



MEDICAL APPLIANCE DIVISION

**Cod. 4984**

# **Operation and maintenance manual** ***STEAM STERILIZERS***



**MODELS**

**PRATIKA B16-20 ECO**



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# 1. INTRODUCTION

The machine described in this operation and maintenance manual is a steam sterilizer that has been specially designed to sterilize of laboratory equipment.

The machine can either operate at a temperature of 134°C and a pressure of 3.180 mbar or 121°C and a pressure of 2.180 mbar. These parameters are monitored and kept at constant levels by three mechanical and electronic devices that ensure an optimal sterilizing process along with total safety.

The operating cycles can be visually checked on a display installed on the control panel of the machine, or by means of a printer supplied on request.

The machine has been built so that the work cycle will automatically stop and the situation be indicated by an error message on the display if the operator fails to carry out the loading operations correctly or if a fault occurs on printer.

SYMBOLS AFFIXED TO THE MACHINE		<b>WARNING: IDENTIFIES A HEAT SOURCE. A PART COULD BE DANGEROUSLY HOT</b>
		<b>WARNING: IDENTIFIES A GENERIC DANGER. THERE COULD BE A POTENTIALLY DANGEROUS CONDITION</b>
		<b>IDENTIFIES THE GROUND CONDUCTOR</b>

**Do not use the machine for purposes other than those for which it has been built.**



**To prevent the autoclave from being subjected to electrical disturbance, it is important to make sure that the earth resistance value is sufficient and well coordinated with the protections in your electrical system.**



- **This symbol it means the product is covered by the European Directive 2002/96/EC.**
- **Please inform yourself about the local separate collection system for electrical products.**
- **Please act according to your local rules and do not dispose of your old products with your normal household waste. The correct disposal of your old product will help prevent potential negative consequences for the environment and human health.**

## **2. TECHNICAL SPECIFICATIONS**

**PRATIKA** are autoclaves designed and built in compliance with the operators' need for functionality, practical use and safety.

Are fully automatic. All functions are electronically servo-assisted, so the operator knows what the machine is doing at any given moment.

Have functional characteristics that make them unique, i.e.:

**AUTOMATIC POWERING**, thanks to which the electric heating element maintains the chamber at a temperature of 80°C for up to 60 min., after which it will automatically switch off if not used, if the “night” program is selected.

- Gradual heating to obtain a more accurate temperature and a better sterilizing process.
- **MANUAL WATER FILLING**
- **AUTOMATIC AIR EXHAUST** to eliminate the air from inside the chamber at the beginning of the cycle, thus achieving the utmost steam saturation.
- **DOUBLE SAFETY VALVE** to prevent overpressures.
- **DRYING CYCLE** included: with thermodynamic system and vacuum pump
- **SAFETY THERMOSTAT** to prevent overtemperatures.
- Electronic **DISPLAY** for all functions, with message display and printout.
- Press-moulded seamless 18/10 **STAINLESS STEEL CHAMBER**.
- **16 or 20 lt. CAPACITY** chamber which can be fitted with up to five trays.
- **POSSIBILITY OF CONNECTING THE DRAIN** to the sewage system or can provided.
- **POSSIBILITY OF CONNECTING UP** the water supply to our **WATER OK** treatment unit.

Description	Unit of measurement	Values
Power source voltage rating	V	230 V.a.c. ~
Power source frequency	Hz	50
Machine power rating	W	1500
Boiler volume	mm	Ø 240 x 340   Ø 240 x 440 (B20)
Operating pressure	mbar	3.180-2.180
Machine dimensions X, Y, Z	mm	Prof. 540 x Larg. 440 x H 390
Gross weight	Kg	44
Pack dimensions	mm	Prof. 670 x Larg. 510 x H 550
Operating temperatures	°C	+ 3°C ..... + 29°C
Distance from walls	cm	8 - 10

X = depth

Y = width

Z = height

The electrical system is protected against the risk of over-currents installed inside the machine by two 15 A delayed action fuses ( T 10 A ).



The electronic control and powering boards protect the various users by means of 3 dedicated fuses: 2 quick-acting 1 A types ( F 1 A ) and one 100 mA delayed action type ( T 100 mA ) – ( see enclosed wiring diagram ).

Only have these fuses changed by a skilled electrician.

The noise level of the machine has been tested. The continuous equivalent weighted acoustic pressure level A is less than 70 dB (A) and the continuous equivalent weighted acoustic power level A does not exceed 70 dB (A). The measured noise level measured is therefore very low. For this reason, the operator need not take any particular measures (also in view of the fact that the machine operates automatically).

**DATA AND SPECIFICATIONS OF THE PRESSURIZED VESSEL:**

Serial N° of vessel, Serial N° of door	Month N°, Year N° (see internal label)
Max. operating pressure:	2.4 Bar
Max. operating temperature:	160°C
Min. operating pressure:	-0.9 Bar
Test pressure:	8 Bar
Reference standards:	TRD 421
Volume of vessel:	16 or 20l.

## 3. GENERAL RECOMMENDATIONS

### 3.1 Regulations for the operator

- Always wear personal protective equipment in compliance with the directives that establish the current accident-preventing provisions.
- Do not approach the machine with inflammable materials.
- Do not carry out repairs or maintenance work whilst the machine is operating or plugged into the electricity main or when parts of it are hot.
- Only responsible adults may use the machine in places inaccessible to children.
- Use the machine in a dry place, sheltered from the rain.
- Periodically inspect the power cable to make sure that it is in a good condition.
- If there are several persons in the place of work, remember to keep at a safe distance from the machine to prevent accidental contact with hot parts.
- Never ever operate the appliance unless the power cable is in a perfect condition and the structure undamaged.
- It is advisable to keep the door half-open with switch (8) turned off in "0" position, when the appliance is not in use.
- It is advisable to nominate a person responsible for the autoclave, as established by directive 626/94.

**Pay the utmost attention to those parts of the appliance that become hot during operation and that still remain hot after it has been switched off.**

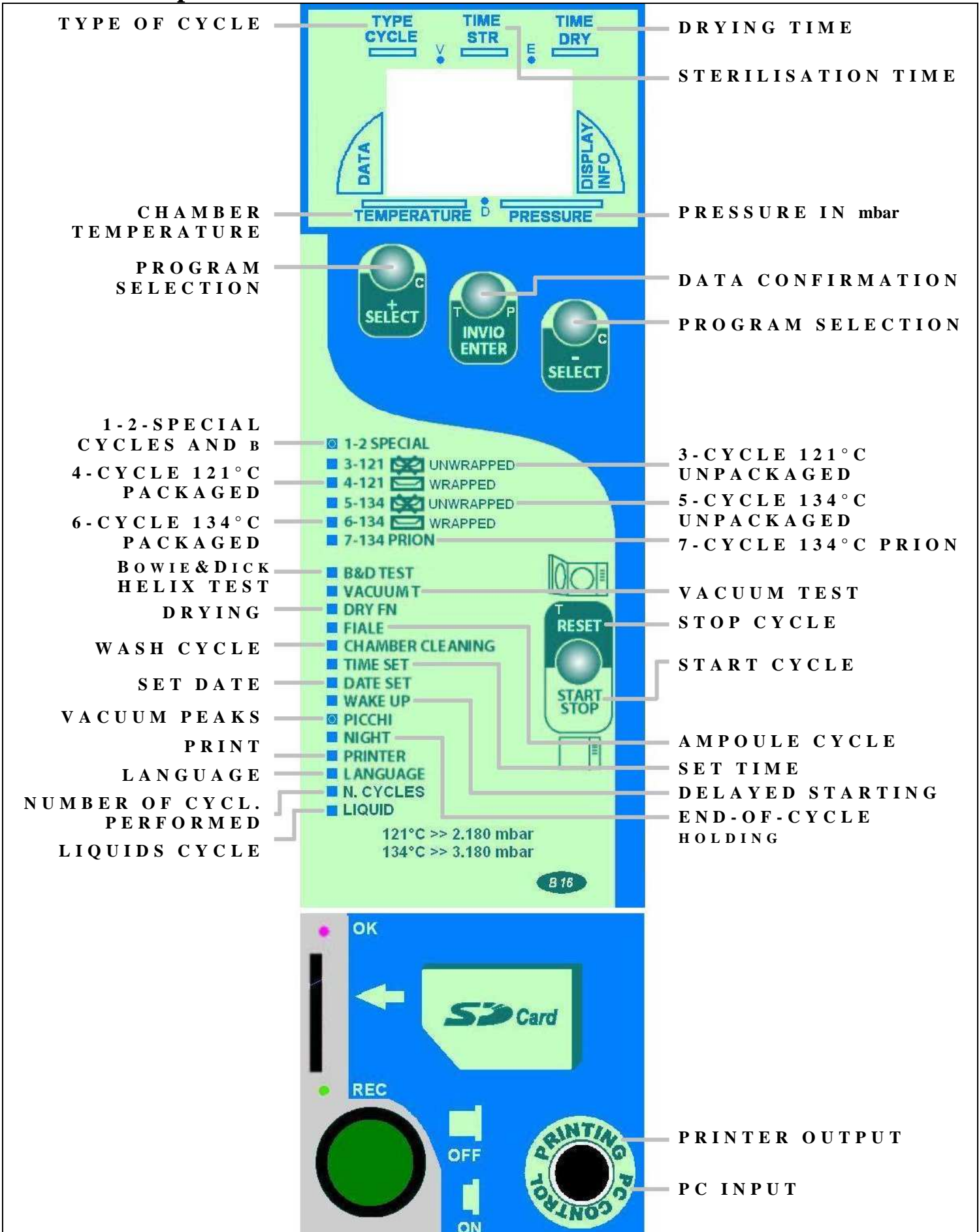
**Keep your face well away from the top part of the machine when the door is opened to prevent it from being scalded by steam. Keep about 50 cm. away from the machine when opening the door.**



**As specified in the technical specifications, these autoclaves operate at a pressure that can reach 2.2 Bar at most. Do not use the autoclave in an improper way and do not carry out maintenance operations while the sterilizing cycles are in progress. Remember that the pressure is shown on the display.**

**Wait at least 20 minutes after the appliance has been switched off, to allow the boiler to completely cool.**

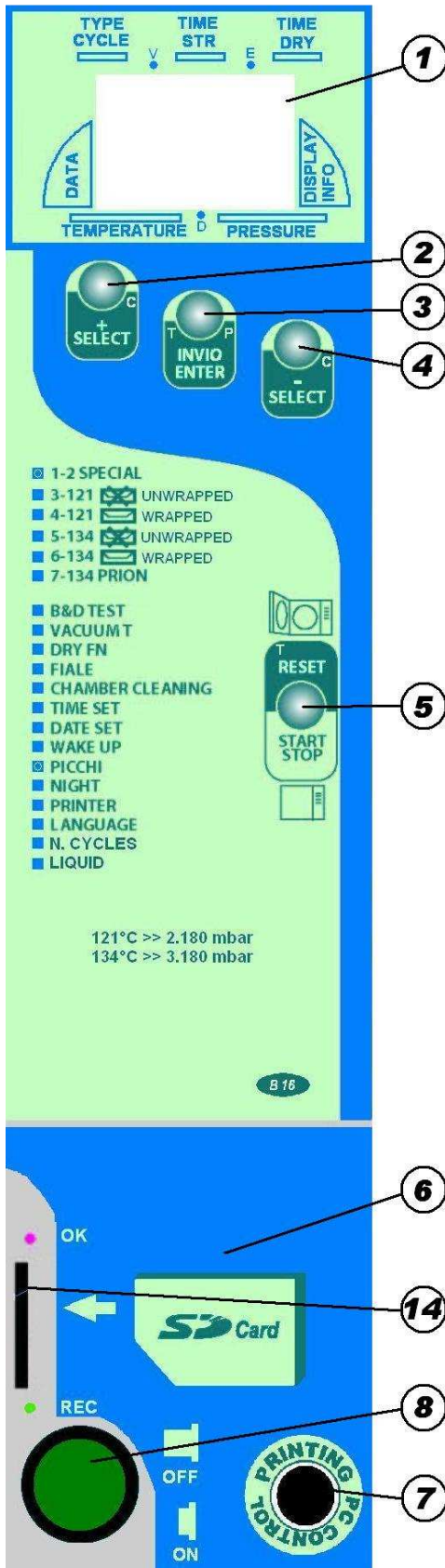
### 3.2 Description of the controls



## 4. LOCATION OF THE CONTROLS

PRATIKA feature an elegant casing treated with scratch-proof epoxy powder paint in the **RAL 9010 COLOUR**. No particular preparations are required to operate the machines. Just fit the plug into a 230 V power socket.

### CONTROL PANEL:

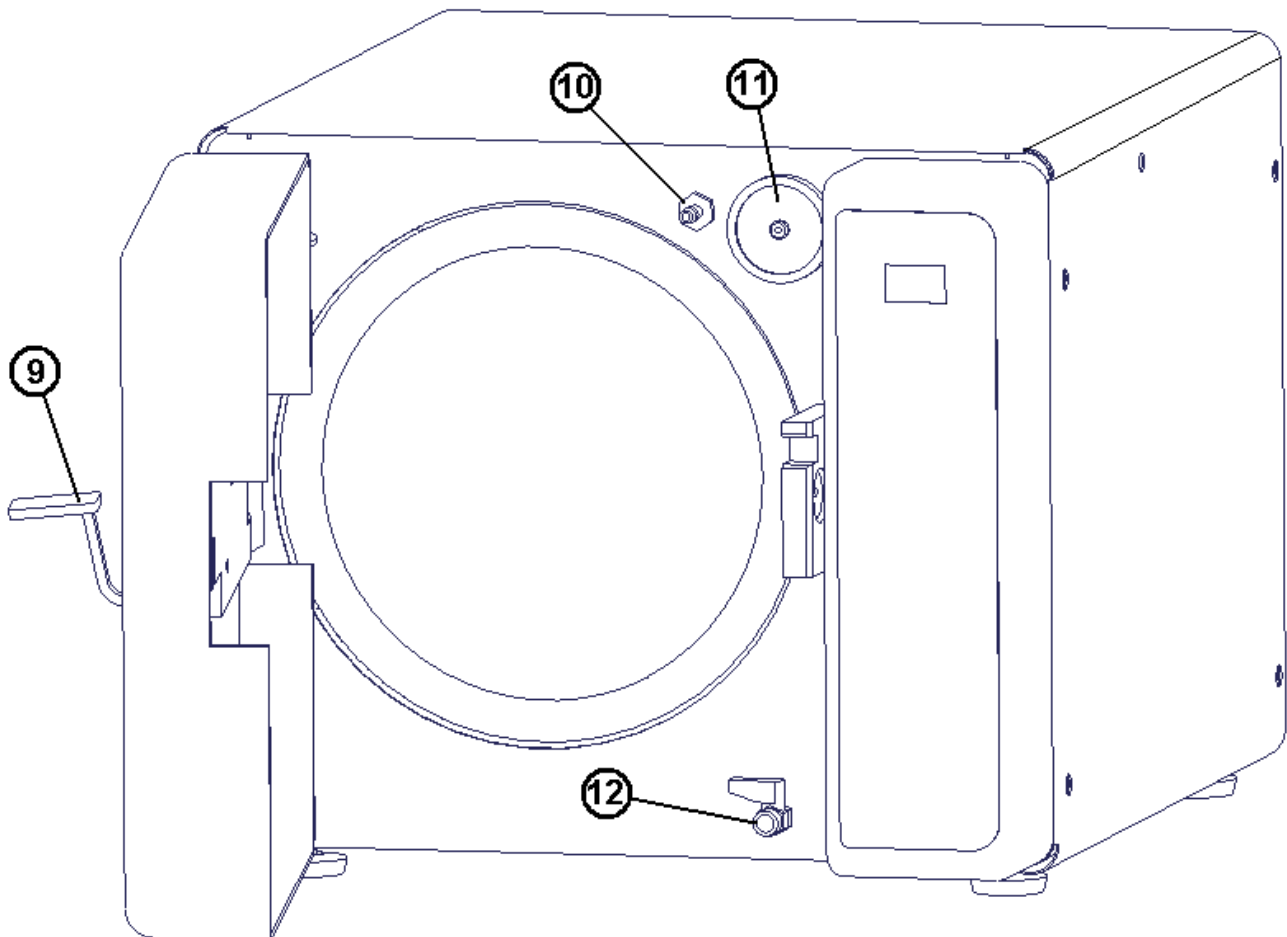


- 1- INFO DISPLAY
- 2- INCREASE / MENU
- 3- CONFIRM / ENTER
- 4- DECREASE / MENU
- 5- START-STOP CYCLE
- 6- SCREEN PRINTING
- 7- PRINTER CONNECTION
- 8- MAIN ON-OFF SWITCH
- 9- DOOR OPENING LEVER
- 10- WATER FILLING FUNNEL
- 11- BACTERIOLOGICAL FILTER
- 12- WATER DRAIN COCK
- 13- VISUAL LEVEL
- 14- SD CARD

### THE FOLLOWING ACCESSORIES ARE SUPPLIED:

1 TRAY HOLDER, 4 TRAY, 1 TOOL TO TAKE OUT TRAYS AND TO ADJUST DOOR, 1 SPONGE, 1 INSTRUCTION MANUAL, 1 LIFTING HANDLE, 1 FILLING PIPE, 1 DRAIN PIPE, 1 DRAIN CANISTER.





