

Power

Efficiency

Stability

Accuracy

Control



[HakkoUSA.com](http://HakkoUSA.com)



Power



Accuracy



Efficiency

# Hakko Warriors



| Control

| Stability

## Soldering

HAKKO FX-100 RF Induction Heating Soldering System .....1-2

HAKKO T31 Series Tips .....3

HAKKO FM-2032 Micro Soldering Iron .....4

HAKKO FM-206 3 Port Rework System .....5-6

HAKKO FM-203 Soldering System .....7

HAKKO FX-951 Soldering Station .....8

HAKKO T15 Series Tips .....9-13

HAKKO T18 Series Soldering Tips .....14

HAKKO T22 Series Soldering Tips FM-2030 & FM-2031 Soldering Irons.....15

HAKKO FX-801 HD Soldering Station & T33 Tips.....16

Accessories for FX-951, FM-203, FM-206 & FM-204 .....17-18

HAKKO FX-888D Soldering Station .....19

HAKKO FX-889 Dual Port Soldering Station .....20

HAKKO Nitrogen Soldering System .....21

HAKKO FX-780 & FX-781 N2 Generators & HAKKO FX-901 Soldering Iron .....22

Hakko FX-600 Soldering Iron .....23

Hakko FX-650 Soldering Iron & HAKKO T34 Series Soldering Tips .....24

HAKKO 373 Soldering Self Feeder .....25

HAKKO 599B & FT-710 Tip Cleaners & FT-700 Tip Polisher .....26

HAKKO FX-301B & FX-300 Soldering Pots .....27

HAKKO 485 Soldering System .....28

## Desoldering

HAKKO FM-204 Desoldering Station .....29

HAKKO FM-205 Desoldering Station .....30

HAKKO FM-2024 Desoldering Module .....31

HAKKO FR-410 Desoldering Tool .....32

HAKKO FR-4101 & FR-4102 Desoldering Tools .....33

HAKKO FR-400 HD Desoldering Station .....34

HAKKO FR-300 Desoldering Tool .....35

FM-2022 SMD Parallel Remover & FM-2023 SMD Mini Hot Tweezers .....36

## Rework

HAKKO FR-811 SMD Hot Air Rework Station .....37-38

HAKKO FR-810B SMD Hot Air Rework Station .....39-40

HAKKO FR Series Acc., Boom Stand, 394 & FM-2029 Replacement Nozzles .....41

HAKKO Hot Air & BGA Nozzles .....42-44

HAKKO FR-872 4-Bank IR Preheater & FR-870B 2-Bank IR Preheater .....45

FR-860 Preheat Plate & HAKKO FR-830 Preheater .....46

HAKKO FR-1418 BGA Rework System .....47-48

HAKKO FX-8804 Hot Tweezer .....49

HAKKO 851 SMD Rework Station .....50

## Fume Extraction

HAKKO Purpose of Fume Extraction & HAKKO Fume Extraction Filters .....51

HAKKO FA-400 Smoke Absorber .....52

HAKKO FA-430 Fume Extraction System .....53

HAKKO Fume Extraction Duct Sets .....54

HAKKO Loc-Line® Kit .....55

HAKKO FA-430 & HJ3100 Accessories .....56

## Accessories

HAKKO FG-100 Thermometer .....57

HAKKO FG-101 Soldering Tester .....58

HAKKO FT-801 Thermal Wire Stripper & FT-8003 Knife Blade .....59

Hakko 611 Reel Stand & HJ5000 Heat Gun .....60

HAKKO Iron Holders .....61

HAKKO 498 System Tester & Dip Liner .....62

\*The specifications written here may be subject to change without notice.



Access the digital catalog at [HakkoUSA.com](http://HakkoUSA.com)

U.S. Patent number D703,715.



## SPECIFICATIONS

<b>Part No.</b>	FX100-04
<b>Voltage</b>	120 V
<b>Power Consumption</b>	85 W

### Station

<b>Temperature Stability</b>	±1.1°C (±2.0°F)
<b>Output Power</b>	50 W
<b>Output Frequency</b>	13.56 MHz
<b>Weight (w/o cord)</b>	3 Kg (6.6 lb.)
<b>Outer Dimensions (W x H x D)</b>	127 x 150 x 167 mm (5.0 x 5.9 x 6.6 in.)

### FX1001-01 Handpiece

<b>Tip to ground resistance</b>	<2 Ω
<b>Tip to ground potential</b>	<2 mV
<b>Length of Cord</b>	1.3 m/4.3 ft
<b>Total Length (w/o cord)</b>	193 mm (7.6 in.) w/T31-01D24 tip 190 mm (7.5 in.) w/T31-02D24 tip
<b>Weight (w/o cord)</b>	31 g (0.07 lb.) w/T31-02D24 tip

## CONTENTS

Part No.	Description
N/A	Station
FX1001-51	Handpiece
FH800-51BY	Iron Holder
B5007	Heat Resistant Sleeve - Green color
B5008	Heat Resistant Sleeve - Gray color
B2300	Heat Resistant Pad
B2419	Power Cord/3wired Cord & American Plug
N/A	Instruction Manual

## Features and Benefits

- User selectable Power Activity Display providing constant dynamic feedback to the operator about the thermal load on the soldering iron tip
- T31 Series Tip Cartridges provide HAKKO's renowned tip life with greater power
- Password Lockout prevents unauthorized system setup changes
- Tip Sleep function reduces tip temperature to preserve tip life and reduce oxidation when the iron is not in use
- Large Backlit Display provides a clear and simple interface with the operator
- User Programmable Profiles for tip and solder selection
- Activity Monitor provides cumulative data on tip heater loads and tip running time to aid in process control and managing operating costs
- Auto-Power Off safety feature
- Compact case design minimizes the workbench footprint
- Slender, lightweight, and ergonomically designed handpiece with burn resistant cord allowing for excellent operator dexterity
- Meets or exceeds requirements under IPC J-STD-001, ANSI ESD S20.20 and older MIL-STDs



HakkoUSA.com

## The Hakko FX-100 Soldering System

The FX-100 soldering system brings RF induction heat soldering technology to an even higher performance level. This small, compact station includes microprocessor control that boosts the recovery performance of the soldering iron tip and an Advanced System Design that optimizes performance by reducing the loss of power in the system while maintaining the lowest EMI levels to meet applicable standards, especially for work with sensitive devices.

# FX-100

RF Induction Heating Soldering Station

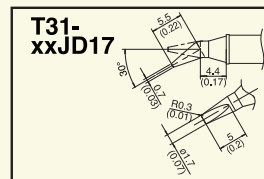
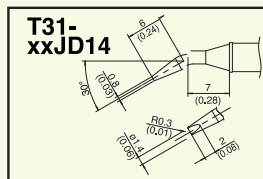
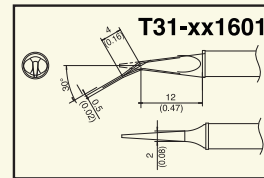
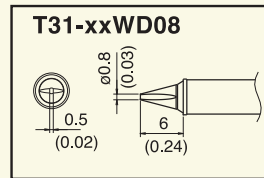
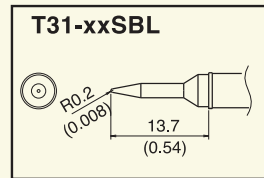
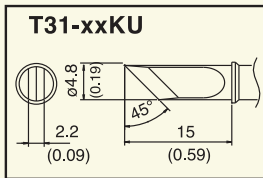
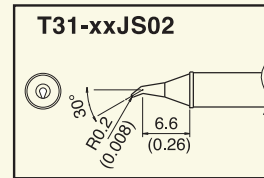
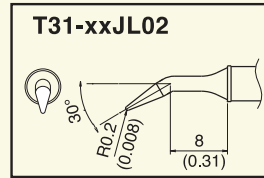
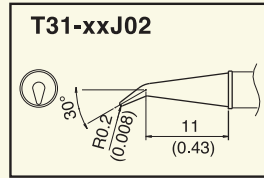
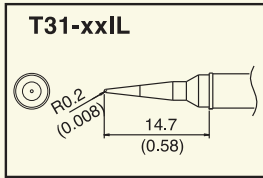
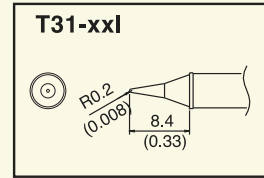
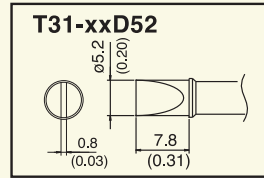
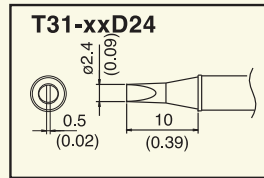
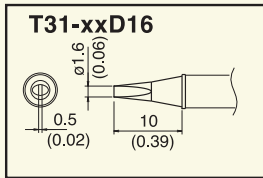
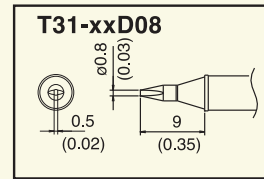
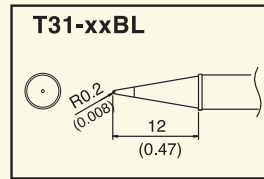
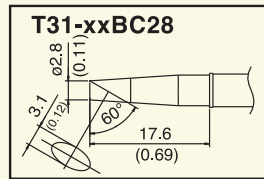
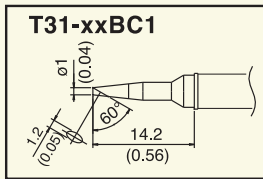


The system is simple to operate  
– just plug it in and turn it on.  
No calibration required.

Soldering

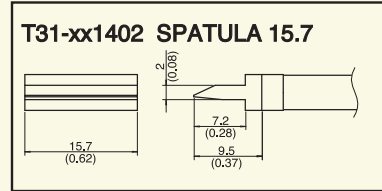
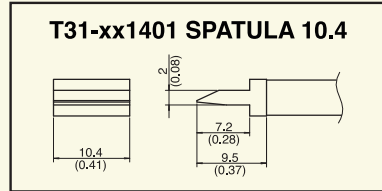
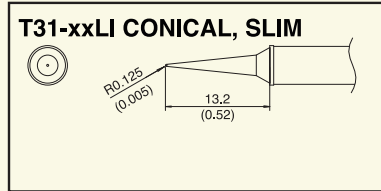
# HAKKO T31 Series Tips

FOR Hakko FX-100 RF Induction Heating Soldering Station



UNIT: mm (inch)  
 xx = 00 = 895°F / 480°C  
 xx = 01 = 840°F / 450°C  
 xx = 02 = 750°F / 400°C  
 xx = 03 = 660°F / 350°C

Not all tips available in every temperature series.







HakkoUSA.com

# FM-2032

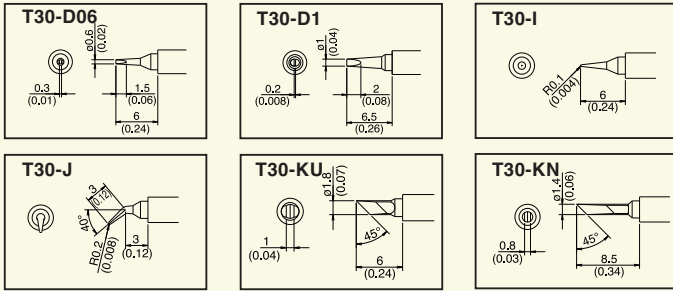
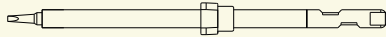
Micro Soldering Iron

Soldering

The FM-2032 micro soldering iron extends precision micro soldering capabilities to a variety of HAKKO soldering and rework systems. The slender, lightweight hand-piece has a tip-to-grip distance optimized for operator dexterity under microscopes and magnifiers while preserving the control one expects when working with 0201 components and smaller. The new T30 Series Composite Micro Tips have geometries engineered for optimal heat transfer and the ability to reach into some of the tightest spots on a board.

### Features and Benefits

- Thin, burn resistant iron cord
- Quick-change T30 Series tips
- Cool running grip even when operating at 450°C for extended periods
- HAKKO renowned tip life and performance
- ESD Safe design



UNIT: mm (inch)

### SPECIFICATIONS

Part No.	FM2032-52 Conversion Kit
Voltage	24 V
Power Consumption	48 W
Temperature Range	200°C ~ 450°C (400°F - 840°F)
Tip to Ground Resistance	<2 Ω
Tip to Ground Potential	<2 mV
Tips	Uses T30 Series Tips (not included)
Length of Cord	1.3 m (4.3 ft)
Total Length (w/o cord)	170 mm (6.7 in.) w/T30-D1
Weight (w/o cord)	14 g (0.03 lb.) w/T30-D1



ACTUAL SIZE

U.S. Patent number D739,696.

### CONTENTS

Part No.	Description
FM2032-51	Handpiece Only
B3253	Connecting Cable
FH200-51	Iron Holder
B2300	Heat Resistant Pad
N/A	Instruction Manual (English, Japanese, Chinese)



HakkoUSA.com

U.S. Patent number D656,525.



# FM-206

## 3 PORT REWORK STATION

### Features and Benefits

- Graphic User Interface for easy setup and operation
- 3 simultaneously powered ports
- Self contained pump for vacuum and air flow
- Meets or exceeds J-STD-001 requirements
- Password lockout for process control
- Digital airflow indicator
- Can be configured in many ways using all FM Series handpieces
- Sleek compact design minimizes loss of bench space
- High performance hot air handpiece ramps to max temperature in under 20 seconds and maintains heating
- Integrates with Hakko FR-830, FR-870B, and FR-872 Preheaters
- Manual or automatic profile for hot air
- Low cost composite hot air nozzles
- Optional foot switch for pump operation
- Security attachment point
- Quiet pump operation
- Desoldering delay timer
- Configurable display in °C or °F
- Capable of hot air rework of 0201 and 01005
- No calibration required
- ESD Safe by design

The Hakko FM-206 Rework Station raises performance standards for rework systems to a new level. With the capability to power any FM Series Hakko handpiece, the Hakko FM-206 can be tailored to fit your specific rework needs. The sleek compact design minimizes loss of bench space, and the full graphic user interface simplifies setup and operation. Powerful ports allow for the use of the Hakko FM-2029 Single Hot Air handpiece, or simultaneous use of the Hakko FM-2030 Heavy Duty Soldering Iron, making this the ultimate rework station.

### SPECIFICATIONS

Part Number	FM206-55 (Base Unit)
Power Consumption	410 W (Max) / 120 VAC
Temperature Stability	±5°C / ±9°F
Dimensions	162 (W) x 136 (H) x 245 (D) mm (6.38 x 6.38 x 7.48 in.)
Weight	6.2 Kg (13.7 lb.)
Air Flow	6 L/min. Max.
Vacuum Generator	Diaphragm Pump System
Vacuum Pressure (Max.)	80 kPa (600 mmHg)
Suction Flow	14 L/min.

### HANDPIECE CONFIGURATION

Part No.	Port 1	Port 2	Port 3
FM206-DSS	FM-2024	FM-2027	FM-2027
FM206-DTS	FM-2024	FM-2022	FM-2027
FM206-StA	FM-2027	FM-2022	FM-2029
FM206-DSA	FM-2024	FM-2027	FM-2029

Handpiece	Temperature Range	Power Consumption	Tip to Ground Resistance/Potential	Total Length (w/o cord)	Weight (w/o cord)	Length of Cord	Tips/Nozzles
<b>FM-2027 Soldering Iron</b> 	200-450°C/400-840°F	70 W/24 V	<2Ω/<2 mV	188 mm (7.4 in.) <small>(w/tip shape-2,4D)</small>	30 g (1.07 oz.) <small>(w/T15-D24)</small>	1.2 m (4 ft.)	T15 Series  Not Included
<b>FM-2026 N<sub>2</sub> Soldering Iron</b> 	200-450°C/400-840°F	70 W/24 V	<2Ω/<2 mV	205 mm (8.1 in.) <small>(w/tip shape-2,4D)</small>	45 g (1.6 oz.) <small>(w/T17-D24)</small>	1.2 m (4 ft.)	T17 Series  Not Included
<b>FM-2022 Parallel Remover</b> 	200-400°C/400-750°F	140 W/24 V	<2Ω/<2 mV	110 mm (4.3 in.) <small>(w/o tip)</small>	53 g (1.9 oz.) <small>(w/o tip)</small>	1.2 m (4 ft.)	T16 Series  Not Included
<b>FM-2023 Mini Hot Tweezer</b> 	200-400°C/400-750°F	140 W/24 V	<2Ω/<2 mV	75 mm (3.0 in.) <small>(w/o tip)</small>	32 g (1.1 oz.) <small>(w/o tip)</small>	1.2 m (4 ft.)	T9 Series  Includes T9-I
<b>FM-2024 Desoldering Tool</b> 	350-450°C/660-840°F	70 W/24 V	<2Ω/<2 mV	180 mm (7.09 in.) <small>(w/o 1.0mm nozzle)</small>	65 g (2.29 oz.) <small>(w/o 1.0mm nozzle)</small>	1.2 m (4 ft.)	N3 Nozzles  Not Included
<b>FM-2029 Hot Air Handpiece</b> 	100-550°C/200-1030°F	140 W/24 V	N/A	167 mm (6.6 in.) <small>(w/o nozzle)</small>	42 g (1.48 oz.) <small>(w/o nozzle)</small>	1.2 m (4 ft.)	N4 Nozzles  Not Included
<b>FM-2030 HD Soldering Iron</b> 	200-500°C/400-930°F	140 W/24 V	<2Ω/<2 mV	224 mm (8.8 in.) <small>(w/o cord)</small>	41 g (1.4 oz.) <small>(w/o cord)</small>	1.3 m (4.3 ft.)	T22 Series Tips  Not Included
<b>FM-2031 HD N<sub>2</sub> Soldering Iron</b> 	200-500°C/400-930°F	140 W/24 V	<2Ω/<2 mV	231 mm (9.1 in.) <small>(w/o cord)</small>	47 g (1.7 oz.) <small>(w/o cord)</small>	1.3 m (4.3 ft.)	T22 Series Tips  Not Included
<b>FM-2032 Micro Iron</b> 	200-450°C/400-840°F	48 W/24 V	<2Ω/<2 mV	170 mm (6.7 in.) <small>(w/o cord) (w/T30-D1)</small>	14 g (0.49 oz.) <small>(w/o cord) (w/T30-D1)</small>	1.3 m (4.3 ft.)	T30 Series Tips  Not Included



HakkoUSA.com



The Hakko FM-203 brings more soldering functionality to your workbench while delivering the heat you need to the soldering area FAST. Select any soldering temperature you want without changing the tip—one tip, any soldering temperature. ESD Safe.

# FM-203

## SOLDERING STATION

### SPECIFICATIONS

#### FM-203 SOLDERING STATION

Power Consumption	140 W (120 V)
Temperature Range	200°C - 450°C (400°F - 840°F)
Temperature Stability	±5°C (±9°F) at idle temperature
Station Output	24 V
Dimensions	120 (W) x 120 (H) x 190 (D) mm (4.72 x 4.71 x 7.50 in.)
Weight	2.7kg (5.9 lbs.)

#### FM-2027 Soldering Iron

Power Consumption	70 W (24 V)
Tip to ground resistance	< 2 Ω
Tip to ground potential	< 2 mV
Total Length (w/o cord)	188 mm (7.4 in.) with T15-D24 tip
Weight (w/o cord)	30g (1.07 oz.) with T15-D24 tip
Length of Cord	1.2 m (4 ft.)
Tips	T15 Series Tips

### CONTENTS

Part No.	Description
FM203-01	FM-203 soldering station Green sleeve assembly (P/N: B3219) Connector (P/N: FM2027-02) Iron holder with 599B tip cleaner (P/N: FH200-01) Key card (P/N: B2972) Heat pad (P/N: B2300) Tip tray (P/N: B2756) Connector cord (P/N: B3253) Power cord (P/N: B2419)

Tips and Nozzles NOT included

### Features and Benefits

- Dual soldering iron ports
- Excellent thermal recovery
- Meets or exceeds J-STD-001 requirements
- Low temperature alarm
- Auto power shutoff after lapse of 30 minutes
- Lock Out key card prevents unauthorized or accidental temperature settings
- Composite tips—heating element and sensor are integrated with ceramic
- Locking sleeve assembly (grip)
- No calibration required
- Optional “Sleep Mode” functionality with iron holder (P/N: FH200-01)
- **Placing the iron into the iron holder activates the sleep mode**
- Adjustable “sleep mode” settings (0-29 minutes)
- Adjustable iron holder angle

#### NOTE:

P/N: **FM203-01** ships with one (1) FM-2027 soldering handpiece.  
P/N: **FM203-DP** ships with two (2) FM-2027 soldering handpieces.  
P/N: **FM203-HD** ships with one (1) FM-2030 soldering handpiece.

### FM-203 Available Accessories

For additional FM-203 accessories please see pages 17-18.



The Hakko FG-100 Thermometer



FM-2030 HD Soldering Iron



FM-2032 Micro Iron



FM-203 Back Sleep Ports



FM-2024 - Page 31 Desoldering Tools



FM203-DP



FM-2027 Soldering Irons

Bring a new design to your workbench with the stylish Hakko FX-951 soldering station. The FX-951 delivers the same superior heat transfer and thermal recovery as the FM-203 and uses the same quick-change composite tips as the FM-203.

### Features and Benefits

- Compact, space-saving design
- Meets or exceeds J-STD-001 requirements
- Excellent thermal recovery
- Lock Out key card prevents unauthorized or accidental temperature settings
- Low temperature alarm
- Composite tips—heating element and sensor are integrated with ceramic
- Locking sleeve assembly (grip)
- Optional “Sleep Mode” functionality with iron holder (P/N: FH200-01)
- **Placing the iron into the iron holder activates the sleep mode**
- Adjustable “sleep mode” settings (0-29 minutes)
- Auto power shutoff after lapse of 30 minutes
- Adjustable iron holder angle

### FX-951 Available Accessories



FM-2026  
N<sub>2</sub> Soldering Iron



FM-2032 Micro Iron



The Hakko FG-100  
Thermometer



U.S. Patent number D530,349.



HakkoUSA.com

# FX-951

## SOLDERING STATION

### SPECIFICATIONS

#### FX-951 SOLDERING STATION

Power Consumption	75 W (120 V)
Temperature Range	200°C - 450°C (400°F - 840°F)
Temperature Stability	±5°C (±9°F) at idle temperature
Station Output	24 V
Dimensions	80 (W) x 130 (H) x 131 (D) mm (3.15 x 5.12 x 5.16 in.)
Weight	1.2kg (2.65lbs.)

#### FM-2027 Handpiece

Power Consumption	70 W (24 V)
Tip to ground resistance	< 2 Ω
Tip to ground potential	< 2 mV
Length (w/o cord)	188 mm (7.4 in.) with T15-D24
Weight (w/o cord)	30g (1.07 oz.) with T15-D24
Length of Cord	1.2 m (4 ft.)
Tips	T15 Series Tips

### CONTENTS

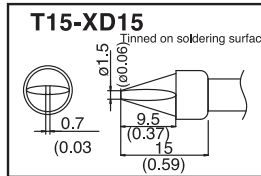
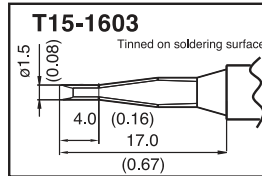
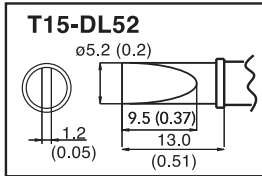
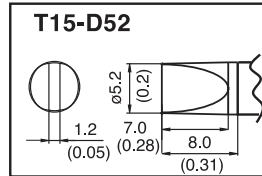
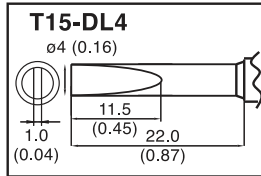
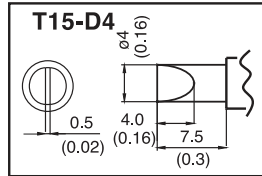
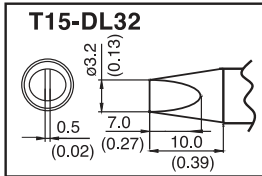
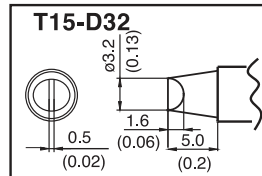
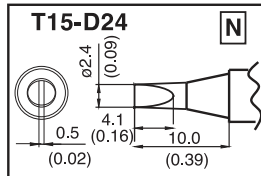
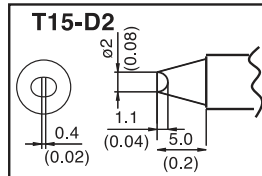
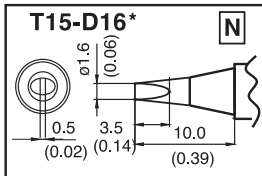
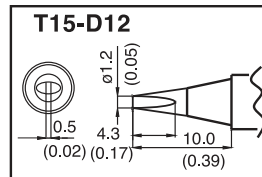
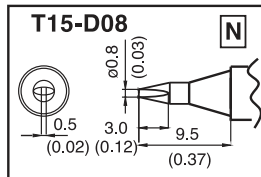
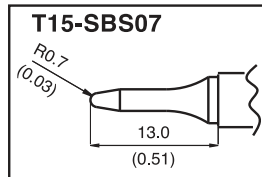
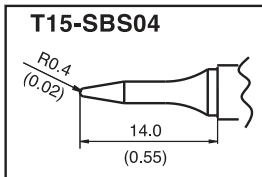
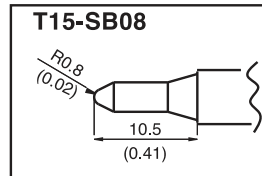
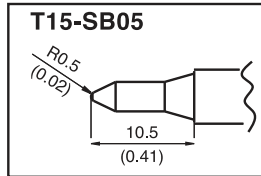
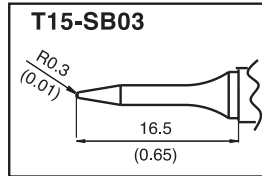
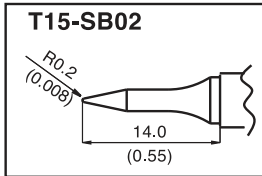
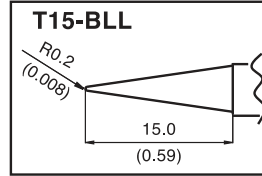
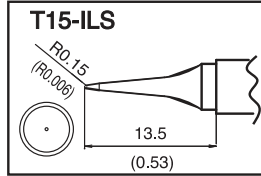
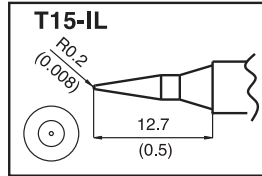
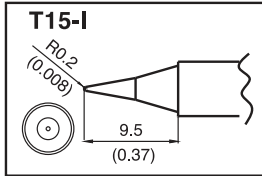
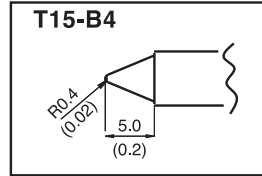
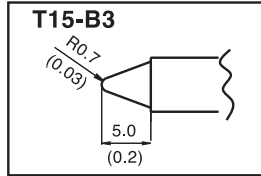
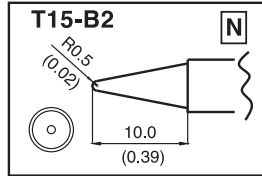
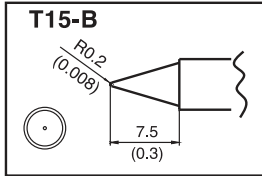
Part No.	Description
FX951-66	FX-951 soldering station Green sleeve assembly (P/N: B3219) Connector (P/N: FM2027-02) Iron holder with 599B tip cleaner (P/N: FH200-01) Key card (P/N: B2972) Heat resistant pad (P/N: B2300) Tip tray (P/N: B2756) Connector cord (P/N: B3253) Power cord (P/N: B2419)

