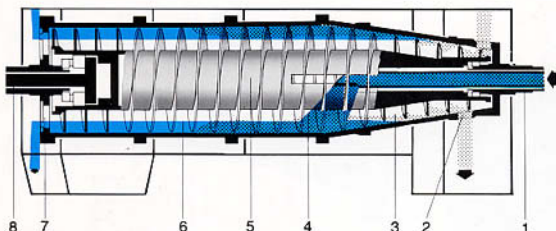


Decanter Centrifuge
for continuous clarification/dewatering
or classification of slurries
type NX 414/16/18 B-31

314 418

The NX 414/416/418 B-31 Decanter Centrifuge



Cutaway view of
NX 414/416/418 rotor

1. Hollow drive shaft with stationary inlet tube
2. Erosion protected solids discharge ports
3. Tapered «beach» section of rotor for discharge of solids
4. Solids deposited on rotor wall
5. Screw conveyor
6. «Pond» of clarified liquid
7. Clarified liquid outlet
8. Conveyor drive shaft from gearbox

Applications

The NX 414/416/418 B-31 decanters are used for clarification (liquid/solid separation), dewatering, and classification duties in various process industries.

Operation

Separation takes place in a horizontal conocylindrical rotor equipped with a screw conveyor.

The slurry is fed into the rotor through a stationary inlet tube and smoothly accelerated by a specially designed inlet distributor.

Centrifugal force causes instant sedimentation of the solids on the wall of the rotor.

The conveyor, rotating in the same direction as the rotor, but at a different speed, conveys the solids to the conical end. Here the solids are lifted clear of the liquid and centrifugally dewatered before being discharged into the collecting cover.

The clarified liquid overflows into the vessel through openings in the cylindrical end of the rotor.

Drive system

The rotor is driven by a V-belt transmission on the shaft at the conical end. Power is transferred to the conveyor by a two stage planetary gear box at the opposite end. To protect the gear box, the machine is provided with an overload protection device.

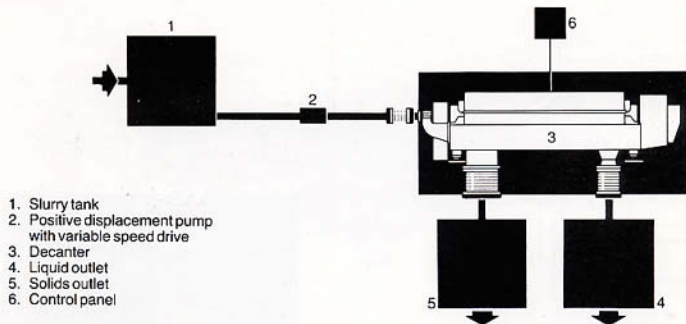
Construction

The rotating part is carried on a welded box beam frame with main bearings at both ends.

It is enclosed in a hinged vessel comprising a semi-cylindrical hood and a bottom section incorporating the solids discharge funnel and the liquid outlet.

The NX 414/416/418 is a range of Alfa-Laval decanter centrifuges which are standardized – only the length varies. This is one of the reasons for the high Alfa-Laval standard of spare parts handling and service.

Typical Flowsheet of a Separation System



Materials

Rotor, conveyor, vessel, inlet tube outlets and other parts in contact with the process media are made of stainless steel.

Solids discharge ports and conveyor flights are protected with erosion resistant material. The frame is of steel with epoxy enamel finish.

Optimization

The NX 414/416/418 decanter centrifuge can be adjusted to suit each user's individual requirements by varying:

- feed rate and rotational speed for optimal separation efficiency
- differential conveyor speed for optimal balance between liquid clarity and solids discharge capacity
- depth of pond in the rotor for optimal balance between liquid clarity and solids dryness.

Standard Equipment

- overload protection device
- vibraswith – for 4000 rpm only
- V-belts and pulleys
- vibration dampers
- guards for belts and gear box

We recommend that tools and spare parts are purchased along with the machine.

Optional Equipment

Differential speed control:

- countershaft transmission (positive drive belts)
- belt variator with motor
- hydraulic sun wheel drive.

Cleaning in place (CIP) equipment – where cleaning is important, e.g. food and dairy applications.

Vibrator for sludge cover.

Motors and starters.

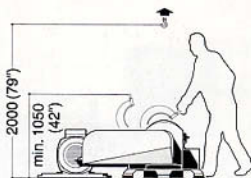
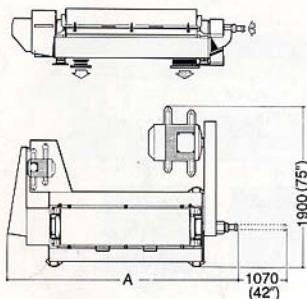
Tilttable stand to facilitate dismantling of the rotor.

Economy

There are several reasons why an Alfa-Laval Decanter centrifuge is a good economical choice.

- It is fully continuous.
- It can tolerate fluctuations in the volume and the concentration of the feed.
- The many decanter varieties available - together with the Alfa-Laval process know-how – enable us to offer a design that gives an optimum technical/economical solution.
- The tuning capabilities enable the same machine to be employed for various duties at different times.
- The compact design means low space requirement.

Dimensions



		NX 414	NX 416	NX 418
A	mm	2265	2565	2865
	inch	90	101	113
Max Load Rotor		460	600	750
		1020	1330	1665

Technical data

Hydraulic capacities
 (Process capacities depend on application)
 Rotor speed max.
 G-force
 Differential speed
 Rotor diameter
 Foundation loads per damper (static)
 Power requirements (depends on application)
 Motor for sun wheel drive
 Starting time approx.
 Stopping time approx.

	NX 414	NX 416	NX 418
(m ³ /h)	20	30	40
USGPM	90	130	175
rpm	4000	4000	4000
	3100	3100	3100
	2-50	2-50	2-50
mm (inch)	353(14)	353(14)	353(14)
N	2200	2500	3500
kW	11-22.5	15-30	18.5-37
kW	4-7.5	4-7.5	4-7.5
min.	3	3	3
min.	10	10	10

Shipping data

Net weight

kg	670	1000	1200
lbs	1475	2200	2650

Gross weight

kg	840	1200	1400
lbs	1850	2650	3080

Volume

m ³	2.0	2.8	3.4
cu.ft	70	100	120

ALFA-LAVAL

PD 88526E
8207

Alfa-Laval reserves the right to change specifications without notice