



PHARMA DIVISION

cGMP Process equipment

UTENSIL AND CONTAINER WASHER UCW

Automatic cGMP cleaning solutions

APPLICATION

Utensil and Container Washers (UCW) are designed for the complete washing, disinfection and drying of products/machines contact parts, utensils, glassware, containers, tanks, drums, bins, tubes, trays and many more combined materials.

The high pressure washing process ensures reliable and effective results by combining energy efficient and environmentally friendly engineering.



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DESCRIPTION

The engineering design is developed in accordance to the latest and most applied international cGMP standards and guidelines.

The equipment is operated by an user friendly HMI that is GAMP5 and 21 CFR Part 11 compliant.

The PLC architecture is based on Siemens hardware.



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CONSTRUCTION DESIGN

- Standard and custom chamber configurations from 500 liters up to 5000 liters
- Square or rectangular cross section chambers of single-wall type made of 316L SS or 316Ti SS
- Innovative centrally located sump made of 316L or 316Ti SS
- Piping and air ducts completely made in 316L SS with sanitary fittings
- 3 degree piping slopping to the floor drain
- Product contact surfaces mechanically polished to a degree of roughness below 0.35 micron
- All internal corners rounded to guarantee a perfect cleaning
- Configuration: single door, double doors; manual hinged or automatic vertical/horizontal sliding type
- Door frame made of 316L or 316Ti SS with HST tempered glass window
- Chamber, doors, piping, components and instruments are properly insulated
- Areas separation by means of bio-seal frame made of 316L/316Ti SS
- Electrical terminal wiring with fast connectors to the cabinet (no single wiring cabling)

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COMPONENTS

- Components and instruments made of 316L/316Ti SS and FDA approved elastomer (21 CFR part 177)

WORKING PROGRAMS

- PLC pre-installed programs – total of 100 customizable programs
- Adjustable pre-wash, wash and final rinse water temperature up to 95 °C

WATER

- Connections: Cold and hot RO/softened water, demineralized/purified water, WFI
- Recirculation pump: High-power water recirculation pump made of 316L SS

WASHING TECHNOLOGY

- Fully customizable spray nozzles configurations, positioned in the internal carts
- Rotating spray balls: pressurized water and intensive spray action by rotating nozzles

RUNNING COSTS

- Optimized energy saving system to reduce the environmental impact, including limited heat loss and noise emission

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SAFETY

- Large inspection glass windows, warning lights, acoustic alarms, internal led lights, UPS, remote assistance
- State of the art full touch screen HMI as operator interface with an intuitive navigation system
- Daily operations protected by PLC microprocessor with multi level passwords and constant diagnosis activities

DETERGENT DOSING SYSTEM

- Up to 4 automatic high level accuracy dispensing systems equipped with pneumatic pumps (FDA approved)

DRYING SYSTEM

- HEPA-filtered forced air-drying system
- Air and water electrical or steam heated
- Electrical fans blow heated air through the chamber and nozzles for direct injection
- AC driver installed on the blower modulates the quantity of air
- Heating elements and blower provide uniform heat distribution and adjustable drying temp. between 80°C and 130°C

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CONTROLS

- Full automatic control of air temperature, water flow, temperature, conductivity, TOC and PH
- PLC Siemens S7-1200+ IPC based control system allow to save unlimited number of report on the HD of PC, connecting the IPC to the company network
- HMI brand ASEM, Siemens, Allen-Bradley
- Paper-less recorder (optional) for real-time recording (FDA 21 CFR part 11 compliant)

COMMUNICATION AND CONNECTIVITY

- USB, Ethernet, SCADA, Remote assistance



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LOAD HANDLING ACCESSORIES

- Brand new design of cart connection with self-ducting and self-disconnection system (100% no leak)
- Large variety of loading trolleys and trays
- Ergonomic product loading of manual or full-automatic type
- Full customized loading carts
- Use of stainless steel combined with FDA approved elastomers
- Possibility of loading different patterns/sizes of products in one batch (combo-loads)
- Tailor-made solutions available for any type of load



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DOCUMENTATION

Extensive project documentation: GANTT, GAD, P&ID, Utility interface agreement (UIA), Electrical diagram (ED), Pneumatic diagram (PD), Bill of materials (BOM), installation, user and maintenance manual, FAT, SAT, IQ/OQ.

