

Brinsea

MODULAR HATCHER EGG INCUBATORS

User Instructions

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1.0 Introduction

These instructions outline the essential procedure for successful hatching of most avian species in your new Modular Hatcher - both standard and ratite versions. Please read them 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 conditions required for common species groups are given below but reference to texts on more unusual species may be necessary. There are a range of books available covering incubation techniques but we recommend our publication 'Essentials of Incubation' which is specifically designed to compliment our operating instructions and provide an understanding of the processes of incubation and how best to control them. 'Essentials of Incubation' also provides a detailed trouble shooting guide to help identify causes of poor results and offer solutions.

The Brinsea Modular Hatchers are designed specifically for the final hatching stages of incubation after egg turning is no longer required.

The operation of both standard and ratite versions is similar, the instructions below apply to both models. The differences between the two models are that the ratite hatcher is taller to accommodate emu, rhea and ostrich eggs/chicks and, as a result of its greater volume, the ratite hatcher has a second heater in the base of the cabinet.

2.0 Unpacking

Your incubator has been supplied in protective packaging. Please remove all tape, strapping and packing from the incubator and parts. Retain the carton and packing materials to enable the unit to be repacked.

Your Modular Hatcher will include as standard:

<u>Quantity</u>	<u>Item</u>
1	Incubator (including removable door/tray)
1	Hatching mat
1	Thermometer
1	Guarantee card

- 2.1 Please identify each part and check that they are all present and undamaged. If there are any parts damaged or missing please contact your retailer or Brinsea Products (at the address at the end of the document)
- 2.2 Check also that the electrical supply matches the machine's requirements (marked on the technical label on the rear of the incubator. UK machines are fitted with 3 Amp mains plug fuses – if replaced always use this rating.
- 2.4 Complete and return your guarantee card to register for your free 2 year guarantee.

3.0 Location and Installation

Your Modular Hatcher will give best results in a room free from wide temperature variations and with generous ventilation – particularly if several incubators are with 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.

- 3.1 Place the hatcher base on a flat, level surface (workbench height is ideal) with the door facing forwards. The top of the Brinsea Modular Hatcher is designed to provide location for additional hatchers or the Autoturn base of a Brinsea Octagon 100 or 250 incubator.
- 3.2 Multiples of Hatchers may be stacked together vertically or side by side to accommodate any hatching capacity required. Stability and ease of access are the only constraints. As a practical guide, up to three standard or two ratite hatchers may be stacked beneath an Octagon 100 or 250 turning base. Hatchers can be stacked four to six high on their own.
- 3.3 Fit the thermometer into the cavity on the inside of the door with the bulb of the thermometer extending into the interior of the cabinet. Swivel the thermometer until the scale is visible through the window.
- 3.4 Remove the interior lamp cover from the inside of the door and fit four AA or equivalent size batteries (not supplied) into the batter holder. The interior light serves to improve visibility of the emerging chicks through the window and illuminate the thermometer scale making readings easier.
- 3.9 Plug incubator mains supply cable into a suitable outlet. The red LED on the temperature control housing will illuminate continuously.
- 3.11 Allow the incubator to run for at least an hour to stabilise the temperature before making adjustments or setting eggs (see below).

Always disconnect the power supply before moving the incubator.

4.0 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.

- 4.1 As the Modular Hatcher warms up and approaches its control setting the red LED will change from continuously on to flashing. Allow the Modular Hatcher to stabilise for at least an hour before adjusting the temperature.
- 4.2 Rotate the red adjustment spindle with a small screwdriver – clockwise to increase temperature, anticlockwise to reduce it. One degree Celcius is about ¼ turn of the spindle.
- 4.3 When reducing temperature the red LED may go out while the Modular Hatcher cools – this is normal.
- 4.4 Use the thermometer supplied to check temperature (see Servicing, section 8). Adjust temperature with care – small differences have large effects on hatching performance.

4.0 Temperature

Recommended hatching temperatures:

Hens	38.0°C (100.5°F)
Pheasant	38.5°C (101.5°F)
Quail	38.5°C (101.5°F)
Ducks	37.5°C (99.5°F)
Geese	37.5°C (99.5°F)
Parrots (all)	37.0°C (98.6°F)
Emu	36.0°C (97°F)
Rhea (Nandu)	35.0°C (95°F)
Ostrich	35.0°C (95°F)

- 4.5 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.
- 4.6 Hatching temperatures may be up to 1°C lower than setting temperature. Note that when using a moving or forced air setter the temperatures measured will be average egg temperatures. The temperatures listed above are corrected for the position of the thermometer and averages will be lower than those given above.
- 4.7 By hatching stage temperatures become less critical than earlier in incubation. Minor temperature variation (e.g. day to night) is not likely to cause problems, but prolonged over-temperature will cause heat stress and mortalities.

