



DILLIGENT WATERTEC

Chemical-free germ reduction for
industrial and cooling water circuits –
safe, efficient, durable

Steinhardt® DILLIGENT WATERTEC

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The Challenge

Water plays a central role in many technical processes.

Evaporative air coolers or **air wash systems** are the best-known examples of circuits where hygiene is of particular importance. The major Legionella outbreaks in Ulm (2010) and Warstein (2013) as well as the continuous rise of registered cases, including those with a fatal outcome, have focused the interest of the public and operators alike. According to the VDI (Association of German Engineers) annual report 2016/2017, the yearly figure for Legionella infection is estimated at 10,000 cases in the industrial sector alone, around 5 – 10% of which end in fatality. In 2017 the government set down boundary conditions and limits for the safe operation of re-cooling systems in the **42. BImSchV – the Federal Emissions Protection Act**. The **VDI's Regulation 2047-2** precluded the act with the definition of technical measures designed to support secure operation.

The task of establishing secure operations and achieving the goal of sustainable protection for health and environment centres firstly on the correct treatment of the process water and secondly on the resolve to guarantee **continuous hygienic and safe conditions**.

Uncontrolled growth of bacteria and their ability to develop **resistance** against biocides complicate a hygienically secure operation.

The Solution

The **Steinhardt® DILLIGENT WATERTEC** uses innovative hydro-mechanical technology to prevent pathological pollution and re-contamination in water circuits long-term. Many years of experience and expertise in the field of water treatment have been invested in the development and application of **DILLIGENT cavitation technology**. The compact units are integrated into the process water circuit and operate fully automatically with no additional chemicals.

The Way

The **DILLIGENT WATERTEC** 's operation is based on physical active principles and is chemical-free. A partial flow of water passes through the **DILLIGENT WATERTEC** unit for hydro-mechanical cavitation treatment, whereby bacteria are mechanically destroyed and removed from the water by oxidation. Over time, coatings such as biofilm



Patents pending

The cavitation technology of the patented DILLIGENT WATERTEC unit eliminates organic impurities such as bacteria, germs, yeasts and moulds sustainably.

or algae growth are gradually eliminated.

The unit can be exactly adapted to existing system volumes and is suitable for either permanent or intermittent operation.

DILLIGENT technology can also be combined with a filtration system which will stabilise the system intake of particles such as dust and pollen.

The Advantages

- fully automatic, compact unit
- integration into existing systems
- low maintenance and operating costs
- saves money for servicing and cleaning
- optimises process flows
- robust and durable technology
- innovative environmental protection
- lasting health protection
- eliminates bacteria
- prevents re-contamination
- free of chemicals
- no resistance problems
- conforms to German Federal Emissions Protection Act
- safe working conditions through reliable hygiene