GEA CRAFT YEAST PROPAGATOR

Yeast propagation system for craft brewers.

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SKID-MOUNTED YEAST PROPAGATION SYSTEM FOR CRAFT BREWERIES.

As yeast is one of the most important constituents of beer production, influencing its taste, bouquet and color, GEA has developed a yeast propagator especially for craft brewers and small to medium sized breweries.

An effective solution for yeast propagation in the craft brewery sector, the GEA Craft Yeast Propagation system adds a further level of control to the brewing process, allowing for experimentation whilst optimizing the consistent production of distinctive beers by producing high quality yeast for their fermentation.

Designed for small to medium-sized craft breweries and complementing GEA's CRAFT-STAR® and GEA COMPACT-STAR® solutions, the GEA Craft Yeast Propagator skid is designed to fit propagation sizes of 5–25 hl.

Key benefits of the GEA Craft Yeast Propagator include
- a pre-engineered modular process skid that facilitates transportation, installation and setup
- with semi-automated control, brew masters have more opportunity to experiment
- the clean-in-place (CIP) process can be handled manually

Focussing on the best possible yeast quality
Available with multiple additional extras, such as living cell measurement, a sterilizing option, etc, only the tank, tank top and the pump need to be changed to match the needs of the designated tank size. A clean-in-place system (CIP) can also be supplied if required.

The propagator is equipped with a recirculation pipe, an internal aeration system and a sterile air measuring unit. During the propagation phase, the yeast cells in the reaction tank are supplied with oxygen to keep them in a state of aerobic metabolism and promote rapid cell growth.

To optimize the fermentation process, the yeast cells should be in the logarithmic growth phase when the fermentation tank is inoculated. For this purpose, the tank is automatically aerated and the required propagation temperature is maintained (both temperature and aeration rate are fully adjustable). Assimilation takes place directly in the propagator.

To start the process, cold wort is pumped from the cooler into the reaction tank. The yeast suspension is then added from a Carlsberg flask using sterile air. The circulating pump ensures that the yeast suspension is thoroughly mixed and homogenized during the entire process. Aeration is performed via a vertical lance in the cone and the nozzle flow supports the homogenization effect. After propagation, the yeast suspension is introduced into the wort line to fill the fermentation tank.

Greater control for the craft brewer

Given that yeast is one of the most important components in beer production, it's important to select the right strain, maintain and propagate healthy cells and utilize the surplus yeast. To handle the increasing number of yeast varieties available on the market, technical automation has become increasingly signficant. Designed for smaller budgets and capacities, the GEA Craft Yeast Propagator offers gentle homogenization, highly efficient aeration and adaptive temperature control. In addition, enabling more experimentation via reduced automation, it also allows for more spontaneity.

Incorporating a leaner design, a customized control system and a manual operation mode, the skid offers a cost-effective solution to the way craft brewers want to work. GEA believes that craft brewers don't simply want to press a button and feel that they're not able to intervene. Here, for example, they can change the propagation parameters for each individual yeast strain without the need for an automation engineer.

Likewise, craft brewers don't always add the yeast at the same time during fermentation. It's therefore, critical that the yeast is in optimal condition after propagation. In addition the propagator can be used as an assimilater. The brewer is able to leave yeast inside the propagator and simply top up with wort to run the next propagation in a repeated batch several times.

Available configurations and batch sizes

- Production volumes from 3–25 hl
- Multiple extras available, such as living cell measurement, load cells, a sterilizing option and an internal CIP system
- The propagator is equipped with a recirculation pipe and an internal aeration system with a sterile air measuring unit (no need for a stirrer in the tank)

Fermentation in CCT:

- Final cell concentration in propagator: 100M cells/ml
- CCT cell concentration at start of fermentation: 10M cells/ml
- Doubling time of yeast cells: 8 hours

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