INFRARED IC HEATER

Smart Reflow Oven User Manual

Model: T-962A V2.0

SHANDONG PUHUI ELECTRIC TECHOLOGY CO.,LTD

http://www.te168.com

CONTENTS

Smart Single Heating Zone Reflow Oven

Ⅰ. PRODUCT DETAILS

1. The product integrates the functions of reflow soldering, drying, insulation, shaping, rapid cooling, constant temperature timing to meet various soldering requirements such as SMD, BGA, etc., and capable of soldering single-sided and double-sided PCB in all packaging forms such as CHIP, SOP, PLCC, QFP, BGA, and more. Widely used in adhesive curing, PCB thermal aging, PCB repairs and other work;
2. The product utilizes microcomputer control to make sure the whole soldering process is completed automatically and the operation is simple;
3. The combination of rapid infrared radiation heating and cooling fan stirring to make the soldering temperature more precise and uniform;
4. There are 8 temperature parameter curves available for selection in the product memory, and it also supports user-defined setting of temperature parameter curves;
5. The product utilizes vague temperature control technology and visualized drawer-style workbench to make the whole soldering process visualized;
6. The product is designed with maintenance-free high reliability, providing you with satisfaction and peace of mind.

Ⅱ. PRODUCT FEATURES

1、POWER SUPPLY：AC220V/50HZ；AC110V/60HZ
2、RATED POWER： 1500W
3、DRAWER AREA： 300 x 320mm
4、CYCLE TIME： 1～8 min
5、MACHINE SIZE： 375 x 450 x235 mm

III. INSTRUCTIONS

EXHAUST PIPE INSTALLATION

STEP 1 Loosen the screw on the fastening clamp of the exhaust pipe.
(size of the exhaust pipe is Φ110mmx1500mm）

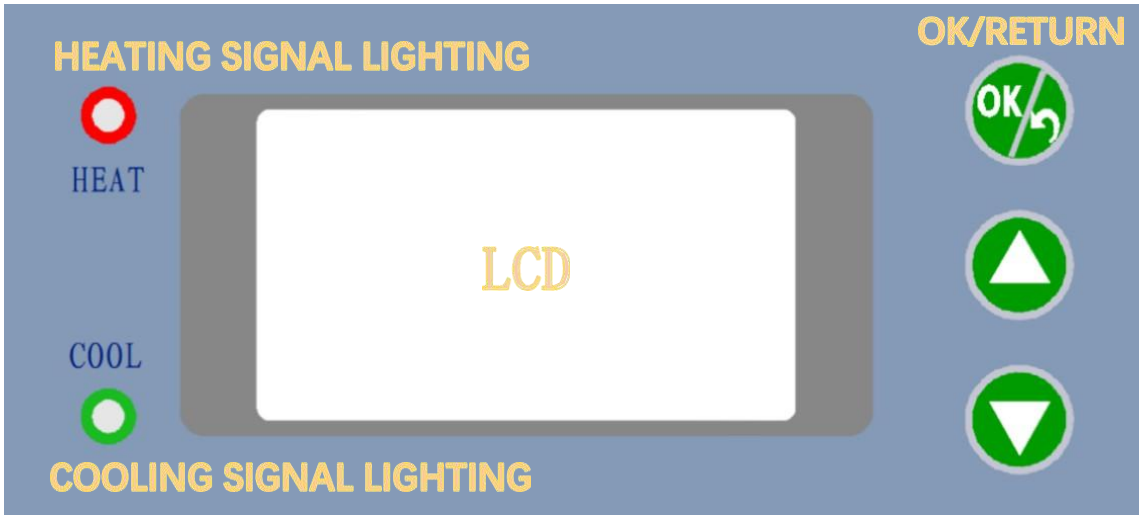
STEP 2 Put the exhaust pipe on the product interface, tighten the fastening screws.

STEP 3 Place the exhaust pipe outdoor.

