



Species	Incubation temperature (°C)	Incubation time (days)	Hatching rate in % of fertilized eggs per clutch	
			Min.	Max.
<i>Chondropython viridis</i>	29	60-63	---	100
<i>Drymarchon corais couperi</i>	28	74	---	90
<i>Elaphe helena</i>	29	60-68	33	100
<i>Elaphe obsolete quadrivittata</i>	27	61-64	91	100
<i>Elaphe schrenckii</i>	29	37-39	---	100
<i>Goniosoma oxycephalum</i>	29	89-91	50	100
<i>Heloderma suspectum</i>	27	145-158	80	100
<i>Lacerta pityusensis</i>	27	61	unknown	
<i>Lampropeltis getulus holbrooki</i>	28	46	---	100
<i>Liasis childreni</i>	29	50-56	---	100
<i>Liasis mackloti</i>	29	87-89	85,5	100
<i>Pantherophis g. guttata</i>	27	61	85	100
<i>Phelsuma madagascariensis grandis</i>	27	58	50	100
<i>Pogona vitticeps</i>	29	58-62	87,5	100
<i>Python spilotos variegatus</i>	30	69-72	71	100
<i>Varanus gilleni</i>	30	87-89	---	100
<i>Varanus storri</i>	29	102-103	---	100
<i>Varanus timorensis similis</i>	29	114-116	---	100
<i>Varanus tristis orientalis</i>	29	117-122	---	100

Table: average incubation temperatures and –times of selected reptiles

If only a single incubation time is given, it is meant that only one egg was available for incubation, or that all animals in a clutch hatched at the same day.

It is possible that the young of a clutch hatch over a period of several days or even weeks (perenties).

It is common agreement that the fertilization rate and the likelihood that healthy offsprings will hatch depends to a large extent on the parent animals being in a good state of health.

INSTRUCTIONS FOR THE USE OF THE REPTILE INCUBATOR

Dear Customer!

You have purchased a high performance incubator from GRUMBACH.
Before starting to incubate you should ensure that all important general requirements are met.

The incubation area:

It is important that the incubator is not subjected to too much vibration from passing traffic or by other equipment. The most suitable location is a cellar as this usually provides the best environmental conditions for incubation. The ideal surrounding temperature for the incubator is a maximum of 18°C*. Windows must be screened so that sunlight does not fall directly on the incubator.

The operating conditions and settings required will vary depending upon where the machine is used. For example, factors such as outside temperature, outside humidity and the stability of the network current might affect the functioning of the machine.

The temperature in the room used for incubation should not fall below 10°C nor rise above 20°C. Fluctuations in temperature should not exceed $\pm 3^\circ\text{C}$.

It is essential that attention is paid to hygiene in the incubation area. Bacteria, viruses and moulds which are brought in on people's shoes will get into the incubator if they are not removed. The floor should be wiped with a good disinfectant at least once a week. All tabletops and the outside of the machine should be wiped down daily.

* The outside temperature should be at approximately 7°C lower than the incubation temperature.

Checking the incubator:

Despite careful attention to packing and testing of the incubator before it leaves the production, there is a minor possibility of damage in shipping. The unit should therefore be checked carefully and should run on test for two or three days upon arrival. It is particularly important to check the functioning of the thermometer.

Before starting incubating, check that the incubator is completely level; if it is not, a corner of the unit may become under- or overheated. It is a mistake to ignore minor problems and hope that they can be corrected later. It is essential that the unit functions absolutely correctly from the beginning on.

If you have purchased a unit with digital adjustment and display you will find instructions for changing the digits enclosed in the unit.

Getting started:

Before first use familiarize yourself with the controls. Insert the plug into a suitably grounded 220V SCHUKO socket. The unit is ready for use now.

Temperature:

Turn on the main switch. This turns on both heating and ventilation. The red temperature control light will come on and the heating fan will start to warm up the incubator evenly. The temperature control light will blink constantly when the set temperature has been reached.

