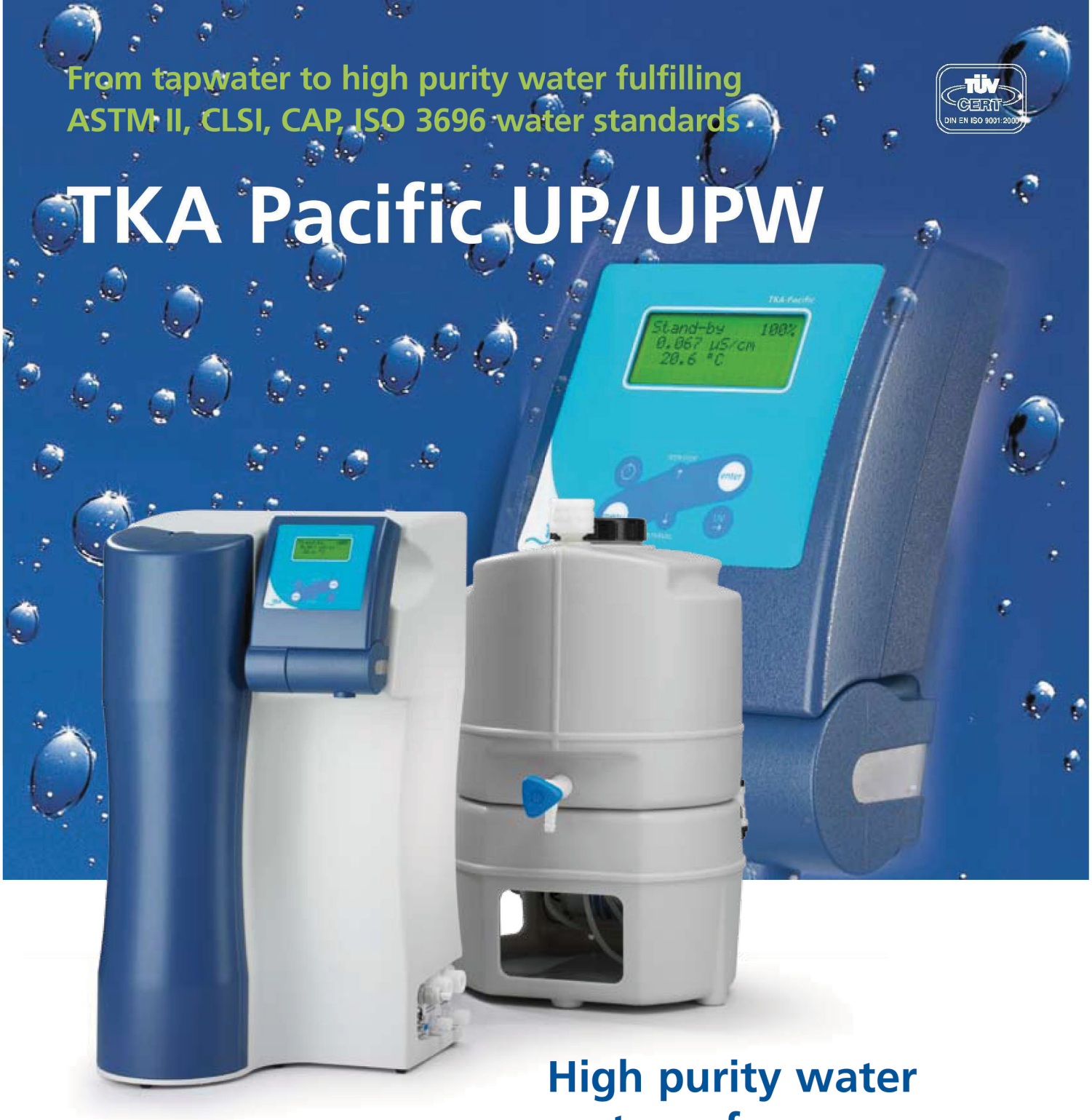
From tapwater to high purity water fulfilling
ASTM II, CLSI, CAP, ISO 3696 water standards

TKA Pacific UP/UPW



High purity water systems for every laboratory

TKA
WATER
PURIFICATION
SYSTEMS

Mount, connect, start!

