



Alfa Laval HBPX 2000

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 1920s. The applications range from rendering of edible animal fat and fish oil to technical fat and blood separation.

Application

The Alfa Laval HBPX 2000 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 design
- Wear resistant
- Real time adjustment vs changing flow conditions
- Gentle treatment of the process liquid

Design

The separator consists of a frame that contains a horizontal drive shaft, worm gear lubricating oil bath, and a hollow vertical bowl spindle. The bowl is fixed 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 hood carries the liquid discharge connections.

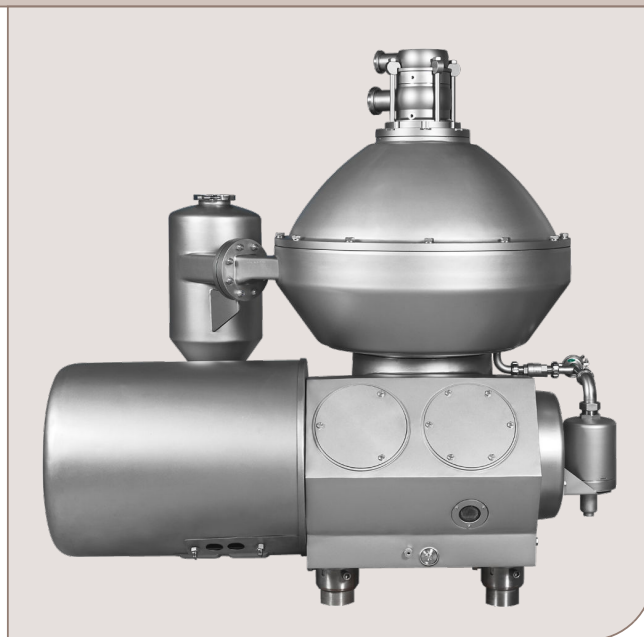
All metallic parts in connection with the process liquid are made of stainless steel.

The bowl is of the solids-ejecting disc type with an automatic hydraulic operating system for discharge.

The electric motor is for variable frequency drive.

Scope of supply

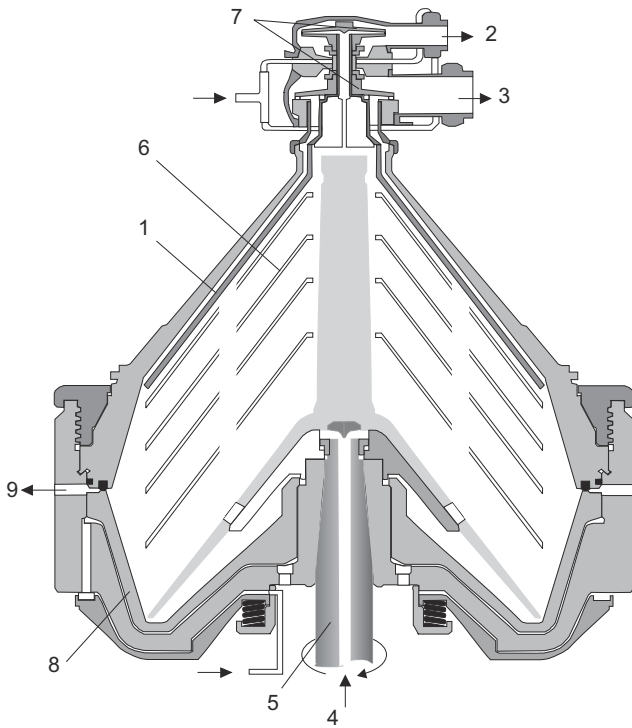
- Bare centrifuge
- OWMC Operating Water Module Compact)
- Concentrator execution
- Foundation plate
- Set of tools
- Standard set of spares
- Cyclone



Working principle

The feed is introduced into the rotating bowl from the bottom via the hollow bowl spindle and accelerated in a distributor before entering the disc stack. The separation takes place between the discs. The light liquid phase moves towards the centre of the bowl and leave the separator by being pumped out by an impeller. The heavy liquid phase moves towards the periphery and leave via the top disc and is pumped out by an impeller.

The solids is collected at the periphery of the bowl where it is discharged intermittently and leave via the 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 to drop down thus opening the solids ports at the periphery of the bowl.



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

1. Top disc
2. Light phase
3. Heavy phase
4. Inlet pipe
5. Spindle
6. Disc stack
7. Impellers
8. Sliding bowl bottom
9. Discharge ports

Technical data

Performance data	
Throughput capacity	max. 2500 l/h (660 gallons/h)
Maximum discharge capacity	0,6 m ³ /h (2.6 US gpm) ¹
Maximum motor power	18,5 kW (24.8 HP)
Sound pressure level	76 dB(A) ²

¹ Actual capacity depends on operating conditions

² In compliance with EN ISO 4871

Connections

Feed inlet	Ø 60.5 mm (2 3/8") Clamp ¹
Blood cell outlet	Ø 60.5 mm (2 3/8") Clamp ¹
Plasma outlet	Ø 48.5 mm (1 7/8") Clamp ¹
Solids outlet	Ø 97.6 mm (2 7/8") Clamp

¹ SMS connections optional.

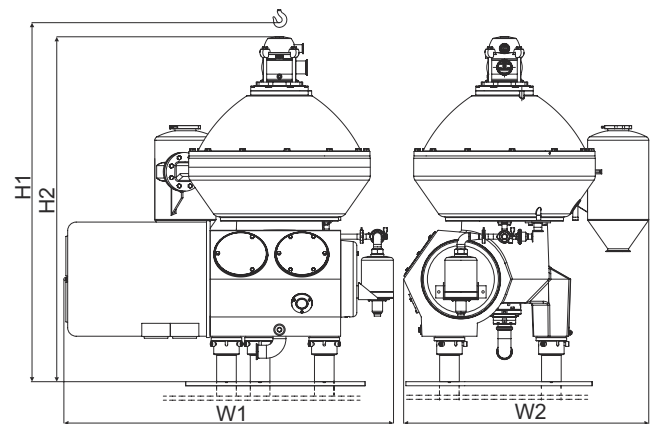
Material data

Bowl body, hood and lock ring	Stainless steel 1.4462 UNS S31803
Frame top part and hood	Stainless steel 1.4401 UNS 31600
Frame bottom part	Cast grey iron, clad with stainless steel 1.4301 UNS 30400
Gaskets and O-rings	Nitrile

Shipping data (approximate)

Gross weight	2150 kg (4,739 lbs)
Bowl weight	310 kg (685 lbs)
Volume	5,2 m ³ (183 ft ³)

Dimensional drawing



Dimensions

H1	Minimum 2865 mm (9 ft 4 51/64 inch)
H2	1616 mm (5 ft 3 5/8 inch)
W1	1618 mm (5 ft 3 6/8 inch)
W2	1267 mm (4 ft 1 7/8 inch)

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