HAKKO

HAKKO FX-301B

SOLDERING POT

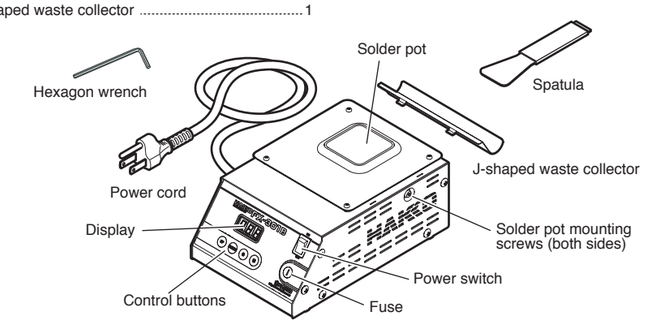
Instruction Manual

Thank your for purchasing the HAKKO FX-301B soldering pot.
Please read this manual before operating the HAKKO FX-301B.
Keep this manual readily accessible for reference.

1. PACKING LIST AND PART NAMES

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

HAKKO FX-301B 1
Spatula 1
J-shaped waste collector 1
Hexagon wrench 1
Instruction manual 1



2. SPECIFICATIONS

	50 × 50 Square	75 × 75 Square
Power consumption	100V - 200W, 110V - 260W, 120V - 290W, 220V - 240W, 230V - 260W, 240V - 280W	
Temperature range	200 - 450°C (400 - 840 °F)	200 - 380°C (400 - 720°F)
Solder pot dimensions	50 (W) × 50 (D) × 43.5 (H) mm (2.0 × 2.0 × 1.7 in.)	75 (W) × 75 (D) × 52.5 (H) mm (3.0 × 3.0 × 2.1 in.)
Molten solder capacity	0.85 kg (1.87 lb.)	1.2 kg (2.64 lb.)
Weight (w/o solder and cord)	1.7 kg (3.74 lb.)	
Outer dimensions	143 (W) × 100 (H) × 220 (D) mm (5.6 × 4.0 × 6.7 in.)	

* Only a 50 × 50 square solder pot is included in this product.
* The 75 × 75 square solder pot is an optinal part.
* Specifications and design are subject to change without notice.

■ Electrostatic Protection

This product includes such features as electrically conductive plastic parts and grounding of the 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 for the language, Japanese, English, Chinese, French, German and Korean can be downloaded from the following URL, HAKKO Document Portal.
(Please note that some language may not be available depending on the product.)

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中國RoHS: 產品中有毒有害物質或元素的名稱及含量

部件名稱	有毒有害物質或元素					
	鉛(Pb)	汞(Hg)	鎘(Cd)	六價鉻 (Cr(VI))	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印刷電路板	×	○	○	○	○	○
插頭	×	○	○	○	○	○

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

注有「附帶BS插頭」之時,表示「插頭」為含有有害物質的部件。

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http://www.hakko.com

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3. SAFETY INSTRUCTIONS

⚠ WARNING

Warnings, cautions and notes are placed at critical points in this manual to direct the operator's attention to significant items. They are defined as follows:

⚠ **WARNING:** Failure to comply with a WARNING may result in serious injury or death.

⚠ **CAUTION :** Failure to comply with a CAUTION may result in injury to the operator, or damage to the items involved. Two examples are given below.

⚠ WARNING

When the power is ON, the temperature of the melted solder in the solder pot is approximately 450°C/842°F. Before changing the solder pot, be sure to unplug the power cord and let the solder and the unit cool to room temperature.

Observe the following precautions to ensure safety.

⚠ CAUTION

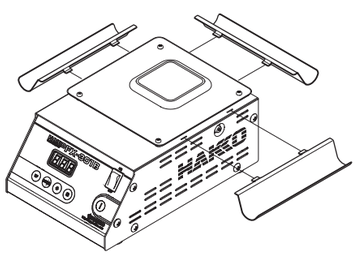
The molten solder in the solder pot is dangerous since it reaches about 450°C/842°F. The pot cover also becomes a high temperature when the power is ON. Wrong handling may cause burns or fire. Be sure to observe the following precautions.

