

HAKKO FR-702

REWORK SYSTEM

Rework System

Instruction Manual

●

Thank you for purchasing the HAKKO FR-702 Rework System.
Please read the manual before operating the HAKKO FR-702.
Keep this manual readily accessible for reference.

●

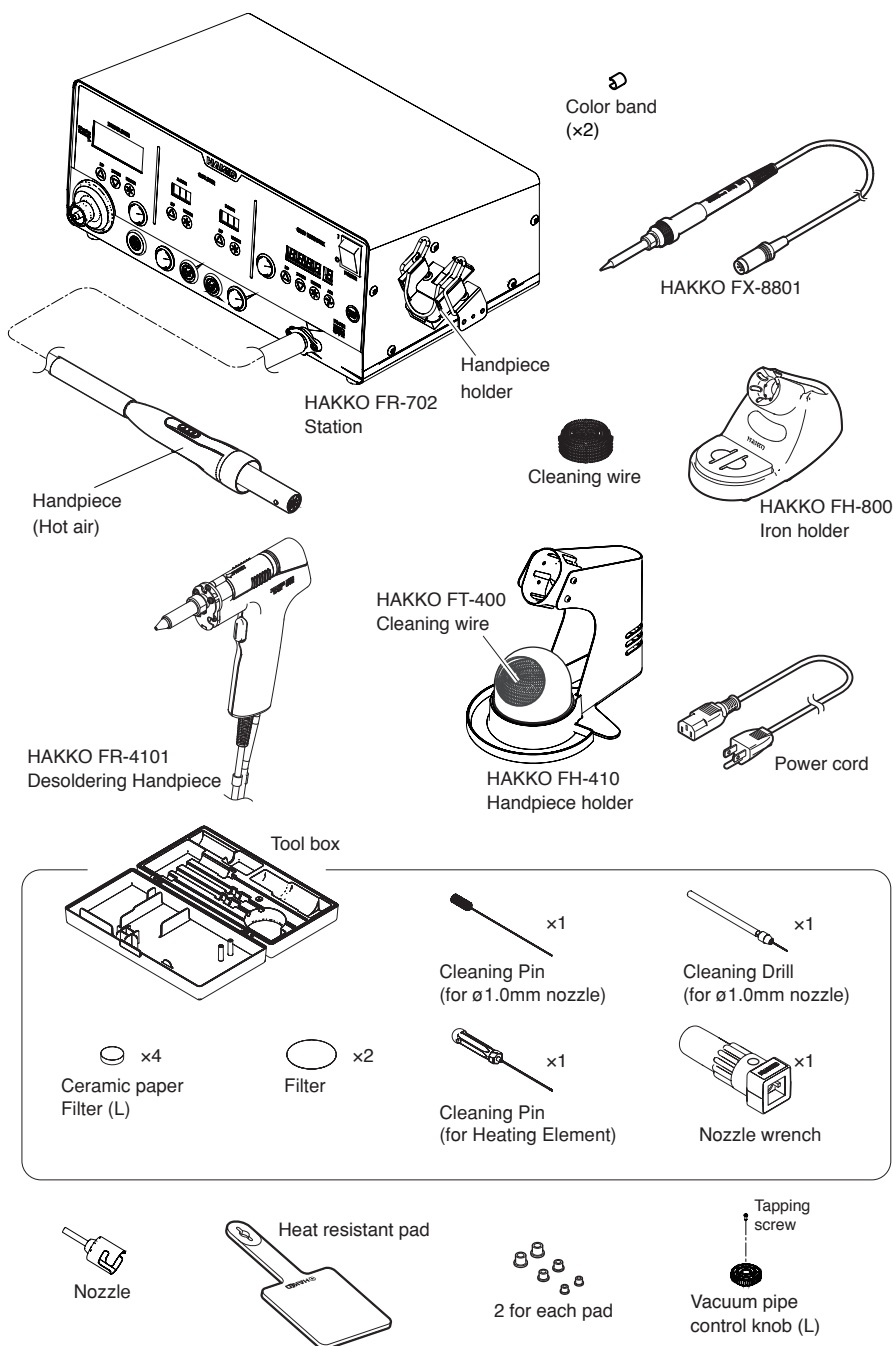
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1. PACKING LIST

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

HAKKO FR-702 Station	1	Tool box	1
Power cord	1	Handpiece holder (for hot air)	1
HAKKO FX-8801 Soldering iron	1	Pads (ø3.0 mm, ø5.0 mm, ø7.6 mm)	2 each
HAKKO FH-800 Iron holder	1	Heat resistant pad	1
Cleaning wire	1	Vacuum pipe control knob (L) (with Tapping screw)	1
HAKKO FR-4101 Desoldering Handpiece with N61-05 (ø1.0mm) nozzle	1	Nozzle N51-02 (ø4.0 mm)	1
HAKKO FH-410 Handpiece holder	1	Color band	2
HAKKO FT-400 Cleaning wire	1	Instruction Manual	1



2. SPECIFICATIONS

Power consumption	100V-1030W 110V-1170W 220V-1430W 230V-1530W 240V-1630W
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● Station (Soldering iron)

Output	AC26V
Temperature range	50 - 480°C (120 - 899°F)
Temperature stability	±1°C at idle temperature {When set to 200-480°C (400-899°F)}

● Station (Desoldering tool)

Output	AC24V
Vacuum generator	Vacuum pump, double cylinder type
Vacuum pressure (max.)	80 kPa (600 mmHg)
Suction flow	15 L/min.
Temperature range	330 - 450°C (620 - 850°F)
Temperature stability	±5°C (9°F) at idle temperature

● Station (SMD Rework station)

Power consumption	30 W
Capacity (Airflow)	1 - 9 (5 - 115L/min*)
Control temperature	50 - 600°C (120 - 1120°F)

* Airflow capacity is rated as free flowing. Restrictions created by various nozzles may reduce the maximum airflow capacity.

● Station

Dimensions (W x H x D)	370(W) x 150(H) x 220(D) mm (14.6 x 5.9 x 8.7 in.)
Weight (w/o cord)	9 kg (19.8 lb.)

■ Electrostatic Protection

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

1. The plastic parts are not insulators, they are conductors. When making repairs or replacing parts, take sufficient care not to expose live electrical parts or damage insulation materials.
2. Be sure to ground the unit during use.

※ 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)
* 各国語(日語, 英語, 中文, 法語, 德語, 韓語)の使用説明書可以通过以下网站的HAKKO Document Portal 下载参阅。
(有一部分的产品没有设定外语对应, 请见谅)
* Instruction manual for the language, Japanese, English, Chinese, French, German and Korean can be downloaded from the following URL, HAKKO Document Portal.
(Please note that some language may not be available depending on the product.)

<https://doc.hakko.com>

● HAKKO FX-8801

Power consumption	65W (26V)
Tip to ground resistance	< 2 Ω
Tip to ground potential	< 2 mV
Heating element	Ceramic heater
Cord	1.2 m (3.9 ft.)
Total length (w/o cord)	217 mm (8.5 in.) with B tip
Weight (w/o cord)	46 g (0.10 lb.) with B tip

● HAKKO FR-4101

Power consumption	140W (24 V)
Nozzle to ground resistance	< 2 Ω
Nozzle to ground potential	< 2 mV
Cord	1.2 m (3.9 ft.)
Length (w/o cord)	168 mm with N61-05 nozzle
Weight (w/o cord)	170 g with N61-05 nozzle

● Handpiece (SMD Rework station)

Power consumption	100V-670W 110V-810W 220V-1070W 230V-1170W 240V-1270W
Total length (w/o cord)	250 mm (9.8 in.)
Weight (w/o cord)	180 g (0.40 lb.)

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

* This product is protected against electrostatic discharge.

* Specifications and design are subject to change without notice.

中國RoHS: 產品中有毒有害物質或元素的名稱及含量

部件名稱	有毒有害物質或元素					
	鉛(Pb)	汞(Hg)	鎘(Cd)	六價鉻 (Cr(VI))	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
焊鐵部	×	○	○	○	○	○
連接部	×	○	○	○	○	○
隔離器	×	○	○	○	○	○
電路板	×	○	○	○	○	○
插頭	×	○	○	○	○	○
插座	×	○	○	○	○	○
電磁蓋	×	○	○	○	○	○
真空泵組件	×	○	○	○	○	○
螺釘	×	○	○	○	○	○
動力單元	×	○	○	○	○	○

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

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 and nozzle will be hot. To avoid injury or damage to personnel and items in the work area, observe the following:

