



## Clara 701H

### Fully hermetic solids-ejecting polisher for the beverage industries

The Clara 701H solids ejecting separator is specifically designed for continuous high efficiency clarification of beverages and wine prior to final filtration. The unique hermetic design not only gives an extremely gentle acceleration of shear-sensitive agglomerates: it also avoids pick-up of oxygen and prevents loss of volatile aromas and CO<sub>2</sub>. 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 Clara 701H meets the high hygienic demands of the food industry and is designed for cleaning-in-place (CIP) and is easily included in the automatic cleaning systems of the process plant.

The maximum throughput capacity is 75 m<sup>3</sup>/h (330 US gpm). The real possible throughput will depend upon a number of factors, such as the amount and type of solids, viscosity and the required degree of clarification.

#### Applications

The Clara 701H is specially designed for various process steps in the production of wine, fruit juice and tea. It is used for removing suspended solids with a particle size of 0.4–200 µm. The solids content in the feed is normally in the range of 0.1–1% by volume, but may also be higher.

#### Standard design

The machine consists of a frame that has a horizontal drive shaft, worm gear, lubricating oil bath and vertical bowl spindle in the lower part. The motor is of a type suitable for variable frequency drive.

The bowl is mounted on top of the spindle, inside the space formed by the upper part of the frame, the solids collecting cover, and the frame hood. The feed and the liquid discharge system also rest on this structure.

All metallic parts that come in contact with the process liquid



Clara 701H complete with motor

are made of high-grade stainless steel. Liquid-wetted rubber gaskets are made of FDA approved nitrile rubber. The bowl casing and the solids collecting chute are cooled with water, which reduces temperature increase of the process medium to a minimum and at the same acts as a sound dampener. The centrifuge is equipped with sensors for monitoring bowl and motor shaft speeds, vibration level. Flushing takes place inside, above and under the bowl, and in the solids collecting chute.

### Special features

The Clara 701H is based on a unique, hermetic design concept. The bottom-fed inlet ensures a gentle acceleration of the process liquid up to full bowl speed. This minimizes splitting of shear-sensitive particles, maximizing separation performance.

The hermetic outlet ensures a completely air-free separation process, ensuring that no foaming, nor oxidation of the process liquid occurs. It is fitted with a pump, eliminating the need for an external pump. The hermetic design has the inherent advantage of a low noise level.

The discharge volume is adjustable. Together with the triggering system it ensures discharge of solids with high dry matter content, thus minimising product losses, a clean bowl and reliable operation.

The bowl casing is jacketed for cooling and sound dampening. The cooling of the solids collecting chute ensures against burning-on of solids.

The presence of a frequency inverter in the VFD system gives a number of advantages, including low starting current, and a short-time power supply at external power failure.

### 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 where it is pumped out under pressure by means of a built-in pump (4). 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.

### Basic equipment

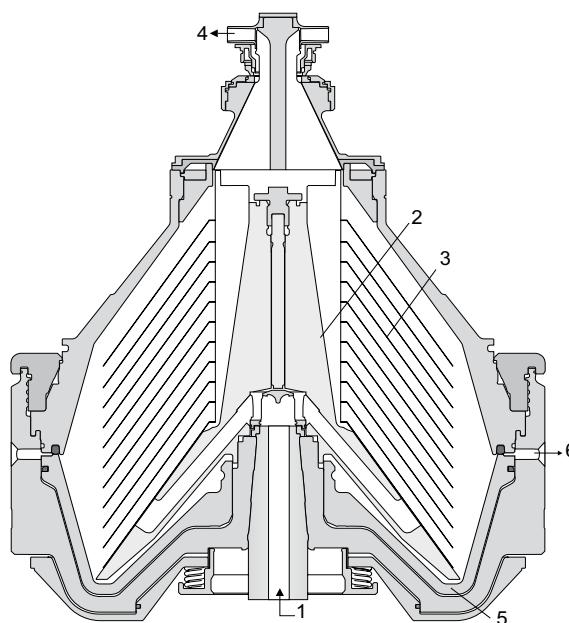
The Clara 701H is normally delivered as a complete system to simplify installation and start-up. The system includes valve modules for process and service liquids, frequency inverter and control system. The centrifuge includes motor, set of tools, speed sensor, vibration switch, vibration-dampening feet, and standard set of spares.

