Washer & Disinfector Systems

Washer Disinfectors
S-M-K-W-T Series

CE 0123

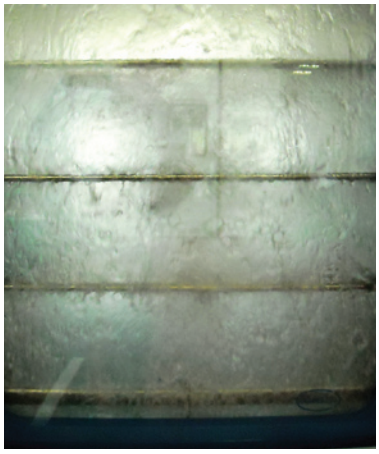
cisa Feel the innovation

Washer/Disinfectors

A wide range of washer/disinfectors for use in hospitals and laboratories for washing and disinfecting surgical instruments, anaesthesia and respiratory products, hospital utensils, glassware, containers, operating shoes, and other devices that require high level disinfection.

CISA Feel the innovation

Washer/Disinfection



CISA has a wide range of applications for its washer/disinfectors using either thermal or thermo-chemical disinfection.

The purpose of a washer disinfector is to:

- Provide safety for patients and staff by controlling and preventing contact with contaminated devices.
- Reprocess medical devices that require high level disinfection.
- Reduce the number of micro-organisms present.
- Remove adhering blood, saliva, and tissue .
- Reduce the microbiological load before the sterilization process.
- Remove all gross contamination including blood residuals that can create a sterilization resistant barrier for micro-organisms
- Protect staff working in the clean area where they are packing and preparing loads for sterilization

Range of Washer/Disinfectors

Based on their applications, the CISA washer/disinfectors are classified in series

S: Small size washer/disinfectors
M: Medium size washer/disinfectors
K: Large size washer/disinfectors
W: Extra-large washer/disinfectors
T: Tunnel washer/disinfectors

Pre Washing and Pre Rinsing

Washing is the basic phase of any washer/disinfector with the aim to remove all gross contamination including adhering blood, saliva, and tissues.

The washing action is mechanically operated using high pressure water combined with special racks for proper washing that enables reaching all points especially those that are hard to reach using manual washing. The quality of the wash will define all further reprocessing quality and performance.

Disinfection

Disinfection can be either thermal for materials that are heat stable, and/or thermo-chemical disinfection for materials that are heat sensitive.

All CISA washers and disinfectors are provided with both disinfection possibilities to increase the range of applications. Different cycles that have varying disinfection temperatures and timings are available across the range.

Final Rinse

The final rinse is an important phase post-disinfection.

The final rinse is recommended to use demineralized water, reverse osmosis water, or similar.

Drying

Drying is an important phase to follow the final rinse. The quality of drying is guaranteed using a powerful system of heated filtered air, and proper air circulation within a minimum time for a fast and high speed disinfection process. Air filtration is through a 0.2 micron Absolute filter.

Lubrication and polishing

For surgical instruments and some other hospital utensils, some end users require polishing and lubrication.

This is either combined with other phases or as a separate phase.

Thee CISA washer/disinfectors allow for either option.

CSSD WASHER/DISINFECTOR SERIES K

Washer/disinfectors used for reprocessing CSSD medical devices including:

- Surgical Instruments using the surgical instrument rack (ST). The rack is provided with rotating nozzles between each level and from top and bottom.
- Anaesthesia and respiratory products using the AN rack with connections for whole patient circuit including hoses, breathing bags, masks, airway guides, etc.
- Containers and hospital utensils such as containers, kidney dishes, basins, etc. using the CO rack.
- Tubular instruments, rigid endoscope devices, and micro instruments using the MIC rack
- Operating shoes using the ZO rack
- Glassware using the GL rack
- Others

Design and Installation

The machines can be supplied with single or double doors. The double door version is appropriate for modern CSSD pass through operations between dirty and clean zones. The machines are manufactured to European regulations includingEN15883-1/-2 and relevant international standards.
The machines are equipped with a PLC computerised control system and high quality components to guarantee the best performance and highest reliability.
The shell of the machine is made from the highest quality materials for optimum hygiene and durability.
The machines are designed with a user friendly interface for the operators and in full compliance with environmental needs and a quiet operating environment.
Installation of the machines and their maintenance is possible by means of smooth and clear procedures. (Effortless installation, with ease of positioning and connection to the main utilities.)
Compact architecture, with overall dimensions always restrained in relation to the machine capacity.

Wash Chamber

The wash chamber is made entirely from AISI 316L stainless steel. The chamber is curved to permit good drainage and to make cleaning easier. The internal chamber surfaces have a "Scotch Brite" type finish, and are subject to electro-lytic polishing to obtain a surface with a roughness less than 0.28 microns, and with a high resistance to corrosive attack.
The heaters to maintain the water at the selected temperature are situated in the chamber bottom, protected by a metal filter. Another protecting metal filter, placed at the bottom level of the chamber, protects the reservoir from any items that might fall and block the passage of the water.
The upper part of the chamber is designed to encourage any condensate to drop straight into the reservoir below.
The wash chamber has an halogen lamp situated over the top of the chamber, and hermetically enclosed behind heat and acid proof glass.

Construction

All internal parts have perfectly finished rounded edges. The frame, front, side, and rear panels are all manufactured from stainless steel. All control valves, and hydraulic circuitry and piping are also made from stainless steel.

Non toxic fire resistant foam, with extremely low thermal conductivity and no particulate release is used to provide insulation for thermal efficiency.

A stainless steel base with a drain to catch any water leaks is an optional extra

Door Construction, Movement, and Sealing

The washers are provided with doors made from heat resistant tempered glass, framed in AISI 316L stainless steel which allows viewing of the washing process. The doors are automatic vertical sliding (SV) controlled from a touch screen and operated

by a pneumatic or motorized device. The double door configuration is fitted with a safety lock so that the two doors cannot open at the same time, to prevent cross contamination.

The doors are fitted with gaskets for perfect closure during the cycle.

The single door configuration (1P) and double door configuration (2P) are both on offer to meet any CSSD design.

Cabinet

The external cabinet holds the body of the washer and components. The face of cabinet and the side panels are made from stainless steel. The external temperature does not exceed 55°C, avoiding the loss of heat to the working environment. The front panels to both the dirty and clean side are mounted on hinges and locked with a special key.

Hydraulic Piping

The hydraulic pipework and components are manufactured from sanitary AISI 316L stainless steel. The pipework is marked up with the conventional colours for the fluids they are carrying. All supplies and the main drain are connected by flexible stainless steel tubing.

Hydraulic Supply Connections

The washer is designed to be connected to cold, hot, and treated water as processing fluids to minimise the cycle length, and at the same time removing residuals and hardened soil deposits without harming the load by overly reducing the supply of the wash materials.

This washer features a safety device for checking the water level in the wash chamber, which also controls the automatic feed of water , in order to optimise the quantity of water needed for the proper function of the rotating wash arms. Solenoid or pneumatic valves control all the hot, cold, and treated water inputs.

