

Brinsea

HATCHMAKER, POLYHATCH & HATCHMASTER STILL AIR INCUBATORS & HATCHERS USER INSTRUCTIONS

These instructions outline the essential procedure for successful incubation of most domesticated species in this range of still air incubators. For more detailed information and for less common species, a variety of books is available. However, note particularly the differences between temperatures quoted for still air and forced air incubators in any text references.

The instructions below apply generally to all models. The differences between the models are as follow:

Hatchmaker: For use as a manual turning incubator or as a hatcher. Automatic egg turning is not applicable. Humidity pans are in the form of two concentric rings molded in the base beneath the egg tray. Access by removing the egg tray or pouring water through the egg tray.

Polyhatch: Incubator with automatic egg turning. Humidity pans are molded into either side of the base with pouring channels accessible under the tray end covers.

Hatchmaster A: Incubator with automatic egg turning. Humidity pans are in the base with filling slots outside the incubator front. Damper lever to control fresh air inlet in the center of the front of the incubator. Move to the left to reduce humidity (increase ventilation).

Hatchmaster H: Intended for use as a hatcher for eggs incubated in another machine. Automatic egg turning not applicable. Humidity pans in the base with filling slots outside the incubator front. Lift-out window provided for easy access to chicks.

Location

1. Ensure a steady room temperature day and night around 70°F. Use an electric heater with a thermostat if necessary.
2. Keep out of direct sunlight. Beware of rapid temperature rise due to sunlight. Ensure that the incubator is on a level surface.
3. Check that available electrical supply matches the machine.

Always disconnect the power supply before moving the incubator.

Temperature

Caution: Errors in temperature account for most failures. Adjust with care.

4. Temperature may not be set to the correct temperature from factory. Check against thermometer supplied. Allow 2 hours to stabilize the temperature before setting eggs. The thermometer is mounted in a swivel clip. Ensure that the bulb is adjusted just clear of the top of the eggs.
5. Fine adjustments can be made with a small screwdriver by adjusting the screw on the control panel - clockwise to increase temperature. A half turn is approximately 3°F. The red light indicates when the heater is on and will flash about once every second when the incubator is up to temperature.
6. Recommended temperatures: Incubation period

Hens	39.2°C	102.5°F	21 days
Pheasant	39.5°C	103°F	24 days
Quail	39.2°C	102.5°F	17 days
Ducks	39°C	102°F	28 days
Geese	39°C	102°F	28-32 days
7. Temperature variations (day to night for example) or constantly low temperature can cause malformations or partial development of the embryo. Constantly high temperature will tend to speed up development but risk early death from heat stress. Brief temperature reduction when checking water levels or inspection will not affect the development of embryos.

Humidity and Ventilation

Note: Short term variations in humidity are not important. The average over the incubation period needs to be near optimum for the ideal weight loss.

8. Recommended humidity:

During incubation:	Poultry	40-50% RH
	Waterfowl	50% RH
	Exotics	Check literature

As a general guide for poultry, set the eggs with water in just one pan (Hatchmaker-inner ring) and adjust humidity according to weight loss or air space development.

If the incubator is less than half full, cover two ventilation holes in the lid to reduce ventilation. At hatching stage, humidity will rise sharply as chicks emerge.

9. To increase humidity, increase wet surface in incubator by filling both water pans in the molded base.
10. To reduce humidity, reduce wet surface and if necessary increase ventilation. (Hatchmaster A: move damper lever to the left).
11. **Caution: excessive humidity can cause problems!**
The air pocket in the egg should occupy between a quarter and a third of the egg at time of hatching. If humidity is too high, chicks will be wet and sticky and the air pocket too small leading to death 24 to 48 hours before hatching.
12. Measuring humidity accurately is particularly difficult in “still air” incubators. The relative humidity will be higher at the bottom where the temperature is lower. Be cautious of instrument readings. Preferably weigh eggs because humidity affects their weight loss. Aim for 12-13% loss over the incubation period. High humidity reduces weight loss and vice-versa.

Storage of eggs

13. Store eggs in a cool, damp place. Avoid storing longer than 14 days. Turn eggs daily during storage.
14. Discard soiled eggs if possible. Don't wash eggs unless under strict directions with proprietary solutions.

Manual egg turning (Hatchmaker)

15. Mark each egg with a pencil “X” one side and “O” the other. This ensures that you can see which eggs you have turned. Turn three times a day starting on the second day. Always turn about the pointed end to reduce the chance of damaging the internal structures of the egg.

Automatic egg turning (Polyhatch & Hatchmaster A)

16. The movement of the tray from side to side causes the eggs to turn. The extent of movement of the tray must be adjusted to suit the size of eggs being incubated as follows.
- 17a. Polyhatch: the underneath of the egg tray is marked with an “L” and an “S”. For large eggs (geese, turkey, large duck or hens), the “L” should be above the turning motor.
- 17b. Hatchmaster A: The black plastic arm with a wheel under the center of the egg tray is a push fit on the drive shaft and can be eased off with a screwdriver.

