METCAL™

Advanced Benchtop Solutions

Soldering, Desoldering, & Rework | Fume Extraction | Fluid Dispensing

Driving the Evolution of the Benchtop

METCAL™

The Metcal Story

Metcal is a benchtop solutions expert that has delivered broad value to customers since its Silicon Valley beginnings in 1982.

Offering unrivaled performance, risk mitigation, and ROI, we give electronics manufacturers the tools – and the confidence – they need to develop faster, safer, more advanced products.

Metcal's track record of innovation is legendary. With SmartHeat®, Connection Validation™, and the addition of the CV-IOT Gateway, Metcal breakthroughs have empowered our global electronics assembly customers in the automotive, aerospace, medical device, and military sectors. And today we're accelerating the pace of global innovation even further, forging developments in hand soldering, convection rework, fume extraction, and fluid dispensing.

Looking to the future, Metcal's industrial ingenuity, and its enduring passion for problem solving, will continue to drive the evolution of the benchtop.

We're Metcal, an OK International company.

www.metcal.com

Table of Contents

Hand Soldering, Desoldering, & Rework Systems

Ultimate Performance Through Inductive Technology

Metcal soldering systems use powerful, reliable inductive heating technology, achieving faster time-to-temperature, shorter dwell times, and faster thermal recovery than comparable resistive heating systems.

What does this mean for the user? Fast, efficient soldering, even on difficult high thermal mass applications.

Metcal SmartHeat® Technology maintains the exact temperature needed for each solder joint and responds by delivering the precise amount of thermal energy required to create a reliable connection.

Connection Validation™ (CV) Technology evaluates the quality of each solder joint by calculating the intermetallic compound (IMC) formation. Closed-loop feedback is provided to the operator via the LED-equipped handpiece. CV technology marks a significant advancement in hand soldering process control.

GT Series, Best-in-Class Adjustable Temperature Soldering Systems

The GT Series is the culmination of over 35 years of work developing and refining hand soldering solutions. The GT90 & GT120 soldering systems are powered by induction, achieving the performance and versatility the industry requires, with the flexibility and control of adjustable temperature.

GT90 & GT120

Best-in-Class Adjustable Temperature Soldering Systems

Metcal's first adjustable soldering stations are high-performance single-iron units with replaceable tip and cartridge options. **(See pages 4-7)**

CV-5210 & CV-510

Connection Validation™ Soldering Systems

Metcal offers two unique Connection Validation™ Soldering Systems featuring patented Connection Validation™ IMC formation technology, and SmartHeat® power-on-demand. **(See pages 8-11)**

MFR Series

Multi-Function Rework Systems

The MFR Series offers dual or single output capability in a compact package. These versatile systems can be used with a variety of soldering and desoldering handpieces for most applications. **(See pages 31-32)**

MX-5200 & MX-500

Soldering & Rework Systems

The MX Soldering and Rework Systems have set the industry standard for decades. These workhorse systems use SmartHeat® technology and offer the longest warranty in the industry. **(See pages 12-14)**

PS-900

Production Soldering System

The PS-900 provides power and exceptional SmartHeat® thermal control in a small benchtop footprint. This durable station is perfect on the production line. **(See page 33)**

GT120 & GT90 Soldering Systems

GT90 and GT120 are ultra-high performance adjustable-temperature soldering systems powered by inductive heating and controlled with an advanced closed-loop algorithm. The inductive process allows heat to transfer efficiently to the tip and allows the system to react faster than typical resistive systems.

Specifications	GT90	GT120
Soldering Temperature Range	150 to 450 °C 302 - 842 °F	
Input Line Voltage	100 - 240 VAC (120 VAC for U.S.) grounded circuit, universal input	
Input Frequency	50/60 Hz	
Channels	Single Port	
Power Input	90 W	120 W
Dimensions - Soldering Station (w x d x h)	11.0 x 12.5 x 16 cm 4.3 x 4.9 x 6.1 in	
Weight - Soldering Station w/ Power Adapter	1.68 kg 3.7 lb	
Display	2.5" monochrome LCD Display	
Controls	4 tactile buttons	
Communications	1 x USB A	
Standby Timer	10 - 480 seconds	
Sleep Timer	1 - 100 minutes	
Free Range Tip Temperature Adjustment	Yes	
Tip Temperature Presets	3	
Firmware Upgrade	Via USB port with memory stick	
Tip-to-Ground Potential	< 2 mV	
Tip-to-Ground Resistance	< 2 ff	
Tip Temperature Accuracy	Meets or exceeds IPC J-STD-001	
Idle Temperature Stability	3 1.1 °C (2.0 °F) in still air	
Power Station Warranty	1 Year	2 Years
Certifications	CE, TUV	
Handpiece		
Handpiece connector	8-pin circular DIN	
Handpiece cord length	1.5 m (5'), burn proof, ESD safe	

Key Features & Benefits

Higher Performance
allows for improved productivity

Replaceable Tips and Improved Tip Life
to reduce operational costs

Intuitive User Interface
for easy settings changes and adjustments to the system

USB Port
to power accessories (mobile phone, fan, light) and to upgrade firmware

Inductive Technology Improves

- **Initial Time-To-Temperature**
- **Temperature Recovery**
- **Temperature Stability**
- **Dwell Time**

Tips & Cartridges

Offered with lower-cost consumable tips that meet or exceed the performance of other competitive tips and cartridges

GT4-xxxxx
T4 Family of Tips

GT6-xxxxx
T6 Family of Tips

GTC-xxxxx
Standard Cartridge

T6 Handpiece Configuration

Compact handpiece design allows use for low and high thermal demand applications. Not offered by any competitor in the market. Single handpiece allows you to choose between tips and cartridges.

GT-RT-T6
T6 Retainer

GT-HC-T6
T6 Heater Cartridge

GT-RT-C
Cartridge Retainer

T4 Handpiece Configuration

Compact handpiece design allows use for low and medium thermal demand applications.

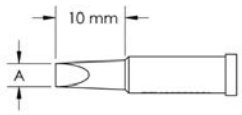
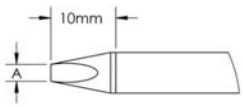
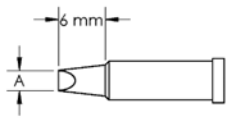
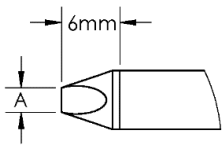
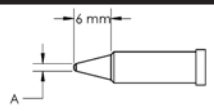
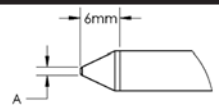
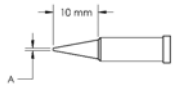
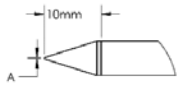
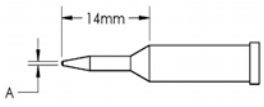
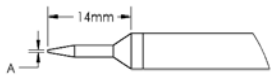
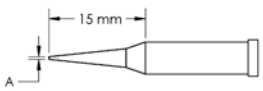
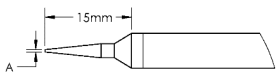
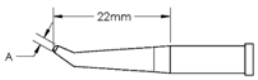
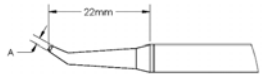
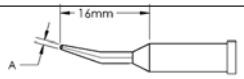
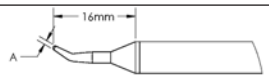
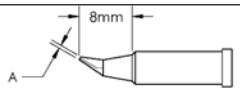
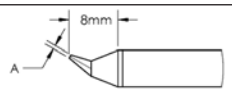
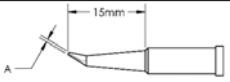
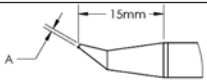
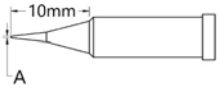
GT-RT-T4
T4 Retainer

GT-HC-T4
T4 Heater Cartridge

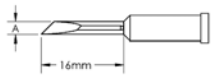
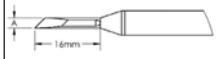
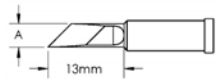
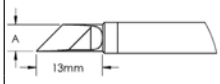
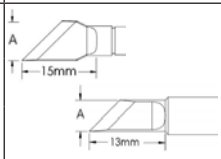
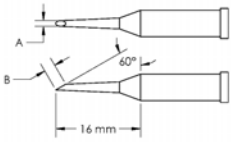
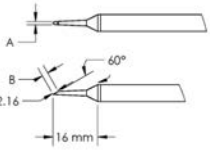
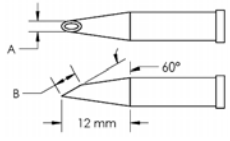
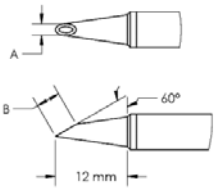
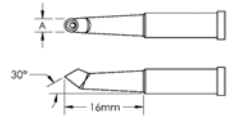
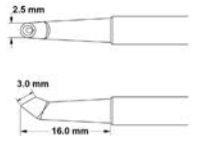
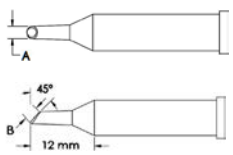
GT-WS Work Stand

Stand can store up to 8 tip/cartridges, has a splash guard, and includes a brasswool sponge

System/Accessories	Part Number
GT90 System (tips sold separately)	GT90-HP-T4
GT120 System (tips sold separately)	GT120-HP-T6
Cleaning Sponge (Pack of 10)	GT-YS10
Cleaning Brass Pad (Pack of 10)	GT-BP10
Handpiece Grip Replacement (Pack of 5)	GT-GR-BK
Tip/Cartridge Removal Pad	MX-CP1
T4 Heater Cartridge	GT-HC-T4
T6 Heater Cartridge	GT-HC-T6
T4 Handpiece	GT-HP-T4UF
T6 Handpiece	GT-HP-T6C
T4 Handpiece w/ Heater	GT-HPHC-T4UF
T6 Handpiece w/ Heater	GT-HPHC-T6UF

GT4	GT6/GTC	GT4 - Tip	GT6 - Tip	GT6 - Cartridge	Dimension A x Length
Chisels					
		GT4-CH0010S	GT6-CH0010S	GTC-CH0010S	1.0 x 10.0 mm
		GT4-CH0014S	GT6-CH0014S	GTC-CH0014S	1.4 x 10.0 mm
		GT4-CH0018S	GT6-CH0018S	GTC-CH0018S	1.8 x 10.0 mm
		GT4-CH0025S	GT6-CH0025S	GTC-CH0025S	2.5 x 10.0 mm
		GT4-CH0032S	GT6-CH0032S	GTC-CH0032S	3.2 x 10.0 mm
		GT4-CH0040S	GT6-CH0040S	GTC-CH0040S	4.0 x 10.0 mm
			GT6-CH0050S	GTC-CH0050S	5.0 x 10.0 mm
			GT6-CH0060S	GTC-CH0060S	6.0 x 10.0 mm
		GT4-CH0010P	GT6-CH0010P	GTC-CH0010P	Power, 1.0 x 10.0 mm
		GT4-CH0014P	GT6-CH0014P	GTC-CH0014P	Power, 1.4 x 10.0 mm
		GT4-CH0018P	GT6-CH0018P	GTC-CH0018P	Power, 1.8 x 10.0 mm
		GT4-CH0025P	GT6-CH0025P	GTC-CH0025P	Power, 2.5 x 10.0 mm
		GT4-CH0032P	GT6-CH0032P	GTC-CH0032P	Power, 3.2 x 10.0 mm
		GT4-CH0040P	GT6-CH0040P	GTC-CH0040P	Power, 4.0 x 10.0 mm
			GT6-CH0050P	GTC-CH0050P	Power, 5.0 x 10.0 mm
			GT6-CH0060S	GTC-CH0060P	Power, 6.0 x 10.0 mm
				GTC-CH0070P	Power, 7.0 x 10.0 mm
Conicals					
		GT4-CN0005P	GT6-CN0005P	GTC-CN0005P	Power, (Ø x L) 0.5 x 6.0 mm
		GT4-CN0010P	GT6-CN0010P	GTC-CN0010P	Power, (Ø x L) 1.0 x 6.0 mm
		GT4-CN0005S	GT6-CN0005S	GTC-CN0005S	(Ø x L) 0.5 x 10.0 mm
		GT4-CN0005A	GT6-CN0005A	GTC-CN0005A	Access, (Ø x L) 0.5 x 14.0 mm
		GT4-CN0010A	GT6-CN0010A	GTC-CN0010A	Access, (Ø x L) 1.0 x 14.0 mm
		GT4-CN1502A	GT6-CN1502A	GTC-CN1502A	Sharp, (Ø x L) 0.2 x 15.0 mm
		GT4-CN1505A	GT6-CN1505A	GTC-CN1505A	Sharp, (Ø x L) 0.5 x 15.0 mm
		GT4-CN2213R	GT6-CN2213R	GTC-CN2213R	Bent, Reach, (Ø x L) 1.3 x 22.0 mm
		GT4-CN1608R	GT6-CN1608R	GTC-CN1608R	Bent, Access, (Ø x L) 0.8 x 16.0 mm
		GT4-CN0002R	GT6-CN0002R	GTC-CN0002R	Bent, (Ø x L) 0.2 x 8.0 mm
		GT4-CN0004R	GT6-CN0004R	GTC-CN0004R	Bent, (Ø x L) 0.4 x 8.0 mm
		GT4-CN1505R	GT6-CN1505R	GTC-CN1505R	Bent, Reach (Ø x L) 0.5 x 15.0 mm
		GT4-CN0002S	--	--	Sharp (Ø x L) 0.2 x 10.0 mm

For our complete selection of tips & cartridges, visit www.metcal.com

GT4	GT6/GTC	GT4 - Tip	GT6 - Tip	GT6 - Cartridge	Dimension A x Length
Knife					
		GT4-KN0025S	GT6-KN0025S	GTC-KN0025S	2.5 x 16.0 mm, 45°
		GT4-KN0040S	--	--	4.0 x 16.0 mm, 45°
		--	GT6-KN0050S	GTC-KN0050S	5.0 x 16.0 mm, 45°
		GT4-KN0025P	GT4-KN0025P	GTC-KN0025P	Power, 2.5 x 13.0 mm, 45°
		GT4-KN0040P	--	--	Power, 4.0 x 13.0 mm, 45°
		--	GT4-KN0050P	GT4-KN0050P	Power, 5.0 x 13.0 mm, 45°
		--	--	GT4-KN0080P	Power, 5.0 x 13.0 mm, 45°
		GT4-KN0040PP	--	--	Xtra Power, 4.0 x 13.0 mm, 45°
		--	GT6-KN0050PP	GTC-KN0050PP	Xtra Power, 5.0 x 13.0 mm, 45°
		--	--	GTC-KN0080PP	Xtra Power, 8.0 x 13.0 mm, 45°
Hoof					
		GT4-HF6010S	GT6-HF6010S	GTC-HF6010S	(Bevel/L) 60° x 2.0, (Ø x L) 1.0 x 16.0 mm
		GT4-HF6015S	GT6-HF6015S	GTC-HF6015S	(Bevel/L) 60° x 3.0, (Ø x L) 1.5 x 16.0 mm
		GT4-HF6020S	GT6-HF6020S	GTC-HF6020S	(Bevel/L) 60° x 4.0, (Ø x L) 2.0 x 16.0 mm
		GT4-HF6030S	GT6-HF6030S	GTC-HF6030S	(Bevel/L) 60° x 6.0, (Ø x L) 3.0 x 16.0 mm
		--	GT6-HF6040S	GTC-HF6040S	(Bevel/L) 60° x 8.0, (Ø x L) 4.0 x 16.0 mm
		GT4-HF6010V	GT6-HF6010V	GTC-HF6010V	Concave, (Bevel/L) 60° x 2.1 mm (Ø x L) 1.0 x 12.0 mm
		GT4-HF6015V	GT6-HF6015V	GTC-HF6015V	Concave, (Bevel/L) 60° x 3.1 mm (Ø x L) 1.5 x 12.0 mm
		GT4-HF6020V	GT6-HF6020V	GTC-HF6020V	Concave, (Bevel/L) 60° x 4.1 mm (Ø x L) 2.0 x 12.0 mm
		GT4-HF6030V	GT6-HF6030V	GTC-HF6030V	Concave, (Bevel/L) 60° x 6.1 mm (Ø x L) 3.0 x 12.0 mm
		GT4-HF3025V	GT6-HF3025V	GTC-HF3025V	Bent 30°, (Bevel/L) 30° x 3.0 mm (Ø x L) 2.5 x 16.0 mm
		GT4-HF4521S	--	--	(Bevel/L) 45° x 2.5, (Ø x L) 2.1 x 12.0 mm
		GT4-HF4532S	--	--	(Bevel/L) 45° x 4.0, (Ø x L) 3.2 x 12.0 mm

For our complete selection of tips & cartridges, visit www.metcal.com

CV-5210 & CV-510

Connection Validation™ (CV) Series Systems

The intermetallic compound (IMC) thickness is critical in the formation of a solder joint. CV evaluates the quality of the solder joint by calculating the IMC formation and provides closed-loop feedback to the operator.

Metcal offers two unique Connection Validation™ (CV) Soldering Systems. The CV-5200 series features the patented Connection Validation™ IMC formation technology along with SmartHeat® power-on-demand technolgy built-in. A 2.8″ color touchscreen with bold graphics makes programming easy. The integrated net-power meter gives a visual representation of the power-on-demand technology.

The CV-500 Series packs all of the Connection Validation™ technology into a compact, economical housing. It is also ideal for SMD touch-up and small component rework using the Ultrafine handpiece and Ultrafine tweezer handpiece (each sold separately).

LED equipped handpiece signals to operator when a good solder joint is formed.

Tip temperature displayed on large color screen.

CV System Configuration

Part Number	Description
CV-5210	Soldering System with CV-PS5200 Power Supply
CV-510	Soldering System with CV-PS500 Power Supply
Both Systems include	
CV-H1-AV	Advanced handpiece for CV with LED light
CV-W1AV	TipSaver Work stand
CV-CP1	Cartridge Removal Pad

Technical Specifications	CV-PS5200	CV-PS500
Input Line Voltage	100 - 240 VAC, grounded circuit, 50/60 Hz	
Rated Power Consumption	125 W	85 W
Output Power	Variable, 80 W max.*	Variable, 40 W max.*
Output Frequency	13.56 MHz	
Heating Method	Induction, SmartHeat®	
Display	2.8″ Color TFT Touch Display	
Connections	2 connectors, single mode 80 Watt. Dual mode power is shared dynamically	Dual port, switchable
Power Supply Dim. W x D x H	4.7 x 5.1 x 9.2 inch (121 x 130 x 235 mm)	4.7 x 4.7 x 8.7 inch (121 x 121 x 220 mm)
Power Supply Weight	7.4 lbs (3.35 kg)	5.8 lbs (2.65 kg)
Certification / Marking	cTUVus, CE	
Tip-to-Ground Potential	< 2 mV	
Tip-to-Ground Resistance	< 2 Ohm	
Idle Temperature Stability	1.1 °C (2 °F) in still air	
Tip Temperature Accuracy	Meets or exceeds IPC J-STD-001 Standard	
Communication / Firmware upgrade	Via USB port and appropriate software with compatible computer and cables.	
Surface Resistivity	10^5 - 10^9 Ohm, ESD safe	
Ground Detection	Permanent	
Warranty	5 Years	4 Years

*RF SmartHeat® Technology provides greater power.

Key Features & Benefits

- SmartHeat® Power-on-Demand Technology
- Patented Connection Validation™ IMC Formation Technology
- 2.8″ color touchscreen with bold graphics
- Communications Port for process traceability data and firmware upgrades
- Integrated Net-Power Meter and power graph
  - With optional precise tip temperature display
- Patented Chip-in-Cartridge technology
  - Closed-loop bi-directional communication
  - Stores and records cartridge attributes
  - Provides traceability information
  - Protects power supply from non-conforming cartridges
  - Backwards compatible with MX Series power supplies
- Password protection
- Wide variety of cartridges available
- Power supply protected by 5-year warranty, longest in the industry

Connection Validation™

Handpieces and Upgrade Kits

Metcal offers eight different handpieces and upgrade kits for the Connection Validation™ Soldering System. These ergonomic handpieces transform the CV systems into a complete soldering solution for a wide variety of applications.

Advanced Handpiece

The Advanced Handpiece for Connection Validation™ incorporates an LED light ring that removes the risk associated with determining a good solder joint. It complements the skill of the operator to judge the quality of a solder joint.

- Compatible with CVC and SMC cartridges. Available in 500, 600, 700, 800, and 900 series temperatures.

See pages 18-20, 23-24 for popular cartridges

Part Number	Description
CV-H1-AV	Advanced Handpiece for CV with LED Light
CV-UK1	Upgrade Kit, Advanced Handpiece and Work-stand

UltraFine Handpiece & UltraFine Tweezer Handpiece

Metcal's UltraFine handpieces add a specialty tool for soldering and rework of very small components, restricted access, or high-density component packaging on a PCB.

- Improved temperature control: Metcal's SmartHeat® inside means lower risk of overshooting delicate components
- Designed for use under a microscope
- The UltraFine handpiece is compatible with 600 and 700 series temperature UFC cartridges
- The UltraFine Tweezer handpiece is compatible with 600 and 700 series temperature UFT cartridges

See page 25-26 for popular cartridges

Part Number	Description
CV-H2-UF	UltraFine Handpiece for CV System
CV-UK2	Upgrade Kit, UltraFine Handpiece and Workstand
CV-H4-UFT	UltraFine Tweezer Handpiece for CV System
CV-UK4-UFT	Upgrade Kit, UltraFine Tweezer Handpiece and Work-stand

Precision Tweezer Handpiece

Transform the Connection Validation™ Soldering Systems into a rework system for applications requiring the removal of surface mount components from 1 x 1 mm on up.

