

# **Instrument Washer & Disinfector**

## Hospital Application



## Hospital Washer Hospital Washer & Disinfector

A wide range of hospital (and CSSD) washer/disinfectors for disinfecting surgical instruments, anaesthesia and respiratory products, hospital tools, glassware, containers, operating shoes, and other devices that require high-level disinfection.

### Design & installation The power of customization

CISA washer and disinfectors for Hospital application are customizable in terms of function and design.

- The machine is available 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 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 the utmost reliability.
- The structure of the machine is made from the highest quality materials for optimum hygiene, high durability and easy cleaning.

- The machines are designed with a user friendly interface for the operators and in full compliance with environmental requirements and a quiet operating environment.
- Installation and maintenance are possible by means of smooth and clear procedures. (Effortless installation, with ease of positioning and connection to the main utilities.)
- Compact architecture, with small overall dimensions compared to the machine capacity.

### Why use a CISA washer disinfector

There is a wide range of applications for its washer/disinfectors using thermal or chemical disinfection with the aim of reducing infection risks.

- 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 microorganisms present on the devices.
- Remove blood, saliva, tissues and all residues that become barriers during the sterilisation process.
- Reduce the microbiological load before the packaging and sterilization process.
- Improve the safety of staff who are working in the clean area, packaging or preparing the load.



## Range of washers

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

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**P-M:** Medium size washer/disinfectors

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**P-KF:** Large size washer/disinfectors

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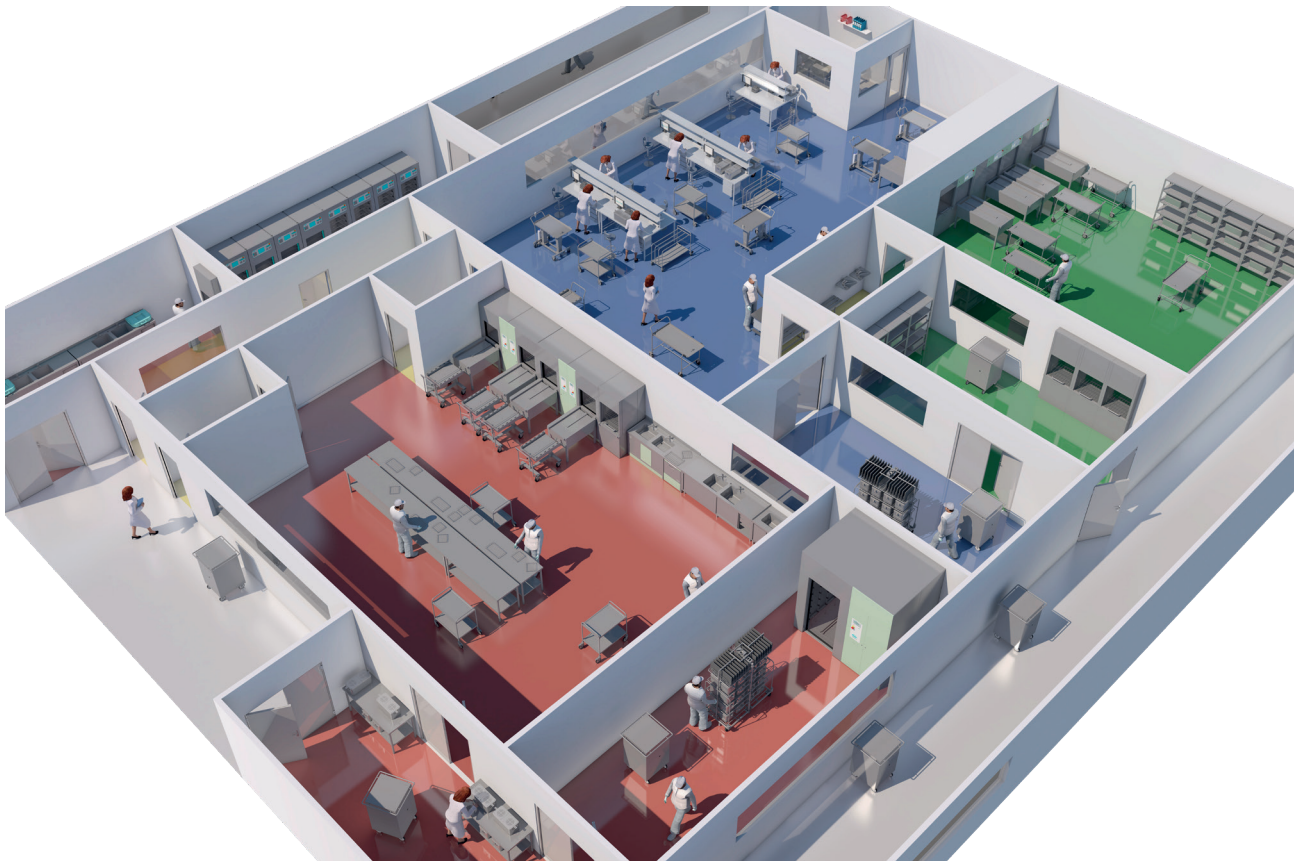
## Within The CSSD Where You Can Find Me

