



# Mini Soldering Iron


## Instruction Manual Version 1.1


For your own safety, please read the manual before installing the device

(The current version of this instruction manual is APPV2.70)



# Index

 **WARNING:** Failure to comply with the WARNING may cause serious injury to the user or others.

 **CAUTION:** Failure to comply with the CAUTION may cause damage to the product or other objects.

 Please pay attention to the Annotations, Operation notes and Additional Information.





# Safety Statement

## 1.1 General Safety

Keep out of reach of children

Please choose the certified power source/adaptor from your region.

(For more detailed information, please refer to 3.0 )

Do not operate under wet condition.

Do not operate near flammable or explosive materials.

Keeping the surface of the equipment clean and dry.

## 1.2 Working Condition

Working Condition	Requirements
Temperature	In operation state: from 0°C to +50°C
	In idle state: from -20°C to +60°C
Humidity	In operation state: from 40°C to 50°C, 0% to 60% RH
	In operation state: from 0°C to 40°C, 10% to 90% RH
	In idle state: high temperature: from 40°C to 60°C, 5% to 60% RH
	In idle state: low temperature: from 0°C to 40°C, 5% to 90% RH





## 1.3 Warnings

Turn the power off when not in use, or left unattended.

When the power is ON, the tip temperature will rise between 100°C~400°C (212°F~752°F)

Please do not wet the tool or operate it when your hands are wet

## 1.4 Cautions

Please avoid any severe shocks, for the control part is created with precision electronic components.

The temperature of control knob will reach 50~60°C after 40-minute continuous use over 350°C.

A small chain of smoke may come out due to the high temperature when use for the first time.

Do not attempt to repair the Mini Soldering Iron, or the warranty will be invalidated.

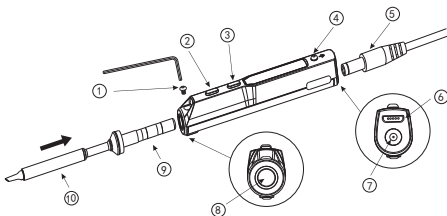
## 1.5 Liability Statement

The user ought to undertake the responsibilities if any special, indirect, consequential, incidental or secondary damages and liabilities are caused out of any reason.



# Overview

## 2.1 Name of Parts



- 01. Solder iron tip fixing screw
- 02. Button A
- 03. Button B
- 04. Set screw
- 05. Power port
- 06. Micro USB
- 07. DC5525 12-24V port
- 08. Solder iron tip connection port
- 09. solder iron connection side
- 10. Solder iron heating element



# Overview

## 2.2 Specifications

Screen		OLED
USB port		Micro USB
Power port		DC5525
Dimensions	Control knob	Length: 96mm, Diameter: 16.5mm
	Heating Part	Length: 33mm, Diameter: 5.5mm
Weight		33g Does not include power adapter

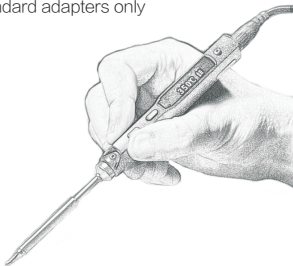
## 2.3 Operation Specifications

Power	65W
Temperature range	100℃~400℃ ( max )
Temperature stability	± 2%
Operation temperature under heat environment	40℃
Soldering tip resistance value to the ground	< 2 Ω



# Power Adaptor Selection

Please ensure the DC5525 ( 12–24V ) power adaptor is in good condition before connecting it with the Mini soldering iron. Please choose the certificated standard adapters only

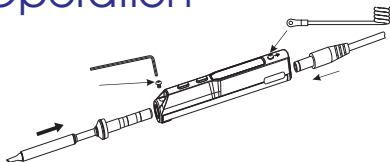


Time for tip temperature rise from 30°C to 300°C under standard operating voltage, power and currents

Operation voltage	Power	Electric current	Time
12V	17W	1.4A	40s
16V	30W	1.9A	20s
19V	40W	2.1A	15s
24V	65W	2.7A	11s



# Operation



## 4.1 Mini Soldering Iron Installation

1. Unscrew the tip setscrew, insert the solder tip into the connection port, and then tighten screw.
2. Connect the ground wires with the ground set screw.
3. Connect the DC connector to Mini Soldering Iron, plug the power cord and turn on the device accordingly.