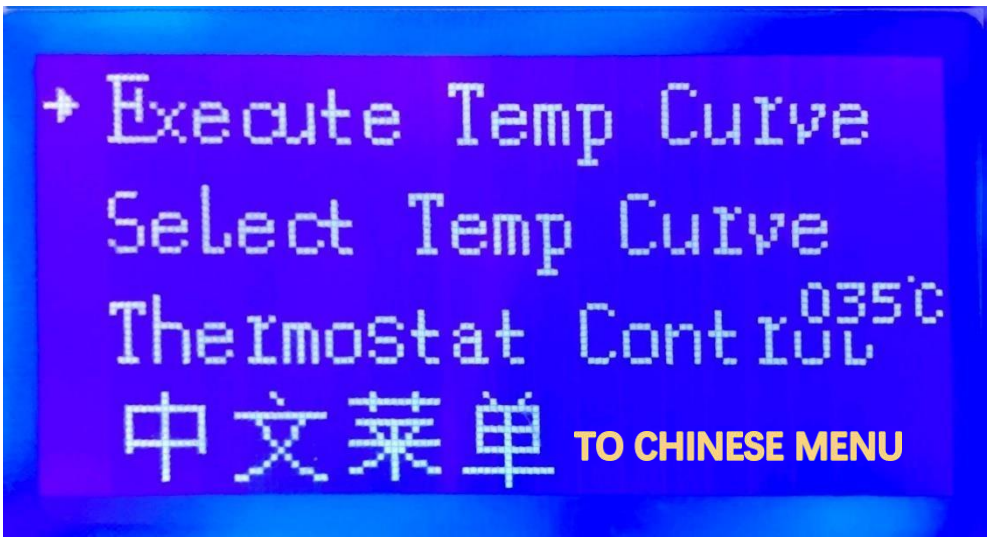
MACHINE INTERFACE DESCRIPTION

STEP 1 Please put machine on the flat tabletop with good ventilation and no combustible items nearby. Reserve space for drawer-pull & push. And leave at least 20mm space around the machine, for heat dissipation. Also ensure smooth ventilation at the bottom.

STEP 2 Operation interface description



STEP 3 Power on the machine, then LCD shows as below:

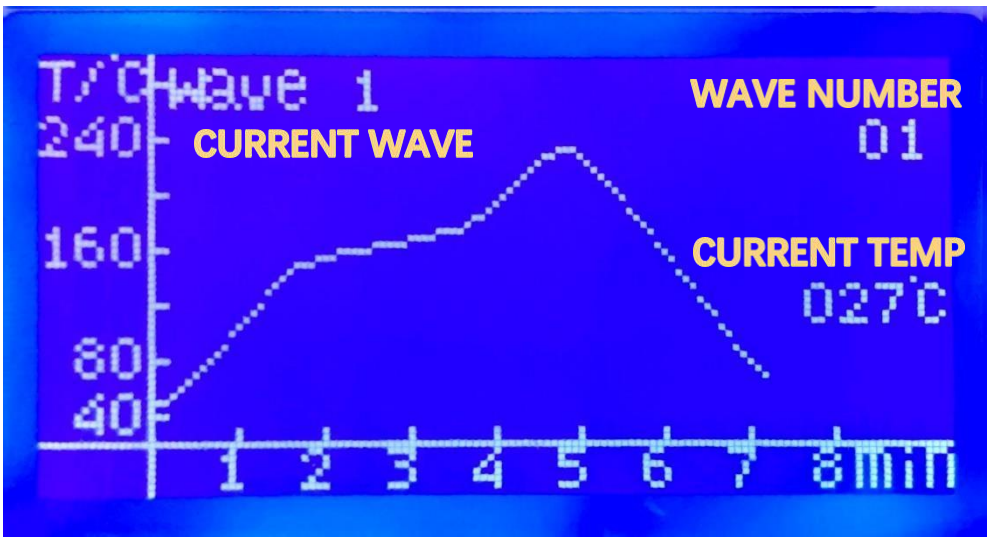


STEP 4 Press▲/▼Button to select functions, press OK/RETURN Button to execute functions or back to the main menu.

SPECIAL NOTE: If the picture in this user manual does not match the machine image, the machine image shall prevail.

EXECUTE TEMPERATURE CURVE

STPE 1 Press▲/▼Button to “Select Temp Curve”, then press OK/RETURN Button, the LCD will show as below:



The initial curve is WAVE 1, press ▲ Button to switch to WAVE 2~WAVE 8.

WAVE 1 for 85Sn/15Pb 70Sn/30Pb;

WAVE 2 for 63Sn/37Pb 60Sn/40Pb;

WAVE 3 for Sn/Ag3.5； Sn/Cu.75 Sn/Ag4.0/Cu.5;

WAVE 4 for Sn/Ag2.5/Cu.8/Sb.5； Sn/Bi3.0/Ag3.0;

WAVE 5 for Standard Curing of Red Glue, Heraeus PD955M;

WAVE 6 for PCB rework etc.