TKA Pacific. Converts tapwater into 15 – 10 MΩ×cm* high purity water.

Water of the type that is needed daily for typical laboratory applications:

- Rinse water for laboratory glassware
- Feedwater for autoclaves, clinical analyzers and ultrapure water systems
- Preparation and dilution of buffers, reagents, tissue culture media and dyes
- Sample preparation for analytical methods such as flame AAS

* better than ASTM Type II

TKA Pacific. Attractive, practical, reliable.

Attractive design!
Elegance outside, High-Tech inside. The ultimate in systems for the automatic and economical production of high purity water for daily requirements of from 20 to 200 litres.

Operational reliability!
Microprocessor controlled for automatic operation with permanent monitoring of all important parameters. Automatic return to the operating mode when operating processes end. Potential free contact for fault messages.

Excellent performance!
Option of a UV lamp for the elimination of even the finest biological contaminants.

Economical to run!
In contrast to the older method of distillation that requires much energy and cooling water, TKA Pacific requires only 0.1 kW/h for the operation of the pump.

Space-saving positioning!
TKA Pacific systems can be stood on a lab bench or be fitted to a wall without an additional mounting bracket.

Qualifiable!
Pacific systems have been developed to comply with GLP (Good Laboratory Practice) requirements. A TKA printer connected to the RS 232 interface allows print-outs for data recording and traceability to be triggered at any time.

A cell constant of 0.01 cm^{-1} ensures highly qualified and precise conductivity measurements, which are compensated to an accuracy of ± 0.1 °C for even minimal temperature changes (in conformity with USP <645>).

TKA Pacific. Comfortable to use!

Flexible control and operating unit.
The display/keypad unit can be tilted and can so always be brought to the optimal position for viewing and key-operation.

Clear information!

The large, illuminated 4-line display is easy to read and provides information on:

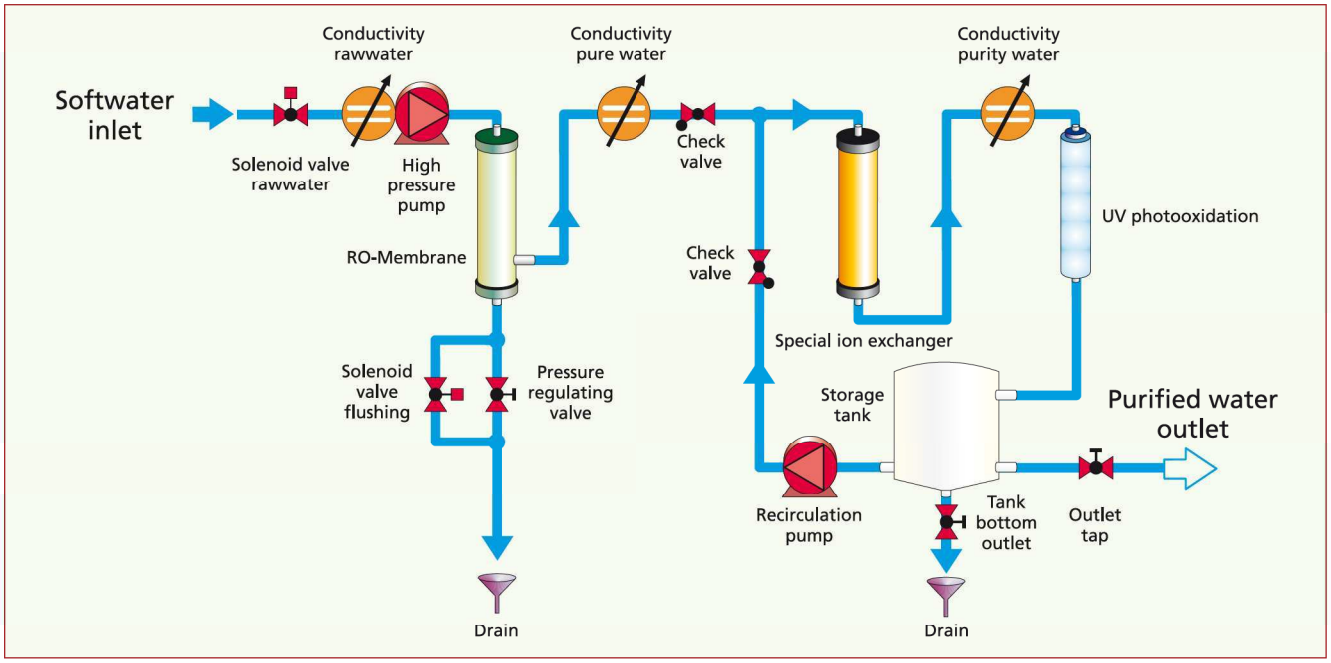
- The temperaure in °C
- The temperature compensated conductivity of the water coming from the reverse osmosis/high purity water cartridge
- The UV lamp operating hours (UPW version only)
- The operating mode status, such as production, stand-by, cleaning, disinfection
- The tank content in %
- The RS 232 interface
- Fault message storage
- Code protected
- 3 languages (D; E; F)

