

Egg Incubator

User Manual



This user manual contains important information on using the egg incubator for the first time. Please read through the instruction carefully before using the product. Please retain this user manual for future reference. It should always accompany the product in the event of transfer a new user.

Please check all packing material carefully before discarding, as some parts may be encased in the packing material.

Outline

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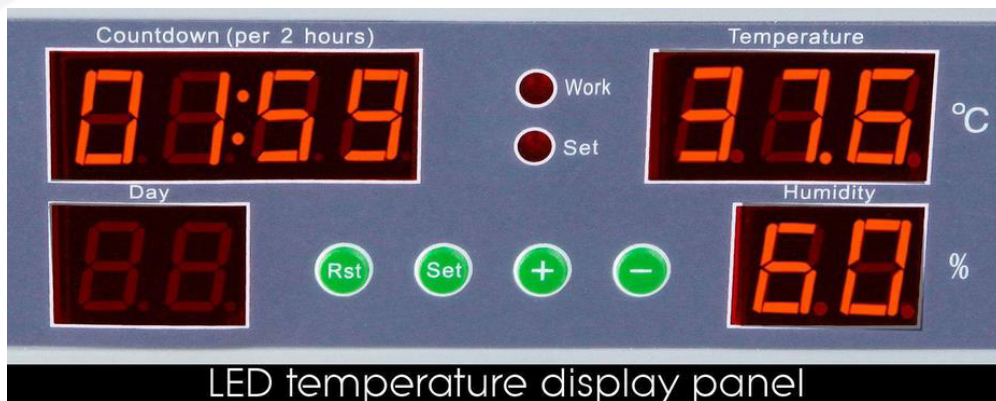
Note: 12 and 24 egg incubator models do not share all above adjustable features as other models. 12 and 24 egg incubators are the simple models with limited adjustability.

Technical Specification

- Range of temperature display: 0-99°C
- Precision of temperature measurement: $\pm 0.1^\circ\text{C}$
- Range of humidity display: 0-99 % RH
- Precision of humidity control: $\pm 3\%RH$
- Output channels: 2 channels - heating and turning eggs (for 12 & 24 egg incubator models)
- Output channels: 3 channels - heating, humidification, and turning eggs
- Working voltage: 220-240V/50Hz
- Relative humidity: less than 80%
- Environment temperature: 18°C - 29°C

Testing the Unit

1. Switch on the power source.
2. Switch on the unit.
3. You will hear an alarm sounding if the temperature/humidity is too low.
4. Press the “-“ button to stop the alarm.
5. Open the incubator and fill in the water channels you will see the humidity reading increase.
6. Press the “RST” button to manually test the egg turning motor.
7. Let the unit run for 2 hours to note the egg turner turning.
8. The egg turning will turn once 2 hours, 12 times a day.



Setting Temperature

1. Push the “SET” button once.
2. Push “+” or “-” to select the desired temperature.
3. Push “SET” once more time to exit.

The incubator’s factory setting temperature is 37.8°C ; this temperature may be too high when hatching at day 19th to 20th. Using the temperature setting method as described above to adjust the temperature; recommended temperature is at 37.6°C .

Default Parameter (Factory Setting)

The parameters in all ranges are set properly. Please leave it alone unless you are a professional.

Form 1:

No.	Parameter name	Parameter ID	Setting Range	Default value
1	Temperature for alarm if over	P1	0-99.9°C	38.6
2	Base temperature	P2	0-99.9°C	37.8
3	Temperature for stopping main heater	P3	0-99.9°C	37.5
4	Temperature for alarm if lower	P4	0-99.9°C	37.0
5	Humidity for alarm if over	H1	0-99%	80%
6	Humidity for alarm if lower	H2	0-99%	40%

Under working mode, user can set the “Temperature and Humidity” to different ranges.

1. Press and hold the “SET” and “+” buttons for 3 seconds.
2. Press “+” or “-” to adjust to your desired temperature or humidity level.
3. Press the “SET” button again to next parameter.

Form 2:

No.	Parameter name	Parameter ID	Setting Range	Default value
1	Egg turning period	F1	00:00-23:59	01:59
2	Egg turning duration	F2	0-999 Seconds	15 Seconds
3	Temperature calibration	F3	Adjust according to the thermometer	
4	Humidity calibration	F4	Adjust according to the humidimeter	
5	Humidity for alarm if over	F5	1-99 Days	0 days

Under working mode, user can set the “Egg Turning Parameter, Calibrating Temperature Sensor Reading and Humid Sensor Reading”.

1. Press and hold the “SET” button for 3 seconds.
2. Push “+” or “-” to adjust to your desired range.
3. Press the “SET” button again to next parameter.

Keep the Humidity

By filling both water channels the humidity should rise to 60%, depending on the local humidity levels and the time of year. It is suggested to fill the water channels every 4 to 5 days.

Sensor Error Indicator

- The temperature display window will show EEE, if the temperature sensor is not working properly; at the same time the heater and the fan will stop working. There will be a beep sound when the sensor is not functioning.
- The humidity display window will show EE, if the humidity sensor is not working; at the same time the humidifier will stop to function. There will be a beep sound when the sensor is not functioning.

