



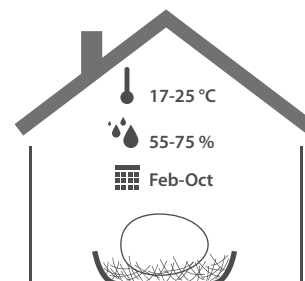
INCUBATOR

USER AND MAINTENANCE INSTRUCTIONS

GENERAL INFORMATION

- The incubator is used to create the ideal conditions so that the fertilized eggs placed in it continue the embryonic development through to the birth of the chicks.
- The highest importance has to be given to the egg.

OPTIMAL CONDITIONS FOR EGG LAYING



- The place must be shaded and well cleaned.
- The nests have not be exposed to direct sunlight or to too much heat, at a temperature included between 16°C and 24°C and humidity between 55% and 75%.
- The fertile period is included between February and October.



The egg has not to be intended for alimentary purposes.



The egg has to be fertilized.



The eggs have to be laid in the nests and not on the ground.



- Use eggs that were collected in hen houses populated with animals that are healthy and well fed. The animals must be fed with balanced diets based on maize, soybean flour, alfalfa, high-protein flours, vitamins, mineral salts and abundant water.
- The animals must be sexually mature: avoid the specimens that are too young or too old. As for the maturation ages, see the table (Table 01).
- Males and females must be correctly proportioned (see the table – Table 02); furthermore, prevent weak or consanguineous subjects from interbreeding (it would cause the death of the embryo).

Table 01: periods in which the sexual maturity is reached

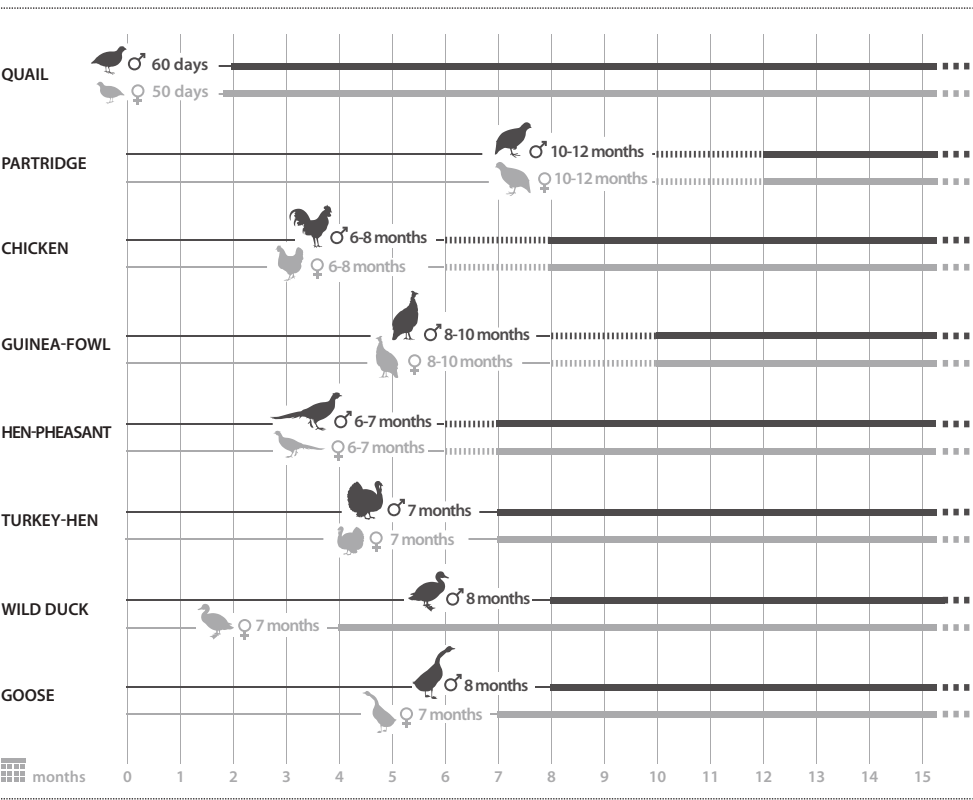


Table 02: optimal ratio between male and female quantities

males ♂		♀ females	
QUAIL			3X
PARTRIDGE			1X
CHICKEN			10X
GUINEA-FOWL			2X

males ♂		♀ females	
HEN-PHEASANT			7X
TURKEY-HEN			10X
WILD DUCK			4X
GOOSE			4X

EGG HARVESTING

Hygienic standards: carefully wash your hands before harvesting the eggs.

