

Operating Instructions Pacific PW

- [] Art. no.: 05.8503
- [] Art. no.: 05.8506
- [] Art. no.: 05.8512

- [] Art. no.: 05.8520
- [] Art. no.: 05.8540



Serial no.:

Read these Operating Instructions prior to system installation and start-up!

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Company
TKA Wasseraufbereitungssysteme GmbH
Stockland 3
D-56412 Niederelbert

EC Declaration of Conformity

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

We herewith declare that the design and construction of the machine 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/EC.

This declaration becomes invalid when changes which were not agreed to by us are made to the machine.

Description of the machine:	Pure water system
Machine type:	Pacific PW
Article number:	05.8503 – 05.8540
Applicable EC Directives:	EC Machines Directive (98/37/EC) EC Low Voltage Directive (2006/95/EC) EC Electromagnetic Compatibility Directive (2004/108/EC)
Standards applied:	DIN EN ISO 12100-1 DIN EN ISO 12100-2 DIN EN 60204-1 DIN EN 55011 DIN EN 50082-2

Niederelbert, 30 October 2007


Authorized Manufacturer's Representative

Preface

Dear Sir or Madam,

In deciding to purchase a pure water system of type **Pacific PW** you have selected a high-quality product.

Thank you for the confidence you have placed in us.

Before you start to install and operate your pure water system, please carefully read the information given in these Operating Instructions on how installation and operation are to be properly carried out.

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

Niederelbert, 12 November 2007

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2. Notes on the Operating Instructions



Danger notes are emphasized with a warning triangle.



Important notes are marked with an information sign.

The information provided in these Operating Instructions is only valid for the system whose serial number is written in on the front page.



Please write in the serial no.* of your Pacific PW system on the front of these Operating Instructions.

* The serial number is given on the type plate of your pure water system.

It is important that you state the following numbers on all inquiries and replacement part orders:

- **Serial no.**
- **Article no.**

3. Transport and packaging

TKA Pure water systems are carefully checked and packed prior to shipment, but there is nevertheless always a possibility that damage could occur to them during shipment.

3.1 Examination on receipt

- Check the completeness of the delivery against the shipping papers.



Is the packaging damaged ?

- Check the system for damage.

3.2 Complaints

Should the system have been damaged during transport:

- Immediately contact the post office, railway or forwarding agent*.
- Keep the packaging, including the outer cardboard box, for a possible inspection and/or return shipment.

3.3 Packaging and return shipment

Whenever possible use the original packaging and packing materials.

Should these no longer be available:

- Pack the system in packing film and then in a strong cardboard box so that it is held shock-proof.



*** Complaints are only valid for 6 days (after receipt of the goods).
After this time, the right to claim for damages expires.**

4. Safety precautions

- The Pacific PW system is a modularly constructed pure water system that is to be used solely to purify tap water.
- Do not start or operate the system until you have read through the corresponding information that is given in these Operating Instructions.
- Note that the manufacturer is freed from all liability for damages that result from improper operation of the system, or from use of it for other than the intended purpose.
- The CE-Mark is invalidated 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 room where it is installed must be at least +2°C and at most + 35°C.
- Observe all regulations and requirements that are in force at the area in which the system is installed, the statics of the flooring (see „Technical specifications“ for the weight) as well as the valid accident regulations.
- The feedwater pressure must be at least 1.5 bar and at most 6 bar. Should the feedwater pressure be higher, then install an additional pressure reducer.
- DIN EN 1717 requires that water purification systems be equipped with a safety device that protects the drinking water system from contamination.
- A 230V/50Hz electric safety socket with earth contact must be available.
- The installation area must have a drain at floor level with at least DN 50 pipe, otherwise the manufacturer will not accept any liability for water damage. Should no such drain be available, then a water watcher (article no. 16.0129) must be installed.
- Gravity fall to the waste drain must be ensured.
- After long standstill periods (e.g. company holidays), the system must be subjected to cleaning and, if appropriate, disinfection. Refer to the "Cleaning and disinfection" section for details.
- When selecting the installation area and installing the system, make sure that there is sufficient working area around the system for convenient operation of it.
- Never look directly into a switched-on UV-lamp, as UV-light is dangerous to eyesight. The UV-lamp is only to be replaced by TKA or by a person authorized by TKA to do so.
- The guarantee is valid for a period of 12 months.

! For your own safety, please observe these safety precautions!

5. Extent of delivery

The Pacific PW pure water system consists of:

1 x Pacific PW	Article no.: 05.85__
1 x Assembly kit consisting of:	Article no.: 25.0098
2 x PVC connecting hose, 1.5 m, straight/angled	Article no.: 18.0042
1 x Pure water hose, 8mm o.d., 2 m	Article no.: 18.0036
2 x Screw hook with dowel	Article no.: 21.0057, 21,0035
1 x Operating Instructions	Article no.: 29.0237



Please check the parts delivered against this list. Contact the manufacturer should a part be missing.

6. Technical specifications

Demands on the feedwater	
Source	Potable tap water that has been softened or hardness stabilized.
Silt density index (SDI)	< 5, With higher values, a pretreatment (article no. 09.4000) must be installed upstream of the system
Conductivity	< 1500 $\mu\text{S}/\text{cm}$
Prefiltration	5 μm + activated carbon
Free chlorine	< 0.1 mg/litre
Manganese content	< 0.05 mg/litre
Iron content	< 0.05 mg/litre
Colloid index	< 3
pH-Range	4 - 11
Temperature	2 - 35 °C
Pressure	1.5 - 6 bar

Pure water quality						
	Pacific	PW 3	PW 7	PW 12	PW 20	PW 40
Salt retention quota	%	Ø 98	Ø 98	Ø 98	Ø 98	Ø 98
Retention quota for bacteria and particles	%	99	99	99	99	99
Performance	L/h	3	7	12	20	40

Dimensions	
Height	603 mm
Width	372 mm
Depth	330 mm
Weight:	
Pacific PW 3	21 kg
Pacific PW 7	21 kg
Pacific PW 12	21 kg
Pacific PW 20	21 kg
Pacific PW 40	22 kg

