

COVINA SUPER 49

Use and maintenance manual / User information manual for artificial incubation of eggs



Art. 549
Semi-automatic incubator



Art. 549/A
Automatic incubator

RIVER SYSTEMS SRL

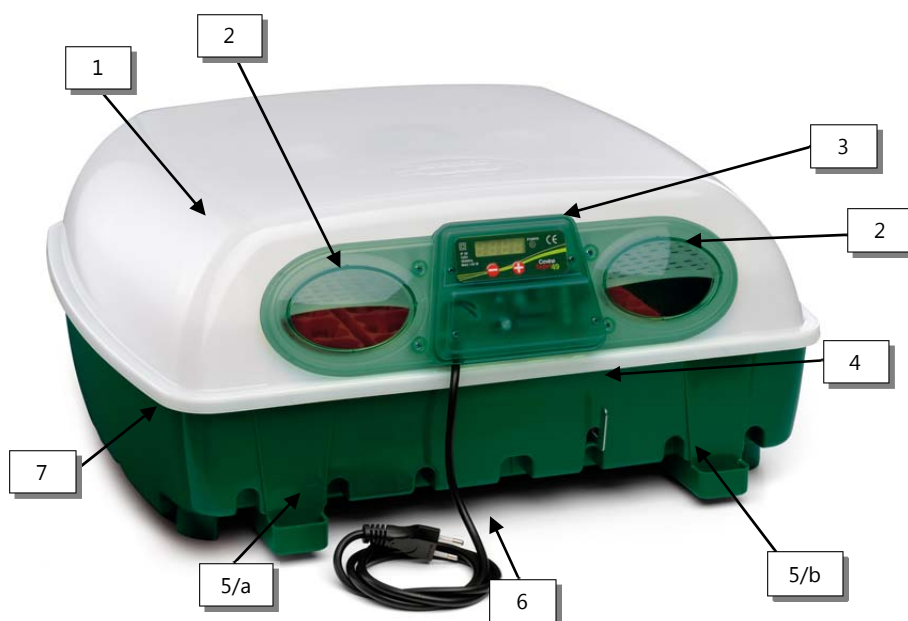
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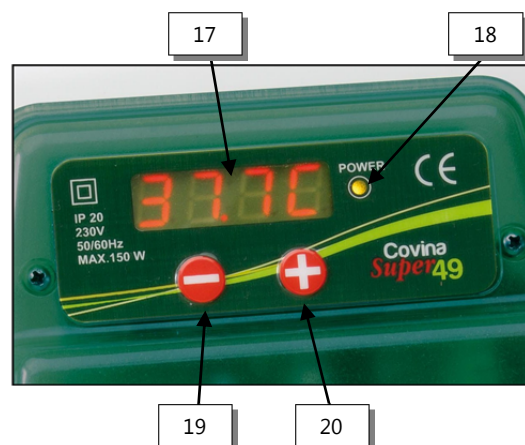
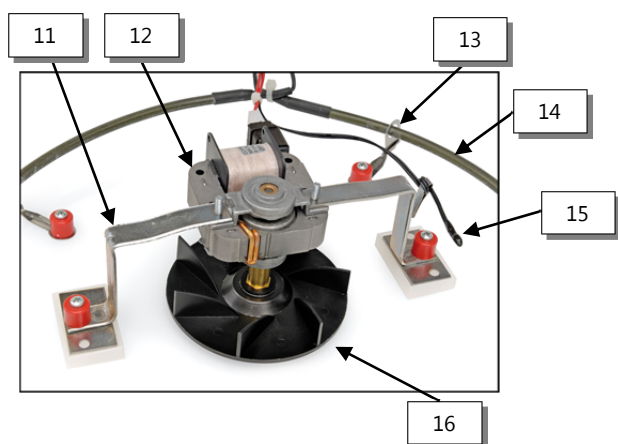
Art. 549



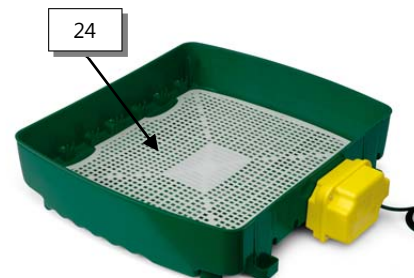
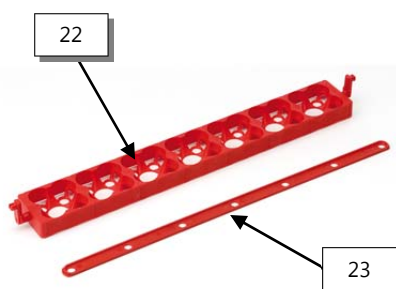
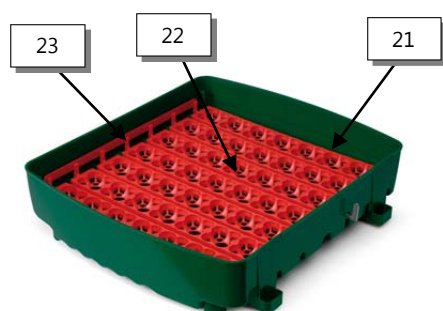
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Art. 549/A





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1 – INTRODUCTION

The COVINA SUPER 49 is designed to hatch hen-eggs as well as pheasant, guinea fowl, quail, partridge, grey partridge, rock partridge, turkey, palmipeds (goose, mallard, all breeds of duck, etc.), peacock, pigeon, exotic birds and birds of prey.