The eggs must be harvested shortly after their laying, at least 4 times a day. In case of very high or very low temperatures, harvest the eggs every hour.

Do not bump or hit the eggs. Do not harvest the eggs that are damaged and/or defective, as shown in the photo attachment (Annex C).

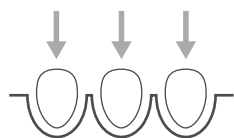
Allow access to the nests only during daytime.

Do not leave the eggs in the nests during the entire night. Close the access to the nests during the night, and then re-open the access early in the morning.

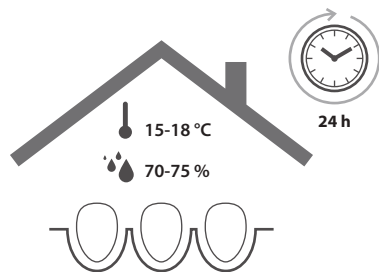
Immediately after egg harvesting, the eggs must be disinfected for a first time. Clean the eggs from possible impurities by using steel wool or a dry cloth with great care.

Do not use water to clean the eggs.

It is advisable to spray the eggs with chlorine-dioxide based solutions.

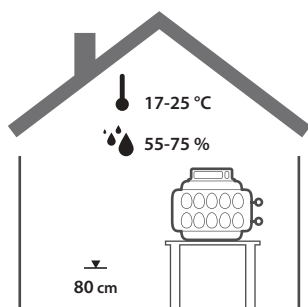


The eggs must be laid into the specific trays with the tip facing downwards. It is advisable to use plastic trays because it is easy to wash and disinfect them.

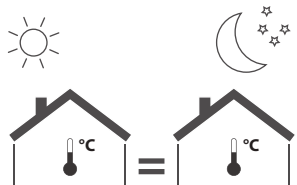


After egg harvesting, keep the eggs for at least 24 hours in a place where the temperature is stable and between 15°C and 18°C, with humidity between 70% and 75%.

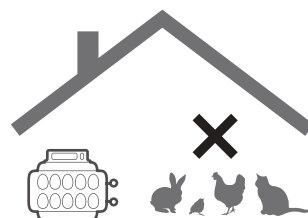
HOW TO POSITION THE INCUBATOR



- Select a place that is clean, odourless, well ventilated and non-dry, where the temperature keeps stable and included between 17°C and 25°C (62°F – 77°F) and humidity included between 45% and 55%.
- The premises must be shaded, and not exposed to direct sunlight or heat sources.
- Do not create sudden changes of temperature and do not create draughts, as they can negatively influence the incubation.
- The supporting plane must be solid and stable; place it at a minimum 80cm (32 inches) height from the floor.

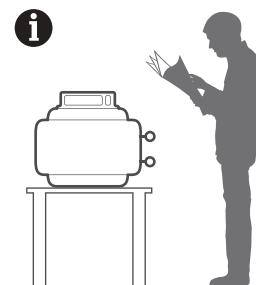


Take into consideration that the temperature detected in the premises influences the correct operation of the device, so the temperature must be kept constant both during the day and the night.

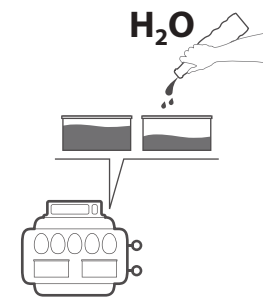


The premises must be free from any type of animal, including newly born chicks.

INCUBATION AND WARNINGS



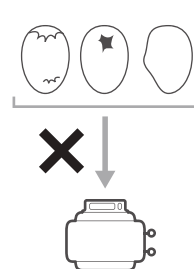
To prepare and correctly operate the incubator, see the attached brochure (**Annex B**).