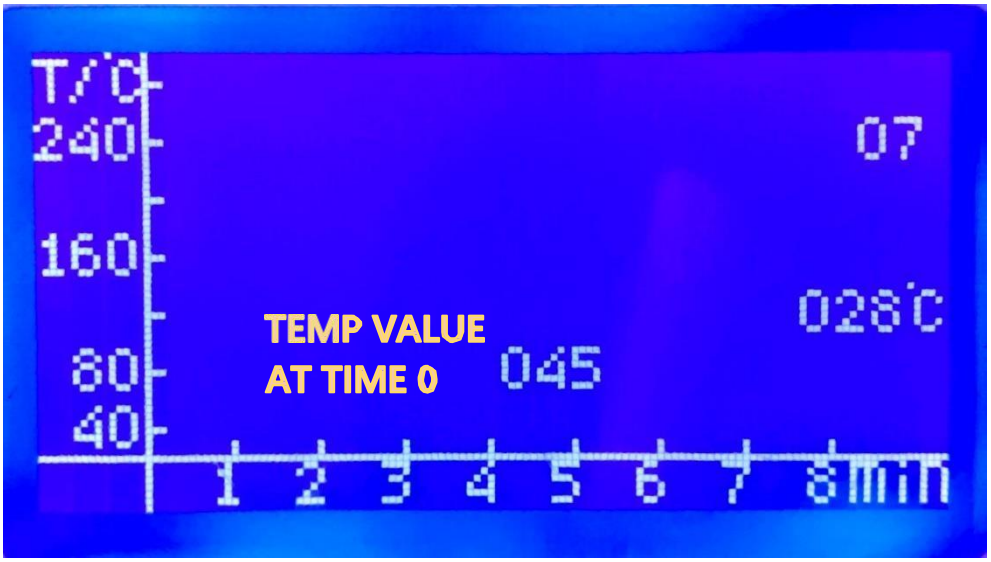
WAVE 7 and WAVE 8 are user-defined curve.

SPECIAL NOTE: The system will automatically switch to the following interface, if there is no any operation for 2~3 seconds. Press OK/RETURN Button to save the curve or back to the main menu.

STEP 2 After selecting curve, press OK/RETURN Button to return to the main menu. Select “Execute Temp Curve”, then press OK/RETURN Button to execute.

SELF-SET CURVE (INDEPENDENT OPERATION)

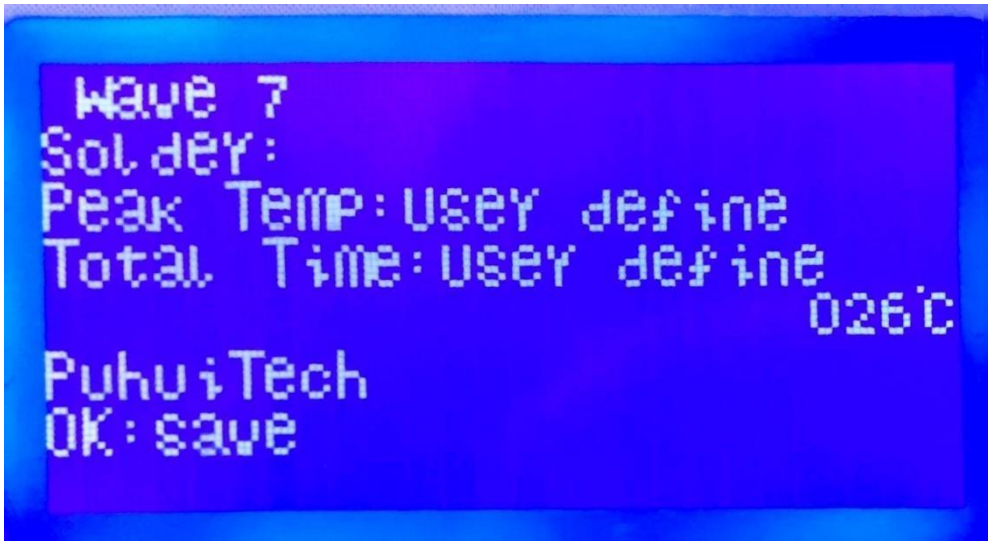
STEP 1 Select “Select Temp Curve”, then select WAVE 7 or WAVE 8. Press OK/RETURN Button enter the following editing interface:



STEP 2 Press ▲/▼ Button to change the temperature value at current time.

