



MEDICAL DEVICES SECTOR

✉ USER MANUAL AND MAINTENANCE ✉

Language: English

Cod. 9041



STEAM STERILIZER
"SERENA" SERIES

SERENA

"THE NEW GENERATION"





<THE MACHINE IS FOR PROFESSIONAL USE ONLY >

<THE USE IS PERMITTED ONLY QUALIFIED PERSONNEL TO DO>

<CONTACT THE QUALIFIED INSTALLER FOR THE IMPLEMENTATION OF THEEQUIPMENT>

<THE MACHINE CANNOT BE PUT IN WORK IN A ENVIRONMENT AT RISK OF EXPLOSION>

- Read carefully the instructions when buying the machine and before storing / installing / using it.
- This Manual, that provides useful information regarding the safety during the IMPLEMENTATION OF THE EQUIPMENT, INSTALLATION, USE, etc., is part of the product itself and it must be delivered to the user, who has to store and carefully read it before starting each step of the service provided by the machine.
- Do not remove, tear or rewrite neither partly this Manual.
- Keep the Manual in areas protected from moisture and heat for future reference.
- This Manual contains the "CE" Declaration of conformity.

	<p>THE MACHINE MUST BE INSTALLED AND USED ONLY ACCORDING TO THE RULES LAID DOWN BY THE MANUAL</p> <p>U.M.M.</p>	
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The manufacturer reserves the right to alter without notice the info in this manual.

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1 INTRODUCTION

We thank you for choosing a REVERBERI sterilizer.

The User and Maintenance Manual (U.M.M.) has been realized in order to provide general knowledge of the machine and to give the transport, use and maintenance instructions and all the necessary details for the installation, for the correct use and for the proper functioning.

We ask you kindly to CAREFULLY read the manual BEFORE CARRYING OUT ANY OPERATION ON THE MACHINE.

In case you need another copy of the Use and Maintenance Manual (U.M.M.) you are invited to forward your motivated request to the CONSTRUCTOR, quoting the serial number on the title of this post or on the name plate on the back of the machine.

1.0 PURPOSE OF THE USER MANUAL AND MAINTENANCE

The following Manual aims to provide user all the information about SERENA 18/23 sterilizers in order to warrant:

- ✓ The correct installation and implementation of the SERENA 18/23 steam sterilizer.
- ✓ The optimal use.
- ✓ A safe and reliable functioning.
- ✓ The requirements for proper and regular maintenance and for the periodic replacement operations of the components.

1.1 USER'S PROFILE

The user, who has the responsibility for operation of the equipment, must be a person previously well trained by the Employer (or whoever takes his place), that person must MANDATORY read/UNDERSTAND all the instructions in this U.M.M.



The manufacturer is not liable for any direct or indirect damages caused by people who had used the device without having received adequate instruction and relevant qualifications to conduct the same and consequently have made bad use.

Three kinds of profiles can use the sterilizer and have to read carefully this Manual:

The Administrator

The administrator is the responsible for the clinic or doctor's office, or rather the person responsible for the protocol of hygiene and sterilization process.

The administrator is also responsible for the OPERATORS' training and for the proper operation and maintenance of the equipment. Must have adequate training for all operations to be performed and for safe use.

The Operators

The operators are those who use the sterilizer according to the instructions received from the ADMINISTRATOR.

Enabled technicians

All the ordinary and extraordinary maintenance, qualified, controls, cleanings and registrations should be performed only by authorized personnel and/or instructed to do so and when the equipment is not working (state of zero energy). The qualified personnel must have attended a technical training from the manufacturer. At the end of the course will receive a certificate of training.



The manufacturer shall make available to operators and technical managers, training at the headquarters of Bibbiano (RE). For information on course dates contact number.
Tel 0522 875 159.

1.2 EUROPEAN STANDARDS AND DIRECTIVES APPLICABLE

SERENA 18/23 sterilizer complies with the following European Directives:

- 93/42/CEE and s.m.i. Medical Devices Directive, IIb Class, in accordance with the rule 15 – Appendix IX of the above Directive.
- 2014/68/UE (PED – Pressure Equipment Directive) on the sterilization chambers projected and realized in accordance with Category I with evaluation form A.
- 2002/96/CEE (RAEE) on the disposal of shares from electrical or electronic components.
- EN13060 current edition concerning performance requirement for small steam sterilizers
- EN 61010-1 and 61010-2-40 current edition concerning safety requirements for small steam sterilizers.
- EN 62304 Software certification current edition
- EN 61326 Electromagnetic Compatibility current edition

1.3 EXPECTED USAGE

Sterilizers SERENA are "steam sterilizers" fully automatic, which generate steam by heating elements.

SERENA sterilizers are used for the sterilization of surgical instruments

The load types that can be sterilized by the sterilizer SERENA are described in Table 1 of the reference technical standard EN 13060. These loads include solid, porous, hollow type A and B, unwrapped, wrapped in single and double envelope.. They are also used for materials and tools that can come into contact with blood and / or body fluids.

Usage environments may be: hospitals, education or medical clinics, dental offices, veterinary.








Sterilizers REVERBERI can not be used to sterilize liquids or pharmaceutical products.





Do not use the machine for purposes other than those for which it was created. It is important to ensure that the value of ground resistance is efficient and well coordinated with the electrical protections of the implant, in order to avoid electrical interferences to the autoclave.

1.4 SYMBOLS SHOWN ON THE STERILIZER

Consult the following table whenever a symbol below appears on the sterilizer or on the Manual.

	WARNING	It shows a notice or a warning about the key functions or about useful information. Pay close attention to blocks of text indicated by this symbol.
	OBSERVATION	The User is required to detect a measure value, to check an alert, etc.
	PROHIBITION	Any procedures that staff must not perform because, otherwise, might endanger his own safety and that of others
	OBLIGATION	Any procedures that staff must perform because, otherwise, might endanger his own safety and that of others
	CAUTION, IT IDENTIFIES A SOURCE OF HEAT, THERE MAY BE AN UNSAFE TEMPERATURE	
	CAUTION, IT IDENTIFIES A GENERIC DANGER, THERE MAY BE A DANGEROUS SITUATION	
	IT IDENTIFIES THE PROTECTIVE EARTH TERMINAL	

	<p align="center">IT IDENTIFIES THAT THE AUTOCLAVE HAS BEEN CERTIFIED BY THE NOTIFIED BODY IMQ S.p.a</p>
	<ul style="list-style-type: none"> • This symbol indicates that the product is covered by 2002/96/CE European Directive. • Please inform yourself about the local separate collection system for electrical and electronic products. • Comply with local rules and do not dispose of your old products with your normal household waste. Proper disposal of the product will help prevent potential negative consequences for the man's health and for the environment.

THE MANUFACTURER DO NOT PROVIDE WARRANTIES ABOUT THE SUITABILITY OF THE TECHNICAL / LEGAL ROOM WHERE THE EQUIPMENT IS INSTALLED AND ALL THE SUPPORT SERVICES AT THE SAME, ALTHOUGH THE U.M.M. OFFERS IMPORTANT INFORMATION FOR A PROPER INSTALLATION. REGARDING THIS ASPECT THE USER IS RECOMMENDED TO USE THE ADVICE OF QUALIFIED PERSONNEL EXPERT IN THE FIELD, FOR THE RESPECT OF EVENTUAL LAWS AND/OR REGULATIONS TOO.

DO NOT ALLOW ANYONE TO USE THE INSTRUMENT WITHOUT FIRST:

- READ AND UNDERSTAND ALL THE INDICATIONS INCLUDED IN THE U.M.M.
- RECEIVE SUITABLE INSTRUCTION FOR THE SAME CONDUCTION BY A PERSON AUTHORIZED.

THE MACHINE IS BUILT IN COMPLIANCE WITH CURRENT STANDARDS. PLEASE BEFORE PROCEEDING WITH THE INSTALLATION, USE, MAINTENANCE AND REPARATION (AND RELATED), READ CAREFULLY THIS USER AND MAINTENANCE MANUAL BECAUSE IT CONTAINS ALL THE NECESSARY INFORMATION FOR A PROPER USE AND OPERATION, DESIGNED TO PREVENT ACCIDENTS.

THIS U.M.M. MUST BE CONSIDERED PART OF THE PRODUCT ITSELF AND IT MUST REMAIN PART OF IT FOR ALL THE PRODUCT LIFE.

The frequencies of monitoring and maintenance, prescribed by the U.M.M., refer to the minimum necessary to ensure efficiency, safety, and duration of the equipment in normal working conditions. Surveillance will still be constant and will act promptly in cases of anomalies.

All our equipment are subject to continuous technological development. We must therefore, from time to time, subject to the possibility of making changes regarding the construction and endowment, which can modify the operating features.

The electrical system, as well as the continuity of the protective circuit, has been tested by REVERBERI at the factory so it is general and guaranteed perfect and functioning.

Any damage caused by the buyer for incorrect links, automatically excludes any warranty on the unit.





The position of the CE plaque is visible EC.

1.5 CAUTIONS, WARNINGS, PROHIBITIONS

- 1°. LIQUIDS OR DUST SHOULD NOT FALL/ENTER INTO THE APPARATUS. SEEK TO MAKE INSTALLATION THAT AVOID THESE PROBLEMS.
- 2°. FLAMMABLE LIQUIDS OR POWDERS SHOULD NOT BE USED NEAR THE MACHINERY.
- 3°. IT IS FORBIDDEN TO EVERYONE AND / OR TO OPERATORS WITH HEART DISORDERS AND PACEMAKERS, TO APPROACH THE MACHINERY WITHOUT FIRST CONSULTING THE DOCTOR.
- 4°. BEFORE USING THE DEVICE, IT IS NECESSARY TO KNOW ALL THE OPERATIONS AND CONTROL DEVICES. LEARNING CONCEPTS OF THIS SHOULD BE MANDATORY BEFORE BEGINNING. PEOPLE NOT ATTACHED AND WITHOUT THE APPROPRIATE CONCEPTS ARE NOT ALLOW USING THE STERILIZER.
- 5°. READ ALL SAFETY INFORMATION CONTAINED HEREIN AND UNDERSTAND ALL THE PLATES (REPORTS SECURITY) ON THE UNITS. THE SIGNS ON THE UNIT MUST ALWAYS BE READ WELL, REPLACE THEM IN CASE THEY GET WORN OR DAMAGED.
- 6°. NO WARRANTIES PROVIDED ON GOOD FUNCTIONAL OR ON SAFETY OF THE USER AND / OR ENABLED PERSON AND / OR ANY OTHER PERSON AND / OR THE ENVIRONMENT, IN THE EVENT THAT:
 - THE PROVISION OF ELECTRICITY NOT COMPLY WITH THE REQUIREMENTS OF THIS LAW AND U.M.M.;
 - THE EQUIPMENT ONCE INSTALLED AND PUT IN SERVICE NOT COMPLY WITH THE

REQUIREMENTS STATED IN THIS U.M.M.;

- THE DEADLINES SET MAINTENANCE ARE NOT RESPECTED
- 7°. THE OPERATING SAFETY EQUIPMENT ALLOWS IT TO BE INSTALLED AND PUT INTO SERVICE BY QUALIFIED PERSONNEL RESPONSIBLE TO FOLLOW THE INSTRUCTIONS GIVEN IN THIS U.M.M. AND RULES.
- 8°. THOSE WHO ARE NOT ABLE TO INSTALL, START UP OR USE SAFETY ALONE OUR PRODUCT, BECAUSE OF PHYSICAL, SENSORY OR MENTAL INABILITY, OR THROUGH INEXPERIENCE OR NO KNOWLEDGE, THEY MAY CARRY OUT THE BUSINESS SPECIAL SUPERVISION ONLY IF INSTRUCTED BY COMPETENT PEOPLE, WHO TAKE FULL RESPONSIBILITY.
- 9°. YOU MAY NOT USE WATER TO WASH THE MACHINE PARTS (EXCEPT FOR SOME ACCESSORIES, NOT EXPRESSLY REPORTED)
- 10°. IT IS FORBIDDEN TO REMOVE AND / OR TAMPER WITH THE LABELLING AND SYMBOLS FROM ORIGINALLY AFFIXED REVERBERI.
- 11°. DO NOT PUT ANY OBJECT OVER EQUIPMENT,
- 12°. DO NOT TOUCH THE DEVICE WITH BODY PARTS WET AND / OR BARE FEET.
- 13°. DO NOT PULL THE ELECTRICAL CABLES OR THE SHEATHS OF THE ELECTRICAL INSTALLATION
- 14°. DO NOT START BEFORE CHECKING DIRECTLY AND VISUALLY THAT IN OR ON THE MACHINERY THERE IS NO FOREIGN BODY.
- 15°. IN ANY SPECIFIC CIRCUMSTANCES ALWAYS USE APPROPRIATE PROTECTIVE CLOTHING OR TOOLS.
- 16°. NEVER INSERT THE HANDS OR OTHER PARTS OF THE BODY IN COMPONENTS NOT PERFECTLY FIXED OR IN PARTS NOT COMPLETELY VISIBLE FROM THE PERSON WHO IS OPERATING.
- 17°. KEEP THIS U.M.M. ALWAYS AT HAND AND AT DISPOSAL OF THE ENABLED USER AND DURING INSTALLATION AND / OR MORE VISITS AND USE.
- 18°. THE U.M.M. DUPLICATION IS RECOMMENDED (AUTHORIZED BY THE MANUFACTURER FOR THE INTERNAL USE ONLY) AND IT IS AVAILABLE FOR THE PERSONAL AND ENABLED USER, KEEP THEN THE ORIGINAL COPY IN A SAFE AND EASY AVAILABILITY.

	DURING THE OPERATION OF THE MACHINE, THE SURVEILLANCE OPERATOR MUST BE CONTINUED	
	ANY TOOLS FOR THE OPENING OF ELECTRICAL PANEL OR PROTECTIONS MUST BE STORED AND / OR ACCESS ONLY TO AUTHORIZED PERSONS AND EDUCATED. IT IS OUT OF LAW LEAVE THESE TOOLS AND ACCESSIBLE TO ALL PACKING	

1.6 WARRANTIES AND LIABILITY

The MANUFACTURER ASSUMES NO LIABILITY FOR DAMAGES CAUSED ON THEMACHINE, ON THINGS, ANIMALS AND / OR PERSONS, MAKING ANY KIND OFWARRANTY INVALIDATE IMMEDIATELY IF:

- THE INSTALLATION OF THE APPLIANCE IS NOT DONE BY QUALIFIED
- PERSONNEL IN ACCORDANCE WITH THE RULES AND MAY BE REPORTED ASIN THE DECLARATION OF CONFORMITY
- THE START UP OF THE EQUIPMENT IS NOT PERFORMED BY A QUALIFIED
- QUALIFIED PERSONNEL AND / OR USER NOT COMPLY WITH THE INSTRUCTIONS GIVEN IN THIS USER AND MAINTENANCE MANUAL OR AS RESULT OF ANY OPERATION NO SPECIFICALLY DESCRIBED.
- VERIFY CAREFULLY DURING THE READING OF U.M.M. THE CORRESPONDENCE WITH THE PARTS OF THE EQUIPMENT, CHECKING:
 - THE PARTS HAVE NOT BEEN DAMAGED DURING THE TRANSPORTATION AND HAVE BEEN DELIVERED INTEGRA,
 - THERE ARE ALL THE SAFETY SYMBOLS.

DO NOT PROCEED TO USE THE STERILIZER IF ALL ITEMS DESCRIBED ABOVE DO NOT EXIST:

- THE MANUFACTURER ASSUMES NO RESPONSABILITY FOR DAMAGES CAUSED TO THE SAME DEVICE ON PEOPLE, ANIMALS AND / OR PROPERTY, IF ANY ANOMALIES IS NOT REPORTED WITHIN 30 DAYS OF RECEIPT OF GOOD TO MANUFACTURER. IN THESE CASES ANY TYPE OF WARRANTY BECOME INVALID AUTOMATICALLY.
- TO COMPLY WITH THE TRACEABILITY OF THE STERILIZER ANY CHANGE OF ADDRESS OF THE SAME MACHINE MUST BE COMMUNICATED TO THE MANUFACTURER / DEALER.

ANY CHANGES MADE ON ITS DEVICE or safety devices, WHICH MAY AFFECT THE FUNCTIONS PROVIDED BY THE MANUFACTURER and the risks of the risk analysis, included in the "Technical Construction File", WILL BE FULL RESPONSIBILITY OF THE RUN. AS CHANGE IS MEANT ALSO THE FAILURE OF THE INSTRUCTIONS, REPRESENTATIONS AND EFFORT NONCONFORMING AND THE USE OF PARTS NOT ORIGINAL.

Any change, even if not substantial, must be communicated by registered post and also approved by the MANUFACTURER, THAT will approve THE CHANGES only if, such amendment, shall not constitute implementations of risk analysis AND THE risks of the machine.

Any change made without notice to the MANUFACTURER, will constitute CANCELLATION OF the "CE" Declaration of Conformity, making void any warranty and guarantee by the same.

The manufacturer is not responsible for:

- The placement of a protection mechanisms against overcurrent for power conductors of the electrical equipment, which must be placed upstream of the apparatus and duly reported.
- the installation of a power plug to be placed between the electrical panel and the electrical appliance in place of the existing installation.

1.7 WARRANTIES CONDITIONS

This appliance is guaranteed for two years (24 months) from the date of purchase, on the whole territory of the European Union; the date of the delivery note / invoice will be the authentication

The device is used for professional use.

During this period, the manufacturer will repair or replace for free those pieces that, at its own sole discretion, were to be originally defective, with only the reimbursement of travel expenses incurred by the technicians of the "Service Centre", at doorstep or totally free if the equipment is delivered to BARCO di Bibbiano (RE).

Defective parts replaced become the property of the manufacturer.

If the defect is not repaired, the manufacturer may avoid the termination of the contract by the customer by offering free replacement of the property.

Are not covered by the warranty the damaged parts for transport / shock for bad or improper installation / use, through neglect or misuse, tampering by unauthorized persons, damages weather or other natural events or other causes not dependent on REVERBERI, supplies and / or subjected to wear / low.

Further or other claims for damages, in addition to those provided by law, are excluded.

The manufacturer will charge the cost of repair if the returned product is not covered under warranty.

Interventions for alleged defects or casual checking shall be borne by the customer.

Any repair of transport to and from the "Technical Assistance Centre" of BARCO di Bibbiano (RE) is done at the expense and responsibility of the customer.

The technical staff, when called to repair, will be sent in time only compatible with the business needs of the manufacturer.

Any use bans imposed by the Health Authority or by other competent bodies, do not entitle the buyer to demand the surrender or to ask for damages.

Any difference on the exterior colour or colour effects of the various parts making up the unit are not considered defects: the differences may be e.g. due to the manual workers.

The inability to ensure substitutability of parts that make up the set with pieces from standard / freshmen / supplies purchased specifically different and not as a replacement is not considered a defect.

In case of repair / replacement of defective parts or replacement of the equipment during the warranty period, the warranty remains unchanged: it always starts from the original date of purchase of the unit.

As nothere reported The Terms and Conditions listed on the commercial documentation / sales catalogue in force at the time of purchase remain valid.

1.8 ENVIRONMENTAL CONDITIONS ALLOWED

TEMPERATURE, HUMIDITY AND ALTITUDE

See Paragraph in particular

ELECTROMAGNETIC COMPATIBILITY

Install the unit where electromagnetic interference comply with the limits permitted by the rules and with the presence of electric and electronic equipment.

RADIATION EXPOSURE

The appliance is not intended to be used to direct exposure to:

- Non-ionizing radiation of the sun, being the same to be placed indoor and / or repaired
- X-ray radiation, microwave radiation, laser radiation, etc...

In the event that, in the environment where the unit is placed, there is a risk of radiation directly on it, specific measures to protect exposed areas must be taken by the purchaser.

USE IN EXPLOSIVE ENVIRONMENT

The device cannot be used in any way in the environment where there is a risk of explosion or in a potentially explosive environment.



IT IS FORBIDDEN TO USE THE EQUIPMENT IN EXPLOSIVE ENVIRONMENTS SUCH OR CONSIDERED.

1.9 ILLUMINATION IN THE WORKPLACE

The environment in which the sterilizer is installed must meet the requirements listed on the Directive 89/654/EEC concerning the workplace and the requirements of the RULES FORCE THE INSTALLATION SITE.



Proper lighting can, in some cases, avoid or limit an injury to the operator.

REQUIREMENTS OF THE LOCAL WHERE THE EQUIPMENT IS INSTALLED. THE LOCAL SHOULD:

- Be free of debris and / or residues of various kinds of flammable or potentially dangerous operation;
- Provide a specific room for sterilization, away from the patient.
- Have doors (accesses) appropriate to the size of the machine, ensure a suitable floor for the mass flow of the machine, ensure a perfectly level floor, be free, at the area of installation, strong drafts or substantial temperature changes;
- Ensure good ventilation and air exchange with the provision of specific natural ventilation openings.

1.10 USE NOT PERMITTED

IT IS NOT ALLOWED:

- The use of the machine if you have not installed in accordance with applicable rules and by authorized personnel,
- The use of the appliance by users not authorized by the superior role (or employer),
- The use of the appliance by users not trained to manage it,
- The use the equipment for purposes other than those expected and stated in the declaration of conformity,
- The use the equipment in environments with explosive atmosphere or where there are similar risks,
- Elaborate or otherwise alter the unit cycles and performance
- Use or use accessories other than the original operation,
- Use replacement parts other than original
- Alter the electrical system and safety devices connected to them,
- Not to comply with the instructions, the obligations and prohibitions contained in this manual and on the unit itself.

1.11 RECOMMENDATIONS AND GENERAL SAFETY

- The user is responsible for installation, proper use and maintenance of the sterilizer in accordance with the instructions in this manual. If necessary, contact your local Technical Support.
- The sterilizer is not designed for the sterilization of liquids.
- The sterilizer should not be used with flammable gases or vapors.
- For the sterilization of materials, carefully follow the instructions provided by the manufacturer of the materials.
- For the preservation of sterilized materials, we recommend the use of special cabinets equipped with ultraviolet lamps, which are perfect for this specific use.
- The support trays and trays must be always present In the room
- At the end of the cycle, the load will be hot. Use the appropriate key for the extraction of the trays or cassettes.
- Do not exceed load limits specified in this manual
- Do not remove the identification number or any other labels from the serial number or other sterilizer.
- To prevent electrical short circuits, do not spill water or other liquids on the sterilizer.
- Turn off the sterilizer and unplug the power cord before inspecting, make operations, maintenance or repairs of the sterilizer.
- Never turn off the machine with the door closed.
- Keep the original packaging carefully for any transport.
- The repairs should be made by individuals authorized by the manufacturer and using only original parts.