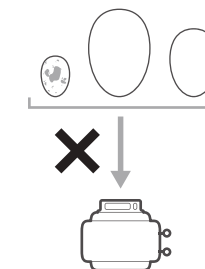
Fill the bowls with water, as shown in the attached brochure (**Annex B**). The incubator was designed to produce the correct humidity level by means of the supplied bowl/s. However, you can increase or reduce the humidity level by adding or removing one or both bowls (having the same capacity, shape and dimensions) when the humidity level being detected in the surrounding environment proves to be higher or lower than the recommended values that are specified in this manual.



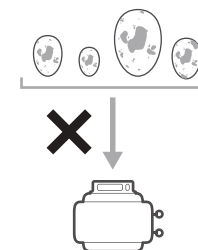
It is advisable to incubate the eggs at least after 24 hours from their laying. However, do not wait more than 5 days (120 hours).



Do not incubate eggs that are damaged, deformed and/or defective, as shown in the photo attachment (**Annex C**).



It is advisable not to simultaneously incubate eggs that belong to different species or with different hatching times (except for incubators that are intended for this specific operation). To know the duration of the incubation period, see the table (**Table 03**).



Even if the eggs belong to the same species, it is advisable not to simultaneously incubate eggs of different size, shape, weight and porosity of the eggshell; otherwise, the hatching of the eggs will take place with different times (except for incubators that are intended for this specific operation - **Annex B**).



WARNING

Likely consequences due to the use of eggs that were laid more than 5 days before or not suitable for the incubation:



the embryos do not reach maturation, or hatching does not take place and the unborn chicks die inside the eggs

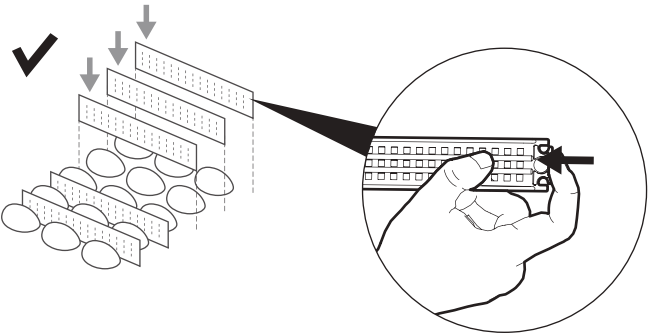


the hatching is delayed and is very irregular with newly born chicks that are poorly vital or deformed. Weak chicks that cannot free themselves of the eggshell



