



# TRITON® Tasty

Modern drinking water freshness  
system without the use of chemicals

**Krauspoitz**  
TANKSYSTEM GMBH





# Comparison of treatments for microbial contamination

## Conventional disinfection methods

The most commonly used disinfection process today is chlorination. However, this process may produce disinfection by-products such as chloramines (combined chlorine) and trihalomethanes, whose carcinogenic effects have been proven.

Allergies, inflammation and irritation are another unpleasant consequence of using chlorine.

There are limits to oxidative disinfection with chlorine, especially when organic substances are present, such as humic substances. By adding chlorine and its oxidative effect, the microbially degradable organic substances of macromolecular size are converted into low molecular weight.

cular matter broken down. This makes them much more suitable as nutrients for the microorganisms and therefore contributes to a greater extent to re-germination in the pipe network.

## Conventional drinking water conditioning systems for the treatment of microbial contaminants

### Disadvantages of adding chlorine:

- permanent costs due to chlorine consumption and dependence on suppliers
- permanent costs due to laboratory monitoring for dosage quantities
- Impairment of water quality in terms of smell and taste
- Incorrect dosage possible and therefore risk of accidents
- Danger to health due to poisoning, chemical burns, formation of carcinogenic gases (e.g. chloroform)



### **Disinfection method using UV light**

UV rays are high-energy, electromagnetic rays that occur in the natural spectrum of radiation emitted by the sun.

The emitters used for UV disinfection have their highest emission value at 254 nm and they therefore almost coincide with the absorption curve of DNA, as the carrier of all genetic information. If liquid is passed directly past the UV lamp at a defined distance and at a defined speed, the treatment effect can be reduced. Due to this in this emission range high absorption capacity of the nucleic acids, which act as DNA building blocks, triggers a photochemical reaction that causes an interruption of the genetic information for cell reproduction and metabolism. The microorganisms in this way they become inactive and therefore harmless. lich made.

This physical process inactivates microorganisms, bacteria and viruses in the water without chemicals and without changing the water characteristics.

### **Combating microbial contamination by using special UV lamps in conjunction with activated carbon multi-layer filters**

#### **Advantages**

- no use of chemicals
- quick and effective disinfection (immediately usable)
- no impairment of smell or taste
- easiest handling and robust application
- no permanent laboratory monitoring
- low operating costs
- no environmental impact, as the process is containing natural (sunlight!), monitoring the wavelength
- no formation of harmful by-products
- no health risks when used
- Disinfection of chlorine-resistant diseases excite
- compact modular design, therefore faster and easy to set up (plug & use) and adjust to the need

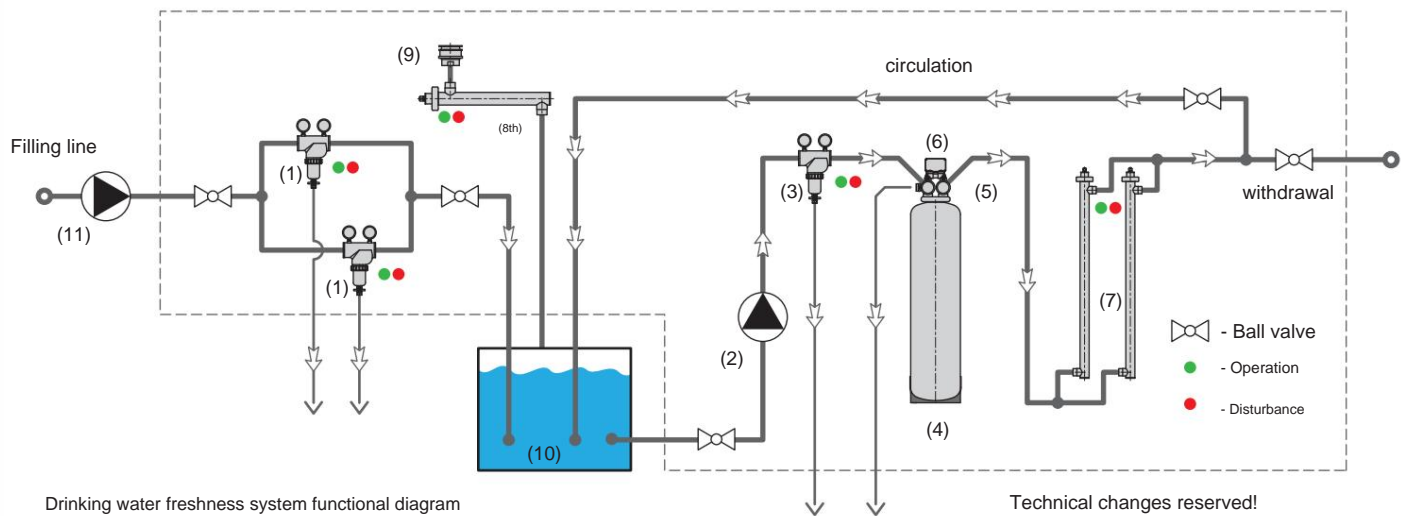
### **Combating legionella**

- A special one is used for hot water applications
- UV technology in conjunction with the basic module used or supplemented

