Quick user guide
Installation and operation

Please read before use!
Pleased consider all safety instructions!
Pleased keep this manual for future uses!

Fully biological SBR – small wastewater treatment plant
acc. to DIN 4261 / 2 and Euronorm EN 12566-3
National technical approvals no.: Z – 55.3…
...- 86 ...
...– 127 ...
...– 216 ...
...– 221 ...
...–244 ...
...– 278 ...
...– 279 ...
...– 344 ...
Application approvals no.: Z – 55.31…
...- 446 ...
...- 456 ...

Serial no.: pls. see type plate
Document ID-no.: at the control
Date of issue: cabinet
Author: rp / pb
Updated by: mo

Manufacturer:
utp umwelttechnik GmbH
Weidenberger Str. 2-4
95517 Seybothenreuth
Service Hotline: 0900 / 1101369
(1,40 € / minute)
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1 Regarding this operating manual

This operating manual is part of the product.
- Please read the operating manual before using the plant.
- Please keep the same during the whole product life and hold the same ready for consultation.
- Please pass the operating manual on to any other owner or user of the product.

1.1 Original language of the documentation

This documentation was originally written in German language.

1.2 Copyright and repeat order:

© utp umwelttechnik GmbH
Weidenberger Str. 2-4
D-95517 Seybothenreuth
Service Hotline: (0900)1101369 (1,40 € / minute)
All rights are expressly reserved.
Duplicating or information to third parties, no matter in which form, is not allowed without written authorization of the owner.

1.3 Imperfections

This operating manual was certainly made up with the necessary accuracy. Any liability of the manufacturer due to false or missing data as well as translation or typographic errors in the documentation is excluded. In case you discover incompleteness or errors, we kindly request you to contact us under the above mentioned address. During preparation of this manual we paid attention to the best possible compliance with the stated facts with the respective system. However, all technical data, dimensions and pictures in this manual are for information only and without liability. Possible claims to the concrete execution of a system cannot be derived from this manual.

We reserve our right to carry out changes at the system due to continuous improvements and developments, without changing this manual. An obligation for installation of carried out product changes in all already completed and delivered systems cannot be derived.

Our documentations will be updated regularly. With your ideas for improvement you are supporting us to create user-friendly documentation. In case you have ideas for improvement, we kindly request you to inform us of the same for being able to consider the same accordingly. Latest information is made available under www.klärofix.com and www.klaerbox.com.

1.4 Liability

Any liability of the manufacturer is in applicable during:
- Non-observance or inadequate use of the information included in this manual
- Use of spare parts or other parts at the system which are not approved by the manufacturer
- Improper operation of the system
- Removal, manipulation or by-passing of protective devices
- Unapproved changes at the system
- Improper execution of maintenance and spare parts replacement

Unauthorized changes at the system or at the operation of the system beyond the specifications given from the manufacturer are resulting in termination of all warranty claims.
2 Safety
This chapter includes information relating to safety precautions and remaining risks. Please read this chapter properly before using the system in order to ensure a safe handling of the system as far as possible.

2.1 Safety instructions
1. For guaranteed safety all persons who have direct contact with the system, have to take note of the content of this documentation.
2. It is not allowed to use the system for another purpose than described by the manufacturer.
3. Local applicable working and safety instructions as well as laws must be always complied with even the same are not listed explicitly in this manual. The same applies for environmental regulations.
4. In case the operator discovers defects or risks, the manufacturer or the responsible maintenance company must be informed immediately.
5. Safety precautions must never be removed or by-passed during normal operation of the system. Only where it is absolutely necessary during repair and maintenance, the safety precautions may temporarily be by-passed or switched-off by the maintenance technician only.
6. When working with chemicals, the direct contact with chemicals should be avoided as far as possible. Before working with these matters, the instructions for use on the package have to be read and complied with. This applies for all chemicals, also for detergents.
7. In case the use of personal protective equipment (safety shoes, safety goggles, gloves, ear protection etc.) is required, it has to be paid attention that the same are used. Defective or damaged protective equipment has to be replaced immediately by proper and functional safety equipment.
8. Works at electrical installations may be carried out by qualified personnel only.
9. All safety instructions and danger warnings which are installed at the system must always be kept in readable condition.
10. Hot parts may not be exposed to explosive or easily inflammable chemicals.
11. Please do not put containers with liquids on electric control cabinets; the pouring out of liquids might lead to short-circuits.
12. The systems must not be operated under the influence of alcohol (consider possible alcohol still left in the blood from the day before!) or pharmaceuticals which influence the perception and reactivity.
13. The system has to be switched off before starting any maintenance and cleaning works.
2.2 Structure of warnings

<table>
<thead>
<tr>
<th>WARNING</th>
<th>Please find type and source of danger here</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Symbol]</td>
<td>Here you will find the measures for avoidance of danger</td>
</tr>
</tbody>
</table>

We distinguish between three steps of warnings:

<table>
<thead>
<tr>
<th>Warning</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>Imminent danger! Death or grievous bodily injury might happen during non-observance.</td>
</tr>
<tr>
<td><strong>WARNING</strong></td>
<td>Possibly imminent danger! Death or grievous bodily injury might happen during non-observance.</td>
</tr>
<tr>
<td><strong>ATTENTION</strong></td>
<td>Dangerous situation! Bodily injury or property damage might happen during non-observance.</td>
</tr>
</tbody>
</table>

2.3 Explanation of symbols and signs

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Cross-reference Symbol]</td>
<td>Cross-reference</td>
</tr>
<tr>
<td>![Information Symbol]</td>
<td>Information</td>
</tr>
<tr>
<td>![Condition for actions Symbol]</td>
<td>Condition for actions</td>
</tr>
<tr>
<td>![Action with one step Symbol]</td>
<td>Action with one step</td>
</tr>
<tr>
<td>![Action with several steps Symbol]</td>
<td>Action with several steps</td>
</tr>
<tr>
<td>![Result from an action Symbol]</td>
<td>Result from an action</td>
</tr>
<tr>
<td>![Listing Symbol]</td>
<td>Listing</td>
</tr>
<tr>
<td>![Indication at the display Symbol]</td>
<td>Indication at the display</td>
</tr>
<tr>
<td><strong>Accentuation</strong></td>
<td>Accentuation (bold text)</td>
</tr>
</tbody>
</table>
3 General

3.1 Manufacturer’s declaration, declaration of conformity

Enclosed to your shipping documents, you will find the manufacturer’s declaration according to EN 12566 part 3, individually issued for your small wastewater treatment plant. Please keep the same with you waste water legislation documents.

3.2 Preface

Dear user,

thank you for your confidence and for purchasing your klärofix ® small wastewater treatment plant.

