

# Operation Manual



# Translation of the original instructions

This operation manual is the translation of the original instructions and refers to the product "Varroa Controller", VC03 series.

## Manufacturer

ECODESIGN company engineering & management consultancy GmbH  
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Austria

## Operation Purpose:

The Varroa Controller is a device for beekeepers that allows pest control against the varroa mite. It has been designed exclusively for the treatment of capped bee brood. The principle is based on the use of heat and humidity within a closed air flow.

The noise level during operation falls below 70 dB(A).

## Maintenance:

Apart from a final cleaning after every use of the machine there are no maintenance routines to be performed by the beekeeper. For storage, the machine must be unplugged from the grid, the water container has to be emptied. The device shall be stored in a dry place with the lid slightly opened.

## General Safety Instructions:

Read through this entire manual before you use the product for the first time. Follow the instructions provided in this manual.

Always take out or empty the water container before you move the Varroa Controller to another place.

To transport the machine, hold it by the metal handle. To lift the machine work if necessary with another person.

Unplug the power cable any time you move the machine. Operate the buttons only with dry hands. Otherwise there is the risk of an electric shock.

The metallic treatment chamber gets hot during operation. Therefore, after a treatment touch only the water container or make use of gloves in order to avoid the risk of a skin burn.

If you have any doubts about the correct functioning of the machine follow the instructions on the penultimate page of this operation manual.

If you identify remaining uncertainties please refer to our website:

[www.varroa-controller.com](http://www.varroa-controller.com)

or contact us under:

[info@varroa-controller.com](mailto:info@varroa-controller.com)

# Dear beekeepers,

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Thank you for your trust in the varroa pest control with the Varroa Controller!

The Varroa Controller has been designed to be easy to use.  
Nevertheless please consider the following instructions:

***Read carefully every single step of this manual before you go ahead with your first treatment of bee brood. Respect the following list of most important instructions:***



- Only perform treatments at surrounding temperatures between 18°C and 30°C.
- Treat only frames with approximately equal breeding area and which are about the same weight.
- Only operate with distilled water in the water container.
- Be extra careful with the correct application of the temperature sensor. Be aware that the success of your treatment will directly depend on that.
- Do not open the machine when running!
- Never transport or move the Varroa Controller with filled water container! Always take out or empty the water container before relocating the machine. Empty the water container right after you have finished your treatments.
- Never remove any screws or coverings by applying force or by means of tools.

# 1.

## Preparing

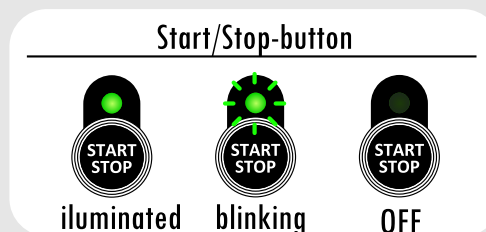
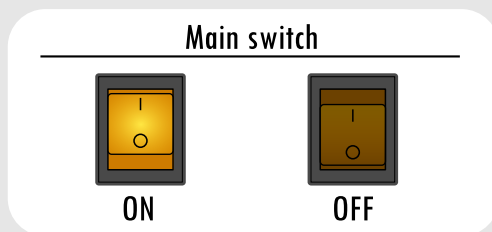
Place the machine on a flat and even surface. Assure a safe stand and protect the machine from intensive sunlight and rain. It shall be placed easily accessible from the front sides as shown in the figure to the right.

If you plan to operate the machine with a power unit, make sure the unit's tank contains sufficient fuel for the duration of the treatment.

