

Operation Manual

Incubator for 12 Eggs

52016



Illustration similar, may vary depending on model

Please read and follow the operating instructions and safety information prior to initial operation.

Technical changes reserved!

Illustrations, functional steps, and technical data may deviate insignificantly due to continuous further developments.

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Introduction

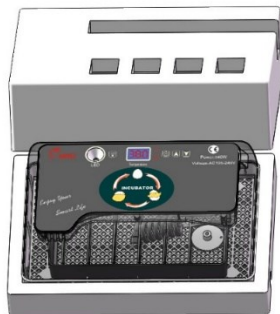
Thank you for choosing to purchase this quality product. To minimise the risk of injury, we ask you to always take some basic safety precautions when using this product. Please read this operating manual carefully and make sure that you understand it. Keep these operation instructions in a safe place.

Unpacking and commissioning

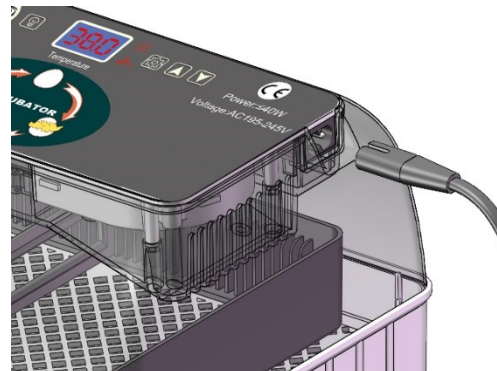
Functional test

It is recommended to perform a functional test before the first incubation. During this test, do not put any eggs into the incubator. We recommend performing a long-term test.

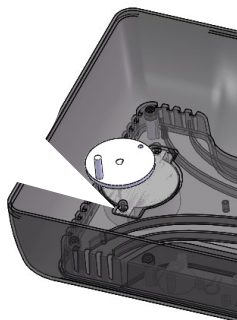
1. Make sure that the rotary shaft is properly fixed to the egg rack.
2. Plug in the power cord.
3. The incubator emits an alarm tone after plugging in, for the temperature inside the device is too low.
4. Stop the alarm by pressing any button.
5. Fill the water reservoir to gradually increase the air humidity. It is recommended to use warm water.
6. The turning interval is pre-set to 2 h. Observe the turning process before first use. During 10 s, the eggs are carefully rolled by 45° from the left to the right, after that in a random direction. To perform the test, you should remove the lid.



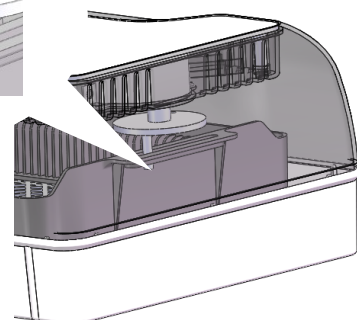
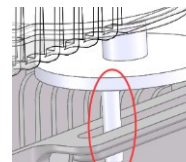
1. Scope of delivery: 1 × incubator, 1 × polystyrene cover, 1 × power cable, 1 × user's manual, 1 × egg rack, 6 × spacer, 1 × rotary shaft



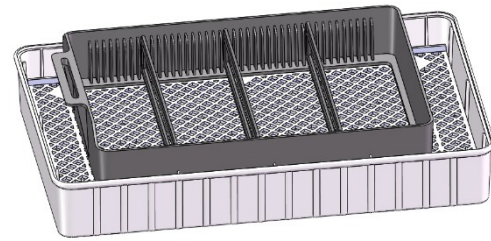
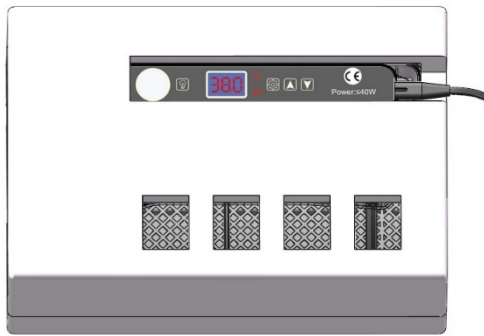
2. Power connection



