HAKKO

SOLDERING STATION

FN-1010

Instruction Manual

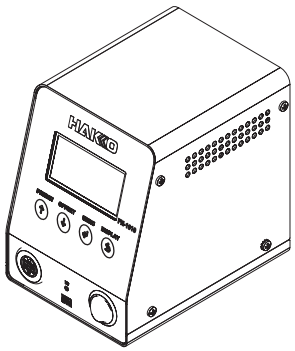
Thank you for purchasing HAKKO FN-1010 soldering station.
This product is a soldering iron with added functions for use
with peripheral equipment such as thermometer.
Please read the manual carefully
before operating the HAKKO FN-1010.
Please keep this manual readily accessible for reference.

Table of Contents

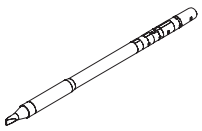
1. PACKING LIST

Please check to make sure that all items listed below are included in the package.

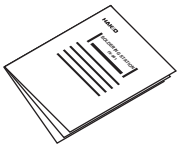
HAKKO FN-1010 soldering station 1
HAKKO FN-1101.....1
Power cord.....1
Iron holder 1
Tip cleaner (FT401-81).....1
Cleaning wire (A1561).....1
Instruction manual 1



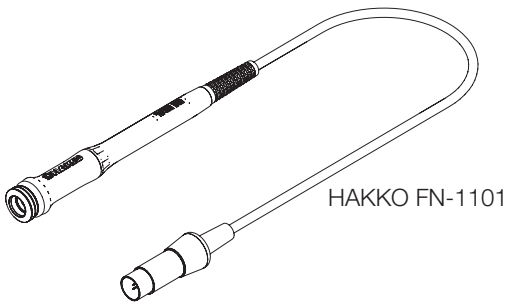
HAKKO FN-1010



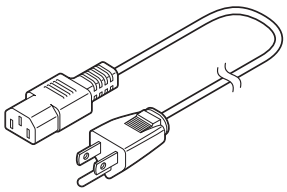
Tip
(T36 series not included)



Instruction manual



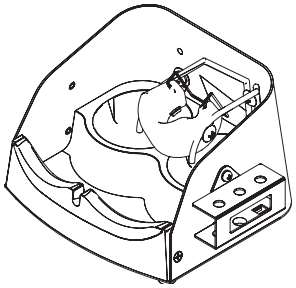
HAKKO FN-1101



Power cord

Tip cleaner
(FT401-81)

Cleaning wire
(A1561)



Iron holder
(FH210-81)

2. SPECIFICATIONS

Power consumption	100 W
Temperature range[*1]	50 - 450°C (120 - 850°F)
Temperature stability	±3°C (±5°F) at idle temperature

Station

Output	21 V
Dimensions	104 (W) × 138 (H) × 152 (D) mm (4.1 × 5.4 × 6.0 in.)
Weight	1.9 kg (4.2 lb.)

*1 The temperature was measured using the HAKKO FG-101 thermometer.

HAKKO FN-1101 (soldering iron)

Power consumption	95 W (21 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Length of cord	1.2 m (4 ft.)
Length (w/o cord)	180 mm (7.1 in.) (with 2.4D tip)
Weight (w/o cord)	32 g (0.07 lb.) (with 2.4D tip)

- This product is protected against electrostatic discharge.
- Specifications and design are subject to change without notice.

Electrostatic Protection

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:

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 ground the unit during use.

3. WARNINGS, CAUTIONS AND NOTES

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.

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

⚠ WARNING

When power is ON, the tip will be hot.
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 FN-1010.**
- **The unit is for a counter or workbench use only.**
- **This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in safe way and understand the hazards involved.**
- **Children shall not play with the appliance.**
- **Cleaning and user maintenance shall not be made by children without supervision.**

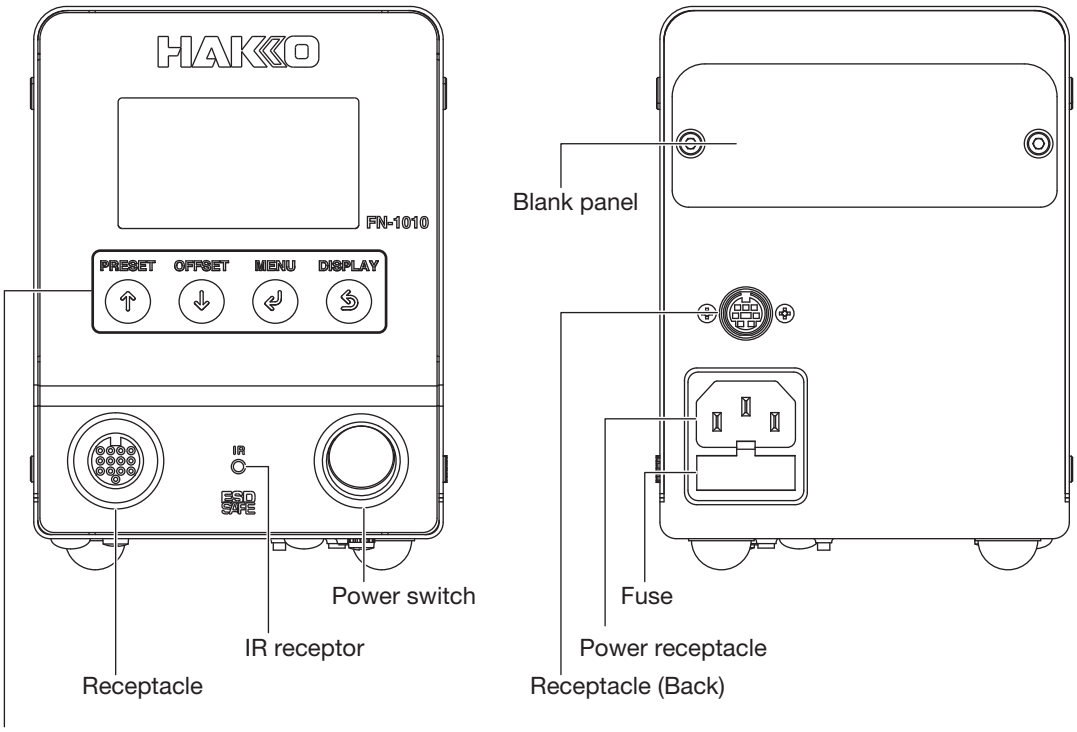
To prevent accidents or damage to the HAKKO FN-1010, be sure to observe the following:

⚠ CAUTION

- **Do not use the HAKKO FN-1010 for applications other than soldering.**
- **Do not strike the iron against hard objects to remove excess solder. This will damage the iron.**
- **Do not modify the HAKKO FN-1010.**
- **Use only genuine HAKKO replacement parts.**
- **Do not allow the HAKKO FN-1010 to become wet, or use it when hands are wet.**
- **Be sure to hold the plug when inserting or removing the iron cord.**
- **Be sure the work area is well ventilated. Soldering produces smoke.**
- **While using the HAKKO FN-1010, don't do anything which may cause bodily harm or physical damage.**

4. PARTS NAMES

4-1 Unit

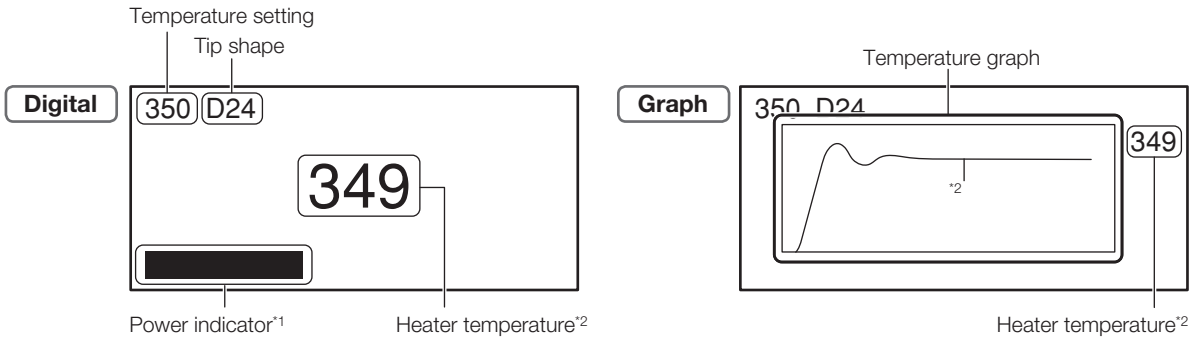


Control Buttons

The front panel of the HAKKO FN-1010 has 4 control buttons.

⇧	In setting screen	Increases numerical values by 1 or moves cursor up one item.
	During normal operation	Opens preset selection screen.
⇩	In setting screen	Decreases numerical values by 1 or moves cursor down one item.
	During normal operation	Opens offset setting screen.
↵	In setting screen	Confirms the numerical setting or item selection.
	During normal operation	Opens setting screen.
↺	In setting screen	Cancels input value and moves to previous screen.
	During normal operation	In normal screen, switches between digital display and graph display.

4-2 Normal display screen



*1 Shows level of power input to heater

*2 The heater temperature and temperature graphs show the sensor values in the heater.

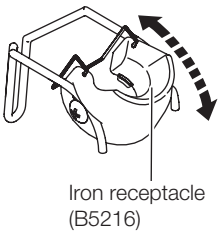
5. INITIAL SETUP

5-1 Iron holder

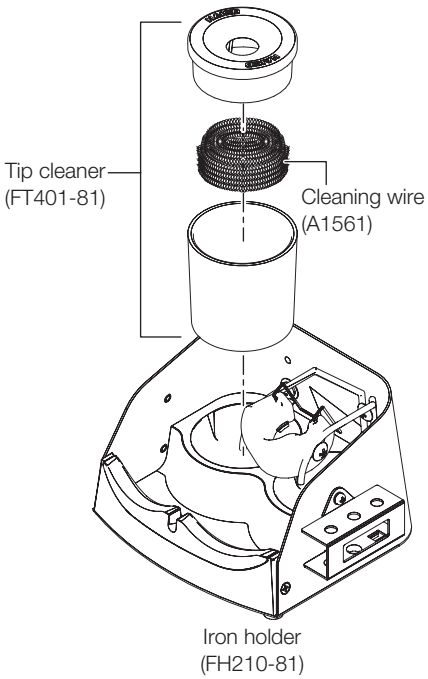
⚠ CAUTION

Be careful not to set the angle too high (close to vertical). Doing so will cause the grip to become hot.
Be careful not to set the angle too low. Doing so may let the soldering iron to fall out.

