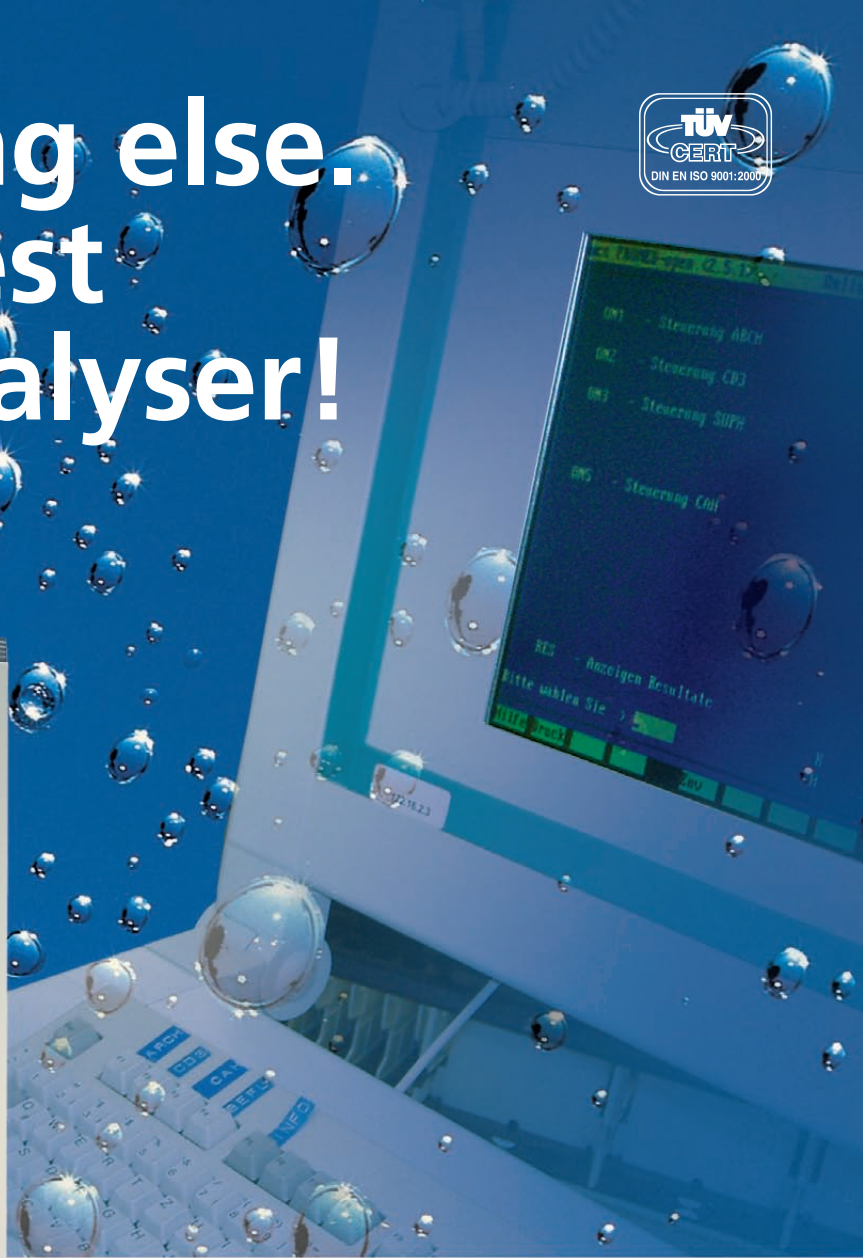


# H<sub>2</sub>O, nothing else. Only the best for your analyser!

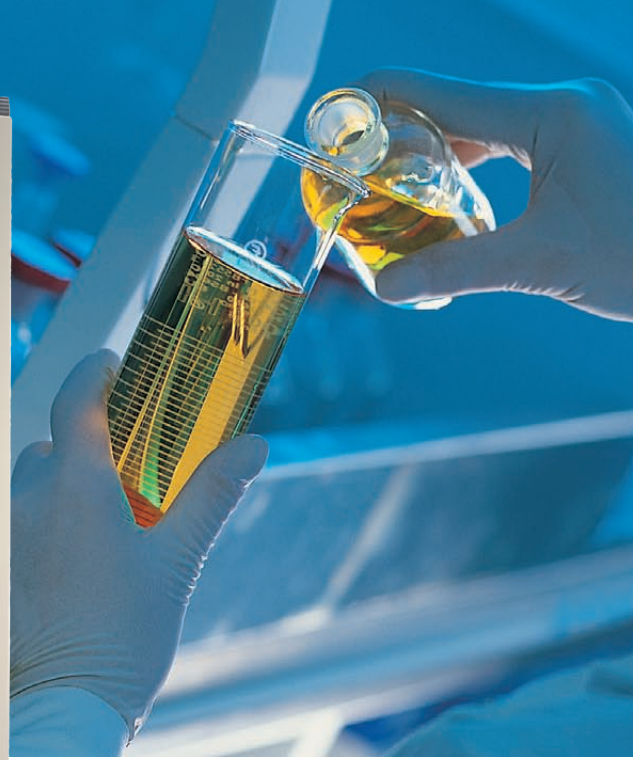


**Superior water  
purification is decisive  
for the quality of the  
lab's results.**



**WATER PURIFICATION SYSTEMS**

**Only the best  
for your analyser!**



■ **Reliability right from the very start.**

TKA ultrapure water systems for supplying clinical analysers in accordance with NCCLS water standards, type 1.

