



GEA HYGIENIC PUMPS

Competence in dairy & food production

GEA HILGE HYGIENIC PUMPS

The heart of every process.

Gentle product handling, continued reliability and economic efficiency are key characteristics of the state-of-the-art hygienic pumps in the GEA Flow Components portfolio.

Our heart pumps for you

What keeps every process system moving for the manufacture of food, beverages, pharmaceuticals and more? Hygienic pumps are applied to processes at the heart of production, in close contact with the product.

GEA offers a multitude of designs for different and often highly sensitive applications: small components, yet an essential part of every system setup.

The success of our customers depends on the quality and profitability of their manufactured products. That's why they rely on GEA's advanced process technology and decades of experience in

ensuring smooth processing. GEA Hilge Hygienic Pumps for all liquid processes meet the highest hygiene standards.

In addition to our hygienic pump portfolio, our range of sophisticated process components also includes hygienic and aseptic valves as well as cleaning technology. All components and services are available worldwide through the international GEA sales network.

GEA Group Aktiengesellschaft

As one of the largest systems suppliers, GEA makes an important contribution to a sustainable future with its solutions and services, particularly in the food, beverage and pharmaceutical sectors. Across the globe, GEA's plants, processes and components contribute significantly to the reduction of CO2 emissions, plastic use as well as food waste in production.



Our heart pumps for you.



Every fourth liter of human blood is handled by GEA equipment.



Around one quarter of the milk processed is handled by GEA equipment.



Roughly every second liter of beer is brewed using GEA equipment and solutions.



Approx. one in three instant coffee lines has been built by GEA.

TWO MODERN PUMP LINES

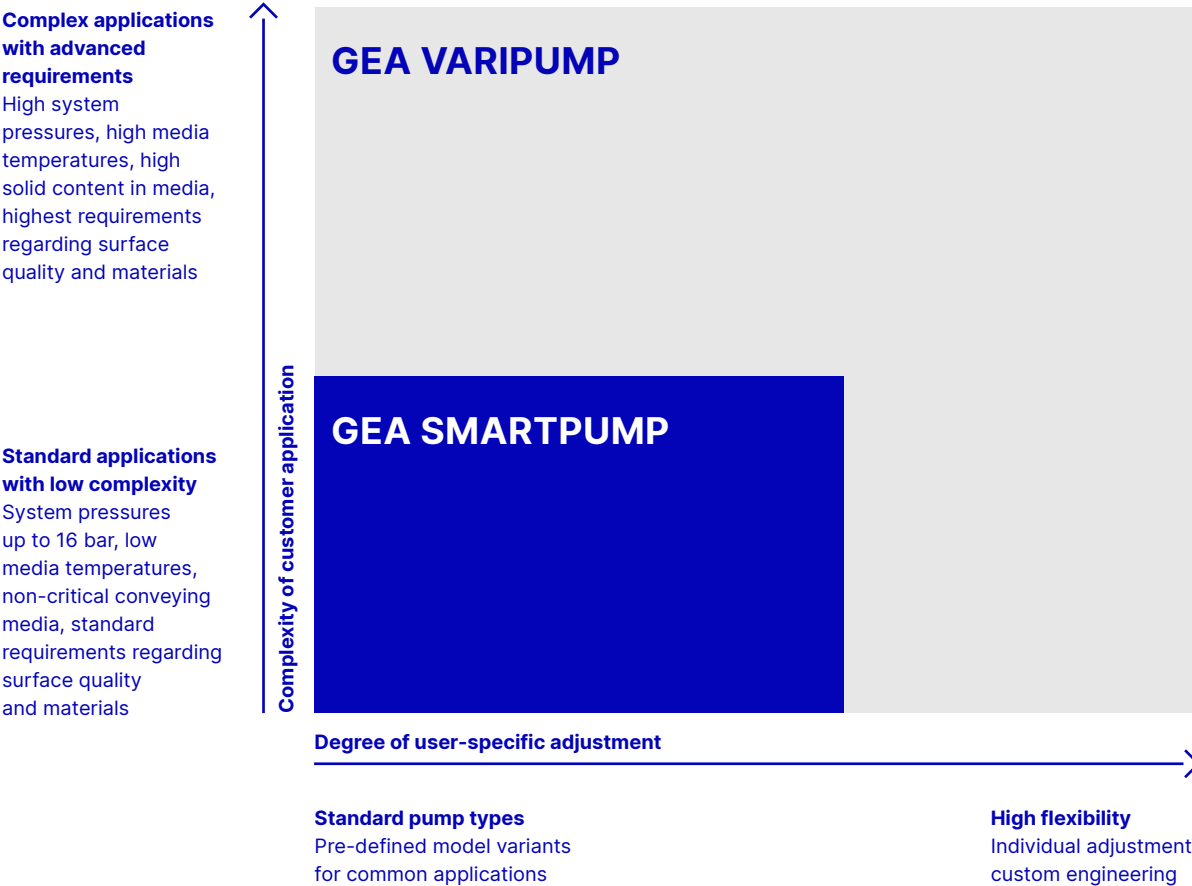
Always the right solution – technologically and economically – for each application.

