

Matachana Integral Solutions  
Infectious Healthcare  
Waste Treatment  
**RBE**



## Infectious Healthcare Waste Treatment - SBW

ISWA (International Solid Waste Association) is the only international association working to ensure sustainable and environmentally friendly solutions in the waste management sector with a view to optimizing and enhancing the efficiency of waste management at a global level. MATACHANA is a Gold Member of this Association and actively participates in the working group dedicated to the Healthcare waste.

Aware of the problems currently facing hospitals and research centers, MATACHANA has developed an integral system that takes care of the whole infected waste circuit:

- The classification and identification of the waste at the places where it is generated, for subsequent collection.
- The transportation flow and its treatment in the sterilizer have all been thoroughly studied to produce a system that is simple and easy to install.
- The sterilization process automatically converts the special waste into urban grade waste and over a short period of time.

## Steam sterilization, the best alternative for environmental preservation

Special healthcare waste sterilization is an alternative to incineration technology; this latter being highly questioned for the generation of dioxins, highly toxic chemical compound. The major source of dioxins in the environment (95%) comes from incinerators when burning chlorinated wastes (e.g. PVC found in large proportion amongst the hospital waste). Sterilization is defined as the destruction of all microbial life.

Features for steam sterilization process:

- SIMPLE
- CLEAN: water vapour is used. CONTAMINATION-FREE!
- EASILY CONTROLLED: monitoring and recording
- EFFECTIVE: one chance in a million of survival!
- EXPERIENCE: technology applied for over 30 years