*Tips and Nozzles NOT included*



# T15 SERIES TIPS

FOR FM-203, FM-204, FM-205, FX-951 and FM-206 STATIONS



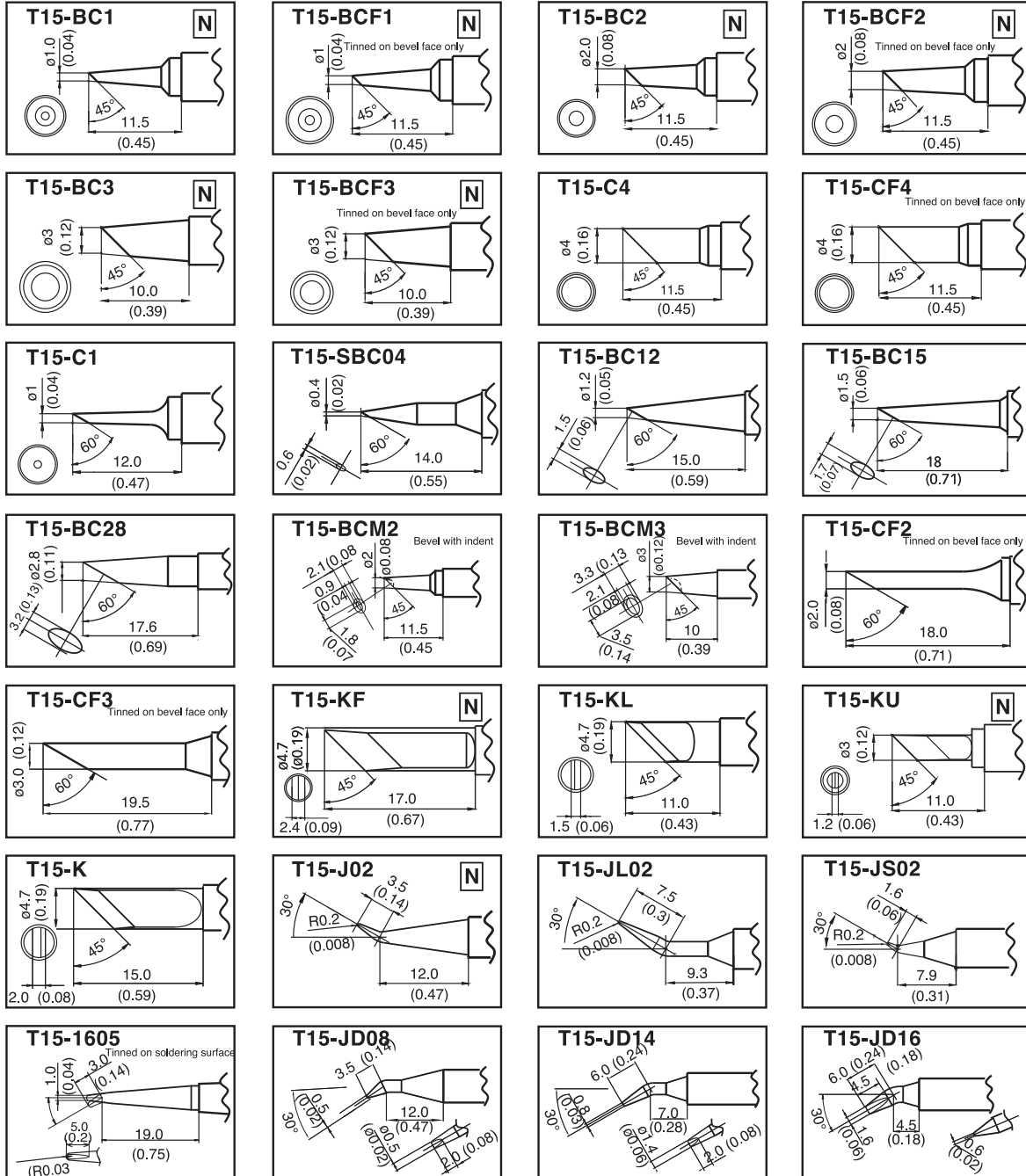
UNIT: mm (inch)

N T17 tips and nozzles can be used with the Nitrogen Soldering System (see page 21).

\*T15-D16 available in pure nickel construction as T15-1608 for soldering with specialized alloys

# T15 SERIES TIPS

FOR FM-203, FM-204, FM-205, FX-951 and FM-206 STATIONS



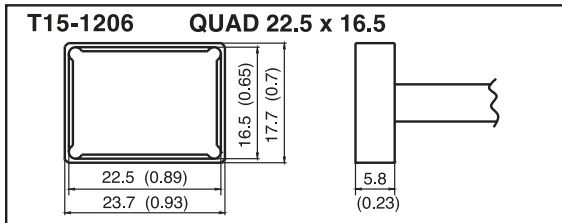
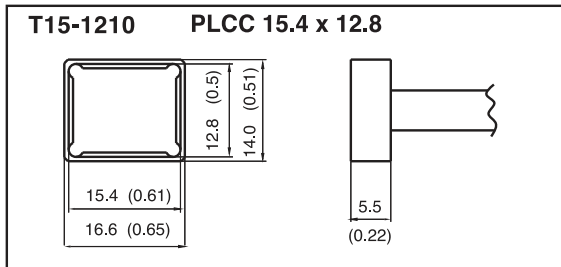
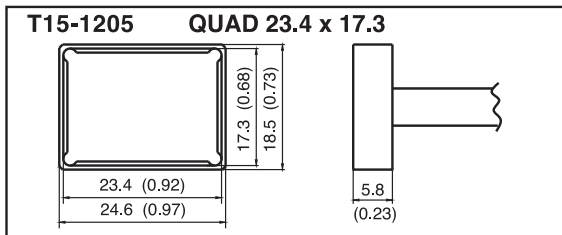
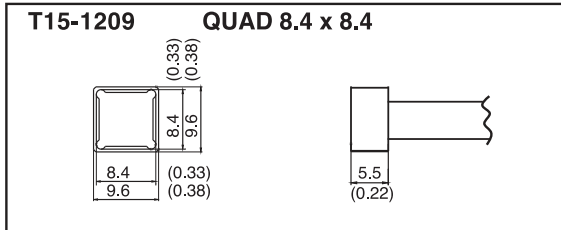
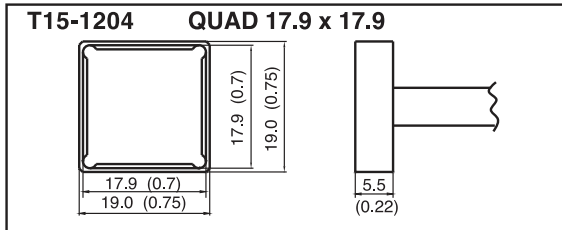
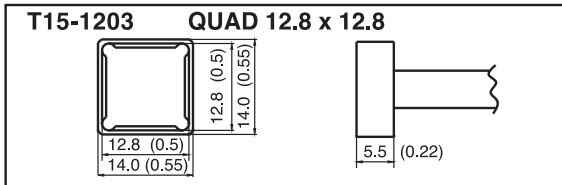
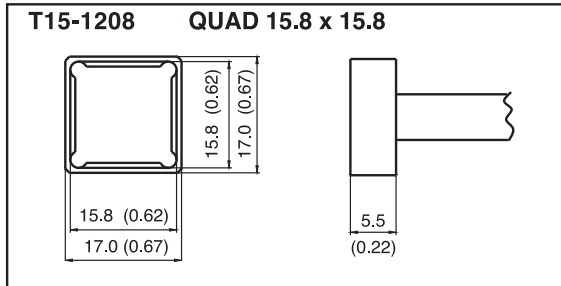
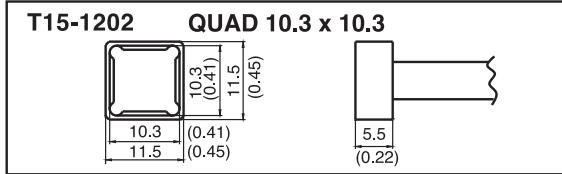
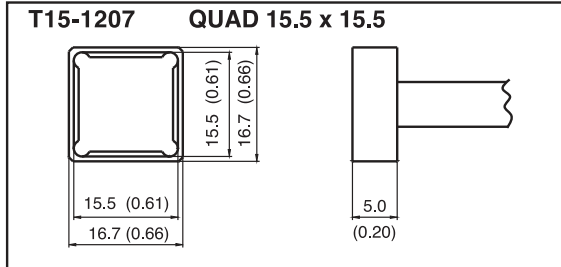
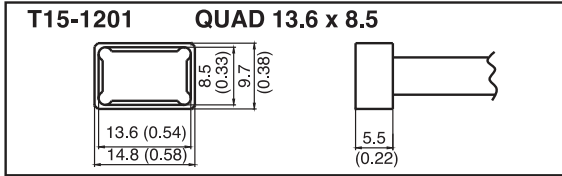
UNIT: mm (inch)

**N** T17 tips and nozzles can be used with the Nitrogen Soldering System (see page 21).



# T15 SERIES TIPS

FOR FM-203, FM-204, FM-205, FX-951 and FM-206 STATIONS

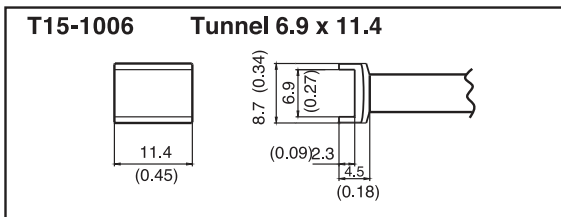
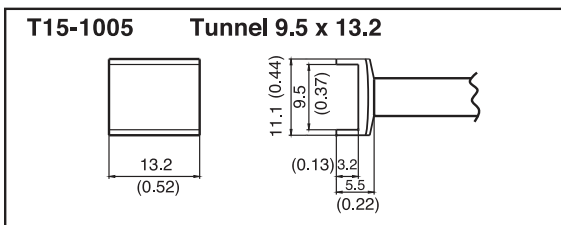
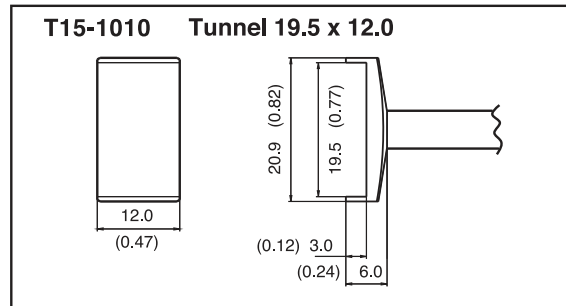
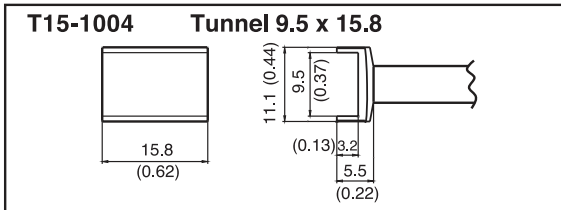
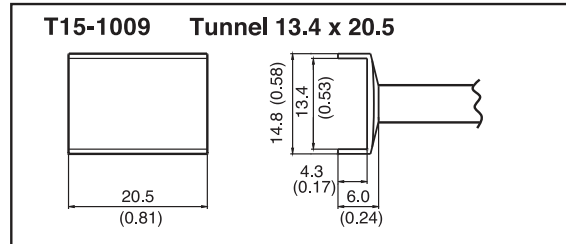
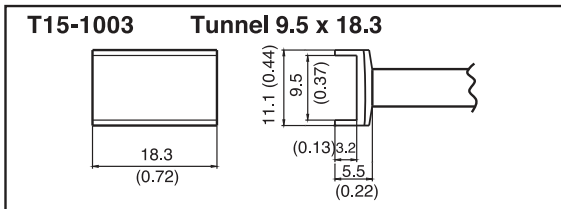
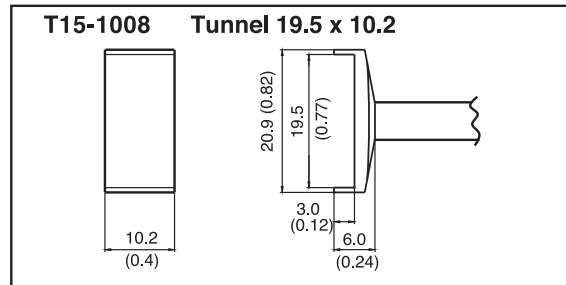
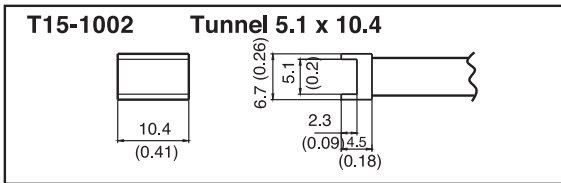
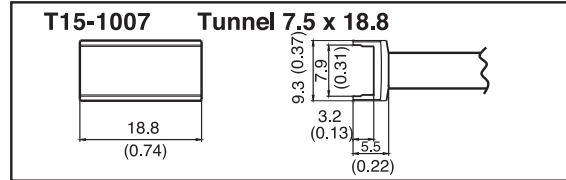
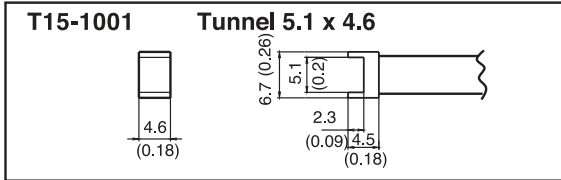


UNIT: mm (inch)



# T15 SERIES TIPS

FOR FM-203, FM-204, FM-205, FX-951 and FM-206 STATIONS

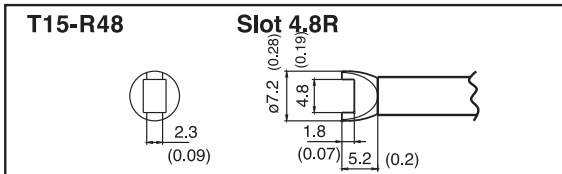
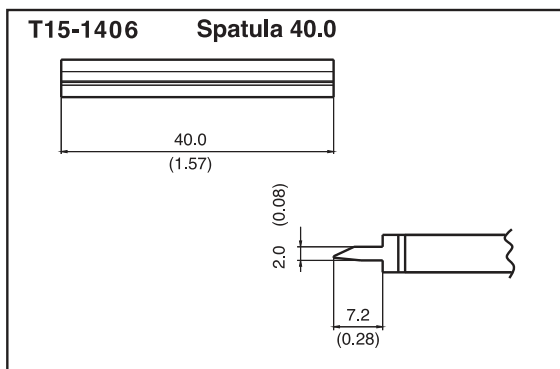
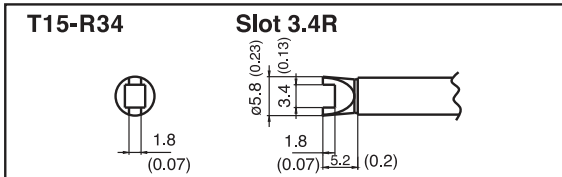
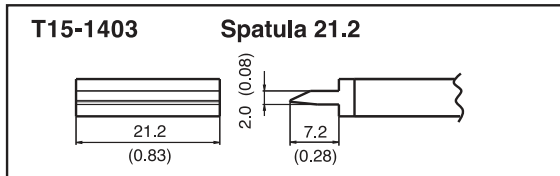
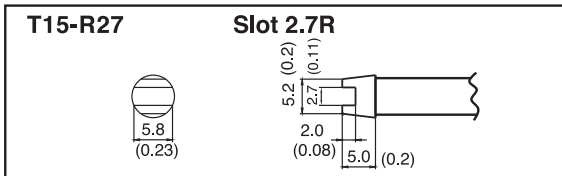
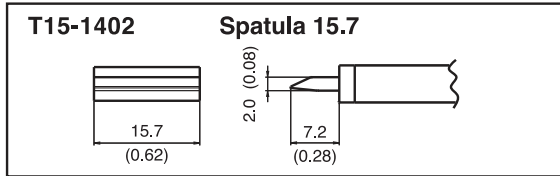
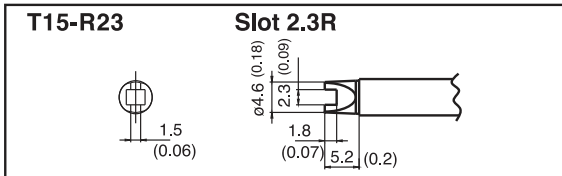
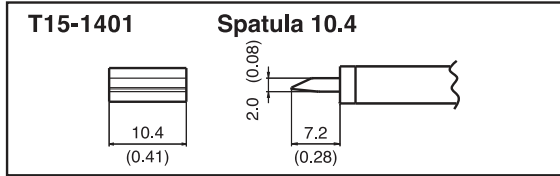
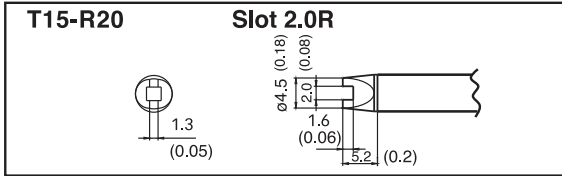


UNIT: mm (inch)



# T15 SERIES TIPS

FOR FM-203, FM-204, FM-205, FX-951 and FM-206 STATIONS



UNIT: mm (inch)

**N** Cross Reference Guide for T17 Tips and N2 Nozzles

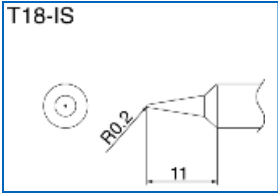
T17 TIP		N2 NOZZLE	
Tip Shape	Part Number	Part No.	Part Name
2BC, 2BCF	T17-BC2, T17-BCF2	B2706	Nozzle assembly A
0.2J	T17-J02	B2707	Nozzle assembly B
1.6D, 0.5B, 2.4D	T17-D16, T17-B2, T17-D24	B2708	Nozzle assembly C
0.8D	T17-D08	B2709	Nozzle assembly D
1BC, 1BCF	T17-BC1, T17-BCF1	B2899	Nozzle assembly F
3BC, 3BCF	T17-BC3, T17-BCF3	B2900	Nozzle assembly G
KU	T17-KU	B2901	Nozzle assembly H
KF	T17-KF	B2923	Nozzle assembly J
KR	T17-KR	<b>B2902</b>	Nozzle assembly I

UNIT: mm (inch)

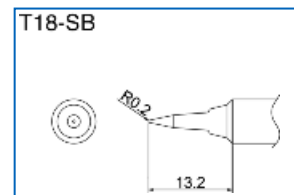
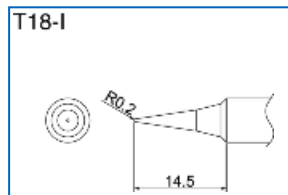
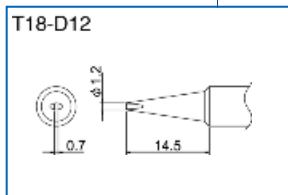
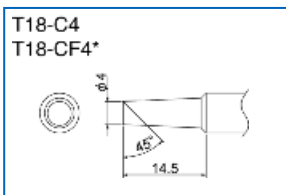
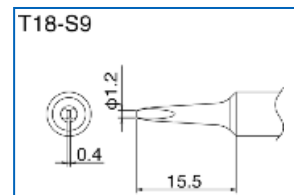
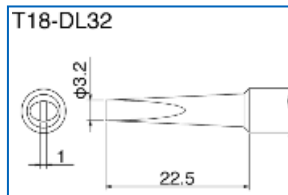
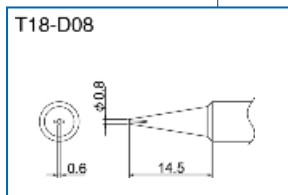
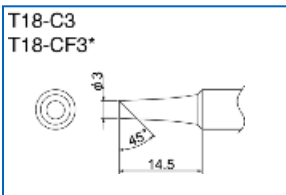
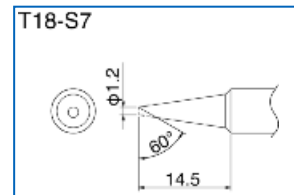
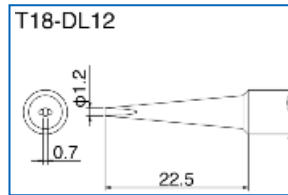
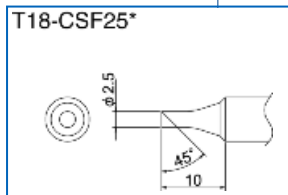
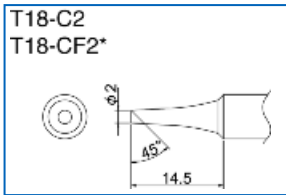
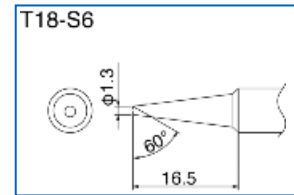
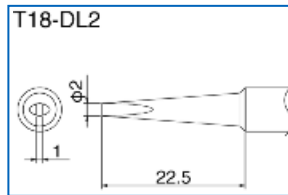
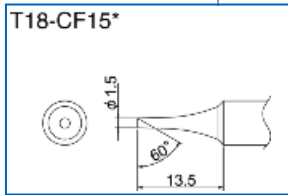
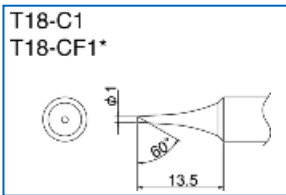
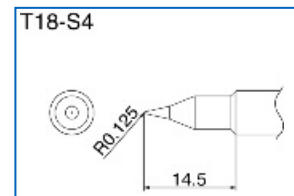
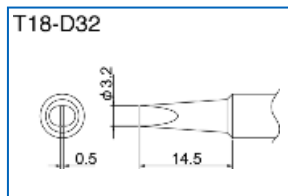
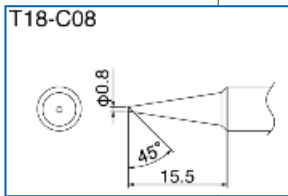
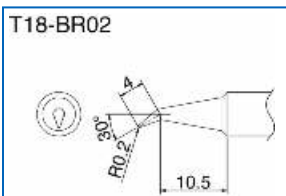
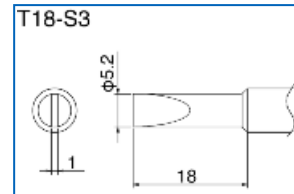
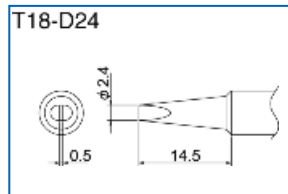
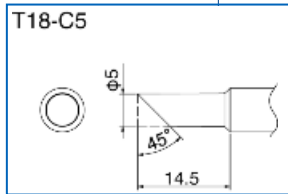
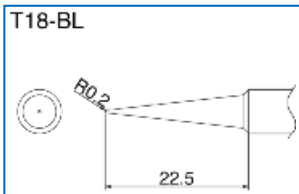
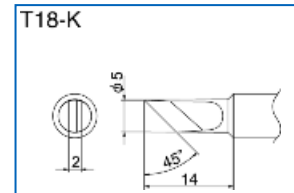
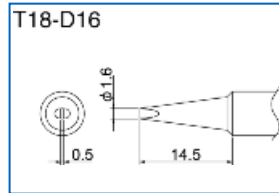
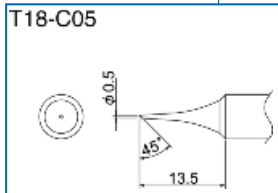
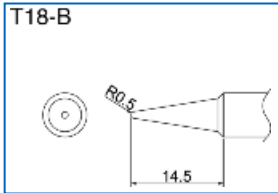


# T18 SERIES TIPS

FOR 900M-ESD, 907-ESD, 913, FX-600  
FX-8801, FX-8802, FX-8803



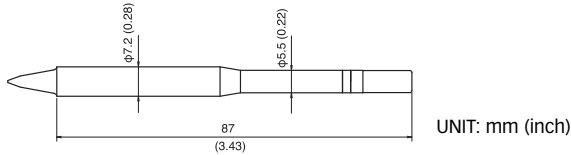
UNIT: mm (inch)



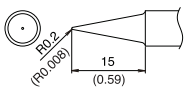
# T22 SERIES TIPS

---FOR Hakko FM-2030 and FM-2031 Heavy Duty Soldering Iron\*

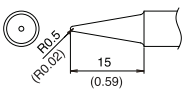
\* Nozzle assembly required when using Nitrogen (see table below).



