



JOVY SYSTEMS

RE-7500



User Manual

Rev. 1.21

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Introduction

Jovy Systems was established in the year 2005. Actual production phase started late 2006, with our first product the RE-7500, which used for the reworking of BGA & SMD.

The IR Technology used gives the RE-7500 the opportunity to fit in a wide range and variety of applications fields, for example, GSM, Networking, Medical, and Military fields as well. This makes RE-7500, the optimum solution to a large sector of the BGA & SMD reworking communities.

This manual structure enable a technician with no previous knowledge of the system, to become familiar with the operation and maintenance using RE-7500 Reworking System.

The safety section of the manual explains the *inherent dangers* presented by any type of soldering/de-soldering equipment and warnings to minimize the risk of injury due to ignorance.



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Jovy Systems Limited Standard Warranty

Limited Standard Warranty

Warranty Policy

Jovy Systems warrants that (i) Jovy Systems has all Intellectual Property Rights necessary to sell the Jovy Systems Products, and to license the Software in accordance with the terms of this policy; and (ii) each Jovy Systems Product will be free from defects in material and workmanship and will conform to Jovy Systems specifications for the particular Product for a period of 12 months from the date of delivery.

Jovy Systems exclusive remedy for any defective Product is limited to the repair or replacement of the defective Product at Jovy Systems sole discretion. Jovy Systems will have a reasonable time after determining that a defective Product exists to repair or replace a defective Product. Jovy Systems replacement Product under its limited standard warranty will be manufactured from new and serviceable used parts. Jovy Systems warranty applies to repaired or replaced Products for the balance of the applicable period of the original standard warranty or ninety days from the date of shipment of a repaired or replaced Product, whichever is longer.

All defective Jovy Systems Products, or defective components thereof, returned under this warranty shall become Jovy Systems property.

Limitations

The foregoing warranties apply only to Jovy Systems Certified Partner's and to its End-Users. Jovy Systems shall have no obligation to provide warranty services if the Material Defect in the Jovy Systems Product is caused by: (I) a malfunction of non-Jovy Systems hardware or software, (II) modification of the Jovy Systems Product not made by Jovy Systems, (III) operator error, (IV) use of the Jovy Systems Product that is not in accordance with the operating instructions for the Jovy Systems Products. Jovy Systems will accept warranty returns only from Certified Partners and Certified Partners must arrange all details of such returns with End-Users eligible under the foregoing warranties.

Jovy Systems has no liability for general, consequential, incidental or special damages. These includes lost profits and the cost of the installation or removal of any Products, the installation of repaired or replacement Products, and any inspection, testing, or redesign caused by any defect or by the repair or replacement of Products arising from a defect in any Product.

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Packing List

RE-7500 Package includes:

- RE-7500 Station
- Power Cord
- X-Y Table
- Instruction Manual
- USB Cable
- Suction Cups
- Extra Fuse
- Thermo Couple
- Vacuum pick up prop
- Hex Allen Key

Specification

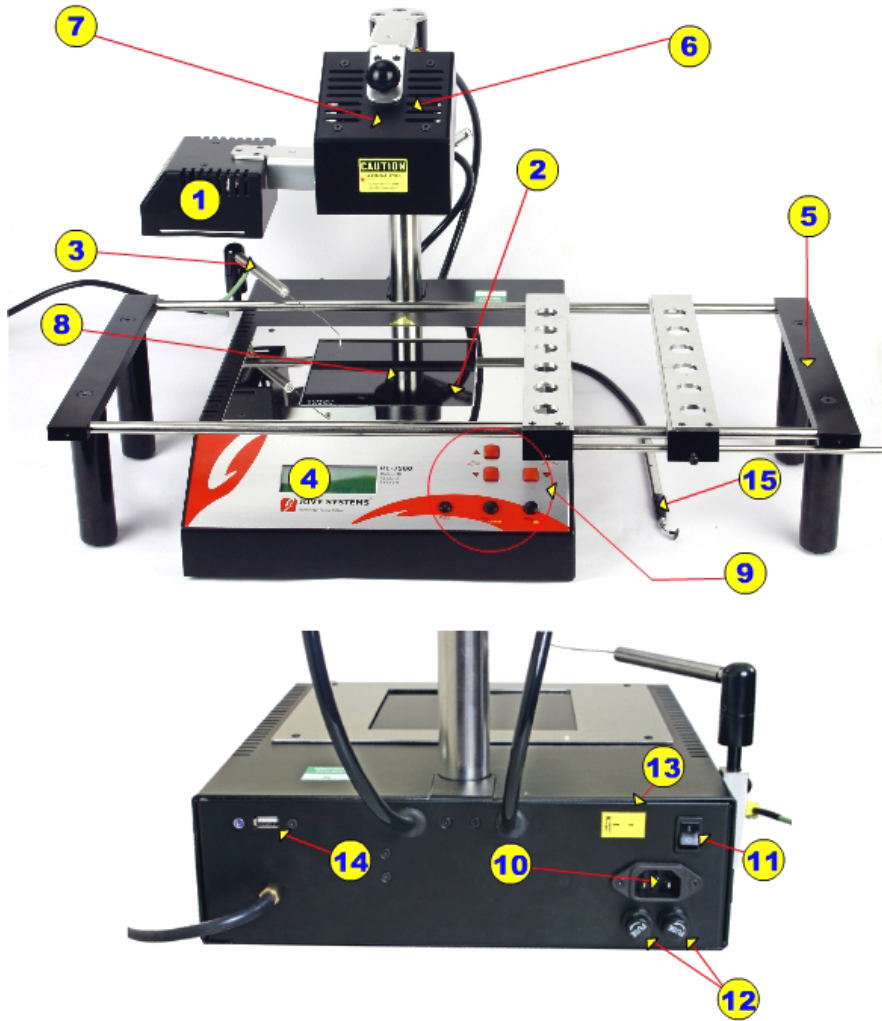
Top heater Power	Max. 300W
Pre heater Power	Max. 600W
Voltage frequency	220 Volts 50 HZ
Max board Size	350 mm x 450 mm
Gross weight	16 KG