considerable percentage of "clear eggs" because the old germ does not develop

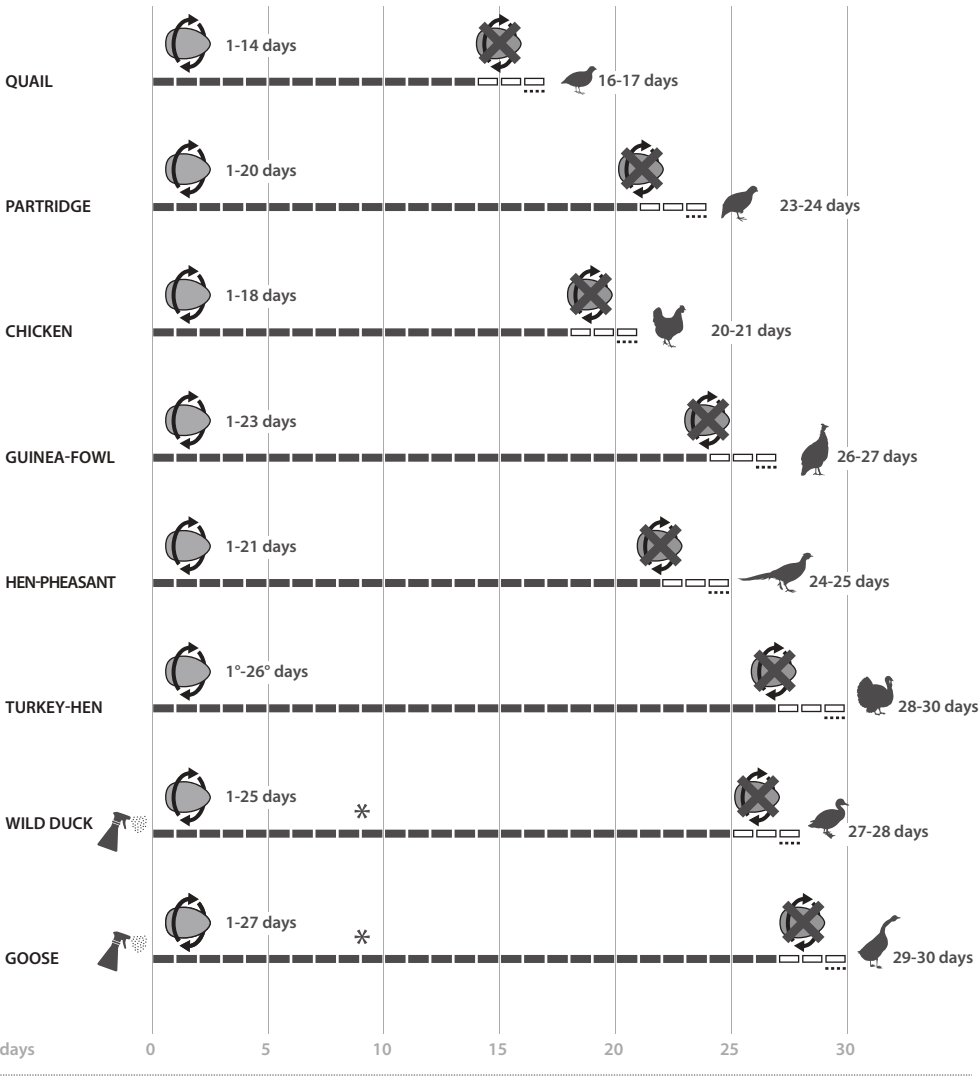
HOW TO USE THE SEPARATORS



Introduce the separators into the specific guides; keep a distance that equals the size of the egg and leave a minimum clearance that allows egg rotation. If the eggs to be incubated are very small, you can introduce one or several egg rows between the separators. If, on the contrary, the eggs are very big, you can remove some separators.

If it is difficult to introduce the separators in the machine due to friction, slightly press the two ends to facilitate their introduction.

Table 03: average duration of the incubation



Legend

Days during which you must rotate the eggs (twice a day)

Days in which the eggs have NOT to be rotated

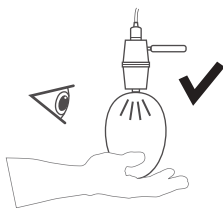
Egg-hatching period

* from day 9, you must open the incubator every day to let the eggs cool down for 15-20 minutes. After that, wet the eggs with sprayed lukewarm water. Do not perform this operation during the last 3 days before egg-hatching.

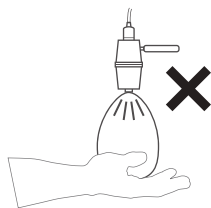
EGG CANDLING



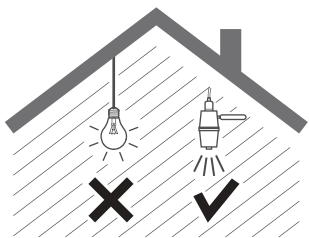
The fertilized egg contains a developing embryo, and you can see a capillary network immediately under the eggshell; the embryo seems a dark spot that becomes bigger and bigger as the incubation goes on. After a certain period, you can see just a dark mass and the air space becomes bigger and bigger.



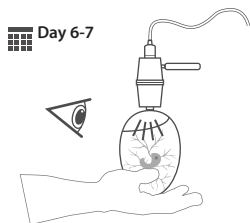
The candling operation is carried out by lighting up the egg with a super-bright torch or rather a specific Novital egg-candling lamp (see the catalogue in the website: www.novital.it).



