HAKKO

REPAIR SYSTEM

FR-701

Instruction Manual

●

Thank you for purchasing the HAKKO FR-701 Repair System.
This product is a multi-purpose machine that uses
the quick-change mechanism.
Please read the manual before operating the HAKKO FR-701.
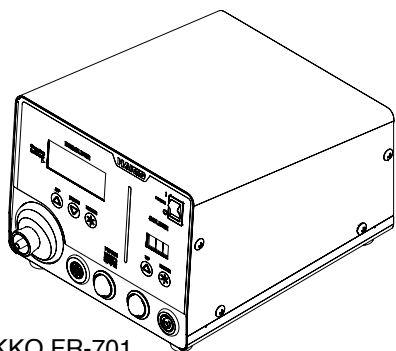Please keep this manual readily accessible for reference.

●

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HAKKO FR-701

HAKKO FX-8801

HAKKO FH-800

Cleaning wire

HAKKO FR-4103

Cleaning wire

or

Cleaning sponge
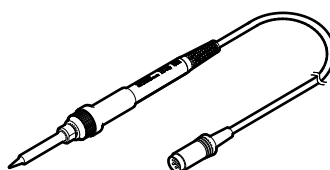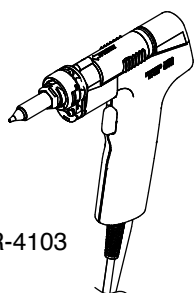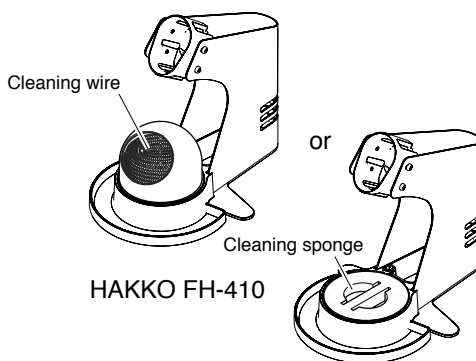
HAKKO FH-410
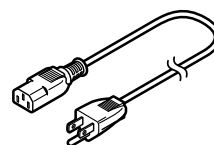
Power cord

Tool box

Cleaning Pin
(for ø1.0 mm [0.04 in.] nozzle)   ×1

Cleaning Drill
(for ø1.0 mm [0.04 in.] nozzle)   ×1
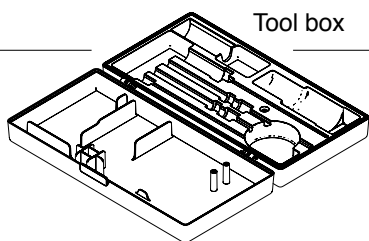
×4   Ceramic paper filter
(for handpiece)

Filter
(for station)   ×2
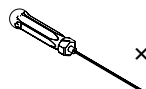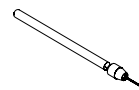
Cleaning Pin
(for heating element)   ×1
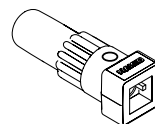
Nozzle wrench   ×1

2. SPECIFICATIONS

● **HAKKO FR-701**

Power consumption	260 W

● **Station**

Dimensions	190 (W) × 140 (H) × 220 (D) mm (7.5 × 5.5 × 8.7 in.)
Weight	6.2 kg (13.7 lb.)

● **Station (Soldering iron)**

Output	AC 26 V
Temperature range	50 - 480°C (120 - 899°F)
Temperature stability	±1°C (±1.8°F) at idle temperature When set to 200 - 480°C (400 - 899°F)

● **Station (Desoldering tool)**

Output	AC 24 V
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

● **Handpiece (Soldering iron HAKKO FX-8801)**

Power consumption	65 W (26 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Cord length	1.2 m (4 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

● **Handpiece (Desodering tool HAKKO FR-4103)**

Power consumption	140 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Cord length	1.2 m (4 ft.)
Length (w/o cord)	168 mm (6.6 in.) with N61-05 nozzle
Weight (w/o cord)	190 g (0.42 lb.) with N61-05 nozzle

* The temperature was measured using the FG-101 Soldering Tester.
* This product is protected against electrostatic discharge.
* Specifications and design are subject to change without notice.

⚠ CAUTION

■ **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

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 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-701.
● 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.
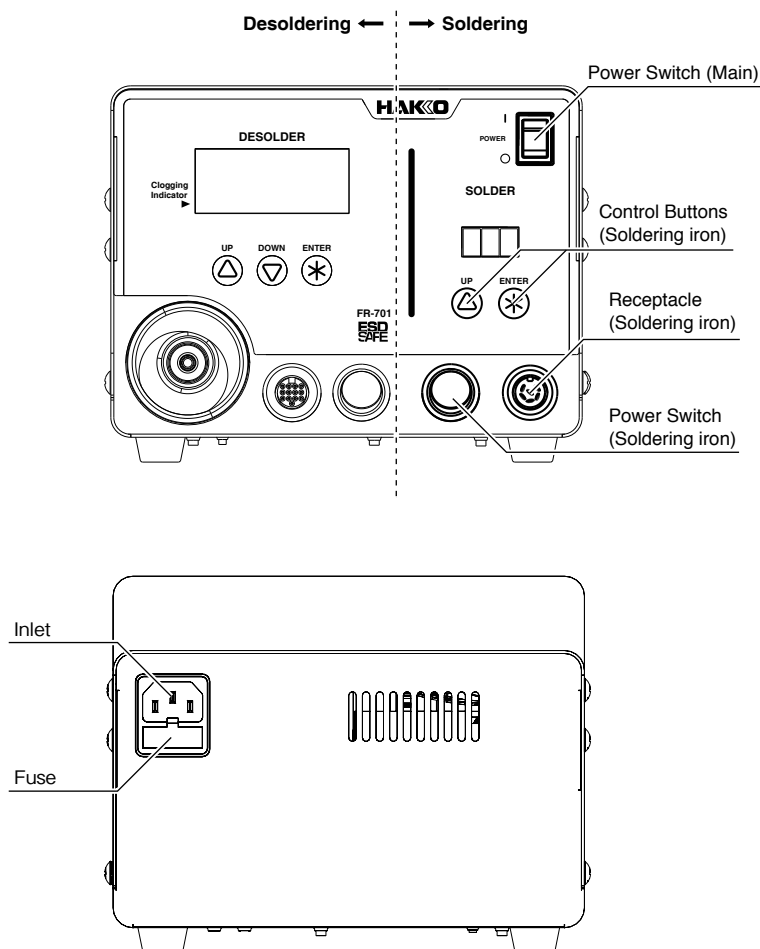

To prevent accidents or damage to the HAKKO FR-701, be sure to observe the following:

⚠ CAUTION

● 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-701.
● Use only genuine HAKKO replacement parts.
● Do not allow the HAKKO FR-701 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-701, don't do anything which may cause bodily harm or physical damage.

4. PART NAMES (Soldering iron)

● **Station**

Desoldering ← : → Soldering

Power Switch (Main)

DESOLDER

Clogging
Indicator ▶

POWER

UP DOWN ENTER
△   ▽   ✳

SOLDER

Control Buttons
(Soldering iron)

UP ENTER

FR-701
ESD
SAFE

Receptacle
(Soldering iron)

Power Switch
(Soldering iron)

Inlet

Fuse

┌─ * Use this product with the following models. ─────────────────────────────┐
│ ・HAKKO FX-8801   ・HAKKO FX-8803   ・HAKKO FX-8805   │
│   ｛Soldering iron (M)｝   (Soldering gun)   ｛Soldering iron (L)｝   │
│ ・HAKKO FX-8802   ・HAKKO FX-8804   │
│   (Soldering iron N$_2$ Type) (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)**

Soldering tip

Heating element
(Inside)

Cord assembly

4
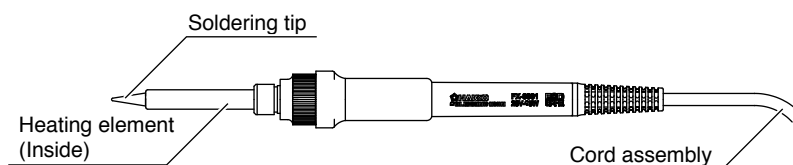
5. INITIAL SETUP (Soldering iron)
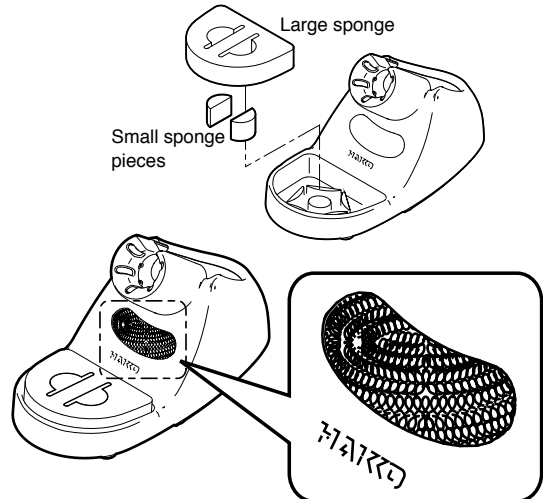
A. Setup the iron holder

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.

Large sponge

Small sponge pieces

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.

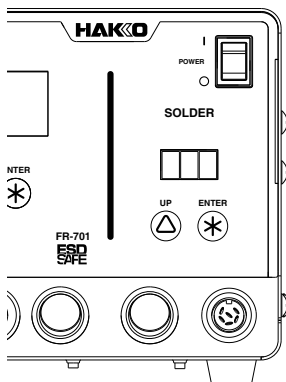Push on the plug until it stops, making sure it is securely connected.
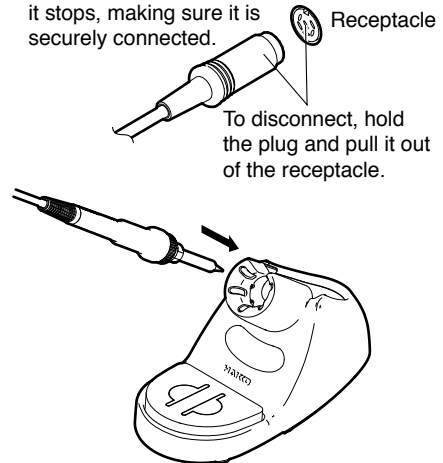
Receptacle

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

6. OPERATION (Soldering iron)

● Operation and indication

Switch and control button

The front panel for Soldering iron has the following two control buttons.

(△) - Use this button to select and change settings.

In the 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 adjust 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 the power switch (soldering iron).

After turning on the power switch, $\boxed{8.8.8.}$ 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
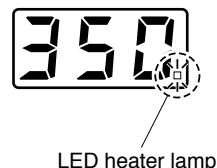
> **⚠ CAUTION**
>
> Place the iron in the iron holder when not in use. Turn the power off when the HAKKO FR-701 is not in use for an extended period.

B. After use

Always clean the tip and coat it with fresh solder after use.
(Refer to "Tip Maintenance" in 8. MAINTENANCE (Soldering iron).)

● 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. The temperature setting mode (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 (750°F).

Example : Changing from 350°C to 400°C
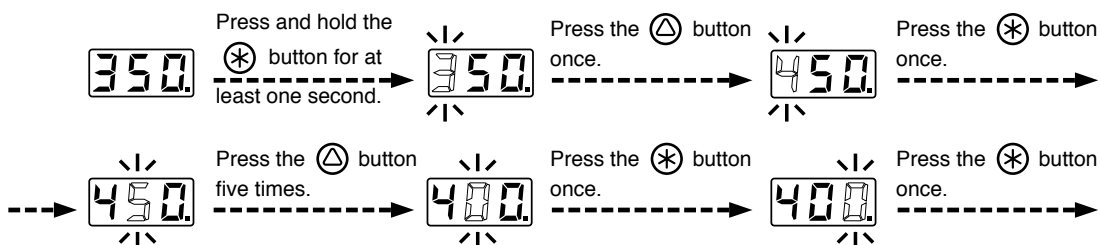
The desired temperature is saved to the system memory.
Heater control will begin after the new set temperature is displayed.

B. The preset mode (Select the set temperature)

When changing the soldering iron temperature, there is a preset function that selects the temperatures set (up to 5 can be stored).
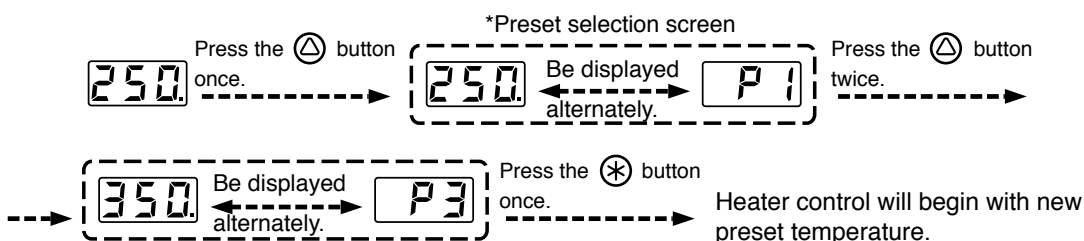
Initial preset temperatures
P1: 250°C (600°F), P2: 300°C (700°F), P3: 350°C (750°F), P4: 400°C (800°F), P5: 450°C (850°F)

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 P1 (250°C) to P3 (350°C).

The procedure for making changes to the preset temperatures is the same with "A. The temperature setting mode" in 6. OPERATION (Soldering iron).
Change the mode on the parameter setting screen. (Refer to "7. PARAMETER SETTING (Soldering iron)")

C. The adjust mode (Performing the temperature adjustment)

When replacing the iron, heater or tip, a temperature adjustment may be required.
Use the adjust mode to perform the temperature adjustment.

⚠ CAUTION
• Enter the observed value in the adjust mode after the tip temperature stabilizes. • The maximum single adjustment that can be made is ±150°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 ⬠ button for at least two seconds.

● $\boxed{A.d.J.}$ is displayed.
   When you press the ✳ button, the display will move to the adjust mode.

2. Changing from $\boxed{4.0.0.}$ to $\boxed{3.8.0.}$.

● The procedure for changing the value in adjust mode is the same with "A. The temperature setting mode" in 6. OPERATION (Soldering iron).

NOTE :
During adjust mode, the hundreds digit will accept values from 0 through 6 (1 through 9 in °F) if the temperature is set to display in °C, or the values 0 through 9 if the temperature is set to display in °F

3. Press the ✳ button to exit the setting after changing the values.

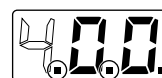● The tip temperature will be adjusted accordingly.

