

VITA - Vacumat 40

Operating Manual



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1 Technical information

1.1 General functions

- 100 freely programmable firing programs
- Illuminated graphic display
- Clearly-structured and controllable firing cycles
- 1 long-time cooling phase can be selected for each program
- Highest temperature accuracy
- Temperature adjustment program with silver sample
- Automatic temperature adjustment
- In case of power cut < 10 sec no abortion of program
- In case of power cut > 10 sec message in display
- Choice of three lift positions in pre-drying phase

1.2 Technical data

Dimensions:

Width:	220 mm
Depth:	320 mm
Height:	420 mm

Casing: steel / stainless steel

Weight: 10.5 kg

Firing chamber - capacity:

Diameter :	90 mm
Height:	55 mm

Firing chamber - temperature: max. 1200°C

1.3 Electrical data

Power supply: 230 Volts AC, 50 Hz

Power consumption: max. 1500 Watts

Classification: Safety class 1

Power supply for vacuum pump: 230 Volts, 50/60 Hz or 100/110 Volts, 50/60 Hz, max. 0.2 KW

1.4 Scope of delivery

Furnace in special shipping carton with:

- 1 operating element
- 1 firing tray
- 1 mains power lead
- 1 pair of furnace tweezers
- 1 set of firing trays A + B
- 1 set of firing trays G
- 1 operating manual

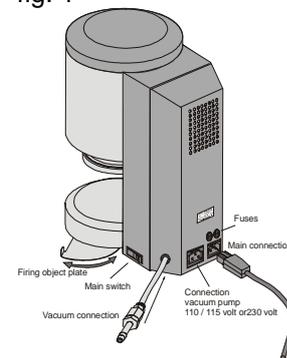
vacuum pump (option) : 230 Volts, 50/60HZ
Weight approx. 6.4 kg

2 Installation and starting-up

2.1 Installation

- When positioning the furnace, the minimum distance of the furnace and any wall is at least 25 cm.
- At temperatures of less than 15°C (e.g. after transport) leave the unit for approx. 30 min. before starting-up.
- Make sure that the unit is placed on a heat-resistant surface. Heat radiation and heating up of the unit are within a harmless range. However it can not be excluded, that sensitive furniture surfaces and veneerings may exhibit slight discoloration due to continuous exposure to heat.
- The unit must not be exposed to direct sunlight.
- Do not place any combustible objects near the furnace.
- Do not place operating element directly into the heat radiation area of the firing chamber.

fig. 1

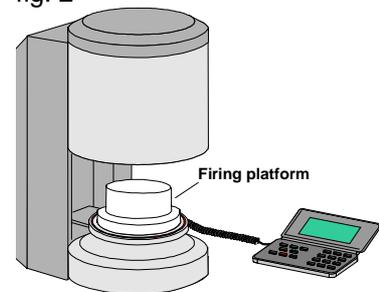


2.2 Connecting the furnace to the mains supply

Notice: Prior to starting-up, observe safety advice item 3!

- Connect furnace to the mains supply (fig. 1). Do not use multiway socket outlet with extension, overload may result in a fire.
- Connect vacuum pump (fig. 1).
- Connect operating element with the furnace (on the side) and open it (fig. 2). Do not place operating element in the area of direct heat radiation of the firing chamber.
- Switch on the furnace with the main switch (fig. 1), lift will descend into lower position.
- Place the firing tray onto the lift support plate. (fig. 2)
- Activate with Standby Mode key (for further information see Standby Mode)

fig. 2



2.3 Furnace out of operation

If the furnace is not used, the lift should be moved with  into the firing chamber and the unit should be switched off with the main switch. Closing the firing chamber will protect the insulation and avoid the absorption of moisture.

3 Safety advice

For your personal safety we would like to ask you to read the following safety-relevant information completely before starting-up the furnace.

3.1 Information of labels

This is a warning symbol about dangerous electrical current. Disconnect the unit from the mains supply before opening it (fig. 3).



Caution if rear panel is removed: there may be a residual voltage of up to 400 volts on the board if the unit is switched off.

The manufacturer disclaims any liability for accidents of the user if the furnace is not closed.

Caution: Do not place any objects near the lift tray. When the unit is switched on, the lift will descend into the lower position (fig. 3).

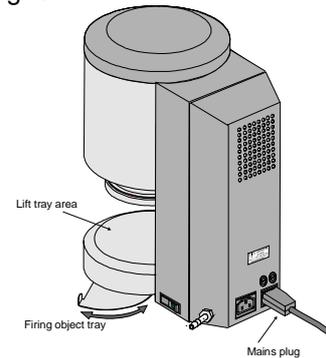


Use lateral plate to place firing objects on (fig. 3). Furnaces must not be operated without firing tray placed on (fig. 2).

During continuous operation (max. end temperature, max. firing time) some parts of the firing chamber may reach high temperatures (above 70°C).

If the unit is connected to the mains supply, do not reach into the open firing chamber to avoid contact with live and hot components.

fig. 3



3.2 Cleaning of the furnace

Unplug the unit each time before it is cleaned !! (fig. 3)

It is not necessary to clean the interior of the firing chamber, cleaning of the casing with a wet cloth within regular intervals will ensure operational reliability (especially of the lift drive). Do not use hot objects for the keys of the operating element, e.g. pair of tweezers. Operating element should only be cleaned with a dry cloth or brush.



Basically, no cleaning agents and no flammable liquids must be used for any type of cleaning work.

3.3 Fuses

In the rear panel there are two fuses for the unit. The labels provide information on the fuses used in the unit. Fuses with different values must not be used.

