BUCHER
denwel

Cerinox® BR

Cross-flow filtration plant with ceramic membranes

For beer recovery from surplus yeast
– Short payback period
– Economic system with diafiltration
– High quality of recovered beer

Characteristics

Cerinox® is a compact cross-flow filtration plant equipped with ceramic tubular membranes. The plant consists of two main parts, the filter unit and the CIP station. Both parts can be arranged separately or on a common skid. Different automation levels are available, from manually controlled units up to fully automated plants.

The special design of the so-called dual-flow modules allows high packing density of filter surface, which leads to small footprints and lower heights of Cerinox® plants. Especially because of the latter, the Cerinox® is easy to maintain. Due to the compactness of the plant, its inner volume is small compared to the installed filter area. This leads to low water and energy consumption as well as low product losses. Tailor-made ceramic membranes for beer recovery from surplus yeast guarantee high economical benefit and high quality of recovered beer. The high durability of the membranes, together with a well proven process based on over 20 years of experience with more than 100 plants installed worldwide, lead to very reliable systems with very low demand for operator presence and maintenance. This, and the short pay back periods, made the CERINOX® a standard solution for beer recovery today.

Basic process

During the brewing of beer, surplus yeast settles in the fermentation and storage tanks. The total volume of surplus yeast represents about 2 to 3 % of a brewery's output. Approximately 50 % of the volume of surplus yeast is beer, which is lost to the brewery if the slurry is sent untreated to farms or food producers. If yeast is discharged into the sewerage system, very high treatment charges arise because of the very high biological oxygen demand. The average B.O.D. value is around 140,000 mg/kg. For these reasons, the valuable component "beer" is recovered from surplus yeast.

Characteristics of the membranes

For the beer recovery, process tailor-made ceramic membranes in tubular multi channel elements have been developed:

Channel diameter	8 mm
Pore size	0.3 µm
Pressure resistance	30 bar
Temperature	> 90 °C
pH	0~14

The robustness of the ceramic material guarantees long lifetime of the membranes, high availability of the plants, low membrane replacement costs and low maintenance costs.

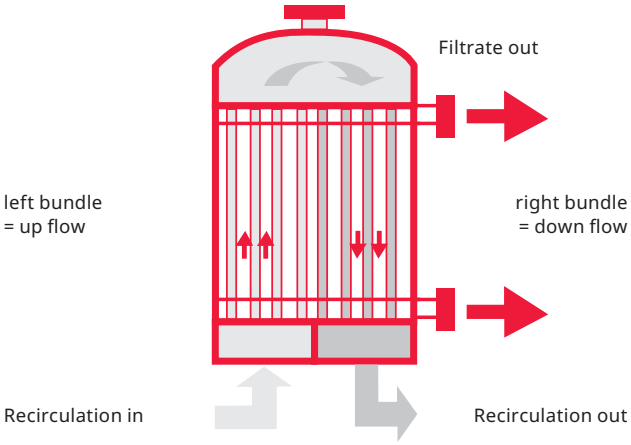
Quality of recovered beer

The membrane's pore size of 0.3 µm guarantees high quality of recovered beer:

Turbidity of filtrate	< 08. EBC (90° angle)
Yeast cells in filtrate	< 5 cells / 100 ml
Bacteria reduction	> 105

The dual-flow module

The name of the dual-flow-module is derived from the two different flow directions – upwards and downwards – of the unfiltered liquid in the channels of the installed ceramic elements.



Thanks to this concept, a maximum of packing density and a minimum of pipe connections are achieved. Complete venting and draining is guaranteed by discharging the liquid through the top and bottom plate.

This concept allows for easy maintenance by simply taking away the top cover of the housing.

With two different sizes of dual-flow modules, one with 20 m^2 filter area, the other one with 48 m^2, and hence by modularly increasing filter area, an optimal plant design for all required brewery sizes is possible.

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Products
We develop and produce a wide range of specialized equipment and provide engineering solutions dedicated to help brewers to optimize their processes.

Combining experience and innovation we build safe and reliable Cold Blocks, supply brewing equipment such as Filtration, Beer recovery systems, Yeast plants, Water Deaeration, Blending, Carbonation, Dosing, Hard Seltzer units, Flash Pasteurization and CIP.

Services
We have a global presence. Our sales and service network is always available for you to provide consultancy, technical support and after sales service.