HAKKO

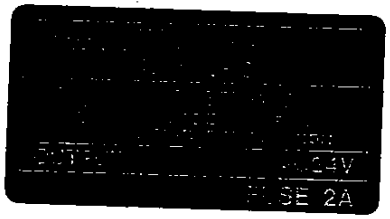
Aug. '94

# HAKKO 470
DESOLDERING TOOL

## Desoldering Tool

# Instruction Manual

Thank you for purchasing the Hakko 470 Desoldering Tool.
This Manual describes the use and maintenance of the Hakko 470. Please read it before using the unit. After reading the manual, keep it in a safe place for future reference.



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# Packing List

Please check to make sure that all the items listed below are included in the Hakko 470 package

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Spring Iron Holder ..... 1
Cleaning Sponge ..... 1
Filter Pipe ..... 1

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Ceramic Paper Filter (L) ..... 4
Spring Filter ..... 3
Cleaning Pin (for $\phi$1.0 mm [0.04 in] nozzle) ..... 1
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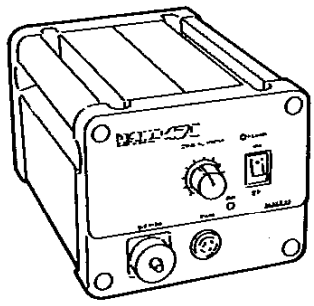
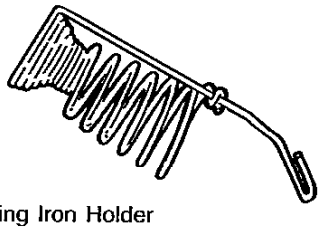
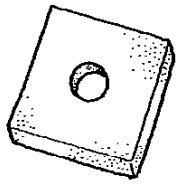
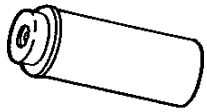

Station

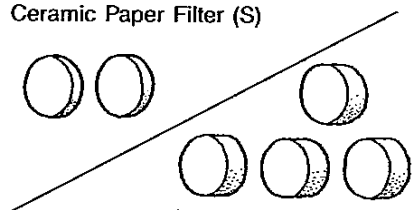

Iron Holder Base

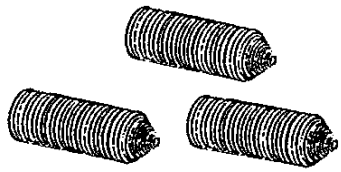

Spring Iron Holder


Cleaning Sponge

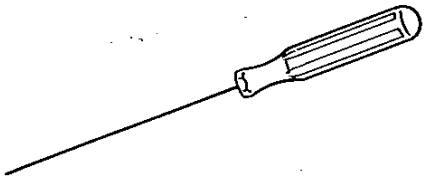

Filter Pipe

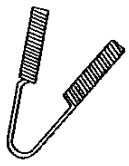
Ceramic Paper Filter (S)

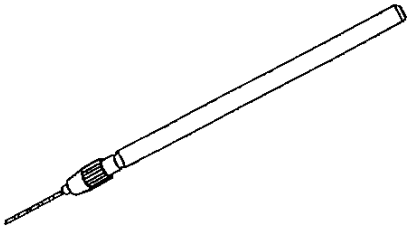

Ceramic Paper Filter (L)

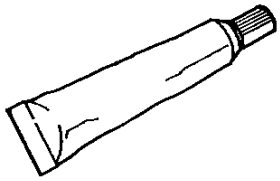

Spring Filter

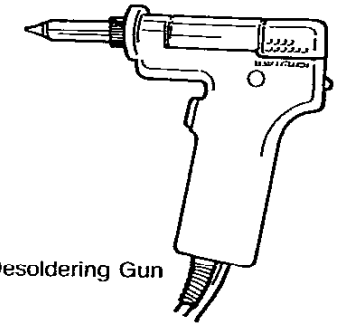

Cleaning Pin for $\phi$1.0 mm (0.04 in) Nozzle


Cleaning Pin (L) for Heating Element


Cleaning Pin Holder


Cleaning Drill for $\phi$1.0 mm (0.04 in) Nozzle


Silicone Grease


Desoldering Gun

# Precautions

### High Temperature

The Heating Element, Filter Pipe, other parts near these parts, and the Spring Iron Holder are all extremely hot during and immediately after operation. Be careful not to touch them at these times.

### Filter

Use Ceramic Paper Filter S/Filter Case (Station) and Ceramic Paper Filter L/Filter Pipe (Gun). Inversely setting may cause to break or the power to drop.

### Mishandling

Sharp impacts may cause parts to break or the power to drop. Handle both the Desoldering Gun and the Station with care.

### Maintenance

Please replace all expendable supplies and clean the specified parts.

# Specifications

| Name | Hakko 470 |
|---|---|
| Power Consumption | 100W |

**•Station**

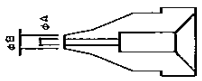
| Part Name | Station |
|---|---|
| Output Voltage | 24V AC |
| Vacuum Generator | Vacuum pump, double cylinder type |
| Vacuum Pressure (Max) | 600 mm Hg (24 in Hg) |
| Suction Flow | 12ℓ/min. |
| Voltage Leakage | Under 1.2mV |
| Ground Resistance | Under 2Ω |
| Motor Output | 12W |
| Outer Dimensions (W×H×D) | 165×135×260 mm (6.5×5.31×10.24 in) |
| Weight | Approx. 5.0 kg (11.02 lb.) |

**•Desoldering Gun**

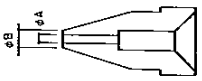
| Part Name | Hakko 802 |
|---|---|
| Part No. | C1000 |
| Power Consumption | 24V AC, 50W |
| Temperature | 380°C – 480°C (716°F – 896°F) |
| Insulation Resistance | Over 300 MΩ at 420°C (790°F) |
| Nozzle Inside Diameter | ϕ1.0 (0.04 in) (Nozzle S, Standard) |
| Outer Dimensions (W×H) | 135×174 mm (5.31×6.85 in) |
| Weight (w/o cord, Hose) | Approx. 200g (0.44 lb) |

**•Replacement Parts**

| Part No. | Part Name/Specification |
|---|---|
| A1002 | Nozzle S ϕ0.8 mm (0.03 in) |
| A1003 | Nozzle S ϕ1.0 mm (0.04 in) |
| A1004 | Nozzle ϕ0.8 mm (0.03 in) |
| A1005 | Nozzle ϕ1.0 mm (0.04 in) |
| A1006 | Nozzle ϕ1.3 mm (0.05 in) |
| A1007 | Nozzle ϕ1.6 mm (0.06 in) |




| Part No. | ϕA | ϕB |
|---|---|---|
| A1002 | 0.8 (0.03 in) | 1.8 (0.07 in) |
| A1003 | 1.0 (0.04 in) | 2.0 (0.08 in) |




| Part No. | ϕA | ϕB |
|---|---|---|
| A1004 | 0.8 (0.03 in) | 2.3 (0.09 in) |
| A1005 | 1.0 (0.04 in) | 2.5 (0.1 in) |
| A1006 | 1.3 (0.05 in) | 3.0 (0.12 in) |
| A1007 | 1.6 (0.06 in) | 3.0 (0.12 in) |

| Part No. | Part Name/Specification | |
|---|---|---|
| B1215 | Cleaning Pin (L) | for Heating Element |
| B1086 | Cleaning Pin | for ϕ0.8 mm (0.03 in) Nozzle |
| B1087 | Cleaning Pin | for ϕ1.0 mm (0.04 in) Nozzle |
| B1088 | Cleaning Pin | for ϕ1.3 mm (0.05 in) Nozzle |
| B1089 | Cleaning Pin | for ϕ1.6 mm (0.06 in) Nozzle |
| B1302 | Cleaning Drill | for ϕ0.8 mm (0.03 in) Nozzle |
| B1303 | Cleaning Drill | for ϕ1.0 mm (0.04 in) Nozzle |
| B1304 | Cleaning Drill | for ϕ1.3 mm (0.05 in) Nozzle |
| B1305 | Cleaning Drill | for ϕ1.6 mm (0.06 in) Nozzle |

| Part No. | Part Name/Specification | |
|---|---|---|
| B1017 | Filter Pipe | w/Front Holder & Filters |
| A1009 | Ceramic Paper Filter (S) | for Filter Case 10 pcs. |
| A1033 | Ceramic Paper Filter (L) | for Filter Pipe 10 pcs. |
| A1030 | Spring Filter | 10 pcs. |
| A1008 | Heating Element | 24V, 50W |
| A1028 | Silicone Grease | |
| A1042 | Cleaning Sponge | |

**Condition of Measurement**

•Insulation Resistance

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

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

•Voltage Leakage

The voltage leakage was measured between the Nozzle and the grounding Plug at a temperature of 480°C (896°F) using an AC mV meter.

Caution: Be sure to ground the unit before measuring the voltage leakage.