## 5. STARTING AND SETTING AT WORK

### 5.1 Removing the machine from the packing

The machine is consigned packed on a wooden pallet in a cardboard box: make sure that there are no dents and that the wrapping is in optimum conditions.

The machine must be stored in a dry place, sheltered from adverse weather conditions, at a temperature between +3°C and +35°C. The machine must be handled without jolting and using appropriate means.

Open the pack without overturning it. Remove the polystyrene from the top and sides (the weight of the model is given in chap. 2, technical specifications).

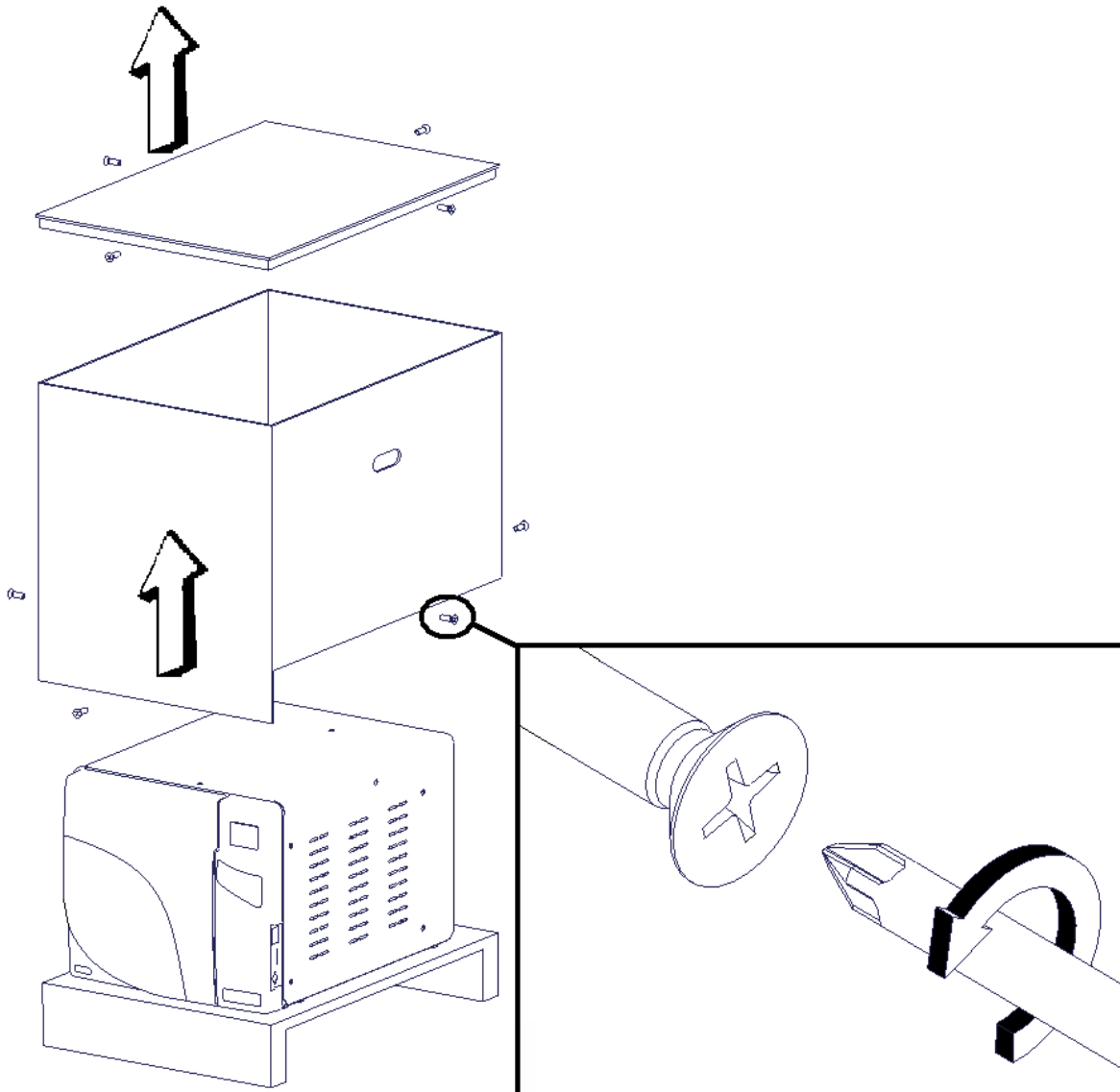
Lift the machine out of the box in a vertical direction using the 2 hooks supplied in the bag inside the pack. These should be inserted into the two holes at the sides of the casing (see drawing on page 9). Remove the pluriball wrapping from around the machine and make sure that all parts of this latter are undamaged and complete with all the accessories indicated on the consignment note. Immediately notify our dealer if discrepancies are discovered.

Keep the packing materials for as long as the machine remains in use, not just for the warranty period. This is because the autoclave may need to be calibrated or regulated by the manufacturer's staff or by an after-sales center. Non-original packing is unable to ensure that the machine is correctly protected during transport.

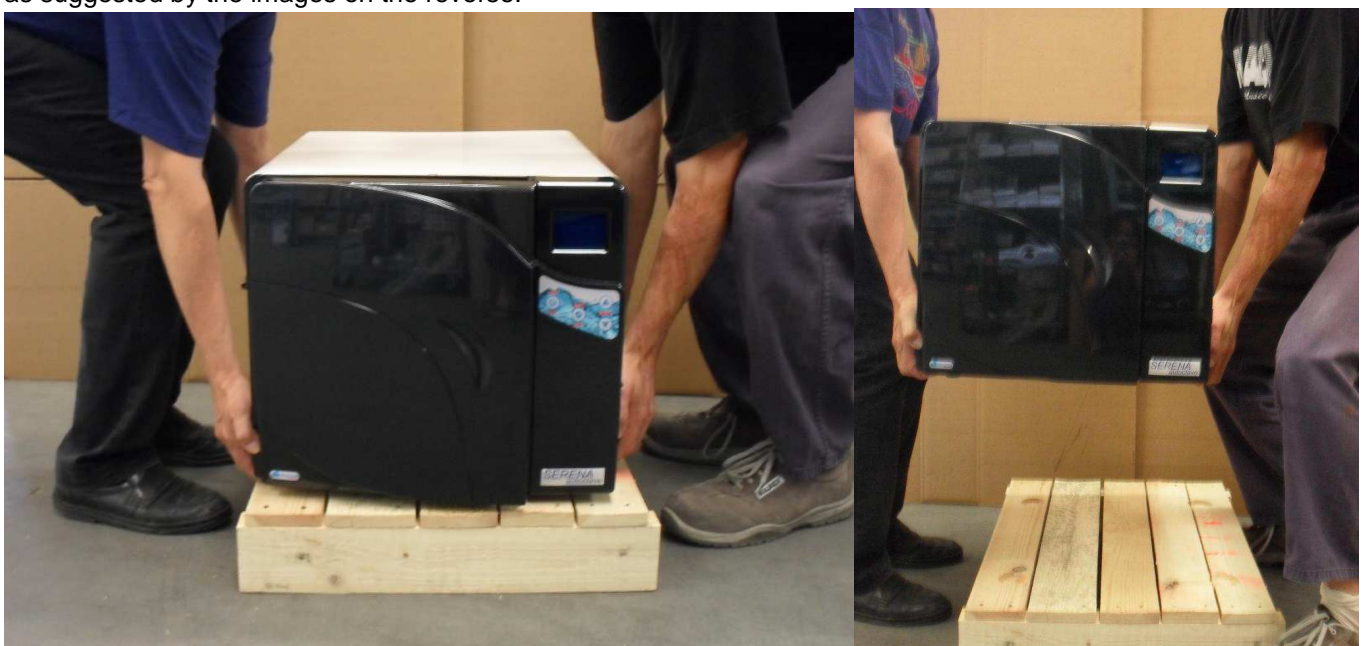
The original packing comprises the following items:

- FIREPROOF WOODEN CRATE

**DRAWING ILLUSTRATING HOW THE MACHINE MUST BE LIFTED FROM THE PACK**



Unscrew all the screws of the package as shown, then remove the cover first and then the chest. Lift the autoclave as suggested by the images on the reverse.



## 5.2 Installation and preliminary inspections



The installer is obliged to make sure that the place in which the sterilizer is installed is fit for that purpose (CEI 62/4).

Install the autoclave in a well ventilated place, well away from sinks, heat sources, grinders and from all other machines.

Comply with the following instructions to simply and efficiently check that the machine has been positioned correctly:

Fit the electric plug into a socket **WITH A CAPACITY OF AT LEAST 16 Ampere AND EQUIPPED WITH AN EARTH CONNECTION.**

Make sure that the mains voltage rating corresponds to the value indicated on the label at the rear of the machine (230 Volts). **PRATIKA** must only be filled with **DISTILLED WATER** to ensure that the electrical and air-operated devices operate efficiently and are long lasting.

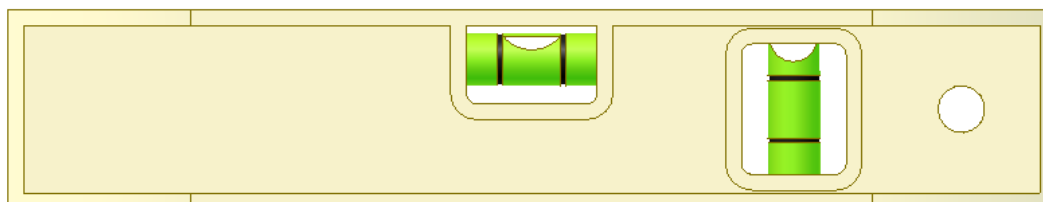
### QUALITY WATER STANDARD

CEN STANDARD DIN EN 285	Maximum value
Evaporation residue	10 mg/l
Silicon dioxide (SiO <sup>2</sup> )	1 mg/l
Iron	0.2 mg/l
Cadmium	0.005 mg/l
Lead	0.05 mg/l
Heavy metal residues (barring iron, cadmium, lead)	0.1 mg/l
Chloride	2 mg/l
Phosphate	0.5 mg/l
Conductivity (at 20°C)	15 µs/cm
pH value	From 5 to 7
Appearance	Colourless, clean and sediment free
Hardness	0.02 mmol/l

**NOTE:** The use of water containing higher concentrations than those indicated in the table above could considerably reduce the life of the equipment, causing serious damages to its components and consequently annulling the warranty.


**Never connect the plug of the machine to a reduction.**

**Use a bubble level to make sure that the surface on which the appliance is to be positioned is perfectly horizontal.**



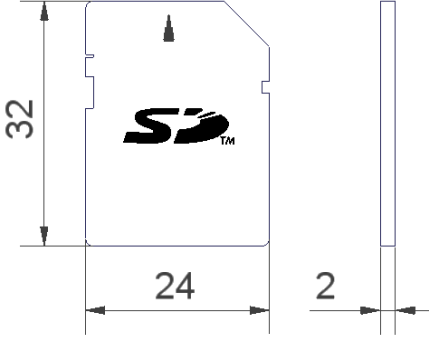
**Fill out and send off the warranty form.**


### 5.3 Using the sd card



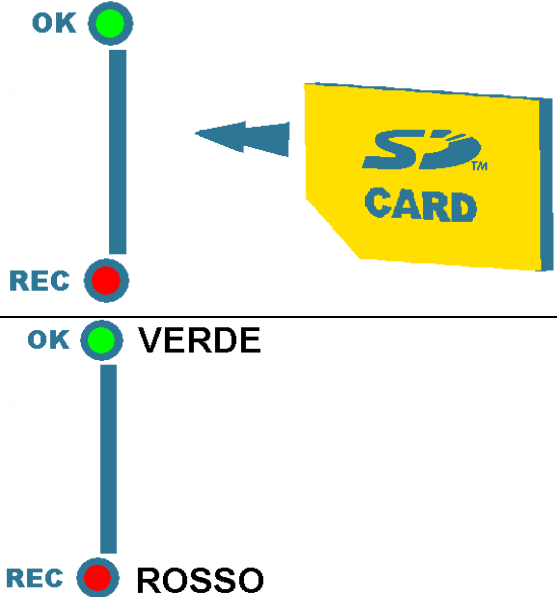
**IT IS FORBIDDEN TO:**

- take the card out and put it back in the slot again while the machine is working;
- force the card into the slot in the wrong direction;
- use different sized cards to those illustrated.