1. Loosen the two screws holding the iron receptacle (B5216), adjust it to the desired angle, and retighten the screws to secure it in place.

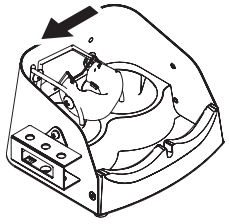


2. Insert the cleaning wire (A1561) into the tip cleaner (FT401-81) and attach the tip cleaner to the iron holder (FH210-81).



— NOTE —

It is possible to switch the left and right positions of the iron receptacle and cleaner.
Attach them in the locations which make them easiest to use.



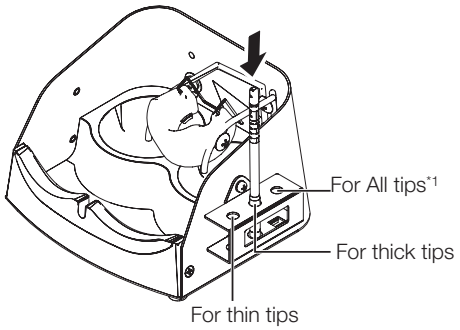
5-2 Handpiece

⚠ CAUTION

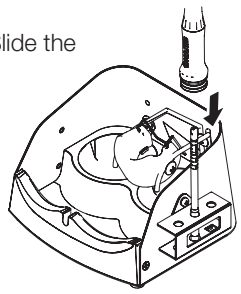
- **The tip gets hot. Use sufficient care when handling it to avoid getting burned.**
- **The tip holder becomes hot, so let the tip cool down sufficiently before placing it in the holder.**
- **When inserting or removing the tip, always be sure to switch the power off first.**
- **Once the tip has been fully inserted into the handpiece, do not try to forcibly push it in more. If the tip is not inserted correctly, "Sensor error" will be displayed.**

5-2-1 Inserting tip

1. Place the tip in the tip insertion stand on the side of the iron holder.
When putting the tip in, put it in the position matching the shape of the tip end.



2. Hold the soldering iron firmly by hand. Slide the handpiece (FN1101-81) fully onto the tip.

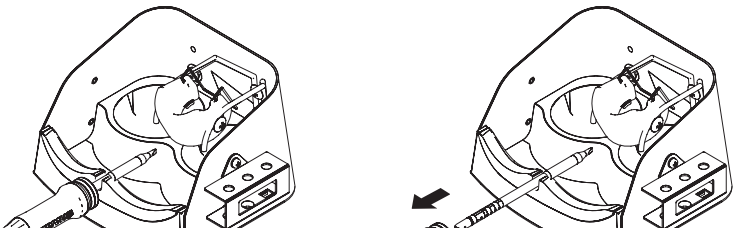


*1 When a 5.2D-type tip is used, place it here and then press-fit it into the handpiece. Otherwise, a 5.2D-type tip cannot be attached.

5-2-2 Removing tip

1. As shown in the diagram below, fit the handpiece (FN1101-81) into the tip removal attachment of the iron holder.

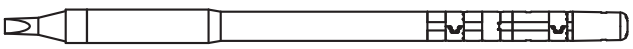
2. Hold the soldering iron firmly by hand. Pull the handpiece (FN1101-81) away from the iron holder to remove the tip.



5-2-3 About tips

When a T36 tip is inserted into the handpiece, the station reads the tip information from the wavy-line section on the following figure.
The tip information can be checked from "**Tip Info**" on the menu screen.
It is possible to set the details on the "**Tip Info**" screen. (Refer to "6-10 Load repetition count alarm")

Tips (T36 series)



5-3 Station

5-3-1 Preparation of the Station

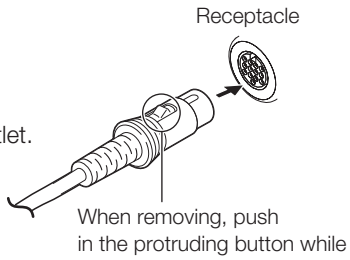
⚠ CAUTION

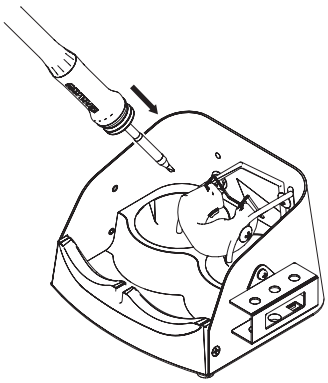
- **When connecting or disconnecting the soldering iron cord to/from the receptacle, always be sure to switch the power off first. Failure to do so may result in damage to the circuit board.**
- **This equipment has electrostatic discharge countermeasures and must be connected to ground when in use.**

1. Connect the power cord to the power receptacle on the back of the station.
Connect the soldering iron cord to the receptacle on the front of the station.

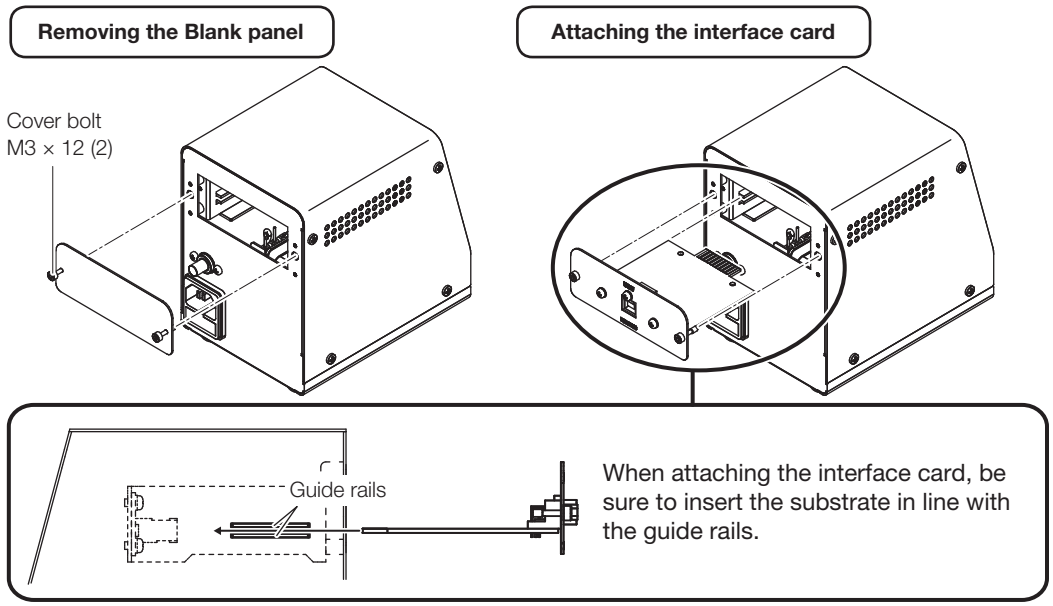
2. Place the handpiece in the iron holder.

3. Plug the power cord plug into an electrical outlet.





5-3-2 Attaching the interface card (optional)



6. OPERATION

⚠ CAUTION

- **At the time of shipment from the factory, the default temperature setting is 350°C in Celsius mode, 750°F in Fahrenheit mode.**
- **When not using, place the iron in the iron holder.**

— NOTE —

Load repetition count function and supplied energy calculation function are influenced by factors such as tip shape, deterioration condition of tips, temperature setting, external environment and work size.
Please use values as reference.

Set power switch to ON.

When turning on the power switch initially,
it is necessary to set the date/time.
For the sequence of steps, refer to “7-12 Date & Time Set.”

When the set temperature has been reached,
a buzzer will sound to indicate that the iron is ready to use.

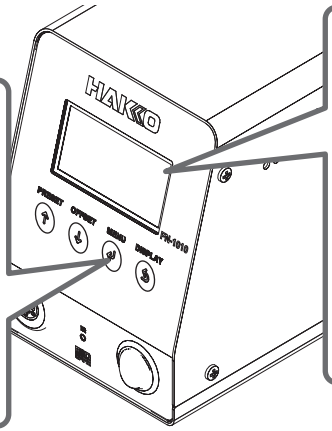
Input Time & Date
2019/01/01/00:00

6-1 Setting/changing the temperature

The temperature can be set or changed by the following steps. The settable temperature range is 50 - 450°C (120 - 850°F).

1. With the normal screen shown, press the ↵ button. The menu screen will appear. Select **"Temp Set"** and press the ↵ button again.

Temp Set	350°C
Auto Cal	→
Auto Cal Info	→
Tip Info	→
Load Detection	OFF
Preset Temp	→
Offset Temp	00°C

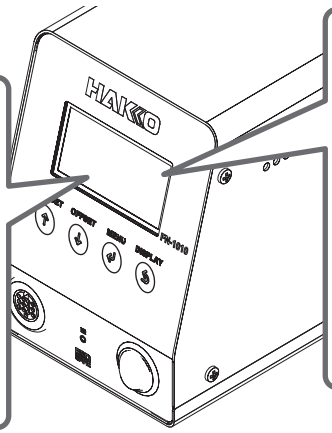


2. The temperature setting screen will appear.
Press the ↑ or ↓ button to set the hundreds digit.*1
After setting, press the ↵ button.

Set Temp
350°C

3. Following the same procedure as in Step **2**, set the tens and ones digits.*2
After setting, press the ↵ button.

Set Temp
400°C



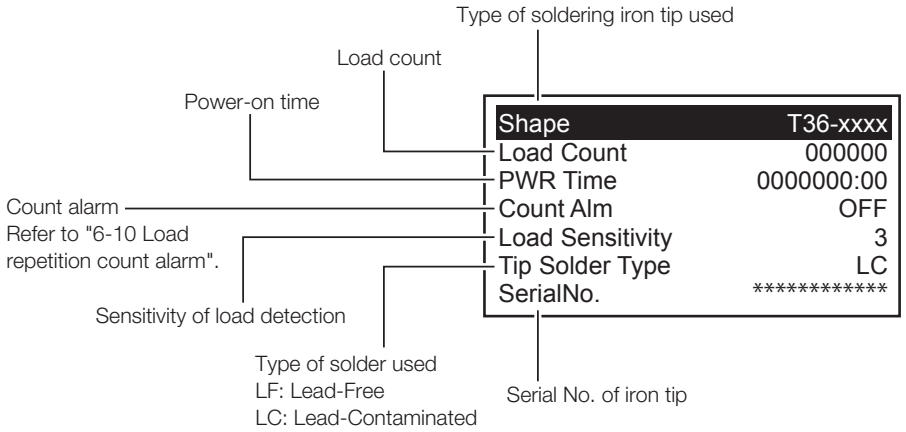
4. The set temperature will be stored in the internal memory, and after the new temperature setting has been displayed, heater control will start.

