



GEA Hygienic Pumps

Competence in beverage industries

Hygienic Pump Technology

The Heart of GEA Flow Components

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

GEA Flow Components

The GEA Flow Components Portfolio comprises hygienic pumps, valve technology and cleaning technology. Our products comply with the highest hygiene standards, such as EHEDG and 3-A.

Our customers' success depends on the quality and profitability of their products. That is why they rely on the advanced technology of GEA Flow Components and on our decades of experience in ensuring smooth processing of liquid products. Our sophisticated process components and service offers for everything that flows are available worldwide from the international GEA sales network.

State-of-the-art pump technology, made to our customers' preferences

At the GEA Hilge Hygienic Pumps Competence Center we develop innovative pump products and processes together with our customers. Our decades of up-close experience with operations and systems at our customers' production sites ensure optimum selection and configuration of the right pumps for every application.

Maximum efficiency

Two product lines, GEA VARIPUMP and GEA SMARTPUMP, enable our customers to choose from a highly versatile pump range with a multitude of smart adaption options to achieve simpler operation, higher-quality production, and reduced consumption of valuable resources. Special construction features of our many types of pumps provide for exceptionally gentle product handling, delivering top-quality products to consumers.

Maximum reliability

Our customers rely on the safe, continuous operation of their production systems without unplanned breaks or disturbances. That is why GEA pumps are optimized for uncompromising reliability in all applications. Thanks to their robust design and long service life, they are known as "workhorses" for their ease of maintenance and outstanding service, proven over decades, and for the great number of pumps currently in operation. Of course, GEA pumps also comply with all relevant hygiene standards and norms, with continuous documentation and up-to-date certifications safely ensuring judicial security.



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



Every fourth liter of human blood is handled by GEA equipment

Two modern pump lines

The right solutions – technologically and economically –
for each application

How to select your pump line

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.

GEA VARIPUMP

Choose GEA VARIPUMP if:

- Complex applications pose high demands
- Pumps need to be customized to individual specifications

Characteristics of the GEA VARIPUMP line:

- Developed for advanced application conditions
- Project-specific customization
- Surface roughness up to $R_a \leq 0.4 \mu\text{m}$
(not applicable for GEA Hilge MAXA)
- Selection of materials in contact with product according to specific requirements (e.g., no die-cast components, Fe $\leq 1\%$)

GEA SMARTPUMP

Choose GEA SMARTPUMP if:

- Complexity of your application is low
- Pre-defined pump variants can cope with your tasks

Characteristics of the GEA SMARTPUMP line:

- Application for common and clearly defined “standard” process tasks
- Simple selection and configuration
- Fast delivery
- Standardized spare parts
- Surface roughness up to $R_a \leq 0.8 \mu\text{m}$
(not applicable for GEA Hilge DURIETTA)

GEA GROUP COMPANY

GEA is one of the largest suppliers of process technology for the food industry and for a wide range of other industries. As an international technology group, the company focuses on world-leading process solutions and components for sophisticated production processes.

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

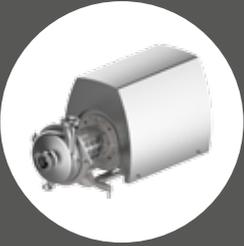
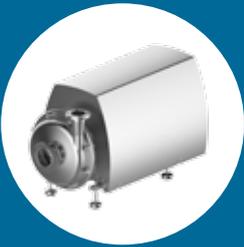
general process pumps capable of handling your product with care and precision, dosing solutions and sanitary pumps that fulfil the strictest hygienic criteria.

GEA Hilge HYGIA

The “Swiss Knife” among the hygienic pumps. Premium quality, reliability and highest flexibility of customization ensure successful application in food, beverage and pharma processes. Wet end parts meet the requirements of the 3-A, QHD and EHEDG standards. Fully encapsulated mechanical seal with the GEA unique/patented face design. Casing drain is an available option.

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.

<p>GEA VARIPUMP</p>	<p>Wide model range with numerous variants. Customization to specific customer requirements</p>	<p>GEA Hilge HYGIA</p> 	<p>GEA Hilge MAXA</p> 
<p>Single-stage end-suction centrifugal pumps</p>			
<p>GEA SMARTPUMP</p>	<p>Clearly defined list of models, limited to standard requirements, no other variants</p>	<p>GEA Hilge TP</p> 	

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 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 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 fully drainable and EHEDG certified. Heatable front cover and rotor case are available as options.

