

5. OPERATION

* Timer function

In this product, setting the timer allows you to control the time during which hot air is blown. Either of the following two modes is selectable by parameter setting: Open Timing in which count is started from the time when temperature reaches the set temperature and Closed Timing in which count is started upon start. The timer setting range is 001 to 999 seconds. (When not using the timer function, select “---”. When set in the timer setting “000”, don't work.)

● Preset mode

In addition to the procedure described remove above, HAKKO FR-810 includes a preset mode allowing the selection of temperature, time, and airflow from the options you define (up to 5 temperature/time/airflow settings can be programmed). Enter the parameter setting to change the mode.

(Please refer to [● Changing Parameter Settings])

Initial preset settings:

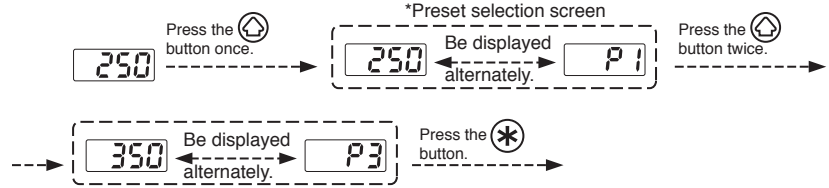
P1 Temp. : 100°C (212°F) Timer : “---” Air flow : 5	P2 Temp. : 200°C (392°F) Timer : “---” Air flow : 5
P3 Temp. : 300°C (572°F) Timer : “---” Air flow : 5	P4 Temp. : 400°C (752°F) Timer : “---” Air flow : 5
P5 Temp. : 500°C (932°F) Timer : “---” Air flow : 5	

The initial number of active presets is set to 5 at the factory.
The default selected preset is set to

P3

 at the factory.

Example : Changing preset selection from preset No.1 to No.3.



Control will begin with new preset setting.

The procedure for making changes to the preset temperatures, timer and air flow is the same as the “Setting/Changing the Temperature and Timer” and “Setting of the air flow”.

● Restriction on setting changes (Password function)

It is possible to restrict certain setting changes to the unit.
There are three choices for the password setting.
Enter the parameter settings to change the mode. (Please refer to [● Changing Parameter Settings])

	0 : Open	1 : Partial	2 : Restricted
Switch to the parameter setting mode	○	×	×
Switch to the temperature setting mode	○	△	×
Switch to the preset selection mode	○	△	×
Switch to the offset setting mode	○	△	×
Make airflow adjustments	○	△	×

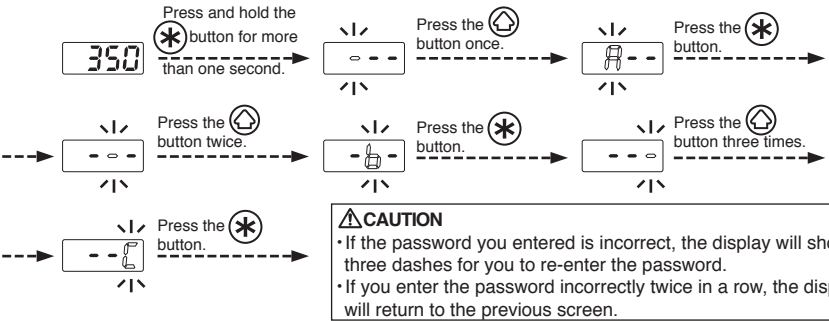
○ : You can make changes without entering a password.
△ : You can choose whether or not a password is needed to make changes.
× : A password is required to make changes.

Select and input three letters for password
from six letters on the right.

A B C D E F

The letters for password

Example: The procedure for changing the set temperature when the unit is restricted by a password. (Password is "AbC")

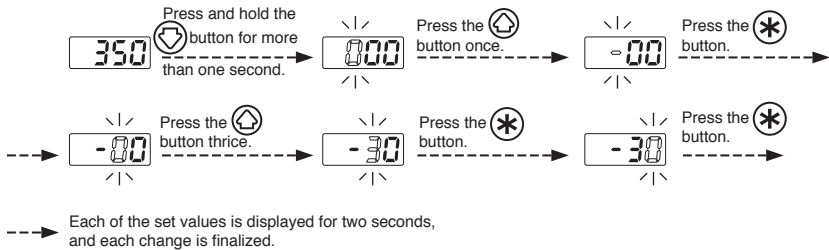


The unit will move to the change setting screen for each mode after entering the password. Please change the setting for each mode according to the procedure covered in this manual.

