

Thermo *Aire*™

Instruction Manual



Thank you for purchasing the **Thermo *Aire***.
Please review this manual before operating the **Thermo *Aire***.
Keep this manual readily accessible for reference.

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1. Packing List

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

Station/Iron.....	1	NozzleØ 1.0mm (0.06").....	1
Holder part	1	Instruction manual	1
Nozzle holder	1		

2. Specifications

Name	Thermo Aire™
Power consumption	85W

● Station

Power Consumption	5W
Pump	Diaphragm Type
Capacity	6 l/min. (max.)
Fuse	2A
Dimension	167w x 101h x 182d mm 6.6" x 4.0" x 7.1"

● Soldering Iron

Power Consumption	80W
Heating Element	Ceramic Heater, 80W
Standard Nozzle Inner Diameter	Ø 2.0mm (0.08") Item#: TA1066
Hot Air Blow Temperature	100 - 540°C 212 - 1004°F
Length	217mm (8.5") w/o Silicone Hose

● Optional/Replacement Parts

	Item #	Description	Specifications
Heating Element	TA1068	Heating Element	120V-80W, Ceramic
Nozzle	TAN10	Nozzle	Ø 1.0mm (0.04") w/o nut


*This product is protected against electrostatic discharge


*Specifications and design are subject to change without notice

3. Warnings, Cautions & Notes

WARNING

Warnings and cautions 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.

CAUTION

● Observe the following precautions to ensure safety:

When the unit power is turned on, the nozzle temperature reaches 100 to 540°C (212 to 1004°F). If the unit is mishandles, **burn injury** or fire may result. Please observe the following precautions:

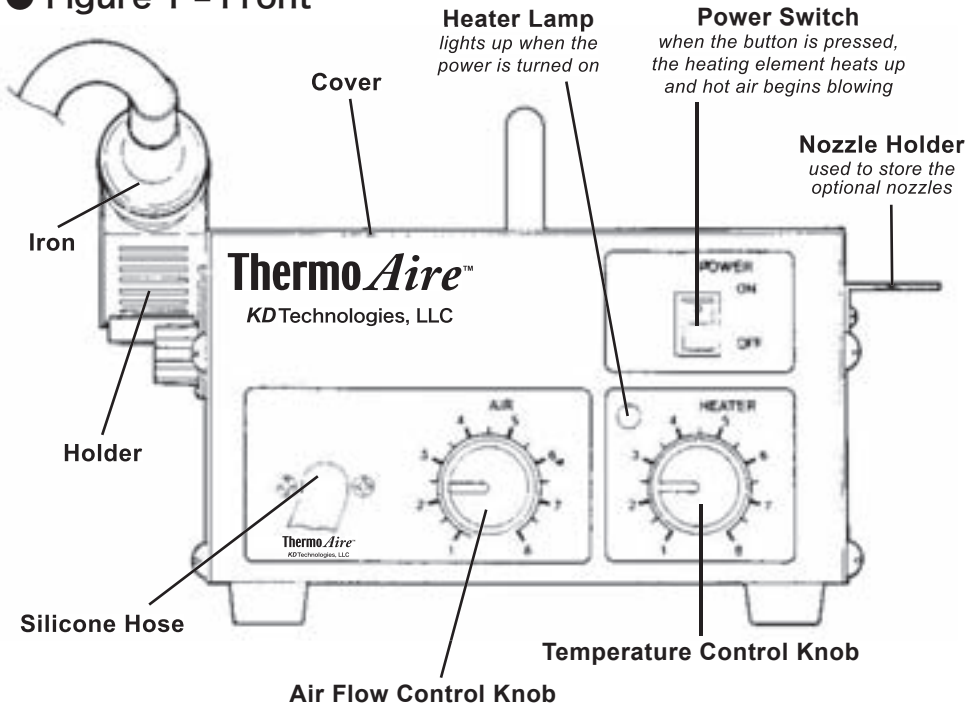
- Do not touch the metal portions surrounding the nozzle, the adjoining plastic portions or the iron receptacle or iron receptacle holder of the iron holder.
- Do not use the product near flammable items.
- Do not direct the hot air toward personnel or touch the metal parts near the nozzle.
- Inform others in the area that the unit is hot and should not be touched.
- Turn the power off when not in use or left unattended.
- Before replacing parts or storing the unit, turn off the power and allow the unit to cool to room temperature.

