

Leiblein

world of liquids



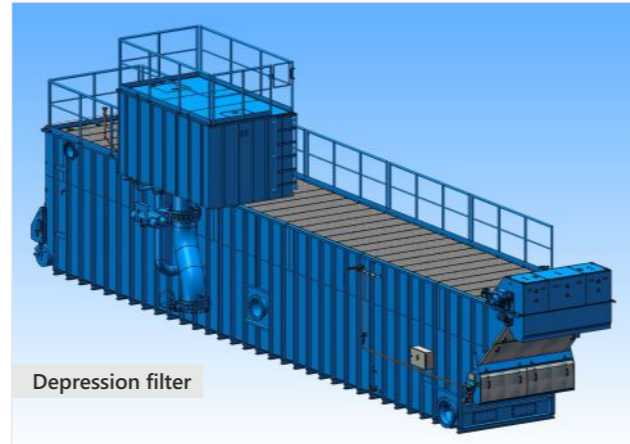
Depression filter

Technologies for solid/liquid separation

The depression filter

For the filtration of emulsions and other liquids

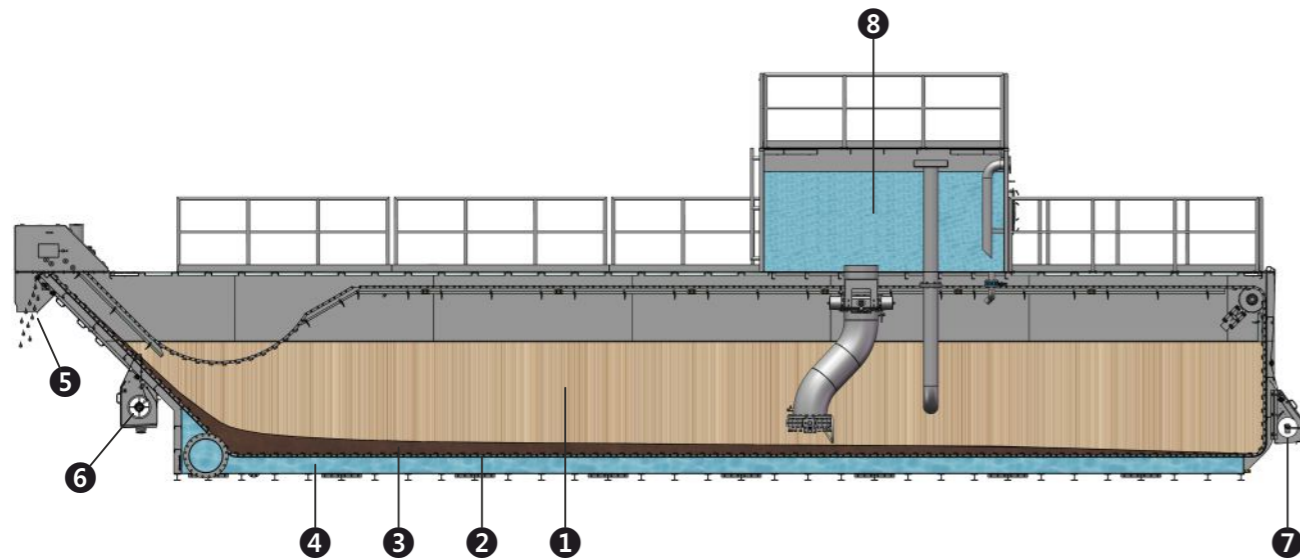
The depression filter uses a filter fleece medium to filter process fluids. In case of the depression filter, the liquid to be filtered is sucked vertically downwards out of the dirt tank, and through the filter medium. The solid processing residues are thus deposited onto the filter fleece. As time passes, even finer particles are held back, thanks to the filter cake that is formed. The pumps convey the filtrate directly to the consumers; an intermediate storage tank and additional pumps are not required.



Depression filter

Functional principle of the depression filter

Technology made by Leiblein



Vacuum-based filtering

The contaminated cooling lubricant is sucked out of the upper dirt tank (1), such that it passes through the horizontal filter fleece (2). The processing residues that are retained on the filter fleece form the filter cake (3). The suction power of the pumps sucks the filtrate downwards into the clean chamber (4).