400 D24
400°C

*1 Values from 0 - 4 can be set. (In °F mode, values from 1 - 8 can be set.)
*2 Values from 0 - 9 can be set. (The range is the same in °F mode.)

6-2 Tip Info information

The following information is displayed if **"Tip Info"** is selected in the menu screen. The count alarm, the sensitivity of load detection, and the solder type used can be set.

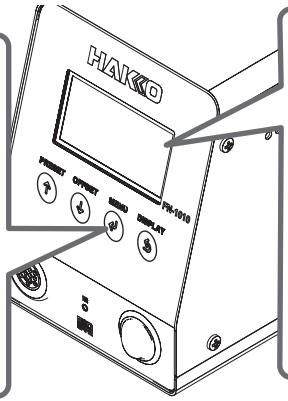


6-3 Type of solder used

Set the type of solder used. LF (lead free) is factory-configured.

1. In the menu screen, select **"Tip Info"**, and press the ↵ button. Select **"Tip Solder Type"**, and press the ↵ button.

Shape	T36-D24
Load Count	000000
PWR Time	0000000:00
Count Alm	OFF
Load Sensitivity	3
Tip Solder Type	LF
SerialNo.	**********



2. The screen in which iron tip information can be viewed and set is displayed. Use the ↑ or ↓ button to select **"Lead-Free"** or **"Lead"**, and press the ↵ button.

Tip Solder Type

Lead-Free
Lead

⚠ CAUTION

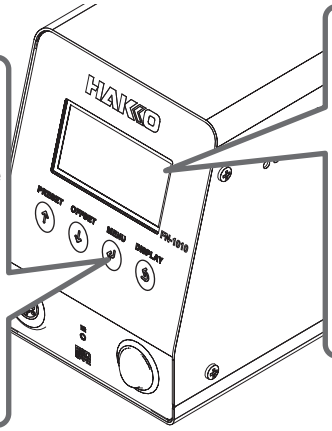
An iron tip whose solder type has been once set to lead-containing solder can not be set back to lead free. In that case, use the iron tip exclusively for lead-containing solder.

6-4 Preset temperature settings

Set or change preset temperature settings. Temperature can be set in the range between 50 and 450°C (120 and 850°F).

1. Press the ↵ button when the screen shows an operational view. The menu screen opens.
Select **"Preset Temp"**, and press the ↵ button again.

Temp Set	400°C
Auto Cal	→
Auto Cal Info	→
Tip Info	→
Load Detection	OFF
Preset Temp	→
Offset Temp	00°C



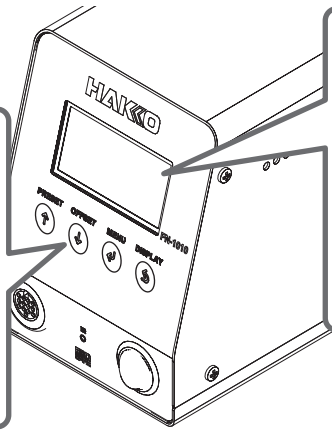
2. Press the ↑ or ↓ button to select an intended preset.
After selecting, press the ↵ button.

Preset1	250℃
Preset2	300℃
Preset3	350℃
Preset4	400℃
Preset5	450℃

3. Press the ↑ or ↓ button to confirm the value in each digit position.*1
After confirming, press the ↵ button.

Preset1 Setting

280°C

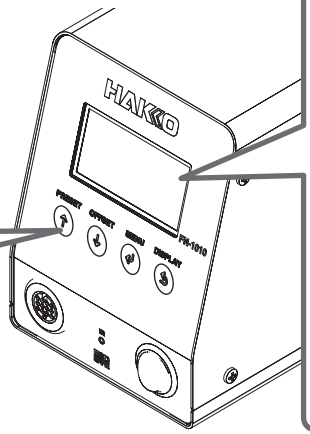


4. The new temperature is displayed in the preset selection screen.

Preset1	280℃
Preset2	300℃
Preset3	350℃
Preset4	400℃
Preset5	450℃

*1 A value between 0 and 4 can be input in the third digit position. (In °F mode, a value between 1 and 8 can be input.) A value between 0 and 9 can be input in the first and second digit positions. (The same for °F mode)

6-5 Selecting a preset temperature



1. With the normal screen shown, press the ⇧ button.

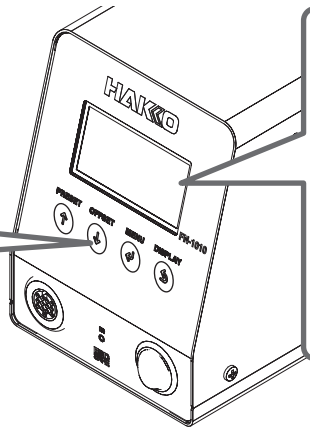
2. The preset selection screen will appear.
Press the ⇧ or ⇩ button to select the desired Preset No.
After selecting, press the ↵ button.
The selection will be stored in the internal memory and after the new temperature setting has been displayed, heater control will start.

Preset Select	
Preset1	250℃
Preset2	300℃
Preset3	350℃
Preset4	400℃
Preset5	450℃

6-6 Setting/changing the offset

6-6-1 Direct input

The offset can be set or changed by the following steps. The settable offset range is -50 - +50°C (-90 - +90°F).
Example: When the set temperature is 400°C and the tip temperature is 395°C, the difference between them is 5°C.

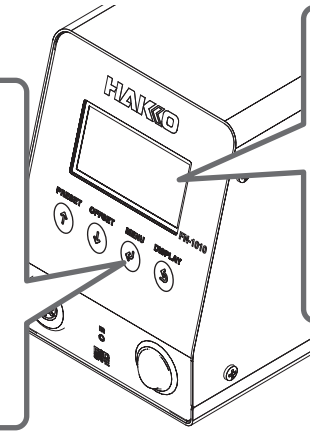


1. With the normal screen shown, press the ⇩ button.

2. The offset input screen will appear.
Press the ⇧ or ⇩ button to select **blank (+)** or **–**.
After selecting, press the ↵ button.

Temp Offset

00°C



3. Following the same procedure as in Step **2**,*1 set the tens and ones digits.*2
After setting, press the ↵ button.

Temp Offset

05°C

4. The new offset value will be stored in the internal memory, and heater control will start.

400 D24

400°C

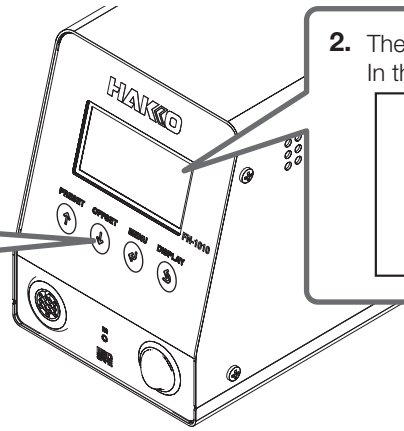
*1 Values from 0 - 5 can be set. (In °F mode, values from 0 - 9 can be set.)
*2 Values from 0 - 9 can be set. (The range is the same in °F mode.)

6-6-2 IR input

In addition to direct input of the offset value as described in “6-6-1 Direct input”, the offset value can also be set using IR input.

Example: Using HAKKO FG-100B

1. With the normal screen shown, press the ⓓ button.

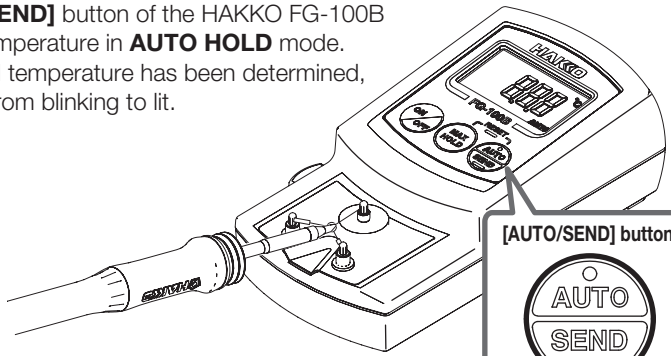


2. The offset input screen will appear. In this state, the product is in standby.

Temp Offset

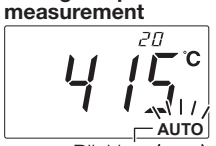
00°C

3. Press the **[AUTO/SEND]** button of the HAKKO FG-100B and measure the temperature in **AUTO HOLD** mode. When the measured temperature has been determined, **AUTO** will change from blinking to lit.



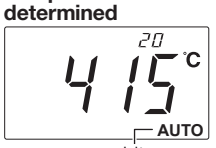
[AUTO/SEND] button

During temperature measurement



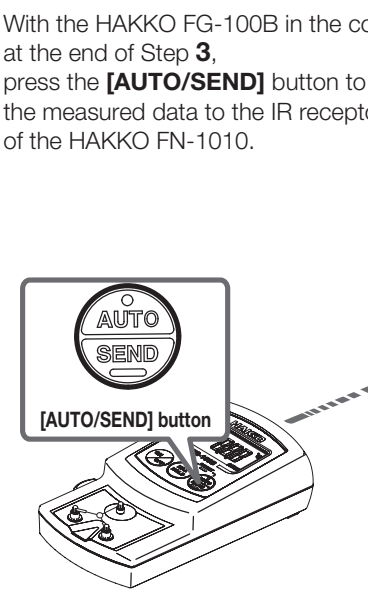
Blinking

Temperature determined



Lit

4. With the HAKKO FG-100B in the condition at the end of Step **3**, press the **[AUTO/SEND]** button to send the measured data to the IR receptor of the HAKKO FN-1010.



5. After the display shown below appears, the new offset value will be stored in the internal memory, and heater control will start.

Temp Offset
Complete!

Before 20°C

After 5°C

— NOTE —

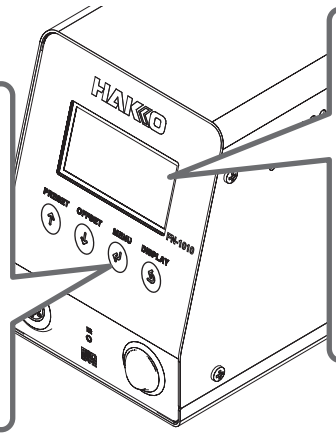
For details on using the thermometer equipped with IR transfer function, refer to the instruction manual for the thermometer being used.