● Offset mode {Setting is available within the range of ±50°C (90°F)}

CAUTION
If the total of a set value and an offset value exceeds 600°C, the exceeding portion in the offset value is not effective.

Example: Changing the offset setting from 0°C to -30°C



5. OPERATION

Other main functions

● Chain Presets function

In this station, when you turn on “Preset mode” and “Chain Presets function” in the parameter settings and set the timer for each preset, available presets are called in from “P-1” to “P-5” allowing you to simulate up to a 5 step rework profile. (The number of available presets changes depending on the setting. Refer to “6. PARAMETER SETTING”.)

Example 1)

P1 Temp. : 100°C (212°F) Timer : “200” Air flow : 2	P2 Temp. : 200°C (392°F) Timer : “100” Air flow : 3
P3 Temp. : 300°C (572°F) Timer : “000” Air flow : 5	P4 Temp. : 400°C (752°F) Timer : “050” Air flow : 5
P5 Temp. : 500°C (932°F) Timer : “030” Air flow : 6	

Operation : 100°C (200sec) → 200°C (100sec) → 400°C (50sec) → 500°C (30sec)

A preset in which “000” is set in the timer setting is skipped and the next preset is automatically started. (In case of the example 1, this setting corresponds to

P3

)

Example 2)

P1 Temp. : 100°C (212°F) Timer : “200” Air flow : 2	P2 Temp. : 200°C (392°F) Timer : “- - -” Air flow : 3
P3 Temp. : 300°C (572°F) Timer : “050” Air flow : 5	P4 Temp. : 400°C (752°F) Timer : “050” Air flow : 5
P5 Temp. : 500°C (932°F) Timer : “030” Air flow : 6	

Operation : 100°C (200sec) → 200°C

Unless you stop blowing hot air by pressing the “S” or (

START STOP

) button manually, the unit will keep up the state if you set “- - -” in the timer setting. (In case of the example 2, this setting corresponds to

P2

)
The unit will not move to next step.

● Auto sleep function

When the handpiece is placed in the holder, the automatic sleep function starts working (by default). Pressing the “S” button (

START STOP

 button) in this state will not turn on the station. If the handpiece is placed in the holder while it is blowing hot air, start of automatic cooling is forced before the stop of operation.

CAUTION
When installing this station, do not place flammable substances behind the outlet of the handpiece. If the handpiece is placed in the iron holder while blowing hot air, serious accidents such as fire may be caused by hot air.

● Auto shutoff function

The auto shutoff function works by default after the station is idle for 30 minutes and it automatically enters a power save state.

● Forced cooling bypass function

With this function enabled, if you press the “S” button (

START STOP

 button) again during cooling, cooling is stopped. This function is used when working temperature is low and you do not have to wait until automatic stop is made. When the set temperature is 380°C or more, the function is unavailable.

● Check of settings

Example : When the set temperature is 350°C and the timer setting is 150 seconds.

Pressing the (

START STOP

) button once allows you to check the settings of the set temperature

350

 and set time

150

 in this order.

6. PARAMETER SETTING

The HAKKO FR-810 has the following parameters:

Parameter name	Parameter No.	Value	Initial value
°C / °F selection	01	C/F	°C
Auto sleep ON/OFF setting	07	0: OFF / 1: ON	1
Auto shutoff ON/OFF setting	08	0: OFF / 1: ON	1
Setting mode selection	11	0: Normal / 1: Preset	0
The number of preset *		[2P] (2 pcs)~[5P] (5 pcs)	[5P]
Password setting	14	0: Open/ 1: Partial / 2: Restricted	0
Temperature setting mode **		[1P] :○/ [11]:×	[11]
Preset selection mode**		[2P] :○/ [21]:×	[21]
Offset setting mode**		[3P] :○/ [31]:×	[31]
Air flow mode**		[4P] :○/ [41]:×	[41]
Password***		A B C D E F Select three letters	-
Auto shutoff time setting	18	30~60min (Set in units of minutes)	30
Timer mode	20	o: Open Timing / c: Closed Timing	o
Forced cooling bypass	21	0: OFF / 1: ON	0
Preset connection ON/OFF setting	22	0: OFF / 1: ON	0

* It is displayed only when "1:Preset mode" is selected in the setting mode.

** It is displayed only when "1:Custom" is selected in the password setting.

***It is displayed only when either "1:Custom" or "2:valid" is selected in the password setting.

6. PARAMETER SETTING

● 01 : °C or °F temperature display selection

The displayed temperature can be switched between Celsius and Fahrenheit.