Higher quality and higher quantity – this is the trend in clinical laboratories. Analysis systems are becoming more and more powerful: they combine several methods in one instrument on the one hand and are able to process more samples on the other hand.

The universal use of electronic data processing (EDP) virtually allows bidirectional operation. This practically excludes the possibility of mix-ups, as the request input and the result output are subject to EDP. Requirements are entered and findings are output via the IT system. This is how the new analysis systems ensure EDP-based, fast and reliable operation throughout, particularly in the main fields of clinical chemistry, haematology, immunology and coagulation.

■ **Ultrapure water is absolutely crucial!**

The ultrapure water circulation within the system is very similar to the system by which blood circulates in the body. Foreign substances are removed. All system components of the analyser coming into contact with the samples and reagents are "refreshed", so the pipettes must be cleaned with fully demineralised water for instance after withdrawal. The same applies to the reagent vessels. And ultrapure water is also required for diluting samples.

Consequently, the quality of the ultrapure water is crucial to the quality of the results. Even the slightest contamination, e.g. a very minimal calcium share, would falsify the sample results owing to a higher calcium content.

Inadequate or fluctuating ultrapure water quality or even a temporary interruption in supply would destroy entire batches with hundreds of samples. Apart from the financial losses, this could also result in potentially life-threatening situations for patients. Consequently, optimum certainty is an absolute must, both in respect of the quality of the ultrapure water itself and in respect of the quality of the technical supply system!

■ **100% reliability for a fraction of your investment.**

The ultrapure water supply is the "heart" of the system!

Opting for an ultrapure water supply system from TKA means that you opt for a particularly powerful, reliable and long-life system.

If you consider that the costs amount to only a fraction of the entire investment in an analyser system, this is one reason more to opt uncompromisingly for TKA state-of-the-art purification technologies.

**TKA systems comply with the required standards:**

- Electrical safety in accordance with CE and VDE
  - The pure water produced complies with the requirements of NCCLS\*, Type 1
- |               |                          |
|---------------|--------------------------|
| - Resistivity | ≤ 10.0 MΩxcm<br>at 25 °C |
| - Bacteria    | ≤ 10 cfu/ml              |
| - Silicate    | ≤ 0.05 mg/l              |

\* National Committee for Clinical Laboratory Standards



## TKA ultrapure water supply.



### The essence of technical advance!

#### Modular design

The right system for any size of analyser can be assigned, as a modular system is compatible with any analyser – optionally as an integrated unit in the control unit. Option for enhanced performance by installation of further RO membranes.

#### Easy connection

Tap water in accordance with the TKA feed water quality requirements. Each unit features an integrated water hardness stabilizing system and so no separate softener or citric-acid rinse is required.

#### Fully automatic operation

User-friendly and safe. Fully automatic monitoring and controlling due to digital microprocessor.

#### Constantly high ultrapure water quality

Highest quality and economy thanks to an intelligent combination of purification techniques pretreatment with

hardness stabilizing, reverse osmosis, ultrapure resin ion exchanger, organic absorber, UV disinfection and sterile filtration.

#### Economical

Low operating costs thanks to series connection and cartridge size designed for increased daily consumption. The TOC-tested resins can be regenerated on the RDS systems.

#### Dissolved oxygen

The TKA units can also be supplied with a degassing membrane for reducing the dissolved oxygen if required by certain analysers.