Before commissioning the wastewater treatment plant, please observe this operating manual which contains important information for operating the plant. Please inspect the plant at delivery for possible transportation damages. The same will have to be indicated immediately in written at your supplier or at company utp umwelttechnik GmbH.

Please find at our website

www.klärofix.com or www.klärbox.com

Further and constantly updated information.

In the comprehensive download area you will find numerous documents, such as

- a form for monthly user controls
- a form for a maintenance contract
- spare parts lists for technical mounting parts

We would be pleased to assist you in future also. A maintenance contract with utp or an authorized klärofix® partner ensures the intended operation of the plant and consequently optimum discharge values.

We wish you a failure-free operation of the klärofix® small waste water treatment plant

your utp team

3.3 Warranty

We refer to the general terms and conditions of utp umwelttechnik GmbH.
## 4 Product description

### 4.1 Application

<table>
<thead>
<tr>
<th>ATTENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your small waste water treatment plant was exclusively developed for purification of domestic waste water. The discharge of other sewages might lead to biological operation problems, corrosion at the structure or to damages at the immersed mounting parts in the waste water. Please contact your utp team in advance. Please pay your attention particularly to rain water, leachate, ground water, dairy waste water, sullage, liquid manure and silage water. National technical approvals or declarations of conformity do not replace building licences or water legislation licences of authorities. For this a previous planning of the waste water plant by a specialised company or an expert is necessary in general. Small waste water treatment plants must always be ready for operation. Therefore a permanent power supply must be ensured as well as the back pressure-free discharge has to be warranted.</td>
</tr>
</tbody>
</table>

### 4.2 Scope of supply

Your klärofix® small waste water treatment plant is consisting of the following main components:

- Technical unit: selectively console, control cabinet or outdoor column including control unit, air distribution system and compressor
- SBR- kit (technical installations at or in the tank(s))
  - Optionally also available are
    - tanks (made of concrete or PE)
    - plant components for sanitation
    - plant components for elimination of phosphate
    - connecting cables
5 Technical unit
The technical unit is consisting of outdoor column, control cabinet or wall bracket and is including the control system, air distribution system and compressor (air blower).

5.1 Selecting the place of installation
When selecting the location for the technical unit, you have to consider the following:

- The installation height must be higher than the highest possible water level of the tank in order to avoid overflow and water inflow into the free flow in the event of an accident.
- The cabinet and especially the ventilation openings must not be covered and have to be freely accessible for maintenance works.
- Choose a dry and well-ventilated room for console or control cabinet.
- Avoid direct sunlight! Increased temperatures inside the control cabinet have a negative impact on the lifetime of durability of electrical installations.
- The operation is generating noise! A permanent noise might arise (comparable with fans of oil-fired heating systems or freezers).

5.2 Laying of the empty pipe
- diameter DN 150
- use archs of maximum 30°, never 90°!
- lay conduit as straight-lined as possible
- lay pipe declining to the waste water treatment plant (draining of condensed water in the pipe)
- during laying:
  - insert tubes, please consider sufficient buffer
  - if required: insert cable
  - alternatively: use taut wire

Unpleasant odour or destruction of electrical and metallic built-in parts in the plant cabinet by condensation of corrosive vapors might occur.

- After completion of the assembly of the whole systems engineering, the empty pipe has to be sealed air-tight on the technical unit side, e.g. with PU-foam. No air exchange must take place here (chimney effect)!
5.3 Assembly of the technical unit

5.3.1 Set-up of the GFK-outdoor column

**ATTENTION**

Non-observance of the following might lead to damages at the electrical built-in parts!

- The inside space of the column has to be protected against rising vapour! This can be effected by a line of special base filling granulate (see below) or by a thin line of cement floating screed.
- It is strictly necessary that the empty duct will be sealed air-tightly after completion of all installation works (e.g. with PU-foam).

---

The pedestal filler is placed on the ground of the column. The filling height amounts to 300mm. The filling material can remain permanently at the bottom of the column and doesn’t have to be replaced.
DANGER

Electric connection outdoor column
• The electric installation may only be carried out by an electronic installation company, authorized by the electrical supply company (EVU). The VDE regulations, especially VDE 100, as well as the technical connection conditions of the local electrical supply company have to be observed.
• The underground cable is inserted in the outdoor column and connected at the supply point (230V/16A, separately fused, cable cross-section has to be observed!)
• In order to prevent the control system from damages caused by thunderstorms, an overvoltage protection should be provided in the domestic installation.

5.3.2 Installation wall bracket or control cabinet

DANGER

Electric connection of wall bracket or control cabinet
• The electric installation may only be carried out by an electronic installation company, authorized by the electrical supply company (EVU). The VDE regulations, especially VDE 100, as well as the technical connection conditions of the local electrical supply company have to be observed.
• A separately fused power socket (230V/16A) has to be available on site (distance approx. 0.5m to the installation site).
• In order to prevent the control system from damages caused by thunderstorms, an overvoltage protection should be provided in the domestic installation.

1. Marking: put the water level at the suspension rail and mark as far as possible on the outer end.
2. Fix it with the attached screws, depending on the condition of the assembly area. If necessary, use the provided dowels (6mm).
3. Check for level fit during tightening the screws.
4. Attach the absorption rubber profile.
5. Fix the rubber buffer at the bottom of the back side
6. Attach bracket or control cabinet

5.4 Air connection

1. Cut the tube to length and thereby consider a generous reserve!
2. Mark tubes with colored labels
3. Assignment waste water treatment plant / control cabinet:
   • red = charging,
   • yellow = aeration,
   • blue = clear water removal,
   • green = secondary sludge removal
4. Tighten spring band clamp and attach
5. Please pay attention to the precise color assignment!
6. Attach hoses at the nozzles of the magnetic valve block.
7. Tighten spring band clamp and push over nozzles and hose.
8. Loosen tightening, hose is clamped by the spring band clamp.

5.5 klärcontrol® option: Telemetry

This option is used for remote monitoring of the systems. The daily and monthly inspections by the operator can be omitted with this option in Germany.

ATTENTION
System is not available
The query of the system data takes place via the mobile network. The provided antenna shall be used.
► The selection of the optimal antenna location is decisive for the function.
► The antenna cable must not be bent or crushed.
At the outdoor column, the antenna is already pre-assembled. Place the supplied magnetic base antenna
• on the horizontal surface at the wall bracket
• on top of the cabinet roof at the control cabinet.

5.5.1 Commissioning

The current value of your plant control system can be read out after commissioning. The green INFO-LED must light!
► From the start display, press "-" key six (6) times.
Ｇ GSM-signal strength (CSQ-value) is displayed (delayed):
minimum: 6.0; maximum: 30.0; no reception: 99.9
By adjusting the antenna position, the reception value can be improved.

