

Hand Soldering, Desoldering &

Single Port



PS-900



MFR-1100 Series



MFR-1300 Series

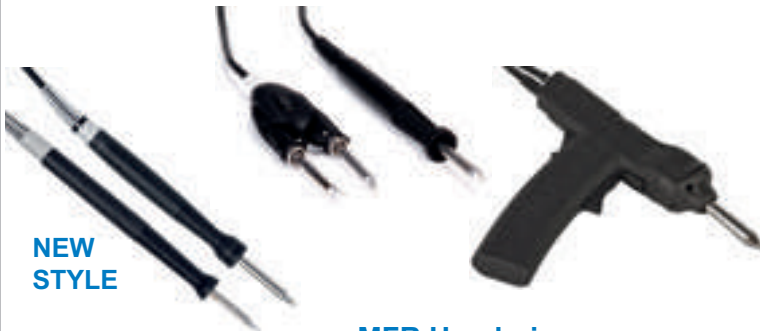


NEW MX-500 Series

M U L T I F U N C T I O N



PS-900 Tip Hand-Piece



**NEW
STYLE**

MFR Hand-pieces



MX Hand-pieces

SmartHeat® Technology

OK International is the original supplier of SmartHeat® Soldering Technology. SmartHeat® senses the exact thermal requirement for each solder joint and responds by delivering the precise amount of thermal energy required to create a reliable connection.

The result is a high degree of control without resorting to higher tip idle temperatures required by conventional heater process technologies. Consequently, the risk of component and board damage is minimized. This is especially important with the greater thermal demands required by lead-free applications.





Rework Systems Overview

Dual Port Simultaneous



MFR-2200 Series



MX-5200 Series

R E W O R K S Y S T E M S



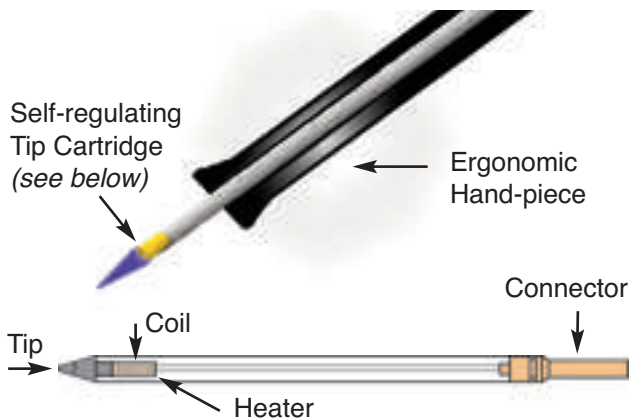
**NEW
STYLE**

MFR Hand-pieces



Also compatible with the
New MX-500 System

MX Hand-pieces



SmartHeat® Soldering Technology = Variable Power / Fixed Temperature

- ▶ SmartHeat® tips and cartridges sense the load and instantly deliver the right amount of heat directly to the solder joint.
- ▶ The required solder joint temperature drives the heating process, as opposed to the idle tip temperature setting (as in a conventional iron).
- ▶ Operates at lower and safer temperatures. Power is delivered in proportion to the load. SmartHeat® technology eliminates overshoot.
- ▶ No calibration required - saves money and eliminates system down-time.

Watch our SmartHeat® Video on YouTube or www.metcal.com



MX-5200 Dual Simultaneous

Soldering, Desoldering & Rework Systems



The new MX-5200 Soldering, Desoldering and Rework Series offers the same increased power and process control as the MX-5000 Series, now with dual-simultaneous ports.

For two users or single user with dual applications. The MX-5200 can be operated with two hand-pieces dynamically sharing the 80 watts output power based on demand adding even more application flexibility and speed.

Fast time-to-recovery. Delivering increased production rates and throughput. No matter the application. The challenges of high mass components, multilayered boards and lead-free solders are seamlessly tackled by the MX-5200 super-charged power supply.

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

TipSaver™ Workstand improves tip life as well as operator ergonomics. This “Auto-Sleep” Workstand reduces the power to the hand-piece when it is placed in the Metcal TipSaver™ Workstand.

Reduction in power will substantially decrease tip oxidation, a major cause of reduced tip life.

Ergonomic Hand-pieces. The aluminium hand-pieces for soldering and rework provides a cooler, lighter weight and more comfortable feel for the operator. And, the Metcal UltraFine™ Hand-piece features a new generation of extremely fine diameter cartridges in a slim profiled handle. Both of these hand-pieces uniquely offer users a choice of three interchangeable grips.

ESD safe and features incoming AC ground monitoring circuitry. This AC (mains) ground monitor detects power line ground failures and immediately alerts the operator and shuts down the system. Only after the power line ground has been restored, can the MX-5200 be restarted and soldering operations can be resumed.

Built-in power indication meter with digital display and bar graph that visually provides the operator with feedback on the status of the soldering operation. Whether using a large mass rework tip for QFPs or a fine-point soldering tip, the power indication meter is a valuable resource for making consistent, acceptable solder joints.

Four mode indicators:

Ready Mode: The hand-piece is removed from the workstand, ready for soldering or rework.

Power Mode: The hand-piece's tip is in contact with the load. The power indication meter provides graphical and numeric feedback on the system power output.

Sleep Mode : The hand-piece is at rest in the workstand; power is reduced to the hand-piece.

Powersave Mode: Power to the hand-piece is shut off. This programmable sleep feature allows an operator to set the desired time to cut off power to the hand-piece (from 10 to 120min).





