HAKKO FX-952

SOLDERING STATION

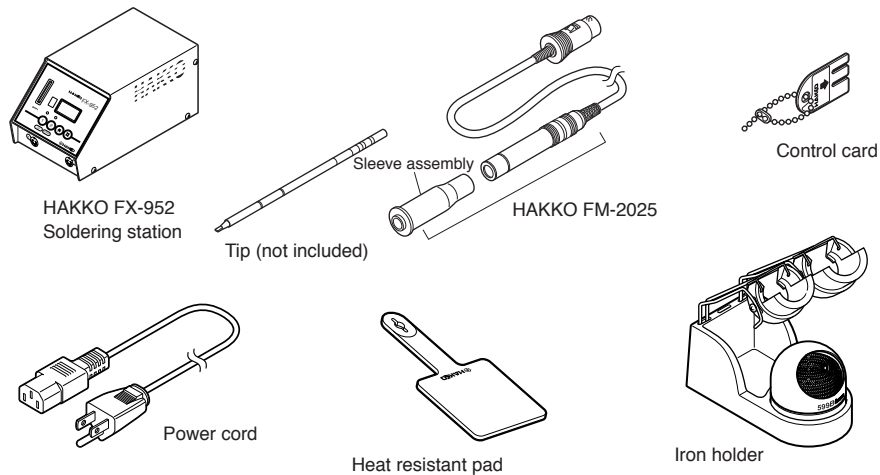High-output, temperature controlled soldering station

Instruction Manual

Thank you for purchasing HAKKO FX-952 soldering station.
Please read this manual before operating the HAKKO FX-952.
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-952 soldering station 1
HAKKO FM-2025 soldering iron 2
Control card 1
Power cord 1
Heat resistant pad 1
Iron holder 1
Instruction manual 1

HAKKO FX-952 Soldering station

Tip (not included)

Sleeve assembly

HAKKO FM-2025

Control card

Power cord

Heat resistant pad

Iron holder

2. SPECIFICATIONS

HAKKO FX-952 soldering station

Power consumption	140W
Temperature range	200 - 450°C (400~840°F)
Temperature stability	±5°C (±9°F)

● **Station**

Output	24V
Dimensions	113 (W) × 106 (H) × 206 (D) mm
Weight	2.6kg

● **HAKKO FM-2025 soldering iron**

Power consumption	70 W (24 V)
Tip to ground resistance	< 2 Ω
Tip to ground potential	< 2 mV
Length of cord	1.2 m (4 ft.)
Length, less cord	188 mm (7.4 in.) with 2.4D tip
Weight, less cord	30 g (0.07 lb.) 2.4D tip

NOTE:
The temperature were measured using the HAKKO 191 thermometer.
This product is protected against electrostatic discharge.
Specifications and design are subject to change without notice.

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.

NOTE : A NOTE indicates a procedure or point that is important to the process being described.

⚠ CAUTION

When power is ON, tip temperatures will be between 200 and 450°C. (392 to 840°F.) To avoid injury or damage to personnel 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-952.

To prevent accidents or damage to the HAKKO FX-952, be sure to observe the following:

● Do not use the HAKKO FX-952 for applications other than soldering.
● Do not allow the HAKKO FX-952 to become wet, or use it when hands are wet.
● Do not modify the HAKKO FX-952.
● 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-952, don't do anything which may cause bodily harm or physical damage.

4. INITIAL SETUP

A. Iron holder
2. Assemble as shown :
· Insert the holder assembly securely into the Iron holder base.

3. Operation:
· First, remove any excess solder from the tip by thrusting the tip into the cleaning wire. (Do not wipe the tip against the wire. This may cause molten solder to spatter.)
When the wire become dirty or loaded with solder, turn the wire until a clean surface is presented.

