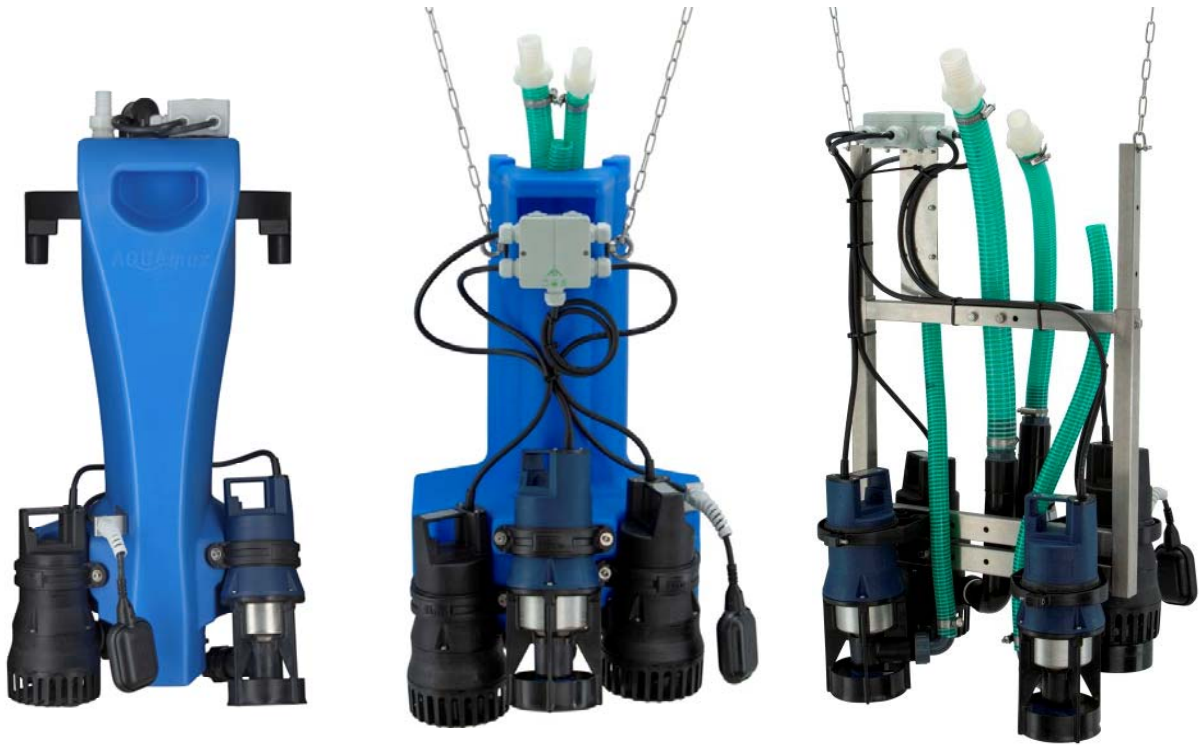


Innovations for clean water



# AQUAMAX<sup>®</sup> BASIC/CLASSIC

## Installation Instructions



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## Dear customer,

at this point we would like to thank you for the trust which you have shown with the purchase of this product.

On the following pages you will find everything necessary about the installation, operation and the maintenance requirements of your AQUAMAX® small wastewater treatment plant.

Please observe that the careful installation of the wastewater treatment plant is very important for a good treatment performance.

## General and Safety Information

With the AQUAMAX® one is concerned with a technical system which, in combination with a multi-chamber tank, is employed as small wastewater treatment plant for the aerobic biological treatment of domestic and comparable wastewater of up to 75 PE from single or several buildings. Dimensioning, design and operation are to take place up to 50 PE in accordance with EN 12566-3.

With employment in accordance with regulations no hazards whatsoever emanate from the plant. If the AQUAMAX® is used for other purposes without the explicit approval of ATB WATER GmbH and/or the following safety information is ignored, this can lead to the hazarding or injury of persons and to malfunctions or defects in the plant. In this case any liability is excluded, Modifications to the plant or unauthorized conversion is not permitted.

The AQUAMAX® and accessories are not intended to be used by persons (including children) with limited physical, sensory or mental capabilities or due to a lack of experience and/or knowledge, unless they are supervised by or receive instruction from a person responsible for their safety, as to how the AQUAMAX® and accessories are to be used. Children are to be supervised in order to ensure that they do not play with them.

Before use the AQUAMAX® is to be installed correctly and in agreement with the installation instructions. Installation instructions, operating and maintenance instructions are to be read thoroughly and the instructions included therein are to be followed implicitly.

With assembly and installation, commissioning and operation as well as, if required, decommissioning, national standard specifications and regulations are to be complied with. All tasks may be carried out by trained and qualified specialists with appropriate certificate of technical qualification. The operator is to be instructed by the fitter.

With the connection of the control system the national applicable regulations and the details on the type plate are to be complied with (mains voltage, frequency etc.). The equipment is to be operated on a network which includes a protective earth conductor (PE). **Attention is to be paid to correct phase connection (even with plug-in design)!** The connection to the mains must take place by means of separate fusing and residual current protective circuit breaker. Before commissioning, the correct function of the electrical protective measures must be checked!

