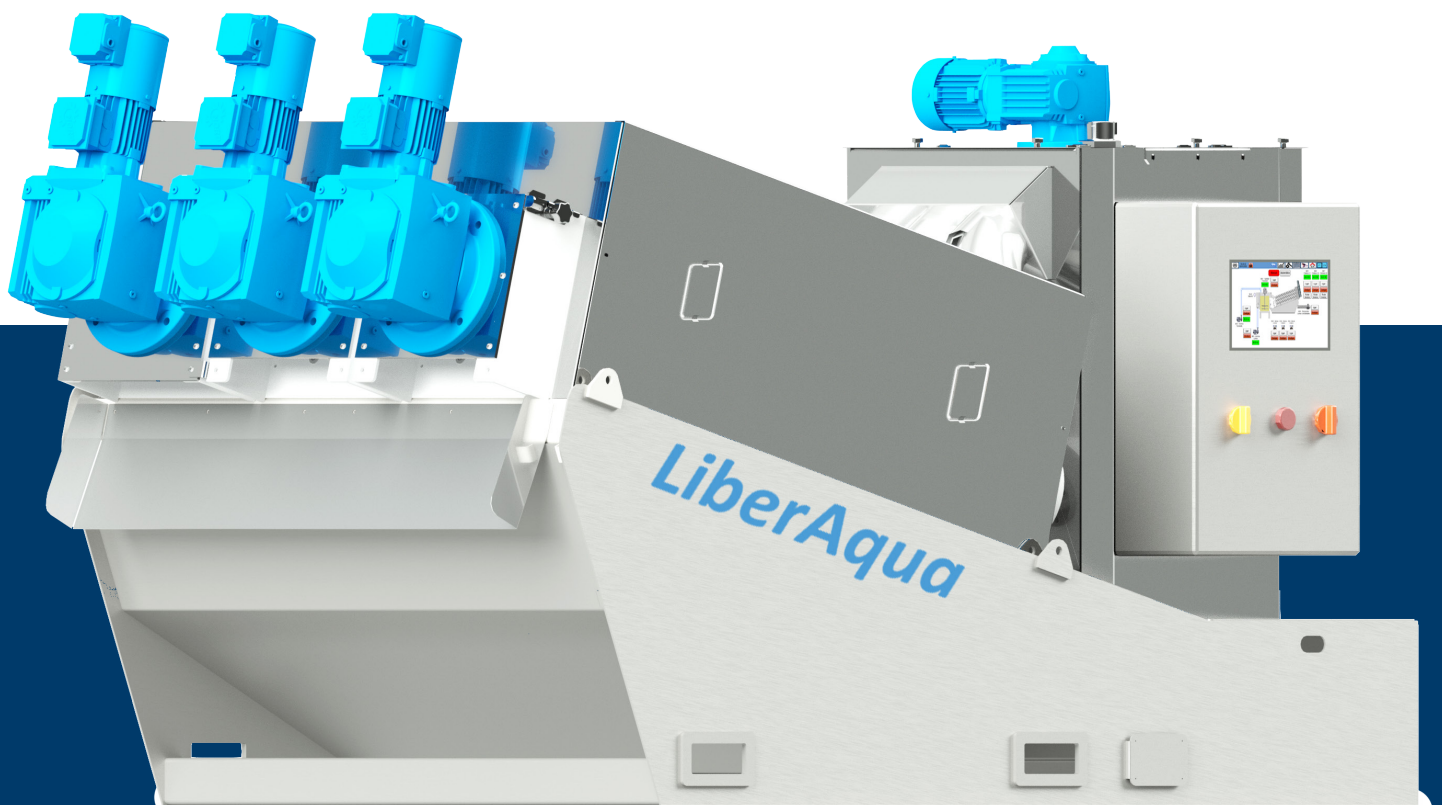


LiberAqua



MULTIDISC SCREW PRESS

Sludge Dewatering



MULTIDISC SCREW PRESS (LDP)

The LDP Multidisc Screw Press is designed for sludge dewatering and can also function as a mechanical thickener.

