

# **METCAL MX-5000**

*Soldering, Desoldering and Rework System*



*Power. Precision. Performance.*

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**METCAL**

# Power. Precision. Performance.

Today, the main challenges for hand soldering and rework are driven by three factors. First, the need for more heat with lead-free and high thermal demand boards. Second, the need for higher levels of precision with increasingly smaller components. And finally, the need for greater control with components and substrates that require limited exposure to high temperatures.

Building on the renowned strengths of its popular MX-500 predecessor, the high precision MX-5000 Series is underpinned by proven foundations of reliability and high performance. The new MX-5000 Series Soldering and Rework System is the next generation of the trusted Metcal Soldering Systems that will enable you to increase productivity and process control for a wide range of applications with these new features:

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

**Improved ergonomics.** A new Metcal Advanced™ Hand-piece for soldering and rework is carefully designed to decrease operator fatigue and enhance the operator manual dexterity resulting in productivity gains.

**Greater process control.** SmartHeat® Technology in every MX-5000 means that soldering and rework are always performed at safe, controlled temperatures. Metcal users know that moderate fixed temperatures, where power is varied, provide the best assurance for a well controlled soldering and rework process.



## Configure to Your Needs

Multiple configurations are available combining the new power supply with hand-pieces and corresponding workstands for users to address an exceptionally wide range of soldering and rework applications.

### Power Supply: Process Feedback and Power

The MX-PS5000 Power Supply is a high power, microprocessor controlled power supply that varies and monitors the power according to the load. It has a built-in power indication meter with digital display and bar graph that dynamically 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 repeatable and a valuable resource for making consistent, acceptable solder joints.

Additionally, the power supply has a programmable timer that activates the "PowerSave" mode, where power to the tip is turned off; saving energy and increasing tip life.



### Hand-pieces: Comfort and Productivity

The three hand-pieces available for the MX-5000 will make the task at hand seem effortless. The new **Metcal Advanced™ Soldering Hand-piece** (MX-H1-AV) is designed for single task soldering, touch-up soldering, Surface Mount Device (SMD) rework, and pad clean-up. This hand-piece uniquely offers users a choice of three interchangeable grips to meet operators preferences for comfort and feel, ultimately resulting in higher levels of productivity.



Interchangeable grips

For removal of chips and SOIC components, the **Precision Tweezers Hand-piece** increases user capability. The tweezers are able to rework devices as small as 0201 combining fine-tip soldering cartridges and a multiple axis hand-piece adjustability to achieve proper tip alignment.



Metcal Advanced™ Soldering Hand-piece

The high power **Desoldering Hand-piece** is designed for plated-through hole component desoldering. The easy-to-grip handle allows the task to be completed quickly and comfortably.



Precision Tweezers Hand-piece

### Workstand: Tip Life and Design Flexibility

The new **Metcal TipSaver™ Workstand** incorporates new features that improve tip life as well as operator ergonomics. This "auto sleep" workstand reduces the power to the tip by over 90% when the hand-piece is placed in the Metcal TipSaver™ Workstand. Reduction in power will substantially decrease tip oxidation, a major cause of reduced tip life.



Desoldering Hand-piece

The workstand can be configured to be used with a soft, coiled brass tip cleaner or with both the brass cleaner and the traditional sponge holder. Many users prefer the brass-only option, as this reduces the possibility to introduce contaminants to the tip, which can occur with poorly maintained sponges.

In addition, the ergonomics of using the workstand are improved with the adjustable angle hand-piece cradle allowing operators to optimize its position and easily rest the hand-piece into the cradle.

## Systems Configurations and Applications

### MX-5010 Soldering and Rework System

The MX-5010 is configured with the Metcal Advanced™ Hand-piece. This system is highly effective for soldering applications including: lead-free, high mass components or boards, thermally sensitive components requiring low operating temperature, high volume production soldering and touch-up soldering operations.



