HAKOFX-951

High-output, temperature controlled soldering station

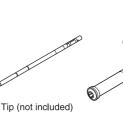
Instruction Manual

Thank you for purchasing HAKKO FX-951 soldering station. Please read this manual before operating the HAKKO FX-951. Keep this manual readily accessible for reference.

1. PACKING LIST AND PART NAMES Please check to make sure that all items listed below are included in the package.

HAKKO FX-951 soldering station1	Heat resistant pad1
HAKKO FX-9501 soldering iron1	Iron holder1
Control card1	Connecting cable1
Power cord1	Instruction manual1

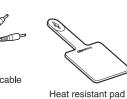






Soldering station









Iron holder

2. SPECIFICATIONS

HAKKO FX-951 soldering station

THAT THE TAX OUT CONCERNING CHARLOTT		
Power consumption	75 W	
Temperature range	200-450°C (400-840°F)	
Temperature stability	±5°C (±9°F)	

Power cord

Station

Output	24 V
Dimensions	80 (W) × 130 (H) × 131 (D) mm
Weight	1.2 kg

HAKKO FX-9501 soldering iron

Power consumption	70 W (24V)
Tip to ground resistance	<2Ω
Tip to ground potential	< 2 mV
Length of cord	1.2 m (4 ft.)
Length, (w/o cord)	202 mm (7.95 in.) with 2.4D tip
Weight, (w/o cord)	40 g (0.09 lb.) with 2.4D tip

中國RoHS: 產品中有毒有害物質或元素的名稱及含量

镊(Cd)

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: 表示該有毒有害物質在該部件所有均質材料中的含量均在SJ/T 11363-2006

標準規定的限量要求以下。 表示該有毒有害物質至少在該部件的某一均質材料中的含量超出SJ/T 11363-2006

有毒有害物質或元素

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NOTE:

The temperature was measured using the HAKKO 191 or FG-100 thermometer.

This product is protected against electrostatic discharge.

⚠ CAUTION

This product includes such features as electrically conductive plastic parts and grounding of the handpiece and station as measures to protect the device to be soldered from the effects of static electricity. Be sure to observe the following instructions:

部件名稱

焊鐵部

焊鐵座

1. The handle and other plastic parts are not insulators, they are conductors. When replacing parts or repairing, take sufficient care not to expose live electrical parts or damage insulation materials 2. Be sure to around the unit during use

Specifications and design are subject to change without notice.

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3. WARNINGS, CAUTIONS AND NOTES

♠ WARNING

Warnings, cautions and notes are placed at critical points in this manual to direct the operator's attention to significant items. They are defined as follows:

★ WARNING: Failure to comply with a WARNING may result in serious injury or death.

⚠ CAUTION : Failure to comply with a CAUTION may result in injury to the operator, or damage to the items involved. Two examples are given below.

: A NOTE indicates a procedure or point that is important to the process being described. **EXAMPLE:** An EXAMPLE is given to demonstrate a particular procedure point or process.

When power is ON, tip temperatures will be between 200°C and 450°C. (392°F to 840°F.) To avoid injury or damage to personal and items in the work area, observe the following:

- Do not touch the tip or the metal parts near the tip.
- Do not allow the tip to come close to, or touch, flammable materials.
- Inform others in the area that the unit is hot and should not be touched
- Turn the power off when not in use, or left unattended
- Turn the power off when changing parts or storing the HAKKO FX-951.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

To prevent accidents or damage to the HAKKO FX-951, be sure to observe the following:

- Do not use the HAKKO FX-951 for applications other than soldering.
- Do not allow the HAKKO FX-951 to become wet, or use it when hands are wet.
- Do not modify the HAKKO FX-951.
- Use only genuine HAKKO replacement parts.
- Do not bend or damage the control card. If the card does become damaged, do not force the card into the station slot.
- Do not strike the iron against hard objects to remove excess solder. This will damage the iron.
- Be sure the work area is well ventilated. Soldering produces smoke.
- While using HAKKO FX-951, don't do anything which may cause bodily harm or physical damage.

4. INITIAL SETUP

A. Iron holder

· Loosen the adjusting screws to change the angle of the iron receptacle as you like, then tighten the

 The sponge is compressed. It will swell when moistened with water. Before using the unit,

holes in the iron holder base

capillary action

⚠ CAUTION

resistant pad.