● 07 : Auto sleep ON/OFF setting

Select whether you will activate the auto sleep function.

● 08 : Auto shutoff ON/OFF setting

Select whether you will activate the auto shut off function.

● 11 : Setting mode selection

Temperature setting can be switched between the normal mode and the preset mode. If selecting the preset mode, you will be asked for the number of preset to have available for programming. Press the (

UP

) or (

DOWN

) button to set the number.

● 14 : Password setting

Select "Open", "Partial" or "Restricted" for password setting. If selecting the Restricted, perform the setting for password. If selecting partial, choose whether or not the password function is needed when moving to the temperature setting, preset, offset, and air flow modes and set the password.

● 18 : Auto shutoff time setting

Set auto shutoff time. The setting is available within 30 to 60 minutes in increments of one minute.

● 20 : Timer mode selection

Timer mode setting can be switched between the Opened timing and the Closed timing modes.

● 21 : Forced cooling bypass

Specify whether or not to enable the function that allows you to force the termination of cooling after completion of work. Forced termination in high temperature may cause premature failure of the heating element. Do not use the function except for work in low temperature.

● 22 : Chain Preset setting

Select whether you will activate the Chain Preset function. If you turn on “Preset mode” and “Chain Preset function”, available presets are called in sequence from “P-1” to “P-5” allowing you to simulate up to a 5 step rework profile.

● Parameter entering mode

- Turn off the power switch.
- Turn on the power switch while pressing the (

UP

) button.
- When the display shows

01

, the station is in parameter entering mode.
- You can switch the parameter No. by pressing the (

UP

) or (

DOWN

).

A. °C or °F temperature display selection

- Either

[C]

 or

[F]

 will be displayed if you press the (

STAR

) button when

01

 is displayed.
- [C]

 and

[F]

 will be switched alternately If you press the (

UP

) (

DOWN

) button.
- The display will return to

01

 if you press the (

STAR

) button after selecting.

B. Auto sleep ON/OFF setting

- Either

[0]

 or

[1]

 will be displayed if you press the (

STAR

) button when

07

 is displayed.
- [0]

 and

[1]

 will be switched alternately If you press the (

UP

) (

DOWN

) button.
- The display will return to

07

 if you press the (

STAR

) button after selecting.

C. Auto shutoff ON/OFF setting

- Either

[0]

 or

[1]

 will be displayed if you press the (

STAR

) button when

08

 is displayed.
- [0]

 and

[1]

 will be switched alternately If you press the (

UP

) (

DOWN

) button.
- The display will return to

08

 if you press the (

STAR

) button after selecting.

D. Setting mode selection

- Either

[0]

 or

[1]

 will be displayed if you press the (

STAR

) button when

11

 is displayed.
- [0]

 (The normal mode) and

[1]

 (The preset mode) will be switched alternately, if you press the (

UP

) (

DOWN

) button.
- The display will return to

11

 if you press the (

STAR

) button after selecting.*

* If you select the preset mode, the display will move to the preset selection screen.

- The number of active preset will be displayed If you press the (

STAR

) button at 3.
(Example : If the number is three,

3P

 is displayed.)
- Press the (

UP

) (

DOWN

) button to change the value and select the number of active preset you required.
The unit will accept values from 2 through 5.
- The display will return to

11

 if you press the (

STAR

) button after selecting.

6. PARAMETER SETTING

E. Password setting

1. Either , or will be displayed if you press the button when is displayed.
2. If you press the () button, (Open), (Partial) and (Restricted) will be switched alternately.
3. If you press the button after selecting, the display will return to . ※1、2

※1 The display will move to the following selection screen if you select (Partial).

4. If you press the button at 3, you will be asked whether or not the password function is needed when moving to the temperature setting mode.

5. Either (without password) or (with password) will be displayed if you press the () button.

6. If you press the button after selecting, you will be asked whether or not the password function is needed when moving to the preset selection mode.

7. Either (without password) or (with password) will be displayed if you press the () button.

8. If you press the button after selecting, you will be asked whether or not the password function is needed when moving to the offset mode.

9. Either (without password) or (with password) will be displayed if you press the () button.

10. If you press the button after selecting, you will be asked whether or not the password function is needed when moving to the Air flow mode.

11. Either (without password) or (with password) will be displayed if you press the () button.

12. If you press the button after selecting, the display will move to password setting screen.

※2 If you select (Restricted), the display will move to the following password setting screen.

