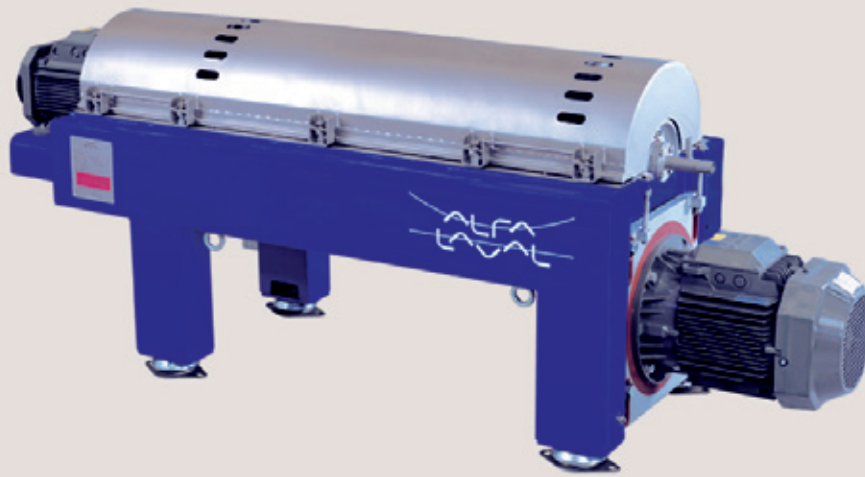




P1 Decanter centrifuge range

High-performance deccanter centrifuge



Applications

The P1 range of deccanter centrifuges was developed with a focus on cost-efficiency, reliability and easy operation. The P1 design is used for separation in a wide range of applications in the process industry.

Ideal for both small and medium-capacity installations

P1 deccanter centrifuges are designed to be efficient, simple to install, easy to maintain and straightforward to operate. Installation, operating and service life costs are minimal.

The P1 range features

- fully enclosed process sections
- critical parts made of wear-resistant material
- high performance combined with low energy consumption.

Benefits

The P1 deccanter centrifuge design provides a series of concrete benefits

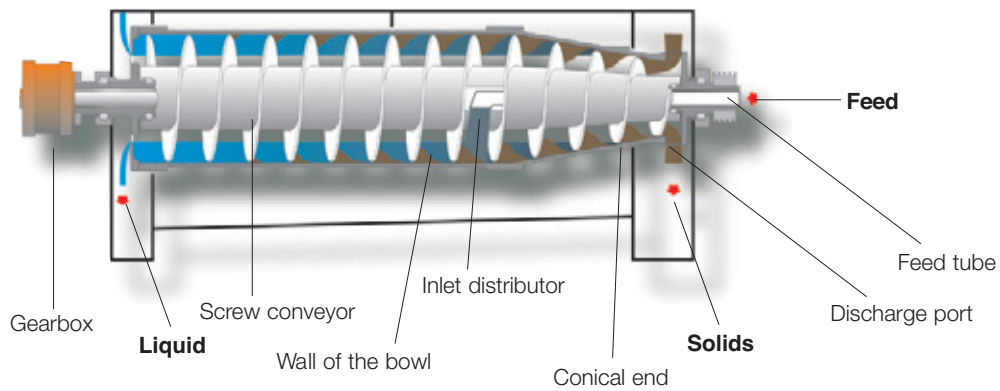
- reduces sludge volume, which cuts down on transport and disposal costs
- continuous operation

- compact, modular design saves space
- low installed power reduces electricity consumption.

Working principle

Separation takes place in a horizontal cylindrical bowl equipped with a screw conveyor (see drawing on page two). The feed enters the bowl through a stationary inlet tube and is accelerated smoothly by an inlet distributor. The centrifugal force that results from the rotation then causes sedimentation of the solids on the wall of the bowl.

The conveyor rotates in the same direction as the bowl, but slightly slower, thus moving the solids towards the conical end of the bowl. The cake leaves the bowl through the solids discharge openings into the casing. Separation takes place throughout the entire length of the cylindrical part of the bowl, and the clarified liquid leaves the bowl by flowing over adjustable plate dams into the casing.



