HAKKO 470·471
DESOLDERING TOOL

Hakko 470 and Hakko 471 are designed for great thermal supply and suction power—as well as provide protection against electrostatic discharges and electrical surges—making them ideal tools for safety and efficiently desoldering multi-layer boards.

Safety

- Both Hakko 470 and Hakko 471 are constructed of static dissipative materials using an ESD design which prevents damage to circuit boards and parts caused by electro-static discharge.
- Heating Element and Motor features zero-cross switching in order to prevent electrical surges.
- An insulated transformer completely isolated the output circuit from the power input circuit.

Specification

Name	HAKKO 470	HAKKO 471
Power Consumption	100W	70W

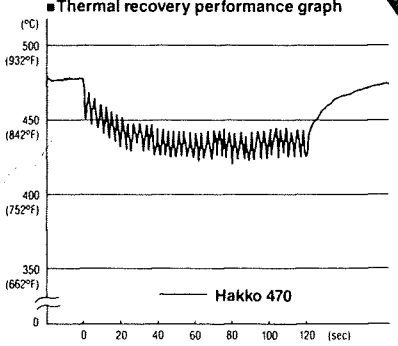
Station (HAKKO 470)

Part Name	Station
Output Voltage	24V AC
Vacuum Generator	Vacuum pump, double cylinder type
Vacuum Pressure (Max)	600 mm Hg (24 in Hg)
Flux Absorption	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.)

Station (HAKKO 471)

Part Name	Station
Output Voltage	24V AC
Vacuum Generator	Ejector type
Vacuum Pressure (Max)	700 mm Hg (28 inHg)
Flux Absorption	28ℓ/min.
Voltage Leakage	Under 1.2mV
Ground Resistance	Under 2Ω
Applied Air Pressure	71 psi (5.0 kgf/cm²)
Compressed Air Consumption	1.62 c.f.m (46ℓ/min.)
Outer Dimensions (W × H × D)	165 × 135 × 260 mm (6.5 × 5.31 × 10.24 in.)
Weight	Approx. 3.0 kg (6.6 lb.)

■Thermal recovery performance graph



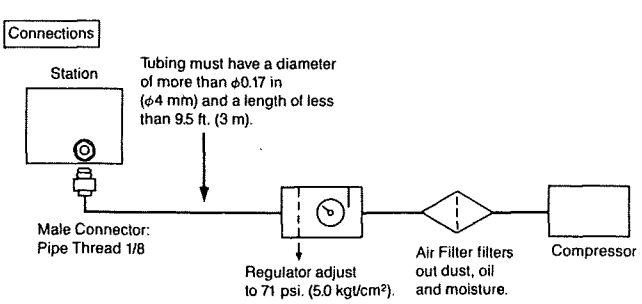
Conditions of Measurement
When melt ϕ0.06 × 0.2 in of solder on a paper phenol copper board can be removed in 3 seconds, measure the temperature at a p... 5 mm from the tip of the nozzle.

HAKKO 471-external air compressor type

Connect to the Compressor

- Use filtered air to clean away any dust, oil and moisture.
- With the trigger pulled and air flowing, adjust the regulator air pressure to 71 psi to (5.0kgf/cm²).

Caution:
The absorption power of the unit will be reduced if adjustment is made while air is not flowing or if the Tube is not measured as specified.
Do not set the regulator to pressures of 128 psi (9 kgf/cm²) or more while the Trigger is not pulled, as such pressures can damage various parts of the Hakko 471 Station.



Condition of Measurement

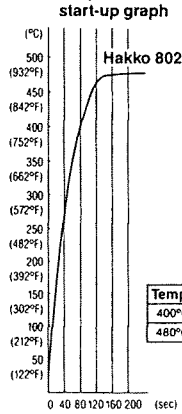
- Insulation Resistance
  The insulation resistance was measured between the Nozzle and the lead of the Heating Element using a 500V DC insulation resistance meter.
  Caution: The insulation resistance cannot be measured between the Nozzle and the power plug as the transformer between the secondary part (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.