The Central Sterilizing Service Department (Central Supply, or Sterile Supply as it is also known), comprises that service within the hospital in which medical/surgical supplies and equipment, both sterile and nonsterile, are cleaned, prepared, processed, stored, and issued for patient care.

CISA's instrument washer and disinfecter is installed, following CSSD regulations, inside the dirty area (as shown in the caption), with pass-through access to the clean area.

## Instrument Washer & Disinfecter Hospital Application

- Dirty Area
- Clean Area
- Sterile Area



## **P-M: Medium Washer/Disinfectors**

### **Model: P-M 104 SV**

CISA washer disinfectors are used for reprocessing CSSD medical devices, including:

- Surgical instruments, using ST specific surgical instruments rack. The rack is provided with rotating nozzles between each level from the top and the bottom: capacity 8 to 12 DIN trays
- Anesthesia and respiratory products using specific AN rack/kit (fast coupling in a modular configuration) with connections for the entire patient circuit including hoses, breathing bags, masks, etc.
- Containers and hospital tools like kidney dishes, basins, and similar using specific CO rack
- Tubular instruments, rigid endoscope devices and micro-instruments using specific MIC rack
- Operating shoes using specific ZO rack

## **P-Kf: Large Washer/Disinfectors**

### **Model: P-KF155 & P-KF 305**

CISA washer disinfectors are used for reprocessing CSSD medical devices including:

- Surgical instruments, using proper surgical instrument rack (ST). The rack is provided with rotating nozzles between each level from the top and the bottom; capacity 9 to 18 DIN trays (P-KF155) and 18-36 (P-KF305)
- Anaesthesia and respiratory products, using AN rack/kit (fast coupling in a modular configuration) with connections for the entire patient circuit including hoses, breathing bags, masks, etc.
- Containers and hospital tools 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

## **Washing chamber**

The washing chamber is made entirely from AISI 316L stainless steel. The chamber is curved to ensure good drainage and to make cleaning easier. The internal chamber surfaces have a “BA” type finish, and are subject to electrolytic polishing to obtain a surface with a roughness of less than 0.3 microns, and with a high resistance to corrosive attack. The heaters for keeping water at the selected temperature are placed in the chamber's bottom, protected by a metal filter. Another protective metal filter, placed at the bottom level of the chamber, protects the reservoir from any items that may fall and block the passage of the water. The upper part of the chamber is designed to allow any condensate to drop straight into the reservoir be-

low. The wash chamber has a lamp placed over the top of the chamber, and is hermetically enclosed by glass.

## **Circulation Water Pump**

The capacity of the water pump defines the quality of operation of any washer disinfectors.

The circulation water pump adopted in the P-KF series has a high capacity, offering 1.200 l/min for the P-KF155 model, while for the larger model P-KF305 there are two water pumps. For model P-M104 the circulation pump has a circulation power of 900 l/min.

## **Pre-Heating of The Water (Fast System)**

In order to reduce the processing time, P-KF155 and P-KF 305 models are provided of FAST system. Water loading time can be considerably reduced and water can be pre-heated for thermal disinfection and for the last rinse before its introduction into the washing chamber, by means of stainless steel tanks of suitable capacity. This allow to drastically reduce passive times, resulting in a reduction of the total cycle time of about 40-45% as compared to generic washer-disinfectors of the same size.

## **Construction**

All internal parts have perfectly rounded edges. The frame, front, side, and rear panels are all manufactured in stainless steel. All control valves, and hydraulic circuitry and piping are 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 basement with a drain to collect any water leaks is standard on all models.

## **Maintenance**

The external cabinet enables access for maintenance thanks to the careful layout of the components, which makes maintenance very easy. All of the main components can be serviced from the front.