B. Handpiece cord assembly
Pass the iron cord through the hole in the heat resistant pad.

C. Soldering station

⚠ CAUTION
Be sure the power switch is OFF before connecting or disconnecting the soldering iron cord. Failure to do so may result in damage to the circuit board.
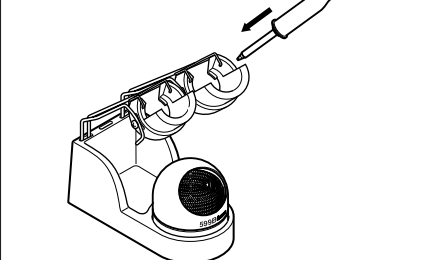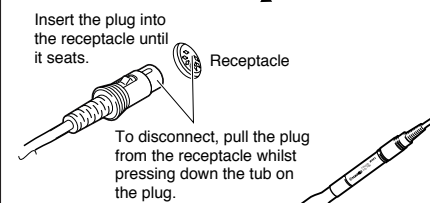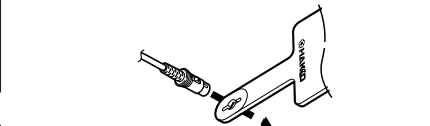
1. Insert the power cord into the receptacle at the back of the station.
Insert the soldering iron cord into the receptacle at the front of the station.

2. Set the iron in the iron holder.

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

⚠ CAUTION
The HAKKO FX-952 is protected against electrostatic discharge and must be grounded for full efficiency.
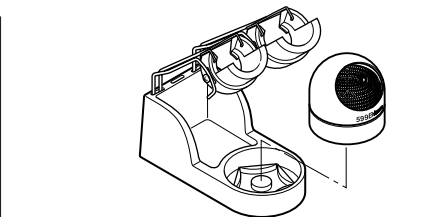
NOTE:
When changing the cleaning wire, lift the case top vertically to prevent solder debris from falling out.
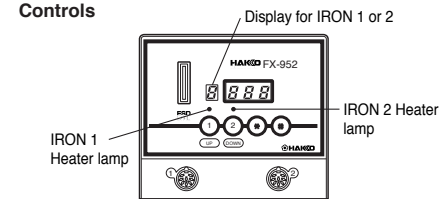
Insert the plug into the receptacle until it seats.

Receptacle

To disconnect, pull the plug from the receptacle whilst pressing down the tub on the plug.

⚠ CAUTION
Remove power and iron cords by holding the plug-not the wires.

5. OPERATION

Controls and displays

Controls

Display for IRON 1 or 2

IRON 1 Heater lamp

IRON 2 Heater lamp

The front panel of the HAKKO FX-952 soldering station has the following controls:
· Four control buttons:

⊕ – Initiates a data entry mode.

✱ – End of sequence signal (terminates a phase of a data entry mode); when pressed for less than one second, displays settings already stored.

① UP – Switches the display to IRON 1
· The display for the temperature and the heat to the IRON 1 will show ON/OFF alternately by pressing more than one second.
· Increases the value in the appropriate display window.

② DOWN – Switches the display to IRON 2
· The display for the temperature and the heat to the IRON 2 will show ON/OFF alternately by pressing more than one second.
· Decreases the value in the appropriate display window.

● **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.

Displays

The HAKKO FX-952 has a three-digit display element. Depending upon the selected mode, it will display:
· Normal mode:
Sensor temperature (tip temperature)
· Data entry:
Selected quantity (see 'data entry procedures' for exact characteristics)
· Temperature scale:
°C or °F, depending upon selection
· Error detection:
Refer to 'ERROR MESSAGES' section

In addition, heater lamps will flash when the station has reached the desired temperature, indicating that it is ready for use.
An audible buzzer is provided to alert the operator when:
· The station has reached the set temperature. The buzzer will sound once.
· 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.
· The buzzer will sound once when sleep function is activated and the tip temperature starts to decrease.
· When a foreign substance, an incompatible tip, or the soldering end of the tip is inserted into the HAKKO FM-2025, the display will blink and the buzzer will sound continuously.
· The auto power shutoff is activated and the power to the heating element is shutoff, the buzzer will sound three times.

