



PX 80

Medium-capacity disc stack centrifuge for fats and oils refining

The Alfa Laval range of centrifuges for the vegetable and animal oils refining industries is continuously modernized to incorporate the advantages of current developments in materials, mechanical design and fluid dynamics. The PX 80 is a medium-sized machine in this range of centrifuges.

Applications

Continuous degumming, neutralizing, dewaxing, and washing of fatty oils, such as 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, neutralization, washing	18,750 kg/h
Dewaxing	8,000 kg/h

Standard design

The machine consists of a frame with a base that contains a horizontal drive shaft, worm gear, lubricating oil bath, and 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 system.

All parts in contact 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 "shooting". The standard electric motor is suitable for variable frequency drive.

Design features

The PX 80 is based on a unique, semi-hermetic design concept. The hermetic, bottom-fed inlet ensures a gentle, non-destructive acceleration of the feedstock up to full bowl speed.

The outlets on the heavy and light phases are open, reducing the pressure drop across the separator. The feed-pressure requirement of the machine is therefore low.

The outlets are equipped with stationary paring devices for removal of the different phases. The paring disc on the light phase is fixed, while the paring tubes on the heavy phase are adjustable.



PX 80 complete with motor

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 makes it possible to adjust the position of the separation interface during operation, facilitating optimal separation.

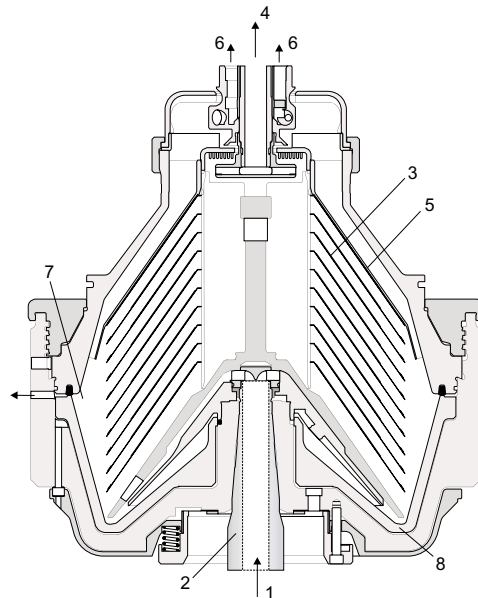
With the working environment in mind, the PX 80 is designed to operate at low noise levels. This is achieved by means of a rubber-damped bearing assembly, jacketed frame and an outer bowl design engineered for low wind noise.

Standard equipment

Each PX 80 comes complete with control unit, electric motor, inlet and outlet connections, auxiliary equipment, a spare parts kit and a set of tools.

Operating principles

The oil to be separated is fed (1) into the separator bowl from the bottom through a hollow spindle (2), and enters the disc stack (3). The heavy phase and heavy sludge are forced towards the periphery of the bowl, while the light phase flows towards the centre of the bowl, from where it is pumped out (4) for further processing. The heavy phase is led over a top disc (5) into a chamber where an adjustable paring device pumps it out of the separator (6). Sludge collects in the sludge space (7) and is discharged intermittently and automatically. The discharge is achieved by a hydraulic system, which at preset suitable intervals forces the sliding bowl bottom (8) to drop down, thus opening the sludge ports at the bowl periphery. The sludge is collected in the frame, and leaves the centrifuge via a cyclone.



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

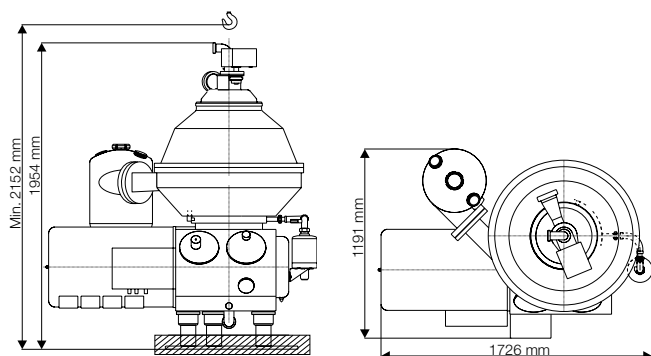
Utilities consumption

Electrical power	max. 18 kW
Operating liquid, continuously/per discharge	5 l/h / 5l
Cooling water, jacket	100 l/h
Cooling water, oil	80 l/h
Sealing liquid	100 l/h
Flushing liquid, per discharge	50 l

Material data

Bowl body, hood and lock ring	s.s. 1.4462 UNS 31803
Frame top part and hood	s.s. 1.4401 UNS 31600
Frame bottom part	grey cast iron, clad with s.s. 1.4301 UNS 30400
Gaskets and O-rings	nitrile rubber

Dimensions



Technical specifications

Throughput capacity	max. 20 m ³ /h
Bowl speed	5,120 rpm
Bowl volume	40 l
Sludge space	9 l
Motor speed, synchronous 50/60 Hz	1,500/1,800 rpm
Motor power installed	30 kW
Starting time	10 mins
Stopping time without brake	45 mins
Inlet pressure at 20 m ³ /h	200 kPa
Outlet pressure, oil	max. 300 kPa
Outlet pressure, heavy phase	0 kPa
Sound pressure level	75 dB (A)
Overhead hoist lifting capacity	min. 1,100 kg

Shipping data (approximate)

Separator incl. bowl and motor	1,715 kg
Bowl	529 kg
Gross weight	2,450 kg
Volume	5.2 m ³

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