● Observe the following precautions to avoid accidents and damage to the unit:

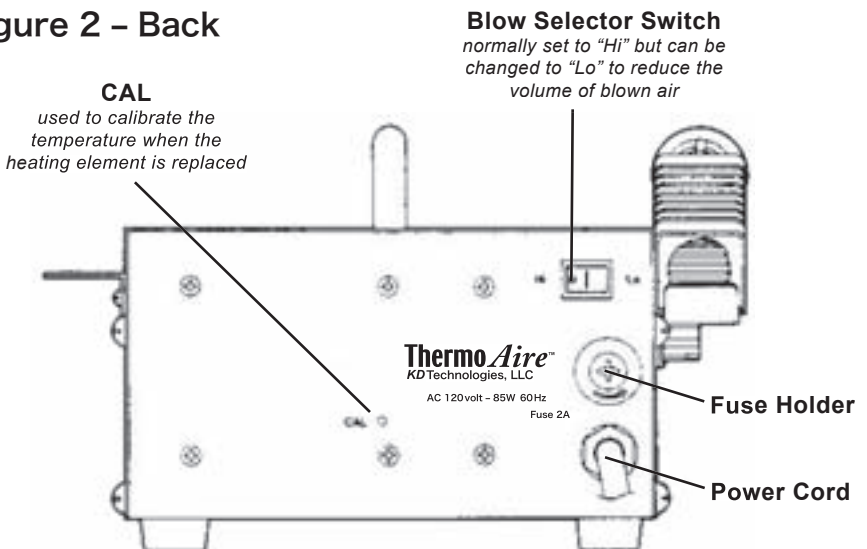
- Do not strike the handpiece against hard surfaces or otherwise subject it to physical shocks. This will damage the quartz glass shield around the heating element and could damage the heater as well.
- Be sure the unit is grounded. Always connect power to a grounded receptacle.
- Do not disassemble the pump.
- Do not modify the unit.
- Use only genuine **Thermo Aire** parts.
- Do not wet the unit or use the unit when your hands are wet.
- Remove power cord by holding the plug – not the wires.
- Make sure the work area is well ventilated.
- Do not do anything else that might be dangerous.

4. Part Names & Descriptions

● Figure 1 - Front



● Figure 2 - Back



5. Using the Thermo Aire™ (Preparation)

1. Attach the holder (Figure 3)

2. Insert iron into the holder

3. Insert power plug into outlet:

Check to make sure the power switch is set to the OFF position before inserting the power plug.

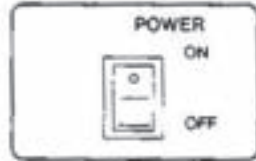
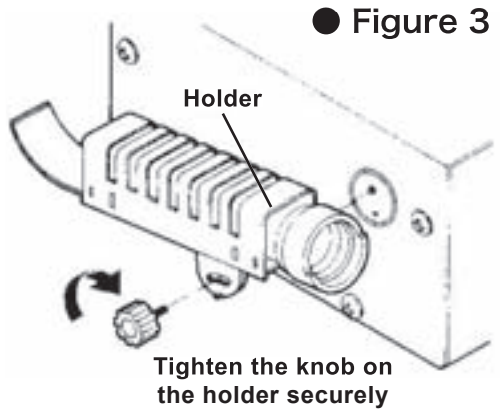
4. Adjust blow level and temperature:

- Refer to the temperate distribution charts (pages 8-9)
- Adjust the blow level & temperature using the air flow and temperature control knob.

5. Turn on power

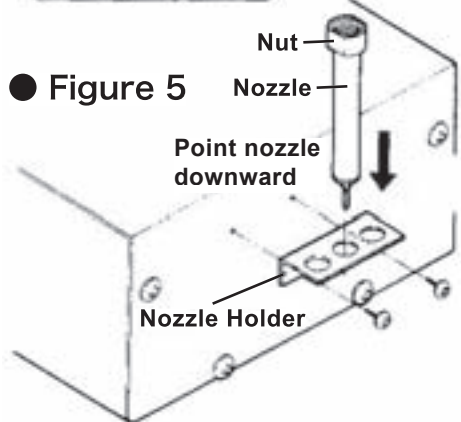
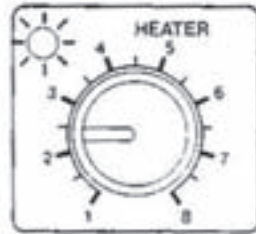
When the power switch is turned on, the heater power lamp will light up. (Figure 4)

6. The unit is ready for use approximately two (2) minutes after the power is turned on



● Figure 4

Lamp lights up



Attaching and using the nozzle holder:

Attach the nozzle shelf included with the unit. With the nuts on the nozzles, insert them into the holes in the nozzle holder with the tips facing downward, as shown in the figure 5 above.