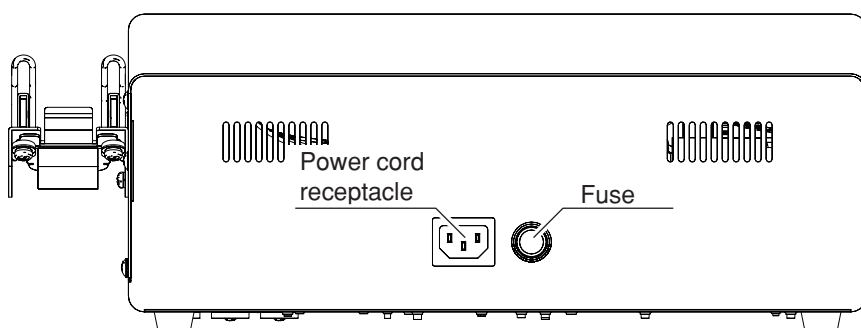
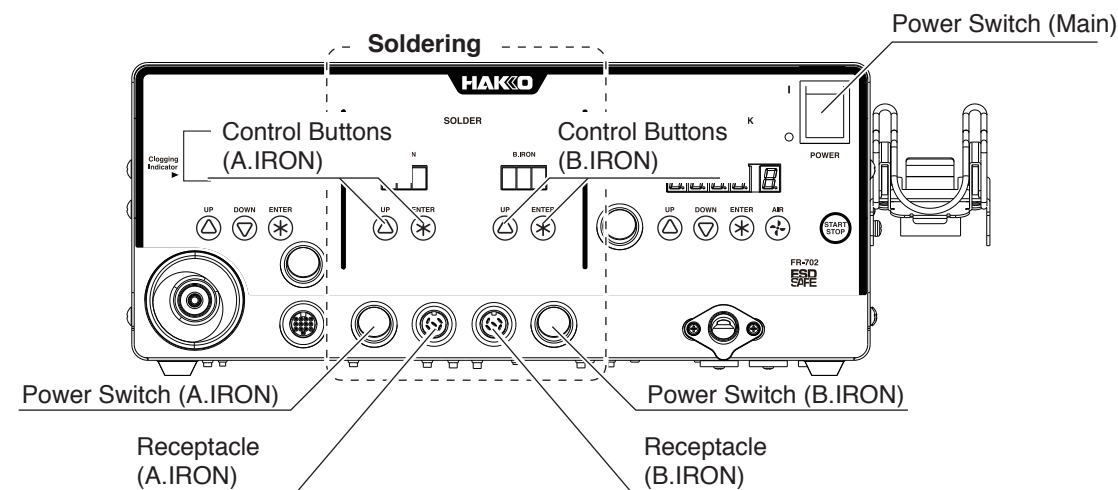
- Do not touch the tip and nozzle or the metal parts near the tip and nozzle. Do not direct the hot air toward personnel or touch the metal parts near the nozzle.
- Do not allow the tip and nozzle to come close to, or touch, flammable materials.
- Inform others in the area that the unit is hot and should 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 FR-702.
- This unit is for 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 FR-702, be sure to observe the following:

- Do not use the unit for applications other than soldering or desoldering.
- Do not strike the handpiece against hard objects to remove excess solder. This will damage the handpiece.
- Do not modify the HAKKO FR-702.
- Use only genuine HAKKO replacement parts.
- Do not allow the HAKKO FR-702 to become wet, or use it when hands are wet.
- Be sure to hold the plug when inserting or removing the handpiece and power cords.
- Be sure the work area is well ventilated. Soldering and desoldering produces smoke.
- While using the HAKKO FR-702, don't do anything which may cause bodily harm or physical damage.

4. PART NAMES (Soldering iron)

● Station

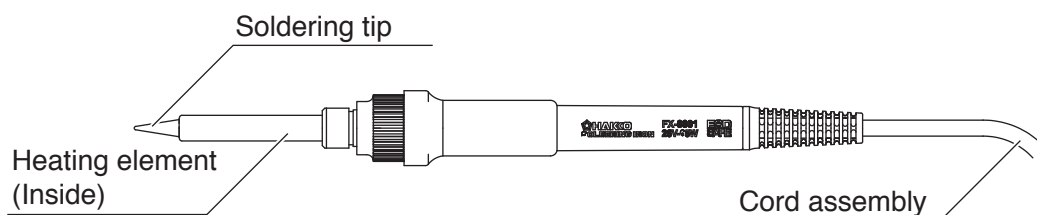


※Use this product with the following models. (Soldering iron)

- | | | |
|---|--------------------------------------|---|
| • HAKKO FX-8801
{Soldering iron (M)} | • HAKKO FX-8803
(Soldering gun) | • HAKKO FX-8805
{Soldering iron (L)} |
| • HAKKO FX-8802
(Soldering iron N ₂ Type) | • HAKKO FX-8804
(SMD Hot tweezer) | |

- When using the HAKKO FX-8802 / FX-8803 / FX-8804, please use the applicable iron holder.
- Each Hakko handpiece with the exception of the HAKKO FX-8801 / FX-8805 has their own instruction manual. Please refer to this manual for specifications and replacement parts.

● Soldering iron (HAKKO FX-8801)



5. INITIAL SETUP (Soldering iron)

A. Setup the iron holder

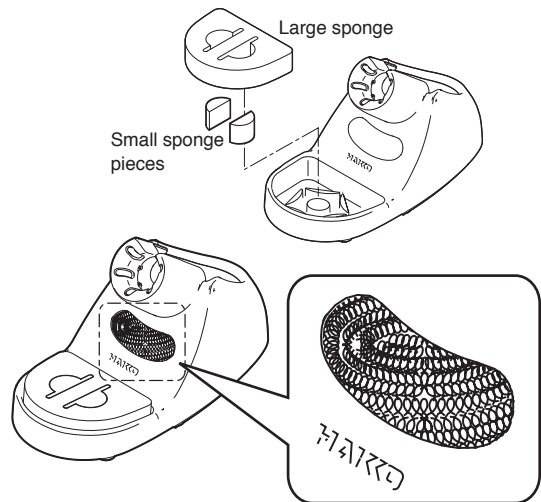
1. Fit the small sponge pieces into the hollows of the iron holder base.
2. Add an appropriate amount of water into the iron holder base. The small sponge will absorb water and help keep the large sponge damp at all times.
3. Dampen the large sponge and place it on the iron holder base.

⚠ CAUTION

Be sure the sponge is moistened with water before use to avoid damaging the tip.

*When using a Cleaning Wire

Place it in the iron holder as shown on the right.



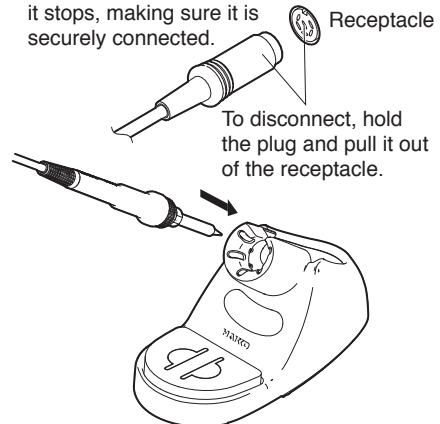
B. Connect the iron to the station

1. Connect the cord assembly to the receptacle.
2. Place the iron into the iron holder.
3. Plug the power cord into an appropriate power supply.

⚠ CAUTION

- Be sure to turn off the power before connecting or disconnecting the cord assembly for the iron to and from the receptacle to avoid damaging the circuit board.
- Do not use any iron other than those listed in Section 1 of this manual. Doing so may result in inadequate performance and / or possible damage to the unit.
- The unit is protected against electrostatic discharge and must be grounded for full efficiency.

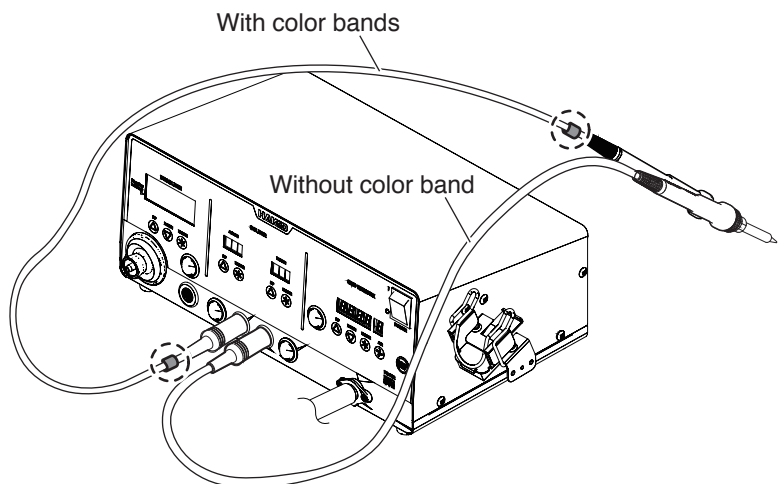
Push on the plug until it stops, making sure it is securely connected.



To disconnect, hold the plug and pull it out of the receptacle.

*When using two soldering irons simultaneously

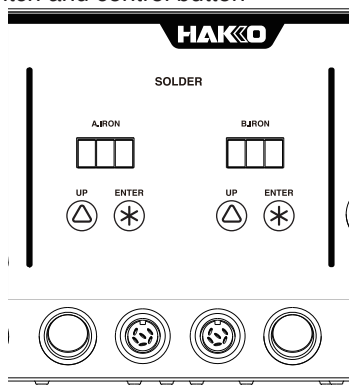
Attachment of the color bands to one of the soldering irons will help identify which soldering iron is connected to receptacle "A.IRON" and "B.IRON".



6. OPERATION (Soldering iron)

● Operation and indication

Switch and control button



The front panel of HAKKO FR-702 (Soldering iron) has two control buttons each for “A.IRON” and “B.IRON.”

- △ - Use this button to select and change settings.
In the temperature preset mode, pressing this button will change the selected preset temperature while the unit is in operation.
Pressing and holding the button will start the adjustment mode.
- * - Use this button to make and confirm selections.
Pressing this button will display the current set temperature.
Pressing and holding the button will start the temperature setting mode.

A. Operation

1. Turn on the power switch (main) located on the front.
2. Turn on either one of power switches located on each side depending on which receptacle of “A.IRON” or “B.IRON” is used.

After turning on the power switch, **8.8.8** will be displayed for two seconds, and current temperature will be displayed. When the display stabilizes, the LED heater lamp will begin to flash.



LED heater lamp

⚠ CAUTION

Place the iron in the iron holder when not in use. Turn the power off when the HAKKO FR-702 is not in use for an extended period.

B. After use

Always clean the tip and coat it with fresh solder after use. (Refer to “Tip Maintenance.”)

