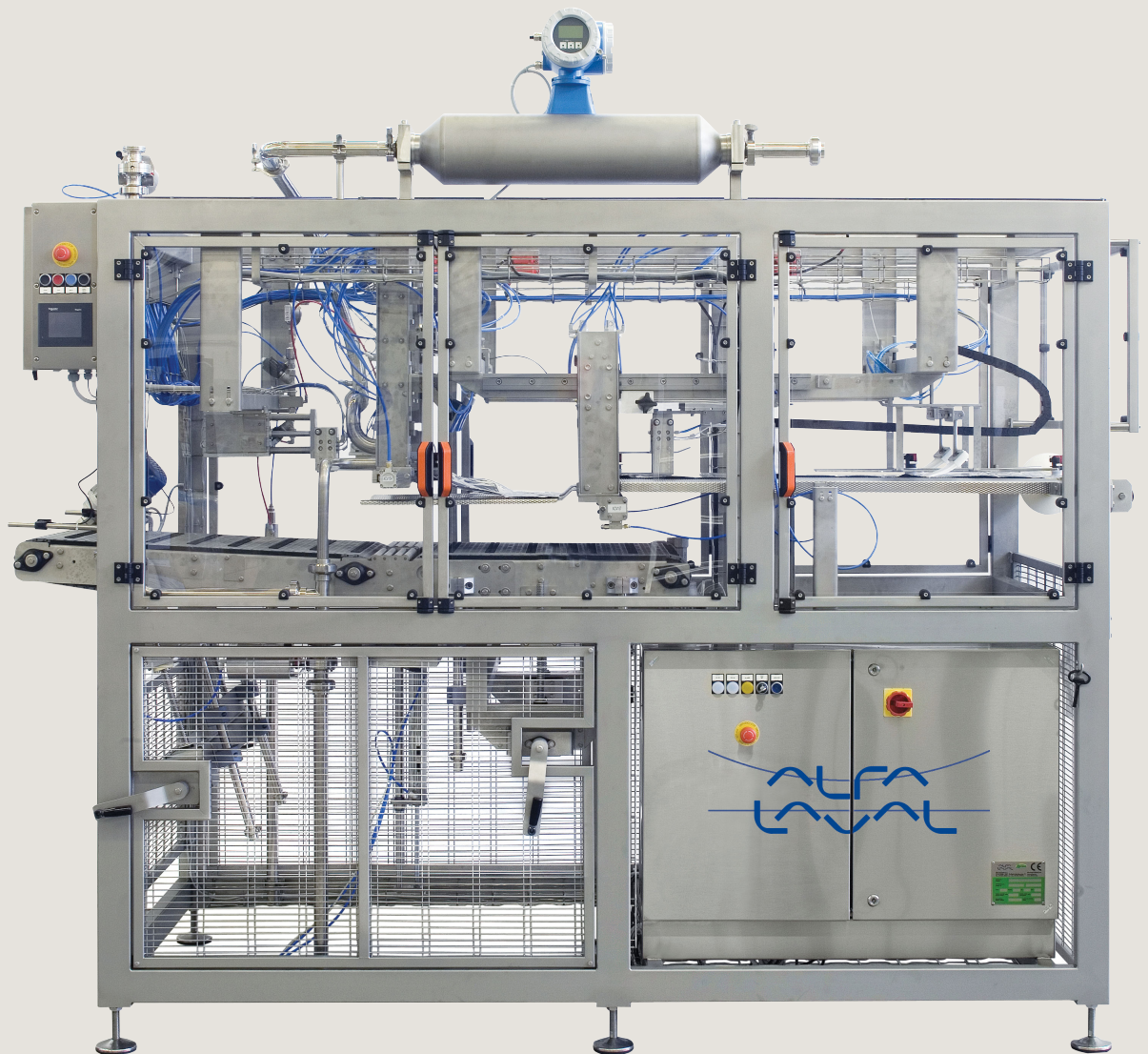


Alfa Laval Astepo Grande filler

Bag-in-box filling system for use in the food and beverage industries



Introduction

The Astepo Grande filler is a bag-in-box (BIB) filling system for flexible bags fitted with international standard 1-inch spouts.