Hygienic pumps are used in processes that directly affect product quality and production. Therefore, the selection and configuration of the right pump requires a lot of experience. The selection matrix for the two pump lines GEA VARIPUMP and GEA SMARTPUMP provides a decision support. The pump types of these two lines are suitable for different requirements and purposes and thus offer the right solution for every application.

The perfect choice

The first parameter to check for selecting the right pump is the complexity of the customer application with regard to the respective system pressures, temperatures and product media.

The second parameter is the required degree of customer-specific adjustment. The overall system concept determines whether standardized pump types or customized engineering will be required.



OVERVIEW OF PUMP TYPES

GEA is a full-line supplier of premium pump solutions. Our range has a variety of models suited to different stages of the industrial process. We can outfit your entire application with general process pumps capable of handling your product with care and precision, dosing solutions and sanitary pumps that fulfil the strictest hygienic criteria.

GEA Hilge HYGIA / HYGIA H

The “Swiss Knife” among the hygienic pumps: premium quality, reliability and highest flexibility of customization as well as 3-A certification. Wet end parts are designed according to EHEDG standards. Fully encapsulated mechanical seal with the GEA-unique face design. Also available as high-pressure execution.



GEA Hilge HYGIA

GEA Hilge MAXA

A single-stage centrifugal pump designed for high flow operation in industrial processes. Especially used in fermentation broth, filtration facilities and transportation of condensate, hot and cold water.



GEA Hilge MAXA

Single-stage end-suction centrifugal pumps

GEA VARIPUMP
Wide model range with numerous variants.
Customization to specific customer requirements

GEA SMARTPUMP
Clearly defined list of models,
limited to standard requirements, no other variants

GEA Hilge TP



GEA Hilge TP

The GEA Hilge TP is the smart solution for standard applications saving time in maintenance and cleaning. The single-stage centrifugal pump suits a wide range of applications and offers uncompromising hygiene and quality (e.g., 3-A and EHEDG certificates).

GEA Hilge SIPLA

This single-stage self-priming side channel pump is especially suited for SIP/CIP return systems and applications with high gas content. Right- and left-hand rotation can be freely adjusted for additional application options. This pump is robust and top casing connections ensure that it is not drained when not running.



GEA Hilge SIPLA

Single-stage self-priming centrifugal pumps

GEA Hilge TPS



GEA Hilge TPS

This self-priming centrifugal pump is the solution of choice, especially for emptying vessels conveying products with air or gas inclusions, e.g., CIP return systems. Media contacting parts meet the requirements of the 3-A, QHD and EHEDG standards.

GEA Hilge CONTRA

Available as single- and multi-stage centrifugal pumps. The pumps offer extremely reliable operation under tough operating conditions. The hygienic, aseptic design in every detail and the use of pore-free materials provide perfect solutions to numerous tasks in sterile and hygienic processes, especially WFI loops.



GEA Hilge CONTRA

Multi-stage centrifugal pumps

GEA Hilge DURIETTA



GEA Hilge DURIETTA

This end-suction single- or multi-stage centrifugal pump in a very compact design has been created for applications with low flow rates at high flow heads.

GEA Hilge NOVALOBE

This rotary lobe pump has been specifically designed for highly viscous media – and for applications where gentle pumping is required (e.g., personal care). The pump is optionally fully drainable and EHEDG certified. Heatable front cover and rotor case are available as options.



GEA Hilge NOVALOBE

Rotary lobe pumps
Twin-screw pumps
Positive displacement pumps

GEA Hilge NOVATWIN

The flexible 3-A certified twin screw pump range allows production and CIP operation with one pump. It fulfills the highest hygienic requirements and ensures reliable production. The system pressure of 30 bar enables also high-pressure applications.



GEA Hilge NOVATWIN

RELIABLE COMPONENTS IN THE DAIRY & FOOD INDUSTRY

For every conceivable pump application in beverage production, the full GEA pump range gives you peace of mind and optimal compatibility.



Quality products need quality pumps

With GEA Hygienic Pumps you ensure that your product lives up to your standards – batch after batch. Our pumps achieve this in food processing plants, chocolate factories and dairies worldwide because they are designed to maintain product integrity and consistency. They are CIP/SIP compatible to keep your products safe. And then there's peace of mind: GEA pumps stand for reliability and are backed by a global network with service partners in more than 50 countries.