230 Volt

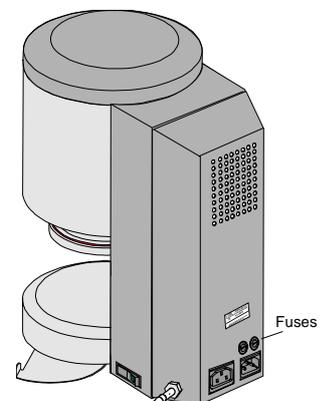
T1 H 250 V

T 8 H 250 V

100/110 Volt

T3,15 H 250 V

T 15 H 250 V



3.4 CE-mark



The use of the CE-mark entails the legally binding statement that the unit complies with the basic requirements of guideline 73 / 23 / EEC (Low Voltage Guideline) as well as guideline 89 336 / EWG (EMV - guideline).

3.5 Cooling fan

The furnace has been equipped with a cooling fan which will be switched on and provide half of its power after starting a firing program at a temperature of 605°C to 800°C in the firing chamber and then offer full power up to the end of the program and cooling down to 600°C. The cooling fan avoids excessive heating of the furnace and contributes to ensure the general operational reliability of the furnace. In case of failure of the cooling fan an error message is shown on the display (see error messages). For safety reasons the furnace should not be operated without the cooling fan. Do not block the upper cover of the firing chamber or the openings of the rear panel.

4 Protection against power failure

The Vacumat furnace is protected against power failure. This element avoids program abortion and thus incorrect firing in case of a short failure of the mains voltage supply. This backup device is activated immediately in the event of a mains power failure during an active firing program.

In case of a failure of less than 10 sec, the program continue and is not aborted. Display shows Error 09 (see error messages). Pressing the Stop key deletes the Error message and the data of the program sequence will be shown on the display again.

Error 9

Recover
Continue: (STOP)

In the case of a failure of more than 10 sec the program is aborted and the display shows Error 08 (see error messages). Pressing the Stop key deletes the Error messages.

Error 8

Power Fail
Continue: (STOP)

5 Rapid cooling down of the firing chamber

To ensure that the furnace can be quickly reused for further firing processes, the pump can be activated by pressing .

Precondition: no active program, lift tray in lower position and temperature in the firing chamber higher than standby temperature.

After cooling down to 50°C below the standby temperature, the pump is switched off, the lift is raised into the upper position and the temperature rises up to the standby temperature (Standby).

6 Standby - Mode

Start:

Switch on furnace with the main switch - lift ↓

 Lift ↑

Stop:

 Lift ↓

Standby 500 °C
08:00
10.01.1999 20 °C

Changing the Standby temperature see utilities No. 1

If the unit is switched on as well as in the standby mode, the time and the date are displayed. (see utilities No. 15 and 16).

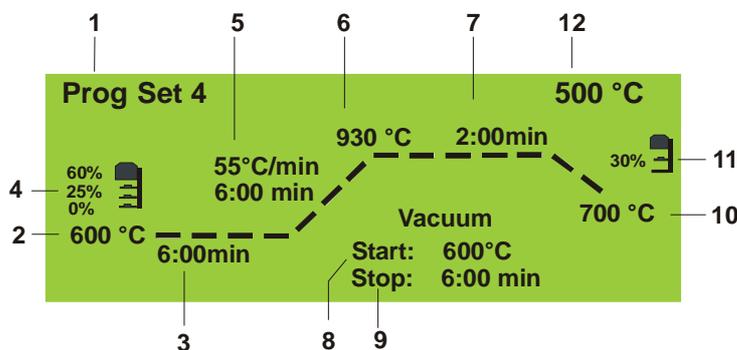
7 Firing programs

7.1 General information on firing programs and display

100 freely programmable firing programs are available.

The programs include the following adjustable parameters:

Firing programs:	No. 1 - 100 Set Mode (change/enter program values) or Run Mode (firing program active)
2 Pre-drying temperature:	200°C - 700°C
3 Pre-drying time:	0:00 - 40:00 min (entry in min/sec.)
4 Lift positions for pre-drying:	see item 8
5 Temperature rising rate:	2:00 - 40:00 min oder 20 - 120°C/min (see also item. 7.2 temperature rising rate)
6 End temperature:	max. 1200°C
7 Hold-time for end temperature:	0:00 - 40:00 min (entry in min/sec.)
8 Vacuum Start and vacuum value:	* Start simultaneously with temperature rising rate (pre-drying - temperature) or selection for start in the temperature range of 200°C - 1100°C. * After the start of the vacuum pump the vacuum value is displayed in % (see also item. 7.3 vacuum display).
9 Vacuum Stop:	rising time is automatically taken over as vacuum time, or individual selection of Stop in the temperature range of 500°C - 1200°C or time range max. rising time plus temperature hold-time
10 Cooling temperature	200°C - max. end emperature in the program.
11 Lift position slow cooling	see also item 7.8
12 Display for temperature in the firing chamber up to 1200°C	



The values for lift position, pre-drying (4) and slow cooling (11) can be removed from the display with the utilities program No. 17

7.2 Temperature rising rate

The temperature rising rate is displayed in the Set-Mode (program selected) in °C/min and in min/sec. The value to be entered can be selected between °C/min (20°C – 1120°C) or min/sec. (2:00 – 40:00). The second value is calculated automatically and displayed. Values outside the acceptable range activate a warning signal and the final, valid value is displayed again. If – due to the entry of a temperature rising rate in min /sec – the calculated temperature rising rate of 20°C/min is not reached or the upper value of 120°C is exceeded, a valid rising time is automatically entered in min/sec.

If the pre-drying temperature or the firing temperature is changed after entering the temperature rising rate, the value °C/min is corrected, the time in min/sec remains unchanged as long as the value lies within the permissible range.

7.3 Vacuum display

The vacuum display shows the value in %.