Application

The non-aseptic Grande range of filling systems is widely used within the food and beverage industries. They are particularly well-suited for the filling of liquids such as wine, water and other shelf-stable products, including ready-to-drink wine

coolers, dense sauces such as mayonnaise and tomato ketchup, postmix products, syrups and vegetable oils.

Special versions tackle particular requirements associated with hygiene standards and the need for production flexibility.

Benefits

- Volumetric dosing by magnetic flowmeter
- A Venturi effect to create vacuum in the bags prior to filling; nitrogen puffing after filling; an air fill system to prevent air trapping before recapping
- Motorized conveyer (adjustable) for expelling the filled bags
- Cap removal synchronized with filling valve
- Horizontal knife for gentle bag separation
- Easily adjustable volume to reduce the time spent changing filling system
- CIP position for closed circuit (no operator required).

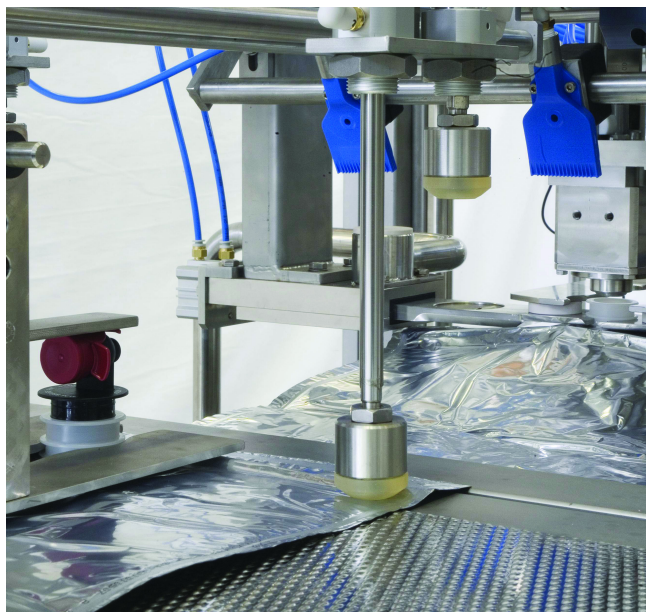
Design

The Grande filler works with web bags of 2–20 litre in capacity. The system carries out the uncapping, filling and capping of the bag and has an hourly capacity of up to 7,000 litre assuming an input flow rate of 9,000 litres, with a filling accuracy of +/- 0.5%. The filler is sanitized using an automatic cleaning-in-place (CIP) cycle.

All filling systems are designed for easy operation and maintenance, and to ensure that any required changes to different bag sizes can be carried out quickly. They can operate with a wide range of different types of bags and spouts, including dispenser taps for wine or syrups.

The Grande filler can deal with an input capacity up to 14,000 litre per hour, but the filling speed depends on the chosen bag size, which can vary between 2 and 20 litre. The maximum hourly capacity for different bag sizes is:

- 1,400 litre per hour (2-litre bags)
- 2,100 litre per hour (3-litre bags)
- 5,500 litre per hour (10-litre bags)
- 7,000 litre per hour (20-litre bags).



Detail: cap, horizontal bag separator, filling valve

Unique automated CIP system with remote control: All of the fillers' surfaces in contact with the liquid product during operation are cleaned with an automated cleaning-in-place (CIP) system and by remote control. All surfaces in contact with food can be sanitized using overheated water or steam.

Integration with carton box system: The Grande bag-in-box filling system can be linked up to an automatic Combibox cartoning line (featuring carton sealing with hot-melt glue or adhesive tape).

The Grande filler can be delivered as a stand-alone unit or as a complete process line consisting of a bag-in-box filler, web bag feeder system and cartoning system as one integrated system. This includes all automation equipment, products' surge tanks for providing sterile inert gas pressure, cleaning-in-place (CIP) system, suitable also for in-line cleaning with overheated water or steam.