There are three available holes in the arm. For larger eggs such as geese requiring maximum tray movement use the hole furthest from the wheel. Use the central hole for hens, duck, turkey etc. and the hole nearest the wheel for bantams, pheasant quail and most exotics.

The arm may then be pushed firmly into the drive shaft, observing the position of the “flat” on the shaft. Replace the egg tray.

18. Replace the two metal end covers to engage in the first notch and cover the spaces at the ends of the moving tray.

Note: Always keep the space clear at the ends of the moving tray. Damage will result to the turning mechanism if this is obstructed.

19. Place the dividing rods across the incubator in the locating notches, spacing them so that the eggs lie freely in between (for hens eggs normally every fifth notch). Use two rods in each notch for larger eggs.
20. Set the eggs between the rods. Check manually that the tray is free to move (depending on the position of the turning arm) and that all the eggs roll.
21. Plug in the electrical supply to the socket in the base of the incubator. Eggs are turned twice/hour. Movement is slow but nearly continuous. The tray will stay at each end position for about 15 minutes.

Hatching

22. Stop egg turning 2 or 3 days before hatch is due. Remove the rods.
23. When first egg pips, raise humidity to maximum by adding warm water to both pans (Hatchmaster A: move ventilation lever to right).
24. Keep the incubator lid on and don't interfere! Humidity will rise rapidly when chicks emerge and condensation may form.
25. When most eggs have hatched (12 to 48 hours) remove hatchlings to a brooder to dry out. (Brinsea Cosy-Lamp recommended, TLC-4 Brooder or Parrot Rearing Module for exotics).

Cleaning up

26. **Unplug from the electrical supply!**
27. Discard shells and unhatched eggs. Wash the egg tray in running water. Wipe incubator base with a damp cloth and dry thoroughly.
28. Remove dust from incubator top with a soft brush.
Caution: Keep electrical parts dry!

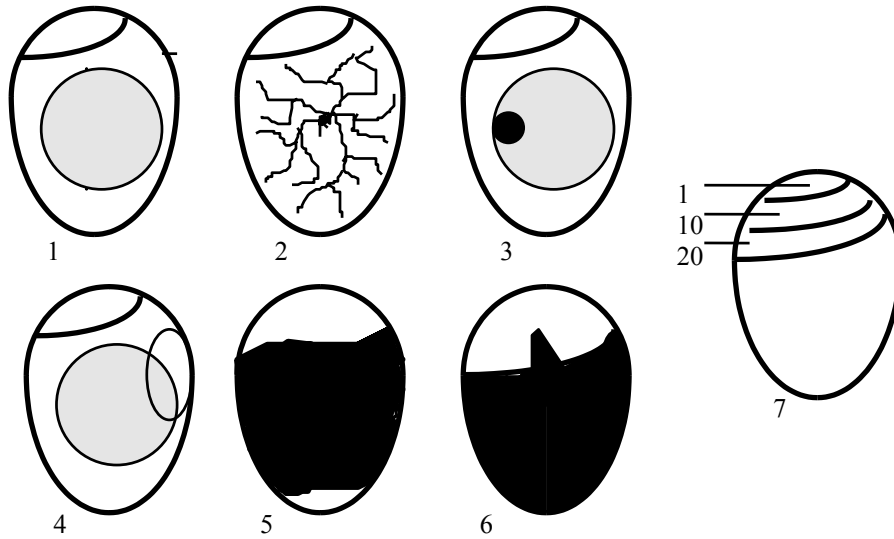
Servicing

29. No routine servicing is necessary other than cleaning. In case of failure refer to your distributor or to Brinsea Service Department.

All operational parts are available and may be fitted by a suitably qualified person. Instruction sheets are supplied with replacement parts.

Troubleshooting

30. Candle eggs with a high intensity light source (such as the Brinsea Eglume) to gauge the extent of embryo development and air space increase during incubation. Break open unhatched eggs.



- 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 (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 the number of days
31. Incubation advice is available from Brinsea Products and a range of books on the subject can also be supplied.

12 VOLT POLYHATCH & HATCHMAKER

These instructions apply to special 12V.DC versions of these products.

32. 12 volt products are for low voltage supply only and must never be connected directly to the mains.
33. Connect to a 12 volt vehicle battery observing the polarity, brown to +, blue to -. The condition of the battery and room temperature will determine the interval between charges.
34. Maximum continuous current consumption will be 4.0 Amp (Polyhatch) or 2.5 Amp (Hatchmaker). A fully charged 40 Ampere/hour battery will operate a Polyhatch for at least 10 hours. (4 Amps x 10 hours = 40 Ampere/hour). Twice this life may be expected in reasonable ambient temperatures.
35. 12 volt products may be run from the 115v mains supply via a transformer/rectifier or a battery charger suitable for the current indicated above. The voltage may be from 11 to 14 volts. Some small temperature adjustment may be necessary when changing between different supplies.