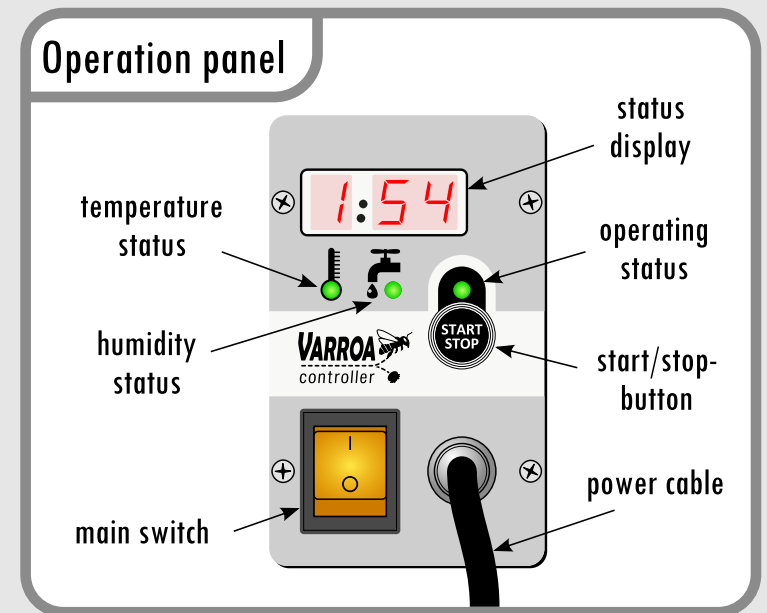
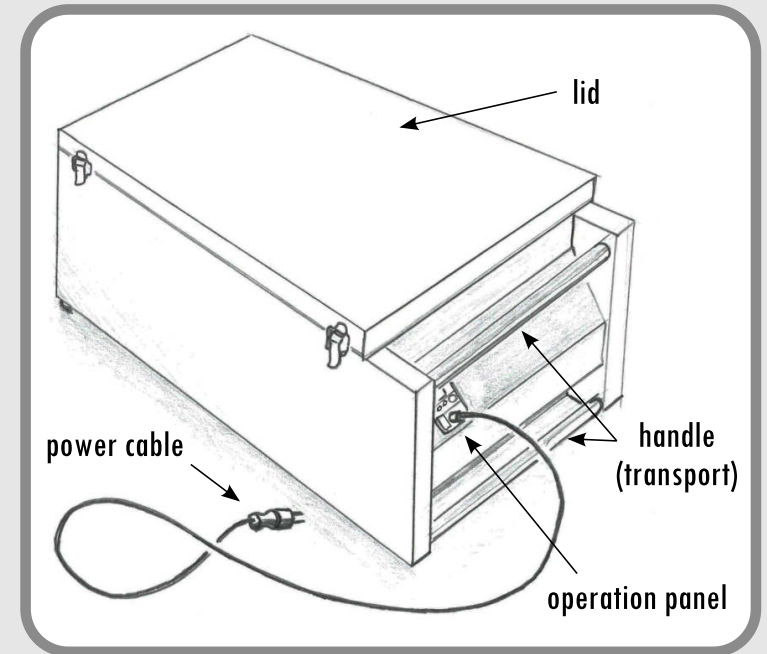
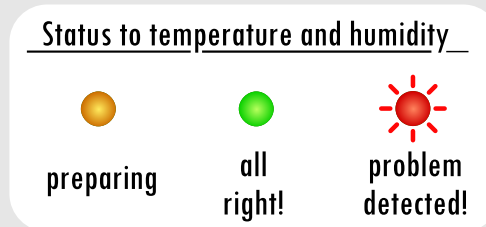
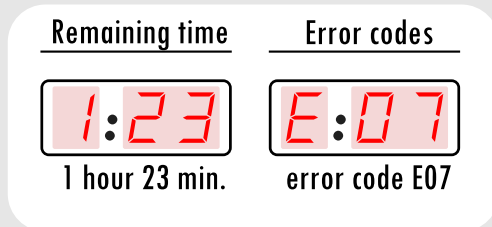


***For your personal safety always care for the appropriate electrical grounding of the power unit!***

Two operating elements are available on the operation panel:

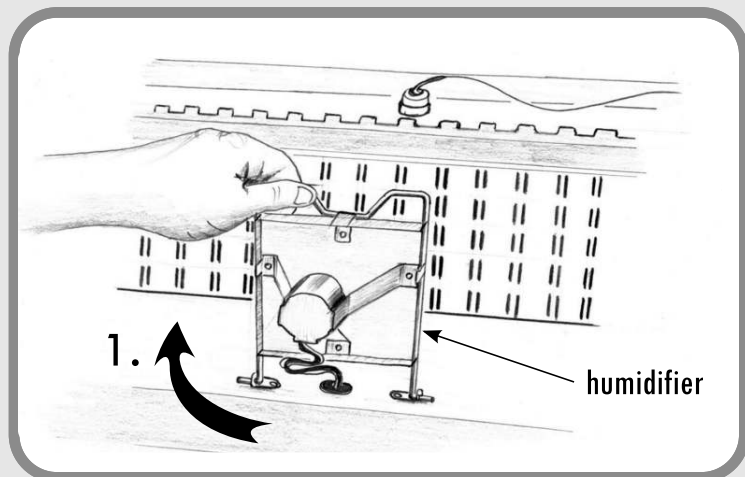


The following informations appear:



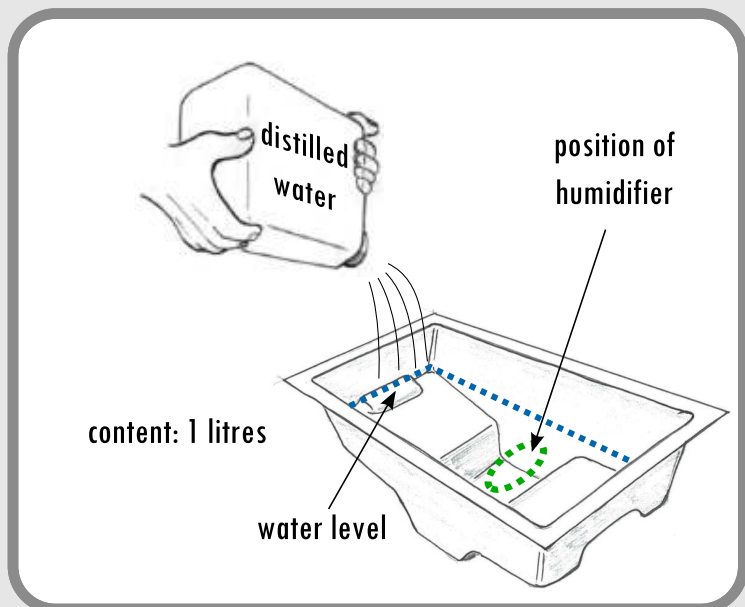
## Filling in water

Open the lid of the machine and lift up (1) the humidifier. Now the water container can be removed.



Fill up the water container with distilled water until you reach the water level.

Put the water container back to its original position inside the treatment chamber. Move the humidifier back to the horizontal position.



*The capacity of the water container is enough for at least two consecutive treatments.*



# 3. Preheating

Put the sensor holder on top of an empty frame in the middle of the treatment chamber and close the lid. Switch on the Varroa Controller by pushing the (orange) main switch.

The machine now starts preheating. This is indicated through the three status lamps illuminated orange and with upwards rising beams in the display.

During preheating, the temperature sensor should be placed on an empty frame.



**During preheating, no brood may be in the treating chamber!**

After some waiting time, the device is preheated. You will hear three short beeps. The status display will now show the duration of the pending treatment in hours and minutes.