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

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

In the Temperature Setting Mode

In the Adjust Mode

Identification lamps are on in the adjust 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. Password function (Restriction on setting changes)

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 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.

× : A password is required 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")
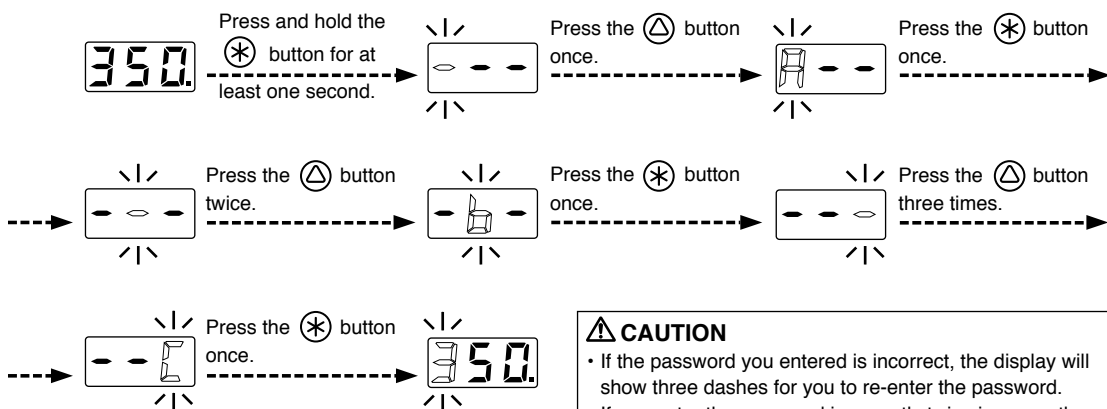
⚠ **CAUTION**
· If the password you entered is incorrect, the display will
  show three dashes for you to re-enter the password.
· If you enter the password incorrectly twice in a row, the
  display will return to the previous screen.

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.
Please refer to "7. PARAMETER SETTING (Soldering iron)".

7. PARAMETER SETTING (Soldering iron)

Soldering iron has the following parameters.

Parameter name	Parameter No.	Value	Initial value
°C / °F selection	01	°C / °F	°C (°F[5])
Low temperature error setting	03	30 to 150°C (54 to 270°F)	150°C (270°F)
Setting mode selection	11	0：The normal mode / 1：The preset mode	0
The number of preset[1]		$2P$ (2 pcs.) to $5P$ (5 pcs.)	$5P$
Password setting	14	0：Open / 1：Partial / 2：Restricted	0
Temperature setting mode[2]		10 : ○[4] / 11 : ×[4]	11
Preset mode[2]		20 : ○[4] / 21 : ×[4]	20
Adjust mode[2]		30 : ○[4] / 31 : ×[4]	31
Password[3]		$AbCdEF$ 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: Partial" is selected in the password setting.
*3 It is displayed only when either "1: Partial" or "2: Restricted" is selected in the password setting.
*4 ○ : Password not required   × : Password required
*5 For USA.

●01: °C or °F temperature display selection

The displayed temperature can be switched between Celsius and Fahrenheit.

●03: Low temperature error setting

If the sensor temperature goes below the low-limit temperature although heating element is on, an error will be displayed.

●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 you required.
Press the △ 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 the partial, choose whether or not the password function is needed when moving to the temperature setting mode, the preset mode and the adjust mode and set the password.

● **Parameter setting mode**

1. Turn off the power switch.

2. Turn on the power switch while pressing the △ button.

3. When the display shows `0 1`, the station is in parameter setting mode.

A. C°or F° temperature display selection

1. Either `C` or `F` will be displayed if you press the ✳ button when `0 1` is displayed.

2. `C` and `F` will be switched alternately If you press the △ button.

3. The display will return to `0 1` if you press the ✳ button after selecting.

B. Low temperature error setting

1. Press the △ button to change the display to `0 3`.

2. The low-limit temperature will be displayed if you press the ✳ button. Enter the value in the same manner as described in the normal mode 6. OPERATION (Soldering iron) "A. The temperature setting mode".

3. The display will return to `0 3` if you press the ✳ button after setting.

C. Setting mode selection

1. Press the △ button to change the display to `1 1`.

2. If you press the ✳ button, the display will move to the setting mode selection screen. If you press the △ button, `0` (The normal mode) and `1` (The preset mode) will be switched alternately.

3. The display will return to `1 1` if you press the ✳ button after selecting.*

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

4. The number of active preset will be displayed If you press the ✳ button at 3.

(Example : If the number is three, `3P` is displayed.)

5. Press the △ button to change the value and select the number of active preset you required.

The unit will accept values from 2P through 5P.

6. The display will return to `1 1` if you press the ✳ button after selecting.

7. PARAMETER SETTING (Soldering iron) (continued)

D. Password setting

1. Press the ⬠ button to change the display to | 14 |.

2. If you press the ✳ button, the display will move to the setting mode selection screen.

   If you press the ⬠ button, | 0 | (Open), | 1 | (Partial) and | 2 | (Restricted) will be switched

   alternately.

3. If you press the ✳ button after selecting, the display will return to | 14 |. (Refer to *1, 2.)

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
*1 The display will move to the following selection screen if you select | 1 | (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 | 1 0 | (without password) or | 1 1 | (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 | 2 0 | (without password) or | 2 1 | (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 adjust mode.

9. Either | 3 0 | (without password) or | 3 1 | (with password) will be displayed if you press the ⬠ button.

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

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

   select | 1 | (Partial), the display will move to the following the password setting screen after selecting *1.

11. When the third digit is flashing, you can input the character you require. Press the ⬠ button to change

   the value of the third digit.

12. After determining the desired character (A b C d E F), press the ✳ button. The second digit will begin

   to flash. Using the same procedure, enter the character you require for the second digit, and the first digit.

13. The display will return to | 14 | if you press the ✳ button after entering the units digit.

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

Changes will not be completed until | y | 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, the solder / 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.

■ Cleaning the tip using the iron holder
1. Using the cleaning sponge

2. Using the cleaning wire
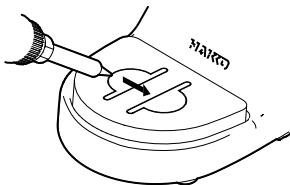
Use the cleaning sponge that comes with the product to clean the tip. It offers wide-ranging uses, from simple removal of excess solder to complete elimination of matter occurring as a result of oxidization.
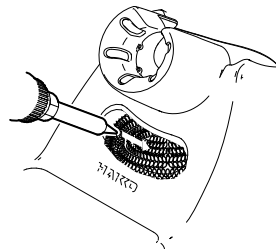
Material that is not removed easily with the cleaning sponge can likely be removed using the cleaning wire.

9. CHECKING PROCEDURE (Soldering iron)

Disconnect the plug of the cord assembly and measure the resistance value between the ping of the connecting plug as follows.

If the values of "a" and "b" are outside the value in the table, replace the heating element (sensor) and/or cord assembly.
If the value of "c" is over the value in the table, remove the oxidization film by lightly rubbing with sand-paper or steel wool the points shown in the drawing on the right.

a. Between pins 4 & 5 (Heating Element)	2.5 – 3.5 Ω (at time of room temperature)
b. Between pins 1 & 2 (sensor)	43 – 58 Ω
c. Between pin 3 & Tip	2 Ω or less

Buff lightly.
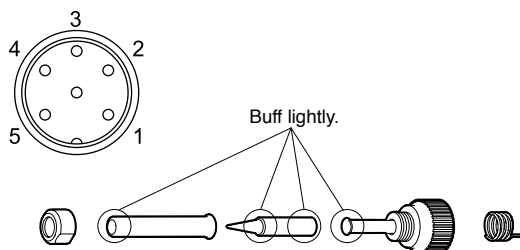
A. Broken Heating Element/Sensor

● Disassembling
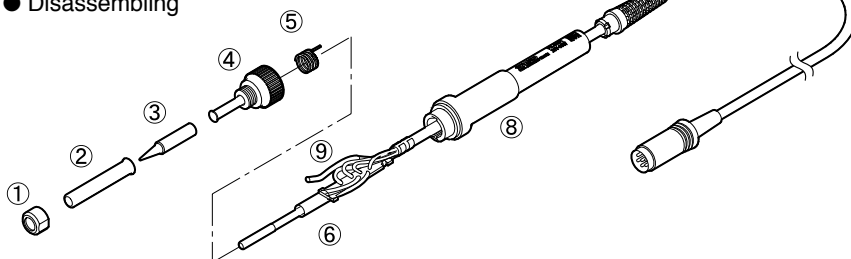
1. Turn the nut ① counterclockwise and remove the enclosure pipe ② and the tip ③.
2. Turn the nipple ④ counterclockwise and remove it from the iron.
3. Pull both the heaing element ⑥ and the cord assembly ⑦ out of the handle ⑧. (Toward the tip of the iron).
4. Pull the grounding spring ⑤ out of the sleeve of the terminal ⑨.

Heating element resistance (red)   Sensor resistance (blue)
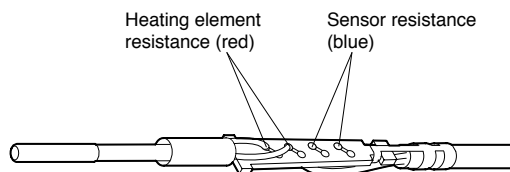
*Measure when the heating element is at room temperature.
   1. Heating element resistance (red) 2.5 – 3.5 Ω
   2. Sensor resistance (blue) 43 – 58 Ω
If the resistance value is not normal, replace the heating element. (Refer to the instructions included with the replacement part.)

After replacement
1. Measure the resistance between pins 4 and 1, 4 and 2, 5 and 1, and 5 and 2. If it is not ∞, the heating element and sensor are touching. This will damage the circuit board.
2. Measure the resitance "a", "b", and "c" to confirm that the leads are not twisted and that the grounding spring is properly connected.

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B. Broken Cord Assembly
There are two methods of testing the cord assembly.

1. Turn the unit ON and set the temperature control to 480°C (899°F). Then bend the iron cord at various locations along its length, including in the strain relief area. The cord assembly needs to be replaced if S-E is displayed or although the LED heater lamp flashes, the tip temperature doesn't rise.
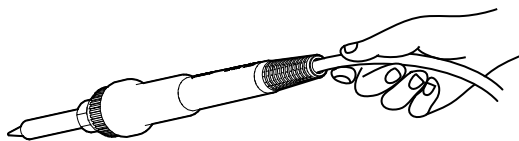
> **⚠ CAUTION**
> The power lamp starts to flash when the temperature reaches 480°C (899°F) regardless of the condition of the cord.

2. Check the resistance between the plug pin and the terminal lead.

   Pin 1: Red
   Pin 2: Blue
   Pin 3: Green
   Pin 4: White
   Pin 5: Black
   Resistance: 0 Ω.

   If it is higher than 0 Ω or is ∞, the cord should be replaced.

10. ERROR MESSAGE (Soldering iron)

● **Sensor Error**
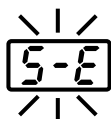
$$\boxed{5\text{-}E}$$

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

> **⚠ CAUTION**
> The sensor error also occurs if the tip is not inserted properly.

● **Low-temperature alarm tolerance error**

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

EXAMPLE:

350°C (400°C – 50°C)

Set temperature — Low-temperature alarm tolerance

OR

650°F (750°F – 100°F)

Set temperature — Low-temperature alarm tolerance

$\boxed{H\text{-}E}$ is displayed when the sensor detection temperature is lower than the low-limit temperature you set. When the tip temperature rises over the low-limit temperature you set, the normal display is restored.

* The low temperature error will be displayed once the set temperature has been reached.

> **EXAMPLE:**
> Assume that the temperature setting is 400°C/750°F and the tolerance 50°C/100°F. If the temperature continues to decrease and finally falls below the value indicated left while the heating element is on, $\boxed{H\text{-}E}$ starts blinking to indicate that the tip temperature has dropped.

11. PART NAMES (Desoldering Tool)

● **Station**

Desoldering ← ┊ → Soldering

Power Switch (Main)

Control Buttons
(Desoldering Tool)

Vacuum
outlet cap

Receptacle
(Desoldering Tool)

Power Switch (Desoldering Tool)
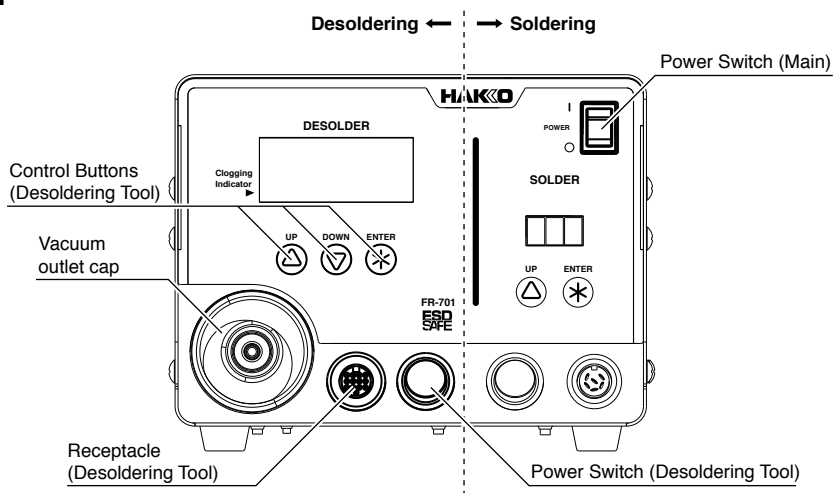
● **Handpiece (HAKKO FR-4103 Desoldering Tool)**

Nozzle

Filter pipe

Back holder
assembly

Heating element
(Inside)

Release knob

Trigger

Cord assembly

Hose

15
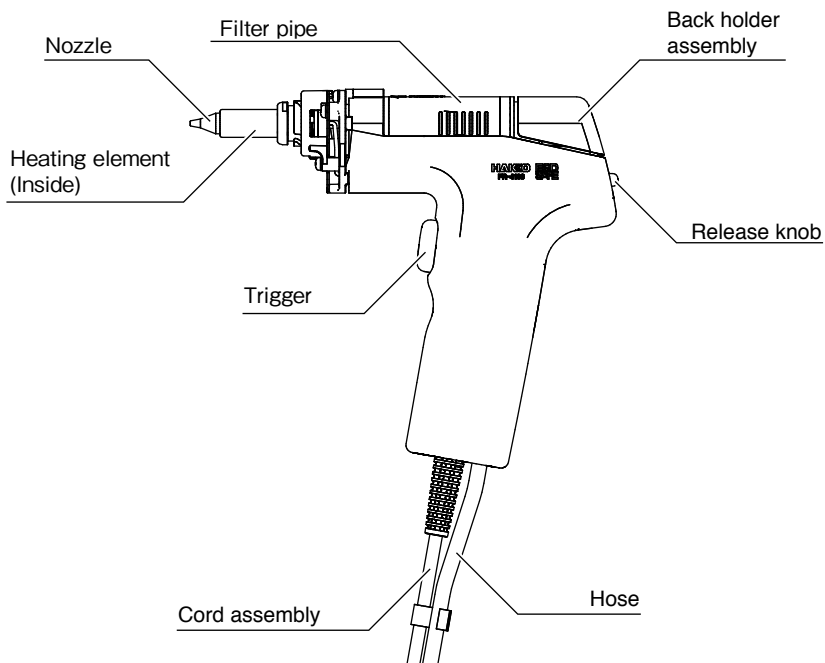
12. INITIAL SETUP (Desoldering Tool)

A. Iron 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.
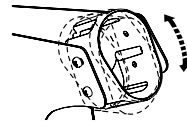
● Setup the iron holder

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

Radial tray
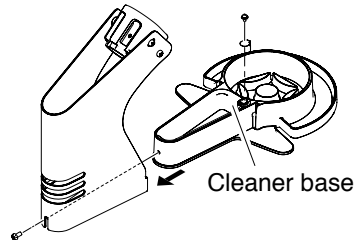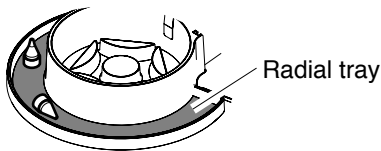
Cleaner base

> **NOTE :**
> You can put nozzles that are not in use on the radial tray of the cleaner base.

