cisa
We care about life

Washing & Disinfector Tunnels
Trolley, Container, Bed & Cage
Hospital & Laboratory Application

![CISA logo]
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We care about life

TECHNOLOGIES FOR INFECTION CONTROL

SINCE 1947

85
EMPLOYEES IN ITALY

70
EMPLOYEES IN BRAZIL

30
SERVICE ENGINEERS

>8%
ANNUAL R&D

CISA was established in 1947 in Italy: it was one of the first companies to develop autoclave sterilizers for the healthcare industry.

With its headquarters in Lucca, at the heart of Tuscany, and its sister company Cisa Brazil in Joinville, Santa Catarina, CISA is a truly global company, and counts as one of the seven largest players on the world market.

CISA GROUP TECHNOLOGY AWARDS

2018
8TH PLACE
EU R&D IN TUSCANY

In 2018 CISA came in eighth in Tuscany in a European backed Research and Development programme. The Company was awarded 326k Euros.

2019
FIRST PLACE
R&D IN TUSCANY

In 2019 CISA Group was awarded the First prize by the Region of Tuscany for the Best R&D Project of the Year. The Prize is called Toscana Innovazione

2020
INVITALIA
National Anti-Covid Effort

CISA Production was among the 15% of Italian Companies admitted to #CuraItalia, the national effort to support investments against Covid-19.

FAPER GROUP

In 2013 CISA was incorporated into Faper Group, a cutting edge Italian technology group, world famous for its breakthroughs in the world of paper converting.
Founded by Fabio Perini, an inventor with multiple honours and awards, Faper Group is a market innovator weith an established record of outstanding achievements.

INDUSTRIY 4.0 AND LEED CERTIFIED
CISA Group's CSSD equipment is Industry 4.0 certified. Because of ts water and energy saving, LEED green construction points are awarded.

Washing Disinfector Tunnels

The equipment has been designed and built for washing, rinsing, thermal disinfection and drying of hospital carrier trolleys, containers, beds and, laboratory version, for washing animal cages.

Why use a CISA Washer Disinfector

There is a wide range of applications for CISA's washer/disinfectors using thermochemical disinfection with an aim of reducing infection risks. It can be used, for example, 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 microorganisms present on devices
- Remove blood, saliva, and tissue
- Reduce the microbiological load
- Remove dirt
- Improve the safety of the staff working in the CSSD

Within The CSSD
Where You Can Find Mel

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 non-sterile, are cleaned, prepared, processed, stored, and issued for patient care.
CISA's Washing Disinfector Tunnels for trolleys, containers and beds are installed, following CSSD regulations, inside the dirty area (as shown in the caption), as a separate washing department for large items. CISA's cage washers are only present and used in laboratory applications.

