SAFE *CLEANBOX*

SERVICE MANUAL

MODEL: STK 100

DISCLAIMER

BICARjet S.r.l. does not accept any liability for injury to persons or damage to property resulting from the misuse of this product or from failure to follow the directions, warnings, instructions and precautions reported in this user manual.

This user manual is provided in hardcopy format only and should always accompany the SAFE CleanBox device.

SAFE CleanBox is manufactured by:

BICARjet S.r.l.
Registered office - Via Nona Strada, 2 - 35129 Padova, Italy
VAT NUMBER: 03735720280

CONTENTS

1 GENERAL INFORMATION

SAFE CleanBox is a medical device intended for sterilization centers/laboratories for the pre-treatment of DMRs (Reusable Medical Devices) and finds its functional location in the pre-washing phase of the DMRs before they undergo washing, disinfection and sterilization processes .The process is similar in outcome to highly effective and efficient mechanical brushing, and involves the use of a jet of compressed air and granular sodium bicarbonate to remove residues from the surfaces of the RMDs without causing structural damage. The sodium bicarbonate used (SAFEKLINIC brand) is totally soluble and is not classified as dangerous for the environment or for the operator.
The system consists of a cabin similar in design to a "glove box" equipped with gloves to manipulate the instruments without these coming into direct contact with the operator's hands, and the operations are confined in a closed environment for the benefit of the operator's safety and comfort.
Inside the cabin there are two handpieces; one for the bicarbonate treatment with compressed air with water and the other for rinsing with compressed air and water. The flanges placed on the front part of the cabin are oval in shape to satisfy the ergonomics necessary for the operator's comfort and allow for ample space for action, easily removable with a quick release system useful for changing gloves in case of first failure. The two handpieces are controlled via two independent pedals .**THE EFFECTIVENESS OF RESIDUE/CONTAMINANT REMOVAL FROM RMDS IS GUARANTEED ONLY AND EXCLUSIVELY BY THE USE OF SODIUM BICARBONATE, ACCORDING TO THE INSTRUCTIONS PROVIDED IN CHAPTER 3.2.4 OF THE USE AND MAINTENANCE MANUAL.**

1.1 INTENDED USE

The intended use is the preparation of the RMD for the washing process in the instrument washer. The action is carried out by bringing a jet of compressed air and bicarbonate in contact with the object to be treated, in order to remove any contaminant from the surface without damaging it and increase the effectiveness of the subsequent phases. This operation is conceptually similar to manual brushing of the RMDs, normally carried out prior to washing, disinfection and/or sterilization processes.

1.2 CLASSIFICATION

Classification according to Regulation (EU) 2017/745 Annex VIII rule 13 class I.

CAUTION!

THE DEVICE IS INTENDED TO BE USED BY SPECIALLY TRAINED OPERATORS IN RMD RECONDITIONING CENTRES WITHIN OR OUTSIDE HOSPITALS, AND IN LABORATORIES USED FOR THE NON-ROUTINE MAINTENANCE OF RMDS.

1.3 SYMBOLS

In order to make the reading of this manual simple and clear, the symbols used as important warnings for the correct and safe use of the device are shown below.

	**Requirement for correct use** This symbol precedes information for the correct use of the device.
	**Information requirement** This symbol precedes useful and general information, which guides the user in the informed use of the device and/or the performance of actions.
	It indicates that the product has been designed and manufactured in compliance with the safety requirements of Regulation (EU) 2017/745 (Medical device class I and in compliance with classification rule 13 as indicated in Annex VIII).

1.4 PRELIMINARY WARNINGS

Failure to observe the following warnings and the rules and precautions described in this user manual will immediately void any warranty on the SAFE CleanBox device.
BICARjet S.r.l. is not liable for any injury to persons or damage to property resulting from failure to comply with the rules or precautions listed below and set out in general in this user manual.

The instructions or warnings are not intended to replace the accident prevention safety rules, but to supplement them and encourage compliance with them.

The employer must train the personnel in the risks of accidents, in the use of personal protective equipment, in the risks of noise emissions and in the general rules on the prevention of accidents provided for by international directives and by the legislation of the country of destination of the machinery. The operating, maintenance, cleaning and control personnel, etc. must therefore strictly comply with the accident prevention regulations of the country of destination of the machinery.

1.5 GENERAL SAFETY RECOMMENDATIONS:

BICARjet® S.r.l. has made every effort to design the **SAFE CleanBox** machine and to make it as **INTRINSICALLY SAFE** as possible.

The manufacturer has also equipped the machine with all the protective and safety devices considered necessary. Finally, it has provided enough information for it to be used safely and correctly.

In each chapter, the following information is provided for all human-machine interaction whenever necessary:

- The operator's minimum qualification required;
- The number of operators needed;
- The status of the system;
- The residual risks;
- The Personal Protective Equipment required or recommended;
- The prevention of human error;
- The prohibitions/obligations regarding reasonably foreseeable non-intended use/behaviour.

The user can integrate the information provided by the manufacturer with additional instructions to increase safety in using the system. Clearly this should not include information that contradicts information given in this instruction manual.

For instance, it is important to pay attention to the clothing of any person operating on the system:

- Do not wear loose clothing that could get caught on parts of the system;
- Do not wear ties or other loose garments;
- Do not wear bulky rings or bracelets that could get caught on parts of the system.

Whenever necessary, further recommendations for use will be provided in the Manual with regard to preventive measures, personal protective equipment, the prevention of human error and any reasonably foreseeable prohibited behaviour.

- It is, however, essential to follow the instructions below carefully:
- It is strictly forbidden to operate the single machines that make up the system automatically with the fixed and/or movable guards removed;
- It is strictly forbidden to inhibit the safety devices installed on the system;
- The low safety operations must be carried out strictly in accordance with the instructions given in the relevant descriptions;
- Any protective devices of the system removed for the purpose of low safety operations must be put back in place as soon as possible;
- The washing operations must be carried out with the electrical and compressed air separation devices disconnected;
- Do not alter parts of the system for any reason; in the event of malfunction due to non-compliance with the above, the manufacturer cannot be held liable for the consequences. We recommend that you contact the manufacturer directly to request any alterations;
- Clean the casing of the machines, the panels and the controls with soft cloths that are dry or have been dampened with a mild detergent solution; do not use any type of solvent, such as alcohol or petrol, as the surfaces may be damaged;
- Position the machines following the instructions given at the time of order and referring to the diagrams provided by the manufacturer; if this is not done, the manufacturer cannot be held liable for any issues.

The safety officer of the company that owns the machine is required to ensure that the following safety warnings are read and understood correctly. The warnings below are divided into:

Safety obligations concerning general and organizational safety indications.

Warnings that apply to and must be known **by all personnel**. Intended for operation with or near the installation;

Warnings for operators with instructions which the operators of the installation must observe to ensure use of the machine without endangering their own safety or that of other operators or of property.

Everyone who, for whatever reason, finds themselves working in the work area of the machine, must read and understand the safety warnings.

Unauthorized tampering/replacement of one or more parts or units of the machine, the use of accessories, tools, consumables other than the original ones or in any case those recommended by the manufacturer, may represent a risk of injury and relieve the manufacturer from civil and criminal liability. The machine has been designed in such a way that all safety devices do not pose any risk for the operator.

The operator is strictly forbidden to alter the technical or physical characteristics of the equipment or to use it for purposes other than those foreseen and documented.

The machine must always be used according to the standards of good practice and the law in force in each country, even if the country of use does not have specific regulations that apply to the specific sector.

The manufacturer **BICARjet® S.r.l.** may be consulted regarding the possibility of carrying out non-routine work cycles not expressly provided for; in which case, the manufacturer will make its resources and expertise available to the customer.

In the case of any use other than that envisaged in the order and tested during the acceptance test, to which the machine may be put during its operating life, the user and/or operator is held solely responsible for any failures, environmental damage and harm to persons and property.

Environmental conditions and careful routine maintenance play a particularly important role for the correct and reliable operation of the machine.

There must be no harmful or chemically aggressive and/or explosive vapours and/or gases in the environment, and no infiltration of dust the extent and quality of which could be harmful to the operator or to the machine.

Cleaning the area around the machine is crucial to safety.

Dust and fragments of the product being processed or other residues can make the floor slippery, creating dangerous conditions.

Both the worktops and the floor must be cleaned regularly, using suitable equipment to remove dust, fragments and residues and any kind of foreign bodies.

It should always be borne in mind that the use of any machine can pose an element of risk.

Always focus all your attention on what you are doing.

It is essential to always take all due care and be alert at all times.

A person who experiences any discomfort or physical malaise, even slight, which can reduce their degree of vigilance, must avoid starting the machine or using the aggregate or accessory equipment. The operator must avoid unsafe operations not foreseen by the work in progress, which could compromise their own balance.

The operator is advised to use clothing suitable for the work environment and the situation concerned.

If necessary, the operator is advised to use protective goggles and personal hearing protection.

The person in charge of the machine or maintenance must avoid wearing chains, bracelets and rings and use a net to hold back long hair.

With regard to personal protective equipment, the European Community has issued directives 89/686/EEC and 89/656/EEC.

Variations with respect to normal operation (increase in power absorption, temperature, vibrations, noise or signals from the safety system) are clear indications of incorrect operation.

To prevent malfunctions, which can directly or indirectly cause serious damage to people or property, the maintenance personnel must be informed as a matter of urgency. Any maintenance on the hydraulic and compressed air systems must be carried out only after having released the pressure inside the systems themselves.

To resolve any cause of failure or inconvenience inherent in any element of the machine, take all suitable precautions to prevent any possible damage to people and property.

1.6 RECOMMENDATIONS REGARDING LIGHTING AND VENTILATION OF THE PREMISES

The customer must ensure ambient lighting to avoid the presence of shaded areas and risk of annoying glare. The lighting must be adequate for the planned operations.

Lack of lighting could pose risks.

An optimal ventilation of the premises must also be guaranteed, with the possible use, if foreseen, of an appropriate suction system.

1.7 CONNECTIONS

1.7.1 ELECTRICAL CONNECTION

Electrical supply: **220** V **50** Hz **16**A

Power: **3.2** kW

Please observe the general rules for the preparation and installation of electrical systems: the earthing system must meet the specific characteristics defined by the CEI 64-8 standard.

Installation and electrical connections must only be carried out by qualified personnel.

The earth connection must also be made for low voltage systems located in normally wet or very humid places (if the voltage exceeds 25V to earth for alternating current and 50V to earth for direct current).

The earthing for protection of all parts of the system and all the earthing for operation of the circuits and appliances must be carried out by connecting the relevant parts to a single earthing system. Check that the materials used for the earthing system are sufficiently strong or have adequate mechanical protection.

Make the shortest possible connection to the main earth and ensure that the earth conductors are not subjected to mechanical stress or to the danger of corrosion.

1.7.2 COMPRESSED AIR CONNECTION

Air supply: 6 (min) to 10 (max) bar

Power line: DN 15 mm (1/2”)

The supply air must be dehydrated, de-dusted and free from lubricating oils.

1.7.3 WATER CONNECTION

Water supply: 3 (min) bar

Power line: DN 15 mm (1/2”)

1.7.4 DRAIN CONNECTION

Connection to the non-hazardous industrial waste water drainage system according to *Annex V part III of Legislative Decree no. 152/06*

Wall drainage line: Ø 40 mm

1.8 SAFETY DEVICES

	FAILURE OR NEGLIGENCE IN COMPLYING WITH THE FOLLOWING INSTRUCTIONS MAY CAUSE THE DEVICE TO MALFUNCTION, CAUSE DAMAGE OR INJURY TO THE USER
	IN ORDER TO PREVENT THE RISK OF ELECTRIC SHOCK, ONLY CONNECT THE DEVICE TO GROUNDED SOCKETS
	DO NOT USE THE DEVICE UNTIL YOU HAVE READ AND UNDERSTOOD THIS USER MANUAL IN ITS ENTIRETY
	DO NOT MODIFY THE DEVICE AND/OR ITS PARTS
	USE OF THE DEVICE FOR PURPOSES OTHER THAN THOSE INDICATED IN THIS USER MANUAL COULD EXPOSE THE USER TO DANGER
	REPORT ANY SERIOUS ACCIDENT INVOLVING THIS DEVICE TO THE MANUFACTURER AND TO THE COMPETENT NATIONAL AUTHORITY OF THE MEMBER STATE IN WHICH THE USER AND/OR PATIENT LIVES

The **BICARjet® S.r.l.** lines have been designed and built to ensure safe and efficient operation. Despite this, some anomalous conditions of use (for example non-compliance with the technical parameters required for the use of the machine and/or non-compliance with the enclosed instructions) can cause danger for the operator and the machine itself.

The user and/or operator must carefully prepare the most suitable environmental structures to ensure the highest general operational safety for the operator, the machine and the environment.

All the normal precautions dictated by the rules of good practice and common sense must necessarily be considered and applied to protect the users themselves.

The machine is equipped with a series of safety devices designed to ensure the safety of the operator and of the system itself.

For the protection of operators, the following are envisaged:

1) work cabin to isolate the spray area from the work environment;

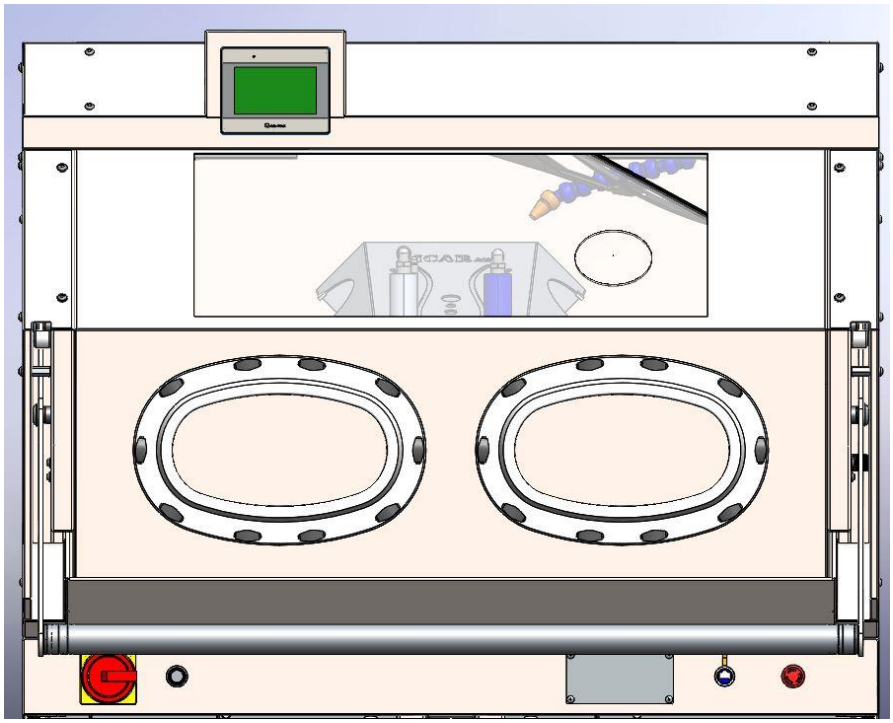


Fig. Work cabin

2) the mushroom-head emergency button on the front of the cabin immediately interrupts the work cycle.

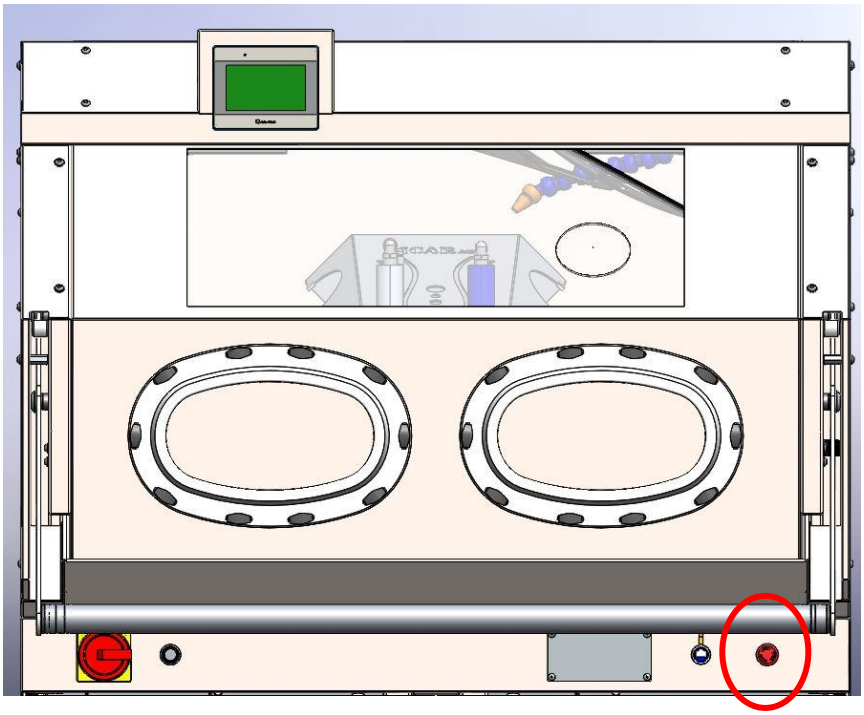


Fig. Emergency buttons

3) safety sensor which immediately interrupts the work cycle if the door at the front is opened.

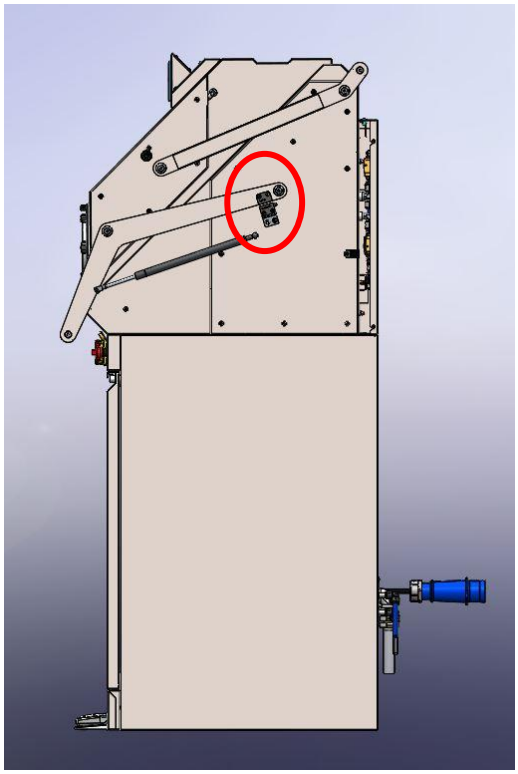


Fig. door sensor

4) the pedals that activate the functions of the device when pressed, but once released, instantly stop the spray in the cabin.

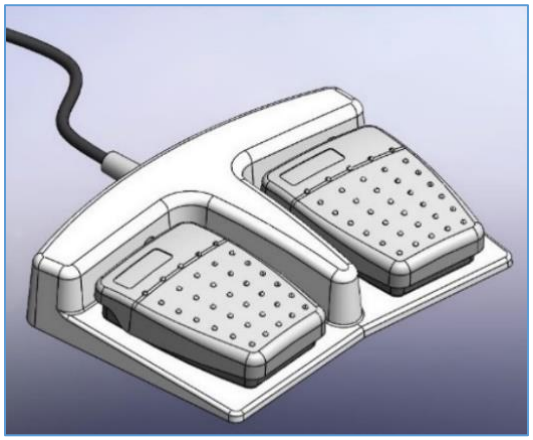


Fig. Pedal

5) Safety signs on the frontal door.

6) Safety signs on electrical cabinet.

7) Rear connections. AIR, WATER, EXHAUST and power supply.

1.9 COMPOSITION OF THE DEVICE

⚠	THE USE OF ITEMS THAT ARE NOT PART OF THE SYSTEM DESCRIBED ABOVE OR NOT SUPPLIED WITH THE DEVICE MAY JEOPARDIZE ITS SAFETY AND PERFORMANCE.
🛈	If not all the items listed have been received, contact the manufacturer immediately

The **SAFE CleanBox** device for cleaning metal surgical instruments manufactured by BICARjet® S.r.l. and hereinafter referred to simply as the **SAFE CleanBox**, integrates a number of elements including:

- A washing cabin
- **SAFEKLINIC®** Bicarbonate System
- Drainage system

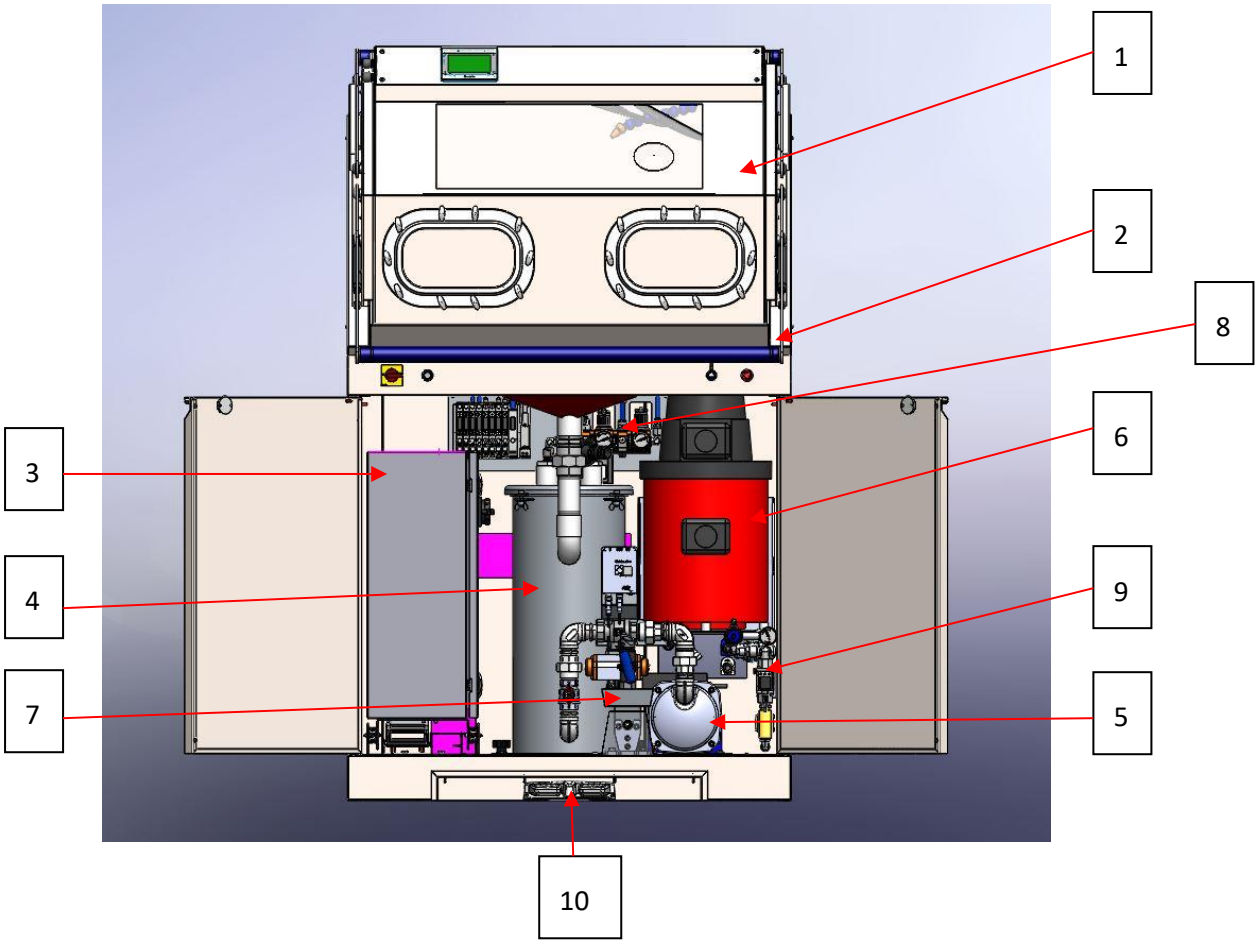
The **SAFE CleanBox** is designed for the specific cleaning of various types of **metal surgical instruments** by means of a mixture of air and pressurized water enriched with abrasive particles consisting of **SAFEKLINIC®** synthetic sodium bicarbonate.

