Hygiene of the dental unit

Decontamination of the process water

Biofilm removal | Cleaning of the suction system

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METASYS
protect what you need

DECONTAMINATION OF DENTAL PROCESS WATER

1 Water as a health risk

Process water in dental treatment units can be subject to increased microbial contamination. Microorganisms tend to colonize the water lines, particularly after longer stagnation periods, and can thus enter the treatment cycle. This represents a serious health risk for patients and medical staff. Although regular flushing of the water lines helps to reduce the microbial risk, this measure alone is usually not enough to ensure long-term hygienic safety.

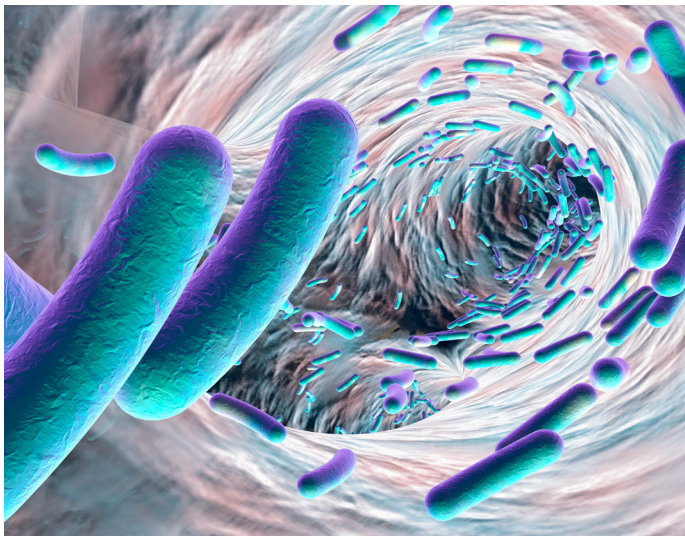
The solution: continuous decontamination by using a water decontamination system.

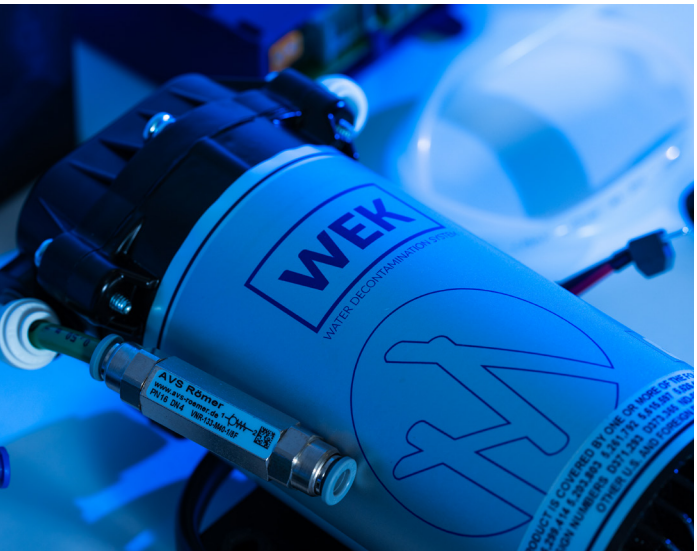
By using a water decontamination system, the microbial load in the process water is continuously reduced. This guarantees that the water in the water lines is always kept at a hygienically impeccable level - even during longer downtimes. Thanks to its advanced technology, METASYS offers a reliable and permanent solution to ensure sustainable hygiene in your practice.

2 No chance for legionella!

Legionella infections are one of the most common health risks in dental practices. These pathogens are primarily transmitted via aerosols produced during dental treatment. By inhaling the aerosols, the pathogens enter the body, where they can sometimes cause serious infections.

METASYS water decontamination systems enable effective control of the legionella risk. Even in the case of heavy contamination, the legionella load in the process water can be successfully eliminated.





3 Problem: Limescale deposits

Limescale poses a particular challenge for the dental unit. Limescale deposits create ideal conditions for the growth of germs, while limescale blockages in pipes and valves can even impair the proper functioning of the entire unit. METASYS water decontamination systems offer effective protection thanks to their limescale-inhibiting agents and thus help to maintain the optimum function of your dental unit.

WATER DECONTAMINATION
WEK | WEK Light

Continuous decontamination of the dental process water

METASYS water decontamination systems offer a reliable solution for the decontamination of process water and water-bearing lines. They not only guarantee hygienically pure water, but also provide effective protection against limescale. This means that important consumers, such as tumbler fillers, syringes and turbines, are always supplied with clean and decontaminated water - for maximum safety and longevity of the dental unit.