● When the cleaning sponge is included in the PACKING LIST

The sponge is compressed. It will swell when moistened with water. Before using the unit, dampen the sponge with water and squeeze it to remove excess water.

Cleaning sponge

(Large)

(Small)

1. Fit the small sponge pieces into the hollows in the cleaner base.
2. Add an appropriate amount of water into the cleaner base.

   The small sponge pieces will absorb water and help keep the larger sponge damp at all times.
3. Dampen the large sponge, squeeze it to remove excess water and put it on the cleaner base.
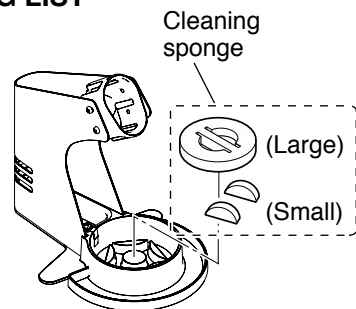
> ⚠ **CAUTION**
> Be sure the sponge is moistened with water before use to avoid damaging the nozzle.

● When the cleaning wire is included in the PACKING LIST

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

Cleaning wire

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.

B. Station

⚠**CAUTION**

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

● **Connection**

1. Connect the power cord to the receptacle on the rear of the station.

2. Connect the plug of the HAKKO FR-4103 to the receptacle on the HAKKO FR-701 (Desoldering Tool).

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

3. Set the HAKKO FR-4103 in the iron holder.

4. Connect the hose of the HAKKO FR-4103 to the vacuum outlet cap on the HAKKO FR-701 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.

   ⚠**CAUTION**
   When not in use, place the handpiece in the iron holder.

Insert the plug into the receptacle until it seats.
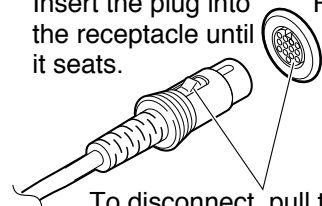
Receptacle

To disconnect, pull the plug of the receptacle while pressing down the tab on the plug.
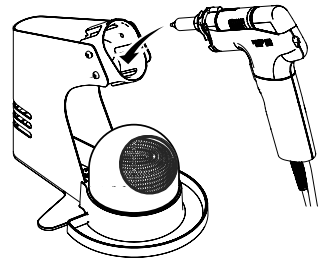
Connect the hose.
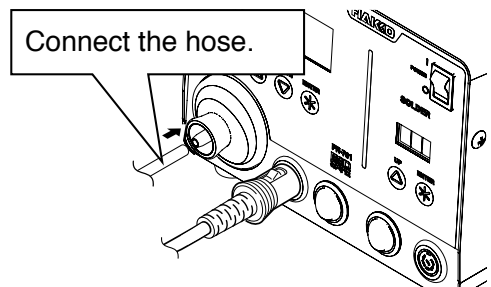
Turn the power switch (main) ON.
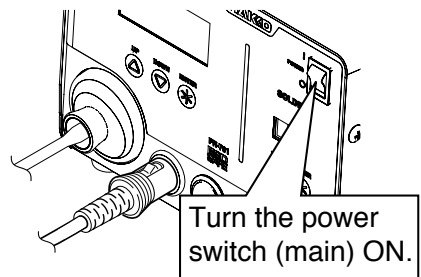
Turn the power switch (desoldering tool) ON.
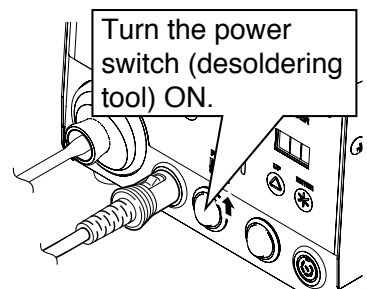
13. OPERATION (Desoldering Tool)

● Operation and indication
Switch and control button

Normal display screen

DESOLDER

Clogging
Indicator ►

UP   DOWN   ENTER

FR-701
ESD
SAFE
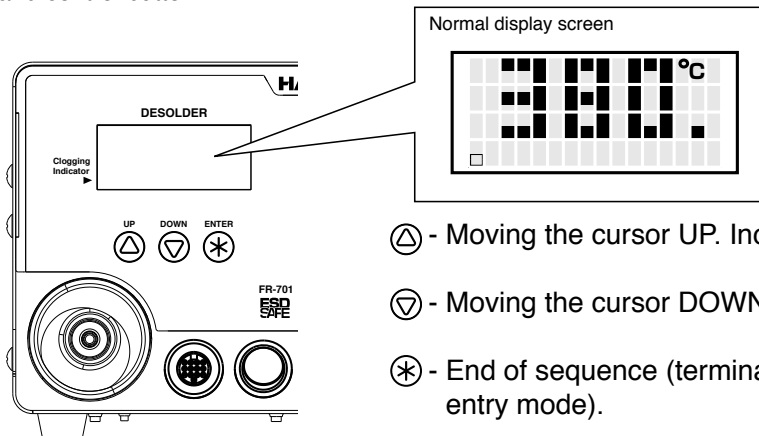
△ - Moving the cursor UP. Increases the value.

▽ - 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.

> ⚠**CAUTION**
> 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.

Nozzle

Board
Solder
Lead
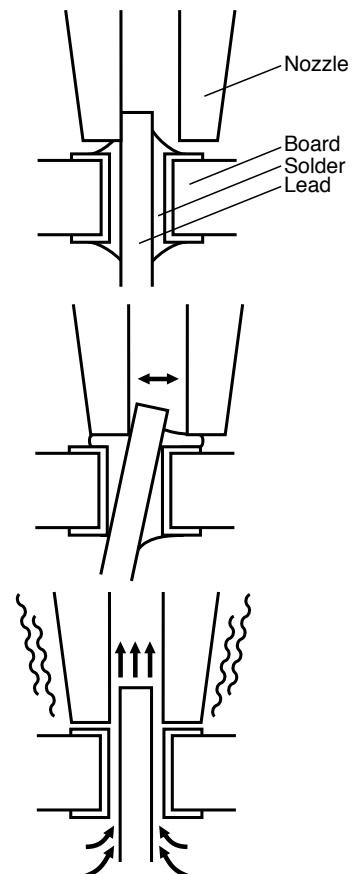
13. OPERATION (Desoldering Tool) (continued)

* 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
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>
```

3. Move 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...
Scroll the cursor to the bottom, select <EXIT>, and press the <ENT> button. You will
return to the normal display screen without making any changes.
Or 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 settings" in 13. OPERATION (Desoldering Tool).

● **Changing various settings (other than preset selections)**

1. Press and hold any one of the three control buttons for at least 2 seconds.

2. The setting selection screen appears.

```
▶Set  Temp    380°C
  OffsetTemp  OO°C
  Vacuum Check
  <↑>   <↓>   <ENT>
```
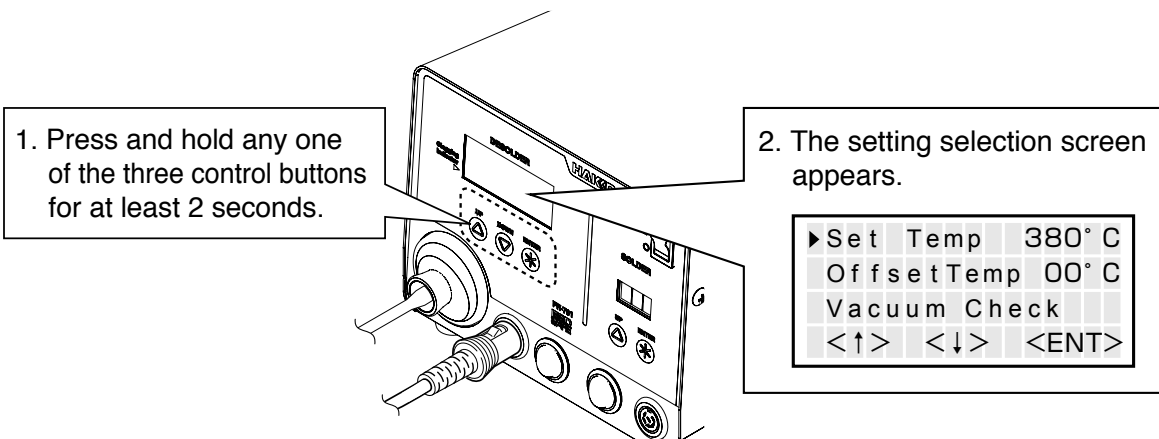
The following settings can be changed from this screen:

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 normal display screen)

3. Move the cursor UP or DOWN by pressing the corresponding buttons.

```
▶Set  Temp    380°C
  OffsetTemp  OO°C
  Vacuum Check
  <↑>   <↓>   <ENT>
```

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

```
▶Set  Temp    380°C
  OffsetTemp  OO°C
  Vacuum Check
  <↑>   <↓>   <ENT>
```
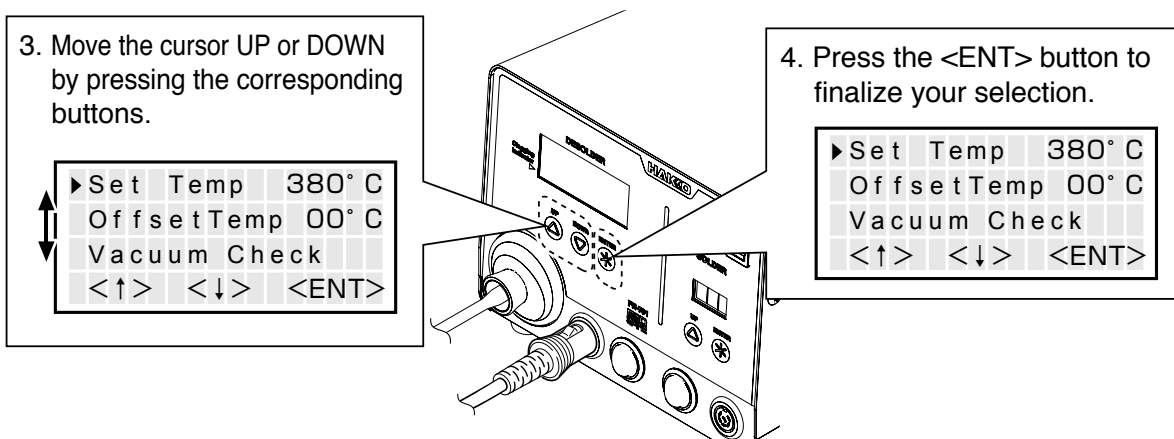
13. OPERATION (Desoldering Tool) (continued)

● **Set Temp (Nozzle temperature setting)**

⚠**CAUTION**
The temperature range is from 330 to 450°C. (620 to 850°F)
If you enter a value outside the temperature setting range, the display returns to
the hundreds digit, and you have to enter a correct value.

1. Move the cursor to select "Set Temp". After selecting, press <ENT>.
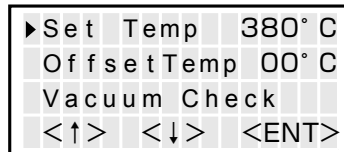
```
▶Set  Temp    380°C
 OffsetTemp  OO°C
 Vacuum Check
 <↑>  <↓>   <ENT>
```

2. Entering from hundreds to units digit
   Press the < ↑ > or < ↓ > to set the desired figure.
   Press the <ENT> button to advance to the next digit.

   Only values from 3 to 4 can be selected when entering the hundreds digit.
   (In °F mode, values from 6 to 8 can be selected.)
   Values from 0 to 9 can be selected when entering the tens or units digits.
   (The same values can be selected in °F mode.)
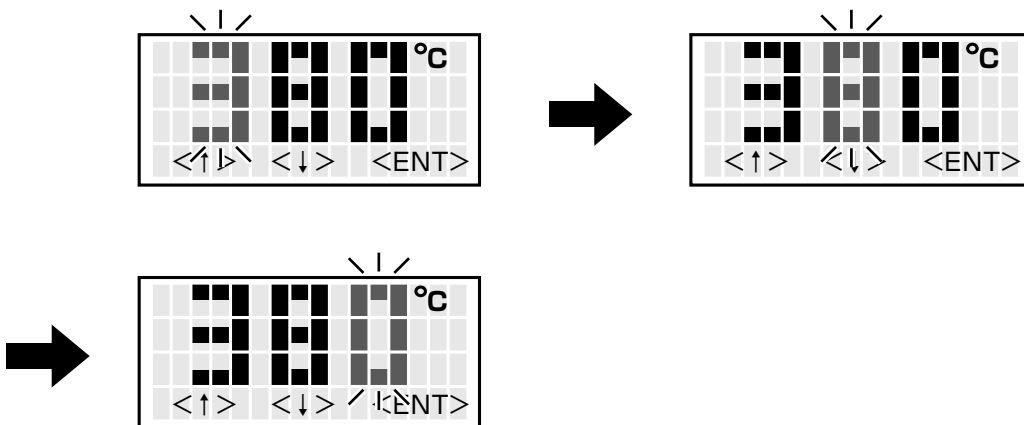
3. When desired figure is displayed, press the <ENT> button to enter.
   The next digit will begin to flash. After entering the units digit, press the <ENT> button
   to save the figure to the system memory and begin heater control with new setting
   temperature.

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

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● Offset Temp (Nozzle temperature offset setting)

Example：If the measured temperature is 405°C and set temperature is 400°C, the difference is -5°C. (need to decrease by 5°C) So, enter the figure which 5 is deducted from present offset value.

⚠**CAUTION**

The allowable ranges for offset values are from -50 to +50°C . (In °F mode, from -90 to +90°F) If you enter a value outside the offset value range, the display returns to the hundreds digit, and you have to enter a correct value.

---

1. Move the cursor to select "OffsetTemp". After selecting, press <ENT>.