Washing & Disinfector Tunnels

Trolley, Container, Bed & Cage
Hospital & Laboratory Application

- Dirty Area
- Clean Area
- Sterile Area
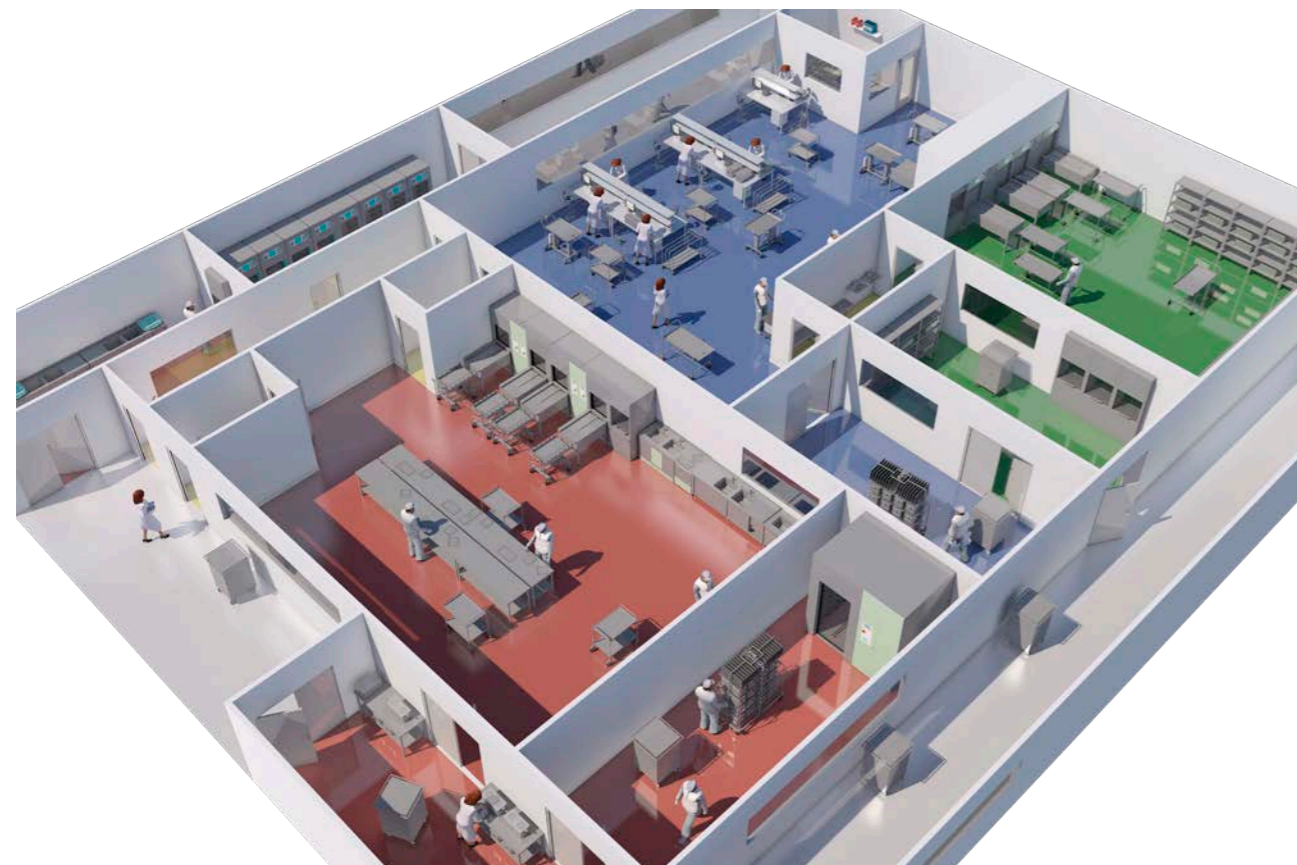
Construction

Stainless Steel

Stainless steel of the highest quality is used for assembling the machine. The internal chamber and jacket are manufactured in AISI 316L.
The machine frame and front panels are manufactured using stainless steel 304L. The hydraulic plant and pipes are manufactured using stainless steel 316L. The pressure vessel as well as all steam pipes are insulated using high efficiency insulation material that reduces heat loss and stabilizes the temperature inside the pressure vessel to improve the quality of the washing cycles.

Door construction
Sliding and sealing

The washers are provided with doors made in heat-resistant tempered glass framed in stainless steel which allows to view the washing process. The doors are automatic horizontal sliding (SO) controlled from a touch screen and operated by an electrical motor. The double door configuration is equipped with a safety lock so that both doors cannot open at the same time, and also to prevent cross contamination. The doors are fitted with gaskets for a perfect closure during the cycle.

Technical compartment
Two way access

The washing equipment body and the components are contained in a technical compartment, adjacent to one side of the equipment.
The compartment can be accessed through two flush doors with front and rear stainless steel panels.