Each water inlet and the main drain are protected by stainless steel water filters. Hot, cold, and treated water are fed separately by a specialised device that avoids any flashback into the main supply line, thereby avoiding any risk of contamination. All the hydraulic circuitry has drainage points for optimum, safe, and reliable operation.

Maintenance

The external cabinet has limited external dimensions, but wide internal space availability thanks to the design of the lay-out of the various components, thereby providing easier maintenance. Moreover the machines need little installation space, because all the main components can be maintained from the front.

Loading

Loading the washer/disinfector can be done from the front by using an external transport trolley which has been specially developed for the purpose. The internal racks have special connectors for easy and smooth internal locking when inside the chamber.

Circulation Water Pump

The capabilities of the water pump define the quality of operation of any washer disinfector.

The water pump used with the K series has a high capacity, offering 900 l/ min for the 105 model, while for the larger model there are two water pumps, one for the upper and lower rack connections with a rating of 900 l/min, and the other with a rating of 600 l/min used for internal
recirculation.

Dosage Pumps & Chemical Dispensing

Dosing pumps are used for the addition of chemicals during the Cycle. The dosing pumps can be pre configured for different chemicals within an open system that use any validated chemical. In the K series 105 model there are three dosing pumps, while for 155 model there are four.

The addition of extra dosing pumps is also possible The chemical containers can be stored inside the washer, or can be connected from a central storage system. The containers are each provided with a sensor for detection of the remaining chemical which activates an alarm when the container is empty or there is not enough chemical left to run the selected cycle.

Drying Module

The drying phase removes any condensate or water vapour from the wash chamber, drying the load inside perfectly.

The drying module is composed of a pre-filter, a 0.2 micron Absolute filter, a fan, and an air heater. These inject of sterile hot air over the load. A second drying module can be added to shorten the drying time.

Each comes with overheat protection. Perfect Drying in a Short Time.

Heating

The washer/disinfector water can be heated using one of the following methods:

(E): Built-in electric heating

(V): External steam supply from Hospital steam Network (domestic Vapour)

(EV): Combination of (E) and (V) which enables the user to select the type of heating from the touch screen, choosing either internal (E) or external (V) without the need to interact with a hardware interface.

Electric Board

The electric board has an IP55 degree of protection and is installed inside the body of the washer.

Mounted on telescopic rails, it is easily accessible. And thus it is possible to carry out maintenance on this panel from the front of the machine.

Control panel

The control panel is mounted on the front of the machine and carries all the components to operate and control the unit.

The outside is protected to IP22, and the inside to IP54.

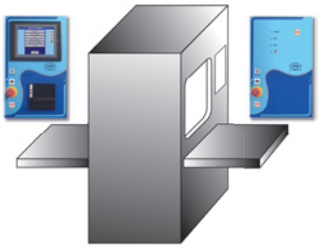
Control System

The unit is entirely controlled by an electronic programmable logic device (PLC) that covers the cycle performances, the control of parameters, and the verification of the process safety. The control includes an input device, microprocessor and data memory, memory card with EEPROM memory (with the ability to connect to an external memory), external interaction (optional serial port RS232C/RS485), input control card for digital input, and output control cards for digital output.
The battery life is 10 years. Temperature regulation complies with European standards.
There are Audio Visual Alarms with different levels of alarm. The control system incorporates high levels of safety features for both the operator and the machine.

Control panel On Loading Side

The Control Panel consists of:
- Colour Touch-Screen as the user interface
- Thermal printer
- Buttons for door management
- Emergency button
- Emergency stop

ON/OFF selector to switch the equipment on and off



Control panel On Unloading side (2P Version)

The Control panel on the clean side consists of:
- Buttons for working the doors
- Emergency button
- Emergency stop

Indicators of process status and alarms

Interactive "Touch-Screen" Display

On the Touch Screen control and display there are different pages for different purposes
- Main menu
- Cycle library
- Cycle parameter display
- Data relating to the operation of the machine (operator code, batch, etc.)
- General readiness of the machine to start a cycle
- Process control
- Programmed preventive maintenance
- Instructions for maintenance and troubleshooting
- Alarm indication and alarms history.
- date and time
- Visualisation of physical values (temperature and A0)
- Machine information (condition of the doors, temperature, etc.)
- Operator access level control with configurable level of accessibility
- Pages for set point cycle follow up
- Calibration and technical pages (password protected)
- Programming new cycles or modifying standard cycle (password protected)
- Type of heating selection
- Manual advance step

The Language of touch screen can be pre selected to meet different machine destinations.

CYCLE OF WASHING AND DISINFECTION

Pre Programmed cycles for:

1) **Washing-Thermal disinfection cycle for instruments at 93°C for 10 minutes (BGa)**
2) **Washing-Thermal disinfection cycle for instruments at 93°C for 10 minutes (n.V.)**
3) **Washing-Thermal disinfection cycle for instruments at 93°C for 10 minutes (S.V.)**
4) **Washing-Thermal disinfection cycle for micro-instruments at 93°C for 10 minutes**
5) **Washing Chemical-Thermal disinfection cycle for anaesthesia equipment at 65°C**
6) **Washing Chemical-Thermal disinfection for footwear at 65°C**
7) **Washing-Thermal disinfection cycle for containers at 93°C for 10 minutes (BGa)**
8) **Washing-Thermic disinfection cycle for containers at 93°C for 10 minutes (n.V.)**
9) **15 customer programmable cycles (open)**
10) **Internal washing disinfection cycle for internal pipe and self cleaning operation**

Thermal Printer

The Thermal printer is for documentation of messages, parameters, and the completed execution of a cycle.
The data shown on the printout include the cycle number, basic process parameters and each stage, date, timings, the result of the cycle, and the operator code, batch, A0, etc.

Quality & Safety Certificates

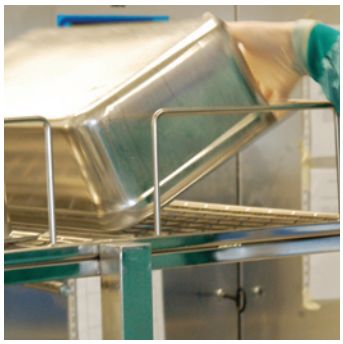
CISA Washer/disinfectors meet the requirements of the ISO EN 15883-1 and ISO EN15883-2 and to the different Standards they refer to, amongst which are ISO EN 61010-1, ISO EN 61010-2-041, and ISO EN 60204-1. The machines are also CE marked to the CE directive 93/42 for medical devices.

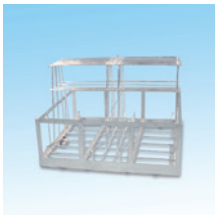
Condenser (Optional)

During the drain phase a heat exchanger will be activated to de-humidify the air before its injection into the chamber.
A close-circulation cooling device condenses the vapour from the wash chamber allowing the discharge of the condensate directly into the main discharge from the washer. The Condenser removes the need for ventilation or an exhaust connection.