```
Set  Temp   380°C
▶OffsetTemp  OO°C
Vacuum Check
<↑>  <↓>   <ENT>
```

2. Enter the offset value (-05) which is the difference between tip temperature and set temperature.
   Press the < ↑ > or < ↓ > to set the desired figure.
   Press the <ENT> button to advance to the next digit.

   The hundreds digit can display 0 (for positive value) or minus sign. (for negative value)
   (Same values can be selected in °F mode.)
   Values from 0 to 5 can be selected when entering the ten digit.
   (In °F mode, values from 0 to 9 can be selected.)
   Values from 0 to 9 can be selected when entering the units digit.
   (Same values can be selected in °F mode.)
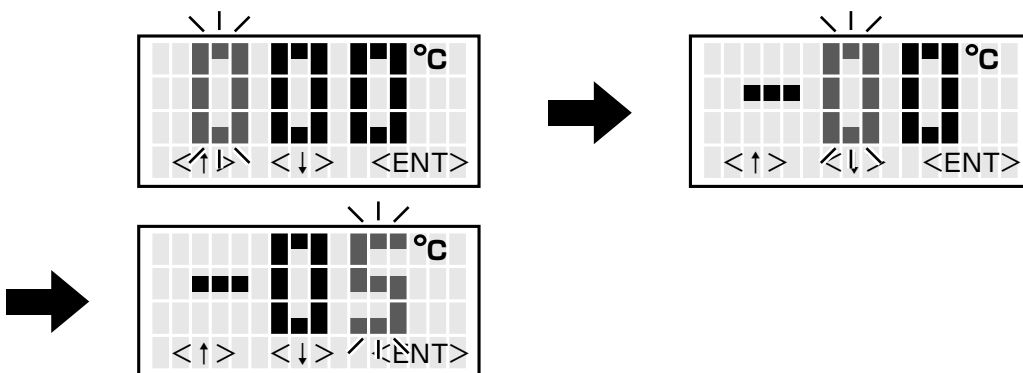
3. After entering the units digit, press the <ENT> button to save the figure to the system memory and begin heater control with the new offset value.

⚠**CAUTION**

During the offset setting, please be careful tip temperature does not exceed 450°C (850°F).

---

13. OPERATION (Desoldering Tool) (continued)

● Vacuum Check (Check of nozzle clogging and suction force)

During suction, the gauge indicating sucking status is shown at the lower side of the screen.

Suction gauge   Sign of clogging
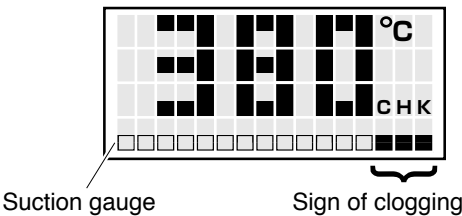
When "CHK" appears and you notice that the sucking force is weakening, perform "Vacuum Check".

1. Move the cursor to select "Vacuum Check". After selecting, press <ENT>.

```
 Set  Temp   380˚C
 OffsetTemp  OO˚C
▸Vacuum Check
 <↑>  <↓>   <ENT>
```

2. Pull the trigger.
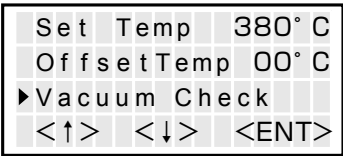
```
 Vacuum Check
 Pull  Trigger

            <EXIT>
```
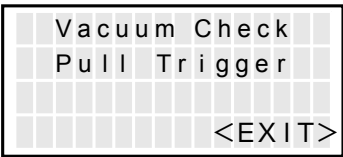
3. When "Clogging" appears, perform cleaning and replace filters.

No degradation in sucking force

```
 Vacuum Check
 Pull  Trigger
      O  K
            <EXIT>
```

Degradation in sucking force

```
 Vacuum Check
 Pull  Trigger
      Clogging
            <EXIT>
```
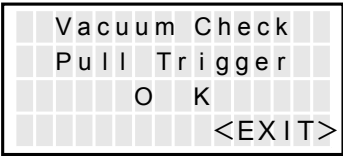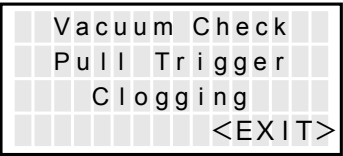
4. Select <EXIT>, and press the <ENT> button to return to the selection screen.

● **Preset Temp (Setting of each preset temperature)**

⚠**CAUTION**
The temperature range is from 330 to 450°C. (620 to 850°F)
If you enter a value outside the temperature setting range, the display returns to
the hundreds digit, and you have to enter a correct value.

1. Move the cursor to select "Preset Temp". After selecting, press <ENT>.
   Select the preset No. whose temperature setting you wish to change.

```
OffsetTemp 00°C
Vacuum Check
▶Preset Temp
<↑>  <↓>  <ENT>
```
➡
```
▶P1 Temp    350°C
 P2 Temp    400°C
 P3 Temp    450°C
<↑>  <↓>  <ENT>
```

2. Entering from hundreds to units digit
   Press the < ↑ > or < ↓ > to set the desired figure.
   Press the <ENT> button to advance to the next digit.

   Only values from 3 to 4 can be selected when entering the hundreds digit.
   (In °F mode, values from 6 to 8 can be selected.)
   Values from 0 to 9 can be selected when entering the tens or units digits.
   (The same values can be selected in °F mode.)

```
PRESET1   TempSet


     350°C
<↑>  <↓>  <ENT>
```
➡
```
PRESET1   TempSet


     350°C
<↑>  <↓>  <ENT>
```

➡
```
PRESET1   TempSet


     350°C
<↑>  <↓>  <ENT>
```

3. After entering the units digit, press the <ENT> button to save the figure to the system
   memory and begin heater control with new setting temperature.

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

4. To exit from each setting screen, scroll the screen, select <EXIT>, and press the
   <ENT> button.

```
 P2 Temp    400°C
 P3 Temp    450°C
▶<EXIT>
<↑>  <↓>  <ENT>
```

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13. OPERATION (Desoldering Tool) (continued)

● **Preset ID (Setting of each preset name)**

> ⚠️**CAUTION**
>
> As a preset ID, 1 to 8 characters can be used.
> Usable characters are "A - Z", "0 - 9", and space (" "). Entering a space makes your
> entry terminated. Any character(s) that follows the space is deleted.

1. Move the cursor to select "Preset ID". After selecting, press <ENT>.

```
 Vacuum  Check
 Preset  Temp
▶Preset  ID
 <↑>  <↓>  <ENT>
```

2. Move up and down the cursor with the control buttons.
   After selecting, press <ENT>.

```
▶P1  ID   PRESET1
 P2  ID   PRESET2
 P3  ID   PRESET3
 <↑>  <↓>  <ENT>
```

3. Press the < ↑ > or < ↓ > to set the desired figure.
   Press the <ENT> button to advance to the next digit.

```
P1  ID          SET

     PRESET1
<↑>  <↓>  <ENT>
```

4. To exit from setting screen, scroll the screen, select <EXIT>, and press the
   <ENT> button.

```
 P2  ID   PRESET2
 P3  ID   PRESET3
▶<EXIT>
 <↑>  <↓>  <ENT>
```

● **LCD Contrast (Contrast adjustment of display screen)**

To make the screen display easy to see, adjust contrast.

1. Move the cursor to select "LCD Contrast". After selecting, press <ENT>.

```
 Preset  Temp
 Preset  ID
▶LCD  Contrast
 <↑>  <↓>  <ENT>
```

2. Press the < ↑ > or < ↓ > to set the adjust contrast.
   (Selection range is 1 to 25.)

```
  LCD  Contrast
   Adjustment
        10
 <↑>  <↓>  <ENT>
```

3. After selecting the value, press <ENT> to return to the selection button.

To exit from each setting screen, scroll the screen, select <EXIT>, and press
the <ENT> button.

```
 Preset  ID
 LCD  Contrast
▶<EXIT>
 <↑>  <↓>  <ENT>
```

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14. PARAMETER SETTING (Desoldering Tool)

● PARAMETER SETTINGS

Press and hold any one of the 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 / °F*
ShutOff Set	OFF / ON	OFF
Timer**	30 to 60 min.	30 min.
Vacuum Mode	Normal / Timer	Normal
Vacuum Time***	1 to 5 sec.	1 sec.
Auto Sleep	OFF / ON	ON
Timer**	1 to 29 min.	6 min.
Sleep Temp	200 to 300°C (390 to 570°F)	200°C (390°F)
Low Temp	30 to 150°C (54 to 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	

Press and hold any one of the three control buttons while turning on the power switch.
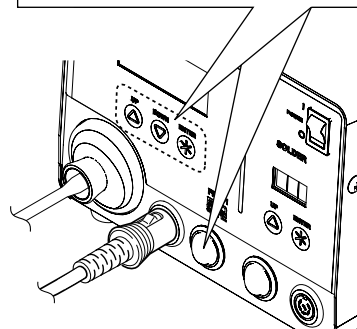
*   For USA

**   Timer can be set when 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 "Lock" or "Partial".

● Temp Mode

Select the temperature mode from Celsius or Fahrenheit.

1. Move the cursor to select "Temp Mode".
   After selecting, press <ENT>.

```
▶Temp Mode      ˚C
 ShutOff Set OFF
 VacuumMode  NOR
 <↑>  <↓>  <ENT>
```

2. °C and °F will be switched alternately if you press the < ↑ > or < ↓ > button.

```
  Temp Mode Set
        ˚C

        ˚F
 <↑>  <↓>  <ENT>
```

3. Return to parameter setting display if you press the <ENT> button after setting.
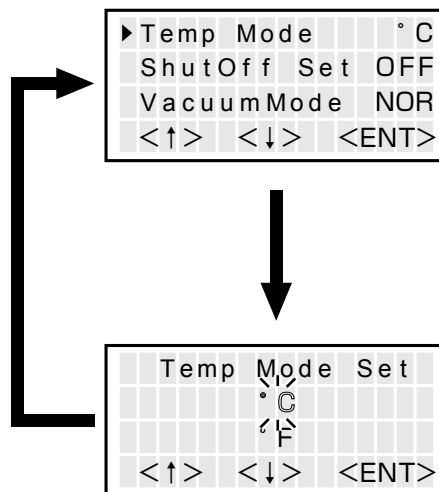
● **ShutOff Set**

Select whether you will activate the auto shutoff function. When the auto shutoff function is set to on and no operation is performed for constant time after the handpiece is set in the iron holder, the auto shutoff function will be enabled.

```
┌─────────────────────────┐
│ Temp  Mode        ° C   │
│▸ShutOff  Set      OFF   │
│ Vacuum Mode       NOR   │
│ <↑>    <↓>    <ENT>     │
└─────────────────────────┘
```

1. Move the cursor to select "ShutOff Set".
   After selecting, press <ENT>.

Select "OFF"

2. ON and OFF will be switched alternately
   if you press the < ↑ > or < ↓ > button.

```
┌─────────────────────────┐
│   Shut  Off  Set        │
│ Shut  Off         OFF   │
│ Timer             3Om    │
│ <↑>    <↓>    <ENT>     │
└─────────────────────────┘
```

3. Selecting "ON" allows you to make the
   setting for "Timer".
   (Default is 30 minutes.)

Select "ON"

4. When setting "Shut Off" to "ON",
   the area for "Timer" flashes.

```
┌─────────────────────────┐
│   Shut  Off  Set        │
│ Shut  Off          ON   │
│ Timer             3Om    │
│ <↑>    <↓>    <ENT>     │
└─────────────────────────┘
```

5. Press the < ↑ > or < ↓ > to set the desired
   figure.

6. Pressing the <ENT> button after this change
   makes the set time stored in the internal memory.

```
┌─────────────────────────┐
│ Temp  Mode        ° C   │
│▸ShutOff  Set       ON   │
│ Vacuum Mode       NOR   │
│ <↑>    <↓>    <ENT>     │
└─────────────────────────┘
```

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14. PARAMETER SETTING (Desoldering Tool) (continued)

● **Vacuum Mode**

Select whether you manually operate the desoldering pump or use the timer function.

Normal：Solder is sucked only when you are pulling the trigger.
Timer：Even after you release the trigger, sucking continues for the specified period of time.

* Set time in "Vacuum Time".

1. Move the cursor to select "VacuumMode".
   After selecting, press <ENT>.

```
Temp  Mode        ˚C
ShutOff  Set  OFF
▶VacuumMode     NOR
<↑>   <↓>   <ENT>
```

Select "Normal"

2. Normal and Timer will be switched alternately
   if you press the < ↑ > or < ↓ > button.

```
Vacuum Mode  Set
        Normal
         Timer
<↑>   <↓>   <ENT>
```

3. Return to parameter setting display
   if you press the <ENT> button after
   setting.

Select "Timer"

(Vacuum Time)

* When selecting "Timer"

"Vacuum Time" appears under "VacuumMode" in the parameter select screen.

● **Vacuum Time**

1. Move the cursor to select "Vacuum Time".
   After selecting, press <ENT>.