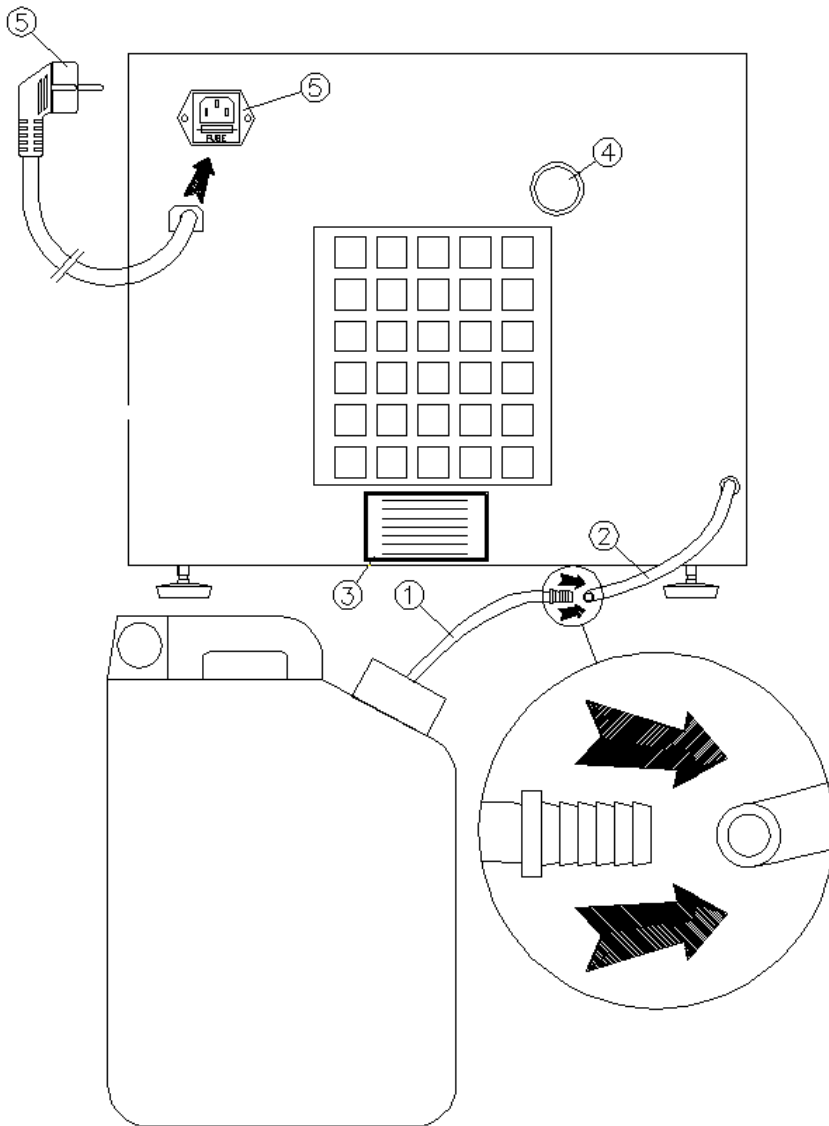


- If the printer is not connected to the device and at the same time the SD card is not fitted in its interface slot, the sterilisation data will be lost.

<ol style="list-style-type: none"> <li>1) Fit the card in its slot with the door open.</li> <li>2) When the card is fitted in place, the red LED will blink once.</li> <li>3) The green LED will then light up steady. The card is ready to receive data from the machine.</li> <li>4) Whenever the machine transfers data to the card, the red LED will blink.</li> </ol>	
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ANOMALY	CAUSE	SOLUTION
The green LED blinks	Card memory full. Card protected (lock).	Replace the card or download the data on the card to a computer. Unlock the card protection lock.
No LED lit.	The card is not fitted in the slot correctly. The internal data transmission cable is faulty.	Fit the card correctly in the slot. Replace the internal data transmission cable.

**DESCRIPTION OF THE REAR PART**



- 1) Canister.
- 2) Water drain pipe to be connected to the canister “1”. The same pipe can be used to drain into the sewers.
- 3) Label bearing the following data: Model, CE marking, power supply voltage and frequency, input power, serial number, year of manufacture, manufacturer’s details.
- 4) Safety valve.
- 5) Power supply cable with Shuko France plug.

**LANGUAGE, DATE AND TIME SETTINGS:**

With the door open and the machine on, scroll through the menu using key (2) or (4). Besides the sterilisation cycles, machine setting data can be displayed in succession (date, time, temperature in the chamber etc.). Enter the desired item and confirm with key (3). Change the figures with keys (2) and (4). Once desired changes have been made, always confirm with key (3).

**TABLE OF CYCLES END SERVICES:**

Nr. Progressiv	Cycle or service
1	CYCLE FREE
2	CYCLE FREE
3	CYCLE 121° UNWRAPPED
4	CYCLE 121° WRAPPED
5	CYCLE 134° UNWRAPPED
6	CYCLE 134° WRAPPED
7	CYCLE 134° PRIONE
B & D TEST	BOWIE & DICK TEST
DRY FN	CYCLE DRY
FIALE	CYCLE PHIALE
CHAMBER CLEANING	CHAMBER CLEANING
PEAKS	PRE-VACUUM
NIGHT	CYCLE NIGHT S/N
PRINTER	PRINT S/N
LANGUAGE	LANGUAGE GB/F/D/E/I

**READ OF INFO DISPLAY:**

	3		1	5			5
1	2	1					

3= Cycle number    15= Sterilization time    5= Dry time  
121= Temperature of sterilization °C

	4		2	0		1	5
1	2	1					

4= Cycle number    20= Sterilization time    15= Dry time  
121= Temperature of sterilization °C

	5			4			5
1	3	4					

5= Cycle number    4= Sterilization time    5= Dry time  
134= Temperature of sterilization °C

	6		1	0		1	5
1	3	4					

6= Cycle number    10= Sterilization time    15= Dry time  
134= Temperature of sterilization °C

	7		1	8		2	0
1	3	4					

7= Cycle number    15= Sterilization time    5= Dry time  
134= Temperature of sterilization °C

B	&	D		T	E	S	T

**BOWIE & DICK TEST** not for instruments  
134= Temperature of sterilization °C

V	A	C	U	U	M		T

**VACUUM TEST**

	D	R	Y		F	N	

**ADDITIONAL DRY**  
110= Temperature of sterilization °C

	B	O	T	T	L	E	

**PHIAL CYCLE**  
54= Temperature of sterilization °C for 48 hour

C	L	E	A	N	I	N	G

**CHAMBER CLEANING**

D	A	T	E		S	E	T

**DATE SET**

	P	E	A	K	S		

Number of vacuum peaks (max. 3). Only for cycle 1 or 2

N	I	G	H	T		F	N
Y	E	S	/	N	O		

**NIGHT CYCLE**  
YES= Active NO= Inactive

P	R	I	N	T	E	R	
Y	E	S	/	N	O		

**PRINTER SELECTION**  
YES= Active NO= Inactive

L	A	N	G	U	A	G	E

**LANGUAGE SELECTION**

N	.	C	Y	C	L	E	S

**NUMBER OF CYCLES**

L	I	Q	U	I	D		
Y	E	S	/	N	O		

**CYCLE FOR LIQUID STERILIZATION**  
YES= Active NO= Inactive

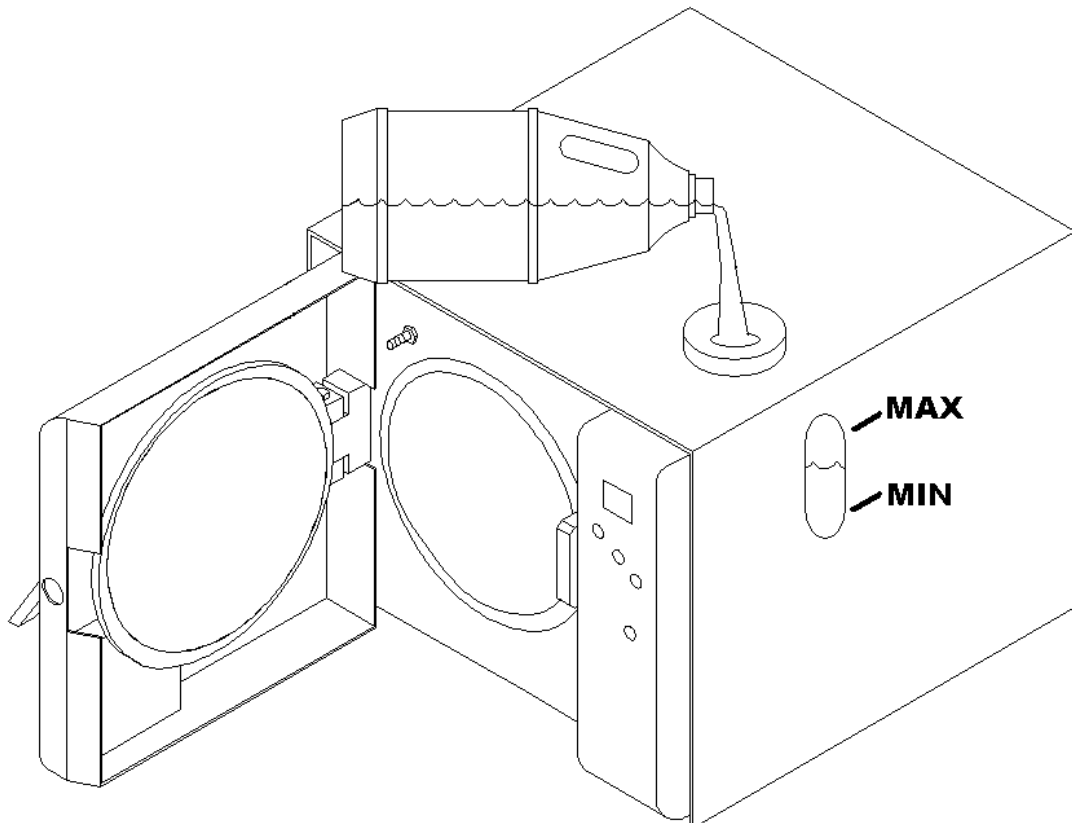
## 6. GENERAL INSTRUCTIONS FOR USE

### 6.1 Method of use

#### OPEN THE DOOR WITH THE HANDLE (9).

- Take the tray holder pack out of the chamber.
- Switch the main ON-OFF switch on (8).
- The display will point out that there is no water with the following message: NO WATER IN TANK.
- Pour the distilled water carefully in through the black funnel (10).
- Check the water level in the tank through the window (13) and wait for the maximum level acoustic signal to trigger.
- The display unit will show the number of the previously performed cycle.
- If a different cycle to that shown on the display unit (1) is to be performed, press button (2) or (4) to scroll the menu.
- For a customised ("special") cycle, select cycles number one or two. Once a "special" cycle has been selected, press key (3) to change the settings made. It is possible to change the sterilisation time, the drying time, the sterilisation temperature and the minimum vacuum value of the vacuum peaks. The settings can be changed using keys (2) and (4) before confirming with key (3). As regards the number of pre-vacuum peaks, enter from the main menu at the PEAKS item and set the desired figure, changing the setting with keys (2) and (4) and confirming with key (3). The number of peaks only concerns cycles one and two ("special").
- Refer to the cycle table on page 15.
- After terminating the settings on the display unit (1), introduce the tray holder into the chamber with the load to be sterilised.
- To start the cycle, close the door with the handle (9).
- Press key (5) to start the cycle.
- The end of the cycle is indicated by a message on the display unit (1).

#### WATER FILLING

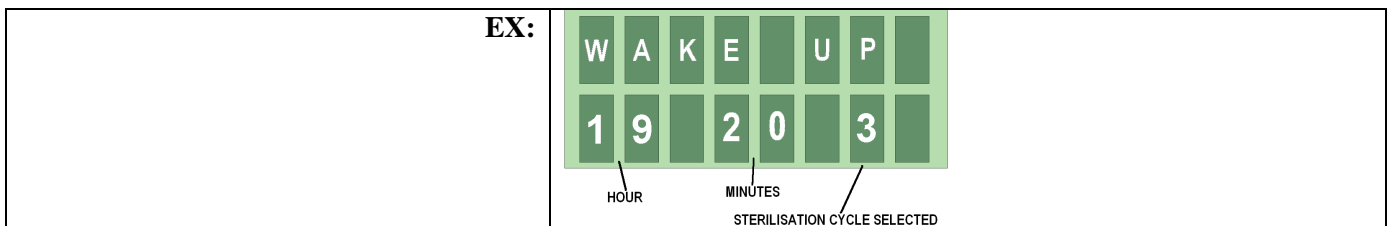


## 6.2 How to drain the water from the tanks

- Check the tank level (used water) before each cycle.
- In case the level is nearly full, please behave as follows:
- Unscrew the plug of the tank.
- Empty the tank in drainage and rinse with care.
- Screw the plug of the tank (make attention to not twist the discharge tube and be sure that the tank is in stable position).
- 

## 6.3 Delayed starting setting within 24 hours

- Light on the autoclave.
- Select (WAKE UP) by the button (2) even in the display appears WAKE UP.
- 



- Press the button (3) so that the first data flashes (19 ex) that correspond to the hour. Slide the keys (2) & (4) to set the hour wanted. Press the button (3) to confirm the hour chosen.
- The second data flashes (20 ex) that correspond to the minutes. Slide the keys (2) & (4) to set the minutes.
- The third data flashes (3 ex) that correspond to the cycle number. Slide the keys (2) & (4) to set the sterilization cycle wanted, between 1 and 7.
- Close the door of the autoclave. Don't touch any buttons of the autoclave.
- The autoclave will execute the sterilization cycle chosen at the set up hour.

## 6.4 End of work

At the end of the operations, open the door and position the green master switch (8) on OFF.



**Pay particular attention to the temperature of the various components when you switch off the machine.**

**Wait a few minutes to allow the components to cool.**



## ***7. HOW TO ARRANGE THE INSTRUMENTS FOR THE STERILIZING PROCESS***

Before being sterilized, the instruments must be cleaned to remove blood residues, incrustations, foreign bodies, etc. These impurities can damage the items being sterilized, the autoclave components and prevent the sterilizing process from being correctly carried out.

These instruments must be made of NON-ferrous material since they could damage or oxidize the other instruments or the autoclave itself.

To achieve perfect sterilizing, it is therefore important to proceed in the following way:

1. Rinse and brush the instruments under running water immediately after use to remove all deposits.
2. Place the instruments in the ultrasound machine with distilled water and detergent solution.
3. Thoroughly rinse the instruments in demineralised water to prevent scaling stains.
4. Dry the instruments to eliminate all water residues which could lead to oxidation.
5. Wash, rinse and dry the supplied trays and make sure that they are perfectly clean.
6. To ensure that packaged instruments are perfectly dried, we recommend use of support art. M9050 supplied as an optional.
7. Scissors and forceps should be slightly opened. Mirrors and containers should be placed upside down for the sterilizing process.
8. It is advisable to keep the instruments separated from each other to achieve a better sterilizing action. Overloading will impair the sterilizing process.
9. If packaged instruments must be sterilized on the trays, place the packets with their transparent side downwards and do not overlap. The packets should not be too large. Drying will be difficult if their edges overlap.
10. The machine can operate with a maximum 3 Kg load.

### **Sterilizing handpieces:**

- Carefully read the handpiece operation manual with particular attention to the part about sterilizing (121°).
- Wrap the handpiece in the special sterilizing cloth.
- Place the wrapped handpiece on a NON-perforated tray to prevent spilt lubricating oil from polluting the pipes of the autoclave.
- Remember to immediately remove the handpiece from the autoclave at the end of the sterilizing process.

For a valid sterilizing process, it is obligatory to add a chemical indicator for each cycle.

## 7.1 Sterilizing table

<b>CYCLES FREE</b>	<i>STERILIZING TIME (Min.)</i>	<i>DRYING TIME (Min.)</i>	<i>Nr. PICCHI</i>
1	*	*	1-3
2	*	*	

<b>CYCLES AT 121°</b>	<i>STERILIZING TIME (Min.)</i>	<i>DRYING TIME (Min.)</i>	<i>Nr. PICCHI</i>
3 UNWRAPPED	15	10	1
4 WRAPPED	15	15	

<b>CYCLES AT 134°</b>	<i>STERILIZING TIME (Min.)</i>	<i>DRYING TIME (Min.)</i>	<i>Nr. PICCHI</i>
5 UNWRAPPED	5	10	1
6 WRAPPED	5	20	
7 PRIONE	18	20	

<b>TEST</b>	<i>STERILIZING TIME (Min.)</i>	<i>DRYING TIME (Min.)</i>	<i>Nr. PICCHI</i>
BOWIE & DICK*	3,5	2	1
Vacuum**	15 (Total length of test)		

<b>CYCLE PHIAL</b>	<i>STERILIZING TIME (Min.)</i>	<i>DRYING TIME (Min.)</i>
54°	48h (Total length of test)	

\* Preset value. \*\* To execute with cold machine.

