

Vario E

No. 1452-0000 / No. 1452-1000

Bedienungsanleitung

Instruction manual • Mode d'emploi • Istruzioni d'uso

Instrucciones para el servicio • Gebruiksaanwijzing

Instrukcja obsługi • Инструкция по эксплуатации



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Renfert

503 21-9868

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

2.1 For modelling waxes

The *Vario E* wax heating unit is used to heat wax in three pots that can be independently controlled.

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 range 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

- **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!**

3.1 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

(Fig. 1a+1b)

- A) On/Off switch
- B) Wax pot selector switch
- C) LED indicator for the selected wax pot
 - >> Operation LED = green
 - >> Warm-up phase = red
- D) Set-point temperature "plus" key

- E) Set-point temperature "minus" key
- F) Set-point/actual temperature LED indicator
- G) Wax pot
- H) Lid
- I) Power cord

5. Commissioning / Operation

1. Connect the *Vario E* to the mains power outlet (Fig. 2).
2. Open lid (H). The lid can be locked in place at a 120° angle (Fig. 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) (Fig. 4).

5.1 Specifying the Desired Temperature Unit (°C or °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. (Fig. 5) while simultaneously turning the *Vario E* on at switch (A) (Fig. 4).
3. The current unit of temperature measurement appears on the display (F).

C = degrees Centigrade (Fig. 7a)
or

F = degrees Fahrenheit (Fig. 7b)

4. After approx. 2 sec., the display changes from **C** to **F** or vice versa. Stop holding the key, when the desired temperature unit is reached.
5. The most recently displayed unit of temperature measurement is saved.

5.2 Set-point Temperature Adjustment

1. Use switch (B) to select the desired wax pot (Fig. 5).
2. The LED (C) associated with the selected pot goes on (red or green) (Fig. 8).
 - **Right-hand** wax pot = Right-hand LED;
 - **Centre** wax pot = Centre LED;
 - **Left-hand** wax pot = Left-hand LED;
3. The set-point temperature is displayed on (F) for approx. 2 sec. (Fig. 9). The actual temperature is then displayed on (F) (Fig. 10).
4. Pressing either key (D +) or (E -) the display (F) switches on to the currently specified setpoint temperature (Fig. 11 + 12).
5. Use the (D +) or (E -) keys to adjust the desired temperature setting (45-110°C / 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].

6. After approx. 2 sec., the display (F) automatically reverts to the indication of the current actual temperature (Fig. 10).

When the pre-set temperature on the selected pot is reached, the indication on the display (C) will turn from red to green (Fig. 13). The indication on the display (C) will always shortly turn on red when re-adjusting temperature.

Note:

In case power is interrupted (e.g. central power is disconnected) and the *Vario E* is switched on, the unit turns on automatically as soon as power is restored at the same operating status as before the interruption, if the last alteration to the parameters had been previously saved by pressing no more key within 4 seconds.

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.

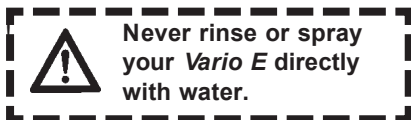
- If the wax liquefied in the *Vario E* is processed with *Waxlectric* modelling instruments, the processing temperature of the electric wax knife can be significantly reduced, since the knife no longer needs to supply the energy required to melt the wax.

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!



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

Please refer to the enclosed spare parts list for all spare / replacement parts.

8. Warranty

Provided the unit is properly used, Renfert warrants the *Vario E* for a **period of 3 years**. 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:

230 V / 50-60 Hz, 120 V / 50-60 Hz

Fuse protection:

Fuse (not replaceable) / rating:

230 V = T 315 mA / 250 V

120 V = T 630 mA / 250 V

Dimensions (wxdxh):

178 x 120 x 54 mm

[7.01 x 4.73 x 2.13 inch]

Weight, filled: approx. 658 g

10. Standard Delivery

- 1 *Vario E* wax heating unit
- 1 set of operating instructions
- 1 spare parts list

11. Accessories

Renfert recommends:

Electric wax instruments:

Waxlectric I incl. 1 handle and 1 kit modelling inserts:

No. 2139-0000 230 V

No. 2139-1000 120 V

No. 2139-2000 240 V

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

No. 2140-0000 230 V
 No. 2140-1000 120 V
 No. 2140-2000 240 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, grau-opaque, 75 g
 No. 492-0300
 occlusal, mint-opaque, 75 g

GEO special waxes:

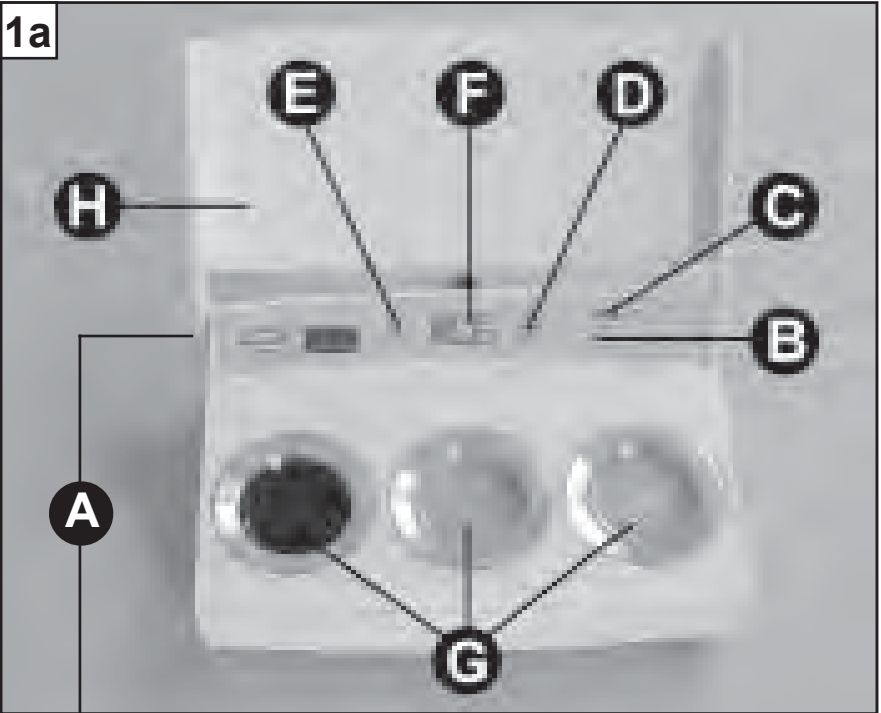
No. 486-1000 GEO cervical wax, red-transparent, 75 g
 No. 489-1000 GEO undercut wax, red-transparent, 75 g
 No. 485-1000 GEO milling wax, blue-opaque, 75 g
 No. 650-0000 GEO block-out wax, pink-opaque, 75 g
 No. 488-1000 GEO sticking wax, pink-transparent, 75 g

You will find more waxes in Renfert product catalogue or under www.renfert.com.

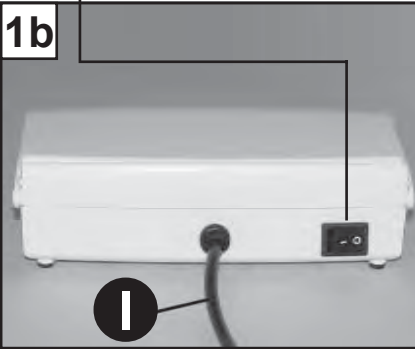
12. Troubleshooting Guide

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

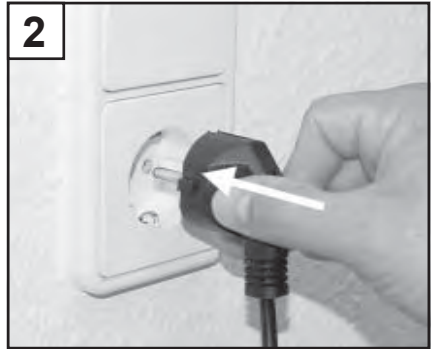
1a



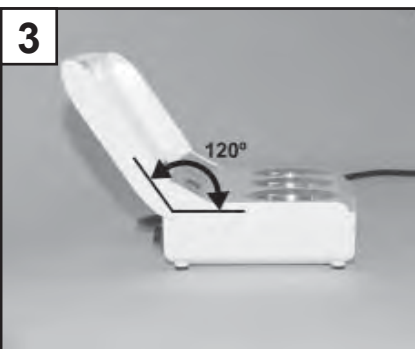
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2

