



FLOTTWEG SEPARATORS

FLOTTWEG SEPARATORS FOR BEER PRODUCTION AND BEER CLARIFICATION

Beer clarification presents a range of challenges that many brewers may encounter in their daily work. In particular, it is important to ensure that the beer is always of the highest quality. Even though every batch of beer is unique, consumers expect consistent quality in taste and texture. Yield, productivity, energy consumption and the associated cost trends are critical aspects which the brewing industry must take into account. To achieve these various goals, Flottweg separators play an important role in the brewing process – especially with regard to beer clarification. The separator helps to remove yeast or turbidity from the beer. This process compensates for individual fluctuations.

The state-of-the-art separation technology and versatile functions of the Flottweg separator help to optimize the brewing process and ensure consistently high beer quality. Three features of the separator are particularly helpful in achieving these goals:

- **SoftShot® FLEX:** for higher yields and minimal noise
- **Brewer Control:** for consistent beer quality
- **LongLife concept:** for maximum service life and minimal wear

Higher yield with Flottweg's SoftShot® FLEX

For many brewers, maximum product yields and throughput are crucial for the efficiency of their brewing process – because it simply translates to more beer. The separator's discharge system, which removes the separated solids from the bowl, plays a crucial role in this case. Flottweg has developed the Soft Shot® FLEX for this specific purpose: The solids discharge system enables variable speeds and any combination of partial and full discharge operations. Thanks to precisely adjustable discharge volumes combined with extremely fast and flexible opening times, the Flottweg separator enables a high product yield and maximum flexibility to adapt to specific requirements. The high solids discharge ensures minimal losses and maximizes the beer yield (typically with a dry matter content of 22 to 24%). This results in stable turbidity and more beer per batch. Because of the flexible discharge times, the separator can be optimally adapted to the specific requirements of different beer styles, as well as their turbidity and yeast loads. This is important for maximum fine clarification (as in lager beers), or for the targeted removal of coarse turbidity in naturally cloudy beers (such as wheat-based beers). Because of this technology, breweries benefit from the highest product quality and increased process reliability.

Engineered For Your Success

In addition, the easily adjustable bowl speeds help to ensure optimal operation. This reduces energy consumption and minimizes operating costs. Brewers can therefore optimize their processes to suit different beer styles.

In particular, the partial discharge feature of the Flottweg separator helps breweries boost their productivity. With a partial discharge, only a portion of the contents of the solids space is discharged. The product supply does not have to be interrupted in this case. The discharge volume can be varied by simply adjusting the parameters on the control unit. Since product throughput is still possible during partial discharge, productivity is also increased. In addition, the machine does not have to be stopped for discharge purposes, which further reduces energy consumption.

Minimal noise emissions: for a pleasant working atmosphere

Soft Shot® FLEX technology also enables virtually silent solids discharge, without any bangs on ejection. Flottweg has created a special design for this: A portion of the control water always remains under the piston as a water layer. This prevents the piston from striking the bottom part of the bowl during solids discharge. This eliminates the usual bangs on ejection. The solids are discharged gently and quietly. Partial discharge is completed quickly, precisely and at a consistent volume, while remaining quiet. This has a significant impact on the working atmosphere, as the minimized noise level makes working life much more pleasant for the brewers.

Flottweg Brewer Control for consistent beer quality

With the innovative Brewer Control, Flottweg offers an efficient solution that enables breweries to optimize their production and consistently achieve the desired product quality. Brewer Control is characterized by two main features: complete automation of the machine and the integrated recipe control.

Automation as the key to consistent beer quality

The centrifuge essentially operates according to two key principles: the centrifugal force and the throughput rate. The centrifugal force separates the particles from one another to a greater or lesser extent based on the bowl speed. In addition, the throughput rate can be used to determine the time that the particles and the beer remain in the machine. The separation process in the Flottweg separator is controlled by using a turbidity measurement in the outlet that maintains the desired turbidity level. The automation system monitors the entire process and empties the separator in a targeted manner based on the turbidity load when the solids space is full. The result is a stable turbidity level.

As a further upgrade, an additional turbidity measurement can be integrated in the feed for requirements with fluctuating infeed or high inlet turbidity. This allows the feed and throughput to be regulated, which also adjusts the retention time in the centrifuge. Higher turbidity liquids are thus separated out in a targeted manner. The turbidity remains stable, without the risk of overruns. The centrifuge system can be supplemented with a bypass system for beer styles that require specific turbidity levels, especially for yeast-based varieties such as wheat beer. An additional turbidity measurement system and control valve enable precise blending and dosing of unclarified beer. Recipe-specific turbidity values can be achieved with the utmost precision. A key feature that makes this possible is the complete automation of the separator. Flottweg's separator skid enables automatic throughput control at the infeed – depending on the turbidity. If the turbidity is high, the throughput can be reduced accordingly. This flexibility allows brewers to produce different types of beer with precision and consistency. For example, in the case of wheat beer, a beer variety with a specific desired turbidity, the bowl speed is reduced. At the same time, the separator can compensate for yeast fluctuations: The brewer merely has to specify the turbidity value of the finished beer, and everything else happens automatically. The control system of the Flottweg separator is based on a simplified PID system, which enables simple visualization of the entire process and ensures a quick overview and traceability of the process parameters and operations.

Easy to use and fully adjustable: Flottweg's recipe control

Another advantage of the system is the ability to program and store different recipes in the machine. The centrifuge can program ten recipes, making life much easier for the operator. At the start of each working day, the brewer can choose the appropriate recipe before ending the day by cleaning the machine after brewing. All recipes can be reused at any time and, if necessary, can be optimized and adjusted with just a few simple clicks. This not only saves time, but also ensures a consistently high quality of the end product. This process automation reduces the manual effort involved while also minimizing the occurrence of errors.

Maximum service life and minimal wear with the LongLife concept

The design and construction of the Flottweg separator also make life in the brewing industry easier for operators. The core elements of the machine are designed to exhibit low wear and tear, resulting in reduced maintenance requirements. Important components, such as the spindle unit and the drive motor, can be accessed quickly and easily whenever required. The design features as few seals as possible, a seal-free infeed pipe and a wear-free, hydrohermetic seal to the outside air, which makes the machine particularly durable and maintenance-friendly. All of these features help to minimize operating costs. After all, when considered in the context of the complete machine life cycle, wear and replacement parts can be a significant cost driver. When it comes to the separator drive, Flottweg has again focused on ease of maintenance. Replacement parts for the standard motor can be easily procured, while repairs are also possible. In addition, the energy-saving belt drive does not require any additional cooling. This has a positive effect on the associated maintenance effort and costs. Flottweg separator systems can be flexibly integrated as a compact skid solution or with a supply panel. Flottweg's supply panel for separator centrifuges provides a fully integrated solution in which all required peripherals and process components are pre-assembled in a robust, stainless steel frame. The sophisticated systems are fully developed, manufactured and tested at Flottweg's headquarters in Germany – serving as the ultimate guarantee for quality, reliability and durability. The systems are characterized by the highest hygiene and cold area standards: leak-proof stainless steel construction, hygienic design of all components, sophisticated layout and pipework, comprehensive CIP integration as well as a particularly user- and maintenance-friendly design. Flottweg also offers breweries various safety solutions to ensure maximum service life, high productivity and process reliability. Remote support allows the temperature, bowl speed and vibrations to be controlled via remote monitoring where necessary. The comprehensive monitoring of the machines also prevents unplanned downtimes and allows maintenance intervals to be planned accordingly.

