

An increasing number of Clarifier Plants try not to spoil their chances of removing the float scum from the clarifier circulation.

Due to this reason it is important to treat the float scum taken off the reclearing tank in such a way that it can be removed from the system having a reduced volume.



**new !**

**Automatic Removal...  
of Floating Sludge...  
with integrated...**

**...Pre Thickening and**



**Flow Rate Reduction**

## **Floating Sludge**

- Extensive Removal -
- Reduction and Thickening in the Clarifier Tank -
- Removal from the System with minimal Energy Input -

# Automatic Float Sludge Removal with integrated Reduction and Pre Thickening of Floating Sludge

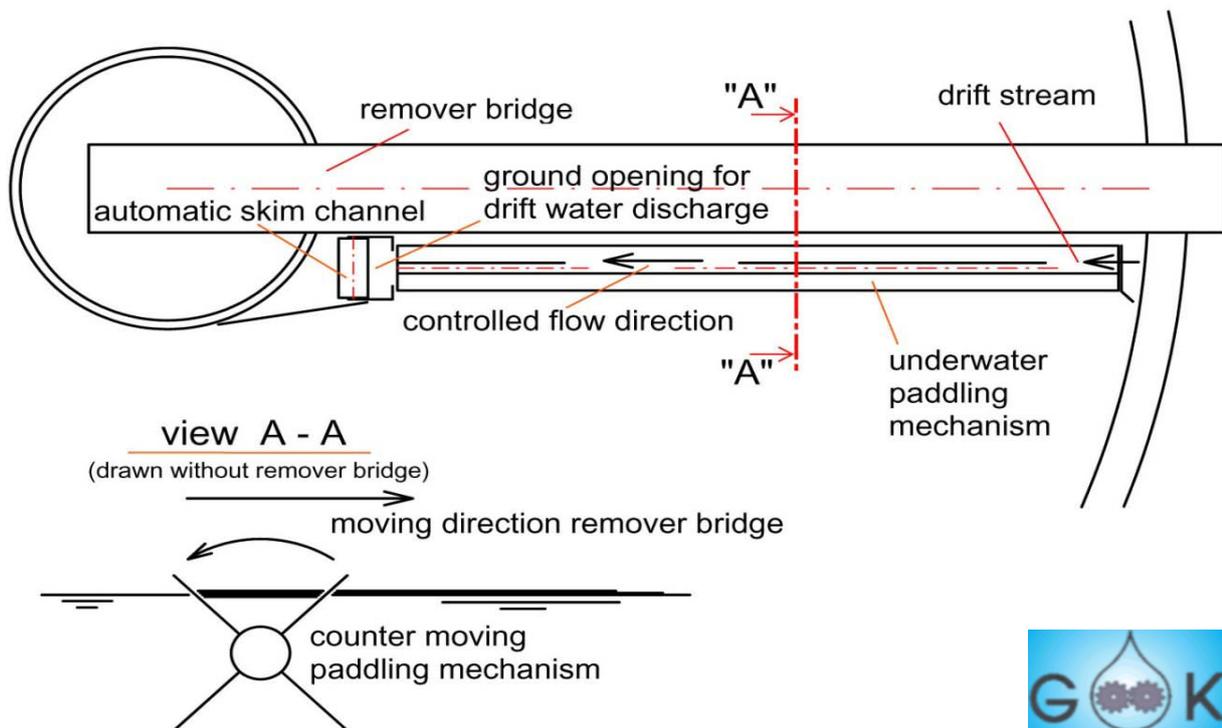
This new development impresses with following characteristics:

**Consequent saving of energy:** The float sludge pulled off is removed from the sludge circuit with a small pump capacity, which means minimal energy involved.

**Long conveyor pipes with small inside diameters are possible:** Due to the minimized sludge amount a transport with only slight loss is possible also for longer distances.

**Elimination out of the sludge circulation:** Due to the consequent pre-thickening the minimized amount of float sludge can be pumped directly into an intermediate tank, a thickener, a digester or any other place of utilization.

## Unifilar Drawing



## Functions

*The system is composed mainly of following function elements:*

- underwater collecting and thickening paddling mechanism -
- thickening device with drift water pump -
- ground opening for drift water and separated water drain -
- automatic skim channel -

With a paddling mechanism counter turning to the drive direction, the float sludge is underpassed and collected. In position (view A-A) the paddling mechanism stops briefly and thus creates a thickening channel separated from the water surface. A drift stream supplied from one side only drives the float sludge to the other end of the channel, pushes it together and starts thickening it. The drift water from the clarifier tank and the separated water taken from the floated sludge leave through a bottom opening and return to the clarifier tank. Time overlapping the gathered and volume reduced sludge is collected and eliminated from the system by an automatic skim channel at the end of the thickening channel. The drift water pushes constantly all the time. After a tunable dead time (e.g. 5 min.), the paddling mechanism makes a 1/4 turn and the process starts again.

The underwater paddling mechanism is fabricated in big sizes, so a removal is guaranteed for a long distance in the tank. Due to the preadjusted thickening only a small-capacity removal pump is required.



# Process phases of a float sludge removal with controlled collection and volume reduction



Duration of one working stroke (e.g. 60 sec.) collection - separation - compression - removal



1. Start after a big amount of float sludge has gathered



2. The float sludge is now underpassed by the paddling mechanism



3. Now follows a controlled hydraulic separation from the water surface



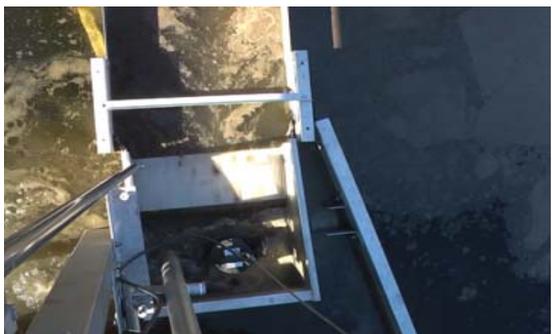
4. After this operation the sludge is separated in the thickening channel which forms now



5. A drift stream delivers now the float sludge to the end and pushes it together



6. The excess and drift water flows at the other end of the supply and thickening channel down and back into the clarifier tank



7. The collected float sludge is now taken over by an automatic skim channel and removed from the system



8. Hereafter the float sludge is underpassed again. After an adjustable time (e.g. 5 min.) the process starts new