

**AOYUE<sup>®</sup>**

**INT 701A+**

**Repairing System**

**INSTRUCTION MANUAL**

Thank you for purchasing Aoyue Int701A+ Repairing System.  
It is important to read the manual before using the equipment.  
Please keep manual in accessible place for future reference.

**!CAUTION**

Remove the pump securing screw (M5\*12 marked red)  
from the bottom of the station. Failure to do so may  
result in serious problem.

Manufacturer:

**AOYUE TONGYI ELECTRONIC EQUIPMENT FACTORY**

Jishui Industrial Zone, Nantou, Zhongshan City,

Guangdong Province, P.R.China

<http://www.aoyue.com>

This manual is designed to familiarize and instruct the operator with the proper usage and maintenance of the equipment. The "Care and Safety Precautions" section explains the hazards of using any type of soldering or reworking device. Please read carefully and observe the guidelines in order to maximize usage and minimize the risk of injury or accidents .

## TABLE OF CONTENTS

Package Inclusion .....	3
Specifications .....	3
Safety Precautions .....	4
Control Panel Guide .....	5
Assembly and Preparation .....	6—7
Operating Guidelines .....	8—10
Care and Maintenance .....	11—17
Basic Troubleshooting Guide .....	18—19

## TROUBLESHOOTING GUIDELINES

### 6. The tip can not be pulled off.

- \* Is the tip seized?

Is the tip swollen because of deterioration?

Replace the heating element and the tip.

### 7. The tip doesn't hold the desired temperature.

- \* Is the iron calibrated correctly?

Recalibrate.

### 8. pump does not operate.

- \* Is the cord assembly properly connected?

Reconnect the cord assembly.

- \* Is the nozzle or hole in the heating element clogged?

Clean it.

### 9. Solder is not being absorbed?

- \* Is the spring filter full of solder?

Replace it with a new one.

- \* Os the ceramic filter hardened ?

Replace it with a new one.

- \* Is there a vacuum leak?

Check the connections and replace any worn parts.

### 10.The nozzle does not heat up.

- \* Is the desoldering gun cord assembly properly connected?

Reconnect it .

- \* Is the heating element damaged?

Replace it .

**Note: When repairs are needed please send both desoldering gun and the station to your sales agent.**

## TROUBLESHOOTING GUIDELINES

### ***Soldering and Desoldering***

#### **1. 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?  
Determine why the fuse blew and eliminate the cause, then replace the fuse.
- a. Is the inside of the soldering iron or desoldering gun short-circuited
- b. Is the grounding spring touching the heating element?
- c. Is the heating element lead twisted and short-circuit?

#### **2. The heater lamp light up but the tip does not heat up.**

- \* Is the soldering iron cord broken?  
Refer to 'Checking for breakage of the cord assembly'
- \* Is the heating element broken?  
Refer to 'checking for breakage of the cord assembly'

#### **3. The tip heats up intermittently.**

- \* Is the soldering iron cord broken?  
Refer to 'checking for breakage of the cord assembly'

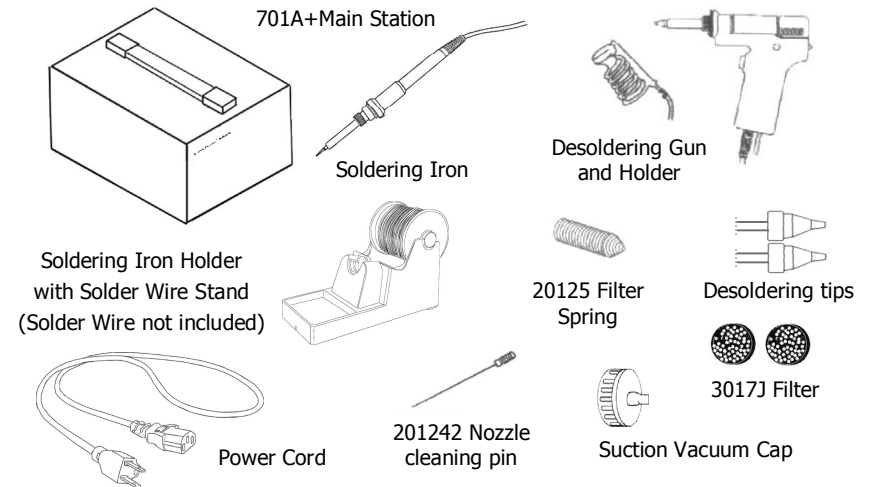
#### **4. The tip is not wet .**

- \* Is the tip temperature too high?  
Set an appropriate temperature.
- \* Is the tip clean?  
Refer to 'tip care and use'

