

## INSTRUCTIONS FOR USE

### *Burnout furnace*

# PROGRAMIX 50 & PROGRAMIX 100



Rév. 031121

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# PROGRAMIX 50 & PROGRAMIX 100

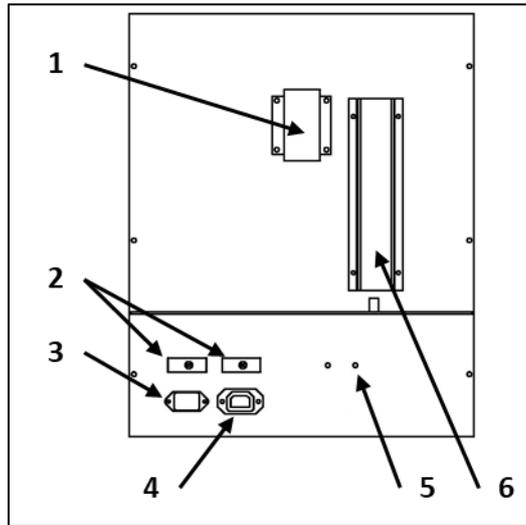
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*Non-contractual images*

*Translation into English from original in French*

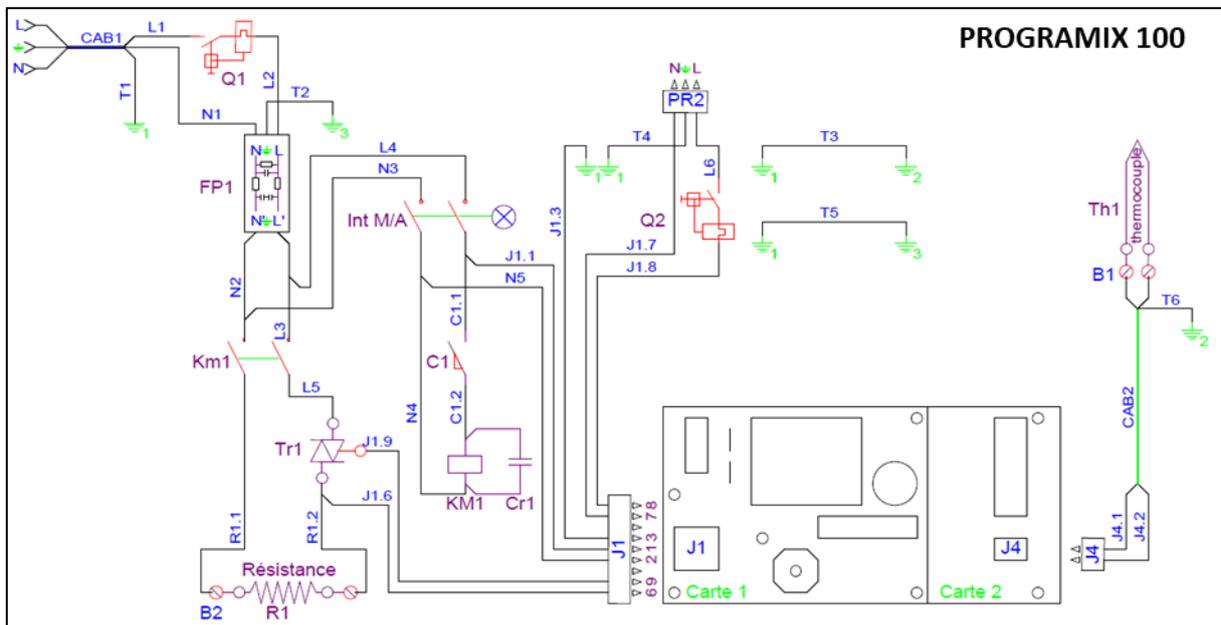
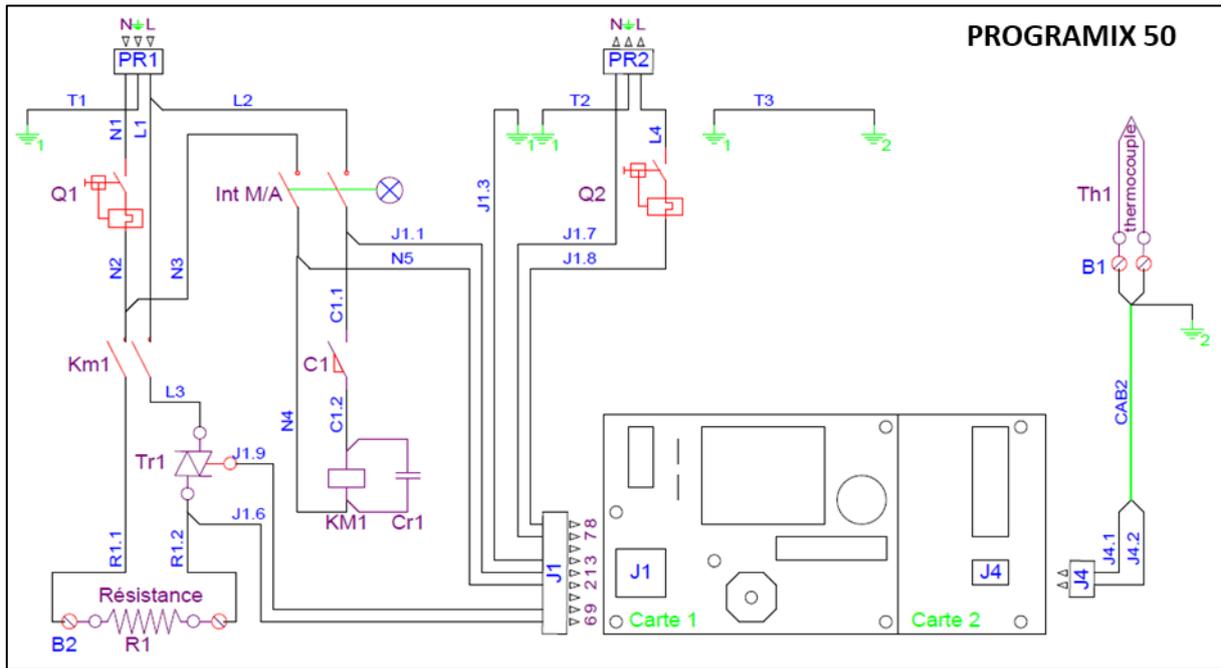
## A. EQUIPMENT DESCRIPTION