The candling operation is carried out by lighting up the eggs from the part that is opposite to the tip, which must keep facing downwards.

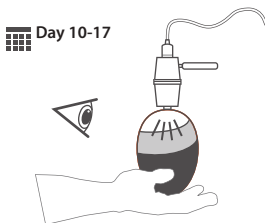


The candling operation is carried out in dark premises. The torch must be the sole light source.



Day 6-7

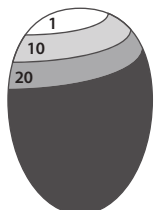
From day 6 - 7, you can "candle" the eggs to remove non-fertilized eggs. This operation is not indispensable.



Day 10-17

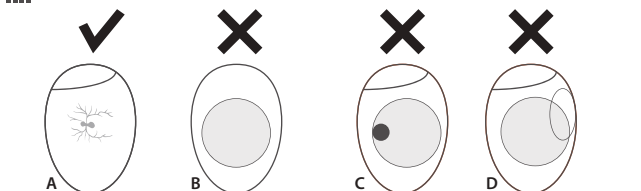
You can repeat this operation between day 10 and 17 (not later than that) to check the correct development of the eggs.

EMBRYO DEVELOPMENT STAGES



Normal development of the air space: with the passing of days, the air space grows as shown.

Day 8



At day 8, use the candling operation to identify the following situations:

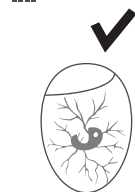
(A) the egg has a network of red blood vessels: normal development of the embryo

(B) the egg reveals no formation: likely premature death of the embryo

(C) the egg has a marked red or black spot: likely premature death of the embryo

(D) the egg has a blood red ring: likely premature death of the embryo

Day 10-12



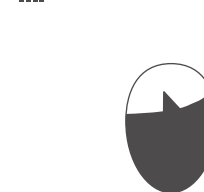
Correct embryo development during the period around day 10: the embryo is growing and the blood vessels are becoming thicker.

Day 16-18



Correct embryo development around day 16: the embryo is considerably growing and, during the candling operation, it appears to be totally dark, except for the air space.

- 1-2 days from egg hatching

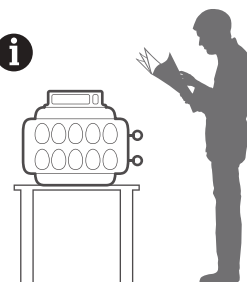


A few hours before egg-hatching (24-48 hours), the live embryo shows the beak in the air space.

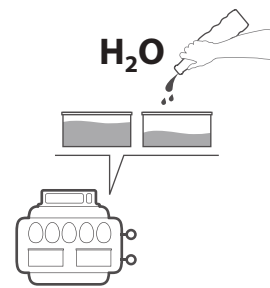


During the last three days, it is not advisable to perform any candling operation.

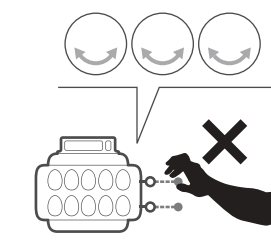
EGG-HATCHING



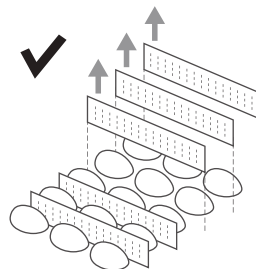
To prepare the incubator to egg-hatching, see the attached brochure (**Annex B**).



Three days before egg-hatching, add water into the bowls so that it will not be necessary to top them up. After that, open the incubator only if it is strictly necessary, not to disturb the delicate egg-hatching period.

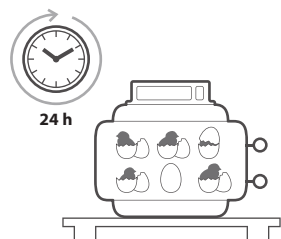


Three days before egg-hatching, do not turn the eggs manually or by using the egg-turning device, if installed.

