

GridBee AP Mixers

GridBee®
Air-Powered Mixers

MalaTECH
water

100% COMPLETE MIXING WITHOUT SLUDGE ACCUMULATION IN YOUR ACTIVATED SLUDGE REACTORS

BOOSTING OVERALL BIOLOGICAL TREATMENT CAPACITY, NITRIFICATION, AND NUTRIENT (N,P) REMOVAL WITH OPTIMIZED SLUDGE STRUCTURE

GRIDBEE AP MIXERS - GENERAL DESCRIPTION

GridBee AP Air-Powered Mixers combine patented long-distance circulation technology with a clog-free design. Our powerful mixers are compact, portable, can be used at any depth, and are easy to install. GridBee AP mixers do not contain any moving parts, or electrical parts. The 100% complete mixing is done by air. The units are available with a custom blower, or like in case of most wastewater treatment plant applications, air is driven from the main aeration line of the plant's blower to supply the units. GridBee AP mixers are designed to be a cure for the ultimate issue nearly all biological wastewater treatment plants struggle with worldwide: to ensure real, 100% complete mixing, which is the basic principle of biological wastewater treatment processes, but nearly never happens in reality.



GRIDBEE AP MIXERS - 100% COMPLETE MIXING, THE CURE

Nearly all activated sludge wastewater treatment plants struggle with sludge accumulation, and build-up at dead zones in anaerobic, and anoxic reactors where mechanical mixing is provided, as well as in aerobic reactors where sludge accumulates in dead zones of the corners, and below the diffuser system which is located far above the floor of the reactor. As a result, the plant loses significant biological treatment capacity because of declined reactor volume, and the tanks have to be emptied and cleaned by the operator periodically which is a very time consuming, hard, and expensive work for the operator company.



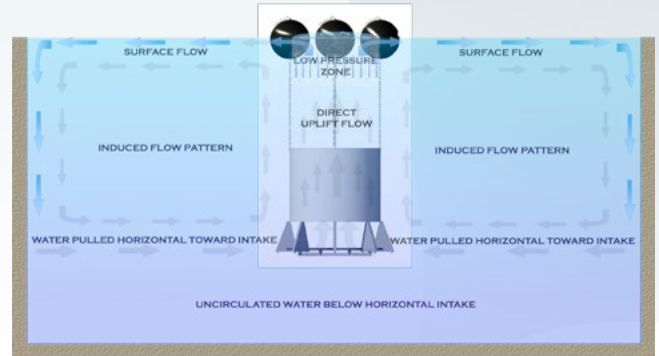
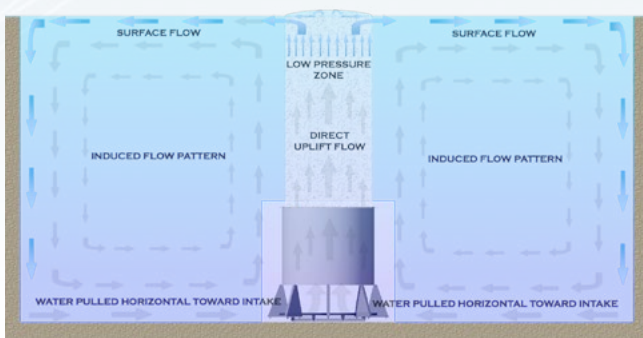
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The source of the sludge accumulation problem is the same in every reactor type: the complete mixing which is actually the main operating principle of activated sludge wastewater treatment is not complete mixing in practice. In most cases neither mechanical mixers used for mixing anaerobic, and anoxic reactors, nor submerged aeration in aerobic reactors are able to provide 100% complete mixing. In order to eliminate sludge accumulation in dead zones, and maximize the biological treatment capacity of the activated sludge, 100% complete mixing must be provided. Our GridBee AP mixers generate a new flow pattern for the reactor, and provide 100% complete mixing in a few hours after their installation.



Our mixers do not have any electrical, or moving parts, and due to their anti-clog structure, hair and fibre like solids cannot cause operational issues to our mixer, unlike they do to conventional mixers.



The GridBee AP mixers are mixing with air. Air supply for our mixers are usually provided from the main air pipe of the blower, so additional blower is not necessary, however, small capacity custom blowers to provide air just for the mixers are available as an option. The diffusers of our mixers are coarse bubble diffusers, as a result their Dissolved Oxygen intake capacity is highly limited, so they can be applied successfully for mixing anaerobic, and anoxic zones as well without compromising the performance of the reactors.



By establishing 100% complete mixing with GridBee AP units at your WWTP will show a quick, and remarkable improvement in the wastewater treatment process of the biology: 100% complete mixing means an upgrade of the plant without large investment costs, like adding reactor volumes by construction, increasing aeration capacity etc. The biological treatment capacity of your activated sludge will be boosted, while floc structure will be optimized. If you want to supply air for the GridBee AP mixers from the main aeration line of your plant's blowers, you just need to install a 1" hand valve on the main aeration line where the hose of the GridBee AP mixer can be attached to.



Installation of GridBee AP mixers is very easy and straightforward. We supply the units fully assembled, only the floating balls need to be put on, and set for the necessary water level (in case of floating units), and the air supply must be connected. Despite all of our units can be lifted by manpower, in case of larger types, we highly recommend to use a crane for installation for safety reasons.



BENEFITS OF 100% COMPLETE MIXING WITH GRIDBEE AP MIXERS

- biological treatment capacity of the activated sludge increases, without any investment for reactor volume expansion (optimization of effluent COD, BOD, NH4-N, TN, TP values)
- sludge accumulation will stop, and accumulated sludge will be removed as dead zones are eliminated. No need for costly operations like draining reactors, removing the accumulated sludge etc. No more reduction of the reactor volumes because of accumulated sludge, no more capacity loss of reactors due to the above phenomenon
- 100% complete mixing optimizes the energy consumption of the WWTP
- if applied in aerobic zones, denitrification (TN removal) can be boosted
- saving chemical (Ferric, and Alum) costs for the operator by boosting Bio-P removal (where Bio-P step is given)
- better activated sludge floc structure, lower SVI



FIELDS OF APPLICATION

- Municipal, and industrial activated sludge WWTP's
- Municipal, and industrial pond WWTP's
- Leachate treatment ponds, and activated sludge WWTP's



AVAILABLE UNITS

PEDESTAL MODELS

Optional legs are available to raise the diffusers off the bottom.



FLOATING MODELS

Can be set at a desired depth to achieve specific water quality objectives.



OPTIONAL AIR SUPPLY UNITS

Low-pressure, and high-pressure air supply units are available.

IMPORTANT INFORMATION:

For determining the exact number, and type of GridBee AP mixers, and design locations of them at your WWTP, please provide us information by sending us our questionnaire filled with information as much as possible: [Click here for questionnaires!](#)

Whenever you have any questions, do not hesitate to [contact us](#) for Complete Process Engineering Assistance service to extract the most of your WWTP with GridBee AP mixers!!