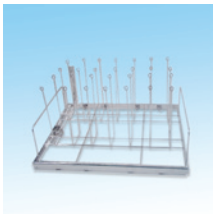
ACCESSORIES - K Series Loading & Unloading Devices

Instrument Rack
Anaesthesia and Respiratory Rack
Containers Rack
Rigid Endoscope, Micro and hollow Instruments Rack
Operating shoes Rack
Milk Bottle Rack
Glassware Rack (GL-10, GL-15)
Electric loading/unloading trolley
Manual loading/unloading trolley





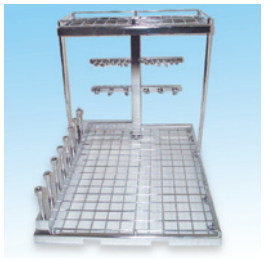
CO Rack
CO-10
CO-15



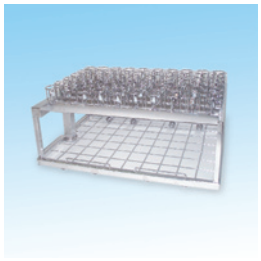
ZO Rack
ZO-10
ZO-15

AN Rack
AN-10
AN-15

ST Rack
ST-8 (8 DIN Trays)
ST-10 (10 DIN Trays)
ST-12 (12 DIN Trays)
ST-15 (15 DIN Trays)



MIC Rack
MIC-10
MIC-15



BI Rack

Fixed height external trolley

Adjustable height external trolley

Technical Data

Model	Max Capacity (DIN)	Capacity (L)	Chamber Dimensions (WxHxD)	Overall Dimensions (WxHxD)
105	10	266	630x680x620	1100x2000x790
155	15	360	630x680x840	1100x2000x1011

CSSD WASHER DISINFECTOR SERIES M

Washer/disinfectors used for reprocessing CSSD medical devices including:

- Surgical Instruments using the surgical instrument rack (ST), the rack is provided with rotating nozzles between each level and from top and bottom.
- Anaesthesia and respiratory products using the AN rack with connections for whole patient circuit including hoses, breathing bags, masks, airway guides, etc.
- Containers and hospital utensils such as containers, kidney dishes, basins, etc. using the CO rack.
- Tubular instruments , rigid endoscope devices, and micro instruments using the MIC rack
- Operating shoes using the ZO rack
- Glassware using the GL rack
- Others

Design and Installation

The machines can be supplied with single or double doors. The double door version is appropriate for modern CSSD pass through operations between dirty and clean zones. The machines are manufactured to European regulations includingEN15883-1/-2 and relevant international standards.
The machines are equipped with a PLC computerised control system and high quality components to guarantee the best performance and highest reliability. The shell of the machine is made from the highest quality materials for optimum hygiene and durability.
The machines are designed with a user friendly interface for the operators and in full compliance with environmental needs and a quiet operating environment.
Installation of the machines and their maintenance is possible by means of smooth and clear procedures. (Effortless installation, with ease of positioning and connection to the main utilities.)
Compact architecture, with overall dimensions always restrained in relation to the machine capacity.
Stainless steel tray (basement) for water leaking with drain is Optional.

Wash Chamber

The wash chamber is made entirely from AISI 316L stainless steel. The chamber is curved to permit good drainage and to make cleaning easier. The internal chamber surfaces have a "Scotch Brite" type finish, and are subject to electrolytic polishing to obtain a surface with a roughness less than 0.28 microns, and with a high resistance to corrosive attack.
The heaters to maintain the water at the selected temperature are situated in the chamber bottom, protected by a metal filter. Another protecting metal filter, placed at the bottom level of the chamber, protects the reservoir from any items that might fall and block the passage of the water. The upper part of the chamber is designed to encourage any condensate to drop straight into the reservoir below.
The wash chamber has an halogen lamp situated over the top of the chamber, and hermetically enclosed behind heat and acid proof glass.

Construction

All internal parts have perfectly finished rounded edges. The frame, front, side, and rear panels are all manufactured from stainless steel. All control valves, and hydraulic circuitry and piping are also made from stainless steel.
Non toxic fire resistant foam, with extremely low thermal conductivity and no particulate release is used to provide insulation for thermal efficiency.
A stainless steel base with a drain to catch any water leaks is an optional extra

Door Construction, Movement, and Sealing

The washers are provided with doors made from heat resistant tempered glass, framed in AISI 316L stainless steel which allows viewing of the washing process. The doors are automatic vertical sliding (SV) controlled from a touch screen and operated by a pneumatic or motorized device. The double door configuration is fitted with a safety lock so that the two doors cannot open at the same time, to prevent cross contamination. The doors are fitted with gaskets for perfect closure during the cycle. The single door configuration (1P) and double door configuration (2P) are both on offer to meet any CSSD design.

Cabinet

The external cabinet holds the body of the washer and components. The face of cabinet and the side panels are made from stainless steel.

The external temperature does not exceed 55°C, avoiding the loss of heat to the working environment. The front panels to both the dirty and clean side are mounted on hinges and locked with a special key.

Hydraulic Piping

The hydraulic pipework and components are manufactured from sanitary AISI 316L stainless steel.

The pipework is marked up with the conventional colours for the fluids they are carrying. All supplies and the main drain are connected by flexible stainless steel tubing.

Hydraulic Supply Connections

The washer is designed to be connected to cold, hot, and treated water as processing fluids to minimise the cycle length, and at the same time removing residuals and hardened soil deposits without harming the load by overly reducing the supply of the wash materials.

This washer features a safety device for checking the water level in the wash chamber, which also controls the automatic feed of water , in order to optimize the quantity of water needed for the proper function of the rotating wash arms. Solenoid or pneumatic valves control all the hot, cold, and treated water inputs.

Each water inlet and the main drain are protected by stainless steel water filters.

Hot, cold, and treated water are fed separately by a specialised device that avoids any flashback into the main supply line, thereby avoiding any risk of contamination. All the hydraulic circuitry has drainage points for optimum, safe, and reliable operation.

Maintenance

The external cabinet has limited external dimensions, but wide internal space availability thanks to the design of the lay-out of the various components, thereby providing easier maintenance.

Moreover the machines need little installation space, because all the main components can be maintained from the front.

Loading

Loading the washer/disinfector can be done from the front by using an external transport trolley which has been specially developed for the purpose.

The internal racks have special connectors for easy and smooth internal locking when inside the chamber.

Circulation Water Pump

The capabilities of the water pump define the quality of operation of any washer disinfector. The water pump used with the M series has a high capacity, offering 600 l/ min, for upper and lower rack connections for internal levels the good water pump capabilities define the washing and disinfection process.

Dosage Pumps & Chemical Dispensing

Dosing pumps are used for the addition of chemicals during the Cycle. The dosing pumps can be pre configured for different chemicals within an open system that use any validated chemical. In the M series models there are two dosing pumps. The addition of extra dosing pumps is also possible. The chemical containers can be stored inside the washer, or can be connected from a central storage system.

