



HAKKO 928

SOLDERING STATION

INSTRUCTION MANUAL

Please read this instruction manual thoroughly before operating the HAKKO 928

Specification

● Station

| | |
|---------------------|---|
| Power Consumption | 120W (60W×2) |
| Output Voltage | AC24V (Both A iron & B iron) |
| Temperature | 200~480°C / 392~896°F (Both A iron & B iron) |
| Temperature Control | ±0.5°C (±0.9°F) <small>Control accuracy of setting at idling temperature.</small> |
| Outer Dimensions | 135(W)×88(H)×190(D)mm (Without Cord) 5.3" 3.5" 7.5" |
| Weight | Approx. 2.7kg (6 lb) |

● Iron

| Part No. | 900S-ESD | 900M-ESD | 900L-ESD |
|-----------------------|--|--------------|--------------|
| Power Consumption | AC24V 50W | | |
| Insulation Resistance | Over 300MΩ at 400°C / 750°F | | |
| Leak Voltage | under 0.6mV | | |
| Heating Element | Ceramic Heater | | |
| Cord Ass'y | 5 wire burn-proof silicon cord, 1.2m (4ft.) with Connecting Plug | | |
| Connecting Plug | 5 pin inter-lock system | | |
| Length (w/o cord) | 176mm (7") | 190mm (7.5") | 210mm (8.3") |
| Weight | 25g (0.061lb) | 45g (0.1lb) | 55g (0.12lb) |

Conditions of Measurement

● Tip Temperature

The tip temperature was measured using HAKKO 191 thermometer.

