

HAKKO 702 REWORK SYSTEM

Trouble Shooting Guide

WARNING

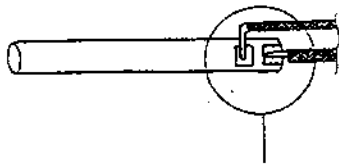
Disconnect the Power Plug before servicing.
Failure to do so may result in electric shock.

Problem; The unit does not operate.

The Power Switch & Each Switch is turned on, but the unit does not operate. LED Lamp does not light up.

Check 1. Is the Power Cord plugged in correctly?
Securely insert the plug into the power supply.

Check 2 · Blown Fuse caused by twisted Heating Element.



900M

If fuse is blown, check the iron 900M. Blown fuse may be caused by twisted Heating Element Leads and short-circuited.

After replacing the Heating Element, please recalibrate the temp. of the soldering iron.

Refer to the instruction manual for calibration.

Check the Heating Element Leads of 807 also.

The fuse should be replaced.

Check3 · Broken Transformer

1) Input side normal resistance value is about 2.4Ω .

Please check the following resistance value.

Disconnect the connector VH 4B on the P.W.B. for the SMD Rework. Measure pin 1 of the connector and the terminal 1 of the switch for SMD Rework.

2) The secondary side of it is about 0.2Ω .

Turning on the switch for desolder (without connecting the plug) . Measure the resistance between R-R of the P.W.B. for desolder .

If the resistance value of transformer is ∞ or not normal value, the transformer should be replaced.

Check 4 · Broken Switch

Power Switch

Check the continuity on the Power Switch .

Be sure to disconnect the wire on the Switch.

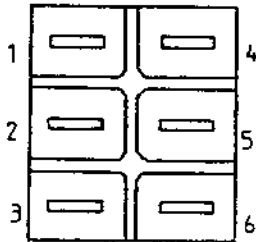
With the Switch ON, the continuity should be;

1-2 Closed 2-3 Open 5-6 Open

With the Switch OFF, the continuity should be;

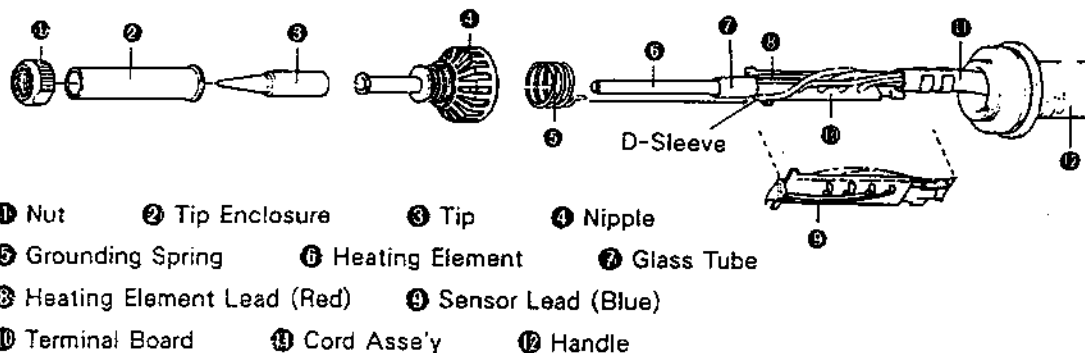
1-2 Open 2-3 Closed 5-6 Closed

If the continuity on the Switch is not as above then the power switch should be replaced.



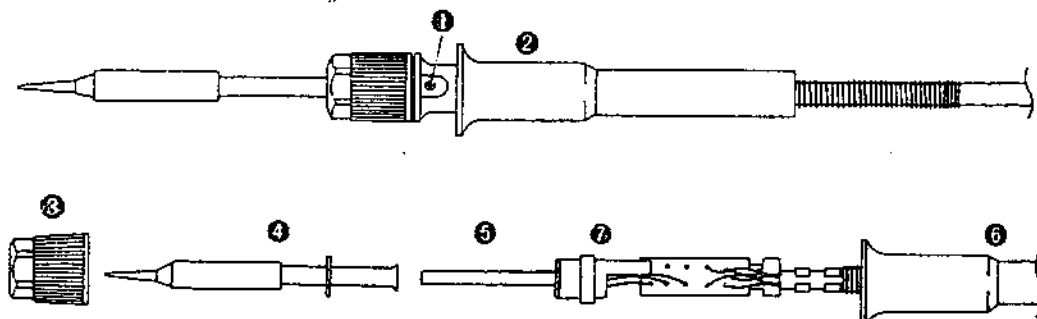
Soldering-1

How to disassemble the 900M



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 the Iron.
3. Pull both the Heating Element 6 and the Cord Asse'y 11 out of the Handle 12. (toward the Tip of the Iron.)
4. Pull the Grounding Spring 5 out of the D-Sleeve.