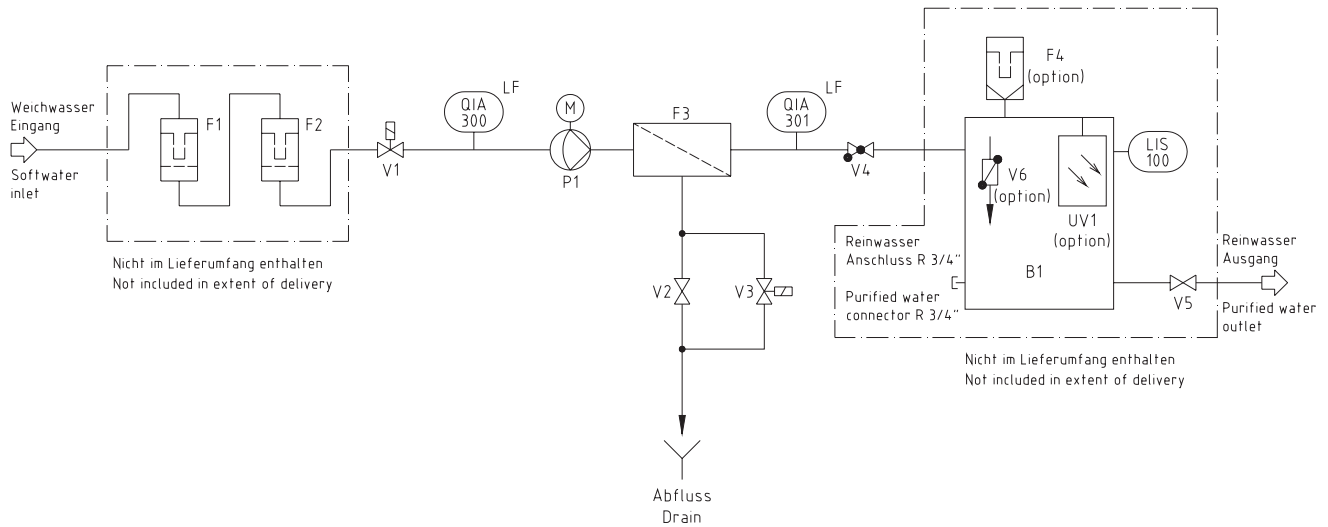
Cell constants of the measuring cells	
Feedwater conductivity	0.16 cm^{-1}
Permeate conductivity	0.16 cm^{-1}

Water connections	
Raw water inlet	R 3/4"
Concentrate outlet	R 3/4"
Pure water outlet	Hose, 8 mm o.d.

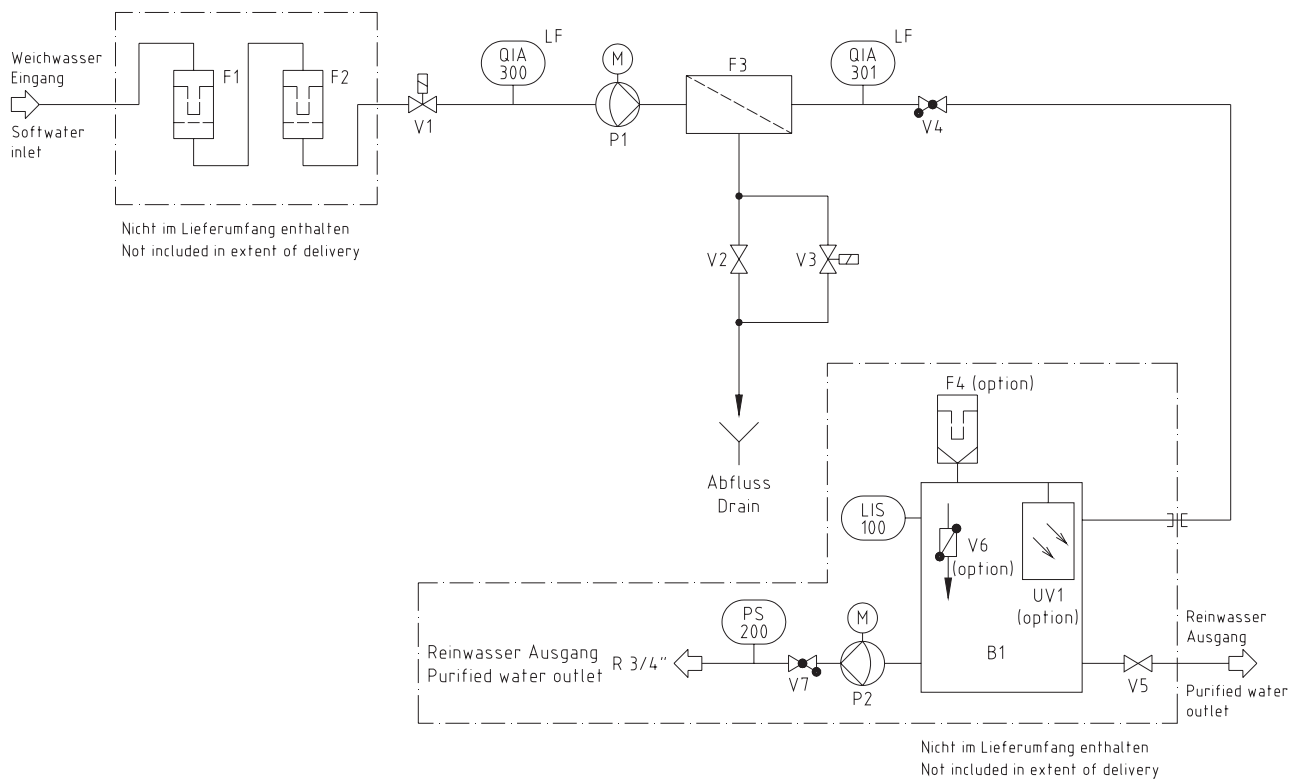
Electrical connections	
Voltage	230 V
Frequency	50/60 Hz
Power consumption	approx. 100 W
Serial interface	RS 232