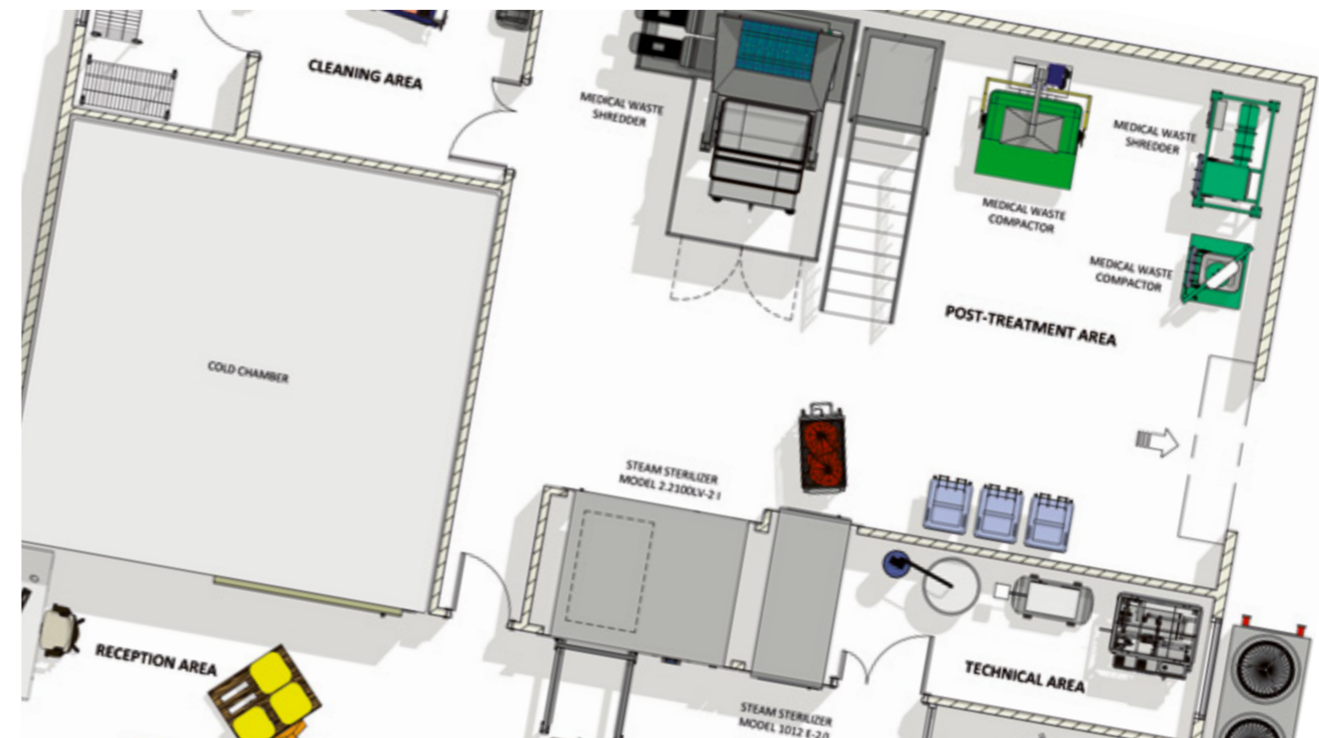


## We plan your waste treatment plant to the last detail

After hearing through your concerns and compiling all the information, our sales advisors transmit it to the **Competence Center** to carry out a **preliminary project based on productivity, efficiency and safety in accordance with the standards related to health, architecture, etc.**

