

Operating Instructions MicroPure Ultrapure Water System

Art. no.: 08.1202 (Standard)

Art. no.: 08.1204 (UV/UF)

Art. no.: 08.1203 (UF)

Art. no.: 08.1205 (UV)



Serial number:

It is imperative that you read these Operating Instructions prior to installing and operating this system!

29.0207; Stand: 01.09 Rights to technical changes reserved!

Firma
TKA Wasseraufbereitungssysteme GmbH
Stockland 3
56412 Niederelbert

EC Declaration of Conformity

acc. to Directive 98/37/EC
- Machines Directive -

We herewith declare that the design and construction of the machines named below, and the versions of it that we have introduced into the market, conform to the fundamental safety and health requirements of EC Directive 98/37/EEC.
This declaration loses its validity when changes which were not agreed to by us are made to the machines.

Description of the machines:	Ultrapure Water Systems
Machine types:	MicroPure Standard MicroPure UF MicroPure UV/UF MicroPure UV
Applicable EC Directives:	EC Machines Directive (98/37/EEC) EC Low Voltage Directive (73/23/EEC) EC Electromagnetic Compatibility Directive (89/336/EEC)
Standards applied:	DIN EN ISO 12100-1 DIN EN ISO 12100-2 DIN EN 1050 DIN EN 60204-1 DIN EN 55011 DIN EN 50082-2

Niederelbert, 30. November 2006


Authorized Manufacturer's Representative

Preface

Dear Sir or Madam

In deciding to purchase an ultrapure water system from the MicroPure series, you have selected a high-quality product.

Thank you for the confidence you have placed in us.

Before you start to install and work with your ultrapure water system, please carefully read the information that is given in these Operating Instructions on how it is to be installed and operated.

This is particularly important as we, the manufacturer, cannot accept liability for any damage occurring as a result of incorrect operation of this system or from use of it for other than the specified purpose.

Niederelbert, 30.11.2006

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2. Notes on the Operating Instructions



Safety precautions are marked by a warning triangle.



Particularly important notes are marked by an information sign.

The information given in these Operating Instructions is only valid for the system whose serial number has been entered on the front cover.



Please write the serial number* of your MicroPure system in on the front cover at the designated position.

* The serial number is printed on the type plate of your ultrapure water system.

It is important that you correctly state the following system data on all correspondence and orders for replacement parts:

- **The serial number.**
- **The article number.**

3. Transport and packaging

TKA Ultrapure water systems are carefully controlled and packed prior to dispatch, but damage could still possibly occur during transport.

3.1 Examination on receipt

- Check the completeness of the goods received against the delivery note.



Does the packaging show signs of damage?

- Inspect the system for damage.

3.2 Complaints

Should damage have occurred to the goods during transport:

- Contact the post, railway or forwarding agent immediately*.
- Save the complete packaging, including the cardboard box, for a possible inspection and/or return shipment).

3.3 Packaging and return shipment

If possible, use the original box and packaging material.

Should these no longer be available:

- Pack the goods in a suitable bag or sheet and a strong cardboard box that provides shock protection.



* **The time limit for claims is 6 days from the time of receipt of the goods. The right to claim for damages ceases when this time has elapsed.**

4. Parts supplied

MicroPure ultrapure water systems with a performance up to 1,5 l/min are available in the following versions:

08.1202	MicroPure	(Standard system)
08.1203	MicroPure UF	(Standard system + Ultrafiltration module)
08.1204	MicroPure UV/UF	(Standard system + UV-Photooxidation + Ultrafiltration module)
08.1205	MicroPure UV	(Standard system + UV-Photooxidation)

(Please check that the article number given on the delivery note agrees with that of the system you ordered.)

1x MicroPure (acc. to version, see above)	Article no. 08.120x
including an installation kit , consisting of:	
Filter cartridge	Article no. 09.1006
Sterile filter capsule 0.2 µm	Article no. 09.1003
Feedwater connecting kit, R 3/4"	Article no. 25.0075
Rinse water hose, 8 mm o.d., 3 m	Article no. 18.0036
Operating Instructions	Article no. 29.0207

5. Safety precautions



Observe the following safety precautions for your own safety!

- Your MicroPure series system is a modularly constructed ultrapure water system that serves exclusively to purify tap water of drinking water quality.
- Do not start to install and operate the system until you have read through the corresponding information contained in these Operating Instructions.
- Note that the manufacturer is freed from all damages that result from improper operation of the system, or from use of it for other than the intended purpose.
- The CE-Mark becomes invalid should constructional changes be made to the system, or products of other manufacturers be installed in it.
- Protect the system from frost. The temperature in the area in which the system is installed must be at least +2°C.
- Observe all appropriate regulations and requirements, including current accident prevention regulations, that are applicable at the area in which the system is installed.
- The feedwater pressure must be at least 0.1 bar and at most 6 bar. If the feedwater pressure is higher, install a reducing valve.
- Water purification systems require a safety device acc. to DIN EN 1717 to protect tap water from contamination.
- An appropriate electrical socket must be available for connection (see "Technical specifications").
- The installation area must have a drain at floor level with at least DN 50 pipe (40 mm o.d.). Should no such drain be available, we recommend that a water watcher (article no.: 16.0129) be installed for safety reasons. The manufacturer accepts no liability for damage caused by water overflows.
- When the system is to be wall-mounted, first check the statics of the wall. This must have a sufficient load-bearing capacity (see "Technical Specifications" for the weight).
- The maximum operating temperature is 35°C.
- Should neither a floor drain nor a water watcher be available, then proceed as follows when the system is to be at a standstill for a longer time (e.g. overnight, weekends, annual holidays):
 - **Switch the system off (unplug the mains plug).**
 - **Shut off the water feed line to the ultrapure water system.**Letting the system run with the water feed line closed would result in damage to the pump. The manufacture does not accept liability for such damage.
- When installing the ultrapure water system, ensure that there is sufficient working area for convenient operation of it (e.g. filter cartridge replacement, connections, etc.).
- The guarantee is valid for a period of 12 months!
- Never look directly into a switched-on UV-lamp, as UV-light endangers eyesight! The UV-lamp is only to be replaced by **TKA** or a person authorized by **TKA** to do so.