MX-5200 Dual Simultaneous

Soldering, Desoldering & Rework Systems

SYSTEMS CONFIGURATION

| PART NUMBER | MX-PS5200 Power Supply | Hand-pieces | | | | TipSaver™ Workstands | | |
|-------------|------------------------|-------------|----------|--------|--------|----------------------|---------|---------|
| | | MX-H1-AV | MX-H2-UF | MX-PTZ | MX-DS1 | MX-W1AV | MX-W4PT | MX-W5DS |
| MX-5210 | ✓ | ✓ | | | | ✓ | | |
| MX-5211 | ✓ | ✓ ✓ | | | | ✓ ✓ | | |
| MX-5220 | ✓ | | ✓ | | | ✓ | | |
| MX-5241 | ✓ | ✓ | | ✓ | | ✓ | ✓ | |
| MX-5250 | ✓ | | | | ✓ | | | ✓ |
| MX-5251 | ✓ | ✓ | | | ✓ | ✓ | | ✓ |

SYSTEMS WITH ONE HAND-PIECE

SYSTEMS WITH TWO HAND-PIECES



MX-5210 Soldering and Rework System
Configured with the Advanced™ Hand-piece. 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.

Soldering cartridges: STTC Series and SMTC Series



MX-5211 Soldering and Rework System
Same features as MX-5210 but configured with two Advanced™ Hand-pieces and two TipSaver™ Workstands.

Best Seller

Soldering cartridges: STTC Series and SMTC Series



MX-5220 UltraFine™ Soldering System
Configured with the UltraFine™ Soldering Hand-piece which is a speciality tool for soldering and touch-up of very small components, restricted access or high density component packaging on a PCB.

Soldering cartridges: UFTC cartridges featuring small tip geometries and low mass, suited for small part soldering.



MX-5241 Precision Tweezers, Soldering and Rework System
Combines both the 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.

Tweezer cartridges: PTTC Series.
Soldering Cartridges: STTC and SMTC Series



MX-5250 Plated-Through-Hole Component Desoldering System
Includes the MX-DS1 Desoldering hand-piece designed for through-hole desoldering.

Desoldering cartridges: STDC Series provide assurance for fast, high quality results

NOTE: Unit requires shop air for desoldering.



MX-5251 Soldering, Desoldering and Rework System
For through-hole desoldering, general soldering, and SMD rework applications. Includes two hand-pieces: the Advanced™ Hand-piece and the MX-DS1 Desoldering hand-piece. Ideal for mixed technology boards. Provides versatility for addressing soldering & rework tasks.

Desoldering cartridges: STDC Series
Soldering cartridges: STTC and SMTC Series.

NOTE: Unit requires shop air for desoldering.



MX-500 Dual Switchable Output

Soldering, Desoldering & Rework Systems

Metcal's MX-500 Soldering and Rework System has been reimagined, adding features and a new look to a bench top icon. The system utilizes SmartHeat® Technology, where each cartridge is equipped with a self-regulating heater which 'senses' its own temperature and closely maintains its pre-set idle temperature for the life of the heater-tip. The tip temperature is determined by the inherent metallurgical properties of the heater; no external adjustment or equipment is required. The MX-500 retains switchable dual port, 40W operation while introducing numerous new features in a new housing.



Key Features & Benefits

- ▶ A built in Net Power Meter which will display a graphical and numerical representation of the power applied to the cartridge.
- ▶ User Programmable PowerSave Mode: the time to enter PowerSave Mode is adjustable from 10 to 120 minutes.
- ▶ Ground Fault Interrupt: AC ground monitor detects power line ground failures and immediately alerts the operator and shuts down the system. Only after the power line has been restored, can the MX-500 be restarted and soldering operations can be resumed.
- ▶ Universal Power Supply: automatically senses the input line voltage and adjusts accordingly, which allows for worldwide operation without adaptors or a change in performance.
- ▶ Full compatibility with existing and previous MX upgrade kits, tip-cartridges, hand-pieces and accessories.
- ▶ Greater process control with SmartHeat® Technology
- ▶ Reduced space requirements

SYSTEM WITH ONE HAND-PIECE



MX-500S Soldering / Rework System

Includes: Power supply, MX-RM3E soldering and rework hand-piece and WS1 sleeper workstand

Soldering cartridges:
STTC Series and SMTC Series

MX-500 System configuration with MX-H2-UF hand-piece coming soon.
Check www.metcal.com for more details.

SYSTEMS WITH TWO HAND-PIECES



MX-500SPT Rework System

Includes: Power supply, MX-PTZ precision tweezer hand-piece with MX-W4PT TipSaver workstand and MX-RM3E soldering and rework hand-piece and WS1 sleeper workstand.

Tweezer cartridges:
PTTC Series.
Soldering Cartridges:
STTC and SMTC Series

POWER SUPPLY WITH NO HAND-PIECE



MX-500P

MX-500 dual port switchable power supply



MX-500DS Desoldering System

Includes: Power supply, MX-DS1 desoldering hand-piece with MX-W5DS TipSaver workstand and MX-RM3E soldering and rework hand-piece and WS1 sleeper workstand

Desoldering cartridges:
STDC Series
Soldering cartridges:
STTC and SMTC Series.

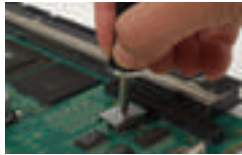
NOTE: Unit requires shop air for desoldering.