Washing chamber
Highest quality

The equipment consists of a washing chamber made in AISI 316L stainless steel. A series of lamps installed on the top of the machine illuminate the internal port of the washing chamber.
The inclined surface of the chamber bottom ensures perfect drainage and is equipped with a collection tank with a grid. The load platform is divided into removable modules to facilitate internal inspection. The internal surfaces of the chamber are mirror polished. The washing ramps in the chamber are designed to be completely drained at the end of each washing phase.

Easy access for maintenance

Despite the large overall dimensions of the machine and its interior, thanks to the perfect designed position of the components the machine is easily serviced. Furthermore, it requires minimal installation space, as well as all components can be serviced from the front.

Tanks
Demineralized water

The two water collection tanks are both placed inside the technical compartment.
The tank n.1, made of stainless steel, is used to load demineralized water for the final rinse inside the chamber in order to maintain the temperature of the four steam resistors placed inside; the tank also includes a coated and insulated temperature level control.
The second tank, n°2, also made of AISI 316L stainless steel, is used for loading hot and cold water for the pre-wash and washing inside the chamber and is complete with level control.

Cisa trolley wash
With impellers
(ONLY WCO SYSTEM)

The second washing line is composed of one main connection from the top (two connection for double trolley washers WT/WCO3100) to the washing trolleys for containers/clogs/trays. This water connection line supplies the impellers installed under the washed materials. The wash arms are as made with Tri-Clamp connections for easy removal.

Side washing ramps
Washing nozzles

The external washing of the components consists of two collectors to the right and the left of the platform supplying a series of vertical ramps equipped with washing nozzles.

During the cycle, the ramps are mechanically activated by a mechanism and rotate alternately, fully orienting the spray direction of the nozzles in order to reach the entire surface of the components to be washed. The machine is provided with a device to tilt the washing platform in order to allow the water to drain during the drying phase, especially when using the closed trolleys.

Hydraulic piping
In stainless steel

The hydraulic pipework and components are manufactured in sanitary AISI 316L stainless steel. All supplies and the main drain are connected by flexible stainless steel tubing. The system can be easily removed and inspected thanks to its Tri-Clamp connections and stainless steel butterfly valves.

Recirculation
Thermal disinfection

The washing water in the outer tank is conveyed to the chamber, and then recirculated by the high flow pump and maintained at set temperature by the heat exchanger. During the washing phase recirculation, chemical additives for the washing, neutralization and thermal disinfection chemical are added.

Drying system
Total removal

The final drying phase enables to fully dry any water or vapour drops, and remove any material from the washing chamber. A compact and industrial Air Handling Unit (AHU) equipped with a fan, G4 filter (95% efficiency) and heating batteries supplies sterile hot air (91°C) to the chamber through several holes. The considerable air flow of the fan (around 1500 m^3/h), reduces the drying time while the steam heating battery heats the air up to a set temperature. The air is extracted from the technical compartment, filtered and then passed through the heating battery where it is finally channelled in the washing chamber. The exhaust air leaving the chamber, which is still hot, is channelled at the entrance of the drying group in order to preheat the incoming fresh air.

A PT100 probe close to the heating battery checks the air temperature. An H13/H14 Hepa filter is available directly at the inlet of AHU.

* For models WT/WCO3100 the drying system described above is doubled for necessities of chamber capacity.

Dosing pumps
Two dosing pumps

Chemical additives to increase the washing and disinfection effects of the materials are added to the water by means of two dosing pumps, which collect the liquid directly from the tanks placed in the technical compartment. The considerably low flow rate of the dosing pumps and the dosing control, carried out by a meter connected to the microprocessor, allow the amount of additives added to water to be optimised and the relative consumptions to be reduced. A level control for each tank indicates the presence of additive until it is fully emptied. The additive is injected directly in the washing chamber, where it is mixed with water. The additives that can be added usually are: detergent, disinfectant, neutraliser and lubricant.

