

# Vario E

No. 1452-0000 / No. 1452-1000

*Bedienungsanleitung*

*Instruction manual • Mode d'emploi*

*Istruzioni d'uso • Instrucciones de servicio*

*Инструкция по эксплуатации*

*操作说明书 • 取扱説明書 • 사용 설명서*

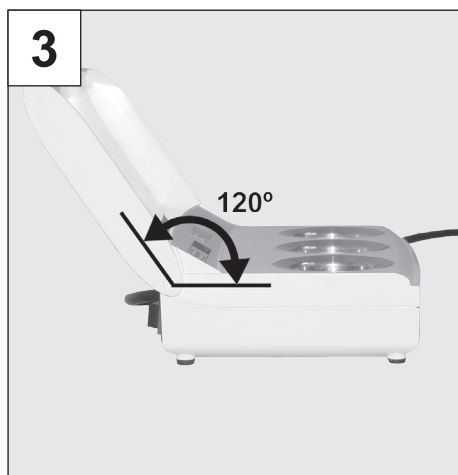
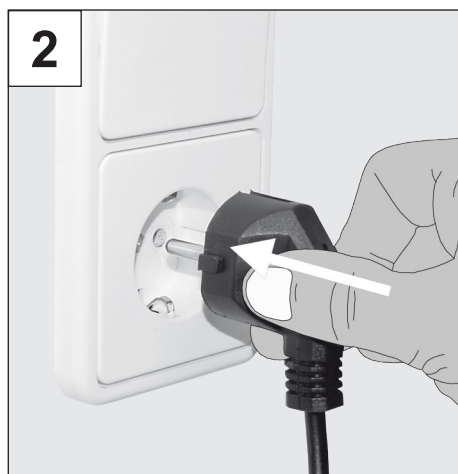
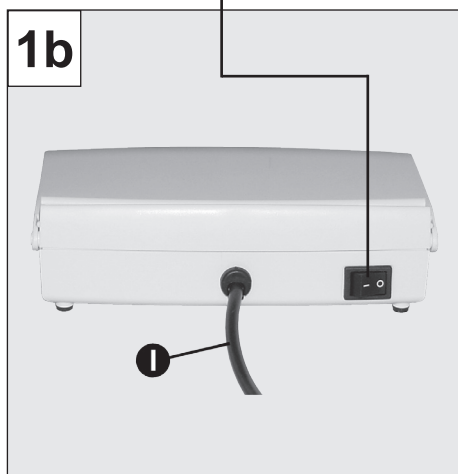
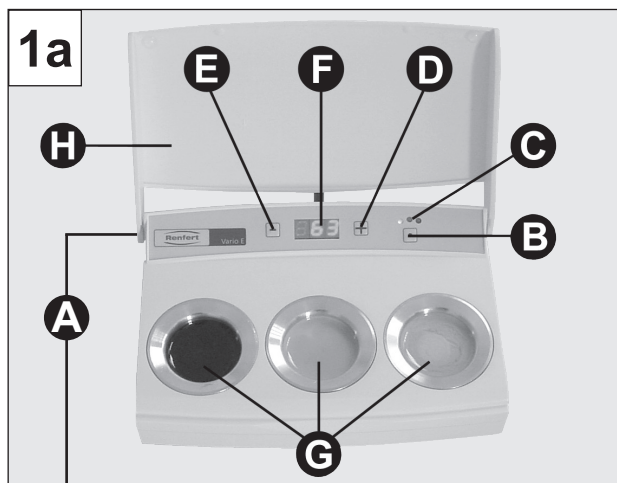


