

ELITE-600

DENTAL PORCELAIN FURNACE

USER MANUAL

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INTRODUCTION

Vacuum porcelain furnace **ELITE-600** that you have purchased is the newest and the most advanced vacuum porcelain furnace. This state of the art furnace makes possible to achieve the best results with any kind of modern porcelain materials and ensures unmatched flexibility of baking process. Microcomputer based electronics and other achievements of modern furnace technology led to versatile, reliable, high performance and low cost design.

Modern advanced porcelain materials present new challenges to dental porcelain furnaces and **ELITE-600** was designed to meet these challenges. Unique features implemented in this new furnace turn dreams to reality. Innovative two-stage baking and two-stage cooling combined with approved 12-parameters baking and postfiring program enable unmatched flexibility and best fit for any kind of existing porcelains as well as for new porcelains being developed in the future.

Some of impressive features of the furnace are listed below:

- ★ 100°C (570°F) to 1200°C (2200°F) operational range
- ★ **NEW!** 200 fully adjustable baking programs
- ★ 2 idle programs (Day and Night)
- ★ Automatic Night program
- ★ Calibration and purge programs
- ★ **NEW!** 2-stage baking (first baking stage at BAKING. TEMP., additional baking stage at FINAL TEMP.)
- ★ **NEW!** 2-stage cooling (slow cooling inside the muffle + fast cooling during work plate descend)
- ★ Postfiring programs
- ★ 13 programmable firing parameters
- ★ Permanent monitoring of current baking stage
- ★ Manual overrun function for immediate start of baking program
- ★ Vacuum level display
- ★ **NEW!** Built-in lamp for working area illumination

- ★ Power failure and power line disturbance protection
- ★ Vacuum level control
- ★ Digital display of vacuum level
- ★ Non-battery user program storage
- ★ **NEW!** Built-in serial port for printer connection.
- ★ Built-in self test capability (muffle, thermocouple, vacuum system, memory etc.)
- ★ Easy and clear operation
- ★ Power failure and power line disturbance protection
- ★ 220-240V/50Hz, 100-120V/60Hz power input
- ★ 24 months warranty on parts and workmanship including muffle

SPECIFICATIONS

| | |
|---------------------------|--|
| Number of baking programs | - 200 |
| Number of idle programs | - 2 |
| Overall dimensions: | - 27cm (10.5") W x 32cm (12.5") D x 50cm (20") H |
| Net weight | - 15 Kg (34 lbs.) |
| Electrical | - 115V 50/60Hz - 1700 W 230V 50/60Hz - 1700W |

DESCRIPTION OF THE FURNACE

1. GENERAL.

- a. The furnace consists of main module and muffle module.
- b. The main module contains power supply, computerized control module, front panel and mechanical assembly with work plate.
- c. The muffle module contains vacuum chamber, muffle, fan and built-in lamp for working area illumination.

2. CONTROLS.

- a. The furnace controls are placed on the front panel and on the rear panel.
- b. Front panel:
 1. Program display.
 2. Data display.
 3. Vacuum display.
 4. Function buttons.
 5. Data buttons.
 6. Control buttons.
- c. Rear panel:
 1. Power switch.
 2. Pump fuse.
 3. Muffle fuse.
 4. Power cord receptacle.
 5. Pump cord receptacle.
 6. RS232 serial port (optional)
- d. Right side:
 1. Calibration plate receptacle.

3. PROGRAM DISPLAY.

- a. Contains 3-digit numeric field.
- b. Initially displays the "DAY" program (---).
- c. Displays selected program number 0 - 200.

4. DATA DISPLAY.

Data display consists of:

- a. 4-digit numeric field.
- b. Measurement units field: °C (°F) for temperature and min for time.

5. VACUUM DISPLAY.

Vacuum display consists of:

- a. 3-digit numeric field.
- b. Measurement units field: "/mm for American and European standards.

