



Quality Tools For The Electronics Industry



GOOD DESIGN  
AWARD 2015

# HAKKO Glo




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HAKKO has grown into a global brand. Our soldering irons and related equipment are hard at work in more than 50 countries. We have local branches and sales representatives around the world, and continue to expand our global network.



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 **HAKKO** is registered in countries and regions including the following. Japan, USA, South Korea, Singapore, China, the member of CTM.

# Global Network



As of Aug. 2015

## 《《《 WORLDWIDE NETWORK 《《《



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# Quality Tools for the



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## • SELECT TIP SHAPE

Search for the appropriate tip for your work by following the guidelines.



[http://www.hakko.com/english/tip\\_selection/](http://www.hakko.com/english/tip_selection/)

## • DOCUMENT PORTAL

Download instruction manuals, MSDSs, and technical documents from the HAKKO Document Portal.



<https://doc.hakko.com/?l=en>

# Electronics Industry



**HAKKO FX-801** ESD SAFE  
SOLDERING STATION  
Heavy Duty Soldering Station

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**HAKKO FR-400** ESD SAFE  
DESOLDERING TOOL  
Heavy Duty Desoldering Tool

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**HAKKO FR-410** ESD SAFE  
DESOLDERING TOOL  
High-Power Desoldering Tool

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**HAKKO FX-889** ESD SAFE  
SOLDERING STATION  
2-Port All-Round Soldering Station

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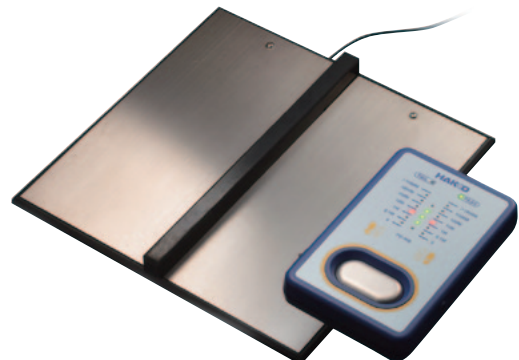
**HAKKO FG-102**  
THERMOMETER  
Soldering Iron Thermometer with  
Traceability Management System

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**HAKKO FG-460**  
FOOTWEAR TESTER  
Footwear Tester

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## Soldering Iron

### All-round Soldering Station & Accessories

**FX-888D**  
65 W



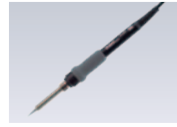
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**FX-889**  
2-Port Type



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**FX-8801**  
Soldering Iron M type (65 W)



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**FX-8803**  
Soldering Gun (65 W)



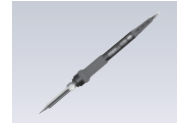
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**FX-8804**  
SMD Hot Tweezers (65 W)



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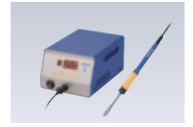
**FX-8805**  
Soldering Iron L type (65 W)



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### Heavy Duty Soldering Station

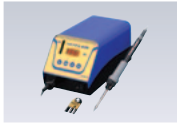
**FX-801**  
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### High Performance Soldering Station

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**FX-951**  
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**FX-950**  
70 W



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**FX-100**  
IH



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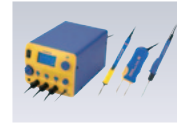
### High Performance Rework Station & Accessories

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**FM-2032**  
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**FM-2022**  
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(140 W)



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**FM-2023**  
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**FM-2024**  
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**FM-2029**  
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**FM-2030**  
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**FX-780**  
N<sub>2</sub> Generator



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**FX-781**  
N<sub>2</sub> Generator



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**FX-791**  
N<sub>2</sub> Flow Meter



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**FX-8802**  
N<sub>2</sub> Soldering Iron (65 W)



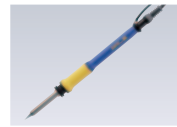
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**FM-2026**  
N<sub>2</sub> Soldering Iron (70 W)



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**FM-2031**  
N<sub>2</sub> Soldering Iron (140 W)



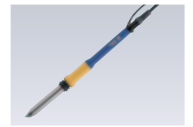
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**FX-8302**  
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### Ceramic Heater Type

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For Electronics Parts Soldering



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**DASH**



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**PRESTO**



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### Battery-powered Type

**FX-901**



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### Nichrome Heater Type

**RED**



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### Built-in Solder Feed Type

**MG**

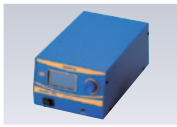


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## Automatic Soldering System

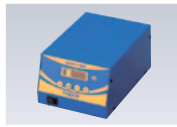
### Automatic Soldering System

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**FU-6002**  
Soldering Iron

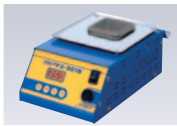


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## Soldering Pot

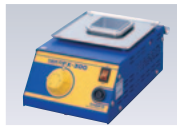
### Soldering Pot

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**FX-300**  
High Performance Type



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**96/96-1**



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**485**



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# Soldering Related Equipment and Materials

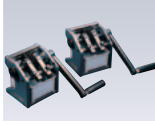
## Tools for Lead and Wire

**FT-801**  
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**153/154**  
Lead Cutter And Former



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Lead Cutter



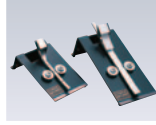
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**152B**  
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**DIPLINER**  
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## Self Feeder

**373**  
Self Feeder



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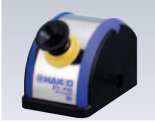
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V-Groove Maker



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## Tip Cleaner / Polisher

**FT-710**  
Tip Cleaner



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**FT-700/FS-100**  
Tip Polisher



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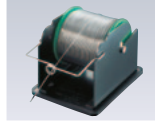
## Iron Holder & Reel Stand

**Iron holder**



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# Desoldering / Rework

## Heavy Duty Desoldering Tool

**FR-400**  
300 W



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## Desoldering Tool

**FR-410**  
140 W



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**FM-204**  
70 W



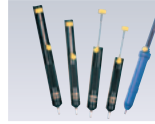
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**FR-300**  
Portable Type



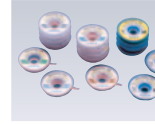
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## SPPON



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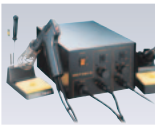
## WICK



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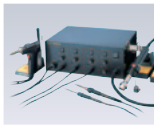
## Rework System

**701**



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**702B**



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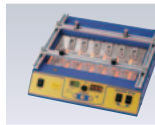
## Preheater

**FR-872**  
IR Type (L-Size)



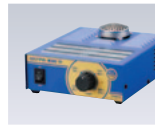
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**FR-870B**  
IR Type (M-Size)



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**FR-830**  
Hot Air Type



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## SMD Rework Station & Accessories

**FR-810**  
BGA-SMD Rework Station



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**FR-803B**  
BGA-SMD Rework Station



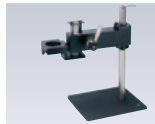
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## Nozzle tray



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## Fixture



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For Chip Components



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# Smoke Absorber

## Air Purifying Type

**FA-430**



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## Desktop Type

**FA-400**



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**490**



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## Line Production System

**494**



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# Static Control

## Static Eliminator

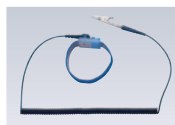
**FE-510**



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## Wrist Strap

**442B**



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# Tester / Meter

## Wrist Strap Tester

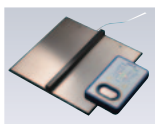
**498**



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## Footwear Tester

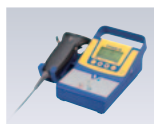
**FG-460**



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## Thermometer

**FG-102**



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**FG-100**



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## Soldering Tester

**FG-101**



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## Static Level Meter

**FG-450**



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# Glue Gun / Heating Gun

## Glue Gun

**804**



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## Heating Gun

**880B/881/882**



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# HAKKO Soldering Iron Lineup

		FX-888D	FX-889	FX-801	FX-838	FX-100	FX-951	FX-950	
									
Specifications	Power consumption	70 W	135 W	300 W	158 W	25 W (85 W)	75 W	75 W	
	Power consumption of Handpiece	65 W	65 W x 2 port	260 W	150 W	—	70 W	70 W	
	Temperature Range	50 to 480°C	50 to 480°C	50 to 500°C	200 to 500°C	350°C/400°C/450°C	200 to 450°C	200 to 450°C	
	Soldering Tip	T18 series	T18 series	T33 series	T20 series	T31 series	T12 series	T12 series	
Applicable Standard	Lead Free Suggestible	●	●	●	●	●	●	●	
	ESD Safe	●	●	●	●	●	●	●	
	RoHS Suggestible	●	●	●	●	●	●	●	
Accessories	Micro Soldering Iron connectable						●		
	SMD Hot Tweezers connectable	●	●						
	N <sub>2</sub> Soldering Iron connectable	●	●		●		●	●	
	Desoldering Iron connectable								
	Hot Air Handpiece connectable								
	Self Feeder connectable	●	●		●		●	●	
	Heavy Duty Soldering Iron connectable			● *Standard feature	● *Standard feature				
Function	Auto Shutoff Function: When a set time passed, the function stops to supply power to the heating element.								
				●	●	●	●		
	Auto Sleep Function: When a set time passed, the tip temperature decreases to a set lower temperature.								
				●	●	●	●	● *Option	
	Lock Function: Lockable by password, control card or lock key.								
		Password	Password	Password	Control card	Password	Control card	Lock key	
	Lower Temperature Error Alert: When the temperature drops below a set limit, an error is displayed and the buzzer sounds.								
				●	●		●		
Offset Temperature Function: Temperature offsettable by analog, digital or adjustment mode.									
	Adjustment mode	Adjustment mode	Digital	Digital		Digital	Manual		
Preset Temperature Function: The function allows to input several frequently-used temperatures and recall with one push of a button.									
	●	●	●	●					



# Heavy Duty Soldering Station

**HAKKO** FX-801 **ESD SAFE**  
SOLDERING STATION

**New**

Heavy Duty Soldering Station **Digital**

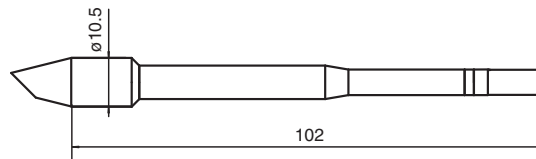
Tip not included



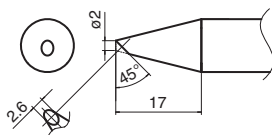
- Super power 300 W
- Best suited for soldering PWB with high heat capacity and high heat dissipation property

## Optional Tips for the FX-8002

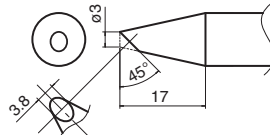
Unit: mm



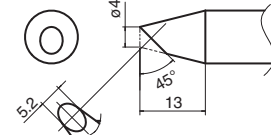
T33-BC2 Shape-2BC



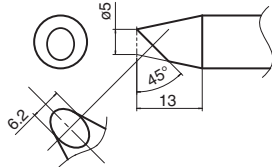
T33-BC3 Shape-3BC



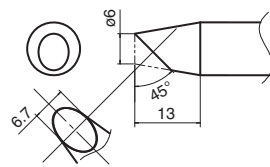
T33-BC4 Shape-4BC



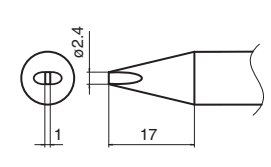
T33-BC5 Shape-5BC



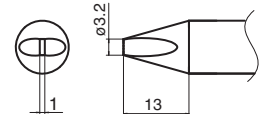
T33-BC6 Shape-6BC



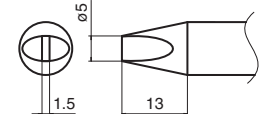
T33-D24 Shape-2.4D



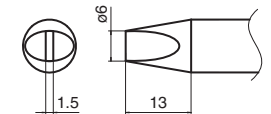
T33-D32 Shape-3.2D



T33-D5 Shape-5D

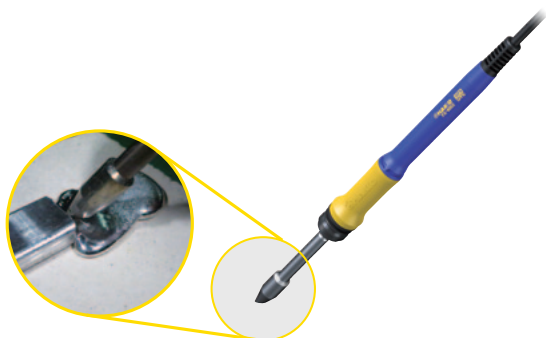


T33-D6 Shape-6D



## Features

Make the impossible possible with Super Power of 300 W Heater.



Check out the powerful performance of FX-801 easily melting a bar solder.

[http://www.hakko.com/mov\\_e\\_fx801\\_feature1](http://www.hakko.com/mov_e_fx801_feature1)



QR code

**Compact and lightweight (50 g) for heavy duty 300 W iron**  
The same weight as the iron part of FX-838, 150 W soldering station, for operator's comfort and better workability.

Large LED display enables easy viewing and operation.



**Handles on unit body**

Handles on unit body make it easy to carry.

**Preset mode**

Up to 6 settings can be preset and easily called up by Up/Down buttons.

**Password function**

Settings can be locked from unnecessary changes by password function.



Selectable alphabets for password

Connectable with N<sub>2</sub> soldering iron  
To improve solder wettability and spreadability

**HAKKO** SOLDERING IRON **FX-8003** ESD SAFE

## N<sub>2</sub> Soldering Iron

Tip not included



For further details, see the N<sub>2</sub> soldering system (P.32 & P.33).

## Packing List

<b>FX-801</b>	Station, Handpiece (FX-8002), Heat resistant pad, Power cord, Connecting cable, Iron holder (with cleaning wire), Instruction manual
<b>FX-8003</b>	Handpiece, Instruction manual

## Specifications

<b>Model No.</b>	FX-801
Power consumption	300 W
Temperature range	50 to 500°C
Temperature stability	±5°C at idle temperature

### Station

Output voltage	AC 29 V
Dimensions	145 (W) × 107 (H) × 211 (D) mm
Weight	3.9 kg

### Soldering Iron

Power consumption	260 W (29 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	228 mm (with 4BC tip)
Weight*	50 g (with 4BC tip)

\* Without cord

<b>Model No.</b>	FX-8003
Power consumption	260 W (29 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	253 mm (with 4BC tip)
Weight*	65 g (with 4BC tip and nozzle assembly A)

\* Without cord

# All-Round Soldering Station

## HAJKO FX-888D SOLDERING STATION ESD SAFE

### All-Round Soldering Station Digital

Tip included



- Features Adjustment mode, Preset mode, and Password function
- Separable tip/heater design provides superior cost performance.
- L type (Large type) soldering iron FX-8805 is added to the lineup.

## HAJKO FX-889 SOLDERING STATION ESD SAFE New

### 2-Port All-Round Soldering Station Digital

Tip included

\* 1 piece of FX-8801 is included as standard.



- All the user-friendly functions are succeeded from FX-888D.
- Two applications can be active at the same time.
- Applicable to all the options, N<sub>2</sub> soldering iron, Soldering gun, SMD Hot Tweezers, and L type (Large type) soldering iron.

## Features

### Strict temperature management

#### ● Digital display

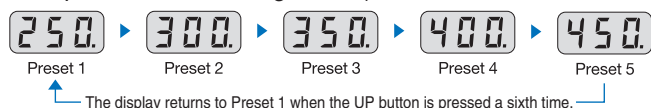
The FX-888D's and FX-889's digital display makes it easy to check the set temperature at a glance.

#### ● Password function

Settings can be locked using a password to prevent them from being changed unexpectedly.

#### ● Preset mode

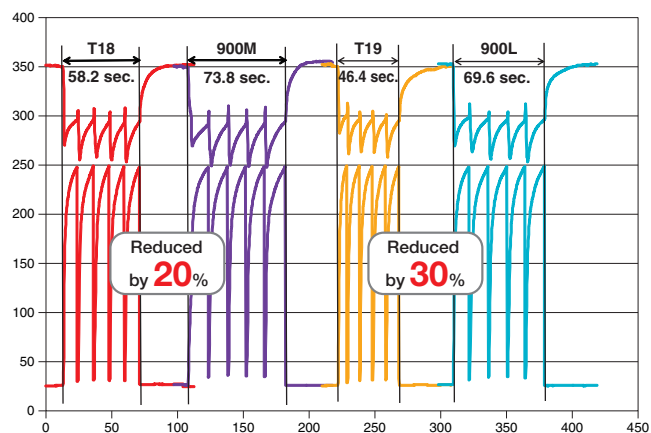
Simply select the desired temperature from a selection of preset temperatures registered in advance. (Up to 5 preset temperatures can be registered.)



#### ● Adjustment mode

With adjustment mode, what used to be a troublesome procedure is now as simple as entering the measured tip temperature in the FX-888D and FX-889.

#### ● FX-888D and FX-889 deliver excellent thermal recovery by using T18 and T19 series tips for their terrific heat conductivity.



## Packing List

FX-888D	Station, Handpiece (FX-8801), Iron holder, Instruction manual
FX-889	Station, Handpiece (FX-8801), Power cord, Dual Iron Holder, Color band (qty 2), Instruction Manual



Measuring the tip temperature with a tip thermometer (HAKKO FG-100)

### Test criteria

Measurement method	Thermocouples are mounted on the tip and the soldered portion on the board, and the time until the soldered portion reaches 250°C is measured for 5 points.
Board	Paper phenol copper board
Component used	Terminal
Tip shape	Shape-2.4D
Temperature setting	350°C
Solder	Lead-free solder (Sn/Ag/Cu), diameter: 0.5 mm

## Specifications

Model No.	FX-888D	FX-889
Power consumption	70 W	135 W
Temperature range	50 to 480°C	50 to 480°C
Temperature stability	±1°C at idle temperature (When set to 200 to 480°C)	

### Station

Output voltage	AC 26 V	AC 26 V
Dimensions	100 (W) × 120 (H) × 120 (D) mm	157 (W) × 121 (H) × 149 (D) mm
Weight	1.2 kg*	2.1 kg

### Soldering Iron

Power consumption	65 W (26 V)	65 W (26 V)
Tip to ground resistance	<2 Ω	<2 Ω
Tip to ground potential	<2 mV	<2 mV
Heating element	Ceramic heater	Ceramic heater
Standard tip	Shape-B (No. T18-B)	Shape-B (No. T18-B)
Cord length	1.2 m	1.2 m
Total length*	217 mm (with B tip)	222 mm (with B tip)
Weight*	46 g (with B tip)	52 g (with B tip)

\* Without cord

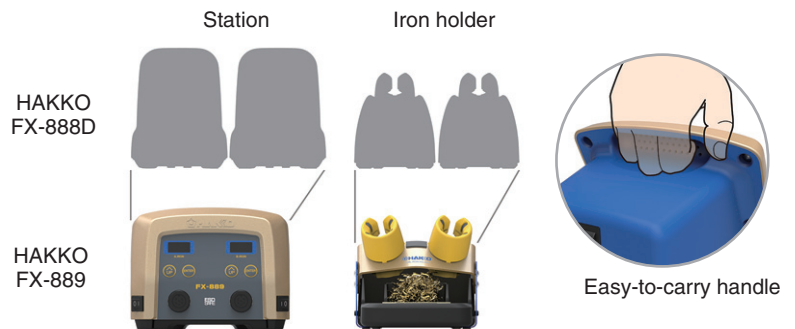
# All-Round Soldering Station

## Features

### User-Friendly Design

#### ● Space-saving design

The reduced foot print is smaller than 2 of FX-888D and its iron holder. Efficient setup is available even on smaller workbench.



#### ● Power-saving design

Independent switches cut the power for each iron when not in use. Power-saving design minimizes standby electricity.

#### ● Superior operability

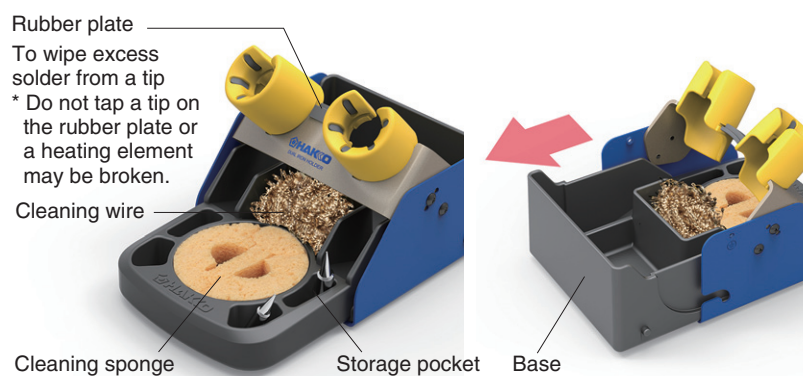
Four buttons were symmetrically placed at the both sides on the front panel. The two buttons on each side allow simple and intuitive operation.

A color band can be attached to the handle, and this makes it possible to see at a glance which side it is connected to. (2 pieces of color band are included as the standard accessories.)



#### ● Rich functions of iron holder

- Convenient pockets to stock soldering tips
- Three different ways for tip cleaning with provided cleaning tools
- Simple and easy cleaning of iron holder inside by removing holder base



# Accessories for HAKKO FX-888D & FX-889

## HAKKO FX-8801 SOLDERING IRON ESD SAFE

### Soldering Iron M type

Tip included



## HAKKO FX-8802 SOLDERING IRON ESD SAFE

### N<sub>2</sub> Soldering Iron

Tip included



## HAKKO FX-8803 SOLDERING GUN ESD SAFE

### Soldering Gun

Tip included



## HAKKO FX-8804 SMD HOT TWEEZER ESD SAFE

### SMD Hot Tweezers

Tip included



## HAKKO FX-8805 SOLDERING IRON ESD SAFE New

### Soldering Iron L type

Tip included



### Specifications

Model No.	FX-8801
Power consumption	65 W (26 V)
Temperature range	50 to 480°C
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Standard tip	Shape-B (No.T18-B)
Cord length	1.2 m
Total length*	217 mm (with B tip)
Weight*	46 g (with B tip)

\* Without cord

Model No.	FX-8802
Power consumption	65 W (26 V)
Temperature range	50 to 480°C
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Standard tip	Shape-B (No.T18-B)
Cord length	1.2 m
Total length**	190 mm (with B tip)
Weight**	59 g (with B tip and nozzle assembly A)

\* Use this N<sub>2</sub> soldering iron below 450°C.

\*\* Without cord and tube

Model No.	FX-8803
Power consumption	65 W (26 V)
Temperature range	50 to 480°C
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Standard tip	Shape-3C pre-tinned surface 45° (No.T18-CF3)
Standard guide nozzle	ø1.0 mm
Usable solder diameter	0.6, 0.8, 1.0, 1.2, 1.6 mm
Cord length	1.1 m
Dimensions	170 (W) × 180 (H) × 23 (D) mm
Weight*	177 g

\* Without cord

Model No.	FX-8804
Power consumption	65 W (26 V)
Temperature range	200 to 400°C
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Standard tip	Shape-2L (No. A1378) 2 pcs/set
Cord length	1.2 m
Total length*	186 mm
Weight*	93 g

\* Without cord

\* The recommended (process) temperature is from 200°C to 400°C while setting temperature range of FX-888D is from 50°C to 480°C.

Model No.	FX-8805
Power consumption	65 W (26 V)
Temperature range	50 to 480°C
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Standard tip	Shape-B (No.T19-B)
Cord length	1.2 m
Total length*	222 mm (with B tip)
Weight*	59 g (with B tip)

\* Without cord

# Accessories for HAKKO FX-888D & FX-889

## Packing List

<b>FX-8801</b>	Handpiece, Instruction Manual
<b>FX-8802</b>	Handpiece, Shield plate, Instruction manual
<b>FX-8803</b>	Handpiece, Instruction manual
<b>FX-8804</b>	Handpiece, Caution label, Heat resistant pad, Instruction manual
<b>FX-8805</b>	Handpiece, Instruction Manual

NOTE: The soldering iron cannot be used as a standalone device.

## Option

### FX-8803

Part No.	Name	Specifications
C1437	Iron holder (with cleaning sponge)	-

### FX-8804

Part No.	Name	Specifications
FH800-04BY	Iron holder (with cleaning sponge)	Blue & yellow

### FX-8801 & FX-8805

Part No.	Name	Specifications
B5122	Tip enclosure	With nut, required when converting from the FX-8801 to the FX-8805
B3730	Nut and tip enclosure	Required when converting from the FX-8805 to the FX-8801

## Replacement Tips for the FX-8801 and FX-8803

Unit: mm

<p>Applicable for FX-8803</p> <p><b>T18-B Shape-B</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-SB Shape-SB</b></p>	<p><b>T18-BR02 Shape-0.2BR</b></p>	<p><b>T18-BL Shape-BL</b></p>	<p><b>T18-C05 Shape-0.5C</b></p>
<p>Applicable for FX-8803</p> <p><b>T18-C08 Shape-0.8C</b></p>	<p><b>T18-C1 Shape-1C</b> <b>T18-CF1*</b></p>	<p><b>T18-CF15* Shape-1.5C</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-C2 Shape-2C</b> <b>T18-CF2*</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-CSF25* Shape-2.5CS</b></p>
<p>Applicable for FX-8803</p> <p><b>T18-C3 Shape-3C</b> <b>T18-CF3*</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-C4 Shape-4C</b> <b>T18-CF4*</b></p>	<p><b>T18-C5 Shape-5C</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-K Shape-K</b></p>	<p><b>T18-D08 Shape-0.8D</b></p>
<p><b>T18-D12 Shape-1.2D</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-D16 Shape-1.6D</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-D24 Shape-2.4D</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-D32 Shape-3.2D</b></p>	<p><b>T18-DL12 Shape-1.2DL</b></p>
<p><b>T18-DL2 Shape-2DL</b></p>	<p><b>T18-DL32 Shape-3.2DL</b></p>	<p><b>T18-S3 Shape-S3</b></p>	<p>Applicable for FX-8803</p> <p><b>T18-S4 Shape-S4</b></p>	<p><b>T18-S6 Shape-S6</b></p>
<p><b>T18-S9 Shape-S9</b></p>	<p><b>T18-I Shape-I</b></p>			

\* These tips are tinned on the soldering surface only.

### Replacement Tips and Nozzles for the FX-8802

Please see the replacement tips on P.34

### Replacement Tips for the FX-8804

#### For Chip Component

Part No.	Name	Size of A (B)	Tip Shape
A1577	Tip/CHIP 0.5L	0.5 mm	
A1379	Tip/CHIP 1L	1 mm	
A1378	Tip/CHIP 2L	2 mm	
A1388	Tip/CHIP 0.5C	1.5 (0.5) mm	
A1389	Tip/CHIP 0.5I	R0.25 mm	
A1576	Tip/CHIP 2.6C	2.6 mm	

#### For SOP Component

Part No.	Name	Size of A	Tip Shape
A1390	Tip/SOP 4L	4 mm	
A1391	Tip/SOP 6L	6 mm	
A1380	Tip/SOP 8L	8 mm	
A1381	Tip/SOP 10L	10 mm	
A1382	Tip/SOP 13L	13 mm	
A1392	Tip/SOP 15L	15 mm	
A1383	Tip/SOP 18L	18 mm	
A1384	Tip/SOP 20L	20 mm	
A1385	Tip/SOP 25L	25 mm	

### Replacement Tips for the FX-8805

Unit: mm

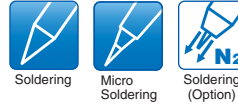
<b>T19-B Shape-B</b> 	<b>T19-B2 Shape-2B</b> 	<b>T19-C3 Shape-3C</b> 	<b>T19-C4 Shape-4C</b> 	<b>T19-C65 Shape-6.5C</b> 
<b>T19-D24 Shape-2.4D</b> 	<b>T19-D32 Shape-3.2D</b> 	<b>T19-D5 Shape-5D</b> 	<b>T19-D65 Shape-6.5D</b> 	<b>T19-I Shape-I</b> 

# High Performance Soldering Station

## HAJKO FX-951 SOLDERING STATION ESD SAFE

### High Performance Soldering Station Digital

Tip not included



- Compact high-power thermally-controlled soldering iron
- Informs you of errors by a warning buzzer or display

### HAJKO FM-2032 SOLDERING IRON ESD SAFE



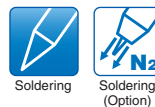
Micro soldering Iron is available optionally.

For further details, see the micro soldering iron (P.25).

