VITA - Vacumat 2500

Service - Manual
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1 Technical specifications

Dimensions:
- Height: 560 mm
- Width: 360 mm
- Depth: 335 mm

Firing chamber (interior space):
- Diameter: 96 mm
- Height: 70 mm

Weight: 19.0 kg

Power Supply: 110/230 Volts A.C., 50/60 Hz

Max. power consumption: 1.5 KW

Classification: Safety Class 1

Fuse:
- 230V / 8 amp, 110V / 2 amp

Max. firing chamber temperature: 1200°C

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

Vacuum pump (optional):
- Type PJ 9080-023.3, 110/230 Volts A.C., 50/60Hz, IP 20
- Weight: approx. 6.4 kg

Supply schedule:

Special shipping carton, containing:

1 VITA VACUMAT 2500 furnace
1 control panel
1 firing tray
1 mains power lead
1 pair of furnace tweezers
1 set of firing stands A+B, grey
1 set of firing stands G, grey
1 Operating Manual
1 vacuum pump (only supplied on special order)

supplied with painted casing:

1 glass platform for depositing hot firing trays

If any items are missing, contact your supplier immediately. Save the carton and packaging materials, in case you ever need to relocate the furnace.
2 Safety advice

This furnace may only be operated with the supplied mains power lead!

Prior to making the electrical connection, make sure that

- the furnace power switch is OFF.
- the furnace voltage matches your power supply. Confirm the line voltage for your furnace by checking the line voltage designation on the rating plate on the back of furnace.
- the protection fuse and the wiring system in your laboratory are suitable to carry the total electric load of the furnace (see rating plate and/or technical specifications).
- the wiring system in your laboratory has an efficient earth connection in compliance with rules and laws in force.
- the plug is inserted into a suitable wall socket which can easily be reached.
- the mains power lead is laid out in such way as to ensure that it does not come into contact with any hot surfaces or objects and that it does not obstruct any passage way.

● The manufacturer disclaims any liability in case these accident-preventing rules are not observed ●

This is a warning symbol about dangerous electrical current. Disconnect furnace from the mains power supply before opening it for maintenance or repair work. Contact your VITA dealer or a qualified service technician if your furnace needs to be repaired or serviced.

Typ PJ 9080-023.3
or
Typ PM 9081-023.3

This label gives information on the power connection of the vacuum pump.

It is not necessary to clean the inside of the firing chamber but only to wipe the surface of the insulation at the low edge of the firing chamber regularly with a damp cloth. This applies also to the O-ring on the lift support plate. The casing can likewise be cleaned using a damp cloth. In order to ensure smooth gliding of the firing tray lift at all times, the lift guide rails should be wiped regularly with a dry cloth.

Never use cleaning agents or flammable liquids for cleaning the furnace
3 Installation and starting-up

(see also Safety Advice)

1. When positioning the furnace, the minimum distance between all sides of the furnace and any wall should be at least 25 cm.
2. Make sure the furnace power switch is OFF. Connect the furnace to the mains outlet, using the supplied mains power lead.
3. Connect the plug of the vacuum pump to the socket at the rear of the furnace and then slide the vacuum hose onto the nozzle.
4. Attach the operating panel to the front of the casing and connect the spiral cable to the right or left side.
5. Press the Power ON/OFF switch at the left to switch on the furnace. The firing tray lift will descend to its lower position. The LCD indicators in Block A display the current firing chamber temperature and the time of day.
6. Place the firing tray onto the lift support plate. **Notice:** Never operate the VITA VACUMAT 500 without the firing tray on the lift support plate. It may cause damage to the furnace.
7. Press the "Start" key. The firing tray ascends into the firing chamber, and the temperature starts rising until it has reached the factory-set starting temperature of 500 °C.

Once the starting temperature has been reached, the furnace is ready for use with any firing program.

For further operating information, see the appropriate section of the Operating Manual.