Dairy

Full of life and goodness, milk is synonymous with good health and nutrition. GEA Hygienic Pump design and gentle handling keep your fresh milk and dairy products just the way you want them.



Plant-based beverages

Fitness is the future: People adhering to this motto are turning plant-based oat, rice, almond and soy beverages into a worldwide phenomenon. GEA pumps are driving the trend and ensure efficient and reliable production, no matter which variety.



Confectionery and chocolate

A taste of the good life starts with stable temperature control, precise solids handling and speed control. GEA pumps are robust for reliability and easily cleaned for consistent quality.



Processed foods

When you make something for every taste and need, we have a pump to keep the process moving. Extremely viscous mixtures, crystalline and corrosive or abrasive media, there's nothing we can't handle gently.

OUR EXPERTISE CREATES SOLUTIONS

GEA pumps are the right choice for reliable and sustainable dairy and food applications. Why?

Because our pumps combine the features that ensure you deliver the product quality that your customers expect.

GEA Hygienic Pumps are manufactured and certified to meet the highest industry standards. With our solutions you know your product's integrity is guaranteed and its level of quality reproduced every time.

Our pumps are constructed from deep-drawn and/or forged stainless steel for hygienic, pore-

and blowhole-free surfaces. Maximum hygiene is further assured by design features such as metal-to-metal contact seal areas and the absence of pump casing dead legs.

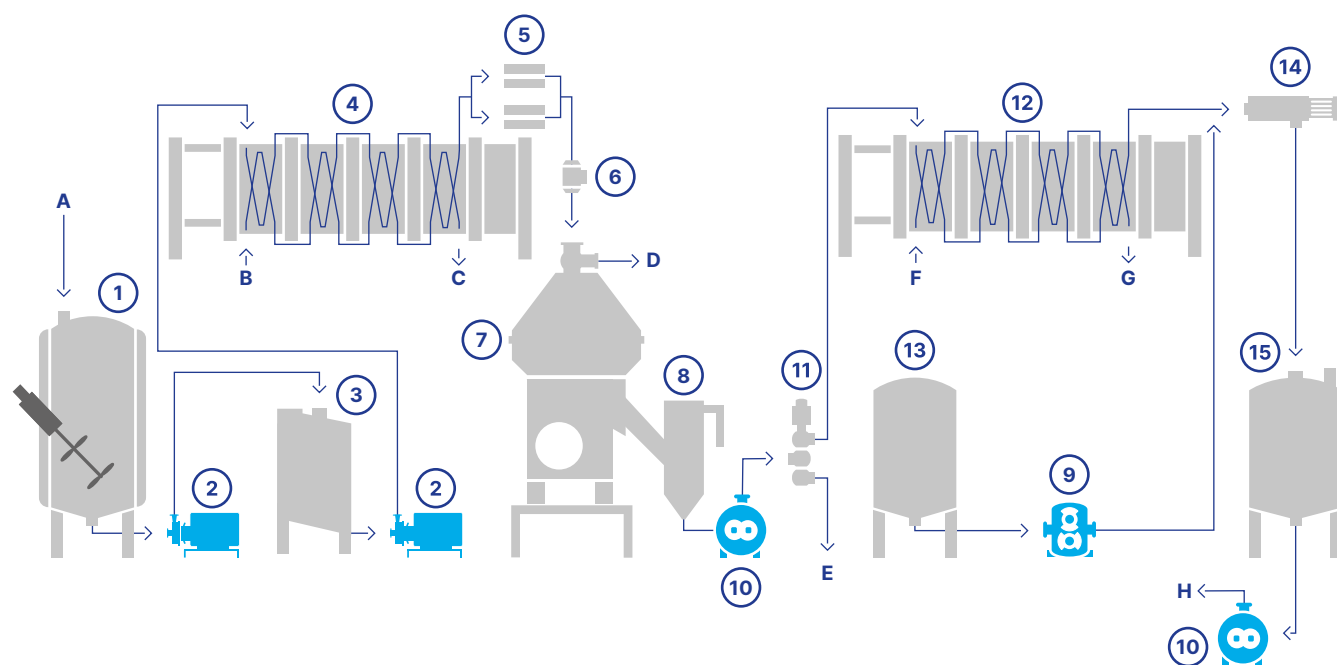
Viscous liquids are pumped with care and precision at a constant pressure so they retain the desired consistency.

Additionally, all our pumps are backed up by GEA CIP (Cleaning In Place) and SIP (Sterilization In Place) solutions.