## HAJKO FX-950 SOLDERING STATION ESD SAFE

### High Performance Soldering Station Analog

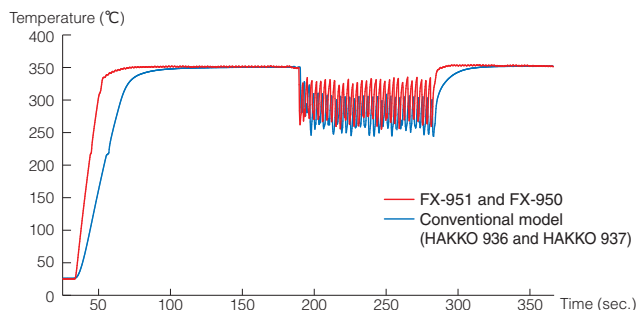
Tip not included



- Analog type high-power soldering iron
- “Lock key” can lock the temperature setting.
- Informs you of various errors by a lamp

## Features

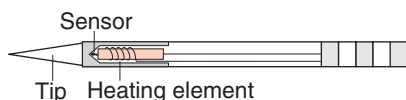
### Thermal recovery graph (Comparison of HAKKO products)



### Test criteria

Measurement method	A thermocouple is mounted on the tip and the tip temperature is measured when soldering $\phi$ 1.6 mm x 5 mm solder to paper phenol copper board once every 3 seconds.
Board	Paper phenol copper board.
Temperature setting	350°C
Solder	Lead-free solder (Sn/Ag/Cu), diameter: 1.6 mm x 5 mm

### Composite tip



The composite tip with an integrated heating element and sensor offers superior thermal responsivity and thermal recovery.

### Variety of tips



### Connectable with N<sub>2</sub> soldering iron

To improve solder wettability and spreadability



For further details, see the N<sub>2</sub> soldering system (P.32 & P.33).

## Packing List

<b>FX-951</b>	Station, Handpiece (FM-2028), Control card, Power cord, Connecting cable, Heat resistant pad, Iron holder, Instruction manual
<b>FX-950</b>	Station, Handpiece (FM-2028), Lock key, Heat resistant pad, Iron holder, Instruction manual

## Specifications

Model No.	FX-951	FX-950
Power consumption	75 W	
Temperature range	200 to 450°C	
Temperature stability	±5°C at idle temperature	

### Station

Output voltage	AC 24 V
Dimensions	FX-951: 80 (W) x 130 (H) x 131 (D) mm FX-950: 80 (W) x 118 (H) x 138 (D) mm
Weight	1.2 kg

### Soldering Iron

Power consumption	70 W (24 V)
Tip to ground resistance	<2 $\Omega$
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	188 mm (with 2.4D tip)
Weight*	30 g (with 2.4D tip)

\* Without cord

## Option

Part No.	Name	Specifications
FH200-01	Iron holder	With power-save function and cleaning wire
FH200-02	Iron holder	With power-save function and cleaning sponge

\* In order to use the power-save function with the FX-950, the FH200-01 or FH200-02 iron holder is required.

# High Performance Soldering Station

## Optional Tips for the FM-2028

Unit: mm

### Standard type

<b>B</b>	<b>T12-B Shape-B</b> 	<b>T12-B2 Shape-0.5B</b> 	<b>T12-B3 Shape-0.7B</b> 	<b>T12-B4 Shape-0.4B</b> 	<b>T12-BL Shape-BL</b> 
<b>BC</b>	<b>T12-BC1 Shape-1BC</b> <b>T12-BCF1*</b> 	<b>T12-BC2 Shape-2BC</b> <b>T12-BCF2*</b> 	<b>T12-BC3 Shape-3BC</b> <b>T12-BCF3*</b> 	<b>T12-BCM2 Shape-2BC</b> <b>Bevel with indent</b> 	<b>T12-BCM3 Shape-3BC</b> <b>Bevel with indent</b> 
<b>C</b>	<b>T12-C08 Shape-0.8C</b> 	<b>T12-C1 Shape-1C</b> 	<b>T12-C4 Shape-4C</b> <b>T12-CF4*</b> 		
<b>D</b>	<b>T12-D08 Shape-0.8D</b> 	<b>T12-D12 Shape-1.2D</b> 	<b>T12-D16 Shape-1.6D</b> 	<b>T12-D24 Shape-2.4D</b> 	<b>T12-D4 Shape-4D</b> 
	<b>T12-D52 Shape-5.2D</b> 	<b>T12-DL08 Shape-0.8DL</b> 	<b>T12-DL12 Shape-1.2DL</b> 	<b>T12-DL32 Shape-3.2DL</b> 	<b>T12-DL52 Shape-5.2DL</b> 
<b>I</b>	<b>T12-I Shape-I</b> 	<b>T12-IL Shape-IL</b> 	<b>T12-ILS Shape-ILS</b> 		
<b>J</b>	<b>T12-J02 Shape-0.2J</b> 	<b>T12-JL02 Shape-0.2JL</b> 	<b>T12-JS02 Shape-0.2JS</b> 		
<b>K</b>	<b>T12-K Shape-K</b> 	<b>T12-KF Shape-KF</b> 	<b>T12-KL Shape-KL</b> 	<b>T12-KR Shape-KR</b> 	<b>T12-KU Shape-KU</b> 

\* These tips are tinned on the soldering surface only.

### Concave type

<b>T12-1610</b> 	<b>T12-1612</b> 
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SMD type

Quad	T12-1201 Quad 13.6 x 8.5 	T12-1202 Quad 10.3 x 10.3 	T12-1203 Quad 12.8 x 12.8 	T12-1204 Quad 17.9 x 17.9 	T12-1205 Quad 23.4 x 17.3 
	T12-1206 Quad 22.5 x 16.5 	T12-1207 Quad 15.5 x 15.5 	T12-1208 Quad 15.8 x 15.8 	T12-1209 Quad 8.4 x 8.4 	
Tunnel	T12-1001 Tunnel 5.1 x 4.6 	T12-1002 Tunnel 5.1 x 10.4 	T12-1003 Tunnel 9.5 x 18.3 	T12-1004 Tunnel 9.5 x 15.8 	T12-1005 Tunnel 9.5 x 13.2 
	T12-1006 Tunnel 6.9 x 11.4 	T12-1007 Tunnel 7.9 x 18.8 	T12-1008 Tunnel 19.5 x 10.2 	T12-1009 Tunnel 13.4 x 20.5 	T12-1010 Tunnel 19.5 x 12 
Spatula	T12-1401 Spatula 10.4 	T12-1402 Spatula 15.7 	T12-1403 Spatula 21.2 	T12-1404 Spatula 25 	T12-1405 Spatula 32 
	T12-1406 Spatula 40 				

Long life type

T12-BZ Shape-B (Z) 	T12-B2Z Shape-0.5B (Z) 	T12-BC1Z Shape-1BC (Z) T12-BCF1Z* 	T12-BC2Z Shape-2BC (Z) T12-BCF2Z* 	T12-BC3Z Shape-3BC (Z) T12-BCF3Z* 
T12-C4Z Shape-4C (Z) T12-CF4Z* 	T12-D12Z Shape-1.2D (Z) 	T12-D16Z Shape-1.6D (Z) 	T12-D24Z Shape-2.4D (Z) 	T12-D4Z Shape-4D (Z) 
T12-KFZ Shape-KF (Z) 	T12-KRZ Shape-KR (Z) 			

\* These tips are tinned on the soldering surface only.

Heavy duty type

T12-WB2 Shape-0.5WB 	T12-WD08 Shape-0.8WD 	T12-WD12 Shape-1.2WD 	T12-WD16 Shape-1.6WD 	T12-WD52 Shape-5.2WD 	T12-WI Shape-WI 

## HAKKO FX-100 ESD SAFE SOLDERING STATION

### IH Soldering Station Digital

Tip not included



Soldering



- Provides the heat to the tip effectively by an 'Induction heater'
- Unique "Power assist" feature that assists the thermal recovery performance of the soldering iron tip
- No calibration is required
- Wide variety of tips available
- Meets or exceeds IPC J-STD-001 and ANSI ESD S20.20.



## GOOD DESIGN

Good Design Award has been a sole comprehensive design evaluation and commendation system in Japan since 1957. "G Mark", the symbol of the award has been recognized widely as a mark representing good design.

### Packing List

<b>FX-100</b>	Station, Handpiece (FX-1001), Heat resistant pad, Power cord, Sleeve (green), Sleeve (gray), Cleaning wire, Iron holder, Instruction manual
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### Specifications

<b>Model No.</b>	FX-100
<b>Power consumption</b>	28 W (85 W)
<b>Temperature range</b>	T31-01 Series: 450°C, T31-02 Series: 400°C, T31-03 Series: 350°C
<b>Temperature stability</b>	±1.1°C

#### Station

<b>Output power</b>	50 W
<b>Output frequency</b>	13.56 MHz
<b>Dimensions</b>	127 (W) × 150 (H) × 167 (D) mm
<b>Weight</b>	3 kg

#### Soldering Iron

<b>Tip to ground resistance</b>	<2 Ω
<b>Tip to ground potential</b>	<2 mV
<b>Heating element</b>	IH (Induction heating)
<b>Cord length</b>	1.3 m
<b>Total length*</b>	190 mm with 2.4D tip for 350°C or 400°C 193 mm with 2.4D tip for 450°C
<b>Weight*</b>	31 g (with 2.4D tip for 400°C)

\* Without cord

## Features

**IH technology delivers the ultimate soldering iron**  
**Excellent heat supply. Ideal for the most challenging soldering jobs.**

The HAKKO FX-100 features IH (induction heater) that continuously powers the soldering iron and maintains the set temperature by automatically detecting even minute drops in temperature, plus HAKKO's proprietary "Power Assist" function. The FX-100 achieves powerful thermal recovery even with fine-shaped tips. It provides excellent thermal responsiveness that conventional IH and sensor feedback systems cannot offer.



### Boost function

To increase tip temperature by 5 to 10°C (depends on tip shape) for better working efficiency.

### Interactive method by LCD display with 3 buttons

#### PROFILE

```
PROFILE 1
S: HAKKO-1
U: ID-123
S: 0.6 LEAD FREE
```

Station ID, user name and solder type can be registered.

#### TIP LOAD

```
TIP LOADS
APPROX.
000025 Points
<RESET> <OK>
```

The soldering count is displayed.

#### TIP TIME

```
TIP TIME
0023 hours
<RESET> <OK>
```

The cumulative running time on the iron tip is displayed.

#### TIP TYPE and NORMAL MODE/BOOST MODE

```
<01>
N
■■■■■■■
```

Visible tip type (01/02/03) and normal mode (N)/boost mode (B) on display.

T31-XX BC1

Indicates tip shape and size as usual.

"01" for 450°C  
 "02" for 400°C  
 "03" for 350°C

## Optional Tips for the FX-1001

Unit: mm

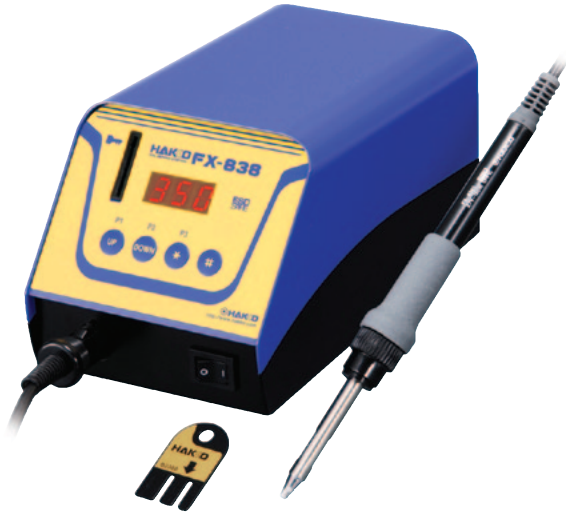
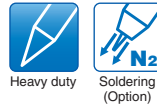
<p>T31-01 Series: 71.5 T31-02/03 Series: 68.5</p>			
<p><b>T31-01BC1 Shape-1BC</b> T31-02BC1 T31-03BC1</p>	<p><b>T31-01BC28 Shape-2.8BC</b> T31-02BC28 T31-03BC28</p>	<p><b>T31-01BL Shape-BL</b> T31-02BL T31-03BL</p>	<p><b>T31-01D08 Shape-0.8D</b> T31-02D08 T31-03D08</p>
<p><b>T31-01D16 Shape-1.6D</b> T31-02D16 T31-03D16</p>	<p><b>T31-01D24 Shape-2.4D</b> T31-02D24 T31-03D24</p>	<p><b>T31-01D52 Shape-5.2D</b> T31-02D52 T31-03D52</p>	<p><b>T31-01I Shape-I</b> T31-02I T31-03I</p>
<p><b>T31-01IL Shape-IL</b> T31-02IL T31-03IL</p>	<p><b>T31-01J02 Shape-0.2RSB</b> T31-02J02 T31-03J02</p>	<p><b>T31-01JL02 Shape-0.2RLB</b> T31-02JL02 T31-03JL02</p>	<p><b>T31-01JS02 Shape-0.2RSSB</b> T31-02JS02 T31-03JS02</p>
<p><b>T31-01KU Shape-KU</b> T31-02KU T31-03KU</p>	<p><b>T31-01SBL Shape-SBL</b> T31-02SBL T31-03SBL</p>	<p><b>T31-01WD08 Shape-0.8WD</b> T31-02WD08 T31-03WD08</p>	

# Heavy Duty Soldering Iron

## HAKO FX-838 SOLDERING STATION ESD SAFE

### Heavy Duty Soldering Iron Digital

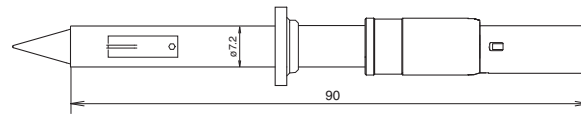
Tip not included



- High powered 150 W soldering iron
- Best suited for soldering of power-supply boards, heat sinks, and shield cases
- Applicable also to the soldering of multilayer boards with micro components

### Optional Tips for the FX-8301

Unit: mm

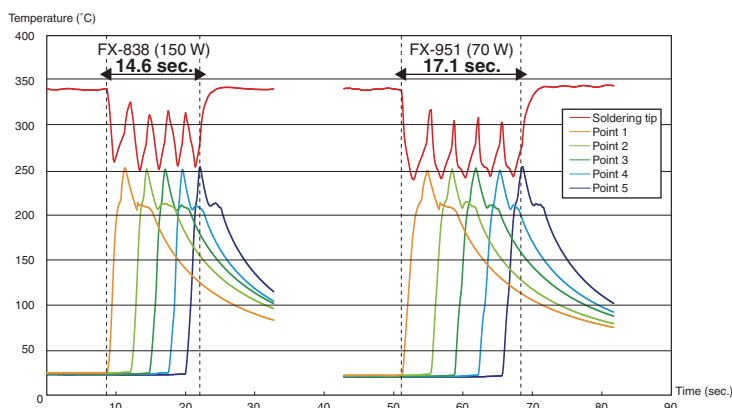


<b>T20-B2 Shape-0.5B</b> 	<b>T20-BC2 Shape-2BC T20-BCF2*</b> 	<b>T20-BC3 Shape-3BC T20-BCF3*</b> 	<b>T20-BC4 Shape-4BC T20-BCF4*</b> 	<b>T20-BCM2 Shape-2BC Bevel with indent</b> 
<b>T20-BCM3 Shape-3BC Bevel with indent</b> 	<b>T20-BL Shape-BL</b> 	<b>T20-BL2 Shape-2BL</b> 	<b>T20-BL3 Shape-3BL</b> 	<b>T20-C5 Shape-5C</b> 
<b>T20-C6 Shape-6C</b> 	<b>T20-D16 Shape-1.6D</b> 	<b>T20-D24 Shape-2.4D</b> 	<b>T20-D32 Shape-3.2D</b> 	<b>T20-D6 Shape-6D</b> 
<b>T20-J02 Shape-0.2J</b> 	<b>T20-K Shape-K</b> 	<b>T20-KU Shape-KU</b> 	<b>T20-1610</b> 	<b>T20-1611</b> 

\* These tips are tinned on the soldering surface only.

## Features

Graph of a comparison of the performance of the HAKKO FX-838 and a conventional station

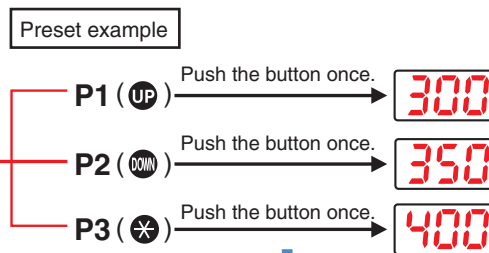


### Test criteria

Measurement method	Thermocouples are mounted on the tip and the soldered portion on the board, and the time until the soldered portion reaches 250°C is measured for 5 points.
Board	Bakelite board
Component used	Terminal
Tip shape	Shape-1.6D
Temperature setting	340°C
Solder	Lead-free solder (Sn/Ag/Cu), diameter: 0.5 mm

### Temperature preset mode

The temperature preset mode allows you to input three frequently-used temperatures in advance and recall them with one push of a button.



One push of a button can quickly recall each setting.

### Connectable with N<sub>2</sub> soldering iron

To improve solder wettability and spreadability



## N<sub>2</sub> Soldering Iron

Tip not included



For further details, see the N<sub>2</sub> soldering system (P.32 & P.33).

## Packing List

FX-838	Station, Handpiece (FX-8301), Control card, Power cord, Heat resistant pad, Connecting cable, Iron holder, Instruction manual
FX-8302	Handpiece, Instruction manual

## Specifications

Model No.	FX-838
Power consumption	158 W
Temperature range	200 to 500°C
Temperature stability	±5°C at idle temperature

### Station

Output voltage	AC 27 V
Dimensions	110 (W) × 110 (H) × 205 (D) mm
Weight	3.2 kg

### Soldering Iron

Power consumption	150 W (27 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Cord length	1.2 m
Total length*	175 mm (with 2.4D tip)
Weight*	31 g (with 2.4D tip)

\* Without cord

Model No.	FX-8302
Power consumption	150 W (27 V)
Temperature range	200 to 500°C
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Cord length	1.2 m
Total length*	195 mm (with 2.4D tip)
Weight*	41 g (with 2.4D tip and nozzle assembly D)

\* Without cord and tube

# High Performance Rework Station & Accessories

## HAJKO FM-203 SOLDERING STATION ESD SAFE

### 2-Port High Performance Rework Station

Digital

Tip not included



- 2 handpieces can be connected at the same time.

## HAJKO FM-206 REWORK SYSTEM ESD SAFE

### 3-Port High Performance Rework Station

Digital

Tip not included

Nozzle not included



- 3-port rework station that enables soldering, desoldering, and SMD rework all with a single unit
- Graphic LCD enables easy viewing and operation.

### Handpiece Combination Examples

#### FM-203



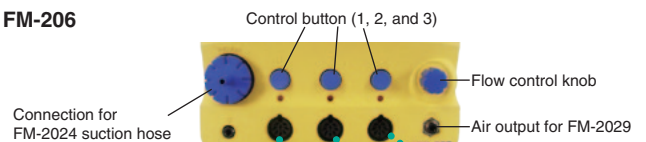
Handpiece	Channel D connector	Channel S connector
FM-2027	○	○
FM-2022 *1	○	×
FM-2023 *1	○	×
FM-2024 *2	○	○
FM-2026 *3	○	○
FM-2032	○	○

\*1 When the FM-2022 or FM-2023 is connected to the channel D connector, both channel connectors can't be used at the same time.

\*2 When two FM-2024s are connected to the channel connectors, each FM-2024 must be connected to the desolder control box.

\*3 For the FM-2026, each handpiece needs an N<sub>2</sub> generator (HAKKO FX-780), flow meter (HAKKO FX-791), compressor, regulator, etc. For further details, see the N<sub>2</sub> soldering system (P.32).

#### FM-206



Handpiece	Receptacle 1	Receptacle 2	Receptacle 3
FM-2027	○	○	○
FM-2024	○ *1	○	○ *1
FM-2029	×	×	○
FM-2022	×	○	×
FM-2023	×	○	×
FM-2026	○	○	○
FM-2030	×	○	○
FM-2031	×	○ *2	○ *2
FM-2032	○	○	○

\*1 The FM-2024 can be connected to receptacle 2 and 3. However, only one FM-2024 can be used with the station.

\*2 For the FM-2031 and FM-2026, each handpiece needs an N<sub>2</sub> generator (HAKKO FX-780), flow meter (HAKKO FX-791), compressor, regulator, etc. For further details, see the N<sub>2</sub> soldering system (P.32).

**NOTE:** The FM-2024 and FM-2029 can't be used at the same time.

Accessories

**HAKKO FM-2027** SOLDERING IRON ESD SAFE

Soldering Iron

Tip not included



**HAKKO FM-2032** SOLDERING IRON ESD SAFE

Micro Soldering Iron

Tip not included



**HAKKO FM-2026** SOLDERING IRON ESD SAFE

N<sub>2</sub> Soldering Iron (70 W)

Tip not included



**HAKKO MODEL FM-2022** PARALLEL REMOVER ESD SAFE

SMD Hot Tweezers

Tip not included



**HAKKO FM-2029** HOT AIR HANDPIECE ESD SAFE

Hot Air Pencil

Nozzle not included



**HAKKO MODEL FM-2023** MINI PARALLEL REMOVER ESD SAFE

Mini SMD Hot Tweezers

Tip included



**HAKKO FM-2030** SOLDERING IRON ESD SAFE

Heavy Duty Soldering Iron

Tip not included



**HAKKO MODEL FM-2024** DESOLDERING TOOL ESD SAFE

Desoldering Tool

Nozzle not included



**HAKKO FM-2031** SOLDERING IRON ESD SAFE

N<sub>2</sub> Soldering Iron (140 W)

Tip not included



# High Performance Rework Station & Accessories

## Specifications

Model No.	FM-203
Power consumption	140 W
Temperature range	FM-2026/2027: 200 to 450°C FM-2022/2023: 200 to 400°C FM-2032: 200 to 450°C FM-2024: 350 to 450°C
Temperature stability	±5°C at idle temperature

### Station

Output voltage	AC 24 V
Dimensions	120 (W) × 120 (H) × 190 (D) mm
Weight	2.7 kg

### Soldering Iron (FM-2027)

Power consumption	70 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	188 mm (with 2.4D tip)
Weight*	30 g (with 2.4D tip)

\* Without cord

Model No.	FM-206
Power consumption	Max. 410 W (450 W)
Temperature range	FM-2026/2027: 200 to 450°C FM-2022/2023: 200 to 400°C FM-2024: 350 to 450°C FM-2029: 100 to 550°C FM-2030: 200 to 500°C FM-2031: 200 to 500°C FM-2032: 200 to 450°C
Temperature stability	±5°C at idle temperature

### Station

Output voltage	AC 24 V
Vacuum generator	Vacuum pump, cylinder type
Vacuum pressure	Max. 80 kPa (600 mmHg)
Suction flow	14 L/min.
Air flow	6 L/min. (max.)
Dimensions	162 (W) × 136 (H) × 245 (D) mm
Weight	6.2 kg

### Soldering Iron (FM-2027)

Power consumption	70 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	188 mm (with 2.4D tip)
Weight*	30 g (with 2.4D tip)

### Desoldering Tool (FM-2024)

Power consumption	70 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	180 mm (with ø1.0 mm nozzle)
Weight**	65 g (with ø1.0 mm nozzle)

### Hot Air Handpiece (FM-2029)

Power consumption	140 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length**	232 mm (with ø4.0 mm nozzle)
Weight***	50 g (with ø4.0 mm nozzle)

\* Without cord \*\* Without cord and hose \*\*\* Without cord and tube

Model No.	FM-2022
Power consumption	140 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	148 mm (with SOP 25L tip)
Weight*	64 g (with SOP 25L tip)

\* Without cord

Model No.	FM-2023
Power consumption	140 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Standard tip	Shape-I: 2 pcs/set (No.T9-I)
Cord length	1.2 m
Total length*	117 mm (with I tip)
Weight*	37 g (with I tip)

\* Without cord

Model No.	FM-2024
<b>• Desoldering Tool</b>	
Power consumption	70 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	180 mm (with ø1.0 mm nozzle)
Weight*	65 g (with ø1.0 mm nozzle)

### • Desolder Control Box

Power consumption	12 W (24 V)
Vacuum generator	Ejector type
Vacuum pressure	Max. 93 kPa (700 mmHg)
Suction flow	20 L/min.
Nozzle to ground potential	<2 mV
Applied air pressure	490 kPa (5.0 kgf/cm <sup>2</sup> ) While in use (trigger or button is pressed)
Compressed air consumption	46 L/min.
Outer dimensions	119 (W) × 45 (H) × 172 (D) mm
Weight*	1.2 kg

\* Without cord

Model No.	FM-2026
Power consumption	70 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length**	205 mm (with 2.4D tip)
Weight**	45 g (with 2.4D tip and nozzle assembly C)

\* Use this N<sub>2</sub> soldering iron below 400°C.

\*\* Without cord and tube

Model No.	FM-2027
Power consumption	70 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	188 mm (with 2.4D tip)
Weight*	30 g (with 2.4D tip)

\* Without cord

## Specifications

Model No.	FM-2030
Power consumption	140 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.3 m
Total length*	224 mm (with 2.4D tip)
Weight*	41 g (with 2.4D tip)

\* Without cord

Model No.	FM-2032
Power consumption	48 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.3 m
Total length*	170 mm (with 1D tip)
Weight*	14 g (with 1D tip)

\* Without cord

Model No.	FM-2031
Power consumption	140 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length*	231 mm (with 2.4D tip)
Weight*	47 g (with 2.4D tip and nozzle assembly E)

\* Without cord and tube

## Packing List

<b>FM-203</b>	Station, Handpiece (FM-2027), Sleeve assembly, Connecting cable, Power cord, Control card, Iron holder, Tip tray, Heat resistant pad, Instruction manual
<b>FM-206</b>	Station, Power cord, Tip tray, Desoldering tool (FM-2024), Handle (for gun configuration for FM-2024), Iron holder (for FM-2024), Ceramic paper filter (10 pcs; for FM-2024), Nozzle remover (for FM-2024), Cleaning drill for heating element (for FM-2024), Connecting cable (for FM-2024), Handpiece (FM-2027), Sleeve assembly, Iron holder (for FM-2027), Heat resistant pad (for FM-2027), Connecting cable (for FM-2027), Hot air handpiece (FM-2029), Iron holder (for FM-2029), Heat resistant pad (for FM-2029), Connecting cable (for FM-2029), Instruction manual
<b>FM-2022 (Conversion kit)</b>	Parallel remover, Heat resistant pad, Iron holder, Connecting cable, Instruction manual
<b>FM-2023 (Conversion kit)</b>	Mini parallel remover, Soldering tip (T9-I), Heat resistant pad, Iron holder, Component bed, Connecting cable, Instruction manual

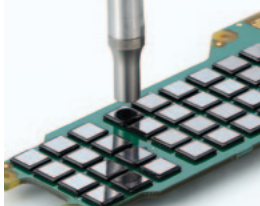
<b>FM-2024 (Conversion kit, with DCB)</b>	Desoldering tool, Handle (for gun configuration), Desoldering control box, Filter pipe assembly, Iron holder, Cleaning drill for heating element, Nozzle remover, Ceramic paper filter (10 pcs), Connecting cable, Instruction manual
<b>FM-2026 (Conversion kit)</b>	Handpiece, Sleeve cover, Sleeve assembly (yellow), Heat resistant pad, Iron holder, Connecting cable, Instruction manual
<b>FM-2027 (Conversion kit)</b>	Handpiece, Sleeve assembly (yellow), Heat resistant pad, Iron holder, Connecting cable
<b>FM-2029 (Conversion kit)</b>	Handpiece (hot air), Handpiece holder, Heat resistant pad, Connecting cable, Instruction manual
<b>FM-2030 (Conversion kit)</b>	Handpiece (soldering), Heat resistant pad, Iron holder, Connecting cable, Instruction manual
<b>FM-2031 (Conversion kit)</b>	Handpiece (soldering), Heat resistance pad, Iron holder, Connecting cable, Instruction manual
<b>FM-2032 (Conversion kit)</b>	Handpiece, Heat resistant pad, Iron holder, Connecting cable, Instruction manual

## FM-2024 Features

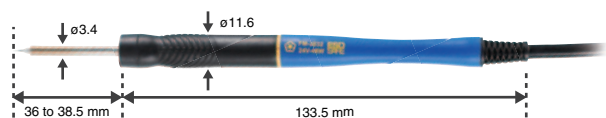
Please see the features on P.67.

## FM-2029 Features

Securely and easily remove 10 x 10 (mm) chips.

