

## COMPACT-STAR™:

Innovative brewhouse concept for 40 hl up to 100 hl.



# Flexible, versatile, efficient, sustainable and cost-effective.

The importance of medium-sized and specialty breweries is growing steadily and thus also their technical and technological demands on production equipment. Since 1874, we have been manufacturing high-quality brewhouse equipment for facilities all over the world and are one of the leading suppliers of process technology for the brewing industry.

With the innovative development of the COMPACT-STAR™ brewhouse concept our engineers meet the increased requirements of medium-sized breweries with their great variety of beers and the challenge of developing a customized brewhouse by taking into account the key factors flexibility, versatility, efficiency, sustainability and cost-effectiveness.

An important feature of the COMPACT-STAR™ is the high flexibility regarding production and later expansions. The brewhouse has a modular design and the brewing vessels are connected as independent units. The later integration of additional vessels to increase the capacity of your brewery is possible without any problems due to the fact that such upgrades are considered from the very beginning.

The COMPACT-STAR™ program includes brewhouses with cast-out quantities from 40 to 100 hl. Depending on the equipment and vessel configuration, up to 12 brews per day are possible. These possible combinations allow a very wide range of annual production capacities and thus meet the requirements of specialty and medium-sized breweries.

## Individual and efficient

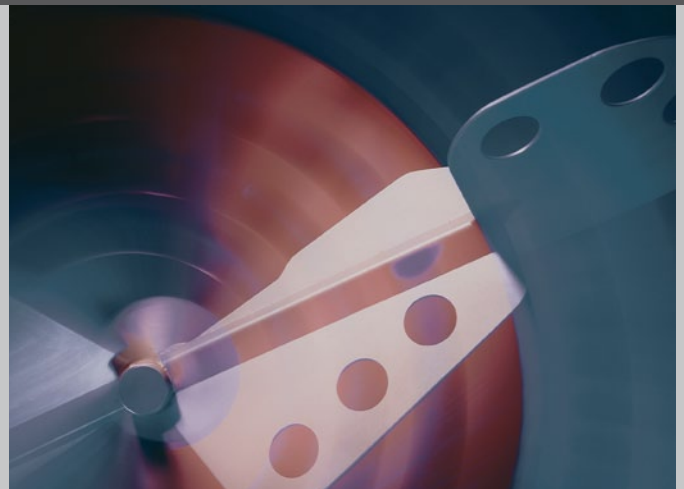
The basic configuration of the COMPACT-STAR™ with mash tun kettle, lauter tun and Whirlpool/wort kettle is already designed for up to 5 brews per day. With the wort pre-run tank as buffer tank for the lauter wort, it is possible to produce up to 7 brews per day. If a wort kettle plus separate Whirlpool is used instead of the combined vessel of the basic configuration, up to 9 brews per day are possible. With conventional brewhouse concepts, the cast-out frequency cannot be increased further at this stage due to technological bottlenecks in the lauter tun. GEA Brewery Systems, however, provides a unique solution with the MILLSTAR™ for steeping conditioned milling which ensures conservation of the husk fraction that is important for the lautering process. With this milling system, the specific false bottom load in the lauter tun is increased and the occupation time is reduced significantly. Thus, up to 12 brews per day are possible.

## FACTS & FIGURES



MILLSTAR™ 2.5 t/h – specifically developed for COMPACT-STAR™

Agitator paddle with optimum streamlined shape for gentle mashing



For Ale brewers, a brewhouse with 2 vessels is already available.

These configuration options allow the brewer to select the equipment individually for his brewery in order to have the optimal system right from the start. One-shift operation breweries can have the ability to produce several brews during such a short period by reducing occupation time during the brew day with a well designed system.

As the variety of beer is very important for medium-sized and specialty breweries, the requirements regarding the versatility of the brewhouse equipment are very high. Unique specialty beers require special mashing procedures, and for this reason we take the technical prerequisites for infusion and decoction mashing into consideration for each system.

### **Efficient production of a great variety of beers**

When selecting the technology to be applied, high process efficiency is always the top priority: high brewhouse yields, optimum occupation times of the vessels and minimum consumption of primary energy.

The CIP concept developed by GEA uses special valve shut-offs for safe separation of vessel groups and pipes. This allows independent cleaning of vessels and pipes, even if production is still going on in other brewhouse vessels. This saves times and increases plant availability.

### **Innovative technology pays off**

The mash vessels are heated with modern templates. Together with an adjustable pre-masher, the flow-optimized agitator paddle provides a very homogeneous mash with minimum oxygen uptake. The LAUTERSTAR™ technology in the lauter tun ensures clear wort and short occupation times.

The internal boiler JETSTAR™ in the Whirlpool/wort kettle allows a versatile boiling program and safe trub separation. The individually controllable two-phase boiling process enables flexible control of the thermal reactions during wort boiling and independent evaporation of undesired aromas via the multi-dimensional wort spreader – without forced circulation by pumps and the related mechanical stress.



Lauter tun with LAUTERSTAR™ technology

JETSTAR™ – Technology and energy management hand in hand

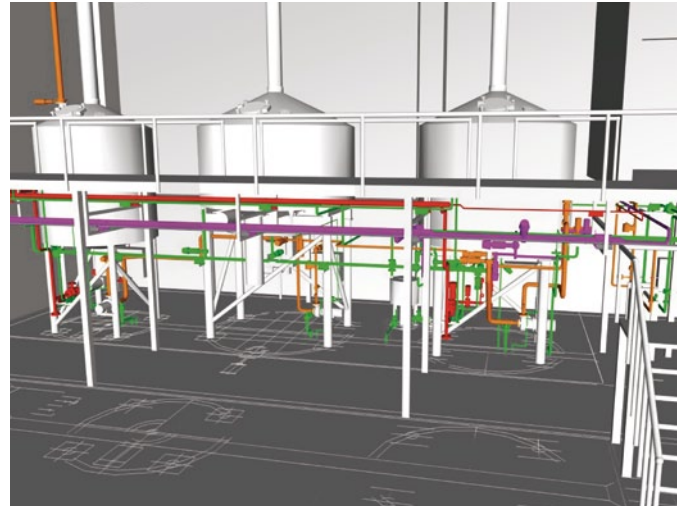


The use of the JETSTAR™ is of special importance with regard to the key factor sustainability, because with this boiling system, the total evaporation rate can be reduced to less than 4 %, which leads to a lower consumption of primary energy and thus a reduced carbon footprint of the brewing process.

### Cost-effective pre-fabrication

The standardization of the individual brewing vessel modules in a modular system allows individual configurations. The brewing equipment is provided largely pre-piped and pre-wired, and in a modular design or for open installation without a frame. As a consequence, erection periods are minimized and the costs on site are reduced. In addition, there are no limits regarding vessel finish and vessel appearance. The compact plant design requires minimum installation space and thus leaves more space in the brewhouse.

The COMPACT-STAR™ is rounded off by the automation and visualization system OTAS™ from GEA Brewery Systems – a well-proven solution for the user-friendly control and monitoring of medium-sized plants.



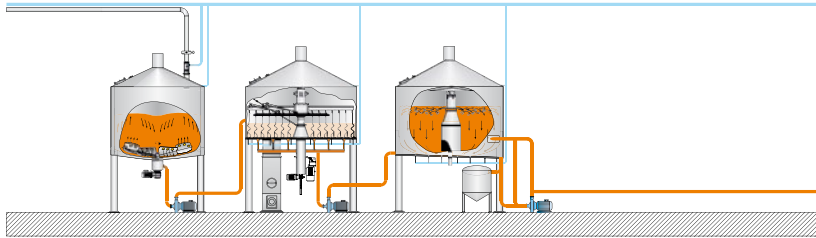
This is how your 60 hl plant could look like!

Consultation, plant design, manufacturing and installation – all from one source. Components are perfectly matched to each other, and professional project management ensures fast and smooth project implementation.

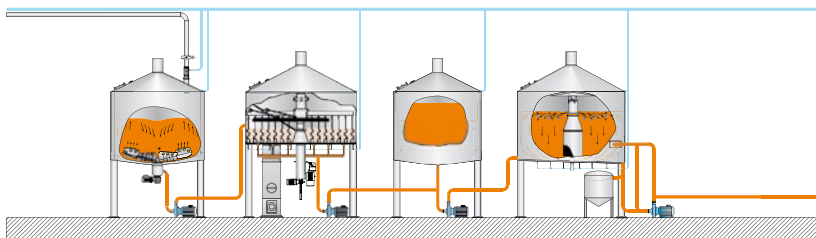


OTAS™ – Open Technology  
Automation Solution for  
COMPACT-STAR™

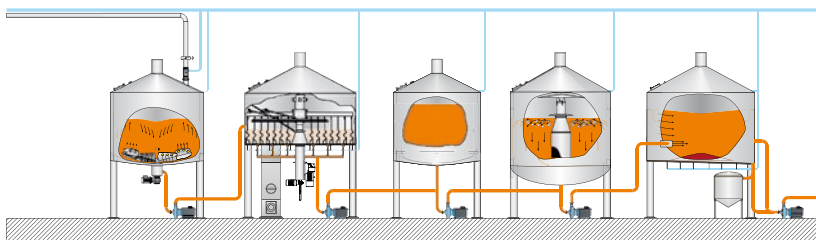
# Concept versions at a glance.



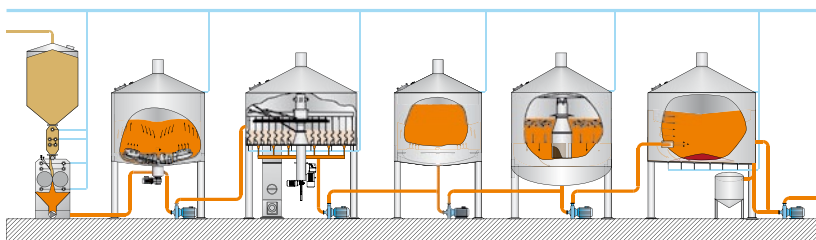
Basic configuration with 3 vessels – 5 brews per day



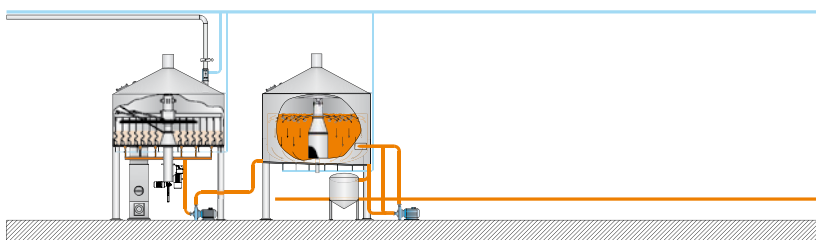
Upgrade with a pre-run tank – 7 brews per day



Upgrade with a Whirlpool – 9 brews per day



Upgrade with a MILLSTAR™ – 12 brews per day



Ale brewery with 2 vessels



## **COMPACT-STAR™:** The concept for the future

With the COMPACT-STAR™, a flexible brewhouse concept based on self-developed solutions – with modular design and synergy effects – we offer excellent brewhouse technology to medium-sized and specialty breweries on favourable terms.

Contact us!



GEA Process Engineering

**GEA Brewery Systems GmbH**

Huppmann Tuchenhagen

Locations:

Heinrich-Huppmann-Str. 1, 97318 Kitzingen, Germany  
Phone +49 9321 303-0, Fax +49 9321 303-603

Am Industriepark 2–10, 21514 Büchen, Germany  
Phone +49 4155 49-0, Fax +49 4155 49-2770

info@gea-brewery.com, www.gea-brewery.com