Alfa Laval Lynx Endurance Decanter Centrifuges

Mining and mineral applications

Applications

Alfa Laval Lynx Endurance decanter centrifuges have been specially developed to deal with tough, demanding solid-liquid separation duties throughout mining and mineral extraction operations.

Lynx Endurance decanters are ideal for use in tailings treatment and mineral recovery as well as many other mining industry processes that require high cake dryness for the easy transport and safe deposit.

Benefits

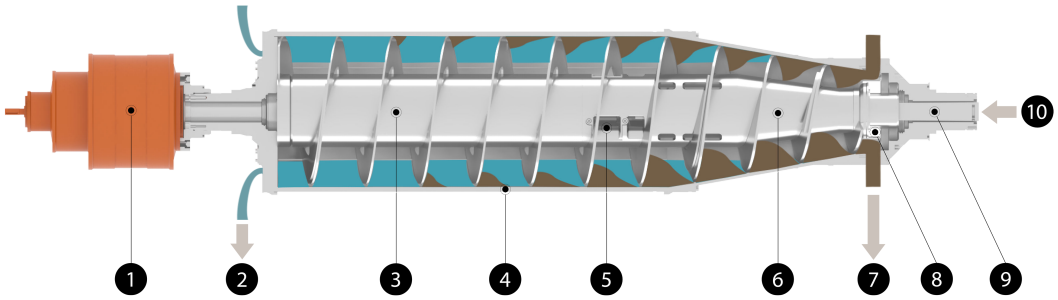
Lynx Endurance decanter centrifuges are built to be robust and reliable. Key benefits include:

- High separation efficiency and effective solids transportation due to special decanter geometry.
- Careful material selection and protection with replaceable wear parts to withstand erosion and corrosion.
- Variable G force and large gearboxes for high cake dryness.
- Continuous operation and compact design compared to other separation technologies.

FlightGuard

SolidsGuard

Decanter design and functionality



1: Gearbox
2: Liquid outlet
3: Screw conveyor
4: Wall of the bowl
5: Inlet distributor
6: Conical end
7: Solids outlet
8: Discharge ports
9: Feed tube
10: Feed inlet

Cross section of the interior of the decanter - the rotating assembly

Working principles

The incoming feed is separated into liquids (2) and solids (7). The product is fed into the bowl through an inlet tube (9) and is smoothly accelerated by the feed inlet distributor (5). Separation takes place in a horizontal cylindrical bowl (4) equipped with a screw conveyor (3). Centrifugal force separates the liquid and the solids, making the liquid clarify in the cylindrical zone and leave by flowing through adjustable PowerTubes. The solids settle on the inner wall of the bowl, where the screw conveyor, rotating at a slightly different speed than the bowl, moves these solids to the conical end (6). The solids are transported out of the liquid and discharged from the discharge ports (8).

Where to use

Lynx Endurance decanter centrifuges are well suited for dewatering fine tailings to produce dewatered solids that are suitable either for dry stacking or for co-disposal along with coarse rejects. If site-specific requirements make it necessary, the technology can also be adapted to produce a thickened discharge that is pumpable. This results in dual benefits of recovering process water, chemicals or minerals while also addressing environmental concerns.

Dry cake ready to be transported to deposit

On-site testing

Alfa Laval is leading the development of decanter centrifuges aimed at the mining and mineral industry, and we are keen to show you how we can help cut costs, increase performance and reduce power consumption.

We offer you a unique opportunity to test a Lynx Endurance decanter centrifuge at your site, enabling you to experience its outstanding separation efficiency when working on your specific slurries. Experienced Alfa Laval Field Service Engineers will guide you through the test runs.

Such site tests give you the best possible basis for selecting the model of decanter centrifuge best suited for separation duties within your particular operations.

Service and Digital Services

Investing in an Alfa Laval decanter centrifuge gives you access to a Service Agreement and Digital Services that helps boost reliability, maximize uptime, and reduce the total cost of ownership, with proactive service and maintenance actions dealing with wear and tear. We provide engineers on site with service kits or support remotely via IoT infrastructure, with condition monitoring for data-driven decisions, and Digital Solution Centres, where locally available, for real-time data analytics.

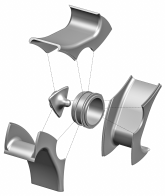
Automation

The modernized, next-generation Decanter Automation meets various operating needs, from specific process performance goals with real-time feedback and seamless adjustments, to Cleaning-in-Place and plant integration. The solution is IoT-enabled, allowing to further boost productivity and enhance decanter robustness. The modular architecture provides flexibility to add or remove features and can scale to meet future needs.

Selected features

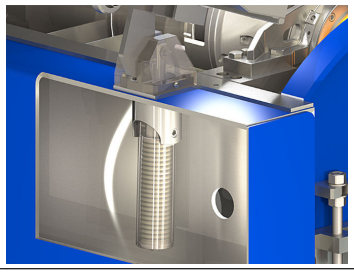
FeedGuard

The fully covered FeedGuard feed zone ensures gentle product acceleration and minimal turbulence, resulting in low wear and tear. The FeedGuard design provides outstanding reliability and uptime in abrasive applications, as well as easy on-site replacement, reducing downtime.