## 7.2 Notes and warnings

- 1- Strictly comply with the manufacturer's instructions when sterilizing materials.
- 2- To preserve packaged and loose sterilized materials, the trays must be stored in special cabinets fitted with ultraviolet lamps and designed for this specific use.
- 3- If the articles are to be stored for a longer period, it is advisable to use our covered trays code 1474 + 2682 and tray holders code 2631 supplied on request.
- 4- Whenever a sterilizing process is carried out, it is advisable to add a chemical indicator that we can supply on request, code 1468.
- 5- It is advisable to purchase a printer with date stamp code M 9003 to file and record the sterilizing cycles and any faults that may have occurred.
- 6 - There must always be trays and tray-holders in the chamber. Without these accessories, abnormal pressures and temperatures could develop inside and these could cause the cycle to abort.
- 7 - It is advisable to place a phial containing culture spores in the chamber along with each load sterilized in order to make sure that the sterilizing process is valid.
- 8 - When packeted materials are sterilized, it is very important to use support art. M9050. This support can hold up to 20 packets (max. 3 instruments per packet). To use this accessory, it is essential to remove the support and all trays from the chamber. The non-perforated tray may only be used to sterilize turbines (handpieces) to prevent lubricant from being spread around the chamber. Only use perforated trays to sterilize packeted instruments and always remove non-perforated ones from the chamber. If the packets are not perfectly dry at the end of the sterilizing process, proceed with the supplementary drying cycle with cycle (1-2) "special".

## 7.3 Monthly inspection proposal

### Fac simile of an inspection form

Sterilizer data			
Brand	Model	Year of purchase	Observations


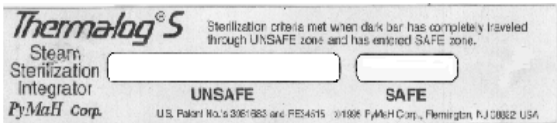




### Periodical internal inspection

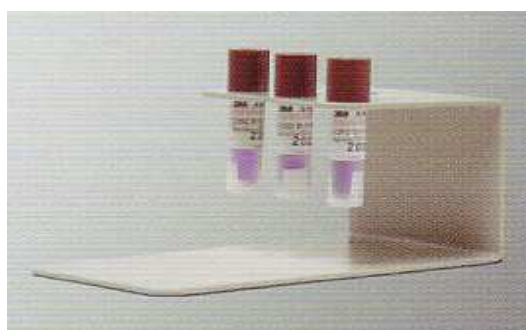
EXAMPLE

Date	Cycle length on display	Cycle temperature	Cycle temperature
07/11/2000	20'	134°	<b>VAPOR LINE</b>

The utilized indicator is enclosed for each inspection.

Always use biological indicators. 3 types of integrator are indicated as an alternative.

	<b>VAPOR LINE</b> (C O D . 1 4 6 8)	<b>THERMALOG S</b>	<b>HELIX TEST*</b> (C O D . 3 3 6 9)
ORIGINAL			
VEER			



PARAMETER: Ø=SAFE O=UNSAFE

- 1) Put the previously sterilised ampoules in the machine and activate the AMPOULE cycle.
- 2) When the cycle has finished, check the result and register it in the department safety folder.

## 8. MESSAGES DISPLAYED

### 8.1 Alarm management

MESSAGE	ERROR TYPE	REMEDY
FAILED	Cycle not terminated	Check presence of any leaks in the hydraulic circuit, in the door seal (adjustment), solenoid valve N.O.
NO POWER	No mains power	Fit the machine plug in a single socket that complies with standards and is without adapters or extensions. Change the fuse and check the causes. Make sure the master switch (8) is not turned off with closed door.
NO WATER IN TANK	Not enough clean water in load tank	Fill up
BOILER	Boiler level error	Steam generator level probe cleaning
HIGH	High temperature	Check generator solenoid valve and temperature probe cable (PT100)
LOW	Low temperature.	Check the solenoid valve, thermostat and heating element of the generator. Clean the generator probe.
VACUUM	Vacuum error	Check the vacuum pump and the relevant solenoid valve. Check the vacuum values on the display unit and on the pressure gauge.
MAX TEMP.	High boiler pressure	Check the temperature probe (PT100) and cable or detached cable.
PRESS. ERR.	Pressure error	Perform the vacuum test and check for any leaks. Check for any transducer malfunctions.
U.FULL	Used water tank full.	In case of connection, empty the tank

To reset the machine, turn the switch (8) off and on.

### 8.2 Operating messages

MESSAGE	OPERATION IN PROGRESS
Vac. test	Check hydraulic circuit for leaks
Phials	Pre-sterilised phial culture cycle
Print.	Start print
No cycle	Maintenance of instrumental drying
Hr. set	Time set
Start time	Start delayed up to 24 hours
Peaks	Vacuum, pressurisation, release
no. cycles	No. of cycle performed by machine
Italian	Current language (set)
End	Cycle finished
Liquid	Liquid sterilisation (gradual drain)
Cleaning	Cleaning chamber

### 8.3 Printed Messages

MESSAGE	OPERATION
Ster. time	Sterilisation time
Type of cycle	Cycle type
Ster. time	Sterilisation time
Min.	Cycle min.
Sec.	Cycle sec.
Hrs	Cycle hrs.
C	Degrees centigrade
Sterilisation	Sterilisation phase
Pressurisation	Steam injection
Drying	Drying stage
End	End of cycle
Total time	Total cycle time
Test	Test cycle
Release	Steam release
Stopped	Cycle stopped by operator

## 9. MAINTENANCE



- Carry out maintenance with the machine switched off, having unplugged the machine from the mains and waited for the various parts to cool down.
- The declaration of conformity to current standards is invalidated if the maintenance jobs indicated hereafter are not carried out.
- If one or more heating elements is/are replaced, you must check the integrity of the machine's electrical safety.
- The declared useful lifecycle of the device is 8 years provided all the maintenance jobs indicated are carried out.
- Pursuant to the application of current standards, the user is requested to carry out all the maintenance jobs indicated. This guarantees that the device maintains the level of performance and safety declared by the manufacturer.
- The maintenance technician is obliged to inform the manufacturer of the jobs carried out.
- Exclusively spare parts supplied by the manufacturer may be used for maintenance purposes.

### 9.1 General maintenance (which can also be carried out by the operator)

The machine requires certain maintenance activities, therefore it is obligatory to observe the following instructions:

- Check the state of the electrical system periodically, especially the connection cable. **If faulty, contact our technical assistance department or specialised personnel.**
- Clean the door and gasket periodically and also the **internal part of the chamber** with special care when removing scale, using the sponge supplied, damping it. The correct maintenance cleaning of these parts of the machine optimize the performance of the sterilization cycle.
- If the machine is not used for quite some time, leave the door ajar and keep it in a room where the temperature is  $>8^{\circ}\text{C}$  and empty the drain tank.
- To clean the panels, use a damp cloth. Do not use flammable liquids for any reason whatsoever.
- You are recommended to replace the bacteriological filter (code 1067) at least once every six months.

### 9.2 Daily routine maintenance (ALSO OPERATOR)

Clear the door seal, door window and generally clean the outer and inner surfaces of the machine.

Clean the black silicone door seal, the outer and inner edges and the part where the door rests on the sterilizing chamber and on which the seal must tightly fit. Use the supplied sponge to do this. The soft part of the sponge can be used to clean the seal while the rough part can be used to clean the edge of the chamber.

This cleaning operation must be carried out regularly to remove all impurities that could lead to loss of pressure inside the sterilizing chamber.

Check the used water level and drain off the actual water into the sewer if necessary. Then wash out the can under running water.

Check the level in the used water can

### 9.3 Weekly routine maintenance (ALSO OPERATOR)

Cleaning the sterilizing chamber (cleaning the trays and tray holders.

As specified in section 9.1 “ General maintenance “, all traces of deposits must be removed from the bottom of the chamber. Use the rough side of the supplied sponge for this operation, attempting to eliminate any scaling that may have formed.

Rinse everything with the same water used for the sterilizing process. The trays and tray-holders must also be cleaned in this way.

### 9.4 Monthly routine maintenance (ALSO OPERATOR)

Lubricate the pins and locking mechanisms.

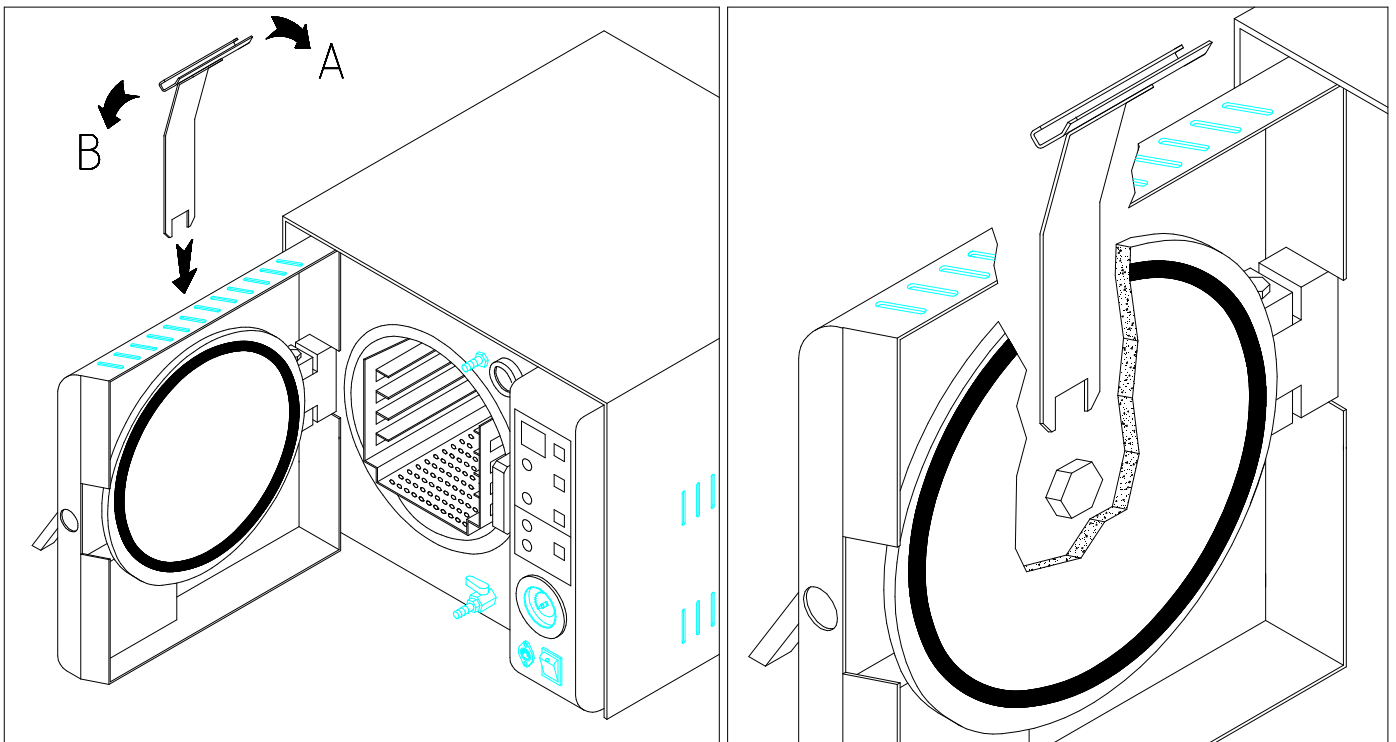
Check the movement of the hinge and door locking pin. Lubricate with Vaseline oil.

Make sure that the door is well regulated. If it is excessively slack, it must be adjusted by means of the supplied wrench. Turn the regulator at the rear of the door in a (A) direction. This will increase the pressure exercised by the seal.

Attempt to shut the door. If some difficulty is encountered, turn the regulator in an (B) direction with the supplied wrench.

Clean the entire autoclave cabinet with a slightly damp sponge, including the door casing.

Check and/or replace bacteriological filter Code. 1067 once a year.



### 9.5 Periodic extraordinary maintenance (to be carried out exclusively by maintenance technicians)

To ensure the regular operation of the autoclave, it is obligatory to carry out a functional test of the machine to make sure the temperature and pressure parameters comply with the requested standards to guarantee correct sterilisation.

These tests must be carried out by authorised personnel using periodically calibrated and certificated instruments.

To have this test carried out, the autoclave can also be returned to the manufacturer, after filling-in form 32/A and signing it for acceptance.

The autoclave is able to accommodate test probes for sterilisation tests.

It is obligatory to have the equipment Fully Serviced by an authorised service centre at least every 12 months.

## **9.6 Inspections and replacements (after approximately 1000 cycles, to be carried out exclusively by technicians)**

- 1) Replace the bacteriological filter when it changes colour
- 2) Clean and inspect the sterilisation chamber (there must be no traces of scale or rust)
- 3) Check the cock (12) to make sure it is not obstructed by blowing it with compressed air
- 4) Check the state of the door gasket (replace it if it is cut or damaged in any way)
- 5) Check the efficiency of the micro switch and micro switch pusher, lubricating with silicon spray.
- 6) Replace the water in-take filter.

## **9.7 Corrective actions to prevent faults**

- 1) Change the water inlet filter (internal) code 1484.
- 2) Clean the "Y" shaped filter (if installed) code 3136, and replace its seal, code 3188.
- 3) Check the quality of the distilled water using the relative instrument (from 0 to 20 mSiemens).
- 4) Replace the diaphragm and head seal of the vacuum pump (specify the model or serial number of the machine).
- 5) Replace the N.O. solenoid valve or coil, code 1015.
- 6) Before closing up the machine, generally inspect the internal components to make sure that they are in a good condition.
- 7) After these operations have been carried out, print out the report on the first cycles to make sure that the sterilizer operates in a normally efficient way.
- 8) Check the temperature and pressure in the chamber with a special "logger" type instrument.

## **9.8 Washing the inside of the chamber**

- 1) Put a spoonful of scale remover in the chamber (code 4177).
- 2) Select the WASH cycle.
- 3) Close the door.
- 4) Select START. The machine will run a chamber washing cycle that will take approximately 2 hours.

