Instruction manual for the automatic humidifier **SIRIO**

1 – Warnings for safe use

When using electrical appliances it is required to adhere to some basic safety precautions, including the following:

1. **READ THE INSTRUCTIONS IN THEIR ENTIRETY.**
2. Use the appliance only with electrical system features complying with the label affixed on the appliance and with this manual.
3. Do not place the unit close to heat sources and do not cover it with other objects.
4. Do not leave the appliance unattended for long periods of time when it is connected to the power mains. Do not use the appliance with damaged cables or plugs, or appliances that have been dropped to the ground or damaged in some way. Consign the appliance to the nearest authorized service center requesting its inspection, or repair.
5. Use of accessories not recommended or not sold by the manufacturer is not permitted.
6. Do not use outdoors.
7. The appliance can be used by children under 12 years of age and/or persons with reduced physical or mental capacity, or without experience or the necessary knowledge, as long as supervised by an adult or after they have received instructions related to safe appliance use and understand the dangers related to it. The same is true for cleaning and maintenance.
8. Always start use by verifying the pump functions, therefore connect it to the power outlet. To remove, disconnect from the power outlet.
9. Disconnect the pump from the power outlet when the appliance is not running.
10. The pump must be placed so it is easy to access when it is necessary to disconnect it from the power supply.
11. To disconnect the plug, grab it directly (not the cable) and detach it from the wall outlet.
12. Any modification to this product that has not been expressly authorized by the manufacturer, besides representing a safety risk, will void the warranty.
13. STORE THESE INSTRUCTIONS WITH CARE.

Translation of original instructions

Contents

Electronic format copy of this instructions manual can be downloaded at www.premier1supplies.com

2 – Declaration of conformity

EU Declaration of conformity

The undersigned Andrea Borotto, as legal representative of the company BOROTTO® with headquarters in Via Papa Giovanni Paolo II, 7 37060 Buttapietra (VR) Italy VAT No. 03787910235

DECLARES

That the product as per the label shown below:

Is intended for use as an accessory for maintaining humidity in incubators for animal eggs, specifically: hen, pheasant, turkey, guinea fowl, quail, grey partridge, partridge, goose, muscovy/common/wild duck, peacock, rock partridge, pigeon, Virginia quail, exotic birds and birds of prey.

The following declaration of conformity is issued under the manufacturer's exclusive responsibility.

And it conforms to the following directives:

- Directive EN 61326 – 1: 2007
- Directive EN 61010 – 1:2010
- Directive EN 61000 – 3– 2 :2014
- Directive EN 61000 – 3– 3 :2013
- Directive EN 61326 – 1 :2013

The person responsible for the technical dossier and legal representative

Buttapietra – VR - Italy 01/01/2020

BOROTTO ANDREA

Attention, prior to performing any operation, carefully read the instructions manual.

Warning symbols used on the product and in this manual

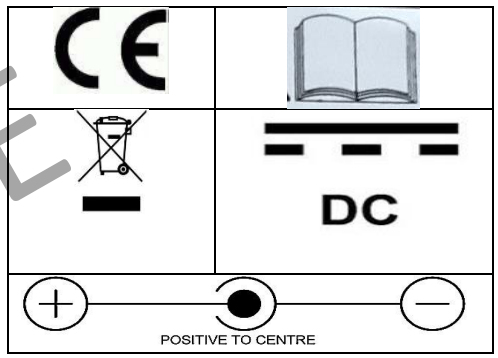
Symbol	Description
	Obligation to read the operating instructions before using the product
	DC Direct Current power supply
	Positive polarity at the centre of the power supply connector

3 – Identification plate

The equipment is fitted with an identification plate showing the equipment's identification details and the main technical specifications.