⚠ CAUTION

⚠ CAUTION

C. Soldering station

back of the station.

at the front of the station

2. Set the iron in the iron holder

on the iron holder base

Use of the sleep function

dampen the sponge with water and squeeze it dry.

sponge will keep the large sponge moist through

3. Wet the large sponge, squeeze it dry and put it

When using the sleep function, insert one end of

iron holder and the other end into the jack at the

Be sure to turn off the power before connecting or

Pass the iron cord through the hole in the heat

Be sure the power switch is OFF before connecting or

disconnecting the soldering iron cord. Failure to do so

1. Insert the power cord into the receptacle at the

3. Plug the power cord into a grounded wall socket.

The HAKKO FX-951 is protected against electrostation

discharge and must be grounded for full efficiency.

Insert the soldering iron cord into the receptacle

may result in damage to the circuit board.

disconnecting the connecting cable.

B. Handpiece cord assembly

back of the soldering station to connect them.

the connecting cable into the jack at the back of the

1. Put the small cleaning sponge in one of the five

2. Add water to the iron holder base. The small

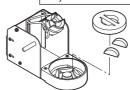


⚠ CAUTION

Do not set up the iron receptacle too high, the temperature of the soldering iron will become very hot.

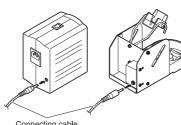
⚠ CAUTION

Do not lay down the iron receptacle too much, it can be easy to fall down.



⚠ CAUTION

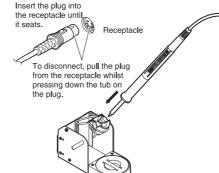
Using the sponge without dampen with water may damage the tips



Connecting cable

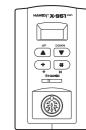


Insert the plug into the receptacle until. Receptacle



5. OPERATION

Controls and displays



The front panel of the HAKKO FX-951 soldering station has the following controls:

- · Four control buttons:
- Initiates a data entry mode.

display window.

- stored.
- Increases the value in the appropriate display window ▼ – Decreases the value in the appropriate
- * End of sequence signal (terminates a phase of a data entry mode); when pressed for less than one second, displays settings already
- An audible buzzer is provided to alert the operator when: • The station has reached the set temperature The buzzer will sound once.

has reached the desired temperature, indicating

In addition, heater lamps will flash when the station

The HAKKO FX-951 has a three-digit display element.

Selected quantity (See 'data entry procedures' for

Depending upon the selected mode, it will display:

Sensor temperature (tip temperature)

°C or °F, depending upon selection

Refer to 'ERROR MESSAGES' section.

- When the low temperature threshold has been crossed, the buzzer will sound continuously. This buzzer will shutoff when the sensed temperature returns to the acceptable range.
- When a foreign substance, an incompatible tip, or the soldering end of the tip is inserted into the HAKKO FM-2028, the display will blink and the buzzer will sound continuously
- When the error occurs with the HAKKO FM-2028, the buzzer will sound continuously.

Displays

Normal mode:

exact characteristics.)

Temperature scale:

that it is ready for use.

Error detection

Data entry:

The buzzer that sounds when the unit reaches the desired temperature, or when C-E or S-E is displayed, can be switched on or off via the parameter settings

Operation

- 1. Turn the power switch ON.
- 2. Once the temperature is reached, the buzzer sounds. The heater lamp at the lower right of the temperature display 350 starts blinking

Setting/changing the temperature

Example: 350°C to 400°C

- 1. Insert the control card into the slot in the front of the unit.
- . The hundreds digit will begin to flash, indicating that the unit is in the TEMPERATURE SET mode and data may be entered.

2. Entering the hundreds digit

 Press the or button to set the desired figure. Only 2, 3, or 4 can be selected. (In °F mode, 4, 5, 6, 7, or 8 can be selected). When the desired figure is displayed, press the (*) button to enter. The tens digit will begin to flash.

3. Entering the tens digit

 Press the or button to set the desired figure. Any value from 0 to 9 can be selected. (In °F mode, the same value can be selected.) When the desired figure is displayed, press the * button to enter. The units digit will begin to flash

4. Entering the units digit

 Press the ▲ or ▼ button to set the desired figure Any value from 0 to 9 can be selected (In °F mode, the same value can be selected.) When the desired figure is displayed, press the * button to enter. The desired temperature is now entered into the system memory and heater control will begin

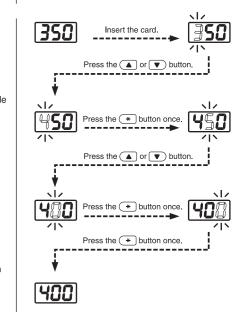
When the station is ON and the card is in the station, the data entry procedure follows:

∴ CAUTION

The HAKKO FX-951 is preset at 350°C at the factory. Check the temperature setting by pressing the *button The set temperature will be displayed for two seconds.

⚠ CAUTION

Place the iron in the iron holder when not in use.



