User Manual

CLEANi Rad

CE

SIMAD
X-RAY MEDICAL TECHNOLOGY

A Sago Medica Company

Overview

This manual was written to help users and operators in the safe and efficient use of the CLEANiRAD®.

Working and lifespan of the machine depend on the correct use and the attention on the usage.

Before leaving the manufacturing plant this model has being subjected to a severe functional tests in order to ensure the best reliability. It has to be verify that the CLEANiRAD® during transport has not suffered structural damage that could affect operation and safety.

This manual should be considered an integral part of CLEANiRAD® and must be with it the same until its demolition. In case of loss, must be asked a replacement copy from the manufacturer.

THE INFORMATION CONTAINED IN THIS MANUAL ARE PROPERTY OF THE MANUFACTURER AND MUST BE CONSIDERED PRIVATE.

Some items shown in this manual may be different from those of your CLEANiRAD®, some components may have been removed to ensure the clarity of images and illustrations.

This manual should be stored in a place accessible to all the staff responsible for the conduct and maintenance of CLEANiRAD®.

This manual must go with CLEANiRAD® in any case.

For legal purpose, only the manual written in Italian is valid.

Manufacturer

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1. GENERAL WARNINGS

The use of CLEANiRAD® assumes that the operator is aware of the correct employ of the machine, however, she must be used with common sense, however, so that has to work and perform its functions in the manner for which it is designed.

CARREFULLY READ THE USER AND MAINTANANCE MANUAL.
CARRY OUT ACTIVITIES CARREFULLY.
DO NOT FORCE AND TAMPERING CONTROL EQUIPMENT AND SAFETY.
PERFORM THE REGULAR MAINTANANCE.

Checks and regulations

After performing the installation with our operator, the machine can work.

Follow the simple checklist of controls in the case of:

- The machine has been moved in another room;
- The machine undergoes a retention period and has to be restarted;
- Some components have been replaced (this operation must be performed by authorized personnel).

Checks:

- Deprive of water the CLEANiRAD® if moved;
- The flooring of the new installation room must have the same resistance of the previous one, or better;
- Check that there are no vibrations and that the floor is leveled;
- Regulate the water;
- Check the supplied voltage;
- Check the grounding system;
- Check the direction of rotation of motors;
- If any allarm occours, search the solutions in the ch. 3 – Security system.

1.1. Intended use

CLEANIRAD® IS DESIGNED FOR WASHING PERSONAL PROTECTIVE EQUIPMENT.
In this manual, the personal protective equipment will also be called PPE.
CLEANIRAD® is designed for washing Irad aprons.
CLEANIRAD® IS DESIGNED AND BUILT TO WORK ONLY WITH WATER AND SPECIFIC SOAPS. (see ch. 8).

WARNING: NO OTHER LIQUID OR ADDITIVES MUST BE USED FOR WASHING.

The CLEANIRAD® is made to obtain a good washing of the details provided, supplied and controlled by the Manufacturer, in the pollution and quantity conditions presented and described.
The Manufacturer is not responsible for damages to aprons different from Irad aprons.
Other issues not here reported, and therefore not taken into consideration by the ***Manufacturer***, can be solvedcontactiong our service department.

The indication of good washing is intended as visual possibility to check the cleanliness of the Personal Protective Equipment depending on the manifested requirement.
Special guarantees on the ability of chemical cleaning and the related compatibility with the pollutants on Personal Protective Equipment have to be demanded in advance to the supplier of the chemical used as additive.

KEEP IN MIND THAT THE USE OF ADDITIVES OF POOR QUALITY OR BADLY CONTROLLED OVER THE TIME OR NOT COMPATIBLE WITH THE MATERIALS TO BE TREATED, MAY AFFECT THE PROPER OPERATION OF WASHING.

THE MANUFACTURER DOES NOT CONSIDER ITSELF RESPONSABLE FOR DAMAGES TO THE MACHINE IN THE CASES ABOVE.

THE MANUFACTURER SHALL NOT BE LIABLE IN ANY WAY FOR MALFUNCTIONING AND / OR EXCESS OF EMISSION VALUES CAUSED BY MODIFICATION OR BY BAD USE OF THE CYCLES PRESET FROM OUR STAFF.

ANY DIFFERENT USE NOT INCLUDED IN THE INDICATED RAISES THE MANUFACTURER FROM RISKS THAT SHOULD BE VERIFIED.

IN ANY CASE, THE USE OF PRODUCTS OTHER THAN THOSE AGREED UPON PURCHASE EXCLUDES THE MANUFACTURER FROM ANY LIABILITY FOR ANY INJURY.

CLEANiRAD® AND ANY OF ITS PART ARE NOT DESIGN FOR USE IN EXPLOSIVE ATMOSPHERE.

USE IN CONFORMITY CONTEMPLATES ALSO THE COMPLIANCE OF THE CONDITIONS OF COMMISSIONING, CONTROL AND REPAIR (owner's manual).

1.2. Additional risks

Despite all the precautions in place, there are more potential dangers, that are less obvious, result of the use of electricity or steam health hazard.
The controls and certain organs not visible in the machine may join this category of risk.

1.3. Operator and Staff minimum legal requirements

Users must have a certain skill in the use and maintenance of the CLEANiRAD, as specified in the manual.
The operator may have acquired this experience thanks to a training of a technical-expert.

1.4. Workstation

DURING OPERATION THE USER MUST STAY IN <u>FRONT OF THE CLEANIRAD</u>®
The front of machine includes:

- Loading door;
- PC with interface of communication;
- Emergency button;
- USB port;
- Rotate PPE button;
- LED button for interior light;
- Green light for power supply ON.

BEFORE ANY OPERATION IN THE BACK OF THE MACHINE STOP IT USING THE SWITCH LOCATED ON ELECTRICAL PANEL*!*

1.5. Noise

THE NOISE PRODUCED BY THE CLEANiRAD® IS LESS THAN 70 DB (A)

The noise present in the workplace can be greater than that of the machine, so it has to be measured the overall noise of the workplace to avoid problems of deafness. In this case the operator must be protected with suitable protection devices.

1.6. Conformity

CLEANiRAD® is designed and built according to the current level of technology and in accordance with European standards, as required by the EC directives listed below:

European Directives:

- Machinery directive (2006/42/CE);
- EMC directive (2004/108/CE);
- Low Voltage Directive LVD (2006/95/CE);
- Noise directive (2003/10/CE);

Harmonized standards applied:

- Safety of machinery EN 12100 part 1 e 2;
- Electrical equipment of machines EN 60204 part 1.

2. INSTALLATION ENVIRONMENTAL REQUIREMENTS

CLEANiRAD® must be installed only in enclosed spaces.
Must be respected regional-national laws for environmental protection, accident prevention regulations and the directive to improve safety and health of workers at work.