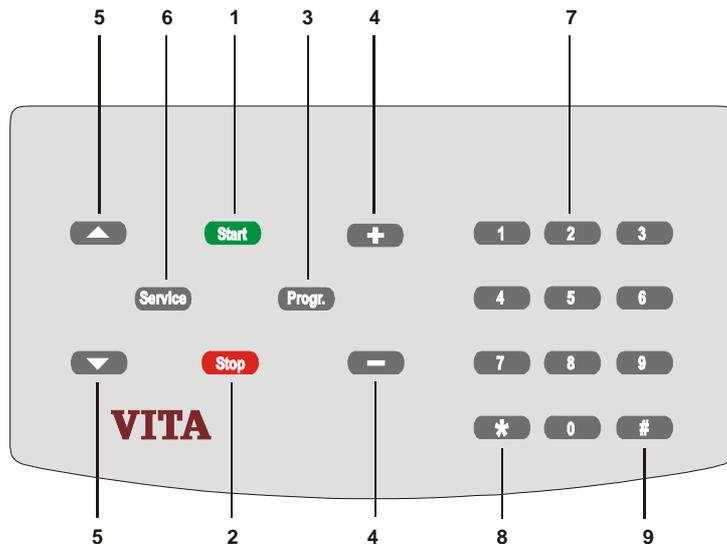
Starting from the atmospheric pressure on sea level of 100 mbar:

100% = - 1000 mbar (can not be achieved)
95% = - 950 mbar or 50 mbar absolute
90% = - 900 mbar or 100 mbar absolute

The vacuum value that is achieved depends on the power of the vacuum pump used and ranges between 85 to 95% (150 mbar - 50 mbar absolute).

If the vacuum value of 30% is not reached within 15 sec during a firing program, the firing program is aborted and error message Vacuum, Error 00 is displayed.

7.4 Function of keys in the On -, Set - and Run - Mode



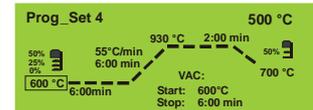
- Mode:**
- On:** Furnace switched on, lift in lower position, no active program.
 - Set:** program selected
 - Run:** program started
- 1 **Start** *On-Mode:* activates standby
Set-Mode: starts program (previously changed values are stored)
Run-Mode: no function
 - 2 **STOP** *On-Mode:* no function
Set-Mode: end set mode (previously changed and unconfirmed values are not stored)
Run-Mode: program abortion
 - 3 **Prog** *On-Mode:* activates Set-Mode, program that was selected last is called
Set-Mode: no function
Run-Mode: no function
 - 4 **+** *On-Mode* no function
- *Set-Mode:* change of program No. and program values, plus/minus
Run-Mode: no function
 - 5 **▲** *On-Mode:* manually moving lift up/down
▼ *Set-Mode:* selection of program steps and simultaneous storing of the value changed last and call of next program step.
Run-Mode: manually moving lift up/down (not active with vacuum)
 - 6 **Service** *On-Mode:* call utilities (see utilities)
Set-Mode: call function input for vacuum parameters
call function input of cooling parameters
call function input of lift positions pre-drying
Run-Mode: no function
 - 7  *On-Mode :* 0 to 9 no function
Set-Mode: 0 to 9 enter program No. and program values
Run-Mode: no function

- 8 ***** *On-Mode:* rapid cooling down of firing chamber (see item No. 5)
Set-Mode: sets back/deletes values
Run-Mode: no function
- 9 **#** *On-Mode:* no function
Set-Mode: Stores changed values and starts next program step.
Run-Mode: no function

7.5 Set-Mode, selecting a program, changing program values

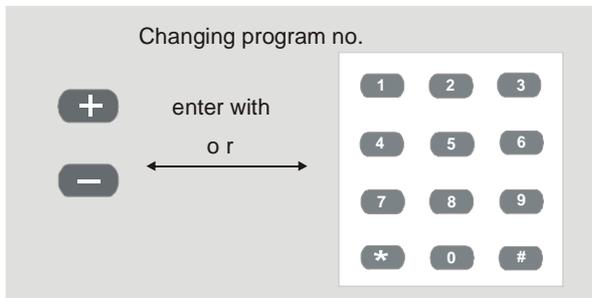
Precondition: *On-Mode*, lift tray in lower position, no active program.

Prog program that was started last is displayed e.g. No.4



Start program starts (Run-Mode)

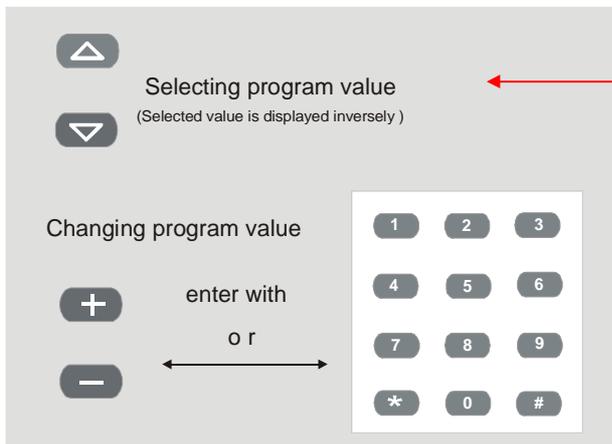
or



When selecting programs with numerical block press **#** to confirm, not required when selecting with plus/minus keys.

Start program starts

or changing program values



temperature rising rate, see also 7.2

Changed values must be confirmed/stored by pressing **#** or **▲** / **▼**

The key ***** is pressed to set back entered values,

Start program starts (changed values are stored)

or select/change next program value

or

STOP Set-Mode end (any changed and not confirmed values are not stored).

7.6 Run-Mode, program started.

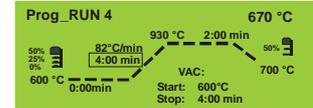
Precondition: *On-Mode*, lift tray in lower position, no active program.

Set-Mode selected (program selected see item 7.5).



Run-Mode can be started with **Start** key.

The countdown of the respective time informs about the program progress. After switching on the vacuum pump the vacuum value is displayed in the Start box.



7.7 Entering / changing / deleting vacuum parameters

Precondition: *program selected, (Set-Mode)*

Service press one time, programmed values are displayed.