The installation work is to be carried out by qualified electricians only. With work on the equipment fundamentally the mains plug is to be disconnected. A separation or extension of the cable is not permitted. The electrical connection data is to be taken from the type plate on the equipment.

Operate no equipment which has a damaged connector/connection cable or plug, which indicates a malfunction, has been dropped or has been damaged in any way.

With all maintenance and repair work the plant is to be disconnected from the mains. The AQUAMAX® can be removed easily from the tank. If the plant is to be climbed into, this may take place only with the presence of a second person (this is fundamental!). Particular care is to be

## Installation instructions AQUAMAX® BASIC/CLASSIC

taken. The applicable accident prevention regulations and rules of technology are to be complied with.

In the versions with submersible aerator the AQUAMAX® feeds the required air to the wastewater through a rapidly rotating propeller. Never work in the vicinity of the aerator as long as the AQUAMAX® is connected with the mains. Danger of injury!

The correct function can only be guaranteed with the employment of original spare parts or spare parts approved by ATB. Before commissioning, all points of the operating instructions are to be checked. Keep these instructions readily to hand at all times!

Explanation of the warning notices used:



Attention!



Danger due to electrical voltage!



Rotating parts. Danger of crushing and being drawn into the area of the submersible aerator!

## Scope of Delivery



ATB goes to great lengths to achieve a complete consignment and product-specific packaging of all equipment and parts supplied. Nevertheless, please check the delivery for transportation damage and completeness.

<p style="text-align: center;"><b>AQUAMAX® BASIC</b> consisting of:</p> <ul style="list-style-type: none"> <li>• 1 carrier frame made of PE/V2A</li> <li>• 1 submers. aerator AQUA 5S</li> <li>• 1 submersible pump ATB<i>lift</i> 2 as clarified water, excess sludge and charging pump</li> <li>• 1 assembled pipeline set made of PE incl. coarse filter</li> <li>• 1 float switch</li> <li>• 15/25 m connecting cable 7x1.5 mm<sup>2</sup> with special plug</li> </ul>	<p style="text-align: center;"><b>AQUAMAX® CLASSIC 1-16 Z</b> consisting of:</p> <ul style="list-style-type: none"> <li>• 1 carrier frame made of PE/V2A for suspension on chains</li> <li>• 1 submers. aerator AQUA 5S</li> <li>• 1 submersible pump ATB<i>lift</i> 2 as clarified water pump</li> <li>• 1 submersible pump ATB<i>lift</i> 2 as excess sludge and charging pump</li> <li>• 1 float switch</li> <li>• 15/25 m connecting cable 7x1.5 mm<sup>2</sup> with special plug</li> </ul>	<p style="text-align: center;"><b>AQUAMAX® CLASSIC 17-50Z</b> consisting of:</p> <ul style="list-style-type: none"> <li>• 1 carrier frame made of V2A for suspension on chains</li> <li>• 1 submers. aerator AQUA 5S</li> <li>• 1 submersible pump ATB<i>lift</i> 2 as clarified water pump</li> <li>• 1 submersible pump ATB<i>lift</i> 2 as excess sludge and charging pump</li> <li>• 1 float switch</li> <li>• 15/25 m connecting cable 7x1.5 mm<sup>2</sup> with special plug</li> </ul>
<p>Accessories, loose:</p> <ul style="list-style-type: none"> <li>• 1 control unit ATB<i>contro</i>® 3, 230 V for internal attachment</li> <li>• 1 sampling bottle (red) made of PE with bracket</li> <li>• 3.5 m PVC hose Ø 25 mm for cleared water</li> <li>• 1 set Mounting parts</li> <li>• 1 information plate "Small wastewater treatment plant according to DIN"</li> </ul>	<p>Accessories, loose:</p> <ul style="list-style-type: none"> <li>• 1 control unit ATB<i>contro</i>® 3, 230 V for internal attachment</li> <li>• 1 sampling bottle (red) made of PE with bracket</li> <li>• 3.5 m PVC hose Ø 25 mm for cleared water</li> <li>• 5.0 m PVC hose Ø 32 mm for charging</li> <li>• 1 pump suction nozzle DN 32</li> <li>• 1 Coarse filter</li> <li>• 1 set Mounting parts</li> <li>• 1 information plate "Small wastewater treatment plant according to DIN"</li> </ul>	<p>Accessories, loose:</p> <ul style="list-style-type: none"> <li>• 1 control unit ATB<i>contro</i>® 3, 230 V for internal attachment</li> <li>• 1 sampling bottle (blue) made of PE with bracket</li> <li>• 5,0 m PVC hose Ø 32 mm for cleared water</li> <li>• 5,0 m PVC-hose Ø 40 mm for charging</li> <li>• 1 pump suction nozzle DN 40</li> <li>• 1 Coarse filter</li> <li>• 1 set Mounting parts</li> <li>• 1 information plate "Small wastewater treatment plant according to DIN"</li> </ul>

### Technical Data:

Aerator AQUA 5S: 230 VAC / 0,56 kW / 2,5 A. Pump ATB*lift* 2: 230 VAC / 0,3 kW / 1,3 A