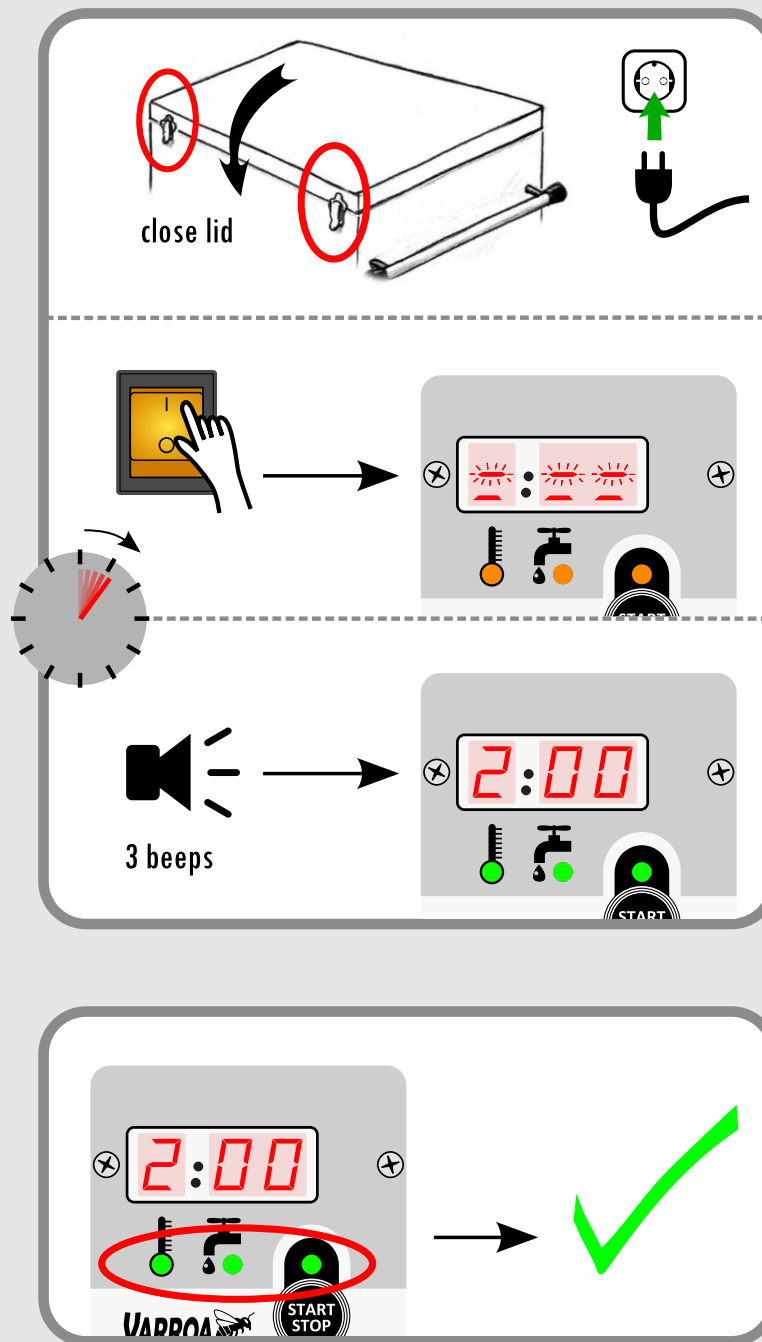
**Model VC STANDARD** → 2:00 (2 hrs. 00 min.)

**Model VC X-LARGE/LIGHT** → 2:20 (2 hrs. 20 min.)

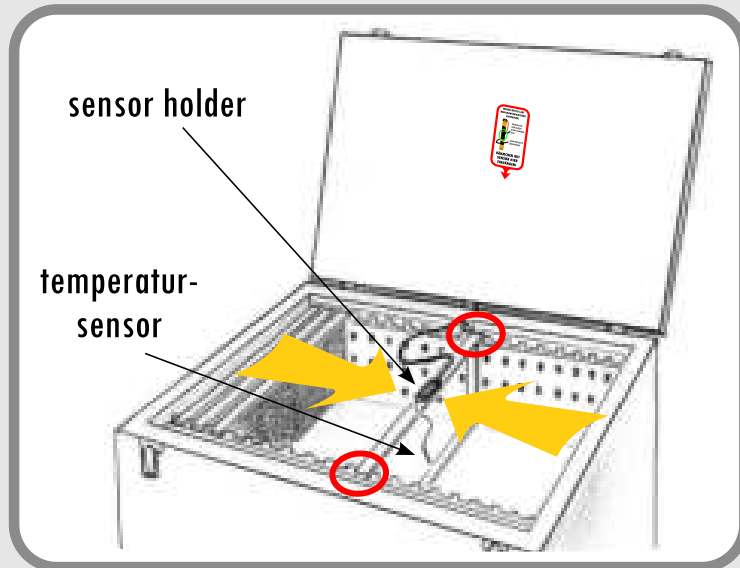
If all three status lights are illuminated steadily green, the Varroa controller has reached the correct starting temperature and the right humidity, and is ready for use.



