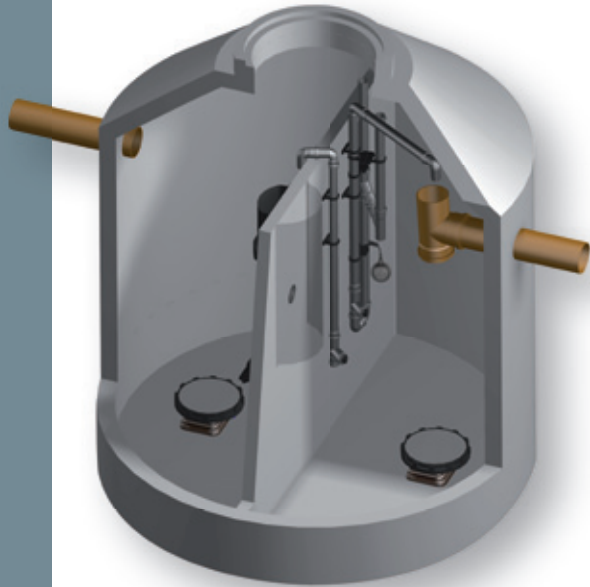


SSB[®] STABI-KOM

Operation- Installation and Maintenance Manual



Effluent Classes (please tick)	C	D	P	H
Serial Number				
Date of Commissioning				
Tank (please tick)	Concrete	PE	GRP	
Volume Primary Treatment / Sludge Storage/ Aeration				
Volume Aeration/ Secondary Sedimentation				

As of 02/2014

General Technical Approval

New installations

Z-55.31-469

Z-55.31-470

Retrofittings

Z-55.32- 489

Z-55.32- 488

Manufacturer:

AQUATO® Umwelttechnologien GmbH
Ernstmeierstr. 24
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1 CE-Marking according to EN 12566-3

With the enactment of EN 12566-3 as of July 2010, some changes in the marking of small sewage treatment plants have resulted:

The EN 12566-3 refers to prefabricated and assembled on-site small wastewater treatment plants. The AQUATO®STABI-KOM complete system is a prefabricated wastewater treatment plant, which has already passed the test according to EN 12566-3.

The installation of a retrofit unit is an on-site small wastewater treatment plant. The CE marking has to be provided by the person who creates a small sewage treatment plant by assembling a retrofit unit with the tank.

How do I declare the CE conformity according to EN 12566-3 for retrofit units?

- ☐ Make sure that the tank has a CE marking according to EN 12566-3.
- ☐ Make sure that the retrofit unit has a „Declaration of Incorporation“ according to the Directive on Machinery 2006-42-EC.
- ☐ Install the retrofit unit according to Installation instructions (chap. 7.2)

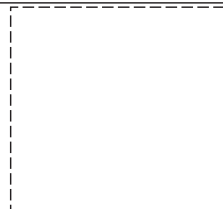
Declare the CE conformity according to EN 12566-3 by completing the accompanying document with your company name.

The values listed for the cleaning performance in the accompanying document were determined by tests at the notified body and always refer to the tested system. The name of the laboratory and the number of the test report can be found in the Declaration of Incorporation.

We assume that the installation of the retrofit unit is carried out in a tank that has been tested according to EN 12566-3 and meets the requirements of the attached wastewater treatment calculation.

Your CE Sticker →

Please attach it clearly visible and durable to the plant,
for example, on the control panel.



1.1 Accompanying CE-document AQUATO®STABI-KOM

											
Marketing Authorisation Holder (MAH)											
14											
EN 12566-3 Prefabricated sewage treatment plants for to the treatment of domestic wastewater Reference No of the product: ASK Material: concrete											
Efficiency of treatment:											
Efficiency of the cleaning performance (with a certified daily organic pollution load BOD5 = 0.06 kg / d)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>COD:</td> <td>95,0%</td> </tr> <tr> <td>BOD₅:</td> <td>99,0%</td> </tr> <tr> <td>SS:</td> <td>96,0%</td> </tr> <tr> <td>NH₄:</td> <td>98,0%</td> </tr> <tr> <td>N_{tot}:</td> <td>77,0%</td> </tr> </table>	COD:	95,0%	BOD ₅ :	99,0%	SS:	96,0%	NH ₄ :	98,0%	N _{tot} :	77,0%
COD:	95,0%										
BOD ₅ :	99,0%										
SS:	96,0%										
NH ₄ :	98,0%										
N _{tot} :	77,0%										
Purification capacity (Design):											
Nominal daily inflow (Q _N) Nominal daily organic pollution load (BOD5)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>0,24 - 3,0 kg/d</td> </tr> <tr> <td>0,60 - 7,5 m³/d</td> </tr> </table>	0,24 - 3,0 kg/d	0,60 - 7,5 m ³ /d								
0,24 - 3,0 kg/d											
0,60 - 7,5 m ³ /d											
Watertightness (tested with water): Compressive Strength (tested in sump): Durability:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>passed</td> </tr> <tr> <td>passed</td> </tr> <tr> <td>passed</td> </tr> </table>	passed	passed	passed							
passed											
passed											
passed											

1.2 CE-Marking AQUATO®STABI-KOMEC Declaration of Conformity

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32052 Herford
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www.aquato.de

We hereby declare that the product AQUATO®**STABI-KOM** for small wastewater treatment plants from 4 to 50 PE is according to the following directives:

89/106/EC Building Products Guideline
2006/42/EC Machinery Directive
2004/108/EWG EMV - Directive
2006/95/EWG Low Voltage Directive

The following harmonized standards were applied:

This letter certifies compliance with the listed directives but does not include any confirmation of characteristics.

The declaration of conformity becomes invalid if the product is changed without approval.

Herford, in March 2014

Eckhard G. Bischoff
Managing Director

2 Important Information

Dear Ladies and Gentlemen,

We are pleased that you have decided to purchase the small wastewater treatment plant AQUATO® STABI-KOM. With the AQUATO®STABI-KOM small wastewater treatment plant for existing tanks you get a quality product which cleans your wastewater reliably. The plant is designed for the inflow of domestic wastewater.

The AQUATO®STABI-KOM works according to the SSB® process and meets the required DIBt purification classes C, N + D. This was confirmed by long-lasting testings by an independent testing institute.

Let yourself brief and train in plant technology and function of AQUATO®STABI-KOM after the commissioning.

Please read this information in advance to permanently ensure proper operation and compliance with the required effluent requirements.



The complete operating instructions must be stored directly at the plant, so that both, operators and qualified staff, may inspect these at any time.

2.1 Harmful substances and their appropriate disposal

In the last years, in the area the detergents for cleaning clothes in washing machines, liquid detergents have become increasingly established and are enjoying growing popularity. Also for dishwashers, liquid dishwashing detergents are found increasingly. Unlike powder detergents, liquid detergents may also contain preservatives that are intended to prevent a microbial affection. These preservatives have a strong disinfecting effect, which becomes noticeable even after the use of the detergent, for example, in your small wastewater treatment plant by killing the microorganisms required for the biological purification of wastewater. The functionality of your small wastewater treatment plant is no longer given and leads to excess of the required effluent values.

We therefore ask you, in your own interest, to check for presence of such preservatives in all liquid detergents, softeners and all other liquid cleaners you are using, in addition to those listed in the table below. Pay attention to the specification:

„BENZISOTHIAZOLINONE“

Detergents and cleaning agents as well softeners with this ingredient should only be used exceptionally or not at all in your small wastewater treatment plant. Please use a powder or tab-detergents and cleaners instead and try to avoid softeners, as these are already included in most detergents.

If you have problems with your system, talk to your service company about it. They will be pleased to assist in solving this problem.