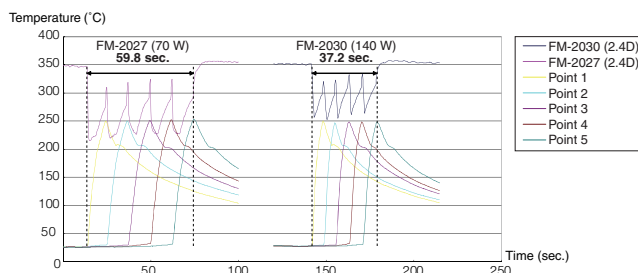


## FM-2032 Size



## FM-2030 Features

Graph of a comparison of the performance of FM-2027 (70 W) and FM-2030 (140 W)



## Test criteria

Test method	Solder at 5 points and measure the time until the temperature of the workpiece reaches 250°C.
Board	Bakelite board
Component used	Screw
Tip shape	Shape-2.4D
Temperature setting	350°C
Solder	Lead-free solder (Sn/Ag/Cu), diameter: 1.0 mm

# High Performance Rework Station & Accessories

## Optional Tips for the FM-207

Unit: mm

### Standard type

<b>B</b>	<b>T12-B Shape-B</b> 	<b>T12-B2 Shape-0.5B</b> 	<b>T12-B3 Shape-0.7B</b> 	<b>T12-B4 Shape-0.4B</b> 	<b>T12-BL Shape-BL</b> 
<b>BC</b>	<b>T12-BC1 Shape-1BC</b> <b>T12-BCF1*</b> 	<b>T12-BC2 Shape-2BC</b> <b>T12-BCF2*</b> 	<b>T12-BC3 Shape-3BC</b> <b>T12-BCF3*</b> 	<b>T12-BCM2 Shape-2BC</b> <b>Bevel with indent</b> 	<b>T12-BCM3 Shape-3BC</b> <b>Bevel with indent</b> 
<b>C</b>	<b>T12-C08 Shape-0.8C</b> 	<b>T12-C1 Shape-1C</b> 	<b>T12-C4 Shape-4C</b> <b>T12-CF4*</b> 		
<b>D</b>	<b>T12-D08 Shape-0.8D</b> 	<b>T12-D12 Shape-1.2D</b> 	<b>T12-D16 Shape-1.6D</b> 	<b>T12-D24 Shape-2.4D</b> 	<b>T12-D4 Shape-4D</b> 
	<b>T12-D52 Shape-5.2D</b> 	<b>T12-DL08 Shape-0.8DL</b> 	<b>T12-DL12 Shape-1.2DL</b> 	<b>T12-DL32 Shape-3.2DL</b> 	<b>T12-DL52 Shape-5.2DL</b> 
<b>I</b>	<b>T12-I Shape-I</b> 	<b>T12-IL Shape-IL</b> 	<b>T12-ILS Shape-ILS</b> 		
<b>J</b>	<b>T12-J02 Shape-0.2J</b> 	<b>T12-JL02 Shape-0.2JL</b> 	<b>T12-JS02 Shape-0.2JS</b> 		
<b>K</b>	<b>T12-K Shape-K</b> 	<b>T12-KF Shape-KF</b> 	<b>T12-KL Shape-KL</b> 	<b>T12-KR Shape-KR</b> 	<b>T12-KU Shape-KU</b> 

\* These tips are tinned on the soldering surface only.

### Concave type

<b>T12-1610</b> 	<b>T12-1612</b> 
---------------------	---------------------

SMD type

Quad	T12-1201 Quad 13.6 x 8.5 	T12-1202 Quad 10.3 x 10.3 	T12-1203 Quad 12.8 x 12.8 	T12-1204 Quad 17.9 x 17.9 	T12-1205 Quad 23.4 x 17.3 
	T12-1206 Quad 22.5 x 16.5 	T12-1207 Quad 15.5 x 15.5 	T12-1208 Quad 15.8 x 15.8 	T12-1209 Quad 8.4 x 8.4 	
Tunnel	T12-1001 Tunnel 5.1 x 4.6 	T12-1002 Tunnel 5.1 x 10.4 	T12-1003 Tunnel 9.5 x 18.3 	T12-1004 Tunnel 9.5 x 15.8 	T12-1005 Tunnel 9.5 x 13.2 
	T12-1006 Tunnel 6.9 x 11.4 	T12-1007 Tunnel 7.9 x 18.8 	T12-1008 Tunnel 19.5 x 10.2 	T12-1009 Tunnel 13.4 x 20.5 	T12-1010 Tunnel 19.5 x 12 
Spatula	T12-1401 Spatula 10.4 	T12-1402 Spatula 15.7 	T12-1403 Spatula 21.2 	T12-1404 Spatula 25 	T12-1405 Spatula 32 
	T12-1406 Spatula 40 				

Long life type

T12-BZ Shape-B (Z) 	T12-B2Z Shape-0.5B (Z) 	T12-BC1Z Shape-1BC (Z) T12-BCF1Z* 	T12-BC2Z Shape-2BC (Z) T12-BCF2Z* 	T12-BC3Z Shape-3BC (Z) T12-BCF3Z* 
T12-C4Z Shape-4C (Z) T12-CF4Z* 	T12-D12Z Shape-1.2D (Z) 	T12-D16Z Shape-1.6D (Z) 	T12-D24Z Shape-2.4D (Z) 	T12-D4Z Shape-4D (Z) 
T12-KFZ Shape-KF (Z) 	T12-KRZ Shape-KR (Z) 			

\* These tips are tinned on the soldering surface only.

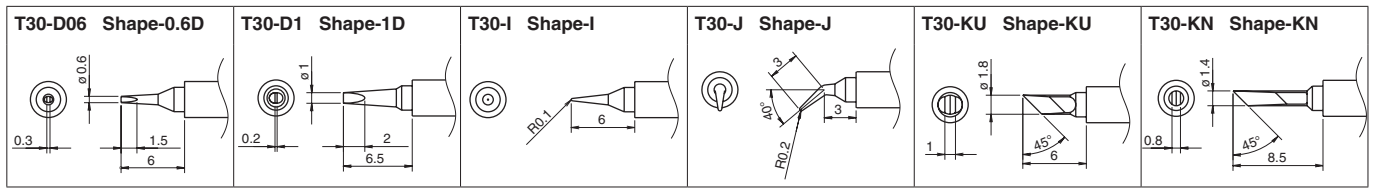
Heavy duty type

T12-WB2 Shape-0.5WB 	T12-WD08 Shape-0.8WD 	T12-WD12 Shape-1.2WD 	T12-WD16 Shape-1.6WD 	T12-WD52 Shape-5.2WD 	T12-WI Shape-WI 

# High Performance Rework Station & Accessories

## Optional Tips for the FM-2032

Unit: mm

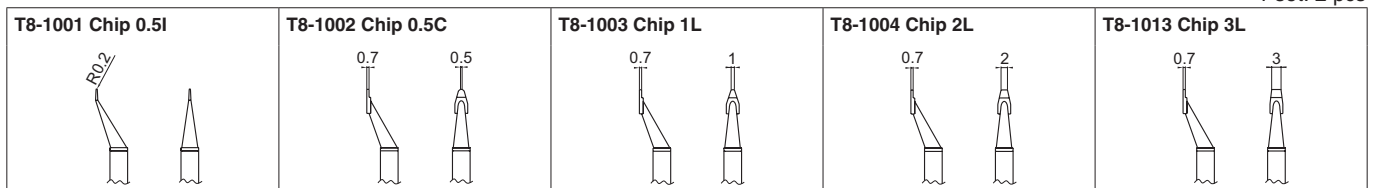


## Optional Tips for the FM-2022

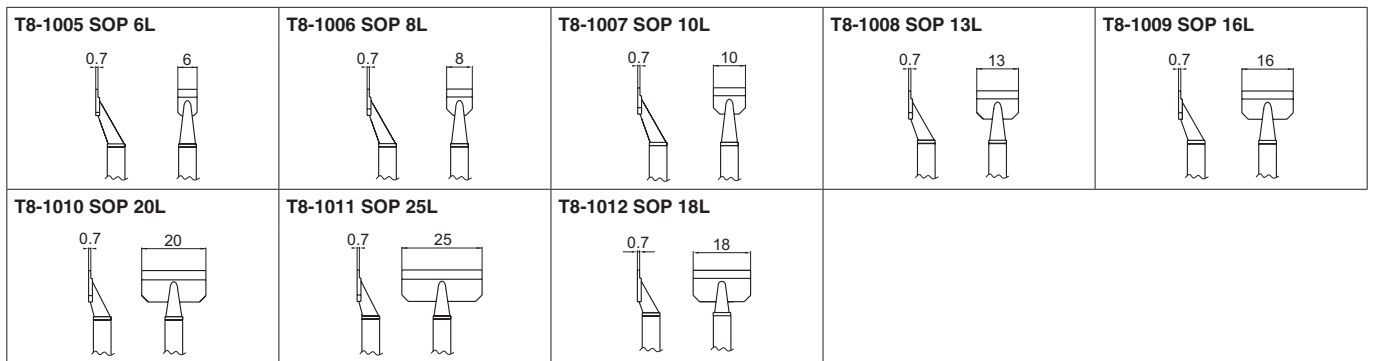
Unit: mm

### CHIP

\*1 set: 2 pcs



### SOP

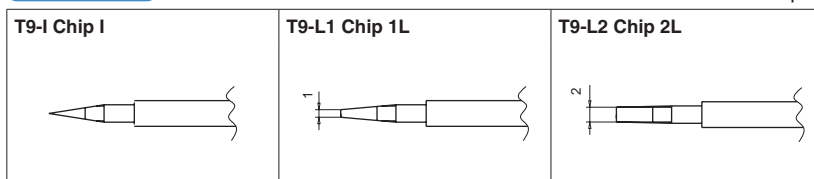


## Replacement Tips for the FM-2023

Unit: mm

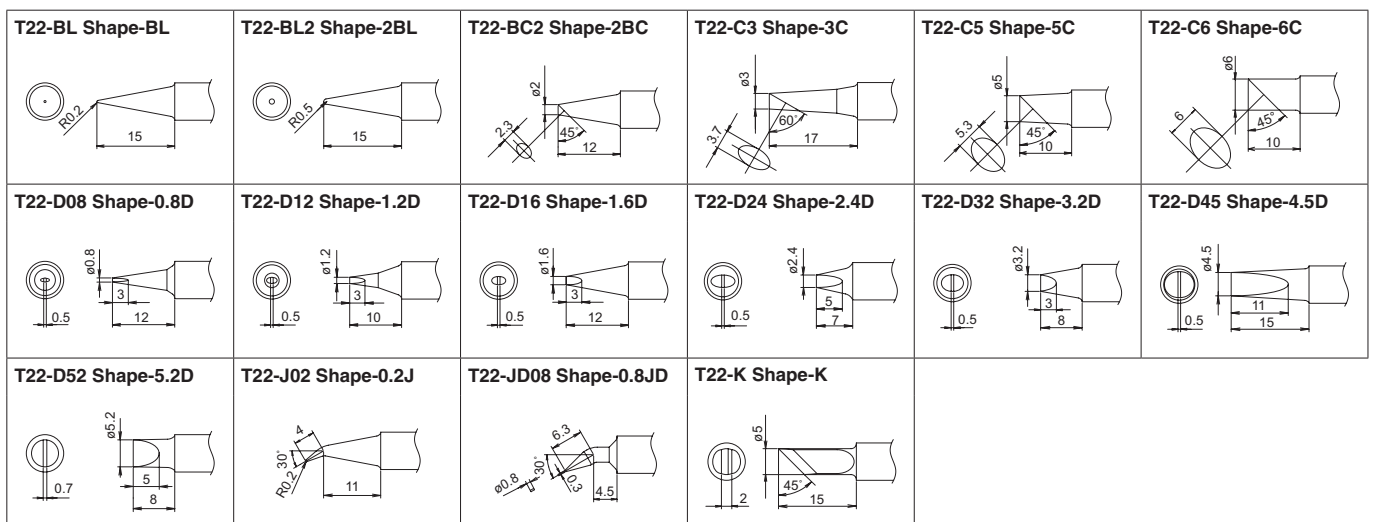
### CHIP

\*1 set: 2 pcs



## Optional Tips for the FM-2030

Unit: mm



**Optional Nozzles for the FM-2024**

Unit: mm

<p><b>N1-06 Nozzle <math>\phi 0.6</math></b></p>	<p><b>N1-08 Nozzle <math>\phi 0.8</math></b></p>	<p><b>N1-10 Nozzle <math>\phi 1.0</math></b></p>	<p><b>N1-13 Nozzle <math>\phi 1.3</math></b></p>	<p><b>N1-16 Nozzle <math>\phi 1.6</math></b></p>
<p><b>N1-20 Nozzle <math>\phi 2.0</math></b></p>	<p><b>N1-23 Nozzle <math>\phi 2.3</math></b></p>	<p><b>N1-L10 Nozzle <math>\phi 1.0</math> Long</b></p>		

**Optional Nozzles for the FM-2029**

Unit: mm

		$\phi A$	$\phi B$
<b>N4-01 Nozzle <math>\phi 2.0</math></b>		2.0	2.5
<b>N4-02 Nozzle <math>\phi 4.0</math></b>		4.0	5.0
<b>N4-03 Nozzle <math>\phi 6.0</math></b>		6.0	7.0
<b>N4-04 Nozzle <math>\phi 8.0</math></b>		8.0	9.0

**Optional Tips for the FM-2026**

Please see the optional tips on P.34.

**Optional Tips for the FM-2031**

Please see the optional tips on P.34.

## HAJKO FX-780

N. GENERATOR

### N<sub>2</sub> Generator



- Highest concentration of nitrogen gas: 99.9%
- Compact design reduces footprint.

## HAJKO FX-781

N. GENERATOR



### N<sub>2</sub> Generator



- Large-capacity type accepts 2 soldering irons.

## HAJKO FX-791

N. STATION

### N<sub>2</sub> Flowmeter



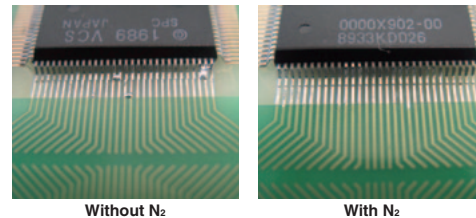
- Flowmeter for N<sub>2</sub> soldering iron with flow control valve and regulator

### Improved Solderability

- Wettability and spreadability comparisons



- Less bridging occurs even for components susceptible to bridging.



### Specifications

Model No.	FX-780	FX-781
Air supply pressure	0.3 to 0.7 MPa	
Concentration of generated N <sub>2</sub>	99.9% (max.)	
Amount of generated N <sub>2</sub>	1.5 L/min. (When compressed air of 0.5 MPa is supplied at 25°C, the concentration of the generated nitrogen is 98%.)	2.4 L/min. (When compressed air of 0.5 MPa is supplied at 25°C, the concentration of the generated nitrogen is 98%.)
Dimensions*	73 (W) × 282 (H) × 71 (L) mm	73 (W) × 407 (H) × 71 (L) mm
Weight**	1.5 kg	2 kg

\* Without sockets and valve  
\*\* Without racks

Model No.	FX-791
Pressure gauge for discharged gas	0.2 MPa (2.0 kgf/cm <sup>2</sup> )
Gas flow	0.25 to 2.5 L/min.
Dimensions	70 (W) × 121 (H) × 134 (D) mm
Weight	0.6 kg

### Packing List

FX-780	Unit, Rack for unit (2 pcs), Instruction manual
FX-791	Unit, Instruction manual

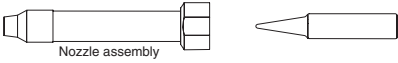
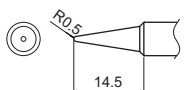
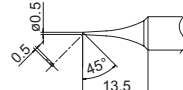
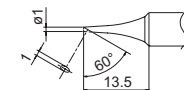
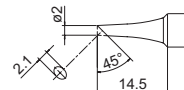
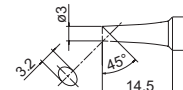
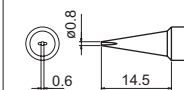
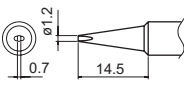
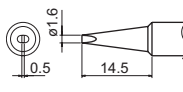
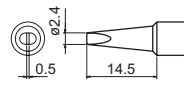
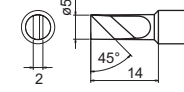
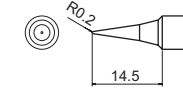
FX-781	Unit, Racks for unit (4 pcs), Fitting, Instruction manual
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## Replacement Tips and Nozzles Assemblies for the FX-802

Tip and nozzle assembly are supplied separately. Please purchase a compatible nozzle assembly for your tip referring the chart below.

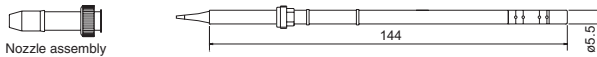
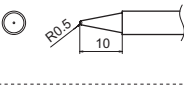
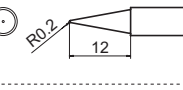
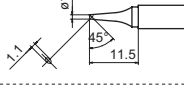
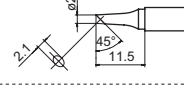
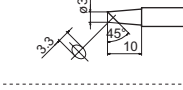
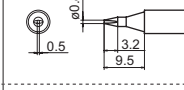
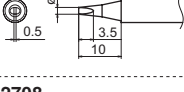
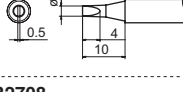
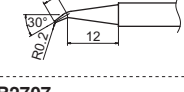
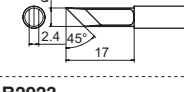
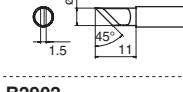
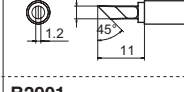
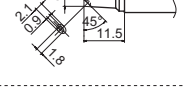
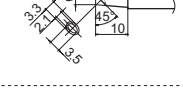
Unit: mm

					
<b>T18-B Shape-B</b> 	<b>T18-C05 Shape-0.5C</b> 	<b>T18-C1 Shape-1C</b> <b>T18-CF1*</b> 	<b>T18-C2 Shape-2C</b> <b>T18-CF2*</b> 	<b>T18-C3 Shape-3C</b> <b>T18-CF3*</b> 	<b>T18-D08 Shape-0.8D</b> 
<b>B3662</b> Nozzle assembly A	<b>B3664</b> Nozzle assembly C	<b>B3664</b> Nozzle assembly C	<b>B3662</b> Nozzle assembly A	<b>B3663</b> Nozzle assembly B	<b>B3662</b> Nozzle assembly A
<b>T18-D12 Shape-1.2D</b> 	<b>T18-D16 Shape-1.6D</b> 	<b>T18-D24 Shape-2.4D</b> 	<b>T18-K Shape-K</b> 	<b>T18-I Shape-I</b> 	
<b>B3662</b> Nozzle assembly A	<b>B3663</b> Nozzle assembly B	<b>B3663</b> Nozzle assembly B	<b>B3665</b> Nozzle assembly D	<b>B3664</b> Nozzle assembly C	* These tips are tinned on the soldering surface only.

## Optional Tips and Nozzles Assemblies for the FM-2026

Tip and nozzle assembly are supplied separately. Please purchase a compatible nozzle assembly for your tip referring the chart below.

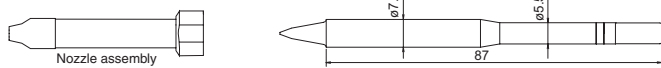
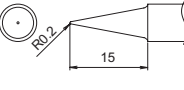
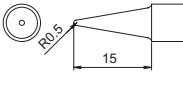
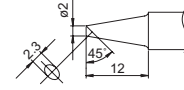
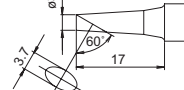
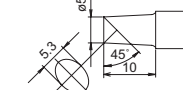
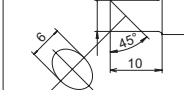
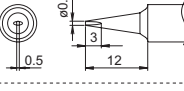
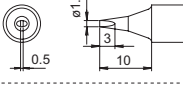
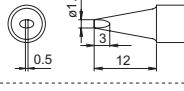
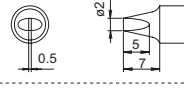
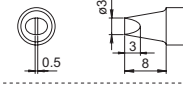
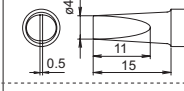
Unit: mm

					
<b>T13-B2 Shape-0.5B</b> 	<b>T13-BL Shape-BL</b> 	<b>T13-BC1 Shape-1BC</b> <b>T13-BCF1*</b> 	<b>T13-BC2 Shape-2BC</b> <b>T13-BCF2*</b> 	<b>T13-BC3 Shape-3BC</b> <b>T13-BCF3*</b> 	<b>T13-D08 Shape-0.8D</b> 
<b>B2708</b> Nozzle assembly C	<b>B2898</b> Nozzle assembly E	<b>B2899</b> Nozzle assembly F	<b>B2706</b> Nozzle assembly A	<b>B2900</b> Nozzle assembly G	<b>B2709</b> Nozzle assembly D
<b>T13-D16 Shape-1.6D</b> 	<b>T13-D24 Shape-2.4D</b> 	<b>T13-J02 Shape-0.2J</b> 	<b>T13-KF Shape-KF</b> 	<b>T13-KR Shape-KR</b> 	<b>T13-KU Shape-KU</b> 
<b>B2708</b> Nozzle assembly C	<b>B2708</b> Nozzle assembly C	<b>B2707</b> Nozzle assembly B	<b>B2923</b> Nozzle assembly J	<b>B2902</b> Nozzle assembly I	<b>B2901</b> Nozzle assembly H
<b>T13-BCM2 Shape-2BC</b> Bevel with indent 	<b>T13-BCM3 Shape-3BC</b> Bevel with indent 	* These tips are tinned on the soldering surface only.			
<b>B2706</b> Nozzle assembly A	<b>B2900</b> Nozzle assembly G				

## Optional Tips and Nozzles Assemblies for the FM-2031

Tip and nozzle assembly are supplied separately. Please purchase a compatible nozzle assembly for your tip referring the chart below.

Unit: mm

					
<b>T22-BL Shape-BL</b> 	<b>T22-BL2 Shape-2BL</b> 	<b>T22-BC2 Shape-2BC</b> 	<b>T22-C3 Shape-3C</b> 	<b>T22-C5 Shape-5C</b> 	<b>T22-C6 Shape-6C</b> 
<b>B3121</b> Nozzle assembly A	<b>B3121</b> Nozzle assembly A	<b>B3121</b> Nozzle assembly A	<b>B3121</b> Nozzle assembly A	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D
<b>T22-D08 Shape-0.8D</b> 	<b>T22-D12 Shape-1.2D</b> 	<b>T22-D16 Shape-1.6D</b> 	<b>T22-D24 Shape-2.4D</b> 	<b>T22-D32 Shape-3.2D</b> 	<b>T22-D45 Shape-4.5D</b> 
<b>B3123</b> Nozzle assembly C	<b>B3121</b> Nozzle assembly A	<b>B3123</b> Nozzle assembly C	<b>B3561</b> Nozzle assembly E	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D

<b>T22-D52 Shape-5.2D</b> 	<b>T22-J02 Shape-0.2J</b> 	<b>T22-JD08 Shape-0.8JD</b> 	<b>T22-K Shape-K</b> 
<b>B3124</b> Nozzle assembly D	<b>B3121</b> Nozzle assembly A	<b>B3561</b> Nozzle assembly E	<b>B3123</b> Nozzle assembly C

**Optional Tips and Nozzles Assemblies for the FX-8302**

Tip and nozzle assembly are supplied separately. Please purchase a compatible nozzle assembly for your tip referring the chart below.

Unit: mm

<b>T20-B2 Shape-0.5B</b> 	<b>T20-BL Shape-BL</b> 	<b>T20-BL2 Shape-2BL</b> 	<b>T20-J02 Shape-0.2J (0.2RSB)</b> 	<b>T20-KU Shape-KU</b> 	<b>T20-BL3 Shape-3BL</b> 
<b>B3121</b> Nozzle assembly A	<b>B3121</b> Nozzle assembly A	<b>B3121</b> Nozzle assembly A	<b>B3122</b> Nozzle assembly B	<b>B3122</b> Nozzle assembly B	<b>B3123</b> Nozzle assembly C
<b>T20-D16 Shape-1.6D</b> 	<b>T20-K Shape-K</b> 	<b>T20-BC2 Shape-2BC</b> <b>T20-BCF2*</b> 	<b>T20-BC3 Shape-3BC</b> <b>T20-BCF3*</b> 	<b>T20-BC4 Shape-4BC</b> <b>T20-BCF4*</b> 	<b>T20-C5 Shape-5C</b> 
<b>B3123</b> Nozzle assembly C	<b>B3123</b> Nozzle assembly C	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D
<b>T20-C6 Shape-6C</b> 	<b>T20-D24 Shape-2.4D</b> 	<b>T20-D32 Shape-3.2D</b> 	<b>T20-BCM2 Shape-2BC</b> <b>Bevel with indent</b> 	<b>T20-BCM3 Shape-3BC</b> <b>Bevel with indent</b> 	<b>T20-D6 Shape-6D</b> 
<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D	<b>B3124</b> Nozzle assembly D	<b>B3561</b> Nozzle assembly E
<b>T20-1610</b> 	<b>T20-1611</b> 	* These tips are tinned on the soldering surface only.			

**Optional Tips and Nozzles Assemblies for the FX-8003**

Tip and nozzle assembly are supplied separately. Please purchase a compatible nozzle assembly for your tip referring the chart below.

Unit: mm

<b>T33-BC2 Shape 2BC</b> 	<b>T33-BC3 Shape 3BC</b> 	<b>T33-BC4 Shape 4BC</b> 	<b>T33-BC5 Shape 5BC</b> 	<b>T33-BC6 Shape 6BC</b> 	<b>T33-D24 Shape 2.4D</b> 
<b>B5070</b> Nozzle assembly B	<b>B5070</b> Nozzle assembly B	<b>B5069</b> Nozzle assembly A	<b>B5069</b> Nozzle assembly A	<b>B5069</b> Nozzle assembly A	<b>B5070</b> Nozzle assembly B
<b>T33-D32 Shape 3.2D</b> 	<b>T33-D5 Shape 5D</b> 	<b>T33-D6 Shape 6D</b> 	* These tips are tinned on the soldering surface only.		
<b>B5069</b> Nozzle assembly A	<b>B5069</b> Nozzle assembly A	<b>B5069</b> Nozzle assembly A			

# Temperature Adjustable Soldering Iron

## HAKKO FX-600

SOLDERING IRON

### Temperature Adjustable Soldering Iron

Tip included



- Adjustable temperature range: 200 to 500°C

## HAKKO FX-601

STAINED GLASS

### Heavy Duty Temperature Adjustable Soldering Iron

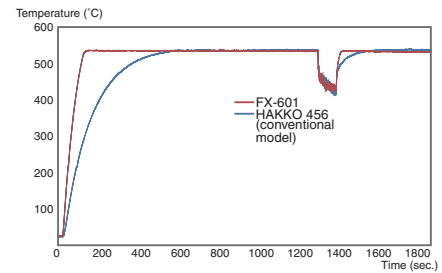
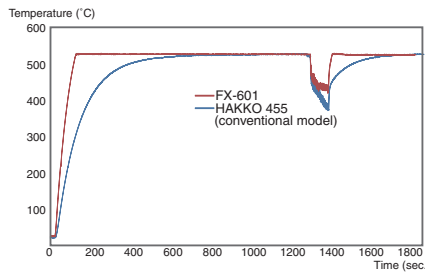
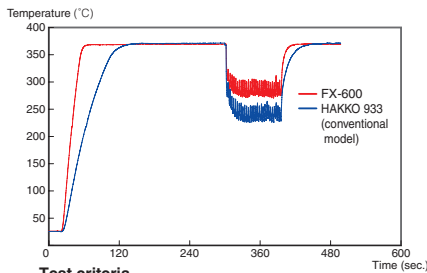
Tip included



- Maximum temperature: 540°C

## Features

### Superior heat conductivity



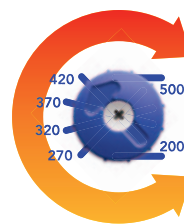
#### Test criteria

- Temperature of soldering iron with a diameter 1.6 x 5 mm piece of solder applied once every 3 seconds to paper phenol copper board.
- Lead-free solder is used.

### Detach the control knob and lock the temperature setting.



### Turn the CAL knob to attain a more accurate temperature.



\* Accurate temperature control can be performed even outside the scale.