6-7 Performing “Auto Cal”

When **“Auto Cal”** has been performed, if the measured temperature is within a previously set temperature range, it will be judged as passed and stored in the main body, and the product will return to normal operation.
If the measured temperature is outside the temperature range, the offset value will be calculated from the measurement results, and calibration will be performed using the new offset value. Follow the instructions on the screen to send the measured results with the new offset value.

1. With the normal screen shown, press the ⏎ button. The menu screen will appear. Select **“Auto Cal”** and press the ⏎ button again.

Temp Set	400°C
Auto Cal	→
Auto Cal Info	→
Tip Info	→
Load Detection	OFF
Preset Temp	→
Offset Temp	05°C



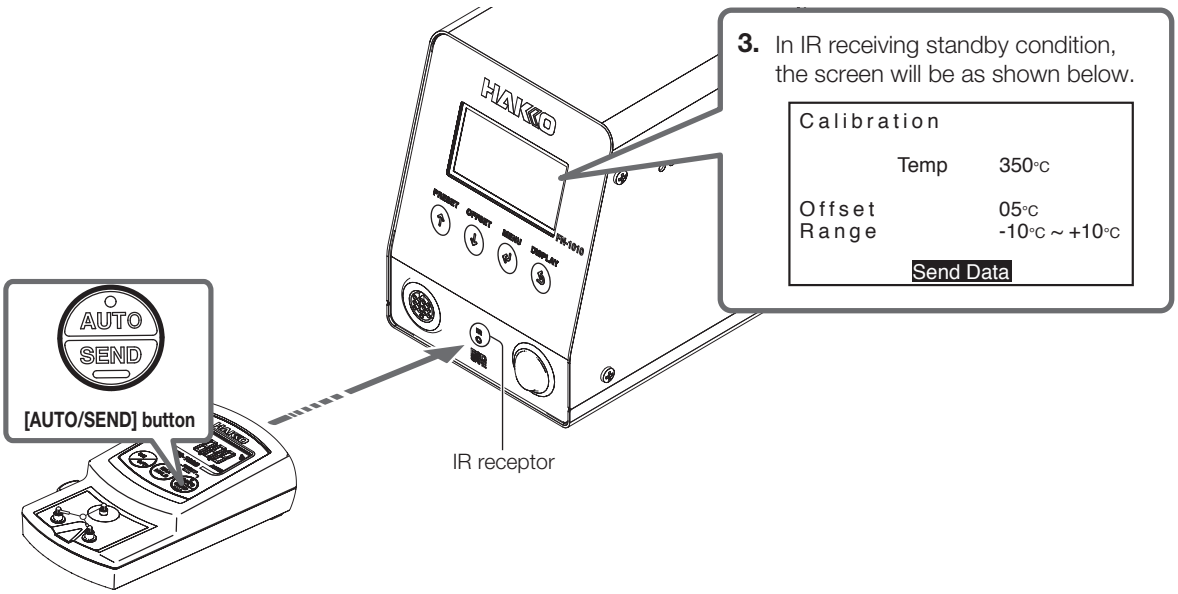
2. The **“Auto Cal”** standby screen will appear. Press the ⏎ button to enter the IR receiving standby condition.

Calibration	
Temperature	ON
Leak Volt	OFF
Tip-to-Ground	OFF
START	

3. In IR receiving standby condition, the screen will be as shown below.

Calibration	
Temp	350°C
Offset	05°C
Range	-10°C ~ +10°C
Send Data	

4. Measure the temperature and press the **[AUTO/SEND]** button to send the measured data to the main body’s IR receptor as described in Steps 3 and 4 of “6-6-2 IR input”.



5. If the measured data is within the set range it will be judged as passed. If it is outside the set range, temperature measurement and sending will be performed repeatedly for the previously set number of retries.

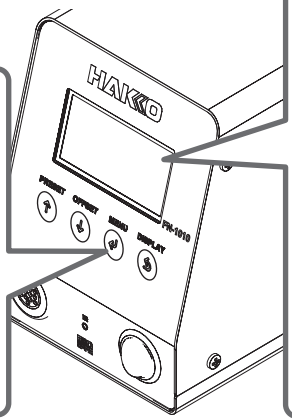
— NOTE —

If the measurement did not pass after Auto Cal was performed, the changed offset value will be returned to the value before calibration.

6-8 Checking “Auto Cal” information

1. With the normal screen shown, press the ↵ button. The menu screen will appear. Select **“Auto Cal Info”** and press the ↵ button again.

Temp Set	400°C
Auto Cal	→
Auto Cal Info	→
Tip Info	→
Load Detection	OFF
Preset Temp	→
Offset Temp	05°C



2. A list of the calibration results for the most recent 10 calibrations will be shown.
To see the details, use the ↑ or ↓ button to select the desired calibration from the list, and then press the ↵ button.

Calibration Result List		*1
1. 2018/03/23	17:15	P
2. 2018/03/23	17:13	F
3. 2018/03/23	17:13	F
4. 2018/03/23	17:12	F
5. 2018/03/22	11:11	P

In the details screen, press the ↑ or ↓ button to change the page. After checking the information, press the ⏻ button.

*1 P and F stand for PASS and FAIL, respectively.

6-9 Setting the load detection function

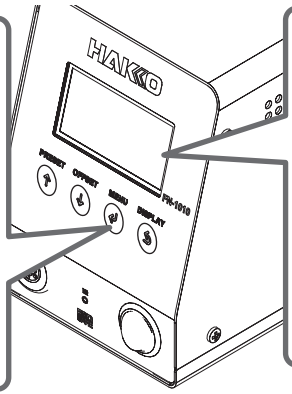
The HAKKO FN-1010 has the following functions for detecting the tip load.

Load repetition count function: The number of times a specified load has occurred is counted and stored in the tip.

Supplied energy calculation function: The amount of energy emitted during the period in which a load occurred is calculated.

1. With the normal screen shown, press the ↵ button. The menu screen will appear. Select **“Load Detection”** and press the ↵ button again.

Temp Set	400°C
Auto Cal	→
Auto Cal Info	→
Tip Info	→
Load Detection	OFF
Preset Temp	→
Offset Temp	05°C



2. The screen for setting the load detection function to ON or OFF will be shown. Use the ↑ or ↓ button to select **“ON”**.

Load Detection

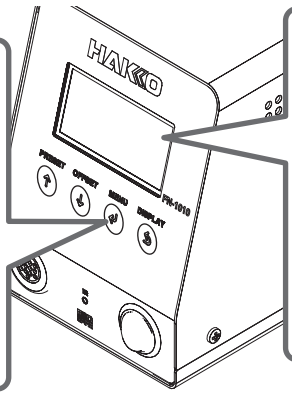
ON
OFF

6-10 Load repetition count alarm

If the specified number of load repetitions has been reached, the load repetition count alarm sounds a buzzer and vibrates the handpiece.
The count alarm value can be set according to the following procedure. The settable range is – – – – – – (OFF) and 100 to 999,900.
If the number of load repetition exceeds the set value, the buzzer sounds and the handpiece vibrates every time when load is counted, and the display showing the tip shape will blink.

1. With the normal screen shown, press the ↵ button. The menu screen will appear. Select **"Tip Info"** and press the ↵ button again.

Temp Set	400°C
Auto Cal	→
Auto Cal Info	→
Tip Info	→
Load Detection	OFF
Preset Temp	→
Offset Temp	05°C



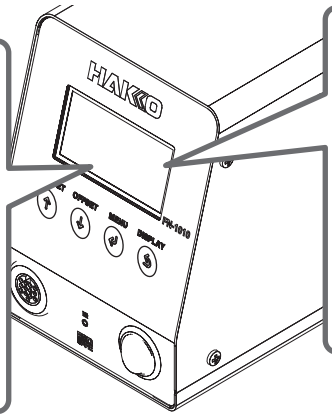
2. The screen for checking and setting tip information will be shown.
Use the ↑ or ↓ button to select **"Count Alm"** and press the ↵ button.

Shape	T36-D24
Load Count	000000
PWR Time	0000000:00
Count Alm	OFF
Load Sensitivity	3
Tip Solder Type	LF
SerialNo.	**********

3. The count alarm value input screen will be shown.
Select "ON" and press the ↑ or ↓ button to set the first digit.*1
After setting, press the ↵ button.

Count Alarm Setting

ON
OFF
▬ — — — — —



4. Following the same procedure as in Step **3**, set the second, third, and fourth digits.*1
After setting, press the ↵ button.

Count Alarm Setting

ON
OFF
1 0 0 **0** 0 0

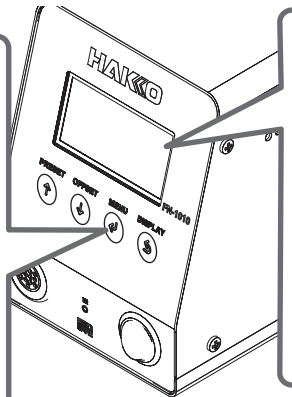
*1 Values from 0 - 9 can be set. (The range is the same in °F mode.)

6-11 Load sensitivity setting

Set the sensitivity of the load applied to the iron tip. It can be set in the range between 1 and 5. The greater the value, the higher the sensitivity becomes.
Adjust the setting according to work conditions and environment so that the Load Count triggers properly.

1. Press the ↵ button when the screen shows an operational view. The menu screen opens.
Select **"Tip Info"**, and press the ↵ button again.

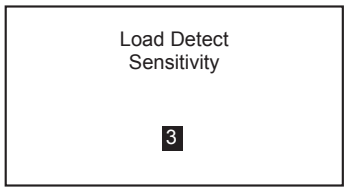
Temp Set	400°C
Auto Cal	→
Auto Cal Info	→
Tip Info	→
Load Detection	OFF
Preset Temp	→
Offset Temp	05°C

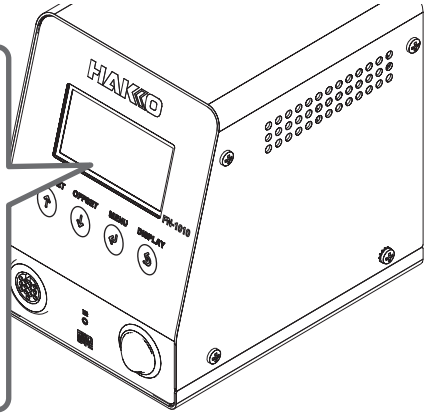


2. The screen in which iron tip information can be viewed and set is displayed.
Use the ↑ or ↓ button to select **"Load Sensitivity"**, and press the ↵ button.