● Making Changes to Settings

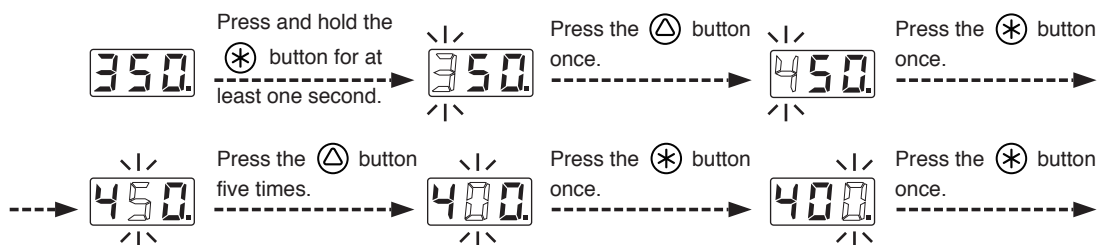
⚠ CAUTION

If no buttons are pressed for at least one minute during the process of changing settings of the unit, the system will exit and return to operating mode and display the current temperature.

A. Changing the set temperature

The temperature setting range is from 50 to 480°C. (from 120 to 899°F)
By default, the temperature is set to 350°C. (662°F)

Example : Changing from 350°C to 400°C



The desired temperature is saved to the system memory.
Heater control will begin after the new set temperature is displayed.

B. The preset mode

The HAKKO FR-702 (Soldering iron) has a preset mode that will allow the unit to store up to 5 preset temperatures you can change between instead of using the above normal mode.

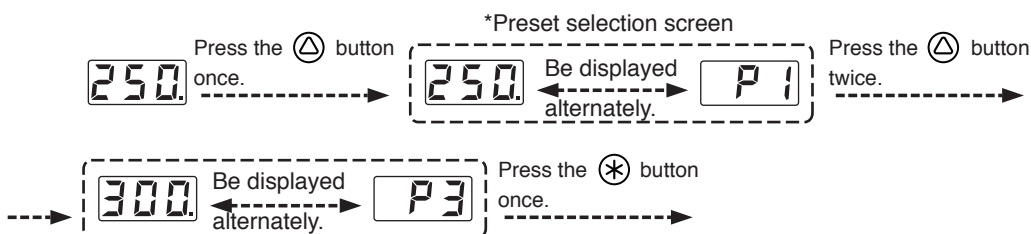
Initial preset temperatures

P1: 250°C (482°F), P2: 300°C (572°F), P3: 350°C (662°F), P4: 400°C (752°F), P5: 450°C (842°F)

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 temperature from preset No.1(250°C) to No.3(350°C).



Heater control will begin with new preset temperature.

The procedure for making changes to the preset temperatures is the same with “A. Changing the set temperature” in 5. OPERATION (Soldering iron).

C. Performing the temperature adjustment

When replacing the iron, heater or tip, a temperature adjustment may be required.

Use adjustment mode to perform the temperature adjustment.

⚠ CAUTION

- Enter the observed value in the adjustment mode after the tip temperature stabilizes.
- The maximum single adjustment that can be made is $\pm 150^{\circ}\text{C}$ (270°F) relative to the set temperature. If a larger adjustment is needed, make the first adjustment at the maximum value of 150°C (270°F), then repeat the adjustment process.
- When a new soldering iron is used or insertion position is changed from A.IRON to B.IRON (and vice versa), temperature adjustment is always required.

Example : If the measured temperature is 380°C , and the set temperature is 400°C .

1. Press and hold the $\triangle$ button for at least two seconds.

● **A.d.J.** is displayed.

1. When you press the $\ast$ button, the display will move to the adjust mode.

2. Changing from **400** to **380**

● The procedure for changing the value in adjustment mode is the same as setting the temperature in normal mode. Please refer to Section 5 - OPERATION (Soldering iron).

NOTE :

During adjustment mode, the hundreds digit will accept values from 0 through 6 if the temperature is set to display in $^{\circ}\text{C}$, or the values 0 through 9 if the temperature is set to display in $^{\circ}\text{F}$.

3. Press the $\ast$ button to exit the setting after changing the values.

● The tip temperature will be adjusted accordingly.

* How to distinguish between Temperature Setting Mode and Adjustment Mode.

The display differs in the temperature setting and the adjustment mode.

In the Temperature Setting Mode



In the Adjustment Mode



Identification lamps are on in the adjustment mode.

⚠ CAUTION

Please be sure to confirm the status of the identification lamps so that you do not enter a value in the wrong mode.

D. 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. (The factory default is "0 : Open")

	0 : Open	1 : Partial	2 : Restricted
Move to the parameter setting mode	○	×	×
Move to the temperature setting mode	○	△	×
Move to the preset selection mode	○	△	×
Move to the adjust mode	○	△	×

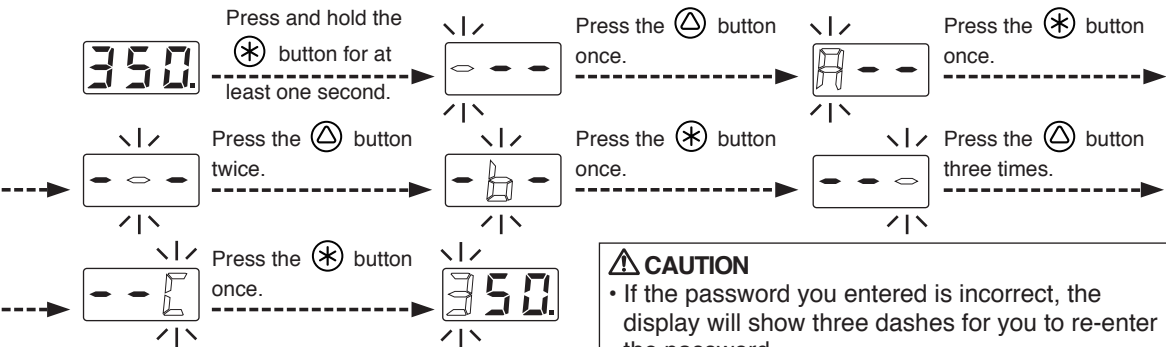
- : You can make changes without entering a password.
- △ : You can choose whether or not a password is needed to make changes.
- ×

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



The letters for password

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



CAUTION

- If the password you entered is incorrect, the display will show three dashes for you to re-enter the password.
- If you enter the password incorrectly twice in a row, the display will return to the previous screen.

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.
Enter the parameter setting to change the mode.

7. PARAMETER SETTING (Soldering iron)

The HAKKO FR-702 (Soldering iron) has the following parameters.

Parameter name	Parameter No.	Value	Initial value
°C/°F selection	01	°C / °F	°C
Low temperature error setting	03	54 ~ 270°F (30 ~ 150°C)	150°C
Setting mode selection	11	0 : The normal mode / 1 : The preset mode	0
The number of preset*1		2P (2 pcs.) ~ 5P (5 pcs.)	5P
Password setting	14	0 : Open / 1 : Partial / 2 : Restricted	0
Temperature setting mode*2		10 : ○*4 / 11 : ×*4	11
Preset selection mode*2		20 : ○*4 / 21 : ×*4	20
Adjust mode*2		30 : ○*4 / 31 : ×*4	31
Password*3		A B C D E F Select three letters	-

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

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

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

*4 ○ : Password not required × : Password required

● Changing Parameter Setting

The HAKKO FR-702 (Soldering iron) has four parameters. Turn the power on while pressing the  button. Perform the setting to select the desired parameter No.. Press the  button to change the values, and press the  button to execute.

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 your 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.

8. MAINTENANCE (Soldering iron)

Performing proper and periodic maintenance extends product life. Efficient soldering depends upon the temperature, quality and quantity of the solder and flux.

Apply the following service procedure as dictated by the conditions of 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.

● Tip Maintenance

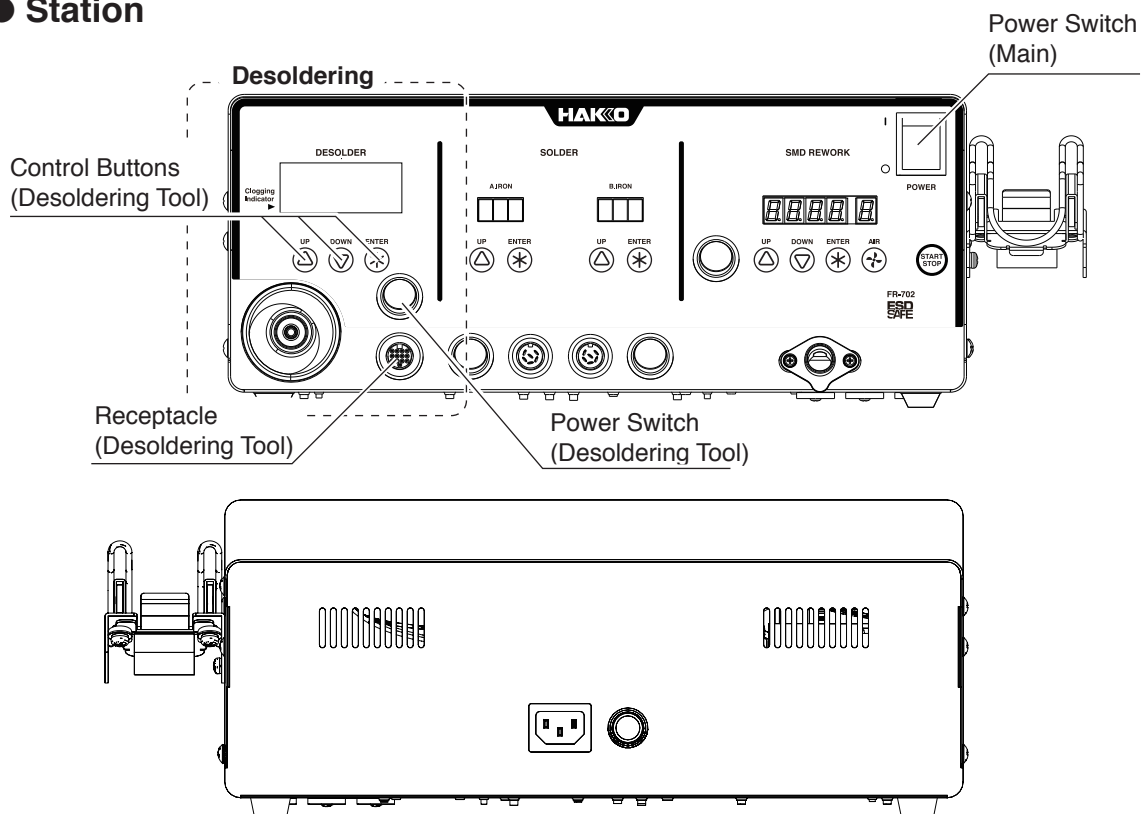
1. Set the temperature to 250°C (482°F).
2. When the temperature stabilizes, clean the tip with the cleaning sponge and check the condition of the tip.
3. If the solder plated part of the tip is covered with black oxide, apply fresh solder containing flux, and clean the tip again. Repeat until all the oxide is removed, then coat the tip with fresh solder.
4. If the tip is deformed or heavily eroded, replace it with a new one.