HAKKO 802
DESOLDERING TOOL

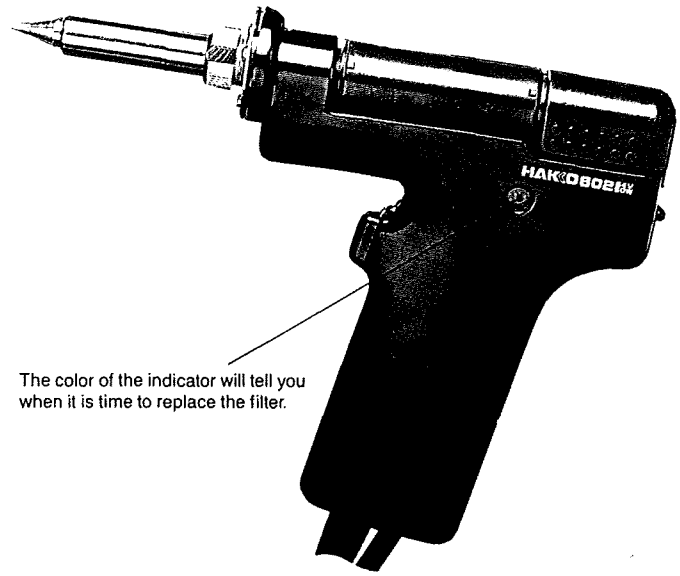
Desoldering Gun for HAKKO 470•471

The dual structure filter—spring filter and high-absorbency ceramic paper filter—effectively limits the amount of solder and flux that passes into the pump.

■ Nozzle temperature start-up graph



Temperature	Heat-up time
400°C (752°F)	80 sec.
480°C (896°F)	180 sec



The color of the indicator will tell you when it is time to replace the filter.

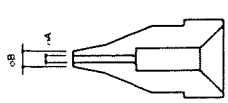
Specifications

Desoldering Gun

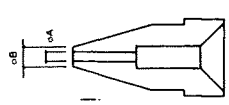
Name	HAKKO 802
Part No.	C1000
Heating Element	Ceramic Heater
Power Consumption	AC 24V 50W
Temperature	380°C ~ 480°C (716°F ~ 896°F)
Insulation Resistance	Over 300 MΩ at 420°C (790°F)
Nozzle Inside Diameter	ϕ1.0 (0.04 in) (Nozzle S, Standard)
Outer Dimensions (W × H)	135 × 174 mm (5.31 × 6.85 in)
Weight (W/O Cord, Hose)	Approx. 200 g (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 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

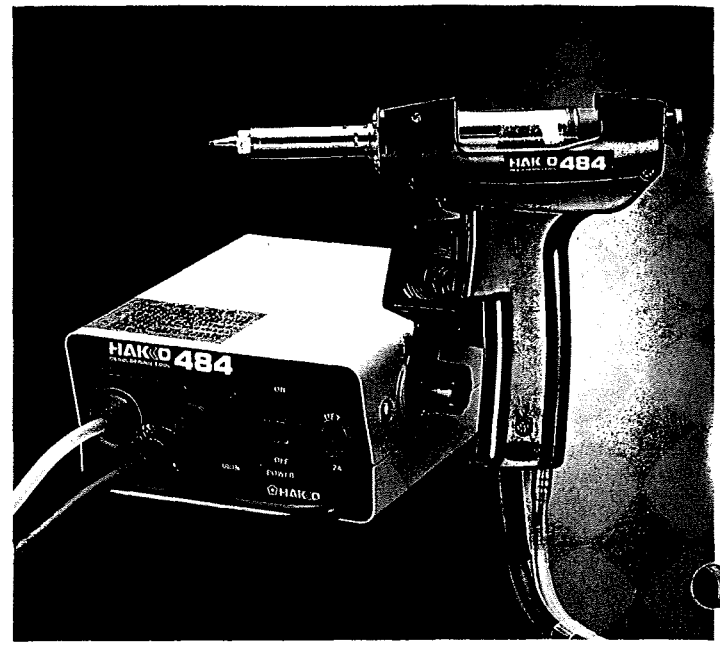
Part No.	Part Name/Specification
B1017	Filter Pipe w/Front Holder & Filters
A1009	Ceramic Paper Filter (S) 10 pcs.
A1033	Ceramic Paper Filter (L) 10 pcs.
A1030	Spring Filter 10 pcs.
A1008	Heating Element 24V, 50W
A1028	Silicone Grease
A1042	Cleaning Sponge