Substances that do not belong in the sink or in the toilet:	What they cause:	Where they belong:
Chemicals	Contaminates the wastewater, lead to decomposition of the concrete	Collection point
Paints	Contaminates the wastewater	Collection point
Photo-chemicals	Contaminates the wastewater	Collection point
Disinfection	Kills bacteria	Do not use!
Medicin/ Drugs	Contaminates the wastewater	Collection point, Pharmacy
Cotton swabs, panty liners, diapers, adhesive plasters, wet toilet paper	Leads to clogging, not decomposable plastic sheets spoil water bodies	Waste/ Garbage
Pesticides	Contaminates the wastewater	Collection point
Brush cleanser, Dilutors	Contaminates the wastewater	Collection point
Cleaning agents, except those which are chlorine-free (environmentally friendly)	Contaminates the wastewater, Fretting pipes and seals	Collection point
Pipe cleaners	Contaminates the wastewater, Fretting pipes and seals	Collection point
Cooking and frying oil	Leads to clogging	Collection point
Food waste	Leads to clogging, attracts rats	Waste/ Garbage
Wallpaper glue	Leads to clogging	Collection point
Textiles (such as nylon stockings, cloths, handkerchiefs, etc.)	Leads to clogging	Clothes recycling bin
Bird sand, cat litter	Leads to clogging	Waste/ Garbage
Urinal deodorizer	Contaminates the wastewater	Do not use!
Cement water	Leads to clogging	Speciales Company
Cigarette stub	Leads to clogging	Waste/ Garbage

Generally the only substances shall be lead into the system which correspond with domestic wastewater.

Biocides, toxic and biologically not degradable substances are not allowed to enter the system, because they lead to biological process problems.

For questions about this issue or about your plant, please contact the manufacturer.

2.2 Operations Diary

Each AQUATO®STABI-KOM plant contains an operations diary. Insert here the results of your control, operating hours and special events. The operating hours can be read out of the operations menu of the control panel.

2.3 The Maintenance Service

In order to ensure long term smooth operation, inspections by the operator as well as regular maintenances of the plant are mandatory according to the General approval.

Maintenance of the system has to be carried out by a qualified professional twice per year. For contact details of maintenance companies please contact your manufacturer.

The exact regulations for the operation and maintenance can be found in the operating manual and in the user approvals.

3 Product Description

3.1 General

The AQUATO®STABI-KOM works according to the SSB® process and meets the required DIBt purification classes C, N + D. This was confirmed by long-lasting testings by an independent testing institute.

The units are approved by the DIBt, Berlin by the following numbers:

New installations in concrete:	Retrofit units in concrete:
Z-55.31-469 (Performance class C)	Z-55.32-489 (Performance class C)
Z-55.31-470 (Performance class D)	Z-55.32-488 (Performance class D)

3.2 Specified Normal Operation

3.2.1 Wastewater Inflow

The unit is designed for the treatment of domestic or similar organic polluted wastewater. It is not allowed to feed the treatment plant with commercial wastewater, such like dairy wastewater.

3.2.2 Tanks

Installation is carried out ex-works or on site in appropriately sized containers. It's based on our wastewater treatment calculations and the applicable user approval.

3.2.3 Harmful Substances

The inflow of harmful substances that harm the biology should be avoided. A list of these materials and their proper disposal can be found in the table under point 2.1

The equipment is exclusively intended for the use as mentioned above. Any other use, a modification or something similar has to be agreed in writing with the manufacturer in advance.

In case of a different use without permission, the manufacturer will not be liable for any damage.

4 Scope Of Delivery

4.1 AQUATO®STABI-KOM

The AQUATO®STABI-KOM unit consists of the following components:

- ☐ Aeration-, separation- and charging devices
- ☐ Control panel/ mounting bracket
- ☐ Accessories / Fastening material

4.1.1 Aeration-, separation- and charging devices installation kit

		
Plate diffuser with concrete base	Separation wall	Coarse material blanket
		
Clearwater siphon	Excess sludge siphon	Control Panel & Compressor

4.1.2 Accessories (optional)



Wall closet



Additional Plate diffuser with concrete base



Clearwater pump



Outdoor cabinet

5 Transport and Storage

5.1 General transport

Transport should be carried out that risk of injury to persons or damage to the plant are excluded.

Check the delivery for completeness and possible transport damages. In case of damages, please contact the manufacturer immediately after delivery.

5.2 Sizes

The dimensions of the complete systems and retrofit units are depending on the number of PE (pop.equiv.) and not listed individually here. The dimensions are always available, if required at AQUATO® Umwelttechnologien GmbH.

Delivery of the equipment is carried out depending on the system in cartons or on pallets.

5.3 Storage

Make sure that the system components are stored properly and damage is excluded.

Avoid:

- outdoor storage in rain, ice and snow (does not apply to tanks)
- mechanical effects such as shocks and impacts
- flying sparks

5.4 Loading and Unloading at the installation site

Make sure that you comply with the safety rules at each location.

- Unpack the equipment completely only at the installation site (does not apply to tanks).
- Make sure that the packaging is completely removed and disposed of properly.

6 Safety Information

6.1 General Safety Information

This operating manual contains basic instructions that have to be followed during the installation, commissioning and maintenance.



The complete operating instructions must be stored directly at the plant, so that both, operators and qualified staff, may inspect these at any time.

The safety information listed in these installation instructions, the existing national regulations for accident prevention and any internal working, operating and safety regulations must be observed.

Ignoring the safety instructions can present a risk to people as well as for the environment and leads to loss of any claims for damages.

6.2 Terminology

Operator

The operator of the plant is the one who ensures that the system is operated functionally.

Qualified/ Skilled staff

is able to identify, judge and perform the delegated tasks and risks due to his technical skills.

6.3 Thread Analysis

The AQUATO®STABI-KOM system was developed according to the state of the art, and subjected to a threat analysis to ensure maximum security. To eliminate or minimize any risk, please observe the following instructions.

6.4 Used Warning Symbols

Below you will find a list of the symbols used in this manual and their meaning:



Warning concerning a point of danger



Warning concerning electrical voltage



Warning concerning explosive atmosphere

6.5 Due Diligence of the Operator

Make sure that

- ☐ the system is used only in accordance with its specified operation (see section 3.2 – specified operation)
- ☐ the system is operated in a proper condition
- ☐ self-monitoring is carried out by the operator
- ☐ the maintenance intervals are observed
- ☐ Maintenance and repairs are carried out by qualified staff only
- ☐ the operation manual is available at any time

6.6 Safety Information for Qualified Staff

Maintenance and repairs may be carried out by qualified personnel only. Before carrying out the work it must be ensured that

- the knowledge and skills of the staff correspond the purpose of use
- staff training has taken place
- the instruction manual was read and understood



Prior to and during the work in the tank it has to be ensured that that no hazardous gases and no explosive atmosphere or oxygen deficiency can occur by using ventilation.



Prior to and during the work in the tank it has to be ensured that that the system is disconnected from power and secured against reconnection.



Working in tank requires safeguards even at low altitudes. Therefore, appropriate actions are to be taken to prevent falling.

If appropriate actions are not possible, personal protective measures against falling should be used.



Always wear suitable protective clothing, as well as hand, foot and face protection.

Avoid contact with wastewater.

We point out that despite all taken precautions at the installation, remaining risks can not be excluded:

- ☐ danger of stumbling
- ☐ danger by electrical voltage
- ☐ risk of infection by germs and bacteria
- ☐ danger of explosion

6.7 Rescue Measures

Make sure that while working in the tank, a second person is available as safeguard. Never follow a senseless person, but rather get some help.

