

# Soldering Tools and Equipment

Product Catalogue 2009



Soldering/Desoldering

Convection Rework

Fume Extraction

Fluid Dispensing



**OKI**

## TAP into OK International and become a SuperProducer



Only at OK International will you find conduction soldering & rework, convection rework, fume extraction and fluid dispensing products that allow you to TAP into three advantages over competitive systems.

### **Training Advantage**

Our products require minimal training time, and are easy and comfortable to use.

### **Application Advantage**

We design our products to be multi-functional and flexible to meet every application need.

### **Productivity Advantage**

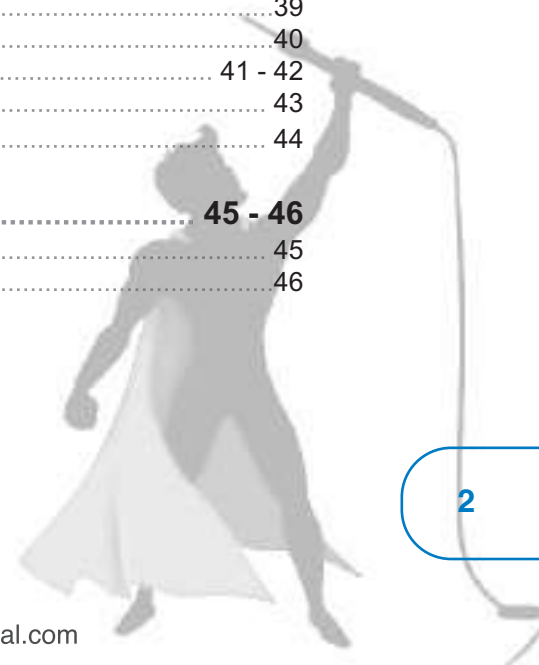
Our products are proven to improve productivity, yield and your bottom line.



Learn more and view our customers testimonials at [www.beasuperproducer.com](http://www.beasuperproducer.com)

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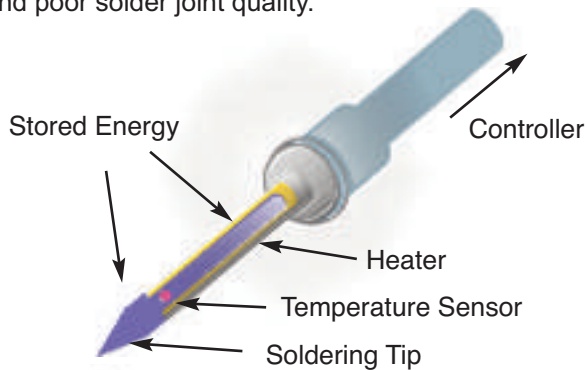
# SmartHeat® Technology

OK International is the only provider of SmartHeat® patented Soldering Technology. SmartHeat® senses the exact thermal requirement for each solder joint and responds by delivering the precise amount of thermal energy required to create a reliable connection.

The result is a high degree of control without resorting to higher tip idle temperatures required by conventional heater process technologies. Consequently, the risk of component and board damage is minimized. This is especially important with the greater thermal demands required by lead-free applications.

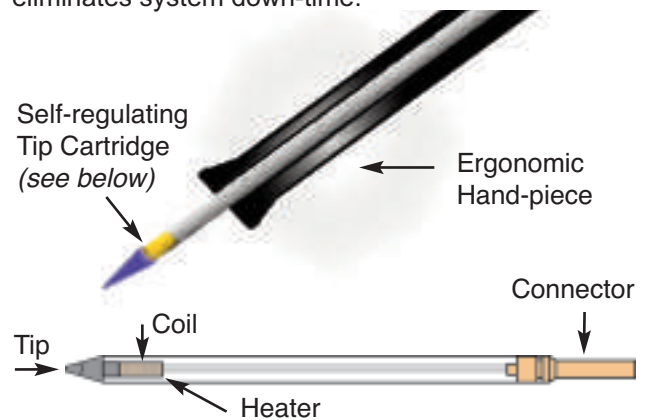
## Conventional Soldering Technology = Fixed Power / Variable Temperature

- ▶ Conventional soldering irons are fixed power systems that store energy in the tip, they don't adjust power in response to thermal demand.
- ▶ The temperature needs to be manually set and adjusted to vary the amount of thermal energy applied, the operator can vary the process.
- ▶ The tip cools as it heats the joint and the heater reheats the tip, often overshooting the set temperature.
- ▶ Conventional soldering systems require calibration.
- ▶ The actual tip temperature can vary widely from set point, slowing the process and causing thermal damage and poor solder joint quality.



## SmartHeat® Soldering Technology = Variable Power / Fixed Temperature

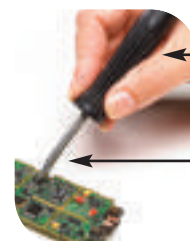
- ▶ SmartHeat® tips and cartridges sense the load and instantly deliver the right amount of heat directly to the solder joint.
- ▶ The required solder joint temperature drives the heating process, as opposed to the idle tip temperature setting (as in a conventional iron).
- ▶ Operates at lower safer temperatures. Power is delivered in proportion to the load. SmartHeat® technology eliminates overshoot.
- ▶ No calibration required - saves money and eliminates system down-time.



## Other Unique OKi Features



Plug and Play: Attach the desired hand-piece and turn power on, no other control. Reduces operator training.



Lightweight, ergonomic hand-piece.

Short tip-to-grip for precise control.



Easy tip insertion and changeouts. Rapid heat-up & recovery. Shorter dwell time.



Watch the SmartHeat® Video at [www.okinternational.com/video](http://www.okinternational.com/video)

# Hand Soldering & Rework Product Selection

## SELECT A COMPLETE SYSTEM

	Soldering	Rework	Desoldering, External Air	Desoldering, Internal Air Pump	Tweezer Hand-Piece	Cartridge Hand-Piece	Tip Hand-Piece	Single Output	Dual Simultaneous Output	Dual Switched Output	Auto Sleep Workstand	OKi Tips	OKi Cartridges	SSC Cartridges
PS-900	✓					✓	✓					✓		
MFR-1110	✓	✓			✓		✓			✓			✓	
MFR-1120	✓					✓	✓			✓		✓		
MFR-1140		✓		✓			✓			✓			✓	
MFR-1160	✓				✓		✓			✓				✓
MFR-1161	✓	✓			✓ <sup>2</sup>		✓			✓ <sup>2</sup>			✓	✓
MFR-2210	✓	✓			✓			✓		✓			✓	
MFR-2220	✓					✓		✓		✓		✓		
MFR-2240		✓		✓				✓		✓			✓	
MFR-2211	✓	✓			✓ <sup>2</sup>			✓		✓ <sup>2</sup>			✓	
MFR-2222	✓					✓ <sup>2</sup>		✓		✓ <sup>2</sup>		✓		
MFR-2241	✓	✓		✓	✓			✓		✓			✓	
MFR-DSX			✓						✓			✓		
MFR-DSI				✓					✓			✓		
MFR-SDX	✓	✓	✓		✓				✓			✓	✓	
MFR-SDI	✓	✓		✓	✓				✓			✓	✓	

## OR CONFIGURE YOUR OWN SYSTEM - 3 PLATFORMS ARE AVAILABLE

**PS Platform - Single Output - Soldering Only**

**MFR Single or Dual Simultaneous Output Platform - Soldering and Rework**

**MFR Dual Switched Output Platform - Soldering and Desoldering**

All OKi Consumables are shared between the 3 product platforms



POWER SUPPLIES	HAND-PIECES (see page 11)	WORKSTANDS (see page 11)	CONSUMABLES
<b>PS-PW900</b> Production Soldering	<b>PS-HC3</b> Tip Hand-Piece (incl. PS-CA3 coil assembly)	<b>WS2-NS</b> (black Non Sleeper) <b>WS2G-NS</b> (green Non Sleeper)	OKi TIPS: PHT - SxV - CxV
<b>MFR-PS1100</b> Single Output Soldering & Rework or <b>MFR-PS2200</b> Dual Simultaneous Output Soldering & Rework	<b>MFR-H2-ST</b> Tip Hand-Piece (incl. MFR-CA2 coil assembly)	<b>WS1</b> (black) / <b>WS1G</b> (green)	OKi TIPS: SxV - CxV
	<b>MFR-H6-SSC</b> Cartridge Hand-Piece		METCAL CARTRIDGES: SSC
	<b>MFR-H1-SC</b> Cartridge Hand-Piece	<b>MFR-WSPT</b> (black)	OKi CARTRIDGES: SxP - RxP
<b>MFR-PS2X</b> Dual Switched Output Desoldering with External Air or <b>MFR-PS2K</b> Dual Switched Output Desoldering with Internal Air Pump	<b>MFR-H4-TW</b> Tweezer Hand-Piece		OKi CARTRIDGES: TxP
	<b>MFR-HSR</b> Cartridge Hand-Piece	<b>MFR-WSSR</b> (black Non Sleeper)	OKi CARTRIDGES: SxP - RxP
	<b>MFR-HDS</b> Desoldering Gun	<b>MFR-WSDS</b> (black Non Sleeper)	OKi TIPS: DxP





# PS-900 Production Soldering System



The PS-900 Soldering System, powered by SmartHeat® Technology, is part of a new generation of **cost effective soldering** systems from OK International.

The PS-900 provides power and exceptional thermal control in a small benchtop footprint.

## Key Features & Benefits

- ▶ SmartHeat® temperature control
- ▶ Ergonomic, lightweight handle
- ▶ Rugged cast aluminum housing
- ▶ Added plating thickness to tips
- ▶ Low cost, quick-change heater coil

The PS-900 increases productivity by performing a wide range of applications. It is designed for lead-free soldering processes, multilayer boards and thermally demanding components.



## Technical Specifications

### Power Supply

Ambient Operating Temperature	10 - 40°C
Maximum Enclosure Temperature	65°C
Input Line Voltage	100 - 240 VAC
Input Line Frequency	50/60 Hz
Power Consumption	90 Watts max.
Output Power	60 Watts max. at 22°C ambient temperature
Output Frequency	450 KHz
Power Cord (3-wire)	183 cm 18/3 SJT
Dimensions W x D x H	80 x 160 x 115 mm (3.1" x 6.3" x 4.5")

### Soldering Handle and Coil Assembly

Tip-to-Ground Potential	< 2 mV
Tip-to-Ground Resistance	< 2 ohms
Idle Temperature Repeatability	± 1.1°C in still air
Handle Cord Assembly Length	122 cm – burn proof, ESD safe
Connector	3-pin power connector
Overall length (with tip)	230 mm (9.06") with standard tips
Grip diameter	13 mm (0.51")
Tip to grip	58 mm (2.28")
Tip shaft diameter	8.0 mm (0.31")
Tip length	82 mm (3.23") to 93 mm (3.66") (typical)
Workstand W x D x H	105 x 175 x 90 mm (4.1" x 6.9" x 3.5")

# PS-900 Production Soldering System

Part No.	Description
PS-900	Complete System

Includes:

PS-PW900	1	Power Supply
PS-HC3	2	Hand-piece (PS-H3) and Coil Assembly (PS-CA3), no tips included
WS2-NS	3	Workstand, Black

Other Accessories Available:

PS-H3	4	Hand-piece only, NO Coil Assembly
PS-CA3	5	Coil Assembly for SxV Soldering Tips and CxV Blade Tips ONLY
WS2G-NS		Workstand, Green
AC-CP2		Tip Removal Pad
WS2		Sleeper Stand

## TIPS



**SxV**  
Soldering Tips



**CxV**  
Blade Tips

See Pages 13 & 14



## ONLY AVAILABLE ON PS-900 SYSTEM AND FOR USE WITH PHT TIPS

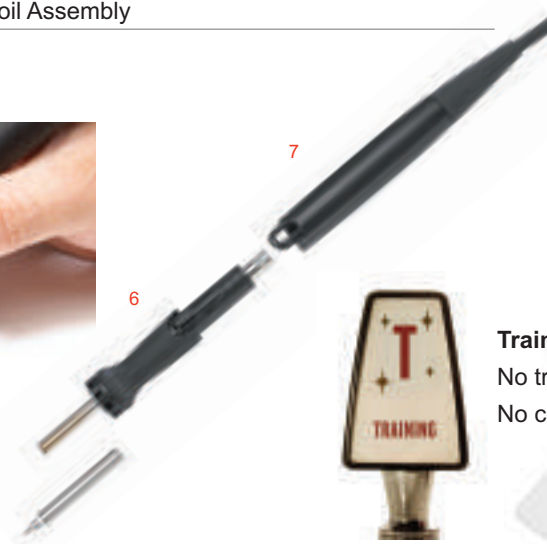
PS-CA1	6	Coil Assembly for PHT Soldering Tips ONLY
PS-HC1		Hand-piece (PS-H3) and Coil Assembly (PS-CA1)
PS-H3	7	Hand-piece only, NO Coil Assembly

## TIPS



**PHT**  
Light Load, Fine  
Access Soldering Tips

See Page 18



### Training Advantage

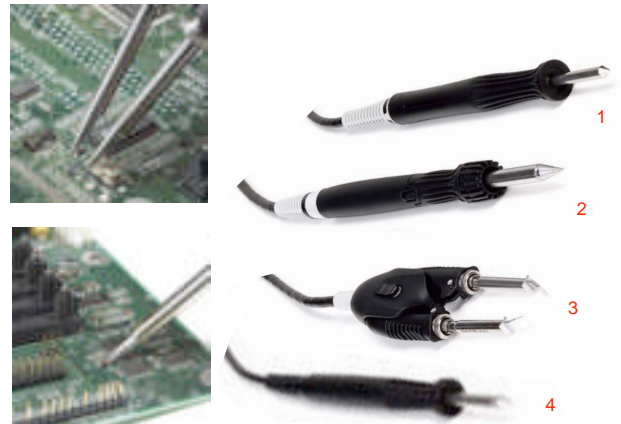
No training: Switch on and Solder  
No calibration required either

# MFR-1100 Series Single Output Soldering & Rework System



The MFR-1100 Single Output Series is designed to minimize training investment, maximize application solutions and increase productivity.

This Series is highly **versatile** in that it can be used with either a soldering tip, cartridge or tweezers and offers a choice of four hand-pieces.



Systems	MFR-PS1100 Power Supply	MFR-H1-SC Soldering Cartridge Hand-piece	MFR-H2-ST Soldering Tip Hand-piece	MFR-H4-TW Tweezer Hand-piece	MFR-H6-SSC SSC Cartridge Hand-piece	WS1 Universal Soldering Workstand	MFR-WSPT Tweezer Workstand
Picture Reference		1	2	3	4		
MFR-1110	1	1				1	
MFR-1120	1		1			1	
MFR-1140	1			1			1
MFR-1160	1				1	1	
MFR-1161	1	1			1	2	

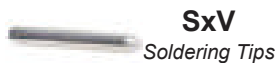
Note: The MFR-1160 is replacing the Metcal SP200 Soldering System

## CARTRIDGES



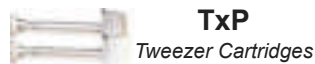
See Pages 15 & 16

## TIPS



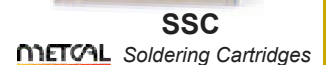
See Pages 13 & 14

## CARTRIDGES



See Page 17

## CARTRIDGES



See Page 18

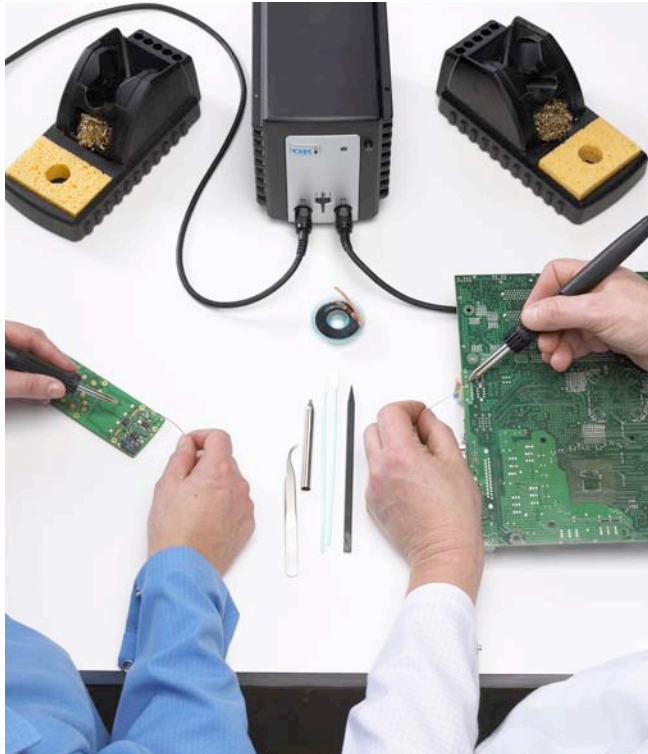


### Application Advantage

Multiple hand-pieces offering a wide range of applications.