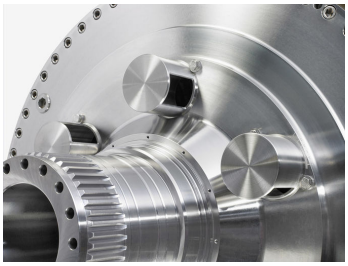
EasyLift

The patented, spring-loaded, hinged design makes it easy to open even the heaviest cover by hand. Offering safe and quick access for maintenance and service.



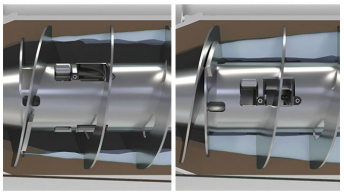
PowerTubes

Adjustable outlets are designed to release the liquid tangential to the rotational direction. This supports the bowl rotation and thereby recovering energy and minimizing power consumption



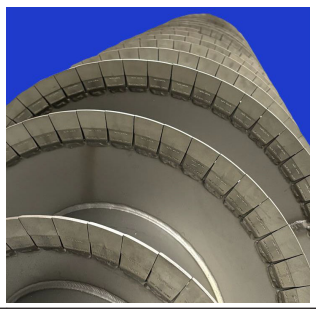
DeepPond

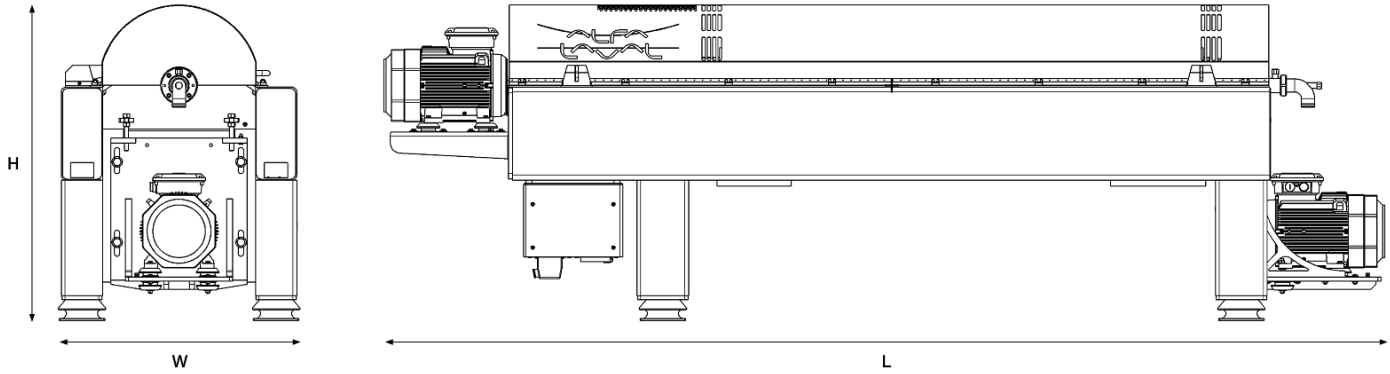
Increasing the pond depth inside the bowl creates a larger volume, leading to longer retention time and improved separation performance. The DeepPond design delivers high solids dryness and clean centrate, even at high flow rates.



FullyTiledConveyor

A fully tiled conveyor provides the decanter with best possible protection, right from the solids end to the liquid end.Tiles can be designed to meet specific operating requirements associated with pH values, temperatures and abrasive solids.





Technical specifications

Designation	**Lynx 44 Endurance**	**Lynx 72 Endurance**	**Lynx 100 Endurance**
Bowldiameter	440 mm/ 17.3 inches	720 mm/ 28.3 inches	1000 mm /39.4 inches
Bowlspeed (maximum)	3800rpm	2900rpm	1875rpm
G-force (maximum)	3558G	3391G	1969G
Gross weight	3600kg / 7937 lbs.	9800kg / 21605 lbs.	20000kg / 44092lbs.
Length (L)	4869 mm / 189.1 inches	6695 mm / 257.6 inches	8867 mm / 361.6 inches
Width(W)	1100 mm /43.3 inches	1560 mm / 61.4inches	2050 mm /80.7 inches
Height (H)	1500 mm / 59.0inches	2032 mm / 80.0inches	2339 mm / 92.1inches
Back drive control	VFD	VFD	VFD

Additional information

Opening of cover Please consult the dimensional drawing when defining the area needed around the decanter unit for opening the cover
Gross weight The gross weight refers to the weight of the empty decanter centrifuge, including the largest available gearbox and motor
Size The sizes provided in the table should be considered as typical. For specific cases, please contact Alfa Laval

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