Metcal TipSaver™ Workstand

For these applications, STTC soldering cartridges are offered in dozens of geometries and sizes. (See [www.okinternational.com/product\\_soldering/mx5000](http://www.okinternational.com/product_soldering/mx5000) for further details)

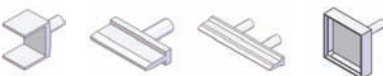
#### Hoof Knife Bent



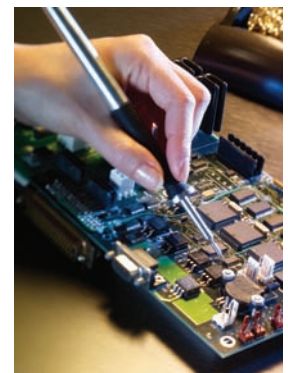
In addition, the MX-5010 can be used for conduction rework of SMDs when using SMTC soldering cartridges with such geometries as: slot, blade, tunnel, and quad styles that provide exact part fit up. Even more, the high power MX-5010 system is ideally suited for quickly and efficiently heating high-mass tips in this range, increasing operator through-put.

A variety of SMTC soldering cartridges geometries are available. (See [www.okinternational.com/product\\_soldering/mx5000](http://www.okinternational.com/product_soldering/mx5000) for soldering cartridge details)

#### Slot Blade Tunnel Quad

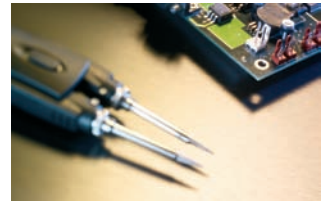


Metcal TipSaver™ Workstand Without Sponge



### MX-5040 SMT Rework System

The MX-5040 includes the Precision Tweezers Hand-piece which is an effective solution for fast, easy removal of chips and SOICs. The ergonomic MX-PTZ Hand-piece provides superior speed and power for the removal process, eliminating situations where operators sometimes use two irons to remove capacitors or resistors.



The range of PTTC rework cartridges include conical and blade geometries in a variety of dimensions to meet your dual sided component rework needs.

[See [www.okinternational.com/product\\_soldering/mx5000](http://www.okinternational.com/product_soldering/mx5000) for further details]

#### Conical Blade



### MX-5041 Precision Tweezers, Soldering and Rework System

The MX-5041 combines both the Metcal Advanced™ Hand-piece and the Precision Tweezers Hand-piece. Users get maximum application flexibility for soldering and reworking the widest range of surface mount components. Due to the high power of the system, when switching hand-pieces, they reach operating temperature in seconds by simply pressing the Output Selector/Command Button.

[See [www.okinternational.com/product\\_soldering/mx5000](http://www.okinternational.com/product_soldering/mx5000) for further details]



### MX-5050 Plated Through-Hole Component Desoldering System

Users challenged by very large ground plane or lead-free solders, when desoldering through-hole devices, now have a new, high-power solution with the Metcal MX-5050. With constant temperature and variable power, the system effectively and quickly responds to the thermal load demands of the application, while remaining safe for thermally sensitive components. The high mass STDC desoldering cartridges are quickly heated and, because they use of SmartHeat® Technology, never overshoot.

[See [www.okinternational.com/product\\_soldering/mx5000](http://www.okinternational.com/product_soldering/mx5000) for further details]



### MX-5051 Soldering, Desoldering and Rework System

This system combines both the desoldering hand-piece and the Metcal Advanced™ Hand-piece, creating a system that can solder, desolder and rework surface mount components.

[See [www.okinternational.com/product\\_soldering/mx5000](http://www.okinternational.com/product_soldering/mx5000) for further details]

