



BREW 701

High capacity hermetic solids-ejecting polisher for the brewery industry

The Alfa Laval centrifuges for breweries are available in many different sizes and configurations, each one designed and adapted to the widely varying separation tasks encountered. A new range of Brewery separators is developed with the focus on high hygiene, low power consumption and high separation performance.

With a feed flow capacity of up to 750 hl/h (330 US gpm)* the BREW 701 is specifically designed for continuous high efficiency polishing of beer prior to final filtration. It provides intermittent discharge of solids with high dry matter content. The unique hermetic design not only gives an extremely gentle acceleration of shear-sensitive agglomerates, it also avoids oxygen pick-up and prevents loss of CO₂. Together with the special geometry of the separator, the hermetic inlet leads to maximum separation efficiency. A further advantage with the hermetic design is the low power consumption.

The BREW 701 will improve the brewery process both in terms of longer filter runlengths and less beer losses. It meets the high hygienic demands of the brewery industry

* Actual capacity depends on application

Applications

The BREW 701 is typically used in the following steps in brewing process:

- Pre-clarification
- Polishing

Standard design

All metallic parts that come in contact with the process liquid are made of high-grade stainless steel. Liquid-wetted rubber gaskets are made of FDA approved nitrile rubber. The frame upper part and the hood are cooled with water, which minimize temperature increase of the process medium and at the same time acts as a sound dampener.



BREW 701 complete with direct drive system.

The centrifuge is equipped with sensors for monitoring bowl speed, vibration level and bearing temperature. Flushing takes place above and under the bowl, in the solids collecting chute, and in the cyclone. The eDrive™ system features a permanent magnet motor, powered by a frequency inverter.

Design features

Inlet. The BREW 701 is based on a unique design concept. The hermetic, bottom-fed inlet ensures a gentle, low-shear acceleration of the beer through the machine. This minimizes particle splitting and maximizing separation performance. The inlet has been designed to minimize inlet pressure.

Outlet. The hermetic seal prevents oxygen pick-up. It is equipped with a built-in pump for the separated product, eliminating the need for an external pump. Together with eDrive™, the fully hermetic principle used gives a power saving of up to 60% compared to conventional brewery separators.

Adjustable discharge volume. The discharge volume is adjustable. Together with the triggering system, based on turbidity of the separated liquid, it ensures discharge of solids with high dry matter content, thus minimizing product losses.

Cooling. The bowl casing is jacketed for cooling and sound dampening. For improved cleanability the solids collecting chute is also cooled.

Direct drive system eDrive™. The eDrive™ system features a permanent magnet motor. Since its rotor is an integral part of the bowl spindle, the eDrive™ consists of fewer parts than conventional drive systems. This increases the service interval. The absence of mechanical gear means higher power efficiency. The motor is water-cooled and controlled by frequency inverter. This will mean a low starting current, and a short-time power supply at external power failure.

Footprint. The compact design of the eDrive™ means a small footprint and saving of valuable floor area.

Lubrication system. The lubrication system consists of a small tank, pump and filter integrated in the eDrive™.

Operating principles

The feed is introduced into the rotating centrifuge bowl from the bottom via the hollow bowl spindle (1) and accelerated in a distributor (2) before entering the disc stack (3). The separation takes place between the discs. The liquid phase moves towards the centre of the bowl from where it is pumped out by an impeller. The heavier solids phase is collected at the periphery of the bowl where it is discharged intermittently via the centrifuge cyclone. The solids are discharged by a hydraulic system below the separation space in the bowl, which at certain intervals forces the sliding bowl bottom (5) to drop down thus opening the solids ports (6) at the periphery of the bowl. The triggering system functions by outlet turbidity and/or timer.

Control and supervision. The system includes valves, sensors and a Controller for control and/or supervision of following functions:

- Cooling of motor.
 - Control of the frequency converter and the bowl speed.
 - Control and supervision of lubrication and bearing temperatures.
 - Control and supervision of discharge system.
 - Supervision of vibration.
 - Communication with plant control system via Modbus TCP.
- The PLC program is built in modules for easy incorporation of different combinations of functions.

Basic equipment

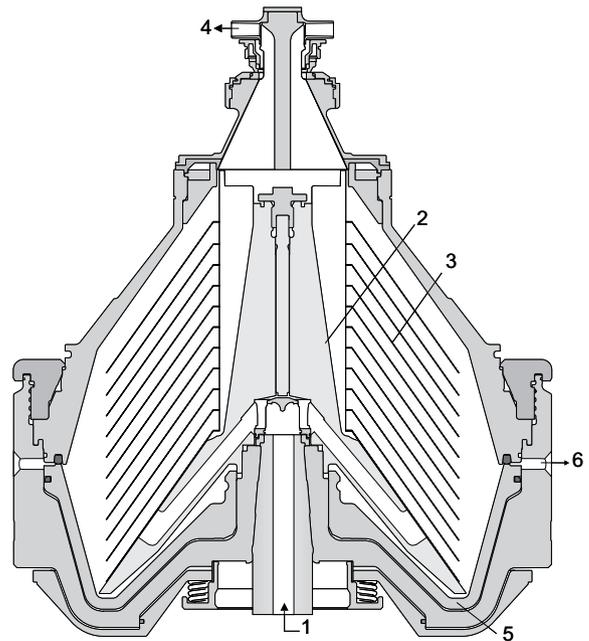
Centrifuge with motor and frequency inverter, speed sensor, vibration switch, vibration-dampening feet, set of tools, and a standard set of spares.