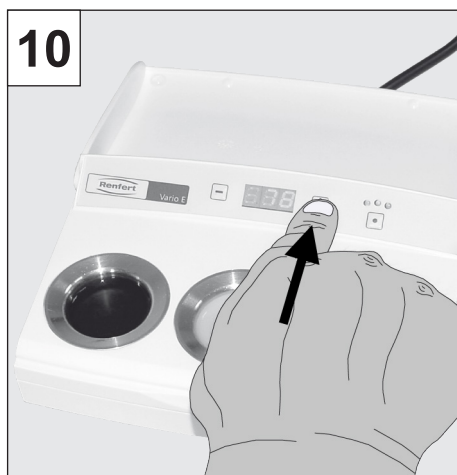
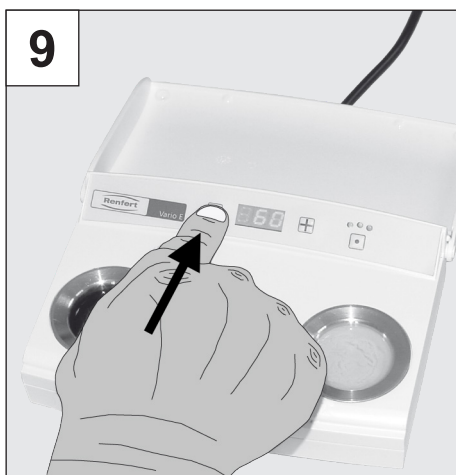
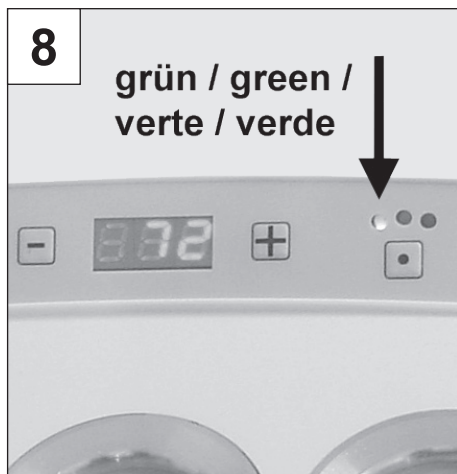
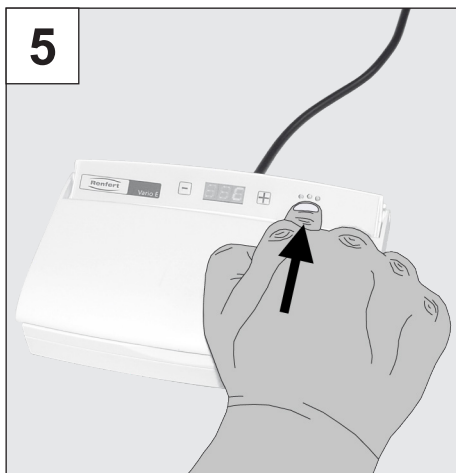
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*Made in Germany*

**Renfert**

Ideas for dental technology





# Vario E

No. 1452-0000 / No. 1452-1000

ENGLISH

## 1. Introduction

We are pleased with your decision to purchase a *Vario E* wax heating unit. Please observe the following information in order to ensure long and trouble-free service.

## 2. Application Area

The *Vario E* wax warmer heats wax in three independently adjustable pots.

### 2.1 For modelling waxes

Depending on the adjusted temperature, small or large wax portions can be taken up out of the pots either directly with the electric modelling instrument or after the instrument has been heated over the flame. This prevents strong contractions since the waxes are not subject to strong temperature fluctuations. This ensures that a uniform quality is maintained.

Technicians can therefore model efficiently and rationally with a uniform wax consistency.

### 2.2 For dipping waxes

It is also possible to use the *Vario E* as a wax dipping pot. Thanks to its 14.5 mm (0.57 inch) deep wells, the unit offers ideal conditions.

### 2.3 For light-curing waxes

With a temperature interval of 45 - 110 °C (113 - 230 °F) the *Vario E* is particularly suitable for processing light-curing waxes.