6. Intended purpose

Decisive for the development of the novel MicroPure ultrapure water systems were the continually increasing requirements that ultrapure water quality must fulfill, the ever stricter demands resulting from technological advances, and the need for user-friendly systems and complete solutions.

MicroPure systems have been specifically designed to produce ultrapure water that is free of particles, salts and organic compounds and is sterile filtered.

6.1 Application areas

- Analytical techniques in laboratories:

- HPLC (**H**igh **P**erformance **L**iquid **C**hromatography)
- IC (**I**on **C**hromatography)
- ICP (**I**nductive **C**oupled Argon **P**lasma)
- AAS (**A**tomically **A**bsorption **S**pectrophotometry)
- TOC-Analyse (**T**otal **O**rganic **C**arbon)
- etc.

- Reagent and solution preparation:

- Cell culture media
- Tissue culture media
- In-vitro fertilisation

- Cleaning water for high-purity rinsing processes in laboratories

7. Technical specifications

Demands made on the feedwater	
Source	Potable tap water pre-treated by reverse osmosis, ion exchange or distillation.
Feedwater conductivity	< 5 $\mu\text{S/cm}$
Free chlorine	max. 0.05 ppb
TOC-Value	max. 50 ppb
Turbidity	< 1.0 NTU
Carbon dioxide	max. 30 ppm
Silicate	max. 2 ppm
Pressure	0.1- 6 bar, with pressures > 6 bar, a pressure reducer must be installed upstream of the system.
Ambient temperature	+2 - +35 °C

Product water quality				
	Standard	UF	UV/UF	UV
Conductivity $\mu\text{S/cm}$	0.055	0.055	0.055	0.055
Resistance $\text{M}\Omega\text{cm}$ at 25°C	18.2	18.2	18.2	18.2
TOC ppb	5 - 10	5 - 10	1 - 5	1 - 5
Bacteria CFU/ml	< 1	< 1	< 1	< 1
Bacterial endotoxines EU/ml	--	0.001*	0.001*	--
Particles > 0.2 μm per ml	< 1	< 1	< 1	< 1
Flow rate l/min	1.5	1.0	1,0	1,5

* Dependent on feedwater and disinfection!

Dimensions	
Height:	545 mm
Width:	305 mm
Depth:	300 mm
Weight:	
MicroPure Standard	approx. 17 kg
MicroPure UF	approx. 17 kg
MicroPure UV/UF	approx. 17 kg
MicroPure UV	approx. 17 kg

Water connections	
Feedwater	Hose, 8 mm o.d./ R 3/4"
Rinse water	Hose, 8 mm o.d.

Electrical connections	
Voltage	230 V
Frequency	50/60 Hz
Power consumption	approx. 100 W

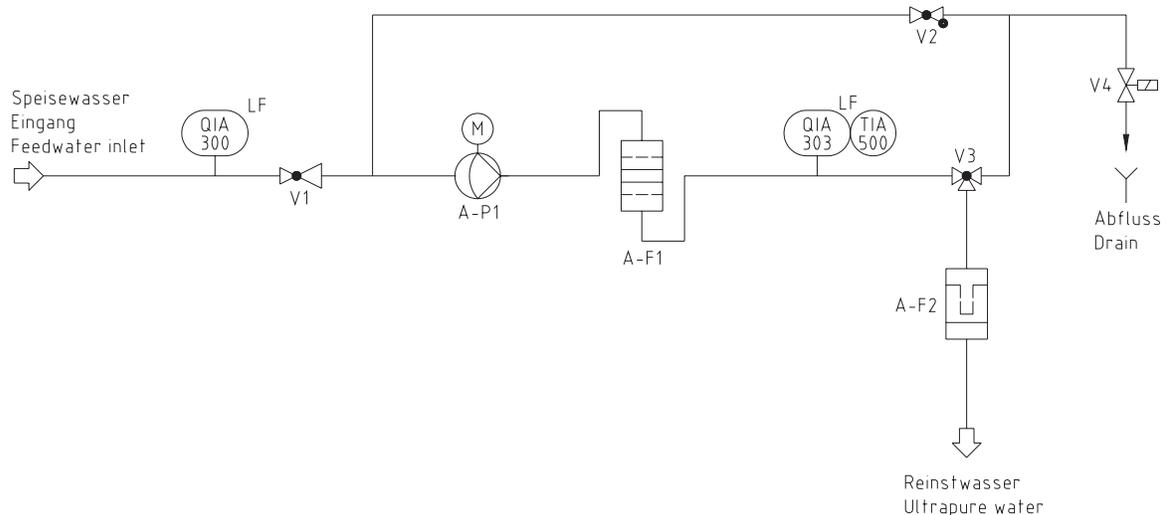
Materials of parts that contact water	
Pump head	Nylon with glass fibre
UV-lamp	High-purity synthetic quartz
UV-Housing	Stainless steel
Filter cartridge	PP
UF-Housing	Polycarbonate
Solenoid rinsing valve	PA
Pressure reducer	VA, EPDM
Dispensing valve	POM
Conductivity measuring cell	PVC, Stainless steel
Connections	POM
Hoses	PE
Gaskets	EPDM
Sterile filter	PP, PE, PSU