3. Installation of the rotary shaft

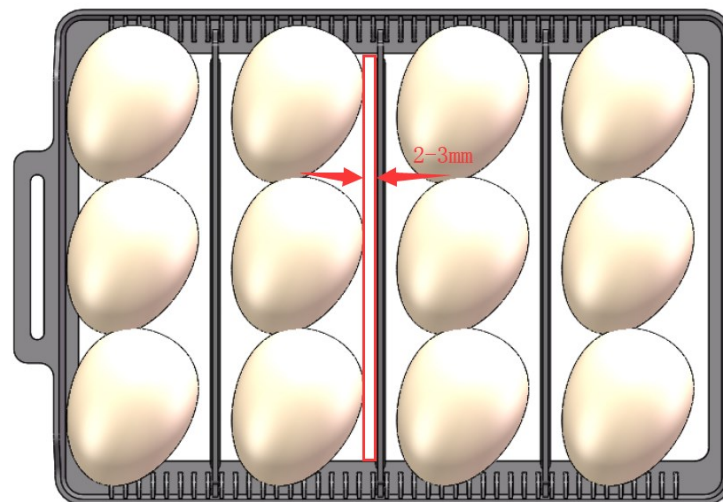


4. Make sure that the rotary shaft is properly fixed to the egg rack.



5. Check the functionality of the fan, temperature display, functional buttons, and heater. Use the polystyrene cover in case the ambient temperature is below 20 °C.

6. Fill in water, pre-heat the incubator. After 20–30 min check values. You can now start incubation.



7. The eggs need 2–3 mm to the spacers.

Check of air humidity during incubation

The following example refers to a hen's egg. Schedule the incubation process by defining three different phases that require different humidity values.

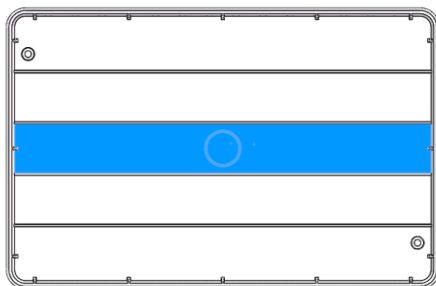


Figure 1

Phase 1: Day 1 to 7 – Only the central part of the water reservoir must be filled (Fig. 1).

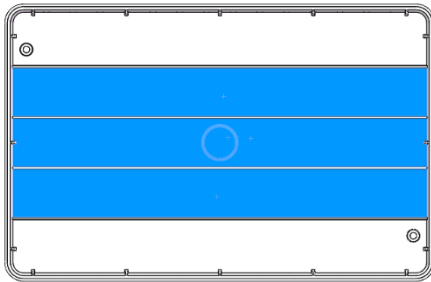


Figure 2

Phase 2: Day 8 to 14 – Fill the three central parts of the water reservoir (Fig. 2).