6. PARAMETER LEADS.

| | | |
|---|---|---------------------|
| Start temperature | - | START TEMP |
| Work table rise time | - | DRY TIME |
| Preheat time inside the muffle at START temperature | - | PREHEAT TIME |
| Ramp | - | RAMP |
| Vacuum on temperature | - | VAC. ON |
| Vacuum level | - | VAC. LEVEL |
| Hold time with vacuum | - | VAC. HOLD |
| Vacuum release temperature | - | VAC. OFF |
| Baking temperature | - | BAKING TEMP. |
| Hold time at END temperature | - | TEMP. HOLD |
| Final temperature | - | FINAL TEMP. |
| Work table exit time | - | COOL TIME |

7. PUSH - BUTTONS.

Three groups of push-buttons are placed on the front panel:

- a. Data buttons: digits 0 to 9, "ENT" and "CLR".
- b. Function buttons: **PROG**, **PARAM** and **TIME**.
- c. Control buttons: **ON/OFF**, **UP**, **DOWN/RESET**, **START** and **POSTFIRE**.

8. AUDIO FEEDBACK.

- a. Audio feedback is provided for user comfortability. Single tone means acceptance of pressed button, double tone - rejection.
- b. Bell warning provided in following cases:
 1. End of baking cycle.
 2. User memory fault.
 3. Muffle fault.
 4. Thermocouple fault.
 5. Calibration error.
 6. Vacuum system fault.
 7. Position error.

OPERATION MANUAL

1. To start operation of the furnace turn the **POWER SWITCH** on. The device is in **STAND-BY** mode.

2. STAND-BY MODE.

a. The **STAND-BY** mode is provided for long period waiting. In this mode the muffle is turned off and the work plate stays in its previous position. The **OFF** led is turned on.

NOTE: It is recommended to keep the vacuum chamber closed to prevent muffle moisturizing.

b. Press the **ON/OFF** button for **PROGRAM** mode selection. The **OFF** led will turn off and the **ON** led will turn on.

3. PROGRAM MODE.

a. The **PROGRAM** mode is provided for baking program selection.

b. Select program number from **0** to **200**. Programs **0** to **2** are factory set service programs, programs from **3** to **200** are free user programs.

c. To correct selected program number, if desired, press the **CLR** button and return to the previous instruction.

d. Press **ENT** button.

e. The muffle temperature is displayed during **PROGRAM** mode. When the muffle is cold (less than 280 °C/530 °F), (**COLd**) message is displayed.

f. The muffle temperature is kept at the initial level for selected program (**START TEMP.**).

4. PARAMETER MODE.

a. **PARAMETER** mode provided for parameter verification and setting.

b. Press **PARAM** button for **PARAMETER** mode selection. **PARAM** and **START TEMP** led will turn on and parameter value will be displayed on the data display. Press **PARAM** button once more to select the next parameter, press **ENT** button to move to another row in the same line of parameter field.

c. Set new parameter value, if desired (for programs 3 to 200 only). Data insertion sequence is the same as in the **PROGRAM** mode.

d. Parameter limits table:

| | |
|---------------------|--|
| START TEMP. | - From 100°C C to 1200°C (210-2200°F) |
| DRY TIME | - From 1 Sec to 45 Min |
| PREHEAT TIME | - From 1 Sec to 45 Min |
| RAMP | - From 10°C/Min to 180 °C/Min (20 °F/Min to 320°F/Min) |
| VAC. ON | - From 100°C to 1200°C (210-2200°F) (Not less than START TEMP.) |
| VAC. LEVEL | - From 1 to 760 mm Hg (1-30"Hg) |
| VAC. HOLD | - From 1 Sec to 45 Min |
| VAC. OFF | - From 100°C to 1200°C (210-2200°F) (Not less than VAC. START) |

- BAKING TEMP.** - From 100°C to 1200°C (210-2200°F)
(Not less than START TEMP. and not less than VAC. OFF)
- TEMP. HOLD** - From 1 Sec to 45 Min.
(Not less than VAC. HOLD)
- FINAL TEMP.** - From 100°C to 1200°C (210-2200°F)
- FINAL TEMP. HOLD** - From 1 Sec to 45 Min.
- COOL TIME** - From 1 Sec to 45 Min.