```
ShutOff  Set  OFF
VacuumMode   TIME
▶Vacuum  Time   1s
<↑>   <↓>   <ENT>
```

2. Press the < ↑ > or < ↓ > button, you can
   change to the desired value.

```
Vacuum  Time  Set

        01sec
<↑>   <↓>   <ENT>
```

3. Return to parameter setting display
   if you press the <ENT> button after
   setting.

● **Auto Sleep**

Select whether you will activate the auto sleep function. When the auto sleep function is set to on and no operation is performed for constant time after the handpiece is set in the iron holder, the auto sleep function will be enabled and the temperature of the handpiece declines to the controlled degree.

* The auto sleep temperature can be set in "Sleep Temp".

1. Move the cursor to select "Auto Sleep".
   After selecting, press <ENT>.

```
ShutOff Set OFF
VacuumMode    NOR
▶Auto Sleep   OFF
<↑>  <↓>  <ENT>
```

2. ON and OFF will be switched alternately
   if you press the <↑> or <↓> button.

Select "OFF"

```
Auto Sleep Set
Auto Sleep    OFF
Timer         06m
<↑>  <↓>  <ENT>
```

3. Selecting "ON" allows you to make the
   setting for "Timer".
   (Default is 6 minutes.)

Select "ON"

* When selecting "ON"

4. When setting "Auto Sleep" to "ON",
   the area for "Timer" flashes.

```
Auto Sleep Set
Auto Sleep    ON
Timer         06m
<↑>  <↓>  <ENT>
```

5. Press the <↑> or <↓> button, you can
   change to the desired value.

6. Pressing the <ENT> button after this change
   makes the set time stored in the internal
   memory.

```
ShutOff Set OFF
VacuumMode    NOR
▶Auto Sleep   06m
<↑>  <↓>  <ENT>
```
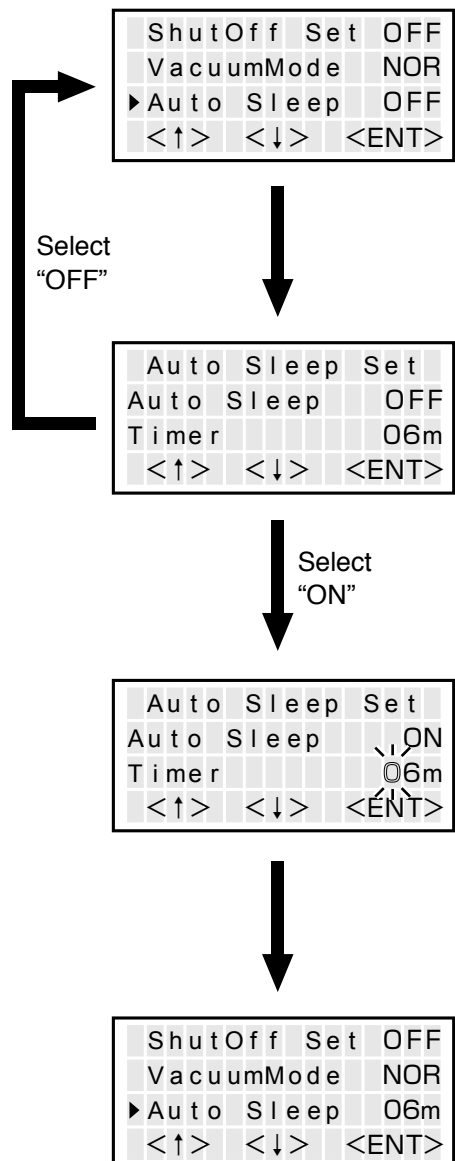
14. PARAMETER SETTING (Desoldering Tool) (continued)

● **Sleep Temp**

Set the auto sleep temperature.

1. Move the cursor to select "SleepTemp".
   After selecting, press <ENT>.

2. Entering from hundreds to units digit.
   Press the < ↑ > or < ↓ > to set the desired figure.
   Press the <ENT> button to advance to the next digit.

   Only values from 2 to 3 can be selected when entering the hundreds digit.
   (In °F mode, values from 3 to 5 can be selected.)
   Values from 0 to 9 can be selected when entering the tens or units digits.
   (The same values can be selected in °F mode.)

```
VacuumMode   NOR
Auto Sleep   06m
▶SleepTemp 200°C
<↑>   <↓>   <ENT>
```

```
Sleep Temp Set

      200°C
<↑>   <↓>   <ENT>
```

3. After entering the units digit, press the <ENT> button to save the figure to the system memory.

● **Low Temp**

When the temperature drops below a set limit, an error is displayed and the buzzer sounds.

1. Move the cursor to select "Low Temp".
   After selecting, press <ENT>.

2. Entering from hundreds to units digit.
   Press the < ↑ > or < ↓ > to set the desired figure.
   Press the <ENT> button to advance to the next digit.

   Only values from 0 to 1 can be selected when entering the hundreds digit.
   (In °F mode, values from 0 to 2 can be selected.)
   Values from 0 to 9 can be selected when entering the tens or units digits.
   (The same values can be selected in °F mode.)

```
Auto Sleep   06m
SleepTemp 200°C
▶Low Temp   150°C
<↑>   <↓>   <ENT>
```

```
Low Temp Set

      150°C
<↑>   <↓>   <ENT>
```

3. After entering the units digit, press the <ENT> button to save the figure to the system memory.

● **Error Alarm**

In the buzzer sound setting mode, which sets whether to sound the buzzer when a error occurs.

1. Move the cursor to select "Error Alarm".
   After selecting, press <ENT>.

```
Sleep Temp  200°C
Low  Temp    150°C
▶Error  Alarm   ON
<↑>   <↓>   <ENT>
```

2. ON and OFF will be switched alternately
   if you press the < ↑ > or < ↓ > button.

```
Error  Alarm  Set
        O N
        OFF
<↑>   <↓>   <ENT>
```

3. Return to parameter setting display if you
   press the <ENT> button after setting.

● **Ready Alarm**

When the set temperature alert setting mode is on, the buzzer sounds if you reached the usable temperature.

1. Move the cursor to select "Ready Alarm".
   After selecting, press <ENT>.

```
Low  Temp    150°C
Error  Alarm  OFF
▶Ready  Alarm   ON
<↑>   <↓>   <ENT>
```

2. ON and OFF will be switched alternately
   if you press the < ↑ > or < ↓ > button.

```
Ready  Alarm  Set
        O N
        OFF
<↑>   <↓>   <ENT>
```

3. Return to parameter setting display if you
   press the <ENT> button after setting.

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14. PARAMETER SETTING (Desoldering Tool) (continued)

● **Pass. Lock**

Set a password and use this function to restrict the following changes.

⚠**CAUTION**
The correct password must be entered to make the change.

Lock   : All setting changes require a password entry.
Partial   : Select whether or not to enter your password for set temperature/preset selection/ offset temperature change. Other procedures require password entry.
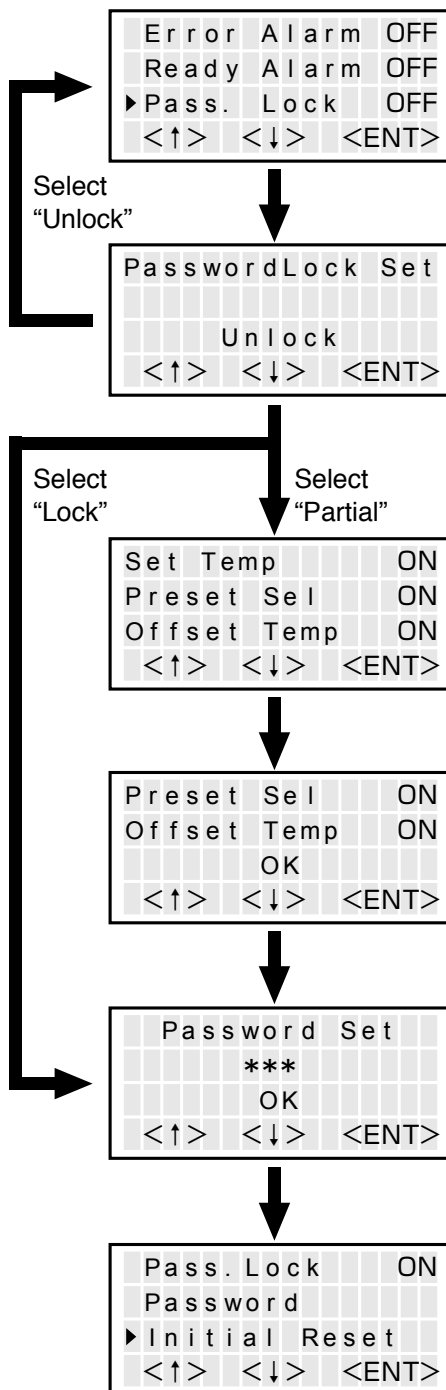Unlock : Any setting change does not require a password entry.

1. Move the cursor to select "Pass. Lock". After selecting, press <ENT>.

2. Using the < ↑ > or < ↓ > button, select an option from "Lock", "Partial", and "Unlock".

* When selecting "Partial" or "Lock"

3. Select Lock ON/OFF for set temperature/ preset selection/offset temperature change. (Only when selecting "Partial")

4. After making all selections, using the < ↑ > or < ↓ > button, select an option from OK or Cancel. (Only when selecting "Partial")

5. Press the <ENT> button. (Only when selecting "Partial")

6. Using the < ↑ > or < ↓ > button, enter a password. (Selection of three characters from ABCDEF)

7. After entering, press the <ENT> button. Select "OK" or "Cancel" using the < ↑ > or < ↓ > button.

8. After setting the password, press the <ENT> button to return to the parameter setting screen.

* When selecting "OK"

The password is shown under "Pass. Lock" on the parameter selection screen.

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Select "Unlock"

```
 Error  Alarm  OFF
 Ready  Alarm  OFF
▸Pass.  Lock   OFF
 <↑>   <↓>   <ENT>
```

```
 PasswordLock Set

        Unlock
 <↑>   <↓>   <ENT>
```

Select "Lock"   Select "Partial"

```
 Set  Temp      ON
 Preset  Sel    ON
 Offset  Temp   ON
 <↑>   <↓>   <ENT>
```

```
 Preset  Sel    ON
 Offset  Temp   ON
        OK
 <↑>   <↓>   <ENT>
```

```
  Password  Set
        ***
        OK
 <↑>   <↓>   <ENT>
```

```
 Pass. Lock     ON
 Password
▸Initial  Reset
 <↑>   <↓>   <ENT>
```

● **Password**

The password can be changed.

1. Match ▶ to "Password" and press the <ENT> button.

```
Pass.Lock      ON
Password
▶Initial  Reset
<↑>   <↓>   <ENT>
```

2. Use the < ↑ > or < ↓ > button to enter the current password, and press the <ENT> button.

```
Input  Password
       A**


<↑>   <↓>   <ENT>
```

3. Enter a new password.
   (For a password, select 3 letters from among ABCDEF.)

```
Password  Set
      ***
       OK
<↑>   <↓>   <ENT>
```

4. After setting the password, press the <ENT> button. Using the < ↑ > or < ↓ > button, select either "OK" or "Cancel".

```
Password  Set
      ***
       OK
<↑>   <↓>   <ENT>
```

5. Press the <ENT> button to return to the parameter selection screen.

```
Ready  Alarm  ON
Pass.Lock      ON
▶Password
<↑>   <↓>   <ENT>
```

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14. PARAMETER SETTING (Desoldering Tool) (continued)

● **Initial Reset**

Initial Reset allows the factory default settings to be restored.

1. Move the cursor to select "Initial Reset".
   After selecting, press <ENT>.

```
┌─────────────────────────┐
│ Ready  Alarm  OFF       │
│ Pass.  Lock    OFF      │
│▶Initial  Reset          │
│ <↑>   <↓>    <ENT>      │
└─────────────────────────┘
```

2. Using the < ↑ > or < ↓ > button, select
   either "°C" or "°F". To stop "Initial Reset",
   scroll the screen to select <EXIT>.

```
┌─────────────────────────┐
│    Initial  Reset       │
│         °C              │
│         °F              │
│ <↑>   <↓>    <ENT>      │
└─────────────────────────┘
```

3. After selecting it, using the < ↑ > or < ↓ >
   button, select "OK" or "Cancel".

```
┌─────────────────────────┐
│    Initial  Reset       │
│         °C              │
│         OK              │
│ <↑>   <↓>    <ENT>      │
└─────────────────────────┘
```

> ⚠️**CAUTION**
> Even when Initial Reset is finished, "Pass. Lock" and password settings remain.

> ⚠️**CAUTION**
> To exit from the parameter setting display, scroll the screen, select <EXIT>,
> and press the <ENT> button.

