



Separating oil from olives

X4, X6, X7 and X9 high-performance decanter centrifuges



The X6 decanter centrifuge

Application

Alfa Laval X-series decanter centrifuges are designed to provide a cost-effective operation in the olive oil chain. The compact and efficient decanters are optimized for olive oil applications, including clarification, extraction, dewatering and classification on first and second extraction (re-milling).

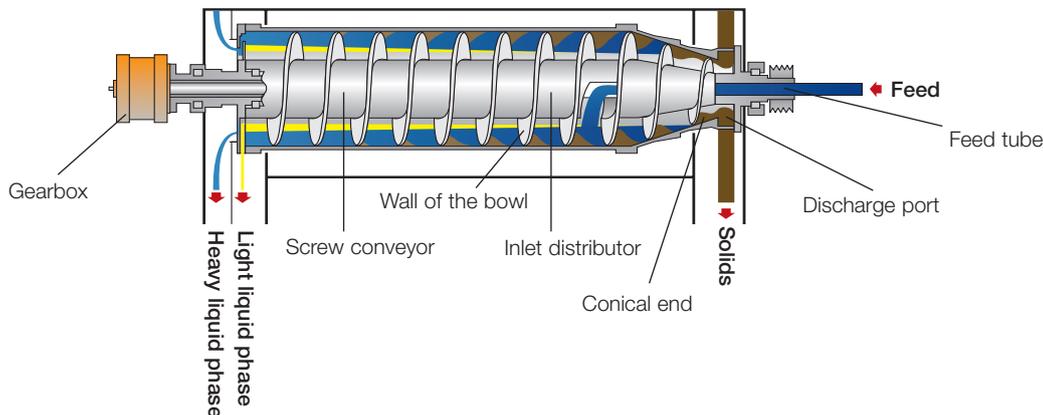
Design features and benefits

The decanters feature a special system called Variable Dynamic Pressure (VDP). The geometry of the bowl and conveyor allows for a high pressure to be made on the solids before the discharge, thus being able to reach a higher level of dryness. Through the electronic control of the conveyor speed (differential speed) the level of this pressure can be adjusted and set to obtain the required degree of dryness.

It is possible to use the same decanter for both two-phase and three-phase operation, on the basis of the differences in specific gravity. In the three phase operation, the special features of the bowl geometry allow to utilize the so called ARA system. The ARA system controls the specific regulation of the decanter liquid level that both optimize quality of oil and water consumption.

The higher clarity of oil separated through the three phase process can be obtained with the addition of a lower amount of dilution water. This ensures a higher oil quality and reduced fresh water consumption. For the same reason, AISI 316 stainless steel is used throughout, and the casings are also made of stainless steel. The design includes hinged casings for easy opening, maintenance and cleaning. The decanters also have an overload protection system in either electronic or mechanical release version.

Three-phase operation



Standard equipment

The decanter centrifuges include the following as standard equipment:

- built-in pumps for water and/or oil displacement to the separating unit
- set of spare parts
- set of tools for disassembly and maintenance
- lubricant oil and grease with the appropriate guns
- tank equipped with vibrating filter suitable for collection of the liquid phases (water, oil)
- flow meter with bracket, including solenoid valve
- scraper with husk exhaust manifold
- satellite bushings to protect the husk outlets.

Optional extras

The following auxiliary equipment is available for use in conjunction with X decanters:

- a back-drive system for electronically adjusting the conveyer or screw differential speed and measuring conveyer torque
- kit for converting three-phase operation to two-phase operation.

Operating principles

The decanter centrifuge design ensures separation of the incoming olive paste into three phases – oil, solids and water. 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 instant sedimentation of the solids on the wall of the bowl.

The conveyor rotates in the same direction as the bowl, but at a different speed, and conveys the solids to the conical end. Because it is lighter, the oil flows on the inside, and the solids move towards the outer perimeter, while the water remains in the middle. Separation takes place along the entire length of the cylindrical part of the bowl. The two liquid phases pass to their respective outlets via a vibrating filter and are then discharged into collecting tanks.

Technical specifications	X4	X6	X7	X9
Bowl diameter diameter in mm (inches)	280 (11)	360 (17)	440 (17)	575 (23)
Bowl length in mm (inches)	1260 (44)	1512 (60)	2300 (91)	2440 (96)
Bowl speed max.	4400 rpm	4200 rpm	3800 rpm	2900 rpm
G-force max.	3030	3549	3500	2703
Weight in kg (lbs)	1500 (3307)	2300 (5071)	3500 (7716)	7000 (15400)
Installed power kW (HP)	15 (20)	18,5 (25)	41 (55)	45 (60)
Length mm (inches)	3130 (123)	4000 (157)	4800 (189)	6000 (236)
Width mm (inches)	780 (31)	990 (39)	1060 (42)	1300 (51)
Height mm (inches)	930 (37)	1233 (49)	1376 (54)	1574 (62)

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