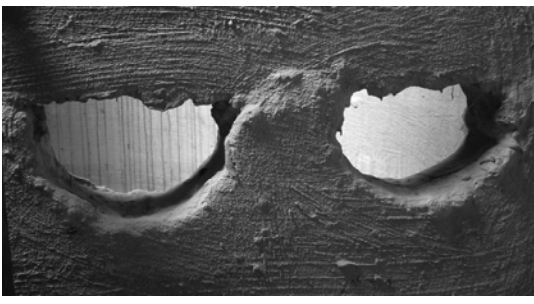
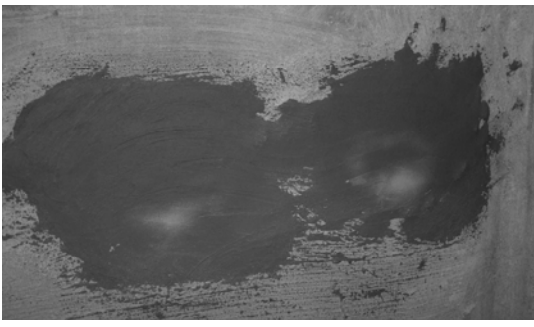

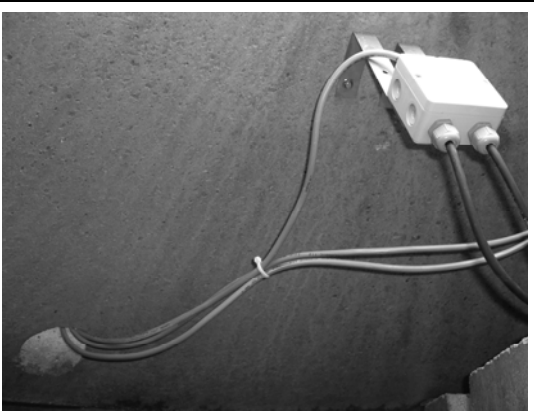
## Services to be Provided by the Customer

- The tanks are to be offset to the appropriate height and are to be watertight
- A watertightness test has been carried out and concluded successfully. For this, the installation instructions of the tank manufacturer are to be observed.
- All chambers of the plant are accessible to persons (clear openings of at least 600 mm diameter).
- The cover of the tank with the aeration chamber must have ventilation openings. In addition a ventilation facility at the outlet pipe plant is strongly recommended. The correct ventilation via the roof is to be ensured. The correct operation is to be documented and verified
- The outlet pipe is connected and reaches ca. 15 cm into the tank (do not cut off at the tankwall).
- Behind the wastewater treatment plant is located a further distributor, control or percolation shaft. If this is not the case then a possibility for sampling is to be installed in the SBR tank.
- A 230 V power line is laid to the location of the control unit and is fused separately as follows: B 16 A, and 25 A / 30 mA earth leakage circuit breaker (ELCB).
- A cable pipe is to be laid between the control unit and the wastewater treatment plant. The diameter should be at least 10 cm. No bends with a greater curvature angle than 30° are to be laid. The cable pipe is to be sealed against odours.
- A draw wire is planned in the empty pipe. The maximum distance between control unit and AQUAMAX® for plug-in variants is 35 m.
- The tank is free of wastewater and cleaned.
- The AQUAMAX® incl. accessories are on the construction site at the start of assembly.
- The partition wall between aeration stage and sludge storage is to be produced watertight and provided with an emergency overflow (ca. 10 x 4 cm) in the upper area (single tank plant).
- The maximum difference between lower edge runoff and upper edge partition wall is 30 cm (AQUAMAX® BASIC and M configurations).
- The inlet pipeline is connected to the primary settling stage. With retrofitting this, as a rule, has been relaid (Note drawing "Tank preparation" or project sketch).

## Tank Preparation



**A watertightness test must be done!**

	<p>The openings between the primary chambers must remain.</p>
	<p>The openings and interstices between pretreatment and buffer or SBR and between buffer and SBR must be closed and sealed.</p>
	<p>It must be ensured that there is an emergency overflow (<math>&gt; 40 \text{ cm}^2</math>) between pretreatment or buffer tank and SBR tank!</p>
	<p>Openings/empty pipes (<math>\geq \text{DN } 100</math>) must be provided for the cable inlet.</p>