# 10. LABELING

## REVERBERI s.r.l.

Via Don Luigi Sturzo, 6

42021 BARCO DI BIBBIANO (RE) ITALY

Tel (0522) 875159 - Fax (0522) 875579

**MINISTRY OF HEALTH  
REGISTRATION NUMBER**

**TRADE NAME**

**MODEL CODE**

**SERIAL NUMBER**

Serie: PRATIKA 222365/R  
 Modello: PRATIKA ????  
 Articolo: M????/??/?  
 Matricola: ??????????  
 Alimentazione: 230 Volt ~ 50 Hz  
 Potenza: 1500 watt  
 Costruita nel: ???? /



**YEAR OF MANUFACTURE**

## CALIBRATION LABEL

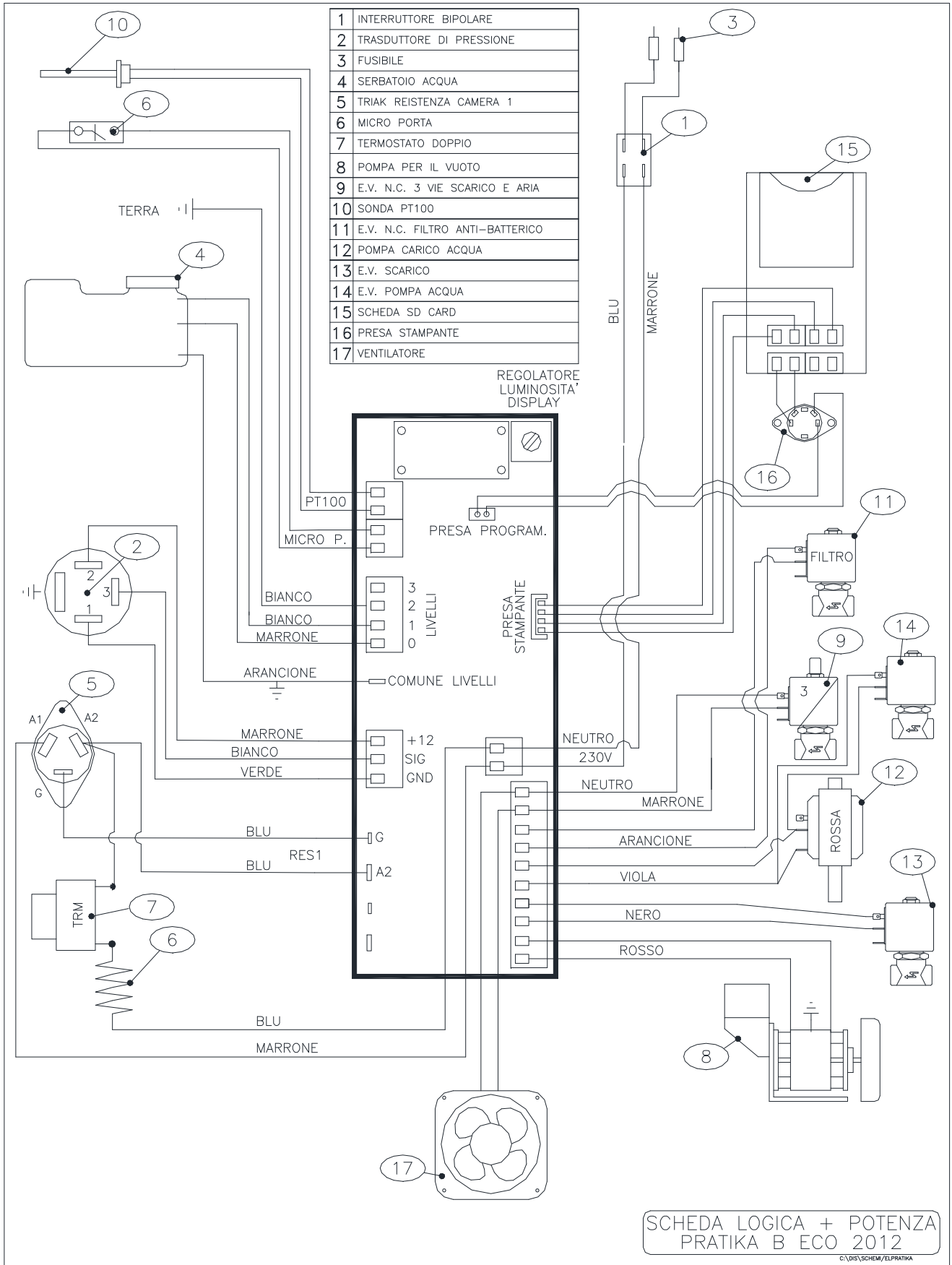
ADJ TEMP .....
ADJ PRES .....
PAR. <input type="checkbox"/> ON <input type="checkbox"/> OFF
P. VUOTO <input type="checkbox"/> ON <input type="checkbox"/> OFF
% ASC. ....

Cod. 4905

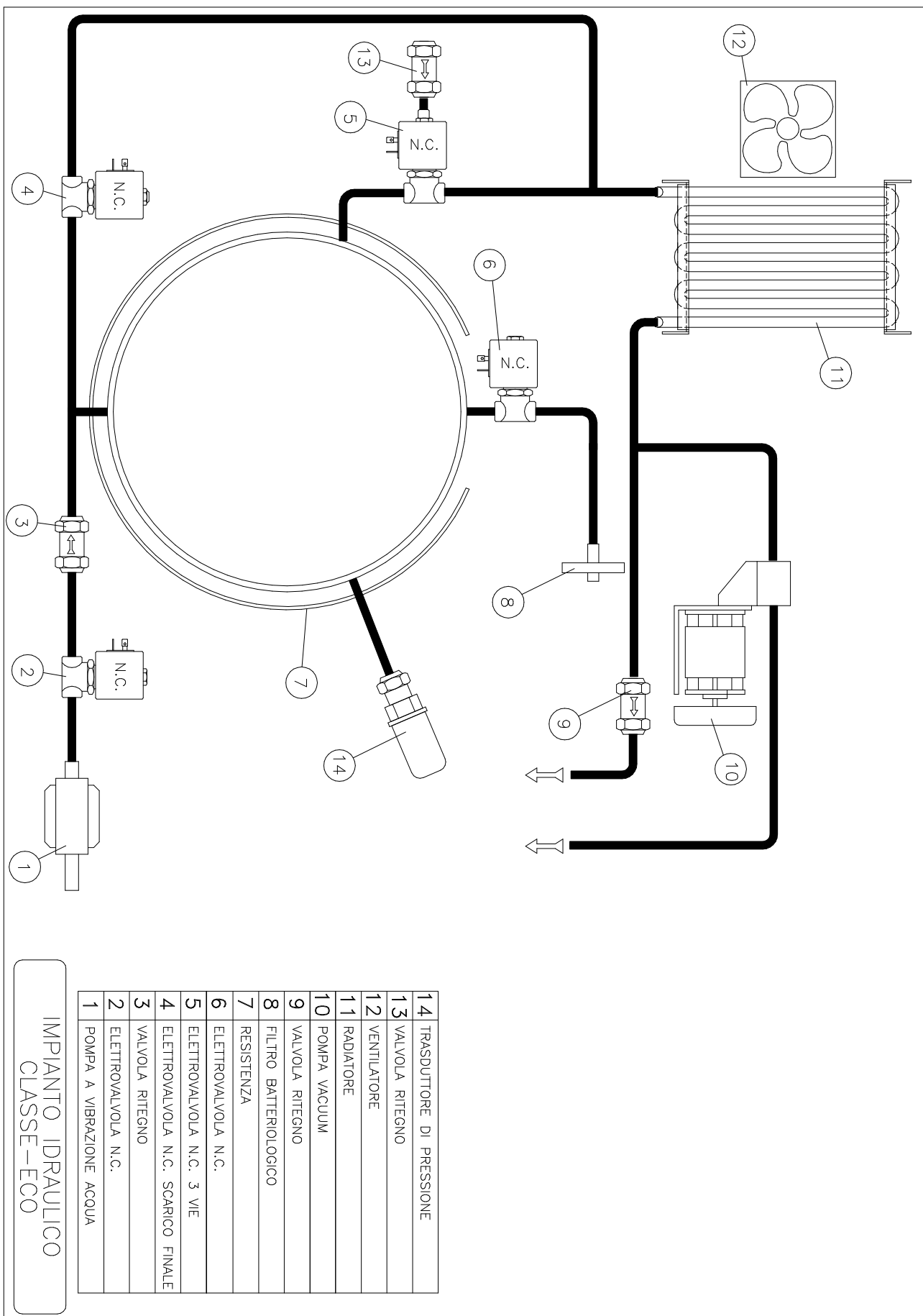
To change these parameters you should press SELECT+ and SELECT- until it sounds BEEP. After the BEEP you can access the parameters. Drying is in percentage of 200%. 100% means that it works, on 10 seconds, only 5 seconds.




# ELECTRICAL SYSTEM:



### HYDRAULIC CIRCUIT:



 <p>FAX NR. 0039 0522 875579          E-MAIL: reverberisrl@gmail.com          REVERBERI ARNALDO S.R.L          Via Don Luigi Sturzo n°6 42021 Barco di Bibbiano          Reggio Emilia – ITALY Tel. 0039 0522/875159          Numero REA: 180051 C.C.I.A.A di Reggio Emilia          Partita IVA, Codice Fiscale e reg. imprese di R.E. 01363800358</p>	<p>FORM TO FILL OUT          WHEN APPLIANCES ARE          RETURNED FOR REPAIRS  <b>Sterilizers:</b>  <b>PRATIKA</b></p>	<p>To be filled out by the:          Installer or authorized person</p>
--	---	---

Autoclave mod.....	Serial N° .....
Invoice nbr.....	dated .....

**REASON WHY THE MACHINE SHOULD BE SENT BACK TO THE MANUFACTURER:**

REPAIR SUBJECT TO PAYMENT ...       EXTRAORDINAY MAINTENANCE WITH SECURITY TEST in compliance with the law EN61010.....

PERIODIC TEST in compliance with the law EN13060 .....       OTHER.....

**FAULT ENCOUNTERED:** Which message appears on the display? .....

.....

**INSTRUCTIONS FOR THE RETURN OF THE AUTOCLAVE:**

1. Before sending back the machine, fill out this form and send it by fax to N° 0039 0522 875579 and await the authorization for the shipment that must be free of charges. In case of non accepted repair estimate, will be invoiced € 100,00.
2. Shipments not agreed will not be accepted.
3. Empty the used and clean water from the tanks.
4. Remove the tray-holder. Do not send it back with the machine.
5. Send the autoclave packed in the original packing in which it was purchased.
6. The maximum cost of the repair will be of € 570,00. In case of substitution of the heating element, the cost will be increased of € 170,00. The repair on the machine will follow our previewed inner protocol from the quality system.
7. In the event of the repair estimate not being accepted, we will charge you of € 100,00 that should be paid against documents (C.O.D.) to the forwarder together with the return of the autoclave (excluded transport charges and, if needed, packing charges).
8. Demands for eventual autoclaves in replacement, will be executed according to the availability and with a charge of € 100,00 , excluded transport.
9. To avoid damages during the transport, should be used the original packing. In absence of the original packing please pack the machine in pallet for handling with pallet unloader.
10. The repair that we will carry out, will be comprehensive of a control and an eventual modernization for a perfect sterilization.

\* The above prices are subject to change without notice.

**ACCEPTANCE OF THE REPAIR**

Date ..... SIGNATURE and STAMP for acceptance .....

This form **MUST** be fully filled-in by the installation technician, who will declare to have observed all the conditions that ensure the correct installation of the equipment according to section 5.2. of the instruction handbook.

The installer also declares that he has duly trained the user to operate the machine, with the help of the instruction manual.

The technician declares that he has attached the printer ticket to this form along with the warranty form, duly filled out in all parts.

The above mentioned documents must be immediately forwarded to the manufacturer.

Notes and/or considerations .....  
.....  
.....  
.....

**Installer's signature and date**

.....



## WARRANTY CERTIFICATE

This document certifies that the appliance has been correctly manufactured.

The appliance will be repaired if it operates in a faulty way during the warranty period owing to manufacturing defects, the manufacturer's judgement over such matters being final.

The sterilizing chamber is covered by guarantee for a period of 60 (sixty) months from the date of purchase. This date shall be testified by the enclosed coupon, which must be filled out, duly stamped and signed by the technician who took part in the installation course.

The sales invoice or consignment note shall bear witness in the event of disputes.

The electrical, electronic parts and nuts and bolts are guaranteed for a period of 24 months.

The warranty covers the sole replacement or repair of those parts recognized as possessing manufacturing defects, travel and call costs excluded and the normally expendable components.

Replaced parts shall be returned free port. The ordering party shall be charged for any part that is not returned.

All appliances returned for repairs shall only be sent to us free port after authorization and shall be adequately packed, with the sender's name, address and claimed defect clearly indicated.

The appliance remains the property of the seller until it has been fully paid for by the purchaser.

### THE WARRANTY SHALL BECOME VOID:

1. If the appliance has been repaired, modified or tampered with by the purchaser or by unauthorized third parties.
2. If the purchaser fails to contact the seller or authorized technical center.
3. 18 months from the date of our consignment note.
4. If the customer delays or suspends payments.
5. If the appliance has been damaged by exposure to fire, spilt liquids, natural disasters, has been dropped or damaged by causes that are not ascribable to manufacturing defects.
6. When the warranty form has not been duly filled out, signed and returned to the manufacturer within the established time.
7. If the customer uses the appliance improperly, fails to carry out the routine maintenance operations or services the appliance in a neglectful way.

# WARRANTY CERTIFICATE

APPLIANCE:

The undersigned reseller certifies that the warranty has been examined and certifies that the appliance has been consigned and installed in compliance with the instructions given by the manufacturer on:.....

By Mr. ....

Address .....

ZIP Code ..... City .....

1 – FOR THE PURCHASER

.....  
TECHNICAL INSTALLER SIGNATURE AND STAMP\*



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



THIS PART OF THE CERTIFICATE MUST BE SENT BACK BY REGISTERED LETTER WITHIN 8 DAYS FROM THE DATE OF PURCHASE

# WARRANTY CERTIFICATE TO BE RETURNED SIGNED AND STAMPED

APPLIANCE:

ATTACCARE QUI L'ETICHETTA

The undersigned reseller certifies that the warranty has been examined and certifies that the appliance has been consigned and installed in compliance with the instructions given by the manufacturer on:.....

By Mr. ....

Address .....

ZIP Code ..... City ..... Buyer signature.....

2 –FOR THE MANUFACTURER

.....  
RESELLER'S SIGNATURE AND STAMP



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

\* The technical installer must be authorized by the building factory.