GEA Hilge SIPLA



Single-stage self-priming centrifugal pumps

GEA Hilge CONTRA



Multi-stage centrifugal pumps

GEA Hilge NOVALOBE



Rotary lobe 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 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 and the beverage industry

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

All over the world, our unique, hygienic pump solutions are installed in:

Breweries

The unique, hygienic design of our GEA Hilge pumps prevents contamination of the beer and ensures product characteristics are maintained.



Juice production

Our wide range of pumps caters to the highly varying needs of juice manufacturers, maintaining ingredient integrity and the desired viscosity.



Wineries

This venerable tradition requires a high degree of environmental control with rigid hygiene standards: GEA Hygienic Pumps ensure the finished product lives up to its label.

Distilleries

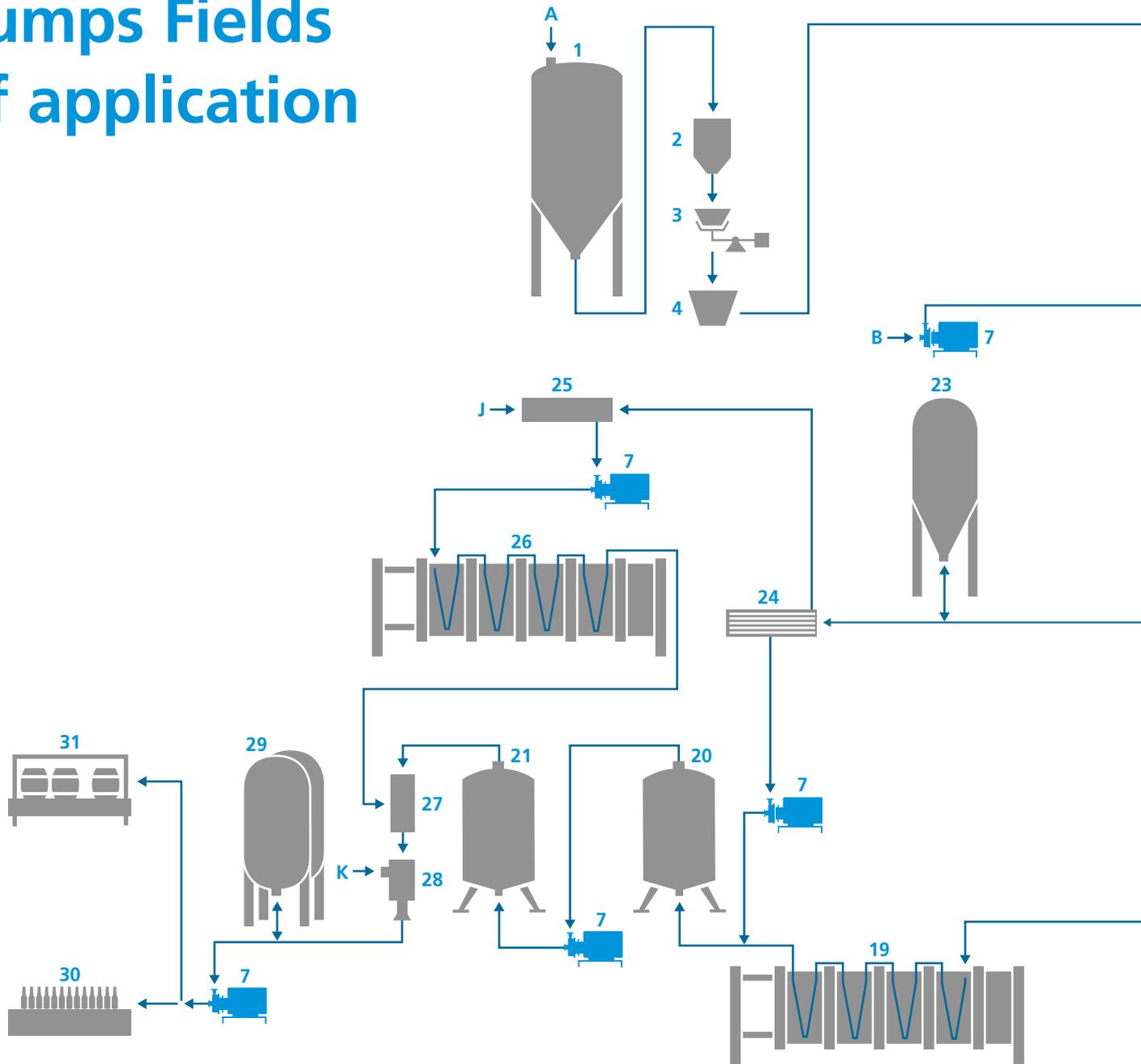
Here the emphasis is on safe handling in hazardous environments. We have the ATEX certification so vital to this industry.