8. How MicroPure systems function

MicroPure Standard, UF, UV/UF, UV

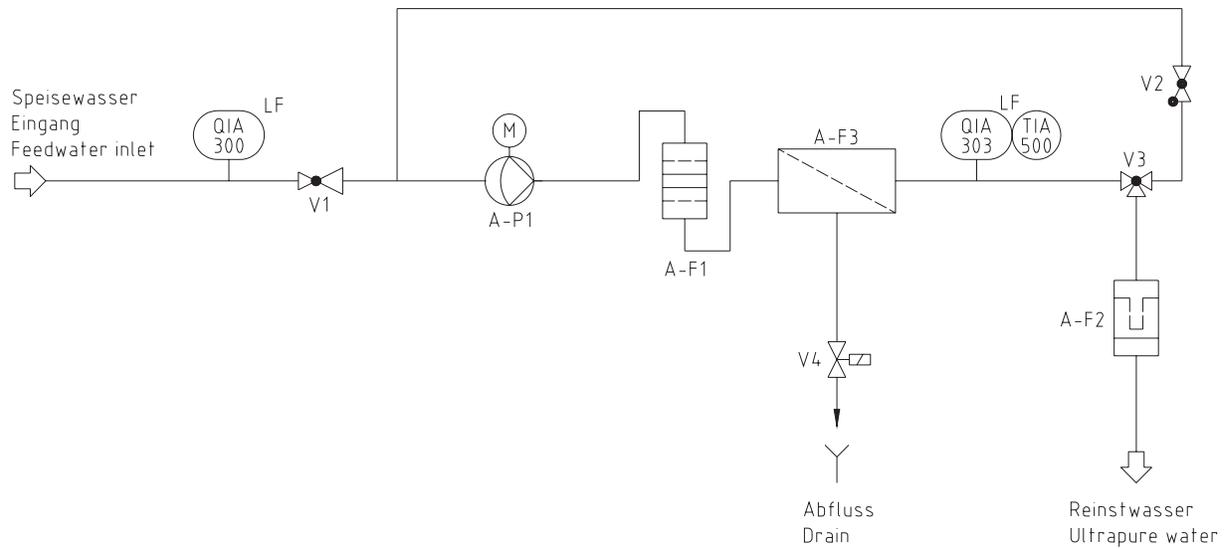
Tap water that has been subjected to pre-treatment (by reverse osmosis, ion exchange or distillation) flows through a pressure reducer and into the ultrapure water system, where the electrical conductivity is monitored. A pump forces this feedwater through UV-photooxidation (with MicroPure UV and MicroPure UV/UF only) and a filter cartridge. Following this, the water is further pumped through an ultrafiltration module (with MicroPure UF and MicroPure UV/UF only) and on through a special conductivity measuring cell equipped with temperature compensation that measures continuously. When treated water is dispensed, it flows through a sterile filter and out through the ultrapure water outlet. During "Interval" operation, the water in the system is re-circulated through an internal circuit at regular time intervals.

8.1 Flow chart, MicroPure Standard



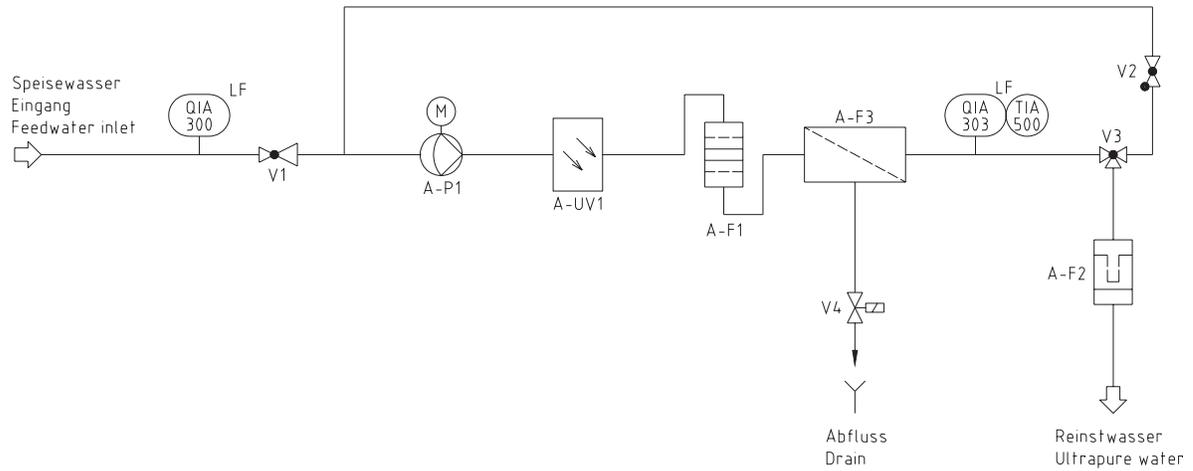
A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Solenoid rinsing valve

8.2 Flow chart, MicroPure UF



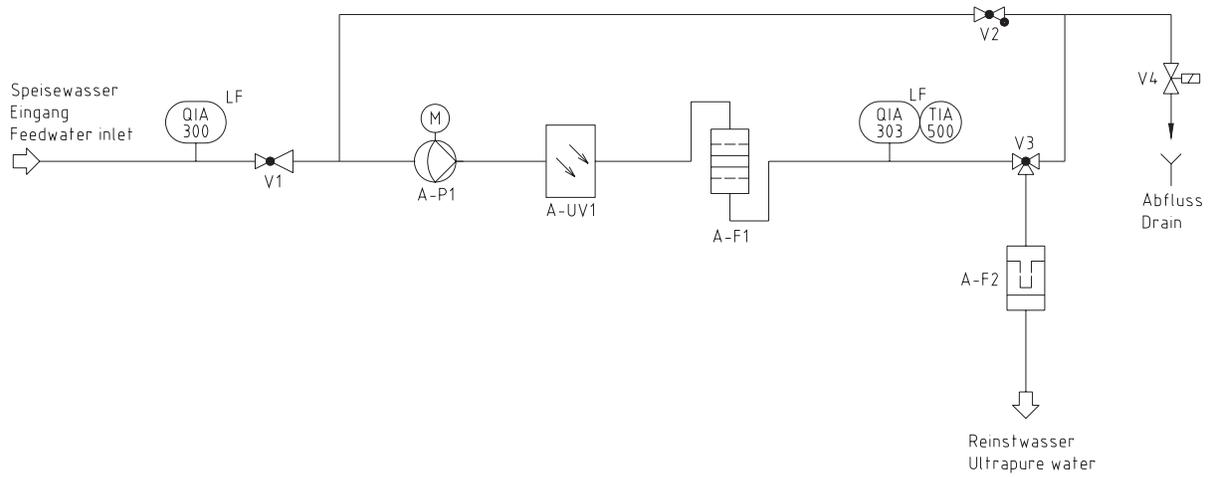
A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Solenoid rinsing valve

8.3 Flow chart, MicroPure UV/UF



A-F1	Filter cartridge
A-F2	Sterile filter
A-F3	Ultrafiltration module
A-P1	Circulation pump
A-UV1	UV-photooxidation
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Solenoid rinsing valve

8.4 Flow chart, MicroPure UV



A-F1	Filter cartridge
A-F2	Sterile filter
A-P1	Circulation pump
A-UV1	UV-photooxidation
QIA 300	Feedwater conductivity
QIA 303	Ultrapure water conductivity
TIA 500	Temperature sensor
V1	Pressure reducer
V2	Check valve
V3	Dispensing valve
V4	Solenoid rinsing valve

9. Installation

9.1 The installation area

The following criteria must be taken into consideration when selecting the installation area:

- Feedwater pressure at least 0.1 bar, max. 6 bar.