Art. **549** is supplied with a semi-automatic egg turning system, manually operated from the outside by means of a small handle connected to the swinging egg tray in the machine. It is possible to retrofit the egg turning motor (art. 556M-1) to automatically tilt the egg tray. Assembly instructions supplied with the motor.

Art. **549/A** is complete with the motor for the automatic tilting of the swinging egg tray.

A high-quality steel electric resistor produces the heat necessary for incubation. It is controlled by a reliable electronic precision thermostat that allows setting the temperature inside the incubator (from 30°C to 40°C) and keeping it constant and accurate. The temperature is set by pressing the (+) and (-) buttons on the control panel.

A turbine fan uniformly distributes the warm and humid air inside the incubator.

The natural "surface-type" humidification is achieved by the molded water basins at the base of the incubator. The two openings at the front allow for filling the basins from the outside, without opening the incubator, thus preventing any heat and humidity loss.

2 – TECHNICAL SPECIFICATIONS AND DATA

Incubator model	Covina Super 49 (art. 549) – semi-automatic Covina Super 49 (art. 549/A) – automatic
Type of eggs to incubate	Hen, pheasant, guinea fowl, quail, partridge, grey partridge, rock partridge, turkey, palmipeds (goose, mallard, all breeds of duck, etc.), peacock, pigeon, exotic birds and birds of prey
Rated voltage	Single phase, 230 Volt CE
Rated frequency	50/60 Hz CE
Maximum power	150 W
Average daily consumption	Max. 2 kW/24h
Display	Digital temperature setting with decimal point
Ventilation	Turbine-type
Thermostat	Electronic precision thermostat +/-0,1°C
Electrical resistor	150W
Humidity in the incubator	45-55% with water in one basin 60-65% with water in both basins
Number of egg turnings in 24h	Art. 549 : with eggs placed in the egg tray: minimum 4 times Art. 549/A : one inclination every two hours
Incubator capacity	49 eggs of medium/large size or 196 small eggs (e.g. quail) placed in the egg tray
Dimensions	Art. 549 : 580x520x250 mm Art. 549/A : 580x570x250 mm
Weight	Art. 549 : 5,0 Kg Art. 549/A : 5,5 Kg

3 – EGG SELECTION AND STORAGE FOR INCUBATION

It is advisable to incubate eggs coming from one's own stock, as eggs that have travelled will have hatching rates below 50% due to stress, vibrations, sudden changes in temperature and asphyxiated embryos (where packaging fails to let the eggs breathe). Anyway, if you use eggs that have travelled, let them rest into an egg tray for at least 24 hours, their point downwards, before incubating them.

Choose eggs from parent stock that are well developed, well fed and healthy.

Parent stock mustn't be blood-related (males must come from a different source), interbreeding can produce eggs with weak embryos, with a high mortality rate (a weak chick develops but without the strength required to hatch).

Ensure all birds are sexually mature and that the correct ratios between males and females are observed.

Please refer to the following table:

Bird	PROPORTION BETWEEN			SEXUAL MATURITY	
	Male	and	Female	Male	Female
Hen	1		6	6/8 months	6/8 months
Pheasant	1		4	6/7 months	6/7 months
Duck	1		4	8 months	4 months
Goose	1		4	8 months	7 months
Guinea fowl	1		2	8/10 months	8/10 months
Partridge	1		1	10/12 months	10/12 months
Quail	1		3	60 days	50 days
Turkey	1		8	7 months	7 months

Please remember that parent stock older than 3 years lose fertility.