## Specifications

Model No.	FX-600	FX-601
Power consumption	50 W (100 V), 59 W (110 V), 74 W (120 V), 43 W (220 V), 47 W (230 V), 51 W (240 V)	47 W (100 V), 56 W (110 V), 67 W (120 V), 42 W (220 V), 46 W (230 V), 50 W (240 V)
Temperature range	200 to 500°C	240 to 540°C
Temperature stability	±1°C at idle temperature	±1°C at idle temperature
Tip to ground resistance	<2 Ω	<2 Ω
Tip to ground potential	<2 mV	<2 mV
Heating element	Ceramic heater	Ceramic heater
Standard tip	Shape-B (No. T18-B)	Shape-2B (No. T19-B2)
Total length*	233 mm (with B tip)	237 mm (with 2B tip)
Weight*	61 g (with B tip)	68 g (with 2B tip)

\* Without cord

### Packing List

<b>FX-600</b>	Unit, Lock key, Instruction manual
<b>FX-601</b>	Unit, Lock key, Instruction manual



FX-600 with 605M

### Option

Part No.	Name	Specifications
FH300-81	Iron holder	With cleaning sponge
633-01	Iron holder	With 599B
633-02	Iron holder	With cleaning sponge
605M	Iron cover	-
B3720	Tip enclosure	With nut, required when converting from the FX-600 to the FX-601
B3730	Nut and tip enclosure	Required when converting from the FX-601 to the FX-600

\* For information on the iron holders, see P.57.

### Replacement Tips for the FX-600

Unit: mm

<b>T18-B Shape-B</b> 	<b>T18-BL Shape-BL</b> 	<b>T18-C05 Shape-0.5C</b> 	<b>T18-C08 Shape-0.8C</b> 	<b>T18-C1 Shape-1C</b> <b>T18-CF1*</b> 
<b>T18-C2 Shape-2C</b> <b>T18-CF2*</b> 	<b>T18-C3 Shape-3C</b> <b>T18-CF3*</b> 	<b>T18-C4 Shape-4C</b> <b>T18-CF4*</b> 	<b>T18-C5 Shape-5C</b> 	<b>T18-CF15* Shape-1.5C</b> 
<b>T18-CSF25* Shape-2.5CS</b> 	<b>T18-D08 Shape-0.8D</b> 	<b>T18-D12 Shape-1.2D</b> 	<b>T18-D16 Shape-1.6D</b> 	<b>T18-D24 Shape-2.4D</b> 
<b>T18-D32 Shape-3.2D</b> 	<b>T18-DL12 Shape-1.2DL</b> 	<b>T18-DL2 Shape-2DL</b> 	<b>T18-DL32 Shape-3.2DL</b> 	<b>T18-I Shape-I</b> 
<b>T18-BR02 Shape-0.2BR</b> 	<b>T18-K Shape-K</b> 	<b>T18-S3 Shape-S3</b> 	<b>T18-S4 Shape-S4</b> 	<b>T18-S6 Shape-S6</b> 
<b>T18-S9 Shape-S9</b> 	<b>T18-SB Shape-SB</b> 	* These tips are tinned on the soldering surface only.		

### Replacement Tips for the FX-601

Unit: mm

<b>T19-B Shape-B</b> 	<b>T19-B2 Shape-2B</b> 	<b>T19-C3 Shape-3C</b> 	<b>T19-C4 Shape-4C</b> 	<b>T19-C65 Shape-6.5C</b> 
<b>T19-D24 Shape-2.4D</b> 	<b>T19-D32 Shape-3.2D</b> 	<b>T19-D5 Shape-5D</b> 	<b>T19-D65 Shape-6.5D</b> 	<b>T19-I Shape-I</b> 

# Ceramic Heater Soldering Iron

**HAKKO DASH** SOLDERING IRON **New**

## Ceramic Heater Soldering Iron

Tip included



- An entry model of ceramic heater soldering iron
- Ideal for electronic circuit assembly

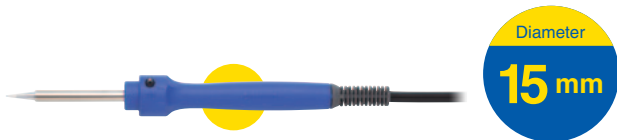


### Packing List

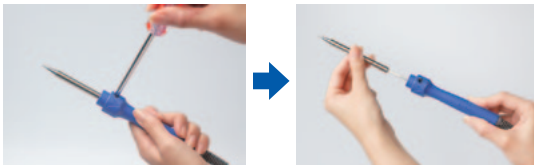
FX-650	Unit
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### Features

Slim handle improves your work efficiency!



Simple and easy tip replacement



Quick change just loosening a screw

### Specifications

Model No.	FX-650
Power consumption	15 to 16 W
Heating element	Ceramic heater
Standard tip	Shape-B (No.T34-B)
Total length*	224 mm
Weight*	60 g

\* Without cord

### Option

Part No.	Name	Specifications
FH300-81	Iron holder	With cleaning sponge
633-01	Iron holder	With 599B
633-02	Iron holder	With cleaning sponge

\* For information on the iron holders, see P.57.

### Replacement Tips for the DASH

Unit: mm

		<b>T34-B Shape-B</b> 	<b>T34-C08 Shape-0.8C</b> 
<b>T34-C2 Shape-2C</b> 	<b>T34-C3 Shape-3C</b> 	<b>T34-C4 Shape-4C</b> 	<b>T34-D32 Shape-3.2D</b> 
		<b>T34-I Shape-I</b> 	

## HAKKO PRESTO

SOLDERING IRON

### W-Switchable Ceramic Heater Soldering Iron

Tip included



- The boost switch can immediately raise the power from 20 W in normal operation mode to 130 W, which enables the soldering iron to be heated up at a high speed.
- The HAKKO Presto can be used for a wide range of applications.
- A safety cap is available for 984 and 985.

#### When capped



#### Packing List

980, 981	Unit
984, 985	Unit, Safety cap

#### Specifications

Model No.	980	981	984	985
Power consumption	20/130 W (while the switch is pushed)			
Heating element	Ceramic heater			
Standard tip	Shape-B (No. 980-T-B)			
Total length*	205 mm	160 mm	205 mm	160 mm
Weight*	48 g	92 g	56 g	100 g

\* Without cord and cap

#### Option

Part No.	Name	Specifications
FH300-81	Iron holder	With cleaning sponge
633-01	Iron holder	With 599B
633-02	Iron holder	With cleaning sponge

\* For information on the iron holders, see P.57.

#### Replacement Tips

Unit: mm

980-T-B Shape-B	980-T-BC Shape-BC	980-T-BI Shape-BI	980-T-D Shape-D

## HAJKO FX-901

CORDLESS IRON

### Battery-Powered Soldering Iron

Tip included



- Easy-to-carry soldering iron powered by AA alkaline batteries
- Cordless design makes this iron very handy and usable virtually anywhere.



#### Easy Replacement

##### Easy tip replacement

Turn the nipple  
90° clockwise.



##### Easy battery replacement



#### Packing List

FX-901	Unit, Cap
--------	-----------

\* Batteries not included

#### Specifications

Model No.	FX-901
Power supply	AA × 4 pcs
Power consumption	Alkaline batteries: 6 W (6 V) Nickel hydrogen batteries (2150 mAh): 5 W (4.8 V)
Standard tip	Shape-B (No.T11-B)
Battery life*	Alkaline batteries: 60 minutes Nickel hydrogen batteries (2150 mAh): 120 minutes
Total length**	212 mm
Weight***	76 g

Measurement conditions

- When using new batteries, performance will vary depending on the batteries.
- The operating time was measured from the point that the soldering iron was turned on to the point at which the temperature dropped below 300°C, which is the minimum temperature at which soldering can be performed.

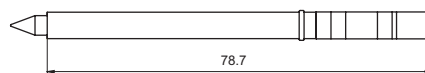
\* When using batteries other than those specified above, the performance and the operating time will vary.

\*\* Without cap

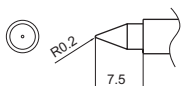
\*\*\* Without battery

#### Replacement Tips for the FX-901

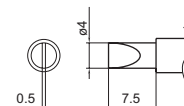
Unit: mm



T11-B Shape-B



T11-D4 Shape-4D



## HAKKO RED SOLDERING IRON

### Nichrome Heater Soldering Iron

Tip included



- Ideal for use in a variety of soldering works



#### Option

Part No.	Name	Specifications
602	Iron holder	With cleaning sponge
603	Iron holder	With cleaning sponge

\* For information on the iron holders, see P.57.

#### Specifications

Model No.	500	501	502	503
Power consumption	20 W	30 W	40 W	60 W
Heating element	Nichrome heater			
Standard tip	ø3 x 65 mm (No.BB3)	ø4 x 70 mm (No.BB4)	ø6 x 85 mm (No.BB6)	
Total length*	199 mm	207 mm	248 mm	
Weight*	60 g	65 g	95 g	

\* Without cord

## HAKKO MG SOLDERING GUN

### Solder Feed Soldering Gun

Tip included



- Solder feed mechanism built in the body allows users to make fine adjustments.



#### Specifications

Model No.	582	583	585	587	589	592
Power consumption	30 W	40 W	60 W	80 W	100 W	150 W
Heating element	Nichrome heater					
Standard tip	ø4 mm (No.582-T-4)	ø6 mm (No.585-T-6)	ø8 mm (No.587-T-8)	ø10 mm (No.592-T-10)		
Dimensions	197 x 149 mm	213 x 149 mm	227 x 149 mm	241 x 149 mm		
Weight*	266 g	290 g	318 g	322 g	380 g	

\* Without cord

#### Packing List

<b>582, 583, 585, 587, 589, 592</b>	Unit, 1.6 mm diameter Guide nozzle, Instruction manual
-------------------------------------	--

\* A 2.3 mm diameter guide nozzle is originally set into the unit.

#### Option

Part No.	Name	Specifications
582-N-0.8	Guide nozzle	0.8 mm
582-N-1.0	Guide nozzle	1.0 mm
582-N-1.2	Guide nozzle	1.2 mm
607	Iron holder	With cleaning sponge
582-022	Spool holder	—

\* For information on the iron holder, see P.57.

# Automatic Soldering System

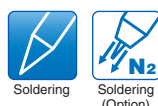
**HAKKO FU-500** ESD SAFE  
FEEDER CONTROLLER  
**HAKKO FU-600** ESD SAFE  
SOLDERING STATION

**HAKKO FU-601** ESD SAFE  
SOLDERING STATION



## Automatic Soldering System

Tip not included



- **HAKKO FU-500** ESD SAFE  
FEEDER CONTROLLER
- Accurate solder feeding
- Supports solder diameters of 0.3 mm and up to 1.6 mm
- Solder feed error detection
- Equipped with countermeasures against solder ball splash as standard
- **HAKKO FU-600/601** ESD SAFE  
SOLDERING STATION
- Easy tip replacement
- High performance composite tip
- Six presets tip-temperature function
- 300 W of ultra-high power (FU-601)

### Packing List

<b>FU-500</b>	Main unit, Feeder unit, Solder reel stand, Feeder cable, Tube unit, Power cord, Instruction manual
<b>FU-600 FU-601</b>	Station, Handpiece (FU-6001 or FU-6002), Iron unit fixing assembly, Tip adjustment jig unit, Iron cable, Heat resistant pad, Connecting cable, Power cord, Flux protector, Feeder unit attachment screw, Instruction manual

### Specifications

Model No.	FU-500	
Power consumption	35 W	
Compatible solder diameters	0.3 mm, 0.5 mm, 0.6(0.65) mm, 0.8 mm, 1.0 mm, 1.2 mm, 1.6 mm	
Dimensions	145 mm (W) × 100 mm (H) × 230 mm (D)	
Weight	2.3 kg	

Model No.	FU-600	FU-601
Power consumption	140 W	300 W
Temperature range	50 to 500°C	
Preset temperature	6 settings	
Dimensions	145 mm (W) × 102 mm (H) × 210 mm (D)	145 mm (W) × 107 mm (H) × 211 mm (D)
Weight	2.8 kg	4 kg

### Soldering Iron

Model No.	FU-6001	FU-6002
Total length	186 mm with 2.4XD tip for TX1 194 mm with 4XD tip for TX2	160 mm with 2.4XD tip for TX1 168 mm with 4XD tip for TX2
Weight*	163 g with 2.4XD tip for TX1 171 g with 4XD tip for TX2	165 g with 2.4XD tip for TX1 173 g with 4XD tip for TX2

\* With iron unit fixing assembly

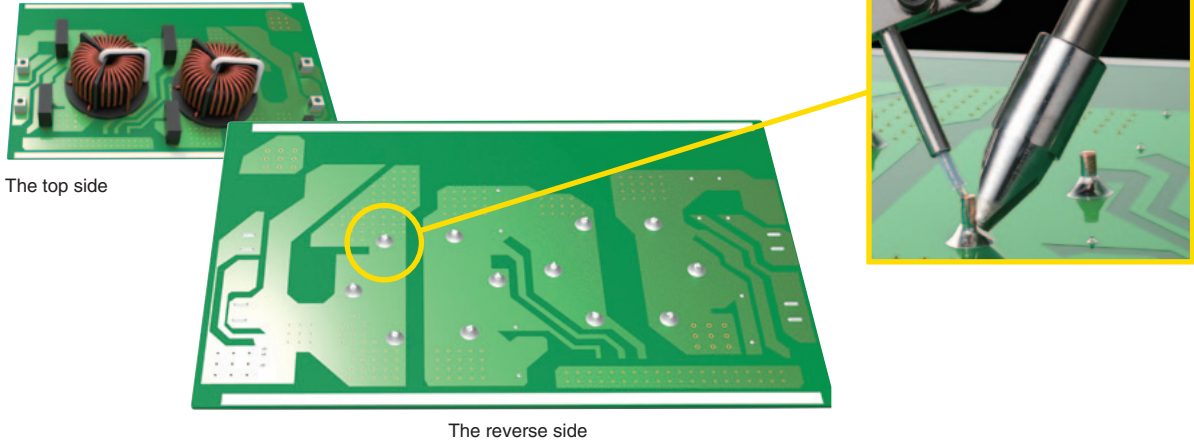
### Replacement Parts (Optional)

\*The accessories are required for initial set-up, such as a solder feed pulley unit, solder feed guide set, and teflon tube are not included. They must be ordered separately and adapted to use with the soldering iron and solder wire diameter.

Part No.	Name	Remarks
BX1000	Solder feed pulley unit/0.3 mm	
BX1001	Solder feed pulley unit/0.5 mm	
BX1002	Solder feed pulley unit/0.6 mm	
BX1003	Solder feed pulley unit/0.8 mm	
BX1004	Solder feed pulley unit/1.0 mm	
BX1005	Solder feed pulley unit/1.2 mm	
BX1006	Solder feed pulley unit/1.6 mm	
BX1007	Solder feed guide set/0.3 mm	
BX1008	Solder feed guide set/0.5-1.0 mm	
BX1009	Solder feed guide set/1.2-1.6 mm	
BX1010	Teflon tube/0.3 mm (set of 10)	
BX1011	Teflon tube/0.5-0.6 mm (set of 10)	
BX1012	Teflon tube/0.8 mm (set of 10)	
BX1013	Teflon tube/1.0 mm (set of 10)	
BX1014	Teflon tube/1.2 mm (set of 10)	
BX1015	Teflon tube/1.6 mm (set of 10)	
BX1016	Tube unit/0.3-1.0 mm	
BX1017	Tube unit/1.2-1.6 mm	
BX1027	Flux protector	
BX1023	Adapter assembly	
BX1024	Nozzle assembly <A>	
BX1025	Nozzle assembly <B>	
BX1026	Nozzle assembly <C>	
CX1000	Slide unit	
CX1001	Slide unit for drag soldering	
CX1002	Temperature probe	
CX1003	Cleaner	

**Features**

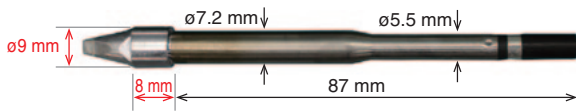
300 W of ultra-high power FU-601 is added to Automatic Soldering System.



**Compact TX1 Series for FU-600**

TX1 for the FU-600 can provide excellent thermal recovery characteristic despite its compact design.

140 W TX1 for FU-600

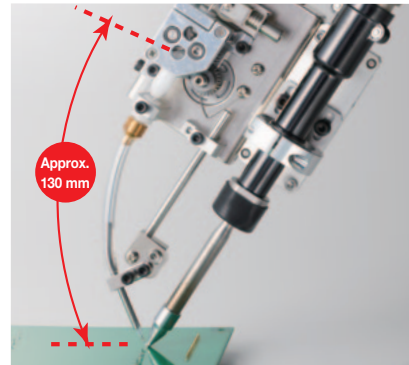


300 W TX2 for FU-601



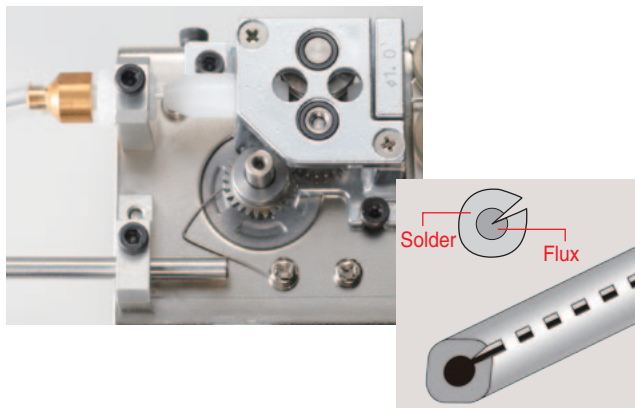
**Accurate Solder Feeding**

The solder feed unit is closer to the iron.



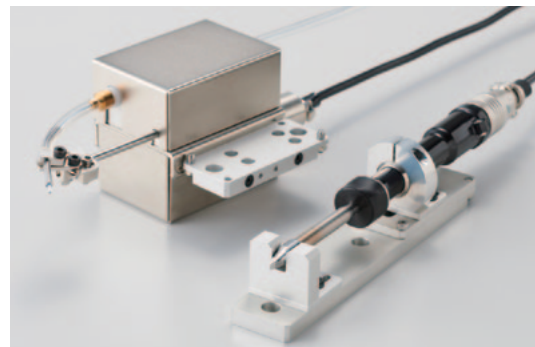
**Countermeasures against solder ball splash**

Equipped with a mechanism that perforates into the solder wire as standard.



**Easy tip replacement**

The position of the tip end can be easily adjusted using the tip adjustment jig unit included with the FU-600 and FU-601.

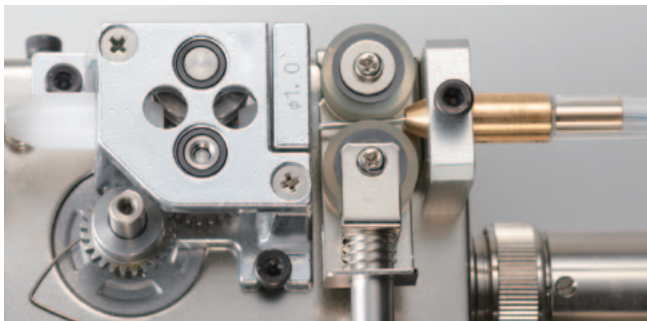


# Automatic Soldering System

## More Features

### Solder feed error detection

With an optical sensor for solder movement, the HAKKO FU-500 can detect solder clogging, slipping and the end of the roll.



### N<sub>2</sub> Adapter assembly

Simply attach the optional N<sub>2</sub> adapter to the iron and install a nozzle assembly that matches the tip to perform N<sub>2</sub> soldering.

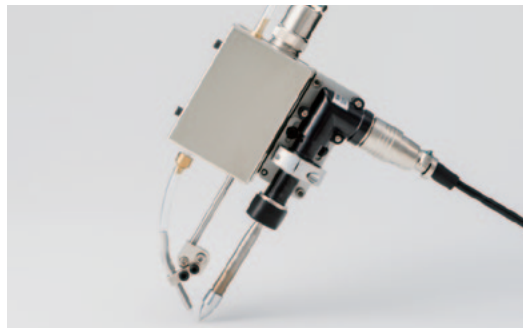


### Two types of soldering irons

#### Straight iron FU-6001

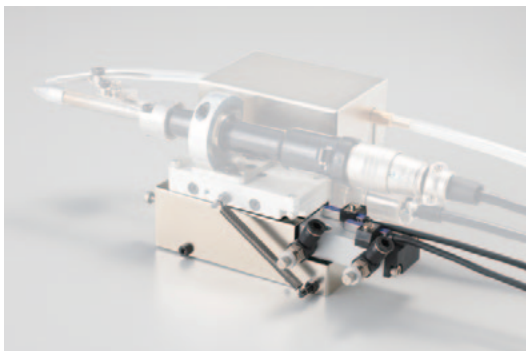


#### L-shaped iron FU-6002

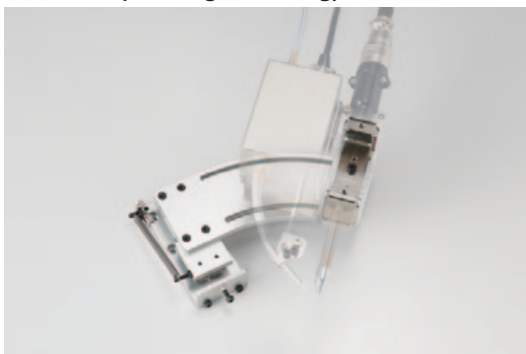


## Optional Parts & Accessories

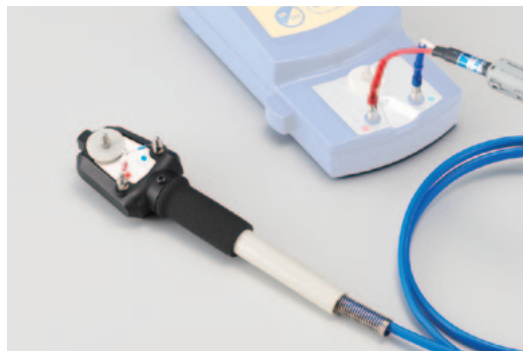
### Slide unit



### Slide unit (for drag soldering)



### Temperature probe



### Tip cleaner



Optional Tips for the FU-600

Unit: mm

<b>TX1-XD Shape-XD</b> 	<b>TX1-XD08 Shape-0.8XD</b> 	<b>TX1-XD16 Shape-1.6XD</b> 	<b>TX1-XD24 Shape-2.4XD</b> 	<b>TX1-XD3 Shape-3XD</b> 
<b>TX1-XBCR2 Shape-2XBCR</b> 	<b>TX1-XBCR3 Shape-3XBCR</b> 	<b>TX1-XBCR4 Shape-4XBCR</b> 	<b>TX1-XDR Shape-XDR</b> 	
<b>TX1-XDR16 Shape-1.6XDR</b> 	<b>TX1-XDR24 Shape-2.4XDR</b> 	<b>TX1-XDR3 Shape-3XDR</b> 	<b>TX1-XRK Shape-XRK</b> 	

Optional Tips for the FU-601

Unit: mm

<b>TX2-XD3 Shape-3XD</b> 	<b>TX2-XD4 Shape-4XD</b> 	<b>TX2-XD6 Shape-6XD</b> 	<b>TX2-XBCR3 Shape-3XBCR</b> 
<b>TX2-XBCR4 Shape-4XBCR</b> 	<b>TX2-XBCR6 Shape-6XBCR</b> 	<b>TX2-XDR3 Shape-3XDR</b> 	<b>TX2-XDR4 Shape-4XDR</b> 
<b>TX2-XDR6 Shape-6XDR</b> 	<b>TX2-XRK Shape-XRK</b> 		

## HAKO FX-301B

SOLDERING POT

High Performance Soldering Pot **Digital**



- Digital display ensures reliable temperature control and realizes precise temperature adjustment.
- Soldering pot is coated in a special long-life material, which is best suited for lead-free solder. This is provided as a standard feature.

## HAKO FX-300

SOLDERING POT

High Performance Soldering Pot **Analog**

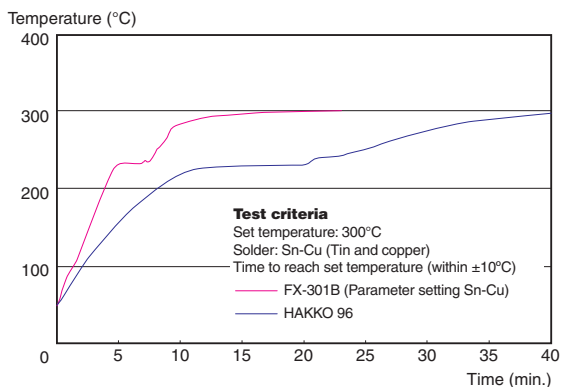


- Temperature can be adjusted just by turning a knob during operation.
- Adding an optional specially coated stainless-steel pot provides compatibility with lead-free solder.

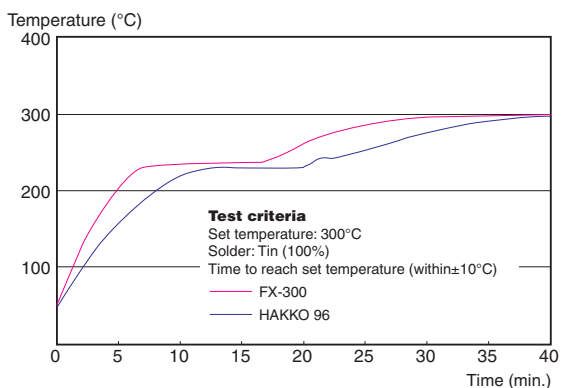
### Quick Heat Up

#### Time comparison to reach set temperature

#### HAKKO FX-301B vs. HAKKO 96 (conventional model)



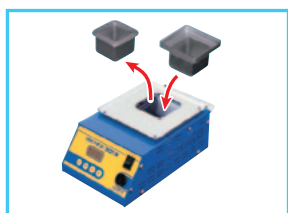
#### HAKKO FX-300 vs. HAKKO 96 (conventional model)



### Easy Pot Replacement



Loosen the screw on both sides.



Change the pot and tighten the screws.

\* For your safety, be sure to replace the pot after the solder completely cools.

### Specially Coated Solder Pot (Durable type)

The special coating prevents the solder pot from corroding, which ensures that the solder pot has a long service life.



Standard solder pot



Specially coated solder pot

### Packing List

<b>FX-301B</b>	Unit (with solder pot, 50 × 50 durable type), Spatula, J-shaped waste collector, Hexagon wrench, Instruction manual
<b>FX-300</b>	Unit (with solder pot, 50 × 50), Spatula, J-shaped waste collector, Hexagon wrench, Instruction manual

### Specifications

Model No.	FX-301B
Power consumption	200 W (100 V), 260 W (110 V), 290 W (120 V), 240 W (220 V), 260 W (230 V), 280 W (240 V)
Dimensions	143 (W) × 100 (H) × 220 (D) mm
Weight	1.7 kg

#### • Pot

Temperature range	50 × 50 square: 200 to 450°C 75 × 75 square: 200 to 380°C
Dimensions of solder pot	50 × 50 square durable type: 50 (W) × 43.5 (H) × 50 (D) mm 75 × 75 square durable type: 75 (W) × 52.5 (H) × 75 (D) mm
Molten solder capacity*	50 × 50 square: 0.85 kg 75 × 75 square: 1.2 kg

Model No.	FX-300
Power consumption	195 W (100 V), 220 W (110 V), 200 W (120 V), 190 W (220 V), 205 W (230 V), 215 W (240 V)
Dimensions	143 (W) × 100 (H) × 220 (D) mm
Weight	1.7 kg

#### • Pot

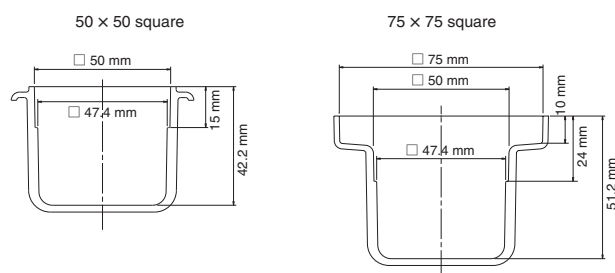
Temperature range	50 × 50 square: 200 to 450 °C 75 × 75 square: 200 to 380 °C
Dimensions of solder pot	50 × 50 standard type: 50 (W) × 43.5 (H) × 50 (D) mm 75 × 75 standard type: 75 (W) × 52.5 (H) × 75 (D) mm
Molten solder capacity*	50 × 50 square: 0.85 kg 75 × 75 square: 1.2 kg

\* The 50 × 50 square solder pot is originally installed. The 75 × 75 square solder pot is an optional part.