NOTE: Additional Hand-pieces and Upgrade Kits are available, see pages 7 and 8

MX Series Hand-pieces

Soldering, Desoldering & Rework Systems

The MX-500 AND MX-5200 Series offers users a choice of hand-pieces to meet the customer's application needs. Each hand-piece has its own range of cartridges with many choices available for tip geometry and temperature. The hand-pieces below are compatible with existing MX-500 and MX-5200 Systems as well as backward compatible with previous MX-500 and MX-5000 Systems



Hand-pieces

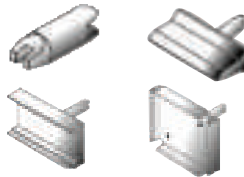
Cartridges

MX-RM3E
Metcal
Hand-piece



STTC Soldering Cartridges
See pages 10-11.

MX-H1-AV
Metcal
Advanced™
Hand-piece



SMTC Rework Cartridges
See pages 13-14.

MX-H2-UF
Metcal
UltraFine™
Hand-piece



UFTC Ultra Fine Soldering Cartridges. See page 12.

MX-PTZ
Metcal
Precision
Tweezer
Hand-piece



PTTC Tweezer Cartridges.
See page 15.

Also available are TATC Cartridges for the previous TALON hand-piece and the existing MX-TALON-01 upgrade kit. See page 15.

MX-DS1
Metcal
Desoldering
Hand-piece



STDC Desoldering Cartridges.
See page 16.



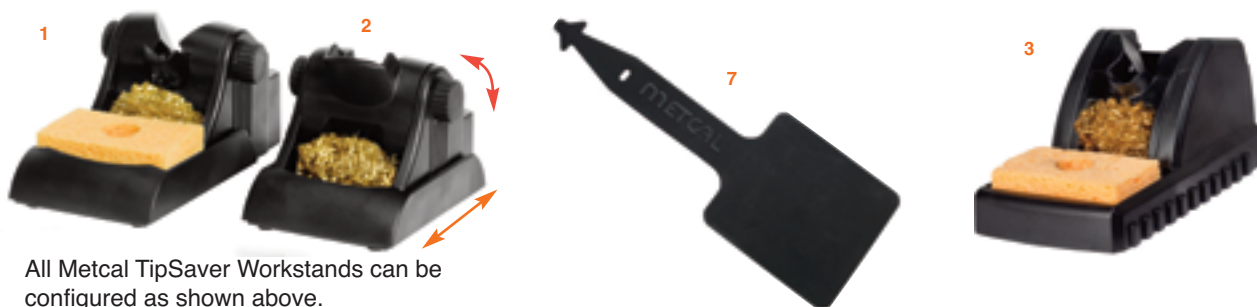
| Hand-pieces and Grips | | |
|-----------------------|----|---|
| MX-H1-AV | 1 | Metcal Advanced™ Hand-piece with cord, soldering and rework, two grips included (see *) |
| MX-H1GR | 2 | Grip Metcal Advanced™ Hand-piece with black sleeve in ring pattern (*) |
| MX-H1GS | 3 | Grip Metcal Advanced™ Hand-piece with black scallop pattern |
| MX-H1GKG | 4 | Grip Metcal Advanced™ Hand-piece with green knob pattern (*) |
| MX-H1-BSR-5 | | Replacement Sleeve only, black ring pattern (pack of 5) - For MX-H1-AV and MX-H1GR |
| MX-H1-BSS-5 | | Replacement Sleeve only, black scallop pattern (pack of 5) - For MX-H1-AV and MX-H1GS |
| MX-H1-GSK-5 | | Replacement Sleeve only, green knob pattern (pack of 5) - For MX-H1-AV and MX-H1GKG |
| MX-H2-UF | 5 | Metcal UltraFine™ Hand-piece with cord, fine soldering, two grips included (see **) |
| MX-H2GR | 6 | Grip Metcal UltraFine™ Hand-piece with black sleeve in ring pattern (**) |
| MX-H2GRS | 7 | Short grip Metcal UltraFine™ Hand-piece with black sleeve in ring pattern |
| MX-H2GS | | Grip Metcal UltraFine™ Hand-piece with black sleeve in scallop pattern |
| MX-H2GKG | | Grip Metcal UltraFine™ Hand-piece with green sleeve in knob pattern (**) |
| MX-H2-BSR-5 | | Replacement Sleeve only, black ring pattern (pack of 5) - For MX-H2-UF and MX-H2GR |
| MX-H2-BSS-5 | | Replacement Sleeve only, black ring pattern (pack of 5) - For MX-H2-UF and MX-H2GS |
| MX-H2-GSK-5 | | Replacement Sleeve only, black ring pattern (pack of 5) - For MX-H2-UF and MX-H2GKG |
| MX-RM3E | 8 | Metcal Soldering / Rework Hand-piece |
| MX-PTZ | 9 | Metcal Precision Tweezer Hand-piece, SMD rework |
| MX-DS1 | 10 | Metcal Desoldering Hand-piece |
| MX-RM8E | | Metcal Desoldering Hand-piece Cord for MX-DS1 |
| MX-RM5E | | Standard Robotic cable (1.83m / 6ft) with connector for Soldering/Rework cartridges |
| MX-RM6E | | Metcal Soldering / Rework Hand-piece for long reach cartridge access |

NOTE: Cartridges are not included with hand-pieces. A cartridge removal pad (MX-CP1 see page 8) is included with every hand-piece.