 **Note:** Solder tip is connected inappropriate when “sen-err” is displayed on the screen , please reconnect under proper instruction.

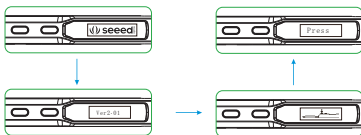
## 4.2 Default Settings

Default temperature unit	°C
Default temperature	300°C ( Default )
Sleep mode temperature	200°C ( Default )
Adjustable temperature range	100°C~400°C (Max )

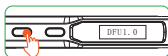
# Operation

## 4.3 Basic Control

### 4.3.1 Screen Display



When the DC12-24V power adapter is plugged into the control part, the boot logo, version number, thermometer and standby image will be displayed in sequence.



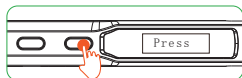
To enter DFU mode, press Button A after DC12-24V power adapter is plugged into the control part. The OLED screen will display "DFU 1.0" when you operate properly.

To exit DFU mode, unplug the power supply and turn the device on again without pressing any button to enter the standby mode.

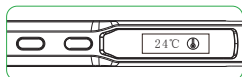
# Operation

## 4.3 Basic Control

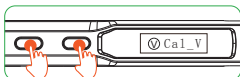
### 4.3.2 Automatic Calibration



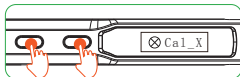
Press Button B in standby mode to enter the thermometer mode



In thermometer mode press two buttons simultaneously to enter the calibration mode

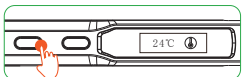


Calibration success



Calibration failed

To exit thermometer mode, long-press any button



Long press any button to exit thermometer mode



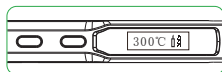
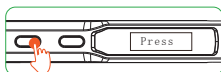
Note: Please operate Calibration Mode when the device is at room temperature.



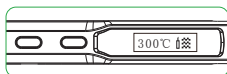
# Operation

## 4.3 Basic Control

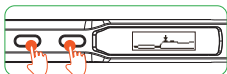
### 4.3.3 Heating up



Pressing Button A in standby mode, the temperature of Mini Soldering Iron will rise to the preset temperatures



Ready for soldering



In operation mode, press two buttons simultaneously for 3 seconds will return to standby mode

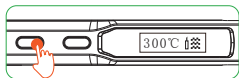




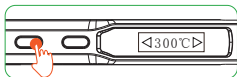
# Operation

## 4.3 Basic Control

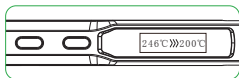
### 4.3.4 Temperature Adjustment



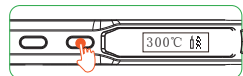
Press button A in Standby Mode to enter Temperature Adjustment Mode



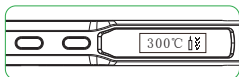
Lower Temperature: Press button A for at least 2 minutes in Temperature Adjustment Mode, and release the button when the temperature reaches the expected value.



The temperature of Mini Soldering Iron is now decreasing to the level you expect



Increasing temperature: Press Button B at least 2 seconds in Temperature Adjustment Mode and release the button when the temperature reaches your expectation

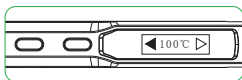
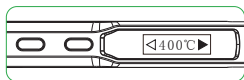



When the temperature increases to the level you expect then release the button

# Operation

## 4.3 Basic Control

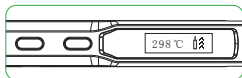
### 4.3.4 Temperature Adjustment



 **Note:** Left /Right Arrow (◀ or ▶) indicates the temperature has reached the maximum or minimum temperature, the setting in current state will not be saved when the user turns the power off.