Working principle

The Grande filler uses web bags with caps in front. These bags are fed automatically to the filling head by a pneumatic system. Prior to filling, the bags are separated by a soft horizontal knife that protects the film from the risks of micro-perforation, which often occurs with traditional equipment using vertical knives.

The clamps for the cap removal are designed for rapid change over. The clamps move horizontally in a movement synchronized with the filling valve by a special pneumatic cylinder that makes the adjustments more user-friendly and reduces time loss.

In wine filling set-ups it is possible to select and temper the vacuum before filling or to provide a nitrogen puff after filling. For filling drinking water (natural or flavoured) or sweet wines the use of a HEPA filter over the filling area is recommended, to prevent powders and contaminants. For vegetable oils or mayonnaise the use of a mass flowmeter is recommended to ensure or increase the accuracy of the filling.

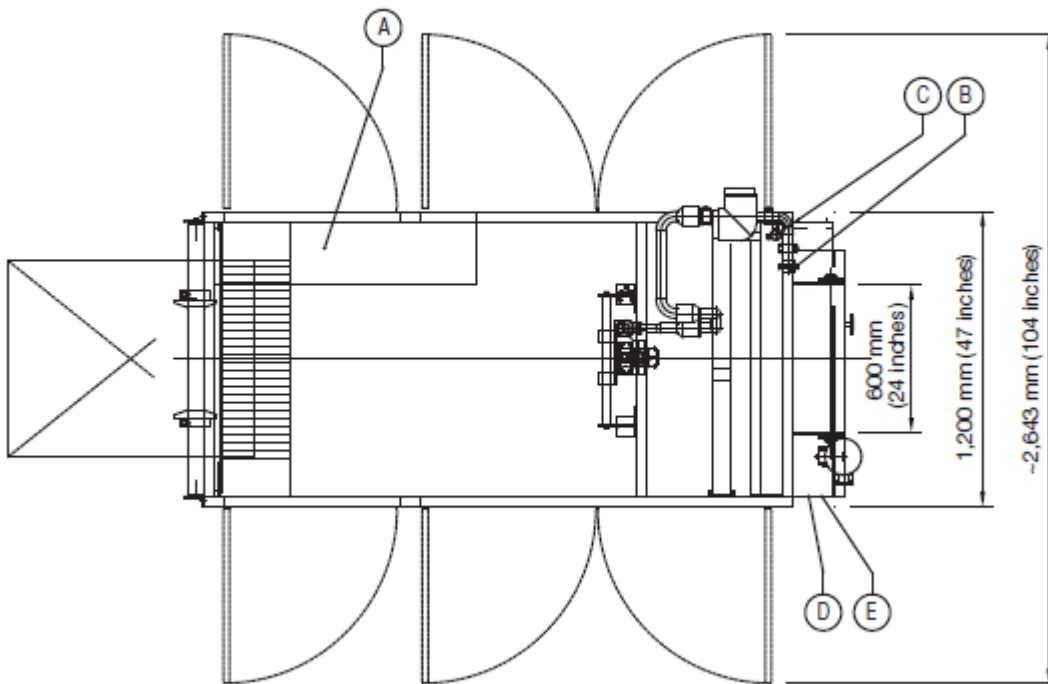
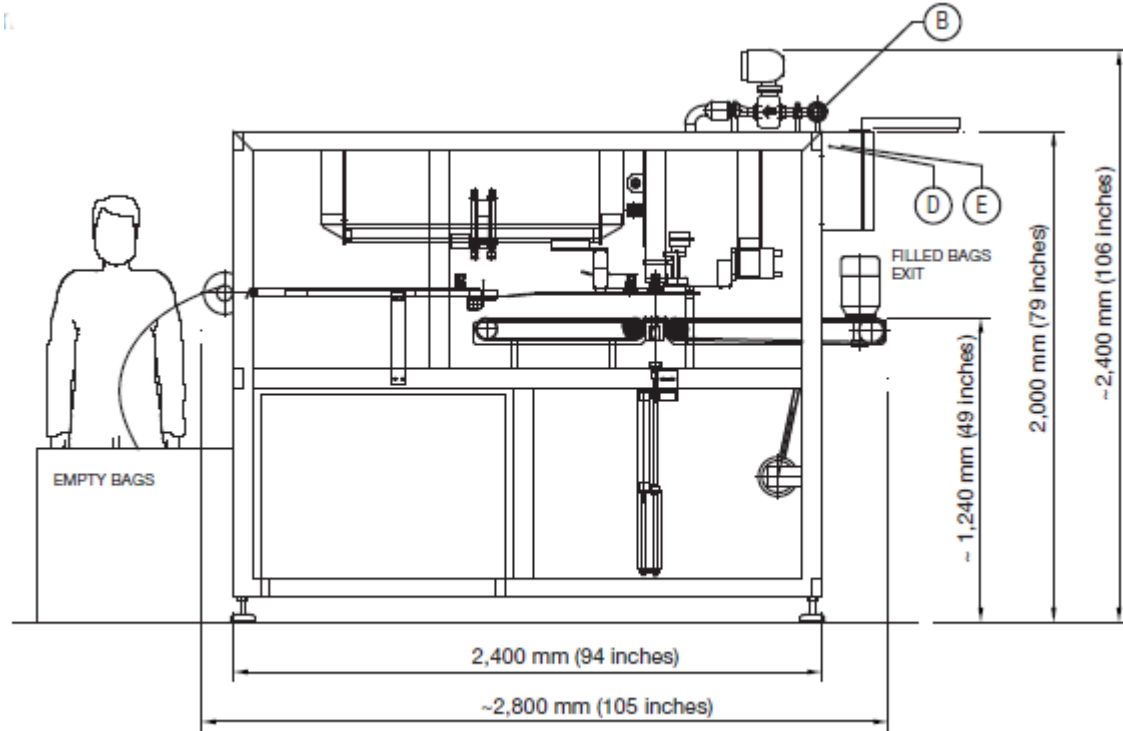
Options