Shape	T36-D24
Load Count	000000
PWR Time	0000000:00
Count Alm	OFF
Load Sensitivity	3
Tip Solder Type	LF
SerialNo.	**********

3. The sensitivity input screen opens. Press the ⇧ or ⇩ button to confirm the sensitivity value.*1
After confirming, press the ↵ button.



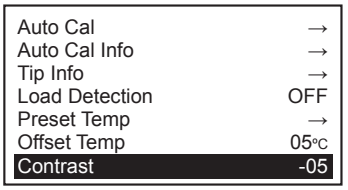


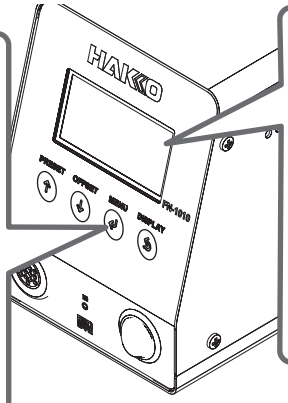
*1 A value between 1 and 5 can be input.

6-12 Contrast setting

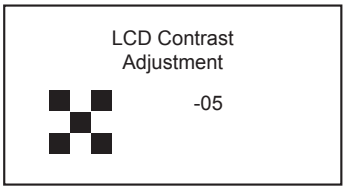
Set the contrast setting. It can be set in the range between -10 and 10.
The greater the value, the higher the contrast level becomes.

1. Press the ↵ button when the screen shows an operational view. The menu screen opens. Select **"Contrast"**, and press the ↵ button again.





2. The contrast setting screen opens. Use the ⇧ or ⇩ button to change values. After selecting an appropriate contrast level, press the ↵ button.



7. PARAMETER SETTINGS

Turning on the power while pressing the ⇧button opens the parameter setting screen.
The following parameters are shown.

7-1 Parameter setting list

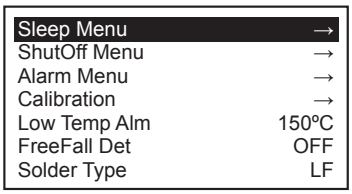
Menu	Item		Description
Sleep Menu (Sleep items)	**ON/OFF** (Auto sleep function)		ON/OFF
	Sleep Activate Time (Auto sleep time)		01 - 29 minutes
	Sleep Temp Set (Auto sleep temperature)		200 - 300ºC (400 - 570°F)
ShutOff Menu (Shut-off items)	**ON/OFF** (Auto shut-off function)		ON/OFF
	Auto ShutOff Activate Time (Auto shut-off time)		30 - 60 minutes
Alarm Menu (Alarm items)	**Error Alarm Set** [Buzzer sound setting (S-E sound, C-E sound)]		Buzzer ON/Buzzer OFF
	Ready Alarm Method [Buzzer sound setting (Setting temperate reach sound)]		Buzzer & Vibration/Only Buzzer/Only Vibration/ Buzzer & Vibration OFF
Calibration (CAL items)	**Set Upper Limit** [Temperature calibration range (positive)]		1 - 20°C (1 - 36°F)
	Set Lower Limit [Temperature calibration range (negative)]		1 - 20°C (1 - 36°F)
	Set Maximum Retry (Temperature calibration retry count setting)		0 - 3
	AutoCal Items (AutoCAL items)	**Temp** (Temperature)	ON/OFF
		Leak Volt (Leak voltage)	ON/OFF
		Tip-to-Ground (Resistance between iron tip and ground)	ON/OFF
	AutoCal Fail Lock Set (AutoCAL fail lock)		ON/OFF
Low Temp Alarm (Lower limit temperature error)			30 - 150°C (60 - 300°F)
Free Fall Detect (Fall detection setting)			ON/OFF
Station Solder Type (Solder type)			Lead-Free/Lead
Solder Type Lock (Solder type lock)			Notification ONLY/Heater Lock
Pass. Lock (Password lock)			Unlock/Partial/Lock
Station ID (Station ID)			Up to 16 digits
Date&Time Set (Year, month, day and time)			Year/Month/Day/Hour: Minute
Temp Unit Set (Switch between °C/°F)			°C/°F
Initial Reset (Initial reset)			°C/°F

7-2 Sleep Menu

Set the sleep functions of the soldering iron.
When this function is enabled, the sleep mode takes effect to cool the iron tip down to a specified temperature if a specified period of time has elapsed after the iron is placed on the holder.

1. Select **"Sleep Menu"**, and press the ↵ button.

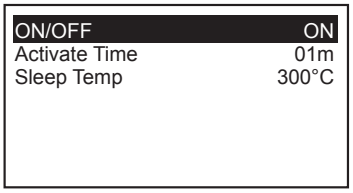
2. The menu screen opens.



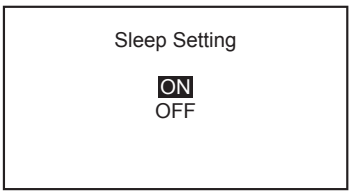
■ Sleep Setting

Switch ON/OFF the auto sleep function.

1. In the menu screen, press the ↑ or ↓ button to select **"ON/OFF"**, and press the ↵ button.



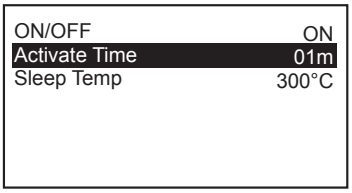
2. In the **"Sleep Setting"** screen, press the ↑ or ↓ button to select **"ON"** or **"OFF"**, and press ↵.



■ Sleep Activate Time

Set the time that elapses before the auto sleep function is activated. A time setting between 01 and 29 minutes can be set.

1. In the menu screen, press the ↑ or ↓ button to select **"Activate Time"**, and press the ↵ button.



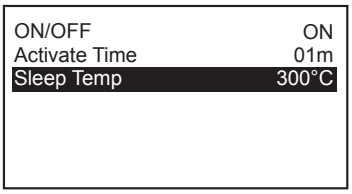
2. In the **"Sleep Activate Time"** screen, press the ↑ or ↓ button to confirm the value in the second digit position.
After confirming, press the ↵ button.

3. As in step 2, confirm the value in the first digit position.
After confirming, press the ↵ button.

■ Sleep Temp Set

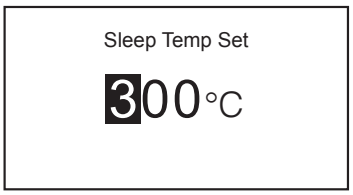
Set the iron tip temperature for auto sleep. Temperature can be set in the range between 200 and 300°C (400 and 570°F).

1. In the menu screen, press the ⇧ or ⇩ button to select **“Sleep Temp”**, and press the ↵ button.



2. In the **“Sleep Temp Set”** screen, press the ⇧ or ⇩ button to confirm the value in the third digit position.
After confirming, press the ↵ button.

3. As in step 2, confirm the values in the second and first digit positions.
After confirming, press the ↵ button.

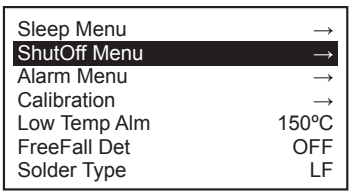


7-3 ShutOff Menu

Set the auto shut-off function.
When this function is enabled, the sleep mode takes effect, and after a specified period of time has elapsed, the auto shut-off function is activated to shut off the heater.

1. Select **“ShutOff Menu”**, and press the ⏎ button.

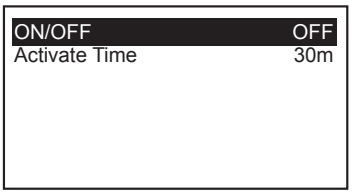
2. The menu screen opens.



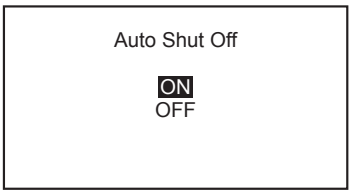
■ Auto Shut Off

Switch ON/OFF the auto shut-off function.

1. In the menu screen, press the ↑ or ↓ button to select **“ON/OFF”**, and press the ⏎ button.



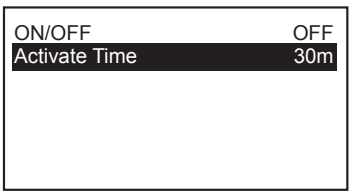
2. In the **“Auto Shut Off”** screen, press the ↑ or ↓ button to select **“ON”** or **“OFF”**.
After selecting, press ⏎.



■ Auto Shut Off Activate Time

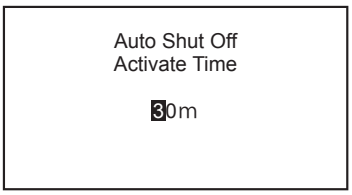
Set the auto shut-off time. A time setting between 30 and 60 minutes can be set.

1. In the menu screen, press the ↑ or ↓ button to select **“Activate Time”**, and press the ⏎ button.



2. In the **“Auto Shut Off Activate Time”** screen, press the ↑ or ↓ button to confirm the value in the second digit position.
After confirming, press the ⏎ button.

3. As in step 2, confirm the value in the first digit position.
After confirming, press the ⏎ button.

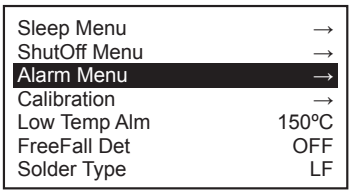


7-4 Alarm Menu

Make buzzer settings for when an error occurs or the set temperature has been reached.

1. Select **“Alarm Menu”**, and press the ↵ button.

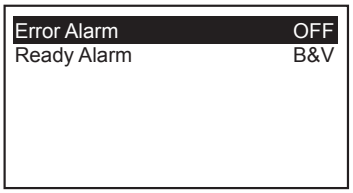
2. The menu screen opens.



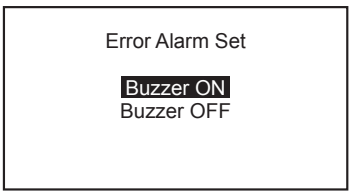
■ Error Alarm Set

Switch ON/OFF the buzzer sound for when a sensor error or grip error occurs.

1. In the menu screen, press the ↑ or ↓ button to select **“Error Alarm”**, and press the ↵ button.



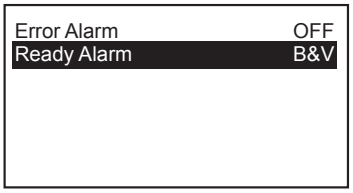
2. In the **“Error Alarm Set”** screen, press the ↑ or ↓ button to select **“Buzzer ON”** or **“Buzzer OFF”**.
After selecting, press ↵.



