



ENGLISH



USER'S MANUAL

APAG

APAG

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Figure 1 CONSOLE APAG

1. INFORMATION TO THE USER

1.1. NOTICE



Please Note.

The Italian version of this manual is the master from which translations derive.
In case of any discrepancy, the binding version is the Italian text.

Carefully read these instructions for installation, use and maintenance of the equipment before operating it, in order to avoid misuse or damage of any kind.

1.2. MEANING OF PICTOGRAMS



Hazard for the operator and/or patient.



Electric shock hazard.



Biological hazard for the operator and/or the patient.



Hot surface, do not touch



Follow the instructions given in this manual.

1.3. WARNINGS

This manual is intended for the syringe heater for surgery **APAG**.

Silfradent S.r.l. congratulates and thanks you for buying this equipment.

Below, we provide some preliminary information to help you in the initial use of the equipment.

It is important that you make sure that the package contains the guarantee certificate and that this is filled in and stamped by the retailer.



Please Note.

Before removing the equipment from packaging, check that all the components described in clause 2.2 are in.

After removed the device from package, place it on a plane and check for no damages due to transport, otherwise immediately advise the retailer.

Follow the instructions in this manual to install the equipment.

Silfradent S.r.l. drafted this manual with the aim to help the user and facilitate the use of the equipment.

Silfradent S.r.l. accepts no responsibility for changes to the equipment or damages to third parties arising from misuse.

Each piece of equipment is supplied with a copy of this manual.

Compliance with the instructions of this technical document is necessary for correct operation.

The use of the equipment for uses different from those indicated in these instructions and in the brochures is absolutely forbidden.

Non compliance with the instructions herein contained results in the immediate termination of the guarantee.



Please Note.

For any request please always indicate: the date of purchase, model and serial number of the equipment that are on the data label located on the back side of the cosole.

The removal of the data label will result in the expiration of the guarantee.

1.4. EQUIPMENT CLASSIFICATION

The device is classified:	
According to the type of protection against electric hazards. Equipment supplied by an external source of electric energy.	CLASS I EQUIPMENT
According to the degree of protection against direct and indirect contacts.	No applied part, the APAG does not contact the patient
According to the degree of protection against liquid penetration.	IPX0.
According to the degree of safety of use in the presence of an anaesthetic mix inflammable with air, oxygen or nitrous oxide.	No protection
According to the conditions of use.	Equipment for continuous operation

1.5. SAFETY SWITCHING OFF SAFE

Before using the equipment, the user must check equipment operation and status.

Before leaving the equipment unattended, switch off the power switch and unplug any power cord from the mains.

1.6. SAFETY WARNINGS

1.6.1. ELECTRICAL HAZARDS



Warning!

Make sure that the environment of use complies with current regulations for electrical installations.
Never extract or handle the power cord with wet hands (risk of electric shock).

APAG is a class I equipment, to avoid electric shock hazard this equipment should be connected only to a mains outlet with a protective earth connection.

When cleaning or disinfecting be careful that no liquid enters the unit



Warning!

This equipment complies with EMC standards in force however as a guarantee of equipment safety, we recommend that the use of mobile phones in the consulting room or clinic be prohibited.

The section 6 of this manual contains the electromagnetic environment characteristics for the unit use.



Caution!

Never carry out any maintenance or cleaning without removing the power cord.

1.6.2. PERICOLI MECCANICI



Warning!

Explosion: Do not activate the equipment in explosion risk areas.



Warning!

High temperature accessible parts, be careful not to touch them.

1.7. PRECAUTIONS



Important!

The **APAG** is a device intended for heating syringes for surgical use, no other use is permitted.
Since it is a device supplied at 230 Vac mains voltage, special precautions must be taken.

To isolate the device from mains remove the power cord from the outlet or from the connector in the back of the equipment.

No modification of this equipment is allowed.

The technical data, the information and the characteristics of the products described in these installation and use instructions correspond to the current specifications in force at the time of publications of this manual.

Change to the product on the basis of technical innovations are possible, this does not entitle the user to the corresponding changes on the equipment already installed.

1.8. APAG CHARACTERISTICS

1.8.1. APAG CONSOLE

Display	Backlit, high contrast LCD
Programs	5
Power supply	230 Vac 50/60 Hz 100VA or 100-115 Vac 50/60 Hz 100VA factory preset.