Packing List

Name	Contents	Accessories
HAKKO 470	Station	Filter Pipe/1 pc. Cleaning Pin for Nozzle ϕ1.0 (0.04)/1 pc. Cleaning Pin for Heating Element/1 pc. Cleaning Drill for ϕ1.0 mm (0.04) Nozzle. Ceramic Paper Filter (S)/2 pcs.
	Gun (HAKKO 802)	Ceramic Paper Filter (L)/4 pcs. Spring Filter/3 pcs. Silicone Grease/1 pc. Iron Holder/1 pc.

Name	Contents	Accessories
HAKKO 471	Station	Filter Pipe/1 pc. Cleaning Pin for Nozzle ϕ1.0 (0.04)/1 pc. Cleaning Pin for Heating Element/1 pc. Cleaning Drill for ϕ1.0 mm (0.04) Nozzle. Ceramic Paper Filter (S)/2 pcs.
	Gun (HAKKO 802)	Ceramic Paper Filter (L)/4 pcs. Spring Filter/3 pcs. Silicone Grease/1 pc. Iron Holder/1 pc.

HAKKO 484
DESOLDERING TOOL

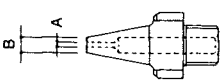


- **Portability**
  The HAKKO 484 is complete with an inner pump, which can be easily carried, therefore suction work is possible anywhere that there is an electric source available.
- **Improves Work Efficiency**
  The nozzle and heating core have been specially designed so solder can be absorbed in the filter while it is still in the molten state. Consequently maintenance time has been reduced and work efficiency improved.
- **Ease of Cleaning**
  To clean, simply pull the knob to remove the filter pipe. The filter pipe is made of heat-proof transparent glass, therefore the accumulation of solder can be easily checked from the outside.
- **Highly Functional Pistol Type Construction**
  The pistol type HAKKO 484 is both compact and light. It weighs only 230 g (0.51 lb) without cord and hose. The trigger type suction control is easily operated by the index finger. Even after extended operation, the operator will feel no fatigue.
- **Ceramic Heating Element**
  The ceramic heating element has an excellent electrical insulation (minimum leakage current) and superior heat recovery qualities thereby making desoldering work quick and efficient.
- **Heat Resistant Suction Hose**
  The use of a heat resistant suction hose eliminates the risk that the hose will be accidentally pierced by the heated tip of the iron.

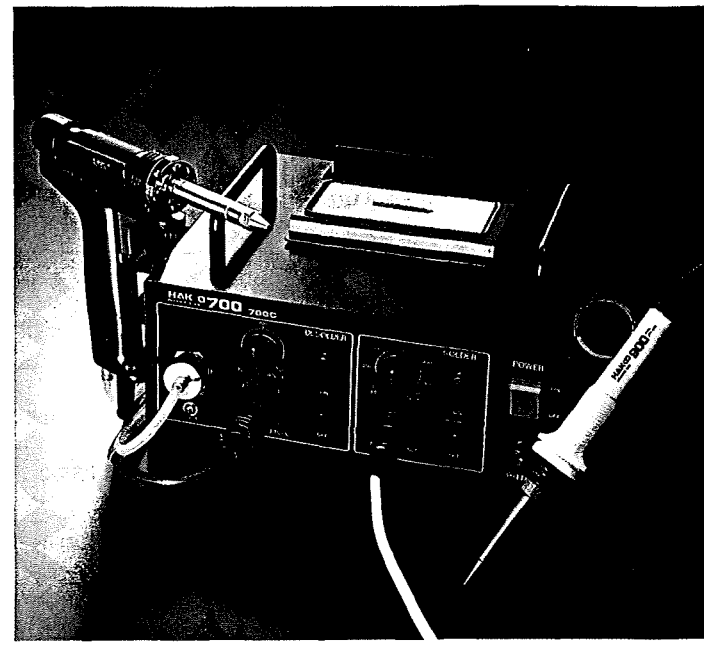
Specifications

Rating	Power Consumption	60W
Station	Pump Type	Double Cylinder
	Vacuum Pressure	600 mm Hg (24 in Hg) Max.
	Motor Power	12W (4-pole)
	Fuse	2A
	Dimensions	135 mm (5.3 in.)(W) × 75 mm (2.9 in.)(H) × 180 mm (7.0 in.)(D)
	Weight	Approx. 2.5 kg (5.5 lb.)
Desoldering Gun	Heating Element	30W Ceramic Heater
	Weight	Approx. 230 g (0.51 lb), without Cord and Hose