5. Using the Thermo Aire™

1. Heat the Essix Appliance

Apply the hot air to the Essix Appliance (Figure 6)

⚠ CAUTION:

Be careful not to touch the Appliance with the tip of the nozzle.

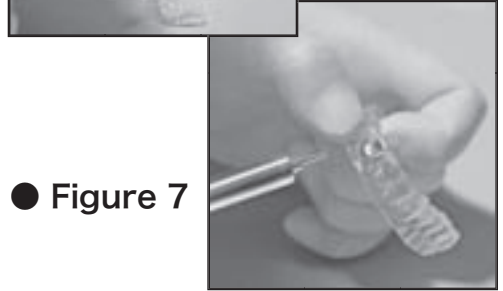
The blow selector switch on the rear of the unit should normally be set to "Hi". To reduce the blow level, set it to "Lo."

2. Remove the Appliance

When the bump has been extended to the desired depth, remove the nozzle away from the appliance. (Figure 7)



● Figure 6



● Figure 7

6. Replacing the Heating Element

1. Disassemble the air nozzle

- Remove the cover from the unit
- Loosen the packing retainer on the rear of the panel (Figure 8)

2. Disassemble the iron

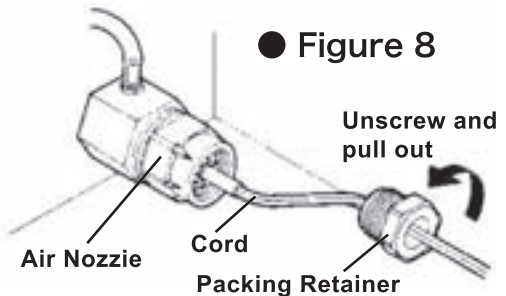
- Remove the nut, nozzle and nipple in that order (Figure 9)
- Slide the tube off of the terminal in the direction indicated by the arrow, then detach the grounding spring from the sleeve

3. Pull out the heating element

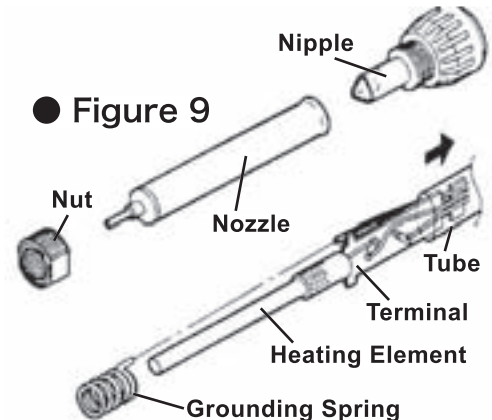
- Pull the silicone hose so it is straight and then pull out the heating element from the handle, along with each of the cords (Figure 10)

⚠ CAUTION:

When the cords are caught inside the silicone hose and do not move freely, press down on it lightly from above.

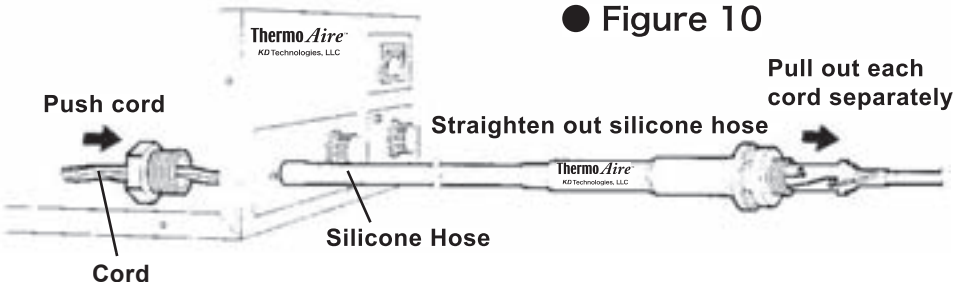


● Figure 8



● Figure 9

● Figure 10



4. Replace the heating element

- Using a stripper or other desoldering tool, remove the solder from the soldered section of the terminal, then remove the old heating element
- Set the new heating element in place as shown in figure 11 at right
- Solder the lead wire of the heating element to the terminal

5. Reassemble the iron

- Attach the grounding spring to the sleeve, then slide the tube back over the terminal
- Pull the cord from the air nozzle side to insert the terminal back in the handle
- Attach the nipple, nozzle and nut

⚠ CAUTION:

The silicone hose should be straight while this is done. Also, be sure to pull all 3 cords (2 white, 1 green) together.

