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СИСТЕМЫ УПАКОВКИ И РАЗЛИВА Fillstar

Технические характеристики



Filler Fillstar DX

Filling machine for pasteurized milk into PET or HDPE bottles

The Fillstar DX is a low-medium-speed filling system for pasteurized white milk. It has a scrap-free, fully drainable design and automatic control. The Fillstar DX is compatible with the NeckFlex handling.

Hygienic design

Fillstar DX is the ultimate low-medium-speed filling system for any still product. It combines the highest hygiene levels with the best performance even for traditional filling.

Fillstar DX has a completely scrap-free design. It has a static tank positioned just above the filling valves making it fully drainable. No stagnation points and a special product recovery duct under the filling nozzles make sure that the system completely recovers any product during the start-up cycle, the product changeover and at the end of production.

The filling valve runs automatically during the production and cleaning phases. The electronic, volumetric filling valve has no moving parts in contact with the product; the filling is achieved without any contact between the filling nozzle and the bottle neck and with a double filling speed that optimizes filling accuracy.

The Fillstar DX is housed inside a Clean Box that has a sterile air flow around the filling-capping area, with a 10Pa ambient overpressure, for the cleanest filling performance.

An automatic external foaming system is available as an option for a complete external COP of the filling bloc.



GEA Procomac Fillstar FX

Volumetric electronic aseptic filler for still products



Fillstar FX series is the GEA Procomac range of aseptic volumetric electronic fillers with magnetic flow meters for any still product, including high acid, low acid, clear, with pulps, fibres, pieces and viscous drinks.

The product is pushed by an overpressure of sterile air or sterile nitrogen gas, through a linear product path.

The filling process is made without contact between the filling nozzle and the bottle to avoid cross contamination. The flow meter determines the quantity of liquid according to the container and closes a membrane

valve when the preset quantity is reached. There is no other moving component in contact with the product.

Furthermore, a dual speed design (slow speed mode is used at beginning and end of filling cycle) allows to avoid foaming even with critical products.

Key feature of FX fillers is the internal sterilization by means of steam. Changeover is performed without breaking of sterility for any container with the same neck finish, due to complete bottle “neck handling” system. CIP cups insertion and extraction for closed-loop CIP and SIP are completely automatic.

Product change is totally automatic and ensures the complete change from different products in less than 30 min with minimal product scraps.

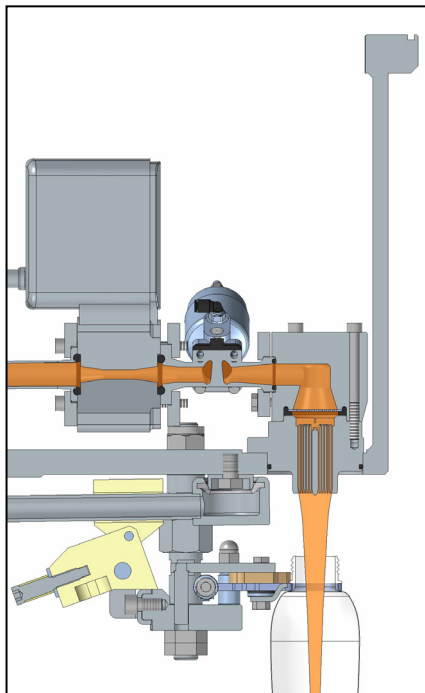
Features

- Volumetric electronic filling head with magnetic flow meter
- On board aseptic tank
- Excellent features for aseptic filling of still liquid
- No contact between filling nozzle and the bottle neck
- Automatic CIP cups insertion and extraction for closed-loop CIP (international patent)
- User-friendly touchscreen control panel