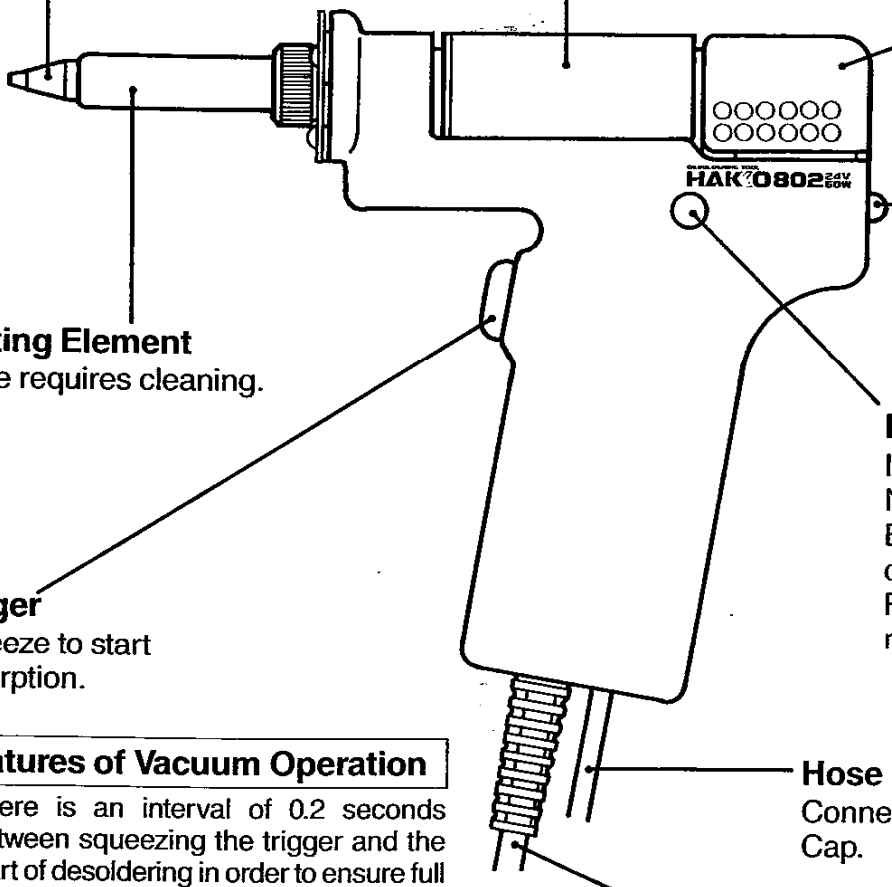
*Specifications are subject to change without notice.

# Part Names (Refer to pp. 19, 20, 21 for part nos.)

## ● Desoldering Gun

**Nozzle**
Transmits heat for melting solder.
Entrance for melted solder.
Expendable part.

**Filter Pipe**
Set the Ceramic Paper Filter (L) (No. A1033).
Contains melted solder and flux using filters.
Filters are expendable parts.




**Back Holder Assembly**
Secures the Filter Pipe.

**Release Knob**
Push down to remove Filter Pipe.

**Heating Element**
Inside requires cleaning.

**Indicator**
Indicates when Nozzle and Heating Element need cleaning and when Filters need replacing.

**Trigger**
Squeeze to start Absorption.

**Hose**
Connects to the Vacuum Outlet Cap.

**Cord Assembly**
Connects to the Receptacle.

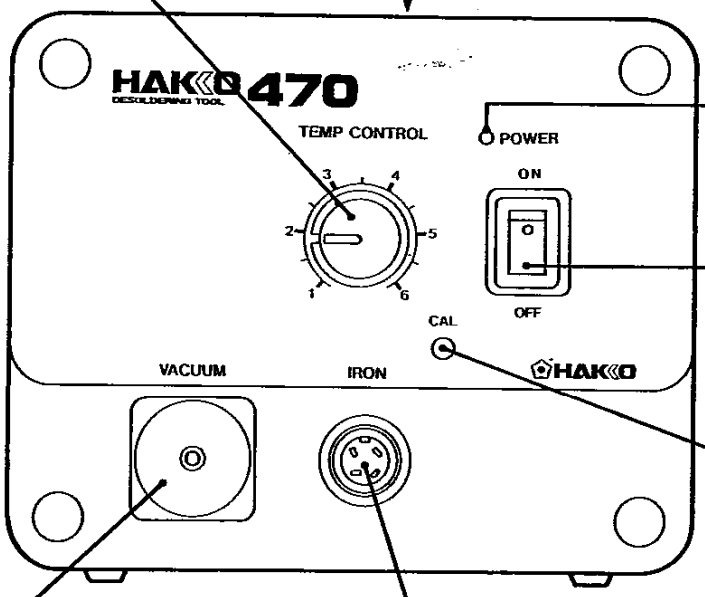
**Features of Vacuum Operation**

1. There is an interval of 0.2 seconds between squeezing the trigger and the start of desoldering in order to ensure full power for desoldering.
2. The Vacuum Pump operates for a minimum of 0.5 seconds after squeezing the trigger in order to absorb molden solder and flux into the Filter Pipe and to prevent the Nozzle and the Heating Element from becoming clogged.

# ●Station

**Temperature Control Knob**
Provides Nozzle temperature control. (refer to p.7)

**Temperature Control Knob Securing Screw**
Prevents the Temperature Control Knob from being reset. (refer to p.7)



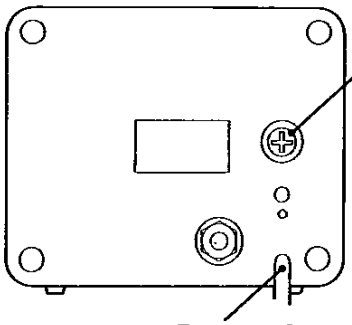

**Power Lamp**
Lights up when the Power Switch is turned to ON.

**Power Switch**
When turned to ON, the Heating Element starts to heat up.

**CAL (Calibration)**
Used for calibrating the temperature after replacing the Heating Element.

**Vacuum Outlet Cap**
Set the Ceramic Paper Filter (S) (No. A1009).
Connects with the Hose. Filter inside Vacuum Outlet Cap is expendable.

**Receptacle**
Connector for the Cord Assembly.



**Power Cord**

**Fuse Holder**
- 100, 110, 120V Unit Contain 125-2A fuse.
- 220, 230, 240V Unit Contain 250-2A fuse.
- Australian 240V, U.K. 240V & Eur. 220, 230V Unit Contain 250-2A Ⓢ fuse.
- SEMKO 230V Unit Contain 250V-1A Ⓢ fuse.

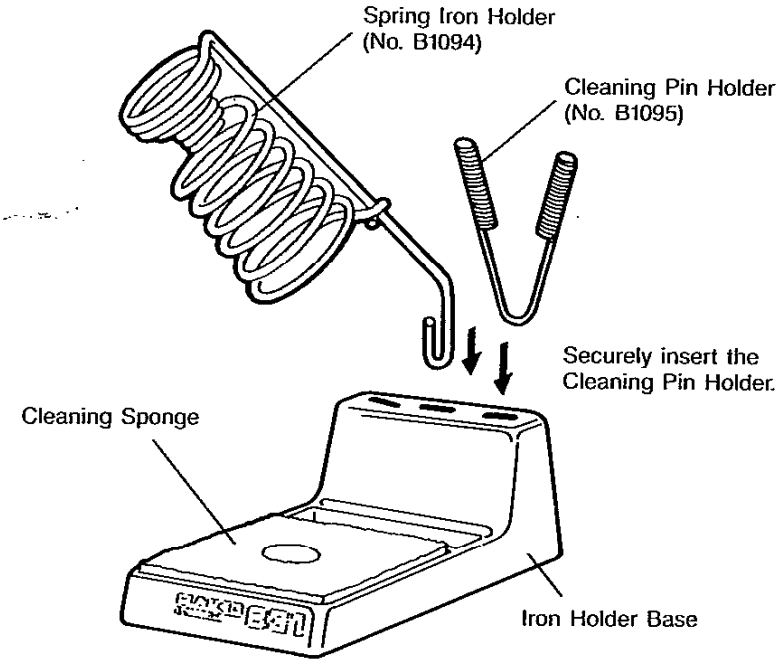
# Operation

## Preparation—Assembly and Connection

Assemble the Hakko 470 on a flat surface.

### ① Assemble the Iron Holder

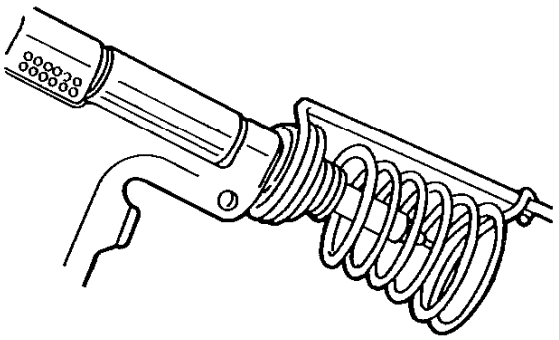
- Set the Spring Iron Holder and Cleaning Pin Holder in the Iron Holder Base.
- Dampen the Cleaning Sponge with water and then squeeze it dry.