7 Installation

7.1 Installation manual AQUATO®STABI-KOM in concrete tanks

The installation of the system have to be carried out by qualified staff only. Make sure that this staff can take a look at the operating manual before beginning to work.

Make sure that there are only authorized persons on site.

During planning and installation of small wastewater treatment plants, attention is drawn to the relevant standards and other regulations and accident prevention regulations.

The place of installation should be chosen so that a disposal vehicle can drive up close enough to the tank WITHOUT stressing the tanks structure! Be sure to keep enough distance!

7.1.1 Space requirements

There must be sufficient space for the tank.

7.1.2 Position to buildings

The tank may not be overbuilt.

The necessary distance to buildings depends on the type and the depth of the building as well as the depth and slope angle the excavation pit. Details are given in DIN 4123.

7.1.3 Frost protection

Regarding frost protection, for the Central European region the depth to the top of the sewer pipe has to be at least 800 mm according to DIN 1986-100; detail on any differences can be obtained by your local authorities.

7.1.4 Additional criteria

Existing cables, pipes, and other specifics have to be taken into account that damages and dangers are avoided (DIN 18300).

7.1.5 Depth of the excavation pit

The depth of the excavation results from the tank height, frost resistance and existing cables.

7.1.6 Surface of the excavation pit

The required surface area for the excavation pit is calculated by the total length and width of the tank plus a width of 500 mm (DIN 4124) for the working space around the tank. In addition, the surface resulting from the slope angle (DIN 4124) leading to expansion of the surface.

7.1.7 Connection of in- and outlet, sampling (optional)

Use DN 100 to DN 150 PVC tubes for the inlet and outlet pipes. Tie the inlet pipe into the prepared hole. Connect the outlet line as well. For existing sampling, plug the sampler from the inside of the tank to the outlet and connect the clearwater siphon with the connector on the sampler. Make sure that both inlet as well as outlet have to be laid with a corresponding gradient (~ 2%).

7.1.8 Empty pipe between outdoor cabinet and tank

Lay a PVC tube DN 100 to DN 200 as a connecting empty pipe between the outdoor cabinet and the tank. The empty pipe must not be frost-free. It should be installed with a slight slope to the container, so that possibly forming condense water can drain.

The integration of the empty pipe on the side of the cabinet location may be realised through a hole DN 100 to DN 150. It is recommended to foam the remaining openings in the brickwork with PU foam after leading the air hoses and cables through the pipe.

Equip the empty pipe in every case with a pull wire or rope, in order to allow the installation of air hoses and the float cable.

Please lay the empty pipes as straight as possible to the tank. Every bend in the hose increases the back-pressure in the air supply hoses and thus decreases the performance of the system. Therefore, for example, always use two 30 ° bends instead of 45 ° elbows. Please generally don't use any 90 ° bends.

7.1.9 Hoses and float switch cable

Establish the connections between the tank and control cabinet as described below:

7.1.10 Adjustment of air hoses

The hose is supplied as a standard roll. It has to be unrolled like a fire hose. Divide the hose roll, for example, into four equal pieces. Divide the fourth piece in two parts of **equal length** (connecting the aeration hose with the two membrane compressors using the supplied connection material - Y-piece and hose clamps). Mark both ends of the three remaining hoses, f.e. with colored tape.

Blue	Clearwater discharge
Green	Sludge recirculation
Black	Aeration

7.1.11 Connection of hoses

Attach the previously cut hoses to the appropriate hose connections using the enclosed hose clamps. Bundle the air hoses and the float switch cable (optional). Pull them together through the empty pipe by means of the pull wire to the direction of the control cabinet.

7.2 Installation manual AQUATO®STABI-KOM retrofit unit

The installation of the system have to be carried out by qualified staff only. Make sure that this staff can take a look at the operating manual before beginning to work. Make sure that there are only authorized persons on site.

During planning and installation of small wastewater treatment plants, attention is drawn to the relevant standards and other regulations and accident prevention regulations

7.2.1 Surroundings

The requirements for the structural body are regulated in accordance within Germany. DIN 4261.

For systems that are installed outside Germany, the regulations of the country and an individual design apply.

The volumes and minimum installation heights are determined by the manufacturer using a wastewater calculation.

7.2.2 Preparatory work

- ☐ Make sure that the water tightness, durability and stability of the structure is guaranteed.
- ☐ Empty and clean the septic tank before starting work.
- ☐ Make sure that there is sufficient ventilation in the septic tank
- ☐ Ensure that a power supply is available (230V, 16 A).
- ☐ Lay a PVC tube DN 100 to DN 200 as a connecting empty pipe between the outdoor cabinet and the tank. The empty pipe must not be frost-free. It should be installed with a slight slope to the container, so that possibly forming condense water can drain..
- ☐ The integration of the empty pipe on the side of the cabinet location may be realised through a hole DN 100 to DN 150. It is recommended to foam the remaining openings in the brickwork with PU foam after leading the air hoses and cables through the pipe.
- ☐ Equip the empty pipe in every case with a pull wire or rope, in order to allow the installation of air hoses and the float cable.

- ☐ Please lay the empty pipes as straight as possible to the tank. Every bend in the hose increases the back-pressure in the air supply hoses and thus decreases the performance of the system. Therefore, for example, always use two 30° bends instead of 45° elbows. Please generally don't use any 90° bends.
- ☐ If your system is split into several tanks, an additional empty pipe of DN 100 has to be laid on the shortest way with a little slop between the last tank and the first tank, as long as the existing connection can not be used for this purpose.
- ☐ The maximum length of the hose between the control and treatment plant may not exceed 10 m

In the following lines all necessary tank preparations shall be explained by the example of a 3-chamber pit with two quarter chambers as primary / sludge storage/ clarification and a half chamber as treatment chamber (biology). These instructions apply equally for other tank configurations.



- ☐ The inlet pipe has to lead into the first quarter chamber.
- ☐ Both quarter chambers are connected below the water level.
- ☐ In front of the overflow towards the aeration chamber (on the side of the primary / sludge storage/ aeration) the supplied coarse material blanket has to be installed and on the side of the aeration chamber the supplied wall closet has to be installed. This prevents the passage of floating sludge (scum) and coarse material to the treatment chamber.
- ☐ The outlet pipe is connected to the pit and extends about 15 cm into the pit (do not cut it on the chamber wall).

7.2.3 Installation of coarse material blanket and separation wall

Separation wall between primary and aeration chamber (always in the overflow to the last chamber)



The separation wall between primary/sludge storage / aeration and aeration / clarification keeps the existing opening. To avoid the overflow of floating sludge and coarse material the supplied coarse material blanket and separation wall need to be installed. The coarse material blanket has to be installed with the supplied installation material right in front of the opening to the aeration/ clarification (on the side of primary / sludge storage / aeration), so that the opening is completely covered and the blanket ends above the highest water level. In best case the opening is right in the middle behind the blanket.

If there are two openings, either both have to be behind the blanket or one of both has to be closed. For tanks with overflows, the blanket has to be installed so that the overflow disappears behind it.



The separation wall has to be installed with the supplied installation material right in front of the opening (on the side of aeration/ clarification). Also here the separation wall ends above the highest water level.

7.2.4 "ATTENTION Desludging here" plate



With the needs-based sludge removal, all chambers are emptied except the last one (See instructions for maintenance). To avoid confusion with single tank plants with several chambers, the scope of delivery contains this plate.

Attach this on the partition wall so that the arrow indicates the chambers, from which no clearwater removal takes place.

Attention! In each chamber there is a membrane diffuser, which may not be damaged during disposal.