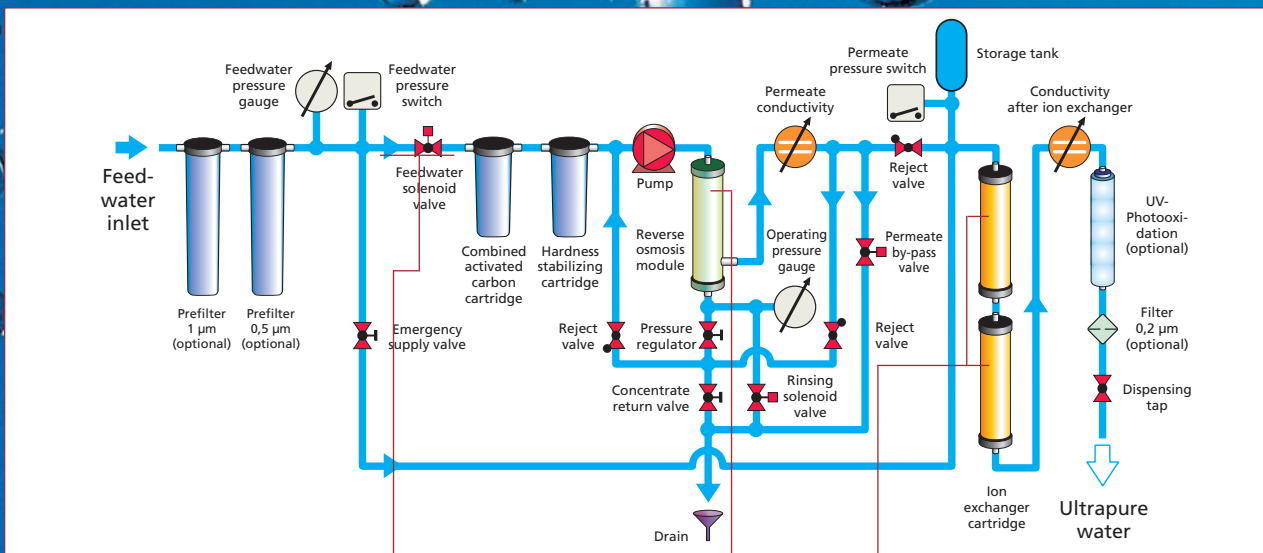
#### Double security

Maximum operating reliability thanks to integrated bypass system. If system faults occur, the system can be switched quickly to pure ion exchanger operation. Consequently, the ultrapure water quality is maintained without interruption regardless of the other purification steps. This is guaranteed until the service technician arrives. Leakage monitoring by freely positionable sensor. With automatic system shut-off and both visual and audible signal in case of an error message.



**TKA Pacific AFS 3 – 40**  
Capacity up to 40 l/h.

## Flowchart RDS 60



### Pretreatment

The activated carbon/prefilter 5 µm combination protects the next purification steps against chlorine and particles. A downstream hardness stabilizing cartridge protects the reverse osmosis unit against hardness-causing substances.

**The result: H<sub>2</sub>O pure – nothing else! Ultrapure water in accordance with NCCLS Standards.**

### Reverse osmosis

The pretreated water is pressed through a permeable reverse osmosis module. This removes 97–99% of all inorganic ions and 99% of all dissolved organic substances, besides microorganisms and particles.

A constant quality of the purified water is guaranteed by a fully automatic rinsing cycle with permeate discard, which runs before and after use and also during standstill. This ensures a long lifecycle of the RO membranes amounting to several years.

### Ion exchanger

The TKA reverse osmosis module removes up to 99% of impurities. Remaining ions, cations and anions, are removed by one or more ion exchangers filled with high purity and tested resin. The number of cartridges required depends on the size of the whole system. Ultraviolet oxidation and sterile filtration of the ultrapure water outlet complete this purification system which supplies water in its purest form capable of satisfying virtually all critical requirements.

## The right system for any analyser. For example ...



**TKA Pacific AFS 3 – 40**  
Compact unit with 30 liters tank capacity up to 40 l/h.



**TKA RO RDS 60 – 120**  
capacity up to 120 l/h.



**TKA RO RDS 100 – 350**  
capacity up to 350 l/h.





**5000 analyses every day and each one must be correct!**

Reliable supply of the analyser with ultrapure water is crucial in order to achieve pure results. For the cleaning of pipettes and reagent vessels a thousand times per day. After each sample, after each sample change.





Ultrapure water system	Pacific AFS 3 – 40		TKA RO RDS 60 – 120		TKA RO RDS 100 – 350	
Typical conductivity ( $\mu\text{S}/\text{cm}$ )	0.1 – 1.0		0.1 – 1.0		0.1 – 1.0	
Bacteria removal	99 %		99 %		99 %	
Power consumption (kW)	0,10		0,30		0,80	
Operating voltage (V/Hz)	230/50 (115/60)		230/50 (115/60)		230/50 (115/60)	
Operating pressure (bar)	8		14		14	
Dimensions (W x D x H in mm)	372 x 330 x 603		615 x 615 x 1400		600 x 600 x 2000	
Weight (kg)	24 – 26		150		200	
	Item No.		Item No.		Item No.	
Flow rate at 15° C	3 l/h	08.4005	60 l/h	05.3061-RDS	100 l/h	05.3100-RDS
	6 l/h	08.4008	120 l/h	05.3121-RDS	180 l/h	05.3180-RDS
	12 l/h	08.4014			300 l/h	05.3300-RDS
	20 l/h	08.4022			350 l/h	05.3350-RDS
	40 l/h	08.4042				

**An impressive achievement you can count on:**

Hundreds of TKA systems ensure reliable supply of ultrapure water to analysers, worldwide.

## Labo Baza

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