7. Flow chart

7.1 Flow chart, tank without pump



7.2 Flow chart, tank with pump



B1 Storage tank:	Stores the pure water that is produced.
F1 5µm Prefilter + activated carbon	Prevents the entry of particles > 5µm and guards against too high free chlorine concentrations.
F2 Hardnes stabilization	Binds calcium and so prevents precipitation of it.
F3 RO Module:	Semi-permeable thin-film composite spiral wound membrane.
F4 Sterile vent filter (option)	Prevents the entry of bacteria and particles > 0.2 µm with drawn-in air.
LIS100 Float switch:	Detects the filling level in the storage tank.
P1 Pressure booster pump:	Increases the inlet pressure to the required working pressure.
P2 Pressure pump:	Pumps water through the pressure switch to the user.
PS 200 Pressure switch::	Switches the pressure pump off when no water is being drawn from the tank.
QIA300 Conductivity measuring cell, raw water:	Measuring device for determination of the conductivity as a parameter that indicates the raw water quality.
QIA301 Conductivity measuring cell, pure water:	Measuring device for determination of the conductivity (after RO) as a parameter that indicates the pure water quality
UV1 UV-Disinfection: (option)	Reduces the bacterial content in the water and serves to prevent bacterial growth and biofilm formation on the inside surfaces of the storage tank.
V1 Raw water solenoid valve:	Is closed during stand-by and during standstills. It prevents water flowing into the system when the system is not in operation.
V2 Pressure hold valve:	Serves to adjust the working pressure and the WCF rate.
V3 Rinsing solenoid valve:	Opens for the cleaning of the membrane, before pure water production, after pure water production and at least every 12 hours.
V4 Check valve:	Prevents running dry of the measuring cell (QIA301).
V5 Dispensing valve	For withdrawal of pure water from the storage tank (B1).
V6 Sterile overflow: (option)	Prevents the entry of bacteria and germs.
V7 Check valve:	Prevents water backflow into the tank.

7.3 How the system functions

After switching the ON/OFF-key to on, the system starts either in the production mode or stand-by mode, according to the filling level in the storage tank.

Feedwater flows into the system under a maximum pressure of 6 bar.

Raw water solenoid valve (V1) is closed in stand-by mode and during standstills. It prevents raw water from flowing into the system when the system is not in operation and so prevents overflowing of the storage tank (B1).

Downstream of the raw water solenoid valve (V1), the raw water flows past the raw water measuring probe (QIA 300) and on through the pressure booster pump (P1) to the membrane (F3).

The semi-permeable membranes (F3) retain all salts that are dissolved in the water according to their given retention quota. In addition, because of the molecular size of the membrane pores, an average 99% retention of bacteria, pyrogens and particles is also effected.

The pure water now flows past the pure water measuring probe (QIA 301) and into the storage tank. The measured values can be seen in the display.

The feedwater constituents that were retained are led off in the remaining concentrate.

The measuring probe (QIA300) values can be called in the microprocessor control menu.

Pure water is pumped to the user by a downstream tank with pressure pump P2. Float switch LIS 100 senses the filling level in the tank.



Valve V2 has been pre-adjusted in the factory. A change in the adjustment of this valve could result in damage to the reverse osmosis module. Because of fluctuations in the feedwater temperature and pressure, the setting of the pressure hold valve and the concentrate flow that it governs must be checked and, if necessary, re-adjusted, when the system is put into operation and at regular intervals thereafter. The measured values must be entered in the maintenance record.

Concentrate flows for Pacific PW				
Check and/or re-adjust every 6 months				
System	Permeate flow [L/h]	Concentrate values		Adjustable to max.
		[L/h]	△ WCF-Rate [%]	WCF-rate [%]
Pacific PW 3	3	min. 40		33
Pacific PW 7	7	min. 40	13	33
Pacific PW 12	12	min. 60	17	33
Pacific PW 20	20	min. 60	25	40
Pacific PW 40	40	min. 100	28	40

Your pure water system is equipped with automatic flushing. Flushing is carried out when the system is switched on, at the end of each production, and also every 12 hours. For this, rinsing solenoid valve (V3) is opened and the strong flow of water across reverse osmosis module (F2) sweeps coarse particles and other contaminants away from the surface of the membranes and carries them with it to drain.

This automatic flushing has a positive effect on the service life of the reverse osmosis module.

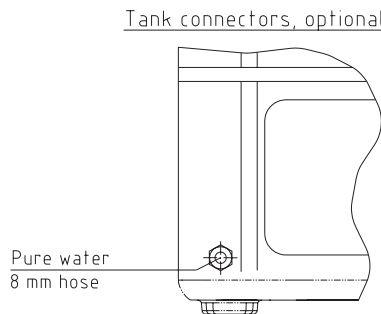
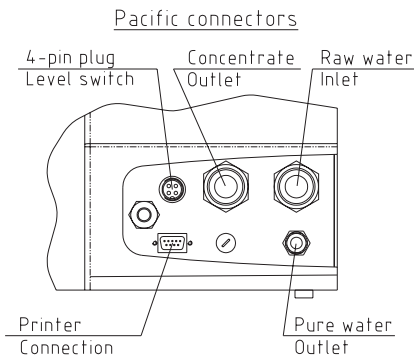
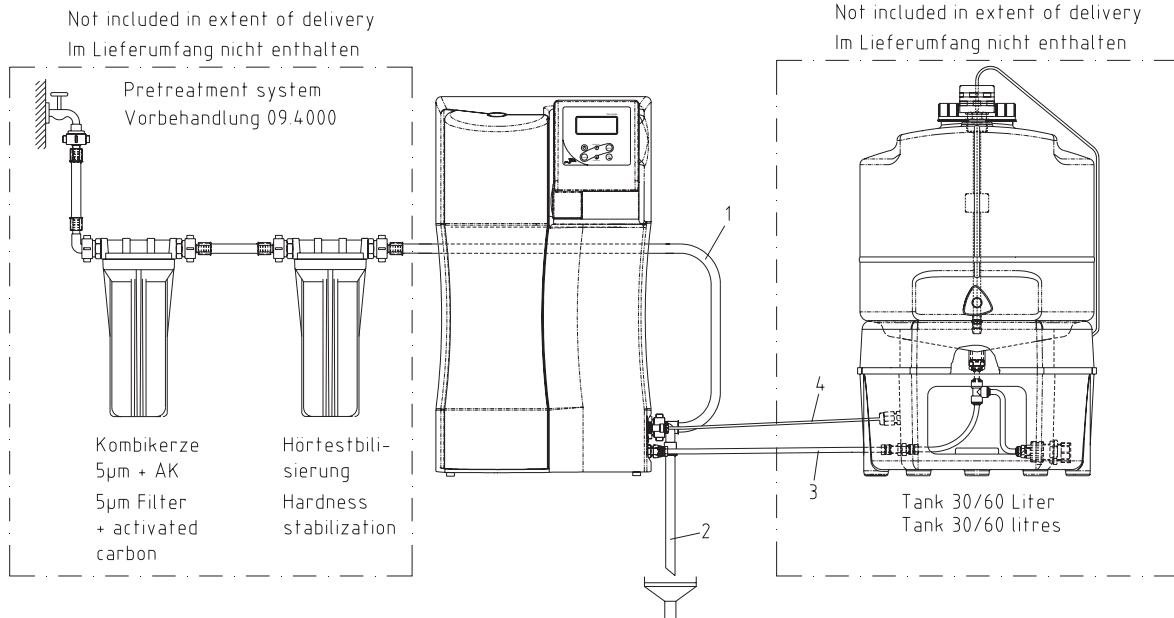
An additional advantage of automatic flushing is that it prevents bacterial growth from occurring in the reverse osmosis module when the system is at a standstill for a long time. For this reason, we highly recommend that you leave the system switched on over the weekend and during holiday times, so that the 12 hour flush can effectively guard against bacterial growth.