```
┌─────────────────────────┐
│ Pass.  Lock    OFF      │
│ Initial  Reset          │
│▶<EXIT>                  │
│ <↑>   <↓>    <ENT>      │
└─────────────────────────┘
```

15. MAINTENANCE (Desoldering Tool)

Properly maintained, the HAKKO FR-701 (Desoldering tool) should provide years of good service. Efficient desoldering depends upon the temperature, solder/flux 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.
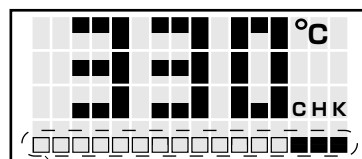
Suction gauge   Sign of clogging

Replacing the filter pipe

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.

C. Replace the entire filter pipe with a secondary filter pipe.

B. Automatically goes back

Release Knob

A. Lower the lock knob
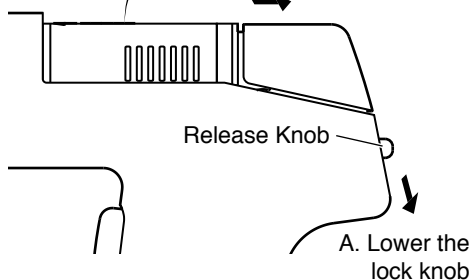
CAUTION : HOT AREA

⚠ **CAUTION**

The section from the heating element to the filter pipe is provided with pipes through which melted solder passes, so it may become very hot. Be very careful when handling this section.
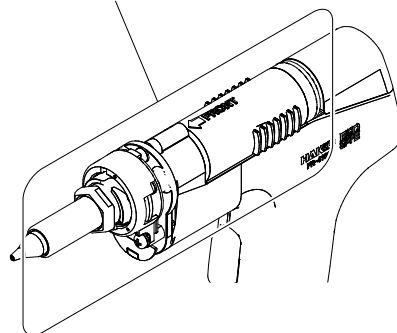
15. MAINTENANCE (Desoldering Tool) (continued)

Nozzle Maintenance

⚠CAUTION
The handpiece 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.

Cleaning with the nozzle cleaning pin

The cleaning pin passes completely through the hole.
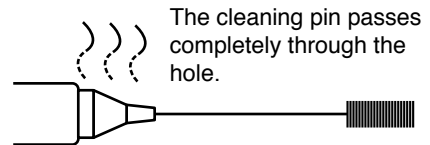
Cleaning with the cleaning drill
● Before cleaning
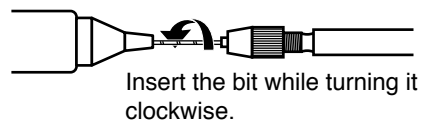
Insert the bit while turning it clockwise.

● After cleaning

Pull the drill bit out straight without turning it.
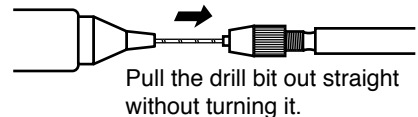
Use the proper size cleaning pin or cleaning drill for the nozzle diameter.

● Check visually if the nozzle was eroded.

Solder plating part

The solder plating is coming off. The nozzle hole is eroded.

The caliber has expanded due to erosion.
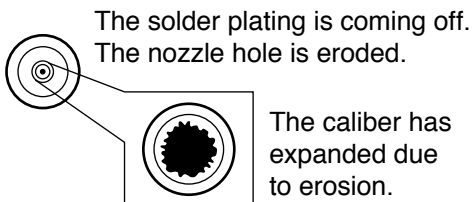
> ⚠ **CAUTION**
> ・Erosion may not be able to be confirmed visually, so replace it when it starts to work inefficiently.
> ・Special plating is applied to the inside and surface of the nozzle hole, but if it is exposed to high-temperature soldering for a long time, it may be eroded and temperature stability may not be maintained.

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

2. Disassemble the heating element.

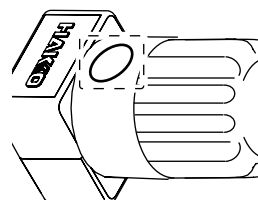Remove the enclosure pipe and the nozzle with the provided wrench.

> ⚠**CAUTION**
> The heating element is very hot during operation.

Heating Element

Nozzle
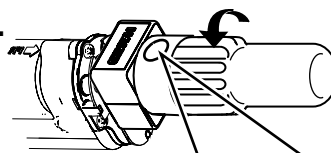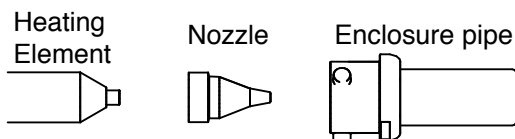
Enclosure pipe

The enclosure pipe is held to the nozzle wrench 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.
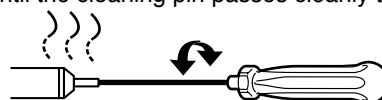
> ⚠**CAUTION**
> ・Be sure the solder in the tube in the heating element is completely heated, before cleaning the tube.
> ・If the cleaning pin does not pass through the tube in the heating element, replace the heating element.

Replacing the filters

● Handpiece filter

1. Turn the power switch OFF.
2. 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.

3. Examine the seals (front and filter holders) at each end of the filter pipe.
   Replace : Stiff and/or cracked.
4. Examine the Pre-filter: Remove solder adhering to the waste collector.
5. Examine the ceramic paper filter.
   Replace : Ceramic paper filter is showing signs of stains from flux, is stiff, or contains any solder.

Front holder

Filter holder

FRONT

Ceramic paper filter

Filter pipe
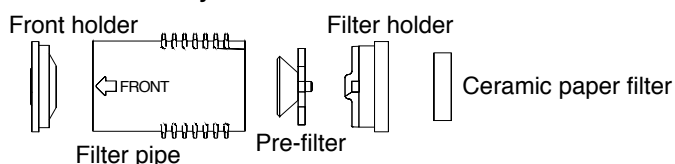
Pre-filter

● Station filter

If the filer is showing signs of stains from flux or is stiff, replace it.
Attach the filter as shown in the right diagram.

Filter

Vacuum outlet cap

Vacuum outlet cap (with Filter)

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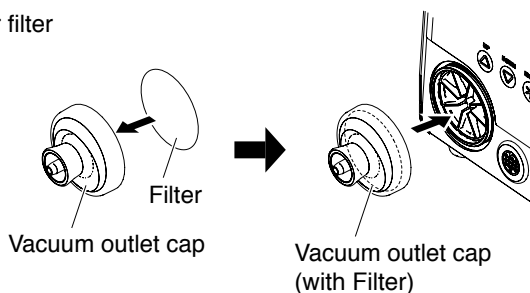
15. MAINTENANCE (Desoldering Tool) (continued)

Replacing the heating element (heating core)

> ⚠ **CAUTION**
> Except the case especially indicated, always turn the power switch OFF and disconnect the power plug before performing any maintenance procedure.
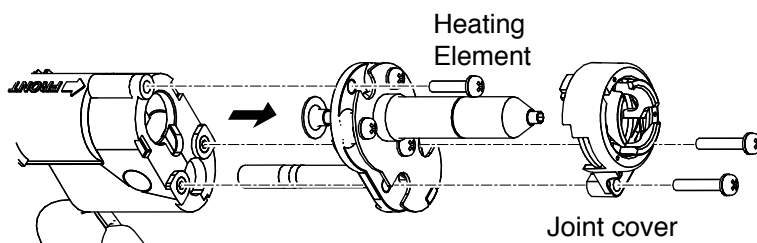
● **Disassemble the heating element.**
1. Remove the nozzle and enclosure pipe.
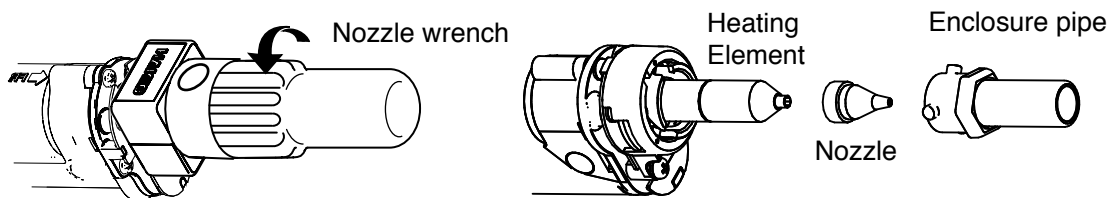
Remove the enclosure pipe and the nozzle with the attached nozzle wrench.

2. Remove the 2 screws fixing the joint cover and remove the joint cover.
3. Remove the screw from the handpiece and disconnect the heating element.

4. Replace the heating element. Assemble using the same procedure in reverse.

* **Caution of the heating element installation**
The installation / disassembly with the quick changer smoothens. Please attach it to have the groove of the movable joint and the guide hole of the joint cover coming at the same position (see figure below).
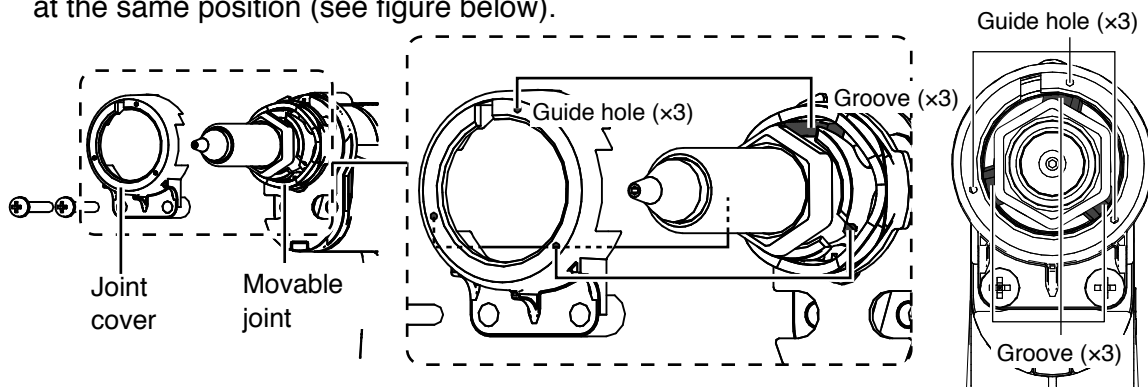
> ⚠ **CAUTION**
> Be sure to change the offset value (temperature adjustment) of the nozzle temperature after replacing the heating element. Failure to do this may result in a heater temperature that is much higher or lower than the previous one.

Maintenance of the pump head

● Remove the cover

When performing maintenance on the pump head, remove the screws holding the cover and take the cover off.
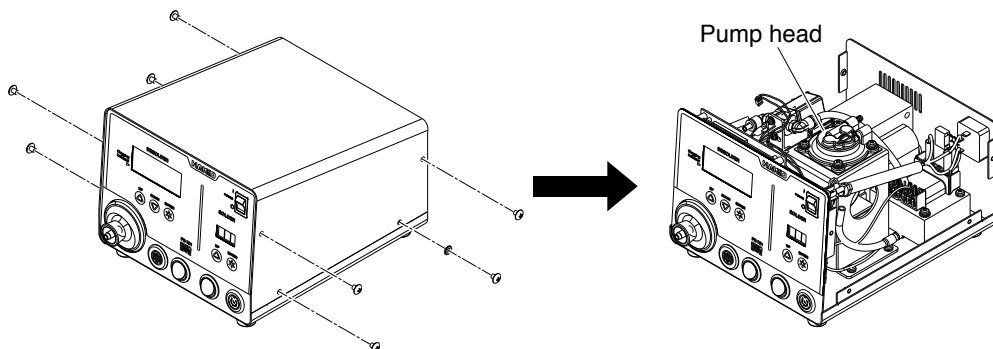
Pump head

● Cleaning the pump head

1. Remove the valve and valve guard and remove any attached flux.

⚠ CAUTION
· When the valve guard is difficult to remove, please warm it with hot air. Please do not try to forcibly remove it with a screwdriver, etc. If the valve guard becomes deformed, it will no longer be airtight.
· Please clean with either alcohol or thinner.
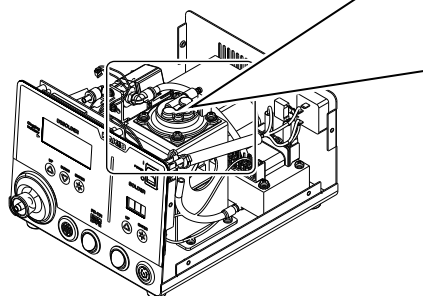
Pump head disassembly
It is resting on its side.
Clean the pump head, valve and valve guard.

Pump head

Valve

Valve guard

Valve guard

Pump head

Valve

*Please replace the valve if it is deformed or hardened.
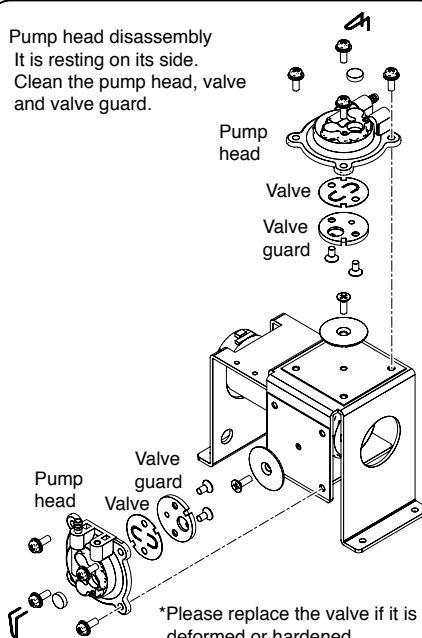
2. Install the valve and valve guard.

⚠ CAUTION
When assembling the pump, please make sure to keep it airtight so that there are no air leaks.

40

16. CHECKING PROCEDURE (Desoldering Tool)

> ### ⚠ WARNING
> Unless otherwise directed, carry out these procedures with the power switch OFF and the power UNPLUGGED.

■ **Check for a broken heater or sensor**

1. Check for a broken heater or sensor
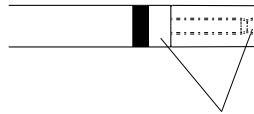
Measure the resistance across this position.

Verify the electrical integrity of the heater and sensor.
Measure the resistance of the heater and sensor while at room temperature（15 to 25°C；59 to 77°F）. It should be 3.9 Ω ±10%. If the resistance exceeds these limits, replace the tip.

■ **Replacing the fuse**
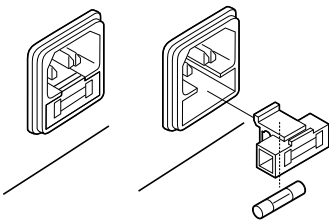
1. Unplug the power cord from the power receptacle.
2. Remove the fuse holder.
3. Replace the fuse.
4. Put the fuse holder back in place.

■ Checking the connection cord for breakage