The **SAFE CleanBox** machine consists of a bicarbonate feed unit that uses pressurized air and water to supply a suitably mixed solution of **SAFEKLINIC®** synthetic sodium bicarbonate in suspension, via suction, for cleaning the instruments in the cabin.

This unit consists of a number of pneumatic components that allow the bicarbonate to be sprayed in an optimised and controlled manner.

The central element is the **SAFE CleanBox** washing cabin, which directs the flow of bicarbonate under pressure without contaminating the surrounding environment with bicarbonate dust and any residues that may have been removed. Through the assisted opening front door, this allows the insertion of trays containing the utensils to be cleaned. The cabin is equipped with a glass to allow the operator to control the operations and by two full-arm and sealed gloves, to allow the operator to insert his hands from the outside to proceed with the operations necessary for cleaning tools. Inside there is a special handpiece from which the air-water-bicarbonate mixture under pressure comes out and a second handpiece from which a jet of pressurized water comes out to facilitate the cleaning operation and the removal of excess bicarbonate particles. The by-product obtained from cleaning, consisting of bicarbonate and removed residues, is collected in a sealed container placed under the cabin and directly aspirated. The third element of the line is the collection and discharge system for the collection and evacuation of dust and water mist present inside the cabin. Dust and mist are extracted from the cabin by the forced ventilation system and conveyed to this unit where the dust is slowed down and transferred to a collection container, and the air is filtered and expelled by the filter. Inside the collection container, the powders are mixed with water and are automatically expelled by means of an independent pump that conveys the processing residues directly into the sewage system.

The **SAFE CleanBox** machine is fitted with a control panel located in the lower compartment on the left of the machine. It is mounted on a series of guides for easier maintenance. The operating modes are controlled via a touch screen located above the cabin. The two handpieces are operated by a double pedal unit on the floor under the cabin. There is an emergency mushroom button placed outside the cabin.



1	WASHING CABIN
2	FRONT DOOR OPENING HANDLE
3	ELECTRICAL PANEL
4	WASTE BIN
5	DRAIN PUMP
6	ASPIRATOR
7	**SAFEKLINIC®** FEED UNIT
8	AIR GROUP
9	WATER GROUP
10	PEDALS

SAFEKLINIC®
The inert product **SAFEKLINIC®** (bicarbonate) does not pose any danger to humans and the environment; it is advisable, however, to observe the following recommendations. During use and loading, unloading and cleaning of both the pieces to be cleaned and the aggregates and processing residues.

2 INSTALLATION

	THE DEVICE MUST BE INSTALLED ONLY BY SPECIALIZED TECHNICAL PERSONNEL DULY TRAINED AND AUTHORIZED BY THE MANUFACTURER
	DO NOT POSITION THE DEVICE IN SUCH A WAY THAT IT IS DIFFICULT TO UNPLUG FROM THE POWER SOCKET OR ACTIVATE THE CIRCUIT BREAKER
	ENSURE THAT THE USE ENVIRONMENT MEETS THE REQUIREMENTS SET OUT IN THE “ELECTROMAGNETIC COMPATIBILITY” CHAPTER BELOW

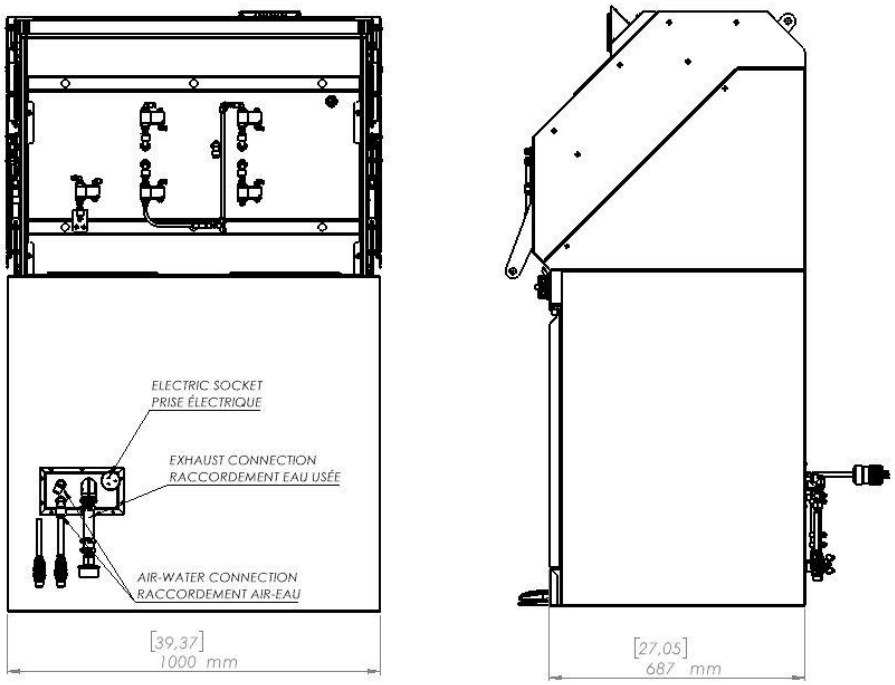
Installation must be entrusted solely to qualified personnel:

those persons who have completed specialization courses, training courses, etc., and have experience in installing, commissioning and servicing, repairing and transporting machines produced by **BICARjet®**. Qualified technician: person able to operate the system under normal conditions and in charge of all electrical adjustments, maintenance and repairs. This technician can operate on live parts in electrical switchboards and junction boxes.

1) **LAYING ON THE GROUND:**

Place the machine on a flat and even surface according to the requirements at the workplace, to ensure correct horizontal positioning of the cabin.

2) **CONNECTIONS:**



- **ELECTRICAL**

Connect the electrical socket to the **230** V **50** Hz **16** A mains panel.

- **AIR**

Connect the compressed air delivery hose to the mains supply unit with quick coupling. DN 15 mm (1/2”)

- **WATER**

Connect the water delivery hose to the mains supply unit with quick coupling. DN 15 mm (1/2”)

- **DRAIN**

Connect the Ø40 mm drain hose between the centrifugal pump and the drain line. It is essential to always ask the local health authorities for the current rules on drains at the place of use. The draining, retention and storage of part or all of the processing residues, whether liquid and/or solid, is at the complete care and responsibility of the user.

2.1 LIFTING AND TRANSPORT

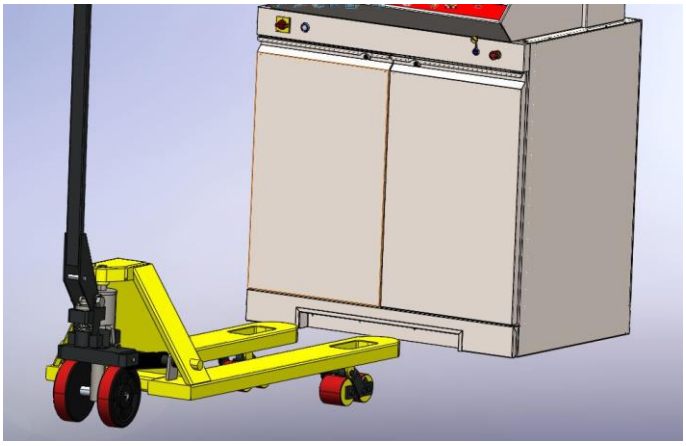
The machine is packed inside a wooden crate.

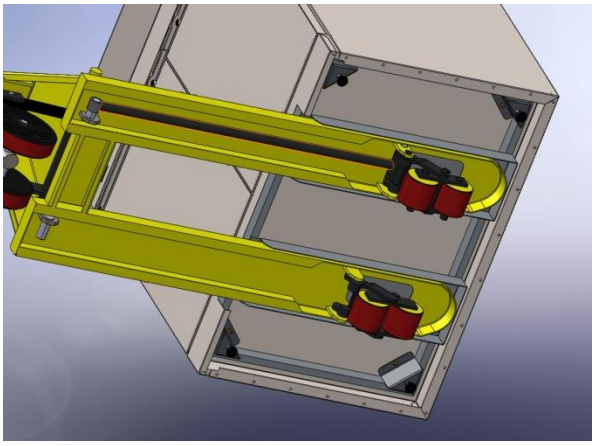
Handling must be carried out with a forklift truck or transpallet.
Slings must NOT be used for lifting.

After opening the box, the machine must be lifted with special equipment designed for moving furniture.

If necessary, mini-skates can be used for moving in very confined spaces

It is possible to lift the SAFE CleanBox model STK 100 device through the use of a transpallet, removing the steel base from the front. If necessary, adjust the feet at the 4 bottom corners by opening the doors.





2.2 SET-UP OF USE ENVIRONMENT

The following operations are the responsibility of the **user**:

1. identification of the work area of the system and preparation before installation in such a way as to optimise the ergonomics and safety of the workplace. In particular, it is recommended to leave enough space around the work and passage areas to allow easy loading/unloading, maintenance and adjustment operations. Furthermore, the following general requirements should be taken into account when identifying the work area:

- Place covered and protected from rain or bad weather.
- Protection from splashes, humidity and direct sunlight.
- Connected, smooth, flat and resistant floor.
- Ambient temperature between +5 and +40°C.
- Ambient relative humidity between 20 and 80%.

- Well ventilated room.
- Place away from electrical systems and free from objects that could be damaged, as well as free from other people.
- When choosing the place of installation, consider the type of lighting; this must be diffused and not reflect off the glass of the window of the cabin, causing glare.

2. Any ducts for the passage of:

- electrical cables;
- hoses for the supply of compressed air;
- any centralized drainage systems;
- near the power supply unit and the electrical panel of the machine.

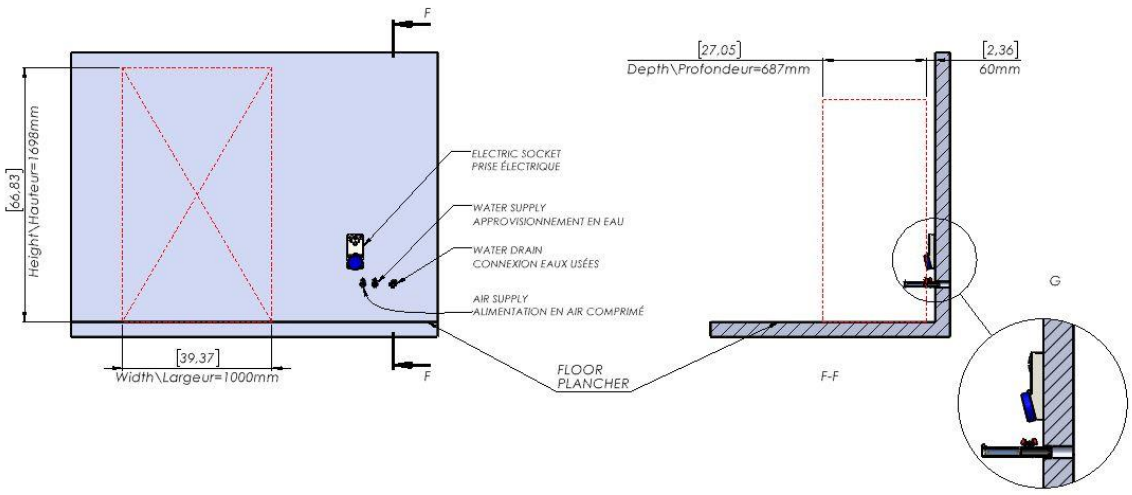
3. Wiring for the supply of electrical power and compressed air, up to the control panel and with power rating matching that on the data plate provided by **BICARjet® S.r.l.**, including earth connection.

- Cordon off the work area to prevent unauthorized access.

2.3 PREPARATION FOR INSTALLATION

There must be sufficient space for manoeuvring the means of transport and for lifting of the device, in order to guarantee the safety of the operators entrusted with installation.

Wall predisposition simulation:



2.3.1 PREPARATION OF THE ELECTRICAL SYSTEM

The following are the responsibility of the **specialized technical staff**:

Electrical supply: **230** V **50** Hz **16** A

Power: **3.2** kW

The connection to the power supply network must be carried out by specialized and qualified personnel in accordance with the wiring diagram and the provisions of the Laws and/or Technical Standards in force pertaining to safety in the workplace and electrical systems. Appropriate safety devices must be provided for its operation in line with those required in the area of safety in the workplace.

To ensure a sufficient level of safety, please observe the general rules for the preparation and installation of electrical systems: the earthing system must meet the specific characteristics defined by the CEI 64-8 standard.

2.3.2 PREPARATION OF THE COMPRESSED AIR SYSTEM

Air supply: 6 (min) bar; max 10 bar

Power line: DN 15 mm (1/2")

The supply air must be filtered to min. 50 microns, and must be dehydrated and free of dust and lubricating oils.

It should be possible to switch off the power supply socket by inserting a manual closing lever.

2.3.3 PREPARATION OF THE WATER SYSTEM

Water supply: 3 (min) bar

Power line: DN 15 mm (1/2")

2.3.4 PREPARATION OF THE DRAINAGE SYSTEM

Connection to the non-hazardous industrial waste water discharge system according to *Annex V part III of Legislative Decree no. 152/06*

Wall drainage line: Ø40 mm

2.3.5 PREPARATION OF THE WORK AREA

In order to guarantee maximum safety, it is necessary to identify with horizontal signs the areas not to be accessed by exposed people, the loading and unloading areas, and the work area for the operator as indicated in the layout drawing.

2.4 COMMISSIONING REPORT

Extract from the "**COMMISSIONING REPORT**" form. Annex 1 of this manual.

CHECKS TO CARRY OUT ON MODEL STK 100				
No.	**PRELIMINARY CHECKS**	**RESULT**		
	before supplying electrical power to the system, check:	**Pos.**	**Neg.**	**N/A**
1	the integrity and stability of the system			
2	the integrity of the electrical, compressed air, water and drain connections			
3	that the air and water supply valves on the wall do not leak			
4	that the safety systems are intact and have not been triggered (emergency buttons)			
5	the integrity of the hoses in the cabin			
No.	**OPERATION CHECKS**	**RESULT**		

	supply electrical power to the system and check:	**Pos.**	**Neg.**	**N/A**
1	switching on of the touch panel and loading of the program			
2	switching on of the lights inside the cabin			
3	the absence of alarms/signals at the panel			
4	the presence of air/water at the panel			
5	operation of the emergency buttons (mushroom-head)			
6	operation of the door and the capacity of the gas springs to support it			
7	loading the SAFEKLINIC bottle			
8	operation of spray handpieces by pressing the pedals			
9	operation of the wiper/ wiper water by pressing the pedals			
10	absence of leaks			
11	operation of aspirator			
12	operation of drain pump			

2.4.1 COMMISSIONING ACTIVITIES

The preliminary checks are carried out to make sure that the system is safe before it is put into operation.

No.	**PRELIMINARY CHECKS**
	Before supplying electrical power to the system, check:
1	**The integrity and stability of the system:** that there is no visible damage to the structure
2	**The integrity of the electrical, compressed air, water and drain connections:** that there are no frayed electrical cables or loose connectors that the pneumatic and water hoses are intact and secured correctly that the discharge pipes from the hoppers to the bin and the wall drainage line are intact
3	**That when the air and water supply valves on the wall are opened:** the water and air connections do not leak
4	**that the safety systems are intact and have not been triggered (emergency buttons)** that the sensitive edges are intact and in position, and that the emergency stop buttons are intact and operate correctly
5	**the integrity of the hoses inside the cabin** that the air and water hoses of the handpieces are intact and properly secured

No.	OPERATION CHECKS
	Turn the electricity on to the system and check:
1	**switching on of the touch panel and loading of the program** check the loading of the program, check the touch function by pressing the settings button and check the operating parameters. See the chapter in SW manual – HMI PANEL; operating parameters screen
2	**switching on of the lights inside the cabin** visually check that all the LED lights on the cabin roof switch on.
3	**the absence of alarms/signals at the panel** check that the alarm / notifications bell is present on the panel.
4	**the presence of air/water at the panel** check that there is air and water present using the home screen of the panel. Green indicators = OK
5	**operation of the emergency buttons** - External emergency stop button Make sure that if it is pressed when the machine is in operation it effectively stops the machine, that its mechanisms are in good working order and that the machine is reactivated when it is rearmed. Check the message on the panel.
6	**operation of door and gas springs** - Door open / closed sensor Make sure that when the door is open the handpieces do not activate when the pedals are pressed. Check that the message appears on the panel and an alarm sounds. - Gas springs Check the anchor points of the gas pistons on the side levers of the door, their stability and their thrust force/capacity to hold the door when opened upwards. Check that the extension of the piston rods is the same on both sides. Make sure that the door is stable once it is fully open upwards. Check that the pistons support the door as it is moved downwards and that they keep it closed once the downward movement has ended. - Door seal Visually check when closing the door downwards that the gasket deforms under the force of the door and the thrust force of the springs.
7	**loading the SAFEKLINIC bottle** open the lower doors and lift the RFID sensor support bracket upwards; close the blue valve and insert it from the part of the stainless steel wedge as far as it will go into the white cap of the bottle, breaking the seal. Then rotate the entire assembly and insert the valve with bottle into the central seat in the bench.

	Reposition the RFID sensor support bracket downwards, make sure that the green and orange lights on the sensor come on and check the weight reading on the panel.
8	**operation of spray handpieces by pressing the pedals** with the door closed: **SAFEKLINIC®** - Press the left pedal - The function is highlighted in orange on the HMI panel - Air, water and bicarbonate come out from the grey handpiece Bottle weight decrease on the HMI panel (if **SAFEKLINIC®** blocks, it is indicated by an alarm on the panel); consumption per minute +/- 150 g. **PRESSURIZED WATER** - Press the right pedal - The function is highlighted in orange on the HMI panel - Water comes out from the blue handpiece
9	**operation of the wiper/ wiper water by pressing the pedals** pressing the pedals automatically activates the wiper and the water on the front window. Check actual operation.
10	**Absence of leaks** Open the doors of the bench and visually check that no water is leaking from the three-piece connection between the hopper and the stainless steel collection bin below. Check for leaks at the connections from the bin drain and the drain pump at the bottom right of the bench. Pay attention to the support brackets of the bicarbonate bottle RFID sensor located in front of the bin and secured to the three-way drain valve.
11	**Operation of aspirator** Open the doors of the bench and listen to see if it is working by pressing a pedal with the cabin door closed.
12	**Operation of drain pump** Open the lower doors and listen to see if it is working by keeping a pedal pressed (with the cabin door closed) until the level inside the waste bin is sufficient to activate the drain pump via the sensors on the lid. It will automatically switch off after about 20 seconds, discharging the contents of the bin.

The installation technician should indicate the outcome of each test in the boxes on the right of the "commissioning report" form, positive, negative or not applicable.

Once the operational checks have been completed, the technician will fill out the report indicating the status/condition of the system after commissioning and include any notes. He will also fill in the "replacements" table, if necessary.

2.5 POST-INSTALLATION CHECKS

To be carried out by:

qualified personnel: those persons who have completed specialization courses, training courses, etc., and have experience in installing, commissioning and servicing, repairing and transporting the machine produced by **BICARjet®**. Qualified technician: the person responsible for all electrical adjustments, maintenance and repairs. This technician can operate on live parts in electrical switchboards and junction boxes.

Adjustments:

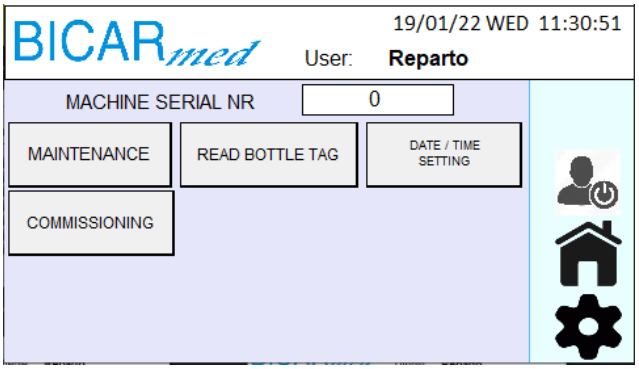
The **STK 100** machine delivered by **BICARjet® S.r.l.** is already set up and ready for operation.

It is recommended that these operations be carried out only by qualified personnel, or by the Manufacturer's personnel.

IMPORTANT:

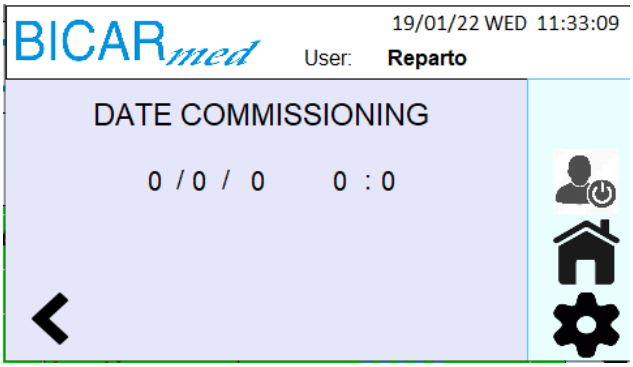
ONCE INSTALLATION HAS BEEN COMPLETED AND THE CHECKS HAVE BEEN CARRIED OUT, THE TECHNICIAN HAS TO REGISTER THE END OF COMMISSIONING USING THE FOLLOWING PROCEDURE:

<table>
<tr><td>LOGIN and access SETTINGS -> SYSTEM on the HMI touch panel.

Press the COMMISSIONING option</td><td> 
</td></tr>
<tr><td>Press SET.

The system will automatically enter and record the date and time that commissioning was completed.

The SET button will no longer be visible and it will not be possible to repeat the commissioning activity.

The system will automatically start the timer for the next maintenance to be carried out on the machine.</td><td> 
</td></tr>
<tr><td colspan="2">The technician can now log out by pressing the central icon on the vertical bar on the right of the panel.</td></tr>
</table>

3 MAINTENANCE

The purposes of maintenance are:

- To keep the device in good working order and ensure maximum production at the best quality, minimizing residual risks associated with use of the system;
- to prevent failures and breakages and guarantee repairs in the shortest possible time;
- to increase the efficiency of the machines and avoid overly expensive breakdowns and repairs.

The need to carry out this work is established by conducting routine checks and inspections, which simply involve measurements and physical tests to determine the conditions of the machine and main equipment most prone to wear.

The personnel is required to observe the system on the basis of the following sensory principles:

- sight, i.e. optical and visual observation;
- hearing, i.e. listening for noises;
- touch, i.e. sensory detection of temperature, vibrations etc.

These checks, inspections, adjustments or replacements must be carried out at the frequency indicated in the **PREVENTIVE MAINTENANCE SCHEDULE** prepared by the manufacturer.

The work involves routine maintenance as well as non-routine maintenance following faults or breakages.

The management of maintenance has been divided into:

- ROUTINE MAINTENANCE – daily, weekly and monthly
- PREVENTIVE MAINTENANCE - every 4 months
- NON-ROUTINE MAINTENANCE/FAULTS - at the request of the customer or on the manufacturer's recommendation

The useful life of the device if used and maintained properly is 10 years

3.1 ROUTINE MAINTENANCE

ROUTINE MAINTENANCE consists of daily and monthly inspections and checks aimed at obtaining the maximum operating efficiency of the machine.

Routine maintenance is divided into daily and monthly inspections/checks.

Only the prescribed materials (**SAFEKLINIC® and BICARjet® Original Spare Parts**) must be used and routine maintenance must be carried out in a regular and systematic manner in accordance with the indications given in the specific work schedule below.