CAUTION

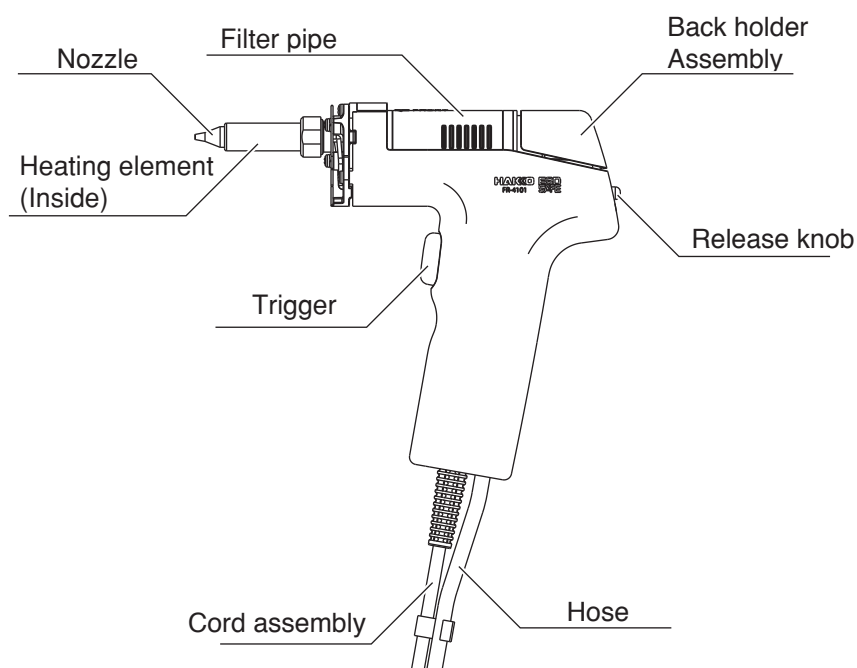
Do not file the tip in an attempt to remove the black oxide.

9. PART NAMES (Desoldering Tool)

● Station



● Handpiece (HAKKO FR-4101 Desoldering Tool)



10. INITIAL SETUP (Desoldering Tool)

A. Handpiece holder

Loosen the adjusting screws to change the angle of the handpiece receptacle as you like, then tighten the screws.

⚠ CAUTION

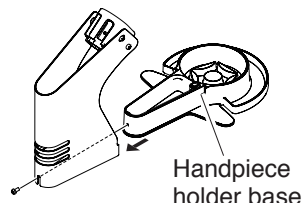
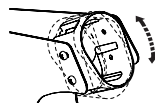
Increasing the angle of the handpiece receptacle will cause an increase in the handpiece temperature.

● Setup the handpiece holder

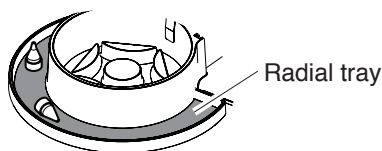
Following the instructions given in the illustration on the right, assemble the handpiece holder.

NOTE :

You can put nozzles that are not in use on the radial tray of the handpiece holder base.



Handpiece holder base



Radial tray

● Cleaning wire

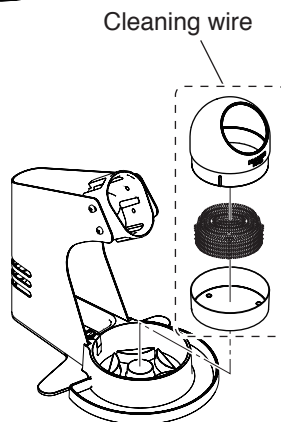
Following the instructions given in the illustration on the right, put the cleaning wire on the handpiece holder base.

Operation:

First, remove any excess solder from the nozzle by thrusting the nozzle into the cleaning wire.

(Do not wipe the nozzle against the wire. This may cause molten solder to spatter.)

When the wire becomes dirty or loaded with solder, reposition the wire until a clean surface is presented. When changing the cleaning wire, lift the case top vertically to prevent solder debris from falling out.



Cleaning wire

⚠ CAUTION

Be sure to hold the plug when inserting or removing the handpiece cord.

B. Station

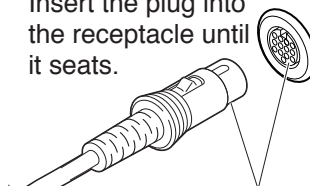
● Connection

1. Connect the power cord to the receptacle on the rear of the station.
2. Connect the plug from the HAKKO FR-4101 to the receptacle on the HAKKO FR-410.

⚠ CAUTION

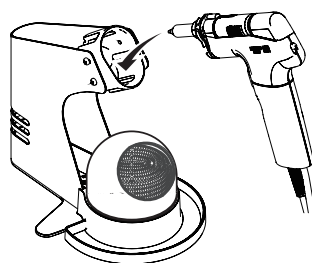
Connect the plug to the receptacle, aligning the tab on the plug with the opening on the receptacle.

Insert the plug into the receptacle until it seats.

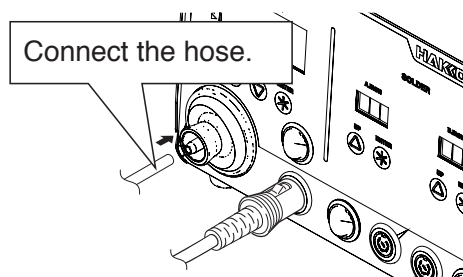


To disconnect, pull the plug from the receptacle while pressing down the tab on the plug.

3. Set the HAKKO FR-4101 in the handpiece holder.



4. Connect the hose from the HAKKO FR-4101 to the vacuum outlet cap on the HAKKO FR-702 station.

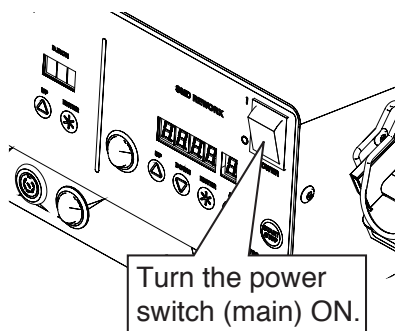


5. Plug the power cord into a grounded power outlet. Ensure that the power switch is OFF before plugging in the power cord.

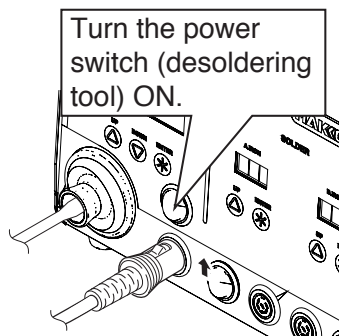
⚠ CAUTION

Be sure to ground this product as it is ESD safe by design.

6. Turn the power switch (main) ON.



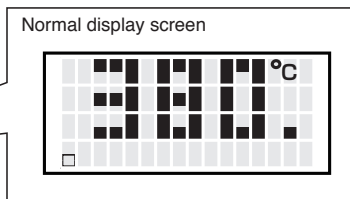
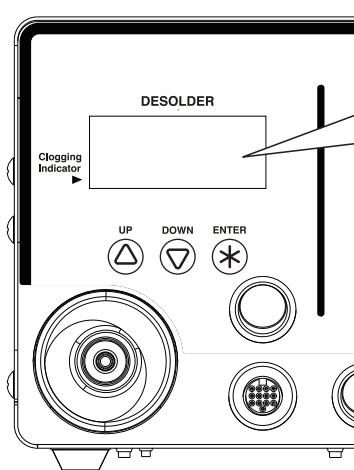
7. Turn the power switch (desoldering tool) ON.



11. OPERATION (Desoldering Tool)

● Operation and indication

Switch and control button



- ⬆ - Moving the cursor UP. Increases the value.
- ⬇ - Moving the cursor DOWN. Decreases the value.
- ✳ - End of sequence (terminates a phase of a data entry mode).

A. Desoldering

⚠ CAUTION

If the pump does not operate, immediately clean the nozzle & heating element and replace the filter if necessary.

1. Place the nozzle over the lead wire of the part to be desoldered and begin heating.

Be careful to heat the lead wire and the solder, not the land. Placing the nozzle directly in contact with the land may cause the land to peel off. You may apply a small amount of solder to form a heat bridge to help the heating process.