Replacement Parts

Part No.	Part Name	Specification
481-T-0.8 **481-T-1.0** **481-T-1.3** **481-T-1.6**	Nozzle Nozzle Nozzle Nozzle	 Unit: mm (in) ϕ0.8 ϕ1.0 ϕ1.3 ϕ1.6 A 0.8 (0.03) 1.0 (0.04) 1.3 (0.05) 1.6 (0.06) B 2.5 (0.09) 2.5 (0.09) 2.5 (0.09) 3.0 (0.1)
481-021	Filter Set	Steel Wool and Ceramic Paper Filters (S/L).
481-002	Filter Pipe	with Filter Set
481-H	Heating Element	30W Ceramic Heater
481-012	Heating Core	
B1085	Cleaning Pin	for Heating Core
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
481-020	Cleaning Wrench	

HAKKO 700
REPAIR SYSTEM



- Combine the powerful desoldering tool and high performance soldering station with accurate control for more effective repair-work.
- Output voltage of both soldering and desoldering are 24V, preventing damage caused by leak voltage.

Specifications

Station

Power Consumption	170W
Output Voltage	24V
Soldering Temperature	200 ~ 480°C (392 ~ 896°F)
Desoldering Temperature	350 ~ 450°C (662 ~ 842°F)
Vacuum Pressure	600 mm Hg (24 in Hg)
Outer Dimension	260 (W) × 145 (H) × 255 (D) mm (10.2 × 5.7 × 10 in)
Weight	Approx. 7.2 kg (15.8 lb.)

Soldering Iron

Part No.	900M
Power Consumption	24V-50W
Temperature Control	Control accuracy of setting at idling temperature ±0.5°C (±0.9°F)
Insulation Resistance	Over 300 MΩ at 400°C (750°F)
Leak Voltage	Under 0.6mV
Cord	5 wired burn-proof silicon cord 1.2 m (4 ft.)
Length (W/O Cord)	190 mm (7.5 in)
Weight (W/O Cord)	45 g (0.10 lb)

Desoldering Gun

Part No.	800L
Power Consumption	24V-60W
Filter Pipe	Heat-resistant Pyrex Glass
Cord/Hose	1.5 m (4.92 ft.) each
Pump Connection	5-pin Metal Connector
Nozzle	Standard φ1.0 (Standard)
Weight (W/O Cord)	230 g (0.51 lb)

Replacement Parts

Desoldering

Part No.	Part Name	Specification
800-021	Filter Set	Steel Wool and Ceramic Paper Filter (S/L).
800-002	Filter Pipe Holder	W/Filter Set
800L-H	Heating Element	24V-60W
800L-012	Heating Core	