For difficult reception conditions, we offer a larger antenna with 5 m cable and a directional antenna with 10m cable.

5.5.2 Activation

ATTENTION
Plant system data are not recalled!
The telemetry query mode must be activated!
For this purpose, a test call must be made to your control system after commissioning. Please call the following hotline:
++49(0)9275/60566 330 (weekdays from 7-15 hours)
5.6 klärcontrol® option: connect UV-lamp (+H)

This is used at plants where the filtration level +H (hygienisation/sanitation) is required.

**DANGER**

Irreversible injury at direct sunlight!
The ultraviolet light (UV-C) is one of the most intense optical radiation!
The system has to be disconnected from the mains supply during all works at the UV-hygienisation (connection, installation and operation).

1. Connect plug-in connection cable of the UV-lamp at the control cabinet
2. Lock connector plug
3. Provide 2m cable reserve at the waste water treatment plant for user-friendly maintenance for the UV-lamp
6 Control system klärcontrol®

6.1 Commissioning

6.1.1 Important note

<table>
<thead>
<tr>
<th>ATTENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The control system is suitable only for 230V- devices with a total power of up to 300VA! During operation of the control system with directly connected devices with higher connected load, any warranty obligations will lapse!</td>
</tr>
</tbody>
</table>

6.1.2 Connection of battery

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTENTION</td>
</tr>
<tr>
<td>1. Power plug may NOT be plugged-in!</td>
</tr>
<tr>
<td>2. Open the service cover by loosening both crosshead screws.</td>
</tr>
<tr>
<td>3. Connect the battery cable at the plug contact shown on the picture (the U-shaped contour of the plug must point at the rectangular plastic contour at the plug contact.)</td>
</tr>
<tr>
<td>4. Now close the cover and screw it.</td>
</tr>
<tr>
<td>5. Attention: Please pay attention that the battery cable is not squeezed between cover and frame.</td>
</tr>
<tr>
<td>6. This plug is protected against polarity reversal and cannot be plugged incorrectly.</td>
</tr>
</tbody>
</table>
6.1.3 Preparation for initial operation

**ATTENTION**

Calibration procedure fails!
- Make sure that all connection works at the control cabinet and in the cesspit are completed.
- Fill the plant completely with water!

6.1.4 Initial operation hydrocontrol®

After connection of the control system to the power plug, an automatic calibration process starts.

Please note the following:
- This action may only be interrupted within the first process of clearwater lifting!
- Avoid any wastewater flow during calibration!
- Fill primary treatment and reactor with water! The right level is reached as soon as water is flowing through the drainage out of the reactor.

The act of calibration fails in case of non-observance! The level control cannot work accordingly!

- Push plug into power socket

The calibration programme P7 starts automatically
- The clear water will be pumped out of the reactor for a preset time. You will hear a kind of “gurgling” when the point of draw-off is reached. This is a normal operating status!
- After completion of the calibration program, an automatic skip to program 2 (running-in program) starts automatically.

Alarm signal: „pressure to low“:
This signal might appear at the display when the reactor is not filled (empty clearwater lifter). You can disconnect the buzzer with the ESC-button. A short alarm signals overview is given on the next page.
## 6.2 Alarm messages

<table>
<thead>
<tr>
<th>Alarm Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery alarm!</td>
<td>• Battery under the cover of control system is not connected or damaged</td>
</tr>
<tr>
<td>Power failure!</td>
<td>• The control system is disconnected from the mains supply</td>
</tr>
<tr>
<td></td>
<td>• Line safety switch or residual current operated device provided by the customer was triggered</td>
</tr>
<tr>
<td>Damaged fuse!</td>
<td>A connected device (max. 300VA), e.g. compressor, electromagnetic valve or an optional electric pump has caused a short circuit, the fitted safety fuse is defect and has to be replaced.</td>
</tr>
<tr>
<td>Overfull alarm!</td>
<td>• The level measuring device has detected the level „high“ for a period of 24 hours</td>
</tr>
<tr>
<td></td>
<td>• Increased inflow, e.g. washday or wellness activities</td>
</tr>
<tr>
<td></td>
<td>• External water, e.g. infiltration water (drainage), rain pipe connected, entering of melt water or surface water, tank leaky (ground water ingress)</td>
</tr>
<tr>
<td></td>
<td>• Compressed-air lifter blocked</td>
</tr>
<tr>
<td></td>
<td>• Outlet defective, e.g. no incline or blocked</td>
</tr>
<tr>
<td></td>
<td>• Faulty calibration or setting of the level measurement</td>
</tr>
<tr>
<td>Underload alarm!</td>
<td>• The level measurement detected level „low“ for a period of 5 days</td>
</tr>
<tr>
<td></td>
<td>• No inflow, e.g. holiday operation mode, inlet blocked or interrupted</td>
</tr>
<tr>
<td></td>
<td>• Leaky tank</td>
</tr>
<tr>
<td></td>
<td>• Faulty calibration or setting of the level measurement</td>
</tr>
<tr>
<td>Pressure too low!</td>
<td>• Pressure falls below lower limit</td>
</tr>
<tr>
<td></td>
<td>• Clearwater lifter was not filled during initial operation.</td>
</tr>
<tr>
<td></td>
<td>• Flexible tube to the active elevator is not connected or damaged</td>
</tr>
<tr>
<td></td>
<td>• Compressor is not connected or damaged</td>
</tr>
<tr>
<td>Pressure too high!</td>
<td>• Pressure exceeds the upper limit</td>
</tr>
<tr>
<td></td>
<td>• Flexible tube to the active elevator is buckled</td>
</tr>
<tr>
<td></td>
<td>• Valve is not connected or damaged</td>
</tr>
<tr>
<td></td>
<td>• Blocked compressed-air lifter</td>
</tr>
</tbody>
</table>
6.3 Operation

6.3.1 Adjustment of date and time

This adjustment is password-protected and can only be carried out with the password of the operator (⇧⇧⇧⇧⇧⇧) or with the password of the service level.

<table>
<thead>
<tr>
<th>Standard display after program start in the main menu.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press “⇧” once to be transferred to the system menu.</td>
</tr>
<tr>
<td>Press “OK”- key to reach the password query. Enter password via arrow keys. Now the operator rights are indicated.</td>
</tr>
<tr>
<td>Press key “⇧” until display text (as shown on the right side) appears.</td>
</tr>
<tr>
<td>Press “OK”-key and you can adjust the hours. The current hour can be adjusted with arrow keys “⇧”. Confirm with “OK”-key.</td>
</tr>
<tr>
<td>Adjustment of minutes. The current minute can be adjusted with arrow keys “⇧”. Confirm with “OK”-key.</td>
</tr>
<tr>
<td>Adjustment of year. The current year can be adjusted with arrow keys “⇧”. Confirm with “OK”-key.</td>
</tr>
<tr>
<td>Adjustment of month. The current month can be adjusted with arrow keys “⇧”. Confirm with “OK”-key.</td>
</tr>
<tr>
<td>Adjustment of day. The current day can be adjusted with arrow keys “⇧”. Confirm with “OK”-key.</td>
</tr>
</tbody>
</table>

Press “OK” – dates are memorized and time / date is set. Press “ESC” – changes are not memorized.

