

KOM

Fully Biological Wastewater Treatment
for New Construction and Retrofitting
using the SBR-Process





SBR

Small Sewage
Treatment Plants
in a 4-Phases-Cycle

Proven **Solutions** for fully Biological Wastewater Treatment

„Although most households are connected to the sewage system, in rural areas this connection is often not possible and therefore your own responsibility as a landowner is required. The wastewater must be removed in such a way that the valuable groundwater is not endangered.

AQUATO®'s sewage plants are energy efficient and highly effective. Our SBR-Systems provide exceptional stability, using well-established components with the best technology available today. The systems are wear-resistant and easy to install, making regular maintenance effortless. The AQUATO® KOM-System provides biological wastewater treatment, using compressors with the latest technology. It can be used in new plant constructions or for retrofitting in existing tanks.

AQUATO® – easy and flexible

SBR

4-Phases Cycle

Outstanding Cleaning Performance

These four phases of the SBR process run in modern single or multi-chamber tanks – or easily, without much structural changes, in existing older tanks.

All processes in the plant take place according to a regular cycle, which is specified by the control unit.

Phases of the SBR-procedure:

1. Charging Phase

Part of the wastewater, which has been collected inside the primary treatment and which has been cleared from solids, is pumped to the reactor.

2. Aeration Phase

The waste water inside the reactor chamber is intermittently aerated and mixed. As a result, activated sludge is created which contains the microorganisms needed for wastewater treatment. Aeration and break times can be adjusted to the actual needs of the biology.

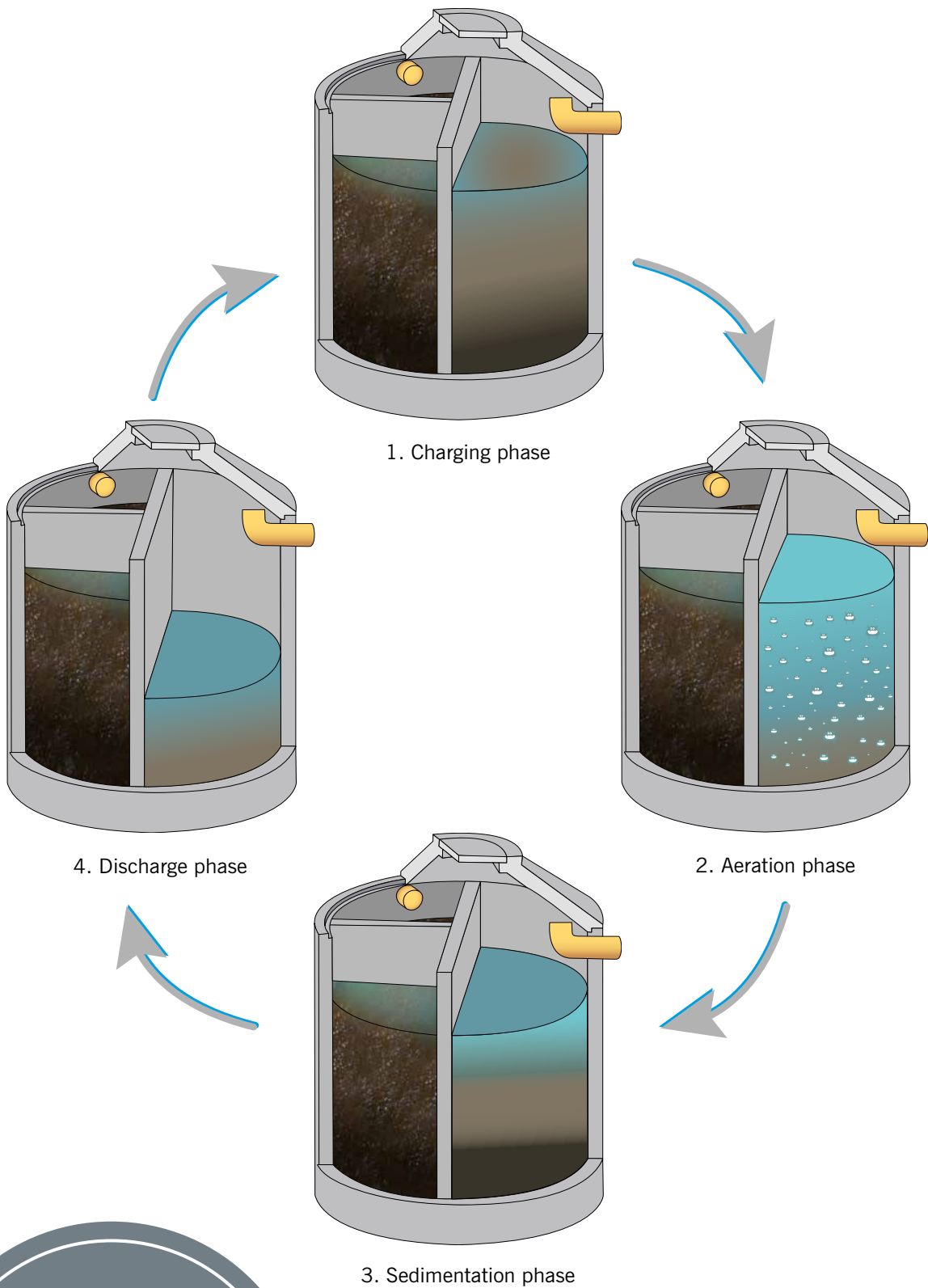
The excess sludge is pumped back to the primary treatment, from where it will be disposed together with the sewage sludge. If no wastewater is added during aeration phase, the plant is able to automatically switch to the energy saving mode.