How to disassemble the 900S



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 & Power Cord toward the Tip of the Iron and out of the Handle 6.

Soldering-2

Problem 1. The Iron does not heat up.

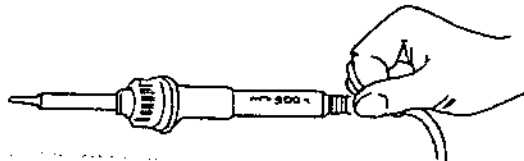
Check 1 : Broken Soldering Iron Cord

There are two methods of testing the Soldering Iron Cord.

1. Turn the unit ON with the temp. dial set at 480 °C (896 ° F) . Then wiggle and kink the iron cord at various locations along the length of the iron cord, including the strain relief area.

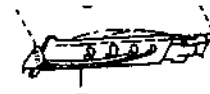
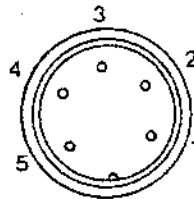
If the LED lamp flickers, then the cord needs to be replaced.

CAUTION; The LED Lamp will flickers if the temp. reaches 480 °C (896 ° F) even with normal Iron Cord.



2. Check the resistance value between the pin of the plug and wire on the terminal.

Pin1-Red
Pin2-Blue
Pin3-Green
Pin4-White
Pin5-Black



The value should be 0 Ω ; if it is greater than 0 Ω or ∞ , the cord should be replaced.

Replacing the Iron Cord

CAUTION It is very important that these connections be soldered well. If they are not, this could cause the unit to fail.

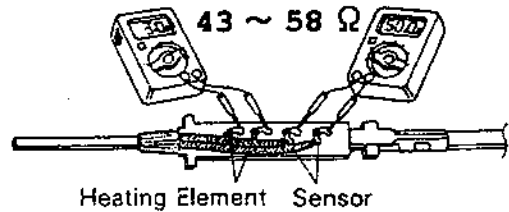
1. Undo the metal grip at the tabs.
2. Desolder the black and white heater leads of the cord.
3. Desolder the blue and red sensor leads of the cord.
4. Insert the new cord into the metal grip and bend the tabs over.
5. Insert the black and white heater leads and the blue and red heater leads through the holes in the fiberboard.
6. Solder these wires to the terminal tabs that protrude from the fiberboard.

Soldering-3

Check 2 · Broken Heating Element

Measure when the Heating Element is at the room temp.

1. Resistance Value of Heating Element 2.5 ~ 3.5 Ω
2. Resistance Value of Sensor 43 ~ 58 Ω



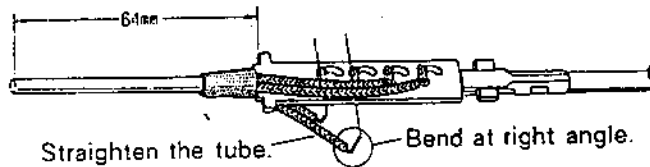
If resistance value is not normal, replace the Heating Element.

1. Desolder the Heating Element Leads and Sensor Leads.
2. Replace the new Heating Element.

There is no polarity between leads of the same colors.
Bend the Leads at right angle to prevent short-circuit.
Adjust the length of Heating Element by the Glass Tube.

3. Solder the new Heating Element Leads to the Terminal Boards. After solder, cut the extra lead.

Please confirm that the lead of sensor and sensor, or sensor and heater is not twisted. That might be the cause of overheat and broken P.W.B..



900S

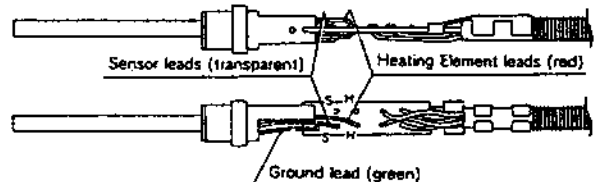
Measure the resistance values at the sensor and the Heating Element of the terminal board.

The resistance value should be same as 900M.