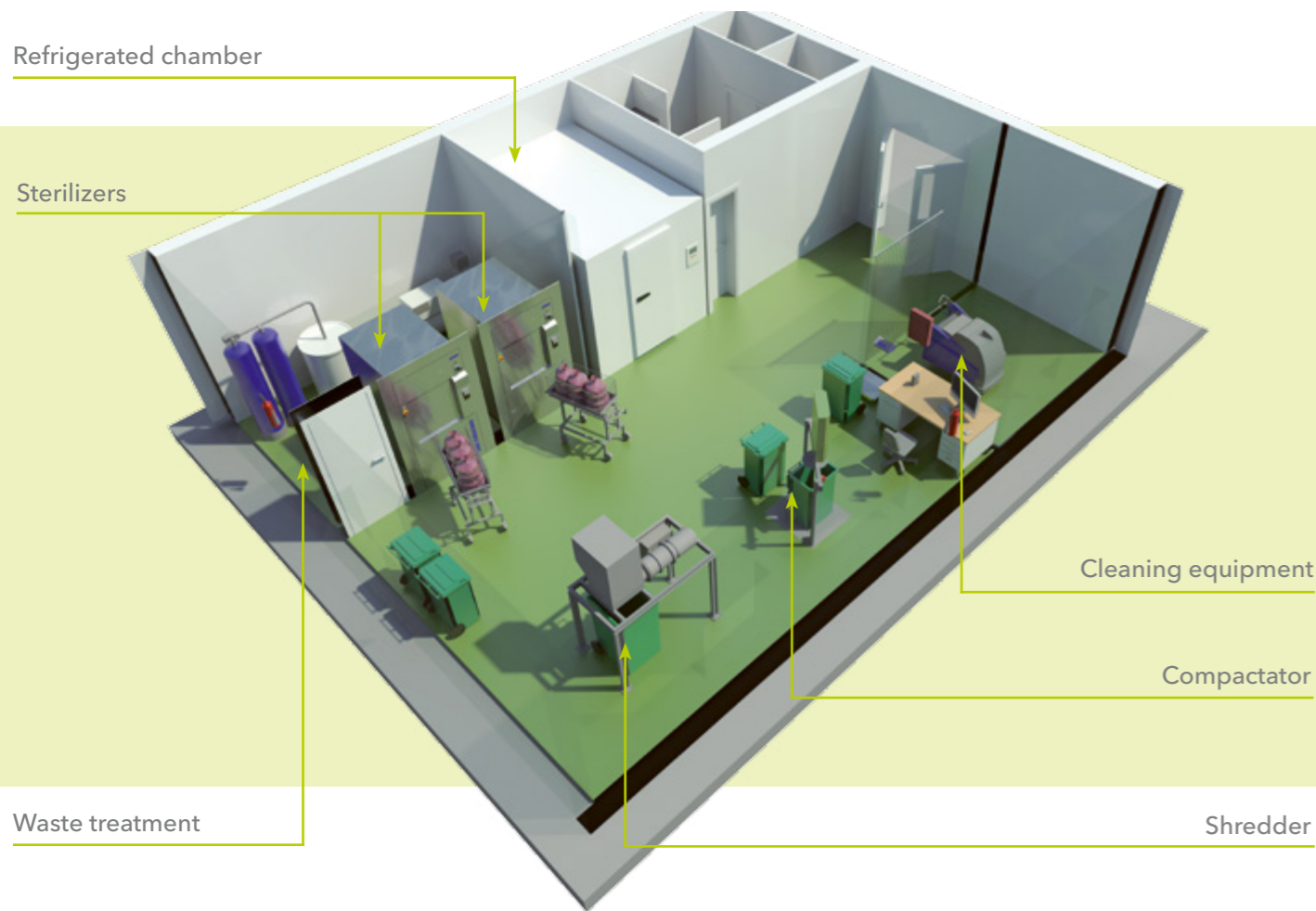
We have the most advanced **computer platforms** that allow our designers to quickly perform tasks such as budget, specifying details, modifications, adjustments to make the most of project implementation including customer's needs; anticipating installation data, timing, plans, implementation drawings for installers, images and renders project simulation to be performed, etc.