Internal fuses not replaceable by operator. F1= 1x T 1A L 250V

External fuses F1-F2= T 630 mA L 250V
For model supplied at 230 Vac.
F1-F2= T 1,25 A L 250V
For model supplied at 100-115 Vac.

Maximum operating temperature 80°C

1.9. WASTE DISPOSAL



Waste materials must be forwarded to recycling system or disposed of so as to prevent hazard to humans and the environment according to national regulations in force.

Should not be considered as municipal solid waste, they are waste of electrical and electronic equipment (WEEE).

For further information refer to the nearest branch of Silfradent S.r.l.

1.10. GUARANTEE

Silfradent S.r.l. guarantees to the purchaser that it will repair or - to its sole discretion - replace any part which is defective with regard to construction or materials, in normal conditions of use, for the period of one year from the date shown on the serial number plate on the back of the equipment.

Silfradent S.r.l. is not liable for any damage depending on:

- External causes (poor quality of liquids or incorrect installation)
- Use of incorrect information

- Use of the equipment not in compliance with the regulations in force
- Unsuitable repair
- Changes made by unauthorized third parties make null and void any equipment guarantee.

Repair and maintenance of **APAG** are the responsibility of Silfradent S.r.l. technicians or staff authorized by Silfradent S.r.l.

Only original spare parts must be used to repair **APAG**.



Please note.

The guarantee is provided ex-factory Silfradent S.r.l.

The guarantee does not cover defects or damage arising from:

- Use not in compliance with the instructions of this manual.
- Incorrect or unsuitable maintenance by the user.
- Unauthorized opening of the external casing.
- Unauthorized tampering or changes.
- Operation not in compliance with the environment specifications indicated for the product.
- Use of non original accessories.
- Cleaning with unsuitable products.

In the case of return shipment, wrap the product correctly by using the original package, if possible.

It is advisable to insure the package.

The customer has full responsibility for damages arising from unsuitable packaging.

1.11. TRANSPORT AND STORAGE

Transport and storage of the equipment **MUST BE CARRIED OUT** into original packaging at a temperature range of -40 to +70 °C ", with relative humidity 10 to

90% and pressure ranging between 500 and 1060 HPA.

2. DESCRIPTION

2.1. FIELD OF APPLICATION AND USE

The Medical Electric Equipment **APAG** by Silfradent S.r.l. is a device designed to heat syringes at a controlled temperature.

APAG has been designed for dental practice and surgery and has to work with:

operating Temperature: from + 10 to + 40°C;

maximum relative humidity rate 95%, non-condensing.

Never use the unit in a flammable atmosphere or in presence of explosive gas (e.g. anesthetic gas).

Place the APAG on a horizontal surface or with a maximum inclination of 10° keeping a free space of at least 10 cm around it to quickly extract the power cord in case of necessity.

Make sure that the cables do not impede the free movement of persons.


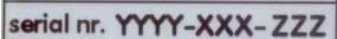

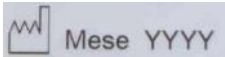

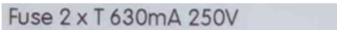
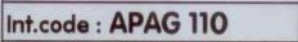
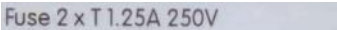


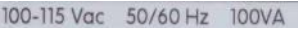
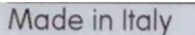






2.2. EQUIPMENT

APAG is equipped with all the accessories required for use:

1	Complete console
1	Power cord
1	Certificate of guarantee
1	Declaration of conformity
1	Use and maintenance manual

2.3. APAG DATA LABEL

La targhetta d'omologazione si trova sul lato inferiore dell'apparecchio. Contiene i seguenti dati:

	Manufacturer's address		Serial number
	Model		Month of manufacture
	Internal code for device powered at 230 Vac		Fuses type for APAG
	Internal code for device powered at 100-115 Vac		Fuses type for APAG 110
	Rated voltage and power for APAG	 The equipment meets the EC conformity requirements	
	Rated voltage and power for APAG 110		
	Manufacturing country	 Refer to the manual and to the safety rules.	
	Cannot be disposed of as municipal solid waste, use the collection centers.		
 Follow instruction for use.		 APAG label	
 APAG 110 label		 APAG 110 label	



Hot surface, do not touch (this label is placed on front of the equipment).