Process optimization

P1 decenter centrifuges can be adjusted to suit specific requirements by varying

- the bowl speed to obtain the G-force required for the most efficient separation
- the conveying speed for the most efficient balance between liquid clarity and solids dryness
- the pond depth in the bowl for the most efficient balance between liquid clarity and solids dryness
- the feed rate – P1 decenter centrifuges are designed to handle a wide range of different flow rates.

Design

The rotating part of these decenter centrifuges is mounted on a compact, in-line frame, with main bearings at both ends. Vibration dampers are placed under the frame. The rotating part is enclosed in a casing with a cover and a bottom section with integrated outlets for both solids and the liquid being removed.

Drive system

In all P1 decenter centrifuges, the bowl is driven by an electric motor and a V-belt transmission drive. Power is transferred to the conveyor via a planetary gearbox.

Operation can either be pre-set to a suitable set of parameters, or the difference between the speeds of the bowl and the conveyor can be controlled automatically, with no need for changing belts or pulleys.

Materials

The bowl, conveyor, inlet tube, outlets, cover and other parts in direct contact with process media are all made of stainless steel. The discharge ports, conveyor flights and feed zone are protected with materials that are highly resistant to erosion. The frame is made of mild steel with an epoxy enamel finish.

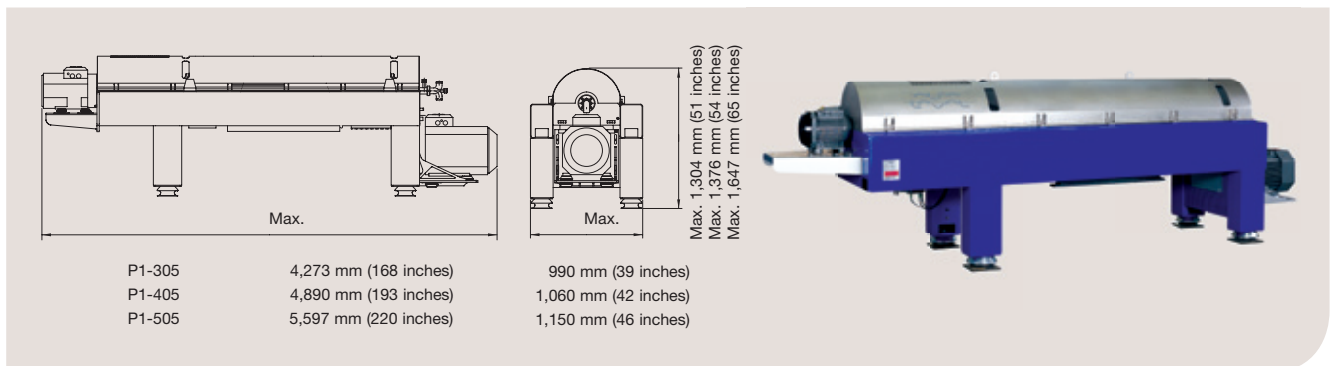
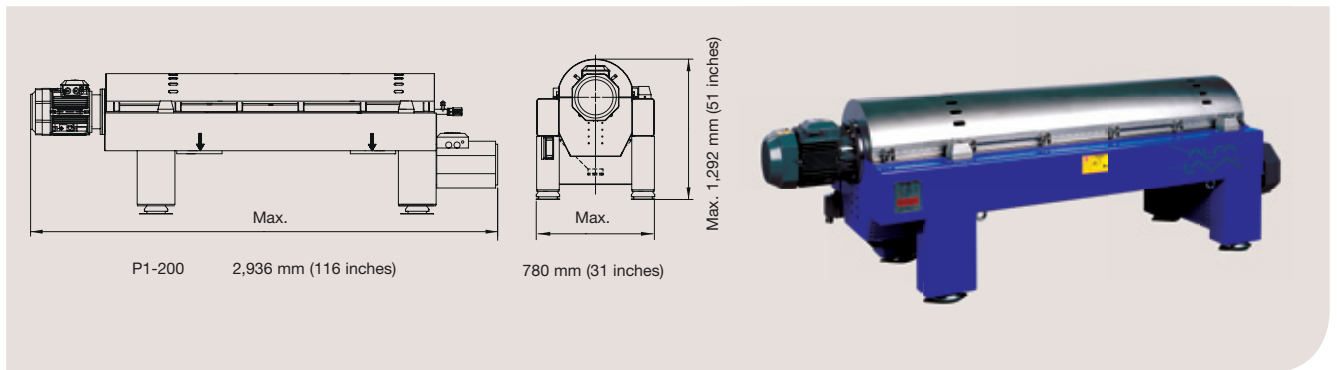
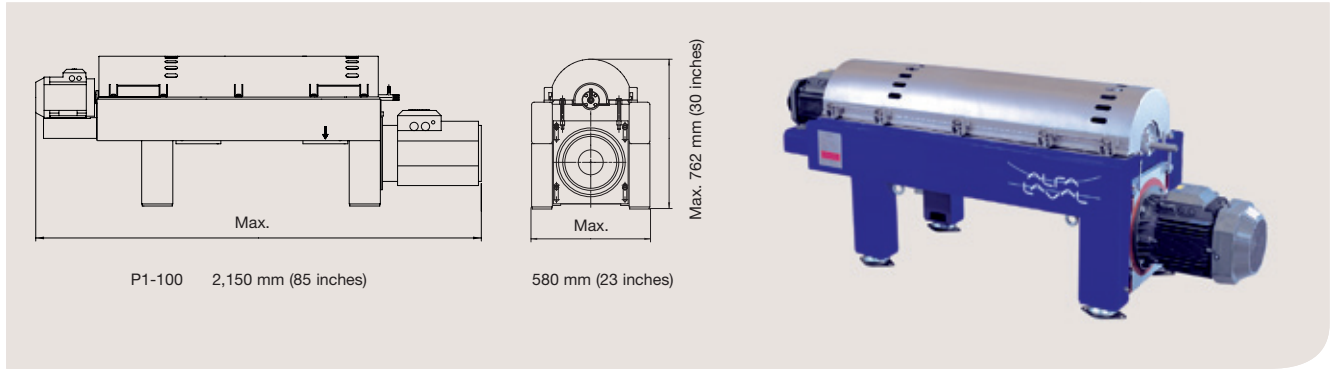