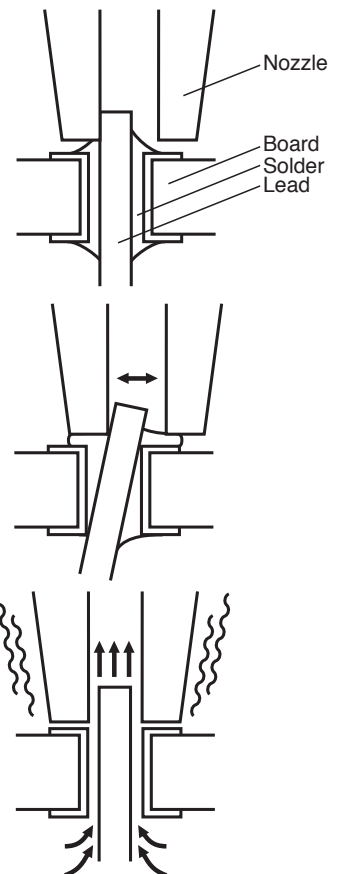
2. Check to make sure all of the solder on the joint has melted.

With the nozzle still in place over the lead wire, slowly move the lead wire, being careful not to apply too much force. If the lead wire moves easily, all of the solder has melted.

3. Pull the trigger to remove the melted solder.

Make sure that a filter has been inserted in the desoldering tool. Desoldering without a filter may damage the pump.

4. If the solder was not removed, re-solder the part using new solder and then repeat the desoldering process.



● When triggering before the heater reaches set temperature

When triggering before the heater reaches set temperature, the display screen shows “HEATING PLEASE WAIT” and the vacuum does not work.

Please wait for the heater to reach the set temperature.

HEATING...
PLEASE WAIT

B. Making Changes to Settings

● Selecting the preset number

The HAKKO FR-702 (Desoldering Tool) has a preset mode.

1. Press any of the three control buttons.

2. The preset selection screen appears.

▶PRESET1	350℃	
PRESET2	400℃	
PRESET3	450℃	
<↑>	<↓>	<ENT>

If you wish to exit the PRESET SELECTION screen, simply use the DOWN button to scroll to the bottom of the list, and select <EXIT>.

3. Make your SELECTION by moving the cursor UP or DOWN by pressing the corresponding buttons.

▶PRESET1	350℃	
PRESET2	400℃	
PRESET3	450℃	
<↑>	<↓>	<ENT>

4. Press the <ENT> button to finalize your selection.

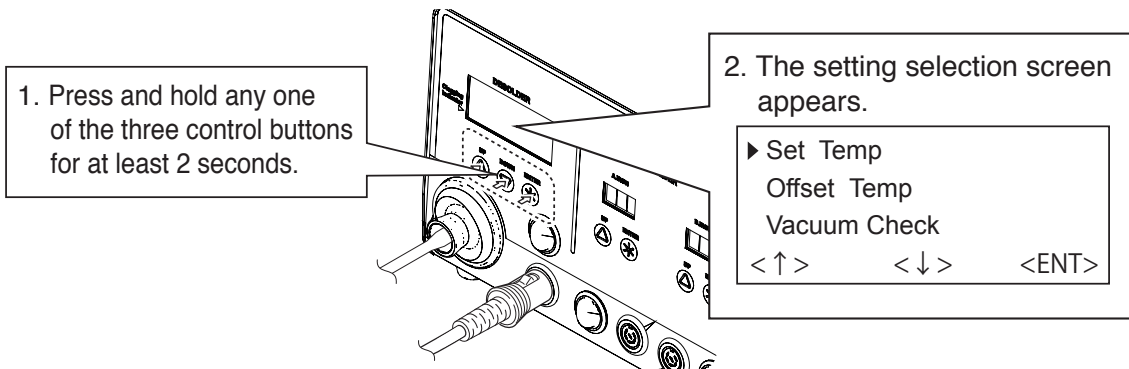
▶PRESET1	350℃	
PRESET2	400℃	
PRESET3	450℃	
<↑>	<↓>	<ENT>

If you wish to exit the PRESET SELECTION screen...

- Select <EXIT> and press the <ENT> button. You will return to the normal display screen without making any changes.
- If the device is left alone without making any operation for 10 seconds, you will return to the normal display screen.

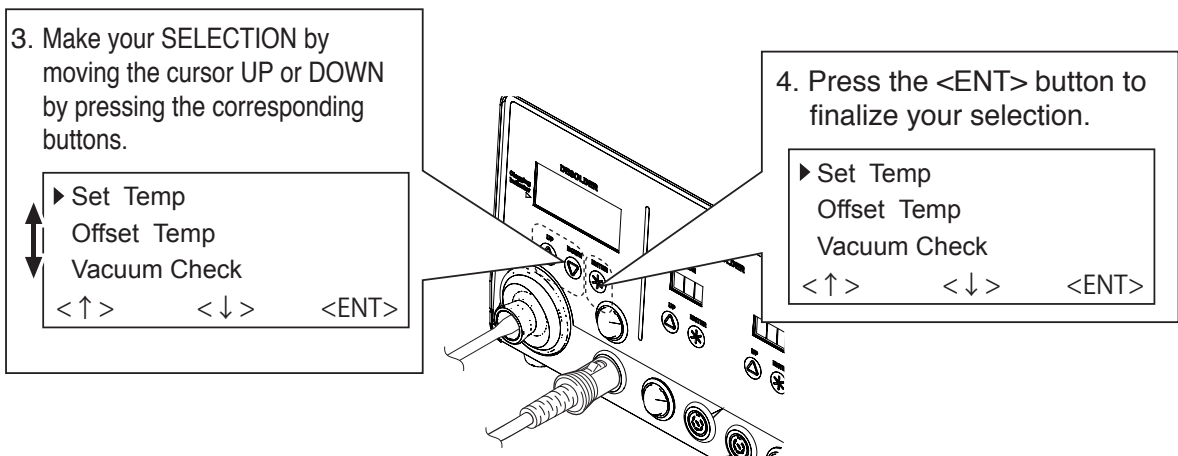
When changing the current set temperature or the preset temperature, follow the operation of “● Changing various setting (other than preset selections)”.

● Changing various settings (other than preset selections)



The following settings can be changed from this screen:

Set Temp	(Nozzle temperature setting)
Offset Temp	(Nozzle temperature offset setting)
Vacuum Check	(Check of nozzle clogging and suction force)
Preset Temp	(Setting of each preset temperature)
Preset ID	(Setting of each preset name)
LCD Contrast	(Contrast adjustment of display screen)
<EXIT>	(Return to the setting screen)



※Change of selected setting

Depending on selected setting, the display on the screen differs. However, you can make changes to the settings by following the above operation procedure. After completing the changes to the setting, if you press the ENTER button again in the selection screen, you will return to the normal display.

12. PARAMETER SETTINGS (Desoldering Tool)

● PARAMETER SETTINGS

Press and hold any one of the three control buttons, and turn on the power switch to display the parameter setting screen. The following parameters can be set:

Parameter name	Value	Initial value
Temp Mode	°C / °F	°C
ShutOff Set	OFF / ON	OFF
Timer*	30 ~ 60 min	30 min
Vacuum Mode	Normal / Timer	Normal
Vacuum Time**	1 ~ 5sec	1sec
Auto Sleep	OFF / ON	ON
Timer*	1 ~ 29min	6 min
Sleep Temp	200 ~ 300°C (390 ~ 570 °F)	200°C (390°F)
Low Temp	30 ~ 150°C (54 ~ 270°F)	150°C (270°F)
Error Alarm	ON / OFF	ON
Ready Alarm	ON / OFF	ON
Pass. Lock	ON (Lock / Partial) / OFF (unlock)	OFF
Password***	"ABCDEF" Select three letters	-
Initial Reset	°C / °F / Cancel	

* Auto-ShutOff (Auto Sleep) Time can be set when Auto-ShutOff (Auto sleep) is set to ON.

** Vacuum Time is displayed when Vacuum Mode is set to "Timer."

***Password is displayed when Password Lock is set to "ON" or "Partial."

✳Operation procedure for parameter setting

Use <↑>, <↓>, and <ENT> to set parameters as you do in the operation settings. When you are finished, press the <ENT> button in the parameter setting screen to return to the normal display.

13. MAINTENANCE (Desoldering Tool)

Properly maintained, the HAKKO FR-702 desoldering tool should provide years of good service. Efficient desoldering depends upon the temperature, nozzle selection, and proper routine maintenance. Perform the following service procedures as dictated by the conditions of the station's usage.

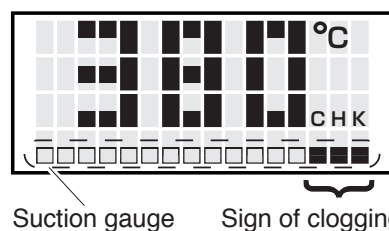
⚠ WARNING

Since the desoldering tool can reach a very high temperature, please work carefully. Except when cleaning the nozzle and heating element, ALWAYS turn the power switch OFF and disconnect the power plug before performing any maintenance procedure.

During suction, the gauge indicating suction force is shown at the bottom of the screen.

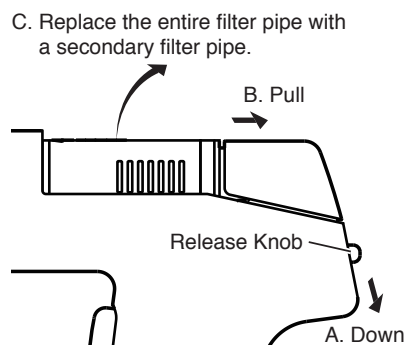
If "CHK" appears on the display, check the nozzle and heater for restrictions.