# MFR-2200 Series Dual Simultaneous Output Soldering & Rework System



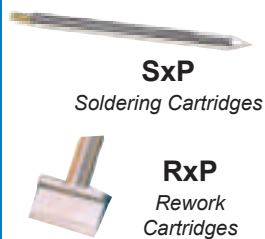
The MFR-2200 Series features dual output capability allowing users to select operation of one hand-piece or two hand-pieces **simultaneously**.

Like the MFR-1100 Series, the MFR-2200 offers the same choice of multiple hand-pieces. Flexibility can be increased by locking both systems together.



Systems	MFR-PS2200 Power Supply	MFR-H1-SC Soldering Cartridge Hand-piece	MFR-H2-ST Soldering Tip Hand-piece	MFR-H4-TW Tweezer Hand-piece	WS1 Universal Soldering Workstand	MFR-WSPT Tweezer Workstand
Picture Reference		1	2	3		
MFR-2210	1	1			1	
MFR-2220	1		1		1	
MFR-2240	1			1		1
MFR-2211	1	2			2	
MFR-2222	1		2		2	
MFR-2241	1	1		1	1	1

## CARTRIDGES



See Pages 15 & 16

## TIPS



See Pages 13 & 14

## CARTRIDGES



See Page 17



**Productivity Advantage**  
Dual Output System for  
increased productivity

# MFR-1100 & MFR-2200 Series Soldering & Rework Systems



Other Accessories Available:

<b>MFR-CA2</b>	Coil Assembly for Tip Hand-piece (MFR-H2-ST)
<b>WS1G</b>	Auto-sleep Workstand, Green
<b>MFR-PM70</b>	Power Meter
<b>AC-CP2</b>	Cartridge / Tip Removal Pad
<b>AC-BP</b>	Brass Pad (for Workstand) - Pack of 10
<b>MFR-UK1</b>	Upgrade Kit: Solder Cartridge Hand-piece (MFR-H1-SC) and Workstand (WS1)
<b>MFR-UK2</b>	Upgrade Kit: Solder Tip Hand-piece (MFR-H2-ST) and Workstand (WS1)
<b>MFR-UK4</b>	Upgrade Kit: Tweezer Cartridge Hand-piece (MFR-H4-TW) and Workstand (MFR-WSPT)

## Key Features & Benefits

- ▶ SmartHeat® Technology provides exceptional power for high thermal demand applications
- ▶ Single or Dual simultaneous outputs allow for single or dual hand-piece use
- ▶ Four hand-pieces available for increased application solutions for soldering and rework on one system
- ▶ Each hand-piece has a comprehensive range of cartridges or tips for maximum flexibility
- ▶ Hand-pieces are ergonomic for operator safety and comfort



MFR-2200: Three position switch. Select left, right or center (both ports operational) to power hand-pieces

## Technical Specifications

Power Supply	MFR-1100	MFR-2200
Ambient Operating Temperature	10 - 40°C (50°F - 104°F)	10 - 40°C (50°F - 104°F)
Maximum Enclosure Temperature	55°C (131°F)	55°C (131°F)
Input Line Voltage	100 - 240 VAC	100 - 240 VAC
Input Line Frequency	50/60 Hz grounded circuit	50/60 Hz grounded circuit
Power Consumption	70 Watts maximum	130 Watts maximum
Output Power	60 Watts at 22°C	60 Watts at 22°C per output (2 outputs)
Output Frequency	450 KHz	450 KHz
Power Cord (3-wire)	183 cm 18/3 SJT	183 cm 18/3 SJT
Dimensions (approx.) W x D x H	90mm (3.5") x 142mm (5.6") x 197mm (7.8")	170mm (7") x 200mm (8") x 152.5mm (6")
Weight	2.3kg (5.05 lbs)	2.97 kg ( 6.55 lbs)
Surface Resistivity	10 <sup>5</sup> -10 <sup>9</sup> Ohms	10 <sup>5</sup> -10 <sup>9</sup> Ohms
Certification / Marking	cTUVus, CE	cTUVus, CE

## Soldering Handle and Coil Assembly

Tip-to-Ground Potential	< 2 mV RMS	< 2 mV RMS
Tip-to-Ground Resistance	<2 ohms	<2 ohms
Idle Temperature Repeatability	± 1.1°C (2°F) in still air	± 1.1°C (2°F) in still air
Handle Cord Assembly Length	122 cm – burn proof, ESD safe	122 cm – burn proof, ESD safe
Connector	8-pin circular DIN	8-pin circular DIN
Workstand W x D x H	100 mm (4") x 200 mm (8") x 100 mm (4")	100 mm (4") x 200 mm (8") x 100 mm (4")
Workstand Weight	0.69 kg (1.51 lbs)	0.69 kg (1.51 lbs)

# MFR Series Desoldering & Rework Systems

MFR-DSX / MFR-DSI



MFR-SDX / MFR-SDI



## Key Features & Benefits

- ▶ Versatile and ergonomic gun hand-piece that easily switches to a pencil handpiece
- ▶ Dual switched outputs (soldering or desoldering)
- ▶ SmartHeat® makes through-hole desoldering easy and safe
- ▶ The solder collection chamber and filter system is quick and easy to change, and provides low cost maintenance
- ▶ Two Desoldering Systems available: MFR-DSX requires shop air. The MFR-DSI features an internal vacuum pump.

Part No.	Description
<b>MFR-DSX</b>	Desolder System, External Air
<b>MFR-DSI</b>	Desolder System, Internal Air Pump
<b>MFR-SDX</b>	Solder / Desolder System, External Air
<b>MFR-SDI</b>	Solder / Desolder System, Internal Air Pump
<i>Includes:</i>	
<b>MFR-HDS</b>	Desolder Hand-piece
<b>MFR-WSDS</b>	Desolder Workstand
<b>MFR-HSR</b>	Soldering and Rework Hand-piece (only for MFR-SDX /-SDI)
<b>MFR-WSSR</b>	Soldering Workstand (only for MFR-SDX /-SDI)
<b>MFR-PS2X</b>	Switched Two-Port Power Supply, External Air
<b>MFR-PS2K</b>	Switched Two-Port Power Supply, Internal Air Pump

### TIPS



#### DxP

Desoldering Tips

See Page 17

### CARTRIDGES



#### SxP

Soldering Cartridges



#### RxP

Rework Cartridges

See Pages 15 & 16

The Gun Hand-piece can be adjusted from a pencil to a gun with a simple press of a button



## Technical Specifications

Ambient Operating Temperature	10- 40°C
Maximum Enclosure Temperature	55°C
Input Line Voltage	100- 240 VAC, grounded circuit
Input Line Frequency	50/60 Hz
Recommended Air Pressure Input	450kPa (65PSI) MFR-PS2X only
Power Consumption (max.)	75 Watts (MFR-PS2K), 70 Watts (MFR-PS2X)
Output Power	50 Watts max. at 22°C ambient temp
Output Frequency	450 KHz
Power Cord 3-Wire	183cm (18/3") SJT
Dimensions w x d x h	170mm (7") x 200mm (8") x 152.5mm (6")
Certification / Marking	cTUVus, CE
Tip-to-Ground Potential	<2mV RMS
Tip-to-Ground Resistance	<2 ohms
Idle Temperature Repeatability	± 1.1°C in still air
Desolder Hand-piece Cable Length	L=152cm (60"), burn proof, ESD safe
Other Hand-piece Cable Length	L=122cm (48"), burn proof, ESD safe
Hand-piece Connector	8-pin circular DIN
Workstand Dimensions w x d x h	100 mm (4") x 200 mm (8") x 100 mm (4")



# Accessories and Spare Parts for PS and MFR Platforms



## Hand-pieces and replacement coils

PS-HC3		Soldering Handle with PS-CA3 Coil Assembly (PS-900)
PS-H3	5	Soldering Handle without Coil Assembly (PS-900)
PS-CA3	6	Coil Assembly for PS-HC3 / PS-H3 Hand-piece (PS-900)
MFR-H1-SC	1	Cartridge Solder / Rework Hand-piece (MFR-1100 & MFR-2200)
MFR-H2-ST	2	Tip Solder Hand-piece (MFR-1100 & MFR-2200)
MFR-CA2		Coil Assembly for MFR-H2-ST Hand-piece (MFR-1100 & MFR-2200)
MFR-H4-TW	4	Precision Tweezer Hand-piece (MFR-1100 & MFR-2200)
MFR-H6-SSC	3	SSC Cartridge Solder Hand-piece (MFR-1100 & MFR-2200)
MFR-HSR		Cartridge Solder / Rework Hand-piece (MFR-SDX & MFR-SDI)
MFR-HDS	14	Desolder Hand-piece (MFR-DSX,-DSI,-SDX,-SDI)

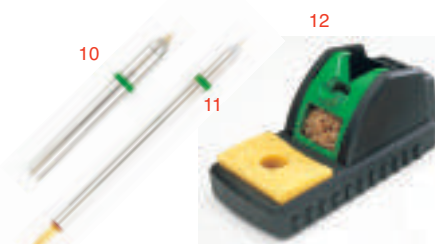


## Workstands

WS1		Universal Auto Sleep Workstand
WS2-NS	9	Solder Workstand (PS-900)
MFR-WSP	7	Non Sleeper Precision Tweezer Workstand
MFR-WSSR		Non Sleeper Stand Soldering Workstand
MFR-WSDS	8	Non Sleeper Desoldering Workstand (MFR-DSX,-DSI,-SDX,-SDI)
WS1CB		Solder Rework Cradle Replacement for WS1 Workstand
WS2CB		Solder Rework Cradle Replacement for WS2 Workstand

## Auto-Sleep Workstand WS1 & WS1G: how do they work?

- ▶ An insert helps increase tip life by allowing the tip or cartridge to idle at a lower temperature, thereby reducing oxidation.
- ▶ Does not shut the iron off, only reduces the power available to the tip while in the Workstand.
- ▶ The recovery time, from when the tip is removed from the Workstand, is within seconds.
- ▶ Also includes a brass wire wool cleaning compartment to remove heavy oxidation build up associated with lead-free processes.



## Lead-Free Process Identification

WS1G	12	Green Universal Auto Sleep Workstand
WS2G-NS		Green Solder Workstand (PS-900)
WS1CG		Green Solder Rework Cradle Replacement for WS1 Workstand
WS2CG		Green Solder Rework Cradle Replacement for WS2 Workstand
AC-CK1	11	Green Identification Ring for OKi Cartridges (Pack of 50)
AC-CK3		Green Identification Ring for SSC Cartridges (Pack of 50)
AC-CK4	10	Green Identification Ring for OKi Tips (Pack of 50)

## Miscellaneous Accessories

AC-BRUSH-P		Soft Brass Brush (Pack of 6)
AC-CP2		Cartridge and Tip Removal Pad
AC-FX1	13	Fume Extraction Kit
AC-IK		Interlocking / Mounting Kit
MFR-PM70		Power Meter for MFR Series
PS-PM900		Power Meter for PS-900
AC-Y10		Yellow Sponge for WS1 Workstand (Pack of 10)
AC-YS4		Yellow Sponge Round for WS2 Workstand (Pack of 10)
AC-BP		Brass Pad (Pack of 10)



## Desoldering Accessories

AC-TC-P		Desoldering Tip Cleaner (Pack of 12)
AC-SK1		Seal Kit Collection Chamber
AC-VL		ESD Air Hose
MFR-HDCA		Desolder Coil Assembly
AC-CC		Solder Collection Chamber
AC-DFP		Chamber Liner, Filter & Fume





# Tips and Cartridges Selection

RANGE	Tip	Cartridge	Soldering	Rework	Blade	Tweezer	Desoldering	PS-HC3 Hand-piece	PS-HC1 Hand-piece	MFR-H2-ST Hand-piece	MFR-H6-SSC Hand-piece	MFR-H1-SC Hand-piece	MFR-H4-TW Hand-piece	MFR-HSR Hand-piece	MFR-HDS Hand-piece
SxV	✓		✓					✓		✓					
CxV	✓				✓			✓		✓					
PHT	✓		✓					✓							
SxP		✓	✓								✓		✓		
RxP		✓		✓							✓		✓		
SSC		✓	✓							✓					
TxP		✓				✓						✓			
DxP	✓						✓								✓

## Maximum Tip Temperature For Smartheat® Soldering Cartridges and Tips

Based on our SmartHeat® Technology, our tips and cartridges provide a fixed temperature, offering users a safe and thermally effective solution to their soldering needs as well as complete process control.

Furthermore, fixed temperature cartridges and tips can offer better tip life because they can operate at a lower temperature than conventional technology.

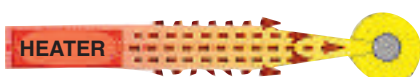
We acknowledge that some of our customers have specific maximum temperature criteria to meet when choosing a tip/cartridge for a particular application. The table below provides the max heater temperature:

Series	P/N Example	Substrate / Application	Max tip temperature
<i>OKi Tips and Cartridges: the second digit (x) denotes substrate material. Replace x by T, F or C as per below :</i>			
<b>T</b>	SxV-xxxx = STV-xxxx	Temp Sensitive	690°F/365°C
<b>F</b>	SxV-xxxx = SFV-xxxx	FR4/Glass Fiber	790°F/421°C
<b>C</b>	SxV-xxxx = SCV-xxxx	Ceramic	860°F/460°C
<i>OKi PHT Tips only: 2 Series available. Replace x by 65 or 75 as per below:</i>			
<b>650</b>	PHT-x3035 = PHT-653035	Temp Sensitive	680°F/360°C
<b>750</b>	PHT-x3035 = PHT-753035	FR4/Glass Fiber	780°F/416°C
<i>Metcal SSC Cartridges: 3 Series available. Replace x by 5, 6 or 7 as per below:</i>			
<b>500</b>	SSC-x17A = SSC-517A	Temp Sensitive	575°F/302°C
<b>600</b>	SSC-x17A = SSC-617A	Temp Sensitive	675°F/357°C
<b>700</b>	SSC-x17A = SSC-717A	FR4/Glass Fiber	775°F/412°C

## Choosing the correct tip geometry



Small pad demand is satisfied with a small geometry tip.



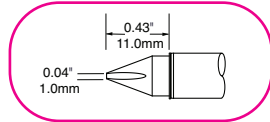
Large pad demand with small tip geometry will not meet the thermal energy required to form a good solder joint.



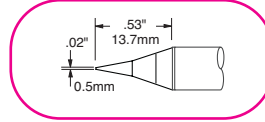
Large pad demand requires large tip geometry to form a good solder joint.