Safety/Caution instruction

 For Safety reasons, please note the following carefully 

- This unit operates by electricity. And some components within the device have high dangerous voltages applied to them.
- Failing to follow the operating instructions could result in death, serious injuries, and/or extensive damage to property!
- Never open the housing or one of the Infrared heaters while main plug is connected.
- Do not use the units for any purpose other than which they are intended to. Use it according to the operating instructions.
- This equipment must not be switched on or used without supervision.
- The unit should be switched-off or in idle state while not in use, leaving it ON may cause overheating.
- Do not place any flammable material in the vicinity of the Infrared heater.
- Do not allow the spillage of any liquid to be on the ceramic emitter as damage may occur.
- Please use the Infrared heater only on a level and non flammable surface.
- When the Infrared heater is in use, its housing and the areas exposed to the infrared rays can reach a high level of temperature. Please do not touch the housing until it has cooled down.
- Any maintenance of the units is only permitted by a JOVY SYSTEMS certified service technician.
- Please also pay attention to the safety regulations applied in your area.

RE7500 Hardware Description

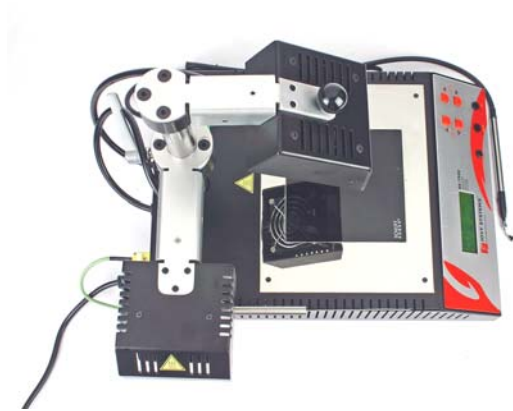


- 1- Upper Heater
- 2- Down Heater (Pre-Heater)
- 3- Thermocouple
- 4- LCD
- 5- X-Y Table
- 6- Cooling Fan
- 7- Laser Pointer
- 8- Guard Glass
- 9- Control Switches
- 10- Power Plug
- 11- Power Switch
- 12- Fuses
- 13- Thermocouple Plug
- 14- USB Port
- 15- Picking-Up Tube

Operation

A) Operation Modes:

1 - Park Mode:

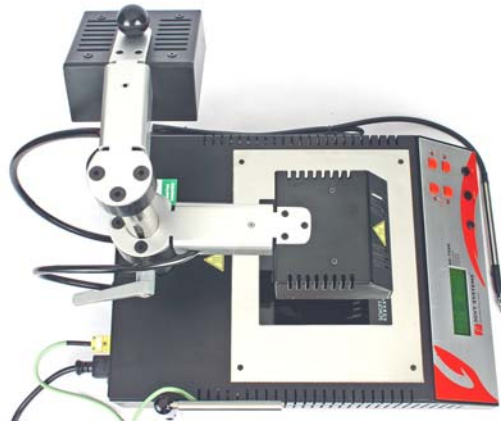


```
U.H.: OFF
PCB Temp.: 25° C
L.H.: OFF
**** PARK MODE ****
```

This mode is used in the following cases:

- Before process to align the PCB using the Laser pointer.
- After process to cool down the PCB using the cooling Fan
- During process in preheating the PCB and before start Reflow stage.
- In Park Mode the upper heater is always OFF. (Except while applying a profile).

