

# SP440 SELF-CONTAINED DESOLDERING SYSTEM

## SP440 SELF-CONTAINED DESOLDERING SYSTEM

The Metcal® SP440 Self-Contained Desoldering System is designed for production level through-hole rework applications. With 50 Watts of power and tips specially designed to maximise heat transfer, the SP440 is ideal for heavy load desoldering of components on heavy ground plane and multilayer PCBs. The SP440 delivers superior Metcal performance at a price competitive with lesser tools.

Using Metcal's patented SmartHeat technology, the SP440 delivers higher watt density power at lower temperatures than conventional desoldering tools, with no overshoot. This minimises the risk of thermal damage during rework.

The whisper quiet, self-contained vacuum pump delivers a powerful vacuum capable of clearing through-holes quickly and completely. As the vacuum system is built into the unit, the SP440 is portable and ideal for areas lacking shop air.

The lightweight, ergonomic pencil grip desolder tool is designed to maximise operator control and comfort while reducing fatigue during rework. The cable and vacuum tubing are burn proof, and the solder collection chamber has been designed for easy cleaning - no glass tubes!



The SP440 Self-Contained Desoldering System includes a 50 Watt power supply with self-contained vacuum, desolder tool and workstand. The SP440 has an automatic Time-Out feature to extend tip life. A variety of desolder tips are sold separately.

# SDC DESOLDERING CARTRIDGES

## CHOOSING THE CORRECT DESOLDER CARTRIDGE

Proper tip cartridge selection is important for getting the best results. Choosing the right tip cartridge will maximise your performance at the lowest possible temperature. Since changing tip cartridges is so quick and easy, there is no need to compromise.

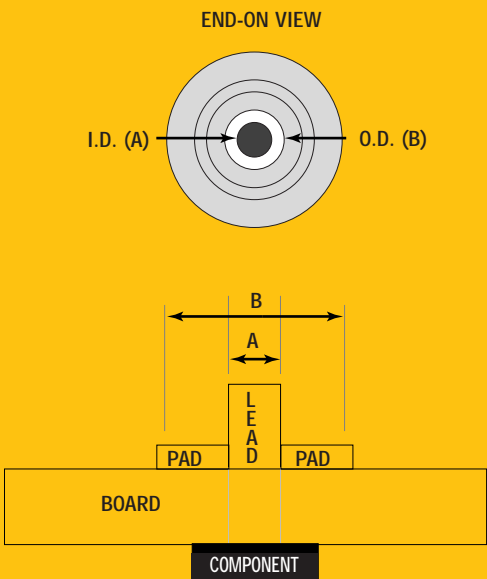
## CHOOSING THE CORRECT GEOMETRY

Select a tip with an inside diameter larger than the lead diameter. Select a tip with an outside diameter that is approximately the same size as the pad.



## CHOOSING THE CORRECT TEMPERATURE (SERIES)

The SP440 features high durability SDC desolder cartridges, designed for high heat transfer, making desoldering on multi-layer boards much easier. Desolder cartridges are available in two temperature ranges (600 and 700 Series). A typical board usually requires a 700 Series tip. Try a 600 Series tip first for thermally sensitive components or small single-sided boards.



## ACCESSORIES

- DP-VP2 Vacuum pump for SP440-21
- DP-DSG2 Desolder Tool assembly, pencil grip
- DP-CA2 Coil assembly
- DP-CC Solder Collection chamber
- DP-FIL Filter Pack
- DP-SL3 Front seal for DP-DSG2
- DP-VB1 Valve body assembly
- DP-VL1 Vacuum line, ESD
- DP-WSC2 Desolder cradle for DP-WSK2
- DP-WSK2 Desolder workstand and with YS3
- AC-CP2 Cartridge removal pad
- AC-YS3 Sponge for DP-WSK2

Inside Diameter (A)	Outside Diameter (B)	PART NUMBER	
		600 Series	700 Series
0.6mm	1.4mm	SDC-602	SDC-702
0.8mm	1.5mm	SDC-603	SDC-703
1.0mm	1.8mm	SDC-604	SDC-704
1.3mm	2.0mm	SDC-605	SDC-705
1.5mm	2.3mm	SDC-606	SDC-706
2.4mm	3.2mm	SDC-607	SDC-707