Soldering

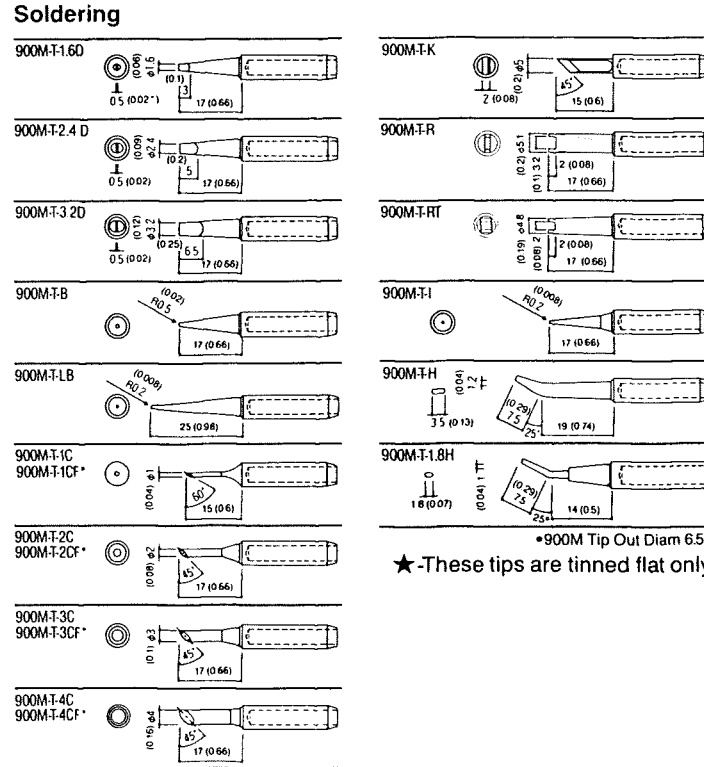
Part No.	Part Name	Specification
900M-H	Heating Element	24V-50W

Replacement Tip

Desoldering

Part No.	Part Name	Specification
800-T-0.8 800-T-1.0 800-T-1.3 800-T-1.6	Nozzle Nozzle Nozzle Nozzle	φ0.8 φ1.0 φ1.3 φ1.6 A 0.8 (0.03) 1.0 (0.04) 1.3 (0.05) 1.6 (0.06) B 2.5 (0.09) 2.5 (0.09) 3.0 (0.1) 3.0 (0.1) Unit: mm (in.)
800-T-1.0S	Nozzle	φ1.0 A 1.0 (0.04) B 2.0 (0.08) Unit mmm (in.)

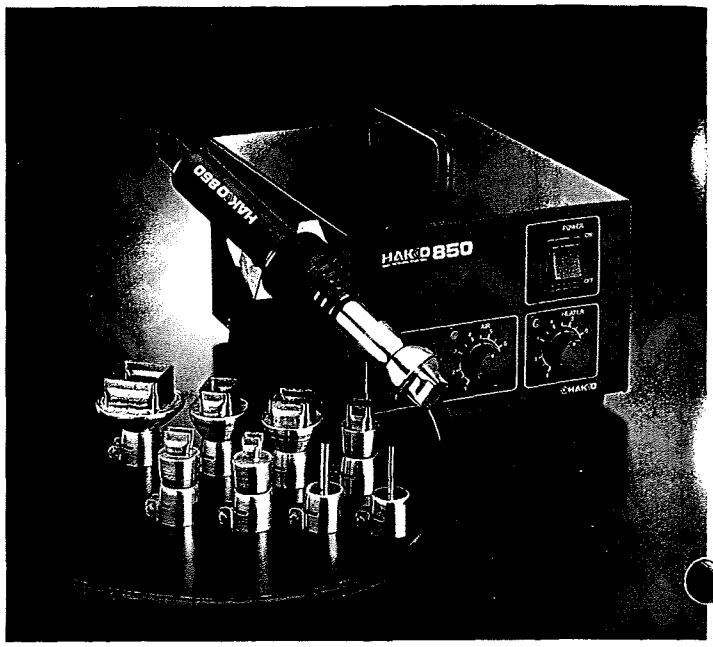
Soldering



•900M Tip Out Diam 6.5φ

★-These tips are tinned flat only

HAKKO 850
SMD REWORK STATION



Note: Nozzles are optional parts. They are not included in HAKKO 850.

- **Soldering**
  Wide range of adjustment of the air volume and temperature permits soldering of QFP's and SOP's.
  The same Nozzle can be used for both soldering and desoldering for greater efficiency.

  Static-free design—ESD safe.

- **Automatic Cooling Mode**
  Protects the Heating Element and Handle when the Power Switch is turned off.

Use the 850 for...

...soldering and desoldering QFP's and SOP's.
...shrinking tubing.