1. Desolder the Heating Element Leads, Sensor Leads, and Ground Lead.
2. Replace the new Heating Element.
 - There is no polarity between leads of the same color.
 - Bend the Leads at the right angle to prevent short-circuit.

3. Solder the new Heating Element Lead to the Terminal Board. After solder, cut the extra lead.

After replacing the Heating Element, recalibrate the temp. of the soldering iron.



Soldering-4

Check 3. Broken Switch

Check the Switch for Solder. The resistance value of the Switch should be 0Ω with ON position.

It should be other than 0Ω with OFF position.

(With the Iron Cord connected.)

Check 4. P.W.B.

Always check the P.W.B. last. If everything else seems to be working in order, then there may be a problem with the P.W.B.. Please confirm that the lead of sensor and heater is not twisted. That might be the cause of broken P.W.B..

1. Triac

The resistance value should be as follows.

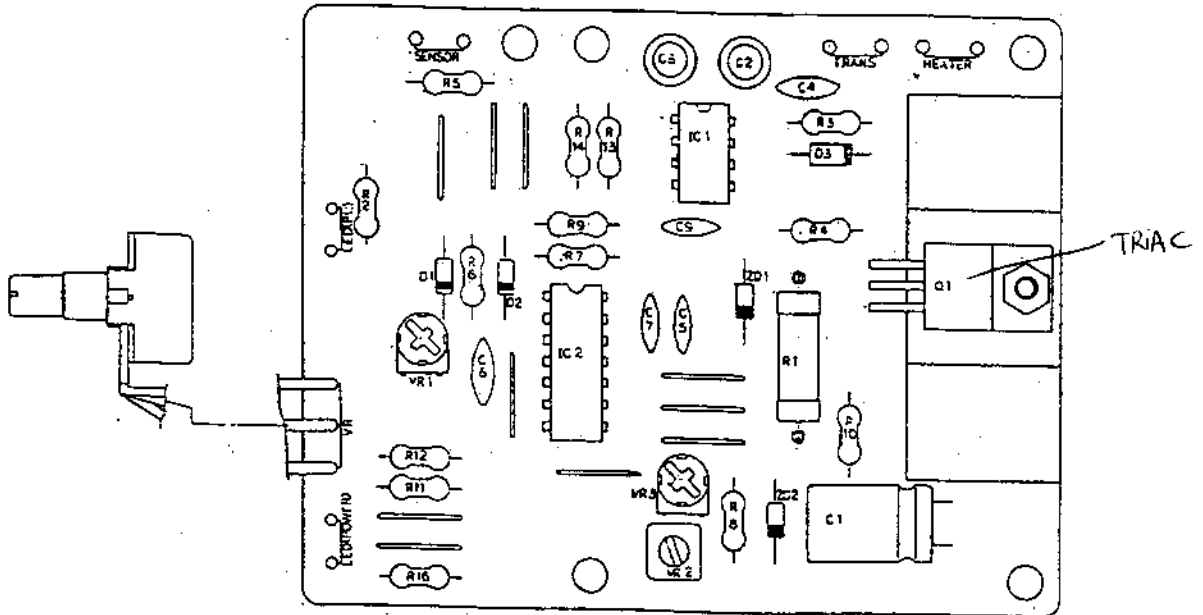
T1-T2 ∞

T2-G ∞

T1-G $140 \sim 300 \Omega$



2. Check the C2 by visual inspection.



Replace the P.W.B. if above item is not good.

Even if 1,2 seems to be working in order, there may be a problem with another component on the P.W.B.. So replace the P.W.B. with the new one.

Soldering-5

Problem 2. The Unit overheats when turned on.

Light up LED? If No → Check 4/ P.W.B.

If Yes → Check 1/Broken Iron Cord

Check 2/Broken Heating Element

Check 4/P.W.B.

Problem 3. The Iron temp. can not be regulated.

Check 1/Broken Iron Cord

Check 4/P.W.B.

Problem 4. LED Lamp for Solder side (only) does not light up.

Check 3/Broken Switch

Check 4/ P.W.B.

Desoldering-1

Problem 1; Heating Element does not warm up.

Check 1. Check the resistance value of the Heating Element.

The resistance values of a working Heating Element are about 9.2Ω between pins 1 and 3 (Heating Element), and about 54Ω between pins 2 and 4 (Sensor) at 23°C (73°F).

If the measured values are outside this range, replace the Heating Element.