4 Control panel

4.1 Description (Block A)

Display shows: Firing chamber temperature 20°C - 1200°C

Display shows:
1. Time of day (while no firing program has been selected)
2. Time remaining of running firing program
3. Date (call via key when no program is active)
4. Utility values
5. Error messages
6. Millivolt display in adjustment program

Calls vaues utility programmes
4.2 Description (Block B)

Display shows: Program No.: 1 – 499 (Firing programs 1 – 300)

Display shows:
1. Values for utility programs
2. Status for additional control panel (showa „OFF“ for disabled panel)
3. Programme phase in which power failure occurred

Calls values for utility programs

4.3 Description pre-drying (Block C)

PRE-Drying LED
1. „ON“ when PRE-Drying is a phase of the selected program
2. flashes in Input-Mode
3. flashes when PRE-Drying is active
4. flashes when STAND-BY program is active

Display shows:
1. STAND-BY temperature 200°C - 800°C
2. PRE-Drying temperature 200°C - 800°C

Display shows:
1. PRE-Drying time 00:00 min - 40:00 min
2. Time remaining of running program
3. Set-Point during running program (when pressing Input-Mode key)

Activates Input-Mode
1. Changes PRE-Drying temperature
2. Changes PRE-Drying time
3. Calls set-points during running program

To select lift positions for PRE-Drying, see Block H - Keyboard & Lift Positions Keys
To edit values, see Operating Block C - PRE-Drying Temperature & Temperature Hold.
4.4 Description heating-up (Block D)

HEATING-UP LED
1. "ON" indicates a firing program has been selected
2. flashes in Input-Mode
3. flashes when HEATING-Up is in Process

Display shows:
- Temperatur rising rate in °C/min
- Temperatur rising time in min:sec
- Activates Input-Mode

Valid entries:
- 20°C/min - 120°C/min
- 3:00min - 20:00min

To edit values, see "Operating Block D - HEATING-UP"

4.5 Description firing temperature & end temperature (Block E)

END temperatur LED
1. "ON" indicates a firing program has been selected
2. flashes in Input-Mode
3. flashes when END temperatur „HOLD“ is active

Display shows:
- END temperature 200°C - 1200°C
- Time for firing at END temperature
- Remaining time of running program
- Set-Point during running program (when pressing Input-Mode key)

Activates Input-Mode
1. END temperature 200°C - 1200°C
2. Temperature rising time min:sec
3. Call set-points during running programm

To edit values, see "Operating Block E - Firing temperature & Temperature HOLD"
4.6 Description vacuum parameters (Block F)

MAX. Vacuum and reduced VACUUM LED

Display shows:
1. VACUUM pump START either:
   a) at the beginning of the heating-up phase
      (display shows PRE-Drying temp.)
   b) at a selectable temperature during HEATING-Up
2. Vacuum in millibar during active vacuum program

Display shows:
1. Vacuum „STOP“ controlled by temperature
   (max value = end temperature)
2. Vacuum „STOP“ controlled by time (1:00 - 60:00 min)

Activates Input-Mode
1. Vacuum pump „START“ controlled by temperature
2. Vacuum pump „STOP“ controlled by time
3. Vacuum pump „STOP“ controlled by temperature
4. Calls set-points during running program

To edit values, see Operating Block F - Vacuum Parameters

4.7 Description slow cooling (Block G)

COOLING LED
1. flashes when COOLING is a phase of the selected program
2. flashes in Input-Mode
3. flashes when COOLING is the active phase in the running program
4. flashes in FAST COOLING phase of firing chamber

COOLING „HOLD“ LED
1. flashes when COOLING „HOLD“ is a phase of the selected program
2. flashes in Input-Mode
3. flashes in COOLING „HOLD“ phase

Flashes in Input-Mod
1. flashes when COOLING with closed or open firing chamber has been selected
2. flashes in Input-Mode
3. flashes in COOLING phase

Display shows:
1. COOLING temperature 300°C - 1000°C
2. Fast COOLING of firing chamber to 50 °C below STAND-BY temperature

Display COOLING phase „HOLD“ 00:00 min - 40:00 min

Activates Input-Mode
1. COOLING temperature 300°C - 1000°C
2. Time for COOLING „HOLD“ 0:00 min - 40:00 min
3. Select lift tray position
4. Select programm FAST COOLING of firing chamber to 50°C below STAND-BY temperature

To edit values, see Operating Block G - SLOW COOLING
4.8 **Description of keyboard & lift position keys** (Block H)

In Input-Mode three pre-drying lift positions may be selected. LED’s show selected lift position. When pre-drying is less than two minutes, the lift position in the middle will be selected.