The containers are each provided with a sensor for detection of the remaining chemical which activates an alarm when the container is empty or there is not enough chemical left to run the selected cycle.

Drying Module

The drying phase removes any condensate or water vapour from the wash chamber, drying the load inside perfectly.

The drying module is composed of a pre-filter, a 0.2 micron Absolute filter, a fan, and an air heater. These inject of sterile hot air over the load. A second drying module can be added to shorten the drying time. Each comes with overheat protection. Perfect Drying in a Short Time.

Heating

The washer/disinfector water can be heated using one of the following methods:

(E): Built-in electric heating

(V): External steam supply from Hospital steam Network (domestic Vapour)

(EV): Combination of (E) and (V) which enables the user to select the type of heating from the touch screen, choosing either internal (E) or external (V) without the need to interact with a hardware interface.

Electric Board

The electric board has an IP55 degree of protection and is installed inside the body of the washer.
Mounted on telescopic rails, it is easily accessible. And thus it is possible to carry out maintenance on this panel from the front of the machine.

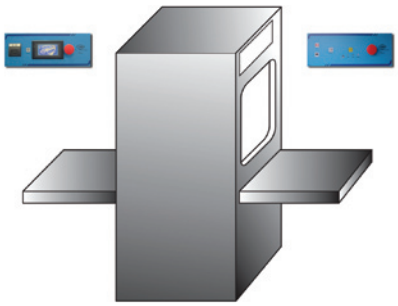
Control System

The unit is entirely controlled by an electronic programmable logic device (PLC) that covers the cycle performances, the control of parameters, and the verification of the process safety. The control includes an input device, microprocessor and data memory, memory card with EEPROM memory (with the ability to connect to an external memory), external interaction (optional serial port RS232C/RS485), input control card for digital input, and output control cards for digital output. The battery life is 10 years. Temperature regulation complies with European standards. There are Audio Visual Alarms with different levels of alarm. The control system incorporates high levels of safety features for both the operator and the machine.

Control panel On Loading Side

The Control Panel consists of:
- Colour Touch-Screen as the user interface
- Thermal printer
- Buttons for door management
- Emergency button
- Emergency stop

ON/OFF selector to switch the equipment on and off



Control panel On Unloading side (2P Version)

The Control panel on the clean side consists of:
- Buttons for working the doors
- Emergency button
- Emergency stop

Indicators of process status and alarms

Interactive Display "Touch-Screen"

On the Touch Screen control and display there are different pages for different purposes

- Main menu
- Cycle library
- Cycle parameter display
- Data relating to the operation of the machine (operator code, batch, etc.)
- General readiness of the machine to start a cycle
- Process control
- Programmed preventive maintenance
- Instructions for maintenance and troubleshooting
- Alarm indication and alarms history.
- date and time
- Visualisation of physical values (temperature and A0)
- Machine information (condition of the doors, temperature, etc.)
- Operator access level control with configurable level of accessibility
- Pages for set point cycle follow up
- Calibration and technical pages (password protected)
- Programming new cycles or modifying standard cycle (password protected)
- Type of heating selection
- Manual advance step

The Language of touch screen can be pre selected to meet different machine destinations.

Cycle of Washing and Disinfection

Pre Programmed cycles for:

1) **Washing-Thermal disinfection cycle for instruments at 93°C for 10 minutes (BGa)**
2) **Washing-Thermal disinfection cycle for instruments at 93°C for 10 minutes (n.V.)**
3) **Washing-Thermal disinfection cycle for instruments at 93°C for 10 minutes (S.V.)**
4) **Washing-Thermal disinfection cycle for micro-instruments at 93°C for 10 minutes**
5) **Washing Chemical-Thermal disinfection cycle for anaesthesia equipment at 65°C**
6) **Washing Chemical-Thermal disinfection for footwear at 65°C**
7) **Washing-Thermal disinfection cycle for containers at 93°C for 10 minutes (BGa)**
8) **Washing-Thermic disinfection cycle for containers at 93°C for 10 minutes (n.V.)**
9) **15 customer programmable cycles (open)**
10) **Internal washing disinfection cycle for internal pipe and self cleaning operation**

Thermal Printer

The Thermal printer is for documentation of messages, parameters, and the completed execution of a cycle.
The data shown on the printout include the cycle number, basic process parameters and each stage, date, timings, the result of the cycle, and the operator code, batch, A0, etc.

Condenser (Optional)

During the drain phase a heat exchanger will be activated to de-humidify the air before its injection into the chamber.
A close-circulation cooling device condenses the vapour from the wash chamber allowing the discharge of the condensate directly into the main discharge from the washer. The Condenser removes the need for ventilation or an exhaust connection.

Quality & Safety Certificates

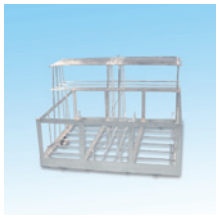
CISA Washer/disinfectors meet the requirements of the ISO EN 15883-1 and ISO EN15883-2 and to the different Standards they refer to, amongst which are ISO EN 61010-1, ISO EN 61010-2-041, and ISO EN 60204-1. The machines are also CE marked to the CE directive 93/42 for medical devices.

Certificates CISA

Milk Bottles Washer Disinfectors

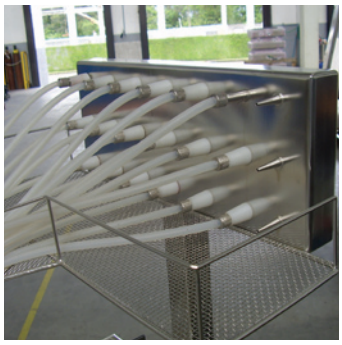
Both the M and K models can be used for reprocessing bottles. Use the appropriate milk bottle rack that can take different bottles sizes and tops, with different capacities dependent on which model is selected.
The CISA Washer/disinfector where used for milk bottles will enable safety for new borns and children. This machine can be installed in a clean utility room or a milk preparation room, for example.

ACCESSORIES - M Series Loading & Unloading Devices



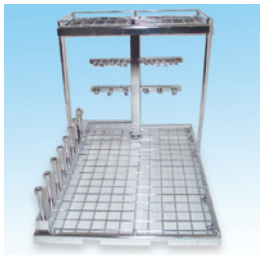
CO Rack
CO-10
CO-15

ZO Rack
ZO-10
ZO-15

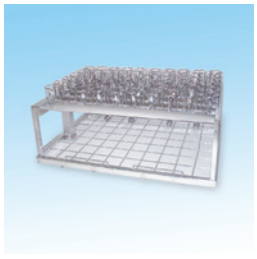


AN Rack
AN-10
AN-15

ST Rack
ST-8 (8 DIN Trays)
ST-10 (10 DIN Trays)
ST-12 (12 DIN Trays)
ST-15 (15 DIN Trays)



MIC Rack
MIC-10
MIC-15



BI Rack

Fixed height external trolley

Adjustable height external trolley

Technical Data

Model	Capacity (DIN)	Capacity (L)	Chamber Dimensions (WxHxD)	Overall Dimensions (WxHxD)
84	8	205	550x600x620	680x2000x790
104	10	225	550x660x620	680x2000x790

OPTIONS FOR K & M
CSSD Washer disinfectors

Automation
CISA Washer/Disinfectors can be automated to work optimally reducing the inactivity time of the machines, as well as giving safety to the staff by reducing possible contact with contaminated material.
Automated loading enables risk free operation while automated unloading helps to reduce the human work on the clean side.