Press “ESC” twice and you return to the main menu.
### 6.3.2 Adjustment of language

This adjustment is password-protected and can only be carried out with the password of the operator (⇧⇧⇧⇧⇧⇧) or the password of the maintenance company.

<table>
<thead>
<tr>
<th>Standard display after program start in the main menu.</th>
</tr>
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<tbody>
<tr>
<td>Press “⇧” once to be transferred to the system menu.</td>
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</tr>
<tr>
<td>Press key “⇧” until adjoining display text appears. (When logging-on with operator password, this display appears immediately) With arrow keys “⇦⇨“ the requested language can be selected. After selection, please confirm with “OK“-key.</td>
</tr>
<tr>
<td>Press “ESC“ twice and you will return to the main menu.</td>
</tr>
</tbody>
</table>

### 6.3.3 Readout of operating hours

The operating hours can be readout either during operator checks or directly at the display.

<table>
<thead>
<tr>
<th>The operating hours can be readout either during operator checks or directly at the display.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting from the main menu, press arrow key “⇦“ once (here it doesn’t matter in which display level you are in the main menu).</td>
</tr>
<tr>
<td>From this point you are transferred with arrow key “⇨“ to the operating hours and back again with arrow key “⇦“. By pressing “ESC“-key you are transferred from operating hours display to the adjoining display. By pressing “ESC“-key again, you return to the main menu (standard display).</td>
</tr>
<tr>
<td>Operating hours compressor and magnetic valve filling (red mark) Press arrow key “⇩“</td>
</tr>
<tr>
<td>Operating hours magnetic valve aeration (yellow mark) and magnetic valve secondary sludge (green mark) Press arrow key “⇩“</td>
</tr>
<tr>
<td>Press key “⇧” until adjoining display appears. (When logging-on with operator password, this display appears immediately) With arrow keys “⇦⇨“ the requested language can be selected. After selection, please confirm with “OK“-key.</td>
</tr>
<tr>
<td>Press “ESC“ twice and you will return to the main menu.</td>
</tr>
</tbody>
</table>
### 6.3.4 Electronic report book (option)

The electronic report book is optionally available for the control system. In case you have bought this option, it is no longer required to take a note of the functional checks as well as of the accrued operating hours in the report book during user check. Furthermore, you are in the position to read out the protocol book.

Pls. also refer to detailed instructions in chapter Electronic Report Book.

Starting from the main menu, press arrow key "⇨" four times (here it doesn’t matter in which display level you are in the main menu).

With arrow key "⇨" you will be transferred to the report book.

The data in the report book are sorted by date and time in descending order (that means the latest data entry comes at first). You can read out the number of cycles, operating hours and the current program for every data entry with arrow keys "⇨".
### 6.3.5 Monthly operator inspections

By means of the control system klärcontrol®, it is possible to carry out the monthly operator inspection by means of a common intercommunication with the control system. The respective data have to be entered into the report book. (Pls. find a copy from at the end of this manual.)

If you have bought the option
- „telemetry“ and a valid telemetry contract with utp or an authorized partner company is existing (all relevant plant data will be saved centrally),
- or
- “electronic report book” (all relevant data will be saved, then all data will be saved in the control system),
you don’t have to note the data separately.

Please make sure that you are in the main menu (display like shown on the right side). Press arrow key “⇨”.

 Display shows how many days until the next operator control are remaining.
Arrow key „⇨“ or „ESC“ = back to the main
Press arrow key „⇩“ in order to continue user control.

Arrow key „⇨“ = previous display
 „ESC“ = back to main menu
 Press arrow key „⇩“ in order to start with the operator inspection.

Visual check of the drain for sludge output?
Press arrow key “⇨”.

Visual check of the drain for sludge output?
Your answer will be saved automatically in the electronic report book.
(otherwise: please note the answer)

No = arrow key “⇨“ – data are saved.
Next inspection question will be asked afterwards.

Yes = press arrow key “⇨“ data are saved

When entering “Yes“, the instruction which actions have to be taken next: When sludge output is discovered, please call service.
Next inspection question will be asked afterwards.
<table>
<thead>
<tr>
<th>Visual check of inlet and outlet for plugging?</th>
<th>Plugging?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press arrow key “⇩” “⇨”.</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>YES ⇨</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visual check of inlet and outlet for plugging?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your answer will be saved automatically in the electronic report book. (otherwise: please note the answer)</td>
</tr>
</tbody>
</table>

| No = arrow key “⇦” – data are saved.         |
|                                               |
| Next inspection question will be asked afterwards. |

| Yes = arrow key “⇨” “⇨” data will be saved (when the option “electronic report book” was purchased) |
|                                                                                           |

| Now the instruction which actions have to be taken next by the operator appears at the display. |
|                                                                                             |
| - Remove plugging or call service if necessary                                               |
| Next inspection question will be asked afterwards.                                          |

<table>
<thead>
<tr>
<th>Visual check: floating sludge in reactor?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press arrow key “⇩” “⇨”.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visual check: floating sludge in reactor?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your answer will be saved automatically in the electronic report book. (otherwise: please note the answer)</td>
</tr>
</tbody>
</table>

| No = arrow key “⇨” “⇨” your answer will be saved. |
|                                               |
| Next check/inspection question will be asked afterwards. |

| Yes = arrow key “⇨” “⇨” your answer will be saved. |
|                                               |

| When entering “Yes”, the dialogue instruction which actions have to be taken next by the operator. |
|                                                                                             |
| - Return floating sludge in reactor back to primary treatment                               |
| Display of operating hours appears.                                                        |

| The operating hours will be saved (in case electronic report book is available) |
| ESC = finish operator control |
| Operating hours were saved ESC |
### 6.3.6 Manual operation

The manual operation enables the operator to check individual functions of the waste water treatment plant.  
- **Manual test operation:** Functions can be activated individually.  
- **Automatic test operation:** Important functions will be activated in a timely preset sequence (recommended for maintenance and inspection purposes).

As soon as the manual operation was activated (plant is stopped), the return into the current program is carried after one hour of no key function by means of a start-up program.

#### Main menu

- Press arrow key „↓“ three times

#### Display:

- Press arrow key „←“ once

#### Query:

- Press arrow key „↓“ once

---

Without electronic report book:

Press arrow key „←“.
The operating hours can be read out manually.
Request to note the operating hours in the report book.
Press arrow key „↓“.

