SMTC SMT rework tip cartridges for MX systems

Choosing the correct tip cartridge for surface mount removal
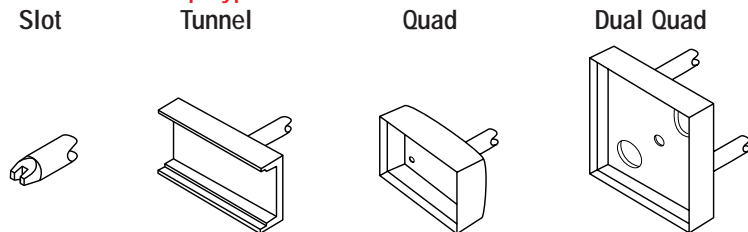

Choosing the correct tip geometry

First, measure the dimensions of your component. Then, using the charts which follow, look up your component description, and match it to the dimensions listed (sometimes components with the same description can have different dimensions). If this doesn't work, try looking up the dimensions of other types of components; one of them may work.

The tip you choose must match your component. A "near fit" is not good enough for most applications. The leads must be contacted on all sides to ensure even performance.

SMT Removal Tip Types

Slot	Tunnel	Quad	Dual Quad

Please note that dual cartridges require 2 power supplies and 2 handpieces. A dual handle support (DHS) is also recommended.

Free Tip Picker Program

Metcal makes available, free of charge, a "Tip Picker" program, to be used with the Microsoft® Excel® spreadsheet program. This is the easiest way yet to get the right tip. Contact Metcal or your local Metcal representative for a copy. You can also download a copy from www.metcal.com.

Tip Template Guide

Many customers have said that trying to measure their components and match them up to a chart can be difficult. That's why Metcal developed the SMTC Tip Template Guide. The SMTC Tip Template is a series of ESD-safe, clear plastic templates in an easy-to-use book. Look up what type of component you have, and turn to one of our templates. Lay the template over the component, and, if it fits and has the correct lead count, you've found your tip. There's also an outline of each tip at the edge of the template, so you can turn the template and "try out" the tip on the component. Contact your local Metcal Distributor or Representative to order.

Choose the proper Series

Each Metcal cartridge is specially designed to deliver high power in response to loads. For this reason, you can often rework with a Metcal cartridge at a temperature 100°F or more below that of a conventional iron. In the tip listing which follows, the recommended Series is included in its own column. If you think you need a different series than recommended, call your Metcal Distributor or Representative.

Soldering QFP's, PLCC's, or other multi-leaded packages?

Let one of Metcal's Multi-lead Soldering tip cartridges or one of Metcal's blade tips do the work for you! It's faster than laboriously soldering point to point. And safer than drag soldering with a bent hook tip, which can abrade leads and shorten tip life.

In addition, you can use Metcal's blade tips to clean up pads or solder components using either wire solder or solder paste. Call Metcal or your local Metcal Representative or Distributor for a copy of our Technical Note or for a demonstration.

Need a custom tip cartridge?

If you have a component that needs a tip cartridge not listed in this brochure, call your local Metcal Representative or Distributor. We may have introduced a new tip cartridge between printings. In addition, Metcal has a custom tip program. Call for details.
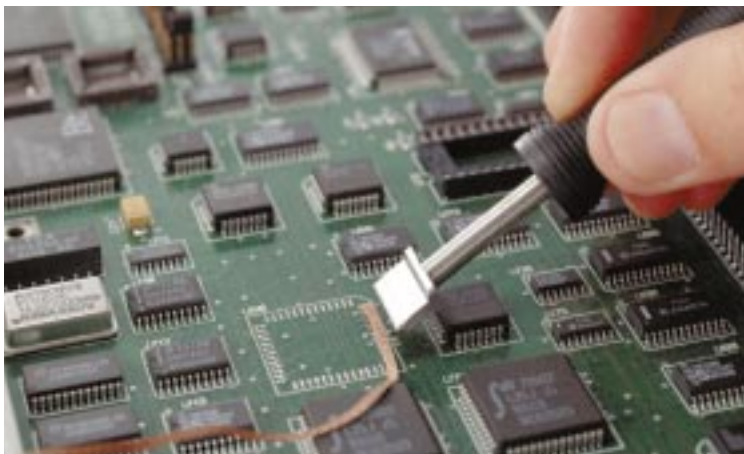
Please note:

SMTC surface mount rework cartridges are for use with MX-RM3E soldering/rework handpieces for STSS/MX Systems only. They cannot be used with SP Systems, Talon handpieces, or desolder handpieces.

SMTC specialty tip cartridges for MX systems

Pad clean-up

Metcal's blade tip cartridges may be used with desolder braid to clean up the pads for both two and four-sided components regardless of the lead configuration or pitch.

For proper wicking, always use the tip by working with the grain of the pad. Never use a blade to wick by dragging it down the row of pads. The heat combined with the abrasive action may cause the epoxy holding the land to the board to lift the pad.

Choose the size of blade tip that best fits the row of pads. For optimum heat delivery, use the recommended part number below to order.

Dimension in inches		Recommended Part Number
0.410	Long	SMTC-060
0.620	Long	SMTC-061
0.830	Long	SMTC-062
1.550	Long Dual	SMTC-1110

Please note that dual cartridges require 2 power supplies and 2 handpieces. A dual handle support (DHS) is also recommended.

Other special tip cartridges

Hot Plate (.425in. sq.)	SMTC-x136
28-Pin SMT Connector	SMTC-x98

Multi-lead speed soldering

Metcal makes special tip cartridges for replacing most component configurations, gull-wing and J-lead, regardless of the number of leads or the lead pitch. We call these multi-lead speed soldering tip cartridges.

For components on boards where access is not a problem, we recommend our SMTC-x147 "hoof" tip cartridge. (This tip cartridge is shaped like a horse's hoof) This tip is designed specifically for "drag soldering" techniques. The face holds just the right amount of solder, and the SMTC-x147 has extra plating where necessary to prevent the failures so commonly seen when using a bent hook to drag solder. Once you have practiced a bit, you will find it is the easiest and fastest way to solder surface mount components.

The "knife" tip (SMTC-x161) is designed for multi-lead soldering of PLCC's in tight spaces. The "mini-hoof" (SMTC-x167) is designed for soldering of either PLCC's or QFP's in tight spaces.

See your local Metcal distributor or representative for a demonstration of these easy techniques.

Style	Recommended Part Number
Hoof	SMTC-x147
Mini-Hoof	SMTC-x167

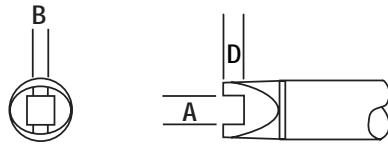|	
Knife	SMTC-x161

Please note:
x = 5 for 500 Series; x = 0 for 600 Series; x = 1 for 700 Series.

Note

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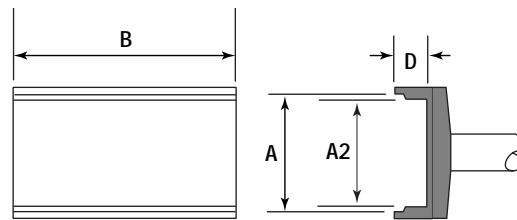
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Slot Tip Cartridges

SMD Component	Dimensions in inches			Part Number	Recommended Series	Recommended Part Number
	A: Width	B: Length	D: Depth			
Chip 0402, 0603	.070	.040	.035	SMTC-x96	500	SMTC-596
Chip 0402, 0603,0805(angle)	.080	.050	.060	SMTC-x88	500	SMTC-588
Chip 0805	.090	.050	.070	SMTC-x01	500	SMTC-501
Chip 1206, 1210	.140	.060	.070	SMTC-x02	500	SMTC-502
Chip 1808, 1812	.190	.080	.075	SMTC-x03	500	SMTC-503
Chip, Case A (EIA SOPM-3224)	.135	.080	.120	SMTC-x35	500	SMTC-535
Chip, Case B (EIA SOPM-3528)	.150	.095	.100	SMTC-x32	500	SMTC-532
Inductor, Case B (EIA SOPM-4532)	.190	.110	.160	SMTC-x36	500	SMTC-536
Chip, Case C (EIA SOPM-6032)	.250	.095	.130	SMTC-x33	600	SMTC-033
Chip, Case D (EIA SOPM-7243)	.300	.100	.140	SMTC-x34	600	SMTC-034
Chip, Case E	.330	.180	.225	SMTC-x41	600	SMTC-041
SOT-23	.068	.100	.050	SMTC-x05	500	SMTC-505
SOT-89	.110	.250	.080	SMTC-x08	500	SMTC-508

Tunnel Tip Cartridges

SMD Component	Dimensions in inches				Part Number	Recommended Series	Recommended Part Number
	A2: Width	A: Width	B: Length	D: Depth			
Chip MNR32	.095	.130	.110	.062	SMTC-x149	600	SMTC-0149
DPAK	.335	.335	.250	.200	SMTC-x47	600	SMTC-047
SO-8	.320	.380	.750	.240	SMTC-x107	600	SMTC-0107
SO-16	.330	.330	.475	.230	SMTC-x46	600	SMTC-046
SO-8	.335	.335	.665	.250	SMTC-x68	600	SMTC-068
SOIC-8	.200	.200	.170	.090	SMTC-x04	600	SMTC-004
SOIC-14,-16	.200	.200	.400	.090	SMTC-x06	600	SMTC-006
SOIC-14	.204	.204	.350	.100	SMTC-x142	600	SMTC-0142
SOIC-24(mini flat pack)	.280	.280	.620	.125	SMTC-x77	600	SMTC-077
SOIC-16 (large)	.320	.320	.470	.270	SMTC-x124	600	SMTC-0124
SOIC-20	.375	.375	.520	.125	SMTC-x10	600	SMTC-010
SOIC-24	.375	.375	.620	.125	SMTC-x09	600	SMTC-009
SOIC-28, SOL-34	.375	.375	.720	.125	SMTC-x07	600	SMTC-007
SOIC-32	.520	.520	.805	.170	SMTC-x42	600	SMTC-042
SOJ-28, SOM-36	.315	.340	.740	.074	SMTC-x26	600	SMTC-026
SOJ-32, 34	.315	.340	.840	.125	SMTC-x140	600	SMTC-0140
SOJ-40, SOM-32	.410	.450	1.020	.075	SMTC-x40	600	SMTC-040
SOJ-42	.410	.450	1.070	.125	SMTC-x148	600	SMTC-0148
SOMC-14,-16, DB-20	.270	.270	.440	.090	SMTC-x20	600	SMTC-020
SOP-20	.270	.270	.285	.100	SMTC-x138	600	SMTC-0138
SOP-28	.420	.420	.720	.125	SMTC-x39	700	SMTC-139
SOP-40	.460	.510	1.000	.125	SMTC-x134	700	SMTC-1134
SOP-44	.510	.565	1.070	.105	SMTC-x83	700	SMTC-183
TSOP-28	.470	.505	.320	.065	SMTC-x95	600	SMTC-095
TSOP-40	.730	.760	.400	.120	SMTC-x154	600	SMTC-0154
TSOP-56	.730	.760	.556	.120	SMTC-x162	600	SMTC-0162