## SPARE PARTS “PRATIKA B ECO 16-20”

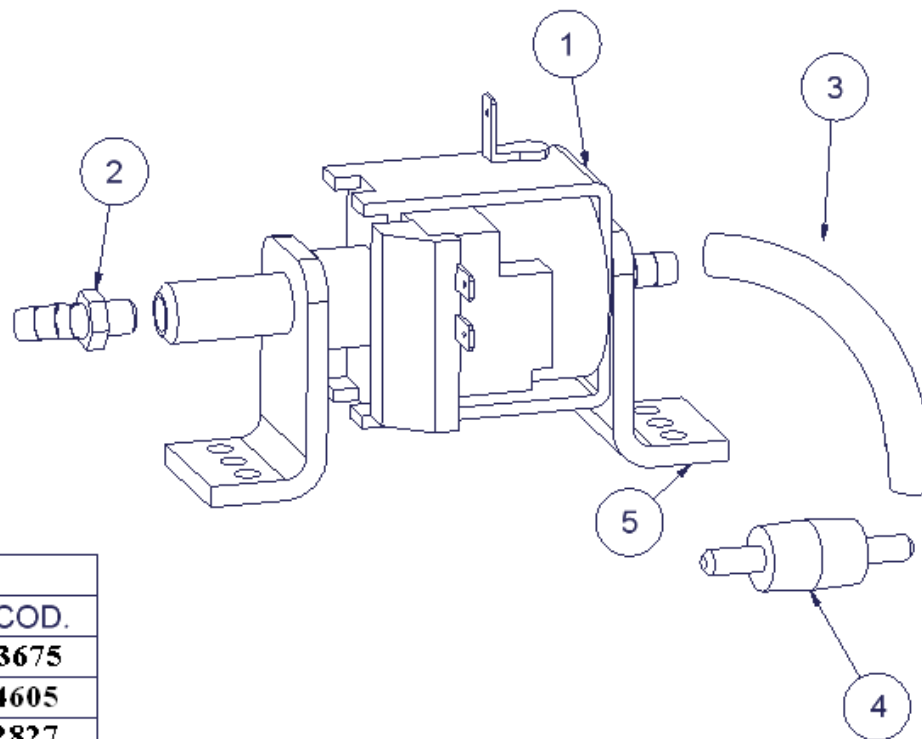


**WARNING: to require spare parts you should always communicate the serial number of the autoclave. Thanks.**



PARTS LIST			
NBR.	QT	DESCRIPTION	COD.
1	1	Door	1394
2	1	Registry washer	1407
3	1	Door controller	3099
4	1	Locking pin	1667
5	1	Arm support	1363
6	1	Arm oxidized	1688
7	1	Handle painted	3071
8	1	Screw M8x20	3017
9	3	Washer Ø 8.5	1879
10	1	Black silicon gasket	2889
11	2	Tension spring door	1406
12	1	Brass washer	3015
13	1	Calibrated plug 10x80	2936
14	2	Teflon bushing	2937
15	2	Screw M6x45	1016
16	2	Screw M8x8	1670
17	1	Screen printing handle	2843

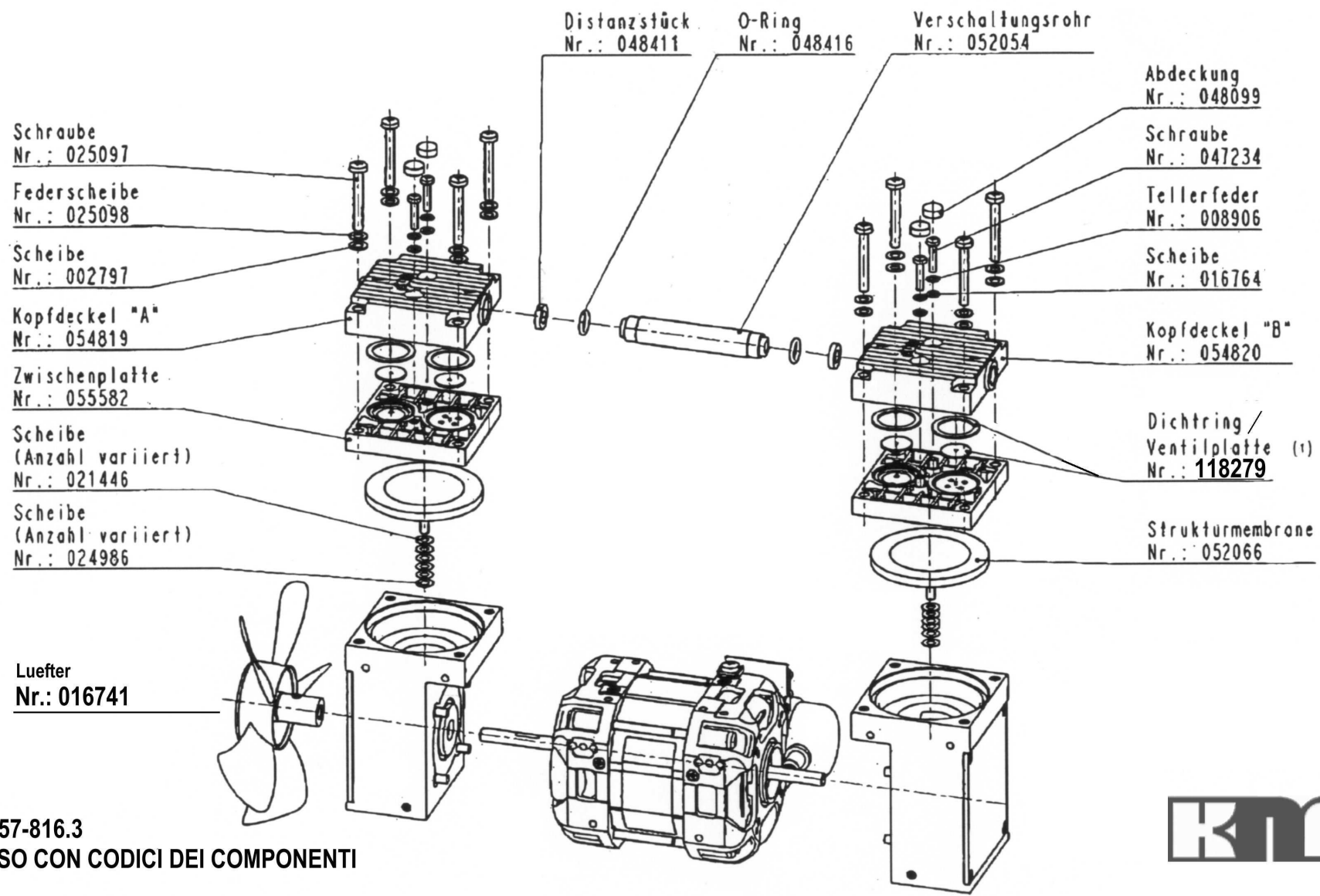
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<b>reverberi</b> S.R.L. Via Don L. Starna, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverberi_a@libero.it		<b>CLOSING GROUP</b>
2924		Edizione      Foglio





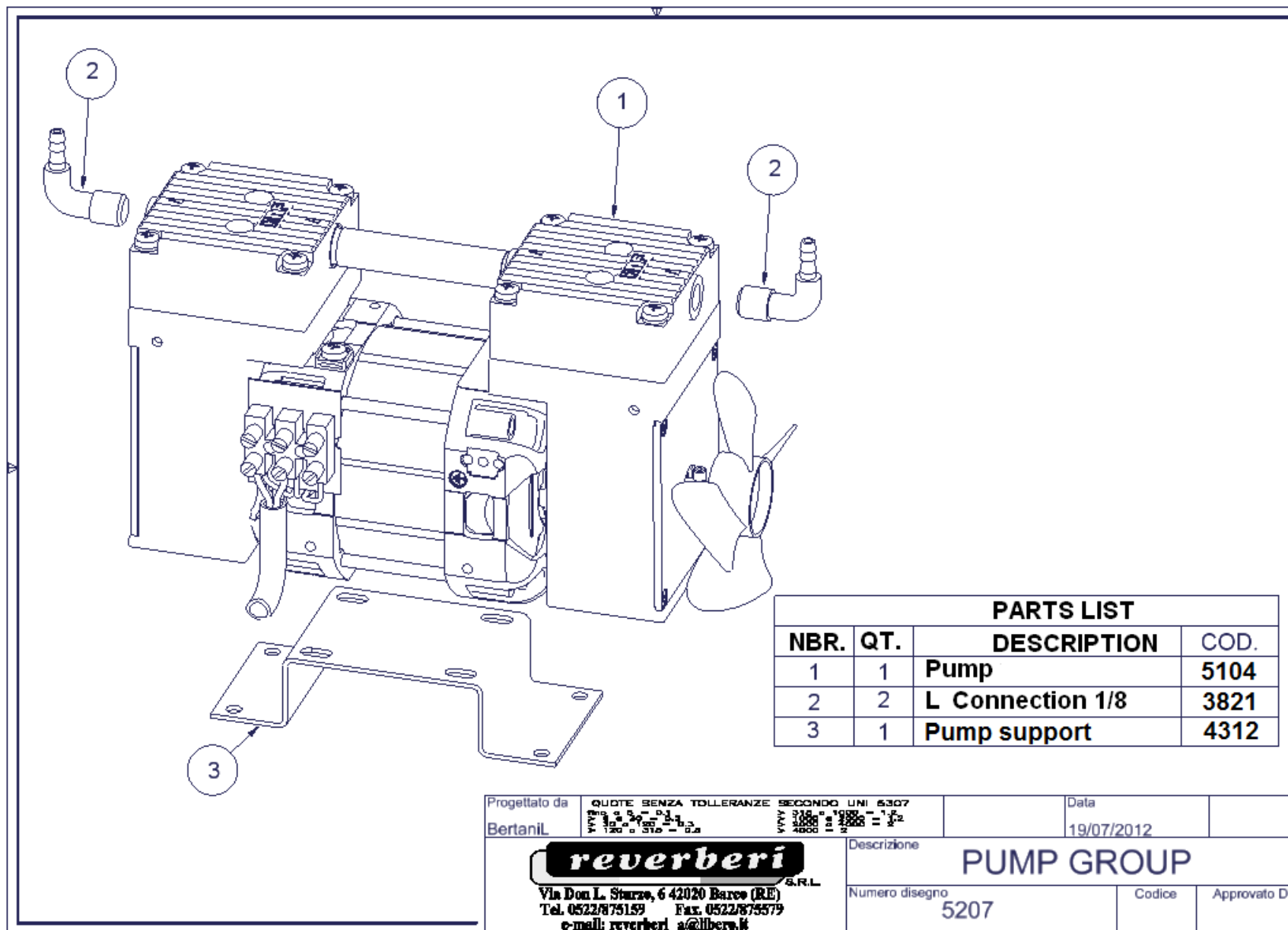
PARTS LIST			
NBR.	QT.	DESCRIPTION	COD.
1	1	Pump vibration	3675
2	1	Connection 1/8	4605
3	1	Silicon tube 10x5	2827
4	1	Water filter Ø6	1484
5	2	Anti vibration L	3677

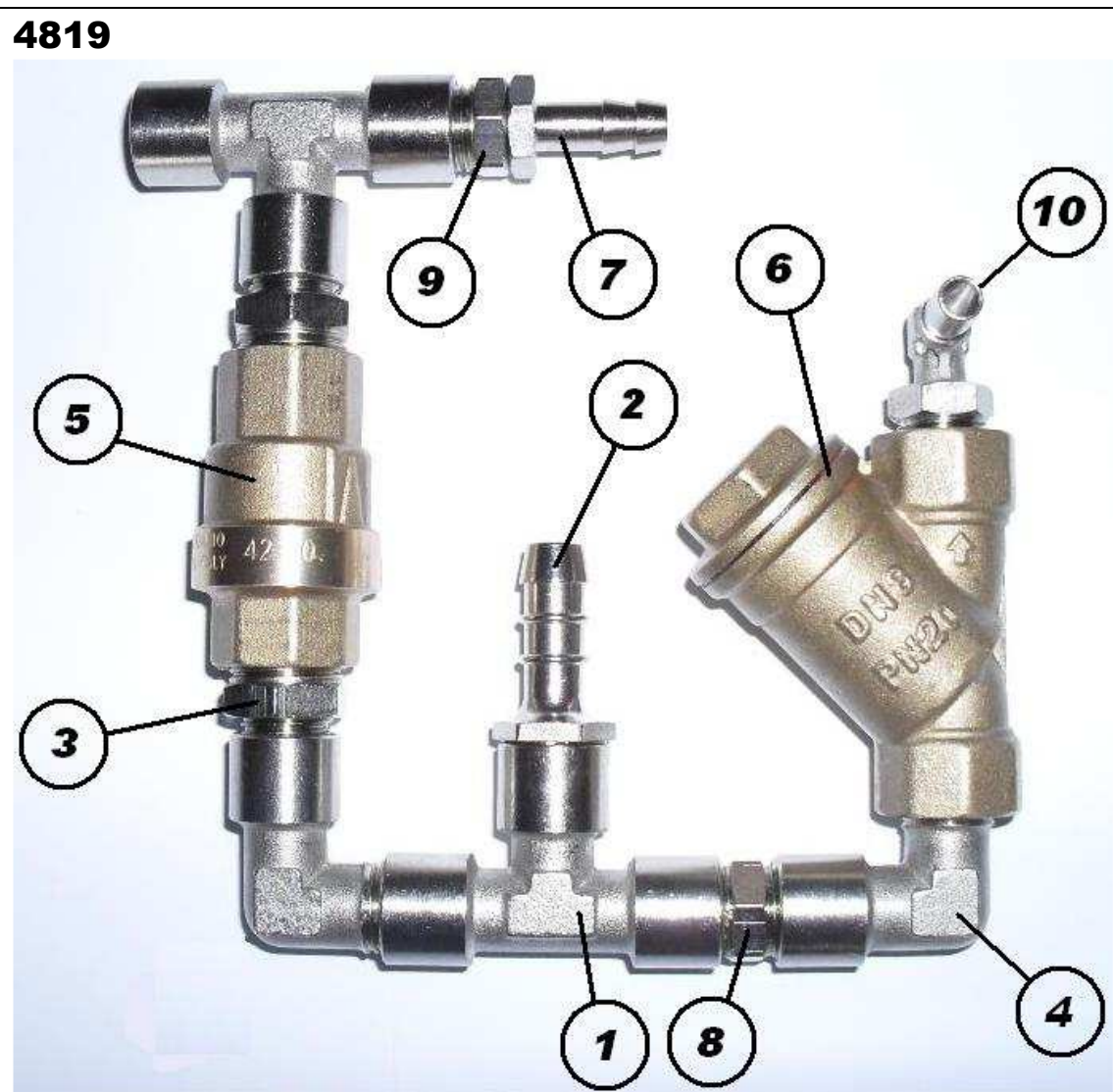
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 Via Don L. Sturzo, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverberi_s@libero.it		<b>CHARGE PUMP</b>  3712
		Edizione      Foglio