**Lift „ASCEND“**

**Lift „DESCEND“**
4.9 Operating Block C - pre-drying temperature & pre-drying time

Select program using keyboard and press Enter-Key “#”

Activate Input-Mode with PRE-DRYING Key

flashing PRE-DRYING LED
upper LCD ‘PRE-DRYING temp.’ shows ?? ??
lower LCD ‘PRE-DRYING time’ shows value min:sec

Change PRE-DRYING temperature?

YES

enter value using keyboard and press Enter-Key ‘#’

flashing PRE-DRYING LED
upper LCD shows ‘PRE-DRYING temp.’ °C
lower LCD ‘PRE-DRYING time’ shows ?? ??

NO

Press Enter-Key ‘#’

Valid Input: 200°C - 800°C

Invalid Entries will result in error message ‘Err’

Change PRE-DRYING time?

YES

enter value using keyboard and press Enter-Key ‘#’

NO

Press Enter-Key ‘#’

Valid Input: 0 min - 40:00 min

PRE-DRYING LED ‘ON’
upper LCD shows ‘PRE-DRYING temp.’ °C
lower LCD shows ‘PRE-DRYING time’

Input-Mode may be interrupted at any time by pressing the ‘STOP’-Key

Lift positions for PRE-DRYING, see Page 10

After program start PRE-DRYING values may be changed until PRE-DRYING LED is flashing. Thereafter program sequence is active and changes are no longer possible.
4.10 Operating Block D- heating-up

Select program using keyboard and press Enter-Key ‘#’

Activate Input-Mode with HEATING-UP Key

flashing HEATING-UP LED
upper LCD shows ?? ??
lower LCD shows value min:sec

Change HEATING-UP parameter?

NO
Press Enter-Key ‘#’

YES

Activate Input-Mode using HEATING-UP Key
selected parameter shows ?? ??

enter value using keyboard and press Enter-Key ‘#’

HEATING-UP LED ‘ON’
upper LCD shows value °C/min
lower LCD shows value min:sec

END

Valid Input: 20°C - 130°C or 3:00 min - 20:00 min
Invalid Entries will result in error message ‘Err’

Input-Mode may be interrupted at any time by pressing the ‘STOP’-Key

Notice: Changes of PRE-DRYING temperature or END temperature after this input sequence will result in a change of the HEATING-UP time (min:sec). The HEATING-UP rate (°C/min) is not affected.

After program start HEATING-UP values may be changed until HEATING-UP LED is flashing. Thereafter program sequence is active and changes are no longer possible.

To call the set-points display during the running program, press the HEATING-UP Key. Display-Reset is done automatically.
4.11 Operating Block E - firing temperature & end temperature

Select program using keyboard and press Enter-Key '#'

Activate Input-Mode with END temperature key

flashing END temperature LED
upper LCD shows END temperature ?? ??
lower LCD shows End temp. HOLD time

When Input-Mode is active, END temperature key will switch between input of END temperature and End temperature HOLD time.

Change END temperature?

NO

Press Enter-Key '#'

YES

enter value using keyboard and press Enter-Key '#'

flashing END temperature LED
upper LCD shows END temperature °C
lower LCD 'Temp. HOLD time' shows ?? ??

Valid Input: 200°C - 1200°C

Invalid entries will result in error message 'Err'

Change END temperature HOLD time?

NO

Press Enter-Key '#'

YES

enter value using keyboard and press Enter-Key '#'

END temperature LED 'ON'
upper LCD shows END temperature °C
lower LCD shows Temperature HOLD time

Valid Input: 0 min- 40:00 min

Input-Mode may be interrupted at any time by pressing the 'STOP' key

After program start END temperature and END temperature HOLD time may be changed until END temperature LED is flashing. Thereafter program sequence is active and changes are no longer possible.
4.12 Operating Block F - vacuum parameters

Select program using keyboard and press Enter-Key '#'

vacuum programmed?

YES

START LED 'ON'
upper LCD shows pump START at °C
lower LCD shows pump STOP at °C or min:sec

Program VACUUM?

NO

Press ""-Key

YES

Change START value?