If the nozzle or heater are clogged, clean or replace them.



● Replacing the filter

Replace the filter as shown following steps A to C.
During operation, the filter pipe is very hot.
Wait until the filter pipe is cool before replacing the filter or cleaning.
We recommend keeping a second filter pipe containing new filters handy, and replacing the installed filter pipe with this secondary filter pipe.



● Nozzle Maintenance

⚠ CAUTION

The desoldering tool may be extremely hot. During maintenance, please work carefully.

1. Inspect and clean the nozzle

- Turn the power switch ON and let the nozzle heat up.

⚠ CAUTION

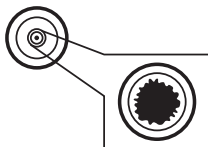
The cleaning pin will not pass through the nozzle until the solder inside the nozzle is completely melted.

- Clean out the hole of the nozzle with the nozzle cleaning pin.
- If the cleaning pin does not pass through the hole in the nozzle, clean with the cleaning drill.
- Check the condition of the solder plating on the nozzle tip.

⚠ CAUTION

If the cleaning drill is forced into the nozzle, the drill bit could break or be damaged.
Please use the proper size cleaning pin or cleaning drill for the nozzle diameter.

- Check visually if the nozzle was eroded.



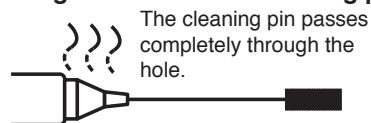
Hole is damaged by erosion.

⚠ CAUTION

Desoldering efficiency goes down and all other parts appear to be OK, the nozzle is probably eroded and should be replaced.
The inside hole and the surface of the nozzle is plated with a special alloy. Should this alloy become eroded by high temperature solder, the nozzle will not be able to maintain the proper temperature.

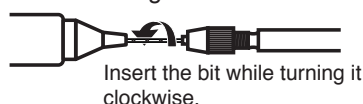
- If the nozzle is still in a good condition, put some fresh solder on the nozzle tip to protect solder plated area from oxidation.

Cleaning with the nozzle cleaning pin

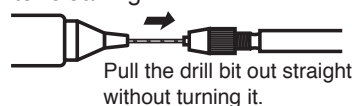


Cleaning with the cleaning drill

- Before cleaning



- After cleaning



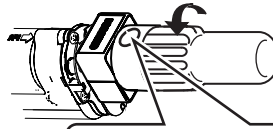
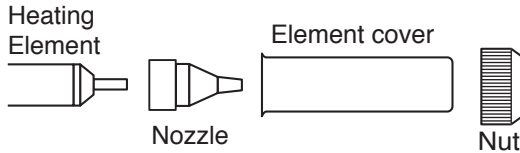
Use the proper size cleaning pin or cleaning drill for the nozzle diameter.

2. Disassemble the heating element.

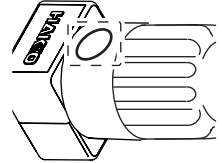
Remove the element cover assembly and the nozzle with the provided wrench.

⚠ CAUTION

The heating element is very hot during operation.



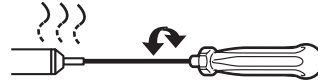
The element cover assembly is held to the nozzle changing tool by pressing this part from both sides. (The nozzle is not held to the nozzle changing tool. Be careful when removing them.)



3. Clean out the tube in the heating element with the provided cleaning pin.

Scrape away all oxidation from the tube in the heating element until the cleaning pin passes cleanly through the tube.

- Turn the power off after cleaning.



⚠ CAUTION

- Be sure the solder in the tube in the heating element is completely heated, before cleaning the tube.
- If the cleaning pin does not pass through the tube in the heating element, replace the heating element.

4. Replace the filters.

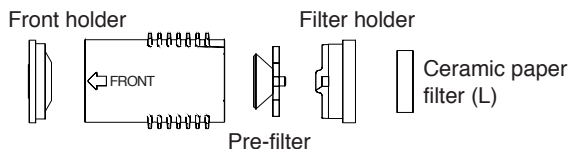
- Turn the power switch OFF.
- When the filter pipe is cool to the touch, push down on the release knob at the back of the handpiece and remove the filter pipe.

⚠ CAUTION

The filter pipe is very hot.

- Examine the seals (front and filter holders) at each end of the filter pipe. Replace : Stiff and/or cracked.
- Examine the Pre-filter: Remove solder adhering to the waste collector.
- Examine the ceramic paper filter (L).

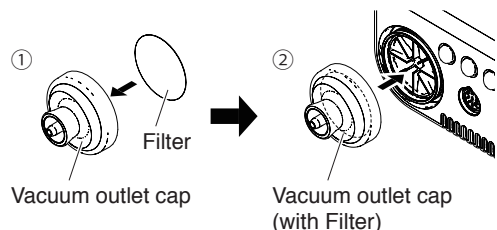
Replace : Ceramic paper filter (L) is showing signs of stains from flux, is stiff, or contains any solder.



5. Replacement of station filter

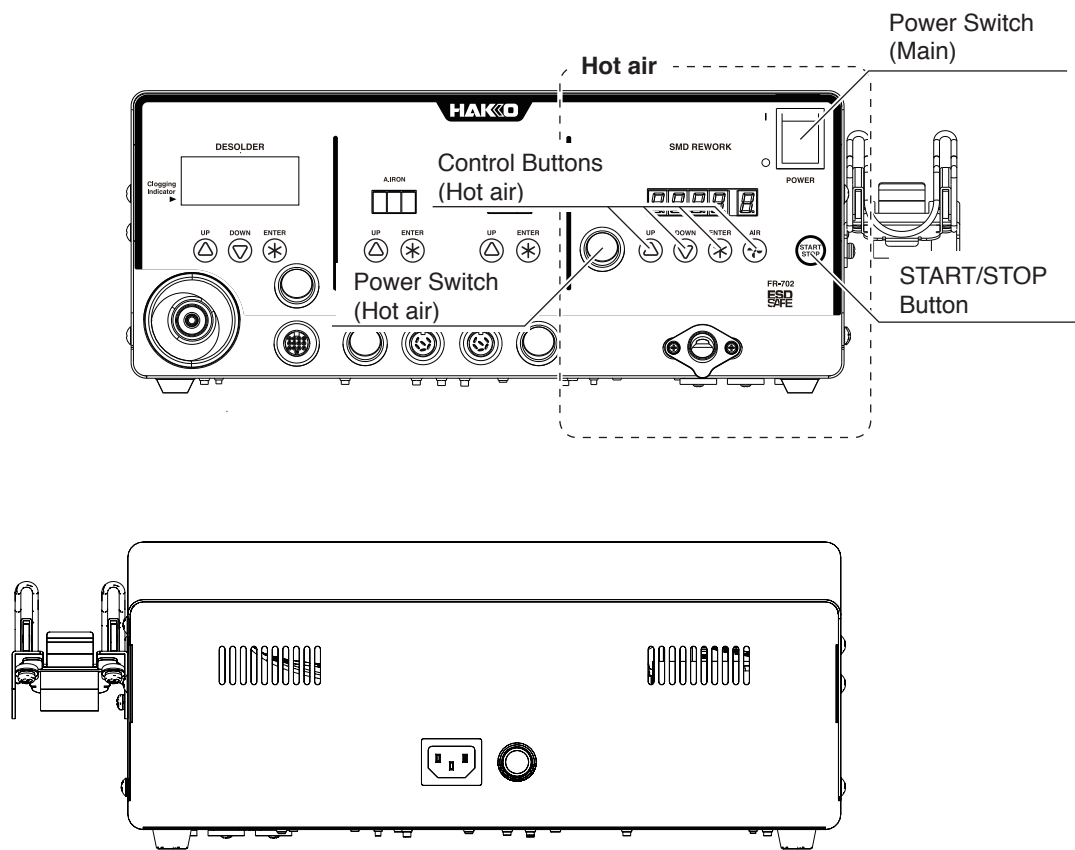
If the filter is showing signs of stains from flux or is stiff, replace it.

Attach the filter as shown in the right diagram.

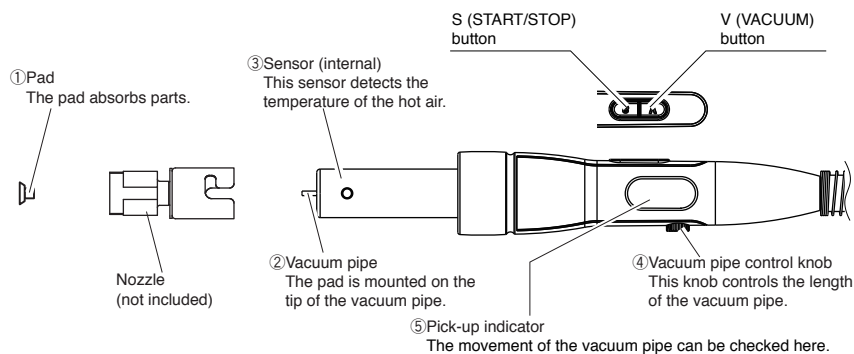


14. PART NAMES (Hot air)

● Station



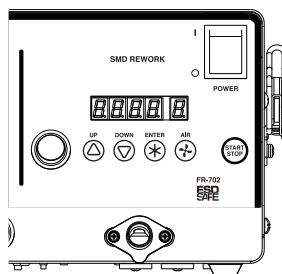
● Handpiece



15. INITIAL SETUP (Hot air)

● Operation and indication

Switch and control button



The front panel of HAKKO FR-702 (Hot air) includes five operation buttons.