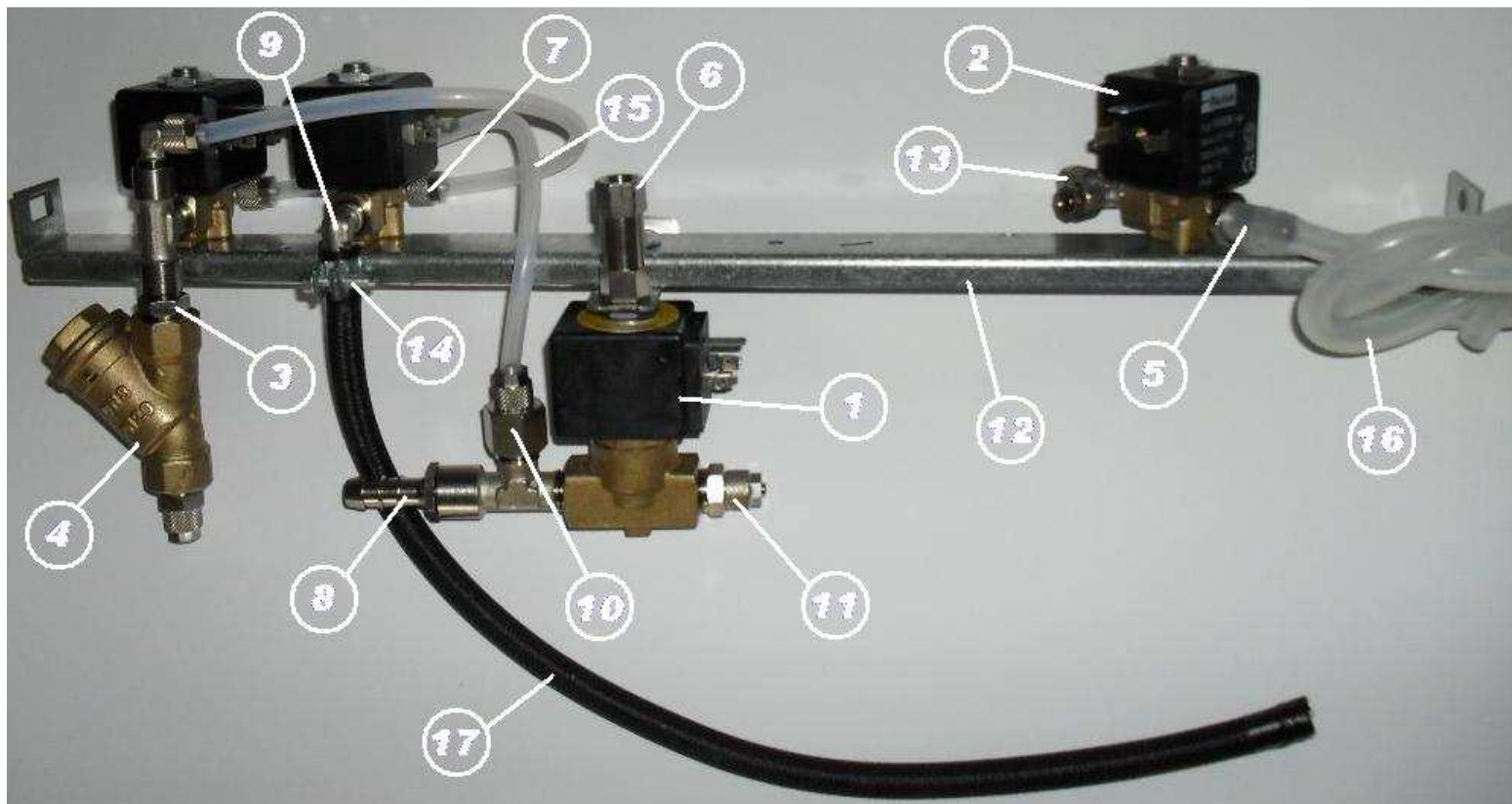
**PM 21157-816.3**  
**ESPLOSO CON CODICI DEI COMPONENTI**







Nr.	Cod.	Description	Q.ty
1	4377	T CONNECTION F. 1/4	2
2	4650	CONNECTION M 1/4	1
3	0289	CONNECTION 1/4 3/8	2
4	0258	CONNECTION L MF 1/4 5020	2
5	4778	CHECK VALVE EGB H151 3/8	1
6	3136	FILTER Y 1/4- DN8 PN20	1
7	3686	HOSE CONNECTION M CIL. 8 1/8	1
8	2945	CONNECTION 1/4 2000	1
9	0719	REDUCTION 2530 1/4 1/8	2
10	3821	HOSE CONNECTION M CON. 7 1/8	1

**4820**

Nr.	Cod.	Description	Q.ty
1	3246	SOLENOID VALVE NC 3 WAY	1
2	3028	SOLENOID VALVE NC	3
3	0523	CONNECTION 1/8 - 1/4	1
4	3136	FILTER Y 1/4- DN8 PN20	1
5	4610	HOSE CONNECTION M 1/8	1
6	2948	ONE WAY VALVE 1/8	1
7	3024	CONNECTION L M. 1/8	3
8	4650	HOSE CONNECTION M 1/4	1

Nr.	Cod.	Description	Q.ty
10	0449	STRAIGHT CONNECTION F	1
11	0911	STRAIGHT CONNECTION M 1/4	1
12	3716	SOLENOI VALVES SUPPORT	1
13	4265	CONNECTION T 1/8	1
14	0109	BELT CLIPS	1
15	4822	SILICON HOSE 5 X 9	1
16	4823	SILIOCN HOSE 7 X 13	1
17	0142	BLACK STEAM HOSE	1

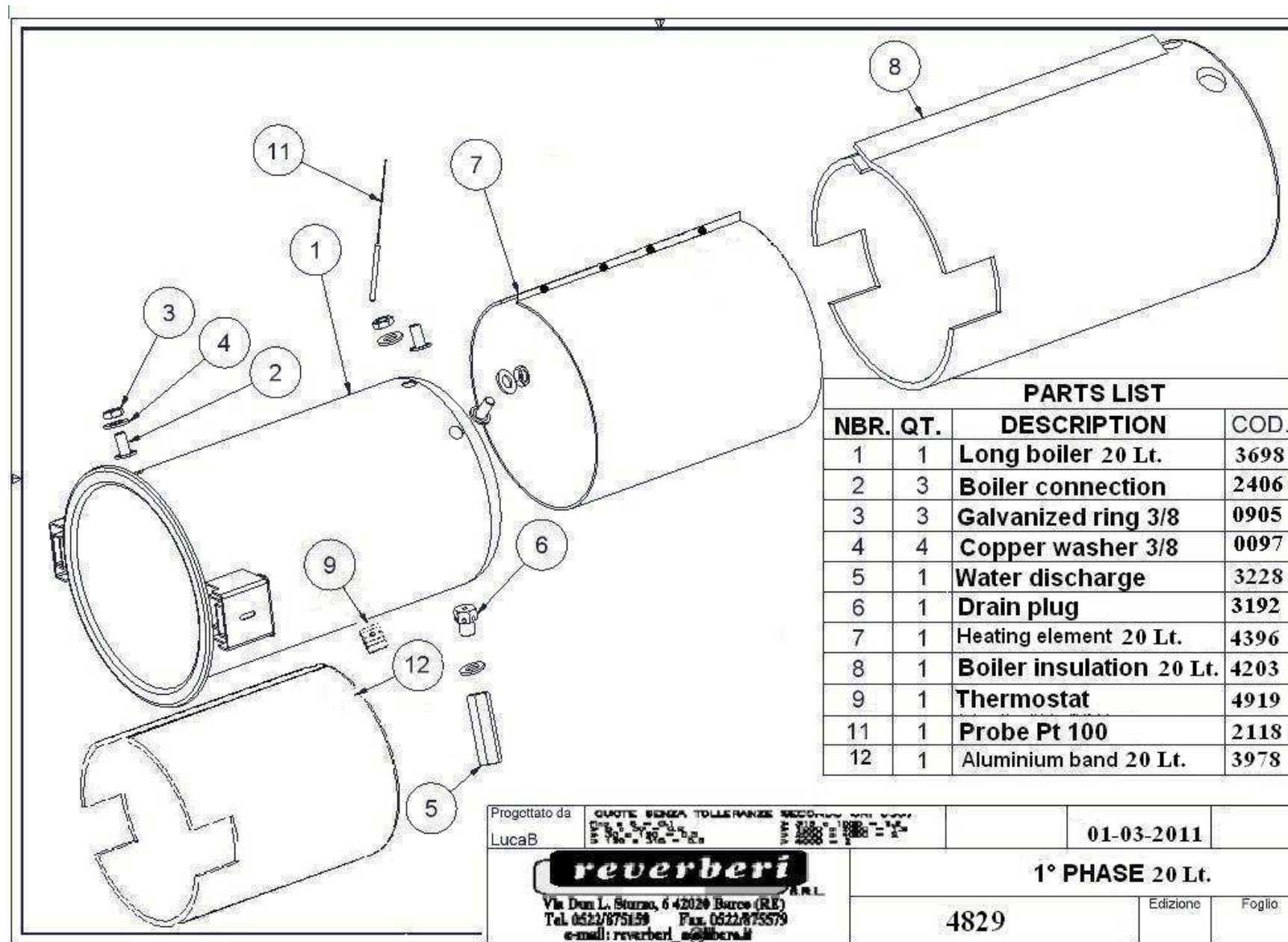
<b>9</b>	<b>3686</b>	<b>HOSE CONNECTION M CIL. 8</b>	<b>1</b>
----------	-------------	---------------------------------	----------

<b>18</b>	<b>1452</b>	<b>CONNECTION T F 1/4</b>	<b>1</b>
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PARTS LIST			
NBR.	QT.	DESCRIPTION	COD.
1	1	Long boiler	2410
2	3	Boiler connection	2406
3	3	Galvanized ring 3/8	0905
4	4	Copper washer 3/8	0097
5	1	Water discharge	3228
6	1	Drain plug	3192
7	1	Heating element	4395
8	1	Boiler insulation	4202
9	1	Thermostat	4919
11	1	Probe Pt 100	2118
12	1	Aluminium band	3977

Progettato da LucaB	QUOTE SENZA TOLLERANZE SECONDO SISTEMA ISO 9001 SISTEMA ISO 14001	01-03-2011
		1° PHASE 16 Lt.
Via Don L. Sturzo, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverberi@libero.it		Edizione Foglio
4828		



PARTS LIST			
NBR.	QT.	DESCRIPTION	COD.
1	1	Long boiler 20 Lt.	3698
2	3	Boiler connection	2406
3	3	Galvanized ring 3/8	0905
4	4	Copper washer 3/8	0097
5	1	Water discharge	3228
6	1	Drain plug	3192
7	1	Heating element 20 Lt.	4396
8	1	Boiler insulation 20 Lt.	4203
9	1	Thermostat	4919
11	1	Probe Pt 100	2118
12	1	Aluminium band 20 Lt.	3978

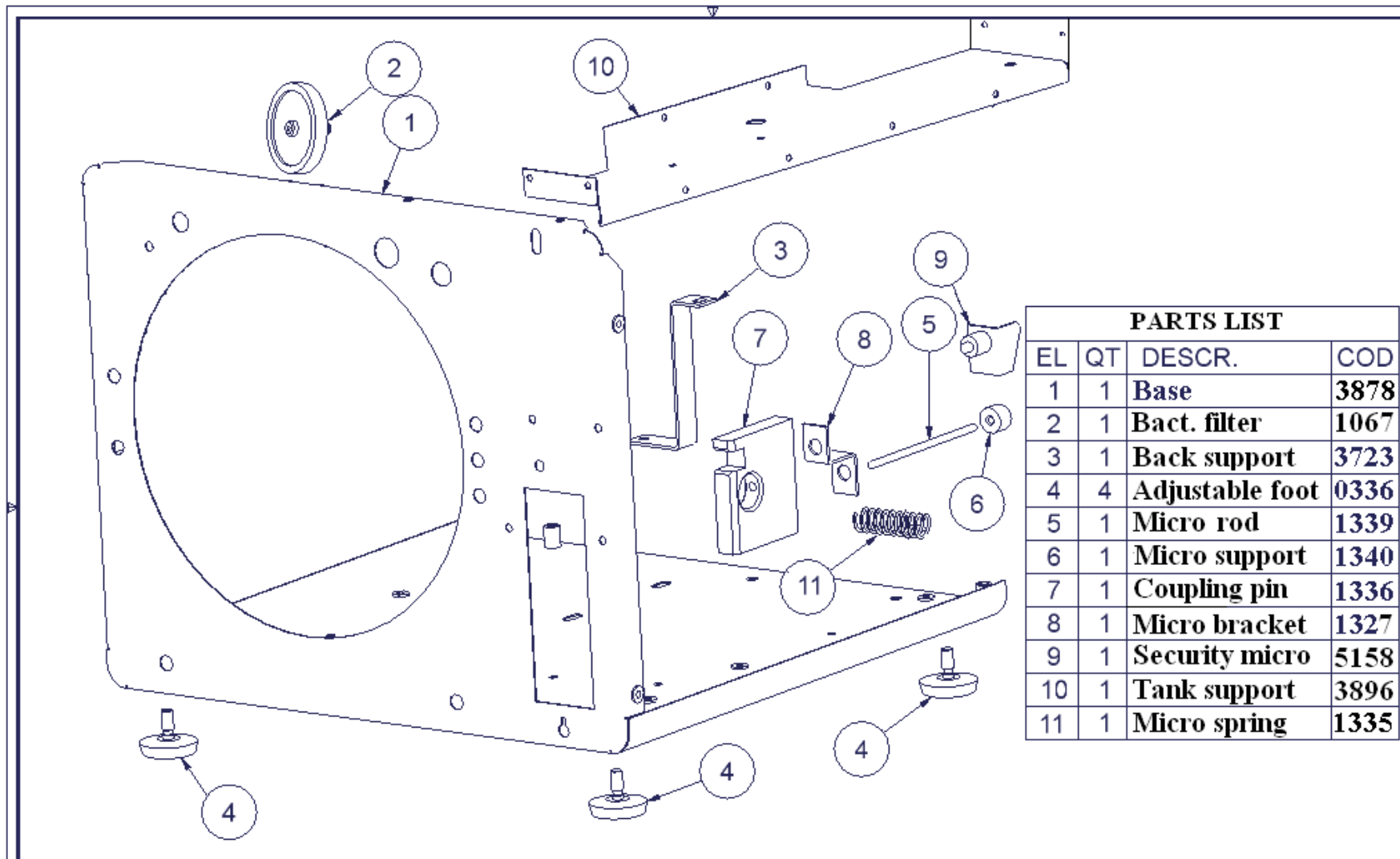
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		1° PHASE 20 Lt.
Via Don L. Sturzo, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverberi@libero.it		Edizione Foglio
4829		



Elenco parti			
ELE	QT	DESCRIZIONE	COD.
1	1	Float level	3907
2	1	Capsule	3687
3	1	Fill tank	3671
4	1	Silicon pipe L=150	3770
5	1	Silicon pipe L=750	2956
6	1	Hose connector 1/8	3686

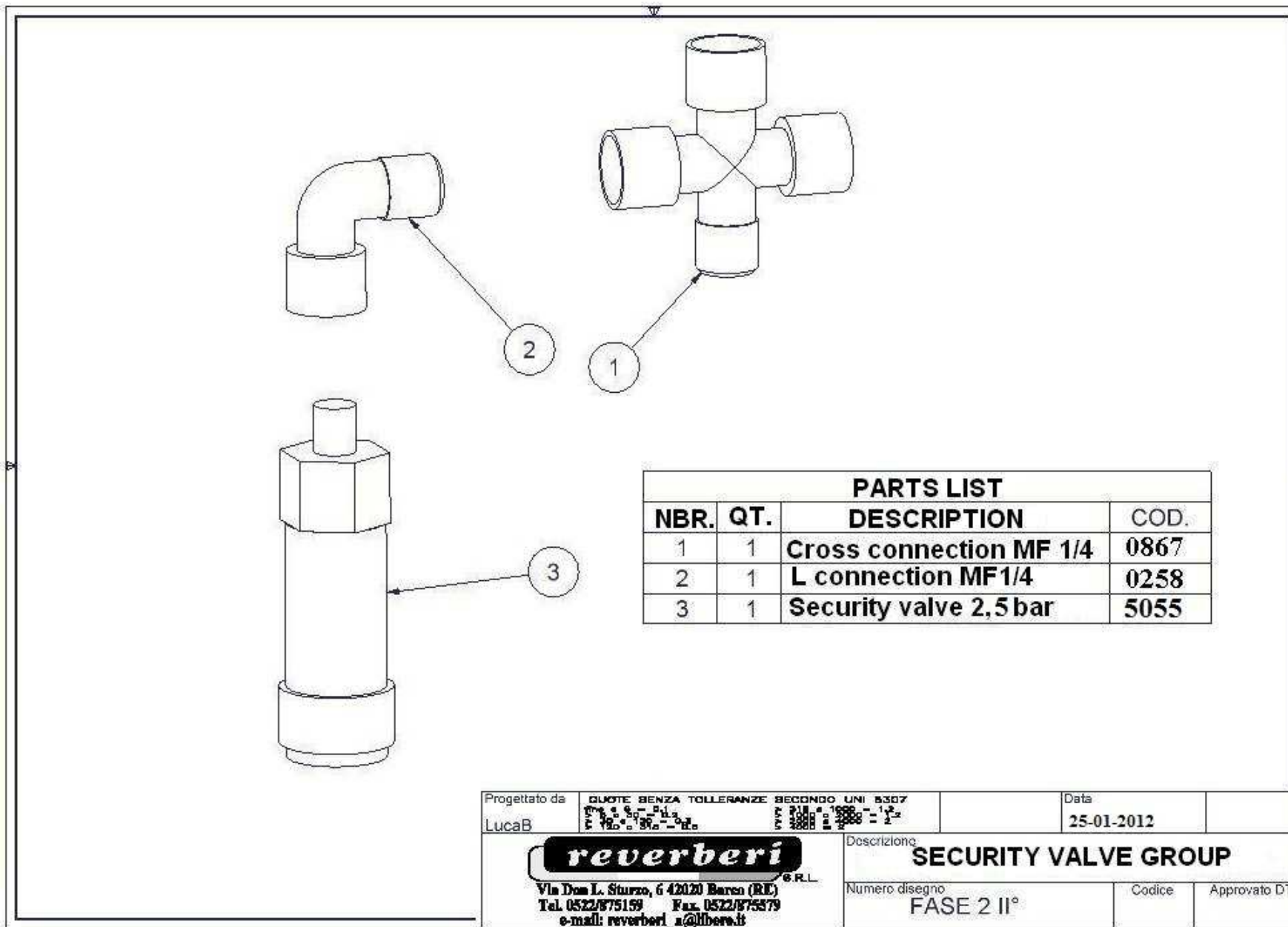
  
  