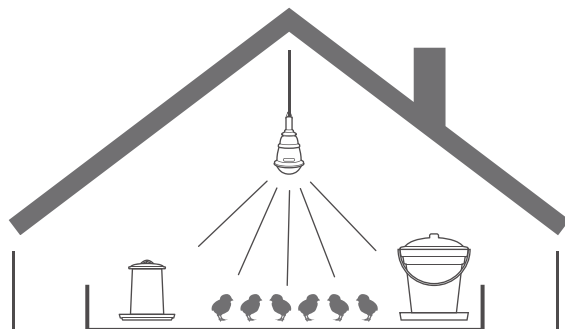


Three days before egg-hatching, remove the separators.

BIRTH OF THE CHICKS



After the egg-hatching, the newly born chicks must keep in the incubator for about 24 hours in order to dry and they don't need neither food nor water.

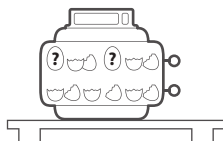


- The chicks must be taken to a very hot and quiet place, or rather under a specific heater; use specific pens to prevent the chicks from scattering.
- When the heat is sufficient, the chicks will not tend to frenetically throng together or to depart too much from the heat source.
- Water the chicks by means of the specific drinkers, and then feed them by using the feeders (see the catalogue in the website: www.novital.it) with suitable birdseed that can be purchased in specialized stores.

AFTER CHICK BIRTH



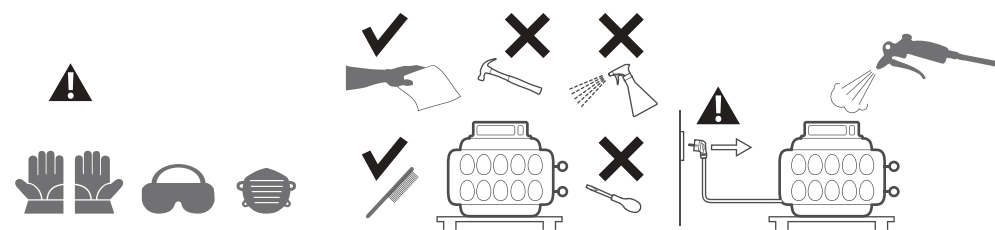
Three days after the last day of incubation, probably unhatched eggs will not lead to any chick birth.



After each incubation, you must check the remaining eggs, if any, to verify their conditions.

MAINTENANCE AND CLEANING

Maintenance is limited to normal periodical checks of the moving parts and of the power cord in order to verify possible damages or wear.



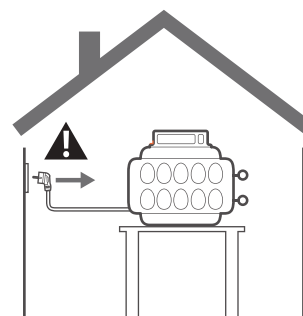
It is advisable to apply all necessary precautions not to breathe poisonous fumes both before and after the operation. Therefore, it is advisable to wear gloves, goggles and a face mask.

At the end of each incubation, you must clean the incubator by using a wet cloth or a brush, without using tools or liquids.

You can remove dust by using a smooth air jet; remember that, before performing any operation, you must disconnect the plug from the mains socket.

EXTRAORDINARY CLEANING

If, during egg-hatching, bad smells develop, caused by the death of newly born chicks, it will be necessary to disinfect the incubator according to the following procedure:



1

Perform the cleaning operations in an open but sheltered place; remember to disconnect the plug from the mains socket.

2

First, clean the incubator in a thorough way. After that, treat it with chlorine dioxide-based disinfectants (it is advisable to purchase commercial products at the best resellers or in veterinary pharmacies).

3

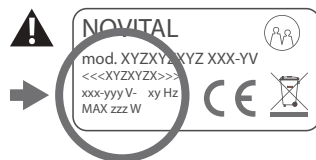
Finally, leave the incubator open for at least 24 hours to eliminate vapours and bad smells.