The embryo starts developing before incubation and therefore needs to be appropriately cared for. The hatching rate will decrease if incorrect procedure is followed. Here below are some rules that will help you to obtain healthier eggs:

1. Collect the eggs at least 3-4 times a day. In summer collect them at least 5 times a day. Never incubate eggs that have been kept at a temperature above +26°C or below +5°C; beyond these temperatures the embryo dies. **Never store the eggs in the refrigerator.**
2. Do not incubate dirty eggs: incubation temperatures and humidity will increase bacterial infection caused by organic material (manure, blood, soil, etc.) contaminating the embryo and causing fatalities. Never wash the eggs. If dirty, gently brush them with a dry abrasive sponge to clean.
3. Keep the eggs in a cool room with temperature between +14°C and +18°C and humidity of about 65-75%. Keep the eggs in the egg trays with the point downwards.
4. Eggs are good for incubation from 2nd to 6th/7th day from laying. Incubating eggs older than 8 days considerably reduces the hatching rate, which will be close to zero in case of eggs kept for more than 15 days.
5. Choose eggs with normal shape (they should not be oblong, spherical, corrugated or misshapen in any way).
6. The egg shell must not be cracked, thin, broken, soft, tapered or blue spotted (old eggs).
7. Allow the cold eggs (from storage temperature) to warm to room temperature gradually before putting them into the incubator. A sudden heating from +12°C to +38°C would cause moisture on the egg shell leading to decreased hatching rates.
8. Avoid incubating eggs from different species. Do not add eggs after having started incubation.

4 – PREPARATION AND START-UP OF THE INCUBATOR

To obtain a successful hatching it is important to choose an appropriate location for the incubator. The temperature in the room where the machine is housed must be between +20°C and +25°C, it should be comfortable, clean and well aired but devoid of air draughts (e.g. not a stable or a garage). Make sure that the machine is not exposed to direct sun light or placed next to heat sources such as radiators, stoves, etc. The relative humidity should be between 50% and 75%.

DO NOT USE THE INCUBATOR IN ROOMS WHERE THE TEMPERATURE IS BELOW +20°C OR ABOVE +25°C. We suggest you keep it at home.

Do not use or store the incubator in a room where there are chemicals, poisonous, toxic or flammable substances, even in small concentrations, as they will negatively affect the development of embryos.

Do not use the incubator where there is the risk of contact with water or other liquids.

Proceed as follows:

- A) Place the incubator on a flat wooden table. The base must rest directly on the table in order to prevent any obstruction of the ventilation holes.
- B) Remove the lid and place it beside the machine, keeping the grill downwards.

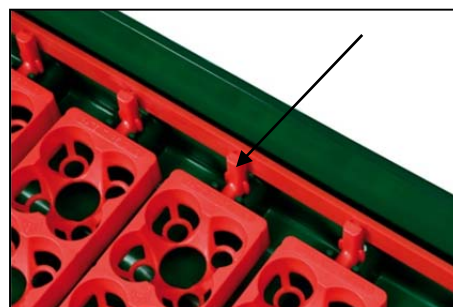
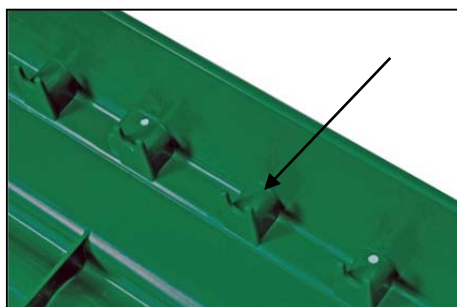
- C) Remove the plastic floor from the base of the incubator, as it is necessary only for hatching (last 3 days). DO NOT LEAVE IT INSIDE THE MACHINE DURING INCUBATION!



NB: store the plastic floor on a flat surface so that it won't deform.



- D) Ensure that the egg tray is in the correct position (on its supports) and that the cradle rows tilt freely in the two directions.



- E) Fill basin 5/a with lukewarm water. Pour the water into the corresponding opening at the front left hand side of the incubator. Do this slowly, taking care not to allow the water to overflow from the basin: too much liquid would increase in the humidity rate lowering the hatching percentage. The second basin (5/b) will be used only for the hatching phase.



- F) Replace the lid. Ensure that the edge of the lower box locates perfectly with the slot in the lid.



- G) Plug the machine into a socket. The fan will start immediately, followed by the display that shows the temperature inside the incubator. The yellow LED indicates that the resistor is working. It will remain illuminated for 20-40 minutes, until the set temperature is reached; it will then flash intermittently at 2-3 seconds intervals.



The machine is pre-set at a temperature of 37,7°C, ideal for all species of birds. It is recommended you reset the temperature following the instructions here below.

4A – TEMPERATURE SETTING AND ADJUSTMENT

To set and adjust the temperature press the (+) and (-) buttons on the control panel. Press one of the two buttons to enter the Programme Mode (the display shows a "P" beside the temperature). Press and release (+) or (-) to set the desired temperature. This will be memorized after a few seconds (the display will show the present internal temperature and the letter "C").