2.4. FUSES

The equipment is provided with three internal fuses that can be replaced by authorized personnel and with two external fuses accessible from the back by removing the power cord and opening the proper cover

External fuses	Glass fuses Dim. Ø 5 x 20mm accessible from the back of the console
APAG	2 x T 630 mA L 250 V
APAG 110	2 x T 1,25 A L 250 V
Internal fuse	F1= 1xT 1A L 250 V
Radial Lead Micro Fuse Ø 8.5 x 8.5mm soldered on pcb. Replaceable only by service personnel (identified with F1 on Figure 2).	

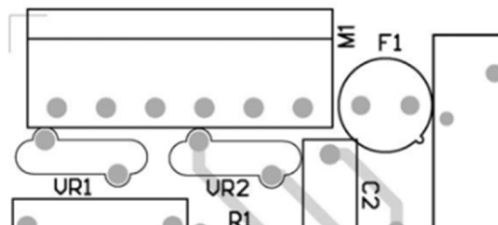


Figure 2 internal fuses

3. Installation And Maintenance



Warning!

Never carry out any maintenance or cleaning without removing the power cord.



Please note.

Before starting **APAG** read this manual carefully.

- The surface of the syringes heating cylinder is very hot, do not touch it.
- As the machine is powered at 100-115 Vac 230 Vac according to its code, all necessary precautions must be taken
- To isolate the device from mains, remove the power cord from the outlet or from the connector in the back of the equipment
- Never extract or handle the power cord with wet hands (risk of electric shock).

3.1. INSTALLATION

3.1.1. REMOVING APAG FROM ITS PACKAGING

Even though during the transport preparation and packing stages all precautions were taken in order to prevent any forwarding-related damage, it is important to check the integrity of the equipment, once taken out from its packing.

- Make sure the outside of the package has not been subjected to shock or deformation.
- Place on a plane surface all the components contained in the package and make sure they are intact.

In case any damage is found, the appropriate letter of complaint should be immediately sent to the supplier. The equipment packing material should be kept intact in case it is necessary to send the machine back for control or overhauling.

In case of return to the supplier always dispatch all components in order to allow the supplier to verify.

3.1.2. PREPARING THE APAG

Pay attention that in the vicinity of the point on which the device is leaned there are no objects (cables, pipes, platforms, etc.) that may interfere with the pedal control or that prevent a proper support of the device, limiting its stability.

Keep a free space of at least 10 cm around the console in order to quickly extract the power cord in case of need.

Check that the power switch is to the OFF position (0) before plugging in the power cord. Connect the mains cable to connector on the rear of the console prior to the power outlet.

At first insertion check that the device is marked with the correct voltage

The rated voltage is marked on the data label placed on the rear of console (Figure 3).



Figure 3 rear panel

3.2. MAINTENANCE AND CLEANING



Warning!

Never carry out any maintenance or cleaning without removing the power cord.



Please note.

Acetone-containing disinfectants are not suitable for cleaning and disinfection

3.2.1. TECHNICAL SUPPORT

APAG technical support is provided by Silfradent S.r.l. In case of technical problems, the equipment must be either repaired by Silfradent's technicians or sent back to the manufacturer. In your request, please indicate the name and code of the device and its serial number, found on the data label on the rear of console (Figure 3). When **APAG** is returned to the Manufacturer always send the console, handpiece and accessories to allow verification of the functionality. On request of Silfradent's technical personnel the company will provide all the technical information and spare parts required for repair the device.

3.2.2. FUSE REPLACEMENT

The fuse holder is included in the power plug as shown in Figure 3.

Before replacing the fuses remove the power plug from the outlet and the power connector from the plug behind the device.

After disconnecting the mains plug with the help of a small screwdriver extract the fuseholder and replace the broken fuse.

Insert the fuseholder and connect the device.

3.2.3. CONSOLE CLEANING

After each use it is necessary to remove all biological residues from the console.

The external surface can be cleaned using a cloth moistened with water and/or a non-alcoholic disinfectant.

Residues of disinfectants on surfaces can be removed with detergent or neutral detergent. The drugs and chemical products used in surgeries can cause damage on the surface. Since the extent of damage is directly dependent on reaction time, it is advisable to immediately clean the damaged area using a soft cloth.

The enclosure is not waterproof pay attention to prevent ingress of the used cleaning products.



Caution!

During cleaning or disinfection, pay attention that the liquid does not leak into the equipment.
Do not use flammable products to clean the device or its accessories.



Please note.

Do not use abrasive cleansing agents.

