



VO 5

Low capacity disc stack centrifuge for fats and oils refining

The Alfa Laval range of centrifuges for the vegetable oil refining industry is continuously modernized to take advantage of developments in materials, mechanical design and fluid dynamics. The VO 5 is a small-sized separator in this range of centrifuges.

Applications

Continuous degumming, neutralizing and washing of fatty oils, such as various vegetable oils, lard, tallow and fish oil.

Performance

The table below shows nominal capacities. Actual throughputs vary according to the type of oil and fat to be treated.

Degumming, neutralizing, washing 2500 kg/h

Standard design

The VO 5 is a top fed self-cleaning separator. The machine consists of a frame with a lubricating oil bath, a horizontal belt driving device, and a vertical bowl spindle. The bowl is fixed on top of the spindle and covered by the frame hood. All process wetted parts are made of stainless steel. The bowl is of the solids ejecting disc type, with a hydraulic operating system for sludge discharging. The separator is driven by a standard electrical motor with friction clutch. Gaskets and sealings are made of nitrile rubber.

Design features

The VO 5 is based on a simple, robust and well-proven, open design concept. Furthermore, the VO 5 is easy to maintain. The design reduces the pressure drop across the separator and results in a low feed pressure requirement to the machine. The bowl of the VO 5 is specifically designed for fatty oil separation. Its geometry permits minimal pressure drop and high flow rates. The outlets are equipped with stationary paring devices for removal of the different phases. The paring device on the light phase is a fixed paring disc, while the paring device on the heavy phase is adjustable.



VO 5 complete with motor

The diameter of the heavy phase paring device can easily be adjusted by changing the length of the paring tubes. This makes it possible to adjust the position of the separation interface in the disc stack, facilitating optimal separation.

With the working environment in mind, the VO 5 is designed to operate at low noise levels. This is achieved through a rubber-damped bearing assembly, and an outer bowl design engineered for low wind noise.

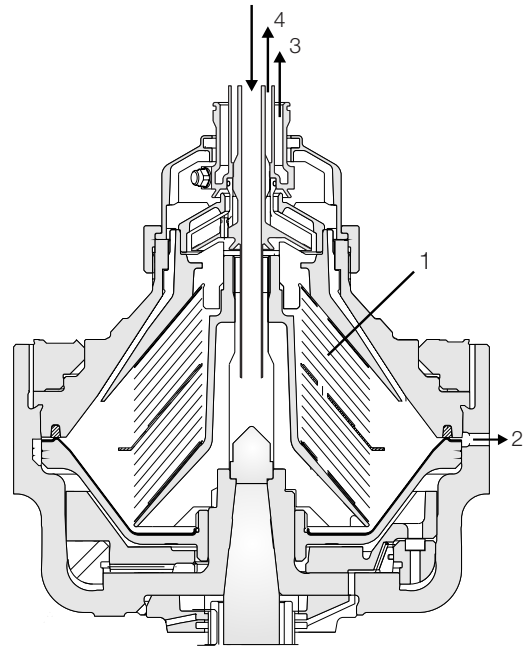
Standard equipment

Each VO 5 comes complete with starter and control unit, electric motor, inlet and outlet connections and auxiliary equipment.

Operating principles

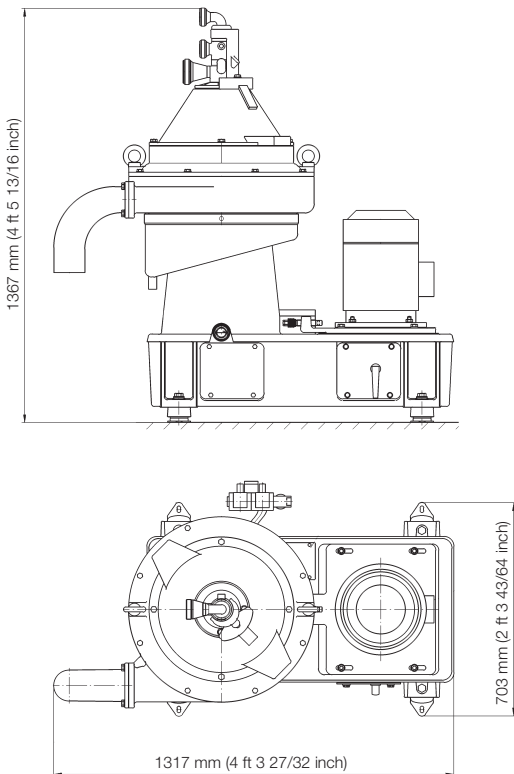
The centrifugal force causes separation in the disc stack (1), forcing the heavier particles (heavy phase and sludge) towards the periphery of the bowl and is discharged automatically through ports (2), while the light phase flows towards the centre of the bowl.

The heavy phase is pumped out of the separator through the heavy-phase outlet (3) at the top. Similarly, the lighter oil is pumped out for further processing through a separate light-phase outlet (4) also in the top of the separator.



Typical bowl drawing for solids ejecting open centrifuge. Drawing details do not necessarily correspond to the centrifuge described.

Dimensions



Shipping data (approximate)

Centrifuge incl. bowl and motor	500 kg (1 102 lbs)
Bowl	140 kg (309 lbs)
Motor	50 kg (110 lbs)

Technical specifications

Throughput capacity	max. 6 m ³ /h
Bowl speed, synchronous 50/60 Hz	8375/8400 rpm
Bowl volume	6 l
Sludge space	2 l
Motor speed, synchronous 50/60 Hz	3000/3600 rpm
Motor power installed	7.5/8.6 kW
Starting time	approx. 6 min
Stopping time with brake	approx. 10 min
Inlet pressure	0-400 kPa
Pressure, light phase outlet	100-400 kPa
Pressure, heavy phase outlet	0 kPa
Sound pressure	84 dB(A) ¹⁾
Overhead hoist lifting capacity	min. 1000 kg

¹⁾ According to ISO 3744

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.