Water treatment
Water treatment plants can be added for supplying the unit with treated water for its washing , disinfecting, and rinsing purposes; the final rinse is recommended to be with demineralized water. The selection of water treatment type needs to be related to installation site water quality, with the possible need to add water softeners, reverse osmosis system, deionizer etc.

Pre-heating of the Water
In order to reduce the processing time, before introducing the water into the wash chamber, the water is preheated in a water boiler, manufactured in AISI 316L stainless steel.

Air Compressors
Compressed air is needed for the pneumatic valves and sometimes for door movement. An air compressor can be provided as an option using electric silent air compressors.

External Steam Connections
External steam connection sets are available as an optional extra, and customizable
to site steam quality, pressure and requirements for the machines to be connected to central domestic steam supply (V) and (EV) .

Centralized Dosage System
A system for centralizing chemical supply to
avoid multiple machine by machine chemical containers can be provided; this system is recommended where there is a large number of machines that require.
The system is made up of special outer storage

Networking & Management Software
ITINERIS Sterilization management system
NCS-WEB Supervision Management System
E-B/BB Communication Systems

The CISA Washer Disinfectors can be connected to a computerized management system and/or sterilizer control system.
Our proprietary external supervision and networking system, NCS, can be added for the sterilizer for central data monitoring, archiving, and reporting using an ETHERNET connection with real time data transfer.
NCS: System for central data monitoring, archiving, and reporting using a real time data interface.
ITINERIS: a system for CSSD management and instrument tracking system.
RMS: Remote maintenance system for external maintenance. Check and interface.

E-Box and Black Box
The Black Box is a device that can be installed in the sterilizer as a communication distribution device, and as a data storage system.
The Black box enables different communication facilities as the recovering system.

WASHER DISINFECTOR S SERIES

CSSD and Dental application

A washer/disinfector for small CSSD and Dental applications which can be used for the following items:

- Surgical and Dental Instruments using the surgical instruments rack ST: the rack is provided with rotating nozzles between each level and at the top and bottom.
- Anaesthesia and respiratory products using the AN rack with connectors for hoses, breathing bags, masks, guide airways, etc
- Hospital utensils such as kidney dishes, basins, etc. using the CO Rack.
- Operating shoes using the ZO rack
- Glassware using the GL rack
- Others

Design and Installation

The machines are configured as follow:

S-U: Under Counter Washer/disinfector

S-T: Table Top Washer/disinfector

S-S/1: Free Standing Washer/disinfector /Single Door

S-S/2: Free Standing Washer/disinfector /Double Door

The machines are manufactured to European regulations includingEN15883-1/-2 and relevant international standards. The machines are equipped with a PLC computerised control system and high quality components to guarantee the best performance and highest reliability.

The shell of the machine is made from the highest quality materials for optimum hygiene and durability. The machines are designed with a user friendly interface for the operators and in full compliance with environmental needs and a quiet operating environment.

Wash Chamber

The wash chamber is made entirely from AISI 316L stainless steel. The chamber is curved to permit good drainage and to make cleaning easier. The internal chamber surfaces have a "Scotch Brite" type finish, and are subject to electrolytic polishing to obtain a surface with a roughness less than 0.28 microns, and with a high resistance to corrosive attack.

The heaters to maintain the water at the selected temperature are situated in the chamber bottom, protected by a metal filter. Another protecting metal filter, placed at the bottom level of the chamber, protects the reservoir from any items that might fall and block the passage of the water.

The upper part of the chamber is designed to encourage any condensate to drop straight into the reservoir below.

Construction

All internal parts have perfectly finished rounded edges. The frame, front, side, and rear panels are all manufactured from stainless steel. All control valves, and hydraulic circuitry and piping are also made from stainless steel.

Non toxic fire resistant foam, with extremely low thermal conductivity and no particulate release is used to provide insulation for thermal efficiency.

Door(s) Construction, Movement and Sealing

The washers are provided with doors made from heat resistant tempered glass, framed in AISI 316L stainless steel which allows viewing of the washing process. The doors are automatic vertical sliding (SV) controlled from a touch screen and operated by a pneumatic or motorized device. The double door configuration is fitted with a safety lock so that the two doors cannot open at the same time, to prevent cross contamination.

The doors are fitted with gaskets for perfect closure during the cycle.

Cabinet & Hydraulic piping

The external cabinet holds the body of the washer and components. The face of cabinet and the side panels are made from stainless steel. The hydraulic pipework and components are manufactured from sanitary AISI 316L stainless steel.

Loading

Loading the washer/disinfector can be done from the front. The internal racks have special connectors for easy and smooth internal locking when inside the chamber.

Circulation Water Pump

The capabilities of the water pump define the quality of operation of any washer disinfector; the water pump has high capabilities for a perfect washing process.

Dosage Pumps

Dosing pumps are used for the addition of chemicals during the Cycle. The dosing pumps can be pre configured for different chemicals within an open system that use any validated chemical. The addition of extra dosing pumps is also possible. The containers are each provided with a sensor for detection of the remaining chemical which activates an alarm when the container is empty or there is not enough chemical left to run the selected cycle

Interactive Display "LCD"

- **Cycle selection**
- **Cycle parameter display**
- **Data relating to the operation of the machine**
- **Process control**
- **Programmed maintenance**
- **Instructions for maintenance and troubleshooting**
- **Alarm indication and alarms history.**
- **Date and time**
- **Machine information (condition of the doors, t°, etc.)**
- **Operator access level control**

Drying Module (optional)

The drying phase removes any condensate or water vapour from the wash chamber, drying the load inside perfectly.
The drying module is composed of a pre-filter, a 0.2 micron Absolute filter, a fan, and an air heater. These inject of sterile hot air over the load.

Heating

The washer/disinfector water can be heated using one of the following methods:
(E): Built-in electric heating

Control System

The unit is entirely controlled by an electronic microprocessor device (PLC) that covers the cycle performances, the control of parameters, and the verification of the process safety. Complete with LCD interface for the operator and installed on the control panel.

The Language of LCD can be pre selected to meet different machine destinations.

Cycle of Washing & Disinfection

Pre-programmed and programmable cycles with different disinfection and temperature values.

Printer (optional)

The Thermal printer is for documentation of messages, parameters, and the completed execution of a cycle.
The data shown on the printout include the cycle number, basic process parameters and each stage, date, timings, the result of the cycle, and the operator code, batch, etc.