STEP 3 Press OK/RETURN Button to set the temperature value, then the system will automatically jump to the next time point. Each time point interval is 5 second.

SPECIAL NOTE: The system will automatically switch to the following interface, if there is no any operation for 2~3 seconds. Press OK/RETURN Button will save the curve and back to the main menu.



STEP 4 When the temperature values at all time points are set, the new curve will be automatically saved and returned to the main menu.

SPECIAL MOTE: The settable time range of the self-set curve is: 0~480 seconds, and the settable temperature range: 40~280°C. The software has a temperature protection function. If the temperature value set at the current time point is too high compared with the temperature value set at the previous time point, the setting cannot be successful.

SELF-SET CURVE (PC CONNETING)

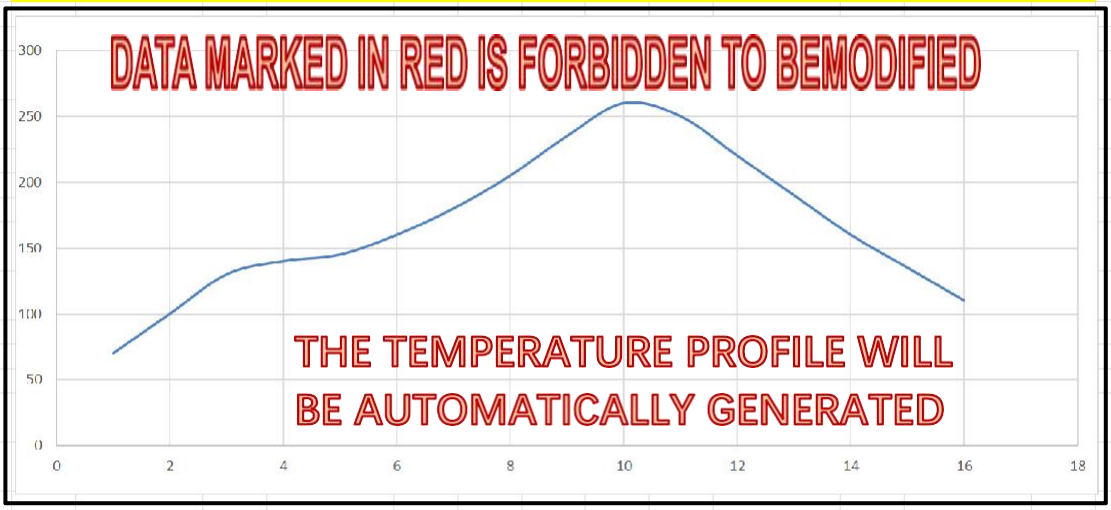
STEP 1 Connect the machine with the computer using a serial cable.

STEP 2 Open the Excel form “temperature data”.

FIRST LINE SHOWS TIME, SECOND LINE SHOWS TEMPERATURE

T	0	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480
temp	40	70	100	130	140	145	160	180	205	235	260	250	220	190	160	135	110

the maximum temperature shall not exceed 280°C, the temperature increase shall not exceed 3°C/s



												01	10	00	00	03
	14	19	1E	23	28	2D	32	37	3C	41	46	4B	50	55	5A	5F
	64	69	6A	6C	6D	6F	71	72	73	74	75	76	77	78	7A	7D
wave8	7F	82	84	87	8A	8D	91	94	97	9B	9F	A3	A7	AB	AF	B4
	B9	BE	C3	C8	CD	D2	D6	DA	DE	E2	E6	EA	E9	E7	E5	E4
	E2	E0	DB	D6	D1	CC	C7	C2	BD	B8	B3	AE	A9	A4	9F	9A
	95	90	8B	86	82	7E	7A	76	72	6E	69	65	61	5D	59	00

												01	10	00	00	03
	94	19	1E	23	28	2D	32	37	3C	41	46	4B	50	55	5A	5F
	64	69	6A	6C	6D	6F	71	72	73	74	75	76	77	78	7A	7D
wave7	7F	82	84	87	8A	8D	91	94	97	9B	9F	A3	A7	AB	AF	B4
	B9	BE	C3	C8	CD	D2	D6	DA	DE	E2	E6	EA	E9	E7	E5	E4
	E2	E0	DB	D6	D1	CC	C7	C2	BD	B8	B3	AE	A9	A4	9F	9A
	95	90	8B	86	82	7E	7A	76	72	6E	69	65	61	5D	59	00

SPECIAL NOTE: The maximum temperature shall not exceed 280°C, and the temperature increase shall not exceed 3°C/s.