Vacuum Off = no values displayed

Vacuum On = the pre-drying time is entered for Vacuum Start (start of vacuum pump with start of temp. rising time) for Vacuum Stop the temp. rising time/ end temperature is taken over.



Selecting Vacuum On or Off:

+ select **On** with key 1 in the numerical block and confirm with **#**

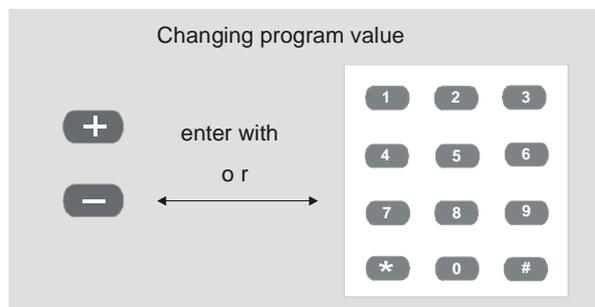
or

- select **Off** with key 0 in the numerical block and confirm with **#** (vacuum values not shown)

Changing vacuum parameters:

▲ these keys are used to select between vacuum parameters selected range can be changed.
▼

Acceptable values for: Vacuum Start = in the temperature range from pre-drying temperature to final temperature.



Changed values must be confirmed/stored with **#** or **▲** / **▼**.

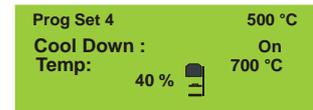
STOP Set-Mode End of vacuum (any changed and unconfirmed values are not stored).



7.8 Slow cooling

Precondition: Program selected, (Set-Mode)

Service press two times, programmed values are displayed



Cooling Off = all values are hidden

Cooling On = programmed values are displayed

Selecting slow cooling On or Off:

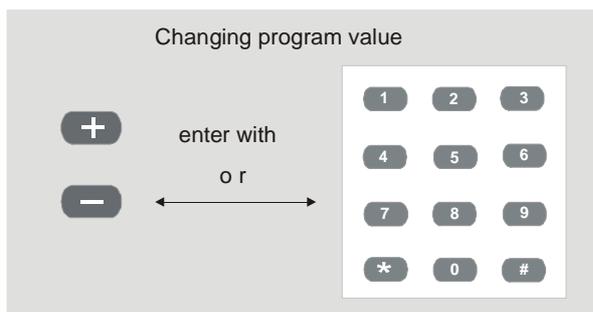
+ select **On** with key 1 in the numerical block and confirm with key **#**

or

- select Off with key 0 in the numerical block and confirm with **#**
(cooling down parameter hidden)

▲ these keys are used to select cooling down temperature and lift position, selected value can be
▼ changed.

Acceptable values: Cooling down temperature = 200°C – max. end temperature in the program. Lift position = 0 - 99% (0% lift in lower position)



Changed values must be confirmed/stored with **#** or **▲** / **▼**.

STOP Set-Mode End of vacuum
(any changed and unconfirmed values are not stored).



8 Lift position for pre-drying

With the utilities No. 18, entry of unit parameters, the following basic values for the lift positions are entered:

- Pos. 1 = 0% time 50 sec.
- Pos. 2 = 25% time 50 sec.
- Pos. 3 = 50% remaining pre-drying time

These values can be changed for each program.

Precondition: program selected, (Set-Mode)

Service press three times, display shows programmed values, Pre-drying Lift position 1 underlined.

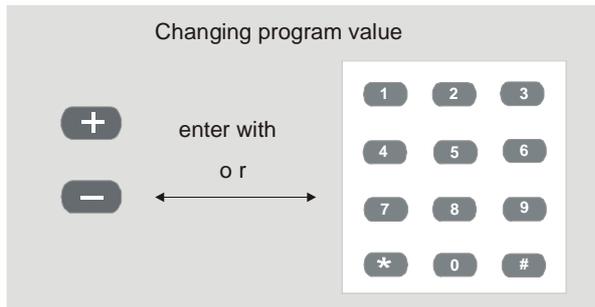
 These keys are used to select lift positions and intervals,

 selected value is underlined and can be changed.



Acceptable values:

- Lift position 1 = 0 - 30% (0% = lift in lower position)
- Lift position 2 = 0 - 50% but not smaller than position 1
- Lift position 3 = 0 - 80% but not smaller than position 2
- Interval 1 = 0 - 120 sec.
- Interval 2 = 0 - 120 sec.
- Interval 3 = automatic entry of remaining pre-drying time.



Changed values must be confirmed/stored with **#** or  / .

STOP Set-Mode End of vacuum
(any changed and unconfirmed values are not stored).



Display for lift positions can be shown or hidden with Service No. 17.

9 Utilities

9.1 Functions of keys in the Service-Mode:

Precondition: On-Mode, lift tray in lower position, no active program.

Service call Utilities-Mode, start with No. 1
store changes and end service program.

+ changes of values
-

 Selecting On = key 1 or Plus key
Selecting Off = key 0 or Minus key

▲ store changes and call next service program.
▼

STOP press once, set back change of value.
press two times to end service program.

Service 1
Standby - Temperature :
500 °C

9.2 Service No. 1 Standby (Standby - Temperature)

Service is pressed, display shows selected value (e.g. 500°C)

+ changes of values (range 200°C - 600°C)
-

Service store and end

or

▲ store and start next service program.
▼

Service 1
Standby - Temperature :
500 °C

9.3 Service No. 2 Lift speed

Service then  is pressed until Service No. 2 is displayed. display shows previously selected values



 These keys are used to select between raising and lowering speed,
 selected value is underlined and can be changed.

Acceptable values: Lowering: approx. 6 - 16 sec.
 Raising: approx. 6 - 16 sec.

 changes of values


Service store and end

or

 store and call next service program.


Note: When selecting/changing values, the lift moves into the upper or lower position after approx. 5 sec to determine the correct speed.