■ Ready Alarm Method

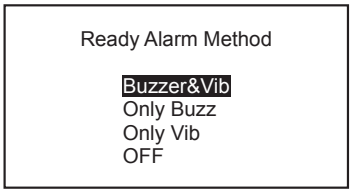
Set the buzzer/vibration function for when the set temperature has been reached.

1. In the menu screen, press the ↑ or ↓ button to select **“Ready Alarm”**, and press the ↵ button.



2. In the **“Ready Alarm Method”** screen, press the ↑ or ↓ button to select from the following options.
- Buzzer&Vib (Buzzer sound + vibration)
- Only Buzz (Buzzer sound only)
- Only Vib (Vibration only)
- OFF (Both set to OFF)

After selecting, press ↵.

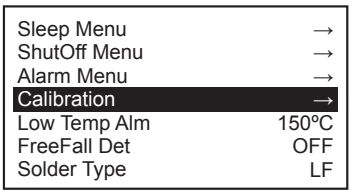


7-5 Calibration

Make AutoCal settings to set the temperature limits, the number of retries, measurement items, measurement targets, and the heater lock option if calibration failed.

1. Select **“Calibration”**, and press the ↵ button.

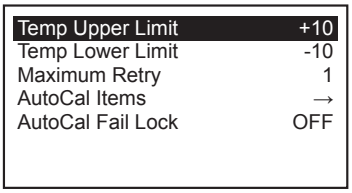
2. The menu screen opens.



■ Set Upper Limit

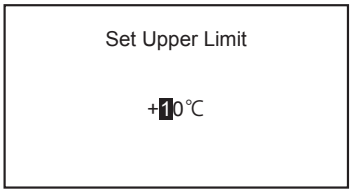
Set the positive temperature calibration limit. Temperature can be set in the range between 1 and 20°C (1 and 36°F).

1. In the menu screen, press the ↑ or ↓ button to select **“Temp Upper Limit”**, and press the ↵ button.



2. In the **“Set Upper Limit”** screen, press the ↑ or ↓ button to confirm the value in the second digit position.
After confirming, press ↵.

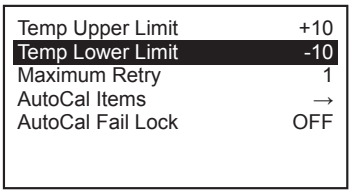
3. As in step 2, confirm the value in the first digit position.
After confirming, press the ↵ button.



■ Set Lower Limit

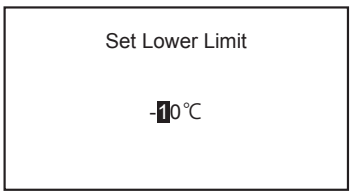
Set the negative temperature calibration limit. Temperature can be set in the range between -1 and -20°C (-1 and -36°F).

1. In the menu screen, press the ⇧ or ⇩ button to select **"Temp Lower Limit"**, and press the ↵ button.



2. In the **"Set Lower Limit"** screen, press the ⇧ or ⇩ button to confirm the value in the second digit position.
After confirming, press ↵.

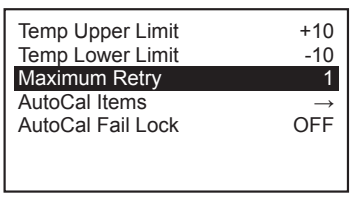
3. As in step 2, confirm the value in the first digit position.
After confirming, press the ↵ button.



■ Set Maximum Retry

Set the number of retries for temperature calibration.
The retries for temperature calibration can be set between 0 and 3.

1. In the menu screen, press the ⇧ or ⇩ button to select **"Maximum Retry"**, and press the ↵ button.

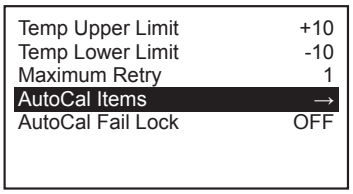


2. In the **"Set Maximum Retry"** screen, press the ⇧ or ⇩ button to confirm the number of times.
After confirming, press ↵.

■ Auto Cal Items

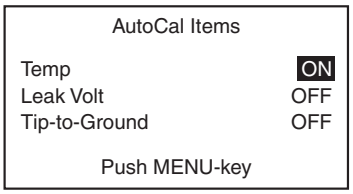
Select whether to perform measurement for items such as temperature, leak voltage, etc. during Auto Cal.

1. In the menu screen, press the ↑ or ↓ button to select **"AutoCal Items"**, and press the ↵ button.



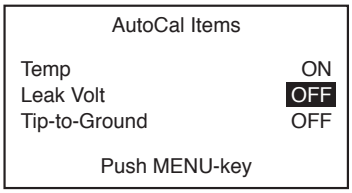
2. In the **"AutoCal Items"** screen, press the ↵ button.
The cursor is positioned for **"Temp"**.

3. With the cursor positioned for **"Temp"**, press the ↑ or ↓ button to select **"ON"** or **"OFF"**.



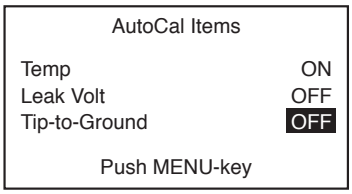
4. After selecting, pressing the ↵ button causes the cursor to move to **"Leak Volt"** (leak voltage).

5. With the cursor positioned for **"Leak Volt"**, press the ↑ or ↓ button to select **"ON"** or **"OFF"**.



6. After selecting, pressing the ↵ button causes the cursor to move to **"Tip-to-Ground"** (resistance between iron tip and ground).
Pressing the ⎋ button causes the cursor to return to **"Temp"**.

7. With the cursor positioned for **"Tip-to-Ground"**, press the ↑ or ↓ button to select **"ON"** or **"OFF"**.



8. After selecting, press the ↵ button.
Pressing the ⎋ button causes the cursor to return to **"Leak Volt"**.

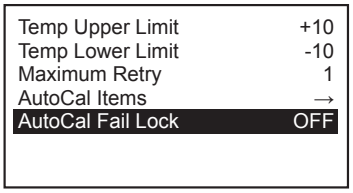
⚠ CAUTION

The Auto Cal function only makes judgements and adjustments of temperature. It does not adjust leak voltage and the resistance between iron tip and ground.

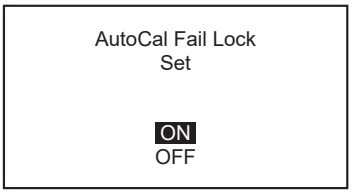
■ AutoCal Fail Lock Set

When this function is ON, the power to the heater will be interrupted if the latest Auto Cal execution result is outside the set limits.

1. In the menu screen, press the ↑ or ↓ button to select **"AutoCal Fail Lock"**, and press the ↵ button.



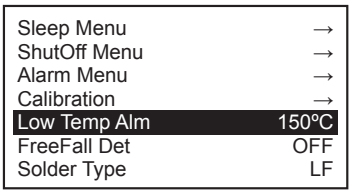
2. In the **"AutoCal Fail Lock Set"** screen, press the ↑ or ↓ button to select **"ON"** or **"OFF"**.
After confirming, press ↵.



7-6 Low Temp Alarm

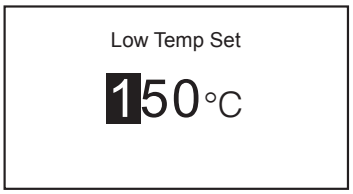
Set the lower limit temperature error alarm. It can be set in the range between 30 and 150°C (60 and 300°F).

1. Select **"Low Temp Alm"**, and press the ⏎ button.



2. In the **"Low Temp Set"** screen, press the ↑ or ↓ button to confirm the value in the third digit position.
After confirming, press the ⏎ button.

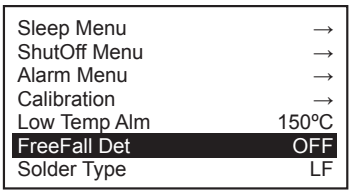
3. As in step 2, confirm the values in the second and first digit positions. After confirming, press the ⏎ button.



7-7 Free Fall Detect

Set the fall detection function. When this function is set to ON, the power to the heater will be interrupted if the iron is detected to be in free fall.

1. Select **"FreeFall Det"**, and press the ⏎ button.



2. In the **"Free Fall Detect"** screen, press the ↑ or ↓ button to select **"ON"** or **"OFF"**.
After confirming, press the ⏎ button.

⚠ CAUTION

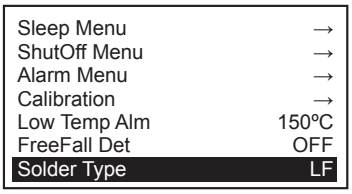
Detection may be impossible depending on how it falls. In addition, set it to OFF in the case of frequent occurrence at normal use.

7-8 Solder Type

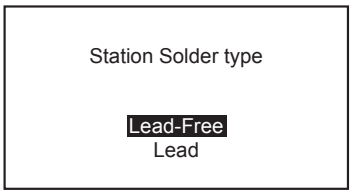
On the station side, set the type of solder used (lead free or lead containing).

1. Select **“Solder Type”**, and press the ↵ button.

2. The menu screen opens.



3. In the **“Station Solder Type”** screen, press the ↑ or ↓ button to select **“Lead-Free”** (lead free) or **“Lead”** (lead containing).
After confirming, press the ↵ button.

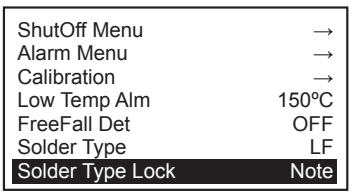


7-9 Solder Type Lock

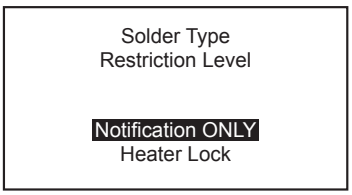
Make the setting (heater power is interrupted or only notification is given) for when the type of solder set in "7-8 Solder Type" is different than the registered solder type of the iron tip.

1. Select **“Solder Type Lock”**, and press the ↵ button.

2. The menu screen opens.

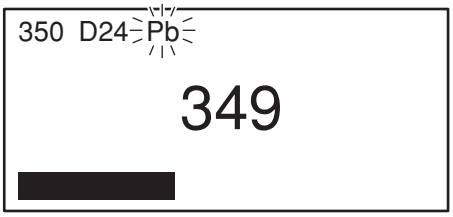


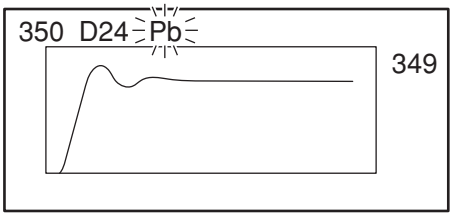
3. In the **“Solder Type Restriction Level”** screen, press the ↑ or ↓ button to select **“Notification ONLY”** (only notification is given) or **“Heater Lock”** (heater power is interrupted).
After confirming, press the ↵ button.