2.1. Required environmental conditions

Unless different specification in the order, CLEANiRAD® has to work regularly in the environmental conditions described in the following:

CLEANiRAD® POSITIONING

Place the CLEANiRAD® as established, otherwise the Manufacturers will not be liable for any inconveniences that may occur.
At the base of the CLEANiRAD® there are 4 wheels useful for the movimentation.
CLEANiRAD® has to be placed on a hard floor, plane in both directions, of sufficient consistency to withstand the weight of it, of the machinery already present and of the possible goods for transport.
The floor of the work room should not be made of absorbent material and must withstand the load of the CLEANiRAD®.

TEMPERATURE

CLEANiRAD® can work in ambient temperatures from +18°C (+ 64°F) to + 40°C (+ 104°F).

LIGHTING

CLEANiRAD® is designed according to the laws and trying to minimize the gray areas to facilitate the operator's.
The room of the CLEANiRAD® must not have shadow zones, dazzling lights or stroboscopic effects due to the lighting.

ATMOSPHERE WITH RISK OF EXPLOSION AND/OR FIRE

CLEANiRAD® standard version is not made and designed to work in environments with explosion or fire hazard.

2.2. Connections

Getting ready to start up

Do not try to open the loading door because it is blocked until the CLEANiRAD® is not connected electrically and pneumatically.

Verify

The installation site has to be well ventilated by a special system.
Before the intervention of the authorized technical service, the customer is responsible for:

- downloading from transport (communicating the resources available to unload);
- introduction within the establishment (check mode transition);
- positioning in the area of use;
- means, materials, labor for connection to the power supply;
- means, materials, labor for connection to the water supply;
- means, materials, labor for connection to the compressed air supply;
- means, materials, labor for the realization of the discharges downstream;
- supply of compressed air;
- supply of cooling water;
- chemicals;
- masonry and / or foundation where necessary.

If mounting and commissioning, by agreement, are made on the site of the final user by our authorized personnel, lifting and displacement means must be available, as well as laborers help if necessary.

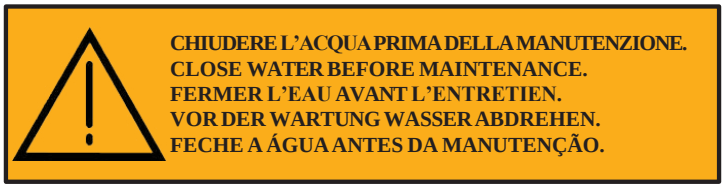
It is also essential that a responsible buyer (usually the responsible for maintenance) constantly and scrupulously follows our authorized personnel.

Our staff will perform the assembly operations only when the availability of electricity, cooling water, compressed air, chemicals suitable will be confirmed.
The assembly operations are:

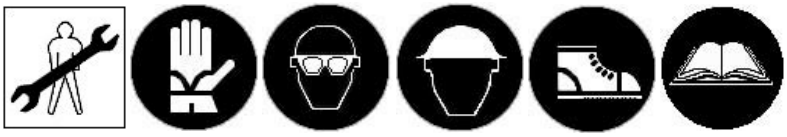
- implant placement;
- electrical connection from the power supply to the electrical panel of the machine and to its accessories;
- hydraulic connection to the power points of the CLEANiRAD® and its accessories;
- connection to the supply line of any steam generators (if expected) and its compliance with specifications.

In this situation, our staff will ensure the commissioning (excluding handling of drums containing additives) verifying the functionality of CLEANiRAD® and giving instructions to your staff for the use.

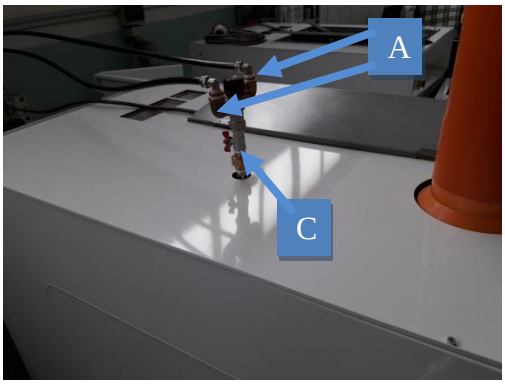
At the end of the day, it is advisable to close all valves related to connections and is essential to close before any repair or maintenance, as reported by the appropriate labels placed in proximity of these connections.

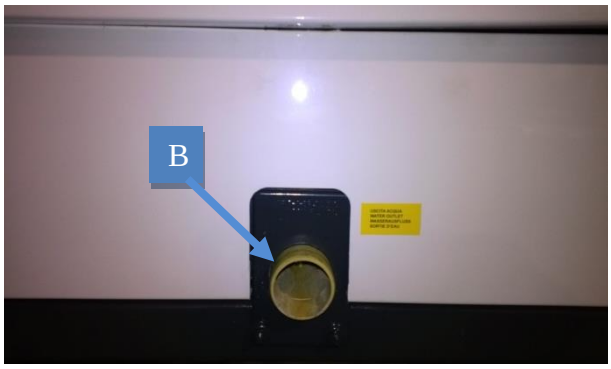


2.2.1. Hydraulic



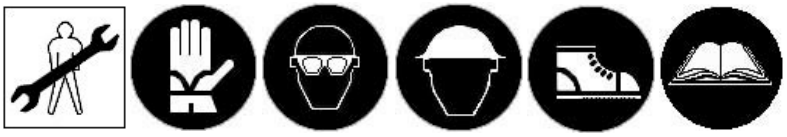
The connection of the inlet water must be performed at the point **(A)**, on the top of CLEANiRAD®. Usually water is supplied to CLEANiRAD® directly from the water mains.
The connection to the water discharge must be performed at the point **(B)**, on the back of CLEANiRAD®.
When the connection is done, open the tap **(C)**.
Make connections to the thermostatic mixing valve for the water inlet point with Rubber or Rilsan **(A)**. The thermostatic mixing valve must be at value 3.
Make connections for the discharge with rigid pipes in iron or copper, point **(B)**.
Provide a shut-off valve on the feeding.

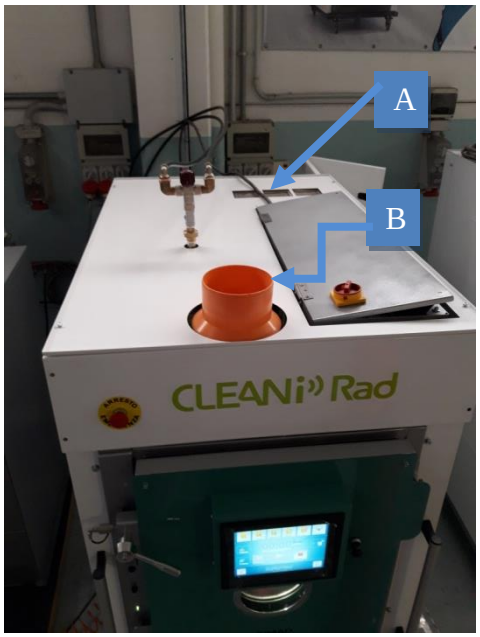




NOTE: AFTER HAVING COMPLETED THE WATER CONNECTION, ALWAYS CHECK THAT THERE ARE NO LEAKS.

