Operating Manual
Jetronix-Eco

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This User Guide provides detailed guide on how to use the Jetronix-Eco Software

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About this Guide

This document is divided into the following chapters:

- Chapter 1, "Introducing Jetronix-Eco Product Information".

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- The glossary   provides definitions of technical terms that appear in the guide.

"Jetronix-Eco" Operating Manual organized in chapters and ends with a glossary of the terms and abbreviations used.

Chapters contain all what's related to the Product features, Technical Data, Safety precautions Product initial Set up, operating instructions and warranty policy ends how to get the Technical support.

Table of content in the soft copy version is dynamic (cross reference); Right click over any content then Ctrl + Right click will direct the reader to the content location.

For more detailed information regarding features, capabilities, and Technical Information introduced with this release, contact our Live Technical Support through SKYPE account jovysystemscs duty time is 10am to 5pm daily (China Local Time). Alternatively, send email to support@jovy-sys.com or fill in a support form, from this link http://www.jovy-sys.com/jovysystems/en/contacts/contact-us.html.

For the most current version of this document, please visit: http://www.jovy-systems.com/

1   Introduction

1.1   Purpose

 "Jetronix-Eco" Rework System is introduced by Jovy Systems® Limited as the first product in the Jovy Systems' Economic Rework System lines. This operation manual provides the detailed information about the product. Product feature shows what the product made for, as well the field of application.

The Safety precaution is very important for user, product and work space safety. User should follow and print it out if necessary

The Operating Manual provides a standard guide for the user. The user can develop own operating method after complete understanding, following and practice the information in this Manual.

The Operating Manual is the only reference for using Jetronix-Eco, it is recommended to read it carefully before using the product.

1.2   Jetronix-Eco Features

- Economical Rework Station with high performance.
- Powerful machine: (max heating power: 3200 watt).
- PID temperature control based microprocessor technology.
- Three heating zones, Reflow zone, Inner preheating zone and Outer preheating zone.
- Close loop heating environment.
- Upper heater can move Up/Down, In/Out and rotate 180°.
- Two Channels thermocouple real time temperature reading (one optional).
- Flexible thermocouple mounting embedded in a Flexi - tube.
- Max application size to (290x315mm).
- Three stages for full process control.
- Separate preheating stage for uniform preheating.
- Built in 1 Watt LED light source.
- Powerful pick up tool up to 150gm lifting power.
- Graphical widescreen LCD.
- Elegant user interface design.
- Saving up to 50 profiles in machine memory.
- User friendly software interface via USB 2.0.
- Convenient work space.
- Safety and alarm functions to protect PCB or application damage.

1.3   Jetronix-Eco Field of Application

- BGA on Flex printed circuit.
- PTH connectors, card slots and sockets.
- Metal components housing.
- Micro lead frame.
- PBGA with heat sink.
- Processor plastic sockets.
- Metal Shielding.
- CSP and fine pitches BGA.
- Plastic PLCC.
- Through- hole sockets.
- Heavy Mass CCGA & CBGA.
- Under fill or epoxy coated components.
- QFN, VQFN and advanced design QFN.
- Package over package (POP)...
- Graphical widescreen LCD.
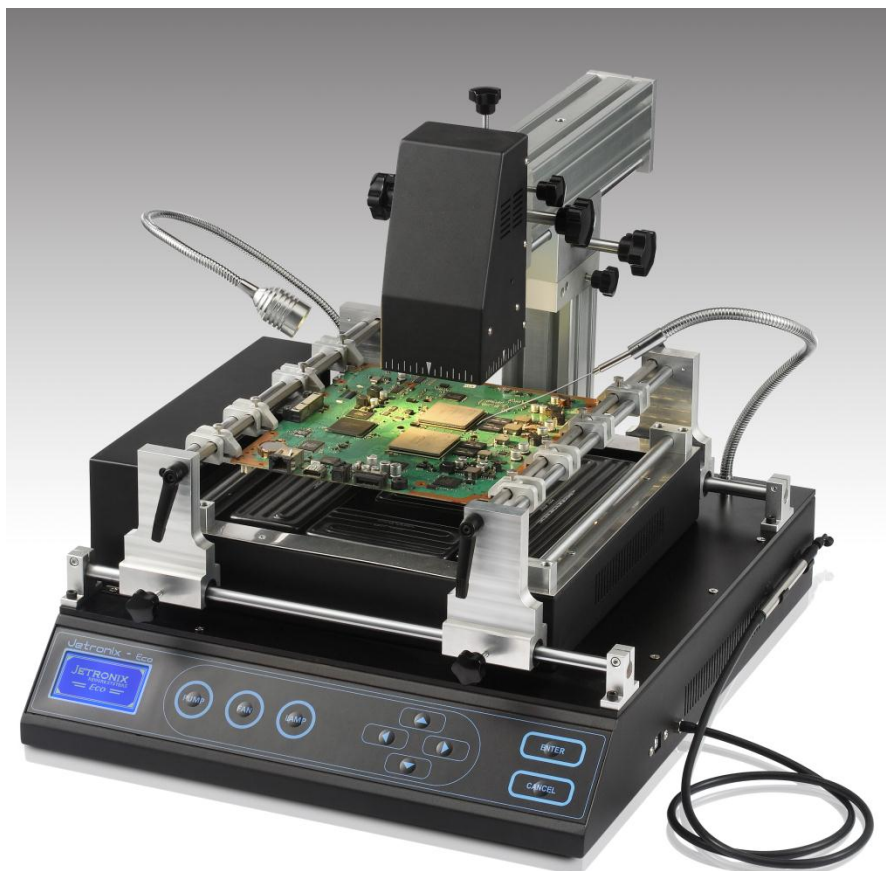
2   Jetronix-Eco Technical Data