1. Unplug the power cord.
2. Disassemble the heating parts.
3. Turn the Back Holder Knob counterclockwise and pull out the Filter Pipe.
4. Remove the Housing Fastener (8).
5. Remove the screws securing the Housing (10) and the Flange (3), (4).
6. Remove the Front Holder.
7. Remove the screws (5) (6) (7) securing the Heating Element to the Flange. (1) (2)
8. Desolder the Heating Element and Sensor Leads.
9. Secure the new Heating Element (24V-60W) to the Flange with the Screws (5) (6) (7). Install the Heating Element in such a way that lead wires are oriented as in Fig. 3.
10. Install the Front Holder.
11. Resolder the Heating Element and Sensor Leads.
12. Reassemble the Unit.
13. Recalibrate the temperature.

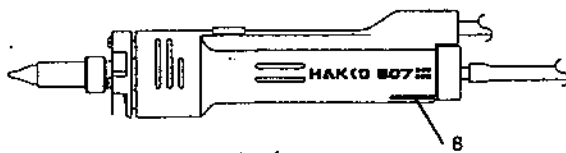


Fig. 1

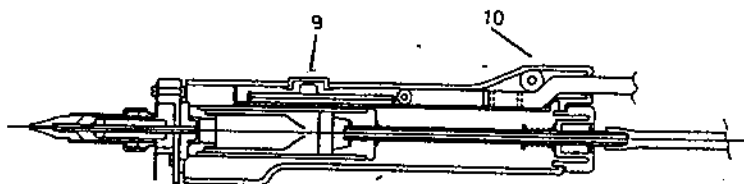
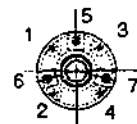


Fig. 2

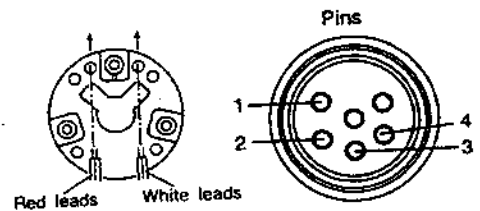


Fig. 3

Fig. 4

Desoldering-2

Check 2. Check the resistance value of H1 (B) -H2 (W)
on the P.W.B..

If the resistance value is out of the range of Heating Element, check the connecting cord. If it is broken, replace it with a new one. The method of checking the cord is same as Soldering Iron 900 except for the following Pin No. and color of the wire.

Pin1-Black
Pin2-White
Pin3-Red
Pin4-White
Pin5-Green
Pin6-Blue

CAUTION: There are two white wires,
please check another combination
if the first one is not 0.

Check 3. Check the Switch for desolder.

The resistance value of the Switch should be 0Ω
with ON position.

It should be ∞ 0 with OFF position.
(With Iron Cord connected.)

Desoldering-3

Problem 2; Pump does not operate.

Check 4. The maintenance should be done.

The maintenance for the Iron and the Pump should be done.
See the instruction manual.