Display with temperature in Programme Mode (temperature followed by "P")

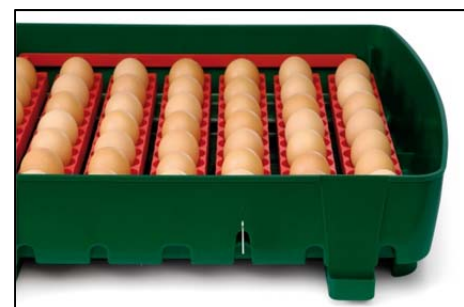


Display with present internal temperature (temperature followed by "C")

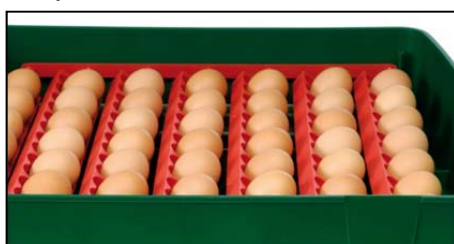
Once the new temperature is set, allow the machine to stabilize and check optimum temperature is attained. If you increase it, the resistor will activate (the LED will be on) heating the air until the temperature is reached. If you decrease it, the resistor will remain inactive (the led will be off) to allow the air inside the incubator to cool.

- H) Run the machine empty (without eggs) for at least 2-3 hours in order to stabilize temperature and humidity.

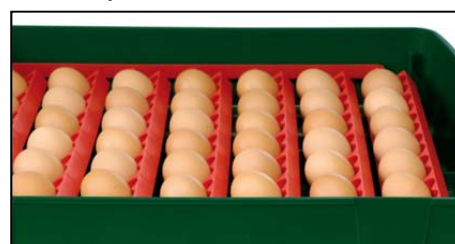
- I) After ensuring that the machine functions correctly remove the lid and place it beside the incubator. Gently place the eggs into the tray cradles, **their point downwards**. Replace the lid.



Only for art. 549/A: start the egg turning motor by plugging it in. The motor will start working. The egg tray executes one tilting every two hours. Note: its movement is scarcely noticeable as it is very slow.



One hour after starting the motor



Two hours later

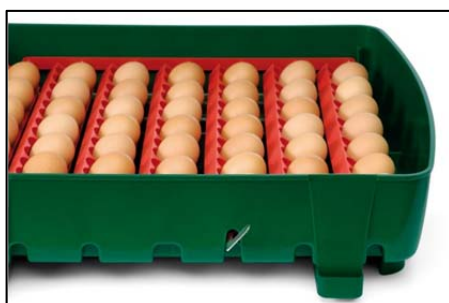
Do not cover the incubator or keep it in a box whilst in use. This would prevent the air exchange in the incubator, necessary for the embryo development, that takes place through the ventilation holes present in the base of the incubator and through the two inspection windows.



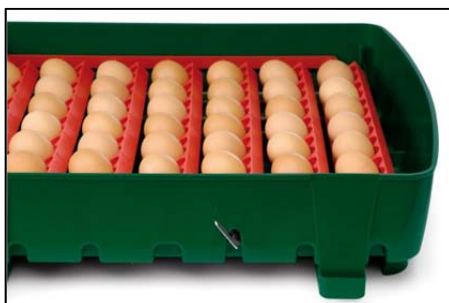
The incubation cycle starts now. Mark the date on a calendar and follow the instructions shown on table 4C "Information For A Correct Incubation".

Only for art. 549: change the inclination of the eggs at least 4 times a day by tilting the handle placed in the front of the incubator. The handle must rest alternately at the 10 o'clock position to the left or the 2 o'clock position to the right. NEVER LEAVE THE HANDLE (AND THEREFORE THE EGGS) IN A VERTICAL POSITION (h. 12.00). Move the handle gently in order to avoid shocks to the eggs.

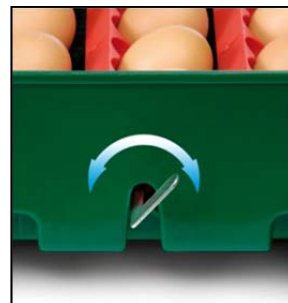
When used with the egg turning motor (art. 556M-1), ensure that the cradles of the egg tray make a complete inclination every two hours.



Inclination rightwards



Inclination leftwards



Handle rotation

Monitor the water level in the basin by looking into the opening every 24 hours (the level you can see inside the opening corresponds to the one in the basin). Fill up with clean and warm water (+35/40°C).

Please beware that it is the water surface and not its quantity that generates the humidity, therefore the quantity of water in the basin will not affect the humidity rate. The punctual and constant check for the presence of water will provide the necessary humidity, preventing the basin from running out of water.

In case of power failure, surround the four sides of the incubator with bottles containing hot water and cover everything with a blanket. This allows the temperature within the incubator to be retained. Once the power is restored, immediately remove all of these items. Do not keep the incubator covered for long periods: low oxygen levels inside the incubator will drastically reduce the hatching rate.

It is possible that during the first incubation cycles the self lubricating turbine brasses may drip some oil onto the central part of the protection grill. This oil is not harmful to the eggs or to the chicks. Remove it with a cloth moistened with alcohol during the cleaning operations at the end of the cycle.

4B – INCUBATION OF PALMIPEDS-EGGS (GOOSE, DUCK, ETC.)