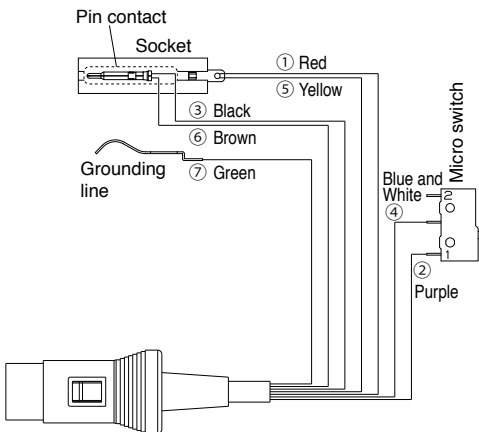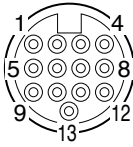
Checking the connection cord for breakage

1. Unplug the connection cord from the station.

2. Disassemble the heating element. (Please refer to "Replacing the heating element (heating core)".)

3. Measure the resistance values between the connector and the lead wires at the socket as follows.
   (Please refer to the wiring diagram on the left)

Pin1 · · · · · · · Red {Heating element1 (+)} ①
Pin2 · · · · · · · Purple {Trigger (+)} ②
Pin4 · · · · · · · Black 〔Heating element1(-)〕 ③
Pin8 · · · · · · · Blue and White {Trigger (-)} ④
Pin9 · · · · · · · Yellow {Heating element2 (+)} ⑤
Pin12 · · · · · · Brown {Heating element2 (-)} ⑥
Pin13 · · · · · · Green (Grounding line) ⑦*

If any value exceeds 0 Ω or is ∞, replace the connection cord.

* For information on the plug 13, refer to
  "■ Checking the grounding line".

■ Checking the grounding line

1. Measure the resistance value between Pin 13 and the nozzle.
2. If the value exceeds 2 Ω (at room temperature), perform the nozzle maintenance. If the value still does not decrease, check the connection cord for breakage.

42

17. ERROR MESSAGE (Desoldering Tool)

● **Sensor Error**

When there is the possibility that a failure has occurred in the sensor or heater (including the sensor circuit), "**Sensor Error**" is displayed and the power is shut down.

● **Grip Error**

"**Grip Error**" will be displayed if the connector cord is not attached to the station OR the wrong handpiece is connected.

● **Low Temp Error**

If the sensor temperature falls below the difference between the current temperature setting and the low-temperature alarm tolerance, "**Low Temp Error**" is displayed and the warning buzzer sounds. When the nozzle temperature rises to a value within the set tolerance, the buzzer will stop sounding.

EXAMPLE:

350°C (400°C - 50°C)

Set temperature
            Low-temperature alarm tolerance
OR
650°F (750°F - 100°F)

Set temperature
            Low-temperature alarm tolerance

EXAMPLE:
Assume that the temperature setting is 400°C/750°F and the tolerance 50°C/100°F. If the temperature continues to decrease and finally falls below the value indicated while the heating element is on, "Low Temp Error" is displayed.

● **Heater Short Error**

"**Heater Short Error**" will flash, and the buzzer will sound continuously, when an incompatible heater circuit is inserted, or if a foreign object has found it's way into the connector.

● **FATAL Error**

This is displayed when the system is unable to operate normally. Should this error be displayed, please contact your HAKKO representative.

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18. TROUBLE SHOOTING GUIDE

<div style="border:1px solid">

⚠ WARNING

Before checking the inside of the HAKKO FR-701 or replacing parts, be sure to disconnect the power plug.

</div>

● **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 fue blew and eliminate the cause, then replace the fuse.
 　　　　　a. Is the inside of the handpiece 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** $H - E$ **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. (Soldering iron)**

 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 tip or nozzle 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 tip or nozzle temperature adjusted correctly?
 ACTION : Perform the temperature adjustment.

● **Pump does not operate. (Desoldering Tool)**

 CHECK : Is the plug of the handpiece properly connected?
 ACTION : Connect it tightly.
 CHECK : Is the nozzle or hole in the heating element 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 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)**

 CHECK : Is the plug of the handpiece properly connected?
 ACTION : Connect it tightly.
 CHECK : Is the heating element damaged?
 ACTION : Replace it with a new one.
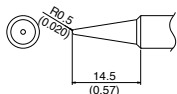
NOTE :
When repairs are needed, please send both the handpiece and the station to your sales agent.
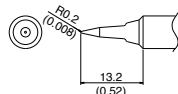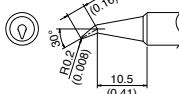
19. TIP & NOZZLE STYLES
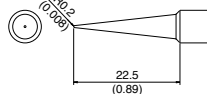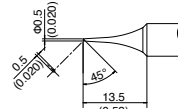
Unit：mm (inch)

● **Tip**

T18-B Shape-B
R0.5 (0.020)
14.5 (0.57)

T18-SB Shape-SB
R0.2 (0.008)
13.2 (0.52)

T18-BR02 Shape-0.2BR
4 (0.16)
30°
R0.2 (0.008)
10.5 (0.41)

T18-BL Shape-BL
R0.2 (0.008)
22.5 (0.89)

T18-C05 Shape-0.5C
Φ0.5 (0.020)
0.5 (0.020)
45°
13.5 (0.53)

T18-C08 Shape-0.8C
Φ0.8 (0.031)
0.8 (0.031)
45°
15.5 (0.61)

T18-C1 Shape-1C
T18-CF1*
Φ1 (0.04)
1 (0.04)
60°
13.5 (0.53)

T18-CF15* Shape-1.5C
Φ1.5 (0.06)
1.6 (0.06)
60°
13.5 (0.53)

T18-C2 Shape-2C
T18-CF2*
Φ2 (0.08)
2.1 (0.08)
45°
14.5 (0.57)

T18-CSF25* Shape-2.5CS
Φ2.5 (0.10)
2.5 (0.10)
45°
10 (0.39)

T18-C3 Shape-3C
T18-CF3*
Φ3 (0.12)
3.2 (0.13)
45°
14.5 (0.57)

T18-C4 Shape-4C
T18-CF4*
Φ4 (0.16)
4.2 (0.17)
45°
14.5 (0.57)

T18-C5 Shape-5C
Φ5 (0.20)
5 (0.20)
45°
14.5 (0.57)

T18-K Shape-K
Φ5 (0.20)
2 (0.08)
45°
14 (0.55)

T18-D08 Shape-0.8D
Φ0.8 (0.031)
0.6 (0.024)
14.5 (0.57)

T18-D12 Shape-1.2D
Φ1.2 (0.05)
0.7 (0.028)
14.5 (0.57)

T18-D16 Shape-1.6D
Φ1.6 (0.06)
0.5 (0.020)
14.5 (0.57)

T18-D24 Shape-2.4D
Φ2.4 (0.09)
0.5 (0.020)
14.5 (0.57)

T18-D32 Shape-3.2D
Φ3.2 (0.13)
0.5 (0.020)
14.5 (0.57)

T18-DL12 Shape-1.2DL
Φ1.2 (0.05)
0.7 (0.028)
22.5 (0.89)
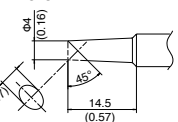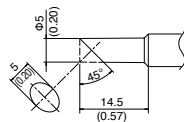
T18-DL2 Shape-2DL
Φ2 (0.08)
1 (0.04)
22.5 (0.89)
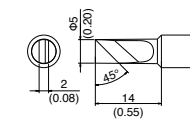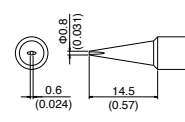
T18-DL32 Shape-3.2DL
Φ3.2 (0.13)
1 (0.04)
22.5 (0.89)
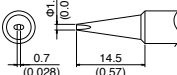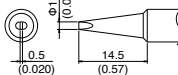
T18-S3 Shape-S3
Φ5.2 (0.20)
1 (0.04)
18 (0.71)
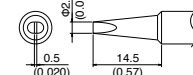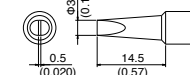
T18-S4 Shape-S4
R0.125 (0.005)
14.5 (0.57)
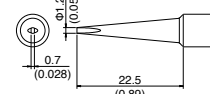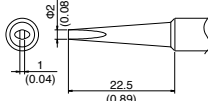
T18-S6 Shape-S6
Φ1.3 (0.05)
1.7 (0.07)
60°
16.5 (0.65)
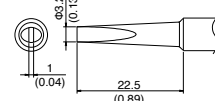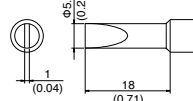
T18-S9 Shape-S9
Φ1.2 (0.05)
0.4 (0.016)
15.5 (0.61)
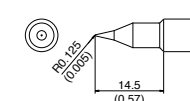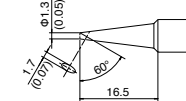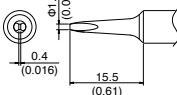
T18-I Shape-I
R0.2 (0.008)
14.5 (0.57)
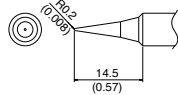
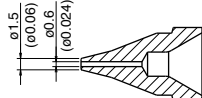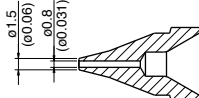* Tinned on the soldering surface only.
● Use only genuine HAKKO soldering iron tips. Replacement tips for the HAKKO FX-8801 are designated the T18 series.
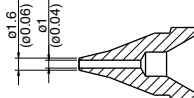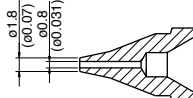
● **Nozzle**

N61-01
ø1.5 (0.06)
ø0.6 (0.024)

N61-02
ø1.5 (0.06)
ø0.8 (0.031)

N61-03
ø1.6 (0.06)
ø1 (0.04)

N61-04
ø1.8 (0.07)
ø0.8 (0.031)

N61-05
ø2 (0.08)
ø1 (0.04)

N61-06
ø2.3 (0.09)
ø1.3 (0.05)

N61-07
ø2.3 (0.09)
ø0.8 (0.031)

N61-08
ø2.5 (0.10)
ø1 (0.04)

N61-09
ø3 (0.12)
ø1.3 (0.05)

N61-10
ø3 (0.12)
ø1.6 (0.06)

