1994/2024 30 YEARS
SPECIALIST IN ULTRASONIC CLEANING WITH QUALITY AND DESIGN MADE IN ITALY

SONICA®

MADE IN ITALY

SONICA SOUNDS BETTER.
NEW DESIGN, NEW TECHNOLOGY, NEW LIFE.

Serie: SONICA® S3

Version: M - M D - MH - MH D - ETH - EP - iETH - iEP

(I) MANUALE DI ISTRUZIONI (F) MANUEL D'INSTRUCTIONS (GB) INSTRUCTION MANUAL
(E) MANUAL DE INSTRUCCIONES (D) BETRIEBSANLEITUNG

SOLTEC®
SOLUZIONI TECNOLOGICHE

ENGLISH

The SONICA® ultrasonic units allow various types of objects to be cleaned safely and easily.
The small size of these units means that they can be placed directly on the work surface and fulfil various requirements.

General features of the units

- Simple and easy-to-read controls.
- High working frequency.
- Low noise levels.
- High power ultrasound generators.
- Wide choice of models with 1.9 to 130 litres capacity.
- Heating temperature and cleaning time control by microprocessor (only for ETH and EP series)

Serie M - M D

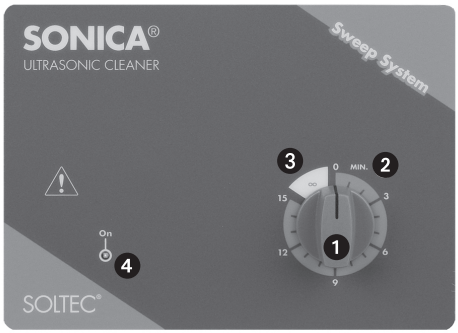


Fig.1

Serie ETH

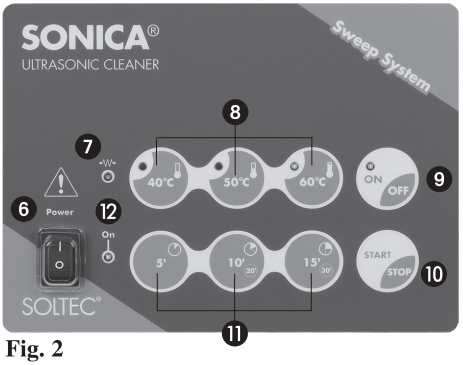


Fig. 2

Serie MH - MH D

Fig. 3

Serie EP

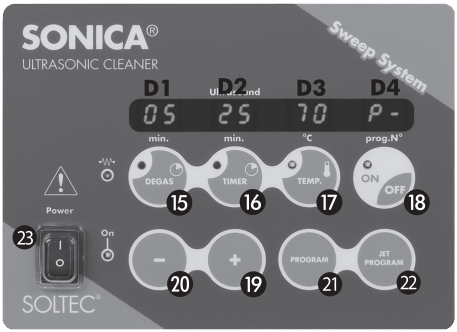


Fig. 4

Fig.5

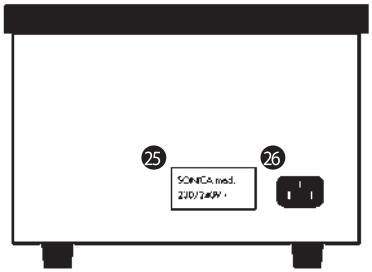


Fig. 6

Warranty
The information contained in this manual may be changed without prior notice.

SOLTEC® S.r.l. declines responsibility for errors in the manual, for accidental damage or that caused by the supply, performances or use of this equipment. This product is guaranteed against material and manufacturing defects for twenty four months from the date of purchase of the product according to the clauses of the warranty certificate provided.
In the event of a fault occurring in the unit during the warranty period, the firm SOLTEC® S.r.l. may decide whether to repair or replace the product found to be defective.

Work during the warranty period
For work or repairs under guarantee, this unit must be sent to SOLTEC® S.r.l. via the retailer. The warranty does not cover technical staff, transfer costs, nor costs of despatch or transport risks, which are to be borne by the purchaser. The purchaser shall in all cases bear the despatch costs, including duties, of products sent to SOLTEC® S.r.l. from another country.

Warranty restrictions
The warranty covers replacement or repair of the components recognised as being unsuitable due to manufacturing defects, inclusive of the necessary labour.
The above is not applicable to faults caused by improper or inadequate maintenance or use by the customer, by unauthorised changes made to the unit, by the use of the product in environmental conditions other than those specified in this manual for said product or by inadequate preparation of the installation area. No compensation shall be payable during the period of time required for replacement or repair of the unit.
Replacement shall in any case be decided solely by the manufacturer and only in the event of the unit being ascertained as wholly unsuitable and impossible to repair.
Compensation of direct or indirect damages of whatsoever kind to persons or property due to the use or non-use of the unit shall not be due.

Safety
In order to retain the original safety features of the product, the customer must not replace any part thereof nor make unauthorised changes.

WARNING

This symbol draws attention to one or more procedures whose partial or complete non-observance may cause partial or total damage to the product or injure the operator. Before carrying out the procedures indicated after this symbol, make sure the conditions specified have been fully understood and observed.

Safety symbols:

- Symbol of the instructions manual. Consult the manual to avoid any damage to the product or injury to the operator.

- High voltage symbol. Do not open or tamper with the device. Live electric parts inside the unit.

INDEX:

Chapter 1

INTRODUCTION

Dear customer,
First we wish to thank you for having chosen a SONICA® ultrasonic unit, produced by the firm SOLTEC® of Milan. All SONICA® ultrasonic cleaning units are totally reliable and every component has been designed and produced to ensure top performances at all times.
Please complete the Warranty Certificate, enclosed with the instruction manual, read it carefully and send it off immediately.
In this way you can benefit from a twelve-month warranty as from the purchase date, according to the terms stated in the certificate. This instruction manual is an essential part of Sonica equipment. It contains important information about installation and operation security, maintenance and use. This instruction manual should always accompany Sonica equipment, an erroneous installation or use may cause damage to people, animals or things. Soltec may not be considered responsible for damage caused by improper use or installation.

ELECTRICAL CONNECTION

Before plugging in the unit to the power socket, check that the voltage indicated on the rating plate, attached to the rear of the unit (㉕), corresponds to that of your work place. (See Fig. 6).

Earthing of the unit is compulsory by law. Any deliberate cutting of the earth wire inside or outside the unit or removal of the earth terminal from the plug is forbidden in that the unit becomes hazardous.

The manufacturer declines all responsibility in respect to persons or things arising from failure to observe this rule. The electrical safety of this unit is only guaranteed when it is correctly connected to an effective earthing system, as provided by current electrical safety laws.
If you do not have an electrical system with proper earthing, do not connect the unit to the socket and consult a specialist electrician as soon as possible.

WARNING

This unit requires earthing.

BEFORE STARTING UP THE UNIT

WARNING

Before switching on the unit, pour water and washing liquid into the stainless steel tank until a maximum level of 3 cm from the upper edge of the tank.

Make sure that the electric socket has been disconnected before filling the tank. Any accidental leakage of liquid could cause a short circuit or electrocution and would therefore be dangerous for the operator.

Check that the unit has not been damaged. Do not use units which have been damaged during transport; if in doubt consult the retailer or the manufacturer directly.

Install the unit on a flat and stable surface, capable of bearing the weight of the unit, the tools or objects which are placed inside for washing and the relevant liquid. Handle it with care.

Install the ultrasonic cleaning unit away from sources of heat. Also ensure that it is not installed near sources of moisture, on wet work surfaces or near dust sources.

Make sure that the feet of the unit are correctly positioned to ensure circulation of air.

Do not start up the unit if: the power cable or plug has been damaged, the unit does not operate properly, it has been damaged or if it has fallen.
In these circumstances there is the risk of electric shock, fire or other accidents. Do not attempt to adjust the unit personally, but instead contact only technical specialists or the manufacturer.

Do not immerse the power supply cable or plug into the water. Keep the power supply cable away from hot surfaces.

Do not allow the supply cable to hang from the edges of tables or furniture units.

Do not leave or use this unit outdoors.

Do not under any circumstances tamper with the electronic system of the ultrasonic cleaning unit as there is the risk of electric shock. For any repairs always contact the after-sales service of the manufacturer.

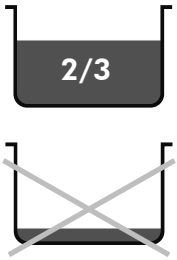
Do not replace the power supply cable. If the cable is damaged through wear and tear, or other reasons, switch off the unit immediately and contact the assistance service.

Do not lift and carry the unit when it is full of liquid. The handles have been designed exclusively for lifting and carrying the unit only when it is empty and disconnected from the supply socket.

WARNING

This ultrasonic cleaning unit only operates with water or detergents for ultrasonic treatments recommended by the manufacturer.
Only pour the quantity of liquid required for washing. **Do not use acid or highly alkaline** solutions such as sodium hypochlorite as these substances, coming directly into contact with the steel tank, cause a series of microscopic holes which are irreparable and above all of hazardous consequences for the operation of your unit. All acid substances or those alkaline substances which may release corrosive compounds such as chloride or other chemical compounds, or disinfecting substances with a glutaraldehyde base, used together with strong ultrasonic cavitation, cause highly accelerated corrosion even in stainless steel.
If you must necessarily use substances which could damage the steel tank, use glass or plastic beakers. Remember that hydrofluoric acid breaks glass beakers and that its use is highly dangerous for your health.
Remember that any acid particles, micronised by intense ultrasonic cavitation, are dispersed in the work area, **corroding your equipment and damaging your health too.**
Do not use substances such as petrol, benzol or benzene, or other harmful or explosive or flammable solvents. Only use solutions suitable for the type of work to be performed.
To prevent damage to the ultrasonic cleaner, change the solution regularly, don't operate the cleaner dry, don't place parts or containers directly on the bottom of the cleaning tank; use a tray or wire to suspend items. Failure to comply may cause transducer damage and will null and void your warranty.
Don't allow the solution to drop more than 1 cm below the operating level line with heat or ultrasonics on. Failure to comply may cause transducers and/or heater damage and will null and void your warranty.

Important instructions for use of the ultrasonic cleaning unit



Before switching on the unit pour water and washing liquid into the stainless steel tank until a maximum level of 3 cm from the upper edge of the tank; if the version of your unit is equipped with liquid drain device, check that the tap is fully turned off.
In this way accidental leakage of liquid substances will be avoided.
Always check the level of liquid so that it does not go below 2/3 of the total height of the tank.
If this should happen, the heating element, ultrasonic transducers and the electronic circuit could suffer serious damage.

Do not place your hands in the tank during operations.

Aggressive liquids which could damage the tank should be placed in a special beaker which is then placed in the tank containing water which transmits the ultrasonic waves to the beaker and hence to the solution it contains. Remember not to rest the glass beaker on the bottom of the tank; a special perforated support for these glass containers is available.
Only use this unit for professional use as described in this manual and for the purpose for which it has been designed. This unit has been designed for washing and detaching surplus materials from instruments, prostheses, drills, probes, forceps, metal objects and metal parts in general, objects and test-tubes in glass, crystals, stones and archaeological objects, rings, spectacles, parts which are difficult to reach by hand etc.
The SONICA® cleaning units also provide ideal solutions for emulsion, accelerating chemical reactions, mixing solutions, degassing liquids, decontamination and for dissolving sediments.

Chapter 2

CONTROL PANEL AND DESCRIPTION OF SYMBOLS

Fig. 1 Front panel of SONICA® models in the M - M D series (manual)
❶ Timer/Switch knob.
❷ MIN symbol (cleaning time in minutes)
❸ ∞ Symbol (infinite cleaning time)
❹ "ON" pilot light indicating switching on of the unit.

Fig. 2 Front panel of the SONICA® models in the ETH (electronic timer and heating) series

❻ Main Switch (power)
❼ Heating resistor “On/Off” red pilot light.
❽ Dip temperature programming buttons, 40°- 50°- 60°C
❾ Heating “On/Off” button
❿ Ultrasounds “Start/Stop” button.
⓫ Cleaning times programming button, 5’-10’-15’-20’min.
⓬ Unit “On” green pilot light

Fig. 3 Front panel of the SONICA® models in the MH - MH D series

⓮ Heating on/off switch
❶ Timer/Switch knob.
❷ MIN symbol (cleaning time in minutes).
❸ ∞Symbol (infinite cleaning time).

Fig. 4 Front panel of the SONICA® models in the EP series

⓯ Degas button
⓰ Timer/Ultrasounds button
⓱ Temperature button
⓲ Start/Stop button
⓳ Plus button
⓴ Minus button
㉑ Program/Set button
㉒ Jet/Program button
㉓ Main Switch (power)

D1 Degas display
D2 Ultrasounds display
D3 Temperature display
D4 Program display

Resistance symbol

Cleaning time symbol (in minutes)

Double cleaning time symbol (in minutes)

Cleaning temperature symbol (degrees centigrade)

Fig. 6 Rear side view of the SONICA® units

㉕) Unit rating plate.
㉖) Socket.

Chapter 3

WORKING INSTRUCTIONS FOR MODELS IN THE M - M D SERIES (see Fig.1)

1) To switch on the unit rotate the Timer/Switch knob clockwise (❶) and set the required cleaning time. The green pilot light will light up on the front panel to indicate actuation of the unit (❹).
2) At the end of the time set, the machine will switch off automatically. If operation of the machine is to be interrupted at any time, return the Timer/Switch knob to the "0" setting.
3) In order to set a cleaning time longer than 15 minutes, rotate the Timer/Switch knob anticlockwise. In this way the cleaning time can be set by hand, and the unit switched on or off according to needs (see Fig. 5).

WORKING INSTRUCTIONS FOR MODELS IN THE MH - MH D SERIES (Fig.3)

1) In order to turn on heating with thermostat control at 60°C, press the illuminated button marked Heater (⓮).
2) Set the washing time by turning the Timer/Switch (❶) knob clockwise and follow the instructions given for the series M - M D models.
3) After the washing cycle, in order to turn off heating, press the Heater switch (⓮).

WORKING INSTRUCTIONS FOR MODELS IN THE ETH SERIES (see Fig. 2)

1) To switch the unit on or off press the main "Power" switch (❻).
2) After the main switch has been pressed, the green ON pilot light (⓬) and that of the 40°C temperature button will light up. The 40°C temperature button pilot light will light up each time the main "power" switch is pressed as the microprocessor always sets the lowest temperature and the shortest cleaning time (in order to start the cleaning cycle or switch on heating, the "On/Off" (❾) and "Start/Stop" (⓾) buttons must be pressed).
3) Press one of the buttons for 5-10-15 minutes according to needs (⓫).
4) In order to start or stop the cleaning cycle press the "Start/Stop" button (⓾). In this way the cleaning cycle will be started for the time you have set. At the end of this time the machine will stop automatically.
5) To double washing times and to obtain washing timing of 10-20-30 minutes, press the minutes key (⓫) twice corresponding to the time you require (within a maximum interval of 5 seconds). The machine will give a double Beep to confirm that double pressing of key (⓫) has been correctly set. Press the " Start/Stop" (⓾) key to start or stop the washing cycle.
   Note: If you have set double washing times, the machine will give a double Beep after pressing the "Start/Stop" key (⓾) before the washing cycle starts.

HOW TO REGULATE THE CLEANING TEMPERATURE (see Fig. 2)

1) Before switching on the heating check that there is liquid inside the tank and that the level is not below 4 cm from the upper edge. If the heating is switched on without liquid, there is the risk of burning the resistor and damaging the entire unit.
2) Set the required temperature of the washing dip by pressing one of the three buttons: 40°-50°-60°C ❽. On pressing one of the three buttons, the pilot light corresponding to the temperature button set will light up.
3) In order to switch on the resistor press the heating "On/Off" ❾ button. The corresponding pilot light will light up.
4) On the control panel the red heating pilot light marked by the heater symbol ❼ will also light up. If the pilot light is on, this means that the resistor is in operation and that the liquid is heating ⏦. When the pilot light goes off this means that the resistor is no longer in operation since the liquid has reached the temperature previously set.

Note:
Whenever a button of the membrane pushbutton panel of the control panel is pressed, a beep is heard which confirms the pressing of the button.

WORKING INSTRUCTIONS FOR THE EP SERIES MODELS (see Fig. 4)

The devices in the EP series have the following features:
a) DEGAS function setting (liquids degassing time) 00-99 min.
b) TIMER function setting (duration of ultrasonic cleaning) 00-99 min.,
c) TEMP function setting (temperature of washing liquid) 00-70°C
d) PROGRAM function setting (programs setting) P0-P9 (ten programs)
e) JET PROGRAM function setting (fast program), factory setting 3 min. degas + 10 min. ultrasonic cleaning

Degas
The degas function is used for degassing the cleaning liquids and allows some sound/chemical applications to be adopted, e.g. degassing of high polymer solvents (HPL). During this function, the detergent solutions are released from air bubbles which prevent effective propagation of the ultrasound waves. Whenever a new detergent solution is used, a degassing cycle of approximately two minutes is recommended in order to bring the air bubbles to the surface.

General working instructions
1) In order to turn the device on or off press the main "POWER" switch (㉓).
2) Select and set the various functions described above according to personal needs.

3) Press the Start/Stop button (⑱) in order to launch the data and functions set.

Specific working instructions for each individual function

Command	Function
POWER	ON/OFF switch. Press to switch the device On/Off.
DEGAS	The DEGAS button (⑮) enables the degassing time setting; set the time in minutes by means of the + (⑲) and - (⑳) buttons; enable other functions (TIMER, TEMP) if necessary.
TIMER	The TIMER button (⑯) enables the setting of the ultrasonic cleaning time; set the time in minutes by means of the + (⑲) and - (⑳) buttons; enable other functions (DEGAS, TEMP) if necessary.
TEMP	The TEMP button (⑰) enables the setting of the washing liquid temperature; set the temperature in degrees centigrade by means of the + (⑲) and - (⑳) buttons; enable other functions (DEGAS, TIMER) if necessary.
PROGRAM	The PROGRAM button (㉑) allows both calling-up of the programs stored by the user and their storage; enter the program required by means of the + (⑲) and - (⑳) buttons.
JET PROGRAM	The JET PROGRAM button (㉒) starts the fast washing program set in the factory (the machine performs 3 minutes of liquid degassing and subsequently 10 minutes of ultrasonic cleaning). The JET PROGRAM cannot be changed or deleted.
Start/Stop	The Start/Stop button launches the functions set.

General operation
The machine can operate in manual, automatic or programmed cycles.

Setting the manual cycle
One single function can be set.
1) Press the function button required.
2) Set the value required by means of the + and - buttons.
3) Press the start/stop button in order to launch the function set.
Example - 1 Function

Setting the automatic cycle
More than one function can be set.
1) Set the function button required.
2) Set the value required by means of the + and - buttons.
3) Press the button of the next function required.
4) Set the value required by means of the + and - buttons.
5) Press the start/stop button in order to launch the functions set.
Example - 2 Functions

Example - 3 Functions

WARNING

When more than one function is set, the microprocessor will perform the individual functions set fully automatically according to the following work cycle: **Reaching the temperature set; run of the degas cycle; start of the ultrasonic cleaning cycle for the time set.**
The machine will only start the ultrasonic cleaning cycle after having reached the exact temperature set and after having performed the degas cycle (if set previously).

Skip procedure in the automatic work cycle
The setting of several functions involves automatic performance of the work cycle as described above. Should it be necessary to start up a set function immediately, irrespective of the temperature being reached, press the required function button.

Example:
Set a temperature of 50°C, 10 minutes of degas and 15 minutes of ultrasonic cleaning. Press the Start/Stop button. The machine will start the degas cycle and subsequently ultrasonic cleaning only after having reached the exact temperature of 50°C.
If the degas button or timer button is pressed, the automatic procedure of reaching the set temperature can be disabled, starting the degas or ultrasounds cycle. In either case the machine will reach the set temperature of the liquid.

Setting and storing the programmed cycle
In programming mode it is possible to store 10 different programs (from P0 to P9) in the memory of the microprocessor and call them up at any time. The stored values will be held in memory even if the device is switched off.
In order to store a program proceed as follows:
1) Press the Program button (the prog. no. display will show the code P0).
2) Decide whether to store the program in the P0 register or select the register number required (P1, P2, P3 ..... P9) by means of the + and - buttons.
3) After having chosen the program number, keep the Program button pressed until the L code appears followed by the program number selected.
4) Select the required function(s) and set the values.
5) In order to store the set values in the program press the Program button once again: on the Prog. no. display the code P will appear, followed by the program number stored.
6) If necessary repeat the procedure indicated above as far as the program P9.
Example:

- Press 

to show, on **D4** display, the program you want to set up (P0...P9).
- Keep 

pressed until the simbol “L” and the number of the program to be set appear on **D4** display.
- Press 

to select **Degas** function and set the value you required.
- Press 

to select **Timer** function and set the value you required.
- Press 

to select **Temp** function and set the value you required.
- Press 

to store the chosen settings in the program selected.
- Press 

to start the cleaning cycle

Calling up and running a stored program
When the device is switched on by means of the power On/Off switch, the display shows the code P-(manual cycle). Press the program button and select the program number required by means of the + and - buttons. The display shows the individual values set for each program if stored. Press the Start/Stop button in order to run the program required. The values of the individual program functions can be changed

manually before starting by means of the Start/Stop button. The changes made only have a temporary effect in that they do not modify the data stored in the memory of the microprocessor.

Changing stored programs
In order to modify the values of the programs stored, press the program button and select the program required by pressing the + and - buttons. Carry out the necessary changes for the individual functions and store the new data with the same program number, following the procedure for storing the programmed cycle described above.

Jet Program Function
The Jet Program button enables a fast ultrasonic cleaning program to be run without having to set the individual functions. In order to run the program press the Jet Program button the code **PH** will appear on the **Prog.no.** display. In this way a standard program, preset in the factory, will be loaded and which performs a degas cycle lasting three minutes and a subsequent ultrasonic cleaning cycle of ten minutes. The Jet Program cannot be deleted or changed.

Displaying the data set, countdown of the time set and real temperature of the liquid.
After having set the data for each individual function, press the Start/Stop button in order to launch the washing cycle; the displays will show the values set for each individual function. In order to display the countdown of the time set and the real temperature of the liquid, press the Program button. In order to return to the values set press the Program button again.

Control of the temperature
The temperature reading has a tolerance of ± 2°C even when the ultrasounds are in operation. Take into account the fact that operation of the ultrasounds may cause a slight increase in the temperature.

WARNING

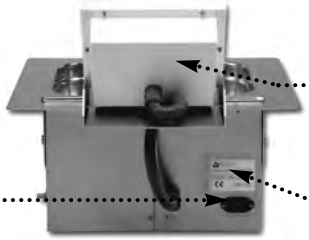
When the heating function reaches temperatures higher than 50°C, do not place your hands in the washing liquid as there is a risk of scolding and burns.
Use gloves and adequate means of protection.

FLUSH-MOUNTABLE SONICA® SERIES iETH, iEP MODELS

The flush-mountable versions of SONICA ultrasonic cleaning units have been specially designed to be built into an already-existing work surface (for example a laboratory bench or sterilisation room). Refer to all the previous sections of this manual for correct usage of the unit (warnings and advice, electrical connection, installation, operating instructions, etc.).

Rear view of the unit

Power supply input lead
Before connecting the power supply lead plug to the electric socket, check that the voltage indicated on the rating plate is the same as the voltage at your work place.



Rear view
Control panel

Unit rating plate with description of electric supply data

Special, additional notes for installing flush-mountable models of the unit only

The unit must be flush-mounted and installed on the work surface by skilled technicians. Check that there is sufficient ventilation inside the bench or work surface where the unit is to be installed and that there are no sources of heat or humidity.
The unit must be mounted and installed exactly as the manufacturer supplies it. Under no circumstances must the control panel or parts of it be removed or separated since this would jeopardise the electrical safety and functioning of the unit.

Side view of the unit

Liquid drainage device

How to install the unit correctly (Notes for the installer)

1. Cut out the work surface following the shape and measurements of the design supplied with the unit.

2. Insert the unit inside the flush-mounting housing and seal the outer steel rim with silicone or an equivalent sealing product.

3. Check that the entire rim is perfectly sealed to the work surface in order to prevent any liquid infiltrations that might damage the structure of the bench surface and the unit.

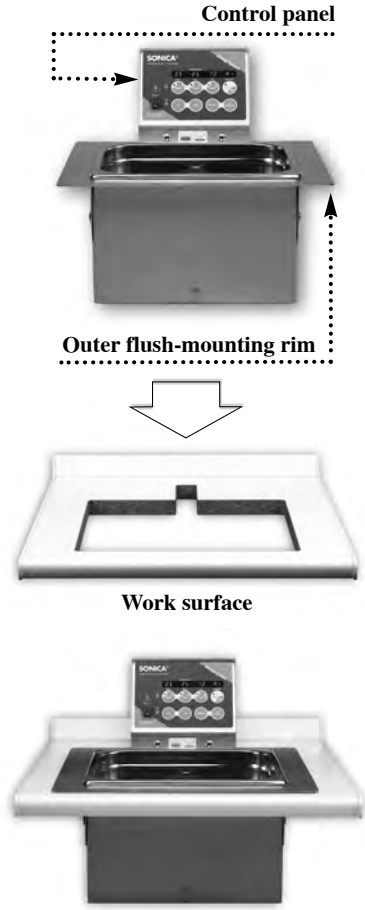
4. Connect the drainage tube and turn off the tap.

5. Connect the supply lead to the unit and then plug it into the electric socket.

6. Fill the tank with the liquid until a maximum level of 3 cm from the upper edge, taking care not to wet the control panel and not to spill liquid outside the tank.

7. Proceed with switching on the unit following the operating instructions described in the chapters referring to the supplied version (ETH – EP).

8. Use the drainage tube to empty the tank and pour the liquid into a container suitable for this operation.



Front view of the SONICA unit flush-mounted to the work surface

SPECIAL SONICA® MODELS

Special versions of the SONICA ultrasonic cleaning units are produced in the internal measurements of the tank specifically requested by the customer. Refer to all the previous sections in this manual for correct usage of the unit (warnings and advice, electric connection, installation, operating instructions, etc.). With regard to the technical features of the specific unit made according to the customer's request, refer to the technical table and relative declaration of conformity delivered together with the unit.

Chapter 4

ACCESSORIES FOR SONICA® ULTRASONIC UNITS

The following accessories are available for the ultrasonic units on request:

-Stainless steel lid.

Use the steel lid to close the ultrasonic tank.

The steel lid is useful when starting the cycle of heating the cleaning liquid. In fact, in order to reach the cleaning temperature set rapidly andefficiently, the tank has to be covered with one of the two lids.
Take great care with the condensation produced through the heating steam inside the lid since, during opening of the latter, condensation liquid could drip onto the electrical parts such as the socket. The lid therefore has to be raised vertically allowing the condensation to drip only inside the ultrasound tank.

-**Rectangular basket in stainless steel mesh**.
The stainless steel mesh basket is a very useful accessory in that it allows the washing of the objects to be optimised and the objects themselves to be drained inside the tank after washing.

- **Glass beakers/plastic beakers**.
Special beakers with an adjustable black rubber support ring are available. They are used to save detergent liquid whenever small quantities of objects are to be cleaned, or if washing is to be performed with a detergent solution in a beaker and rinsing simultaneously in another beaker. They are also used to wash objects with particularly aggressive solutions which must not come into direct contact with the steel tank.

-**Stainless steel beakers holder**.
The holder is used to support the beakers during washing. Remember to adjust the support ring of the beaker so that the bottom of the beaker is always in contact with the liquid in the tank, but at the same time does not come into contact with the bottom of the steel basket.

- **Small round basket**
In stainless steel mesh to be inserted in the beaker for washing small parts.

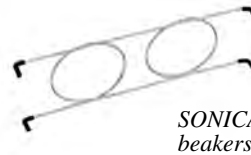
- **Stainless steel cassettes carrier**
For dental instruments.

- **Special stainless steel holder basket**
For cleaning small, medium and large dental instrument cassettes. The holder (cassette rack) is suitable only for SONICA® ultrasonic cleaners 4300 series.

SONICA® stainless steel rectangular basket

Glass beaker and plastic beaker

SONICA® stainless steel cassettes carrier



SONICA® stainless steel beakers holder

SONICA® stainless steel cassette for dental instruments

SONICA® stainless steel lid

SONICA® small stainless steel immersion basket

SONICA® special stainless steel holder basket

SONICA® Decontamination

Chapter 5

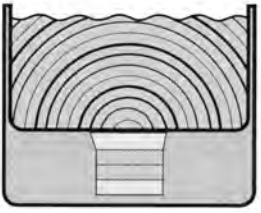
CLEANING WITH ULTRASOUNDS

What are ultrasounds?
Ultrasounds are vibrations of a material medium which are similar to sound waves, but with frequencies which are too high to be audible to the human ear. The frequency limit of human hearing ranges from around 10 Khz to approximately 18 Khz. The audible frequency limit decreases with the increase in age. More particularly SONICA® ultrasonic cleaning units operate at a frequency of as many as 39 Khz, i.e. at a frequency much higher than the audible one. All the SONICA® units consist of an ultrasounds generator and one or more piezoelectric transducers (according to the model) which are attached to the outside base of the tank in stainless steel containing the washing liquid. The electronic generator produces a continuous signal at a frequency of 39 Khz, and pilots the piezoelectric transducers which transform the electrical signal into a mechanical vibration. This vibrational energy is transmitted to the liquid in the tank at the frequency of 39,000 oscillations per second. These pressure and vacuum oscillations create an enormous quantity of microbubbles in the liquid which, by imploding in extremely rapid succession, create enormous impact energies between the detergent liquid and the surface to be cleaned. This is known as “cavitation” and provides an efficient and safe cleaning method in less time.

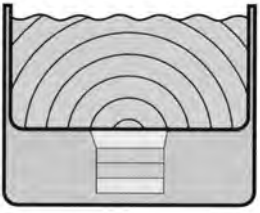
SONICA® Sweep System Technology

The new **SONICA®** series with **Sweep System technology** is the best that you can ask from ultrasonic cleaning equipment. The state-of-the art generator incorporates a special ultrasonic oscillator using Sweep System Technology. The frequency from the ultrasonic generator deviates around a central frequency of 39 kHz and the transducers shift between 38 and 40 kHz. Sweep System Technology gives:

- **Faster cleaning**
- **Damage free cleaning**
- **Increased distribution of ultrasound energy**
- **Better cleaning**
- **Improved cavitation**



Sweep System



Traditional System

USEFUL ADVICE AND SUGGESTIONS

The type of detergent to be used. In order to wash any instrument or object, use tap water as the main substance and dissolve in it a quantity of detergent or solution which varies according to the type of material residue to be removed from the object. Only use pure detergent if expressly specified in the instructions for use of the product. If for example an object soiled with greasy or fatty material is to be cleaned, use a small quantity of SONICA® UG solution, diluting it in water as indicated in the instructions for the product and clean in ultrasounds.
The SONICA® UG detergent enables removal of many types of impurities.

When small quantities of plaster have to be removed. Use pure SONICA® RG solution. Pour it into a beaker or directly into the tank. Its strong action will allow total removal of the plaster even from dental prostheses.

When many objects have to be cleaned. Do not overload the ultrasonic cleaning unit. Preferably arrange the objects rationally on the base of the rectangular basket, place the latter in the tank and clean as appropriate. Too many objects washed at the same time reduce the efficiency of cleaning with ultrasounds.

When the objects are very dirty. Use long cleaning times, heating the washing liquid according to the object to be washed.

When to replace the detergent solution. To achieve efficient cleaning change the detergent solution often, above all if it is used to clean surgical instruments.

Shape and size. There are no special rules for the shape of objects to be cleaned, however avoid inserting particularly heavy and large objects in the tank.
The liquid must always cover the entire object.

Cleaning time. The cleaning time always depends on the type of object, and the type and quantity of the material to be removed.

SONICA® LIQUID DETERGENTS

SONICA® UG Concentrated detergent for general use. Suitable for cleaning objects and instruments made of plastic, metal, rubber and silicone, dental instruments, for getting greasy deposits off precision mechanical parts and for cleaning metallographic coupons. Also

suitable for cleaning lenses, spectacle frames, electrostatic metal filters and gas-masks. Does not contain dangerous substances. (5-10 % dilution in H_2O) *pH 6.5 to 7.5*

SONICA® SF Concentrated detergent for removing thick grease from very dirty spots. Suitable for all metals except aluminium and brass. Also suitable for cleaning laboratory glassware (not suitable for limestone deposits). (8-10 % dilution in H_2O). *pH 13*

SONICA® RC Ready-to-use detergent for removing cement deposits from dental instruments. Not suitable for use with aluminium. *pH 13*

SONICA® AF Concentrated detergent for removing limestone deposit stains and large quantities of oxides and rust. Not suitable for aluminium. Suitable for cleaning very dirty limestone-encrusted laboratory glassware. (5-10 % dilution in H_2O). Acidic product. *pH 0*

SONICA® AC Concentrated detergent for removing limestone traces and small amounts of oxides and rust. Suitable for removing tartar from dental prostheses. (10 % dilution in H_2O). *pH 2.0-2.5*

SONICA® RA Ready-to-use detergent for removing alginate deposits from impression trays without damage even after lengthy immersion. The detergent is also suitable for metal impression trays. *pH 7.5-8.5*

SONICA® RG Special neutral detergent for removing plaster deposits from all types of surfaces without damage e.g. articulator plates, spatulas, miscellaneous instruments, all types of prostheses. Can also be used for gypsum investments. When plaster comes into contact with the cleaning liquid small bubbles form and show that the detergent is acting on the plaster. The product should not be diluted. *pH 7.5-8.5*

SONICA PCB Cleaner. Cleaner with aqueous base for washing electronic boards.
It removes flux residues and organic dirt. The product does not contain CFC, is not flammable and is compatible with most plastic materials. A compatibility test is recommended before use for particularly sensitive materials. pH 10.5-11.5

SONICA® CL 4% is a concentrated aqueous solution with decontaminating and cleansing action developed for using with SONICA® Ultrasonic cleaners. The solution is concentrated.

Application Fields
Decontamination and simultaneous detergency of surgical instruments and medical devices. Temporary sterile conservation of surgical instruments.

Action Mechanism
Chlorexidine reacts with the negatively charged groups that are found on the cell surface. For this reason, when it comes into contact with bacterial suspensions, it is absorbed immediately, causing an irreversible loss of cytoplasm components, which damages the cell membrane and inhibits enzymes. Cetrimide is a quaternary ammonium salt that reduces surface tension in the point of contact and has precipitant, complexing and denaturing effects on bacteria proteins, causing enzyme changes in the cytoplasm membrane.

Germicidal Activity
Chlorexidine acts on vegetative bacteria, yeasts, fungi, several protozoa, viruses (HIV) and salmonella. Cetrimide acts as a bactericide above all on gram-positive bacteria; it has varying fungistat properties and acts as a virucide against lipophilic viruses. The action of the product is superior to that of its single components. Its bactericidal actions are reduced by the presence of organic material (serum).
In hospital usage SONICA® CL 4% is mainly recommended for its action against gram-negative and gram-positive bacteria, as well as lipophilic viruses (HIV).

From tests carried out, SONICA® CL 4% has shown that it acts against such bacteria as Citrobacter freundi, Serratia marcescens, Pseudomonas aeruginosa ATCC 15442, Pseudomonas aeruginosa ATCC 14502, Proteus rettgeri, Staphylococcus aureus ATCC 114, Staphylococcus aureus ATCC 6538, and Klebsiella pneumoniae.

Composition

100 g of solution contain: Active Ingredients: Chlorexidine gluconate g 1,50; Cetrimide g 15,00; Excipients: Isopropyl alcohol (F.U.I.) g 6,00; Essence g 2,00; Colouring E110 g 0,10; Purified water q.b. to g 100,00

Abstract:
The efficiency of a decontamination procedure by sonication for different dental instruments after experimental microbic and viral contamination was tested.
Both germicidal and virucidal activity of sonication in presence or absence of a cationic bio-biguanid disinfectant was assessed following three different disinfection/sterilisation protocols. Dental instruments were contaminated with a mixed culture of Streptococcus faecium, Staphylococcus sp., Pseudomonas aeruginosa, Mycobacterium sp., Escherichia coli and Bacillus subtilis, or with Polio virus type 1 and Herpesvirus simplex type 1 (HHV1, following the new herpesvirus denomination), exposed to ultrasonic treatment in an ultrasonic bath and the surviving microorganisms titered. The results showed that an effective disinfection of dental instruments, expressed by an equal or higher than 4 logs microbial and viral reduction, can be obtained after 15 min or 10 min sonication in the ultrasonic cleaner equipped with a Sweep System Technology. Conversely, by the combined action of chemical disinfection and ultrasonic treatment in the same device, a sterilising effect was obtained after only 5 min for microbial and after 10-15 min for virally contaminated instruments. The synergistic effect of chemical and physical means, as already accepted as an effective cleaning procedure of medical instruments, can therefore be applied to obtain a safe and effective sterilisation of dental instruments potentially contaminated by organic fluids and dental material harbouring pathogenic microbes and viruses.

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MAINTENANCE OF THE UNIT

Pull out the mains plug before carrying out any maintenance works. Check the housing and the mains cable for damage regularly in order to prevent electrical accidents.

Cleaning is the only maintenance operation normally required. It must be performed with the unit switched off in electrical terms. Only use mild detergents for cleaning the inside of the tank and a soft cloth for cleaning the outside parts such as the control panel and casing. **Do not leave deposits of dirt** inside the tank above all if your model is fitted with a liquids drain device. If the liquid outlet hole is obstructed by dirt residues, clean it by means of a blunt flexible stick, taking care not to perforate the connected rubber tube.

Chapter 6

AFTER-SALES SERVICE

If the unit does not function:

- Check that the plug is inserted properly in the power socket;
- Check the level of liquid in the tank;
- Check that the green ON pilot light lights up.

WARNING

The after-sales service must only be provided by technicians trained by the manufacturer. It is dangerous for anybody else to carry out repairs. If you require assistance, contact your retailer as soon as possible. He will send the unit directly to the manufacturer for the appropriate repairs. Otherwise the manufacturer can be contacted directly at the following address:

SOLTEC® S.r.l.
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21036 MILAN
Tel. +39 0258308378
Fax +39 0258308595
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http://www.soltec.it

EU DECLARATION OF CONFORMITY

We undersigned SOLTEC S.r.l., single registration number (SRN): IT-MF-000018179 with recorded office addressed in MILANO, Via G. Röntgen 16 – 20136, as manufacturer of medical devices:

Product name	Codes	Basic UDI-DI
SONICA Ultrasonic Cleaner	1200MS3ZZVW 2200X(X(X)YYZZVW 2400X(X(X)YYZZVW 3200X(X(X(X)YYZZVW 3200LX(X)(X)(X)YYZZVW 3300X(X)(X)(X)YYZZVW 4200X(X)(X)(X)YYZZVW 4300X(X)(X)(X)YYZZVW 5200X(X)(X)(X)YYZZVW 5300X(X)(X)(X)YYZZVW 45EP(X)YYZZVW 60EP(X)YYZZVW 90EP(X)YYZZVW ATEP(X)YYZZVW	805108418FT002ST2M

intended for cleaning of surgical instruments, risk class I (Not Sterile), according to the rule 13 of the EU Regulation 2017/745, Annex VIII, declare under its own responsibility that the medical devices:

- comply with safety and performance requirements and dispositions of the EU Regulation 2017/745 and further amendments as per technical file kept on the premises of the company;
- no common specifications were used for the compliance of the aforementioned medical devices;
- comply with Directive 2011 /65 / EU and Directice RoHS III 2015/863/UE about the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- are manufactured according to the Quality System which satisfies requirements of Annex II + III of the above mentioned Regulation;
- comply with following standards: EN 61326-1:2013, EN 61010-1:2010,

Milan, date 03rd January 2022

SOLTEC S.r.l.
[Chief Technical Officer]
Falbo Pietro Angelo

TECHNICAL FEATURES

SONICA® ULTRASONIC UNITS

Table 1

Model	Sonica® 1200 M	Sonica® 2200 M M D	Sonica® 2200 MH-MHD ETH EP	Sonica® 2400 M	Sonica® 2400 MH ETH EP	Sonica® 3200 M	Sonica® 3200 MH ETH EP	Sonica® 3200 LM	Sonica® 3200 LMH LETH LEP
Supply Voltage	230/240V ~ 50/60Hz 115V ~ 60Hz available on request only for some models								
Input Power	80W	130W	130W	130W	130W	180W	180W	180W	180W
Input Power with heating	—	—	305W	—	305W	—	355W	—	355W
Weight in Kg.	2,2	3,2	3,8	3,5	4,1	4,3	4,5	5,1	5,4
EXTERNAL Dimensions (in mm)	180 165 260	270 170 260	270 170 260	325 175 260	325 175 260	325 270 260	325 270 260	540 165 260	540 165 260
TANK Dimensions (in mm)	150 140 100	240 140 100	240 140 100	300 150 100	300 150 100	300 240 100	300 240 100	500 140 100	500 140 100
Number of transducers	1	2	2	2	2	3	3	3	3
Ambient conditions	Temperature from 5 a 40°C; rel. hum. 80% up to 31°C with linear decrease up to 50% at 40°C								
Installation category	Class II according to EN 61010-1								

Sonica® 3300 M	Sonica® 3300 MH ETH EP	Sonica® 4200 M	Sonica® 4200 MH ETH EP	Sonica® 4300 M	Sonica® 4300 MH ETH EP	Sonica® 5200 M	Sonica® 5200 MH ETH EP	Sonica® 5300 M	Sonica® 5300 MH ETH EP
230/240V ~ 50/60Hz 115V ~ 60Hz available on request only for some models									
200W	200W	300W	300W	300W	300W	400W	400W	500W	500W
—	500W	—	800W	—	800W	—	1400W	—	1500W
6,0	6,3	6,8	7,1	7,2	7,5	14,2	14,5	15	15,3
400 270 370	400 270 370	440 340 425	440 340 425	440 340 425	440 340 425	600 330 425	600 330 425	600 330 425	600 330 425
300 240 150	300 240 150	330 300 150	330 300 150	330 300 200	330 300 200	500 300 150	500 300 150	500 300 200	500 300 200
3	3	4	4	4	4	8	8	10	10
Temperature from 5 a 40 C; rel. hum. 80% up to 31 C with linear decrease up to 50% at 40 C									
Class II according to EN 61010-1									

TECHNICAL FEATURES

SONICA® ULTRASONIC UNITS

Model	Sonica® 3200 i ETH i EP	Sonica® 3300 i ETH i EP	Sonica® 4200 i ETH i EP	Sonica® 4300 i ETH i EP	Sonica® 5200 i ETH i EP	Sonica® 5300 i ETH i EP	Sonica® 45L EP	Sonica® 60L EP	Sonica® 90L EP	Sonica® ATC EP
Supply Voltage	230/240V ~ 50/60Hz 115V ~ 60Hz available on request only for some models									
Input Power	180W	200W	300W	300W	400W	500W	600W	700W	1000W	600W
Input Power with heating	355W	500W	800W	800W	1400W	1500W	1600W	2200W	3000W	2100W
Weight in Kg.	8,9	10,3	11,3	11,6	19,2	19,5	21	30	40	30
EXTERNAL Dimensions (in mm)	412 434 380	412 434 540	440 497 595	440 497 595	613 495 595	613 495 595	600 340 525	1160 360 425	660 560 525	660 380 570
TANK Dimensions (in mm)	300 240 100	300 240 150	330 300 150	330 300 200	500 300 150	500 300 200	500 300 300	1100 300 200	600 500 300	600 320 350
Number of transducers	3	3	4	4	8	10	12	16	24	14
Ambient conditions	Temperature from 5 a 40°C; rel. hum. 80% up to 31°C with linear decrease up to 50% at 40°C									
Installation category	Class II according to EN 61010-1									

Notes for use as “Medical Devices”:

Denomination: Ultrasonic Cleaning Equipment EMDN: Z12011302
Field of application: Ultrasonic Cleaning Equipment for surgical and dental instruments
Classification: MDR 2017/745/UE Medical Devices Regulation Class 1 rule 13, Active MD, Non Invasive MD, Non Implantable MD

Chapter 7

CORRECT DISPOSAL OF THIS PRODUCT
(electrical waste & electronic equipment)

This marking shown on the product or its literature, indicates that it should not be disposed of with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources. The unit components can be taken to metal, plastics and electronics recycling stations.

I

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