



380

User Instructions

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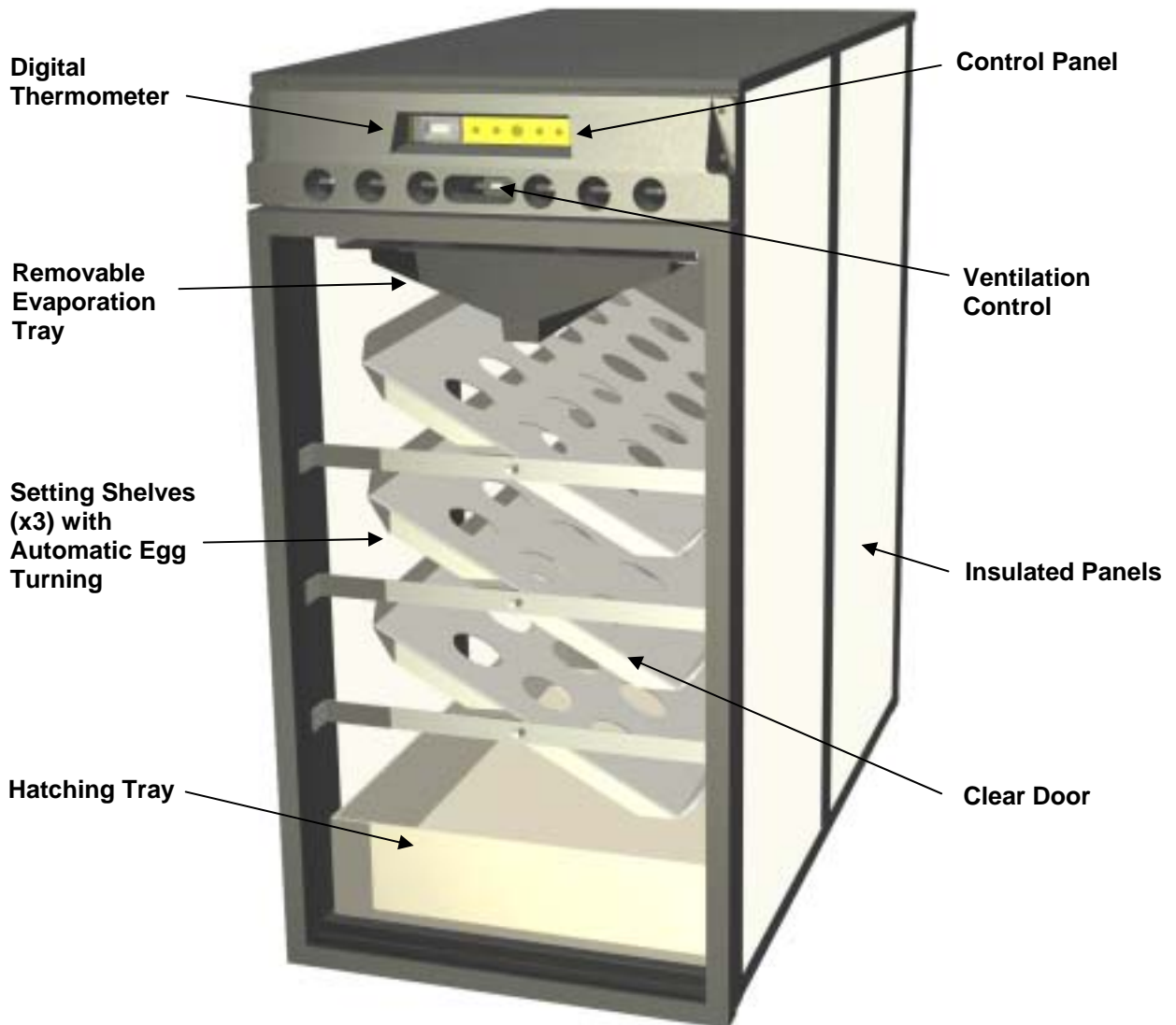
CAUTION:-

RISK OF ELECTRIC SHOCK! DO NOT CONNECT THE INCUBATOR TO THE ELECTRICITY SUPPLY UNTIL THE WHOLE INCUBATOR IS FULLY ASSEMBLED.