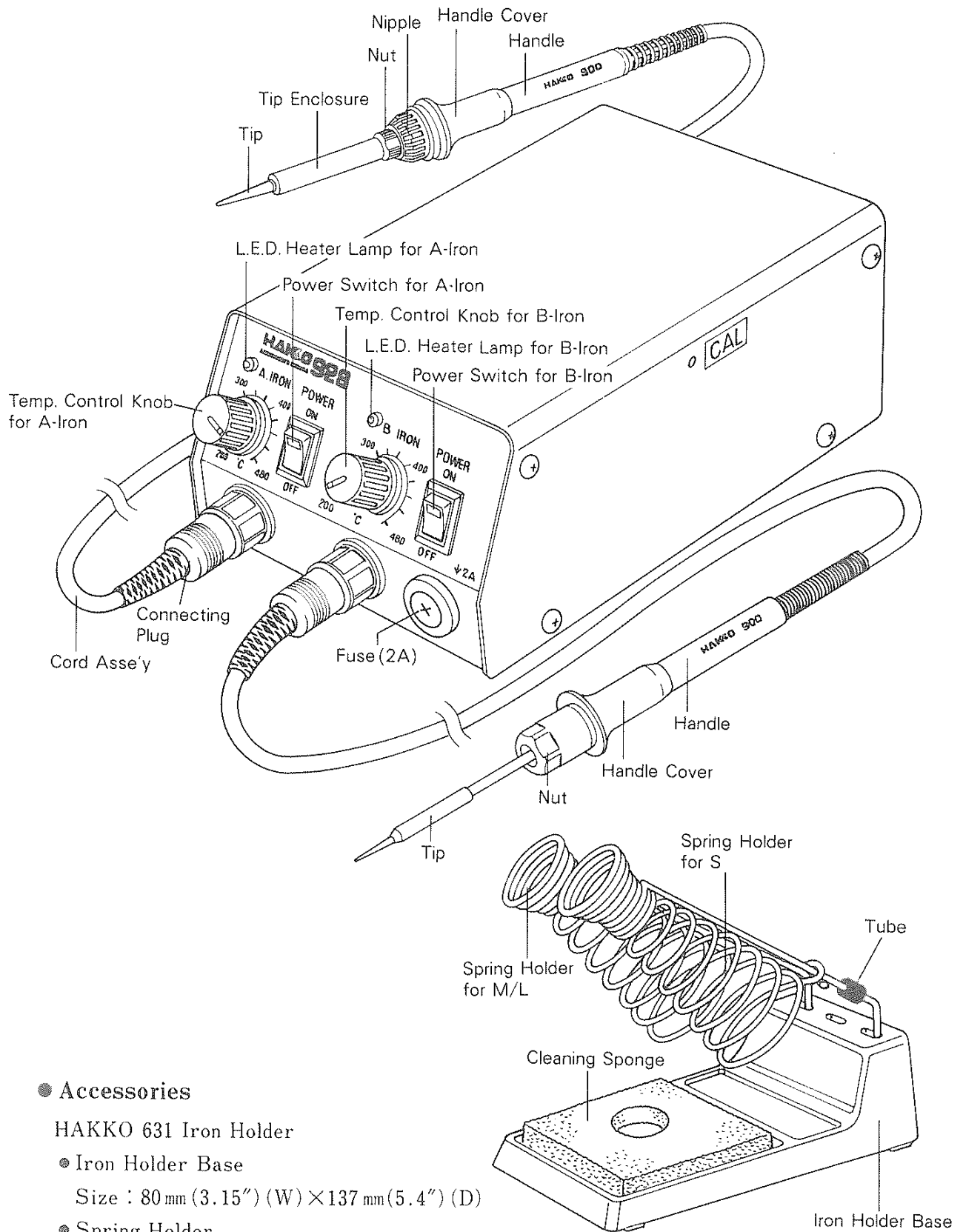
● Insulation Resistance

The insulation resistance was measured between the tip and the lead of the Heating Element using a 500V DC insulation resistance meter.

Caution : The insulation resistance cannot be measured between the tip and the power plug as the transformer between the secondary part (Heating Element) and the primary part acts as an insulator.

※The specification written here may be subject to change without notice.

Parts Name



● Accessories

HAKKO 631 Iron Holder

● Iron Holder Base

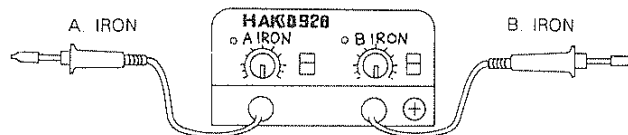
Size : 80 mm (3.15") (W) × 137 mm (5.4") (D)

● Spring Holder

● Cleaning Sponge

Operating Instructions

- 1) Insert a Spring Holder into each of the two Holder holes at the base of the Station.
Note : There are two sizes of Spring Holder available ; select the Spring Holder with yellow tube for 900S(No.B1469), black one for 900M/L(No.B1468).
- 2) Place the Cleaning Sponge in the Iron Holder Base and dampen it with clean water.
Note : Specially coated soldering tips may be damaged if they are cleaned on a dry sponge.
- 3) Insert the 5-pin Connecting Plug into the Receptacle on the Station.
Lock the Connecting Plug by turning the plug's outer ring clockwise.
Warning 1 : Each Soldering Iron has been tested and calibrated in the factory. Be sure to connect the A-Iron to the A-Iron receptacle and the B-Iron to the B-Iron receptacle. "A-Iron" and "B-Iron" are indicated on the Handle of the respective Soldering Irons.



Warning 2 : To prevent damage to the Control PCB inside the Station, be sure to turn the power off before connecting or disconnecting the Soldering Iron.

Precautions

- 1) Never strike the Soldering Iron against the workbench or other solid surface as the ceramic Heating Element is very fragile and cannot withstand sharp blows.
- 2) Before using the Soldering Iron, make sure the Nut securing the Tip Enclosure is properly tightened.
- 3) When replacing the Heating Element, first unscrew the Nut, then the Nipple. After replacing the Heating Element, first screw on the Nipple, then the Nut. (Disassembly /assembly in the reverse order may result in damage to the Heating Element.)
- 4) Always remove excess solder from the Tip prior to soldering and tin the tip daily. HAKKO recommends using a heavier tip with the 900L for heavy-duty soldering, and a fine tip with the 900S for micro soldering.
- 5) Even with the power switch off, the 928 still contains a 4W current when the power cord is plugged into an AC outlet. Therefore, always unplug the power cord whenever the 928 will not be used for a long period of time.
- 6) All HAKKO 900 soldering irons are tested and calibrated in the factory. Recalibration may be necessary, however, in the following cases.
 1. After replacing the Soldering Iron with a larger or smaller iron.
 2. After replacing the Heating Element.
 3. After replacing the tip with one of a different type.