### Options

The centrifuge is available with three stacks with different outer diameters to optimise the solids handling capability. The frame can be delivered in two executions: painted or clad with stainless steel. In the latter case, the motor has a stainless steel cover.

### Optional extras

The Clara 701H is available with the following optional extras: cover interlocking kit to make it impossible to start the centrifuge unless it is properly assembled, and additional service kits.



Typical bowl drawing for a solids ejecting hermetic centrifuge. Drawing details 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, with or without cladding with stainless steel 1.4301 UNS 30400
Inlet and outlet	stainless steel 1.4401 UNS 31600
Gaskets and O-rings	Nitrile rubber <sup>1)</sup>

<sup>1)</sup> In accordance with FDA 21 CFR 177.2600

### Shipping data (approximate)

Centrifuge incl. bowl and motor	2,550 kg (5,600 lbs)
Bowl	1,150 kg (2,500 lbs)
Gross weight	2,800 kg (6,200 lbs)
Volume	10 m <sup>3</sup> (350 cuft)

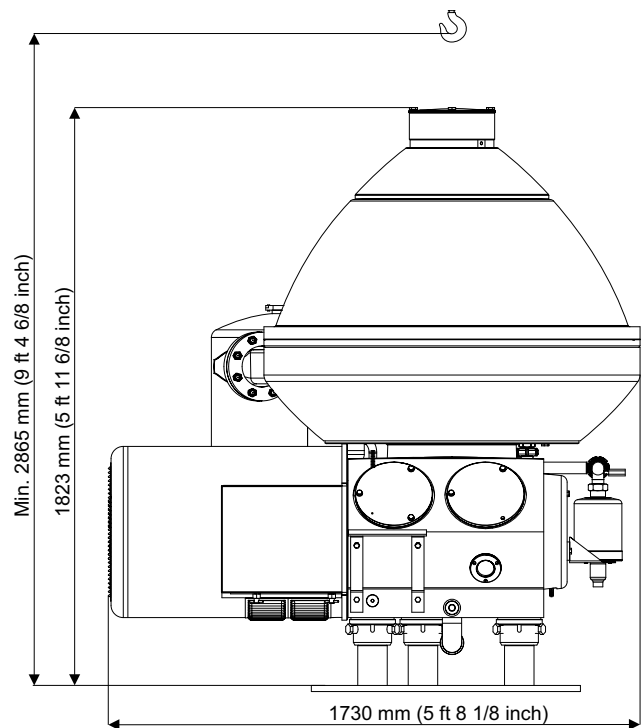
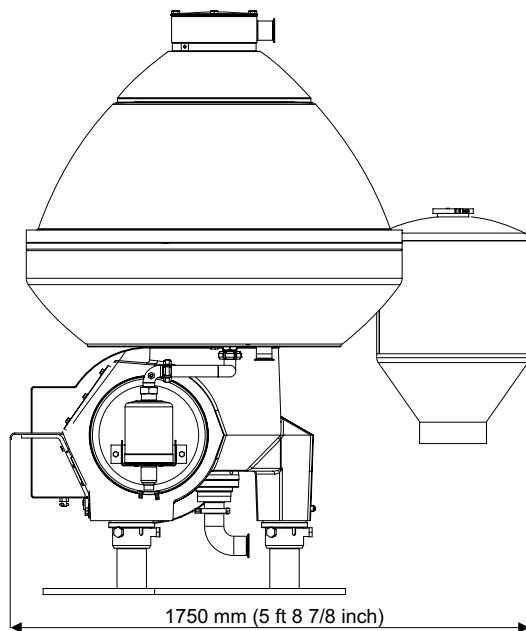
### Technical specifications

Throughput capacity	max. 75 m <sup>3</sup> /h (330 US gpm)
Bowl speed	4,800 rpm
Sludge space volume	38 l (10 US gal)
Motor power installed	37 kW (50 HP)
Feed inlet pressure required at inlet flange	400 kPa (58 psig) <sup>1)</sup>
Sound pressure	78 dB(A) <sup>2)</sup>
Overhead hoist lifting capacity	min. 1,200 kg (2,700 lbs)

<sup>1)</sup> At 75 m<sup>3</sup>/h with outlet pressure 640 kPa (93 psig)

<sup>2)</sup> According to EN ISO 3744

### Dimensions



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**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](http://www.alfalaval.com).