Washing pumps
Pre-washing

A pump starts the circulation of the washing water distributed along the two lines placed on the washing trolley and on the side ramps. The water is filtered by means of a self cleaning filter added to the circulation pipe
and heated by a inline steam exchanger. There is a second filter in the bottom part of the chamber, before the water suction device. Another pump, at the end of the washing cycle, allows emptying the chamber and provides the client with the possibility of collecting the final rinsing water into tank n°2, with the aim of using it in the pre-washing of the next batch oraccording to customer's needs.

*For models WT/WCO3100 the washing group described above is doubled for necessities.
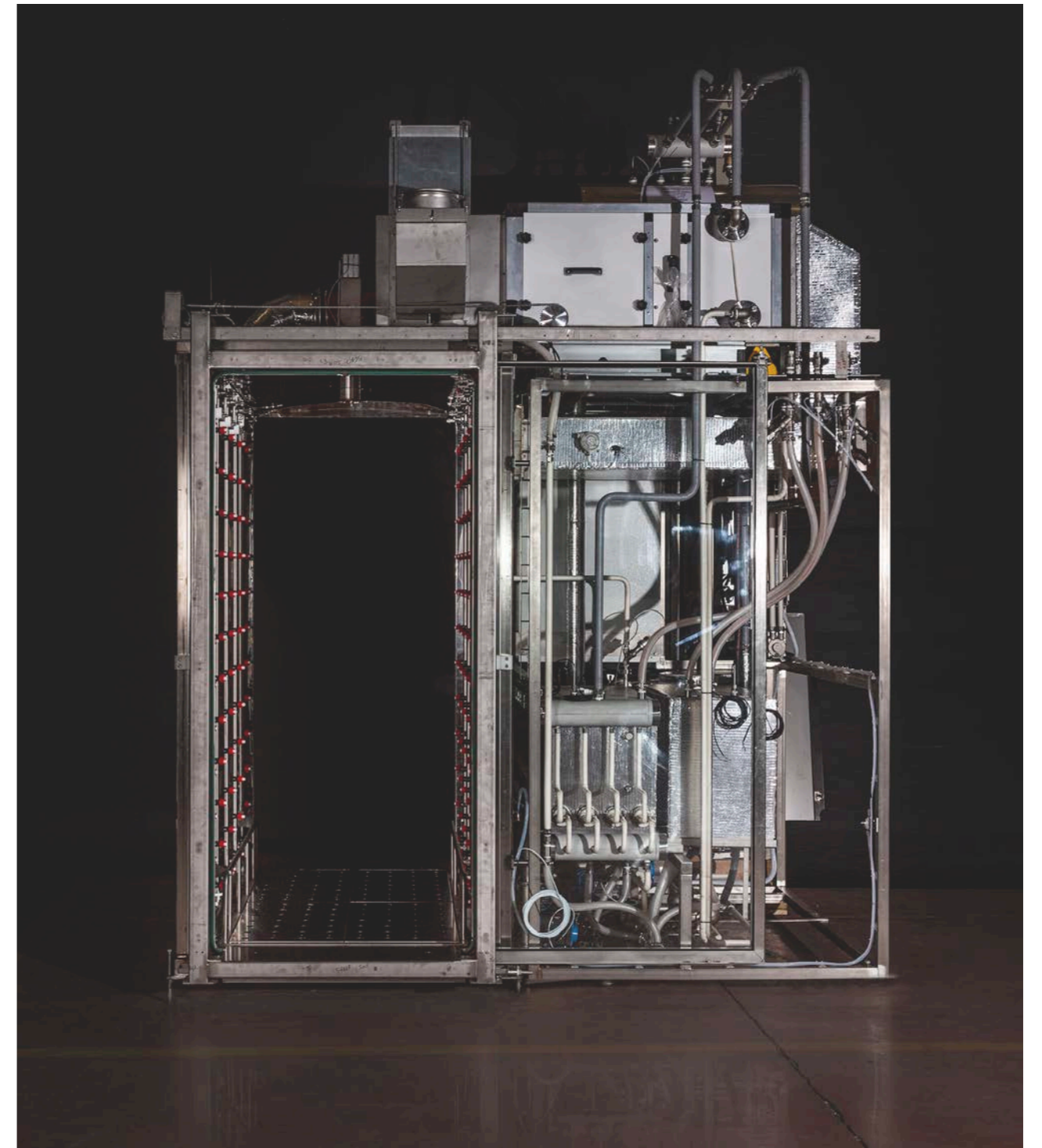
of chamber capacity.