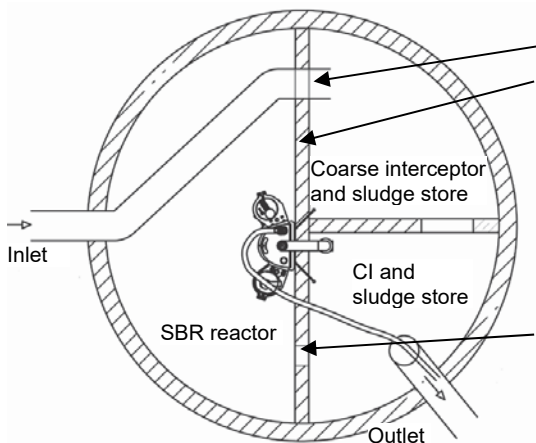
## Tank Preparation

### AQUAMAX® BASIC – New Plant



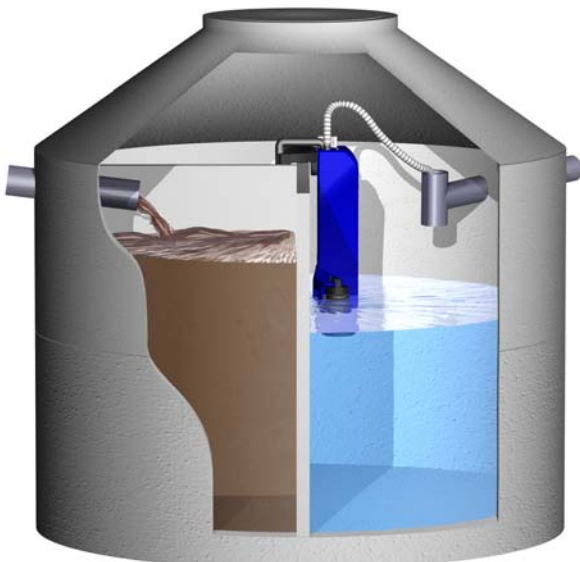
- Cover opening at least 60 cm diameter with ventilation openings or separate ventilation pipe.
- Emergency overflow, ca. 4 x 10 cm (H x W). So far as the danger of a backwater exists in the inlet pipe and this is to be avoided, the lower edge of the emergency opening is to be planned below the lower edge of the inlet.
- Close openings in the dividing wall. If necessary, reseal tank interstices.
- Introduce empty pipe > DN 100 for cable at any desired position.
- Inlet and outlet must extend ca. 15 cm into the plant.

### AQUAMAX® BASIC - Retrofitting



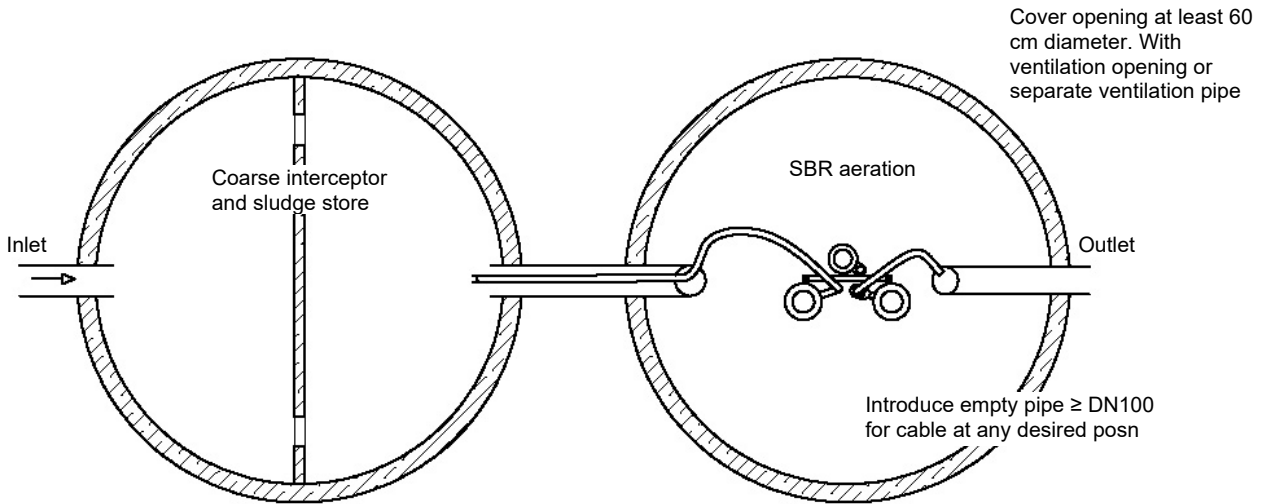
- Cover opening at least 60 cm diameter with ventilation openings or separate ventilation pipe.
- Lay inlet into 2nd chamber and seal in.
- Close openings in dividing wall. If required, reseal tank interstices.
- Introduce empty pipe > DN 100 for cable at any desired position.
- Inlet and outlet must extend ca. 15 cm into the plant (if necessary, remove old scum baffles) and/or mortise pipe with spigot end free.
- An emergency overflow can be planned here (see above), to use the half-chamber as additional buffer in case of power or pump failure, before the water reaches the outlet. Lower edge overflow must then lie below lower edge outlet but above  $H_{W, max}$ .