3. Sedimentation Phase

The activated sludge settles down to the ground of the aeration tank. The cleared water separates in the upper part of the tank.

4. Discharge Phase

The clearwater is pumped into the outlet, out of the tank.



COD:	94%
BOD ₅ :	98%
SS:	96%
NH ₄ -N:	98%
N _{tot,anorg} :	59%

KOM & KOM-PAKT

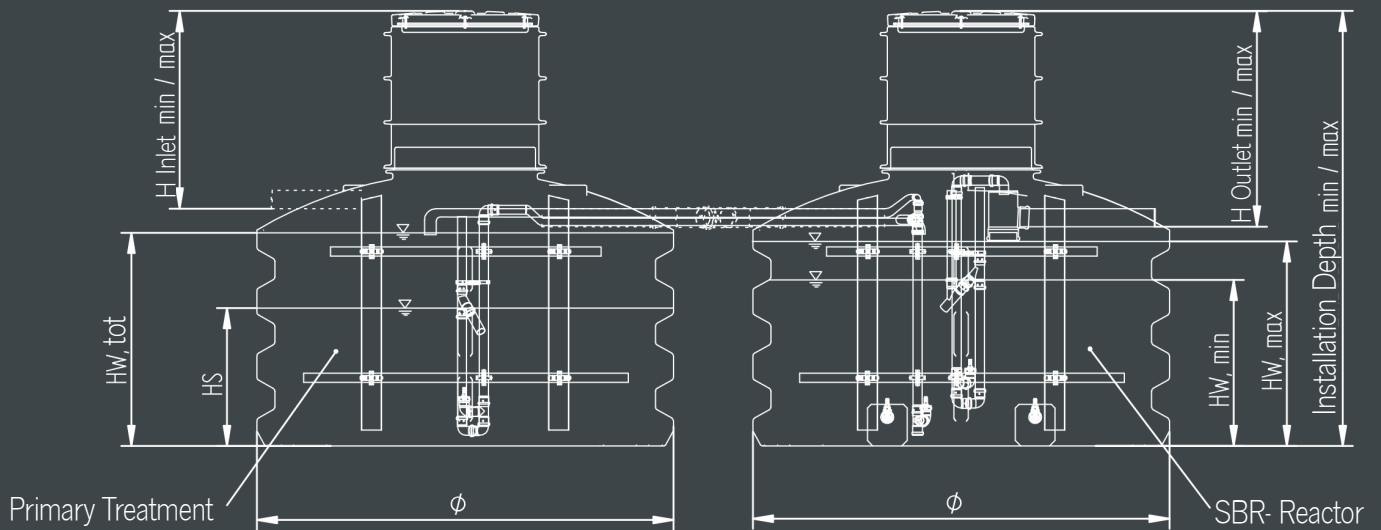
New Construction
and Retrofitting
made easy!