- Single-head version controlled by PLC, with supervision and control via modem optional
 - Automatic loading system using a range of different funnel designs for integration with existing cartoning lines
 - Special funnel for high-weight products (above 10 kg) to prevent damage
 - Two or more machines can be aligned to provide large capacities, with synchronized cartoning devices
 - Tailor—made solutions to ensure that the bags fit smoothly into the cartons
- Bag-in-box decapping tools for dispenser caps that include Vitop, Presstap and Flextap
 - Special tools for caps for post mix and syrups and oils
 - Massic flowmeter for better accuracy
 - The product can be fed from pressurized, hygienic tanks such as Alfa Laval SteriTank aseptic tanks to prevent foaming and to achieve better accuracy
 - The product can be fed using volumetric or centrifugal pumps controlled by a central control unit in the Grande filler in order to maximize filling performance.

Technical data

Material	AISI 316 stainless steel (valve), AISI 304 stainless steel (frame)
Bag size	2-20 litre (0.5-6 gallon)
Maximum performance in cycle per hour (chp)	700 cph/2 and 3 litre (0-4 and 0.6 gallon)
	550 cph/10 litre (3 gallon)
	350 cph/20 litre (6 gallon)
Product infeed	> 1.5 to < 4 bar (> 22 to < 58 PSI)
Filling temperature	0-95°C (32-203°F)
Instantaneous product flow meter	9,000 - 14,000 litre/h (2,400 - 3,700 gallon/h)
Maximum temperature sanitization	120°C (248°F)
Air infeed	6-8 bar dry microfiltered (87-116 PSI)
Compressed air consumption	6 Nm/h
Electrical supply	1 kW, 400V, 3 Ph, 50/60 Hz
Dimensions: W x L x H	1,250 x 2,800 x 2,100 mm (49 x 110 x 83 inches)
Weight	800 kg (1,764 lb)

Dimensional drawing



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