Options

The disc stacks are available with either slots or distribution holes.

Optional extras

The BREW 701 can be delivered as a complete fully automated system, including valve modules for process and service liquids, VFD starter and control system. Extra service kits can be included in the delivery.



Typical fully-hermetic bowl for a solids ejecting clarifying centrifuge. The details illustrated do not necessarily correspond to the centrifuge described.

Material data

Bowl body, hood and lock ring	s.s. 1.4418
Solids cover and frame hood	s.s. 1.4401 UNS 31600
Bottom frame	Cast iron/s.s. 1.4401 UNS 31600, covered with stainless steel 1.4301 UNS 30400
Inlet and outlet	stainless steel 1.4401 UNS 31600
Gaskets and O-rings	Nitrile rubber ¹⁾

¹⁾ In accordance with FDA CFR 21§177.2600

Shipping data (approximate)

Separator incl. bowl and motor	3,300 kg (7,300 lbs)
Bowl	1,150 kg (3,300 lbs)
Gross weight	3,700 kg (8,200 lbs)
Volume	4,4 m ³ (190 cuft)

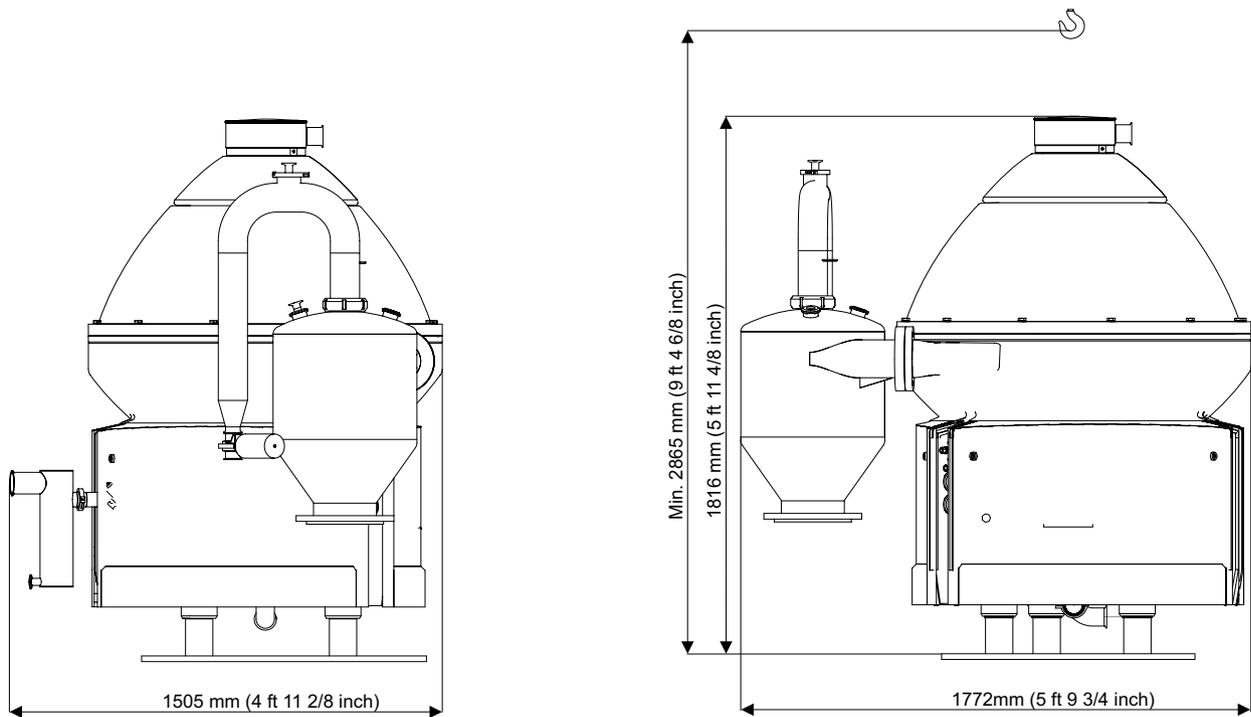
Technical specifications

Hydraulic capacity on water	900hl/h (396 US gpm)
Bowl speed	4,800 rpm
Sludge space volume	17 l (4.5 US gal) ¹⁾
Motor power installed	55 kW (75 HP)
Feed temperature range	0° C–100° C (32–212° F)
Inlet pressure at 900 hl/h at inlet flange	500 kPa (73 psig)
Sound pressure	78 dB(A) ²⁾
Overhead hoist lifting capacity	min. 1,200 kg (2,700 lbs)

¹⁾ With Ø535 mm disc stack

²⁾ In compliance with EN ISO 3744

Dimensions



How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com.