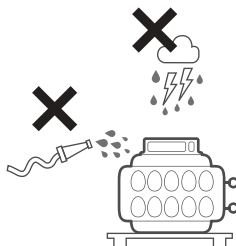
Other device cleaning and/or maintenance operations must be carried out only by qualified personnel at an authorised Service Centre or at Novital's premises.

SAFETY STANDARDS

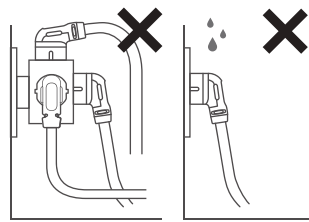
- Use the device only for the purposes it is intended for. Uses other than the ones being specified in these instructions must be considered hazardous and the Manufacturer refuses all responsibilities caused by possible damages to people, animals or property, which derive from the non-compliance with these warnings.
- Check the data that are specified in the identification plate of the device, and make sure that the available nominal voltage of the network and the power are suitable for the operation of the device.



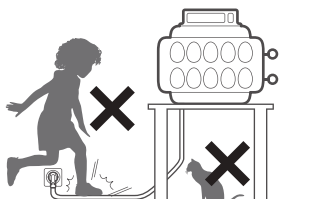
As it is an electrical device, never use it with wet hands or naked feet.



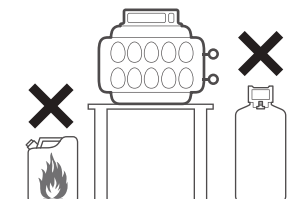
The device is intended only for indoors use. Any contact with water streams or weather agents can cause electrical faults.



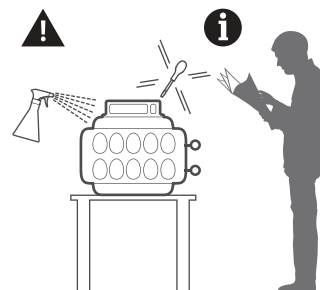
Do not improperly use cable extensions. Keep the connections under cover.



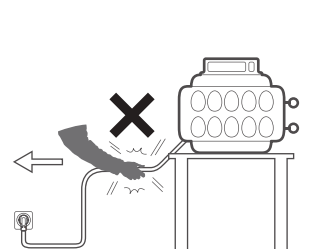
Prevent the power cord from being damaged or crushed. Protect it against collisions, sharp corners, and sharp or moving components. While being used, it has not to be accessible to children and/or animals.



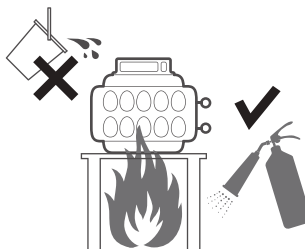
The device has never to be used in risky environments, where saturation with flammable gases is possible or in case the device can enter into contact with flammable liquids.



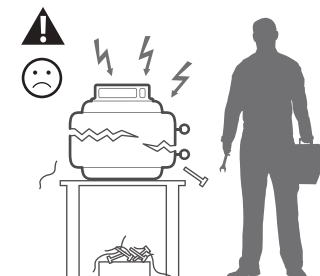
Device cleaning or maintenance must be carried out by following the standards that are specified in the "MAINTENANCE AND CLEANING" paragraph.



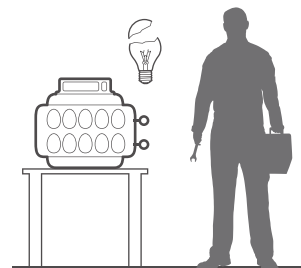
Do not displace the device by pulling the power cord. Always disconnect the plug from the mains socket before performing any displacement.



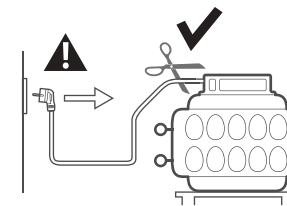
As it is an electrical device, in case of fire, only use dust extinguishers (NEVER use water: risk of electrocution).



If the device proves to be fully or partly damaged, do not use it.



Only qualified personnel, at an authorised Service Centre or at Novital's premises, must replace the bulb (in the machines where it is provided for).