Turn off Alarm Manually

When the alarm is on, user can mute it by pressing “-” button and switch back by pressing the same button again. The alarm lighting will stay on during alarm period.

Note: The alarm will not be on for the first cycle of the machine.

Reset Function

Press “+” and “-” for 5 seconds, then all the parameters will be reset to the default values after a beep sound.

Using the Incubator

1. Test the incubator to see if it functions properly.
2. Connect the egg turner plug to the control plug inside the egg compartment.
3. Fill one or both water channels depending on local humidity levels.
4. Set the eggs with the pointy side down.
5. Close the lid and switch on the incubator.
6. Press and hold “+” and “-” button for 5 seconds to reset and have the day counter back to “0”. This will also reset the egg turning countdown back to 1:59.
7. Keep an eye on the humidity reading and fill the water channels when needed. Normally every 4 days.
8. On day 18th remove the tray from the turner and place the eggs on top of the bottom grid.
9. At the same time it is important to fill both water channels to increase the humidity. This is very important to ensure that the eggshells are soft enough for the chicks to break through.
10. You should never open the lid when the chicks start to hatch. If you do, the loss of humidity will cause the eggshells of the unhatched eggs to dry out and they won't be able to break through the eggshell.

Operating Environment

Ideally the incubator should be located in a room where the temperature ranges between 18°C and 29°C. The room should be free from drafts and not subject to excessive fluctuations in temperature. Do not place the incubator alongside windows as direct sunlight can cause problems with the temperature control. Avoid heating appliances (e.g. gas heaters) as excessive levels of CO₂ can cause problems. Do not place the incubator in areas where the temperature may drop below 15°C as the incubator may struggle to maintain the correct temperature.

Egg Selection and Care

Once you have obtained a supply of eggs the following points will help you in maximising the hatchability.

- 1) Freshly laid eggs should be stored for at least one day before setting in the incubator.
- 2) Storage of eggs from 1-7 days generally will result in maximum hatchability.
- 3) Eggs should be stored pointy end down and turned through 90° once a day.
- 4) Eggs should be held a temperature range of 15°C - 18°C with a relative humidity of no more than 75%.
- 5) Only put clean eggs inside the incubator. Dirty eggs could potentially contain pathogens.
- 6) Do not use cracked or chipped eggs.
- 7) Use medium sized eggs.
- 8) How you handle the eggs before setting in the incubator could determine your hatch rate.

If you need to incubate dirty eggs, wash them first in warm water (44-49°C) that contains disinfectant at a rate recommended by the professionals (most household disinfectants are suitable), and dry the eggs quickly after washing using separate paper towels. Do not soak eggs for longer than four minutes to avoid affecting fertility and do not soak eggs in cold water, as it encourages bacterial penetration through the eggshell. Do not add eggs from unknown sources to make up the numbers, as you risk infecting your flock.

Fertility Testing

By using a candling lamp you can determine if the egg is fertile or not. Although testing is not necessary, you can eliminate infertile eggs by doing so. Usually by about day 7 you are able to see red blood cell growth around the inside of the egg. Eggs that show no growth and are clear are infertile and maybe discarded at this time. Candle the eggs again when it's time to put them down into the separate hatching tray. The removal of eggs for candling purposes will not harm your hatchability so long as it's for no longer than 15 minutes. It is important to have clean hands when handling the eggs.

Incubation and Hygiene

Always start with a clean incubator. Bacteria can enter through the shell of the egg potentially damaging or killing the embryo and affecting your hatchability. After you have completed your hatch it's essential that you clean and sanitise the incubator. By maintaining a high level of hygiene ensures you breed healthy chickens / ducks. When cleaning the incubator, do not spray any liquid directly on the temperature probe or fan, it will malfunction the parts. Only use a disinfectant recommended by professionals.