The feedwater pressure must not be allowed to go above 6 bar. With higher feedwater pressure, a pressure reducer must be additionally installed.

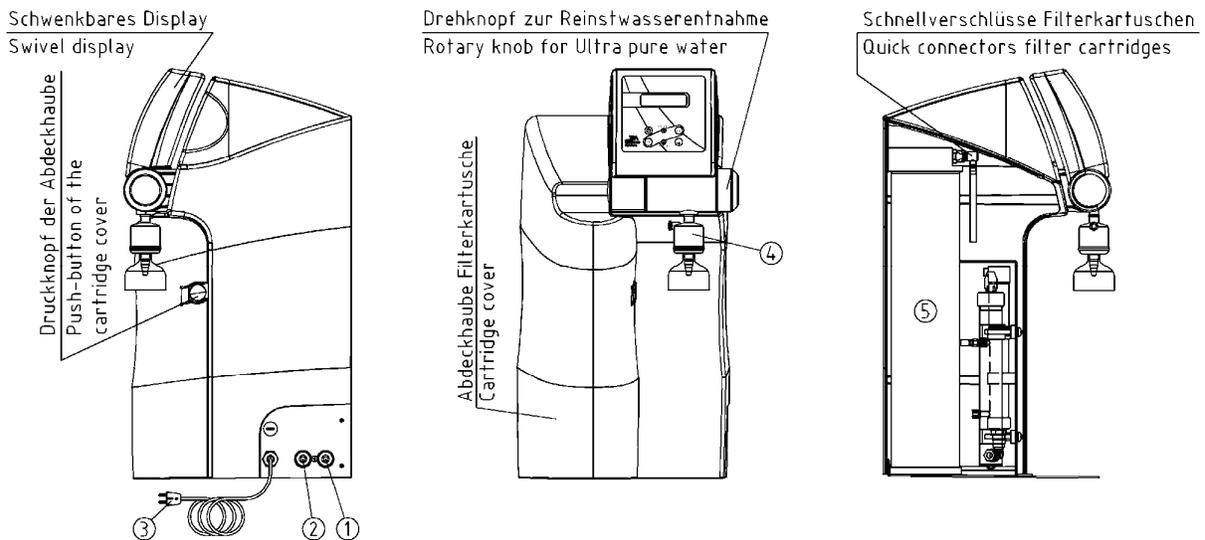
- Minimum temperature + 2°C .
- Level standing surface
- A smooth wall for wall-mounting. Check the statics of the wall, which must be strong enough to hold the system (for system weight, see "Technical Specifications").
- A floor drain with a DN 50 size (38.5 mm i.d.) waste pipe.
- Free running to drain
- Should no floor drain be available, then a water watcher (article no.: 16.0129) must be installed to guard against water damage!



Unrestricted gravity flow to drain is an absolute necessity!

- An electrical socket appropriate for operation of the system (see "Technical Specifications").
- Sufficient working room around the system (for replacing filters etc.).
- Easy operating and controlling of the system is allowed
- An R 3/4" thread tap water connection "

9.2 Installation



- | | |
|--------------------------|-----------------|
| 1) Feedwater connector | Hose, 8 mm o.d |
| 2) Rinse water connector | Hose, 8 mm o.d. |
| 3) Mains plug | |
| 4) Sterile filter | |
| 5) Filter cartridge | |

Proceed as follows to install and start your MicroPure ultrapure water system:

- Either stand the system at the intended location, or hang it on the wall using the wall-mount that is available as an accessory.
- Press the push-button of the cartridge cover to unlock the cover. Remove the cover.
- Remove the stoppers from the filter cartridge (5) standardly supplied and save them for possible return of the spent filter cartridge (only when **TKA** is to carry out waste disposal).
- Fit filter cartridge (5) in the free space at the back of the compartment, then plug the 2 quick-connect couplings onto the filter cartridge connections so that they audibly snap into position..
- Now take the R3/4" feedwater hose kit and make connection to feedwater connector (1).
- Fit the dirt-trap sieve (hose kit) in the 3/4" threaded connector of the feedwater hose, then screw this connector onto a water tap that can be turned off.
- Use the 8 mm o.d. rinse water hose supplied to make a pressureless connection from the system (2) to the waste drain.
- If needed, screw the sterile filter standardly supplied into the outlet of the dispensing valve (R 1/4" female thread).

- Plug the mains plug of the system into a 230V/60Hz earthed socket.
- The system is now ready to operate.
- Open the water tap to supply feedwater and check that the connections are leak-free.
- Replace the cartridge cover, ensuring that the catch on the right side of the cover locks into position.

10. Preparing the system for operation



The system must have warmed up, or cooled down, to room temperature prior to the first start-up.



Check that all connections have been made as described in the "Installation" section.



Switch the system on by pressing the "ON/OFF"-key. The system goes to the last used operating mode after an obligatory rinse.

NONSTOP



Use the "NONSTOP"-key to set the system to "NONSTOP" mode and allow it to run in this mode.



The "**Cleaning**" operating mode must be triggered to vent air out of the system (see "Cleaning"). Following this, dispense 5 litres of ultrapure water. The limiting value might be exceeded during this run-off (see "Limiting value for ultrapure water").