Request to note the operating hours in the report book.
Press arrow key „↑“.

Note operating hours in report book.
Arrow key „←“ = back
Arrow key „↓“ = next

Note operating hours and cycle counter in the report book.
Arrow key „←“ = back
Arrow key „↓“ = next

Arrow key „←“ = back
Arrow key „↓“ = next

Operator control completed.
Automatic skip to the main menu, „ESC“ – immediate return
### 6.3.6.1 Automatic test operation

- **Press arrow key „ ≤ “**
  - Buzzer test

  Waiting time 3 minutes, can be reduced with „ ≤ “ to 10 seconds in order to walk from the control system to the pit, (time starts after last key pressing)

  Activation of clear water pump for 10s. and break for 20 sec.
  (Magnetic valve remains open, compressor is switched-off; analogical also at the following steps including „aeration“).

  Activation of the secondary sludge pump for 10s and break afterwards

  Activation of charging pump for 10s and break afterwards

  Activation of aeration for 10s and break afterwards

- **Start-up program – 10 min aeration**

- **Start-up program - 30min settling**

- **Return to program (Start of last program step before manual operation)**

### 6.3.6.2 Manual test operation

- **Confirm with arrow key „ ≤ “.**

- **Individual functions can be selected and activated successively with the keys „ ≤ “ and „ ≥ “.**
  - **Press arrow key „ ≤ “ once**
  - **Clear water lifter is activated.**
  - **Press arrow key „ ≥ “ once**

---

© Break 3-20s, plant stopps
© Selection by arrow keys

“ ≤ “: automatic test operation

“ ≥ “: manual test operation

---

© Control system klärcontrol®
Clear water pump deactivated
► Break 3 - 20 sec. (depending on compressor)

Display
► Press "-" key once

► Press "-" key once
Secondary sludge pump activated
► Press "-" key once
Secondary sludge pump deactivated
► Press "-" key once

► Press "-" key once
Charging pump activated
► Press "-" key once
Charging pump deactivated
► Press "-" key once

► Press "-" key once
Aeration activated
► Press "-" key once
Aeration deactivated
► Press "-" key once

6.3.6.3 Level measurement (option hydrocontrol®)

Display:
► Press "-" key once
Level measurement activated
Waiting time approx. 30 seconds
Display: level in % and pressure in mbar
► Press "-" key once (back)

6.3.6.4 Finish the manual test operation

Press "ESC" - key at display of one of the above functions

Start-up program – 10 min. aeration
Start-up program – 30 min. settling

Return to the program (start of last program step)
7 Control system klärbox®

7.1 Commissioning

7.1.1 Important note

ATTENTION

The control system is suitable only for 230V-devices with a total power of up to 300VA!
During operation of the control system with directly connected devices with higher connected load, any warranty obligations will lapse!

7.1.2 Activation of battery

ATTENTION

Possible damage of the device!
Never replace the used Mignon (AA)-NiMH-rechargeable batteries by normal batteries!

1. Loosen the crosshead screw of the battery cover slightly.
2. Remove the red protection foil for the battery and dispose the same.
3. Close the cover again and screw it afterwards.
7.1.3 Preparation of initial commissioning

**ATTENTION**

- Calibration procedure fails!
  - Make sure that all connection works at the control cabinet and in the cesspit are completed.
  - Fill the plant completely with water!

7.1.4 Initial commissioning

After connection of the control system to the power plug, an automatic calibration process starts.

Please note the following:

**ATTENTION**

- Calibration procedure fails!
- The level monitoring cannot work correctly!
- This action may only be interrupted within the first process of clearwater lifting!
- Avoid any wastewater flow during calibration!
- Fill primary treatment and reactor with water! The right level is reached as soon as water is flowing through the drainage out of the reactor.

- Push plug into power socket

- The calibration process starts automatically
- The clear water will be pumped out of the reactor for a preset time. You will hear a kind of “gurgling” when the point of draw-off is reached. This is a normal operating status!
- After completion of the calibration program, the running-in program starts automatically.

**Alarm signal: „pressure to low“:**
This signal might appear at the display during the clear water discharge phase. The buzzer can be deactivated by the ESC-button. (Alarm signals overview is given on the next page.)
## 7.2 Alarm signals

**ATTENTION**

Failure of the plant
Alarm messages are for detection of failures of the plant technology or external influences respectively as note for upcoming maintenance works.
Alarm messages at the display can be deleted by entering “9999” as password in the service menu. (refer to chapter 7.3.4.5)

<table>
<thead>
<tr>
<th>BATTERY ALARM!</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Battery was not activated</td>
</tr>
<tr>
<td>- Battery defective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POWER FAILURE!</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Power failure of the electric supply company</td>
</tr>
<tr>
<td>- The control system was disconnected from the mains supply</td>
</tr>
<tr>
<td>- Line safety switch of residual current protective devices is triggered</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FUSE DEFECTIVE!</th>
</tr>
</thead>
<tbody>
<tr>
<td>- A connected device (max. 300VA), has caused a short circuit or an increased current consumption. The installed safety fuse is defective and has to be replaced.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRESSURE TOO LOW!</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Pressure falls below lower limit value</td>
</tr>
<tr>
<td>- Clear water lifter was not filled during initial commissioning</td>
</tr>
<tr>
<td>- Flexible tube to the active lifter is not connected or damaged</td>
</tr>
<tr>
<td>- Air blower is not connected or defective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRESSURE TOO HIGH!</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Pressure passes upper limit value</td>
</tr>
<tr>
<td>- Flexible tube to the active lifter is buckled</td>
</tr>
<tr>
<td>- Valve not connected or defective</td>
</tr>
<tr>
<td>- Plugged air-lift pump</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAINTENANCE IS DUE!</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The preset maintenance interval is reached.</td>
</tr>
</tbody>
</table>

## 7.3 Operation

### 7.3.1 Display, operating keys and LEDs

The operating and display panel of the control system is designed as follows (display text is exemplary:)

```
> utp klärbox <
Filling 003:29
```
7.3.2 Main menu

In the main menu, basic information regarding the control system and the operation of the plant can be read. In addition, shown trouble indication texts can be deleted.

► Press “-” key

Display or the next menu item or:

► Press “+” key

Display of the previous menu item

7.3.3 Operator control

Operating controls at the wastewater treatment plant have to be carried out daily and monthly by a qualified person or by the operator himself/herself in case he/she has the required expert knowledge.