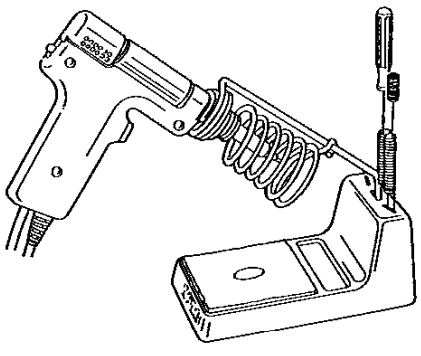



### ② Insert the Desoldering Gun and Cleaning Pins

- Fully insert the Desoldering Gun into the Spring Iron Holder.

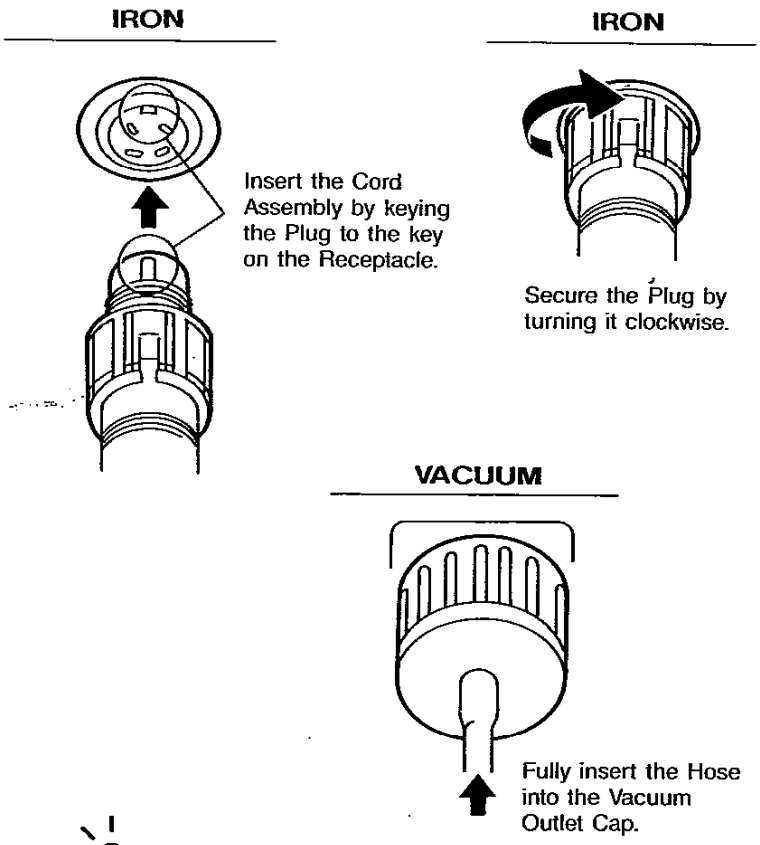
**Caution:**
The Spring Iron Holder becomes extremely hot during operation of the Desoldering Gun. Do not touch the Spring Iron Holder during and immediately after using the Gun.





## ③ Connections

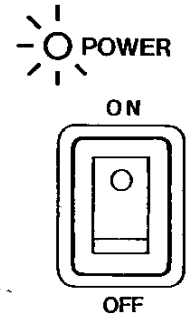
- Connect the Cord Assembly to the Receptacle (marked "IRON").
- Never connect or disconnect the Cord Assembly while the Power Switch is set to "ON".
- Connect the Hose to the Vacuum Outlet Cap (marked "VACUUM").




## ④ Power Switch

- Confirm that the Power Switch is set in the OFF position, then connect the power plug to the power source.

  Note: The entire unit is constructed of conductive materials. Always ground the unit.
- Turn the Power Switch to ON. The Power Lamp should light up.
- The Nozzle begins to heat up as soon as the Power Switch is turned to ON.




The Power Lamp lights up.

The Nozzle heats up.

**The Power Lamp doesn't light up.**

1. Is the Power Cord properly connected?
2. Is the fuse blown?

**The Nozzle doesn't heat up.**

1. Is the Cord Assembly properly connected?
2. Is the Heating Element broken?

## ⑤ After turning the Power Switch to ON, wait 3 minutes before beginning desoldering operations.

# Operation

## Desoldering

After turning the Power Switch to ON, wait 3 minutes before beginning desoldering operations.

### ① Set the temperature

Note: Always set the temperature to as low as possible for the work being done.

- To more precisely set the temperature, measure the temperature at the Nozzle using a soldering iron thermometer and adjust the Temperature Control Knob accordingly.

> We recommend the Hakko 191 thermometer for measuring the Nozzle temperature.

- For volume desoldering, the Temperature Control Knob can be secured by tightening the Temperature Control Knob Securing Screw ("+" screw) at the top of the 470 unit.

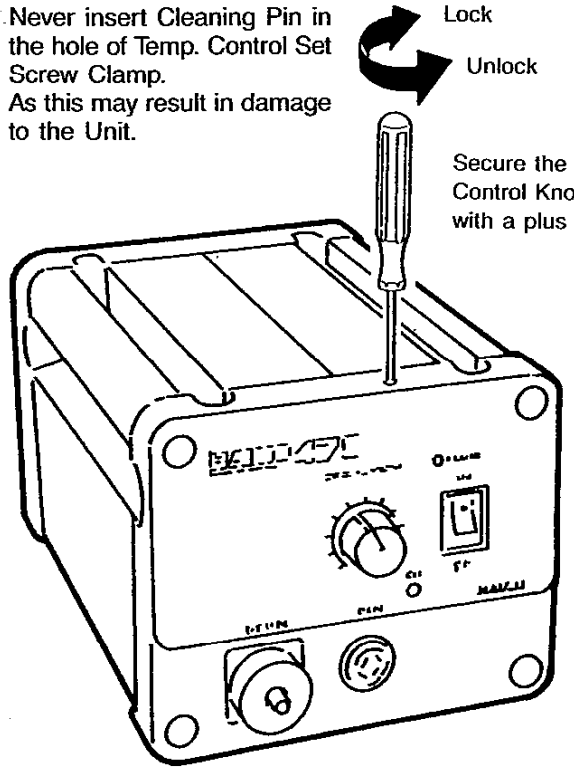
### ② Clean the tip of the Nozzle

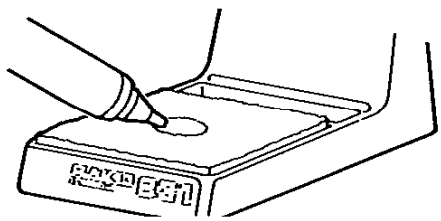
- Keep the solder-plated section of the Nozzle a shiny white by coating it with a small amount of solder.

> If the tip of the Nozzle is coated with oxide, the Nozzle's heat conductivity will be lowered. Coating the tip with a small amount of fresh solder ensures maximum heat conductivity.

The Temperature can be adjusted between 380°C (716°F) and 480°C (896°F) (±16°C/±30°F) with Temperature Control Knob.
This Unit has excellent thermal recovery to operate with lower temperature than conventional desoldering tool. We recommend to operate under position '2' (398°C, ±16°C/750°F ±30°F)

Note: Never insert Cleaning Pin in the hole of Temp. Control Set Screw Clamp.
As this may result in damage to the Unit.



Wipe away any oxide or old solder from the Nozzle using the hole in the center of the sponge.

## ③ Melt the solder.

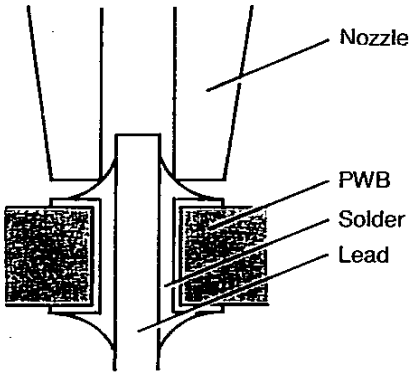
- Apply the Nozzle to the soldered part and melt the solder.

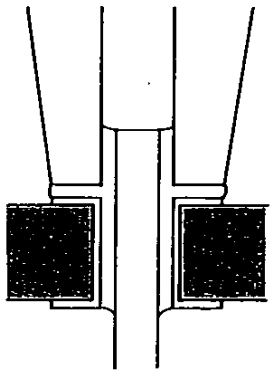
  Note: Never allow the Nozzle to touch the board itself.

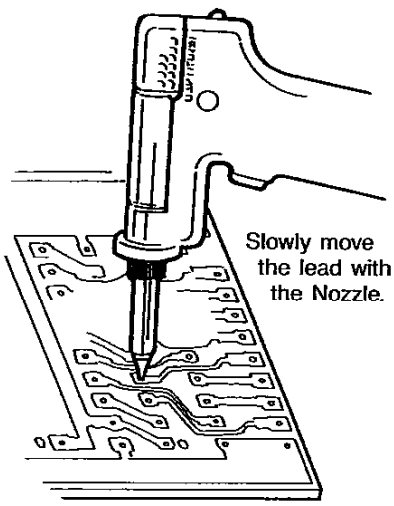
- Confirm that the solder is melted.

  Note: To confirm that all the solder is melted, observe the inside of the hole and the backside of the PWB. If this is difficult to do, try slowly moving the lead with the Nozzle—if the lead moves, the solder is melted.

  Note: Never move the lead by force. If it doesn't move easily, the solder isn't yet fully melted.