Soft drinks

Our Cleaning in Place (CIP) and Sterilization in Place (SIP) capable pumps are ideal for the intricate mixing and carbonizing processes in this industry. Residue is reliably cleaned away in time for the next batch.

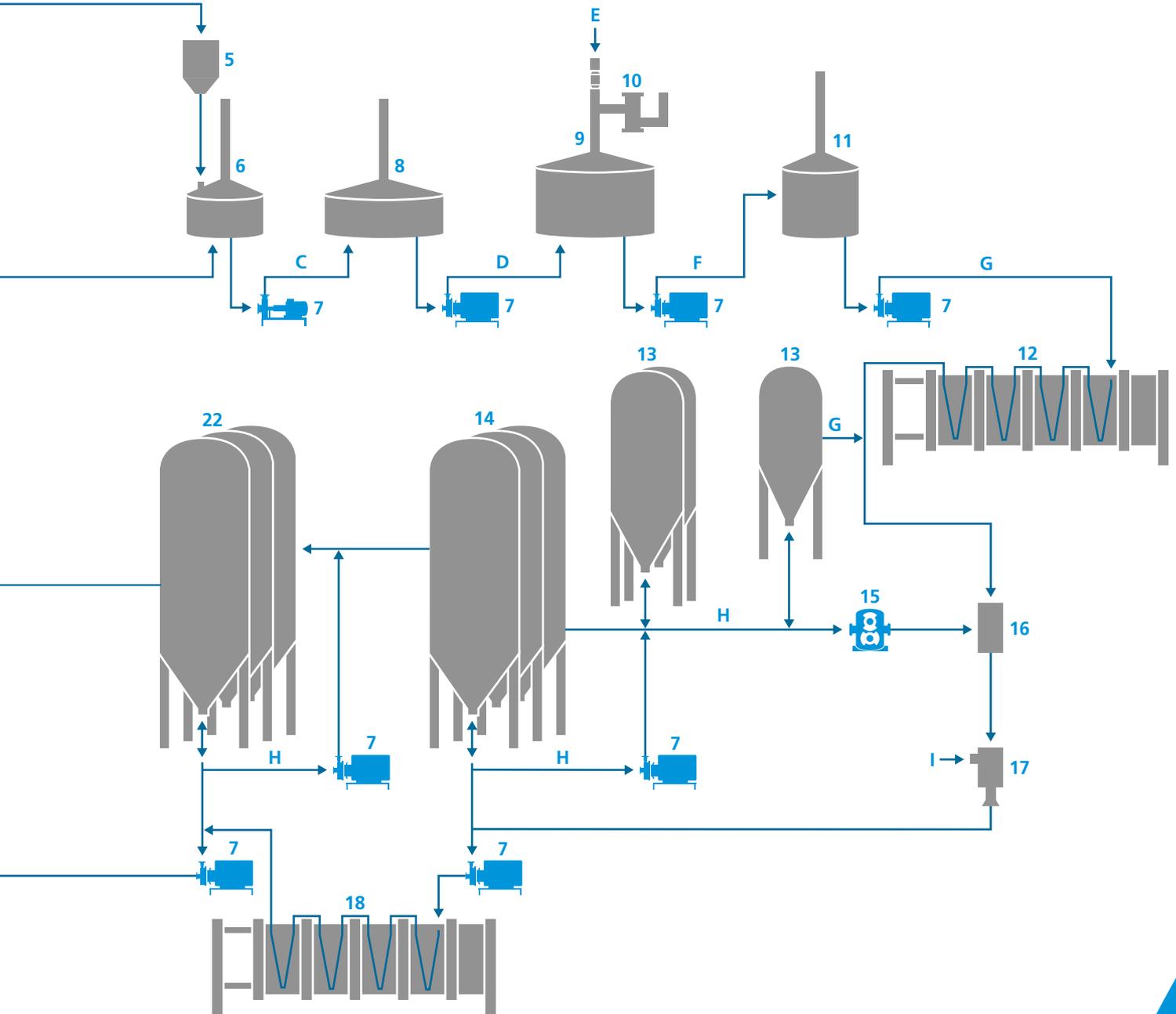


Pumps Fields of application



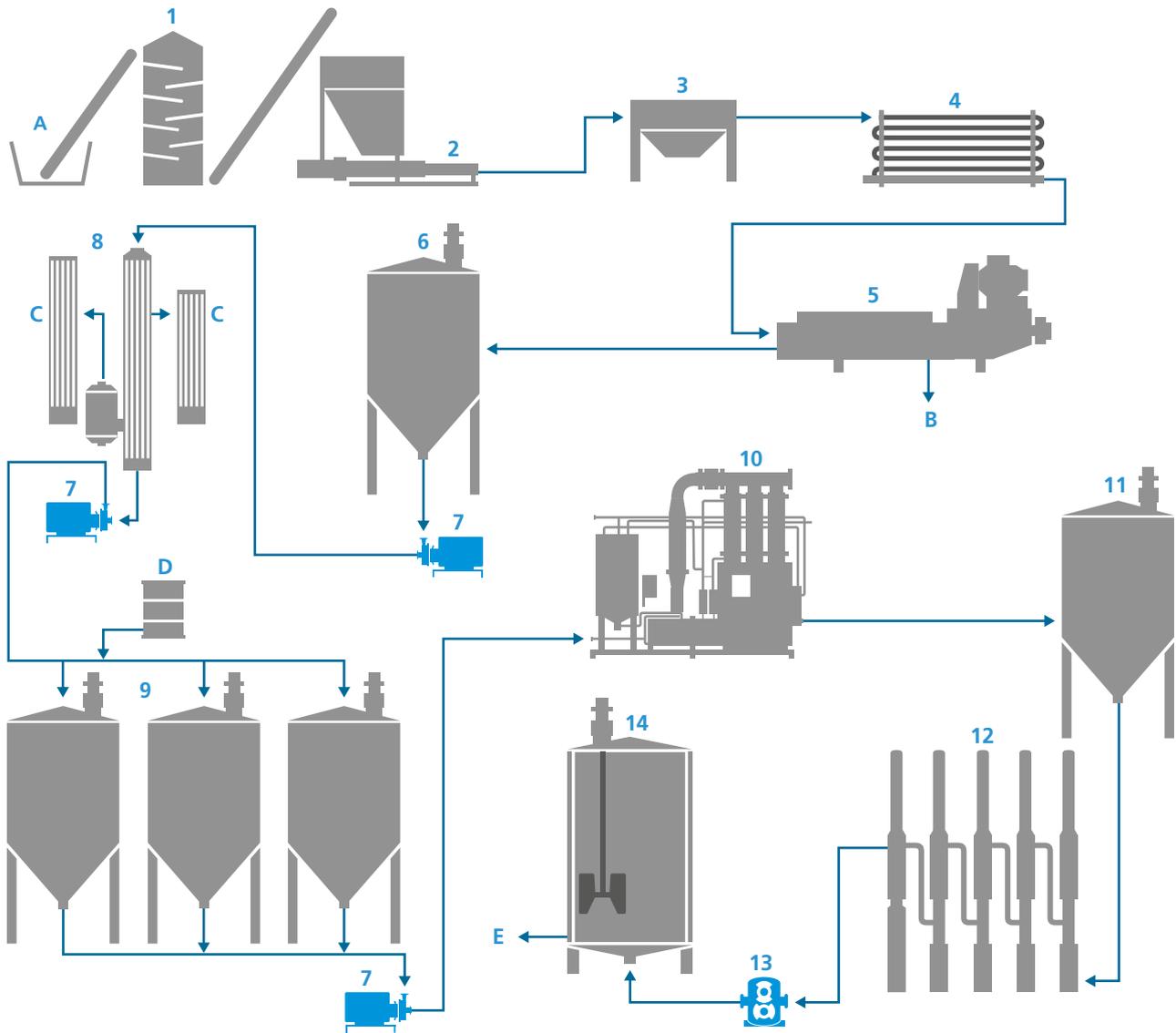
PROCEDURE IN A BREWERY

- | | | | |
|-----------------------|--------------------------|---|-------------------------|
| A Malt | H Yeast | 1 Malt silo | 8 Lauter tun |
| B Water | I Sterile air | 2 Malt cleaning | 9 Wort kettle |
| C Mash | J Process water | 3 Scale | 10 Heat recovery |
| D Lauter wort | K CO ₂ | 4 Malt-mill | 11 Whirlpool |
| E Hopping rate | | 5 Grist case | 12 Wort cooler |
| F Hot wort | | 6 Mash pan | 13 Yeast tanks |
| G Wort | | 7 Product pump
(centrifugal pump) | |



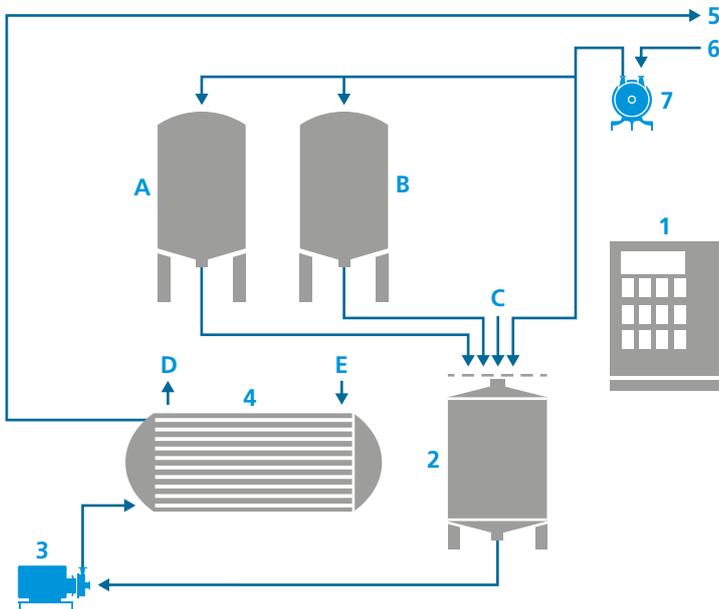
- | | | |