-  - Used to start or stop the station.
 - Pressing this button when the forced cool down bypass is enabled will turn the airflow off and stop the cooling process.
-  - Used for changing values.
 - Pressing this button when using Preset Mode will cause the preset selection screen to appear.
-  - Used for changing values.
 - Hold this button for at least two seconds to enter the Offset Mode.
-  - Used for finalizing entered values and checking settings.
 - Hold this button for at least two seconds to display the temp/timer screen.
-  - Used to set air flow.
 - When setting the airflow, you may press  or  to finalize your airflow setting value.

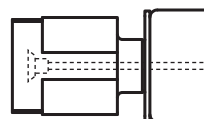
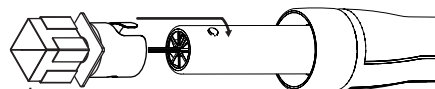
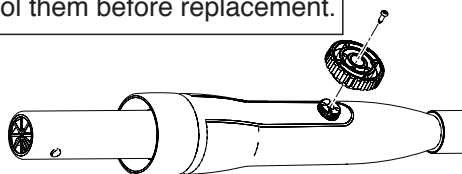
A. Handpiece

⚠ CAUTION

The nozzle and pad will be heated at high temperature. Cool them before replacement.

NOTE:

The handpiece can be used with the provided vacuum pipe control knob (L).



● Using vacuum function operative nozzle

1. Attach the nozzle.

- a. Extend the vacuum pipe using the vacuum pipe control knob.
- b. Pass the vacuum pipe through the nozzle hole and attach the nozzle.

⚠ CAUTION

- Vacuum pipe
 - Do not use excessive force. When not using a nozzle, retract the vacuum pipe to the shortest length.

2. Attach the pad.

- a. Attach the pad.
- b. Adjust the pad to an appropriate position.
 - Adjust the vacuum pipe so that the pipe and pad protrude as little as possible.

⚠ CAUTION

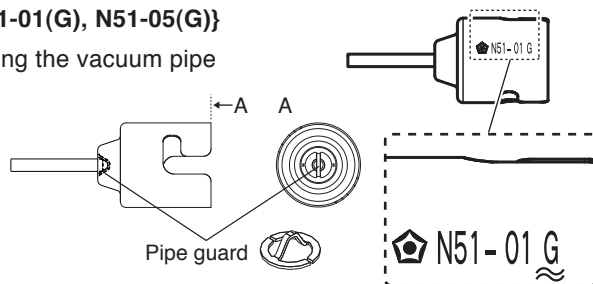
- Pad
 - The pad does not last indefinitely. When it becomes deteriorated, replace it. Since exposure to high temperatures causes it to deteriorate faster, Hakko recommends it be cooled after use.

● Using vacuum function inoperative nozzle {N51-01(G), N51-05(G)}

- a. Retract the vacuum pipe to the shortest length using the vacuum pipe control knob.

⚠ CAUTION

The new N51-01/N51-05 nozzle has a pipe guard inside. These nozzles could not be attached to HAKKO FR-702 when the vacuum pipe is extended. Do not use excessive force.



- b. Tighten the nozzle mounting screw.

⚠ CAUTION

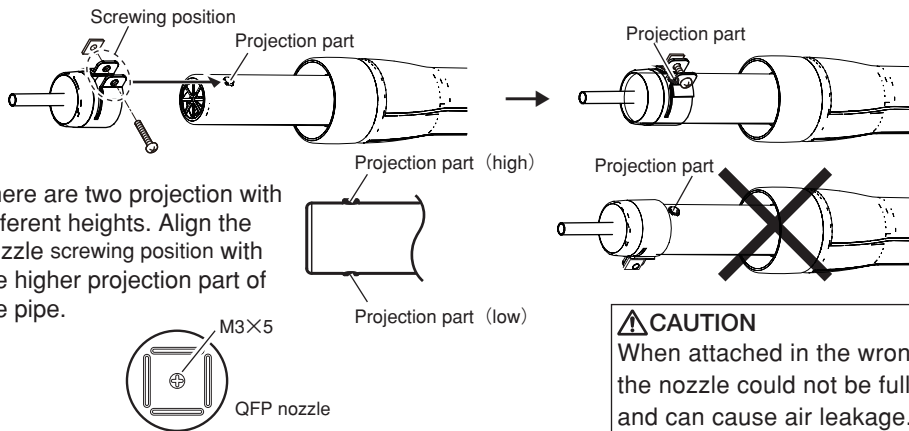
When "G" is not marked on the nozzle, these nozzles do not have space to blow hot air. using them with the HAKKO FR-702 may result in danger.

NOTE :

Letter "G" is marked on the nozzle with the pipe guard.

● How to Use a old nozzle

Align the projection part, attach the old nozzle to the heater pipe.



There are two projection with different heights. Align the nozzle screwing position with the higher projection part of the pipe.

※When using the QFP nozzle, remove the inside screw (M3 × 5) of the nozzle.

CAUTION
When attached in the wrong direction, the nozzle could not be fully inserted and can cause air leakage. Make sure to attach the nozzle in the correct direction.

▲ CAUTION

● Vacuum function inoperative nozzles. (Old nozzle)

A1124B, A1130, A1131, A1132, A1133, A1134, A1142B, A1183, A1190, A1191, A1192, A1325
These nozzles could not be attached to HAKKO FR-702 when the vacuum pipe is extended.

Do not use excessive force.

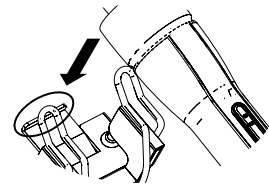
A1124, A1142

Do not use these nozzles with HAKKO FR-702. These nozzles do not have space to blow hot air, using them with the HAKKO FR-702 may result in danger.

B. Electrical connection and power ON

1. Insert the power cord into the receptacle on the rear panel of the station.
2. Place the handpiece on the holder.
3. Plug the other end of the power cord into a grounded wall socket.
4. Turn the power switch ON.

The rim of the handpiece must rest on the area circled in the illustration.



▲ CAUTION

When not in use, place the handpiece on the holder.

▲ CAUTION

This product is protected against electrostatic discharge. Be sure the unit is grounded.

16. OPERATION (Hot air)

● Air Blow

1. Start

Press the "S" button on the handpiece or  (START/STOP) button on the station to start blowing air. Hot air blows out of the tip of the nozzle. Hot air temperature is controlled according to the temperature setting.

2. Stop

Press the "S" or  button again. Power to the heater is shut off and cooling begins. When the temperature falls to 100°C (200°F), or after 1.5 minutes of cooling, air blow is automatically stopped. The display will show  indicating that the station is ready to start again.

⚠ WARNING

Do not stop the hot air by turning the power switch OFF.

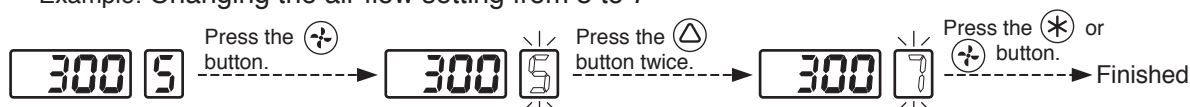
If power is turned off after use, there will be no cool-down. To avoid damage to the equipment, do not turn the power switch OFF until **P-S** appears on the display.

● Setting of the air flow

Pressing the **+** button in the station causes the LED for AIR display to blink and allows you to change air flow. The air flow setting range is 1 to 9.

Actual airflow may be affected by the size and shape of the nozzle(s) used.

Example: Changing the air flow setting from 5 to 7



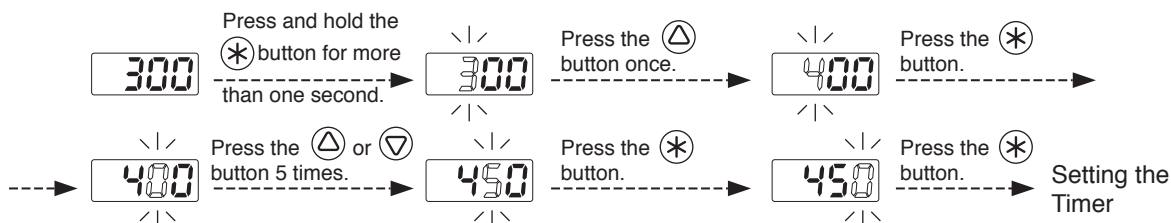
● Setting/Changing the Temperature and Timer

NOTE:

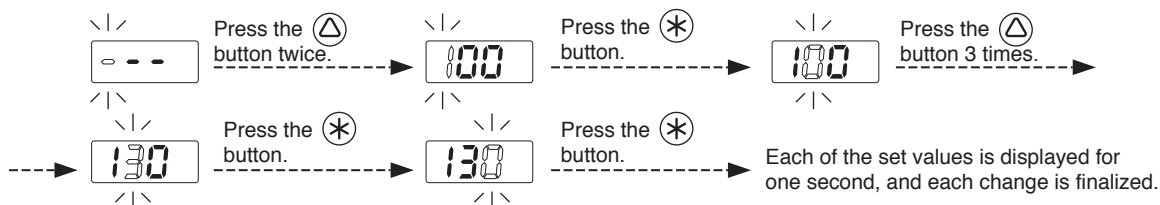
After accepting the value for the ones digit for temperature, you will have the option to set the timer starting over with the hundreds digit. The factory default : "Temperature 300°C" "Timer --- (No setting)"

Example : When the set temperature is 300°C and the timer setting is ---.