MX Series Accessories

| Workstands and Accessories | | |
|----------------------------|---|---|
| MX-W1AV | 1 | Metcal TipSaver™ Workstand, for Metcal Advanced™ and UltraFine™ Hand-pieces |
| MX-W1CR | | Cradle for TipSaver™ Workstand, Advanced™ and UltraFine™ Hand-pieces, incl. knobs |
| MX-W4PT | 2 | Metcal TipSaver™ Workstand, for MX-PTZ Hand-piece |
| MX-W4CR | | Cradle for Metcal TipSaver™ Workstand, MX-PTZ Hand-piece, includes knobs |
| MX-W5DS | | Metcal TipSaver™ Workstand, for MX-DS1 Hand-piece |
| MX-W5CR | | Cradle for Metcal TipSaver™ Workstand, MX-DS1 Hand-piece, includes knobs |
| WS1 | 3 | Sleeper Soldering Workstand for MX-RM3E hand-piece |
| WST | | Talon Workstand for MX-TALON hand-piece |
| AC-Y10 | 4 | Yellow sponge, pack of 10 |
| AC-YS3-P | | Yellow sponge, pack of 50 |
| AC-BP | 5 | Brass pad, pack of 10 |
| AC-BRUSH | | Soft Brass Brush |
| MX-CP1 | 7 | Cartridge removal pad |
| AC-CK2 | | Green Lead Free identification ring for STTC cartridges (pack of 50) |
| AC-PTP1 | | Rubber tip cleaning pad insert for all MX workstands (pack of 1) |
| AC-PTP3 | | Rubber tip cleaning pad insert for all MX workstands (pack of 3) |
| AC-PTP10 | | Rubber tip cleaning pad insert for all MX workstands (pack of 10) |

| Accessories for MX-DS1 Desoldering Hand-piece | |
|---|---|
| MX-DCF1 | Chamber Liners (pack of 15) and Filters (pack of 6) |
| MX-DCF1L | Chamber Liners (pack of 40) |
| MX-DCF1F | Filters (pack of 20) |
| AC-TC | 8 Desolder Tip Cleaner |
| AC-CB1-P | Desolder Chamber Cleaning Brush (pack of 25) |
| AC-CB2-P | Tube Cleaning Brush (pack of 6) |
| MX-DSL2 | Seal Cartridge |
| MX-DSB | Swivel Connector |
| MX-DLA | Desolder Gun Latch Adjustment (pack of 10) |
| MX-DMK1 | Maintenance Kit |
| MX-DAH4 | ESD air hose for MX-DS1 Desoldering Hand-piece |
| MX-DSL1 | Seal Chamber |
| MX-DVC1 | Venturi Cartridge |
| MX-DAR1 | Air Regulator and Filter |



All Metcal TipSaver Workstands can be configured as shown above.

| UPGRADE KITS GUIDE: HAND-PIECE AND WORKSTAND | | | | | | | |
|--|---|--|---|--------------------------------------|------------|---------|---------|
| PART NUMBER | Hand-pieces | | | | Workstands | | |
| | MX-H1-AV <small>Metcal Advanced™</small> | MX-H2-UF <small>Metcal UltraFine™</small> | MX-PTZ <small>Precision Tweezers</small> | MX-DS1 <small>Desoldering</small> | MX-W1AV | MX-W4PT | MX-W5DS |
| MX-UK1 | ✓ | | | | ✓ | | |
| MX-UK2 | | ✓ | | | ✓ | | |
| MX-UK4 | | | ✓ | | | ✓ | |
| MX-UK5 | | | | ✓ | | | ✓ |

All upgrade kits include a hand-piece and a workstand.



MX-TALON-01 Upgrade kit is also available for the MX-500 Series. It includes the previous MX-TALON hand-piece and WST workstand (as shown right). The TALON hand-piece is for use with TATC cartridges only.

MX Series Specifications

Soldering, Desoldering & Rework Systems



MX-5200

| | |
|-----------------------------------|--|
| 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 |
| Rated Power Consumption | 125W |
| Output Power | Single mode: 80 Watts max. per channel * Dual Mode: 80 Watts shared dynamically * |
| Output Frequency | 13.56 MHz * |
| Power Supply Dimensions w x d x h | 12.1 cm (4.8") x 13.0 cm (5.1") x 23.5 cm (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=182 cm (72"), burn proof, ESD safe |
| Hand-piece Connector | F connector |
| Weight of the power supply | 7.4 lbs (3.35 kg) |

* RF SmartHeat Technology provides greater power. More details at www.metcal.com/smarheat

