

## USER MANUAL

From version 1.00

TECNA® S.p.A.

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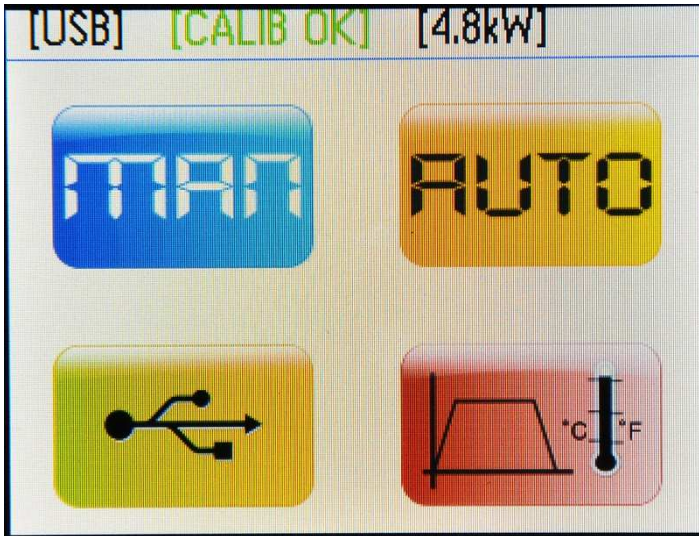
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## 1.0 INTRODUCTION

This is a control unit for managing the infrared heating system used to remove the panels glued to the inside of a motor vehicle.

- Control unit equipped with color touch screen to facilitate the management of the heater's programming parameters.
- Three different operating modes:
  - o Manual
  - o Automatic
  - o Temperature profile for the drying or adhesive polymerization operations.
- Temperature management both in °C and °F.
- USB interface to load the pre-parameterized profiles for the automatic and temperature profile operating modes.
- Firmware upgrade through USB.
- Alarms buzzer.
- Automatic recognition of the type of heating tool connected to the machine.

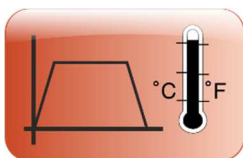
## 2.0 MAIN MENU



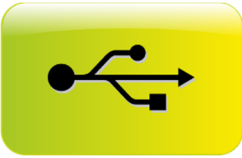
Allows the user to access the TE70 heater's manual work mode. This mode is used when a part needs to be heated through constant heat without the control unit having any limits on the temperature that the heated part can attain.



Allows the user to access the TE70 heater's automatic work mode. This mode is used when a part needs to be heated at a temperature defined by the user and when the user wants to prevent the temperature of the heated object from exceeding the set value, even in case of prolonged exposure to infrared radiation. The TE70 heater will modulate power so that the object to be heated will not exceed the temperature set on the control unit.



Allows the user to access the TE70 heater's profile work mode. This mode allows the generating of a temperature profile that varies over time and that features up to 5 different temperature values. Heating, according to a variable thermal profile, is useful to reduce paint drying time or polymerization time of structural adhesives.



Allows the user to load files from a USB pendrive that contains the pre-parameterized programs for the automatic and temperature profile work modes, simplifying parameter settings for the user.

## 2.1 STATUS BAR

The status bar is located at the top of the screen and can be seen in each TE70 heater screen.



When [USB] is shown, this means a pendrive was properly inserted and recognized. Indication [---] means the lack of or the non-recognition of the pendrive.

Indicates the calibration state of the temperature sensor within the heating tool:

[-----] → Calibrator not connected: the temperature sensor cannot be calibrated.

[!!CALIB!!] → Calibrator connected but temperature sensor calibration not done yet.

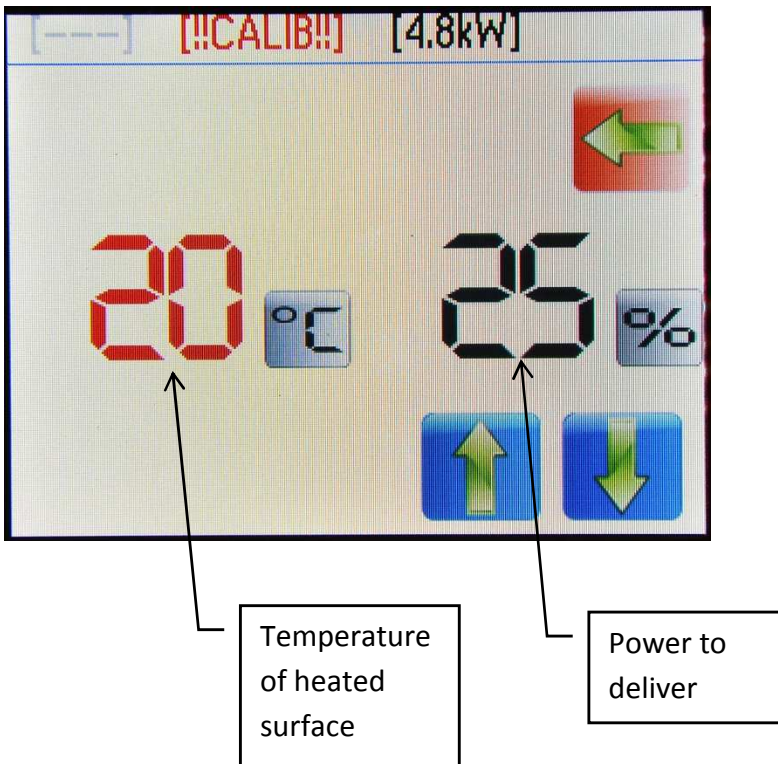
[CALIB OK] → Calibrator connected and temperature sensor calibration performed correctly.

Indicator of the max power that the heating tool, connected to the power box, can deliver. This value is updated automatically, depending on which tool is connected.

The indicator switches from black to red when the user starts a heating cycle.

### 3.0 MANUAL WORK MODE

This work mode is used when you want to heat the object by providing a constant amount of heat to it, without any control on the maximum temperature the object will reach during the heat application time. The user can adjust the power delivered by the heating tool; power adjustment will affect the object's maximum temperature and heating speed.







Button to return to the main screen.



Buttons to adjust the percentage of power that must be delivered by the heating tool.

The heated surface's temperature is measured through the temperature sensor built-into the tool. The maximum temperature the sensor can measure is 240°C; if the object is heated to above this temperature, the sensor will no longer provide the temperature reading until the object's temperature drops to below 240°C.

In the event the surface subjected to infrared radiation is heated to above 240°C, the temperature sensor built-into the tool will not be damaged.

The precision in indicating the temperature of the object for temperatures below 240°C is related to the calibration of the sensor according to the surface to be heated.

The user manages the duration of the heating process through the start button on the heating tool handle.

## **4.0 AUTOMATIC WORK MODE**

This work mode is used when you want to heat a surface by controlling the maximum temperature it can reach during the heating process. In this case, the user sets two parameters: the maximum temperature the surface to be heated can reach and the power that must be delivered by the heating tool. The setting of the power delivered by the tool allows you to adjust the speed with which the required temperature will be reached on the surface of the material subjected to infrared radiation. On reaching the temperature set on the TE70 heater, the control unit will begin to modulate the power delivered to the tool to maintain constant the temperature of the heated surface.

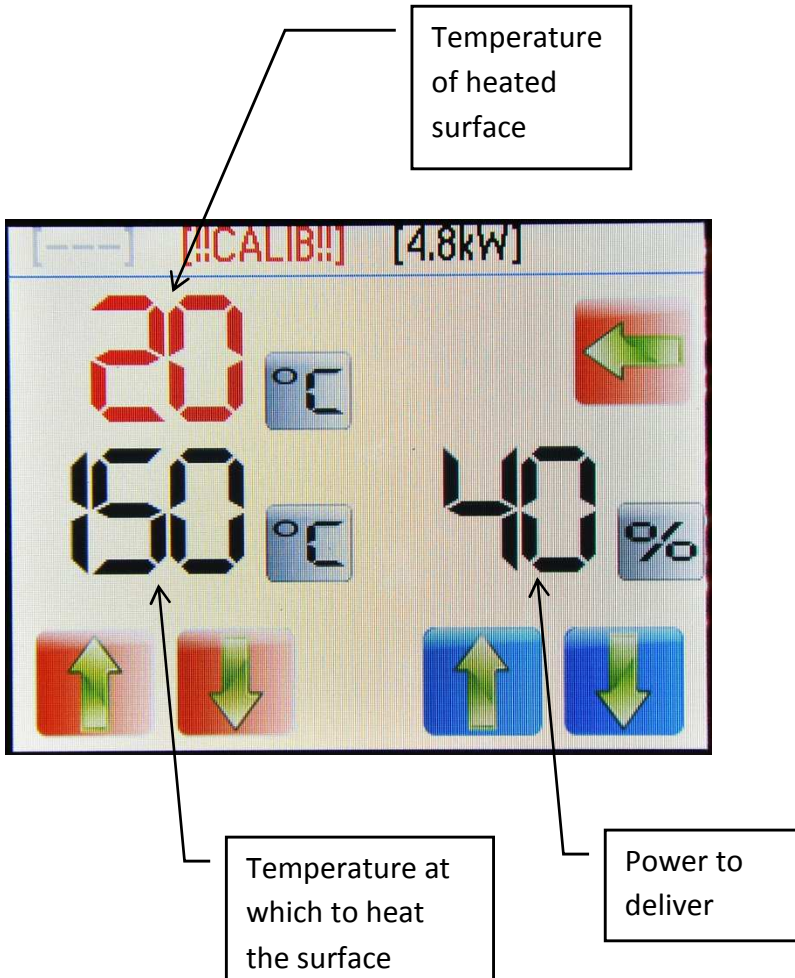
We recommend using high power values when working on matt surfaces or when you want the piece to heat quickly. A lower power value is advisable in the case of glossy surfaces or when you want a more uniform distribution of the heat delivered within the material to be heated.

The temperature setting at which to heat the surface can be in a range between 50°C and 240°C.

For correct temperature measurements, it is essential to calibrate the sensor built-in the tool according to the type of surface to be heated.

TE70 IR-HEATER

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Button to return to the main screen.



Buttons to adjust the power percentage that must be delivered by the heating tool.



Buttons to adjust the temperature at which the object subjected to infrared radiation must be heated.

The user manages the duration of the heating process through the start button on the heating tool handle.

## **5.0 TEMPERATURE PROFILE WORK MODE**

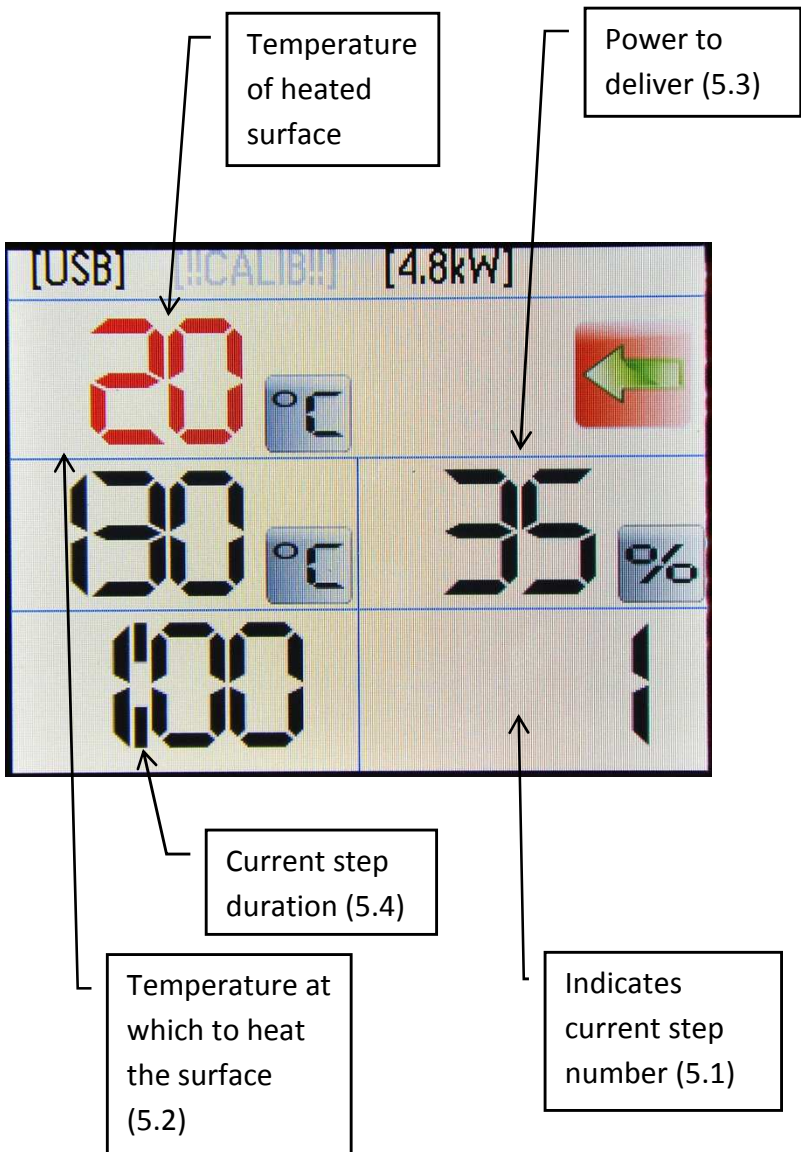
The temperature profile work mode must be used every time you want to generate variable-temperature heating over time, the temporal duration of which is determined a priori. The variable-temperature profile work mode is useful to reduce the paint drying time or the polymerization time of the structural adhesives.

The profile generated by the TE70 heater can contain up to 5 program steps: each step is characterized by power delivered by the heating tool, by a temperature value the heated surface must reach and by time duration.

After setting the temperature profile, simply place the tool on the surface to be heated and lock the Start, through the appropriate button, on the tool's handle in the ON position. The TE70 heater will perform the programmed profile steps in sequence and at the end of the execution the tool will automatically stop delivering heat.

The maximum duration of each step can be 4 hours for a total maximum duration of the heating process of 20 hours.

The setting of the power delivered by the tool allows the adjustment of the speed with which the required temperature will be reached on the surface of the material subjected to infrared radiation. On reaching the temperature set on the TE70 heater, the control unit will begin to modulate the power delivered to the tool to maintain constant the temperature of the heated surface.

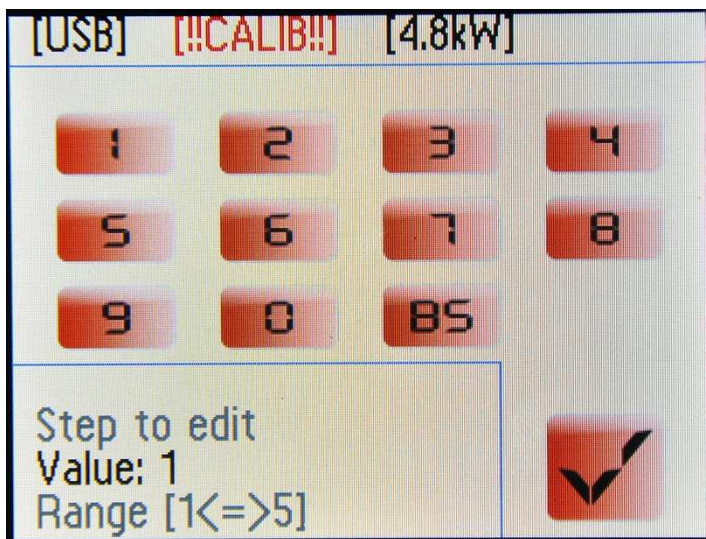




Button to return to the main screen.

## 5.1 SELECTING THE STEP OF THE PROFILE TO BE EDITED

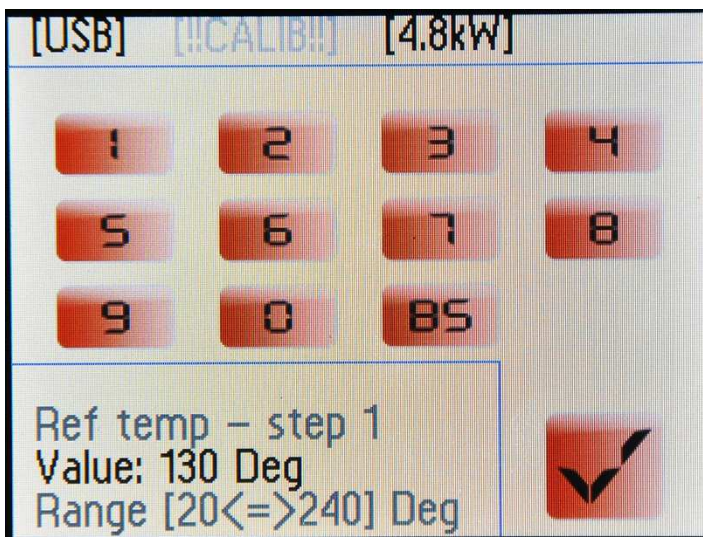
When you press the indication of the step number currently displayed, a numeric keypad will appear with which to select which of the 5 steps making up the temperature profile you want to view and/or edit.



The step to be viewed can be selected only when the start button on the heating tool is not pressed.

## 5.2 TEMPERATURE SETTING

When you press the indication of the temperature at which to heat the surface, a numeric keypad will appear with which to set the temperature the heated surface must reach during the current step.



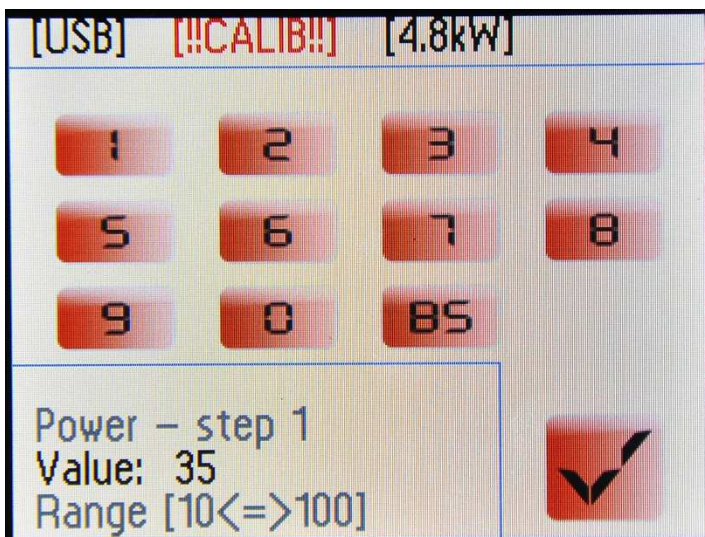
When the heated surface reaches the temperature value set on the control unit, the TE70 heater will begin to modulate the power delivered to the heating tool to maintain the temperature of the heated surface at the same value set on the control unit.

Before starting the execution of a heating profile, it is crucial to calibrate the temperature sensor in the heating tool using the appropriate calibrator to be sure to have an accurate temperature reading.



## 5.3 POWER SETTING

When you press the indication of the power to be delivered, a numeric keypad will appear with which to set the power that must be delivered by the heating tool during the profile's current step.



We recommend using high power values when working on matt surfaces or when you want the piece to heat quickly. A lower power value is advisable in the case of glossy surfaces or when you want a more uniform distribution of the heat delivered within the material to be heated.

## 5.4 SETTING THE STEP DURATION

If you press the duration of the current step, a numeric keypad will appear with which to set the time duration of the profile's current step.



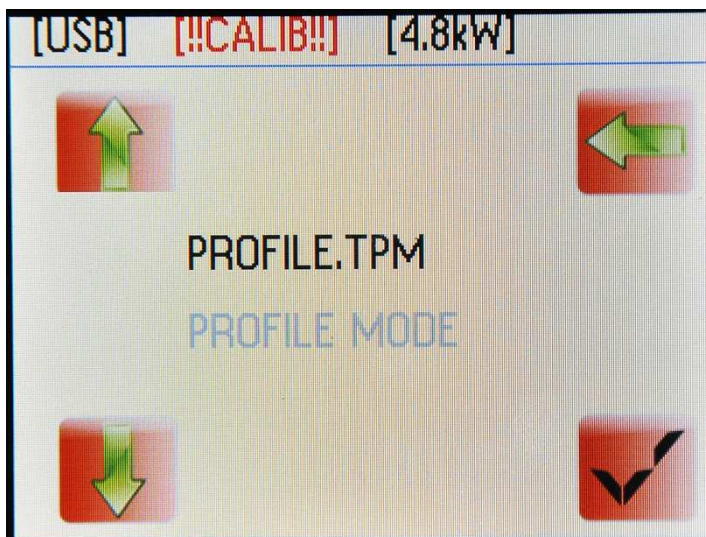
If you set a current step duration of 0, the TE70 heater will skip the execution of the current step and go to the next step, if present; otherwise it will stop delivering power to the surface to be heated.

When you press the start button on the heating tool, the field reserved to the duration of the current step will show the time remaining to the end of the step.

Step duration is displayed in hh:mm format.

## 6.0 USB

When you connect a pendrive to the control unit, the [USB] indicator is activated in the status bar when it is properly recognized. On entering the USB management menu, the files containing the TE70 valid heating programs will be displayed in a scrollable list.



Button to return to the main screen without loading the parameters contained in the displayed file; TE70 parameterization does not change.



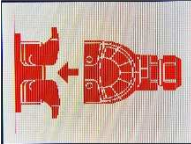


Buttons to scroll through the list of available programs in the pendrive. The pendrive can contain up to 100 different programs.

Files with .TPM extension contain a parameterization for the temperature profile work mode. Files with .TAM extension contain a parameterization for the automatic work mode.

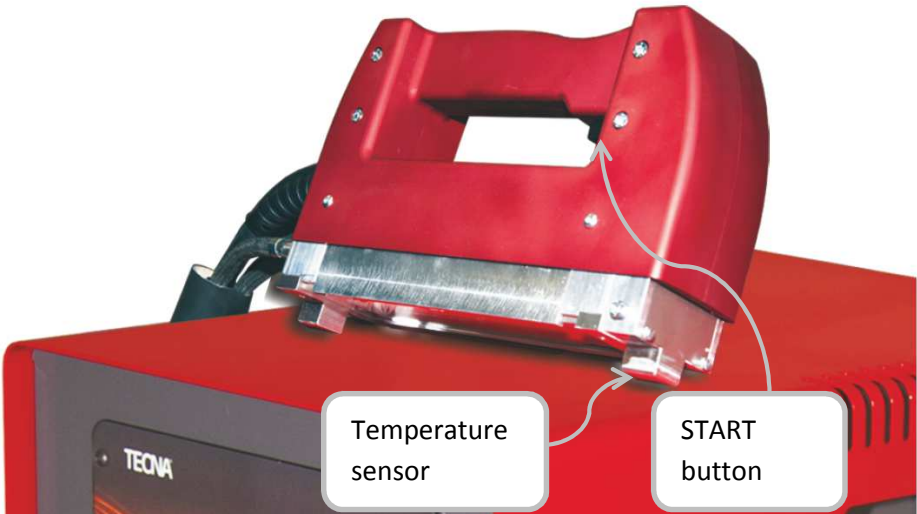


Loads the work parameters contained in the selected file and takes the user to the relating work screen.

## 7.0 ERROR MESSAGES

	<p>Heating tool not connected to the inverter.</p>
	<p>Warns that the start button was pressed when powering-on the machine or right after connecting the heating tool. Release the start button to restore machine operation.</p>
	<p>Indicates, at the end of a machine use stage, not to disconnect the system from the power supply mains to allow the heating tool to cool down properly. This stage requires 5 minutes. You can press the START button at any time to resume the heating process. You can delete the warning message by touching the touch screen in case you want to change the control unit's settings.</p>
<p><b>IGBT FAIL MACHINE LOCKED</b></p>	<p>Power inverter error. Check the integrity of the connection cable between the power box and the heating tool. Contact customer support.</p>
<p><b>TEMP</b></p>	<p>Warns there is an overheating in the power inverter or the heating tool. Wait until the error message clears, without powering off the machine. Check the cleanliness of the cooling fan on the side of the power box. Check the correct water and air flow to the heating tool.</p>

## 8.0 HEATING TOOL



Place the heating tool on the surface to be heated and press and hold down the START button.

There is a button on the handle's side to lock the START button in held-down position, to be used when you cannot hold down the START button during the process or when using it in the temperature profile work mode. In order to deactivate the START, press the START button again to release the lock.

## 9.0 TEMPERATURE SENSOR CALIBRATION

The temperature reading of the surface to be heated, performed by the sensor built into the heating tool, is influenced by the finish and the color of the surface itself. Therefore, in order to have a correct reading of the surface temperature before starting work, you must calibrate the temperature sensor using the appropriate calibrator.

Calibration should be performed each time you power on the machine, when you connect a different heating tool and every time the surface to be processed changes color or finish.



Calibrate the sensor using the appropriate calibrator on an area of the surface to be heated, possibly a flat area.

- Set the calibrator orthogonal to the surface on which the heating process will be performed.
- Press and hold down the “PUSH CALIB” button.
- The calibration process requires from 30 seconds to 1 minute.
- At the end of the calibration process, the “CALIB” LED stays on and the control unit will emit 3 beeps to confirm calibration was performed.
- Release the “PUSH CALIB” button and put the calibrator back in its seat.

**N.B.: use the calibrator only on surfaces at room temperature; if the surface to be calibrated had been previously heated, wait until it cools down before placing the calibrator on the surface. The use of the calibrator on hot surfaces can damage the calibrator.**



## 10.0 CHOOSING BETWEEN °C AND °F

You can select to display temperatures in °C or °F. In order to change the two views, press the area that displays the temperature of the heated surface within the automatic or temperature profile work screens. The switching between the two units of measure will take place immediately.

