



SkimDrive Scum Removal with LEO® Linear Electronic Oscillator



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Experts in Spray Technology

Scum removal with LEO® oscillators

Scum is removed from the surface of the water in the clarifier using so-called scum troughs. These scum troughs are usually adjusted manually using a spindle. To make adjustments, the service technician stands on the bridge about 2-3 m above the clarification tank and estimates the ideal immersion depth of the front edge of the scum trough. However, exact adjustment is very difficult and prone to errors from this position. Furthermore, the immersion depth set is only stable for a short time because the water level can change quickly with respect to the edge of the scum trough. This means no floating solids are removed, or only the water below the solids is removed.



Examples of possible sources of error:

- Tolerances in the top edge of the tank. The height of the skimmer arm with the attached floating sludge removal system changes with respect to the water level
- Water level fluctuations due to changing water quantities, and therefore different overflow heights on the V-notched weir
- Effect of wind (water backup)

Through the use of an automated system to remove floating solids, it is possible to increase the efficiency and availability of your clarifier.

Using high precision pressure sensors, the SkimDrive system measures the height of the water or of the floating solids. The edge of the skimmer is controlled automatically by an actuator so that the best possible removal performance is always achieved. This ensures automatic skimming of the floating solids in circular and rectangular clarifiers as well as in aeration tanks. Advantages such as less handling work and minimization of the safety hazards speak for themselves.

FEATURES & ADVANTAGES

- Optimal removal performance and increased efficiency of the clarifier
- Measurement of the water and floating solids level
- Control of the skimmer edge using the high precision 300W LEO actuator
- Durable construction - protection class IP 67 for safe operation in wet areas
- Easy to operate control unit – speed and stroke can be adjusted by the user. Settings can be adjusted and saved during operation. Operating parameters can be preprogrammed.
- Integrated proximity switch to monitor the vertical position and protect the overall system

TECHNICAL DATA ON THE DRIVE SYSTEM FOR REMOVING FLOATING SOLIDS

A drive system consists of 1 oscillator and an oscillation controller (optional) as well as installation and flange-mount accessories.

LEO 300W	
Operating voltage	230 V 50 Hz (110 V 50 Hz). 60 Hz possible.
Drive	2-Phase step motor
Power consumption	400 W
Operating temperature	45° C (max.)
Exterior housing	Stainless Steel 1.4571, mechanically polished
Weight	20,2 kg
Skimmer through	Available as an option or at the factory
Adjusting speed	usually 0,1 mm/s
Adjusting force	3,500 N
Oscillator stroke	1 - 348 mm
Optional alarm	Relay outputs, maximum 24V, 100 mA, not isolated. Error indicator on the display. Internal rotation monitored by an initiator on a flex coupling.
Display	Either 4-line LCD screen or 4.5" touch screen display
Protection Class	Oscillator: IP 67 Sensor: IP 68



*= Depends on the oscillation speed



Accessories: Heavy-duty wheels & floats

Does your heavy-duty wheel look like this after a while? Then it's time for an alternative!



The sludge rakes in the secondary clarifier are permanently pulled over the bottom by heavy-duty wheels to remove solids that have sunk to the bottom through the discharge at the center of the tank.



Conventional heavy-duty wheels wear down quickly due to continuous use and the enormous forces of up to 200 kg per wheel acting on them. The blocked wheels scrape across the bottom as the rake rotates. This damages the bottom of the secondary clarifier, which only becomes visible when the tank is

completely drained for the purpose of routine maintenance. It is often necessary in this case to repair the bottom of the tank, which is expensive and time-consuming.

An alternative is to use of low-wear heavy-duty wheels with specially manufactured Teflon bearings. These wheels last longer, even when used in continuous operation. The likelihood that the bottom of the clarifier becomes damaged is much lower.



Floats

Floats are used to take some of the load off the rakes in the secondary clarifier. The floats are adapted individually to the local conditions and are characterized by a long service life.



The required buoyancy is determined with the help of a tension gauge. After preparing the floats, they are attached to the rake using shackles and a chain. The length of the chains must be selected so that the floats swim above the sediments but do not get stuck in the solids floating on the surface of the water. A properly configured flotation system can double the lifespan of the heavy-duty wheels and significantly lower the expensive consequential damage on the bottom of the tank.



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