#### **5. The tip temperature is too low.**

- \* Is the tip coated with oxide?  
Refer to 'Inspect and clean the tip'
- \* Is the iron calibrated correctly?  
Recalibrate.


## PACCKAGE INCLUSIONS



## SPECIFICATION

<b>MAIN STATION</b>	
Power Input :	available in 110V / 220V
Station Dimensions:	188(w) x 126(h) x 250(d) mm
Weight:	5.6Kg
<b>SOLDERING IRON</b>	
Power Consumption:	35W
Temperature Range:	200°C - 480°C
Heating Element:	Ceramic Heater
Output Voltage:	24V
<b>DESOLDERING GUN</b>	
Temperature Range:	200°C - 480°C
Heating Element:	Ceramic Heater
Output Voltage:	24V

## SAFETY PRECAUTIONS

 **CAUTION: Improper usage can cause serious injury to personnel and/or damage to equipment. For your own safety, please observe the**

- Check each component after opening the package to make sure everything is in good condition. If there are any suspected damage, do not use the item and report the issue to your vendor.
- Turn OFF the main power switch and unplug the device when moving the device from one location to another.
- Do not strike or subject the main unit to physical shock. Use carefully to avoid injury and damage to any part.
- Handle with care.
  - Never drop or sharply jolt the unit.
  - Contains delicate parts that may break if the unit is dropped.
- Make sure the equipment is always grounded. Always connect power to a grounded receptacle.
- Temperature may reach as high as 480°C when switched ON.
  - Do not use the device near flammable gases, paper and other flammable materials.
  - Do not touch heated parts, which can cause severe burns.
  - Do not touch metallic parts near the tip.
- Disconnect the plug from the power source if the unit will not be used for a long period.
  - Turn off power during breaks, if possible.
- Use only genuine replacement parts.
  - Turn off power and let the unit cool before replacing parts.
- The unit may produce a small amount of smoke and unusual odor during initial usage. This is normal and should not yield any negative result when reworking.
- Soldering process produces smoke — use on well ventilated place.
- Do not alter the unit, specifically the internal circuitry, in any manner.

## CARE and MAINTENANCE

### Broken Soldering Iron Cord

#### ***There are two methods of testing the soldering iron cord.***

1. Turn the unit ON and set the temperature control knob to 480°C. Then wiggle and kink the iron cord at various locations along its length, including in the strain relief area. If the LED heater lamp flickers. Then the cord needs to be replaced.
2. Check the resistance between the plug and the wire on the terminal. The values should be 0  $\Omega$  if the value is  $\infty$ , the cable should be replaced.



## CARE and MAINTENANCE

### Checking of the Heating Element And Cord Assembly

#### **To test if the heating element is in working condition:**

Let whole assembly cool down to room temperature before continuing the tests below:

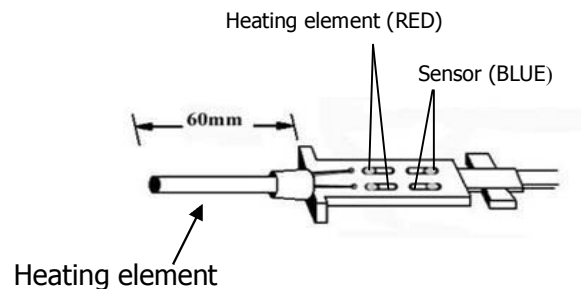
1. Follow "disassembling the hand piece " guide.
2. Do the following tests on the hand piece PCB board:

Resistance value of heating element (RED) 2.5 — 3.5  $\Omega$

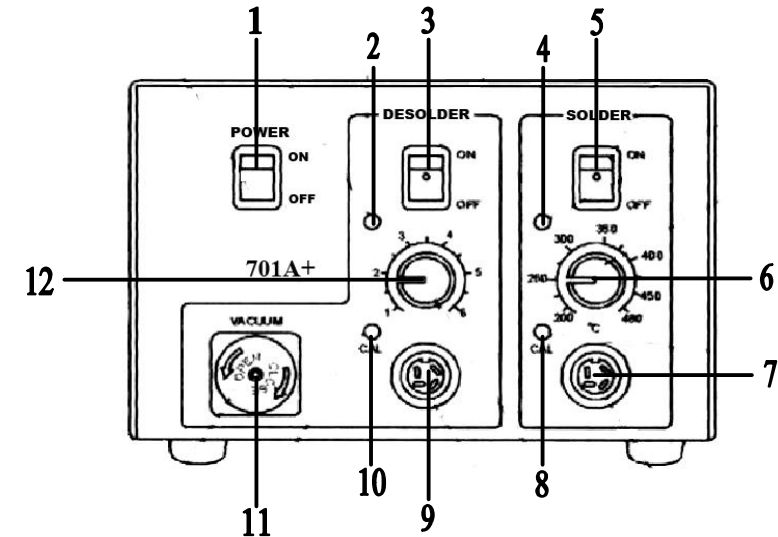
Resistance value of sensor (blue) 43 — 58  $\Omega$

After testing check results with the following:

- If the resistance value is not as stated above replace the heating element.
- If a 0  $\Omega$  or infinite resistances are measured check for shorts or open circuits.
- Intermittent readings can also be caused by cold solder double check solder points if the heating element has recently been replaced.

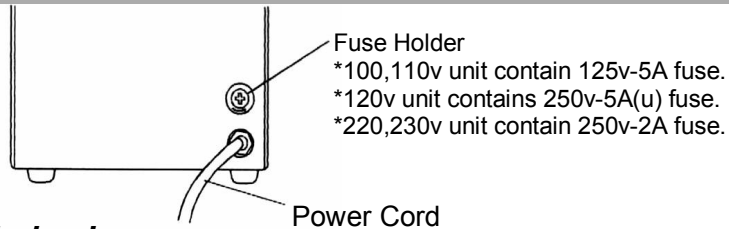


## CONTROL PANEL GUIDE



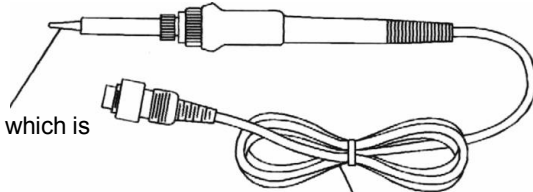
- [1] **Main Power Switch**
- [2] **LED indicator for Desoldering function**
- [3] **Function switch for Desoldering Gun**
- [4] **LED indicator for Soldering function**
  - Blinks on and off when the tip temperature reaches the set temperature.
- [5] **Function switch for Soldering Iron**
- [6] **Temperature control knob for Soldering Iron**
- [7] **Receptacle connector for Soldering Iron**
- [8] **Soldering CAL pot**
  - Used for calibrating the temperature after replacing the heating element, soldering iron or solder tip.
- [9] **Receptacle connector for Desoldering Gun**
- [10] **Desoldering CAL pot**
  - Used for calibrating the temperature after replacing the heating element, desoldering gun or nozzle.
- [11] **Vacuum Cap connects with the hose of the Gun**
- [12] **Temperature control knob for Desoldering Gun**