— NOTE —

If the type of solder used is different when **“Notification ONLY”** (only notification is given) is selected in "7-9 Solder Type Lock", **“Pb” blinks** in the operation screen.





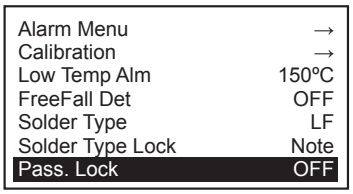
7-10 Pass. Lock

When this function is enabled, settings cannot be changed unless the correct password is entered.
The options that you can select are as follows.

Unlock	The input of password is not required for all setting changes.
Partial	Select whether to input the password when settings are changed for Offset, Preset, Temp (temperature) or AutoCal.
Lock	The password is required for all setting changes.

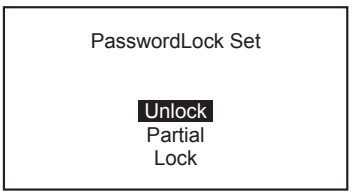
1. Select **“Pass. Lock”**, and press the ↵ button.

2. In the **“PasswordLock Set”** screen, press the ↑ or ↓ button to select **“Unlock”**, **“Partial”** or **“Lock”**.



■ Selecting “Unlock”

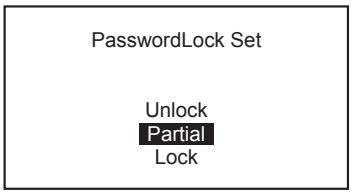
Select **“Unlock”**, and press the ↵ button to return to the menu screen.



■ Selecting “Partial”

1. Select **“Partial”**, and then press the ↵ button.

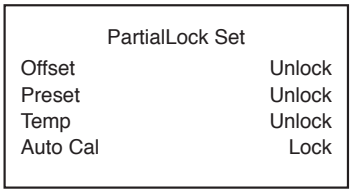
2. In the **“PartialLock Set”** screen, press the ↑ or ↓ button to select **“Unlock”** or **“Lock”** for **“Offset”**.
After selecting, press the ↵ button.



3. Press the ↑ or ↓ button to select **“Unlock”** or **“Lock”** for **“Preset”**. After selecting, press the ↵ button.

4. Press the ↑ or ↓ button to select **“Unlock”** or **“Lock”** for **“Temp”** (temperature). After selecting, press the ↵ button.

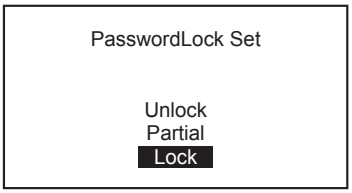
5. Press ↑ or ↓ to select **“Unlock”** or **“Lock”** for **“Auto Cal”**. After selecting, press the ↵ button.



6. In the **“Enter New Password”** screen, press ↑ or ↓ to input a new password.
To input, select three letters from "ABCDEF".

■ **Selecting "Lock"**

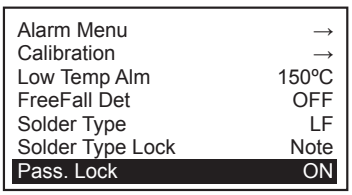
1. Select **“Lock”**, and then press the ⏎ button.



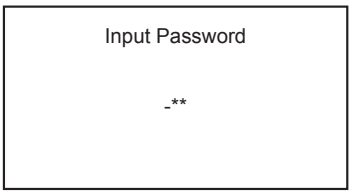
2. In the **“Enter New Password”** screen, input a new password.
To input, select three letters from "ABCDEF".

When changing passwords

1. Select **“Pass. Lock”**, and press the ⏎ button.
The password input screen opens.



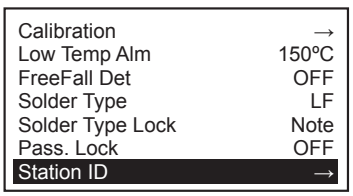
2. Input the registered password, and then press the ⏎ button.
The **“PasswordLock Set”** screen opens.



7-11 Station ID

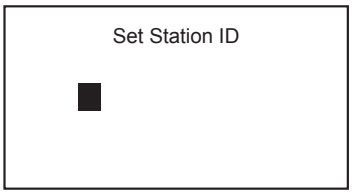
Set the station ID.

1. Select **“Station ID”** and press the ⏎ button.



2. The menu screen opens.

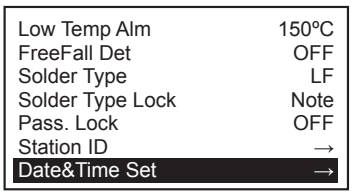
3. Input an ID.
ID input conditions
- Characters that can be input: Single-byte alphanumerics and symbols
- Number of input characters: 16 letters



7-12 Date&Time Set

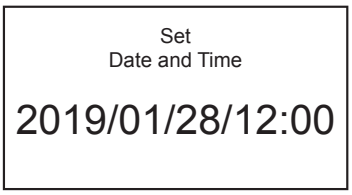
Set the year, month, day and time.

1. Select **“Date&Time Set”**, and press the ↵ button.



2. The menu screen opens.

3. In the **“Set Date and Time”** screen, press the ↑ or ↓ button to set the year.
After selecting, press the ↵ button.

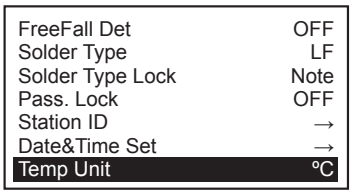


4. As in the year setting, press the ↑ or ↓ button to set the month, day, hour and minute.
After selecting, press the ↵ button.

7-13 Temp Unit

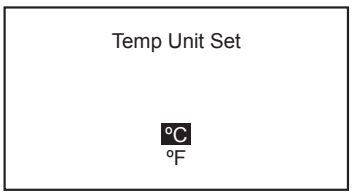
The temperature to be displayed can be switched to either °C or °F.

1. Select **“Temp Unit”**, and press the ↵ button.



2. The menu screen opens.

3. In the **“Temp Unit Set”** screen, press the ↑ or ↓ button to select **“ºC”** or **“ºF”**.
After selecting, press the ↵ button.

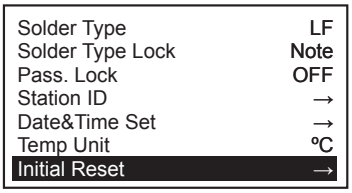


7-14 Initial Reset

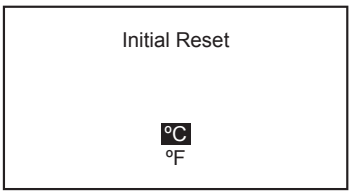
Initial reset can return the settings to default values.
For the setting, select either ºC mode or ºF mode.

1. Select **“Initial Reset”**, and press the ↵ button.

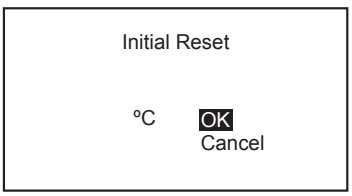
2. The menu screen opens.



3. In the **“Initial Reset”** screen, press the ↑ or ↓ button to select **“ºC”** or **“ºF”**. After selecting, press the ↵ button.



4. Press the ↑ or ↓ button to select **“OK”** or **“Cancel”**.
When **“Cancel”** is selected, the settings will not return to default values.



— NOTE —

Even after initial reset is performed, the password lock function and the password will remain the same as before the reset.

8. MAINTENANCE

Performing proper and periodical maintenance extends the products life and contributes to use it always in a good condition. Efficient soldering depends upon the temperature, the quality and quantity of the solder and flux. Apply the following service procedure as dictated by the conditions of the usage.

⚠ WARNING

Since the soldering iron can reach a very high temperature, please work carefully. Except the case especially indicated, always turn the power switch OFF and disconnect the power plug before performing any maintenance procedure.

⚠ CAUTION

NEVER file the tip to remove oxides!

1. Set the temperature to 250°C (482°F).
2. When the temperature stabilizes, clean the tip (refer to “Cleaning”, below) and check the condition of the tip. If the tip is badly worn or deformed, replace it.
3. If the solder plated part of the tip is covered with black oxide, apply fresh solder, containing flux, and clean the tip again.
   Repeat until all the oxide is removed, then coat the tip with fresh solder.
4. Turn the power OFF and remove the tip, using the heat resistant pad. Set the tip aside to cool.
   Remaining oxides, such as the yellow discoloration on the tip shaft, can be removed with isopropyl alcohol.
5. If the tip is deformed or severely worn, replace it.

— NOTE —

Tip temperature	High temperatures shorten tip life and may cause thermal shock to components. Always use the lowest possible temperature when soldering. The excellent thermal recovery characteristics of the HAKKO FN-1010 ensure effective soldering at low temperatures.
Cleaning	Always clean the soldering tip before use, to remove any residual solder or flux adhering to it. Use the tip cleaner. Contaminants on the tip have many deleterious effects, including reduced heat conductivity, which contribute to poor soldering performance.
After use	Always clean the tip and coat it with fresh solder after use. This guards against oxidation.
When the unit is not being used and the auto power shutoff is not active.	Never allow the unit to idle at a high temperature for extended periods. This will allow the tip to become oxidized. Turn the power switch OFF. If it is to be out of service for several hours, it is advisable to pull the power plug as well.

9. INSPECTION

⚠ WARNING

Unless otherwise specified, turn off the power switch and unplug the power cord when performing the following procedure.

■ Heater and sensor disconnection

Check that the heater and sensors have no electrical abnormality.
Measure the resistance of the heater and sensors at room temperature (15 - 25°C; 59 - 77°F). The normal value is 5 Ω ±10%.
In the case of an abnormal resistance value, replace the iron tip.

■ Ground line inspection

1. Unplug the iron connection cord from the station.
2. Measure the resistance between pin 13 and the iron tip.
3. If the resistance exceeds 2 Ω (at room temperature), perform the maintenance of the iron tip. If it persists even after this action is taken, check for possible break in the connection cord.

■ Inspection for possible break in the connection cord

In the error display screen, check that "Grip Com Error" is not displayed.
The issuance of this error indicates that there is a break in the connection cord or in the PCB. Therefore, replace the HAKKO FN-1101.
If the error persists even after this action is taken, consult with the distributor or agency near you.