## Dosage Pumps & Chemicals

Dosing pumps are used for adding chemicals during the cycle. The dosing pumps can be preconfigured for different chemicals within an open system that uses any validated chemical.

4 dosing pumps are included in the P-KF model, while in the P-M104 model there are 2, upgradable to 3.

The chemical containers can be stored inside the washer, or can be connected from a central storage system. Each container is provided with a level 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.

## Electrical Panel

The electrical panel has IP55 degree protection and is installed inside the body of the washer. Mounted on telescopic rails (on the 155 version), it is easily accessible. On the 104 version, access to the electrical board is entirely from the load side of the machine. It is therefore 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 cycle performances, control of parameters, and verification of process safety. The control system incorporates high levels of safety features for both operator and the machine.

## Control Panel

The human interface is based on a modern industrial grade component designed with a smooth surface for hygiene and easy cleaning.

The control panel is provided with standard 7" HMI touch screen upgradable to 10", built-in 2" dot matrix printer, emergency button, door control buttons, and is mounted at an ergonomic level position to enable good view and easy control. The external part of the panel is protected by IP54.

## Printer

On the panel there is a built-in printer for cycle documentation which includes: print out of date and time with hospital name, lot number, operator name, selected cycle, parameter values in different cycle phases that can be programmed as per customer requirements phase by phase display, total cycle time and cycle results (valid or invalid) as well as printing alarms during cycle execution.

## User Interface

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 preparation and information 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 verification
- Display of physical values (temperature and A0)
- Machine information (condition of door(s), 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 advanced steps

The touch screen language can be pre selected to meet different clients satisfaction

## Operators Access Level Control

CISA system allow every operator to have its own identity code by using the predefined password and access level to which it belongs. The levels can be customized for each operator with access to multiple functions. Operator name will be printed and kept in the system for external storage, or transferred to external supervision/traceability system software.

## Alarms

Audio and visual alarms are defined for operator warning; the alarms list includes audio and visual alarms; the alarms list includes multilevel alarms with clear message notifications; alarm levels are configured, according to the level of importance, to stop the machine or the cycle, or to issue a warning notification without affecting the running cycle.

The alarm lists are complete for safe and perfect operation for the operators and the machines. The alarms history can be displayed all the alarms that occurred in the last 90 days. Alarms are also indicated on unloading side in case of double doors execution. The end of cycle alert is included for alerting the user of the finished cycle and unloading process.

## Service & Maintenance Program

The touch screen is equipped with software pages for periodic preventive maintenance, enabling a safe operation of the machine, and a self maintenance program for steam generator discharge with user acceptance; There are technical pages for calibration and parameter control. Easy and friendly troubleshooting pages are added for easy maintenance and service.

## Remote Maintenance

The machine, through the Touch Screen, is equipped with a remote access system that allows to be connected to the CISA customer service by means of a simple Ethernet connection with internet access. This represents the fastest way for a CISA technician to verify a problem and reduce the downtime.

## Pre Washing & Pre-Rinsing

The Pre-Washing is an important phase of the cycle with the aim to remove all dirt, blood residues, saliva, and tissues; the washing action is mechanically operated using spray arms and special racks to wash every part, even those hard to reach.

## Disinfection

Disinfection can be either thermal for materials that are heat resistant, and/or thermo-chemical 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 with varying disinfection temperatures and timings are available across the range.

## Final Rinse

The final rinse is an important post-disinfection phase. Demineralized water to protect the material from stains is recommended for the final rinse.

## Drying

The final drying phase allows to remove the condensate and vapours from the washing chamber, drying perfectly the load inside.

The drying module is composed of pre-filter, absolute HEPA H14 filter, motor fan and air inline heater to inject sterile hot air, completed with overheat protection. It achieves perfect drying in a very short time. In the P-KF series the drying module is doubled for higher efficiency.

## Lubrication

In CISA washers, an integrated system for instrument lubrication during the last phase of the process is available as an optional.

