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Bottle filling technology for liquid dairy

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.

We live our values.
Excellence • Passion • Integrity • Responsibility • GEA-versity

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, the company supports the customer in choosing the most competitive containers 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
- Sharp and simple closure placement (minimum loss of sterility in case of UHT products)
- No limitation in light-weighting from GEA Procomac grade packaging treatment setups

Innovative technology for different closures handling and application:
- New DRY technology combined cap sterilizer for flat and Sport caps (sterilizer VHP)
- No limitation to cap design
- Aluminium Peel
- Integrated system for foil forming, sterilization, handling and application on HDPE or PET bottles

Packaging

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### Shelf Life and Technologies

**Flexibility**
- **Pasteurized liquid dairy products**
  - UHT MILK: Filling and capping bloc for ESL products.
  - "Compact Line" filling and capping bloc (microcomputer controlled).
- **ESL liquid dairy products**
  - Up to 90 days for ESL products.
  - Up to 9 months for ESL products.
- **UHT liquid dairy products**
  - Up to 144 h of continuous production without any intermediate SOP cycles.
  - Less than 3 h for automatic cleaning and sterilization cycles (CIP/COP/SIP).
  - Up to 6 Log reduction efficiency to meet most demanding quality specifications.
  - Automatic cleaning and sterilization cycles (CIP/COP/SIP).

**Safe and Hygienic Filling**
- **Filling valves from aseptic design**
  - No movable parts in contact with the product except for sterilizing steam valve.
  - Milling filling valves (stagmatron) eliminates bacteria contamination (total efficiency).
  - Complete automatic cleaning cycle available (COP).
- **Easy environment control**
  - **Filling-cleaning-blowing area (ESL)** surrounded by aseptic walls (HEPA filter) and environment.
  - Sterile air flow (from HEPA filter) surrounding filling – capping area to maintain a controlled overpressure of 10 Pa.
  - Complete isolation of sterile area from mechanical components and lubrication points.
  - Non-stagnation spots on filler base frame thanks to redundant HEPA filters.
  - Automatic cleaning and sterilization cycles (CIP/COP/SIP) dependent on production cycles.

**Easy to manage**
- **Full automated control of filling and closing automatic cycles.**
- No stagnation spots on filler base frame thanks to redundant HEPA filters.
- Complete isolation of sterile area from mechanical components and lubrication points.
- Sterile air flow (from HEPA filter) surrounding filling – capping area to prevent contamination.
- Ambient temperature: ≤ 5°C.

**Control devices, fully integrated in HMI = 100% safety**
- Smart sensor: digital identification of valid preform/cap.
- Double sensor for foil application (HDPE).
- "Smart sensor" detector to detect contamination points and haemorrhages (ESL).
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**Pasteurized liquid dairy products**
- Milk: Filling and capping bloc for ESL products.
- "Compact Line" filling and capping bloc (microcomputer controlled).
- "Safe and Hygienic Filling".
- "Easy to manage".

**ESL liquid dairy products**
- "Safe and Hygienic Filling".
- "Easy to manage".

**UHT liquid dairy products**
- "Safe and Hygienic Filling".
- "Easy to manage".

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**Innovative filling valves for any Liquid Dairy product**
- Aseptic valves: White milk, flavoured milk, milk based soft drinks, drinkable yogurt, kefir and probiotics.
- Filling valves with pulse valves and filters up to an area of 10x10x10 mm.
- Dual Fill solution: Piston above P.E. and Piston below P.E.
- "Fully automatic product change in 10 mins (product on line) or up to 30 mins with intermediate rinsing (CIP/SIP cycle)."
- "Filling valves Performances".
  - **Viscosity range:** up to 100,000 cPas at 30°C.
  - **Filling accuracy:** up to ±1% of the filled volume.
  - **Filling speed:** up to 30 litres/min at 30°C.

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**Impressive cleaning and sterilization performances**
- "Safe and Hygienic Filling".
- "Easy environment control".
- "Easy to manage".

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**Full automated filling and closing automatic cycles.**
- No stagnation spots on filler base frame thanks to redundant HEPA filters.
- Complete isolation of sterile area from mechanical components and lubrication points.
- Sterile air flow (from HEPA filter) surrounding filling – capping area to prevent contamination.
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- Sterile air flow (from HEPA filter) surrounding filling – capping area to prevent contamination.

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**Product**
- 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 performance and reliability, and unique hygiene designs and quality standards.**
- "Safe and Hygienic Filling".
- "Easy environment control".
- "Easy to manage".

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