NO

Press Enter-Key '#'

E N D

YES

enter value using keyboard and press Enter-Key '#'

START LED 'ON'
upper LCD shows START value °C
flashing STOP LED
lower LCD shows STOP value °C or min:sec

Input-Mode may be interrupted at any time by pressing the 'STOP' key

Activate Input-Mode with VACUUM Key

flashing START LED
upper LCD shows START value °C
(presetted to PRE-DRYING temperature)

YES

END

Input-Mode may be interrupted at any time by pressing the 'STOP' key

Invalid entries will result in error message 'Err'

Valid Input: 200°C - 1200°C
Invalid entries will result in error message 'Err'

Valid Input time: 1:00 min - 40:00 min
Valid Input temp.: 200°C - 1200°C

After program start changes of VACUUM values are no longer possible.
After start of vacuum-pump the LCD 'START value' shows the vacuum 0 to -bar.
4.13 Operating Block G - slow cooling

Select program using keyboard and press Enter-Key '#'

YES

cooling programmed?

NO

COOLING LED 'ON'
upper LCD shows COOLING temperature in °C
COOLING 'HOLD' LED 'ON' when programmed
lower LCD shows 'HOLD' min:sec

Input-Mode may be interrupted at any time by pressing the 'STOP' key

Activate Input-Mode with COOLING Key

YES

cooling programmed?

NO

Press '*-Key

flashing COOLING LED
upper LED shows COOLING temperature ?? ??
COOLING 'HOLD' LED 'ON' when programmed
lower LCD shows 'HOLD' min:sec

Press Enter-Key '#'

Change COOLING temperature?

NO

YES

enter value using keyboard and press Enter-Key '#'

COOLING LED 'ON'
upper LCD shows COOLING temperature °C
flashing COOLING 'HOLD' LED
lower LCD shows 'HOLD' min:sec

NO

Press Enter-Key '#'

Change COOLING 'HOLD' time?

NO

YES

enter value using keyboard and press Enter-Key #

COOLING LED 'ON'
upper LCD shows COOLING temperature °C
'HOLD' LED 'ON' when programmed
lower LCD shows 'HOLD' min:sec
flashing lift position 'open' LED

Select lift position 'open' or 'closed' using COOLING Key and press ENTER-Key '#'

END

After program start COOLING values may be changed until COOLING LED’s are flashing. Thereafter program sequence is active and changes are no longer possible.

Valid Input: 300°C - 1000°C

Invalid entries will result in error messages “Err”

Valid Input: 0 min - 40:00 min
4.14 Initial vacuum programing

By using the above initial vacuum-program, the programs 497/498 mentioned in the operating instructions, become redundant.
5 Utilities

All programs listed may be selected by entering the respective program number using the keyboard (Block H). The selection must be confirmed by pressing the "#"-Key. The programs may only be selected if no firing program is active. To stop or cancel a program, press the "Stop"-Key.