The METASYS WEK water decontamination system also complies with DIN EN 1717 which stipulates that water must not be returned to the public water supply after contact with patients or chemicals. METASYS WEK is equipped with an air gapwhich ensures that the decontaminated process water is separated from the fresh water.

GREEN&CLEAN WK is a 2% hydrogen peroxide-based solution that has been specially developed for the continuous reduction of germs in process water. By using lime-binding substances, GREEN&CLEAN WK also provides effective protection against limescale deposits. 750 ml concentrate is sufficient for 63 liters of dental process water.

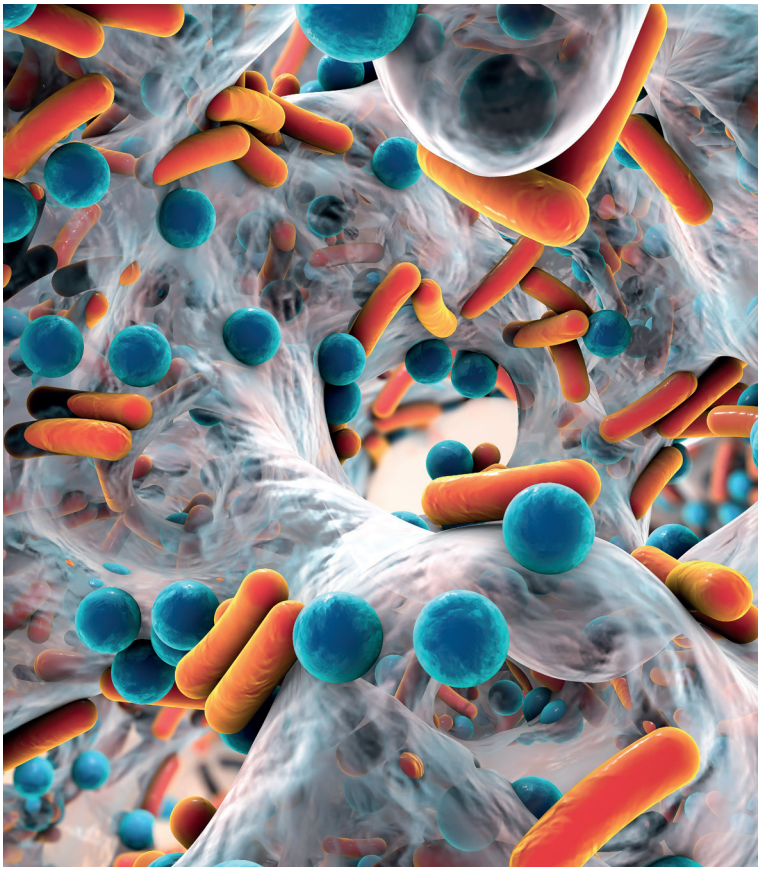
	WEK available as built-in version or with cover	WEK Light available as built-in version or with cover
Order no.	108000011 | 108000012	108000030 | 108000029
Power supply	230 V AC (version with cover) 24 V AC (built-in version)	230 V AC (version with cover) 24 V AC (built-in version)
Frequency	50/60 Hz	50/60 Hz
Max. current consumption	100 mA (version with cover) 1,2 A (built-in version)	0,2 A (version with cover) 0,03 A (built-in version)
Permissible water pressure	1 - 6 bar	1 - 6 bar
Permissible air pressure	3,5 - 8 bar	4 - 8 bar
Operating pressure (water)	2,5 bar	2,5 bar
Operating pressure (air)	3,5 bar	3,5 bar
Max. water flow rate	1 l/min (depressurized))	6 l/min (water pressure dependent)
Mixing ratio	1:85 standard decontamination 1:42 intensive decontamination	1:85 standard decontamination 1:42 intensive decontamination
Working solution	235 ppm	235 ppm
Dimensions (H x W x D)	335 x 265 x 160 mm	modular construction
MD class	I	I

Customized versions of the WEK/WEK Light built-in versions are available for a wide range of dental units.

PROTECTION AGAINST BIOFILM AND LIMESCALE

Contamination of dental treatment units with micro-organisms poses a serious risk. Temperatures of 37°C in the water line systems, long stagnation periods, as well as back-flow in handpieces favor the growth of bacteria and fungi.