2.2.2. Drying intake/output air





Point **(A)** external view, and point **(A.1)** internal view of the drying intake air. The room must allow an air exchange of minimum 1800m^3/hr air, as indicated in the technical data.

Point **(B)**, drying hot air output, must be channeled and brought outside. For this connection, use extensible isolated tube for hot air Ø160 mm, able to withstand temperatures in its interior up to 45°C (113°F).

NOTE: FOR THE CHANNELLING OF THE HOT AIR, ALWAYS FOLLOW THE REGULATIONS IN FORCE IN THE COUNTRY OF INSTALLATION OF CLEANiRAD®

2.2.3. Power supply

On the top of CLEANiRAD® there are a supply cable and the overall switch. For more information see the document "*Technical data installation".*

3. SECURITY SYSTEM

CLEANiRAD® is equipped with monitoring system to ensure the efficiency and, especially, the safety of users during the cycles.
The messages of alarm appear on the panel-pc, as code and its description.

In the following table, the list of and description and related troubleshooting. When the troubleshooting is not indicate click on “Continue” button, if persists, click “Cancel” button.

Code	Description	State of machine (Recommended action before contacting support)
01	DOOR OPEN	PAUSE (CHECK THE CORRECT CLOSING THE DOOR AND PRESS GO)
02	NO WATER IN INPUT	PAUSE (MAKE SURE THE TAP (C) IN PIC. 2-1 ARE OPENING AND PRESS CONTINUE. IF PERSIST PRESS CANCEL BUTTON)
03	CIRCUIT BREAKER	PAUSE
04	MAX WATER LEVEL	PAUSE (PRESS CANCEL BUTTON AND START DRAIN CYCLE)
05	AIR OVERTEMPERATURE 1	PAUSE
06	TIME-OUT FILLING LEVEL	PAUSE
07	TIME-OUT DRAIN	PAUSE
08	TIME-OUT AIR TEMPERATURE 1	PAUSE
09	DETERGENT 1 MIN LEVEL	ALARM AT END OF THE CYCLE (NO START)
10	DETERGENT 2 MIN LEVEL	ALARM AT END OF CYCLE (NO START)
11	DO RESET	(NO START)
12	RX – WRONG COMMAND	CURRENT MACHINE STATE
13	RX – WRONG DATA	GIVE COMMAND AGAIN WITH RIGHT DATA
14	RX RS232 TIMEOUT ERR,	GIVE COMMAND AGAIN
15	RX RS232 “BAUD” ERR,	GIVE COMMAND AGAIN
16	COMMAND NOT DONE	CORRECT BUT NOT EXECUTE COMMAND WHEN SENT the only alarm miscarrying automatic washing
17	PRESSION OF EMERGENCY BUTTON	As if the washing was sent to pause: on display, the screen with options Cancel or Continue Washing. The pressing of the button takes away the common from the PLC outputs
18	RAM ERROR	STOP MACHINE
19	ALL POWER OFF	STOP MACHINE
20	DETERGENT 1 LOW LEVEL	ALARM AT END OF THE CYCLE (NO START)
21	DETERGENT 2 LOW LEVEL	ALARM AT END OF THE CYCLE (NO START)
22	NO AIR PRESSURE	PAUSE
23	DETERGENT 1 NO FLOW	PAUSE
24	DETERGENT 2 NO FLOW	PAUSE
25	SOAP DOOR/BACK DOOR OPEN	PAUSE (CLOSE THE SOAP AND/OR BACK DOOR AND CLICK CONTINUE BUTTON)
26	NO WASHING HIGHT PRESSURE	PAUSE
27	NO PRESSURE LOW AIR	PAUSE
28	NO PRESSURE HIGHT AIR	PAUSE
29	NO APRONS ROTATION	PAUSE
30	WATER IN CHAMBER	PAUSE (PRESS CANCEL BUTTON AND VERIFY THE PROBLEM)

31	EMPTY	(CONTACTING THE SUPPORT)
32	NO PROGRAM	(CONTACTING THE SUPPORT)
33	AIR TEMPERATURE SENSOR 1 - BROKEN	PAUSE
34	WATER TEMPERATURE SENSOR 2 - BROKEN	PAUSE
35	WATER OVERTEMPERATURE SENSOR 2	PAUSE
36	AIR OVERTEMPERATURE SENSOR 1	PAUSE (PRESS CANCEL BUTTON AND OPEN THE DOOR)
37	DETERGENT 1 & 2 MIN LEVEL	PAUSE
38	DETERGENT 1 LOW, 2 MIN LEVEL	PAUSE
39	DETERGENT 2 LOW, 1 MIN LEVEL	PAUSE
40	DETERGENT 1 & 2 LOW	PAUSE
41	TAG READER COMMUNICATION ERROR	ONLY DURING SWITCH-ON, NO LIMITATION

4. COMPONENTS

4.1. Containement basin

It is the base for all the components of the CLEANiRAD®, its function is to contain any spillage of liquid spill from the reservoirs thus avoiding dispersion in the surrounding environment.

On the outer perimeter of that have been foreseen 4 wheels useful for handling.

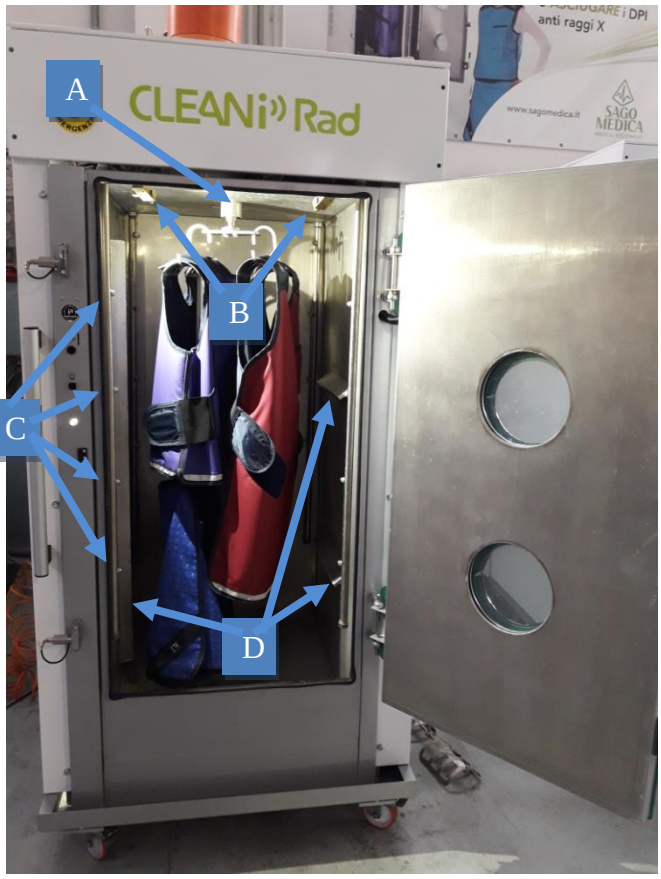
Pic. 4-1

4.2. Washing chamber

The washing chamber is the central part of CLEANiRAD®, and it is composed of several elements:

- support **(A)** to which hanging PPE to be washed using the appropriate support;
- nozzles **(B)** output soaps;
- nozzles **(C)**, 4 for each edge, output water in hight and low pressure;
- deflectors **(D)** input air;
- hot water containment with level control system;

The washing chamber is made of stainless steel, fully insulated, with polished internal welds.