MX-500

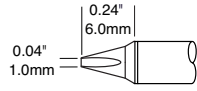
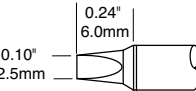
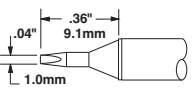
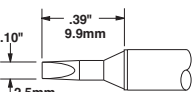
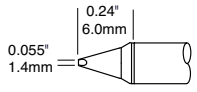
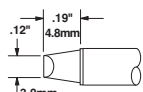
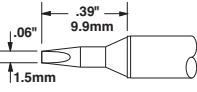
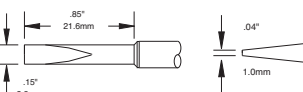
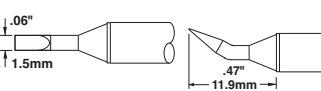
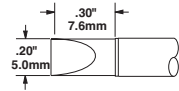
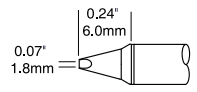
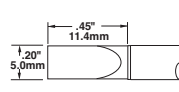
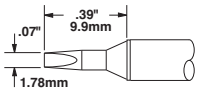
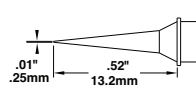
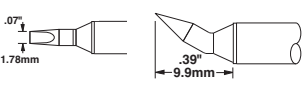
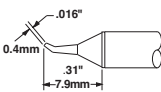
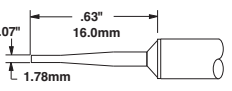
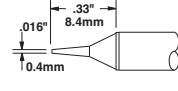
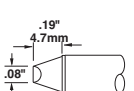
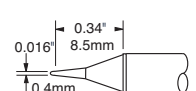
| | |
|-----------------------------------|---|
| Ambient Operating Temperature | 10 - 40°C |
| Maximum Enclosure Temperature | 55°C |
| Input Line Voltage | 100 - 240 VAC, grounded circuit |
| Input Line Frequency | 50/60 Hz |
| Rated Power Consumption | 70 W |
| Output Power | 40 Watts max. RF SmartHeat Power * |
| Output Frequency | 13.56 MHz * |
| Power Supply Dimensions w x d x h | 12.1 cm (4.8") x 12.1 cm (4.8") x 2.2 cm (8.8") |
| Certification / Marking | cNRTLus, 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=182 cm (72"), burn proof, ESD safe |
| Hand-piece Connector | F connector |
| Weight of the power supply | 5.85 lbs (2.65 kg) |

* RF SmartHeat Technology provides greater power. More details at www.metcal.com/smarheat

STTC Soldering Cartridges

STTC SOLDERING CARTRIDGES

Compatible with: MX-500, MX-5000 and MX-5200 Systems / MX-RM3E and MX-H1-AV hand-pieces

| | | | | | | |
|--------|---|--|--------|---|---|--|
| CHISEL |  | STTC-125P STTC-825P | CHISEL |  | STTC-136P STTC-836P | |
| |  | STTC-525 STTC-025 STTC-125 STTC-825 | |  | STTC-536 STTC-036 STTC-136 STTC-836 | |
| |  | STTC-138P STTC-838P | |  | STTC-513 STTC-013 STTC-113 STTC-813 | |
| |  | STTC-538 STTC-038 STTC-138 STTC-838 | |  | STTC-020 STTC-120 STTC-820 | |
| |  | STTC-599 STTC-099 STTC-199 STTC-899 | |  | STTC-517 STTC-017 STTC-117 STTC-817 | |
| |  | STTC-137P STTC-837P | |  | STTC-565 STTC-065 STTC-165 STTC-865 | |
| |  | STTC-537 STTC-037 STTC-137 STTC-837 | | CONICAL |  | STTC-590 STTC-090 STTC-190 STTC-890 |
| |  | STTC-598 STTC-098 STTC-198 STTC-898 | | |  | STTC-526 STTC-026 STTC-126 STTC-826 |
| |  | STTC-542 STTC-042 STTC-142 STTC-842 | | |  | STTC-522 STTC-022 STTC-122 STTC-822 |
| |  | STTC-514 STTC-014 STTC-114 | | |  | STTC-145P STTC-845P |

5 = 500 Series and 0 = 600 Series for temperature sensitive applications - 1 = 700 Series for most standard applications.
8 = 800 Series for Ceramic and high thermal demand applications.

STTC Soldering Cartridges



STTC SOLDERING CARTRIDGES

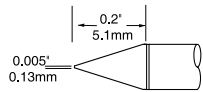
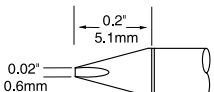
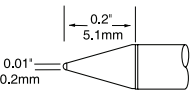
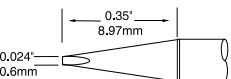
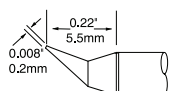
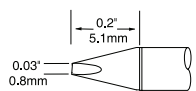
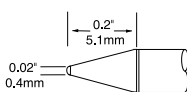
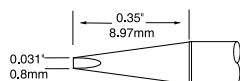
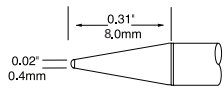
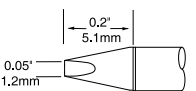
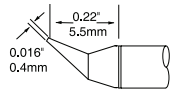
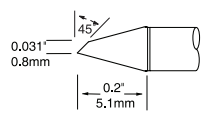
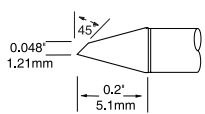
Compatible with: MX-500, MX-5000 and MX-5200 Systems / MX-RM3E and MX-H1-AV hand-pieces

| | | | | | | |
|---------|--|--|---------|-------|--|--|
| CONICAL | | STTC-506 STTC-006 STTC-106 STTC-806 | CONICAL | | STTC-507 STTC-007 STTC-107 | |
| | | STTC-545 STTC-045 STTC-145 STTC-845 | | | STTC-541 STTC-041 STTC-141 STTC-841 | |
| | | STTC-540 STTC-040 STTC-140 STTC-840 | | BEVEL | | STTC-546 STTC-046 STTC-146 STTC-846 |
| | | STTC-511 STTC-011 STTC-111 | | | | STTC-147P STTC-847P |
| | | STTC-516 STTC-016 STTC-116 STTC-816 | | | | STTC-505 STTC-005 STTC-105 |
| | | STTC-544 STTC-044 STTC-144 STTC-844 | | | | STTC-547 STTC-047 STTC-147 STTC-847 |
| | | STTC-543 STTC-043 STTC-143 STTC-843 | | | | |
| | | STTC-531 STTC-031 STTC-131 | | | | |
| | | STTC-501 STTC-001 STTC-101 | | | | |

5 = 500 Series and 0 = 600 Series for temperature sensitive applications - 1 = 700 Series for most standard applications.
8 = 800 Series for Ceramic and high thermal demand applications.