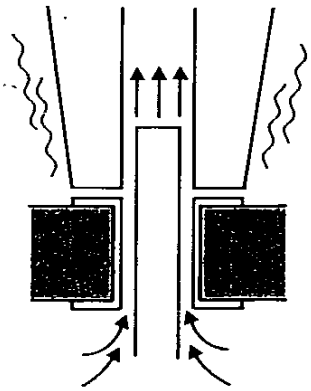



## ④ Absorb the solder.

- After confirming that the solder is completely melted, absorb the solder by squeezing the trigger on the Gun.

  Note: Never leave any solder remaining inside the hole in the PWB.

- After fully absorbing all the solder, cool the soldering junction in order to prevent it from becoming resoldered.



Absorb the solder by slowly moving the lead back and forth with the tip of the Nozzle.

## ⑤ Problems during Desoldering.

- If solder remains, resolder the component and repeat the desoldering process.

# Operation

Heated solder and flux can cause oxides to form and adhere to the Nozzle and the inside of the Heating Element. These oxides not only lower the heat conductivity, but can also clog the Nozzle and Heating Element, resulting in a drop in suction efficiency. Should there be a noticeable drop in suction efficiency during operation, replace the filter and clean the Nozzle and Heating Element with the provided Cleaning Pin.

## Cleaning during Operation

### ① Observing the Indicator

While looking at the indicator and with the hole of the Nozzle open, pull the trigger and look at the indicator. If it is red, clean the Nozzle and Heating Elements, empty the Filter Pipe, and replace the Filters. If the indicator is blue, cleaning is not necessary and operations can be resumed.

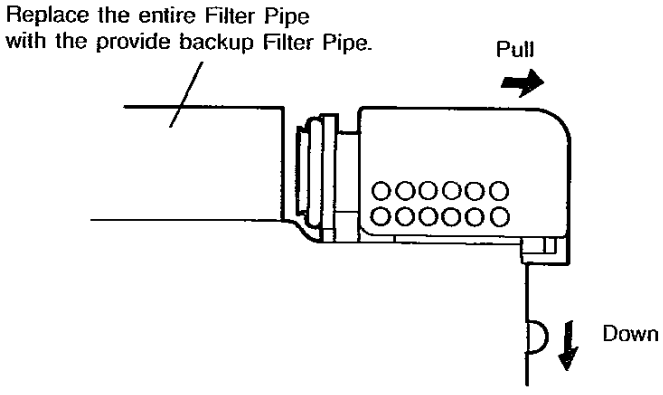
Note: The indicator will not operate accurately if the hole of the nozzle is closed or if the solder in the hole of the PWB is not melted.

Note: The indicator on Hakko 471 is read is a different way. For instructions on the reading the 471 indicator, please refer to the Hakko 471 instruction manual.

| Normal | Abnormal | Solution |
|---|---|---|
|  |  | If the indicator is more than half red, replace the filter and clean the Nozzle and the inside of the Heating Element. (refer to p.12, Maintenance of the Desoldering Gun) |
| Blue or slight amount of red can be seen. | More than half of the indicator is red. | |

### ② Replacing the Filter

During operation, the Filter Pipe is very hot. Wait until the Filter Pipe is cool before replacing the Filter. We recommend keeping a second Filter Pipe containing new Filters handy, and replacing the installed Filter Pipe with this backup Filter Pipe.



## Problems during Desoldering

**A. The solder in the junction is not sufficiently melted.**

**B. Suction power is dropping.**

### A. The solder in the junction is not sufficiently melted.

**●Temperature is not high enough.**

The following parts require a greater heat capacity to desolder.

- Multi-layer PWBs, power supplies, ground planes in through-hole PWBs high-capacity transistors, triacs with heat radiation fins, tuner PWB ground wires, and large-scale transformer terminals.

Use a preheating oven or heating gun to heat the PWB to a temperature that won't damage the board or its components [between 70°C (160°F) and 80°C (180°F)], then desolder.
Do not increase the temperature of the gun by recalibration as this may damage the PWB board and its components.

**●Nozzle is worn out.**

- When the Nozzle begins to wear out, the heating efficiency begins to decline. Check the Nozzle. If the solder plating is damaged (p.12), or the Nozzle is eroded (p.12), replace the Nozzle.

### B. Suction Power is dropping.

- Replace the Filters, and clean the Nozzle and the inside of the Heating Element. (refer to p.12, Gun and Station Service)

**●Air is leaking from the vacuum system.**

Air leakage cannot be determined from the indicator. Check the air-tightness of the following parts and replace any that are worn.

a. Contact point of the Nozzle and Heating Element
b. Front Holder and nearby parts.
c. O-ring in Back Holder
d. Hose
e. Vacuum Outlet Cap

## Post-operation Maintenance

To ensure a long service life, always perform the following maintenance procedures immediately after using the Hakko 470 unit.

- Remove all solder from the inside of the Nozzle and Heating Element.
- Clean the tip of the Nozzle with the Cleaning Sponge, then coat the tip with a fresh layer of solder to protect the solder plating.

## Troubleshooting Guide

**●Power Lamp does not light up.**

**•Is the Power Cord plugged in correctly?**
Securely insert the Power Cord into the power supply.

**•Is the Fuse blown?**
Replace with a new fuse (2 amp.)

**●Pump does not operate.**

**•Is the Cord Assembly properly connected?**
Reconnect the Cord Assembly (p.6)

**•Is the Nozzle or hole in the Heating Element clogged?**
Clean it. (p.12)

**●Solder is not being absorbed.**

**•Is the Spring Filter full of solder?**
Replace it with a new one.

**•Is the Ceramic Filter hardened?**
Replace it with a new one.

**•Is there a vacuum leak?**
Check the connections and replace any worn parts.

**●The Nozzle does not heat up.**

**•Is the Desoldering Gun Cord Assembly properly connected?**
Reconnect it. (p.6)

**•Is the Heating Element damaged?**
Replace it.

Note: When repairs are needed, please send both the Desoldering Gun and the Station to your sales agent.

# Maintenance (Desoldering Gun)

Properly maintained, the Hakko 470 Desoldering Gun should provide years of good service.
Efficient desoldering depends upon the temperature, and the quality and quantity of the solder and flux. Perform the following service procedures as dictated by the conditions of the Gun's usage.
The Desoldering Gun will be extremely hot. During maintenance, please wear gloves and work carefully.

## Servicing the Desoldering Gun

### ① Inspect and clean the Nozzle

- Plug in the power cord, turn the Power Switch On and let the Nozzle heat up.
- Clean out the hole of the Nozzle with the Nozzle Cleaning Pin.

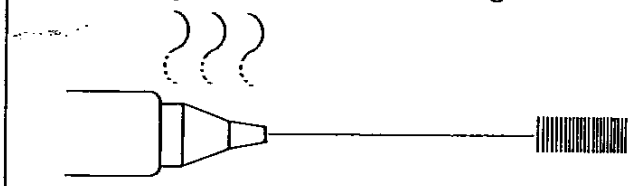
  Note: The Cleaning Pin will not pass through the Nozzle until the solder inside the Nozzle is completely melted.

- Check the condition of the solder plating on the tip of the Nozzle.
- If it is slightly worn, recoat the tip with fresh solder to prevent oxidation.
- If it is severely worn, replace the Nozzle.
- Check the condition of the surface and inside hole of the Nozzle.
- If either is worn or eroded, or the inside diameter seems unusually wide, replace the Nozzle.

  Note: The inside hole and the surface of the Nozzle is plated with a special alloy. Should this alloy become eroded by high-temperature solder, the Nozzle will not be able to maintain the proper temperature.

- If the Cleaning Pin and Cleaning Drill does not pass through the hole in the Nozzle, replace the Nozzle.

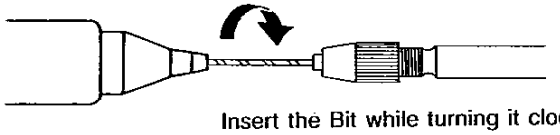
**Cleaning with the Nozzle Cleaning Pin**



The Cleaning Pin passes completely through the hole.

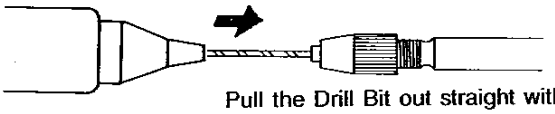
**Cleaning with the Cleaning Drill**

**•Before Cleaning**



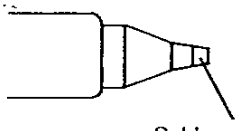
Insert the Bit while turning it clock wise.

**•After Cleaning**



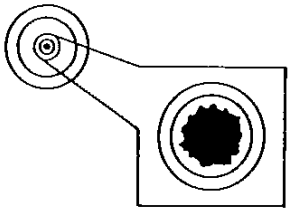
Pull the Drill Bit out straight without turning it.

Caution:
If the Cleaning Drill is forced into the Nozzle, the Drill Bit could break or be damaged.



Solder plating

Caution:
Please use the proper sized Cleaning Pin or Cleaning Drill for the Nozzle diameter.