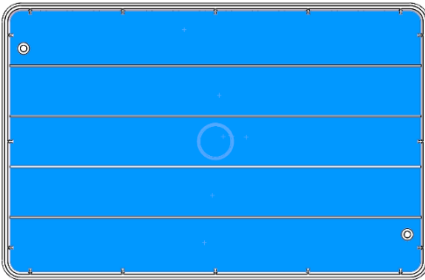
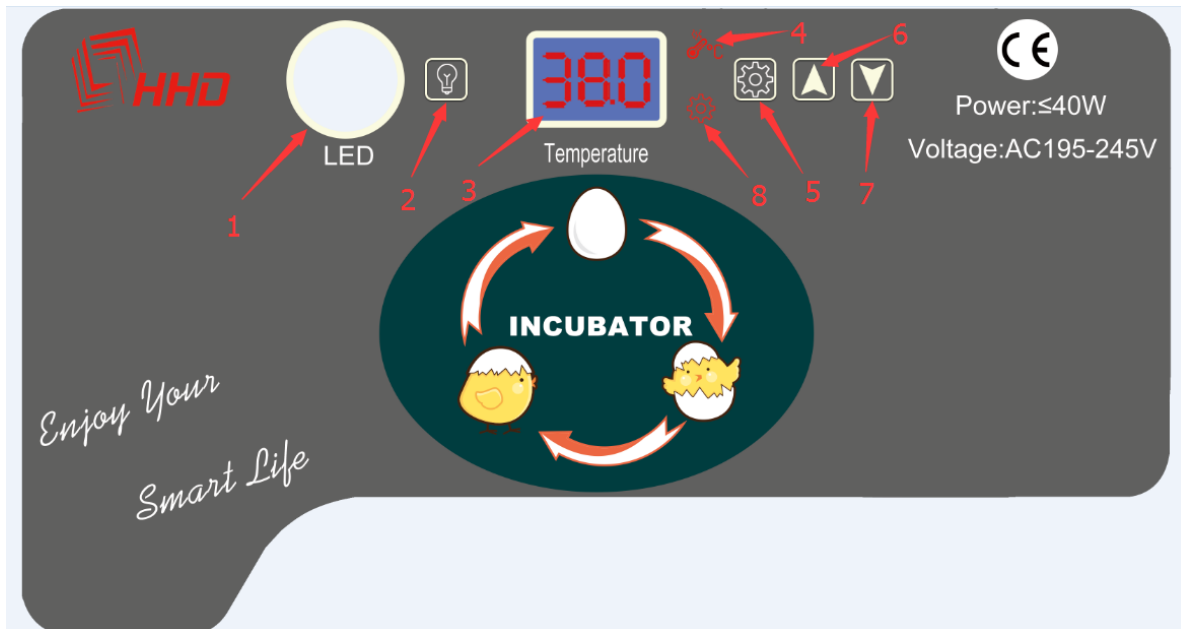


Figure 3

Phase 3: Day 15 to 21 – Fill all parts of the water reservoir (Fig. 3).

Attention: Different clutches require different air humidity values. The data mentioned above correspond to hen's eggs. When incubating eggs of other species, adapt the air humidity to the individual clutch.

Adjustments



No	Name	No	Name
1	LED lamp	5	Adjustments
2	Switch to 1	6	Up (+)
3	Temperature display	7	Down (-)
4	Status LED of heater	8	Status LED of adjustments

Basic functions

1. Press “SET” (5) and “+” (6) while the incubator is not supplied with energy to restore the factory settings (turning interval: every 2 h during 10 s).
2. Press the LED switch (2) during 3 s to test the egg turning function. By pressing the up and down buttons (6, 7), the turning interval can be adjusted.

Temperature adjustment

The factory temperature setting is 38 °C (100 °F). The temperature can be adapted to different types of clutches and ambient temperature. Should the incubator not have reached 38 °C (100 °F) even after several hours of operation, check the following:

1. Has the temperature been set to 38 °C (100 °F)?
2. Does the fan work properly?
3. Is the lid closed?
4. Is the ambient temperature above 18 °C (64.4 °F)?

To check and modify the temperature settings, proceed as follows:

1. Press the “SET” button (5) once.
2. Press “+” (6) or “-” (7) to adjust the desired temperature.
3. Press “SET” (5) to complete the adjustment.

Adjustments of temperature alarm value (AL and AH)

The alarm value is set to 1 °C (33.8 °F) in the factory.

Adjustment of alarm when temperature is too low (AL)

1. Press the “SET” button (5) during 3 s.
2. Press the “SET” button (5) repeatedly until “AL” is displayed.
3. Press “+” (6) or “-” (7) to define the desired temperature alarm value.