If power is switched off or lost during the execution of this procedure, no data will be entered. The entire procedure must be repeated from step 1.

1. Hold the * button down for at least one second. The current temperature setting will be displayed, then the hundreds digit will begin to flash. This indicates that the station has entered the temperature setting mode. Continue with the procedure of 2 - 4, above.

2. When the * button is pressed for less than one second, the current temperature setting is displayed for two seconds, then returns to show the actual tip temperatures.

0

5. OPERATION

Replacing the tip

⚠ CAUTION

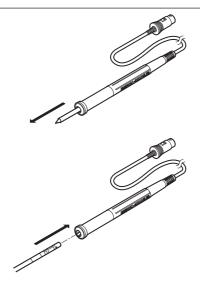
- When holding the head of the tip, there is a danger of burn. Be sure to use the heat-resistant pad.
- The tip may be hot. Avoid holding the hot tip for a long time even if using the heat-resistant pad.

Removing the tip:

· Remove the tip from the iron.



. Insert the tip fully into the iron. When inserting the tip, there are no direction of the tip connector.



• How to enter the tip offset value into the HAKKO FX-951

Example 1:

If the measured temperature is 410°C and the set temperature is 400°C, the difference is -10°C (need to decrease by 10°C). So, enter the figure which 10

1. Insert the control card into the slot in the station.

- The station is in the temperature setting mode. The hundreds digit will begin to flash.
- 2. Press the # button on the front panel. This will set the station to offset value entry

3. Enter the offset value

The allowable ranges for offset values are from -50 to +50°C (In °F mode from -90 to +90°F).

NOTE:

mode

During offset data entry mode with blinking. the tip temperature is controlled by present

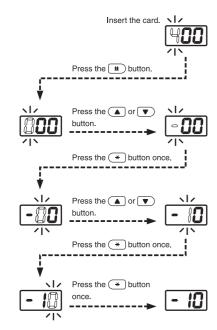
a. Entering the hundreds digit
Press the ▲ or ▼ button to set the desired figure. Only 0 (plus) or - (minus) can be selected. (In °F mode, it is the same as °C mode). When the 0 (plus) or - (minus) is selected, press the * button to enter. The tens digit will begin to flash.

b. Entering the tens digit

 Press the (▲) or (▼) button to set the desired figure. Any value from 0 to 5 (In °F mode, 0 to 9) can be selected. When the desired figure is displayed, press the * button to enter The units digit will begin to flash.

c. Entering the units digit

 Press the ▲ or ▼ button to set the desired figure. Any value from 0 to 9 (In °F mode, same value can be selected.) When the desired figure is displayed, press the (*) button to enter. The desired temperature is now entered into the system memory and heater control will begin with new offset value.



When the unit is in offset-free mode, you can go into the offset value entry mode without control card by pressing the # button for second.

When the station is ON and the card is in the station, the offset entry procedure follows:

- 1. Hold the # button down for at least one second. The current offset value will be displayed, then the hundreds digit will begin to flash. This indicates that the station has entered the offset value input mode. Continue with the procedure of a - c. above
- 2. When the mbutton is pressed for less than one second, the current offset value is displayed for two seconds, then returns to tip temperature.

6. PARAMETER SETTINGS

The HAKKO FX-951 comes from the factory with the following values preset.

Temperature scale	Celsius
Power save	0 min.
Low temperature alarm setting	150°C
Resetting the supervisor or	4 0
operator control setting	
Setting temperature	350°C
Buzzer setting (C-E sound, S-E sound)	ON
Buzzer setting (Set temperature alert)	ON

• Entering the parameter

1 °C or °F temperature display

2 Power save setting

Set the time from the placement of the soldering iron on the iron holder to the activation of the sleep function.

NOTE:

When not using the power save function, do not connect the iron holder and the soldering station with the connecting cable.

Power save example:

- 2 0 Sleep (immediately after the soldering iron is placed on the iron holder)
- 210 Sleep (10 minutes after the soldering iron is placed on the iron holder)
- 230 Auto-power shutoff (30 minutes after the soldering iron is placed on the iron holder)

NOTE:

The power save time can be set in steps of one minute (30 minutes max.)

- When the sleep function is activated, the temperature of the tip begins to drop.
- When the display shows \(\sum_{LP} \), pressing any button the power will be turned on again.

NOTE:

The sleep function does not work in case the setting temperature is less than 300°C/570°F.

- When the auto-power shutoff function is activated and power to the heater is shut off, the buzzer sounds three
- When the display shows ---, and to begin soldering, cycle the power switch OFF, then ON.