3.2.4. APAG DISINFECTION.

Disinfection with alcohol-based solutions must be carried out in compliance with the instructions provided by the manufacturer.

The procedure is illustrated in the instructions concerning each product.

You can buy disinfectant in several concentrations.

As a general criterion, we indicate below the elements of preparations.

They were tested, considered good and their maximum acceptable values are indicated.



Warning!

Do not to exceed indicated levels!

Ethanol 96%	= max 40g/100g disinf.
Propanol	= max 35g/100g disinf.
Glutaraldehyde 25%	= max 75mg/100g disinf.
Ethyl hexanol	= max 10mg/100g disinf.
Formaldehyde solution	= max 10mg/100g disinf.

Please note.

Silfradent S.r.l. accepts no responsibility for preparations that are different or in a greater concentration than the above indications.

4. WORKING

4.1. HOW TO START

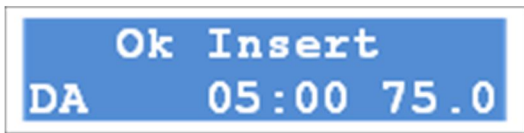
The APAG has two programs with preset data and three anonymous programs called P3, P4, P5. At switch the equipment is always placed on the program called:



of which shows the name on lcd display for about 3 seconds. After showing the name of the program, the unit starts to heat the heating cylinder of syringes and the display will show:

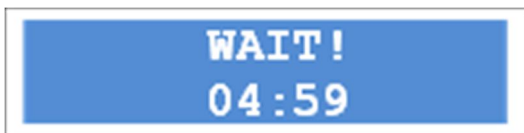


When the temperature reaches the set value, in this case 75 ° C, the display will show the words:



where it is indicated that device is ready to receive the syringes and the preset heating time, and LED "READY", located above the START button, lights up.

Now you can insert the syringes and start the timer by pressing the START button. The display now will show the word WAIT flashing and will decrease the value of time:



When the timer reaches zero, the unit will beep three times and the display shows the message:



For 8 seconds on the display reappears the writing:



The device is now ready again for another cycle.



Figure 4. Syringe heater cylinder



Warning!

The heating cylinder of syringes is marked with the safety signal of Figure 4 because it reaches high temperatures, do not touch it.

4.2. KEYBOARD DESCRIPTION

4.2.1. KEYS DESCRIPTION



Figure 5 APAG front panel



Start

Start the countdown timer to alert the user when he can extract the syringe.
When you are in the menu it confirms the data changed.

Up

Increase data
When you are in the menu it scrolls data.

Down

Decrease data
When you are in the menu it scrolls data.

Prog

Cyclically scrolls the programs up to P5 and then starts again from the first program.
When you are in menu, exits from menu

4.3. USING APAG KEYBOARD

4.3.1. DISPLAY DESCRIPTION

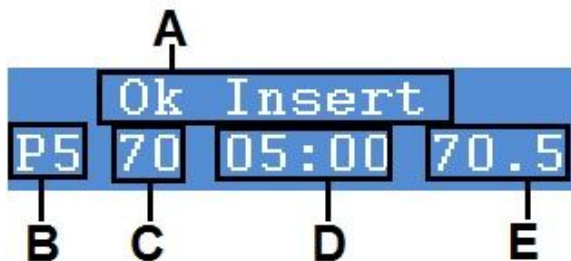


Figure 6 Working window

When preset temperature is reached the display is as shows in Figure 6:

A. Working phase

- WAIT ok = heating
- Ok Insert = preset temperature reached, insert syringes
- Wait = time decrease,

B. Number or name of program:

programs are five:

- DA or Denat. Albumine
- AC or Activ. Collagen
- P3
- P4
- P5

C. Preset temperature

This data is visible only when active.
It is expressed in °C

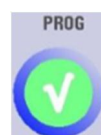
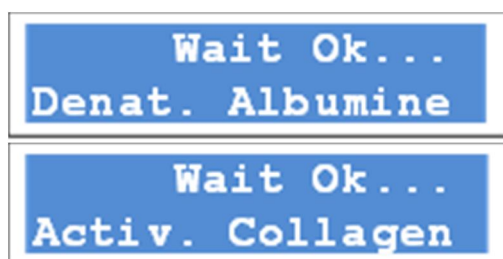
D. Preset time

Preset time for the heating of syringes.
It is expressed in min:sec.