- Use this product on highly stable metal workbench. Never use it near paper or other flammable materials.
- Inform others in the area that the product is hot and should not be touched.
- Never put water in the solder pot as this will cause solder to spatter out of the solder pot.
- Turn the power off when not in use, or left unattended.
- Before changing parts or storing the unit, be sure to turn the power off and allow the unit to cool to room temperature.
- 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.
- The unit is for a counter or workbench use only.

Observe the following precautions to prevent accidents or damage to the unit.

- Do not use the HAKKO FX-301B for applications other than soldering.
- Do not modify the HAKKO FX-301B.
- Use only genuine HAKKO replacement parts.
- Do not allow the HAKKO FX-301B to become wet, or use it with wet hands.
- Be sure the work area is well ventilated. Soldering produces smoke.
- Do not do anything else that might be dangerous.

4. INTIAL SETUP



1. Install the J-shaped waste collector to the unit. (Three-way installation is possible to meet your operating needs.)
2. Cut the solder sticks into small pieces and put them in the solder pot.
3. Plug the power cord into a grounded wall socket.

⚠ CAUTION
Make sure the power switch is off before plugging in the power plug.

⚠ CAUTION
This product is ESD-protected. Be sure to use a grounded wall socket.

5. OPERATION

Display and operation



● **Display**

The front panel of the HAKKO FX-301B soldering pot has the following controls:

UP - Increases the value in the appropriate display window.

DOWN - decreases the value in the appropriate display window.

✱ - Holding down the button for one second or more will enter into the temperature setting mode. If the button is otherwise pressed for only less than one second, the current set temperature will remain displayed. In the input mode, establish the entered value and exist the data input mode.

- Holding down the button for one second or more will enter into the offset input mode. If the button is otherwise pressed for only less than one second, the current offset value will remain displayed.

Operation

1. Turn the power switch ON.
2. The temperature set at factory is displayed.
   *The temperature was set to 350°C at factory.
3. The temperature control is started, causing the temperature to increase.

NOTE:
The display blinks when the power is turned ON or when settings are changed. This blinking occurs because the temperature control is in progress. The current temperature will be displayed in a short time.

6. PARAMETER SETTINGS

Before changing the setting temperature

The HAKKO FX-301B comes from the factory with the following values preset:

°C or °F temperature display selection	1 C	°C
Setting a solder type	2 1	Sn-Pb (Tin an lead)
Setting the solder pot type	3 1	50×50 square
Setting the timer	4 0	OFF or disabled

● **Entering the parameters**

1. °C or °F temperature display selection

2. Setting a solder type
Once a solder type close to the applicable one as shown in the right side, the temperature control will be performed for that solder type.

The HAKKO FX-301B has the following four parameters:

1) °C or °F temperature display selection
2) Setting a solder type
3) Setting the solder pot type
4) Setting the timer

Once you enter the parameter setting mode, the setting sequence will start in the following order. After all the parameters have been set, the displayed temperature setting starts blinking and the temperature of the solder pot starts rising.

1. Turn the power switch OFF.
2. Press and hold down the UP and DOWN buttons simultaneously, and then turn the power switch ON.
3. When you enter the parameter setting mode, 1 C is displayed.
4. Press the UP or DOWN button to select 1 C for °C or 1 F for °F.
   After checking the displayed selection, press the ✱ button.
   After establishing the temperature unit to use, enter the solder type selection mode.

Press the UP or DOWN button to select the number corresponding to your solder type as follows:

2 1 Sn-Pb (Tin an lead)
2 2 Sn-Ag-Cu (Tin, silver, and copper)
2 3 Sn-Cu (Tin and copper)
2 4 Sn (Tin)

After checking the displayed selection, press the ✱ button.

NOTE:
The solder types are listed for only rough classification. Select the closest one to your solder type.

6. PARAMETER SETTINGS

3. Setting the solder pot type
In the HAKKO FX-301B package, the size of the solder pot is 50 × 50 square. The 75 × 75 square solder pot is available to order for the requirement of your work.

Set the size of the solder pot that you will use.