This innovative solution features two distinct zones that optimize the dewatering process:

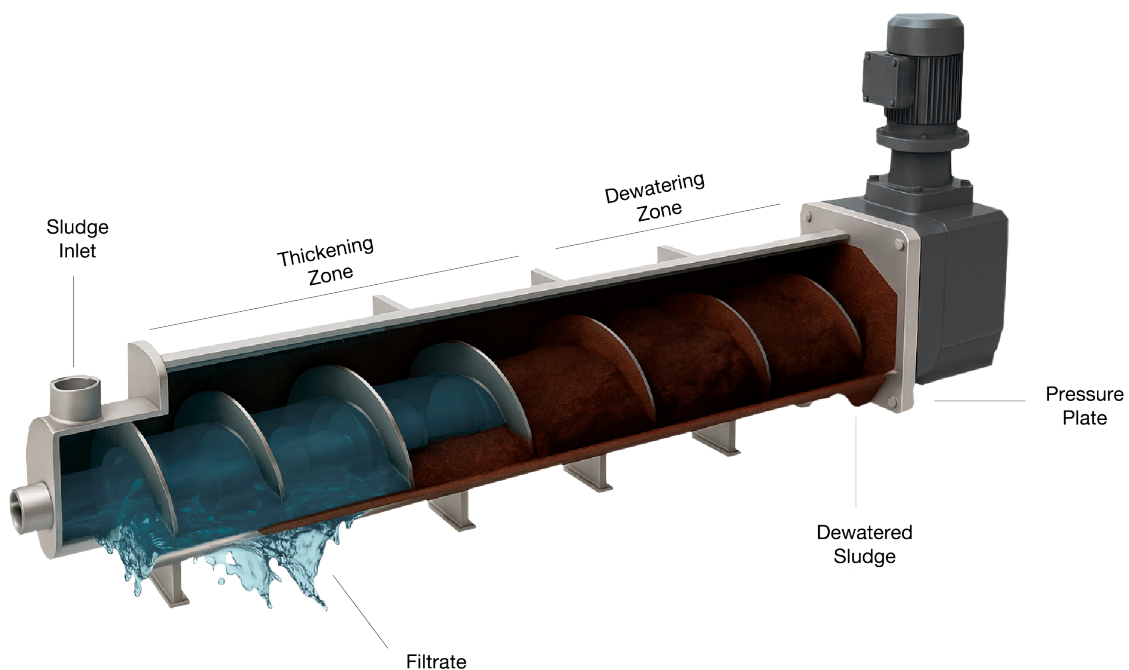
» **First zone:** the filter discs are spaced further apart, allowing the majority of free water to be extracted.

» **Second zone:** disc spacing is reduced, and applied pressure increases progressively, ensuring more efficient water removal.

This process raises the dry solids content of the dewatered sludge, enhances operational efficiency, and allows processing of low-concentration sludge from 2 g/L (0.2%).

The press is designed to prevent clogging and significantly reduce operational costs. It also incorporates a self-cleaning system between the fixed and moving discs, ensuring greater reliability and continuous operation.

The entire filter structure of the LDP consists of Fixed Discs, Spacer Rings, and Moving Discs, all made of stainless steel, providing robustness and durability.



WORKING PRINCIPLE

The LDP is suitable for dewatering the following types of sludge:

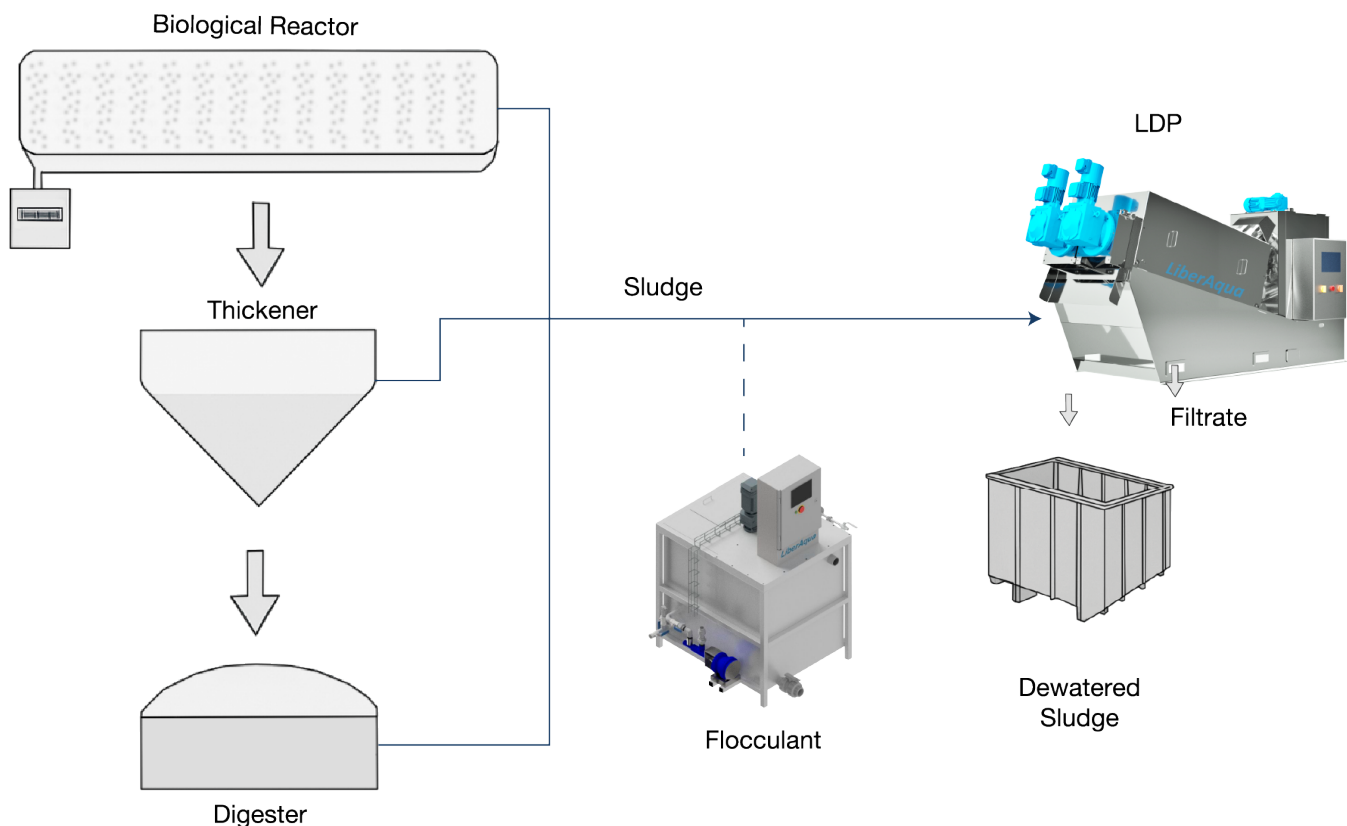
- » mixed sludge;
- » primary biological sludge;
- » thickened sludge;
- » non-thickened sludge;
- » digested sludge;
- » sludge from physico-chemical treatments.

To ensure efficient dewatering, it is essential to optimize the flocculation process (or coagulation–flocculation, when required). For this purpose, the LDP is equipped with a standard flocculation tank installed upstream of the screw dewatering system.

The process begins in the flocculation tank, from where the flocculated sludge is fed into the press. At this stage, the conveyor screw and filter discs work together to separate water from the solids, transporting the material through the two dewatering zones until the final extraction of dewatered sludge.

The oscillating movement of the moving discs ensures continuous self-cleaning of the filter surface, preventing clogging and maintaining process efficiency. The screw geometry also provides a gradual increase in pressure on the sludge, promoting effective dewatering. Thanks to this design, the LDP maintains high efficiency even with low-solid-content sludge.

