The All-Round Talent for Aqueous Part Cleaning

EcoCwave

ECOCLEAN

technology that inspires

Part Cleaning as a Value-Adding Process

Increasing demands on cleanliness in component manufacturing impose a need for flexible system technology, optimized in terms of energy and costs.

Ecoclean meets relevant industry quality standards and cleaning objectives with its individually configurable part cleaning systems – whether the aim is to clean mass-produced items in bulk, precision parts arranged in defined position, or large-size components made of metal, plastics or ceramics.

By combining diverse cleaning and drying methods, specifications on part quality and throughput can be fulfilled regardless of your specific industry or activity. Ecoclean offers customer-focused, forward-looking solutions which take into account the entire process chain including chemistry, processes, equipment and instrumentation.

Innovative technology, continuous product improvement and a customer-oriented advisory and planning competence, backed by a global service network, are the hallmarks of Ecoclean and characterize our cleaning solutions. The well-conceived and flexible equipment design relying on the use of high-grade components guarantees a superior level of availability and process reliability in your production environment.

The use of alkaline, neutral and acidic cleaning media is common practice in wet chemical part cleaning and surface treatment applications today. Our newly developed EcoCwave machines are all-round talents in aqueous part cleaning. Thanks to their versatility in application, user-specific configuration options and minimized floorspace needs, they deliver reduced per-unit costs and stable process quality and will be of valuable help in boosting your competitiveness and value-adding performance.

The All-Round Talent for Aqueous Part Cleaning

The EcoCwave is a powerful spray flood cleaning system with a vacuum-tight work chamber. At the user's option, it can be equipped for either two or three independent cleaning steps. The use of upright cylindrical flood tanks, which have been developed for fine cleaning applications, ensure an optimized fluid management, a high flexibility and improved process quality.

Offering a choice of two different work chamber sizes, the system enables you to make-up your individual specific batches. Therefore per-unit product costs are minimized. For your EcoCwave machine, Ecoclean offers an extensive range of options which are individually selectable to suit your requirements.

- **Universal versatility for diverse applications:** in wet chemical part cleaning and surface treatment due to its two-/three-tank configuration capability
- **Innovative system technology requiring minimum floorspace:** only 5.5 m² (two-tank system)
- **Reduced per-unit product costs:** up to 30 % savings through volumetrically optimized batch make-up
- **Optimized fluid management:** upright cylindrical flood tanks, superior to rectangular tanks in preventing the formation of dirt deposits, are backed by full-flow filtration and cleaning fluid treatment
- **100 % drying:** achieved through a combination of hot-air and vacuum drying
- **An extensive range of options:** basic options, fine cleaning, equipment monitoring, fluid treatment, automation solutions
- **User-friendly operation:** advanced HMI operator panel for real-time monitoring of all system states, fault diagnostics and service intervals notification

EcoCwave – versatility in application, reduced per-unit costs and stable process quality

Ecoclean demonstrates its commitment to the efficient and careful use of resources. Thanks to their energy- and cost-optimized design, our cleaning systems will reduce your process, material and per-unit product costs in a sustainable manner.

Your Benefits

CLEANING AND PROCESS EFFICIENCY

- Upright cylindrical flood tanks with dished bottom, perfect for withstanding changing pressure loads during filling and draining, and effective in preventing dirt deposits
- Accurate positioning in front of the nozzles – for pinpointed cleaning and drying precision on parts of complex geometry
- Optimized fluid management provides an effective reduction of drag-out losses
- Powerful spray flooding pumps ensure a turbulent fluid flow and optimum chip removal
- Frequency-controlled flooding process permits the use of high-performance immersion cleaners and controlled flooding of sensitive parts
- Process reliability and system monitoring are ensured by an HMI control panel providing real-time monitoring of all system states, fault diagnostics and service intervals notification

COST EFFICIENCY

- The best possible system configuration from an investment and customer process perspective is achieved through optimum equipment features
- Volumetric optimization of batch make-up can reduce per-unit product costs
- Compact system design requires minimum floorspace
- Energy-optimized filling and draining is ensured by frequency-controlled pumps
- Aquaclean system (evaporator) provides heat recovery and reduced water consumption
- An integrated oil separator extends fluid lifetime
- High-quality insulation cuts heat losses

Simple and Reliable Control

Our newly developed control panel provides full view of all process parameters. Its intuitive user interface allows an easy and safe operation of the system. Integrated real-time monitoring ensures that all system states are transparently mapped.