Adjustment of alarm when temperature is too high (AH)

1. Press the “SET” button (5) during 3 s.
2. Press the “SET” button (5) repeatedly until “AH” is displayed.
3. Press “+” (6) or “-” (7) to define the desired temperature alarm value.

Adjustment of upper and lower temperature limit (HS and LS)

With the upper limit set to for example 38.2 °C (100.8 °F) and the lower limit to 37.4 °C (99.3 °F), the temperature of the incubator can only be adjusted to a value comprised between these two limits.

Calibrating the temperature sensor

The thermometer is set to 0 °C (32 °F) in the factory. In case the temperature display has deviating values, you can adjust the temperature sensor. Use a standardised external thermometer to determine the correct temperature values. The deviation between the temperature display and the external thermometer is the value to be set.

1. Press the “SET” button (5) during 3 s.
2. Press the “SET” button (5) repeatedly until “CAU” is displayed.
3. Press “+” (6) or “-” (7) to define the desired value.



Display	Name	Factory setting
AL	Adjustment of alarm when temperature is too low	1 °C (33.8 °F)
AH	Adjustment of alarm when temperature is too high	
CAU	Calibrating the temperature sensor	0 °C (32 °F)
HS	Adjustment of the upper temperature limit	39.5 °C (103.1 °F)
LS	Adjustment of the lower temperature limit	30 °C (86 °F)

Hygiene of eggs and incubator

- To obtain good incubation results, hygiene is utterly important. With bad hygiene, the chicks might already perish during the first 10 days.
- You should only use clean eggs for incubation. Dirty eggs are potential vectors for pathogens that develop and proliferate thanks to optimal warmth and air humidity conditions. Should you nonetheless wish to incubate dirty eggs, ensure to wash them clean before in warm water (44–49 °C) with disinfectant (most household disinfectants are suitable) and to immediately dry off each egg after cleaning with an individual dry cloth.
- Do not leave the eggs in the water for more than 4 min to not impair fertility. Do not wash them clean in cold water; this might invite the intrusion of bacteria through the eggshell.

Troubleshooting chart (problems with the chicks)

#	Problem	Possible cause	Solutions
1	Too much egg white or too many unfertilised eggs	(a) Wrong ratio of male and female animals	(a) Check mating conditions according to breeder's recommendations.
		(b) Male animal malnourished	(b) Feed roosters separately, so that chickens do not take most of the food.
		(c) Interruption of male animals during mating	(c) Do not use too many male animals; keep breeding roosters together; build a non-permanent solid separation wall between individual breeding coop or separate them within bigger breeding coops.
		(d) Damaged combs and gills on roosters	(d) Ensure that their coop is comfortable and there is enough suitable drinking water.
		(e) Rooster too old	(e) A young rooster is required.
		(f) Sterile rooster	(f) An unsterilised rooster is required.
		(g) Egg has been stored for too long or under the wrong circumstances beforehand	(g) Do not keep eggs for more than ten to twelve days; store them at cool temperature (8–15 °C) with relative humidity of 75–80 %. Turn eggs at least once a day around their longitudinal axis
2	Blood dots pointing to an early death of the embryo	(a) Temperature of incubator too high or too low	(a) Check thermometers, thermostat, and electricity, follow manufacturer's instructions.
		(b) See 1 (g)	(b) See 1 (g)
3		(a) See 2 (a).	(a) See 2 (a).