Replacement Tip

900S

For micro soldering HAKKO recommends
The 900S iron with fine tips.

| | | |
|-------------|--|--------------|
| 900S-T-1.2D | | 0 (480°C) |
| 900S-T-1.6D | | 0 (480°C) |
| 900S-T-2C | | 0 (480°C) |
| 900S-T-1C | | 0 (480°C) |
| 900S-T-B | | 0 (480°C) |
| 900S-T-I | | 0 (480°C) |

● 900S Tip Out Diam 5.8φ

900M

| | | |
|-------------|--|------------------|
| 900M-T-1.6D | | 0 (480°C) |
| 900M-T-2.4D | | 0 (480°C) |
| 900M-T-3.2D | | 0 (480°C) |
| 900M-T-B | | 0 (480°C) |
| 900M-T-LB | | -10°C (470°C) |
| 900M-T-1C | | 0 (480°C) |
| 900M-T-2C | | 0 (480°C) |
| 900M-T-3C | | 0 (480°C) |
| 900M-T-4C | | 0 (480°C) |
| 900M-T-K | | +30°C (510°C) |
| 900M-T-I | | -10°C (470°C) |
| 900M-T-H | | -20°C (460°C) |

● 900M Tip Out Diam 6.5φ

900L

For heavy duty soldering HAKKO recommends
The 900L iron with heavier tips

| | | |
|-------------|--|------------------|
| 900L-T-B | | 0 (480°C) |
| 900L-T-2B | | 0 (480°C) |
| 900L-T-3.2D | | 0 (480°C) |
| 900L-T-2C | | -20°C (460°C) |
| 900L-T-3C | | 0 (480°C) |
| 900L-T-4C | | 0 (480°C) |
| 900L-T-I | | -20°C (460°C) |
| 900L-T-K | | +20°C (500°C) |

● 900L Tip Out Diam 8.5φ

Caution

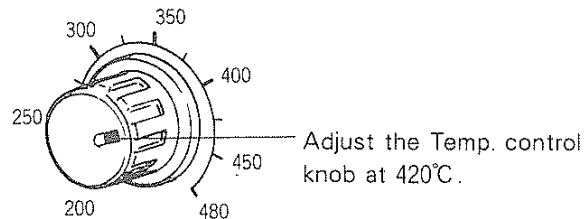
- 1) Use exclusive tips for HAKKO 900 only.
- 2) The set temperature should be adjusted according to the tip configuration.
If required, adjust the temperature with "CAL" potentiometer on side of station when changing tip configurations.
The temperature is increased by turning "CAL" clockwise.
- 3) When using the Soldering Iron continuously loosen Tip and remove oxide once a week. This helps prevent seizure and reduction of Tip temperature.
- 4) Tin the tip daily as follows ;
 1. Clean the Tip.
 2. Set the temperature at 200°C (392°F).
 3. Melt the solder gradually at the tip.
- 5) Never file the specially plated tip.

■ The tip temperature may vary depending on the figure. Refer to the left chart for the correct adjustment.

(Example)

When using 900M-T-H Tip at 400°C.

(The Gap between standard Tip — 20°C)



Trouble Shooting Guide

If the Soldering Iron doesn't heat-up or uncontrollable and Tip becomes over-heat when the Power Switch on, please check as follows ;

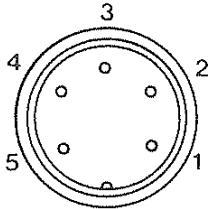
CAUTION : Disconnect the plug before checking.

(Case 1) Power Lamp doesn't light up.

- Check Fuse ... Replace Fuse if necessary as follows,
 In put AC220V~240V ; AC250V—2A Fuse
 In put AC100V~120V ; AC125V—2A Fuse
- Check Power Cord ... Repair or replace with new one.