[3 1] 50 × 50 Square: Setting range of temperatures 200 - 450°C/400 - 840°F

[3 2] 75 × 75 Square: Setting range of temperatures 200 - 380°C /400 - 720°F

Press the UP or DOWN to select the number corresponding to your solder pot size as shown above. After checking the displayed selection, press the ✻ button.

4. Setting the timer
It will be able to check the present addition time by pressing the DOWN button.

[4 0] for OFF or disabled
[4 1] for a value between 10 and 9990 hours
Select the displayed [4 1] and then press the ✻ button. You will proceed to enter the time to set. Enter a desired time value.
Time can be set in units of 10 hours in a range between [001] and [999] (10 and 9,990 hours). After entering the time value, press the ✻ button.

NOTE:
After the set time has passed, [t 0] will be displayed, the alarm will start sounding, and then the heater for the solder pot will be turned OFF. To reset the alarm and others, turn OFF the power switch and then immediately turn it ON again. The timer will be reset to the above time setting.After the set time has passed, the heater for the solder pot will be turned OFF.

● How to change and reset

Changing the time ..... Enter the value between 001 - 999.

Resetting the time ..... In case of resetting the time (in the middle of setting the time.), please change to the different value once, and enter the desired value.

7. CHANGING THE TEMPERATURE SETTING

● Changing the temperature setting

The HAKKO FX-301B is preset at 350°C at the factory.

Example: 350°C to 400°C

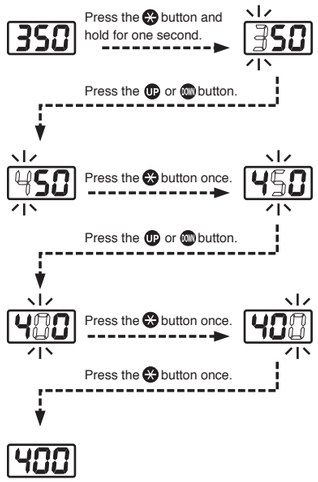
1. Check that the displayed value is 350°C.
Press the ✻ button for one second or more. The hundreds digit will start blinking, indicating the unit is in the temperature setting mode.

2. Entering the hundreds digit
Press the UP or DOWN button to set the desired figure. When the desired figure is displayed, press the ✻ button to enter. The tens digit will begin to blink.

3. Entering the tens digit
Press the UP or DOWN button to set the desired figure. When the desired figure is displayed, press the ✻ button to enter. The unit's digit will begin to blink.

4. Entering the unit's digit
Press the UP or DOWN button to set the desired figure. When the desired figure is displayed, press the ✻ button to enter. Now the setting has been completed.

After the setting has been completed, the displayed temperature starts blinking and the temperature in the solder pot starts rising. The current temperature will be displayed in a short time.



NOTE:
For the 50 × 50 square pot, the setting range of temperatures is between 200 - 450°C/400 - 840°F.
For the 75 × 75 square pot, the setting range of temperatures is between 200 - 380°C/400 - 720°F.

8. IN CASE THE DISPLAY AND THE ACTUAL TEMPERATURE IS DEFFERENT

● Entering offset value

The offset value was set to 0°C at factory.

Example:
When the set temperature is 400°C and the actual solder temperature in the solder pot is 350°C; The difference between the two is +50°C. Therefore, enter 050 instead of the current offset value.

1. Press the # button on the front panel.
- This will set the station to offset value entry mode.

2. Enter the offset value
The allowable ranges for offset values are from –70 to +70°C (In °F mode from –158 to +158°F).

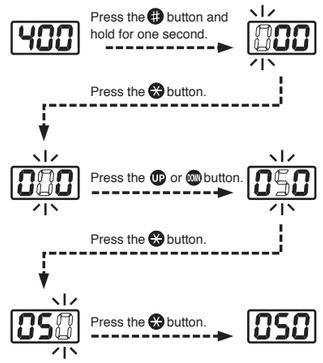
a. Entering the hundreds digit
- Press the UP or DOWN button to set the desired figure. In °C mode, 0 (plus) or - (minus) can be selected. (In °F mode, 0, 1 (plus) or -, -1 (minus) can be selected.)
When the desired figure is displayed, press the ✻ button to enter. The tens digit will begin to flash.

b. Entering the tens digit
- Press the UP or DOWN button to set the desired figure. Any value from 0 to 7 (In °F mode, 0 to 9) can be selected. When the desired figure is displayed, press the ✻ button to enter.
The units digit will begin to flash.

c. Entering the units digit
- Press the UP or DOWN button to set the desired figure. Any value from 0 to 9 (In °F mode, same value can be selected.) When the desired figure is displayed, press the ✻ button to enter.