1. Introduction

These instructions detail the operation of your new 380 egg Digital Cabinet Incubator with automatic egg turning system. Please read these instructions carefully before setting up your machine to achieve best results and keep these instructions safe for future reference. This document includes recommended procedures for successful hatching but incubation involves the control and manipulation of a large number of factors and in certain circumstances different procedures may be necessary. Your incubator is designed to allow the user to vary the incubation conditions to suit a wide range of species in different ambient conditions and the specific set-up for every situation is beyond the scope of these instructions.

Fig. 1 Functional Features of the Ova-Easy 380 Cabinet Incubator with Automatic Turning.



2. Unpacking & Assembly

- 2.1 Your incubator has been supplied in protective packaging. Please remove all tape, strapping and packing from the incubator parts. Retain the carton and packing materials to enable the unit to be repacked. **Follow each step of the assembly instructions carefully to ensure the incubator is functional on start-up.**
- 2.2 Please identify each part (see list in Assembly Instructions) and check that they are all present and undamaged. If there are any parts damaged or missing please contact your retailer. Please note Egg Setting Trays are supplied separately.
- 2.3 Check also that the electrical supply matches the machine's requirements (marked on the technical label on the outside of the box and on the 'Top Cover' part of the Incubator).

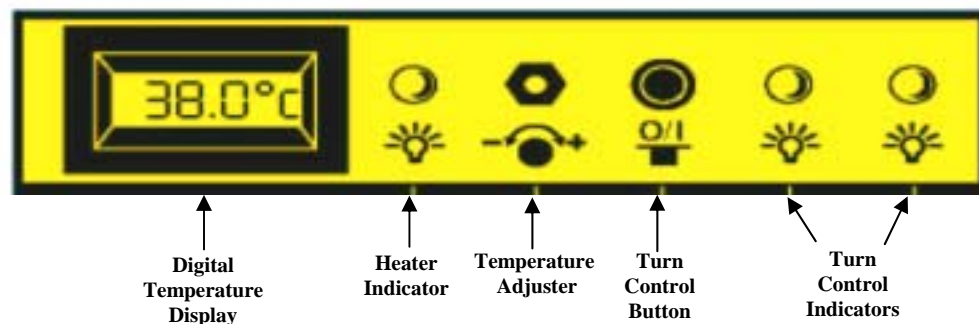
ON NO ACCOUNT CONNECT TO THE ELECTRICITY SUPPLY UNLESS THE INCUBATOR IS FULLY ASSEMBLED AS PER THE ASSEMBLY INSTRUCTIONS. THERE MAY BE DANGEROUS VOLTAGES PRESENT AND A RISK OF ELECTRIC SHOCK.

3. Location and Installation

THE INCUBATOR MUST BE PLACED IN AN INDOOR AREA NOT SUBJECT TO SPLASHES OF WATER OR WET CONDITIONS.

- 3.1 Your incubator will give best results in a room free from wide temperature variations and with generous ventilation – particularly if several incubators are running at the same time. Ensure that the room temperature cannot drop on a cold night. Ideally thermostatically control the room at between 20 and 25°C (68 and 77°F). Never allow the room temperature to drop below 15°C (59°F) and ensure that the incubator cannot be exposed to direct sunlight.
- 3.2 Always place the incubator upright on a flat level surface. The incubator weighs 27Kg (60Lbs). Ensure the surface is adequate to support the weight of the machine and contents.
- 3.3 Open the door, slide out the Evaporation Tray and fill with 1:200 mix of water and incubation disinfectant solution. The water level should be no higher than approx 1" (2.5cm) from the top. Close the door.
- 3.4 Plug the incubator mains supply cable into the inlet on the rear of the incubator. Plug the cable into a suitable outlet ensuring that the cables are not pulled tight and that the plug may be reached once the incubator is in its final position. The incubator fans will start, the red Heater Indicator will illuminate continuously and the digital temperature display will show the air temperature.