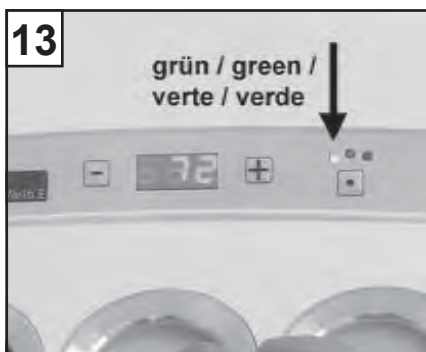
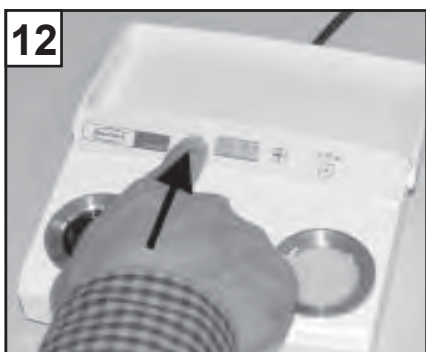
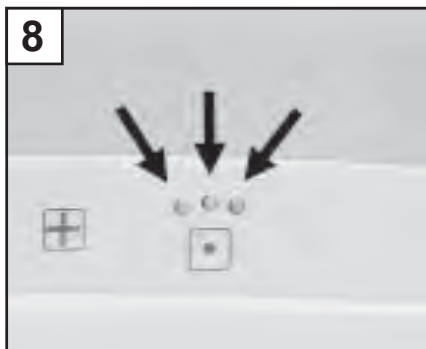
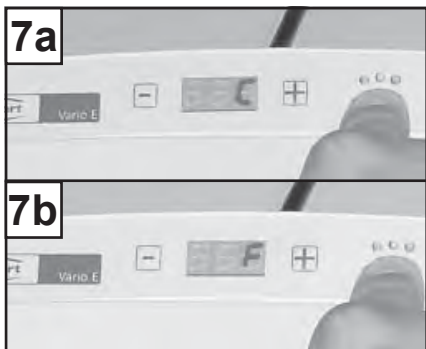
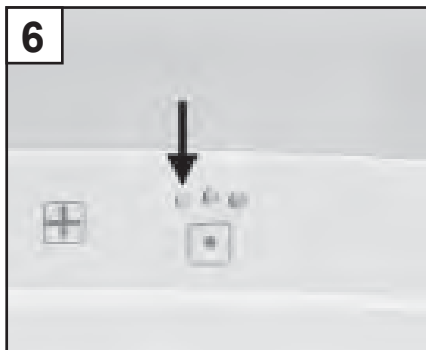
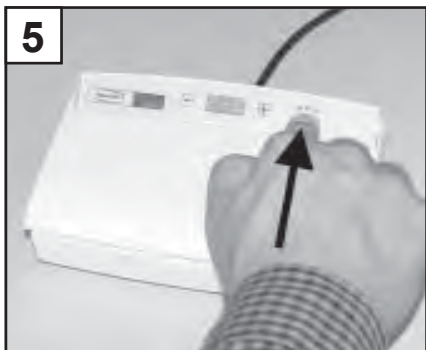


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Seriennummer, Herstelldatum und Geräte-Version befinden sich auf dem Geräte-Typenschild.
Serial number, date of manufacturing and unit version are shown on the type plate of the unit.
Le numéro de série, la date de fabrication et la version se trouvent sur la plaque signalétique de l'appareil.



EG-Konformitätserklärung

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Germany

Hiermit erklären wir, dass die Bauart des Wachswärmers *Vario E* folgenden einschlägigen Bestimmungen entspricht:

EG-Richtlinie: 73/23/EWG Niederspannungsrichtlinie

Mitgeltende EG-Richtlinie: 89/336/EWG Elektromagnetische Verträglichkeit (EMV)

Angewendete harmonisierte Normen: DIN EN 61010-1; DIN EN 61010-2-010

T. Burgbacher, Leiter Konstruktion

Hilzingen, 12.03.03



EU Conformity Declaration

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Germany

We herewith declare that the construction of the *Vario E* wax heating unit complies with the following applicable regulations:

EU Guideline: 73/23/EEC, Low Voltage Guideline

As sociated applicable EU Guideline:
89/336/EEC, Electromagnetic Compatibility (EMC)

Applied uniform standards: DIN EN 61010-1; DIN EN 61010-2-010

T. Burgbacher, Engineering Director

Hilzingen, 12.03.03



Déclaration de conformité CE

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Germany

Nous assurons que le type de construction du réchauffeur de cire *Vario E* est conforme aux normes:

Directive CE: 73/23/CEE Directive basse tension

Directives CE complémentaires valables:
89/336/CEE Compatibilité électromagnétique (CEM)

Spécifications nationales appliquées: DIN EN 61010-1; DIN EN 61010-2-010

T. Burgbacher, Chef de construction

Hilzingen, 12.03.03

Il numero di serie, la data di costruzione e la versione si trovano sulla targhetta dell'apparecchio.
El número de serie, la fecha de fabricación y la versión del aparato están indicados en la placa
identificadora del aparato.

Serienummer, fabricatiedatum en versie van het toestel staan vermeld op het typeplaatje van het
toestel.



Dichiarazione di conformità secondo le norme della C.E.

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Germany

Con la presente dichiariamo che il sistema di costruzione dello scaldacera *Vario E* è conforme alle norme pertinenti:

Direttiva CE: 73/23/EWG Direttiva sulla bassa tensione

Direttiva EC pertinente:

89/336/EWG Direttiva sulla compatibilità elettromagnetica (EMV)

Norme armonizzate impiegate: DIN EN 61010-1; DIN EN 61010-2-010

T. Burgbacher, capo reparto e costruzione

Hilzingen, 12.03.03



Declaración de conformidad según la C.E.

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Germany

Por la presente, declaramos que la construcción del fundidor-calentador de cera *Vario E* corresponde a las siguientes disposiciones pertinentes:

Directriz CE: Directriz de baja tensión (73/23/CEE)

Directrices CE también válidas: Compatibilidad electromagnética (89/336/CEE)

Normas armonizadas, que han sido aplicadas:

DIN EN 61010-1; DIN EN 61010-2-010

T. Burgbacher, Jefe de construcción

Hilzingen, 12.03.03



EG-conformiteitsverklaring

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Duitsland

Wij verklaren dat het model van de wasverwarmer *Vario E* voldoet aan onderstaande standaards en normen:

EG-richtlijn: 73/23/EEG laagspanningsrichtlijn

Andere geldende EG-richtlijn: 89/336/EEC elektromagnetische compatibiliteit (EMC)

Gebruikte geharmoniseerde normen:

DIN EN 61010-1; DIN EN 61010-2-010

T. Burgbacher, Chef constructie

Hilzingen, 12.03.03

Numer seri, data produkcji i wersja urządzenia znajduje się na tabliczce znamionowej urządzenia.

Номер серии, дата изготовления и модель прибора указаны на фирменной табличке.



Deklaracja zgodności UE

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Niemcy

Niniejszym oświadczamy że konstrukcja podgrzewacza do wosku *Vario E* odpowiada następującym obowiązującym przepisom:

Wytyczne UE: 73/23/EWG wytyczne niskiego napięcia

Aktualne wytyczne UE: 89/336/EWG zgodność elektromagnetyczna (EMV)

Zastosowane zgodne normy: Niemiecka Norma Przemysłowa DIN EN 61010-1; Niemiecka Norma Przemysłowa DIN 61010-2-010

T. Burgbacher, kierownik działu konstrukcji

Hilzingen, 12.03.03



Декларация о соответствии ЕЭС

Renfert GmbH, Industriegebiet, 78247 Hilzingen / Niemcy

Настоящим заявляем, что конструкция прибора для разогрева воска *Vario E* соответствует следующим определениям:

Директиве ЕЭС: 73/23/ЕЭС Директива в отношении низкого напряжения

Сопутствующим директивам ЕЭС:

89/336/ЕЭС Электромагнитная совместимость (EMV)

Использованные гармонизированные стандарты:

DIN EN 61010-1; DIN EN 61010-2-010

T. Burgbacher, руководитель конструкторского отдела

Hilzingen, 12.03.03