Progettato da LucaB	QUOTE SENZA TOLLERANZE SECONDO UNI 5307 1:2 2:1 3:2 4:1 5:1 6:1	Data 01-03-2011	
<b>reverberi</b> S.R.L. Via Don L. Sturzo, 6 42020 Barso (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverber_i@gilbera.it		<b>SERBATOIO CARICO</b> 4009	
		Edizione	Foglio



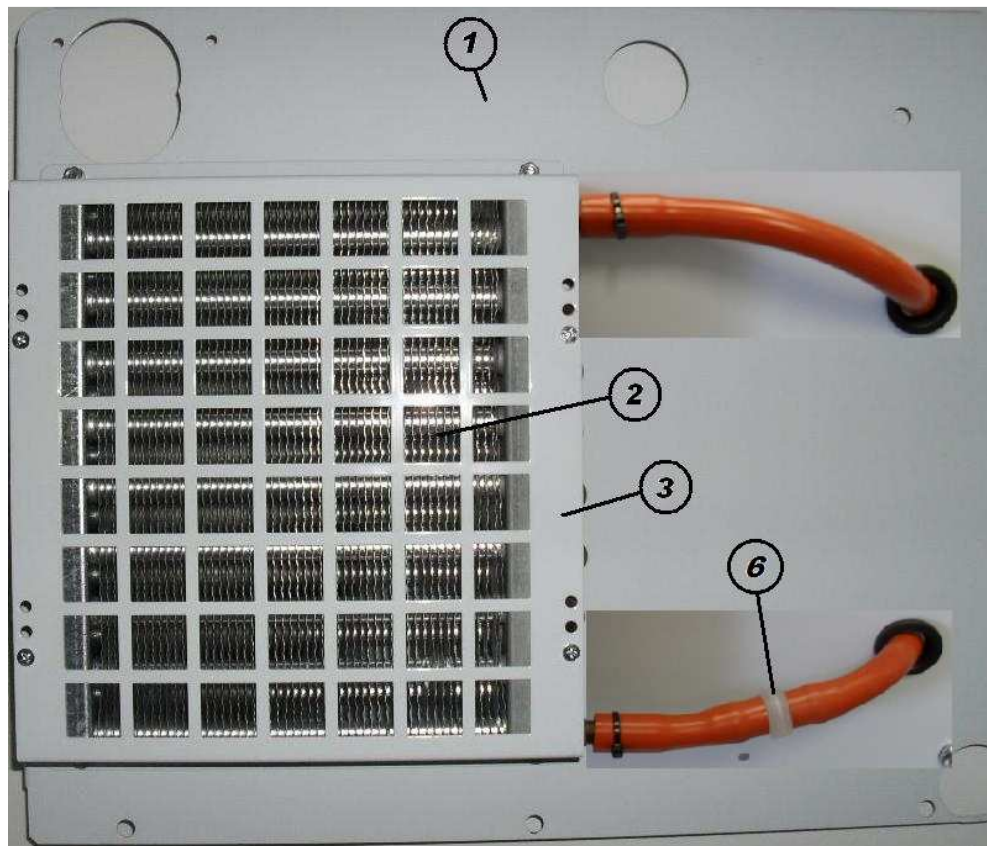
PARTS LIST			
EL	QT	DESCR.	COD
1	1	Base	3878
2	1	Bact. filter	1067
3	1	Back support	3723
4	4	Adjustable foot	0336
5	1	Micro rod	1339
6	1	Micro support	1340
7	1	Coupling pin	1336
8	1	Micro bracket	1327
9	1	Security micro	5158
10	1	Tank support	3896
11	1	Micro spring	1335

Progettato da LucaB	QUOTE SENZA TOLLERANZE SECONDO UNI 5307 <small>                 1:100 = 1:100                  1:200 = 1:200                  1:500 = 1:500                  1:1000 = 1:1000                  1:2000 = 1:2000                  1:5000 = 1:5000                  1:10000 = 1:10000             </small>	Data 01-03-2001
<b>reverberi</b> S.R.L. Via Don L. Sturzo, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverberi_a@libero.it		Descrizione <b>PHASE 2</b>
Numero disegno 4830		Codice Approvato DT



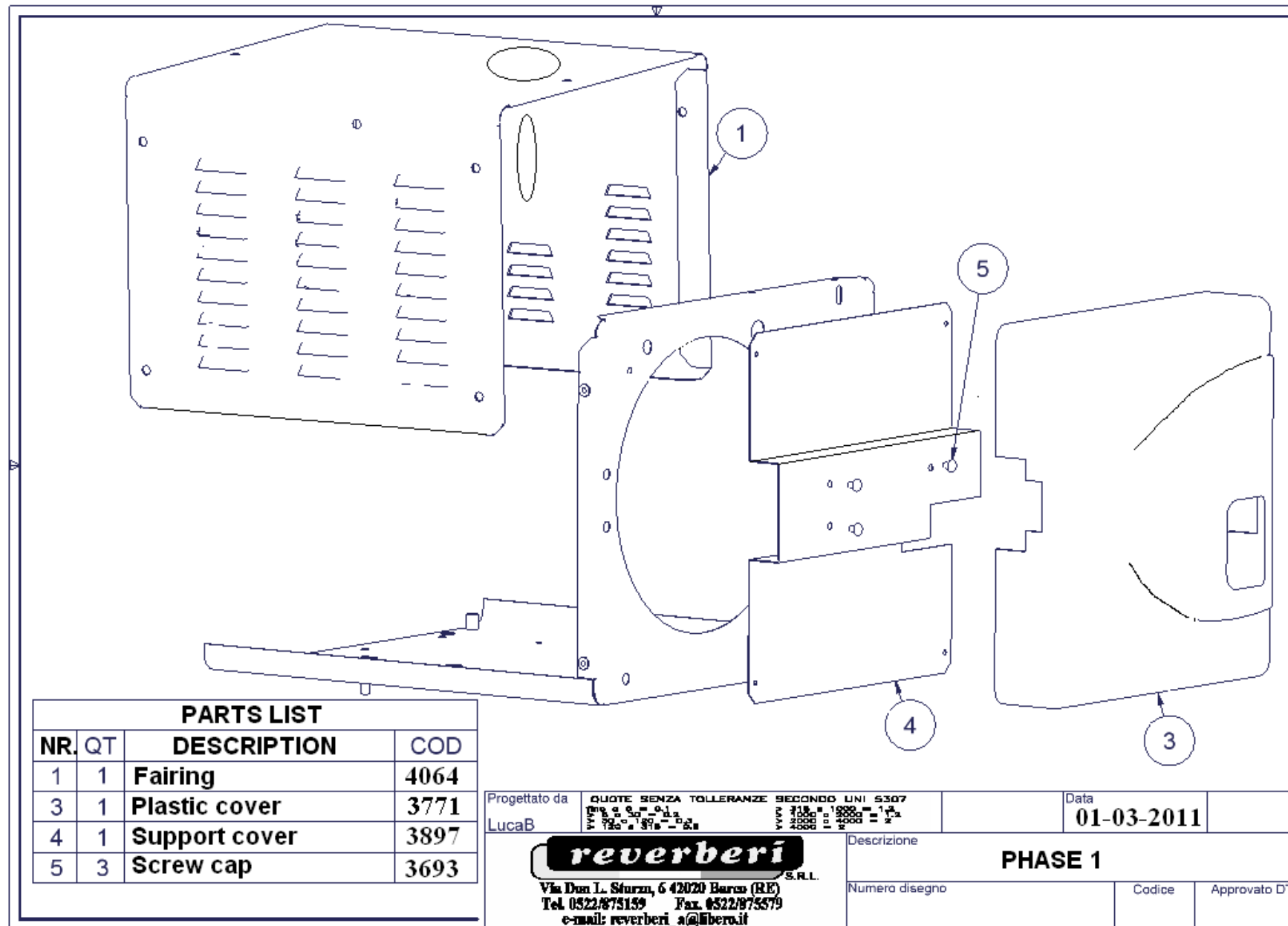
Progettato da LucaB	QUOTE SENZA TOLLERANZE SECONDO UNI 5307 F. 111 = 1000 - 1/2 F. 120 = 1000 - 1/2	Data 25-01-2012
 Via Don L. Sturzo, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875379 e-mail: reverberi_a@libero.it		Descrizione: <b>SECURITY VALVE GROUP</b> Numero disegno: FASE 2 II°
		Codice Approvato DT

## 4816

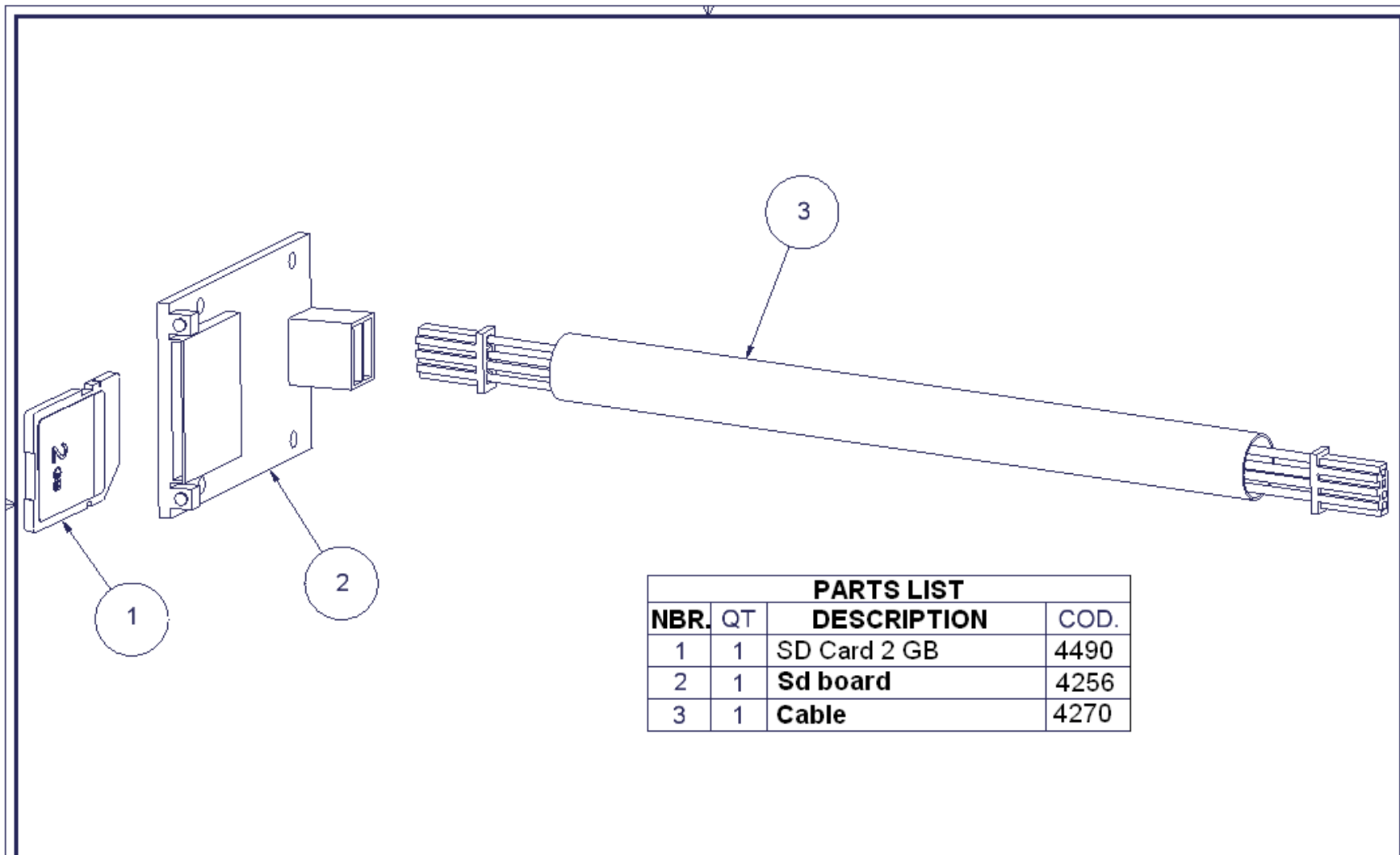


Nr.	Cod.	Descrizione	Q.tà
1	4794	BACK PANNEL	1
2	4360	RADIATOR	1
3	4817	RADIATOR GRATE	1
4	0268	PVC CABLE Ø15	2
5	4361	RADIATOR FAN	1
6	5406	WATER FILTER	1





Progettato da LucaB	QUOTE SENZA TOLLERANZE SECONDO UNI 5307 1/100 ± 0,1% 1/200 ± 0,2% 1/500 ± 0,5% 1/1000 ± 1% 1/2000 ± 2%	Data 01-03-2011
<b>reverberi</b> S.R.L.		
Via Don L. Sturzo, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverberi_a@libero.it		
Descrizione <b>PHASE 1</b>		
Numero disegno	Codice	Approvato DT



PARTS LIST			
NBR.	QT	DESCRIPTION	COD.
1	1	SD Card 2 GB	4490
2	1	Sd board	4256
3	1	Cable	4270

Progettato da	QUOTE SENZA TOLLERANZE SECONDO UNI 5307	Data	
LucaB	<small>                 0° = 0°                  10° = 10°                  15° = 15°                  30° = 30°                  45° = 45°                  60° = 60°                  75° = 75°                  90° = 90°                  120° = 120°                  150° = 150°                  180° = 180°             </small>	06/04/2006	
 Via Don L. Sturzo, 6 42020 Barco (RE) Tel. 0522/875159 Fax. 0522/875579 e-mail: reverberi_a@libero.it		Descrizione	
		SD CARD BOARD	
		Numero disegno	Approvato DT
		Codice	