This results in designing your installation to the smallest detail. With **areas defined as per different features and installation drawings** to facilitate accurate implementation of the project and an indispensable guide for both the architect or interior designer responsible for the site, as for the installer regardless of their speciality.

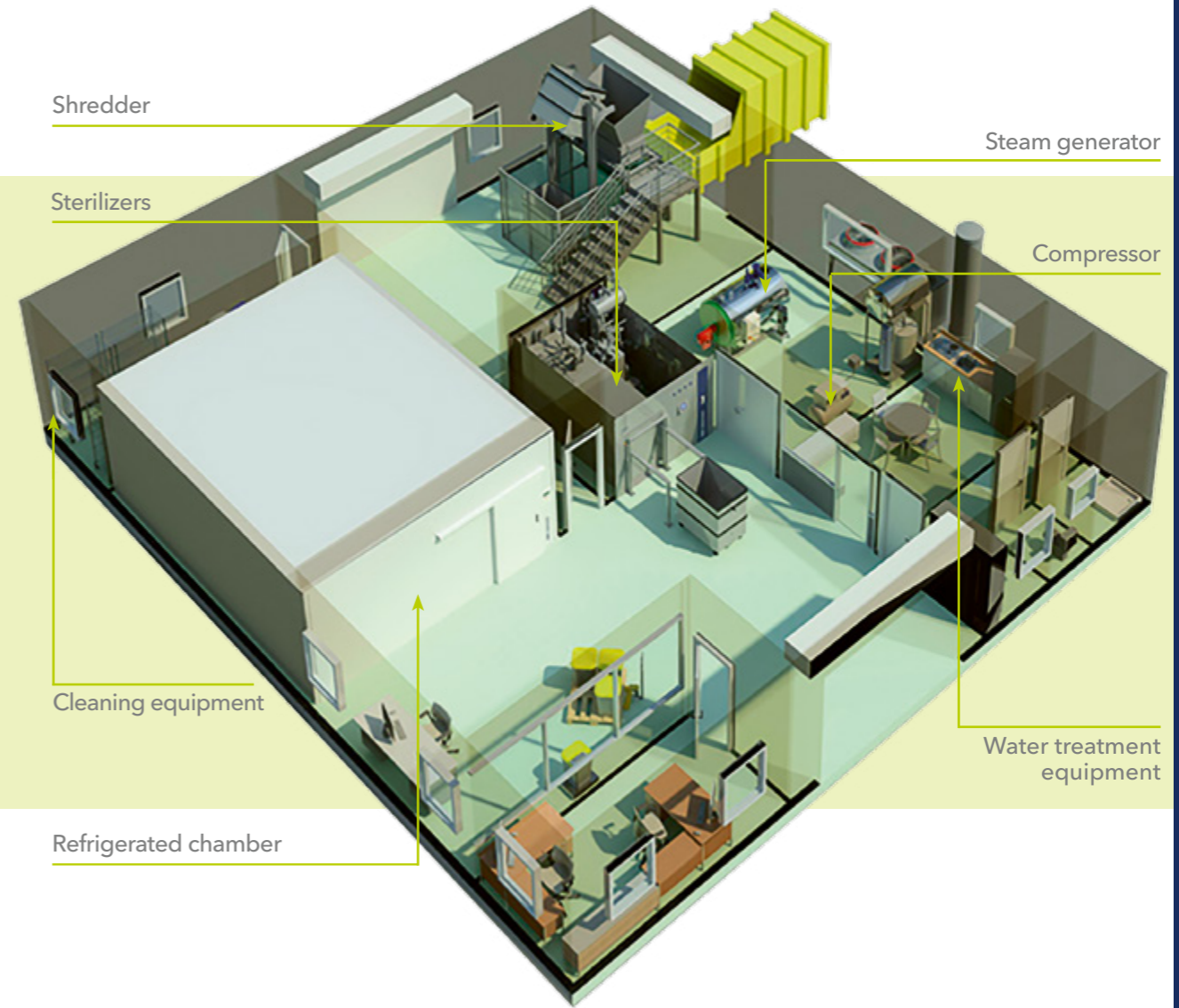


# MATACHANA Solutions for waste treatment

## Medium Size Capacity Treatment Plant In-hospital or External



## Big size capacity Treatment Plant External



# IWIS, Integral Solution for infectious waste integral system



MATACHANA offers a global solution for the infectious waste treatment in a container, equipped with all the necessary elements to inactivate the potentially contaminated materials with the best guaranties.

We provide a complete solution for the waste storage, sterilization and post shredding, optimizing the space. This container can be installed in an external place, near the center with no workmanship required.

This means a clear advantage over traditional waste treatment plants.



This system is composed by:

- **REFRIGERATION CHAMBER** - To store the infected waste waiting to be processed in the sterilizer. With two 240 l. DIN container storage capacity (included).
- **STERILIZER** - To process with saturated steam the infectious waste. Different models under request, depending on the numbers of beds in the centre (this determines the volume of the waste to be processed). With built-in electric steam generator. With air and condensates treatment system.
- **SHREDDER** - Shredder for the sterile waste. With space to allocate under it a 240 l. DIN container.
- **WASHBASIN** - Made of stainless steel. Pedal-operated.
- **ADDITIONAL EQUIPMENT** - It is fitted with additional equipment to cover the container needs (water softener, air compressor).
- **ACCESS RAMP AND SEPARATION BETWEEN ZONES** - With an access ramp for the easy movement of the 240 l. containers with wheels, inside and outside the IWIS working area.

The IWIS is designed with two totally separated areas with different access points: a working area where the waste is processed and a technical area for the maintenance of the equipment (with an access door placed in the lateral side of the container).

## Technical features

Models	IWIS 1006	IWIS 1008	IWIS 1010
<b>Overall dimensions</b> (width x height x depth)	6058 x 2591 x 2438 mm	6058 x 2591 x 2438 mm	6058 x 2591 x 2438 mm
<b>Sterilizer</b>	1006ER-1	1008ER-1	1010ER-1
<b>Liters in chamber</b>	445	565	774
<b>Load capacity/approx. cycle</b> (kg/cycle)(*)	40 - 75	65 - 105	80 - 135
<b>Total power (kW)</b>	46	64	77
<b>Maximum total weight (kg) (**)</b>	5020	5275	5590

