

NEWSTER[®] SWT

Safe Water Treatment

Treatment of
potentially infectious
sewage water

Liquid Waste



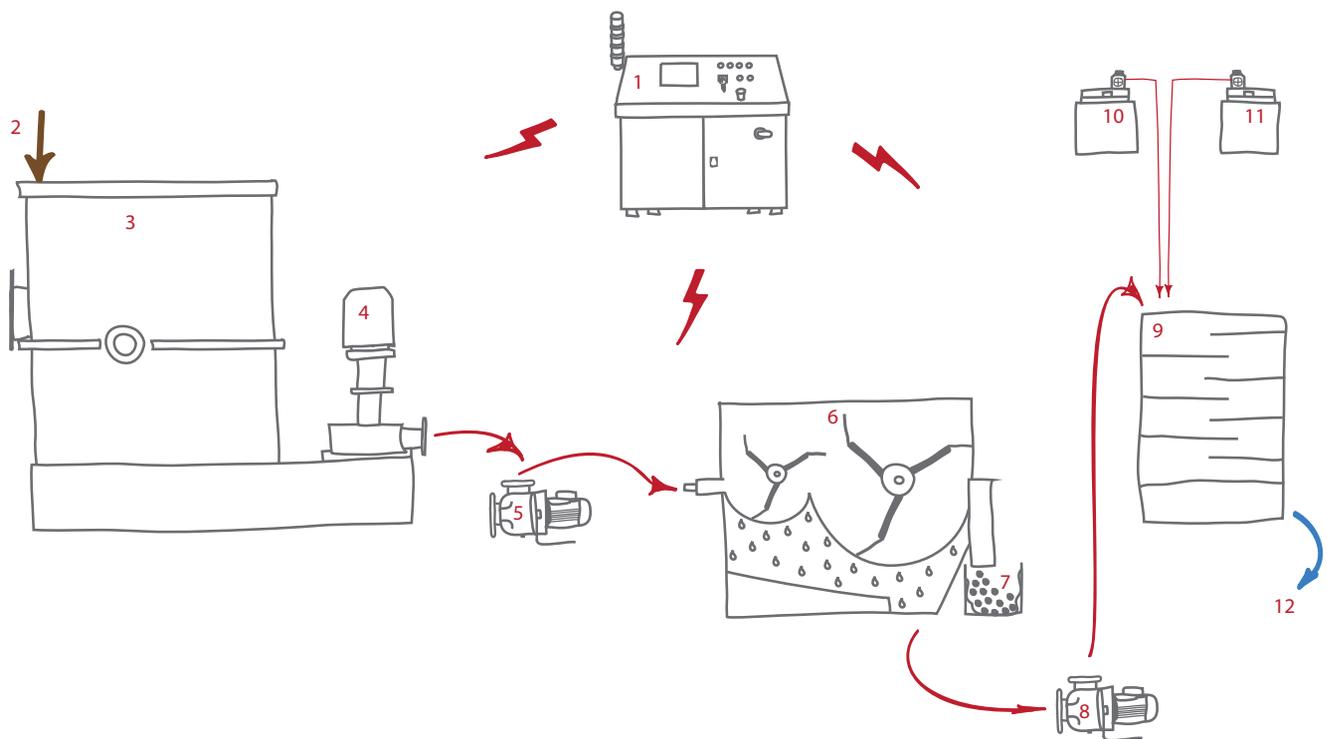
English



Newster® SWT - Safe Water Treatment

is a system for the disinfection of hospital waste water. It has been specially designed as final mechanical treatment of waste water deriving from infectious-disease hospital wards. The system is based on an innovative process that uses a special grinder to dispel all organic material and eventually grinds all other material in the waste water. The Newster® SWT system is designed for on-site installation in hospital facilities. It meets the needs of small-sized hospitals and hospitals located far from main urban areas, lacking connection to sewage system and urban water treatment plant. SWT is a Newster® technology designed to complete the range of Newster® products providing a complete solution for hospital eco-sustainability.