# PRODUCT SPECIFICATIONS AND WARRANTIES

## POWER SUPPLY

TIP-TO-GROUND POTENTIAL	< 2 mV, true RMS, 50-500 Hz
TIP-TO-GROUND RESISTANCE	< 2 ohms, DC, unit on
IDLE TEMPERATURE STABILITY	± 1.1°C (±2°F), still air
AMBIENT OPERATING TEMP	10 - 40°C (50 - 104°F)
MAX ENCLOSURE TEMP	65°C (150°F)
INPUT LINE VOLTAGE	
SP440-11	108-132 VAC
SP440-12	85-110 VAC
SP440-21	216-264 VAC
INPUT LINE FREQUENCY	45 - 70 Hz
NOMINAL OUTPUT	50 W @ 22°C (72°F) ambient
OUTPUT FREQUENCY	470 KHz
TIME OUT FEATURE	After 25-30 mins idle time
POWER CORD (3-WIRE)	183 cm - 18/3 SJT

## MX POWER SUPPLY

TIP-TO-GROUND POTENTIAL	< 2 mV, true RMS, 50-500 Hz
TIP-TO-GROUND RESISTANCE	< 2 ohms, DC, unit on
IDLE TEMPERATURE STABILITY	± 2°F (± 1.1°C), still air
AMBIENT OPERATING TEMP	50 - 104°F (10 - 40 °C)
MAX ENCLOSURE TEMP	150°F (65 °F)
THERMAL SWITCH	Setpoint at 150 ± 3°F (66± 1.2°C) Auto-reset once cooled to 110°F (43°C)
INPUT LINE VOLTAGE	
MX-500P-11	190-130 VAC
MX-500P-21	190-260 VAC
INPUT LINE FREQUENCY	
MX-500P-11	45-70 Hz
MX-500P-21	50-60 Hz
OUTPUT POWER	40 Watts maximum @ 72°F (22°C) ambient
OUTPUT FREQUENCY	13.56 MHz
AUTO-OFF FEATURE	10 millisecond lag time
TIME OUT FEATURE	After 25-30 minutes idle time
U.S. POWER CORD (3-WIRE)	6 ft (183 cm) - 18/3 SJT
LENGTH X WIDTH X HEIGHT	5.3" x 9.5" x 4.7" (13.5 x 24.1 x 11.9 cm)
WEIGHT (TOTAL UNIT)	7.5 lbs (3.4 kg)
STANDARDS COMPLIANCE	MIL-STD-2000, -1686, -45743E, WS-6536D and E
AGENCY APPROVALS	ETL, CE Approved
ESD MATERIALS	10 <sup>5</sup> -10 <sup>11</sup> ohm/square per ASTM D257 (10 <sup>5</sup> -10 <sup>9</sup> ohm/square where possible)

## SP200 POWER SUPPLY

TIP-TO-GROUND POTENTIAL	< 2 mV, true RMS, 50-500 Hz
TIP-TO-GROUND RESISTANCE	< 2 ohms, DC, unit on
IDLE TEMPERATURE STABILITY	± 2 °F (± 1.1 °C), still air
AMBIENT OPERATING TEMP	50 - 104 °F (10 - 40 °C)
MAX ENCLOSURE TEMP	150 °F (65 °F)
INPUT LINE VOLTAGE	
SP200-11	108-132 VAC
SP200-21	216-264 VAC
INPUT LINE FREQUENCY	45 - 70 Hz
NOMINAL OUTPUT	35 Watts @ 72°F (22°C) ambient
OUTPUT FREQUENCY	470 KHz
POWER CORD (3-WIRE)	6 ft (183 cm) - 18/3 SJT
HANDLE/CORD ASSY	4 ft (122 cm) carbon loaded silicone, shielded
LENGTH X WIDTH X HEIGHT	4.25" x 3.5" x 6.7" (10.8 x 8.9 x 17.0 cm)
WEIGHT (TOTAL UNIT)	5.0 lbs (2.3 kg)
WEIGHT (HANDPIECE)	2.0 oz (57 g)
STANDARDS COMPLIANCE	MIL-STD-2000, -1686, -45743E , WS-6536D and E
AGENCY APPROVALS	ETL Listed, FCC Approved
ESD MATERIALS	10 <sup>5</sup> -10 <sup>11</sup> ohm/square per ASTM D257 (10 <sup>5</sup> -10 <sup>9</sup> ohm/square where possible)