Quality & Safety Certificates

CISA Washer/disinfectors meet the requirements of the ISO EN 15883-1 and ISO EN15883-2 and to the different Standards they refer to, amongst which are ISO EN 61010-1, ISO EN 61010-2-041, and ISO EN 60204-1. The machines are also CE marked to the CE directive 93/42 for medical devices.

Technical Data

Model	Installation	Baskets Capacity (DIN)	Capacity Lt.	Chamber Dimensions (WxHxD)	Overall Dimensions (WxHxD)	Accessories
S-U	Under Counter	4	154	550x520x550	600x630x840 900x630x840 with drying module	ST-4, AN-4, ZO-4, GL-4, CO-4 *
S-T	Table Top	1	60	300x500x400	500x560x600	ST-2, (1 DIN) *
S-S/1	Free Stand (1 Door)	4	154	550x520x550	600x1500x840	ST-4, AN-4, ZO-4, GL-4, CO-4 *
S-S/2	Passthrought (2 Doors)	4	154	550x520x550	600x1500x840	ST-4, AN-4, ZO-4, GL-4, CO-4 *

* ST-2: 1 DIN; ST-4: 4 DIN; AN-4: anaesthesia; ZO-4: operating shoes; GL-4: glass ware; CO-4: utensils

TUNNEL WASHER DISINFECTOR
SERIES T

Multi Chambers
The CISA tunnel or multi-chamber washer/disinfector can contain two or more of the following modules:

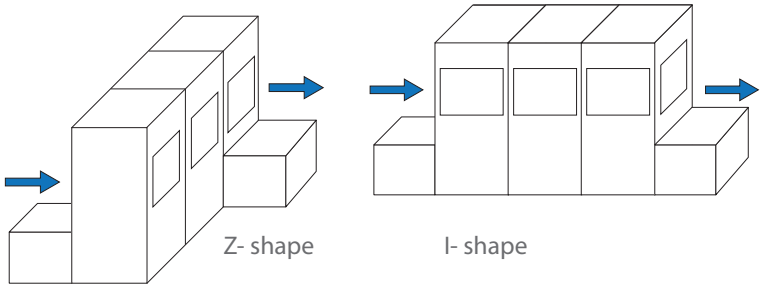
CC: Cleaning Chamber
UCC: Ultrasonic Cleaning Chamber
DC: Disinfection Chamber
FRC: Final Rinse Chamber
DRC: Drying Chamber

Description and Automation
The movement of the racks is achieved automatically using a mechanical system that transfers the loaded rack from one chamber to another as soon as each process phase is over.
The Tunnel washer has the value of providing smooth automated reprocessing without human interface, and there by making minimum contact between staff and contaminated material during the process.
Automatic loading and unloading is an important option that can be added to the tunnel washer to provide automation of the whole process including an automated rack return using a conveyer system.

Safety
The Tunnel washer will increase safety inside the CSSD by limiting the number of persons needed to work inside the dirty zone and by ensuring minimum contact between staff and contaminated material.

Productivity
The Tunnel washer will increase CSSD productivity by applying the concept of automation and related phases independent of each other.

Installation & Configuration
The Tunnel washer is designed to be installed between dirty and clean zones with the options to configure the set up as follows.



Application

The Tunnel Washer/disinfector used for reprocessing CSSD medical devices including:

- Surgical Instruments using the surgical instrument rack (ST). The rack is provided with rotating nozzles between each level and from top and bottom.
- Anaesthesia and respiratory products using the AN rack with connections for whole patient circuit including hoses, breathing bags, masks, airway guides, etc.
- Containers and hospital utensils such as containers, kidney dishes, basins, etc. using the CO rack.
- Tubular instruments , rigid endoscope devices, and micro instruments using the MIC rack
- Operating shoes using the ZO rack
- Glassware using the GL rack
- Others

Regulations

The machines are manufactured to European regulations including EN15883-1/-2 and relevant international standards.
The machines are equipped with a PLC computerised control system and high quality components to guarantee the best performance and highest reliability.
The shell of the machine is made from the highest quality materials for optimum hygiene and durability.
The machines are designed with a user friendly interface for the operators and in full compliance with environmental needs and a quiet operating environment.
Installation of the machines and their maintenance is possible by means of smooth and clear procedures. (Effortless installation, with ease of positioning and connection to the main utilities.)

Processing Chambers

The processing chambers are made entirely from AISI 316L stainless steel. The chamber is curved to permit good drainage and to make cleaning easier. The internal chamber surfaces have a "Scotch Brite" type finish, and are subject to electrolytic polishing to obtain a surface with a roughness less than 0.28 microns, and with a high resistance to corrosive attack.

CC - Cleaning Chamber.	The Cleaning chamber for the purpose of pre-cleaning connected to detergent dosage pumps and operated using powerful water circulation pumps.
UCC - Ultrasonic Chamber.	High frequency ultrasonic waves for effective cleaning.
DC - Disinfection Chamber.	Thermal and Thermo chemical disinfection/Multi dosing pumps for adding chemicals/Powerful water pump
FRC: Final Rinse Chamber.	Connected to demineralised water supply, for making final rinse before drying.
DRC - Drying Chambers.	Drying system composed of pre filter and Absolute filter (efficacy 0,2 microns) heater and fan special connections like wash chamber

Construction & Connection

All internal parts have perfectly finished rounded edges. The frame, front, side, and rear panels are all manufactured from stainless steel. All control valves, and hydraulic circuitry and piping are also made from stainless steel.

The external cabinet holds the multichambers.
The face of cabinet and the side panels are made from stainless steel. The external temperature does not exceed 55°C, avoiding the loss of heat to the working environment.
The front panels to both the dirty and clean side are mounted on hinges and locked with a special key.
Multi circulation pumps & mutildosage pumps are added based on selected chambers configuration.
The hydraulic pipework and components are manufactured from sanitary AISI 316L stainless steel.
The washer is designed to be connected to cold, hot, and treated water as processing fluids to minimise the cycle length, and at the same time removing residuals and hardened soil deposits without harming the load by overly reducing the supply of the wash materials.
Each water inlet and the main drain are protected by stainless steel water filters.
Hot, cold, and treated water are fed separately by a specialised device that avoids any flashback into the main supply line, thereby avoiding any risk of contamination. All the hydraulic circuitry has drainage points for optimum, safe, and reliable operation.

Maintenance

The machine is designed as modules in order to make the maintenance easier. Accessibility is guaranteed for engineers with no limitations, thanks to a special design that favours accessibility needs of multichamber washer. Maintenance steps are clear and easy to apply

Heating

The washer/disinfector water can be heated using one of the following methods:

(E): Built-in electric heating

(V): External steam supply from Hospital steam Network (domestic Vapour)

(EV): Combination of (E) and (V) which enables the user to select the type of heating from the touch screen, choosing either internal (E) or external (V) without the need to interact with a hardware interface.