Once you can check the display and the measured temperature, all the settings are finished.

When the temperature of solder reaches the set value, the buzzer sounds. About 5 to 10 minutes later, measure the temperature of solder. If the measured value is different from the displayed temperature, match them with each other by entering an offset.

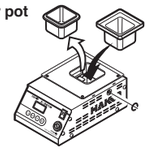


NOTE:
When measure the temperature of the solder, be sure to measure at the same position.

9. MAINTENANCE

⚠ WARNING
Unless otherwise directed, carry out these procedures after turning the power switch OFF, unplugging the power plug and waiting for both the unit and the solder to sufficiently cool down.

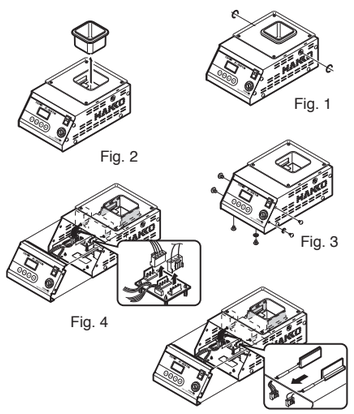
Changing the solder pot



⚠ CAUTION
After changing the solder pot, measure the temperature again. If the measured value is different from the displayed temperature, enter an offset.

⚠ WARNING
When the power is ON, the temperature of the melted solder in the solder pot is approximately 450°C/842ºF. Before changing the solder pot, be sure to unplug the power cord and let the solder and the unit cool to room temperature.

Replacing the heating element



1. Using the hexagon wrench (provided with the HAKKO FX-301B) to loosen the screws on both sides of the unit.

NOTE:
Removal is unnecessary.

2. Pull out the solder pot.

3. Insert a new solder pot and then tighten the screws on both sides.

⚠ CAUTION
Check that the solder pot has been locked now. Otherwise, the temperature may not increase properly.

1. Loosen the screws on both sides of the unit. (Fig. 1)

NOTE:
Removal is unnecessary.

2. Pull out the solder pot. (Fig. 2)

3. Remove the setscrews (6 pieces) on the unit. (Fig. 3)

4. Slide the front panel frontward, disconnect the two connectors (Fig. 4) from the connector circuit board, and then pull out the units of the heating elements (Fig. 5).

5. Insert the right and left heating elements in the reverse procedure to removing the heating elements.

After finishing the maintenance, measure the temperature of solder. If the measured value is different from the display temperature, enter an offset.

⚠ CAUTION
The heating element is a discrete type.
The right heating element is equipped with a sensor.

10. ERROR MESSAGES

● Sensor Error



There is the possibility that a failure has occurred in the sensor circuit. The power is shut down with the buzzer sounding continuously.