FIELDS OF APPLICATION

Curd production

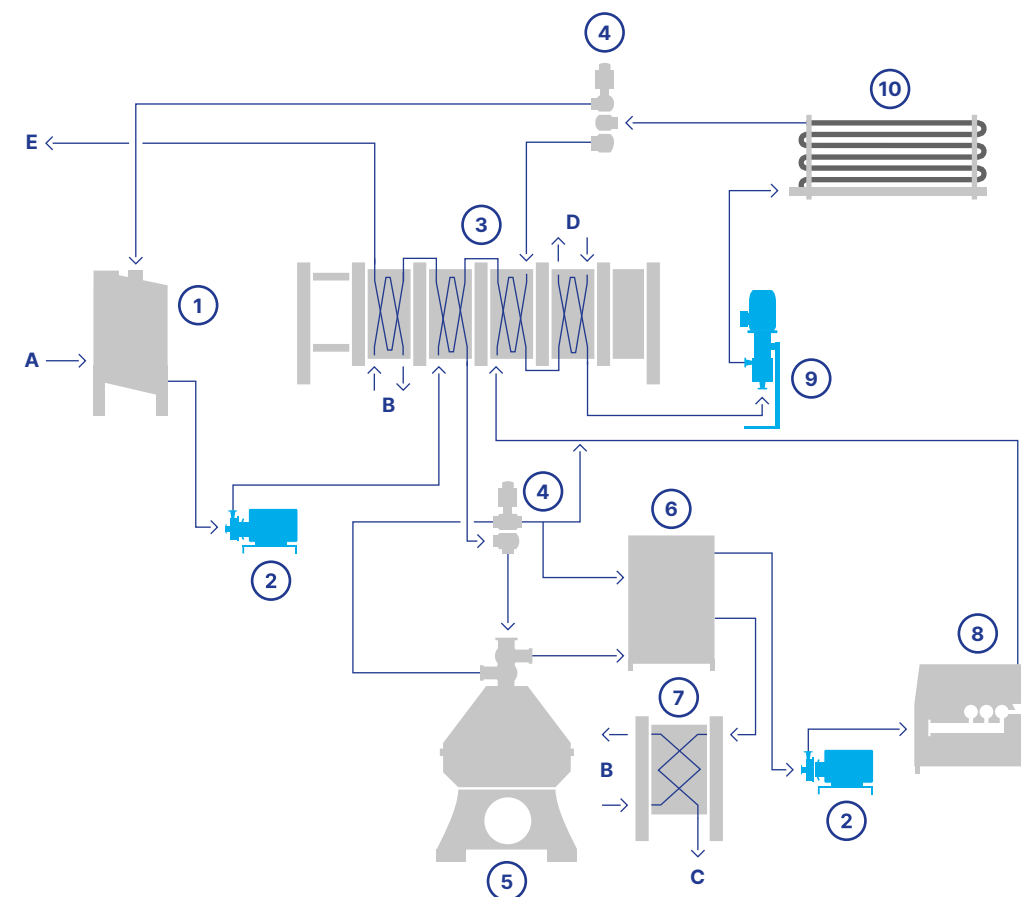


- 1 Coagulation tank with agitator
- 2 Product pump (centrifugal pump)
- 3 Lead vessel
- 4 Heat exchanger for thermization
- 5 Double screen (switchable)
- 6 Supply control
- 7 Curd separator
- 8 Feed funnel

- 9 Product pump (rotary lobe pump)
- 10 Curd pump (twin screw pump)
- 11 Switching valve
- 12 Curd cooler
- 13 Stacking container for cream, fruit concentrates, herbs, etc.
- 14 Dynamic mixer
- 15 Curd silo

- A Skimmed milk inlet
- B Hot water inlet
- C Hot water outlet
- D Whey discharge
- E Discharge
- F Iced water supply
- G Iced water discharge
- H Curd/cream cheese to packaging machine