	Broken egg-shells	(b) Eggs not turned properly	(b) Turn eggs frequently, at least 4–5 times a day; always turn them into opposite direction.
		(c) Deficient feeding if high death rate on days 10 and 14	(c) Check feeding.
		(d) Ventilation of the incubator faulty	(d) Increase air flow by normal means.
		(e) Infectious diseases	(e) Only use eggs from healthy stocks; check hygiene measures.
4	Eggs which will not hatch	(a) Insufficient humidity inside incubator	(a) Increase evaporation surface with water or sprays.
		(b) Too high a humidity at too early a stage	(b) Check humidity temperature measurements.
		(c) Problems with the food	(c) Check feeding.
5	(a) Too early a hatching	(a) Too high a temperature inside incubator	(a) (b) (c) Make sure property of temperature regulation or adjust it properly.
	(b) Too late a hatching	(b) Too low a temperature inside incubator	
	(c) Sticky chicks	(c) Temperature inside incubator probably too high	
6	Deformed chicks	(a) Too high a temperature inside incubator	(a) See 2 (a).
		(b) Too low a temperature inside incubator	(a) See 2 (a).
		(c) Eggs turned improperly	(c) See 3 (b); ensure to insert eggs with wider part first.
7	Chicks with straddled legs	Breeding inlay too slippery/smooth	Use wire inlay or cover slippery/smooth ground with e.g., sackcloth.
8	Weak chicks	(a) Incubator or hatchery overheated	(a) See 5.
		(b) Use of small eggs	(b) Only use eggs of average size.
	Small chicks	(c) Too low a humidity inside incubator	(c) See 4.
	Heavily breathing chicks	(d) Too high a humidity inside incubator	(d) See 4.
		(e) Possible infectious disease	(e) Bring chicks to a veterinary surgeon for diagnosis.
		(f) Lower temperature during incubation time.	(f) See 2 (a).
Weak chicks	(g) Ventilation of incubators too low	(g) See 3 (d).	
	(h) Omphalitis (navel infection)	(h) Clean and disinfect incubator as well as entire equipment.	
9	Irregular hatching	Eggs too different in size and age	Set eggs at least once a week, never keep them for longer than ten to twelve days before breeding them, only breed average sized eggs.

**Thoroughly read the instructions
to obtain best hatching
results.**

General information on breeding

Ambient conditions

Voltage (V)	230
Frequency (Hz)	50
Relative air humidity (%)	Between 55 and 75
Ambient temperature (°C)	Between 17 and 25

The right location

For a good result, place the incubator into a heated room. There should not be any major fluctuations of room temperature inside it. Ideally, the room temperature should be comprised between 17 °C and 25 °C.

Additionally, there should be a good ventilation in this area. Especially with presence of several incubators, you should make sure sufficient ventilation. A natural air supply ensures that the developing embryos always have fresh oxygen.

Make sure that the incubator is placed on a flat, even surface and not in direct sunlight. Place it on a solid surface which is approx. 80 cm above the floor.

It is recommended to place the incubator far away from heating sources, drafts, and windows to avoid harmful temperatures fluctuations. Additionally, the incubator should be kept with the included polystyrene packaging, which provides protection.

1. How do the poultry eggs must be stored before placing them into the incubator?

Hatching eggs should not be kept longer than ten to twelve days. After that, the hatching success rate is very low. Store the eggs at a cool temperature (8–15 °C) and at a relative air humidity of 75 %. If the hatching eggs have been sent you via post, they should rest for at least 24 h before being placed in the incubator.

Important: The eggs should be stored lying and need to be rotated halfway around their longitudinal axis at least once a day.

2. When is the incubator ready?

The incubator should run for **at least 24 hours before placing any eggs** into it. If possible, let the incubator run for a week without eggs. Thus, you will easily see if all parameters can be adjusted and work as required. Additionally, you will learn how the incubator functions and adjustments work during this time. There is nothing more harmful to the eggs than wrong adjustments of the incubator. If everything works accordingly in the testing period, the incubator must be **cleaned thoroughly** with a suitable disinfectant.

The intended humid and warm climate in the incubator is a good breeding ground for bacteria and fungi. Not disinfecting the incubator invites the growth of these, posing a threat to the entire brood. Thus: **Before the first breeding and after every new breeding, thoroughly disinfect the incubator.**

You need to make sure that the disinfectant is suitable for the material of the incubator. Otherwise, the material can be attacked and the hatching process endangered.