If you select (Partial), the display will move to the following the password setting screen after selecting ※1.

11. The hundreds digits in the display will begin to flash. It indicates that you can enter the value.

Press the () button to enter the letter you required.

12. The tens digits in the display will begin to flash if you press the button after entering.

Use the same procedure to enter the letters for tens and units digit.

13. The display will return to if you press the button after entering the units digit.

F. Auto shutoff time setting

1. Auto shutoff time (30 minutes early) will be displayed if you press the button when is displayed.
2. Press the () button, you can change to the desired value. The values you can enter is 30 to 60 (minutes).
3. The display will return to if you press the button after selecting.

G. Timer mode selection

1. Either or will be displayed if you press the button when is displayed.
2. (Open Timing) and (Closed Timing) will be switched alternately If you press the () button.
3. The display will return to if you press the button after selecting.

H. Forced cooling bypass

1. Either or will be displayed if you press the button when is displayed.
2. and will be switched alternately If you press the () button.
3. The display will return to if you press the button after selecting.

I. Chain Preset setting

1. Either or will be displayed if you press the button when is displayed.
2. and will be switched alternately If you press the () button.
3. The display will return to if you press the button after selecting.

After changing parameters, press and hold the button down for at least two seconds until is displayed. At this time, you can switch between and by pressing the () button. Select if you are finished making changes or if you need to go back and make more changes. Press the button to confirm you selection.

Changes will not be completed until is displayed and you press the button.
Please note that no changes will be made if you turn off the power while making changes.

7. TEMPERATURE DISTRIBUTION CHART

CAUTION

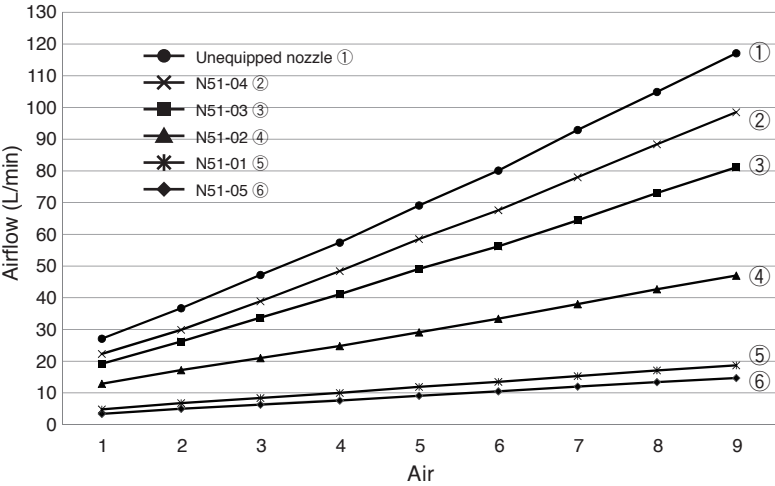
● These charts do not define the temperature characteristics, and are for reference only.

● The temperature distribution charts for HAKKO 850 or 850B should not be used for FR-810. FR-810 uses a different pump and control system. When you use the FR-810, make sure to refer to the temperature distribution charts shown to the under.

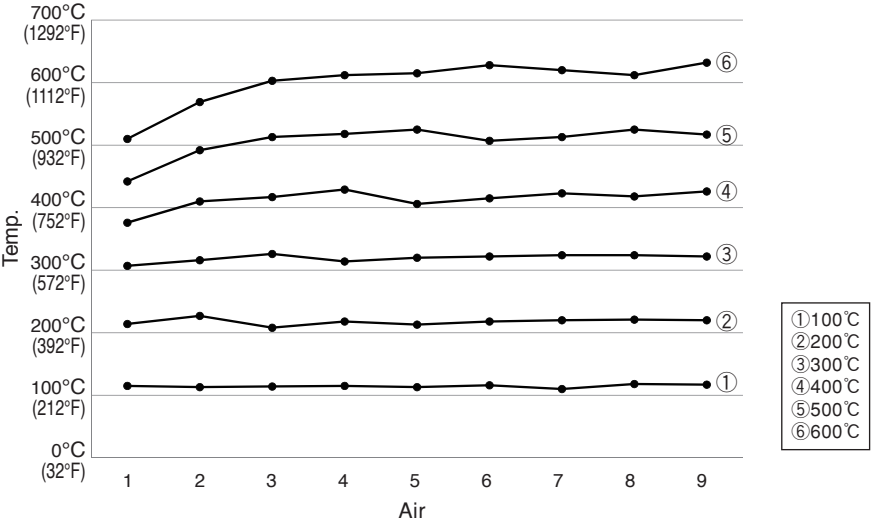
● The hot air temperature may not reach the set temperature depending upon the combination of the nozzle and the set air flow. In this case, reduce the set temperature or the air flow.