The LDP comes standard with an electrical control panel equipped with PLC and HMI, providing integrated control of the entire process. This system allows adjustment of the screw speed, flocculation tank agitator, and sludge and flocculant pumps via frequency variation, ensuring flexible operation tailored to the specific characteristics of each installation. Additionally, the system can control a conveyor screw to facilitate the transfer of dewatered sludge.



Key advantages:

- » Low energy consumption, resulting in efficient and sustainable operation;
- » Reduced maintenance costs, thanks to low rotational speed, mechanical robustness, and self-cleaning system;
- » Continuous operation, 24/7 throughout the year, with low noise and odor emissions;
- » Low wash water consumption, even in high-capacity models;
- » Effective performance with sludge containing high levels of oils and grease (O&G);
- » Ability to dewater sludge directly from the biological reactor, reducing investment in thickening equipment and minimizing odor formation;
- » Full stainless steel construction (AISI 304 L or 316 L), ensuring high durability and corrosion resistance;
- » Fully automated equipment, controlled via PLC and HMI.

TECHNICAL SPECIFICATIONS

The LDP system range has been developed to meet a wide variety of applications, ensuring high levels of efficiency and reliability. The following models are available:

Model	Capacity	Screw Specifications	Length	Width	Height	Electrical Power	Wash Water Consumption	Weight
LDP 30125	up to 70 kg-DM/h	Ø 300 × 1	3200 mm	1000 mm	1700 mm	1.30 kW	10 L/h	850 kg
LDP 30225	up to 140 kg-DM/h	Ø 300 × 2	3300 mm	1300 mm	1700 mm	2.05 kW	20 L/h	1350 kg
LDP 30325	up to 210 kg-DM/h	Ø 300 × 3	3500 mm	1650 mm	1700 mm	3.00 kW	30 L/h	1880 kg
LDP 30425	up to 280 kg-DM/h	Ø 300 × 4	3650 mm	2050 mm	1700 mm	3.75 kW	40 L/h	2400 kg
LDP 35125	up to 120 kg-DM/h	Ø 350 × 1	3500 mm	1050 mm	2100 mm	1.65 kW	30 L/h	1600 kg
LDP 35225	up to 240 kg-DM/h	Ø 350 × 2	3600 mm	1450 mm	2100 mm	2.75 kW	60 L/h	2350 kg
LDP 35325	up to 360 kg-DM/h	Ø 350 × 3	3900 mm	1850 mm	2150 mm	4.40 kW	90 L/h	3360 kg
LDP 35425	up to 480 kg-DM/h	Ø 350 × 4	4250 mm	2400 mm	2250 mm	5.50 kW	120 L/h	3360 kg
LDP 40125	up to 160 kg-DM/h	Ø 400 × 1	3700 mm	1100 mm	2200 mm	1.65 kW	60 L/h	2400 kg
LDP 40225	up to 320 kg-DM/h	Ø 400 × 2	4200 mm	1600 mm	2200 mm	2.75 kW	120 L/h	3460 kg
LDP 40325	up to 480 kg-DM/h	Ø 400 × 3	4300 mm	2000 mm	2200 mm	4.40 kW	180 L/h	5450 kg
LDP 40425 (1) (2)	up to 640 kg-DM/h	Ø 400 × 4	4800 mm	2850 mm	2200 mm	5.50 kW	240 L/h	6500 kg

*The technical specifications provided are approximate and may be adjusted depending on equipment customization. KLINGER Portugal reserves the right to make changes without prior notice whenever necessary for continuous product improvement.