E. Actual temperature

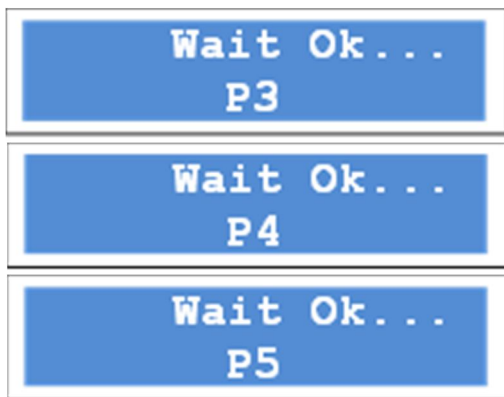
This is the real temperature of heating cylinder of syringes, expressed in °C.

4.3.2. SELECTING OPERATING PROGRAM



Pressing the PROG button you can scroll through the preset programs, each pressure increments of a program.

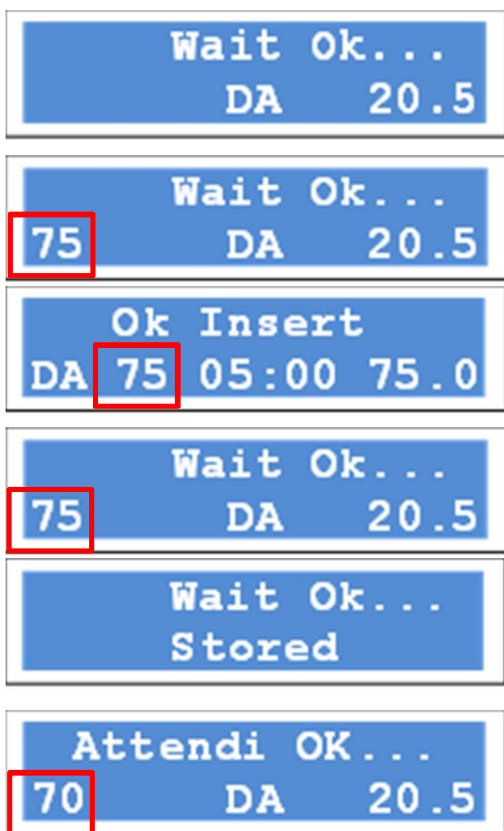
The scroll of the programs is cyclic, after the last program restarts from the first.



Please note.

When you press the START button to start the timer, until the end of time, you can not make changes unless to stop the cycle by pressing the START button again.

4.3.3. CHANGING TEMPERATURE



Select program to be changed



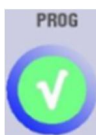
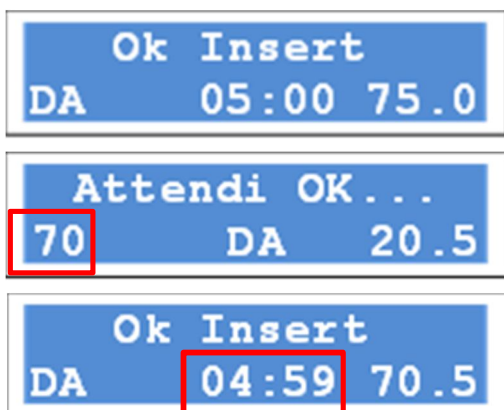
Press the PROG button until appear the preset temperature value (about 8 sec.) in the lower left corner during heating or as second data in the lower row when temperature is reached.



With UP (▲) or DOWN (▼) buttons you can change the temperature value. After about three seconds without changes the message "Stored" is shown.

Then come back to the screen with the correct value of the temperature and the heating cylinder of syringes is heated up or cooled down to the new value.

4.3.4. CHANGING TIME



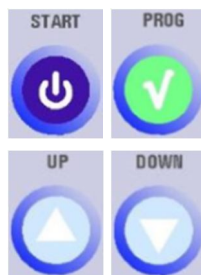
When preset value of the temperature has been reached, you can change the time of the heating cycle of the syringes.

When preset value of temperature is displayed, press the PROG button until it is deleted from the display (about 8 sec.).



Using the UP (▲) or DOWN (▼) buttons you can change the value of time. After about three seconds without changes, the message Stored is shown.