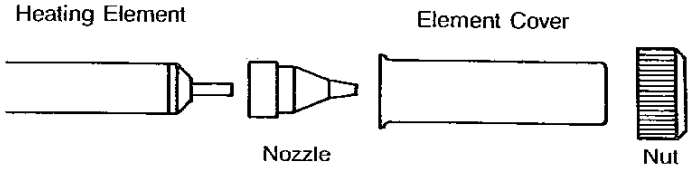


Diameter of hole is widened through erosion.

Note:
Unfortunately, it is often difficult to observe this condition, therefore, if desoldering efficiency goes down and all other parts appear to be OK, the Nozzle is probably eroded and should be replaced.

## ② Disassemble the Heating Element

Caution: The Heating Element is very hot during operation.



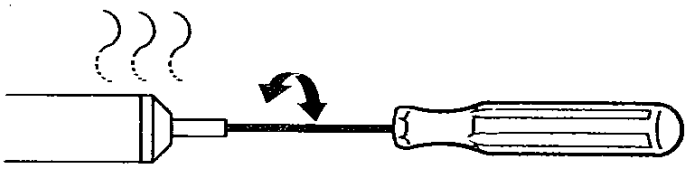

Remove the Nut.

## ③ Clean out the hole in the Heating Element

- Be sure the solder in the hole in the Heating Element is completely melted, then clean the hole with the provided Cleaning Pin.

Note: If the Cleaning Pin cannot pass through the hole, replace the Heating Element.

Scrape away all oxidation from the hole in the Heating Element until the Cleaning Pin passes cleanly through the hole.

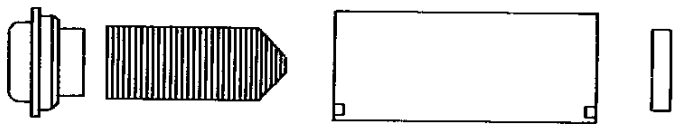


The Cleaning Pin passes cleanly and completely through the hole.

## ④ Replace the Filters

- Turn the Power Switch OFF.
- When the Filter Pipe is cool to the touch, push down the Release Knob at the back of the Gun and remove the Filter Pipe.

Front Holder



Spring Filter

Ceramic Paper Filter (L) **(No. A1033)**

- Examine the Front Holder.

**Replace**
Stiff and cracked.

- Examine the Spring Filter.

**Replace**
Solder is collected in two-thirds of the Spring Filter.

- Examine the Ceramic Paper Filter. **(A1033)**

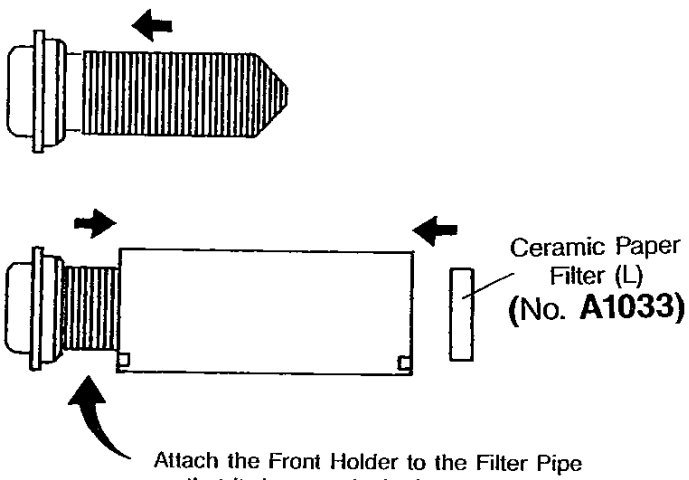
**Replace**
Ceramic Paper Filter is stiff with flux and solder.

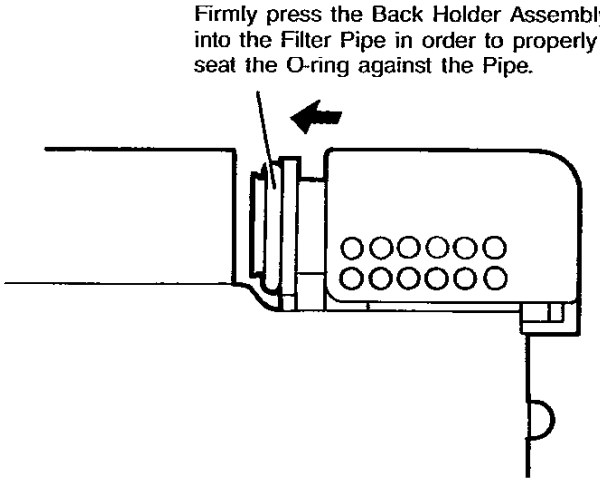
## ⑤Secure the filters

- Attach the Spring Filter to the Front Holder.
- Attach the Front Holder to the Filter Pipe.

Caution: Be sure the Front Holder is correctly aligned.

Caution: Use Ceramic Paper Filter (L) for Filter Pipe (Gun). Using of the Ceramic Paper Filter (S) in the Filter Pipe may cause to break or the power to drop.




## ⑥Assemble the Heating Element

- Attach the Nozzle and securely tighten the Nut.

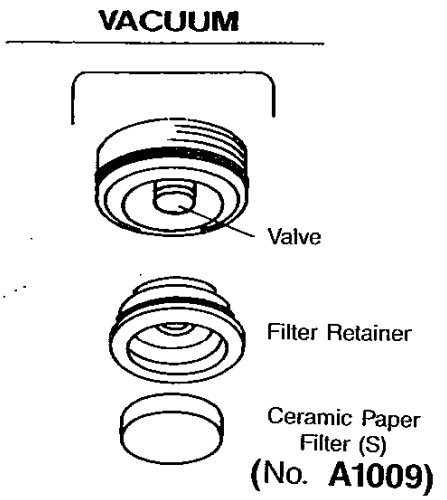
Caution: If the nut is loose, air will leak and the temperature will drop.

# Maintenance (Station)

## Cleaning the inside of the Filter Case

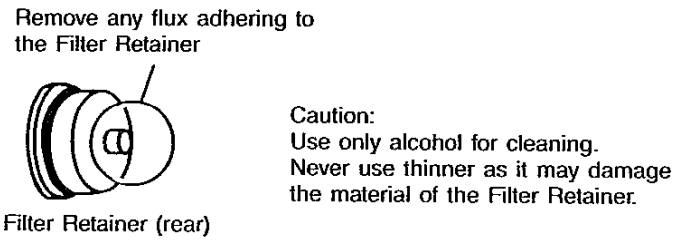
### ①Replace the Ceramic Paper Filter (A1009)

Detach the Filter Retainer, being very careful not to let the Valve pop out. Remove the Ceramic Paper Filter and inspect it. If it is stiff with flux, replace it.




### ②Clean the Filter Retainer

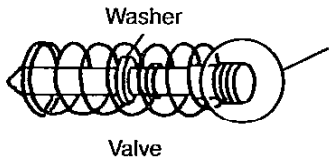
Remove any flux adhering to the Filter Retainer.




### ③Clean the Valve

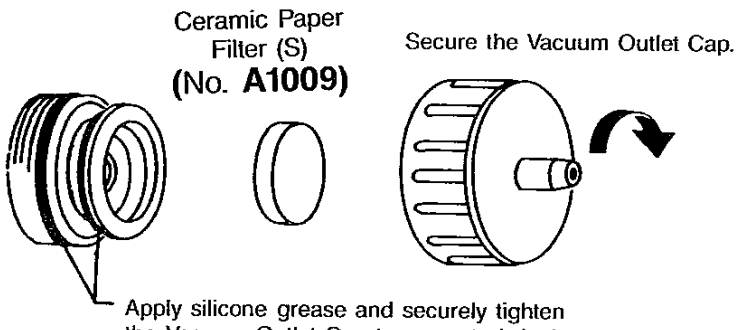
Remove any flux adhering to the Valve.

Caution: Do not misplace the white washer that is attached to the Valve.




### ④Reassemble the Filter Case

Caution: Set the Ceramic Paper Filter (S) for Filter Case (Station).
Using Ceramic paper Filter (L) in the Filter Case may cause to break or the power to drop.

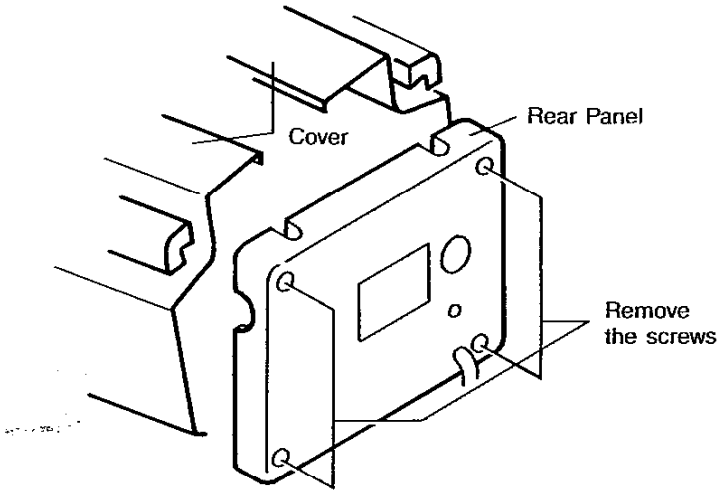


## Cleaning the Pump

Caution: Unplug the Power Cord before starting this procedure.