## DESOLDER TOOL

VACUUM RISE TIME	25 ms to 12 inches Hg
HANDPIECE ASSY	5 ft (152 cm) carbon loaded silicone, shielded
DIMENSIONS	
LENGTH X WIDTH X HEIGHT	8.0" x 6.0" 7.0" 20.3 x 15.2 x 17.8 cm
WEIGHT (TOTAL UNIT)	9.0 lbs (4.1 kg)
WEIGHT (DESOLDER TOOL)	8.0 oz (227 g)
STANDARDS COMPLIANCE	
MIL-STD-2000, -1686, -45743E , WS-6536D and E	
ESD 10 <sup>5</sup> -10 <sup>11</sup> ohm/square per ASTM D257	
(ESD 10 <sup>5</sup> -10 <sup>9</sup> ohm/square where possible)	

## RM3E SOLDERING/REWORK HANDPIECE

WEIGHT	56.7 g
HANDLE CORD ASSEMBLY	6 ft (183 cm) carbon loaded silicone, shielded
ESD MATERIALS	10 <sup>5</sup> - 10 <sup>12</sup> ohm/square as per ASTM D257 (10 <sup>5</sup> - 10 <sup>9</sup> ohm/square where possible)

## TALON HANDPIECE

WEIGHT	2.0 oz (56.7 g)
HANDLE CORD ASSEMBLY	6 ft (183 cm) carbon loaded silicone, shielded
ESD MATERIALS	10 <sup>5</sup> - 10 <sup>11</sup> ohm/square as per ASTM D257 (10 <sup>5</sup> - 10 <sup>9</sup> ohm/square where possible)

## MX DESOLDERING HANDPIECE

INPUT AIR PRESSURE	60-100 psig required
VACUUM	18 inches (45.7cm) Hg minimum
WEIGHT	10.5 oz (298 g)
HANDLE CORD ASSEMBLY	6 ft (183 cm) carbon loaded silicone, shielded
ESD MATERIALS	10 <sup>5</sup> - 10 <sup>11</sup> ohm/square as per ASTM D257 (10 <sup>5</sup> - 10 <sup>9</sup> ohm/square where possible)

## TIP CARTRIDGES

STTC STARTUP POWER	500 Series > 25 Watts 600 Series > 25 Watts 700 Series > 30 Watts
MAXIMUM TEMPERATURE	500 Series ≤ 575°F (302°C) 600 Series ≤ 675°F (352°C) 700 Series ≤ 775°F (405°C)

## WARRANTY

Metcal, Inc. warrants Power Supplies against any defects in materials or workmanship for two (2) years from the date of purchase by the original owner. All Handle/Cord Assemblies and the DS1 Desolder Tool are warranted against any defects in materials or workmanship for one (1) year from the date of purchase by the original owner.

Metcal warrants all other products except consumables against any defects in materials or workmanship for ninety (90) days from the date of purchase by the original owner. This Warranty excludes normal maintenance and shall not apply to any opened, misused, abused, altered or damaged items.

Metcal warrants that the heater in its STTC, STD, TATC, and SSC tip cartridges will operate according to specifications for the lifetime of the tip plating. Because tip plating is mainly dependent upon the user's application and practices, tip cartridges are not warranted for plating wear. Tip cartridges are warranted against any defects in materials or workmanship. Misused, abused, altered or damaged tip cartridges are not warranted.

All tip cartridges that fail to heat will be repaired or replaced at Metcal's option.

Metcal will repair or replace (at Metcal's sole option) a Power Supply that fails in normal use within three (3) years after the expiration of the two-year warranty at the then current repair or exchange rate. This offer does not apply to any previously opened, modified, repaired, altered, misused or damaged Power Supply.

This Warranty excludes normal maintenance and shall not apply to any opened, misused, abused, altered or damaged items. If the product should become defective within the warranty period, Metcal, Inc., will repair or replace it free of charge at its sole option. The replacement item(s) will be shipped, freight prepaid, to the original purchaser.

The warranty period will start from the date of purchase. If the date of purchase cannot be substantiated, the date of manufacture will be used as the start of the warranty period.