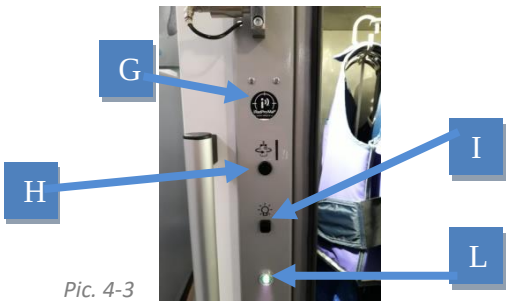


Pic. 4-1

4.3. Front side

The front side of CLEANiRAD® is composed of:

- Loading door;
- Emergency button **(F)** to immediately interrupt any work in progress;
- Tag reader RFID **(G)**. The iRad aprons have a tag RFID for traceability and management with iRadProMaP software. The washing information of the iRad aprons can be integrated in iRadProMaP software for a complete management of the PPE as indicated by the regulations;
- **(H)** button for rotation of PPE (see A in Pic. 4-1);
- **(I)** LED button for interior light;
- **(L)** Green light for power supply ON.



Pic. 4-3

4.3.1. Load door

The load door is in front the side of machine. When the load door is open, it is possible to hang the PPE for the washing and pick them up after washing. It consists of the following elements:

- N°2 handles for closing **(A)**;
- N°2 inspection windows **(B);**
- Panel-PC, communication interface of the CLEANiRAD® **(C)**. The Panel-PC can be fed both in direct and alternating current. The power supply is a 24V AC with direct earthing inside the Panel-PC;
- USB port **(D)** for washing data import/export;
- **(E)** breakers for the door open signal.

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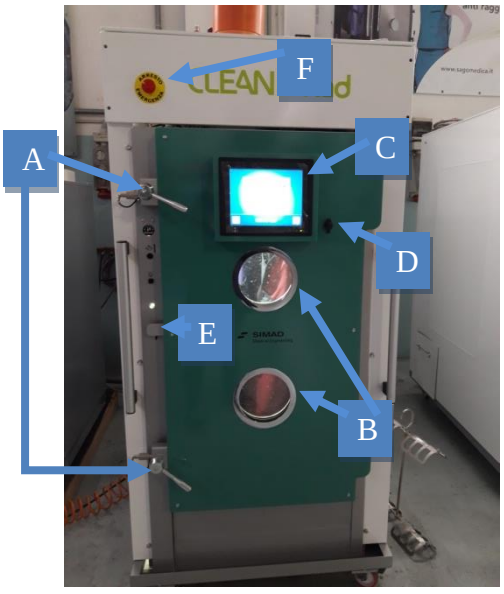


Pic. 4-4

4.4. Back side

4.4.1. Soaps pumps

The soaps pumps are normal peristaltic pumps; one is for the detergent and the other for the sanitizer.

Pic. 4-5

4.4.2. Water pump

This device allows the circulation and the high-pressure water inlet inside the washing chamber.

Pic. 4-6

4.4.3. Water filter

The water filter allows purifying the water when switched into high-pressure cycle.

Pic. 4-7

4.4.4. Air filter

The air filter is used to clean up the air taken from the room where the CLEANiRAD® resides during the drying phase.

Pic. 4-8

If it has been installed

Pic. 4-8 bis

4.4.5. Fan motor

The engine is used to enter the air in the washing chamber in a forced manner. During low ventilation works in opposite rotation, during high ventilation phase in normal rotation.

Pic. 4-9

4.4.6. PLC

The PLC is used to control all the sensors, circuit breakers, pumps, motors and for the interaction with the interface software on panel-pc.

Pic. 4-10

4.5. Drying chamber

The drying chamber corresponds with the washing chamber in Pic. 4-2. In particular, the point D is the hot-air outlet for the drying of the PPE. Pic. 4-11 and 4-12 shows the exit hole ducted air in the ventilation system to the outside of the structure.

Pic. 4-11

Pic. 4-12

4.6. Soaps case

The soap tanks are placed at the left side of CLEANiRAD®. There are two tanks, the first one contains detergent and the second one sanitizer. Each tank is equipped with two suction pipes, one for the minimum level and the other for the reserve.

Pic. 4-13

4.7. Electrical panel

The electrical panel is on the top of machine with all the connections between the PLC and the various components it controls. In that area you can also find the switch ON/OFF of power supply.

Pic. 4-14

5. USE

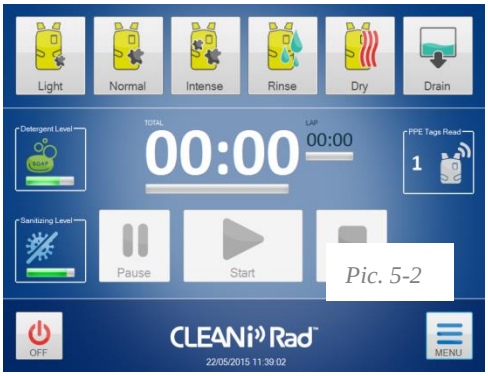
5.1. Switch ON

Turn ON the Main Power Switch, automatically CLEANiRAD® and its console will be ready to work after a few second. After that, on the main screen appears the user interface (Pic. 5-2) and the green light (Pic. 4-3) is on.

Pic. 5-1

5.2. Switch OFF

The shutdown procedure has two phases:



Pic. 5-2

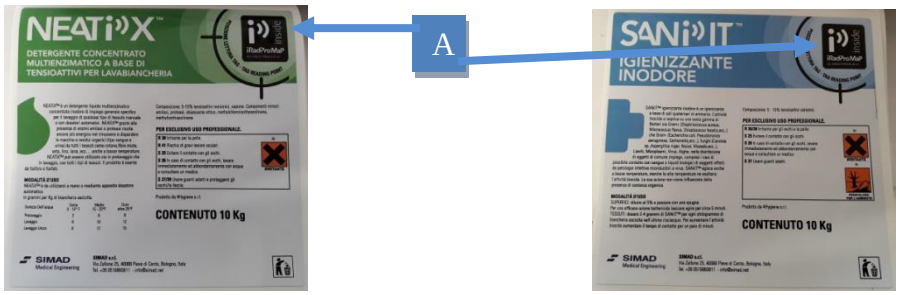
Press the OFF button on the bottom left, after a few seconds the console turns off. This operation switches OFF **only** the user interface. To restart the interface panel, switch first OFF and then ON.