- Adjustable tip alignment for both height and rotation ensures coplanarity of the tip cartridges
- Dual position pitch-switch enables adjustment of pincer-action, adjusting to the component width, improving operator ergonomics
- Quick-change tip cartridges with keyway to prevent misalignment
- For use with PTC Tweezer Cartridges

See page 27 for popular cartridges

Part Number	Description
CV-H4-PTZ	Precision Tweezer Handpiece for CV System
CV-UK4	Upgrade Kit, Tweezer Handpiece and Work-stand

Desolder Handpiece

Transform the Connection Validation™ Soldering Systems into a rework system for applications requiring the removal of solder such as through hole components.

- Designed for plated-through hole component desoldering
- The handpiece requires shop air for operation
- Compatible with DSC cartridges available in 700, 800, and 900 series temperatures

See page 28 for popular cartridges

Part Number	Description
CV-H5-DS	Desolder Handpiece for CV System with Airline Kit and Accessories
CV-H5-DSHP	Desolder Handpiece only
CV-UK5	Upgrade Kit, Desolder Handpiece and Work-stand

High Thermal Demand Handpiece

Metcal's High Thermal Demand handpieces and tips transform the CV-5200 Soldering System into a powerhouse. Metcal's HTD solution provides a boost in performance by more effectively delivering thermal energy to the most demanding loads.

- Compatible with HCV cartridges and available in 700, 800, and 900 series temperatures
- Not recommended for use with CV-500 system

See page 21-22 for popular cartridges

Part Number	Description
CV-H6-HTD	High Thermal Demand Handpiece for CV System
CV-UK6	Upgrade Kit, High Thermal Demand Handpiece and Workstand

Connection Validation™ (CV)

Solder Wire Feeder Handpieces

Metcal's Solder Wire Feeder System adds control and convenience to your soldering process. The digital controls, high performance, and ability to handle multiple solder wire diameters provide repeatability and functionality to your process. Two handpieces are available, for standard CV applications and high thermal demand applications.

Key Features & Benefits:

- Improved temperature control: Metcal's SmartHeat® inside means lower risk of overshooting delicate components
- Very fast heat-up speed means you can get to your next task even faster
- Compatible with solder diameters from 0.3 mm to 1.27 mm
- Compatible with CVC and SMC series cartridges for standard applications and HCV series cartridges for high thermal demand applications. Available in 700, 800, and 900 series temperatures.
  *CV-H7-HTD not Recommend for use with the CV-500 Connection Validation™ System.

Part Number	Description
CV-H7-AV	Solder Wire Feeder Advanced Handpiece for CV System
CV-UK7	Upgrade Kit, Solder Wire Feeder Advanced Handpiece, Workstand and Solder Wire Feeder Unit
CV-H7-HTD	High Thermal Demand Handpiece for CV Solder Wire Feeder System
CV-UK7-HTD	Upgrade Kit, Solder Wire Feeder HTD Handpiece, Workstand and Solder Wire Feeder Unit

The Next Generation of Connection Validation™ Technology is Here

The latest CV firmware update brings new and improved CV modes, cartridge optimization capabilities, enhanced traceability, improved solder joint reliability, and more.

Production Mode (PCV)

Timed Mode

Cartridge Optimization

Allowed Cartridge List

Tip Wipe Reminder

Operator Passcodes

Go to Metcal.com/Resources and search "CV Firmware" to download today.

The CV-IOT Gateway Module with Connection Validation™ systems enables you to monitor and capture data at every station on your network, for maximum productivity and process control.

Key Features & Benefits

- **Capture Soldering Data** on every joint made on a connected system, anywhere on your network
- **Dynamic and Static Reports** generated locally or anywhere in the world
- **Intuitive Dashboard** enables you to view solder events, tip life, production floor updates, stations are on/off, ground fault events, and total solder joints by station
- **Download detailed data** to a CSV file to evaluate and create queries:
  - Identify which tips are being used at each station
  - Track the soldering process through automatic evaluation of each joint, to ensure processes are being followed
  - Understand productivity dips and spikes
  - Set up email alerts for cartridge changes and ESD events
  - Add an optional barcode scanner (not included) for board-level traceability
  - Find the root cause of faulty joints faster by analyzing data never before available
  - Analyze valuable metrics on the processes at the bench. Drill down to the board level

Part No.	Description
CV-IOT	CV-IOT Gateway module, cables, splitter, charger, intro guide with software link
CV-5210-IOT	CV-5210 Soldering System + CV-IOT (everything listed above)

CV-IOT Module Specifications		
Dimensions	70 mm x 55 mm	
PCB Layer	8-layer	
Power Supply	5 V/1 A	
Power Consumption	5 V/0.25 A	
	UK/EU	NORTH AMERICA
Working Temperature	-40 °C ~ 85 °C	0 °C ~ 70 °C
Target Applications	Industry 4.0	IoT
CPU	MCIMX6	
DDR3	256 MB (Support up to 2 GB)	
NAND Flash	256 MB (Support 512 MB/1 GB)	
Ethernet	1 x 10/100 Mbps	
USB	1 x USB Host, 1 x Micro USB Device	

SYSTEM REQUIREMENTS:

- Windows 10
- Intel® Core™ i5 CPU or better
- 2 GB of system memory/RAM
- Intel® HD Graphics
- At least 150 GB of storage
- Ethernet 10/100

The MX-5200 Soldering, Desoldering, & Rework Series

Series has increased power and process control, with dual-simultaneous ports.

For two users or a single user with dual applications. The MX-5200 can be operated with two handpieces dynamically sharing the 80 watts output power based on demand, adding even more application flexibility and speed.

Fast time-to-recovery. Delivers increased production rates and throughput no matter the application. The challenges of high-mass components, multilayered boards, and lead-free solders are seamlessly tackled by the MX-5200 super-charged power supply.

SmartHeat® process control. The technology built into every Metcal System means soldering and rework are always performed at safe, controlled temperatures. Metcal users know moderate fixed temperatures, where power is varied, provides the best assurance for a well-controlled soldering rework process.

TipSaver™ Work stand improves Tip Life as well as operator ergonomics. The "Auto-Sleep" function reduces the power to the handpiece when it is placed in the Metcal TipSaver™ workstand. Reduction in power will substantially decrease tip oxidation, a major cause of reduced tip life.

Ergonomic Handpieces. The aluminium handpieces for soldering and rework provide a cooler, lighter weight and more comfortable feel for the operator. And, the Metcal UltraFine™ Handpice features a new generation of extremely fine-diameter cartridges in a slim- profiled handle. Both of these handpieces uniquely offer users a choice of three inter-changeable grips.

ESD-safe and features incoming AC ground monitoring circuitry. The AC (mains) ground monitor detects power line ground failure, immediately alerting the operator and shutting down the system. Only after the power line ground has been restored can the MX-5200 be restarted and soldering operations can be resumed.

Built-in power indication meter with digital display and bar graph provides the operator with feedback on the status of the soldering operation. Whether using a large-mass rework tip for QFPs or a fine-point soldering tip, the power indication meter is a valuable resource for making consistent, acceptable solder joints.

MX-5200 System Configuration

Part Number	Power Supply	Handpieces				Tip Saver™ Workstands		
	MX-PS5200	MX-H1-AV*	MX-H2-UF*	MX-PTZ*	MX-DS1*	MX-W1AV*	MX-W4PT*	MX-W5DS*
MX-5210	•	•				•		
MX-5211	•	• •				• •		
MX-5220	•		•			•		
MX-5241	•	•		•		•	•	
MX-5250	•				•			•
MX-5251	•	•			•	•		•

*See handpiece descriptions on page 14

Metcal's MX-500 Soldering and Rework System has been reimagined, adding features and a new look to a bench top icon.

The system utilizes SmartHeat® Technology, where each cartridge is equipped with a self-regulating heater which 'senses' its own temperature and closely maintains its preset idle temperature for the life of the heater-tip. The tip temperature is determined by the inherent metallurgical properties of the heater; no external adjustment or equipment is required. The MX-500 retains switchable dual port, 40W operation while introducing numerous new features in a new housing.

MX-500 System Configuration

Part Number	Power Supply	Handpieces					Tip Saver Workstands			
	MX-500P	MX-RM3E*	MX-H1-AV*	MX-H2-UF*	MX-PTZ*	MX-DS1*	WS1*	MX-W1AV*	MX-W4PT*	MX-W5DS*
MX-500S	•	•					•			
MX-500AV	•		•					•		
MX-500UF	•			•				•		
MX-500SPT	•	•			•		•		•	
MX-500DS	•	•				•	•			•

*See handpiece descriptions on page 14

Technical Specifications	MX-PS5200	MX-500P
Input Line Voltage	100 - 240 VAC, grounded circuit, 50/60 Hz	
Rated Power Consumption	125 W	
Output Power	80 W max.*	40 W max.*
Output Frequency	13.56 MHz	
Heating Method	Induction, SmartHeat®	
Display	LCD, 2.5 x .6 inch (64.5 x 14 mm)	
Connections	2 connectors, single mode 80 Watt. Dual mode power is shared dynamically	2 connectors, single mode 40 Watt
Power Supply Dim. W x D x H	4.7 x 5.1 x 9.2 inch (121 x 130 x 235 mm)	4.7 x 4.7 x 8.7 inch (121 x 121 x 220 mm)
Power Supply Weight	7.4 lbs (3.35 kg)	5.8 lbs (2.65 kg)
Certification / Marking	cTUVus, CE	
Tip-to-Ground Potential	< 2 mV	
Tip-to-Ground Resistance	< 2 Ohm	
Idle Temperature Stability	1.1 °C (2 °F) in still air	
Tip Temperature Accuracy	Meets or exceeds IPC J-STD-001 Standard	
Surface Resistivity	10^5 - 10^9 Ohm, ESD safe	
Ground Detection	Permanent	
Warranty	5 Years	4 Years

*RF SmartHeat® Technology provides greater power.

Key Features & Benefits

- A built in Net-Power Meter displays a graphical and numerical representation of the power applied to the cartridge.
- User Programmable PowerSave Mode: the time to enter PowerSave Mode is adjustable from 10 to 120 minutes.
- Ground Fault Interrupt: AC ground monitor detects power line ground failures and immediately alerts the operator and shuts down the system.
- Universal Power Supply: automatically senses the input line voltage and adjusts accordingly, which allows for worldwide operation without adaptors or a change in performance.
- Full compatibility with existing and previous MX upgrade kits, tip-cartridges, handpieces and accessories.

MX Series

Handpieces and Upgrade Kits

Metcal offers a variety of handpieces and upgrade kits for the MX Series Soldering and Rework Systems.

Advanced Handpiece

The Advanced MX handpiece is highly effective for most soldering applications including lead-free and thermally sensitive components requiring low operating temperatures.

- For use with STTC and SMTC Cartridges.

See pages 18-20, 23-24 for cartridge list

Part Number	Description
MX-H1-AV	Advanced Handpiece for MX Systems
MX-W1AV	Tip Saver Workstand for Advanced Handpiece
MX-UK1	Upgrade Kit, includes Advanced handpiece and Workstand

UltraFine Handpiece

The Ultrafine handpiece is a specialty tool for soldering and rework of very small components.

- For use with UFTC Cartridges.

See page 25 for cartridge list

Part Number	Description
MX-H2-UF	UltraFine Handpiece for MX Systems
MX-W1AV	Tip Saver Workstand for Ultrafine Handpiece
MX-UK2	Upgrade Kit, includes Ultrafine handpiece and Workstand

MX-RM3E Handpiece

The MX-RM3E is an economical handpiece for use on most common soldering applications.

- For use with STTC and SMTC Cartridges.

See page 18-20, 23-24 for cartridge list

Part Number	Description
MX-RM3E	Economical Handpiece for MX Systems
WS1	Tip Saver Workstand for MX-RM3E Handpiece

Precision Tweezer Handpiece

Transform the MX Soldering System into a rework system for applications requiring the removal of surface mount components.

- For use with PTTC Cartridges.

See page 27 for cartridge list

Part Number	Description
MX-PTZ	Precision Tweezer Handpiece for MX Systems
MX-W4PT	Tip Saver Work-stand for Precision Tweezer Handpiece
MX-UK4	Upgrade Kit, includes Precision Tweezer Handpiece and Work-stand

Desolder Handpiece

The desolder handpiece is great for mixed-technology boards and for through-hole desoldering

- For use with STDC Cartridges.

See page 28 for popular cartridges

Part Number	Description
MX-DS1	Desolder Handpiece for MX Systems
MX-W5DS	Tip Saver Workstand for Desolder Handpiece
MX-UK5	Upgrade Kit, includes Desolder Handpiece and Workstand

High Thermal Demand Handpiece

The High Thermal Demand (HTD) handpiece transforms your MX-5200 Series power supply into a powerhouse for applications with high thermal loads such as dense boards, without damaging sensitive components.

- For use with HTC Cartridges.

See page 21-22 for popular cartridges

Part Number	Description
MX-H6-HTD	High Thermal Demand Handpiece for MX Systems
MX-W1AV	Tip Saver Workstand for HTD Handpiece
MX-UK6	Upgrade Kit, includes HTD handpiece and Workstand

Speed. Control. Convenience.
Solder Wire Feeder System

Speed up your soldering process & increase your line efficiency.

Metcal's Solder Wire Feeder System adds control and convenience to your soldering process. The digital controls, high performance, and ability to handle multiple solder wire diameters provide repeatability and functionality to your process. The Solder Wire Feeder pairs with Metcal's SmartHeat® MX-5200 or MX-500 Soldering and Rework Systems.

Part Number	Description
MX-5270	MX-5200 Series Solder Wire Feeder System
MX-570	MX-500 Solder Wire Feeder System
Included in both systems	MX Power Supply, Solder Feeder Assembly, Solder Feeder Handpiece, Feeder Tube Assembly, Teflon Nozzle, Foot-switch and Workstand
MX-UK7	Solder Wire Feeder Upgrade Kit for MX Series
Includes	Solder Feeder Assembly, Solder Feeder Handpiece, Feeder Tube Assembly, Teflon Nozzle, Footswitch and Workstand

See page 17 for additional accessories. Specification information on website.

Key Features & Benefits

- **Digital Controls with multiple Modes of Operation:** Forward Feed, Retraction, Delay, and Speed are programmable parameters in either the automatic, forward, or the backward mode of operation
- **Large LCD Display:** Displays program parameters and a cycle counter with selectable unit of measure, millimeters or inches
- **Internal Program Storage:** Stores thirty (30) programs internally, allowing the operator to select the right program for the application
- **Password Protection:** Prevents unintended changes to stored programs
- **Multiple Solder Diameters:** Compatible with solder diameters 0.3 mm to 1.27 mm
- **Solder Feed Blades:** Reduces the tendency for solder balls to form at point of use
- **Solder Spool Lock:** Secures the solder spool to the unit
- **Universal Power Supply:** Automatically senses the input line voltage and adjusts accordingly, which allows for worldwide operation without adaptors or a change in performance

Solder Tip Cleaner

Solder tips represent a significant part of the cost of ownership for a solder station.

Oxidation on the tip degrades performance by creating a barrier that decreases the thermal transfer of heat to the solder joint. This barrier slows performance and, if not corrected, will damage the tip. Proper tip care is essential to maximize the life of the tip.

Metcal's new Solder Tip Cleaner removes oxidation and extends the life of the solder tip. By placing the tip into the opening, the tip cleaner senses the tip and automatically activates, saving the operator time. A splash-guard prevents debris from escaping the collection area.

Part Number	Description
AC-STC	Solder Tip Cleaner
AC-STC-BBRUSH	Replacement Brushes (pair)
AC-STC-GUARD	Rubber Splash Guard
AC-STC-TRAY	Replacement Tray

Specification information on website.

Key Features & Benefits

- **Contactless Activation**
- **Compact Footprint:** Surface area on the bench top is at a premium. This unit doesn't disappoint, taking up minimal space.
- **Replaceable Brush System:** Allows for easy replacement of the solder brush, providing for a long useful life for the system.
- **Universal Power Supply:** Simple plug and play
- **ESD-Safe**
- **Quiet Operation**

CV-5200/500 & MX-5200/500 Series

Soldering, Desoldering & Rework Systems

A range of hand-pieces & accessories to meet your every application need.

Metcal offers a complete line of hand-pieces (standard, advanced, ultrafine, tweezer, desoldering, and high thermal demand), workstands, cradles, wire feeders, brass pads & sponges, and upgrade kits for CV and MX systems. Whether you solder tiny components under a microscope, or desolder high thermal mass PCBAs, these are the products that turn your MX or CV system into a versatile workhorse.

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CV Handpieces and Accessories		
CV-H1-AV		Advanced Handpiece for CV System with LED
CV-H2-UF		Ultrafine Handpiece for CV System
CV-H4-PTZ		Precision Tweezer Handpiece for CV System
CV-H4-UFT		Ultrafine Tweezer Handpiece for CV System
CV-H5-DS	3	Desoldering Handpiece for CV System with Cord and Airline Kit
CV-H5-DSHP		Desolder Handpiece Only
CV-RM8E		Desoldering Handpiece Cord for CV-H5-DS
CV-H6-HTD		High Thermal Demand Handpiece for CV System
CV-H7-AV		Advanced Solder Wire Feeder Handpiece for CV System
CV-H7-HTD		High Thermal Demand Solder Wire Feeder Handpiece for CV System
CV Workstands		
CV-W1AV		Standard Workstand for Advanced, Ultrafine and High Thermal Demand Handpieces
CV-W4PT		Workstand for Ultrafine Tweezer Handpiece
CV-W5DS		Workstand for Desoldering Handpiece
CV Upgrade Kits		
CV-UK1	2	Advanced Handpiece and Tip Saver Workstand for CV System
CV-UK2		Ultrafine Handpiece and Tip Saver Workstand for CV System
CV-UK4		Precision Tweezer Handpiece and Tip Saver Workstand for CV System
CV-UK4-UFT	4	Ultrafine Tweezer Handpiece and Tip Saver Workstand for CV System
CV-UK5		Desolder Handpiece and Tip Saver Workstand for CV System
CV-UK6	1	High Thermal Demand Handpiece and Tip Saver Workstand for CV System
CV-UK7		Solder Wire Feeder Handpiece and Tip Saver Workstand for CV System
CV-UK7-HTD	5	High Thermal Demand Solder Wire Feeder HP and Tip Saver Workstand for CV System

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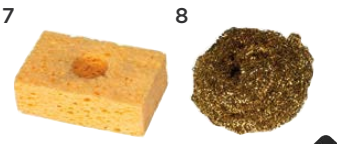
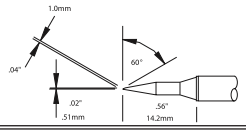
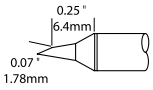
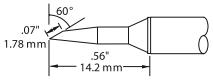
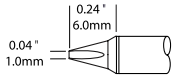
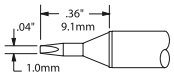
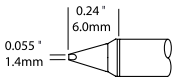
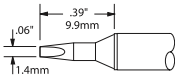
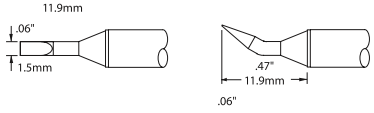
CV and MX Accessories for Desoldering Handpieces		
CV System	MX System	Description
CV-DAH4	MX-DAH4	ESD Air Hose for desoldering Handpiece
CV-DAR1	MX-DAR1	Air Regulator and Filter
CV-DCF1	MX-DCF1	Chamber Liners (Pack of 15) and Filters (Pack of 6)
CV-DCF1F	MX-DCF1F	Filters (Pack of 20)
CV-DCF1L	MX-DCF1L	Chamber Liners (Pack of 40)
CV-DLA	MX-DLA	Desolder Gun Latch Adjustment (Pack of 10)
CV-DMK1	MX-DMK1	Desolder Maintenance Kit
CV-DSB	MX-DSB	Swivel Connector
CV-DSL1	MX-DSL1	Seal Chamber
CV-DSL2	MX-DSL2	Seal Cartridge
CV-DVC1	MX-DVC1	Venturi Cartridge
AC-TC		Desolder Tip Cleaner
AC-CB1-P		Desolder Chamber Cleaning Brush (Pack of 25)
AC-CB2-P		Tube Cleaning Brush (Pack of 6)