From day 10 of incubation to three days prior the foreseen hatching date, open the incubator and let the eggs cool for 15 minutes each day. Before putting the lid back on, spray a misting of water on the eggs. During this operation you may unplug the machine.

4C – INFORMATION FOR A CORRECT INCUBATION

Suggested temperature at the beginning of incubation: 37,7°C

Suggested temperature during the last 3 days before hatching: 37,2°C.

Please make reference to the following chart in order to have a successful hatching:

Species	Incubation time	For a correct humidity at the beginning of incubation	Do not turn the eggs after	For a correct humidity during the last 3 days before hatching
Hen	21 days	Fill up 1 water basin	Day 18	Fill up the 2 water basins
Pheasant	23-25 days	Fill up 1 water basin	Day 20	Fill up the 2 water basins
Quail	16-17 days	Fill up 1 water basin	Day 14	Fill up the 2 water basins
Guinea fowl	26-28 days	Fill up 1 water basin	Day 23	Fill up the 2 water basins
Turkey	28 days	Fill up 1 water basin	Day 25	Fill up the 2 water basins
Partridge	23-24 days	Fill up 1 water basin	Day 20	Fill up the 2 water basins
Peacock	28 days	Fill up 1 water basin	Day 25	Fill up the 2 water basins
Goose	29-31 days	Fill up 1 water basin	Day 27	Fill up the 2 water basins
Duck / Mallard	27-28 days	Fill up 1 water basin	Day 24	Fill up the 2 water basins
Muscovy duck	33-35 days	Fill up 1 water basin	Day 30	Fill up the 2 water basins

5 – PERIODIC CHECK OF EGGS DURING INCUBATION (CANDLING)

The candling is a delicate and complex operation that can lead to eliminating fertilized eggs by mistake. Since it is facultative, if you are not experienced we recommend proceeding directly with the incubation.

You can periodically check the incubated eggs by candling them. This operation should be carried out in a dark room, using a strong beam (e.g. the River Systems' egg tester art. 164), as per the following chart:

Species	1 st check	2 nd check	3 rd check
Hen	at 8 days	at 11 days	at 18 days
Pheasant	at 8 days	at 12 days	at 19 days
Guinea fowl	at 8 days	at 13 days	at 24 days
Turkey	at 8 days	at 13 days	at 24 days
Partridge	at 8 days	at 12 days	at 19 days
Peacock	at 9 days	at 14 days	at 24 days
Goose	at 9 days	at 15 days	at 24 days
Duck / Mallard	at 9 days	at 13 days	at 24 days
Muscovy duck	at 10 days	at 15 days	at 25 days

Take the eggs individually from the incubator and check them immediately. The egg can stay out of the incubator for maximum 2 minutes. With a little experience, and if you use the egg tester, you can candle the eggs without lifting them. In this case, open the incubator and lay the egg tester on each egg. The beam allows you to see the embryo. Never shake or turn violently the egg as this can break the blood vessels and therefore cause the death of the embryo.

1st check: beginning of incubation

Normally it is difficult to see the embryo, as it is incorporated in the yolk: next to the air cell and at its point you shall see blood vessels. If the egg is not fertilized its inside is uniform, doesn't show blood vessels and the yolk is right in the middle. Discard these eggs.

It is possible that eggs with a thick shell or brown ones don't allow a clear view of their interior at this stage: leave them to the second check.

2nd check: development of the embryo

You will normally see a network of blood vessels at the point of the egg and the embryo will look like a dark spot. If the blood vessels are not present, it means that the embryo is lost.

3rd check: verification of the embryo

Normally the embryo occupies the entire egg, therefore the blood vessels shall be no longer visible. The air cell is big. If the embryo doesn't fill the whole egg, blood vessels are still visible, the air cell is small and the albumen has not been used up, it means that the embryo is underdeveloped and the egg should be discarded.

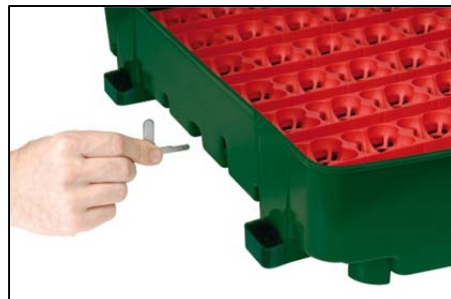
6 – HATCHING AND BIRTH OF THE CHICK

The following operation is very delicate and should be executed quickly to prevent the eggs from cooling. We suggest that two people perform it in order to reduce the time as much as possible.

Three days before the expected hatching date:

Only for art. 549/A: stop the egg turning motor by unplugging it when the eggs are in a vertical position: this will facilitate the removal of the egg tray after the eggs have been taken out.

A) Remove the eggs from the swinging tray and place them gently on a blanket.