# SxV and CxV Soldering Tips

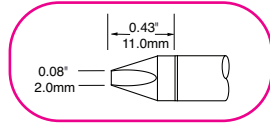
The SxV and CxV tips are for use with the soldering tip hand-pieces of the PS and MFR Platforms and are recommended for heavy duty applications. Full range available at [www.okinternational.com](http://www.okinternational.com).



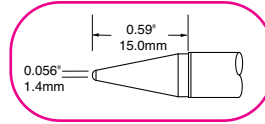
**SFV-CH10**  
Chisel Solder Tip 30°  
1.0mm (.04")



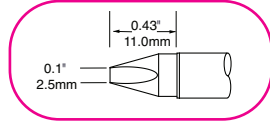
**SFV-CNL10**  
Conical Long Solder Tip  
1.0mm (.04")



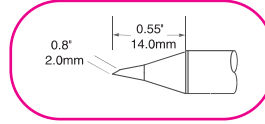
**SFV-CH20**  
Chisel Solder Tip  
2.0mm (.08")



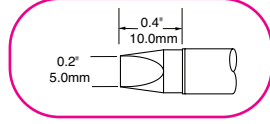
**SFV-CNL14**  
Conical Long Solder Tip  
1.4mm (.056")



**SFV-CH25**  
Chisel Solder Tip  
2.5mm (.10")



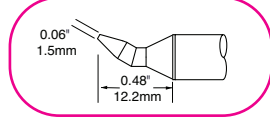
**SFV-DRH20**  
Conical Bevel Solder Tip  
2.0mm (.08")



**SFV-CH50**  
Chisel Solder Tip  
5.0mm (.20")



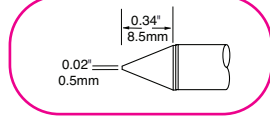
**SFV-DRH20CP**  
Drag Soldering Tip Hoof  
2.5mm (.10")



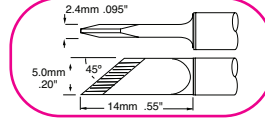
**SFV-CHB15**  
Chisel Bent 30° Solder Tip  
1.5mm (.06")



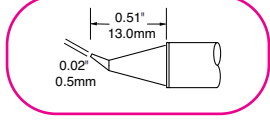
**SFV-DRH30CP**  
Drag Soldering Tip Hoof  
3.6mm (.14")



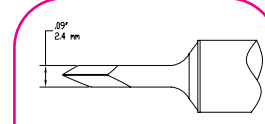
**SFV-CN05**  
Conical Solder Tip  
0.5mm (.02")



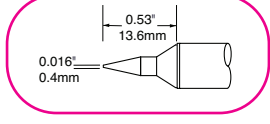
**SFV-DRK50**  
Knife Solder Tip  
5.0mm (.20")



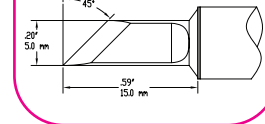
**SFV-CNB05**  
Conical Bent Solder Tip  
0.5mm (.02")



**SFV-DRK50S**  
Drag Soldering Tip Knife  
5.0mm (.20")



**SFV-CNL04**  
Conical Long Solder Tip  
0.4mm (.016")



**CFV-BL100**  
Blade Tip L=10mm (.40")

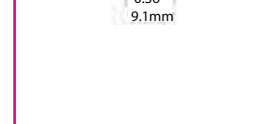


**CFV-BL250**  
Blade Tip L=25mm (1")

**CFV-BL350**  
Blade Tip L=35mm (1.4")

**CFV-BL400**  
Blade Tip L=40mm (1.6")

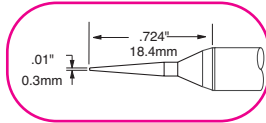
**CFV-BL500**  
Blade Tip L=50mm (2")



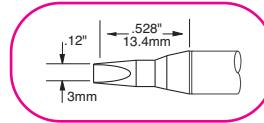
**F** = FR4 / Glass Fiber, for most standard applications. Two other series also available, just replace F with either T or C.  
**T** = Temperature Sensitive **C** = Ceramic. Note: CxV tips are only available in F and C Series.

## SxV Soldering Tips - Easy Access

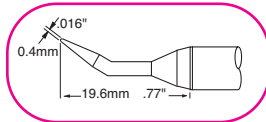
The SxV Easy Access tips are for use with the soldering tip hand-pieces of the PS and MFR Platforms and are recommended for longer reach touch up applications. Full range available at [www.okinternational.com](http://www.okinternational.com).



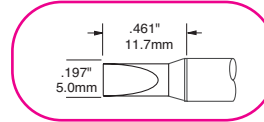
**SFV-CNL03A**  
Conical Long Solder Tip  
0.3mm (.0125")



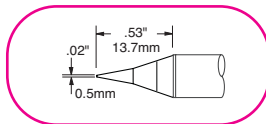
**SFV-CH30A**  
Chisel Solder Tip  
3.0mm (.118")



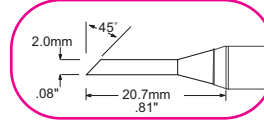
**SFV-CNB04A**  
Conical Bent Solder Tip  
0.4mm (.0157")



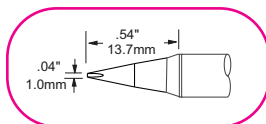
**SFV-CH50A**  
Chisel Solder Tip  
5.0mm (.197")



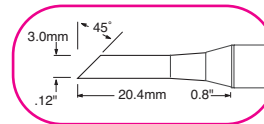
**SFV-CN05A**  
Conical Solder Tip  
0.5mm (.02")



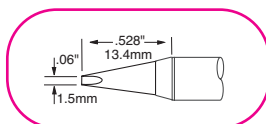
**SFV-DRH420A**  
Drag Solder Tip Hoof, 45°  
2.0mm (.079")



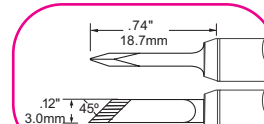
**SFV-CH10A**  
Chisel Solder Tip  
1.0mm (.039")



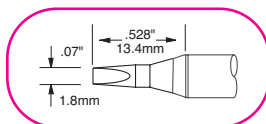
**SFV-DRH430A**  
Drag Solder Tip Hoof, 45°  
3.0mm (.118")



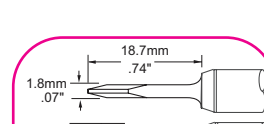
**SFV-CH15A**  
Chisel Solder Tip  
1.5mm (.059")



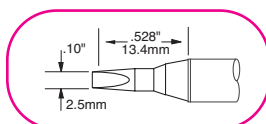
**SFV-DRK30A**  
Knife Solder Tip,  
3.0mm (.118")



**SFV-CH18A**  
Chisel Solder Tip  
1.8mm (.071")

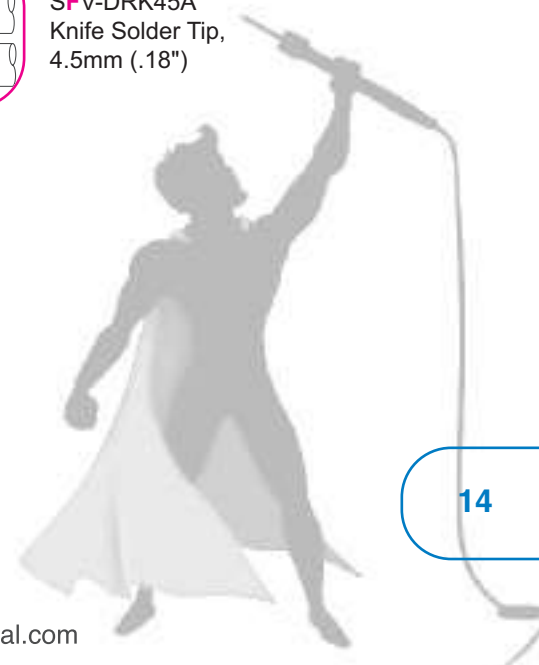


**SFV-DRK45A**  
Knife Solder Tip,  
4.5mm (.177")



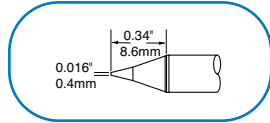
**SFV-CH25A**  
Chisel Solder Tip  
2.5mm (.098")

**F** = FR4 / Glass Fiber, for most standard applications.  
**Two other series also available, just replace F with either T or C.**  
**T** = Temperature Sensitive **C** = Ceramic

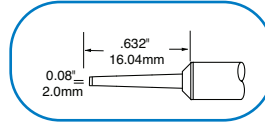


# SxP Soldering Cartridges

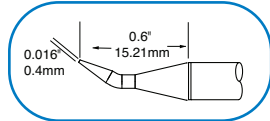
The SxP cartridges are for use with the soldering cartridge hand-piece of the MFR Single and Dual Platform. They provide a wide range of options addressing specialized soldering and rework applications. Full range available at [www.okinternational.com](http://www.okinternational.com).



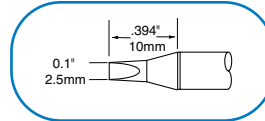
**SFP-CN04**  
Conical Cartridge 0.4mm (.016")



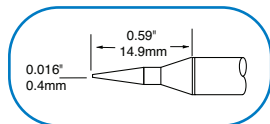
**SFP-CHL20**  
Chisel Soldering Cartridge 60°  
Long Reach 2.0mm (.08")



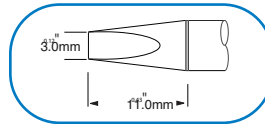
**SFP-CNB04**  
Conical Cartridge Bent  
0.4mm (.016")



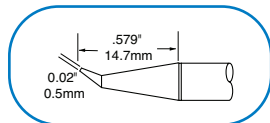
**SFP-CH25**  
Chisel Cartridge 30°  
2.5mm (.10")



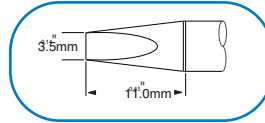
**SFP-CNL04**  
Conical Cartridge Long Reach  
0.4mm (.016")



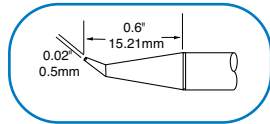
**SFP-CH30**  
Chisel Cartridge 30°  
3.0mm (.12")



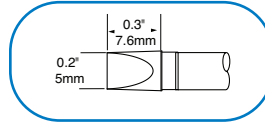
**SFP-CNB05**  
Conical Cartridge Bent  
0.5mm (.02")



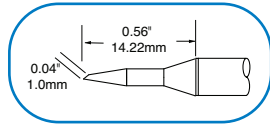
**SFP-CH35**  
Chisel Cartridge 30°  
3.5mm (.14")



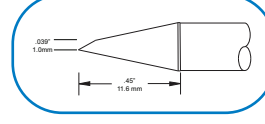
**SFP-DRH05**  
Drag Soldering Cartridge Hoof  
0.5mm (.02")



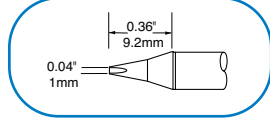
**SFP-CH50**  
Chisel Cartridge 30°  
5.0mm (.20")



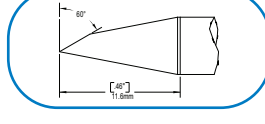
**SFP-BVL10**  
Bevel Cartridge 60°  
1.0mm (.04")



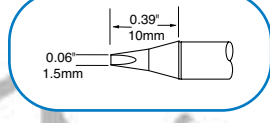
**SFP-DRH610**  
Drag Soldering Cartridge Hoof  
1.0mm (.04")



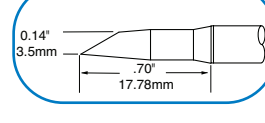
**SFP-CH10**  
Chisel Cartridge 30°  
1.0mm (.04")



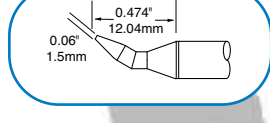
**SFP-DRH615**  
Drag Soldering Cartridge Hoof  
1.5mm (.06")



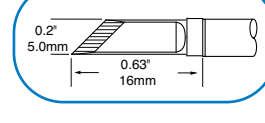
**SFP-CH15**  
Chisel Cartridge 30°  
1.5mm (.06")



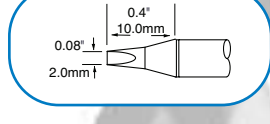
**SFP-DRH35**  
Drag Soldering Cartridge Hoof  
3.5mm (.14")



**SFP-CHB15**  
Chisel Cartridge 30° Bent  
1.5mm (.06")



**SFP-DRK50**  
Drag Soldering Cartridge  
5.0mm (.20")



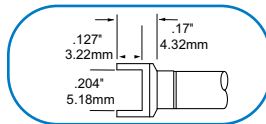
**SFP-CH20**  
Chisel Cartridge 30°  
2.0mm (.08")



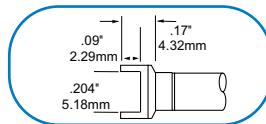
# RxP Rework Cartridges

The RxP cartridges are for use with the soldering cartridge hand-piece of the MFR Single and Dual Platform. Full range available at [www.okinternational.com](http://www.okinternational.com).

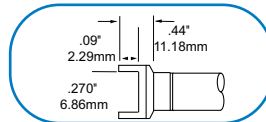
**Tunnel cartridges** are used for the removal of multi-lead, two-sided components such as SOICs, SOJs and TSOPs.



**RFP-DL1**  
Tunnel Cartridge

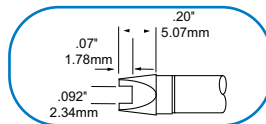


**RFP-DL2**  
Tunnel Cartridge

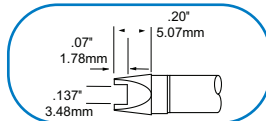


**RFP-DL3**  
Tunnel Cartridge

**Slot cartridges** are used for the removal of discrete and passive devices

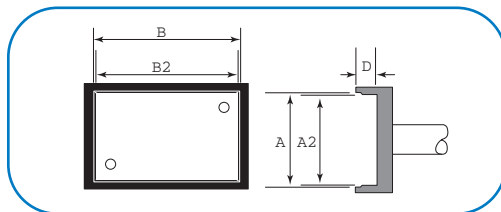


**RFP-SL1**  
0805 Chip Package



**RFP-SL2**  
1206 Chip Package

**Quad cartridges** are used for the removal of four-sided devices such as QFPs and PLCCs.

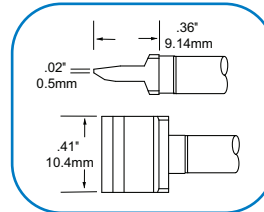


Dimensions in mm (")

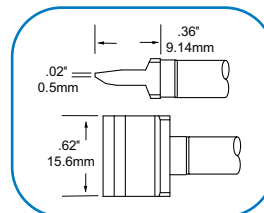
Part No.	SMT TYPE	A2	A	B2	B	D
RFP-QD4	PLCC 32	11.43 (.450)	12.70 (.500)	13.97 (.550)	15.24 (.600)	3.81 (.150)
RFP-QD6	PLCC 44	16.76 (.660)	17.78 (.700)	16.76 (.660)	17.78 (.700)	3.81 (.150)
RFP-QD7	PLCC 68	24.38 (.960)	25.27 (.995)	24.38 (.960)	25.27 (.995)	5.59 (.220)
RFP-QD10	PLCC 52	19.30 (.760)	20.32 (.800)	19.30 (.760)	20.32 (.800)	3.81 (.150)
RFP-QD15	TQFP 80	12.32 (.485)	13.34 (.525)	12.32 (.485)	13.34 (.525)	2.79 (.110)
RFP-QD19	QFP 44	16.13 (.635)	16.13 (.635)	16.13 (.635)	16.13 (.635)	3.30 (.130)
RFP-QD20	QFP 100	16.51 (.650)	16.51 (.650)	22.48 (.885)	22.48 (.885)	3.30 (.130)

**F** = FR4 / Glass Fiber, for most standard applications. Two other series are also available, just replace F with either T or C.  
**T** = Temperature Sensitive, **C** = Ceramic. Note: RxP tips are only available in F and C Series.