Newster® SWT cycle process

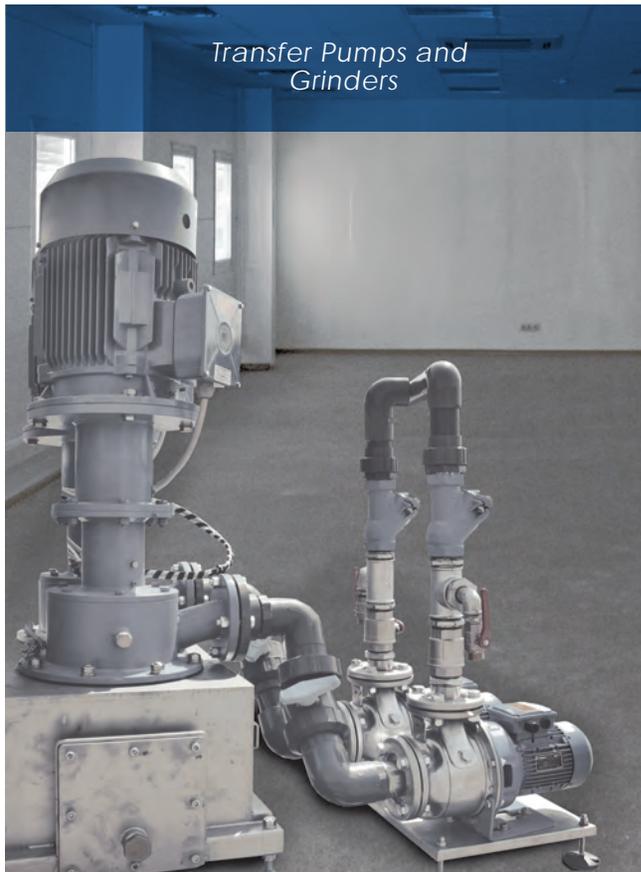


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|---------------------------------|---|
| 1. Electric board | 7. Container for solid waste collection |
| 2. Incoming hospital wastewater | 8. Transfer pump |
| 3. Grinding tank | 9. Disinfection tank |
| 4. Grinder | 10. Tank and pump for peracetic acid |
| 5. Transfer pumps | 11. Tank and pump for caustic soda |
| 6. Separator | 12. Sewer |

The automatic cycle carries out the following stages:

- Grinding of solids contained in sewage water
- Solid-liquid separation
- Disinfection of infected liquids and final drainage to sewer

Grinding of solids



Transfer Pumps and Grinders

The two processing lines work alternatively (one at a time)

Dissipation and grinding operations of the solids during treatment take place in the grinding tank (3) where the grinders (4) and the transfer pumps (5) are installed.

This phase of the grinding disintegrates the organic matter and reduces the size of solid and fiber matter when the wastewater is pumped to the separator (6). Heavier materials that might be present (stones, pieces of iron, glass, etc) sediment in an area far from the grinder, due to the centrifuge effect

Grinders and pumps are controlled by the computer through a system of level probes. The tank has a safety overflow drain that, in case of emergency, drains the water into the disinfection tank and then directly into the sewer.



Electric Board

The entire process is operated and controlled by the PLC equipped with a remote control system

Solid-liquid separation

During this phase the liquid passes through a mechanical filtration stage where solids are compacted.

This stage of the treatment takes place on a stainless steel sheet with 5 mm diameter holes. The perforated sheet is continuously cleaned by four nylon brushes. During this stage solids are pressed by two rotating rollers, mounted on special elements that allow the regulation of the force of the pressure. In this way the solid is squeezed and then loaded into the container (7) with the use of two

nylon brushes that brush the perforated sheet. The liquid is collected in the separator's lower tank and from there transferred to the disinfection tank (9) by means of the transfer pumps with an open impeller pump for wastewater. (8).

Where possible the transfer is made by fall. The separated solids are taken from the separator and piled into the container (7). They may be treated in the Newster® NW solid waste sterilization machines.



Separator (detail)

Disinfection of infected liquids and final drainage to sewer



The choice of the disinfectant to be utilized can be made by the final client. The peracetic acid is advised inasmuch as it doesn't leave chemical residues in the sewers

The disinfection tank (9) is designed to mix the wastewater and disinfectants correctly. The dosage of the chemical additives is controlled by chemical and physical parameters linked to the computer that controls the function of the entire system. The peracetic

acid (10), used mainly as a disinfectant, creates an acid environment in the disinfection tank. To maintain a pH value of about 7 a basic product is used, usually sodium Hydroxide (11). The disinfection tank is designed in order to guarantee a contact

time of 30 minutes between the disinfectant agents and the wastewater (peracetic acid requires a minimum contact of 20 minutes in order to disinfect the wastewater). At the end of the treatment the wastewater is discharged into the sewer(12).

Technical specifications

The system is designed with two redundant work lines. The technical specifications are intended for a single line.

Newster® SWT general characteristics

Maximum capacity	10 m ³ /h
Total power used	25 kW
Grinding tank	185 x110 x160 cm
Separator	220 x110 x170 cm
Electric board	100x450 x120 cm

Transfer pump, centrifugal model

Capacity	10 m ³ /h
Motor power	4x1,1 kW

Vertical axis submersible grinder

Treatment capacity	10 m ³ /h
Motor power	2x5,5 kW
Max. diameter grinded solids	10 mm
Blade material	special steel

Separator

Motor power	0,5 kW
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Why to choose Newster® SWT

- Proven excellence in hospital sanitation
- Newster® SWT avoids the spread of infected pollutants in underground and surface water
- Certification proving conformity with CE regulations
- Newster® SWT is pre-assembled and can be installed without any structural work. It can be deliverable in containers.
- Newster® SWT is easily maintained and an operator is not necessary while it is in function
- Newster® SWT is completely automatic and computerized
- Newster® SWT is equipped with a remote control system
- Newster® SWT is endowed with two redundant processing lines