### 2.4 Ambient Conditions

(in accordance with IEC 60664-1)

The *Vario E* may only be operated:

- Indoors;
- Up to an altitude of 2,000 m (6,500 ft) above sea level;

- At an ambient temperature of 5 – 40 °C (41 – 104 °F);
- At a maximum relative humidity of 80 % at 31°C (87.8 °F), decreasing linearly to 50 % relative humidity at 40 °C (104 °F);
- At mains power fluctuations where the voltage fluctuations do not exceed 10 % of the nominal value;
- At pollution degree 2;
- Over voltage category II

## 3. Safety Information

### 3.1 Symbols Used

The following symbols are employed in these instructions and on the unit:



#### Danger

An imminent danger of injury exists.



#### Electrical Power

Danger of electrical shock



#### Attention

Failure to observe this information can result in damage to the unit.



#### Note

*This is a note intended to provide the operator with useful information to make operation easier.*



For indoor use only.



Before opening the unit, disconnect it from the power supply by pulling the wall plug.

### 3.2 Safety Information

- The *Vario E* is an electrical device with potential hazards. This unit may only be locked and used by authorized specialist personnel after an examination with regard to conformity with applicable national standards.
- Before starting the unit, compare the information on the nameplate with the specifications of your local power supply.
- Do not operate the unit with damaged power cords or other defects.
- During operation, always unroll the power cord (overheating hazard in case of a short circuit).
- Liquid waxes can cause burns. Do not move the unit during operation!
- During operation, the wax pots are heated up to their rims. Improper use or handling can result in burns even approx. within 30 minutes after power off.
- The *Vario E* is designed to be used exclusively in conjunction with commercially available dental waxes. Never use the unit to heat other types of materials!
- Please note: Overfilled pots can spill over!
- Do not use this device with materials whose flash point is below 175 °C (347 °F). Keep away any flammable materials from the hot surface of device.
- Do not rinse or dip into water. Hazardous voltage can cause electric shock!
- It is the responsibility of the operator that national regulations during operation and regarding a repeated safety inspection of electrical equipment are complied with.  
For Germany these are BGV A3 in relation with VDE 0701-0702.

### 3.3 Liability Exclusion

Renfert GmbH shall be absolved from all claims for damages or warranty if:

- The product is employed for any purposes other than those cited in the operating instructions;
- The product is altered in any way other than those alterations described in the operating instructions;
- The product is repaired by other than an authorized facility or if any but Renfert OEM parts are employed;
- The product continues to be employed, despite obvious safety faults;
- The product is subjected to mechanical jarring or is dropped.

## 4. Operating Elements

(Figure 1a + 1b)

- A) On / Off switch
- B) Wax pot selection button
- C) LED indicator for the selected wax pot
  - >> Operation indicator = green
  - >> Warm-up phase = red
- D) Set-point temperature increase
- E) Set-point temperature decrease
- F) Setpoint / actual temperature display
- G) Wax pot
- H) Lid
- I) Power cord

## 5. Commissioning / Operation

### 5.1 Switching the Unit On

1. Connect the *Vario E* to the mains power outlet (Figure 2).
2. Open lid (H). The lid can be locked in place at a 120° angle (Figure 3).
3. Add the waxes to be heated to the pots.

**Caution:**

**Do not overfill the pot. The scoring all around the upper pot rim marks the limit for the max. filling height.**

4. Switch the *Vario E* on at switch (A) (Figure 4).
5. The most recently selected unit of temperature (°C or °F) appears for approx. 2 sec. on the display (F).  
C = degrees Celsius (Figure 7a) or  
F = degrees Fahrenheit (Figure 7b)
6. The display (F) then shows the most recently entered setpoint temperature for the selected pot for approx. 2 sec. The selected pot is indicated by the LED (C).
7. Finally, the display (F) shows the current actual temperature in the most recently selected pot. The selected pot is indicated by the LED (C).

## 5.2 Specifying the Desired Temperature Unit (°C or °F)

**Note:**

***Please note that 230 V units have been preset to °C at the factor, while 120 V units are preset to °F.***

1. If your *Vario E* is switched on, please turn it off at switch (A).
2. Press and hold key (B) approx. 2 sec. (Figure 5) while simultaneously turning the *Vario E* on at switch (A) (Figure 4).
3. The units of temperature, °C and °F are alternately shown for approx. 2 sec. on the display (F) (Figure 7a + 7b). Release key (B) when the desired unit is displayed.
4. The most recently displayed unit of temperature is saved.