1.12 SAFETY DEVICES

- SAFETY VALVE 2.5 bar
- FUSE 10 A security
- manual reset safety THERMOSTAT calibrated 230°

In case of transport:

- Fully discharge both water tanks.
- Leave to cool the sterilization chamber.
- Use the original packaging or other suitable packaging.
- Use a reliable transporter



Any intervention on, determined by a malfunction, must mandatory be performed by qualified personnel to do so.



In case of replacements of equipment parts, use original spare parts, to avoid causing variations in performance and / or reduce the level of safety.



Each cleaning, checking and / or maintenance must be performed by authorized personnel and authorized to do so in accordance with the requirements described in this U.M.M.



Failure to follow the instructions in this manual may cause danger to the user.

1.13 DEVICES FOR PERSONAL PROTECTION TO BE USED TO PREVENT THE ONSET OF RESIDUAL RISKS

According to legal requirements dictated by the regulations on this subject it is the duty of Head of Hygiene and Safety to analyse the potential risks people are exposed to and to wear appropriate Personal Protective Equipment (P.P.E.) in the Studio where the equipment is installed. Regardless of the risk analysis of Hygiene and Safety Manager, in all cases mentioned in this Section are shown the MANDATORY P.P.E. that the exposed personnel must use while approaching the machine. The use of additional D.P.I. is at the discretion of the Head of the Hygiene and Safety in the Studio where the equipment is installed.

Use:

1. safety shoes to ensure a sufficient level of electrical / mechanical isolation /
2. flame retardant protective clothing.
3. appropriate gloves



IN NORMAL CONDITION OPERATIONS NEVER STOP THE DEVICE REMOVING THE POWER SUPPLY DIRECTLY FROM THE GENERAL SWITCH BUT STOP THE CONTROL PANEL FIRST.

1.14 EMERGENCY STOP AUTOCLAVE

In case of emergency there is a need to stop THE equipment the operator must take prompt action on the connection socket / plug off, grabbing the plug WITHOUT pulling the cable. In this regard it should be noted that the plug must always be free of any material or furniture and always visible.

1.15 CONDUCT OF MACHINE BY USER

The user's tasks are:

- monitor the operation of the appliance, acting promptly in case of malfunctions;
- check the constancy of performance and integrity of the devices used and promptly shut down the device in case of malfunctions.



It is FORBIDDEN to leave the unit without first having switched it off at the end of the work



The intervention of the user will always be subject to compliance with the symbols placed on the machine and the requirements dictated by this U.M.M.

1.16 RESIDUAL DANGERS INFORMATION

RESIDUAL DANGERS AND SIGNALS

To highlight to the user, to those exposed and to the authorized personnel all the residual risks to which attention must be paid, it was decided to affix to the machine standardized symbols highlighted in the following pages.

The dangers to which it could not apply a total protection, because it would make the machine difficult to use, inhibiting their intended use, are as follows:



1 Electrical dangers inside the control panel or any derivations of the unit.



2 Thermal dangers resulting from the contact of the user's arms when the respective electrical resistance is operating.

1.17 FAILURES, MALFUNCTIONS OR OTHER INCONVENIENCES

In case of failures, malfunctions or other problems not covered in this U.M.M., call the manufacturer directly. The address is as follows.

REVERBERI ARNALDO S.R.L.

Via Don L. Sturzo, 6 – 42021 BARCO di Bibbiano (RE) – ITALIA

Tel. +39 (0) 522 875159

Fax.+39 (0) 522 875579

e-mail: reverberisrl@gmail.com



Any work on the machine, determined by a malfunction, must necessarily be performed by qualified personnel.



In case of replacements of equipment parts, use original spare parts, to avoid causing variations in performance and / or reduce the level of safety



Each cleaning, checking and / or maintenance must be performed by authorized personnel and authorized to do so in compliance with the requirements given in this U.M.M.

2 UNPACKING

UNPACKING OF THE STERILIZER

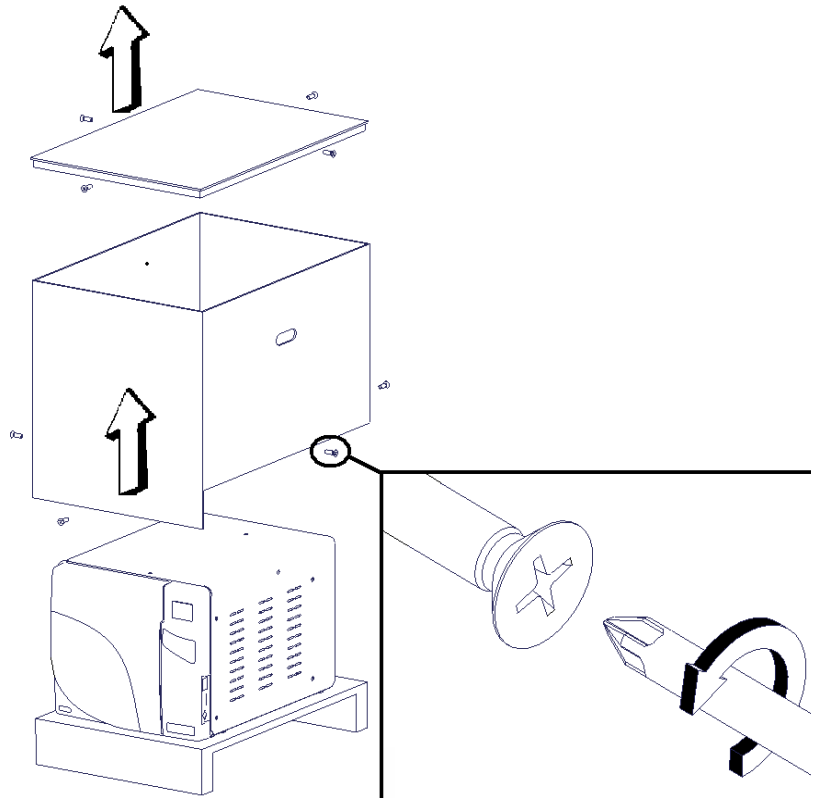


If the sterilizer has been kept in temperature and humidity conditions different from those of the installation, wait for an appropriate period of time before installing it and turn it on. The sterilizer that comes from a cold place could accumulate inside moisture and condensation which could cause a danger if turned on immediately. The sterilizer should be removed from the packing box and transported by two people.

Total weight dry:
SERENA 18 = 45kg 441.5N
SERENA 23 = 50kg 490.5N

NOTES:

Check the external condition of the carton box and of the sterilizer. In case of damage, contact the retailer, the shipper and the carrier that have delivered the product.



2.0 SUPPLIED ACCESSORIES (STANDARD)

The autoclave has the following standard accessories:

ACCESSORIES CONTAINED IN THE CHAMBER

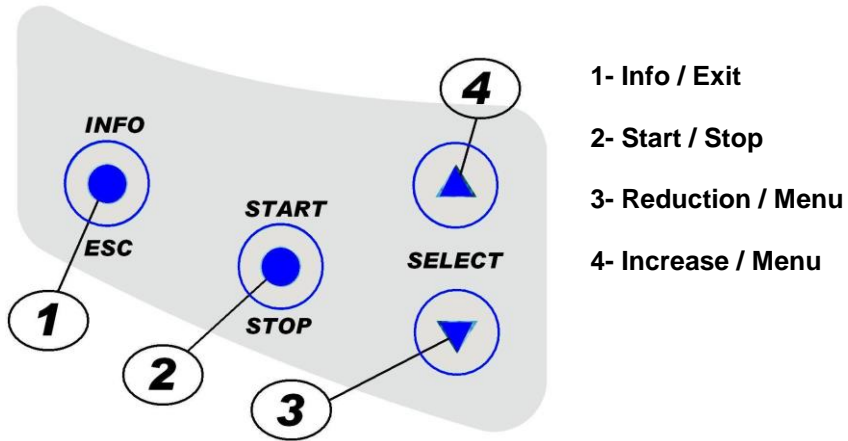
Key for adjustment door and extraction trays, 4 trays made of anodized aluminium, stainless steel support for 4 trays or 2 boxes, SD card, exhaust pipe, water supply hose, funnel for filling water in emergency, support phials for spores, 2 sterilization indicators, a sponge for cleaning.

DOCUMENTATION CONTAINED IN THE PACKAGING

Use and maintenance manual containing the CE Declaration of Conformity

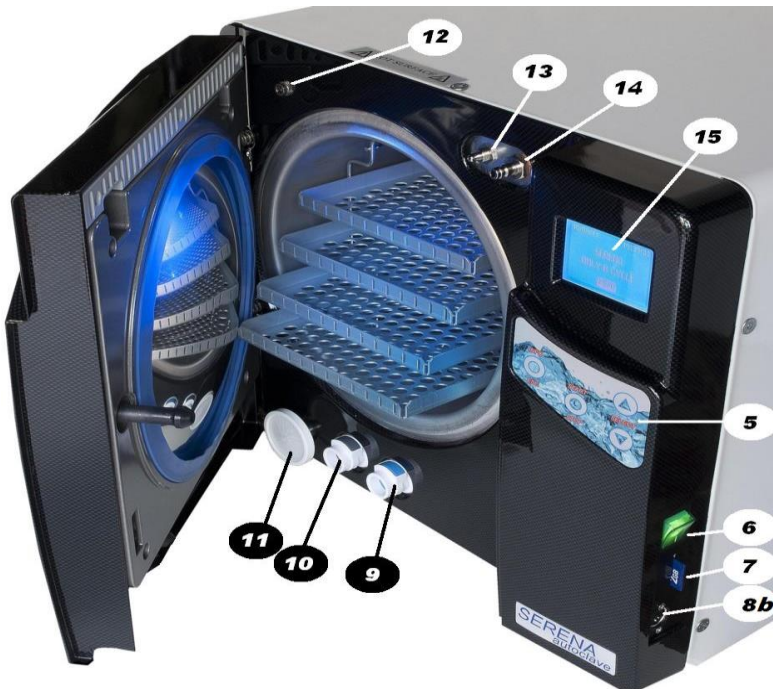
3. STERILIZER DESCRIPTION

3.0 KEYBOARD



- 1- Info / Exit
- 2- Start / Stop
- 3- Reduction / Menu
- 4- Increase / Menu

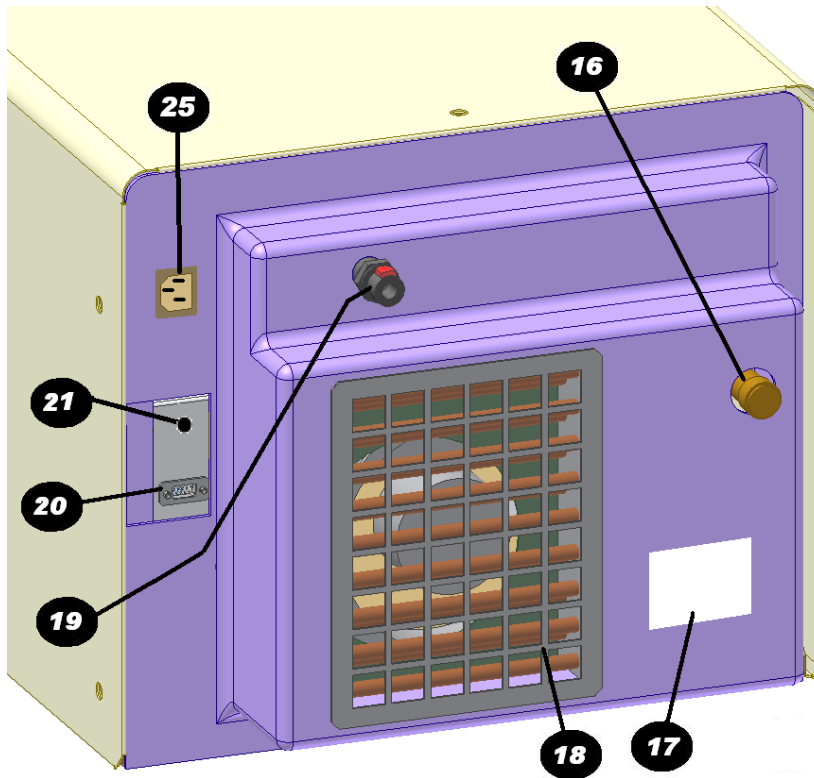
3.1 FRONTAL SIDE



- 5- Keyboard
- 6- Switch
- 7- SD card
- 8a- Printer
- 8b- Printer connection
max 12 VDC 2A
- 9- Drainage clean water
- 10- Drainage water used
- 11- Bacterial filter
- 12- Load water emergency
- 13- Door switch
- 14- Water load
- 15- Info display

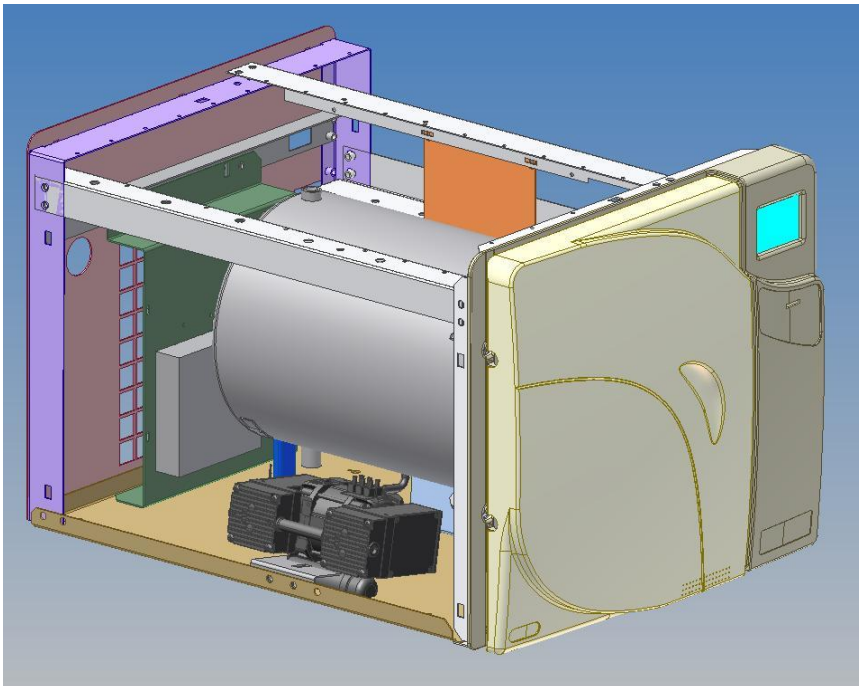


3.2 BACK SIDE

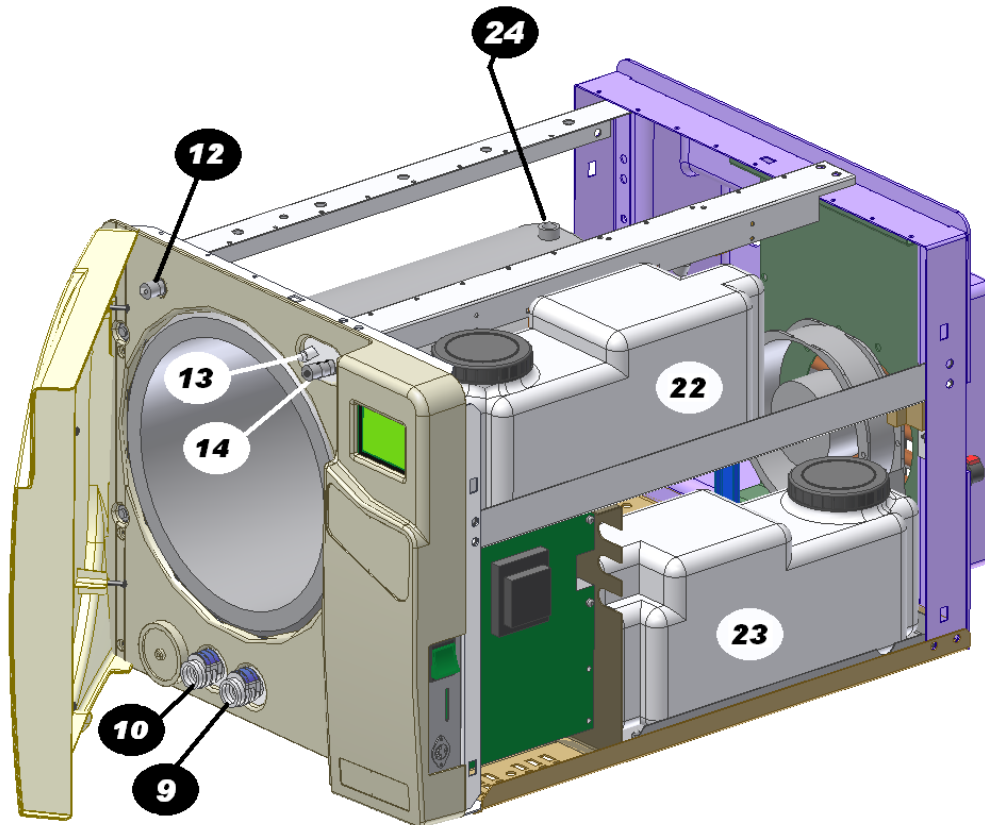


- 16- Safety valve
- 17- CE plate
- 18- Heat exchanger
- 19- Vent
- 20- Labeller connection 9 PIN max 12VDC 1A
- 21- Power cord
- 22- Clean water tank
- 23- Water USED tank
- 24- Connection test
- 25- 230V/50Hz 10A power outlet for connection to the cleaner

VACUUM PUMP



3.3 DESCRIPTION OF INTERIOR WATER TANKS



The autoclave is equipped with two independent water tanks, respectively, for pure water and that used (each tank has a usable capacity of 3.5 litres). The drainage port for the water used is grey.

The upper tank (22) is called "clean water tank" and must be filled with distilled or demineralized water required for the sterilization process. Please find below the quality table of the water to be used.

The tank has a minimum (0.8 litres) and maximum level sensor (3.5 litres). When the water level falls below the minimum threshold and you are choosing a sterilization cycle, the display shows a message of request for water.

It is then necessary to connect the supplied tube to the quick connection (14) and press the START button (2). During this phase it is important that the container of clean water is at the same height of the autoclave.

Just in case of emergency, the tank can be filled manually from the junction (12), or automatically through an automatic external water treatment system connected to the attack (9) on the front of the autoclave. Use quick connection (9) to download the clean water tank.

The lower tank (23) is called "water tank used" and contains the used water collected at the end of each cycle. The tank is equipped with a sensor-level maximum (3.5 litres).

Use the quick (10) to get the water tank.

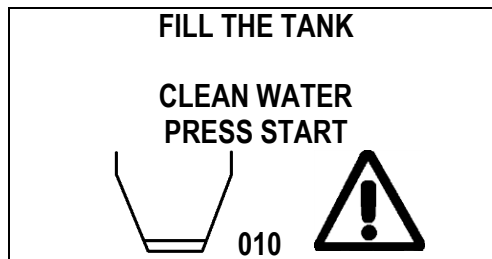


- **Water consumption per cycle varies depending on the type and weight of the load. The clean water tank capacity is enough for 6 to 8 cycles of sterilization.**
- **Never reuse the water used!**

3.4 QUALITATIVE WATER TABLE

CEN STANDARD DIN EN 285	MAXIMUM VALUE
Evaporation residue	10mg/l
Silicon oxide (SiO ₂)	1mg/l
Iron	0,2mg/l
Cadmium	0,005mg/l
Lead	0,05mg/l
Remains heavy metal (excluded iron cadmium and lead)	0,01mg/l
Chloride	2mg/l
Phosphate	0,5mg/l
Conductivity (at 20° C)	15 μ s/cm
Ph Value	From 5 to 7
Aspect	colourless, clean and free of sediment
Hardness	0,02 mmol/l

NOTE: the use of feed water containing concentrations higher than those indicated in the table above may significantly reduce the life of the device causing serious damages to its components and determining the loss of the warranty



3.5 CLEAN WATER LOAD

FILLING THE TANK WITH CLEAN WATER



Use only distilled water of high quality! Follow the qualitative water table!

3.6 MANUAL FILLING

Place the tank of distilled water (standard 5 lt.) on the right side of the autoclave at about the level of the car door.

- Connect the water hose supplied to the hose connection (14) by inserting the other end into the tank
- Press START
- In this way the pump is activated and starts filling water
- If the water is non-compliant (> 15μS), the pump stops and the message of dirty water appears on the display.
- The filling takes place in two or three times since the command is timed. The pump will stop automatically when the tank is full and on the display will appear the screen and then the filling.
- If you notice that during the filling in the tank the water is running out, the pump stops as you press START. Provide for a new tank and re-press START to continue and complete the filling.
- Disconnect the water supply hose and keep it for the next filling.



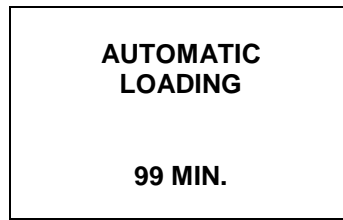
To clear the message of dirty water you must empty it and fill with water quality.

Proceed as follows:

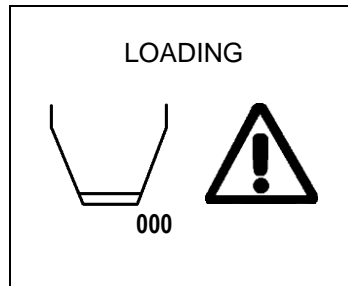
- Insert the supplied drain hose into the blue speed connection
- Proceed automatically emptying the tank of clean water
- Fill the tank with water quality

3.7 AUTOMATIC LOADING

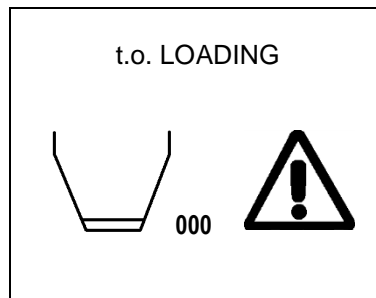
In the SETTINGS choose AUTOMATIC LOADING:



It is recommended to set about 20-30 minutes if the water supply system has no less than 2 atmospheres.





The valve of the water purifier starts working for the set minutes pressing the START button.



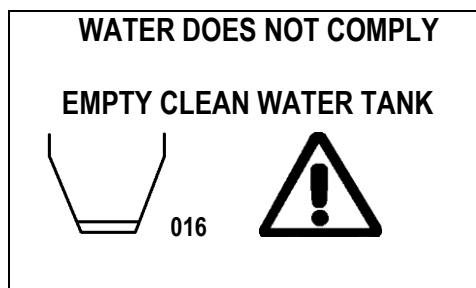
T.o. LOADING means TIME OUT LOADING. It's a valve opening timer of the purifier with sufficient time for refilling the tank with clean water to a minimum. The three zeros indicate that no passage of water has been found therefore the quality has not been checked. In case of normal water passage numbers instead of zeros attest to the quality of the water.