6. Reassemble air nozzle

- Push the packing and cord stopper through the tube and insert into the air nozzle (Figures 12-13)

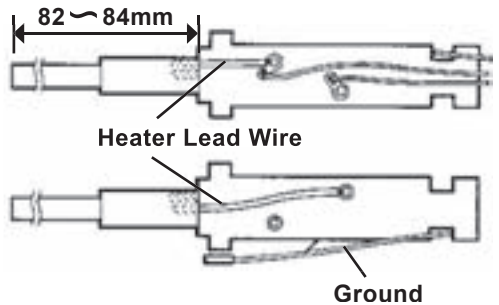
⚠ CAUTION:

Be sure to push the packing and cord stopper through the tube in order to prevent air leakage.

- Screw on the packing retainer
- Replace the cover on the unit

● Figure 11

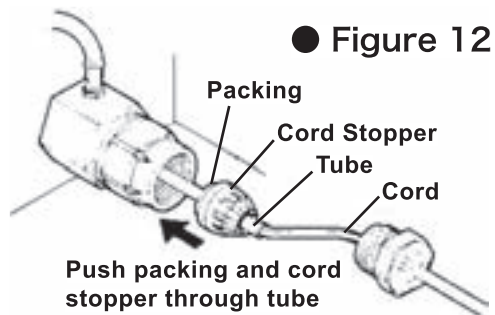
Confirm that the distance between the tip of the heating element and the terminal is 82–84mm (3.2–3.3").



⚠ CAUTION:

Make sure that the insulation tubes on the heating element lead wires completely cover the lead wires when the heating element is put into place.

● Figure 12



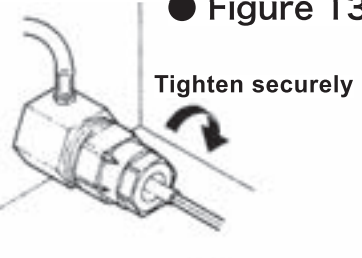
6. Replacing the Heating Element

(Cont.)

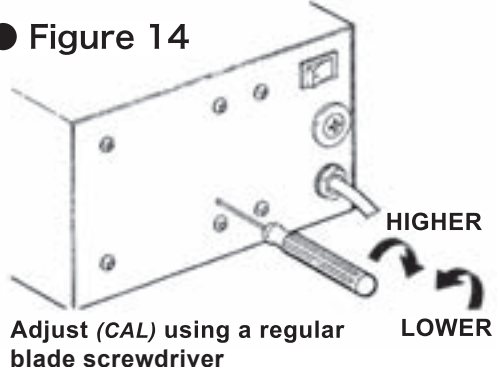
7. Calibrate the temperature

- After replacing the heating element, be sure to calibrate the temperature to ensure accurate temperature control.
- Attach $\varnothing 2.0\text{mm}$ (0.08") nozzle and set the blow selector switch to "Hi." Set the temperature control knob to "8" and the air flow control knob to "5", then heat the nozzle for two (2) minutes.
- Using a screwdriver, adjust the CAL control until the temperature of the air 2mm (0.08") from the blow exit aperture 540°C (1004°F). (Figure 14)

● Figure 13



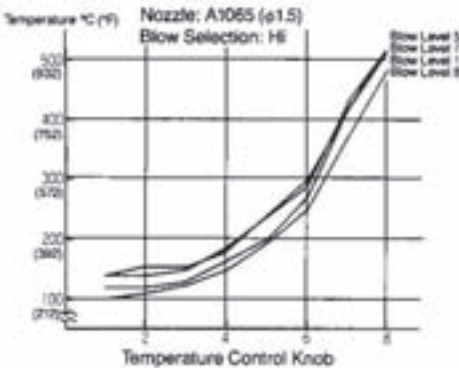
● Figure 14



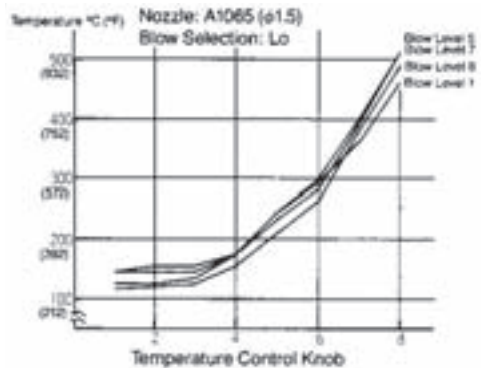
7. Temperature Distribution Charts

Measurement Conditions: Maximum air temperature measured 2mm ((0.08 in.) from blow exit aperture)