Control System

The unit is entirely controlled by an electronic programmable logic device (PLC) that covers the cycle performances, the control of parameters, and the verification of the process safety. The control includes an input device, microprocessor and data memory, memory card with EEPROM memory (with the ability to connect to an external memory), external interaction (optional serial port RS232C/RS485), input control card for digital input, and output control cards for digital output. The battery life is 10 years. Temperature regulation complies with European standards. There are Audio Visual Alarms with different levels of alarm. The control system incorporates high levels of safety features for both the operator and the machine.

Control panel On Loading & Unloading Side

The Control Panels (same for loading & unloading side) consist of:

- Colour Touch-Screen technology as the user interface
- Thermal printer
- Buttons for door management
- Emergency button
- Emergency stop
- ON/OFF selector to switch the equipment on and off

Interactive Display "Touch-Screen"

On the Touch Screen control and display there are different pages for different purposes

- Main menu
- Cycle library
- Cycle parameter display
- Data relating to the operation of the machine (operator code, batch, etc.)
- General readiness of the machine to start a cycle
- Process control
- Programmed preventive maintenance
- Instructions for maintenance and troubleshooting
- Alarm indication and alarms history.
- date and time
- Visualisation of physical values (temperature and A0)
- Machine information (condition of the doors, temperature, etc.)
- Operator access level control with configurable level of accessibility
- Pages for set point cycle follow up
- Calibration and technical pages (password protected)
- Programming new cycles or modifying standard cycle (password protected)
- Type of heating selection
- Manual advance step
- Multi Language coloured touch screen

Thermal Printer

The Thermal printer is for documentation of messages, parameters, and the completed execution of a cycle.
The data shown on the printout include the cycle number, basic process parameters and each stage, date, timings, the result of the cycle, and the operator code, batch, A0, etc.

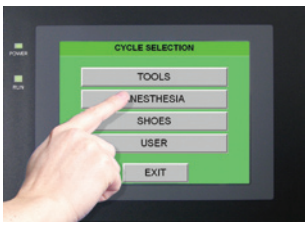
Quality & Safety Certificates

CISA Washer/disinfectors meet the requirements of the ISO EN 15883-1 and ISO EN15883-2 and to the different Standards they refer to, amongst which are ISO EN 61010-1, ISO EN 61010-2-041, and ISO EN 60204-1. The machines are also CE marked to the CE directive 93/42 for medical devices.

TUNNEL WASHER CYCLES

There is a choice of Pre-programmed cycles and programmable :
We also offer:

- **Automatic Loading / Unloading system with load recognition**
- **Automatic rack return**
- **Conveyer system for automatic rack return from clean zone to dirty zone after discharge in clean zone**



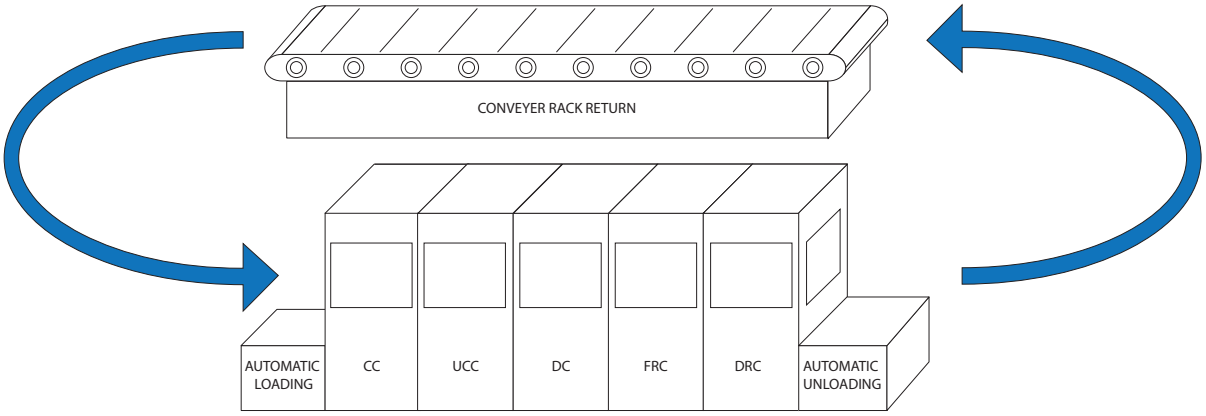
E-Box and Black Box

These are devices for data archiving and retrieval which can be installed inside the machine for extra documentation and a quality operation.

E-B/BB
Communication Systems

Options and Accessories

- Instrument rack (ST8 - ST10)
- Anaesthesia rack (AN8 - AN10)
- Container rack (CO8 - CO10)
- Footwear rack (ZO8 - ZO10)
- Rigid Endoscope rack (MIC8 - MIC10)
- Loading and Unloading trolleys



Technical Data

Model	Chamber (number) Chamber Dimensions 1	2	3	4	5	Overall Dimensions (WxHxD)
T2	CC	DC	-	-	-	1100x2300x3200
T3	CC	DC	DRC	-	-	1100x2300x4000
T4	CC	UCC	DC	DRC	-	1100x2300x4800
T5	CC	UCC	DC	FRC	DRC	1100x2300x5600

CHAMBER DIMENSION (WxHxD): 550x660x620

EXTRA LARGE WASHER/DISINFECTOR W SERIES

(carts - bed frames - operating tables and other large items)

This is a washer/disinfector for large medical devices that require a decontamination level appropriate for CSSD applications, operating theatres, or hospital utilities. The model can be selected from the range, depending on the items to be reprocessed and the physical installation.

Configuration	Medical devices	Installation
WT	Carts , trolleys and Large Items	CSSD
WB	Hospital Bed Frames	CSSD or others
WOT	Operating Tables	ORS or CSSD
WCO	Containers and large Items	CSSD
WBB	Orthopedic bed	CSSD
WBI	Baby Incubator	NICU Utilities or CSSD

The CISA washer/disinfectors use with different medical devices depends on the device's manufacturer's recommendation for safe reprocessing to ensure the performance of the equipment is not affected, particularly where there are electronic parts and control modules.
The need to be able to use washer/disinfectors with medical devices is increasing because of the increase in the occurrence of cross-infection arising from those devices. The washability must be considered by the end user when selecting the suitability of a medical device.

Design and Installation

The machine is offered with either single or double doors. The double door version is a requirement for modern CSSDs where pass-Through facilities are needed from the dirty zone to the clean zone. The machine is manufactured to International and European regulations including PrEN15883-6 and safety standards.
The units are designed with a PLC computerised control system which together with high level functional elements to guarantee the best performance and highest reliability.

Wash Chamber

The wash chamber is made entirely from AISI 316L stainless steel. The chamber is curved to permit good drainage and to make cleaning easier. The internal chamber surfaces have a "Scotch Brite" type finish, and are subject to electrolytic polishing to obtain a surface with a roughness less than 0.28 microns, and with a high resistance to corrosive attack.
The wash chamber has an halogen lamp situated over the top of the chamber, and hermetically enclosed behind heat and acid proof glass.