Safety systems
Total prevention

The machine is equipped with the following safety devices that make it extremely reliable:

- Door blocking device when running a cycle.
- An anti-overheating device during the disinfection/washing phase.
- A temperature defect device during the disinfection/washing phase.
- A device that prevents the cycle from starting if the door is open or not perfectly closed.
- Safety overflow device.
- Device that prevents the doors from opening simultaneously
- Circuit breakers to protect the motors.
- A fuse and electrical protection on the auxiliary devices of the electrical system.
- Emergency button that stops all the machine functions (which can be restored to stand-by using the key, while the cycle functions are resumed via the start command).
- Emergency button that stops all the washing chamber functions.
- Differential protection on hot water electric circuit (resistances)
- Safety thermostat for generator resistances.
- Generator safety valve.
- No risks, double protection
- Releasing micro-switches on electric panel
- Double buttons (requiring two hands) to close the door
- Emergency buttons on control panels to immediately stop all equipment operation
- Safety device enabling to open the door from the inside

Audio and visual alarms

Audio and visual alarms are defined for operator warning. The alarms are included in a multi-level alarm list 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 display all the alarms that occurred in the last 90 days. The end cycle alert is included in notification the user that the cycle is finished and it is necessary to start unloading process.

Multi Language Touch Screen

Most world languages are pre-installed in the machine. Users can easily select them from the touch screen, including: English, Italian, French, Spanish, Arabic, Russian, Portuguese, German, Turkish, Polish, Chinese, Greek, Romanian, Korean, Bulgarian and others.

Service & maintenance
Program

The touch screen is equipped with software pages for periodic preventive maintenance, enabling a safe operation of the machine, a self maintenance program for steam generator discharge with user acceptance. There are technical pages for calibration and parameter control. Simple and friendly troubleshooting pages are added for easy maintenance and service. The maintenance and technical pages are password protected, and where only authorized technicians can access them.

Remote maintenance
Remote access system

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

Quality & safety /Our certificates

Direttiva LVD 2014/35/EU
Direttiva EMC 2014/30/EU
IEC 61010-1:2010/AMD1
IEC 60204-1
IEC 61010-2-040
UNI EN ISO 15883-1
UNI EN ISO 15883-2

Heating
Many methods

The washer/disinfector water can be heated using one of the following methods:
(E): Built-in electric heating, using a steam generator in a separate technical compartment
(V): External steam supply from Hospital steam

Network (domestic steam)
(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 panel
Loading side

The loading side control panel consists of:
- A 7" colour touch-screen programmable terminal that controls interaction with the operator.
- Emergency button
- An on/off equipment selector
- A graphic alphanumeric printer
- Door opening/closing buttons
- Air pressure gauge
- Network steam pressure gauge

Control panel
Unloading side

The unloading side control panel consists of:
- Door opening/closing buttons
- Emergency button
- Control light showing cycle phase and alarms
- An on/off equipment selecto.
- Network steam pressure gauge

Touch-Screen

The control display unit, with a colour 7" touch screen monitor.
- Main menu
- Cycle menu
- Cycle parameters
- Data regarding the load (operator, batch)
- General system conditions for starting thef cycle
- Diagram of the process variables in real time
- Process control
- Scheduled maintenance
- Alarms
- Alarms history
- Temperatures
- Various messages (door status, temperature, etc.).