7.3.3.1 Daily operator control

ATTENTION

It has to be checked daily if the plant is working:

• ALARM-LED red: off
• RUN-LED green: on

7.3.3.2 Monthly operator control

• With our control system klärbox® it is possible to carry out the monthly operator control. The data have to be entered into the operating log book.
• For the operator control, the following steps have to be carried out for function control.
• Additionally, the checks described in chapter 9.5.2 have to be carried out
7.3.3.2.1 Reading of operating hours

- Total hours = operating time of the control system
- Air blower hours = operating time of air blower
- Secondary = operating time secondary pump
- Clear water = operating time clear water pump
- Charging= operating time charging pump
- Aeration= operating time aeration

Main menu

► Press “–” key

Display „Total:######/air blower:######“

► Please note operating hours

Press „–“ key

Display „Secondary:#####/clear water:####“

► Please note operating hours

Press „–“ key

Display „Charging:#####/Aeration:######“

► Please note operating hours

Press „–“ key

Display „Total:#######h/Air blower:######h“

► Please note the total operating hours and air blower operating hours

Press „–“ key

7.3.3.2.2 Option: Remaining time to maintenance

Display: Time till service

This optional function is for display of the period of time until the next maintenance and is giving the alarm message SERVICE DUE, when the preset period of time is up.

Press „–“ key

Time till service

000d 00h

7.3.3.2.3 Carrying out of manual operation

The manual operation enables the operator to check single functions of the wastewater treatment plant.

- System monitoring (= automatic test operation mode):
  Important functions are activated in series in a timed order (for maintenance and control purposes).

- Manual test operation mode: outputs can be activated individually.
### 7.3.3.2.3.1 Automatic test operation mode

- **Display:** "Valves work" for 3s
- **Display:** "System control/OK-key"
  - Press "-"-key
  - Skip to next menu item
  - or:
    - Press "OK"-key

The automatic test operation starts with a break and a reset of the valves.

- Successively the valves 01 (left) to 04 (right) are opened and the air blower is switched on. This cycle is repeated until interruption/breakup.
  - 01= secondary (green), 02= clear water (blue) 03= charging (red), 04= aeration (yellow)
  - Breaking-off of the tests by pressing the "OK"-key
  - Automatic test operation is stopped
  - Return to display
  - Press "-" key in order to skip to the next menu item

### 7.3.3.2.3.2 Manual test operation

- **Display:** "op.output OFF" = optional 230V output
  - Press "OK"-key
  - Output is activated (on).
  - Press "OK"-key
  - Output is deactivated (off).
  - Press "-" key

For functional test, the air blower has to be switched-on at this point!

- **Display:** "Air blower OFF"
  - Press "OK"-key
  - Air blower is activated (on).
  - Press "-" key
### 7.3.3.2.3.3 Finishing of manual operation

| Display „Secondary“ | Secondary OFF  
|                   | ON/OFF => OK  
| Press “OK“-key    | Secondary ON  
|                   | ON/OFF => OK  
| Secondary sludge lifter is activated (on). | Secondary OFF  
|                   | ON/OFF => OK  
| Secondary sludge lifter is deactivated (off). |  
| Press ”-“-key    |  

| Display „Clear water“ | Clear water OFF  
|                     | ON/OFF => OK  
| Press “OK“-key      | Clear water ON  
|                     | ON/OFF => OK  
| Clear water lifter is activated (on). | Clear water OFF  
|                     | ON/OFF => OK  
| Clear water lifter is deactivated (off). |  
| Press ”-“-key      |  

| Display „Charging“ | Charging OFF  
|                   | ON/OFF => OK  
| Press “OK“-key    | Charging ON  
|                   | ON/OFF => OK  
| Charging lifter is activated (on). | Charging OFF  
|                   | ON/OFF => OK  
| Charging lifter is deactivated (off). |  
| Press ”-“-key    |  

| Display „Aeration“ | Aeration OFF  
|                   | ON/OFF => OK  
| Press “OK“-key    | Aeration ON  
|                   | ON/OFF => OK  
| Aeration is activated (on). | Aeration OFF  
|                   | ON/OFF => OK  
| Aeration is deactivated (off). |  
| Press ”-“-key    |  

| Display „Buzzer test“ | Buzzer test OFF  
|                      | ON/OFF => OK  
| Press “OK“-key       | Buzzer test ON  
|                      | ON/OFF => OK  
| Buzzer is activated (on). | Buzzer test OFF  
|                      | ON/OFF => OK  
| Buzzer is deactivated (off). |  
| Press ”-“-key       |  

Press ”-“-key in order to skip to the next menu item.
7.3.4 Additional information in the main menu

7.3.4.1 Display of the current pressure

Display: „Pressure=0000mbar“
This pressure complies with the system pressure in the housing of the klärbox® and is fluctuating according to the water level and the simultaneously carried out function.
Note for display „Power = OFF“;
The display of the current power consumption is not supported by klärbox®.
► Press „¬“ –key in order to skip to the next menu item.

7.3.4.2 Growing of biology

Display: „Biology growing/remain. days: 000“
The remaining time for growing of the biology is shown.
After commissioning, klärbox® is carrying out a start-up operation for a preset period of time.
During this time
• no energy-saving operation and
• no secondary sludge removal is carried out
► Press „¬“ –key in order to skip to the next menu item.

7.3.4.3 KF-number

Display: „KF-number/########“
The klärbox control unit is especially dimensioned for the respective plant size and filtration level.
The KF-number is the identification of this dimensioning calculation.
► Press „¬“ –key in order to skip to the next menu item.
7.3.4.4 Firmware and software version

<table>
<thead>
<tr>
<th>Display (example):</th>
</tr>
</thead>
<tbody>
<tr>
<td>„Ver.: HBxx01.31u / SW ver.: 01.01“</td>
</tr>
<tr>
<td>Here, the firmware and software version is shown.</td>
</tr>
<tr>
<td>► Press „–“ key in order to skip to the next menu item.</td>
</tr>
</tbody>
</table>

| Ver.: HBxx01.31u |
| SW ver.: 01.01 |

7.3.4.5 Reset of service menu and alarm text

| Display: „SERVICE MENü / OK-Taste“ |
| Here the plant password can be entered by the maintenance technician. Additionally, alarm text messages at the display can be deleted. |
| ► Press OK-key for password request or |
| ► Press „–“ key in order to skip to the start display of the main menu |

| SERVICE MENü>>> |
| OK-key |

| Delete alarms: |
| Please enter the password „9999“ in order to delete possibly shown alarm texts in the main menu. |

| Password request |
| ► Set the first digit with „–“ and „–“ |
| ► Press OK-key |
| ► The entered digit is replaced by an asterisk |
| ► Skip to the next digit |
| ► Repeat action till 4th digit position |

| Keys 0, 0, <OK> |
| PIN: _ _ _ _ |
| Keys 0, 0, <OK> |
| PIN: 9 _ _ _ |
| Keys 0, 0, <OK> |
| PIN: * _ _ _ |

| Display: „Alarm deleted“ for 2s |
| Display of the current program step, e.g. |

| > u t p  k l ä r b o x < |
| Charging 3:29 |
8 Summary initial operation / commissioning

Please observe the installation instructions of the tank!

