



Combibox

Compact cartoning system for the food and beverage industries



Combibox cartoning system

Application

Alfa Laval Astepo has designed the Combibox system in order to complete and integrate its range of aseptic and non-aseptic bag-in-box fillers.

Combibox is a three-in-one system that integrates the carton erector, the bag loading and the carton closer in response to the particular filling and packing requirements of companies engaged in food and beverage production. Such companies often have to deal with combinations of limited storage space, stringent hygiene requirements and an unskilled labour force, as well as needing to be able to make quick changes in packaging formats and to be sure of volume flexibility.

Design

The Combibox system features a space-saving design with three machines in one single frame: the carton box former, carton box inserter/bag loader and the carton box closer.

The movement of the carton box from one phase to another takes place step by step, and the integrated control system simplifies all working and maintenance operations. The Combibox system can handle both French and American closures, and change-overs from one bag size to another take only a few minutes.

The Combibox system is designed and built in accordance with EC regulations for safety protection. The equipment is made of stainless steel so it can be placed in areas used for food production, and the design allows easy access to all parts for cleaning.

Combibox is operated via a PLC system. The components and software for the “no bag/no box – no filling” protection and the alarms for missing box and bag are standard functions. So, too, are the auto-diagnosis on the digital command panel and the synchronization functions with the aseptic and non-aseptic filler system used.

The food bag is inserted using a food-grade Intralox tape belt and a funnel. This funnel can be changed to match the requested format, and is mounted on pneumatic cylinders that open the flaps slightly to ease the fall of the bag inside the cardboard box.

The system can be equipped with a hot-melt gluing group or two 50 mm (2-inch) taping groups, on request.

How it works

The carton box erector automatically opens the box, folds the lower flaps and seals them with adhesive tape or hot glue. A gear motor controls the two principal linear movements of the machine. One of these is for withdrawing and opening the carton box, while the other is for movement during the sealing stage. The carton box flaps are opened and sealed by electro-pneumatic movements.

The carton feeding unit is of the step-feed type. The bag cartoner runs on a food-grade tape belt, installed on pneumatic cylinders that move the flaps sideways to make sure the bags fall gently into the carton to avoid friction and twisting.

As an option, it is possible to insert a pneumatic fork suitable for closing cardboard boxes with hot melt or adhesive tape. By moving up and down, this pushes the bags' corners inside the box before the last station.

Specifications:

Minimum box size	90x180x230 (h)
in mm (inches)	(3,5x7,1x9,1 inches)
Maximum box size	250x350x400 (h)
in mm (inches)	(9,8x13,8x15,7 inches)
Bag transport height from floor	1100 mm +/- 50 mm
in mm (inches)	(43,3 inches ± 2 inches)
Box transport height from floor	650 mm +/- 50 mm
in mm (inches)	(25½ inches ± 2 inches)
Production cycles per hour (base dimensions)	up to 700 according to size
Format change time	~15 minutes
Electrical supply:	3x400 V, 50 Hz, 5,5 kW with hot melt or 2 kW with tape
Air pressure in bar (PSI)	6 bar (87 PSI) 400 NL/min.
Dimensions (WxLxH)	1790x5210x1955 mm
in mm (inches)	(70,4x205x77 inches)
Weight in kg (lb)	max 1800 kg (3968 lb)

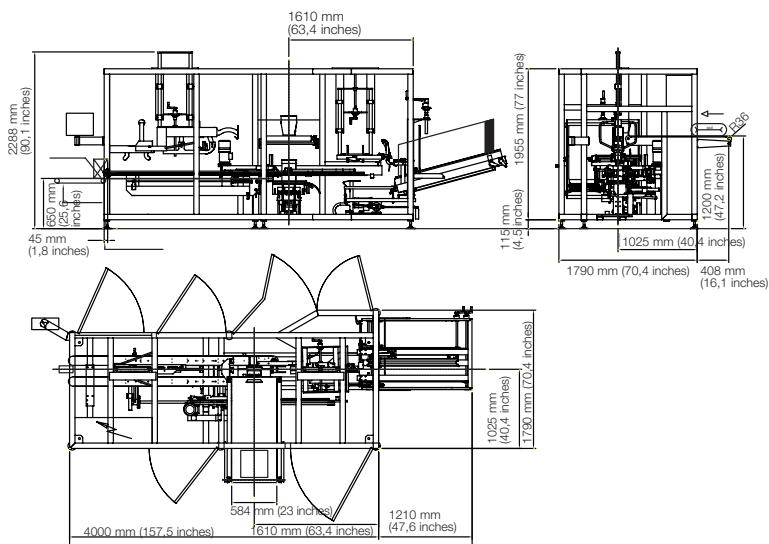
The machine receives the boxes filled with the product straight from the loading. The closing and the application of tape or hot melt are fully automatic operations.

The integrated control management system makes both operation and maintenance easy. The control panel with pre-installed software is configured to synchronize the working phases with the aseptic and non-aseptic fillers required.

Operator intervention is only necessary in order to adjust the machine to take boxes of different sizes/heights. This is a very simple operation that does not require skilled labour, because all adjustments are carried out using cranks with numerical indices.

Combibox standard equipment

- Three-in-one system with forming, box inserter/bag loader and sealing
- Box closing using hot-melt gluing or adhesive tape
- Can handle 3–20 litre (0.8–5.3 gallons) boxes, or larger on request
- Can operate with both French and American types of carton boxes
- Capacity up to 700 pieces/hour
- Suitable for both paper/plastic handles or perforated carton boxes
- Made of AISI 316 stainless steel
- Fully cleanable using overheated water
- Siemens PLC system
- Safety doors protection.



How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com