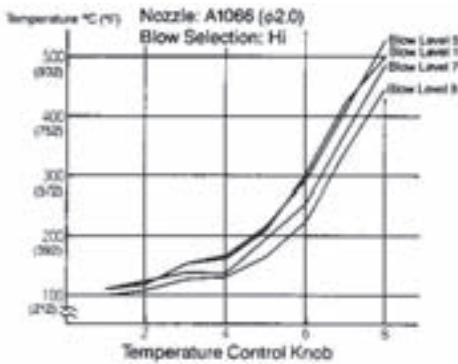
● Graph 1



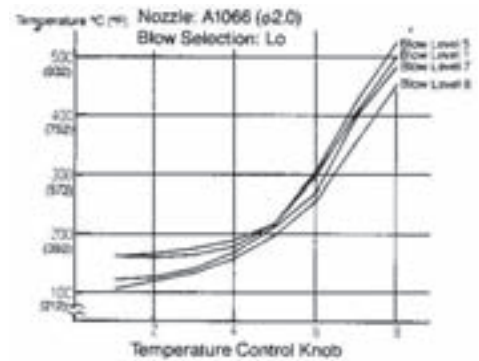
● Graph 2



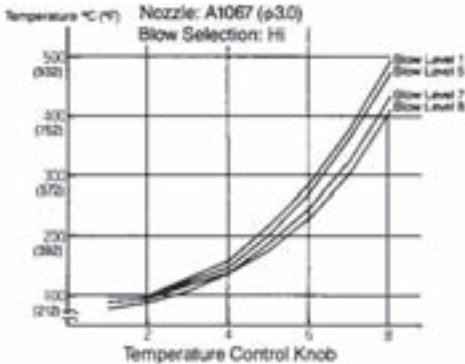
● Graph 3



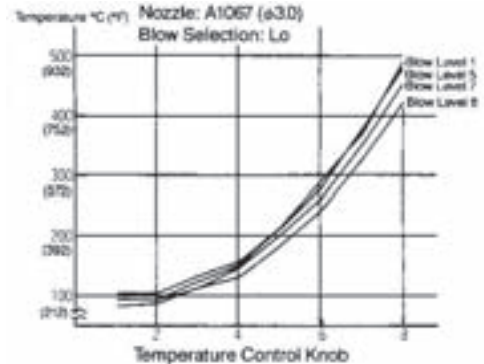
● Graph 4



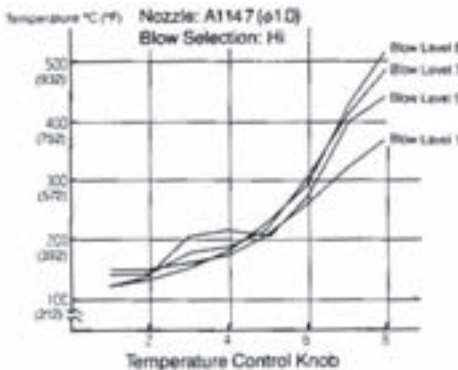