### Option / Replacements

Part No.	Name	Specifications
A1539	Solder pot	50 × 50 durable type
A1540	Solder pot	75 × 75 durable type
A1517	Solder pot	50 × 50
A1518	Solder pot	75 × 75
A1310	Temperature probe	For solder bath and pot

### Dimensions of Solder Pot



# Soldering Pot/Flow Soldering System

## HAKKO 96 SOLDERING POT

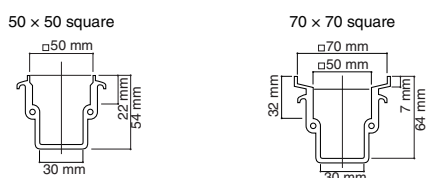
### Soldering Pot



- Temperature can be adjusted just by turning a knob during operation.

### Features

#### Dimensions of Solder Pot



#### Operation



### Packing List

96, 96-1	Unit, Spatula, Instruction manual
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### Specifications

Part No.	96	96-1
Power consumption	200 W	
Dimensions	135 (W) × 105 (H) × 224 (D) mm	135 (W) × 120 (H) × 224 (D) mm
Weight*	1.5 kg	1.6 kg
Temperature range	100 to 450°C	100 to 380°C
Dimensions of solder pot	50 (W) × 54 (H) × 50 (D) mm	70 (W) × 64 (H) × 70 (D) mm
Molten solder capacity	0.85 kg	1.2 kg

\* Without cord

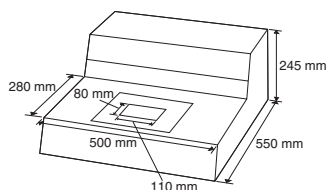
## HAKKO 485 SOLDERING SYSTEM

### Flow Soldering System



- Compatible with lead-free solder
- The impeller and chamber, which are the parts that corrode most easily, are plated with corrosion-resistant material.
- Both temperature and time are used to control the solder flow.

### Dimensions



### Packing List

485

Main unit, Air unit, Lamp (10 W [6 V]), Horizontal gauge, Spatula, IC tweezers, Waste collector, Positioning board, Foot switch, Locator light, Anti-oxidizer, 42-pin nozzle, 28-pin nozzle, 18/20-pin nozzle, 14/16-pin nozzle, 42-pin air hood, 28-pin air hood, 18/20-pin air hood, 14/16-pin air hood, Instruction manual

### Specifications

Model No.	485
Power consumption	850 W
Temperature range	Room temperature to 300°C
Molten solder capacity	10 kg
Dimensions	500 (W) × 245 (H) × 550 (D) mm
Weight*	35 kg
<b>• Air unit</b>	
Air pressure	196 to 686 kPa (2 to 7 kgf/cm <sup>2</sup> )
Dimensions	150 (W) × 100 (H) × 300 (D) mm
Weight**	3.5 kg

\* Without solder and cord

\*\* Without cord

\* Solder is not included.

# Thermal Wire Stripper

## HAKKO FT-801 THERMAL WIRE STRIPPER ESD SAFE

### Thermal Wire Stripper

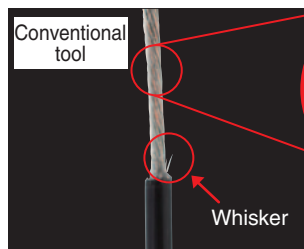
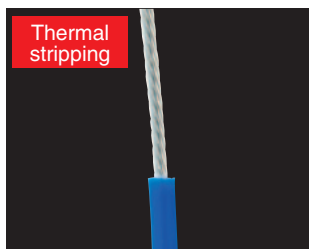
Blade not included



- Thermal wire stripper that ensures clean-cut removal of wire insulation
- High stripping performance ensures clean cut through highly heat-resistant PTFE.

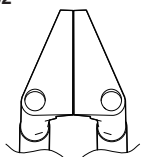
### Features

Solves the problem of whiskers and scratches being left by conventional tools

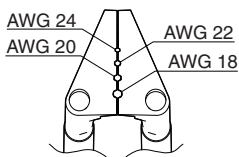


### Replacement Blades

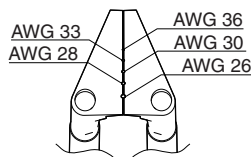
For FT-8002



G2-1601 Wire stripper blade  
Straight

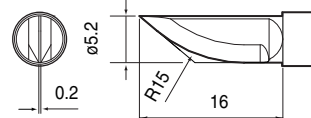


G2-1602 Wire stripper blade  
AWG 18 to 24



G2-1603 Wire stripper blade  
AWG 26 to 36

For FT-8003 (option)



G3-1601 Knife type blade

### Packing List

FT-801	Station, Handpiece (FT-8002), Power cord, Handpiece holder, Connecting cable, Lead adjuster, Blade removal tool, Instruction manual
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### Option

Part No.	Name	Specifications
FT8003-01	HAKKO FT-8003 conversion kit	Handpiece (FT-8003), Knife blade, Handpiece holder, Instruction manual



Blade included



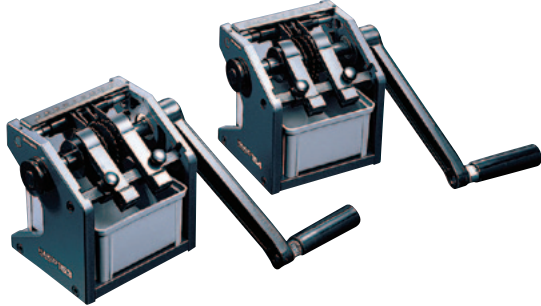
### Specifications

Model No.	FT-801
Power consumption	68 W/ 50 W*
<b>• Station</b>	
Output voltage	AC 24 V
Dimensions	80 (W) × 130 (H) × 131 (D) mm
Weight	1.2 kg
<b>• Handpiece</b>	
Power consumption	64 W (24 V)
Cord length	1.3 m
Total length**	96 mm
Weight**	48 g

\* When connecting with FT-8003  
\*\* Without cord and blade

## HAKKO 153·154 LEAD FORMER

### Lead Cutter and Former



- Lead cutter and former for axial components
- Can be used for forming and cutting, forming only, or cutting only

### Cutting and Forming

HAKKO 153	HAKKO 154
<p>Cutting and forming</p>	<p>Cutting and forming</p>
<p>Forming</p>	<p>Forming</p>
<p>Cutting</p>	<p>Cutting</p>

### Packing List

153, 154

Unit, Parts tray, Clamp, Handle, 2.0 mm Hexagon wrench, 2.5 mm Hexagon wrench, 3.0 mm Hexagon wrench, 4.0 mm Hexagon wrench, Instruction manual

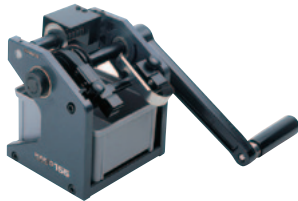
### Specifications

Part No.	153-1	154-1
Forming size	5.6 mm pitch	5 mm pitch
Max. diameter of lead wire	ø0.8 mm (max.)	ø0.5 mm (max.)
Lead wire*	For annealed copper lead wire only	
Outer width of tape	85 mm (max.)	
Taping pitch	5 mm	
Dimensions	125 (W) × 130 (H) × 110 (D) mm	
Weight**	2 kg	

\* These tools are not suited to work on components with lead frames (square lead).  
\*\* Including handle and clamp

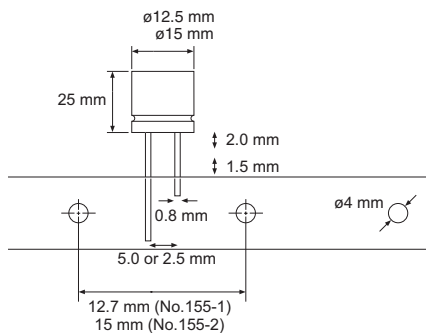
## HAKKO 155 LEAD CUTTER

### Lead Cutter



- Lead cutter for radial components

### Cutting



\* Cutting only

### Packing List

155

Unit, Parts tray, Clamp, Handle, 2.0 mm Hexagon wrench, 2.5 mm Hexagon wrench, 3.0 mm Hexagon wrench, 4.0 mm Hexagon wrench, Instruction manual

### Specifications

Part No.	155-1	155-2
Max. diameter of lead wire	ø0.8 mm (max.)	
Lead wire*	For annealed copper lead wire only	
Max. processing part size	ø12.5 × 25 mm (max.)	ø15 × 25 mm (max.)
Feed hole pitch	12.7 mm	15 mm
Lead pitch**	5.0 mm, 2.5 mm	5.0 mm
Min. processing size	1.5 mm from taping end, 2.0 mm from component end	
Dimensions	110 (W) × 140(H) × 125 (D) mm	
Weight***	1.7 kg	

\* These tools are not suited to work on components with lead frames (multiangular lead).  
\*\* When shipped, the unit is set for components with a lead pitch of 5.0 mm.  
\*\*\* Including handle and clamp

## HAKKO 152B

MOTOR DRIVE

### Motor Drive



Lead cutter or former is not included in the HAKKO 152B.



- Motor drive that enables automatic cutting and forming of taped components
- Constant-torque drive ensures precise and speedy processing.
- Speed control knob enables the adjustment of the processing speed.

### Packing List

152B	Unit, Instruction manual
------	--------------------------

### Specifications

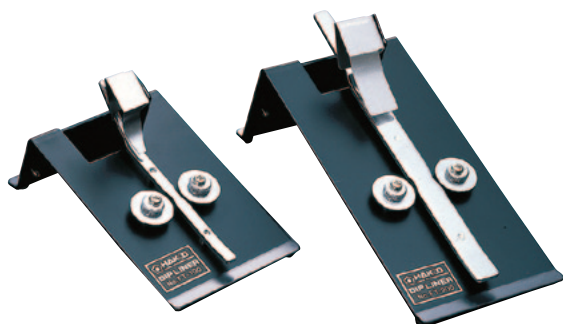
Model No.	152B
Power consumption	30 W
Max. processing capacity (with HAKKO 153, 154)	50 Hz : 30,000 pcs/hr 60 Hz : 36,000 pcs/hr
Max. processing capacity (with HAKKO 155)	50 Hz : 15,000 pcs/hr 60 Hz : 18,000 pcs/hr
Dimensions	430 (W) × 140 (H) × 150 (D) mm
Weight*	5.6 kg

\* Without cord

## HAKKO DIPLINER

LEAD STRAIGHTENER

### Lead Straightener



- IC lead liner for correcting variable lead pitches
- Simple mechanism enables the adjustments with just one screw.
- Simply insert the IC case into the chute.

### Packing List

FT100, FT150, FT200, FT300	Unit, Instruction manual
----------------------------	--------------------------

### Specifications

Part No.	FT100	FT150	FT200	FT300
Width of IC	7.5 mm	10 mm	15 mm	19 mm
Number of IC leads	8, 14, 16 18, 20	22	24, 28 40, 42	64

## HAKKO FT-710 ESD SAFE TIP CLEANER

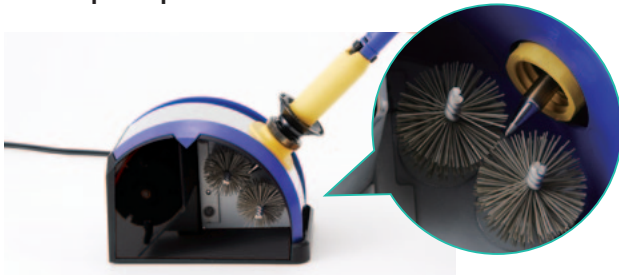
### Solder-Splash-Preventing Rotary Tip Cleaner







- The solder removal level can be adjusted using two different types of brushes.
- Brushes can be replaced without using any tools, and safe design prevents solder waste from entering the drive part.

#### Features

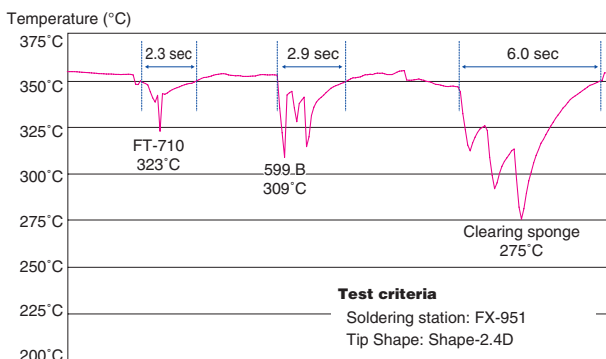
##### Solder-Splash prevention



##### Controllable solder removal level

Brush	Cleaning brush A (standard accessory)	Cleaning brush B (optional)
Material	Resin 	Metal 
Image after cleaning	Some solder remains. 	Solder is completely removed. 
Benefit	Prevents tip oxidation and extends the service life of the tip	Suitable for soldering small sections that require control over the amount of solder.

##### Minimizes decrease in temperature of the tip during cleaning



#### Packing List

FT-710	Unit, AC adapter, Receptacle A, Receptacle B, Lock nut, Gauge, Instruction manual
--------	---

#### Specifications

Model No.	FT-710
Rating	DC 24 V 130 mA
Brush notational speed	2500 rpm
Standard receptacle	Receptacle A and B
Dimensions	71 (W) × 77 (H) × 107 (D) mm
Weight	450 g

##### • AC adapter

Output voltage	DC 24 V
----------------	---------

##### • Compatibility table

Tip	Receptacle A	Receptacle B	Receptacle C
T12, T11	✓		
T18, 900M, T14		✓	
T20, T13, T22			✓

\* This cleaner cannot be used with the T12-JL02, quad type, tunnel type, and spatula type soldering tips of the T12 series.

\* It cannot be used with the FX-8802 and the FX-8803 with the T18 series.

\* There are some tips with dimensions that cannot be adjusted with the standard receptacles. In this situation, consult your nearest HAKKO dealer or distributor.

#### Option

Part No.	Name	Specifications
A1567	Cleaning brush B	Metal brushes, set of 2
B3519	Receptacle C	—

# Tip Cleaner and Polisher

## HAJKO FT-700 TIP POLISHER

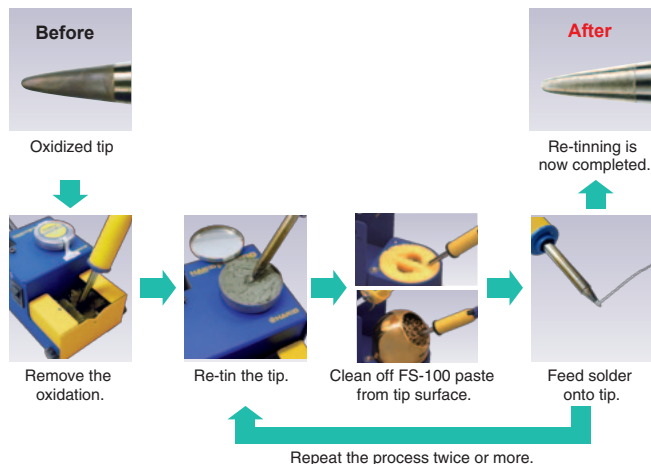
### Tip Polisher



- Soldering tip polisher best suited to the removal of oxidation on soldering tips
- Prevents the shortening of the service life of tips caused by oxidation.

### Usage

#### Cleaning procedure



\* Approximately 350°C is the most suitable temperature for cleaning the tips.



Use the brush to remove tough oxide.

## HAJKO FS-100 CHEMICAL PASTE

### Chemical Paste



- Chemical paste best suited to the removal of oxidation on soldering iron tips
- Also used for re-tinning of soldering tips

### Specifications

#### • Chemical paste

Amount	10 g
Ingredients	Flux, tin (Sn) 50 wt% (each)

\* The flux component of chemical paste consists of alicyclic amine hydrobromate, aliphatic amine hydrobromate, petrolatum, and wax.

### Packing List

FS-100	Paste, Instruction manual
--------	---------------------------

### Packing List

FT-700	Unit, Paste, Brush, Instruction manual
--------	--

### Specifications

Model No.	FT-700
Power consumption	3 W (100 V), 4.5 W (110 to 120 V, 220 to 240 V)
Dimensions	70 (W) × 54 (H) × 101 (D) mm
Weight*	0.65 kg

\* Without cord

#### • Chemical paste

Amount	10 g
Ingredients	Flux, tin (Sn) 50 wt% (each)

\* The flux component of chemical paste consists of alicyclic amine hydrobromate, aliphatic amine hydrobromate, petrolatum, and wax.

## HAKKO 373 ESD SAFE SELF FEEDER

### Self Feeder



- Automatic solder feeder that enables a user to complete soldering work with just one hand
- The solder feed time and speed can be set.

### Set-Up Example

#### •Soldering for one-handed operation

Soldering iron + HAKKO 373 + Solder diameter adjustment ring + Tube unit with switch or Guide pipe assembly or

\* See the applicable soldering irons in the P.55.

Set-up example

#### •Soldering with a feeder pen

Soldering iron + HAKKO 373 + Solder diameter adjustment ring + Feeder pen + Switch or Foot switch or Feeder switch

\* Compatible with all soldering irons

Set-up example

### Specifications

Model No.	373
Power consumption	6 W
Solder feed time	0 to 7 sec. (auto mode)
Solder feed speed	4.5 to 26 mm/sec.
Solder feed quantity	0 to 182 mm
Solder return quantity	0 to 5 mm (fixed speed)
Mode	Auto and manual
Usable solder diameter*	0.6, 0.65, 0.8, 1.0, 1.2, 1.6 mm
Usable solder quantity	1 kg or less
Dimensions	107 (W) × 110 (H) × 215 (D) mm
Weight**	1.5 kg

\*  $\phi$ 1.6 mm lead free solder can't be used.

\*\* With cord

### Packing List

373	Unit, Instruction manual
-----	--------------------------


The accessories that are required for initial set-up, such as a tube unit, guide pipe assembly, and solder diameter adjustment ring, are not included. They must be ordered separately and adapted to use with the soldering iron and solder wire diameter.

## Accessory Selection Guide

### ■ One-handed operation

Applicable soldering iron	Solder feed unit	Solder diameter	Options		
			Solder diameter adjustment ring	Guide pipe assembly	Tube unit
FM-2027 FM-2028 	373	0.6, 0.65 mm	 B1626	 or 	 or 
		0.8 mm	B1627	B3482	
		1.0 mm	B1628	B3483	
		1.2 mm	B1629	B3484	B3478
FM-2030 	373	0.6, 0.65 mm	B1626	B3726	B3477
		0.8 mm	B1627	B3727	
		1.0 mm	B1628	B3728	
		1.2 mm	B1629	B3729	B3478
FX-8301 	373	0.6, 0.65 mm	B1626	B3566	B3563
		0.8 mm	B1627	B3567	
		1.0 mm	B1628	B3568	
		1.2 mm	B1629	B3569	B3564
		1.6 mm	B1630	B3570	
FX-8801 907 	373	0.6, 0.65 mm	B1626	B2146	B2143
		0.8 mm	B1627	B2147	
		1.0 mm	B1628	B2148	
		1.2 mm	B1629	B2149	B2144
		1.6 mm	B1630	B2150	
FX-8805 	373	0.6, 0.65 mm	B1626	B2151	B2143
		0.8 mm	B1627	B2152	
		1.0 mm	B1628	B2153	
		1.2 mm	B1629	B2154	B2144
		1.6 mm	B1630	B2155	

### ■ Feeder pen

Applicable soldering iron	Solder feed unit	Solder diameter	Options		
			Solder diameter adjustment ring	Feeder pen	Switch
Compatible with all soldering irons	373	0.6, 0.65 mm	 B1626		 or 
		0.8 mm	B1627		
		1.0 mm	B1628		
		1.2 mm	B1629	C1235	
		1.6 mm	B1630		

## HAKKO 375 SELF FEEDER

### V-Groove Maker



- Cutting a V-groove put on the solder surface reduces the splash of solder and flux.
- The solder feed amount can be controlled by turning the switch on and off.
- Compact, space-saving automatic solder feeder

### Features

#### Minimize solder and flux splash

Cutting a V-groove on the solder surface enables the release of gas pressure generated by the flux, thereby suppressing splash. The HAKKO 375 can cut a groove in only the solder needed, then helps to reduce the level of defectiveness.

#### Advantages of V-grooved solder

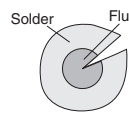
-Examination of solder and flux splash

#### Test criteria

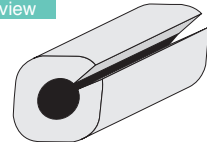
Measurement method	Measure the amount of solder and flux splashing after solder is fed to the soldering iron
Temperature setting for soldering iron	350°C and 400°C
Solder	Lead-free (Sn-3Ag-0.5Cu) Halogen-free flux ø0.3 mm and ø1.0 mm
Solder feed length	50 mm

\* The effect of solder and flux splashing prevention may differ under different operation conditions.

Solder cross-section view

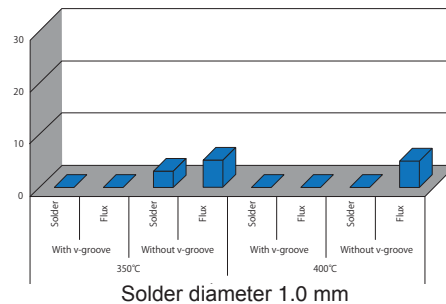
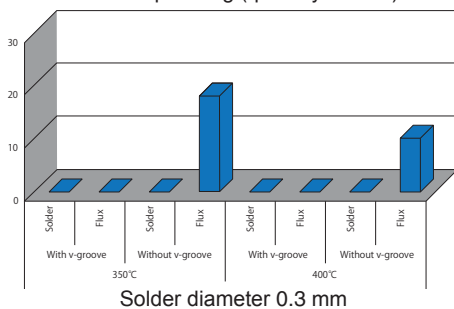


3D view



V-grooved solder

#### Amount of flux splashing (quantity of dots)



### Packing List

375	Unit, AC Adapter, Instruction manual
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### Option

Part No.	Name
B1649	Foot switch
B2763	Hand switch

### Specifications

Model No.	375
Rating	DC 24 V 75 mA
Solder feed speed	27 mm/sec.
Usable solder diameter	ø0.3, 0.5, 0.6, 0.8, 1.0 mm
Dimensions	78 (W) × 98 (H) × 56 (D) mm
Weight	0.59 kg

#### •AC Adapter

Output voltage	DC 24 V
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## HAKKO CUTTING TOOL

### Cutting Tool

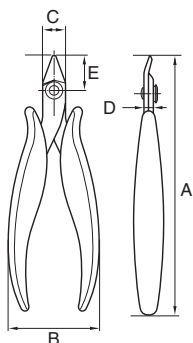


- Designed for precision assembly of delicate, complex electronic work
- Soft-touch grip enables long tool usage for long periods at a time.
- Recommend for use in cutting copper and soft lead wires

### Specifications

Part No.	Name	Max. copper wire cutting capability	A	B	C	D	E
106-01	Cutting tool for flush cut with safety clip	1.3 mm	132	54	13.5	5	20
106-02	Cutting tool for flush cut with angled blade	1.3 mm	129	54	13.5	5	16
106-03	Cutting tool for flush cut with small blade	0.8 mm	130	54	9.5	4	18
106-04	Cutting tool for a front, flush cut	1.0 mm	138	54	14	6	27
106-05	Cutting tool for flush cut	1.3 mm	132	54	13.5	5	20
106-06	Short nose pliers	–	140	54	13	6	29
106-07	Long nose pliers	–	154	54	13	6	40
106-08	Bent nose pliers	–	146	54	13	4	35

(Unit: mm)



## HAKKO IRON HOLDER

### Iron Holder



No. FH-300\*



No. 633-01



No. 633-02



No. 607



No. 602



No. 603



\* HAKKO 599B can be also mounted.

### Wire-type tip cleaner



No. 599B

#### HAKKO 599B

Prevents soldering tip oxidation



### Applicable Soldering Irons

Part No.	FH-300	633-01	633-02	607	602	603
Soldering irons	DASH PRESTO FX-600 FX-601	DASH PRESTO FX-600 FX-601	DASH PRESTO FX-600 FX-601	MG	RED	RED

## HAKKO 611 ESD SAFE SOLDER REEL STAND

### Reel Stand



- Solder reel stand for coiled solder with a maximum load of 1 kg
- Smooth action when reeling out solder wire improves work efficiency
- A mounting screw for the grounding wire is attached on the baseplate.



No. 611-2

### Specifications

Part No.	611-1	611-2
Shaft diameter	ø15 mm	
Usable solder	Roll solder 1 kg (max.) × 1	Roll solder 1 kg (max.) × 2
Dimensions	87 (W) × 78 (H) × 141 (D) mm	87 (W) × 200 (H) × 141 (D) mm
Weight	450 g	750 g

# Vacuum Pick-Up Tool

## **HAKKO392** ESD SAFE VACUUM PICK-UP

### Outlet-Powered Type



- Outlet-powered suction pick-up tool with built-in vacuum pump
- The pick-up capacity can be increased up to 230 gf with an optional pad.

## **HAKKO393** VACUUM PICK-UP

### Dropper Type



- Portable, easy-to-carry manual dropper-type vacuum pick-up
- Maximum pick-up capacity of 40 gf
- Uses antistatic material

## **HAKKO394** VACUUM PICK-UP

### Battery-Powered Type



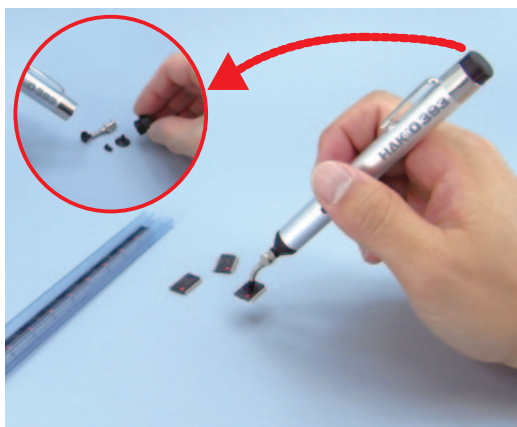
- Battery-powered suction pick-up tool with built-in vacuum pump
- Maximum pick-up capacity of 120 gf
- Uses antistatic material

### Usage Example

#### HAKKO 392



#### HAKKO 393



#### HAKKO 394



With the bent nozzle accessory, 0603-size components can be picked up.



### Replacement Pads and Nozzles

Part No.	Name	Specifications
A1164	Bent nozzle	0.4 mm
A1165	Bent nozzle	1.1 mm with stopper
A1198	Bent nozzle	0.26 mm
A1486	Straight nozzle	1.1 mm with stopper
A1166	Pad	3 mm
A1312	Pad	5 mm
A1167	Pad	7 mm
A1311	Pad	10 mm

### Packing List

<b>392</b>	Unit, 0.4 mm diameter Bent nozzle, 1.1 mm diameter Bent nozzle, 3 mm diameter Pad, 7 mm diameter Pad, Instruction manual
<b>393</b>	Unit, 1.1 mm diameter Bent nozzle with stopper, 3 mm diameter Pad, 7 mm diameter Pad, 10 mm diameter Pad, Instruction manual
<b>394</b>	Unit, 1.1 mm diameter Bent nozzle with stopper, 5 mm diameter Pad, 10 mm diameter Pad, two AAA Alkaline batteries (for trial), Instruction manual

### Specifications

Model No.	392
Power consumption	5 W
Maximum pressure	37.3 kPa (280 mmHg)
Pad	Conductive silicone rubber
Dimensions	Station: 132 (W) × 83 (H) × 170 (D) mm Pen: ø10 × 123 (L) mm Hose: 1.1 m
Weight*	Station: 1.65 kg Pen: 25 g

\* Without cord, nozzle and pad

Model No.	393
Pad	Conductive silicone rubber
Dimensions	ø13 mm × 132 mm
Weight*	19 g

\* Without nozzle and pad

Model No.	394
Power supply	Two AAA batteries
Pad	Conductive silicone rubber
Battery life	Approx. 30,000 suction cycles (with alkaline batteries)
Suction capacity	120 gf (with a pad diameter of 10 mm)
Dimensions	130 (W) × 29 (H) × 22 (D) mm
Weight*	43 g

\* Without batteries, nozzle and pad

## HAKO FS-210

SOLDERING FLUX



### Brush-tip Type Flux Pen



- Pen tip does not split easily.
- You can fill your favorite flux into FS-210.
- Simply push the pen shaft when you need some extra flux.