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# Functional scheme



## Legend / components

- |  |  |
|--|--|
| (1) Pre-filter, coarse, self-cleaning              | (7) UV treatment system with UV tubes            |
| (2) Centrifugal pump, delivery rate 50 liters/min. | (8) Ventilation and ventilation line with UV-SET |
| (3) Safety filter, coarse, self-cleaning           | (9) Ventilation and ventilation fitting          |
| (4) Pressure vessels                               | (10) Water storage tank                          |
| (5) Central control valve                          | (11) Transfer pump (optional)                    |
| (6) Electronic control device                      |  |

**Note:** Additional contamination of drinking water due to harmful ingredients such as arsenic, hydrogen sulfide, iron, Manganese can be removed using alternative or additional multi-layer filter modules with special granules.

## Multi-layer filter / mode of operation

The vertical coating of the inverse multi-layer filter creates

naturally an "ideal" filter.

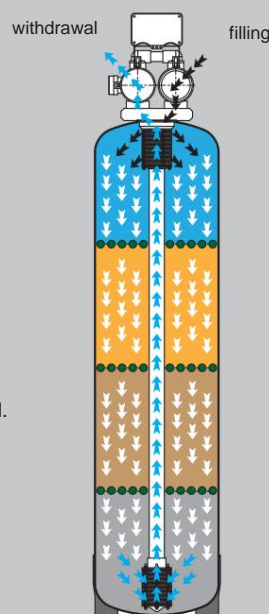
After a certain period of operation

a so-called "filter cake". The result is an increased filter resistance, with the sensor message: Backwashing required!

The backwashing operation is carried out automatically by an integrated control unit when a pressure difference is built up through the filter material. chen.

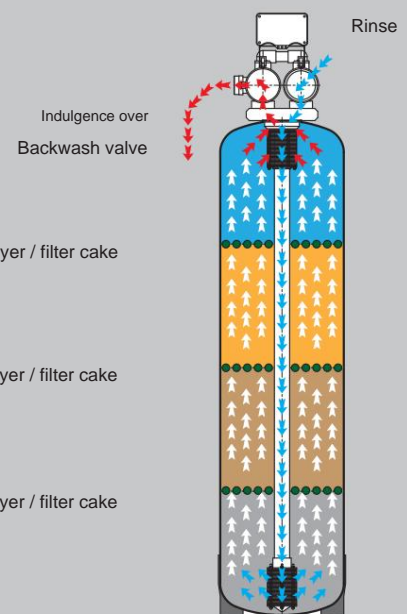
## Continuous operation /

### Cleaning operation (continuous)



## Backwash

### operation (phased depending on pressure)





The water to be treated flows through the housing and is guided specifically along the quartz immersion tube in which the lamp is mounted. The precisely defined water film thickness (distance between UV light emission on the quartz tube surface and the inner wall of the housing) guarantees optimal penetration of the water by the UV light.

### UV treatment system

for water disinfection, consisting of:

- UV radiation treatment tubes
- Power supply (switch box) and OPD monitoring unit with UV sensor including OTC lifespan monitoring

### OPD - monitoring with UV sensor

To monitor UV systems, UV sensors with the associated monitoring are required and should be standard in modern systems.

OPD controls the UVC irradiance of the UV lamps used.

Installation takes place behind the front panel of the control box.