Easy to use!

Six keys only for rapid operational readiness:

- Start/stop high purity water production
- Start/stop other operational sequencies or service procedures
- Setting of limiting conductivity values for RO-water and high purity water
- Setting of the circulation interval
- Start/stop UV lamp (UPW version only)

Flow chart – TKA Pacific UPW.



TKA Pacific with high purity water storage tank. A complete system.

Pretreatment:
Two purification steps are carried out to protect the reverse osmosis membrane. The hardness stabilizing cartridge prevents the precipitation of hardness-formers on the membrane. The second step removes free chlorine and particles.

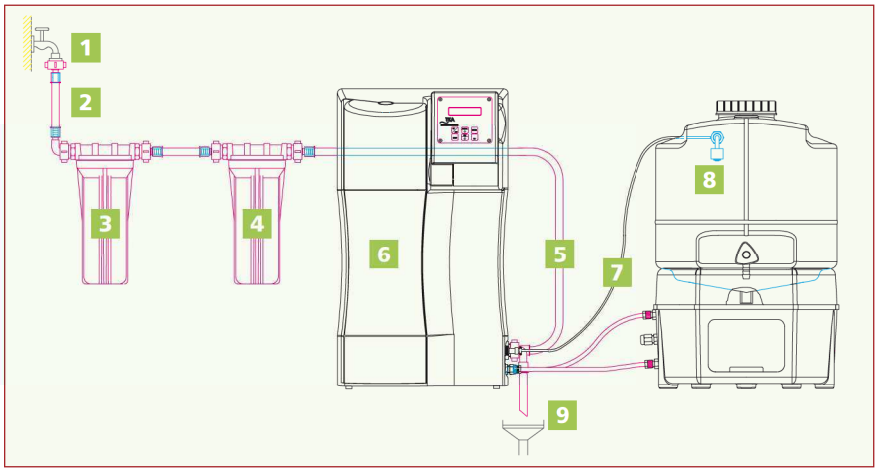
Reverse osmosis membrane:
The high performance reverse osmosis membrane removes approx. 98 % of inorganic ions and 99 % of all dissolved organic substances, microorganisms and particles.

High purity water cartridge:
This cartridge further purifies the reverse osmosis permeate to produce high-purity water of the 0.067 – 0.1 µS/cm quality that is required by international standards (ASTM II, CAP, ISO 3696, BS 3997 and CLSI, previously NCCLS, Type 1).

UV Lamp (UPW version only):
The 254 nm UV transmission ensures optimal UV irradiation. Light of wavelength 254 nm acts germicidal.

Recirculation:
Recirculation of the water between the storage tank and Pacific UPW is an important improvement for maintenance of the water quality. The recirculation path is from the storage tank is through the high purity water cartridge and the UV chamber, then back to the tank.