Switch OFF the main power to shut down the CLEANiRAD®. An Info message will appear if any working cycle is going on (see Pic. 5-3). Pressing "Continue", the panel-pc switches-off; with "Cancel" the washing cycle will be continued.

Pic. 5-3

5.3. Loading soaps

Place iRadProMaP image of the tank near the tag reader (Pic. 4-3 pt G) for loading soaps.



5.4. Wash

5.4.1. Loading PPE

Place iRadProMaP small pocket (Pic. 5-4), if present, near the tag reader (Pic. 4-3).

Pic. 5-4

Pic.5-5

The number shown in the window at center right "PPE Tags Read" will increase by one.

5.4.1.1. PPE – Coats and similar

Follow these steps:

A)  Take the coat hanger equipped with a single support

B)  Hang the apron.
Close it as if it was worn.

C)  Hook the hanger to its support in the CLEANiRAD®

D) Press the rotate button and verify that the PPE does not go to rub against air deflectors.

5.4.1.2. PPE – Skirt and Vest Apron

A)  Take the hanger equipped with a double support

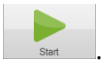
B)  Hang the vest on the top of the hanger.
Close it as if it was worn.

C)  Hang the skirt on the top of the hanger.
Close it as if it was worn.

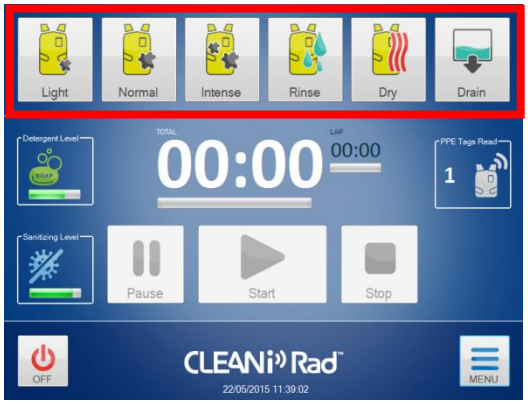
D)  Hook the hanger to its support in the CLEANiRAD®

E) Press the rotate button and verify that the PPE does not go to rub against air deflectors.

5.4.2. Starting any cycle

Select just one of the six buttons on the top of the display and press START 

. Make sure the door is firmly closed.



a. Light, Normal and Intense are three PPE washing, rinsing and drying cycles.
b. Rinse: cycle for only rinsing the PPE;
c. Dry: cycle for only drying the PPE;
d. Drain: drain water from the tub in the washing chamber.

During the cycle there will be a TOTAL countdown (updated every 4 seconds) which indicates the end, and a countdown STEP which indicates the split time and remains to the end of the specific operation.

Note: the countdown TOTAL and STEP will remain stationary during the filling of the washing chamber tank.

When the icons  *and*  *will start to blink it means that the amount of the soaps left is approximately for 10/20 washing cycle .*

If blinks only one icon, the soap is at minimum level.

5.4.3. Pausing any cycle

Pressing 

, the cycle running is paused and then you can select to go through to the Menu if needed, or to restart the cycle or to stop the current cycle.

5.4.4. Interrupting a cycle

To stop a cycle, press 

.

If the ventilation phase is on "high" the cycle will take 30 sec. to stop after the STOP button has been clicked.

When the CLEANiRAD® ends all the controls, the loading door will be unlocked.

5.4.5. Ending the cycle

In the end of cycle you listen a sound, an acoustic alarms starts, the load door are unlocked and the buttons PAUSE and STOP will be disabled.

A) 

Open the loading door and unhook the hanger.

B) 

Remove the PPE from the hanger and put it in a special trolley. Make sure that the PPE sanitized just do not come into contact with the dirty ones.

5.5. Menu

Press the button MENU  to accede to the following functions: (Pic. 5-6)

Pic.5-6

5.5.1. Language

If CleaniRad is configured with different Languages, there will be the possibility to change it following the instructions below:

Select the Menu  ; if other languages are installed the “Language” icon appears colored  and can be selected, otherwise the Icon appear in grey color and it can’t be selected.

5.5.2. Import Export

The list of the cycles performed with hour, date, operator, PPE (if read with tag reader) can be exported on USB memory:

- Insert USB memory in the USB connector on the bottom of the console
- In the menu  , select “Import/Export”  :

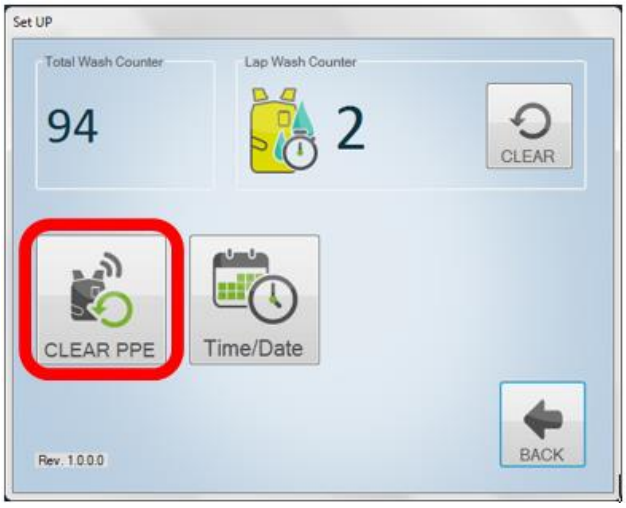
  data will be automatically saved on the USB memory and the window below will appear.

5.5.3. Setup

Select the menu 

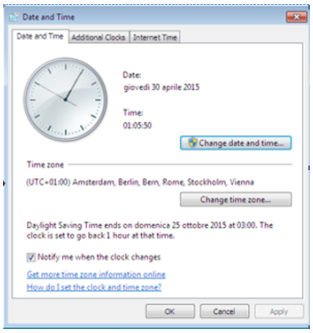
, and then select setup 

and the window will appear:



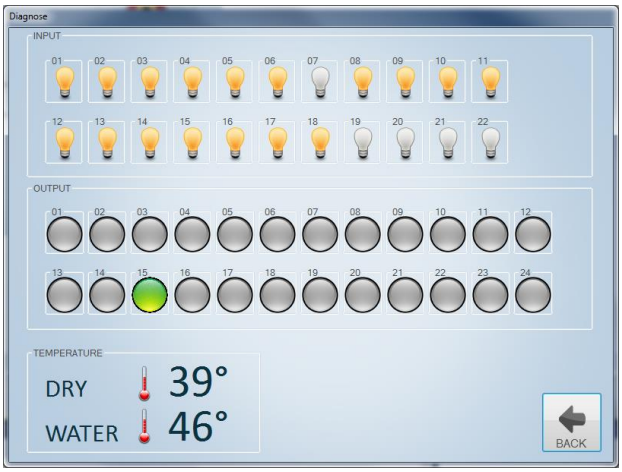
Select the icon “CLEAR PPE” to erase the washing cycles saved in the memory.