Milk pasteurization

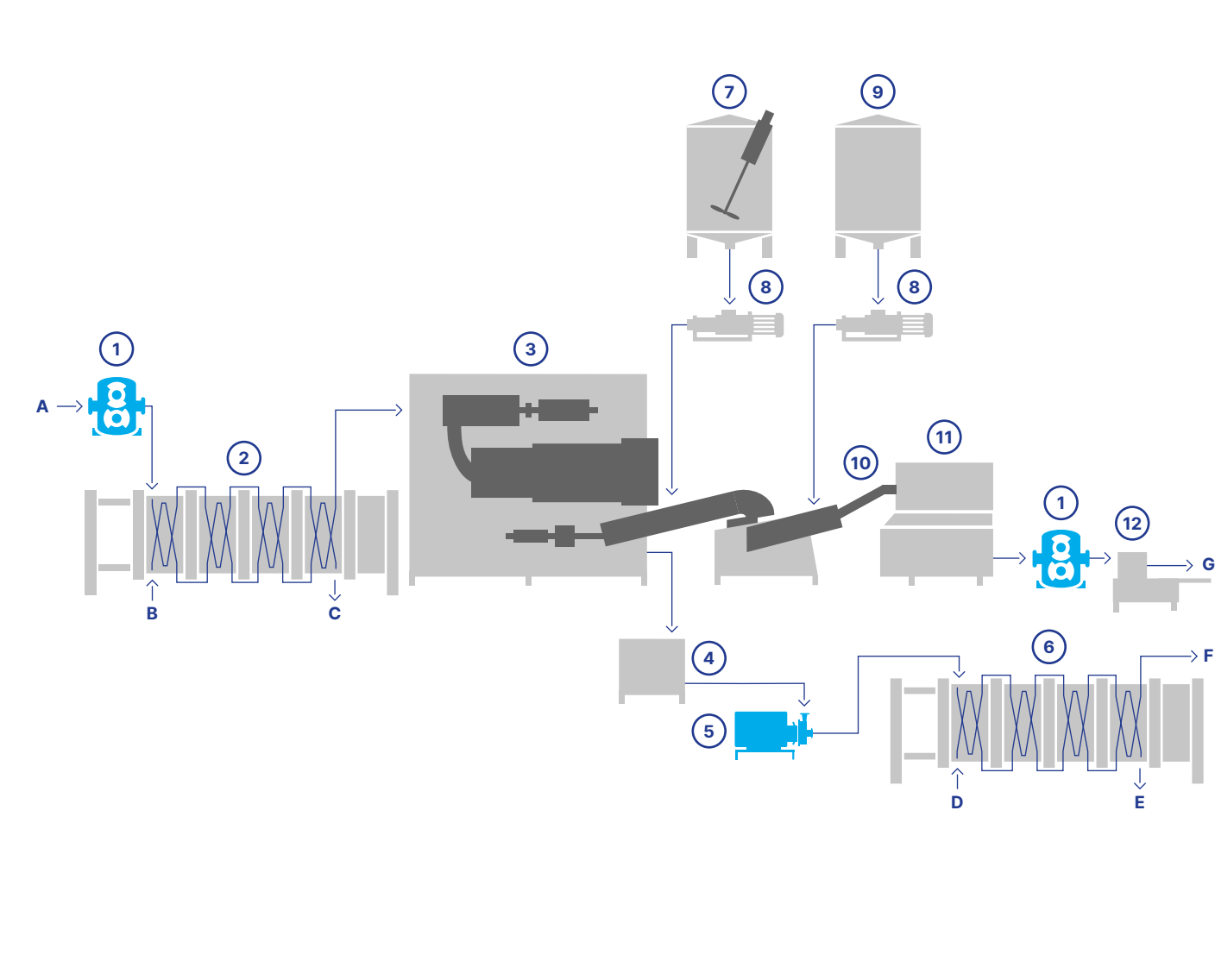


- 1 Feed vessel
- 2 Product pump (centrifugal pump)
- 3 Heat exchanger
- 4 Switching valve
- 5 Separator
- 6 Fat content standardization

- 7 Cream cooler
- 8 Homogenizer
- 9 Pressure increase pump (centrifugal pump)
- 10 Heat holder

- A Raw milk
- B Iced water supply/discharge
- C Excess cream, cooled
- D Hot water supply/discharge
- E Pasteurized, standardized milk