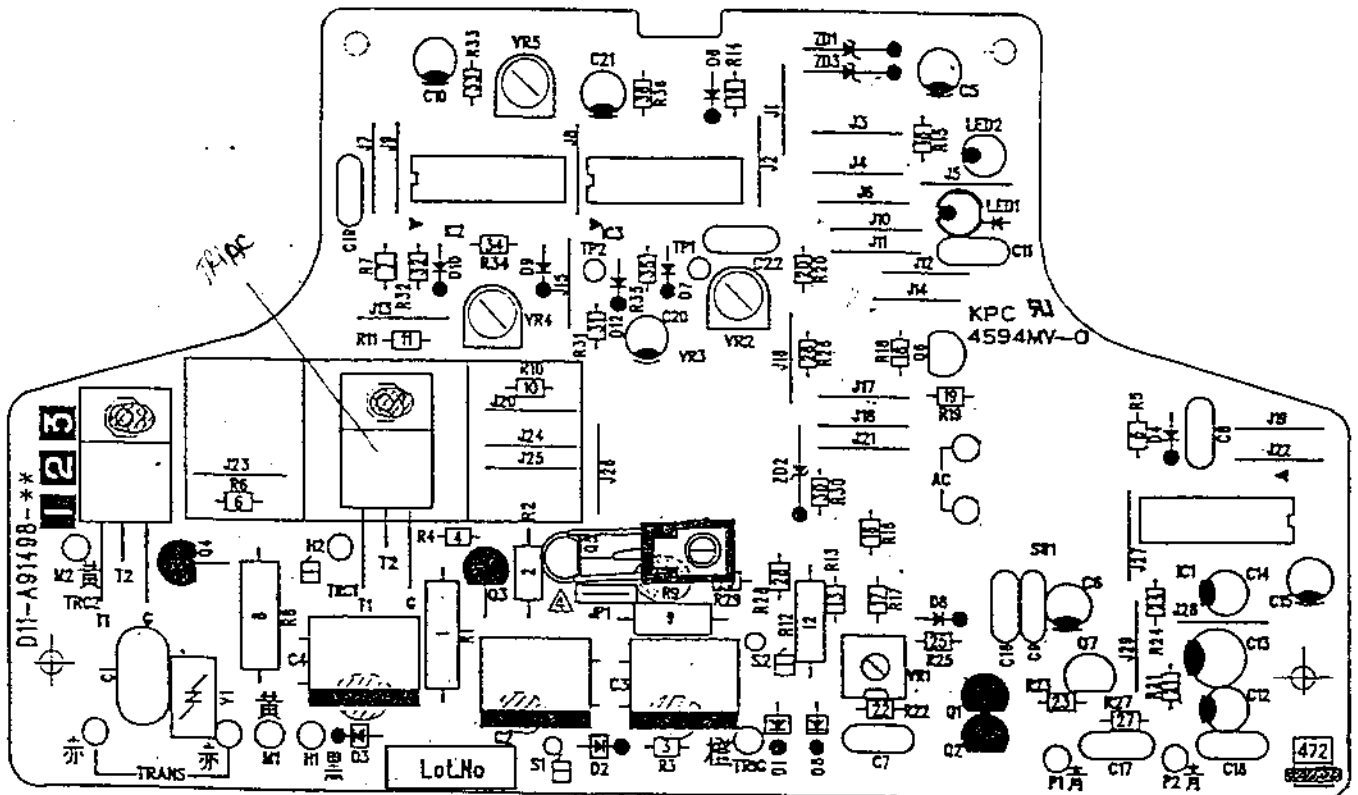
Check 5; When the button of 807 is pushed, the resistance value between 1-6 pins in the plug is 0 Ω .

If the value is not 0 the connecting cord should be checked.
(See check 2.) If the connecting cord is O.K., the board with the switch should be replaced.

Check 3; Check the Switch for Desolder.

Check 6; The P.W.B.

If all previous check is good, there maybe a problem with the P.W.B.. Replace P.W.B..