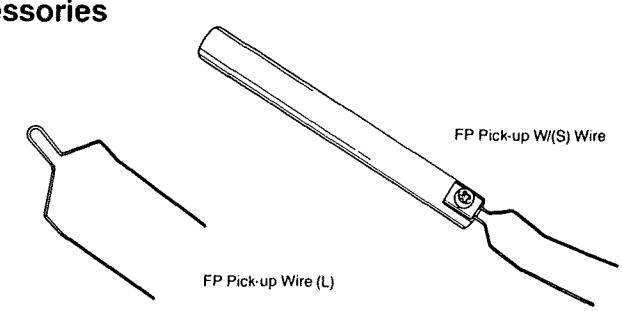
Specifications

HAKKO 850			
Station		**Iron**	
Power Consumption	20W (When the Power Switch is "OFF" 2W)	**Power Consumption**	250W
Pump	diaphragm pump	**Hot Air Temperature**	100 ~ 420°C (212 ~ 788°F) (Use A1126)
Capacity	23ℓ/min (max.)		
Dimensions	187(W) x 135(H) x 245(D) mm (7.36 x 5.31 x 9.64 in)	**Length**	196 mm (7.71 in.)
Weight	Approx. 4 kg (8.81 lb)	**Weight**	120 g (0.26 lb)

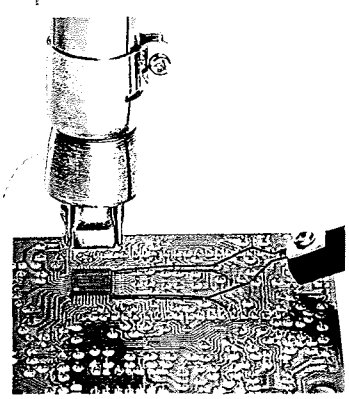
Replacement Parts

Part No.	Part Name
A1143	100V/250W Heating Element
A1144	110V/250W Heating Element
A1146	220V-240V/250W Heating Element
B1438	FP Pick-up [with (S) (L) wire]
B1439	FP Pick-up wire (S)
B1440	FP Pick-up wire (L)

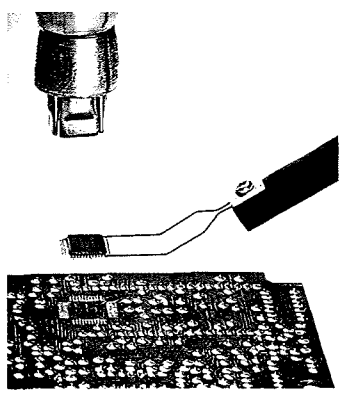
Accessories



Operation—QFP Desoldering

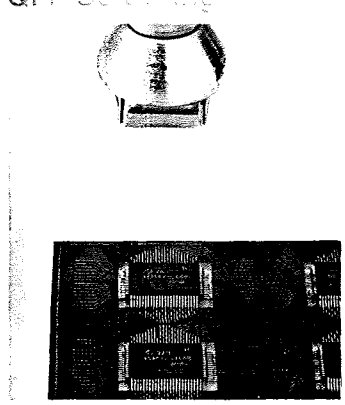


1. Place the FP pickup into the lead frame.
   Place the 850 over the lead frame and melt the solder.



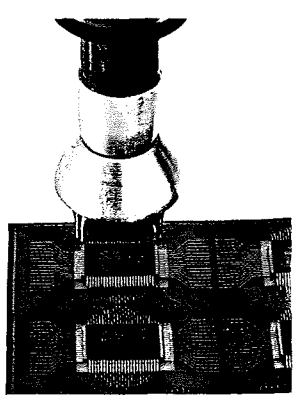
2. Gently lift the SMD from the printed circuit board.

QFP Soldering



1. Apply solder paste and install the SMD on the PCB.

2. Preheat SMD.

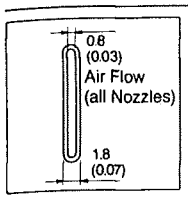


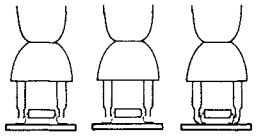
3. Heat the lead frame evenly.

4. When soldering is completed, wash away the flux.

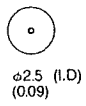
*Inspect the PCB for solder balls and bridges.

Option Parts mm (inch) *The size in Name/Specification indicates the size of IC package.