Select the icon 

to set Date & Time 

5.5.4. Diagnose

Pressing the button you can view the input/output light sensors for a quick diagnosis.



5.5.5. Fill Pumps

In the menu 

, select the icon “Fill Pumps” 

and the window of the selected menu will appear:

Choose the Pump (Detergent or Sanitizing) and press 

, when you see the selected liquid nebulizing inside the washing chamber press 

. Now the pumps are ready.

Nota: To start the filling pumps procedure the CLEANiRAD the door must be closed.

6. MAINTENANCE

To constantly have an efficient CleaniRad, perform accurate and regular maintenance, therefore we invite you to scrupulously observe what we are going to illustrate.

WARNING!

AFTER ANY WORK OF MAINTENANCE, THE SAFETY MANAGER HAS TO ENSURE SAFETY CONDITIONS OF THE CLEANiRAD® AND ITS PROTECTION DEVICES.

IN PARTICULAR, THE MANAGER IS OBLIGED TO CLOSE THE SECURITY CASING OF THE MACHINE!

DURING THE MAINTENANCE IT IS REQUIRED TO HANG ON THE CONTROL PANEL A SIGN OF PROHIBITION TO PERFORM MOVEMENTS. ALWAYS MAKE SURE, BEFORE CALLING IN FUNCTION THE CLEANiRAD®, THAT THE STAFF IS AT A SAFE DISTANCE AND TOOLS OR MATERIALS HAVE NOT BEEN LEFT IN THE AREA OF THE CLEANiRAD®.

BEFORE WORKING ON ELECTRICAL POWER, DISCONNECT THE UPSTREAM OF CLEANiRAD® (SWITCH LINE). ALL OPERATIONS MUST BE MADE WITH THE SWITCH ON POSITION "0- OFF" AND IT MUST BE FIXED WITH A LOCK, TO PREVENT THE INVOLUNTARY REENABLING. THE KEY LOCK HAS TO BE RETAINED BY MAINTENANCE

THE MAXIMUM RELIABILITY OF CLEANiRAD®IS THE RESULT OF A PROGRAM OF SERVICING AND INSPECTION, PLANNED AND CAREFULLY FOLLOW DURING THE WHOLE LIFE OF THE CLEANiRAD®.

For more information, see below the detailed descriptions of maintenance, practiced by the security officer or the user of the machine; for others contact an authorized technician.

6.1. Program – Ordinary maintenance

The following table summarizes the frequency and type of maintenance to be performed:

Periodicità	***Manutenzione***
100 CYCLES / at least every 6 months	Clean air intake filter (Par. 6.2.1)
100 CYCLES / at least every 6 months	Clean cooling fan motors (Par. 6.2.2)
300 CYCLES / at least every 6 months	Clean water high pressure filter (Par. 6.3.1)
500 CYCLES / at least every 6 months	Clean drain pump filter (Par. 6.3.2)
1000 CYCLES	Clean heater (Pic. 6-1)
1 YEAR	Check the oil compressor (Par. 6.5.1)

Note: frequency of scheduled maintenance is indicative.

The complete list of checks to be carried out is indicated in the "Ordinary Maintenance Report" document.

6.2. Periodicity 100 cycles

6.2.1. Cleaning air intake filter

THIS SERVICE MUST BE PERFORMED WITH THE MACHINE OFF AND THE MAIN SWITCH TO "0-OFF".

CLEANiRAD® is equipped with 1 suction AIR filter on the top (See par. 4.4.4 Pic. 4-8 or Par. 2.2.2).

The CLEANiRAD® built after January 2019 also include a second filter positioned inside the technical compartment in input to the forced air fan (see par. 4.4.4 Pic. 4-8bis or Pic. 6-1).

The filter should be removed and cleaned every 100 cycles or at least every 6 months if the CLEANiRAD® is installed in "clean" environments. If the cabin is installed in areas with air particularly "dirty", anticipate filter cleaning.

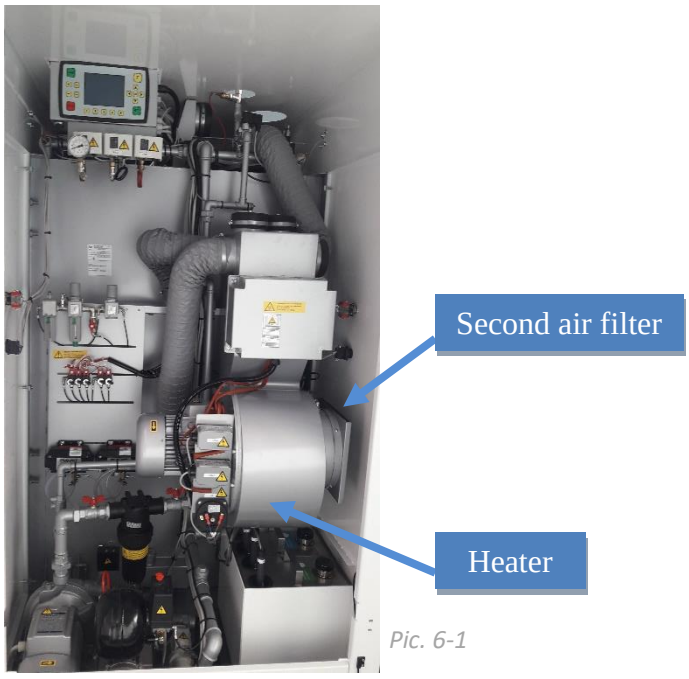
To clean, follow the procedures listed below:

A. Move to the back of the CLEANiRAD®, near the grid within which is contained the air filter;

B. Remove the air filter and position yourself in a place where it is possible to perform the cleaning;

C. Check the integrity of the filter and then, through a special suction device and a brush, eliminate the particles deposited on the walls.

CLEANiRAD® CAN NOT DO THE DRYING CYCLE IF THE AIR FILTER IS NOT PROPERLY PLUGGED INTO ITS HOUSING. THE MANUFACTURER SHALL NOT BE LIABLE FOR DAMAGES TO CLEANiRAD® FOR THE REASONS ABOVE.