<table>
<thead>
<tr>
<th>Number</th>
<th>Program</th>
<th>Description</th>
<th>Display</th>
<th>Operating Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>470 + #</td>
<td>Enter time</td>
<td>time-format 12 or 24 hours select with program 473</td>
<td>lower LCD Block A</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>471 + #</td>
<td>Enter date</td>
<td>format MM:DD or ,DD:MM select with program 474</td>
<td>lower LCD Block A</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>472 + #</td>
<td>Enter year</td>
<td>4-digit entry</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>473 + #</td>
<td>Enter time format</td>
<td>Selection 1 = time-format 12hours Selection 2 = time-format 24hours select with program 474</td>
<td>lower LCD Block B</td>
<td>Keys Info + #</td>
</tr>
<tr>
<td>474 + #</td>
<td>Enter date format</td>
<td>Selection 1 = Format MM:TT Selection 2 = Format TT:MM select with program 474</td>
<td>lower LCD Block B</td>
<td>Keys Info + #</td>
</tr>
<tr>
<td>475 + #</td>
<td>Display off furnace serial - number</td>
<td>6 digits maximum</td>
<td>lower LCD Block A+B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>476 + #</td>
<td>Show operating hours</td>
<td>display in hours and minutes</td>
<td>lower LCD Block A+B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>477 + #</td>
<td>Show software version</td>
<td>displays software version</td>
<td>lower LCD Block A+B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>481 + #</td>
<td>Stand-by temperature</td>
<td>Entry: 200°C - 800°C 500°C select with program 475</td>
<td>lower LCD Block B</td>
<td>Keys Info + #</td>
</tr>
<tr>
<td>482 + #</td>
<td>Signal on program end</td>
<td>Selection 1 = signals once Selection 2 = permanent signal select with program 476</td>
<td>lower LCD Block B</td>
<td>Keys Info + #</td>
</tr>
<tr>
<td>483 + #</td>
<td>Program termination with &quot;Stop&quot;-Key</td>
<td>Selection 1 = press &quot;Stop&quot; 2x Selection 2 = press &quot;Stop&quot; 1x select with program 477</td>
<td>lower LCD Block B</td>
<td>Keys Info + #</td>
</tr>
<tr>
<td>484 + #</td>
<td>Start firing program when temperature of firing chamber is higher than stand-by temperature</td>
<td>Selection 1 = start when temperature is higher than stand-by temperature select with program 483</td>
<td>lower LCD Block B</td>
<td>Keys Info + #</td>
</tr>
<tr>
<td>485 + #</td>
<td>Set volume</td>
<td>select &quot;0&quot; - &quot;9&quot; select with program 489</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>486 + #</td>
<td>Brightness of control panel display</td>
<td>select &quot;1&quot; - &quot;4&quot; select with program 485</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>487 + #</td>
<td>Brightness of remote display</td>
<td>select &quot;1&quot; - &quot;4&quot; select with program 486</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>488 + #</td>
<td>Remote display control</td>
<td>Selection 1 = OFF Selection 2 = ON select with program 487</td>
<td>lower LCD Block B</td>
<td>Keys Info + #</td>
</tr>
<tr>
<td>489 + #</td>
<td>Initialization</td>
<td>all factory-set time/date values are read into memory (standard settings) select with program 488</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>491 + #</td>
<td>Lift positions Pre-Drying and Cool-Down</td>
<td>Pos.1, 1st pre-drying step Value 0 - 100 select with program 491</td>
<td>lower LCD Block A+B</td>
<td>Keys Block H Save:Key #</td>
</tr>
<tr>
<td>492 + #</td>
<td>Lift speed</td>
<td>select S up 0 - 99 select S down 0 - 99 select with program 492</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>493 + #</td>
<td>Lift stop</td>
<td>select L up 50 - 250 select L down 50 - 250 select with program 493</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>494 + #</td>
<td>Temperature-Adjustment</td>
<td>see description &quot;Adjusting the firing chamber temperature&quot; select with program 494</td>
<td>lower LCD Block B</td>
<td>Keys Block H + #</td>
</tr>
<tr>
<td>495 + #</td>
<td>Vacuum-Adjustment</td>
<td>automatic program run (approx. 4 min) select with program 495</td>
<td>lower LCD Block B</td>
<td>Keys Block H</td>
</tr>
<tr>
<td>0</td>
<td>Close firing chamber without heating</td>
<td></td>
<td>lower LCD Block B</td>
<td>Keys Block H</td>
</tr>
</tbody>
</table>

Factory settings
6 Adjusting the firing chamber temperature

The VITA VACUMAT 2500 furnace is supplied with a digitally controlled potentiometer for automatic adjustment of the firing chamber temperature. The factory-set temperature test circuit is adjusted as follows: At 1000°C a voltage of 9.25 millivolt may be measured at the built-in thermocouple (PtRhPt). Should the measurements differ during the life of the furnace, the adjustment may be checked and corrected using the supplied program. The adjustment program is selected as follows:

Select program No: 494 and press the "#"-Key

The program displays the following settings:

- Pre-drying temperature: 600°C
- Pre-drying time: 6:00 min
- Heating-up time: 6:00 min
- Final temperature: 1000°C
- Hold-time for final temperature: 5:00 min

Press the "Start"-Key

The program starts, parameters may not be changed, the program must be stopped by pressing the "Stop"-Key. The upper LCD-Display in Block A indicates the temperature of the firing chamber in °C (degrees Celsius). The lower LCD-Display in Block A indicates the value in millivolt. After two minutes in the hold-phase at a temperature of 1000°C, a short signal sounds which indicates the lift-keys "UP/DOWN" may now be used for adjustment. Using the "UP/DOWN" keys (UP = Increase, DOWN = Decrease), the voltage value may now be adjusted to 9.25 millivolt. At a temperature range of 1000°C a change of 0.01 millivolt causes a change in the firing chamber temperature of 1°C.