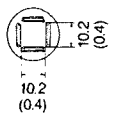




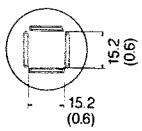
A1124 Single



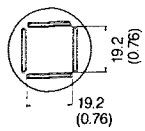
A1125 QFP 10 × 10 (0.39 × 0.39)



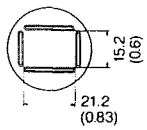
A1126 QFP 14 × 14 (0.55 × 0.55)



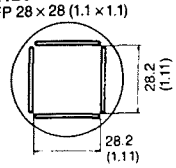
A1127 QFP 17.5 × 17.5 (0.68 × 0.68)



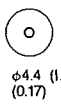
A1128 QFP 14 × 20 (0.55 × 0.78)



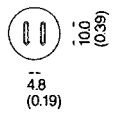
A1129 QFP 28 × 28 (1.1 × 1.1)



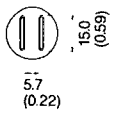
A1130 Single



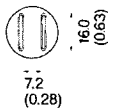
A1131 SOP 4.4 × 10 (0.17 × 0.39)



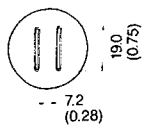
A1132 SOP 5.6 × 13 (0.22 × 0.51)



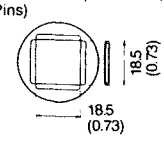
A1133 SOP 7.5 × 15 (0.3 × 0.59)



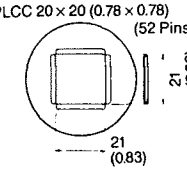
A1134 SOP 7.5 × 18 (0.3 × 0.7)



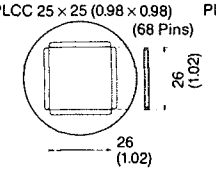
A1135 PLCC 17.5 × 17.5 (0.68 × 0.68) (44 Pins)



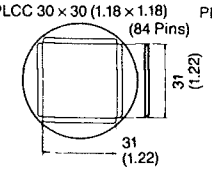
A1136 PLCC 20 × 20 (0.78 × 0.78) (52 Pins)



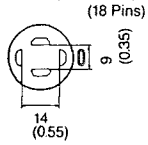
A1137 PLCC 25 × 25 (0.98 × 0.98) (68 Pins)



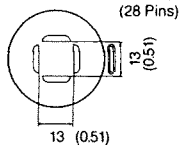
A1138 PLCC 30 × 30 (1.18 × 1.18) (84 Pins)



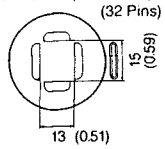
A1139 PLCC 12.5 × 7.3 (0.49 × 0.29) (18 Pins)



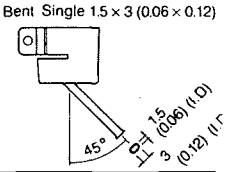
A1140 PLCC 11.5 × 11.5 (0.45 × 0.45) (28 Pins)



A1141 PLCC 11.5 × 14 (0.45 × 0.55) (32 Pins)



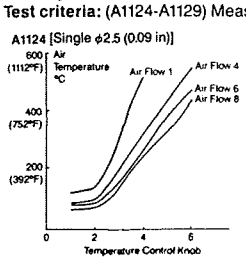
A1142 Bent Single 1.5 × 3 (0.06 × 0.12)



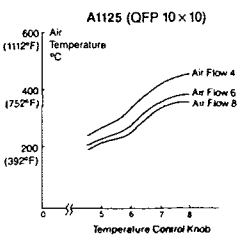
Temperature Distribution Chart

Test criteria: (A1124-A1129) Measured at the point 3 mm (0.1 ") from the Nozzle by recorder. Room Temperature 23°C (73.4F)

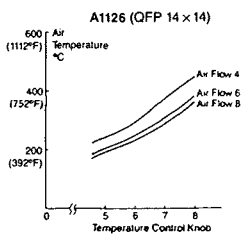
A1124 [Single φ2.5 (0.09 in)]



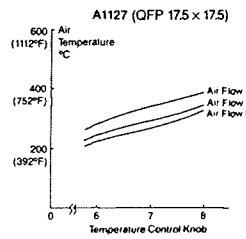
A1125 (QFP 10 × 10)