Flexible Use
in Concrete or
Plastic Tanks

The AQUATO®-systems KOM and KOM-PAKT can be integrated into a concrete or plastic tank, as new construction or retrofitting.

Your fully biological sewage treatment plant can be set up in no time at all!





Variable Installation Options

The AQUATO®-systems KOM and KOM-PAKT are very flexible for sewage plants up to 50 persons.

They can be used in 1-tank systems as well as in multi-tank systems. The shape of the container is also irrelevant, whether round or square, the AQUATO® systems can be installed. Depending on the requirements, different chambers or tanks of the plant can be used as reactors.

If there is no partition wall in the case of multi-tank systems, the air-lift pumps can also be hung on chains or crossbars.

KOM

Small Sewage Treatment Plant
using the SBR Process

Durable, proven,
operationally reliable

- + Highest adaptability
- + Excellent cleaning performance
- + Easy assembly and handling
- + Low maintenance costs





ALWAYS A PERFECT FIT

The **Inner Workings** of your System - **Ingeniously Simple** with maximum Output up to 50 PE



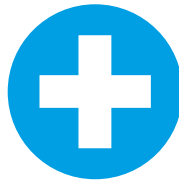
AQUATO® KOM

No electrical devices are needed in the water with the AQUATO® KOM. Only the plate diffuser(s) on the bottom of the tank and the air-lift pumps attached to the partition are installed in the tank.

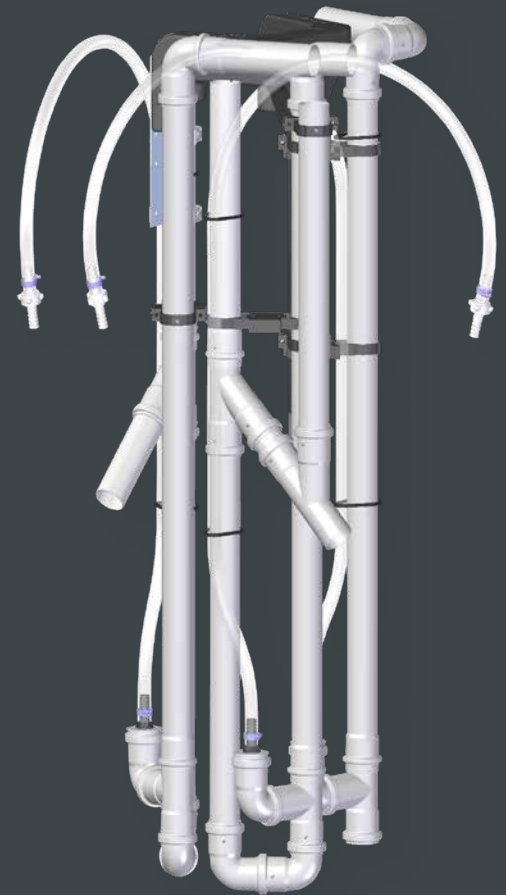
The aeration takes place through a compressor which is placed aside the control unit and blows the required air into the disc diffusers. The lifting processes are handled with the air-lift pumps, which work according to the mammoth pump principle and are also supplied with compressed air by the compressor.

The electrical devices, control unit and compressor, are easily accessible and kept dry.

Advantages



- + Low wear
- + Without electrical components in the water
- + Suitable for underloading
- + High level of operational safety due to modern technology
- + Long lifecycle due to proven units
- + Significantly below required effluent limits
- + Suitable for various tank types
- + High adaptability
- + Low maintenance costs due to easy handling
- + Energy efficient with high performance
- + Energy-saving due to integrated economy mode



AQUATO® KOM-PAKT

At the AQUATO® KOM-PAKT all air-lift pumps are attached to a wall bracket. This allows to mount the lifting unit over the dividing wall, simply and in one piece. The entire lifting unit can be removed again just as easily.