STEP 3 Double-click the unmarked temperature cell to modify the temperature value.

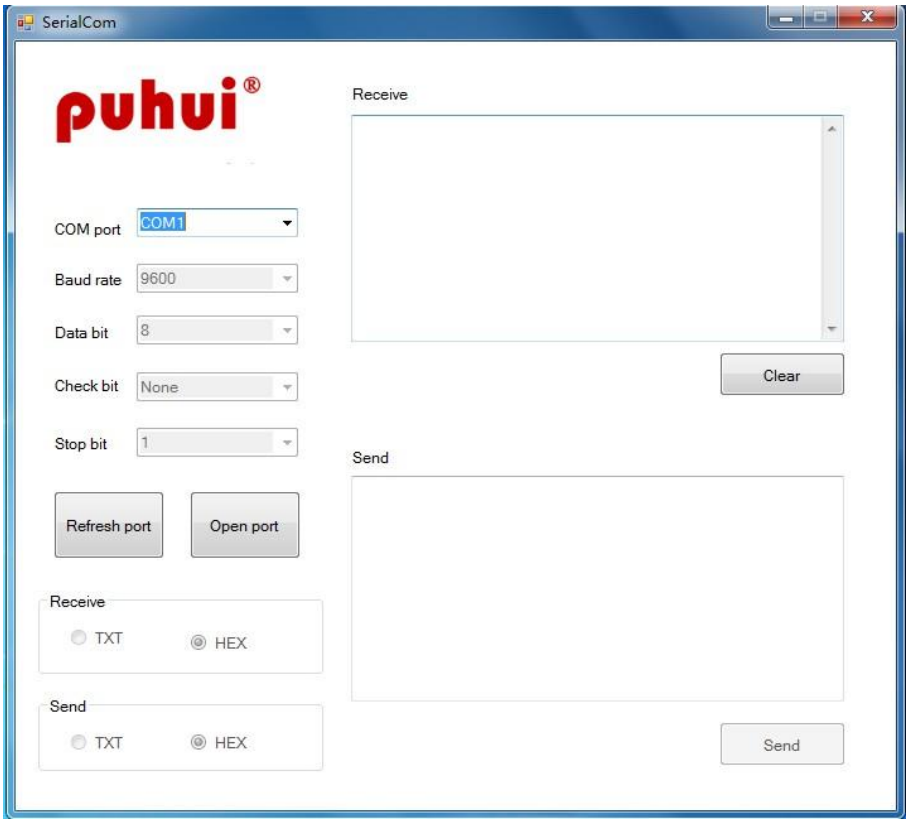
STEP 4 After modifying all temperature values, click on the blank space or press the "Enter" key on the keyboard to refresh the data, and the newly generated temperature curve will be observed. At the same time, the data in the two tables below will be updated.

STEP 5 Select and copy all data in the WAVE 7 or WAVE 8 table area.

												01	10	00	00	03
	14	19	1E	23	28	2D	32	37	3C	41	46	4B	50	55	5A	5F
	64	69	6A	6C	6D	6F	71	72	73	74	75	76	77	78	7A	7D
wave8	7F	82	84	87	8A	8D	91	94	97	9B	9F	A3	A7	AB	AF	B4
	B9	BE	C3	C8	CD	D2	D6	DA	DE	E2	E6	EA	E9	E7	E5	E4
	E2	E0	DB	D6	D1	CC	C7	C2	BD	B8	B3	AE	A9	A4	9F	9A
	95	90	8B	86	82	7E	7A	76	72	6E	69	65	61	5D	59	00