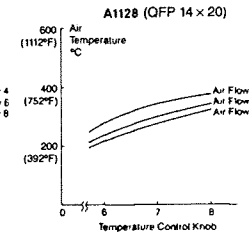
A1126 (QFP 14 × 14)



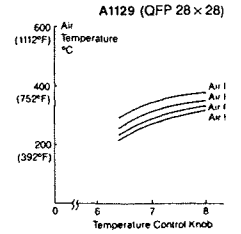
A1127 (QFP 17.5 × 17.5)



A1128 (QFP 14 × 20)

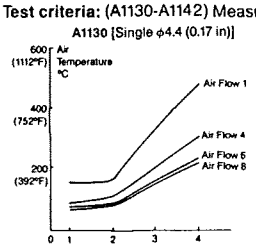


A1129 (QFP 28 × 28)

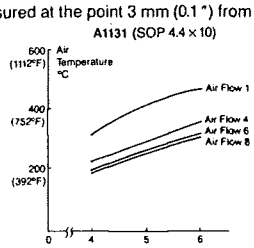


Test criteria: (A1130-A1142) Measured at the point 3 mm (0.1 ") from the Nozzle by recorder. Room Temperature 21°C (67°F)

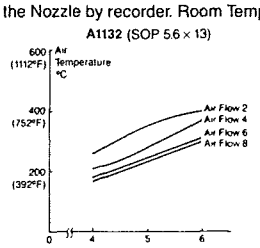
A1130 [Single φ4.4 (0.17 in)]



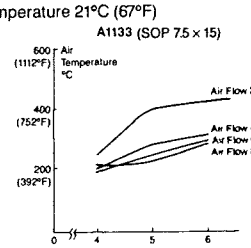
A1131 (SOP 4.4 × 10)



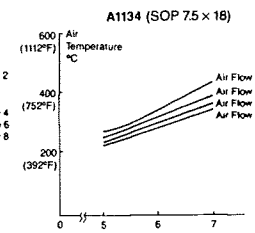
A1132 (SOP 5.6 × 13)



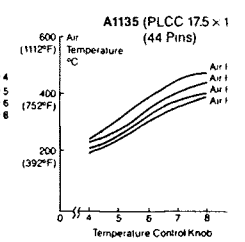
A1133 (SOP 7.5 × 15)



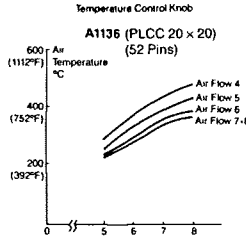
A1134 (SOP 7.5 × 18)



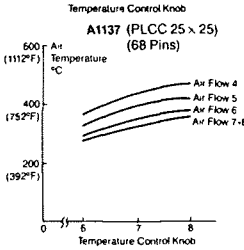
A1135 (PLCC 17.5 × 1 (44 Pins)



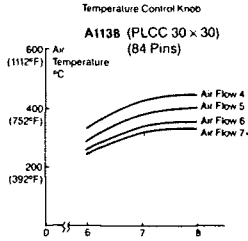
A1136 (PLCC 20 × 20) (52 Pins)



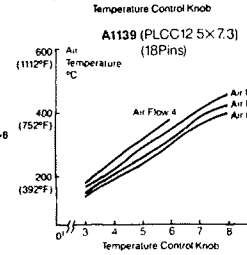
A1137 (PLCC 25 × 25) (68 Pins)



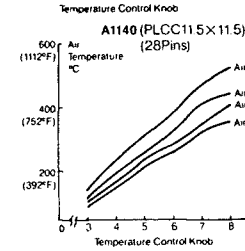
A1138 (PLCC 30 × 30) (84 Pins)



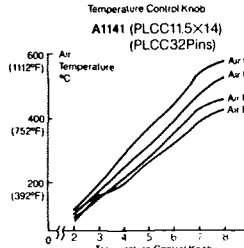
A1139 (PLCC12.5×7.3) (18Pins)



A1140 (PLCC11.5×11.5) (28Pins)



A1141 (PLCC11.5×14) (PLCC32Pins)



A1142 (Bent Single 1.5×3)