

※ Before using titanium lead-free solder pot ML-52T3/4/5, please read the operation manual carefully.



WARNING

1. The solder pot should be placed on the flat table it is working to prevent the solder from spraying outside the solder pot.
2. The solder and the melting pot are very hot when the pot is working. Please be careful when operating it!
3. It is prohibited to operate the solder pot around the flammable gas and articles.
4. Do not knock or hit the pot or splash the liquid on the surface of the pot to avoid being scalded by the hot solder.
5. Before moving the pot, shut off the power first and wait until the solder pot is cooled to the room temperature.
6. The product is a machine of high temperature. Remember to cut off the power when it is not used.



NOTICE

1. Make sure the earth wire of the pot is well connected to the earth.
2. For the safety and the life of the machine, the pot should not work consecutively over 12 hours.
3. The state of high temperature will easily oxidize the solder surface which is not good for soldering. At the same time, it will reduce the service life of the solder pot. So let the pot work at a low temperature if possible.
4. When the solder pot is wrong, do not dismantle it on your own. Send it to the professional person or the designated address for maintenance to avoid any accident.

2.2 It is CPU-controlled and the temperature is accurate and constant.

2.3 It provides two modes for temperature setting: regular setting and instant setting.

2.4 The digital display is direct and accurate.

2.5 Display the actual temperature value and heating power value at the same time.

2.6 Save the setting temperature value.

2.7 Detect the sensor automatically.

2.8 The fitting of the heating is effective, fast temperature rising and long-lived.

2.9 Adopt high quality titanium-made solder pot which is high temperature resistant, anti-corrosive and long-lived.

2.10 The compact structure and reasonable design are practical for operation.

1. General

Titanium lead-free solder pot ML-52T3/4/5 adopts the corresponding technology of lead-free soldering. Its control circuit adopts the high-performance micro-processor chip for precise temperature control. It is full functional, direct-displayed and practical. It can automatically judge the fault of the heating part. The heater of the solder pot is closely fitted to the heated side of the pot to increase the heat efficiency and speed the temperature rising. The temperature fluctuation is small and it prolongs the service life of the heater. The solder pots of ML-52T series are made of high-quality titanium. Its advantages are anti-corrosive, high temperature resistant and durable. The shell of the pot and the fixing of the elements are specially designed for heat conduction, insulation and preservation to avoid the heat loss and the effect that high temperature may put on the shell and the circuit board or the electrical elements. The excellent combination of the parts and the high performances make the solder pot ML-52T3/4/5 ideal electro thermal tools.

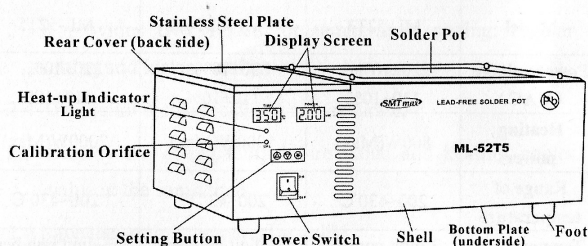
2. Features

2.1 Adopt the lead-free corresponding technology for temperature control especially designed for the high melting point of the lead-free tin solder. It can also work at the same temperature as melting Sn-Pb.

3. Specifications

| Model | ML-52T3 | ML-52T4 | ML-52T5 |
|-------------------------|-----------------------------------|--|--|
| Power voltage (V AC) | 220±10%; 110±10% | 220±10%; 110±10% | 220±10%; 110±10% |
| Heating power | 800W(Max) | 1200W(Max) | 2000W(Max) |
| Range of temperature | 200~430℃ | 200~430℃ | 200~430℃ |
| Temperature display | 3-digit number (1℃ difference) | 3-digit number (1℃ difference) | 3-digit number (1℃ difference) |
| Power display | 3-digit number (1W difference) | 3-digit number (10W difference) (one number after decimal point) | 3-digit number (10W difference) (one number after decimal point) |
| Temperature fluctuation | <1℃(at constant temperature) | <1℃(at constant temperature) | <1℃(at constant temperature) |
| Size of the pot (mm) | 160×110×60 | 210×160×60 | 255×210×60 |
| Weight of fillings | 9kg | 16kg | 27kg |
| Outer measurement (mm) | 375×170×150 | 425×220×150 | 470×270×150 |
| Weight | 5.3kg | 6.5kg | 8.8kg |

4. Product Profile



5. Operation

5.1. Installation

- 5.1.1 Put the solder pot on the firm and flat table of adequate height.
- 5.1.2 Fill the pot with soldering material.
- 5.1.3 Plug the cables to the outlet.



Notice:

- a. Make sure the power supply cables and the capacity of the outlet can meet the requirement of the peak load.
- b. Be sure that the earth wire is correctly connected and the shell is orderly placed.

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5.2 Operation


5.2.1 Temperature display

Push the power switch of ON/OFF to the ON position. The solder pot begins to heat up. The temperature display screen on the left will display the present setting value for 5 seconds. After 5 seconds, the value will go up gradually. In about 20 minutes, the solder is melted completely and the temperature will conform to the setting value. The solder pot enters the state of constant temperature.

Notice:

- A. The red LED luminescent tube on the lower part of the display screen is the heat-up indicator. When it is on, it means the pot is warming.
- B. When the pot is just switched on, since the solder is not yet melted the displayed temperature is the temperature of the solder surface. The displayed value is the temperature of the solder slurry only until the solder is wholly melted.
- C. When the displayed temperature reaches the setting value, it still takes 3 to 5 minutes to stabilize the temperature of the solder.
- D. Owing to the big volume of the pot and the limit of the solder heat conduction, the temperature of each point of the pot differs (especially ML-52T5) even if it is in the state of constant temperature. But it will not affect the use too much.

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- E. During the warming, press the  button (<1 second) for learning the present setting temperature and it will display for 3 seconds. Then it will redisplay the temperature of the pot.
- F. When the pot is in the state of constant temperature, the fluctuation of temperature is less than 1°C. But when sucking the circuit board is disturbed by the power supply or the blast air, the temperature will change but resume very soon to the stable state.
- G. After the machine is switched off, the time interval before re-switching on should be longer than 10 seconds or the micro-processing can not reset completely and may go dead.

5.2.2 .Power display

The display screen on the right displays the consumption power of the pot. Usually under different circumstances, the consumption power of the pot is different. The rule of power consuming of the pot is:

5.2.2.1 When the solder pot is switched on, the temperature of the pot has not yet reached the setting value. At this time, the heat-up indicator light remains on. The power display screen will display the full power of the pot (like ML-52T5 displays 2.00KW), the power value will remain until it enters the state of constant temperature.

5.2.2.2 When the temperature in the pot is approaching the setting value, the warming light turns flash. The power display

shifts constantly among zero power, full power and the power between zero and full power.

5.2.2.3 When the temperature in the pot reaches the setting value, the pot enters the state of constant temperature. The warming indicator light flashes speedily, the power display value stabilizes at a smaller power (usually it will not exceed 50% of the maximum power). Sometimes the value changes a little.

Notice:

- A. When the solder pot is in the state of constant temperature, the power display value is related to the weight of the solder, the temperature setting value and the exterior influence. The micro-processor achieves the aim of constant temperature by constantly changing the power supply state to the heater.
- B. Even if it is in a state of constant temperature, the power value will also change. But it is more stable and the fluctuation is small.

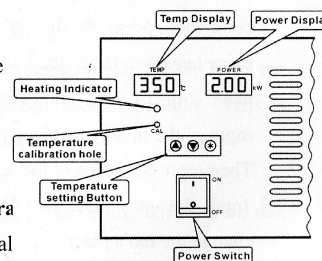
6 Temperature setting

When you need to change the present temperature,

ML-52T3/4/5 has two modes for your choice:

6.1 Regular setting of tempera

Input the temperature val



order of hundred's place, ten's place and unit's place to the digital chip, press for confirmation and then the setting is

finished. The steps are as below:

6.1.1 Press , time is > 1 second,

(before press , the display screen will display the present working temperature). Then the hundred's place begins to flash, indicating it enters the mode of temperature setting. Then input the value of the hundred's place.

6.1.2 Input the hundred's place that

is needed: press button or to change the hundred's place:

2↔3↔4

When the hundred's place is confirmed, press , the ten's place begins to flash (the hundred's place stops flashing), indicating the input of the hundred's place is finished.

Then input the value of the ten's place.

6.1.3 Input the ten's place that is needed, press or to change the ten's place:

rise by 1℃ (the display screen displays the setting temperature raising 1℃). Press again , the setting value will rise again by 1℃. Hold on , the temperature will rise speedily. When it reaches the needed temperature, loosen the button , the figure will stay on the screen for 2 seconds. After 2 seconds, the displayed figure will return to the actual temperature from the setting value.