9.4 Service No. 3 Signal time

Service then  is pressed until Service No. 3 is displayed. Display shows previously selected values.



 Acceptable values: 0 - 20 sec. or continuously


Service store and end

or

 store and call next service program.


9.5 Service No. 4 Function STOP - key

Service then  is pressed until Service No. 4 is displayed.
Display shows previously selected values.

 changes of values


Acceptable values: 1 = Press Program Stop once
2 = Press Program Stop two times

Service store and end

or

 store and call next service program.


Service 4
Stop Press :


9.6 Service No. 5 Show total operating hours

Service then  is pressed until Service No.5 is displayed.
Display shows total operating hours of the furnace.

Service end

or

 call next service program.


Service 5
Device - Hour :
00011 h

9.7 Service No. 6 Show total operating hours of muffle

Service then  is pressed until Service No.6 is displayed.
Display shows operating hours of muffle.

Service end

or

 call next service program.


Service 6
Heat - Hour :
00005 h

9.8 Service No. 7 Call up furnace No.

Service then  is pressed until Service No.7 is displayed.
Display shows furnace No.

Service end

or

 call next service program.


Service 7
Device - ID :
000455

9.9 Service No. 8 Call up software No.

Service then  is pressed until Service No.8 is displayed.
Display shows software No.

Core = software No. of main board
CTRL = software No. of operating element

Service end

or

 call next service program.


Service 8
Software - Version :
CoreVac: V 1.2
Ctrtext : V 1.2

9.10 Service No. 9 Service-Hotline

Service then  is pressed until Service No. 9 is displayed.
Display shows Tel. * 49 (0) 7761/562222

Service end

or

 call next service program.


Service 9
Hotline :
* 49 (0) 7761 - 562222

9.11 Service No. 10 Temperature adjustment with silver sample

With this program and the VITA silver sample set (VITA Order No. B 230) the temperature in the firing chamber can be checked and readjusted in the range of plus/minus 20°C. Up on readjusting it must be ensured that the instructions to perform (instructions in the silver sample set) the test with the silver sample are strictly adhered to. Noncompliance leads to incorrect measurements and thus to incorrect adjustment.

Service then  is pressed until Service No. 10 is displayed.

 to set Temp. – Offset to „0“


Service 10
Temp - Adjust :
Temp - Offset :

Check program values:

Prog check program values,

 select/change program values with the keys ,  or .

the following values should be included in the program:

- Pre-drying temperature 600°C
- Pre-drying time 1:00 min
- Temperature rising time 6:00 min
- End temperature 955°C
- Hold-time for end temperature 3:00 min

Changed values must be confirmed/stored with  or  / .

Stop end check/input of program values

Place silver sample on lift tray

Start is pressed, program starts

acoustic signal at the end of the program

Stop signal off

melting point of silver sample is O. K. (*silver should have melted slightly*)

Service program completed

or

melting point of silver sample is not O.K.

 adjustment of temperature e.g. plus 10°C (range of plus/minus 20°C)


Service 10
Temp - Adjust :
Temp - Offset :

Service 10
Temp - Adjust :
Temp - Offset :

then **Start**, program starts - see, * *acoustic signal at the end of the program.*

When the melting point of the silver sample is reached, the temperature -offset

value will be stored when the **Service** key is pressed.

Temperature control and thus the temperature in the firing chamber is adjusted with this value.

9.11.1 Silver sample set VITA - Order No. B 230

Vita silver sample set for temperature control contains

- Description
- VITA silver sample set for temperature control
- 6 ceramic trays
- 3 silver rods with a length of 70 mm and a diameter of 1.5 mm

9.12 Service No. 11 Automatic temperature adjustment

Automatic temperature adjustment is activated after switching on the furnace at intervals of 100 operating hours of the muffle. During this process the display shows for approx. 15 sec: Auto Electronic.

Preconditions are:

- Automatic temperature adjustment ON
- 100 operating hours of muffle have expired
- Temperature in the firing chamber lower than 50°C

Automatic temperature adjustment considers resp. corrects any deviation of the electronic components within the temperature measuring circuit. Accordingly, a constant temperature control of +/- 1°C is ensured even when the furnace is operated over longer periods.

Selecting Service program:

 then  is pressed until Service No. 11 is displayed.

 On is selected

or

 Off is selected

 store and end

or

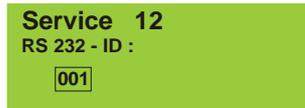
 store and call next service program.



9.13 Service No. 12 Code digit for PC connection

Service then  is pressed until Service No. 12 is displayed.

 enter code digit

Acceptable range: 0 to 255

Service store and end

or

 store and call next service program.



9.14 Service No. 13 Activate/reactivate data transfer

Service then  is pressed until Service No. 13 is displayed.

 On is selected

or

 Off is selected

Service store and end

or

 store and call next service program.



9.15 Service No. 14 Brightness / contrast of display

Service then  is pressed until Service No. 14 is displayed.
Display shows values selected so far

 These keys are used to select between brightness and contrast,
 selected value is underlined and can be changed.

Acceptable values: Brightness: 0 - 100%
Contrast: 0 - 100%

Service store and end

or

 store and call next service program.



9.16 Service No. 15 Setting of time

Service then  is pressed until Service No. 15 is displayed.

 These keys are used to select time, day, month and year;
 selected value can be changed. The sequence and the display of the parameters depends on the time and date format set in Service No. 16.

Acceptable values:

Hours: 0 - 24 (0 - 12 am, 0 - 12 pm)
 Minutes: 0 - 60
 Month: 1 - 12
 Day: 1 - 31
 Year: until 2099

 Changes of values


Service store and end

or

 store and call next service program.


Service 15

Time - Date :
 : 20
 01. 01. 1999

9.17 Service No. 16 Time – Date format

Service then  is pressed until Service No. 16 is displayed.