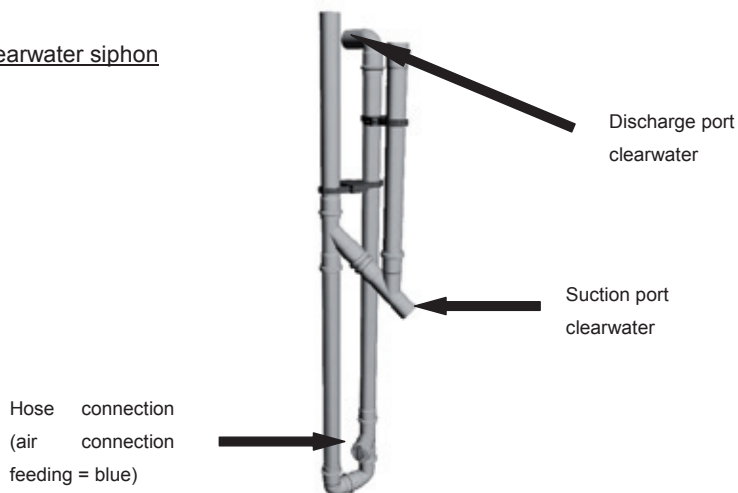
7.2.5 Installation procedure

Before starting the installation, please observe the safety precautions listed in the operating manual and secure the installation site. The sludge siphon and the clearwater siphon are separately attached to the partition wall in the aeration / clarification chamber.

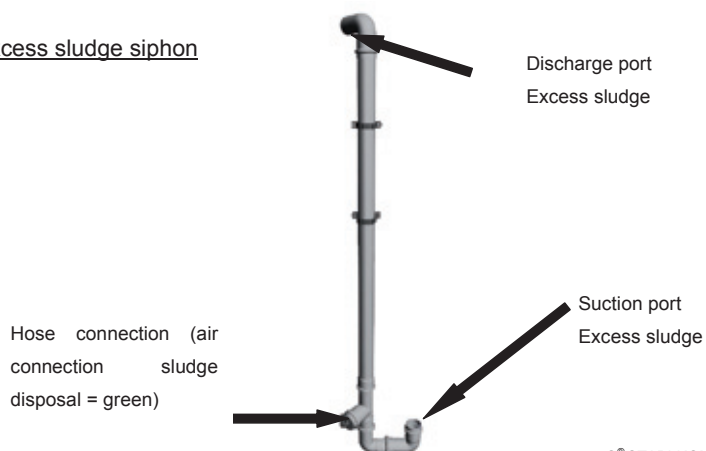
The clearwater siphon is set according to HWmin, the outlet height of the sludge siphon should be installed at the same height as that of the clearwater siphon.

The discharge port of the sludge siphon has to just lead into the first chamber. The discharge port of the clearwater siphon shall be laid with free gradient into the sampler (optional), or into the outlet of the tank.

Clearwater siphon



Excess sludge siphon



Possible installation options

Installation: In 1 tank: $\frac{1}{2}$ chamber primary/sludge storage/aeration, $\frac{1}{2}$ chamber aeration/clarification.

- ☐ All chambers are connected below the water level.
- ☐ Position the clearwater and excess sludge siphon in the second chamber (aeration/clarification)
- ☐ In front of the overflow towards the aeration chamber (on the side of the primary / sludge storage/ aeration) the supplied coarse material blanket has to be installed
- ☐ The separation wall has to be installed with the supplied installation material right in front of the opening (on the side of aeration/ clarification).
- ☐ The discharge port of the sludge siphon has to lead to the first chamber.
- ☐ The discharge port of the clearwater siphon has to lead with a free slope to the outlet of the tank or the sampling device.
- ☐ A membrane compressor is installed in each chamber.



Installation: In 1 tank: 2 x $\frac{1}{4}$ chamber primary/sludge storage/aeration, $\frac{1}{2}$ chamber aeration/clarification

As above...



Installation: In 1 tank: $\frac{1}{2}$ + $\frac{1}{4}$ chamber primary/sludge storage/aeration, $\frac{1}{4}$ chamber aeration/clarification

As above...



Attention: Ensure that the level HWmin complies with the manufacturer's instructions. In case of differences, the height the siphon needs to be changed.

7.2.6 Aeration device

Place the membrane diffusers with concrete base carefully in each chamber of the tank. Since at least two aerators are used, they should be connected with the Y connector in the area above the partition wall. Make sure that the hoses to the aeration devices always have exactly the same length, so that there will be no different pressurisation of the chambers.

7.2.7 Hoses and float switch cable (optional)

Bundle the 3 air hoses and the float switch cable (optional). Pull them together through the empty pipe by means of the pull wire to the direction of the control cabinet.

7.2.8 Tank without separation wall

The sludge- and clearwater siphons are each attached to a PE carrying tube with clamps.

The PE-carrying tube has a stainless steel bracket on top, on which the siphons are suspended with 2 shackles and 2 chains each 1.5 m long, the height is adjusted via the chain length.

At the bottom there is a concrete weight to keep the unit upright.

The sampling device (optional) has to be connected to the outlet. To do so, extend the outlet pipe in the direction of the tank center so that the sampling device is easily accessible, but an entry into the tank is still possible. Then attach the sampler using the included suspension to the top of the tank.

Installation: In 2 tanks: 1. tank primary/sludge storage/aeration, 2. tank aeration/clarification

- ☐ All tanks have to be connected below the water level.
- ☐ Position the clearwater and excess sludge siphon in the second tank (aeration/clarification)
- ☐ In front of the overflow towards the aeration chamber (on the side of the primary / sludge storage/ aeration) the supplied coarse material blanket has to be installed
- ☐ The separation wall has to be installed with the supplied installation material right in front of the opening (on the side of aeration/ clarification).
- ☐ The discharge port of the sludge siphon has to lead to the first chamber.
- ☐ The discharge port of the clearwater siphon has to lead with a free slope to the outlet of the tank or the sampling device.
- ☐ A membrane compressor is installed in each tank.



Installation: In 2 tanks: 1.tank split in 2 chambers primary/sludge storage/aeration, 2.tank aeration/clarification

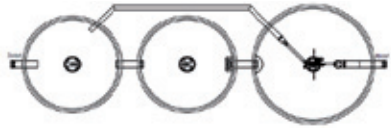
as above, but:

- ☐ A membrane compressor is installed in each chamber.



Installation: In 3 tanks: 1. & 2. tank primary/ sludge storage/ aeration, 3. tank aeration/ clarification

As above:



7.2.9 Laying of the installed hoses

Installation steps:

- ☐ Cut 3 hoses (have to be led to control) and the hoses for the membrane diffusers (have to be led to the membrane diffusers with supplied hose connectors)
- ☐ Mark both ends of each hose with colour
- ☐ Seal all hose ends temporarily (to keep the inside clean) and pull all 3 hoses at the same time from the control to the tank through the empty pipe.
- ☐ Attention: If the empty pipe ends in an open air cabinet, it is necessary to ensure that no vapors / gases get through the empty pipe into the cabinet during operation
- ☐ Connect hose ends according to their color as marked to the controller.
- ☐ Connect hoses at the other end to the siphons and in the allocation to the membrane diffusers.
- ☐ Place the membrane diffusers carefully in the center of the chambers.
- ☐ When using 2 membrane diffusers, they are connected to a Y-hose connector and 2 short pieces of hose. With several aeration devices the appropriate number of connectors is included with the delivery. Please make sure that the membrane diffusers always are at the same height and that the hose length to the connections is always the same length

Connections to the control

aeration = black

sludge disposal = green

clearwater discharge = blue



Membrane diffusers for the aeration

Hose connector
(aeration connector = black)



Fastening and laying of hoses

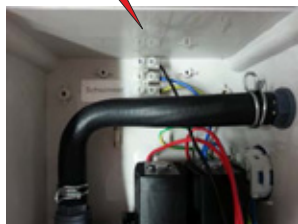


7.2.10 Installation of the float switch (optional)

- ☐ With cable and installation clamp for the clearwater siphon
- ☐ Cable lengths of 5m / 10m / 15m / 20m available
- ☐ Bracket is clicked to the pipe
- ☐ Height adjustable by moving on the pipe
- ☐ Adjustment of the switching point to HW-min
- ☐ Laying of the float switch cable together with hoses through the empty pipe to control



Connection to the control to terminal „float switch“



7.2.11 Max waterlevels with backpressure

The possible theoretical water levels are resulting from the water pressure on the membrane diffusers, the air drag in the hoses, the capacity of the compressor and some other factors. Thus, for the installation of our equipment the maximum water depth below apply. The specified pressure value can be read off the control during operation.