As the filter cake becomes denser, the flow resistance increases, and the vacuum in the clean chamber increases as well. When a vacuum limit value is reached or a predefined period of time has elapsed, the regeneration process is initiated: The vacuum is

broken. The filter then undergoes a clocking procedure, whereby the drag chain transports the processing residues forward to the drop ramp (5). The contaminated filter fleece is cleaned, and a defined length is rolled up (6). At the rear side of the depression filter, the same length of new filter fleece is fed in by a roller (7). The filtration cycle begins anew after the regeneration process has been completed. During the regeneration process, the recipients are fed from a clean tank in an uninterrupted manner; this clean tank is positioned on the dirt tank, and it is filled continuously (8).

Fields of application of the depression filter

Multiple applications

The depression filter can be used for many different filtration processes. It is the classic filter when it comes to the domain of cooling lubricant filtration; thanks to its compact design and large filter area, it is particularly well-suited for scenarios involving high and very high flow-rates of process fluids, e.g.:

- Cooling lubricant cleaning in situations involving steel, grey cast iron and non-ferrous metal processing
- Cooling lubricant cleaning in situations involving aluminium processing
- Cooling lubricant cleaning in situations involving a material mix
- Cooling lubricant cleaning in situations involving grinding (conditional)
- Filtration of cooling water
- Filtration of washing baths
- Miscellaneous process water processing

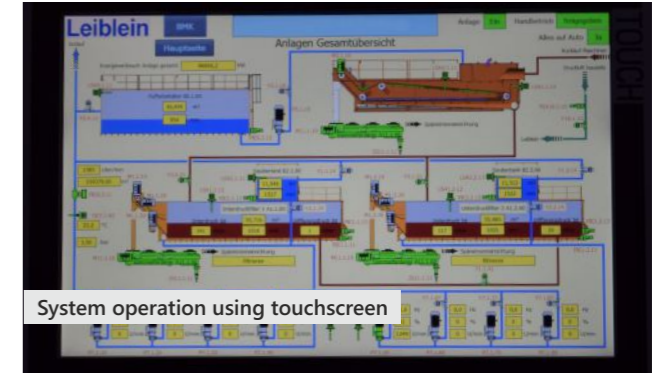
A complete central system can be formed by combining the depression filter with the following components:

- Pre-separator for chippings
- Heat exchanger
- Chiller
- Refilling and dosing
- Emulsion maintenance devices
- Centrifuge for chippings
- Conveyance of chippings

Efficient and powerful

Benefits you can enjoy with our depression filter

- Large filter area and the most minor space requirements
- High throughput rates
- Low operating costs, e.g. due to frequency-controlled IE4 pump motors
- Low-maintenance and user-friendly
- Fully automatic operations



System operation using touchscreen



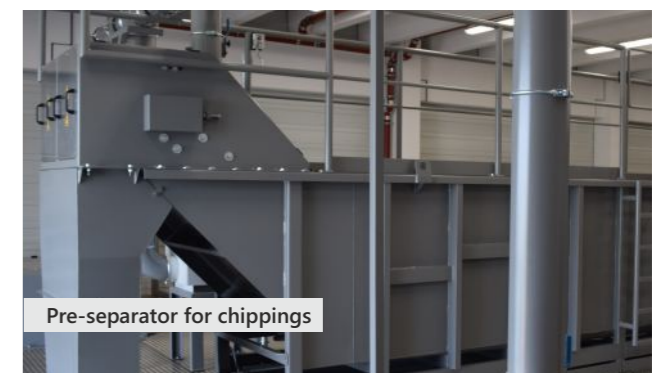
Drop ramp of the depression filter



Depression filter – Twin filter system



Pump group with driving power of 8 x 55 kW



Pre-separator for chippings

Design

Types and materials

The depression filter is a rectangular container featuring an integrated chipping discharge facility and a superimposed clean tank. It is therefore particularly compact and space-saving.

The depression filter uses a filter fleece that is selected for the specific filtration task. Thanks to the twin filter design, the required filtrate quantity can quickly be doubled.

Material: Coated steel
Stainless steel 1.4301/1.4404

Filter fleece: Polyester, viscose, polypropylene

Each depression filter is designed for your specific use.



You have questions about the treatment of your medium?
Do not hesitate and contact us!
We would be pleased to advise you.



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