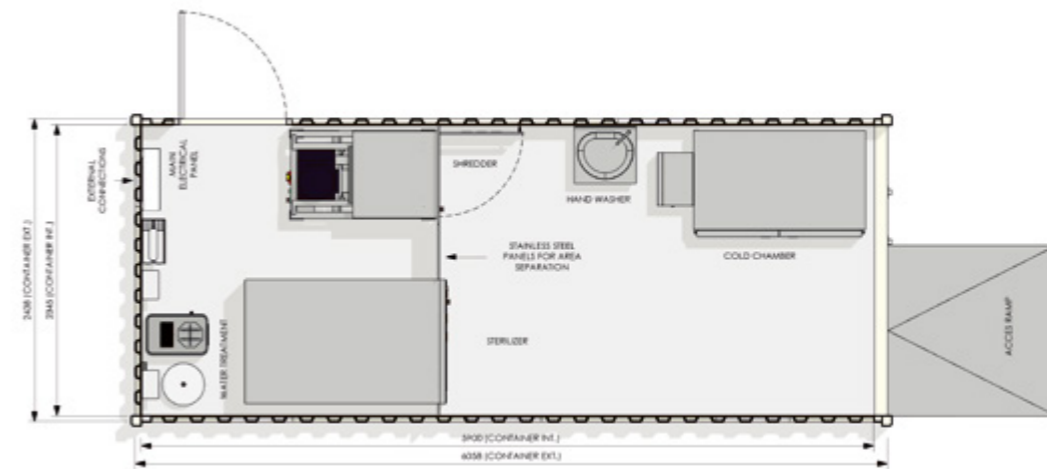
(\*) Production can vary depending on the loading system and receptacles used  
 (\*\*) With the sterilizer full of water for the hydraulic test

“Plug and play” design & installation.

Specially developed so that when it has reached its final installation place, only electricity, water and drainage facilities (to an existing connection) are required.

It can be installed in an annex location to the site, occupying the space of only two car places.

A variant of this container is available on request, prepared to be installed in very cold countries or places.



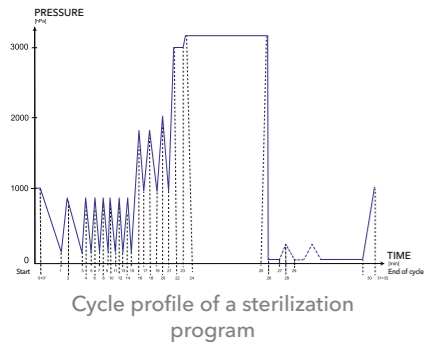


## Matachana RBE

### Steam sterilization

The MATACHANA S100 RBE, SC500 RBE, S1000 RBE and 2000 RBE sterilizers can cope with the needs of any hospital. The only difference between all the series is the volume of waste they can treat. These series of sterilizers use a "clean" treatment system.

The air extracted and the condensates generated during the process are treated using a special technique and monitored by a control unit incorporating an industrial microcomputer to ensure total asepsis without any environmental contamination. The autoclave technique by means of fractionated vacuum is the most efficient alternative for the treatment of special biocontaminated waste. It is reliable, easy to operate, has low operating costs and it is a clean system, as it does not produce any contaminants whatsoever.



Treatment of condensates inside the chamber



Treatment of condensates outside the chamber. Accumulator-Digester system. (optional on 2000 RBE Series)

### Description of the programs

MATACHANA steam sterilizers for the sterilization of Special Biocontaminated Waste differ essentially from sterilizers normally used for hospital sterilization, in that they possess unique characteristics for treating fluid evacuated from the chamber during the initial phase of the process and when the load has not been sterilized. These fluids may be gaseous or condensate and may contain microorganisms susceptible to contaminate, so they are treated within or outside the sterilizer chamber through a special system that ensures sterility before being discharged into the general drainage and released to the environment.

Steam sterilizers S100 RBE, SC500 RBE and S1000 RBE, destined to the sterilization of Special Biocontaminated Waste sterilize the condensates inside the chamber. The 2000 RBE Series sterilizers, specially designed for centralized waste treatment plants, have a system composed of an external tank/digester acting independently from the sterilization process, for treating these condensates in order to improve performance and consequent production.

In sterilizers fitted with SBW treatment system, the air is drawn from the upper chamber through a HEPA absolute autoesterilizable high efficiency (0.2µ) filter, with stainless steel housing, which retains bacteria avoiding contamination of the environment. This filter sterilizes itself during the sterilization phase (not requiring a specific program for treatment), to avoid any possibility of re-contamination of the system. The condensates generated during the sterilization process are retained in the lower interior of the chamber, and are sterilized during the cycle by steam pulses that enter through the bottom of the chamber. Such fluids which are already sterile, once treated by the sterilizer are discharged into the sewer.