#### Packing List

FS210-82	Flux container for 4 mL (5 pcs)
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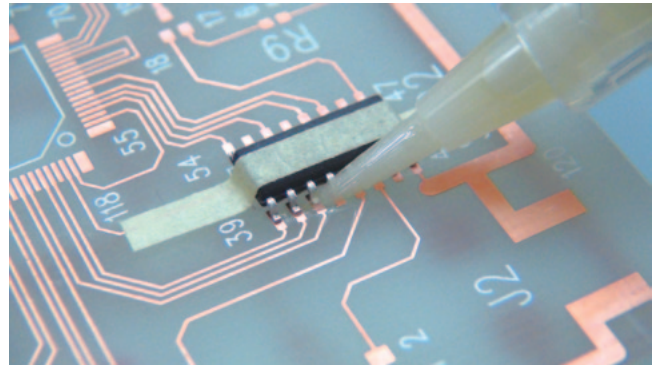
\* No Flux contained.

#### Replacement Parts

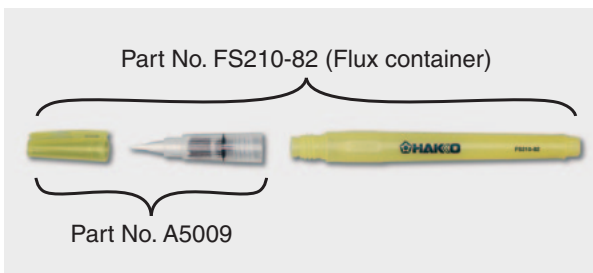
A5009	Brush-tip with a cap (5 pcs)
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#### Features

Pen for pinpoint application of optimum amount of flux



Simply push the shaft for a generous coating of flux



## HA-KO FR-300 DESOLDERING TOOL

### Portable Desoldering Tool

Nozzle included



- Power switch and adjustable temperature control built into the handle
- Ergonomic grip design provides superior operability



FR-300 is supplied in a carrying case with maintenance parts and simple iron holder.

### Packing List

FR-300

Unit, Ceramic paper filter (L; 2 pcs), Nozzle changing tool, Protection cover, Pre-filter, Iron holder, Cleaning pin for 1.0 mm diameter nozzle, Cleaning pin for heating core, Instruction manual

### Specifications

Model No.	FR-300
Power consumption	100 V 98 W (50/60 Hz), 110 V 122 W (50/60 Hz), 120 V 140 W (50/60 Hz), 220 V 105 W (50/60 Hz), 230 V 118 W (50/60 Hz), 240 V 130 W (50/60 Hz)
Temperature range	350 to 500°C
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Vacuum generator	Diaphragm pump
Vacuum pressure	81 kPa (610 mmHg)
Suction flow	11 L/min.
Standard nozzle	ø1.0 mm (No. N50-04)
Dimensions	210 (W) × 226 (H) mm
Weight*	0.52 kg

\* Without cord

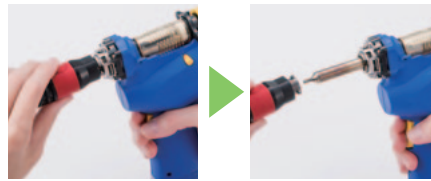
### Replacement Nozzles

Unit : mm

Part No.	Figure	Size	
		A	B
N50-01		0.8	2.0
N50-02		1.0	2.0
N50-03		0.8	2.5
N50-04		1.0	2.5
N50-05		1.3	3.0
N50-06		1.6	3.0

### Features

Quick-change nozzle replacement with special tools



Power switch at hand



Simplified iron holder as standard



# Heavy Duty Desoldering Tool

**HAJKO** DESOLDERING TOOL **FR-400** **ESD SAFE**

**New**

**Heavy Duty Desoldering Tool** Digital

Nozzle included



- 300 W heavy duty desoldering tool with built-in vacuum pump
- Secure desoldering with valve function
- Reduction of solder clogging
- Improvement in maintainability

**GOOD DESIGN AWARD 2015**

## Specifications

Model No.	FR-400
Power consumption	320 W
Temperature range	350 to 500°C
Temperature stability	±5°C at idle temperature

## Packing List

<b>FR-400</b>	Station, Desoldering tool (FR-4001), Power cord, Iron holder (with cleaning wire), Tool box (Cleaning pin for $\phi 1.0$ mm, Cleaning pin for heater, Cleaning drill for $\phi 1.0$ mm, Nozzle wrench, Filter [2 pcs] Ceramic paper filter [4 pcs]), Instruction manual
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### • Station

Output voltage	AC 29 V
Vacuum generator	Vacuum pump, double cylinder type
Vacuum pressure	Max. 80 kPa (600 mmHg)
Suction flow	15 L/min.
Dimensions	166 (W) × 137 (H) × 264 (D) mm
Weight	5.7 kg

### • Desoldering Tool

Power consumption	300 W (29 V)
Nozzle to ground resistance	<2 $\Omega$
Nozzle to ground potential	<2 mV
Heating element	Composite heater
Standard nozzle	$\phi 1.0$ mm (Part No. N60-02)
Cord length	1.2 m
Total length*	183 mm (with $\phi 1.0$ mm nozzle)
Weight*	245 g (with $\phi 1.0$ mm nozzle)

\* Without cord

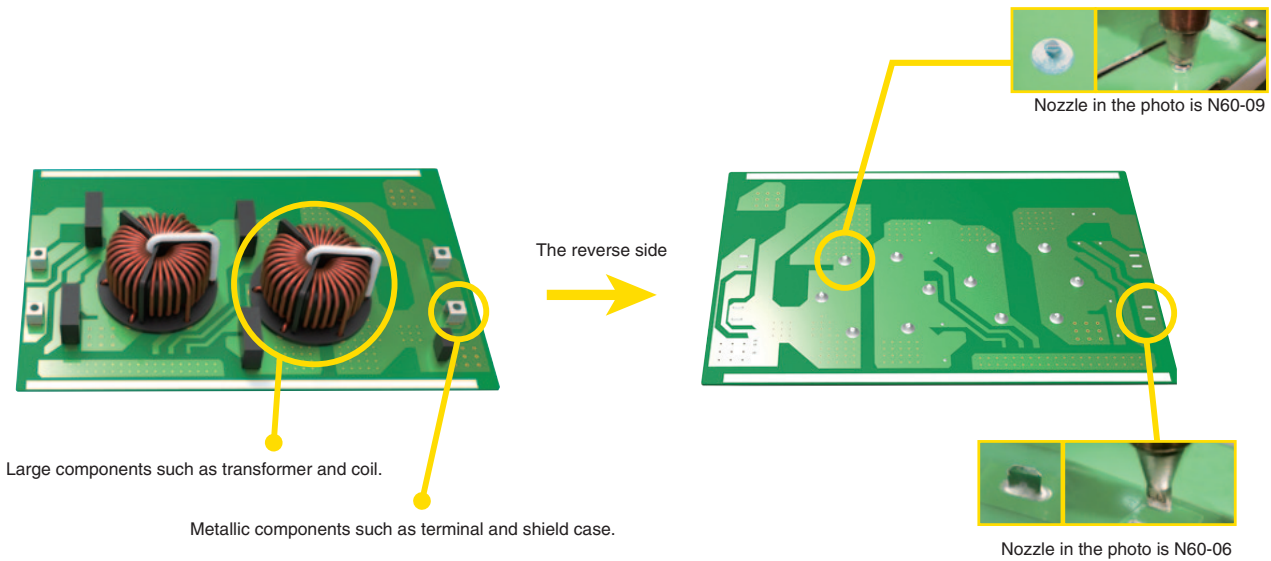
## Replacement Nozzles

Unit : mm

<b>N60-01 Nozzle <math>\phi 0.8</math></b> 	<b>N60-02 Nozzle <math>\phi 1.0</math></b> 	<b>N60-03 Nozzle <math>\phi 1.3</math></b> 	<b>N60-04 Nozzle <math>\phi 1.6</math></b> 	<b>N60-05 Nozzle <math>\phi 2.0</math></b> 
<b>N60-06 Nozzle <math>\phi 2.6</math></b> 	<b>N60-07 Nozzle <math>\phi 3.0</math></b> 	<b>N60-08 Nozzle 4.2 x 1.5</b> 	<b>N60-09 Nozzle 6.2 x 1.5</b> 	

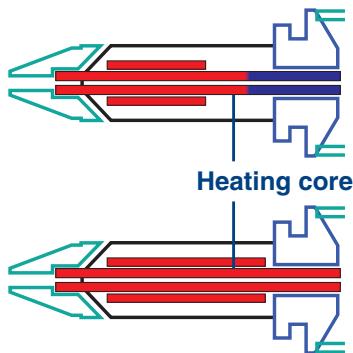
**Features**

300 W tremendous power makes incredible heating.



**Secure desoldering, valve function that suctions with high pressure**

Suction starts 0.2 seconds after pulling the trigger for instance and high pressure suction to achieve complete desoldering.



**Reduction of solder clogging**

**Improvement in heating core**

Heating ability for backside of heating core is increased to ensure suctioned solder be carried to filter pipe and avoid solder clogging.

**Featuring ACF (Anti Clogging Function)**

ACF ensures suctioned solder be carried to filter pipe by keeping pump running for a second after releasing trigger.

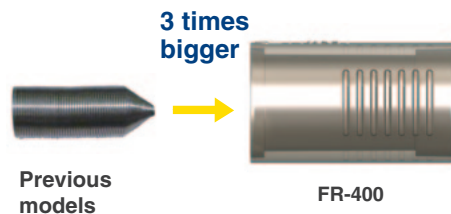
**Improvement in maintainability**

■ **Easy heater replacement**



By removing 3 screws

■ **New filter pipe**



■ **Tool box for maintenance kit**



# High-Power Desoldering Tool

**HAJKO** DESOLDERING TOOL **FR-410** **ESD SAFE**

**New**

## High-Power Desoldering Tool Digital

Nozzle included



- 140 W high power enables perfect desoldering for the components on multi-layer PWB.
- A wide selection of nozzles is available for a variety of desoldering works.

### Packing List

<b>FR-410</b>	Station, Desoldering Tool (FR-4101), Power cord, Iron Holder (with cleaning wire), Tool box, Instruction manual
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### Specifications

<b>Model No.</b>	FR-410
Power consumption	190 W
Temperature range	330 to 450°C
Temperature stability	±5°C at idle temperature

#### • Station

Output voltage	AC 24 V
Vacuum generator	Vacuum pump, double cylinder type
Vacuum pressure	Max. 80 kPa (600 mmHg)
Suction flow*	15 L/min.
Dimensions	165 (W) × 137 (H) × 244 (D) mm
Weight	4.8 kg

#### • Desoldering Tool

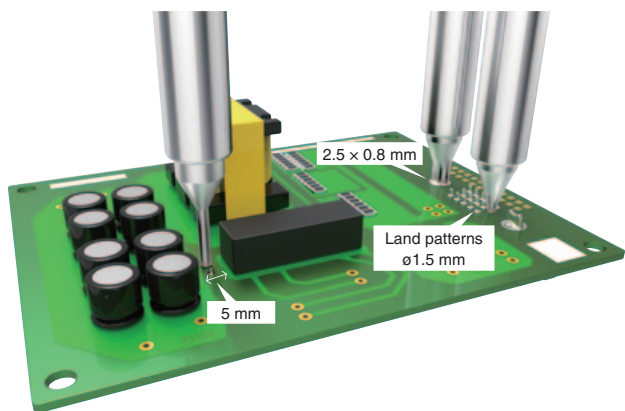
Power consumption	140 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Heating element	Composite heater
Standard nozzle	ø1.0 mm S type (No. N61-05)
Cord length	1.2 m
Total length**	168 mm (with ø1.0 mm S type nozzle)
Weight**	170 g (with ø1.0 mm S type nozzle)

\* The suction flow is measured at the filter case suction port of station.

\*\* Without cord and hose

## Features

A wide selection of nozzles is available for a variety of desoldering works.



- Long type nozzles for narrow space**  
 Slim and long nozzles reach to target easily in a narrow space.
- Oval shape nozzles for flat terminals**  
 No solder left-over because of the nozzles that much square shape terminals.
- SS type nozzles for micro land-patterns**  
 Close-fitting nozzles on micro land pattern secure desoldering.

High power of 140 W!  
3 times more powerful than the previous model.



HAKKO 474 (50 W)

FR-410 (140 W)

Features comparison with the latest models and the previous model

Features	FR-400	FR-410	HAKKO 474
High pressure suction	○	○	△
Longer heating core	○	○	×
ACF (Anti Clogging Function)	○	○	×
Easy nozzle replacement	○	○	△
Easy heater replacement	○	○	×
Bigger filter pipe	○	○	△
Large LCD display	○	○	×

## Replacement Nozzles

Unit : mm

<b>N61-01</b> 	<b>N61-02</b> 	<b>N61-03</b> 	<b>N61-04</b> 
<b>N61-05</b> 	<b>N61-06</b> 	<b>N61-07</b> 	<b>N61-08</b> 
<b>N61-09</b> 	<b>N61-10</b> 	<b>N61-11</b> 	<b>N61-12</b> 
<b>N61-13</b> 	<b>N61-14</b> 	<b>N61-15</b> 	<b>N61-16</b> 

## HAKKO FM-204 ESD SAFE DESOLDERING TOOL

### Composite-type Desoldering Tool Digital

Nozzle not included



- Vacuum pump built-in type desoldering tool
- Digital display ensures easy and reliable temperature control.
- Sleep function that works with iron holder prevents nozzle oxidation.

### Packing List

<b>FM-204</b>	Station, Iron holder, Ceramic paper filter (10 pcs), Cleaning drill for heating element, Filter pipe assembly (1 pc), Control card, Power cord, Connecting cable, Nozzle remover, Desoldering tool (FM-204), Handle for gun configuration, Instruction manual
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### Option

Part No.	Name	Specifications
FM2027-04	HAKKO FM-2027 conversion kit	70 W (24 V)
FM2026-05	HAKKO FM-2026 conversion kit	70 W (24 V)

### Specifications

Model No.	FM-204
Power consumption	120 W
Temperature range	FM-2024: 350 to 450°C FM-2026/2027: 200 to 450°C
Temperature stability	±5°C at idle temperature

#### • Station

Output voltage	AC 24 V
Vacuum generator	Vacuum pump, double cylinder type
Vacuum pressure	Max. 80 kPa (600 mmHg)
Suction flow*	15 L/min.
Dimensions	160 (W) × 120 (H) × 225 (D) mm
Weight	3.7 kg

#### • Desoldering Tool

Power consumption	70 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Heating element	Composite heater
Cord length	1.2 m
Total length**	180 mm (with ø1.0 mm nozzle)
Weight**	65 g (with ø1.0 mm nozzle)

\* Measured at the filter case suction port of the station.

\*\* Without cord and hose

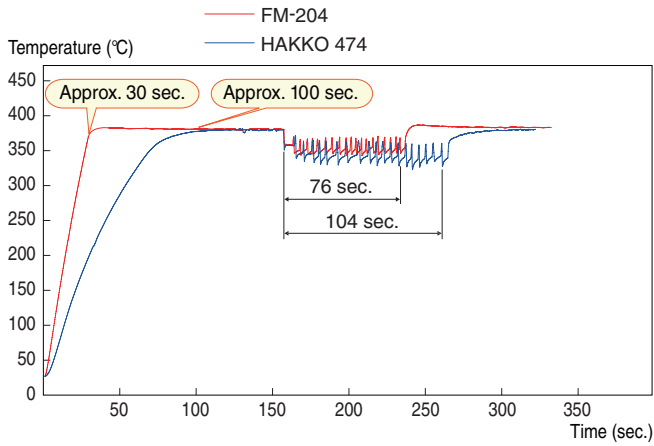
### Optional Nozzles

Unit : mm

<b>N1-06 Nozzle ø0.6</b> 	<b>N1-08 Nozzle ø0.8</b> 	<b>N1-10 Nozzle ø1.0</b> 	<b>N1-13 Nozzle ø1.3</b> 
<b>N1-16 Nozzle ø1.6</b> 	<b>N1-20 Nozzle ø2.0</b> 	<b>N1-23 Nozzle ø2.3</b> 	<b>N1-L10 Nozzle ø1.0</b> 

## Features

### Excellent thermal recovery



### Test criteria

Measurement method	The time until the soldered portion reaches 200°C is measured for 20 points.
Nozzle used	ø1.0 mm
Solder	Lead-free solder

### Two way use of grip part

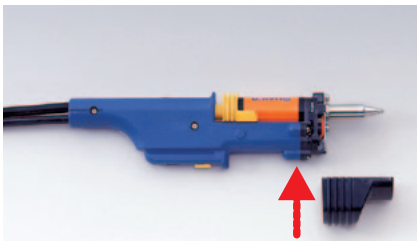


Gun configuration

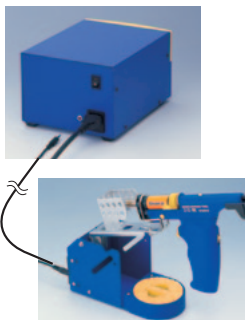


Straight configuration

### Simple and safe nozzle replacement by the nozzle remover



### Sleep function and Auto Power Shut-off function



Connect the FM-204 station and FH-200 iron holder using a connecting cable.

### Replacing the handpiece enables soldering.

#### ■ Soldering



HAKKO FM-2027

#### ■ N<sub>2</sub> System



Set-up example  
 HAKKO FM-204  
 HAKKO FM-2026  
 HAKKO FX-780  
 HAKKO FX-791

## HAKKO 701 REPAIR SYSTEM ESD SAFE

### Repair System Analog

Tip included

Nozzle included



Soldering



Soldering (Option)



Desoldering



Hot Tweezer (Option)



- All-in-one repair system that enables both soldering and desoldering

### Packing List

701	Station, Soldering iron (907), Desoldering gun (809), Filter pipe, Cleaning pin for 1.0 mm diameter nozzle, Cleaning pin for heating element, Cleaning drill for 1.0 mm diameter nozzle, Ceramic paper filter (S; 2 pcs), Ceramic paper filter (L; 4 pcs), Spring filter (3 pcs), Silicone grease, Wrench, Iron holder for soldering iron, Iron holder for desoldering gun, Instruction manual
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### Replacement Tips and Nozzles

For information on replacement tips and nozzles, see our website (<http://www.hakko.com>).

### Specifications

Model No.	701
Power consumption	150 W
Temperature range	Soldering: 200 to 480°C Desoldering: 380 to 480°C

#### • Station

Output voltage	AC 24 V
Vacuum generator	Vacuum pump, double cylinder type
Vacuum pressure	Max. 80 kPa (600 mmHg)
Suction flow	15 L/min.
Dimensions	190 (W) × 130 (H) × 250 (D) mm
Weight*	5 kg

#### • Soldering Iron

Power consumption	50 W (24 V)
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Standard tip	Shape-B (No. 900M-T-B)
Cord length	1.2 m
Total length*	222 mm (with B tip)
Weight*	44 g (with B tip)

#### • Desoldering Gun

Power consumption	50 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Heating element	Ceramic heater
Standard nozzle	ø1.0 mm S type (No. A1003)
Cord length	1.2 m
Dimensions**	135 (W) × 174 (H) mm
Weight**	200 g

\* Without cord

\*\* Without cord and hose

## HAKKO 702B ESD SAFE REWORK SYSTEM

### Rework System Analog

Tip included

Nozzle included



Soldering



Soldering (Option)



Desoldering



Hot Tweezer (Option)



Hot Air Reworking



- Multi-station that enables soldering, desoldering, and SMD rework all with a single unit

### Packing List

<b>702B</b>	Station, Soldering iron (907 × 1 pc, 900S × 1 pc), Desoldering gun (809), Handpiece (hot air), Nozzle tray, Filter pipe, Cleaning pin for 1.0 mm diameter nozzle, Cleaning pin for heating element, Cleaning drill for 1.0 mm diameter nozzle, Ceramic paper filter (S; 2 pcs), Ceramic paper filter (L; 4 pcs), Spring filter (3 pcs), Silicone grease, Wrench, Iron holder for soldering iron (2 pcs), Iron holder for desoldering gun, Handpiece holder, FP pick-up with S and L wires, Nozzle for handpiece (hot air; A1124B × 1 pc, A1128B × 1 pc), Power cord, Instruction manual, Troubleshooting guide
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### Replacement Tips and Nozzles

For information on replacement tips and nozzles, see our website (<http://www.hakko.com>).

### Specifications

Model No.	702B
Power consumption	500 W
Temperature range	Soldering: 200 to 480°C Desoldering: 380 to 480°C SMD Rework: 100 to 420°C (use No. A1126B)

#### • Station

Output voltage	AC 24 V
Vacuum generator	Vacuum pump, double cylinder type
Vacuum pressure	Max. 80 kPa (600 mmHg)
Suction flow	15 L/min.
Air flow	20 L/min. (max.)
Dimensions	360 (W) × 150 (H) × 266 (D) mm
Weight	10 kg

#### • Soldering Iron

Power consumption	50 W (24 V) × 2 pcs
Tip to ground resistance	<2 Ω
Tip to ground potential	<2 mV
Heating element	Ceramic heater
Standard tip	Shape-B (No. 900M-T-B), Shape-I (No. 900S-T-I)
Cord length	1.2 m
Total length*	907-ESD: 222 mm (with B tip) 900S-ESD: 215 mm (with B tip)
Weight*	907-ESD: 44 g (with B tip) 900S-ESD: 29 g (with B tip)

#### • Desoldering Gun

Power consumption	50 W (24 V)
Nozzle to ground resistance	<2 Ω
Nozzle to ground potential	<2 mV
Heating element	Ceramic heater
Standard nozzle	ø1.0 mm S type (No. A1003)
Cord length	1.2 m
Dimensions**	135 (W) × 174 (H) mm
Weight**	200 g

#### • Handpiece (Hot Air)

Power consumption	250 W
Standard nozzle	No. A1124B and A1128B
Total length*	196 mm
Weight*	120 g

\* Without cord

\*\* Without cord and hose

# Desoldering Tool and Wire

## HAKKO SPPON DESOLDERING TOOL

### Desoldering Tool

Nozzle included



- Light-weight and simplified desoldering tool with high suction power
- Use a cleaning shaft that enables the nozzle to be cleaned after each use
- Nozzles can be easily replaced.

### Replacement Nozzles

Unit : mm

Part No.	Figure	Adaptation products
18-N		No.18, 18G
20-N		No.20, 20G
DS01-N		No.DS01P

### Specifications

Part No.	Absorption capacity
18	12 cm <sup>3</sup> (12 cc)
18G	12 cm <sup>3</sup> (12 cc) with guard
20	20 cm <sup>3</sup> (20 cc)
20G	20 cm <sup>3</sup> (20 cc) with guard
DS01P	28 cm <sup>3</sup> (28 cc)

## HAKKO WICK DESOLDERING WIRE

### Desoldering Wire



- Handy for removing solder after dismantling surface-mounted components

### Features

#### Through-hole solder removal



#### Bridging solder removal



### Specifications

#### Regular type (Flux)

Part No.	Description
FR100-00	1.5 m × 0.6 mm
FR100-01	1.5 m × 0.9 mm
FR100-02	1.5 m × 1.4 mm
FR100-03	1.5 m × 1.9 mm
FR100-04	1.5 m × 2.5 mm
FR100-05	1.5 m × 3.3 mm

#### Unflux type (Unflux)

Part No.	Description
FR110-00	1.5 m × 0.6 mm
FR110-02	1.5 m × 1.4 mm
FR110-03	1.5 m × 1.9 mm
FR110-04	1.5 m × 2.5 mm
FR110-05	1.5 m × 3.3 mm

#### No clean type (Low residue flux) ESD SAFE package

Part No.	Description
FR120-00	1.5 m × 0.6 mm
FR120-01	1.5 m × 0.9 mm
FR120-02	1.5 m × 1.4 mm
FR120-03	1.5 m × 1.9 mm
FR120-04	1.5 m × 2.5 mm
FR120-05	1.5 m × 3.3 mm

## HAJKO 851 ESD SAFE SMD REWORK STATION

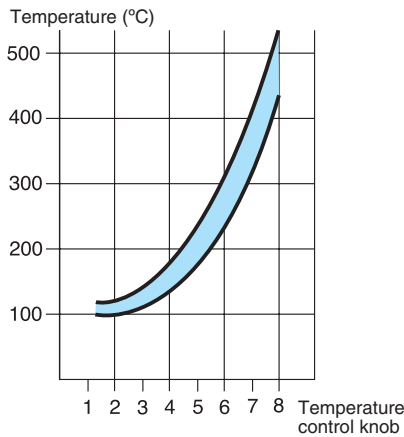
### Hot-Air SMD Rework Station Analog

**Nozzle included**



- Single-nozzle hot air rework system that is perfect for the repair or local heating of small surface-mounted components
- Slim grip is ideal for work in narrow spaces.

### Temperature Distribution Chart



#### Test criteria

Measured at a point	2 mm from the nozzle
Room temperature	20 °C
Nozzle used	A1066 ø2.0 mm

### Replacement Nozzles

Part No.	Name	Specifications
A1065	Nozzle	ø1.5 mm
A1066	Nozzle	ø2.0 mm
A1067	Nozzle	ø3.0 mm
A1147	Nozzle	ø1.0 mm

### Packing List

<b>851</b>	Station with handpiece, Handpiece holder, Nozzle holder, Instruction manual
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### Specifications

Model No.	851
Power consumption	85 W
Hot air temperature	100 to 540°C

#### • Station

Power consumption	5 W
Air flow	6 L/min. (max.)
Dimensions*	167 (W) × 101 (H) × 182 (D) mm
Weight*	1.8 kg

#### • Handpiece

Power consumption	80 W
Standard nozzle	ø2.0 mm (No. A1066)
Total length**	217 mm
Weight**	180 g

\* Without cord and handpiece

\*\* Without cord

## HAJKO FR-810 ESD SAFE SMD REWORK STATION

### Hot-Air SMD Rework Station Digital

Nozzle included



- High volume airflow and high output for a various kinds of rework
- Full digital control of temperature, airflow, and time.
- Simple nozzle removal and easy maintenance

### Packing List

FR-810	Station with handpiece, Handpiece holder, FP pick-up (with pick-up wire SS), Heat resistant pad, Power cord, Nozzle (ø4), Instruction manual
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### Specifications

Model No.	FR-810
Power consumption	700 W (100 V), 840 W (110 V), 820 W (120 V), 1100 W (220 V), 1200 W (230 V), 1300 W (240 V)
Temperature range	50 to 600°C

#### • Station

Power consumption	30 W
Air flow	1 to 9 (5 to 115L/min.)
Dimensions	160 (W) × 145 (H) × 220 (D) mm
Weight	1.5 kg

#### • Handpiece

Power consumption	670 W (100 V), 810 W (110 V), 790 W (120 V), 1070 W (220 V), 1170 W (230 V), 1270 W (240 V)
Standard nozzle	ø4 mm (No. N51-02)
Total length*	250 mm
Weight*	180 g

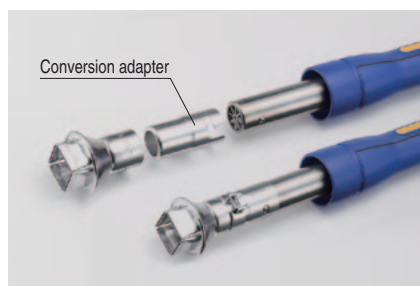
\* Without cord.

\* Values for airflow are approximate. Actual volume of airflow may be affected by the size and shape of the nozzle used.

### Option

Part No.	Name	Specifications
B5058	Conversion adapter	-

When using the FR-810 with a nozzle for the FR-803B, attach a conversion adapter No.B5058 (option).



## Features

### Timer function

A new timer function allows for repeatably consistent work times. This can help to prevent parts from overheating and can improve the overall quality of your work.

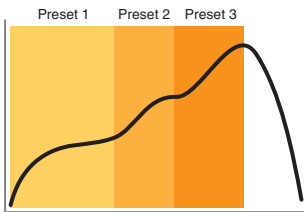
### Preset mode

Preset mode allows you to change the settings easily to suit a variety of boards and workpieces. (You can program temperature, time and airflow settings for up to five presets) Simply switch to the desired setting for variety of jobs.

	Preset 1	Preset 2	Preset 3	Preset 4	Preset 5
Temperature (°C)	250	300	350	400	450
Time (sec.)	100	80	50	120	150
Airflow (level)	6	7	8	4	5

### Chain Presets function

The Chain Presets function allows you to create a simple temperature profile by combining settings registered in preset mode. (Up to five steps can be created). It also supports sophisticated removal work, and significantly improves efficiency.



	Temperature (°C)	Time (s)	Airflow
Preset 1	250	100	6
Preset 2	300	40	6
Preset 3	350	50	6
Preset 4	100	000	6
Preset 5	100	000	6

\*Presets 4 and 5 have been set to '000', so they are skipped.

### Auto sleep and auto shutoff features

To ensure safety and conserve power, when the handpiece is placed in the handpiece holder, the auto sleep function is activated and it starts cooling automatically.