Control Panel Layout



- 3.5 On power-up the turning system may start automatically or should be initiated by pressing the Turn Control Button. Turning will stop at the end of its travel (approx 80°). **Always ensure the shelves are free of obstructions and the door is closed during turning.** Push the Turn Control Button again to start a turn in the opposite direction. If both the AMBER and GREEN Turn Control Indicators stay lit at the same time there could be an obstruction or debris jamming the turning assembly. Check for any obstruction and push the Turn Control Button again to start a turn. If both indicators remain lit please contact your Ova-Easy dealer. Allow the incubator to run for at least an hour to stabilise the temperature before making adjustments or setting eggs (see section 5.0 below).

4. Storage of eggs

- 4.1 Store eggs in cool, damp conditions. Most species may be safely stored for up to 14 days before serious reductions in hatch rates are likely. Daily turning of stored eggs also helps maintain hatchability.
- 4.2 Discard cracked, mis-shaped and heavily soiled eggs (if possible). Only wash soiled eggs using a brand egg wash solution following the manufacturer's instructions. It is essential to wash eggs in solution which is significantly warmer than the egg. Bear in mind that all solutions will remove the outer cuticle from the egg as well as the dirt and may leave the egg at greater risk from bacterial contamination in the future.

5. Temperature

Stable and correct temperature is essential for good results. Adjust with care.

Note: your incubator may not be set to the correct temperature from the factory and the following procedure must be followed before setting eggs.

- 5.1 As the incubator warms up and approaches its control setting the red Heater Indicator LED will change from continuously on to flashing. Allow the incubator to stabilise for at least an hour before adjusting the temperature.
- 5.2 Rotate the red adjustment spindle with a small screwdriver – clockwise to increase temperature, anticlockwise to reduce it. 1°C (2°F) is about ¼ turn of the spindle.
- 5.3 When reducing temperature the red LED may go out while the incubator cools – this is normal.
- 5.4 Recommended incubation temperatures vary between models of incubator due to their different designs. Be sure to follow the Manufacturer's guidelines. Refer to the digital temperature display to check temperature. The display shows degrees Celsius in increments of 0.2°. Adjust temperature with care – small differences have large effects on hatching performance.

Recommended temperature display setting for Ova-Easy 380:

Typical incubation period:

Hens	38.0 – 38.2°C	100.4 – 100.8°F	21 days
Pheasant	38.0 – 38.2°C	100.4 – 100.8°F	23-27 days
Quail	38.2 – 38.4°C	100.8 – 101.1°F	16-23 days
Ducks	38.0 – 38.2°C	100.4 – 100.8°F	28 days
Geese	38.0 – 38.2°C	100.4 – 100.8°F	28-32 days

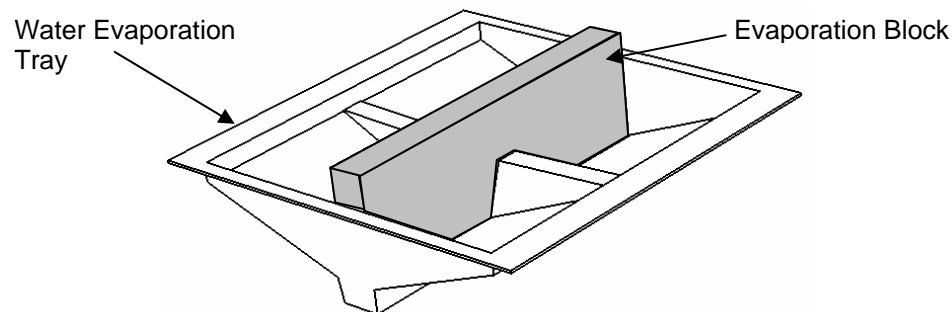
- 5.5 Developing embryos are fairly tolerant of short-term temperature drops and the user need not be concerned about cooling that occurs when inspecting eggs. Temperatures above ideal can quickly have a serious detrimental effect on hatch rates and must be avoided.
- 5.6 The Cabinet Incubator can be used in conjunction with a temperature alarm system that gives audible and visual warning of mains failure, over temperature and under temperature. Contact your dealer for further details.

6. Humidity and Ventilation

Short term variations in humidity are not important. The average humidity over the incubation period needs to be near optimum to achieve the ideal weight loss. High humidity for the day or two of hatching is also important. Beware chronic, excessive humidity.