B) **Only for art. 549:** remove the metal handle from the front of the incubator.

C) Remove the egg tray.

Only for art. 549/A: to remove the egg tray, simply lift it, pulling it out from the steel tongue of the motor (be careful to reinsert it correctly when you relocate the egg tray).

If after several incubation cycles you notice that the slit where the motor steel tongue is inserted is too large, swap the row with another of the tray.



D) Put the supplied plastic grill floor (removed at the beginning of the incubation) into the base of the incubator, ensuring that the two plastic tongues cover the internal side of the water openings, so that the chicks will not fall into them and drown.



E) Distribute the eggs on the grill and close the lid.



F) Fill both basins (5/a and 5/b) with lukewarm water.

G) Set the temperature to 37,2°C (see instructions on page 28)

IMPORTANT - during the last 3 days:

- Do not turn the eggs
- Do not open the incubator unnecessarily as the humidity and the heat necessary for the hatching would escape, causing the loss of the chick inside the shell. Open the incubator A MAXIMUM OF ONCE A DAY to extract the dried off chicks.

Keep the newborn chicks in the incubator for about 12 hours. They can stay in the incubator for 3 days without drinking or eating without damage.

7 – FIRST DAYS OF LIFE

Put the chicks in a draught-free room provided with the necessary heat and light where they can be fed and watered.

TIPS: you can use a 50x50 carton box. Cover the bottom with newspaper sheets that will require daily renewal. You can also create a small pen using the plastic panels art. 4510-09 (size of each panel: cm 800x400).

For heating, you can hang a reflector with an infrared heat lamp (see list below) at approximately 20-25 cm from the floor. The temperature can be adjusted by changing the height of the lamp. The box or the pen should be big enough to contain a drinker and a feeder.

7A – BENEFITS OF THE INFRARED HEAT LAMP

The infrared heat lamps do not only heat the chick; they also act deeply, on the tissues and muscles, fixing the calcium in the bones and helping the expansion of the blood and lymph vessels, thus improving the blood circulation and, consequently, the nutrition of the cells. This assists the healthy growth of the chick that will also be more resistant to diseases.

The reflector (of aluminium or polycarbonate) increases the concentration of the infrared rays coming from the bulb.

- art. 701: aluminium reflector Ø 21 cm, complete with hanging chain L=2m and protection grill
- art. 702: reflector in clear polycarbonate Ø 27 cm (hanging chain L=2m and protection grill are optional)
- art. 750/100: infrared bulb Philips IR100R, heavy
- art. 750/150: infrared bulb Philips 150W, light

7B – NUTRITION

Normally the chicks start eating and drinking from their second/third day of life. Put a drinker and a feeder for fine fodder in the box/pen. We suggest the following products:

Drinkers:

- art. 137: siphon drinker - capacity 1,5 litres in polypropylene (suitable for all chicks, even small sized ones)
- art. 138: siphon drinker - capacity 3 litres in polypropylene (suitable for bigger sized chicks – not quail or pheasant)
- art. 137/A: Bottle-holder drinker for chicks (suitable for bigger sized chicks – not quail or pheasant).

If you use other drinkers, make sure that the basin is not higher than 3-4 cm, otherwise the chicks may get wet or drown. To prevent this, we suggest you put some pebbles inside that will attract them towards the drinking water.

Feeders:

- art. 296: polypropylene tray Ø 24 cm
- art. 120: galvanized feed trough with grill L=0,3 m – or L=0,5 m (art. 121)
- art. 120/A/R: plastic feed trough with grill L=0,5 m

We suggest you sprinkle some fodder on the newspaper sheets too.

8 – PROBLEMS THAT MAY ARISE DURING INCUBATION

Problem	Possible cause	Suggestion
Clear eggs. No blood vessels are visible during candling	Eggs not fertilized due to too many, too few, too old or infertile cocks	Use only young and vigorous cocks, never consanguineous ones
Blood rings are visible while candling	Eggs stored for too long before incubation	Do not store the eggs for more than 7 days
	Too high or too low temperature during storage	Ensure that the room temperature is between +14°C and +18°C
	Inadequate care of the eggs before incubation	Check the correct storing of the eggs
	Eggs not collected frequently enough	Collect the eggs more frequently during the day
Many dead embryos / Chicks die before piercing the shell	Blood-related parent stock	The parent stock must not be siblings
	Old eggs	Store the eggs for max. 7 days
	Old parent stock	Parent stock shall not be older than 3 years
	Only for art. 549: eggs not sufficiently turned during incubation	Turn the eggs at least 4 times a day
	Bacterial contamination	Ensure that the eggs are clean
	Nutritional deficiencies	Feed the parent stock with specific fodder
	Eggs have traveled for long distances	Incubate local eggs only
	Wrong humidity during incubation	Comply with the information given about the filling up of water basins
	The incubator deployed in too hot an environment	Make sure that the room temperature is NOT above +26°C
	The incubator has been opened too often during hatching	Open the incubator max. once a day to remove the dried off chicks
	Other causes	Follow the instructions on chapters 3 and 4
The eggs fracture	Dirty eggs	Incubate clean eggs
Chicks with malformed lower limbs	Incorrect humidity during incubation	Comply with the instructions on the quantity of water necessary. Do not pour water outside the basins when not required
	The incubator worked in a room below +20°C	Make sure the temperature of the room is of at least +20°C
	Blood-related parent stock	The parent stock shall not be siblings