Trained operators who use the machine and carry out routine daily maintenance must follow the instructions below:

- ***IMPORTANT:***
  *In case of failure/anomaly of the **SAFE CleanBox** it is necessary to contact the assistance service.*

PERSONAL PROTECTIVE EQUIPMENT (PPE):
Nitrile gloves
Protective glasses or face shields
headwear
Body gowns or coveralls
Protective footwear

The manufacturer BICARjet S.r.l. is not liable for injury or damage due to non-compliance with this provision.

In turn, the employer should evaluate the risks for the operators deriving from the routine maintenance, cleaning and sanitization of the system, in order to define the PPE that it deems most appropriate to carry out these activities and to inform the personnel.

3.1.1 ROUTINE MAINTENANCE: DAILY

CHECKS AT THE START OF THE WORK SCHEDULE		
DESCRIPTION	**WHO**	**ACTIONS**
LEVEL OF SAFEKLINIC® BICARBONATE	TRAINED OPERATOR	Visually check the quantity of SAFEKLINIC® bicarbonate in the bottle located in the lower right compartment. The weight and level of the bottle are indicated on the HMI panel. If necessary, replace the bottle by extracting the whole unit, closing the valve and sliding the bottle upwards. Then insert the valve into the new container, turn the bottle upside down and place it in the appropriate space in the feed unit.
INSIDE LIGHTS	TRAINED OPERATOR	Visually check that the interior lights of the cabin are on.
GLOVES AND FLANGES	TRAINED OPERATOR	To avoid unnecessary accidents, it is recommended to visually check the state of wear of the gloves at the beginning of each work cycle, immediately reporting to the internal maintenance manager the presence of any abnormal cuts or abrasions that could affect tactile sensitivity and safe use of the same. It is also important to check closing of the glove flanges on the front of the panel to avoid leaks.
NOZZLES	TRAINED	Before starting the work schedule, visually check that the spray nozzles are working correctly by checking that

	OPERATOR	the mixture of air, water and SAFEKLINIC® flows freely and continuously from the grey handpiece when the left pedal is pressed and that the air and water mixture flows freely from the blue handpiece when the right pedal is pressed. In relation to the functions described, visually check the operation of the wiper. DO NOT OBSTRUCT OR PLUG THE NOZZLE OUTLET!
SEALS	TRAINED OPERATOR	It is advisable to check visually and by touch (if possible) the air-tightness and wear of the cabin seals. (example: glass panel and doors).

ACTIVITIES AT END OF WORK SCHEDULE		
DESCRIPTION	**WHO**	**ACTIONS**
RINSING INSIDE THE CABIN	TRAINED OPERATOR	After using the machine, all processing residues containing **SAFEKLINIC®** inside the cabin must be rinsed out (with the doors closed) through the blue handpiece. This must be done because the bicarbonate is hygroscopic and highly sensitive to the external environment, and humidity can cause the crystallization of the grains of bicarbonate in the conduits inside the cabin, obstructing them and compromising their durability. Visually check and make sure to also clean the area under the gloves and the entire surface of the ceiling of the cabin with the jet of water.
SANITIZATION OF THE CABIN	TRAINED OPERATOR	SANITIZATION is, to all intents and purposes, a form of machine maintenance that aims to minimize, as far as possible, the risks of the stagnation and spreading of processing residues that could affect the safety of users. For this reason, sanitization is to be considered part of the MANDATORY daily maintenance before shutdown. After rinsing, as described above, carry out the sanitization procedure. Place a decontaminating spray in the cabin and close the door. Spray the entire inner surface of the cabin, paying particular attention to the less visible parts such as the area under the

		gloves, the roof, the gloves, below the bracket of the handpieces and spray everything with the sanitizing solution. Leave it for the contact time indicated by the manufacturer of the product. Rinse the entire inner surface of the cabin using the blue handpiece.
CLEANING AND SANITIZATION OF THE EXTERNAL PARTS OF THE CABIN	TRAINED OPERATOR	Open the front door and thoroughly rinse the outer closing edge of the door with a cloth dampened with water and sanitize the parts using a sanitizing spray. Leave it for the contact time indicated by the manufacturer of the product. Rinse the parts with a cloth dampened with water. Carry out the same procedure for the external surfaces of the cabin and see chapter 4.3 of the User Manual.

3.1.2 ROUTINE MAINTENANCE: WEEKLY

ACTIVITIES AT END OF WORK SCHEDULE		
DESCRIPTION	**WHO**	**ACTIONS**
CLEANING IN CABIN WITH BICARBONATE	TRAINED OPERATOR	Clean the internal walls of the cabin thoroughly using the bicarbonate handpiece. This will permit complete mechanical removal of all solid residues deposited inside. Visually check that all residues have been removed, using the blue handpiece to rinse thoroughly with pressurized water.
SANITIZATION OF THE CABIN	TRAINED OPERATOR	Sanitize the inside of the cabin as indicated at the end of work activities in the previous table.
SANITIZATION OF THE SUPPORT SURFACES INSIDE THE CABIN	TRAINED OPERATOR	Remove each support surface (3 surfaces) from the cabin by lifting them upwards. Leave them to soak in a tank containing a solution of water and disinfectant. Wait for the contact time declared by the product. The support surfaces inside the cabin can be cleaned using standard thermal disinfection wash cycle. Visually check that the tank under the support surfaces and the drain are free from solid residues, otherwise use the blue handpiece to rinse them until the material has been completely removed.

SANITIZATION OF THE GLOVES	TRAINED OPERATOR	Extract the gloves by removing the front flanges and leave them immersed in a tank with a solution of water and disinfectant. Wait for the contact time declared by the product.
CLEANING THE INSIDE OF THE GLASS PANEL	TRAINED OPERATOR	Introduce an anti-limescale spray in the cabin, cover all the glass internally, wait 2 minutes and rinse thoroughly using the blue handpiece.

3.1.3 ROUTINE MAINTENANCE: MONTHLY

ACTIVITIES AT END OF WORK SCHEDULE		
DESCRIPTION	**WHO**	**ACTIONS**
CLEANING THE BICARBONATE FEED UNIT	TRAINED OPERATOR	Remove the bottle of SAFEKLINIC, closing the valve manually. Completely remove any excess bicarbonate that has accumulated in the injection port using the suction system. Replace the bottle of SAFEKLINIC with the valve closed. Now run the automatic cleaning cycle for the bicarbonate feed unit using the “UNBLOCK BICARBONATE” function on the settings/menu screen. Once the cycle has been completed, open the valve of the SAFEKLINIC bottle. Press the spray pedal and make sure that the weight of bicarbonate decreases.
BIN CLEANING	TRAINED OPERATOR	Press settings on the HMI touch panel and then press the CLEAN BIN button. The button will become blue (in operation) and will activate a cycle in which water jets will automatically clean the inside of the collection bin and then discharge the contents via the pump. All operations are repeated twice. The duration of the cycle varies from 3 to 5 minutes.

IMPORTANT:
Any damage due to wear, breakages or malfunctions encountered during the inspections/checks described above must be reported to the department manager and to the manufacturer (BICARjet S.r.l.). The customer,

*and therefore the trained operators who use the **SAFE CleanBox** machine, are only authorized to replace the gloves.*

3.2 PREVENTIVE MAINTENANCE

PREVENTIVE MAINTENANCE means all the maintenance operations of inspection/control, adjustment and replacement of parts aimed at preventing breakdown, according to established criteria.

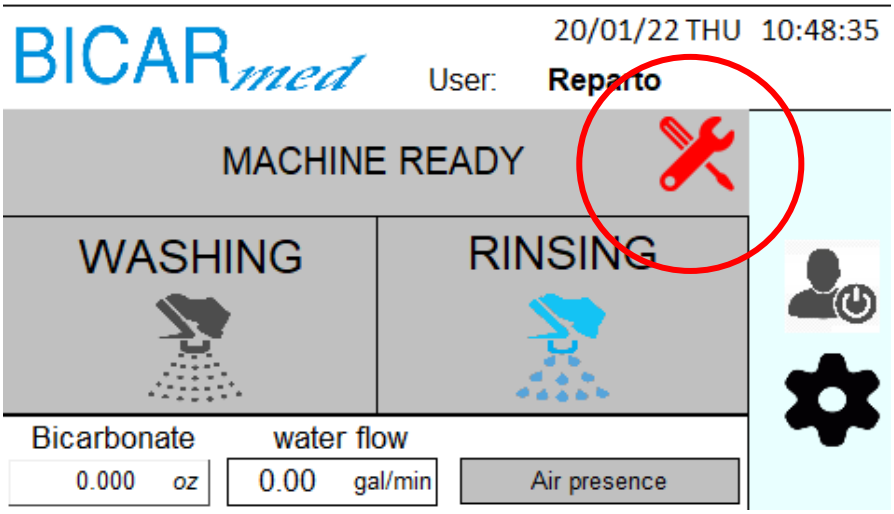
To be carried out by:

BICARjet® S.r.l. technician qualified technician provided by **BICARjet® S.r.l.** or specialized personnel trained by **BICARjet® S.r.l.** to carry out replacements / repairs and operational checks.

Frequency:

every four months.

An indicator light on the HMI touch panel of the SAFE CleanBox devices indicates if scheduled preventive maintenance has to be carried out:



PERSONAL PROTECTIVE EQUIPMENT (PPE):

Nitrile gloves
Protective glasses or face shields
Body gowns or coveralls

Safety shoes

3.2.1 PREVENTIVE MAINTENANCE REPORT

Extract from the "**MAINTENANCE REPORT**" form. Annex 2 of this manual

PRE-MAINTENANCE REPORT
SYSTEM STATUS / CONDITIONS

CHECKS TO BE APPLIED TO STK 100 MODEL				
N°	**PRELIMINARY CHECKS**	**RESULT**		
		Pos.	**Neg.**	**N/A**
1	Visual verification of the integrity and stability of the equipment			
2	Sanitization of the cabin interior			
3	Sanitization of the cabin exterior			
4	Take out and sanitize the inside carpets and gloves			
N°	**INTERVENTION**	**RESULT**		
		Pos.	**Neg.**	**N/A**
1	General cleaning of the system and removal of the cabin carter covers			
2	Check the integrity and functioning of the safety devices			
3	Check the integrity of glass and tightness of its seal			
4	Check the integrity and functioning of the LED lamps			
5	Check the integrity and functioning of the doors and the tightness of the relative gaskets			
6	Check the integrity and tightness of the glove flanges and of the gloves themselves			
7	Check the integrity of the tubes inside the cabin			
8	Check the integrity of the pedals, their connector and the functioning of the handpieces inside the cabin			

9	Check the operation of the external control touch panel			
10	Check the bench opening doors			
11	Check the integrity and functioning of the aspirator			
12	Check the integrity of the air / water / exhaust pipes, air pressure gauges and read the water flow switch			
13	Check the integrity of the collection bin under the bench			
14	Open the collection bin, sanitize the cover and the bin itself			
15	Clean the bicarbonate compartment under the bench			
16	Check the integrity and functioning of the bicarbonate transport group			

INTERVENTION REPORT
SYSTEM STATUS / CONDITIONS

3.2.2 PREVENTIVE MAINTENANCE ACTIVITIES

The pre-maintenance activities are carried out to make sure that the system is safe before it is put into operation.

No.	PRE-MAINTENANCE ACTIVITIES
1	**Check by sight of the integrity and stability of the system** that there is no visible damage to the structure
2	**Sanitization of the inside of the cabin** Use a sanitizing spray to sanitize the inside of the cabin.
3	**Sanitization of the outside of the cabin** Use a sanitizing spray to sanitize the outside of the outer closing edge of the doors.
4	**Sanitization of the mats inside the cabin and the gloves** Remove each mat (3 pcs) from the inside of the cabin by lifting them upwards. Leave them to soak in a tank containing a solution of water and disinfectant. Wait for the contact time declared by the product. The mats inside the cabin can be cleaned using standard thermal disinfection wash cycle. Visually check that the tank under the mats and the drain are free from any solid residues, otherwise use the blue handpiece to rinse until the material is completely removed. Remove the gloves by taking off the front flanges and leave them to soak in a tank containing a solution

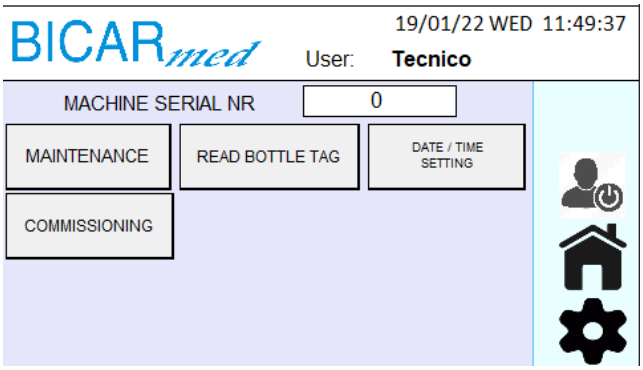
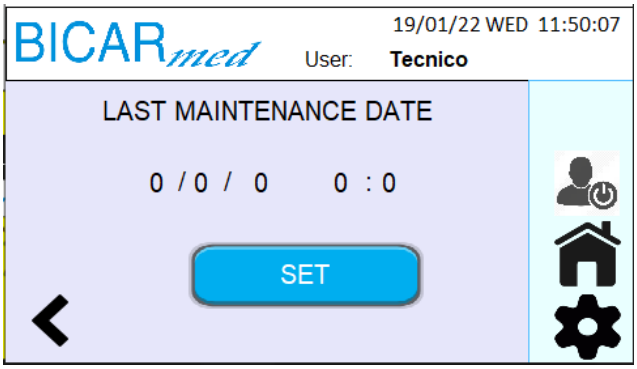
	of water and disinfectant for 10 minutes.
No.	**OPERATIONS**
1	**General cleaning of the system**
2	**Operation of touch panel and operating parameters** check the loading of the program, check the touch function by pressing the settings button and check the operating parameters. See the chapter in SW manual – HMI PANEL; operating parameters screen
3	**integrity and operation of the safety devices** - External emergency stop button Make sure that if it is pressed when the machine running, it effectively stops the machine, that its mechanisms are in good working order and that the machine is restored when it is rearmed. Check the message on the panel.
4	**Integrity of the cabin's glass panels and the tightness of the seals** Visually inspect and touch the front glass and the adhesive gasket to make sure they are intact and there are no damages or leaks.
5	**Integrity and operation of the LED lamps** Visually check that the interior LED lights in the cabin roof switch on.
6	**Integrity and operation of the doors and tightness of the seals** - Door open / closed sensor Make sure that when the door is open the handpieces do not activate when the pedals are pressed. Check that the message appears on the panel and an alarm sounds. - Gas springs Check the anchor points of the gas springs on the side levers of the door, their stability and their thrust force/capacity to hold the door when opened upwards. Check that the extension of the rods of the gas springs is the same on both sides. Make sure that the door is stable once it is fully open upwards. Check that the gas springs support the door as it is moved downwards and that they keep it closed once the downward movement has ended. - Door seal Visually check by closing the door downwards that the gasket deforms under the force of the door and the thrust force of the gas springs.
7	**Integrity and seal of the gloves and glove flanges** - remove the flanges - check the seals - remove the gloves - clean/sanitize the gloves Immerse the gloves to check for cuts.
8	**Integrity of the hoses inside the cabin** Check the condition of the points at which the hoses are connected to the handpieces. Make sure they

	are not worn or badly positioned.
9	**Integrity of the pedals, connector and the operation of the handpieces** Visually check the integrity of the connector, electrical cable and pedals: **SAFEKLINIC®** - Press the left pedal - The function is highlighted in orange on the HMI panel - Air, water and bicarbonate come out from the grey handpiece - Bottle weight decrease on the HMI panel (if **SAFEKLINIC®** blocks, it is indicated by an alarm on the panel) Bottle weight decrease on the HMI panel (if **SAFEKLINIC®** blocks, it is indicated by an alarm on the panel); consumption per minute +/- 150 g. If consumption is lower, see point 18. **PRESSURIZED WATER** - Press the right pedal - The function is highlighted in orange on the HMI panel - Steady blue light on the push-button panel inside the cabin - Water comes out from the blue handpiece
10	**bench opening doors**
11	**Operation of aspirator** Bin opening and connection for cleaning and blockage check. Check aspirator operation using the test cycle.
12	**Integrity of the air/water/drain hoses** Visually check that there are no leaks and the condition of the connections.
	Integrity and operation of the air pressure gauges and the water flow switch reading Open the doors of the bench and visually check that they are working correctly.
13	**Integrity of the collection bin** Visually check that there are no leaks and the condition of the bin.
14	**Opening of the bin, sanitization of the lid and bin** See the chapter replacements guide, bench unit.
15	Cleaning of the **SAFEKLINIC®** compartment
16	**Integrity and operation of the SAFEKLINIC® feed unit** - Press the left pedal - The function is highlighted in orange on the HMI panel - Air, water and bicarbonate come out from the grey handpiece - Bottle weight decrease on the HMI panel (if **SAFEKLINIC®** blocks, it is indicated by an alarm on the panel); consumption per minute +/-150 g. If consumption is lower, use the "unblock bicarbonate" function on the HMI panel described in the monthly maintenance chapter. Then remove the grey spray nozzle from inside the cabin and disconnect the **SAFEKLINIC® black flow tube** from its quick coupling. Once the tube has been disconnected, inject compressed air (NO WATER)

	into the quick coupling hole on the handpiece for 10 seconds in order to free the conduit inside the nozzle. Make sure that the conduit is free and then reconnect the **SAFEKLINIC® black flow tube.** Then check the bicarbonate consumption on the HMI panel for 1 minute. consumption per minute +/- 150 g.

IMPORTANT:

ONCE THE SCHEDULED PREVENTIVE MAINTENANCE HAS BEEN COMPLETED AND THE TESTS HAVE BEEN CARRIED OUT, THE TECHNICIAN SHOULD REGISTER THE END OF MAINTENANCE USING THE FOLLOWING PROCEDURE:

LOGIN and access SETTINGS -> SYSTEM on the HMI touch panel. Press the MAINTENANCE option.	
Press SET. The system will automatically enter and record the date and time the maintenance ended. The system will automatically start the timer for the next maintenance to be carried out on the machine.	
The technician can now log out by pressing the central icon on the vertical bar on the right of the panel.	

3.3 NON-ROUTINE MAINTENANCE AND REPAIRS

NON-ROUTINE MAINTENANCE AND REPAIRS means all diagnostics, replacement and adjustment of parts, aimed at repairing a fault or resolving anomalies, according to established criteria.

To be carried out by:

BICARjet® S.r.l. technician qualified technician provided by **BICARjet® S.r.l.** or specialized personnel trained by **BICARjet® S.r.l.** to carry out replacements / repairs and operational checks.

DIAGNOSTICS AND TROUBLESHOOTING:

- **The device does not start:**
  Check that the emergency mushroom-shaped buttons on the cabin are not pressed, and if necessary release the buttons by turning them anticlockwise and repeating the start-up procedure.

- **Air or water alarm:**
  Check the pressure and flow rate of the compressed air and/or water supply, which is too low. Check that the supply valve is completely open and check the inlet piping for any bottlenecks.

- **The electrical equipment does not work**:
  Check the electrical connection and, if the problem is not solved, check the fuses located inside the electrical panel.

- **Generic alarm does not reset:**
  first activate the emergency buttons and then rearm them, reset everything and see if the problem has been resolved, or turn the system off and on again.

- **Bicarbonate blocked or inconsistent:**
  follow the monthly maintenance procedure to unblock the bicarbonate, if blocked.
  If inconsistent, replace the bottle.

- **When operating the wiper, the blade does not move:**
  Check that the fixing screw of the arm has not come loose. If necessary, re-tighten the screw and make sure it is symmetrical in relation to the axis of the wiper itself.

3.3.1 PARTS REPLACEMENT REPORT

Extract from the "**SERVICE REPORT"** form. Annex 3 of this manual

The preliminary checks and pre-maintenance activities are carried out to make sure that the system is safe before it is put into operation.

MAINTENANCE REPORT
SYSTEM STATUS/CONDITION/CUSTOMER REQUEST FOR ACTION

CHECKS TO CARRY OUT ON MODELS STK 100-103-113 (indicate N/A where the check cannot be carried out)				
No.	**PRELIMINARY CHECKS**	**RESULT**		
	before supplying electrical power to the system, check:	**Pos.**	**Neg.**	**N/A**
1	the integrity and stability of the system			
2	the integrity of the electrical, compressed air, water and drain connections			
3	the mains air and water wall valves do not leak			
4	the safety systems are intact and have not been triggered			
5	the integrity of the hoses in the cabin			
6	the integrity of the electrical and mechanical connections of the loaders			
No.	**PRE-MAINTENANCE ACTIVITIES**	**RESULT**		
		Pos.	**Neg.**	**N/A**
1	Visually inspect the integrity and stability of the system			
2	Sanitization of the inside of the cabin			
3	Sanitization of the outside of the cabin			
4	Sanitization of the mats inside the cabin and the gloves			

No.	**MAINTENANCE DESCRIPTION**
1	
2	

3	
4	
5	

N.	REPLACEMENTS			RESULT		
	Code	Component	Qty.	Pos.	Neg.	N/A
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

CHECKS TO CARRY OUT ON MODEL STK 100				
No.	OPERATION CHECKS	RESULT		
	supply electrical power to the system and check:	Pos.	Neg.	N/A
1	switching on of the touch panel and loading of the program			
2	switching on of the lights inside the cabin			
3	the absence of alarms/signals at the panel			
4	the presence of air/water at the panel			
5	operation of the emergency buttons			
6	operation of the door and the capacity of the gas springs to support it			

7	loading the SAFEKLINIC bottle			
8	operation of spray handpieces by pressing the pedals			
9	operation of the wiper/ wiper water by pressing the pedals			
10	absence of leaks			
11	operation of aspirator			
12	operation of drain pump			

3.3.2 PARTS REPLACEMENT REPORT ACTIVITIES

No.	PRELIMINARY CHECKS
	Before supplying electrical power to the system, check:
1	**The integrity and stability of the system:** that there is no visible damage to the structure
2	**The integrity of the electrical, compressed air, water and drain connections:** that there are no damaged electric cables or loose connectors that the pneumatic and water hoses are intact and secured correctly that the discharge pipes from the hoppers to the bin and the wall drainage line are intact
3	**That when the air and water supply valves on the wall are opened:** the water and air connections do not leak
4	**the safety systems are intact and have not been triggered** that the sensitive edges are intact and in position, and that the emergency stop buttons are intact and operate correctly
5	**the integrity of the hoses inside the cabin** that the air and water hoses of the handpieces are intact and properly secured
6	**the integrity of the electrical and mechanical connections** sensitive edges connector fitted correctly, mechanical connection tightly secured, towers correctly positioned and secured with their respective rear pins

No.	PRE-MAINTENANCE ACTIVITIES
1	**Check by sight of the integrity and stability of the system** that there is no visible damage to the structure
2	**Sanitization of the inside of the cabin**

	Follow the procedure described on the panel and in the user manual for sanitizing the inside of the cabin
3	**Sanitization of the outside of the cabin** Open the front door and thoroughly rinse the outer closing edge of the door with a cloth dampened with water and sanitize the parts using a sanitizing spray. Leave it for the contact time indicated by the manufacturer of the product. Rinse the parts with a cloth dampened with water.
4	**Sanitization of the mats inside the cabin and the gloves** Remove each mat from inside the cabin by lifting them upwards. Leave them to soak in a tank containing a solution of water and disinfectant for 10 minutes. Visually check that the tank under the mats and the drain are free from any solid residues, otherwise use the blue handpiece to rinse until the material is completely removed. Remove the gloves by taking off the front flanges and leave them to soak in a tank containing a solution of water and disinfectant for 10 minutes.