Important note on parameters: Be sure to properly understand the term “internal temperature” (“internal”). Do not confuse the term “internal temperature (inside the egg)” with “internal temperature (inside incubator).” The internal temperature within the incubator constantly changes up and down. The internal temperature of the egg thus is the average temperature of the temperature fluctuations inside the incubator.

3. Which temperature should my incubator have?

The required temperature depends on the individual type of animal. For every type of animal has its own requirements and even amongst poultry there are differences regarding the temperature required during the breeding process. The required temperature depends as well on the type of incubator.

An example based on a chicken egg:

With so-called surface incubators (breeding on an even surface), the breeding temperature is measured on the height of the upper edge of the egg and should be between 38.0 °C and 38.3 °C. If a so-called motorised incubator (breeding process on several levels one above the other) is used, the measured temperature should be at around 37.5 °C at any point of the egg. **Your incubator is a surface incubator.**

An overview of various poultry types and the breeding temperatures required:

Type of poultry	Breeding temperature (°C)
Chicken	37.4–37.6
Duck	37.4–37.6
Pigeon	38.5
Goose	37.6
Quail	37.6–37.8

Note: A short temperature drop while checking the eggs usually is not a problem for the embryos. Contrariwise, temperatures exceeding the recommended one are harmful and even deadly and should be avoided at all costs.

4. Does my thermometer show exact values?

Thermometers are not exact. Keeping the temperature constant might be difficult, even with good thermometers. If running a big incubator over a longer period of time, you can optimise the temperature, regardless of what the thermometer states.

After the first breeding process, you may modify the temperature (set it to a higher or lower value). If the hatching takes places in an early stage, the temperature should be lowered. If the hatching is delayed, it needs to be increased.

How to check the thermometer: Keep notes during the time of the brood, as these are a reliant aid. You will soon have the required routine to select the right adjustments and settings for a successful hatch. Alternatively, an additional thermometer can be placed in the incubator to be able to see the various temperature differences and readjusting the temperatures of the incubator accordingly.

5. What is the rate of air humidity required?

The air humidity required varies again depending on the brooded type of animal and needs to be changed during the breeding process. Inform yourself beforehand on the requirements to be met in the incubator. To give you an example:

Chicken eggs:

Day 1–18: 50–55 % air humidity
 From day 19: 70–75 % air humidity

The air humidity is increased towards the end of the breeding to soften the hard egg membrane. Without increased humidity, the chicks can neither break through the membrane nor through the egg shell. Yet, the humidity should not be increased too much, as the chicks might drown.

Note: The humidity is checked with a so-called hygrometer. It is near enough impossible to keep humidity as exact as temperature, especially in small incubators. Just try to keep it as exact as possible. The temperature is the significant criteria. Even a small deviation (even a couple of degrees) can ruin the breeding process or lead to a bad result.

Important: The air humidity changes with the season. If the breeding is carried out in January and February, it is very difficult to keep the humidity at the desired level, as the external humidity is rather low (depending on the location).

In June and July, the external humidity usually is higher, resulting in the humidity in the incubator being higher than desired. To avoid these problems, change the water surface in the incubator: To increase the humidity and thus to enlarge the water surface, place an additional container with water/a few small moist sponges in the incubator. Alternatively, the eggs can be sprayed with fine water mist. To reduce the humidity, decrease the water surface by using smaller containers.

6. How long is the incubation time?

Type of poultry	Incubation time (days) [normal deviation: 1–2]
Chicken	20–21
Duck	28
Pigeon	18
Goose	30
Quail	16–18

7. When start to turn and how frequently? When do the eggs not must be turned any longer?

With a manual or semi-automatic surface incubator, you may not start turning the eggs **before day four**. Contrariwise, turning may be carried out from the first day on with fully automatic incubators (large incubators with several levels).