## ASSEMBLY and PREPARATIONS

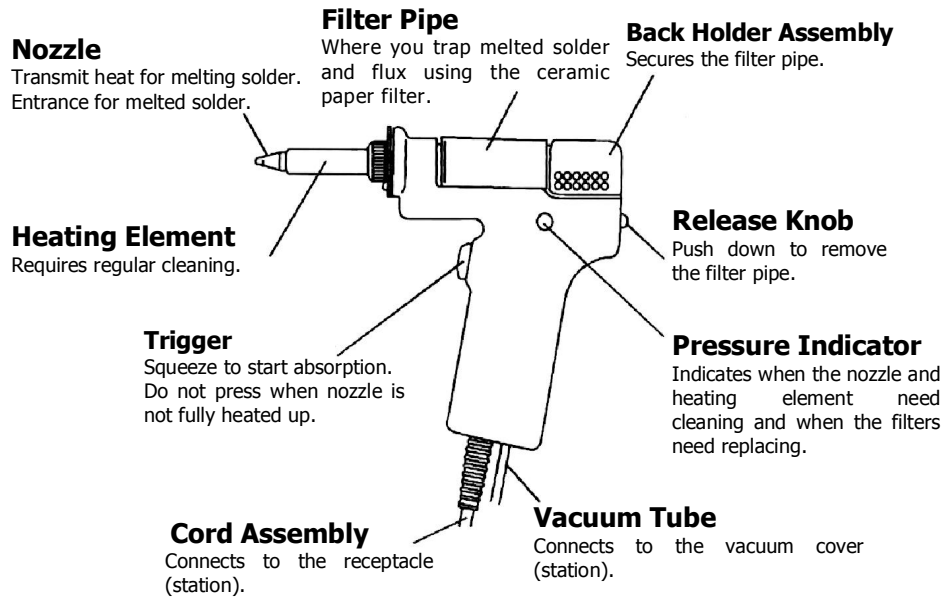


### Soldering Iron

Soldering tip  
 Heats the solder and things which is soldered, Expendable parts



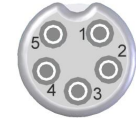
### Desoldering Gun



## CARE and MAINTENANCE

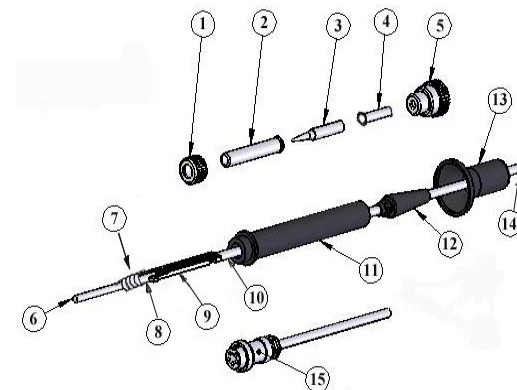
Disconnect the plug and measure the resistance value between the connecting plug pins as follows. if the values are outside the ff. values. Replace the heating element (sensor) and /cord assembly. Refer to procedures.

Pins 1 & 2	2.3 to 3.5 $\Omega$
Pins 4 & 5	43 to 58 $\Omega$
Pin 3 & solder tip	Below 2 $\Omega$



### The hand piece may be disassembled for trouble shooting and repair:

1. Turn of main station and unplug from power source.
2. Detach the soldering iron plug("15" as shown in the figure below) from the main unit.
3. Turn the nut, ("1" as shown in the figure below) counter clockwise.
4. Pull out the tip enclosure ("2" as shown in the figure below), the tip("3" as shown in the figure below) , and the tip stand ("4" as shown in the figure below).
5. Turn the front module ("5" as shown in the figure below) counter clockwise to release it from the main body.
6. Push out the Heating element ("6" as shown in the figure below) via the cord ("14" as shown in the figure below).



## CARE and MAINTENANCE

### Inspect and Clean the tip

#### **CAUTION: Never file the tip to remove oxide.**

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 there is black oxide on the solder-plated portion of the tip, apply new solder (containing flux) and wipe the tip on the cleaning sponge. Repeat until the oxide is completely removed, Coat with new solder.
4. If the is deformed or heavily eroded, replace with a new one.

### Calibrating the Soldering Iron temperature

The soldering iron should be recalibrated whenever the whole soldering iron is changed and when the heating element or tip is changed.

