Alfa Laval BPM 209

Disc stack separator for protein applications

Introduction

The use of separators in the production of animal fats and protein from fish and meat goes back to the 1920ies. The applications range from rendering of edible animal fat and fish oil to technical fat and blood separation.

Application

The BPM 209 is a high-performance separator that is designed and optimized to separate animal whole blood into two fractions, red cells/hemoglobin and plasma, with the target to recover blood plasma in best possible quality at maximized yield.

Benefits

- Easy to operate
- Robust and reliable
- Wear resistant
- Small footprint – easy to install and start up

Design

The centrifuge consists of a machine bottom part, machine top part and the bowl. The machine bottom part comprises particularly the frame, the horizontal driving shaft with clutch, worm gear, the lubricating oil bath, and the vertical driving shaft with bowl spindle. Being a bottom-fed machine, the inlet device is mounted at the bottom of the spindle. The machine top part is composed of the frame hood. In this bottom-fed separator, the feed outlet device is mounted on the top of the frame hood. The bowl itself is mounted on the bowl spindle inside the frame top part and the frame hood.

All product wetted parts - the bowl, disc stack, product inlet, and liquid outlets are made exclusively of high-quality, corrosion and acid resistant duplex/stainless steels. Gaskets and seals in contact with product are made of nitrile.

The bowl is of the sediment-retaining disc type.

The electric motor is of the CT motor type and is supplied with a protecting cap.

Scope of supply

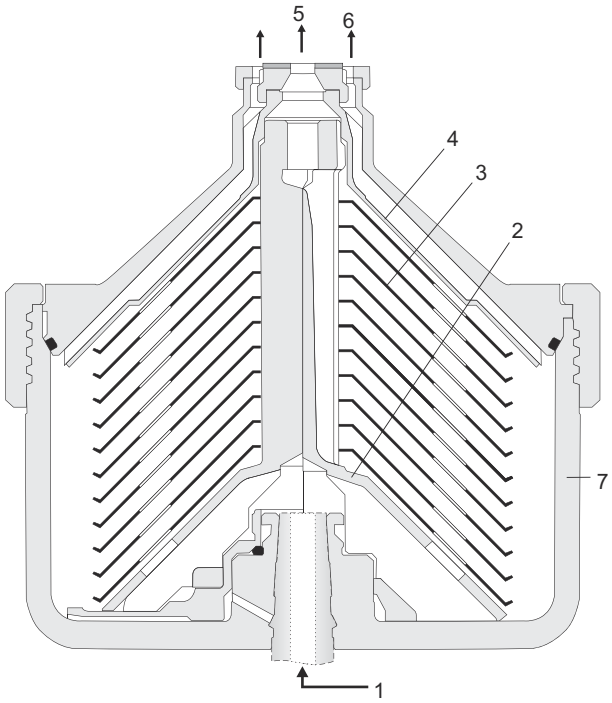
- Bare centrifuge
- Concentrator execution
- Set of tools
- Standard set of spares (Intermediate Service Kit)

Working principle

Separation takes place inside a rotating bowl. The untreated feed is introduced to the bowl from the bottom through a hollow spindle and is accelerated in the distributor before entering the disc stack.

The separation of the two liquid phases and the sediment takes place between the discs. The light liquid phase moves towards the center of the bowl, while the heavy liquid phase moves towards the periphery of the bowl, and then along the upper side of the top disc. The two liquid phases are pumped out at the top of the separator through separate outlets. The sludge settles at the bowl periphery.

Intermittently the bowl has to be stopped and opened to remove sediment from the bowl periphery.



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

1. Spindle
2. Distributor
3. Disc stack
4. Top disc
5. Light liquid phase outlet
6. Heavy liquid phase outlet
7. Frame

Technical data

Hydraulic capacity	5 m^3/h (22 US gpm)
Installed motor power	4 kW (5,5 HP)
Sound pressure level	71 dB(A)[1)]

1): In compliance with EN ISO 4871

Connections

Feed inlet diameter	DN 25, SMS 1148
Heavy liquid phase outlet	DN 25, SMS 1148
Light liquid phase outlet	DN 38, SMS 1148

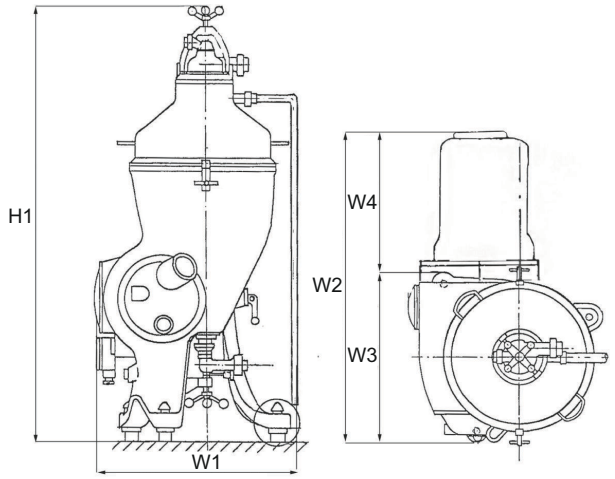
Material data

Bowl body and hood	Stainless steel 1.4462 UNS S31803
Bowl lock ring	Stainless steel 1.7218
Frame hood and inlet and outlet devices	Stainless steel, mostly 1.4301 UNS S 30400
Frame	Epoxi-painted cast iron
Gaskets and O-rings	Nitrile rubber

Shipping data (approximate)

Gross weight	600 kg (1,320 lbs)
Bowl weight	140 kg (310 lbs)
Volume	1,2 m^3 (42 ft^3)

Dimensional drawing



H1	1411 mm (4 ft 7 35/64 inch)
W1	630 mm (2 ft 51/64 inch)
W2	1007 mm (3 ft 3 41/64 inch)
W3	570 mm (1 ft 10 7/16 inch)
W4	437 mm (1 ft 5 13/64 inch)

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How to contact Alfa Laval

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