(Case 2) Power Lamp lights up.

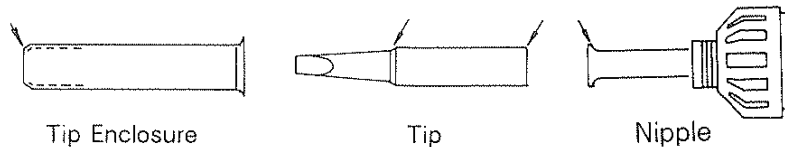
- Confirm whether the Connecting Plug is connected correctly.
- Disconnect the Connecting Plug and measure the resistance value between pins of Connecting Plug as follows ;



| | | |
|---|--|-------------------------|
| a | Between pin 4 & pin 5 (Heating Element) | 2.5~3.5 ohm (Normal) |
| b | Between pin 1 & pin 2 (Sensor) | 43 ~ 58 ohm (Normal) |
| c | Between pin 3 & Tip (Grounding) | Under 10 ohm |

- (1) If the value of "a" & "b" is different from above value, replace the Heating Element (Sensor) or Silicon Cord.
- (2) On HAKKO 900M, 900L.

If the value of "c" — between pin 3 and tip (Grounding) is over above value, remove the oxidization film by rubbing points shown as under with sand-paper or steel wool.



On HAKKO 900S.

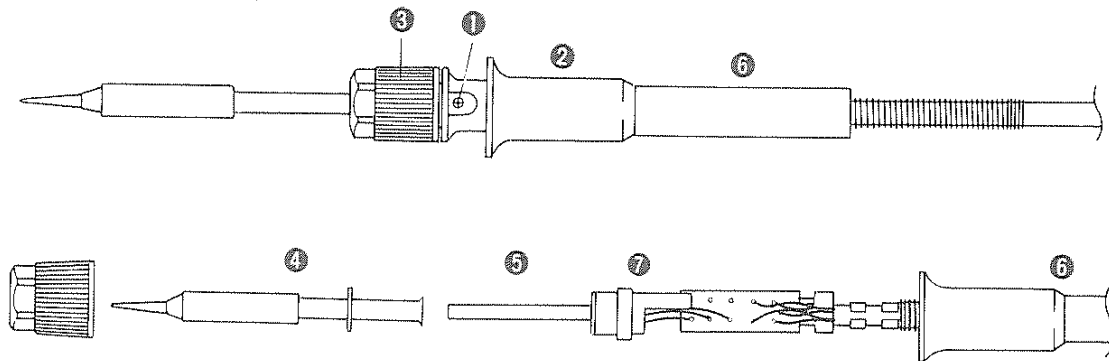
If the value of "c" — between pin 3 and tip (Grounding) is over above value, check the Cord Ass'y and replace it.

- If the problem remains unsolved after check in the Soldering Iron, the Station may have a problem.

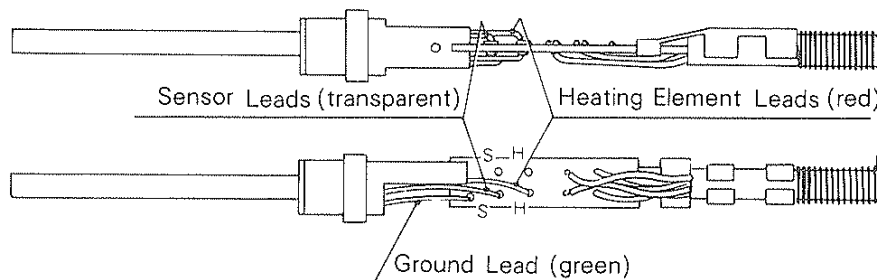
Please contact your nearest HAKKO representative.

