

Brinsea

Octagon 20/40 Wet Bulb Thermometer

USER INSTRUCTIONS

Introduction

Your new wet bulb thermometer is specifically designed to allow the accurate measurement of relative humidity in the Brinsea Octagon 20 MkIII, Octagon 20 digital and Octagon 40 digital incubators or Parrot Rearing Module. To derive % relative humidity (%RH), two temperatures are recorded, one normal 'dry bulb' temperature and one 'wet bulb' temperature where the thermometer probe is moistened. The unit consists of a two piece translucent moulding, a liquid-in-glass incubation thermometer and a length of hollow wick. A clip and pair of screws and nuts are included to equip your incubator to accept the wet bulb thermometer properly. The wet and dry bulb thermometers needed to gauge humidity are held parallel and are easily read outside the incubator, effectively allowing measurement of temperature and humidity in one convenient unit. In digital incubators the wet bulb thermometer reading is compared to the in-built digital temperature display.

Installation

Remove the black blanking plate from one end of the Octagon 20 incubator top. Depending on the age of manufacture of the incubator this could mean unscrewing fixing screws or pushing out plastic locating plugs from the inside with a small screwdriver. Use the countersunk screws (supplied) to attach the black plastic clip (supplied) in place of the blanking plate using the existing fixing holes through the incubator casing.

Pull the water reservoir from the wet bulb thermometer moulding. Tie a knot in the end of the length of hollow wick and push the other end through the tube (a piece of stiff wire or similar will help). Fill the reservoir with distilled water (see below). With the reservoir held upright to prevent spillage, push the wet bulb thermometer moulding firmly back onto the reservoir. Fit the thermometer supplied with your incubator (additional mercury thermometers are available from the address below) into one of the sockets in the wet bulb thermometer moulding and slide the thermometer (supplied) into the other. The two thermometers should extend as far as the wick tube. The end of the wick is then pushed over the bulb of either one of the thermometers. Ensure that the wick is neither pulled tight nor in a wide loop between the end of the tube and the thermometer bulb.

Measurement

Relative humidity (always expressed as a percentage) is proportional to the difference between the dry and wet bulb thermometer readings. Do not confuse wet bulb temperatures (which are sometimes quoted in books) with % relative humidity. The following table gives the wet bulb temperatures which relate to % relative humidity.

<u>WB temp. (°C)</u>	<u>WB temp. (°F)</u>	<u>RH level (%)</u>
20	68	19
21	69.8	23
22	71.6	26
23	73.4	30
24	75.2	34
25	77	38
26	78.8	42
27	80.6	46
28	82.4	51
29	84.2	55
30	86	60
31	87.8	65
32	89.6	70
33	91.4	76
34	93.2	82
35	95	87
36	96.8	94
37	98.6	100

The figures above assume a dry bulb (incubation) temperature of 37°C (98.6°F). If the incubation temperature is different compensate by adjusting the wet bulb temperature accordingly.

For example: if using the incubator at 36°C with a wet bulb temperature of 26°C calculate the RH level using the 25°C wet bulb temperature: = 38%. Note that the wet bulb thermometer will read the same as the ordinary (dry bulb) thermometer either at 100% RH or, more probably, when the wick dries out.

Generally accepted incubation RH levels for species groups:

During incubation

Poultry	40-50% RH
Parrots	35-45% RH
Ratites	20-30% RH

Hatching

All species	65% RH or more
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See your incubator instructions on methods for varying humidity to achieve the desired level.

Maintenance

Use of distilled water will reduce the salt deposits which build up on the exposed wick and extend wick life. It is essential that dirty and encrusted wick is trimmed off and more wick is drawn through the tube to ensure accuracy.

A small amount of disinfectant may be added to the water to reduce the chance of bacterial contamination but for complete accuracy and minimal infection risk trim back the wick between each hatch. Additional lengths of wick are available from Brinsea Products or your local Brinsea stockist.

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