Borotto®

BOROTTO
Via Papa Giovanni Paolo II, 7A
37060 Buttapietra (VR) Italy



SIRIO automatic humidifier

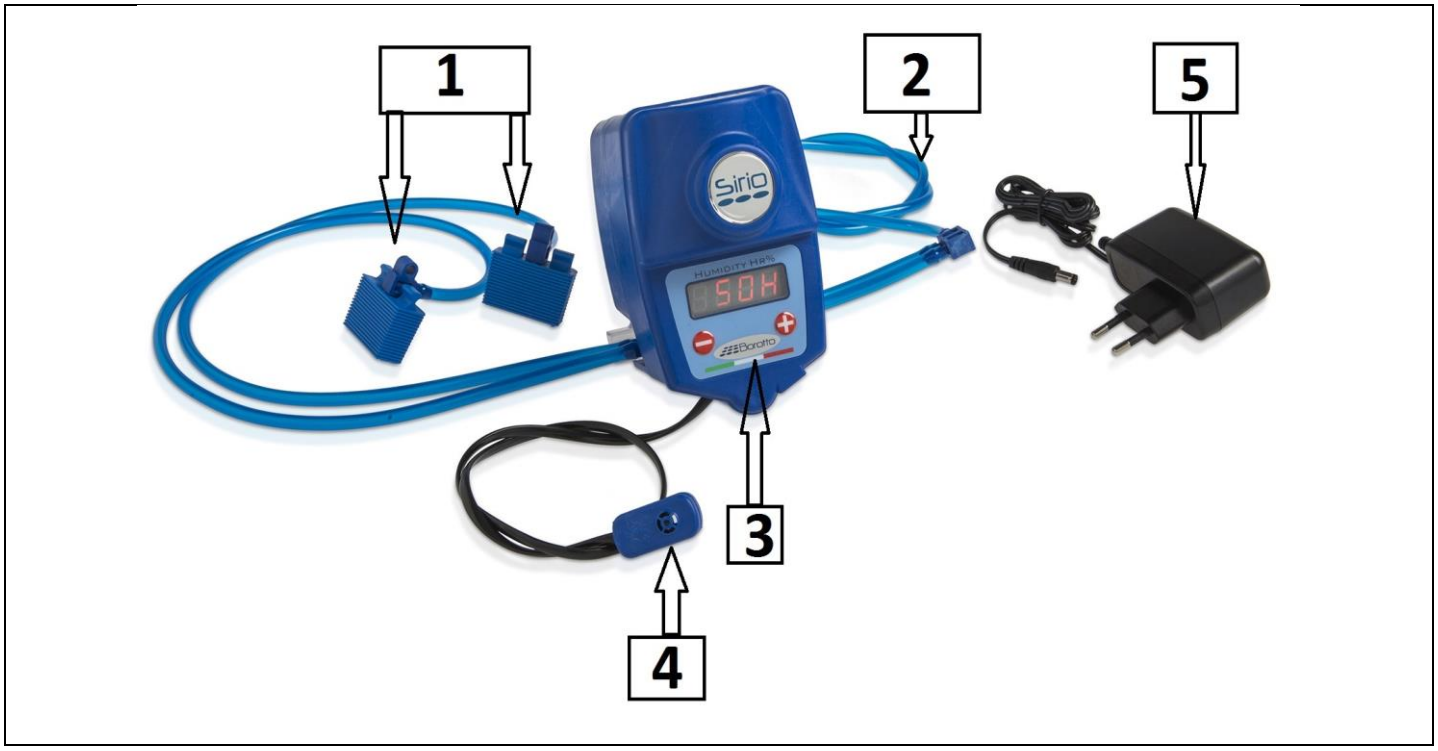
Year: XXXX Code: **SIRIO** Portata 0-5 l/h (ca) Bar: 0,2
Serial Number: XXXX Weight Kg 0,435 Classe II
Imput voltage: 12 V DC MAX Power: 1,2W Made in Italy

4 – Presentation of the manual

This manual contains instructions for the installation, maintenance and use of the SIRIO peristaltic pump, hereafter referred to as SIRIO.
This manual is intended for users of the equipment, and concerns its use after production and sale. In the event the equipment should be transferred to third parties for any reason (sale, loan for use, or any other reason), the equipment must be delivered complete with all its documentation.
This manual contains proprietary information and may not be, even partially, provided to third parties for any purpose and in any form, without the prior written consent of the manufacturer.
The manufacturer declares that the information contained in this manual is congruent with the technical and safety specifications of the equipment and for the manual refilling of water inside an–incubator machine, making it possible to automatically maintain the set humidity rate.