1. Connect the cord assembly plug to the receptacle on the station.
2. Set the temperature control knob to 400°C(750°F).
3. Turn the power switch to 'ON' and wait until the temperature stabilizes.
4. Place an external temperature sensor on the tip of the soldering iron.
5. When the temperature stabilizes, use a regular or small cross point screwdriver to adjust the screw (marked CAL at the station) until the external tip thermometer indicates the appropriate temperature.

## ASSEMBLY and PREPARATIONS

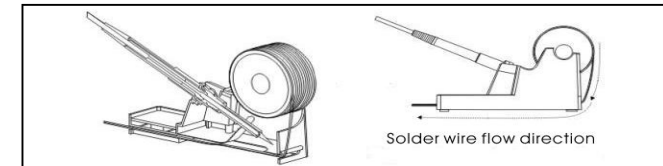
### A. Main Station

As soon as the equipment has been removed from the package, **REMOVE THE SCREW** located at the center of the bottom of the main unit. This screw holds the pump in place during transportation.

 **WARNING:** Failure to remove the screw before using the equipment can cause damage to the system.

### B. Soldering Iron

1. Install the solder wire to the soldering iron holder as in Figure 1.

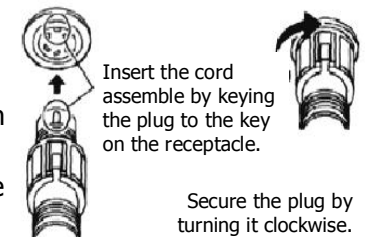


**Figure 1.** Soldering iron stand with solder wire holder

2. Connect the soldering iron cord assembly to the 6-pin output terminal found at the lower middle portion of the main unit.
3. Place the soldering iron to the soldering iron stand as shown above.
4. Dampen the large cleaning sponge and place it on the iron holder base.

### C. Desoldering Gun

1. Connect the cord of the desoldering gun to the 8-pin terminal .
2. Connect the vacuum tube to the suction vacuum cap.
3. Place the desoldering gun onto the holder in preparation for usage.



**CAUTION:** Be sure to turn off the switch before connecting or disconnecting the soldering iron and desoldering gun, failure to do so may damage the P. C. B.

## OPERATING GUIDELINES

### IMPORTANT REMINDERS:

1. Make sure the equipment is placed on a flat stable surface and all the heat-generating components placed on their respective holders or stands.
2. Ensure all function switches are OFF prior to reworking.
3. Ensure all terminal connections are properly secured.

### **A. INITIAL PROCEDURES**

1. Plug the device to the main power source using the power cord provided in the package.
2. With all function switches deactivated and all terminal connections properly secured, switch ON the device by activating the main power switch ("1" from the control panel).

### **B. DESOLDERING**

1. Follow the initial procedures above, "**A. INITIAL PROCEDURES**".
2. Turn ON the Desoldering function switch ("3" from the control panel).
3. Set the temperature.
  - a. Always set the temperature to as low as possible for the work being done.
  - b. To set the temperature precisely, measure the temperature at the nozzle using a thermocouple and adjust the temperature control knob accordingly.
  - c. The temperature can be adjusted between 380°C (716°F) and 480°C (896°F) with temperature control knob.

Please refer to the chart below.

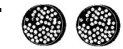
Knob	P.C.B.
4-5	Single-sided P.C.B
5-6	Through-hole P.C.B
5-6	Multilayer P.C.B

**CAUTION: The desoldering gun must be placed in the iron holder when not in use.**

## CARE and MAINTENANCE

### **General Guidelines:**

- Before usage dampen the filter pads with a little bit of water to allow efficient air passage and filter action, re-dampen pads frequently for maximum efficiency.



Filter Pads

- Routinely clean Spring Filter, and replace filter pads when they are dirty or clogged .



