



Alfa Laval Sigma 9 decanter centrifuge

Separating oil from olives



The Sigma 9 decanter centrifuge – first in the new Alfa Laval Reverse Decanter Sigma Range

Application

Alfa Laval introduces the Sigma series of decanter centrifuges specially designed for olive oil extraction in two-phase operation. The main focus in this successful development has been to maximize oil recovery throughout the flow range, while maintaining the highest oil quality by minimizing any temperature increase in the separation process.

Decanter centrifuges in the Alfa Laval Sigma series are designed to ensure cost-effective operation in the olive oil processing chain, with a specific focus on two-phase operation. These compact, efficient decanters are optimized for olive oil applications that include clarification, extraction, dewatering and classification on the first and second extraction (re-milling).

Sigma decanters performances can be enhanced with AL Thermal Conditioning Module, a high-tech system for controlling temperature in olive oil extraction.

Design features and benefits

Sigma decanter centrifuges feature a special design optimized for two-phase operation. Particular features include:

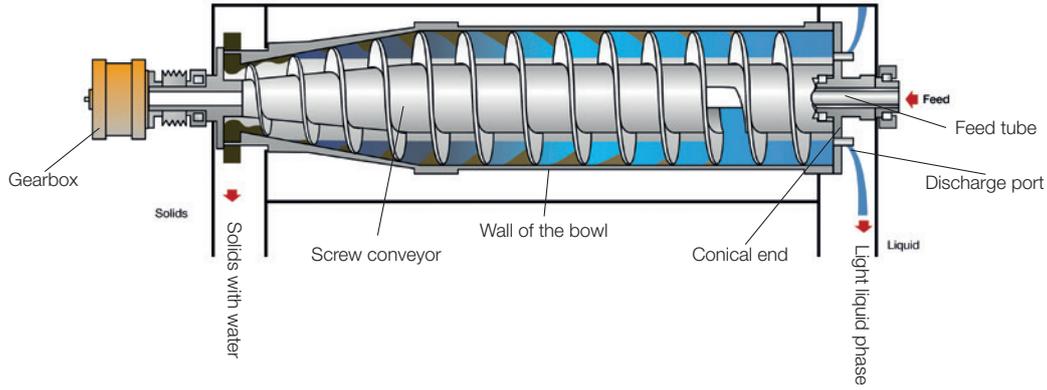
- Fully protected feed zone, benefiting from a new design
- Special conveyor design to improve solids transportation and maximize oil recovery
- Special flight for oil migration to the liquid outlet, designed to help optimize yield and oil clarification by avoiding turbulence
- 360° solids discharge outlet made of tungsten carbide, for exceptional protection against wear
- Tungsten carbide tiles on conveyor, for special wear protection that significantly reduces maintenance costs
- Compact design with small footprint

Electronic control of the conveyor speed (differential speed) means the retention time can be adjusted and set to obtain maximum oil recovery. Electronic control of differential speed is carried out via a variable frequency drive (VFD) directly connected to the exclusive Alfa Laval direct drive gearbox. This setup ensures minimum power consumption as well as reduced heating of the oil.

Alfa Laval Sigma decanter centrifuges also feature an electronic overload protection system.

High-quality stainless steel is used throughout. The casing is hinged for easy opening, maintenance and cleaning.

Two-phase operation



Standard equipment

Alfa Laval Sigma decenter centrifuges include the following as standard equipment:

- Solids chute and oil pipe
- Tank equipped with filter suitable for collection of the oil
- Set of spare parts
- Set of tools for disassembly and maintenance
- Lubricant oil and grease with the appropriate guns

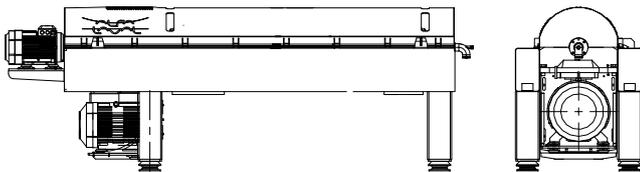
Control panel with back-drive system for electronically adjusting the conveyor screw differential speed and measuring conveyor torque.

Operating principle

The Sigma decenter centrifuge design ensures separation of the incoming olive paste into two phases – oil and wet solids. The olive paste is fed into the bowl through a stationary inlet tube and is then smoothly accelerated by an inlet rotor. Separation takes place in a horizontal cylindrical bowl equipped with a screw conveyor. Centrifugal force causes the oil to accumulate at the liquid surface in the decenter, while the solids settle on the inner wall of the bowl surrounded by the water separated out of the feed stream.

The conveyor rotates at a slightly different speed than the bowl, and conveys the solids to the discharge in the conical end. Separation takes place along the entire length of the cylindrical part of the bowl. The oil is discharged through the large end of the bowl and passes into collecting tanks via a filter.

Dimensions



Technical data

Bowl diameter	550 mm / 86.61 inches
Bowl length	2200 mm / 86.61 inches
Bowl speed (maximum)	3400 rpm
G-force (maximum)	3554 G
Weight	5000 kg / 11023 lbs
Installed power	77 kW (103.3 hp)
Maximum length	5722 mm / 225.27 inches
Width	1300 mm / 51.18 inches
Height	1693 mm / 77.28 inches

Alfa Laval reserves the right to change specifications without prior notification.

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