*If you notice a behavior of the machine that differs from the one described above, press and hold the start/stop button for at least 4 seconds to reset the machine.*



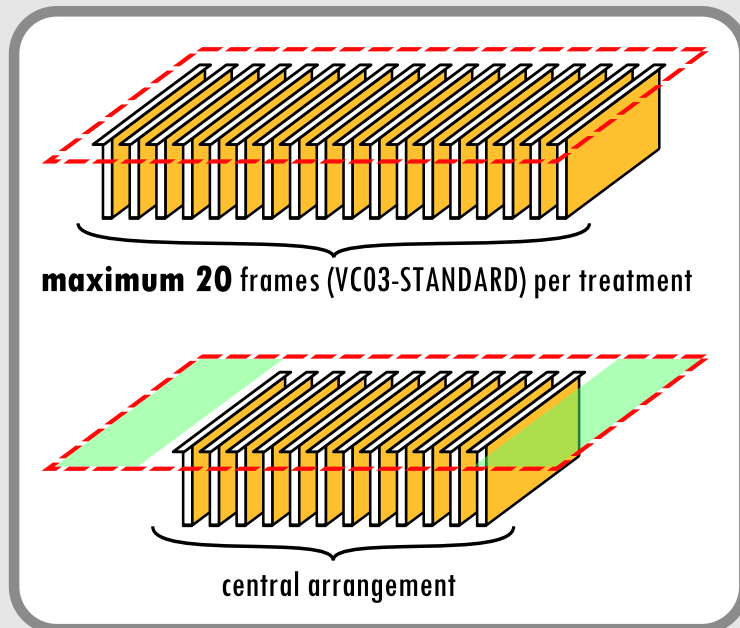
# Hanging in your frames



Now the bee brood can be brought into the treatment chamber. Open the lid of the Varroa Controller and hang one frame after the other into the treatment chamber, beginning from the border of the machine.

Each frame immediately goes from the warmth in the hive to the warmth of the preheated Varroa Controller.

The lid shall be opened for every single frame and closed again. Leave the sensor holder on top of the empty frame in the middle of the treatment chamber so that the sensor continues measuring the air temperature.



**IMPORTANT: You must avoid by any means that the brood cools down. Ideally bring the frames directly from the warm hive into the warm device. Avoid delays.**



You can treat a maximum of 10/20/40 frames (depending on device and frame size), which can originate from different hives.

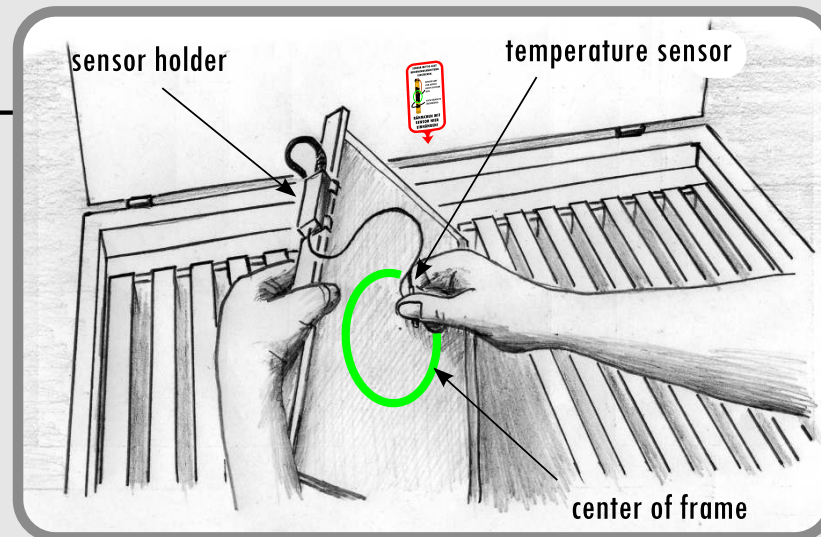
In any case arrange the frames around the center of the device, so that both sides show equal open spaces.

**You must not treat different sized frames in one treatment.**



# 5. Placing the sensor

Pick the empty frame from the middle of the treatment chamber and exchange it by the last brood frame you want to treat. Put the sensor holder on top of this frame and insert the temperature sensor inclined into the brood cells. Find a spot in the centre of the frame which is full of capped brood.

