

# MX-5200 Dual Simultaneous

[Soldering, Desoldering & Rework Systems]

## The MX-5200 Soldering, Desoldering and Rework Series has increased power and process control, now with dual-simultaneous ports.

**For two users or single user with dual applications.** The MX-5200 can be operated with two hand-pieces 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-in every Metcal System means that soldering and rework are always performed at safe, controlled temperatures. Metcal users know that moderate fixed temperatures, where power is varied, provides the best assurance for a well controlled soldering and rework process.

**TipSaver™ Workstand improves** tip life as well as operator ergonomics. This “Auto-Sleep” Workstand reduces the power to the hand-piece 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 Hand-pieces.** The aluminium hand-pieces for soldering and rework provides a cooler, lighter weight and more comfortable feel for the operator. And, the Metcal UltraFine™ Hand-piece features a new generation of extremely fine diameter cartridges in a slim profiled handle. Both of these hand-pieces uniquely offer users a choice of three interchangeable 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 that visually 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	MX-PS5200 Power Supply	Hand-pieces				Tip Saver™ Work-stands		
		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 hand-piece descriptions on page 10

# MX-500 Dual Switchable Output

[Soldering, Desoldering & Rework Systems]

**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 pre-set 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	MX-PS500 Power Supply	Hand-pieces					Tip Saver™ Work-stands			
		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 hand-piece descriptions on page 10

## Technical Specifications

	MX-PS5200 Power Supply	MX-PS500 Power Supply
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 <sup>5</sup> - 10 <sup>9</sup> 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 which will display 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, hand-pieces and accessories.

# MX Series Hand-Pieces

[Soldering, Desoldering & Rework Systems]

## MX Series

### Hand-pieces and Upgrade Kits

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

#### Advanced Hand-piece

The Advanced MX-Hand-piece 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 14-16, 18-19 for cartridge list

Part Number	Description
MX-H1-AV	Advanced Hand-piece for MX Systems
MX-W1AV	Tip Saver Work-stand for Advanced Hand-piece
MX-UK1	Upgrade Kit, includes Advanced hand-piece and Work-stand

#### UltraFine Hand-piece

The Ultrafine hand-piece is a specialty tool for soldering and rework of very small components.



- For use with UFTC Cartridges. See page 20 for cartridge list

Part Number	Description
MX-H2-UF	UltraFine Hand-piece for MX Systems
MX-W1AV	Tip Saver Work-stand for Ultrafine Hand-piece
MX-UK2	Upgrade Kit, includes Ultrafine hand-piece and Work-stand

#### MX-RM3E Hand-piece

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



- For use with STTC and SMTC Cartridges. See page 14-16, 18-19 for cartridge list

Part Number	Description
MX-RM3E	Economical Hand-piece for MX Systems
WS1	Tip Saver Work-stand for MX-RM3E Hand-piece

#### Precision Tweezer Hand-piece

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 22 for cartridge list

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

#### Desolder Hand-piece

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



- For use with STDC Cartridges. See page 23 for popular cartridges

Part Number	Description
MX-DS1	Desolder Hand-piece for MX Systems
MX-W5DS	Tip Saver Work-stand for Desolder Hand-piece
MX-UK5	Upgrade Kit, includes Desolder hand-piece and Work-stand

#### High Thermal Demand Hand-piece

The High Thermal Demand (HTD) hand-piece 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 17 for popular cartridges

Part Number	Description
MX-H6-HTD	High Thermal Demand Hand-piece for MX Systems
MX-W1AV	Tip Saver Work-stand for HTD Hand-piece
MX-UK6	Upgrade Kit, includes HTD hand-piece and Work-stand

# CVC/STTC Cartridges

[Soldering, Desoldering & Rework Systems]

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## 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	
	CVC Cartridges are compatible with MX-500, MX-5000, MX-5200 and CV-5200, CV-500 Systems -MX-RM3E, MX-RM6E, MX-HI-AV, MX-H7-SF - CV-HI-AV and CV-H7-AV Solder Hand pieces.		STTC Cartridges are compatible with MX-500, MX-5000 and MX-5200 Systems -MX-RM3E, MX-RM6E, MX-HI-AV and MX-H7-SF Solder Hand pieces.

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) 0.83 x 6.4 mm
	CVC-6BV6018P		
	CVC-7BV6018P	STTC-147P	
	CVC-8BV6018P		
	CVC-5BV6018R	STTC-547	Long reach, (Bevel/L) 60° x 1.78 mm, (ø x L) 0.83 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		
	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-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-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	

# CVC/STTC Cartridges

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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-5CN1404S	STTC-522	Sharp, (ø x L) 0.4 x 8.4 mm
	CVC-6CN1404S	STTC-022	
	CVC-7CN1404S	STTC-122	
	CVC-8CN1404S		
	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-5CN1604R	STTC-540	Sharp, long reach, bent 30°, for work under a microscope, (ø x L) 0.4 x 16 mm
	CVC-6CN1604R	STTC-040	
	CVC-7CN1604R	STTC-140	
	CVC-8CN1604R	STTC-840V1	
	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-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-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-5CN1608R	N/A	Sharp, long reach, bent 30°, for work under a microscope, (ø x L) 0.8 x 16 mm
	CVC-6CN1608R		
	CVC-7CN1608R		
	CVC-8CN1608R		
	CVC-9CN1608R		
	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-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	

# SMC/SMTC Rework Cartridges

## [Soldering, Desoldering & Rework Systems]

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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	
	SMC Rework Cartridges are compatible with MX-500, MX-5000, MX-5200 and CV-5200, CV-500 Systems - MX-RM3E, MX-RM6E, MX-H1-AV, CV-H1-AV Solder Hand pieces.		SMTC Rework Cartridges are compatible with MX-500, MX-5000 and MX-5200 Systems MX-RM3E, MX-RM6E and MX-H1-AV Solder Hand pieces.

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-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-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-5BL0025H		Blade for Pad Clean-Up, A = 25 mm H = 9.12 mm
	SMC-6BL0025H	SMTC-0BL250	
	SMC-7BL0025H	SMTC-1BL250	
	SMC-8BL0025H		
	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 1.78 mm, (ø x L) 0.89 x 11.43 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 2.28 mm, long reach, (ø x L) 1.14 x 16.51 mm
	SMC-6HF6011S	SMTC-0174	
	SMC-7HF6011S	SMTC-1174	
	SMC-8HF6011S		
	SMC-9HF6011S	SMTC-8174	

# SMC/SMTC Rework Cartridges

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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° (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	