

## List of parts – control unit

71 ESC key	80 Cursor key left
72 ENTER key	81 Information key
73 START key	82 Program 1
74 Start LED	83 Program 2
75 STOP key	84 Program 3
76 + key	85 Program 4
77 – key	86 Next program
78 Settings key	87 Open furnace head
79 Cursor key right	88 Close furnace head



## Explanation of key functions

### – Settings key (78)

After pressing the ‚Settings‘ key, the settings of the furnace can be displayed and/or changed one after the other.

### – Information key (81)

After pressing the ‚Information‘ key, the information about the furnace can be displayed one after the other.

### – Cursor keys (79, 80)

By pressing the cursor keys in the stand-by mode, the program can be changed. The cursor keys can be used to browse through the settings and/or information. In the list of parameters, the current cursor position is indicated by an illuminated (non-blinking) frame around the numerical value.

### – – / + keys (76, 77)

Changing the settings or entry of a numerical value are carried out using the –/+ keys. Each individual entry by means of the ‚–‘ or ‚+‘ key is immediately accepted, provided the corresponding value range is observed. Once the limit of the value range is reached, the value is no longer adjusted.

### – ESC key (71)

This key is used to close an error indication. Moreover, any screen can be left by pressing this key.

### – ENTER key (72)

This key is used to select settings or confirm entries.

### – START key (73)

Pressing this key starts the selected program. Starting a program is only possible with the furnace head open.

### – STOP key (75)

Pressing this key once (program paused)  
Pressing this key twice (program will be interrupted and vacuum flooded). With the STOP key the movement of furnace head and the beeper will be interrupted, too.

### – Open furnace head key (87)

The furnace head is opened (not possible during a program in progress).

### – Close furnace head key (88)

The furnace head is closed (not possible during a program in progress).

### – Programm 1 key (82)

Used to select Program 1 (P1) (not possible during a program in progress).

### – Programm 2 key (83)

Used to select Program 2 (P2) (not possible during a program in progress).

### – Programm 3 key (84)

Used to select Program 3 (P3) (not possible during a program in progress).

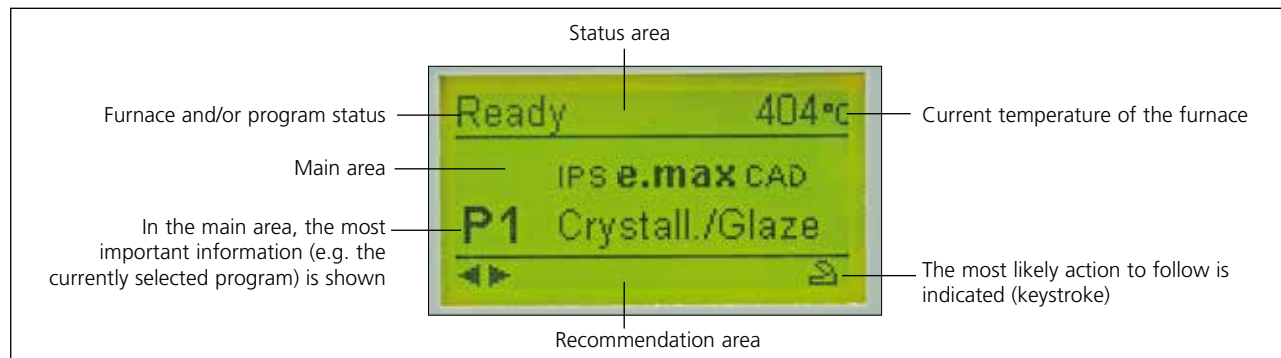
### – Programm 4 key (85)

Used to select Program 4 (P4) (not possible during a program in progress).

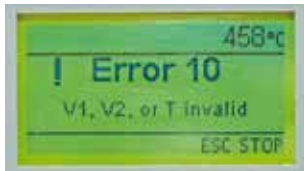
### – Next program key (86)

Used to select the next program (P5, P6, ...) (not possible during a program in progress)

## Basic meaning of the display information



## Error messages



The furnace continuously checks all functions during operation. If an error is detected, the respective error message is displayed. In case of an error, the heater switches off for safety reasons.

### The following error messages may be displayed:

Index	Category	Error	ERR No.	Continuation possible	Error Message Text
1	Entry	T < B	2		Enter a logical value for T
2	Entry	L > T	8		Enter a logical value for long-term cooling L
3	Entry	V2x ≤ V1x	9		Enter a logical value for the vacuum-on temperature Vx1 or the vacuum-off temperature Vx2
4	Entry	V2x > Tx + 1°C	10		Change either the vacuum values or the holding time T
5	Entry	Incorrect values for V1x, V2x	11		Enter a logical value for V1x, V2x
6	System	Current temperature after Start > Tx + 50 °C	13 *, **		Excess temperature! Program aborted, furnace head opens to allow the furnace to cool down.
8	Entry	T2 < T1	16		Enter a lower value for T1 or a higher value for T2.
9	System	Power failure > 10 s during a firing program in progress	17		A firing program in progress was interrupted for more than 10 s. The program cannot be continued!
10	Entry	T1 > V12	18		Enter a lower value for T1 or a higher value for V12
11	Entry	VV set, but V2 is missing or invalid	19		Pre-vacuum activated! V2 must be higher than B.
12	System	Error in the heating system	20 **	no	Check the heater fuse. If the fuse is O.K., contact your local Ivoclar Vivadent Service Center.
13	System	Heating muffle very old	23		The heating muffle is very old. It is recommended to replace it. After the error message has been acknowledged, a firing program may still be started.
14	System	Heating muffle defective	24		The condition of the muffle is so poor that it has to be replaced immediately.
16	Entry	T is > B + 200 °C at the start of a firing program	26		Firing chamber too hot to start a firing program.
17	System	Furnace head cannot be initialized	27 **, ***		The furnace head cannot be moved to the final position. It might be blocked by an external mechanical source! If this is not the case, please contact your local Ivoclar Vivadent Service Center!
18	System	The furnace head does not reach the target position	28 **		The furnace head does not open/close correctly. The furnace head was manually moved or is obstructed. The furnace head must only be moved using the keys intended for this purpose!
21	System	Necessary vacuum (xxmbar) is not reached within 1 min	33		The vacuum cannot be established. Check the seal of the firing chamber, vacuum hose, vacuum pump, pump fuse.
33	Entry	HV > H (H2)	110		Enter a lower value for HV or a higher value for H (H2)
35	Entry	*Share of the holding time with vacuum* is activated, but Vx2 does not correspond to Tx or Tx+1	120		Activate the vacuum during the holding time Tx or deactivate HV.
38	System	Brief power failure during a firing program in progress	702		A firing program in progress was interrupted by a brief power failure. The program is continued!
45	System	Vacuum drop	801		An unacceptable vacuum drop has occurred.
46	System	The vacuum does not increase (self-test)	802		No vacuum increase could be measured. Check the following points: Is the firing chamber tight (no contamination on the sealing surfaces)? Is the vacuum hose connected? Is the vacuum pump connected? Is the fuse F1 o.k.?
75	System	ATK2 calibration: Pre-heating to 963 °C	1302 **		Error during calibration. Sample may not be correctly inserted. Try again with a new sample and make sure the sample makes ampl contact.
79	Note	Calibration reminder	1310		Some time has passed since the last calibration procedure. Calibrate the furnace soon.
80	Note	Dehumidification reminder	1312		Some time has passed since the last dehumidification procedure. Dehumidificat the furnace soon.

Please contact the Ivoclar Vivadent After Sales Service, if other error messages being displayed.

## Program structure

Program	Description
1	Crystallization/glaze program for IPS e.max CAD HT/LT
2	Corrective firing for IPS e.max CAD
3	Speed Crystallization/glaze program for IPS e.max CAD HT/LT
4	Stain and glaze program for IPS Empress CAD
5	Fusion/Crystallization program for the IPS e.max CAD-on technique
6	Characterization/glaze program for the IPS e.max CAD-on technique
7	Crystallization program for IPS e.max CAD Impulse
8 to 20	Individual Programs

Please observe the notes in the Instructions for Use of the corresponding material.

## Adjustable parameters and possible value ranges

Symbol	Parameter	Value range	Value range
<b>P</b>	Program number P	1–20	
<b>B</b>	Stand-by temperature	100–700 °C	212–1292 °F
<b>S</b>	Closing time (min : sec)	00:18–30:00	
<b>t<sub>r</sub> (*)</b>	Temperature increase rate	30–140 °C/min	54–252 °F/min
<b>T</b>	Holding temperature	100–1200 °C	212–2192 °F
<b>H</b>	Holding time (min : sec)	00.01–60:00	
<b>V1</b>	Vacuum on	0 or 1–1200 °C	0 or 34–2192 °F
<b>V2</b>	Vacuum off	0 or 1–1200 °C	0 or 34–2192 °F
<b>t<sub>r</sub> (*)</b>	Temperature increase rate		
<b>t<sub>2</sub> ↗</b>	Second stage	30–140 °C/min	54–252 °F/min
<b>T</b>	Holding temperature		
	Second stage	100–1200 °C	212–2192 °F
<b>H</b>	Holding time		
	Second stage (min : sec)	00.01–60:00	
<b>V1 (V1 2)</b>	Vacuum on		
	Second stage	0 or 1–1200 °C	0 or 34–2192 °F
<b>V2 (V2 2)</b>	Vacuum off		
	Second stage	0 or 1–1200 °C	0 or 34–2192 °F
<b>L</b>	Long-term cooling	0 or 50–1200 °C	0 or 122–2192 °F
<b>tL</b>	Cooling temperature rate	0 or 1–50	0 or 32–90

(\*) 100 V Version: 140°C/min (252°F/min)