1. Make sure the tap of the cleaner is opened.
 2. The technician must verify the correct operation of the filling device present in the autoclave.
 3. For the detailed calibration, refer to the instruction manual of our cleaner.
- Insert the attack provided to the front of the sterilizer purifier (9).
 - Connect the plug of the purifier into the plug to the back of the sterilizer

	For the first functioning of purifier, check the pressure gauge. The pressure must be at least 2 bars. Otherwise, extend the filling T.O. After replacing the cartridges, turn off and then switch on the sterilizer.
	Just in case is selected the automatic filling, it is the task manager, to provide the sterilizer a check valve conforms to IEC61770.



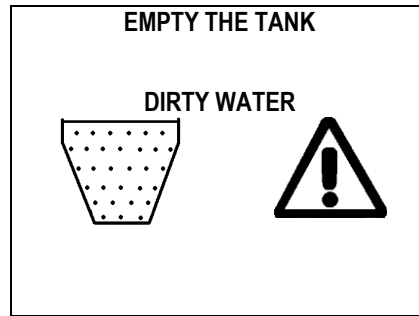
If the water is used is of low quality, ie more than 15 microsiemens, the following message appears:



Proceed to empty the water tank clean as follows:

1. Set the **MANUAL LOADING** (Menu -> Settings-> Manual loading)
2. Insert the drain hose (red) provided in the slot blank. Will come out of the water present in the clean water tank.
3. When all the water is output, remove the exhaust pipe (red).
4. Insert the inlet hose (white-transparent) in the graft load water at the top right of the sterilizer (see photo 1).
5. Press **START**. Fill up with pure water **NOT EXCEEDING 15 microsiemens**

3.8 DRAINING WATER USED



Warning! The drain water of the sterilizer must be conveyed in a clearly visible labelled container with the words "DIRTY WATER DERIVED FROM THE AUTOCLAVE". Empty it immediately!

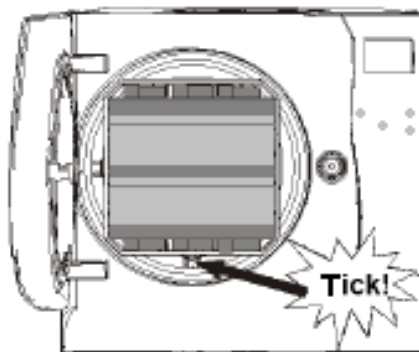
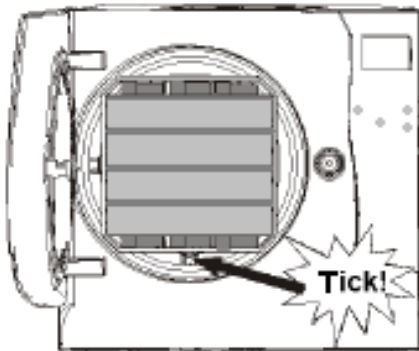
3.9 DIRECT CHARGING AND DISCHARGING WATER CONNECTIONS



**SCARICO
DIRETTO**

**CARICO
DIRETTO**

3.10 TRAYS SUPPORT FOR THE STERILIZATION CHAMBER



Insert the support into the sterilization chamber, align it with the centre / bottom of the chamber and gently push it until a click warns the connection has been established.

The support is reversible and can be used for: 4 trays or, once entered and rotated to 90 °, for 2 horizontal cassettes.

Usable space of the sterilization chamber

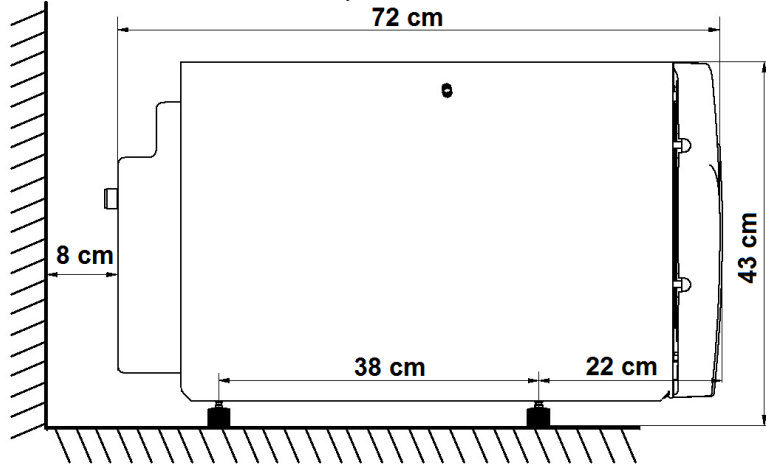
The usable space of the chamber is the maximum volume load and it is identical for all types of loading and sterilization cycle.

Serena 18 lt - (AxLxP) mm 195x195x360 volume 13.69 lt
Serena 23 lt. - (AxLxP) mm 195x195x490 volume 18.63 lt

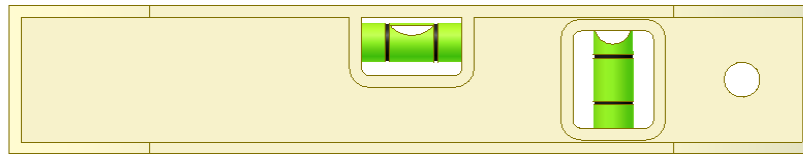
4 INSTALLATION

4.0. POSITIONING

Install the autoclave in a well-ventilated area and away from sinks, heat sources, mole, and any other machinery. Possibly use as a separate room as **sterilization room**. Carefully place the autoclave on a perfectly flat surface with a minimum height of 70 cm and maximum 130 cm, making sure to leave an area of about 8-10 cm and 5-6 cm on the back side around the machine to allow proper ventilation. **It is not recommended to install the machine inside a cabinet**. In the event, the cabinet must **have the back side completely open and the side walls provided with air intakes**. Before the construction of a custom furniture, please contact the manufacturer.



Check with a "bubble" or "levelling" the plane in which the device should be supported to be perfectly flat, both in length and width.



The environmental characteristics also concern the place where, in case of need, machine maintenance must be performed.

Observe the following environmental conditions:

Operating temperature $+5^{\circ}\text{C} \div +40^{\circ}\text{C}$ / umidità relativa: 0 – 80%

Storage temperature $-5^{\circ}\text{C} \div +50^{\circ}\text{C}$ / umidità relativa: 0 – 80%

The maximum weight of the sterilizer is:

SERENA 18 - 45kg = 441.5N

SERENA 23 - 50kg = 490.5N

4.1. POWER SUPPLY

The electrical system for the sterilizer shall conform to the rules in force in the country of installation, and must have the following features: Voltage $230\text{ V} \pm 10\%$, 50 Hz, 10A (single phase). Installation category / class of overload power = II Differential switch 10A with a sensitivity of 30mA. The power switch must be a certified tipo according to current regulations. Maximum Power Consumption: 2000-2400 W (10A)

It is essential an efficient ground connection.



The device has the maximum impedance equal to $Z_{\text{max}} = 0.205\text{ Ohm}$. For the installation it will be necessary to contact your electric energy distributor that will have to provide, where necessary, to create a connection conditioned to the power supply.

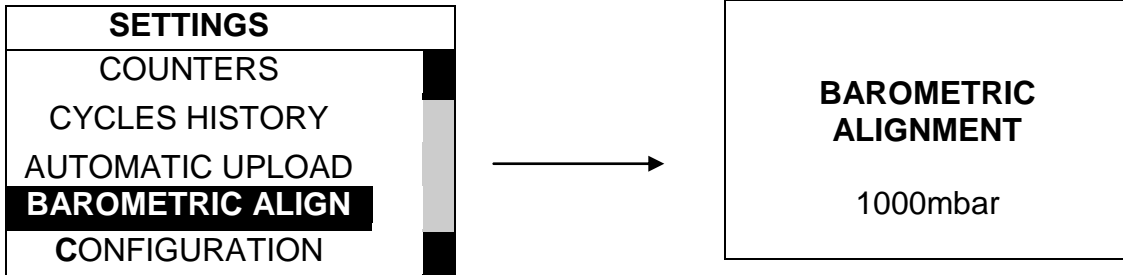


- Check that the voltage specified on the nameplate on the back of the sterilizer corresponds to the network.
- The complete electrical safety is guaranteed only if the electrical connection is provided with proper connection to the ground according to current regulations.
- If necessary make electrical circuit checked by a qualified electrician.
- Do not connect other equipment to the same power.
- Do not bend or twist the power cord.
- Use only the original cables supplied with the sterilizer.
- Do not use extension cords.

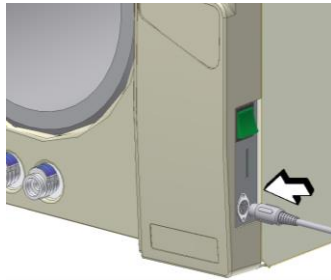
4.2. BAROMETRIC ALIGNMENT

It is mandatory to do it during the first installation. It is used for to calibrate the autoclave pressure with atmospheric pressure. Check that the door is open and the machine is cold:

Menu → Settings → Barometric alignment → Press START (about 5 seconds) until a "Beep" is heard



4.3. CONNECTION TO THE PRINTER M9004



M9004



Do not connect printers different from the Rever-Print! The use of other printers relieve the autoclave manufacturer from any liability under warranty or any other claim or damage caused by the printer itself.

- Connect the printer cable to the serial attack pin9 on the back of sterilizer.
- Use only the supplied cable (length up to 2 meters)
- Connect the network cable to the printer
- Turn the printer

4.3 CONNECTION TO THE LABELLER M9006

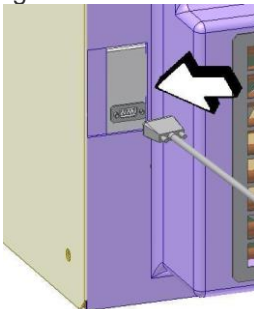


**Use only our labeller UNION PRINT!
The use of other labellers relieves the manufacturer of the autoclave from any liability under warranty or any other claim or damage caused same label.**


- Use only thermal labels supplied by us - Place the roll as shown in the drawing visible when you open the door
- Close the door until it clicks leaving a label outside - Press the button to place the label.
- Flashing red light -> NOT operational
- Flashing green light -> WAITING positioning
- Solid green light -> READY

To do a test print (p. 44 Instruction Manual): OPTIONS -> LABEL PRINTING LAST CYCLE

In the case of incorrect printing, too high or too low, the light is solid green, press and hold the button and wait until the light flashes once and then twice more, then release the button.



M9006

CICLO: Universale B134		
s/n 110001	c.n. 0030	cod.op. 02
Ora 11:03:10	Data 03-46-41	SCADENZA 90gg
 01100010030020		



Use only original rolls and place them in the right way!

4.4 CONNECTIONS TO DEMINERALIZERS KIARA-TEC

The manufacturer offers the possibility of automatic feeding of SERENA autoclaves with demineralized water. Once installed the system, the tank of clean water is automatically kept full without any operator intervention.

4.5 CONTINUOUS DRAIN CONNECTION

The autoclave can be connected to an external drain to allow the automatic discharge of water used.



**The length the drain hose must not exceed 5 meters!
The discharge point must be at least 20-30 cm below the plane of the autoclave!**

4.6 USING SD CARD



SERENA sterilizers are equipped with an integrated digital recording cycles.

The cycle data are automatically recorded and saved as a file on a removable SD memory card / rewritable.

This file can be downloaded and run on a PC or MAC.

Insert the SD card in the appropriate space (7) designed in the lateral side of the autoclave, enter it oriented with the bevel up, and press gently until it stops.

NOTE 1 To avoid damage to the SD memory card, it is recommended to insert and remove (7) SD card, only when the machine is off.

NOTE 2 It is recommended to periodically download the data from the card to a computer. Do not format!

NOTE 3 The manufacturer assumes no responsibility for any damage to the SD card or loss of data both during and after the warranty period.

NOTE 4 AND 'mandatory for the validity of the warranty, to keep an SD card inserted.

To remove the SD card, pull it out directly.

The card supplied has a storage capacity of at least 1-2GB. Be careful not to bend the package and remove the SD card with the help of scissors. Leave it in the lock up position.

READ OF THE MEMORY CARD WITH PC / MAC

The data on the card can be directly read, copied and printed via PC or Macintosh equipped with a USB 1.1 (or higher) with a card reader or SD card input. The MAC must be able to format in FAT32.

MINIMUM HARDWARE REQUIREMENTS FOR A PC / MAC

PC / MAC 1-Port USB 1.1 (or higher) free

PC / MAC CD-ROM

Operating system PC Windows 98SE, 2000, ME, XP or higher

Mac OS 9.1.x, OS X v10.1.2 +.

The autoclaves SERENA record all data of sterilization on a digital SD card that can be recorded, saved or printed directly on a standard PC.



When you turn on the sterilizer if you do not have an SD card, the display shows an error message.

If during the cycle, the SD card is removed, at the end of the cycle the display shows the error.

5 LOADING PREPARATION

5.0 CLEANING OF TOOLS

The objects to be sterilized must be perfectly clean, carefully dried and without any residue of blood, soap, plaster. These substances can cause irremediable damage to both the objects to be sterilized and either to the components of the autoclave as well as compromising the autoclave sterilization. In cleaning, always use protective gloves.

1. Immediately after the use, immerse the instruments in a bowl with disinfectant solution. Strictly follow what is indicated by the manufacturer of the disinfectant for the times and the percentages of solution. After this preliminary decontamination proceed with a thorough rinsing.
2. Continue with cleansing by using ultrasound machines and washer machine. If you use ultrasound machines, it is essential a thorough rinsing with demineralised water if possible. Follow the manufacturer's instructions. We recommend using a WASHER-DISINFECTOR and disinfection that in addition to cleaning, rinse and dry automatically.
3. Before the sterilization, make sure that the instruments are perfectly dry (use a paper towel, TNT or cloth of low release) and without any residual disinfectant, since these residues may cause corrosion during the sterilization. For the drying of hollow instruments use a compressed air gun.
4. Make a final check of the tools and eliminate those with cracks, stains, rust and friction between the parties (it may be useful a magnifying glass). Then proceed with the enveloping.
5. For dynamic tools, lubricate according to the instructions provided by the manufacturer of the instruments.
6. Snippy or cutting materials should be protected with rubber tubes resistant to high temperatures.
7. For the cleaning of dental manipulates, proceed as follows:
 - Always use protective gloves
 - Follow the instructions provided by the manufacturer of the tools
 - Do not use abrasive cleaners nor chlorine-based disinfectants neither similar
 - Do not immerse instruments in the disinfectant
 - Clean, rinse and dry with extreme care, taking care not to scratch the fibre optic
 - Lubricate the instrument before the sterilization according to the manufacturer's instructions
 - Wrap the instrument in



- **Do not use sharp objects for cleaning or Disinfectants**
- **Carefully clean the bottom of the chamber, taking care not to damage the sensors**
- **Use non-abrasive cloth and light detergent.**
- **Rinse thoroughly**



WARNING! DO NOT introduce sensitive materials in the autoclave !

5.1 PREPARATION OF THE TRAYS



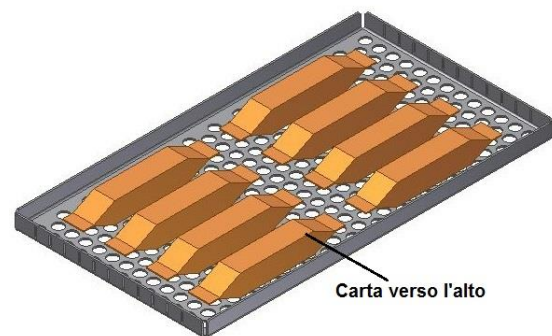
**Warning! Use always the trays and the tray holder.
Never place the material to be sterilized directly on the bottom of the chamber!**



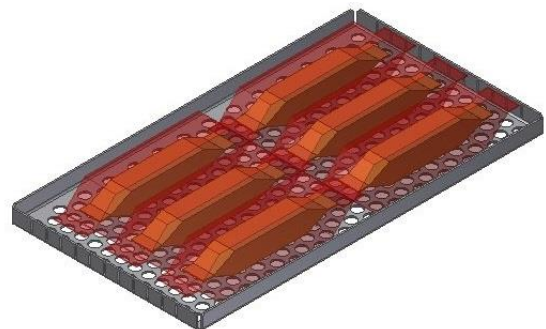
During the cleaning and maintenance of instruments, always use protective gloves!

- a. Adhere to the weight of the load limits set by the manufacturer
- b. Always use the trays and hold-trays
- c. Do not overload individual trays
- d. Leave space between the envelopes placed on trays, in this way the steam circulates better.
- e. Please note that the envelopes do not touch the walls of the sterilization chamber
- f. Empty containers or bowls not drilled must be placed in the inverted position to prevent the accumulation of water inside
- g. The instruments of different material (stainless steel, carbon steel, aluminium, etc..) must be placed on separate trays and wrapped in separate envelopes
- h. The instruments of carbon steel should be isolated from the tray with a specific sheet of paper and wrapped with a special double envelope by inserting an indicator of sterilization.
- i. Instruments with joints, such as forceps, scissors, etc... must be sterilized in the open position.
- j. Always use proper sterilization pouches that allow good penetration of steam and a good drying. It's better to use sealed envelopes with HEAT.
- k. The envelope must be placed on the tray with the paper side facing up.
- l. Place the tubes in order to keep the open ends. Make sure there are no kinks.
- m. To prepare the trays containing dental manipulates, follow instructions provided by the manufacturer of the handpiece. Proceed as follows:
 - Wrap the tray for sterilization in the cleaning cloth and proceed to pack it
 - Place the handpiece on a tray NOT drilled to prevent a possible spill of oil that could contaminate the pipes of the autoclave.
 - At the end of the cycle immediately remove the handpiece
- n) For the preparation of the trays containing rotary instruments (drills, etc.) always use a double envelope and indicate the type of sterilization. In the case of double wrapped, at the end of cycle wait about 5 minutes before removing the trays.

Disposition of the envelopes on the tray (put the paper up)



Trays containing cutters or other tools inside two sealed envelopes



6 START OF STERILIZER

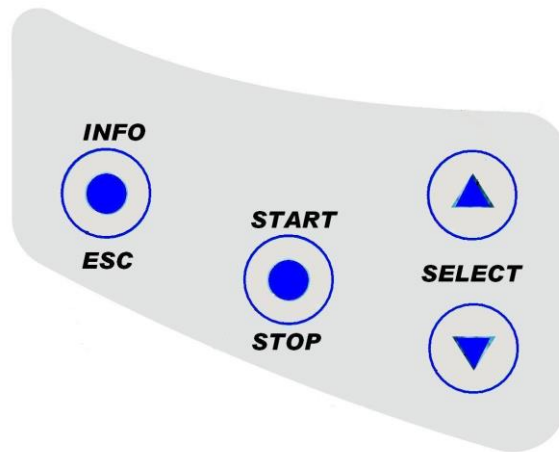
To turn on the autoclave, press the main switch (6), on the right side of the sterilizer.

Only the first time you will turn on the autoclave, the display screen appears as below: it warns that the sterilizer will not start if the water will not be in the tank (22) (clean water).

Normally at the starting of the autoclave the following screen appears:



Use the keyboard to navigate through the menu:



INFO

Pressing the info button when the machine is running and the door closed, the following technical data will appear:

1. Temperature probes
2. Four other temperatures
3. The chamber pressure
4. Quantity of water
5. the voltage
6. Water quality expressed in microns
7. Door status and levels

ESC START STOP

It allows to go to the previous menu or to exit any situation.

It allows to:

1. Close the door
2. Interrupt a cycle
3. Confirm a menu item
4. Enter the menu item
5. Open the door
6. Trigger the pump that fills the tank (with door open)

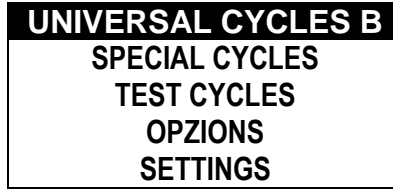
SELECT

It allows to:

1. Go up / down in a menu item
2. Pressed together take off any alarms.

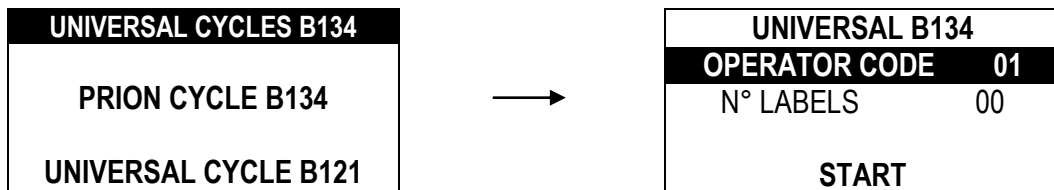
6.0 EXECUTION OF A STERILIZATION CYCLE

Place the load inside the chamber and press START to enter the main menu:



UNIVERSAL CYCLES B

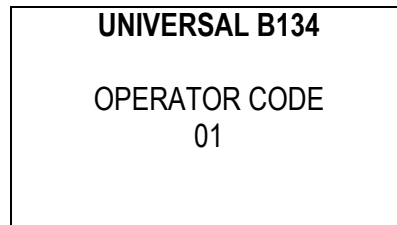
Press START to choose the B cycle you want to start. Press the arrow keys for move the cursor and push START for choose the cycle. When you choose the cycle push STAR for to enter the main menu. Use the arrows to move up and down.



For change the "OPERATOR CODE" press START.

Each operator within of the studio will be marked with a number, so that at the time of sterilization of the material you can find out who made the sterilization). We recommend keeping on hand a list of the codes of the various operators of the studio. We enclose an example in the last pages of this U.M.M.

The following screen will appear, if you want to change the operator code you have to press the arrow keys (the top if you want to increase and the bottom if you want to decrease).



The same applies for labels, increase / decrease the numbers by using the arrows.
Press ESC to exit.



SERENA GB-R06 del 15.02.2019
Then will appear this screen:

UNIVERSAL B134	
OPERATOR CODE	01
N° LABELS	00
START	

Move the arrow down until you highlight the word **START** and press **START** approaching the door at closing time.

UNIVERSAL B134	
OPERATOR CODE	01
N° LABELS	01
START	

At **END THE CYCLE** will appear this screen:

00/00/00	00:00:00
60.5°C	983 mbar
UNIVERSAL B134	
END CYCLE	
50:39 NC0112 00:00	


To return to the menu, press **START**.
Pressing **ESC / INFO** the information related to the ended cycle will be displayed.

At the **END OF THE CYCLE** the following screen appears:

12/07/11	12:04.09
60.5°C	983 mbar
UNIVERSAL B134	
END CYCLE	
50:39 NC0112 00:00	

To return to the menu, press **START**. Pressing **ESC / INFO** the information related to the ended cycle will be displayed.

LABEL EXAMPLE

CICLO: Universale B134		
s/n 110001	c.n. 0030	cod.op. 02
Ora 11:03:10	Data 09-46-41	SCADENZA 90gg
		
01100010030020		

We recommend that you print a number of labels equal to the number of STERILIZED bags because each LABEL will be attached to AN ENVELOPE. Moreover, if you do not possess a bar code reader, YOU NEED TO print as many labels THAT will be associated with that patient. Another label will be printed for filing.

