



Alfa Laval VO 10, VO 20, VO 30

Medium-capacity disc stack separator for fats and oil refining

Introduction

The use of Alfa Laval disc stack separators in the vegetable oil and refining industries goes back to the end of 19th century. The application ranges from fats and oil refining to palm oil washing.

Application

The VO separator range is designed for and can be adapted to applications such as degumming, neutralization and washing.

Benefits

- Robust and reliable design
- Easy to operate and maintain
- Low water consumption
- Optimum separation by adjustable interface and liquid seal stability by using the Centrizoom™

Design

The separator consists of a machine bottom part which includes a gear drive and a lubrication system. The machine top part includes the bowl, bowl casing and outlets for the separated liquids and discharge sludge.

The separator is top fed and the bowl is of sediment ejecting type. By adjusting a positioner on the heavy phase outlet, the operator can reduce or enlarge the paring diameter of the paring tubes. This patented innovation is called Centrizoom™ and makes it possible to manually adjust the position of the separation interface during operation, facilitating optimal separation.

All metallic part in contact with the process liquid are made of stainless steel. Gaskets and seals in contact with product are made of nitrile rubber. The separator is designed for a standard highly efficient electric motor with rigid coupling and variable frequency drive (VFD).

Scope of supply

- Separator
- Set of tools
- Speed sensor kit
- Start & control cabinet
- Process liquid unit
- Service liquid unit
- Sight glass

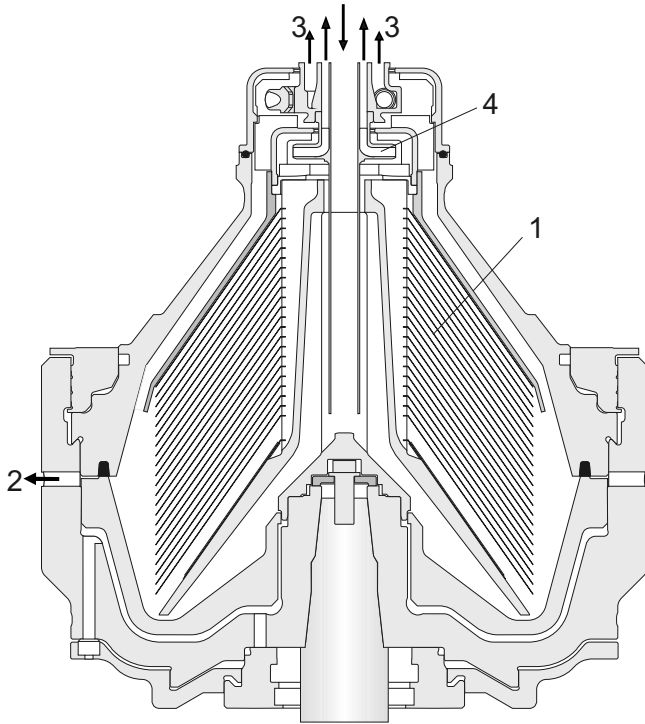


Options

- Associated system (foundation, inlet/outlet/utility piping, valves, gauges)
- Stainless steel frame top part
- Vibration sensor kit

Working principle

The feed enters the separator bowl from the top. Separation takes place between the bowl discs where the light liquid phase moves towards the centre of the bowl and the heavy phase and solids moves towards the periphery. The separated liquids leaves the separator bowl in the top, where the light phase is pressurized by a paring disc. The heavy phase is led over a top disc into a chamber where an adjustable paring device pumps it out of the separator. The solids are collected in the periphery of the bowl and discharged hydraulically.



Typical bowl drawing for a solids-ejecting separator. The details illustrated do not necessarily correspond to the separator described.

1. Disc stack
2. Discharge port
3. Heavy phase outlet
4. Light phase outlet

Technical data

Performance data VO 10

Hydraulic capacity ¹⁾	10 m ³ /h (44 US gpm)
Nominal capacity ²⁾	100 TPD (220 462 US lbs/day)
Maximum discharge capacity	3 litre (0,79 gallon)
Maximum motor power	18.5 kW (24,8 HP)

¹⁾: Actual capacities depend on operating conditions, and type of oil and fat to be treated

²⁾: Crude palm oil washing application, capacities depends on operating conditions

Performance data VO 20

Hydraulic capacity ¹⁾	18 m ³ /h (79 US gpm)
Nominal capacity ²⁾	200 TPD (440 925 US lbs/day)
Maximum discharge capacity	3 litre (0,79 gallon)
Maximum motor power	18.5 kW (24,8 HP)

¹⁾: Actual capacities depend on operating conditions, and type of oil and fat to be treated

²⁾: Crude palm oil washing application, capacities depends on operating conditions

Performance data VO 30

Hydraulic capacity ¹⁾	20 m ³ /h (88 US gpm)
Nominal capacity ²⁾	300 TPD (661 387 US lbs/day)
Maximum discharge capacity	3 litre (0,79 gallon)
Maximum motor power	22 kW (29,5 HP)

¹⁾: Actual capacities depend on operating conditions, and type of oil and fat to be treated

²⁾: Crude palm oil washing application, capacities depends on operating conditions

Connections

Feed inlet	DN 50, SMS union
Light liquid phase outlet	DN 50, SMS union
Heavy liquid phase outlet	DN 65, SMS union
Solids outlet	107 mm 4 7/32") SMS union

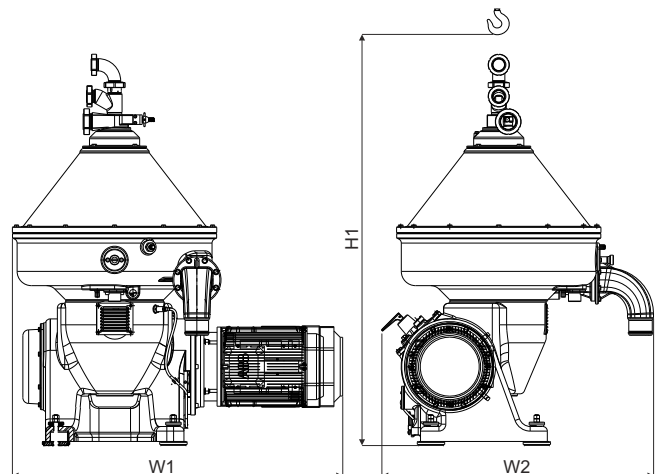
Material data

Bowl body	Stainless steel
Frame top part	Cast grey iron (option stainless steel)
Frame bottom part	Cast grey iron
Gaskets and O-rings	Nitrile

Shipping data (approximate)

Gross weight	1504 kg (3,316 lbs)
Bowl weight	279 kg (615 lbs)
Volume	5 m ³ (176 ft ³)

Dimensional drawing



Dimensions

H1	Minimum 2000 mm (6 ft 6 6/8 inch)
W1	1383 mm (4 ft 6 4/8 inch)
W2	1180 mm (3 ft 10 4/8 inch)

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