5.0 Humidity and ventilation for Hatching

- 5.1. Humidity levels for hatching need to be high enough to prevent membranes drying before the chicks fully emerge but is otherwise uncritical. Ventilation levels need to be high enough to prevent Carbon Dioxide build up without adverse reduction in humidity.
- 5.2. Fill both reservoirs with water and ensure all vents are clear. Humidity levels will rise sharply as chicks start to emerge and the door can be opened by 1 to 2 cm (1/2 - 3/4") when about half the chicks have hatched to further increase ventilation.
- 5.3 Resist the temptation to open the door more frequently than every six hours during hatching. This reduces humidity levels which can take considerable time to recover.
- 5.4 Once the hatch is complete the door can be opened further to allow the chicks to dry. After 24 hours transfer dry chicks to a brooder (Brinsea Cosylamp recommended for precocious species, Brinsea Hospital Cage or Parrot Rearing Module for altricial species).

6.0 Egg Setting

- 6.1 After pouring water into both grooves patterns, place the hatching mat in the tray bottom and run the hatcher for at least an hour at the correct temperature (see section 4) to warm the water.
- 6.2 Eggs should be transferred to the hatcher no earlier than 2 days before they are due to hatch and no later than when the first egg 'pips'. Place the eggs onto the hatching mat. Eggs may be angled with the large end uppermost to maximise the number of eggs that can be accommodated.
- 6.3 Care must be taken when lifting the laden egg tray to support the tray underneath and not to lift using the door alone.

7.0 Cleaning Up

7.1 **IMPORTANT:**

DISCONNECT THE INCUBATOR AND BASE FROM THE MAINS POWER SUPPLY DURING CLEANING.

ENSURE THAT ALL ELECTRICAL PARTS ARE KEPT DRY.

NEVER WASH THE TRAY OR CABINET PARTS IN LIQUIDS OVER 50°C (120°F). DO NOT USE A DISHWASHER TO CLEAN TRAYS OR COVERS.

- 7.3 Following each hatch remove shells and unhatched eggs. Unscrew the tray from the door and wash the tray and hatching mat under running water then immerse in sterilising solution. Wipe all internal surfaces with a soft cloth soaked in a sterilising agent such as Milton. Allow to dry before screwing the tray back to the door.
- 7.4 The exterior of the cabinet may cleaned with a damp cloth.
- 7.5 Always clean the Modular Hatcher before storage and ensure that the unit is totally dry inside and out.

8.0 Servicing

8.1 **IMPORTANT**

Modular Hatchers are fitted with mercury thermometers except in countries where mercury is prohibited, in this case colour spirit thermometers are used. No routine servicing is necessary for mercury types but spirit thermometers sometimes suffer from evaporation and condensation of the liquid resulting in clear spirit forming at the top of the column corrupting the readings. To avoid this problem it is essential that between each hatch the thermometer is warmed gently in warm water to take the spirit to the top of the column, allowing any clear distillate to be re-incorporated, before using again.

- 8.2 In case of failure first check that the mains power supply is working and that the mains plug fuse is intact. If the problem persists contact your distributor or Brinsea Products Service Dept.

- 8.3 Parts are available for the Modular Hatcher and most are readily exchanged by a suitably qualified person equipped with basic tools.
Fitting instructions are supplied with replacement parts.

9.0 Troubleshooting

- 9.1 Poor hatching results are frustrating and can be caused by a large number of factors. The most common are given below but see the Brinsea publication 'Essentials of Incubation' for further details.
- 9.2 Glean 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. The Brinsea Egglume candling lamps are available from your dealer.
- 9.3 Some 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)
Chicks hatch later than expected	Incubation temperature too low	Increase incubation temperature slightly (0.5°C)
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.

10.0 Specification

Modular Hatcher Maximum Setting Capacities:

Standard Modular Hatcher		Ratite Modular Hatcher
<u>Egg size</u>	<u>No. eggs</u>	<u>No. eggs</u>
Quail	160	160
Partridge		
Pheasant	95	95
Hen	65	65
Duck	55-60	55-60
Turkey	55-60	55-60
Goose	22-30	22-30
Emu/Rhea	-	14-16
Ostrich	-	8-10
Dimensions:	Standard (mm)	450 wide x 640 deep x 250 high
	Ratite (mm)	450 wide x 640 deep x 370 high
Weight:	Standard	8kg
	Ratite	9.5kg
Power Consumption	Max.	50 Watts (Standard version) 100 Watts (Ratite version)
	Typical average	25 Watts (Standard version) 50 Watts (Ratite version)
Electrical Supply		230v 50Hz or 115v 60Hz as ordered

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