Part Number		Description
MX Handpieces and Accessories		
MX-H1-AV	1	Advanced Handpiece for MX System
MX-H2-UF	2	Ultrafine Handpiece for MX System
MX-PTZ		Precision Tweezer Handpiece for MX System
MX-DS1	13	Desoldering Handpiece for MX System
MX-H6-HTD		High Thermal Demand Handpiece for MX System
MX-H7-SF		Advanced Solder Wire Feeder Handpiece for MX System
MX-HPDC		Dual Cartridge Handpiece for MX System
MX-RM3E		Standard Soldering/Rework Handpiece
MX-RM5E		Standard Robotic Cable, 1-Piece, 183 mm
MX-RM6E		Soldering/Rework Handpiece for Long Reach Cartridge Access
MX-RM8E		Desoldering Handpiece Cord for MX-DS1
Sleeves and Grips for MX Advanced and Ultrafine Handpieces		
MX-H1-BSR-5		Sleeve, Black, Adv HP Grip, Ring Pattern (Qty=5)
MX-H1-BSS-5		Sleeve, Black, Adv HP Grip, Scallop Pattern (Qty=5)
MX-H1GKG	11	Grip, Advanced Handpiece Knob Pattern, Green
MX-H1GR	12	Grip, Advanced Handpiece, Ring Pattern
MX-H1GS	10	Grip, Advanced Handpiece, Scallop Pattern
MX-H1-GSK-5		Rubber Grip, Knob Green, MX-5000
MX-H2-BSR-5		Sleeve, Black, UF HP Grip, Ring Pattern (Qty=5)
MX-H2-BSS-5		Sleeve, Black, UF HP Grip, Scallop Pattern (Qty=5)
MX-H2GKG		Grip, Ultrafine Handpiece Knob Pattern, Green
MX-H2GR		Grip, Ultrafine Handpiece Ring Pattern
MX-H2GRS		Grip, UF Handpiece, Ring Black, Extended Reach
MX-H2GS		Grip, Ultrafine Handpiece Scallop Pattern
MX-H2-GSK-5		Rubber Grip, UF HP Grip, Knob Green, MX-H2-UF
MX Workstands and Accessories		
MX-W1AV	3	Workstand for Advanced, Ultrafine and High Thermal Demand Handpieces
MX-W1CR		Cradle for Advanced Workstand
MX-W4PT	4	Workstand for Tweezer Handpiece
MX-W4CR		Cradle for Tweezer Workstand
MX-W5DS		Workstand for Desolder Handpiece
MX-W5CR		Cradle for Desolder Workstand
MX-WHPDC		Workstand for Dual Cartridge Handpiece
WS1		Workstand for MX-RM3E Handpiece, Sleeper
AC-Y10	7	Yellow Sponge, Pack of 10
AC-YS3-P		Yellow Sponge, Pack of 50
AC-BP	8	Brass Pad, 18 grams, Pack of 10
AC-BRUSH-P		Soft Brass Brush, Pack of 6
MX-CP1	9	Cartridge Removal Pad
AC-CK2		Green Lead Free ID Ring for STTC Cartridges (Pack of 50)
AC-TC		Desolder Tip Cleaner
AC-TC-P		Desolder Tip Cleaner (12 Pack)
MX-DAH4		ESD Air Hose, U.S. Standard Fitting
MX-PC1		Power Cord
5100-0073		On/Off Switch replacement
MX Upgrade Kits		
MX-UK1	14	Advanced Handpiece for MX and Workstand
MX-UK2		Ulfrafine Handpiece for MX and Workstand
MX-UK3		Dual Cartridge Handpiece for MX and Workstand
MX-UK4		Precision Tweezer Handpiece for MX and Workstand
MX-UK5		Desolder Handpiece for MX with Cord, Air line Kit and Workstand
MX-UK6	6	High Thermal Demand Handpiece and Workstand
MX-UK7	5	Solder Wire Feeder for MX and Workstand
CV and MX Accessories for Solder Wire Feeder System		
USF-1000		Solder Wire Feeder, Main Unit Only
USF-FTA-12		Feeder Tube Assembly, 0.56-0.71 mm Wire Dia.
USF-FTA-17		Feeder Tube Assembly, 0.79-1.27 mm Wire Dia.
USF-GTA-06		Guide Tub and Teflon Nozzle, 0.6 mm (Pack of 10)
USF-GTA-12		Guide Tube and Teflon Nozzle, 1.2 mm (Pack of 10)
USF-GTA-17		Guide Tube and Teflon Nozzle, 1.7 mm (Pack of 10)



All upgrade kits include a Handpiece and a workstand.

Temperature Guide & Tip Specifications CV & MX-Series			
Max Temperature	**CV-Series**	**MX-Series**	**Application**
575 °F/302 °C	CVC-5xxx	STTC-5xx	Temperature Sensitive
675 °F/357 °C	CVC-6xxx	STTC-0xx	
775 °F/413 °C	CVC-7xxx	STTC-1xx	Most Standard
875 °F/468 °C	CVC-8xxx	STTC-8xxV1	Ceramic and High Thermal Demand
950 °F/510 °C	CVC-9xxx	STTC-8xx	
Compatible with:	Systems: MX-500, MX-5000, MX-5200, CV-500, CV-5200 Handpieces: MX-RM3E, MX-RM6E, MX-H1AV, MX-H7-SF, CV-H1-AV, CV-H7-AV	Systems: MX-500, MX-5000, MX-5200 Handpieces: MX-RM3E, MX-RM6E, MX-H1-AV, MX-H7-SF	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)			

Bevel Cartridges			
	CVC-5BV6005A	STTC-546	Long reach, (Bevel/L) 60° x 1 mm, (ø x L) 0.50 x 14.2 mm
	CVC-6BV6005A	STTC-046	
	CVC-7BV6005A	STTC-146	
	CVC-8BV6005A		
	CVC-9BV6005A	STTC-846	
	CVC-5BV6018P		(Bevel/L) 60° x 1.78 mm, optimized geometry for best thermal performance (ø x L) 0.89 x 6.6 mm
	CVC-6BV6018P		
	CVC-7BV6018P	STTC-147P	
	CVC-8BV6018P		
	CVC-9BV6018P	STTC-847P	
	CVC-5BV6018R	STTC-547	Long reach, (Bevel/L) 60° x 1.78 mm, (ø x L) 0.89 x 14.2 mm
	CVC-6BV6018R	STTC-047	
	CVC-7BV6018R	STTC-147	
	CVC-8BV6018R		
	CVC-9BV6018R	STTC-847	
Chisel Cartridges			
	CVC-5CH0010P		Optimized geometry for best thermal performance, (W x L) 1.0 x 6.0 mm
	CVC-6CH0010P	STTC-025P	
	CVC-7CH0010P	STTC-125P	
	CVC-8CH0010P	STTC-825PV1	
	CVC-9CH0010P	STTC-825P	
	CVC-5CH0010S	STTC-525	(W x L) 1.0 x 9.1 mm
	CVC-6CH0010S	STTC-025	
	CVC-7CH0010S	STTC-125	
	CVC-8CH0010S	STTC-825V1	
	CVC-9CH0010S	STTC-825	
	CVC-5CH0014P		Optimized geometry for best thermal performance, (W x L) 1.4 x 6.0 mm
	CVC-6CH0014P		
	CVC-7CH0014P	STTC-138P	
	CVC-8CH0014P	STTC-838PV1	
	CVC-9CH0014P	STTC-838P	
	CVC-5CH0014S	STTC-538	(W x L) 1.4 x 9.9 mm
	CVC-6CH0014S	STTC-038	
	CVC-7CH0014S	STTC-138	
	CVC-8CH0014S	STTC-838V1	
	CVC-9CH0014S	STTC-838	
	CVC-5CH0015R	STTC-599	Bent 30°, for work under a microscope, (W x L) 1.5 x 11.9 mm
	CVC-6CH0015R	STTC-099	
	CVC-7CH0015R	STTC-199	
	CVC-8CH0015R		
	CVC-9CH0015R	STTC-899	

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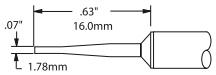
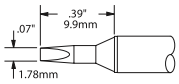
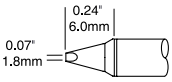
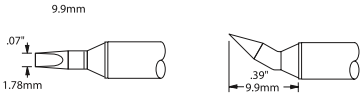
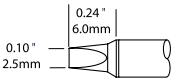
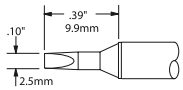
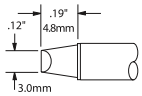
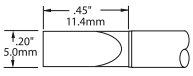
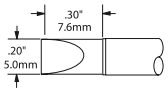
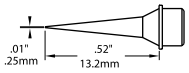
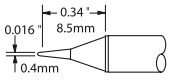
Chisel Cartridges			
	CVC-5CH0018A	STTC-542	Long reach, flat, (W x L) 1.78 x 16mm
	CVC-6CH0018A	STTC-042	
	CVC-7CH0018A	STTC-142	
	CVC-8CH0018A		
	CVC-9CH0018A	STTC-842	
	CVC-5CH0018S	STTC-537	(W x L) 1.78 x 9.9 mm
	CVC-6CH0018S	STTC-037	
	CVC-7CH0018S	STTC-137	
	CVC-8CH0018S	STTC-837V1	
	CVC-9CH0018S	STTC-837	
	CVC-5CH0018P		Optimized geometry for best thermal performance, (W x L) 1.8 x 6.0 mm
	CVC-6CH0018P		
	CVC-7CH0018P	STTC-137P	
	CVC-8CH0018P	STTC-837PV1	
	CVC-9CH0018P	STTC-837P	
	CVC-5CH0018R	STTC-598	Bend 30°, for work under a microscope, (W x L) 1.8 x 10.0 mm
	CVC-6CH0018R	STTC-098	
	CVC-7CH0018R	STTC-198	
	CVC-8CH0018R		
	CVC-9CH0018R	STTC-898	
	CVC-5CH0025P		Optimized geometry for best thermal performance, (W x L) 2.5 x 6.0 mm
	CVC-6CH0025P		
	CVC-7CH0025P	STTC-136P	
	CVC-8CH0025P	STTC-836PV1	
	CVC-9CH0025P	STTC-836P	
	CVC-5CH0025S	STTC-536	(W x L) 2.5 x 9.9 mm
	CVC-6CH0025S	STTC-036	
	CVC-7CH0025S	STTC-136	
	CVC-8CH0025S	STTC-836V1	
	CVC-9CH0025S	STTC-836	
	CVC-5CH0030S	STTC-513	Optimized geometry for best thermal performance (W x L) 3.0 x 4.8 mm
	CVC-6CH0030S	STTC-013	
	CVC-7CH0030S	STTC-113	
	CVC-8CH0030S		
	CVC-9CH0030S	STTC-813	
	CVC-5CH0050A	STTC-565	Long reach, (W x L) 5.0 x 11.4 mm
	CVC-6CH0050A	STTC-065	
	CVC-7CH0050A	STTC-165	
	CVC-8CH0050A		
	CVC-9CH0050A	STTC-865	
	CVC-5CH0050S	STTC-517	(W x L) 5.0 x 7.6 mm
	CVC-6CH0050S	STTC-017	
	CVC-7CH0050S	STTC-117	
	CVC-8CH0050S	STTC-817V1	
	CVC-9CH0050S	STTC-817	
Conical Cartridges			
	CVC-5CN0003A	STTC-590	Fine, long reach, for work in tight spaces, (ø x L) 0.25 x 13.2 mm
	CVC-6CN0003A	STTC-090	
	CVC-7CN0003A	STTC-190	
	CVC-8CN0003A		
	CVC-9CN0003A	STTC-890	
	CVC-5CN0004P		Sharp, optimized geometry for best thermal performance, (ø x L) 0.4 x 8.5 mm
	CVC-6CN0004P		
	CVC-7CN0004P	STTC-145P	
	CVC-8CN0004P		
	CVC-9CN0004P	STTC-845P	

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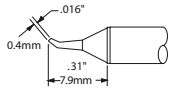
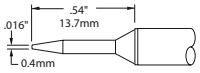
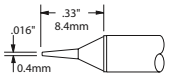
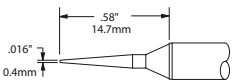
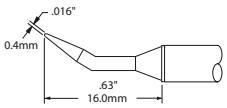
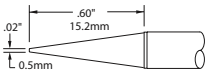
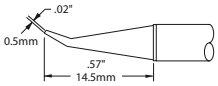
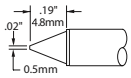
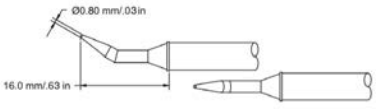
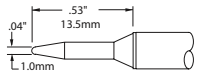
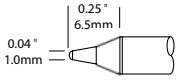
Conical Cartridges			
	CVC-5CN0004R	STTC-526	Sharp, Bent 30°, for work under a microscope, (ø x L) 0.4 x 7.9 mm
	CVC-6CN0004R	STTC-026	
	CVC-7CN0004R	STTC-126	
	CVC-8CN0004R	STTC-826V1	
	CVC-9CN0004R	STTC-826	
	CVC-5CN1304A	STTC-506	Sharp, long reach, (ø x L) 0.4 x 13.7 mm
	CVC-6CN1304A	STTC-006	
	CVC-7CN1304A	STTC-106	
	CVC-8CN1304A		
	CVC-9CN1304A	STTC-806	
	CVC-5CN1404S	STTC-522	Sharp, (ø x L) 0.4 x 8.4 mm
	CVC-6CN1404S	STTC-022	
	CVC-7CN1404S	STTC-122	
	CVC-8CN1404S		
	CVC-9CN1404S	STTC-822	
	CVC-5CN1504A	STTC-545	Sharp, long Reach, (ø x L) 0.4 x 14.7 mm
	CVC-6CN1504A	STTC-045	
	CVC-7CN1504A	STTC-145	
	CVC-8CN1504A		
	CVC-9CN1504A	STTC-845	
	CVC-5CN1604R	—	Sharp, long reach, bent 30°, for work under a microscope, (ø x L) 0.8 x 15 mm
	CVC-6CN1604R		
	CVC-7CN1604R		
	CVC-8CN1604R		
	CVC-9CN1604R		
	CVC-5CN0005A	STTC-543	Sharp, long reach, (ø x L) 0.5 x 15.2 mm
	CVC-6CN0005A	STTC-043	
	CVC-7CN0005A	STTC-143	
	CVC-8CN0005A		
	CVC-9CN0005A	STTC-843	
	CVC-5CN0005R	STTC-544	Sharp, long reach, bent 30°, for work under a microscope, (ø x L) 0.5 x 14.5 mm
	CVC-6CN0005R	STTC-044	
	CVC-7CN0005R	STTC-144	
	CVC-8CN0005R		
	CVC-9CN0005R	STTC-844	
	CVC-5CN4805S	STTC-516	Blunt, optimized geometry for best thermal performance, (ø x L) 0.5 x 4.8 mm
	CVC-6CN4805S	STTC-016	
	CVC-7CN4805S	STTC-116	
	CVC-8CN4805S		
	CVC-9CN4805S	STTC-816	
	CVC-5CN1608R	STTC-540	Sharp, long reach, bent 30°, for work under a microscope, (ø x L) 0.8 x 16 mm
	CVC-6CN1608R	STTC-040	
	CVC-7CN1608R	STTC-140	
	CVC-8CN1608R	STTC-840V1	
	CVC-9CN1608R	STTC-840	
	CVC-5CN0010A	STTC-501	Long reach, (ø x L) 1.0 x 13.5 mm
	CVC-6CN0010A	STTC-001	
	CVC-7CN0010A	STTC-101	
	CVC-8CN0010A		
	CVC-9CN0010A	STTC-801	
	CVC-5CN0010P		Optimized geometry for best thermal performance, (ø x L) 1.0 x 6.5 mm
	CVC-6CN0010P		
	CVC-7CN0010P	STTC-101P	
	CVC-8CN0010P		
	CVC-9CN0010P	STTC-801P	

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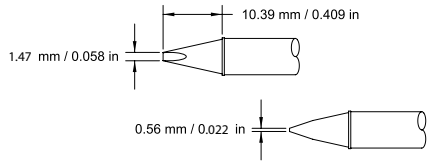
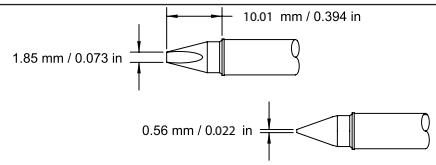
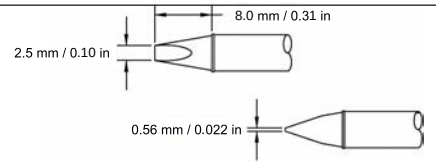
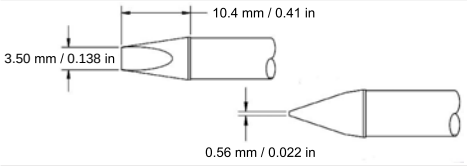
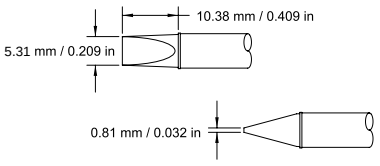
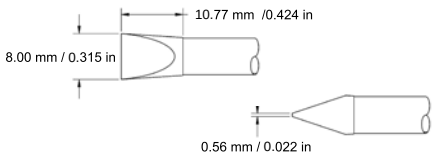
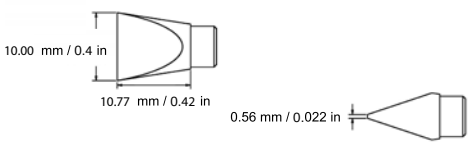
Temperature Guide & Tip Specifications HCV/HTC			
Max Temperature	**CV-Series**	**MX-Series**	**Application**
775 °F/413 °C	HCV-7	HTC-7	Most Standard
875 °F/468 °C	HCV-8	HTC-8	Ceramic and High Thermal Demand
950 °F/510 °C	HCV-9	HTC-9	
Compatible with:	Systems: MX-5000, MX-5200, CV-5200 Handpieces: MX-H6-HTD, CV-H6-HTD, CV-H7-HTD	Systems: MX-5000, MX-5200 Handpieces: MX-H6-HTD	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge.			

High Thermal Demand - Chisels			
	HCV-7CH0015S HCV-8CH0015S HCV-9CH0015S	—	Chisel, (W x L) 1.47 x 10.4 mm
	HCV-7CH0018S HCV-8CH0018S HCV-9CH0018S	—	Chisel, (W x L) 1.85 x 10 mm
	HCV-7CH0025S HCV-8CH0025S HCV-9CH0025S	HTC-7CH0025S HTC-8CH0025S HTC-9CH0025S	Chisel, (W x L) 2.5 x 8 mm
	HCV-7CH0035S HCV-8CH0035S HCV-9CH0035S	—	Chisel, (W x L) 3.5 x 10.4 mm
	HCV-7CH0053S HCV-8CH0053S HCV-9CH0053S	HTC-7CH0053S HTC-8CH0053S HTC-9CH0053S	Chisel, (W x L) 5.3 x 8.3 mm
	HCV-7CH0080S HCV-8CH0080S HCV-9CH0080S	—	Chisel, (W x L) 8.0 x 10.7 mm
	HCV-7CH0100S HCV-8CH0100S HCV-9CH0100S	—	Chisel, (W x L) 10.0 x 10.8 mm

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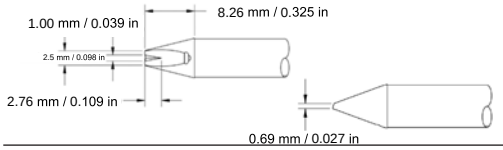
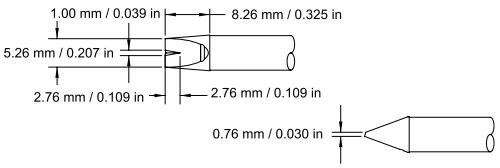
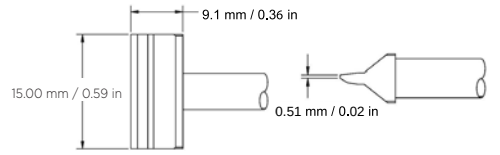
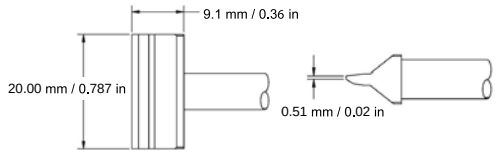
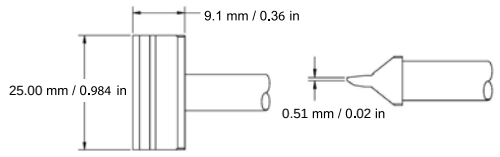
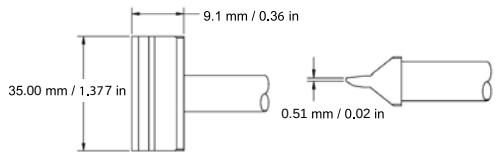
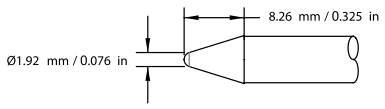
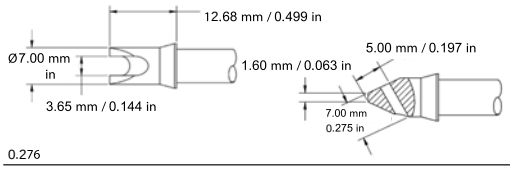
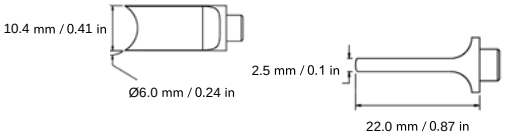
High Thermal Demand - V Groove Chisels			
	HCV-7VG0025S HCV-8VG0025S HCV-9VG0025S	—	V-Groove Chisel for pin soldering, Groove (W x L) 1.0 x 2.8 mm, (W x L) 2.5 x 8.3 mm
	HCV-7VG0053S HCV-8VG0053S HCV-9VG0053S	HTC-7VG0053S HTC-8VG0053S HTC-9VG0053S	V-Groove Chisel for pin soldering, Groove (W x L) 1.0 x 4 mm, (W x L) 5.3 x 8.3 mm
High Thermal Demand - Blades			
	HCV-7BL0015S HCV-8BL0015S HCV-9BL0015S	—	Blade, (W x L) 10.0 x 9.1 mm
	HCV-7BL0020S HCV-8BL0020S HCV-9BL0020S	—	Blade, (W x L) 20.0 x 9.1 mm
	HCV-7BL0025S HCV-8BL0025S HCV-9BL0025S	—	Blade, (W x L) 25.0 x 9.1 mm
	HCV-7BL0035S HCV-8BL0035S HCV-9BL0035S	—	Blade, (W x L) 35.0 x 9.1 mm
High Thermal Demand - Specials			
	HCV-7CN0020S HCV-8CN0020S HCV-9CN0020S	HTC-7CN0020S HTC-8CN0020S HTC-9CN0020S	Conical, (ø x L) 2 x 8.3 mm
	HCV-7SL0070S HCV-8SL0070S HCV-9SL0070S	—	Slot, 3.7 x 7.0 mm
	HCV-7BR0010S HCV-8BR0010S HCV-9BR0010S	—	Barrel, ø 2.5 mm, by 2.5 mm (W)

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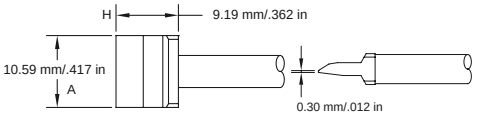
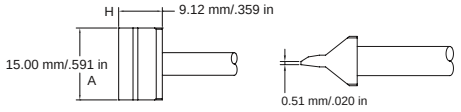
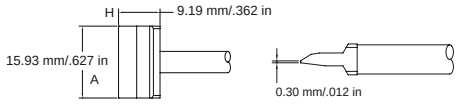
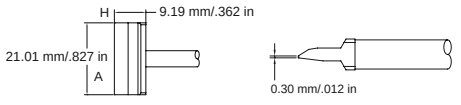
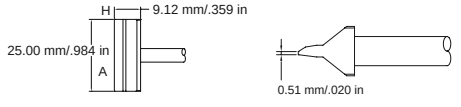
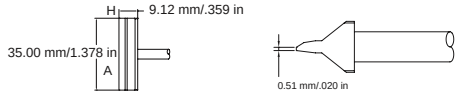
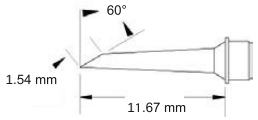
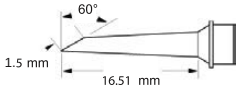
Temperature Guide & Tip Specifications CV/MX-Series			
Max Temperature	**CV-Series**	**MX-Series**	**Application**
575 °F/302 °C	SMC-5xxx	SMTC-5xx	Temperature Sensitive
675 °F/357 °C	SMC-6xxx	SMTC-0xx	
775 °F/413 °C	SMC-7xxx	SMTC-1xx	Most Standard
875 °F/468 °C	SMC-8xxx	SMTC-8xxV1	Ceramic and High Thermal Demand
950 °F/510 °C	SMC-9xxx	SMTC-8xx	
Compatible with:	Systems: MX-500, MX-5000, MX-5200, CV-500, CV-5200 Handpieces: MX-RM3E, MX-RM6E, CV-H1-AV	Systems: MX-500, MX-5000, MX-5200 Handpieces: MX-RM3E, MX-H1-AV	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.) These tips will provide data via the CV series power supplies, but due to the nature of their application the Connection Validation™ function is not required and therefore not enabled.			