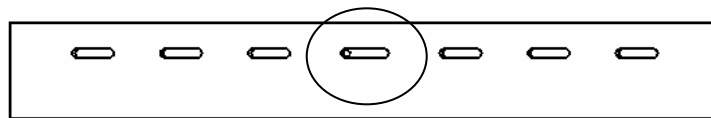
- 6.1 Two main factors affect incubation humidity: water evaporation within the cabinet (from eggs as well as from additional water) and levels of ventilation. The water content of the air being drawn through the incubator will also have an effect.
- 6.2 There are three methods available to bird breeders to achieve correct humidity levels:
- Follow manufacturers guidelines for water and ventilation levels.
 - Measure humidity levels and adjust to match published guidelines for different species.
 - Monitor egg weight loss which varies as a direct result of humidity and correct against published weight loss figures for the species.

NOTE:- Sections of evaporation block may be used to assist in reaching high levels of humidity. Follow this diagram as a guide: -

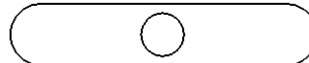


- a) As a general guide for poultry set the ventilation control to about half open and maintain water levels in the Evaporation Tray. If the incubator is not full of eggs reduce the ventilation level accordingly (below).

Ventilation Control Panel



Vents Closed



Vents Half Open



Vents Open

For all species ensure the water is high in the last two days of incubation. Higher humidity levels are needed for hatching to prevent membranes drying too quickly. **Do not close the vent below 1/3rd when hatching.**

The above guidelines make no provision for different ambient conditions and are necessarily rather generalised but they are simple and often effective.

- b) If measuring humidity levels directly be cautious of readings from low cost analog or digital hygrometers.

Generally accepted incubation RH levels for species groups:

During incubation	Poultry	40-50% RH
	Waterfowl	45-55% RH
Hatching	All species	65% RH or more

For more specific information on particular species' requirements check the relevant literature.

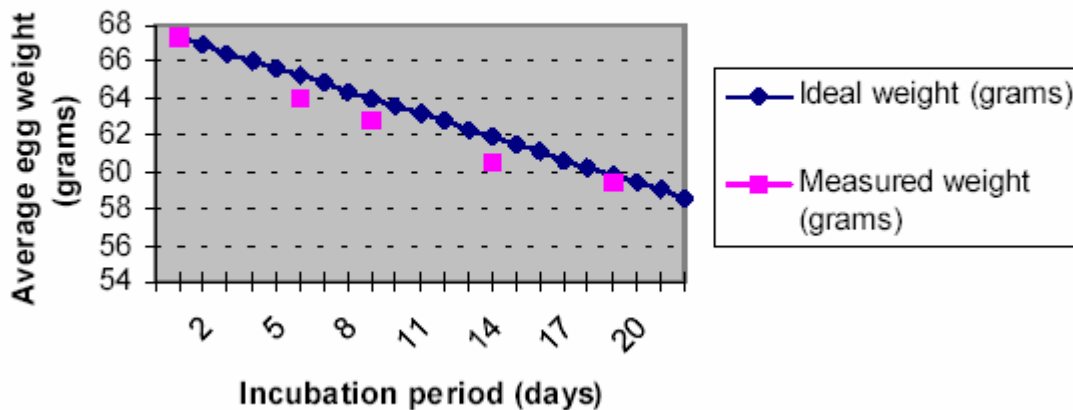
- c) Eggs lose moisture through their shells and the rate of evaporation depends on the humidity levels around the eggs and the shell porosity. During incubation eggs need to lose a fixed amount of water which corresponds to a loss in weight of around 13-16% depending on species. By weighing eggs periodically during incubation it is possible to monitor and, if necessary, correct humidity levels to achieve the correct weight loss.

Weigh the eggs on the day they are set in the incubator, take the average weight and plot this on a graph (see example below). The ideal weight loss line can be plotted by joining the point representing initial average weight with the ideal hatch weight (13-16% less depending on species) with the x-axis representing the incubation period (in days).

By measuring actual average weights every few days the actual weight loss can be plotted and compared to the ideal weight loss line and corrections can be made. For example if the actual weight loss was greater than ideal (see graph below) then the air has been too dry and humidity levels need to be increased to compensate.