2- Normal Mode:



```
U.H.: OFF
PCB Temp.: 25° C
L.H.: OFF
*** NORMAL MODE ***
```

- This mode is used while process to use the upper heater in Reflow stage.
- In Normal Mode the cooling Fan is always OFF (Except while applying a profile).

3- Sleep Mode:

```
1.ALARM SETPOINT
→ 2.SLEEP MODE TIME
3.Temp.UNIT °C/°F
```



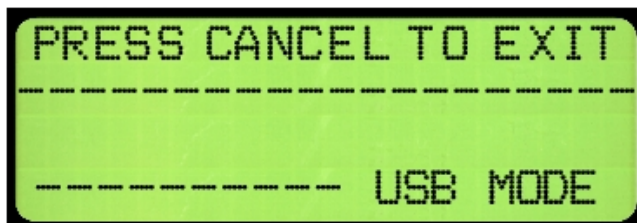
The default mode of the machine, in this mode, all parts of the machine are turned OFF.

- This mode designed to assure safety of the machine and the User as well. In this mode you can adjust a timer between 5 min to 30 min. IF the machine is left working without any key is pressed for this period, it will go into sleep mode.

4- Profile Mode(Pre-Programmed mode):

- Lead free pre-programmed profile for lead free PCB soldering.
- Profile 1 & 2 is a user's pre-programmed profile.
- You can download Profile 1&2 from Jovy Systems support area www.jovy-sys/vip , or user can create his/her own profile.
- To upload/create a profile into RE-7500 please refer to Part (G) *REJOVY software*.

5- PC and USB modes:



- This profile is used while plugging the USB cable to PC. By pressing any key you will exit this mode.

B) Heaters Modes

1- Lower heater (Pre-heater):

It has 4 states as follows:

- OFF by default.



```
U.H.: OFF
PCB Temp.: 25°C
L.H.: OFF
**** PARK MODE ****
```

- **Pre-Heat (PH)** which about 400°C (752°F) and reach this value from room temperature in 3 min.



```
U.H.: OFF
PCB Temp.: 25°C
L.H.: PREHEAT
**** PARK MODE ****
```

- **Reflow (RF)** which about 500°C (932°F) and reach this value from room temperature in 4 min.



```
U.H.: OFF
PCB Temp.: 25°C
L.H.: REFLOW
**** PARK MODE ****
```

- **Fast Reflow (FR)** which about 750°C (1382°F) and reach this value from room temperature in 5 min.

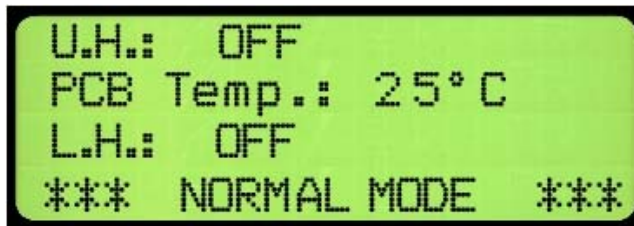


```
U.H.: OFF
PCB Temp.: 25°C
L.H.: FAST REFLOW
**** PARK MODE ****
```

2- Upper Heater :

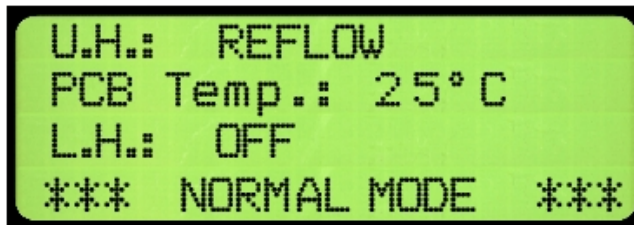
It has 3 states as follows:

- OFF by default



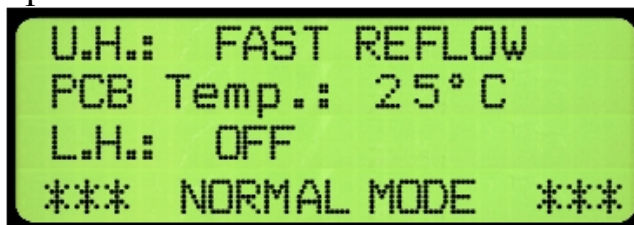
```
U.H.: OFF
PCB Temp.: 25°C
L.H.: OFF
*** NORMAL MODE ***
```