2.1   Product Technical Specification

Upper heater Power	400 watt-Jetronix(special made)
Upper heater size	80*80 mm
Lower heater power	2800 watt-Jetronix(special made)
Lower heater size	245*245 mm
Total power	3200 watt
Control Method	PID controlling method
Light source	1 Watt LED, Built in with flex tube
Thermocouple type	K-type ,Built in with flex tube
LCD Type	128*64 Pixels Graphical LCD
Power Supply	220 Volt AC,50/60 Hz.
USB connectivity	USB 2.0
Suction Pump	60-90 dpi (Lifting power up to 150 gm)
Cooling fan	Horizontal Cross flow Fan
Max. Application size	290*315 mm
Total weight	30 Kg

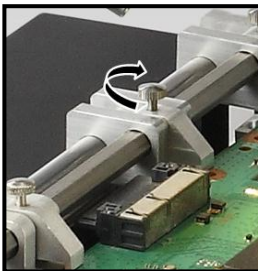## 2.2   Jetronix-Eco Main Parts Description

2.2.1   X/Y Movable PCB Holder
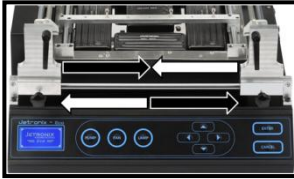
The X/Y movable PCB holder, the base equipped with bearing to guarantee smooth movement. The maximum PCB size is 290mm x 315mm

The PCB holder base fastener is known to stop the movement after placing the PCB over the holder.

PCB clamp, to tighten the PCB over the holder and the fastener screw is to prevent the PCB from moving or sag during the heating process
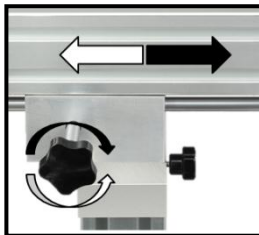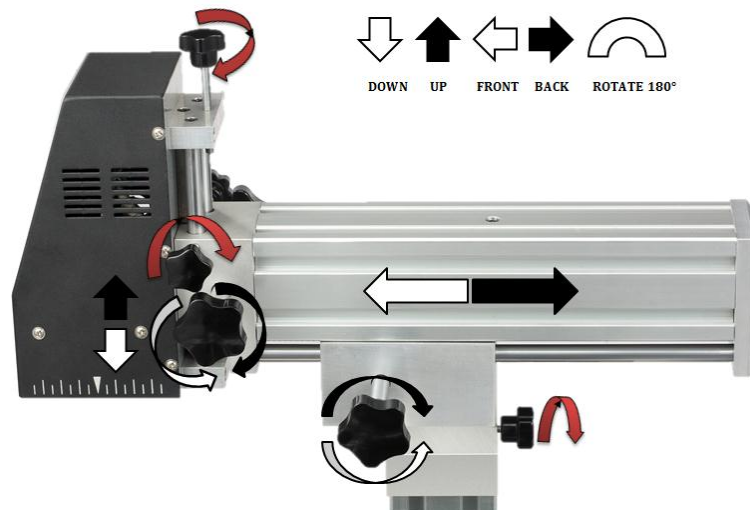

PCB clamp to be open before placing the PCB. There are four movables along the clamp rail, for fixing the PCB from its flat edges.
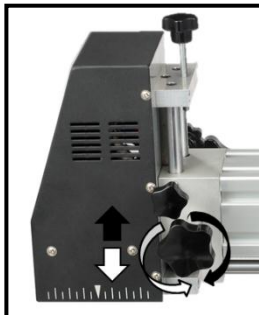

PCB clamp to be closed after placing the PCB. The used clamps should not be closed over or make minimal stress to any PCB components.
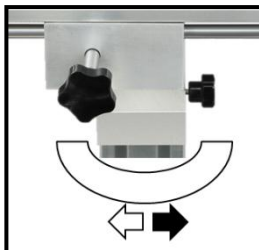
2.2.2   Upper Heater Movement Description

Upper heater Arm move Forward and Backward. **The F/B Knob driver** controls the movement through gears and two roll bars.
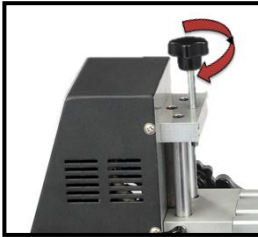
Upper Heater Block moves Upward and Downward. **The U/D knob driver** controls the movement through gears and two roll bars.

Upper Heater Block with Arm together Rotate 180° from Left to Right and reverse. **L/R rotation fastener** Stop the arm and make it non-movable.
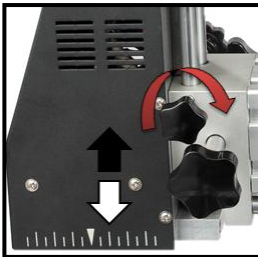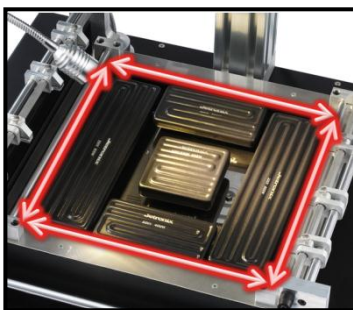
Upper heater Block safety fastener

Upper heater Arm L/R rotation fastener

Upper heater Block fastener

2.2.3   Heating Zones Technical Details

Lower Heaters segmented in Two Zones. Total Heaters Power is 2800 watts.
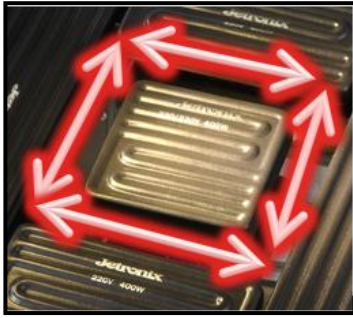
Lower Heater Zone 2 – Middle Heating Area, Heater size is 80mm x 80mm with total power of 400 watts
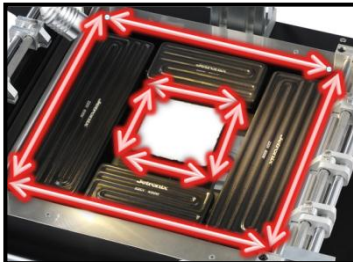
Lower Heating Zone 3 – Sides Heating Area. Two heaters of 60mm x 120mm with total power of 800 watts (400 watts x 2) and Two heaters of 60mm x 240mm with total power of 1600 watts (800 watts x 2).
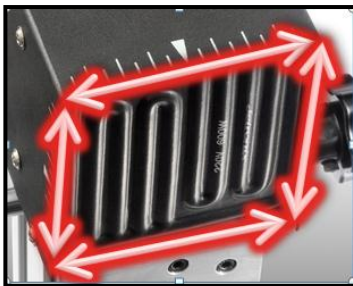
Upper Heating Zone 1 – Upper heating Area.

One Heater of 80mm x 80mm with total power of 400 watts.

2.2.4   Machine peripherals
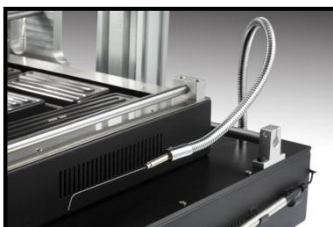
Built-in K-type thermocouple embedded inside Flex tube for easy placement over the PCB.

Optional K-type thermocouple channel.
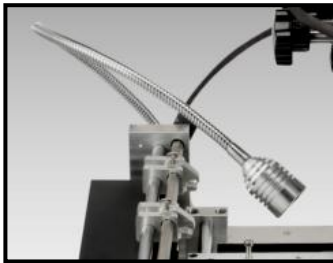
LED light source embedded inside Flex tube for easy placements. It is switched ON/OFF from LAMP button

Cross flow cooling fan directed above the lower heaters level and under the PCB level to provide cooling air carpet without direct effect to the PCB or the Process. Automatically switched ON/OFF from the settings, or manually from FAN button.

Two large PCB supporters to prevent PCB damage during the heating process.

The suction pen with high power of 60 dpi to 90 dpi (lifting objects up to 150gm weight).

Switch ON/OFF the pump from PUMP button.

2.3   Operating precaution

• Please carefully read the relevant information provided by the manual before starting using this machine.

• Make sure that the power cord has been properly connected before using the machine.

• Install the rework station at a location free from splashing of water or other liquids.

• Install the rework station in a dry location.

• Install the rework station at a location free from excessive dust.

• Install the rework station at a location away from inflammable.

• Before starting any process, install the rework station at a location free from the direct airflow impact from air Conditioner, heater or ventilator.

• Regularly clean the surface of the machine especially the guard glass.

• For more safety, please wear heat-proof gloves and never touch the high-temperature zone.

For further information or technical inquiries please write to support@jovy-sys.com

2.4   Safety instructions

- *Fire and explosion hazard*

The upper heating element and the lower heating element become very hot during operation. Flammable objects, liquids, and gases, must be removed from the work area of the device!

CAUTION Do not use the system to heat any liquids, or containers under pressure. Batteries and electrolyte capacitors can explode if heated excessively.

- *Attention burn hazard*

Hot housing elements should not be brought into contact with the skin or materials that are sensitive to heat. The housing parts of the IR system remain hot for several minutes after a rework process.

- *Attention*

The device contains voltage-conducting parts. There is a risk of fatal injury if inexperienced personnel work on the unit.

Only experienced and qualified electricians may perform repair work.

Choose the supply power voltage standard. (220V-250V/50Hz or 60Hz) before installing to avoid possible electric shock caused serious damage, please disconnect the power cord from the outlet temporary before moving machines.

Pull out the power if don't use the machine for a long time.

3   Initial Setup

3.1   Machine package contents

The machine package includes the following items

- Basic unit
- 3 heaters, 1 heater from each type
- Two PCB Supporters
- Operation Manual
- USB cable
- Suction pen and nozzles.
- CD includes all needed operational files

3.2   Machine Initial Setup

- Take out the Basic Unit and put it on the horizontal workable. Please note that the machine weight is 30Kg.
- Remove any plastic or packing materials or any residues might burn when switch the heaters first time.
- Please make sure that the supply voltage accords with the rated voltage on the system nameplate then connect the power cord. 220V-250V/15A
- Insert the vacuum tube into the suction pump nozzle
- Run the CD and install the software package and USB driver.

4 Operating instructions

4.1 Getting started

- Connect the machine to power source and switch on the machine, the

welcome screen will be displayed .

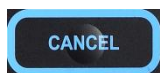- When the LCD display Main Menu Screen go to settings

, scroll Up/Down using the UP and Down press

buttons to change the setting parameter press Right to increase or Left to decrease the value or to toggle between the

available choices. Press Enter for Settings Menu . Press
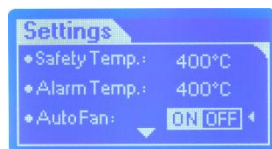
 to return to Menu or cancel the input.

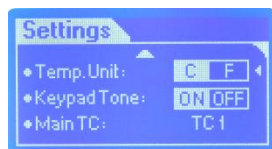- Settings Menu includes the following functions parameters

  o Safety set point, at this temperature value all heaters will turn off and the cooling fan will turn on.
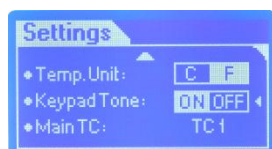
  o Alarm set point, at this temperature value the machine buzzer will start working, as audible warning.

o Auto Fan, ON to run the fan after process Profile ends. OFF to run the fan manually from Fan button.