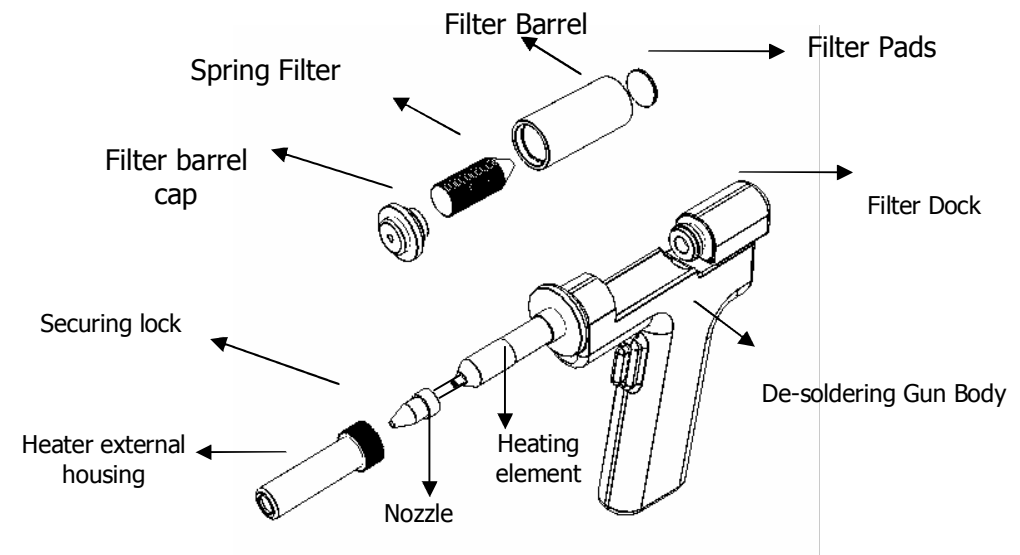
Filter Spring

- The solder pathway can be cleaned using the provided Nozzle cleaning pin, use the cleaning pin when pathway seems clogged.



Nozzle cleaning pin

### **GUN Illustration:**



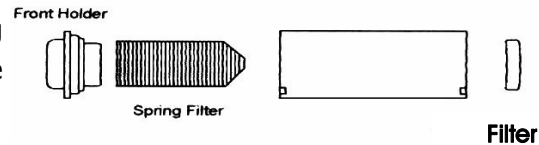


## CARE and MAINTENANCE

### 4. Check the filters

- Filters need to be checked regularly.
- When the filter pipe is cool to touch, push down the release knob at the back of the gun and remove the filter pipe.

- Examine the front holder and spring filter for damage and blockage.



- Examine the filter.

- Replace filter/spring filter if you notice the following:

- \* Filter is stiff and cracked
- \* Solder is collected in two thirds of the Spring Filter
- \* Spring Filter is stiff with flux and solder.

### 5. Secure the filters

1. Attach the spring filter to the front holder.

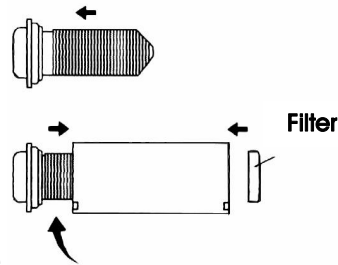
2. Attach the front holder to the filter pipe.

**! CAUTION**

Be sure the front holder is correctly aligned.

**! CAUTION**

Use the filter for the filter pipe (gun). Using of the ceramic paper filter in the filter pipe may cause to break or the power to drop.

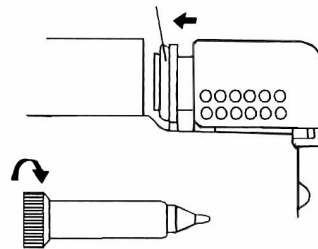


### **Assemble the heating element.**

Attach the nozzle and securely tighten the nut with the attached spanner.

**! CAUTION**

If the nut is loose. Air will leak and the temperature will drop.



## OPERATING GUIDELINES

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

**Tip:** If the tip of the nozzle is coated with oxide, its heat conductivity will be lowered. Coating the tip with a small amount of fresh solder ensures maximum heat conductivity.