Temperature drop: press , the setting temperature will drop 1℃ (the display screen will display the setting temperature dropping 1℃). Press again , the setting value will drop another 1℃. Hold on , the displayed temperature will drop speedily. And then the situation is like setting the temperature rise.

The instant setting is more adapted for the small adjustment of temperature during operation.

7. Temperature Calibration

ML-52T3/4/5 are solder pots of high precision. Its outstanding advantage is its small temperature fluctuation. But owing to some factors like the different positioning of the temperature sensor on every solder pot, the oxidizing by high temperature of the temperature sensor, the performance change of the elements, the replacement of the heater and the

0↔1↔2↔3↔4↔5↔6↔7↔8↔9

When the ten's place is confirmed, press , the unit's place begins to flash (the ten's place stops flashing), indicating the input of the ten's place is finished. Then input the unit's place.

6.1.4 Input the unit's place, the operation is same as inputting the ten's place. When finishing the input, press , the setting is completely finished.

Notice:

- Press , within 1 second, the display is the present setting temperature (not entering the temperature setting mode) and it displays for 3 seconds. After 3 seconds, it re-displays the temperature of the pot.
- The newly-set temperature will cover the last setting and the value will save until next setting. The value is not affected by switch-off and power cut. (same as temperature instant setting)

6.2 Instant setting of temperature

When the solder pot is working, press to raise the temperature or to reduce the temperature. That is called instant setting of temperature.

The steps of instant setting:

Temperature rise: press , the setting temperature will

difference of the temperature meters, the accuracy of the pot temperature may have little difference. The users with higher requirement can calibrate the machine regularly:

- Prepare a digital temperature meter. Place its head into the pot to test the temperature.
- Set the pot temperature to 350℃. Wait until it enters the constant-temperature state.
- Put the head of the temperature meter into the solder pot to observe the temperature value of the meter.
- If the display of the temperature meter is not 350℃, use a small screwdriver to adjust the potentiometer in the calibration orifice (CAL) to conform the temperature value of the solder pot to the value of the temperature meter.
- Wait for a while, the temperature display of the solder pot will resume 350℃. At this same time, the figure of the temperature meter will also display 350℃. Thus the calibration is finished. If there is variation, repeat the above step 7.4.

Notice:

The change of the solder temperature takes some time. So temperature calibration requires enough time for waiting until the pot temperature is stable.

8. Trouble Detecting

After the solder pot is used for some time, if the heater or the temperature sensor is burnt out, then replacement of new heater or temperature sensor is needed. The users can judge the fault of the sensor or heater according to the following situations:

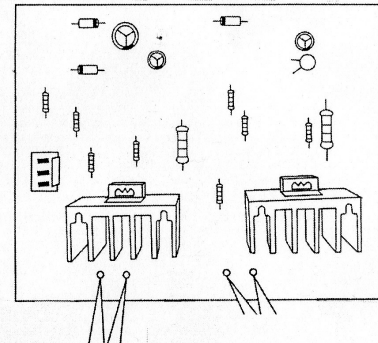
8.1 The temperature sensor is broken. If the temperature of the solder in the pot can not rise and the temperature display screen displays Err, the power display screen displays the 000, it indicates that the sensor is broken. Pull off the two-cored plug connected to the digital display board, use the multimeter for further detecting: measure the resistance value of the two-cored plug (that is the circuit of the sensor). The normal resistance value is smaller than 1Ω . If it is open circuit, it indicates that the sensor is burnt out.

8.2 The heater is broken. Each solder pot of ML-52T3/4/5 has 3 heaters and they heat up at the same time when the pot is working. When one heater is broken, it takes a long time to reach the setting temperature. Observe the power display screen, the displayed power is quite big and may reach the maximum or approach the maximum. (Notice: If the heater is broken, then the displayed power is not the real power.) The following is another way for judging whether the heater is broken:

8.2.1 Open the rear cover

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8.2.2 If using a multimeter to measure, the resistance value of the heater is between scores ohms and two hundred ohms (the resistance values of the heaters differ between different positions and different models). If the circuit is open, it means the heater is burnt out.



Notice:

If the temperature sensor or the heater is detected to be broken, the user can not dismantle it on his own to avoid any accident. He should send it to the dealer and the dealer will contact the manufacturer for maintenance.

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