- Total of 50 cleaning programs, easy to program individually
- Self-explanatory buttons
- Integrated part visualization supports continuous process tracking (real-time monitoring) and optimized machine maintenance
- Straightforward, fast fault diagnostics
- Display of equipment information relevant for service purposes
- Technical and graphic display of all system states directly in the HMI control panel
- Automatic pressure and temperature control for easy operation, increased process reliability and effective validation of cleaning results
- PLC controller (Siemens) with PROFINET for highly flexible Ethernet interfacing
- Optional full-scale visualization with expandable process graphics

EcoCwave – at a Glance

Hardware and processes*

- Single-chamber cleaning system for aqueous part cleaning
- Two or three cleaning stages for cleaning and rinsing processes
- Combinable cleaning processes: spray cleaning, immersion/injection flood washing, ultrasonic cleaning
- Upright cylindrical flood tanks
- Frequency-controlled flooding pumps allow for individually adapted cleaning processes
- Optimized fluid management and minimized drag-out
- Fluid-contacting components are made of high-grade steel, piping is welded and flanged
- Attractively designed enclosure with integrated floor tray
- PLC controller (Siemens) with PROFINET, HMI control panel, 50 cleaning programs, remote diagnosis
- Extensive automation options

Work chamber*

- Vacuum-tight work chamber with illuminated sight glass
- Roll-over unit for optimum cleaning fluid access in spraying and flooding processes provides product rotation (360°) about the horizontal axis
- Automatic basket closing device
- Two chamber sizes for flexible batch make-up
- Rotating and rocking action: accurate part positioning in front of the nozzles is ensured by a frequency-controlled rotary drive for pinpoint precision in cleaning and drying
- Electropolished finish of work chamber and roll-over unit for fine cleaning applications

Drying*

- Hot-air drying with filtered air
- Water-compatible vacuum drying at 300 m³/h
- Intermediate drying of complex part geometries possible

Fluid treatment*

- Combination filter housing for each flood tank, plus fast and easy filter change
- Versatile use of bag and cartridge filter inserts
- Full-flow filtration in every filling and draining process
- Differential pressure monitoring of the filters
- Continuous bypass filtration
- Integrated oil separator for fluid treatment
- Aquaclean system for rinsing fluid treatment
- Rinsing bath demineralization
- Dosing system
- Magnetic inserts
- Bath control instrumentation

* List comprises all equipment variants including options

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Energy Efficient Cleaning Systems
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Technical data	2-tank system	2-tank system	3-tank system	3-tank system
SYSTEM DIMENSIONS	650 mm work chamber	750 mm work chamber	650 mm work chamber	750 mm work chamber
Width	2,750 mm	2,750 mm	3,450 mm	3,450 mm
Depth	2,000 mm	2,000 mm	2,000 mm	2,000 mm
Height	2,600 mm	2,600 mm	2,600 mm	2,600 mm
Footprint (not including loading system)	5.5 m²	5.5 m²	6.9 m²	6.9 m²
Loading level (approx.)	860 mm	860 mm	860 mm	860 mm
BASKET DATA (MAX.)				
Length	670 mm	670 mm	670 mm	670 mm
Width	480 mm	480 mm	480 mm	480 mm
Height	300 mm	400 mm	300 mm	400 mm
BATCHES				
Batch weight (max.)	150 kg	150 kg	150 kg	150 kg
Throughput (approx.)	7 – 11 batches/h	6 – 11 batches/h	6 – 9 batches/h	5 – 8 batches/h
POWER RATING				
Total power rating	56 – 75 kW depending on equipment options taken			
Connected load	3 x 400 V / 50 Hz	3 x 400 V / 50 Hz	3 x 400 V / 50 Hz	3 x 400 V / 50 Hz
OPERATING TEMPERATURE				
Washing, rinsing, preserving	45° – 80 °C	45° – 80 °C	45° – 80 °C	45° – 80 °C

1 Work chamber
2 3 4 Flood tank
5 Oil separator
6 Aquaclean
7 Heat recovery
8 Condensate oil separator
9 10 11 Pumps and filters
12 Hot air dryer
13 Vacuum dryer
14 Sampling with membrane filter
15 Bath monitoring

Example of an EcoCwave process scheme (3-tank system with Aquaclean)

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Our Locations Worldwide

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