If you own a bar code reader, you only need to print the labels to be attached to the envelope as they will then proceed through the reader to the association to the patient.
Another label will always be printed for filing.

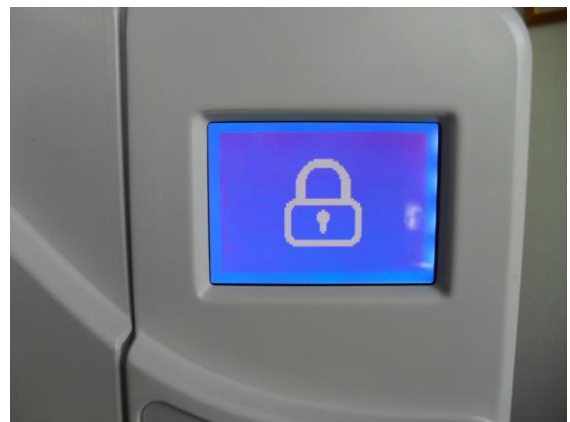
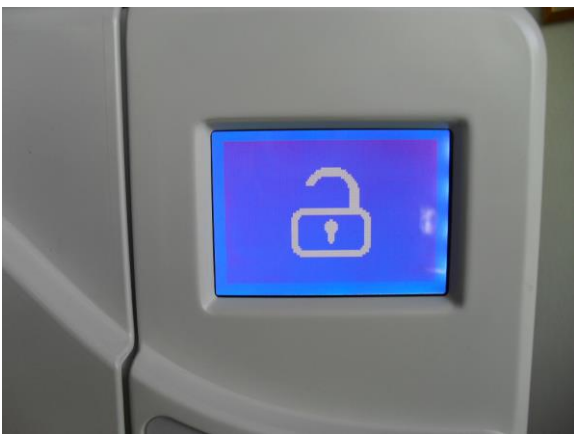
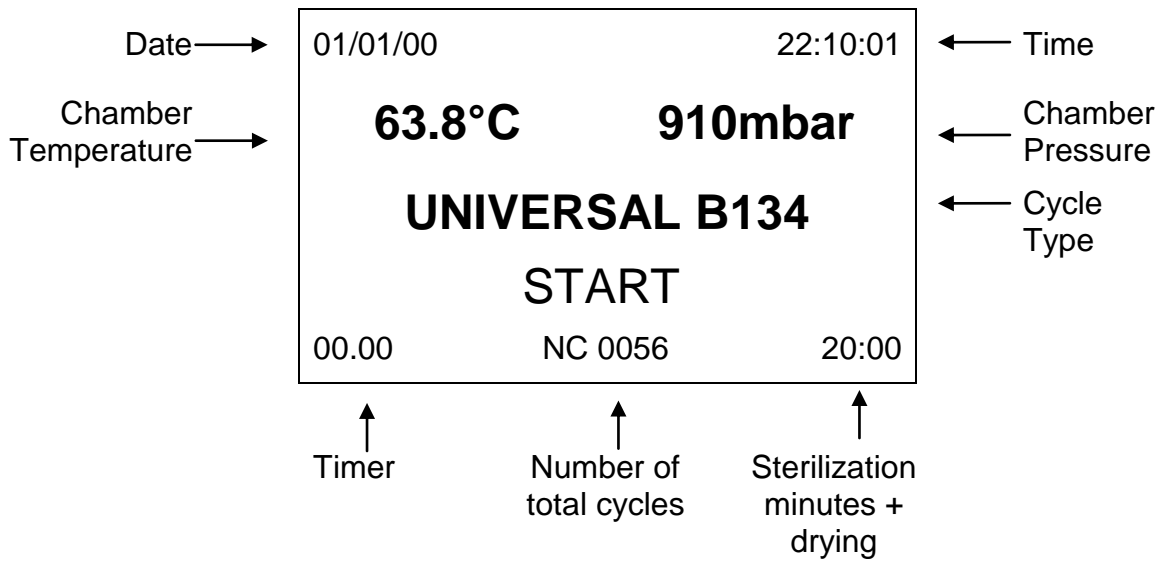
STEP 1



STEP 2



STEP 3



6.1 AVAILABLE PROGRAMMS

6.1.1 UNIVERSAL CYCLE TYPE B

The following three universal cycles differ in the temperature, in the time of sterilization and in the minutes of drying.

B134 UNIVERSAL CYCLE This sterilization cycle of Type B is suitable for any load, solid, porous, unwrapped and packed in a single envelope or double, for hollow type A and B.

PRION CYCLE B134 T type B sterilization cycle is suitable for any load, solid, porous, unwrapped and packed in a single envelope or double, for hollow type A and B.

UNIVERSAL CYCLE B121 Type B sterilization cycle is suitable for any load, solid, porous, unwrapped and packed in a single envelope or double, for hollow type A and B.



Follow the instructions provided by the manufacturer of the materials to be sterilized.

Pay close attention to weight limits for maximum the load and to dispose the load in the trays as per detailed instructions of the manufacturer's autoclave,

Only in full respect of the above information, the sterilization is guaranteed

6.1.2 SPECIAL CYCLES

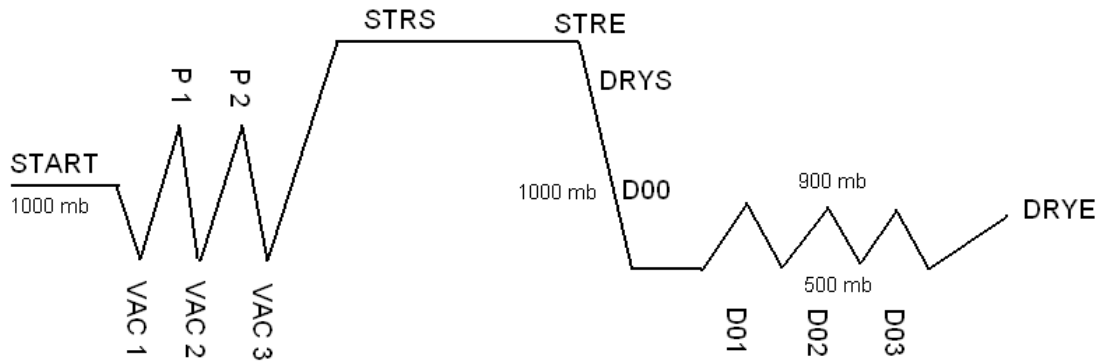
The special cycles allow to increase the sterilization time (5 minutes (134°) and 15 minutes (121°) are default), drying time (10 minutes is default), the number of hollows (default is two) Once you set up data they are automatically stored.

SPECIAL CYCLE 1

SPECIAL CYCLE 2

NOTE: If you leave set the two predefined hollows and the ten minutes of drying, the load should only be UNWRAPPED and SOLID.

6.1.3 STERILIZATION CYCLES GRAPHS, TEST AND TYPE OF TEST PHASES OF THE CYCLE OF STERILIZATION



SERENA 18
ONLY B CYCLE
Ver. 0.27

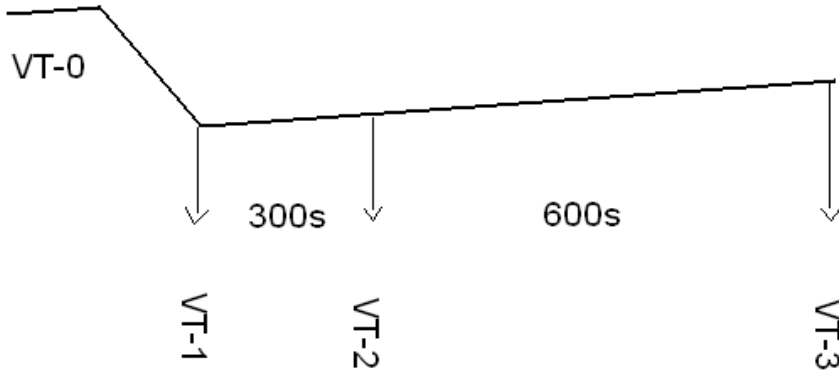
S/N 000000
Nr. CYCLE 0000
CYCLE: UNIVERSALE B 134
OPERATOR COD 00
DATE 00-00-00
TIME 00:00:00

FASE	TIME	TøC	P mbar
START	00:00:16	79.2	1066
VAC1	00:04:24	68.8	105
P1	00:06:39	104.4	1314
VAC2	00:10:31	78.1	134
P2	00:12:48	103.9	1319
VAC3	00:16:46	82.8	85
PPH	00:17:21	97.0	1000
STRs	00:23:27	135.9	3271
MINt	00:24:39	135.1	----
MAXt	00:23:27	136.0	----
MINp	00:24:35	----	3178
MAXp	00:23:32	----	3274
STRe	00:28:27	135.3	3192
DRYs	00:28:27	135.3	3191
D00	00:30:03	114.6	1294
D01	00:31:00	108.6	496
D02	00:31:05	108.7	704
D03	00:38:02	97.1	497
D04	00:38:11	97.3	714
D05	00:44:58	91.6	494
D06	00:45:07	92.1	713
DRYe	00:48:27	91.1	599

CICLO OK

PHASE	DESCRIPTION
START	START
VAC1	FIRST ACHIEVED MAXIMUM VACUUM
P1	FIRST PRESSURE ACHIEVED
VAC2	MAXIMUM ACHIEVED IN VACUUM
P2	SECOND PRESSURE ACHIEVED
PPH	REPORT TEMPERATURE / PRESSURE
VAC3	THIRD ACHIEVED MAXIMUM VACUUM
STRS	STERILIZATION MAINTENANCE
STRE	END OF STERILIZATION
DRYS	DRYING TIME START
D01	VACUUM PULSATIONS IN DRYING
D02	
D03	
DRYE	END OF DRYING

VACUUM TEST DIAGRAM



```

=====
SERENA 18
ONLY B CYCLE
Ver. 0.27
S/N      000000
Nr.CYCLE 0000
CYCLE:   VACUUM TEST
OPERATOR CODE 01
DATE     00-00-00
TIME     00:00:00
PHASE    TIME    TøC    P mbar
VT-0     00:00:16  19.7  992
VT-1     00:03:30  19.6  47
VT-2     00:08:30  20.1  45
VT-3     00:18:30  21.1  45
CYCLE OK
    
```

PHASE	DESCRIPTION
VT-0	PRESSURE ENVIRONMENT
VT-1	TIME IN WHICH THE MAXIMUM DEPRESSION IS REACHED .
VT-2	START TIME COMPENSATION
VT-3	START LEAK PERIOD





Test Type	Sterilization cycle	
	UNIVERSAL B134	UNIVERSAL B121
DYNAMIC IN CHAMBER	x	x
LEAK PERIOD OF AIR	x	x
EMPTY CHAMBER	x	x
SOLID DOUBLE packed LOAD	x	x
SMALL POROUS ITEMS		
SMALL POROUS DOUBLE packed LOAD	x	x
FULL POROUS DOUBLE packed LOAD	x	x
LOAD CABLE B		
LOAD CABLE A	x	x
MULTIPLE PACKAGING		
DRYING SOLID DOUBLE packed LOAD	x	x
DRYING POROUS DOUBLE PACKED LOAD	x	x
RESIDUAL AIR		
X	IN ACCORDANCE WITH ALL APPLICABLE POINTS OF UNI EN 13060	

6.1.4 SPECIAL CYCLE

In special cycles the features are:

- ✓ Possible empties from 2 to 5 (default is two)
- ✓ Sterilization from 5 min. to 99 min.
- ✓ Dry from 10 min. to 99 min.
- ✓ Temperature 121 ° or 134 °

Note: when set to manual water filling, the sterilizer automatically asks filling of clean water.

Choosing SPECIAL CYCLE, after setting set up this cycle will be memorized.

If you decide you want to continue with the SPECIAL CYCLE 1 press START: use the arrows to move in the menu

SPECIAL CYCLE1
SPECIAL CYCLE2

OPERATOR CODE

If you want choose the OPERATOR CODE press START.

SPECIAL 1	
OPERATOR CODE 01	
PRE VACUUM	2
TEMPERATURE	134
TIME STER.	05
TIMER DRYING	10

PRE VACUUM

Number pre -vacuum.

If you want choose PRE VACUUM press START.

SPECIAL 1	
OPERATOR CODE	01
PRE VACUUM 2	
TEMPERATURA	134
TIME STER.	05
TIMER DRYING	10

TEMPERATURE

Sterilization temperature.

If you want choose TEMPERATURE press START.

SPECIAL 1	
OPERATOR CODE	01
PRE VACUUM	2
TEMPERATURE 134	
TIME STER.	05
TIMER DRYING	10

STERILIZATION TIMER

Sterilization timer.

If you want choose STERILIZATION TIMER press START.

SPECIAL 1	
OPERATOR CODE	01
PRE VACUUM	2
TEMPERATURE	134
TIME STER.	05
TIMER DRYING	10

TIMER DRYING

Timer drying.

If you want choose TIMER DRYING press START.

SPECIAL 1	
PRE VACUUM	2
TEMPERATURE	134
TIME STER.	05
TIMER DRYING	10

N. LABELS

Number of labels to be printed per cycle.

If you want choose N. LABELS press START.

SPECIAL 1	
TEMPERATURE	134
TIME STER.	05
TIMER DRYING	10
N.LABELS	01



START CYCLE


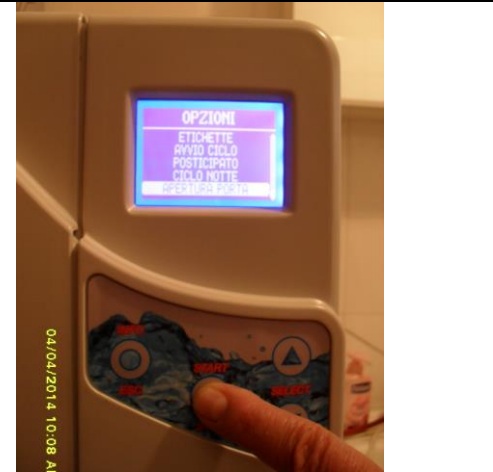
PRESS START to close the door, screw the handle and wait for the cycle to start.

PRESS ESC to return to the main menu.

SPECIAL 1	
TIMER DRYING	10
N.LABELS	01
START	

TO REMOVE AN ALARM

	<p>Simultaneously press the up arrow and down arrow until the disappearance of the alarm (about 5 seconds).</p> <p><u>*If the pump makes noise wait until it finishes</u></p>	
--	---	---

<p>Then <u>MENU</u> → <u>OPTIONS</u> → <u>OPEN DOOR</u> → press start twice <u>START</u>. The door will open automatically.</p> <p><i>The procedure has been studied for safety reasons.</i></p>		
--	--	--

		
--	---	---

INTERRUPTION OF A STERILIZATION CYCLE: HOLD the START button until the beep. After a few seconds the door will open automatically (even if the opening is set to manual) in total safety.

6.1.5 TEST CYCLES

These cycles serve for the autoclave verification.

UNIVERSAL CYCLES B
SPECIAL CYCLES
TEST CYCLES
OPTIONS
SETTINGS

6.1.5.1 VACUUM TEST

Cycle to check the vacuum of the autoclave

VACUUM TEST
B&D/HELIX TEST
SPORE TEST

6.1.5.2 B&D/HELIX TEST

For this test the temperature is 121°.

Moving with the arrow you switch to the next item. When you choose the cycle B & D / Helix and water filling is set manually, automatically the sterilizer calls for the filling of clean water. For this test the temperature is 121 °.

VACUUM TEST
B&D/HELIX TEST
SPORE TEST

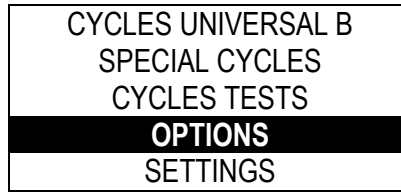
6.1.5.3 SPORE TEST

The spores must be introduced into a normal sterilization cycle. After the cycle the vials must be removed, broken and incubated for 48 h at 53 ° into the cycle spores (insert an integrated vial for better test). Follow the instructions of the manufacturer of spores to a correct reading of the result.

VACUUM TEST
B&D/HELIX TEST
SPORE TEST

7 OPTIONS

Press START will appear this screen:



7.0 PRINT LABELS LAST CYCLES

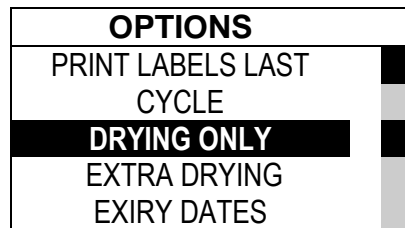
Only missing labels of the last cycle are printed (e.g. if the card is over, to forget, etc). The print is a label at a time.



7.1 DRYING ONLY

Drying cycle only.

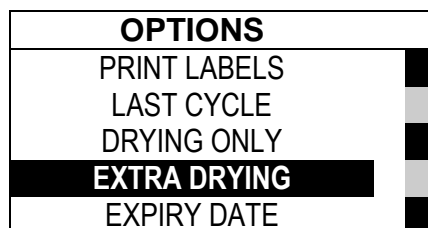
Minimum 1 min , maximum of 99 minutes.



7.2 EXTRA DRYING

With this menu the standard drying sterilization cycle is increased from 1 to 99 minutes.

This drying is indicated in the presence of multiple packaging (double envelope).



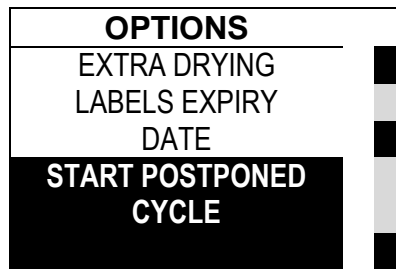
7.3 LABELS EXPIRY DATE

The expiry date printed on the labels has to be attached to the envelopes containing the sterilized instruments. After this date the instruments is no longer considered sterilized.



7.4 START POSTPONED CYCLE

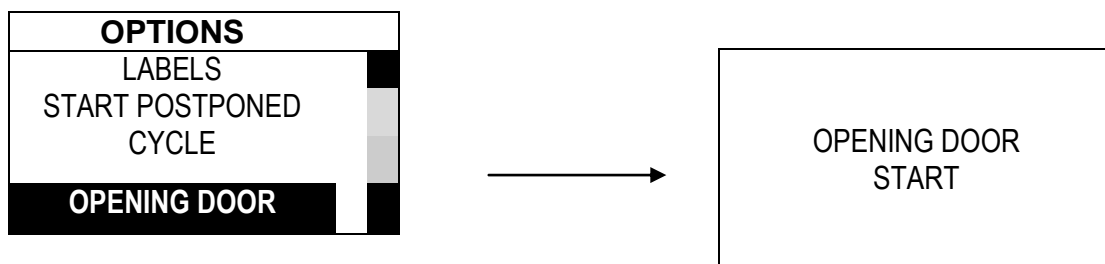
Pressing the "down arrow-up arrow" you should program a delayed start of the sterilization Minimum 1 min, maximum 99 minutes.



See paragraph 1.5 PRECAUTIONS, WARNINGS AND PROHIBITIONS!
DURING THE OPERATION OF THE MACHINE, THE SURVEILLANCE OF THE OPERATOR MUST BE CONTINUED!

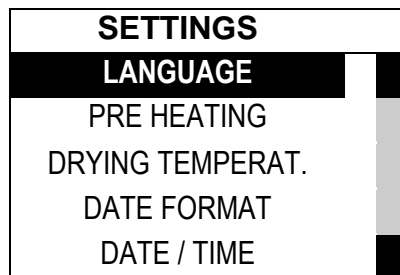
7.5 OPENING DOOR

“Pressing the START you will have access to change information. With this option you can open the door safely in case of error or interrupted cycle.



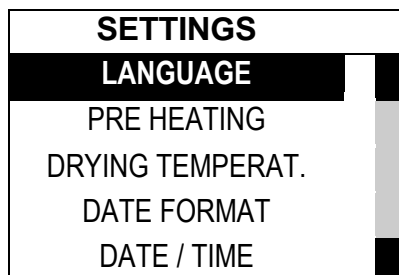
8 SETTINGS

Press START to access and modify the followings:



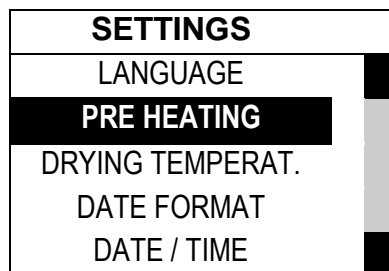
8.0 LANGUAGE

Choose your language.



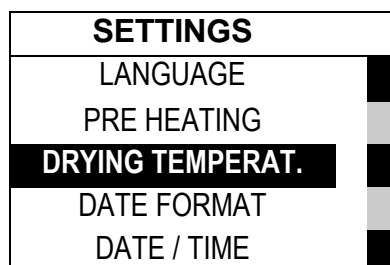
8.1 PRE HEATING

It can possible choose pre heating timer



8.2 DRYING TEMPERATURE

It can possible choose drying temperature.



8.3 DATE FORMAT

GG=day MM=month AA=year

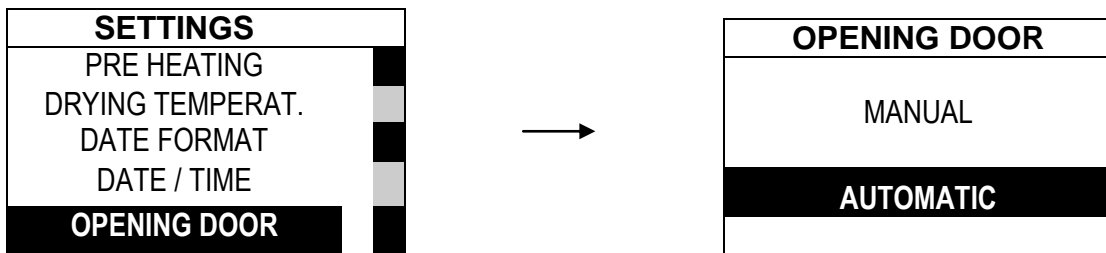
SETTINGS
LANGUAGE
PRE HEATING
DRYING TEMPERAT.
DATE FORMAT
DATE / TIME

8.4 DATE/TIME

SETTINGS
LANGUAGE
PRE HEATING
DRYING TEMPERAT.
DATE FORMAT
DATE / TIME

8.5 OPENING DOOR

If you set the automatic door opening, once the sterilization cycle is finished, the door opens automatically, If you set the opening of the door manually, once the sterilization cycle finish the door remains closed.



If labeller is connected:

- If you set the opening of the door manually, once the sterilization cycle finish the door remains closed and you cannot print any labels. By pressing START the door will be open and automatically will print the labels.
- If you set the automatic door opening, once the sterilization cycle is finished, the door opens automatically and the labels are automatically printed.