8. The installation area

The following criteria must be taken into consideration when choosing the installation area.

- ⇒ Minimum temperature in the installation area: + 2°C - +35°C.
- ⇒ The surface that your pure water system is to be stood on must be strong enough to support it (for weight, see "Technical specifications").
- ⇒ A floor drain with waste pipe of DN 50 size (38.5 mm i.d.) is required. Should this not be available, then a water watcher (article no.: 16.0129) must be installed to protect against damage from flooding!
- ⇒ An unrestricted gravity flow of concentrate to the floor drain is obligatory.
- ⇒ An electrical socket appropriate to the voltage given on the type plate of the system must be positioned directly alongside the system. The safety fuse must be appropriate for the power required (see "Technical specifications").
- ⇒ There must be sufficient working room around the system.
- ⇒ An R ¾"R male thread tap water connection which can be shut off must be installed in the direct vicinity of the system. Easy access must be ensured

9. Putting the system into operation



1. Connect the raw water inlet of your pure water system to the pretreatment and this to a water tap that can be shut off. The connector (R 3/4") of the pure water system is marked „Raw water“.
2. Connect the concentrate outlet to the on-site drain. The connector (R 3/4") of the pure water system is marked "Concentrate". **TAKE CARE!** The concentrate must be able to pass to drain under free gravity fall!
3. Pacific-PW with external tank (optional): Use the Ø 8 mm hose provided to connect the pure water outlet of the system to the pure water inlet of the tank.
4. Connect the cable of the level switch to the 4-pin plug on the system.

Optional: Sterile overflow (accessory). Plug the hose for the sterile overflow, Ø 8 mm, in the overflow at the back of the tank and connect this to drain.

Note: The tank lid must be tightly closed for the sterile overflow to function properly.

6. Check the connections for perfect leakproof connection.
7. Check the raw water pressure. It must be within the permissible pressure range (see the Technical Specifications).
8. Open the raw water tap.

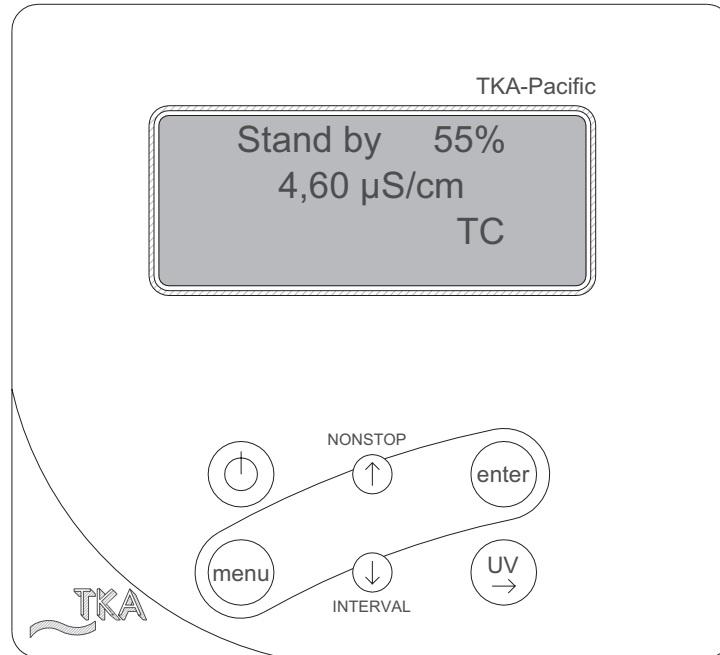


Before you now switch the system on, please read through the rinsing procedure for removing preservative solution from reverse osmosis membranes supplied filled with it in the „Cleaning and disinfecting“ section!

9. Plug the mains plug in and switch the system on at the on/off key of the operating unit.

After a brief rinsing phase, your system is ready to produce pure water into the tank.

10. Operating elements



Switches the system on or off

NONSTOP



Allows you to increase a value on display



Confirms the value shown in a menu point



Switches the menu to the next menu point



INTERVAL

Allows you to decrease a value on display



Allows you to select the position in a number that you wish to change

11. System control

General information

When the ON/OFF key is pressed, the pure water system starts running either in the operating mode or in the stand-by mode, as governed by the float switch.

The operating mode and the volume contained in the tank are shown in line 1 of the display and the measured value for the permeate is shown in line 2.

Should a fault exist, then a fault message is given out across the potential-free output and is shown in line 4 of the display. Should several faults occur simultaneously, then they are alternately displayed.

11.1 User menu

All of the measured values, operating times and limiting values that are relevant for the user can be set and read in this menu.

A press on the menu-key brings you into this menu. Each further press on the menu-key moves you on from one menu prompt to the next.

Settings can be changed with the arrow keys and, when the appropriate value has been set, be confirmed by pressing the Enter-key, which also takes you to the next menu prompt.

To simplify changing settings, a press on the UV-key allows you to select a certain number in the numerical value that you wish to change. The arrow-keys can then be used to enter a number from 0 to 9 at the selected position.

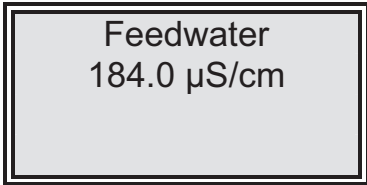
11.1.1 Feedwater conductivity:

A single press on the menu-key allows the feed water conductivity (measuring position LF3) to be read.

An evaluation of the limiting value is not carried out.