The system can perform a self-diagnosis and check the thermodisinfector for the following alarms:
- Minimum/maximum disinfection temperature alarm
- No supply voltage alarm
- No hot/treated water supply alarm
- Overload relay alarm
- Minimum tank level alarm
- Temperature probe fault alarm
- Maximum phase time alarm

Thermal printer

The printer is prints out the parameters and regular execution of the cycles. The data showed in the printout are the basic process parameters and each alteration of stage, further date, time, the result of cycle, operator code, lot, A0 etc are also reported. Besides, cycle numbers are also reported, in progressive order, on the self-certification printout.

Washing cycles
Programmed sequence

These are obtained via the system that controls the trolley/container washer.
The sequence of the different cycle phases depends on the intended conditions and set parameters being achieved.

The programmed cycles are as follows:

- P1 Trolleys 60° 3' Washing/chemical disinfection cycle of trolleys at 60°C for 3'
- P2 Trolleys 91° 1' Washing at 60°C for 5' and thermal disinfection of trolleys at 91°C for 1'
- P5 Container 60° 6' Washing disinfection of containers at 60°C for 6'
- P6 Container 91° 1' Washing at 60°C for 10' and thermal disinfection of containers at 91°C for 1'
- P9 Clogs 91° 1' Washing at 70°C for 10' and thermal disinfection of clogs at 91°C for 1'
- P13 Drying cycle.

Optionals

Something for everyone
Mirror reverse machine

According to on installation requirements and to facilitate the ordinary and extraordinary maintenance operations, the equipment can be configured a standard or inverted module.
In the first case, the chamber is placed on the left (looking from the loading side) and the technical module to the right, and in the second case the chamber is placed on the right side and the technical module is placed on the left. This optionals can change according to the client's requests.

Floor level adjustment for Concealed installations

Depending on the customer's requirements, the machine can be installed at floor level and loaded without the aid of external trolleys.

Side panels

The machine can be equipped with side closure panels on one or both sides to meet with installation requirements.

Double touch-screen

An additional touch-screen can be installed on the unloading side of a double door equipment upon request. This type of requirement may arise in some situations, such as hospital or laboratories, where the loading side is the laboratory itself and the unloading side is exposes to a decontaminated area.
Equipment control settings can be also customised and the operator can set one of the two sides control as main one, allways in accordance with standard requirements.

UPS backup control system

the backup UPS system is connected to the PLC and the touch screen and does not allow the cycle to be disrupted in case of sudden changes in voltage or power cuts, as long as the cycle conditions are still valid.