 These keys are used to select a 12-hour or 24-hour display of time.


 Changes


Service store and end

or

 store and call next service program.


Service 16

Time - Date -Format :
 Time :  h
 Date : DD : MM : JJ

9.18 Service No. 17 Show – hide display messages

Service then  is pressed until Service No.17 is displayed.

 These keys are used to select display messages for lift position
 pre-drying and lift position slow cooling down, selected message can be changed

 On is selected

or

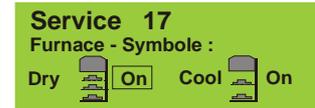
 Off is selected

Service store and end

or

 store and call next service program.





9.19 Service No. 18 Enter furnace parameters

Notice: When this program is run, individual values that have been entered will be overwritten with the values recommended by the manufacturer of the furnace.

Pre-stored basic settings for:

Service No. 1	Standby temperature:	500°C
Service No. 2	Lift speed:	↑ = 14 ↓ = 14
Service No. 3	Time for buzzer:	5 sec
Service No. 4	Abortion of firing program:	press Stop key once
Service No. 10	Temperature adjustment with silver sample:	Temp - Offset = 0°C
Service No. 11	Automatic temperature adjustment:	On
Service No. 12	Code digit for PC connection:	1
Service No. 13	Store process data:	Off
Service No. 14	Display brightness:	60%
	Display contrast:	60%
Service No. 16	Time – format:	24 h
	Data – format:	DD:MM.YYYY
Service No. 17	lift position pre-drying	On
	lift position slow cooling down	On
Service No. 24	Hold – temperature	130°C
	Hold – Time	5:00 min.

Reading basic furnace settings in the memory:

Service then  is pressed until Service No.18 is displayed.
Display shows e.g. 00016h = performed last during operating hour 00016.

Service 18
Service - Defaults :
0000 h auto

man = performed manually
or auto = automatically (only with new board)

 Keep key pressed for approx. 5 sec, (countdown in the display), only then basic furnace settings are
 read in the memory.

Service end

or

 call next service program.


9.20 Service No. 19 Read firing table in the memory:

Service then  is displayed until Service No. 19 is displayed.
Display shows e.g. 00016h = was performed last during operating hour 00016.

Service 19
Programm - Defaults :
0000 h auto

man = performed manually
or auto = automatically (only with new board)

read in memory with key:

 keep key pressed for 5 sec, (countdown in the display),
 only then the firing table is read in the memory.

Service end

or

 call next service program.


9.21 Service No. 20 Delete process data

(Software Version: > Core 3.2, Ctrl 3.1)

Service then  press until Service No. 20 is displayed.
Display shows e.g. 00016h = was performed last at operating hours 00016. 50 = 50 data records are stored in the memory.

Service 20
Delete process data :
0016 h 50

 keep key pressed for 5 seconds, (countdown in the display),
 only then the records contained in the memory will be deleted.

Service end

or

 call next service program.


Caution: The data records in the memory will be automatically deleted during the transfer with the FDS program to a PC.

9.22 Service No. 21 Firing program – write / read parameters

(Software Version: > Core 3.2, Ctrl 3.1)

The data of the firing programs have been stored in the memory of the keyboard. In order not to lose firing programs that have been entered individually when exchanging the keyboard, it is possible to write the values to the memory of the board using the Service program "write". This process should be carried out after any changes of firing programs to avoid loss of data.

If required, the firing programs can be read in the memory of the keyboard again using the service program "read".

Service then  press until Service No. 21 is displayed.

 write = write values to memory or
 read = read in memory of keyboard

Service 21
Program parameters :
 READ
 WRITE

 keep key pressed for 5 sec , (countdown in the display), only then the data are transferred.


Service end

or

 call next service program.


9.23 Service No. 22 Service – write / read parameters

(Software Version: > Core 3.2, Ctrl 3.1)

The data service parameters (standard values see operating instructions service program No.18) are stored in the memory of the CPU board. In order not to lose service programs that have been entered individually when exchanging the CPU board, it is possible to write the values to the memory of the keyboard using the service program "write". This process should be carried out after any change of service parameters to avoid loss of data.

If required, the service parameters can be read in the memory of the CPU board again using the service program "read".

Service then  press until Service No. 22 is displayed.

Service 22

Service parameters :
 READ
 WRITE

 write = write values to memory or

 read = read in memory of CPU board

 keep key pressed for 5 sec , (countdown in the display), only then the data are transferred.



Service end

or

 call next service program.



9.24 Service No. 23 Language

(Software Version: > Core 3.2, Ctrl 3.1)

Service then  press until Service No. 23 is displayed.

 to select German, English, Spanish, Italian or French.



Service store and end

or

 store and call next service program.



Service 22

Language :
 German

9.25 Service No. 24 Hold –temperature- program

(Software Version: > Core 5.6, Ctrl 4.1)

Service then  press until Service No. 24 is displayed.

 changes the values for hold temperature (range 130°C - 700°C)



 store and call up holding time

 changes the values for hold time (range 0:00 – 59:00 min.)



Start programm will be started

Service end

or

 call next service program.



Service Nr 24

HOLD -TEMP- PROGRAMM :
 temperature :
 time : 05:00min

10 Error messages Error 01 - Error 29

In case of a malfunction Error xx is shown on the display. The message can be reset by pressing the Stop key or by switching the unit on and off. If the malfunction is not eliminated, the message is repeated, the unit, however, can only be operated after the elimination of the malfunction. When one of the error messages listed below is displayed, it is required to contact the manufacturer or an authorized service company, see also Service No. 9, Service-Hotline. In most cases it is necessary to open the furnace in order to detect or to verify an error that has occurred. For this purpose the aspects described under „**Safety advice**“ must be observed.

