OVENS AND INCUBATORS (ENGLISH)

1 Warranty

Thank you for purchasing this instrument. In normal use conditions, the instrument is guaranteed for a period of 24 months from the date of purchase.

The warranty is valid only if the product is original. It does not apply to any product or parts of it that have been damaged due to incorrect installation, improper connections, improper use, accident or abnormal conditions of operation. The manufacturer declines all responsibility for damage**s** caused by failure to follow instructions, lack of maintenance and any unauthorized modification

2 Contents of package

The instrument is delivered complete with the following parts:

5. n. 2 stainless steel wire shelves
6. n. 4 brackets for shelves
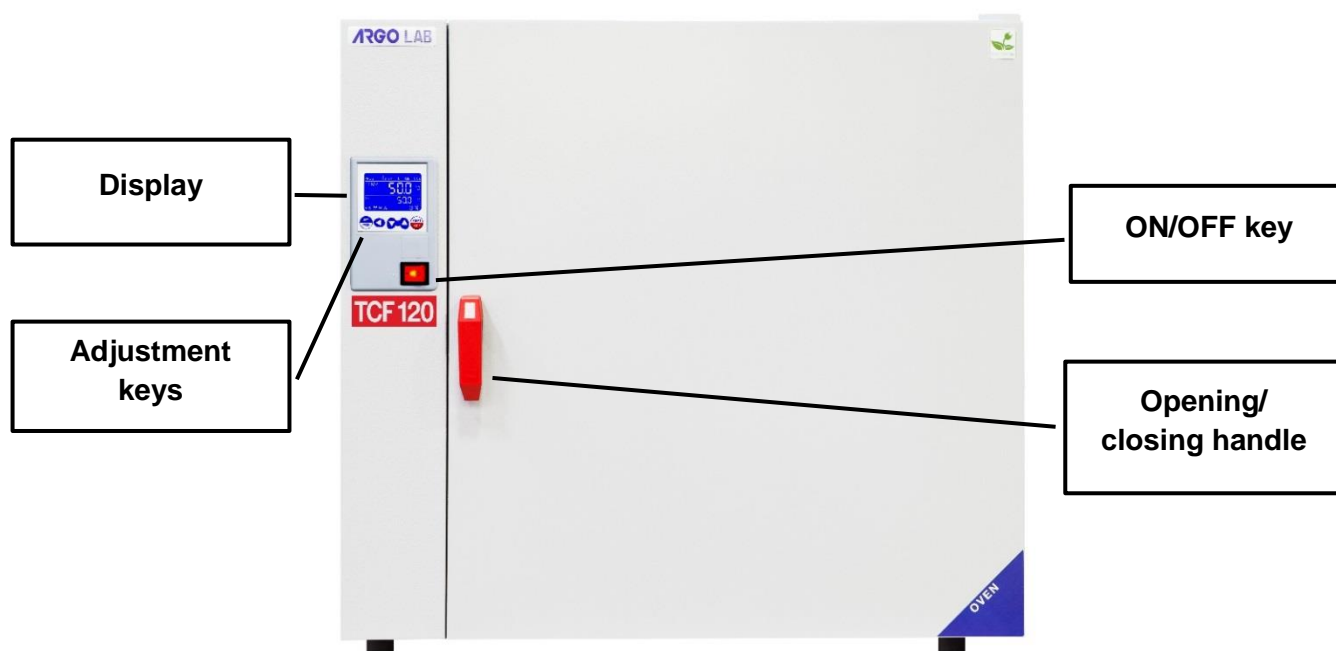7. Power supply cable
8. User manual

3 First use

3.1 Getting started

The oven should be installed in follow conditions:

6. Dry, clean and stable work table with a flat horizontal surface
7. Respect minimum spaces around instrument 30-50 cm
8. Room temperature between 5 °C and 40 °C, and relative humidity maximum of 85%
9. Power supply socket with earth connection
10. Power feed between 220-240 V - 50 Hz

3.2 Instrument parts

Display

Adjustment keys

ON/OFF key

Opening/ closing handle

Picture 1

4 Display and commands

Picture 2

Picture 3

COMMANDS	DESCRIPTION
SET PROG	The SET/PROG button permits the working parameters setting and to enter/escape from the programs (PRO version only). In combination with the SHIFT key allows access to menus with password (see paragraph 5.4).
(left arrow)	The SHIFT button permits to change quickly the digit (decimal, units, tens, etc.) of the value of the parameter you are editing. In combination with the SET/PROG key allows access to menus with password (see paragraph 5.4).
(up/down arrows)	Adjustment buttons allow you to increase or decrease the value of the operating parameter being edited.
START STOP	The START / STOP button permits to start / stop a cycle operation or a program (PRO version only).
(power button)	The ON/OFF button allows to turn on and turn off the instrument.

5 Operation

5.1 Switching on the instrument

Connect the power cord to a power outlet with a protective ground connection.

Turn on the instrument by pressing the button ON / OFF. Button and the display will light up.

The display shows the initialization sequence and then the instrument is ready for use.

NOTE: every time you turn the instrument beeps intermittently, the icon of visual alarm and the word **"end"** appear on the display, indicating that a heating cycle had been done before. Press any button to silence the audible signal and the icon appears.

5.2 Programming

The instrument can manage until 7 programs with 10 steps each one in which temperature, timer and fan speed (if present) are settable.

Moreover them, it's possible to set a simple work cycle at single work step, with temperature, timer and fan speed (if present). This is called "PROG 0".

5.2.1 Calling programs

When the instrument is switched on, in standby or during a work cycle both, pressing shortly one time the SET/PROG button, the word "PROG" and the program number (see Picture 3) start to blink together.

Calling the desired program by the keys. Confirm pressing shortly one time the SET/PROG button. The selected program is ready to start.

5.2.2 Modify a program

To modify a program it's necessary keep pressed for few seconds the SET/PROG button: the word "PROG" and the program number start to blink together and after some moment only the program number blinks.

Now it's possible to choose the desired program to be modified by the keys and to confirm it by a short press of SET/PROG button.

Then the instrument enters in the modification mode and the temperature value of the first step blinks together the word "PROG" to indicate that you are in programming phase.

STEP 1

Set by the and SHIFT keys the temperature value of the first step. Press shortly SET/PROG to confirm it and pass to the next value (timer), always of the first STEP. Set by the and SHIFT keys the desired timer value of the first step and confirm by a short press of SET/PROG .

If the instrument is a forced air model, the next parameter to be set is the fan speed, adjustable by the keys in (H=High, M=Medium, L=Low), otherwise you pass to STEP 2.

STEP 2

Set by the 🔵🔵 and SHIFT 🔵 keys the temperature value of the second step. Press shortly SET/PROG 🔵 to confirm it and pass to the next value (timer), always of the second STEP. Set by the 🔵🔵 and SHIFT 🔵 keys the desired timer value of the second step and confirm by a short press of SET/PROG 🔵.

If the instrument is a forced air model, the next parameter to be set is the fan speed, adjustable by the 🔵🔵 keys in (H=High, M=Medium, L=Low), otherwise you pass to STEP 3.

REPEAT THE ABOVE INSTRUCTIONS FOR EVERY STEP YOU WANT TO PROGRAM

NOTE: if you do not want to use all 10 STEP of the program you are editing, it is necessary to communicate to the instrument the end of the program. To do this, simply set in the next step after the last step you want to use the time equal to "00:00".

EXAMPLE
If the last work step you want to use is the fifth, it's sufficient set in the sixth step the timer equal to "00:00", imposing in this way to the instrument to stop it at the end of the fifth step.

5.3 Start/stop of a program

After setting the program, simply call one of them and press the START / STOP 🔴 with long pressure (4-5 seconds) to start the selected program.

The word "end" at the top right of the display disappears, the message RUN appears on bottom left part and display shows simultaneously: program number, step in progress, timer, measured temperature inside the chamber, set temperature and fan speed if present (see Picture 3).

At any time you can always manually stop the cycle by pressing the START / STOP 🔴 button with long pressure (4-5 seconds).

Once the set program is finished or after a manual stop, the instrument beeps intermittently, the icon of visual alarm 🔔 and the word **"end"** appear on the display. Pressing any button will silence the audible signal and the icon 🔕 appears.

NOTE: the acoustic signal will not end until it is stopped by the operator, but the heating cycle is terminated so for the samples inside the instrument will remain exposed to the internal temperature the chamber.

5.4 Functions with password access

5.4.1 Access to menu with password

Simultaneously pressing the SET / PROG 🔵 and SHIFT 🔵 for few seconds, you can access some functions and parameters that are password protected.

To access these submenus and avoid mistakenly entering in the operating parameters setting, it is recommended to firstly press the SHIFT 🔵 key, keep it pressed, and then press the SET / PROG 🔵 for few seconds.

After have made this keys combination, on the right top part of display instead of word TIME, "**Lk**" (lock) appears close to "**0000**" (password). Below the passwords and access sequence to the various parameters/functions.

PASSWORD	FUNCTION/ PARAMETER	DESCRIPTION
0000	Pn	Number of program to which to apply the dy e Cy functions
	Cy	Number of repetitions of the work cycle
	dy	Delay of heating cycle start
0003	tm	Safety temperature limiter for samples protection
	Po	Restart mode after absence of power supply
	AL	Temperature range for over temperature alarm
	Pb	Temperature offset on single point
	PK	Temperature offset on the entire ramp
	PA	Temperature offset of the room temperature probe

5.4.2 Number of program to which apply the Delay and Cycle functions

It is necessary to define to which program (from 1 to 7) apply the functions of starting delayed (Delay) and repetition of cycle (Cycle).

To do that it's necessary enter in the first submenu with password access (0000) and modify the parameter Pn (program number) by ∞ keys and confirm the selected program by a short press of SET/PROG 🔵 button.

5.4.3 Repetition of a program

The instrument allows the repeating from one to more times of the selected program. After have chosen the program to which apply the function by the parameter Pn it's possible set the Cy value (Cy)= 1, 2, 3,...with ∞ keys and SHIFT 🔵 and confirm it pressing shortly SET/PROG 🔵.

NOTE: it's also possible set the continuous repetition of a program, setting it in continuous "loop", with the parameter Cy=0.

5.4.4 Delay of the program start

It's possible to set a delay (hour and minutes) of the program start.

After have chosen the program to which apply the function by the parameter Pn it's possible set the desired delay value (hh:mm) pressing ∞ keys. It's possible a quick movement between the digits using the SHIFT 🔵 button. Confirm the set value with another press of SET/PROG 🔵 button. The display comes back to the standby screen (see Picture 3). Pressing the START/STOP 🔴 button with long pressure (4-5 seconds) the instrument starts the program, but it doesn't immediately heat: the word "end" and the set delay time alternately blink on the top right part of display, counting the wait time until the real starting of the program.

Once the delayed time is passed the instrument starts to heat and the regular timer appears on display.

5.4.5 Safety temperature limiter for samples protection

The instrument has the possibility to limit the maximum work temperature for the samples protection from an erroneous setting of the working temperature.

Please follow the instructions reported at paragraph 5.4 and using the ∞ keys set the "**0003**" password. It's possible a quick movement between the digits using the SHIFT 🔵 button.

Confirm the set value with another press of SET/PROG ![SET/PROG] button.

On the top right part of display the parameter "**tm**" (temperature max) and the maximum expected value for the kind of instrument (different for oven and incubator) appear.

Set the maximum temperature value you want the instrument doesn't exceed during work cycle by the ![keys] keys. It's possible a quick movement between the digits using the SHIFT ![SHIFT] button.

Confirm the set value with another press of SET/PROG ![SET/PROG] button.

Example

If the set temperature for the work cycle is 100°C and the safety temperature is fixed at 70°C, the instrument tries to achieve the set temperature (100°C), even if it's major than the safety temperature set in this menu (tm).

When the 70°C are achieved the instrument goes in alarm emitting an audible intermittent alarm (silence it pressing any keys) and the heating element doesn't receive power supply until to the temperature will go below the safety temperature (tm).

NOTE: the instrument tries in any moment to achieve the set work temperature; as a consequence, until it is bigger than the safety temperature (tm), it goes in over temperature alarm as described in the previous paragraph.

5.4.6 Restart mode after absence of power supply

It's possible to set the restart mode of the instrument after a power supply absence:

Po VALUE	DESCRIPTION
0	On return of the power supply, the instrument does not automatically resume the heating cycle, but you must manually restart.
1	On return of the power supply, the instrument automatically resumes operation from the beginning of the heating cycle interrupted
2	On return of the power supply, the instrument automatically resumes operation at the very point of the heating cycle in which it was interrupted

Please follow the instructions reported at paragraph 5.4 and using the ![keys] keys set the "**0003**" password. It's possible a quick movement between the digits using the SHIFT ![SHIFT] button.

Confirm the set value with another press of SET/PROG ![SET/PROG] button.

On the top right part of display the parameter "**tm**" (temperature max), pass to the next parameter "**Po**" (Power) pressing shortly SET/PROG ![SET/PROG].

Confirm pressing shortly another time SET/PROG ![SET/PROG]. Set the desired value (0, 1, 2) pressing the ![keys] keys. Confirm pressing shortly SET/PROG ![SET/PROG].

5.4.7 Temperature range for over temperature alarm

The instrument has the opportunity to set the range of temperature over which it goes in over temperature alarm.

NOTE: even if this value is adjustable by the operator, it's already set by factory and perfectly calibrated in function of instrument type, natural/forced air oven or incubator.

We recommend to do not change this value unless absolutely necessary, because temperature fluctuations more or less than the set one, especially in models with natural convection, are normal and thus reducing dramatically the value of AL, it would risk do go frequently and unnecessarily alarmed the instrument.

Please follow the instructions reported at paragraph 5.4 and using the 🔼🔽 keys set the "**0003**" password. It's possible a quick movement between the digits using the SHIFT ◀ button.

Confirm the set value with another press of SET/PROG 🔵 button

On the top right part of display the parameter "**tm**" (temperature max), pass to the next parameters pressing shortly SET/PROG 🔵 more times.

Find the parameter AL (alarm), set the minimum temperature value above which you want the instrument goes in alarm pressing the 🔼🔽 keys. It's possible a quick movement between the digits using the SHIFT ◀ button. Confirm the set value with another press of SET/PROG 🔵 button.

5.4.8 Temperature offset on single point, on entire ramp, on room temperature sensor

The instrument has the opportunity to set the offset value on a single temperature point, on the entire temperature ramp and on the room temperature sensor.

NOTE: even if these values are adjustable by the operator, they are already set by factory and perfectly calibrated with certified and referable Accredia measurement instruments.

We recommend that you do not change these values unless absolutely necessary, for example if after a check with digital certified thermometer you find a discrepancies between the reading of the instrument and the external thermometer.

Please follow the instructions reported at paragraph 5.4 and using the 🔼🔽 keys set the "**0003**" password. It's possible a quick movement between the digits using the SHIFT ◀ button.

Confirm the set value with another press of SET/PROG 🔵 button

On the top right part of display the parameter "**tm**" (temperature max), pass to the next parameters pressing shortly SET/PROG 🔵 more times.

PARAMETER	DESCRIPTION
Pb	Changing this parameter you can correct the reading of PT100 sensor inside the instrument on one-point temperature. The correction will therefore be attributable to one specific point.
PK	Changing this parameter you can correct the reading PT100 sensor inside the instrument over the entire temperature ramp, that is going to change the inclination of the ramp reading of the sensor.
PA	Changing this parameter you can correct the reading of environmental PT100 sensor installed on the instrument (only refrigerated versions) on only one temperature point. The correction will therefore be attributable to one specific point.

6 Clean and maintenance

Proper maintenance and cleaning of the instrument guarantee its good conditions.

The inner chamber of the instrument is made of stainless steel, so it can be cleaned with any detergent provided it is not aggressive and / or corrosive.

You should clean the inside and outside surfaces with a standard all-purpose cleaner sprayed on a soft cloth.

Before proceeding with any cleaning or decontamination, the user must ensure that the method used does not damage the instrument.

IMPORTANT:

If the instrument must be returned for service, it is necessary to provide for proper cleaning and possible decontamination by pathogens of the same.

It is also recommended to put the instrument in its original packaging to send it in for repairs and if it is missed it is necessary to provide to pack it properly in order to the transport.

Any damage caused from the incorrect shipping will not be covered by warranty.

7 Disposal of electronic equipment

The electrical and electronic equipment marked with this symbol may not be disposed of in landfills.

In accordance with EU Directive 2012/19/UE, the European users of electrical and electronic equipment have the opportunity to give back to the distributor or manufacturer upon purchase of a new one.

The illegal disposal of electrical and electronic equipment is punished with an administrative fine.