### ① Disassemble the Pump Heads

- Remove the Rear Panel
- Remove the Cover
- Remove the Pump Head from each side of the Pump.




### ② Clean the Pump Head

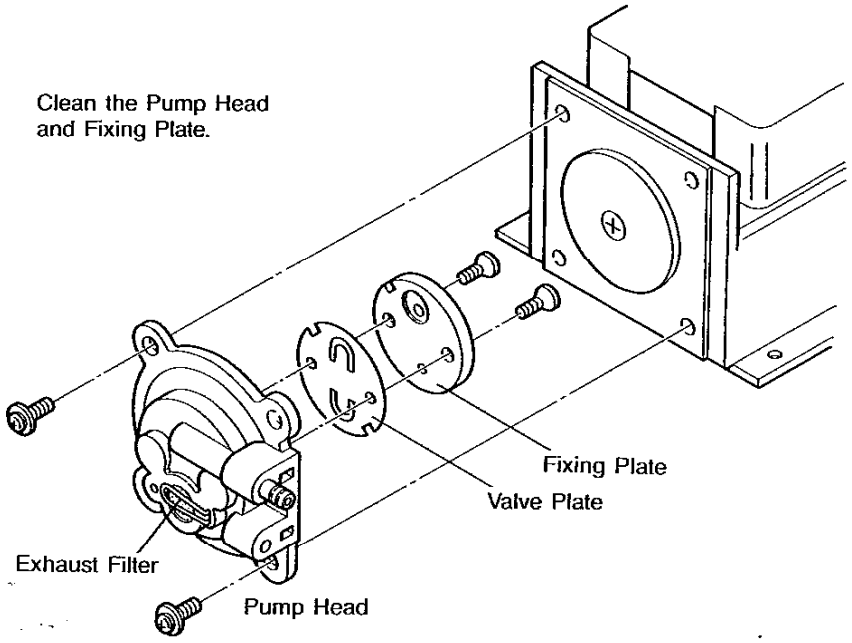
- Remove the Valve Plate and Fixing Plate.
- Remove any flux adhering to the Plates.

**Caution:**
If the Fixing Plate is difficult to remove, apply hot air to it to warm it up. Never use excessive force to remove the Plate as it is easy to bend, and a bent Plate will allow air to leak out and reduce solder vacuuming efficiency.

**Caution:**
Clean the Plates only with alcohol or thinner.

**Replace:**
If the Valve Plate is bent or stiff, replace it.

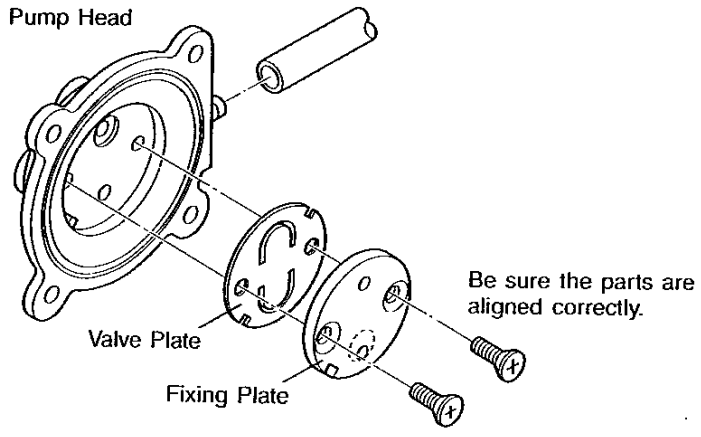
- If the Exhaust Filter is dirty, replace it.




### ③ Assemble the Pump Heads

Reassemble the Valve Plate and Fixing Plate

**Caution:**
When assembling the Pump, be sure to check for air leaks.



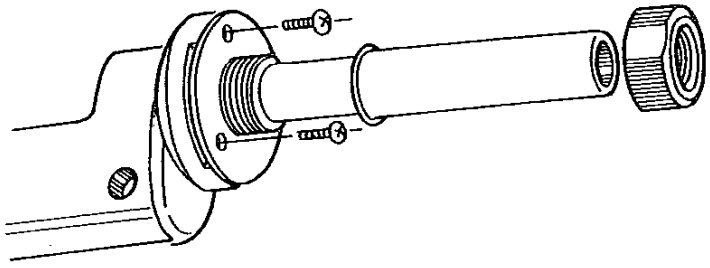
# Replacement Parts

## Replacing the Heaing Element

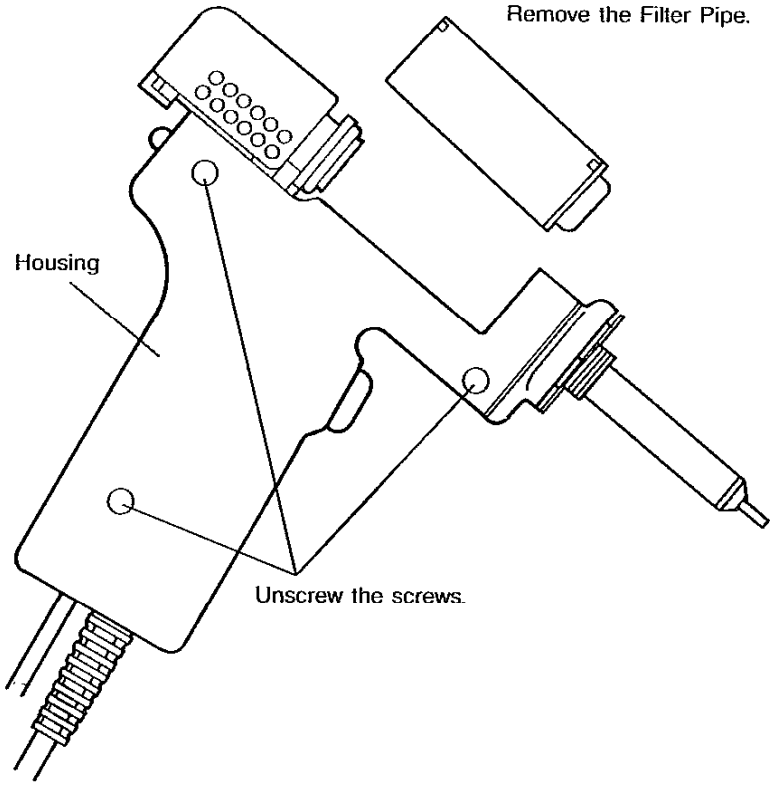
The resistance value of a working Heaing Element is 2-4Ω at 23°C (73°F). If the value you get is outside this range, replace the Heating Element.

### ① Disassemble the heating parts

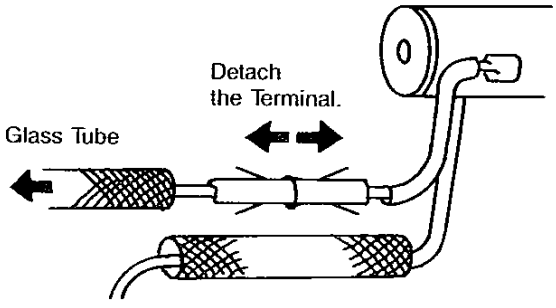
Caution: Unplug the Power cord before starting this procedure.



### ② Separate the Housing.



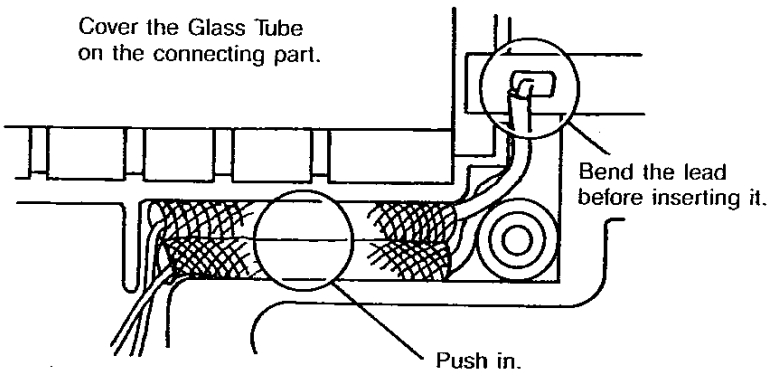

### ③ Detach the Terminal and remove the Heating Element.



## ④ Insert a new Heating Element and reassemble.

(Heating Element 24V-50W)

Caution: Before reassembling enclosure, make sure connectors are completely covered by Glass Tube.