NOTE: There is no separate led for FINAL TEMP. HOLD parameter. When you stay at FINAL TEMP. parameter and PARAM button is pressed, both leds TEMP. HOLD and FINAL TEMP. are turned on and FINAL TEMP. HOLD value appears on DATA DISPLAY. You may set or change the value as usual.

- e. The muffle temperature is kept at the initial level for selected program (START TEMP.).
- f. Press the **PROG** button to return to the **PROGRAM** mode.
- g. Press the **ON/OFF** button to get to the **STAND-BY** mode.
- h. Use power switch to turn off the furnace.

NOTE: For American standard vacuum level value is rounded to 0.5" Hg. resolution automatically.

5. CORRELATION BETWEEN PARAMETERS.

- a. The following parameters are necessary for normal furnace operation:
 1. **START TEMP.**
 2. **RAMP.**
 3. **BAKING TEMP.**
- b. If the **VAC. ON** parameter is set, then **VAC. OFF** or **VAC. HOLD** parameter must also be set and vice versa.
- c. If the **VAC. ON** parameter is set, then **VAC. LEVEL** must also be set and vice versa.
- d. If the **VAC. HOLD** parameter is set, then **TEMP. HOLD** parameter must also be set.
- e. If parameter correlation error occurs, baking cycle will not start and corresponding parameter leds will blink.

6. PROGRAM TIMER..

- a. Program duration in minutes and seconds is displayed when the **TIME** button is pressed. The **TIME** led is turned on. When the button is released, the previous display is returned.
- b. If program duration can not be evaluated (missing parameters or parameters don't fit), (---) is displayed.

NOTE: For programs with slow cooling stage (FINAL TEMP. is lower than BAKING TEMP.) calculated program duration doesn't include cooling time from BAKING TEMP. to FINAL TEMP.

7. BAKING CYCLE.

- a. Press the **START** button. Baking cycle will not start if parameter correlation error exists. Blinking leds point to problematic parameters. Correct the error and press **START** button again.
- b. To start baking cycle the work plate should be in **DOWN** position. If the work place wasn't in this position, the **START** led blinks and work plate moves to **DOWN** position, then **START** led is turned on and baking cycle begins.
- c. Baking cycle starts automatically when muffle temperature is equal to the **START TEMP.** for selected program.
- d. You may start baking cycle immediately independently of current muffle temperature by pressing **START** button and holding it pressed for about 1 second.
- e. Use **PARAM** button to check parameter values during baking cycle.
- d. Back running counter is provided for baking cycle. Press the **TIME** button for timer display.
- e. Press **DOWN/RESET** button to interrupt baking cycle if desired. In this case vacuum is released from the chamber, the work plate goes down and the furnace stays in the **PROGRAM** mode.
- f. Parameters of selected program may not be changed during baking cycle and other program may not be selected.

NOTE: ELITE-600 has several options for vacuum starting:

1. If you want to keep low temperature until vacuum level is reached, you have to set **PREHEAT TIME** for 40 seconds at least and **VAC ON** temperature has to be equal to **START TEMP.** Vacuum pump turns on immediately after chamber is closed and temperature doesn't rise during **PREHEAT TIME.**
2. If **PREHEAT TIME** is not set (---), temperature will rise simultaneously with vacuum start.
3. If you want to keep air in the chamber during **PREHEAT TIME**, you have to set **VACUUM ON** temperature higher than **START TEMP** (even one degree is enough). In this case, after **PREHEAT TIME** is over, temperature will rise and vacuum will start at programmed point.