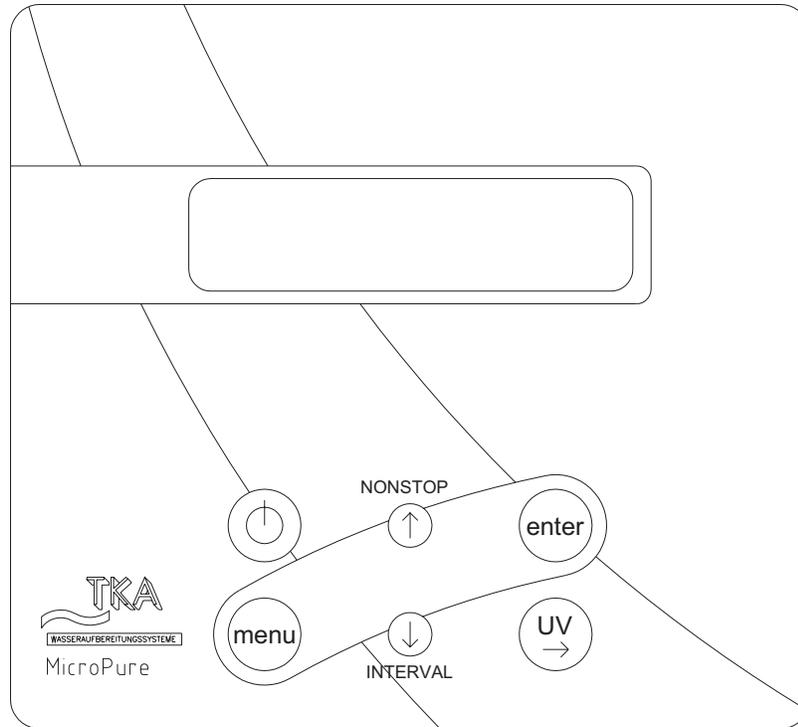
The system is now ready for use.

10.1 Venting the sterile filter



To air-vent the sterile filter, turn the milled screw on this filter anti-clockwise to open it, wait until ultrapure water flows out of vent outlet, then turn the screw clockwise to close it. The sterile filter has now been vented.

11. Operating elements



Switches the system on or off.

NONSTOP



Switches to NONSTOP-mode for dispensing.
In menu, increases a number value.



Confirms the numerical value entered in
a menu prompt.



Calls the menu and switches to the next
menu prompt.



INTERVAL

Switches to INTERVAL-mode.
In menu, reduces a numerical value.



Switches the UV-lamp on.
In menu, serves to select the number to be changed.

12. System control

General information

Your MicroPure ultrapure water system MicroPure offers the following operating modes:

- „NONSTOP“
- „INTERVAL“
- „Disinfection“

NONSTOP:

A press on the "ON/OFF"-key causes the system to run in the "NONSTOP" operating mode. In this mode you can dispense treated water via the dispensing valve/sterile filter. The conductivity and the temperature of the ultrapure water, and the operating mode, are permanently shown in the display.

When the "NONSTOP"-key is now pressed, the system switches to the "NONSTOP" mode, the pump is started and the solenoid rinsing valve opens for the set rinsing time. "NONSTOP" operation can be stopped by pressing the "INTERVAL"-key. After a wait of 2-hours, the system switches itself to the "INTERVAL" mode.

A press on the "UV"-key brings "UV on" in the display. The UV-lamp is only switched on when the system is in the "NONSTOP" mode, however. The UV-lamp switches itself off when the "NONSTOP" mode is ended.

INTERVAL:

In this mode, the treated water is re-circulated after a certain given time to prevent possible re-ionization of the treated water.

The "INTERVAL" mode is automatically started every 0.5 hours for the period of the interval pump time to ensure maintenance of the quality of the ultrapure water.

Disinfection:

See the „Disinfection“ section.

User menu

In this menu, all measured values, operating times and limiting values that are user-relevant can be set and read.

To reach this menu, press the "menu"-key (2 sec). To reach the next menu prompt, press the "menu"-key again.

Settings can be changed using the arrow-keys. When the entry has been confirmed with "enter", then the next menu prompt appears.

12.1 Menu

12.1.1 Feedwater conductivity

A single press on the "menu"-key allows the limiting value for the feedwater conductivity to be reset:

Feedwater measuring range:	0.1- 100 $\mu\text{S}/\text{cm}$
Limiting value setting range:	1- 100 $\mu\text{S}/\text{cm}$
Basic setting:	2 $\mu\text{S}/\text{cm}$

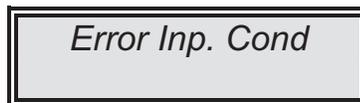
The display shows:



Inp. Cond (0.1)
2.0 μS

The „Error Inp. Cond“ message flashes should the limiting value be exceeded.

The display shows:



Error Inp. Cond

12.1.2 Ultrapure water limiting value

Pressing the "menu"-key twice allows the limiting value for ultrapure water to be reset:

Ultrapure water measuring range:	0.055- 20 $\mu\text{S}/\text{cm}$
Limiting value setting range:	0.055- 5 $\mu\text{S}/\text{cm}$
Basic setting:	0.1 $\mu\text{S}/\text{cm}$

The display shows:



Permeate Conduct.
0.10 μS

The „Error Permeat Cond“ message flashes should the limiting value be exceeded.

The display shows:



Error Permeat Cond

12.1.3 Cleaning

A fourth press on the "menu"-key gives you the opportunity to have the system rinsed. To trigger this, confirm with the "enter"-key. The pump is started and the solenoid rinsing valve opens for the set rinsing time.

Neither faults nor measured values are displayed during the cleaning. The rinsing time that remains is counted down in the display.

The display shows:



Cleaning
are you sure ?

After confirmation with the „enter“-key, the display shows „Cleaning Confirm ?“.

The display shows:



Cleaning
Confirm ?

12.1.4 Disinfection



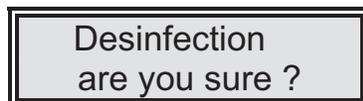
Please observe the directions given in the „Disinfection“ section of these Operating Instructions.

A sixth press on the "menu"-key gives you the opportunity to have disinfection carried out. When this prompt is confirmed with the "enter"-key, which brings the request "Insert disinfection cartridge" to display. Should this be confirmed with "enter", then disinfection is carried out. The pump runs for the whole of the set disinfecting time. When the half of the set disinfecting time has elapsed, the solenoid rinsing valve additionally opens and keeps open until the disinfection process is finished. The message "Disinfection ended replace cartridge" is shown.

Confirmation of this with "enter" returns the system to the last operating mode.

During disinfection, the disinfecting time that remains is counted down in the display.

The display shows:



Desinfection
are you sure ?

After confirming with „enter“, the display shows:



Desinf. Kart.
einsetzen

During disinfection/rinsing the display shows:

Desinfection
15 00

During rinsing the display shows:

Des. Ausspuelen
15 00

After disinfection, the display shows:

Desinf. beendet
Betr. Kart. ein.



Please note that the disinfection program takes 30 minutes and cannot be interrupted



You need a TKA disinfection cartridge, article no. 09.1102, to carry out the disinfection program.