The display shows:

e. g:



Feedwater
184.0 µS/cm

11.1.2 Permeate limiting value:

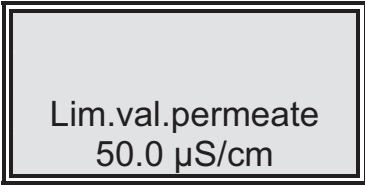
A second press on the menu-key allows the permeate limiting value to be set. Should this limiting value be exceeded, then the *Lim.val.permeate* message is shown (measuring position LF 2).

Limiting value setting range: 1.0 – 99.0 $\mu\text{S/cm}$
Basic setting: 50 $\mu\text{S/cm}$

Use the arrow keys to set the limiting value (see Setting with the arrow keys).
Settings above 99.0 $\mu\text{S/cm}$ result in the limiting value being switched off. The word "Off" appears in the display.

The display shows:

e.g.:

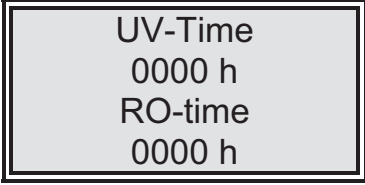


Lim.val.permeate
50.0 $\mu\text{S/cm}$

11.1.3 Operating hours: (UV-operating hours is not active in this version)

A third press on the menu-key in this menu brings the operating hours of the UV-lamp and the RO pump to display. The operating hours counter for the UV-lamp registers the time that the lamp has been in operation. When the maximum operating time is reached, then the fault message "UV-Time" is triggered. The limiting value of this is set in the OEM menu. The operating time of the RO pump has no limiting value.

The display shows:



UV-Time
0000 h
RO-time
0000 h

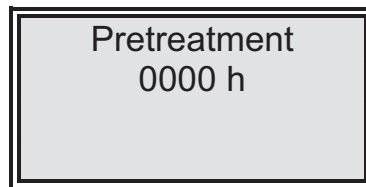
11.1.4 Pretreatment operating hours:

A fourth press on the menu-key in this menu brings the operating hours of the pretreatment cartridge to display.

This operating time has a limiting value, which is set in the UV menu. The fault message that is displayed when the limiting value is exceeded is "*Pretreatment*".

The operating hours of the pretreatment are counted over the whole time that the reverse osmosis pump is running.

The display shows:



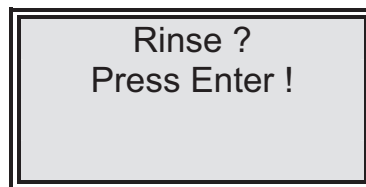
Pretreatment
0000 h

11.1.5 Cleaning:

A fifth press on the menu key in this menu allows cleaning to be triggered if necessary. Triggering is made by confirming the requirement with a press on the Enter-key. The pump is started and the inlet solenoid valve and the rinsing solenoid valve open for a 60 second period.

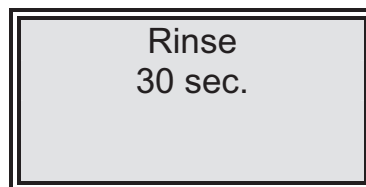
During cleaning, no fault messages or measured values are shown; when cleaning is finished, the system is in the last operating mode (operation or stand-by). During cleaning, the remaining cleaning time is displayed.

The display shows:



Rinse ?
Press Enter !

During rinsing, the display shows:



Rinse
30 sec.

11.1.6 Disinfection: (Is not active in this version)

The display shows:




Disinfection
Press Enter !

11.1.7 Fault storage:

A seventh press on the menu-key in this menu calls the fault storage prompt. Confirmation of this with the Enter-key allows the fault storage to be looked through. The display can show two faults at once, each with time and date. Pressing an arrow key allows previous or following faults to be displayed.

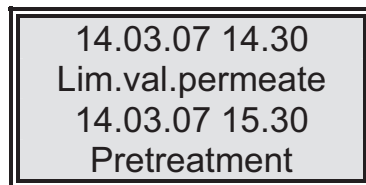
Pressing the menu-key or the Enter-key returns the system to the last operating mode.

The display shows:



Error history
Press Enter!

Display of the fault storage:



14.03.07 14.30
Lim.val.permeate
14.03.07 15.30
Pretreatment

11.1.8 Unlocking the system:

An eighth press on the menu-key in this menu brings you to the “Code” menu. To prevent unauthorized access to the settings in the system control, changes to the settings can only be carried out when a correct code from the Assignment Table that follows is entered and confirmed with the Enter-key. The unlocking remains active for 5 minutes. Each access via the code is typed out by the printer (RS 232) complete with date, time and abbreviated code number (“Code 0001” corresponds to code 150, “Code 0002” to code 250 etc.).

The display shows:



Code numbers can be assigned to individual persons according to the Assignment Table that follows on page 25. Remove that page from the Operating Instructions and store it where it is safe from unauthorized viewing.

Assignment Table for code numbers that allow the system to be unlocked

Code no.	Printer output	Person
150	0001	
250	0002	
350	0003	
450	0004	
550	0005	
650	0006	
750	0007	
850	0008	
950	0009	

11.2 OEM Menu

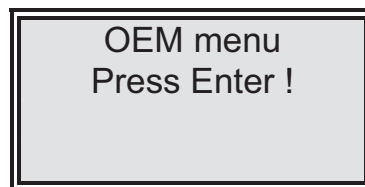
Basic settings and limiting values can be changed in this menu. To make changes in the OEM menu, the system control must previously be unlocked (see 11.1.8).

Calling the OEM menu:

Simultaneous pressing of the Interval-key and the Nonstop-key calls the OEM menu. Following this, the prompt "OEM menu Press enter" appears. When this is confirmed with the Enter-key, the first menu prompt can be worked on. To simplify changing settings, press the UV-key to select the number in a value which you want to change. Now use the arrow keys to enter a number from 0 to 9 at the selected position.

A press on the menu-key takes you to the next menu prompt.

The OEM menu prompt display shows:



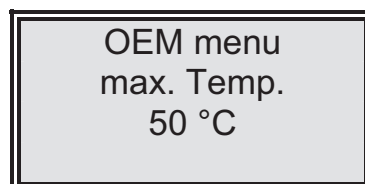
11.2.1 Maximum temperature:

**A single press on the menu-key:
(this is not active in this version)**

The maximum temperature which the system can be allowed to reach can be set in this menu. When this temperature is exceeded, the "max. Temp." fault message is triggered. Settings above 50 °C cause the limiting value to be suppressed and the word „off“ appears in the 4th line of the display.