CONTROL

K-Pilot 18.1/18.3



Control

State-of-the-art computer control **K-Pilot 18.1 and 18.3** with a large graphic display. It provides all important data at a glance. To minimise maintenance efforts, there is an integrated backpressure monitoring system.

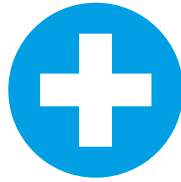
Standard equipment is the K-Pilot 18.1. For larger systems or special functions, the K-Pilot 18.3 with extended functionality is used. In this control unit there is for example the possibility to connect a clear water pump, whereby even larger lifting heights can be bridged.

Rotary Valve

Integrated rotary valve with step motor technology- energy saving and quiet.



Advantages



- + Modern control for smooth operation
- + Graphical display
- + Safe and easy to handle
- + Compact construction due to integrated rotary valves with stepper technology
- + Instead of airlifters, submersible pumps can be connected
- + Compact modular construction: optionally with wall bracket-, or in wall- and outdoor cabinet



Wall Closets (optional)

External cabinet solution to accommodate the control unit and the compressor. The casing consists of fibre-glass reinforced plastic (GFR) and includes a built-in power socket.

Outdoor Cabinet (optional)

External cabinet solution to accommodate the control unit and the compressor. Not only cost-effective but also a reliable protection against the elements. The casing consists of fibre-glass reinforced plastic (GFK) or PE and includes a built-in power socket.





MODULES

Additional cleaning stages can be:

H-Module for UV-Desinfection

With an UV module the highest level of wastewater treatment can be reached. The precious water is now available, e.g. for garden irrigation. But also environmental and water protection is being taken care of. This is the latest technology for clean and cross-generational future! The disinfection performance of an UV system is based essentially on the fact that each volume element – as it flows through the UV reactor – receives the required UV dosage. To ensure this, the radiation field and hydraulics in the UV system are perfectly adjusted.



ADVANTAGES

- + UV module as an additional treatment stage
- + Ideal maintenance due to installation in outdoor cabinet
- + Low maintenance with high operational safety
- + In stainless steel housing
- + High reliability
- + Can be retrofitted for sewage treatment plants that are already in operation

MODULES

P-Module Phosphate precipitation as an additional treatment

C-Module External carbon source during underload operation

Cl-Module Chlorine disinfection as downstream hygienisation



ADVANTAGES

- + As an additional treatment
- + Reservoir made of steady plastic with a bolt dosing pump
- + High operational reliability
- + Low maintenance
- + Refillable by a long hose
- + Easy installation due to suspension chains
- + Safe against unwanted access when inside the tank
- + Can be retrofitted to any existing sewage treatment plant in operation



Why Phosphate Elimination ?

Since the 1980s, the phosphate elimination was introduced in wastewater treatment, in order to prevent the lack of oxygen in the receiving waters, and particularly in water conservation areas.

Phosphorus compounds act as fertilizers and are the main reason for eutrophication (nutrient accumulation) in stagnant waters and streams.

With a P- module for phosphate elimination a dosing pump adds a coagulant like ferric chloride from the reservoir to the wastewater in the biological stage and ensures the removal of phosphorus compounds.

Notes

Underload !

AQUATO® sewage plants offer full cleaning power - from just one person and with low water consumption! But even after your vacation or any other break it immediately continues - always reliable with maximum operational safety and compliance with the legal discharge values.

Declaration of Performance

According to European guidelines, Aquato® small sewage treatment plants are examined and documented for all their standardized effectiveness parameters by notified bodies. The plants are well tested on test fields and a declaration of performance from the manufacturer according to EN 12566-3 is available.

If required, declarations of performance for our systems can be requested from AQUATO® using the contact options below:

fon +49 5221 10219-0 info@aquato.de





Garden-
friendly
installable!





Presented by:



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