● Graph 5



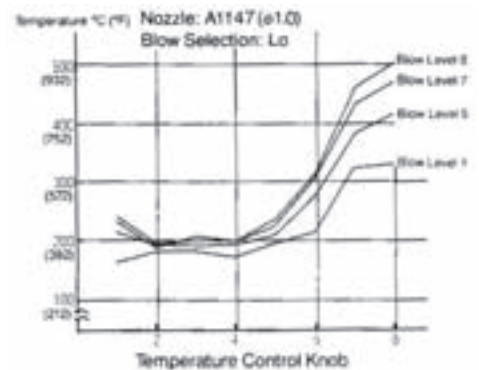
● Graph 6



● Graph 7

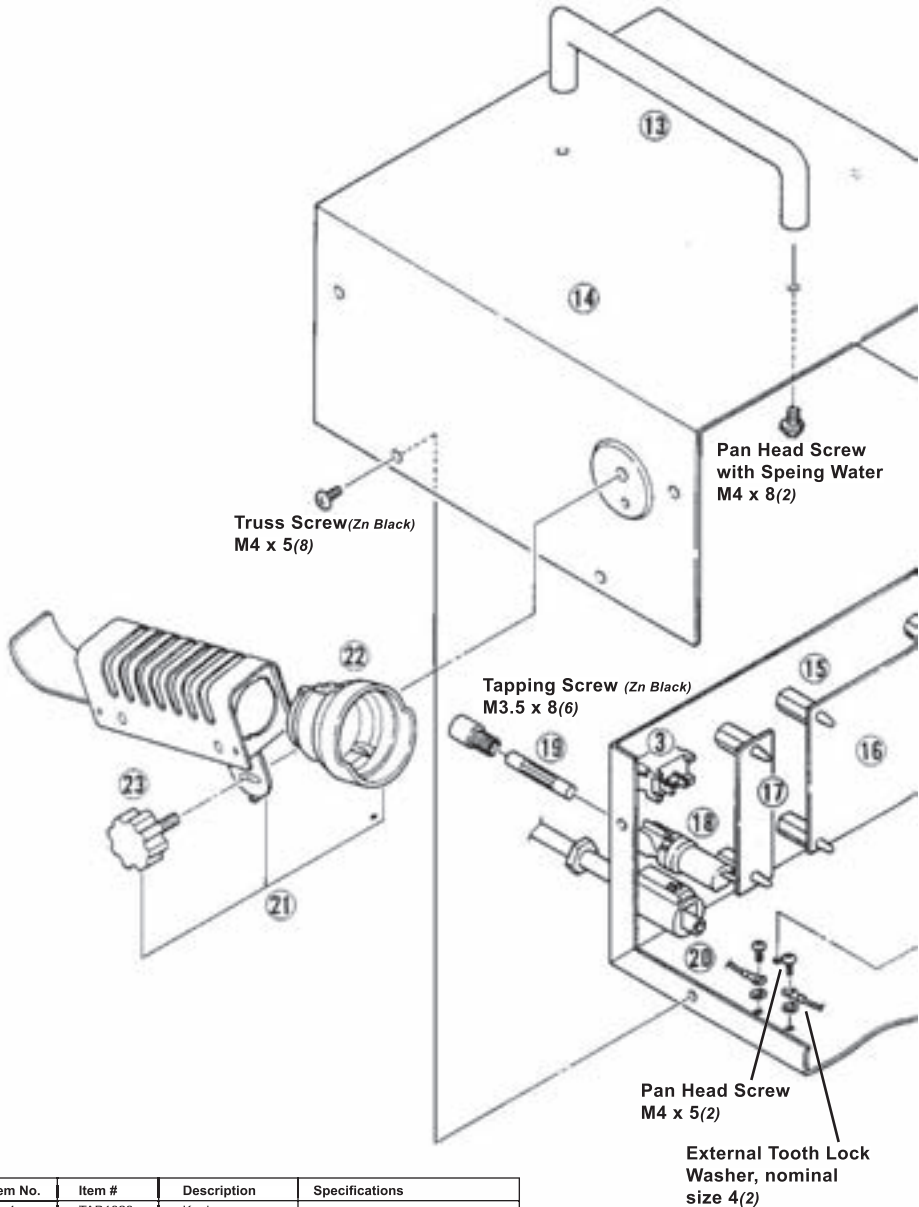


● Graph 8



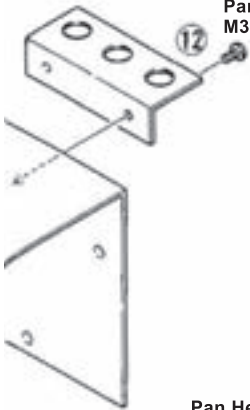
▲ CAUTION: These charts are for reference.