Basic setting: 50 °C
Setting range: 1 - 50 °C

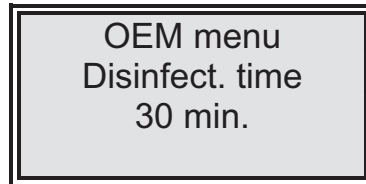
The display shows:



11.2.2 Disinfection time:

**A second press on the menu-key:
(this is not active in this version)**

The display shows:

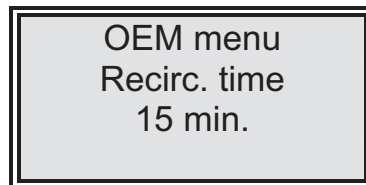
**11.2.3 Recirculation time:**

**A third press on the menu-key:
(this is not active in this version)**

The recirculation time is set in this menu.

**Basic setting: 15 min.
Setting range: 1 - 30 min.**

The display shows:

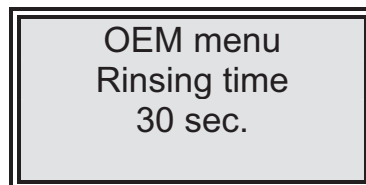
**11.2.4 Rinsing time:**

A fourth press on the menu-key:

The rinsing time is set in this menu.

**Basic setting: 30 sec.
Setting range: 10 - 60 sec.**

The display shows:

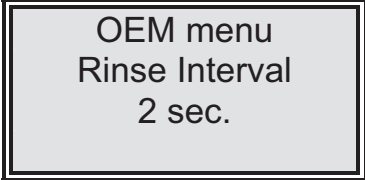


11.2.5 Interval rinse time: A fifth press on the menu-key:

The interval rinse time can be set in this menu. Rinsing is then carried out for this time period when the operating mode is changed, between stand-by and operation and every 12 hours.

Basic setting: 2 sec.
Setting range: 1 - 30 sec.

The display shows:



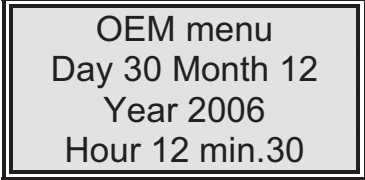
OEM menu
Rinse Interval
2 sec.

11.2.6 Real-time clock: A sixth press on the menu-key:

The real-time clock is set in this menu.

Basic setting: The actual time
Setting range: 1 - 12 month, 1 - 31 day, 0 - 24 h, 0 - 60 min.

The display shows:



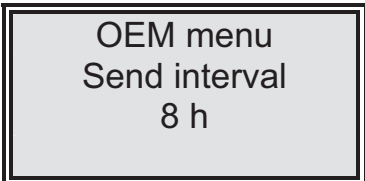
OEM menu
Day 30 Month 12
Year 2006
Hour 12 min.30

11.2.7 Sending interval: A seventh press on the menu-key

In this menu, the sending interval for transmissions of measured values and fault messages to the RS 232 interface can be set.

Basic setting: 8 hours
Setting range: 0.5 - 12 hours

The display shows:



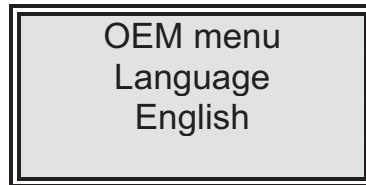
OEM menu
Send interval
8 h

11.2.8 Languages: An eighth press on the menu-key

The language in which the texts are displayed is set in this menu.
The choice is of English, German or French.

Basic setting: **English**

The display shows:



11.2.9 Switching units: A ninth press on the menu-key

In this menu, a choice can be made as to which unit is to be displayed, specific electric resistance or conductivity.

Basic setting: **Conductivity $\mu\text{S}/\text{cm}$**
Setting range: **Conductivity $\mu\text{S}/\text{cm}$,
Specific electric resistance $\text{M}\Omega \text{ cm}$**

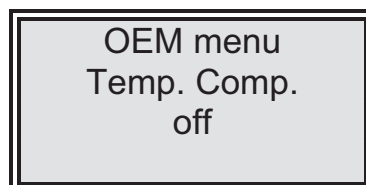
The display shows:



11.2.10 Switch off temperature compensation: A tenth press on the menu-key

Basic setting: **on**
Setting range: **on, off**

The display shows:



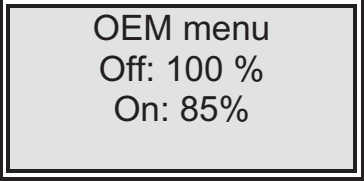
11.2.11 Adjusting the float switch circuit hysteresis: An eleventh press on the menu-key:

Basic setting: Off: 100 %
 On: 85 %

Setting range: Off: 25 - 100 %
 On: 0 - 85 %

With a setting over 100 % for the upper switching point, the display of the tank level is switched off, so that this setting shows whether an analogue or a digital float switch is installed.

The display shows:




OEM menu
Off: 100 %
On: 85%

11.2.12 Programme choice UPW/PW: A twelfth press on the menu-key

The equipping grade of the system can be set in this menu so that a differentiation can be made between UPW and PW versions.

Basic setting: PW

The display shows:

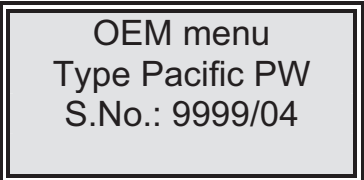


OEM menu
Version
PW

11.2.13 Entering the system type and serial number:

The system type and serial number can be entered in this menu. They are both then printed as headline on every print-out. The following types of system can be entered:
Pacific PW / Pacific UP / Pacific UPW / Pacific AFS

The display shows:



OEM menu
Type Pacific PW
S.No.: 9999/04

11.3 Printer output

Various parameters can be recorded by means of a printer. A distinction is made between three types of messages:

- Standard messages
- Code messages
- Fault messages

11.3.1 Standard messages:

A record of all measured values is printed out here in dependence on the sender interval.

Print-out:

e.g.: 31.10.07 09:39
 Pacific PW
 S.No. 9999/07
 TC off UV off
 LF2= 4.60 μ S/cm
 LF3= 184,60 μ S/cm
 Temp.= off

11.3.2 Code messages:

Whenever a code number is entered in the system control and confirmed with the Enter-key, then the code input is immediately printed out.