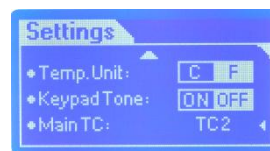o Temperature Unit, to set the temperature reading display in °C or °F.

o Keypad Tone, On to activate audible sound with each press of any keypad button. OFF to deactivate the audible sound.
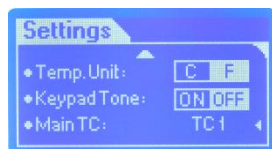
o TC1 is the default Main Thermocouple reading – Built in machine thermocouple, to choose the optional

thermocouple as main TC, choose TC2 .

4.2   Process Profile Parameters

4.2.1   Create

Jetronix-Eco Process Profile divided into optional 1 to 4 stages, user can create a process profile of at least 1 stage. Preheat stage is pre-programed and heaters power predefined, while in other stages, the user defines the heater power for each zone.

From Main Menu choose Profiler and press Enter

. Then, create a profile .

The first screen to define the process profile stages, if the preheat stage needed, choose ON. To skip the preheat stage, choose OFF
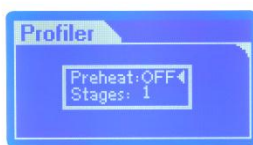
To determine the number of user defined stages set the stage's input to the required stages number 1, 2 or 3.

The required inputs in preheat stage is the stage's end temperature and

dwell time needed at this temperature   .

The process profile parameter of the user defined stages includes more

inputs for each heating zone power setting   .

In the main tab use the Right and Left buttons for selecting stages to set its parameters or review it.

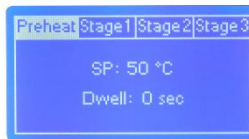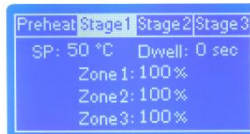To set a stage's parameter press Up or Down button to scroll between parameters and change the parameter input value by press Right button (increase) or by press Left button (decrease).

Parameters of each predefined stage are as follows:

- Stage's end temperature value .

- Time at end temperature (Dwell time) .

- Upper heater power Level from (0% to 100%) .

- Middle heater power Level from (0% to 100%) .

- Side heaters power Level from (0% to 100%) .

4.2.2   Save process profile

After input the process profile paramters, save the profile in the machine memory (Memory can save up to 50 profiles).

Press enter and choose Save profile   .

The Process Profile will be numbered according to the available empty

profile numbers in the machine memory   .

Write a Name for each Process Profile, choose from letters (A to Z),

Numbers (0 to 9)   or space character, the Name is 5 digits long.

4.2.3   Run a Process Profile

Run a Process Profile just after creating new one (the Process Profile could run without saving) by choosing Run instead of Save , or Run a Save Process Profile saved in machine Memory

.

The Process Profile parameters will be displayed to ensure the settings before running the profile.

The Running Process window displays the temperature and stage status

(the finished and running stages will be in white color).

The Thermocouple readings display the attached thermocouple readings (TC1, TC2 or both).

The Process profile time displayed in minutes and seconds.

4.2.4   Delete a specific Process Profile

Delete specific Process Profile from the machine memory by choose Erase

, then choose the profile number   and

confirm Delete   .

4.2.5   Erase all profiles in machine memory

Delete all Process Profiles saved in machine memory in one step by

choosing Format   , and confirm Delete all

.

A message will be displayed that no profile if the format process succeeds.

5   Warranty Policy

Thank you for purchasing Jetronix-Eco, you did your best decision. We committed to quality and warranty as follows:

The complete machine has a warranty period of 6 months from the time of purchase.

The package includes extra spare 3 heaters from each heater type, easy to install.

Warranty applied only from machines sold through our official distributors or authorized resellers.

6   Getting the Technical Support

For after sales service at utmost levels and Jovy Systems customer care, we have many support ways in the following points:

• Many process profiles for the common applications.

• White papers.

• Videos.

• Live support through SKYPE.

We provide online troubleshooting support and technical advice service through the web site www.jovy-sys.com by support tickets. Alternatively, refer to Getting the Technical Support.

We also support software and drivers for the any updates.

Visit www.jovy-systems.com .

7   The Glossary

TC-1	Main Thermocouple
TC-2	Optional Thermocouple
SP	set point, Temperature value for process profile Stage's end
Zone1	Upper heater heating zone
Zone2	Middle heater heating zone
Zone3	Side heaters heating zone
°C	Celsius
°F	Fahrenheit
OFF	For exclude the preheating stage from the process profile
ON	For include the preheating stage as one of process profile stages
Sec	Seconds