|---------------------------------------|-----------------------|------------------|
| 14 Fermenting tanks | 20 Filter | 27 Blender |
| 15 Product pump
(rotary lobe pump) | 21 Stabilizer | 28 Carbonizer |
| 16 Yeast dosage | 22 Storage tanks | 29 Pressure tank |
| 17 Wort aeration | 23 Yeast production | 30 Bottling |
| 18 Green beer cooling | 24 Yeast beer cooling | 31 Keg filling |
| 19 Beer cooling | 25 Deaerator | |
| | 26 Cooling | |

JUICE PRODUCTION (E.G., CHERRY)



- | | | |
|-----------------------------------|--|----------------------|
| 1 De-stemming system | 8 Initial evaporation/flavor recovery | A Cherries |
| 2 Crushing | 9 Tanks for addition of enzymes | B Pomace |
| 3 Finisher | 10 Cross-flow filtration | C Flavor |
| 4 Heat exchanger | 11 Tank | D Enzymes |
| 5 Decanter | 12 Evaporator | E Cherry concentrate |
| 6 Tank | 13 Concentrate pump (rotary lobe pump) | |
| 7 Product pump (centrifugal pump) | 14 Tank for concentrate | |

CIP-SYSTEM



- | | |
|--|-----------------------|
| 1 Control | A Caustic concentrate |
| 2 Tank | B Acid concentrate |
| 3 CIP-feed pump (centrifugal pump) | C Fresh water |
| 4 Tubular heat exchanger | D Condensate |
| 5 CIP-feed | E Vapor |
| 6 CIP-return | |
| 7 CIP-return pump
(self-priming centrifugal pump) | |

Quality products need quality pumps

In such a diverse and competitive industry you need pumps that contribute to the quality of your product. GEA Hygienic Pumps do this, simply because they treat your product better. And this is why:

Standardization

Clearly defined list of models with standardized connections. The GEA SMARTPUMP line provides smart solutions for standard applications and uncompromising hygiene and quality. The GEA Hilge TP, for instance, offers a clearly defined list of models with standardized connections and requirements.

Customization

Customized to fit

With GEA, you always get a perfect match to your needs. With the GEA Hilge HYGIA, for instance, you have a choice of numerous connections, impellers, shaft seals, coupling methods, frequency converters, surface finishes, foundations, motors and horizontal and vertical mounting. And that's just for one pump model.



GEA Hilge TP



GEA Hilge HYGIA

Quality materials

Cold-rolled stainless steel for reliability

Ordinary pumps are often made of cast stainless steel, with uneven surfaces that cause corrosion and reduce productivity. That's why all GEA Hygienic Pumps are made of cold-rolled stainless steel that provides a robust, homogenous and pore-free surface.

Polished performance

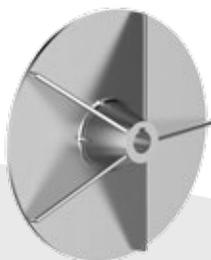
The surface is electro-polished – which means a completely smooth surface down to the molecular level.

Unique hygienic design

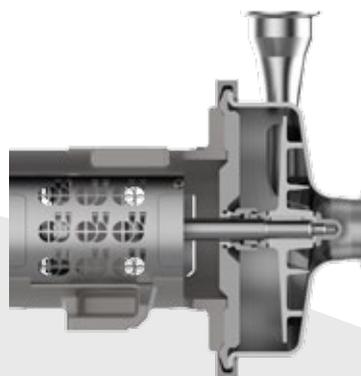
Total circulation means no dead ends. The pump casing design and the set position of the input and output connections generate a vortex inside the pump, so the fluid keeps moving.

Hygienic shaft seal solutions

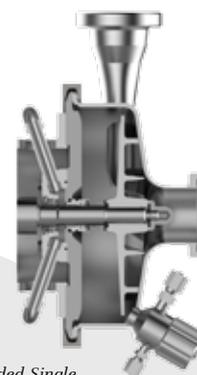
In ordinary pumps, the seal is positioned in a seal chamber, generating bacteria-friendly dead ends. The hygienic shaft seal solutions in GEA pumps are mounted in an optimum position in the product flow to ensure lubrication, cooling and CIP and SIP capability.



Free Flow Impeller



Front Loaded Single Mechanical Seal



Front Loaded Single Mechanical Seal with Quench Flush System

Pumps that treat your product right

In a competitive industry you need premium pumps that contribute to the quality of your product. GEA Hygienic Pumps are manufactured and certified to the highest industry standards. With our solutions, you know your product's integrity is guaranteed and its level of quality reproduced every time.

In beverage applications all ingredients are kept separate from one another. Our pumps are designed for easy CIP (Cleaning In Place) and SIP (Sterilization In Place) applications so there is no chance of residue tainting the next batch. And like all GEA pumps, our sanitary solutions are designed to be highly user-friendly.

CIP

All GEA Hygienic Pumps are CIP compatible. Rinsing water and detergent solutions are circulated through tanks, pipes and process lines without dismantling the equipment.

Large flow applications

As well as hot and cold water transportation, GEA pumps can be installed for all types of large flow liquid transfers such as brewing and cross-flow filtration.

Liquid transfer

Juice and soft drink applications require the flexibility and hygienic design of GEA pumps.

Highly viscous liquid

GEA pumps move syrups, yeast and other similar ingredients gently and safely through the production process.





We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA is a global technology company with multi-billion euro sales operations in more than 50 countries. Founded in 1881 the company is one of the largest providers of innovative equipment and process technology. GEA is listed in the STOXX® Europe 600 Index. In addition, the company is included in selected MSCI Global Sustainability Indexes.

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