Your incubator is a semi-automatic surface incubator with turning mechanism. Therefore, wait for the first three days to pass before starting turning. For the embryos are very sensitive in the first days, therefore shakes should be avoided.

Additionally, the incubator should be kept closed within the first three days of breeding, if possible, which allows for a better climate to build up.

Important: In the last two to three days of the breeding process, the eggs must not be turned any longer. For the chicks are finding a hatching position, which must not be changed any more.



8. What is to regard within the last days of the breeding process?

In the last two to three days before hatching, the poultry eggs must not only not be turned anymore, but also does the entire incubator need to stay closed. For the humid-warm atmosphere needs to be preserved during the last days of breeding to soften the egg membrane and enable the hatching process.

Therefore, remove the turning insert at that moment. To do so, carefully open the incubator to take out the eggs with greatest care from the turning insert. Then place them on the bottom of the incubator. Try to keep opening of the device as short as possible, then spray the eggs with warm (**not** boiling!) water from a spray bottle. Thus, in most cases, the damp-warm climate inside the device will be preserved.

Note: Most chicks are not able to cope with a complete collapse of the climate.

9. What happens after hatching?

Congratulations, your chicks have hatched! Have a little patience, as the freshly hatched chicks should stay in the incubator for approx. 24 hours longer to be able to recover and dry off.

Important: Remove the water container. Otherwise, the humidity is too high for the chicks, and there is the danger of the chicks drowning. However, you must develop a sure instinct for possible Johnnys-come-lately still need humidity to hatch.

If these latecomers, pecking the egg from the inside, have difficulties getting through the eggshell, you can provide a starting aid by carefully opening the eggshell a little bit. Certainly, a sure instinct is needed as well in this condition for you must not help them too early. Oftentimes, a wrong humidity can be the reason for that, as the egg membrane can dry and get stuck to the chick before it is able to get out. Thus, the chick cannot turn any longer and hatch.

Note: There must be a sufficient fresh air flow, too, as the young animals can otherwise suffocate in the closed container. If an integrated air hole is available, it will ensure for fresh air.