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ADVANTAGES AND BENEFITS OF MECHANICAL WASHING

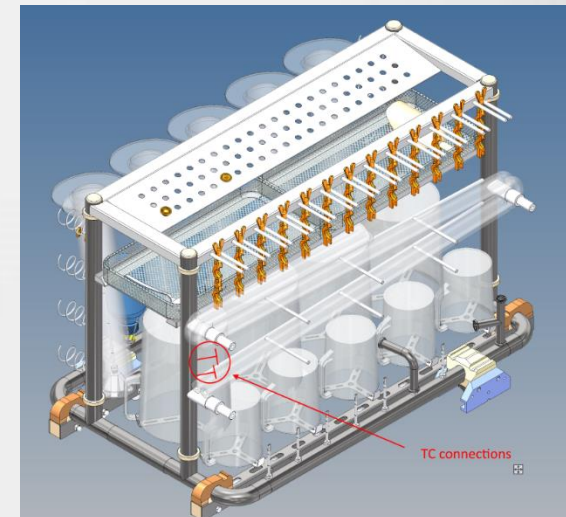
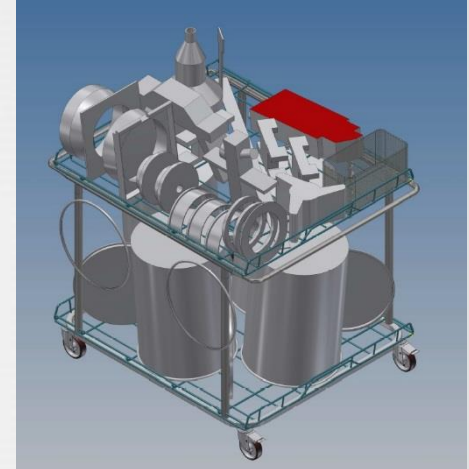
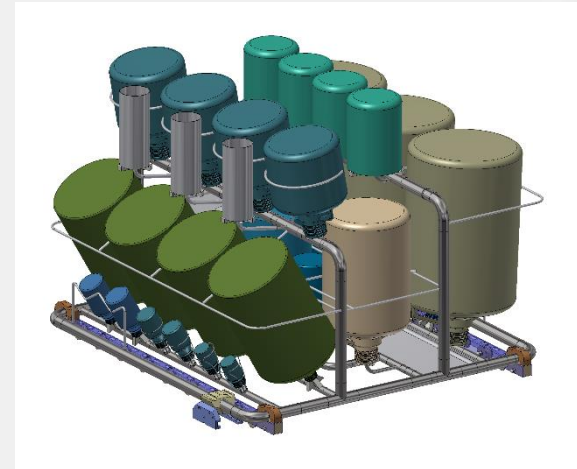
- Reduced manual operations
- Reduced production downtime
- Optimized utilities consumption
- Reduced running costs
- Increased productivity output
- Automated set-up and control of critical parameters
- Perfect dosage of chemical detergents
- Full cGMP validated and repeatable processes
- Batch traceability



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- Wide range of custom made carts, racks and trolleys designed for the optimization of daily washing operations
- Complete prevention of any cross contamination between different production batches
- Elimination of any mechanical strains and particle generation due to friction and abrasion
- Standard built-in tele-assistance package, enabling remote diagnosis, assistance and software upgrades



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SUPERVISORY, TRACEABILITY AND CONTROL SYSTEMS

All process equipment engineered by LAST Technology are automated through a Programmable Logic Controllers (PLC). A color touch screen Panel PC (IPC) performs as Human Machine Interface (HMI).

A P&ID control interface manage all process parameters, recipes, settings, sequence of operations and their storage with an intuitive design that grants an easily accessing to the information, minimizing the risk of human error.

Hardware and software are provided only from the most well known brands such as Siemens, Allen Bradley, ASEM, Rockwell.