## Washing & disinfection cycle

Pre programmed cycles for:

- Washing cycle at 91°C for 05 minutes (P1 NV Surgical Instruments)
- Washing cycle at 91°C for 05 minutes (P2 Micro-instruments)
- Washing cycle at 91°C for 10 minutes (P3 BGA Short)
- Washing cycle at 91°C for 05 minutes (P4 SV)
- Washing cycle at 60°C for 05 minutes (P5 Anaesthesia)
- Washing cycle at 91°C for 01 minutes (P9 Shoes)
- Washing cycle at 91°C for 01 minutes (P13 Containers)
- Drying cycle at 110°C for 20 minutes (P14 Drying)
- Self-disinfection cycle at 91°C for 05 minutes (P15 Self)
- Open cycles (from 01 up to 08 pre-set as P1 cycles)

## Quality & safety

CISA Washer-disinfectors are built in accordance with the following standards: UNI ISO EN 15883-1-2-5, IEC EN 61010-1, IEC EN 61010-2-040, IEC EN 60204-1 and with the following European Directives: Low Voltage 2014/35/EU, Electromagnetic Compatibility 2014/30/EU, Machinery Directive 2006/42/EEC. The CE mark with identification number 0123 is issued by the Notified Body TÜV Product Service GmbH in accordance with Medical Device Directives 93/42/EEC as amended by Directive 2007/47/CE. Product are realized within quality system UNI EN ISO 9001:2015, UNI CEI EN ISO 13485:2016

## Accessories

### P-M & P-K Series Loading And Unloading Devices

Loading the washer disinfectors can be done from the front using external transport carriages (available with fixed or adjustable height) specially developed for this purpose. The internal washing racks have special connectors for easy and smooth internal locking when inside the chamber.

Both series have the possibility to wash and disinfect different types of material according to the needs and demands of the hospital. This is why CISA provides many possibilities and has designed and manufactured many racks for these purposes.

### ST RACK

Instrument rack

### CO RACK

Container rack

### ZO RACK

Operating shoes rack

### MIC RACK

Microsurgery rack

### AN RACK

Anaesthesia and respiratory rack

### DV RACK

Da vinci endowrist arms rack



## External Trolley

## Optionals for P-M & P-KF CSSD

### Washer Disinfectors

### Loading Automation

The system automates equipment loading/unloading operations allowing the washer disinfectors to be loaded or unloaded without the presence of an operator. Each individual system consists of a device placed in front of each machine, detecting sensors and coupling devices for transfer carriages, manual bypass actuation and safety devices.

The pneumatic mechanism and the electronic control by PLC ensure a high reliability of the system all while preventing injuries to personnel working in close proximity.

## External Steam Connections

External steam connection sets are available as an extra optional, and are customizable to on-site steam quality, pressure and machine requirements in order to be connected to the domestic steam supply (V) and (EV) .

## Centralized Dosage System

To avoid multiple containers for chemical storage, a centralized supply system can be provided as an optional. The system includes special outer storage tanks connected to the pumps and the piping system.

## Condenser

During the draining phase a condenser can be installed to dehumidify the air after the exhaust from the chamber. A closed circulation cooling device condenses the vapour from the washing chamber, allowing discharge of the condensate directly from the washer into the main drain.

## UPS Backup Control System

The UPS backup system is connected to the PLC and the touch-screen and allows to bring the cycle to completion in case of sudden surges or power failure. The cycle remains valid as long as the conditions that ensure the cycle performances have not been compromised.

## Drain Cooling Device

All discharges are conveyed to a thermostat-controlled pipe in order to detect the temperature before the exhaust in the pipeline. The device measures the discharge temperature and adds service water to cool it down if necessary. The drain will be maintained at less than 60°C and it is adjustable for better management of the service water consumption.

## Washing Arms Obstruction Detection System

This system checks if the washing arms of the internal rack rotate properly during the washing cycle, by means of a set of proximity magnetic sensors.

## Automatic Trolley Recognition

This system enables to recognize the trolley type as well as its presence inside the washing chamber, inhibiting cycle start when absent. Moreover, the instrument washer can automatically start the cycle depending on the trolley type detected. This feature allows for maximum performance when combined with the automatic device loading and unloading option, which enables a fully automatized loading process, thus leaving the users with the sole task of positioning the rack to be washed on the trolley in front of the automatic loading device. In this case, the equipment will collect the rack from the trolley, insert it inside the equipment's chamber, automatically start the cycle unload once finished.

# Our Product Range

All of the sizes and measurements below can be modified according to the different configurations and applications of the machines.