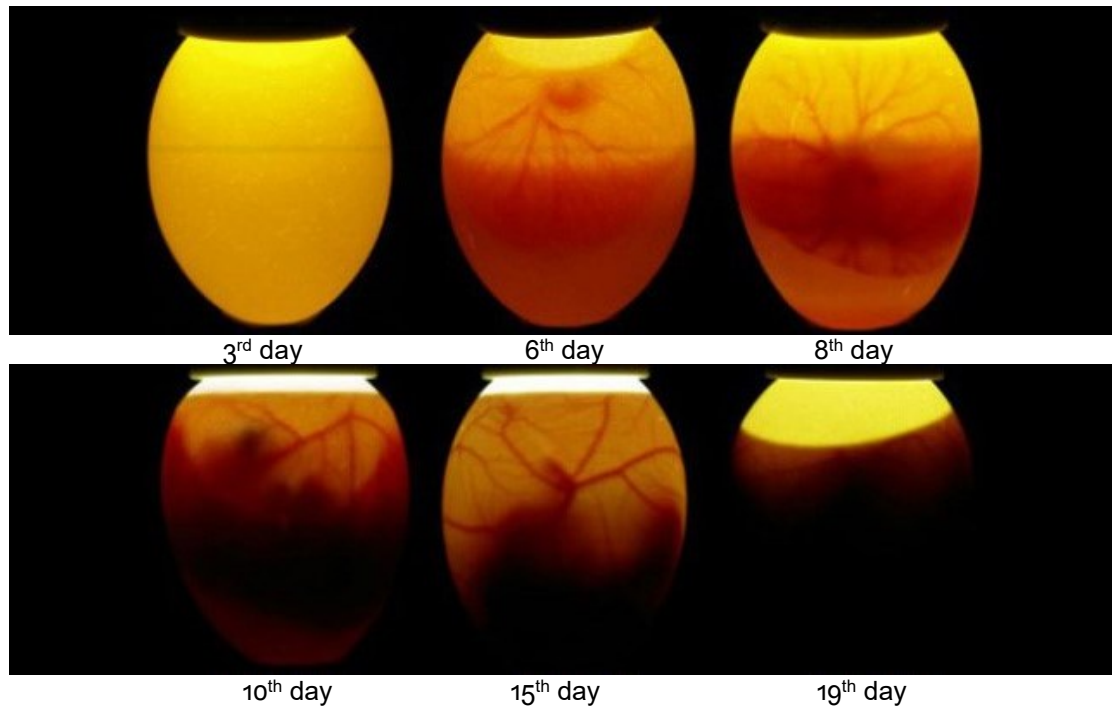
Incubation notes

The first step to good incubation results is choosing the best fertilised eggs. How to do this?

1. Fertilised eggs must be fresh, there may only be 4–7 days between laying the eggs and starting the incubation. Optimal storing temperatures of fertilised eggs are comprised between 8 and 15 °C. The fertilised egg is covered with a powdery substance that must not be washed off or stored in the refrigerator.
2. The eggshell surface must be free from deformations, cracks, or spots.
3. There is no need to disinfect the fertilised eggs, as improper disinfection might reduce the hatching ratio. Just make sure that the egg surface is clean and spotless.
4. When placing the egg into the incubator, make sure that the pointed end points down.
5. Proper operation and thorough observation are necessary during incubation. Among other things, this requirement comprises regular adding of water every 1 or 2 days to the device (dependent on water level and air humidity value inside the device).
6. The fertilised eggs cannot be tested by the grower within the first 4 days of incubation, as a temperature drop in the incubator and on the egg surface is harmful to the early development of the egg.
7. First check-up of the egg (after 5–6 days): mainly to check fertilisation of the eggs. Sort out the unfertilised, yellow, and dead eggs.

Second check-up of the egg (after 11–12 days): mainly to check development of the embryo. A well-developed embryo has already grown and formed inside blood vessels. The air chamber should be large and clearly distinguishable.

Third check-up of the egg (after 16–17 days): Light the egg from the side. A well-developed embryo has still grown, filling nearly the entire egg, so that most of the light is absorbed. In case the embryo is dead, the inside blood vessels are indistinct, parts near the air chamber have adopted a yellowish colour, and the line between the egg and air chamber is not clearly visible.



8. During incubation, increase the air humidity and lower the temperature. This prevents the water in the eggs from quickly evaporating. The air humidity corresponding to the defined values, dehydration prevented from forming, and lowering the temperature are of capital importance to avoid too high a temperature and too high an air humidity, especially when the hatching takes some time. The temperature should not be above 37.5 °C within 19–21 days.

Regulations for waste disposal

The Waste Electrical and Electronic Equipment Directive (WEEE Directive, 2012/19/EU) of the EU was implemented in the German law related to electrical and electronic equipment and appliances.

All WiTec electric devices that fall under the WEEE directive are labelled with the symbol of a crossed-out wheeled rubbish bin. This symbol indicates that this electric device must not be disposed of with the domestic waste.

WiTec Technik GmbH is registered with the German registration authority EAR (Stiftung Elektro-Altgeräte Register) under the WEEE-registration number DE45283704.

Disposal of used electrical and electronic devices (intended for use in the countries of the European Union and other European countries with a separate waste collection system for these devices).

The symbol on the packaging or the product itself indicates that this product must not be treated as normal domestic waste but must be disposed of at a recycling collection station for electrical and electronic waste.

By disposing of this product correctly, you contribute to the protection of the environment and the health of your fellow people. Inappropriate disposal threatens the environment and health.



Material recycling helps to reduce the consumption of raw materials.

Additional information about the recycling of this product can be provided by your local commune, the municipal waste disposal facilities, or the store where you purchased the product.

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