### Installation Example AQUAMAX® BASIC

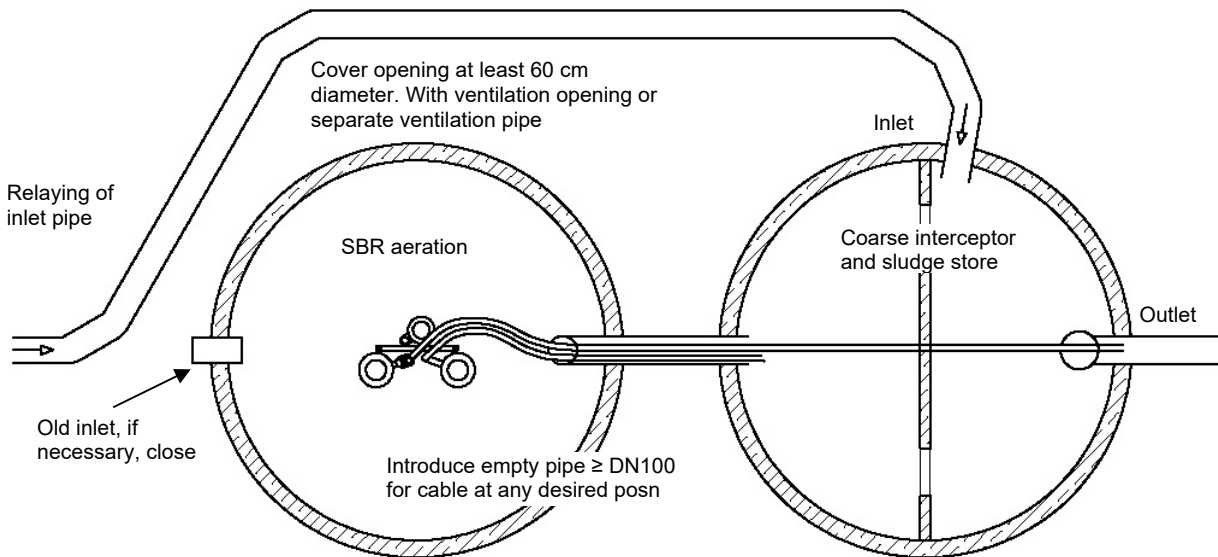


The diagram shows a typical installation of a 3-chamber tank with installed AQUAMAX®. With this, the suction pipe of the AQUAMAX® produces the connection to the last chamber of the primary settling stage. Here the thick matter is separated from the influent

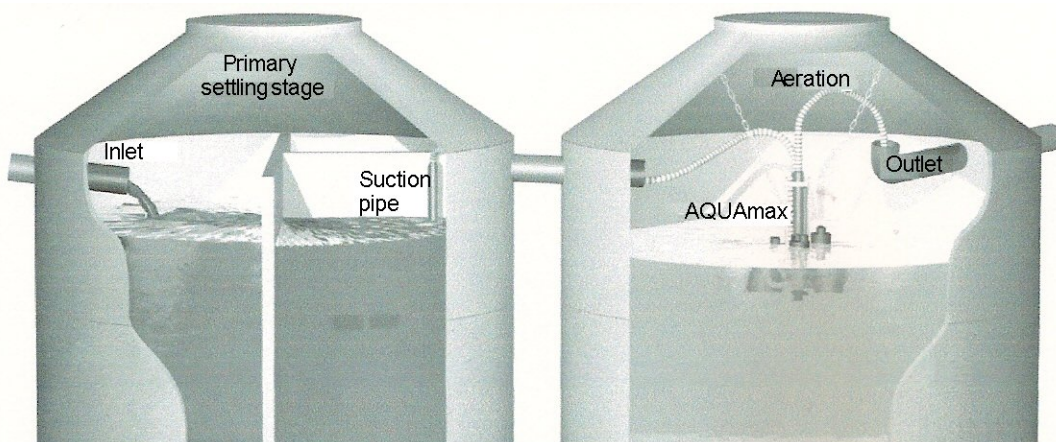
**Tank Preparation AQUAMAX® CLASSIC Z – New Plant**