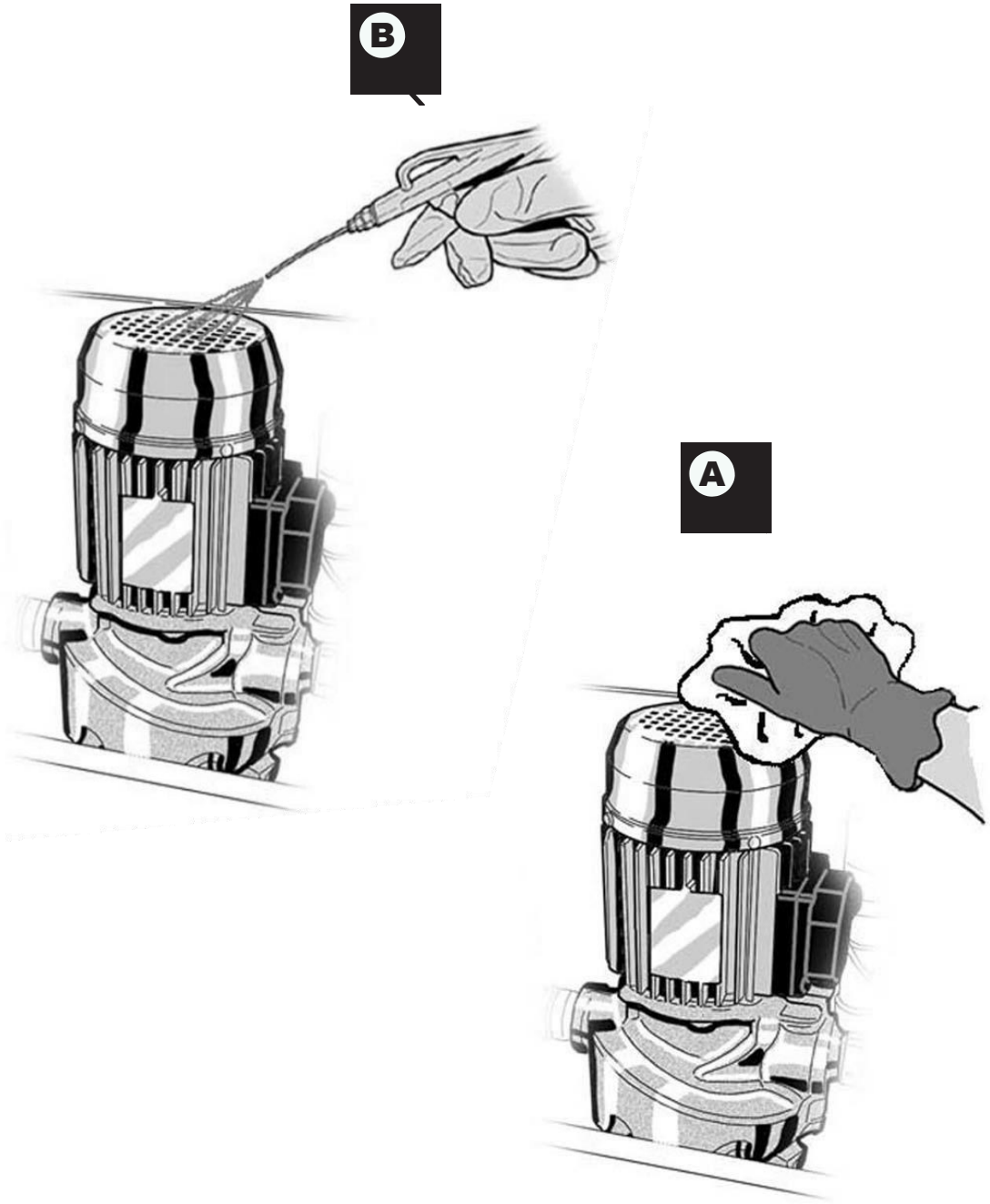


Pic. 6-1

6.2.2. Clean cooling fan motors

THIS SERVICE MUST BE PERFORMED WITH THE MACHINE OFF AND THE MAIN SWITCH TO "0-OFF".

Every 100 cycles or at least every 6 months clean the caps of the cooling fans of the motors or of the pumps of the machine.
Use a common clean cloth **(A)** or an air pistol **(B)**.



6.3. Periodicity 300 cycles

6.3.1. Cleaning water high pressure filter

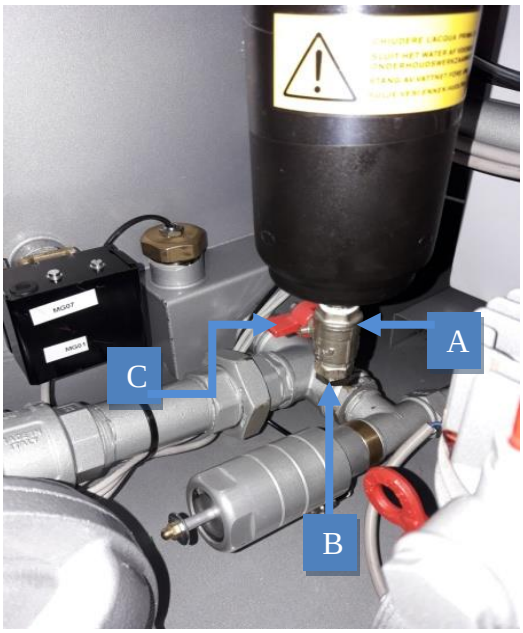
THIS SERVICE MUST BE PERFORMED WITH THE MACHINE OFF AND THE MAIN SWITCH TO "0-OFF".

CLEANiRAD® is equipped with 1 water high pressure filter.

The filter should be removed and cleaned every 300 cycles or at least every 6 months if the CLEANiRAD® is installed in "clean" environments. If the cabin is installed in areas with air particularly "dirty", anticipate filter cleaning.

To clean, follow the procedures listed below:

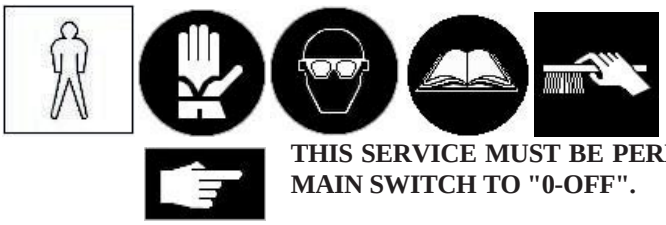
1. Move to the side of the CLEANiRAD® (Pic. 6-2)
2. If there is a tap (A) in the lower part of the filter, remove the cap (B) that closes it, place a container underneath and open it (C);
3. Remove the water filter and position yourself in a place where it is possible to perform the cleaning;
4. Check the integrity of the filter and then, through a special suction device and a brush, eliminate the particles deposited on the walls.
5. If in the lower part of the filter is present a tap, close it, and again mount the cap at the end and replace the filter



Pic. 6-2

6.4. Periodicity 500 cycles

6.4.1. Clean drain pump filter



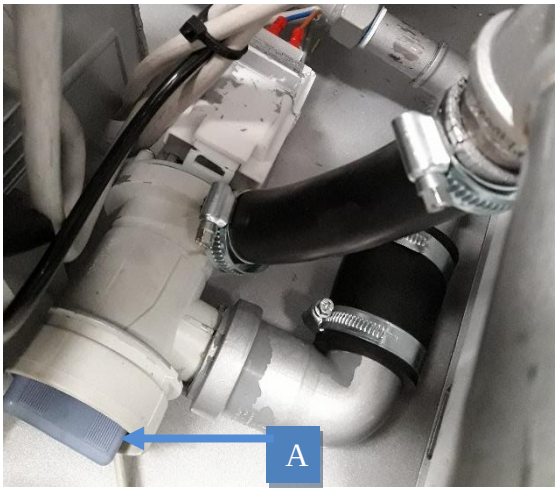
THIS SERVICE MUST BE PERFORMED WITH THE MACHINE OFF AND THE MAIN SWITCH TO "0-OFF".

