



AIR COOLER FC-500

MANUAL FOR SAFETY AND USE

English Edition 10E

Helsinki 2015

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1. Introduction

We are grateful for your decision to buy our Air Cooler FC-500. It is fabricated by us especially for You in accordance with the highest quality standards and tested by our experts on compliance with EU directives presented in the Section **"Documents taken into account in production and documentation"** before shipping the equipment to you. Despite the fact that the equipment is simple enough to use, we strongly recommend that you read the instructions before starting work, paying close attention to the **Safety Instructions**.

Air Cooler FC-500 was developed to secure PCB cooling speed and can work as a separate aggregate. At the same time Air Cooler FC-500 can be easily integrated into an Reworking Soldering Center IR-650 Pro. To do this, simply connect the device to the USB port of the computer and the "TERMOPRO - Center" Program will automatically recognize it and will adjust a desired rate of cooling in accordance with a predetermined thermal profile. Cooler FC-500 is recommended to complete a soldering set based on Pre-heating systems of NP Series, but Cooler FC-500 is also often used for cooling circuit boards with any other Pre-heaters.

1.1 Documents, taken into account in a process of production and manual for use set up.

For EU Countries only:

OOO NTF "Techno Alliance Electronics" being the responsible Manufacturer declares that Digital Bottom Pre-Heating and Soldering System of NP Series with Characteristics presented in Section 3.1 is a serial product and meets following EU Directives:

- Directive 2006/95/ECs relating to electrical equipment designed for use within certain voltage limits.

- Directive 89/336/EC related to electro-magnetic compatibility of 3rd May 1989;
- Machinery Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery and amending Directive 95/16/EC.

Technical documentation for EU Authority Use is kept by European official Representative of the Manufacturer:

***K&K Kauppa ja Konsultointi Oy:
Fredrikinkatu 33B,
00120 Helsinki
Finland***

1.2. Briefly about Manufacturer

The Scientific-Technics Firm "Techno Alliance Electronics" was founded in 1993 in Moscow, Russia. Since that time the quality and service of "TERMOPRO" Brand was appreciate by hundreds of enterprises of dozens High-Tech industries. We have thousands customers among modern service centers who use modern methods of repair both with BGA components and without them. Contact coordinates of OOO

NTF "Techno Alliance Electronics" the office and plant on the page #9 of this Manual.

2. Safety measures working with the Machine



WARNING: Read all instructions and safety recommendations. Failure to follow warnings and instructions may lead to electric shock, burns, fire and / or serious injury.

Keep these instructions with recommendations for future use.

Air Cooler FC-500 was designed only for cooling of electronic modules (PCB's) in a process of installation and removal of electronic components. Another use of Cooler as a separate aggregate or as an integrated part of Reworking Center will be considered by the manufacturer as executed by the user at his (User) personal responsibility and risk.

2.1. Precautions and safely when using the equipment.



Never insert any foreign objects and/or fingers between fan blades. It can cause serious injury and damage the equipment.



In case of operation fault, do not open the device housing case yourself (this can cause even more damage), and contact a experiences service.

General safety work on electrical installations and heating devices shall be carried out working with the Cooler. The room in which the product operates must be equipped with fire extinguishing agents and exhaust ventilation.



All inter-unit connections have to be made before connecting the device to the power supply line. All connectors

must be secured with cap nuts (where applicable). Before switching on, make sure that grounding outlet or a separate ground terminals are in order.



A fuse replace should be carried out only when the device is switched off (the power cord must be disconnected from Power line socket).



NEVER!

- connect the unit to Power supply line without the ground ; in the absence of a reliable grounding the proper functioning of the installation can not be guaranteed;
- leave turned on unit unattended;
- turn on a Cooler near flammable materials and flammable liquids;
- spray flammable liquids near working equipment;
- carry out maintenance without shutting down the product the unit and disconnecting it of power supply line.



WARNING: DO NOT let comfort or experience in device operation (gained from repeated use) dominate strict adherence to safety rules for handling this device. Improper use of tools or failure to follow the safety rules stated in this Manual may cause serious personal injury.

3. Description of the Device

3.1. Technical Specification of Air Cooler

Nominal Voltage / Maximum current	12V / 1A
Max. Air blow rate	2,3 m ³ /min at 50W
Working modes	Continuous or intermittent
Noise level (max)	40 dB
Dimensions	80x150x310 mm
Weight (with power adapter)	1,4 (1,9) kg

3.2. Air Cooler FC-500 delivery set



Pic. 1. Air Cooler FC-500

Air Cooler F-500 delivery Set includes:
- Cooler Unit on support

- Power adapter ~220-230V/12V 1A
- USB Interface cable for connection with PC
- Grounding wire

Before equipment start up make sure that delivery set is complete and nothing missed or damaged. If the above items damaged or missed, please contact your supplier.

4. Start Up

4.1. First Switch On

First of all, please read the present Manual for Safe Use. Then, the procedure is as follows:

- Unpack unit;
- Place it on a flat and hard surface of the desktop;
- Place the unit in a way to ensure maximum ease of movement for operator and avoid appearance of foreign subjects against fan blades;
- Fix a ground wire with a control nut on a unit housing case panel. Other end of the ground wire connects to ground terminal.
- For a work of FC-500 under PC control drivers are to be installed to computer prior the work (driver can be downloaded from our web-site or installed from media supplied with Reworking Center), after that connect unit to PC using supplied USD interface cable.
- Connect Power adapter to a terminal at unit FC-500 housing first and then to a power line 220V. Red indicator near “power on” bottom will start blinking.
- If it is necessary you can adjust Cooling unit height position. For this matter unscrew screws on housing and install these into other fixing holes on supporter. Air flow angle can be also adjusted against PCB in a work.