Rear panel



<b>N°</b>	<b>DESCRIPTION</b>
1	Chimney outlet
2	Thermal fuse
3	Power socket
4	Fumes extractor connection socket
5	Location of triac
6	Thermocouple cover

### B. ELECTRICAL DIAGRAM



## C. INSTRUCTIONS FOR USE

### 1. SAFETY INSTRUCTIONS

#### 1.1. USE

Programix 50 and Programix 100 burnout furnaces are intended use to heating the coated cylinders. These furnaces have to be operated only by dental professionals.

Programix 50 and Programix 100 have to use in the conditions and for the uses described in this manual. Any other use that will be made of it (such as firing other materials, heating food products, etc.) is considered inappropriate. In this case, the manufacturer declines all liability and immediately cancels the equipment warranty.

According to the product’s instructions and functionalities, **it is imperative to read carefully the manual before furnace installation and operations.** Retain the manual for future reference.

#### 1.2. SAFETY INSTRUCTIONS

Pictograms’ meaning used in these instructions for use:

	General warning		Electrical hazard		Burn hazard - Hot surface
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Observe following safety instructions:

	<ul style="list-style-type: none"> <li>- During operation and after use, <b>the furnace surfaces and door may reach high temperatures: do not touch.</b></li> <li>- Wear suitable gloves for handling cylinders after heating.</li> </ul>
	<ul style="list-style-type: none"> <li>- The unit has to be connected to an <b>electrical installation in accordance</b> with the applicable standard in the country in which it is being used. This installation has to provide <b>protection against overcurrent, overload and ground faults.</b></li> <li>- <b>This furnace requires its own power line and has to be connected to a circuit breaker.</b></li> <li>- <b>Connect it directly to the mains socket.</b> Do not use multiple sockets.</li> <li>- Ensure that the <b>connection cables</b> are in perfect condition to prevent short circuits.</li> <li>- Before any <b>technical intervention</b>, the unit has to be switched off (with the breaker) and disconnected from the mains power supply.</li> <li>- <b>Do not spill liquid</b> on the ventilation openings or inside the furnace.</li> </ul>
	<ul style="list-style-type: none"> <li>- The furnace must be placed on a <b>flat surface</b>, keeping sufficient clearance around the unit to <b>ensure proper ventilation.</b></li> <li>- <b>Do not block the ventilation openings</b> to avoid overheating.</li> </ul>
	<ul style="list-style-type: none"> <li>- The heating chamber contains <b>insulating material</b> composed of high temperature insulation wool (alkaline earth silicate), a substance not classified as dangerous according to Regulation 1272/2008/EC (CLP). Handle carefully.</li> <li>- <b>Dust can be released: remove with a vacuum cleaner - do not blow or use compressed air.</b></li> </ul>



- Use only **genuine spare parts**. The use of non-original spare parts voids any warranty for your device.
- **Do not introduce stranger objects inside** the unit during the maintenance operations. It is forbidden to modify the material without authorization.
- **Do not execute different operations of maintenance** from those brought back in the manual. Any operation not included in this manual can involve risks.
- For any further information concerning installation, maintenance and use, contact the **customer's service UGIN DENTAIRE**.

### 1.3. WASTE DISPOSAL

Observe the waste disposal regulations for electrical and electronic equipment: do not dispose of with household waste.

The unit is subject to Directive 2012/19/EU on waste electrical and electronic equipment and to the laws of the country in which it is being used and must be disposed of in accordance with applicable regulations.

The insulating material are composed of high temperature insulation wool (alkaline earth silicate), a substance not classified as dangerous according to Regulation 1272/2008/EC (CLP), and classified as non-hazardous waste for disposal. However, such a waste is normally dusty and so must be properly packaged before for disposal. Check any national or regional applicable regulations.

## 2. EC DECLARATION OF CONFORMITY

The equipment's EC declaration of conformity is provided as appendix of instructions for use.

### Content of the declaration EC:

- Name and address of the manufacturer:  
UGIN DENTAIRE. 25 rue de la Tuilerie. 38170 SEYSSINET-PARISSET – FRANCE
- UGIN DENTAIRE declares, on its own exclusive responsibility, that the product:
  - Burnout furnace **PROGRAMIX 50** or **PROGRAMIX 100**
  - Serial number: *see the equipment's EC declaration of conformity*
- Fulfills the essential requirements of health and safety of the following directives:
  - Machinery directive 2006/42/EC
  - Electromagnetic compatibility directive 2014/30/EU

### 3. TECHNICAL INFORMATION

#### 3.1. TECHNICAL DATA

Programix 50 and Programix 100 burnout furnaces are intended use to heating the coated cylinders. These furnaces have to be operated only by dental professionals and in the conditions described in this manual (see chapter 1.1 and 3.2).

<b>TECHNICAL DATA</b>	<b>PROGRAMIX 50</b>	<b>PROGRAMIX 100</b>
<b>Maximum temperature</b>		
- in constant use	1050°C / 1922°F	
- temporary peak	1150°C / 2102°F	
<b>Time programming</b>	0 to 100 hours	
<b>Heat rise rate:</b>		
- regulated position	1 to 15°C/min	
- full position	16°C/min and more	
<b>Numbers of programs</b>	30 programs	
<b>Regulation</b>	program No. 0 to 19: 3 stages program No. 20 to 29: 6 stages	
<b>Thermocouple</b>	type K	
<b>Numbers of cylinders</b> <i>(diameter 80 mm, length 55 mm)</i>	4 to 6 cylinders	8 to 12 cylinders
<b>Supply voltage</b>	230 V – 50/60 Hz	
<b>Maximum power consumption</b>	2 000 W	3 000 W
<b>Dimensions (furnace) (mm)</b> <i>(height, width, depth)</i>	500 x 390 x 440	590 x 465 x 555
<b>Chamber size (mm)</b> <i>(height, width, depth)</i>	120 x 170 x 210	150 x 220 x 300
<b>Weight</b>	34 kg	56 kg

### 3.2. CONDITIONS OF USE, TRANSPORT AND STORAGE

- **Authorised conditions of use**
  - Ambient temperature: +5°C to +40°C
  - Humidity range: maximum relative humidity 80% for temperatures until 31°C, without condensation and decrease linear until 50% to 40°C, without condensation.
  - Ambient pressure: up to an altitude of 2000 m above sea level.
- **Authorised conditions of storage**
  - Ambient temperature: -20°C to +65°C
  - Humidity range: maximum relative humidity 80%
  - Ambient pressure: up to an altitude of 2000 m above sea level.
- **Conditions to transport**
  - Wait the complete cooling before packing/transporting.
  - Use the original packaging only, with the protective elements.
  - Take hold the furnace by its base.
  - Install the furnace in the packaging with the protective elements. Also protect the accessories for transportation.

### 3.3. ACCESSORIES

- **Accessories delivered with the furnace** *(included in the packaging)*

<i>DESCRIPTION</i>	<i>CODE UGIN</i>
Refractory plate to Programix 50 (160x210)	FCH05THE0044
Refractory plate to Programix 100 (210x280)	FCH05THE0037

- **Accessory recommended** *(not delivered with the furnace – to order separately)*

<i>DESCRIPTION</i>	<i>CODE UGIN</i>
Fumes extractor	FCH01EXT0001

## 4. INSTALLATION AND START-UP

### 4.1. UNPACK

- Unpack PROGRAMIX 50 / 100 and check that it is in perfect order (furnace and accessories).
- Any defects can be reported to the carrier.
- Remember to get the carrier to sign the delivery note.

*NOTE: keep the original packaging to transport the furnace (see chapter 3.2).*

## 4.2. INSTALLATION

*NOTE: for marks, see chapter A – equipment description.*

- Install in a ventilated room. Observe the conditions indicated in chapter 3.2.
- Place the furnace on a flat, level and clear surface. Keep a distance from other objects around not less than 10 cm. Keep it away from heat sources (radiators and/or other equipment that release heat). Avoid vibrations and shocks
- Dust, corrosive or explosive gases can damage the body and the insulation.
- The furnace must not be used or placed in a place where there is a risk of explosion.
- Its forbidden placing inflammables, toxic, volatile or explosives around the furnace.



**This unit requires its own power line and has to be connected to a circuit breaker. Grounding is mandatory** to avoid accidents and the dangers of overheating the power line. **Connect it directly to the primary socket, do not use multiple sockets (risk of electrical interference).**

### ▪ Fumes extractor installation

UGIN DENTAIRE recommends installing a fumes extractor on the PROGRAMIX 50 / 100 in order to achieve optimal gas evacuation. It will be installed in place of the chimney outlet. It is recommended to use the **UGIN DENTAIRE fumes extractor**.

Installation procedure to UGIN DENTAIRE fumes extractor:

- Remove the chimney outlet (No. 1): unscrew.
- Instead install the fumes extractor: screw.
- Connect it to the fumes extractor connection socket (n ° 4).
- Through this connection, the fumes extractor is connected with the furnace programmer which will start and stop it as needed.

**IMPORTANT:** PROGRAMIX 50/100 can be connected a fumes extractor or extractor hood within or without external control independent of the furnace and a maximum power of 20W.

*If non-observance of these instructions: risk of material damage (overintensity) and may voids any warranty for your device.*

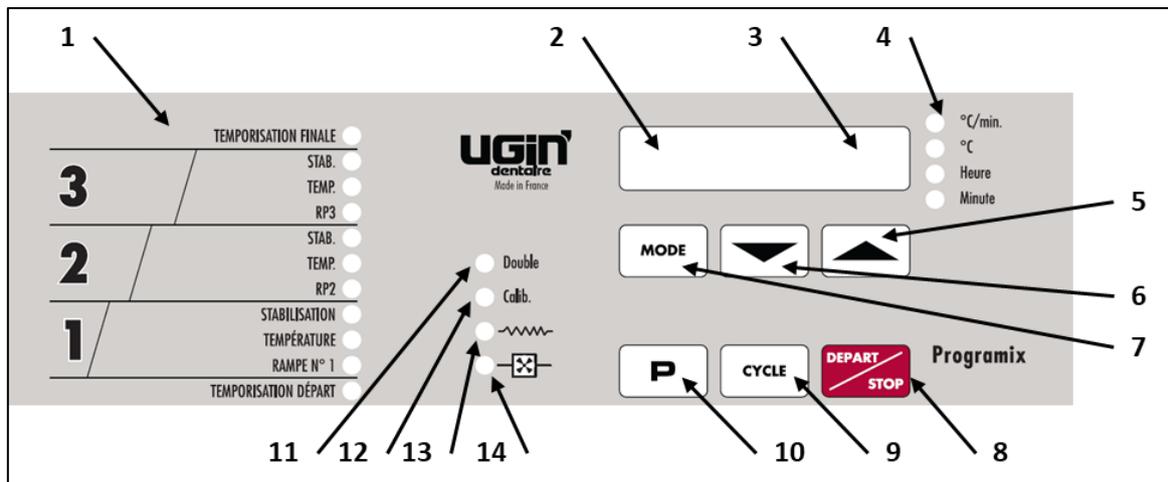
## 4.3. START-UP

*NOTE: for marks, see chapter A – equipment description.*

- Connect the power cord to the power socket (No. 3).
- Make sure that the mains voltage complies with the voltage indicated on the rating plate, connect the power cord to a 10/16 A grounded power socket.
- Activate the ON/OFF switch (on the right side).

## 5. PROGRAMMING

### 5.1. Description of the control panel



N°	DESCRIPTION
1	Program progress table
2	Program number display (0 to 29)
3	Temperature / time display
4	Indicator of the unit displayed on 3 ( <i>temperature / time</i> )
5	Mode key
6	Forward key
7	Reverse key
8	Start/Stop touch control
9	Cycle advance key
10	Program selection key
11	Double indicator ( <i>used for programs 20 to 29</i> )
12	Calibration indicator
13	Heating element indicator
14	Ventilation indicator

## 5.2. OPERATING PARAMETERS

- To program the operating parameters, press key 
- When the program number blinking (display No.2), enter the data with keys  and 
- To switch to another parameter, use the  key.
- When you have programmed all the parameter, "lock" the program by pressing key  again.

## 5.3. DEPARTURE DELAY

This timer function is used to delay the beginning of the firing cycle: **from 0 hours to 99 hours and 59 minutes**. A count-down before start time is displayed on the control panel (n° 3).

Should you not wish to use this function, set the parameter at 0h 0min, heating will begin immediately (or use the  key after pressing the  touch control).

## 5.4. 1<sup>st</sup>, 2<sup>nd</sup> AND 3<sup>rd</sup> STAGE AND DELAY FINAL

### ▪ 1<sup>st</sup> STAGE

- **Rate No. 1: STOP – from 1 to 15°C/min - FULL**

The heating rate is the heat rise per unit time (rate of rise). There are three positions:

- **STOP (the furnace stops heating):** this is only used when the next stage is at a lower temperature.
- **1 to 15°C/min:** heating is regulated and will not rise above the programmed value. However, it may be lower than that value, especially in the higher temperature ranges, or if the muffle is well loaded (several cylinders inside the muffle).
- **"FULL":** this position corresponds to the maximum furnace output: the heat rise rate is no longer regulated.

- **1<sup>st</sup> stage temperature: from 0 to 1200°C**

Temperature setting for the 1<sup>st</sup> stage.

- **Hold time from 0 to 240 min**

Hold time for the temperature of the 1<sup>st</sup> stage.

### ▪ 2<sup>nd</sup> STAGE

- **Rate No. 2 (RP 2): from 1 to 15°C/min – FULL - STOP**

Heat rise to reach the second stage. The principle is the same as for heating rate No. 1, except that the programmed values may differ.

- **2<sup>nd</sup> stage temperature: from 0 to 1200°C**

Temperature setting for the 2<sup>nd</sup> stage.

- **Hold time from 0 to 240 min**

Hold time for the temperature of the 2<sup>nd</sup> stage.

▪ **3<sup>rd</sup> STAGE**

- **Rate No. 3 (RP 3): from 1 to 15°C/min – FULL - STOP**

Temperature rise to the 3<sup>rd</sup> stage.

- **3<sup>rd</sup> stage temperature: from 0 to 1200°C**

Temperature setting for the 3<sup>rd</sup> stage

- **Hold time from 0 to 240 min**

Hold time for the temperature of the 3<sup>rd</sup> stage.

▪ **DELAY FINAL: FROM 0 TO 240 MIN**

This timer function sets a time delay before the firing cycle is stopped completely.

Once you have programmed your full cycle, you may program the furnace hold at the last temperature for 0 to 240 min, in addition to the hold time.

This means that you can choose the time you need to perform your castings.

**5.5. PROGRAM NUMBER DISPLAY**

If the control station is on stand-by, the program number can be changed using the keys



and

The control station has a storage capacity of 30 programs.

- Programs 0 to 19 are 3-stage programs.
- Programs 20 to 29 are a double 6-stage programs.

The program number cannot be changed while the furnace is in operation (the program number blinks, key



enabled) or when the cycle has begun (



key enabled).

**5.6. TEMPERATURE/TIME DISPLAY**

This display gives you the value of the parameters while setting up the program. During the heating cycle, you can choose to display either:

- the temperature during the heat rise and the countdown during the hold periods,
- or the temperature only.

In that case, press the



key. A dot then appears at the far right of the display (No. 3) to indicate that you have chosen the temperature mode.

**5.7. INDICATOR OF THE UNIT DISPLAYED ON THE PANEL (No. 3)**

Two red lights indicate units of temperature and heating rate: °C and °C /min. Two green lights indicate units of time: hours and minutes.

**5.8. MODE KEY**

This key



is pressed to switch from the temperature/time display mode to the temperature only display mode.

**5.9. FORWARD AND REVERSE KEY**

In **stand-by position**, pressing one of the increment/decrement keys modifies the program number.

In **programming position**:

- press the key  increases the value of the parameter displayed on the screen (No. 3),
- press the key  decreases that value.

### 5.10. START/STOP TOUCH CONTROL

After checking the number of the program selected, press the key START/STOP control  to start the heating cycle. All indicators on the panel light up simultaneously.

A second press on START/STOP cancels the cycle.

### 5.11. CYCLE ADVANCE KEY

During program set-up, the key  is pressed to choose the parameters to be programmed.

During the heating cycle, the key CYCLE is pressed to skip a stage and move on to the next one.

### 5.12. PROGRAM SELECTION KEY

This key  accesses program selection.

Once  is pressed, program parameters can be entered or modified using the FORWARD/REVERSE keys. During that time, the program number blinks.

Once the program has been entered, pressing the key  a second time "locks" the program, and the program number then stops blinking.

### 5.13. INDICATORS

#### ▪ Double

Programs No. 0 to 19 are simple three-stage programs, and the programs No. 20 to 29 are double 6-stage programs.

While programs No. 20 to 29 are being set up, this indicator goes OFF for stages 1 to 3 and ON for stages 4 to 6.

#### ▪ Calibration

CALIBRATION function is used to adjust the heating temperature in the furnace within a range of -50°C/+40°C, by increments of 10°C (*see chapter 7*).

#### ▪ Heating element

This indicator visualizes the electric pulses transmitted to the muffle.

It continues to blink during the heat rise or hold time.

#### ▪ Ventilation

A fumes extractor (available in option) may be connected via the socket located on the back panel of the PROGRAMIX 50/100 furnaces.

It is programmed after the final time-delay parameter has been set by pressing the CYCLE key and FORWARD/REVERSE keys.

The fumes extractor starts operating at the beginning of the heating cycle and stops when the programmed temperature is reached.

## 6. USE

Après avoir installé votre four comme indiqué dans le chapitre 4.3 –, actionner l'interrupteur général situé sur le côté droit.

L'afficheur indique la température (n° 3) et le numéro de programme (n° 2).

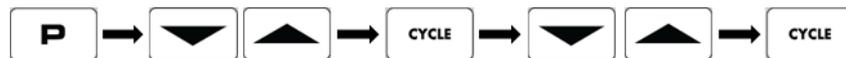
After installing your furnace according to the instructions in chapter 4.3 – *Start-up*, activate the switch ON/OFF located on the right side of the furnace.

The main display indicates the temperature (No. 3) and the program number (No. 2).

### ▪ Change the program number

Use the keys  and .

### ▪ To visualize and modify the data in a program



*Note: during this operation, the program number blinks.*

### ▪ Lock the program

Press  a second time (*the program number stops blinking*).

### ▪ Launch the cycle

Press : all the panel indicators light up.

Each of these indicators will go out at the appropriate time during the heating cycle

### **Note:**

- To move from one stage to the next, use key CYCLE
- To cancel an active cycle, press START/STOP

## 7. CALIBRATION

The furnace has been subjected to a temperature test using a temperature calibrator during his factory. However, you can change the set value the initial setting satisfactory. You can test the temperature using a pure silver wire. Pure silver melts at 960°C.

### TEST PROCEDURE:

- Place the silver wire on a ceramic support in the middle of the muffle.
- Raise the temperature by stages. starting at 940°C with a 5min hold, then 950°C/5 min, then 960°C/ 5 min and, if need be, 970°C/5 min, until the test silver melts.
- Open the furnace door briefly after each stage to check on the silver wire.
- Let us assume, for example, that the wire melted at 950°C. In that case, the calibration should be **modified as follows:**

- Press  and then 
- The number 5 appears on the main display. The indicator  lights up.
- Using the  key, raise the position number to 6.
- Press  again.

### NOTE:

- **Each position corresponds to a temperature change of 10° C relative to the starting point.** Hence, it is normal to observe that same deviation from ambient temperature when the furnace is cold.
- It is possible to modify the calibration which is by default at 5: **between 0 (-50°C) and 9 (+40°C) for the temperature offset.**



CAUTION: a calibration that is too low but not justified will increase the temperature and may exceed the authorized temperature of the furnace.

## 8. PROTECTION

### ▪ PROGRAM PROTECTION

The programmer is equipped with a lithium battery which allows programs to be stored in memory. It is recommended to change the battery approximately every 5 years.

- Lithium battery: 3V - CR 1/2 AA

### ▪ OVERVOLTAGE

The power supply to furnaces with micro-processing units requires perfect filtering. PROGRAMIX furnace is protected against over-voltage by a system of active and passive filters. However, very high over-voltages may interfere with your programs.

As a precautionary measure, we recommend that you keep a record of your programs on the table prepared for that purpose (*see chapter 10*).

### ▪ OUTLET VOLTAGE VARIATION

Within a limit of  $\pm 20$  volts, the furnace self-corrects the variation and maintains the same accuracy.

### ▪ INTERRUPTION OF POWER SUPPLY

If the power supply is cut off, the cycle stops but will begin again at the same point once the mains voltage is re-established. The total duration of the cycle will be increased by the time of the cut-out.

Depending on the length of the interruption, the operator will decide whether to continue or cancel the cycle.

## 9. MAINTENANCE AND TROUBLE-SHOOTING



**Before to carry out the maintenance work and/or cleaning:**

- **disconnect from the main power supply** (*switch OFF and unplug to mains socket*),
- **wait the cooling at room temperature** after use (*risk of burns and/or damage*).

### 9.1. MAINTENANCE

Observe the following recommendations to ensure the longevity of the device:

- Clean the machine outside with a soft, dry cloth.
- Do not use abrasive, solvents or flammables products for cleaning (outside and inside).
- Visual inspection of **heating chamber and refractory plate** before use.  
If necessary, clean with a vacuum cleaner to remove any particles (dust) - do not use compressed air.  
If damaged or cracked: do not use and replace-it.
- **PRECAUTIONS FOR USE:** some investments (alcohol based) are extremely aggressive to the heating elements of the muffle and the thermocouple.  
To avoid premature wear of these elements, we recommend to **preheat the cylinders in a special preheating furnace at 200°C for 1 hour**. If you do not have a preheating furnace, you can also use a metallic heating platform used on a gas stove for 20 to 30 minutes.



**IMPORTANT:** we recommend to **keep a thermocouple in reserve**, to avoid the furnace's immobilization due to wear of this element.

## 9.2. TROUBLE-SHOOTING

<i>Operational failure</i>	<i>Cause</i>	<i>Procedure to be followed</i>
<b>1. The furnace does not heat (and furnace indicator light on)</b>	<b>1.1. Thermocouple</b> <i>The main display shows "dF sond" (probe fault).</i>	<ul style="list-style-type: none"> <li>- Check the continuity of the thermocouple with an Ohmmeter or a sound test.</li> <li>- If you do not have such device, a visual examination will inform you on the level of wear (the wire should not be cut).</li> <li>- Replace the thermocouple: see chapter 9.3. Press the P key to remove the faulty probe on the furnace (programs reset).</li> </ul>
	<b>1.2. The muffle (the heating element) is cut</b>	<ul style="list-style-type: none"> <li>- Remove the back panel and check resistance at the muffle with a multimeter:                             <ul style="list-style-type: none"> <li>- Programix 50: 24 ohms</li> <li>- Programix 100: 15 ohms</li> </ul> </li> <li>- Replace the muffle as indicated in chapter 9.4.</li> </ul>
<b>2. The furnace does not heat (and furnace indicator light off)</b>	<b>Programming</b>	<ul style="list-style-type: none"> <li>- Check the program: temperature and time values.</li> </ul>
<b>3. The furnace heats continuously</b>	<b>Of that happens just after changing the thermocouple.</b> <i>It is because the positive or negative wires have been reversed. In this case, the furnace <u>displays the room temperature</u> all the time.</i>	<ul style="list-style-type: none"> <li>- Connect correctly the thermocouple's polarity: + : green wire / - : white wire</li> </ul> <p><i><u>NOTE:</u> the negative wire (white) is slightly magnetic (check with a magnet).</i></p>
<b>4. The fume extractor goes out</b>	<b>Programming</b>	<ul style="list-style-type: none"> <li>- Check the extractor stop temperature. <i>In the standard setting, the extractor stops at 650°C.</i></li> </ul>

In all cases, if the failure persists, contact the after-sale service.

### 9.3. THERMOCOUPLE REPLACEMENT



Disconnecting and reconnecting the thermocouple causes an error and resets the furnace and all programs.

- **Disconnect** the furnace from the main power supply (switch OFF and unplug to mains socket).
- If necessary, **wait the cooling** at room temperature before to replace.
- **Unscrew the thermocouple cover** (No. 4).
- **Unscrew the thermocouple** and disconnect the two wires attached to it.
- **Place the new thermocouple** and re-connect the two wires, making sure to hook up the wires correctly (respect the polarity): **+ : green wire / - : white wire.**  
*NOTE: the negative wire (white) is slightly magnetic.*
- After replacing the thermocouple, **press the P key** to remove the faulty probe on the furnace. This also resets the programs settings.
- Let the furnace **heat up at a steady 200°C** to check if is working properly. It is then ready for use again.

### 9.4. MUFFLE REPLACEMENT



#### IMPORTANT – Personal Protective Equipment

PROGRAMIX 50 / 100 contains insulating material composed of high temperature insulation wool (alkaline earth silicate), a substance not classified as dangerous according to Regulation 1272/2008/EC (CLP).

The muffle replacement requires contact with the heating chamber and the insulation plates. The personnel involved must be equipped with the appropriate **personal protective equipment**.

It is recommended to wear respiratory protection (mask type FFP2), protective coverall, gloves and goggles. For cleaning, use a vacuum cleaner - do not use a broom and/or compressed air.

- **Disconnect** the furnace from the main power supply (switch OFF and unplug to mains socket).
- If necessary, **wait the cooling** at room temperature before to replace.
- **Dismounting the thermocouple:** unscrew the thermocouple cover, the thermocouple and disconnect the two wires attached to it.
- **Unscrew the rear panel.**
- **Remove the insulation plates.**
- **Disconnect the muffle connections.**
- **Take the insulation wool** off the upper half.
- **Get the muffle out**, from the rear.
- **Install the new muffle**, taking care to keep the resistor terminal at least 5 cm away from heating element.
- **Reassemble the various components** by reversing the dismounting order.  
*Warning: during the placement of thermocouple, respect the polarity (re-connect the wires correctly: + : green wire / - : white wire) (see chapter 9.3).*
- **Dehydrate the furnace** by heating it up at **200°C for 1 hour**. It is then ready for use again.

**10. TABLE OF PROGRAMS**

**10.1. TABLE OF SINGLE PROGRAMS (No. 0 to No.19)**

No.	Start. temp	RP1	Temp.	Hold time	RP2	Temp.	Hold time	RP3	Temp.	Hold time	Final temp.	Description
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												

**10.2. TABLE OF DOUBLE PROGRAMS (No. 20 to No. 29)**

No.	Start. temp	RP1	Temp.	Hold time	RP2	Temp.	Hold time	RP3	Temp.	Hold time	Final temp.	Description
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												



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