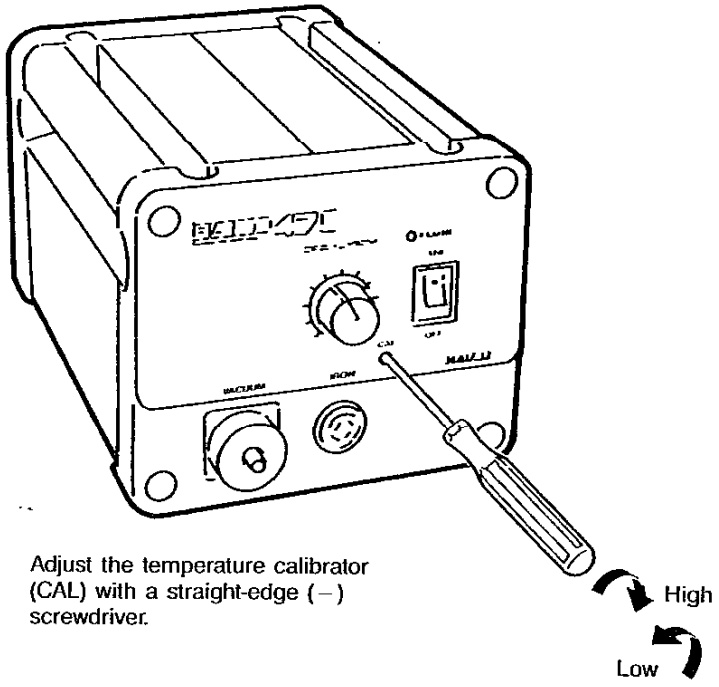



Position the leads in the groove and press them into place.
Be careful that the leads do not get caught in the Housing.

## ⑤ Recalibrate the temperature.

The resistance of new Heating Elements varies, resulting in variations in operating temperatures. It is necessary to recalibrate the temperature every time the Heating Element is replaced.

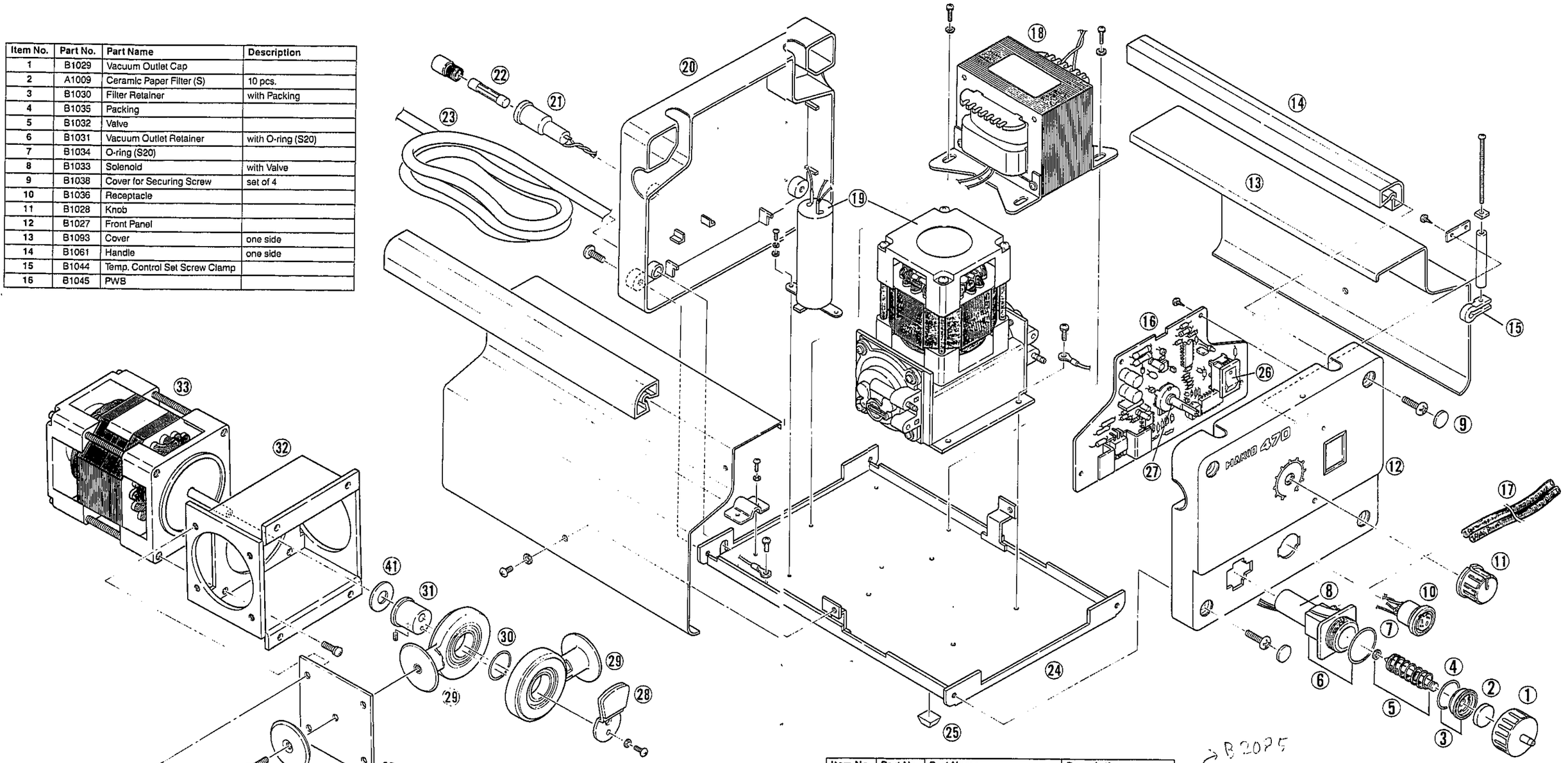
1. Set the Temperature Control Knob to 1 and allow the Gun to warm up for 3 minutes.
2. Using a tip thermometer, adjust the temperature calibrator (marked "CAL") until the Nozzle temperature reads 380°C (716°F).




Adjust the temperature calibrator (CAL) with a straight-edge (−) screwdriver.

# Parts List (Station)

| Item No. | Part No. | Part Name | Description |
|---|---|---|---|
| 1 | B1029 | Vacuum Outlet Cap | |
| 2 | A1009 | Ceramic Paper Filter (S) | 10 pcs. |
| 3 | B1030 | Filter Retainer | with Packing |
| 4 | B1035 | Packing | |
| 5 | B1032 | Valve | |
| 6 | B1031 | Vacuum Outlet Retainer | with O-ring (S20) |
| 7 | B1034 | O-ring (S20) | |
| 8 | B1033 | Solenoid | with Valve |
| 9 | B1038 | Cover for Securing Screw | set of 4 |
| 10 | B1036 | Receptacle | |
| 11 | B1028 | Knob | |
| 12 | B1027 | Front Panel | |
| 13 | B1093 | Cover | one side |
| 14 | B1061 | Handle | one side |
| 15 | B1044 | Temp. Control Set Screw Clamp | |
| 16 | B1045 | PWB | |