- Test condition: Measured at a point 1mm (0.04 in.) from the nozzle by recorder.

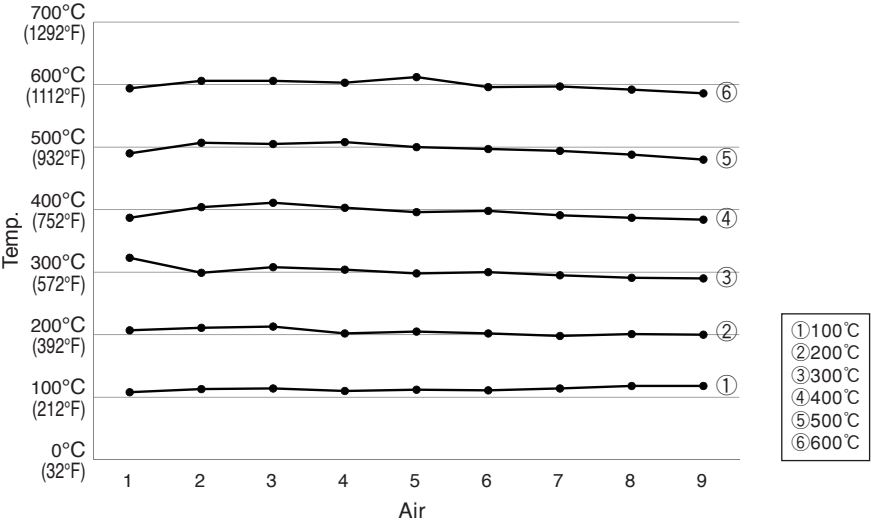
HAKKO FR-810 Airflow



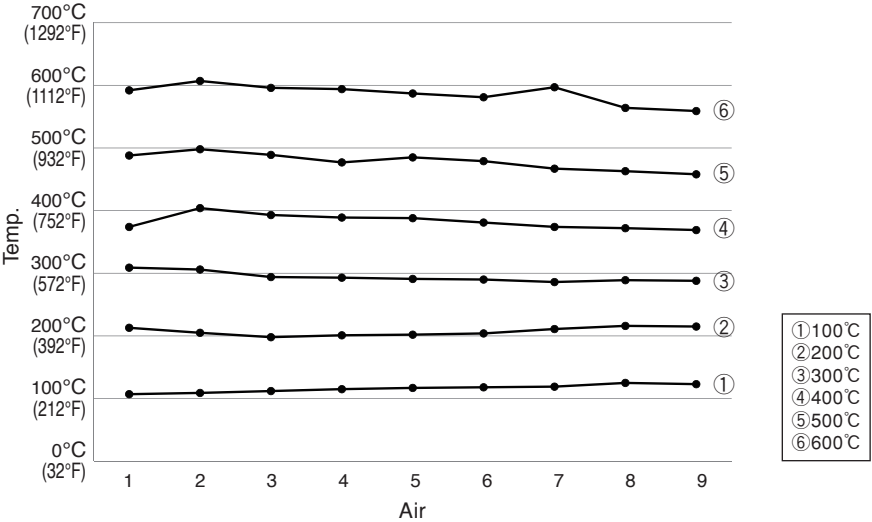
N51-01 Single ø2.5 (0.10)



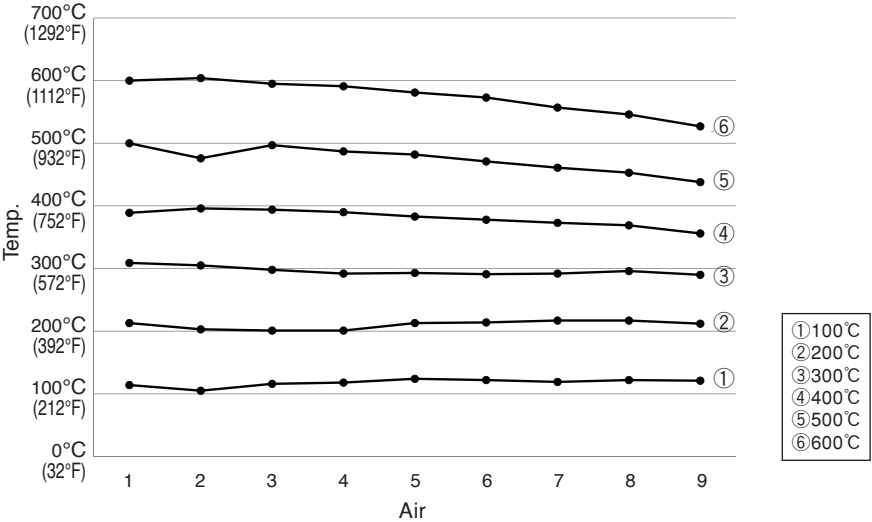
N51-02 Single ø4.0 (0.16)