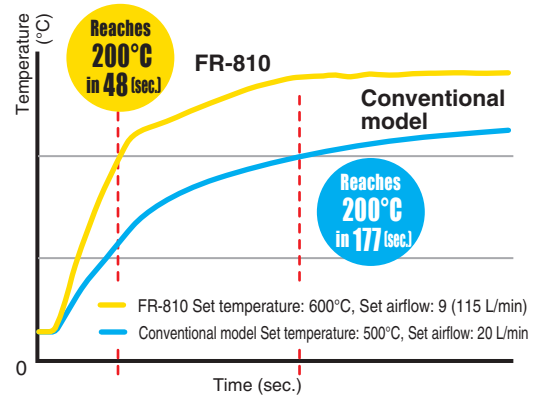
If the handpiece has not been removed from the handpiece holder (Ex. Using it in a rework fixture) and after it has been idle for 30 minutes, auto shutoff function is activated. It is automatically powered off.

Access to settings can be restricted via the password function for easy management.



### Efficiency improvement

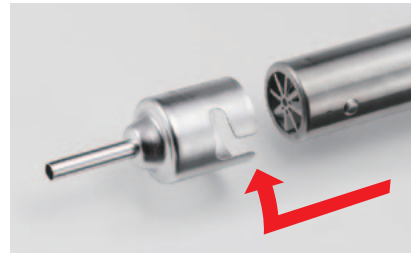
The FR-810's high volume airflow and high output make it possible to perform the same work in only one-third of the time required when using a conventional model. This reduces the thermal impact on boards and components.



\*Examination of time taken for connector sections soldered onto a ceramic board to be heated to 200°C with maximum temperature and airflow settings selected.

Single nozzles with an approximately 4 mm diameter were used.

### Quick-change N51 nozzles



Simple, tool-free removal and attachment.

### Simple heater replacement



Simply remove four screws to replace heater.

## HAKKO FR-803B ESD SAFE SMD REWORK STATION

### Hot-Air SMD Rework Station Digital

Nozzle not included



- 3-step temperature profile (preheating, heating, and cooling down) is available.
- Vacuum function makes it possible to pick up workpieces.

#### Packing List

FR-803B	Station with handpiece, Power cord, Control card, Handpiece holder, Connecting cable, Pad (3 mm, 5 mm, 7.6 mm x 2 pcs each), Instruction manual
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NOTE: This product does not come with a nozzle. When purchasing this product, be sure to order a nozzle suitable for the work to be done.

#### Specifications

Model No.	FR-803B
Power consumption	310 W (100 V), 370 W (110 V), 440 W (120 V), 590 W (220 V), 650 W (230 V), 700 W (240 V)
Temperature range	100 to 500°C (sensor)

#### •Station

Power consumption	30 W (100 V), 40 W (110 to 120 V), 50 W (220 to 240 V) (stand-by power consumption: 4 W [100 to 120 V, 220 to 240 V])
Air flow	5 to 20 L/min. (max.)
Operation mode	Auto or manual
Timer	50 files, 3 steps each
Dimensions	160 (W) x 145 (H) x 230 (D) mm
Weight	5 kg

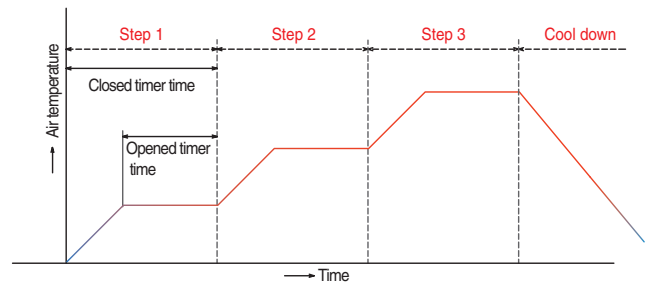
#### •Handpiece

Power consumption	270 W (100 V), 330 W (110 V), 400 W (120 V), 540 W (220 V), 600 W (230 V), 650 W (240 V)
Total length*	200 mm
Weight*	200 g

\* Without cord

#### Features

##### Settable 3-step temperature profile



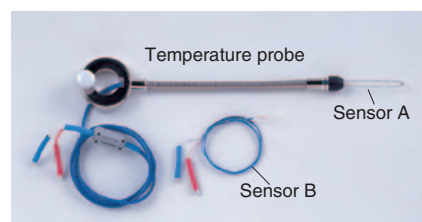
##### Built-in vacuum pickup



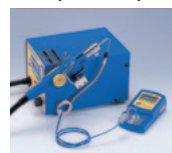
#### Option

Part No.	Name
C1541	Temperature probe

##### Controlling the temperatures of the hot air rework system and the workpiece using a temperature probe



Set-up example 1



Set-up example 2



Set-up example 3



## Accessories for SMD-BGA Repair System

Set-up example; Rework fixture, Omnivise, FR-803B, FR-830, FG-100



- Combination with HAKKO FR-810 and FR-803B allows the SMD and BGA rework equipment to set up at low cost.

### Features

#### REWORK FIXTURE 脚 No.C1392B



- Smooth vertical motion
- The handpiece may be easily installed or removed from the clamp.
- Easy to position

#### OMNIVISE 脚 No.C1390C



- The height can be adjusted to 72.5 mm, 78.0 mm, 84.5 mm, 91.0 mm and 97.5 mm.
- The jaws are padded to preclude damage to delicate objects.
- Full rotations of 360° are available without interference.

#### NOZZLE TRAY 脚 No.C1391B

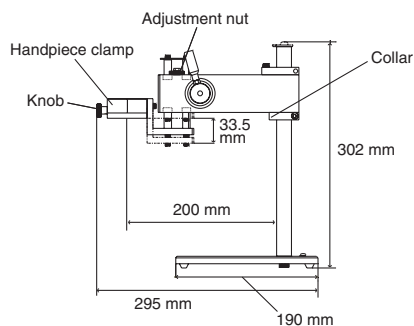


- Holds nozzles in neat rows
- Aids in nozzle installation and removal

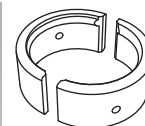
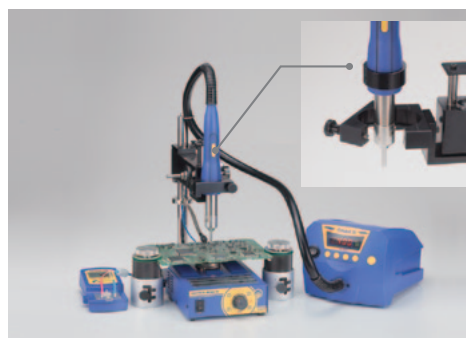
### Specifications

Model No.	C1392B	C1390C	C1391B
Dimensions	—	ø57 × 88 mm	305 (W) × 64 (H) × 140 (D) mm
Weight	4.6 kg	1.2 kg (1 pc)	0.87 kg

#### Dimensional drawing for C1392B



#### Fixture adapter

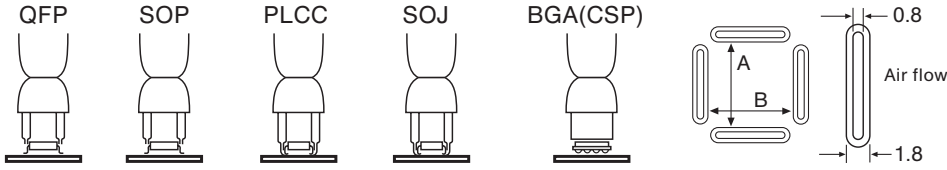


No.B5059

When using the FR-810 handpiece with a rework fixture No.C1392B, attach a fixture adapter No.B5059 (option).

## Optional Nozzles

Unit: mm



The size in each description indicates the size of the package.

### QFP and BQFP

<b>A1125B QFP 10 × 10</b> 	<b>A1262B QFP 12 × 12</b> 	<b>A1126B QFP 14 × 14</b> 	<b>A1128B QFP 14 × 20</b> 	<b>A1127B QFP 17.5 × 17.5</b> 
<b>A1261B QFP 20 × 20</b> 	<b>A1129B QFP 28 × 28</b> 	<b>A1263B QFP 28 × 40</b> 	<b>A1265B QFP 32 × 32</b> 	<b>A1203B QFP 35 × 35</b> 
<b>A1264B QFP 40 × 40</b> 	<b>A1215B QFP 42.5 × 42.5</b> 	<b>A1180B BQFP 17 × 17</b> 	<b>A1181B BQFP 19 × 19</b> 	<b>A1182B BQFP 24 × 24</b> 

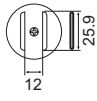

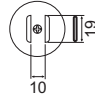
### SOP and TSOL

<b>A1131* SOP 4.4 × 10</b> 	<b>A1132* SOP 5.6 × 13</b> 	<b>A1133* SOP 7.5 × 15</b> 	<b>A1134* SOP 7.5 × 18</b> 	<b>A1258B SOP 7.6 × 12.7</b> 
<b>A1260B SOP 8.6 × 18</b> 	<b>A1257B SOP 11 × 21</b> 	<b>A1259B SOP 13 × 28</b> 	<b>A1185B TSOL 13 × 10</b> 	<b>A1186B TSOL 18 × 10</b> 
<b>A1187B TSOL 18.5 × 8</b> 				

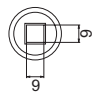

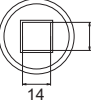






### PLCC

<b>A1188B PLCC 9 × 9 (20 pins)</b> 	<b>A1140B PLCC 11.5 × 11.5 (28 pins)</b> 	<b>A1141B PLCC 11.5 × 14 (32 pins)</b> 	<b>A1139B PLCC 12.5 × 7.3 (18 pins)</b> 	<b>A1135B PLCC 17.5 × 17.5 (44 pins)</b> 
<b>A1136B PLCC 20 × 20 (52 pins)</b> 	<b>A1137B PLCC 25 × 25 (68 pins)</b> 	<b>A1138B PLCC 30 × 30 (84 pins)</b> 	<b>A1189B PLCC 34 × 34 (100 pins)</b> 	



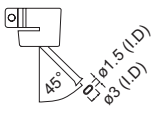

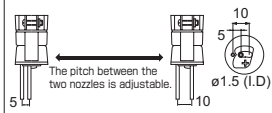
**SOJ**

<b>A1214B SOJ 10 × 26</b> 	<b>A1183* SOJ 15 × 8</b> 	<b>A1184B SOJ 18 × 8</b> 
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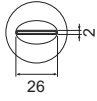
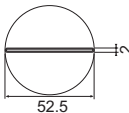
**BGA**

<b>A1470 BGA 8 × 8</b> 	<b>A1471 BGA 12 × 12</b> 	<b>A1472 BGA 13 × 13</b> 	<b>A1473 BGA 15 × 15</b> 	<b>A1474 BGA 18 × 18</b> 
<b>A1475 BGA 27 × 27</b> 	<b>A1476 BGA 35 × 35</b> 	<b>A1477 BGA 38 × 38</b> 	<b>A1478 BGA 40 × 40</b> 	

**Single**

<b>A1124B* Single 2.5</b> 	<b>A1130* Single 4.4</b> 	<b>A1142B* Bent single 1.5 × 3</b> 	<b>A1190* Dual single 2.5 × 9.5</b> 	<b>A1325* Dual single ø1.5 × 5 to 10 Adjustable pitch</b> 
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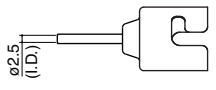
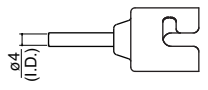
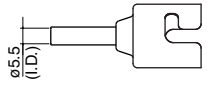
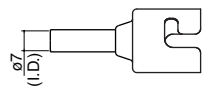
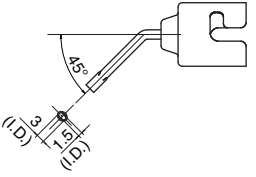
**SIP**

<b>A1191* SIP 25L</b> 	<b>A1192* SIP 50L</b> 
--	--

\* The vacuum function does not operate with these nozzles.  
The vacuum function is not available on the FR-810.

**Optional Nozzles for the FR-810**

Unit: mm

<b>N51-01 Single 2.5</b> 	<b>N51-02 Single 4</b> 	<b>N51-03 Single 5.5</b> 	<b>N51-04 Single 7</b> 	<b>N51-05 Bent single</b> 
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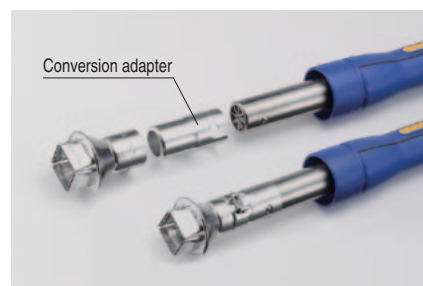
Single nozzle set (N51-01, N51-03, N51-04, and N51-05) is also available.

\*N51-02 included with station

No. N51-50



When using the FR-810 with a nozzle for the FR-803B, attach a conversion adapter No.B5058 (option).

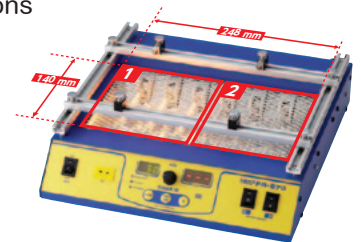


## HAJKO FR-870B PREHEATER ESD SAFE

IR Preheater **Digital**



- Infrared preheater that provides the optimal heating effect over the whole workpiece surface
- Non-contact system enables the application of this preheater to doublesided boards.
- 2 independent switchable work grid partitions



## HAJKO FR-872 PREHEATER ESD SAFE

Large Size IR Preheater **Digital**



- Large heating area 286 (W) x 350 (D) mm
- 4 independent switchable work grid partitions



## HAJKO FR-830 PREHEATER ESD SAFE

Preheater **Analog**



- Compact pre-heater best suited for heat processing on localized areas
- Featuring quick heatup and less variations in temperature

### Features of FR-870B and FR-872

#### Power Mode

Control heater out put from 0% to 100%.

#### T/C Mode

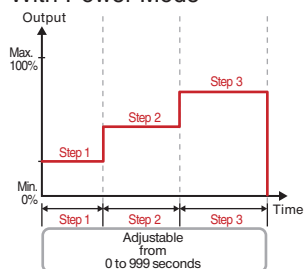
Sense the temperature of the sensor attached to the board and control to maintain the set temperature for the board.



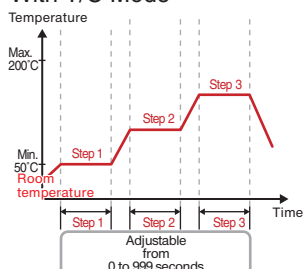
#### Auto Mode

Auto mode provides three steps (Step 1 to 3) to create an optimal heating profile for the workpiece.

#### With Power Mode

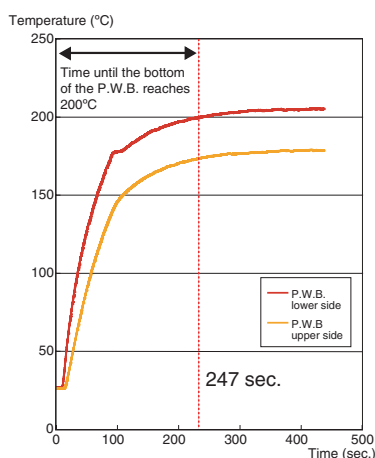


#### With T/C Mode



### Features of FR-830

#### Preheating in a short time



#### Test criteria

Measurement method	Temperature measured using sensors mounted on both the top and bottom surfaces of the P.W.B.
Distance between air outlet and P.W.B.	10 mm
Temperature setting	300°C

### Packing List

FR-870B	Unit, Thermocouple, Power cord, Heater lamp, Instruction manual
FR-872	Unit, Thermocouple, Heater, Power cord, Instruction manual

### Specifications

Model No.	FR-870B	FR-872
Power consumption	500 W (100 V) 610 W (110 V) 730 W (120 V) 1130 W (220 V) 1240 W (230 V)	1050 W (100 V) 1250 W (110 V) 1440 W (120 V) 1150 W (220 V) 1250 W (230 V)
Operation mode	Power mode, T/C mode Auto power mode, Auto T/C mode	
Setting range	Power mode: 0 to 100% T/C mode: 50 to 200°C Set time: 0 to 999 seconds	
Heating element	Carbon heater	High efficiency carbon heater
Heater area dimensions	248 (W) × 140 (D) mm	286 (W) × 350 (D) mm
Heater zone	2	4
Temperature sensor	K-type thermocouple	
Heater lamp lifetime*	2100 hours	2100 hours
Heater control	Power mode: Percentage-based system T/C mode: PID control	
External connections	Start signal input possible	
Dimensions	290 (W) × 100 (H) × 311 (D) mm	AC100 to 120 V: 360 (W) × 97 (H) × 535 (D) mm AC220 to 230 V: 360 (W) × 97 (H) × 524 (D) mm
Weight	3.2 kg	5.6 kg

\* Provided for reference purpose only and is not guaranteed.

### Packing List

FR-830	Unit, Power cord, Instruction manual
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### Specifications

Model No.	FR-830
Power consumption	210 W (100 V), 240 W (110 V), 470 W (120 V), 230 W (220 V), 250 W (230 V), 270 W (240 V)
Air flow	0.15 m <sup>3</sup> /min. (above the hot air outlet)
Temperature range	150 to 300°C (above the blow exit)
Dimensions*	140 (W) × 75 (H) × 185 (D) mm
Weight	0.75 kg

\* The height (H) is the distance from the bottom of the feet to the top of the exhaust outlet.

### Option

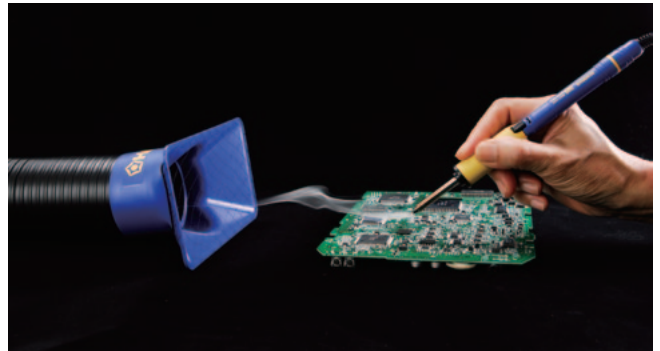
Part No.	Name	Specifications
B3263	Extension pipe	with lid
B2763	Hand switch	-
B1649	Foot switch	-

## HAKKO FA-430 ESD SAFE FUME EXTRACTION

### Air-Purifying Smoke Absorber



- Powerful yet quiet suction
- Freestanding flexible ducts facilitate production changeovers
- Three airflow levels are selectable according to working environments.



#### Packing List

<b>FA-430</b>	Main unit, Power cord, Main filter, Pre-filter (10 pcs), Instruction manual
---------------	---

\*Ducts are optional parts.

#### Specifications

Model No.	FA-430
Power consumption	120 W
Noise level*	50 dB (A) (MEDIUM mode)
Max. suction capacity	With single duct: Max. 4.1 m <sup>3</sup> /min. (145 cfm) With two ducts: Max. 4.7 m <sup>3</sup> /min. (167 cfm)
Filtering efficiency**	99.97% 0.3 μm (LOW or MEDIUM mode) 99.96% 0.3 μm (HIGH mode)
Static pressure	1500 Pa
Duct set (sold separately)***	Duct length: ø55 mm × 1.2 m (ESD safe)
Dimensions	330 (W) × 366 (H) × 343 (D) mm
Weight	7.5 kg

\* Measured at a distance of 1 m from the face of the unit in an anechoic room.

\*\* An initial value of the collection efficiency based on a counting method for airborne dust collected by a single plate of filter (unfolded)

\*\*\* Nets in duct sets are not protected against electrostatic discharge.

#### Option

Part No.	Name	Specifications
C1571	Duct set	With rectangular type nozzle
C1572	Duct set	With round type nozzle



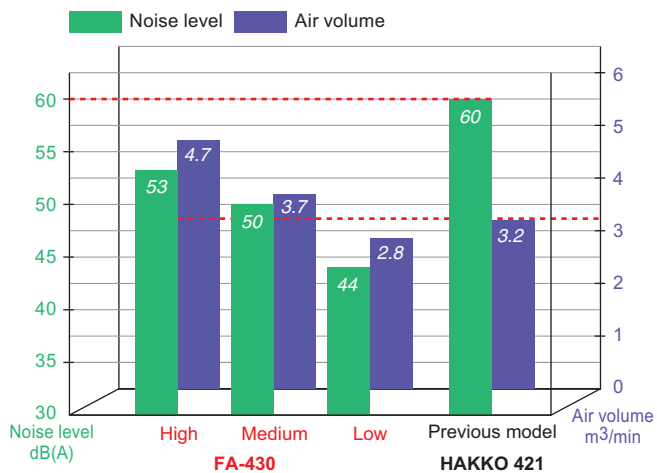
No.C1571



No.C1572

## Features

### Quiet operation and powerful suction



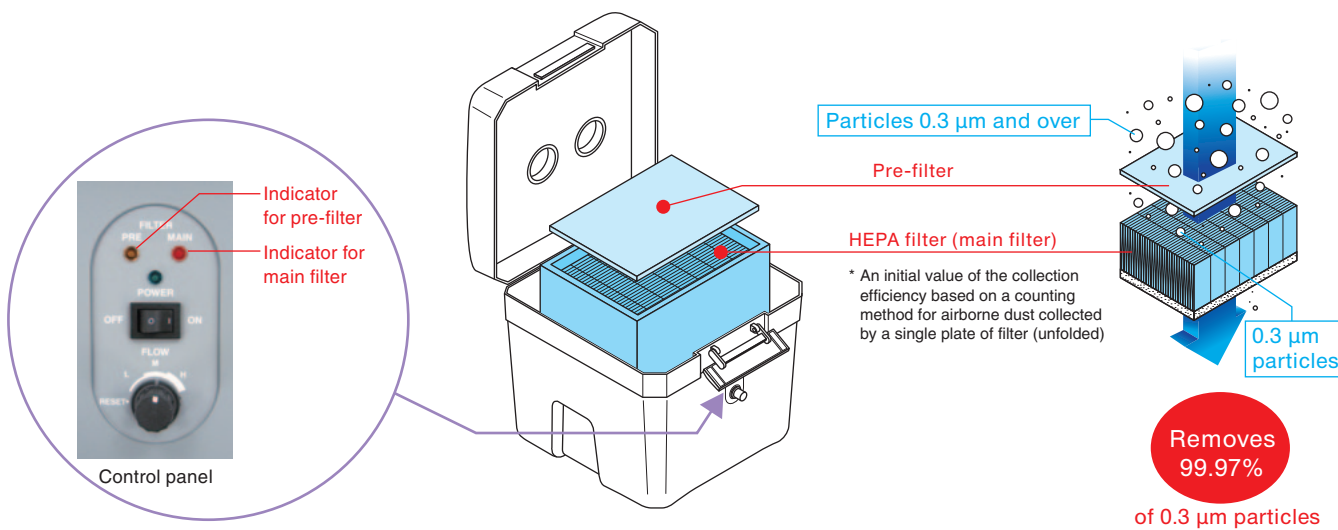
#### Basic noise level guide

Quiet office = 50 dB  
 Ringing telephone, noisy street, or office = 70 dB

### Flexible ducts and compact body for perfect placement

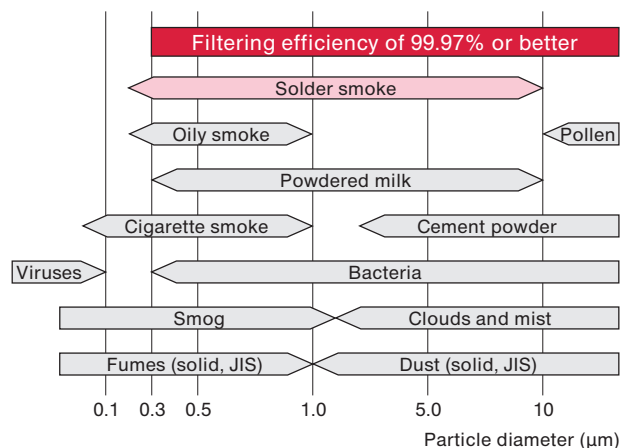


### Filter replacement notification function



### Aerosol particle diameter range

\* During LOW and MIDDLE modes



## HAKKO 490 SMOKE CLEANER

### External Air Compressor Type Smoke Absorber



- External air compressor type soldering smoke absorber
- Three inner filters attached on different levels absorb soldering smoke.
- Up to 2 soldering irons can be connected to one unit.

### Compatible Soldering Station for HAKKO 490 and HAKKO 494



HAKKO FX-888D



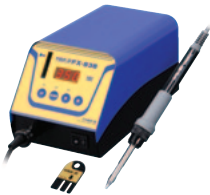
HAKKO FX-889



HAKKO FX-951



HAKKO FX-950



HAKKO FX-838



HAKKO FM-203



HAKKO FM-206

### Specifications

Model No.	490
Noise level	39 dB
Working pressure	392 to 686 kPa (4 to 7 kgf/cm <sup>2</sup> )
Air consumption	40 L/min. (490 kPa)
Suction flow	23 L/min. (490 kPa)
Dimensions	ø120 × 200 (H) mm
Weight*	1.5 kg

\* Unit only

\*\* Use compressed air; no power supply is necessary.

### Packing List

490	Unit, Absorption pipe set, Instruction manual
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\* A second soldering iron can be attached to HAKKO 490 by purchasing an additional absorption pipe set.

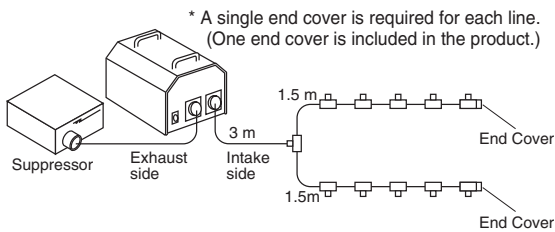
## HAKKO 494 SMOKE ABSORBER

### Smoke Absorbing System



- Soldering smoke absorber for production-line use that enables the exhausting of fumes to an outdoor location
- Equipped with a suppressor to reduce exhaust noise during operation
- Up to 10 soldering irons can be connected to one unit

#### Example of Connections



#### Packing List

<b>494</b>	Unit, Filter case, Filter cap, Pre-filter (5 pcs), Duct (3 m), End cover, Main filter (5 pcs), Inlet socket, Exhaust duct (5 m), Nylon strap, Suppressor, Absorption pipe set, Instruction manual
------------	---

\*When ordering HAKKO 494, specify the part number of the absorption pipe set.

#### Option

Part No.	Name	Specifications
C1540	Absorption pipe set <R>	Any with a handle Φ 16 mm or smaller
B1246	Parallel piping joint	-

#### Specifications

Model No.	494
Power consumption	50 Hz: 150 W 60 Hz: 200 W
Noise level*	With hose: 55 dB Without hose: 71 dB
Suction capacity	50 Hz: 1.56 m <sup>3</sup> /min. 60 Hz: 1.82 m <sup>3</sup> /min.
Static pressure	50 Hz: 2.3 kPa (240 mmAq.) 60 Hz: 3.2 kPa (325 mmAq.)
Dimensions**	322 (W) × 300 (H) × 386 (D) mm
Weight***	18 kg

\* Measured at a distance of 1 m from the face of the unit.

\*\* Without handle and cord

\*\*\* Unit only

## HAKKO FA-400 SMOKE ABSORBER ESD SAFE

### Desktop Type Smoke Absorber



- Desktop solder smoke absorber that can be mounted horizontally or vertically
- An optional arm stand makes a third mounting position available.