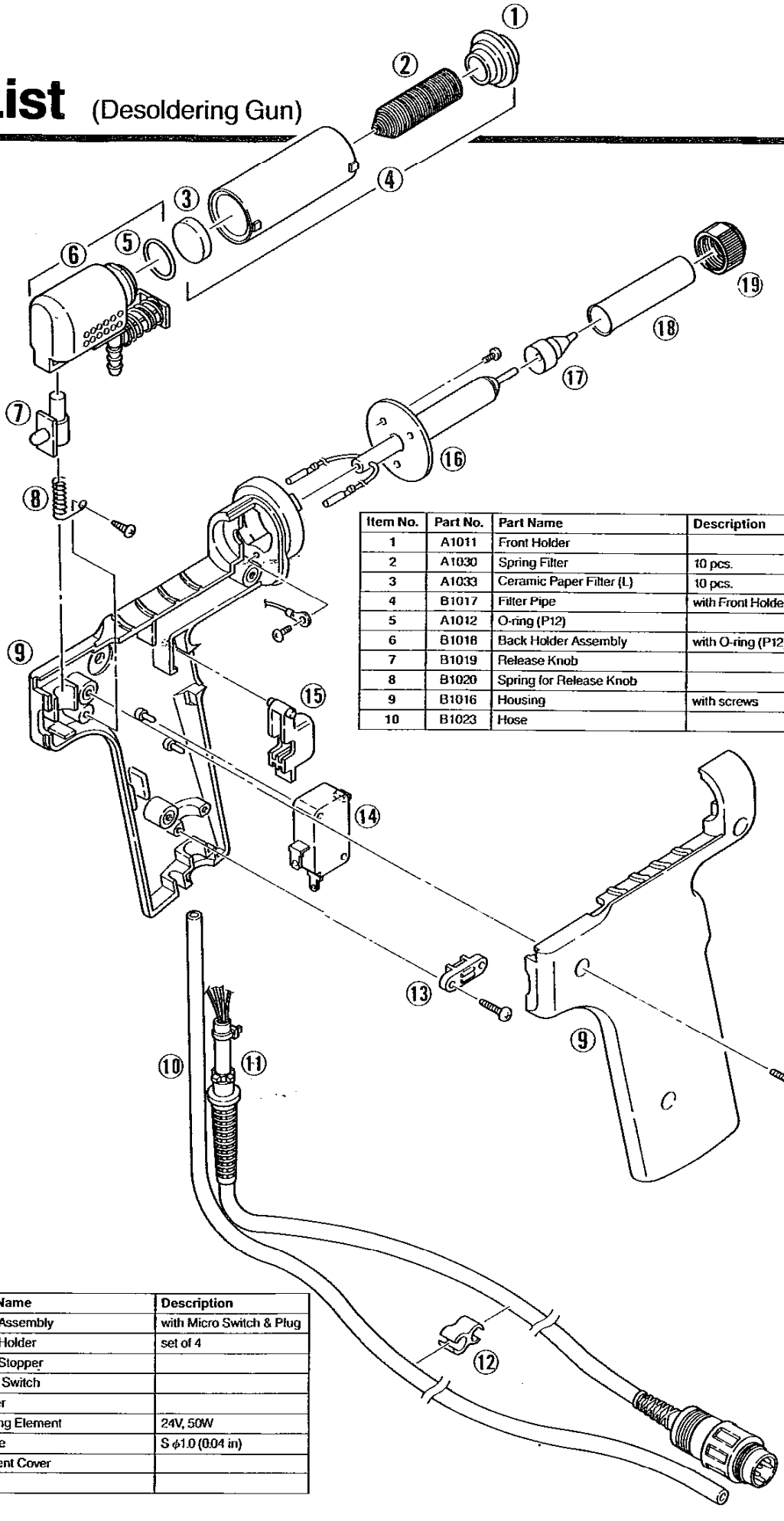

| Item No. | Part No. | Part Name | Description |
|---|---|---|---|
| 17 | B1046 | Hose | with Spring (set of 2) |
| 18 | B1060 | Transformer | 100-24V |
| | B1129 | Transformer | 110-24V |
| | B1131 | Transformer | 220-24, 230-24, 240-24V |
| 19 | B1047 | Pump | with Motor Capacitor |
| 20 | B1040 | Rear Panel | with Rating Seal |
| 21 | B1041 | Fuse Holder | w/o Fuse |
| | B1134 | Fuse Holder | w/o Fuse/for Australian 240V, U.K. 240V & Eur. 220, 230V |
| 22 | B1042 | Fuse | 125V-2A/100, 110V |
| | B1132 | Fuse | 250V-2A/220, 230, 240V |
| | B1133 | Fuse | 250V-2A/SEMKO/Australian 240V, U.K. 240V & Eur. 220, 230V |
| | B1139 | Fuse | 250V-1A/SEMKO |

| Item No. | Part No. | Part Name | Description |
|---|---|---|---|
| 23 | B1043 | Power Cord | PNCTF 100V |
| | B1104 | Power Cord | SVT 110V, 220V |
| | B1130 | Power Cord | VCTF |
| | B1135 | Power Cord | VSRF |
| | B1170 | Power Cord | PVC |
| | B1716 | Power Cord | PNCTF, Korean 220V |
| | B1719 | Power Cord | SEMKO |
| 24 | B1039 | Chassis | |
| 25 | B1037 | Rubber Stopper | set of 4 |
| 26 | B1084 | Switch | |
| 27 | B1078 | Volume Type Temp. Control | |
| 28 | B1053 | Balance Weight | |
| 29 | B1312 | Crank | with bearing |

B2025

| Item No. | Part No. | Part Name | Description |
|---|---|---|---|
| 30 | B1057 | Ring for Bearing | |
| 31 | B1049 | Crank Shaft | |
| 32 | B1052 | Pump Frame | |
| 33 | B1048 | Motor | with Capacitor |
| 34 | B1055 | Diaphragm Setting Plate | |
| 35 | A1013 | Diaphragm | set of 2 |
| 36 | B1056 | Fixing Plate | |
| 37 | A1014 | Valve Plate | set of 2 |
| 38 | B1050 | Pump Head | with Hose Connector |
| 39 | B1059 | Exhaust Filter | set of 2 |
| 40 | B1313 | Filter Retaining Pin | |
| 41 | B1300 | Plain Washer | 6.5 mm × 15 mm × 2t |

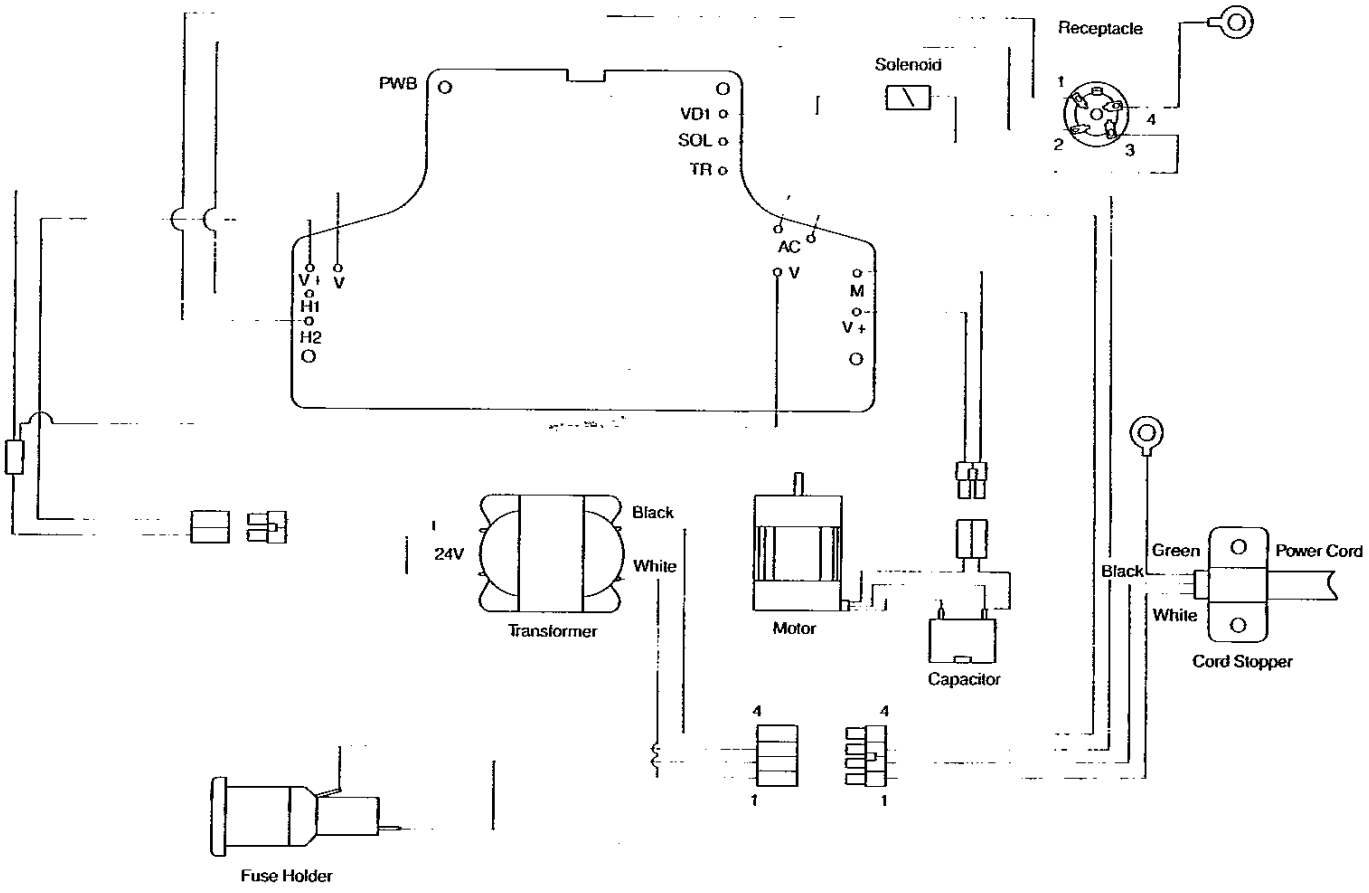
# Parts List (Desoldering Gun)




| Item No. | Part No. | Part Name | Description |
|---|---|---|---|
| 1 | A1011 | Front Holder | |
| 2 | A1030 | Spring Filter | 10 pcs. |
| 3 | A1033 | Ceramic Paper Filter (L) | 10 pcs. |
| 4 | B1017 | Filter Pipe | with Front Holder & Filters |
| 5 | A1012 | O-ring (P12) | |
| 6 | B1018 | Back Holder Assembly | with O-ring (P12) |
| 7 | B1019 | Release Knob | |
| 8 | B1020 | Spring for Release Knob | |
| 9 | B1016 | Housing | with screws |
| 10 | B1023 | Hose | |

| Item No. | Part No. | Part Name | Description |
|---|---|---|---|
| 11 | B1025 | Cord Assembly | with Micro Switch & Plug |
| 12 | B1024 | Cord Holder | set of 4 |
| 13 | B1022 | Cord Stopper | |
| 14 | B1026 | Micro Switch | |
| 15 | B1021 | Trigger | |
| 16 | A1008 | Heating Element | 24V, 50W |
| 17 | A1003 | Nozzle | S $\phi$1.0 (0.04 in) |
| 18 | B1014 | Element Cover | |
| 19 | B1015 | Nut | |

# Wiring


Receptacle
Solenoid
PWB
VD1
SOL
TR
AC
V
M
V+
H1
H2
24V
Black
White
Transformer
Motor
Capacitor
Green
Power Cord
Black
White
Cord Stopper
Fuse Holder

THIS PRODUCT CONFORMS
TO ELECTROMAGNETIC
COMPATIBILITY
DIRECTIVE 89/336/EEC

HAKKO

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**HAKKO CORPORATION**


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