Install the control cabinet (pls. refer to the previous chapters).

Malfunction of the plant
Please check the
- colored assignment of the pressure hoses wastewater treat-
  ment plant / control cabinet
- sufficient water filling of the wastewater treatment tank (max.
  water level of all chambers up to the level of treatment plant
  outlet).

Commission the control system (please observe the before men-
  tioned notes).

The control system shows the start display and switches to the
automatic operation mode.

Please change immediately to manual operation after inserting the
mains plug into the power socket. Please refer to chapter „manual
operation“.

Please check all functions in the following order:

1. Clear water (blue):
   The pumped-out water has to drain in the free flow after the
   clear water pump; there may be no back pressure or back wa-
   ter.

2. Secondary (green):
   The direction of conveyance has to point at the primary treat-
   ment.

3. Charging (red):
   The direction of conveyance of the charging pump has to point
   at the reactor. Different water levels arise (and remain) in the
   chambers.

4. Aeration (yellow):
   The bubbles in the waste water treatment plant have to be in
   the form of micro-bubbles and throughout the plant.

Please skip back to automatic operation; your wastewater treat-
ment plant continues the calibration and switches to automatic
operation.

Please observe that the function of the compressed air lifter and
the charging device is only given in case the tank is filled with
enough water.

- Please fill in the commissioning journal. The original is for the
  operator and hast to be attached to the operating book.
- One copy has to be sent to utp umwelttechnik GmbH. Please
  observe that possible warranty claims can only be handled in
  case the completed journals certificates are available.

Unpleasant odour or destruction of electrical and metallic built-in
parts in the plant cabinet by condensation of corrosive vapors
might occur.

The empty duct has to be sealed with an airtight seal after comple-
tion of all installation works (e.g. PU-foam), refer to chapter 5.2!
9 Operation

9.1 General

According to the basic principles of the „Deutsches Institut für Bautechnik“ (German approval body) operation and maintenance have to be organized and prepared that

- hazards of the environment may not be expected, which especially applies for the sampling/removal, the collection and storage of sludge from small waste water treatment plants
- the small waste water treatment plants will not be impaired/damaged or endangered in their existence or in their intended function
- the waters intended for the discharge may not be polluted exceeding the allowed degree or may not be modified unfavourably in another way
- no unpleasant odours occur

9.2 Contaminants in the waste water

Only domestic waste water or comparable waste water may be fed to the treatment plant. Other matters might lead to adhesions, blockages and other damages. Furthermore, foreign substances might lead to operating troubles and influence the purification capacity. Detergents pollute the environment. Please use the same economically! Please also observe the dosage instructions of the manufacturer. Food rests and grease have a negative impact on the purification capacity of your small waste water treatment plant. Therefore, the same shall not be thrown into the drain but into the organic waste container.

ATTENTION

Biocides, toxic or biologically incompatible or non-degradable matters may not be fed to the plant as they might lead to problems in the biological processes. Please pay attention to products which are bio-degradable. Basically, please do not throw things due to convenience into the waste water which could be disposed properly by another way. Please consider that e.g. only one litre milk comes up to an organic daily load of 2 persons; one litre hotpot comes up to that of 10 persons!
### 9.2.1 Table of matters and substances which shall not be discharged

<table>
<thead>
<tr>
<th>Matters/substances which shall not be discharged by drain or toilet:</th>
<th>They are causing the following damages:</th>
<th>Where they are in good hands:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</td>
<td>Contamination of the waste water; decomposition of concrete</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Colours</td>
<td>Contamination of the waste water</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Photochemicals</td>
<td>Contamination of the waste water</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Disinfectants</td>
<td>Bacteria are killed</td>
<td>Please do not use!</td>
</tr>
<tr>
<td>Medicine</td>
<td>Contamination of the waste water</td>
<td>Collecting point at pharmacies</td>
</tr>
<tr>
<td>Cotton swabs, panty liners, nappies, adhesive tapes</td>
<td>Cause blockages; indecomposable plastic foils harm home waters</td>
<td>Dustbin</td>
</tr>
<tr>
<td>Pesticides</td>
<td>Contamination of the waste water</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Paint brush cleaner, thinner</td>
<td>Contamination of the waste water</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Detergents, besides those which are free from chlorine (ecologically harmless)</td>
<td>Contaminate the waste water, corrode pipings and sealings</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Pipe cleaning detergents</td>
<td>Contaminate the waste water, corrode pipings and sealings</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Insecticides, pesticides</td>
<td>Contamination of the waste water</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Cooking oil, chip fat</td>
<td>Causes deposits and clogging</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Food garbage</td>
<td>Causes blockages and lures rats</td>
<td>Dustbin resp. bio waste pin</td>
</tr>
<tr>
<td>Wall paper paste</td>
<td>Causes blockages</td>
<td>Collecting points</td>
</tr>
<tr>
<td>Textiles (e.g. nylon stockings, floorcloths, handkerchiefs, etc.)</td>
<td>Causes blockages in pipings and might tie up pumping stations</td>
<td>Clothing collection</td>
</tr>
<tr>
<td>Bird sand, cat litter</td>
<td>Causes deposits and clogging</td>
<td>Dustbin</td>
</tr>
<tr>
<td>Toilet rim hangers</td>
<td>Contamination of the waste water</td>
<td>Please do not use!</td>
</tr>
<tr>
<td>Cement water</td>
<td>Causes deposits and causes blockages as hardened matter</td>
<td>Disposal by specialized company</td>
</tr>
<tr>
<td>Cigarette stubs</td>
<td>Cause deposits in the treatment plant</td>
<td>Dustbin</td>
</tr>
</tbody>
</table>

Upon questions relating to these problems resp. to your plant in general, please contact company utp umwelttechnik GmbH or the authorized specialized company.

### 9.3 Special drinking water characteristics

**ATTENTION**

**Reduced purification capacity**

Water of private but also of municipal drinking water supply systems might have characteristics that could lead to problems in processing. Among others, the content of carbon dioxide and the acid buffer capacity of the drinking water can influence the purification capacity of your plant. Please contact your maintenance company for possible counteractions.
9.4 Sludge disposal

In the domestic waste water, also particles which are heavier than water can be found. These settleable solids, sand and possibly discharged foreign matters are settling as sludge at the bottom part of the storage. The storage capacity is highly depending on the discharge habits of the operator. The capacity amounts from one year up to approx. three years.