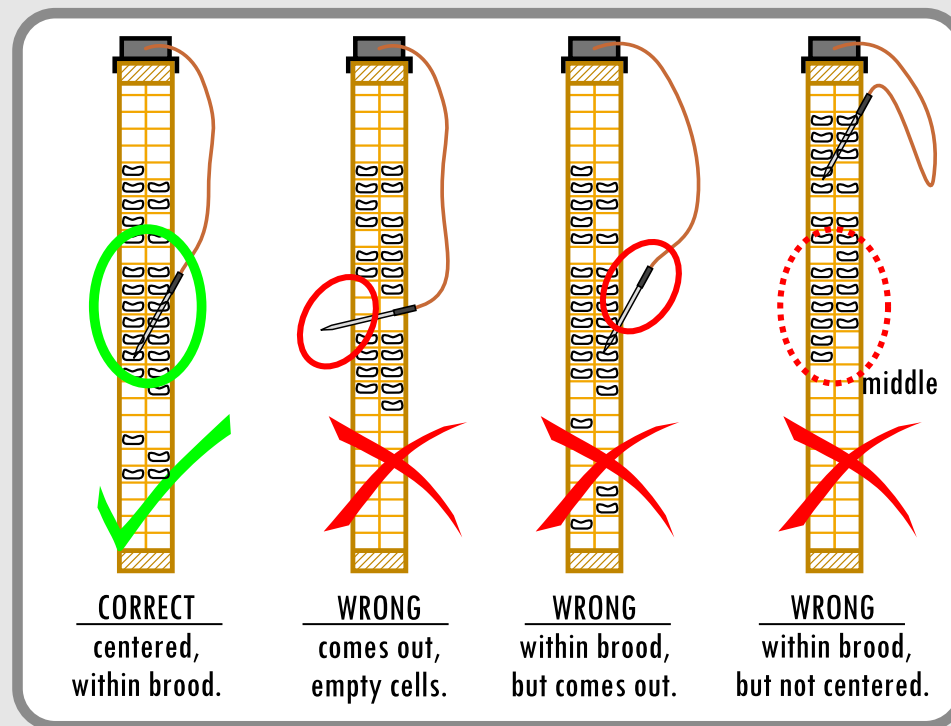


***Look out for a properly applied sensor. Check that the metal needle does not come out on any side of the frame. The metal needle should be entirely inserted into bee brood. Also check the back of the frame.***

Now carefully hang in this last frame and attach the sensor holder on top of it.

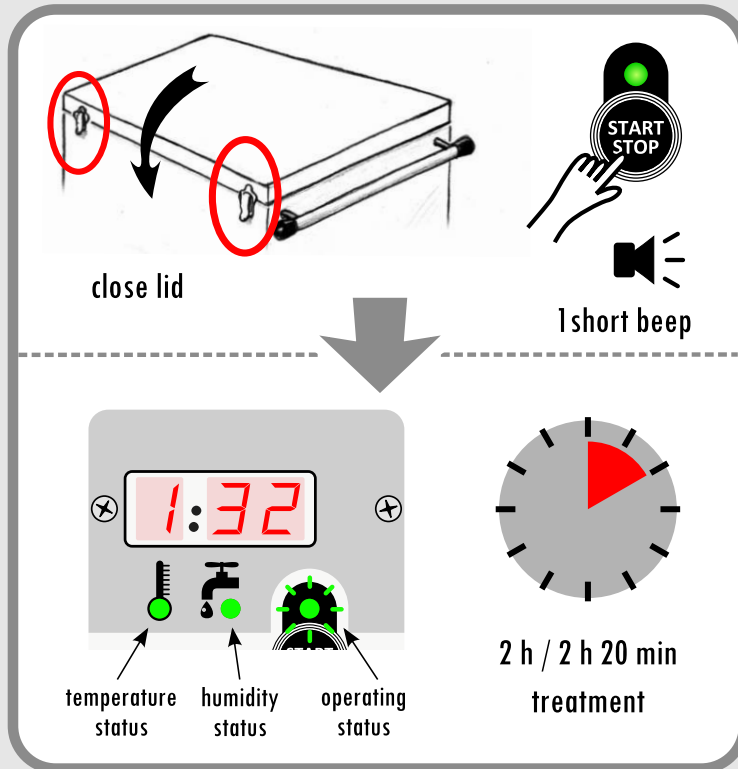


***Check that all frames hang in a way that the airflow is not blocked and the air can circulate freely between the frames.***