Blades for Rework Applications			
	SMC-5BL0010S	SMTC-560	Blade for Pad Clean-Up, A = 10.59 mm H = 9.19 mm
	SMC-6BL0010S	SMTC-060	
	SMC-7BL0010S	SMTC-160	
	SMC-8BL0010S		
	SMC-9BL0010S	SMTC-860	
	SMC-5BL0015H		Blade for Pad Clean-Up, A = 15 mm H = 9.12 mm
	SMC-6BL0015H	SMTC-0BL150	
	SMC-7BL0015H	SMTC-1BL150	
	SMC-8BL0015H		
	SMC-9BL0015H	SMTC-8BL150	
	SMC-5BL0016S	SMTC-561	Blade for Pad Clean-Up, A = 15.93 mm H = 9.19 mm
	SMC-6BL0016S	SMTC-061	
	SMC-7BL0016S	SMTC-161	
	SMC-8BL0016S		
	SMC-9BL0016S	SMTC-861	
	SMC-5BL0022S	SMTC-562	Blade for Pad Clean-Up, A = 21.01 mm H = 9.19 mm
	SMC-6BL0022S	SMTC-062	
	SMC-7BL0022S	SMTC-162	
	SMC-8BL0022S		
	SMC-9BL0022S	SMTC-862	
	SMC-5BL0025H		Blade for Pad Clean-Up, A = 25 mm H = 9.12 mm
	SMC-6BL0025H	SMTC-0BL250	
	SMC-7BL0025H	SMTC-1BL250	
	SMC-8BL0025H		
	SMC-9BL0025H	SMTC-8BL250	
	SMC-5BL0035H		Blade for Pad Clean-Up, A = 35 mm H = 9.12 mm
	SMC-6BL0035H	SMTC-0BL350	
	SMC-7BL0035H	SMTC-1BL350	
	SMC-8BL0035H		
	SMC-9BL0035H	SMTC-8BL350	
Rework Hoof-Cartridges – For Drag Soldering SOICs/QFPs			
	SMC-5HF6009S	SMTC-5175	Micro Hoof, (Bevel/L) 60° x 1.54 mm, (ø x L) 0.77 x 11.67 mm
	SMC-6HF6009S	SMTC-0175	
	SMC-7HF6009S	SMTC-1175	
	SMC-8HF6009S		
	SMC-9HF6009S	SMTC-8175	
	SMC-5HF6011S	SMTC-5174	Micro Hoof, (Bevel/L) 60° x 1.5 mm, long reach, (ø x L) 0.75 x 16.51 mm
	SMC-6HF6011S	SMTC-0174	
	SMC-7HF6011S	SMTC-1174	
	SMC-8HF6011S		
	SMC-9HF6011S	SMTC-8174	

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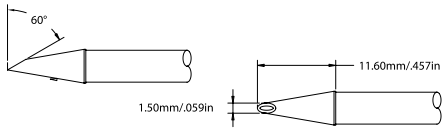
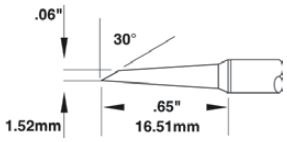
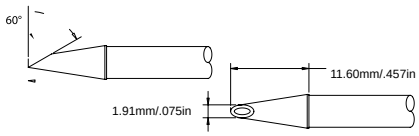
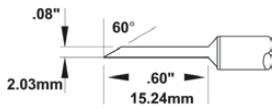
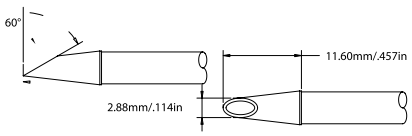
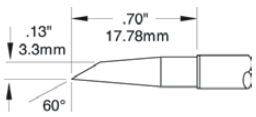
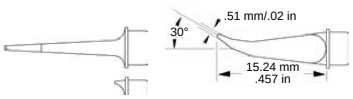
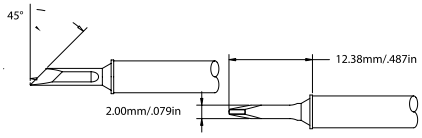
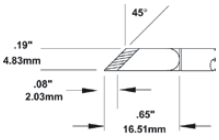
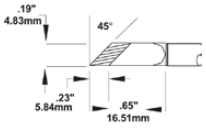
Rework Hoof-Cartridges – For Drag Soldering SOICs/QFPs			
	SMC-5HF0015V		Concave Hoof, (Bevel/L) 60° x 3 mm, (ø x L) 1.5 x 11.6 mm
	SMC-6HF0015V	SMTC-0184	
	SMC-7HF0015V	SMTC-1184	
	SMC-8HF0015V		
	SMC-9HF0015V		
	SMC-5HF6015S		Hoof, (Bevel/L) 30° x 1.76 mm, long reach, (ø x L) 1.52 x 16.51 mm
	SMC-6HF6015S	SMTC-0167	
	SMC-7HF6015S	SMTC-1167	
	SMC-8HF6015S		
	SMC-9HF6015S	SMTC-8167	
	SMC-5HF0020V		Concave Hoof, (Bevel/L) 60° x 3.82 mm (ø x L) 1.91 x 11.6 mm
	SMC-6HF0020V	SMTC-0185	
	SMC-7HF0020V	SMTC-1185	
	SMC-8HF0020V		
	SMC-9HF0020V		
	SMC-5HF6020S		Hoof, (Bevel/L) 60° x 4.06 mm, (ø x L) 2.03 x 15.24 mm
	SMC-6HF6020S	SMTC-0169	
	SMC-7HF6020S	SMTC-1169	
	SMC-8HF6020S		
	SMC-9HF6020S	SMTC-8169	
	SMC-5HF0030V		Concave Hoof, (Bevel/L) 60° x 6 mm, (ø x L) 3.0 x 11.6 mm
	SMC-6HF0030V	SMTC-0186	
	SMC-7HF0030V	SMTC-1186	
	SMC-8HF0030V		
	SMC-9HF0030V		
	SMC-5HF6033S	SMTC-5147	Hoof, (Bevel/L) 60° x 6.6 mm, long reach, (ø x L) 3.3 x 17.78 mm
	SMC-6HF6033S	SMTC-0147	
	SMC-7HF6033S	SMTC-1147	
	SMC-8HF6033S		
	SMC-9HF6033S	SMTC-8147	
Special Rework Cartridges			
	SMC-5HK0005S	SMTC-5172	Hook, for fine drag and point-to-point soldering on contacts from J-lead components, bend 30°, (ø x L) 0.51 x 15.24 mm
	SMC-6HK0005S	SMTC-0172	
	SMC-7HK0005S	SMTC-1172	
	SMC-8HK0005S		
	SMC-9HK0005S	SMTC-8172	
Rework Knife-Cartridges – For Multi-Lead Soldering of PLCCs/SOJs			
	SMC-5KN0025S		Knife, 45° angled, tinned area length 2.03 mm (W x L) 2.0 x 12.38 mm
	SMC-6KN0025S	SMTC-0165	
	SMC-7KN0025S	SMTC-1165	
	SMC-8KN0025S		
	SMC-9KN0025S		
	SMC-5KN0048S	SMTC-5161	Knife, 45° angled, tinned area length 2.03 mm (W x L) 4.83 x 16.51 mm
	SMC-6KN0048S	SMTC-0161	
	SMC-7KN0048S	SMTC-1161	
	SMC-8KN0048S		
	SMC-9KN0048S		
	SMC-5KN0048W	SMTC-5173	Knife, 45° angled, tinned area length 5.84 mm (W x L) 4.83 x 16.51 mm
	SMC-6KN0048W	SMTC-0173	
	SMC-7KN0048W	SMTC-1173	
	SMC-8KN0048W		
	SMC-9KN0048W	SMTC-8173	

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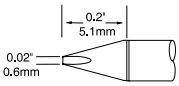
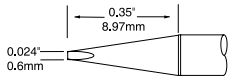
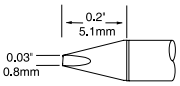
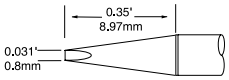
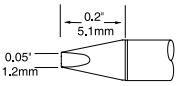
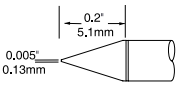
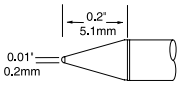
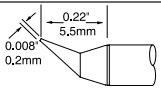
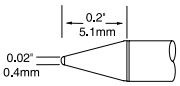
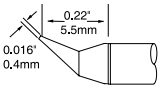
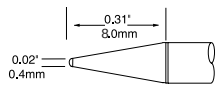
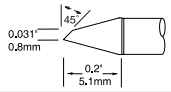
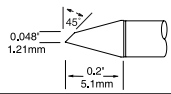
Temperature Guide & Tip Specifications UFC-Series / UFTC-Series			
Max Temperature	**CV-Series**	**MX-Series**	**Application**
675 °F/357 °C	UFC-6	UFTC-6	Temperature Sensitive
775 °F/413 °C	UFC-7	UFTC-7	Most Standard
Compatible with:	Systems: CV-500, CV-5200 Handpieces: CV-H2-UF	Systems: MX-500, MX-5000, MX-5200 Handpieces: MX-H2-UF	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)			

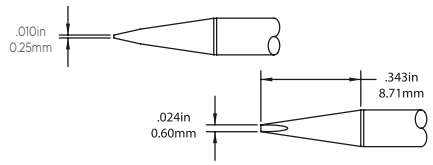
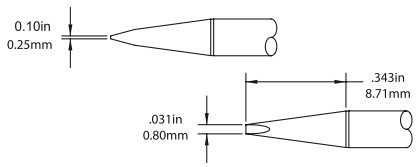
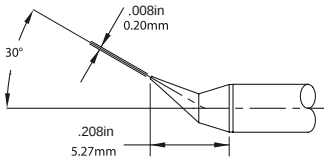
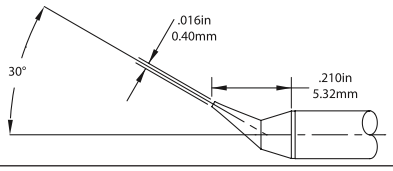
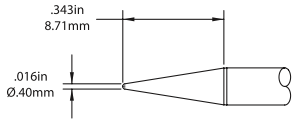
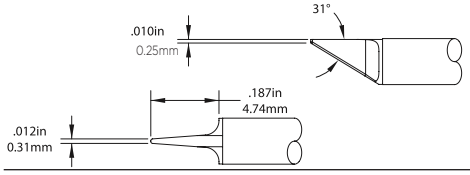
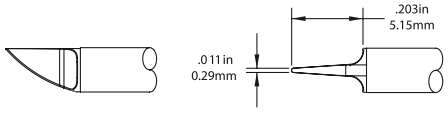
Ultra-Fine Chisel Cartridge			
	UFC-6CH5106S	UFTC-6CH06	(W x L) 0.6 x 5.1 mm
	UFC-7CH5106S	UFTC-7CH06	
	UFC-6CH9006S	UFTC-6CHL06	Long reach, (W x L) 0.6 x 9 mm
	UFC-7CH9006S	UFTC-7CHL06	
	UFC-6CH5108S	UFTC-6CH08	(W x L) 0. 8 x 5.1 mm
	UFC-7CH5108S	UFTC-7CH08	
	UFC-6CH9008S	UFTC-6CHL08	Long reach, (W x L) 0.8 x 9 mm
	UFC-7CH9008S	UFTC-7CHL08	
	UFC-6CH5112S	UFTC-6CH12	(W x L) 1.2 x 5.1 mm
	UFC-7CH5112S	UFTC-7CH12	
Ultra-Fine Conical Cartridge			
	UFC-6CN5101S	UFTC-6CN01	(ø x L) 0.13 x 5.1 mm
	UFC-7CN5101S	UFTC-7CN01	
	UFC-6CN5102S	UFTC-6CN02	(ø x L) 0.2 x 5.1 mm
	UFC-7CN5102S	UFTC-7CN02	
	UFC-6CN5502R	UFTC-6CNB02	Bent 30°, for work under a micro-scope, (ø x L) 0.2 x 5.5 mm
	UFC-7CN5502R	UFTC-7CNB02	
	UFC-6CN5504S	UFTC-6CN04	0.4 x 5.1 mm
	UFC-7CN5504S	UFTC-7CN04	
	UFC-6CN5504R	UFTC-6CNB04	Bent 30°, for work under a micro-scope, 0.4 x 5.6 mm
	UFC-7CN5504R	UFTC-7CNB04	
	UFC-6CN8004S	UFTC-6CNL04	For work in tight spaces, long reach, 0.4 x 8.0 mm
	UFC-7CN8004S	UFTC-7CNL04	
Ultra-Fine Rework Hoof-Cartridges – For Drag Soldering SOICs/QFPs			
	UFC-6HF5108S	UFTC-6DRH408	Micro Hoof, (Bevel/L) 45° x 1.13 mm, (ø x L) 0.8 x 5.1 mm
	UFC-7HF5108S	UFTC-7DRH408	
	UFC-6HF5112S	UFTC-6DRH412	Micro Hoof, (Bevel/L) 45° x 1.71 mm, (ø x L) 1.21 x 5.1 mm
	UFC-7HF5112S	UFTC-7DRH412	

For our complete selection of tips & cartridges, visit www.metcal.com

Temperature Guide & Tip Specifications UFT-Series

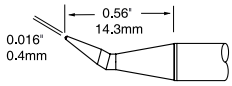
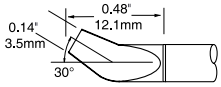
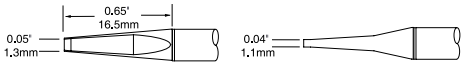
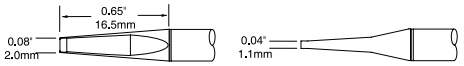
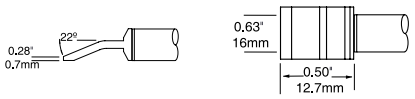
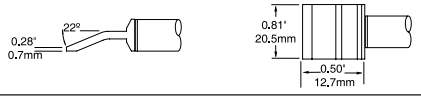
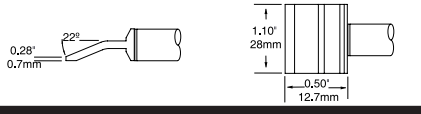
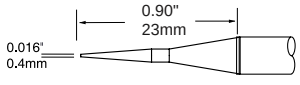
Max Temperature	CV-Series	Application
675 °F/357 °C	UFT-6	Temperature Sensitive
775 °F/413 °C	UFT-7	Most Standard
Compatible with:	Systems: CV-500, CV5200 Handpieces: CV-H4UFT	

Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge. These tips will provide data via the CV power supplies, but due to the nature of their application the Connection Validation™ function is not required and therefore not enabled. All tweezer cartridges are sold per pair.

Ultra-Fine Tweezer Cartridge - Chisel		
	UFT-6CH9006S	(W x L) 0.6 x 8.71 mm, sold per pair
	UFT-7CH9006S	
	UFT-6CH9008S	(W x L) 0.8 x 8.71 mm, sold per pair
	UFT-7CH9008S	
Ultra-Fine Tweezer Cartridge - Conical		
	UFT-6CN5502R	Conical, Bent, for work under a micro-scope, (ø x L) 0.2 x 5.27 mm, sold per pair
	UFT-7CN5502R	
	UFT-6CN5504R	Conical, Bent, for work under a micro-scope, (ø x L) 0.4 x 5.3 mm, sold per pair
	UFT-7CN5504R	
	UFT-6CN8004S	Conical (ø x L) 0.4 x 8.7 mm, sold per pair
	UFT-7CN8004S	
Ultra-Fine Tweezer Cartridge - Power Wedge		
	UFT-6PW3150S	Power Wedge, two-way use, tip and long side, (ø x L) 0.31 x 4.74 mm, sold per pair
	UFT-7PW3150S	
	UFT-6PW2954C	Power Wedge, two-way use, tip and long side, (ø x L) 0.29 x 5.15 mm, sold per pair
	UFT-7PW2954C	

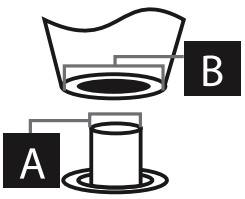
For our complete selection of tips & cartridges, visit www.metcal.com

Temperature Guide & Tip Specifications PTC/PTTC-Series			
Max Temperature	**CV-Series**	**MX-Series**	**Application**
675 °F/357 °C	PTC-6	PTTC-6	Temperature Sensitive
775 °F/413 °C	PTC-7	PTTC-7	Most Standard
875 °F/468 °C	PTC-8		Ceramic and High Thermal Demand
950 °F/510 °C	PTC-9	PTTC-8	
Compatible with:	Systems: MX-500, MX-5000, MX-5200, CV-5200 Handpieces: MX-PTZ, CV-H4-PTZ	Systems: MX-500, MX-5000, MX-5200 Handpieces: MX-PTZ	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)			

Bent			
	PTC-6CN1404A		Conical, bent 30°, (Ø x L) 0.4 mm x 14.3 mm (0.016" x 0.56"), sold per pair
	PTC-7CN1404A	PTTC-701B	
	PTC-8CN1404A		
	PTC-9CN1404A	PTTC-801B	
	PTC-6FB1235R	PTTC-608B	Bent 30°, blade, (W x L) 3.2 mm x 12.1 mm (0.14" x 0.48"), sold per pair
	PTC-7FB1235R	PTTC-708B	
	PTC-8FB1235R		
	PTC-9FB1235R	PTTC-808B	
Blade			
	PTC-6CH1713A	PTTC-602	Blade, (W x L), 1.27 mm x 16.55 mm (0.05" x 0.65"), sold per pair
	PTC-7CH1713A	PTTC-702	
	PTC-8CH1713A		
	PTC-9CH1713A	PTTC-802	
	PTC-6CH1720A	PTTC-603	Blade, (W x L) 2 mm x 16.5 mm (0.08" x 0.65"), sold per pair
	PTC-7CH1720A	PTTC-703	
	PTC-8CH1720A		
	PTC-9CH1720A	PTTC-803	
	PTC-6BL1306R	PTTC-604	Blade, (W x L) 6.35 mm x 12.7 mm (0.25" x 0.5"), sold per pair
	PTC-7BL1306R	PTTC-704	
	PTC-8BL1306R		
	PTC-9BL1306R	PTTC-804	
	PTC-6BL1316R	PTTC-605	Blade, (W x L) 15.75 mm x 12.7 mm (0.63" x 0.5"), sold per pair
	PTC-7BL1316R	PTTC-705	
	PTC-8BL1316R		
	PTC-9BL1316R	PTTC-805	
	PTC-6BL1321R	PTTC-606	Blade, (W x L) 20.6 mm x 12.7 mm (0.81" x 0.5"), sold per pair
	PTC-7BL1321R	PTTC-706	
	PTC-8BL1321R		
	PTC-9BL1321R	PTTC-806	
	PTC-6BL1328R	PTTC-607	Blade, (W x L) 28 mm x 12.7 mm (1.1" x 0.05"), sold per pair
	PTC-7BL1328R	PTTC-707	
	PTC-8BL1328R		
	PTC-9BL1328R	PTTC-807	
Conical			
	PTC-6CN2304A	PTTC-601	Conical, (Ø x L) 0.4 mm x 19 mm (0.016"x0.7"), sold per pair
	PTC-7CN2304A	PTTC-701	
	PTC-8CN2304A		
	PTC-9CN2304A	PTTC-801	

For our complete selection of tips & cartridges, visit www.metcal.com

Temperature Guide & Tip Specifications DSC/STDC-Series			
Max Temperature	**CV-Series**	**MX-Series**	**Application**
675 °F/357 °C	DSC-6	STDC-0	Temperature Sensitive
775 °F/413 °C	DSC-7	STDC-1 / 7xxL	Most Standard
875 °F/468 °C	DSC-8		Ceramic and High Thermal Demand
950 °F/510 °C	DSC-9	STDC-8	
Compatible with:	Systems: MX-500, MX-5000, MX-5200, CV-500, CV-5200 Handpieces: MX-DS1, CV-H5-DS	Systems: MX-500, MX-5000, MX-5200 Handpieces: MX-DS1	DSC-xxxA / STDC-xxxL = Long Reach Desolder Cartridge to remove components form high density packed PCBs.
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.) These tips will provide data via the CV series power supplies, but due to the nature of their application the Connection Validation™ function is not required and therefore not enabled.			