#### 2 Way Plus Placement

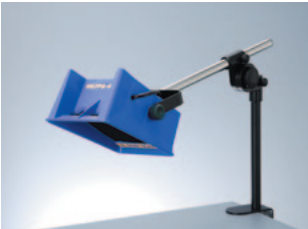
##### Vertically mounted:



##### Horizontally mounted:



##### Using a stand:



#### Packing List

FA-400	Unit, Filter, Instruction manual
--------	----------------------------------

#### Specifications

Model No.	FA-400
Power consumption	50 Hz: 15 W (100 V), 18W (110 V), 19 W (220 V), 22 W (230 V), 24 W (240 V) 60 Hz: 13 W (100 V), 15 W (110 V), 19 W (120 V), 16W (220 V), 18W (230 V), 19 W (240 V)
Noise level*	50 Hz: 48 dB 60 Hz: 51 dB
Suction capacity**	Vertically: 1.0 m <sup>3</sup> /min. (50 Hz), 1.1 m <sup>3</sup> /min. (60 Hz) (max.) Horizontally: 0.4 m <sup>3</sup> /min. (50 Hz), 0.5 m <sup>3</sup> /min. (60 Hz) (max.)
Air velocity	Vertically: 1.0 m/sec. (50 Hz), 1.1 m/sec. (60 Hz) Horizontally: 2.6 m/sec. (50 Hz), 2.9 m/sec. (60 Hz)
Filter size	130 (W) × 130 (H) × 10 (D) mm
Dimensions	166 (W) × 212 (H) × 113 (D) mm
Weight***	0.91 kg

\* Measured at a distance of 1 m from the face of the unit

\*\* Measured with a filter present

\*\*\* Without cord

#### Option

Part No.	Name	Specifications
C1568	Arm stand	With knobs

## HAKKO FE-510 STATIC ELIMINATOR

### Static Eliminator

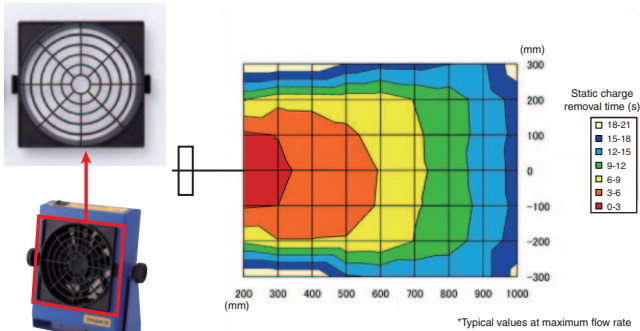


- Static eliminator enables the selection of the area in which static will be neutralized.
- Locking mechanism maintains the angle of the eliminator unit.
- Error output signal function is useful when incorporating the unit into line applications.

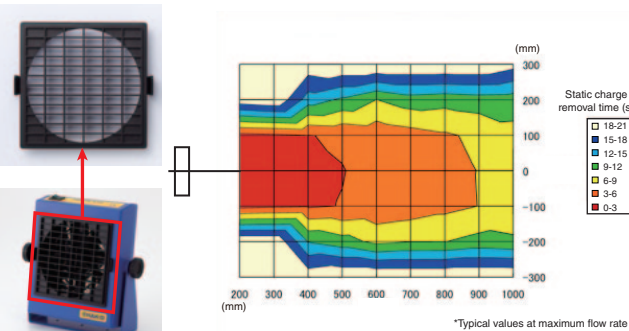
### Features

#### Static elimination area

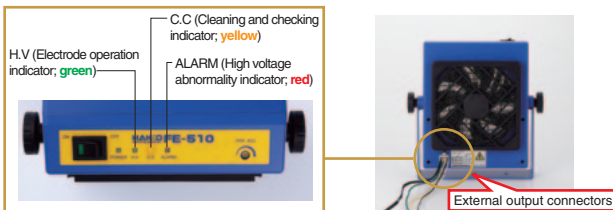
##### Wide-angle louver



##### Straight louver



#### Error output signal



#### Superb ease of maintenance

The discharge electrode can be replaced simply by turning it gently in the clockwise direction.



### Packing List

FE-510	Unit, Straight louver, Cleaning brush, Filter, AC adapter, Output signal connection lead (1 set), Instruction manual
--------	--

### Specifications

Model No.	FE-510
AC adapter output/Capacity	DC 24 V 10 VA
Discharge method	High frequency AC method
High voltage output	Approx. AC 2000 V
Ion balance*	±10 V or less
Static elimination time*	Straight louver: Approx. 1.5 sec. Wide-angle louver: Approx. 2.5 sec.
High voltage abnormality output (ALARM)	MOS FET relay output Maximum allowed current: 100 mA Applied voltage: DC 30 V or less
Cleaning check output (C.C)	MOS FET relay output Maximum allowed current: 100 mA Applied voltage: DC 30 V or less
Air flow	1.5 to 3.0 m <sup>3</sup> /min.
Air flow out angle	Vertically 360° variable (every 10°)
Quantity of produced ozone**	0.04 ppm or less
Operating environment	Ambient temperature: 0 to 40°C Ambient humidity: 15 to 65% (without condensation)
Material for discharge electrode	Tungsten
Dimensions	150 (W) × 182 (H) × 50 (D) mm (without stand)
Weight***	0.79 kg

#### AC adapter

AC adapter output/Capacity	DC 24 V 1 A
Dimensions	34 (W) × 72 (H) × 51 (D) mm
Weight	100 g

\* Typical value measured (before shipment) at a distance of 300 mm from the center of the fan outlet with the maximum flow rate

\*\* Measured at a point 150 mm away from the center of the fan outlet

\*\*\* Including stand

## HAKKO 442B

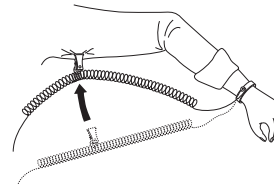
WRIST STRAP

### Wrist Strap



- This antistatic wrist strap prevents the human body from becoming charged with static electricity.
- The stretchable band is easy to adjust.
- A conductive thread is used for the band lining.

### Cord Helper



1. Insert the grounding wire into the ring of the cord helper.
2. Clip the cord helper to clothing as shown here.

### Packing List

442B	Wrist band, Grounding wire, Cord helper, Instruction manual
------	---

### Specifications

Part No.	442B-01	442B-02	442B-04	442B-05	442B-06	442B-07
Color	Blue		Light green		Gray	
Grounding wire	1.5 m	2.5 m	1.5 m	2.5 m	1.5 m	2.5 m

# Tester

## HAKKO 498

SYSTEM TESTER

### Wrist Strap Tester



- Easy-to-use, quick-response tester for wrist straps

### Packing List

498	Unit, 006P 9 V Manganese dry battery (for trial), Grounding wire, Instruction manual
-----	--

### Features

Can be used anywhere to quickly and easily check a variety of grounding systems.



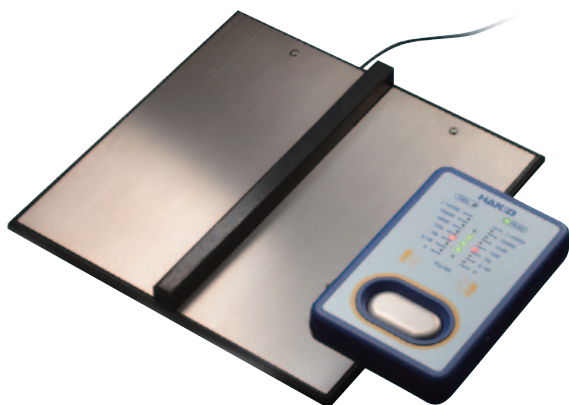
### Specifications

Model No.	498
Power supply	006P 9 V dry battery
Indication: LOW	$R < 800 \text{ k}\Omega$
Indication: GOOD	$800 \text{ k}\Omega \leq R \leq 9 \text{ M}\Omega$
Indication: HIGH	$R > 9 \text{ M}\Omega$
Battery life	Approx. 50,000 times
Grounding wire	2.5 m
Operating environment	0 to 40°C, 20 to 90%RH (without condensation)
Dimensions	80 (W) × 40 (H) × 117 (D) mm
Weight*	110 g

\* Without battery

## HAKKO FG-460 FOOTWEAR TESTER

### Footwear Tester

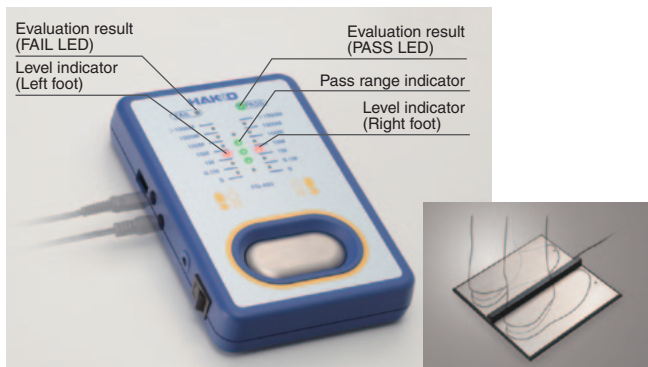


- Very easy-to-use footwear tester
- Information of measurement and evaluation of electrical resistance at a glance
- Meet the criteria of standards such as JIS T 8103:2010 and ANSI/ESD S20.20

### Features

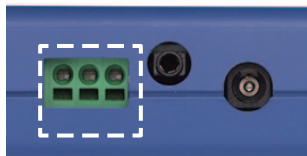
#### Individual measurement

Measure the anti-static performance of shoes individually. Prevents faulty measurement with the divider on test plate.



#### Evaluation external output

Side view



External output terminal

Example of interlock



#### Optional Stand (C5032)



### Packing List

<b>FG-460</b>	Unit, Mounting base, AC adapter*, Test plate, Mounting screw (qty 2)**, Pan head screw (qty 2), Wood screw (qty 2), Instruction manual
---------------	--

\* AC adapter may not be included depending on the specifications.  
 \*\* Delivered as they are screwed onto the unit.  
 NOTE: Stand (C5032) is sold separately.

### Specifications

Model No.		FG-460
Rating		DC 24 V 33 mA
Measurement voltage		DC 20 V
Measurement range	Upper evaluation limit	1000 MΩ (1×10 <sup>9</sup> Ω) 100 MΩ (1×10 <sup>8</sup> Ω) 10 MΩ (1×10 <sup>7</sup> Ω)
	Lower evaluation limit	1 MΩ (1×10 <sup>6</sup> Ω) 0.1 MΩ (1×10 <sup>5</sup> Ω) R < 0.1 MΩ (1×10 <sup>5</sup> Ω)
	Conductivity evaluation	R < 0.1 MΩ (1×10 <sup>5</sup> Ω)
Evaluation level accuracy	R < 0.1 MΩ	± 5%
	1 MΩ ≤ R ≤ 100 MΩ	± 10%
	100 MΩ < R	± 8%
Operating environment		Ambient temperature / humidity range 0 to 40°C, 20 to 90%RH (without condensation)
Environment condition		Applicable rated pollution degree 2 (According to IEC / UL61010-1)
Dimensions		120 (W) × 30 (H) × 185 (D) mm
Weight*		0.55 kg
<b>• Test plate</b>		
Cord length		1.6 m
Dimensions**		300 (W) × 30 (H) × 300 (D) mm
Weight**		1.9 kg
<b>• AC adapter</b>		
Outoput voltage		DC 24 V

\* Including mounting base  
 \*\* Without cord

### Option

Part No.	Name
C5032	Stand

# Soldering Iron Thermometer

**HAKKO** THERMOMETER **FG-102** **New**

## Soldering Iron Thermometer with Traceability Management System



- Free of errors in temperature measurement
- Free of transcription errors for measured temperature
- Standardization of temperature measurement
- Secure management of tip temperature records

### Packing List

<b>FG-102</b>	Unit, Battery (6 pcs, for trial), Barcode reader, USB cable, Software (CD-ROM), Sensor (10 pcs), Barcode sticker for soldering iron ID (30 pcs), Barcode sticker for operator ID (30 pcs), Instruction manual
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### Option / Replacements

Part No.	Name	Specifications
A1310	Temperature probe	for soldering bath & pot
C1541	Temperature probe	for hot air
A1556	Sensor A	—
A1557	Sensor B	—
C5009	Bar code reader	—
191-212	Sensor	lead-free, set of 10

### Specifications

Model No.	FG-102
Power supply	AA sized (LR6) battery × 6 (alkaline cell recommended)
Temperature resolution	1°C
Temperature measurement range	0 to 700°C
Temperature precision	±3°C (300 to 600°C) ±5°C (other than above)
Temperature sensor*	K (CA) type thermocouple
Display	LCD
Operating environment	0 to 40°C, 20 to 90%RH (without condensation)
Environmental conditions	Applicable rated pollution degree 2 (according to IEC/UL 61010-1)
Dimensions**	193 (W) × 90 (H) × 219 (D) mm
Weight***	0.93 kg

\* Temperature sensor (No.191-212 or No.191-212C) can only be used if measure temperatures below 500°C. To measure higher temperatures, use an applicable temperature probe.

\*\* Without barcode reader

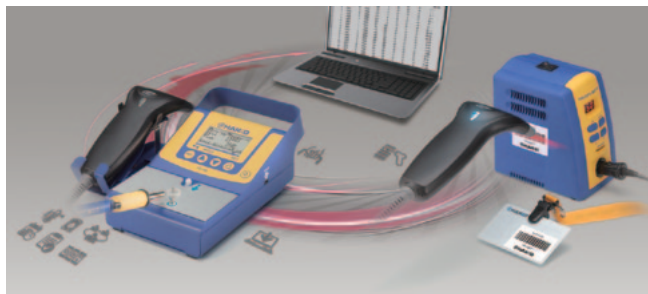
\*\*\* Without battery and barcode reader

\*\*\*\* Traceability management function can only be used for soldering irons.

## Features

### An Innovation in Tip Temperature Control

#### Flow chart of management



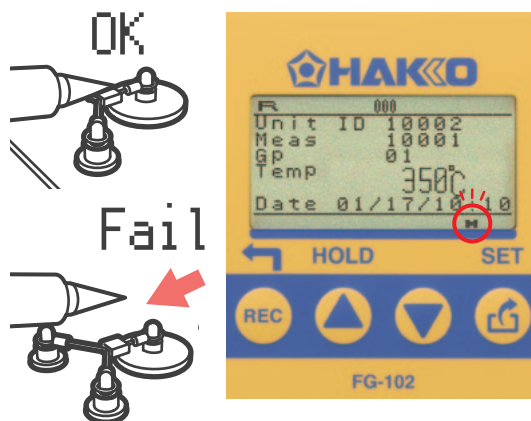
1. Scan the unit and the measurer's ID by a barcode reader.
2. Measure the temperature.
3. Press the REC button to save the data on the unit main body.
4. Transfer and save the data on the PC.

#### Free of errors in temperature measurement by standardization of temperature measurement

The unit has a function to notify the end of measurement. When measurement is finished, "H" icon stops blinking. The unit can find measurement errors and prompt an operator to repeat measurement. The display shows "Fail" if tip loses appropriate contact with sensor before completion of measurement.

#### Pass/Fail judgment on measured temperature

Pass/Fail judgment on measured temperature can be automatically made if an acceptable temperature range is registered in advance. (The display shows "OK" or "Fail".)



#### Make it easy to manage tip temperature records by transferring the data to computer



No	InstID	Gr No	MeasID	Temp	Set Temp	Month	day	hour	min	OK/NG	
1	10023	0	10005	375	380	10	10	21	14	47	---
2	10024	0	10005	372	380	10	10	22	14	48	---
3	10025	0	10005	372	380	10	10	23	14	49	---
4	10026	0	10005	373	380	10	10	24	14	50	---
5	10027	0	10005	375	380	10	10	25	14	51	---
6	10028	0	10005	375	380	10	10	26	14	52	---
7	10029	0	10005	373	380	10	10	27	14	53	---
8	10030	0	10005	376	380	10	10	28	14	54	---
9	10001	1	10005	371	380	10	10	29	14	55	OK
10	10002	1	10005	371	380	10	10	30	14	55	OK
11	10003	1	10005	372	380	10	10	31	14	56	OK
12	10004	1	10005	382	380	10	10	32	14	57	OK
13	10005	5	10005	382	380	10	10	33	15	3	NG
14	10006	5	10005	380	380	10	10	34	15	4	NG

Free of transcription errors for measured temperature

## More Features



#### Group control

Groups can be created based on different set temperatures for different operations. Pass/Fail judgment on measured temperatures can be automatically made for different acceptable temperature ranges.



Automatic counting of the number of measurements



Notification of the calibration date

## HAKKO FG-100 THERMOMETER

### Soldering Iron Thermometer



- Tip thermometer that provides reliable temperature control of soldering iron tips
- Compact design minimizes your workspace and enables you to easily carry it around.
- Incorporating an extremely fine sensor that has high temperature reactivity.

## HAKKO FG-101 SOLDERING TESTER

### Soldering Iron Tester

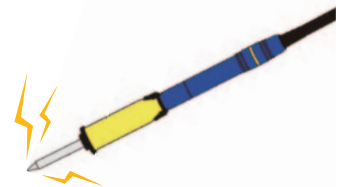


- Tip temperature, leak voltage, and tip-to-ground resistance can be easily measured with high accuracy.
- Soldering iron tester useful for daily maintenance of station-type soldering irons

#### What is leak voltage and tip-to-ground resistance?

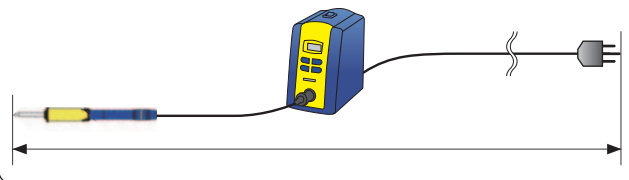
##### Leak voltage

Leak current is the current that leaks from the tip to a board or device. Leak voltage is a specific measurement of the level of this current. The leakage can adversely affect delicate devices, so it is necessary to check leak voltage on a daily basis.



##### Tip-to-ground resistance

Most leak current flows from the tip via the ground wire to the outlet ground terminal, and is prevented from affecting the device. Because of this, tip-to-ground resistance is another important issue that must be checked daily.



### Common Features of FG-100 and FG-101

#### Dimensional measurement



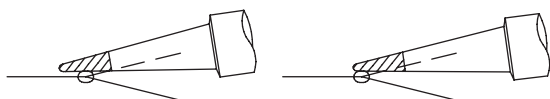
\*Design image only

#### MAX HOLD function

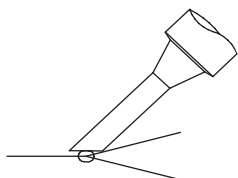
When the “MAX HOLD” button is pressed, “MAX HOLD” is displayed and the highest tip temperature is held on the display.



### Procedure for Measuring the Soldering Tip Temperature



- Typical measuring point for Shape B, I and D (Measure at the center of the tin coated area)



- Typical measuring point for Shape BC and C which are tinned flat only.

### Option / Replacements

Part No.	Name	Specifications
A1310	Temperature probe	For solder bath and pot
C1541	Temperature probe	For hot air
A1556	Sensor A	-
A1557	Sensor B	-
191-212	Sensor/10 pcs	-

### Packing List

FG-100	Unit, 006P 9 V Manganese dry battery (for trial), Instruction manual, Sensor (10 pcs)
FG-101	Unit, Fuse, Conduction wire, Sensor (10 pcs), Multi-adapter, European adapter, Ground clip, Power cord, Instruction manual

### Specifications

Model No.	FG-100
Power supply	006P 9 V dry battery (alkaline cell recommended)
Temperature resolution	1°C
Temperature measurement range	0 to 700°C
Temperature precision	±3°C (300 to 600°C) ±5°C (other than above)
Temperature sensor*	K (CA) type thermocouple
Display	LCD: 3 1/2 digits
Operating environment	0 to 40°C, 20 to 90%RH (without condensation)
Environmental conditions	Applicable rated pollution degree 2 (according to IEC/UL 61010-1)
Dimensions**	68 (W) × 140 (H) × 38 (D) mm
Weight***	115 g

\* The temperature sensor (No.191-212 or No.191-212C) can only be used to measure temperatures below 500°C. To measure higher temperatures, use an applicable temperature probe.

\*\* Excluding protrusions

\*\*\* Without battery

Model No.	FG-101
Power consumption	2.6 W (100 V), 2.9 W (110 V), 2.6 W (120 V), 2.7 W (220 V), 2.8 W (230 V), 3.0 W (240 V)
Temperature resolution	1°C
Temperature measurement range	0 to 700°C
Temperature precision	±3°C (300 to 600°C) ±5°C (other than above)
Temperature sensor*	K (CA) type thermocouple
Voltage resolution	0.1 mV
Voltage measurement range	0 to 40 mV (AC)
Voltage precision	± (5% of reading + 1 digit)
Resistance resolution	0.1Ω
Resistance measurement range	0 to 40Ω
Resistance precision	± (5% of reading + 1 digit)
Display**	LCD: 3 1/2 digits
Operating environment	0 to 40°C, 20 to 90%RH (without condensation)
Environmental conditions	Applicable rated pollution degree 2 (according to IEC/UL 61010-1)
Dimensions	200 (W) × 50 (H) × 120 (D) mm
Weight	1 kg

\* The temperature sensor (No.191-212 or No.191-212C) can only be used to measure temperatures below 500°C. To measure higher temperatures, use an applicable temperature probe.

\*\* When a sensor is not attached or it burns out, the Burnout (-1) alarm symbol is displayed. The same symbol is also displayed when a temperature outside the measurement range is detected.

## HAKO FG-450

STATIC LEVEL METER

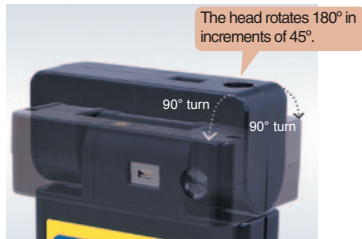
### Static Level Meter



- Portable static level meter for the measurement of electric potential of films and plastic objects
- Useful when checking electric potential measurements in production lines.
- Also suitable for performing operation test of static eliminators.

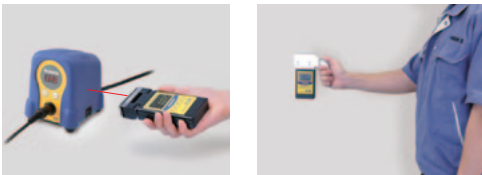
### Features

#### Rotating sensor head

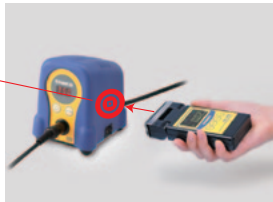


#### Selectable two modes in measurement

- Measuring static electricity (Resolution: 10 V)



The red light image is projected to a point about 30 mm from the meter.



- Measuring ion balance (Resolution: 1 V)



### Packing List

#### FG-450

Unit (with carrying case), Grounding wire, Strap, 006P 9 V Manganese dry battery (for trial), Ion balance plate (with screw), Instruction manual

### Specifications

Model No.	FG-450
Power supply	006P 9 V dry battery
Measurable potential range	Normal mode: 0.00 to ±19.99 kV (resolution: 0.01 kV) Ion balance mode: 0.000 to ±1.999 kV (resolution: 0.001 kV)
Signal detection method	Oscillating chopper method
Display refresh frequency	0.5 seconds
Measurement precision	±10% of reading ±2 digits
Continuous operating limit	Approx. 10 hours (with an alkaline battery)
Measurement distance	30 mm (between object being measured and sensor)
Measurement distance adjustment	Red LED beam focusing method
Sensor head rotation angle	180° (stops every 45°)
Display	LCD display with built-in backlight
Polarity display	Positive polarity/negative polarity display
Mode switching	Switch modes by pressing MODE button
Battery check	Remaining charge displayed in display panel
Operating environment	0 to 40°C, 20 to 70%RH (without condensation)
Dimensions	68 (W) × 138 (H) × 22 (D) mm
Weight*	160 g

\* Including battery

### Option

Part No.	Name	Specifications
B3586	Body changing level measurement plate	-

## HAKKO MELTER

### Glue Gun



- Glue gun with temperature control function is applicable also to the adhesion of electronic components.
- Useful when fixing up sealing of carton boxes, dressing cases, and packages
- Only used with a stick-type adhesive that is easy to replenish (ø11.5 mm)

### Applications

#### When using polyamide adhesives

- Reinforce and insulate soldered parts.
- Fasten capacitors, resistors, etc.
- Fasten jumper wires.
- Perform insulation potting for terminals.
- Fasten the ends of coils.
- Fasten deflecting yokes and variable coils.

#### When using EVA adhesives

- Glue paper products (cardboard boxes, gift boxes, etc.).
- Fasten wood products.
- Fasten plastics and metals.
- Fasten textiles and shock absorbent packing.
- Reseal products during packaging.

### Packing List

<b>804</b>	Unit, #13 Spanner, #14 Spanner, Instruction manual
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### Specifications

Model No.	804
Power consumption	100 W
Melting temperature	100 to 200°C (variable)
Standard nozzle	ø2.0 mm (No. A1083)
Discharge capacity	900 g/h
Dimensions	207 (L) × 173 (H) × 45 (D) mm
Weight*	350 g

\* Without cord

### Adhesive Used

This model has been designed for use with stick adhesives (those hardened into the shape of a stick) only. Be sure to use adhesives recommended by HAKKO. (No. 810: UL94V-O recognized)

Part No.	810	811	812
Name	Polyamide	EVA	
Packing	1 kg		14 pcs
Color	Yellowish brown	Milky white	
Size	ø11.5 × 220 mm		
Viscosity	2300 cps. (2300 mPa·s)	5800 cps. (5800 mPa·s)	
Open time*	10 seconds	40 seconds	
Temperature at which adhesive is heat resistant	100°C	55°C	
Suitability	P.W.B.	○	—
	Wood	○	○
	Paper	○	○
	Metal	○	○
	Plastic	○	○
Packing	In aluminum foil bag	In polyethylene bag	In blister pack

Adhesives marked with ○ are more suited for that material than adhesives marked with ○.

\* Application period

## HAKKO HEATING GUN

### Heating Gun



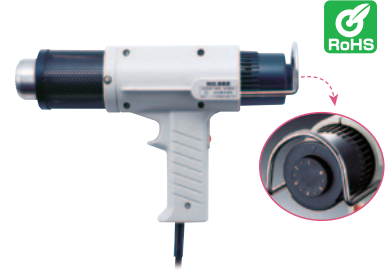
#### No. 880B 880 W

Ideal for heat shrinking of shrink films with low heat resistance. Optional nozzle makes local heating work possible.



#### No. 881 1000 W

General-purpose type: The range of applications can be expanded by using a variety of optional nozzles.

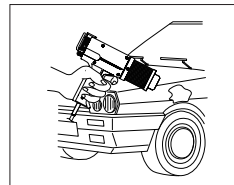


#### No. 882 1000 W

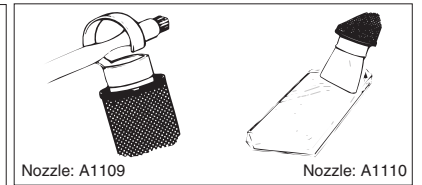
Temperature is freely adjustable within the range of room temperature to 450°C.

### Applications

Drying of paints	Perfect for drying paints locally
Shrink film	Heat shrinking of films
Shrink tubing	Heat shrinking of electric wire covers
Putty	Repair work using putty including repairs of automotive bumpers
Interior decor	Vinyl cloth, floor materials, flooring work
Plastic moldings / Rubber products	Bending, fitting, and assembly of plastic products (heat plasticity)
PVC pipe	Bending work
Stone	Drying of stone after polishing, drying of surface-lustering agent, drying of paint finish, drying before rubber lining (printing of names, etc.)
Removal of labels	—
Thermosetting resin	Expediting setting
Defrosting	Heating water pipes and machinery frozen in winter



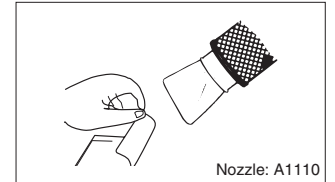
Spot drying of coating material and coating putty



Heating of shrink tubing and shrink film



Bending and welding of PVC pipes



Removing stickers, labels, and gummed tape

### Packing List

<b>880B, 881, 882</b>	Unit, Instruction manual
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### Option

Part No.	Name	Specifications
A1109	Nozzle	Hook type For 880B, 881, 882
A1110	Nozzle	Spatula type, 62 mm For 880B, 881, 882
A1111	Nozzle holder	For 881, 882, 880B
A1112*	Nozzle	For 881, 882
A1113*	Nozzle	Single, ø5 mm For 880B
A1114*	Nozzle	Spatula type, 20 mm For 881, 882, 880B
A1115	Roller	For 881, 882, 880B
B1419	Stand <L>	For 880B, 881
B1420	Stand <L>	For 882

\* Must be inserted into part number A1111.

### Specifications

Model No.	880B	881	882
Power consumption	880 W	1000 W	1000 W
Maximum temperature*	400°C	450°C	Room temperature to 450°C (variable)
Air velocity	330 m/min.	360 m/min.	360 m/min.
Air flow	0.18 m <sup>3</sup> /min.	0.2 m <sup>3</sup> /min.	0.2 m <sup>3</sup> /min.
Dimensions	245 (W) × 185 (H) × 70 (D) mm	245 (W) × 185 (H) × 70 (D) mm	285 (W) × 185 (H) × 70 (D) mm
Weight**	0.62 kg	0.62 kg	0.7 kg

\* Approximate value measured at a point 10 mm from the hot air outlet

\*\* Without cord



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