8.6 MAINTENANCE

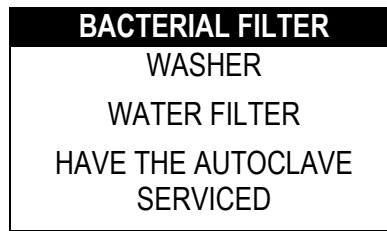
Press START to enter the main menu:

Here you can see how much missing for maintenance.

SETTINGS
DRYING TEMPERAT.
DATE FORMAT
DATE / TIME
OPENING DOOR
MAINTENANCE

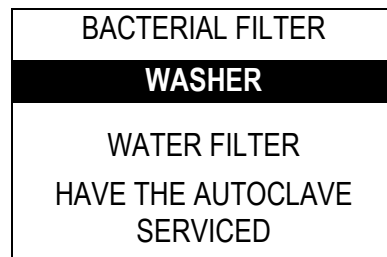
8.6.1 BACTERIAL FILTER

0400: INDICATES THE MAXIMUM STERILIZATION CYCLES WITH A BACTERIAL FILTER.



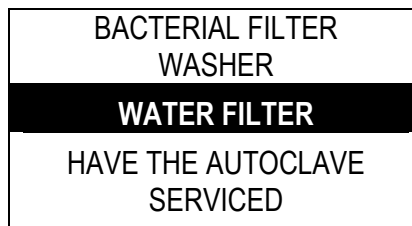
8.6.2 WASHER

0990: INDICATES THE MAXIMUM STERILIZATION CYCLES WITH A WASHER.



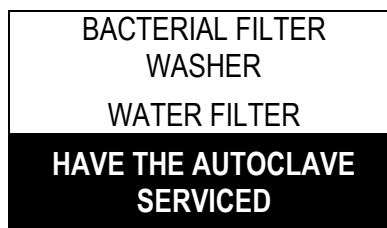
8.6.3 WATER FILTER

2000: INDICATES THE MAXIMUM STERILIZATION CYCLES WITH A WATER FILTER.



8.6.4 HAVE THE AUTOCLAVE SERVICED

2000: IT MEANS THAT ONCE ARRIVED TO THE 2000 CYCLES THE AUTOCLAVE HAS TO BESERVICED.



8.7 TOTAL N° OF CYCLES

SETTINGS
DATE FORMAT
DATE / TIME
OPENING DOOR
MAINTENANCE
TOTAL N° OF CYCLES

8.7.1 VALID CYCLES

Indicates the number of cycles executed correctly.

VALID CYCLES
CYCLES NOT VALID
VACUUM TEST
B&D/HELIX TEST
SPORE TEST

8.7.2 CYCLES NOT VALID

Indicates the number of cycles executed not correctly.

VALID CYCLES
CYCLES NOT VALID
VACUUM TEST
B&D/HELIX TEST
SPORE TEST

8.7.3 VACUUM TEST

Vacuum test executed correctly.

VALID CYCLES
CYCLES NOT VALID
VACUUM TEST
B&D/HELIX TEST
SPORE TEST

8.7.4 B&D/HELIX TEST

B&D/Helix Test executed correctly.

VALID CYCLES
CYCLES NOT VALID
VACUUM TEST
B&D/HELIX TEST
SPORE TEST

8.7.5 SPORE TEST

Spore test cycle executed correctly.

VALID CYCLES
CYCLES NOT VALID
VACUUM TEST
B&D/HELIX TEST
SPORE TEST

8.8 COUNTERS

Historical use of autoclave.

SETTINGS
DATE / TIME
OPENING DOOR
MAINTENANCE
TOTAL N° OF CYCLES
COUNTERS

8.8.1 WORKING HOURS

The hours indicate the period in which the sterilizer has been turned on (ON).

WORKING HOURS
N° OF CYCLES PERFORMED
CONFORMABLE WATER LITRES
UNCONFORMABLE WATER LITRES

8.8.2 N° OF CYCLES PERFORMED

It includes all cycles.

WORKING HOURS
N° OF CYCLES PERFORMED
CONFORMABLE WATER LITRES
UNCONFORMABLE WATER LITRES

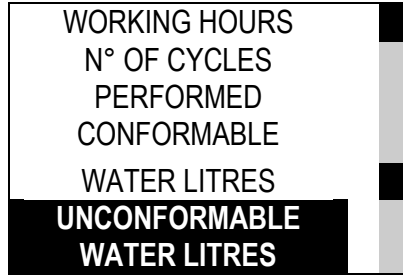
8.8.3 CONFORMABLE WATER LITRES

Water litres with less of 15 microsiemens.

WORKING HOURS
N° OF CYCLES PERFORMED
CONFORMABLE WATER LITRES
UNCONFORMABLE WATER LITRES

8.8.4 UNCONFORMABLE WATER LITRES

Water litres with more of 15 microsiemens.

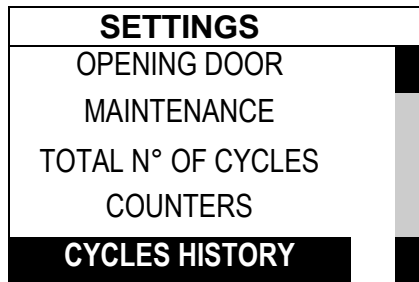


8.8.5 PRINTED LABELS



8.9 CYCLES HISTORY

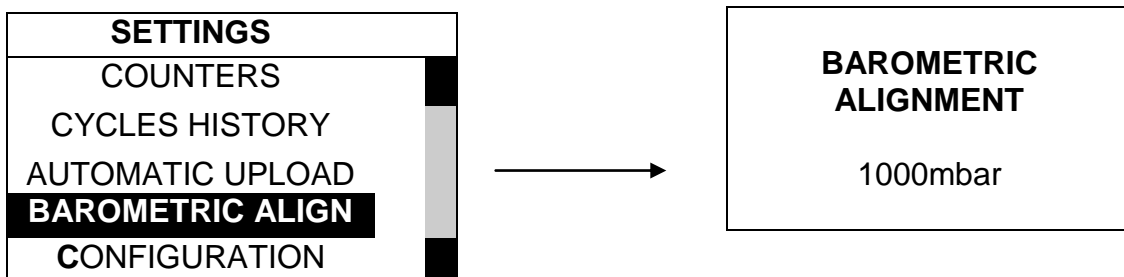
The historical cycles contains the last ten cycles performed successfully (it does not contain cycles concluded with alarms).



8.10 BAROMETRIC ALIGNMENT

It is mandatory to do it during the first installation. It is used for to calibrate the autoclave pressure with atmospheric pressure. Check that the door is open and the machine is cold:

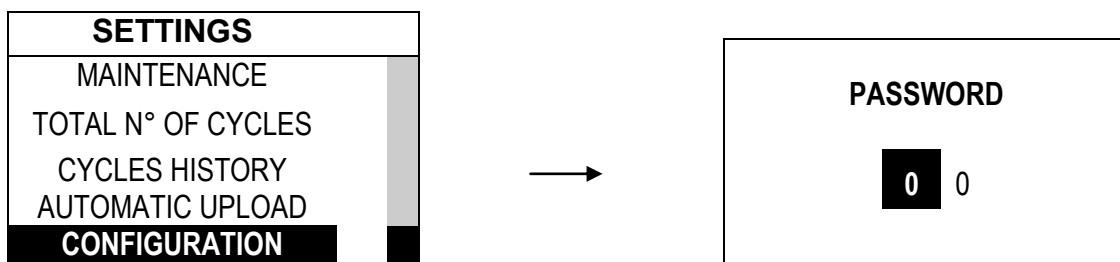
Menu → Settings → Barometric alignment → Press START (about 5 seconds) until a "Beep" is heard



8.11 CONFIGURATION

Menu only for technician.

Consult the manufacturer to access the menu that require PASSWORD.



9 ALARMS

During the course of the cycle, the autoclave SERENA, constantly monitors a set of parameters to ensure a perfect sterilization. If during this check there is an error of one parameter, the cycle is interrupted and appears on the display a warning message. The display shows the message even if sterilization has had a positive exist, or if you have to repeat the cycle.

If the alert occurs during sterilization, the display shows:

UNIVERSAL B134	
93.3° C	963 mbar
INTERRUPTED CYCLE	
LOAD NOT STERIL	

If the alert occurs after the sterilization phase, for example during the drying phase, the display shows:

UNIVERSAL B134	
93.3° C	963 mbar
INTERRUPTED CYCLE	
LOAD NOT STERIL	
DRYING INTERRUPTED	

STERILE LOAD: If drying is not sufficient (see UNI EN13060, 5.5,10.11,10.12), perform a drying cycle only. Once the operator has read the error message, you can unlock the alarm by pressing simultaneously on the down arrow and up arrow.

9.0 ALARM CODES

Warning! Never turn off the machine during ALERT! To remove the alarms simultaneously press the Down and the UP arrow - for at least 5 seconds!



To open the door, proceed going to the OPTIONS menu and select OPEN DOOR. Then press START twice.

ALARM CODE	DESCRIPTION	CAUSES	ACTIONS
AL0002 Load not sterile	Lack of networking with sterilization cycle in progress	<ul style="list-style-type: none"> - Interruption of the cycle in progress in a voluntary manner - Lower-voltage below 190v 	<ul style="list-style-type: none"> - Check that the plug of the studios is efficient - Check the power behind the equipment - Repeat-the sterilization
AL0002 sterile load, drying interrupted	Lack of networking during the drying phase	<ul style="list-style-type: none"> - Defective switch 	<ul style="list-style-type: none"> - Check that the plug of the studios is efficient - Check the power behind the equipment - Repeat-the sterilization
AL0003	Door open during the sterilization cycle	<ul style="list-style-type: none"> - Micro-control defective door - see attached picture 	<ul style="list-style-type: none"> - Check the efficiency of micro-1-2-3 with a tester <i>Only authorized technicians</i>
AL0004	Lack of water during the cycle Resistance is not working Injection pump is not working	<ul style="list-style-type: none"> - Volumetric dispenser broken - Cable not properly connected - Excessive consumption of water- - Group-filter obstructed evaporator - Drop-pump performance - Cable-resistance is not connected - Resistance burned - Electrovalve-vaporizer is not working 	<ul style="list-style-type: none"> - Replace the dispenser - Connect the cable properly - Check for water leaks - Replace the filter - Repeat the sterilization - Check if the problem occurs both in the cycle and in the 134° 121°. If it does not occur in the cycle 121°, replace the pump . - Connect the cable resistance -Replace the resistance if was burned
AL0005	The compensation time between depression maximum and minimum is higher than 1 minute	<ul style="list-style-type: none"> - Bacterial filter obstructed - Electrovalve bacterial filter not working 	<ul style="list-style-type: none"> - Replace the bacterial filter no. 20 with an original one - Replace the electrovalve no. 7
AL0006	Excessive consumption of water during the cycle	<ul style="list-style-type: none"> - Connections with any loss - Electrovalves with losses - Resistance to external band interrupted 	<ul style="list-style-type: none"> - Check and / or replace fittings - Check and / or replace electrovalves - Check that the resistance is not burned

AL0209	Insufficient vacuum in drying	<ul style="list-style-type: none"> - It does not reach the minimum values of peaks and venting - Drain valve no. 5 not working - It does not perform the vacuum in drying vacuum drying - Maximum depression is not reached 	<ul style="list-style-type: none"> - Check if inside the chamber the ducts are free - Check configurations in DRYING <i>Only authorized technicians</i> - Replace the valve no. 5 - Check if the vacuum pump works - Perform Vacuum Test for control
AL0301 AL0302 AL0303 AL0304	Failure thermodynamic pressure 1st impulse Failure thermodynamic pressure 2nd impulse Failure thermodynamic pressure 3rd impulse Failure thermodynamic pressure 4th impulse	<ul style="list-style-type: none"> - It has not reached the temperature - Resistance steamer burned - Resistance band burned 	<ul style="list-style-type: none"> - Through INFO check if Tr is higher than 110° - Through INFO check if Tr is higher than 130°
AL0309	Failure final slope	<ul style="list-style-type: none"> - Pump water injection steamer decreased of pressure. Electric valve 1 - 1B 	<ul style="list-style-type: none"> - Pump Replacement <i>Only authorized technicians</i>
AL0401 AL0402 AL0403 AL0404	Failure discharge after 1st thermodynamic Failure discharge after 2nd thermodynamic Failure discharge after 3rd thermodynamic Failure discharge after 4th thermodynamic	<ul style="list-style-type: none"> - Electric valve 5 burned - Electric valve 4 burned 	<ul style="list-style-type: none"> - Check and / or replace electric valves 5-4 <i>Only authorized technicians</i>
AL0409	Failure discharge during the drying	<ul style="list-style-type: none"> - Electrovalve 5 defective 	<ul style="list-style-type: none"> - Replace the Electric valve 5 - Warning door opening, there may be presence of water <i>Only authorized technicians</i>
AL0901	VACUUM TEST excessive changes of pressure during the stabilization	<ul style="list-style-type: none"> - Loss of air from electric valves 6-5-1B - Loss door gasket 	<ul style="list-style-type: none"> - Check and/or replace the gasket and electric valves <i>Only authorized technicians</i>
AL0902	VACUUM TEST excessive changes of pressure during the maintenance	<ul style="list-style-type: none"> - Loss of air from electric valves 6-5-1B - Loss door gasket 	<ul style="list-style-type: none"> - Check and/or replace the gasket and electric valves <i>Only authorized technicians</i>

See cap. **"To remove an alarm"** to release Alarms in detail

9.1 TABLE OF STERILIZATION PROGRAMS AVAILABLE

		STERILIZATION CYCLE					TEST CYCLES		
		UNIVERSAL B134 *	PRIONE B134 *	UNIVERSAL B121 *	SPECIAL 1 **	SPECIAL 2 **	Helix B&D	Vacuum	Spore
TEMPERATURE		134°	134°	121°	121°/134°	121°/134°	135.5°	--	54°
PRESSURE		3050 mb	3050 mb	2060 mb	2060/3050 mB	2060/3050 mb	3185 mb	198 mb	--
DURATION OF STERILIZATION PHASE		5'	18'	15'	5'-99'	5'-99'	3'30"	15'	--
DURATA TION DRYING PHASE		15'	15'	15'	1-99'	1-99'	4'	--	--
DURATION TOTAL CYCLE	18 LT	48'	61'	58'	VARIABLE	VARIABLE	60'	19'	2910'
	23 LT.	53'	66'	63'	VARIABLE	VARIABLE	65'	21'	2910'
TYPE OF LOADS	SOLID TWEEZERS, MILLS...	YES	YES	YES	YES	YES	EMPTY CHAMBER OR TEST		
	POROUS SMALL OBJECTS SUCH AS GAUZES, COTTON ...	YES	YES	YES	NO	NO			
	POROUS 80% USABLE SPACE	YES	YES	YES	NO	NO			
	HOLLOW ITEMS A SUCH AS SCISSORS, PLIERS, HANDPIECES	YES	YES	YES	NO	NO			
	HOLLOW ITEMS TYPE B SURGERY SUCTION	YES	YES	YES	NO	NO			
	UNWRAPPED	YES	YES	YES	YES	YES			
	WRAPPED	YES	YES	YES	NO	NO			
	DOUBLE ENVELOPE	YES	YES	YES	NO	NO			
MAXIMUM LOAD	SERENA 18LT.	NO WRAPPED SOLID	3 KG.	3 KG.	3 KG.	3 KG.	3 KG.		
		WRAPPED SOLID	3 KG.	3 KG.	3 KG.	NO	NO		
		POROUS	1 KG.	1 KG.	1 KG.	NO	NO		
	SERENA 23 LT.	NO WRAPPED SOLID	4 KG.	4 KG.	4 KG.	4 KG.	4 KG.		
		WRAPPED SOLID	4 KG.	4 KG.	4 KG.	NO	NO		
		POROUS	1.2 KG.	1.2 KG.	1.2 KG.	NO	NO		

* **COLD CHAMBER:** Add 10 minutes - **MACHINE FULL LOAD:** Add 10 minutes

** **SPECIAL CYCLES:** If you leave vacuums two set and five minutes of drying, the load should only be unwrapped and SOLID

10 MAINTENANCE



- Carry out maintenance with the machine off, having pulled the plug from the wall outlet, when the various components are not at high temperature.
- The declaration of conformity to standards in force has no effect if the below maintenance have not been performed.
- In case of replacement of one or more components you need to verify the integrity of the safety of the machine.
- In response of all maintenance indicated it is declared a useful life of the device of 8 years.
- Depending on the application of existing rules will require the user to perform all maintenance indicated. This is to ensure that the device maintains the level of performance and security declared by the manufacturer.
- The operations and maintenance checks must be made on time and procedures indicated. Otherwise the guarantee will no longer be 'valid and the manufacturer will not be liable for any damages.
- It is required by those who perform maintenance to communicate the manufacturer the operations carried out.
- In the maintenance phase should be used only parts supplied by the manufacturer.

GENERAL MAINTENANCE BY THE USER

The machine requires special maintenance, so it is good practice to follow the instructions below:

- Periodically check the electrical system with particular attention to the connection cable. **In case of damage please contact our technical support or service assistant.**
- Clean periodically the door, the gasket and **with particular care the inside of the chamber** from any of calcification using the supplied wet sponge. Proper cleaning maintenance of these parts of the machine makes optimal the performance of the sterilization cycle.
- In the event of prolonged inactivity switch off the machine leaving the door not completely closed, keep it in an environment with a temperature $>8^{\circ}\text{C}$ and empty both tanks.
- To clean the fairing is necessary to use a wet cloth. Never use flammable liquids case.
- It is recommended to replace at least once every 6 months or when the machine signals, the bacterial filter.

DAILY CARE BY THE USER

- Clean the door / clean the porthole / general cleaning of internal or external surfaces.
- Clean the black silicon gasket of the door, the outer edge, and the internal support of the sterilization chamber on which the gasket is sealed. For this cleaning, use the sponge that comes, the soft part will be used to clean the seal and the rough to clean the edge of the chamber.
- This clean should be performed regularly to remove any impurities that may cause loss of pressure. Also check that the gasket has no cuts or incisions, or imperfections.

WEEKLY MAINTENANCE BY THE USER

- Cleaning the chamber sterilization / cleaning trays and plate trolley. As specified in section "General Maintenance", you must eliminate any deposits on the bottom of the chamber. Use the rough part of the supplied sponge for this operation trying to eliminate all traces of limestone. Rinse everything with the same water used for sterilization. This cleaning should also be extended to the tray and the tray door.

MONTHLY MAINTENANCE BY THE USER

- Clean with a barely wet sponge all over the furniture of the autoclave, including the cover of the door.
- Lubricate the pins and locking mechanisms with silicone spray.
- Check the movement of the hinge pin and door locks; lubricate with silicone spray.
- Check the adjustment black silicon gasket of the door: if it appears very slow use the special wrench to adjust.

10.0 NATURE AND FREQUENCY OF CLEANING, INSPECTION AND MAINTENANCE

To proceed with this operation:

- Wear appropriate clothing,
- Use only vacuum cleaners where possible,
- If the use of compressed air is forced: also wear masks, goggles, protective gloves and always close the sleeves with elastic,
- Dispose of waste deposits and respecting the environment and laws.

It is FORBIDDEN to use jets of water or other liquids on the unit.

Water splashing generated by atmospheric pressure and pressure jets generated by pressure washer for industrial cleaning are both seen as jets of water.

For a smooth operation and good maintenance of the machine, it is recommended to perform, by the technician, the regular operations. Scheduled maintenance can be limited to a few interventions that can save you from UNDESIRED STOPS DURING THE USE AND MUST BE PERFORMED IN COMPLIANCE WITH THE TERMS ESTABLISHED OTHERWISE BY APPLICABLE RULES.

10.0.1 BACTERIOLOGICAL FILTER REPLACEMENT (USER)

- Open the door
- Unscrew the bacterial filter manually in a counter clockwise direction
- Install new filter in a clockwise direction



The new bacterial filter should be new and in its original envelope

10.0.2 PINS LUBRICATION (USER)

- Only use silicone spray
- Use the spray in small quantities in the direction of closing hinges

10.0.3 WATER TANK CLEANING (LICENSED TECHNICIAN)



Disconnect the network cable! Only authorized technicians!

- Remove the fairing
- Empty both tanks through the drain hose supplied
- Unhook the springs that hold the tanks
- Disconnect the tubes connected
- Disconnect the wires connected paying attention to the colours
- Remove the caps from the tanks
- Wash carefully with water and mild detergent tanks. Rinse and dry carefully.
- In case of persistent impurities, use for cleaning a dishwasher detergent tablet, chopped, and placed in tanks with about 500 cc of warm water. Shake to try to remove the dirt residues.
- Rinse thoroughly and dry carefully.
- Be careful during reassembly of the original positions of the coloured wires.



To prevent algae growth or other deposits, empty both tanks if the sterilizer is not used for more 'than three days! When the sterilizer is turned off, keep always the door not completely closed !

At the end check that everything is ok CHECK ACTUATORS.

10.0.4 REPLACEMENT OF THE VAPORIZER GROUP (AUTHORIZED TECHNICIAN)

- Remove the casing
- Empty the tanks
- Remove the two lower springs of the water used tank
- Disconnect the three tubes of rubber holder and remove the tank, being careful NOT to remove the wires of the level
- Unscrew the vaporizer
- Disconnect the wires and tubes connecting the vaporiser
- Remove and replace the old with the new vaporizer
- Replace the wires and tubes in the original position
- Replace the water tank used taking care to check that inside is perfectly clean
- Try the sterilizer without the casing (keeping a safe distance) to check any loss
- Replace the casing and perform a Vacuum Test

10.0.5 REPLACEMENT OF THE ELECTROVALVES GROUP (AUTHORIZED TECHNICIAN)

- Remove the casing
- Disconnect wires and tubes
- Remove the old bar and replace the new pre-assembled and complete
- Replace wires and tubes as originally
- Check without reassembling the casing the presence of any loss (maintain safe distance)
- Run the Vacuum Test



Remove the network cables! Only authorized technicians!