5 – Technical features and specifications

Equipment model	SIRIO
SIRIO Power supply voltage	12V DC
Maximum absorbed power	4 W
Average daily consumption	1 Wh
Feeder power supply voltage (already included)	100-240V 50/60 Hz
Display	For digital control of humidity parameters
Electronic board	With microprocessor with modified PID algorithm
Range	Humidity can be modified from a Min. of 40% to a Max. of 75%
Dimensions and weight	Height 4.2" - Width 3.5" - Length 5" Weight: .97 lbs
Environmental operating conditions	Temperature From + 68°F to MAX 99°F Relative humidity 20%-80%
Environmental storage conditions	Temperature from + 35.6°F to MAX 122°F Relative humidity < 90% without condensation



1	Water distribution valve
2	Water suction pipe
3	Control panel
4	Sensor
5	Power Supply

6 – SIRIO preparation and commissioning

During transportation pay attention not to cause collisions and/or damage to the equipment. Always position flat, avoiding crushing and/or breakage.

6.1 SIRIO positioning

Demonstrative photo equivalent for all BOROTTO incubator models of the REAL series

Position SIRIO on a flat surface.

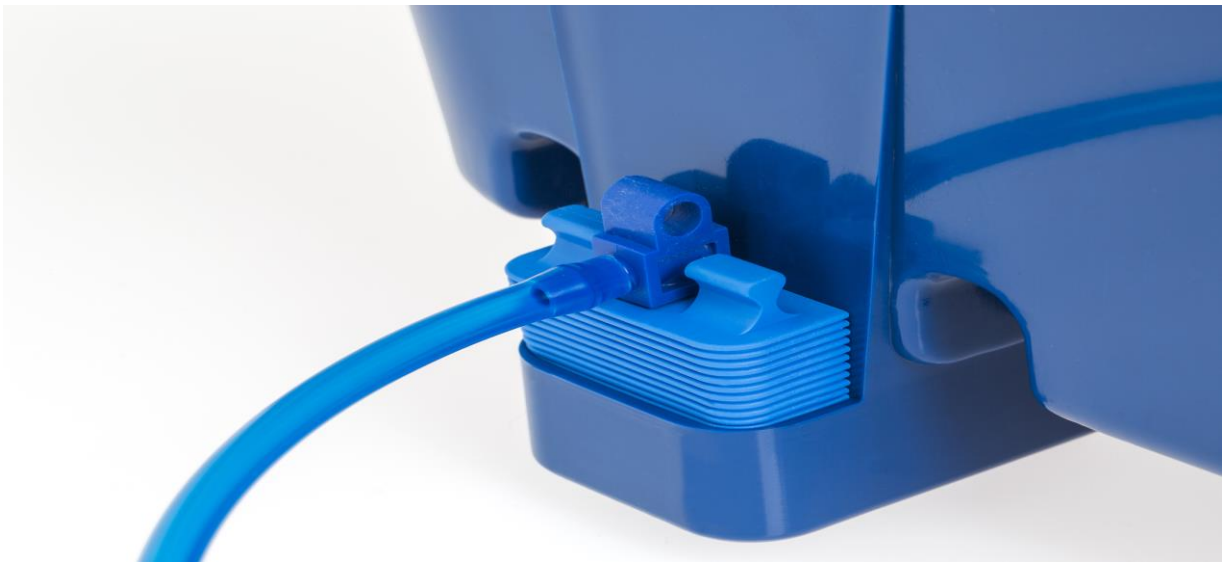
Do not place other objects between the product and the table surface, for example tablecloths or covers.