8. TWO-STAGE BAKING.

- a. **ELITE-600** enable both regular one-stage baking and innovative two-stage baking programs. For one-stage baking set **BAKING TEMP.** and **TEMP. HOLD** parameters as required for porcelain you use and leave **FINAL TEMP.** and **FINAL TEMP. HOLD** parameters empty. Baking program begins at **START TEMP.**, after **DRY TIME** and **PREHEAT TIME** steps temperature is risen to **BAKING TEMP.** with heat rate defined by **RAMP**; after reaching **BAKING TEMP.** the temperature stays at this level during **TEMP. HOLD** and then the work plate goes down.
- b. Two-stage baking is a unique feature enabling more flexible porcelain processing. For two-stage baking **FINAL TEMP.** should be set higher than **BAKING TEMP.** In this case baking process is performed as follows:

Temperature is risen from **START TEMP.** to **BAKING TEMP.** with heat rate equal to **RAMP.**; after reaching **BAKING TEMP.** the temperature stays at this level during **TEMP. HOLD** as usual (**TEMP. HOLD** leds are turned on). When **TEMP HOLD.** is over the temperature is risen to **FINAL TEMP.** with the same **RAMP.**; After reaching **FINAL TEMP.** the temperature stays stable during **FINAL TEMP. HOLD** time. After **FINAL TEMP. HOLD** is over work plate goes down and **COOL TIME** led is turned on.

- c. Two stage baking may be useful for special treatments such as post-soldering, etc.

9. TWO-STAGE COOLING.

Some kinds of modern porcelains (Shofu, etc.) require two-stage cooling which is easily achieved in **ELITE-600**. **FINAL TEMP.** parameter should be set lower than **BAKING TEMP.** In this case baking is performed as usual until **BAKING TEMP.** is reached and **TEMP. HOLD** is over. At this moment the work plate goes down a little to enable slow cooling inside the muffle. The muffle is turned off and the work is cooling slowly until **FINAL TEMP.** is reached. **FINAL TEMP.** led is turned on and the temperature stays stable during **FINAL TEMP. HOLD** time. When it is over the second stage - fast cooling - is performed according to **COOL TIME** parameter while work plate goes down.

NOTE: The time required for slow cooling inside the muffle is not included in overall duration of baking cycle. When temperature decreases from BAKING TEMP. to FINAL TEMP., program timer is halted. Down count is resumed after FINAL TEMP. is reached.

10. POSTFIRING.

Postfiring means additional baking without need to wait for furnace cooling. This option is especially important for **GLAZE** programs if baking temperature of regular program was not high enough.

Postfiring is performed with accordance to following parameters:

| | |
|-----------------------------|---|
| Heating rate | - RAMP |
| Baking temperature | - BAKING TEMP. + P.F. STEP |
| Hold time | - TEMP. HOLD |
| Final temperature | - FINAL TEMP. + P.F. STEP (for two-stage baking, if FINAL TEMP. > BAKING TEMP.) - FINAL TEMP. (for two-stage cooling, if FINAL TEMP. < BAKING TEMP.) |
| Final hold time | - FIN TEMP. HOLD |
| Work plate exit time | - COOL TIME |

When **POST FIRE** button is pressed, the work table does up immediately without reference to present temperature, and the baking cycle is performed from current temperature.

Every additional push on **POST FIRE** button will cause postfiring cycle. **Baking temperature of every consequent postfiring will be higher then the previous one by P.F. STEP. When START button is pressed or new program number is selected, the postfiring counter is cleared and the maximum temperature of following postfiring will be equal to BAKING TEMP + P.S.STEP as in the first postfiring cycle.**

11. BUILT-IN ILLUMINATING LAMP.

ELITE-600 is equipped by built-in illuminating lamp that is microcomputer controlled. When baking cycle is over and working plate goes down the lamp is turned on automatically enabling excellent examination of processed work. The lamp is turned off automatically 30 seconds after baking cycle is completed or when **START TEMP.** is reached. If one of the control buttons **DOWN/RESET, START** or **POSTFIRE** is pressed, the lamp is turned off as well. You may turn the lamp manually on and off by pressing **DOWN/RESET** button. After 30 sec. delay the lamp turns off automatically.