7 Protection against power failure

The VITA VACUMAT 2500 is protected against power failure. This backup device is activated immediately in the event of a mains power failure during a firing or stand-by program. If the power failure lasts for less than 20 seconds the program continues. In case of power failure for more than 20 seconds the program is aborted and the following is displayed:

The upper LCD-Display of Block A indicates program time remaining, min:sec. The lower LCD-Display of Block A indicates phase where program was aborted:

- Phase 0 = Stand by
- Phase 1 = Pre-drying phase
- Phase 2 = Heating-up phase
- Phase 3 = Hold-temperature phase
- Phase 4 = Cooling phase

Pressing of the "STOP"-key deletes all messages and the furnace is once more ready for use.

Notice: In case of the mains power supply in the laboratory being turned off accidentally with the furnace in operation or on stand-by, the same symptoms as those of a power failure will be indicated after the power resumes.
8 Error messages

The VITA VACUMAT 2500 furnace is equipped with a self-checking system which detects and indicates possible errors. The following error messages may occur:

Err 1 the required i.e. the preselected temperature has been exceeded by 80 °C.
  1. Hardware failure, change CPU-board
Err 2 Rupture of thermocouple
  1. Defective temperature sensor, change thermocouple
Err 3 Error in vacuum system (see Errors in the vacuum system)
  1. Check and clean lift plate seal and lower edge of firing chamber
  2. Check/change seals at firing chamber connections.
  3. Check vacuum pump, change of membran and/or valve flap may be required.
Err 4 Furnace does not heat
  1. Check/change fuse back of furnace
  2. Check/change firing muffle (see Page 21)
Err M Should the lift not have reached ist upper or lower within a certain time, the error message „errM“ will appear in flash mode in the temperature indicator °C. At the same time, this monitors the microswitches for the upper lift positions.
  The error message „errM“ will also appear if the microswitch contact is defect. To delete the error message „errM“, press „STOP“ key. The time lapse until this error message appears can be set using programm 901 and key #. The time value can be selected in the range 10 - 20 seconds; the factorystored value is 15 seconds. The time selected must be longer than the time the lift drie takes to move from the lower to the upper position. If the time is too short, the motor will switch off too early and the lift will be unable to reach ist nd position. In case of incorrect input of program parameters, a short signal indicates the error and the last valid input is assumed. In order to recognize the reliable closing contact of the microswitches, the debounce-time is set via program no. 902 and key #. The range for the setting is 2 - 10 (number x 15 msec. = debounce time). The factory-set value is 3. This setting should not be altered.

In case of recurring "Err"-Messages after Power OFF/ON, please contact the VACUMAT service Department of your local VITA distributor.
8.1 Error in the vacuum system
The error message Error 03 is activated if the vacuum value of -0.3 bar is not reached within 30 seconds. The cause of this error may be found in the vacuum pump or the furnace.

Testing the vacuum pump
The vacuum pump type 9080 or 9081 supplied with the furnace is an oil-free and hence also practically maintenance-free pump. For smooth and efficient operation of the vacuum pump, attention should be paid to the following:

1. Maximum ambient temperature = +45°C
   When fitting in closed casings or cupboards make sure of adequate ventilation.
2. Minimum ambient temperature = +5°C
3. Install only in a dry place.

The performance of the vacuum pump can be tested with a corresponding vacuum gauge. A drop in performance can result from the formation of condensation and dirt in the area of the pump head. Unscrew the pump heads and clean, if necessary replace membrane and valve plates.

The type no. of the vacuum pump should be given when ordering replacement parts.

Checking the furnace
A leak in the vacuum system of the furnace may be found in the lift support plate seal, the firing chamber seals, solenoid valve or in the solenoid valve/firing chamber connections. The vacuum system of the furnace can be checked by starting a vacuum programme and disconnecting the plug of the vacuum pump from the furnace after the maximum vacuum value is reached on the vacuum indicator. The vacuum value displayed on the indicator must not drop - then the system is in order. A noticeable drop in the displayed value means there is a leak in the system.

In case of leakage, check in the following order:

1. Lift support plate seal
2. Firing chamber seals
3. Seals in vacuum system

9 Additional service advice
Daily usage of the VITA VACUMAT 2500 is highly demanding. Due to external influence, such as very fine dust, the lift drive system needs to be cleaned regularly with a dry cloth.

The following problems/changes may be solved using the supplied utilities:

1. Lift drive too slow: Program 492 increases/decreases the lift speed.
2. Change lift position "Pre-Drying" and "Cooling": Program 491 will change the respective positions.