Plant Capacity	Compressor Size	max. Waterlevel	max. Pressure Value
04 - 06 PE	80' er	1600 mm	250 mbar
07 - 11 PE	120' er	1600 mm	250 mbar
12 - 16 PE	150' er	2100 mm	300 mbar
17 - 20 PE	200' er	2100 mm	300 mbar
21 - 30 PE	2 x 150' er	2100 mm	300 mbar
31 - 40 PE	2 x 200' er	2100 mm	300 mbar

7.2.12 Clearwater discharge with submersible pump

The pump version of the clearwater discharge for AQUATO®STABI-KOM - units has been designed as an alternative to the siphon version. By the use of pump version it is possible to charge the treated wastewater over long distances.

The pump is mounted ex works on the stainless steel bracket. It has a cable with a length of 10m and a float switch for limit value detection. The supply ncludes 3.5 m hose (25 mm diameter) as a pressure pipe.

Connect the 25 mm hose to the coupling of the pump. Attach the hose with the supplied assembly parts to the top of the tank and lead the pipe to the outlet. The electrical connection is described under [7.3.3](#).

7.3 Installation manual for control panels and wall brackets

7.3.1 Safety instructions



The connection of the control may be carried out by skilled personnel only. In case of damage caused by your own installation, the manufacturer assumes no liability. If this instructions are disregarded, the manufacturer and supplier of the switchgear will not assume any responsibility. Working on the equipment and any repairs may only be performed by the manufacturer.

Before commissioning and turning on power, make sure that

- ☐ The device and the connection cables show no damage
- ☐ Particularly the mains connection and the connections of the aggregates are connected correctly
- ☐ All connections have been carried out properly and professionally
- ☐ Laying / Completion of all cables meet applicable standards
- ☐ The unit is properly closed
- ☐ The system is professionally secured

Note the following important information before working on the control:

- ☐ Before opening the unit, disconnect from the power supply (pull the plug!).
- ☐ Replace fuses only when the control is de-energized.
- ☐ Never use fuses with higher amperage than approved
- ☐ Do not make any circuitry manipulation of the system.
- ☐ The valid regulations (EN, VDE, ...) as well as the regulations of the local power suppliers must be observed
- ☐ If a fuse is broken, it may only be replaced by a microfuse of the following type:
- ☐ Microfuse, slow-blow, type 3.15 A, 5 x 20 mm according to EN 60127-2/III with a maximum power loss of 1.5W. This fuse is also installed ex works.

Note:

For larger plants, a stronger fuse might be installed (max 6.3 AU). Always replace a fuse with a fuse of the same amperage.

The cables to the device have to be installed correctly. In particular, pay attention that greater mechanical stress on the cables has to be avoided, f.e. by insufficiently fixed cable, otherwise the protection class IP54 can not be guaranteed.

7.3.2 Mains Connection

The mains is connected via the included power cord (length 1.5 m) with safety plug (L1, N, PE).
Fuse mains side: max. 1 x 16 A G.

7.3.3 Float switch

A float switch can be connected via the existing terminal block to the controller.
This controls the feeding, clear water discharge, the aeration times and gives high-level alarm.
Control voltage: 230 V ~ 5 mA, switching between input and N.

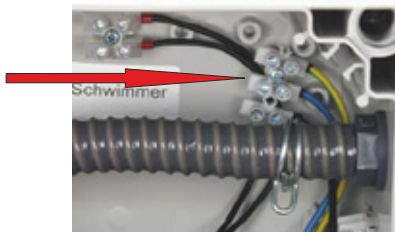
Connection Float Switch



7.3.4 Clearwater Pump

A clearwater pump can be connected via the existing terminal block to the controller. (Optional connection must have been specified in your order!)
This will be used with larger heads and replaces the clearwater siphon.

Connection Clearwater Pump



7.3.5 Floating contact

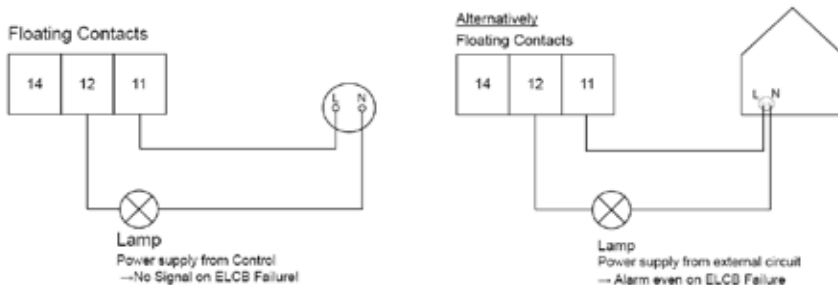
Via the floating contacts, an additional warning lamp / flash Light can be connected.

These can be supplied with current via the controller or through an independent / external line. In case of alarm the relay closes the circuit between terminals 11 and 12 and opens the line 11 to 14.



7.3.6 Connections

If the warning lamp / flash light is supposed to illuminate/ flash on failure, the connection of the contacts 11 and 12 have to be selected (see drawing). For permanent light, the connection 11 and 14 have to be selected.



After a self-test of the control, the text will appear with the start-up message after about 3 sec.

Vx.xx.xx (e.g. V2.15.04) is the version number of the software. Seconds later, the standard display appears. The green LED remains on when the unit is on. If a fault / error occurs, the red LED flashes. The unit is now ready for use.

8 Operation

8.1 Operation and Display

The control has a graphic LCD - display with 128 x 64 pixels. The displays are in plain text. It is operated via three buttons and two LEDs.



Arrow keys to select the menu items



Center key to confirm the entry



Arrow keys to select the menu items

The green LED remains permanently on when the unit is on. In case of a fault / error, the red LED flashes. In case the green and red LED are illuminated permanently at the same time, the device is initializing. In normal operation, the green LED flashes and additionally a flashing triangle ◀ is visible in the lower right corner of the LCD display.

Each menu consists of a series of illustrations on the LCD display.

Press the ← key to enter the input mode of the respective menu item. The input mode can be seen by a selected line (shown inverted). With the ↓ ↑ keys now the rows can be selected, by pressing the ← key the values can be changed.

If a multi-digit entry is required, the highest point is changed at first. Press the ← key to move on to the next point, etc. If a selection of different options is required (eg yes / no), the desired selection is done via the arrow keys ↓ ↑. When the desired option is displayed, this is confirmed by pressing the ← key.

8.2 Commissioning

During commissioning, the following must be entered at first:

- Password
- Language (see item 8.4.7.5)
- Time and date (see item 8.4.7.1)
- Type of system (see item 8.4.6)
- Float switch (see item 8.4.6)
- Denitrification (see item 8.4.8.2)
- Test mode - takes about 1 minute (see item 8.4.4)

After the test run, a window with the query „input OK“ appears. This can be answered with yes / no. If you enter NO, the entry of the password restarts, If you enter YES the default display appears.



! The commissioner has to ensure that the settings of the parameters apply to requirements arising from the approval of the system, with which the control is used with.

8.3 Main Display

In the default display the control shows the switching status of the plant and of the units such as:



1st Line: the date and time

2nd Line: recent SSB cycle

2nd Line (right): Normal or Economy mode of the plant (remaining) time, how long the recent phase still lasts

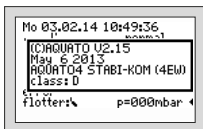
3rd Line: Shows which unit is running or is OFF when all units are turned off.

4th Line: operating current of the compressor / eventually of clearwater pump

5th Line: fault Indication

6th Line: float Switch status up / down (only visible with activated float Switch) and display existing backpressure

By pressing the ← the following is displayed:



- Release
- Date of release
- Type (set inhabitants/ PE)
- Effluent class

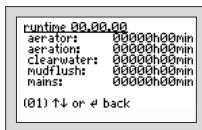
With the ← button you can also turn off the buzzer. (See also 5.4.6)

8.4.2 Display of operating hours



In the menu item operating hours, the operating hours of the individual units are shown. The operating hours are counted when the control turns on the compressor and the pump. It is displayed in hours and minutes.

By pressing the ← key, the operating hours of the last weeks (up to 52) are displayed (operations Diary).



The last line represents the date of the week (example calendar week 1) in which values were stored (always on Sunday). Using the ↓ ↑ keys you can scroll from week to week.

Note: This function only works correctly when the date and time have been set correctly.

8.4.3 Service menu



The service is mainly intended for the service technician.

Typically selected

- Change password (only with special password)
- System test / Trial Run
- Manual operation
- Clear counter (only with special password)
- Select plant types

8.4.4 System test / Trial run



The automatic test operation is selected from the menu **Start test**. During the trial run, it is checked if the power consumption of the units is properly.

In addition, by raising the float switch, the function of the float can be checked. During the Trial Run the main display changes.



1. Compressor 15 s
2. Compressor Clearwater 15 s
3. Compressor Sludge discharge 15 s

The trial run has to be aborted by pressing the ← key.

Display "float switch" is only visible when float switch is selected / set.

8.4.5 Manual mode

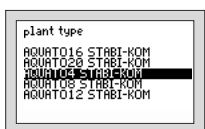


In manual mode, each of the units can be switched on or off manually (eg for a test run).

Using the ↓ ↑ keys the unit is selected and with the ← key the unit is turned ON or OFF.

On the menu ... end manual operation the manual Mode is terminated. After the end of the manual Mode the treatment cycle continues.

8.4.6 Selection of plant type

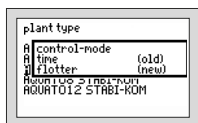


In this menu, the plant type can be selected.

Select the menu item PLANT TYPE SELECTION and then press the ← key. Using the ↓ ↑ keys the appropriate type of plant with the number of inhabitants can be selected.

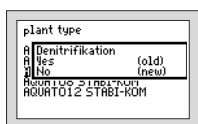
All parameters for the process are then automatically preset.

Afterwards optional functions are queried:



Control Type: In The first line of the currently selected mode is displayed.

In the second line, the state can be changed. By pressing the ↓ ↑ keys you can select between TIME or FLOAT. By using the ← - key, the selected state is adopted. With the setting TIME, the process is time-controlled, with the setting FLOAT it is float controlled.



Denitrification: The first line of the currently selected mode is displayed.

In the second line, the state can be changed. By pressing the ↓ ↑ keys you can select between Yes or No. By using the ← button, the selected state is adopted.

8.4.7 Basic settings



In this menu, the operator settings are configured.

8.4.7.1 Setting of Time and Date



Example: changing the clock from 14:19 to 14:23. The clock is quartz controlled. It should be checked during maintenance.

8.4.7.2 LCD Contrast

The LCD contrast can be optimized here. Usually no change is necessary.

8.4.7.3 Alarm buzzer

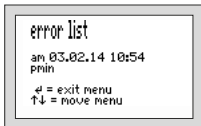


The alarm buzzer can be turned OFF. The acoustic alarm can be turned off, for example, from 18.00 to 06.00 o'clock.

Caution:

Within the set time no acoustic alarm will be given!

8.4.7.4 View Errors



From this menu, the error logbook is called.

The error logbook shows the last 20 failure events with date and time. Use the ↓ ↑ keys to scroll down in the logbook, the ← button to exit the menu.

(The error logbook can not be deleted!)

8.4.7.5 Language

Here the language of the control is selected. The Input of the password is required. The control is prepared for several languages. Currently programmed languages are:

- German - English - French – Finnish – Polish - Swedish - Russian

8.4.7.6 Clear Alarm



In case an error (alarm) occurred, it can be reset by pressing the ← key to NO ERRORS. The error is stored in the error logbook anyway. The display will show OK for 1 second and then jump back to the menu screen.

Note: If, during a failure, the ← button in the main display is pushed once (standard display during operation), only the buzzer is switched off temporarily. The error message is stored in the error logbook and remains in the main screen until the error message is cleared via CLEAR ALARM.

8.4.8 System menus for individual settings



In the following menus all system parameters can be set individually. An adjustment may only be done by a professional, as possibly the cleaning performance of the system might be reduced and the approval expires. To change the values, however, the input of a special password is required.

In general, changes to the parameters are not needed as these are automatically preset when choosing the number of PE (under Selection of Plant Type).

To restore the original factory settings, the type of system has to be re-selected new. (see item 7.6.6)

8.4.8.1 Aeration



In this menu you can set number of minutes, the aeration should be switched ON or OFF during normal operation_(pulsing).

Note:

Aeration economy mode is only visible when the float switch is activated. Then also for the economy mode the aeration period can be set as described above.

Economy mode starts when the float switch does not float up after the first aeration phase and runs for exactly three days. If during this time the float switch does not float up again, the system goes into holiday mode. The aeration times for this are no longer adjustable. They are automatically set to one third of the set economy mode operating time.

8.4.8.2 Denitrification



In this menu you can set number of minutes, the aeration should be switched ON or OFF; each for normal and economy Mode, however only for denitrification.

Also the duration of the denitrification is set.

Note:

This menu is only visible when the denitrification is activated.

8.4.8.3 Parameters



In this menu, the following parameters can be set:

- Sludge Disposal
- Settling Phase
- Clearwater discharge

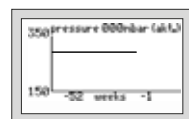
8.4.8.4 Power / Pressure Monitoring



When the control turns on the compressor or a pump, it is not necessarily guaranteed that it operates. Overheating, faulty cables or other defects can cause that the relay is turned on but the unit is not running anyway. Therefore The control monitors, whether current is flowing in the circuit. If the current gets below the limit, which is set by software to 0.2 A, a current alarm is generated.

In this menu, the current monitoring can be switched ON or OFF. In addition, the current value is shown in the main display. The control additionally monitors the pressure created during aeration, feeding, sludge return and clearwater discharge. The minimum and maximum pressure can be specified here. "Diff. Pressure " is the counter-pressure difference between aeration and pumping of the wastewater which has to exist at least. If this difference is less than the specified value, an alarm is triggered. This indicates that, for example, a valve has not opened.

8.4.8.5 Pressure Diary



In this Pressure diary, the back pressure after the clearwater discharge is recorded weekly.

The pressure is shown graphically from 150 mbar only.