The digital-thermometer achieves the required temperature by pulsing. A long pulse indicates that the temperature has nearly reached the desired range; a short pulse means that the target temperature has been reached. (From then on the unit consumes only a minimal amount of power.)

All incubators have an inbuilt safety thermostat which prevents overheating of the unit. It is set at 35°C by the manufacturer.

After the test run the thermostat needs to be set to the required switch-off temperature. The safety control should be turned carefully as even a very small movement changes the switch-off temperature. If the temperature is allowed to rise by altering the temperature control the precise switch-off temperature can be set.

As an additional safeguard this can only be set by a thin screwdriver.

1/10 turn = approx. 1°C

Turning clockwise - increases the switch-off temperature

Turning anti-clockwise - decreases the switch-off temperature

To confirm that the heating has switched off you will hear a click and the temperature control light turns off.

Humidity:

The extent of humidity control will depend on the location of the incubator. There will be less need for humidification in a cellar than in a centrally heated room.

Reptile boxes:

We recommend to place the eggs into one of our special incubation boxes, by the circulating air inside the incubator. This prevents the eggs from collapsing. The boxes are designed to hold an average clutch of eggs.

The box consists of a deeper and a shallower half with a coated fine-mesh grid in between the two. Depending on the size of the eggs, either half of the box can be positioned above or below the grid. If the eggs are tall, the deeper box should be on top of the grid.

The lower box is filled (max. half) with water and put into the incubator to be heated up. Alternatively, warm water of the same temperature as in the incubator can be poured into the box before placing the eggs on the grid and then carefully placing the closed box into the incubator.

The fine wire mesh has been specially treated to protect its surface against corrosion. The mesh should therefore not be immersed in water for longer than necessary for cleaning. After thorough cleaning it should be stored in a dry place. Avoid contact of anything that can rust on the mesh.

Incubation:

If the unit is fully functioning and has been run on test for 2-3 days, you can begin to place in eggs (or the incubation box). When the boxes are positioned in the incubator the temperature will initially fall, but this is no cause for concern. It happens because opening of the unit allows heat to escape and because the temperature of the boxes is lower than that of the incubator. It is incorrect to counter this by turning up the heating as the boxes first need to warm up to the incubating temperature. After only a few hours the thermometer will be indicating the desired temperature again.

Although minor adjustments sometimes need to be made, avoid changing the heat setting unnecessarily, particularly after the unit has been opened.

Incubation temperature:

We recommend to use the incubation temperature as depicted in the table on page one.

Cleaning and disinfecting:

Once hatching is completed the incubator should be carefully disinfected and cleaned with a damp cloth. The trays can be scoured with soapy water.

We recommend leaving the door open when the unit is not in use.

Checklist - before placing the eggs into the incubator:

Temperature range, temperature constancy
Ambient humidity, ambient noise levels

Incubator

Unit is completely level
Thermometer is working
Controls (switches, regulators) are working
Test run completed
Safety thermostat is set
Unit is fully functioning

Temperature indicator:

Operation:

Display mode:

After the device has been switched on, the current temperature (actual level) is displayed in 3 digits with decimals. When the button on the front panel is pushed briefly (< 3 seconds), the display switches to the temperature that is to be reached (target level). After releasing the button the display returns to the standard reading, i.e. the actual temperature inside the device.

Setting mode:

When the button is held longer than 3 seconds, the display begins to flash and switches to the setting mode of the temperature that is to be reached (target level). After releasing the button the display continues flashing. Now it is possible to change the target level for the temperature. If the button is pushed briefly, the target level displayed changes by 0.1°. Each time the button is held longer, it leads to quicker adjustment of the target level. Rising levels are displayed. After surpassing the maximum level the lowest possible level is displayed. When the button is released for a longer time, the display returns automatically to the actual temperature.

Adjustment of temperature sensor:

The display can be adjusted to a calibrated reference thermometer with the adjustment regulator (a screwdriver is needed). The adjustment regulator is located on the lower right side of the display.