3 Resetting the low temperature alarm tolerance setting

The unique function alerts the operator when the sensed temperature drops below a set limit. Should this occur, an error message will be displayed, and the buzzer will sound continuously. When the temperature returns within the allowable range, the buzzer will stop.

Range of allowable low temperature alarm tolerance for °C: 30 - 150°C for °F: 60 - 300°F

Example:

When the setting temperature is 350°C and the low temperature alarm tolerance is 100°C, buzzer will sound when the tip temperature will drop over 250°C.

4 Resetting the supervisor/operator control setting

The HAKKO FX-951 has the following six parameters:

- 1) °C or °F temperature display selection
- 2) Power save
- 3) Low temperature alarm setting
- 4) Resetting the supervisor/operator control setting
- 5) Buzzer setting (C-E sound, S-E sound) 6) Buzzer setting (Set temperature alert)

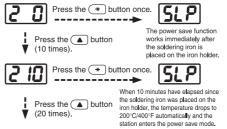
Once the station enters parameter mode, set the parameters in the order shown below. After all the parameters have been set, normal operation will be resumed.

- 1. Turn power OFF.
- 2. Insert the control card into the card slot in the front of the unit
- Press and hold down the ▲ and ▼ buttons simultaneously, and then turn power ON.
- display shows [[Celsius) or [F (Fahrenheit).

When either the display shows either [! [] or 1 F the station is in parameter input mode.

- Pressing either the ▲ and ▼ button will cause the display to alternate between [; [] or [; F].
- When the desired scale is displayed, select by pressing the * button. The system will automatically sequence to power save mode.

When the station enters the parameter input mode the procedure is as follows.



Press the * button once. When 30 minutes have elapsed since the soldering iron was placed on the iron holder nower to the heater will

be automatically shut off (auto powe shutoff).

- When the station enters low-temperature alarm tolerance setting mode, the hundreds digit begins flashing. Enter and store the value in the same manner as described in "Changing the temperature setting."
- If you enter a value exceeding the allowable range shown to the left, you will be brought back to entering a value in the hundreds digit. If this occurs, reenter a correct value.
- Once the value is stored, the system will automatically sequence to resetting the supervisor/operator control setting mode.

To change the supervisor/operator control settings, the procedure is as follows.

- The display will show \(\frac{\mathbb{H}}{2} \) or \(\frac{\mathbb{H}}{2} \) when this mode is entered.
- पि 🗓 : No offset value can be entered without inserting the card.

 Y
 I

 : An offset value can be entered without
 inserting the card.

Pressing the ▲ or ▼ button will change ♀ □ and 4 1.

When the desired setting is displayed, select by pressing * button.

5 Buzzer setting (C-E sound, S-E sound)

6 Buzzer setting (Set temperature alert)

• In the buzzer sound setting mode, which sets whether to sound the buzzer when a sensor error or soldering iron error occurs, either 5 1 or 5 / is displayed. 5 0: The buzzer does not sound.

Select ▲ or ▼ and press the * button.

• In the set temperature alert setting mode, either **5 C** or **5 I** is displayd.

 $[\underline{F}, \underline{G}]$: The buzzer does not sound.

5 !: The buzzer sounds.

and begin heater control.

5 /: The buzzer sounds.

Select ▲ or ▼ and press the * button. The system will exit the parameter setting mode

It is now ready for normal operation.

7. ERROR MESSAGES

Sensor Error



Low-temperature alarm tolerance error



EXAMPLE:

350°C (<u>400°C</u> – <u>50°C</u>) Set temperature Low-temperature alarm tolerance 650°F (<u>750°F</u> – <u>100°F</u>) Set temperature Low-temperature alarm tolerance

Heater terminal short-circuit error



Soldering iron error



When there is the possibility that a failure has occurred in the sensor or heater (including the sensor circuit), 5 - E is displayed and the power is shut down

⚠ CAUTION

The sensor error also occurs if the tip is not inserted properly.

If the sensor temperature falls below the difference between the current temperature setting and the low-temperature alarm tolerance, [H-E] is displayed and the warning buzzer sounds. When the tip temperature rises to a value within the set tolerance, the buzzer will stop sounding.

EXAMPLE:

Assume that the temperature setting is 400°C/750°F and the tolerance 50°C/100°F. If the temperature continues to decrease and finally falls below the value indicated below while the heating element is on, the displayed value starts blinking to indicate that the tip temperature has dropped.

 $\overline{H5E}$ will flash, and the buzzer will sound continuously, when the tip is inserted wrong way round, an incompatible tip is inserted, or a foreign object has found its way into the connector.

 $[\underline{\mathcal{L}} - \underline{\mathcal{E}}]$ will be displayed if the connector cord is not attached to the station OR the wrong soldering iron is connected.