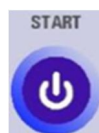
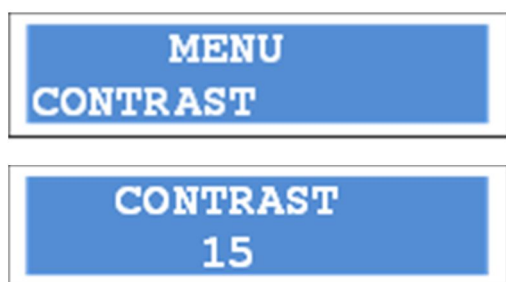
4.3.5. MENU



By simultaneously pressing the START and PROG buttons you can enter the APAG menu.

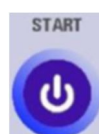
Using the UP (▲) or DOWN (▼) button you can scroll through the menu items.

4.3.5.1. Display contrast adjustment



With the START button you can enter the item to be changed .

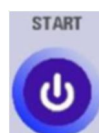
When EXIT is selected the pressure of the START button causes the exit from menu.



With the START button you can enter the item to be changed.

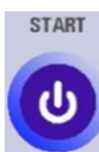
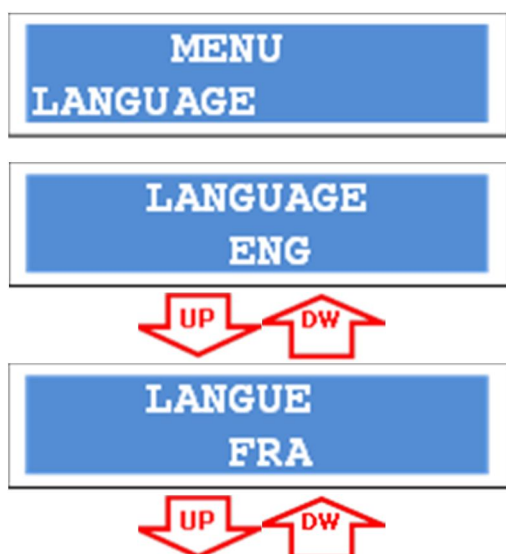


Using the UP (▲) or DOWN (▼) buttons you can change the display contrast, the variation is shown either as a numeric value as a variation of the contrast in real time.



Using the START button you confirm the changes and exit the menu returning to the previous working display.

4.3.5.2. Change Language



With the START button you can enter the item to be changed.

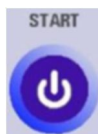


Using the UP (▲) or DOWN (▼) button you can change the language of the display.

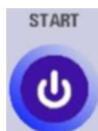
The default language is English



4.3.5.3. Beep



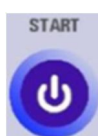
Using the START button you confirm the changes and exit the menu returning to the previous working display.



With the START button you can enter the item to be changed.



Using the UP (▲) or DOWN (▼) button you can either disable or enable the buzzer.



4.4. MESSAGES DISPLAYED



Too high temperature (higher than 85°C)



Too low temperature



Thermal gradient too high. Temperature increases or decreases too quickly the heater or the thermal sensor could be broken.



Thermal gradient too low. Temperature increases too slowly, the heater or the thermal sensor could be broken.

4.5. DEFAULT PARAMETERS

When is delivered the **APAG** programs are set as shown following:

PROGRAM	ABB.	TEMPERATURE	TIME
Denat. Albumine	DA	75°C	05:00 min.
Activ. Collagen	AC	43°C	20:00 min.
P3	P3	50°C	15:00 min
P4	P4	60°C	10:00 min.
P5	P5	70°C	05:00 min.

5.5. SERVICE



Warning!

Only Silfradent S.R.L. authorised technicians have access to the internal parts of the equipment.
For repairs or further information contact Silfradent S.R.L.



Warning!

Do not try to open **APAG** dangerous high voltage is present inside the equipment
Before carrying out any maintenance or repair, always remove the power cord.



Please note.

The wiring diagrams and technical support information are available to the personnel responsible.
For repairs and additional information is required to contact Silfradent S.r.l.

5.1. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSES	SOLUTION
No light is visible on the front panel and the equipment does not work.	<ul style="list-style-type: none">• The supply plug is not correctly connected to the power socket.• The supply cable is not correctly connected to the rear connector.• The supply cable is worn and interrupted.• The rear switch is off.• Faulty switch.• Missing fuse or fuses.• One or more fuses either faulty or interrupted.• The electronic control card is not working.	<ul style="list-style-type: none">• Check the outlet.• Connect plug and cable to the rear connector in the appropriate way.• Replace the supply cable.• Switch the supply switch on.• Replace the missing, faulty or interrupted fuse/fuses.• Contact the customer service centre.

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