Use MICRO-Chlor granulate, article no. 09.2202, as disinfectant.



To avoid possible health hazards when handling MICRO-Chlor granulate disinfectant, please be sure to observe the precautions that are given in the Safety Data Sheet provided with it!

12.2 OEM-Menu

Basic settings and limiting values can be changed in this menu.

Calling the OEM-menu:

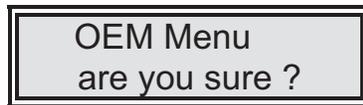
To reach this menu, press both the "NONSTOP"-key and the "INTERVAL"-key (hold them depressed for 2 seconds). The display shows "OK". Stop pressing the keys. The "OEM-Menu are you sure?" query appear. On confirming this query with "enter", the first menu prompt can be worked on.

Use the arrow keys to increase or decrease preset values. Press the "menu"-key to pass to the next program prompt.

The display shows:



The display shows:



12.2.1 Service life of the UV-lamp

Basic setting: 3000 h
Setting range: 100 – 10000 h

The display shows:

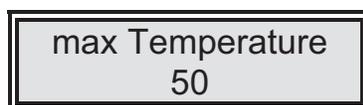


12.2.2 Set the limiting temperature value

In this menu, the maximum temperature that is permissible for the system is set. Should this limiting value be exceeded, then the fault message "max. Temperature" is triggered.

Basic setting: 50 °C
Setting range: 2 - 110 °C

The display shows:



12.2.3 Change the cleaning time

Basic setting: 15 min.
Setting range: 1 - 60 min.

The display shows:

A rectangular display box with a double border. The text inside reads "Clean Time" on the top line and "15min" on the bottom line.

Clean Time
15min

12.2.4 Set the interval pump time

Basic setting: 10 min.
Setting range: 1 - 29 min.

The display shows:

A rectangular display box with a double border. The text inside reads "Pump Time on" on the top line and "10min" on the bottom line.

Pump Time on
10min

12.2.5 Set the interval rinsing time 1zS = 1/10 sec.

Basic setting: 5zS
Setting range: 1zS – 25zS

The display shows:

A rectangular display box with a double border. The text inside reads "Int Clean 1/10s" on the top line and "5zS" on the bottom line.

Int Clean 1/10s
5zS

13. Maintenance

Regular maintenance safeguards the value of your system. We recommend that you close a service contract with **TKA** or a service company expressly authorized by **TKA**. You then have the assurance that the high operational safety and reliability of your ultrapure water system is maintained.

NOTE!

When your ultrapure water system is to work reliably for a long time, it must be checked, serviced and cared for at regular time intervals in accordance with these operating instructions! For this reason, the operating instructions must at all times be readily available to operating and maintenance staff and be carefully followed!

Please observe that, in accordance with the general terms and conditions of business of the **TKA** company which are the basis for both parties, the guarantee loses its validity when the customer or a third party improperly installs, maintains, repairs, operates or alters the ultrapure water system, or operates it in an environment which does not fulfil the installation conditions specified by **TKA**.

Any maintenance work which should become necessary during the validity of the guarantee is only to be carried out by **TKA**, or by a customer service which is expressly authorized by **TKA** to do this.

The operating staff assigned is committed to carry out daily/weekly controlling. During the agreed term of validity of the guarantee, maintenance is to be carried out weekly according to the maintenance record sheet supplied with the operating instructions.

Should the maintenance protocol not kept up-to-date, or be improperly kept, i.e. without the necessary establishment of data, then the system is deemed to be improperly maintained and the guarantee is correspondingly invalidated.



To ensure flawless functioning, the ultrafiltration membrane is to be replaced every two years, or when it is subject to a drop in performance. The cleaning and disinfection of your ultrapure water is carried out for reasons of hygiene and has no effect on the technical condition of it. The system is to be cleaned and disinfected at least once per year.



Control or maintenance work involving electrical equipment is only to be carried when the ultrapure water system has been separated from the mains by unplugging the mains plug and has been safeguarded against re-connection. Such work is only to be carried out by skilled electricians.

13.1 Replacing the filter cartridge



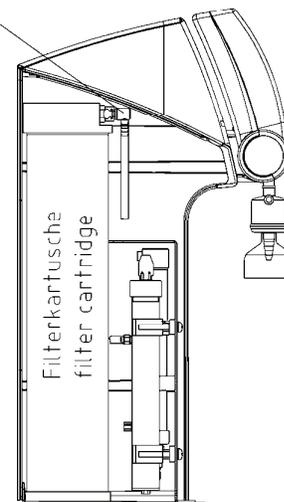
The filter cartridge must be replaced when the limiting value that you have set for the ultrapure water is exceeded, or after the system has been subject to disinfection.

Proceed as follows to replace the filter cartridge:

Remove the stoppers from the new filter cartridge and save them for later use.

1. Switch the system off.
2. Separate the system from the mains by unplugging the mains plug.
3. Turn off the supply of feedwater.
4. Open the dispensing valve until no more water flows out, then close the valve again.
5. Remove the cartridge cover.
6. Remove the quick connects from the filter cartridge feedwater inlet and purified water outlet. Close the connectors with the stoppers that you have kept for later use.
7. Draw the spent filter cartridge out of the guide and replace it with the new filter cartridge.
8. Remove the stoppers from the new filter cartridge and save them for later use.
9. Fit the quick connects properly to the new filter cartridge inlet and outlet so that they audibly lock.
10. Open the feedwater tap.
11. Re-connect the system to the mains.
12. Switch the system on and check connections for leaks.
13. Put the cartridge cover back on.
14. Run off and discard at least 5 litres of water.

Schnellverschlüsse Filterkartuschen
Quick connectors filter cartridges



Switch the system to the „*Cleaning*“ operating mode to vent air out of it.



The filter cartridge is to be replaced when the ultrapure water limiting value is exceeded. Longer usage could lead to bacterial growth on resins.

13.2 Disinfection



Disinfection should be regularly carried out, at the latest when the filter cartridge is to be replaced.
Your system should be cleaned and disinfected at least once a year to eliminate any bacteria that are possibly in the system. We recommend that you carry out cleaning and disinfection shortly before the time that the filter cartridge is to be replaced.

To carry out disinfection of your system, you need a TKA disinfection cartridge, article no. 09.1102.