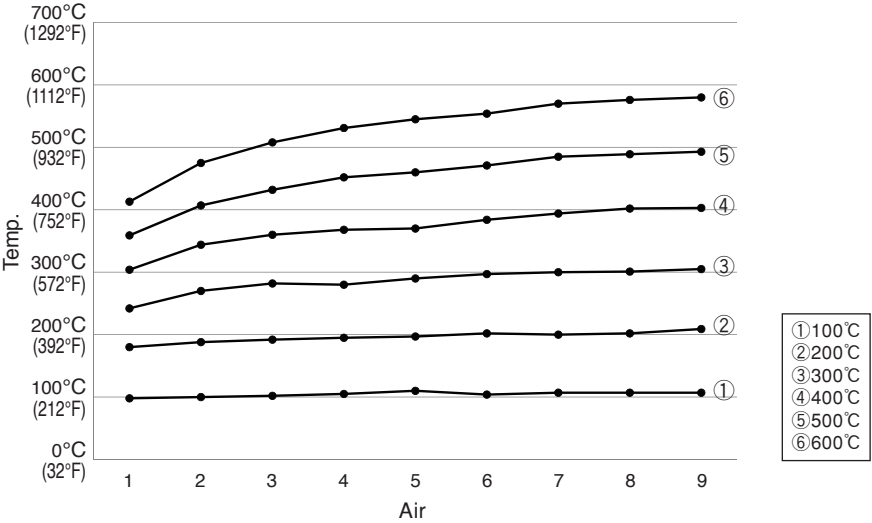
N51-03 Single ø5.5 (0.22)



N51-04 Single ø7.0 (0.28)



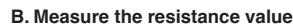
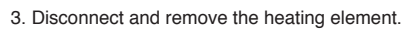
N51-05 Bent Single 1.5 x 3 (0.06 x 0.12)



⚠ CAUTION

Replacing the heating element is very dangerous. Be sure to turn the power switch OFF and be careful of the following procedure when replacing the heating element.

1. Remove the 4 screws that attach the heater pipe to the handpiece. Remove the heater pipe.

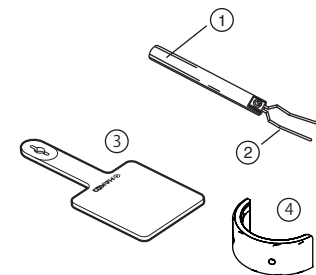


- Connect an ohmmeter across the connector terminals (a).

The correct values are approximately: 14Ω ($\pm 10\%$ 100-110V), 17Ω ($\pm 10\%$ 120V), 41Ω ($\pm 10\%$ 220-240V).

If the resistance value is incorrect, replace the part.

- Connect an ohmmeter across the connector terminals (b). If the resistance value is ∞ , replace the part.



Item No.	Part No.	Part Name	Specifications
①	B5056	FP pick-up	With pick-up wire (SS)
②	B5057	FP pick-up wire (SS)	
③	B2300	Heat resistant pad	
④	B5059	adapter	x2

WARNING
Before checking the inside of the HAKKO FR-810 or replacing parts, be sure to disconnect the power plug. Failure to do so may result in electric shock.

- $\xi - \xi$ is displayed

- $H-\xi$ is displayed

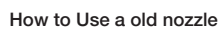
- $f - \varepsilon$ is displayed

ACTION : The fan may be broken. Replace the fan with a new one.

● HAKKO FR-810

Item No.	Part No.	Part Name	Specifications
①	A5005	Heating element	100-110V
	A5006	Heating element	120.127V
	A5007	Heating element	220-240V
②	B5043	Joint hose	

Unit: mm (in.)



1. Attach old nozzle to B5058 Conversion adaptor.



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Please access to the following address for the other Sales affiliates.

<http://www.hakko.com>