UFTC UltraFine Soldering Cartridges



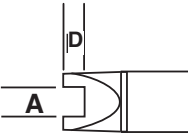
| UFTC ULTRAFINE SOLDERING CARTRIDGES | | Compatible with: MX-500, MX-5000 and MX-5200 Systems and MX-H2-UF hand-piece | | | |
|-------------------------------------|---|--|--------|---|-------------|
| CONICAL |  | UFTC-7CN01 | CHISEL |  | UFTC-7CH06 |
| |  | UFTC-7CN02 | |  | UFTC-7CHL06 |
| |  | UFTC-7CNB02 | |  | UFTC-7CH08 |
| |  | UFTC-7CN04 | |  | UFTC-7CHL08 |
| |  | UFTC-7CNL04 | |  | UFTC-7CH12 |
| |  | UFTC-7CNB04 | | | |
| HOOF |  | UFTC-7DRH408 | | | |
| |  | UFTC-7DRH412 | | | |

7 = 700 Series for most standard applications

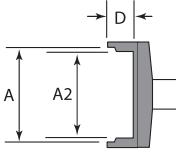
SMTC Rework Cartridges

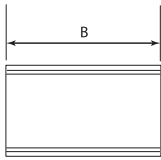
Compatible with: MX-500, MX-5000 and MX-5200 Systems / MX-RM3E and MX-H1-AV hand-pieces
 All dimensions shown are in mm (inches)

SMTC REWORK CARTRIDGES

| SLOT |  | A | D | B | SMT TYPE |
|----------------------------------|---|----------------------------------|----------------|--------------------------------|--------------|
| | | SMTC-505 SMTC-005 SMTC-105 | 1.7 (.068) | 1.27 (.05) | 2.5 (.10) |
| SMTC-596 SMTC-096 SMTC-196 | 1.78 (.070) | 1.02 (.040) | 1.02 (.040) | Chip 0402, 0603 | |
| SMTC-588 SMTC-088 SMTC-188 | 2.03 (.080) | 1.52 (.60) | 1.27 (.050) | Chip 0402, 0603, 0805 | |
| SMTC-501 SMTC-001 SMTC-101 | 2.3 (.090) | 1.8 (.070) | 1.3 (.050) | Chip 0805 | |
| SMTC-502 SMTC-002 SMTC-102 | 3.6 (.14) | 1.8 (.07) | 1.5 (.06) | Chip 1206,1210 | |
| SMTC-132 | 3.81 (.150) | 2.54 (.10) | 2.41 (.095) | Chip Box B EIA SOPM-3528 | |
| SMTC-536 SMTC-036 SMTC-136 | 4.8 (.190) | 4.06 (.16) | 2.8 (.110) | Chip Box B EIA SOPM-4532 | |
| SMTC-503 SMTC-003 SMTC-103 | 4.83 (.190) | 1.91 (.075) | 2.03 (.080) | Chip 1812 | |

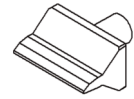


| TUNNEL |  | A | A2 | D | B | SMT TYPE |
|------------------------|--|----------------------|----------------|-----------------|-------------------|---------------|
| | | SMTC-004 SMTC-104 | 5.08 (.20) | 5.08 (.20) | 2.3 (.90) | 4.32 (.17) |
| SMTC-006 SMTC-106 | 5.08 (.20) | 5.08 (.20) | 2.3 (.90) | 10.16 (.40) | SOIC-14, 16 | |
| SMTC-0142 SMTC-1142 | 5.18 (.204) | 5.18 (.204) | 2.54 (.100) | 8.89 (.350) | SOIC-14 | |
| SMTC-047 SMTC-147 | 8.51 (.335) | 8.51 (.335) | 5.08 (.200) | 6.35 (.250) | DPAC | |
| SMTC-126 | 8.64 (.340) | 8.0 (.315) | 1.88 (.074) | 18.8 (.740) | SOJ-28, SOM-32 | |
| SMTC-007 SMTC-107 | 9.53 (.375) | 9.53 (.375) | 3.20 (.125) | 18.3 (.720) | SOIC-28 | |
| SMTC-009 SMTC-109 | 9.53 (.375) | 9.53 (.375) | 3.18 (.125) | 15.75 (.620) | SOIC-24 | |
| SMTC-010 SMTC-110 | 9.53 (.375) | 9.53 (.375) | 3.20 (.125) | 13.20 (.520) | SOIC-20 | |
| SMTC-040 SMTC-140 | 11.43 (.450) | 10.40 (.410) | 1.90 (.075) | 25.9 (1.02) | SOJ-40, SOM-32 | |



5 = 500 Series & 0 = 600 Series for temperature sensitive applications. 1 = 700 Series for most standard applications.