8.4.8.6 Pressure Gauges



Here the respective pressure during the last cycle is displayed. The feeding-, clearwater and excess sludge backpressure is filed under the individual operations. Here, only the last step is considered: During aeration two values are stored.

The 1st is the maximum pressure, which is received after feeding.

The 2nd is the minimum pressure that is stored after clearwater discharge.

In this menu you can understand if the existing pressure difference is sufficient (see Parameter 2).

8.5 Errors/ Alarms

Following Errors can be shown in the display:

1. HW - Highwater: after clearwater discharge the float switch is not down
2. Battery - low battery, faulty or not inserted
3. Clock - clock is not set
4. I AER – current Error compressor
5. I CLW – current Error Clearwater pump
6. p min - Permitted pressure fell below
7. p max - Permitted pressure was exceeded
8. POWER ON - power is turned on
9. POWER OFF - power is turned off
10. Power Cut Power cut <15 min: the SSB cycle continues
 Power cut > 15 min: restart of the SSB cycle
11. V_CLW - Set pressure difference during clearwater discharge fell below
12. V_Sldg - Set pressure difference during excess sludge discharge fell below

Alarms are displayed by the flashing red status LED. The alarm message disappears from the display only when the error is eliminated and also reset at the control. (See menu items 8.4.7.6)

8.6 Power Cut Alarm

The control has a power cut alarm.

During a power failure, an acoustic alarm is generated every 30 seconds to indicate the operator on the treatment plant. The display shows a crossed out power socket. By holding down the  key until you hear an acknowledgment tone, the alarm is permanently disabled.

As soon as the power supply returns, the unit will automatically restart.

Note: with a new device, the internal batteries will take a few days to reach their full capacity in order to achieve maximum alarm duration.

If the function of the internal batteries decreases, they have to be replaced by 2 pcs AA size NiMH batteries.



The replacement should be carried out by a qualified electrician.

Before opening the control disconnect from mains.

The batteries may only be disposed of properly.

8.7 Factory Settings

Inhabitants connected (PE): 8
 Control Type: Time
 Denitrification: No

8.8 Technical Specifications

Temperature range (Operation)	0°C ... + 40 °C
Temperature range (Storage)	-20°C ... + 70 °C
Humidity (Operation and Storage)	0 ... 90 % RH <i>non-condensing</i>
Protection Class	Protective insulation
Type Protection	IP 54
Dimension (without cabel fittings, power socket) approx.	200 x 200 x 140 mm
Installation	Wall mounting with screws
Housing Material	Light grey plastic
Mains connection (L1, N, PE) cable ca. 1,5 m with plug	230 V~ 50 Hz □ 10 %
Units (compressor/ pumps) Max. engine power (with fuses 3,15 A)	230 V / 50 Hz P < 0,7 KVA
Internal fuse (max 1,5 W)	1 x 3,15 AT, max. 6,3 AT
Temperature protections of pumps	Via thermal contact in motor, in series with the motor
Current monitoring via transformer	Max. 10 A, Typ 10% v.E. (10 A)
Power consumption control	Type 5 VA
Float switch input (switches against N)	Control voltage 230 V~, I < 10 mA
Required pre-fuse	Max. 1 x 16 A G
Cable diameter	1,5 mm ² (with end sleeves)
Alarm relay	max. contact voltage 230 V~ max. contact current 8 A; AC1
Internal buzzer	type 70 dB(A)
Display	graph. LCD-Display 128 x 64 mm 1 x LED green 1 x LED red

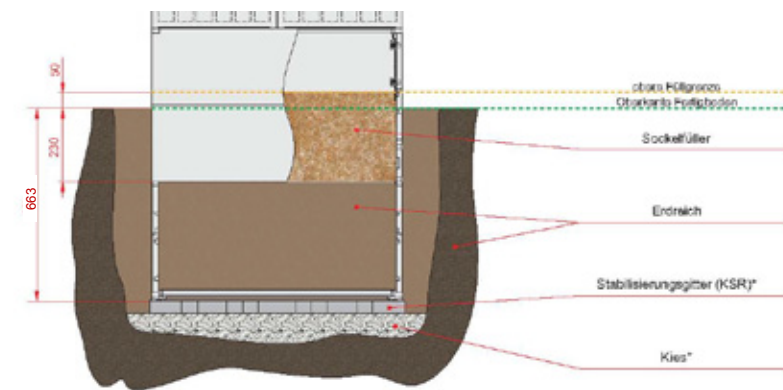
8.9 Switching times

Number of PE	Normal Mode Aerator ON (min)	Normal Mode Aerator OFF (min)	Normal Mode Duration (min)	Economy Mode Aerator ON (min)	Economy Mode Aerator OFF (min)	Deni. Normal Mode Aerator ON (min)	Deni. Normal Mode Aerator OFF (min)	Deni. Normal Mode Duration (min)	Deni. Economy Mode Aerator ON (min)	Deni. Economy Mode Aerator OFF (min)	Deni. Economy Mode Duration (min)	Sludge removal (min)	Settling phase (min)	Clearwater (min)
4	3,0	5,0	180	2,0	5,0	1,0	15,0	45	1,0	15,0	45	1,0	90	5
8	5,0	5,0	180	3,0	5,0	1,0	15,0	45	1,0	15,0	45	1,0	90	10
12	7,0	3,0	180	5,0	5,0	1,0	15,0	45	1,0	15,0	45	2,0	90	15
16	7,0	3,0	180	5,0	5,0	1,0	15,0	45	1,0	15,0	45	2,0	90	15
20	8,0	3,0	180	6,0	3,0	1,0	15,0	45	1,0	15,0	45	2,0	90	20

The holiday mode begins after the economy mode, if the float switch (optional) did not float up after 3 days of economy mode. During holiday mode the aeration times are again reduced by 2/3.

8.9.1.1 Underground installation of the socket for the outdoor cabinet

Dig the socket up to the mark as shown. If possible, use socket filler (can be ordered in AQUATO® Accessory Shop), in order to minimize condensation. For the underground installation of the socket consider the run of the air hoses, power cable and the float switch cable.



*optional

9 Maintenance

9.1 Maintenance works

The maintenance is carried out at least twice a year by qualified personnel only and includes the following tasks:

- ☐ Inspection of the operators diary with determination of the regular operation (target-performance comparison)
- ☐ Function control of important mechanical, electrical and other system components
- ☐ Functional control of the control panel and alarm function
- ☐ Setting of best operating values such as oxygen supply and sludge volume in aeration / clarifier
- ☐ Testing of the sludge volume in the chamber in which the coarse material blanket is installed (always the second last chamber). If necessary, initiation of the sludge removal of all chambers except the last chamber (aeration / clarifier) by the operator. For proper operation of the wastewater treatment plant needs-based sludge disposal is necessary. The sludge disposal is required at 70% filling, which corresponds with a sludge volume > 850 ml / l, measured in the second last chamber (where the coarse material blanket is installed) . ATTENTION! Please be careful during sludge removal because the membrane diffusers are in the chambers! In order to achieve stabilization of the sludge, the sludge should be removed only when it actually exceeds the volume of 850 ml / l.
- ☐ Carrying out general cleaning works, such as removal of deposits
- ☐ Verification of the structural condition of the plant
- ☐ Control of sufficient ventilation
- ☐ The servicing carried out is to be noted in the log book.

Analysis in the aeration/ clarifier chamber:

- Oxygen concentration
- Sludge volume (< 600 ml / l)

During maintenance, a sample of the discharged water has to be taken.