If the device is out of order, first disconnect the mains socket. After that, make the device non-operating by cutting the power cord as close as possible to the connection point in the device. Dispose of the device at suitable dismantling centres.



Possible repairs (including the replacement of the power cord, if damaged) must be carried out by the manufacturer or by qualified engineers.



Do not disperse package parts in the environment and, as for the device, do not leave them within reach of children, minors, mentally incapable people or animals.



The manufacturer refuses all responsibility due to possible damages to people, animals or property due to the non-compliance with these standards.

DISCLAIMER

After updates, modifications and/or technical innovations, part of the instructions, the specifications and the images included in this

documentation may differ. The elements being described thereto must be considered only as explanatory and may not be

applicable to your specific case. You cannot obtain legal rights or claims from the description that is to be found in this manual.

INFORMATION TO THE USERS

• In application of Directives 2002/95/EC, 2202/96/EC and 2003/108/EC concerning the reduction in the use of hazardous substances in electrical and electronic devices, as well as waste disposal, the crossed bin symbol, which is shown here and affixed onto the device, specifies that the product, at the end of its useful life period, must be collected separately from the other waste.

• Therefore, the user must deliver the device at the end of its useful life period to suitable separated collection centres for electronic and electro-technical waste, or re-deliver it to the reseller when purchasing a new similar device, on a one-to-one basis.

• The suitable separated collection of the dismantled device for the following recycling, treatment and disposal, being environmentally compatible, will contribute to prevent possible negative effects over the environment and the health, and will

favour the recycling of the materials that form the device.

• The unlawful disposal by the user will imply the application of the administrative sanctions that are provided for by the laws in force.

• The information concerning the correct procedure of the collection systems being at disposal must be asked for to the Local Waste Disposal Service or at the purchase store.



TROUBLESHOOTING ☺

Phase	Situation	Advice
Incubation	Misting of the cover and/or of the porthole, with subsequent formation of droplets.	• Open the incubator for a few minutes to balance the humidity. • Check the environment temperature.
Egg-hatching	Misting of the cover and/or of the porthole, with subsequent formation of droplets.	It is normal that the cover and/or the porthole get wet. Do NOT open the incubator to prevent reducing the humidity level.
Incubation / Egg-hatching	No supply of electrical power for some hours.	DO NOT open the incubator, to slow down temperature lowering inside the machine.
Incubation / Egg-hatching	No supply of electrical power for more than 5-6 hours.	Move the incubator to a sufficiently warm place. Leave the cover open to let the heat enter the device, so that the eggs do not cool down.



In case of irregularities while operating, warning lights (analogue models) may turn ON or error messages may be shown in the display of the incubator (digital models).

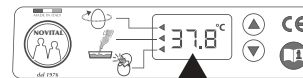
ANALOGUE MODELS



Position of the **warning light** in analogue incubators.

Messages	Problem	Solution 1	Solution 2
Lamp always ON or always OFF Green lamp fixed or OFF 	Low temperature or high temperature 	• Wait a bit before adjusting the temperature. • Try to adjust the temperature in the modes that are specified for each individual machine (see Annex B).	Turn off the machine and call Novital or an authorised Service Centre 
Red lamp flashing	General problem	Turn off the machine and call Novital or an authorised Service Centre 	

DIGITAL MODELS



Position of the **display** in digital incubators.

Messages	Solution 1	Solution 2
E01	Disconnect the plug from the mains socket for a few seconds, and then connect it once more (if necessary, repeat the operation). If the irregularity persists, call an authorised Service Centre.	 If Solution 1 proves to be ineffective, call Novital or an authorised Service Centre
E02	Replace the temperature probe at an authorised Service Centre.	
E03	Replace the temperature probe at an authorised Service Centre.	
E04	The temperature inside the incubator is too low. Check: - temperature of the premises - prolonged opening of the incubator - possible breaking of the heating element/s. Call an authorised Service Centre for the possible replacement of the heating element/s.	
E05	The temperature inside the incubator is too high. Call an authorised Service Centre to solve the problem.	

GENERAL FINAL NOTE:
For further information and explanations, visit the web-site: www.novital.it