

# Yeast Technology

High-End yeast propagation and  
harvest yeast revitalization



## Our systems CONTI PROP and FLEXI PROP in detail

Vigorous and strongly fermenting yeast in a physiologically flawless state is an essential requirement for high and consistent beer quality. It also contributes to biological safety. The aerobic phase in the yeast life cycle is particularly important for later vitality, as it is during this phase that all the essential components of the cells are synthesized. High fermentation power and subsequent high vitality of the yeast cells characterizes the **CONTI PROP** system for aerobic yeast propagation developed by Esau & Hueber. The removable quantity can be adapted to the production requirements by adjusting the propagation time, temperature, aeration volume/aeration intervals and the start cells/residual cells in the propagator. Aeration with the **TURBO AIR** yeast aeration system and the resulting ultra-fine distribution of air ensures optimal yeast growth. The construction strictly follows the specifications for hygienic design and ensures biological safety, so that the brewery always has a reliable supply of fresh propagation yeast.



Example of a FLEXI PROP with harvest yeast revitalization

Modern yeast management for breweries of any size requires strongly-fermenting harvesting yeast as well as sufficient amounts of fresh propagation yeast at any time. The ingenious **FLEXI PROP** yeast management system by Esau & Hueber makes it possible to manage both yeast flows in an effective manner to ensure a consistent yeast supply and therefore a consistent beer quality. The **FLEXI PROP** procedure builds on the success of the **CONTI PROP** yeast propagation system and the **FERMEX** revitalization system and combines the advantages of both solutions in one system. This modern yeast management system includes a closed, aerobic yeast propagation unit and a crop yeast treatment unit that expels the carbonic acid from the fermentation process and subsequently provides intense aeration - with or without the addition of wort, depending on the time of application - to achieve vitalization.

### Technical data

The propagation equipment is equipped with:

- Gas panel
- Product panel with swing bends
- Butterfly valves
- Media gentle pump
- **TURBO AIR** aeration nozzle

Optional equipment:

- Fully automated gas management
- Hygienic and fully automated double-seat valve block
- Inductive flow meter in the main pipe
- Additional tanks with piping and connection

## Your advantages

- Maximum biological safety, as this is a closed system that uses no accessories
- Homogeneous yeast suspension independent of aeration due to an external recirculation and ventilation device
- Smoother, more reproducible fermentation processes due to good physiological condition of the yeast
- High selection pressure on alien organisms
- Fast degradation of diacetyl
- High fermentation rate, high beer quality, high foam stability, better filter service life, etc. due to an excellent fermentation process
- Improved foam and pH value also for older yeast due to revitalization
- Different sizes of vessels and degrees of automation offer a solution for every type of budget



Also upstream propagation solutions such as CARLSBERG FLASK are available

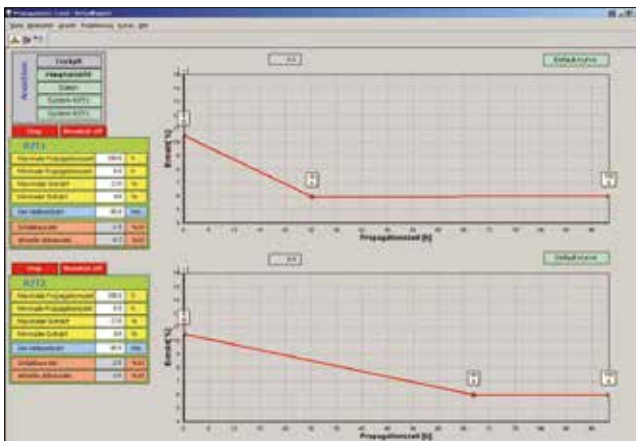
Yeast line and nozzle	Propagation vessels
DN 40	10 hl to 20 hl
DN 50	30 hl to 70 hl
DN 65	80 hl to 280 hl
DN 80	300 hl to 800 hl

In order to fully automatize a **CONTI PROP** and/or a **FLEXI PROP**, Esau & Hueber provides a self-optimizing solution for the control of yeast propagation the **YEAST PROPAGATION MANAGER (YPM)**.

The **VIRTUAL EXPERT** made by GIMBIO and the Faculty of Brewing and Beverage Technology at the Technische Universität München-Weihenstephan is an expert system designed for situation-orientated control, in contrast with conventional controllers that are strictly recipe-based. The **YPM** continuously monitors all process-relevant parameters in real time and intervenes when they deviate from the ideal values. Based on constant evaluation of the total process the software learns and optimizes itself. The decisions required are based on the knowledge of experts and not on mathematical calculations. The **YPM** controls temperature



Example of a FLEXI PROP



and aeration as a function of the number of cells and the extract decomposition as determined by inline measurements of turbidity and the original wort content in the recirculation line. This system controls the outcome of yeast production, to ensure yeast of optimal vitality with  $80$  to  $100 \times 10^6$  cells/ml and a residual extract of approx.  $5-7 \text{ }^\circ\text{P}$  will be available at a predetermined time.



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