#### Options for adding HEPA filter

- Adapting according to HEPA filter
- Inlets to perform integrity tests periodically
- Measuring system for differential pressure



SC500 RBE



S1000 RBE



2000 RBE

### Sterilizers general features

- **Technology:**  
New control system more powerful and modern. TFT touch screen for loading area with integrated PLC. Frontal made of an innovative material that prevents dirt and reflections. Easy to clean.
- **Ergonomics:**  
More accessible displays with a modern and versatile interface.
- **Sustainability:**  
Energy and water consumption reduced thanks to incorporated economizer systems.
- **Efficiency:**  
Redesigning of vacuum system by Venturi.
- **Comfort:**  
New range of more functional accessories, adapted to the loading requirements.
- **Accessibility:**  
Full circuits and components redistribution that facilitates the accessibility of the Technical Support Service for easy maintenance procedures.
- **Remote diagnosis:**  
Remote connection via Ethernet port to know the sterilizer's condition and enable the Technical Support Service to diagnose incidences/failures remotely for faster solution.

### Technical features

RBE Series	Models	Chamber dimensions (width x height x depth)	Overall dimensions (width x height x depth)	Usable chamber volume	
<b>S100 RBE</b>	S101VR-1/ER-1	1 door	340 x 340 x 645 mm	680 x 1560 x 925 mm	75 l
	S101VR-2/ER-2	2 doors	340 x 340 x 675 mm	680 x 1560 x 940 mm	80 l
<b>SC500 RBE</b>	SC501VR-1/ER-1	1 door	500 x 500 x 1020 mm	900 x 1824 x 1342 mm	252 l
	SC501VR-2/ER-2	2 doors	500 x 500 x 1020 mm	900 x 1824 x 1355 mm	252 l
	SC502VR-1/ER-1	1 door	500 x 500 x 1300 mm	900 x 1824 x 1622 mm	321 l
	SC502VR-2/ER-2	2 doors	500 x 500 x 1300 mm	900 x 1824 x 1635 mm	321 l
<b>S1000 RBE</b>	1006VR-1/ER-1	1 door	670 x 670 x 998 mm	996 x 1954 x 1314 mm	445 l
	1006VR-2/ER-2	2 doors	670 x 670 x 996 mm	996 x 1954 x 1336 mm	445 l
	1008VR-1/ER-1	1 door	670 x 670 x 1265 mm	996 x 1954 x 1614 mm	565 l
	1008VR-2/ER-2	2 doors	670 x 670 x 1296 mm	996 x 1954 x 1636 mm	578 l
	1010VR-1/ER-1	1 door	670 x 670 x 1735 mm	996 x 1954 x 2054 mm	774 l
	1010VR-2/ER-2	2 doors	670 x 670 x 1733 mm	996 x 1954 x 2076 mm	773 l
<b>2000 RBE</b>	1012VR-1/ER-1	1 door	670 x 670 x 2000 mm	996 x 1954 x 2313 mm	893 l
	1012VR-2/ER-2	2 doors	670 x 670 x 1998 mm	996 x 1954 x 2338 mm	892 l
	2.1830LVR-1	1 door	960 x 1440 x 1520 mm	2390 x 1950 x 1880 mm	2100 l
	2.1830LVR-2	2 doors	960 x 1440 x 1520 mm	2390 x 1950 x 1980 mm	2100 l
	2.3730LVR-1	1 door	960 x 1440 x 2920 mm	2390 x 1950 x 3330 mm	4037 l
	2.3730LVR-2	2 doors	960 x 1440 x 2920 mm	2390 x 1950 x 3430 mm	4037 l
	2.6200LVR-1	1 door	960 x 1440 x 4300 mm	2390 x 1950 x 4670 mm	5920 l
	2.6200LVR-2	2 doors	960 x 1440 x 4300 mm	2390 x 1950 x 4770 mm	5920 l



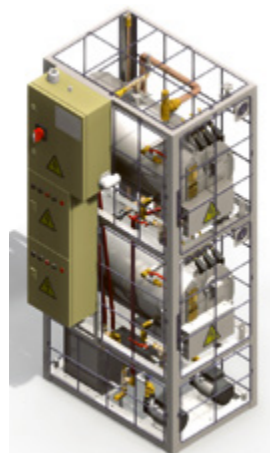
Shredder with lifting and tilting device for large production plants



Shredder for treatment plants



Waste compactor



Electric heating generator

## Infectious Healthcare Waste Treatment - SBW

### Post-treatment

With the aim to reduce the waste volume and morphology, shredding and compacting equipment may be included after the sterilization process in accordance with the user's specific requirements.