Butter production

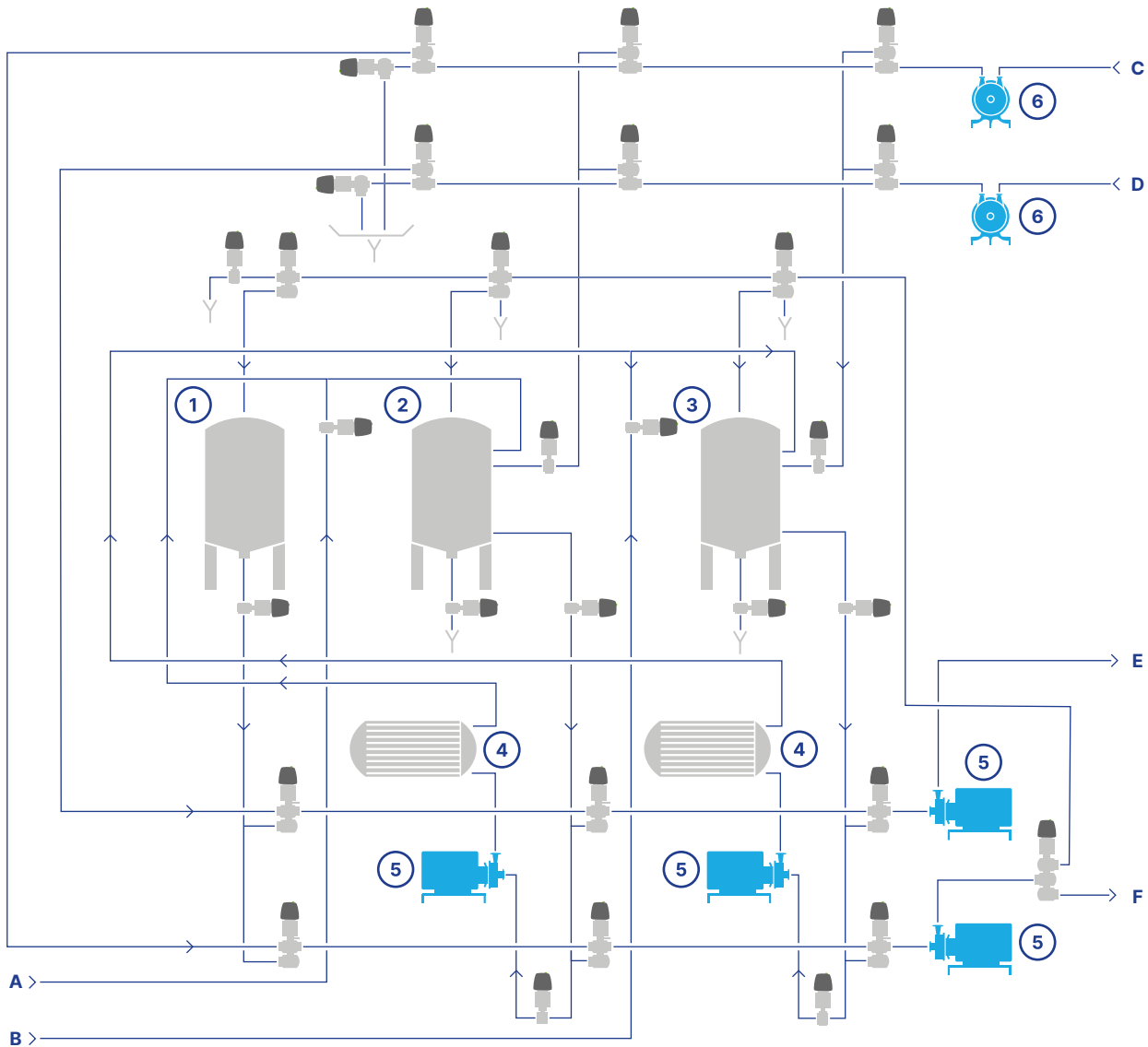


- 1 Product pump (rotary lobe pump)
- 2 Heat exchanger for cream
- 3 Buttering machine
- 4 Buttermilk collection vessel
- 5 Product pump (centrifugal pump)
- 6 Buttermilk cooler
- 7 Container with agitator for liquid dosage

- 8 Dosing pump
- 9 Container for water dosage
- 10 Water content measuring point
- 11 Butter tub with auger feed screw
- 12 Butter packaging machine for butter pieces

- A Supply buttering cream
- B Hot water inlet
- C Hot water outlet
- D Iced water supply
- E Iced water discharge
- F Buttermilk
- G Butter piece

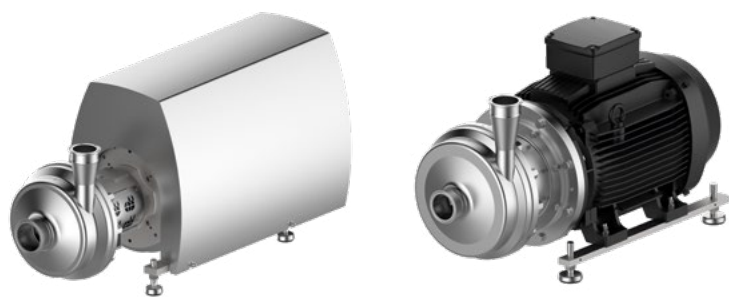
CIP-System



- 1 Fresh water
- 2 Caustic
- 3 Acid
- 4 Heat exchanger
- 5 CIP-feed pump (centrifugal pump)
- 6 CIP-return pump (centrifugal pump)

- A Caustic Concentrate
- B Acid Concentrate
- C CIP-return 2
- D CIP-return 1
- E CIP-supply 1
- F CIP-supply 2

WITH HIGH-PRESSURE PUMPS INTO THE DAIRY INDUSTRY



GEA Hilge HYGIA H

Single-stage, end-suction high-pressure centrifugal pump for membrane filtration in the dairy, food and beverage industry.