SMTC Rework Cartridges



SMTC REWORK CARTRIDGES

Compatible with: MX-500, MX-5000 and MX-5200 Systems / MX-RM3E and MX-H1-AV hand-pieces. All dimensions shown are in mm (inches)

| QUAD | SMT TYPE | A | A2 | D | B | B2 | SMT TYPE | BLADE TYPE | |
|-----------|-----------|-----------|--------|--------|--------|--------|---------------------|--|------------------------|
| | | (.330) | (.330) | (.100) | (.330) | (.330) | | | |
| | SMTC-0121 | 8.38 | 8.38 | 2.54 | 8.38 | 8.38 | SQFP 48 (EJA) | SMTC-064 SMTC-164 | 5mm (.20") Short |
| | SMTC-1121 | 10.16 | 9.14 | 3.80 | 10.16 | 9.14 | PLCC 20 | | |
| | SMTC-0112 | 11.18 | 11.18 | 2.54 | 11.18 | 11.18 | SQFP 64 (EJA) | SMTC-560 SMTC-060 SMTC-160 SMTC-860 | 10mm (.40") Long |
| | SMTC-1120 | 12.19 | 11.18 | 2.79 | 13.21 | 12.19 | TQFP 44 | | |
| | SMTC-1159 | 12.70 | 11.56 | 3.80 | 12.70 | 11.56 | PLCC 28 | | |
| | SMTC-0113 | 12.70 | 11.43 | 3.80 | 15.24 | 13.97 | PLCC 32 | SMTC-561 SMTC-061 SMTC-161 SMTC-861 | 15.75mm (.62") Long |
| | | SMTC-1116 | 13.34 | 12.32 | 2.79 | 13.34 | 12.32 | | |
| | SMTC-1132 | 15.49 | 14.48 | 2.79 | 15.49 | 14.48 | VQFP 100 (EJA) | | |
| | SMTC-043 | 16.51 | 16.51 | 3.30 | 22.48 | 22.48 | QFP 100 Rectangular | SMTC-562 SMTC-062 SMTC-162 SMTC-862 | 22mm (.86") Long |
| | | SMTC-143 | 17.78 | 16.76 | 3.80 | 17.78 | 16.76 | | |
| | SMTC-014 | 20.32 | 19.30 | 3.80 | 20.32 | 19.30 | PLCC 52 | | |
| | SMTC-117 | 25.27 | 19.30 | 3.80 | 25.27 | 19.30 | PLCC 68 | SMTC-0BL050 SMTC-1BL050 SMTC-8BL050 | 5mm (.20") Short |
| | | SMTC-118 | 26.42 | 26.42 | 3.30 | 26.42 | 26.42 | | |
| | SMTC-144 | | | | | | | | |
| HOOF | SMTC-5175 | | | | | | | SMTC-0BL150 SMTC-1BL150 SMTC-8BL150 | 15mm (.59") Short |
| | SMTC-0175 | | | | | | | | |
| | SMTC-1175 | | | | | | | SMTC-0BL250 SMTC-1BL250 SMTC-8BL250 | 25mm (1.0") Long |
| | SMTC-8175 | | | | | | | | |
| | SMTC-5174 | | | | | | | SMTC-0BL350 SMTC-1BL350 SMTC-8BL350 | 35mm (1.38") Long |
| | SMTC-0174 | | | | | | | | |
| | SMTC-1174 | | | | | | | | |
| | SMTC-8174 | | | | | | | | |
| SMTC-5167 | | | | | | | | | |
| SMTC-0167 | | | | | | | | | |
| SMTC-1167 | | | | | | | | | |
| SMTC-5169 | | | | | | | | | |
| SMTC-0169 | | | | | | | | | |
| SMTC-1169 | | | | | | | | | |
| SMTC-0183 | | | | | | | | | |
| SMTC-1183 | | | | | | | | | |
| SMTC-8183 | | | | | | | | | |
| SMTC-0170 | | | | | | | | | |
| SMTC-1170 | | | | | | | | | |
| SMTC-5147 | | | | | | | | | |
| SMTC-0147 | | | | | | | | | |
| SMTC-1147 | | | | | | | | | |
| SMTC-8147 | | | | | | | | | |

5 = 500 Series & 0 = 600 Series for temperature sensitive applications. 1 = 700 Series for most standard applications. 8 = 800 Series for Ceramic and high thermal demand applications.

PTTC Tweezer Cartridges

TATC Talon Cartridges

Compatible with: MX-5000 and MX-5200 Systems and MX-PTZ Precision Tweezers hand-piece