MATACHANA presents a system in which manipulation is minimal in regards to management and maintenance. Therefore, we firmly believe that the shredding/compacting process to reduce volume should be performed at a later stage to sterilization to minimize contamination risks.

Concerning the shredders with a lifting device, the containers used for the treatment of Healthcare Waste inside the sterilizer chamber, are designed and manufactured according to EN 840 Standard. This makes them compatible with the lifting and tilting mechanism used by the urban waste transport.

### Other accessories

Depending on the center's requirements, MATACHANA can incorporate other equipment to the project such as:

- Containers weighing scale
- Radioactivity detector
- Waste cooling for storage prior to treatment
- Waste containers and bags for collection and treatment
- Water treatment
- Steam generator
- Refrigeration and recycling of sterilizer's clean condensates



Waste treatment



Refrigerated chamber for big-sized plants

## Consumables

### Autoclavable bags

Made in red polypropylene, labelled with infectious materials identification (international symbol). Include sterilization control indicator. Supplied in boxes of 200 units. Each box contains 200 flanges to facilitate the closing the bag.



Bag	50 liters	100 liters
Dimensions	64 x 90 cm	80 x 100 cm
Thickness	50 microns	50 microns

Remark: Each country may have its own local regulations concerning the type of container used for internal and external transport.

## Monitoring for SBW sterilizers

Monitoring for SBW sterilizers becomes essential due to the multitude of sources of biosafety waste, as well as various complex geometries of the components to be sterilized. The monitoring should include a routine analysis of microbial lethality, including the effect of saturated steam in the most complex positions within the chamber.

### B&D porous load

Such tests allow evaluating saturated steam penetration into porous loads.



Bowie & Dick Test



PCD-Hélix



Chemical strips



Biological indicators

### Hollow loads with complex geometries Load controls

This type of tests enables to assess the hollow loads with complex geometries before the biowaste shredding process.

### Biowaste control

#### Chemical strips

These chemical indicators are classified as per their sensitivity to sterilization process variables to a greater or lesser precision.

#### Biological indicators - microbial lethality

The diverse origins of the load's components, coupled with the time elapsed before being sterilized can facilitate that the loads may contain populations of unidentifiable microorganisms. For this reason, MATACHANA offers biological indicators containing *G. stearothermophilus* spores with a higher population than those used in hospital applications.



## MATACHANA GROUP

# Innovation is the way forward

Since our foundation 50 years ago, our mission has been to provide the best service, bringing our knowledge and field experience to our customers to facilitate their daily work, allowing them to be efficient in the production whereas keeping rigorously the quality.

Our history has taken us from the beginnings in 1962 to the transformation in 2000 in MATACHANA GROUP, with its subsidiaries in Germany, France, USA, Argentina, Malaysia and China, as well as the collaboration of direct distributors in over 110 countries.

In MATACHANA GROUP we are aware that Training and Service contribute decisively to achieve customer satisfaction. For this reason, we have always invested in the development of these two areas of activity, which enables a direct contact with customers and help us to develop together a continuous improvement process.

### Technical Assistance Service

A service of engineers, highly skilled expert technicians and support staff, all committed to ensure the proper equipment operation and condition.

### Training Academy



Committed to the responsibility to obtain the optimum operation from our equipment, in MATACHANA GROUP we invest in the training of future users.

In addition, we offer training courses regularly in the 5 continents, providing this service to all our customers.

### Environmentally friendly

The sterilizers are designed and manufactured using the latest technologies on the market to achieve the best results in terms of energy savings and reduction in water consumption.

Our Production Center complies with the ISO 14001 Environmental Management System and ISO 50001 Energy Management.

### Quality

The MATACHANA devices are developed, manufactured and tested within a strict quality control according to the International Standard ISO 9001.