Construction

All internal parts have perfectly finished rounded edges. The frame, front, side, and rear panels are all manufactured from stainless steel. All control valves, and hydraulic circuitry and piping are also made from stainless steel.

Door Construction, Movement and Sealing

The washers are provided with doors made from heat resistant tempered glass, framed in AISI 316L stainless steel which allows viewing of the washing process. The doors are automatic vertical sliding (SV) controlled from a touch screen and operated by a pneumatic or motorized device. The double door configuration is fitted with a safety lock so that the two doors cannot open at the same time, to prevent cross contamination.
The doors are fitted with gaskets for perfect closure during the cycle.

Maintenance

The external cabinet enables access for maintenance thanks to a an orderly lay-out of the components, that makes maintenance easier.
All of the main components involved in the active function of the machine can be accessed from the front.

Hydraulic Piping

The pipework and other components are manufactured from sanitary AISI 316L stainless steel.

The washer is designed to be connected to cold, hot, and treated water as processing fluids to minimise the cycle length, and at the same time removing residuals and hardened soil deposits without harming the load by overly reducing the supply of the wash materials.

Each water inlet and the main drain are protected by stainless steel water filters. Hot, cold, and treated water are fed separately by a specialised device that avoids any flashback into the main supply line, thereby avoiding any risk of contamination.

Circulation Water Pump

The capabilities of the water pump define the quality of operation of any washer disinfector.

The water pump used with the W series has a high capacity to meet different application needs.

Drain Device

The water drain is executed by means of a pump, which take water from the bottom of the wash chamber and direct the flow to the discharging pipe. In this way will be avoided problems that come from residuals of chemical solutions (these residuals comes from the combination of chemical and water)

Dosage Pumps & Chemical Dispensing

Dosing pumps are used for the addition of chemicals during the Cycle.

The dosing pumps can be pre configured for different chemicals within an open system that use any validated chemical. The number of dosage pumps in W series is dependent from the application and needs of adding chemicals starting from 2 pumps.

The addition of extra dosing pumps is also possible

The chemical containers can be stored inside the washer, or can be connected from a central storage system.

The containers are each provided with a sensor for detection of the remaining chemical which activates an alarm when the container is empty or there is not enough chemical left to run the selected cycle.

Drying Module

The drying phase removes any condensate or water vapour from the wash chamber, drying the load inside perfectly.

The drying module is composed of a pre-filter, a 0.2 micron Absolute filter, a fan, and an air heater. These inject of sterile hot air over the load.

Heating

The washer/disinfector water can be heated using one of the following methods:

(E): Built-in electric heating

(V): External steam supply from Hospital steam Network (domestic Vapour)

(EV): Combination of (E) and (V) which enables the user to select the type of heating from the touch screen, choosing either internal (E) or external (V) without the need to interact with a hardware interface.

Control System

The unit is entirely controlled by an electronic programmable logic device (PLC) that covers the cycle performances, the control of parameters, and the verification of the process safety. The control includes an input device, microprocessor and data memory, memory card with EPROM memory (with the ability to connect to an external memory), external interaction (optional serial port RS232C/RS485), input control card for digital input, and output control cards for digital output. The battery life is 10 years. Temperature regulation complies with European standards. There are Audio Visual Alarms with different levels of alarm. The control system incorporates high levels of safety features for both the operator and the machine.

Control panel On Loading Side

The Control Panel consists of:

- Colour Touch-Screen as the user interface
- Thermal printer
- Buttons for door management
- Emergency button
- Emergency stop

ON/OFF selector to switch the equipment on and off

Control panel On Unloading side (2P Version)

The Control panel on the clean side consists of:

- Buttons for working the doors
- Emergency button
- Emergency stop

Indicators of process status and alarms

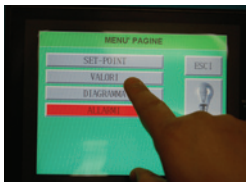
Printer

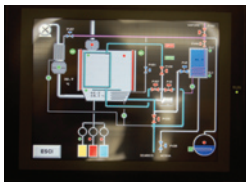
The Thermal printer is for documentation of messages, parameters, and the completed execution of a cycle. The data shown on the printout include the cycle number, basic process parameters and each stage, date, timings, the result of the cycle, and the operator code, batch, A0, etc. The printer uses rolls of paper with following dimensions: diameter mm. 50, width mm. 48 easy to find in the local market.

Interactive Touch-Screen Display

On the control and display Touch Screen there is a range of pages:

- Main menu
- Cycle options
- Cycle parameters
- Data relating to current procedure (operator code, batch, etc.)
- General condition of the equipment before starting a cycle
- Process control
- Programmed Preventive Maintenance
- Instructions for maintenance and troubleshooting
- Alarm indication and alarm history.
- Date and time
- Visualisation of physical values (temperature and A0)
- Machine information (condition of the doors, temp, etc.)
- Operator access level control with configurable level of accessibility
- Pages for set point cycle follow up
- Calibration and technical pages (password protected)
- Programming new cycles or modifying standard cycle (password protected)
- Type of heating selection
- Manual advance step





Quality & Safety Certificates

CISA Washer/disinfectors meet the requirements of the ISO EN 15883-1 and PrEN15883-6 and to the different Standards they refer to, amongst which are ISO EN 61010-1, ISO EN 61010-2-041, and ISO EN 60204-1. The machines are also CE marked according to the CE directive 93/42 for medical devices.

Condenser (Optional)

During the drain phase a heat exchanger will be activated to de-humidify the air before its injection into the chamber. A close-circulation cooling device condenses the vapour from the wash chamber allowing the discharge of the condensate directly into the main discharge from the washer. The Condenser removes the need for ventilation or an exhaust connection.

Accessories & Options

(Loading & Unloading Devices)

External Steam Connecting Set

E-Box and Black Box

Devices for data archiving and retrieval which can be installed inside the machine for extra documentation and quality operation.

E-B/BB
Communication Systems

CYCLE OF WASHING AND DISINFECTION
Washing and Disinfection cycles

Pre Programmed cycles for washing and disinfection using thermal or thermochemical means, with 20 programmable cycles The cycles are designed and validated for different medical devices and as per prEN15883-6, each cycle must reflect the recommendations of the medical devices manufacturers. For general items such as carts and containers there are pre-programmed cycles that have been validated.

Technical Data

Model	Capacity (DIN)	Chamber Dimensions (WxHxD)	Overall Dimensions (WxHxD)
WT	1 cart	900x1450x1600	2350x2000x1850
WCO	8 containers	900x1450x1600	2350x2000x1850
WOT	1 Operating Table	900x1450x2500	2350x2000x2750
WB	1 Bed frame	1050x1450x2500	2500x2000x2750
WBB	1 Orthopedic Bed frame	1050x1800x2500	2500x2350x2750
WBI	One Incubator	1050x1800x1600	2500x2350x1850

Feel the innovation

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