Standard

Long Reach

Standard		A	B	C
DSC-6CN0006S	STDC-002	0.64 mm	1.40 mm	11.43 mm
DSC-7CN0006S	STDC-102			
DSC-8CN0006S				
DSC-9CN0006S	STDC-802			
DSC-6CN0008S	STDC-003	0.76 mm	1.68 mm	11.17 mm
DSC-7CN0008S	STDC-103			
DSC-8CN0008S				
DSC-9CN0008S	STDC-803			
DSC-6CN0010S	STDC-004	1.02 mm	1.78 mm	10.92 mm
DSC-7CN0010S	STDC-104			
DSC-8CN0010S				
DSC-9CN0010S	STDC-804			
DSC-6CN0013S	STDC-005	1.27 mm	2.03 mm	10.66 mm
DSC-7CN0013S	STDC-105			
DSC-8CN0013S				
DSC-9CN0013S	STDC-805			
DSC-6CN0015S	STDC-006	1.52 mm	2.29 mm	10.41 mm
DSC-7CN0015S	STDC-106			
DSC-8CN0015S				
DSC-9CN0015S	STDC-806			
DSC-6CN0024S	STDC-007	2.41 mm	3.18 mm	9.14 mm
DSC-7CN0024S	STDC-107			
DSC-8CN0024S				
DSC-9CN0024S	STDC-807			
Long Reach				
DSC-6CN0008A		0.76 mm	1.68 mm	21.33 mm
DSC-7CN0008A	STDC-703L			
DSC-8CN0008A				
DSC-9CN0008A	STDC-803L			
DSC-6CN0010A		1.02 mm	1.79 mm	21.08 mm
DSC-7CN0010A	STDC-704L			
DSC-8CN0010A				
DSC-9CN0010A	STDC-804L			
DSC-6CN0013A		1.27 mm	2.03 mm	20.82 mm
DSC-7CN0013A	STDC-705L			
DSC-8CN0013A				
DSC-9CN0013A	STDC-805L			

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The MFR-2200 Series

features dual-output capability allowing users to select operation of one handpiece or two handpieces simultaneously.

The MFR-2200 Systems offer a choice of three handpieces, however two additional hand-pieces including the desoldering option are also available as upgrade kits. **(see pages 30 & 34)**

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

This series is compact and versatile and can be used with either a soldering tip, cartridge, or tweezers handpiece. A shop air desoldering option is also available as an upgrade kit. **(see pages 30 & 34)**

System Specifications	MFR-PS1100	MFR-PS2200
Input Line Voltage	100 - 240 VAC, grounded circuit, 50/60 Hz	
Rated Power Consumption	70 W max.	130 W max.
Output Power	Variable, 60 W max.*	Variable, 2 x 60 W max.*
Output Frequency	450 KHz	
Heating Method	Induction, SmartHeat®	
Connections	Single Port	Dual Port
Power Supply Dim. W x D x H	90 x 200 x 152.5 mm	120 x 200 x 152.5 mm
Power Supply Weight	2.3 kg (5.05 lb)	2.97 kg (6.55 lb)
Certification / Marking	cTUVus, CE	
Tip-to- Ground Potential	< 2 mV	
Tip-to-Ground Resistance	< 2 Ohm	
Ground Detection	Permanent	
Surface Resistivity	10^5 - 10^9 Ohm	
Idle Temperature Stability	1.1 °C (2 °F) in still air	
Tip Temperature Accuracy	Meets or exceeds IPC J-STD-001 Standard	
Warranty	1 year	
	*RF SmartHeat® Technology provides greater power.	

Key Features & Benefits

- SmartHeat® Technology provides exceptional power for high thermal demand applications
- Single or Dual Simultaneous outputs allow for single/dual handpiece use
- Five handpieces available for increased application solutions for soldering, desoldering (upgrade kit) and rework on one system
- Each handpiece has a comprehensive range of cartridges or tips for maximum flexibility
- Ergonomic handpieces for operator safety and comfort

MFR-H1-SC2
Soldering Cartridge Handpiece

MFR-H2-ST2
Soldering Tip Handpiece

MFR-H4-TW
Tweezer Handpiece

MFR-H6-SSC
SSC Cartridge Handpiece

WS1
Universal Soldering Workstand

WS2
Round Soldering Workstand

MFR-WSPT
Tweezer Workstand

MFR-2200 Series

Part Number	Power Supply	Handpieces			Tip Saver Workstands	
	MFR-PS2200	MFR-H1-SC2	MFR-H2-ST2	MFR-H4-TW	WS1	MFR-WSPT
MFR-2210	●	●			●	
MFR-2211	●	●●			●●	
MFR-2220	●		●		●	
MFR-2222	●		●		●●	
MFR-2240	●			●		●
MFR-2241	●	●		●	●	●

*See Handpieces and more accesories on page 34

MFR-1100 Series

Part Number	Power Supply	Handpieces				Tip Saver Workstands		
	MFR-PS1100	MFR-H1-SC2	MFR-H2-ST2	MFR-H4-TW	MFR-H6-SSC	WS1	MFR-WSPT	WS2
MFR-1110	●	●				●		
MFR-1120	●		●			●		
MFR-1140	●			●			●	
MFR-1160	●				●			●
MFR-1161	●	●			●	●		●

*See Handpieces and more accesories on page 34

Applicable Soldering Cartridges & Tips (Partial list)

SxP
Soldering Cartridges

RxP
Rework Cartridges

Full range on pages 37-38

SxV
Soldering Tips

CxV
Blade Tips

Full range on pages 35-36

SSC
Soldering Cartridges (Previous SP200 System)

TxP
Tweezer Cartridges

Full range on pages 39-40

Accessories

MFR-CA3
Coil Assembly for Tip Handpiece (**MFR-H2-ST2**)

WS1G
Auto-sleep Workstand, Green

MFR-PM70
Power Meter

AC-CP2
Cartridge / Tip Removal Pad

AC-BP
Brass Pad for Workstand (Pack of 10)

The MFR-1150 Desolder System

with Venturi Workstand provides a compact and easy shop air option.

Metcal's MFR-1150 Desoldering System is a powerful, cost-effective system with a small footprint. The MFR-1150 has a powerful 0.85 bar vacuum built into the workstand which makes throughole desoldering clean and easy.

The MFR-1150 system includes a Desoldering Pistol with an easy to change, large-capacity solder collection chamber to ensure minimum downtime. The pistol can easily be converted to a pencil grip for additional control.
Metcal offers a wide range of long-life desoldering tips that will keep your equipment working efficiently.

DxP
Deoldering Tips

Full range on page 39

Remove grip for Pencil configuration

Collection chamber replacement

MFR-H5-DS Desolder Handpiece	
Solder Handpiece cable length	152 cm (60"), burn proof, ESD safe
Hand piece connector	8 pin power connector
MFR-WSDSX Workstand	
Input voltage	24 V
Input power	15 W
Workstand dimensions	100 mm x 200 mm x 140 mm (4" x 8" x 5.5")
Noise level	< 55 dB
Recommended Air pressure input	550 kPa (80 PSI) - Shop air only
Vacuum suction force	0.85 bar (25" Hg)

Part Number	Description
MFR-1150	Complete System (Includes parts listed below)
MFR-PS1100	Power Supply
MFR-H5-DS	Desolder Handpiece
MFR-WSDSX	Workstand with venturi box for desolder Handpiece
MFR-FTKIT	Fittings and air hose kit
AC-TC	Desolder tip cleaner tool
AC-CP2	Cartridge and Tip Removal Pad

Key Features & Benefits

Venturi Workstand

2-in-1 Desolder Handpiece (Pistol or Pencil)

MFR-H5-DS & MFR-WSDSX
are compatible for use with all MFR systems (available under MFR-UK5 upgrade kit)

Uses DxP desolder tips and replaceable coil assembly (MFR-HDCA)

MFR-UK5 Upgrade Kit
Compatible with all MFR Series Power Supplies

The MFR-1350 Desoldering and Rework System features an innovative desoldering handpiece and a power supply with an internal pump, providing 0.7 bar of vacuum suction force, making through-hole desoldering easy.

SxP
Soldering Cartridges

Full range on page 37

DxP
Deoldering Tips

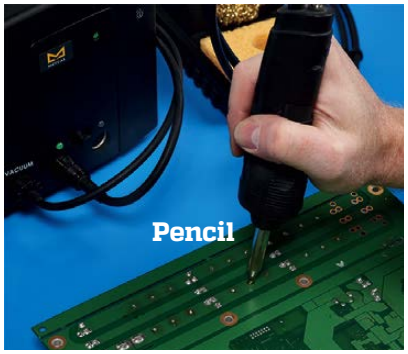
Full range on page 39

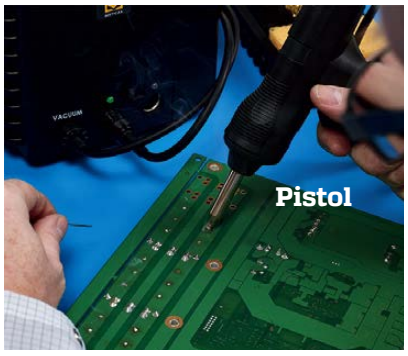
RxP
Rework Cartridges

Full range on page 38

System Specifications - MFR-PS1300	
Input Line Voltage	100 - 240 VAC, grounded circuit, 50/60 Hz
Rated Power Consumption	110 W max.
Output Power	Variable, 60 W max.*
Output Frequency	450 KHz
Heating Method	Induction, SmartHeat®
Connections	Switchable Dual Port
Power Supply Dim. W x D x H	170 x 200 x 152.5 mm (6.7" x 7.9" x 6")
Power Supply Weight	3.9 kg (8.6 lb)
Certification / Marking	cTUVus, CE
Tip-to-Ground Potential	< 2 mV
Tip-to-Ground Resistance	< 2 Ohm
Ground Detection	Permanent
Surface Resistivity	10^5 - 10^9 Ohm
Idle Temperature Stability	1.1 °C (2 °F) in still air
Tip Temperature Accuracy	Meets or exceeds IPC J-STD-001 Standard
Vacuum Suction Force	0.7 bar (21" Hg at Vacuum pump)
Noise Level	< 55 dB
Warranty	1 year

*RF SmartHeat® Technology provides greater power.





Part No.	Description
MFR-1350	Desolder System with internal pump includes power supply, desolder Handpiece and workstand
MFR-1351	Solder/Desolder System with internal pump includes power supply, desolder Handpiece, solder Handpiece, and (2) workstands
MFR-PS1300	Power Supply
MFR-H5-DS	Desolder Handpiece
MFR-H1-SC2	Solder Cartridge Handpiece
MFR-WSDSU	Workstand for Desolder Handpiece
WS1	Workstand for Solder Handpiece

Key Features & Benefits

- Self-contained powerful vacuum pump
- 2-in-1 ergonomic and flexible handpiece
- Recyclable collection chamber with increased capacity
- Quick and easy change collection chamber
- Dual switchable output
- Powered by SmarthHeat® Technology
- Compatible with previous MFR De-solder range

The PS-900 Production Soldering System

Metcal's PS-900 Soldering System, powered by SmartHeat® technology, is a powerful, cost-effective soldering system with a small benchtop footprint. The PS-900 is designed for lead free soldering, multi-layer boards, and thermally demanding components.

Metcal's PS-900-Solar System is a specific package designed for solar cell applications, with an extended cable, and a specially designed high thermal demand STV-DRH440A hoof tip.

Key Features & Benefits

SmartHeat® temperature control

Ergonomic, lightweight handle

Rugged cast aluminum housing

Added Planting thickness to tips

Low cost, quick-change heater coil

System Specification - PS-PW900	
Input Line Voltage	100 - 240 VAC, grounded circuit, 50/60 Hz
Rated Power Consumption	90 W max.
Output Power	Variable, 60 W max.*
Output Frequency	450 KHz
Heating Method	Induction, SmartHeat®
Connections	Single Port
Power Supply Dim. W x D x H	80 x 160 x 115 mm (3.1" x 6.3" x 4.5")
Power Supply Weight	1.12 kg
Certification / Marking	cTUVus, CE
Tip-to- Ground Potential	< 2 mV
Tip-to-Ground Resistance	< 2 Ohm
Ground Detection	Permanent
Surface Resistivity	10^5 - 10^9 Ohm
Idle Temperature Stability	1.1 °C (2 °F) in still air
Tip Temperature Accuracy	Meets or exceeds IPC J-STD-001 Standard
Warranty	1 year

*RF SmartHeat® Technology provides greater power.

Part No.		Description
PS-900		Complete System
Includes		
PS-PW900	1	Power Supply
PS-HC3	2	Handpiece (PS-H3) and Coil Assembly (PS-CA3)
WS2-NS	3	Workstand, Black
SFV-CH15A	6	Chisel Solder Tip 1.5 mm (.06")
AC-CP2		Tip Removal Pad
Other Accessories Available		
PS-H3	4	Handpiece only, NO PS-CA3 Coil Assembly
PS-CA3	5	Coil Assembly - SxV Soldering Tips/CxV Blade Tips ONLY
WS2		Auto-sleep Workstand, Black
WS2G		Auto-sleep Workstand, Green

SxV
Soldering Tips

Full range on pages 35-36

CxV
Blade Tips

Full range on page 36

Part No.	Description
PS-900-Solar	Complete Solar Soldering System
Includes Parts listed below	
PS-PW900	Power Supply
PS-900-PC9	Handpiece with long cord (274cm / 9ft) & PS-CA3 Coil Assembly
STV-DRH440A	Soldering tip
WS2-NS	Workstand
AC-CP2	Tip removal pad

Handpieces and replacement coils

PS-HC3		Soldering Handle with PS-CA3 Coil Assembly (PS-900)
PS-H3	1	Soldering Handle without Coil Assembly (PS-900)
PS-CA3	2	Coil Assembly for PS-HC3/PS-H3 Handpiece (PS-900)
MFR-H1-SC2	3	Cartridge Solder / Rework Handpiece (MFR)
MFR-H2-ST2	4	Tip Solder Handpiece (MFR)
MFR-CA3		Coil Assembly for MFR-H2-ST2 Handpiece (MFR)
MFR-H4-TW	5	Precision Tweezer Handpiece (MFR)
MFR-H6-SSC	6	SSC Cartridge Solder Handpiece (MFR)
MFR-H5-DS	7	Desolder Handpiece
MFR-HSREC		Cartridge Solder / Rework Handpiece with long cord (1.83 m / 6 ft)
MFR-HSRLR	8	Cartridge Solder / Rework Handpiece with long reach access

Workstands

WS1		Universal Auto Sleep Workstand
WS2		Round Auto-Sleep Workstand
WS2-NS	9	Solder Workstand (PS-900)
MFR-WSPT	10	Non-Sleeper Precision Tweezer Workstand
MFR-WSDSX	11	Venturi Workstand for Desolder Handpiece
MFR-WSDSU		Non-Sleeper Workstand for Desolder Handpiece
WS1CB		Solder Rework Cradle Replacement for WS1 Workstand
WS2CB		Solder Rework Cradle Replacement for WS2 Workstand
MFR-WSDSCB		Replacement cradle for MFR-WSDSU Desolder Workstands

Lead-Free Process Identification

WS1G	12	Green Universal Auto Sleep Workstand
WS2G		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	13	Green Identification Ring for MFR Cartridges (Pack of 50)
AC-CK3		Green Identification Ring for SSC Cartridges (Pack of 50)
AC-CK4	14	Green Identification Ring for MFR Tips (Pack of 50)

Miscellaneous Accessories

AC-BRUSH	15	Soft Brass Brush
AC-CP2		Cartridge and Tip Removal Pad
AC-FX1	16	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)
5100-0044		Power switch, push button, replacement, PCB mounting
5100-0067		Power switch, rocker, on-off-on, replacement
7074-0570		SW cap/power switch

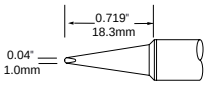
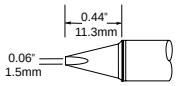
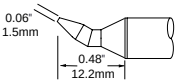
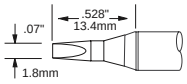
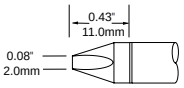
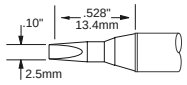
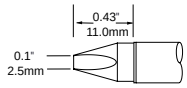
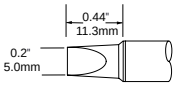
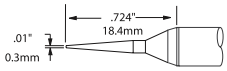
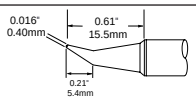
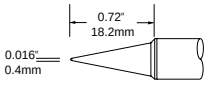
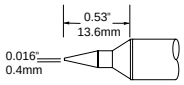
Desoldering Accessories

MFR-DC10	17	Disposable Collection Chamber for MFR-H5-DS (Pack of 10)
MFR-DC100		Disposable Collection Chamber for MFR-H5-DS (Pack of 100)
MFR-HDCA	18	Coil Assembly for MFR Desolder Handpiece
MFR-PG		Replacement Pistol grip for MFR-H5-DS Handpiece
AC-SK1		Seal Kit Collection Chamber (Pack of 2)
AC-VP		Vacuum Port
AC-VL		ESD Air Hose
AC-VPF		Vacuum Port Filter (Pack of 5)
LM-PS		Power supply for MFR-WSDSX with multi-plug adapters
AC-TC		Desoldering Tip Cleaner Tool

Upgrade Kits

MFR-UK1	Solder Cartridge Handpiece (MFR-H1-SC2) and Workstand (WS1)
MFR-UK2	Solder Tip Handpiece (MFR-H2-ST2) and Workstand (WS1)
MFR-UK4	Tweezer Cartridge Handpiece (MFR-H4-TW) and Workstand (MFR-WSPT)
MFR-UK5	Desolder Handpiece (MFR-H5-DS) and Workstand (MFR-WSDSX)
MFR-UK6	Solder Cartridge Handpiece (MFR-H6-SSC) and Workstand (WS2)
MFR-H5-DS-C	Desolder Handpiece (MFR-H5-DS) and Workstand cradle (MFR-WSDSCB)

Temperature Guide & Tip Specifications SxV-Series		
Max Temperature	**PS and MFR-Series**	**Application**
690°F/366°C	STV	Temperature Sensitive
790°F/421°C	SFV	Fiberglass, Most Standard
880°F/471°C	SCV	Ceramic and High Thermal Demand
	Compatible with: PS-900, MFR-1120, MFR-2220, MFR-2222 Systems, PS-HC3, MFR-H2-ST and MFR-H2-ST2 Handpieces, PS-CA3, MFR-CA2 and MFR-CA3 Coil Assemblies.	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)		

Chisel		
	SFV-CH10A STV-CH10A SCV-CH10A	Chisel, (W x L), 1.0 x 18.3 mm (.04" x .72")
	SFV-CH15A STV-CH15A SCV-CH15A	Chisel, (W x L), 1.5 x 11.3 mm (.06" x .44")
	SFV-CHB15 STV-CHB15 SCV-CHB15	Chisel, Bent, (W x L), 1.5 x 12.2 mm (.06" x .48")
	SFV-CH18AR STV-CH18AR SCV-CH18AR	Chisel, (W x L), 1.8 x 13.4 mm (.07" x .53")
	SFV-CH20 STV-CH20 SCV-CH20	Chisel, (W x L), 2.0 x 11.0 mm (.08" x .43")
	SFV-CH25AR STV-CH25AR SCV-CH25AR	Chisel, (W x L), 2.5 x 13.4 mm (.10" x .53")
	SFV-CH25 STV-CH25 SCV-CH25	Chisel, (W x L), 2.5 x 11.0 mm (.10" x .43")
	SFV-CH50A STV-CH50A SCV-CH50A	Chisel, (W x L), 5.0 x 11.3 mm (.20" x .44")
Conical		
	SFV-CNL03AR STV-CNL03AR SCV-CNL03AR	Conical, (Ø x L), Long Reach 0.3 x 18.4 mm (.01" x .72")
	SFV-CNB04A STV-CNB04A SCV-CNB04A	Conical, (Ø x L), Bent 0.4 x 15.5 mm (.016" x .61")
	SFV-CN05A STV-CN05A SCV-CN05A	Conical, (Ø x L), 0.4 x 18.2 mm (.016" x .72")
	SFV-CNL04 STV-CNL04 SCV-CNL04	Conical, (Ø x L), 0.4 x 13.6 mm (.016" x .53")