Cage washer
EASY USE

CISA CAGE Washing Tunnel is a system that that, by means of a thermal and chemical washing, washes and disinfect all types of animal cages, preventing contamination in the field of animal care.
The CAGE Washing Tunnel is designed in a special way so that all research laboratories and animal care facilities can use it with ease. A special trolley has been designed, which once inserted in the washer allows for external washing and drying of the cages which are already inserted inside, separating and dividing the plastic compartment from the metal grid of the cage.
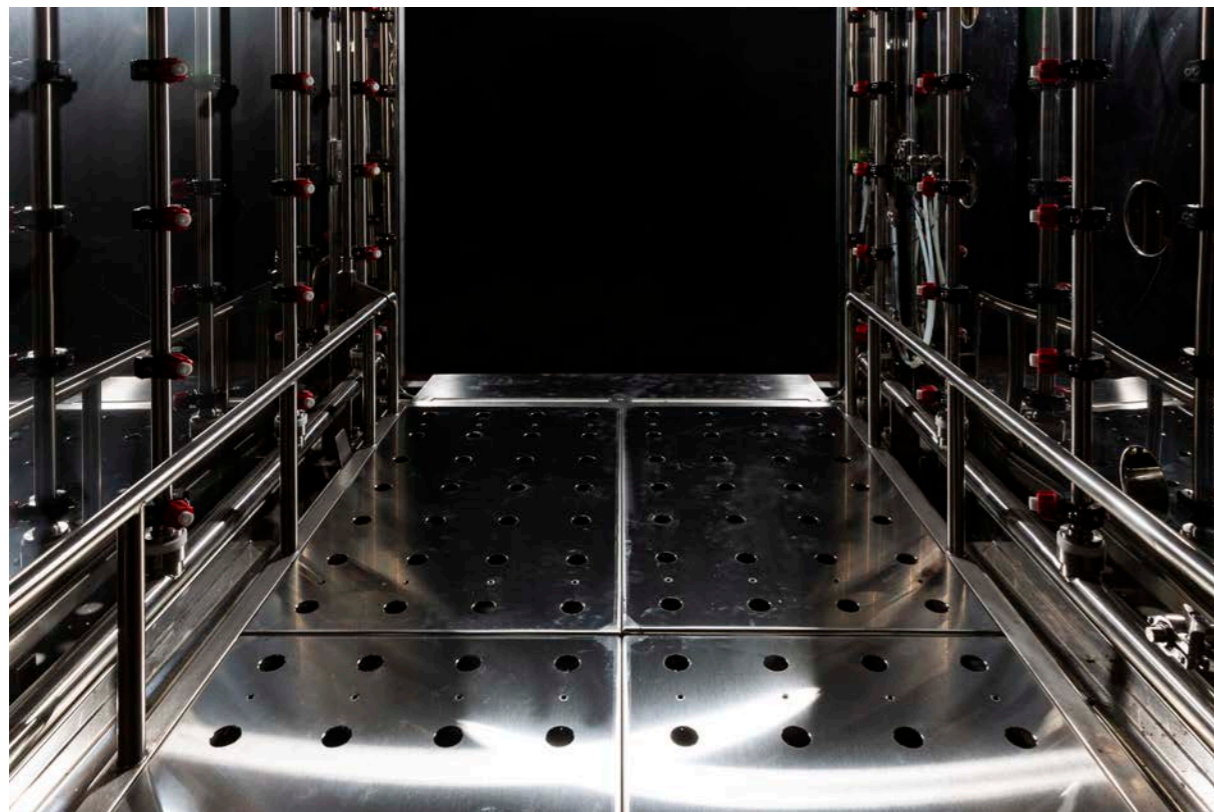
* CISA may customize the trolley according the clients request and needs.

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)

	Chamber Dim	Dimensions 1P-2P	LT	Load Capacity
P-WT 1500	900X1700x1590	2750X2400x1950 3350X2400x1950 (E)	2370	**N.1 Trolley Max Dim** 850X1500x1400 **N.1 Trolley16** Iso Container **N.1 Trolley For Cage Dim** 850X1500x1400
P-WT 3100	900X1700x3100	2750X2400x3500 3350X2400x3500 (E)	4743	**Trolley Max Dim** 850X1500x1400 **N.2 Trolley** 16 Iso Container (Tot. 32) **N.2 Trolley For Cage Dim** 850X1500x1400
P-WCO 1500	900X2000x1550	2750X2700x1950 3350X2700x1950 (E)	2790	**N.1 Trolley Max Dim** 850X1800x1400 **N.1 Trolley** 20 Iso Container **N.1 Trolley For Cage Dim** 850X1800x1400
P-WCO 3100	900X2000x3100	2750X2700x3500 3350X2700x3500 (E)	6000	**N.2 Trolley Max Dim** 850X1500x1800 **N.2 Trolley** 16 Iso Container (Tot. 40) **N.2 Trolley For Cage** Dim 850X1500x1800
P-WB 2500	1050X2000x2500	2900x2700x2900 3500X2700x2900 (e)	5250	**n.1 Bed max dim** 1000x1800x2350 **N.1 Table max dim** 1000X1800x2350 **N.2 Trolley max dim** 850X1800x1100 **N.1 Trolley** 20 Iso container **N.1 Trolley for cage dim** 1000X1800x2300 **N.2 Trolley for cage dim** 1000X1800x1100