Position SIRIO next to the incubator, placing a water container nearby. Any container can be used: bottle, canister, etc., as long as it is clean inside. Dirty containers may result in the development of bacterial flora during incubation, causing the death of the embryo.

Insert the suction pipe (the one connected to the rubber holding connector with the writing “IN” engraved on the transparent bottom of the appliance) in a container of water.

SIRIO also works with tap water! As long as it is clean.

6.2 Valve positioning



Insert the two water valves into the incubator inlets, making sure that they sufficiently touch the bottom in order to ensure a seal. The input nozzle should face away from the incubator.

ATTENTION: if the filling nozzles or valves become encrusted with limestone, remove it with anti-scaling agent before inserting the valves.

6.3 Sensor positioning

Place the humidity sensor inside the incubator, positioning it above the flap in the corner (use a minimum amount of pressure to ensure a firm grip).

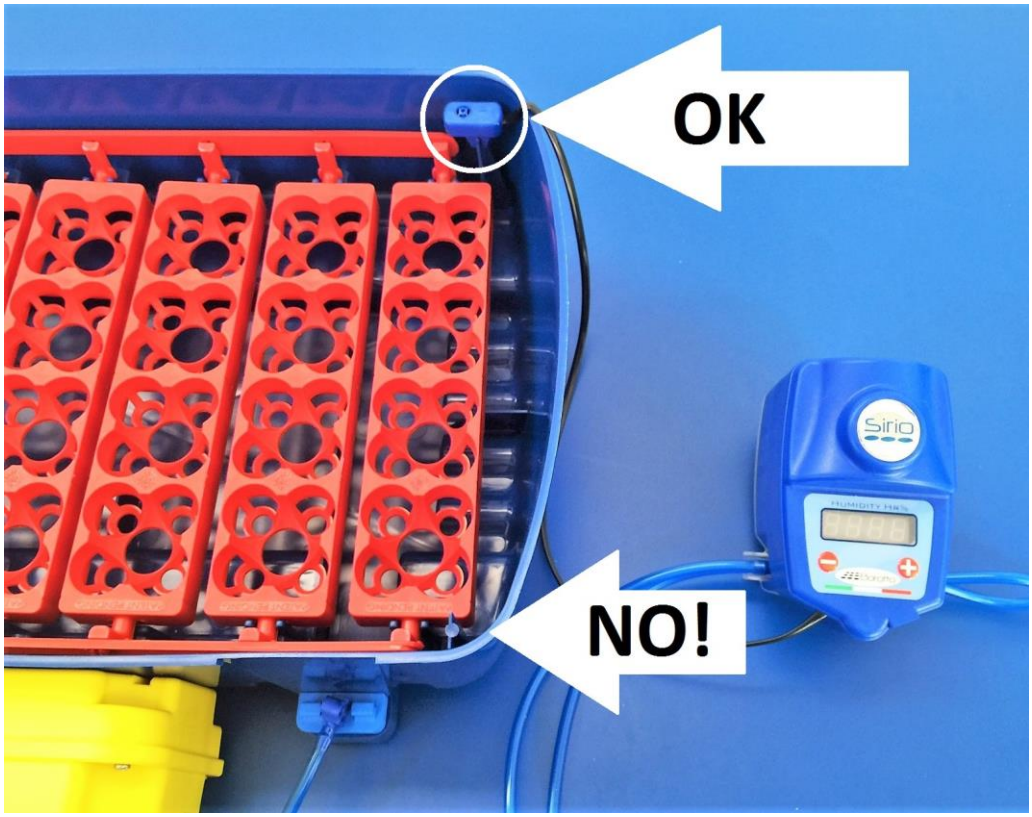
The sensor cable must remain resting on the flat side on the edge of the incubator as shown in the photo. It is a special anti-crushing cable, therefore it will not be damaged with the machine closed.

The imperfect closure of the cover over the wire does not compromise functionality or the hatching results of the incubator in any way.