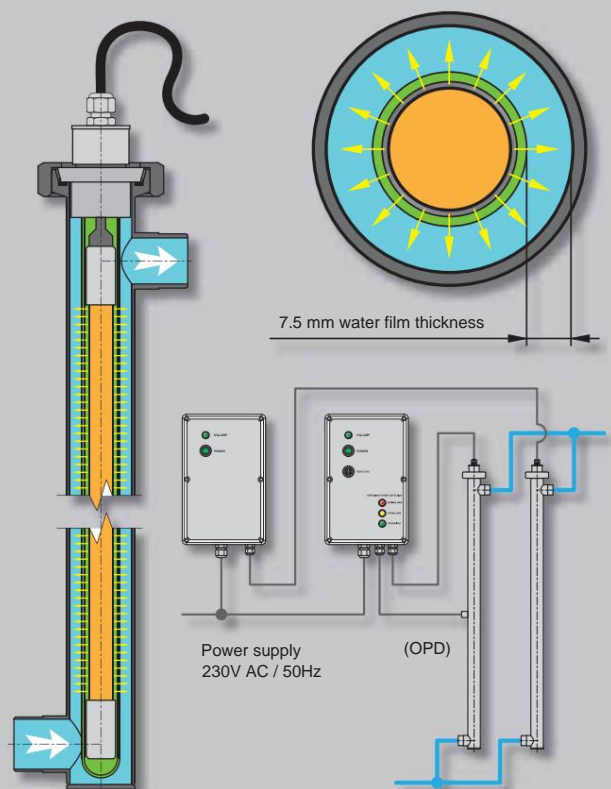
### OTC - lifespan monitoring

This system works as a normal operating hours counter.

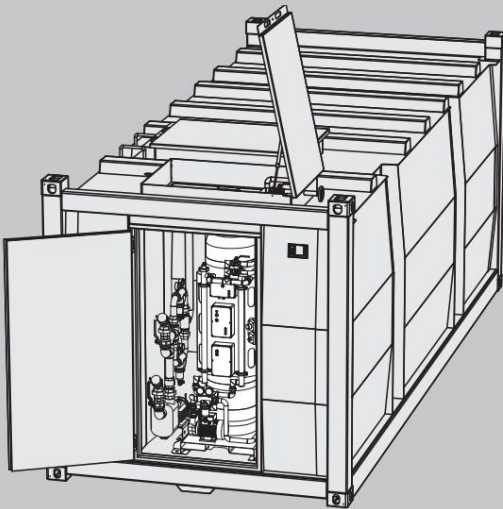
After applying the operating voltage, the counter starts to run. Installation takes place behind the front panel of the control box.

The UV treatment system for water disinfection is characterized by an extraordinarily high disinfection performance with a compact design and low energy consumption.

The UV treatment system traditionally consists of a UV low-pressure mercury lamp, which is centered in a stainless steel reactor vessel protected by a quartz immersion tube, so that no radiation can penetrate to the outside. UV output is monitored by a UV sensor that provides visual or audible indicators of UV lamp status.



# Drinking water tank container

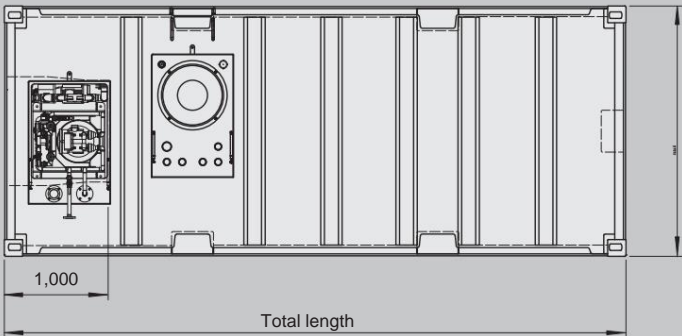
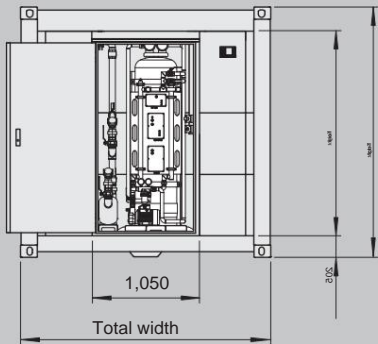
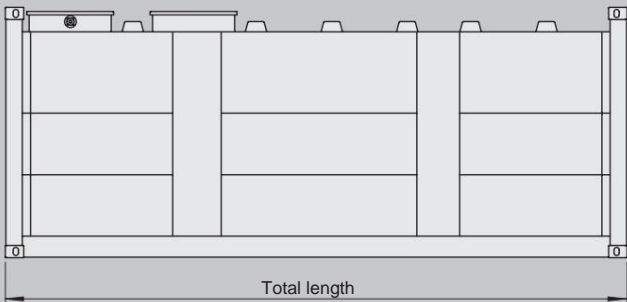


The Minotaur® storage tank container is a cubic, single-walled construction. It is integrated into an ISO container frame and combines all the advantages of this system. This applies in particular to special on:

- Transport - international approval for ships, rail and Street (CSC), in an empty and cleaned condition,
- Storage - can be stacked 8 times (empty),
- Safety - high static strength due to the construction,
- Storage capacity - optimal space-content ratio cubic design,
- the arrangement of the equipment (is protected in a the niches of the tank).