Replacing the Heating Element

● 900S Soldering Iron

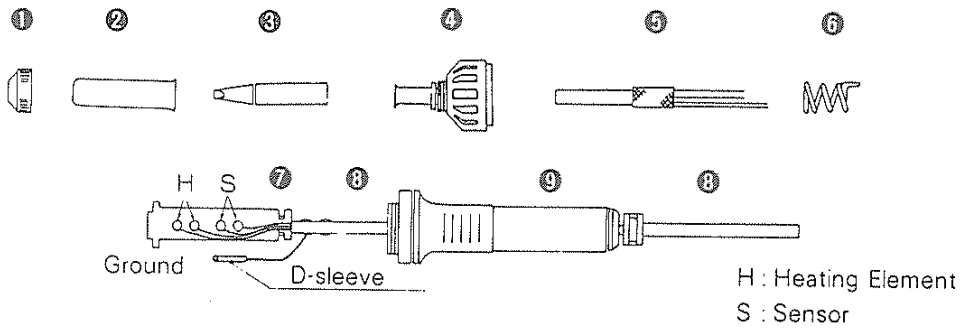


- 1 . Slide the Handle Cover ② toward the Power Cord and remove the Screw ① securing the Heating Element.
- 2 . Turn the Nut ③ counterclockwise and remove it.
- 3 . Remove the Tip ④.
- 4 . Pull both the Heating Element ⑤ & the Cord Asse'y toward the tip of the Iron and out of the Handle ⑥.
- 5 . Measure the resistance values at the Sensor and the Terminal. Should the resistance value be correct, the Cord Asse'y will have to be changed as it is disconnected.

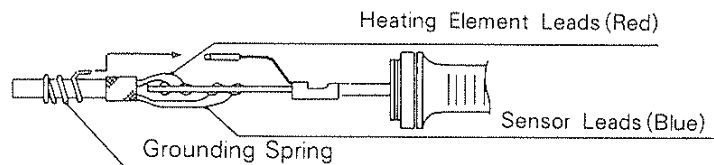


- 6 . Unsolder the Heating Element Leads, Sensor Leads and Ground Lead. Remove the Heating Element and the Heating Element Holder ⑦. Be careful not to damage the leads with soldering iron.
 - 7 . Solder the new Heating Element and resolder the Ground Lead. Resolder the two Sensor Leads (transparent) and the two Heating Element Leads (red). Be careful not to damage the leads.
- Note : There is no polarity between leads of the same color.
- 8 . Pull on the Cord Asse'y to reset the Heating Element in the Handle. Align the holes in the Heating Element Holder ⑦ with the holes in the Handle ⑥.
 - 9 . Secure the Heating Element with the Screw ①.
 - 10 . Insert the Heating Element ⑤ into the Tip and secure it with the Nut ③.
 - 11 . Slide back the Handle Cover ② in its place.

● 900M·900L Soldering Iron



1. Turn the Nut ① counterclockwise and remove the Tip Enclosure ②, the Tip ③.
2. Turn the Nipple ④ counterclockwise and remove it from Iron.
3. Pull both the Heating Element ⑤ and the Cord Ass'e'y ⑥ out of the Handle ⑨ (toward the tip of the Iron).
4. Pull the Grounding Spring ⑥ out of the D-Sleeve.
5. Measure the resistance value at the Sensor and the Heating Element of the Terminal.
6. Desolder the Heater Lead Wire.
7. Solder the new Heating Element, solder two Sensor Leads (blue) and Heating Element Leads (red) on the Terminal Board ⑦ as above drawing.
 - In the above Item 5 & 6, be careful not to damage the leads with soldering iron.
8. Insert the Grounding Spring into the Heating Element. And connect the Grounding Spring and D-sleeve on the side of Heating Element Leads.



9. Pull the Power Cord and fix the Heating Element in the Handle to prevent rolling.
10. Turn the Nipple and secure the Handle.
11. Replace, the Tip ③, the Tip Enclosure ② and secure the Nut ①.

Recalibrating of Iron Temperature

After replacing the Heating Element, recalibrate the temperature of Soldering Iron.

- 1) Connect the Plug of Cord Ass'e'y to the Station and lock it.
- 2) Set Temperature Control Knob at 400°C (752°F).
- 3) Turn the Power Switch on and wait till the L.E.D. Heater Lamp comes on and off.
- 4) Adjust the temperature of Tip at 400°C (752°F) by "CAL" on the side of the Station using thermometer.



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