■ Fuse replacement method

1. Remove the power cord from the inlet.
2. Remove the fuse holder.
3. Replace with a new fuse.
4. Assemble it into position.

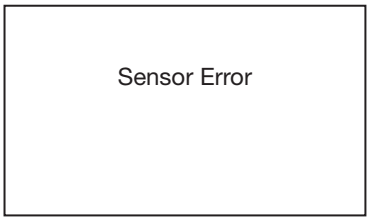
※各言語（日本語、英語、中国語、フランス語、ドイツ語、韓国語）の取扱説明書は以下のURL、HAKKO Document Portalからダウンロードしてご覧いただけます。
（商品によっては設定の無い言語がありますが、ご了承ください。）
* 各國語言（日語、英語、中文、法語、德語、韓語）的使用説明書可以通過以下网站的HAKKO Document Portal 下載參閱。
（有一部分的產品沒有設定外語對應、請見諒）
* Instruction manual in the language of Japanese, English, Chinese, French, German, and Korean can be downloaded from the HAKKO Document Portal.
(Please note that some languages may not be available depending on the product.)

https://doc.hakko.com

10. ERROR DISPLAY

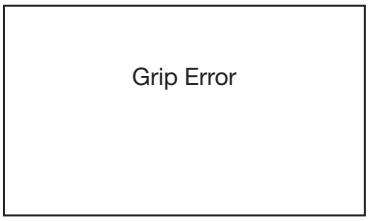
■ Sensor Error

When sensor/heater disconnection (including the sensor circuits) is suspected, **“Sensor Error”** is displayed and the power is shut off.



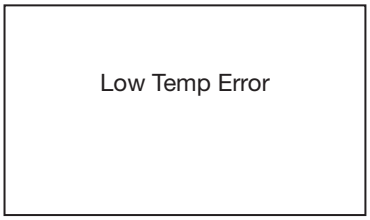
■ Grip Error

When the iron connection cord is not connected to the station or a wrong iron part is connected, **“Grip Error”** is displayed.



■ Low Temp Error

When the difference between the sensor detection temperature and the setting temperature reaches or becomes greater than the lower limit setting temperature, **“Low Temp Error”** is displayed and the alarm buzzer sounds. The buzzer stops sounding if the difference between the sensor detection temperature and the setting temperature becomes smaller than the lower limit setting temperature.

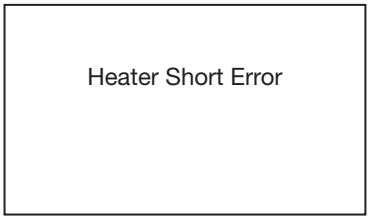


■ Free Fall Error

When the iron is detected to be in free fall, **“Free Fall Error”** is displayed and the power to the heater is stopped.
The power to the heater reverts if any of the operation buttons is pressed.

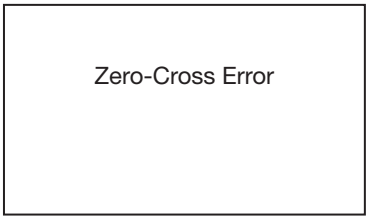
■ Heater Short Error

When the iron tip is inserted in the wrong direction, an iron tip that cannot be used with the product is inserted, or a foreign material is intruded in the connector joint, **“Heater Short Error”** blinks and the alarm buzzer continuously sounds.



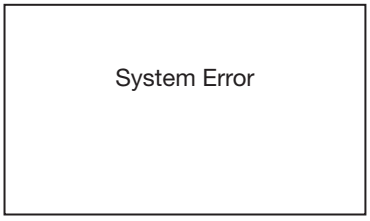
■ Zero-Cross Error

It is displayed when zero-cross was unable to be measured at a specified cycle.
If this error is displayed, consult with the distributor or agency near you.



■ System Error

It is displayed when the system became unable to operate correctly.
If this error is displayed, consult with the distributor or agency near you.



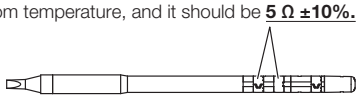
■ Grip Com Error

The correct communication with the iron part is not maintained. A break in the cable or PCB, etc. is suspected. Replace the iron part.
If the error persists even after this action is taken, consult with the distributor or agency near you.

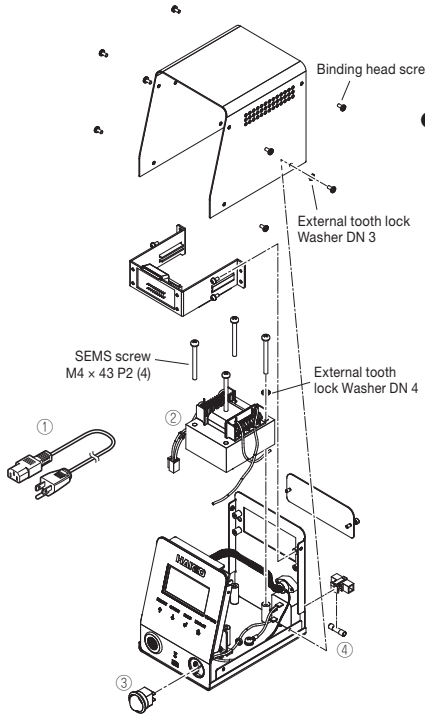
11. TROUBLE SHOOTING GUIDE

⚠ WARNING

Before checking the inside of the HAKKO FN-1010 or replacing parts, be sure to disconnect the power plug. Failure to do so may result in electric shock.

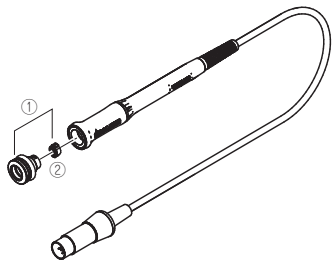
The unit does not operate when the power switch is turned on.	**CHECK** Is the power cord and/or the connection plug disconnected? **ACTION** Connect it. **CHECK** Is the fuse blown? **ACTION** Investigate why the fuse blew and then replace the fuse. If the cause can not be determined, replace the fuse. If the fuse blows again, send the unit in for repair.
The tip does not heat up. **The "Sensor Error" is displayed.**	**CHECK** Is the tip for HAKKO FN-1101 soldering iron? **ACTION** Turn the power switch OFF and insert the genuine HAKKO FN-1101 tip. Turn the power switch ON. **CHECK** Is the tip inserted properly? **ACTION** Insert the tip completely. **CHECK** Is the connection cord and/or the heater/sensor broken? **ACTION** See the appropriate section of this manual regarding how to check the connection cord and/or the heater/sensor for breakage. Measure the resistance of the heater and sensor while at room temperature, and it should be **5 Ω ±10%.** 
Solder does not wet the tip.	**CHECK** Is the tip temperature too high? **ACTION** Set the appropriate temperature. **CHECK** Is the tip contaminated with oxide? **ACTION** Remove the oxide. (Refer to "8. MAINTENANCE".)
The tip shape display blinks.	**CHECK** Is the load repetition count exceeding the load repetition count alarm setting value? **ACTION** Replace the tip with a new one.
"Pb" blinks.	**CHECK** Are you using a soldering iron tip different from that chosen in "7-8 Solder Type"? **ACTION** Replace it with a tip that uses the same type of solder as that chosen.
The tip temperature is too high.	**CHECK** Is the connection cord broken? **ACTION** If the connection cord is broken, replace the HAKKO FN-1101. **CHECK** Is the entered offset value correct? **ACTION** Enter the correct value.
The tip temperature is too low.	**CHECK** Is the tip contaminated with oxide? **ACTION** Remove the oxide. (Refer to "8. MAINTENANCE".) **CHECK** Is the entered offset value correct? **ACTION** Enter the correct value.
The low-temperature alarm tolerance error occurs frequently.	**CHECK** Is the tip too small for the items to be soldered? **ACTION** Use a tip with a larger thermal capacity. **CHECK** Is the setting value for the low-temperature alarm tolerance too low? **ACTION** Increase the setting value.
Heater terminal short circuit error is displayed.	**CHECK** Is the tip for HAKKO FN-1101 soldering iron? **ACTION** Turn the power switch OFF and insert the genuine HAKKO FN-1101 tip. Turn the power switch ON.

12. PART NUMBER LIST



● **HAKKO FN-1010**

Item No.	Part No.	Part name	Specification
①	B2419	Power cord/3 core & American plug	120 V USA
	B2421	Power cord/3 cored wire with no plug	220 - 240 V
	B2422	Power cord/3 core & BS plug	India
	B2424	Power cord/3 core & European plug	220 V KC 230 V CE
	B2425	Power cord/3 core & BS plug	230 V CE U.K.
	B2426	Power cord/3 core & Australian plug	
	B2436	Power cord/3 core & Chinese plug	China
	B3508	Power cord/3 core & American plug	Taiwan, Philippines, Thailand, Vietnam
	B3550	Power cord/3 core & SI plug	
	B3616	Power cord/3 core & BR plug	
②	B5206	Transformer/100 - 110 V	
	B5207	Transformer/120, 127 V	
	B5208	Transformer/220 - 240 V	
③	B5209	Power switch	
④	B2403	Fuse/250 V - 2 A	100 - 110 V, 127 V
	B3011	Fuse/250 V - 2 A	120 V
	B2987	Fuse/250 V - 1 A	220 - 240 V

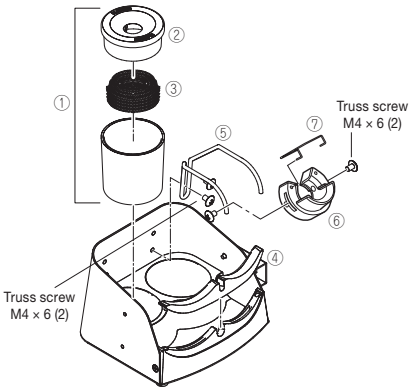


● **HAKKO FN-1101**

Part No.	Part name	Specification
FN1101-81	HAKKO FN-1101	

● **HAKKO FN-1101 parts**

Item No.	Part No.	Part name	Specification
①	B5217	Nipple	with seal valve
②	B5218	Seal valve	



● **Iron holder**

Part No.	Part name	Specification
FH210-81	Iron holder	

● **Iron holder parts**

Item No.	Part No.	Part name	Specification
①	FT401-81	Tip cleaner	
②	B5213	Solder scattering prevention cover	
③	A1561	Cleaning wire	
④	B5214	Tip removing attachment	
⑤	B5215	Holder for iron receptacle	
⑥	B5216	Iron receptacle	with screw
⑦	B2791	Tip fixing spring	

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