9 – MAINTENANCE AND STORAGE OF THE INCUBATOR AT THE END OF THE CYCLE

At the end of the cycle, thoroughly clean the lower part of the incubator with neutral detergent first, then disinfect it with a chlorine-based disinfectant or some household bleach.

Thoroughly clean the lid exterior with a soft cloth, dampened with clean water and squeezed out.

The external part of the protection grill of the lid should be cleaned with a soft cloth moistened with alcohol. Blow the internal part with compressed air to remove any feathers dropped by the chicks.

DURING THIS OPERATION THE MACHINE SHALL BE UNPLUGGED.

Do not use solvents, diluents and toxic chemicals.

Allow all parts to dry thoroughly. Place the incubator in a dry place, safe from shocks and changes in temperature. Do not put any other object on top of it.

10 – WARNINGS / ADVICES

- Do not leave the appliance within children's reach;
- Do not use or store the appliance in rooms with corrosive, flammable or explosive substances;
- Do not use the appliance if the electric cord, the electronic circuit or the protection grill are damaged;
- Keep the incubator safe from shocks;
- Do not open the cover of the electronic circuit or remove the fan guard (protection grill);
- Clean the machine after the incubation process is finished. The incubator must be unplugged.
- WARNING: the guarantee lapses if the machine is modified, tampered with or misused.

11 – CONFORMITY OF THE APPLIANCE

This appliance complies with the EC European Directives.

SR-1 EN 60335, EN 55014-1, 2006/95/EC, 2004/108/EC EMC, ROHS 2002/95/EC, 60730-2-1/A11 IEC EN, 60730-2-9 IEC EN, 61032 IEC, UNI EN ISO 13732, UNI EN ISO 13857, IEC 48-8.

12 – GUARANTEE

The machine is granted a 1 year guarantee, commencing on the date of purchase.

Within the guarantee period we will eliminate, free of charge, any defect in the machine, resulting from faults in materials or workmanship, either by repairing or replacing the complete appliance as we may choose.

This guarantee extends to every country where this appliance is supplied by River Systems srl or its appointed distributor.

The guarantee does not cover: damage due to improper use, normal wear or use as well as defects that have a negligible effect on the value or operation of the machine. The guarantee becomes void if repairs are undertaken by unauthorized persons and if original parts are not used.

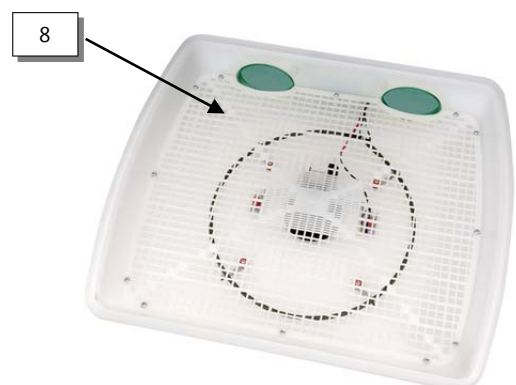
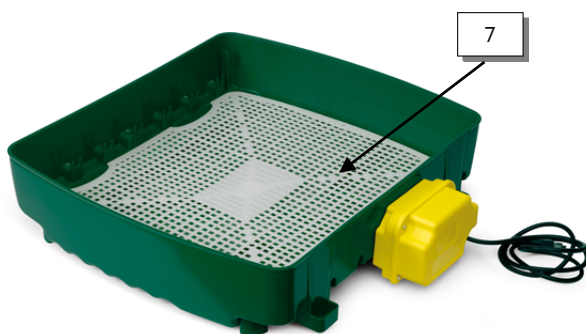
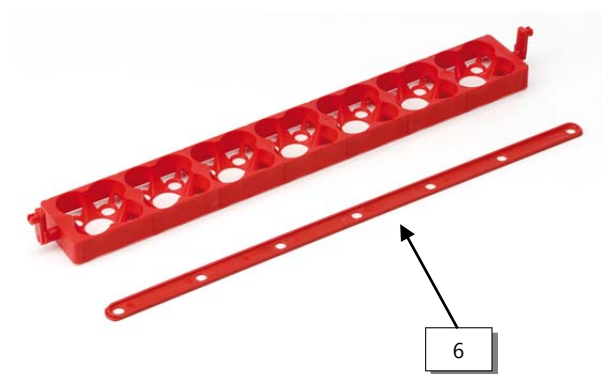
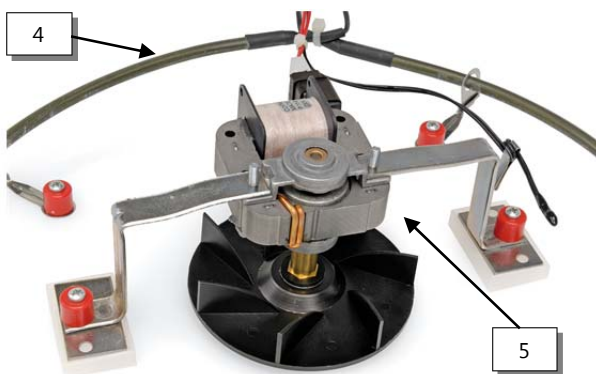
To obtain service within the guarantee period, hand in or send the complete machine with your sales receipt to your retailer.