⚠ CAUTION
The HAKKO FX-952 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.
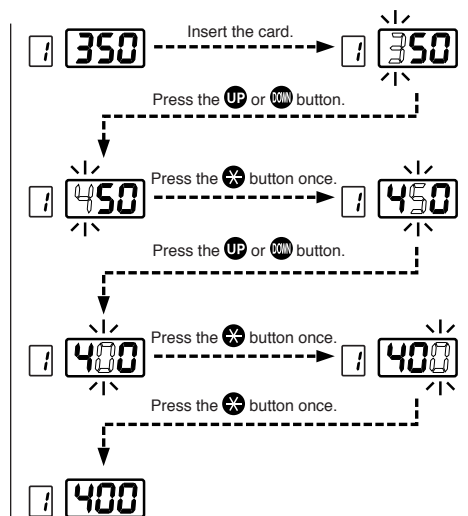
⚠ CAUTION
Place the iron in the iron holder when not in use.

When you need one soldering iron only, refer to the following example.

(Ex.) IRON 2 is not required

● **Changing the temperature setting**

The allowable changes for temperature setting are:
°C..........200~450°C
°F...........400~840°F

Example: 350°C to 400°C for IRON 1

1. Confirm that the display of IRON is 1.
If it shows 2, press ① button to show 1.

2. 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.

3. Entering the hundreds digit
· Press the UP or DOWN button to set the desired figure. When the desired figure is displayed, press the ✱ button to enter. The tens digit will begin to flash.

4. Entering the tens digit
· Press the UP or DOWN button to set the desired figure. When the desired figure is displayed, press the ✱ button to enter. The units digit will begin to flash.

5. Entering the units digit
· Press the UP or DOWN button to set the desired figure. 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.

1. Change the display of IRON to 2.
2. Press ② button until the displayed figure disappears.

NOTE:
The heat to the IRON 2 will not function.

3. Press ① button to display IRON 1.
The change is stored in the system memory and does not disappear even after power off.

1 350 → Insert the card. → 1 350
Press the UP or DOWN button.
1 450
Press the ✱ button once.
1 450
Press the UP or DOWN button.
1 400
Press the ✱ button once.
1 400
Press the ✱ button once.
1 400

NOTE:
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.

NOTE:
Temperature setting can be changed even during the display for the temperature and the heat to the iron is OFF, If HAKKO FM-2025 soldering iron and tip are connected properly.
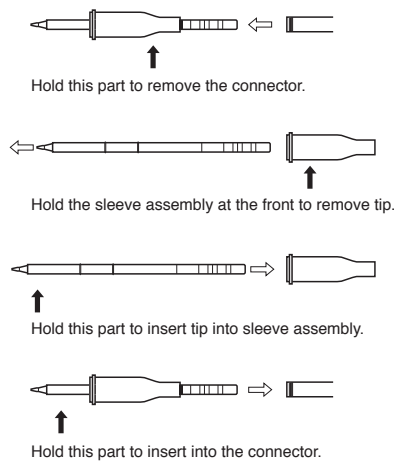
5. OPERATION

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

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 3 - 5, 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.

● **Replacing the tip**

Removing and inserting the tip:
Removing the tip: Hold the sleeve assembly to remove the connector.
Remove the tip from the sleeve assembly.
(If the tip is hot, hold it with the heat-resistant pad.)

Inserting the tip: Hold head part and insert the tip into the sleeve assembly. Push until the sleeve assembly touches the ring round the tip; at this point the tip should not be forced further into the sleeve assembly.
Put the tip into the connector.
Insert the new tip firmly into the connector. (If the tip is not properly inserted, $\boxed{5\text{-}\mathcal{E}}$ will be displayed.)

Hold this part to remove the connector.

Hold the sleeve assembly at the front to remove tip.

Hold this part to insert tip into sleeve assembly.

Hold this part to insert into the connector.

⚠ **CAUTION**
The tip can be very HOT. Use the heat-resistant pad for handling hot tips, but do not hold the hot portion of the tip, even with the pad, for a long time.