## 5.3 Set-point Temperature Adjustment

1. Use switch (B) to select the desired wax pot (Figure 5).
2. The LED (C) associated with the selected pot goes on (red or green) (Figure 6).
  - Right-hand wax pot = Right-hand LED;
  - Centre wax pot = Centre LED;
  - Left-hand wax pot = Left-hand LED;
3. Display (F) first shows the setpoint temperature for approx. 2 sec., followed by the actual temperature.
4. Pressing either key (D +) or (E -) the display (F) switches on to the currently specified setpoint temperature (Figure 9 + 10).
5. Pressing keys (D +) or (E -) resets the desired setpoint temperature (adjustment range: 45 - 110 °C or 113 - 230 °F).



= Increase temperature



= Decrease temperature

By pressing the Minus-Key once again at 45 °C (113 °F), the corresponding pot will be switched off (the display shows OFF). By pressing the plus-key, the pot will be switched on again beginning at 45 °C (113 °F). If an attempt is made to set a temperature higher than 110 °C (230 °F), the value of 110 (230) will flash on the display (F).

6. After approx. 2 sec., the display (F) automatically switches to the actual temperature in the selected pot. When the pre-set temperature on the selected pot is reached, the indication on the corresponding LED will turn from red to green (Figure 8). The indication on the LED (C) will always shortly turn on red when re-adjusting temperature.

**Note:**

***The setpoint temperatures in the individual pots, together with the most recently selected pot are stored in memory even if the power is switched off or in case of a power failure, provided the most recent change to a setpoint temperature was made at least 4 sec. prior to the power outage.***

***When the unit is again switched on or power is restored, the Vario E returns to the previously saved operating state.***

**Notes / Tips on Operation:**

- Opaque waxes may separate while heating in the Vario E. Before beginning work, use an instrument to stir these types of waxes.
- Wax can be most easily removed shortly after the unit is switched on. Once the wax has begun to melt around the edges, the wax cylinder can simply be removed.
- When carving the edges of crowns, the pot rims on the Vario E are ideally suited to warm the instrument (this prevents the instrument from becoming excessively hot, as can occur when an open flame is used). Within seconds, the instrument will be warm to the touch; the ideal temperature for working on the wax crown edge.
- Quickly withdrawing the instrument from the Vario E = Larger wax beads; Slowly withdrawing the instrument from the Vario E = Smaller wax beads.
- To speed the melting process, always close the lid on the wax pot during the melting phase.

- If the wax liquefied in the Vario E is processed with Waxlectric modelling instruments, the processing temperature of the electric wax knife can be significantly reduced, since the knife no longer needs to supply the energy required to melt the wax.

**Tips on Dipping:**

- Do a quick dip to just beyond the preparation border.
- Slowly and evenly remove the die from the wax.
- Just before the tip comes out, hold it steady in the pot for a short time so that any excess wax can drop down.

## 6. Cleaning and Maintenance

The Vario E is maintenance free. From time-to-time, you should wipe your unit down with a damp cloth. Never use detergents or solvents!



**Never rinse or spray your Vario E directly with water.**

With the unit switched off, you can remove hardened wax residue by carefully scraping it.

Warming the unit's surfaces with a hair drier will make it easier to remove wax residue.

The lid of your Vario E can be removed for gently cleaning with the steam jet.

## 7. Spare Parts

You can find components subject to wear and the spare parts on the spare part list in the internet at [www.renfert.com/p918](http://www.renfert.com/p918).

The components excluded from the warranty (such as consumables or parts subject to wear and tear) are marked on the spare part list.

Serial number and date of manufacturing are shown on the type plate of the unit.



## 8. Warranty

Provided the unit is properly used, Renfert warrants the *Vario E* for a period of **3 years**. The original sales invoice of the specialist depot is required for a claim under guarantee.

Components subject to natural wear are excluded from this warranty.