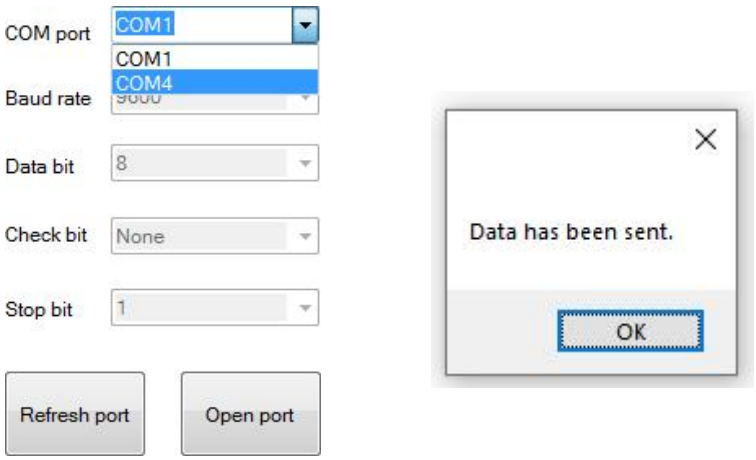
												01	10	00	00	03
	94	19	1E	23	28	2D	32	37	3C	41	46	4B	50	55	5A	5F
	64	69	6A	6C	6D	6F	71	72	73	74	75	76	77	78	7A	7D
wave7	7F	82	84	87	8A	8D	91	94	97	9B	9F	A3	A7	AB	AF	B4
	B9	BE	C3	C8	CD	D2	D6	DA	DE	E2	E6	EA	E9	E7	E5	E4
	E2	E0	DB	D6	D1	CC	C7	C2	BD	B8	B3	AE	A9	A4	9F	9A
	95	90	8B	86	82	7E	7A	76	72	6E	69	65	61	5D	59	00

STEP 6 Open “SerialCom” software, it will show as below:



SPECIAL NOTE: Baud rate/ Data bit/ Check bit/ Stop bit/ Receive/ Send parameters do not need to be set.

STEP 7 Select the corresponding serial pot connected to the machine in the “COM port” drop-down list, then click the “Open port” Button. If there is any question about corresponding serial port, go to the “Control Panel” to check.



STEP 8 Copy the data in the WAVE 7 or WAVE 8 table set in the "temperature data" Excel form to the send area, then click the "Send" Button. When the data is sent successfully, a pop-up window will display. At the same time, machine will have a corresponding sound prompt.

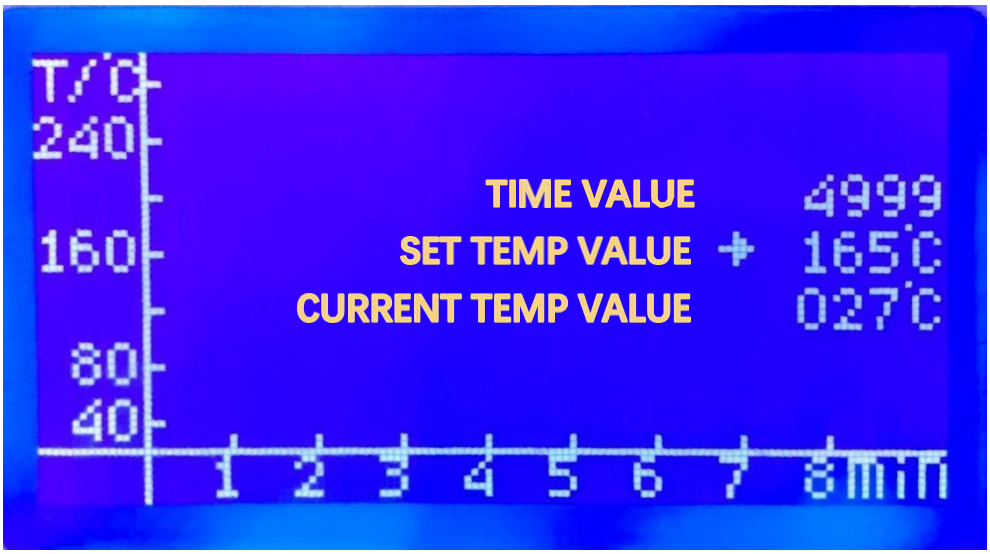
STEP 9 Unplug the serial cable and restart the machine.

STEP 10 Restart the machine, enter the "Select Temp Curve" interface, press ▲/▼ Button to select WAVE 7 or WAVE 8, it will show the new curve.

THERMOSTATIC CONTORL

STEP 1 Select the “Thermostat Control”, press the OK/RETURN Button enter into the operation interface.

STEP 2 Press ▲/▼ Button to set the temperature value (Temperature Range: 30~260°C)



STEP 3 After setting the temperature value, press OK/RETURN Button to adjust the time.