No.	MAINTENANCE DESCRIPTION
1	BRIEF DESCRIPTION OF THE INTERVENTION AND SYSTEM CONDITIONS
2	
3	
4	
5	

N.	REPLACEMENTS	RESULT

	Code	Component	Qty.	Pos.	Neg.	N/A
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

No.	OPERATION CHECKS
	Turn the electricity on to the system and check:
1	**switching on of the touch panel and loading of the program** check the loading of the program, check the touch function by pressing the settings button and check the operating parameters. See the chapter in SW manual – HMI PANEL; operating parameters screen
2	**switching on of the lights inside the cabin** visually check that all the LED lights on the cabin roof switch on.
3	**the absence of alarms/signals at the panel** check that the alarm / notifications bell is present on the panel.
4	**the presence of air/water at the panel** check that there is air and water present using the home screen of the panel. Green indicators = OK
5	**operation of the emergency buttons** - External emergency stop button Make sure that if it is pressed when the machine is in operation it effectively stops the machine, that its mechanisms are in good working order and that the machine is reactivated when it is rearmed. Check the message on the panel.
6	**operation of door and gas springs** - Door open / closed sensor Make sure that when the door is open the handpieces do not activate when the pedals are pressed. Check that the message appears on the panel and an alarm sounds. - Gas springs Check the anchor points of the gas springs on the side levers of the door, their stability and their thrust force/capacity to hold the door when opened upwards. Check that the extension of the rods of the gas

	springs is the same on both sides. Make sure that the door is stable once it is fully open upwards. - Door seal Visually check by closing the door downwards that the gasket deforms under the force of the door and the thrust force of the pistons.
7	**loading the SAFEKLINIC bottle** open the doors of the bench and lift the RFID sensor support bracket upwards; close the blue valve and insert it from the part of the stainless steel wedge as far as it will go into the white cap of the bottle, breaking the seal. Then rotate the entire assembly and insert the valve with bottle into the central seat in the bench. Reposition the RFID sensor support bracket downwards, make sure that the green and orange lights on the sensor come on and check the weight reading on the panel.
8	**operation of spray handpieces by pressing the pedals** with the doors closed: **SAFEKLINIC®** - Press the left pedal - The function is highlighted in orange on the HMI panel - Air, water and bicarbonate come out from the grey handpiece Bottle weight decrease on the HMI panel (if **SAFEKLINIC®** blocks, it is indicated by an alarm on the panel); consumption per minute +/- 150 g. **PRESSURIZED WATER** - Press the right pedal - The function is highlighted in orange on the HMI panel - Water comes out from the blue handpiece
9	**operation of the wiper/ wiper water by pressing the pedals** pressing the pedals automatically activates the wiper and the water on the front window. Check actual operation.
10	**Absence of leaks** Open the doors of the bench and visually check that no water is leaking from the three-piece connection between the hopper and the stainless steel collection bin below. Check for leaks at the connections from the bin drain and the drain pump at the bottom right of the bench. Pay attention to the support brackets of the bicarbonate bottle RFID sensor located in front of the bin and secured to the three-way drain valve.
11	**Operation of aspirator** Open the doors of the bench and listen to see if it is working by pressing a pedal with the cabin door closed.
12	**Operation of drain pump** Open the doors of the bench and listen to see if it is working by keeping a pedal pressed (with the cabin door closed) until the level inside the waste bin is sufficient to activate the drain pump via the sensors on

	the lid. It will automatically switch off after about 20 seconds, discharging the contents of the bin.

4 CLEANING

In addition to cleaning the interior of the cabin, which should always be carried out after use of the device according to the instructions given previously, it is also important to keep the external surfaces of the device clean.
Clean the casing of the device, the panels and the controls with soft cloths that are dry or that have been dampened with a mild detergent solution. **Do not use any type of solvent, such as alcohol or petrol, as they may damage the surfaces. Do not use substances that are abrasive or corrosive or contain chlorine.** This operation must be done at least once a week.

NOTICE:

DO NOT USE WATER OR LIQUIDS FOR CLEANING THE SAFEKLINIC COMPARTMENT. THE INSTRUCTIONS IN THE TABLES OF CHAPTER 3 - ROUTINE MAINTENANCE - MUST BE FOLLOWED TO ENSURE CLEANING OF THE SYSTEM IN SAFETY.

5 TECHNICAL ASSISTANCE

BICARjet S.r.l.
Registered office - Via Nona Strada, 4 - 35129 Padova, Italy

Tel. 049 7808036 / fax. 049 7927203

info@bicarmed.com

6 WARRANTY TERMS AND CONDITIONS

The terms and conditions of the warranty are:
- validity for 12 months from the date of testing and commissioning of the machine
(materials recognized by the manufacturer as defective, excluding consumables and normal wear and tear)

7 REPLACEMENT GUIDE

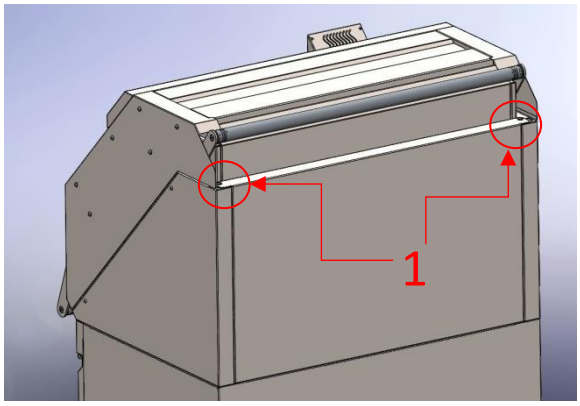
7.1 CABIN UNIT

Open the lower doors to access:

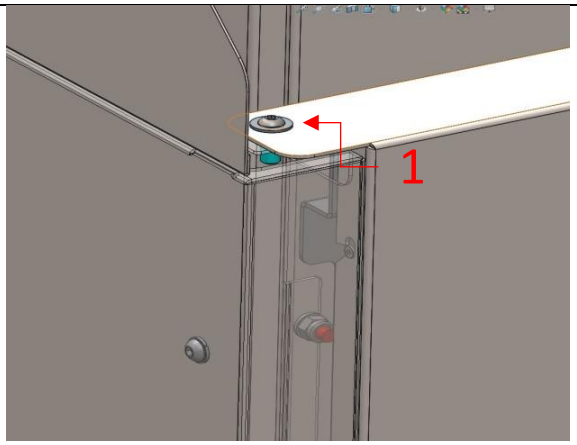
A) **Rear cabin zone**: pneumatic valves, fittings and hoses
B) **External upper cabin zone**: HMI panel, wiper arm and motor
C) **Internal upper cabin zone**: LED lights, wiper arm and internal water hose
D) **Cabin sides:** gas springs, door open / closed sensor
E) **Cabin seals**

For electrical and/or pneumatic connections, see the wiring diagram and the pneumatic diagram.

N.B. BEFORE PROCEEDING MAKE SURE YOU HAVE DISCONNECTED THE POWER SUPPLY!!!

A) **Rear cabin zone**: pneumatic valves, fittings and hoses	
Remove the 2 screws that secure the back panel of the machine (1).	

Lift it slightly upwards and then pull it towards you to release it.



Once the back of the machine has been removed, you will be able to access the valves located at the back.

2: Wiper water valve

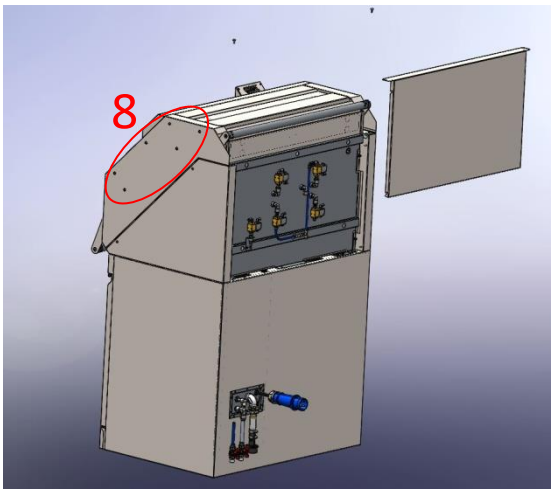
3: Blue handpiece water valve

4: Blue handpiece air valve

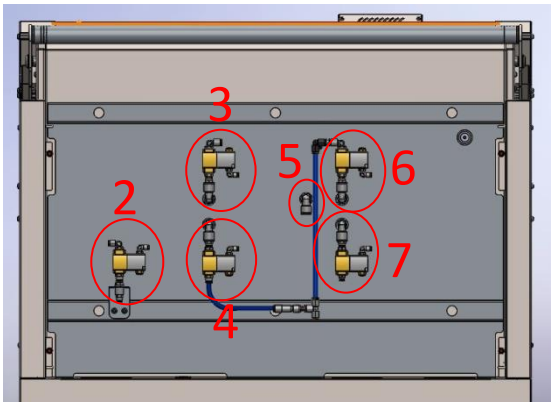
5: Bicarbonate feed hose connection

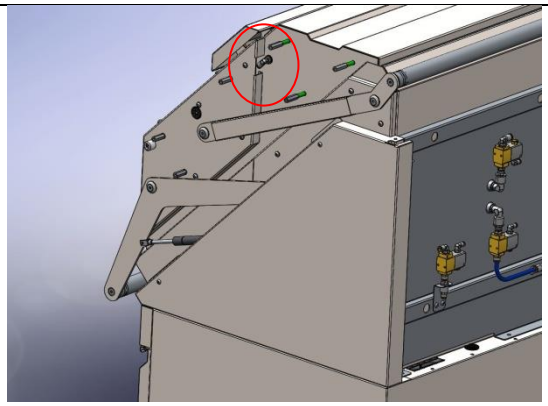
6: Grey handpiece air valve

7: Grey handpiece water valve

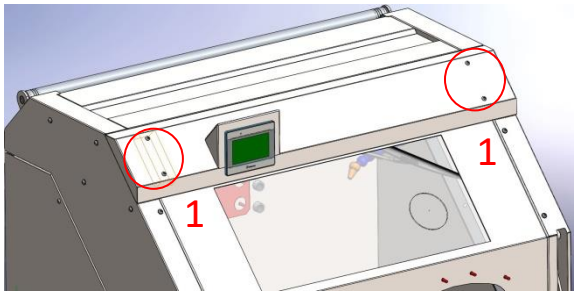
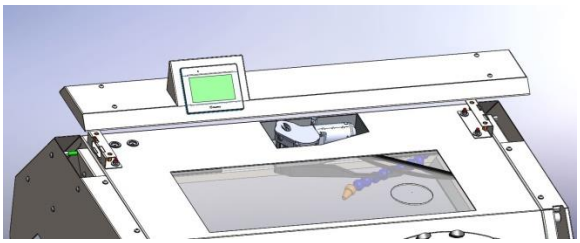


Unscrew the screws of the right casing (8) of the door and remove it in order to access the external fitting that connects the water supply hose to the internal wiper for washing the glass.

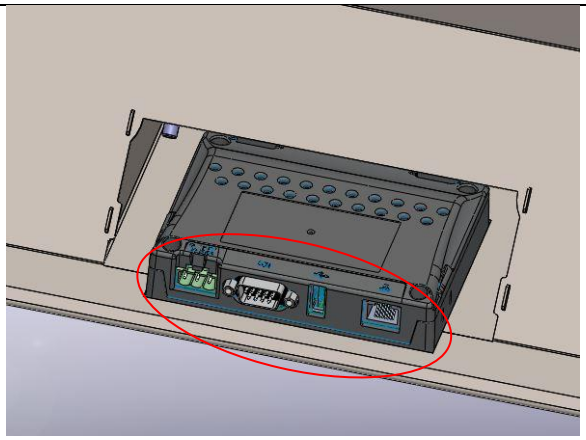


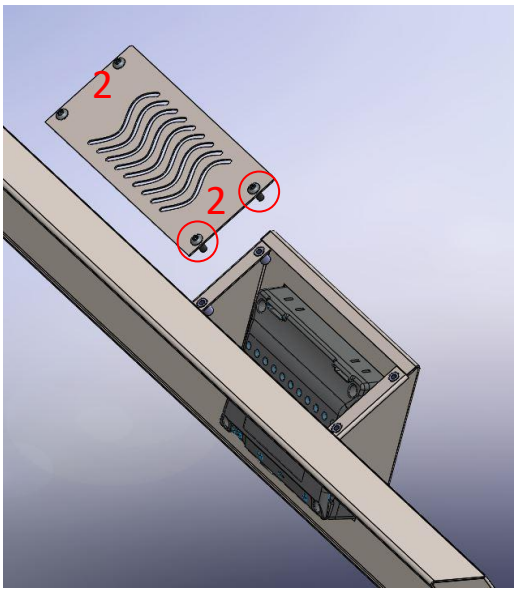
B) **External upper cabin zone**: HMI panel, wiper motor

REMOVING THE HMI PANEL Unscrew the 4 screws that secure the front casing of the machine. (1)	
Lift the casing carefully paying attention to the cables.	
Carefully disconnect the cable connectors from the HMI panel.	

Unscrew the 4 screws (2) of the top cover and remove it.

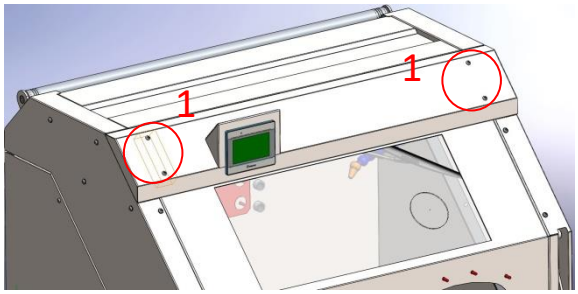


This will allow you to access the side clips on the side of the HMI panel (not shown in the image) that secure it to the sheet metal casing. Unscrew the screw on each clip in order to remove the HMI panel from the casing.

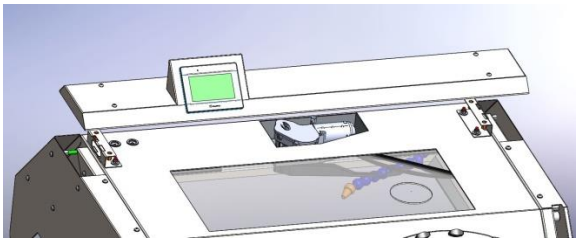


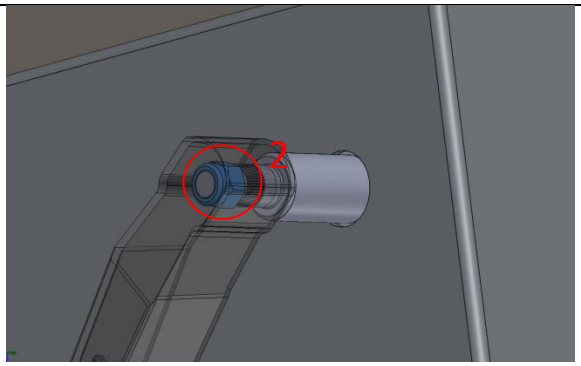
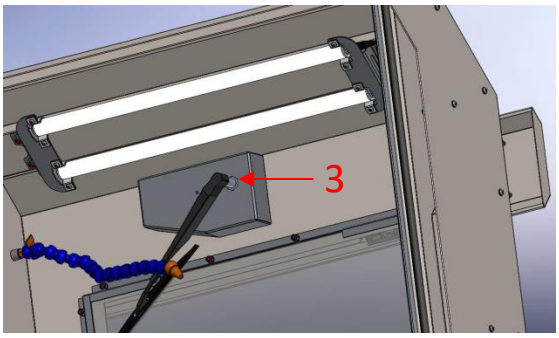
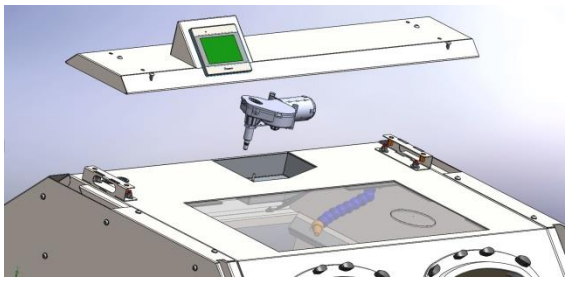
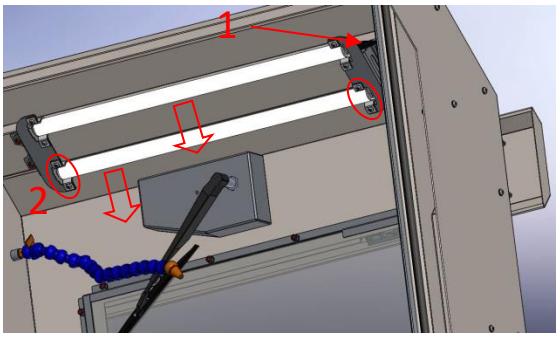
REMOVING THE WIPER MOTOR

Unscrew the 4 screws that secure the front casing of the machine. (1)



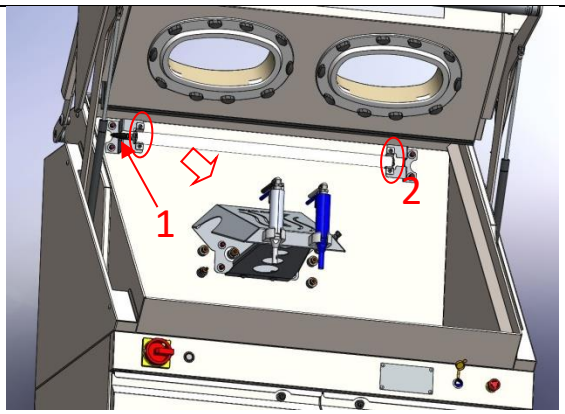
Lift the casing carefully paying attention to the cables.



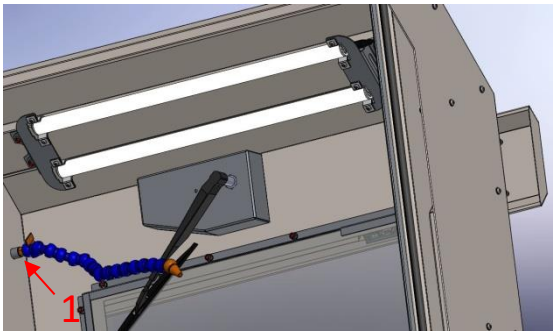
Lift the plastic cover of the wiper arm (2) and unscrew the internal nut on the top of the motor shaft.	
Once the arm and blade have been removed, unscrew the nut at the base of the motor that secures it to the door sheet metal. (3)	
Disconnect the power cables and then remove the wiper gearmotor unit from the outside of the door.	
C) **<u>Internal upper cabin zone</u>**: LED lights, wiper arm and internal water hose	
REMOVING THE LED LIGHTS Unscrew the power connector (1) of the lamp to be removed and pull the lamp outwards to release it from its support. It might be necessary to remove the screws of the plastic lamp holder (2).	

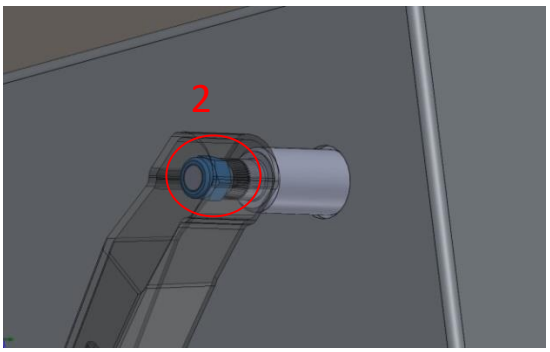
REMOVING THE WIPER ARM AND WATER HOSE

Open the door in order to access the wiper arm and water hose. To remove the window washer water hose, unscrew the fitting in the integrated tap in correspondence with the wall of the door (1).



To remove the wiper arm, lift the plastic cover of the wiper arm (2) and unscrew the internal nut on the top of the wiper motor shaft.

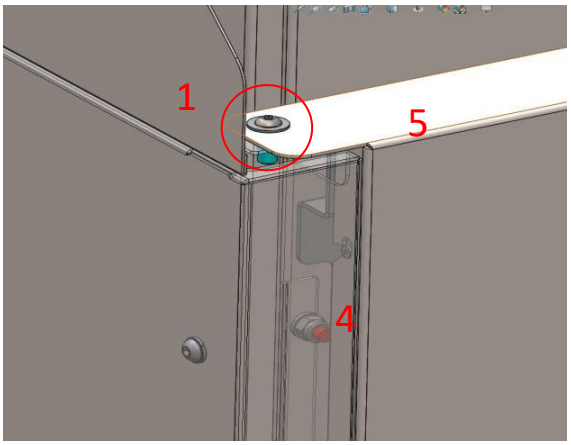




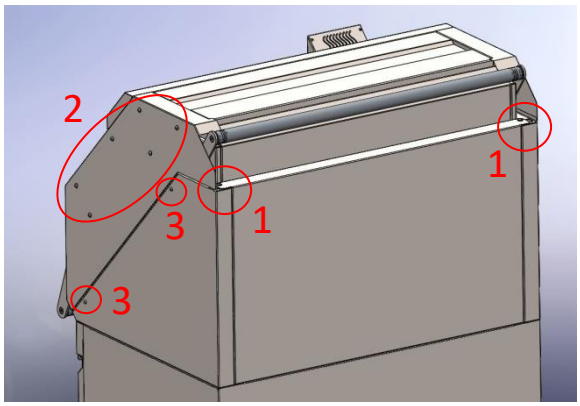
D) **Cabin sides**: gas springs, door open/closed sensor.

REMOVING THE GAS SPRINGS

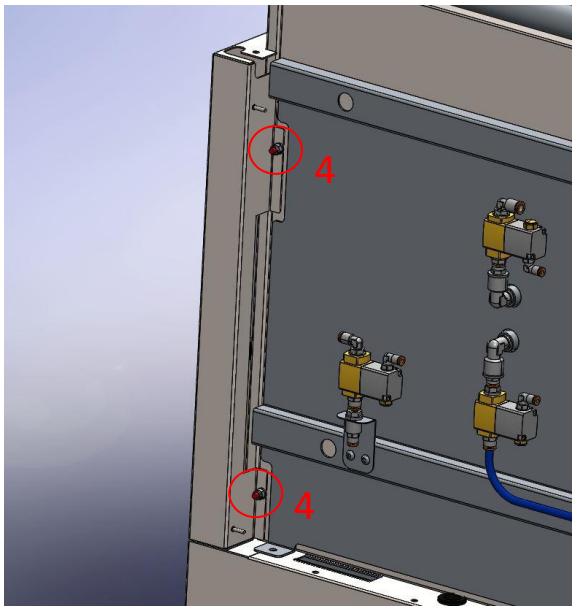
Remove the 2 screws that secure the back panel of the machine (1).



Remove the 8 fixing screws on the left casing of the door in order to remove the left gas spring, or the screws on the right casing in order to remove the gas spring on the right (2).



Then remove the fixed left or right casing by unscrewing the two screws on the side (3) and the two nuts on the back of the machine (4).



Once the casing has been removed, you will be able

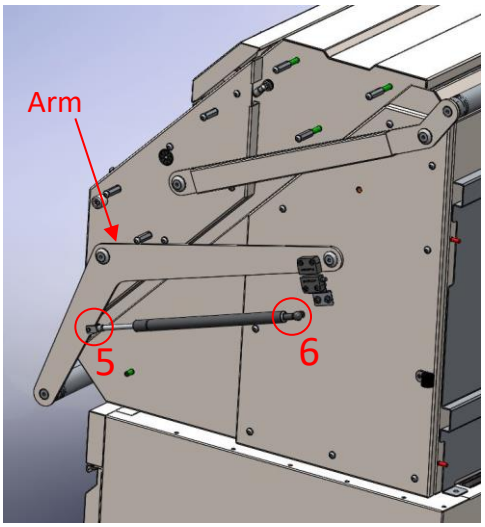
to access the gas spring.

N.B.: Be careful when doing this because as soon as a gas spring is released from the arm of the door, it will lower abruptly if it is not supported manually!

To remove the gas spring from the arm of the door, open the door, release the fastening clips of the fork pin and remove the pin (5).

Lower the door, guiding it until it is completely closed.