Error 00 vacuum error, 30% of vacuum not achieved within 15 seconds

ERROR: 00
Vacuum
Continue: Stop

Error 01 firing temperature exceeded by more than 20°C
or transposition of thermocouple connections

ERROR: 01
Temp. Burn >>
Continue: Stop

Error 02 Firing temperature exceeded by more than 30°C during rising

ERROR: 02
Temp. Burn >>
Continue: Stop

Error 03 Break of temperature sensor, cooling fan runs immediately

ERROR: 03
Temp. - Sensor
Continue: Stop

Error 04 Malfunction of limit switch for lower lift position

ERROR: 04
Lift Home Pos
Continue: Stop

Error 05 Error resp. failure of cooling fan

ERROR: 05
Cooling Fan
Continue: Stop

Error 06 Error resp. failure of lift motor

ERROR: 06
Lift Motor
Continue: Stop

Error 07 Error resp. failure of speed measurement

ERROR: 07
Lift Pos Sig
Continue: Stop

Error 08 Error voltage supply resp. supply unit
(see protection against power failure)

ERROR: 08
Power Fail
Continue: Stop

Error 09 Error voltage supply resp. supply unit
(see protection against power failure)

ERROR: 09
Core Recover
Continue: Stop

Error 10 Muffle or Fuse defective

ERROR: 10
Heating
Continue: Stop

Error 11 Memory, memory full, transfer data to PC
or delete with Service No. 20.

ERROR: 11
Memory
Continue: Stop

Error 12 Vakuum Offset, Fehler im Bereich Vakuummessung

ERROR: 12
Vacuum Offset
Continue: Stop

Error messages Error 13 to 29 generally refer to malfunctions of the electronic system as well as communication errors between the keyboard and the main board. When these errors occur, the manufacturer of the furnace or an authorized service company should be contacted.

11 Data transfer

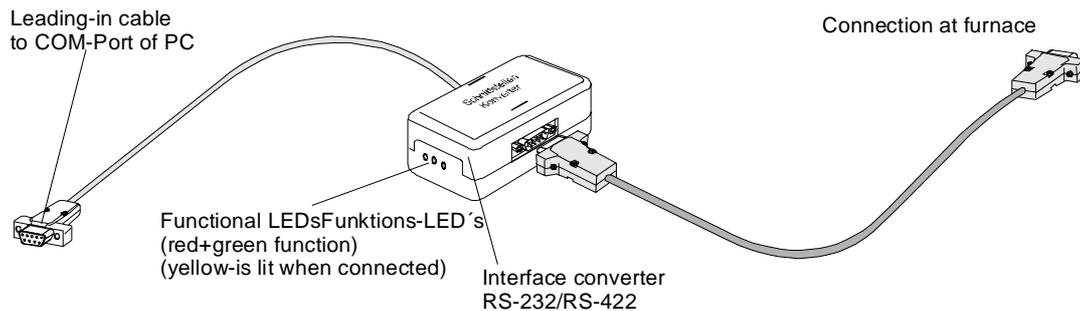
The FDS (Firing – Data – System) allows the transfer and administration of firing data to and on a PC to assure the quality of dental ceramic work. The program (software on CD) incl. accessories is not included in the delivery of the unit and can be ordered under the Order No. D 34230.

11.1 Activate data storage

To store firing data, „On" in the Service Program No.13 must be selected. This way it is ensured that firing data will be stored in the memory and the data can be transferred to a PC later on using the FDS (Firing–Data–System) program. The memory in the furnace stores approx. 300 firing programs and will be automatically deleted after a transfer. The message "memory full" (Error 11 – Memory) is displayed early enough to save a running program. If no data are transferred to a PC, the memory can be deleted using the Service Program No.20.

11.2 Connection to PC for data transfer

The connecting cable (figure) required for the transfer of data is included in the accessories of the PC program.



12 Firing Cycle Charts

VITA OMEGA	Progr. no.	Pre-Drying °C	→ min.	↗ min.	↘ °C/min.	Temp. approx. °C	→ min.	VAC min.
Oxidation firing	1	Follow manufacturer's instructions !						
1 st opaque firing (powder)	2	600	2.00	3.00	117	950	1.00	3.00
1 st opaque firing (paste)	52	500	6.00	6.00	75	950	1.00	6.00
2 nd opaque firing (powder)	3	600	2.00	3.00	110	930	1.00	3.00
2 nd opaque firing (paste)	53	500	6.00	6.00	72	930	1.00	6.00
Margin porcelain firing "MARGIN"	10	600	6.00	6.00	57	940	1.00	6.00
Dentine firing	4	600	6.00	6.00	55	930	1.00	6.00
2 nd dentine firing	5	600	6.00	6.00	53	920	1.00	6.00
3 rd dentine firing	6	600	6.00	6.00	52	910	1.00	6.00
Glaze firing	7	600	---	3.00	110	930	1.00	---
Glaze firing with VITA Akzent® Fluid	8	600	4.00	3.00	110	930	1.00	---
Glaze firing with Glaze Akz 25	9	600	4.00	3.00	100	900	1.00	---

VITA OMEGA 900	Progr. no.	Pre-Drying °C	→ min.	↗ min.	↘ °C/min.	Temp. approx. °C	→ min.	VAC min.
Oxidation firing	41	Follow manufacturer's instructions !						
1 st opaque firing (powder)	42	600	2.00	4.00	75	900	2.00	4.00
1 st opaque firing (paste)	54	500	6.00	6.00	67	900	3.00	6.00
2 nd opaque firing (powder)	43	600	2.00	4.00	75	900	1.00	4.00
2 nd opaque firing (paste)	55	500	6.00	6.00	67	900	2.00	6.00
Margin porcelain firing "MARGIN"	50	600	6.00	6.00	50	900	2.00	6.00
Dentine firing	44	600	6.00	6.00	50	900	1.00	6.00
2 nd dentine firing	45	600	6.00	6.00	48	890	1.00	6.00
3 rd dentine firing	46	600	6.00	6.00	48	890	1.00	6.00
Correction porcelain firing with COR	*)	600	4.00	6.00	33	800	1.00	---
Glaze firing	47	600	---	4.00	75	900	2.00	---
Glaze firing with VITA Akzent® Fluid	48	600	4.00	4.00	75	900	2.00	---
Glaze firing with Glaze Akz 25	49	600	4.00	4.00	75	900	1.00	---