The high-pressure pump is designed for system pressures up to 64 bar and is available in three sizes for use in industries with high demands to hygiene and flexibility. A typical application area for the new high-pressure pump is membrane filtration like Reverse Osmosis (RO) and Nano Filtration (NF) in the dairy, food and beverage industry.

High pressure for the whey process

The new 3-A certified high-pressure pump from GEA is based on the GEA Hilge HYGIA, which has proven itself for decades. The premium pump has always stood for good cleanability, high stability and quality. Now the series can also cover the pressure ranges that are required for membrane filtration in the whey process.

Suitable for the highest standards

The materials used for GEA Hilge HYGIA H pumps have been selected for the use in hygienic processes. The housings are made of CrNiMo (1.4404) forged and have a smooth surface without pores and blowholes.

Your benefits at a glance:

- Designed for system pressures up to 64 bar
- Capable of pumping a wide range of liquids
- High surface quality and maximum reliability for hygienic operation
- Facilitated system qualification due to extensive documentation and certificates
- Proven HYGIA design over decades
- Competent pump experts support during the whole life cycle process

GEA Hilge HYGIA H	50 Hz	60 Hz
Flow	200 m³/h	175 m³/h
Head	100 m	145 m
Operating temperature	up to 100 °C	
Sterilization temperature	up to 140 °C (SIP)	
System pressure	up to 64 bar	

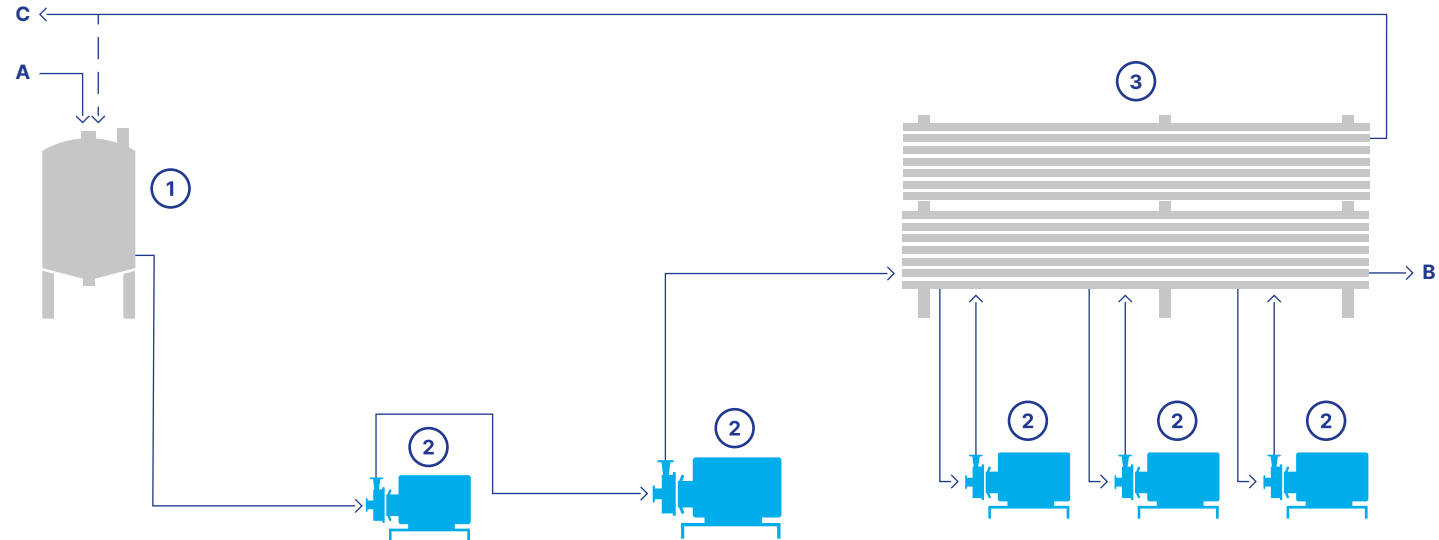


HYGIA H cut-away model



HYGIA H Adapta

Membrane filtration



- 1 Feed/buffer tank

2 Loop pump (High pressure pump GEA Hilge HYGIA H)

3 Membrane filtration Loops
- A Whey/Milk

B Concentrate/Retentate

C Filtrate/Permeate

FOR HIGHLY VISCOUS AND SENSITIVE MEDIA



GEA Hilge NOVALOBE & GEA Hilge NOVATWIN positive displacement pumps – optimized for your application.