Troubleshooting

#	Problem	Potential Cause	Action
1	Too many clears or infertile eggs	(a) Wrong proportion of males to females	(a) Check mating ratios according to breeder's recommendations
		(b) Male is undernourished	(b) See that cockerels are able to feed separately, otherwise hens may eat all the feed
		(c) Interference among males during mating	(c) Do not use too many males; always rear breeding males together; erect temporary solid partitions between breeding pens or inside large pens
		(d) Damaged combs and wattles among males	(d) See that housing is comfortable and proper drinking fountains are provided for breeding pens
		(e) Male is too old	(e) Replace old birds
		(f) Male is sterile	(f) Replace with another male
		(g) Eggs kept too long or under the wrong conditions before setting	(g) Do not keep hatching eggs longer than seven days; store them in a cool temperature (10-15.6°C) at relative humidity around 75-80%
2	Blood rings, which suggests very early embryonic death	(a) Incubator temperature too high or low	(a) Check thermometers, thermostats and electricity supply; follow manufacturer's instructions
		(b) Incorrect fumigation procedure	(b) Use the correct amount of fumigant. Do not fumigate between 24 and 96 hours after setting
		(c) Eggs kept too long or under the wrong conditions before setting	(c) Do not keep hatching eggs longer than seven days; store them in a cool temperature (10-15.6°C) at relative humidity around 75-80%
3	Many died-in-shell	(a) Incubator temperature too high or low	(a) Check thermometers, thermostats and electricity supply; follow manufacturer's instructions
		(b) Eggs not properly turned	(b) Turn the eggs regularly at least three to five times a day; always turn the eggs in the reverse direction each time.
		(c) Breeding stocks' nutrition is deficient if deaths are high in days 10 and 14	(c) Check that feeding is sound
		(d) Incubator's ventilation faulty	(d) Increase ventilation by normal means
		(e) Infectious diseases	(e) Use eggs only from healthy stock; check that hatchery hygiene is sound and carried out regularly
4	Piped eggs failing to hatch	(a) Insufficient moisture in the incubator	(a) Increase the evaporating surface of water or the sprays
		(b) Too much moisture at earlier stages	(b) Check wet-bulb readings
		(c) Nutrition problem	(c) Check flock feeding
5	(a) Hatching	(a) Incubator's temperature too high	(a) (b) (c) Ensure the temperature regulating gear is working and set at the correct operating temperature when the control switches off
	(b) Hatching too late	(b) Incubator's temperature too low	
	(c) Sticky chicks	(c) Incubator's temperature probably too high	
6	Malformed chicks	(a) Incubator's temperature too low	(a) Check thermometers, thermostats and electricity supply; follow manufacturer's

			instructions
		(b) Incubator's temperature too high	(b) Check thermometers, thermostats and electricity supply; follow manufacturer's instructions
		(c) Egg set incorrectly or not properly turned after setting	(c) Turn the eggs regularly at least three to five times a day; always turn the eggs in the reverse direction each time. Also, take care to set the eggs broad-end up
7	Spraddling chicks	Hatching trays too smooth	Use wire-meshed tray floors or cover slippery floors with burlap or other similar material
8	Weak chick	(a) Incubator or hatching unit overheating	(a) Ensure the temperature regulating gear is working and set at the correct operating temperature when the control switches off
		(b) Setting small eggs	(b) Only set eggs of the breed average size
	Small chick	(c) Too little moisture in incubator	(c) Increase the evaporating surface of water or the sprays
		(d) Too much fumigant left in hatcher	(d) Use the correct amount of fumigant. Do not fumigate between 24 and 96 hours after setting
	Heavy breathing chicks	(e) Too much moisture in hatcher	(e) Check wet-bulb readings
		(f) Possibly infectious disease	(f) Send chicks to a veterinary laboratory for diagnosis
		(g) Low average temperature during period of incubation	(g) Check thermometers, thermostats and electricity supply; follow manufacturer's instructions
	Mushy chicks	(h) Incubator has poor ventilation	(h) Omphalitis (navel infection)
(i) Incubator's ventilation faulty		(i) Carefully clean out and fumigate the incubator using formaldehyde at the higher strength; disinfect all equipment	
9	Hatch not coming off evenly	Setting eggs too diverse in age or size	Set eggs at least once a week and never retain hatching eggs longer than 10 days before setting; incubate only average-size eggs

FAQ

1. How must I store eggs?

Your eggs need to settle for at least 24 hours if they came through the post. This allows the air cell inside the egg to return to its normal size. Eggs should always be stored with the pointy end down. It will help with the hatchability. If you receive eggs that are getting old, you may only let them settle overnight.

2. When is the incubator ready to start incubating?

By the time you have gotten your eggs your incubator should have been running at least 24 hours. A week is even better. This gives you time to learn what's going to happen in the incubator and allows you to make any necessary adjustments before setting your eggs. If putting the eggs in the incubator without having the device properly adjusted, there is a high chance of ruining the eggs. Please note the internal egg temperature and the internal incubator temperature are different. The temperature of an incubator

changes constantly, rising and lowering. The temperature of an egg will be an average of the temperature swing in the incubator.

3. What is the recommended temperature and humidity inside the incubator?

Recommended temperature is 37.5°C measure anywhere inside the incubator. Humidity is 55% for the first 18 days, and 60-65% for the last 3 days of the incubation.

4. Is my thermometer accurate?

After the first hatch, you can raise or lower the temperature by what the incubation tells you. If the eggs hatched early the temperature needs to be lowered. If the eggs hatch late, the temperature needs to be raised. You can check your thermometer this way. Keep notes on everything you do during the incubation period as you can look back on them later. They will be the most valuable information that you can have. It won't be long until you can say "I know what happened, all I need to do is change this one little thing." Soon you will be able to make adjustments by knowing what to do, instead of guessing.

5. How long will it take to incubate chicken eggs?

The incubation period for chicken eggs is 21 days. You should turn your eggs at least three times a day for the first 18 days, and stop turning after the 18th day or use a hatcher if you have eggs from different days in the same machine. After day 18, keep the incubator close except to add water. This will help bring the humidity up to help the chicks hatch.