N61-11
ø2.1 (0.08)
ø0.8 (0.031)
11 (0.43)

N61-12
ø2.3 (0.09)
ø1 (0.04)
11 (0.43)

N61-13
ø2.6 (0.10)
ø1.3 (0.05)
11 (0.43)

N61-14
ø3 (0.12)
ø1.6 (0.06)
11 (0.43)

N61-15
4.8 (0.19)
3 (0.12)
1 (0.04)
2.8 (0.11)

N61-16
5.8 (0.23)
4 (0.16)
1 (0.04)
2.8 (0.11)

20. PARTS LIST

Pump assembly

⑨

SEMS screw
M4×12 P3 (8)

③

②

⑤ ── Countersunk head screw
M4×8 (4)

⑪ ── Countersunk head screw
M4×12 (2)

①

⑬

⑫

SEMS screw
M3×6 P2 (3)

SEMS screw
M3×6 P2

① ⑩ ⑧ ⑧

⑪ ⑫ ⑧

③ ② ⑤ ⑥

Hexagon socket
set screw
M4×6

④

⑨ ⑦

㉖

㉗

SEMS screw
M3×6 P2 (4)

Truss screw
M4×5 (8)

External tooth lock washer
DN4

⑱

Pan head screw
M4×38 (4)

⑳

S washer
DN4 (4)

Plain washer
DN4×10×0.8

㉔

⑰

⑯

⑮

⑭

㉕

⑲

㉓

㉑

㉒

SEMS
screw
M3×6 P2 (3)

External tooth
lock washer
DN4

20. PARTS LIST (continued)

● **HAKKO FR-701**

Item No.	Part No.	Part Name	Specifications
①	A1013	Diaphragm	qty 2
②	A1014	Valve plate	qty 2
③	B1050	Pump head	
④	B1053	Balance weight	
⑤	B1056	Fixing plate	
⑥	B1057	Ring for bearing	
⑦	B1059	Exhaust filter	qty 2
⑧	B1312	Crank	
⑨	B1313	Filter retaining pin	
⑩	B2060	Crank shaft	
⑪	B2085	Diaphragm setting plate	
⑫	B2506	Damper	qty 2
⑬	B3428	Motor	
⑭	B5076	Vacuum outlet cap	
⑮	A5020	Filter	qty 10
⑯	B5077	O-ring / S-40	
⑰	B5148	Power switch	
⑱	B5281	Inlet/100 - 120 V	with varistor, capacitor
	B5282	Inlet/200 - 240 V	with varistor, capacitor
⑲	B3463	Receptacle	Soldering iron
⑳	B3674	Fuse/250 V-7 A	100 - 110 V
	B3675	Fuse/250 V-4 A	220 - 240 V
㉑	B3736	P.W.B. / for control	Soldering iron
㉒	B3737	Transformer	100 - 110 V Soldering iron
	B3739	Transformer	220 - 240 V Soldering iron
㉓	B3414	Inner hose joint	
㉔	B5176	P.W.B. / for control	LCD, with connector Desoldering Tool
㉕	B5100	Receptacle assembly	Desoldering Tool

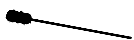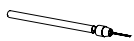| Item No.	Part No.	Part Name	Specifications
㉖	B2421	Power cord, 3 wired cord but no plug	220 - 240 V
	B2422	Power cord, 3 wired cord & BS plug	India
	B2424	Power cord, 3 wired cord & European plug	220 V KC, 230 V CE
	B2425	Power cord, 3 wired cord & BS plug	230 V CE U.K.
	B2426	Power cord, 3 wired cord & Australian plug	
	B2436	Power cord, 3 wired cord & Chinese plug	China
	B3508	Power cord, 3 wire cord & American plug (B)	110 V, 220 - 240 V
	B3550	Power cord, 3 wire cord & SI plug	
	B3616	Power cord, 3 wire cord & BR plug	
㉗	C5030	Tool box	

● **Cleaning pin / Drill**

	Part No.	Part Name	Specifications
	B1215	Cleaning pin	For heating element
	B2874	Cleaning pin	For ø0.6 mm (0.02 in.) nozzle
	B1086	Cleaning pin	For ø0.8 mm (0.03 in.) nozzle
	B1087	Cleaning pin	For ø1.0 mm (0.04 in.) nozzle
	B1088	Cleaning pin	For ø1.3 mm (0.05 in.) nozzle
	B1089	Cleaning pin	For ø1.6 mm (0.06 in.) nozzle
	B5141	Cleaning drill	For ø0.6 mm (0.02 in.) nozzle
	B1302	Cleaning drill	For ø0.8 mm (0.03 in.) nozzle
	B1303	Cleaning drill	For ø1.0 mm (0.04 in.) nozzle
	B1304	Cleaning drill	For ø1.3 mm (0.05 in.) nozzle
	B1305	Cleaning drill	For ø1.6 mm (0.06 in.) nozzle
	B5142	Drill holder	For ø0.6 mm (0.02 in.) nozzle
	B1306	Drill holder	For ø0.8 mm (0.03 in.)/1.0 mm (0.04 in.) nozzle
	B1307	Drill holder	For ø1.3 mm (0.05 in.)/1.6 mm (0.06 in.) nozzle
	B5143	Drill bit	For ø0.6 mm (0.02 in.) nozzle (qty 10)
	B1308	Drill bit	For ø0.8 mm (0.03 in.) nozzle (qty 10)
	B1309	Drill bit	For ø1.0 mm (0.04 in.) nozzle (qty 10)
	B1310	Drill bit	For ø1.3 mm (0.05 in.) nozzle (qty 10)
	B1311	Drill bit	For ø1.6 mm (0.06 in.) nozzle (qty 10)
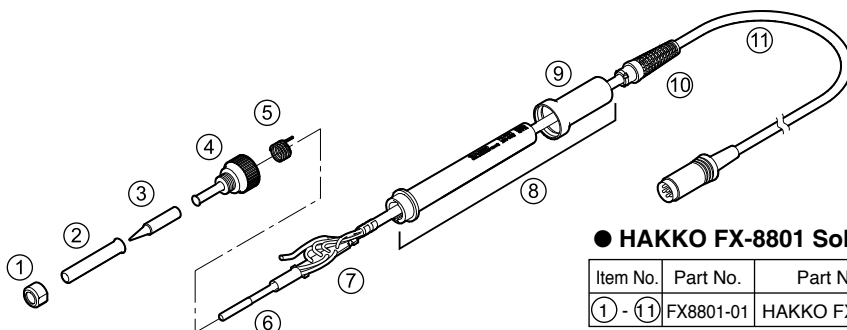
● **HAKKO FX-8801 Soldering iron**

Item No.	Part No.	Part Name	Specifications
① - ⑪	FX8801-01	HAKKO FX-8801	

● **Soldering iron parts**

Item No.	Part No.	Part Name	Specifications
①	B1785	Nut	
②	B3469	Enclosure pipe	
③		Tip	see "19. TIP & NOZZLE STYLES"
④	B2022	Nipple	
⑤	B2032	Grounding spring	
⑥	A1560	Heating element	26 V-65 W
⑦	B2028	Terminal board	with cord stopper
⑧	B3470	Handle	with handle cover
⑨	B3471	Handle cover	
⑩	B3467	Cord bushing	
⑪	B3468	Cord assembly	

● **Optional parts**

Item No.	Part No.	Part Name	Specifications
①	B5122	Eenclosure pipe assembly	

* If you use the capacious tip T19, change to above
enclosure pipe assembly. Please see the tip styles and tip shape
for T19 from the following URL.

⇨ https://www.hakko.com

● **Iron holder**

Item No.	Part No.	Part Name	Specifications
① - ④	FH800-03BY	HAKKO FH-800	blue-yellow

● **Iron holder parts**

Item No.	Part No.	Part Name	Specifications
①	A1559	Cleaning sponge	
②	B3472	Iron holder base with protecting cap	BY, with rubber foot
③	B3751	Bottom plate	with Protective Sheet & rubber foot
④	A1561	Cleaning wire	
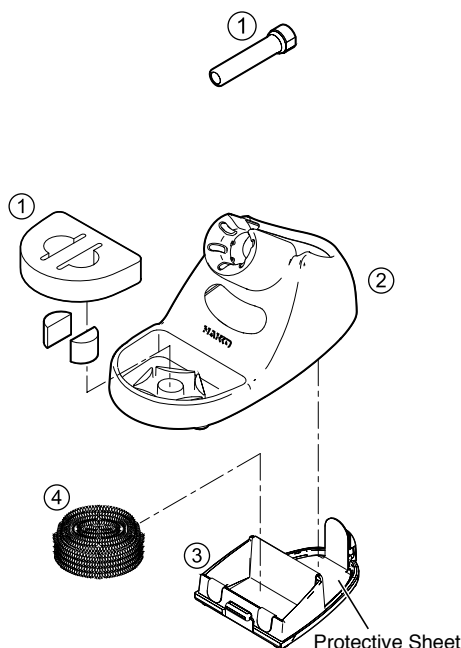
Protective Sheet

⚠ **CAUTION**

For safety reasons, please attach the protective sheet
to the bottom plate when using the HAKKO FH-800
iron holder.

● **Optional parts**

Part No.	Part Name	Specifications
B3474	Rubber cleaner	

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● **HAKKO FR-4103**

Part No.	Part Name	Specifications
FR4103-81	HAKKO FR-4103	

● **HAKKO FR-4103 parts**

Item No.	Part No.	Part Name	Specifications
①	A5030	Front holder	
②	B5104	Pre-filter	
③	A5031	Filter holder	
④	A5044	Ceramic paper filter	L, qty 10
①-④	B5185	Filter pipe assembly	
⑤	B5222	Enclosure pipe	FR-4103
⑥	B5224	Joint cover	FR-4103
⑦	B5064	Wave spring	FR-4103
⑧	B5063	Movable joint	FR-4103
⑨	A5055	Heating element	FR-4103
⑩	B5101	Hose	FR-4103
⑪	B5258	Trigger	FR-4103
⑫	B5106	Nozzle wrench	

SEMS screw
M2.6×12 P2

SEMS screw
M2.6×15 P2 (2)

Pan head
screw
M3×6

SEMS screw
M3×12 P2 (2)
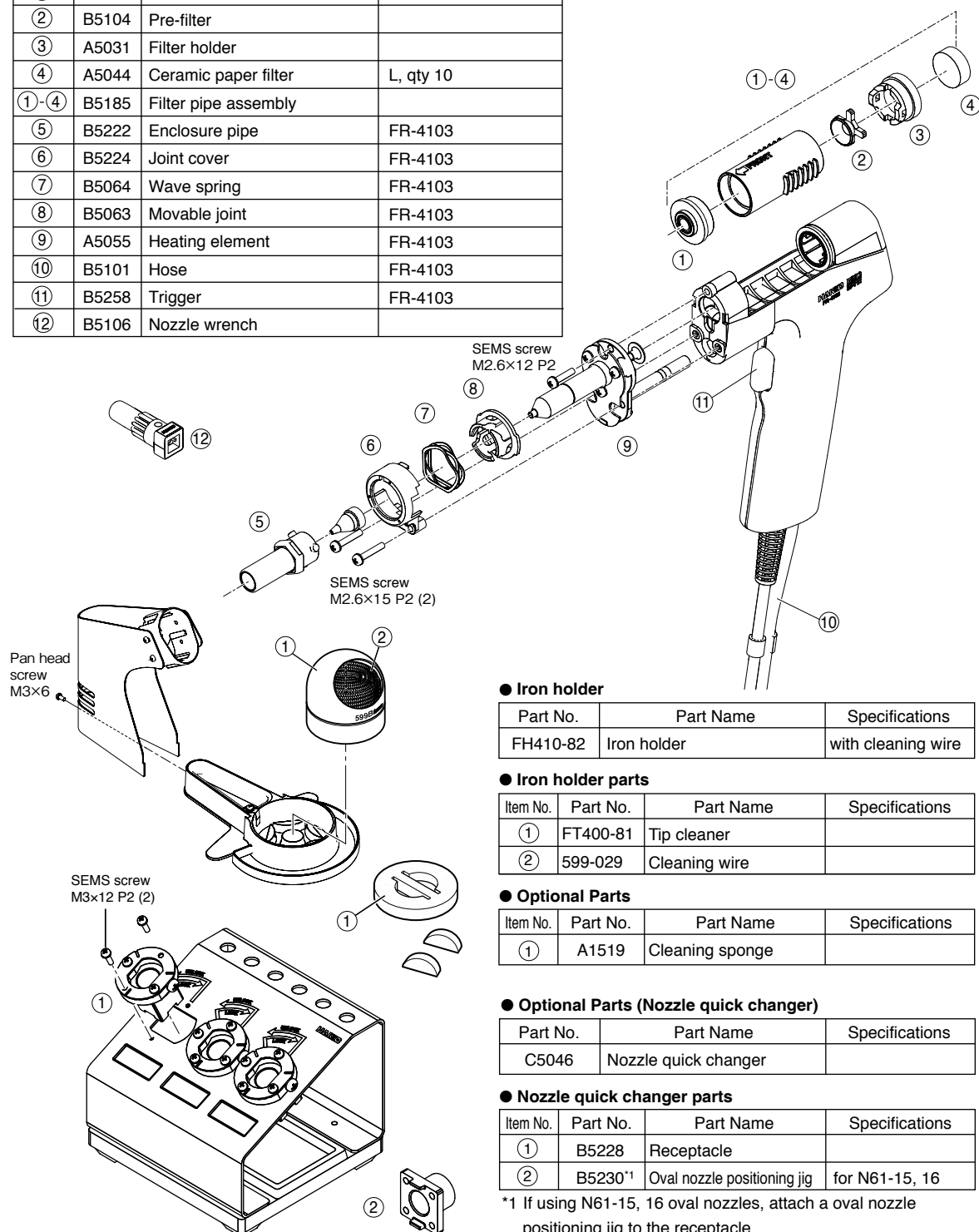
● **Iron holder**

Part No.	Part Name	Specifications
FH410-82	Iron holder	with cleaning wire

● **Iron holder parts**

Item No.	Part No.	Part Name	Specifications
①	FT400-81	Tip cleaner	
②	599-029	Cleaning wire	

● **Optional Parts**

Item No.	Part No.	Part Name	Specifications
①	A1519	Cleaning sponge	

● **Optional Parts (Nozzle quick changer)**

Part No.	Part Name	Specifications
C5046	Nozzle quick changer	

● **Nozzle quick changer parts**

Item No.	Part No.	Part Name	Specifications
①	B5228	Receptacle	
②	B5230[*1]	Oval nozzle positioning jig	for N61-15, 16

*1 If using N61-15, 16 oval nozzles, attach a oval nozzle
positioning jig to the receptacle.

21. WIRING DIAGRAM
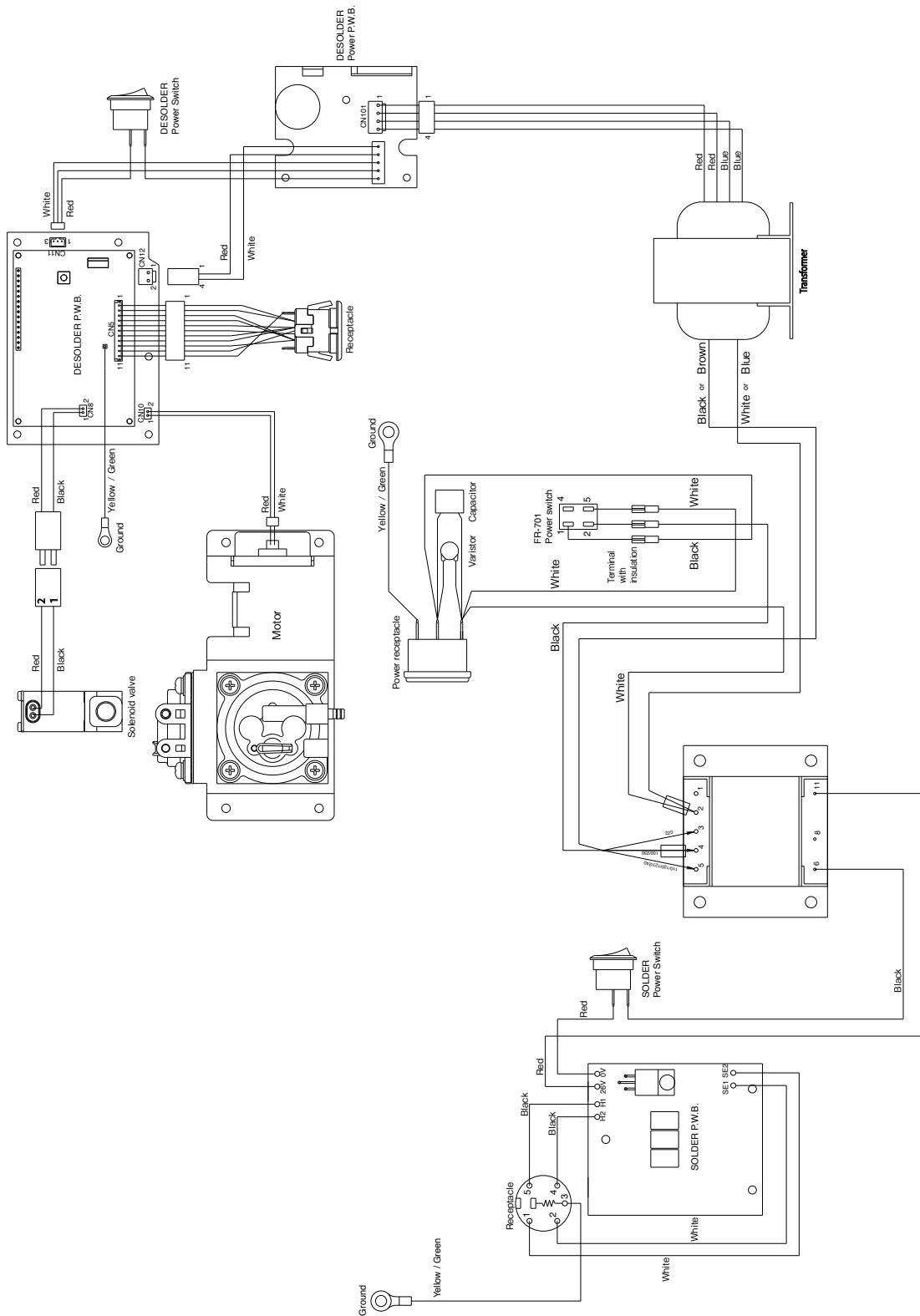
HAKKO

HAKKO CORPORATION

HEAD OFFICE
4-5, Shiokusa 2-chome, Naniwa-ku, Osaka 556-0024 JAPAN
TEL: +81-6-6561-3225 FAX: +81-6-6561-8466
https://www.hakko.com E-mail: sales@hakko.com

OVERSEAS AFFILIATES
U.S.A.: AMERICAN HAKKO PRODUCTS, INC.
TEL: (661) 294-0090 FAX: (661) 294-0096
Toll Free (800) 88-HAKKO
                    4 2 5 5 6
https://www.HakkoUSA.com E-mail: Support@HakkoUSA.com
HONG KONG: HAKKO DEVELOPMENT CO., LTD.
TEL: 2811-5588 FAX: 2590-0217
https://www.hakko.com.cn   E-mail: info@hakko.com.hk
SINGAPORE: HAKKO PRODUCTS PTE., LTD.
TEL: 6748-2277 FAX: 6744-0033
https://www.hakko.com.sg   E-mail: sales@hakko.com.sg

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