Tap water pretreatment and multi-stage purification



1 Drinking water tap
2 Inlet hose, raw water
3 4 Pretreatment unit (09.4000)
5 Connecting hose to TKA Pacific
6 TKA Pacific high purity water system 3/7/12/20/40 l/h
7 Connection, Pacific to storage tank
8 Storage tank, 30 l (06.5032 or 33), 60 l (06.5062 or 63)
9 Drain

TKA Standard storage tanks. For 30 or 60 litres.

Store high purity water safely and conveniently!

An advanced and proven tank construction with many beneficial features:

Large opening
- For easy and effective cleaning by hand. Closed with a screw cap.

Sterile venting filter/tank overflow
- Contamination by microorganisms in the environment is prevented by two safety filters.
- Option: A CO_2 absorber that prevents TOC value increases from drawn-in CO_2.

Float switch/volume display
- Completely automatic water level regulation, with analog signal to show the percentage volume in the tank in the Pacific display.

Polyethylene tank
- Ultrapure water resistant, opaque to light and food-safe.

High purity water dispensing tap
- With 24 cm free space for practical water removal

Recirculation pump/pressure pump
- The recirculation pump protects the high purity water from bacterial growth during standstills and maintains the low conductivity value
- The pressure pump can pump high purity water to laboratory autoclaves and clinical analyzers

Wall mount
- For simple and space-saving wall mounting

Conical bottom outlet
- Allows complete draining and efficient cleaning and disinfection

Pacific UP/UPW system components and accessories

Type Pacific UP/UPW	Pacific 3	Pacific 7	Pacific 12	Pacific 20	Pacific 40
Flow rate at 15 °C, l/h:	3	7	12	20	40
Typical conductivity UP*/UPW* (µS/cm)			0.067 – 0,10		
Resistance at 25 °C UP*/UPW* (MΩ×cm)			15 – 10		
Retention quota bacteria, %:			99		
Silicate removal, %:			> 99.9		
TOC Value, ppb:			< 30		
Operating pressure in bar, min./max.:			2/6		
Supply voltage:			230 V/50 Hz		
Power consumption, kW:			0,1		
Connector size, male thread:			R 3/4“		
Ambient temperature:			+2 °C – +35 °C		
Dimensions, W x D x H, mm:			372 x 330 x 613		
Weight in kg, Standard/with UV:	24/25	24/25	25/26	25/26	25/26
Cat. no., UP version:	**08.4103**	**08.4106**	**08.4112**	**08.4120**	**08.4140**
Cat. no., UPW version:**	**08.4104**	**08.4107**	**08.4113**	**08.4121**	**08.4141**

* With < 30 ppm CO_2 in the feedwater

** With UV lamp

TKA Requirements for feedwater for Pacific systems:

Feedwater:	Potable water or maximum conductivity 1500 µS/cm
Free chlorine concentration:	< 0.01 mg/liter
Manganese content:	< 0.05 mg/liter
Iron content:	< 0.05 mg/liter
Colloid index:	< 3
PH range:	4 – 11

Pre-treatment for TKA Pacific UP/UPW:

Cat. No. 09.4000	Complete pre-treatment consisting of: 2 x Filter housing 10" with activated carbon with prefilter 5 µm and hardness stabilizer to remove particles, free chlorine and hardness formers to protect the RO-membrane.

System expendables and accessories for TKA Pacific:

Cat. No. 06.5201	Activated carbon cartridge with 5 µm prefilter
Cat. No. 06.5452	Hardness stabilizing cartridge
Cat. No. 09.2202	Disinfection kit, pack of 12
Cat. No. 09.4002	UV Lamp (UPW version only)
Cat. No. 09.4011	High purity water cartridge
Cat. No. 22.0046	Reverse osmosis module

Storage tanks and accessories

Standard storage tanks

Volume:	30 litres or 60 litres
Material:	PE acc. to ME 8159 and NG2431 E, ultrapure water resistant, opaque to light, food-safe
Outlet tap:	240 mm free headroom
Overflow:	d8 hose connector
Diameter:	380 mm
Height, 30/60:	598 mm/912 mm
Weight in kg:	Tank 30/60 6/7 (Standard) Tank 30/60 8/10 (with recirculation or pressure pump)