*) Enter program number yourself

VITA RESPONSE®	Progr. no.	Pre-Drying °C	→ min.	↗ min.	↘ °C/min.	Temp. approx. °C	→ min.	VAC min.
Oxidation firing	56	Follow manufacturer's instructions !						
1 st opaque firing (powder)	57	400	2.00	6.00	67	800	1.00	6.00
1 st opaque firing (paste)	58	400	6.00	6.00	67	800	1.00	6.00
2 nd opaque firing (powder)	59	400	2.00	6.00	65	790	1.00	6.00
2 nd opaque firing (paste)	58	400	6.00	6.00	67	800	1.00	6.00
Margin porcelain firing "MARGIN"	60	400	6.00	6.00	65	790	1.00	6.00
Dentine firing	61	400	6.00	6.00	63	780	1.00	6.00
2 nd dentine firing	61	400	6.00	6.00	63	780	1.00	6.00
3 rd dentine firing	61	400	6.00	6.00	63	780	1.00	6.00
CORRECTIVE firing with COR	62	400	4.00	6.00	58	750	1.00	6.00
Glaze firing	63	400	2.00	4.00	95	780	1.00	---
Glaze firing with VITA GLAZE - LT	64	400	4.00	4.00	90	780	1.00	---

VITA VMK 95	Progr. no.	Pre-Drying °C	→ min.	↗ min.	↗ °C/min.	Temp. approx. °C	→ min.	VAC min.
Oxidation firing	11	Follow manufacturer's instructions !						
1 st opaque firing (powder)	12	600	2.00	4.00	88	950	1.00	4.00
1 st opaque firing (paste)	52	500	6.00	6.00	75	950	1.00	6.00
2 nd opaque firing (powder)	13	600	2.00	4.00	83	930	1.00	4.00
2 nd opaque firing (paste)	53	500	6.00	6.00	72	930	1.00	6.00
Margin porcelain firing "MARGIN"	20	600	6.00	6.00	755	930	1.00	6.00
Dentine firing	14	600	6.00	6.00	55	930	1.00	6.00
2 nd dentine firing	15	600	6.00	6.00	55	930	1.00	6.00
3 rd dentine firing	16	600	6.00	6.00	53	920	1.00	6.00
Correction porcelain firing CORRECTIVE	— *)	600	4.00	6.00	50	900	1.00	---
Glaze firing	17	600	---	4.00	83	930	1.00	---
Glaze firing with VITA Akzent® Fluid	18	600	4.00	4.00	83	930	1.00	---
Glaze firing with Glaze Akz 25	19	600	4.00	4.00	75	900	1.00	---

*) = Enter program number yourself

Very good results have been obtained for many years with alloys and VITA Metal Ceramics (OMEGA, OMEGA 900, VMK 95) when the alloy had thermal expansion coefficient of 14.0 and 14.4 x 10⁻⁶ x K⁻¹ (measured from 25°C – 600°C). However, if the alloy has a higher thermal expansion coefficient, the cooling period from 900°C down to 700°C should not take less than 3 minutes.

VITADUR ALPHA	Progr. no.	Pre-Drying °C	→ min.	↗ min.	↗ min.	Temp. approx. °C	→ min.	VAC min.
Hard core porcelain	21	600	---	6.00	87	1.120	2.00	6.00
Dentine firing	22	600	6.00	6.00	60	960	1.00	6.00
1 st +2 nd correction firing	23	600	6.00	6.00	58	950	1.00	6.00
Glaze firing	24	600	---	4.00	85	940	1.00	---
Glaze firing with VITA Akzent® Fluid	25	600	4.00	4.00	85	940	1.00	---
Glaze firing with Glaze Akz 25	26	600	4.00	4.00	80	920	1.00	---

Additional programs	Progr. no.	Pre-Drying °C	→ min.	↗ min.	↗ °C/min.	Temp. approx. °C	→ min.	VAC min.
Spectra-Gold	92	550	---	3.00	90	820	1.00	---
Furnace soldering 1	93	600	5.00	5.00	40	z.B.800	3.00	---
Furnace soldering 2	94	600	1.00	3.00	67	z.B.800	4.00	---

Soldering in the VITA - Vacumat

Method 1

Preheat the restoration, complete with flux and beads of solder, in a preheating furnace for 15 – 20 min. at 400°C.

Programm no. 93

Set final temperature by adding 50°C to melting point of solder.

Pre-drying time: 5.00 min.
Heating-up time: 5.00 min.
Hold time: 3.00 min.

Method 2

Preheat the restoration, with flux but yet without solder, in a preheating furnace for 15 – 20 min. at 400°C.

Programm no. 94

Set final temperature by adding 50°C to melting point of solder.

Pre-drying time: 1.00 min.
Heating-up time: 3.00 min.
Hold time: 4.00 min.

Please note: Our products should be used according to the working instructions. We cannot be held liable for damages resulting from incorrect handling or usage. The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications. We cannot accept any liability if the product is used in conjunction with materials and equipment from other manufacturers which are not compatible or not authorized for use with our product. Furthermore, our liability for the correctness of this information is independent of the legal ground and, in as far as legally permissible, is limited to the invoiced value of the goods supplied excluding turnover tax. In particular, as far as legally permissible, we do not assume any liability for profit loss, for indirect damages, for consequential damages or for claims of third parties against purchaser. Claims for damages based on fault liability (culpa in contrahendo, breach of contract, tort liability, etc.) can only be made in the case of intent or gross negligence. Date of issue of these instructions for use: 06/01.



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