#### SYSTEM SPECIFICATIONS

Ambient Operating Temperature	10 - 40°C
Maximum Enclosure Temperature	55°C
Input Line Voltage	100 - 240 VAC, grounded circuit
Input Line Frequency	50/60 Hz
Power Consumption	125W
Output Power (Max.)	80 Watts max. Per channel at 22°C ambient temperature
Output Frequency	13.56 MHz
Power Cord 3-Wire	183cm (72") 18/3 SJT
Dimensions w x d x h	12.1 cm (4.8") x 13.0cm (5.1") x 23.5cm (9.3")
Certification / Marking	cTUVus, CE
Tip-to-Ground Potential	<2mV
Tip-to-Ground Resistance	<2 ohms
Idle Temperature Stability	± 1.1°C in still air
Hand-piece Cable Length	L=122cm (48"), burn proof, ESD safe
Hand-piece Connector	F connector
Workstand Dimensions w x d x h	8.6 cm (3.4") x 19.1 cm (7.5") x 8.3 cm (3.3")

Part Number	Description	Handpieces			Workstand		
		MX-H1-AV	MX-PTZ	MX-DS1	MX-W1AV	MX-W4PT	MX-W5DS
<b>MX-5010</b>	MX-PS5000 Power Supply, Metcal Advanced™ Hand-piece (MX-H1-AV), Workstand (MX-W1AV)	✓			✓		
<b>MX-5040</b>	MX-PS5000 Power Supply, MX-PTZ Tweezers Hand-piece, Metcal TipSaver™ Workstand (MX-W4PT)		✓			✓	
<b>MX-5050</b>	MX-PS5000 Power Supply, MX-DS1 Desoldering Hand-piece, Workstand (MX-WS5)			✓			✓
<b>MX-5041</b>	MX-PS5000 Power Supply, MX-PTZ Tweezers Hand-piece, Metcal Advanced™ Hand-piece (MX-H1-AV), Workstand (MX-W4PT), Workstand (MX-W1AV)	✓	✓		✓	✓	
<b>MX-5051</b>	MX-PS5000 Power Supply, MX-DS1 Desoldering Hand-piece Metcal Advanced™ Hand-piece (MX-H1-AV), Workstand (MX-WS5), Workstand (MX-W1AV)	✓		✓	✓		✓
<b>MX-PS5000</b>	Power supply, 100 to 240 VAC input, dual switch port with LCD Display						
<b>MX-UK1</b>	Upgrade Kit, MX-H1-AV Metcal Advanced™ Hand-piece and MX-W1AV Workstand						
<b>MX-UK4</b>	Upgrade Kit, MX-PTZ Precision Tweezers Hand-piece and MX-W4PT Workstand						
<b>MX-D001</b>	Upgrade Kit, MX-DS1 Desoldering Hand-piece and MX-H5DS Workstand						
<b>MX-H1-AV</b>	Hand-piece, Metcal Advanced™ Hand-piece, Soldering and Rework						
<b>MX-PTZ</b>	Hand-piece, Precision Tweezers Hand-piece, SMD Rework						
<b>MX-DS1</b>	Hand-piece, Metcal Desoldering Hand-piece						
<b>MX-W1AV</b>	Workstand, Metcal TipSaver™ Workstand for the Metcal Advanced™ Hand-piece						
<b>MX-W4PT</b>	Workstand, Metcal TipSaver™ Workstand for Precision Tweezers						
<b>MX-W5DS</b>	Workstand, Metcal TipSaver™ Workstand for Desoldering Hand-piece						
<b>MX-H1GR</b>	Grip, Metcal Advanced™ Hand-piece , Ring pattern						
<b>MX-H1GK</b>	Grip, Metcal Advanced™ Hand-piece , Knob pattern						
<b>MX-H1GS</b>	Grip, Metcal Advanced™ Hand-piece , Scallop pattern						
<b>MX-CP1</b>	Cartridge Removal Pad, Metcal Logo						

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## About OK International

OK International is a leading global supplier of products for production assembly. The product range includes bench top soldering and desoldering tools, array package rework equipment, fluid dispensing systems and accessories, and fume extraction systems.

OK International is committed to understanding the product needs of its customers and supplies professional grade products that are innovative, reliable and price competitive. Easy to use, the OK International product range reduces required training investment while a diverse range of application possibilities substantially enhances ongoing productivity and flexibility. Through a global sales channel, OK International provides expert product support and responsive customer service, with localization to meet regional market needs.

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