- **Reflow (RF)**: which about 600°C (1112°F) and reach this value from room temperature in 50 seconds.



```
U.H.: REFLOW
PCB Temp.: 25°C
L.H.: OFF
*** NORMAL MODE ***
```

- **Fast Reflow (FR)**: which about 800°C (1472°F) and reach this value from room temperature in 1 min.



```
U.H.: FAST REFLOW
PCB Temp.: 25°C
L.H.: OFF
*** NORMAL MODE ***
```

* Room temperature is measured as 25 °C (77 °F)

C) Machine Settings

- **Alarm Set point:** From this Menu you can adjust the alarm of the machine to beep in a certain temperature between 20°C (68°F) to 400°C (752°F).



```
→ 1.ALARM SETPOINT
   2.SLEEP MODE TIME
   3.Temp.UNIT °C/°F
```

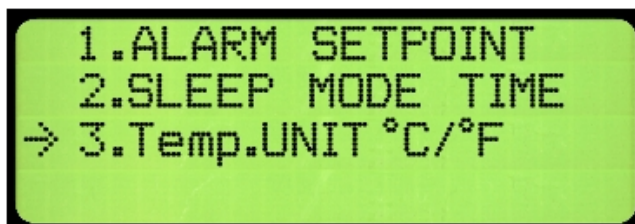


```
ALARM SETPOINT
-----
      220°C
```

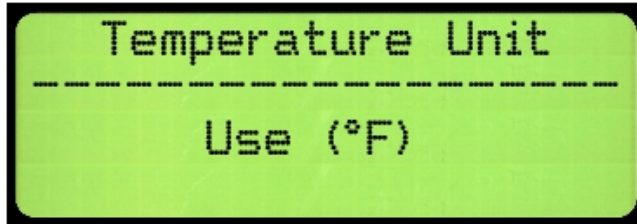
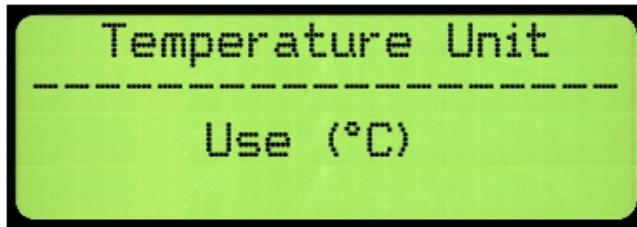


When you scroll UP & Down this Menu do not press the Key for more than 3 seconds (System Protection).

- **Temperature Unit:** From this Menu you can convert the display temperature from Centigrade to Fahrenheit and vice versa.



```
1.ALARM SETPOINT
2.SLEEP MODE TIME
→ 3.Temp.UNIT °C/°F
```



D) Keys Functions of RE7500

- **Upper Heater (UP-Down keys):** used only to change Upper Heater Status.
- **Lower Heater (UP-Down keys):** used to change Lower Heater Status and to scroll up & down in menu also to setup any machine settings.
- **OK/Menu:** used to open menu and also to select any item inside the Menu .
- **Fan/Cancel:** it has two statuses, 1st when you are viewing a menu it will act to cancel and 2nd when you are outside any menu it will power ON the cooling Fan. (if Re-7500 in Parking mode)
- **Pump:** used to Power Pump ON/OFF only.

E) How to start

- Adjust the PCB to the XY table out of operation area.
- Every time you power ON the machine you should leave the Lower Heater on Reflow Mode for 5 min until the Guard Glass become saturated with heat.
- You should align the PCB using the Laser pointer so that the pointer will be in the center of the desired component.
- Make sure that the machine is situated in Park Mode.



U.H.: OFF
PCB Temp.: 25° C
L.H.: REFLOW
**** PARK MODE ****

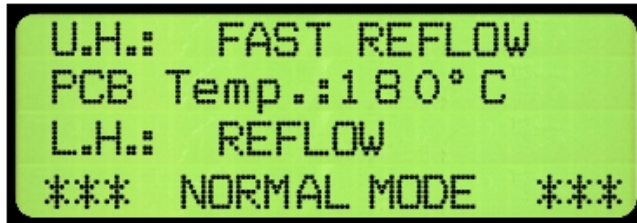
- Put the Thermocouple (TC) in any place near to the desired component.
- Adjust the lower Heater to the desired mode.
- If you have any component which can be affected or damaged by excess heat, you should cover it with reflective tape to prevent Infrared rays to reach it.
- Monitor the screen until the PCB reach a temperature from 80°C (176°F) to 120°C (248°F) .