The warranty is voided in case of improper use; failure to observe the operating, cleaning, maintenance, and connection instructions; in case of independent repairs or repairs by unauthorized personnel; if spare parts from other manufacturers are employed, or; in case of unusual influences or influences not in compliance with the utilization instructions. Warranty service shall not extend the original warranty.

## 9. Technical Specifications

Maximum power: 85 W

Minimum operating temperature: 45 °C [113 °F]

Maximum operating temperature: 110 °C [230 °F]

Supply voltage: 220 - 240 V / 50 - 60 Hz  
100 - 120 V / 50 - 60 Hz

Dimensions  
(w x h x d): 176 x 54 x 120 mm  
[7.01 x 2.13 x 4.73 inch]

Weight, filled: approx. 658 g

## 10. Standard Delivery

1 *Vario E* wax heating unit

1 set of operating instructions

## 11. Accessories

Renfert recommends:

### Electric wax instruments:

*Waxlectric I* incl. 1 handle and 1 modelling insert:

No. 2156-0000 230 V

No. 2156-1000 120 V

*Waxlectric II* incl. 2 handles and 2 modelling inserts:

No. 2157-0000 230 V

No. 2157-1000 120 V

### GEO Avantgarde modelling waxes:

No. 495-0100 Universal, beige-opaque, 75 g

No. 495-0200 Universal, grey-opaque, 75 g

No. 495-0300 Universal, mint-opaque, 75 g

No. 492-0100 Occlusal, beige-opaque, 75 g

No. 492-0200 Occlusal, grey-opaque, 75 g

No. 492-0300 Occlusal, mint-opaque, 75 g

### GEO special waxes:

No. 486-1000, GEO cervical wax,  
red-transparent, 75 g

No. 489-1000, GEO undercut wax,  
red-transparent, 75 g

No. 485-1000, GEO milling wax,  
blue-opaque, 75 g

No. 650-0000, GEO block-out wax,  
pink-opaque, 75 g

No. 488-1000, GEO sticking wax,  
pink-opaque, 75 g

You will find more waxes in Renfert product catalogue or under

**[www.renfert.com](http://www.renfert.com)**.



## 12. Troubleshooting Guide

Error	Possible cause	Corrective action
<b>No display, no operation although the unit is switched on the main switch (A).</b>	<ul style="list-style-type: none"><li>• Power supply interrupted.</li><li>• Faulty overheat fuse.</li><li>• Faulty unit fuse</li></ul>	<ul style="list-style-type: none"><li>• Check the power supply and power cords</li><li>• Have fuse replaced by Service Department.</li><li>• Have fuse replaced by Service Department.</li></ul>
<b>The unit is operating but there is no increase in temperature.</b>	<ul style="list-style-type: none"><li>• Faulty thermal sensor.</li><li>• Faulty heater.</li></ul>	<ul style="list-style-type: none"><li>• Have fuse replaced by Service Department.</li><li>• Have fuse replaced by Service Department.</li></ul>
<b>No memorisation of the last settings when restarting the unit.</b>	<ul style="list-style-type: none"><li>• The unit was switched off immediately after setting the parameters.</li></ul>	<ul style="list-style-type: none"><li>• Before switching off the unit, wait 4 seconds without pressing any dials, since the last parameters will be memorised only after this period of time.</li></ul>

## 13. Disposal instructions for countries in the EU

To conserve and protect the environment, prevent environmental pollution and improve the recycling of raw materials, the European Commission adopted a directive that requires the manufacturer to accept the return of electrical and electronic units for proper disposal or recycling.

Within the European Union units with this symbol should not therefore be disposed of in unsorted domestic waste:



For more information regarding proper disposal please apply at your local authorities.

**Hochaktuell und ausführlich auf ...  
Up to date and in detail at ...  
Actualisé et détaillé sous ...  
Aggiornato e dettagliato su ...  
La máxima actualidad y detalle en ...  
Актуально и подробно на ...**

**[www.renfert.com](http://www.renfert.com)**



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