Tank, 30 liter volume

Cat. No. 06.5032	30 litre storage tank with level display and recirculation pump/pressure pump
Cat. No. 06.5033	30 litre storage tank with level display

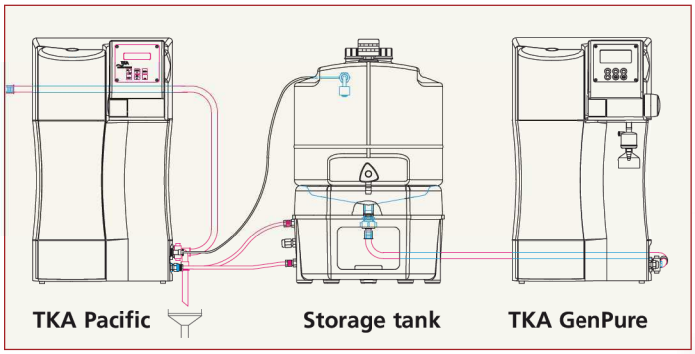
Tank, 60 liter volume

Cat. No. 06.5062	60 litre storage tank with level display and recirculation pump/pressure pump
Cat. No. 06.5063	60 litre storage tank with level display

Complementary accessories

Cat. No. 06.5001	Sterile overflow
Cat. No. 06.5002	CO_2 Absorber + sterile venting filter, 0.2 µm
Cat. No. 06.5003	Sterile venting filter, 0.2 µm
Cat. No. 06.5006	UV Immersion lamp for 30 l tank and 60 l tank
Cat. No. 06.5015	Wall mounting bracket for 30 l storage tank
Cat. No. 06.5016	Wall mounting bracket for 60 l storage tank

When the water purity must fulfill even higher demands!



Then 18.2 MΩ×cm ultrapure water. TOC value 1 – 10 ppb.

Prepared by the TKA GenPure ultrapure water system. Simply install it downstream of the Pacific system.

TKA GenPure UF
With ultrafiltration for the certain removal of pyrogens and nucleases.

TKA GenPure UV
With UV photooxidation for further reduction of organic contaminants.

TKA GenPure UV/UF
With a combination of ultrafiltration and UV photooxidation.

TKA GenPure UV/TOC and UV/TOC/UF
With UV photooxidation and display of the TOC value. Validatable and qualifiable in compliance with GLP. Optionally also with ultrafiltration. Peak technology for the highest demands and smaller volumes.

Please request our TKA GenPure brochure!

TKA Water purification systems

The purification systems for laboratory water described in this brochure are only a part of the complete TKA line of water purification systems.

For example, TKA also offers top quality reverse osmosis systems with state of the art spiral membranes, alone or in combination with TKA electrodeionization. Systems for the smallest to the largest need of high purity water, from the daily supply of water to autoclaves up to the production of Aqua Purificata.

We gladly supply further information, advise you on the most fitting pretreatment and recommend the optimal combination of different systems for the performance required. Always with economy in mind and under consideration of the water quality you need. As little as possible, as much as necessary!

It is our aim to offer you water purification systems that prepare water of the various qualities as reliably, practically and cost-favourably as possible. Our standard systems are correpondingly designed. Should none of these exactly fit your requirements, however, simply contact us! We see each and every problem as one that is worth solving and will find a suitable and economic solution even when the conditions are difficult.

Pac02en Status 11.2007 3000 GT

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Carl Stuart Limited

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Contact Us:
Irl Ph: 01 4523432
UK Ph: 08452 30 40 30
Web: www.carlstuart.com
Email: info@carlstuart.com

TKA Wasseraufbereitungssysteme GmbH
Stockland 3
56412 Niederelbert / Germany
Telephone: +49 (0) 2602/10699-0
Telefax: +49 (0) 2602/10699-50
eMail: info@tka.de
www.tka.de