For servicing, the VITA VACUMAT 2500 may only be shipped in special packing cases. If the original packing case is unavailable, special packing cases may be ordered from your local VITA distributor.
10 Changing the eprom

Before changing the eprom, the programs listed in the table below must be selected and the corresponding values called up and taken note of:

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>477 # (Software No.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>453 #</td>
<td>8719 #</td>
<td>9224 #</td>
<td></td>
</tr>
<tr>
<td>454 #</td>
<td>8719 #</td>
<td>9224 #</td>
<td></td>
</tr>
</tbody>
</table>

* see Operating Manual

"# " = key on keyboard (confirm key)

After noting the values, switch off the furnace and disconnect it from the mains power supply (see Operating Manual, Safety advice).

Remove the lower casing of the furnace and exchange the eprom.

Attention!

Pay attention to the fitting position (labelling faces the direction of the motor).

Replace the lower casing

Attach the operating panel to the front of the casing and connect the spiral cable to the right hand side.

Reconnect the furnace to the mains power supply and switch it on again.

Select program no. 451 # 8719 # (independent program sequence, duration approx. 25 sec.)

Switch furnace off at the mains and on again after ten sec.

Select program no. 933 # 8719 # (independent program sequence, duration approx.)

Select program no. 489 # (independent program sequence, duration approx.)

Call up all programs (except no. 477) as indicated in the table. Check or reenter values as required and confirm with key #

Select program no 495 # (independent program sequence for vacuum adjustment, duration approx. 4 min.)

After completion of this program the furnace is once again ready for operation.
## 11 Changing the muffle

**Before opening the furnace disconnect from the mains.**
**Exchange the muffler while the firing chamber is cold.**

1. Remove the rear panel of the furnace.
2. Unscrew the screws on the top cover of the furnace and lift cover off.
3. Unscrew the 6 screws (22254) on the top cover of the firing chamber and then lift this off also.
4. Remove the insulating disc and insulating slab (22258 + 22259).
5. Disconnect wires from the thermocouple, disconnect insulation stone connection (28264). Lift out insulation stone (22260) complete with Thermocouple.
6. Disconnect wires from the muffler (22261), and then lift it out.
7. Place the new muffler into position, then reassemble the furnace in reverse order to that given above.

When replacing the top cover of the firing chamber (22256), make sure the o-ring seal (22257) is positioned correctly in the groove.

Replace and tighten all the screws (22254) to the same torque, moving from one screw to the next diagonally across the cover plate.
12 Changing the liftmotor

1. Take the lift to the top position. If it is not possible, due to an electrical failure, the lift can be lowered by removing the toothed belt at rear.
   See Diag. C.: 
   - Remove backing plate
   - Loosen screw holding top cog.
   - Slide the bracket downwards
   - Adjust the lift by hand
2. Turn off the mainswitch
3. Remove the plug for the control panel and remove the control panel.
4. Remove plug.

1. Remove holding screws for the lower cover.
2. Pull the control panel forward.
3. Remove the lower by lifting forward and up. **CAUTION:** The earth cable must be removed from the cover.

1. Remove the screws (4 x M3) that hold the CPU-Board. Lift the board slightly and bring 4-6 cm forwards. (Not necessary to disconnect the cable attachments).
2. Remove holding screws for rear cover and lift away rear cover.
3. Loosen screws holding top cog, hold the lift fest and push the bracket downwards, to release the toothed belt, then lower the lift.
4. Remove the black plastic screw covers and release the screws holding the motor.
5. Unplug the motor and remove the motor.
1. Place the motor in position and secure with the screws. Replace the black plastic screw covers.
2. Reseat the CPU - board and secure with 4 x M 3 screws. Plug in the electrical connector from the motor.
3. Push the top bracket up by hand and secure the right screw.
4. Using a screwdriver, push the bracket up and secure the lift screw.
5. Replace the rear panel secure.
6. Replace the lower cover and refasten the screws. Do not forget to attach the Earth connection.
7. Place the control panel on the swing arm and plug in the attachment, and secure with the two screws.

The oven is now for use

Adjustments to the lift speed can now be carried out using Prog. 492

The toothed belt should have lateral movement of 5 - 6 mm in either direction.
13 Installation microswitch for lift-motor

parts marked red are included in the set to be built in.