The unit is ready for an operation.

5. Equipment operation

5.1 Operation and Process control

Press the Power on/off button. The red light will be lit on constantly, and built-in fans will gain the necessary rotation speed.

Direct the air flow from device louvers on the circuit board. Adjust the desired air flow speed of the cooling by pressing [+], [-]. The speed may have 16 fixed pre-sets of airflow rates which are changed discretely.

The flow rate can be evaluated on a scale of four LEDs positioned next to the control buttons.

Never insert foreign objects or fingers against the fan blades, this can lead to injury or damage to the product.

Working with FC-500 under PC control please study “Termopro-Center” Program Manual in Sections referring FC-500 unit control.

5.2 Process of working completion

- Shut down the “Termopro-Center” program.
- Turn the power off
- Disconnect power adapter from Power supply line.

6. Maintenance

- Make sure that ground cable has no defect and damages, and its terminals are properly fixed.

- Remove a dust from the unit surface.
- Make sure that all four built-in fans are rotating.
- Replace a fan in case of increased noise level.

7. Terms of Warranty limitation

The Manufacturer reserves the right to introduce any changes into design, working scheme, internal program of the Controller and into software, supplied with equipment, any time and without preliminary notification. The present Manual also can be changed any time without preliminary notification.

The manufacturer is committed to the toll-free repair or replacement of hardware components **within 12 months**, subject to the user's manual of recommendations set forth herein. Possibility of warranty repair service is determined by an authorized local service company or by the manufacturer after the examination (inspection) equipment.

For repairs, contact the organization at the place of purchase of the system. After the warranty period repair is possible for an extra charge. The cost of repair is determined by an authorized local service company or the manufacturer after the examination of faults.

The Manufacturer does not provide Warranty services either obvious or undermine if these are not presented and listed into the Clause. Any undermine warranties are limited by the present warranty by Law.

Within Warranty period:

The manufacturer provides free repair or replacement of the defective product (products) of its with similar product without defects during the limited warranty period. If the product is no longer available, the defective product will be replaced with the

same product or a similar type, if a defect in material or workmanship is found within the limited warranty period.

The warranty period starts from the date of first customer purchase. Evidence of the date of purchase is a waybill or transport company consignment note with date delivery to the first customer. Also, the reference period of the guarantee may start from the date specified in the warranty card manufacturer provided if the product serial number, signature and seal of the trading organization are presented on the card.

If the buyer can not submit the above mentioned documents, the warranty period begins on the date of product acceptance by Manufacturer product control department. Date of acceptance is determined by the serial number of the product. This limited warranty does not extend to any product from which the serial number has been removed (or replaced). Warranty repairs carried out on the territory of the manufacturer, and any transport costs borne by the Buyer. The warranty period is extended for a period of the product repair. Extending the guarantee does not apply at the time of return shipment of the product to a place of repair.

The Buyer has to cover the costs of materials and repair job, if a warranty service work is carried out when warranty period is over.

Manufacturer warranty within the warranty period in applied at:

- Materials used for manufacturing;
- Quality and precision of mechanical parts work;
- Assembly correctness and calibration of equipment.
- Stability in time of declared technical characteristics and functions.

Manufacturer Warranty does not cover following:

- Natural wear and loss of materials and parts.

- gradual loss of electrical contacts due to high temperatures exposure in combination with corrosive vapors of materials used, and other external factors.
- Destruction of the paint, electroplating, corrosion due to high temperatures exposure and corrosive vapors used in the materials as well as other external factors.
- Violations of the present manual recommendations by user during equipment operation.
- Mechanical or other damage to the product due to negligence of User.
- Unauthorized changes of design or electrical schematic by User.
- Attempts of unauthorized repair.
- Improper and untimely maintenance.
- Damage to products due to improper transportation.
- Any damage caused by natural disasters, earthquakes, lightning, abnormal voltage or environmental influences.

All costs the manufacturer carries for non-warranty repair and/or replacement are on a buyer's side.

The manufacturer does not hold warranty for the following materials and products:

- Perishable parts
- Lubricants
- Packing materials and manual itself
- Cables, connectors from other manufacturers supplied in a set with equipment (these are covered by its manufacturer warranty).

8. Disposal

Disposal of old and replaced equipment parts, spare parts and/or the center as a whole should be carried out by the Buyer or the End User in accordance with the laws of Your Country.

Design and production of all “ThermoPro” devices,
“ThermoPro-Center” Software and all rights to this brand owner is
OOO NTF “Techno-Alliance Electronics”

Russian Federation 113570, Moscow, Ulitsa Krasnogo
Mayaka, 13, k4
Tel: +7 (495) 231-37-21
<http://www.termopro.ru>, E-Mail: ta@termopro.ru



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V. Kuzichkin, A.Rukavishnikov
Editor: E. Shulika
English Translation: M.Kondrashov

All notes, advices, recommendation as well as information
about mistakes can be sent to company mail: termopro2010@mail.ru