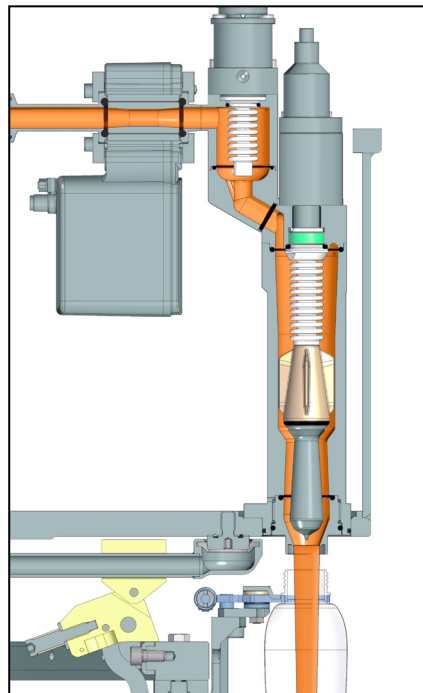
Advantages

- Advanced product and container flexibility:
 - clear products or products containing pulps and fibres filling capability;
 - complete neck handling system: fast bottle changeover;
 - self-adapting grippers to treat bottles with different neck diameters available as an option.
- Optimal hygiene
- Fully automatic CIP and SIP cycles

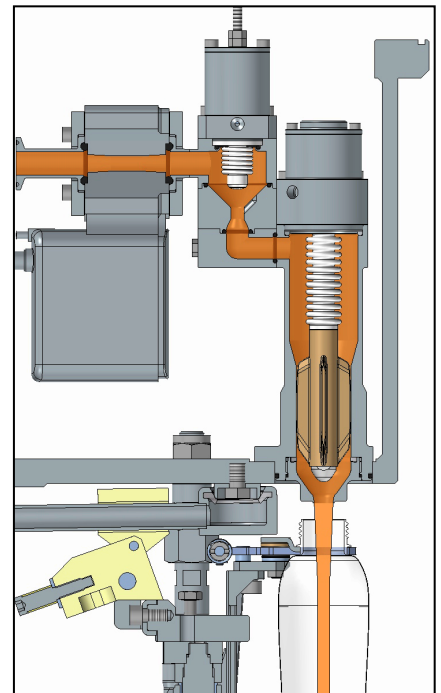
GEA Procomac range of FX volumetric electronic fillers includes:



FX filling valve for still clear products



FX P EVO filling valve for still products with and without pulps and fibres with maximum dimensions of 3 mm diameter x 20 mm length



FX C filling valve for still products with and without pulps, fibres, pieces with dimensions up to 6x6x6 mm

Filler Fillstar LXf

Fillstar LXf is a rotary volumetric machine for filling still drinks into plastic bottles that offers accurate dispensing measurement to prevent product losses, fast changeover and the flexibility to accept bottles of different shapes.

Fillstar LXf features: electronic control valves; free-standing, neck-handling starwheels; brushless motors; simple tank filling, draining and level detection and assures sanitization of machine and filters.

Extreme flexibility

The Fillstar LXf is a rotary volumetric machine for filling still drinks into plastic bottles. It is fitted with electronic control filling valves that do not make contact with the bottles during filling.

Bottles are transported by free-standing neck-handling starwheels powered by electronically synchronized brushless motors.

The filling operation is controlled using electronic filling valves and a magnetic-inductive flowmeter. Product flow on/off is controlled using a membrane pneumatic valve. Other features include a product tank complete with an electropneumatic valve cluster for tank loading and drainage, and a level detector and modulating valves to provide independent control over the product despatch and counter-pressure gas venting lines.

Improved hygiene

Effective sanitization is guaranteed through permanently installed dummy bottles - with an automatic insertion and removal mechanism - that are kept closed in a standby position to improve machine hygiene. Filler sanitation is achieved by forcing a washdown solution through the filling valves and returning it via a separate channel.

A sterile air filtering unit is installed on the capper turret to eliminate any possible microbiological contamination from the air used for cap handling, thereby further improving machine hygiene.

All parts that are in contact with the product (tank, piping, filling valves, etc.) are made from stainless steel. The machine also has an operator safety guard (detached from the machine) composed of a frame with steel vertical pools, transparent panel and safety sensor. A stainless steel electrical panel is mounted on-board.