The large surface area of the hose system and the plastics used in the hose lines support the rapid growth of germs which form deposits on the walls of the hose system after just a few days. The water flowing through is contaminated by these germs, which poses a considerable health risk. It is therefore essential to disinfect the water in dental treatment units. However, it is not only bacteria and fungi that can become a problem. Especially in areas with very hard water, limescale deposits in the water lines can lead to damage to the dental unit. With the METASYS water decontamination system, limescale can be easily and effectively prevented.



What is biofilm?

Biofilm is a multi-layered coating of microorganisms that forms when they colonize surfaces. Biofilms are often perceived in everyday life as a “layer of slime” or “coating”. Extracellular polymer substances (EPS) excreted by the microorganisms form so-called hydrogels in combination with water. This results in a mucus-like coating in which nutrients and other substances are dissolved. These EPS also give the system a stable form (hydrate shell). Inside biofilms, dissolved substances are mainly transported by concentration equilibration. Nutrients are transported by the water flow in the “slime layer”.

Biofilm contains both oxygenated (the side facing the water) and non-oxygenated areas (inner walls of the dental unit). This complex structure is very difficult to dissolve completely without a suitable disinfectant. Commercially available products are often only able to attack the uppermost biofilm layer (shear forces tear off pieces, clogging the instruments).

What to do in case of biofilm?

- **First step:** Intensive decontamination and biofilm removal: BR System and GREEN&CLEAN BR
- **Second step:** Permanent water decontamination: WEK / WEK Light and GREEN&CLEAN WK

BIOFILM REMOVAL
BR System

Intensive decontamination and biofilm removal

Dripping instruments or unpleasantly smelling water are usually the first signs that something is wrong with the dental unit's process water lines. This is usually caused by biofilm, which builds up on the inner walls of the hose system and contaminates the process water. Biofilm is not only a source of infection, it can also affect the entire unit as well as instruments such as straight and contra-angle handpieces.

Before installing a water decontamination system, it is recommended to remove any existing biofilm from the water pipes. With the BR System for biofilm removal and the associated product GREEN&CLEAN BR, METASYS offers the right tool for this.

GREEN&CLEAN BR is a ready-to-use hydrogen peroxide solution (4%) for biofilm removal which, thanks to its pH value, breaks the hydrate shell (hydrogen bonds) of the biofilm and enables its oxidation. The GREEN&CLEAN BR disinfectant penetrates to the inner walls of the dental unit's piping system and removes the biofilm there as well.

The advantages of the BR System are convincing:

The BR System is used to decontaminate water-bearing lines before installing a WEK or WEK Light water decontamination system. The GREEN&CLEAN BR preparation, which is specially adapted to the device, removes existing biofilm in just 30 minutes.

- Easy to connect
- Easy to handle (cleaning solution is automatically pumped into the respective treatment unit)
- Short exposure time of 30 minutes

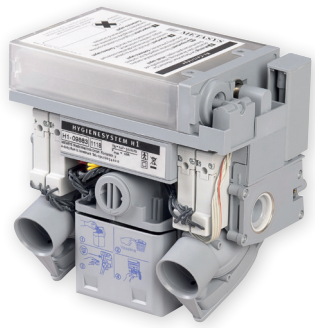
CLEANING AND DEODORIZATION
H1 Hygiene System

Risk due to backflow

The Robert Koch Institute (RKI) warns that backflow into a patient's oral cavity can occur when suctioning fluids such as blood, saliva or cooling water. This occurs when suction cannulas are blocked by aspirated soft tissue. This backflow can pose a risk for the transmission of infections, especially if the aspirated fluids are contaminated with pathogens. The RKI also requires regular maintenance and cleaning of the suction systems to avoid cross-contamination and ensure the necessary hygiene (RKI (2006), *Recommendation on infection prevention in dentistry*, and RKI (2021), *Hygiene requirements for the reprocessing of medical devices*).

The H1 Hygiene System was specially developed to prevent this path of infection. It uses a special process in which GREEN&CLEAN H1 is nebulized retrogradely at the suction cannula. This continuous cleaning of the suction hoses ensures that no liquid residue remains that could serve as a source of infection.

The system works fully automatically and impresses with its low consumption of the cleaning agent. This increases hygiene and at the same time reduces the amount of cleaning required.