**Tank Preparation AQUAMAX® CLASSIC Z - Retrofitting**

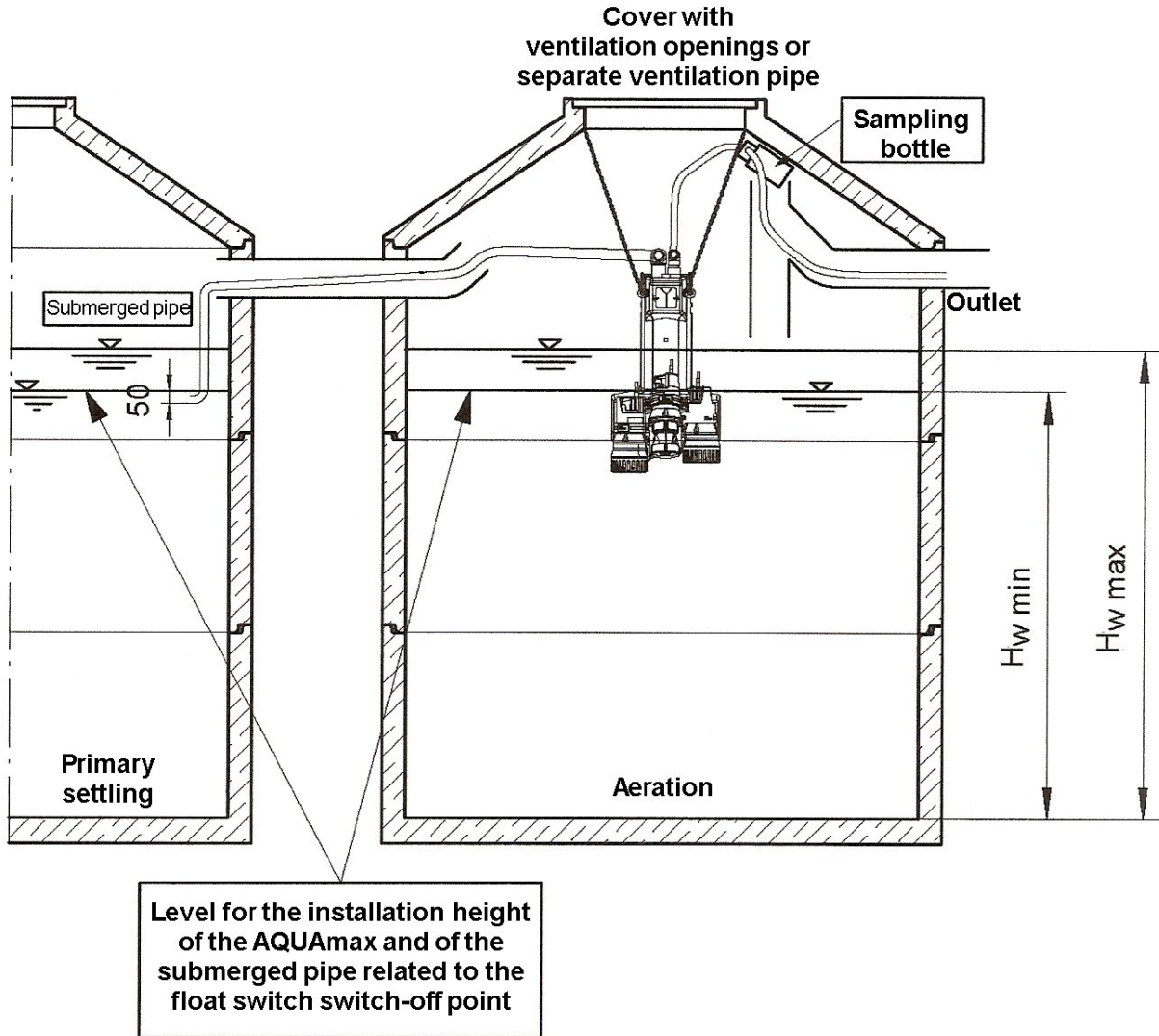


**Installation Example AQUAMAX® CLASSIC Z**



The diagram shows a typical installation of a 3-chamber tank with installed AQUAMAX®. With this, the suction pipe of the AQUAMAX® produces the connection to the last chamber of the primary settling stage. Here the thick matter is separated from the influent.

## Assembly Drawing AQUAMAX® CLASSIC Z



### Switch-off Point Float Switch ( $H_{W,min}$ ), all Types



The switch-off point of the float switch for all types is at the height of the centre selvedge between upper and lower part of the aerator housing (see also marking on the side of the carrier frame).

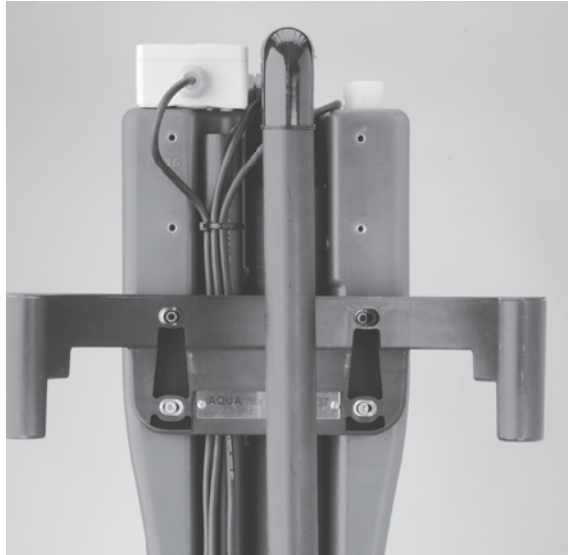
The difference ( $= H_{W,min}$ ) between this point and the bottom of the tank should not be exceeded. The values for  $H_{W,min}$  are to be taken from the data sheets or the wastewater engineering calculations.



## Preparation of the AQUAMAX®

### AQUAMAX® BASIC

Before locating the AQUAMAX® BASIC in the cesspit, check the mounting bracket for the correct, and for the number of connected inhabitants, matching position. The lower position of the mounting bracket is provided for 4-8, the upper for 9-16 PT (see also the stamp on the plastic bodywork). If required, loosen the securing screw and relocate the mounting bracket.



### AQUAMAX® CLASSIC Z

Secure the stainless-steel hooks supplied in such a way on the tank cover that the AQUAMAX® is positioned as far as possible centrally in the tank. Now suspend the AQUAMAX® on the chains supplied so that the float switch-off point agrees with  $H_{w,min}$ . The slope of the tensioned chain should not be more than 45° to the vertical. The pressure hoses are connected with union fittings (smaller diameter → clear water; larger diameter → feeding/sludge recirculation).