DISPOSAL OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

According to 2002/95/CE, 2002/96/CE and 2003/108/CE Standards concerning the reduction of the use of dangerous substances in the electrical and electronic devices, as well as the disposal of waste electrical and electronic equipment, the symbol of the crossed refuse bin shown hereinafter indicates that the product, at the end of its working life, should be disposed of correctly at your local recycling centre and should not be disposed of with general household waste. Please contact your local authority for further information. The observation of the procedures helps the recycling of the waste generated by the electric or electronic devices and therefore the preservation of the environment.

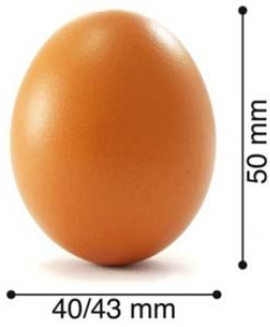
SPARE PARTS



SPARE PARTS

Pos.	Code	Description
1	549-01	Egg tilting handle
2	556M-1	Egg turning motor
3	549-03	Electronic card with display
4	549-04	Resistance
5	549-05	Motor with turbine
6	549-06	Kit egg tray (2 joining bars + 7 cradle elements)
7	549-07	Plastic floor (for hatching)
8	549-08	Upper protection grill

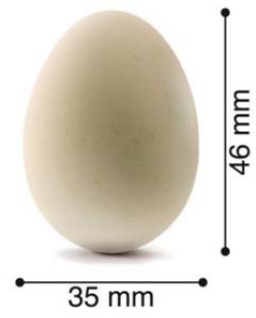
THE EGGS



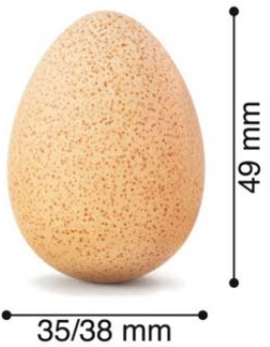
Hen



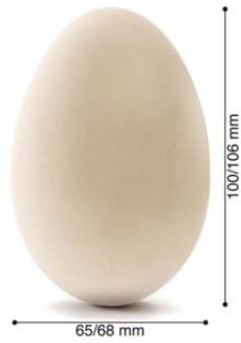
Duck



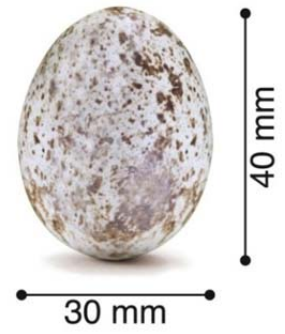
Pheasant



Guinea fowl



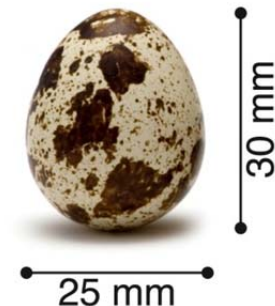
Goose



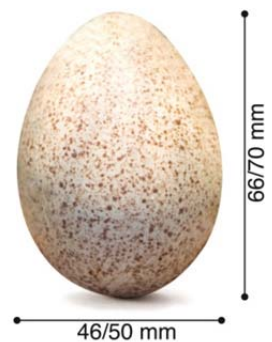
Partridge



Pigeon



Quail



Turkey

EGG SELECTION



EGGS SUITABLE FOR INCUBATION



Good quality eggs



EGGS WITH LOW HATCHING RATE



Scabrous shell



White (not genetically)
and fragile shell



Small egg



Slightly dirty egg



Oblong egg



EGGS TO BE DISCARDED



Soil dirty egg



Blood on the shell



Manure on the shell



Yolk on the shell



Slight crack



Broken



Perforated



Misshapen



Thin shell



Wrinkled shell



Very dirty



Product: _____

Delivery date: _____

Date, stamp and signature of the retailer: