OFPX 517

Three phase disc stack centrifuge for oily water treatment

The Alfa Laval OFPX 517 is a high efficiency separation system for oily water treatment in the Oil & gas industry. Based on a disc-stack centrifuge, the OFPX 517 is supplied as a complete, ready-to-go system and complies to EC ATEX directive category 2, hence hazardous area zone 1 and 2. The OFPX 517 is a three-phase separation system that handles water, oil and solids in one step.

Thanks to the disc-stack inside the centrifuge a large separation area is achieved, and in combination with centrifugal force the OFPX 517 is highly efficient and yet very compact. The OFPX 517 separates oil droplet sizes as low as 2µm and is proven to separate oil from water to levels of less than 15ppm. Like all disc-stack centrifuge systems the OFPX 517 provides a stable separation performance regardless of fluctuations in the inlet feed composition in terms of oil and solids content.

OFPX 517 centrifuge with motor

Standard design

The OFPX 517 centrifuge is of Alfa Laval's well proven Oilfield design featuring a vertically mounted separation bowl driven through worm-gear by a horizontally mounted motor. The bowl spindle is built as an easily served cartridge. The entire unit, including bearings, lifts out in one piece for maintenance. The bowl hood is jacketed for cooling water circulation and noice reduction. The separation bowl is of the solids-ejecting type with continuous discharge of the oil and water phases under pressure and intermittent discharge of the solids. The OFPX 517 system is supplied as a complete, factory-tested plug-in unit, ready to connect to piping, utilities and control room.

Basic skid equipment

- A complete skid with the OFPX 517 centrifuge, drive motor, sample points, instrumentation and an operator panel
- Control and starter panel for safe area location
- Process and utility piping with flanged skid-edge process connections.

Optional skid equipment

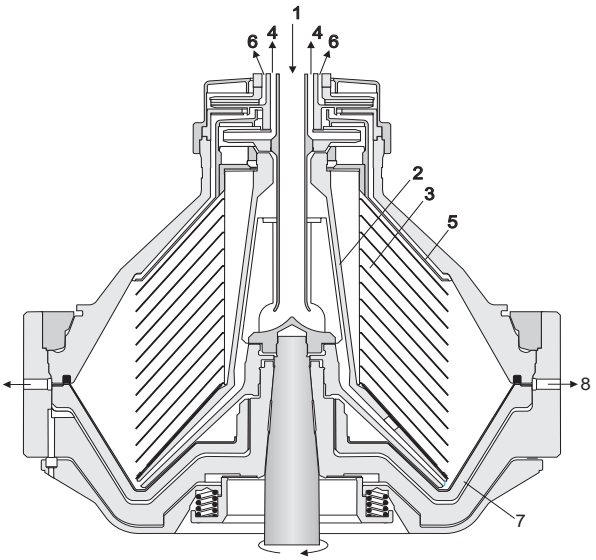
- Cleaning-In-Place (CIP) unit
- Inert gas blanketing package mounted on skid
- Explosion proof control and starter panel mounted on skid

Operating principles

The feed is introduced into the rotating centrifuge bowl from the top via a stationary inlet pipe (1) and accelerated in a distributor (2) before entering the disc stack (3). Separation takes place between the discs.

The light phase moves towards the centre of the bowl, where it is pumped out under pressure by means of a built-in paring disc (4). The heavy phase moves towards the periphery of the bowl, then along the upper side of the top disc (5) to a paring chamber, from where it is pumped out under pressure by means of a built-in paring disc (6).

The solids phase is collected at the periphery of the bowl, where it is discharged intermittently via the centrifuge cyclone. The solids are discharged by a hydraulic system below the separation space in the bowl, which forces the sliding bowl bottom (7) to drop down at suitable intervals, thus opening the solids ports (8) at the periphery of the bowl.



Typical bowl for solids-ejecting concentrator centrifuge.

Utilities consumption

Back-up water	5m^3/h (intermittent supply only)
Operating water	200 l/day
Cooling water	300 l/h
Inert gas	100–400 Nl/h 20 Nm^3/h for 3 min. at start-up

Skid weight and dimensions (approximate)

Width	2,900 mm
Depth	2,600 mm
Height	2,700 mm
Weight (in operation)	5,500 kg

Technical specifications

Throughput capacity	max. 60 m^3/h (9,000 bpd) [1)]
Discharge volyme	min /max. 15/35 l
Feed temp	0-100°C
Bowl speed	4,136 rpm
Bowl volume	59 l
Motor power installed	max. 45 kW (60 HP)
Sound pressure	80 dB(A)

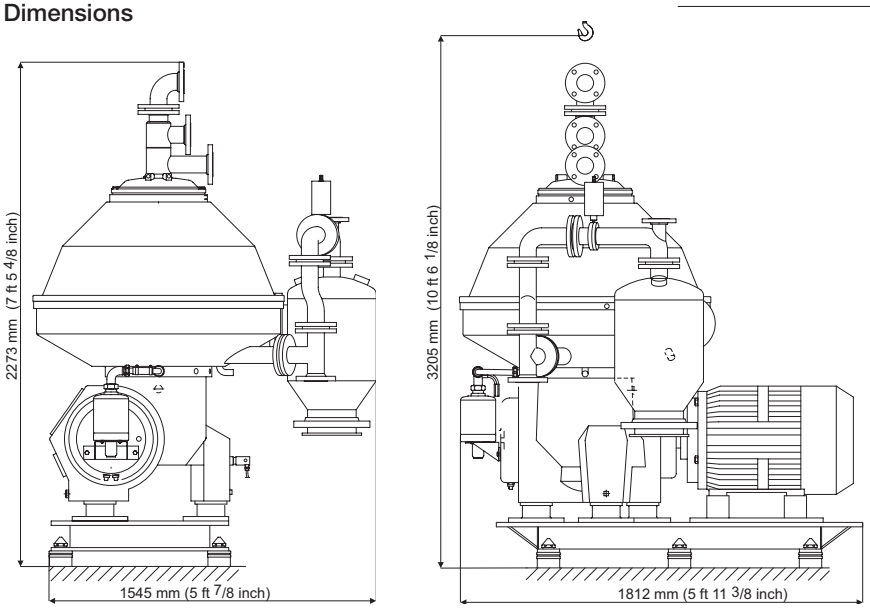
[1)] Maximum recommended operation flow rate depends on feed characteristics and OiW requirement at outlet.

Design standards

ATEX zone 1 or 2

Class I div I or Class I div II

Dimensions



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.