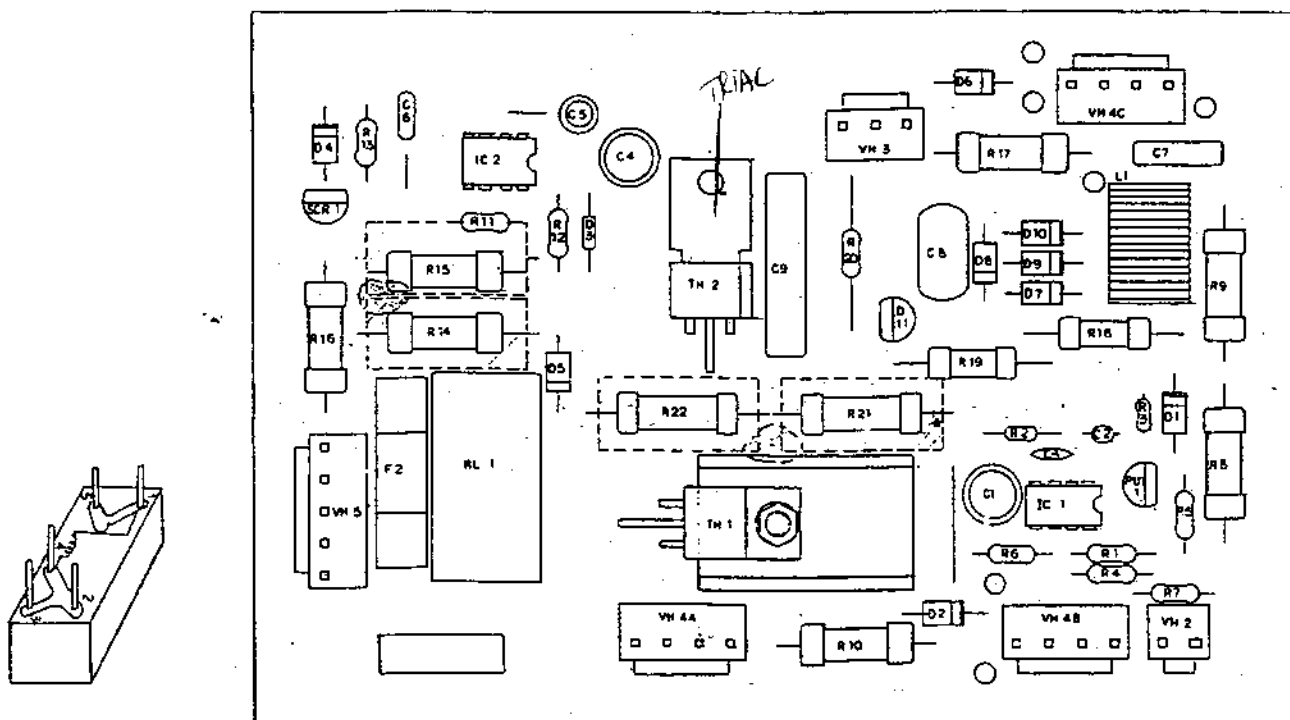


Problem 1. The Cut-off Timer

When the unit is initially plugged in the cut-off timer is not activated. Or when the unit is turned off, the cut-off timer does not work.

Check 1. The Relay Switch (RL1) on the P.W.B.

Check the resistance between pins 1 & 4. The resistance should be about $6K \Omega$. If not, the P.W.B. should be replaced.



Check 2. Blown Fuse

See fig.1. Inspect the fuse (F2) on the PCB, and if it is blown, the the fuse. should be replaced.

If the RL1 and F2 seems to be working in order,
Please check the Power Switch. (See Page 2)

If 1, 2 are O.K., there may be a problem with another component on the P.W.B.. So replace the P.W.B. with the new one.

SMD Rework-2

Problem 2. The Air Control Knob does not control the air.

Check 3 . Broken Air Control Potentiometer

Fig.1 Remove the air control potentiometer VH3 on the FWB and check the resistance between sockets 1 & 3 on the connector.

Air control potentiometer

With knob on "1" resistance should be $300k \Omega$.

" 8"

0Ω .

If these resistance is different, then the air control potentiometer should be replaced.

Check 4 . Broken Air Control Triac. (TH2)

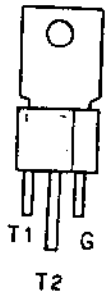
Check the resistance between all of the legs of the triac. The value should be as follows.

T1 and T2 = ∞

T2 and G = ∞

T1 and G = 150 to 250 Ω

If any of values are different than the above , the P.W.B. should be replaced.



Problem 3. The switch is on, but the pump does not pump air.

Please confirm the hose is connected securely inside the station.

Check 3 .Broken Air Control Potentiometer

Check 6. Broken Pump

See fig.1. Disconnect the VH4C and check the resistance value between pins 1 and 4 on the connector .Normally it is around 70 Ω . If the value is ∞ or far from the normal resistance value the pump should be replaced.

Check 6. Broken Switch

Switch for SMD Rework

B) The resistance value of the switch for SMD Rework should be 0 Ω with ON position.

It should be other than 0 with OFF position.

Problem 4. The switch is on, but the unit does not heat.

Check 7. Broken Heating Element.

See fig. 4 & 5. Check the heater in the handle. The resistance between the two sockets in the connector should be about 30 Ω .
If it is not, the Heating Element should be replaced.
Please replace the quartz glass in the pipe if it is broken.

Check 8. Bad Heat Control Potentiometer

See fig. 1. Remove the heat control potentiometer connector from VH2 on the P.W.B. and check the resistance between two sockets in the connector.

Heat potentiometer: With knob on "1" resistance should be 100K Ω .
"8" resistance should be 0 Ω .

If these resistance are different, then the heat control potentiometer should be replaced.

Problem 5. The LED Lamp does not turn on and off.

Check 9. The Heat Control Triac on the P.W.B. (TH1)

Check the resistance between all of the legs of the triac.

The values should be as follows:

T1 and T2 = ∞

T2 and G = ∞

T1 and G = 150 to 250 Ω

Even the Heat Control Triac seems to be working in order,
there might be a problem with another component in the P.W.B..
The P.W.B. should be replaced.