

SEDIMENTATION

Johnson Lamella- Separator® for optimal sedimentation

1. Function of the inclined plate settler

The Johnson Lamella Separator® is an economical and space-saving method of optimising sedimentation. Johnson Lamella Separators® are used to separate solids, e.g. as pre-purification before filtering or as final purification after biological activation processes.

The fluid to be purified enters a specially-sized inlet chamber between the inclined plates via a supply pipeline. The fluid enters the plates from the sides via the inflow openings. The fluid travels upwards between the plates into the drain channel equipped with throttle openings and exits the separator via the drain pipeline. Sedimentation occurs during the upward flow of the fluid to be purified. The solids sediment on the plates and slide down into the sludge funnel. The sludge is thickened in the sludge funnel and exits the separator via the sludge extractor.

The even distribution of the flow to each plate guarantees optimal operation at a high capacity. The side entry of the fluid into the sedimentation chamber between the plates prevents the solids sedimented on the plates being carried away when the fluid enters.

The tried and trusted Johnson Lamella Separator® models are designed for a wide range of applications.

Pilot systems are available to develop concepts adapted for special cases.

2. Construction

2.1 Container construction

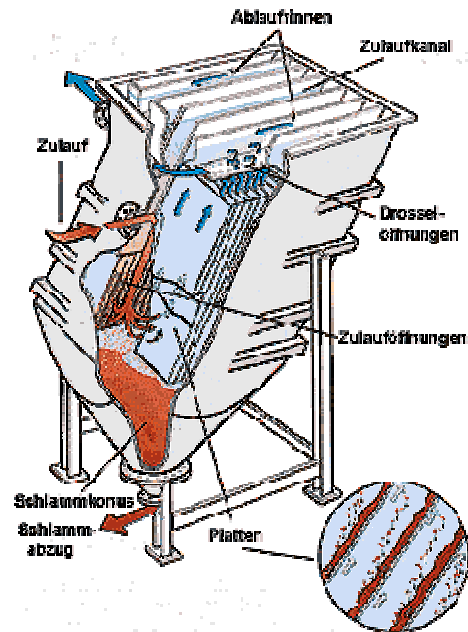
The **LS model** has a conical sludge funnel, the sedimented sludge is removed from the separator via hydrostatic pressure by opening a valve. The separators are available with a wide range of sedimentation areas and can be adapted for the respective requirements. A rabbling unit is used for sludge types with high sedimentation density.

The LS Lamella Separator® is mainly used for simple sedimentation without pre-treatment.

The **LT model** is a separator with integrated thickener and a sludge rabbling unit. This treatment unit is mainly used for fluids with high sludge content, or if a high degree of sludge thickening is required. It is available with various sedimentation areas and can be adapted for the specific requirements.

Flocculation container

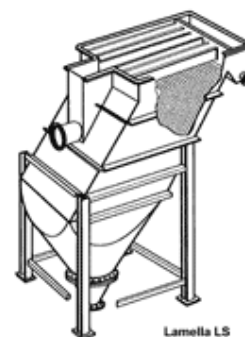
Both types of Lamella Separators, LS and LT, can be equipped with additional upstream flocculation containers. The upstream treatment in flocculation containers improves flocculation and



Sectional drawing of the baffle plate thickener.



Johnson Lamella separator with 390 m² sedimentation area.



sedimentation.

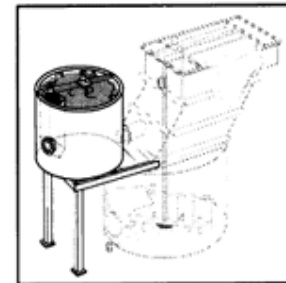
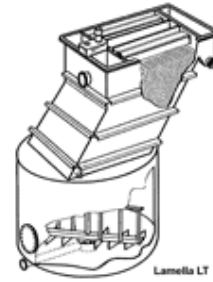
2.2 Concrete construction

The LP model is a plate package ready for installation in concrete tanks. These plate packages are mainly used in large steel or reinforced concrete constructions. This method of construction offers considerable advantages for planning new treatment plants and improving existing overloaded treatment plants due to the cost savings.

They are used to treat drinking and industrial water, as well as in pre- and post-treatment in municipal sewage treatment plants.



Plate packs in a concrete tank with a Zickert sludge scraper.



Der LT und der LS können mit einem Mischer und Flockungstank ausgerüstet werden.

3. Processes / applications

Lamella separators or gravity settlers can be found in nearly all areas of water treatment, e.g.

- for purification and thickening in the chemical industry
- in treatment technology
- in purification of waste water
- in treating metal surfaces
- in the paper and cellulose industry
- for purification in biological cleaning processes
- for water treatment in power plant dust scrubbers
- in recirculating washing water in the potato and vegetable industry
- in treating water from industrial processes
- for treating surface water
- in those places where solids must be separated from fluids via sedimentation