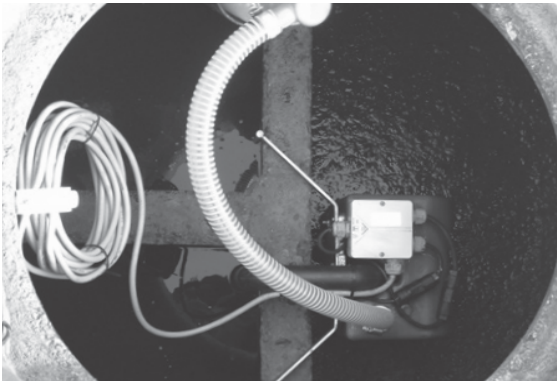
## Installing AQUAMAX®



A communicating tube forms the connection to the primary chamber. This system works only with absolute tightness! Please ensure that cables and hoses are long enough so that the AQUAMAX® can be easily take out of the tank. Cables must not be subjected to tensile stress.

### AQUAMAX® BASIC

AQUAMAX® BASIC, CLASSIC M are placed centrally on the partition wall. The immersion pipe must dip into the 2<sup>nd</sup> primary settling chamber (not the inlet chamber). With single-chamber primary settling an additional protective pipe or a scum board is to be provided for the immersion pipe. Connect the outlet hose with the AQUAMAX® by means of a coupler connection.



### AQUAMAX® CLASSIC Z

With the AQUAMAX® CLASSIC Z push the 30 respectively 40 mm PVC hose through the connecting pipe to the primary settling stage and, using the coupler connection screw on to the sludge pipe. Lay the hose in such a way that this does not sag. Secure the sludge pipe using the enclosed pipe clips such that the inlet opening is at the height of  $H_{W,min}$ . Connect PVC hose and immersion pipe by means of the enclosed hose clips. If required, the immersion pipe must be secured against the ingress of thick matter floating sludge (see below).



## Sampling bottle

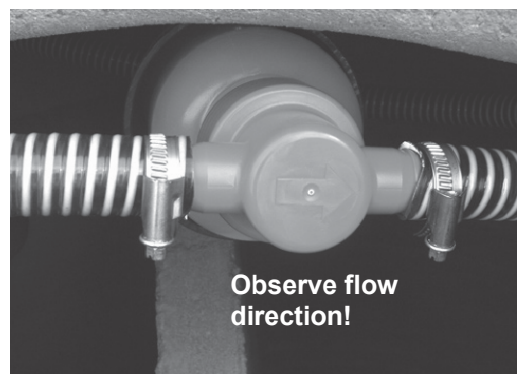
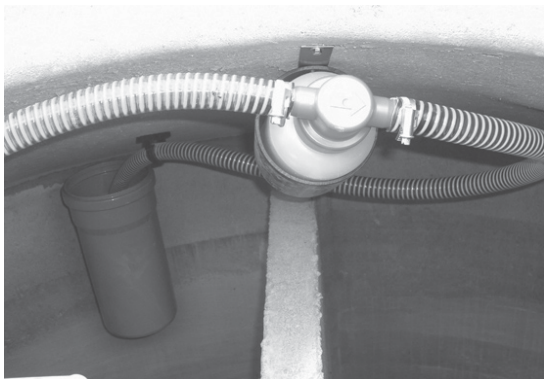


Up to 16 PE red connection cover, 17-50 PE blue connection cover!

The sampling bottle is attached to the cone of the sewage treatment plant with a holder. The holder should be provided where there is no obstacle when removing the AQUAMAX®.

Cut the outlet hose to length and place it on the inlet nozzle of the sampling bottle (note the marking/flow direction!).

Put the remaining hose on the outlet spout and push it into the outlet so far that the clear water cannot flow back. Secure the hose with a pipe clamp to prevent it from slipping out. If a non-return flap is installed in the clear water hose or if the sampling bottle is mounted significantly higher than the outlet, further action may be necessary. In these cases, please contact our service department. Sufficient space must be ensured for removing the bottle.





## Control unit ATBcontrol® 3



### Assembly

Using the mounting materials provided secure the ATBcontrol® 3 to the casing provided for this and to a suitable, as far as possible, weather-protected position.

The ATBcontrol® 3 is supplied as plug-in variant. Cabling on site is dispensed with.

With temperatures below 0°C a severely limited function of the LC display is to be anticipated.

**All tasks, which nevertheless require an opening of the control unit, are to be carried out by a qualified electrician!**



**ATTENTION! Before opening the ATBcontrol® 3 and/or the connection box it/they must be disconnected from the mains supply. Work on opened units may be carried out exclusively by qualified electricians! Pay attention to phase-correct connection (even with plug-in design)!**



**As you are concerned with an electrical plant with submerged motor units, a separate B16 fuse and a (separate) upstream 30 mA ELCB (earth leakage circuit breaker) is absolutely essential!**

**Attention is to be paid to correct laying of the protective earth conductor up to the earthing of the building.**



## Cable connection and test run

Pull the cable from the AQUAMAX® through the empty pipe to the control unit (draw wire!). Cable lengths longer than 15 m must be ordered separately.