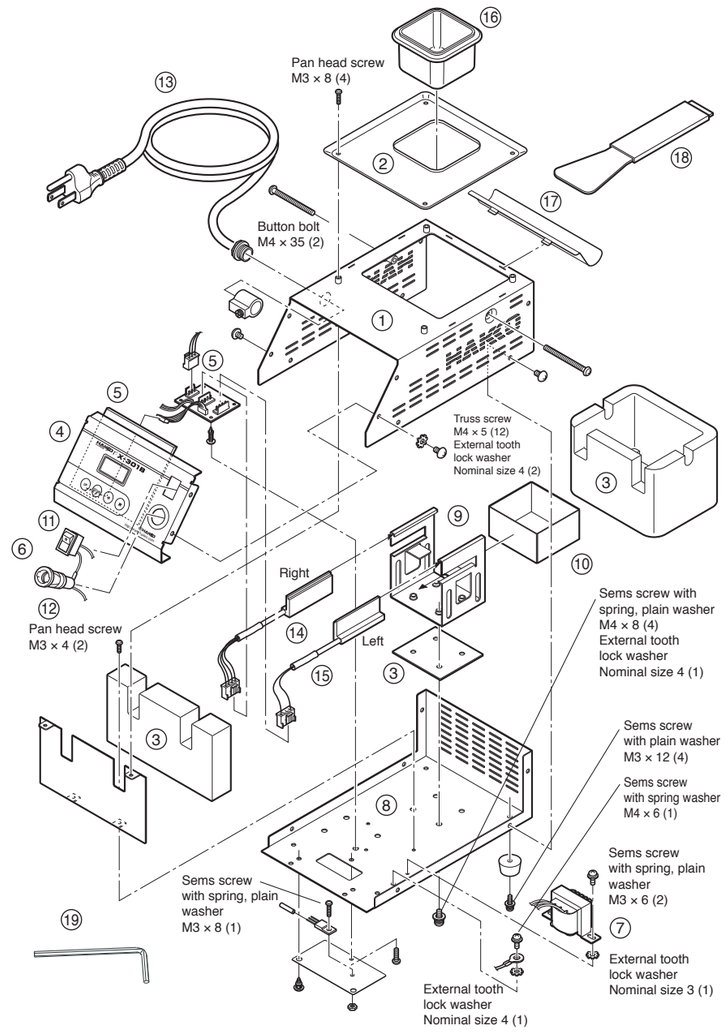
11. TROUBLE SHOOTING GUIDE

⚠ WARNING
- **Before checking the inside of the FX-301B or replacing parts, be sure to disconnect the power plug.**
- **If the power cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid personal injury or damage to the unit.**

● The unit does not operate when the power switch is turned on.

CHECK : Is the power cord and/or the connection plug disconnected?
ACTION : Connect it.
CHECK : Is the fuse blown?
ACTION : Investigate why the fuse blew and then replace the fuse. If the cause can not be determined, replace the fuse. If the fuse blows again, send the unit in for repair.

12. PARTS LIST



● FX-301B Soldering pot

Item No.	Part No.	Part Name	Specifications
①	B2917	Cover	
②	B2918	Overflow tray	
③	B2916	Heat insulator	
④	B3377	Front panel	With membrane sheet
⑤	B3376	P.W.B.	For temperature control, connector
⑥	B2705	Fuse/125V-5A	100 - 110V
	B2468	Fuse/125V-5A	120V
	B2922	Fuse/250V-5A	220 - 240V
	B3045	Fuse/250V-5A	230V CE, KTL for SG. MY, ID, PH
⑦	B2924	Transformer	100 - 120V
	B2925	Transformer	220 - 240V
⑧	B2926	Chassis	With rubber feet
⑨	B2927	Solder pot support	
⑩	B2928	Solder pot tray	
⑪	B1084	Power switch	
⑫	B1134	Fuse holder	
⑬	B1795	Power cord, 3 wired cord & American plug	USA
	B1796	Power cord, 3 wired cord but no plug	
	B2913	Power cord, 3 wired cord & BS plug	230V India
	B2914	Power cord, 3 wired cord & Chinese plug	220V China
	B1797	Power cord, 3 wired cord & European plug	KTL, CE
⑬	B1798	Power cord, 3 wired cord & Australian plug	230V - 240V
	B3046	Power cord, 3 wired cord & BS plug	230V UK
	B3513	Power cord, 3 wired cord & American plug	100 - 220V

● Replacement parts

Item No.	Part No.	Part Name	Specifications
⑭	A1548	Heating element/Right Equipped with a sensor	100 - 120V
	A1550	Heating element/Right Equipped with a sensor	220 - 240V
⑮	A1552	Heating element/Left	100 - 110V
	A1554	Heating element/Left	120V
	A1555	Heating element/Left	220 - 240V
⑯	A1539	Solder pot	Special coating 50 × 50 × 43.5(mm) /1.97 × 1.97 × 1.7(in.)
⑰	B2919	J-shaped waste collector	
⑱	B2932	Spatula	
⑲	B1417	Hexagon wrench	2.5mm

● Optional parts

Part No.	Part Name	Specifications
A1540	Solder pot	Special coating 75 × 75 × 52.5(mm)/3.0 × 3.0 × 2.1(in.)