Alfa Laval Screw Press

High-performance screw press

The Alfa Laval Screw Press is a new member of Alfa Laval's extensive product range of sludge dewatering solutions. The high-performance screw press is a user-friendly, reliable and robust piece of machinery with high uptime.

The moderate rotational speed and low power consumption of the screw press have a direct positive impact on operational costs. Another advantage of the moderate rotational speed is that the screw press has an extremely low noise level, which in turn is a benefit to the working environment. Alfa Laval controls ensure that the need for supervision is minimal.

Applications

- Municipal waste water plant sludges – primary, secondary, mixed or digested sludge
- Industrial biosolids
- Biogas residue.

Benefits

The Alfa Laval Screw press provides a number of benefits to the process.

- Reduces sludge volume, lowering transportation and disposal costs
- Continuous operation
- Extremely low energy consumption
- Extremely low noise level
- Totally enclosed
- Low spare parts consumption.

Working principle

Separation takes place in an inclined drum with a wedge wire screen forming the cylinder wall, and an internal screw conveyor. By introducing the already flocculated sludge suspension (after addition of a polymer solution) into the inlet chamber, the first section of the drum is used to drain off free water that has been released. Gradually, the sludge suspension increases its DS-content as it enters into the pressure zone of the drum. By virtue of the counter-pressure created by a restricted outlet, more free water is released from the sludge cake as it progresses towards the outlet. The released water is drained off to the reject-water outlet underneath the drum. The wedge wire screen is kept clean by intermittent flushing from the outside of the screen and by gentle contact with a special material at the tip of the screw conveyor flight.

Process optimization

The following examples of screw press variables enable adjustment to suit every customer need:

- Conveyor speed for the most efficient balance between cake solids and capacity
- Counterpressure to obtain best solids dryness and liquid clarity.

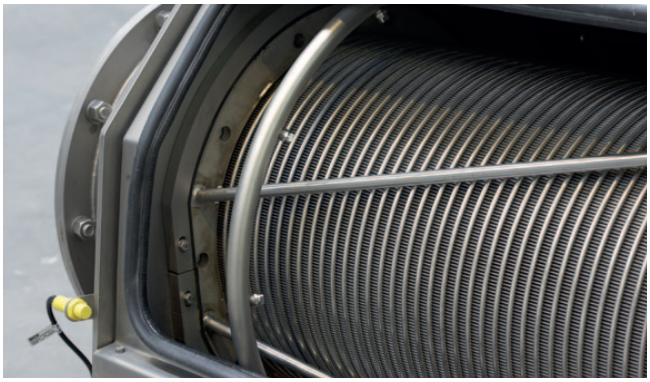
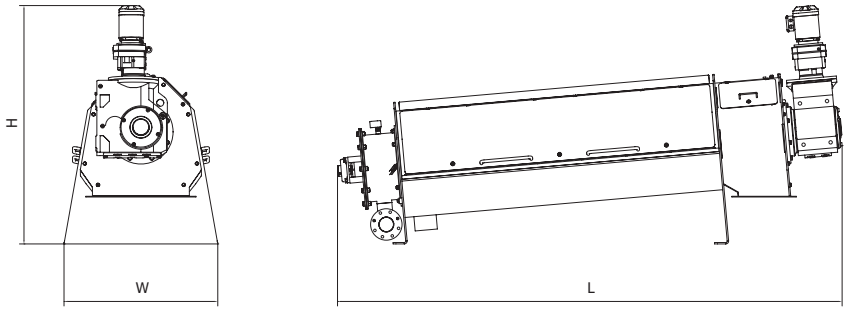


Fig. 1 Wedge wire screen

Design

The drum is mounted in a casing where the screw conveyor is fixed at either end in strong bearings. The screw conveyor is powered by an electric motor through a geared transmission to produce the slow rotational speed needed for optimal performance. The entire drum is totally enclosed and provided with inspection hatchets for maximum operability and maintainability.

Dimensions



Dimensions	Alfa Laval Screw Press 20
Length	3,583 mm (141 inch)
Width	1075 mm (42 inch)
Height	1,708 mm (67 inch)
Drum diameter	470 mm (19 inch)
Net weight	1,340 kg (2,954 lbs)

Materials

All parts in contact with sludge and water are made of Stainless steel.

Technical data

Conveyor speed	0 – 2 rpm
Typical motor size	1.1 kW
Control panel enclosure	IP54

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