

Water recovery units

The economical, environmentally-friendly addition to high-pressure water cleaning machines by RST



Cost-saving recirculation of cleaning water

Where high-performance high-pressure plunger pumps are used for cleaning and paint-removal purposes, the quality of the water is crucial. At pressures of up to 3000 bar, solid particles of a maximum of 1 micron are permitted to ensure safe, economical pump operation. To ensure that the water requirements of the cleaning and/or paint-removal systems can always be guaranteed, new high-performance water recovery units were developed. The environmentally friendly design Filtrate retreatment of these units allows complete recirculation in a 3-shift environment. Apart from separation of solids and liquids by an inclined filter, molecular filters ensure a water quality which will guarantee long lifetimes of the high-pressure pumps and associated components, which keeps operating costs to a minimum.





Stationary water treatment unit



Mobile water treatment version of the WAA



Multistage, platform-mounted water recovery unit Site: Mexico



Valve blocks for automatic gate control



Ultrafiltration unit with four pressure pipes, each with two membranes

Membranes ensure optimum filtration

The central feature of these WAA water treatment units is the ultrafiltration process using a molecular filter. These molecular filters employ the cross-flow method to separate any foreign bodies held in suspension by their molecular weights and sizes. Once a difference in pressure between the two sides has been generated, the membranes act like a sieve. Any particles smaller than the pores in the membranes are allowed to pass through as permeate, while all larger molecules or particles are retained as residues. This kind of separation technology is easy to handle and requires very

Fully-automated, easy-to-operate cleaning cycles

Sump pumps transfer the precleaned suspension from the cleaning and paint-removal booths to the corresponding containers in the water recovery unit. The easily adjustable flow rate for the permeate enables the unit to be optimised to match the inline process. Double-action gates, controlled by a software program, enable the numerous cleaning cycles to be run in either automatic mode or in manual mode. Economical, environmentallyfriendly treatment

Ecological aspects: Water may only be used as a cleaning tool if it is disposed of afterwards in an environmentally responsible manner. Economic aspects: The conditions under which waste water may be disposed off are prescribed by legislation*. The costs of conventional waste water disposal come to around \in 2 to \in 5 per m³ of water (as in 2007). Using the RST water recovery unit, the costs of wastewater disposal and consumption of clean water can be reduced by up to 90%, because 90% of the cleaned water is recycled by the WAA.

Recycled Water 900 * Laws on water disposal: little energy Rigid statutory requirements regulate the maximum amount of hazardous substances permitted in water used for cleaning purposes and then disposed of. Water technology tools Clean water 10% Valve Suspension pump Permeate pumps the cleaned water from the booth The filtered water is returned to the cycle. In this way, up to 90% of the water can be reused. Molecular filter Ultrafiltration Inclined filter Residues Separates solid residues from liquids Overcurrent pump continuously pumps residues through the membranes Solid residues



Machine data and applications WAA



Applications

- Weld-seam cleaning on subframes
- Core tool cleaning
- Internal cleaning of containers
- Paint removal on gratings and subframes
- Maintenance of machines and heavy equipment
- Cleaning formwork
- Environmentally-friendly substrate cleaning
- Zero-emission decoating and paint-removal of surfaces
- Decontamination of surfaces

Application industries

- Automotive industry
- Aerospace industry
- Construction and concretemaking industries
- Mining
- Chemicals industry
- Iron & steel and metalworking industries
- Drinks industry
- Glass, china and ceramics industries
- Mechanical and plant engineering
- Food-processing industry
- Offshore industry Shipbuilding
- Silippullullig
 Wood pulp on
- Wood pulp and paper industries
- Cement industry



Throughput	1200 l/h – 4800 l/h
Recycling rate	85-90%
Concentration tank approx.	ca. 10 m ³
Permeate tank approx.	ca. 10 m ³
Electric power rating approx.	ca. 10 kW

Fully automated controller	
Double-action pneumatic gates	V
Measuring technology	V
High-pressure water pumps	
Prepressure pumps	V
Overcurrent pumps	V
Suspension pumps	V
Recirculation pumps	V
Inclined filter separates solids from liquids	V
Concentration tank made of stainless steel	V
Permeate tank made of stainless steel	V
Cleaning fluid tank made of stainless steel	V
Redundant prefiltration	V
Fine filter	V
UV radiation kills germs	V
Biocide pumps sterilise using chemicals	V
Oil skimmer	V

Enterprise certified to § 19 I WHG

WATER RESOURCES LAW: RST is certified to § 19 I WHG by the German TÜV testing authority and, with its equipment and qualifications, is thus authorised to build plant and equipment which may be used in connection with waterendangering substances. These include LAU facilities (storage, bottling and transhipment of water-endangering substances) and HBV facilities (production, treatment and use of water-endangering substances).

Machine engineering

- Cleaning machines
- Water recovery units
- High-pressure water
- High-pressure was too have been allowed and the second second
- technology ► Robot technology
- System integration

Electrics

- Automation
- Drive technology
- ▶ Software development
- ▶ Process visualisation
- Switchgear manufacture

Fine metalsheet machining

- Sound-insulating hoods
- Machine housings
- Containers and tanks
- Control desks
- Enclosures

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