GEA Procomac Fillstar LXi

Volumetric electronic filler for water and carbonated products filling in standard or ultra-clean conditions



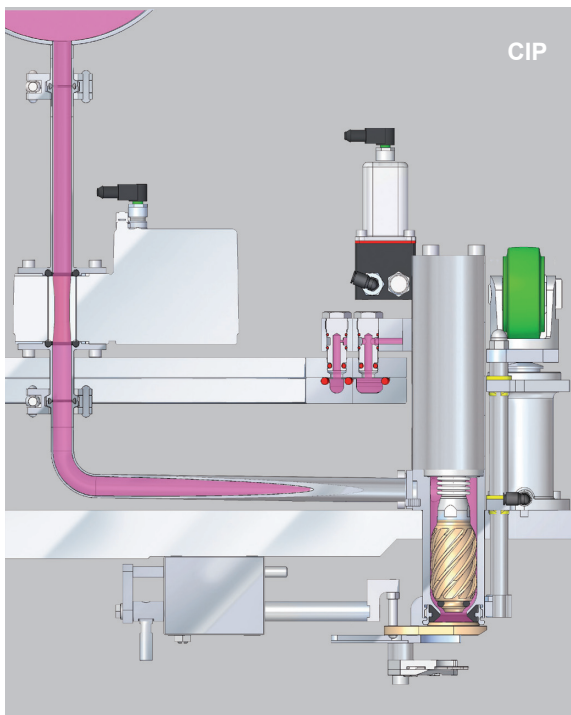
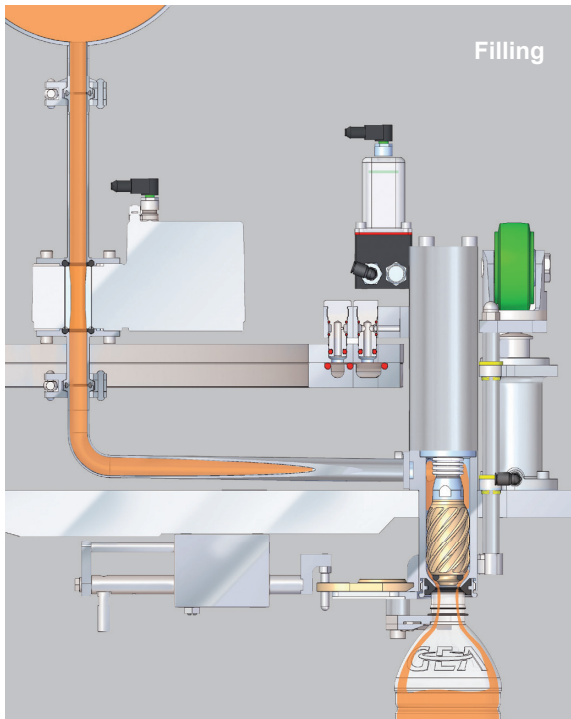
The present tendency of CSD products is to emerge as a healthier product, thereby reducing or eliminating the use of preservatives. In order to comply with the need of a cleaner filling process within a hygienic environment, GEA Procomac introduces the new range of counterpressure fillers Fillstar LXi.

Fillstar LXi, a volumetric type filler machine fitted with electronic filling valves, is suitable to fill carbonated and non-carbonated products into PET bottles. It is specifically designed to be coupled with the Airstar blow moulder to create the ONE bloc. Fillstar LXi machines offer:

fast changeover; automatic CIP; accurate volume measurement to minimize product losses; small footprint; higher speed with a low number of valves and the highest flexibility to run bottles of different shapes. The product tank can be either annular or central depending on the dimension of the machine. Each filling valve is equipped with a magnetic flow meter which measures the volume of product. Prior to filling, the bottle is raised by the lifting jack to get in contact with the filling nozzle. After the pressurization phase with carbon dioxide, the filling valve stem is opened in order to start filling.

The air return is performed with a dedicated separate channel. Even difficult foaming products – such as diet CSD - can be filled at temperatures close to ambient, with no loss of speed. This reduces the need for chilled water thus attaining savings in power consumption and costs. The complete bottle “neck handling” system allows very quick changeover for any container with the same neck design. The CIP cups insertion and extraction for closed-loop internal cleaning is completely automatic. Fillstar LXi provides excellent safety and hygiene for both still and carbonated liquids owing to its clean, hygienic design.