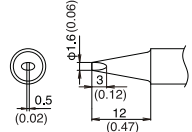
T22-BL SHAPE-BL



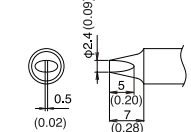
T22-BL2 SHAPE-2BL



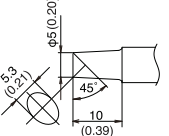
T22-D16 SHAPE-1.6D



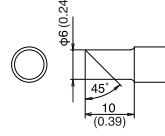
T22-D24 SHAPE-2.4D



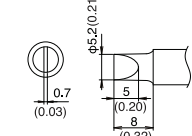
T22-C5 SHAPE-5C



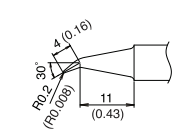
T22-C6 SHAPE-6C



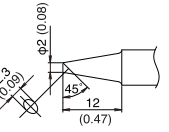
T22-D52 SHAPE-5.2D



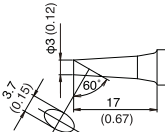
T22-J02 SHAPE-0.2J



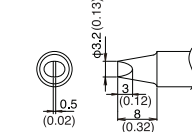
T22-BC2 SHAPE-2BC



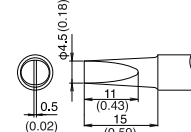
T22-C3 SHAPE-3C



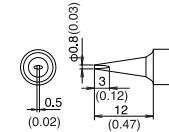
T22-D32 SHAPE-3.2D



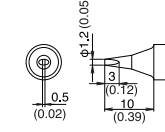
T22-D45 SHAPE-4.5D



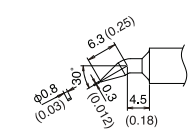
T22-D08 SHAPE-0.8D



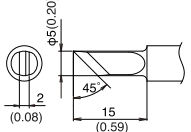
T22-D12 SHAPE-1.2D



T22-JD08 SHAPE-0.8JD



T22-K SHAPE-K



*Tip P/N	Nozzle Assy P/N	Nozzle Assy
T22-BL T22-BL2 T22-BC2 T22-C3 T22-D12 T22-J02	B3121	Nozzle Assy A
T22-D08 T22-D16 T22-K	B3123	Nozzle Assy C
T22-C5 T22-C6 T22-D32 T22-D45 T22-D52	B3124	Nozzle Assy D
T22-D24 T22-JD08	B3561	Nozzle Assy E

# FM-2030

HEAVY DUTY SOLDERING IRON

For use with FM-203 and FM-206

U.S. Patent number D660,667.



The Hakko FM-2030 Soldering Iron provides a higher mass tip with double the power of conventional T15 tips.

### Features and Benefits

- Uses T22 tips (not included)
- Compatible with the Hakko FM-203 soldering station and FM-206 rework system
- Includes holder (with sleep functionality), tip cleaner and other affiliated parts

Part Number: FM2030-02 = Conversion Kit  
Part Number: FM2030-01 = Handpiece ONLY

### SPECIFICATIONS

Part No. (Handpiece only)	FM2030-01	FM2031-01
Power Consumption	140 W 24 V	
Temperature Range	200-500°C / 400-930°F	
IPC J-STD-001	Meets or exceeds requirements	
Total Length (w/o cord)	224 mm (8.8 in.)	231 mm (9.1 in.)
Weight (w/o cord)	41 g (1.4 oz.)	47 g (1.7 oz.)
Cord/Reach	1.3 m (4.3 ft.)	
Tips	T22 Series (not included)	

**IMPORTANT:** The FM-2030 and the FM-2031 can only be attached to the Hakko FM-203 "D" port, and the Hakko FM-206 CH2 or CH3 ports. If you attach the iron to any other port, a grip error or connector error (C-E) will occur.

### CONTENTS

Part No.	Description
FM2030-02 or FM2031-02	Handpiece (P/N: FM2030-01 or FM2031-01)
	Handpiece Holder with Sleep Function— (P/N: FH200-01)
	Connecting Cable (P/N: B3253)
	Heat Resistant Pad (P/N: B2300)

# FM-2031

NITROGEN COMPATIBLE HEAVY DUTY SOLDERING IRON



### Features and Benefits

- Uses T22 tips (not included)
- Compatible with the Hakko FM-203 soldering station and FM-206 rework system

Part Number: FM2031-02 = Conversion Kit  
Part Number: FM2031-01 = Handpiece ONLY

The Hakko FM-2031 Soldering Iron provides double the power of T17 tips.

The FX-801 is the ideal soldering station for extremely large mass components such as, high current inductor coils, heat sinks, large transformers, shields and other difficult to solder applications where there is a significant amount of thermal inertia that must be overcome.

The station uses T33 Series Tips, which feature 260W composite ceramic heating elements. These heating elements have a top controlled temperature of 940°F (500°C) and high mass shapes, enabling you to solder some of the most challenging solder joints at only 750°F (400°C) and without preheating!

#### Features and Benefits

- Up to 6 user programmable preset temperatures
- Process control lockout with password protection
- Lightweight (50g) heavy duty 260W soldering iron
- Sleep/Power-off function — station automatically enters sleep/power-off function when handpiece is placed in iron holder
- Large LED display
- Integrated handles on station make it easy to move or carry
- Low temperature alarm
- ESD Safe



Experience the Power of Ultra Heavy Duty Soldering!

U.S. Patent numbers D480,522, D542,110, D660,667.

# FX-801

Ultra Heavy Duty Soldering Station

## T33 SERIES TIPS

---FOR Hakko FX-801

### SPECIFICATIONS

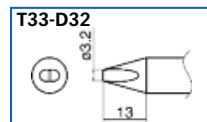
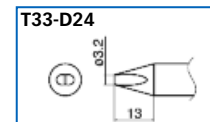
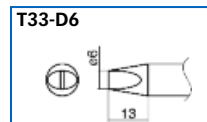
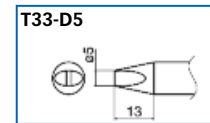
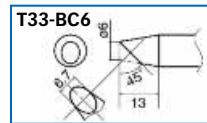
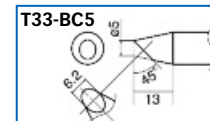
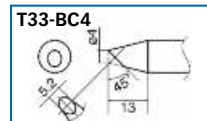
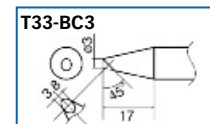
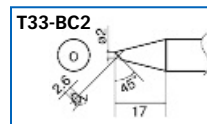
<b>Model Name</b>	FX-801
<b>Part Number</b>	FX801-02
<b>Voltage</b>	120 VAC 50/60 Hz
<b>Output Voltage</b>	29 V
<b>Power Consumption</b>	300 W
<b>Temperature Range</b>	120°F - 940°F (50°C - 500°C)
<b>Temperature Stability</b>	±9°F (±5°C)
<b>Outer Dimensions</b>	5.7 x 4.2 x 8.3 in. (145 x 107 x 211 mm)
<b>Weight (w/o Cord)</b>	8.3 lb. (3.9 kg)
<b>ESD Safe</b>	Yes

### Soldering Iron - Handpiece

<b>Model Number</b>	FX-8002
<b>Part Number</b>	FX8002-81
<b>Power Consumption</b>	260 W (29 V)
<b>Tip-to-Ground Resistance</b>	< 2 ohms
<b>Tip-to-Ground Potential</b>	< 2 mV
<b>Heater</b>	HAKKO Composite Ceramic™
<b>Tips†</b>	T33 Series (not included)
<b>Cord Length‡</b>	4 ft. (1.2 m)
<b>Total Length (w/o cord)‡</b>	9.0 in. (288 mm)
<b>Weight (w/o cord)</b>	0.11 lb. (50 g)

† Tips not included

‡ As measured with T33-BC4 tip installed



UNIT: mm (inch)

### CONTENTS

Part No.	Description	Part No.
<b>FX801-02</b>	FX-8002 Soldering Handpiece FH-200 Holder w/599B Tip Cleaner Sleep Connection Cable Heat Resistant Pad Power Cord Instruction Manual	<b>FX8002-81</b> <b>FH200-83</b> <b>B3253</b> <b>B2300</b> <b>B2419</b>



SOLDERING

MICRO SOLDERING

DESOLDERING



**FX-951 Soldering Station**  
P/N: FX951-66



T15 Series Tips



FM2027-02 Connector (only)



**Sleeve Assembly**  
B3216 - yellow  
B3217 - orange  
B3218 - blue  
B3219 - green



FH200-01



FM2032-52 (Kit)

FM-2032 Handpiece  
FH200-51 Handpiece Holder  
with Sleep Function  
B2300 Heat Resistant Pad  
B3253 Connecting Cable



T30 Series Tips



**FM-203 Dual Port Soldering System**  
P/N: FM203-01



T15 Series Tips



FM2027-02 Connector (only)



**Sleeve Assembly**  
B3216 - yellow  
B3217 - orange  
B3218 - blue  
B3219 - green



FH200-01



FM2027-03



FM2032-52 (Kit)

FM-2032-01 Handpiece  
FH200-51 Handpiece Holder  
with Sleep Function  
B2300 Heat Resistant Pad  
B3253 Connecting Cable



T30 Series Tips

**FM2024-21 Desoldering Conversion Kit**



- FM2024-02 handpiece
  - C1492 control box
  - FH200-05 holder
  - B2873 cleaning drill
  - B2876 nozzle remover
  - A1514 ceramic filter, 10 pk
  - A1511 filter pipe assembly
- N3 series nozzles (not included)**

+ 999-216 shop air hose kit (not incl.)



**FM-206 3 Port Rework System**  
P/N: FM206-55



T15 Series Tips



FM2027-02 Connector (only)



**Sleeve Assembly**  
B3216 - yellow  
B3217 - orange  
B3218 - blue  
B3219 - green



FH200-01



FM2027-06



FM2032-52 (Kit)

FM-2032-01 Handpiece  
FH200-51 Handpiece Holder  
with Sleep Function  
B2300 Heat Resistant Pad  
B3253 Connecting Cable



T30 Series Tips



**FM2024-42 (Kit)**

- FM2024-02 handpiece
  - FH200-05 holder
  - B2873 cleaning drill
  - B2876 nozzle remover
  - A1514 ceramic filter, 10 pk
  - A1511 filter pipe assembly
- N3 series nozzles (not included with station)**



**FM-204 Desoldering and Soldering Station**  
P/N: FM204-01



T15 Series Tips



FM2027-02 Connector (only)



**Sleeve Assembly**  
B3216 - yellow  
B3217 - orange  
B3218 - blue  
B3219 - green



FH200-01



FM2027-03



















**FM2024-02 Handpiece**

(included with station)



FH200-05

**N3 series nozzles (not included with station)**

REWORK	N <sub>2</sub> SOLDERING	HOT AIR	HEAVY DUTY
<p style="font-size: 48px; color: gray;">X</p>	<p style="text-align: right; font-weight: bold;">FX781-81</p>  <ul style="list-style-type: none"> <li>FX780-01 N<sub>2</sub> Generator</li> <li>FX791-01 N<sub>2</sub> Controller</li> <li>FM2026-01 Soldering Iron</li> </ul> <p>T17 tips (requires sleeve) T17 sleeves: B2769D, B2768D &amp; B2765D</p> <p>FM2026-KIT includes: FX791-01 Controller + FM2026 Iron</p>	<p style="font-size: 48px; color: gray;">X</p>	<p style="font-size: 48px; color: gray;">X</p>
 <p><b>FM2022-05 (kit)</b> Mini Reel Remover T16 tips (not included) A1536 replacement sponge</p>  <p><b>FM2023-05 (kit)</b> Mini Reel Remover T9-I tips included A1536 replacement sponge</p>	<p style="text-align: right; font-weight: bold;">FX781-81</p>  <ul style="list-style-type: none"> <li>FX780-01 N<sub>2</sub> Generator</li> <li>FX791-01 N<sub>2</sub> Controller</li> <li>FM2026-01 Soldering Iron or Optional FM2031</li> </ul> <p>T17/T22 tips (T17 requires sleeve) T17 sleeves: B2769D, B2768D &amp; B2765D</p> <p>FM2026-KIT includes: FX791-01 Controller + FM2026 Iron</p> <p style="text-align: right; font-weight: bold;">FM2031-KIT</p> 	<p style="font-size: 48px; color: gray;">X</p>	 <p><b>FM2030-02 (Kit)</b></p> <p>FM-2030-01 Handpiece FH200-01 Handpiece Holder With Sleep Function B2300 Heat Resistant Pad B3253 Connecting Cable</p>  <p><b>T22 Series Tips</b></p>
 <p><b>FM2022-05 (kit)</b> Mini Reel Remover T16 tips (not included) A1536 replacement sponge</p>  <p><b>FM2023-05 (kit)</b> Mini Reel Remover T9-I tips included A1536 replacement sponge</p>	<p style="text-align: right; font-weight: bold;">FX781-81</p>  <ul style="list-style-type: none"> <li>FX780-01 N<sub>2</sub> Generator</li> <li>FX791-01 N<sub>2</sub> Controller</li> <li>FM2026-01 Soldering Iron or Optional FM2031</li> </ul> <p>T17/T22 tips (T17 requires sleeve) T17 sleeves: B2769D, B2768D &amp; B2765D</p> <p>FM2026-KIT includes: FX791-01 Controller + FM2026 Iron</p> <p style="text-align: right; font-weight: bold;">FM2031-KIT</p> 	<p style="text-align: center; font-weight: bold;">FM2029-01 (Kit)</p> <p>FM-2029 Hot Air Handpiece N4 Nozzles (not included) C5034 Holder B2300 Heat Resistant Pad B3253 Connecting Cable</p>  <p style="text-align: center; font-weight: bold;">FM2029-01 (Kit)</p> 	 <p><b>FM2030-02 (Kit)</b></p> <p>FM-2030-01 Handpiece FH200-01 Handpiece Holder With Sleep Function B2300 Heat Resistant Pad B3253 Connecting Cable</p>  <p><b>T22 Series Tips</b></p>
<p style="font-size: 48px; color: gray;">X</p>	<p style="text-align: right; font-weight: bold;">FX781-81</p>  <ul style="list-style-type: none"> <li>FX780-01 N<sub>2</sub> Generator</li> <li>FX791-01 N<sub>2</sub> Controller</li> <li>FM2026-01 Soldering Iron</li> </ul> <p>T17 tips (requires sleeve) T17 sleeves: B2769D, B2768D &amp; B2765D</p> <p>FM2026-KIT includes: FX791-01 Controller + FM2026 Iron</p>	<p style="font-size: 48px; color: gray;">X</p>	<p style="font-size: 48px; color: gray;">X</p>



HakkoUSA.com

Soldering

U.S. Patent number D678,373.



The FX-888D is an updated digital version of the popular FX-888 with new features.

The added power of the Hakko FX-888D provides up to a 30% increase in operator productivity due to the increased thermal performance and faster thermal recovery time.

# FX-888D

## SOLDERING STATION

### SPECIFICATIONS

<b>Part No.</b>	FX888-23BY
<b>Power Consumption</b>	70 W
<b>Station</b>	
<b>Output</b>	26 VAC
<b>Temperature Range</b>	50 - 480°C (120 - 899°F)
<b>Temperature Stability<sup>1</sup></b>	±1°C (1.8°F)
<b>Temperature Control</b>	Microprocessor control using closed-loop sensor
<b>Temperature Presets</b>	2 - 5 (Default is 5)
<b>Dimensions</b>	100 (W) x 120 (H) x 120 (D) mm (3.9 x 4.7 x 4.7 in.)
<b>Weight</b>	1.2 kg (2.6 lbs.)
<b>ESD Safe</b>	YES
<b>IPC J-STD-001</b>	Meets or Exceeds Requirements
<b>Safety Approval</b>	cMETus

### Iron

<b>Model Name</b>	FX-8801
<b>Part No.</b>	FX8801-02
<b>Power Consumption</b>	65 W 26 VAC
<b>Heating Element</b>	Ceramic heater
<b>Cord Length/Reach</b>	1.2 m (3.9 ft.)
<b>Handpiece Length<sup>2</sup> (w/o cord)</b>	217 mm (8.5 in.)
<b>Handpiece Weight<sup>2</sup> (w/o cord)</b>	46 g (0.1 lbs.)
<b>Standard Tip (included)</b>	T18-D16
<b>Tips</b>	T18 Series

### New Features:

- User selectable preset temperatures and digital calibration simplify user setup and operation
- New password protection and low temperature alarm provide process control and help protect against cold solder joints

### Additional Features:

- Adjustable temperature control
- Temperature range of 50-480°C (120-899°F)
- Maintains an idle temperature within ±1°C (1.8°F)
- Ceramic heating element and sensor ensure rapid heat-up temperature and fast thermal recovery
- Digital display shows °C or °F
- Slender iron handles are padded and have an ergonomic design for comfort and ease of use
- Wide selection of tips available for soldering SMD and through-hole applications

### CONTENTS

Part No.	Description
N/A	FX-888D Station
FX8801-02	FX-8801 Soldering Iron
T18-D16	Soldering Iron Tip (installed on FX-8801)
FH800-03BY	Iron Holder
A1559	Cleaning Sponge
A1561	Tip Cleaning Wire
N/A	Instruction Manual-FX-888D

1 - Stability is at idle temperature in the range of 200°C - 480°C (400°F - 899°F)

2 - Handpiece length and weight are measured with the standard tip installed

### REPLACEMENT PARTS

Part No.	Description
A1560	Heating Element
B3469	Tip Enclosure
B1785	Nut
B2022	Nipple
A1559	Cleaning Sponge
A1561	Tip Cleaning Wire
B3472	Iron Holder Base
B3751	Bottom Plate with Lock



The HAKKO FX-889 Dual Port Soldering Station is the long awaited update to the favorite basic dual port soldering iron, the HAKKO 928. This station has the same great improvement in performance as the HAKKO FX-888D had over its predecessor



### Features and Benefits

- Up to 5 user programmable presets for each port
- Digital calibration
- Password lockout
- Low temperature alarm
- Each port operates as an independent soldering station with full power output allowing true simultaneous use of the various handpieces that can be connected to the HAKKO FX-889

In addition to the standard FX-8801 soldering iron, you can also use:

- FX-8802 (N2 version of the FX-8801)
- FX-8803 (soldering gun with manual solder feed trigger)
- FX-8804 (SMD hot tweezers)
- FX-8805 (Large soldering iron)

# FX-889

## DUAL PORT SOLDERING STATION

### CONTENTS

Part No.	Description	Part No.
<b>FX889-04/P</b>	Dual Iron Holder Cable Identification Band (2 pcs) Power Cord Instruction Manual	FH801-81 B5125 B2419

### FX-889 Available Handpieces



FX-8801  
Standard  
Soldering Iron



FX-8802  
Standard  
Soldering  
Iron with N2  
capability



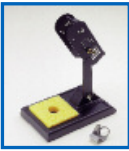
FX-8803  
Soldering  
Gun with  
Manual  
Solder Feed



FX-8804  
SMD  
Hot Tweezers



FX-8805  
Large  
Soldering Iron



FX-8803  
Holder



FX-8804  
Holder

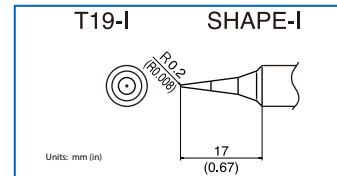
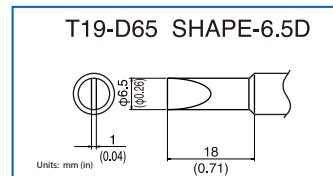
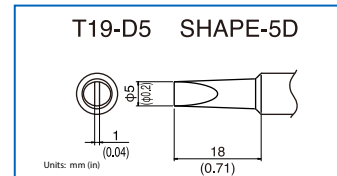
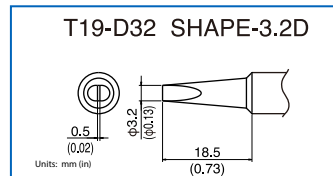
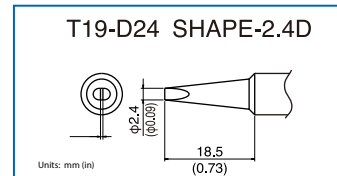
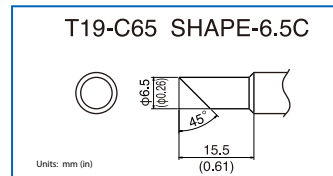
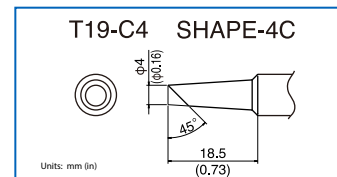
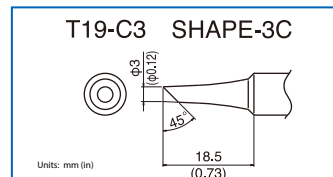
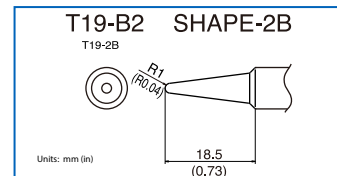
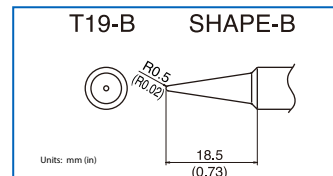
### SPECIFICATIONS

<b>Part No.</b>	FX889-04/P
<b>Input Voltage</b>	120 VAC 50/60 Hz
<b>Power Consumption</b>	135 W Max
<b>Temperature Range</b>	120°F - 899°F (50°C - 480°C)
<b>Temperature Stability<sup>1</sup></b>	±1.8°F (±1°C) at idle
<b>Temperature Control</b>	Microprocessor control using closed-loop sensor
<b>Temperature Presets</b>	2 - 5 (Default is 5)
<b>Output Voltage</b>	26 V
<b>Dimension (W x H x D)</b>	6.2 x 4.8 x 5.9 in. (157 x 121 x 149 mm)
<b>Weight</b>	4.6 lb. (2.1 kg)
<b>ESD Safe</b>	Yes

1 - Within the set temperature range of 400-899°F (200-480°C).

## T19 SERIES TIPS

FOR FX-601 & FX-8805 SOLDERING IRON





HakkoUSA.com

Soldering

U.S. Patent number D554,550.



The Hakko N<sub>2</sub> Soldering System can be used with any Hakko soldering station that has a nitrogen compatible handpiece.

The Hakko Nitrogen (N<sub>2</sub>) soldering system is the ideal solution for all your LEAD-FREE hand-soldering applications. The bench-top nitrogen generator creates nitrogen gas from filtered, dry compressed air and the FX-791 Nitrogen Controller delivers it efficiently and uniformly to the nitrogen compatible soldering iron and soldering area.

- Nozzle assembly envelops the soldering iron tip and delivers uniform nitrogen gas to the soldering area
- The Nitrogen Flow can reduce or prevent oxidation from forming during the soldering process

For a complete list of tips and nozzle assemblies see pages 13 and 15.

# Nitrogen SOLDERING SYSTEM

## SPECIFICATIONS

Part Number	FX780-01	FX781-81
Outer Dimensions (w/out sockets and valve)	73(W) x 282(H) x 71(L) mm (2.9 x 11.1 x 2.8 in.)	73(W) x 407(H) x 71(L) mm (2.9 x 16.02 x 2.8 in.)
Weight	1.5 Kg (3.3 lb.)	2 Kg (4.4 lb.)
Air Supply Pressure	0.3 - 0.7 MPa (44 - 102 psi)	
Concentration of Generated Air	99.9 % (max)	
Generated N <sub>2</sub> Gas Flow	1.5L/min.	2.4L/min.

## SPECIFICATIONS

Part Number	FX791-01
Outer Dimensions	70 (W) x 121 (H) x 134 (D) mm (2.76 x 4.76 x 5.28 in.)
Weight	600g (1.3 lb.)
Input Gas Pressure	0.2 - 0.9 MPa (28 - 129 psi)
Output Gas Flow	0.25 - 2.5 L/min
Input Hose	6.0 mm (0.24 in.) OD (not included)
Contents	FX-791 (1 pc)

## SPECIFICATIONS

Part Number	FM2026-06	FM2031-02
Power consumption	70 W/24 V	140 W/24V
Tip to ground resistance	< 2 Ω	
Tip to ground potential	< 2 mV	
Cord	1.2 m (4 ft.)	
Length, less cord	205 mm (8 in.) with T17-D24	231 mm (9.1 in.) with 2.4D tip
Weight, less cord	45 g (1.6 oz.) with T17-D24	47 g (1.7 oz.) with 2.4D tip and nozzle assembly E
Contents	FM-2026 handpiece w/sleeve cover FH-200 sleep holder Connecting cable Heat resistant pad Tip and nozzle assembly NOT included	FM-2031 handpiece FH-200 sleep holder Connecting cable Heat resistant pad Tip and nozzle assembly NOT included

\* Nozzle assembly required when using Nitrogen.

### FX-780 Nitrogen Generator

High-volume, high-performance Nitrogen Generator

- Concentration of generated N<sub>2</sub> gas up to 99.9%
- Generator can be placed vertically or horizontally
- Part Number: FX780-01 (sold separately, NOT included with any kit)



### FX-781 Controller

High-volume, high-performance Nitrogen Generator

- Concentration of generated N<sub>2</sub> gas up to 99.9%
- Generator can be placed vertically or horizontally
- Part Number: FX781-81 (sold separately, NOT included with any kit)



### FX-791 Controller

Compact Nitrogen Controller

- Controls the flow of nitrogen to the FM-2026 nitrogen iron with the FX-951, FM-206 and FM-203 soldering stations
- Controls the flow level from 0.25 L/min to 2.5 L/min. (recommended level 0.5-1.5 L/min.) and should be adjusted to the tip shape
- ESD Safe
- Part Number: FX791-01



### FM-2026 Soldering Iron

Soldering Iron (for the FM-203, FX-951 FM-206 solder stations)

- Supplies hot nitrogen (N<sub>2</sub>) gas to the soldering area
- The nitrogen gas is preheated as it passes along the ceramic heater in the FM-2026 handpiece
- Soldering efficiency can be improved as the hot nitrogen creates a preheating effect while reducing the amount of oxygen in the solder connection area (less oxidation)
- Part Number: FM2026-06



### FM-2031 Soldering Iron

Nitrogen Compatible Heavy Duty Soldering Iron

- Uses T22 tips (not included)
- Compatible with the Hakko FM-203 soldering station and FM-206 rework system
- Part Number: FM2031-01

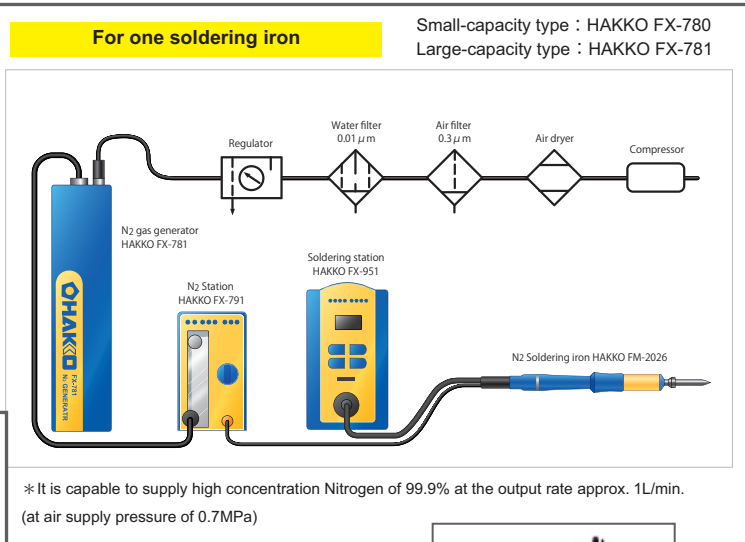
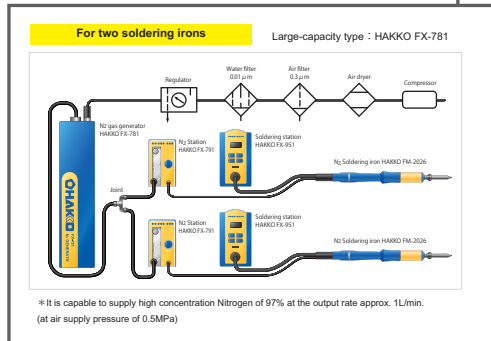


U.S. Patent numbers D542,110, D480,522.

# FX-780 & FX-781

## COMPACT N2 GENERATORS

- Generates Nitrogen gas at max. concentration of 99.9%
- Provides N2 gas by compressed air which does not need electric power supply.
- Large-capacity type accepts two soldering irons



SPECIFICATIONS	
Model Name	FX-901
Part Number	FX-901/P
Power Consumption	Alkaline batteries (AA) 6V (6W) Ni-MH (AA) 4.8V (5W)
Battery	Type AA x 4 (not included)
Outer Dimensions (w/o cap)	212 (L) x 40 (W) x 23 (D) mm (8.3 x 1.6 x 0.9 in.)
Weight (w/o batteries)	76g (0.17 lb.)

- ON / OFF switch
- Quick-change composite tip
- Maintains soldering temperature above 600°F
- Separate battery magazine for easy replacement of batteries
- Long-life battery power
  - Alkaline batteries ~70 minutes
  - Ni-MH batteries ~120 minutes
- Safety cap turns unit off and covers tip
- Uses type AA x 4 batteries (not included)

REPLACEMENT TIPS	
Part Number	Description
T11-B	Soldering Tip Shape B (standard tip included with unit)
T11-D4	Soldering Tip Shape D



See the Video Online  
HakkoUSA.com

# FX-901

# CORDLESS

## SOLDERING IRON

U.S. Patent number D660,669.



The Hakko FX-600 soldering iron is a basic soldering iron for soldering electrical wires, terminals, and electronic components on PWBs.

- Ceramic heating element
- Adjustable temperature control: 392° - 932°F (200° - 500°C)
- Fast thermal recovery

**For the T18 Series Tips for the FX-600 Soldering Iron, please see page 14.**

# FX-600

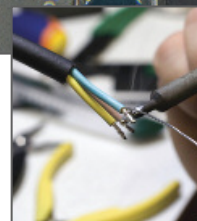
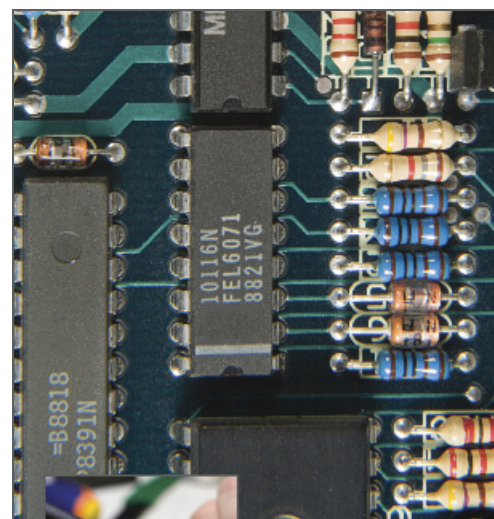
## ADJUSTABLE TEMPERATURE-CONTROLLED SOLDERING IRON

### SPECIFICATIONS

<b>Part No.</b>	FX600-05/P
<b>Input Voltage</b>	120 VAC 60 Hz
<b>Power Consumption</b>	74 W
<b>Tip-to-Ground Resistance</b>	< 2 Ω
<b>Leak Voltage</b>	< 2 mV
<b>Temperature Range</b>	400-932°F (200-500°C)
<b>Temperature Accuracy</b>	±18°F (±10°C)
<b>Temperature Stability</b>	±1.8°F (±1.0°C)
<b>Heater Type</b>	Ceramic
<b>Tips</b>	T18 Series
<b>Standard Tip</b>	T18-B
<b>Length (w/o cord)</b>	9.17 in. (233 mm) w/T18-B Tip
<b>Weight (w/o Cord)</b>	61 g (0.13 lb.)
<b>Reach</b>	1.8 m (6.0 ft)

**NOTE:** The small, blue tool is a temperature adjustment tool for process control engineers or supervisors to set and lock the iron temperature so operators cannot accidentally or intentionally change the temperature of the iron.

Process control is particularly useful when soldering delicate or temperature sensitive components.



### DEAL FOR:

- Wires and Terminals
- Electronic Components

The Hakko FX-650 is a lightweight, economical soldering iron for light to medium soldering of electrical wires and electronic components. It is an excellent tool for hobbyist and beginners.

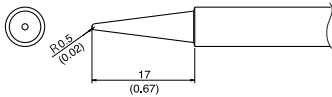
- Ceramic heating element
- Fast thermal recovery
- Iron holder and solder sample included



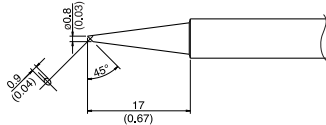
## T34 SERIES TIPS

FOR FX-650 SOLDERING IRON

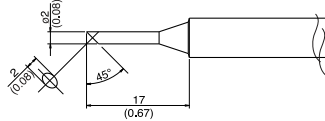
T34-B SHAPE-B UNIT: mm (inch)



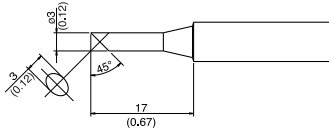
T34-C08 SHAPE-0.8C



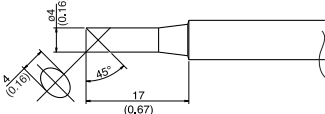
T34-C2 SHAPE-2C



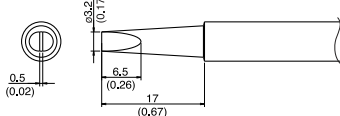
T34-C3 SHAPE-3C



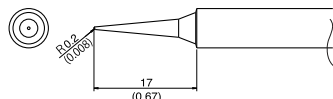
T34-C4 SHAPE-4C



T34-D32 SHAPE-3.2D



T34-I SHAPE-I



# FX-650

SOLDERING IRON

### SPECIFICATIONS

Part No.	FX650-02/P
Voltage	120 V
Power Consumption	15 W
Temperature Range	Approx. 410° - 480° C (770° - 896° F)
Insulation Resistance	Estimate 100MΩ
Standard Tip	T34-B (included)
Handpiece Outer Diameter	Ø15 mm (0.59 in.)
Length of the Power Cord	1.8 m (70.9 in.)
Handpiece Length (w/o cord)	224 mm (8.8 in.)
Weight (w/o cord)	60 g (0.13 lb.)

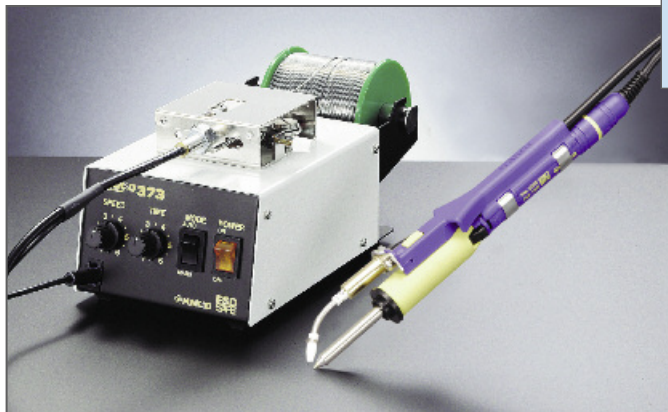
Specifications may change without notice.

### HEATING ELEMENT

Part No.	Shape
A5011/P	110-120V Heater

### SOLDER WIRE

Solder Composition	Lead-free (Sn-0.7Cu)
Solder Diameter	1.0 mm (0.04 in.)
Weight	15 g (0.03 lb.)
Length	275 mm (10.8 in.)



Feed wire solder with one hand while freeing the other hand for other tasks.

- By fully automating the solder feeding process, soldering can be performed with one hand, freeing the other hand for other tasks
- Can be used with a wide range of HAKKO brand soldering irons, permitting selection of the most appropriate iron for the task at hand. If you already own one of these compatible HAKKO soldering irons, you won't need to buy another

**Note:** Soldering Iron and Solder not included.

# 373

## SOLDERING SELF FEEDER

**HAKKO 373 Self Feeder P/N: 373-11**



**Soldering station or soldering iron**



**Solder dia. adjustment ring (Selected according to solder dia.)**

0.6, 0.65 mm (0.024, 0.026 in.)	0.8 mm (0.031 in.)	1.0 mm (0.039 in.)	1.2 mm (0.047 in.)	1.6 mm (0.063 in.)
B1626	B1627	B1628	B1629	B1630



**Tube unit (Selected according to solder dia. & soldering iron)**

Solder dia. Iron	0.6—1.0 mm (0.024~0.039 in.)	1.2—1.6 mm (0.047~0.063 in.)
900M, 900L N452, N453, N454	B1631	B1672
918, 920, 921, 922	B1632	B1673
903	B1957	B1958
907, 908, FX-8801 FX-8805	B2143	B2144
FM-2027	B3477	B3478*
FM-2030/ FM-2031	B3477	B3478*

\*NOTE: 1.6mm Ø is NOT available for use.



**Guide pipe assembly (Selected according to solder dia. & soldering iron)**

Solder dia. Iron	0.6, 0.65 mm (0.024, 0.026 in.)	0.8 mm (0.031 in.)	1.0 mm (0.039 in.)	1.2 mm (0.047 in.)	1.6 mm (0.063 in.)
900M, N452 N453	B1674	B1675	B1676	B1677	B1678
900L, N454	B1679	B1680	B1681	B1682	B1683
920, 921, 922	B1684	B1685	B1686	B1687	B1688
918	B1689	B1690	B1691	B1692	B1693
903	B1694	B1695	B1696	B1697	B1698
907 FX-8801 FX-8805	B2146	B2147	B2148	B2149	B2150
908	B2151	B2152	B2153	B2154	B2155
FM-2027	B3481	B3482	B3483	B3484	n/a
FM-2030/ FM-2031	B3726	B3727	B3728	B3729	n/a

## SPECIFICATIONS

Part No.	373-11
Power Consumption	6W
Motor Rating	24V DC/32W
Outer Dimensions	107(W) x 110(H) x 215(D) mm (4.2 x 4.3 x 8.5 in.)
Weight	Approx. 1.5 kg (3.3 lbs.)
Solder Feed Time	0—7 sec. (Auto mode)
Solder Feed Speed	4.5—26 mm/sec. (0.18—1.0 in./sec.)
Solder Return Qty.	0—5 mm (0—0.2 in.) (Fixed speed)
Mode Switch	Auto/Manual
Solder Diameter	0.6, 0.65, 0.8, 1.0, 1.2, 1.6 mm (0.024, 0.026, 0.031, 0.039, 0.04, 0.063 in.)
Coiled Solder	Maximum 1 kg bobbin (2.2 lbs.)

## OPTIONAL PARTS

Part No.	Description
B1649	Foot switch

For complete details and specifications visit [www.HakkoUSA.com](http://www.HakkoUSA.com)

When hand soldering with Lead-Free alloys, higher tip temperatures and highly-active fluxes cause oxidation and corrosion, which greatly decreases the life of your soldering iron tip. The Hakko FT-700 tip polisher helps increase the life of your tip by keeping it clean and free from oxidation quickly and easily.

- FAST and EASY way to keep your soldering iron tips clean and free from oxidation
- Two spinning polishing brushes (brushes will not damage tip plating)
- Lead-free tip polish for immediate tip tinning
- FS-100 tip polish may be used with or without the FT-700 to remove tip oxides and restore tips

### SPECIFICATIONS

Part No.	FT700-05
Power Consumption	4.5W 120V
Weight	0.65 kg (1.4 lb.)
Outer Dimensions	70(W) x 54(H) x 101(D) mm (2.8 x 2.1 x 4.0 in.)

### ACCESSORIES

Part No.	Description
FS100-01	Tip Polish
B3052	Polishing Brush

# 599B

## TIP CLEANER

U.S. Patent number D480,522.



- Cleans better than conventional sponges
- No water required
- Will not reduce the tip temperature

### SPECIFICATIONS

Part No.	Size mm/in.	Weight oz.	Replacement Wire
599B-02	71.1 mm dia. (2.8 in)	3	P/N: 599-029 (cleaning wire)

Access the digital catalog at [HakkoUSA.com](http://HakkoUSA.com)

Polishing Brush



U.S. Patent number D569,403.



[HakkoUSA.com](http://HakkoUSA.com)

# FT-700

## TIP POLISHER



The **FS-100 Tip Polish** is a quick and easy solution for oxide removal from soldering tips. The FS-100 does not contain Diammonium Phosphate and will not corrode the PWB or tip (Conforms to JIS-Z-3197 6.6.1 test method). Use the FS-100 by itself or in combination with the HAKKO FT-700 for enhanced effectiveness.

# FT-710

## TIP CLEANER

The **HAKKO FT-710 Tip Cleaner** is designed to quickly and effectively clean the soldering iron tip. The counter-rotating brushes remove tip oxides, debris, and excess solder without damaging the tip plating. The soldering iron receptacle collar provides accurate positioning of the tip for optimal cleaning while mitigating FOD potential from the spatter of the solder that is cleaned from the tip.

The tip cleaner is activated only when the tip is pressed into the holder. The FT-710 can also be mounted to existing FH-200 Series Iron Holders in place of the sponge/tip cleaner tray.



### SPECIFICATIONS

Part No.	FT710-04
Motor Rating	24 VDC 5 W
Standby Power Consumption	0.6 W
Power Consumption	5 W
Dimensions (W x H x D)	71 x 77 x 107 mm (2.8 x 2.8 x 4.2 in.)
Weight	450 g (1 lb.)
Brush Rotation Speed	2500 rpm
ESD Safe	Yes

AC Adapter Included

U.S. Patent number D607,911.

### REPLACEMENT PARTS

Part No.	Description
A1566	Brushes (resin)
A1567	Brushes (metal)



The Hakko FX-301B digital, Lead-Free compatible, high performance soldering pot features:

- Four (4) different heating programs for optimum temperature settings for Sn-Pb (Tin/Lead), Sn-Ag-Cu (Tin/Silver/Copper), Sn-Cu (Tin/Copper) or Sn (Tin) solder
- Temperature controllable
- Ceramic heating element
- Digital temperature display
- Easy pot replacement
- Two different size Long Life Pots (50 mm square and 75 mm square)
- Convenient timer for monitoring use and making it easy to judge when to replace the pot
- Digital display reads °C or °F

# FX-301B

## SOLDERING POT

### SPECIFICATIONS

Part Number	FX301B-03	
	50 x 50 Square (Standard)	75 x 75 Square (Optional)
Power Consumption	120V-310W	
Temperature range	200°C—450°C (400°F—840°F)	200°C—380°C (400°F—720°F)
Solder pot dimensions	50(W) x 50(D) x 42(H) mm (2.0 x 2.0 x 1.7 in.)	75(W) x 75(D) x 55(H) mm (3.0 x 3.0 x 2.1 in.)
Molten solder capacity	0.85 kg (1.87 lb.)	1.2 kg (2.64 lb.)
Outer Dimensions	143(W) x 220(D) x 100(H) mm (5.6 x 8.7 x 4.0 in.)	



# FX-300

## SOLDERING POT

The Hakko FX-300 is the “analog” version of the FX-301B.

- Analog type
- Fast thermal recovery
- Easy pot replacement
- Two different pot sizes: 50 x 50 mm or 75 x 75 mm
- Optional pot for long-life

### REPLACEMENT PARTS

For FX-301B and FX-300

Part No.	Description
A1553	Heater, Right Side, FX-300
A1554	Heater, Left Side, FX-300/FX-301B
A1548	Heater, Right Side, FX-301B
A1539	Pot, Long Life 50 x 50 mm (2.0 x 2.0 in.)
A1540	Pot, Long Life 75 x 75 mm (3.0 x 3.0 in.)

### CONTENTS

For FX-301B and FX-300

Part No.	Description
B1417	Hex Wrench
B2919	J-shape collector
B2932	Spatula

### OPTIONAL PARTS

Part No.	Description
A1310	Solder Pot Temperature Probe

### SPECIFICATIONS

Part Number	FX300-03	
	50 x 50 Square (Standard)	75 x 75 Square
Power Consumption	110V-220W	
Temperature range	200°C—450°C (400°F—840°F)	200°C—380°C (400°F—720°F)
Solder pot dimensions	50(W) x 43.5(D) x 50(H) mm (2.0 x 1.7 x 2.0 in.)	75(W) x 52.5(D) x 75(H) mm (3.0 x 2.1 x 3.0 in.)
Molten solder capacity	0.85 kg (1.87 lb.)	1.2 kg (2.64 lb.)
Outer Dimensions	143(W) x 220(D) x 100(H) mm (5.6 x 8.7 x 4.0 in.)	



HAKKO 485 is a compact, high-performance soldering system developed exclusively for soldering and desoldering components and connectors mounted on PC boards.

- Solder flow is time controlled and temperature controlled
- Soldering and desoldering cycles are automatic and precise
- A built-in locator light pinpoints the exact position for placing components
- Residual solder is completely removed by using the 486 air unit
- A large selection of nozzle sizes is available
- Works well with lead-free solders



# 485

## SOLDERING SYSTEM

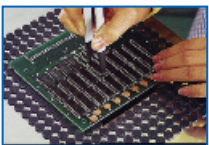
### SPECIFICATIONS

<b>Part No.</b>	<b>485-V12</b>	
<b>Power Consumption</b>	850W	
<b>Operating Temperature</b>	Between -5°C (23°F) and 40°C (104°F)	
<b>Temperature Control</b>	Normal temperature—299°C (570°F)	
<b>Solder</b>	10 kg (22 lb.) (not included)	
<b>Heating Element</b>	800W (400W x 2)	
<b>Air Pressure</b>	2 kg/cm <sup>2</sup> (4.4 lb.)—10 kg/cm <sup>2</sup> (22 lb.)	
<b>Dimensions</b>	485(Body)	500(W) x 245(H) x 550(D) mm (19.7 x 9.6 x 21.7 in.)
	486(Air unit)	150(W) x 100(H) x 300(D) mm (5.9 x 3.9 x 11.8 in.)
<b>Weight</b>	485(Body)	35 kg (77 lb.) without solder
	486(Air unit)	3.5 kg (7.7 lb.)

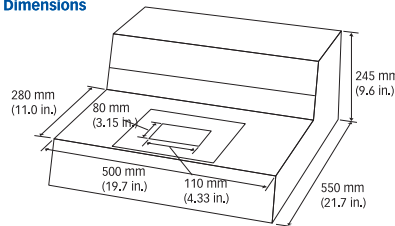
### REPLACEMENT PARTS

Part No.	Description
486	Air unit
485-N-01	14/16 Pin nozzle
485-N-02	18/20 Pin nozzle
485-N-03	28 Pin nozzle
485-N-04	42 Pin nozzle
485-28	14/16 Pin air hood
485-29	18/20 Pin air hood
485-30	28 Pin air hood
485-31	42 Pin air hood
485-026B	Anti-oxidizer
B2932	Spatula
485-10	Lamp (6V-10W)
485-H-V12	Heating element 400W/120V
485-06	Sensor/CA
485-07	IC tweezers

**Note:** Due to the increased use of Lead-Free and other solder compositions, the 485 is shipped with an empty solder pot. Previously, customers would have to empty and clean the solder pot when using any solder other than the supplied Sn63 alloy. Shipping the 485 without solder will save time and effort for the end-user.



Outer Dimensions



### CONTENTS

Part No.	Description	Part No.
<b>485-V12</b>	Body	486
	Air unit	485-N-01
	14/16 Pin nozzle	485-N-02
	18/20 Pin nozzle	485-N-03
	28 Pin nozzle	485-N-04
	42 Pin nozzle	485-28
	14/16 Pin air hood	485-29
	18/20 Pin air hood	485-30
	28 Pin air hood	485-31
	42 Pin air hood	485-07
	IC tweezers	485-026B
	Anti-oxidizer	B2932
	Spatula	485-10
	Lamp (6V-10W)	485-22
	Horizontal gauge	485-20
	Positioning board	485-23
	Waste collector	485-26
Locator light	485-24	
Air hood holder with hose Cable	485-60	
Foot switch (connected to body)		
<b>485-1-V12</b>	Includes 485-V12 except 486, 485-28, 485-29, 485-30, 485-31, 485-24	



HakkoUSA.com

Desoldering



The Hakko FM-204 is a versatile desoldering and soldering station.

# FM-204

## DESOLDERING AND SOLDERING STATION

CONTENTS	
Part No.	Description
FM204-01	FM-204 desoldering station Desoldering handpiece (P/N: FM2024-02) Iron holder with 599B tip cleaner (P/N: FH200-05) Cleaning drill (P/N: B2873) Nozzle remover (P/N: B2876) Ceramic paper filter (10 pcs) (P/N: A1514) Key card (P/N: B2972) Connector cord (P/N: B3253) Power cord (P/N: B2419)
<i>Tips and Nozzles NOT included</i>	

SPECIFICATIONS	
DESOLDERING AND SOLDERING STATIONS	
	FM-204
Part Number	FM204-01
Power Consumption	120 W (120 V)
Temperature Range	200°C - 450°C (400°F - 840°F)
Temperature Stability	±5°C (±9°F) at idle temperature
Station Output	24 V
Dimensions	160 (W) x 120 (H) x 225 (D) mm (6.3 x 4.7 x 8.9 in.)
Weight	3.7 kg (8.1 lbs.)
Vacuum Generator	Vacuum Pump, Double Cylinder
Vacuum Pressure (Max.)	80 kPa (600 mm Hg) (24 in. Hg)
Suction Flow	15 L/min

U.S. Patent numbers D480,522, D590,853.

### Features and Benefits

- Built in vacuum pump
- Meets or exceeds J-STD-001 requirements
- **Placing the iron into the iron holder activates the sleep mode**
- Can be used for soldering with the FM-2027 soldering iron (not included)
- Quick-change composite nozzle (N3 series)
- Choose either gun or pencil style handpiece

### NOTE:

P/N: **FM204-01** ships with one (1) FM-2024 desoldering handpiece.

P/N: **FM204-CP** ships with one (1) FM-2024 desoldering handpiece and one (1) FM-2027 soldering handpiece.

### FM-204 Available Accessories



FM-204 Gun



FM-204 Pencil



FM204-CP



FM-204 Back Sleep Port

For additional FM-204 accessories please see pages 17-18.

FM-204 Desoldering Handpiece	
Part Number	FM2024-02
Power Consumption	70 W (24 V)
Temperature range	350°C - 450°C (660°F - 840°F)
Tip to ground resistance	< 2 Ω
Tip to ground potential	< 2 mV
Length (w/o cord)	180 mm (7.1 in.)
Weight (w/o cord & hose)	65g (2.3 oz.)
Length of Cord	1.2 m (4.0 ft.)
Nozzles	N3 Series Nozzles

The Hakko FM-205 is a "shop air" desoldering station with all the "soldering" functionality of the FM-203 in a single-port station.

### Features and Benefits

- Requires Shop Air
- Digital Temperature Control
- Temperature range 200 - 450°C (400 - 840°F)
- Meets or exceeds J-STD-001 requirements
- Uses composite nozzles for improved thermal performance.
- Quick-change composite nozzles (N3 series)
- Uses low cost disposable filter cartridges
- Can be used as a soldering station with a Hakko FM2027 connector
- Gun or Pencil-style desoldering handpiece
- Less prone to clogging as compared to older desoldering stations when used on lead free applications
- Includes low temperature alarm, sleep mode functionality and auto power off

### NOTE:

P/N: **FM205-01** ships with one (1) FM2024-02 desoldering tool.



HakkoUSA.com

Desoldering

# FM-205

## DESOLDERING AND SOLDERING STATION

### SPECIFICATIONS

DESOLDERING AND SOLDERING STATIONS		FM-205 (Req. Shop Air)
<b>Part Number</b>	<b>FM205-01</b>	
<b>Power Consumption</b>	80 W (120 V 60 HZ)	
<b>Temperature Range</b>	200°C - 450°C (400°F - 840°F)	
<b>Temperature Stability</b>	±5°C (±9°F) at idle temperature	
<b>Station Output</b>	24 V	
<b>Dimensions</b>	160 (W) x 120 (H) x 225 (D) mm (6.3 x 4.7 x 8.9 in.)	
<b>Weight</b>	3.4 kg (7.5 lbs.)	
<b>Vacuum Generator</b>	Ejector Type	
<b>Vacuum Pressure (Max.)</b>	93 kPa (700 mm Hg) (28 in. Hg)	
<b>Suction Flow</b>	20 L/min	
<b>Applied Air Pressure</b>	490 kPa (71 PSI) When in use (trigger or button is pressed)	
<b>Comp. Air Consumption</b>	46 L/min	

### CONTENTS

Part No.	Description
<b>FM205-01</b>	FM-205 desoldering station Desoldering handpiece (P/N: FM2024-02) Iron holder with 599B tip cleaner (P/N: FH200-05) Cleaning drill (P/N: B2873) Nozzle remover (P/N: B2876) Ceramic paper filter (10 pcs) (P/N: A1514) Key card (P/N: B2972) Connector cord (P/N: B3253) Power cord (P/N: B2419)
<i>Tips and Nozzles NOT included</i>	

U.S. Patent numbers D480,522, D590,853.



HakkoUSA.com

Desoldering

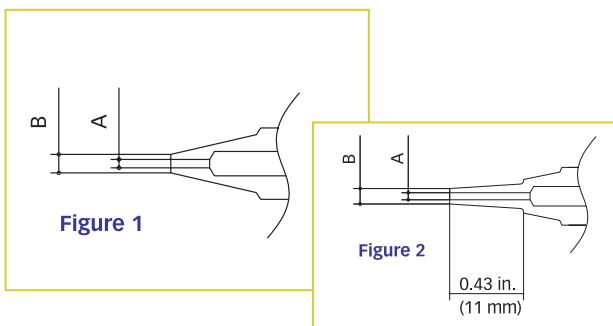


**Note:** Requires shop air.  
Soldering station not included.

# FM-2024

## DESOLDERING MODULE

For use with FM-203



### REPLACEMENT NOZZLES

Nozzle (Figure 1)

Part No.	Part Name	A	B
N3-06	Nozzle, 0.6 mm (0.02 in.)	0.6 mm (0.02 in.)	1.9 mm (0.07 in.)
N3-08	Nozzle, 0.8 mm (0.03 in.)	0.8 mm (0.03 in.)	2.0 mm (0.08 in.)
N3-10	Nozzle, 1.0 mm (0.04 in.)	1.0 mm (0.04 in.)	2.2 mm (0.09 in.)
N3-13	Nozzle, 1.3 mm (0.05 in.)	1.3 mm (0.05 in.)	2.6 mm (0.10 in.)
N3-16	Nozzle, 1.6 mm (0.06 in.)	1.6 mm (0.06 in.)	3.0 mm (0.12 in.)
N3-20	Nozzle, 2.0 mm (0.08 in.)	2.0 mm (0.08 in.)	3.4 mm (0.13 in.)
N3-23	Nozzle, 2.3 mm (0.09 in.)	2.3 mm (0.09 in.)	3.8 mm (0.15 in.)

Nozzle (Figure 2)

Part No.	Part Name	A	B
N3-L10	Long nozzle, 1.0 mm (0.04 in.)	1.0 mm (0.04 in.)	2.3 mm (0.09 in.)

U.S. Patent number D480,522.

The Hakko FM-2024 Desoldering Module increases the versatility of your Hakko FM-203 giving you a complete soldering and desoldering system.

The configurable handpiece uses quick-change composite nozzles and allows you to choose either a gun style or pencil style handpiece.

### SPECIFICATIONS

#### Desoldering Handpiece

Power Consumption	70 W (24 V)
Temperature Range	350°C- 450°C (660°F- 840°F)
Length w/o cord	180 mm. (7.09 in.)
Length of cord	1.2 m (4 ft.)
Weight w/o cord & hose	65g (2.3 oz.)
Tip to Ground Resistance	< 2Ω
Tip to Ground Potential	< 2mV

#### Desoldering Control Box

Power Consumption	12 W
Output	24 V
Applied Air Pressure	490 kPa when in use
Air Consumption	1.62 cfm (46 l/min.)
Vacuum Generator	Ejector Type
Vacuum Pressure (max.)	93 kPa (700 mmHg) (28in. Hg)
Suction Flow	20 L/min
Tip to Ground Potential	< 2mV
Outer Dimensions w/o cord	119(W) x 45 (H) x 172 (D) mm (4.7 x 1.8 x 6.8 in.)
Weight	1.2 kg (2.6 lbs.)

### FILTERS AND ACCESSORIES

Part No	Description
A1514	Ceramic paper filter (set of 10)
A1511	Filter pipe assembly (set of 10)
999-216	Air hose kit

See page 32 for a list of cleaning pins.

### CONTENTS

Part No.	Description
<b>FM2024-21</b>	Desoldering tool w/handle (P/N:FM2024-02)
For use with FM-203	Desolder Control Box (P/N: C1492)
	Iron Holder (P/N: FH200-05)
	Cleaning Drill (P/N: B2873)
	Ceramic Filters (P/N: A1514)
	Nozzle Remover (P/N: B2876)
	Connector Cord (P/N: B3253)
	Soldering station and nozzle not included



FM2024-21

The Hakko FR-410 is a high power, 140-watt desoldering station for desoldering components on multi-layer printed wiring boards, small land patterns, and difficult to reach lands in narrow spaces.

The FR-410 delivers nearly three times more heating power than previous models, and its unique features increase desoldering work efficiency.

The station also includes the same popular features from the Hakko FR-400 including:

- (ACF) Special Anti-clogging Feature
- Advance Vacuum System for instant high-power vacuum
- Improved Heater Core to reduce solder clogging
- Large, easy-to-read LCD display

## SPECIFICATIONS

Part No.	FR410-02	FR410-03
Input Voltage	120 VAC 50/60 Hz	
Power Consumption	190 W	
Temperature Range	620°F – 850°F (330°C – 450°C)	
Temperature Stability <sup>1</sup>	±9°F (±5°C) at idle	
Temperature Control	Microprocessor control using closed-loop sensor	
Temperature Presets	3 – User Programmable	
Sleep Enabled	Yes	
Auto Power Off Safety	Yes	
Low Temp Alarm	Yes	
Process Control Lockout	Yes - Password	
Output Voltage	24 V	
Dimension (W x H x D)	6.5 x 5.4 x 9.6 in. (165 x 137 x 244 mm)	
Weight	10.6 lb. (4.8 kg)	
ESD Safe	Yes	

<sup>1</sup> – Within the set temperature range of 400-899°F (200-480°C).

## CONTENTS

Part No.	Description	Part No.
<b>FR410-02</b>	Gun-Style Handpiece Holder for FR-4101 handpiece	<b>FR-4101</b> <b>FH410-81</b>
<b>FR410-03</b>	Pencil-Type Handpiece Holder for FR-4102 handpiece	<b>FR-4102</b> <b>FH410-02</b>
<b>FR410-02</b> <b>FR410-03</b>	Maintenance Kit (6 pcs) 1.0mm Cleaning Pin Heater Cleaning Pin 1.0mm Cleaning Drill Nozzle Wrench Station Filter (x2) Handpiece Filter (x4) Power Cord Instruction Manual	C5030 B1087 B1215 B1303 B5106 A5020 A1033 B2419

A wide selection of nozzles are available for a variety of desoldering applications. See page 33 for N61 nozzles.

FR410-02 with FR-4101  
Gun-Type Handpiece



See the **Video**  
Online

HakkoUSA.com

FR-4102 Pencil-Type  
Handpiece



Basic maintenance kit with an assortment of basic tools included.

# FR-410

## DESOLDERING TOOL

### CLEANING PINS

Part No	Description
<b>B2874</b>	0.6mm cleaning pin
<b>B1086</b>	0.8mm cleaning pin
<b>B1087</b>	1.0mm cleaning pin
<b>B1088</b>	1.3mm cleaning pin
<b>B1089</b>	1.6mm cleaning pin
<b>B2875</b>	2.0-2.3mm cleaning pin
<b>B1215</b>	Heater cleaning pin

### CLEANING DRILLS

Part No.	Description
<b>B1302</b>	Cleaning Drill, 0.8 mm
<b>B1303</b>	Cleaning Drill, 1.0 mm
<b>B1304</b>	Cleaning Drill, 1.3 mm
<b>B1305</b>	Cleaning Drill, 1.6 mm
<b>B5141</b>	Cleaning Drill, 0.6 mm



Large transparent filter to protect the pump from contamination. Transparent cover allows quick visual check of filter condition.



HakkoUSA.com



HakkoUSA.com

Desoldering



# FR-4101

DESOLDERING GUN FOR FR-410

### Soldering Iron - Handpiece

Model Number	FR-4101	FR-4102
Part Number	FR4101-81	FR4102-81
Power Consumption	140 W	
Nozzle-to-Ground Resistance	< 2 ohms	
Nozzle-to-Ground Potential	< 2 mV	
Heater	HAKKO Composite Ceramic™	
Nozzles	N61 Series	
Standard Nozzle (Included)	N61-05 (0.04 in. / 1.0 mm)	
Cord Length	4 ft. (1.2 m)	
Total Length (w/o cord)†	6.6 in. (168 mm)	8.1 in. (206 mm)
Weight (w/o cord)†	0.38 lb. (170 g)	0.35 lb. (160 g)

† As measured with N61-05 nozzle installed

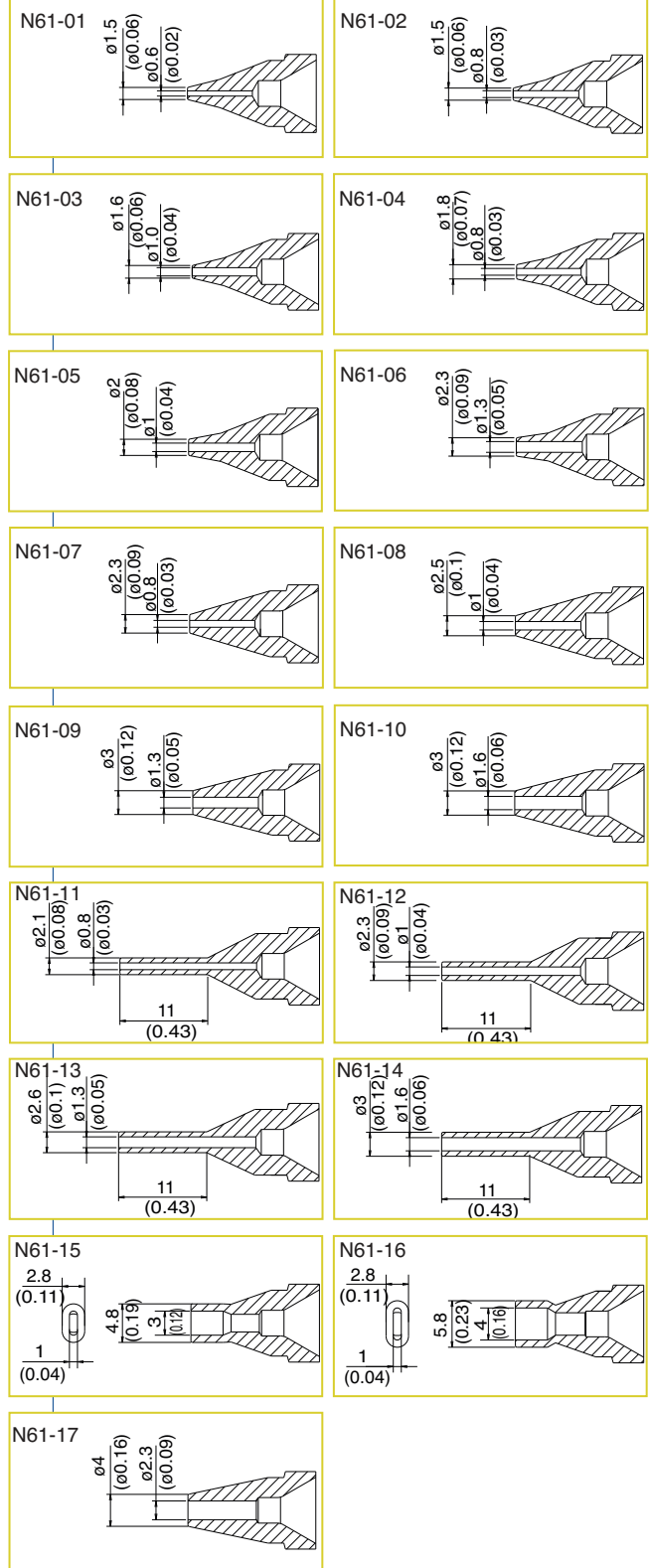


# FR-4102

DESOLDERING PENCIL FOR FR-410

### N61 Series Nozzles

UNIT: mm (inch)

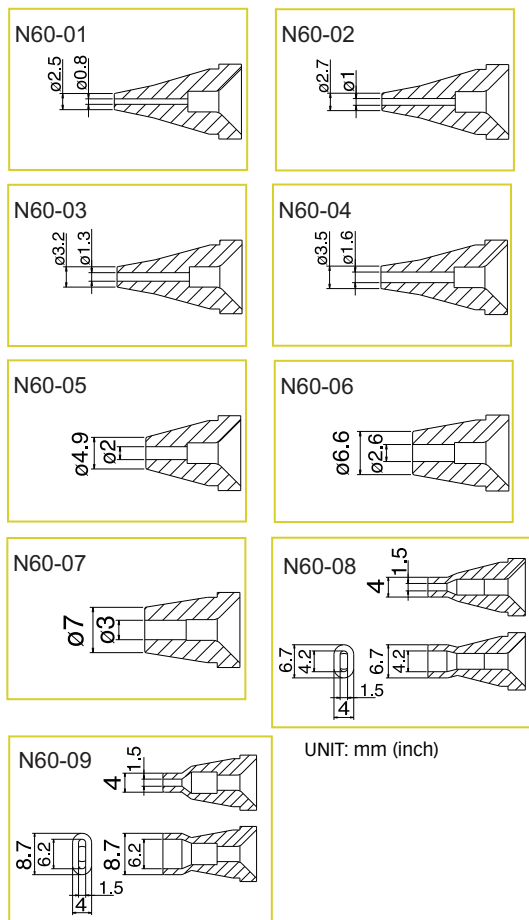


The Hakko FR-400 Ultra Heavy Duty desoldering station is specifically designed for the difficult rework of extremely large mass components, such as high current inductor coils, heat sinks, large transformers, shields, and other connections where there is a significant amount of thermal inertia that must be overcome.

### FEATURES

- 300W Heating Element. Top Controlled Temperature of 940°F (500°C). The high mass of the heater and nozzles combined with the power and control of the composite ceramic heating cartridge allows for rework of some of the most challenging solder joints at only 750°F (400°C) and without preheating.
- (ACF) Anti-Clogging Feature helps ensure instantaneous application of peak vacuum pressure to the solder joint. This prevents the premature release of the vacuum system before the solder has cleared the heater and is captured in the solder collector chamber.
- Large Solder Collection Chamber. The solder collection chamber is 3X larger in capacity than other Hakko desoldering stations, and it can be cleaned and re-used, reducing environmental waste.
- Large Easy-to-Read Display. The display includes a vacuum indicator that lets you know if there are any restrictions building that will need to be cleaned out using the tools that are in the maintenance kit (included with the station).

### N60 Series Nozzles



U.S. Patent number D480,522.



# FR-400

## ULTRA HEAVY DUTY DESOLDERING STATION

### SPECIFICATIONS

<b>Model Number</b>	FR-400
<b>Part Number</b>	FR400-02
<b>Input Voltage</b>	120 VAC 50/60 Hz
<b>Power Consumption</b>	320 W
<b>Temperature Range</b>	660° - 930°F (350°C - 500°C)
<b>Temperature Stability</b>	±9°F (±5°C) at idle
<b>Vacuum Generator</b>	Pump - Double Cylinder
<b>Vacuum Pressure (max)</b>	80 kPa / 600 mm Hg (24 in. Hg)
<b>Output Voltage</b>	29 V
<b>Suction Flow</b>	15 l/min
<b>Outer Dimensions (W x H x D)</b>	6.3 x 5.4 x 9.3 in.
<b>Weight (w/o cord)</b>	12.6 lb. (5.7 kg)
<b>ESD Safe</b>	Yes

### Soldering Iron - Handpiece

<b>Model Number</b>	FR-4001
<b>Part Number</b>	FR4001-81
<b>Power Consumption</b>	300 W (29 V)
<b>Nozzle-to-Ground Resistance</b>	< 2 ohms
<b>Nozzle-to-Ground Potential</b>	< 2 mV
<b>Heater</b>	HAKKO Composite Ceramic™
<b>Nozzles</b>	N60 Series
<b>Standard Nozzle (included)</b>	N60-02 (1.0mm / 0.04 in.)
<b>Cord Length</b>	4 ft. (1.2 m)
<b>Total Length (w/o cord)*</b>	7.2 in. (183 mm)
<b>Weight (w/o cord)*</b>	0.54 lb. (245 g)

\*As measured with N60-02 nozzle installed.

### CONTENTS

Part No.	Description	Part No.
FR400-02	Gun-Style Handpiece	FR4001-81
	Holder for FR-4001 handpiece	FH400-82
	Maintenance Kit (6 pcs)	C5011
	1.0mm Cleaning Pin	B1087
	Heater Cleaning Pin	B1215
	1.0mm Cleaning Drill	B1303
	Nozzle Wrench	B5082
	Station Filter (x2)	A5020
	Handpiece Filter (x4)	A5019
	Power Cord	B2419
	Instruction Manual	


[HakkoUSA.com](http://HakkoUSA.com)

Desoldering



# FR-300

## DESOLDERING TOOL

### SPECIFICATIONS

<b>Part No.</b>	FR300-05/P
<b>Voltage</b>	120 V
<b>Power Consumption</b>	140 W
<b>Temperature Range</b>	350°C - 500°C (660°F ~ 930°F)
<b>Tip to Ground Resistance</b>	<2 Ω
<b>Tip to Ground Potential</b>	<2 mV
<b>Vacuum Pump</b>	Diaphragm pump
<b>Vacuum Pressure</b>	81 kPa (610 mm Hg)
<b>Suction Flow</b>	11 L/min
<b>Standard Nozzle</b>	1.0 mm N50-04
<b>Length of the Power Cord</b>	1.8 m (5.9 ft)
<b>Dimensions</b>	210 (W) × 226 (H) × 49 (D) mm (8.3 × 8.9 × 1.9 in.)
<b>Weight (w/o cord)</b>	0.52 kg (1.1 lb.)

### REPLACEMENT PARTS

Part No.	Description
A5000	Heating element (120V)
B5016	Pre-filter (Aluminum) 5 pcs.
A1033	Ceramic paper filter (Large) set of 10 pcs.
B5017	Filter pipe
A1217	Front holder
B5020	Back holder bushing
B5014	Quick change nozzle enclosure

### CONTENTS

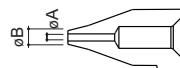
Part No.	Description	Part No.
FR300-05	Desoldering tool	N/A
	Filter pipe	B5017
	Pre-filter (Aluminum) (1 installed, 1 replacement)	B5016
	Ceramic paper filter (Large) (1 installed, 2 replacements)	A1033
	Cleaning pin for 1.0 mm nozzle	B1087
	Cleaning pin for heating element	B1085
	1.0mm nozzle (1 installed)	N50-04
	Quick change nozzle tool	B5015
	Holder	C5003
	Tool case	C5000
	Instruction manual	N/A

The FR-300 desoldering tool puts the performance of an industrial desoldering station into a compact and lightweight hand tool that can be used on the workbench, or in the field. This new tool incorporates much of what you have been asking for— a longer power cord to provide the extra reach, integrated power switch to turn the tool off when not in use, and a quick change nozzle system.

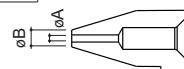
### Features and Benefits

- New N50 Series desoldering nozzles optimize performance
- Easy-to-clean solder recovery chamber minimizes maintenance and reduces waste
- Fast release tool for the quick-change nozzle system
- Closed-loop sensor integrated heating system for improved thermal performance
- Compatible with Lead-Free solders
- Ergonomic grip design to minimize stress on your hand and wrist
- New pump design that lowers vibration and noise, but improves vacuum pressure and flow
- Easy-to-use adjustable temperature control built into the handle
- Includes storage case and maintenance accessories

### N50 Nozzles for Hakko FR-300



Part No.	∅A	∅B
N50-01	0.8 (0.03 in)	2.0 (0.08 in)
N50-02	1.0 (0.04 in)	2.0 (0.08 in)



Part No.	∅A	∅B
N50-03	0.8 (0.03 in)	2.5 (0.1 in)
N50-04	1.0 (0.04 in)	2.5 (0.1 in)
N50-05	1.3 (0.05 in)	3.0 (0.12 in)
N50-06	1.6 (0.06 in)	3.0 (0.12 in)



P/N: 633-01



P/N: 633-02



The Hakko FM-2022 SMD Parallel Remover uses revolutionary parallel action between the tip ends (one tip remains stationary) allowing greater surface contact between the tip and the component and providing more efficient and even heat transfer.



For use with FM-203 or FM-206

# FM-2022

## SMD PARALLEL REMOVER

Whether removing small chips or larger SOP components, the parallel action of the FM-2022 also allows for a more secure hold on the component.

- The Parallel Remover uses the same quick-change composite tip technology as the FM-203 soldering station
- A fixing collar properly aligns the tips opposite each other
- Changing tips for different types of components has never been easier

### SPECIFICATIONS

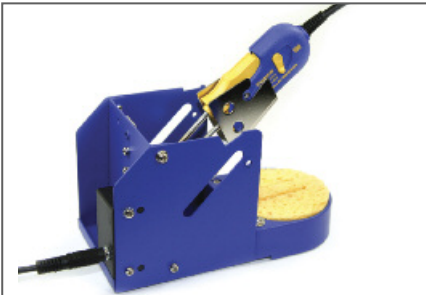
	FM-2022	FM-2023
<b>Power Consumption</b>	140 W (24V)	
<b>Temperature Range</b>	200°C - 400°C (400°F - 750°F)	200°C - 400°C (400°F - 752°F)
<b>Tip to ground resistance</b>	< 2 Ω	
<b>Tip to ground potential</b>	< 2 mV (typical 0.6mV)	
<b>Length, less cord &amp; tip</b>	110 mm (4.3 in.)	75 mm (3.0 in.)
<b>Weight, less cord &amp; tip</b>	53g (1.9 oz.)	32g (1.1 oz.)
<b>Length of Cord</b>	1.2 m (4ft.)	
<b>Tips</b>	T16 Series Tips	T9 Series Tips
<b>Weight</b>	53 g (1.9 oz.) (w/o Tip)	37 g (1.28 oz.) (w/T9-I Tip)
<b>Temperature Stability</b>	±5°C (9°F) at idle temperature	

#### FM2022-05 Contents

Description	Part No.
FM-2022 SMD Parallel Remover	FM2022-02
Iron Holder w/Sponge	FH200-03
Heat Resistant Pad	B2300
Connector Cord	B3253

#### FM2023-05 Contents

Description	Part No.
FM-2023 Mini Hot Tweezer	FM2023-02
Iron Holder w/Sponge	FH200-04
Component Bed	B2849
Standard Tip	T9-I
Heat Resistant Pad	B2300
Connector Cord	B3253






For use with FM-203 or FM-206

# FM-2023

## SMD MINI HOT TWEEZER

The Hakko FM-2023 is designed for use with small chip components as small as 0201. The Mini Hot Tweezer has a unique feature allowing it to work as a standard or reverse action tweezers. A simple flip of a switch sets the action of the tool.

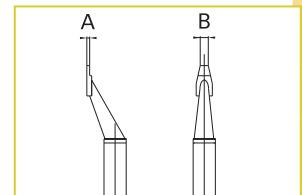
The FM-2023 must be used in conjunction with an FM-203 soldering station or an FM-206 3 port rework station.

Part No.	Size A [a]	Shape
T9-I	R0.2 (0.008)	
T9-L1	1.0 (0.04)	
T9-L2	2.0 (0.08)	

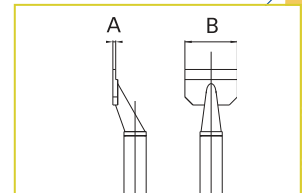
U.S. Patent numbers D489,236, D491,030, D542,110.

UNIT: mm (inch)

CHIP	A	B
T16-1001	0.2 (0.008)	N/A
T16-1002	0.7 (0.03)	0.5 (0.02)
T16-1003	0.7 (0.03)	1.0 (0.04)
T16-1004	0.7 (0.03)	2.0 (0.08)
T16-1013	0.7 (0.03)	3.0 (0.12)



SOP	A	B
T16-1005	0.7 (0.03)	6.0 (0.24)
T16-1006	0.7 (0.03)	8.0 (0.31)
T16-1007	0.7 (0.03)	10.0 (0.39)
T16-1008	0.7 (0.03)	13.0 (0.51)
T16-1009	0.7 (0.03)	16.0 (0.63)
T16-1010	0.7 (0.03)	20.0 (0.79)
T16-1011	0.7 (0.03)	25.0 (0.98)
T16-1012	0.7 (0.03)	18.0 (0.71)

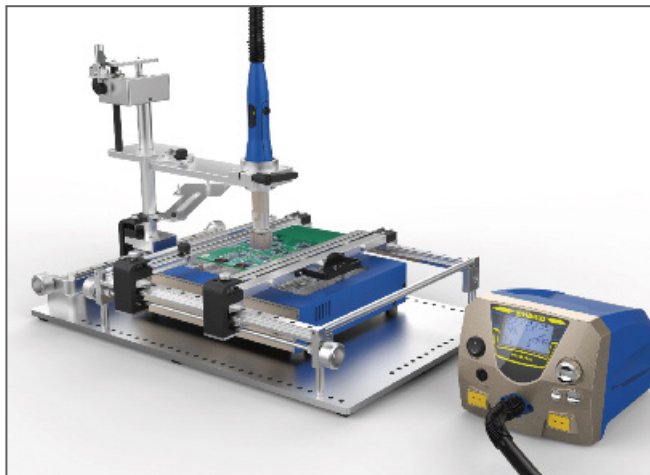


#### FM2023-05 Conversion Kit



U.S. Patent numbers D505,053, D489,236.

Desoldering



HakkoUSA.com

# FR-811

## SMD Hot Air Rework Station with Vacuum Pickup

### SPECIFICATIONS

Part No.	FR811-04
Input Voltage	120 VAC 50/60 Hz
Power Consumption	820 W
Heater Power Consumption	790 W
Airflow Source	Turbine
Airflow Capacity <sup>1</sup>	Setting 1-100% (115 L/min Max)
Vacuum Function	Yes
Temperature Range <sup>2</sup>	50°C - 600°C (120°F - 1120°F)
Thermocouple Inputs	2 - Type K
External Connections	1 - USB-A 1 - USB Mini B
Operating Modes	Manual or Automatic
Memory	50 x 6 Stage + Preheat
Process Control	Password Lockout
Auto Power Off Safety	Yes
Auto Cooling Safety	Yes
Presets	6 - User Programmable
Handpiece Length (w/o Cord) <sup>1</sup>	250 mm (9.8 in.)
Handpiece Weight (w/o Cord) <sup>1</sup>	180 g (0.40 lb.)
Nozzles (not included)	N51 Series
Station Dimensions (W x H x D)	160 x 145 x 220 mm (6.3 x 5.7 x 8.7 in.)
Station Weight (w/o Cord)	1.5 kg (3.3 lb.)
Safety Approval	cMETus
ESD Safe	Yes

<sup>1</sup> Airflow capacity is rated as free flowing. Restrictions created by various nozzles may reduce the maximum airflow capacity.

<sup>2</sup> Under certain airflow and temperature setting conditions, the station may not attain the maximum allowable temperature selection.

### Features:

- Stand-alone holder with safety shield
- Auto power off for safety
- Clear and easy to read graphic user interface
- Incorporates continuous closed-loop feedback control
- Thin wall nozzle design to fit densely populated PCBs

The HAKKO FR-811 SMD Rework System is an affordable and easy to use system that simplifies the hot air rework of SMD components including BTCs such as QFN/DFN and BGA using up to 6 stages for a rework profile, and includes a board only preheating stage to allow for proper reflow at lower top heater temperatures. One thermocouple input provides closed-loop top heat control based on part temperature while the other input provides closed-loop bottom heat control based on PCB temperature.

Included with the HAKKO FR-811 is communication software that allows for PC control of the system, enabling the user to create and modify rework profiles, and the ability to upload them to, or download them from the system.



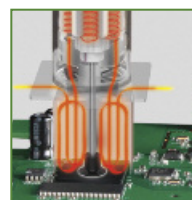
Integrated vacuum pickup with visual reflow indicator that safely lifts the component off the PCB at the right time.



USB to PC interface to allow for PC communication with the system.



USB port for flash drive storage of rework profiles.



Nozzle design to optimize heating and mitigate adjacent reflow, even on densely populated PCBs.

Two remote thermocouple inputs for integrated closed-loop process control



- Nozzle vent system to mitigate adjacent reflow
- Integrated vacuum pickup system that includes a visual indicator for reflow
- External USB connection for flash drive profile storage
- Optional PCB fixture with fine adjustment and quick release capability
- Optional Handpiece fixtures for use with the HAKKO C5016 Bottom Heater or other pre-heaters



The FR-811 SMD Rework System can be used as a stand-alone system or as a complete solution using the optional accessories shown below



Stand-alone holder with safety shield and integrated auto top and cooldown



Optional C5016 Bottom heater that seamlessly integrates with the FR-811 System for complete reflow control.



One-touch adjustable board holder with fine adjustment capability



Option PCB holder (P/N: C5027) is versatile and simple to use.



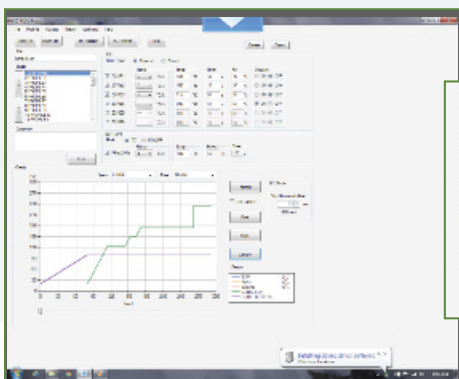
Optional fixturing and support options for PCBs of various sizes and shapes.



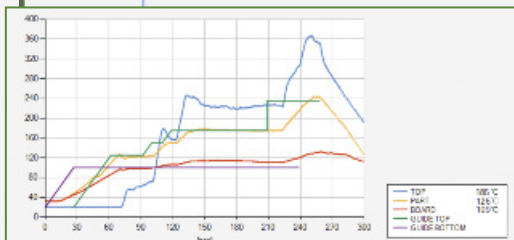
Optional handpiece fixture (P/N: C5028) for use with other preheaters.



Optional handpiece fixture (P/N: C5029) for use with the C5016 Bottom Heater.



Easy to use software for profile creation and monitoring



Integrated component nest assembly compatible with standard CPF stencils or flux trays.

## Self-Contained Turbine Air Source



Advanced  
SMD  
Vacuum  
Pick-Up

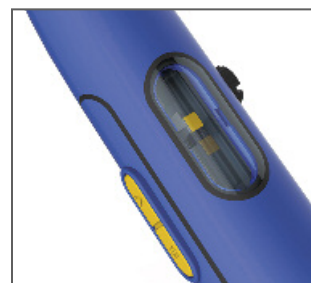
The Hakko FR-810B has a compact and lightweight design (only 3.3 lbs.) and features a quiet, self-contained turbine air supply and built-in SMD vacuum pickup. The new heating element design improves durability, provides a top end temperature of 1120°F (600°C) and eliminates the quartz glass insulator tube. New N51 Series quick change nozzles allows for tool-free installation and removal, and the integrated holder provides automatic safety cool down when the handpiece is not in use.

- Easy to read digital display for both temperature and air level
- Slender handpiece with integrated a vacuum pick-up indicator that indicates when the component has been lifted from the PC Board and a Start/Stop button
- The ability to store up to 5 user programmable presets for temperature, airflow and time
- New Preset Chain feature that allows the operator to link up to 5 presets to run in sequence, simulating a 5-heating zone reflow profile for SMD components
- Auto Power-Off
- Additional new, single jet nozzles with larger sizes
- A quick-change adapter for compatibility with existing Hakko nozzles
- Password Lockout to prevent unauthorized setup changes
- ESD safe by design

**Note: Nozzles not included**



FR-810B with optional board holder and fixture system



Vacuum  
Pick-up  
Indicator



HakkoUSA.com

REWORK

# FR-810B

## SMD Hot Air Rework Station

### SPECIFICATIONS

<b>Part No.</b>	FR810B-05
<b>Standby Power Consumption</b>	120 VAC 60HZ
<b>Power Consumption</b>	820 W
<b>Airflow Setting Range*</b>	1 to 9 (5 to 115L/min.)
<b>Dimensions (W x H x D)</b>	160 x 145 x 220 mm (6.3 x 5.7 x 8.7 in.)
<b>Weight</b>	1.5 kg (3.3 lb.)
<b>Power Consumption</b>	790 W (120 V)
<b>Nozzles</b>	N51 Series
<b>Total Length (w/o cord)</b>	250 mm (9.8 in.)
<b>Weight (w/o cord)</b>	180 g (0.40 lb.)

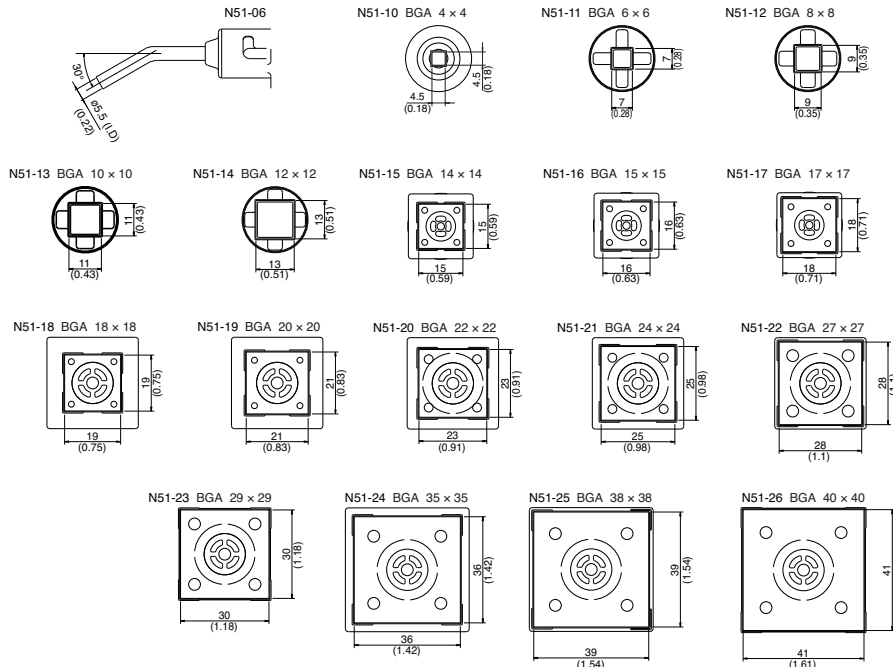
\*Values for airflow are approximate. Actual volume of airflow may be affected by the size and shape of the nozzle used.

### CONTENTS

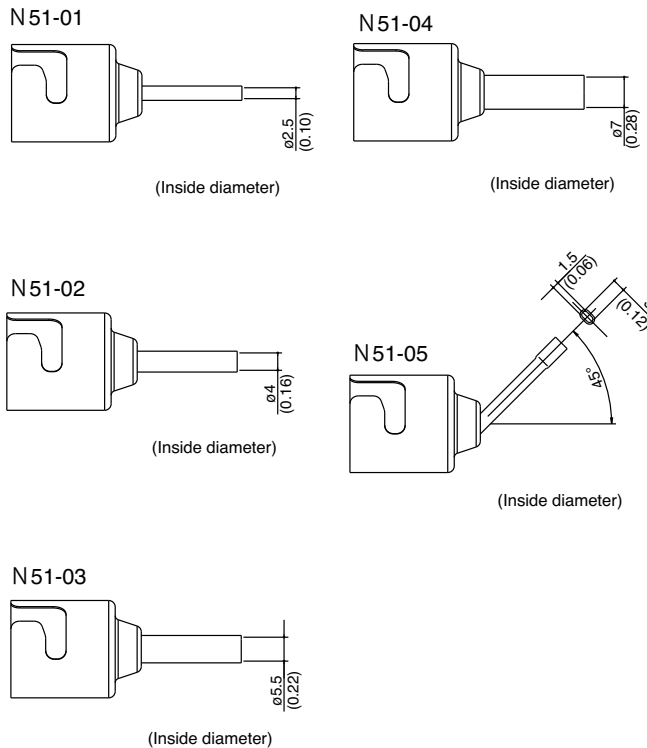
Part No.	Description	Part No.
FR810B-05	Power cord	B5054
	Heat resistant pad	B2300
	Handpiece Holder	B5048
	Large Vacuum Pipe Knob (w/screw)	B3023
	Pad 3.0mm (2 pcs)	A1520
	Pad 5.0mm (2 pcs)	A1439
	Pad 7.6mm (2 pcs)	A1438
	Instruction Manual	

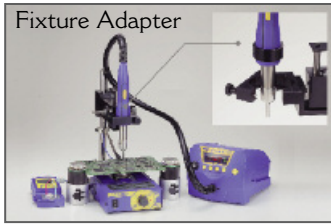
## ■ Nozzle

UNIT: mm (inch)



FR-810B Hot Air Rework Station





## ACCESSORIES



**FR-830 Preheater.**  
Precondition boards for soldering and rework with hot air. Temperature range is 150-300°C (302-572°F).

### FOR "FR Series" REWORK STATIONS



**999-224B Adjustable Boom Stand.** The adjustable boom stand supports the Hakko FR-800 series (FR-801, FR-802, and FR-803B) handpieces.

# 394

## BATTERY OPERATED SMD VACUUM PICK UP TOOL



### Pickup Power

Pad Size (Part No.)	Maximum Item Weight
3 mm (A1166)	6 gf (0.2 ozf)
5 mm (A1312)	40 gf (1.4 ozf)
7 mm (A1167)	80 gf (2.8 ozf)
10 mm (A1311)	120 gf (4.2 ozf)

### Service life of battery

Pickup repetition limit	Continuous Pickup time
Approx. 30,000 pickup times	Approx. 15 hours

### SPECIFICATIONS

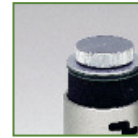
<b>Part No.</b>	394-01
<b>Power Supply</b>	AAA alkaline battery x2
<b>Suction Capacity</b>	120 gf (4.2 ozf) (with pad A1311)
<b>Outer Dimensions</b>	130 mm x 29 mm x 22 mm (5.1 x 1.1 x 0.9 in.)
<b>Weight</b>	Approx. 43 g (1.5 oz) (not including batteries)

### CONTENTS

	Pick up Tool
<b>A1165</b>	Bent nozzle/ 1.1mm (0.04 in.)
<b>A1312</b>	Pad/ 5 mm (0.20 in.)
<b>A1311</b>	Pad/ 10 mm (0.39 in.)
	AAA Alkaline battery

### Replacement Parts

Part No.	Name	Specifications
<b>A1164</b>	Bent Nozzle/0.4 mm (0.02 in.)	
<b>A1165</b>	Bent Nozzle/1.1 mm (0.04 in.)	With Stopper
<b>A1166</b>	Pad/3 mm (0.12 in.)	
<b>A1312</b>	Pad/5 mm (0.20 in.)	
<b>A1167</b>	Pad/7 mm (0.28 in.)	
<b>A1311</b>	Pad/10 mm (0.39 in.)	
<b>A1486</b>	Straight Nozzle/1.1 mm (0.04 in.)	With Stopper
<b>A1198</b>	Nozzle, Bent, Ø 0.26 mm	



**C1390C Omnivise.™**  
Holds boards easily, safely and securely. Unique design allows 360° use. Five adjustable heights. Can accommodate any board size.



**C1392B Rework Fixture.**  
Rack and pinion action for smooth vertical motion. Makes repetitive component removal and installation simple.

# FM-2029

## SINGLE HOT AIR HANDPIECE

For use with FM-206



FM2029-01 Conversion Kit.

### SPECIFICATIONS

<b>Part No.</b>	FM2029-02
<b>Temperature Range</b>	100-550°C/200-1030°F
<b>Power Consumption</b>	140 W/24 V
<b>Nozzle to Ground Resistance</b>	<2 Ω
<b>Nozzle to Ground Potential</b>	<2 mV
<b>Total Length (w/o cord, nozzle)</b>	167 mm (6.57 in.)
<b>Weight (w/o cord, nozzle)</b>	42 g (1.48 oz.)
<b>Length of Cord</b>	1.2 m (4 ft.)
<b>Nozzles</b>	N4 Series

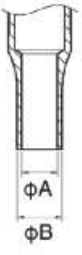
### CONTENTS

Part No.	Description
<b>FM2029-01</b>	Hot Air Handpiece (P/N: FM2029-02)
<b>For use with FM-206</b>	Holder (P/N: C5034)
	Connecting Cable (P/N: B3253)
	Heat Resistant Pad (P/N: B2300)

## FM-2029 REPLACEMENT NOZZLES

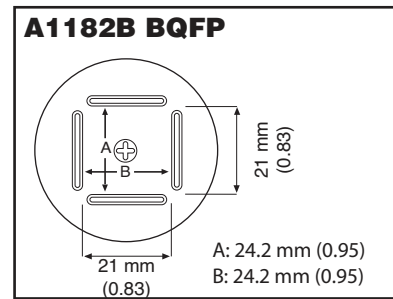
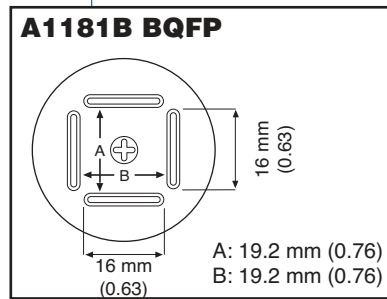
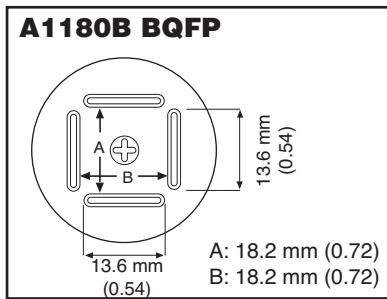
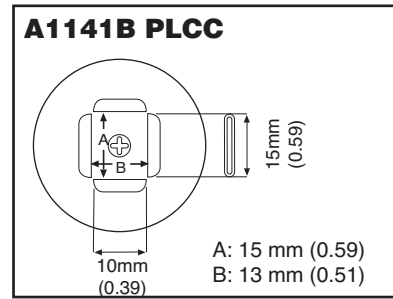
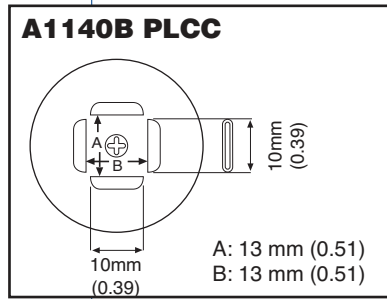
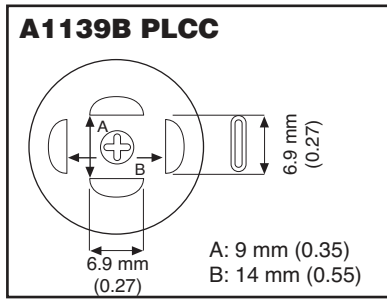
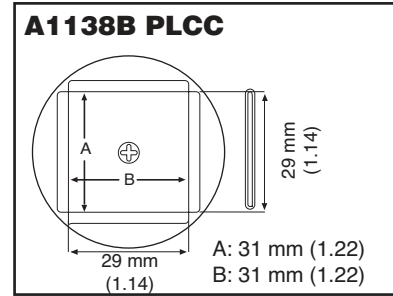
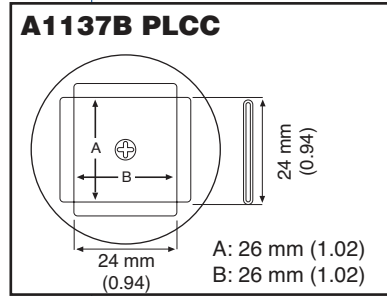
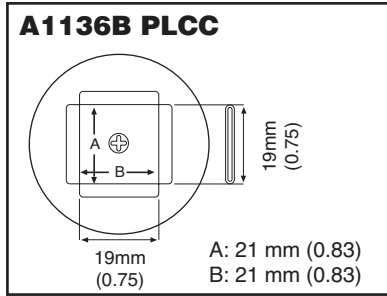
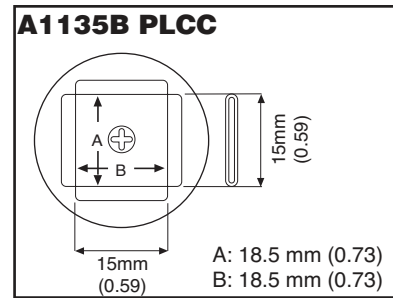
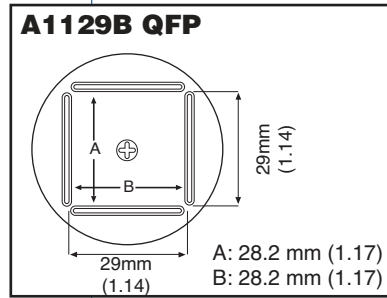
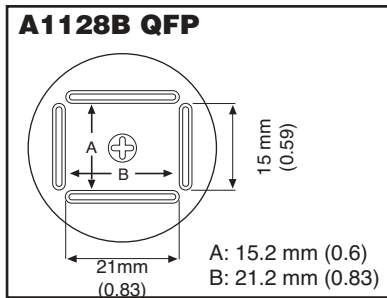
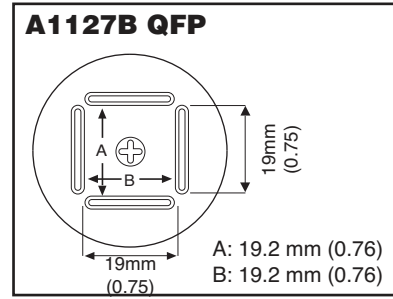
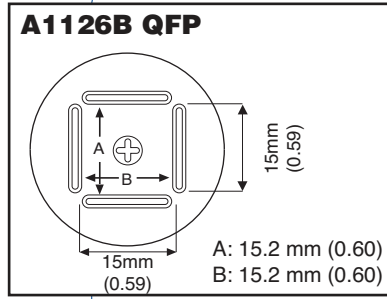
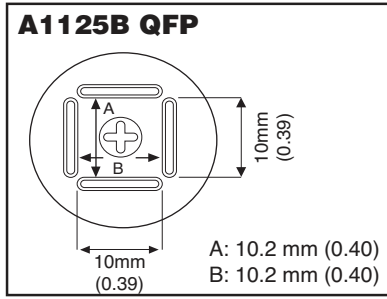
### REPLACEMENT NOZZLES

Part No.		φA	φB
N4-01		2.0mm	2.5mm
N4-02		4.0mm	5.0mm
N4-03		6.0mm	7.0mm
N4-04		8.0mm	9.0mm
N4-05		2.0mm	2.5mm

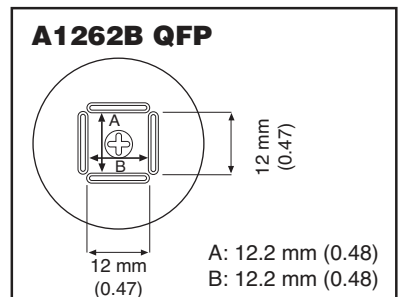
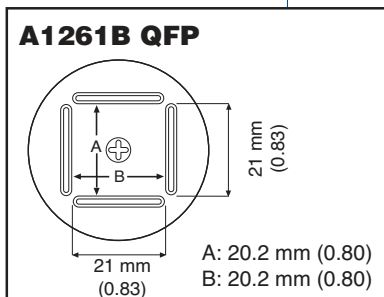
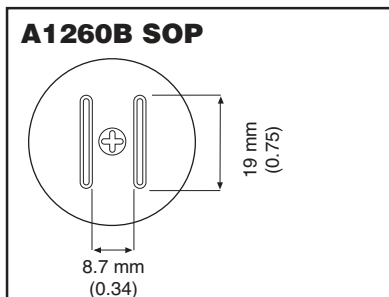
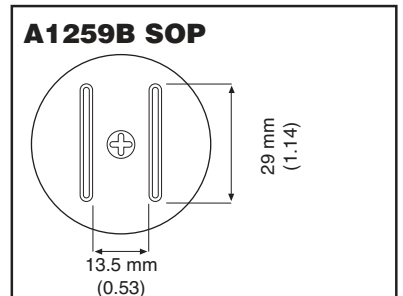
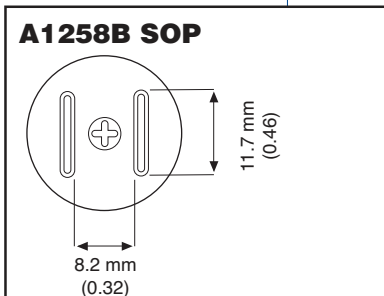
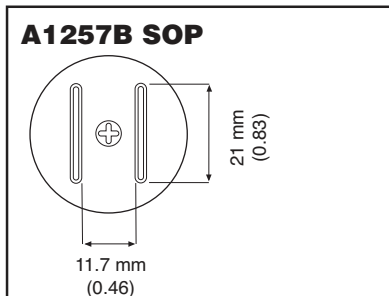
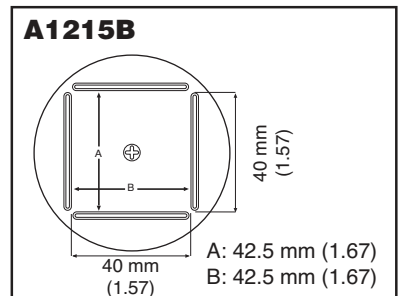
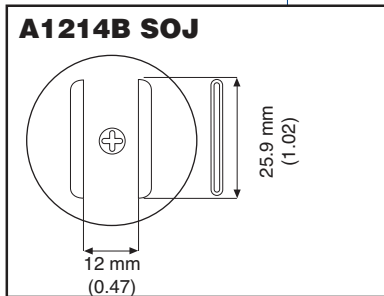
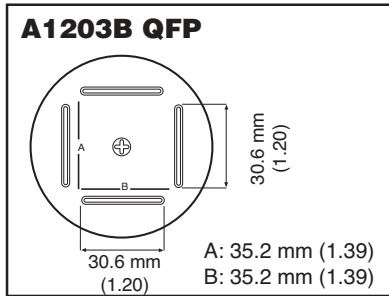
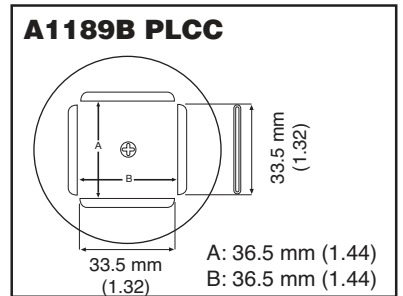
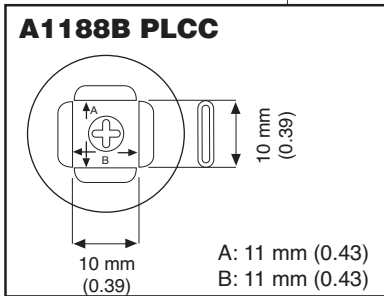
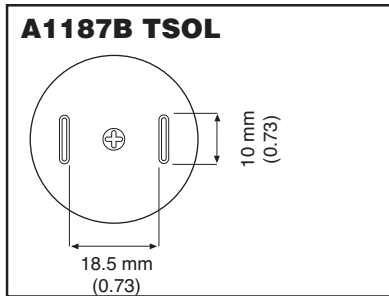
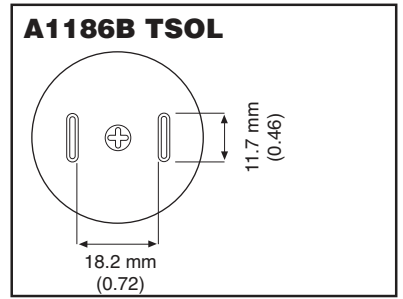
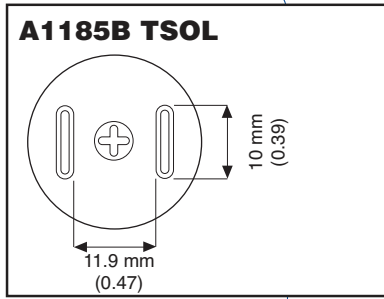
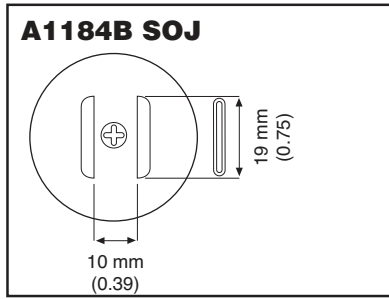


U.S. Patent number D659,496.

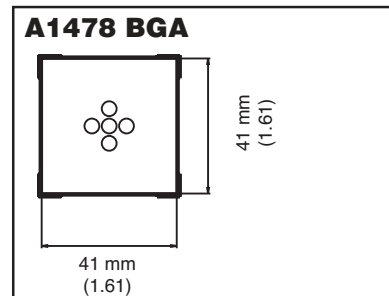
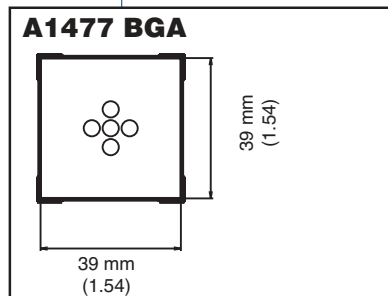
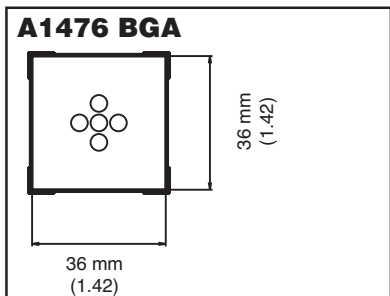
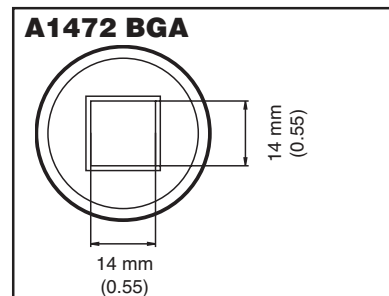
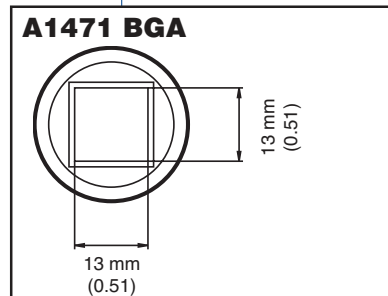
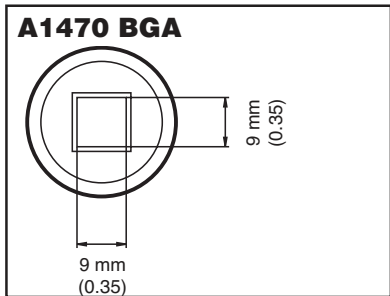
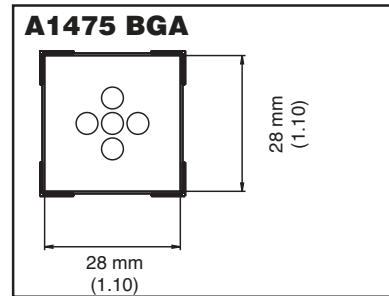
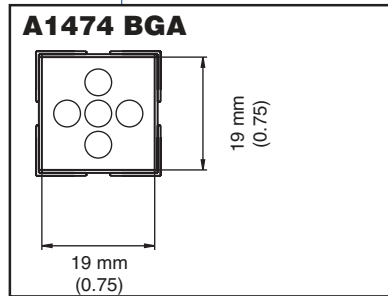
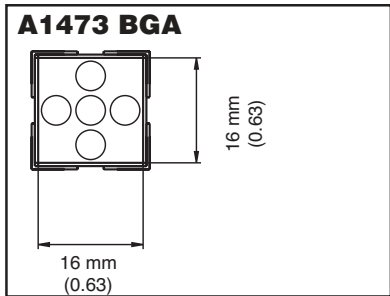
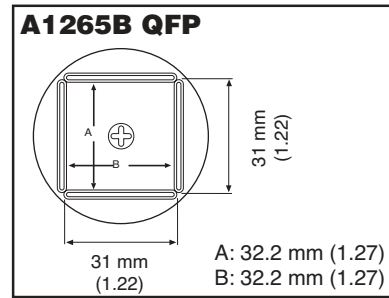
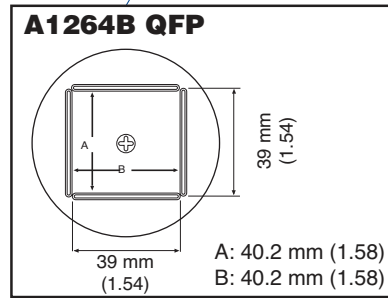
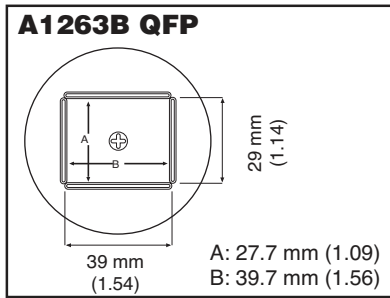
U.S. Patent number D467,048.



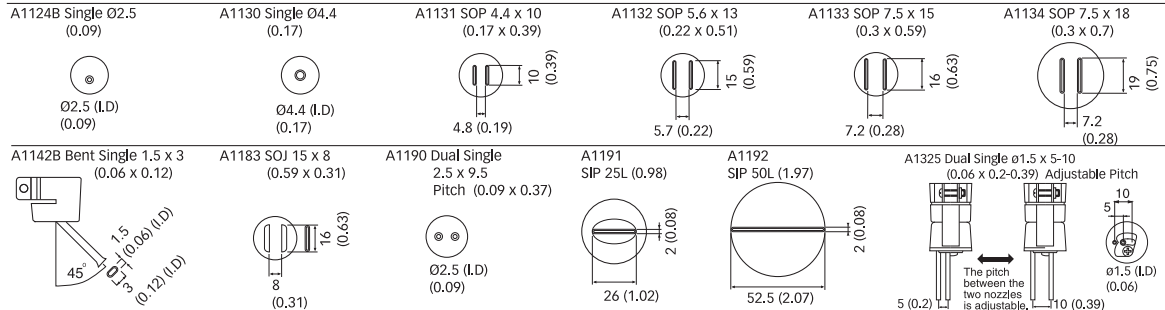
Rework







**•VACUUM FUNCTION INOPERATIVE NOZZLES:** \* When attaching the nozzle to the Hakko FR-803B





# FR-872

## LARGE IR PREHEATER

### SPECIFICATIONS

<b>Part No.</b>	FR872-03
<b>Voltage</b>	120 V
<b>Power Consumption</b>	1440 W
<b>Heater Array</b>	Carbon Filament Lamp x 12
<b>Remote Thermocouple</b>	K-Type
<b>Calibration</b>	Digital Offset
<b>Power Range</b>	0 – 100% (1% Increments)
<b>Temperature Range</b>	50°C - 200°C (122°F - 392°F)
<b>Ramp Rate Select</b>	1, 2, or 3°C/sec
<b>Timer Range</b>	0 – 999 seconds
<b>Operating Modes</b>	Manual – Power Manual – Thermocouple Automatic – Power Automatic – Thermocouple
<b>Heating Control</b>	Power: Percentage-based Thermocouple: PID control
<b>Board Capacity (W x D)</b>	360 x 450 mm (14.1 x 17.7 in.)
<b>Heating Area (W x D)</b>	286 x 350 mm (11.2 x 13.7 in.)
<b>Effective Heating Area (W x D)</b>	224 x 267 mm (8.8 x 10.5 in.)
<b>Zones</b>	4
<b>External Connections</b>	1 – Integrate to FM-206
<b>Dimensions (W x H x D)</b>	360 x 97 x 535 mm (14.2 x 3.8 x 21.1 in.)
<b>Weight (w/o cord)</b>	6 kg (13.2 lb.)



# FR-870B

## 2-BANK IR PREHEATER

- 248 mm x 140 mm PCB capacity
- Soft EPO to protect assemblies
- Integrates with Hakko FM-206
- Manual or Automatic modes of operation
- Preheat control by Power or Thermocouple
- 2 independent switchable zones
- Small footprint and low profile
- Ramp rate control settings of 1, 2, or 3°C/sec.
- Faster than ceramic IR preheating

The Hakko FR-872 IR Preheater includes a software feature to control ramp rate for heating sensitive components. Designed to elevate the temperature of printed circuit board assemblies so the components can be soldered and desoldered more easily and with improved results, particularly on high-mass boards, which can “heat-sink” a significant amount of energy from a soldering iron tip or hot air tool. The FR-872 incorporates a new heating method and a closed-loop thermocouple control. The preheater array has four (4) separate switchable zones for smaller PCBs used in devices similar to PDAs and cell phones.

### CONTENTS

Part No.	Description	Part No.
<b>FR872-03</b>	Power Cord	B5042
	Thermocouple	B3516
	Spare Heating Lamp	A5003

### SPECIFICATIONS

<b>Part No.</b>	FR870B
<b>Voltage</b>	120 V
<b>Power Consumption</b>	1440 W
<b>Heater Array</b>	Carbon Filament Lamp x 12
<b>Remote Thermocouple</b>	K-Type
<b>Calibration</b>	Digital Offset
<b>Power Range</b>	0 – 100% (1% Increments)
<b>Temperature Range</b>	50°C - 200°C (122°F - 392°F)
<b>Ramp Rate Select</b>	1, 2, or 3°C/sec
<b>Timer Range</b>	0 – 999 seconds
<b>Operating Modes</b>	Manual – Power Manual – Thermocouple Automatic – Power Automatic – Thermocouple
<b>Heating Control</b>	Power: Percentage-based Thermocouple: PID control
<b>Board Capacity (W x D)</b>	360 x 450 mm (14.1 x 17.7 in.)
<b>Heating Area (W x D)</b>	286 x 350 mm (11.2 x 13.7 in.)
<b>Effective Heating Area (W x D)</b>	224 x 267 mm (8.8 x 10.5 in.)
<b>Zones</b>	2
<b>External Connections</b>	1 – Integrate to FM-206
<b>Dimensions (W x H x D)</b>	360 x 97 x 535 mm (14.2 x 3.8 x 21.1 in.)
<b>Weight (w/o cord)</b>	6 kg (13.2 lb.)

### CONTENTS

Part No.	Description	Part No.
<b>FR870B-04</b>	Power Cord	B2419
	Thermocouple	B3516
	Spare Heating Lamp	A5003

Optional Part:  
Connecting Cable for FM-206, P/N: B3686

The Hakko FR-830 is a compact and low cost solution for hot air preheating of printed circuit boards. The design of the FR-830 delivers consistent heat through the closed-loop temperature control allowing you to select a preheating temperature between 150° - 300° C (302° - 572°F). The new heater and fan design makes the Hakko FR-830 the most durable hot air preheater Hakko has ever made.

The unit has an optional Extension Pipe to extend the airflow an additional 27 mm (1.1 in.) vertically and a port to allow the preheating cycle to be activated by remote foot switch (B1649) or hand switch (B2763), or integrated with the Hakko FM-206 so the start of the preheating cycle is directly controlled by the rework profile of the attached station.

- Compact design; Measures only 140 x 75 x 185 mm (5.5 x 3 x 7.3 in.)
- Fast heating and excellent Thermal Stability
- Closed-loop adjustable temperature control—150° to 300° C (302 to 572° F)
- ESD Safe by design
- Integrated cool down mode
- Optional connection to FM-206, hand or foot switch to activate preheating cycle

### ACCESSORIES

Part No.	Description
<b>B3263</b>	Extension pipe w/LID
<b>B2763</b>	Hand switch
<b>B1649</b>	Foot switch
<b>B3685</b>	Connecting Cable, FM-206

The Hakko FR-860 Preheat Plate provides fast, even preheat for PCB assemblies that have been bonded or are otherwise attached to solid metal surfaces such as heavy metal heat sinks, shielding, or microwave filter chassis, making them difficult to rework. The industrial microprocessor temperature control uses closed-loop feedback from either the plate or from a remote thermocouple. The split plate/controller design allows for minimal use of bench space and the low profile allows for use under microscopes.

### SPECIFICATIONS

<b>Part No.*</b>	<b>FR860-01F</b>
<b>Power Consumption</b>	400W / 120VAC 60Hz
<b>Temperature Range</b>	Room Temp - 260°C (Room Temp - 500°F)
<b>Temperature Stability</b>	±5°C/±9°F
<b>Temperature Control</b>	Industrial Microprocessor
<b>Temp. Control Modes</b>	Plate or External Thermocouple
<b>Thermocouple Inputs</b>	1 - Type K
<b>Heating Surface</b>	102 x 178 mm
<b>Dimensions</b>	(4.0 x 7.0 in.)
<b>Overall Dimensions (Plate - WxHxD)</b>	175 x 79 x 204 mm (6.9 x 3.1 x 8.0 in.)
<b>Overall Dimensions (Controller - WxHxD)</b>	100 x 66 x 169 mm (3.9 x 2.6 x 6.7 in.)
<b>Weight (w/o Cord)</b>	3.0 kg (5.9 lbs.)

\*Part numbers shown are for °F version.  
For °C version, use FR860-01C.

Access the digital catalog at [HakkoUSA.com](http://HakkoUSA.com)



# FR-830

## PREHEATER

### SPECIFICATIONS

<b>Part No. *</b>	<b>FR830-02</b>
<b>Power Consumption</b>	470 W / 120 VAC
<b>Hot Air Temperature</b>	150°C - 300°C (302°F - 572°F)
<b>Air Flow</b>	0.15 cu.m/min (6.35 cu.ft/min)
<b>Outer Dimensions</b>	140(W) x 75(H) x 185(D) mm (5.5 x 3.0 x 7.3 in.)
<b>Weight w/o cord</b>	750 g (1.6 lbs.)

### REPLACEMENT PARTS

<b>Part No.</b>	<b>Description</b>
<b>A1571</b>	Sensor
<b>A1569</b>	Heater



# FR-860

## PREHEAT PLATE

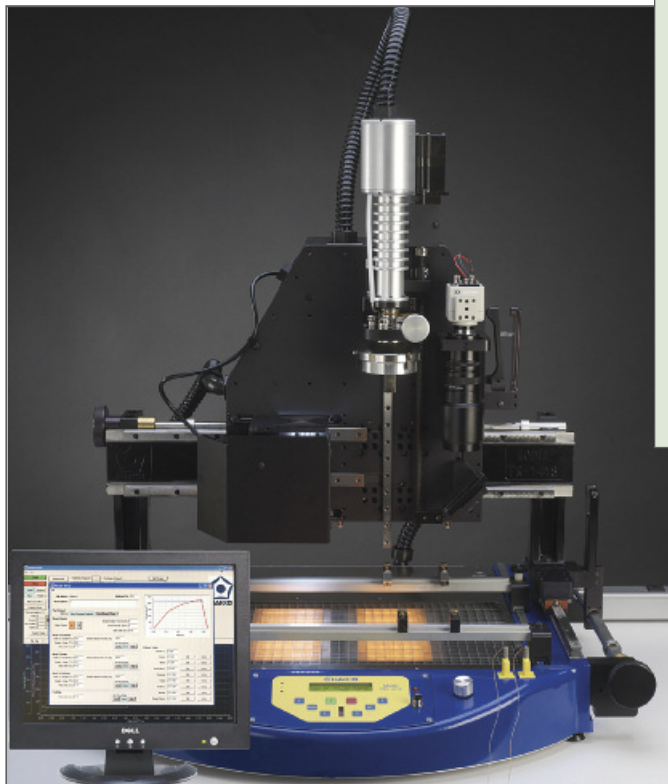
### CONTENTS

Part No.*	Description	Part No.	Accessories	Part No.
<b>FR860-01F</b>	Preheat Plate (Small) 120 VAC 60 Hz	<b>FR860-01</b>	Controller Power Cord Thermocouple (Type K)	<b>FR860-30</b> <b>B2419</b> <b>B3516</b>



[HakkoUSA.com](http://HakkoUSA.com)

REWORK



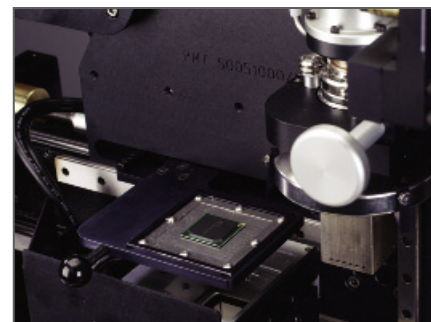
The HAKKO FR-1418 SMD Rework System is a low cost, lead-free compatible system designed for manual and semi-automatic rework of surface mount devices, including BGA, LGA, QFN, microBGA, and other bottom terminated components.

The system uses a rigid gantry design and simple construction that provides a stable platform for repeatability, and includes a computer system with easy-to-use software for creating, storing, and controlling rework profiles. The software also provides the capability to 'learn' the optimal profile through the simple TEACH feature using thermocouple inputs and closed-loop temperature control.

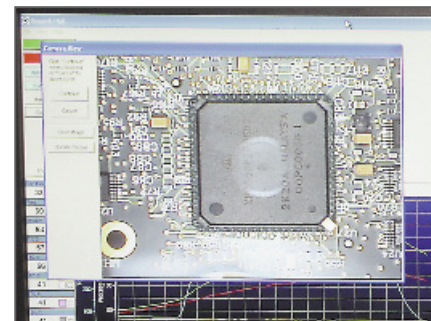
The HAKKO FR-1418 includes various upgrade options such as a 2 kW top heater, a 3 kW bottom pre-heater array, and vision system enhancements.



Integrated board fixture with standard and long reach support clips provides flexibility to handle many PCB shapes and sizes and allows for easy insertion and removal.



Component nest comes with a standard plate but is also sized to accept standard stencil frames for paste-on-component process or a custom liquid flux tray for a component dipping process.



Easy-to-use software provides real-time graphing and control of the reflow profile with change-on-the-fly capability and a TEACH mode that allows the system to 'learn' the proper profile.

Note: Select upgrade options require a 208 V 1-Phase base unit.

# FR-1418

## SMD REWORK SYSTEM

SPECIFICATIONS		
Part No.	FR1418-01	FR1418-03
Voltage	120 V 15 A 50/60 Hz	
Power Consumption	1800 W Max.	
Pre-Heater	750 W Infra-red Std. (1500 W Max)	
Top Heater	1000 W Forced Convection	
Airflow Source	Compressed Air Required 90 PSI at 5 CFM	
Airflow Settings	Low/Medium/High	
Pre-Heater Array	Low Mass Quartz IR	
Pre-Heater Area (W x D)	1 Zone - 305 x 254 mm (12 x 10 in.) 2 Zone - 508 x 305 mm (20 x 12 in.)	
Operating Modes	Manual Control Automatic - Install or Remove Teach	
Motion Control	Manual X,Y,Z	Manual X,Y - Auto Z
Thermocouple Inputs	4 - Type K	
Alignment System	High Resolution Split Vision	
Maximum Field of View	50 mm (2 in.)	
Placement	± 100 micron	± 50 micron
Maximum Board Width	570 mm (22.4 in.)	
Dimensions (W x H x D)	711 x 711 x 711 mm (28 x 28 x 28 in.)	
Weight	57 kg (125 lb.)	

### Construction

Precision machined, heavy duty aluminum castings  
Precision linear bearings for optics, X-Y-Z axis

### Bottom Pre-Heaters

Standard  
- 1 Zone (750 W) for 120V base unit  
- 1 Zone (1.5k W) high density for 208 V base unit  
Options  
- 1 Zone (1.5k W) high density for 120 V base unit  
- 2 Zone (1.5k W) for 120V base unit  
- 2 Zone (3k W) high density for 208 V base unit

### Top Heater

Standard  
- 1 kW for 120 V base unit  
- 2 kW for 208 V base unit

### Board Handling

Integrated PCB holder with 6 board support clips  
Minimum size 25 x 25 mm (1 x 1 in.) w/o custom fixture  
Maximum size 508 x 356 mm (20 x 14 in.) recommended  
Maximum thickness up to 6.4 mm (0.25 in.)  
Clearance up to 51mm (2 in.) for bottom side components  
Options  
- Extended reach board support clips  
- Bottom board supports  
- Left and right board supports

### Component Handling

Integrated component nest that fits standard stencil frames  
Integrated vacuum pickup in the heater head  
Interchangeable vacuum tips and silicone cups available  
Minimum component size 2 x 2 mm (0.08 in.)  
Maximum component size 51 x 51 mm (2 x 2 in.)  
Options  
- Custom nozzles and tooling for small components (0201)  
- Custom nozzles and tooling for components as large as 76 x 76 mm (3 x 3 in.)

### Alignment Control

Balanced movement with quick release handles  
Fine adjustment of X and Y axis with fine threaded knobs  
Adjustable theta control  $\pm 15^\circ$

### Z-Axis Automation

Available on select base units  
High precision stepper motor with screw drive  
Z-axis positioning stored within the rework profile  
Integrated vacuum detection of component contact  
Integrated collision safety stops

### Vision

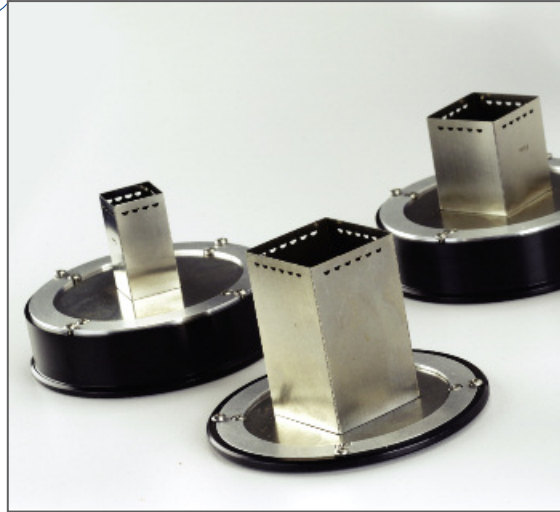
High resolution color USB camera  
High quality close focus macro lens with 6X optical zoom  
Fixed mirror  
Split vision prism factory calibrated  
Options  
- High Definition color USB camera  
- 2X magnification adapter  
- Pan-Tilt mirror

### Lighting

Two bank/two color LED lighting (white/blue)  
Option  
- Four bank/two color LED lighting (white/blue)

### Profile Control

PC with advanced control software and real-time graphing  
TEACH mode profiling  
Password protection for process control



### STANDARD NOZZLE STARTER KITS

Part No.	Description
222-501	Micro Nozzle Kit - 3, 4, 5, 8, and 10 mm Nozzles - 1, 2, and 3 mm Syringe Vacuum Pickups
222-502	Large Nozzle Kit - 38, 40, 44, and 48 mm Nozzles
222-503	Standard Nozzle Kit - 14, 18, 22, 26, 30, and 34 mm Nozzles

NOTE: Individual and custom nozzles available

### OPTIONAL ACCESSORIES AND UPGRADES

Part No.	Description
222-526	Bottom board supports
222-529	Pan-Tilt mirror assembly
222-535	Left and right board supports
222-536	Extended reach board support clips
222-537	Additional board support clips
222-541-03	120V 1.5 kW high density preheat zone
222-541-04	208V 1.5 kW high density preheat zone
222-543	4-bank LED lighting
222-544	2X optical magnification adapter
222-548	120 V 750 W preheat zone

### REPLACEMENT PARTS

Part No.	Description
222-524-01	5mm vacuum cup
222-513	8mm vacuum cup (Standard)
222-530	9mm vacuum cup
222-532	12mm vacuum cup
222-510	500W IR replacement lamp
222-512	36 AWG Type K thermocouple



The FX-8804 hot tweezer delivers direct heat to the component, preventing damage to surrounding components on dense boards. Easily removes SMD chips and flat packs up to 25mm. Compatible only with the Hakko FX-888/FX-888D and FX-889 soldering stations.

- Direct heating - less effect upon surrounding components on crowded boards
- Easily removes SMD chips and flat packs up to 25mm
- The collet allows easy replacement of the tips
- Specially designed tool allows easy and precise tip alignment

# FX-8804

## SMD HOT TWEEZER

For use with FX-888/FX-888D and FX-889

### SPECIFICATIONS

<b>Part No.</b>	FX8804-02
<b>Output Voltage</b>	26 VAC 65 W
<b>Temperature Range</b>	200°C - 400°C (392°F - 752°F)
<b>Tip to Ground Resistance</b>	< 2Ω
<b>Heating Element</b>	Ceramic Heater
<b>Leak Voltage</b>	Under 2mV
<b>Cord Length</b>	1.2 m (4ft.)
<b>Total Length (w/o cord)</b>	186 mm (7.3 in.)
<b>Weight (w/o cord)</b>	93g (0.2 lbs.)

### REPLACEMENT PARTS

Part No.	Description
<b>A1578</b>	Heating Element - 26 VAC, 65W (x2)
<b>B2289</b>	Nipple
<b>B2300</b>	Heat Resistance Pad
<b>A1559</b>	Cleaning Sponge



Easy replacement of tip



Easy alignment of tip

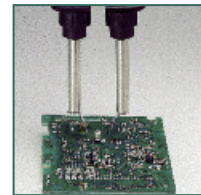
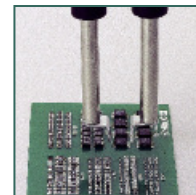


### REPLACEMENT PARTS

	Size A [B] x W	Unit: mm(in.)	Part No.
<b>CHIP</b>		2.6 x 1.0 (0.10 x 0.04)	A1576
		1.5 [0.5] x 1.0 (0.06 [0.02] x 0.04)	A1388
		0.5 x 1.0 (0.02 x 0.04)	A1577
		1.0 x 1.0 (0.04 x 0.04)	A1379
		2.0 x 1.0 (0.08 x 0.04)	A1378
		R0.25 (R0.01)	A1389
<b>SOP</b>		4 x 1.0 (0.16 x 0.04)	A1390
		6 x 1.0 (0.24 x 0.04)	A1391
		8.0 x 1.0 (0.31 x 0.04)	A1380
		10.0 x 1.0 (0.39 x 0.04)	A1381
		13.0 x 1.0 (0.51 x 0.04)	A1382
		15.0 x 1.0 (0.59 x 0.04)	A1392
		18.0 x 1.0 (0.71 x 0.04)	A1383
		20.0 x 1.0 (0.79 x 0.04)	A1384
		25.0 x 1.0 (0.98 x 0.04)	A1385



Iron Holder for FX-8804 with cleaning sponge. P/N: FH800-04BY.



The 851 hot air rework station is ideal for soldering and desoldering small surface mount chip components, heating heat-shrink tubing, and other local heating operations.

- Adjustable temperature control from 100°C to 540°C (212°F to 1004°F)
- The air volume sensor has an 'ultra-light' setting
- ESD safe by design

#### Uses

- Soldering and desoldering of small surface-mounted chip components
- Shrinking tubing, heating tests and other local heating operations



# 851

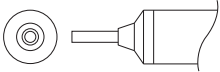
SMD REWORK STATION

Rework

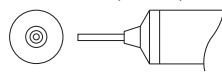
### REPLACEMENT NOZZLES

Part No.	Description
A1065	Nozzle ø1.5 mm (0.06 in.)
A1066	Nozzle ø2.0 mm (0.08 in.)
A1067	Nozzle ø3.0 mm (0.12 in.)
A1147	Nozzle ø1.0 mm (0.04 in.)
A1344	Nozzle/dual single bent ø1.0 mm (0.04 in.)

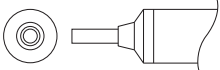
Part No. A1065  
Inside dia 1.5 mm (0.06 in.)



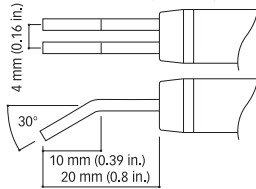
Part No. A1147  
Inside dia 1.0 mm (0.04 in.)



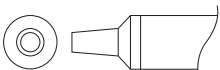
Part No. A1066  
Inside dia 2.0 mm (0.08 in.)



Part No. A1344  
Inside dia 1.0 mm (0.04 in.)



Part No. A1067  
Inside dia 3.0 mm (0.12 in.)



### SPECIFICATIONS

Part No.	851-2
Power Consumption	85W
Station	
Power Consumption	5W
Pump	Diaphragm type
Capacity	6 L/min. (max.)
Fuse	2A
Outer Dimensions (w/o handle & iron)	167(W) x 101(H) x 182(D) mm (6.57 x 3.98 x 7.15 in.)
Iron	
Power Consumption	80W
Heating Element	Ceramic heater
Hot Air Temperature	100°C to 540°C (212°F to 1004°F)
Standard Nozzle	A1066 (Nozzle ø2 mm)
Length (w/o hose)	217 mm (8.54 in.)

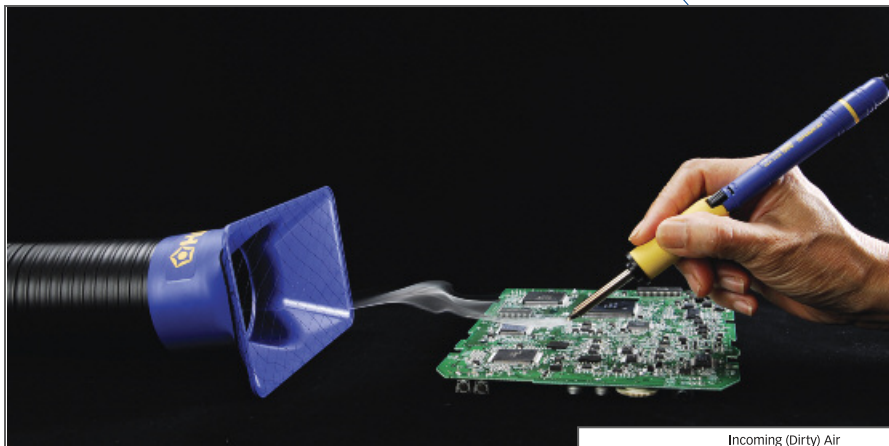
### HEATING ELEMENT

Part No.	Description
A1068	Heating element 80W/120V

### CONTENTS

Part No.	Description	Part No.
851-2	Station	
	Hot air rework iron (Connected to station)	*
	Iron holder	B1190
	Nozzle holder	B1212
	Nozzle ø1.5 mm (0.06 in.)	A1065
	Nozzle ø2.0 mm (0.08 in.) (Attached to iron)	A1066
	Nozzle ø3.0 mm (0.12 in.)	A1067

\*Hot air rework iron is not sold separately.



# BREATHE EASY

Soldering work involves both metallic and organic compounds. Ordinary solders themselves contain, besides tin and lead, various levels of zinc, arsenic, cadmium, antimony and other metals. Fluxes necessary for soldering contain activators to enhance their cleaning properties; these activators are typically organic acids. Such compounds, when heated, release byproducts of incomplete combustion, which in turn can contain noxious fumes, particulate matter, aerosols, and gasses. Prolonged breathing of these contaminants can lead to both short and long-term operator irritations and illness. Respiratory tract irritation, sore throats, eye irritation and headache are the most common symptoms. Allergies and asthma are often exacerbated by solder smoke.

Please note that the metals of which solder is made do not themselves vaporize at soldering temperatures. Lead, the metal with the lowest vaporization temperature commonly found in solders, does not become a gas below 2,950° F. What you are really getting rid of is flux smoke, scorched board material and conformal coating. Hakko fume extraction systems remove these contaminations from the air before the operator can breathe them. Their simplicity and ruggedness ensure many years of service. Filters are disposable and easily changed. A wide selection of accessories is available to meet any fume extraction need.

### DANGER!

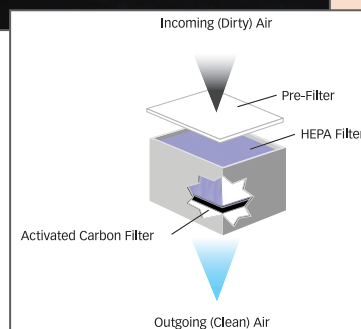
Never use a Hakko Fume Extraction System to extract fumes from highly flammable liquids or gasses! Serious risk of injury or death due to explosion or fire may occur.

Certain airborne contaminants, when in contact with activated carbon, can undergo chemical reactions resulting in heat. The Hakko fume extraction system **MUST NOT** be used to extract fumes from these substances.

## FILTERS

Hakko fume extraction systems use a 3-stage filtration process to remove airborne particles. This process involves 2 filters in the Hakko FA-430 Fume Extraction System: The Pre-Filter and Main Filter.

The pre-filter works to remove coarse particles such as dust, that may be suspended in the air, and thus extend the service life of the main filter. Particles as small as 30 microns in diameter are trapped by the pre-filter. It should be checked periodically based on usage, or about once a week.



The Hakko FA-430 has an indicator light that indicates when the pre-filter has exhausted its service life and should be replaced. Under normal condition this will be about once a month.

The main filter purifies the air in two ways. The first is through the pleated media which provides the greatest amount of surface area within the volume of the filter case and traps even smaller particles. The second is an activated carbon element built into each filter. The activated carbon element of the main filter is designed to last the life of the main filter. Carbon Filters have adsorption ratings of 80-85%.



When used in tandem, the standard filters in the Hakko FA-430 Fume Extraction System can provide filtration greater than 98% efficient for particles as small as 0.3 microns. Optional filter sets are available to provide HEPA level efficiencies of 99.97% as small as 0.3 microns.

Used filters should be handled with care when being disposed. They may contain hazardous substances such as lead, flux residue, asbestos, organic compounds, or pollutants extracted from the air. Always use appropriate personal protection equipment when handling used filters and dispose of them in containment bags. Local regulations will dictate the means of disposal.



Soldering work involves both metallic and organic compounds, the solders themselves, and the fluxes necessary for soldering. These compounds release noxious fumes when heated, which can lead to both short and long term operator irritations and illness.

- The HAKKO FA-400 is designed to remove noxious fumes quickly, safely and efficiently
- The replaceable filter is made by joining a specific urethane foam with refined, activated high absorption carbon
- Portable
- Can be used vertically or horizontally
- ESD-safe by design



U.S. Patent number D623,282.



FA-400 when vertically mounted.



FA-400 with stand.

# FA-400

**SMOKE ABSORBER**

## SPECIFICATIONS

<b>Part No.</b>	FA400-04
<b>Power Consumption</b>	13-19 W (60 HZ)
<b>Dimension</b>	169(W) x 213(H) x 113(D) mm
<b>Weight</b>	930 g
<b>Air Capacity (w/filter)</b>	1.07 (60HZ) m <sup>3</sup> /min
<b>Filter Dimension</b>	130 x 130 x 10 mm
<b>Contents</b>	HAKKO FA-400; Filter; Instruction Manual

## Activated-Carbon Filter

<b>Size</b>	130 x 130 x 10 mm (5.1 x 5.1 x 0.4 in.)
<b>Amount of Activated-Carbon filter</b>	7 g (0.25 oz.)
<b>Max. Absorbing weight of noxious components per one filter</b>	2 g (0.07 oz.)

## REPLACEMENT PARTS

Part No.	Description
<b>A1001</b>	Activated carbon filter, set of 5
<b>999-198</b>	High efficiency pleated filter
<b>C1568</b>	Optional arm stand, w/ knobs
<b>B1166</b>	Knob (set of two) ESD

U.S. Patent number D617,437.



The Hakko FA-430 provides powerful yet quiet suction. Protects from noise and harmful smoke.

- Quiet operation and powerful suction
- Catch harmful smoke with freestanding ducts and adjustable air volume to suit your working environment
- Airflow adjustment. Three airflow modes are available: High, Medium, and Low
- Free standing ducts
- Filter replacement notification function ensures excellent trapping efficiency can be maintained at all times. The Hakko FA-430 detects the fan speed and notifies the operator of the appropriate time to replace the filter, for a comfortable working environment.

# FA-430

## FUME EXTRACTION SYSTEM

SPECIFICATIONS	
Part No.	FA430-16
Power Consumption*1 (high mode)	120 W
Maximum Suction Capacity (with single duct)	4.1 m <sup>3</sup> /min (145 cfm)
Maximum Suction Capacity (with two ducts)	4.7 m <sup>3</sup> /min (167 cfm)
Filtering Efficiency*1 (low/medium mode)	99.97% 0.3 μm
Filtering Efficiency*1 (High mode)	99.96% 0.3 μm
Noise level*2 (medium mode)	50 dB (A)
Dimensions	330 (W) x 366 (H) x 343 (D) mm (13.0 x 14.4 x 13.5 in.)
Weight	7.5 Kg (16.5 lb.)
Static Pressure	1500 Pa
Duct Kit (sold separately)*3	ø55 mm x 1.2 m (2.16 in. x 3.9 ft.) (ESD-safe)

\*1 Initial value for trapping efficiency measurement using airborne dust counting method.  
 \*2 Measured in an anechoic chamber at 1 m.  
 \*3 Net is not ESD-safe.

CONTENTS	
Part No.	Description
A1585	Pre-filter
A1586	Main Filter
B3641	Power Cord
B3619	Port Cap Instruction Manual



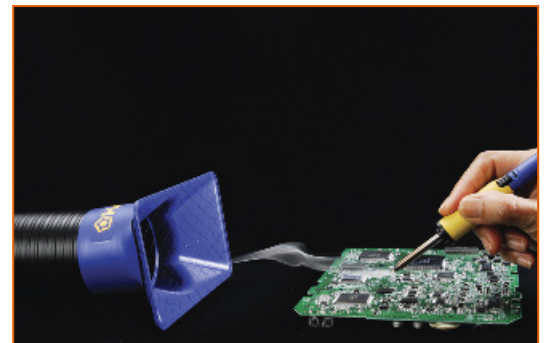
Duct Kit with round nozzle.  
P/N: C1572.



Duct Kit with rectangle nozzle.  
P/N: C1571.



FA-430 Control Panel for filter replacement notification.



FA-430 Setup

# FA-430

DUCT KITS



Example of kit installation. Unit not included.



### C1572 Duct Kit

with round nozzle.

#### CONTENTS

Part No.	Description	SPECIFICATIONS
<b>B3623</b>	Round Nozzle	
<b>B3642</b>	Duct	55 mm x 1.2 m (2.2 in. x 4 ft.)
<b>B3620</b>	Adapter	Attach duct to FA-430
<b>B3625</b>	Net (5 per pack)	10 x 10 mm (0.4 x 0.4 in.)



### C1571 Duct Kit

with rectangle nozzle.

#### CONTENTS

Part No.	Description	SPECIFICATIONS
<b>B3622</b>	Rectangle Nozzle	
<b>B3642</b>	Duct	55 mm x 1.2 m (2.2 in. x 4 ft.)
<b>B3620</b>	Adapter	Attach duct to FA-430
<b>B3625</b>	Net (5 per pack)	10 x 10 mm (0.4 x 0.4 in.)



999-196

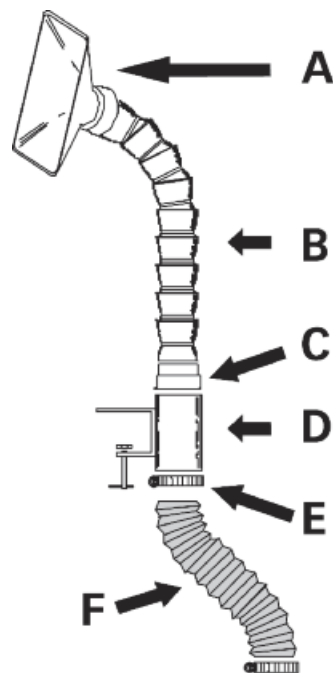
# LOC-LINE KIT<sup>®</sup>

## KIT CONTENTS

(B) Hose	(3) 999-194	63.5 mm (2.5 in.) articulated hose per foot
(C) Adapter	999-197	63.5 to 76.2 mm (2.5 to 3 in.) adapter
(D) Bench clamp	999-188-01	Bench clamp with 76.2 mm (3 in.) coupler
(E) Hose clamp	999-169	88.9 mm (3.5 in.) hose clamp, 2 pack
(F) Lower hose	999-189	76.2 mm (3 in.) Neoprene ESD duct, 1.83 m (6 ft.)

Flexible segmented hoses capped with either a round or rectangular hood allow the hood to be placed close to the work and moved out of the way when needed. ESD safe.

KIT NUMBER	NOZZLE OPTION (A)
<b>999-205-01</b> Round nozzle kit	999-195 Round 114.3 mm nozzle (4.5 in.)
<b>999-205-02</b> Rectangle nozzle kit	999-196 Rectangle 152.4 x 88.9 mm nozzle (6 x 3.5 in.)
<b>999-205-01B</b> Round nozzle kit	999-195 Round 114.3 mm nozzle (4.5 in.) B3621 for the FA-430 only
<b>999-205-02B</b> Rectangle nozzle kit	999-196 Rectangle 152.4 x 88.9 mm nozzle (6 x 3.5 in.) B3621 for the FA-430 only



\* Note: Loc-Line Kit can be used with FA-430 with adapter B3621.

# FA-430 & HJ3100 ACCESSORIES

Loc-Line® Accessories			
63.5 mm diameter articulated hose (2.5")	999-194		
114.3 mm diameter round nozzle for 999-194 (4.5")	999-195		
152.4 x 88.9 mm rectangular nozzle for 999-194 (6 x 3.5")	999-196		
76.2 to 63.5 mm adapter for 999-194 (3 to 2.5")	999-197		
Adapter for Neoprene Duct for FA-430	B3621		
Nets, Pack of 5	B3625		
Hoses		Filters	
3" diameter, 6' long Neoprene (ESD)	999-189	Particulate Filter	999-178*

\*For HJ3100 only

Misc. Fittings			
89.9 mm Hose Clamp 3.5" Hose Clamp (set of 2)	999-169		
*For HJ3100 only			
Bench Clamp (3")	999-188-01		
Carbon Filter	999-245		
Remote Power Switch	999-252		

U.S. Patent number D554,545.



The Hakko FG-100 Thermometer measures soldering iron tip temperatures as well as solder pot temperatures (with optional temperature probe). Lightweight, easy to replace sensors provide accurate measurement of tips for verification or calibration processes.

When the MAX HOLD feature is enabled the thermometer will display the maximum temperature measured. To preserve battery life the auto shutoff feature turns the thermometer off when not used for three minutes. The thermometer design allows for easy measurements from right or left handed operators.

- MAX HOLD feature will display the maximum temperature
- Low battery alarm
- Burnout alarm indicates sensor burnout
- Quick and easy sensor replacement
- Design allows easy access to sensor from front, right or left side.
- Auto shutoff after 3 minutes

# FG-100

## THERMOMETER

SPECIFICATIONS		
Part No.	FG100-01	FG100-02
Display Units	°C	°F
Resolution	1°C	2°F
Range of Measurement	0°C—700°C	32°F-1300°F
Sensor Type	K(CA) type thermocouple	
Measurement tolerance	±3°C (in 300°C—600°C range) ±5°C outside range	±6°F (in 572°F—1112°F range) ±10°F outside range
Power Supply	9V battery	
Dimensions	68 (W) x 140 (H) x 28 (D) mm (2.7 x 5.5 x 1.1 in.)	
Weight	Approx. 115g (4.0 oz.)	

\*191-212 Sensor can only be used to measure temperatures below 500°C (932°F).

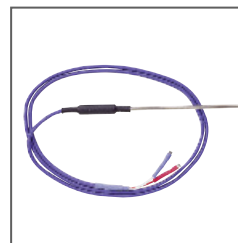
CONTENTS		
Part No.	Description	Part No.
FG100-01	Thermometer Sensor/10 pcs.	191-212
FG100-02		

### REPLACEMENT PARTS

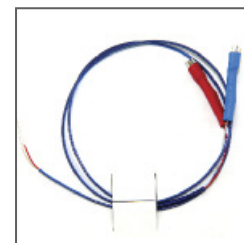
Part No.	Description
191-212	Sensor, 10 pack

### OPTIONAL PARTS FG-100

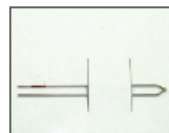
Part No.	Description
A1310	Temperature probe *For measuring the temperature of solder in pots and other applications as required.
A1556	Thermocouple Sensor A
A1557	Thermocouple Sensor B



P/N: A1310



P/N: A1557



P/N: A1556

Accessories

The HAKKO FG-101 Soldering Tester measures tip temperature, leak voltage and tip-to-ground resistance.

The FG-101 is resistant to drift and ambient temperature variations, ensuring highly reliable and accurate measurements. The MAX HOLD function will display the maximum value when the "MAX HOLD" button is pressed. Leak voltage and tip to ground resistance can be easily measured due to automatic self-correction of the zero point. Temperature sensors are easily replaced to ensure temperature measurement accuracy. The FG-101 is suitable for lead-free solder applications. The FG101-10 measures in Fahrenheit.



# FG-101

## SOLDERING TESTER

### CONTENTS

Part No.	Description	Part No.
<b>FG101-10</b>	FG-101 Soldering Tester Conduction plate Ground clip Conduction wire Sensor 10 pcs Power Cord	N/A B1752 B1754 B1950 191-212 B2419

### ACCESSORIES / REPLACEMENT PARTS

Part No.	Description
<b>A1310</b>	Temperature probe for soldering pot
<b>191-212</b>	Sensor 10 pcs
<b>B2468</b>	Fuse/125V-5A
<b>B1752</b>	Conduction plate
<b>B1754</b>	Ground clip
<b>B1950</b>	Conduction wire
<b>A1556</b>	Thermocouple Sensor A
<b>A1557</b>	Thermocouple Sensor B

### SPECIFICATIONS

Part No.	FG101-10	
<b>Temperature</b>	Resolution	1°F
	Measurement range*	32°F - 1300°F
	Precision	± 6°F (572°F - 922°F) ±10°F outside of above range
	Sensor	K(CA) thermocouple
<b>Voltage</b>	Resolution	0.1mv
	Measurement range	0-40mV (AC)
<b>Resistance</b>	Precision	± (5% + 1 digit)
	Resolution	0.1Ω
	Measurement range	0—40 Ω
<b>Display</b>	Precision	± (5% + 1 digit)
	Liquid crystal display (LCD)	3.5 digits
	Burnout	-/
<b>Monitor Output</b>	MAX HOLD	Refer to manual
	Temperature	1mv/°F
	Voltage	10mv/mv
<b>Power Consumption</b>	Resistance	10mv/ Ω
	Burn out	-7V (max.)
<b>Dimensions</b>	120V/2W	
<b>Weight</b>	200(W) x 50(H) x 120(D) mm (7.9 x 2.0 x 4.7 in.)	
<b>Operation Temperature</b>	Approximately 1.0 kg (2.2 lbs.)	
	32-104°F 20-90% RH	

\*Temperature sensor 191-212 can only be used to measure temperatures below 500°C (932°F).

NOTE: For measurement in °C, use Part No. FG101-16.



HakkoUSA.com

U.S. Patent number D641,221.



HakkoUSA.com



Redesigned ergonomic handpiece.

Blades not included.

# FT-801

## THERMAL WIRE STRIPPER

### SPECIFICATIONS

Part No.	FT801-02
Power Consumption	68W / 120VAC
Temperature Range	200°C - 800°C (392°F - 1472°F)
Dimensions	80(W) x 130(H) x 131(D) mm (3.1 x 5.1 x 5.2 in.)
Weight (station)	1.32 kg (2.9 lb.)
Weight (shipping)	2.66 kg (5.9 lb.)
ESD Safe	Yes
Handpiece Length (w/o cord)	136 mm (5.4 in.)
Handpiece Weight (w/blade)	90 g (0.2 lb.)
Handpiece Reach	1.3 m (4.3 ft.)

Note: Blades are not included with the FT-801.

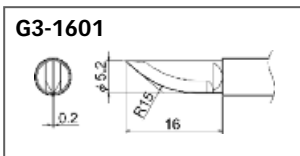
# FT-8003

## KNIFE BLADE

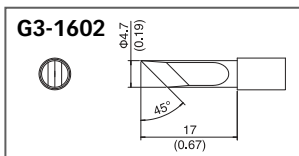
### For use with FT-801



- Easy blade insertion and removal
- P/N: FT801-31  
FT-801 Station with FT8003-01 Conversion Kit.



G3-1601



G3-1602

The FT-801 is a unique thermal wire stripper designed for use with a wide variety of insulated wires, including teflon.

- Compact station minimizes bench space
- Digital power control from 5% to 100%
- 3-digit password security eliminates the need for a key card
- Extra long (1.3 m x 4.3 ft.), flexible cord for a long reach
- Redesigned ergonomic handpiece
- Handpiece is compatible with older version G1 blades
- New wire stop with improved performance and durability
- Optional extension cord (B3659) allows a maximum reach of 2.5 m (that's 8.2 feet!)
- Auto Power Off
- Sleep mode functionality

### REPLACEMENT PARTS

Part No.	Description
B3644	Lead Adjuster, FT-8002
B3648	Tool, Removal, FT-801
C5012	Holder, Iron, FT-8002, FT-801
FT8002-01	Assy, Handle, FT-801, FT-8002



"A" type blade with enhanced wishbone

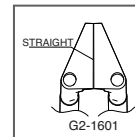


FT-801 Iron Holder

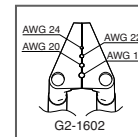


FT-801 Removal Tool

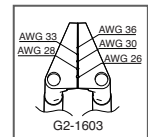
U.S. Patent number D641,221.



G2-1601



G2-1602



G2-1603

NOTE: Part numbers that include the letter 'A' are alignment enhanced blade sets.

### REPLACEMENT BLADES

Part No.	Description
G2-1601 or G2-A1601	Straight, Pair
G2-1602 or G2-A1602	18-24 AWG, Pair
G2-1603 or G2-A1603	26-36 AWG, Pair

### CONTENTS

Part No.	Description	Part No.
FT8003-01	FT-8003 Handpiece	FT8003-02
Conversion Kit	G3 Blade	G3-1601
	Holder	C5034
	Connecting Cable	B3253
	Blade Removal Tool	B3648

### SPECIFICATIONS

Part No.	FT8003-01
Power Consumption	64 W / 24 V
Length of Cord	1.3 m (4.3 ft.)
Length (w/o cord, blade)	96 mm (3.7 in.)
Weight (w/o cord, blade)	48 g (0.11 lb.)

Accessories

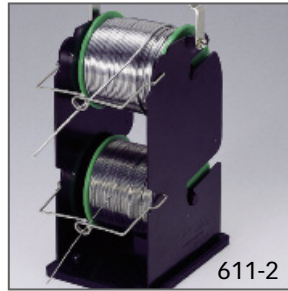
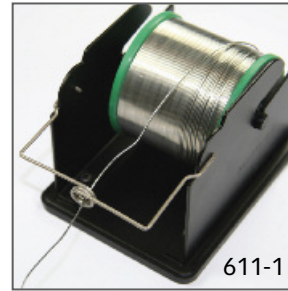


**611-1**

- Keep your bench neat
- Draw out the solder wire smoothly
- Max. 1kg (2.2 lbs.) rolled solder wire can be used

**611-2**

- Holds two reels of solder wire  
Maximum weight of each reel is 1kg (2.2lbs)
- Different diameters of solder wire can be used on the two reels
- The solder wire can be pulled smoothly from either reel, which contributes to operator efficiency
- ESD safe by design


**611-2**

**611-1**

Solder is not included.

# 611

## SOLDER REEL STAND

**SPECIFICATIONS**

Part No.	611-1	611-2
<b>Outer Dimensions</b>	87(W) X 78(H) X 141(D) mm (3.4 X 3.1 X 5.6 in.)	87(W) X 200(H) X 141(D) mm (3.4X 7.9 X 5.6 in.)
<b>Shaft Dia</b>	ø15mm (0.6 in.)	ø15mm (0.6 in.)
<b>Weight</b>	450 g (1.0 lbs.)	750 g (1.7 lbs.)

The Hakko HJ5000 heat gun is designed for general intermittent use. It is ideal for heat shrink tubing, curing epoxy, stripping paint, defrosting ice-frozen plumbing, and other applications where general heating is required.



# HJ5000

## HEAT GUN

- Dual temperature switch/settings 316°C (600°F) / 510°C (950°F)
- Double insulated power cord for safety
- Impact resistant housing

**SPECIFICATIONS**

<b>Part No.</b>	<b>HJ5000</b>
<b>Voltage</b>	120 VAC/60 HZ
<b>Output</b>	1300 watts
<b>Temperature</b>	Dual Settings: 316°C (600°F) / 510°C (950°F)

**OPTIONAL NOZZLES**

<b>999-221</b>	Scraper 66 mm (2.6 in.)
<b>999-220</b>	Reflector
<b>999-219</b>	Spreader 75 mm (3.0 in.)

# IRON HOLDERS

## SPECIFICATIONS

Part No.	Size mm/in.	Weight oz.	Cleaning Sponge	Use with
602	88.9 x 106.7 mm (93.5 x 4.2 in.)	3	P/N: 602-029	N452, N453, N454(DASH), 918, 920, 921, 922(MACH-I) 455, 456
605M*			NONE	N452, N453, N454(DASH), 918, 920, 921, 922(MACH-I) 455,FX-600,FR-300
607	96.5 x 165.1 mm (3.8 x 6.5 in.)	21	P/N: A1042	583, 585, 587, 589(MG)
633-01	83.8 x 185.4 mm (3.3 x 7.3 in.)	14	P/N: 599-029 (cleaning wire)	N452, N453, N454(DASH) 918, 920, 921, 922(MACH-I), FR-300 455, 456, 808, FX-600, FX-650
633-02	83.8 x 185.4 mm (3.3 x 7.3 in.)	12	P/N: A1519	N452, N453, N454(DASH) 918, 920, 921, 922(MACH-I), FR-300 455, 456, 808, FX-600, FX-650
FH300-01/P	The footprint is $\phi 85 \times 128$ (D) mm	17.71	P/N: A1519	N452, N453, N454(DASH) 918, 920, 921, 922 (MACH-I) 980, 981, FX-600, FX-650

\*The HAKKO 605M iron holder offers superior heat resistance and thermal insulation.  
With the HAKKO 605, the soldering iron can be placed in the toolbox immediately after finishing soldering work.



602



607



FH-300



605M



633-01



633-02



**Quickly and simply checks for:**

1. Wrist straps and grounding wires
  2. The contact resistance between the wrist strap and the skin
- Can be used anywhere to quickly and easily check grounding systems
  - Ensures employee safety
  - Eliminates product defects caused by static electricity

# 498

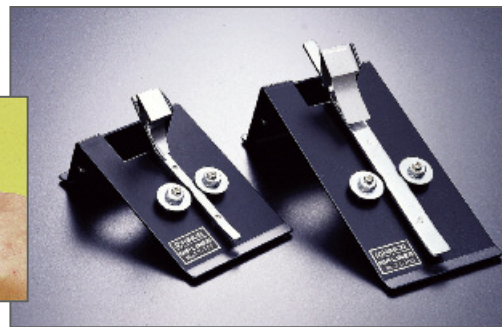
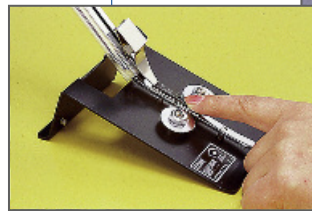
SYSTEM TESTER

### SPECIFICATIONS

Part No.	498
Power Supply	9V battery *
Grounding Wire	2.5 m (6.2ft) *
Outer Dimensions	80(W) x 40(H) x 117(D) mm (3.1 x 1.5 x 4.6 in.)

\* Standard accessories

Indication	Nominal Resistance
LOW	R < 800KΩ
GOOD	800KΩ - 9MΩ
HIGH	R > 9MΩ



- Low-cost, high-performance tool for reforming IC and LSI leads
- Speeds IC and LSI insertion
- No more broken leads during IC and LSI insertion or transportation
- Simply insert the IC case into the Dipliner chute, and the leads are protected right through circuit board insertion
- Adjustable lead former fits all types, sizes and makes of ICs and LSIs

# DIP LINER

### SPECIFICATIONS

Part No.	Width of IC	Number of IC leads
FT100	7.5 mm (0.3 in.)	8, 14, 16, 18, 20
FT150	10 mm (0.4 in.)	22
FT200	15 mm (0.6 in.)	24, 28, 40, 42
FT300	19 mm (0.7 in.)	64

Accessories



**AMERICAN HAKKO PRODUCTS, INC.**

28920 Avenue Williams  
Valencia, CA 91355  
Tel. 661.294.0090 Fax 661.294.0096

**HakkoUSA.com**

Scan here to visit us  
online and learn  
more about the  
American Hakko  
product line.



Rev. 2016-06