As disinfectant, use MICRO-Chlor granulate, article no. 09.2202.



To avoid possible health hazards when handling MICRO-Chlor granulate disinfectant, please be sure to observe the precautions that are given in the Safety Data Sheet provided with it!

Proceed as follows to disinfect your system:

1. Switch the system off.
2. Separate the system from the mains by unplugging the mains plug.
3. Open the dispensing valve until no more water flows out, then close the valve again.
4. Remove the filter cartridge (as under "Replacing the filter cartridge" above).
5. Screw the disinfection cartridge closure plug off, fill the disinfection cartridge with water and add the contents of a can of MICRO-Chlor.

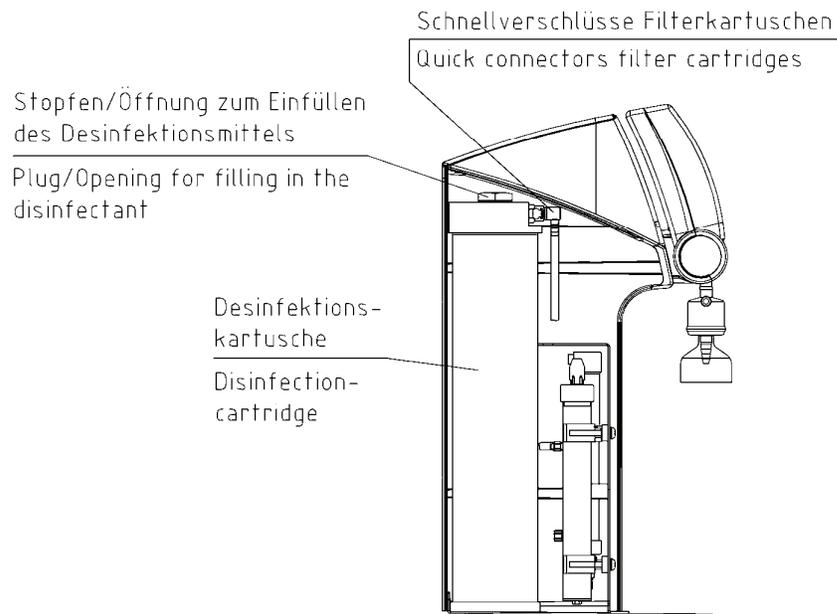
Important:

The disinfection cartridge must be completely filled with water for successful disinfection.

6. Screw the disinfection cartridge closure plug back on and fit the disinfection cartridge in position (as under "Replacing the filter cartridge" above).
7. Open the feedwater tap.
8. Re-connect the system to the mains.
9. Switch the system on and select the "Disinfection" prompt in menu. The disinfection program is finished after about 30 minutes.
10. Switch the system off.
11. Open the dispensing valve until no more water flows out, then close the valve again.
12. Remove the disinfection cartridge (as under "Replacing the filter cartridge" above).
13. Fit the new filter cartridge in position (as under "Replacing the filter cartridge" above).



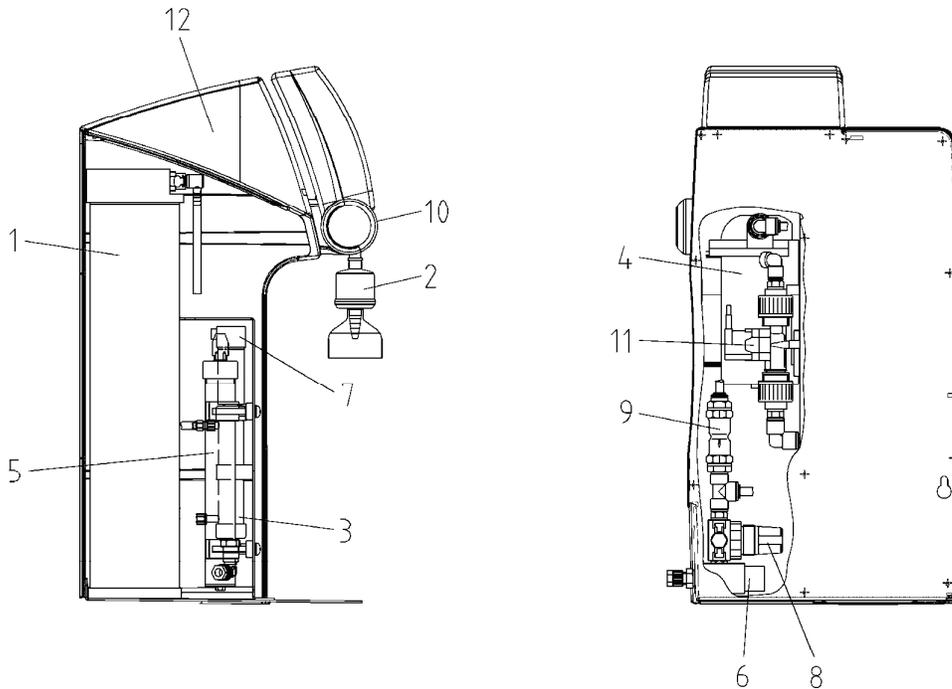
Run off and discard at least 5 litres of water. The system is now ready to again provide ultrapure water.



14. Trouble shooting

Fault	Cause	Remedy
System does not start	<ul style="list-style-type: none"> - No current - System control defect 	<ul style="list-style-type: none"> - Connect to power supply - Replace system control
Water cannot be dispensed	<ul style="list-style-type: none"> - Feedwater supply is closed - Feedwater and rinse water connections are wrong way round - Feedwater pressure too low 	<ul style="list-style-type: none"> - Feedwater tap öffnen - Reverse the connections - Increase feedwater pressure
Conductivity > 0.055 µS/cm	<ul style="list-style-type: none"> - System has a UF-module (possibility of higher conductivities) - Ion exchange capacity exhausted 	<ul style="list-style-type: none"> - Install a new filter cartridge
System control no longer reacts	<ul style="list-style-type: none"> - Improper user-operation - Voltage disturbance 	<ul style="list-style-type: none"> - Pull the mains plug out for 5 seconds
Water leaks out	<ul style="list-style-type: none"> - Leaky hose connection - Feedwater pressure > 6 bar - Defect component (e.g. UV-quartz tube) 	<ul style="list-style-type: none"> - Check and seal hose connection - Install upstream pressure reducer - Replace component
„Inp. Cond.“ Display flashes	<ul style="list-style-type: none"> - Feedwater limiting value exceeded 	<ul style="list-style-type: none"> - Check the upstream water pre-treatment
„Error Cond.“ flashes	<ul style="list-style-type: none"> - Ion exchange capacity exhausted 	<ul style="list-style-type: none"> - Install new filter cartridge (Art.-no.: 09.1006)
Volume that can be dispensed is too small	<ul style="list-style-type: none"> - UF-Module blocked - Sterile filter blocked - Air in the sterile filter 	<ul style="list-style-type: none"> - Replace the UF-module - Replace the sterile filter - Vent the sterile filter