Typical ideal weight losses for species groups: Poultry 13%
Waterfowl 14%

Egg weight loss chart



Several incubation software such as the EggWISE Software calculate egg weight loss and make achieving correct humidity easy.

- 6.3 Of the three methods given above the most reliable is egg weight method and is recommended – particularly where poor hatch rates are experienced or if eggs of high value are being incubated.
- 6.4 Alter the setting of the ventilation control and have the Evaporation Tray either dry, with water, or with water plus evaporating-block to change the humidity level (see section 6.2a above).

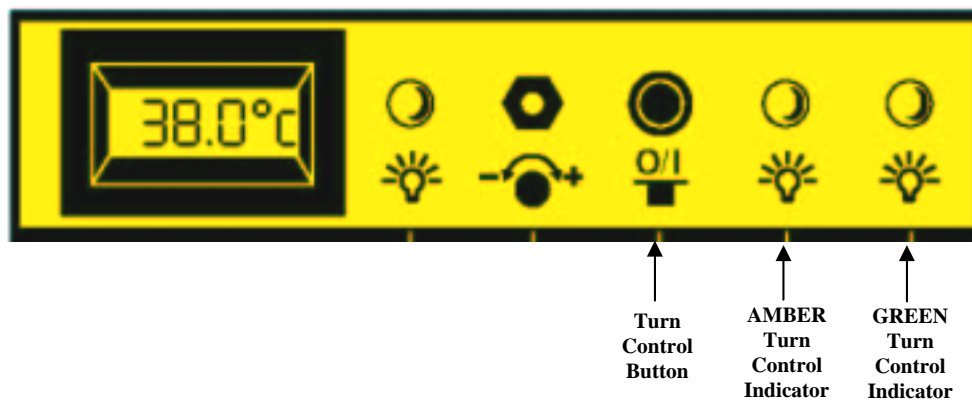
- 6.5 In all cases the humidity for hatching needs to be high. Because of the short duration involved water/weight loss will not be significantly affected. High humidity is necessary to prevent membranes drying and hardening before the hatch fully emerges. Humidity will naturally increase as the first eggs begin to hatch and internal membranes begin to dry. This effect is in addition to the increased amount of water and evaporating-block.
- 6.6 During hatching the high humidity levels will fall dramatically when the door is opened and will take some time to build up. Resist the temptation open the door frequently – leave for at least 6 hours between inspections.

7. Egg Setting

- 7.1 Before setting eggs ensure that the incubator has been run for several hours and has stabilised at the correct temperature.
- 7.2 Press the Turn Control Button. The shelves will start to turn and the Amber Turn Control Indicator will light to warn that the shelves are moving. **Always ensure the shelves are free of obstructions and the door is closed during turning.** Once the shelves are level, press the Turn Control Button again to stop the turn. The turn system will now remain in this position for 30 minutes allowing egg trays to be easily handled. Once the egg trays have been placed on the shelves close the door and press the Turn Control Button to start the turn system again. **If the user forgets to restart the turning, the turn system will automatically reactivate in 30 minutes.**
- 7.3 Use the standard egg “flats” or Universal Egg Trays as purchased with the incubator to set the eggs on the setting shelves. **Load the shelves evenly to avoid overloading the turning system.**
- 7.4 Eggs may be set on end (or at an angle) provided the large end of the egg is upwards. Eggs rolling through a few degrees as the incubator turns are not in danger.
- 7.5 Once the eggs have been set the temperature must not be adjusted for 24 hours to allow the eggs to warm. Check the water level every 3 days or so and temperature daily. Candle the eggs after 1/3rd of the incubation period has elapsed to reject clear, infertile eggs (see section 12).

8. Egg Turning

Ensure the incubator is not overloaded and that nothing can restrict the movement of the trays or setting shelves. This may damage the turning mechanism and invalidate the guarantee. Load the setting shelves evenly to help prevent imbalanced operation.



- 8.1 On power up the two Turn Control Indicators may be lit. Push the Turn Control Button to activate the Automatic Turning system. The trays will turn until they reach their maximum turn angle. There shall then be a 1 hour delay until the next turn. The GREEN Turn Control Indicator will be lit to show the 1 hour delay timer is running.