CLEANiRAD® is equipped with 1 drain pump filter.

The filter should be removed and cleaned every 300 cycles or at least every 6 months if the CLEANiRAD® is installed in "clean" environments. If the cabin is installed in areas with air particularly "dirty", anticipate filter cleaning.

To clean, follow the procedures listed below:

1. Move to the side of the CLEANiRAD® (Pic. 6-3);
2. Place a cloth at the bottom of the drain pump;
3. Rotate the cap (A), remove the filter and position yourself in a place where it is possible to perform the cleaning;
4. Verify that the cap seal is intact;
5. reposition the filter by screwing the cap back on.



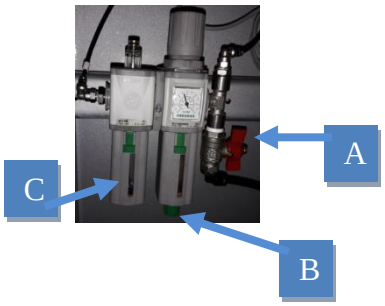
Pic. 6-3

6.5. Periodicity 1 year

6.5.1. Compressor of the oil level

Use the manual valve (A) to shut off the compressed air supply.

I. Rotate the valve (B), in order to eliminate compressed air and condensation;
II. Position a container in line with the condensation gathering tumber;
III. Press the valve (B) at short intervals, pressing upwards to eliminate the residues deposited.



Control the level of oil in the tumber (C).
If necessary, turn it to unscrew and refill it.
If the oil needs replacing, use mineral oil equivalent.

Carry out checks and operations required, then use manual valve (A) to return machine to original conditions.

6.6. Extraordinary maintenance

6.6.1. Cleaning water inlet filter

THIS SERVICE MUST BE PERFORMED WITH THE MACHINE OFF AND THE MAIN SWITCH TO "0-OFF".

this operation must be performed only if the error code 02 or 34 appears on the system.

To clean, follow the procedures listed below:

- Move to the rear of the cabin, open the casing and get inside the fairing, see par. 2.2.1;
- Close the valve of the water**(C)**;
- Disassemble, clean and replace the water filters of the thermostatic mixing valve **(A);**
- Open the valve.

7. DETERGENT AND SANITIZING

7.1. Detergent

Identification	Conc. %.	Classification 67/548/CEE.	Classification 1272/2008 (CLP)
SOAP COCONUT POTASSIUM			
CAS. 61789-30-8	5 - 10	Xi R36/38	
CE. 263-049-9			
INDEX.			
ALCHIL SULFONATE DIETHANOLAMINE			
CAS. 90194-40-4	5 - 10	Xn R22, Xi R38, Xi R41	
CE. 290-650-3			
INDEX.			
BUTOXYETHANOL			
CAS. 111-76-2	5 - 10	Xn R20/21/22, Xi R36/38	Acute Tox. 4 H332, Acute Tox. 4 H312, Acute Tox. 4 H302, Eye Irrit. 2 H319, Skin Irrit. 2 H315
CE. 203-905-0			
INDEX. 603-014-00-0			
PROPANOL			
CAS. 67-63-0	5 - 10	R67, F R11, Xi R36	Flam. Liq. 2 H225, Eye Irrit. 2. H319, STOT SE 3 H336
CE. 200-661-7			
INDEX. 603-117-00-0			
ETHOXYLATED FATTY ALCOHOLS			
CAS. 68439-54-3	5 - 10	Xn R22, Xi R41	
CE			
INDEX			
ACID IDROSSIETILIDENDIFOSFONICO			
CAS. 2809-21-4	1 - 5	Xi R41	
CE. 220-552-8			
INDEX.			

T+ = High Toxicity(T+), T = Toxic(T), Xn = Harmful(Xn), C = Corrosive(C), Xi = Irritantating(Xi), O = Combustive(O), E = Explosivo(E), F+ = Hightly Inflammable(F+),F = Easily Inflammable (F)

7.2. Sanitizing

Identification	Conc. %.	Classification 67/548/CEE	Classification 1272/2008 (CLP)
BENZALKONIUM CHLORIDE			
CAS. 68424-85-1	5 - 10	C R34, Xn R21/22, N R50	
EC. -			
INDEX. -			

T+ = High Toxicity(T+), T = Toxic(T), Xn = Harmful(Xn), C = Corrosive(C), Xi = Irritantating(Xi), O = Combustive(O), E = Explosivo(E), F+ = Hightly Inflammable(F+),F = Easily Inflammable (F)

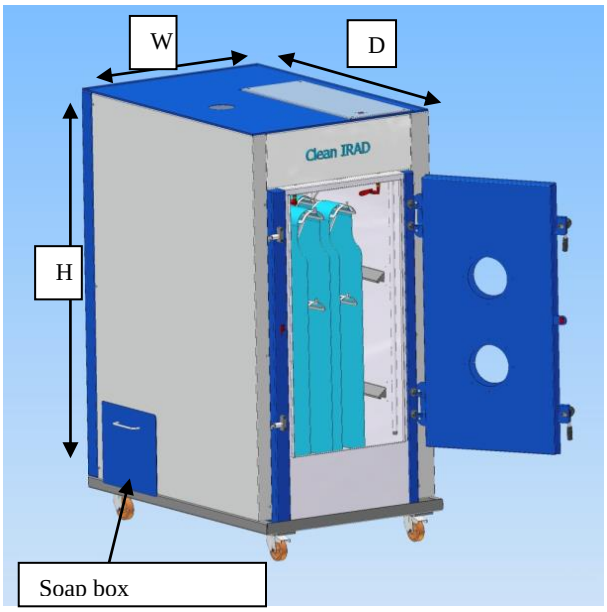
8. DIMENSIONS

8.1. Size and weight

- Height (H) – wheels included: 215 cm
- Height with electrical panel opened: 235 cm
- Depth (D): 170 cm *
- Depth with front door opened: 230 cm
- Width (W): 105 cm **
- Weight: 600 kg
- Payload: 400Kg/m^2

* The Depth does not consider the opening of the **Rear Door**, which increases the **depth with an extra 60cm**.

** The Width does not consider the opening of the **lateral soaps box**, which **increases the width with an extra 60cm** on the left side of the equipment.



8.2. Minimum space for installation

It is advisable to reserve for the equipment and for an easy movement of the operator a chamber with dimensions equal or bigger than:

- Height: 2,5 m
- Width: 2,5 m
- Depth: 4,0 m