Fillstar LXi



Features

- Volumetric electronic filling head with magnetic flow meter
- Continuous flow control (via new hardware and customized software algorithm) during the filling phase to guarantee the highest filling accuracy
- Full pneumatic control of filling cycle
- Rotating product tank
- Bellow valves are used for pressurisation, separate air return, snift
- Pipelined "snift"
- All parts in contact with products are made in AISI 304 (AISI 316 available)
- Carousel drive: brushless motors with electronic synchronization
- Automatic CIP cups insertion and extraction for closed-loop CIP
- N. of valves: from 50 to 160

Advantages

- Complete neck handling system: any container with the same neck finish can be filled with fast changeover
- Product measurement with magnetic flow meters: product losses are minimized; can adapt to container with variations in shape without mechanical intervention
- Pneumatic valves: filling cycle can be optimised for any product/container combination to obtain best filling performance or smallest footprint for the required speed
- Easy tuning of filling cycle: difficult foaming products i.e. diet CSD can be filled at ambient temperature with no loss of speed: cost reduction (no product chilling)
- Clean design: filler is easy to clean and "hygienically correct"
- Easy access: the machine's design allows an easy access to all the components for maintenance purposes

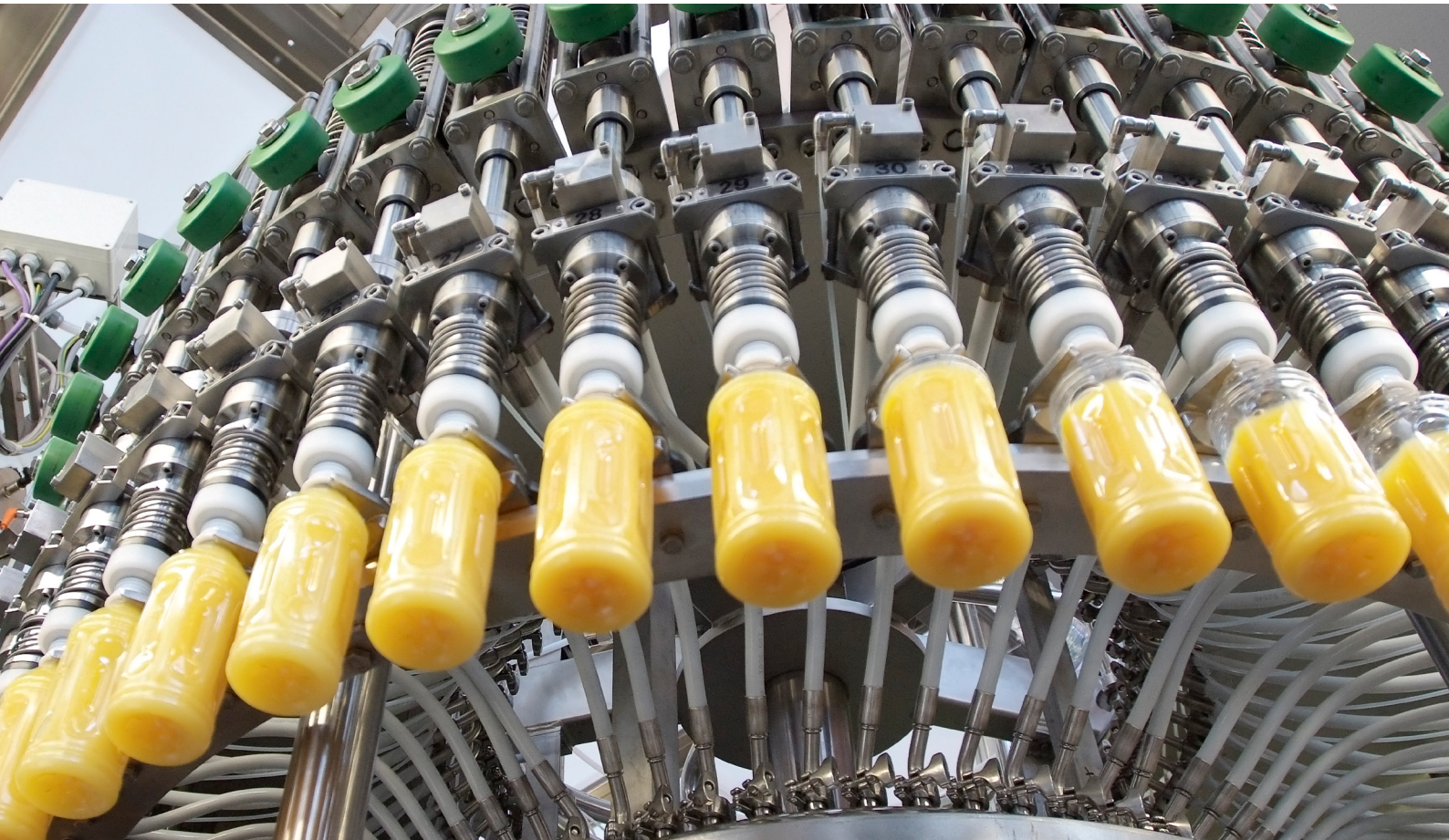
Fillstar LX is available in AERO (open machine with separated guards) and AERORING (micro-isolator in slight overpressure) version and in stand-alone configuration with or without rinser.