All measures are expressed in mm. (W x H x D)

	P-155 KF	P-305 KF	P-M 104 SV
Chamber Dim	630X680x840	630X680x1680	550X660x620
Dimensions 1P-2P	1200X2000x1036-1066	1200X2000x1910	780X2000x800-830
Lt	400	800	225
Load Capacity	18 Din Trays	30 Din Trays	12 Din Trays



**Our product range features a distinctive Italian design, new technological features, our trademark water and energy savings and intelligent remote connection.**

### **High Temperature Steam Sterilizer**

CISA's R&D engineers have used advanced design to optimize the machine for hospital use by working on quality, safety, ergonomics and energy saving. The machine is built with the highest quality components for perfect hygiene, perfect operation, high durability and maximum safety.

### **Low Temperature Plasma Sterilizer**

The plasma machine operates based on sterilization with hydrogen peroxide. The Plasma series offers optimal sterilization results for a wide range of medical devices.

### **Instrument Washing & Disinfection**

A wide range of hospital (and CSSD) washer/disinfectors for disinfecting surgical instruments, anaesthesia and respiratory products, hospital tools, glassware, containers, operating shoes, and other devices that require high-level disinfection.



## Table Top Steam Sterilizer

The CISA Table Top is installed, according to hospital or dental office regulations in the operating room or inside dental offices, where the operator can have immediate access to fast sterilization of the instruments or sterile materials needed.

## Washing & Disinfection Tunnels

The equipment has been designed and built for reprocessing of hospital carrier trolleys, containers and beds, and there is a laboratory version for washing animal cages.

## Tracecare Traceability Software

CISA TRACECARE is the system developed by CISA that monitors the kit through all the steps in CSSD areas (dirty area - clean area - sterile area - operating theatre).

## Laboratory High Temperature Sterilizer

CISA offers a wide range of Special Application Steam Sterilizers for laboratories, research centers, pharmaceutical industries and others. Flexibility in design, sizes and functions always meets customer requirements and needs.

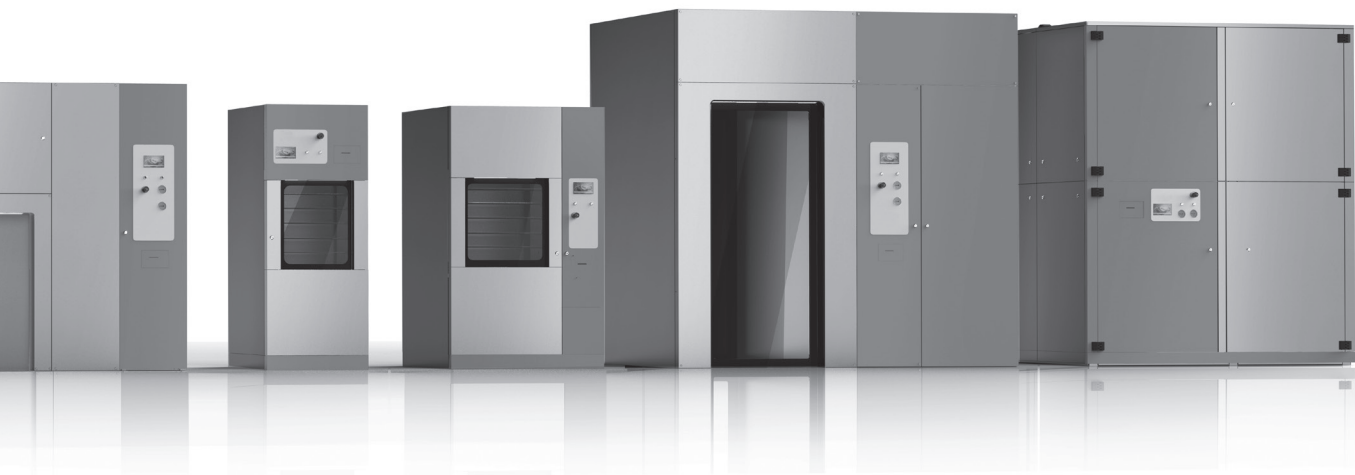
## Medical Waste

An innovative system that uses saturated steam as a sterilization agent to remove microorganisms and treat hospital medical waste.

CISA's solution for infection control in medical waste includes an inline shredding/sterilizing system, providing maximum output with minimal inconvenience. This new system for managing hospital and laboratory bio-hazard waste with integrated Aquazero pump reduces consumption to the lowest level achievable today.

### Medical Waste Treatment (MWT)

An international distribution agreement with ALS Angelantoni Life Science has added their powerful WASTER MWT solutions to our range of products. Waster models use an embedded sterilization chamber internal shredder for a safe MWT.



The machines are designed with industrial grade components for higher safety and guaranteed reliability, easy maintenance and low running costs.



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