8. Parts List (Station)



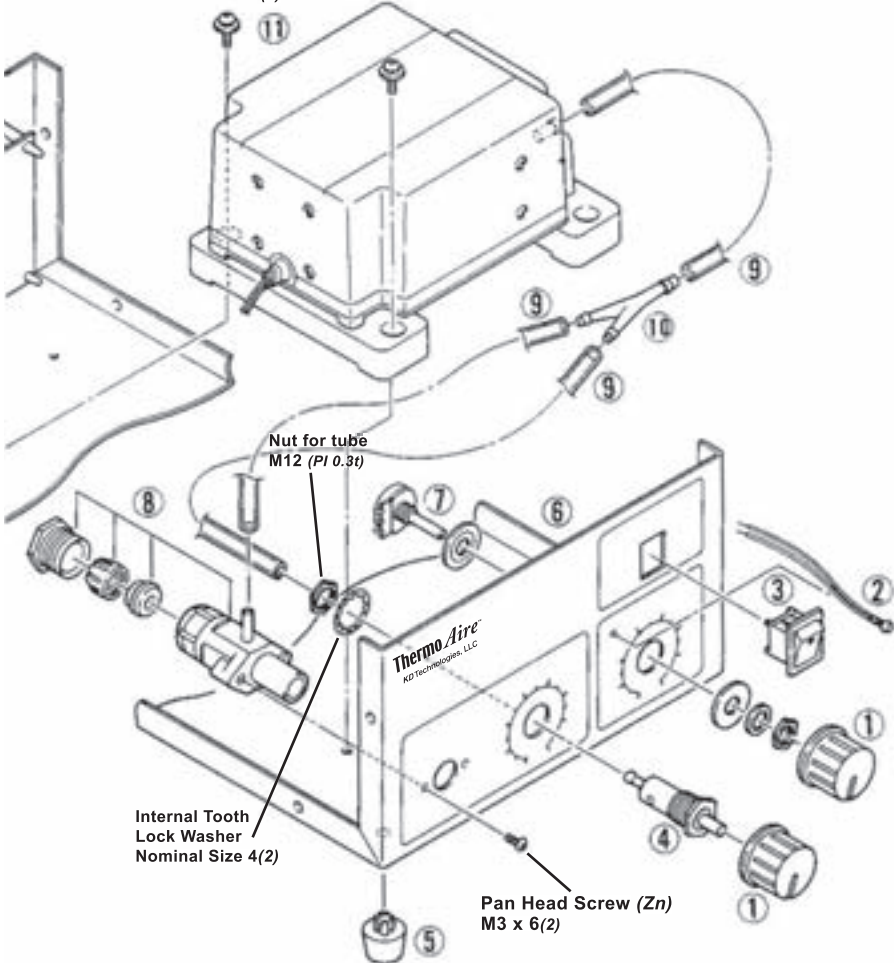
Item No.	Item #	Description	Specifications
1	TAB1028	Knob	
2	TAB1853	L.E.D. Lamp	
3	TAB1084	Switch	
4	TAB1202	Exhaust nozzle	
5	TAB1204	Rubber Foot	
6	TAB1195	Chassis	
7	TAB1197	Potentiometer	5KΩ
8	TAB1856	Air nozzle	
9	TAB1199	Silicone tube	Ø4 x 90l
10	TAB1200	Distribution Tube	
11	TAB1217	Pump	120V

Pan Head Screw (Ni)
M3 x 3(2)



Item No.	Item #	Description	Specifications
12	TAB1212	Nozzle holder	
13	TAB1193	Handle	
14	TAB1194	Cover	
15	TAB1855	Locking spacer	
16	TAB1218	P.W.B.	120V
17	TAB1207	Wiring Board	
18	TAB1041	Fuse holder	w/o fuse
19	TAB1042	Fuse	2A
20	TAB1208	Cord stopper	
21	TAB1190	Holder	w/o iron receptacle and thumb screws
22	TAB1191	Iron receptacle	
23	TAB1192	Thumb screw	

Pan Head Screw with Washer
(w/Spring, Plain Washer)
M4 x 12(4)



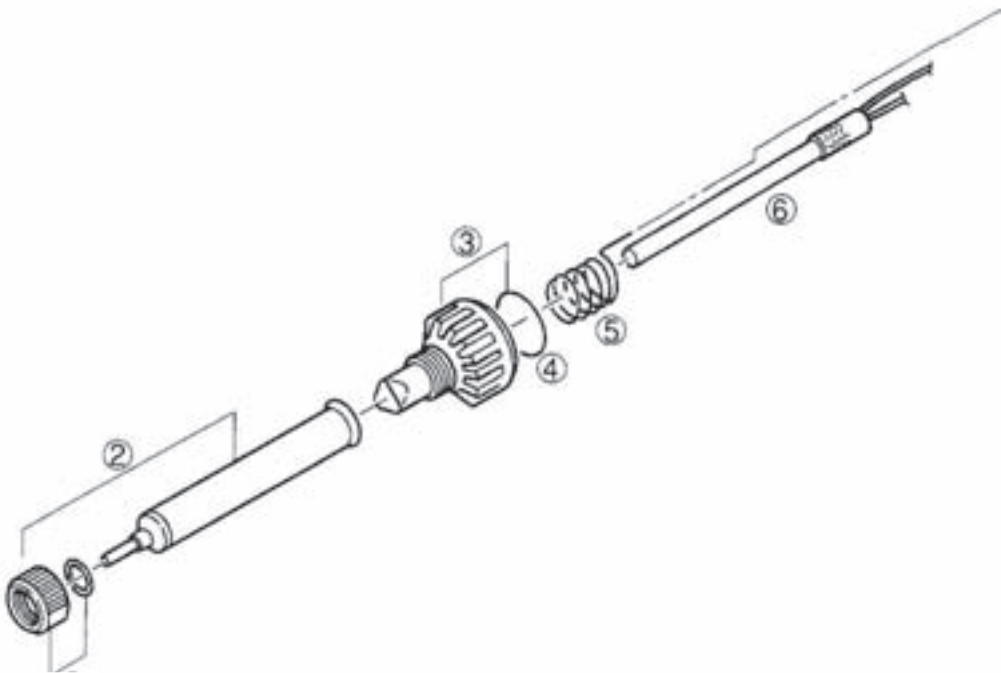
Nut for tube
M12 (PI 0.3t)