The **functional niche** is installed at the front and contains the drinking water freshness system with systems, control and filling system.

The storage tank container requires a permanently installed connection to the power grid to operate. (Exception: with option - diesel unit for self-sufficiency).



Tank type	volume 100%	Volume 95%	Total length	Width in total	height velvet	Tank height	Weight (empty)
Item No.	liter	liter	mm	mm	mm	mm	kg (approx.)
KCE-ST-V6-10	10,600	10,000	2,991	2,438	2,438	2,000	2,400
KCE-ST-V6-20	24,400	23,300	6,058	2,438	2,438	2,000	4,200
KCE-ST-V6-20-HC	29,200	28,000	6,058	2,438	2,896	2,500	4,800
KCE-ST-V6-40	51,900	49,400	12,192	2,438	2,438	2,000	7,200
KCE-ST-V6-40-HC	62,600	59,700	12,192	2,438	2,896	2,500	8,600



# components

## a.) Composite pressure vessel and distribution system

Material inner tank made of LD-PE rotationally melted

Outer material: fiberglass - epoxy resin winding

Container volume: 170 liters, empty weight: 20 kg

Operating pressure: min. 0 bar / max. 10 bar

Operating temperature: min. +1°C / max. +50°C

## b.) Fully automatic central control valve for filling, Withdrawal and circulation.

The control valve is used both in the house and

Swimming pool technology as well as in commercial and industrial areas are always used when water needs to be filtered.

Operating pressure: min. 1.5 bar / max. 9 bar

Operating temperature: min. +1°C / max. +40°C

Flow rate operation: 20 m³/h at 1 bar

Backwash flow: 11 m³/h at 1 bar

## c.) Electronic control device

Small computer used to control compact de-icing and manganese removal systems, as well as for softening and de-nitrification

becomes.

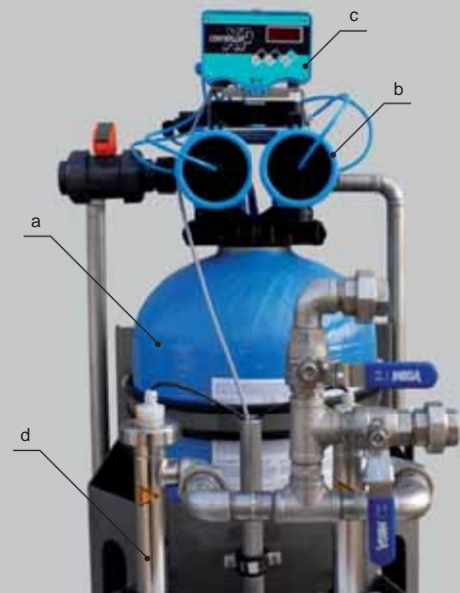
- Regeneration and rinsing according to programmed Time (in days) at defined times of day/night
- Regeneration and rinsing after consumption programmed amount of water to the defined one Time of day/night

## d.) The UV treatment system for water disinfection

tion is available in electropolished stainless steel. It is used for the disinfection of drinking water for flow rates of up to 2,500 liters/h

Drinking water with UV lamps with a defined strength.

The UV lamps used are characterized by a long service life, high disinfection performance and low energy consumption.



The fully automatic drinking water freshness system Triton® Tasty is a time-controlled filter system for removing fine solids in accordance with the drinking water regulations. The fully automatic central control valve with electronic control unit controls freely programmable or fixed backwash intervals and the associated backwash times.

The pressure vessel is made of corrosion-resistant according to GRP. Coarse gravel/granules, fine quartz gravel/granules and hydroantracite NI are used for the filter material used.



## Technical data:

- UVC transmission: 90% T1 cm, dose: < 500 J/m²
- Lamp service life: 10,000 h
- Water temperature min. 2°C / max. 40°C
- Housing inner wall (reactor): stainless steel 1.4571
- Weight: 3.4kg
- Seal: FPM, operating pressure max. 10 bar
- electric Connection: 230 V AC / 50 Hz

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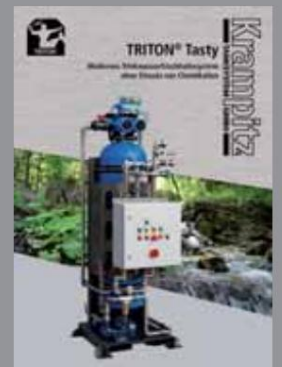
Mobile service module for  
"on-site" operations in mining



Mobile maintenance module for  
"on-site" operations in mining



KRP-5000 - Automatic  
Fuel - cleaning and  
Nursing station



TRITON® Tasty drinking water  
freshness system