The following values have to be checked:

- ☐ Temperature
- ☐ PH- value
- ☐ Suspendable solids
- ☐ COD
- ☐ NH₄-N (only for performance class D)
- ☐ N_{anorg.} (only for performance class D)

The results and the work carried out has to be recorded in a maintenance report. The maintenance report has to be sent to the operator. The operator has to combine the operations manual with the maintenance report and submit this to the relevant authority or the local water authority upon request.

9.2 Maintenance of the compressors

The air compressors are operated without lubricants and are mostly maintenance free. For the precise procedure for servicing, please see the manual included in the package of the air compressor. Keep it together with the other documents of the system. An inspection of the air filter is recommended at each service and each compressor type.

9.2.1.1 Maintenance of linear diaphragm pumps

- ☐ Cleaning of the filter - replacement when heavily contaminated
- ☐ Pump Block Exchange - exchange every 3 years or 15000-20000 h, depending on the size

9.2.1.2 Maintenance on free-piston compressors

- ☐ Cleaning of the filter - replacement when heavily contaminated
- ☐ Check the piston set - replacement after approximately 20,000 hours of operation

9.2.1.3 Maintenance on rotary disk compressors

- ☐ Cleaning of the filter (larger than DT 4.10) - replacement when heavily contaminated
- ☐ Check the carbon fiber lamella - replacement (in sets) when fallen below the dimensions as described by the manufacturer
- ☐ Check the capacitor - exchange if capacity falls below 20%

10 Shut-Down and Disposal



The installation of the system have to be carried out by qualified staff only. Make sure that there are only authorized persons on site. Make sure that the general safety regulations and the safety regulations on site are observed.



Before starting the final dismantling turn the system off by pulling the power plug. Secure the system against restarting.



Danger of explosion in wastewater treatment plants can be caused for example by incorrectly inflowing flammable substances or by faulting processes (methane).

Vent the tank and check the gas concentration by gas detector before entering.

10.1 Temporary shut-down

A temporary shut-down is required for maintenance or replacement of the following components:

- Control unit
- Compressor
- Magnetic valve
- Spare parts (for example, membrane diffusers)

10.2 Dismantling of the entire system

The complete disassembly of the entire plant has to be performed by qualified personnel.

- ☐ Loosen the hoses and cables at the control / switch cabinet
- ☐ Pull the float switch cable (optional) and the hoses towards the tank
- ☐ Remove the tank
- ☐ Remove the control / switch cabinet

10.3 Disposal

Pay attention to proper disposal of system.

11 Error Messages

Display	Possible Cause	Remedial Action
I Bel The compressor has received no current	- Compressor broken - Fuse Blown	- Replace the compressor - Replace the fuse
I CLW The clearwater pump has received no current	- Clearwater pump broken - Fuse Blown	- Replace the clearwater pump - Replace the fuse
p min Permitted pressure fell below	- No hoses or wrong connected - Hose connections or hose leaking / damaged	- Check hose fittings and hoses
p max Permitted pressure has exceeded	- Water level too high - Hose buckled - Aeration element clogged	Check the water level - Check the hoses - clean / renew aeration element
HW Highwater	- Infiltration water inflow - Backwater from irrigation - Power cut - Float switch broken - Clearwater pump clogged - Clearwater hose damaged	- Locate and stop inflow - Any single event - Establish permanent power supply - Replace the float switch - Remove clogging - Replace the clearwater hose
Battery	- Battery low, damaged or not inserted	- Insert new batteries
Clock	- Clock is not set	- Set Clock
V_CLW	- Clearwater valve does not open or pressure difference is set	- Check valve or replace if necessary - Reduce pressure difference
V_Sldg	- Excess sludge valve does not open or pressure difference is set too high	- Check valve or replace if necessary - Reduce pressure difference



With all works on compressor and pumps the plant has to be disconnected from the mains !

If the proper operation of the plant can not be resumed, please contact our Customer Service Department.

12 Checklist for installation and commissioning

Checklist for the installer

Task carried out	Done	Not Done	Specialties
Installationa			
▪ Installation of control/ switchgear	☐	☐	
▪ Air hose connections	☐	☐	
▪ Float switch connection (optional)	☐	☐	
Injection of the plant (optional)	☐	☐	
Commissioning	☐	☐	
Functional Control			
▪ Control/ Alarms	☐	☐	
▪ Compressor	☐	☐	
▪ Magnetic Valve Distributor	☐	☐	
▪ Membrane Diffusor 1	☐	☐	
▪ Membrane Diffusor 2	☐	☐	
▪ Membrane Diffusor 3 (optional)	☐	☐	
▪ Membrane Diffusor 4 (optional)	☐	☐	
▪ Clearwater Siphon	☐	☐	
▪ Sludge Disposal Siphon	☐	☐	
▪ Float Switch (optional)	☐	☐	
▪ Clearwater Pump (optional)	☐	☐	
Briefing of operator	☐	☐	
Proper handover of the system	☐	☐	

13 Checklist for Maintenance

Checklist for the Maintenance Service Company

Task carried out	Done	Not	Specialties
		Done	
Inspection of operators diary	☐	☐	
Check the structural condition	☐	☐	
Control of ventilation	☐	☐	
General cleaning	☐	☐	
Functional Control			
▪ Control/ Alarms	☐	☐	
▪ Compressor	☐	☐	
▪ Magnetic Valve Distributor	☐	☐	
▪ Membrane Diffusor 1	☐	☐	
▪ Membrane Diffusor 2	☐	☐	
▪ Membrane Diffusor 3 (optional)	☐	☐	
▪ Membrane Diffusor 4 (optional)	☐	☐	
▪ Clearwater Siphon	☐	☐	
▪ Sludge Disposal Siphon	☐	☐	
▪ Float Switch (optional)	☐	☐	
▪ Clearwater Pump (optional)	☐	☐	

Analysis:

		Inflow	Outflow	
Oxygen concentration	mg/l	COD		mg/l
Sludgevolume				
Aeration/Clarification	ml/l	NH ₄ -N ¹		mg/l
Temperature	°C	N _{anorg.} ²		mg/l
pH-Value				
Suspendable Solids	ml/l			
Sludgevolume primary/ aeration (second last chamber)	ml/l			

¹ Only in combination with performance class D

² Only in combination with performance class D

14 Operators Diary

To ensure smooth operation of your wastewater treatment plant in the long term, following inspections are required by the operator in accordance with the user approval.

Operation of the treatment plant	daily
Reading of working hours and entering them into the log book ☐ Visual inspection of the outlet on sludge overflow ☐ Detecting and possibly removal of floating sludge ☐ Check the supply and outlets for cloggings	monthly

Enter the results of your controls, operating hours and special events in the following tables.

15 Contacts

Manufacturer	
Company	AQUATO® Umwelttechnologien GmbH
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	32051 Herford
Phone	+49 (0) 5221 10219 0
Internet	www.aquato.de
Email	info@aquato.de

Your Service Company	
Company	
Adress	
Phone	
Fax	
Internet	
Email	

Operation Diary

AQUATO®STABI-KOM



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[illegible]

[illegible]

[illegible]

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[illegible]

SEWAGE TREATMENT PLANTS ...

... are approved by the DIBt.

The „Deutsches Institut für Bautechnik“ (DIBt) is a governmental institute which monitors and supervises the compliance with European standards and laws and grants national technical approvals for construction products such as sewage treatment plants.

For wastewater treatment plants there are currently following effluent classes ...



AQUATO®STABI-KOM			
Tank	Effluent Classes	User Approvals Z-55.31-	User Approvals Z-55.32-
■ Concrete	C	469	489
	D	470	488
	D+P		
	D+H		
■ PE Lying	C	469	
	D	470	
	D+P		
	D+H		
■ PE Standing	C	469	
	D	470	
■ GRP	C	469	
	D	470	



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Installation Company: