



*Precision Systems for the Electronics Bench*

SOLDERING, DESOLDERING AND REWORK SYSTEMS





Since 1982, OK International's Metcal brand has been the industry's single source of high-performance, precision systems for the electronics bench. Always ahead of the competition, Metcal's soldering/desoldering stations, BGA/CSP/QFP rework equipment and fume extraction systems continue to set the standard for reliability, flexibility and cost-effective performance.

By listening to customers, focusing on their specific needs and working as their technology partner, we continue the quest for excellence, economy and innovation – aimed at helping each customer meet increasingly complex electronics manufacturing challenges.





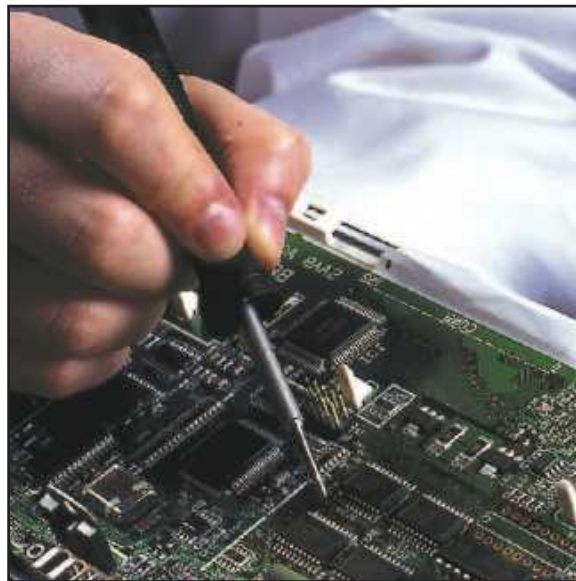
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Speciality Tip Cartridges	1 4
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# SmartHeat®

## SmartHeat® Technology

### The Metcal Difference

In production environments where a single component can cost hundreds of dollars and rework and repair can sometimes be more costly than the components involved, process control is vital. Metcal improves product quality, increases productivity and reduces manufacturing costs with its patented SmartHeat® technology. As SmartHeat® maintains a constant tip temperature, automatically delivering the exact amount of power required for the task, consistent results are guaranteed and component/PCB damage is virtually eliminated. Metcal's SmartHeat® systems offer task-specific versatility with no limits, no barriers and absolutely no compromise.

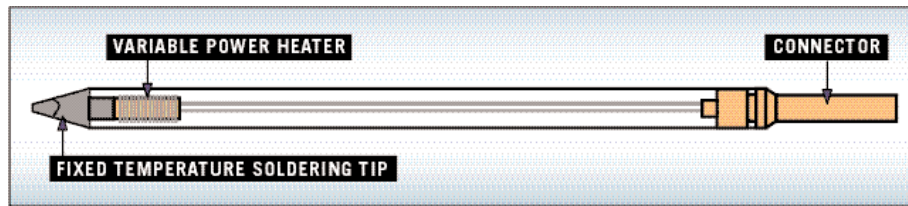


### What Is SmartHeat®?

Unlike conventional soldering irons, SmartHeat® administers heat directly from the heater to the joint. Metcal tip cartridges detect the thermal load and instantly adjust the power in order to deliver the right amount of heat precisely where it is needed. If the tip cools while transferring heat to a joint, SmartHeat® immediately responds by safely increasing the power to maintain a constant tip temperature. As a result, operators are relieved of the responsibility of regulating the tip temperature, thus eliminating the risk of thermal damage to the component or to the PCB.

SmartHeat® soldering systems comprise three basic elements: a high frequency power supply, a tip cartridge and a hand-piece. The cartridge contains the solder tip, a heater and the wire coil.

When the temperature of the heater (a copper bar coated with a magnetised iron/nickel alloy) reaches a certain level (its Curie Point), it stops absorbing energy and the temperature becomes



constant. Energy from the power supply feeds a steady current to the coil. This creates an electrical field from which the heater absorbs energy, turns it into heat and transfers it to the iron/nickel alloy. When soldering has drawn heat from the heater to the extent that the tip begins to cool, the alloy reacts by taking on more energy in order to reheat the tip. In this way, SmartHeat® self-regulates the tip temperature to within  $\pm 1.1^{\circ}\text{C}$  of a set point regardless of thermal load and without any need for adjustment.

### Trouble-Free Tip Replacement

The heat-resistant pad supplied with the unit allows you to easily insert and remove the tip cartridge. The simplicity of this process ensures there is no loss of productivity, no need for additional tools and no reason for two soldering systems to be heating at the same time.



### The SmartHeat® Route To Lead-Free Hand Soldering

Switching to lead-free hand soldering does not necessarily mean that you will have to invest in new equipment or adjust your existing process. As SmartHeat's variable power and fixed temperature guarantee a repeatable tip temperature under a wide variety of thermal loads, the system can easily adapt to meet the higher temperatures demanded by lead-free applications without any need for modification.

### No Calibration Required For Easy ISO 9000 Compliance

To define the parameters for soldering with a SmartHeat® system, simply record the tip cartridge part number. As the heater's alloy dictates the temperature, calibration is not required. Indeed, there are no dials, buttons or calibration tools, typical of other systems, with which you can adjust SmartHeat's temperature. This avoids all risk of unauthorised operator intervention. Throughout the cartridge's lifetime, temperature drift is less than a few degrees. A letter to confirm SmartHeat's self-calibration capacity is available on request.



# MX-500

## Soldering, Desoldering & Rework System

### Industry Standard, Soldering, Desoldering And Rework System

Metcal's MX-500 Soldering, Desoldering & Rework System is the benchmark against which other soldering, desoldering and rework systems are measured. Flexible, fast and powerful, the MX-500 Soldering, Desoldering & Rework System raises bench-top conduction soldering to a new level of process control, productivity and throughput.



### Higher Throughput At Lower Temperatures

Unlike conventional soldering/rework systems that rely on stored energy, Metcal systems use SmartHeat® for direct power on demand. Despite its capacity to work at lower, safer temperatures, SmartHeat® still delivers the fastest temperature recovery, joint-to-joint, in the industry.

### Versatility Without Compromise

Metcal's MX-500 Soldering, Desoldering & Rework System handles both SMT and through-hole soldering/rework with one power supply at the bench. With two switchable outputs, the system can be adapted to your exact needs, using two of the three tools available (soldering iron, Talon® tweezers, desolder gun) to configure the most powerful bench-top soldering/rework system on the market. In addition, the MX-500 Soldering, Desoldering & Rework System's power supply has an automatic shut-off, which helps maximise tip cartridge life, and a standard four year warranty.

## Unrivalled Comfort And Simplicity

The short tip-to-grip distance, characteristic of the Metcal hand-piece, improves process precision, especially for fine-pitch applications. The easy-squeeze design of Metcal's Talon® tweezers has been ergonomically designed for superior performance, unmatched comfort and optimum control.

### MX-500S SMT SOLDERING/REWORK SYSTEM

Part No.	Description
<b>MX-500S-11</b>	Two Port 100/120 VAC, Solder System
<b>MX-500S-21</b>	Two Port 220/240 VAC, Solder System
<b>INCLUDES</b>	
<b>MX-500P</b>	Two Port Switchable Power Supply with Power Cord*
<b>MX-RM3E</b>	Rework Hand-Piece with Cord
<b>MX-WS4</b>	MX Workstand with YS3 Sponge
<b>AC-YS3</b>	Sponge
<b>AC-CP2</b>	Cartridge Removal Pad



### MX-500TS SMT REWORK/TALON® SYSTEM

<b>MX-500TS-11</b>	Two Port 100/120 VAC, Solder/Talon® System
<b>MX-500TS-21</b>	Two Port 220/240 VAC, Solder/Talon® System
<b>INCLUDES</b>	
<b>MX-500P</b>	Two Port Switchable Power Supply with Power Cord
<b>MX-TALON</b>	Talon® Hand-Piece with Cord
<b>MX-WS5</b>	DS1/Talon® Workstand with YS3 Sponge
<b>MX-RM3E</b>	Rework Hand-Piece with Cord
<b>MX-WS4</b>	MX Workstand with YS3 Sponge
<b>AC-YS3</b>	Sponge (2)
<b>AC-CP2</b>	Cartridge Removal Pad (2)



### TALON® UPGRADE KITS

<b>MX-TALON-01</b>	Talon® Upgrade Kit
<b>INCLUDES</b>	
<b>MX-TALON</b>	Talon® Hand-Piece with Cord
<b>MX-WS5</b>	DS1/Talon® Workstand with YS3 Sponge
<b>AC-YS3</b>	Sponge
<b>AC-CP2</b>	Cartridge Removal Pad

Tip cartridges sold separately for all systems.

MX-500





# MX-500

## Soldering, Desoldering & Rework System

### Pistol Grip SMT Desoldering/Rework System

The MX-500DS Desoldering/Rework System converts shop air into a powerful Venturi vacuum to clean through-holes quickly and efficiently. Paper solder collection liners within the hand-piece barrel are easy to maintain and are an improvement upon traditional glass tubes.

**Please note:** The MX-500DS Desoldering/Rework System requires shop air for desoldering. If shop air is not available, Metcal recommends the SP440 Self-Contained Desoldering System.

### MX-500DS SMT DESOLDERING/REWORK SYSTEM

Part No.	Description
<b>MX-500DS-11</b>	Two Port 100/120 VAC, Desolder/Solder System
<b>MX-500DS-21</b>	Two Port 220/240 VAC, Desolder/Solder System

#### INCLUDES

<b>MX-500P</b>	Two Port Switchable Power Supply with Power Cord
<b>MX-DS1</b>	Desoldering Hand-Piece
<b>MX-RM3E</b>	Rework Hand-Piece with Cord
<b>MX-RM8E</b>	Desoldering Cord
<b>MX-DAH4</b>	ESD Air Hose with Fitting
<b>MX-WS5</b>	DS1/Talon® Workstand with YS3 Sponge
<b>AC-YS3</b>	Sponge (2)
<b>AC-CP2</b>	Cartridge Removal Pad (2)
<b>AC-CB1</b>	Cleaning Brush
<b>AC-CB2</b>	Tube Cleaning Brush
<b>MX-DCF1</b>	Chamber Liner and Filter Pack
<b>AC-TC</b>	Desoldering Tip Cleaner
<b>MX-WS4</b>	MX Workstand with YS3 Sponge



### DESOLDER UPGRADE KIT

<b>MX-D001</b>	Desolder Upgrade Kit
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#### INCLUDES

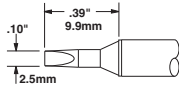
<b>MX-DS1</b>	Desoldering Hand-Piece
<b>MX-RM8E</b>	Desoldering Cord
<b>MX-DAH4</b>	ESD Air Hose with Fitting
<b>MX-WS5</b>	DS1/Talon® Workstand with YS3 Sponge
<b>AC-YS3</b>	Sponge
<b>AC-CP2</b>	Cartridge Removal Pad
<b>AC-CB1</b>	Cleaning Brush
<b>AC-CB2</b>	Tube Cleaning Brush
<b>MX-DCF1</b>	Chamber Liner and Filter Pack
<b>AC-TC</b>	Desoldering Tip Cleaner



# STTC Soldering Tip Cartridges

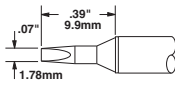
STTC soldering tip cartridges are for use with the MX and the STSS soldering/rework hand-pieces only. They cannot be used with the SP systems, the Talon® or desoldering hand-pieces.

## FREQUENTLY USED TIP CARTRIDGES



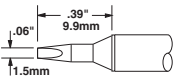
### STTC-X36\* Chisel 30° .10" (2.5mm)

For medium to heavy load joints requiring extra reach.



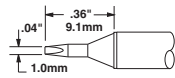
### STTC-X37\* Chisel 30° .07" (1.78mm)

For a wide variety of tasks. If you are choosing the first tip for your Metcal system, the STTC-037 is ideal.



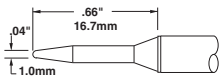
### STTC-X38\* Chisel 30° .06" (1.5mm)

A finer version of the STTC-037. Ideal for medium to light through-hole and general surface mount touch-up.



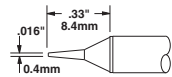
### STTC-X25 Chisel 30° .04" (1.0mm)

Good for a variety of light soldering tasks. Looking for a surface mount touch-up tip? The STTC-025 should be your first choice.



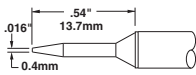
### STTC-X07 Conical Sharp .04" (1.0mm)

General-purpose SMT and through-hole tip when access is limited.



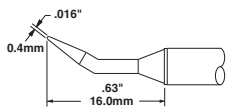
### STTC-X22 Conical Sharp .016" (0.4mm)

Sharp tip cartridges for soldering SMT components or fine wire applications (not for general through-hole tasks).



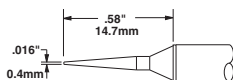
### STTC-X06 Conical Sharp .016" (0.4mm)

For limited access SMT rework.



### STTC-X40 Sharp Bent 30° .016" (0.4mm)

Tip for soldering SMT components. The bend makes it much easier to work on small circuits and PLCCs.



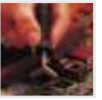
### STTC-X45 Bevel 60° .016" (0.4mm)

An extended length fine tip for surface mount or fine wire applications (not for general through-hole tasks).

**For Lead Free STTC Power tip enhancements, please see page 20.**

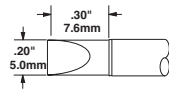
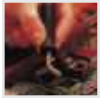
**500 SERIES X=5 600 SERIES X=0 700 SERIES X=1 800 SERIES X=8, WHEN FOLLOWED BY AN \***

MX Tips

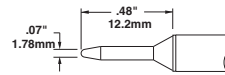


## OTHER STANDARD TIP CARTRIDGES

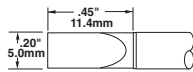
MX Tips



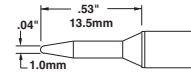
**STTC-X17\***  
Extra Large Chisel  
.20" (5.0mm)



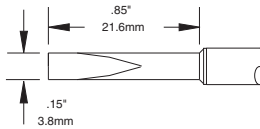
**STTC-X02**  
Conical Sharp  
.07" (1.78mm)



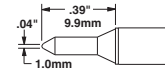
**STTC-X65**  
Large Chisel  
.20" (5.0mm)



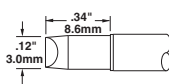
**STTC-X01**  
Conical Sharp  
.04" (1.0mm)



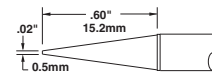
**STTC-X20**  
Long Reach  
Chisel 12°  
.15" (3.8mm)



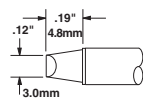
**STTC-X31**  
Conical Sharp  
.04" (1.0mm)



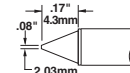
**STTC-X03\***  
Chisel 90°  
.12" (3.0mm)



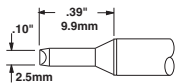
**STTC-X43**  
Conical Sharp  
.02" (0.5mm)



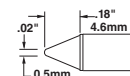
**STTC-X13**  
Chisel 90°  
.12" (3.0mm)



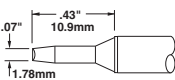
**STTC-X12**  
Conical  
.08" (2.03mm)



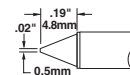
**STTC-X33**  
Chisel 90°  
.10" (2.5mm)



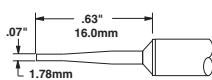
**STTC-X11**  
Conical  
.02" (0.5mm)



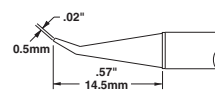
**STTC-X04**  
Chisel 90°  
.07" (1.78mm)



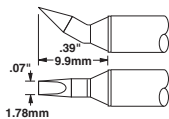
**STTC-X16**  
Conical  
.02" (0.5mm)



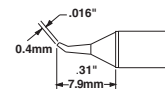
**STTC-X42**  
Long Reach Chisel 60°  
.07" (1.78mm)



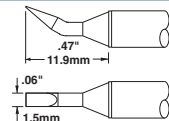
**STTC-X44**  
Sharp Bent 30°  
.02" (0.5mm)



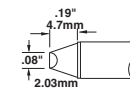
**STTC-X98**  
Chisel Bent 30°  
.07" (1.78mm)



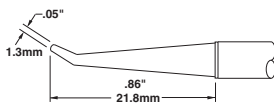
**STTC-X26**  
Sharp Bent 30°  
.016" (0.4mm)



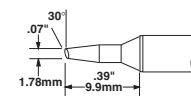
**STTC-X99**  
Chisel Bent 30°  
.06" (1.5mm)



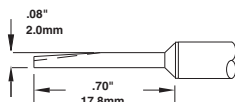
**STTC-X14**  
Bevel 45°  
.08" (2.03mm)



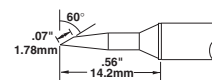
**STTC-X41**  
Chisel 30°  
.05" (1.3mm)



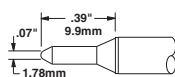
**STTC-X35**  
Bevel 30°  
.07" (1.78mm)



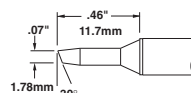
**STTC-X83**  
Conical Grooved  
.08" (2.0mm)



**STTC-X47**  
Bevel 60°  
.07" (1.78mm)

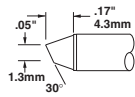


**STTC-X32**  
Conical Sharp  
.07" (1.78mm)

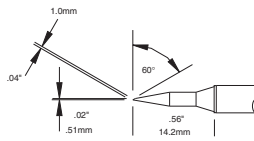


**STTC-X05**  
Bevel 30°  
.07" (1.78mm)

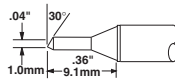
## OTHER STANDARD TIP CARTRIDGES



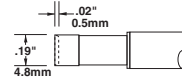
**STTC-X15**  
Bevel 30°  
.05" (1.3mm)



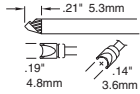
**STTC-X46**  
Long Reach  
Bevel 60°  
.04" (1.0mm)



**STTC-X24**  
Bevel 30°  
.04" (1.0mm)



**STTC-X70**  
Heat Staking  
.19" (4.8mm)

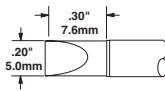


**STTC-X97**  
Grooved Semi-Rigid  
Coax

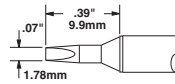
**500 SERIES X=5    600 SERIES X=0    700 SERIES X=1    800 SERIES X=8, WHEN FOLLOWED BY AN \***

## SRTC ROBOTIC TIP CARTRIDGES

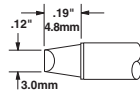
For use with robotic applications and MX-RM5E or MX-RM8E handles only. Similar to STTC tip cartridges, however, SRTC Robotic Tip Cartridges have a shaft length of 3.15" (80mm) and, therefore, are not compatible with the MX-RM3E handle.



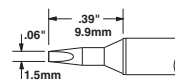
**SRTC-X17\***  
Extra Large Chisel  
.20" (5.0mm)



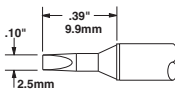
**SRTC-X37**  
Chisel 30°  
.07" (1.78mm)



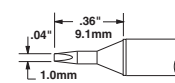
**SRTC-X13**  
Chisel 90°  
.12" (3.0mm)



**SRTC-X38**  
Chisel 30°  
.06" (1.5mm)



**SRTC-X36**  
Chisel 30°  
.10" (2.5mm)

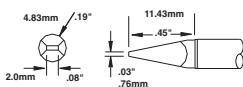


**SRTC-X25**  
Chisel 30°  
.04" (1.0mm)

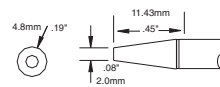
**600 SERIES X=6    700 SERIES X=7    800 SERIES X=8, WHEN FOLLOWED BY AN \***

## PTTB BONDING TIP CARTRIDGES

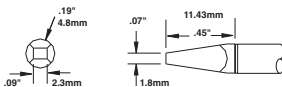
For use in low temperature plastic bonding applications, these aluminium tips can be used with all available MX handles.



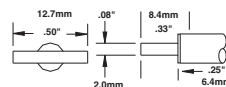
**PTTB-501**  
Bonding Tip



**PTTB-503**  
Bonding Tip



**PTTB-502**  
Bonding Tip



**PTTB-504**  
Bonding Tip

MX Tips



# STDC Desoldering System Tip Cartridges

Depending on available access, choose one of two desoldering tip cartridge configurations: standard STDC or long reach STDC. Like all Metcal tip cartridges, STDC changeover takes just a few seconds. When desoldering through-hole components, on thermally demanding PCBs, always use the correct geometry for the task. This may mean choosing an 800 series (high temperature) tip.

## STANDARD TIP CARTRIDGES

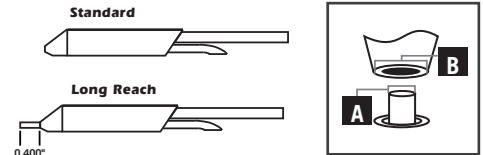
Part No.	DIAMETERS IN INCHES (mm)	
	A	B
<b>STDC-X02</b>	.025 (0.64)	.055 (1.40)
<b>STDC-X03</b>	.030 (0.76)	.066 (1.68)
<b>STDC-X04</b>	.040 (1.02)	.070 (1.78)
<b>STDC-X05</b>	.050 (1.27)	.080 (2.03)
<b>STDC-X06</b>	.060 (1.52)	.090 (2.29)
<b>STDC-X07</b>	.095 (2.41)	.125 (3.18)

**600 SERIES X=0 700 SERIES X=1 800 SERIES X=8**

## LONG REACH TIP CARTRIDGES

Part No.	DIAMETERS IN INCHES (mm)	
	A	B
<b>STDC-X03L</b>	.030 (0.76)	.066 (1.68)
<b>STDC-X04L</b>	.040 (1.02)	.070 (1.79)
<b>STDC-X05L</b>	.050 (1.27)	.080 (2.03)

**700 SERIES X=7 800 SERIES X=8**

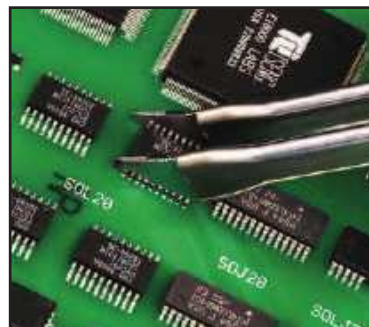


# TATC Talon® Tip Cartridges

Designed for the removal of all discrete and SO symmetrical components. TATC tip cartridges for Talon® hand-pieces are always sold in pairs. Due to its shape and design, by simply rotating the Talon®, a single TATC cartridge can remove a 28 pin SOIC, a tantalum or an 0603 chip capacitor without changing tips. Metcal's new Viper Tip is shown in the main photograph below.

Part No.	Description
<b>TATC-X01</b>	Fine Point Tip .20" (5.08mm)
<b>TATC-X02</b>	Blades Tip .25" (6.35mm)
<b>TATC-X03</b>	Blades Tip .62" (15.75mm)
<b>TATC-X04</b>	Blades Tip .81" (20.57mm)
<b>TATC-X05</b>	TSOP 32 Tip
<b>TATC-X06</b>	Blades Tip 1.1" (27.94mm)
<b>TATC-X08</b>	Angled Viper Tip .05" (1.27mm)

**500 SERIES X=5 600 SERIES X=6**

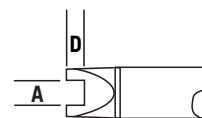
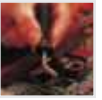


# SMT Rework Tip Cartridges

Designed for reworking SMT components, SMTC tip cartridges do it all – assembly, removal and cleaning. The SMTC range includes slot, tunnel and quad tip cartridges. The SMTC range also includes hoof tips for drag soldering, blade tips to remove residual solder from pads, and knife tips for multi-lead soldering of PLCCs in tight places.

**Please note:** SMTC soldering tip cartridges are for use with the MX-RM3E soldering/rework hand-pieces for STSS/MX systems only. They cannot be used with SP systems, Talon® hand-pieces or desolder hand-pieces.

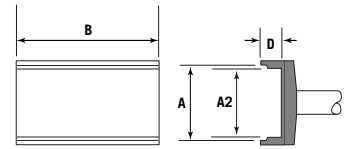
MX Tips



## SLOT TIP CARTRIDGES

SMT TYPE	DIMENSIONS IN INCHES (mm)			Part No.
	A	B	D	
Chip 0805	.090 (2.29)	.050 (1.27)	.070 (1.79)	SMTC-X01
Chip 1206, 1210	.140 (3.56)	.060 (1.52)	.070 (1.79)	SMTC-X02
Chip 1808, 1812	.190 (4.83)	.080 (2.03)	.075 (1.91)	SMTC-X03
Chip, Box A (EIA SOPM-3224)	.135 (3.43)	.080 (2.03)	.120 (3.05)	SMTC-X35
Chip, Box B (EIA SOPM-3528)	.150 (3.81)	.095 (2.41)	.100 (2.54)	SMTC-X32
Melf, Box B (EIA SOPM-4532)	.190 (4.83)	.110 (2.79)	.160 (4.06)	SMTC-X36
Chip, Box C (EIA SOPM-6032)	.250 (6.35)	.095 (2.41)	.130 (3.30)	SMTC-X33*
Chip, Box D (EIA SOPM-7246)	.300 (7.62)	.100 (2.54)	.140 (3.56)	SMTC-X34*
SOT-23	.068 (1.73)	.100 (2.54)	.050 (1.27)	SMTC-X05
SOT-89	.110 (2.80)	.250 (6.35)	.080 (2.03)	SMTC-X08
Chip 0402, 0603, 0805 (angled)	.080 (2.03)	.050 (1.27)	.060 (1.52)	SMTC-X88
Chip 0402, 0603	.070 (1.78)	.040 (1.02)	.040 (1.02)	SMTC-X96

500 SERIES X=5    600 SERIES X=0    700 SERIES X=1    \*=NOT AVAILABLE FOR 500 SERIES

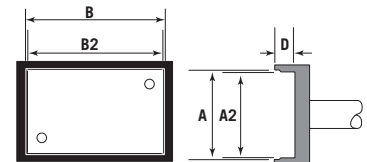


**TUNNEL TIP CARTRIDGES FOR DUAL IN-LINE PACKAGES**

SMT TYPE	DIMENSIONS IN INCHES (mm)				Part No.
	A2	A	B	D	
DPAC	.335 (8.51)	.335 (8.51)	.250 (6.35)	.200 (5.08)	SMTC- <b>X</b> 47
SO-8	.320 (8.13)	.380 (9.65)	.750 (19.05)	.240 (6.10)	SMTC- <b>X</b> 107
SO-16	.330 (8.38)	.330 (8.38)	.475 (12.07)	.230 (5.84)	SMTC- <b>X</b> 46*
SO-8	.335 (8.51)	.335 (8.51)	.665 (16.90)	.250 (6.35)	SMTC- <b>X</b> 68**
SOIC-8	.200 (5.08)	.200 (5.08)	.170 (4.32)	.090 (2.29)	SMTC- <b>X</b> 04
SOIC-14,-16	.200 (5.08)	.200 (5.08)	.400 (10.16)	.090 (2.29)	SMTC- <b>X</b> 06
SOIC-14	.204 (5.18)	.204 (5.18)	.350 (8.89)	.100 (2.54)	SMTC- <b>X</b> 142
SOIC-24 (Mini flat pack)	.280 (7.11)	.280 (7.11)	.620 (15.75)	.125 (3.18)	SMTC- <b>X</b> 77
SOIC-16 (Wide)	.320 (8.13)	.320 (8.13)	.470 (11.94)	.270 (6.86)	SMTC- <b>X</b> 124
SOIC-20	.375 (9.53)	.375 (9.53)	.520 (13.21)	.125 (3.18)	SMTC- <b>X</b> 10
SOIC-24	.375 (9.53)	.375 (9.53)	.620 (15.75)	.125 (3.18)	SMTC- <b>X</b> 09
SOIC-28, SOL-34	.375 (9.53)	.375 (9.53)	.720 (18.29)	.125 (3.18)	SMTC- <b>X</b> 07
SOIC-32	.520 (13.21)	.520 (13.21)	.805 (20.45)	.170 (4.32)	SMTC- <b>X</b> 42
SOJ-28, SOM-36	.315 (8.00)	.340 (8.64)	.740 (18.80)	.074 (1.88)	SMTC- <b>X</b> 26
SOJ-32, 34	.315 (8.00)	.340 (8.64)	.840 (21.34)	.125 (3.18)	SMTC- <b>X</b> 140
SOJ-40, SOM-32	.410 (10.41)	.450 (11.43)	1.020 (25.91)	.075 (1.91)	SMTC- <b>X</b> 40
SOJ-42	.410 (10.41)	.450 (11.43)	1.070 (27.18)	.125 (3.18)	SMTC- <b>X</b> 148
SOMC-14,-16, DB-20	.270 (6.86)	.270 (6.86)	.440 (11.18)	.090 (2.29)	SMTC- <b>X</b> 20
SOP-20	.270 (6.86)	.270 (6.86)	.285 (7.24)	.100 (2.54)	SMTC- <b>X</b> 138
SOP-28	.420 (10.67)	.420 (10.67)	.720 (18.29)	.125 (3.18)	SMTC- <b>X</b> 39
SOP-40	.460 (11.68)	.510 (12.95)	1.000 (25.4)	.125 (3.18)	SMTC- <b>X</b> 134*
SOP-44	.510 (12.95)	.565 (14.35)	1.070 (27.18)	.105 (2.67)	SMTC- <b>X</b> 83
TSOP-28	.470 (11.94)	.505 (12.83)	.320 (8.13)	.065 (1.65)	SMTC- <b>X</b> 95
TSOP-40	.730 (18.54)	.760 (19.30)	.400 (10.16)	.120 (3.05)	SMTC- <b>X</b> 154
TSOP-56	.730 (18.54)	.760 (19.30)	.556 (14.12)	.120 (3.05)	SMTC- <b>X</b> 162
TSOP-32	.730 (18.54)	.760 (19.30)	.320 (8.13)	.120 (3.05)	SMTC- <b>X</b> 84**

600 SERIES X=0 700 SERIES X=1 \* =NOT AVAILABLE FOR 600 SERIES

\*\* =NOT AVAILABLE FOR 700 SERIES



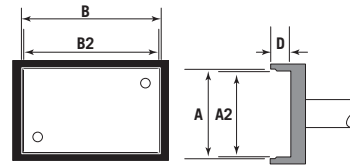
**QUAD TIP CARTRIDGES FOR PLCC**

SMT TYPE	A2	A	B2	B	D	Part No.
PLCC 18	.300 (7.62)	.330 (8.38)	.500 (12.70)	.530 (13.46)	.150 (3.81)	SMTC- <b>X</b> 11
PLCC 20	.360 (9.14)	.400 (10.16)	.360 (9.14)	.400 (10.16)	.150 (3.81)	SMTC- <b>X</b> 12
PLCC 28	.370 (9.40)	.410 (10.41)	.570 (14.48)	.610 (15.49)	.150 (3.81)	SMTC- <b>X</b> 103
PLCC 32	.450 (11.43)	.500 (12.70)	.550 (13.97)	.600 (15.24)	.150 (3.81)	SMTC- <b>X</b> 16
PLCC 28	.455 (11.56)	.500 (12.70)	.455 (11.58)	.500 (12.70)	.150 (3.81)	SMTC- <b>X</b> 13
PLCC 44	.660 (16.76)	.700 (17.78)	.660 (16.76)	.700 (17.78)	.150 (3.81)	SMTC- <b>X</b> 14
PLCC 68	.960 (24.38)	.995 (25.27)	.960 (24.38)	.995 (25.27)	.220 (5.59)	SMTC- <b>X</b> 18*
PLCC 68 dual*	.960 (24.38)	.995 (25.27)	.960 (24.38)	.995 (25.27)	.220 (5.59)	SMTC- <b>X</b> 28
PLCC 84 dual*	1.165 (29.59)	1.195 (30.35)	1.165 (29.59)	1.195 (30.35)	.220 (5.59)	SMTC- <b>X</b> 29
PLCC 52	.760 (19.30)	.800 (20.32)	.760 (19.30)	.800 (20.32)	.150 (3.81)	SMTC- <b>X</b> 17*
PLCC 84	1.165 (29.59)	1.195 (30.35)	1.165 (29.59)	1.195 (30.35)	.220 (5.59)	SMTC- <b>X</b> 19*

600 SERIES X=0 700 SERIES X=1 FOR ALL QUADS USE 700 SERIES TIP CARTRIDGES

\* =NOT AVAILABLE FOR 600 SERIES

**Please note:** •Dual tip cartridges require two power supply units and two hand-pieces. A Dual Hand-Piece Support (MX-DHS) is also recommended.

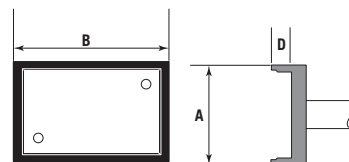


**QUAD TIP CARTRIDGES FOR QFP**

SMT TYPE	DIMENSIONS IN INCHES (mm)					Part No.
	A2	A	B	B2	D	
<b>SQFP 48 (EIAJ)</b>	.330 (8.38)	.330 (8.38)	.330 (8.38)	.330 (8.38)	.100 (2.54)	SMTC- <b>X</b> 121
<b>SQFP 64 (EIAJ)</b>	.440 (11.18)	.440 (11.18)	.440 (11.18)	.440 (11.18)	.100 (2.54)	SMTC- <b>X</b> 120
<b>TQFP 44</b>	.440 (11.18)	.480 (12.19)	.480 (12.19)	.520 (13.21)	.110 (2.79)	SMTC- <b>X</b> 159
<b>TQFP 80</b>	.485 (12.32)	.525 (13.34)	.485 (12.32)	.525 (13.34)	.110 (2.79)	SMTC- <b>X</b> 132
<b>QFP 48</b>	.550 (13.97)	.550 (13.97)	.550 (13.97)	.550 (13.97)	.130 (3.30)	SMTC- <b>X</b> 115
<b>VQFP 100 (EIAJ)</b>	.570 (14.48)	.610 (15.49)	.570 (14.48)	.610 (15.49)	.110 (2.79)	SMTC- <b>X</b> 118
<b>QFP 128 (3.2 mm fp)</b>	.620 (15.75)	.620 (15.75)	.860 (21.84)	.860 (21.84)	.130 (3.30)	SMTC- <b>X</b> 133
<b>QFP 44</b>	.635 (16.13)	.635 (16.13)	.635 (16.13)	.635 (16.13)	.130 (3.30)	SMTC- <b>X</b> 21
<b>QFP 100 (rectangular)</b>	.650 (16.51)	.650 (16.51)	.885 (22.48)	.885 (22.48)	.130 (3.30)	SMTC- <b>X</b> 43
<b>QFP 64, 80</b>	.675 (17.15)	.675 (17.15)	.910 (23.11)	.910 (23.11)	.130 (3.30)	SMTC- <b>X</b> 15
<b>QFP 100</b>	.805 (20.45)	.805 (20.45)	.805 (20.45)	.805 (20.45)	.190 (4.83)	SMTC- <b>X</b> 45*
<b>QFP 144</b>	.805 (20.45)	.840 (21.34)	.805 (20.45)	.840 (21.34)	.075 (1.91)	SMTC- <b>X</b> 122
<b>QFP 132</b>	.985 (25.02)	1.020 (25.91)	.985 (25.02)	1.020 (25.91)	.125 (3.18)	SMTC- <b>X</b> 86
<b>QFP 100 (square)</b>	1.040 (26.42)	1.040 (26.42)	1.040 (26.42)	1.040 (26.42)	.130 (3.30)	SMTC- <b>X</b> 44*
<b>QFP 208 DUAL •</b>	1.125 (28.58)	1.770 (44.96)	1.125 (28.58)	1.170 (44.96)	.114 (2.90)	SMTC- <b>X</b> 81
<b>QFP 120,160 DUAL •</b>	1.165 (29.59)	1.200 (30.48)	1.165 (29.59)	1.200 (30.48)	.120 (3.05)	SMTC- <b>X</b> 48
<b>PQFP 240 DUAL •</b>	1.290 (32.77)	1.330 (33.78)	1.290 (32.77)	1.330 (33.78)	.110 (2.79)	SMTC- <b>X</b> 125
<b>QFP 304 DUAL •</b>	1.600 (40.64)	1.650 (41.91)	1.650 (41.91)	1.600 (40.64)	.200 (5.08)	SMTC- <b>X</b> 158**

**600 SERIES X=0 700 SERIES X=1 FOR ALL QUADS USE 700 SERIES TIP CARTRIDGES**  
**\*= NOT RECOMMENDED FOR 600 SERIES \*\*= NOT AVAILABLE FOR 600 SERIES**

**Please Note: •Dual tip cartridges require two power supply units and two hand-pieces. A Dual Hand-Piece Support (MX-DHS) is also recommended.**



**SOCKET TIP CARTRIDGES (TIP INSIDE SOCKET)**

SMD COMPONENT	A	B	D	Part No.	Recommended
					Part No.
<b>PLCC-20 SOCKET</b>	.360 (9.14)	.360 (9.14)	.115 (2.91)	SMTC- <b>X</b> 144	SMTC-1144
<b>PLCC-32 SOCKET</b>	.456 (11.58)	.556 (14.12)	.120 (3.05)	SMTC- <b>X</b> 109	SMTC-1109
<b>PLCC-84 SOCKET DUAL •</b>	1.160 (40.64)	1.160 (40.64)	.115 (2.91)	SMTC- <b>X</b> 145	SMTC-1145

**600 SERIES X=0 700 SERIES X=1 FOR ALL QUADS USE 700 SERIES TIP CARTRIDGES**

**Please Note: •Dual tip cartridges require two power supply units and two hand-pieces. A Dual Hand-Piece Support (MX-DHS) is also recommended.**

# Speciality

## Speciality Tip Cartridges

MX Tips



### BLADE TIP CARTRIDGES

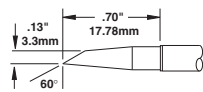
SMTC-X110**	SMTC-X62	SMTC-X61	SMTC-X60
Blade	Blade	Blade	Blade
Dual Heater Quad 1.55" (39.37mm)	0.870" (22.10mm) Long	0.620" (15.75mm) Long	0.410" (10.41mm) Long



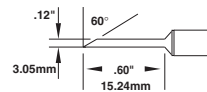
500 SERIES X=5    600 SERIES X=0    700 SERIES X=1    800 SERIES X=8

\*\*=NOT AVAILABLE FOR 500 OR 800 SERIES

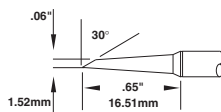
### HOOF AND KNIFE TIP CARTRIDGES FOR DRAG SOLDERING



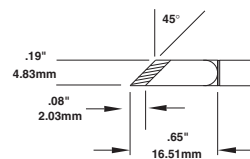
**SMTC-X147\***  
Hoof



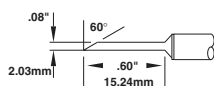
**SMTC-X170\***  
Long Reach Hoof



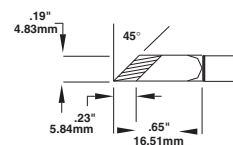
**SMTC-X167\*\***  
Mini-Hoof



**SMTC-X161\***  
Knife  
(Tinned Area, .08"  
2.03mm)



**SMTC-X169\*\***  
Long Reach Hoof

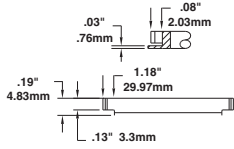


**SMTC-X173**  
Knife  
(Increased Tinned Area,  
.23" 5.84mm)

500 SERIES X=5    600 SERIES X=0    700 SERIES X=1    800 SERIES X=8

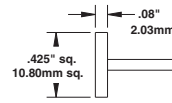
\*=NOT AVAILABLE FOR 800 SERIES    \*\*=NOT AVAILABLE FOR 500 OR 800 SERIES

## OTHER SPECIALITY TIP CARTRIDGES



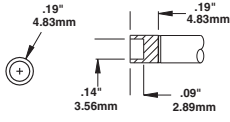
### SMTC-X98\*\*

SMT Connector  
28 Pin



### SMTC-X136\*\*

Hot Plate  
.425" sq. (10.8mm sq.)



### SMTC-X100

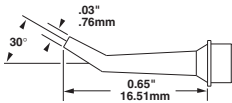
Micro XMT  
Small Package  
Co-Axial Tip

500 SERIES X=5    600 SERIES X=0    700 SERIES X=1    800 SERIES X=8

\*\*=NOT AVAILABLE FOR 500 OR 800 SERIES

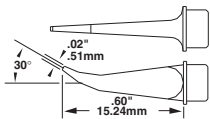
# Microfine Rework Tip Cartridges

The Microfine rework tip cartridge series is designed for reworking 0201 and 0402 or microfine components in tight spaces with the help of a microscope. This series includes tips that can be used to remove 0402 and 0201 components from the topside approach or can also be used for multi-lead drag soldering on micro PLCC and QFP components with access problems. Depending on your application, one of these tips will meet your micro component rework needs.



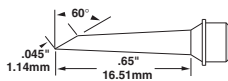
### SMTC-X171

Use to remove 0201 and 0402 components from a "topside" angle. This design increases microscope viewing when reworking/removing micro chip capacitors/components.



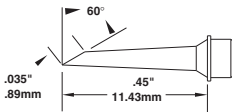
### SMTC-X172

Designed for fine drag soldering and point-to-point soldering. This tip increases access between components and allows for lead to lead or solder bridge clean-up.



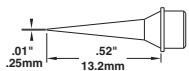
### SMTC-X174

Long reach micro hoof tip designed with a smaller surface area than the mini-hoof for optimal drag soldering of components in tight spots.



### SMTC-X175

Micro-hoof tip designed with a smaller surface area than the mini-hoof for drag soldering of small/micro leaded components.



### STTC-X90

Microfine tip designed for soldering and touch-up of micro components such as 0201s and 0402s.

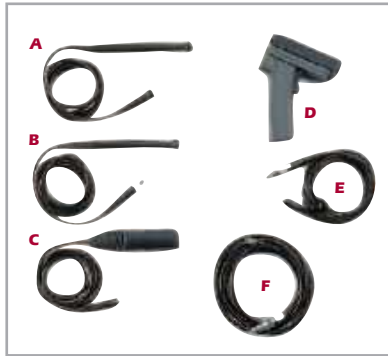
500 SERIES X=5    600 SERIES X=0    700 SERIES X=1    800 SERIES X=8

MX-Tips



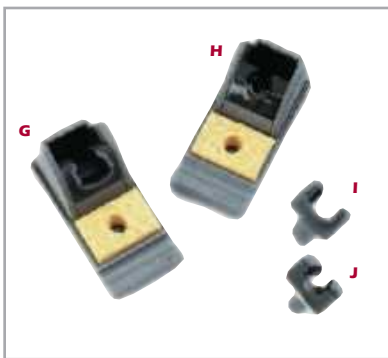
# MX-500

## Accessories & Spare Parts



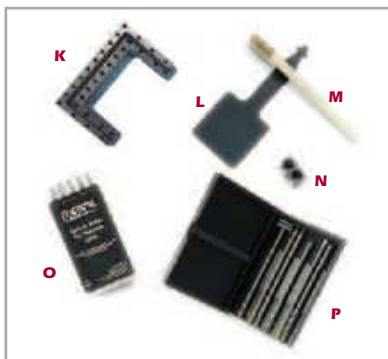
### HAND-PIECES AND CORDS

Part No.	Description
<b>A</b> <b>MX-RM3E</b>	ESD Solder Handle W/CP2 for MX-500 Systems
<b>B</b> <b>MX-RM6E</b>	ESD Long Reach Solder Handle W/CP2 for MX-500
<b>C</b> <b>MX-TALON</b>	Talon® Hand-Piece with Cord
<b>D</b> <b>MX-DS1</b>	Desolder Hand-Piece
<b>E</b> <b>MX-RM8E</b>	DS1 Desolder Cord
<b>F</b> <b>MX-DAH4</b>	ESD Air Hose, standard with fitting
<b>MX-RM5E</b>	Standard Robotic Cable, 1-piece, 6' (1.83m)**



### WORKSTAND ITEMS

<b>G</b> <b>MX-WS5</b>	DS1/Talon® Workstand with YS3 Sponge
<b>H</b> <b>MX-WS4</b>	MX Workstand with YS3 Sponge
<b>I</b> <b>MX-WSC5</b>	Talon® Cradle
<b>J</b> <b>MX-WSC4</b>	MX-RM3E / 6E Cradle
<b>AC-YS1-P</b>	WS1 Sponge (1.7" x 2.7" x 1.0") (Pack of 50)**
<b>AC-YS3-P</b>	MX, SP & DP Workstand Sponge (Pack of 50)**



### MISCELLANEOUS ACCESSORIES

<b>K</b> <b>AC-TSTAND</b>	Tip Stand
<b>L</b> <b>AC-CP2</b>	Cartridge Removal Pad
<b>M</b> <b>AC-BRUSH-P</b>	Soft Brass Brush Cleaner (Pack of 6)
<b>N</b> <b>MX-DHS</b>	Dual Handle Support (use with dual heater SMTCs)
<b>O</b> <b>STSS-TEMPLATE</b>	SMTC Tip Selection Template
<b>P</b> <b>AC-TCASE</b>	Tip Case for STTC/SSC (holds 10 tips)*
<b>MX-FX2</b>	Fume Extraction Tube and Clamp**

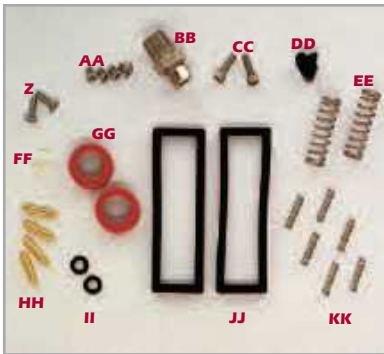
\* Tips not included \*\* Not shown



## DESOLDERING ACCESSORIES

<b>Q</b>	<b>MX-DCF1</b>	DS1 Filter Pack: 15 chamber liners, 6 fume filters
	<b>MX-DCF1L</b>	DS1 Chamber Liners (Pack of 40)**
	<b>MX-DCF1F</b>	DS1 Fume Filters (Pack of 20)**
<b>R</b>	<b>MX-DAR1</b>	Air Regulator and Filter with Fittings
<b>S</b>	<b>AC-TC-P</b>	Desolder Tip Cleaner (Pack of 12)
<b>T</b>	<b>AC-CB1-P</b>	Desolder Chamber Cleaning Brush (Pack of 25)
<b>U</b>	<b>AC-CB2-P</b>	Desolder Tube Cleaning Brush (Pack of 6)
<b>V</b>	<b>MX-DVC1</b>	Venturi Cartridge for Desolder Gun
<b>W</b>	<b>MX-DSL1</b>	DS1 Chamber Seal
<b>X</b>	<b>MX-DSL2</b>	DS1 Cartridge Seal
<b>Y</b>	<b>MX-DSB</b>	Desolder Gun Swivel Bushing
	<b>MX-DLA</b>	Desolder Gun Latch Adjustment (Pack of 10)*

\* Not shown



## DESOLDERING MAINTENANCE KIT

<b>MX-DMK1</b>	DS1 Maintenance Kit
----------------	---------------------

### INCLUDES

<b>Z</b>	Long Phillips Screws (Pack of 2)**
<b>AA</b>	Short Phillips Screws (Pack of 4)**
<b>BB</b>	<b>MX-DSB</b> Desolder Gun Swivel Bushing
<b>CC</b>	Hex Screws (Pack of 2)**
<b>DD</b>	<b>MX-DLA</b> Desolder Gun Latch Adjustment (Pack of 10)
<b>EE</b>	Large Springs (Pack of 2)**
<b>FF</b>	Nylon Screws (Pack of 2)**
<b>GG</b>	<b>MX-DSL2</b> DS1 Cartridge Seal (Pack of 2)
<b>HH</b>	Hinge Pins (Pack of 4)**
<b>II</b>	O-Rings (Pack of 2)**
<b>JJ</b>	<b>MX-DSL1</b> DS1 Chamber Seal (Pack of 2)
<b>KK</b>	Small Springs (Pack of 6)**
	<b>MX-DUC</b> DS1 Upper Chamber (Type II Desolder Tool only)*

\* Not shown \*\* Not sold separately



## OTHER SYSTEM COMPONENTS

### POWER SUPPLY AND POWER METER

<b>MX-500P-11</b>	Two Port 100/120 VAC Power Supply
<b>MX-500P-21</b>	Two Port 220/240 VAC Power Supply
<b>MX-NPM</b>	Net Power Meter



# SP200 Soldering System

## Economical Soldering System Cuts Costs, Not Corners

The SP200 Soldering System is the most cost-effective and easiest to use compact soldering system available today

For flawless soldering, technicians need only select the correct tip cartridge, insert it into the hand-piece and switch on. As the unit works at a lower temperature than a conventional iron and requires no calibration, operators always apply the correct level of thermal energy needed to produce solder joints of the highest quality without risking component or PCB damage.

In addition, the system's design is extremely reliable, with very few parts that ever need repairing, ensuring that the SP200 Soldering System is practically maintenance-free.

Metcal's SP200 Soldering System, for through-hole soldering and SMT touch-up, is designed to perfectly complement our MX-500 Soldering, Desoldering & Rework System.



### SP200 SOLDERING SYSTEM

System Includes Power Supply With Power Cord\*, Hand-Piece With Cord, Workstand With Sponge And Cartridge Removal Pad

Part No.	Description
<b>SP200-11</b>	115 VAC Soldering System
<b>SP200-21</b>	220/240 VAC Soldering System

### ACCESSORIES & SPARE PARTS

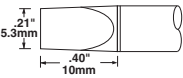
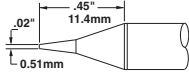
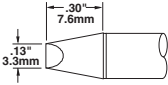
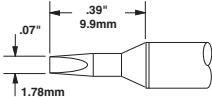
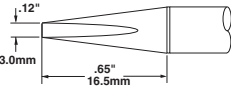
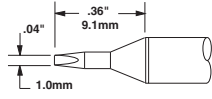
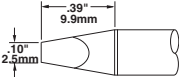
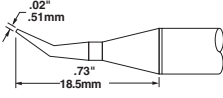
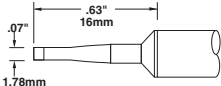
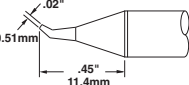
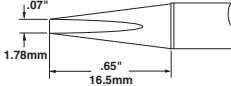
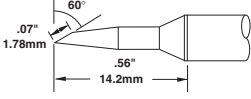
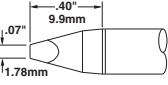
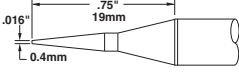
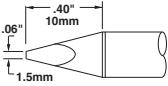
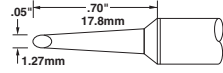
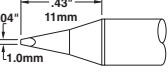
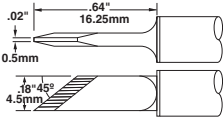
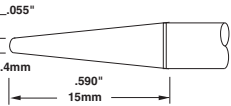
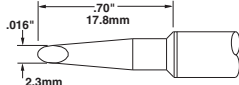
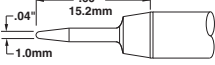
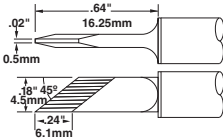
<b>SP-PW1-10</b>	Power Supply 115 VAC with Power Cord
<b>SP-PW1-20</b>	Power Supply 220/240 VAC with Power Cord
<b>AC-CP2</b>	Cartridge Removal Pad
<b>AC-YS3-P</b>	Workstand Sponge (Pack of 50)
<b>AC-BRUSH-P</b>	Soft Brass Brush Cleaner (Pack of 6)
<b>AC-TCASE</b>	Tip Case (holds 10 tips)*
<b>AC-TSTAND</b>	Tip Stand
<b>SP-HC1</b>	ESD Solder Handle W/CP2 for SP200 Systems
<b>SP-OR</b>	O-Ring Replacement Kit
<b>SP-WSK1</b>	SP Workstand with YS3 Sponge
<b>SP-CRADLE</b>	Universal Cradle

\*Tips not included

# Tip Cartridges For Soldering Applications

The SP200 Soldering System's tip cartridges are designed to suit a wide range of soldering applications. For optimum performance, operators should select the tip that allows maximum contact with the work surface. We suggest that you start with a 600 series tip cartridge.

## SP200 SOLDER TIP CARTRIDGES

	<b>SSC-X17A</b> Extra Large Chisel .21" (5.3mm)		<b>SSC-X22A</b> Conical Sharp .02" (0.51mm)
	<b>SSC-X13A</b> Chisel 90° .13" (3.3mm)		<b>SSC-X72A</b> Conical Chisel .07" (1.78mm)
	<b>SSC-X46A</b> Long Reach Chisel .12" (3.0mm)		<b>SSC-X71A</b> Conical Chisel .04" (1.0mm)
	<b>SSC-X36A</b> Chisel 30° .10" (2.5mm)		<b>SSC-X54A*</b> Sharp Bent 30° .02" (0.51mm)
	<b>SSC-X42A</b> Long Reach Chisel 60° .07" (1.78mm)		<b>SSC-X26A</b> Sharp Bent 30° .02" (0.51mm)
	<b>SSC-X70A</b> Long Chisel .07" (1.78mm)		<b>SSC-X47A</b> Bevel 60° .07" (1.78mm)
	<b>SSC-X37A</b> Chisel 30° .07" (1.78mm)		<b>SSC-X45A</b> Bevel 60° .016" (0.4mm)
	<b>SSC-X38A</b> Chisel 30° .06" (1.5mm)		<b>SSC-X67A</b> Drag Soldering Tip (Mini-Hoof)
	<b>SSC-X25A</b> Chisel 30° .04" (1.0mm)		<b>SSC-X61A</b> Drag Soldering Tip (Knife)
	<b>SSC-X74A</b> Conical Sharp .055" (1.4mm)		<b>SSC-X39A</b> Drag Soldering Tip (Hoof)
	<b>SSC-X01A</b> Conical Sharp .04" (1.0mm)		<b>SSC-X73A</b> Drag Soldering Tip (Increased Tinned Area, .24" 6.1mm)

500 SERIES X=5    600 SERIES X=6    700 SERIES X=7

\* = NOT AVAILABLE FOR 500 SERIES

SP200



# Lead Free Upgrades

Lead Free



To help you convert your current lines to lead-free, we have released a range of product enhancements for your existing MX-500 and SP200 Soldering Systems as you make the transition to lead-free soldering.

## Workstand Upgrade and Identification Kits

The new Auto-sleep Workstands help increase tip life by allowing the tip cartridge to idle at a lower temperature, thereby reducing oxidation. The Auto-sleep Workstands are also available with green tip cradle inserts to easily identify lead-free stations. In addition, green bands that clip onto tip cartridges, identifying them as being used for lead-free processes, are available.

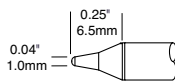


Part No.	Description
<b>PS-WSAS</b>	Auto-sleep Workstand for SP200 Soldering Systems
<b>PS-WSAS-G</b>	Auto-sleep Workstand for SP200 Soldering Systems with Green Cradle
<b>MFR-WSAS</b>	Auto-sleep Workstand for MX-500 s Soldering Systems
<b>MFR-WSAS-G</b>	Auto-sleep Workstand for MX-500 Soldering Systems with Green Cradle
<b>AC-CK2</b>	Green Cartridge Identification Rings for STTC Cartridges (Pack 50)
<b>AC-CK3</b>	Green Cartridge Identification Rings for SSC Cartridges (Pack 50)

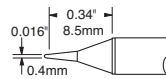
## Power Tip Enhancements

All SSC Tip Cartridges, for the SP200 Soldering System, have been upgraded with a new, high power coil assembly that delivers additional power to demanding solder joints, without the need to increase temperature (see page 19).

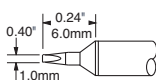
Additionally, a new range of STTC Tips for the MX-500 Series with optimized tip geometries has been developed. These tips are specially designed to deliver heat more efficiently for common hand soldering applications. The new STTC Tips are listed below



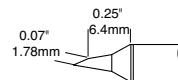
**STTC-101P**  
Conical Sharp  
.04" (1mm)



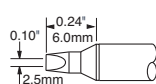
**STTC-145P**  
Conical  
.016" (0.4mm)



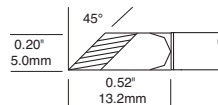
**STTC-125P**  
Chisel 30°  
.04" (1mm)



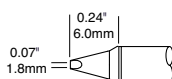
**STTC-147P**  
Bevel 60°  
.07" (1.78mm)



**STTC-136P**  
Chisel 30°  
.10" (2.5mm)



**STTC-1173P**  
Knife  
.22" (5.0mm)



**STTC-137P**  
Chisel 30°  
.07" (1.8mm)

**NOTE THAT THESE NEW TIPS ARE ONLY AVAILABLE WITH THE 700 SERIES HEATER.**

# QX2 Convection Rework System

QX2

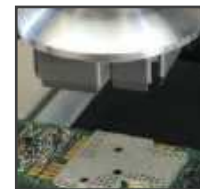


## Convection Rework Made Easy

The QX2 Convection Rework System combines sophisticated process control and wide-ranging capabilities with a user-friendly, ergonomic design to speed and simplify the rework process. With its constant temperature and variable power, the QX2 Convection Rework System minimizes the risk of thermal damage, providing a safe environment for delicate components and substrates.

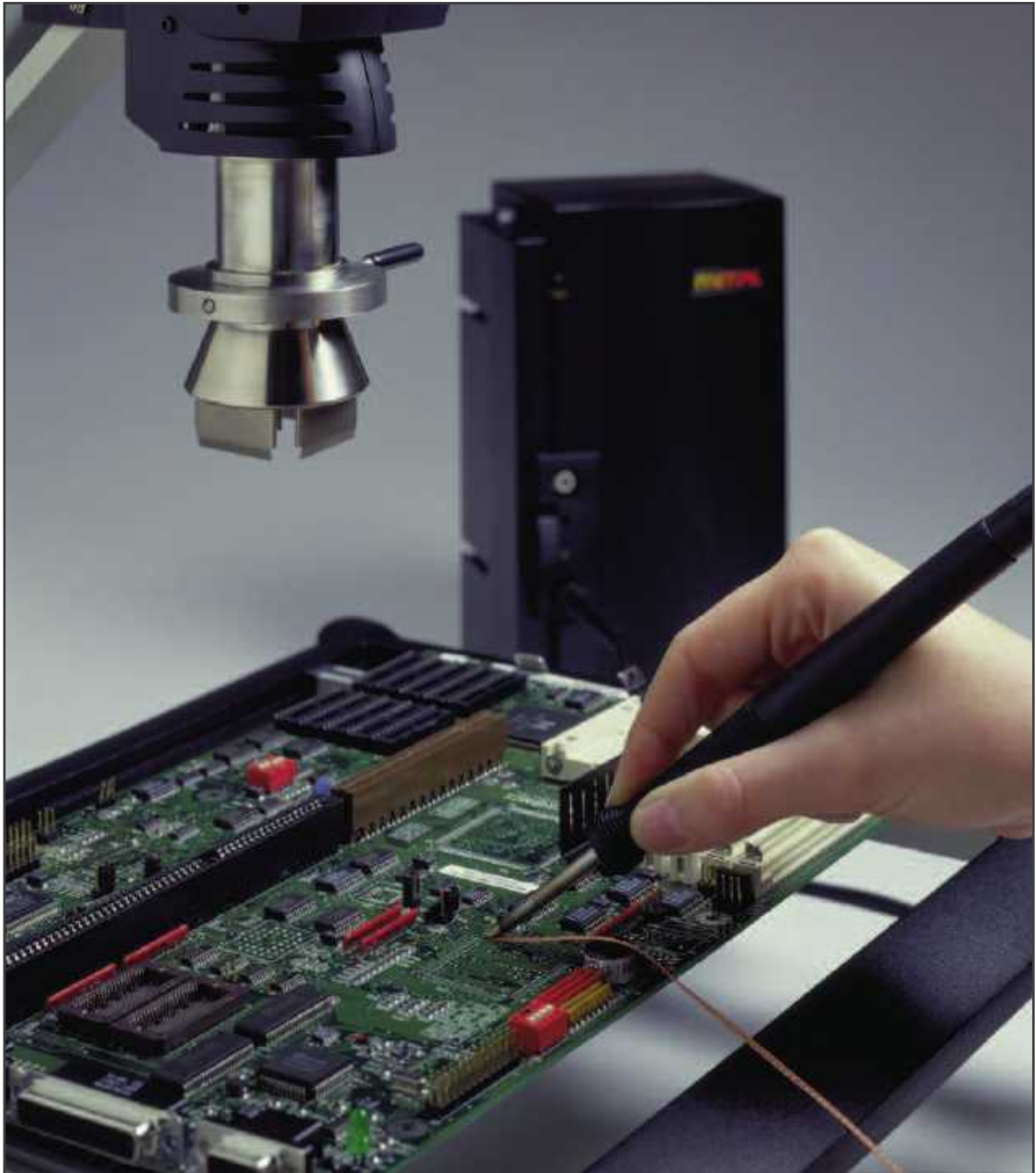
In comparison with other convection systems, the simplicity and power of this machine is clear. Simplified push-button controls and advanced automation reduce the need for extended operator training while greatly reducing the likelihood of human error. Older convection systems are difficult to operate and require extensive user training. This is not the case with the QX2 Convection Rework System. Even its initial set-up is a fast and easy process, requiring no special tools.

**Please note:** The QX2 Convection Rework System is shown below alongside a Metcal BVX-100 Fume Extraction System which is available separately



## Precise Nozzles Increase Flexibility

A wide range of focused convection nozzles is available for the QX2 Convection Rework System. These direct heat precisely where it is needed. With Metcal's quick-release system, these nozzles can be changed in seconds, for unsurpassed speed and flexibility



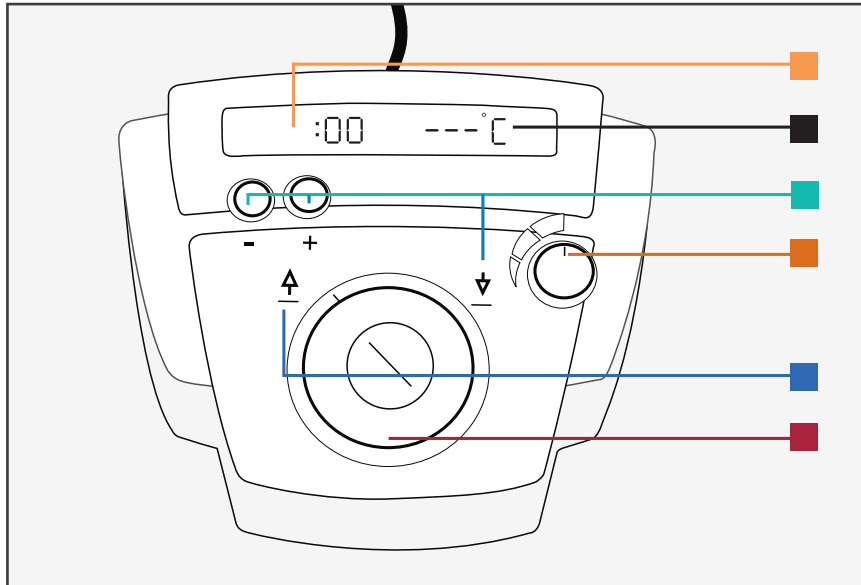
## Streamlined Operation

The QX2 Convection Rework System's vacuum pick-up gently removes components after reflow. The time of each removal cycle is stored and displayed as a guide to help operators quickly establish a minimum time for component placement. The system then automatically turns off the heat to minimise the risk of thermal shock to adjacent components or to the PCB itself. An integrated under-board pre-heater is also available to prevent the warping of large boards during rework.

Operators can fine-tune the power by adjusting the airflow rate, but to minimise thermal stress, the system automatically sustains the heater exhaust temperature while maintaining a consistently low set point temperature. To accommodate any process change, including the use of new soldering alloys, the manufacturing engineer can easily reprogram this set temperature.

## Advanced Process Control

The system's digital controller clearly displays critical parameters during operation while its automated functions reduce process variability. Its expanded level of process control provides superior quality of operation and final product, with less scrap and greater throughput.



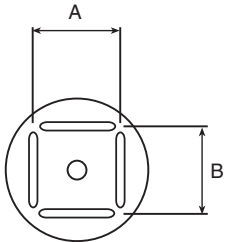
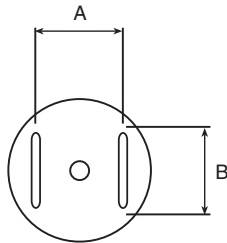
### Remote Controller Functions

- Timer:** By counting up during removal and down during attachment, the timer removes subjective guesswork from the rework process.
- Temperature Display:** Displays the temperature of the heater exhaust or the temperature measured by an auxiliary thermocouple in either °F or °C. The heater exhaust temperature is preset at 662°F (350°C) and may be reset by the process engineer to anywhere between 482°F (250°C) and 842°F (450°C) by entering an unlock code.
- Attach Mode:** This mode reflows a new component to the PCB. By adjusting the time stored in Remove mode with the + - keys, you can ensure an appropriate reflow time, which may be adjusted on the fly if desired.
- Airflow Selector:** The airflow selector determines the rate at which thermal energy is transferred to the component.
- Remove Mode:** This mode activates the vacuum pick-up, which applies a gentle upward force to the component. When component lift off is sensed, the heater is automatically turned off.
- Start/Stop Button:** Pressing the Start/Stop button initiates or ends the Remove or Attach cycle. In Remove mode, stopping the cycle also shuts off the vacuum, to release components after lift off.



## OX2 Convection Rework Nozzles

Metcal has a comprehensive range of nozzles for the OX2 Convection Rework System. For non-standard components we offer a custom nozzle program. Please contact your local Metcal representative for more information about custom nozzles.



### STANDARD NOZZLE RANGE

DIMENSIONS IN INCHES (mm)

Part No.	Component Types	A	B
<b>NZ-D1113</b>	Nozzle Dual	0.43 (11)	0.51 (13)
<b>NZ-D1116</b>	Nozzle Dual (for SOL 28)	0.43 (11)	0.63 (16)
<b>NZ-D1420</b>	Nozzle Dual	0.55 (14)	0.79 (20)
<b>NZ-D2109</b>	Nozzle Dual	0.83 (21)	0.35 (09)
<b>NZ-D2113</b>	Nozzle Dual	0.83 (21)	0.51 (13)
<b>NZ-Q11</b>	Nozzle Quad (for PLCC 20)	0.43 (11)	0.43 (11)
<b>NZ-Q13</b>	Nozzle Quad (for PLCC 28)	0.51 (13)	0.51 (13)
<b>NZ-Q1415</b>	Nozzle Quad	0.55 (14)	0.60 (15)
<b>NZ-Q17</b>	Nozzle Quad	0.67 (17)	0.67 (17)
<b>NZ-Q18</b>	Nozzle Quad (for QFP 80)	0.71 (18)	0.71 (18)
<b>NZ-Q19</b>	Nozzle Quad (for PLCC 44)	0.75 (19)	0.75 (19)
<b>NZ-Q1925</b>	Nozzle Quad (for QFP 100)	0.75 (19)	0.98 (25)
<b>NZ-Q22</b>	Nozzle Quad	0.87 (22)	0.87 (22)
<b>NZ-Q23</b>	Nozzle Quad	0.91 (23)	0.91 (23)
<b>NZ-Q27</b>	Nozzle Quad (for PLCC 68)	1.06 (27)	1.06 (27)
<b>NZ-Q28</b>	Nozzle Quad	1.10 (28)	1.10 (28)
<b>NZ-Q32</b>	Nozzle Quad (for PLCC 84, QFP 208)	1.26 (32)	1.26 (32)
<b>NZ-Q33</b>	Nozzle Quad (for QFP 120/128/144/160)	1.30 (33)	1.30 (33)
<b>NZ-Q35</b>	Nozzle Quad	1.38 (35)	1.38 (35)
<b>NZ-Q38</b>	Nozzle Quad	1.50 (38)	1.50 (38)
<b>NZ-Q43</b>	Nozzle Quad	1.70 (43)	1.70 (43)

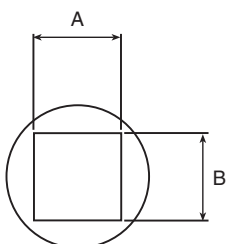
## Box Reflow Nozzles

In addition to our broad range of standard nozzles, we also offer a range of box reflow nozzles designed for the removal of shielding cans, connectors and other square components.



### BOX REFLOW NOZZLES

INTERNAL DIMENSIONS IN INCHES (mm)



Part No.	Component Types	A	B
<b>NZ-B23</b>	Nozzle Box	0.91 (23)	0.91 (23)
<b>NZ-B27</b>	Nozzle Box	1.06 (27)	1.06 (27)
<b>NZ-B33</b>	Nozzle Box	1.30 (33)	1.30 (33)
<b>NZ-B35</b>	Nozzle Box	1.38 (35)	1.38 (35)
<b>NZ-B40</b>	Nozzle Box	1.57 (40)	1.57 (40)
<b>NZ-B44</b>	Nozzle Box	1.73 (44)	1.73 (44)

# QX2 Convection Rework System

## TECHNICAL SPECIFICATIONS

	QX2-S-11	QX2-S-21
<b>Input Voltage</b>	90-132 VAC, 50/60 Hz	220-260 VAC, 50/60 Hz
<b>Convection System</b>		
<b>Heater</b>	550 W	550 W
<b>Rated Current</b>	5 Amps	2.5 Amps
<b>Airflow</b>	20-50 l/min	20-50 l/min
<b>Source Temperature (Default Set Point)</b>	662°F	350°C
<b>Source Temperature Range</b>	482°F - 842°F	250°C - 450°C
<b>Pre-Heater</b>		
<b>Heater</b>	950 W	950 W
<b>Rated Current</b>	8.5 Amps	4.5 Amps
<b>Heating Surface</b>	6" x 6"	152mm x 152mm
<b>Board Temperature Range</b>	194°F - 248°F	90°C - 120°C
<b>Board Holder</b>		
<b>Minimum Board Size</b>	2" x 2"	50mm x 50mm
<b>Maximum Board Size</b>	14" x 18"	360mm x 460mm
<b>Weights</b>		
<b>Convection Rework System</b>	18 lb	8.2 kg
<b>Board Holder</b>	5.5 lb	2.5 kg
<b>Pre-Heater</b>	6.4 lb	2.9 kg
<b>Outer Dimensions (W x D x H)</b>		
<b>Convection Rework System</b>		
<b>(Operating)</b>	11.5" x 20.5" x 14.2"	292mm x 521mm x 361mm
<b>(Stored)</b>	11.5" x 16.8" x 21.0"	292mm x 427mm x 533mm
<b>Board Holder</b>	20.5" x 15.0" x 5.0"	521mm x 381mm x 127mm
<b>Pre-Heater</b>	8.2" x 15.5" x 2.5"	208mm x 394mm x 64mm

## FEATURES

<b>Vacuum Operator</b>	Self-contained Moveable controller with: <ul style="list-style-type: none"> <li>• Start/Stop button</li> <li>• Airflow control</li> <li>• Time control</li> <li>• LCD display</li> <li>• Remove/attach control</li> </ul>
<b>Component Removal</b>	Automatic component lift off and heater shut off
<b>Component Attachment</b>	Manual, timer controlled
<b>Nozzle Attachment/Removal</b>	Push on, quick-release
<b>Other</b>	Auxiliary thermocouple port for component temperature monitoring

## SYSTEMS

**QX2-S-11**  
115V Convection Rework System

**QX2-SBH-11**  
115V Convection Rework System with Board Holder

**QX2-SBP-11**  
115V Convection Rework System with Board Holder & Pre-Heater

**QX2-S-21**  
230V Convection Rework System

**QX2-SBH-21**  
230V Convection Rework System with Board Holder

**QX2-SBP-21**  
230V Convection Rework System with Board Holder & Pre-Heater

### 115V CONVECTION REWORK SYSTEM INCLUDES:

<b>QX2-P-11</b>	Power Supply, 115V
<b>QX2-CT</b>	QX2 Controller
<b>AC-WT</b>	Work Tray
<b>AC-RP</b>	Nozzle Removal Pad
<b>AC-CC1</b>	QX2 Controller Cable
<b>AC-CC2</b>	Pre-Heater Control Cable
<b>AC-VC</b>	Vacuum Cup Kit

### 230V CONVECTION REWORK SYSTEM INCLUDES:

<b>QX2-P-21</b>	Power Supply 230V
<b>QX2-CT</b>	QX2 Controller
<b>AC-WT</b>	Work Tray
<b>AC-RP</b>	Nozzle Removal Pad
<b>AC-CC1</b>	QX2 Controller Cable
<b>AC-CC2</b>	Pre-Heater Control Cable
<b>AC-VC</b>	Vacuum Cup Kit

## ACCESSORIES

<b>AC-BH</b>	Board Holder
<b>AC-BP-11</b>	Board Holder/Pre-Heater Kit 115V
<b>AC-BP-21</b>	Board Holder/Pre-Heater Kit 230V
<b>AC-PH-11</b>	Pre-Heater 115V
<b>AC-PH-21</b>	Pre-Heater 230V
<b>AC-BS</b>	Board Support

QX2





[www.okinternational.com/soldering](http://www.okinternational.com/soldering)



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