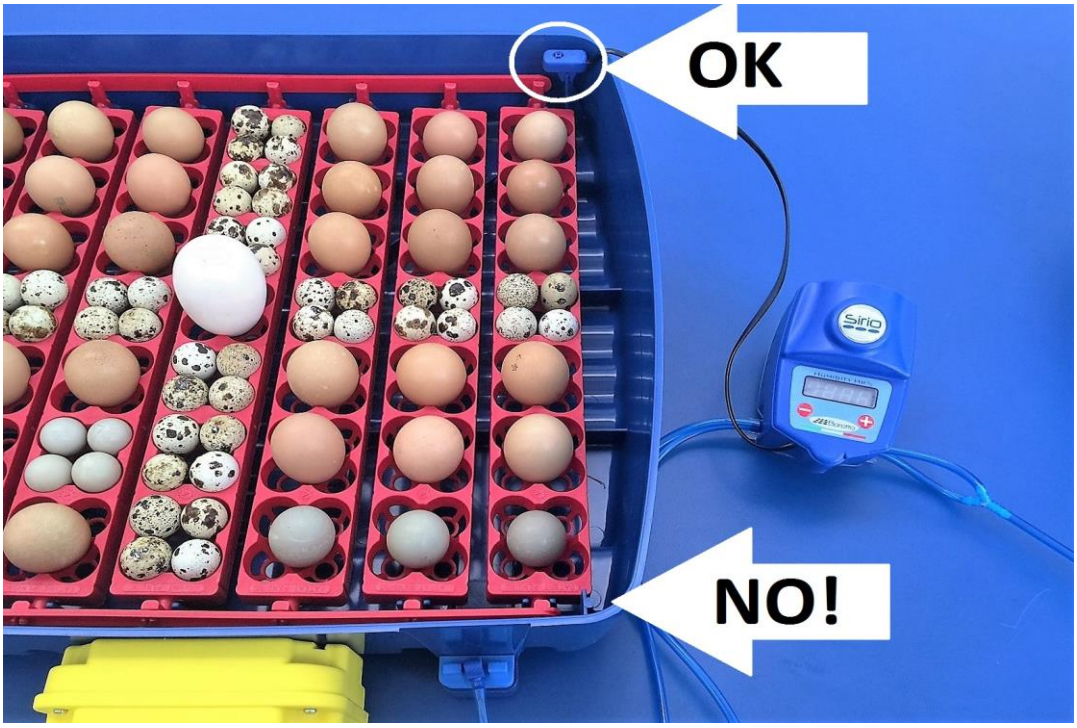
Position the humidity sensor on the motor side of the incubator, away from the filling nozzles.

DO NOT PLACE THE SENSOR
ABOVE THE WATER INLET TANKS!

LUMIA SERIES



REAL 24



REAL 49

7– Using SIRIO during incubation

Turn on the incubator and make it run dry without water and without eggs for a few hours.

After two hours of no-load operation, insert the eggs and make it run for at 2-3 more hours.

After the 2-3 hours of incubator operation with the eggs inserted, turn on SIRIO by inserting the power supply jack in its front socket. Next insert the plug-in into a power outlet.

The display will show the detected humidity value, with “H” symbol meaning “humidity”.

To set the desired humidity value, press the (+) and (-) buttons located on the control panel. By pressing either of the two keys, you activate the memory (the letter “P” appears next to the numbers). Press the corresponding (+) and (-) buttons until the desired value is reached, as per section No. 9. Once the humidity is set, wait for the value to be saved (when current internal humidity re-appears along with the letter “H” on the display).

From this moment, SIRIO starts working by pumping water inside the incubator only when necessary, displaying a rotating symbol on the monitor. When not pumping, the unit will be in standby mode monitoring the humidity.

SIRIO is programmed to inject water droplets, little by little, in order to allow the evaporation effects humidity. Upon start-up, it will require 2 to 4 hours to reach the set humidity value. If the quantity of water inside the incubator is more than necessary, the time required to reach the set humidity value may be longer.

ATTENTION: if for brief periods (even a whole day) the humidity is not correct, this does NOT result in any imbalance in the incubating process in progress.