● **How to enter the tip offset value into the HAKKO FX-952**

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 is deducted from present offset value.

1. **Check if IRON $\boxed{i}$ is selected with the display window.**
If not, press ❶ button to switch into IRON $\boxed{2}$.

2. **Insert the control card into the slot in the station.**
• The station is now in the temperature setting mode. Set the temperature at 400°C. (750°F.).

3. **Press the ⊕ button on the front panel.**
• This will set the station to offset value entry mode.
The hundreds will blink, pressing the UP or DOWN button to select either 0 or - then press ✴ button.
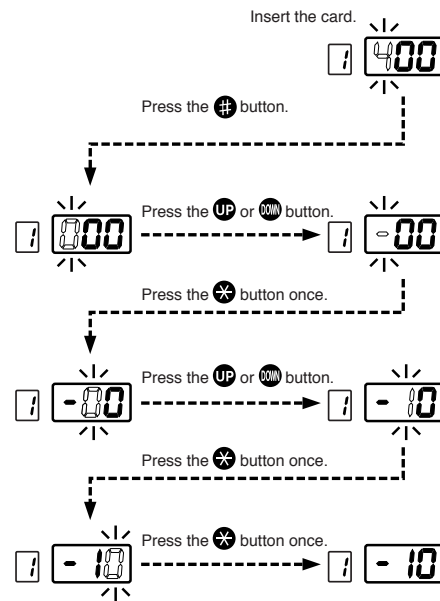The tens digit will flash indicating that the offset value can be changed.

The allowable ranges for offset values are:
°c..........-50 ~ +50°C
°F...........-90 ~ +90°F

If the value outside the above ranges is entered, the hundreds digit will blink, indicating that the system has reverted to the beginning of the mode and procedure must be repeated from the beginning.

4. **Measure the tip temperature with tip thermometer after it is stabilized.**

⚠ **CAUTION**
During offset data entry mode with blinking, the tip temperature is controlled by present off-set value.

5. **Enter the offset value**

Insert the card.

Press the ⊕ button.

Press the UP or DOWN button.

Press the ✴ button once.

Press the UP or DOWN button.

Press the ✴ button once.

Press the UP or DOWN button.

Press the ✴ button once.

Press the ✴ button once.

NOTE:
Temperature setting can be changed even during the display for the temperature and the heat to the iron is OFF, If HAKKO FM-2025 soldering iron and tip are connected properly.

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6. PARAMETER SETTINGS

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 mode.Continue with the procedure of 3 for 'How to enter the tip offset value into the HAKKO FX-952.'

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

6. PARAMETER SETTINGS

The HAKKO FX-952 comes from the factory with the following values preset.

	IRON 1	IRON 2
°C or °F	°C	
Power save	0	0
Low temperature alarm setting	150°C	
Resetting the supervisor or operator control setting	4 0	
Setting temperature	350°C	350°C

● **Entering the parameter**

1 °C of °F temperature display

The HAKKO FX-952 has the following four parameters:
(1) °C or °F temperature display selection
(2) Power save
(3) Low temperature alarm setting
(4) Supervisor or operator control setting

NOTE:
Power save parameter (2) can be set for Iron 1and Iron 2 respectively. The other parameter (1, 3, 4) settings are for common between Iron 1 and Iron 2.

Once the station enters parameter mode, set the parameters in the order shown below. Once 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.
3. Press and hold down the ✴ and ⊕ buttons simultaneously, and then turn power ON.
4. Hold ✴ and ⊕ buttons down until the display shows $\boxed{i\ \mathcal{L}}$ (Celsius) or $\boxed{i\ F}$ (Fahrenheit). When either the display shows either or , the station is in parameter input mode.
● Pressing either the UP and DOWN button will cause the display to alternate between $\boxed{i\ \mathcal{L}}$ or $\boxed{i\ F}$. When the desired scale is displayed, select by pressing the ✴ button. The system will automatically sequence to power save mode.