- 8.2 To override the 1 hour delay and activate the next turn, push the Turn Control Button once. The turn will start and the AMBER Turn Control Indicator will light to show the turn is in progress. Do not open the door during a turn.
- 8.3 To pause the turn with the shelves level, or to pause the turn in an emergency, press the Turn Control Button once. The GREEN Turn Control Indicator will flash to show the 30 minute pause timer is running.
- 8.4 To switch the turn system off, press and hold the Turn Control Button for 3 seconds. The turn system will stop and the AMBER Turn Control Indicator will flash to show the turn system is switched off. Note that if power is interrupted the turn system will reset and switch back on.



Turn Control Indicators Summary

ERROR – PRESS BUTTON TO RESET OR, CONTACT OVA-EASY DEALER.

1 HOUR TIMER RUNNING BETWEEN TURNS

TURN IN PROGRESS – DO NOT OPEN DOOR

30 MINUTE PAUSE TIMER RUNNING (GREEN LAMP FLASHING)

Regular lubrication of the turn drive rod (in the rear left hand side of the cabinet) with light oil helps to ensure smooth, silent operation and long life.

9. Hatching

- 9.1 For maximum setting capacity, cleanliness, flexibility and performance use the hatching tray situated in the base of the incubator.
- 9.2 Eggs nearing hatch benefit from a slightly lower temperature. The hatching tray temperature is approximately 1°C (2°F) lower than the setting shelves.
- 9.3 Hatching humidity levels need to be high (see section 6.0 above) but note that the **ventilation control must be at least 1/3rd open during hatching.**
- 9.4 When most eggs have hatched (12 to 48 hours) it may be recommended to remove the hatchlings to a brooder.
- 9.5 During hatching the high humidity levels will fall dramatically when the door is opened and will take some time to build up. Resist the temptation to open the door frequently – leave for at least 6 hours between inspections.

10. Cleaning Up

10.1 **IMPORTANT:**

DISCONNECT THE INCUBATOR FROM THE MAINS POWER SUPPLY DURING CLEANING.

ENSURE THAT ALL ELECTRICAL PARTS ARE KEPT DRY.

NEVER WASH THE TRAYS, INSULATED PANELS, FASCIA OR EVAPORATION TRAY PARTS WITH LIQUIDS OVER 50°C (120°F). DO NOT USE A DISHWASHER TO CLEAN THESE PARTS.

- 10.2 Following each hatch in the Cabinet Incubator remove and wash the egg tray(s), and most importantly the Hatch Tray in Incubation Disinfectant Solution. Wipe all other internal surfaces with a soft cloth soaked in the solution. Ensure that the instructions supplied with the fluid are followed. Dust and fluff may be removed from the fan guard area with a soft brush.
- 10.3 If a separate hatcher is used the procedure above should still be followed every two months.
- 10.4 The exterior of the incubator may be cleaned with a damp cloth. Avoid allowing any moisture to get inside the top electrical housing or electrical connector at rear.
- 10.5 Always clean the incubator before storage and ensure that the unit is totally dry inside and out.