The Basic Core Controller

Each decenter centrifuge in the P1 range equipped with a variable frequency drive (VFD) as standard is delivered with the Basic Core Controller (BCC). This control package is capable of fully controlling the decenter operation, ensuring the most efficient performance and keeping costs for installation, commissioning, operation and maintenance to a minimum. The controller is also designed to measure the temperature of the bearings, and to monitor vibration levels.



Dimensions



Technical Data

Designation	Max. weight kg (lbs)	Bowl material	Other product and liquid wetted parts	Typical main drive size kW (HP)	Typical back drive kW (HP)	Start method
P1-100	375 kg (830 lbs)	AISI 316	Stainless steel	7.5 kW (10 HP)	3 kW (4 HP)	Star-delta, VFD
P1-200	1,125 kg (2,495 lbs)	AISI 316	Stainless steel	11 kW (15 HP)	7.5 kW (10 HP)	Star-delta, VFD
P1-305	2,300 kg (5,071 lbs)	AISI 316/Duplex	Stainless steel	22 kW (30 HP)	5.5 kW (7 HP)	Star-delta, VFD
P1-405	3,200 kg (7,050 lbs)	Duplex	Stainless steel	37 kW (50 HP)	11 kW (15 HP)	Star-delta, VFD
P1-505	4,500 kg (9,000 lbs)	Duplex	Stainless steel	55 kW (75 HP)	11 kW (15 HP)	VFD

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