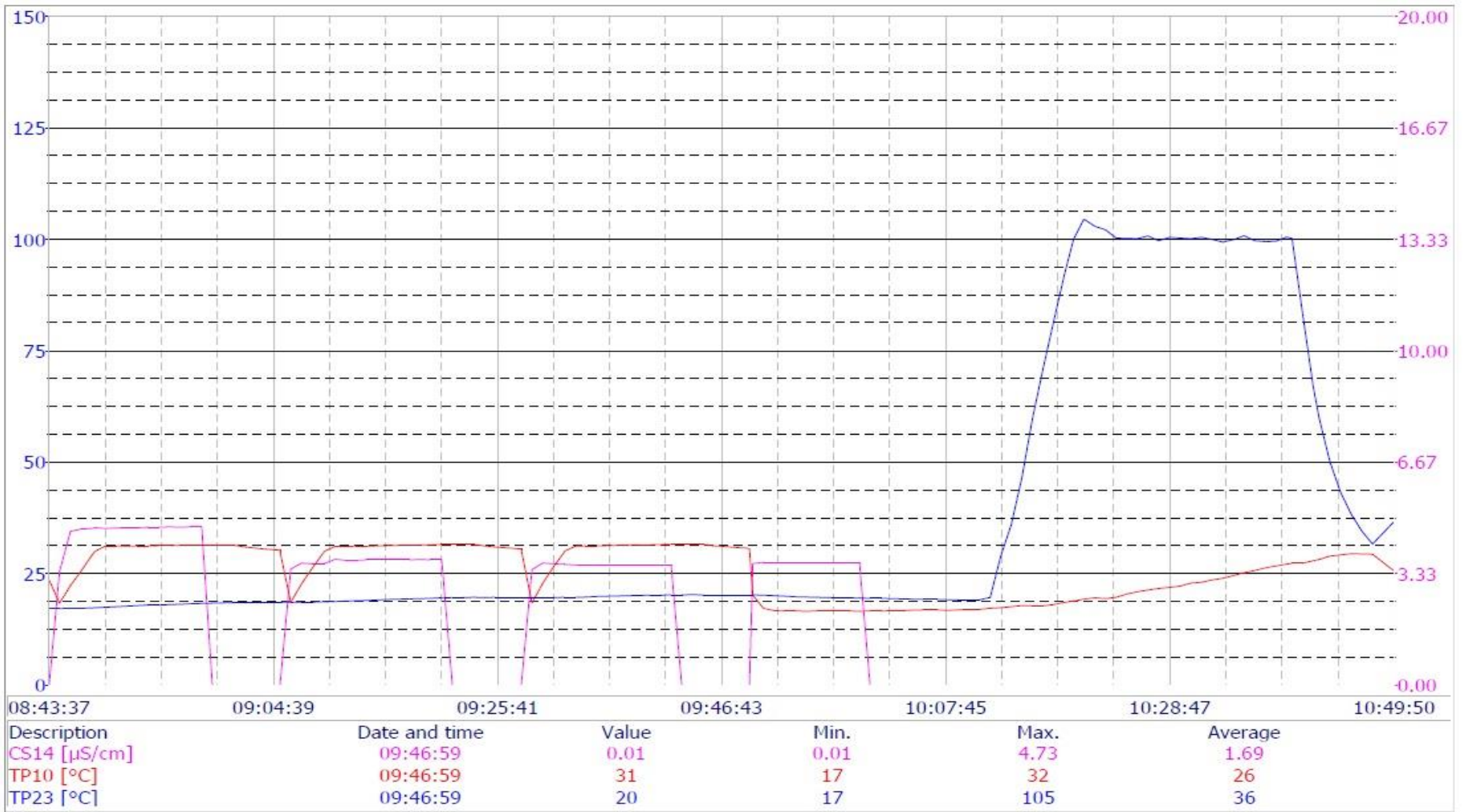
In compliance to the 21 CFR Part 11 LAST install a Supervisory Control and Data Acquisition (SCADA) system, developed and engineered following the Good Automated Manufacturing Practices (GAMP 5).



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TREND



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THE RANGE

Type	Chamber dimensions (mm / inches)			Capacity (litres / cu.ft.)	Overall dimensions (mm / inches)		
	Width	Height	Lenght		Width	Height	Lenght
UCW 350	735 / 29	700 / 27.5	815 / 32	400 / 14	1450 / 57	2200 / 86.5	980 / 38.5
UCW 500	710 / 28	710 / 28	1000 / 39.5	500 / 17.5	2200 / 86.5	2200 / 86.5	1215 / 48
UCW 1000	992 / 39	992 / 39	1000 / 39.5	1000 / 35.5	2500 / 98.5	2550 / 100	1215 / 48
UCW 1250	992 / 39	1242 / 49	1000 / 39.5	1250 / 44.5	2500 / 98.5	2800 / 110	1215 / 48
UCW 1500	1242 / 49	992 / 39	1250 / 49	1500 / 53	2750 / 108	2550 / 100	1465 / 57.5
UCW 4000	1392 / 55	1852 / 73	1554 / 61	4000 / 142	3000 / 118	2800 / 110	1691 / 66.5

Upon request LAST Technology is able to provide further chamber sizes up to 5 m3

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PROCESS SEQUENCE DESCRIPTION

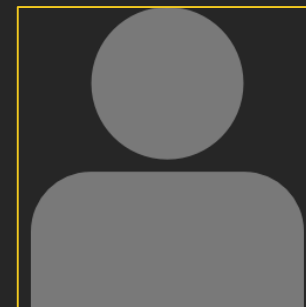
The process consists of combined phases to provide maximum process flexibility. The choice of times and temperatures makes it possible to obtain the most appropriate cycle for the characteristics of the material to be processed.

The process is developed in accordance to the current codes, standards and type of product to be washed.

From dirty to ready to be sterilized products, passing through a pre-washing, washing with chemicals, rinsing and final drying with hot filtered air.

Keeping under control: water, conductivity, T.O.C. level and PH.





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