10.0.6 REPLACEMENT PUMP LOAD (AUTHORIZED TECHNICIAN)

- Remove the casing
- Empty the tank of clean water
- Replace the pump and filter making sure to reconnect all tubes and cables in the original position
- Check for loss
- Check the efficiency of conducting

10.0.7 MAINTENANCE OF VACUUM PUMP (AUTHORIZED TECHNICIAN) CODE 5153 TWO HEADS

MODEL COD. 5104

- Remove the casing
- By using an indelible pen mark each head
- Disconnect tubes and cables
- Remove the four screws
- Unscrew the two heads without remove the pump
- Take the two heads
- Remove the two centre screws (two plugs are hidden by blacks)
- Replace the valves
- Replace the two membranes
- Replace the pump with cables and tubes in the original position
- Turn the motor fan by hand (full cycle) checking that nothing has hardness
- Perform a vacuum test
- Replace the casing

MODEL COD. 5237

- Remove the casing
- By using an indelible pen mark each head
- Disconnect tubes and cables
- Unscrew the pump placed under the camera
- Remove the four screws
- Remove the pump and replace the membrane and valves of the three heads
- Replace the pump with cables and tubes in the original position
- Turn the motor fan by hand (full cycle) checking that nothing has hardness
- Perform a vacuum test
- Replace the casing

MODEL COD. 6312

- Remove the casing
- By using an indelible pen mark each head
- Unscrew the nuts
- Disconnect tubes and cables
- Remove the pump
- Remove two heads
- Replace the replacement parts
- Replace the pump with cables and tubes in the original position
- Turn the motor fan by hand (full cycle) checking that nothing has hardness
- Perform a vacuum test
- Replace the casing

SEE PUMP EXPLODED



USE ONLY ORIGINAL SPARE PARTS PROVIDED BY THE MANUFACTURER!

10.0.8 REPLACEMENT OF THE GASKET (LICENSED TECHNICIAN) CODE 5030

- Open the door of the sterilizer
- Remove the 4 screws on the door
- Use a wrench of 10 to unscrew the central nuts
- Remove the gasket along with stainless steel cover
- Replace the old seal with a new one along with the stainless steel cover making sure that the central spring must be in its original position.
- Tighten the central nut (MODERATELY) along with its lock washer using a wrench of 10.
- Start a sterilization cycle at 134 ° universal. When it is in the sterilization phase (STR), tighten the nut and put silicone gel for fixing.
- Replace the plastic cover and tighten the 4 screws carefully when the cycle is finished and the autoclave is cold



To tighten the central nut, always use a wrench of 10!



Pay close attention to replace the door gasket to prevent leakage. It must be entered perfectly to fit without swelling or warping.

10.0.9 REPLACEMENT OF THE TRANSDUCER (LICENSED TECHNICIAN)

- Remove the casing of the sterilizer
- Remove the PAKER connector that is attached to the transducer
- Unscrew the connection of the Teflon pipe Teflon
- Unscrew the fixing screw of the transducer support
- Assemble the new transducer that will be featured with ring
- Verify by the menu OPTIONS -> OPEN DOOR -> info button if the pressure corresponds to the ambient temperature

10.0.10 REPLACEMENT OF THE ELECTRONIC BOARD (LICENSED TECHNICAL)

- Remove the cowling of the sterilizer
- Begin to remove the connectors on the left side of the card. With a coloured pen mark their original position, paying particular attention to the transducer and probe connectors
- Remove the other connectors using an appropriate tweezers
- Unscrew with a wrench of 5 the five nuts of 3 MA
- Unscrew the screw of 5 MA that holds fixed the heat sink (top right)
- Replace the card with a new one
 - It is advisable, once changed the card, to update the software using a new SD card and carefully storing the old
 - It is then necessary to arrange the SETTING, CONFIGURATIONS and the OPTIONS of the autoclave and taking care to restore the original choices of the studio. It is important to apply to the manufacturer's the factory settings file (according to the serial number of the machine)



Always use a paste of White type transmission under the heatsink!

Give full attention to securing the heatsink and the box ! In case of incorrect fixation it may burn the triaks of the electronic board!



The trimmer on the board controls the display REVERSE.
After replacing the electronic board, REGISTER YOUR TRIMMER tab to enhance the contrast!

10.0.11 REPLACEMENT OF THE BATTERY OF THE ELECTRICAL CARD (LICENSED TECHNICIAN)

- Remove the cowl of the sterilizer
- Remove the existing stack and replace it with a new ORIGINAL
- Be careful putting it back in same position as the original
- Do not use pliers or metal
- The battery must not come into contact with metal parts

10.0.12 REPLACEMENT OF DISPLAY (AUTHORIZED TECHNICIAN)

- Disconnect from electronic card brown connector with blue wires connected and release it (for the moment do not disassemble display from the machine)
- Take the new display and connect the new brown connector to the electronic card
- Check that the new display work correctly. If everything is ok, proceed to remove the old display and replace with the new display.

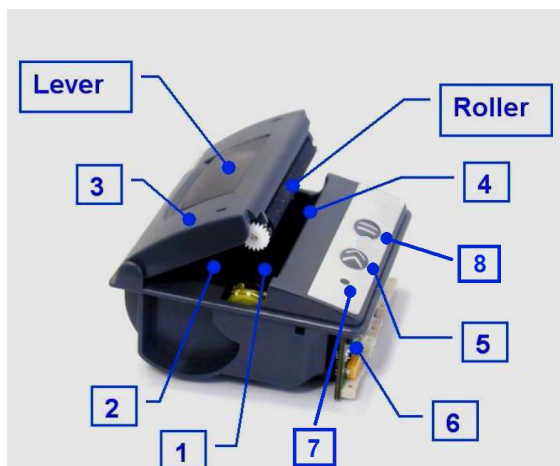
10.0.13 REPLACEMENT PIN DOOR (AUTHORIZED TECHNICIAN)

- Obtain key 8/9 and Phillips screwdriver.
- With the machine's door open remove the 4 screws that support the front plastic
- Unscrew the stop pin
- Remove the pin and replace it with the new pin
- During the fixing make sure that the pin is soft, but it must not get out of its seat
- Screw the stop pin
- Try closing the door
- Replace the plastic front, moderately, with screw, washer, grommet

10.0.14 REPLACE PRINTER PAPER ROLL (USER)

Only for model with printer

Exploded printer



1. Printer mechanism, easy loading type
2. Paper roll housing
3. Cover group, with Lever (for easy opening) and Roller
4. Tear Bar, for paper cutting
5. Control panel with two push button and one LED
6. Electronic Control Board
7. Steady green light indicates that the printer is turned on. Flashing green indicating a fault (lack of paper, roll not installed correctly)
8. Stand-by button on / off (press and hold for a few seconds)

How to open the cover group



Pull the lever until the Cover Group is released from its locking position.

To avoid damages to the lever do not use excessive force!

How to load paper rolls



Step 1



Step 2

How to close the Cover Group correctly

Press on both sides of the Cover Group simultaneously



OK

Do not close the Cover Group pressing only on one side.



NO

How to cut the paper correctly



Pull the paper towards the Tear Bar from one side to the other.



Use only original rolls and place them in the right way!

10.1 SCHEDULED MAINTENANCE SUMMARY TABLE

SUMMARY TABLE												
DESCRIPTION	Cat. lubricants	INTERVALS										
		At each start	Every 8 hours	Every 40 hours	Every 100 hours	Every 200 hours	Every 500 hours	Every 1000 hours	Every 6 months	Every 2000 hours	Every 2 years	Every N° cycles
★Electrical safety test★												
Visual inspection (any subsidence of isolation, burns ...)	-											2000 or 2 years
Check continuity of the earth												2000 or 2 years
Control of leakage currents (1)												2000 or 2 years
Functional test with the receipt issued												2000 or 2 years

(1) If the leakage is At the limit of acceptability, it is necessary to provide as soon as possible... to the replacement of the filter code.

SUMMARY TABLE												
DESCRIPTION	Cat. lubricants	INTERVALS										
		At each start	Every 8 hours	Every 40 hours	Every 100 hours	Every 200 hours	Every 500 hours	Every 1000 hours	Every 6 months	Every 2000 hours	Every 2 years	Every N° cycles
☆Mechanical Maintenance☆												
Cleaning water filter	-											2000 or 2 years
Clean door gasket	-		*									
General cleaning of exterior and interior surfaces	-		*									
Cleaning the sterilization chamber	-			*								
Cleaning support for trays and cleaning trays	-			*								
Lubrication of hinges and locking mechanism	-					*						
Bacteriological filter replacement	-											400
Control door regulation	-											2000 or 2 years
Replacing door gasket and pin	-											990
☆ Electrical / electronic Maintenance ☆												
Control actuators	-											2000 or 2 years
Check the integrity of the flexible cable and of the plug power supply (in case of damage replace)	-			*								

☆ Guarantee Slips☆

<p>1° Guarantee slip with replacement and/or control of:</p> <ul style="list-style-type: none"> ▪ Kit vacuum pump ▪ Group Vaporizer ▪ Drain valve ▪ 3-way valve ▪ Control door lock ▪ Control ACTUATORS ▪ Cleaning tanks ▪ Water filters ▪ Metal filter ▪ Micro switch ▪ Pump group of tanks loading ▪ Valve purifier 	-											2000 or 2 years
<p>2° Guarantee slip with replacement and/or control of:</p> <ul style="list-style-type: none"> ▪ Kit vacuum pump ▪ Group Vaporizer ▪ Drain valve ▪ 3-way valve ▪ Control door lock ▪ Control ACTUATORS ▪ Cleaning tanks ▪ Water filters ▪ Metal filter ▪ Micro switch ▪ Pump group of tanks loading ▪ Valve purifier 	-											4000
<ul style="list-style-type: none"> ▪ 3° Guarantee slip with replacement and/or control of: ▪ Same as 2° guarantee slip ▪ Fan ▪ Pressure Transducer ▪ Valve bacterial filter ▪ By-pass valve ▪ Temperature sensors T1 and T2 drain pipes ▪ Replace the batteries of the electronic board model. CR2032 												6000

10.2 RECOMMENDED SPARE PARTS LIST

You should keep in your service area for the spare parts the details listed below that in case the sterilizer stops working, the details below may be useful to the TECHNICAL AUTHORIZED qualified during maintenance, avoiding the downtime lasts more than necessary, an event that in some cases can cause substantial damage to your business.

RECOMMENDED SPARE PARTS				
n°	denomination	quantity	s/n.	
1	Door Gasket	1	5030	
2	Bacteriological Filter	1	1067	
3	Power Cable	1	0129	
4	Pressure Transducer	1	5125	
5	Probe Double T1 T2	1	5804	
6	SD Card	1	5793	
7	Label Roll	1	K800262	
8	Float Tank Range	1	3907	
9	Water Filter	1	1484	
10	Bowie-Dick Test	1	3606	
11	Strip Test	1	4263	
12	Phials Spores	1	4344	
13	3-Way Complete Valve	1	3246	
14	Entry fuses	1	5534	
15	Cartridges for connecting water supply*	1	3858	
16	Vaporizer group	1	5695	
17	Electro valve group	1	5181	
18	Load pump	1	0715	
19	Vacuum pump /	1	5104	
	Vacuum pump /	1	5237	
	Vacuum pump		6312	
20	Electronic card	1	5023	
21	Battery of the electronic card	1	5279	
22	Safety thermostat	1	5093	
23	Door pin	1	5040	
24	Printer rolls	1	5831	

*Only for Kiaratec



Use only original spare parts supplied by the manufacturer! It is required by those who perform maintenance to communicate the manufacturer the operations carried out.

11 EMERGENCY - HOW TO COPE

11.0 FIRE

FIRE EQUIPMENT

Water must not be used to extinguish fires, because it may react with materials with which it would meet, causing the significant increase in temperature or the emission of flammable gases and / or dangerous.

Use, unless contraindicated, powder extinguishers CO2.

In close proximity to the machine, it must always be prepared, at least one extinguisher of approved type and of sufficient size:

- features and minimum requirements for fire equipment have to be evaluated in relation to the environment where the machine is placed and in relation of the user or users' risk factors.

Features and requirements of fire equipment specified in this U.M.M., are minimal and are not binding and do not release the buyer (in the country of use), from any obligations arising from standard regulations and/or laws, in prevention and fire protection.

The fire equipment must be maintained in efficient and periodically inspected by qualified and authorized personnel, according to the deadlines prescribed by the relevant rule.



Present fire extinguishers must be inspected once every law (in Italy at least every six months).

NOXIOUS EMISSIONS IN CASE OF FIRE

Noxious emissions released from the machine, in case of fire, are caused by the combustion of (non-exhaustive list):

- Paints,
- Textiles,
- Plastic materials
- Electrical equipment in general.
- The precautions are those normal in the event of a fire and dictated by the specific case.

12 SOLUTION TO FAILURES

PROBLEM	CAUSES	ACTION
The autoclave does not turn on	<ul style="list-style-type: none"> ▪ The main switch is off ▪ No power outlet ▪ Faulty cable 	<ul style="list-style-type: none"> ▪ Turn on the power switch ▪ Check the installation ▪ Replace the cable
Loss of water in front of the machine during the cycle	<ul style="list-style-type: none"> ▪ Gasket worn 	Replace the gasket
Presence of water within the chamber at the end of the sterilization cycle	<ul style="list-style-type: none"> ▪ Problem inside the machine 	<ul style="list-style-type: none"> ▪ Contact authorized service centre
Sterilized instruments with spots or rust	<ul style="list-style-type: none"> ▪ Tools are not perfectly dry ▪ Chemical residues on the tools ▪ Tools are not perfectly clean ▪ Tools made of different materials wrapped together ▪ Sterilization chamber not clean ▪ Load water of poor quality - see paragraph "water quality" ▪ Cutters or similar tools not properly wrapped 	<ul style="list-style-type: none"> ▪ Dry thoroughly the tools before the sterilization ▪ Rinse carefully the tools ▪ Clean tools carefully ▪ Place on several trays the tools of different material ▪ Always keep the chamber clean - see paragraph "cleaning and maintenance" ▪ Use water with features referred to paragraph "water quality" ▪ See paragraph "load preparation"
Tools that change colour	<ul style="list-style-type: none"> ▪ Choice of the wrong cycle ▪ Tools fallen in the bottom of the chamber 	<ul style="list-style-type: none"> ▪ Always follow the tools manufacturer's instructions ▪ Ensure the correct conditions to restore load water
The display does not light	<ul style="list-style-type: none"> ▪ Fuse no. 1 burned ▪ Flat cable not connected 	<ul style="list-style-type: none"> ▪ Replace the fuse (identify the cause) ▪ Connect the flat cable
The door will not open.	<ul style="list-style-type: none"> ▪ The device is delivered with the locked door 	<ul style="list-style-type: none"> ▪ Options ▪ Opening door <p>If the door does not open, contact the service center.</p>
Error message on the display	<ul style="list-style-type: none"> ▪ Operating error 	<ul style="list-style-type: none"> ▪ Press the up arrow and down arrow keys simultaneously for at least 20 seconds
To break the cycle	<ul style="list-style-type: none"> ▪ Various reasons 	<ul style="list-style-type: none"> ▪ Press the start button until it beeps
The printer prints only on the left side of paper	<ul style="list-style-type: none"> ▪ Printer setting data lost 	<ul style="list-style-type: none"> • Keep the "Pause" button of printer pressed until the green light goes out. Then start a new cycle

INTERRUPTION OF THE STERILIZATION CYCLE

➤ **VOLUNTARY INTERRUPTION** during the depression phase without introduction of water in the chamber:

1. Acoustic signal with the writing on the display CYCLE INTERRUPTED
2. Opening of the valve of the bacterial filter (no.7). The sterilizer comes to ambient pressure.
3. Starting of the vacuum pump (No.3) and electrovalve drain ignition (no.5) for a few minutes.
4. Opening of the three-way valve (number 6) up to 600 mbar
5. The sterilizer stops and the bacterial filter is activated. At ambient pressure, the door opens automatically and the display will show the message CYCLE INTERRUPTED - LOAD NOT STERILE
6. Press START to remove the warning message.

➤ **LACK OF POWER TO THE STERILIZER:**

1. Acoustic signal with a message on the display showing ALARM a0002 - LOAD NOT STERILE
2. Opening of the valve of the bacterial filter (no.7). The sterilizer reaches the ambient pressure.
3. Starting of the vacuum pump (No.3) and electrovalve drain ignition (no.5) for a few minutes.
4. Opening of the three-way valve (number 6) up to 600 mbar.
5. The sterilizer stops and the bacterial filter is activated. To open the door go in the MENU, OPTIONS and select OPEN DOOR - START -START.
6. The display will show PLEASE WAIT. After a few seconds the door will open.
7. In the event that the sterilizer fails to fall below 600 mbar, e.g. for a pump problem, after 4 minutes the door will open automatically, because the water inside the chamber will already have been eliminated.

➤ **VOLUNTARY INTERRUPTION during the SPECIALcycle1**

1. Acoustic signal with a message on the display showing ALARM CYCLE INTERRUPTED - PLEASE WAIT
2. See points as described above
3. In the event the power failures to work while the sterilizer is being emptied (PLEASE WAIT) and returns the current, the machine returns to the MENU '. It will open the door manually as in step 5.

➤ **VOLUNTARY INTERRUPTION during the SPECIALcycle1 during the sterilization phase**

1. Acoustic signal with a message on the display showing ALARM INTERRUPTED CYCLE-PLEASE WAIT
2. Opening of the valve (no.5) and valve (No.4). the fan starts working. (no. 19).
3. Discharge water up to 1100 mbar
4. Starting of the vacuum pump (No.3) and opening of the valve (number 6) with the creation of vacuum inside the chamber for a few minutes
5. On the display-CYCLE INTERRUPTED LOAD NOT STERILE
6. Door opens automatically when achieving 600mbar.

➤ **VOLUNTARY INTERRUPTION during the SPECIALcycle1 during the drying phase**

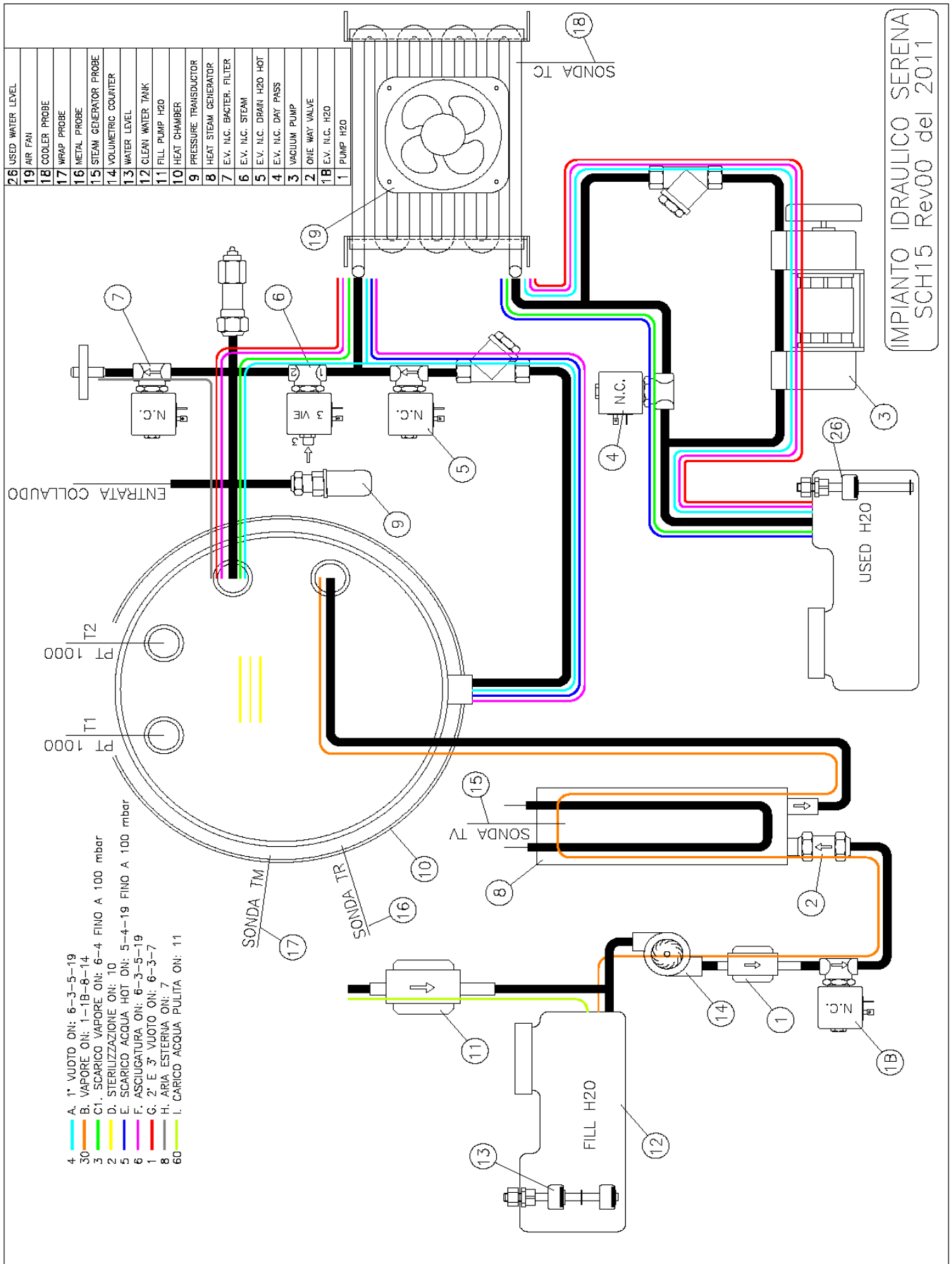
1. Acoustic signal with a message showing on the display CYCLE INTERRUPTED
2. Opening the valve of the bacterial filter (no.7). The sterilizer comes to ambient pressure.
3. Starting of the vacuum pump (No.3) and ignition of the electrovalve drain (no.5) for a few minutes. The fan starts working nr.19).
4. Opening the three-way valve (number 6) up to 60 mbar.
5. The sterilization stops and the bacteriological filter starts working. At ambient pressure, the door opens automatically and the display will read-CYCLE INTERRUPTED LOAD NOT STERILE
6. Press START to remove the warning message.

NOTE: ALL TRANSACTIONS DESCRIBED ABOVE HAVE BEEN STUDIED TO PREVENT RELEASE OF WATER FROM THE STERILIZATION CHAMBER.

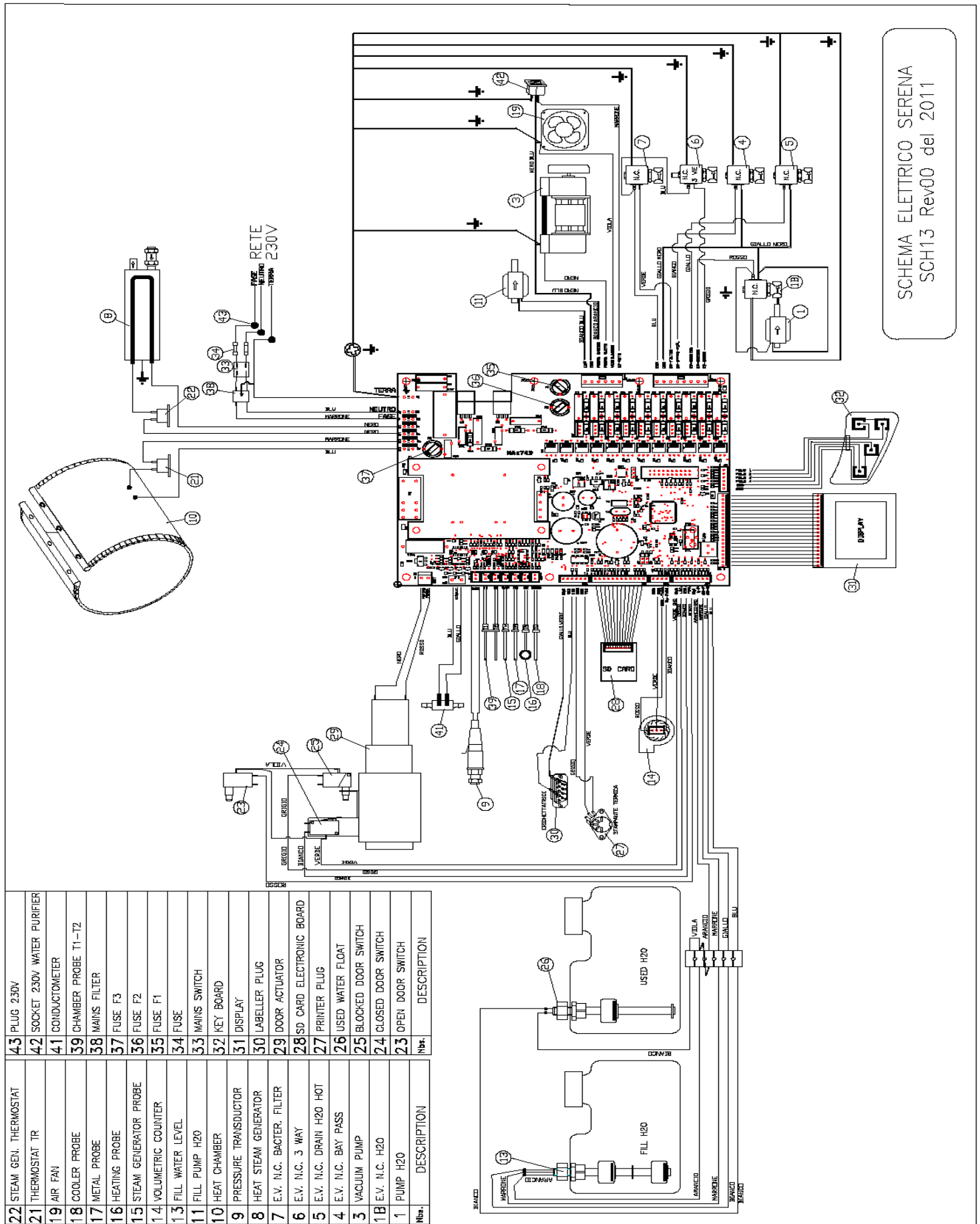
13 TECHNICAL FEATURES		AUTOCLAVE "SERENA"		U.M
		SERENA 18 LT.	SERENA 23 LT.	
<u>STERILIZER:</u>	Max. power consumption	2200	2200	W
	Power sterilization chamber	1250	1250	W
	Working pressure	2,1 – 1,1 3100-2100 (absolute)	2,1 – 1,1 3100-2100 (absolute)	Bar mBar
<u>STEAM GENERATOR:</u>	Electrical power	230 Vca ~ 50Hz monophase – 10 A	230 Vca ~50Hz monophase – 10 A	~
	Max. power consumption	1050/1100	1050/1100	W
<u>STERILIZATION CHAMBER:</u>	Max. pressure	2,1 – 1,1 3100-2100(absolute)	2,1 – 1,1 3100/2100(absolute)	Bar mBar
	Max. temperature	180°	180°	°C
	Voltage	230	230	~
	Max. pressure	2,5 3500 (absolute)	2,5 3500 (absolute)	Bar mBar
	Max. temperature	140°	140°	°C
	Safety valve	2,5 3500 (absolute)	2,5 3500 (absolute)	Bar mBar
	Bacteriological filter	0,027	0,027	µm
	Temperature / Operating humidity	Da +5° a +29° C / 0-90%	Da +5° a +29° C / 0-90%	-
	Max. altitude	2800 slm	2800 slm	m
	Minimum atmospheric pressure	0,5	0,5	Bar
Flexible electric cable length	2	2	m	
Plug power equipment	si	si	-	
Power commands	24	24	V	
Maximum noisiness equipment	62	66	dB	
Total weight (net)	(45) 441,5	(50) 490,5	(Kg) N	
Total weight (gross)	(51) 500,3	(56) 549,4	(Kg) N	
Predominant colour	Varnish RAL 9010	Varnish RAL 9010	-	
<u>DIMENSIONS</u>	Boiler	Ø 236 P. 360	Ø 236 P. 530	mm
	Sterilizer	470x630x400	470x700x400	(LxPxH) mm
	Package	580x760x530	580x760x530	(LxPxH) mm
<u>DISTILLED WATER</u>	Water quality	European standard EN13060 <15 µS/cm	European standard EN13060 <15 µS/cm	-
	Min/max consumption	0,32L/0,57L POROUS LOAD	0,42L/0,62L POROUS LOAD	-

14 APPENDIXES

14.0 HYDRAULIC DIAGRAM

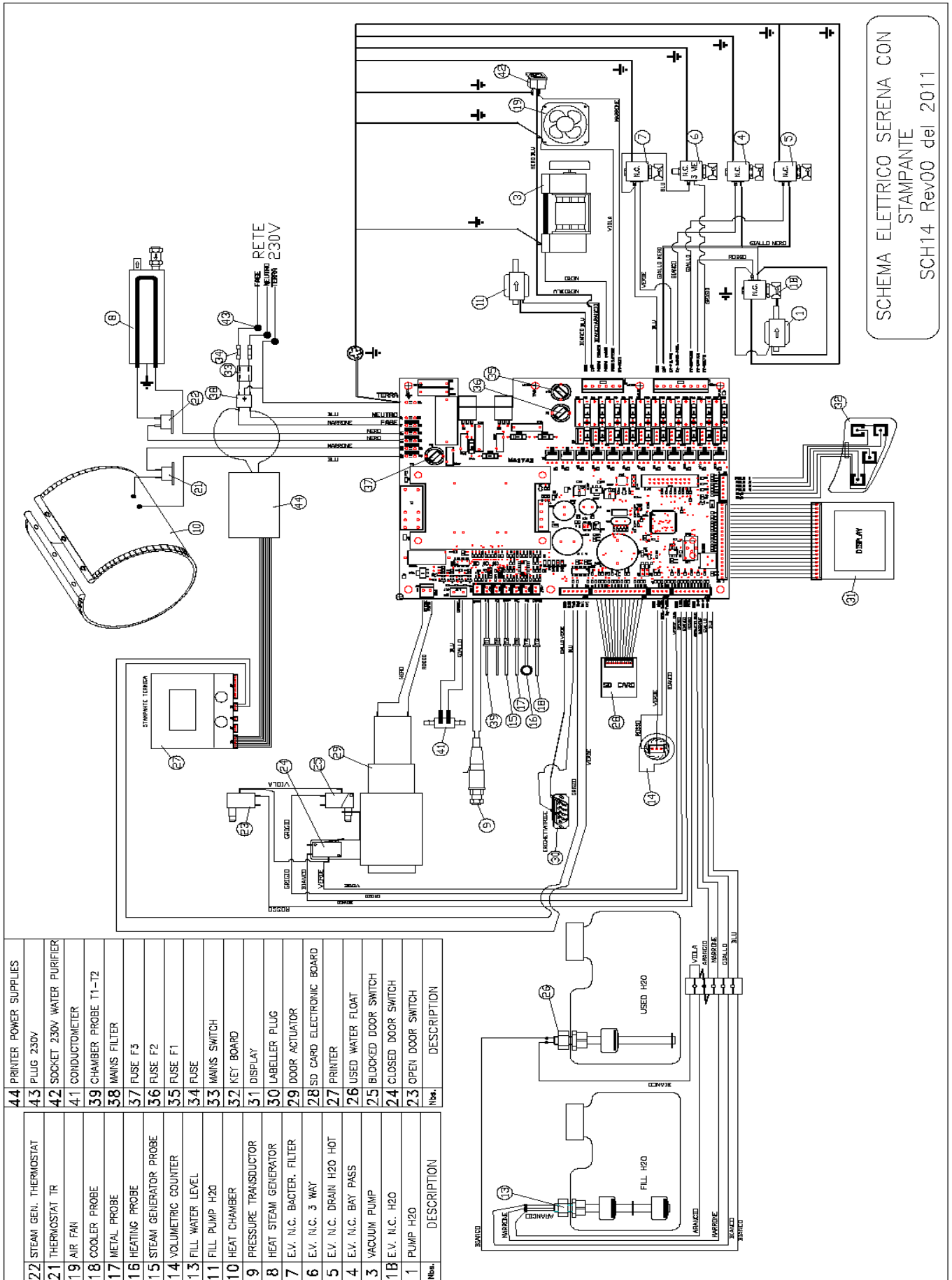


14.1 ELECTRICAL



SCHEMA ELETTRICO SERENA
SCH13 Rev00 del 2011

Nbr.	DESCRIPTION	Nbr.	DESCRIPTION
22	STEAM GEN. THERMOSTAT	43	PLUG 230V
21	THERMOSTAT TR	42	SOCKET 230V WATER PURIFIER
19	AIR FAN	41	CONDUCTOMETER
18	COOLER PROBE	39	CHAMBER PROBE T1-T2
17	METAL PROBE	38	MAINS FILTER
16	HEATING PROBE	37	FUSE F3
15	STEAM GENERATOR PROBE	36	FUSE F2
14	VOLUMETRIC COUNTER	35	FUSE F1
13	FILL WATER LEVEL	34	FUSE
11	FILL PUMP H2O	33	MAINS SWITCH
10	HEAT CHAMBER	32	KEY BOARD
9	PRESSURE TRANSDUCTOR	31	DISPLAY
8	HEAT STEAM GENERATOR	30	LABELLER PLUG
7	E.V. N.C. BACTER. FILTER	29	DOOR ACTUATOR
6	E.V. N.C. 3 WAY	28	SD CARD ELECTRONIC BOARD
5	E.V. N.C. DRAIN H2O HOT	27	PRINTER PLUG
4	E.V. N.C. BAY PASS	26	USED WATER FLOAT
3	VACUUM PUMP	25	BLOCKED DOOR SWITCH
1B	E.V. N.C. H2O	24	CLOSED DOOR SWITCH
1	PUMP H2O	23	OPEN DOOR SWITCH
Nbr.	DESCRIPTION	Nbr.	DESCRIPTION



SCHEMA ELETTRICO SERENA CON STAMPANTE SCH14 Rev00 del 2011

⚠ If the display does not light, check the fuse near the transformer because it could be burned!

14.1.1 NEW SOFTWARE INSTALLATION – PROCEDURE



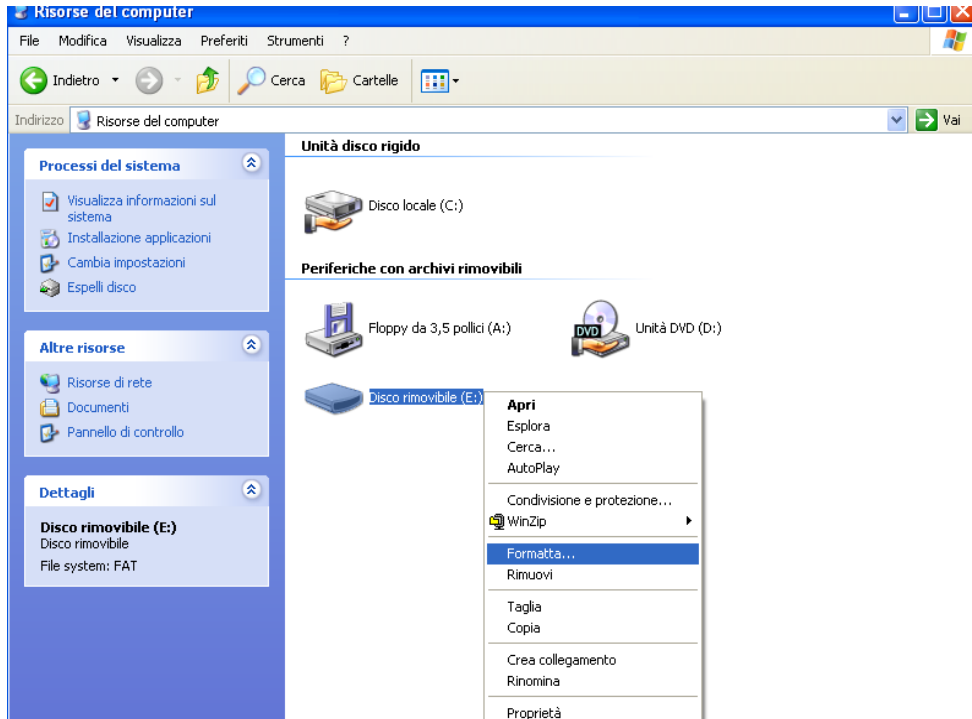
1. Extract the SD card from the sterilizer
2. Save the SD card data on your computer
3. After saving the data, proceed with formatting the SD card (The formatting window must contain FAT 32)
4. Close the formatting
5. The new software will be sent by e-mail, so ensure to open the message in your inbox
6. Save the attachment. A window will open. Save on SD card.
7. Remove the SD card from the computer and move the small button of the SD card on LOCK
8. With the sterilizer OFF, insert the SD card
9. Turn on the sterilizer, making sure to press the power button once .Wait for the acoustic signals end up (bip..bip..bip.....pausebip...bip...bip) and the display lights up.
10. The display turns on automatically when the machine has loaded the new software
11. Wait a few minutes before turning off the machine or start a sterilization cycle.
12. To verify the successful update of the software, check directly on the SD card or control the printing of labels
13. If the software installation is successful, remember to remove from the SD card the LOCK (otherwise the card will not be recorded data sterilization) or insert a new SD card without LOCK.
14. For assistance, call 0039 522 875159 from 8 am to 12.30pm.

FORMATTING SD CARD

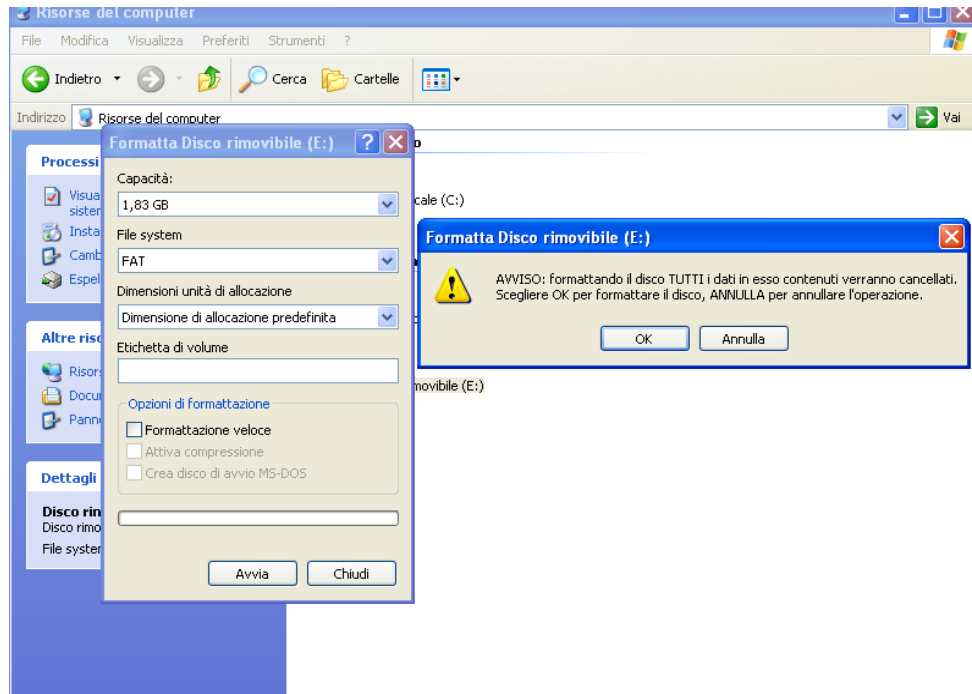


Warning! By formatting the SD card all presented data will be automatically deleted.

After entering the SD card to read, highlight the Removable Disk (E:) and by the right bottom highlight to format. show format



Press START then OK



Once the formatting is complete, is it possible to enter the SD card in the autoclave .To copy a new software or for updates to the same, after formatting, using copy-paste, and copy on a removable disk (E:)



Warning! When you insert a new software or for updates and the SD card is removed, it is important that the machine is turned off After inserting the card, turn on the machine and make sure it does not lack the electrical system for at least one or two minutes

14.2 LABELLING

The following is an example, accompanied by brief description of the labelling that you will find on the device.

COMMERCIAL NAME
MODEL CODE
SERIAL NUMBER
YEAR OF CONSTRUCTION

NOME COMMERCIALE
CODICE MODELLO
NUMERO DI SERIE

ANNO DI COSTRUZIONE

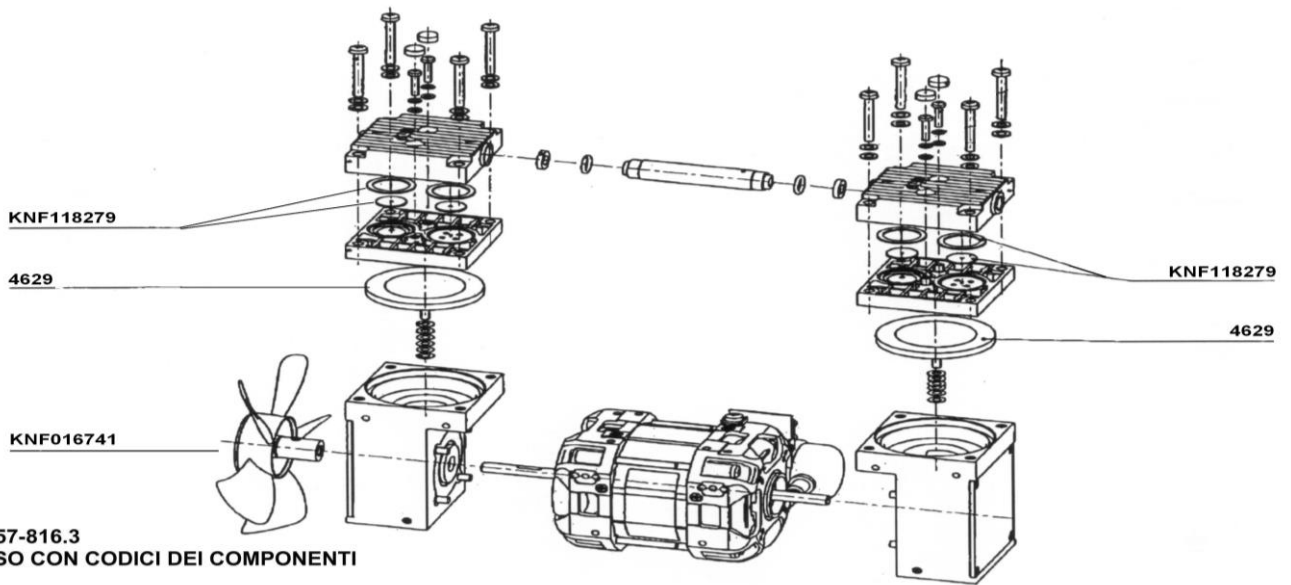
REVERBERI s.r.l. 0051

Via Don Luigi Sturzo, 6
42021 BARCO DI BIBBIANO (RE) ITALY
Tel (0522) 875159 - Fax (0522) 875679

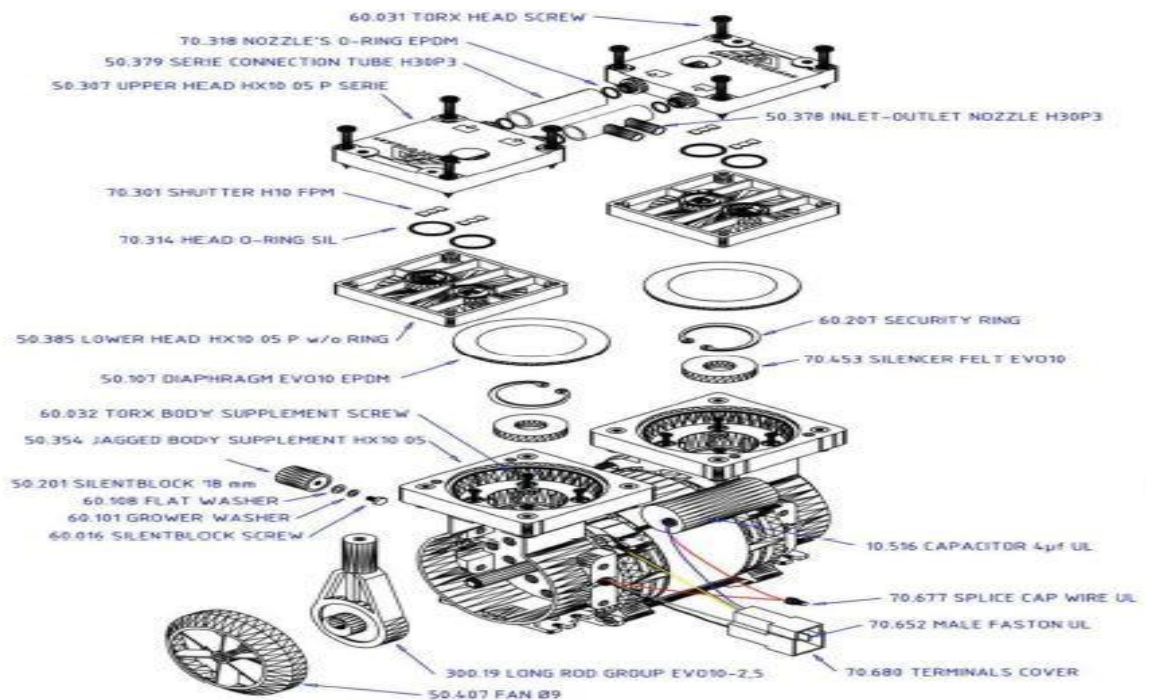
Modello: XXXXXXXXXXXXXXXX
 Articolo: MXXXX/XX/XX
 Matricola: XXYYZZZ
 Alimentazione: 230 Volt ~ 50 Hz
 Potenza:
 Costruita nel: XXXX

14.3 EXPLODED

VACUUM PUMP COD.5104/5237



VACUUM PUMP COD. 6312



14.4 TEST

TEST BOWIE & DICK



IT IS THE SPECIFIC TEST FOR MEASURING THE EFFICIENCY OF STERILIZATION LOADS FOR TEXTILE.
TIME OF TEST

Sterilization phase 3.5.minutes

Drying phase 4 minutes

PERFORMANCE OF THE TEST

- The test should be run with empty chamber but leaving the port trays and all trays inside.
- Place the test package on the lower tray
- Select the program CYCLE B & D / HELIX
- TEST CYCLES -> B & D / HELIX
- At the end of the cycle, remove the test paying attention because it could still be very hot.
- Open the package and remove the chemical indicator. For a correct interpretation of results, follow the instructions of the manufacturer of the test package.

TEST RESULT

The result is positive if all radial strips of the test are toned getting dark.

You should keep STORED all test results in a register.

TEST HELIX



It is 'THE SPECIFIC TEST FOR MEASURING THE EFFICIENCY OF STERILIZATION FOR LOADS OF HOLLOW OBJECTS OF TYPE A

TIME OF THE TEST

Sterilizing Phaseminute

Drying phase ... minutes

Important Note: There are two types on the market of the Helix test. Be sure to purchase one specifically for dentists.

PERFORMANCE OF THE TEST

- The test should be run with empty chamber but leaving the port trays and all trays inside.
- Place a test strip within the capsule and close carefully according to the instructions provided by the manufacturer of the test.
- Select the program CYCLE B & D / HELIX
- At the end of the cycle, remove the test paying attention because it could still be very hot.
- Open the capsule and remove the chemical indicator. For a correct interpretation of results, follow the instructions provided by the manufacturer of the test.

TEST RESULT

The result is positive if the indicator is tacked completely to black.

You should keep STORED all test results in a register.

PROCESS INDICATORS

Class	Description	Precision	Cycle
1	- Tape to close packages Small Tiles-on envelopes		Normal sterilization cycle
2	-Bowie & Dick Specific for porous loads		Appropriate test cycle
3	- Indicators that measure a parameter and monitor only the point where they are located.	2° on temperature 25% on time	Normal sterilization cycle
4	Indicators that measure two parameters, time and temperature.	1° on temperature 15% on time	Normal sterilization cycle
5	Indicators that measure three parameters, time, temperature and humidity.	1° on temperature 15% on time	Normal sterilization cycle
6	Helix-test. Measures three parameters,	1° on temperature 5% on time	Dedicated test cycle
	- Spore Test The spores must be placed inside the chamber. At the end of the sterilization cycle they must return to the chamber temperature and incubated for at least two days. Incubation of spores can take place directly in the sterilizer Serena using the appropriate SPORE TEST cycle		Normal sterilization cycle

The indicators specified above should be used at each sterilization cycle

The belonging class is written on the packaging of the indicator

Test results should be archived and stored

If the tone is not correct, repeat the test. Contact the technical support if the tone is still wrong.

ISO 11140-1

SERENA 18 ONLY B CYCLE Ver. 027					SERENA 23 ONLY B CYCLE Ver. 027				
S/N	000000				S/N	000000			
Nr.CYCLE	0000				Nr.CYCLE	0000			
CYCLE:	HELIX - BOWIE & DICK				CYCLE:	HELIX - BOWIE & DICK			
OPERATOR CODE	04				OPERATOR CODE	04			
DATE	00-00-00				DATE	00-00-00			
TIME	00:00:00				TIME	00:00:00			
PHASE	TIME	TøC	P mbar		PHASE	TIME	TøC	P mbar	
START	00:00:03	108.2	960		START	00:00:03	27.3	967	
VAC1	00:03:45	106.2	138		VAC1	00:04:21	35.4	144	
P1	00:04:09	111.5	1315		P1	00:10:22	102.2	1323	
VAC2	00:07:08	105.6	139		VAC2	00:17:16	62.0	168	
P2	00:07:56	113.9	1301		P2	00:20:58	106.0	1304	
VAC3	00:11:27	98.5	139		VAC3	00:28:28	67.2	172	
PPH	00:11:43	102.2	1004		PPH	00:31:06	98.2	1002	
STRs	00:15:45	137.0	3254		STRs	00:38:45	136.3	3277	
MINt	00:17:42	135.8	----		MINt	00:39:50	136.2	----	
MAXt	00:15:47	137.1	----		MAXt	00:39:06	136.6	----	
MINp	00:17:39	----	3085		MINp	00:40:02	----	3265	
MAXp	00:15:47	----	3256		MAXp	00:40:54	----	3299	
STRe	00:19:15	136.7	3180		STRe	00:42:15	136.4	3286	
DRYs	00:19:15	136.7	3181		DRYs	00:42:15	136.4	3286	
D00	00:20:47	121.3	1099		D00	00:44:19	104.8	1095	
D01	00:21:09	115.5	498		D01	00:44:41	89.9	498	
D02	00:23:45	111.4	901		D02	00:46:55	72.5	901	
DRYe	00:24:15	109.0	609		DRYe	00:47:15	70.2	687	
CYCLE OK					CYCLE OK				

14.5 SCHEDULED MAINTENANCE COUPONS

	<p>FOR THE AUTHORIZED TECHNICIAN SPARE PARTS KIT SERENA</p>	Form 93/D
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To activate the warranty of the equipment and the proper functioning of the same, in addition to the bulletin installation, it is necessary to perform the scheduled maintenance. In this respect below you will find coupons for periodic maintenance. For every action made by you, the coupon at the bottom must be completed and returned to us, .

SCHEDULED MAINTENANCE WITHIN THE FIRST 1000 CYCLES

WITHIN THE FIRST 1000 CYCLES	<p>Coupon within the first 1000 cycles:</p> <p>Check if the daily maintenance are run and run following:</p> <ul style="list-style-type: none"> ✓ Cleaning the door ✓ Cleaning of the chamber, trays and port trays ✓ Check that the water used is distilled, clear and not recycled ✓ Check the quality of the water with the appropriate tool ✓ Check that the clean water tank is in a good condition and that inside there is clear water without algae and other impurities ✓ Replace the door gasket and check the regulation ✓ Replace the bacteriological filter ✓ Check the integrity of cables and plugs ✓ Check the metal filter inside the chamber ✓ Lubrication the locking system ✓ Replace the door pin
-------------------------------------	---

Please complete and mail to our address or fax number 0039 (0) 522 875579. Thank you.


COUPON WITHIN 1000 CYCLES

Date..... Serial Number.....

Model of autoclave.....At the studio of

Address:

Post Code: City:

<p>.....</p> <p>STAMP AND SIGNATURE OF THE STUDIO</p>	<p>.....</p> <p>STAMP AND SIGNATURE OF THE TECHNICIAN</p>	 Via Don Luigi Sturzo, 6-42021 BIBBIANO (Reggio Emilia) ITALY
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FOR THE AUTHORIZED TECHNICIAN
SPARE PARTS KIT
SERENA

SCHEDULED MAINTENANCE WITHIN TWO YEARS OR 2000 CYCLES

Coupon on Payment:

	QUANTITY	CODE	COMPONENTS DESCRIPTION	REPLACED	REVISED	CONTROLLED
WITHIN 2000 CYCLES	4 per 5104 6 per 5237	KNF118279	Gasket vacuum pump cod.5104/5237	<input type="checkbox"/>		
	1	E90056	Kit vacuum pump cod.6312	<input type="checkbox"/>		
	1	5695	Vaporizer group			<input type="checkbox"/>
	1	5104 5237 6312	Vacuum pump / Vacuum pump / Vacuum pump	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
	1	3028	Discharge electro valve			<input type="checkbox"/>
	1	3246	3-ways electro valve			<input type="checkbox"/>
	1	3028	Purifier electro valve			<input type="checkbox"/>
	1	5158	Door micro switch			<input type="checkbox"/>
	1	5040	Door pin	<input type="checkbox"/>		
		Registration and control door pressure				<input type="checkbox"/>
		Replacement water filter		<input type="checkbox"/>		
		Cleaning tanks				<input type="checkbox"/>
		Lubrication door plug				<input type="checkbox"/>
		Control actuators				<input type="checkbox"/>
		Control temperature parameters / pressure and test cycles				<input type="checkbox"/>
		Control metallic filter inside the chamber				<input type="checkbox"/>
		Electrical safety test				<input type="checkbox"/>
		Replacement of SAFETY THERMOSTATS of the heaters		<input type="checkbox"/>		
		Check if the daily maintenance are performed, such as: <ul style="list-style-type: none"> ✓ Cleaning the door ✓ Cleaning of the chamber, trays and port trays ✓ Check that the water used is distilled, clear and not recycled ✓ Check the quality of the water with the appropriate tool ✓ Check that the clean water tank is in a good condition and that inside there is clear water without algae and other impurities ✓ Replace the door gasket and check the regulation ✓ Replace the bacteriological filter ✓ Check the integrity of cables and plugs ✓ Check the metal filter inside the chamber ✓ Lubrication the locking system ✓ Replace the door pin 				
	<i>Send a copy of the revised delivery note to the manufacturer.</i>					

Please complete and mail to our address or fax number 0039 (0)522 875579 Thank you.


COUPON WITHIN 2000 CYCLES OR TWO YEARS

Date..... Serial Number.....

Model of autoclave.....At the studio of

Address:

Post Code: City:

<p>..... STAMP AND SIGNATURE OF THE STUDIO</p>	<p>..... STAMP AND SIGNATURE OF THE TECHNICIAN</p>	 <p>Via Don Luigi Sturzo, 6 42021 BIBBIANO (Reggio Emilia) ITALY</p>
--	--	---

FOR THE AUTHORIZED TECHNICIAN
SPARE PARTS KIT
SERENA

SCHEDULED MAINTENANCE WITHIN 4000 CYCLES

Coupon on Payment:

Quantity	Code	Components description	REPLACED	REVISED	CONTROLLED
1	5695	Vaporizer group	<input type="checkbox"/>		
1	5104 5237 6312	Vacuum pump/ Vacuum pump/ Vacuum pump	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
1	3028	Discharge electro valve			<input type="checkbox"/>
1	3246	3-ways electro valve			<input type="checkbox"/>
1	3028	Purifier electro valve	<input type="checkbox"/>		
1	5158	Door micro switch			<input type="checkbox"/>
1	5040	Door pin	<input type="checkbox"/>		
Registration and control door pressure					<input type="checkbox"/>
Replacement water filter			<input type="checkbox"/>		
Cleaning tanks					<input type="checkbox"/>
Lubrication door plug					<input type="checkbox"/>
Control actuators					<input type="checkbox"/>
Control temperature parameters / pressure and test cycles					<input type="checkbox"/>
Control metallic filter inside the chamber					<input type="checkbox"/>
Electrical safety test					<input type="checkbox"/>
Replacement of SAFETY THERMOSTATS of the heaters			<input type="checkbox"/>		
Check if the daily maintenance are performed, such as: <ul style="list-style-type: none"> ✓ Cleaning the door ✓ Cleaning of the chamber, trays and port trays ✓ Check that the water used is distilled, clear and not recycled ✓ Check the quality of the water with the appropriate tool ✓ Check that the clean water tank is in a good condition and that inside there is clear water without algae and other impurities ✓ Replace the door gasket and check the regulation ✓ Replace the bacteriological filter ✓ Check the integrity of cables and plugs ✓ Check the metal filter inside the chamber ✓ Lubrication the locking system ✓ Replace the door pin 					
<i>Send a copy of the revised delivery note to the manufacturer.</i>					

WITHIN 4000 CYCLES

Please complete and mail to our address or fax number 0039 0522 875579 Thank you.

COUPON WITHIN 4000 CYCLES

Date..... Serial Number.....

Model of autoclave.....At the studio of

Address:

Post Code: City:



Via Don Luigi Sturzo, 6
42021 BIBBIANO (Reggio Emilia) ITALY

.....
STAMP AND SIGNATURE OF THE STUDIO

.....
STAMP AND SIGNATURE OF THE TECHNICIAN

FOR THE AUTHORIZED TECHNICIAN
SPARE PARTS KIT
SERENA

SCHEDULED MAINTENANCE WITHIN 6000 CYCLES

Coupon on Payment:

QUANTITY	CODE	COMPONENTS DESCRIPTION	SUBSTITUTED	REVISED	CONTROLLED
4 per 5104 6 per 5237	KNF118279	Gasket vacuum pump cod.5104/5237	<input type="checkbox"/>		
2 per 5104 3 per 5237	KNF052066	Membrane vacuum pump cod.5104/5237	<input type="checkbox"/>		
1	E90056	Kit vacuum pump cod.6312			
1	5695	Vaporizer group	<input type="checkbox"/>		<input type="checkbox"/>
1	5104 5237 6312	Vacuum pump / Vacuum pump / Vacuum pump			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1	3028	Discharge electro valve	<input type="checkbox"/>		
1	3246	3-ways electro valve	<input type="checkbox"/>		
1	3028	Purifier electro valve			<input type="checkbox"/>
1	5158	Door micro switch	<input type="checkbox"/>		
1	4361	Fan 18 lt.	<input type="checkbox"/>		
1	5741	Fan 23 lt.	<input type="checkbox"/>		
1	5125	Pressure transducer	<input type="checkbox"/>		
1	3028	Bacteriological filter electro valve			<input type="checkbox"/>
1	3028	Bypass electro valve			<input type="checkbox"/>
1	5804	Temperature sensors T1 and T2			<input type="checkbox"/>
1	5244	Discharge pipes			<input type="checkbox"/>
1	5279	Batteries electronic card mod. CR2032	<input type="checkbox"/>		
1	5040	Door pin	<input type="checkbox"/>		
Registration and control door pressure					<input type="checkbox"/>
Replacement water filter			<input type="checkbox"/>		
Cleaning tanks					<input type="checkbox"/>
Lubrication door plug					<input type="checkbox"/>
Control actuators					<input type="checkbox"/>
Control temperature parameters / pressure and test cycles					<input type="checkbox"/>
Control metallic filter inside the chamber					<input type="checkbox"/>
Electrical safety test					<input type="checkbox"/>
Replacement of SAFETY THERMOSTATS of the heaters			<input type="checkbox"/>		
Check if the daily maintenance are performed, such as: <ul style="list-style-type: none"> ✓ Cleaning the door ✓ Cleaning of the chamber, trays and port trays ✓ Check that the water used is distilled, clear and not recycled ✓ Check the quality of the water with the appropriate tool ✓ Check that the clean water tank is in a good condition and that inside there is clear water without algae and other impurities ✓ Replace the door gasket and check the regulation ✓ Replace the bacteriological filter ✓ Check the integrity of cables and plugs ✓ Check the metal filter inside the chamber ✓ Lubrication the locking system ✓ Replace the door pin 					
Send a copy of the revised delivery note to the manufacturer. IMPORTANT! AFTER 6000 CYCLES, CONTACT THE MANUFACTURER FOR THE FUTURE MAINTENANCE.					

WITHIN 6000 CYCLES

Please complete and mail to our address or fax number 0039 (0) 522 875579 Thank you.

COUPON WITHIN 6000 CYCLES

Date..... Serial Number.....

Model of autoclave.....At the studio of

Address:

Post Code: City:




Via Don Luigi Sturzo, 6
42021 BIBBIANO (Reggio Emilia) ITALY

.....
STAMP AND SIGNATURE OF THE STUDIO

.....
STAMP AND SIGNATURE OF THE TECHNICIAN

14.6 FORM TO FILL IN FOR THE RETURN OF THE EQUIPMENT

 REVERBERI ARNALDO S.R.L Via Don Luigi Sturzo n°6 42021 Barco di Bibbiano Reggio Emilia – ITALY Tel. 0039 522 875159 Fax. 0039 522 875159 E-mail: reverberisrl@gmail.com Numero REA: 180051 C.C.I.A.A di Reggio Emilia Partita IVA, Codice Fiscale e reg. imprese di R.E. 01363800358	FORM FOR THE RETURN FOR THE REPARATION OF AUTOCLAVES MODEL: SERENA ELEVA SUPRA	Mod. 94/B To be filled by the technician or an authorized person
---	---	--

Autoclave model	Serial Number
Purchase Invoice Nbr.....	Dated

REASON FOR RETURN TO THE MANUFACTURER:

<input type="checkbox"/> REPAIR FEE	<input type="checkbox"/> EXTRAORDINARY MAINTENANCE WITH SAFETY TESTING (According to regulation EN61010)
<input type="checkbox"/> PERIODIC INSPECTION (According to regulation EN 13060)	<input type="checkbox"/> OTHER.....

PROBLEM FOUND: Which message appears on the display?

.....

ISTRUZIONI FOR THE RETURN OF THE AUTOCLAVE :

1. Please send us this form filled out by fax to the number 0039 522 875579 before sending back the machine and please wait for our authorization to proceed to the shipment that must be by your carrier at your charge.
2. Unauthorized or not agreed shipments won't be accepted.
3. Before sending back the machine, please provide to empty the tanks of used and clean water, remove trays and trays-holder and keep them with you.
4. The autoclave must be sent back packed in its original package. Otherwise, please provide for a suitable packing preferably on a pallet for handling with pallets trucks.
5. If the autoclave sent back to us is not properly cleaned and disinfected, will be charged additional costs of € 50,00.
6. The intervention on the machine will follow our internal protocol provided by the internal quality system and, it includes a control and a possible upgrade for a perfect sterilization.
7. After taking vision of the machine, will be sent you a detailed quote. It can be accepted within 7 days from the date of issue, after this period of time, it will be considered tacitly rejected and the machine will be sent back to you NOT REPAIRED at your charge, with the payment of the amount specified below by cash on delivery (C.O.D against documents).
8. In case of Non-acceptance of the quote, we will proceed to invoicing €120,00 as contribution of the analysis costs and managing of the appliance.
9. Requests for machines in loan use, will be carried out according to availability and, with a monthly charge for the use of € 60,00.
10. Standard repairs time : 3 weeks.
11. Urgent repairs time: 7 working days with a supplement of 50,00€ for the urgency.

***The prices mentioned above are NET.**
*** Please note: any unforeseen events that may occur during repair (not foreseen in the quotation) will be quantified at the time of invoicing.**

ACCEPTANCE OF THE REPAIR AND WAITING FOR THE QUOTE **WAIVING REPAIR**

Date: Stamp and signature

14.7 WARRANTY CERTIFICATION



WARRANTY CERTIFICATION

Hereby certify the correct construction of the equipment.

The device that within the warranty period manifests irregularities in the running for manufacturing defects will be repaired at the sole discretion of the house.

The sterilization chamber is covered by a period of 60 months from date of purchase and must be evidenced by returning the attached coupon, duly stamped and signed by the technician who took part to the installation course.

In case of dispute will be valid the delivery note / sale invoice or delivery invoice.

The electric and electronic parts, screws, are guaranteed for a period of 12 months.

The warranty is limited to the replacement or refurbishment of spare parts or parts that prove defective manufacturing, excluding expenses, or call.

Any particular replaced must be returned prepaid. Any piece that is not returned will be billed to the payer.

THE WARRANTY IS NO MORE VALID:

- 1. If the equipment is repaired, modified or tampered with by the purchaser or unauthorized third parties.**
- 2. If the customer does not perform the proper and constant maintenance on this manual.**
3. If the buyer does not talk to the dealer or authorized service centre.
4. After 24 months from date of purchase proven by the sales document.
5. After 2000 cycles.
6. If the customer delays or suspends payments.
7. If the equipment shows damages caused by exposure to fire, spilled liquids, natural disasters, falls, however, causes not attributable to manufacturing defects.
8. If the guarantee has been not duly completed, signed and returned in a timely manner.
- 9. If the customer makes improper use of the equipment, does not administer the ordinary maintenance or neglects elements principles of good maintenance.**

14.8 VARIOUS FORMS

Codes operators table

STUDIO..... DOC.INT.NR.....

Responsible of the Studio Doct.....

Operator Code	Operator name	Date of assignment
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		

Control System Table

STANDARD IEC 61010-2-040:2005

FUNCTIONS	FIGURES THAT CAN PERFORM THE FUNCTION	SIGNATURE
START OF THE OPERATIVE CYCLE	OPERATOR
SELECTION OF THE OPERATIVE CYCLE	OPERATOR / SUPERVISOR
MODIFICATION OF THE PARAMETERS OF THE OPERATION CYCLE	OPERATOR / SUPERVISOR
MANUAL ADVANCEMENT THROUGH THE OPERATING CYCLE	NOT APPLICABLE
MAINTENANCE	TECHNICIANS WITH TRAINING
OPERATING CYCLE PROGRAM UPDATE	MANUFACTURER OR AGENT

15 DECLARATION OF INSTALLATION

WARRANTY CERTIFICATE AND STATEMENT OF SERVICE INSTALLATION

INSTALLATION DATE

Technical course of installation, repair and maintenance

The technician who has carried out the installation of the sterilizer has previously attended the technical course and has been authorized by the manufacturer's for the installation and repair of such equipment

Installation according to the manual of use and maintenance

The technician who has carried out the installation of the sterilizer claims to have complied with all conditions that allow the correct installation of the device according to the use and installation manual.

Instruction to the user, functioning and maintenance

The technician further declares to have properly instructed the user on the functioning of the machine with the support of the instruction manual and he declares to have explained the timing of scheduled and daily maintenance. See paragraph 11 MAINTENANCE.

Instructions to the user on the warranty conditions

The technician has also shown the warranty conditions as described in the use and maintenance manual.

Warranty form

The technician declares to have attached to this form the warranty model, which has been carefully filled in.

WARRANTY CERTIFICATION



EQUIPMENT:

Incollare etichetta matricola

The undersigned dealer certifies that the warranty conditions have been read and that the autoclave has been delivered and operated in accordance with the provisions of the manufacturer.

Installation date:..... To the Doct:

Address:Post Code

City:Country.....

STAMP AND SIGNATURE OF THE DEALER

STAMP AND SIGNATURE OF THE DOCTOR/MANAGER

To be completed by the technician who has made the installation of sterilizer according to the DDM 93/42/CE replaced by Directive 2007/47/CE-D.lgs. 25.01.2010 n°37, attachment I. Copy for the medical.

15 DECLARATION OF INSTALLATION WARRANTY CERTIFICATE AND STATEMENT OF SERVICE INSTALLATION

Copy to be sent to manufacturer.

INSTALLATION DATE

Technical course of installation, repair and maintenance

The technician who has carried out the installation of the sterilizer has previously attended the technical course and has been authorized by the manufacturer's for the installation and repair of such equipment

Installation according to the manual of use and maintenance

The technician who has carried out the installation of the sterilizer claims to have complied with all conditions that allow the correct installation of the device according to the use and installation manual.

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Instructions to the user on the warranty conditions

The technician has also shown the warranty conditions as described in the use and maintenance manual.

Warranty form

The technician declares to have attached to this form the warranty model, which has been carefully filled in.

WARRANTY CERTIFICATION



EQUIPMENT:

Incollare etichetta matricola

The undersigned dealer certifies that the warranty conditions have been read and that the autoclave has been delivered and operated in accordance with the provisions of the manufacturer.

Installation date:..... To the Doct:

Address:Post Code

City:Country.....

STAMP AND SIGNATURE OF THE DEALER

STAMP AND SIGNATURE OF THE DOCTOR/MANAGER

To be completed by the technician who has made the installation of sterilizer according to the DDM 93/42/CE replaced by Directive 2007/47/CE-D.lgs. 25.01.2010 n°37, attachment I. Copy to be sent to manufacturer.