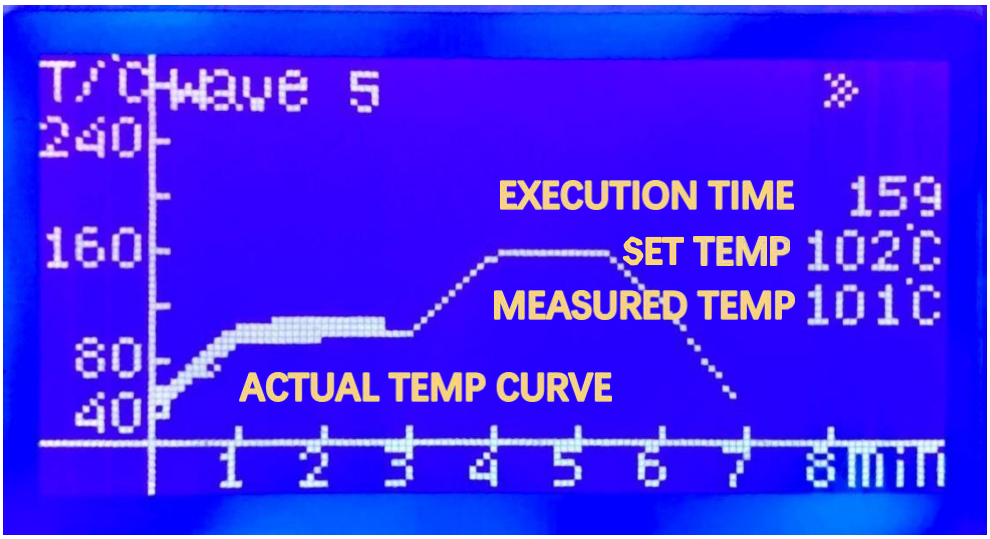
STEP 4 Press ▲/▼ Button to set the time value (Time Range: 300~9999s)

Step 5 After setting the time value, press OK/RETURN Button to execute the thermostatic control function. When the work done, the machine will stop automatically (the machine will beep when the process stops)

SPECIAL NOTE: When the machine is running the thermostatic control function, it can be stop by pressing the OK/RETURN Button at any time and back to the main menu.

OPERATING DETAILS

A. Gently put the item to be processed on the flat surface in the drawer, close the drawer, then select the desired function and press OK/RETURN Button to execute. The LCD shows as below:



B. The process will be done automatically under your supervision through the front window & the LCD data. (If the actual measured temperature value differs greatly from the set temperature value, the machine may alarm to prompt.)
C. Press OK/RETURN Button can force the machine to stop at any time, if necessary.
D. After the processing is completed, the fan will cool the machine automatically.
E. If the result is not as expected, it can be processed again.

SUGGESTIONS

A. To satisfy the soldering of small boards, please place a 10x10cm PCB board under it when soldering small-sized PCB boards and BGA balls to ensure soldering quality.
B. Please preheat the machine when the environment is of low temperature or high humidity. The method: run the heating curve without placing any items.
C. The chips with metal encapsulation of strong reflective material and the plastic inserts that withstand temperatures below 250°C cannot be soldered using this machine.
D. The method to measure the temperature of the machine: use a standard thermometer to tightly fix the external temperature probe directly above the PCB, then put the PCB in the drawer, and push it into the machine for testing. The temperature measured in this way is more in line with the actual situation during machine processing.

MAINTENANCE

A. The machine is equipped with an inner cavity cleaning function: after using it a few times, please run the heating curve without any components to allow the residual solvent and solder to evaporate. To ensure the inner cavity is clean and the performance of the whole machine is stable.
B. Before shutting down the machine, please make sure the machine is cooling down sufficiently, to prolong the service life of the machine.
C. Regularly clean the observation window in front of the machine to keep it clean.

Ⅳ. ATTENTIONS

1、Please make sure the machine is reliably grounded, and disconnect the machine from the mains when it is not in use for a long time.
2、The thermal insulation material of the machine has been strictly protected, it is not allowed to disassemble the machine without protection.
3、Due to technological innovation and product upgrading, etc., if the pictures and software operations shown in this manual are inconsistent with the real thing, the real thing shall prevail.
4、For more detailed information and technical support, please go and visit the website www.te168.com for consultation.