

Packaging



GEA Procomac machines can handle any preforms or containers made of any resin available on the market. Thanks to the connection with major players of PET and HDPE industry the company supports the customer in choosing the most competitive container for the specific application (i.e.: barriered PET for ESL or UHT milk, multilayer bottles for HDPE).

Innovative bottle neck handling technology both for PET and HDPE:

- Different material, same performances
- No mechanical stress to bottle body ensures unlimited light-weighting possibilities
- Quick and simple format changeover (without loss of sterility in case of UHT product)
- No limitation to light-weighting from GEA Procomac gentle packaging treatment setup



Innovative technology for different closures handling and application:

- New DRY technology combined cap sterilizer for Flat and Sport caps (Sterilcap VHP)
- No limitation to caps design
- Aluminum Foil
- Integrated system for foil forming, sterilization, handling and application on HDPE or PET bottles



We live our values.

Excellence · Passion · Integrity · Responsibility · GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 Index.

GEA Process Engineering

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GEA Procomac in Dairy

Bottle filling technology for liquid dairy

engineering for a better world

Product

GEA Procomac offers simple design and clean solutions for liquid dairy product filling fully integrated with GEA process units



Dairy products are different from anything else.

That's why it is so important to choose "state of the art" filling technology.

GEA Procomac filling valves ensure the highest filling performances and flexibility, and unique hygiene design and quality standards. The increased level of filling precision achieved with the latest generation of magnetic flow meters grants electronic volumetric fillers the best accuracy in the easiest and less expensive way.

Innovative filling valves for any Liquid Dairy product

- FX valve: White milk, flavoured milk, milk based soft drinks, drinkable yogurt, kefir and probiotics
- FX P EVO valve: Dairy products with pulps and fibers up to 3x20 mm 10% w/w
- FXC valve: Dairy products with pieces up to 5x5x5 mm 10% w/w
- Dual Fill Solution: Piston doser PX + Fillstar FX: Dairy products with pieces up to 10x10x10 mm

Filling valves Performances

- Viscosity up to 500 cPoise
- Filling accuracy: up to $\sigma = 1,2$ ml on 1 l (32 Oz) and $\sigma = 0,8$ ml on $\leq 0,5$ l (16 Oz)
- Filling speed: up to 200 cc/s
- Suitable for steam sterilization (fully automatic and traceable CIP/SIP cycle)
- Fully automatic product change in 10 mins (product on product) or up to 30 mins with intermediate rinsing
- On board tank and filler scrap-free design with a fully product recovery during start up, product change and end of production cycles.

Up to 30 days	Up to 90 days	Up to 9 months
PASTEURIZED	ESL	UHT
Cold Chain Distribution (2-4°C)	Cold Chain Distribution (2-4°C)	Ambient temp. Distribution (15-30°C)
CLEAN	ULTRACLEAN	ASEPTIC
No container Decontamination	Container Decontamination Up to 3 Log	Container Decontamination Up to 6 Log

Shelf life and Technologies



Pasteurized liquid dairy products

Flexibility

- ✓ "ONE MILK" Blow Fill bloc for PET compact layout
- ✓ FILLSTAR DX filling and capping bloc (empty bottle supply through controlled contamination conveyors for PET and HDPE)

Safe and Hygienic Filling

- ✓ Filling valves from aseptic design
- ✓ No movable parts in contact with the product except for sanitary membrane valve
- ✓ All filling valves cleaning controlled through flow meters
- ✓ Standard automatic cleaning cycles available (CIP)
- ✓ Complete automatic foaming cycle available (COP)

Easy environment control

- ✓ Filling carousel within Clean Box: sterile air flow (from HEPA filter) surrounding filling – capping area in order to prevent contamination

Easy to manage

- ✓ Full automated control of Filling and Cleaning automatic cycles.
- ✓ No stagnation spots on filler base frame thanks to hygienic design
- ✓ Completely washable design
- ✓ Universal neck handling suitable for both PET and HDPE containers: short changeover times

ESL liquid dairy products

- ✓ ABF 4C ultraclean Blow Fill bloc with DRY preform/cap sterilization technology (PET)
- ✓ WHITEBLOC: Ultraclean sterilizing, filling and capping bloc with DRY bottle/cap sterilization technology (HDPE and PET).

- ✓ Up to 3 Log reduction efficiency to meet most demanding quality specifications
- ✓ Automatic cleaning and sterilization cycles (CIP/COP/SIP/SOP)

- ✓ Suitable for the more demanding ultraclean products: no compromise in terms of cleanliness, hygiene and product safety.
- ✓ Sterile air flow (from HEPA filter) surrounding blowing – filling – capping area in order to prevent contamination
- ✓ Ambient overpressure: 10 Pa

- ✓ Full automated control of Filling, sterilization and Cleaning automatic cycles
- ✓ Complete isolation of sterile area from mechanical components and lubrication points.
- ✓ Slanted Base Frame for ideal cleanability and absence of stagnation points.
- ✓ Universal neck handling suitable for both PET and HDPE containers: short changeover times

ESL products require a high level of hygiene. GEA Procomac "CLEAN BOX" technology ensures a competitive ratio between container decontamination level and operative costs.

UHT liquid dairy products

- ✓ ABF Aseptic Blow Fill bloc with DRY preform/cap sterilization technology (PET)
- ✓ ECOSpin2 Aseptic bloc with either WET bottle/cap sterilization technology (HDPE & PET)

- ✓ Up to 6 Log reduction efficiency to meet most demanding quality specifications.
- ✓ Less than 3 h for automatic cleaning and sterilization cycles (CIP/COP/SIP/SOP)
- ✓ Up to 144 h of continuous production without any intermediate SOP cycles
- ✓ FDA approved technology
- ✓ Residuals below 0,5 ppm as per FDA regulation

- ✓ Suitable for the more demanding validation protocols: challenge test up to 6 Log reduction sterilization efficiency on internal, external (bottle/cap) and environment.
- ✓ A microbiological isolator housed around the filling area to maintain a controlled overpressure of redundant HEPA filtered air (class 100)

- ✓ Full automated control of Filling and Cleaning automatic cycles and CCP (critical control points).
- ✓ Complete isolation of sterile area from mechanical components and lubrication points
- ✓ Slanted Base Frame for ideal cleanability and absence of stagnation points



Control devices fully integrated in HMI = 100% safety

- "Smart sensor" device to detect sterilization nozzles functioning (Aseptic)
- Bottle squeezer for foil application (HDPE)
- Preforms/caps/bottles double camera inspection (PET)