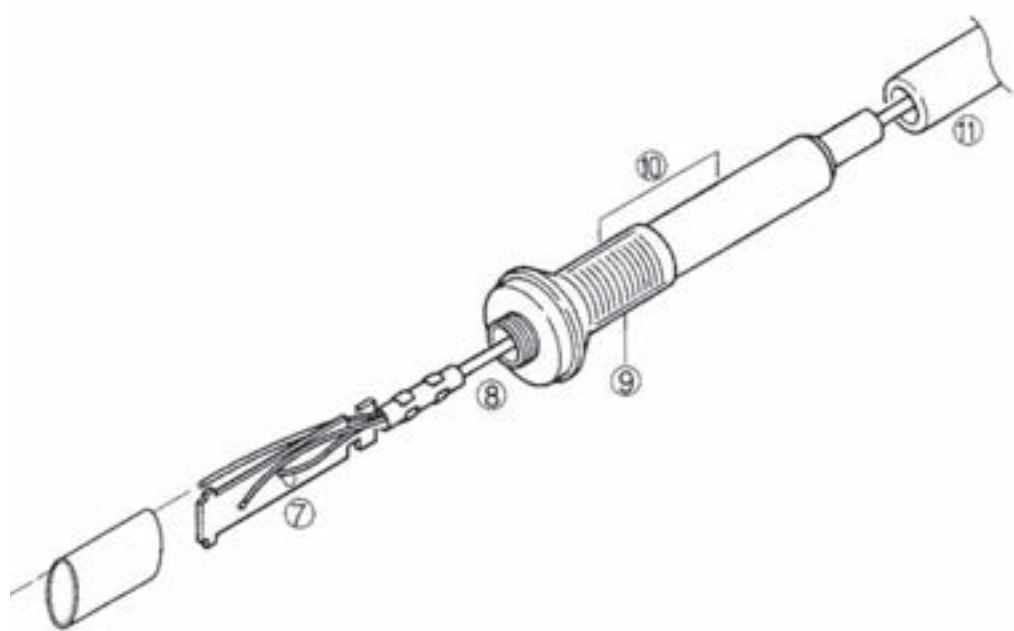
Internal Tooth
Lock Washer
Nominal Size 4(2)

Pan Head Screw (Zn)
M3 x 6(2)

8. Parts List *(Iron)*

Item No.	Item #	Description	Specifications
1	TAB1182	Nut	with Stopper
2	TAN10	Nozzle	Ø1.0mm (0.04") w/o nut
3	TAB1183	Nipple	with O-ring (P15)
4	TAB1213	O-ring (P15)	
5	TAB1184	Grounding spring	
6	TA1068	Heating element	120V-80W, Ceramic
7	TAB1187	Terminal	with Cord stopper
8	TAB1189	Cord	
9	TAB1186	Handle Cover	
10	TAB1185	Handle	with Handle cover
11	TAB1188	Silicone hose	





9. Precautions Regarding: Electrostatic Protection

This product includes such features as electrically conductive plastic parts and grounding of the hand piece and station as measures to protect the device to be soldered from the effects of static electricity. Be sure to observe the following instructions:

1. The handle and other plastic parts are not insulators, they are conductors. When replacing parts or repairing, take sufficient care not to expose live electrical parts or damage insulation materials.
2. Be sure to ground the unit during use.

10. About the **Thermo Aire**[™]

Thermo Aire is the next progression in the art and science of thermoplastic technology in orthodontics and dentistry. This system allows the clinician to direct a small, precisely controlled jet of heated air onto the surface of a thermoplastic appliance. Both the air pressure and temperature are fully adjustable with the **Thermo Aire** system.

Thermo Aire's interchangeable nozzles, ranging from 1 mm to 3 mm in diameter, will allow for a variety of alterations to the thermoplastic appliance. The 1 mm nozzle will be standard with the **Thermo Aire**.

Because of the system's use of a jet of heated air, no physical contact is made between **Thermo Aire** and the thermoplastic material. Once the material has been heated, a variety of instruments, including pliers, are used to thermoform shapes in the appliance. The combination of **Thermo Aire** and these instruments will allow the clinician to thermoform the appliance to the desired activation for minor tooth movement with greater control over the thermoplastic.

RAINTREE ESSIX[®]

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Patent Pending

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