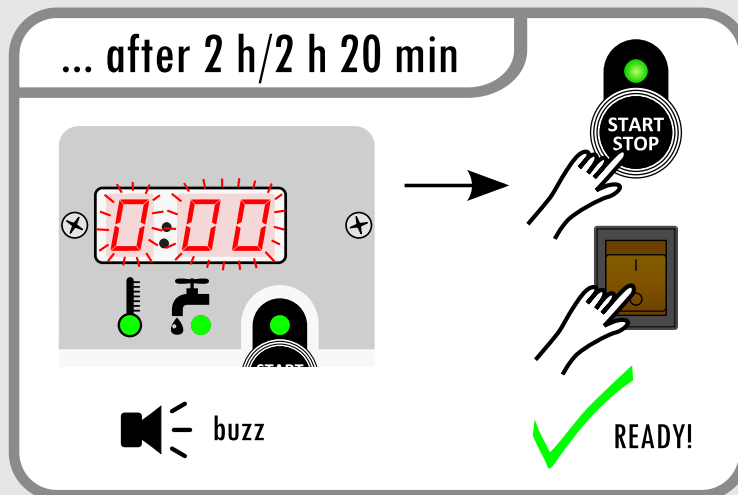
# Performing the treatment



Close the lid using the two fasteners on the front side.  
Now you are ready to start the treatment.  
Push the start/stop button. You will hear one beep signal by doing so.

The treatment runs now fully automatically.  
During this time, the remaining treatment time is displayed until the end of treatment. During proper operation the lights of the temperature- and humidity status are illuminated green and the operating status light is blinking green.

***During the treatment keep the lid closed at any time!  
Even when opened for a short moment the immediate loss  
of heat would affect the effectivity of the treatment.***



When the treatment is finished the machine indicates that by a continuous buzz. The status lamp stops blinking and is illuminated green. The status display will show a flashing "0:00". Press the start/stop button to confirm and turn off the machine at the main switch, then open the lid.  
First carefully take out the frame which holds the sensor.  
Pull out the sensor needle with caution and put it aside. Now bring back all frames to their original hives without any delay.

# 7.

## After the treatment

### Doing one more treatment?

With the machine switched off, check if there is still enough water in the water container.

Then close the lid and switch on the empty machine at the main switch. Continue at point 3. of the manual and wait until the treatment time is displayed.

### Or are you finished?

When the machine is still switched off and disconnected from the grid, remove the water container and clean the treatment chamber.

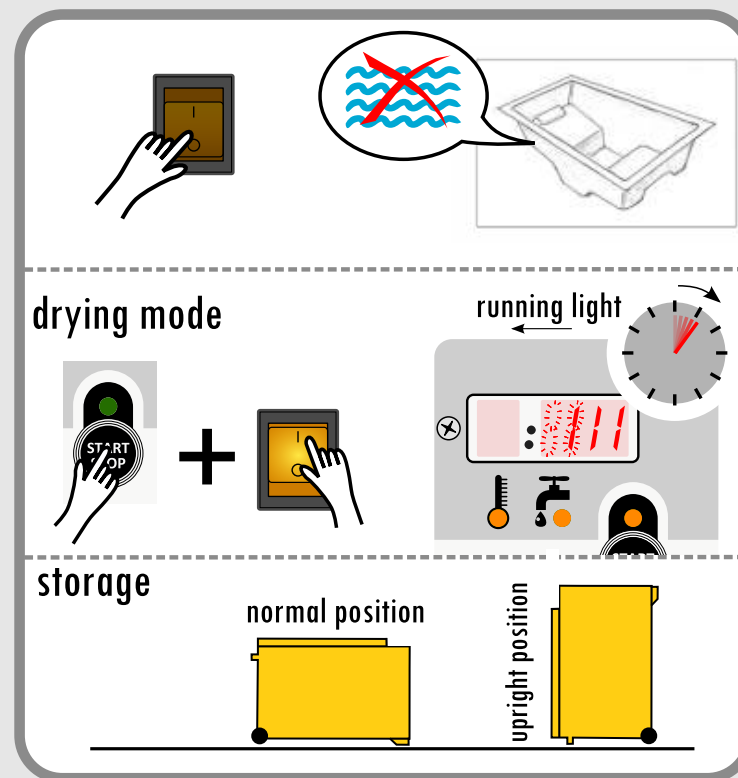
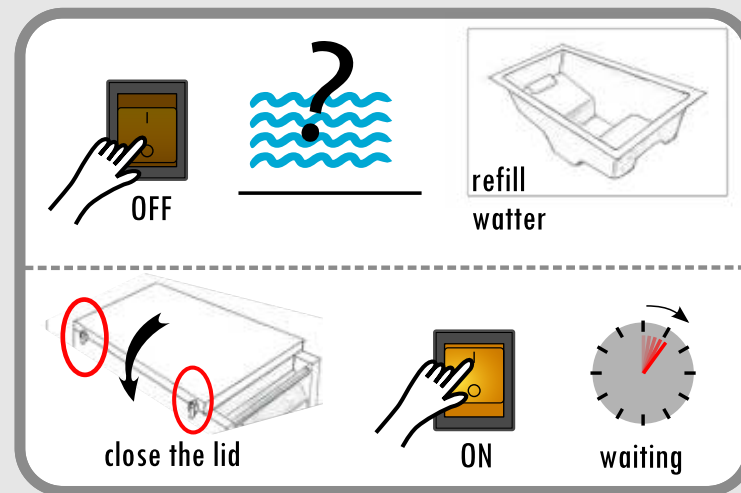
**Drying:** Start the drying mode when the lid opened and the water container is taken out by doing the following:

*Press and hold the start/stop button and turn on the main switch at the same time.*

*After two seconds, release the start/stop button.*

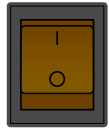
Now the Varroa Controller indicates the drying mode with a running light. The drying takes a few minutes until the machine buzzes continuously. Then turn off the machine at the main switch and unplug the power cable.

Store the Varroa Controller in a normal or upright position with slightly opened lid.

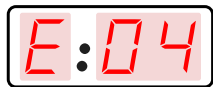


# Troubleshooting

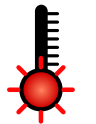
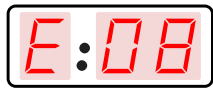
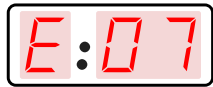
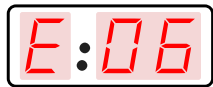
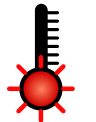
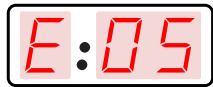
## Signals and Error Codes



During treatment the light goes off at the main switch.  
No signals.



repeating  
beeps



## Significance, guide to solve the problem

**Blackout.** After a break of up to 15 minutes without power supply the treatment will not be affected and can be continued normally. Reestablish immediately power supply. No further action is needed.

**Low water level.** Turn off the machine and unplug the power cable. Open the lid, fill up the watercontainer, close the lid, dry your hands (!), plug in the power line again and switch on the machine.

**Overheat.** If the machine would measure a critical temperature, the heating will be turned off automatically and the treatment is immediately interrupted. Turn off the unit. In this case immediately open the lid and bring your brood frames back to their hives. Contact us!

**Not enough humidity.** The treatment has to be stopped. Turn off the machine, open the lid, and bring back the brood frames to the hives. Contact us!

**Humidity sensor is defect.** The treatment has to be stopped. Turn off the machine, open the lid, and bring back the brood frames to the hives. Contact us!

**Temperature sensor is defect.** The treatment has to be stopped. Turn off the machine, open the lid, and bring back the brood frames to the hives. Contact us!



*In case of questions write us to:*  
[info@varroa-controller.com](mailto:info@varroa-controller.com)

- name of machine: Varroa Controller
- series: VC03
- nominal power: 600W (VC03 STANDARD and X-LARGE), 400W (VC03 LIGHT)
- year of manufacture: ☐ 2018  
☐ 2019  
☐ 2020  
☐ 2021
- dimension: 30 kg (model LIGHT)  
40 kg (model STANDARD)  
42 kg (model X-LARGE)
- declaration of conformity

The Varroa Controller series VC02/E complies with the following EU-directives and international norms:

2006/95/EC, 2006/42/EC, 2004/108/EC,  
EN 14121-1, EN 12100-1, EN 60204

[www.varroa-controller.com](http://www.varroa-controller.com)

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