Hygienic positive displacement pumps in the GEA Hilge portfolio are specialists for highly viscous media, ensuring optimum product safety, availability and sustainable use of resources through reliable and smooth conveying. The robust design prevents galling and wear and allows high differential pressures. No metal-to-metal contact takes place, which secures smooth transport even for abrasive media.

Flexible pump configurations ensure easy adaption to demanding application requirements. Pumps can easily be retrofitted to cover a different application.

GEA Hilge NOVATWIN

This ingeniously flexible twin screw pump series allows fulfilling several tasks with one pump, facilitating an efficient plant setup.

- One pump for product and CIP: Variable speeds up to 3,000 rpm allow production and cleaning with only one pump.
- Variable screw combinations: Over 40 different combinations of screw diameters and pitches enable the pumps to operate at different operating points.
- Gentle product handling: The pump design ensures a low-pulsation flow, especially for large and delicate particles.

Ideal for modern yoghurt and cheese products

Yoghurt is an exceptionally demanding product to transport: On the one hand, excessive shear forces must be avoided to protect the bacteria cultures and prevent the irreversible separating of the different phases, which would reduce viscosity. On the other hand, the pumps needs to meet all hygienic safety requirements and ensure fast and safe cleaning. The GEA Hilge NOVATWIN moves the product gently through the chambers without changing the direction and with reduced backflow to ensure product integrity. The same advantage applies to cheese curd applications.

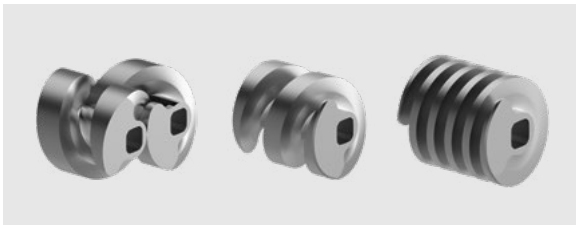
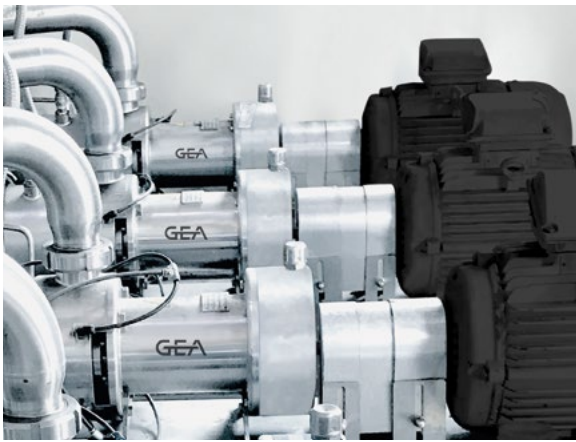
GEA Hilge NOVALOBE

This extremely reliable rotary lobe pump series ensures meeting highest hygienic requirements.

- Robust construction: The GEA Hilge NOVALOBE's compact design and the rigid shaft geometry prevent galling and wear and allow high differential pressure.
- Flexible rotor profiles: The rotor housing can be equipped with various rotor profiles, making it easy to adapt the GEA Hilge NOVALOBE to specific applications for optimum performance in different conditions.
- Service-friendly: The front-loaded mechanical seals can be quickly replaced while the pump and pipe connections remain in place.



GEA Hilge NOVALOBE's rotor case is designed to fit a variety of lobe shapes, including uni-wing, bi-wing and multilobe rotors.



GEA Hilge NOVATWIN can be equipped with a wide range of screws with different pitches.

Stainless materials for precious products

The stainless steel surface of GEA hygienic pumps ensures no liquid residue accumulates. This makes cleaning swift and easy. We use AISI 316L stainless steel, which is either cold-rolled or forged.



GEA Hilge NOVALOBE	
Displacement	0.03 – 2.1 liters / rev
Viscosity	max. 1,000,000 mPas
Operating temperature	150 °C (up to 200 °C on request)
Sterilization temperature	150 °C (SIP)
Max. differential pressure*	16 bar

* Exception: GEA Hilge NOVALOBE 60: 10 bar

GEA can provide a selection of certificates and test reports:

- Surface roughness test reports
- Delta ferrite test report
- Designed according to EHEDG guidelines
- FDA & USP Class VI declaration of conformity
- 3-A certificate (only available for GEA Hilge NOVATWIN)
- ATEX certificate

GEA Hilge NOVATWIN	
Max. flow rate	310 m³/h
Max. differential pressure	25 bar
Max. speed	2,000 rpm
Max. connection size	150 mm
Max. particle size	74 mm

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