15. Replacement parts and consumables



Pos.	R+I Nr.	Designation	Article no.
1	A-F1	Filter cartridge	09.1006
2	A-F2	Sterile filter	09.1003
3	A-F3	Ultrafiltration module	22.0089
4	A-P1	Circulation pump	19.0066*
5	A-UV1	Replacement UV-lamp UV-Booster	09.1002 22.0086
6	QIA 300	Feedwater conductivity measuring cell	16.0126
7	QIA 300 TIA 500	Ultrapure water conductivity measuring cell Temperature sensor	16.0143
8	V1	Pressure reducer	15.0109
9	V2	Check valve	15.0019
10	V3	Ultrapure water dispensing valve	25.0068
11	V4	Solenoid rinsing valve	15.0016*
12		System control	26.0028

* Wearing part



We ask for your understanding that the guarantee that we give becomes invalidated when replacement parts, accessories or consumables from other manufacturers are used in or for the system, as we have no influence on their appropriateness, composition or quality.

16. Accessories

Bezeichnung	Artikel - Nr.
Pre-treatment	09.2000
Disinfection cartridge	09.1102
Disinfectant, MICRO-Chlor (Pack of 12 cans)	09.2202
Wall mount	09.2212
Water watcher	16.0129

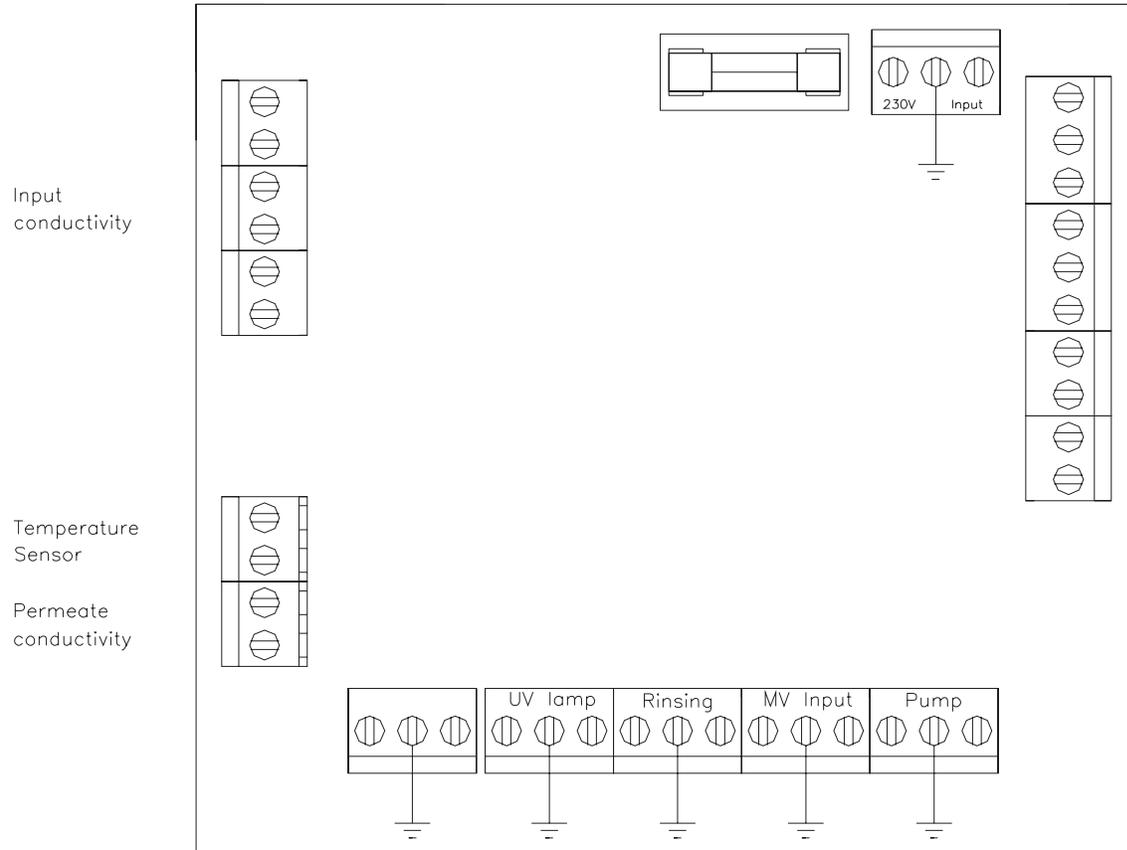
The address to contact should you need service:

TKA Wasseraufbereitungssysteme GmbH
Stockland 3

D-56412 Niederelbert

Tel. No.: (0 26 02) 1 06 99-0
Fax-No.: (0 26 02) 1 06 99-50
Internet: www.tka.de
E-Mail: info@tka.de

17. Terminal assignment



18. Maintenance record

(Please keep this carefully updated, as correct keeping of this maintenance record is a condition of the guarantee)

Address of customer: _____ **Location:** _____ **Type of system:** _____

 _____ **Serial-no.:** _____
 _____ **Year made:** _____

Date	Conductivity of feedwater [μS/cm]	Conductivity of ultrapure water [μS/cm]	Quantity of ultrapure water [l/h]	Temperature [°C]	UV-Lamp operating hours [h]	Last filter cartridge replacement	Last time cleaned and disinfected

Last replacement of pretreatment	Remarks	Signature

Any false entry is considered to constitute a falsification of documents.

The following points are to be observed to assure the quality of the system:

- 1x / Weekly, acquire measured values.

To ensure an optimal ultrapure water quality, the water pre-treatment must be regularly subjected to control and maintenance.