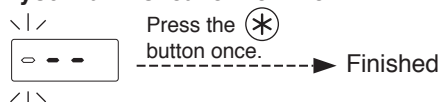
1. Setting the Temperature (from 300°C to 450°C)



2. Setting the Timer (from --- to 130sec)

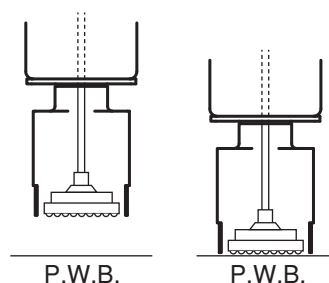
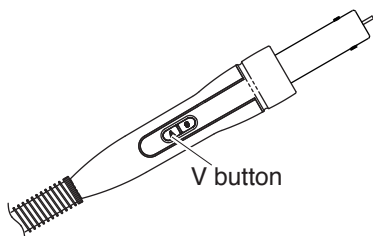


* When you want to leave the timer "----".



✳ Vacuum Function

Press the V (Vacuum) button on the handpiece. The vacuum pump turns ON and the part is held by suction.



* 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-702 (Hot air) 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 [PARAMETER SETTING].)

Initial preset settings:

P1 Temp. : 100°C Timer : “---” Air flow : 5

P3 Temp. : 300°C Timer : “---” Air flow : 5

P5 Temp. : 500°C Timer : “---” Air flow : 5

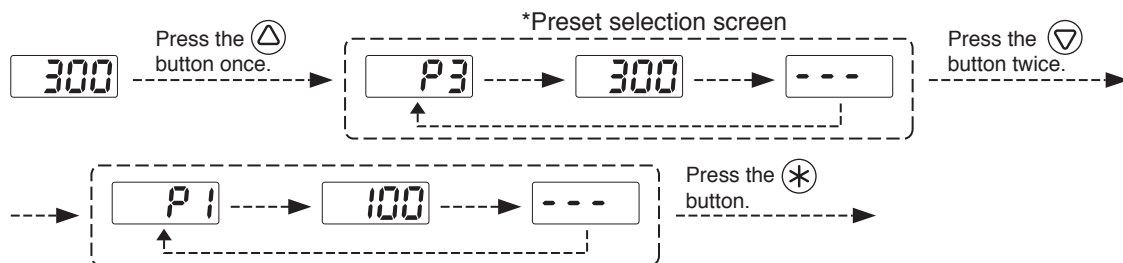
P2 Temp. : 200°C Timer : “---” Air flow : 5

P4 Temp. : 400°C 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. 3 to No. 1.



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.

	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.

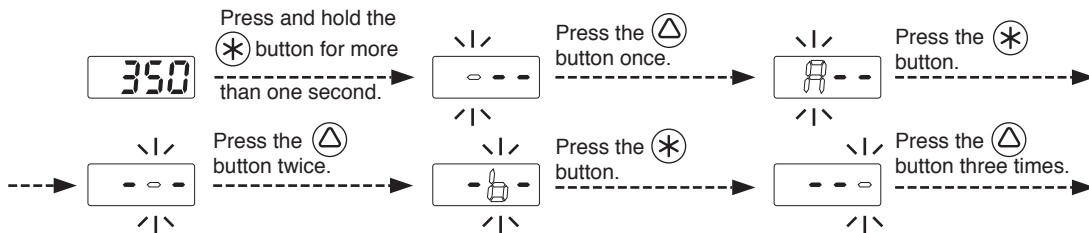
×

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



The letters for password

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



CAUTION

- If the password you entered is incorrect, the display will show three dashes for you to re-enter the password.
- If you enter the password incorrectly twice in a row, the display will return to the previous screen.

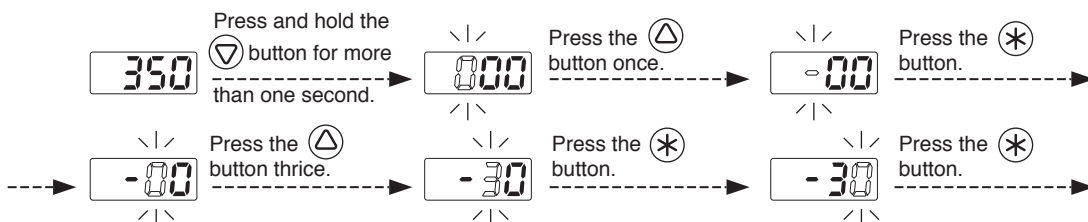
The unit will move to the change setting screen for each mode after entering the password. Please change the setting for each mode according to the procedure covered in this manual.

● Offset mode {Setting is available within the range of $\pm 50^{\circ}\text{C}$ (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



Each of the set values is displayed for two seconds, and each change is finalized.

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.

A preset in which "000" is set in the timer setting is skipped and the next preset is automatically started.

● Auto sleep function

When the handpiece is placed in the holder, the automatic sleep function starts working (by default). Pressing the START/STOP (HOT AIR) 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 ( 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.

CAUTION

Please do not use this function at high temperatures.

● Check of settings

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

Pressing the  button once allows you to check the settings of the set temperature  and set time  in this order.

17. PARAMETER SETTING (Hot air)

The HAKKO FR-702 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 *		 (2 pcs) ~  (5 pcs)	
Password setting	14	0: Open/ 1: Partial / 2: Restricted	0
Temperature setting mode **		 :○ /  :×	
Preset selection mode**		 :○ /  :×	
Offset setting mode**		 :○ /  :×	
Air flow mode**		 :○ /  :×	
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:Partial" is selected in the password setting.

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

Turn the power on while pressing the  button. Perform the setting to select the desired parameter No..

Press the  or  button to change the values, and press the  button to execute.

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  or  button. Select  if you are finished making changes or  if you need to go back and make more changes. Press the  button to confirm your selection.

Changes will not be completed until  is displayed and you press the  button.

25 Please note that no changes will be made if you turn off the power while making changes.

18. TROUBLE SHOOTING GUIDE

WARNING

Before checking the inside of the HAKKO FR-702 or replacing parts, be sure to disconnect the power plug.

- Nothing happens when the power switch is turned on.

CHECK : Is the power cord and/or connecting plug disconnected?

ACTION : Connect it.

CHECK : Is the fuse blown?

ACTION : Determine why the fuse blew and eliminate the cause, then replace the fuse.

a. Is the inside of the iron short-circuited?

b. Is the grounding spring touching the heating element?

c. Is the heating element lead twisted and short-circuited?

Try replacing the fuse even if the cause cannot be identified.

If it still blows, return the product for repair.

- The heater lamp lights up but the tip does not heat up. (Soldering iron)

CHECK : Is the cord assembly broken? Is the heating element/sensor broken?

ACTION : If the cord assembly is broken, replace the HAKKO FX-8801.

If the heating element / sensor is broken, replace the heating element.

- The Heater-error  is displayed. (Soldering iron)

CHECK : Is the heater broken?

ACTION : If the heater is broken, replace the heating element.

CHECK : Is the setting value for the low-temperature alarm tolerance too low?

ACTION : Increase the setting value.

- The tip heats up intermittently. (Soldering iron)

CHECK : Is the cord assembly broken?

ACTION : If the cord assembly is broken, replace the HAKKO FX-8801.

- Solder does not wet to the tip or nozzle.

CHECK : Is the tip or nozzle temperature too high?

ACTION : Set an appropriate temperature.

CHECK : Is the tip coated with black oxide?

ACTION : Remove the black oxide. (Refer to "Tip Maintenance.")

- The tip or nozzle temperature is too low.

CHECK : Is the tip or nozzle coated with black oxide?

ACTION : Remove the black oxide. (Refer to "Tip Maintenance.")

CHECK : Is the iron temperature adjusted correctly?

ACTION : Perform the temperature adjustment.

- The tip can not be pulled off. (Soldering iron)

CHECK : Is the tip seized? Is the tip swollen because of deterioration?

ACTION : Replace the tip and the heating element.

- The tip or nozzle doesn't hold the desired temperature.

CHECK : Is the iron temperature adjusted correctly?

ACTION : Perform the temperature adjustment.

- Pump does not operate. (Desoldering Tool)

CHECK : Is the power supply cable or connection plug disconnected?

ACTION : Connect it tightly.

CHECK : Is the heater tube or nozzle clogged?

ACTION : Clean it.

- Solder is not being absorbed. (Desoldering Tool)

CHECK : Is the filter pipe full of solder?

ACTION : Clean it.

CHECK : Is the ceramic paper Filter (L) hardened?

ACTION : Replace it with a new one.

CHECK : Is there a vacuum leak?

ACTION : Check the connections and filter pipe seals and replace any worn parts.

CHECK : Is the heater tube or nozzle clogged?

ACTION : Clean it.

- The nozzle does not heat up.
(Desoldering Tool)

- **[S-E]** is displayed (Hot air)

- **[H-E]** is displayed (Hot air)

- **[F-E]** is displayed (Hot air)

CHECK : Is the desoldering gun cord assembly properly connected?

ACTION : Connect it tightly.

CHECK : Is the heating element damaged?

ACTION : Replace it with a new one.

CHECK : Is the sensor broken?

ACTION : Measure the resistance value of the sensor. When the resistance value is ∞ , replace the heater. Details on the procedure of resistance value measurement are described in the corresponding manual in HAKKO Document Portal. Please refer to the document.

CHECK : Is the heater broken?

ACTION : Measure the resistance value of the heater. The correct values are approximately: 17Ω ($\pm 10\%$ 120V and normal temperature). When the resistance value is not within the normal range, replace the heater. Details on the procedure of resistance value measurement are described in the corresponding manual in HAKKO Document Portal. Please refer to the document.

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

Detailed information on the parameters and how to change them can be found in manuals available at the HAKKO Document Portal. Please download and make use of them.

➡ <https://doc.hakko.com/ja>



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