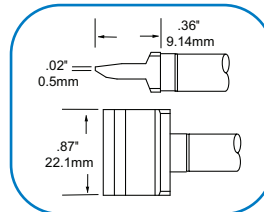
**Blade cartridges** are designed to allow effective and quick cleaning of PCB pads.



**RFP-BL1**  
Blade Cartridge



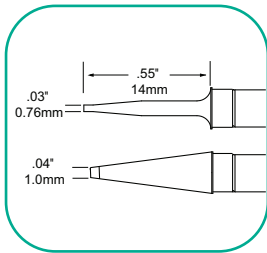
**RFP-BL2**  
Blade Cartridge



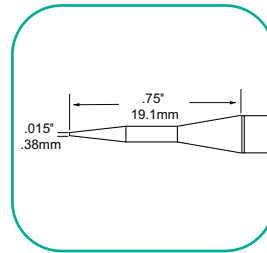
**RFP-BL3**  
Blade Cartridge

# TxP Tweezer Cartridges

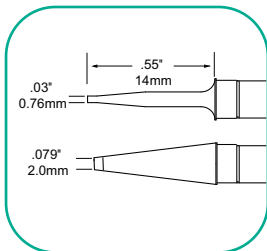
For use on MFR Single and Dual Platforms  
 More cartridges available at [www.okinternational.com](http://www.okinternational.com)



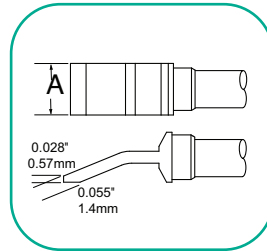
**TFP-BLP1**  
 Tweezer Cartridge  
 Blade Pair  
 1.0mm (.04")



**TFP-CNP1**  
 Tweezer Cartridge  
 Conical Pair  
 0.4mm (.015")



**TFP-BLP2**  
 Tweezer Cartridge  
 Blade Pair  
 2.0mm (.08")

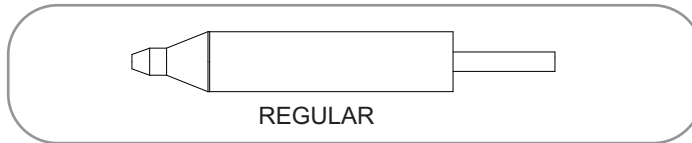


**Heavy Duty Tweezer Pair**  
**TFP-BLH40** - A= 6.35mm (.25")  
**TFP-BLH50** - A= 16mm (.62")  
**TFP-BLH60** - A= 20.5mm (.81")  
**TFP-BLH70** - A= 28mm (1.1")

**F** = FR4 / Glass Fiber, for most standard applications. Two other series are also available, just replace F with either T or C.  
**T** = Temperature Sensitive, **C** = Ceramic

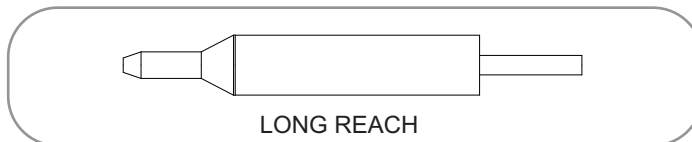
# DxP Desoldering Tips

For use on MFR Desoldering Platform  
 More tips available at [www.okinternational.com](http://www.okinternational.com)



REGULAR

DFP-CN2	Ø A = 0.67mm (.026")	Ø B = 1.8mm (.07")
DFP-CN3	Ø A = 0.79mm (.031")	Ø B = 2.05mm (.080")
DFP-CN4	Ø A = 1.05mm (.041")	Ø B = 2.30mm (.090")
DFP-CN5	Ø A = 1.31mm (.052")	Ø B = 2.65mm (.104")
DFP-CN6	Ø A = 1.55mm (.061")	Ø B = 2.85mm (.112")
DFP-CN7	Ø A = 2.44mm (.096")	Ø B = 3.65mm (.143")



LONG REACH

DFP-CNL3	Ø A = 0.79mm (.031")	Ø B = 2.05mm (.080")
DFP-CNL4	Ø A = 1.05mm (.041")	Ø B = 2.30mm (.090")
DFP-CNL5	Ø A = 1.31mm (.052")	Ø B = 2.65mm (.104")

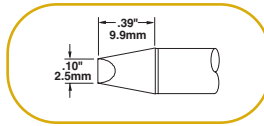


**F** = FR4 / Glass Fiber, for most standard applications. Two other series are also available, just replace F with either T or C.  
**T** = Temperature Sensitive, **C** = Ceramic. Note: DxP tips are only available in F and C Series.

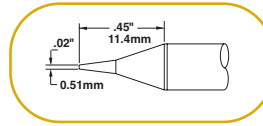
# SSC Soldering Cartridges

For use on MFR Single Platform

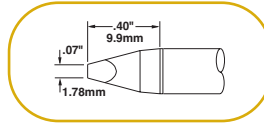
More cartridges available at [www.okinternational.com](http://www.okinternational.com)



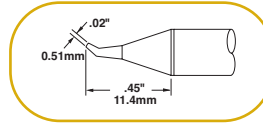
SSC-736A  
Chisel 30°  
2.5mm (.10")



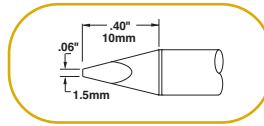
SSC-722A  
Conical Sharp  
0.51mm (.02")



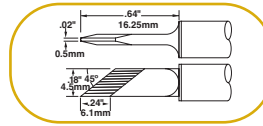
SSC-737A  
Chisel 30°  
1.78mm (.07")



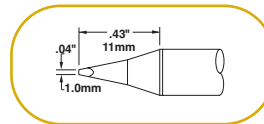
SSC-726A  
Sharp Bent 30°  
0.51mm (.02")



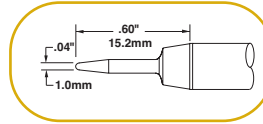
SSC-738A  
Chisel 30°  
1.50mm (.06")



SSC-773A  
Drag Soldering (increased tinned area)  
6.1mm (.24")



SSC-725A  
Chisel 30°  
1.0mm (.04")



SSC-701A  
Conical Sharp  
1.0mm (.04")

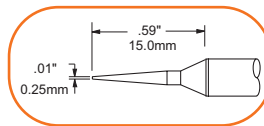
7= 700 Series for most standard applications. 6= 600 Series and 5= 500 Series also available for temperature sensitive applications. To order these series, replace 7 with either 6 or 5 except \* (not available in 500 Series)

# PHT Soldering Tips

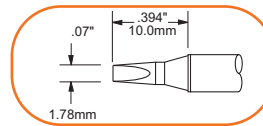
For use on PS Platform

More tips available at [www.okinternational.com](http://www.okinternational.com)

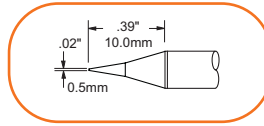
The PHT tips are specifically offered to provide a solution for light load and fine access applications using the PS-900 and the PS-CA1 coil assembly.



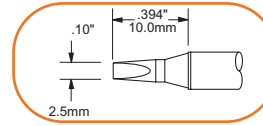
PHT-752017  
Conical 30°  
0.25mm (.01")



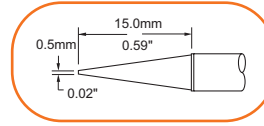
PHT-750335  
Chisel Fine 30°  
1.78mm (.07")



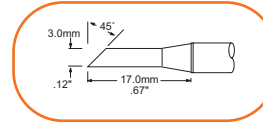
PHT-752035  
Conical Fine  
0.5mm (.02")



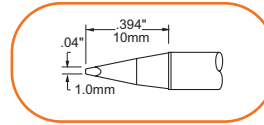
PHT-751355  
Chisel 30°  
2.5mm (.10")



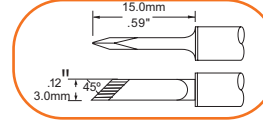
PHT-753035  
Conical 30°  
0.5mm (.02")



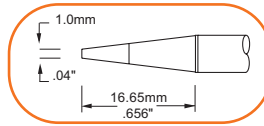
PHT-754487F  
Hoof 45° Face Only  
3.0mm (.12")



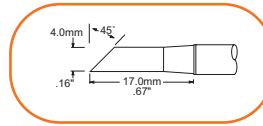
PHT-750315  
Chisel Fine 30°  
1.0mm (.04")



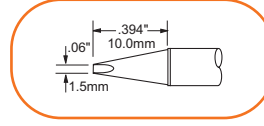
PHT-755437  
Knife Sharp 45°  
3.0mm (.12")



PHT-753077  
Power Conical  
1.0mm (.04")



PHT-754497  
Hoof 45°  
4.0mm (.16")



PHT-750325  
Chisel 60°  
1.5mm (.06")

75 = 750 Series for most standard applications. 65 = 650 Series also available for temperature sensitive applications. To order this series, replace 75 with 65.

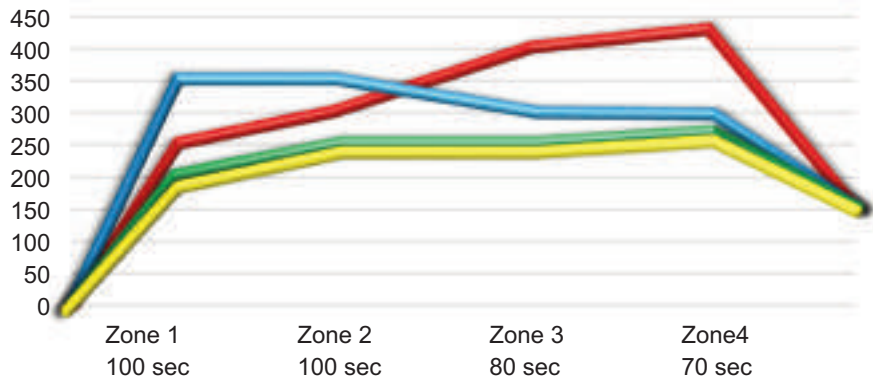
# Convection Rework Product Selection

SYSTEMS	110V	240V	Analog	Digital	Pre-heater	Hand held tool	Programmable	Manual	External TC option	Vacuum pickup	Integrated board holder	Profiles Storage
MRS-1000	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
HCT-1000	✓	✓		✓		✓	✓	✓	✓	✓		✓
PCT-1000	✓	✓		✓	✓		✓	✓	✓			✓
PCT-100-11	✓		✓		✓			✓				
PCT-100-21		✓	✓		✓			✓				
PCT-101-11	✓		✓		✓			✓				
PCT-101-21		✓	✓		✓			✓				
PCT-102-11	✓		✓		✓			✓				
PCT-102-21		✓	✓		✓			✓				
PCT-103-11	✓		✓		✓			✓			✓	
PCT-103-21		✓	✓		✓			✓			✓	
HCT-900-11	✓		✓			✓		✓				
HCT-900-21		✓	✓			✓		✓				

## Why is convection important?

- Best stable heating method for rework
- Excellent temperature stabilization across the PCB
- Gentle ramp up to temperature prevents component damage
- Gentle ramp up reduces solder balls
- Cool down mode ensures proper solder joint formation
- Non-contact reflow prevents thermal shocking of delicate components such as BGAs, CSPs and QFPs
- Non-contact reflow assists with component self centering during the soldering process
- Convection removal is the preferred method for component recycling
- Convection is used in most manufacturing production lines today

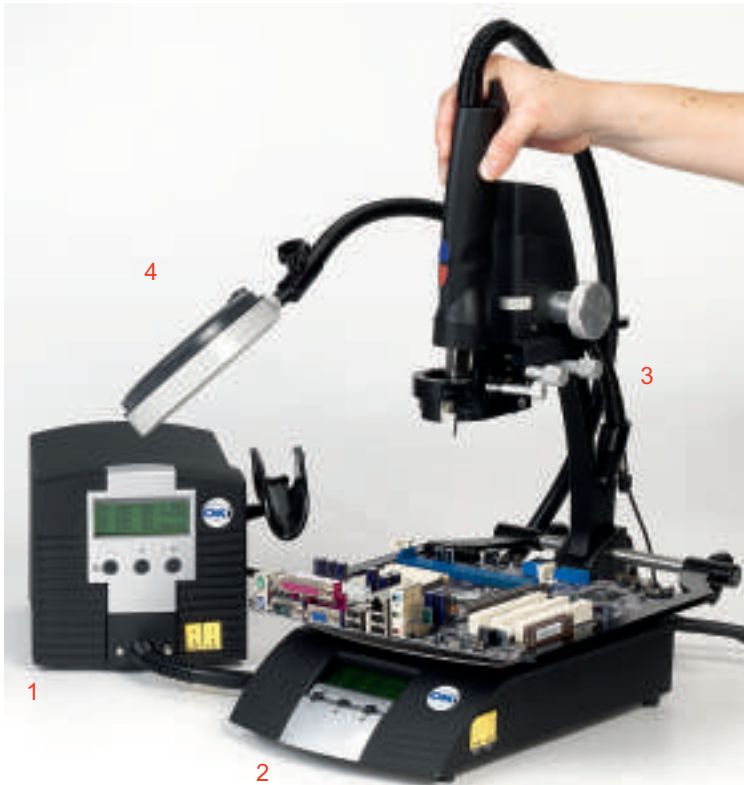
**Typical Profile Characteristics of the MRS System**



■ HCT-1000      ■ Top of Component  
■ PCT-1000      ■ Solder Reflow Area



# MRS-1000 Modular Rework System



The MRS-1000 Modular Rework System is an **integrated convection rework** system for the removal and placement of BGA/CSP and SMT components.

The MRS-1000 is comprised of a hand held convection tool, preheater, and adjustable tool holder with board holder to create a manually assisted rework system. A series of nozzles, targeting a variety of applications, and light magnifier round out the product offering for this system.

The 4 components of the MRS-1000 Systems are:

1. HCT-1000 Programmable Hand Held Convection Tool. *See pages 21 & 22.*
2. PCT-1000 Programmable Pre-heater. *See page 23.*
3. ATH-1000 Adjustable Tool Holder. *See page 24.*
4. LM-1000 Light Magnifier. *See page 24.*

## Key Features & Benefits

- ▶ Simple removal and replacement of SMT components
- ▶ Quick, easy and cost effective removal of BGA & CSP
- ▶ Digital display for repeatable temperature settings
- ▶ Automatic control of the preheater for simple operation
- ▶ Easy 5 zone profile creation for operator repeatability
- ▶ Integrated vacuum pickup for easy component removal
- ▶ Hand held or tool holder mounted for operator comfort
- ▶ Manual mode for quick setup
- ▶ External thermocouple for process setup and verification
- ▶ Digital controlled airflow for repeatable results
- ▶ X, Y, Z and Theta controls for component alignment
- ▶ Adjustable PCB holder for easy change outs
- ▶ Automaticity lifts the component at the end of the cycle, preventing operators from prematurely lifting components and damaging expensive PCBs

Part No.	Description
MRS-1000A	<b>Modular Rework System Advanced</b> <i>Incl.: HCT-1000, PCT-1000, ATH-1000A and LM-1000</i>
MRS-1000B	<b>Modular Rework System Basic</b> <i>Incl.: HCT-1000, PCT-1000, ATH-1000B and LM-1000</i>

The 4 components of the MRS system can also be ordered separately, see pages 21 to 24.



# HCT-1000 Programmable Hand Held Convection Tool



The HCT-1000 is a fully Programmable Hand Held Convection Tool offering **fast and easy removal and placement of SMT components**.

The HCT-1000 stands out as a versatile convection rework tool. It can be used on its own or as part of the MRS-1000 Modular Rework System for more complex applications.

The system comes equipped with a 5mm nozzle and nozzle adapter. In addition, a wide range of nozzles is available, see page 22.

## Key Features & Benefits

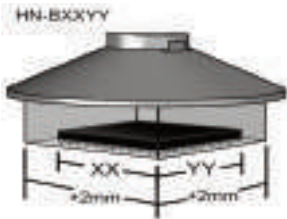
- ▶ Integrated vacuum pickup for easy component removal
- ▶ Profile creation for operator repeatability and storage for up to 50 user defined profiles
- ▶ Manual mode for quick setup
- ▶ External thermocouple for process setup and verification
- ▶ Hand-piece controls for heater and vacuum
- ▶ Programmable, digitally controlled airflow for repeatable results
- ▶ Multiple modes of operation: manual, 4 zone heating (with the MRS-1000 System)
- ▶ The HCT-1000 is connected to the PCT-1000 via a cable when used as part of the MRS System
- ▶ May be used with ATH-1000 Adjustable Tool Holder (see page 24)

Part No.	Description
HCT-1000	Programmable Hand Held Convection Tool
Includes:	
HCT-PS1000	HCT-1000 Power Supply
HCT-HV1	Hand-piece with integral vacuum, cord and connector
HCT-FS2	Footswitch, Dual, HCT-1000
HCTA-VC50-5	Vacuum Cup, 3/16" (5.00mm), pack of 5
HCTA-VC64-5	Vacuum Cup, 1/4" (6.4mm), pack of 5
HCTA-VC80-5	Vacuum Cup, 5/16" (8mm), pack of 5
HCTA-VC11-5	Vacuum Cup, 7/16" (11mm), pack of 5
HCTA-TH1	Hand-piece Tool Holder
AC-TCK-24-36	Thermocouple
HCTA-CC	Communications Cable
HCT-HTRASSY	Heater Assembly

## Technical Specifications

Size	229 x 178 x 152mm (9" x 7" x 6")
Weight	5.4kg (12 lbs.)
Rated Power	600 W
Input Voltage	100-240 VAC, 50/60 Hz
Storage	0°C to 50°C Temperature (32°F to 122°F)
Air Flow	5-25 l/minute
Temperature Range	Up to 450°C (840°F)
Vacuum Pump	15" Hg (381mm Hg)
Noise Level	<55 dB

# HCT-1000 Programmable Hand Held Convection Tool

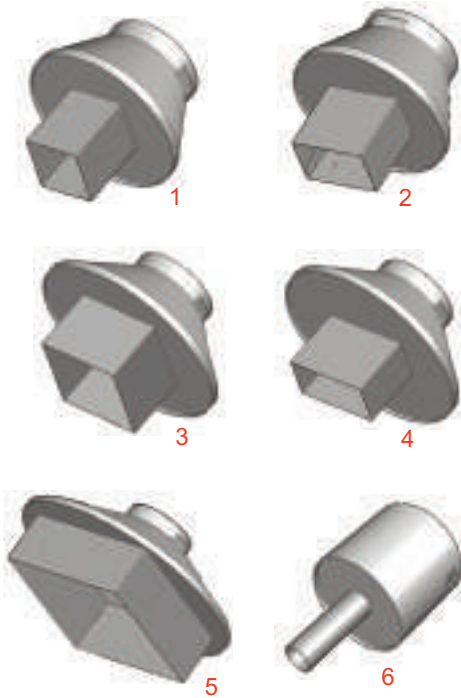


## HN Series Nozzles

A series of 14 Nozzles are available for use with the MRS-1000 / HCT-1000. The nozzles fit applications reworking components of all sizes from (including, but not limited to) BGAs, QFPs, LGAs, PLCC and SOIC. A custom nozzle program is also available.

## Nozzle Measurement and Selection

The nozzle part number (the digits after the “B”) represents the size of the component. 2mm have been added to each side of the internal nozzle dimension to allow for component access.



Part Number	Component Size	Components
HN-B0707	1 7mm X 7mm	CSP, LGA44
HN-B1010	1 10mm X 10mm	CSP, LGA178, LCC28
HN-B1414	1 14mm X 14mm	CSP, QFP, TQFP100
HN-B1408	2 14mm X 8mm,	CSP, SOIC24M
HN-B1515	3 15mm X 15mm	BGA
HN-B1818	3 18mm X 18mm	PLC44, CSP, TQFP100, BGA
HN-B2525	3 25mm x 25mm	BGA, PLCC68
HN-B1809	4 18.2mm X 8.5mm	SOLJ28, SOIC28M, TSOP32
HN-B2519	4 24.5mm X 18.5mm	QFP100, QFP80
HN-B2727	5 27mm X 27mm	BGA
HN-B3232	5 32mm X 32mm	BGA
HN-B3535	5 35mm X 35mm	BGA
HN-B4040	5 40mm X 40mm	BGA
HN-J0005	6 5mm Ø Diameter	DISCRETE

## Other Nozzle Accessories for HCT-1000

HCT-NC	7	Nozzle Carrier
HNA-1	8	Nozzle Adapter
HCTA-NW1	9	Nozzle Wrench





# PCT-1000 Programmable Pre-heater



The PCT-1000 is a fully Programmable Pre-heater offering **more heat, lower temperatures for faster and higher quality results.**

The PCT-1000 provides users exceptional ability to increase heat capacity with highly controlled thermal output.

The PCT-1000 can be used as a stand alone unit or as part of the MRS-1000 Modular Rework System.

## Key Features & Benefits

- ▶ Adds heat capacity and enables lower process temperatures
- ▶ Used in a variety of processes including soldering, desoldering, SMD rework
- ▶ Provides faster production rates while lowering overall process temperatures.
- ▶ 2 modes: manual for constant heater temperature and profile for greater control
- ▶ 4 programmable heating zones and 1 cooling zone
- ▶ Storage for up to 50 user defined profiles for easy set-up
- ▶ Heater control with temperature controlled either at the heater output or at the board
- ▶ High efficiency vortex heater design maximizes ramp to temperature for increased productivity

Part No.	Description
PCT-1000	1 Programmable Preheater
Includes:	
PCT-FS1	2 PCT-1000 Foot Switch
AC-TCK-24-36	3 Thermocouple



## Technical Specifications

Size	330 x 203 x 76mm (13" x 8" x 3")
Weight	3.4kg (7.5 lbs)
Rated Power	1200 W
Input Voltage	100-240 VAC, 50/60 Hz
Storage Temperature	0°C to 50°C (32°F to 122°F)
Air Flow	19 cfm
Temperature Range	Up to 350°C (622°F)
Operational Modes	Setup, Run, Manual, Active Setup
Display	LCD 20 x 4 display segments
Number of Programs	50 memory locations
Number of Zones	5 (4 Heat Zones, 1 Cool Down Zone)

See Board Holders options  
on pages 24 and 26



The ATH-1000 and LM-1000 are both attached to the back of the PCT-1000 when the components are used together, as part of the MRS System.

## ATH-1000 Adjustable Tool Holder



### Key Features & Benefits

- ▶ Adjustable Tool Holder designed to work as stand-alone operation or integrated as part of the MRS-1000
- ▶ Consists of a board holder, locking hand-piece retainer, Z axis stop and mounting configurations
- ▶ Sturdy and easy to attach to the PCT-1000 when incorporated into the MRS System.

Two Adjustable Tool Holder models are available:

- ▶ The **ATH-1000A** uses the Advanced Head Assembly which features 4" of Z axis adjustment, ½" fine adjustment of the X & Y axis as well as 30° θ adjustment.
- ▶ The **ATH-1000B** uses the Basic Head assembly and provides 4" of Z axis adjustment.

Part No.	Description
ATH-1000A	Adjustable Tool Holder, Advanced Head (without base plate)*
ATH-1000B	Adjustable Tool Holder, Basic Head (without base plate)*
ATH-RAIL-12	Board Holder Rail for ATH-1000, 12"
	<sup>1</sup> Both ATH-1000A and ATH-1000B are supplied with an 8" rail as standard (ATH-RAIL-8).
ATH-BASE	<sup>2</sup> Base assembly for ATH-1000A and ATH-1000B

\* As part of the MRS-1000, the ATH-1000 is attached to the back of the PCT-1000, see page 23. The ATH-BASE can be ordered separately when the ATH-1000 is used as a stand-alone unit.

## LM-1000 Light Magnifier



### Key Features & Benefits

- ▶ Integrated light and magnifier
- ▶ 4x magnification lens
- ▶ Integrated LED lighting system for shadow free illumination
- ▶ Can be used with the MRS System or as standalone operation

Part No.	Description
LM-1000	<sup>3</sup> Light Magnifier (without base plate)*
LM-BP	<sup>4</sup> Base Plate for Light Magnifier

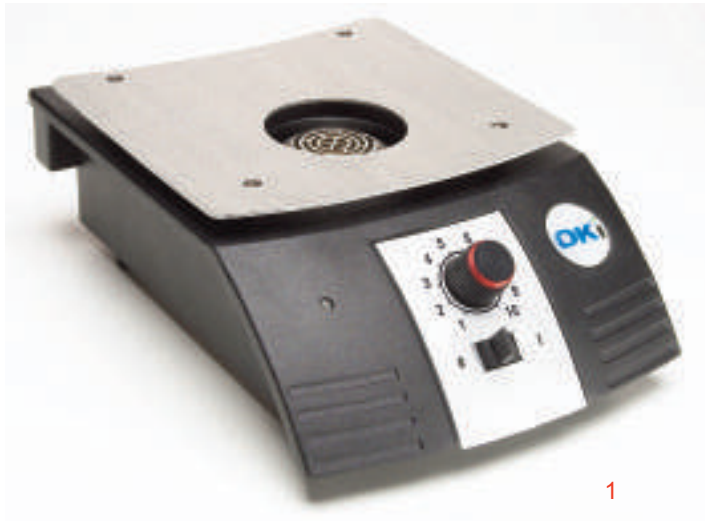
\* As part of the MRS-1000, the LM-1000 is attached to the back of the PCT-1000, see page 23. The LM-BP can be ordered separately when the LM-1000 is used as a stand-alone unit.

### Technical Specifications

Weight	2.9kg (6.5 lbs)
Magnification	4x
Lighting	8 LEDs, white
Power	24V DC

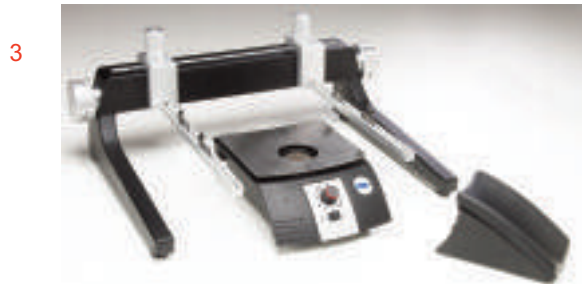


# PCT-100 Focused Convection Pre-heater



## Key Features & Benefits

- ▶ For hand soldering, through-hole desoldering, hot air SMT rework, lead-free, multi-layer boards and assemblies with large ground planes
- ▶ Improved process time and exceptional control of potentially damaging temperatures
- ▶ Vented top plate allows the PCB to be placed directly over the heater for maximum heat transfer
- ▶ Integrated or stand-alone board holder
- ▶ Optional adjustable-angle arm rest



The PCT-100 is a focused convection pre-heater that is designed to **provide extra heat capacity** for demanding applications.

Unlike conventional pre-heaters, the PCT-100 Focused Convection Pre-heater directly targets the underside PCB providing a substantial thermal boost for lead-free processes.

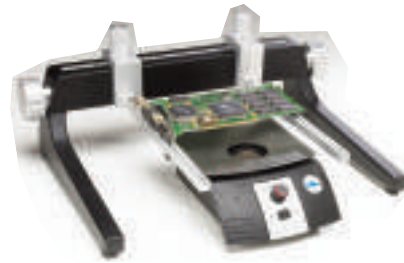
Part No.	Description
PCT-100-11	1 Pre-heater 115V
PCT-100-21	1 Pre-heater 230V
PCT-101-11	2 Pre-heater 115V with Arm Rest
PCT-101-21	2 Pre-heater 230V with Arm Rest
PCT-102-11	3 Pre-heater 115V with Arm Rest and Boardholder
PCT-102-21	3 Pre-heater 230V with Arm Rest and Boardholder
PCT-103-11	4 Pre-heater 115V with Arm Rest and Integrated Boardholder
PCT-103-21	4 Pre-heater 230V with Arm Rest and Integrated Boardholder
PCT-1HE-11	Heating Element Replacement for PCT-100 115V
PCT-1HE-21	Heating Element Replacement for PCT-100 230V
BH-010	Integrated Boardholder for PCT-100
BH-100	Boardholder for PCT-100
PCT-AR	Arm Rest for PCT-100
PCT-ARPAD	Replacement Pad for Arm Rest PCT-AR

## Technical Specifications

Input Voltage	115 V (PCT-100-11) 230 V (PCT-100-21)
Heater Rating	450 W
Storage Temperature	-10°C—60°C (14°F—140°F)
Environmental Temperature	0°C—40°C (32°F—104°F)
Air Flow	0.2 CFM (280 l/min)
Control Temperature	Variable up to 300°C (572°F)
Surface Resistivity ESD	10 <sup>6</sup> Ω - 10 <sup>11</sup> Ω
Dimensions (L x W x H)	205 x 155 x 65 mm (8" x 6.1" x 2.6")
Weight	1.6 kg (3.5 lbs)
Certificate/Approvals	cTUVus, CE

See more Board Holders on pages 24 and 26

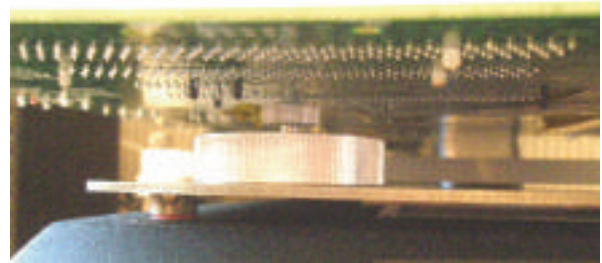
## Board Holders for PCT-1000 & PCT-100 Pre-heaters



**BH-100** Board Holder. Recommended for use with the PCT-100 Pre-heater



**BH-1000** Post-Rail Board Holder. Includes: 4 posts, 2 rails with sliding clips, 4 support pins and flat-head support



**BH-PK1000** Board Holder Pin Kit. Includes: 2 discs, 2 long pins, 2 short pins



**ATH-1000(A or B) + ATH-BASE**

**ATH-1000(A or B) + PCT-1000**

*A = Advanced Head - B = Basic Head*



# HCT-900 Hand Held Convection Tool



The HCT-900 Hand Held Convection Tool offers a **low cost, versatile rework solution** for a wide variety of production and rework application challenges:

- ▶ Rework a wide range of simple and complex SMT components
- ▶ Rework pin in-hole devices such as sockets and connectors
- ▶ Remove solder shorts and splashes by using it with solder braid and flux
- ▶ Plastic applications such as applying shrink wrap to components

## Key Features & Benefits

- ▶ Versatile Hot Air Tool for soldering and desoldering applications
- ▶ Robust and compact design
- ▶ Analog controls for both airflow and heat
- ▶ Closed loop feedback circuit controls the temperature
- ▶ Unique low noise air pump (less than 45 db) provides precise airflow control
- ▶ Fully ESD compliant



A closed loop feedback circuit allows the desired temperature to be achieved and maintained regardless of changes in the volume of airflow.

Part No.	Description
HCT-900-11	115V Hand Held Convection Tool
HCT-HE-11	Heating Element, Replacement, 115V
HCT-900-21	230V Hand Held Convection Tool
HCT-HE-21	Heating Element, Replacement, 230V

The HCT-900 can be used for the removal and refitting of electronic components, including lead-free, from 0201 up to 304 pin QFP.





# HCT-900 Hand Held Convection Tool

## Nozzle Selection

The HCT-900 is supplied with a standard single jet H-D50 (0.2", 5.0mm) nozzle. In addition, two rework nozzle kits, predefined for specific applications, are available, as well as a full selection of nozzles.



<b>NZKT-1</b>	Nozzle Kit for Chip Resistors, SOIC & TSOP Packages. Includes (one each):
	<ul style="list-style-type: none"> <li>• H-D25      • H-SL16      • H-SL28</li> <li>• H-SOJ40   • H-TS48</li> </ul>
<b>NZKT-2</b>	Nozzle Kit for PLCC, QFP & BQFP packages. Includes (one each):
	<ul style="list-style-type: none"> <li>• H-P20      • H-P44      • H-P84</li> <li>• H-Q1420   • H-Q2626</li> </ul>

	Model	Chip Type	A mm (in)	B mm (in)
	H-P20	PLCC-20	11.9 (0.47")	11.9 (0.46")
	H-P28	PLCC-28	14.5 (0.57")	14.5 (0.57")
	H-P32	PLCC-32	16.9 (0.67")	14.3 (0.56")
	H-P44	PLCC-44	19.5 (0.77")	19.5 (0.77")
	H-P52	PLCC-52	22.0 (0.86")	22.1 (0.87")
	H-P68	PLCC-68	27.0 (1.06")	27.2 (1.07")
	H-P84	PLCC-84	32.4 (1.28")	32.4 (1.28")
	H-Q07	QFP-48	8.4 (0.33")	8.4 (0.33")
	H-Q10	QFP-44	13.4 (0.53")	13.4 (0.53")
	H-Q14	QFP-52,80	17.3 (0.68")	17.3 (0.68")
	H-Q1420	QFP-64,80,100	23.4 (0.92")	18.1 (0.71")
	H-Q28	QFP-120,128,144,160	31.2 (1.23")	31.2 (1.23")
	H-BQ23	BQFP-100	22.4 (0.88")	22.4 (0.88")
	H-Q3232	QFP-240	34.5 (1.36")	34.5 (1.36")
H-BQ38	BQFP-196	37.7 (1.48")	37.7 (1.48")	
H-Q2626	QFP-208	29.8 (1.17")	29.8 (1.17")	
	H-S16	SOIC 14,16	6.8 (0.27")	10.2 (0.4")
	H-SL16	SOL 14,16	10.6 (0.41")	10.8 (0.43")
	H-SL20	SOL 20,20J	10.6 (0.41")	13.3 (0.52")
	H-SL24	SOL 24,24J	10.6 (0.41")	15.9 (0.63")
	H-SL28	SOL 28	10.6 (0.41")	18.4 (0.72")
	H-SL44	SOL 44	16.0 (0.41")	27.9 (1.1")
	H-SOJ32	SOJ 32	13.5 (0.53")	20.6 (0.81")
	H-SOJ40	SOJ 40	13.5 (0.53")	25.4 (1.0")
	H-TS24	TSOP 20-24	17.0 (0.67")	7.1 (0.28")
	H-TS32	TSOP 28-32	21.0 (0.83")	9.1 (0.36")
	H-TS40	TSOP 40	21.0 (0.83")	10.8 (0.43")
	H-TS48	TSOP 48	21.0 (0.83")	13.3 (0.52")
	H-TSW24	TSOP 20-24	10.2 (0.4")	18.4 (0.72")
	H-TSW44	TSOP 24-28/40-44	12.7 (0.5")	19.8 (1.78")
	Model	ø A (mm)		
	H-D25	2.5 (0.1")		
	H-D50	5.0 (0.2")		
	H-D120	12.0 (0.47")		

## Technical Specifications

Input Line Voltage	230 V HCT-900-21 / 115V HCT-900-11
Power	320 W
Air Pump Type	Diaphragm
Air Flow	6-25 l/min
Control Temperature	100°C - 500°C (212°F - 932°F)
Dimensions (L x W x H)	210 x 170 x 140 mm (8.7" x 6.7" x 5.5")
Noise Level	Less than 46 dBA
Surface Resistivity	Unit: 10 <sup>5</sup> Ω - 10 <sup>6</sup> Ω. Hand-piece & tube: 10 <sup>7</sup> Ω - 10 <sup>11</sup> Ω
Weight	4.7Kg (10.4 lbs)
Certification / Approvals	cTUVus, CE

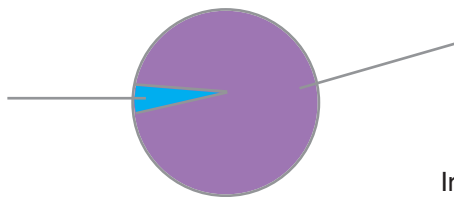
# Fume Extraction Product Selection

SYSTEMS	Volume Extraction	Tip Extraction	Single User	Multiple Users	Portable / Benchtop	Plenum Function	BVX Arms	Omniflex Arms	Particle Extraction*	Gas Extraction	Filter Block Indicator	Analog Unit	Digital Unit	Exhaust Cabinet
BVX-101	✓		✓		✓	✓	✓		✓		✓			
BVX-103	✓		✓		✓	✓	✓			✓	✓			
BVX-201-KIT	✓		✓	✓	✓		✓	✓	✓		✓			
BVX-201-KIT1	✓		✓	✓	✓		✓	✓	✓		✓			
BVX-201	✓		✓	✓	✓		✓	✓	✓		✓			
BVX-203	✓		✓	✓	✓		✓	✓		✓	✓			
BTX-208		✓		✓					✓					
MFX-2200C-A	✓			✓			✓	✓	✓		✓	✓		
MFX-2200C-D	✓			✓			✓	✓	✓		✓		✓	
MFX-2206C-A	✓			✓			✓	✓	✓		✓	✓		
MFX-2206C-D	✓			✓			✓	✓	✓		✓		✓	
MFX-2200G-A	✓			✓			✓	✓		✓	✓	✓		
MFX-2200G-D	✓			✓			✓	✓		✓	✓		✓	
MFX-2206G-A	✓			✓			✓	✓		✓	✓	✓		
MFX-2206G-D	✓			✓			✓	✓		✓	✓		✓	
EC-1800	✓		✓							✓				✓

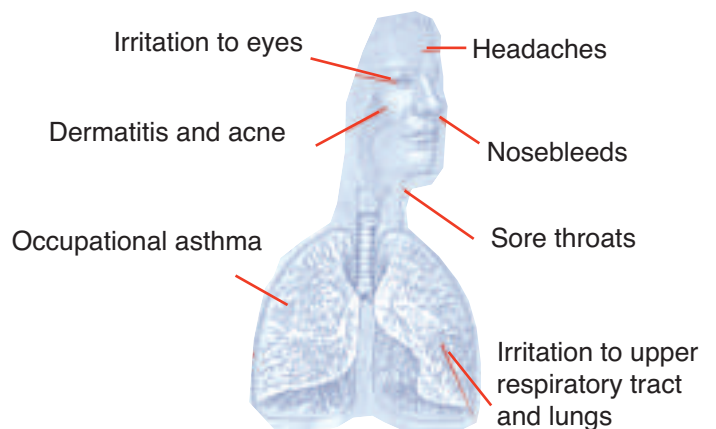
\* all particle filter units are inclusive of a thin gas filter.

## What are Solder Fumes?

5% Gases:  
 Acetone  
 Methyl Alcohol  
 Formaldehyde  
 Carbon Dioxide  
 Diterpine Acid  
 Carbon Monoxide  
 Isopropyl Alcohol



95% Particulates (Fumes)



## Health Implications of Solder Fumes

Largely seen as an irritant, solder smoke can reduce the productivity of workers through a loss of concentration as well as the accompanying onset of fatigue and other health concerns as shown in the illustration.



# BVX-100 Benchtop Single User Arm/Plenum System



## Key Features & Benefits

- ▶ Portable, single user fume extraction system
- ▶ Low noise unit
- ▶ No external ducting or compressor needed
- ▶ Unit easily fits on any bench-top or under-bench
- ▶ Innovative adaptor transforms the plenum into an arm
- ▶ Powerful 85m<sup>3</sup>/hr-airflow rate
- ▶ Immediate extraction of fumes, particles and vapors
- ▶ Two filtration configurations: heavy soldering and light dust or light duty organic solvent and adhesive applications
- ▶ Bi-coloured LED light indicates when the filters are blocked and require replacing

▶ **Compatible with BVX Arms (page 30)**



Part No.	Description
BVX-101	Bench-Top, single user arm/plenum system, Pre-HEPA-Gas
BVX-103	Bench-Top, single user arm/plenum system, Pre-Gas

## Filters

FG-BVX	Deep Bed Gas Filter
FM-BVX	Main Filter (Combined HEPA/Gas)
FP-BVX	Pre-Filter (Pack of 5)

## Accessories

BVX-ADT	Replacement Arm-To-Plenum Adaptor
BVX-IADT	Inverted Arm Adaptor, ESD Safe
BVX-BCK	Under Bench Mounting Bracket
BVX-CH01	Connection hose, 50mm (2") diameter, 1.8m (6') long
BVX-TB01	Table bracket with 2 C-clamps



## Technical Specifications

Static Pressure (suction force)	1250 Pa (5"WC)
Fan Capacity	110m <sup>3</sup> /h (65 cfm)
Flow Rate (with filter)	85m <sup>3</sup> /h (50 cfm)
Air Inlets/Number of Stations	1
HEPA Efficiency	99.97% at 0.3 micron
Noise Level	< 55 db A
Dimensions (W x D x H)	300mm x 230mm x 290mm (11.8" x 9.1" x 11.4")
Weight	9kg (20lbs)
Voltage	100-240 VAC
Frequency	50-60 Hz
Power	85 watt
Certification	UL, CSA, CE

# BVX-200 Two Stations Portable Filter Unit



## Key Features & Benefits

- ▶ Two station design for dynamic fume extraction
- ▶ New brushless motor, quiet operation
- ▶ Complete portability, placed under or next to the bench-top
- ▶ Fitted with 2x 50mm (2") Ø arms or 1x 63mm (2.5") Ø arm
- ▶ Main filter has a HEPA efficiency of 99.97% at 0.3 micron, and an activated carbon filter to remove additional gases
- ▶ Deep-bed gas filter for high capacity of gas filtration, such as cleaning with solvents or conformal coatings
- ▶ Audible alarm informs operators when filters need replacing
- ▶ Easy access on/off remote switch

▶ **Compatible with Omniflex Arms and BVX Arms (page 30)**



Part No.	Description
BVX-201	Filter unit for 2 stations, Pre-HEPA-Gas
BVX-203	Filter unit for 2 stations, Pre-Deep Bed Gas
BVX-201-KIT	Filter unit with 2 BVX-ARML, Pre-HEPA-Gas
BVX-201-KIT1	Filter unit with 2 BVX-ARM-K1, Pre-HEPA-Gas

## Filters

FP-BVX200	Pre-Filter (Pack of 5)
FM-BVX200	Main Filter HEPA Carbon
FG-BVX200	Deep Bed Gas Filter

## Accessories

BVX-ARM-K1	1 BVX-ARM 760mm (30") long with 1.8m (6') long hose and table bracket with C-clamps
BVX-ARM-K2	1 BVX-ARM 760mm (30") long and table bracket with C-clamps
BVX-ARM	Arm flexible ESD safe, 760mm (30") long
BVX-ARML	Arm flexible ESD safe, 1.5m (59") long with arm clip
BVX-TB01	Table bracket with 2 C-clamps
BVX-CH01	Connection hose, 50mm (2") diameter, 1.8m (6') long
BVX-CH02	Connection hose, 50mm (2") diameter, 3.6m (12') long
RPS-1	Remote power switch

## Technical Specifications

Static Pressure (suction force)	850 Pa (3.5"WC)
Fan Capacity	250m <sup>3</sup> /h (150 cfm)
Flow Rate (with filter)	2 x 75m <sup>3</sup> /h (45 cfm)
Air Inlets/Number of Stations	2
HEPA Efficiency	99.97% at 0.3 micron
Noise Level	< 55 db A
Dimensions (W x D x H)	508mm x 254mm x 388mm (20" x 10" x 15.3")
Weight	9kg (20lbs)
Voltage	100-240 VAC
Frequency	50-60 Hz
Power	85 watt
Certification	UL, CSA, CE
Max duct run	3.6 m (12')



# MFX-2200C Particle Fume Extraction System



## Controls and Filter Monitor



- ▶ Unit On/Off Switch with power indicator
- ▶ Thermal overload protection
- ▶ Analog models with filter status gauge
- ▶ Digital models with filter status indicator lights and other control options

The multi-user MFX-2200C Fume Extraction System provides the ultimate performance in a compact size that easily fits under most workbenches. It is ideal for removing solder fumes and filtering laser fumes.

## Key Features & Benefits

- ▶ Excellent air flow performance
- ▶ Large, pleated pre-filter
- ▶ HEPA filter rating of 99.97% at 0.3 micron
- ▶ Casters as standard
- ▶ Dust filter seal keeps filter housing clean
- ▶ Minimum operating noise
- ▶ Compact size, unit fits under most workbenches
- ▶ Connects up to 4 Omniflex arms with rectangular nozzle (EA1122) or large hood (EA1126)
- ▶ Connects up to 8 BVX arms or 8 Omniflex arms with tapered nozzle (EA1124)

▶ **Compatible with Omniflex Arms and BVX Arms (page 30)**

Part No.	Description
MFX-2200C-A	Particle Fume Extraction System Analog 110V
MFX-2206C-A	Particle Fume Extraction System Analog 230V
MFX-2200C-D	Particle Fume Extraction System Digital 110V
MFX-2206C-D	Particle Fume Extraction System Digital 230V

## Filters

FIL22P030	Prefilter Pleated 60% Efficiency (Pack of 2)
FIL22H070	Combination Filter HEPA/Carbon

## Accessories

AC2204	Top cover with 2 air inlets Ø100mm (4") and 2 air inlets Ø63mm (2.5")
--------	---

## Technical Specifications

	110V Units	230V Units
Air Inlet Openings	4 x Ø2.5"	4 x Ø63mm
Fan Capacity	600 cfm	900m <sup>3</sup> /h
Flow Rate	400 cfm	600m <sup>3</sup> /h
HEPA Efficiency	99.97% at 0.3 micron	99.97% at 0.3 micron
Static Pressure	4.5" WC Max	1075 Pa
Power Supply	100-120VAC, 60Hz	220-240VAC, 50Hz
Power	400 Watt	400 Watt
Noise Level	58 dbA	58 dbA
Dimensions (W x D x H)	17.7" x 20.7" x 26.4"	450 x 525 x 670mm
Weight	93 lbs	43 Kg
Certification	UL, CSA	CE
Max duct run	100'	30 m

# MFX-2200G Gas Fume Filtration System



The MFX-2200G Fume Extraction System has been specifically designed for the removal of gases and vapors from a range of heavy duty bench-top applications, including solvent cleaning, gluing/bonding and conformal coatings.

## Key Features & Benefits

- ▶ High capacity gas filter cartridge ensures a long dwell-time of the gases inside the filter media
- ▶ Large, pleated pre-filter
- ▶ Casters as standard
- ▶ Minimum operating noise
- ▶ Provides air flow for two exhaust cabinets
- ▶ The unit lid features 100mm (4") and 63mm (2.5") air inlet flanges suitable for the connection of exhaust arms or cabinets
- ▶ **Compatible with Omniflex Arms and BVX Arms (page 30)**
- ▶ **Compatible with EC1800 Exhaust Cabinet (page 32)**

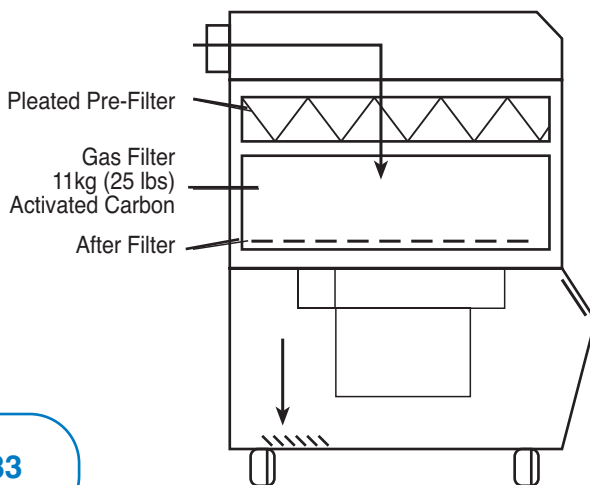
Part No.	Description
MFX-2200G-A	Gas Fume Extraction System Analog 110V
MFX-2206G-A	Gas Fume Extraction System Analog 230V
MFX-2200G-D	Gas Fume Extraction System Digital 110V
MFX-2206G-D	Gas Fume Extraction System Digital 230V

## Filters

FIL22P040	Pre-filter Pleated 85% Efficiency
FIL22G010	Gas Filter Cartridge 11kg (25lbs)
FIL22G020	Carbon Refill Kit 11kg (25lbs)

## Accessories

AC2202	Top cover with 4 air inlets Ø 63mm (2.5")
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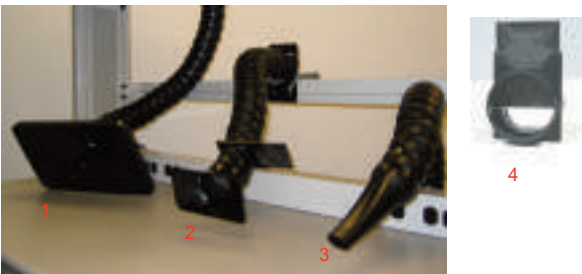


## Technical Specifications

	110V Units	230V Units
Air Inlet Openings	2xØ4" & 2xØ2.5"	2xØ100mm & 2xØ63mm
Fan Capacity	600 cfm	900m <sup>3</sup> /h
Flow Rate	350 cfm	550m <sup>3</sup> /h
Static Pressure	4.5" WC Max	1075 Pa
Power Supply	100-120VAC, 60Hz	220-240VAC, 50Hz
Power	400 Watt	400 Watt
Noise Level	58 dbA	58 dbA
Dimensions (W x D x H)	17.7" x 20.7" x 26.4"	450 x 525 x 670mm
Weight	115 lbs	52 Kg
Certification	UL, CSA	CE
Max duct run	100'	30 m



## Omniflex & BVX Arms



The **Omniflex Arms** (Ø63mm) are designed for higher airflow rates and effective fume capture from greater distances. A unique ball/socket design provides an unmatched flexibility in manoeuvring and positioning. The arms can be adjusted in working length or radius, simply by adding or removing Omniflex components. ESD conformance is ensured through the use of fully conductive material.

### Key Features & Benefits

- ▶ 140m<sup>3</sup>/h (85cfm) air flow rating (varies with nozzle)
- ▶ 63mm (2.5") diameter
- ▶ 0.6m (24") long with optional extensions of 300mm (12")
- ▶ **Omniflex Arms are compatible with BVX-200\* and MFX units**

Part No.	Description
EA1122	2 Omniflex Arm ESD with Rectangular Nozzle
EA1124	3 Omniflex Arm ESD with Tapered Nozzle
EA1126	1 Omniflex Arm ESD with Large Hood 350 x 212mm (14" x 8.5")
AC1101	4 Damper for Omniflex Arm
AC1102	Omniflex Arm Extension 30cm (12")

*\*BVX-200 series is only rated for one EA1122 arm, one EA1126 arm or two EA1124 arms.*

The **BVX Arms** (Ø50mm) are most economic solution while providing good airflow rates and high flexibility. The spiral rolled duct can be tightened in stiffness and can be positioned precisely. The BVX Arm-K2 kit includes a mounting plate and c-clamps for universal mounting. A Y-connection piece is available to connect two BVX Arms to one hose.

### Key Features & Benefits

- ▶ 75m<sup>3</sup>/h (45cfm) air flow rating
- ▶ 50mm (2") ducting with 40mm (1.75") nozzle
- ▶ 710mm (28") long
- ▶ **BVX Arms compatible with all units**

Part No.	Description
BVX-ARM-K1	5 1 BVX-ARM 760mm (30") long with 1.8m (6') long hose and table bracket with C-clamps
BVX-ARM-K2	1 BVX-ARM 760mm (30") long and table bracket with C-clamps
BVX-ARM	Arm flexible ESD safe, 760mm (30") long
BVX-ARML	Arm flexible ESD safe, 1.5m (59") long with arm clip

### Connection Hoses for Omniflex and BVX Arms

CH0251	6 Connection Hose 2.5m xØ63mm (8" x 2.5") with clamps
CH0252	6 Connection Hose 3.5m xØ63mm (12" x 2.5") with clamps
CH0253	6 Connection Hose 7.5m xØ63mm (25" x 2.5") with clamps
AC2025	7 Y-Piece for Ø63mm (2.5") hose with clamps



# BTX-208 Portable Tip Extraction Unit



## Key Features & Benefits

- ▶ High performance extraction directly from the tip of any iron
- ▶ Easy extraction network configuration for up to 8 benches
- ▶ Complete portability. Designed for under-bench installation
- ▶ Main filter has a HEPA efficiency of 99.97% at 0.3 micron, and an activated carbon filter to remove gases
- ▶ Both pre- and main- filters can be changed independently
- ▶ Plug-and-play ducting system for simple, flexible low cost solution and fast installations
- ▶ Universal hose connection kit



Part No.	Description
BTX-208	Filter Unit for 8 Tip Extraction Stations, Pre/HEPA/Gas

### Filters

FP-BVX200	Pre-Filters (pack of 5)
FM-BVX200	Main Filter, HEPA 99.95% / Carbon

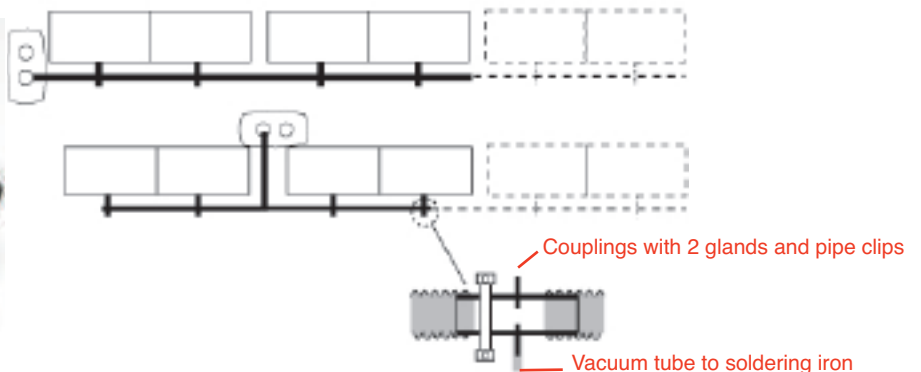
### CONNECTION KITS:

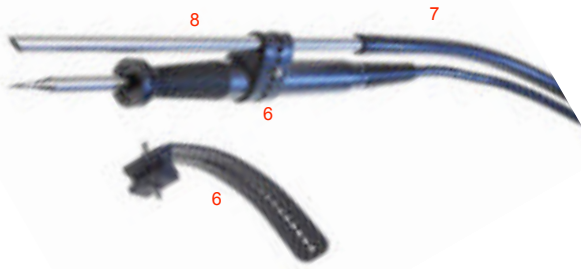
BTX-CK2-25	Connection Kit for 2-4 stations with 2.5m (8') Long Hose
BTX-CK4-50	Connection Kit for 4-8 stations with 5m (16') Long Hose
BTX-CK4-75	Connection Kit for 4-8 stations with 7.5m (25') Long Hose

### Individual Parts

CH0121	1	Flexible Hose Ø35mm x 2.5m (8') Long
CH0122	1	Flexible Hose Ø35mm x 5m (16') Long
CH0123	1	Flexible Hose Ø35mm x 7.5m (25') Long
AC-TX001-4	2	Couplings with 2 Glands 5.6mm (pack of 4)
18566S-5	3	End Plug (Pack of 5)
AC-TX002-2	4	T-Piece Connector (pack of 2)
19115S-10	5	Pipe Clip (pack of 10)

CONNECTION KITS		BTX-CK2-25	BTX-CK4-50	BTX-CK4-75
Max number of stations	single-row bench	2	4	4
	when using 5.6mm tubes	4	8	8
		Qty	Qty	Qty
1	Flexible Hose Ø35mm (1.25")	2.5m (8")	5.0m (16")	7.5m (25')
2	Coupling with 2 Glands 5.6mm	2	4	4
3	End Plug	1	2	2
4	T-piece Connector	0	1	1
5	Pipe Clip	2	5	5
-	Roll of Vinyl Tape	1	1	1





### Iron Adapter Kits

Part No.	Description
AC-FX1	Universal tip extraction iron adapter clip includes:
BTX-UC01	6 2 x universal clips
18574S-5	7 1 x silicon hose
DS03-910-5	1 x cleaning brush
20233S-5	8 1 x stainless tube
20237S-5	4 x S clips
18576S-5	1 x connecting gland

Other tip extraction iron adapter kits available:  
[www.okinternational.com/product\\_fume/btx\\_208](http://www.okinternational.com/product_fume/btx_208)

### Technical Specifications

Max. number of stations	8
Flow Rate per station	>28 l/min
Noise Level	< 55 db A
Dimensions (W x D x H)	508mm x 254mm x 388mm (20" x 10" x 15.3")
Weight	9kg (20lbs)
Voltage	100-240 VAC
Frequency	50-60 Hz
Power	85 Watt
Max Duct Run	30m (100')
Certification	UL/CSA/CE



## EC1800 Exhaust Cabinet



The EC1800 is an ideal bench top exhaust cabinet for applications such as volatile vapors and gases with high toxic levels.

A hinged and clear viewing panel maintains excellent visibility while at the same time reducing the airflow demand on the cabinet.

### Key Features & Benefits

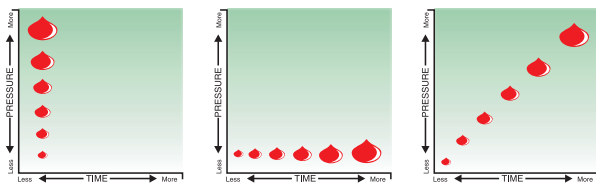
- ▶ Bench Top exhaust cabinet
- ▶ Offers operators high levels of protection
- ▶ Easy Assembly
- ▶ Dimensions (W x D x H) 760 x 510 x 560mm (30" x 20" x 22")
- ▶ Connection Flange Ø100mm (4")
- ▶ Requires MFX-2200G-A/D Gas Fume Filtration System (page 29)

Part No.	Description
EC1800	Exhaust Cabinet with clear viewing panel
CH0047	Connection hose 2.5m (8') Long Ø100mm (4") with Clamps

# Product Selection

SYSTEMS	Dispenser 0 to 100 psi	Dispenser 0 to 15 psi	Digital Timer & Vacuum	Digital Pressure	Economical	Programmable	Foot Valve Dispenser	Analog Vacuum	Dispensing Tips	Stainless Steel Canula	Double Helix Brush	Flexible Plastic	Double Helix Luer Lock Hub	Tapered
DX-250	✓		✓		✓									
DX-255		✓	✓		✓									
DX-350	✓		✓	✓		✓								
DX-355		✓	✓	✓		✓								
924-DFV					✓		✓							
924-DFV-VAC					✓		✓	✓						
TE Series									✓	✓				
BT Series									✓		✓			
TS-P Series									✓			✓		
TT Series									✓				✓	✓

## Tutorial Time-Pressure Dispensing



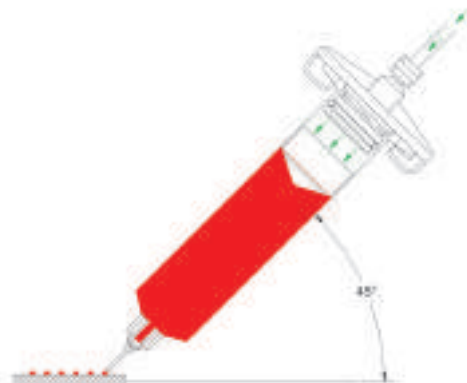
Time pressure dispensing is the most common dispensing method used today. Its popularity stems from the need for process control and the fact it is possible to dispense from disposable containers without the need for cleaning.

### Factors affecting dispensing

- ▶ **PRESSURE:** Increasing fluid pressure will increase dot size and vice versa
- ▶ **TIME:** Increasing dispense time will increase dot size and vice versa
- ▶ **TIP SIZE:** Larger inside diameter (orifice) tip results in bigger dot size

### Basic dispensing guidelines

- ▶ Small shot size = small tip, low fluid pressure, short dispense time
- ▶ Large shot size = larger tip, higher fluid pressure, longer dispense time
- ▶ Low viscosity fluid = small tip, low pressure, time as required
- ▶ High viscosity fluid = larger tip (tapered needles recommended), high pressure, time as required
- ▶ Position the syringe barrel at a 45° angle
- ▶ Position the tip close to the work surface then activate the dispensing cycle and keep the syringe barrel in the same position until the cycle is completed
- ▶ If vacuum “suck-back” is needed, use only enough vacuum to draw back fluid into dispense tip. Excessive vacuum could draw air into the fluid and also could draw fluid into the dispenser



## DX-250 Series Digital Dispenser



The DX-250 Series is a high performance Digital Dispenser. Complete with a range of accessories, the micro-air dispensing system unites affordability with high accuracy and repeatability for exceptional results.

These user friendly fluid dispensing systems include a digital timer with a rotary control time knob for easy setup and a vacuum suck-back control for all viscosities of fluids.

### Key Features & Benefits

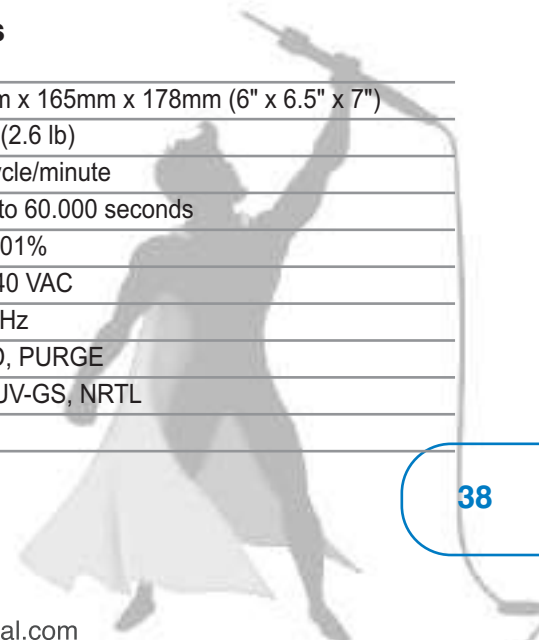
- ▶ Small footprint and lightweight
- ▶ Economical dispenser
- ▶ Highly accurate and repeatable micro-air dispensing
- ▶ Digital timer and vacuum controls
- ▶ Available in two versions of operating pressure: 0 to 100 psi for general applications, and 0 to 15 psi for specific low viscosity applications
- ▶ Packaged ready to use with a universal power supply, foot switch, air hose, sample tips, syringe barrels and adapter.



Part No.	Description
DX-250	Digital Dispenser 0 to 100 psi (0 to 6.9 bar)
DX-255	Digital Dispenser 0 to 15 psi (0 to 1.0 bar)

### Technical Specifications

Size (W x L x H)	152mm x 165mm x 178mm (6" x 6.5" x 7")
Weight	1.2Kg (2.6 lb)
Cycle Rate	600 cycle/minute
Timing Range	0.020 to 60.000 seconds
Timing Tolerances	+/- 0.001%
Input Voltage	100-240 VAC
Input Frequency	50-60 Hz
Cycle Mode	TIMED, PURGE
Certification	CE, TUV-GS, NRTL
Warranty	1 year





## DX-350 Series Digital Dispenser



The DX-350 Series is a microprocessor-driven and fully digital Dispenser. Intuitive to use, the DX-350 dispenses low, medium and high-viscosity fluids accurately and consistently.

The firmware provides the option of programming up to 10 varied, sequenced or individual shots.

The DX-350 includes an adjustable vacuum-driven “suck-back” to control material “tailing” and waste.

### Key Features & Benefits

- ▶ Small footprint and lightweight
- ▶ 10 programmable dispense routines and 4 operating modes
- ▶ Digital timer, pressure and vacuum read-outs
- ▶ Accurate reproduction of sequences of beads or dots
- ▶ Adjustable vacuum feature for controlling drips of fluid between dispense cycles
- ▶ Available in two versions of operating pressure: 0 to 100 psi for general applications, and 0 to 15 psi for specific low viscosity applications
- ▶ Packaged ready to use with a universal power supply, foot switch, air hose, sample tips, syringe barrels and adapter

Part No.	Description
DX-350	Digital Dispenser 0 to 100 psi (0 to 6.9 bar)
DX-355	Digital Dispenser 0 to 15 psi (0 to 1.0 bar)

### Technical Specifications

Size (W x L x H)	152mm x 165mm x 178mm (6" x 6.5" x 7")
Weight	1.2Kg (2.6 lb)
Cycle Rate	1200 cycle/minute
Timing Range	0.008 to 60.000 seconds
Timing Tolerances	+/- 0.001%
Input Voltage	100-240 VAC
Input Frequency	50-60 Hz
Memories	10 programmable
Cycle Mode	TIMED, INTERRUPT, TEACH, PURGE
Certification	CE, TUV-GS, NRTL
Warranty	1 year



## 924-DFV Series Foot Valve Dispenser



The 924-DFV Series Foot Valve Dispenser offers increased production combined with dispenser economy. Floor mounted, they have a built in pressure regulator, pressure gauge and a unique fast-dump, three-way air valve. Output rate and shot size are operator controlled.

The 924-DFV is the ideal basic dispensing unit for most general applications of adhesives, sealants, coatings and compounds.

The 924-DFV-VAC features a vacuum suck-back to prevent very thin materials from dripping to reduce tailing or stringing with thicker materials.

### Key Features & Benefits

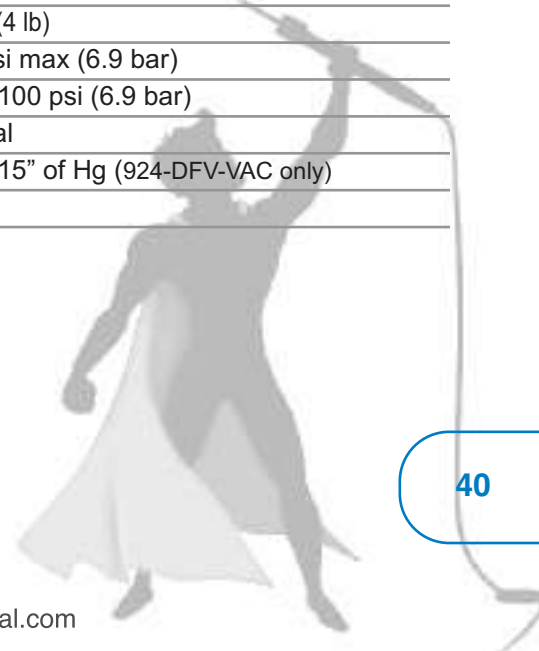
- ▶ Ideal for applications where electricity is prohibited
- ▶ Robust design
- ▶ Floor mounted conserves bench space
- ▶ No programming required



Part No.	Description
924-DFV	Foot Valve Dispenser
924-DFV-VAC	Foot Valve Dispenser with Vacuum

### Technical Specifications

Size (W x L x H)	124mm x 206mm x 121mm (8.1" x 4.9" x 4.7")
Weight	1.8Kg (4 lb)
Input Pressure	100 psi max (6.9 bar)
Operating Pressure	Up to 100 psi (6.9 bar)
Cycle Mode	Manual
Vacuum Force	Up to 15" of Hg (924-DFV-VAC only)
Warranty	1 year



# Dispensing Tips



## TE Tips Series

- ▶ Stainless-steel cannula with a double Helix polypropylene hub
- ▶ Burr-free and electro-polished cannula for unobstructed and consistent material flow
- ▶ Silicone and chloride free
- ▶ Sold in packs of 50

Gauge	1/4" (6.35mm)	1/2" (12.7mm)	1" (25.4mm)	1-1/2" (38.1mm)
14		914050-TE	914100-TE	914150-TE
15		915050-TE	915100-TE	915150-TE
18	918025-TE	918050-TE	918100-TE	918150-TE
20	920025-TE	920050-TE	920100-TE	920150-TE
21	921025-TE	921050-TE	921100-TE	921150-TE
22	922025-TE	922050-TE	922100-TE	922150-TE
23	923025-TE	923050-TE	923100-TE	923150-TE
25	925025-TE	925050-TE		
27	927025-TE	927050-TE		
30	930025-TE	930050-TE		
32	932025-TE			



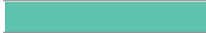

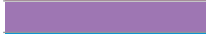








## TE Bent Tip Series

- ▶ Precision bent tips at 45° and 90° angles
- ▶ Perfect for dispensing fluid in hard to reach places
- ▶ Sold in packs of 50

Gauge	1/2" (12.7mm)		1-1/2" (38.1mm)
	90°	45°	45°
14	914050-90BTE	914050-45BTE	914150-45BTE
15	915050-90BTE	915050-45BTE	
18	918050-90BTE	918050-45BTE	918150-45BTE
20	920050-90BTE	920050-45BTE	
21	921050-90BTE	921050-45BTE	921150-45BTE
22	922050-90BTE	922050-45BTE	
23	923050-90BTE	923050-45BTE	
25	925050-90BTE	925050-45BTE	
27	927050-90BTE	927050-45BTE	
30	930050-90BTE	930050-45BTE	

## Color Coding and Gauge For TE Series and TE Bent Tips

	Gauge	Colour	I.D. (inches)	I.D.(mm)
	14	Olive	0.063	1.600
	15	Amber	0.054	1.371
	18	Green	0.033	0.838
	20	Pink	0.024	0.610
	21	Purple	0.020	0.508
	22	Blue	0.016	0.406
	23	Orange	0.013	0.330
	25	Red	0.010	0.254
	27	Clear	0.008	0.203
	30	Lavender	0.006	0.152
	32	Yellow	0.004	0.102

# Dispensing Tips



## BT Series

- ▶ Double Helix Brush Tips for "spread" applications such as glues and other materials.
- ▶ Soft brush is made of Red Sable
- ▶ Stiff brush is made of Nylon
- ▶ Available in packs of 12.

Gauge	Soft Bristle	Stiff Bristle
16	916BT-SOFT	916BT-STIFF
18	918BT-SOFT	918BT-STIFF
22	922BT-SOFT	922BT-STIFF



## TS-P Plastic Series Tips

- ▶ Flexible tips allow access to hard to reach areas
- ▶ 1-1/2" but length can also be customized
- ▶ Ideal for CA applications
- ▶ Both hub and cannula are made from polypropylene
- ▶ Sold in packs of 50

Gauge	Colour	TS-P Needle
15	Grey	915150-PTS
16	Brown	916150-PTS
18	Pink	918150-PTS
20	Yellow	920150-PTS
22	Black	922150-PTS
25	Red	925150-PTS



## TT Series Tips

- ▶ Molded in high density polyethylene with UV light block additive
- ▶ Include a double Helix luer lock hub
- ▶ Tapered tip prevents blockage and increases the flow of high viscosity materials
- ▶ Sold in packs of 50

Gauge	Colour	TT Needle
14	Olive	914125-DHUV
16	Grey	916125-DHUV
18	Green	918125-DHUV
20	Pink	920125-DHUV
22	Blue	922125-DHUV
25	Red	925125-DHUV
27	Clear	927125-DHUV



## Dispensing Tip Kit

- ▶ Kit contains a selection of most popular TE, TE Bent and TT tips

900-NK	Dispensing Tip Kit
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# Dispensing Consumables



## End Caps

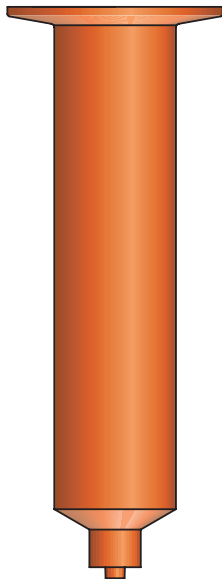
- ▶ Designed to seal large end of the syringe barrel
- ▶ Ensure no contaminants come in contact with material during storage
- ▶ Made from polyethylene
- ▶ Available in packs of 50

Size	End Cap
3cc	903-EC
5cc	905-EC
10cc	910-EC
30/55cc	93055-EC

pistons



syringe barrels



## Air Powered Pistons

- ▶ Wiper Pistons provide a seal for low to medium viscosity fluids
- ▶ Straight Wall Pistons for reduced stringing with medium to high viscosity fluids
- ▶ Both styles of pistons are made from polyethylene
- ▶ Sold in packs of 50

Size	Wiper Piston (White)	Straight Wall (Red)
3cc	903-WW	903-SWR
5cc	905-WW	905-SWR
10cc	910-WW	910-SWR
30/55cc	93055-WW	93055-SWR

## Syringe barrels

- ▶ Unique ultra-low draft of inner diameter yield high accuracy and stability
- ▶ Industry compliant silicone / chloride free, low friction polypropylene
- ▶ 3 colours: Natural for most generic applications, Amber for protection of UV/visible light block (up to 520nm), Black for total light block
- ▶ Sold in packs of 50

Size	Natural	Dark Amber	Black
3cc	903-N	903-D	903-B
5cc	905-N	905-D	905-B
10cc	910-N	910-D	910-B
30cc	930-N	930-D	930-B
55cc	955-N	955-D	955-B

## Tip Cap

- ▶ Use to seal syringe barrel when not in use
- ▶ Fits all syringe sizes
- ▶ Made from polypropylene
- ▶ Sold in packs of 50



900-ORTC	Tip Care Double Helix Thread Orange
900-BTC	Tip Care Double Helix Thread Black

## Syringe Assembly Kits

- ▶ Packaged together in ready-to-use kits of 50 each (syringe and Wiper Piston, without piston inserted)

Size	Natural
3cc	903-NW
5cc	905-NW
10cc	910-NW
30cc	930-NW
55cc	955-NW

# Dispensing Accessories



### Receiver Head Assembly

- ▶ Connecting link between time/pressure controllers and Syringe assemblies
- ▶ Provides a safe connection for accident proof dispensing
- ▶ Available with 3 or 6 feet of tubing
- ▶ Includes: receiver head with O-ring, tubing and male quick connector
- ▶ Receiver heads are made of Delrin®
- ▶ Sold individually

Size	3' Hose	6' Hose
3cc	903-3RHB	903-6RHB
5cc	905-3RHB	905-6RHB
10cc	910-3RHB	910-6RHB
30/55cc	93055-3RHB	93055-6RHB



### Manual Syringe Gun

- ▶ Lightweight barrel applicator gun
- ▶ Provides excellent control for medium/high viscosity products
- ▶ Easy to use. No dripping or mess

Size	Manual Syringe Gun
5cc	905-MSG
10cc	910-MSG
30cc	930-MSG
55cc	955-MSG



### Vacuum Pencil

- ▶ Use for pick and place function
- ▶ Stand-alone vacuum pick-up requires shop air
- ▶ Optional Mixed Kit of Vacuum Cups also available

TS8120	Vacuum Pick Up Assembly
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### Syringe Holder

- ▶ Use for 900 Series syringes

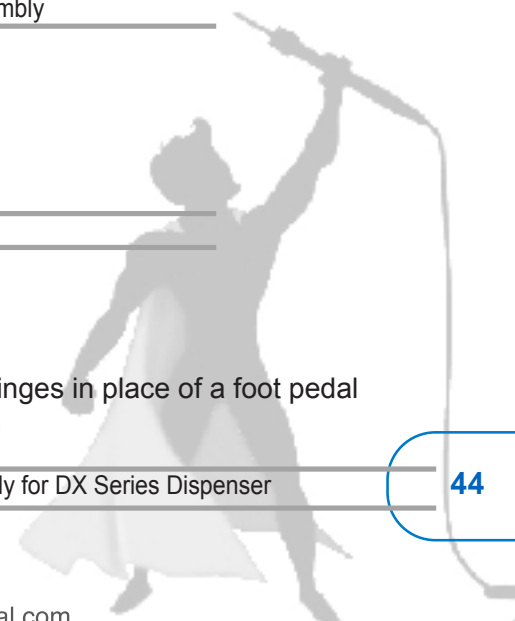
SH-300	Syringe Holder
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### Finger Switch Assembly

- ▶ Use with OKi dispensers and syringes in place of a foot pedal
- ▶ Provides control at your finger tip

DX9010	Finger Switch Assembly for DX Series Dispenser
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# Metcal MX-5000 Soldering, Desoldering and Rework Systems



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► More power: With nearly double the power of its predecessor, the MX-5000 time-to-recovery increases production rates and throughput.

► Improved ergonomics: The new UltraFine™ Hand-piece features a new generation of extremely fine diameter cartridges in a slim handle.

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► The new Metcal TipSaver™ Workstand improves tip life as well as operator ergonomics.



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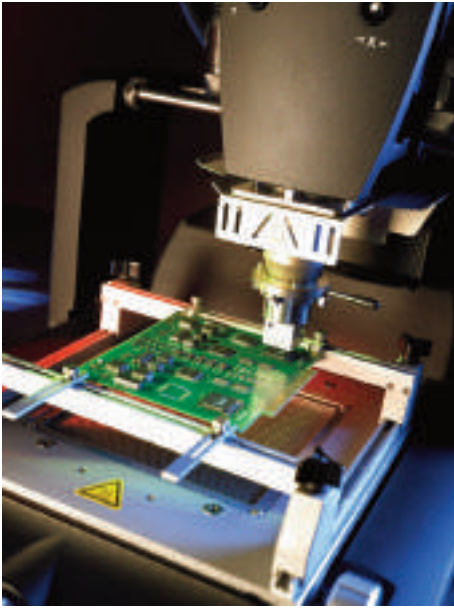
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## Metcal APR-5000 Precision Advanced Package Rework Systems

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- ▶ The APR-5000 Series incorporate state-of-the-art vision, and closed-loop time, temperature and airflow control.
- ▶ Economical and easy-to-use, the APR-5000 Series delivers best-in-class BGA/CSP functionality with performance at an affordable price.
- ▶ Easy-to-program multi-lingual software manages the five stages of the reflow profile: pre-heat, soak, ramp, reflow and cooling.
- ▶ Innovative single reflow/placement head and dual stage preheaters help achieve a consistently small Delta T across the board and the component.
- ▶ The dual stage convective pre-heater can be switched between inner and outer stage within the four heating zones of a profile to meet the higher rework requirement of lead-free.
- ▶ Two models are available: The APR-5000-DZ capable of handling boards up to 229mm x 381mm (9" x 15") and the APR-5000-XLS for boards up to 622mm x 622mm (24.5" x 24.5").





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