ATTENTION: if during incubation it were necessary to carry out candling or cool down the eggs (as with incubation of palmipeds), disconnect SIRIO from the power outlet before opening the cover. This will keep the pump from continuing to insert water into the incubator when the humidity goes down due to opening.

Once the operations are completed, reconnect SIRIO to the power outlet after at least two hours.

ATTENTION: Do not incubate with the environment temperature below 68°F. **Below this value, the incubator base will be cool, preventing the water from evaporating (creating humidity). The SIRIO pump will sense the low humidity and continue to pump water, resulting in flooding of the incubator.**

Thus, if during the incubation the water level is detected as higher than that of the eggcup, immediately disconnect the SIRIO pump, in order to avoid flooding the eggs!

8 – Using SIRIO during hatching

Once the incubation phase is completed, begin the hatching phase:

- Disconnect SIRIO from the power supply.
- Prepare the incubator for hatching (see the instructions manual of your incubator).
- Reconnect SIRIO to the power supply once the incubator temperature is stable at the set value.
- Set SIRIO to the value as directed by the table in paragraph No 9.
- At the end of the hatching, before disconnecting the incubator from the power outlet, remove the SIRIO humidity sensor from inside. If left in the incubator after it has been turned off, it would be ruined due to the possible condensation.

NOTE: During hatching, especially if the incubator is placed in a dry environment, the set humidity level may not be reached, causing the the SIRIO to overflow the internal trays, flooding the bottom of the incubator.

Not reaching the set humidity value does not compromise the result. The first chick births, since they are wet, will cause a quick increase of the relative humidity level.

ATTENTION: Do not incubate with the environment temperature below 68°F. Below this value, the temperature of the plastic bottom of the incubator (cold) does not allow the water to evaporate. SIRIO will continue to pump water into the incubator, unnecessarily flooding it.

Thus, if during the hatching the water level were detected as higher than that of the hatching grid, immediately disconnect the SIRIO pump, in order to avoid flooding the eggs!

9 – Humidity parameters for incubation

Indicative table for any poultry:	**Indicative table for exotic birds:**
During incubation phase: 45% RH	During incubation phase: 40% RH
During hatching phase 60% RH	During Hatching phase: 60% RH

ATTENTION: it is recommended that the relative humidity during the incubation is maintained at relatively low values, rather than high. The egg must in fact loose about 11-13% of its initial weight, in this way, it will enable the creation of a large air chamber, which in the next phase of hatching, will enable the chick to dilate the lungs, take the first breath and start more vigorously to break the shell.

Even during hatching, too high humidity values cause condensation on the egg, plugging the pores of the shell. This reduces the embryo respiration, weakening it and reducing its strength to break the shell. At values higher than 75% of relative humidity, the pores of the shell are completely occluded, leading to the death by asphyxia of the chick!

10 – Using SIRIO with other brand incubators

The process and the incubation/hatching parameters do not significantly differ from other incubators. The only significant change could be the structure of the machine.

To apply SIRIO to an incubator machine different from the Borotto ones:

- Remove the two rubber valves from the tubes (those normally inserted in the nozzles);
- Pass the two tubes through the ventilation holes. If there were any missing, add as needed. The PVC pipes must reach the tray or the water trays present inside the incubator, leave the two tubes resting in the tray or trays depending on the incubator model.
- Position the humidity sensor in the incubator and fasten it with a zip tie. If it is not possible to insert the humidity sensor through an air intake, pass it through the egg loading door. The anti-crushing cable will secure functionality.

11– SIRIO maintenance and cleaning

ATTENTION: The SIRIO humidity sensor requires an incubator temperature above 96.8°F.
To make it work, the sensor must be inserted into an operating and warmed incubator.