Fillstar LXi series is equipped with GEMS

- An integrated system which, connected to the standard operator interface (SCADA), allows to identify and foresee plant maintenance intervention
- Taking into account the production hours and the number of Cleaning cycles, the system is able to focus on the needs for maintenance of each single component, proposing its replacement using simple reminder panels

GEA Procomac Fillstar HF Hot

Fill gravity iller



Hot fill technology represents one of the solutions to fill still drinks cold rain type tunnel to be cooled with or without pulps and fibres down. GEA Procomac has developed the specifically product coming out at high designed Fillstar HF RC P, gravity temperature (up to 92-95°C filler for hot filling. Thanks to the depending on product fact that the filling head can be specifications) from the pasteurizer adapted for brimful filling or reaches the filler maintaining the level filling with a simple operation high temperature and sterilizes and without tools, the versatility is the container to be filled considerably high. ensuring the correct shelf life. The The gravity filling valve HF RC P bottles have to sustain treatment (Hot Fill with product recirculation temperature therefore they are few control pneumatical valve) is grams heavier than those bottled with mobile type. The filling valve moves cold fill technology. Once filled and to get in

contact with the bottle during filling. The bottle itself in contact with the valve opens the valve and there is no product recirculation. Air flowing from bottle is exhausted through product recirculation pipe, once the filling level has been reached the product recirculation restarts, then a pneumatical valve closes the filling head and stops product recirculation. The maximum amount of product recirculation through the machine is guaranted less than 10%. A timed opening phase of the pneumatical

valve, which controls the recirculation rate, allows to maintain a high filling temperature in all parts of the machine.

This specific filling valve does not need dummy bottles for CIP cleaning because within the valve there is closed loop that allows to perform the cleaning.

The shaping of the contact zone between fixed and mobile parts is designed in order to grant a proper cleaning flow rate. The rest of the machine is very easy to clean: only cleaning of manifold and external tank with spray-ball is needed.

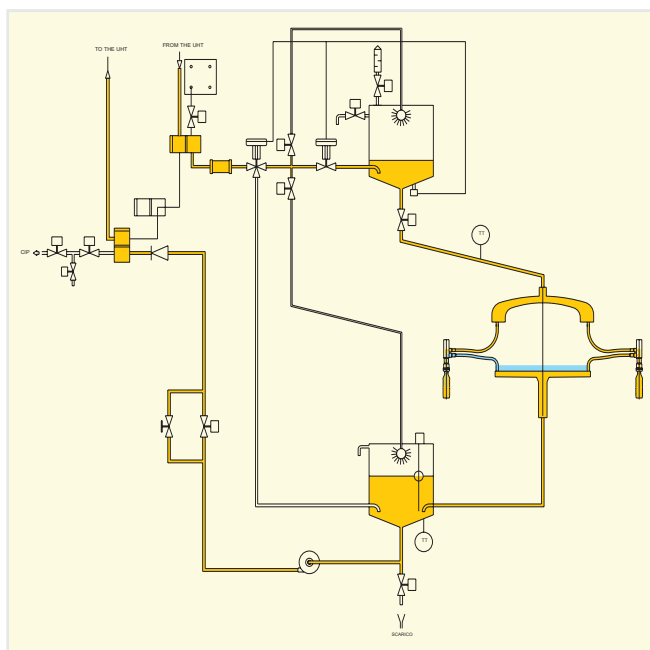
Hot fill technology features

- External tanks for inlet and recirculation product recovery.
- Product recirculation: 10% max with all bottle formats.
- Electro-pneumatic control of all filling valves.
- Easy CIP cycle.
- Filling temperature up to 92-95°C.
- Easy filling level setup.
- Different versions can be offered according to customer's specifications.

Fillstar HF filling head features

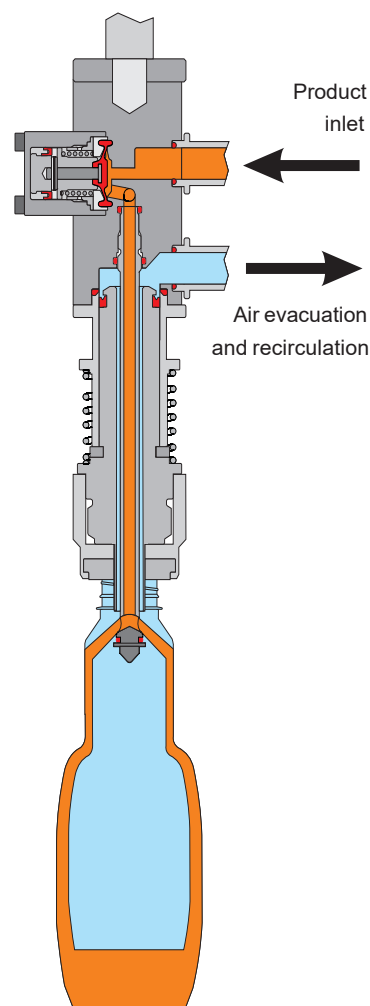
- Pneumathical filling head: easy maintenance.
- Simple filling head (level filling).
- Product recirculation also when no bottles are on the machine: filling head is always kept at high temperature
- Advanced recirculation control with external actuator in pneumathical version with membrane valve to control product recirculation rate and to avoid product splash-out.

Filling flow diagram for GEA Procomac hot fill technology.



GEA Procomac Fillstar HF filler is also available in:

- "Proclean" version: laminar flow of sterile air and contamination control of the filling environment guarantee a high level of hygiene in the filling environment.
- CC (Controlled Contamination) version with bottle and caps sterilization treatment and environment control using a full microbiological isolator; CC version is suggested as reference to fill Low Acid products.





GEA Aseptic piston doser

Aseptic cold dosing for fruits and cereals

GEA Procomac has developed the new Aseptic Dual Filling System for the bottling of still beverages that contain pulps, fibres, and pieces of fruit or cereals with dimensions up to 10 x 10 x 10 mm. This is believed to be the first time this process has been used in a cold-fill environment for PET bottles. The Piston

Doser PX achieves the aseptic dosing of the valuable solid pieces ahead of the subsequent liquid filling process, with a high level of accuracy.

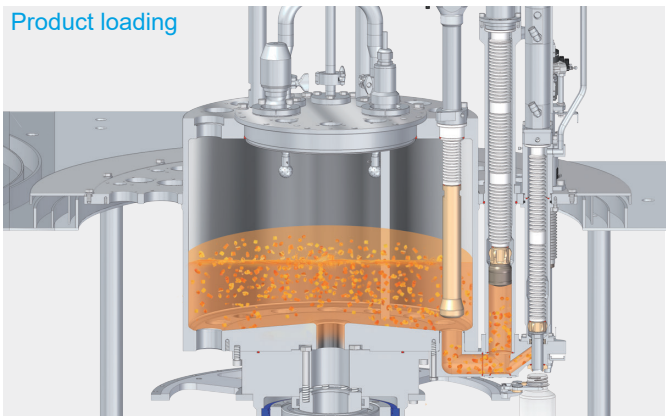
The Piston Doser PX is simple but effective. A cam-driven piston first draws into a cylinder the prescribed volume of solid particles, before injecting it into the

awaiting PET bottle. The bottle then moves onto a standard volumetric, electronic filler, the Fillstar FX, to add the liquid juice and complete the aseptic filling process. The dual fill system requires a 2 stream process line: one dedicated to the thermal treatment of the pieces and the other to the thermal treatment of the clear liquid.

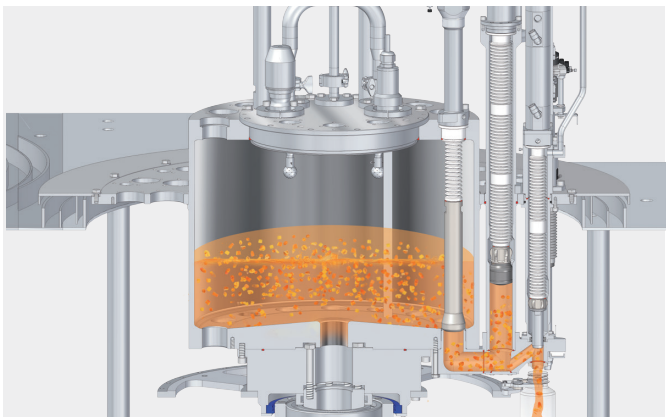
The Piston Doser PX

Aseptic integrity

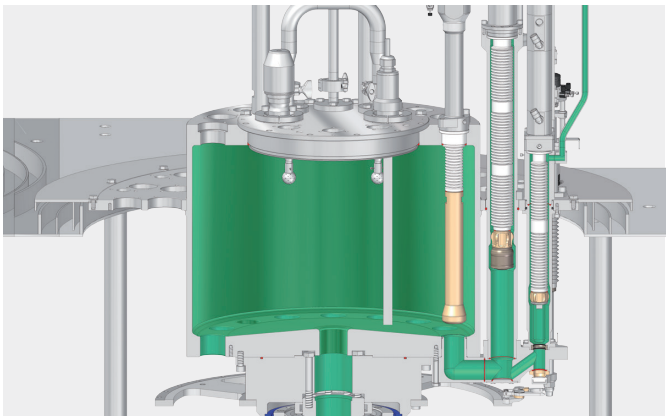
Product loading



Filling



CIP/SIP



The aseptic integrity of the Piston Doser is maintained with the inclusion of a hygienic seal around the piston which prevents product leaking through to the non-aseptic side. Dosing volume can easily be regulated from 30 to 150 ml by changing the dosing value on the HMI. The stroke of the piston is automatically adjusted by a linear motor. This provides adequate dosing for most products in PET bottles of up to 2 litres. Smaller/Greater dosing volumes may be achieved simply by changing the diameter of the cylinder.

The Piston Doser PX is ideal for adding large pieces of pulp, fibre, fruit or cereal to still beverages, both High Acid and Low Acid, or for filling product whose density does not allow the consistent distribution of the pieces.

Features	Benefits
Aseptic design	Suitable for HA and LA applications. Allows the dosing of cold solid particles in aseptic conditions.
Automatic dosing adjustment	Accurate dosing to prevent wastage of high value product. Very reliable. Easily adjusted by linear motors.
No contact between filling nozzle and bottle neck	Mandatory for Low Acid aseptic beverages.
Simple design	Low maintenance.
Volumetric measurement	No need for weighing equipment or flow meters.
High Speed dosing	Designed to match production volumes of Fillstar FX – up to 800 bpm.
Built-in CIP/SIP and sterile water rinsing	Fully automatic cleaning and sterilization cycle with overheated water and fast product change over availability.
Compact	Small footprint.
Gentle filling	Negligible damage rate in the final beverage.

GEA launches Fillstar CX EVO aseptic filler

GEA has introduced the latest, advanced and multifunctional aseptic filling technology, the Fillstar CX EVO.

The new system provides beverage industry customers with the capacity to easily shift between different types of products, from carbonated to still beverages and vice-versa.

The integrated control unit of the system requires minimal reprogramming, eliminating product changeover times that previously would have taken approximately three hours.

“Our customers feel the need to react quickly to changes in demand.”

The changeover from contact filling to non-contact filling is also fully automated.

To ensure complete sterility, GEA's Fillstar CX EVO technology uses a counter-pressure volumetric electronic filling valve and has the capability to handle high and low acid beverages, along with aseptic soft drinks with different carbonation levels.

The system can fill products with up to 20mm-long fibres with a 3mm diameter.

When integrated with an aseptic piston doser, the Fillstar CX EVO can fill even fruit pieces with a volume of up to 10mm³.

Bottle sizes and shapes can also be easily changed.

The high-performance GEA system will have a capacity of 54,000 bottles each hour.

GEA blowing, filling and packing vice-president Alessandro Bellò said: “Fashionable products such as liquid food with cereals, fruit particles and berries, RTD teas or milk-based low acid beverages are becoming ever more common on supermarket shelves.

“Producers are reacting by replacing standard products and shifting their production processes to allow for greater flexibility and innovation.

“Our customers feel the need to react quickly to changes in demand. Our technical solutions lay the foundation for a dynamic response.”world



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