12. AUTOMATIC NIGHT PROGRAM.

Automatic night program enables to save operator's time in the end of work day. If the **ON/OFF** button is pressed when baking cycle is running, the **OFF** led is turned on in addition to the **ON** led. The furnace will finish the baking cycle as usual and after that will switch itself to the **NIGHT** program (**No. 0**). When temperature inside the muffle will reach 100°C, the work table will go up and the muffle will stay at this temperature. It is possible to cancel automatic night program by pressing **DOWN/RESET** or **POST FIRE** buttons.

13. CHAMBER VENTILATION

Chamber ventilation by vacuum pump is implemented in the **ELITE-600** furnace to enable faster muffle cooling between successive baking cycles. If the temperature inside the muffle exceeds starting temperature of the selected program by 10 degrees or more, the pump is turned on automatically when working plate descends to the **DOWN** position and ventilates the chamber. When the temperature drops to the **START TEMP** value, the pump turns off automatically. Chamber ventilation may be stopped manually by pressing **RESET**, **START** or **POSTFIRE** buttons.

ATTENTION! Chamber ventilation is inhibited for baking programs 0 to 100 and is enabled for programs 101 to 200, so the ceramist may choose to use this feature or not by selecting appropriate program numbers.

14. HARDCOPY REPORT (optional)

External printer may be connected to the **ELITE-600** furnace via standard RS232 serial port (optional). After completing the baking cycle, hardcopy report containing baking parameters is printed automatically.

| | | |
|-----------------------|------------|-------------|
| Serial port settings: | Baud rate | - 19200 bps |
| | Bit length | - 8 bit |
| | Stop bits | - 1 bit |
| | Parity | - Disabled |

Serial port connector - 9 pin D-type male connector.

15. CALIBRATION.

Automatic calibration program is provided to correct temperature measurement that may change during extended use of the furnace.

The sequence of operations during calibration procedure is as follows:

- a. Turn the furnace off, remove ceramic table, put calibration set on the work plate and center it..
- b. Connect the pins on calibration plate using pure silver wire.
- c. Insert calibration plug into receptacle on the right side of the furnace.
- d. Turn the furnace on.
- e. Move work plate down, select calibration program (**No 1**) and press the **START** button.
- f. When muffle temperature reaches the melting point of silver (**960°C/1760°F**), temperature measurement of the furnace is adjusted to this temperature. The value of correction (positive or negative) appears on data display in form (**C xx**). For instance, when certain porcelain was fired at 970°C (1780°F) before calibration, it has to be baked at 980°C

(1800°F) after calibration if correction value was 10°C (20°F) and at 960°C (1760°F) if calibration value was -10°C (-20°F).

- g. Turn the furnace off, remove calibration set and return ceramic table.

WARNING:

1. **Calibration program will not start and bell will sound if there is not good electrical contact between silver wire and pins.**
2. **If calibration error occurs as a result of power line failure, the correction value will be cleared. Run calibration program to ensure correct temperature measurement.**

16. SELF TESTS.

Number of automatic self tests are implemented in **ELITE-600** furnace to ensure high reliability, to avoid incidental damage to the work inside the furnace and to provide fast and easy maintenance.

a. Baking program test.

1. When the furnace is turned on, all user programs are checked. If any program was changed because power line failure the message (**tEst**) appears on data display. Every program that was affected is cleared and User Error message (**UErr**) will blink on the display when the test is finished.
2. Parameter values are checked as they are entered. The value will not be accepted by the computer if it isn't within defined limits.
3. Parameter correlation is checked before every baking cycle. If correlation error occurs, the cycle will not start and blinking leds will point to problematical parameters.

b. Calibration test.

Temperature correction value is checked when the furnace is turned on. The test is similar to User Program test, but Calibration Error (**CErr**) appears in this case.

WARNING: **Temperature measurement may change when Calibration Error occurs. Run calibration program to get correct temperature reading.**

c. Muffle and thermocouple test.

1. If the muffle or the muffle fuse are burned, the Heat Error message (**HErr**) blinks on data display and the bell sounds every 30 sec.
2. If thermocouple is damaged, the Thermocouple Error message (**tErr**) is displayed.

d. Vacuum system test.

When porcelain baking is provided in vacuum, vacuum level appears on vacuum display and vacuum system is checked.