Insert the special plug Ø 30 mm of the AQUAMAX® into the corresponding socket of the control unit or the distribution box and screw it hand-tight. Do not connect the control unit to the mains yet!



**The system must now be filled with water at least up to the switch-on point of the float switch (also pretreatment!).**

After connecting the control unit to the mains, it is activated and in program mode. With the help of the test run, a function check of the equipment assembly must be carried out now. For more detailed information on this and on setting the control unit, please refer to the corresponding chapter in the operating instructions.

## Closing operations

<p><b>Kleinkläranlage nach DIN EN 12566-3</b>          ATB WATER GmbH · www.atbwater.com          Südstraße 2 · D-32457 Porta Westfalica</p> <p><b>AQUAMAX® Neuanlage</b> <input type="checkbox"/> <b>CE</b> <input type="checkbox"/></p> <p>Nachrüstung (Anhang B) <input type="checkbox"/></p> <p>Jahr der Fertigstellung:          2018 <input type="checkbox"/> 2019 <input type="checkbox"/> 2020 <input type="checkbox"/></p> <p>BASIC 1-16<sup>1)</sup> <input type="checkbox"/></p> <p>CLASSIC 1-16<sup>1)</sup> <input type="checkbox"/> 17-50<sup>2)</sup> <input type="checkbox"/></p> <p>CLASSIC ZB 1-16<sup>1)</sup> <input type="checkbox"/> 17-32<sup>1)</sup> <input type="checkbox"/> 33-50<sup>1)</sup> <input type="checkbox"/></p> <p>PRO GZ 1-16<sup>2)</sup> <input type="checkbox"/> 17-50<sup>2)</sup> <input type="checkbox"/></p> <p>PRO GZB 1-16<sup>2)</sup> <input type="checkbox"/> 17-32<sup>2)</sup> <input type="checkbox"/> 33-50<sup>2)</sup> <input type="checkbox"/></p> <p>Ablaufklasse C <input type="checkbox"/> N <input type="checkbox"/> D <input type="checkbox"/> +H <input type="checkbox"/></p> <p>230V AC/50Hz; max P1 <sup>1)</sup>560 W <sup>2)</sup>1000 W <sup>3)</sup>1120 W</p> <p>Volumen Vorklärung ..... m<sup>3</sup></p> <p>Volumen Puffer ..... m<sup>3</sup></p> <p>Volumen Belebung ..... m<sup>3</sup></p> <p>Max EW .....</p> <p><b>BIOLOGIE!</b>          Diese Kammer nicht entsorgen          Do not desludge this chamber</p> <p></p>	<p>Please write all relevant data with a waterproof pen on the red information plate and fix it visibly in the tank with the SBR biology or with the tip towards the SBR chamber.</p> <p>Then instruct the operator to his duties and the operation and functioning of his sewage treatment plant and give over the operating instructions (further copies can be downloaded free of charge from <a href="http://www.atbwater.com">www.atbwater.com</a>)!</p>
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## Before commissioning check:

- whether the communicating slits are present in the partition walls in the primary settling chamber
- whether the partition wall joints and the communicating slits to the aeration stage (SBR) are sealed
- whether the immersion pipe is in the 2nd chamber of the primary settling stage. If the immersion pipe has been installed in the 1<sup>st</sup> chamber or with single chamber primary settling stages, this must be protected against floating sludge by a protective pipe or by a scum board
- whether the setting according to actual connected inhabitants has been carried out
- whether all units are connected correctly, the pump(s) transport(s) water and the aerator inserts air (to check, test run and/or activate manual operation → ATBcontro<sup>®</sup> 3)
- whether the switch-off point of the float switch lies at the height of the specified minimum water level  $H_{W, \min}$
- whether the charging suffices to remove the air completely from the immersion pipe (i.e. bubble-free water exits)
- whether the information plate, which contains the disposal information, is clearly visible and correctly mounted
- whether the outlet hose is correctly secured at the outlet elbow and the sampling bottle and that a backwater is not to be feared from the percolation, the receiving water or through counter-gradient in the outlet pipe
- whether the plant cover has ventilation openings and the through ventilation of the tank via the roof ventilation or in another manner is guaranteed
- whether the small wastewater treatment plant is fused via a separate residual current circuit breaker
- whether, in case of extension with a threaded connection, this has in any case been additionally protected against infiltrating water (shrink hose is also supplied by ATB for cable extension).
- Whether, in case of electrical power outage, the air intake hose can't be flood

## ACCIDENT HAZARD



**The AQUAMAX® may be first commissioned when the plant is installed and is filled with water. Persons may no longer be in the manhole.**



**Moving parts – injury hazard!  
Before working in the tank and before removing the AQUAMAX® the power supply is to be disconnected.**



**Danger due to electrical voltage. With work on the AQUAMAX® the plant is, without fail, to be disconnected from the mains supply!**





**ATB WATER GmbH**

Südstraße 2  
32457 Porta Westfalica  
Germany

Fon: +49 5731 30230-0  
Fax: +49 5731 30230-30

E-Mail: [info@atbwater.com](mailto:info@atbwater.com)  
Website: [www.atbwater.com](http://www.atbwater.com)