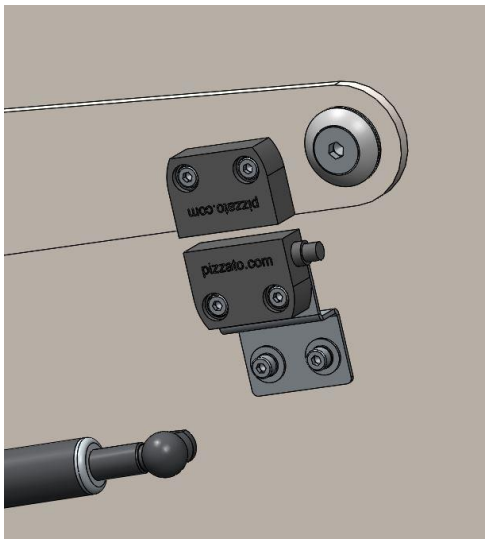
Then unscrew the threaded pin at the joint of the spring (6) in order to remove it from the machine.



REMOVING THE DOOR POSITION SENSOR

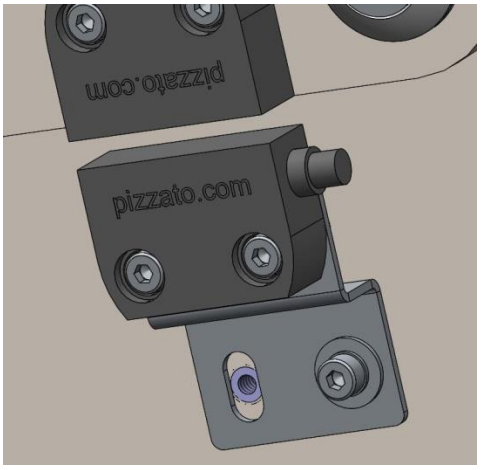
To remove the door position sensor, unscrew the relative fixing screws on the arm and the sheet metal support bracket.

Refer to the wiring diagram and disconnect the sensor power cable.



The sensor consists of two parts that must be positioned no less than 5 mm apart in order to work properly.

The distance between the two parts can be adjusted via the slots in the bracket that allow it to move up and down.



F) **Cabin seals**

Open the front hatch.

REMOVAL:

Remove by pulling an end of the push-on single-flap seal out along the entire internal edge of the door.

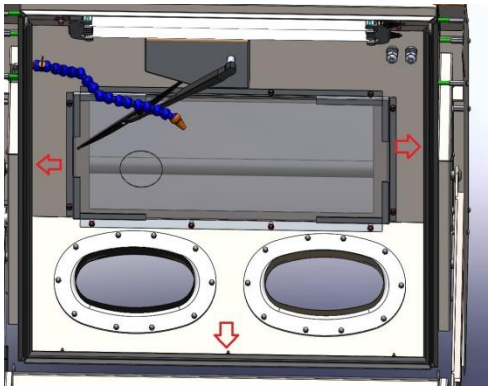
Remove by pulling an end of the round push-on seal out along the entire internal edge of the door.

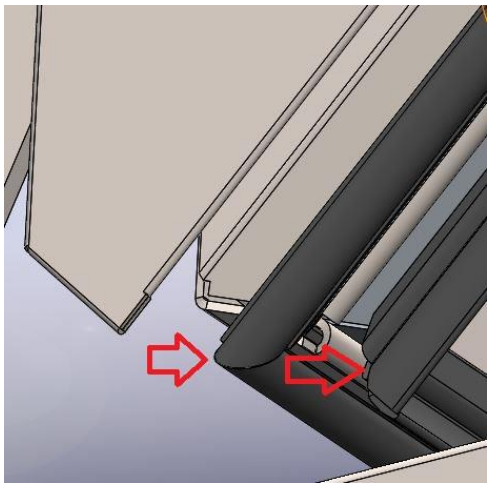
INSTALLATION:

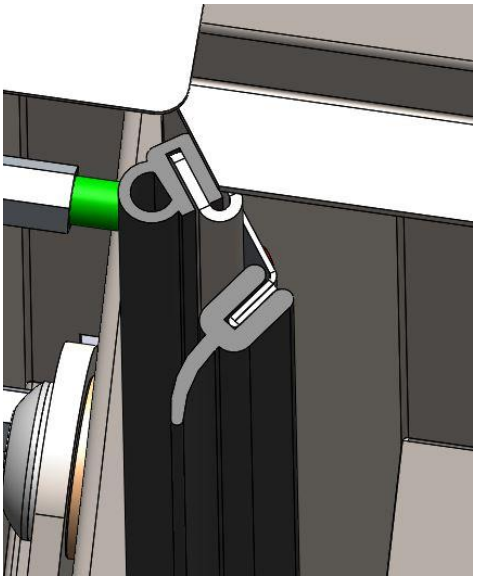
N.B. Make sure that the 45° angle of the seals coincide with the bottom corners of the cabin hatch. The angled edge of the seals must face towards the inside of the cabin.

Fasten along the internal seat of the cabin door by pressing the groove of the round seal inwards.

Carry out the same operation with the single flap seal.



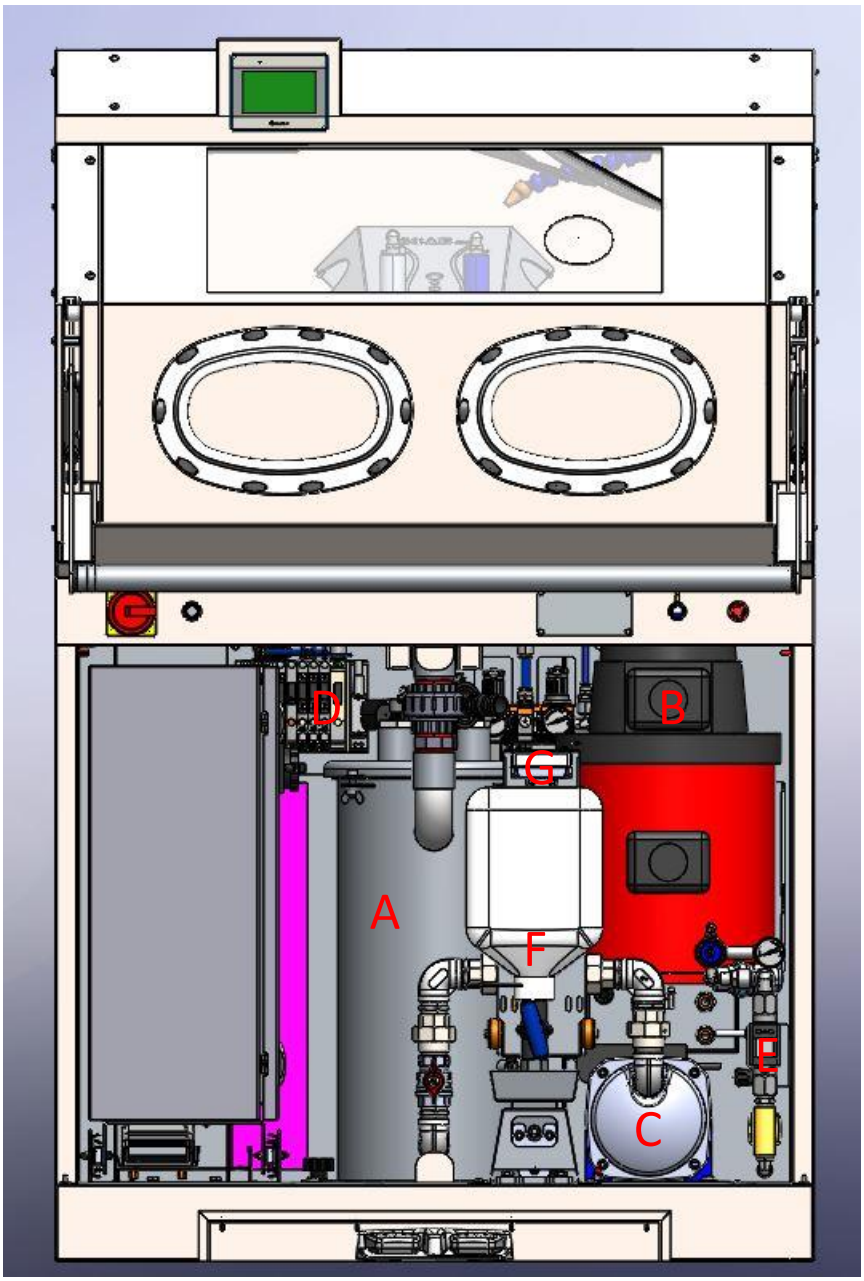




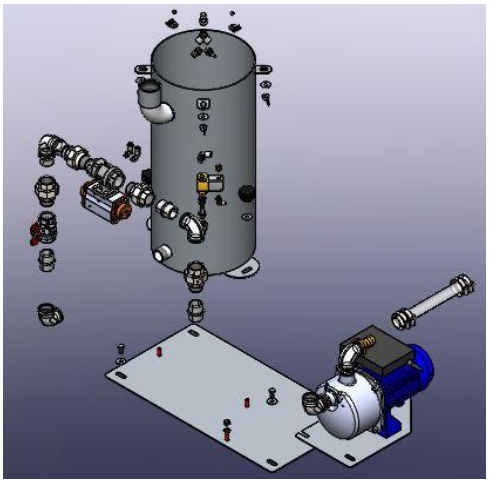
7.2 BENCH UNIT

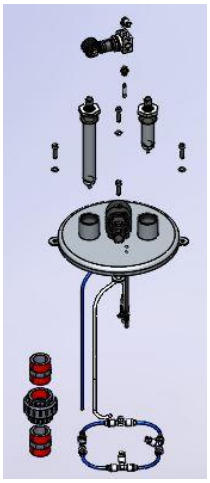
Open the lower doors at the front of the machine in order to access:

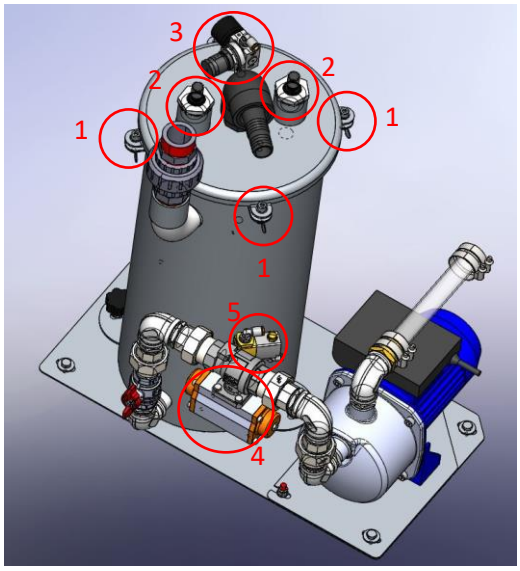
A) Collection bin, level sensors, drains
B) Aspirator, filters
C) Drain pump, drain
D) Pneumatic unit, valve unit
E) Hydraulic unit
F) Bicarbonate feed unit, load cell
G) RFID reader



A) COLLECTION BIN, LEVEL SENSORS, DRAINS







IMPORTANT:

BEFORE CARRYING OUT ANY WORK ON THE COLLECTION BIN, IT IS MANDATORY TO RUN A BIN CLEANING CYCLE, WHICH CAN BE STARTED VIA THE HMI PANEL. LOGIN AS A TECHNICIAN, ACCESS SETTINGS, PRESS THE SYSTEM OPTION AND START THE BIN CLEANING CYCLE.

To remove the lid, unscrew the 4 fastening screws (1) paying attention to the connection pipes for the air jets on the bottom of the bin and the spray ball that can be easily removed by pressing the edge of the quick coupling.

Use a sanitizing spray to sanitize the inside of the bin and the lid.

Check for solid residues and remove them, if necessary.

There are 2 level sensors (2) on the lid, which can be removed by unscrewing the ring nut on the top of the lid, and a pressure regulator with a pressure gauge (3) that can easily be removed by releasing the quick coupling. There is also a spray ball attached to a rod inside the lid.

IMPORTANT: clean the tips of the sensors with water until all material has been completely removed and then dry. Make sure that the “Bin water level probe” light on page 1 of the diagnostics on the HMI panel is grey and not green.

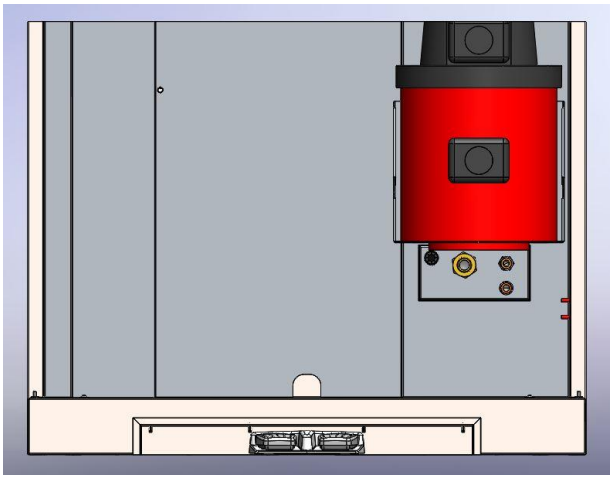
The connection of the aspirator hose, which can also be removed, is located at the centre.

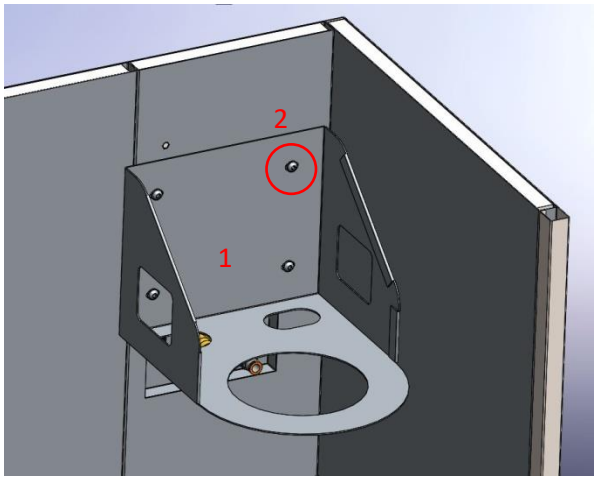
Check for leaks and make sure that the drain hoses are securely connected to the bin.

At the bottom right of the bin, there is a pneumatic water inlet valve (4). Make sure there are no leaks.

To the side of the bin there is a valve (5) for controlling the bin washing water, which can be removed by releasing the quick coupling.

B) ASPIRATOR, FILTERS





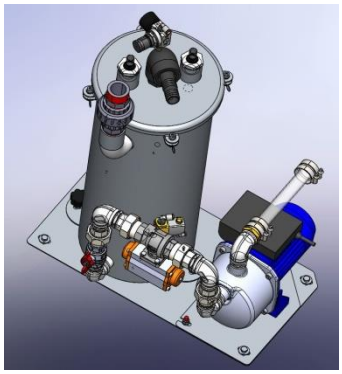
The aspirator is secured to a metal support bracket (1) on the bottom of the bench at the back.

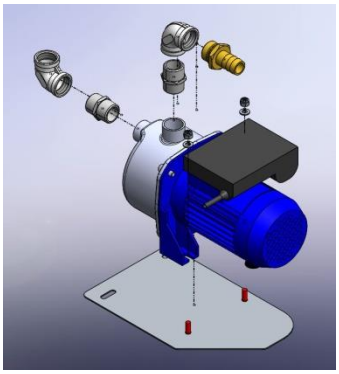
The aspirator is fitted with a HEPA 14 filter and is connected to the collection bin via a suction hose.

To replace it, unscrew the 4 fixing screws (2) on its support and disconnect the connector on the power cable.

A test cycle can be carried out on the aspirator (see chapter 10.18)

C) DRAIN PUMP, DRAIN





The drain pump is secured to the base of the bench by screws.

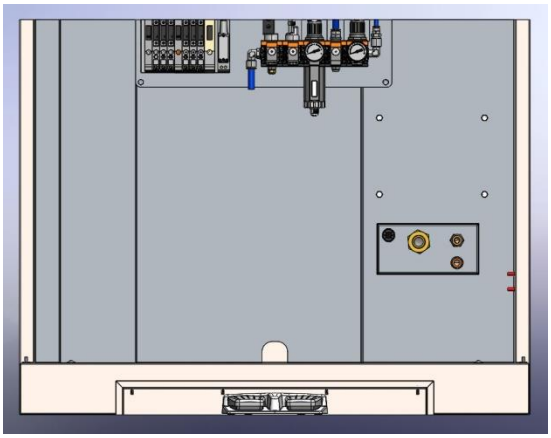
It is connected to the waste bin.

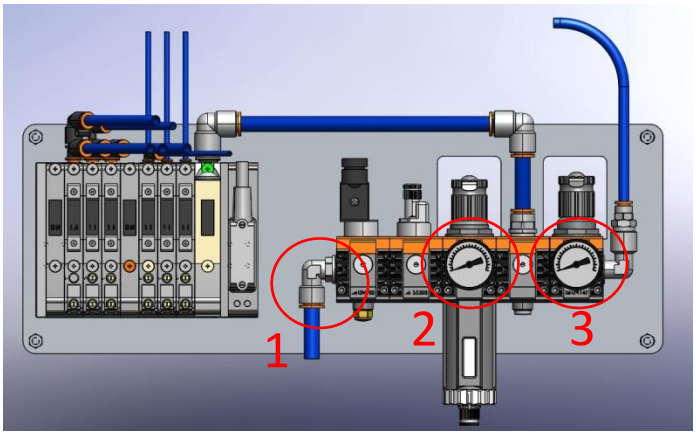
Check for leaks and that the hose is properly secured.

To replace it, unscrew the fixing screws and disconnect the connector on the power cable. Disconnect the suction and delivery hose.

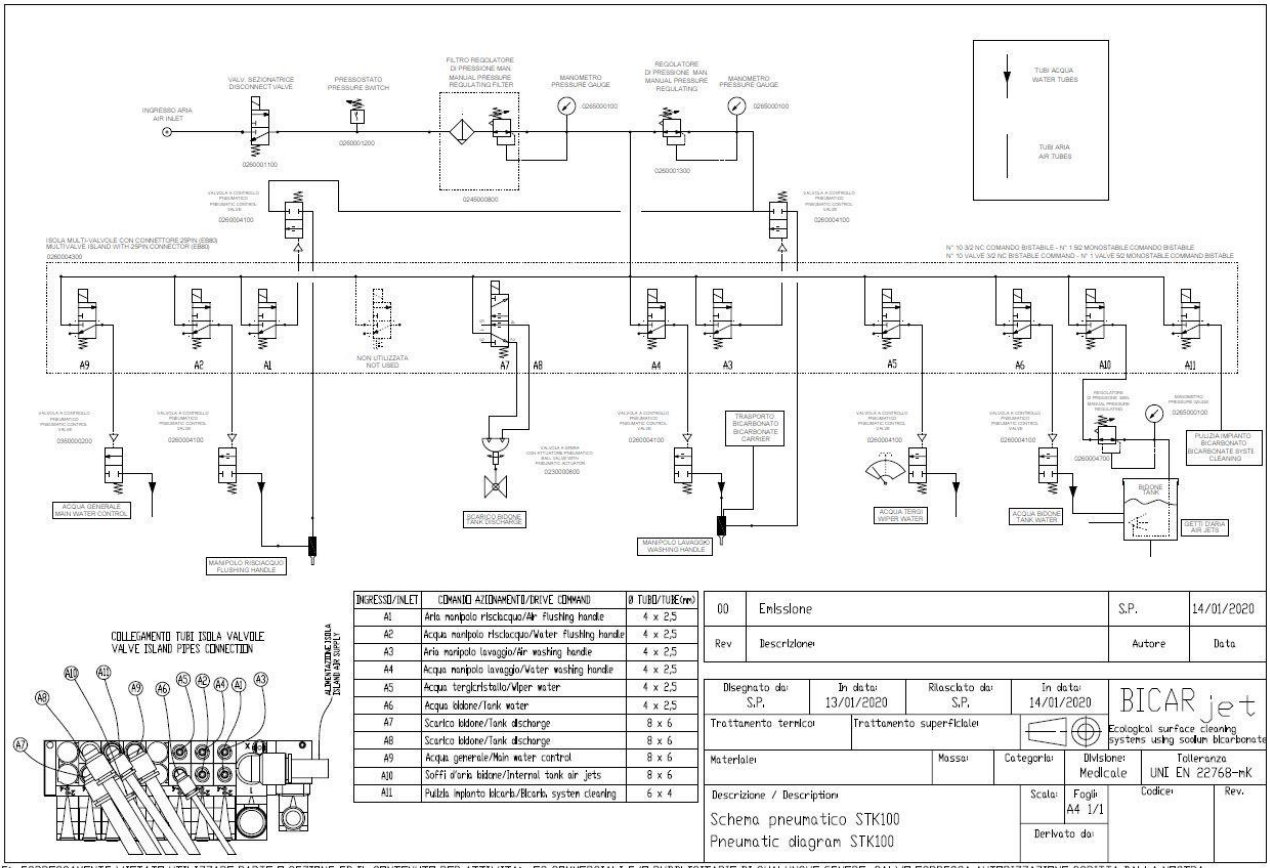
A test cycle can be carried out on the drain pump. (See test cycles)

D) PNEUMATIC UNIT, VALVE UNIT





1. Air inlet to system
2. Air inlet pressure gauge – 6 bar
3. Handpiece air pressure gauge – 5.5 bar

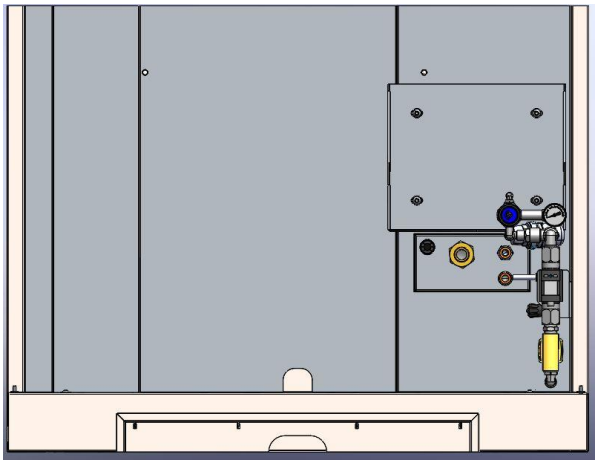


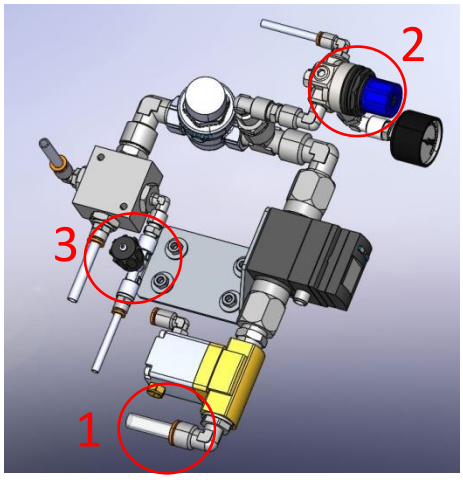
INGRESSO/INLET	COMANDO AZIONAMENTO/DRIVE COMMAND	Ø TUBO/TUBE(mm)
A1	Aria manipolo risciacquo/Air flushing handle	4 x 2,5
A2	Acqua manipolo risciacquo/Water flushing handle	4 x 2,5
A3	Aria manipolo lavaggio/Air washing handle	4 x 2,5
A4	Acqua manipolo lavaggio/Water washing handle	4 x 2,5
A5	Acqua tergicristallo/Wiper water	4 x 2,5
A6	Acqua bidone/Tank water	4 x 2,5
A7	Scarico bidone/Tank discharge	8 x 6
A8	Scarico bidone/Tank discharge	8 x 6
A9	Acqua generale/Main water control	8 x 6
A10	Soffi d'aria bidone/Internal tank air jets	8 x 6
A11	Pulizia impianto bicarb/Bicarb. system cleaning	6 x 4

00	Emissione	S.P.	14/01/2020
Rev	Descrizione	Autore	Data

Disegnato da: S.P.	In data: 13/01/2020	Rilasciato da: S.P.	In data: 14/01/2020	BICAR jet
Trattamento termico:	Trattamento superficiale:			Ecological surface cleaning systems using sodium bicarbonate
Materiale:	Massa:	Categoria:	Divisione: Medicale	Tolleranza: UNI EN 22768-mK
Descrizione / Description: Schema pneumatico STK100 / Pneumatic diagram STK100		Scala:	Fogli: A4 1/1	Codice: / Rev.
		Derivato da:		

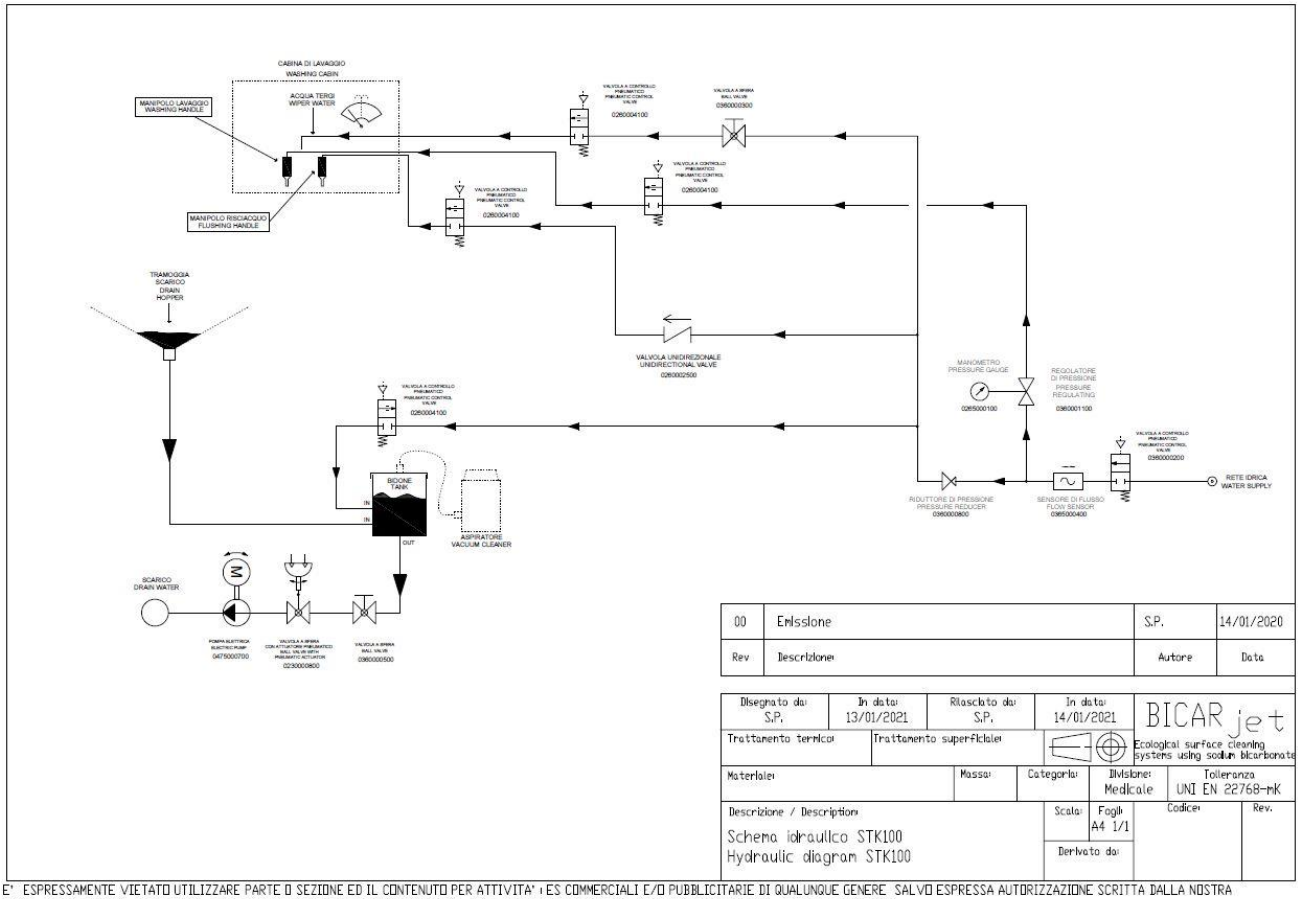
E) HYDRAULIC UNIT



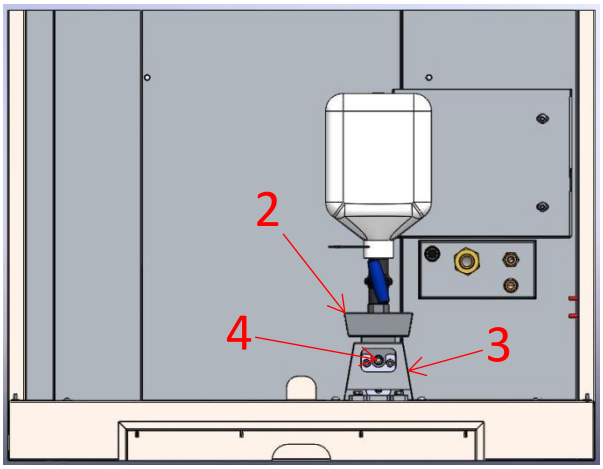


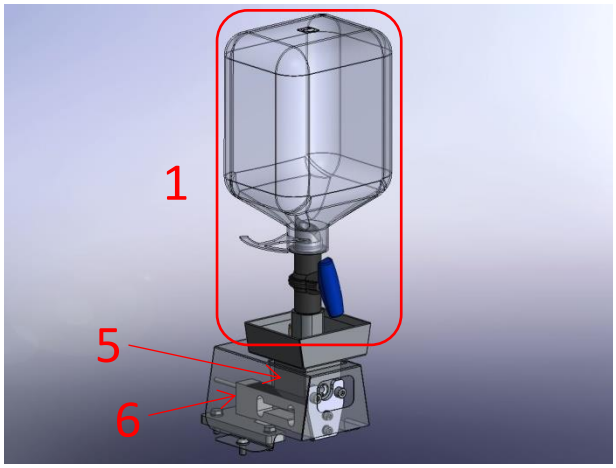
1. Water inlet to system (min. 3 bar)
2. Grey handpiece water pressure regulator (Adjust to 3bar)
3. Wiper water flow regulator

The hydraulic system diagram is shown below.



F) BICARBONATE FEED UNIT, LOAD CELL





Vacuum or blow air to remove any residues of SAFEKLINIC from the work area.

CLEANING THE INJECTOR

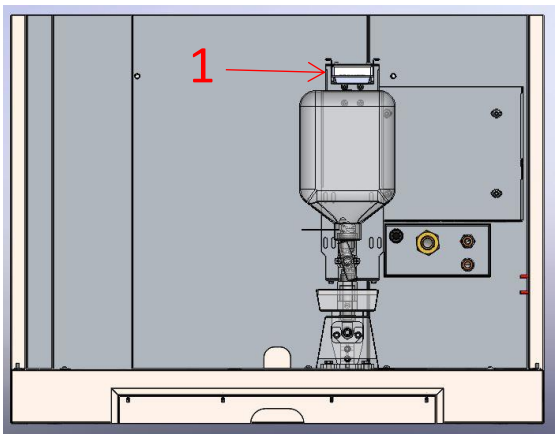
Remove the bottle unit (1) .

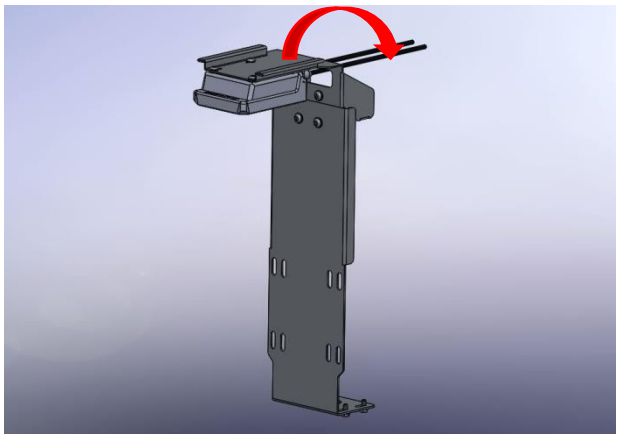
Remove the tray (2) and the casing (3) in order to access the bicarbonate feed unit and check that the

injector (4) on top of the unit (5) is not damaged or blocked and check the connection of the black supply hose. Blow air into the feed unit (5) to remove any obstructions caused by bicarbonate.

The load cell is located directly below the unit (6).

G) RFID READERS





The RFID reader is located in the tilting bracket above the bottle so that the tag on the bottom of the SAFEKLINIC bottle can be read and the bottles recognised.

To replace the bottle, simply turn the reader backwards to allow the bottle unit to be removed.

8 ALARMS

TYPES OF ALARM:

A = High probability of failure

B = Low probability of failure

C = No probability of failure

D = Normal (in most cases)

No.	MESSAGE	AUTO RESET	TYPE OF ALARM	CAUSE	SOLUTION
01	**EMERGENCY ON**	**NO**	**B-C**	1) Emergency button pressed	1) Release emergency button, press reset button.
02	**DOORS OPEN**	**NO**	**D**	1) Operating cycle started with doors open.	1) Close the doors.
03	**DRAIN WATER PUMP THERMAL**	**NO**	**A**	1) Thermal protection of the drain pump tripped. 3) Drain pump faulty or overheated.	1) Rearm the pump thermal magnetic circuit breaker. 3) Replace the drain pump. 3) Replace the thermal magnetic circuit breaker.
04	**INSUFFICIENT AIR PRESSURE**	**NO**	**B-C**	1) The inlet air pressure to the machine is too low. 2) Pneumatic circuit component failure.	1) Increase the inlet air pressure. 2) Make sure that all the pneumatic circuit components are working correctly.
05	**INSUFFICIENT WASH WATER**	**NO**	**B-C**	1) The inlet water flow rate is too low. 3) Hydraulic circuit component failure.	1) Increase the inlet water flow rate. 3) Make sure that all the hydraulic circuit components are working correctly.
06	**BICARBONATE CARTRIDGE NOT LOADED**	**NO**	**C-D**	1) The bottle of bicarbonate has not been placed in the housing. 2) Load cell failure.	1) Insert the bottle of bicarbonate. 2) Make sure that the load cell is working correctly. 2) Replace the load cell. (to be programmed)
07	**LOW BICARBONATE LEVEL**	**YES**	**C**	1) The bicarbonate in the bottle is running out.	1) Replace the empty bottle with a full one as soon as possible.
08	**INSUFFICIENT BICARBONATE LEVEL**	**NO**	**C**	1) The bicarbonate bottle is empty.	1) Replace the empty bottle with a full one.
09	**INCONSISTENT**	**NO**	**C**	1) The amount of bicarbonate left in the bottle is different from the	1) Replace the bottle of bicarbonate

	BICARBONATE LEVEL			amount in memory.	with a new one.
10	**BOTTLE RFID CODE NOT RECOGNIZED**	**NO**	**B-C**	1) The bicarbonate bottle is not positioned correctly.	1) Remove the bottle and insert it again. 1) Replace the bottle of bicarbonate with a new one.
11	**ASPIRATOR THERMAL**	**NO**	**A**	1) Thermal protection of the aspirator tripped. 2) Aspirator faulty or overheated.	1) Rearm the aspirator thermal magnetic circuit breaker. 2) Replace aspirator. 2) Replace the thermal magnetic circuit breaker.
12	**PNEUMATIC UNIT ALARM**	**NO**	**A-B**	1) Faulty valve 2) Software error	1) Switch the machine off and on again. 2) replace it
13	**MAXIMUM LEVEL OF DRAIN WATER**	**YES**	**B-C**	1) The bin is full and the pump cannot empty it. 2) Drain blocked.	1) Make sure that the drain pump is working correctly. 2) Check the drain hose connection and the bin-pump connection. 2) Check the tap between the bin and the pump; it must be open.
14	**WEIGHING DEVICE ERROR**	**NO**	**A**	1) Load cell connection problem. 2) Load cell damaged. 3) Load cell control unit damaged.	1) Check the load cell control unit. 1) Check the load cell wiring. 2) Replace the load cell. 3) Replace the load cell control unit. (to be programmed)
18	**WATER LEVEL SENSOR**	**NO**	**A**	1) Maximum water level sensor activated but normal water level sensor not active.	1) Make sure that the maximum level sensor is not dirty. 1) Replace normal water level sensor.
19	**WATER DRAINAGE**	**YES**	**C-D**	1) Normal level sensor does not de-energize after 100 seconds of drain pump running. 2) Normal water level sensor faulty.	1) Make sure that the drain pump is working. 1) Make sure that the water drain is not clogged. 1) Make sure that the normal water level sensor is not dirty. 2) Replace normal water level sensor.
22	**COMMUNICATION WITH WEIGHING DEV.**	**YES**	**D**	1) Profinet communication problem between load cell control unit and PLC.	1) Check network cable on load cell transmitter. 2) Check that the load cell control

				2) Load cell control unit faulty.	unit is switched on. 3) Replace load cell control unit. (to be programmed)
23	**COMMUNICATION WITH RFID TAG READER**	**NO**	**A-B**	1) Profinet communication problem between RFID reader and PLC.	1) Check wiring connectors.
24	**WEIGHING CELL ERROR**	**NO**	**A**	1) Load cell faulty.	1) Check the load cell wiring. 1) Replace the load cell. 1) Replace the load cell control unit.
26	**MAXIMUM TIME FOR FILLING THE BIN**	**NO**	**A**	1) During the bin cleaning cycle, the normal water level sensor does not energize after 150 seconds. 2) Normal water level sensor faulty.	1) Use the diagnostics to check the activation of the solenoid valve on the bin and the relative water outlet. 2) Replace the normal water level sensor.
50	**LOAD DOOR OPEN DURING CYCLE**	**NO**	**D**	1) Door open during the machine operating cycle.	1) Close the door. 1) Check door position sensor.
57	**BOTTLE RFID ERROR**	**NO**	**B**	1) Bicarbonate bottle RFID tag read/write error. 2) Non-certified bicarbonate bottle. 3) Bicarbonate bottle not in its housing or inserted incorrectly.	1) Check that there is a tag on the bottle and/or for any obstructions that could prevent it from being read. 2) Only use the bottles supplied and certified. 3) Insert the bottle correctly in the housing.
60	**BICARBONATE BLOCKED**	**NO**	**A**	1) Lump of bicarbonate blocking the feed circuit or in the handpiece.	1) Clean the bicarbonate feed unit. See ROUTINE MAINTENANCE - MONTHLY
61	**MEDIUM LOW BICARBONATE FLOW**	**NO**	**C**	1) Flow rate of bicarbonate delivered by the handpiece not consistent with the machine parameter.	1) Check the bicarbonate feed circuit.
62	**LOG CREATION ERROR**	**NO**	**C-D**	1) Memory full	1) remove the SD card from the PLC and download the data (send data to the manufacturer)
63	**LOG WRITING ERROR**	**NO**	**C-D**	1) random interference with the PLC	1) reset
64	**LOG OPENING ERROR**	**NO**	**C-D**	1) random interference with the PLC	1) reset

65	**USER NOT RECOGNIZED**	**NO**	**C-D**	1) user not registered	1) use existing registered users or create a new one

9 DISPOSAL

Do not dispose of this product and its accessories as unseparated waste. Prepare the product for recycling or separate collection in accordance with Italian Legislative Decree no. 49 of 14 March 2014 entitled "Implementation of Directive 2012/19/EU, on waste electrical and electronic equipment (WEEE)".

When used in hospitals, follow their internal rules for the disposal of electrical and electronic waste.

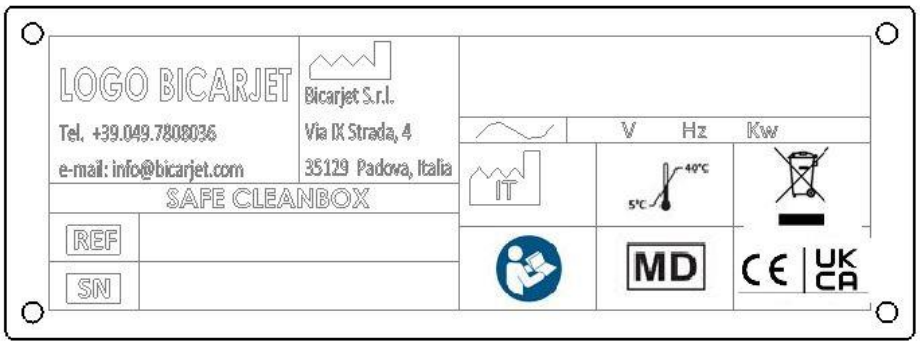
10 TECHNICAL FEATURES

Model	SAFE CLEAN BOX
Code	STK100
Dimensions	1000 mm (w) x 687 mm (d) x 1697.5 mm (h)
Weight	320 kg
Power supply	220 V - 50 Hz - 16 A
Power consumption	3.2 kW

Environmental conditions	Temperature:	Use	+5 / +40°C
		Storage / transport	-20 / +70°C
	Humidity:	Use	20 / 80% Rh non-condensing
		Storage / transport	5 / 95% Rh non-condensing
	Atmospheric pressure:	Use	700 to 1020 hPa
		Storage / transport	500 to 1060 hPa (375 - 795 mm Hg)

11 LABELLING

11.1 RATING PLATE INFORMATION

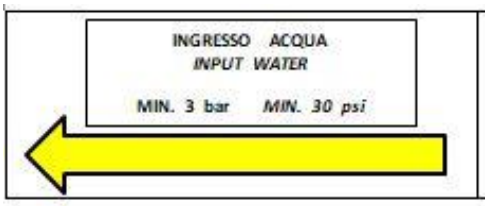


11.2 INTERNAL MARKINGS

All protective earth terminals have this marking.

11.3 WATER SUPPLY, COMPRESSED AIR AND DRAINAGE

The following marking will be located near the connection between the hydraulic circuits of the device and structure.



The following marking will be located near the connection between the compressed air circuit of the device and the distribution network of the structure.

The following marking will be located near the connection with the liquid drain.

11.4 WARNING MARKINGS

The following markings are located on the door of the electrical panel.

The following markings are located near the motorized system for loading and unloading the baskets.

11.5 SAFETY SYMBOLS AND LABELLING

	Manufacturer identification
REF	Product identification code
SN	Production serial number
 YYYY/MM/DD or YYYY/MM	Country of manufacture and date of manufacture.
MD	Medical device

	Alternating current
	Earth terminal
	Dispose of according to WEEE regulations
	Consult the user manual
	Complies with Regulation (EU) 2017/745, MD class I
	Danger of: xxx (generic symbol to be associated with descriptions)
	Danger due to the presence of live parts
	Hand crushing hazard
	Direction and characteristics of flow
	Direction of the discharge flow with the presence of potentially bio-contaminating residues
	Do not use water for washing/cleaning
	**SAFEKLINIC®** bottle compartment
	Ambient operating temperature
	UK Conformity Assessed

12 ELECTROMAGNETIC COMPATIBILITY

12.1 EMC WARNINGS

The appliance complies with the collateral standard CEI EN 61326-1 applicable to the product and relating to electromagnetic compatibility.

	THE APPLIANCE MUST BE INSTALLED AND COMMISSIONED ACCORDING TO THE EMC INFORMATION PROVIDED IN THIS SECTION.
	THE EQUIPMENT MAY BE AFFECTED BY COMMUNICATION EQUIPMENT AND MOBILE PHONES.
	THE EQUIPMENT MUST ONLY BE USED WITH THE CABLES SPECIFIED BY THE MANUFACTURER.
	THE DEVICE MUST NOT BE USED NEAR OR IN COMBINATION WITH OTHER EQUIPMENT IN ORDER TO AVOID INTERFERENCE DURING NORMAL USE.

The device falls into group 1 and class A, according to the definitions of the EN 55011 standard, as follows:

- Group 1: Group 1 includes all equipment covered by the EN 55011 standard which does not fall within the definition of group 2 equipment.
- Class A: equipment suitable for use in all places other than those in residential environments and those directly connected to a low voltage power supply network for buildings put to domestic uses.

13 SW MANUAL - HMI PANEL

13.1 INTRODUCTION

Guide to using the graphical control interface of the touch panel mounted on SAFE CLEANBOX model STK100 machines.

13.2 SYSTEM LOGIC

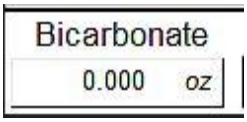
A special touch screen panel has been provided to enable the operator to interact easily with the machine. It contains software that controls the graphic and sound notification system that alerts the user of potential problems. It makes it easier for the user, both when using the machine normally and when troubleshooting problems. It also provides numerous functions and useful information during the routine use of the machine. This system was implemented to facilitate troubleshooting and the correct interpretation of alarms during factory testing, first installation, technical assistance and normal use.

13.3 GRAPHICAL INTERFACE

On the HOME screen  , there are numerous types of indicators that allow the active functions and the main types of information to be displayed quickly. On the right of the screen, there are also softkeys for the most frequently used functions.

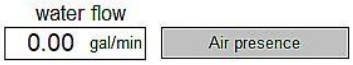
13.4 TYPES OF INDICATORS AND INFORMATION

-REAL TIME BICARBONATE USAGE INDICATOR

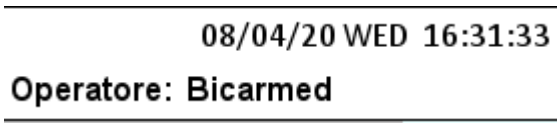


-WATER FLOW INDICATOR

-PRESENCE COMPRESSED AIR INDICATOR



-LOGGED ON USER INDICATOR, DATE AND TIME



-MACHINE STATUS INDICATOR

-LOGOUT / LOGIN SOFTKEY

-SETTINGS SOFTKEY

13.5 MAIN FUNCTION INDICATOR

The machine is fitted with 2 handpieces located inside the washing cabin. These are used to clean the contaminated instruments and both are controlled by a double pedal on the floor. When the machine is ready, pressing the pedal on the left will cause air, water and bicarbonate to flow out from the left handpiece and the washing status will appear on the screen (fig. 1). Similarly, pressing the right pedal will deliver a jet of pressurized water from the right handpiece, i.e. from the handpiece used for rinsing the instruments (fig. 2).

FIG.1

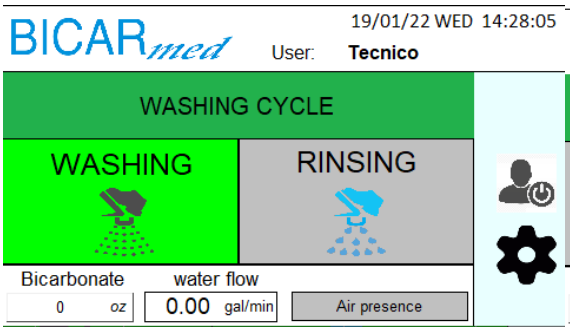
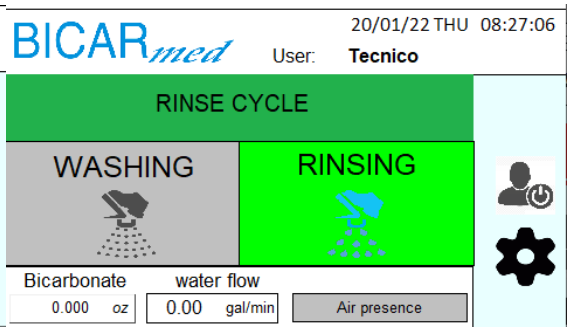
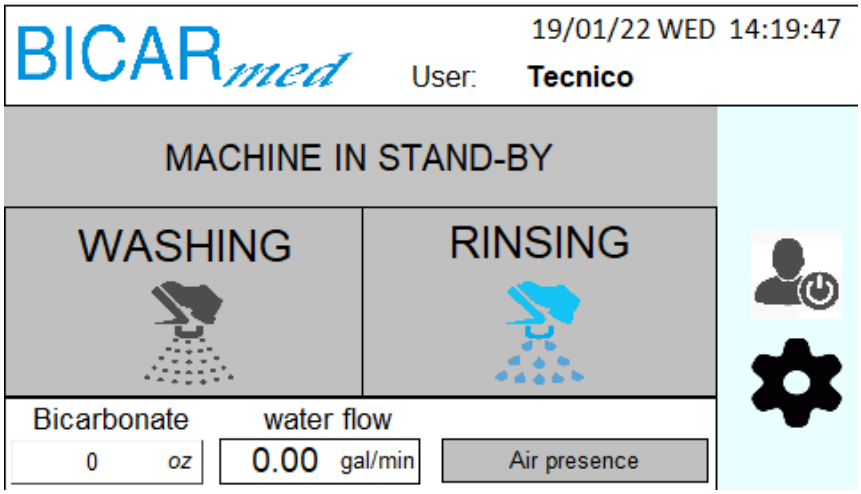


FIG.2



13.6 MACHINE STATUS

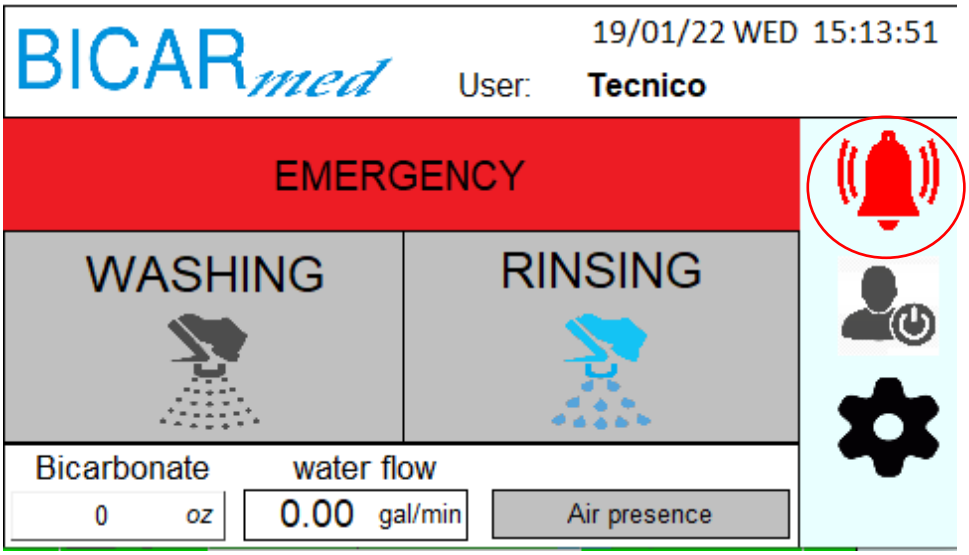
With the machine switched on and ready, the following appears on the HOME screen  :



STATUS: MACHINE IN STAND-BY (machine ready but in energy saving mode; press a pedal to turn the lights back on)

ALARMS ICON: ABSENT

If there is a fault or the notification of a problem, the HOME screen will appear like this:



STATUS: MACHINE IN EMERGENCY MODE

ALARMS ICON: PRESENT

In this case, touch the ALARMS softkey to display the active alarms window.

13.7 ACCESS LEVELS AND LOGIN.

Logging in allows the machine to "recognize" the type of user, who may have a certain level of access to the machine.

ACCESS LEVELS:

-Machine operator (A)

-Head of department (B)

-Technician (C)

-Manufacturer (D)

OPERATOR (A)

Anyone who is only authorized to operate the machine for cleaning medical instruments.

-HEAD OF DEPARTMENT (B)

The person who supervises and manages all the operators who can operate the machine.

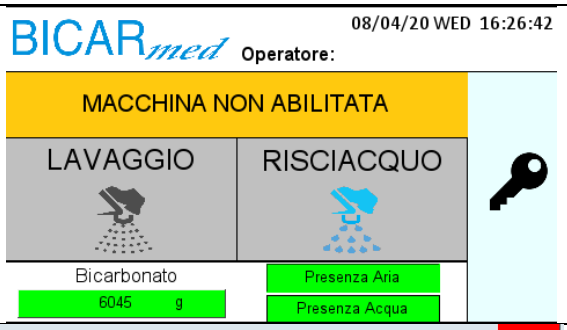
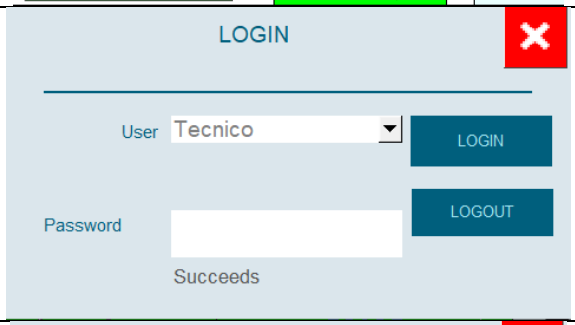
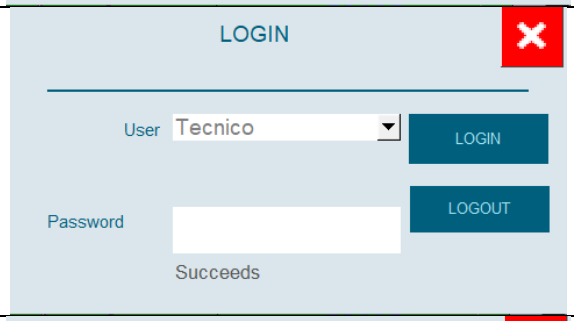
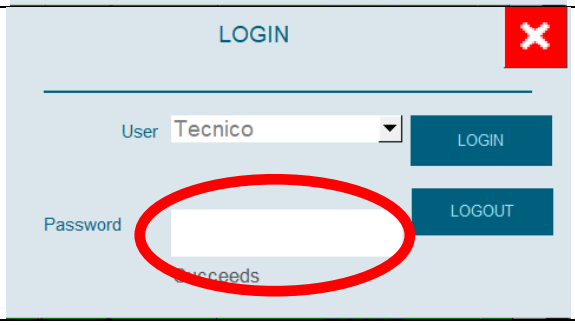
TECHNICIAN (C)

Anyone authorized by the manufacturer to carry out maintenance on the machine.

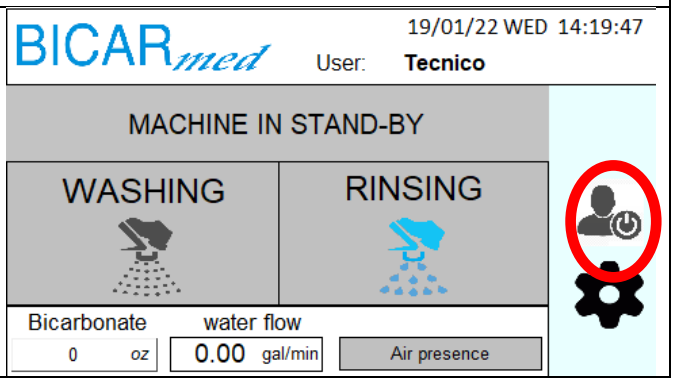
MANUFACTURER (D)

HOW TO LOGIN (User authentication procedure)

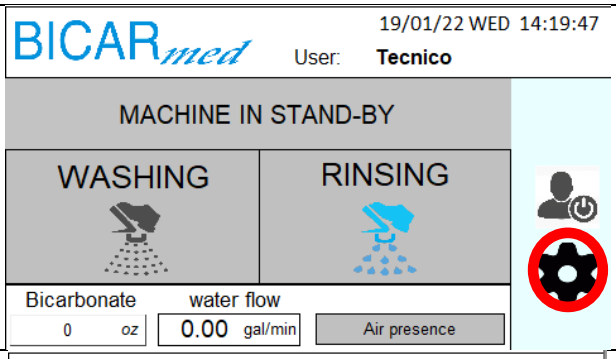
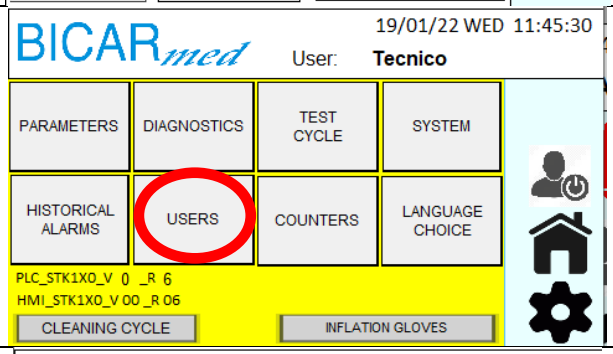
- via username and password

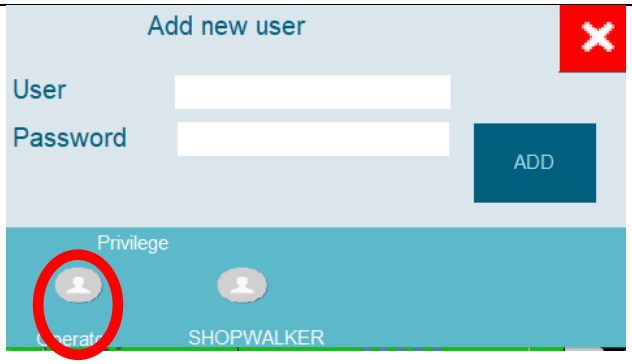
Before logging in, the monitor indicates that the machine is not enabled and its use is inhibited.	
Selecting the KEY symbol will cause the login screen to be displayed.	
Select the USER name on the monitor.	
Enter the PASSWORD on the monitor. (touching the empty field will call up the on-screen keyboard) Then press LOGIN	
The machine is now ready to operate.	

HOW TO LOGOUT:

The device automatically LOGS OUT after 5 minutes if the machine has not been used.	
To logout, press the highlighted icon on the monitor.	

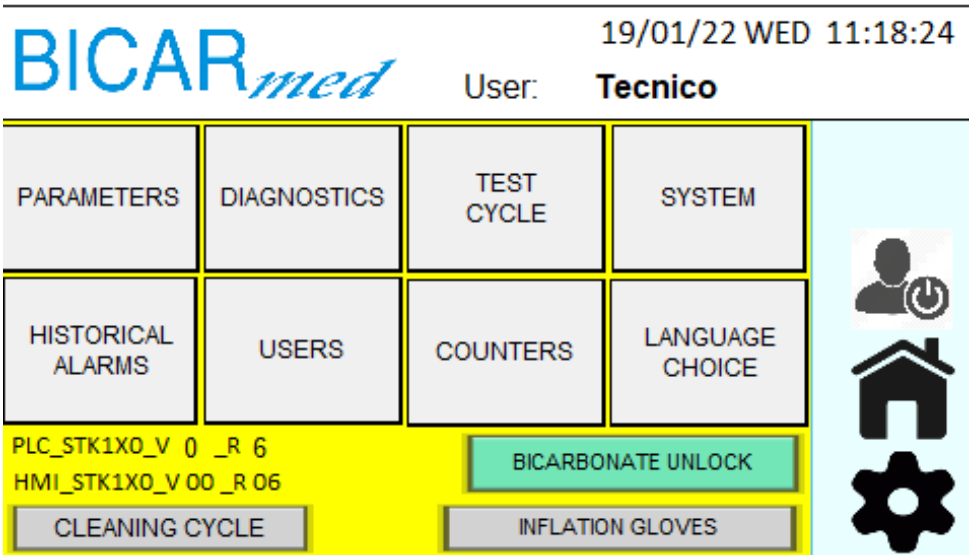
13.8 CREATING A NEW USER

Log in as a TECHNICIAN.	
Press the impostazioni (settings) icon.	
Press the User Management button.	
Press the Add Users button	

Logging in as a TECHNICIAN will allow you to create users with Operator or Head of Department privileges. Enter the number (01, 02, 03) or the name of the operator in the “Name” field. (Pressing the empty field to the right of “Name” or “Password” will call up the on-screen keyboard) Enter the personal password corresponding to the user name in the "Password" field. Lastly, select all the icons until you reach the required privilege level. For example, to create a Head of Department, select the "Operator" icon and the "Head of Department" icon. Then press Add.	
Creation of new user completed.	

13.9 SETTINGS

Depending on the access level (Operator, Head of Department etc.), additional machine menus can be accessed using the softkey button  on the HOME screen 



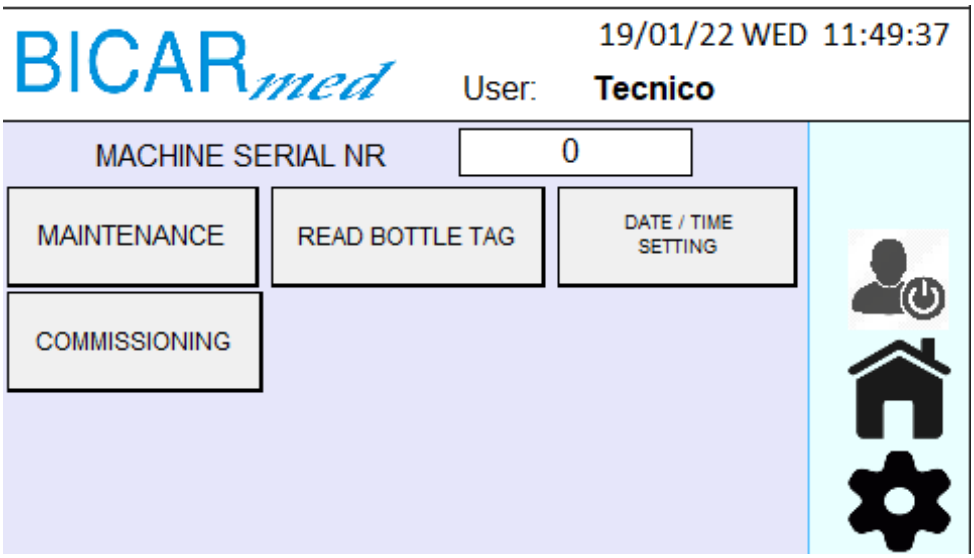
There are various main softkeys in the SETTINGS menu that are described individually in the following chapters.

13.10 SYSTEM

The system screen is a main submenu used to enter some basic settings such as the time and date.

ACCESS LEVEL: HEAD OF DEPARTMENT (B) TECHNICIAN (C)

To access the system screen, press the "SETTINGS" softkey  on the HOME screen and then press "SYSTEM" on the next screen.



13.10.1 SETTING THE SYSTEM TIME AND DATE

To enter the date and time, touch the relative fields and enter the current date and time via the on-screen keyboard. Then press the “SET” button to set them.

13.10.2 AUTOMATIC BIN CLEANING CYCLE

The automatic bin cleaning cycle can be run from this screen by simply pressing the "BIN CLEANING" softkey. The cleaning cycle will end automatically.

13.10.3 HMI AND PLC SOFTWARE VERSION

The version of the software installed is displayed in the lower left of the screen.

To go back to the previous screen, simply press the "HOME" softkey 

13.11 DIAGNOSTICS

The system is provided with a series of diagnostic screens that allow the operator to carry out an initial diagnosis with the assistance of CUSTOMER CARE.

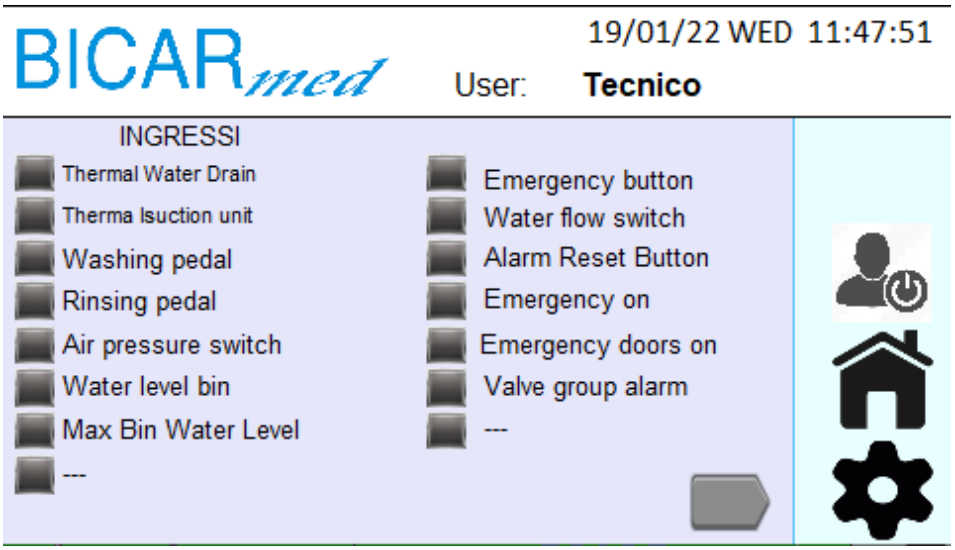
ACCESS LEVEL: MACHINE OPERATOR (A) HEAD OF DEPARTMENT (B) TECHNICIAN (C)

To access the diagnostics screen, press “SETTINGS”  on the HOME screen and then press “DIAGNOSTICS” on the following screen.

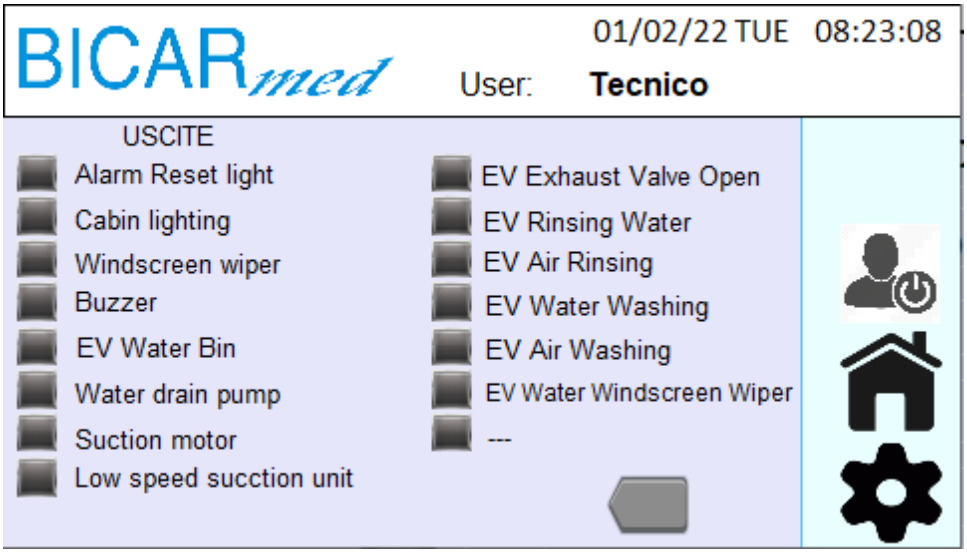
THE FOLLOWING DIAGNOSTICS SCREENS SHOW THE ACTIVATION STATES UNDER NORMAL USE.

THE MACHINE STATUS CAN BE CHECKED USING THE FOLLOWING IMAGES AND COMPARING THE VARIOUS ACTIVATIONS WITH THE ONES DISPLAYED ON THE MACHINE.

DIAGNOSTICS Screen 1



DIAGNOSTICS Screen 2



To go back to the previous screen, simply press the "HOME" softkey 

13.12 ALARMS REGISTER.

All alarms are recorded in a special register associated with the operator that is using the machine.

Depending on the type of alarm and whether an automatic cycle is in operation, the system will record the relative event logs.

ACCESS LEVEL: MACHINE OPERATOR (A) HEAD OF DEPARTMENT (B) TECHNICIAN (C) MANUFACTURER (D)

To access the alarm register, press the "SETTINGS" softkey  and then the "ALARMS REGISTER" softkey on the following screen.

Use the softkeys on the right of the screen to go to the next screen or go back to the previous screen.

Use the "File" softkey to search for a specific event by time.

Use the "Filter" softkey to filter the alarms display.

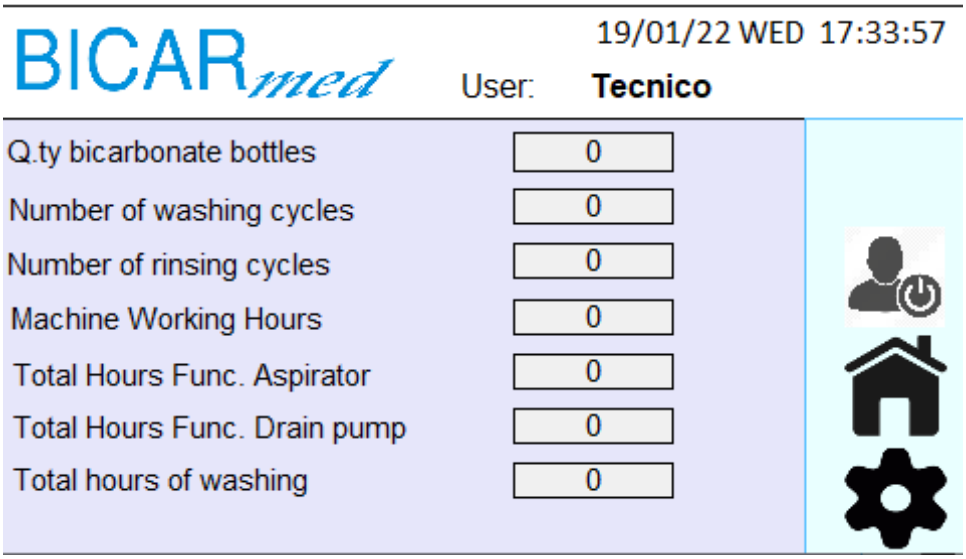
To go back to the previous screen, simply press the "HOME" softkey 

13.13 COUNTERS

The system has a COUNTERS screen in which the number of cycles, the hours of operation and the number of bicarbonate bottles used since the machine was put into operation are recorded.

ACCESS LEVEL: TECHNICIAN (C) MANUFACTURER (D)

To access the relative screen, press the "SETTINGS" softkey  on the HOME screen and then the "COUNTERS" softkey on the following screen.



To go back to the previous screen, simply press the "HOME" softkey 

13.14 TEST CYCLE

To allow the automatic operation of some of the machine functions, a special menu has been added to the interface. By setting the duration, it allows the main functions or routines to be activated that can be used by a technician to control the machine more easily. These routines have been created in order to make it easier to carry out the various functional checks that are used during factory testing, first installation, technical assistance etc.

13.14.1 DEVICES OR FUNCTIONS THAT CAN BE ACTIVATED IN TEST CYCLE MODE

ASPIRATOR

RINSE AIR

RINSE WATER

AIR SPRAY

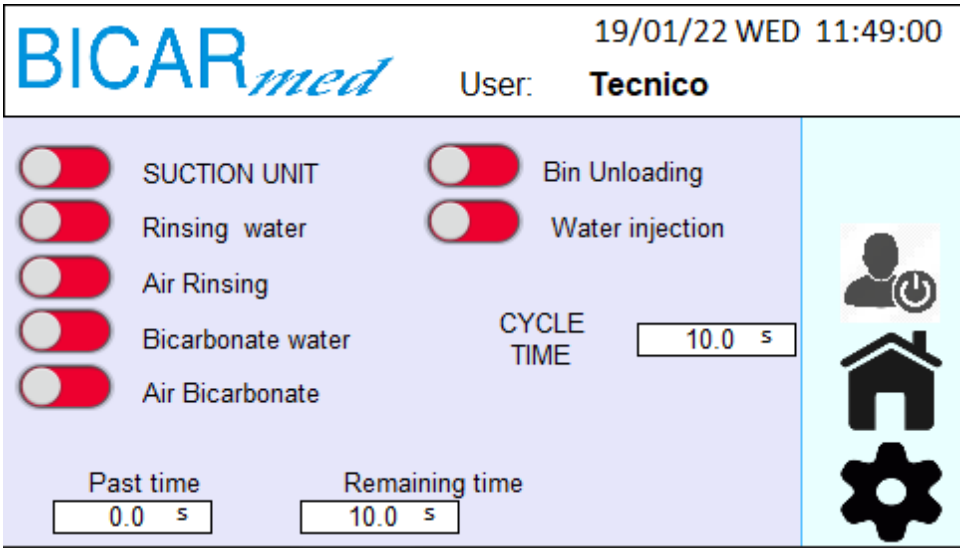
WATER SPRAY

DRAIN WATER

INJECT WATER IN BIN

ACCESS LEVEL: TECHNICIAN (C) MANUFACTURER (D)

To access the relative screen, press the "SETTINGS" softkey on the HOME screen and then the "TEST CYCLE" softkey on the following screen.



The start test cycle button will appear as soon as the utility you wish to activate has been selected.

13.14.2SETTING UP A TEST CYCLE

Select the function(s) and set the cycle duration.

To start the cycle, press the "START CYCLE" softkey.

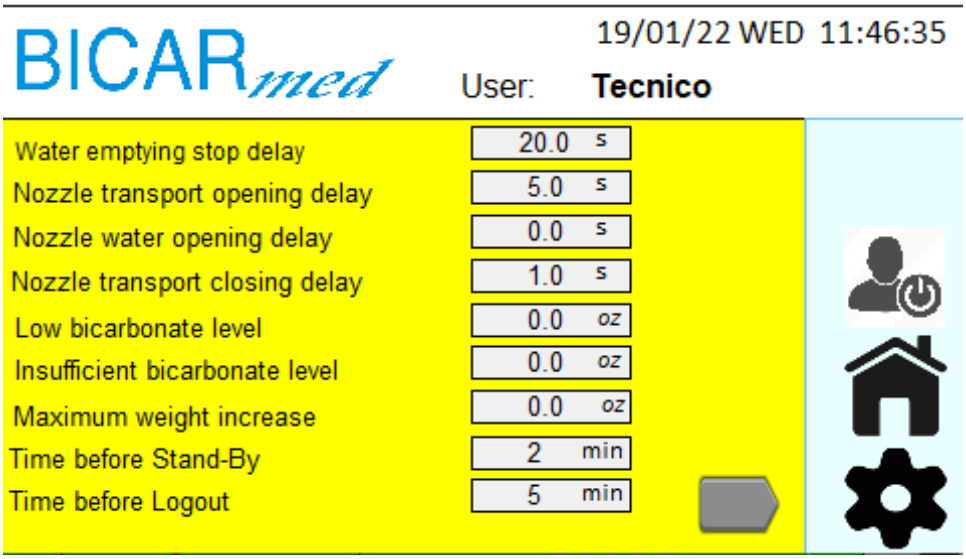
13.15 PARAMETERS

The machine parameters screen consists of a main screen on which you can set some parameters regarding the bicarbonate bottle and the initial screen opening delay.

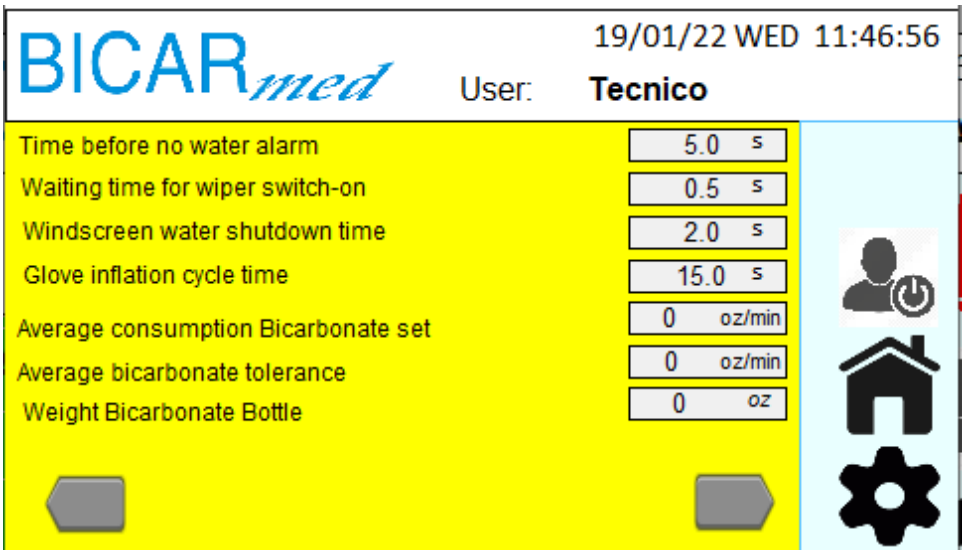
ACCESS LEVEL: HEAD OF DEPARTMENT (B) TECHNICIAN (C) MANUFACTURER (D)

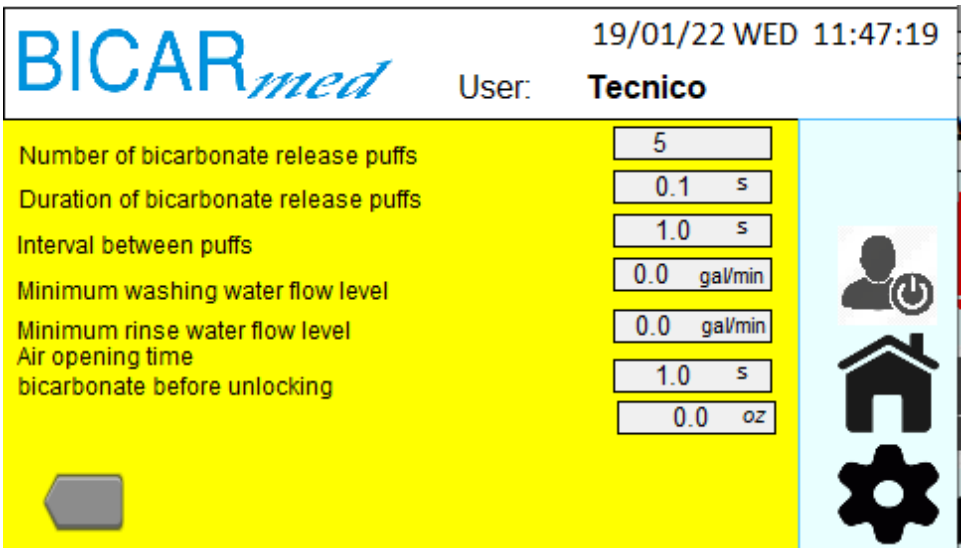
To access the relative screen, press the "SETTINGS" softkey  on the HOME screen and then the "PARAMETERS" softkey on the following screen.

OPERATING PARAMETERS SCR. 1



OPERATING PARAMETERS SCR. 2



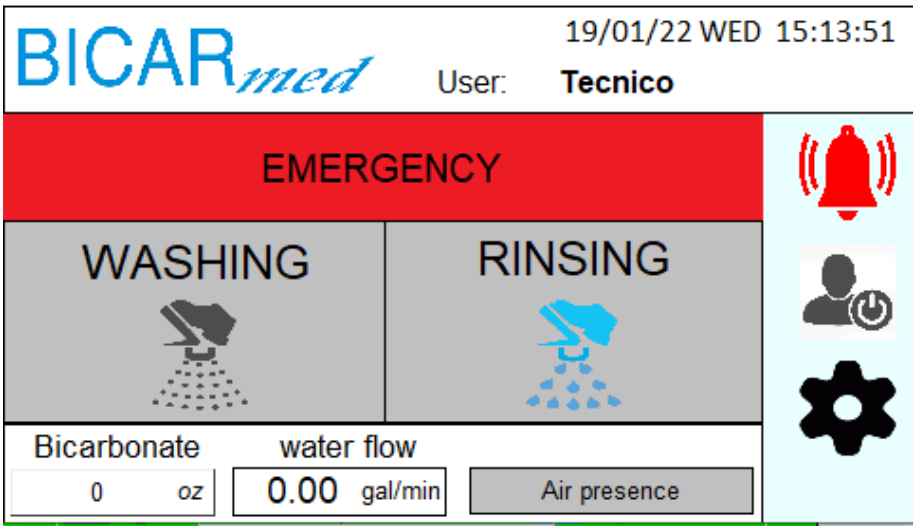


To go back to the previous screen, simply press the "HOME" softkey 

13.16 MACHINE ALARMS

To manage faults or to simply provide the user with information about the status of the machine and its components, a software control logic and notification system has been implemented that uses a series of "alarms" that appear on the main HOME screen under "EMERGENCY" and a softkey to access the alarms window  .

If there is a fault or the notification of a problem, the HOME screen  will appear like this:

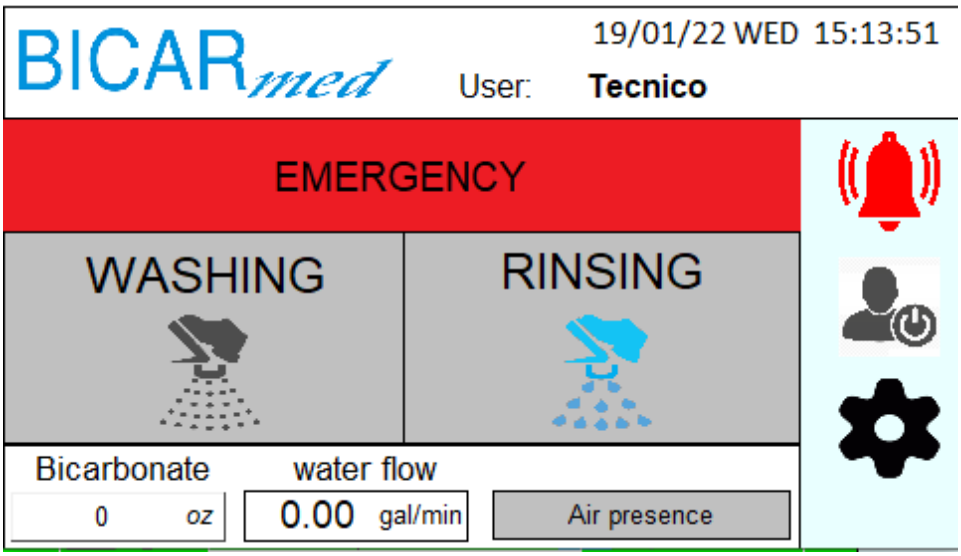


13.16.1 ALARMS LIST

See chapter 8 of this manual.

13.17 HOME SCREEN NOTIFICATIONS

As with an emergency status due to an alarm, notifications of a temporary machine condition that may require the intervention of the machine operator may appear on the HOME screen.



In this case, the machine indicates that the cabin door is open. Close the cabin door using both hands.

14 ANNEX 1: COMMISSIONING

BICARmed®	**COMMISSIONING REPORT**	Doc. N.
		DATE

Customer	Machine Model	
Address	Serial N.	Prod. date
	Maintenance type	
Contact person	Maintenance frequency	
Telephone	Maintenance technician	

CHECKS TO CARRY OUT ON MODELS STK 100 (indicate N/A where the check cannot be carried out)				
No.	**PRELIMINARY CHECKS**	**RESULT**		
	before supplying electrical power to the system, check:	**Pos.**	**Neg.**	**N/A**

1	the integrity and stability of the system			
2	the integrity of the electrical, compressed air, water and drain connections			
3	the mains air and water wall valves do not leak			
4	the safety systems are intact and have not been triggered			
5	the integrity of the hoses in the cabin			
6	the integrity of the electrical connections			

No.	OPERATION CHECKS	RESULT		
	supply electrical power to the system and check:	**Pos.**	**Neg.**	**N/A**
1	switching on of the touch panel and loading of the program			
2	switching on of the lights inside the cabin			
3	the absence of alarms/signals at the panel			
4	the presence of air/water at the panel			
5	operation of the emergency buttons (mushroom-head)			
6	operation of the door			
7	loading the SAFEKLINIC bottle			
8	operation of spray handpieces by pressing the pedals			
9	operation of the wiper/ wiper water by pressing the pedals			

CHECKS TO CARRY OUT ON MODEL STK 100

No.	PRELIMINARY CHECKS	RESULT		
	before supplying electrical power to the system, check:	**Pos.**	**Neg.**	**N/A**
1	the integrity and stability of the system			
2	the integrity of the electrical, compressed air, water and drain connections			
3	that the air and water supply valves on the wall do not leak			
4	the safety systems are intact and have not been triggered			
5	the integrity of the hoses in the cabin			

No.	OPERATION CHECKS	RESULT		
	supply electrical power to the system and check:	**Pos.**	**Neg.**	**N/A**
1	switching on of the touch panel and loading of the program			
2	switching on of the lights inside the cabin			
3	the absence of alarms/signals at the panel			
4	the presence of air/water			
5	operation of the emergency buttons (mushroom-head)			
6	operation of the door and the tightness of the seal			
7	loading the SAFEKLINIC bottle and TAG reading			
8	operation of spray handpieces by pressing the pedals			
9	operation of the wiper/ wiper water by pressing the pedals			
10	absence of leaks			
11	operation of aspirator			

12	operation of drain pump				

MAINTENANCE REPORT

SYSTEM STATUS/CONDITION

N.	REPLACEMENTS			RESULT		
	Code	Component	Qty.	Pos.	Neg.	N/A
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

NOTES

*it is mandatory to carry out post-repair electrical safety tests if the maintenance involves disconnecting electrical cables, earthing sockets etc.

● If the installation tests described above are passed, it means that the product is suitable for use in its place of commissioning and use, as well as being the formal act of delivery of the product. ● By signing this form, the Customer: 1. Confirms that the product and its operation are suitable for his specific needs, and the product is accepted; 2. Declares that he has received the use and maintenance instructions for this product, that he will read them and make them available to all those who will use the product; 3. Undertakes to ensure that the product is used correctly and is kept in good condition and good working order, especially the safety devices, in accordance with the use and maintenance instructions; 4. Confirms that he has received the EC Declaration of conformity regarding the current safety regulations and confirms its acceptance.

Technician's signature	Customer's stamp and signature

15 ANNEX 2: MAINTENANCE

BICARmed®	PRE-MAINTENANCE REPORT	Doc. N.
		DATE

Customer	Machine Model	
Address	Serial N.	Prod. date
	Maintenance type	
Contact person	Maintenance frequency	
Telephone	Maintenance technician	
PRE-MAINTENANCE REPORT		
SYSTEM STATUS/CONDITION		

CHECKS TO CARRY OUT ON MODELS STK 100 (indicate N/A where the check cannot be carried out)				
No.	**PRE-MAINTENANCE ACTIVITIES**	**RESULT**		
		Pos.	**Neg.**	**N/A**
1	Visually inspect the integrity and stability of the system			
2	Sanitization of the inside of the cabin			
3	Sanitization of the outside of the cabin			
4	Sanitization of the mats inside the cabin and the gloves			
No.	**OPERATIONS**	**RESULT**		
		Pos.	**Neg.**	**N/A**
1	General cleaning of the system			
2	Check the integrity and operation of the safety devices			
3	Check the integrity of the door glass and the tightness of the seal			
4	Check the integrity and operation of the LED lamps			
5	Check the integrity and operation of the door and the tightness of the seal			
6	Check the integrity and the seal of the glove flanges and gloves			
7	Check the integrity of the hoses inside the cabin			
8	Check the integrity of the pedals, their connector and the operation of the handpieces inside the cabin			
9	Check the operation of the touch panel			
10	Check the integrity and operation of the aspirator			
11	Check the integrity of the air/water/drain hoses, the air pressure gauges and the reading of the water flow switch			
12	Check the integrity of the collection bin			
13	Opening of the collection bin, sanitization of the lid and bin			
14	Cleaning of bicarbonate feed unit and relative tray underneath the bottle			
15	Check the integrity and operation of the bicarbonate feed unit			
16	Check the operation of the doors under the cabin and their locks			
CHECKS TO CARRY OUT ON MODEL STK 100				
No.	**PRE-MAINTENANCE ACTIVITIES**	**RESULT**		
		Pos.	**Neg.**	**N/A**
1	Visually inspect the integrity and stability of the system			
2	Sanitization of the inside of the cabin			
3	Sanitization of the outside of the cabin			
4	Sanitization of the mats inside the cabin and the gloves			
No.	**OPERATIONS**	**RESULT**		
		Pos.	**Neg.**	**N/A**
1	General cleaning of the system			
2	Check the integrity and operation of the safety devices			
3	Check the integrity of the glass and the tightness of the seal			

4	Check the integrity and operation of the LED lamps			
5	Check the integrity and operation of the front door and the seal			
6	Check the integrity and the seal of the glove flanges and gloves			
8	Check the integrity of the hoses inside the cabin			
9	Check the integrity of the pedals, their connector and the operation of the handpieces inside the cabin			
10	Check the operation of the touch panel			
11	Check the opening of the lower doors and their locks			
11	Check the integrity and operation of the aspirator			
12	Check the integrity of the air/water/drain hoses, the air pressure gauges and the reading of the water flow switch			
13	Check the integrity of the collection bin under the bench			
14	Opening of the collection bin, sanitization of the lid and bin			
15	Cleaning of bicarbonate feed unit and tray underneath the bottle			
16	Check the integrity and operation of the bicarbonate feed unit			

MAINTENANCE REPORT

SYSTEM STATUS/CONDITION

N.	REPLACEMENTS			RESULT		
	Code	Component	Qty.	Pos.	Neg.	N/A
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

NOTES

*it is mandatory to carry out post-repair electrical safety tests if the maintenance involves disconnecting electrical cables, earthing sockets etc.

• If the maintenance tests described above are passed, it means that the product is suitable for use in its place of commissioning and use.

- By signing this form, the Customer:
  1. Confirms that the product and its operation are suitable for his specific needs, and the product is accepted;

2. He undertakes to ensure that the product is used correctly and is kept in good working order in accordance with the use and maintenance instructions;

Technician's signature	Customer's stamp and signature

16 ANNEX 3: ASSISTANCE

BICARmed®	**SERVICE REPORT**	Doc. N.
		DATE

Customer	Machine Model	
Address	Serial N.	Prod. date
	Maintenance type	
Contact person	Maintenance frequency	
Telephone	Maintenance technician	
MAINTENANCE REPORT		
SYSTEM STATUS/CONDITION/CUSTOMER REQUEST FOR ACTION		

CHECKS TO CARRY OUT ON MODELS STK 100-103-113 (indicate N/A where the check cannot be carried out)

No.	PRELIMINARY CHECKS	RESULT		
	before supplying electrical power to the system, check:	**Pos.**	**Neg.**	**N/A**
1	the integrity and stability of the system			
2	the integrity of the electrical, compressed air, water and drain connections			
3	the mains air and water wall valves do not leak			
4	that the safety systems are intact and have not been triggered (emergency buttons)			
5	the integrity of the hoses in the cabin			

No.	PRE-MAINTENANCE ACTIVITIES	RESULT		
		Pos.	**Neg.**	**N/A**
1	Visually inspect the integrity and stability of the system			
2	Sanitization of the inside of the cabin			
3	Sanitization of the outside of the cabin			
4	Sanitization of the mats inside the cabin and the gloves			

No.	MAINTENANCE DESCRIPTION
1	
2	
3	
4	

5	

N.	REPLACEMENTS			RESULT		
	Code	Component	Qty.	Pos.	Neg.	N/A
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

CHECKS TO CARRY OUT ON MODELS STK 100 (indicate N/A where the check cannot be carried out)

No.	OPERATION CHECKS	RESULT		
	supply electrical power to the system and check:	Pos.	Neg.	N/A
1	switching on of the touch panel and loading of the program			
2	switching on of the lights inside the cabin			
3	the absence of alarms/signals at the panel			
4	the presence of air/water			
5	operation of the emergency buttons			
6	operation of the door			
7	loading the SAFEKLINIC bottle and tag reading			
8	operation of spray handpieces by pressing the pedals			
9	operation of the wiper/ wiper water by pressing the pedals			

CHECKS TO CARRY OUT ON MODEL STK 100

No.	OPERATION CHECKS	RESULT		
	supply electrical power to the system and check:	Pos.	Neg.	N/A
1	switching on of the touch panel and loading of the program			
2	switching on of the lights inside the cabin			

3	the absence of alarms/signals at the panel			
4	the presence of air/water at the panel			
5	operation of the emergency buttons			
6	operation of the door and the capacity of the gas springs to support it			
7	loading the SAFEKLINIC bottle			
8	operation of spray handpieces by pressing the pedals			
9	operation of the wiper/ wiper water by pressing the pedals			
10	absence of leaks			
11	operation of aspirator			
12	operation of drain pump			

NOTES

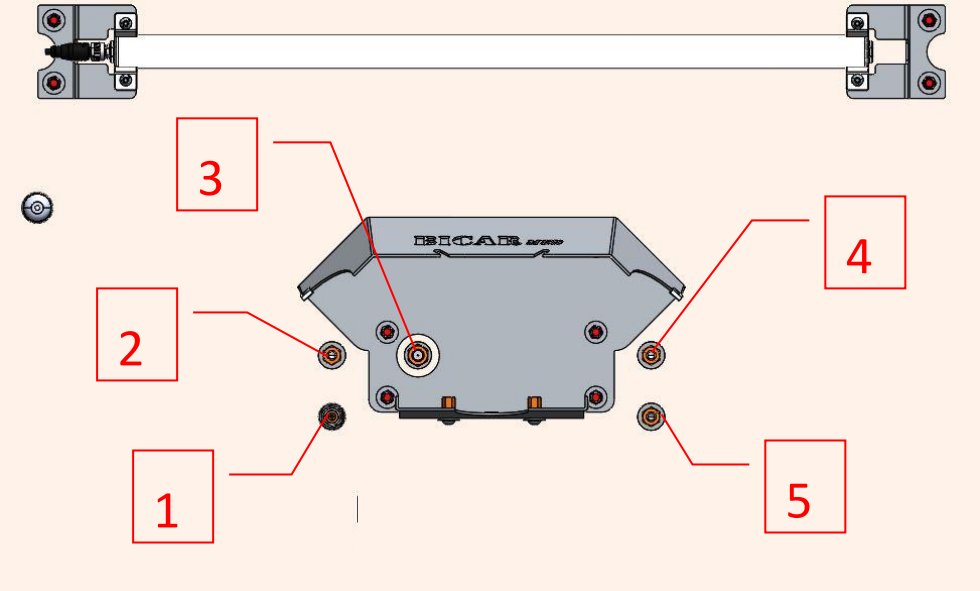
*it is mandatory to carry out post-repair electrical safety tests if the maintenance involves disconnecting electrical cables, earthing sockets etc.

- If the servicing tests described above are passed, it means that the product is suitable for use in its place of commissioning and use as well as being the formal acceptance of the product.
- By signing this form, the Customer:
  1. Confirms that the product and its operation are suitable for his specific needs, and the product is accepted;
  2. Undertakes to ensure that the product is used correctly and is kept in good condition and good working order, especially the safety devices, in accordance with the use and maintenance instructions;
  3. Accepts the product.

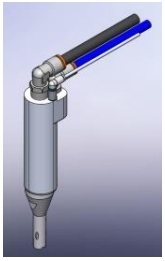
Technician's signature	Customer's stamp and signature

17 ANNEX 04: HOSE CONNECTIONS INSIDE THE CABIN

Connections of the handpiece hoses to the fittings on the wall inside the cabin.



WASHING HANDPIECE (GREY)



1) HOSE Ø3x2 TRANSPARENT –WATER-

2) HOSE Ø8x5 BLUE –AIR-

3) HOSE Ø10x6.5 BLACK –BICARBONATE-

RINSING HANDPIECE (BLUE)

4) HOSE Ø8x6 TRANSPARENT –WATER-

5) HOSE Ø8x6 BLUE –AIR-