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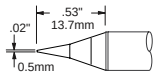
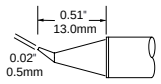
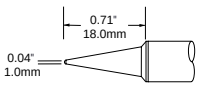
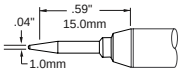
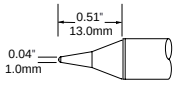
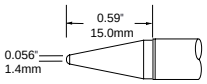
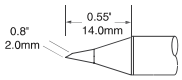
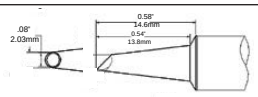
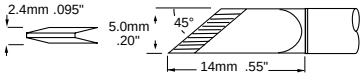
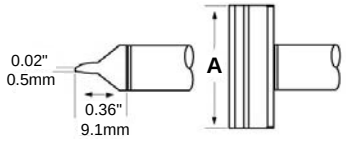
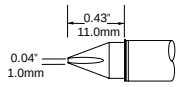
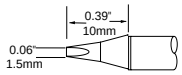
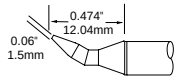
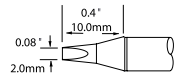
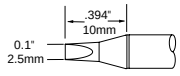
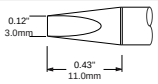
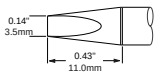
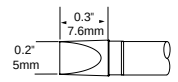
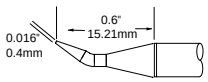
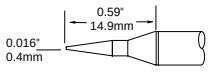
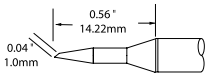
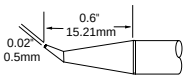
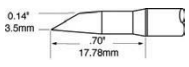
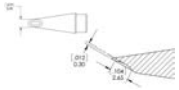
Temperature Guide & Tip Specifications SxV & CxV-Series		
Max Temperature	**PS and MFR-Series**	**Application**
690 °F/366 °C	STV & CTV	Temperature Sensitive
790 °F/421 °C	SFV & CFV	Fiberglass, Most Standard
880 °F/471 °C	SCV & CCV	Ceramic and High Thermal Demand
	Compatible with: PS-900, MFR-1120, MFR-2220, MFR-2222 Systems, PS-HC3, MFR-H2-ST and MFR-H2-ST2 Handpieces, PS-CA3, MFR-CA2 and MFR-CA3 Coil Assemblies.	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)		

Conical		
	SFV-CN05AR STV-CN05AR SCV-CN05AR	Conical, (Ø x L), 0.5 x 13.7 mm (.02" x .53")
	SFV-CNB05 STV-CNB05 SCV-CNB05	Conical, Bent, (Ø x L), 0.5 x 13 mm (.02" x .51")
	SFV-CNL10A STV-CNL10A SCV-CNL10A	Conical, Long Reach, (Ø x L), 1.0 x 18 mm (.04" x .71")
	SFV-CNL10AR STV-CNL10AR SCV-CNL10AR	Conical, Long Reach, (Ø x L), 1.0 x 13.7 mm (.04" x .54")
	SFV-CNL10 STV-CNL10 SCV-CNL10	Conical, Long Reach, (Ø x L), 1.0 x 13 mm (.04" x .51")
	SFV-CNL14 STV-CNL14 SCV-CNL14	Conical, Long Reach, (Ø x L), 1.4 x 15 mm (.056" x .59")
	SFV-DRH20 STV-DRH20 SCV-DRH20	Conical, Bevel, 60° x 2 mm (Ø x L), 1 x 14 mm (.04" x .55")
	SFV-WV20 STV-WV20 SCV-WV20	Rework Hoof-Cartridge – For Drag Soldering SOICs/QFPs, Concave Wave Hoof, Bevel 45°, (Ø x L), 2.0 x 13.8 mm (.08" x .54")
Rework Knife-Cartridges – For Multi-Lead Soldering of PLCCs/SOJs		
	SFV-DRK50 STV-DRK50 SCV-DRK50	Knife, Bevel 45°, (W x L), 5.0 x 14 mm (.20" x .55")

CxV Blade Tips for Rework Applications			A
			
CFV-BL100	CTV-BL100	CCV-BL100	10 mm (.40")
CFV-BL250	CTV-BL250	CCV-BL250	25 mm (1")
CFV-BL350	CTV-BL350	CCV-BL350	35 mm (1.4")
CFV-BL400	CTV-BL400	CCV-BL400	40 mm (1.6")
CFV-BL500	CTV-BL500	CCV-BL500	50 mm (2")

For our complete selection of tips & cartridges, visit www.metcal.com

Temperature Guide & Tip Specifications SxP-Series		
Max Temperature	**MFR-Series**	**Application**
690 °F/366 °C	STP	Temperature Sensitive
790 °F/421 °C	SFP	Fiberglass, Most Standard
880 °F/471 °C	SCP	Ceramic and High Thermal Demand
	Compatible with: MFR-1110, MFR-1161, MFR-2210, MFR-2211, MFR-2241, MFR-1350/51 Systems and MFR-H1-SC2 Handpiece.	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)		

Chisel		
	SFP-CH10 STP-CH10 SCP-CH10	Chisel, Cone 30°, (W x L), 1.0 x 9.2 mm (.04" x .36")
	SFP-CH15 STP-CH15 SCP-CH15	Chisel, Cone 30°, (W x L), 1.5 x 10 mm (.06" x .39")
	SFP-CHB15 STP-CHB15 SCP-CHB15	Chisel, Cone 30°, Bent, (W x L), 1.5 x 12.04 mm (.06" x .474")
	SFP-CH20 STP-CH20 SCP-CH20	Chisel, Cone 30°, (W x L), 2.0 x 10 mm (.08" x .4")
	SFP-CH25 STP-CH25 SCP-CH25	Chisel, Cone 30°, (W x L), 2.5 x 10 mm (.10" x .39")
	SFP-CH30 STP-CH30 SCP-CH30	Chisel, Cone 30°, (W x L), 3.0 x 11 mm (.12" x .43")
	SFP-CH35 STP-CH35 SCP-CH35	Chisel, Cone 30°, (W x L), 3.5 x 11 mm (.12" x .43")
	SFP-CH50 STP-CH50 SCP-CH50	Chisel, Cone 30°, (W x L), 5.0 x 7.6 mm (.20" x .3")
Conical		
	SFP-CNB04 STP-CNB04 SCP-CNB04	Conical, Bent, (ø x L) 0.4 x 15.21 mm (.016" x .6")
	SFP-CNL04 STP-CNL04 SCP-CNL04	Conical, Long Reach, (ø x L) 0.4 x 14.9 mm (.016" x .59")
	SFP-BVL10 STP-BVL10 SCP-BVL10	(Bevel x L) 60° x 1 mm (ø x L) 0.5 x 14.22 mm (.02" x .56")
Rework Hoof-Cartridges – For Drag Soldering SOICs/QF		
	SFP-DRH05 STP-DRH05 SCP-DRH05	
	SFP-DRH35 STP-DRH35 SCP-DRH35	
	SFP-WV20 STP-WV20 SCP-WV20	
Hoof, (ø x L) 0.5 x 15.21 mm (.02" x .6")	Hoof, Bevel 60°, Long Reach, (ø x L) 3.5 x 17.78 mm (.14" x .7")	Concave WAVE Hoof, (Bevel/L) 60° x 2.96 mm, (ø x L) 2.0 mm x 11.6 mm

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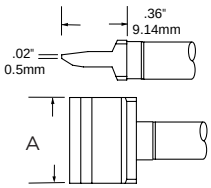
Temperature Guide & Tip Specifications RxP-Series

Max Temperature	MFR-Series	Application
790 °F/421 °C	RFP	Fiberglass, Most Standard
880 °F/471 °C	RCP	Ceramic and High Thermal Demand
	Compatible with: MFR-1110, MFR-1161, MFR-2210, MFR-2211, MFR-2241, MFR-1350/51 Systems and MFR-H1-SC2 Handpiece. All dimensions shown are in mm (inches)	

Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)

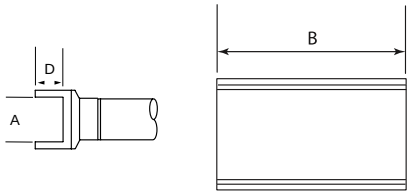
All dimensions shown are in mm (inches)

Blades for Rework Applications



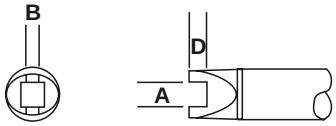
	A	B	D	SMT TYPE
RFP-BL1	10 (0.41)	-	-	-
RCP-BL1				
RFP-BL2	15.6 (0.62)	-	-	-
RCP-BL2				
RFP-BL3	22.1 (0.87)	-	-	-
RCP-BL3				

Tunnel - Special Rework Cartridges



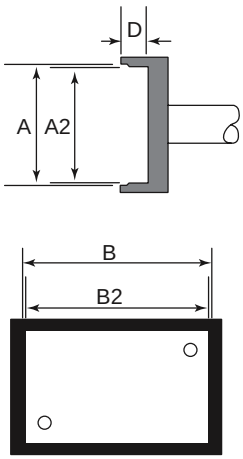
	A	B	D	SMT TYPE
RFP-DL1	5.18 (0.204)	10.16 (0.40)	3.22 (0.127)	Tunnel SOIC-14-16
RCP-DL1				
RFP-DL2	5.18 (0.204)	4.32 (0.17)	2.29 (.09)	Tunnel SOIC-8
RCP-DL2				
RFP-DL3	6.86 (.270)	11.15 (0.44)	2.29 (.09)	Tunnel SOIC-16
RCP-DL3				

Slot - Special Rework Cartridges



	A	B	D	SMT TYPE
RFP-SL1	2.34 (.092)	1.37 (.054)	1.78 (.07)	0805 Chip Package
RCP-SL1				
RFP-SL2	3.48 (.137)	1.63 (.064)	1.78 (.07)	1206 Chip Package
RCP-SL2				

Quad - Special Rework Cartridges



	A	A2	D	B	B2	SMT TYPE
RFP-QD4	12.70 (.500)	11.43 (.450)	3.81 (.150)	15.24 (.600)	13.97 (.550)	PLCC 32
RCP-QD4						
RFP-QD6	17.78 (.700)	16.76 (.660)	3.81 (.150)	17.78 (.700)	16.76 (.660)	PLCC 44
RCP-QD6						
RFP-QD7	25.27 (.995)	24.38 (.960)	5.59 (.220)	25.27 (.995)	24.38 (.960)	PLCC 68
RCP-QD7						
RFP-QD10	20.32 (.800)	19.30 (.760)	3.81 (.150)	20.32 (.800)	19.30 (.760)	PLCC 52
RCP-QD10						
RFP-QD15	13.34 (.525)	12.32 (.485)	2.79 (.110)	13.34 (.525)	12.32 (.485)	TQFP 80
RCP-QD15						
RFP-QD19	16.13 (.635)	16.13 (.635)	3.30 (.130)	16.13 (.635)	16.13 (.635)	QFP 44
RCP-QD19						
RFP-QD20	16.51 (.650)	16.51 (.650)	3.30 (.130)	22.48 (.885)	22.48 (.885)	QFP 100
RCP-QD20						

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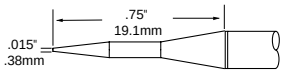
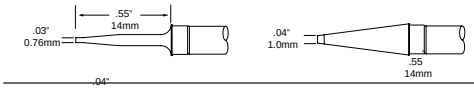
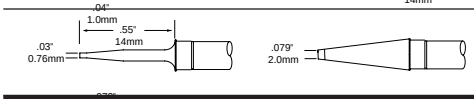
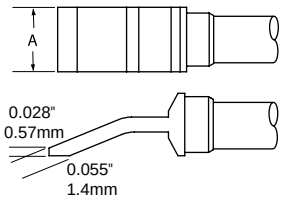
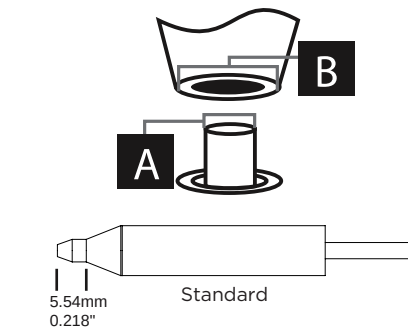
Temperature Guide & Tip Specifications TxP & DxP-Series		
Max Temperature	**MFR-Series**	**Application**
690 °F/366 °C	TTP & DTP	Temperature Sensitive
790 °F/421 °C	TFP & DFP	Fiberglass, Most Standard
880 °F/471 °C	TCP & DCP	Ceramic and High Thermal Demand
	TxP Tweezer Cartridges compatible with: MFR-1140, MFR-2240, MFR2241 Systems and MFR-H4-TW Handpiece DxP Desoldering Tips compatible with: MFR-1150, MFR-1350, MFR-1351 systems with MFR-H5-DS Handpiece and previous MFR-DSX, -DSI, -SDX, -SDI Systems with MFR-HDS Handpiece. All dimensions shown are in mm (inches).	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)		

TxP - Rework Tweezer Cartridges - Conical		
	TFP-CNP1 TTP-CNP1 TCP-CNP1	(Ø x L), 0.4 x 19.1 mm (.015" x .75"), sold per pair
TxP - Rework Tweezer Cartridges - Blade		
	TFP-BLP1 TTP-BLP1 TCP-BLP1	(W x L), 1.0 x 14 mm (.04" x .55"), sold per pair
	TFP-BLP2 TTP-BLP2 TCP-BLP2	(W x L), 2.0 x 14 mm (.08" x .55"), sold per pair
TxP - Rework Tweezer Cartridges - Wide Blade		**A**
	TFP-BLH40 TTP-BLH40 TCP-BLH40	6.35 mm (.25"), sold per pair
	TFP-BLH50 TTP-BLH50 TCP-BLH50	16 mm (.62"), sold per pair
	TFP-BLH60 TTP-BLH60 TCP-BLH60	20.5 mm (.81"), sold per pair
	TFP-BLH70 TTP-BLH70 TCP-BLH70	28 mm (1.1"), sold per pair

All dimensions shown are in mm (inches)

	DxP - Desoldering Tips	A	B	Type
	DFP-CN2 DCP-CN2	0.64 (.025)	1.78 (.070)	Standard
	DFP-CN3 DCP-CN3	0.76 (.030)	2.03 (.080)	Standard
	DFP-CN4 DCP-CN4	1.02 (.040)	2.28 (.090)	Standard
	DFP-CN5 DCP-CN5	1.27 (.050)	2.64 (.104)	Standard
	DFP-CN6 DCP-CN6	1.52 (.060)	2.84 (.112)	Standard
	DFP-CN7 DCP-CN7	2.41 (.095)	3.63 (.143)	Standard
	DFP-CNL3 DCP-CNL3	0.76 (.030)	2.03 (.080)	Long Reach
	DFP-CNL4 DCP-CNL4	1.02 (.040)	2.28 (.090)	Long Reach
	DFP-CNL5 DCP-CNL5	1.27 (.050)	2.64 (.104)	Long Reach

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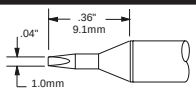
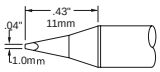
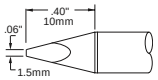
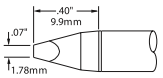
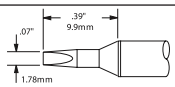
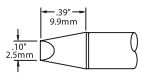
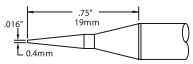
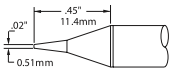
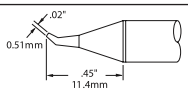
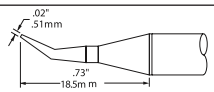
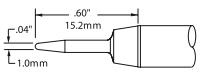
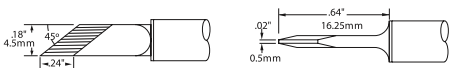
Temperature Guide & Tip Specifications SSC-Series		
Max Temperature	**MFR & SP200-Series**	**Application**
675 °F/357 °C	SSC-6	Temperature Sensitive
775 °F/413 °C	SSC-7	Most Standard
	Compatible with: SP200, MFR-1160 Systems, SP-HC1 and MFR-H6-SSC Handpieces	
Please note the above temperatures are the maximum temperatures of the heater. The idle temperature is dependent on the geometry of the cartridge (up to 15 °C lower.)		

Chisel		
	SSC-671A	Chisel, (W x L) 1.0 x 9.1 mm (.04" x .36")
	SSC-771A	
	SSC-625A	Chisel, (W x L) Cone 30°, 1.0 x 11 mm (.04" x .43")
	SSC-725A	
	SSC-638A	Chisel (W x L) 30°, 1.5 x 10 mm (.06" x .40")
	SSC-738A	
	SSC-637A	Chisel (W x L) 30°, 1.78 x 9.9 mm (.07" x .40")
	SSC-737A	
	SSC-672A	Chisel, (W x L) 1.78 x 9.9 mm (.07"x .39")
	SSC-772A	
	SSC-636A	Chisel 30°, (W x L) 2.5 x 9.9 mm (.10" x .39")
	SSC-736A	
Conical		
	SSC-645A	Conical, Sharp, Long Reach, (Ø x L), 0.4 x 19 mm (.016" x .75")
	SSC-745A	
	SSC-622A	Conical, Sharp, (Ø x L), 0.51 x 11.4 mm (.02" x 45")
	SSC-722A	
	SSC-626A	Conical, Sharp Bent 30°, (Ø x L), 0.51 x 11.4 mm (.02" x .45")
	SSC-726A	
	SSC-654A	Conical, Sharp Bent 30°, Long Reach, (Ø x L), 0.51 x 18.5 mm (.02" x .73")
	SSC-754A	
	SSC-601A	Conical, Sharp, (Ø x L), 1.0 x 15.2 mm (.04" x .60")
	SSC-701A	
Rework Knife-Cartridges – For Multi-Lead Soldering of PLCCs/SOJs		
	SSC-661A	Knife, Bevel 45°, (W x L), 4.5 x 16.25 mm (.18" x .64")
	SSC-761A	
	SSC-673A	Knife, Bevel 45°, Increased tinned area 6.1 mm ,(W x L), 5.1 x 16.25 mm (.24" x .64")
	SSC-773A	

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Convection Rework

Whatever your convection rework needs are, Metcal has the solution

Offerings for removing and replacing SMT components, reworking pin-hole devices like sockets and connectors, applying shrink wraps, and more.

A range of best-in-class hand-held convection tools, digital hot air pencils, preheaters, tool holders, and complete modular rework systems.

HCT-1000
Programmable Hand-Held Convection Tool

HCT-910
Hot Air Rework System

HCT2-200
Digital Hot Air Pencil

MRS-1100A
Modular Rework System

PCT-1000
Programmable Preheater

PCT-100
Focused Convection Preheater

The HCT-1000 is a fully Programmable Handheld 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-1100A Modular Rework System for more complex applications.

The system comes equipped 5 mm diameter nozzle and nozzle adapter. In addition, a wide range of nozzles are available.

System Specifications - HCT-1000	
Input Line Voltage	100 - 240 VAC, 50/60 Hz
Rated Power	600 W
Surce Temperature	Up to 450 °C (840 °F)
Heating Method	Convection
Airflow	5 - 25 l/min
Noise Level	< 55 dBA at maximum airflow
Surface resistivity	10^{7} - 10^{11} Ohm
Vacuum Pump for Pick-Up Components	381 mm Hg (15" Hg)
Display	LCD, 20 X 4 display segments
Operational Modes	Setup, Run, Manual, Active Setup
Storable Solder Profiles	50
Size W x D x H	178 x 229 x 152 mm (7" x 9" x 6")
Weight	5.4 kg (12 lb)
Certification/Marking	TUV, CE

Part No.	Description
HCT-1000	Programmable Hand-Held Convection Tool
Includes parts listed below	
HCT-PS1000	HCT-1000 Power Supply
HCT-HV1	Handpiece with integral vacuum, cord & connector
HCTA-VC-KIT	Vacuum Cup kit, one of each *(see Accessories)
HCTA-TH1	Handpiece Tool Holder
HNA-1	Nozzle Adapter
HCTA-NW1	Nozzle Wrench
AC-TCK-36-36	Thermocouple, Ø 0,13 mm (36 AWG), pack of 2
HCTA-CC	Communication cable, length 1.22 m (4 ft)
HN-J0005	Nozzle, ø 5 mm

Accessories

HCT-FS2 1
Footswitch, Dual, HCT-1000

HCT-HTRASSY
Heater Assembly

AC-TCK-40-36
Thermocouple, Ø 0,08 mm (AWG 40) pack of 2

HCTA-VC50-5 *
Vacuum Cup, 3/16" (Ø 5 mm), pack of 5

HCTA-VC64-5 *
Vacuum Cup, 1/4" (Ø 6.4 mm), pack of 5

HCTA-VC80-5 *
Vacuum Cup, 5/16" (Ø 8 mm), pack of 5

HCTA-VC11-5 *
Vacuum Cup, 7/16" (Ø 11 mm), pack of 5

Key Features & Benefits

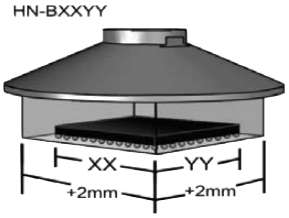
- Integrated vacuum pickup for easy component removal
- Profile creation for operator repeat-ability and storage for up to 50 user-defined profiles
- Manual mode for quick setup
- External thermocouple for process setup and verification
- Handpiece controls for heater and vacuum
- Programmable, digitally-controlled airflow for repeatable results
- Multiple modes of operation: manual, 4-zone heating (with the MRS-1100A 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-1100A Adjustable Tool Holder

HN Series Nozzles

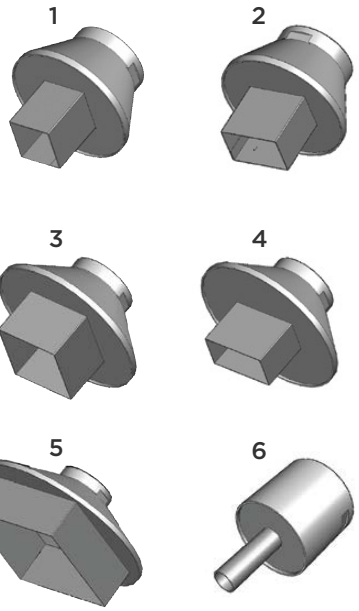
A series of 14 nozzles are available for use with the MRS-1000/HCT-1000. The nozzles fit applications reworking components of all sizes from (including, but not limited to) BGAs, QFPs, LGAs, PLCC, and SOIC. A custom nozzle program is also available.

Nozzle Measurement and Selection

The nozzle part number (the digits after the "B") represents the size of the component. Two millimeters have been added to each side of the internal nozzle dimension to allow for component access.

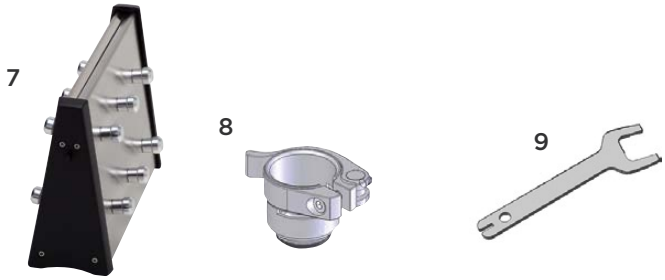


Part Number		Component Size	Components
HN-B0707	1	7 X 7 mm	CSP, LGA44
HN-B1010	1	10 X 10 mm	CSP, LGA178, LCC28
HN-B1414	1	14 X 14 mm	CSP, QFP, TQFP100
HN-B1408	2	14 X 8 mm,	CSP, SOIC24M
HN-B1515	3	15 X 15 mm	BGA
HN-B1818	3	18 X 18 mm	PLC44, CSP, TQFP100, BGA
HN-B2525	3	25 x 25 mm	BGA, PLCC68
HN-B1809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



Nozzle Accessories

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



HCT-910 Hot Air Rework System

Maximize process control and productivity with the convection system built to ensure ease-of-use and operator safety.

Key Features & Benefits

- **Fast Time-to-Temperature** 900 W of power
- **Fully Adjustable Temperature Range** 50 - 600 °C
- **Unrestricted Airflow** Up to 120 l/m (4.24 cfm)
- **Intuitive User Interface** Easy programming & adjustments
- **"On-the-fly" Manual Mode** Adjust temp & airflow with one dial
- **Tool-less Nozzle Swapping** Compatible with HCT-900 nozzles

System Specifications	Description
Input Voltage	HCT-910-11: 115 V / 60 Hz HCT-910-21: 230 V / 50 Hz
Power	900 W
Temperature Range	50 - 600 °C (122 - 1112 °F)
Temperature Accuracy	30 °C (54 °F)
Air Flow	At 300 °C, 5 - 120 l/m (0.2 - 4.2 cfm)
Air Pump Type	Blower
Hose Length (Panel-Handpiece)	1.2 m (3.9 ft)
Noise	< 46 dB (A)
Weight	2 kg (4.4 lbs)
Safety Class	1
Pollution Degree Category	II
Storage Temperature	0 – 60 °C (32 – 140 °F)
Surface Resistivity	Unit: 105ff - 106ff Handpiece & Tube: 107ff - 1011ff
Dimensions	21 x 14 x 14 cm (8.3 x 5.5 x 5.5 in)
Certification/Approvals	cTUVus, CE, RoHS

Part No.	Description
HCT-910-11	115 V Hot Air Rework System
HCT-910-HE-11	HCT-910 Replacement Heater, 115 V
HCT-910-21	230 V Hot Air Rework System
HCT-910-HE-21	HCT-910 Replacement Heater, 230 V

The HCT-910 Advanced Handpiece features colored system-status lights for added safety: no light for Stand-by Mode, red light for Heating Mode, and blue light for Cooling Mode.

HCT-910 Nozzles

The HCT-910 is supplied with a standard HB-D50 5.0 mm diameter Bayonet Nozzle. In addition, several other configurations are available, taking advantage of the HCT-910 tool-less nozzle system.

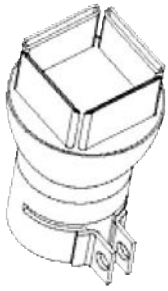
HCT-910 Nozzles	Description
HB-D25	HCT-910 Nozzle, Bayonet, 2.5 mm Ø
HB-D50	HCT-910 Nozzle, Bayonet, 5.0 mm Ø
HB-D100	HCT-910 Nozzle, Bayonet, 10.0 mm Ø
HB-D25-B	HCT-910 Bent Nozzle, Bayonet, 2.5 mm Ø
HB-D50-B	HCT-910 Bent Nozzle, Bayonet, 5.0 mm Ø
HB-ST	HCT-910 Nozzle, Bayonet, Shrink Tube

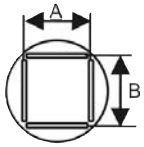
HCT-910 Compatible Nozzles

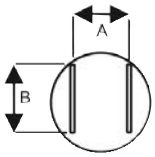
The HCT-910 is compatible with legacy HCT-900 nozzles. Two rework nozzle kits, predefined for specific applications, are available, as well as a full selection of individual nozzles.

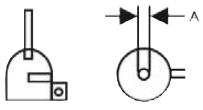
NZKT-1 Nozzle Kit for Chip Resistors, SOIC & TSOP Package. Includes (one each): H-D25 H-SL16 H-SL28 H-SOJ40 H-TS48

NZKT-2 Nozzle Kit for PLCC, QFP & BQFP packages. Includes (one each): H-P20 H-P44 H-P84 H-Q1420 H-Q2626









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	21.0 (0.83")	21.0 (0.83")
H-P68	PLCC-68	27.1 (1.07")	27.1 (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
H-D25	2.5 mm (0.1")
H-D50	5.0 mm (0.2")
H-D120	12.0 mm (0.47")

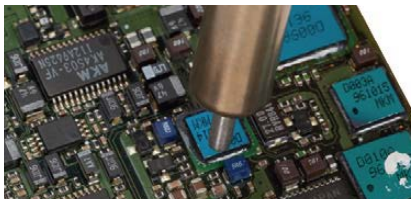
HCT2-200 Digital Hot Air Pencil

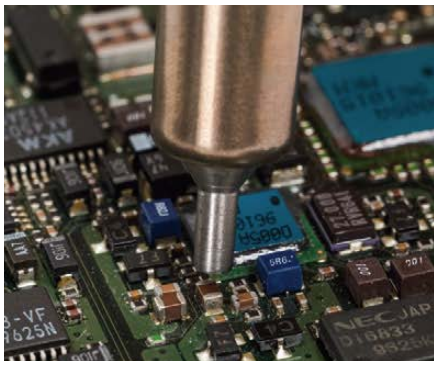
This digital handheld convection tool is ideally suited for light rework applications, which use smaller components and integrated circuits. As component miniaturization continues (i.e. 01005 components) the ergonomics of a pencil allow a user more freedom to access and rework components on the board without affecting adjacent parts. Larger handheld convection systems commonly reflow and dislodge adjacent components due to a higher minimum airflow. The HCT2-200's small nozzle sizes, precision control, and thermal power allow the operator to target only the desired component.

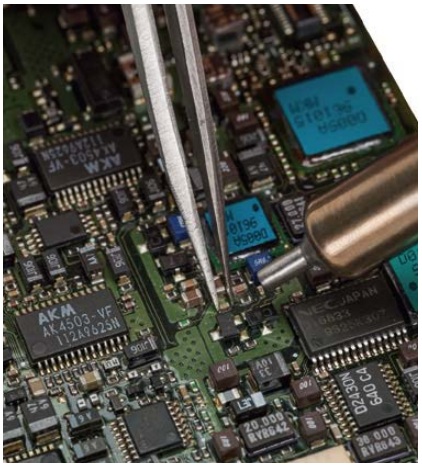
Applications

The HCT2-200 was developed for very small surface-mount component and package sizes (1210s and smaller) and low board densities. For denser PCBA's, applications with heavy copper planes, boards with more than four layers, or components larger than 50 mm^2, use of a Metcal preheater (PCT-100 series) may be necessary.


SOICs


0201s


1210s



Technical Specifications - HCT2-200	
Input Line Voltage	HCT2-200-11, 110 VAC, 60 Hz
	HCT2-200-21, 240 VAC, 50 Hz
Rated Power	200 W
Source Temperature	100 - 450 °C (212 - 842 °F)
Heating Method	Convection
Airflow	1.5 - 7 l/min
Noise Level	< 52 dBA at maximum airflow
Surface resistivity	10^5 - 10^9 Ohm
Display	Temperature & Air Flow
Size W x D x H	10.6 x 21.3 x 17 cm (4.2" x 8.4" x 6.7")
Weight	2.63 kg (5.8 lb)
Certification/Marking	CNRTLus, CE, RoHS + WEEE

Easy-change heater

Workstand with nozzle holder

Easily change heaters & nozzles in seconds

6 straight nozzles, (Ø 1.5 mm - 4.0 mm)

Part Number	Description
HCT2-200-11	Digital Hot Air Pencil, 115V
HCT2-200-21	Digital Hot Air Pencil, 230V
Both Systems Include	
HCT2-200-HP	Handpiece
HCT-WS120	WorkStand with Nozzle Holder
HCT-HTR200	Heater Assembly, 200W
HN-120KIT-6	Pack of six (6) Straight Nozzles (Ø 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm, 3.5 mm and 4.0 mm)
AC-CP2	Nozzle Removal Pad
Optional Accessories	
HN-HCT2-BENT-6	Pack of six (6) Bent Nozzles (Ø 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm, 3.5 mm and 4.0 mm)
HN-120COL	Collet Kit Replacement for Straight Nozzles

Key Features & Benefits

200 Watt Ceramic Heater and Dual-Stage Air Pump
Provides the power and performance needed to deliver the right amount of thermal energy.

Digital Airflow & Temperature Controls
Two LED displays provide a graphical and numeric representation of the desired airflow and temperature.

Fast Response and Performance
A microprocessor controlled, closed-loop feedback system provides fast heating, precise and stable temperature control.

Standby Mode
When the handpiece is placed into the workstand, the temperature will drop, prolonging heater life.

Replaceable Handpiece
Handpiece has been redesigned to allow removal from front of the machine.

Ergonomic and Light Weight Handpiece
Slim and ergonomically designed handpiece that feels like a pencil, with a rubber grip.

Easily Change Heaters and Nozzles
Both can be changed in seconds.

Nozzles
Six nozzles (Ø 1.5 mm – 4.0 mm) are included in the unit with a nozzle plate holder inside the workstand.

Optional Accessories

Six Bent Nozzles (Ø 1.5 mm - 4.0 mm) for easy access and use under microscope

The PCT-1000 is a fully Programmable Preheater offering more heat capacity which enables soldering at lower temperatures to produce 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-1100A Modular Rework System.

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System Specifications - PCT-1000	
Input Line Voltage	100 - 240 VAC, 50/60 Hz
Rated Power	1200 W
Source Temperature	25 - 400 °C (77 - 752 °F)
Heating method	Convection
Airflow	538 l/min (19 cfm)
Display	LCD, 20 X 4 display segments
Operational Modes	Setup, Run, Manual, Active Setup
Size W x D x H	203 x 330 x 76 mm (8" x 13" x 3")
Weight	3.4 kg (7.5 lb)
Certification	cTUVus, CE

Part No.		Description
PCT-1000	1	Programmable Preheater
Includes parts listed below		
PCT-FS1	2	PCT-1000 Foot Switch
AC-TCK-36-36	3	Thermocouple, Ø 0,13 mm (36 AWG), Pack of 2

Key Features & Benefits

- Adds heat capacity and enables lower process temperatures
- Used in a variety of processes including soldering, desoldering and SMD rework
- Provides faster production rates while lowering overall process temperatures.
- 2 modes: Manual for constant heater temperature, and profile for greater process 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 at the heater output or at the board
- High-efficiency vortex heater design maximizes ramp to temperature for increased productivity

The PCT-100 is a focused convection preheater designed to provide extra heat capacity for demanding applications.

Unlike conventional preheaters, the PCT-100 Focused Convection Preheater directly targets the underside of the PCB, providing a substantial thermal boost for lead-free processes.

1

System Specifications - PCT-100	
Input Line Voltage	PCT-100-11, 110 VAC, 60 Hz, PCT-100-21, 240 VAC, 50 Hz
Rated Power	450 W
Source Temperature	Up to 300 °C (572 °F)
Heating method	Convection
Airflow	280 l/min (9.88 cfm)
Surface resistivity	10^6 - 10^{11} Ohm
Size W x D x H	155 x 205 x 65 mm (6.1" x 8" x 2.6")
Weight	1.6 kg (3.5 lb)
Certification/Marking	cTUVus, CE

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Part No.		Description
PCT-100-21	1	Preheater 230V
PCT-101-21	2	Preheater 230V with Arm Rest
PCT-102-21	3	Preheater 230V with Arm Rest and Boardholder
PCT-103-21		Preheater 230V with Arm Rest and Integrated Boardholder
PCT-1HE-21		Heating Element Replacement for PCT-100 230V
BH-010		Integrated Boardholder for PCT-100 (see page 53)
BH-100	4	Boardholder for PCT-100
PCT-AR	5	Arm Rest for PCT-100
PCT-ARPAD		Replacement Pad for Arm Rest PCT-AR

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

Convection Rework

ATH-1100A & MRS-1100A Rework Systems

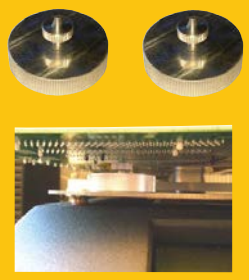
BH-2000
Free Standing Board Holder
provides a solid and stable base for a variety of PCBs. The unit features easily adjustable rails to accommodate boards 8" (203 mm) x open-ended.

BH-1000
Post-Rail Board Holder
Includes: 4 posts, 2 rails with sliding clips, 4 support pins and flat-head support. Minimum PCB size is 0.60" (15 mm)

BH-100 Board Holder
Recommended for use with the PCT-100 Pre-heater. Accommodate boards 12" (305 mm) x 12" (305 mm)

BH-010 Integrated Board Holder for PCT-100
Accommodate boards 3.5" (89 mm) x 7" (178 mm)

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



The ATH-1100A Adjustable Tool Holder

is designed to work with the HCT-1000 or as part of the MRS-1100A System.

- Advanced Head Assembly features 102 mm (4") of Z axis adjustment, 12.7 mm (1/2") fine adjustment of the X & Y axis and 30° Θ adjustment.
- Features locking handpiece retainer, Z axis stop and mounting configurations for stand-alone operation or as part of the MRS-1100A.
- Sturdy and easy to attach to the PCT-1000 Programmable Preheater when incorporated into the MRS System.
- Can be attached to the PCT-1000 or used as a standalone unit

The MRS-1100A Modular Rework System

is an integrated convection rework system for the removal and reflow of BGA/CSP and SMT components.

The MRS-1100A is comprised of a convection tool, a preheater, an adjustable tool holder, and a free-standing board holder to create a manually assisted rework system. A series of nozzles, targeting a variety of applications, round out the product offering for this system.

Key Features & Benefits

- Digital display for repeatable temperature settings and profile control
- Automatic control of the preheater for simple operation
- Easy 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
- Digitally controlled airflow for repeatable results
- X, Y, Z and Theta controls for component alignment
- Adjustable PCB holder for easy change outs
- Automatic vacuum lift off at the end of the cycle
- Password lockout of programmed profiles

Why Fume Extraction?

Solder smoke is more than just an irritant. It can reduce worker productivity through a loss of concentration and fatigue. These and other health concerns, like occupational asthma, may be a result of exposure to solder fumes during the production process. As an employer, you are responsible for properly managing the health risks associated with solder fumes and take appropriate precautionary measures. Smoke absorbers and fume extractors are a simple way to manage the risk to employees and your organization.

MSA-25U
Benchtop Smoke Absorbers

MSA-35L
Benchtop Smoke Absorbers

BVX-100
Benchtop Single-User Arm/Plenum System

BVX-250
Two-Station Portable Filter Unit

BTX-208
Portable Tip Extraction Unit

VFX
Multi-User Extraction Unit

MSA Series Smoke Absorbers

The Metcal MSA-25U and MSA-35L are compact, space-saving smoke absorbers that filter smoke and flux fumes from the workbench.

- Absorb lead-free flux fumes and smoke from soldering
- Compact design allows the units to easily fit on most workstations
- Quiet operation, ESD-complaint
- Fast and easy filter replacement
- One activated carbon filter included

MSA-25U Smoke Absorber

MSA-25U features a versatile USB plug compatible with any 5 V USB power supply, including the Metcal GT soldering systems.

When the USB plug is connected to a Metcal GT soldering system, the smoke absorber will automatically go into sleep mode when the GT unit is in idle, sleep, or standby mode.

MSA-25U Specifications	Description
Input Voltage	5 V
Absorption Capacity Vertical Position	0.8 m /min (27 cfm)
Noise level	<-41 dB
Related Input Power	2.5 W
Dimensions (mm)	165 (H) x 159 (W) x 90 (D)
Dimensions (inches)	6.5" (H) x 6.26" (W) x 3.54" (D)
Weight	0.82 lbs. / 0.37 kg

Part No.	Description
MSA-25U	MSA-25U Base Unit, Activated-Carbon Filter, Introduction Guide
FM-MSA25U	MSA-25U Replacement Activated-Carbon Filter, Pack of 5

MSA-35L Smoke Absorber

The MSA-35L is a versatile, dual-position smoke absorber, able to be used vertically (standing up) or horizontally (laying down). In the vertical position, the airflow is approximately 2 times as efficient.

	MSA-35L-11	MSA-35L-22	MSA-35L-23	MSA-35L-24
Power	25W	24W	24W	24W
Absorption Capacity Horizontal Position	1.1 m^3/min (38 cfm)	0.9 m^3/min (32 cfm)		
Absorption Capacity Vertical Position	0.5 m^3/min (18 cfm)	0.45 m^3/min (16 cfm)		
Noise level	<-41 dB - 51dBA			
Frequency	60 Hz	50 Hz		
Voltage	110 VAC	220 VAC	230 VAC	
Certifications	TUVus		CE	UKCA
Dimensions (mm)	217 (H) x 186 (W) x 111 (D)			
Dimensions (inches)	8.54" (H) x 7.32" (W) x 4.37" (D)			
Weight	0.93 kg. / 2.05 lbs.		0.9 1kg. / 2.0 lbs.	

Part No.	Description
MSA-35L-11	MSA-35L Base Unit (110 V), Activated-Carbon Filter, Introduction Guide
MSA-35L-22	MSA-35L Base Unit (220 V), Activated-Carbon Filter, Introduction Guide
MSA-35L-23	MSA-35L Base Unit (230 V, EU), Activated-Carbon Filter, Introduction Guide
MSA-35L-24	MSA-35L Base Unit (230 V, UK), Activated-Carbon Filter, Introduction Guide
FM-MSA35L	MSA-35L Replacement Activated-Carbon Filter, Pack of 5

BVX-100
Benchtop Single-User Arm/Plenum System

- Quiet operation
- Portable, single-user unit
- No external ducting or compressor needed
- Powerful 85 m^3/h airflow rate
- Unit easily fits on and under any workbench
- Innovative adaptor transforms the plenum into an arm
- Immediate extraction of fumes, particles, and vapors
- Two filtration configurations: heavy soldering & light dust, or light duty organic solvent & adhesive applications
- Bi-colored LED light indicates when the filters are blocked and require replacing

Key Features & Benefits

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 a simple, flexible, low-cost solution and fast installations

Filters are easy to remove and replace

Part Number	Description
BVX-101	Benchtop, single-user arm/plenum system with Pre-, HEPA/Gas-Filter
BVX-103	Benchtop, single-user arm/plenum system with Pre-/Gas-Filter

Filters

FG-BVX	Deep Bed Gas Filter
FM-BVX	Main Filter, HEPA/Gas (Carbon)
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, Ø 50 mm (2") x 1.8 m (6') long
BVX-TB01	Table bracket with 2 C-clamps

System Specifications - BVX-100	
Static Pressure (suction force)	1250 Pa (5"WC)
Fan Capacity	110 m^3/h (65 cfm)
Flow Rate (with filter)	85 m^3/h (50 cfm)
Air Inlets/Number of Stations	1
HEPA Efficiency	99.97 % at 0.3 micron
Noise Level	< 55 dBA
Dimensions (W x D x H)	300 x 230 x 290 mm (11.8" x 9.1" x 11.4")
Weight	9 kg (20 lbs)
Input Line Voltage	100 - 240 VAC
Frequency	50 - 60 Hz
Power	85 W
Certification	cTUVus, CE
Max duct run	1.8 m (6')

BVX-250 Two-Station Fume Extraction System

for the removal of workplace fumes, smoke, dust, and vapors.

Key Features & Benefits

- **Completely portable, versatile, and quiet** Designed for under-bench or benchtop use
- **HEPA efficiency of 99.97%** at 0.3 micron, and an activated carbon filter to remove gases
- **Easy & Fast Filter Changes** without having to remove any hoses from the unit
- **Plug-and-play ducting system** for a simple, flexible, low-cost solution and fast installs
  - Powerful airflow and suction capacity
  - Low-profile, compact unit fits under most work benches
  - Communicates with Metcal CV and GT soldering systems for filter change notification and smart run-time functionality
  - Three airflow options (High, Medium, & Low)
  - Light-weight, portable, and quiet design
  - Color LED indicator for filter block notification
  - HEPA Efficiency at 99.97%
  - Optional Deep Bed Gas Filter (sold separately)
  - Connects to 50 mm (2") or 63 mm (2.5") hoses or exhaust arms
  - 360° rotating air diverter - adjust the exhaust direction for operator comfort
  - On/Off switch with "soft-start" feature
  - ESD-safe housing
  - UL & CSA, UKCA, KC, PSE, NOM, CE (ISO-14644)
  - ROHS/REACH

Specifications	Description
Max. airflow, free blowing	297 m3/h (175 cfm)
Flow rate	2 x 75 m3/h (45 cfm)
Static pressure	1743 Pa (7" WC)
Noise level (approx.)	< 55 dBA (at medium setting)
Voltage	100 – 240 VAC, 1 phase
Frequency	50/60 Hz
Power (piece)	150 Watts
Safety compliance	UL, CSA, CE
Power Dimensions W/D/H mm	268 x 400 x 320
Power Dimensions W/D/H in	10.5" x 16" x 13"
Weight (approx.)	12 lbs. / 5.5 kg

Part Numbers	Systems
BVX-250	Unit, Pre-Filter, and HEPA/Gas Filter, Remote Switch (arms sold separately)
BVX-250-KIT	BVX-250 + BVX-ARML + BVX-250-NOZR + BVX-250-NOZC (see below)

Part Numbers	Filters
FP-BVX250	Pre-Filter (Pack of 5)
FM-BVX250	Main Filter, HEPA 99.97% / Carbon
FG-BVX250	Deep Bed Gas Filter (Carbon)
FN-BVX-250	Replacement Nozzle Filter (pack of 5)

Part Numbers	Nozzles
BVX-NOZC	Replacement Rectangular Nozzle
BVX-NOZC	Replacement Round- Circular Nozzle

Part Numbers	Optional Arm Kits & Accessories
BVX-ARM-K1	2.5' Flexible Arm, 6' Hose, Table Bracket & C-Clamps, ESD-Safe
BVX-ARM	2.5' Flexible Arm, 2" Ø, ESD-Safe
BVX-ARML	5' Flexible Arm, 2" Ø, ESD-Safe
BVX-CH01	6' BVX Connection Hose, 2" Ø, ESD-Safe
BVX-CH02	12' BVX Connection Hose, 2" Ø, ESD-Safe
AC-BVX250-DUCT	Adaptor for Direct Ducting BVX-250 into Ventilation Systems
AC-BVX250-OMNI	BVX-250 Adaptor for Metcal Omniflex Arms
BVX-TB01	BVX Table Bracket & (2) C-Clamps
RPS-1	Replacement Remote Power Switch for BVX-200 Series Systems

BVX-250 is compatible with all BVX and Omniflex arms and hoses. See page 58.

BTX-208
Portable Tip Extraction Unit

Part Number	Description
BTX-208	Filter Unit for 8 Tip Extraction Station with Pre-, HEPA/Gas-Filter
Filters	
FP-BVX200	Pre-Filters (pack of 5)
FM-BVX200	Main Filter, HEPA/Gas (Carbon)

System Specifications - BTX-200	
Input Line Voltage	100 - 240 VAC, 50 - 60 Hz
Rated Power	85 W
Air Inlets/Number of solder stations	8
Duct run	30 m (100') max.
Flow Rate per extraction tube	> 28 l/min
HEPA Efficiency	99.97 % at 0.3 micron
Noise Level	< 55 dBA
Dimensions (W x D x H)	508 x 254 x 388 mm (20" x 10" x 15.3")
Weight	9 kg (20 lb)
Certification/Marking	UL, CSA, CE

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 a simple, flexible low-cost solution and fast installations

Universal hose connection kit

Connection Kits		
BTX-CK2-25		Connection Kit for 2-4 stations with 2.5 m (8') long hose, Ø 35 mm
BTX-CK4-50		Connection Kit for 4 -8 stations with 5 m (16') long hose, Ø 35 mm
BTX-CK4-75		Connection Kit for 4-8 stations with 7.5 m (25') long hose, Ø 35 mm
Individual Parts		
CH0121	1	Flexible Hose, Ø 35 mm x length 2.5 m (8')
CH0122	1	Flexible Hose, Ø 35 mm x length 5 m 16')
CH0123	1	Flexible Hose, Ø 35 mm x length 7.5 m (25')
AC-TX001-4	2	Couplings with 2 Glands, Ø 5.6 mm (pack of 4)
AC-TX002-2	3	T-piece Connector, Ø 35 mm (pack of 2)
Iron Adapter Kits		
AC-FX1		Universal Tip Extraction Iron Adaptor Kit

VFX-1000
Benchtop Single-User Arm/Plenum System

The VFX-1000 Fume Extraction unit is Metcal's next generation under-the-bench fume extraction unit. Its improved pre-filter provides higher efficiency, and its enhanced gas filter, a 50/50 mix mix of Activated Aluminum Potassium Permanganate and Active Carbon, allows for a wider range of fume extraction.

VFX Volume Fume Extraction Systems	
VFX-1000-H	VFX-1000 with Pre-, HEPA/Gas-Filter
VFX-1000-G	VFX-1000 with Pre-, Deep Bed Gas Filter

System Specifications - VFX-1000	
Voltage	100 - 240 VAC, 50 - 60 Hz
Rated Power	12.5 amp / 1.1 kW, grounded circuit
Duct run	10 m
Max. Number of Arms Ø 32 mm	7
Max. Number of Arms Ø 50 mm	5
Fan Capacity	350 m^3/h (206 cfm) / 96 mbar
HEPA Efficiency	99.997 % at 0.3 micron
Noise Level (Typical at low speed)	< 58 dBA
Dimensions (W x D x H)	590 x 375 x 415 mm (23.2 x 14.8" x 16.3")
Weight	35 kg (77 lb)
Certification/Marking	CE, REACH, RoHS Compliant

The selection of a fume capture device should be guided by your application and work habits. Contact your local sales rep for additional guidance.

System performance is a function of the following factors and will decrease if

- Hose diameters decrease
- Length of ducting increases
- Number of 90° bends increases
- Number of arms increases

All exhaust arms are made of ESD material and are supplied with appropriate mounting accessories. The design allows for mounting the arms to a variety of surfaces.

Features & Benefits

- **Digital Speed Control**
- **Deep-Pleat Pre-Filter**
- **Blower with high airflow and pressure**
- **3-stage filtration**
- **Built-in silencing**
- **Long-life filters with low replacement costs**
- **Remote speed control**
- **Remote Start/Stop Interface**

Nozzle Selection	
Round/Funnel	Point and small area extraction for soldering, gluing/bonding, laser marking fumes
Oval	Point extraction for: • Soldering under a microscope, • Laser marking Fumes
Rectangular	Area extraction for: • Soldering, • Gluing/Bonding
Large Rectangular/Large Hood	Large area extraction for: • Soldering of large boards, • Large Solder Pots
Plenum/Funnel	Area extraction for: • Soldering, • Gluing/Bonding
Cabinet	Area extraction for: • Volatile gases, • Toxic gases, • Odors

Fume Extraction Accessories

Fume Extraction Cabinet

AC-VFX-CAB-75	Fume Extraction Cabinet with 2 LED-lights, 2 x 1.5 mm long hoses x Ø 75 mm and hose clamps
AC-VFX-75X75	Adapter Ø 75 mm to connect 2 tubes Ø 75 mm
AC-VFX-HS7525	Hose, Ø 75 mm x 2.5 m long

Arms Ø 32 mm

AC-VFX-ARM-32F	Arm, Ø 32 mm x 650 mm long with round funnel
AC-VFX-ARM-32N	Arm, Ø 32 mm x 650 mm long with oval nozzle

Arms Ø 50 mm

AC-VFX- ARM-RF	Arm, Ø 50 mm x 650 mm long with round funnel
AC-VFX- ARM-PF	Arm, Ø 50 mm x 650 mm long with plenum funnel
AC-VFX- ARM-LF	Arm, Ø 50 mm x 650 mm long, LED with round funnel, power adapter
AC-VFX- HK75	Hose Kit Adapter, Ø 75 mm to 50 mm

Note: Each AC-VFX-ARM-xx requires one hose kit

VFX Filters

AC-VFX-FIL-PRE
Deep Pleat Pre-Filter for VFX-1000

AC-VFX-FIL-HEPA
Combined HEPA/Gas Filter for VFX-1000

AC-VFX-FIL-GAS
Deep Bed Gas Filter for VFX-1000

Fume Extraction Systems (continued)

Omniflex Arms Ø 63 mm

AC-VFX-ARM-ORN	Ø 63 mm Omniflex arm with rectangular nozzle, 150 x 88 mm bracket, C-clamps and hose clamp
AC-VFX-ARM-OTN	Ø 63 mm Omniflex arm with oval nozzle, bracket, C-clamps and hose clamp
AC-VFX-ARM-OLH	Ø 63 mm Omniflex arm with large hood, 350 x 212 mm bracket, C-clamps and hose clamp
AC-VFX-HK7563	Ø 75 mm to 63mm Hose Kit adapter

Note: Each AC-VFX- ARM-xx Omniflex requires one hose kit (AC-VFX-HK7563)

AC-VFX-YAD63	Y Adapter, Ø 63 mm with hose (305 mm) and 3x hose clamps
Q-AD426530	Replacement Nozzle – Rectangular, 150 x 88 mm
Q-AD426550	Replacement Nozzle – Tapered
Q-AD426560	Replacement Nozzle – Large Hood, 350 x 212 mm
AC1101	Damper for Omniflex arms Ø 63 mm
AC1102	Omniflex arm extension, Ø 63 mm x 30 cm length
CH0251	Connection hose, Ø 63 mm x length 2.5 m (8')
CH0252	Connection hose, Ø 63 mm x length 3.5 m (12')
CH0253	Connection hose, Ø 63 mm x length 7.5 m (25')
AC2025	Y Adapter, Ø 63 mm and hose Ø 63 mm x length 305 mm with 3 clamps

Additional Accessories

AC-VFX-HK75CONN	Arm connection receptacle with seal and hardware for Arms with Ø 32/50 mm
AC-VFX-HK75BRK	Bracket with (2) clamps
AC-VFX-HK75RED	Reducer, Ø 50/40 mm
AC-VFX-HK75HC	Hose clamp
AC-VFX-HK75CL	50 mm Hose clip
AC-VFX-HK75H50	Flexible Hose, Ø 50 mm x length 1 m
AC-VFX-HK75H75	Flexible Hose, Ø 75 mm x length 2.5 m
AC-VFX-HK75TCONN	Ø 75 x 50 mm x 75mm T-Connector and cover
AC-VFX-HK75CAP	Ø 75 mm End Cap
AC-VFX-HK75CUFF75	Ø 75 mm Connection cuff
AC-VFX-HK75CUFF50	Ø 50 mm Connection cuff

Replacement Filters

AC-VFX- FIL-PRE	Deep Pleat Pre-Filter for VFX-1000
AC-VFX- FIL-HEPA	Combined HEPA/Gas filter for VFX-1000
AC-VFX- FIL-GAS	Deep Bed Gas Filter for VFX-1000

Omniflex Arms

Omniflex Arms (Ø 63mm) are designed for higher airflow rates and effective fume capture from greater distances. A unique ball/socket design provides an unmatched flexibility in maneuvering 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.

- 140 m^3/h (85 cfm) air flow rating (varies with nozzle)
- Ø 63 mm (2.5")
- 0.6 m (24") long with optional extensions of 300 mm (12")

Part Number		Description
EA1122	1	Omniflex Arm ESD with Nozzle 150 x 88 mm
EA1124	2	Omniflex Arm ESD with Tapered Nozzle
EA1126	3	Omniflex Arm ESD with Large Hood 350 x 212 mm (14" x 8.5")
Q-AD426530		Replacement nozzle - Rectangular, 150 x 88 mm
Q-AD426550		Replacement nozzle - Tapered
Q-AD426560		Replacement nozzle - Large Hood, 350 x 212 mm (14" x 8.5")
AC1101	4	Damper for Omniflex Arm, Ø 63 mm
AC1102		Omniflex Arm Extensions, Ø 63 mm x 30 cm (12") long

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

BVX Arms

BVX Arms (Ø 50mm) are the most economical 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.

- 75 m^3/h (45cfm) air flow rating
- Ø 50 mm (2") ducting with Ø 40 mm (1.75") nozzle
- 760 mm (30") long
- BVX Arms are ESD safe and compatible with all units

Part Number		Description
BVX-ARM-K1	5	1 BVX-ARM 760 mm (30") long with 1.8 m (6') long hose and table bracket with C-clamps
BVX-ARM-K2		1 BVX-ARM 760 mm (30") long and table bracket with C-clamps
BVX-ARM		Arm flexible ESD safe, 760 mm (30") long
BVX-ARML		Arm flexible ESD safe, 1.5 m (59") long with arm clip
BVX-NOZ1		Replacement ESD nozzle, Ø 40 mm
Connection Hoses for Omniflex and BVX Arms		
CH0251	6	Connection Hose, Length 2.5 m x Ø 63 mm (8' x 2.5") with clamps
CH0252		Connection Hose, Length 3.5 m x Ø 63 mm (12' x 2.5") with clamps
CH0253	7	Connection Hose, Length 7.5 m x Ø 63 mm (25' x 2.5") with clamps
AC2025	8	Y-Piece for Ø 63 mm (2.5") hose with clamps

Fluid Dispensing

Ease-of-use meets repeatability, with Metcal fluid dispensing solutions

Accurately and consistently dispense low, medium, and high-viscosity fluids with a diverse line of digital dispensers, dispensing tips, manual syringe guns, foot valve dispensers, consumables, and accessories to meet your every need.

DX-250
Digital Dispenser

DX-350
Digital Dispenser

Dispensing Tips

Dispensing Consumables

Accessories & More

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 to control material "tailing" and waste of low-viscosity fluids.

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)

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 of low-viscosity fluids.

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)

System Specifications	DX-250/255	DX-350/355
Power Supply AC/DC	100 - 240 VAC, 50/60 Hz	100 - 240 VAC, 50/60 Hz
Operating Pressure	DX-250 - 0 - 6.9 bar (0 - 100 psi) DX-255 - 0 - 1 bar (0 - 15 psi)	DX-250 - 0 - 6.9 bar (0 - 100 psi) DX-255 - 0 - 1 bar (0 - 15 psi)
Cycle Rate	600 cycle/minute	1200 cycle/minute
Timing Range	0.020 - 60 seconds	0.008 - 60 seconds
Vacuum Suck-Back Control	steplessly variable	steplessly variable
Timing Tolerances	+/- 0.001 %	+/- 0.001 %
Cycle Mode	TIMED, PURGE	TIMED, PURGE, INTERRUPT, TEACH
Memories	—	10 programmable
I/O Interface	Initiated by voltage or contact closure	Initiated by voltage or contact closure
Certification	CE, TUV-GS, NRTL	CE, TUV-GS, NRTL
Dimensions (W x D x H)	152 x 165 x 178 mm (6" x 6.5" x 7")	152 x 165 x 1787 mm (6" x 6.5" x 7")
Weight	1.2 kg (2.6 lb)	1.2 kg (2.6 lb)
Warranty	1 year	1 year

DX-250/255
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: universal power supply, foot switch, air hose, sample tips, syringe barrels & adapter
- I/O Interface for robotic applications

DX-350/355
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 suck-back 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: universal power supply, foot switch, air hose, sample tips, syringe barrels & adapter
- I/O Interface for robotic applications

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" (6.35 mm)	1/2" (12.7 mm)	1" (25.4 mm)	1-1/2" (38.1 mm)
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			
34	934025-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

Length	1/2" (12.7mm)		1-1/2" (38.1mm)
Gauge	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
34	Lime Green	0.0037	0.095

Brush Tips

- 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 12

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

Flexible Plastic Tips

- Flexible tips allow access to hard-to-reach areas
- 38 mm (1-1/2") length. The 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

Tapered Series Tips

- Tapered tip prevents blockage and increases flow of high viscosity filled materials. Length 31.7 mm
- Standard tips molded in high density polyethylene with UV light-block additive
- Rigid Tips in opaque colors – Provides total protection from premature curing by UV/visible light
- Sold in packs of 50

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

Dispensing Tip Kit

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

900-NK	Dispensing Tip Kit

End Caps

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

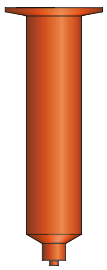
Size	End Cap
3 cc	903-ECB
5 cc	905-ECB
10 cc	910-ECB
30/55 cc	93055-ECB

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
- Made from polyethylene
- Sold in packs of 50

900 Series Color	Piston Type	Application Examples
Blue	Easy Flow	Anaerobic, epoxy, flux, SMA, oil, silicone, UV
White	Wiper	Any fluid used on a mechanical rod/gun including UV
Red	Straight Wall	SMA,Solder paste, viscous grease

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



Syringe Barrels

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

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

Tip Cap

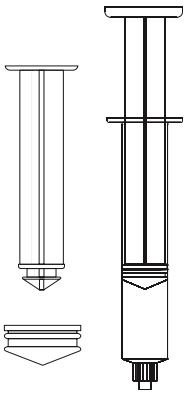
- Use to seal syringe barrel when not in use
- Fits all syringe sizes
- Blue stand-up tip cap enables the syringe barrel to stand upright
- Made from polypropylene
- Sold in packs of 50

Part Number	Description
900-ORTC	Tip Care Double Helix Thread (Orange)
900-BTC	Tip Care Double Helix Thread (Black)
900-STC	Stand-up Tip Cap (Blue)

Syringe Assembly Kits

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

Size	Natural with white piston	Natural with blue piston
3 cc	903-NW	903-NBL
5 cc	905-NW	905-NBL
10 cc	910-NW	910-NBL
30 cc	930-NW	930-NBL
55 cc	955-NW	955-NBL



Plunger and Piston for Syringe Barrels

- Provide simple and quick dispensing solutions without the need for compressed air
- Molded from polypropylene resin, manual plungers
- Compatible with a wide range of dispensing fluids
- Pistons are made from thermoplastic rubber
- Available dry or with lubrication
- Sold in packs of 50

Part Number	Description
903-PL	Plunger - 3 cc
903-PRD	Manual Piston Rubber - 3 cc
903-PRL	Manual Piston Rubber - Lub 3 cc
905-PL	Plunger - 5 cc
905-PRD	Manual Piston Rubber - 5 cc
905-PRL	Manual Piston Rubber - Lub 5 cc
910-PL	Plunger 10 cc
910-PRD	Manual Piston Rubber 10 cc
910-PRL	Manual Piston Rubber Lub 10 cc

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	Plunger Rod
10 cc	910-MSG	71000ROD
30 cc	930-MSG	73000ROD
55 cc	955-MSG	75500ROD-C

Receiver Head Assembly

- Connecting link between time/pressure controllers & syringe assemblies
- Provides a safe connection for accident-proof dispensing
- Available with 0.9 m (3') and 1.8 m (6') length of tubing
- Includes: receiver head with O-ring, tubing, and male quick connector
- Receiver heads are made of Delrin®
- Sold individually

Size	0.9 m (3') Hose	1.8 m (6') Hose
3 cc	903-3RHB	903-6RHB
5 cc	905-3RHB	905-6RHB
10 cc	910-3RHB	910-6RHB
30/55 cc	93055-3RHB	93055-6RHB

Finger Switch Assembly

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

DX9010	Finger Switch assembly for DX-350/-355 Dispenser

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

Syringe Holder

- Use for 3 - 55 cc Syringes

SH-300	Syringe Holder

Replacement O-rings for Receiver Head

Size	EPR O-ring	VITON O-ring
3 cc	P3015EPK	P3019VPK
5 cc	P3016EPK	P3020VPK
10 cc	P3017EPK	P3021VPK
30/55 cc	P3018EPK	P3022VPK

(Sold in Pack of 10)

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, polypropylene reduce tailing or stringing with thicker materials.

System Specification	924-DFV / - VAC
Operating Pressure	0 - 6.9 bar (0 - 100 psi)
Cycle Rate	Manual
Vacuum Suck-Back Control	924-DFV - —
	924-DFV-VAC - steplessly variable
Vacuum Force	Up to 15 of HG (924-DFV-VAC only)
Size (W x D x H)	124 x 206 x 121 mm (8.1" x 4.9" x 4.7")
Weight	1.8 kg (4 lb)
Warranty	1 year

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