For code identification refer to the „Assignment Table for code numbers that allow the system to be unlocked”.

Print-out:

e.g.: 31.10.07 10:17
 Pacific PW
 S.No. 9999/07
 Code 0001

11.3.3 Fault messages:

Should a fault message be shown in the display, e.g. for the pure water limiting value, then this fault message is printed out after the sending interval.

Print-out:

e.g.: 31.10.07 16:15
 Pacific PW
 S.No. 9999/07
 Lim.val.permeate

12. Maintenance

Your system requires regular, proper and professional maintenance.

We recommend that you close a service contract to ensure that the necessary maintenance work is carried out.

You then have the certainty of a high operational safety and reliability.

The service protocol appended to the service contract serves for certification that maintenance work specified in the contract has been carried out by **TKA** or a service company authorized by **TKA**.

When your 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 be readily available to operating and maintenance staff at all times, 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 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 such work.

The operating-staff assigned is committed to carry out daily/weekly checks.

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.

In so far as the maintenance protocol is not kept up-to-date, or is improperly kept, i.e. without the necessary establishment of data, then the system is deemed to be improperly maintained and the guarantee becomes invalid.

The calibration of the conductivity display is only to be carried out and recorded by TKA customer service.

Cleaning and disinfection of supply tanks, piping, filter housings etc. is performed for reasons of hygiene and has no effect on the technical condition of the system. These components must be cleaned and disinfected whenever algae or slime are detected inside them or at least once yearly.

The 5µm + activated carbon combi-cartridge (article no. 06.5203) and the hardness stabilization (article no. 06.5453) in the pretreatment integrated in the system must be replaced twice yearly.



Checks or maintenance work on electrical equipment are only to be carried out after the system has been completely separated from the electrical supply by unplugging the mains plug and ensuring that it will not be inadvertently plugged back in. Such work is only to be carried out by qualified electricians.

12.1 Rinsing the membrane

Rinsing out preservative solution:

According to the mode of delivery, the system may be supplied filled with a solution containing a preservative. When putting the system into operation, it is important to discard the permeate produced for at least 3 – 4 hours after switching to production.

To do this, after each filling of the tank, open the permeate outlet and empty the tank by allowing the permeate to run to drain.

Cleaning the membrane:

Automatic rinsing lengthens the service life of your reverse osmosis module. Coarse particles and other contaminants are swept away from the membrane surface during this rinsing process. The rinsing phases so ensure the longest service life and optimal purified water quality.



Leave your pure water system on over the weekend and during holiday times. Only then can the 12-hourly rinse operate and ensure that your reverse osmosis module is not subject to bacterial growth during standstill periods.

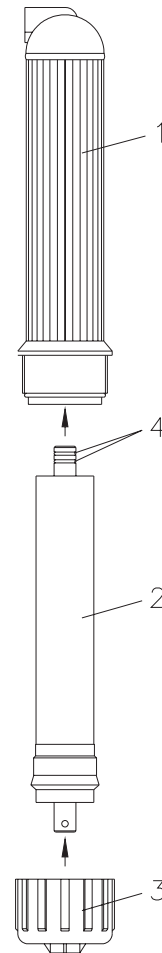
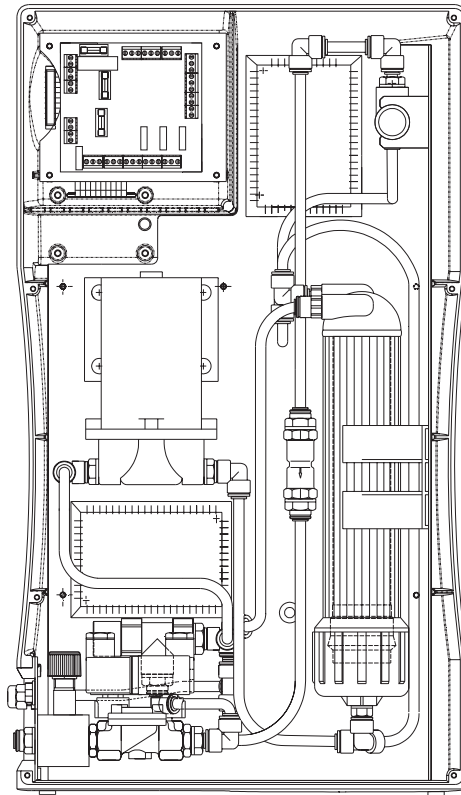
Should the performance of your module drop because operation of the system without appropriate pretreatment has resulted in blockage of the membrane, it may well be that your module can be reconditioned.

Reconditioning and disinfection of the module is only to be carried out by authorized service personnel on-site or by sending the module to the manufacturer of your system, whereby exposure to frost must be avoided.

12.2 Replacing the RO membrane

Pacific PW 3 – 12: 1 RO membrane
Pacific PW 20 – 40: 2 RO membranes

Ansicht von hinten – ohne Rückwand
Back view, with back panel removed



- Unplug the mains plug.
- Remove the back panel.
- Release all hose connections to the pressure tube (1) of the RO-module.
- Take the pressure tube out of the holding sleeves.
- Open the pressure tube cap nut (3) and remove the membrane unit (2).
- Insert the new membrane unit with the two O-rings (4) on the permeate tube in the direction of the arrow pointing to the pressure tube.



Insertion of RO-membranes the wrong way round would lead to certain destruction of them!

13. Trouble shooting

Fault	Cause	Remedy
The system does not start	<ul style="list-style-type: none"> - No supply of power 	<ul style="list-style-type: none"> - Supply power
No dispensing possible	<ul style="list-style-type: none"> - Feedwater tap is closed - Feedwater and rinse water connections mixed up - Feedwater pressure < 1.5 bar 	<ul style="list-style-type: none"> - Open the feedwater tap - Make correct connections - Increase feedwater pressure
System control no longer reacts	<ul style="list-style-type: none"> - Improper operation 	<ul style="list-style-type: none"> - Unplug the mains plug for 5 seconds
Water leaks out	<ul style="list-style-type: none"> - Leaky hose connection - Feedwater pressure > 6 bar 	<ul style="list-style-type: none"> - Check hose connection, find and stop the leak - Install a pressure reducer
Permeate flow is too low (-15%)	<ul style="list-style-type: none"> - Clogged membrane - Too low a pre-pressure - Feedwater temperature fluctuates 	<ul style="list-style-type: none"> - Clean the membrane - Increase pre-pressure
Time or date is wrong	<ul style="list-style-type: none"> - Time zone - Summer/winter time 	<ul style="list-style-type: none"> - Set to correct time and date
Wrong language	<ul style="list-style-type: none"> - Wrong language is set 	<ul style="list-style-type: none"> - Set to correct language setting
Fault message: <i>"Lim.val.permeate"</i>	<ul style="list-style-type: none"> - The permeate conductivity is too high - Limiting value is set too low - The membrane is clogged 	<ul style="list-style-type: none"> - Check the pretreatment - Check and re-adjust the limiting value setting - Replace the membrane