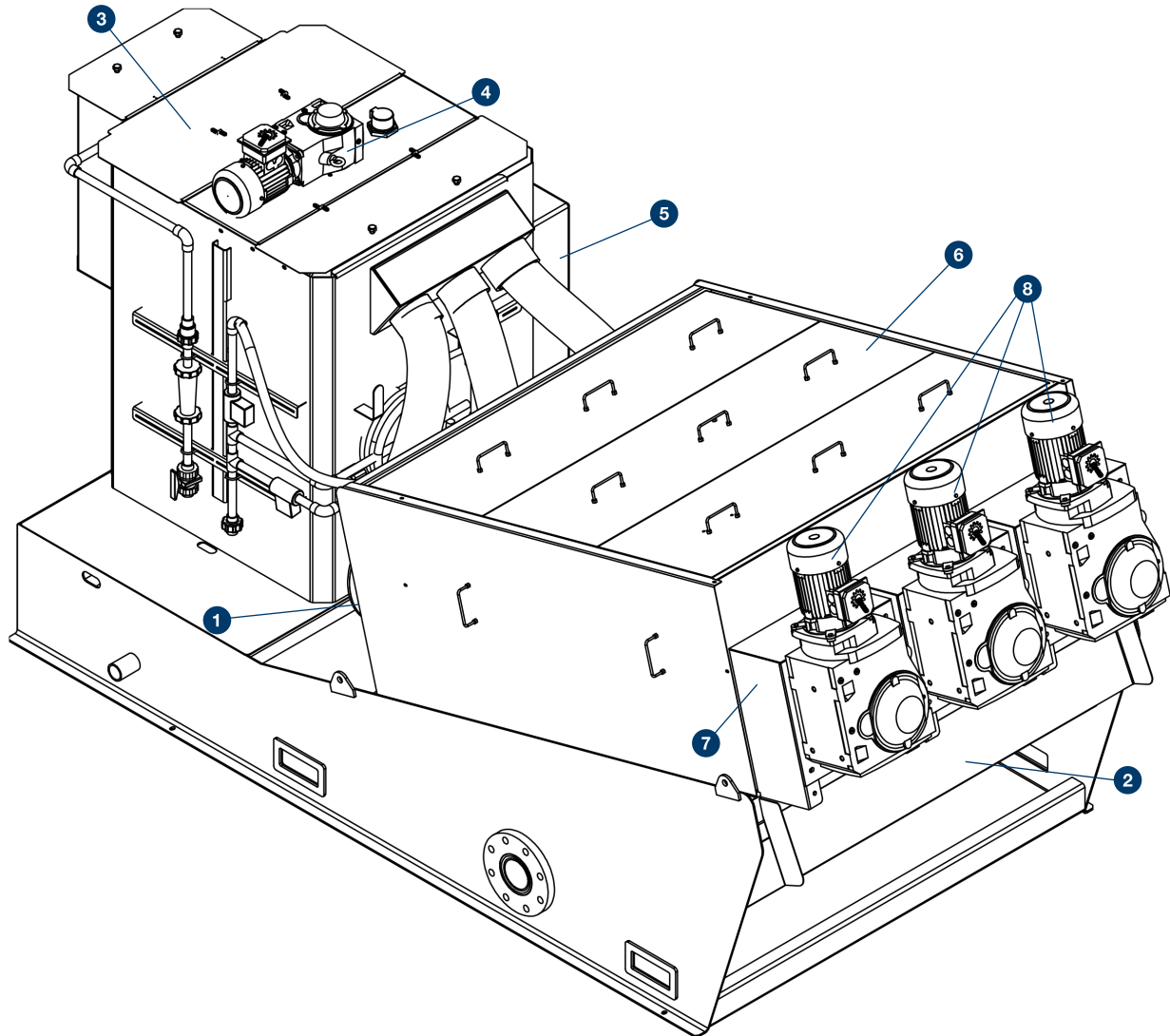
**The images shown are for illustrative purposes only and do not constitute a commitment regarding the supplied equipment.

The treatment capacity is indicative and should be confirmed through laboratory and/or industrial testing. KLINGER Portugal offers trial/rental units for this purpose.

There is no defined upper limit for the concentration of sludge fed to the LDP, provided the sludge remains fluid.

TECHNICAL DRAWING

The following image shows the equipment and its main components.



- | | | |
|---------------------|------------------------------|-------------------------------|
| 1 Main Body Screw | 4 Agitator Gearmotor | 7 Screw Access for Unblocking |
| 2 Sludge Outlet | 5 Electrical Control Display | 8 Gearmotor |
| 3 Flocculation Tank | 6 Inspection Cover | |

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