The operation described below is highly recommended, if SIRIO is left stopped for more than one month, water may stagnate in the pipes, supporting bacterial flora that when pumped into the incubator may generate bacterial contamination of the embryo, resulting in death!
Therefore, at the end of each incubation cycle:

- Blow (best if using compressed air) the sensor, absolutely avoiding opening the sensor-door;
- Carry out the following routine cleaning and disinfection of the water circuit:
    - Bring the humidity value set on the display to the maximum;
    - Insert the water intake tube into a solution of water and 10% bleach or amukine;
    - Let the pump run for approximately 15 minutes, recovering and disposing of the pumped aqueous solution;
    - Leave the pump running dry for another 15 minutes.

We recommend using bleach since it destroys the bacterial flora and any residue does not damage the embryos under development.
DO NOT USE ANY OTHER CHEMICAL SUBSTANCES FOR CLEANING AND SANITIZING SIRIO FOR ANY REASON!
With variable frequency, depending on hardness of the water used and after a few hatching cycles, besides the described washing of the water circuit using disinfectant solution, it is possible to carry out a descaling cycle, using the same procedure, a solution of water and descaling agent or vinegar.
During a stop period, at least once a month, turn on SIRIO and run it dry for few minutes, this will make it possible to eliminate the memory effect from the pumps where they are crushed.

12 – Disposal

In implementation of Directives 2011/65/EU and 2012/19/EU, LEGISLATIVE DECREE 4 March 2014, no. 27 and LEGISLATIVE DECREE 14 March 2014 , no. 49, relative to the use of hazardous substances in electrical and electronic equipment and the disposal of waste, the symbol of the crossed wheelie bin, shown here, indicates that at the end of its service life the product must be collected separately from other waste.
The user shall therefore deliver the appliance at the end of its service life to the suitable electric and electronic separate waste collection facilities. Appropriate separate collection for subsequent recycling of the decommissioned appliance, treatment and environmentally compatible disposal contributes to avoiding possible negative effects on the environment and health and promotes the recycling of the materials the appliance consists of.
Unlawful disposal by the user involves the application of the administrative sanctions provided for by the laws in force. The information related to the correct procedure of available collection systems must be obtained from the Local Waste Disposal Service.

EEE ITALY REGISTRATION NUMBER: IT14080000008557

13 – Warranty / after sale service

BOROTTO® (hereinafter the Manufacturer) grants a 24 month warranty to the product from the date of purchase. During this period, the Manufacturer undertakes to repair at its expense any defect that might occur during normal operation of the appliance, attributable to manufacture.

NOTE: the rubber hoses have no warranty.

Upon requesting servicing under warranty, show this contract complete with date, stamp and signature.

The appliance must be shipped in its original packaging under the customer's responsibility.

If the appliance is in the warranty period and has been used correctly it will be repaired free of charge. It is understood that no reimbursement shall be acknowledged in the event of lack of fault or defect of the product. However, the Manufacturer reserves the right to charge to the customer the expenses incurred for the demand for servicing in warranty in the absence of the prerequisites.

The warranty does not cover damage caused by:

- transport;
- wear, water, dirt;
- use in conditions other than those herein specified by the Manufacturer;
- repairs or modifications made by personnel not authorised by the Manufacturer;
- force majeure (earthquakes, floods, fires etc.).

Only use the appliance for the purpose it is intended for; uses other than those indicated in these instructions shall be deemed as hazardous and the Manufacturer disclaims any and all liability for any damage to persons, animals or property arising from failure to comply with this warning.

The Manufacturer shall not be deemed liable, nor shall they grant any servicing under warranty or compensation for negative results due to failure to comply with these instructions, misuse, incorrect installation of the appliance or problems arising from the inadequacy of the electrical installations or other facilities, or arising from environmental, climate or other conditions, or from entrusting the appliance to minors or persons manifestly unsuitable to using or handling the appliance.

No compensation shall be requested from the Manufacturer for indirect damage due to loss of material occurred as a consequence of product defects such as, eggs inserted or to be inserted in the incubator, or further damage to property, persons or animals.

Please contact us for warranty service:

Premier 1 Supplies
2031 300th St, Washington, Iowa 52353
800-282-6631
premier1supplies.com

Date, stamp and signature for the warranty: