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REFLOW OVEN FT01

(Article number F31105)

User's Manual



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E.C. CONFORMITY CERTIFICATE

Us,

C.I.F**Circuit Imprimé Français****11 rue Charles Michels – 92227 Bagneux Cedex France****Tel 33 01 45 47 48 00 FAX 33 01 45 47 16 14****email : cif@cif.fr - web : www.cif.fr**

We certify under our responsibility that this product conforms to European Economic Community standards :

FT01 oven

In conformance With European guidelines,

(89/392/CEE – 89/336/CCE) and to EN60-204-1 standard

(F) Déclaration du constructeur

La société C.I.F. – 92220 BAGNEUX, France, certifie que le produit répond bien aux directives de la Communauté Economique Européenne.

(GB) Manufacturer declaration :

C.I.F. company – 92220 BAGNEUX, France, herewith declare that this product conforms to E.E.C. regulations.

(D) Herstellererklärung :

Hiermit erklärt die Firma C.I.F. S.A. – 92220 BAGNEUX, France dass dieses produkt der Richtlinie EWG entspricht.

Conforms to the following standards

In accordance with the following European Decrees :

- **Directives 73/23/EEC for low voltage machines amended by 93/68/EEC**
- **Directives 98/37 EC for Machines**
- **Directives EMC 89/336/EEC amended by 92/31/EEC and 93/68/EEC**

Bagneux, May 14th 2001

Authorised signature
M. Bernard ANDRIOT,

A handwritten signature in black ink, appearing to read 'M. Bernard ANDRIOT', is written over a faint, larger version of the same signature.

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1. General Information

1.1 Introduction

Thank you for choosing the FT01 reflow oven. To get optimal satisfaction from this machine, please read these instructions carefully. If you should lose this instruction manual, you can receive a new one free of charge by specifying the date of purchase and series number of the model.

The FT01 reflow oven is designed to weld hybrid or SMT boards, and to polymerize serigraphy adhesives and inks. This equipment is suitable for use with prototypes as well as small series.

1.2 Working with FT01

- Use FT01 only for reflow soldering of hybrid circuits and SMT boards and for serigraphy adhesives and inks polymerization.
- Incorrect oven programming can lead to overheating the board and even burning it.
- Never let the machine operate without supervision.

1.3. Technical Specifications

Dimensions : **370 x 455 x 320 mm (L x w x h)**

Working area : **170 x 290 mm**

Heating system : **2 x 1 kW quartz heating elements**

Electrical supply : **220/240-Volts, 50-60 Hz (110 Volts on request)**

Power supply : **2,2 KW**

Net Mass : **13,5 Kg**

Noise level when operating < 50 dB (A).

Heater :

Thermal stability time: approx. 4 mn

- 3 levels
- cooling time from 0 to 5 minutes
 - preheating time from 0 to 5 minutes
 - reflowing time from 0 to 5 minutes

Stand-by temperature from 0° to 250°C

Preheating temperature from 0° to 250°C

Reflowing temperature from 0°C to 250°C

Working temperature

To be used at room temperature from 5°C to 35°C.

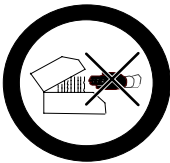
2. Transportation

Before unpacking, check that the packing materials show no signs of impact. If they do, check the machine's condition immediately and inform the transport company. If you do not make the necessary remarks on the freight documents, you lose all rights to file a claim with insurance companies.

3. Safety

PLEASE NOTE :

During operation, if ON/OFF switch is activated or Stop button pushed, the oven remains warm inside. A board which remains inside at that moment could be damaged by the high temperatures.



A HOT OVEN DOES NOT COOL INSTANTANEOUSLY.
DO NOT PUT YOUR HAND INSIDE THE OVEN.

- Do not make any internal adjustments or repairs by yourself
- Make sure that you place only compliant materials
- Do not introduce inflammable or explosive materials into the oven.
- Put the oven in a well-ventilated area where it won't be a fire hazard.
- Make sure that the oven is not switched on and that it is completely cooled before cleaning.
- Wait for the oven to cool 30 minutes before any manual intervention.
- Use only soft clothes and a non-aggressive detergent.
- Do not use cleaning solvent or sprays.
- Do not try to clean the inside of the oven, this action should be done by an authorised maintenance technician during preventive maintenance.
- After any technician intervention, carry out a thorough check to ensure safe equipment operation.
- Use heat-proof gloves to handle welded circuits.

4. Installation

4.1 FT01 unpacking

Carefully unpack the oven and keep the packing materials in case you need to move the oven at a later date.

Check that the following elements are packed with your oven :

- **FT01 oven**
- **User's manual !**

5. Start up

5.1 Suggestions

- Read the entire manual and follow our methods before trying yours.
- Keep this manual near the oven and follow safety instructions.
- To guarantee optimal results, keep your oven clean and in good operating condition.
- Do not let the oven operate without supervision.
- When researching a temperature profile, start with the lower temperatures in order to avoid burning the board and the components.
- Avoid any draught around the machine: these could modify your temperature profile.

5.2 Recommended settings

Using the settings recommended below, you will be able to solder (weld) most of the boards. On the other hand, we cannot guarantee that these settings correspond perfectly to your application and you will have to first assess the result before deciding whether you should use your own settings. When you want to find the right settings for your board, start with the lower temperatures. If you begin with the higher temperature, you risk starting a fire by igniting an overheated board. If you see that the board is overheated, open the drawer immediately to take it out.

Configuration example :

Battery tester board (Ref.: F52171) format 20 x 40 mm
Number of components : 7
Green long-oil varnish
No lay-out plan

“P0” program

Oven temperature setting	127°C
Cooling time (after reflowing)	2 minutes

“P1” program

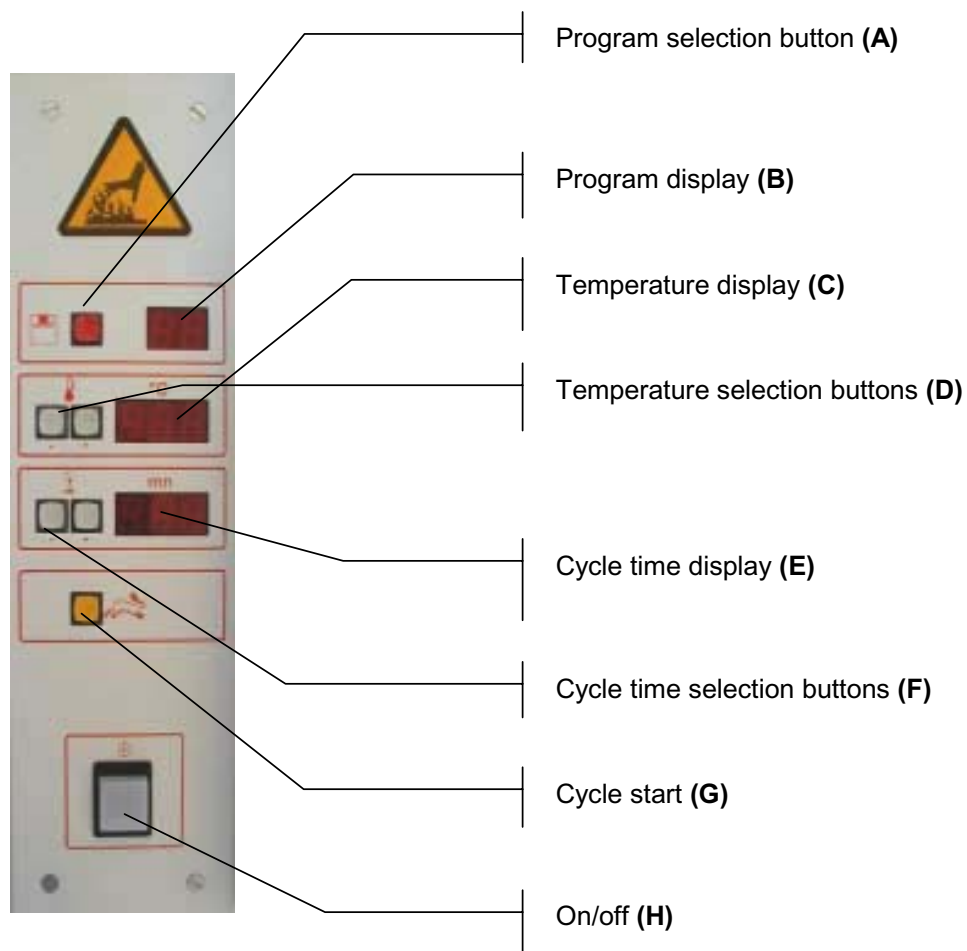
Preheating time	1,30 minutes
Preheating temperature	130°C

“P2” program

Reflowing time	30 seconds
Reflowing temperature	180°C

6. Oven use

6.1 Front Panel



6.2 Oven start up – Configuration

Oven configuration is easy to set and includes three basic phases: oven preparation phase, preheating phase, and reflowing phase.

For this, 3 programs are available : **P0**, **P1**, and **P2**. The selection is made by pushing on the button **(A)**.

The **P0 program** enables you set the oven preparation phase which includes the oven temperature before the reflowing cycle starts and **cooling time at the end of the cycle**. (This time is the necessary time to reach this temperature).
In our configuration example (see paragraph 5.2.), the P0 program will be configured as follows:

Switch on the appliance by pushing the **On/off** button **(H)**

The program **(P0)** can be selected by pushing the button **(A)**
Use the temperature selection buttons **(D)** to display 127°C **(C)**
Use the time selection buttons **(F)** to display 2 minutes **(E)**.

The **P1** and **P2** programs enable you to set the reflowing cycle which includes the preheating and reflowing steps. The preheating step prepares the solder paste, and the reflowing step enables you to reach alloy melting temperature.

In our configuration example , the P1 program is configured as follows :

- the program **(P1)** can be selected by pushing the button **(A)**
- use the temperature selection buttons **(D)** to display 137°C **(C)**
- use the time selection buttons **(F)** to display 1,30 minutes **(E)**.

In our configuration example (see paragraph 5.2.), the **P2** program is configured as follows :

- the program can be selected **(P1)** by pushing the button **(A)**
- use the temperature selection buttons **(D)** to display 180°C **(C)**
- use the time selection buttons **(F)** to display 30 seconds **(E)**.

After programming the preheating and reflowing phases **(P1)** and **(P2)**, push the button **(A)** once again. The cycle corresponding to the oven temperature-setting phase **(E0)** will automatically start, displays **(B)** and **(E)** will be on standby, temperature display **(C)** will indicate the oven temperature.

When the programmed temperature is reached (P0 programming), the reflowing cycle is ready to be started up (see paragraph 6.3.).

The choice of time/temperature instructions depends on many criteria, including the nature of the product used (soldering paste, adhesive, etc.), board dimensions, number and density of components on the board, lay-out plan presence, etc. Therefore, it is essential for you to read attentively and respect all product recommendations. It is also important to carry out tests and take note of all setting parameters.

The last reflowing cycle parameters are kept in memory. The next time the oven is started up, it will be preheated until the last recorded value is reached.

6.3 Reflowing process

Open the drawer and set the board on the plate. The reflowing cycle is triggered by pushing on the cycle start button (**G**).

If the cycle has been interrupted by opening the drawer, you will have to start a new complete reflowing cycle. To do so, wait until the oven temperature reaches the programmed stabilisation temperature and press the button (**G**).

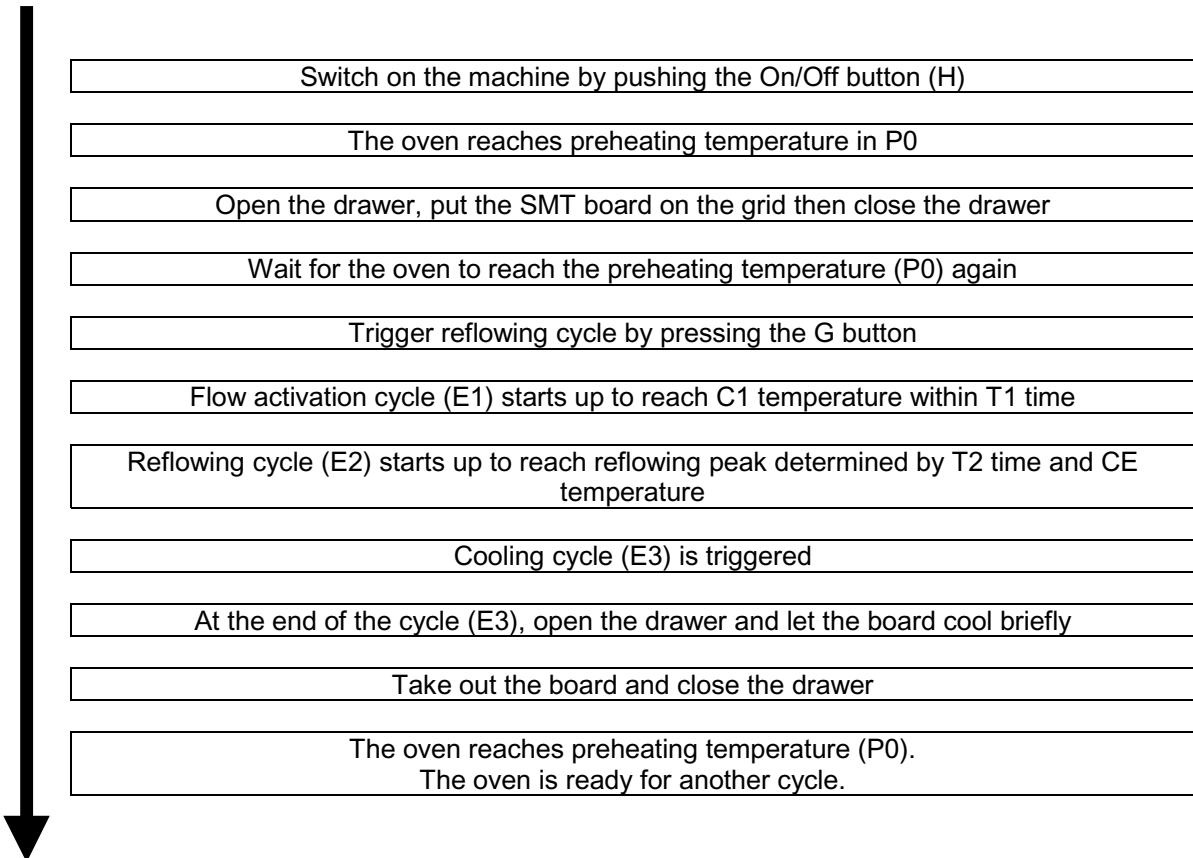
At the end of the preheating and reflowing cycles (**E1**) & (**E2**), the oven goes into the cooling phase (**E3**) for the time programmed in (**P0**). Wait until cycle completion before opening the drawer to take out the board.

Warning !!!

At this point the board is still at a high temperature; to avoid burns, do not touch it with your hands. Use pliers or a protective glove to take the board out.

A new cycle can only be started when the temperature of the “oven temperature setting” programmed in (**P0**) is reached, i.e. 127°C in our example.

6.4 Operating process - plan



7. Maintenance, Repair & Technical Support

7.1 Maintenance

- Clean the oven once a week with a soft cloth.
- To avoid damaging the oven, do not use cleaning products inside it.
- Do not use the oven to cook food products.
- In the event an incident occurs on your machine, do not try to dismantle or repair it by yourself.
- Call your supplier or an authorised after sales department.

KEEP IN MIND THAT A CLEAN MACHINE WILL OPERATE CLEANLY.

All repairs must be carried out by a qualified technician authorised by CIF. Only original parts supplied by CIF can be used.

For all questions relative to the FT01 oven, please contact the CIF technical departments.

The more specific you are in explaining your problem, the easier it will be find a solution. Before calling, please write down the symptom description to clarify the request.

8.Profile example

Use the following graph to set a temperature profile