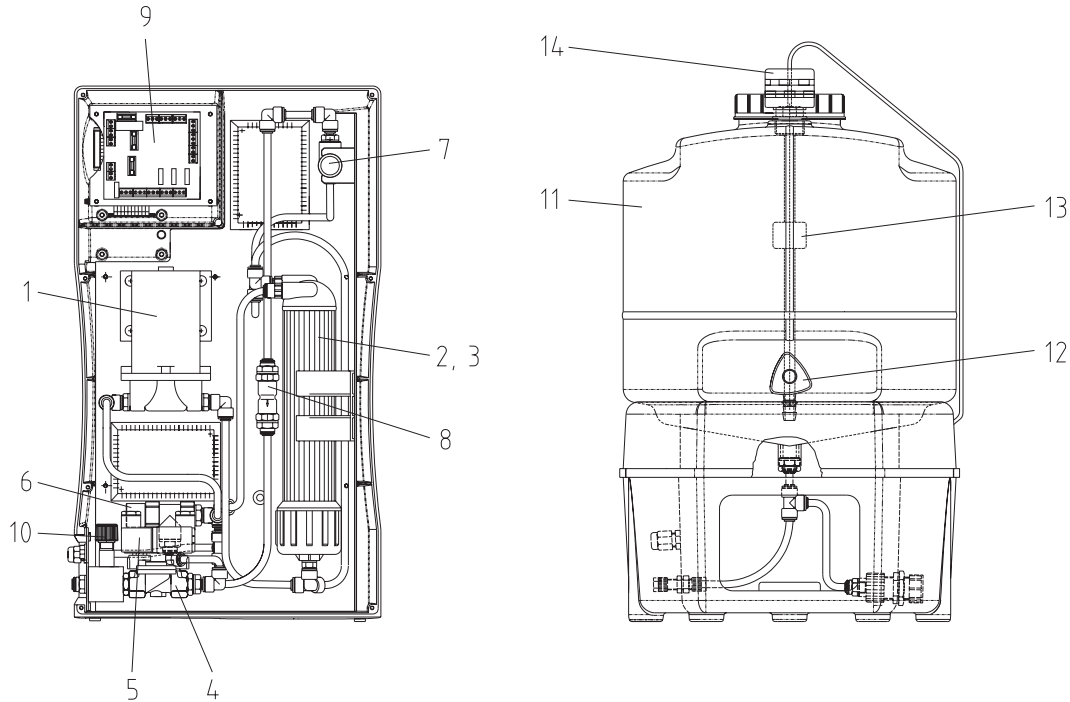
<p>Fault message: <i>"Measuring cell LF2"</i></p>	<ul style="list-style-type: none"> - Break in the measuring cell cable - System control is defect - Permeate conductivity is outside the measuring range 	<ul style="list-style-type: none"> - Replace the measuring cell - Replace the system control - see "Permeate limiting value"
<p>Fault message: <i>"Measuring cell LF3"</i></p>	<ul style="list-style-type: none"> - Break in the measuring cell cable - System control is defect 	<ul style="list-style-type: none"> - Replace the measuring cell - Replace the system control

The address to contact when service is needed:

TKA Wasseraufbereitungssysteme GmbH
Stockland 3
D-56412 Niederelbert

Tel. No.: +49 (26 02) 1 06 99-0
Fax. No.: +49 (26 02) 1 06 99-50
Internet: www.tka.de
E-Mail: info@tka.de

14. List of replacement parts



Pos.	R+I no.	Article designation	Article no.
1	P1	Pressure booster pump, RO (Pacific PW 3-20) (Pacific PW 40)	19.0046* 19.0050*
2,3	F3	RO Module, consisting of: Reverse osmosis membrane (Pacific PW 3 – 12) 1x (Pacific PW 20) 2x (Pacific PW 40) 2x Pressure tube	22.0046* 22.0046* 22.0087* 22.0047
4	V1	Inlet solenoid valve	15.0103*
5	V3	Rinsing solenoid valve	15.0103*
6	QIA300	Measuring cell, raw water	16.0126
7	QIA301	Measuring cell, pure water	16.0126
8	V4	Check valve	15.0009
9		Microprocessor control, complete	26.0023
10	V2	Pressure hold valve	15.0060
11	B1	Pure water tank, 30 litre Pure water tank, 60 litre	18.0114 18.0115
12	V5	Dispensing valve	14.0250
13	LIS 100	Float switch for 30 litre tank for 60 litre tank	16.0303 16.0304
14	F4	Sterile vent filter, 0.2µm (optional)	06.5003
15	V6	Sterile overflow (optional, not shown)	06.5001
16	UV1	UV-Disinfection in tank (optional, not shown)	06.5006

* Wearing part

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

15. Consumable materials and accessories

Pacific PW	
Article no.	Article designation
09.4000	Pretreatment for PW Complete, incl. 2 x 10" housings, hardness stabilization and Activated carbon combi-cartridge
06.5201	Combi-cartridge with activated carbon, 10" for pretreatment
06.5452	Hardness stabilization, 10" for pretreatment
22.0046	Reverse osmosis membrane for Pacific PW 3 – 20
22.0087	Reverse osmosis membrane for Pacific PW 40

Tank (optional)	
Article no.	Article designation
06.5033	Pure water tank, 30 litre incl. float switch
06.5063	Pure water tank, 60 litre incl. float switch
Accessories	
Article no.	Article designation
06.5001	Sterile overflow
06.5002	CO2 adsorber + sterile vent filter
06.5003	Sterile vent filter
06.5006	UV-Immersion lamp complete for tank
22.0095	Replacement UV-lamp
06.5015	Wall mount for storage tank 30 L + mounting kit

16. Terminal assignment