U.H.: OFF
PCB Temp.: 100° C
L.H.: REFLOW
**** PARK MODE ****

- Rotate the upper heater so the machine enters the Normal Mode, and then adjust the upper heater to the desired mode.

- Monitor the screen until the PCB reaches a temperature between 180°C (356°F) and 230°C (446°F).



U.H.: FAST REFLOW
PCB Temp.: 180°C
L.H.: REFLOW
*** NORMAL MODE ***

- Remove the component using the Pickup tool after you power ON the pump switch. Or use the proper twisters to remove the other components (plastic parts, connectors, etc....)
- Return back the machine to Park mode and press Fan switch for cooling stage.



U.H.: OFF
PCB Temp.: 25°C
L.H.: OFF
**** PARK MODE ****

F) RE7500 pre-programmed Profiles

- Using Profiling feature in Jovy Systems Re-7500 you can control the mode of the two heaters during the process at required temperature.
- In RE-7500 control panel you can only run the profile which already uploaded to the machine.
- To create your own profile and upload it to the machine you must use REJOVY software, also you can run the profile using the same software.
- To start run a profile the machine must be in Park Mode.
- During run profile you will have no control on the machine so you must take care to run the correct profile otherwise you may use the cancel button to exit the profile Mode.
- RE-7500 has 3 ready made profiles Lead free, Profile 1, Profile 2.
- The success time for a profile varies according to room temperature and adjusting the upper heater level so we recommend that you use your own profile.



Before start profile we advice to set the machine alarm to 300 °C (572 °F) or higher so that not to interrupt the process.



In profile, the upper heater can work in Park Mode so you must take care not to put any heat sensitive material in this area.

G) REJOVY software

With REJOVY Software the Complete Reworking process can be archived and documented, The USB Connection between RE-7500 and the PC ease the temperature monitoring/Capturing as well as setting Systems parameters and Profiles to be as easy and fast as doing your Rework systems completely Automated from your PC.

To be able to use REJOVY Soft, have to insure the installation of the Driver correctly.



Be sure to not connect the Machine until you install the REJOVY Soft first.

a) Driver installation

- a. Run REJOVY Soft (available in the VIP Support Area at www.jovysystems.com).
- b. Follow the installation instructions -See Figure (1)-.
- c. After successfully installing REJovy Soft and at this moment you can connect the RE-7500 to your PC USB Port.
- d. The system will detect you Machine automatically and will ask for installing the Driver.
- e. The Driver located under C:\Program Files\REJovy\Driver by default.
- f. Press Continue, thus your Machine is ready to be connected to REJovy Soft.

- g. These instructions only to install the Driver once you connect the machine for the first time, you don't have to refer to Driver installation part each time you run the REJovy Soft with Machine..

b) REJOVY Soft

- a. After installing the Setup application, Program will create a Desktop Icon Automatically.
- b. If the Driver was installed successfully and your Machine is connected, you can run the REJovy by double clicking the icon.
- c. Press "Connect" button to check the connectivity. Your REJovy soft will read the Machine ID and the Firmware ID as well.
- d. For more information and help for the software and its parameters, please refer to the help file provided with the application.

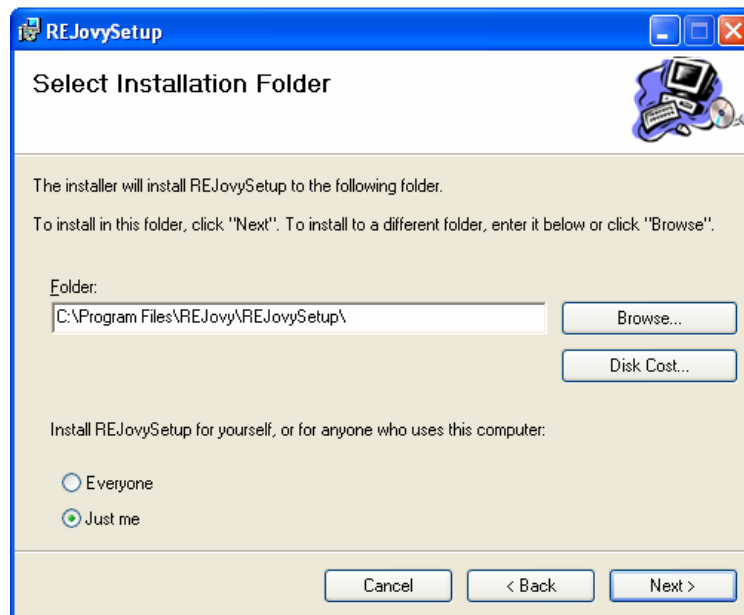


Figure -1-