	H1 Hygiene System without hose tray
Order no.	108000002
Power supply	24 V AC
Frequenz	50/60 Hz
Max. current consumption	450 mA
Max. power consumption	11 VA
Max. ambient temperature	40°C
Permissible water pressure	2-4 bar (operating pressure: 2 bar)
Weight (without housing)	2,45 kg
Dimensions (H x W x D)	128 x 132 x 95 mm (without housing and hose tray)
Space requirement for installation (H x W x D)	180 x 260 x 110 mm ((without housing and hose tray)
MD class	I

CLEANLINESS AND EFFICIENCY
H1 Hygiene System

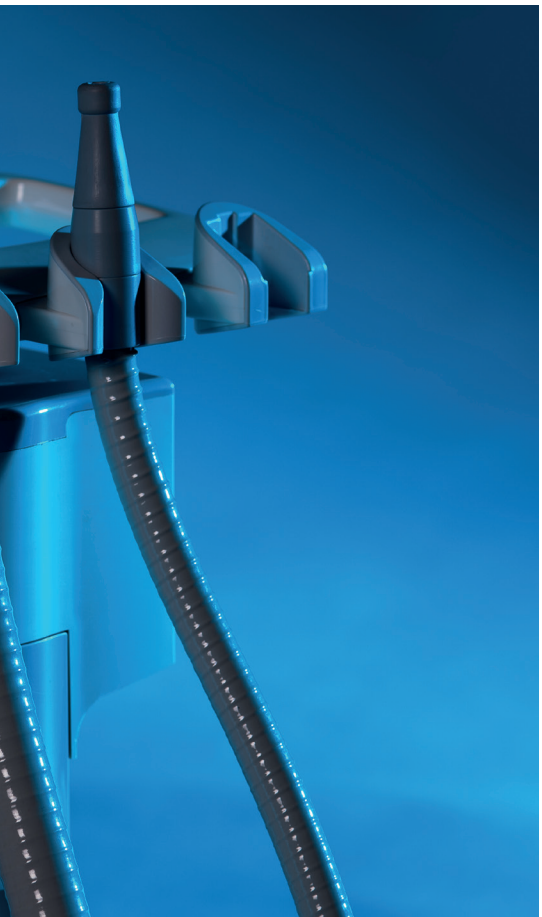
Automated cleaning for your suction system

When the handpiece of a suction hose is lifted from the hose tray, a vacuum is created. This negative pressure activates the opening of the suction flow closure membrane via a solenoid valve. The suction flow closure membrane is designed as a pipe bend - ideal for maximizing flow efficiency and minimizing sensitivity to contamination.

The cleaning process starts automatically at the start of the suction process. Either water from the DVGW tank, or GREEN&CLEAN H1 from the pouch is drawn out by means of a a water-driven double membrane pump. The cleaning agent passes through the knee sealing membrane and specially designed pipes directly to the active handpieces, where it is evenly distributed on the inner walls of the suction hoses by the suction flow.

This ensures that your entire suction system is reliably cleaned - for optimum operational safety!

The GREEN&CLEAN H1 cleaning agent ensures cost-effective maintenance of the entire suction system in conjunction with the H1 Hygiene System. Enzymes ensure good protein solubility, which also removes old deposits. Active defoamers also prevent foaming in amalgam separators and suction systems.



The advantages of the H1 Hygiene System are convincing:

- Automated cleaning process
- Reliable and cost-effective
- Easy maintenance and high operational safety

MAINTENANCE AND DISINFECTION

Annual service kit WEK

Order no. 120000612

3-year service kit WEK

Order no. 120000611

Annual service kit WEK Light

Order no. 120000613

Dosing aid for bottle systems

Order no. 121000014

GREEN&CLEAN WK test strips

Order no. 121000016 - WK test strips, 5 pcs

Order no. 121000015 - WK test strips, half year supply, 25 pcs

GREEN&CLEAN WK

Order no. 122000057 - GREEN&CLEAN WK refill kit 1 (4 x 750 ml)

Order no. 122000056 - GREEN&CLEAN WK refill kit 2 (6 x 1000 ml)

GREEN&CLEAN BR

Order no. 122000002 - GREEN&CLEAN BR (2 x 1000 ml)

GREEN&CLEAN H1

Order no. 122000005 - GREEN&CLEAN H1 refill kit

(4 x 500 ml pouches)

METASYS
protect what you need

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METASYS recycling & processing GmbH

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