1. If vacuum pump is not connected or doesn't work or pump fuse is burned, the bell will sound.
2. If vacuum level is not reached within 60 seconds, the bell will sound and vacuum display will blink.

3. If vacuum valve doesn't release vacuum in time, the bell will sound and vacuum display will blink.

e. Micro-switch test.

Upper and lower micro-switches are tested during work plate movement. If correspondent micro-switch was not depressed when work plate has reached its upper or lower position, the lift is stopped after 2 sec. Time-out and Position Error message (**PErr**) is blinking on Data display. Error message is cleared when **PROG** or **PARAM** push-buttons are pressed.

17. PROTECTION.

- a Power failure protection is provided to prevent work damage.
 1. If power failure occurs when baking cycle with vacuum is running, vacuum is released from the chamber.
 2. It is possible to move the work plate during power failure using mechanical joint and handle.

WARNING: Don't use the handle when power is on. This may damage the mechanism.

BAKING PROGRAMS

| SERVICE PROGRAMS | | | | | |
|------------------------|-----|-------|--------|-------|---|
| Program | | 0 | 1 | 2 | 3 |
| Program name | Day | Night | Calib. | Purge | |
| 1. Start temp. (°C) | 300 | 100 | 650 | 700 | |
| 2. Dry time (Min) | -- | -- | -- | 5:00 | |
| 3. Preheat time (Min) | -- | -- | -- | -- | |
| 4. Ramp (°C/Min) | -- | -- | 30 | 90 | |
| 5. Vac. on (°C) | -- | -- | -- | 700 | |
| 6. Vac. level (mm. Hg) | -- | -- | -- | -- | |
| 7. Vac. hold (Min) | -- | -- | -- | -- | |
| 8. Vac. off (°C) | -- | -- | -- | -- | |
| 9. Baking temp. (°C) | -- | -- | 1060 | 1040 | |
| 10. Temp hold (Min) | -- | -- | -- | -- | |
| 11. Final temp. (°C) | -- | -- | -- | -- | |
| 11. Final hold (Min) | -- | -- | -- | -- | |
| 12. Cool time (Min) | -- | -- | -- | -- | |

| USER PROGRAMS | | | | | |
|------------------------|--|--|--|--|--|
| Program | | | | | |
| Program name | | | | | |
| 1. Start temp. (°C) | | | | | |
| 2. Dry time (Min) | | | | | |
| 3. Preheat time (Min) | | | | | |
| 4. Ramp (°C/Min) | | | | | |
| 5. Vac. on (°C) | | | | | |
| 6. Vac. level (mm. Hg) | | | | | |
| 7. Vac. hold (Min) | | | | | |
| 8. Vac. off (°C) | | | | | |
| 9. Baking temp. (°C) | | | | | |
| 10. Temp hold (Min) | | | | | |
| 11. Final temp. (°C) | | | | | |
| 11. Final hold (Min) | | | | | |
| 12. Cool time (Min) | | | | | |

| USER PROGRAMS | | | | | |
|------------------------|--|--|--|--|--|
| Program | | | | | |
| Program name | | | | | |
| 1. Start temp. (°C) | | | | | |
| 2. Dry time (Min) | | | | | |
| 3. Preheat time (Min) | | | | | |
| 4. Ramp (°C/Min) | | | | | |
| 5. Vac. on (°C) | | | | | |
| 6. Vac. level (mm. Hg) | | | | | |
| 7. Vac. hold (Min) | | | | | |
| 8. Vac. off (°C) | | | | | |
| 9. Baking temp. (°C) | | | | | |
| 10. Temp hold (Min) | | | | | |
| 11. Final temp. (°C) | | | | | |
| 11. Final hold (Min) | | | | | |
| 12. Cool time (Min) | | | | | |

| USER PROGRAMS | | | | | |
|------------------------|--|--|--|--|--|
| Program | | | | | |
| Program name | | | | | |
| 1. Start temp. (°C) | | | | | |
| 2. Dry time (Min) | | | | | |
| 3. Preheat time (Min) | | | | | |
| 4. Ramp (°C/Min) | | | | | |
| 5. Vac. on (°C) | | | | | |
| 6. Vac. level (mm. Hg) | | | | | |
| 7. Vac. hold (Min) | | | | | |
| 8. Vac. off (°C) | | | | | |
| 9. Baking temp. (°C) | | | | | |
| 10. Temp hold (Min) | | | | | |
| 11. Final temp. (°C) | | | | | |
| 11. Final hold (Min) | | | | | |
| 12. Cool time (Min) | | | | | |

| USER PROGRAMS | | | | | |
|------------------------|--|--|--|--|--|
| Program | | | | | |
| Program name | | | | | |
| 1. Start temp. (°C) | | | | | |
| 2. Dry time (Min) | | | | | |
| 3. Preheat time (Min) | | | | | |
| 4. Ramp (°C/Min) | | | | | |
| 5. Vac. on (°C) | | | | | |
| 6. Vac. level (mm. Hg) | | | | | |
| 7. Vac. hold (Min) | | | | | |
| 8. Vac. off (°C) | | | | | |
| 9. Baking temp. (°C) | | | | | |
| 10. Temp hold (Min) | | | | | |
| 11. Final temp. (°C) | | | | | |
| 11. Final hold (Min) | | | | | |
| 12. Cool time (Min) | | | | | |

| USER PROGRAMS | | | | | |
|------------------------|--|--|--|--|--|
| Program | | | | | |
| Program name | | | | | |
| 1. Start temp. (°C) | | | | | |
| 2. Dry time (Min) | | | | | |
| 3. Preheat time (Min) | | | | | |
| 4. Ramp (°C/Min) | | | | | |
| 5. Vac. on (°C) | | | | | |
| 6. Vac. level (mm. Hg) | | | | | |
| 7. Vac. hold (Min) | | | | | |
| 8. Vac. off (°C) | | | | | |
| 9. Baking temp. (°C) | | | | | |
| 10. Temp hold (Min) | | | | | |
| 11. Final temp. (°C) | | | | | |
| 11. Final hold (Min) | | | | | |
| 12. Cool time (Min) | | | | | |

| USER PROGRAMS | | | | | |
|------------------------|--|--|--|--|--|
| Program | | | | | |
| Program name | | | | | |
| 1. Start temp. (°C) | | | | | |
| 2. Dry time (Min) | | | | | |
| 3. Preheat time (Min) | | | | | |
| 4. Ramp (°C/Min) | | | | | |
| 5. Vac. on (°C) | | | | | |
| 6. Vac. level (mm. Hg) | | | | | |
| 7. Vac. hold (Min) | | | | | |
| 8. Vac. off (°C) | | | | | |
| 9. Baking temp. (°C) | | | | | |
| 10. Temp hold (Min) | | | | | |
| 11. Final temp. (°C) | | | | | |
| 11. Final hold (Min) | | | | | |
| 12. Cool time (Min) | | | | | |

| USER PROGRAMS | | | | | |
|------------------------|--|--|--|--|--|
| Program | | | | | |
| Program name | | | | | |
| 1. Start temp. (°C) | | | | | |
| 2. Dry time (Min) | | | | | |
| 3. Preheat time (Min) | | | | | |
| 4. Ramp (°C/Min) | | | | | |
| 5. Vac. on (°C) | | | | | |
| 6. Vac. level (mm. Hg) | | | | | |
| 7. Vac. hold (Min) | | | | | |
| 8. Vac. off (°C) | | | | | |
| 9. Baking temp. (°C) | | | | | |
| 10. Temp hold (Min) | | | | | |
| 11. Final temp. (°C) | | | | | |
| 11. Final hold (Min) | | | | | |
| 12. Cool time (Min) | | | | | |

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**Forum Engineering Technologies (96) LTD.
1, Platin Str., New Industrial Zone,
Rishon Lezion 75653, Israel
Tel :972-3-9625517 Fax :972-3-9613355
www.forumtec.net E-mail :info@forumtec.net**