As far as no other interval is required according to your waste water legal approval, we recommend the sludge disposal according to individual demand. Your service specialist measures the sludge level during the maintenance works. In case the upper gauge has reached approx. 50 % of the storage tank, you will be informed and requested to arrange the sludge disposal.

The operator of the waste water treatment plant will receive a „record of proper waste management“ from the waste management company. This record has to be attached to the operating book and has to be kept at least five years. Furthermore, the disposal has to be noted in the operating book.

9.4.1 Important notes

ATTENTION In the medium-term, a decreasing purification capacity and damage of built-in parts might occur.

Never empty the reactor (biology) during sludge disposal. Activated sludge, which is necessary for the cleaning process would be removed and additionally, there is a danger of damaging the compressed air lifters and aeration equipment by the back and forth swinging hose of the pump truck.

How to identify the chamber of the reactor:
1. Switch the control system into manual operation.
2. Activate the aeration.
   - The chamber where the waste water is circulated now, is the chamber of the reactor of your small waste water treatment plant (air bubbles are rising).

ATTENTION Falsified results in the maintenance report. At coincidence with maintenance works, the sludge disposal has to be carried out after the sludge disposal.

9.4.2 Procedure of sludge disposal

ATTENTION

1. Removal of floating sludge in all primary treatment chambers
2. Removal of the bottom sludge in all primary treatment chambers.

Contamination of biology

The filling procedure during normal operation might take too long! The waste water would go bad and is contaminating the biology!

3. After sludge removal:
   Please fill immediately all primary treatment chambers with fresh water in opposite direction to the normal flow direction! Therefore, the remaining primary treatment will be filled from the chamber located before the reactor. Herewith, it can be avoided that floatables are plugging the feeder or other installed equipment.
9.5 Self-checking, user controls

The user has to carry out the following works or has to entrust a technical expert with these works, in case the user does not have the necessary expert knowledge. The user or entrusted third persons are regarded as “competent or skilled persons” in case they are in the position to carry out self-checkings at small waste water treatment plants professionally and properly due to their training, knowledge and practical experience.

9.5.1 Daily user control (to be omitted with module “telemetry“)

**ATTENTION**

This is the task of the acoustical or optical alarm display at the control system. Green stands for operational readiness; red indicates an error. An external signal lamp is optionally available.

- It has to be checked by the functional indicator at the control system whether the plant is working.

9.5.2 Monthly controls (to be omitted with module “telemetry“)

**ATTENTION**

1. Visual check of the drain outlet for sludge output.
2. Control of inlet and outlet for plugging (visual control).
3. Check for possible existing floating sludge and removal of the floating sludge (into the sludge storage), if necessary.
4. Update the operating book.
5. Carry out function control of the battery-supplied power failure monitoring by a short disconnection from power supply.
6. There is a certain proportion of grease contained in the discharged domestic waste water. As grease is collecting on the water surface as well as is depositing at the installed equipment in the waste water treatment plant, it is necessary to check and clean the optionally installed floating switch (e.g. protection against dry running at electronic pumps etc.). Depending on the quantity of grease, this control has to be carried out half-yearly or more often.

9.5.3 Actions during detected defects

**ATTENTION**

During detected defects or failures, all defects have to be remedied immediately by the user resp. by an authorized specialist and have to be recorded in the operating book.

9.5.4 Further actions required by the authorities

Differing from the before mentioned user controls, other actions and works might be required by the official water rights notification of your authority as well. In this case, these requirements have to be observed.
10 Maintenance

10.1 General

**DANGER**
The maintenance of small waste water treatment plants is subject to special dangers. Skilled maintenance specialists are specially trained to danger prevention. No maintenance without special training!

We recommend the conclusion of a maintenance contract with company utp service GmbH or with a maintenance company authorized by utp!
Only by this, you assure a proper operation of your plant.

Maintenance reports must be kept at least 5 years!

10.2 Maintenance intervals

We recommend the following maintenance intervals as far as no other specifications are stated in the official water rights notification of your authority:

(Please see filtration level at the type plate)

<table>
<thead>
<tr>
<th>Filtration level according to effluent features</th>
<th>2 maintenances per year approx. every 6 months</th>
<th>3 maintenances per year approx. every 4 months</th>
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<tbody>
<tr>
<td>Level C</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Level N</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Level D</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Level D / plus P</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Level D / plus H</td>
<td></td>
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11 History of modifications

utp umwelttechnik GmbH is updating this document continuously. Of course, your requests for alterations will be taken into consideration.

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<tr>
<th>Date</th>
<th>Changed by</th>
<th>Modification</th>
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<td>08/2009</td>
<td>pb/rp</td>
<td>Adding hydrocontrol®</td>
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<tr>
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<td>Notes for initial operation</td>
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<tr>
<td>08/2009</td>
<td>pb/rp</td>
<td>Short overview regarding alarm messages</td>
</tr>
<tr>
<td>08/2009</td>
<td>rp</td>
<td>Changes in monthly controls</td>
</tr>
<tr>
<td>07.09.2009</td>
<td>rp</td>
<td>Adding history of modifications</td>
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<td>28.10.2009</td>
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<td>Amendment option hydrocontrol®</td>
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<td>31.03.2010</td>
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<td>Amendment notes for UV</td>
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<td>28.10.2009</td>
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<td>Amendment GFK-outdoor column</td>
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<td>Amendments to control systemklärcontrol®</td>
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<td>31.03.2010</td>
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<td>12.07.2011</td>
<td>md</td>
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<tr>
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<td>pb</td>
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# 12 Form for monthly user controls: klärcontrol®

<table>
<thead>
<tr>
<th>Date</th>
<th>Visual check</th>
<th>Operating hours</th>
<th>Cycles</th>
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<tr>
<td></td>
<td></td>
<td>Air blower</td>
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<td>Charging</td>
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<td></td>
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<td>Secondary</td>
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<td></td>
<td></td>
<td>Clear water</td>
<td>N</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>E</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F</td>
</tr>
</tbody>
</table>

- **Sludge output**: yes/no
- **Plugging inlet / outlet**: yes/no
- **Floating sludge**: yes/no

<table>
<thead>
<tr>
<th>Sludge output</th>
<th>Plugging inlet / outlet</th>
<th>Floating sludge</th>
<th>Air blower</th>
<th>Charging</th>
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</tr>
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**Notes of the operator:**

**Proof of maintenance (to be filled in by maintenance company):**

- **Technician**: 
- **Signature**: 
- **Remark**: 

---

Date of print: June 2013

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### 13 Form for monthly user controls: klärbox®

<table>
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<th>Date</th>
<th>Visual check</th>
<th>Operating hours</th>
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<td>no</td>
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</tbody>
</table>

### Notes of the operator:

- ...
- ...
- ...
- ...

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<th>Technician</th>
<th>Signature</th>
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</tr>
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