**Remark:** Maximum temperature: 400℃

Minimum temperature: 100℃



Soldering Iron will enter into the Automatic Compensation Mode when the custom temperature stabilizes for 60 seconds (Temperature will be compensated every 5–8 seconds)

The rightmost digital image represents the following meanings respectively



Up-arrows : heating



Down-arrows:cooling

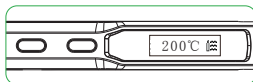


Wave lines :Temperature stabilized

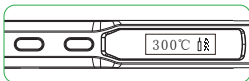
# Operation

## 4.3 Basic Control

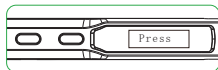
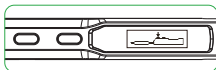
### 4.3.5 Sleep Mode



Rest the Mini Soldiering Iron for 180 seconds (3 minutes in default) in Operating Mode will trigger the Sleep Mode and back to the custom sleep mode temperature.



It will go back to operating temperature mode (300°C in default) when the user moves the device again.



In Sleep Mode, the device will then enter the Standby Mode if it is not operated longer than the IDLE-TIME setting.

Note: IDLE\_TIME (6 minutes in default) can be customized and should not be shorter than 5 minutes minimum



# Operation

## 4.4 System Parameters

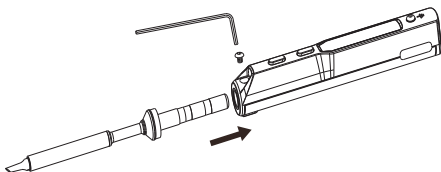
Parameter	Description	Default	adjustable range
Sleep mode temperature	Standby mode temperature	200°C	100°C~400°C
Sleep mode time	Time from operation mode to sleep mode	180 seconds	60~9999 seconds
Standby mode time	Length of Sleep Mode to Standby Mode	360 seconds	300~9999 seconds
Temperature increase	When set to "1", each step will progress in 1.2.5.25 When set to 2-25, each step will progress according to setting	10	5-25
Protection voltage	When operation voltage is lower than default voltage MINI SOLDERING IRON will return to standby mode	10V	9-12V
Unit setting	Temperature unit selection	°C	0 is °C 1 is °F
Temperature calibration	Temperature calibration parameter MINI SOLDERING IRON automatic adjustment		no manual setting required
Operation mode temperature	Mini solder iron operation temperature	300°C	300°C

Note: The default parameter will be updated to Mini Soldering Iron automatically after saving it.



# Soldering Iron Tips

## 5.1 Assemble the Solder Tip



1. Make sure the power is turned off before changing the tip
2. Remove the screw on operation side
3. Remove the tip and replace with another one
4. Fix the tip with the screw

Note: An "sen-err" image on the screen indicates the tip is not properly installed

# Soldering Iron Tips

## 5.2 Choosing Soldering Iron Tips

Note: Selecting a right tip will help you work more efficiently



TS-D24



TS-K



TS-BC2



TS-B2

## 5.3 Soldering Iron Tip Maintenance

- (1) Wipe the tip's soldering side with some solder before turning it off.
- (2) Do not leave the tip in high temperature for too long as the high temperature may degrade the tip.
- (3) To prevent the tip from damages, please use the soldering iron in a proper strength.
- (4) Do not use rough material to clean the tip.
- (5) If the tip is covered with oxide and difficult to joint the solder, please apply 600~800 grit sandpaper and wipe the tip with Ethanol or Isopropyl alcohol. Increase the tip temperature to 200°C and joint solder immediately to avoid it oxidize.
- (6) Do not use Flux which contains high chlorine or acid, use the resin based flux only.

## 5.4 Soldering Iron Tip Lifespan

Please refer to item 5.3 for a better maintenance of the Mini Soldering Iron. Its lifespan depends highly on how you use it.



# Trouble Shooting Guide

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## Q1: No Display

- A1. Check whether the cable is in a good condition.
- A2. Check whether there are any data in USB mode
- A3. Check the screen and see whether it needs to be replaced.