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

5. Apply the nozzle to the soldered part and melt the solder.

- a. Never allow the nozzle to touch the board itself.
- b. Confirm that the solder is melted. (Partially melted solder will still be sucked up however it would clog the barrel).

- To confirm that all the solder has melted, observe the inside of the hole and the backside of the P.C.B. If this is difficult to do, try slowly moving the lead with the nozzle, if the lead moves that means that solder is melted.

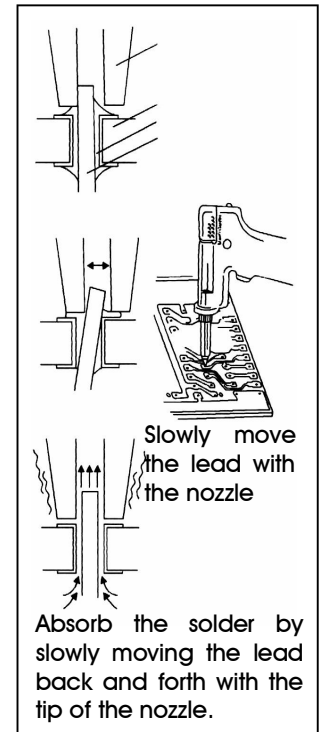
- c. Never move the lead by force. If it doesn't move easily, the solder isn't fully melted yet.

6. After confirming that solder has completely melted, absorb the solder by pressing the trigger on the gun.

- a. Hold the trigger for 1 to 2 seconds longer, as larger lumps of solder may need a longer suction time to clear the barrel and go into the filter.

- b. Never leave any solder remaining inside the hole in the P.C.B.

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



## OPERATING GUIDELINES

7. Clean the filter and dampen the sponge frequently during and after usage to allow better suction power.
8. When the task is finished, deactivate the SOLDER IRON switch.
9. Allow the desoldering gun to cool down before handling for storage.

### Pressure Indicator

1. The pressure indicator helps determine problems we may encounter during desoldering.
2. Observe the indicator with the hole of the nozzle open, pull the trigger and look at the indicator. If it is red, clean the nozzle and heating element, empty the filter pipe, and replace the filters (see page 14-15). If the indicator is blue, cleaning is not necessary and operations can resume.

REMINDER: If there is a noticeable drop in suction efficiency, clean the nozzle and heating element with the cleaning pin.

Normal	Abnormal	Solution
○	◐	
Blue or slight amount of red can be seen.	More than half of the indicator is red.	If the indicator is more than half red, replace the filter and clean the nozzle and the inside of the heating element.

### C. SOLDERING

1. Connect the Soldering Iron connection assembly to the 6-pin receptacle located at the front of the control panel ("7" from the CONTROL PANEL GUIDE).
2. Follow the initial procedures ("A. INITIAL PROCEDURES").
3. Turn ON the Soldering function switch ("5" from control panel).
4. Set the temperature.
5. Start using the soldering iron as soon as desired temperature is reached. (LED starts blinking)
6. When the task is finished, deactivate the Soldering function switch.
7. Allow sufficient time for the soldering iron to cool down before keeping in a safe storage.

## CARE and MAINTENANCE

### A. DESOLDERING GUN

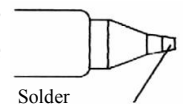
#### 1. Inspect and clean gun for blockage

- a. Plug in the power cord, turn the power switch on and let the nozzle heat up.
- b. Be sure that nozzle is completely heated, before cleaning the hole.
- c. Clean out the hole of the nozzle with the nozzle cleaning pin.
- d. If the cleaning pin cannot completely pass through the hole, use the cleaning drill instead.

**CAUTION:**  
The desoldering gun will be extremely hot during maintenance. Please handle carefully.

#### 2. Inspect nozzle for erosion

- a. Check the condition of the solder plating on the tip of the nozzle.
- b. 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.



#### 3. Replacing the heating element

- a. Loosen securing lock and pull out cover and tip.
- b. Remove old heating element and insert new one.
- c. Attach the nozzle and securely tighten the nut with the attached cover. If the nut is not properly tightened, air will leak and the temperature will drop.