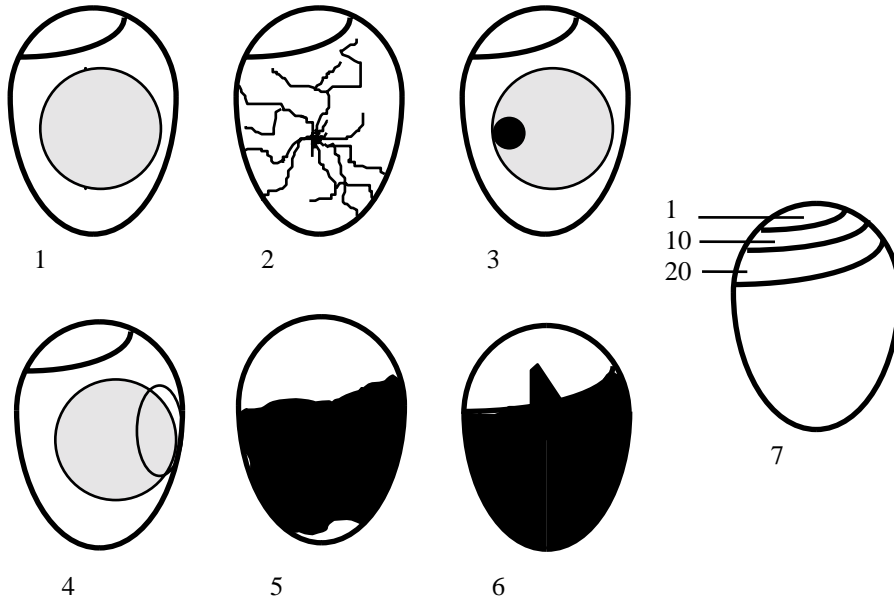
11. Servicing

IMPORTANT: THE HEATER AND CONTROL SYSTEM ARE AT MAINS VOLTAGE. NEVER ATTEMPT ANY KIND OR FORM OF SERVICING UNLESS THE MACHINE IS SWITCH OFF, AND BEEN OFF FOR AT LEAST 1 HOUR.

- 11.1 Under certain conditions it is possible that condensation may form on the inner walls. The presence of water gathering at the base of the incubator does not affect the performance of your incubator and does not pose an electrical hazard
- 11.2 In case of failure first check that the mains power supply is working. If the problem persists contact your Ova-Easy distributor.
- 11.3 Lubrication (e.g. with WD-40 or other light oil) of the turn drive rod is recommended once a year.
- 11.4 No lubrication or further servicing is required beyond the instructions above.

12. Troubleshooting

- 12.1 Poor hatching results are frustrating and can be caused by a large number of factors. The most common are given below. Ova-Easy incubators and their distributors will not be held responsible for loss of eggs or chicks under any circumstances.
- 12.2 Gather as much information from the hatching results as possible to enable the problem to be analysed in detail. Record dates that eggs are set, incubator settings, dates of hatches, weight losses and the number and condition of hatchlings. Candle or break open unhatched eggs to estimate the extent of embryo development. Candling lamps are available from your dealer.



- 1) Clear when candled - probably infertile (or very early death) when candled at 8 days
- 2) Fertile with red blood vessels - after 8 days
- 3) Red or black staining - early death when candled at 8 days
- 4) Embryo with red blood 'ring' - early death when candled at 8 days
- 5) Dark outline with ill defined detail - late death (10-16 days)
- 6) Live embryo with bill in air sack - due to hatch in 24-48 hours
- 7) Normal development of the air pocket according to number of days

12.3 General guides:

Observation	Likely Cause(s)	Solution(s)
No chicks hatch	Infertility, infection, drastically incorrect incubation settings, parent ill health.	Check egg viability – are similar eggs hatching naturally. Disinfect the incubator. Check incubator settings and procedures – particularly temperature.
Chicks hatch earlier than expected, deformities.	Incubation temperature too high	Reduce incubation temperature slightly 0.5°C (1°F)
Chicks hatch later than expected	Incubation temperature too low	Raise incubation temperature slightly 0.5°C (1°F)
Hatch dates widely spread	Different rates of development due to different storage times, incubation temperature variation.	Limit egg storage times. Check for incubation temperature variation – sunlight, large room variation etc.
Late stage 'death in shell'	Incorrect humidity, probably too high.	Try reducing average humidity levels (but see section 6 above)
Generally poor results	Incorrect incubation settings, poor parent bird health, inadequate egg turning,	Improve parent bird health, check all incubation settings, analyse egg weight loss to confirm humidity correct, check turning working correctly.

13. Specification

Maximum Setting Capacities:

Egg size	Universal Tray setting capacity	Hatching Tray capacity
Quail	600	250
Partridge	336	135
Pheasant	282	111
Hen	216	96
Duck	141	70
Goose	81	35

Dimensions:

Assembled	820 x 420 x 800mm (32.5" x 16.5" x 31.5") HxWxD
Packed	800 x 500 x 450mm (31.5" x 20" x 18")

Weight:

Incubator only	27 Kg (60 Lbs)
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Power Consumption:

Maximum	200 Watts
(typical average)	100 Watts

Electrical Supply:

110V 60Hz