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## Q 2: Every time when replace a new tip, the temperature vary dramatically

- A. The phenomena indicates the device is in Auto-detect Mode, which is normal

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## Q3: Soldering iron restarts automatically

- A1. Check the power source, whether it is plugged correctly
- A2. Check the voltage, if it is lower than the system parameter's please reset it.

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## Q4: Soldering iron is heating intermittently

- A1. This may happen occasionally when the tip is used for the first time.
- A2. Check if the power cord is in loose or contact defectively?
- A3. If the tip temperature is too high, please lower the temperature to an appropriate value.  
Set the temperature in appropriate level
- A4. If the tip is dirty, please refer to Part 5.3 Soldering Iron Tip Maintenance.

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## Q5: OLED displays "Warning!"

- A1. The Mini Soldering Iron temperature may be higher than the maximum operating temperature  
The warning sign will disappear after the temperature returns to the working temperature range



# Trouble Shooting Guide

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## Q6: OLED displays " High-Vt "

A1: The voltage may be too high (Excess 24V)

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## Q7: OLED displays " Sen-err"

A1: Check if the tip is installed properly

A2: If the tip is installed properly you should consider replacing it with a new tip.

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## Q8: The tip fails to take a tin and cause defective joints

A1. If the tip temperature rises higher than 400°C, please lower the temperature.

A2. The tip tins improperly.

A3. If there is not enough flux during operation, please add some more flux.

A4. Don't wipe the tip with a high-sulfur sponge or dry fabric.

A5. Don't use the tip to touch any organic materials such as plastic, silicone oil or other chemicals.

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## Q8: Mini Soldering Iron return to Standby Mode during operation

A1: Check whether the voltage is lower than default (10V). If so, please adjust or wait until the voltage rises to 10V or higher.

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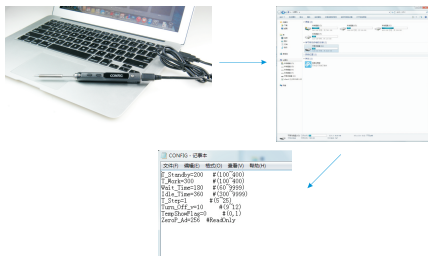
# Technical Support

## 7.1 Standard Service

The one year warranty will be effective for the damage caused by accidents beyond control. Please contact your regional sales for more detailed warranty information.

Tips are consumable product , once it is used the purchases can not be changed or returned.

## 7.2 Default Parameter Setting



The image "CONFIG" will be shown on the screen after connecting the Mini Soldering Iron to computer with a USB cable. The "CONFIG" means you are in Setting Mode, you can set the default parameters by opening config.txt in the USB drive.

# Technical Support

## 7.3 Firmware Update



1. For firmware upgrade, please visit:  
[seeed.cc/mini-soldering-iron](http://seeed.cc/mini-soldering-iron)
2. Hold Button A while connecting Mini Soldering Iron to your computer with a USB cable, screen will display "DFU1.0" after connecting successfully. The virtual drive will be shown in your computer( 8 digit serial number) once the device enters the DFU Mode.
3. Copy the .hex firmware to the root category, once the file extension .hex becomes to .rdy disconnect the USB and the firmware upgrade is completed.

## 7.4 Boot Screen Customization

Pick the image (96\*16 pixel )you like and save it as BMP format in single color bitmap



Paste the file of the customized image into the Mini Soldering Iron USB drive, change the file name to "LOGOIN"

**Note:** The Boot screen logo should be the customized logo you select once the LOGOIN.BMP is saved in the USB drive. The boot screen will display default logo if the "LOGON.BMP" is not saved in the USB drive.



# Legal Statements

## 8.1 Disposal



Do not dispose the product with household waste

Handling and Recycling: Please obey the local management regulations and laws.

## 8.2 Statement of Fulfilling FCC Standard



This device fulfills Part 15 of the FCC regulations  
Device must fulfill below 2 conditions:

- (1) Device must not generate interference.
- (2) Device must be able to resist any interferences on it, including interferences that could cause dangerous manipulation.

## 8.3 Statement of Fulfilling CE Standard



This is a trademark of European Union  
This product with CE logo on it fulfills related European Union laws and regulations