2 Power save setting

Power save is an optional setting HAKKO FX-952 has 2 selections of power save. In case power save is not required, select 0 and press ✴ button.

Set up power save function
0   Power save is not set
15 Sleep function starts after 15 minutes
30 Auto power shutoff function starts after 30 minutes

● **Sleep**
When this function is activated and the soldering irons are not used for 15 minutes, the display will show $\boxed{5LP}$ and the tip temperature goes down to 200°C/400°F automatically with a buzzer sound just one time. Then, it enters sleep (stand-by) mode. To start soldering again at the previous temperature, press any button among ❶ ✴ ⊕ for IRON 1 or press any buttons among ❷ ✴ ⊕ for IRON 2.

● **Auto power shutoff**
When it is activated and the soldering irons are not used for 30 minutes, the power to the heating element is shutoff automatically and the buzzer will sound three times.
When the temperature decreases to 100°C/200°F, the display will show $\boxed{\text{- - -}}$ (in case display is selected). To resume soldering, cycle the power switch OFF, then ON. The power will be turned on automatically if you hit any button before the temperature decreases to 100°C/200°F.

1. When the system entered this mode, the display shows $\boxed{i\quad \mathcal{O}}$ which is the status of IRON 1
2. The display will turn to $\boxed{i\quad \mathcal{O}}$ $\boxed{i\quad l5}$ $\boxed{i\quad 30}$ by pressing UP or DOWN button.
3. Allow the display to show your favorite duration and press the ✴ button. Then, $\boxed{2\quad \mathcal{O}}$ comes up to the display window, that is the status of IRON 2.
4. Select your favorite duration with UP or DOWN button and press ✴ button as you did for IRON 1.

NOTE:
$\boxed{i\quad \mathcal{O}}$ and $\boxed{2\quad \mathcal{O}}$ are displayed only for the first time. From the next time, your set duration will display.

NOTE:
This function does not work in case the setting temperature is less than 300°C/570°F.

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6. PARAMETER SETTINGS

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: 50 - 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

● 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 offset free setting mode.

To change the supervisor/operator control settings, the procedure is as follows.
● The display will show $\boxed{4\ \mathcal{O}}$ or $\boxed{4\ i}$ when this mode is entered.

$\boxed{4\ \mathcal{O}}$: No offset value can be entered without inserting the card.

$\boxed{4\ i}$: An offset value can be entered without inserting the card.

Pressing the UP or DOWN button will change $\boxed{4\ \mathcal{O}}$ and $\boxed{4\ i}$.
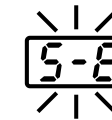When the desired setting is displayed, select by pressing ✴ button.
The system will exit the parameter setting mode and begin heater control.
It is now ready for normal operation.

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7. ERROR MESSAGES

In case some errors occur in the IRON not displayed, automatically display will change to show the IRON in puestion. When the problem is setted, the display will return to show another IRON.
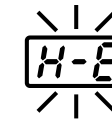
● **Sensor Error**

$\boxed{5\text{-}\mathcal{E}}$

● **Low-temperature alarm tolerance error**

$\boxed{H\text{-}\mathcal{E}}$

EXAMPLE:

350°C (400°C – 50°C)

Set temperature └─ Low-temperature alarm tolerance

OR

650°F (750°F – 100°F)

Set temperature └─ Low-temperature alarm tolerance

● **Heater terminal short circuit error**

$\boxed{HSE}$

● **Soldering iron error**

$\boxed{\mathcal{L}\text{-}\mathcal{E}}$

When there is the possibility that a failure has occurred in the sensor or heater (including the sensor circuit), $\boxed{5\text{-}\mathcal{E}}$ is displayed and the power is shut down.

NOTE:
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, $\boxed{H\text{-}\mathcal{E}}$ 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.

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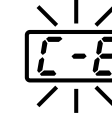
$\boxed{\mathcal{L}\text{-}\mathcal{E}}$ will be displayed if the connector cord is not attached to the station OR the wrong soldering iron is connected.