Compatible with: MX-500 Systems and MX-Talon hand-piece

| PTTC TWEezer CARTRIDGES | | |
|-------------------------|---|--|
| CONICAL | <p>0.016" 0.4mm</p> <p>0.90" 23mm</p> | <p>PTTC-601 PTTC-701 PTTC-801</p> |
| | <p>0.016" 0.4mm</p> <p>0.56" 14.3mm</p> | <p>PTTC-701B PTTC-801B</p> |
| BLADE | <p>0.05" 1.3mm</p> <p>0.65" 16.5mm</p> | <p>PTTC-602 PTTC-702 PTTC-802</p> |
| | <p>0.08" 2.0mm</p> <p>0.65" 16.5mm</p> | <p>PTTC-603 PTTC-703 PTTC-803</p> |
| | <p>0.14" 3.5mm</p> <p>0.48" 12.1mm</p> <p>30°</p> | <p>PTTC-608B PTTC-708B PTTC-808B</p> |
| | <p>0.28" 0.7mm</p> <p>22°</p> <p>0.25" 6.3mm</p> <p>0.50" 12.7mm</p> | <p>PTTC-604 PTTC-704 PTTC-804</p> |
| | <p>0.28" 0.7mm</p> <p>22°</p> <p>0.63" 16mm</p> <p>0.50" 12.7mm</p> | <p>PTTC-605 PTTC-705 PTTC-805</p> |
| | <p>0.28" 0.7mm</p> <p>22°</p> <p>0.81" 20.5mm</p> <p>0.50" 12.7mm</p> | <p>PTTC-606 PTTC-706 PTTC-806</p> |
| | <p>0.28" 0.7mm</p> <p>22°</p> <p>1.10" 28mm</p> <p>0.50" 12.7mm</p> | <p>PTTC-607 PTTC-707 PTTC-807</p> |


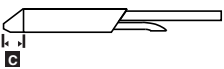
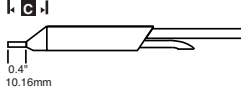
| TATC TALON CARTRIDGES | |
|--|-----------------|
| <p>0.49" 12.45mm</p> <p>0.02" 0.5mm</p> <p>0.13" 0.35mm</p> | <p>TATC-609</p> |
| <p>0.49" 12.45mm</p> <p>0.02" 0.5mm</p> <p>0.047" 1.2mm</p> | <p>TATC-601</p> |
| <p>0.05" 1.27mm</p> <p>3.75" 95.25mm</p> | <p>TATC-608</p> |
| <p>0.10" 2.54mm</p> <p>0.40" 10.16mm</p> <p>0.25" 6.35mm</p> | <p>TATC-602</p> |
| <p>0.03" 0.76mm</p> <p>0.40" 10mm</p> <p>0.43" 10.93mm</p> | <p>TATC-605</p> |
| <p>0.05" 1.27mm</p> <p>0.62" 15.75mm</p> <p>0.33" 8.38mm</p> | <p>TATC-603</p> |
| <p>0.05" 1.27mm</p> <p>0.81" 20.57mm</p> <p>0.33" 8.38mm</p> | <p>TATC-604</p> |
| <p>0.03" 0.76mm</p> <p>1.1" 27.94mm</p> <p>0.30" 7.62mm</p> | <p>TATC-606</p> |

6 = 600 Series for temperature sensitive applications. 7 = 700 Series for most standard applications.
8 = 800 Series for Ceramic and high thermal demand applications.

STDC Desolder Cartridges

Compatible with: MX-500 MX-5000 and MX-5200 Systems, MX-DS1 Desoldering hand-piece
All dimensions shown are in mm (inches)

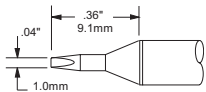
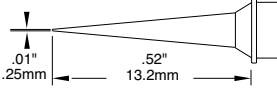
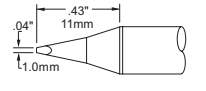
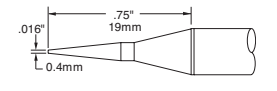
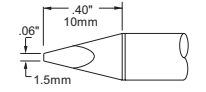
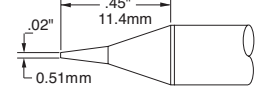
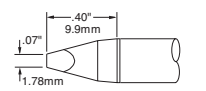
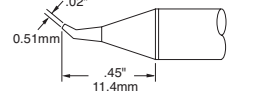
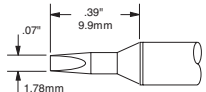
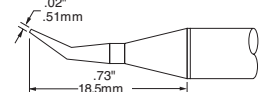
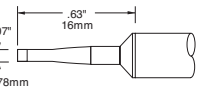
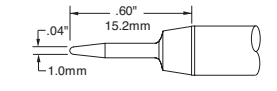
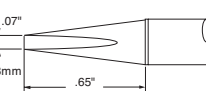
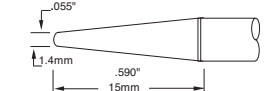
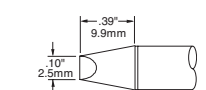
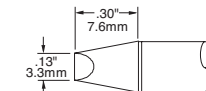
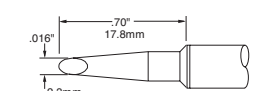
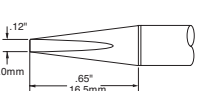
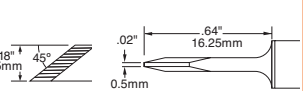
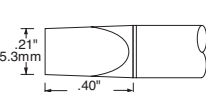
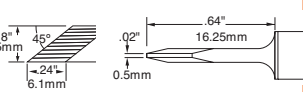
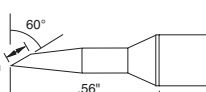
STDC DESOLDER CARTRIDGES

| | A | B | C | TYPE | |
|---|------------------------|----------------|----------------|----------------|------------|
|  | STDC-102 STDC-802 | 0.64 (.025) | 1.40 (.055) | 11.43 (.45) | Standard |
| | STDC-103 STDC-803 | 0.76 (.029) | 1.68 (.066) | 11.17 (.44) | Standard |
| | STDC-104 STDC-804 | 1.02 (.04) | 1.78 (.07) | 10.92 (.43) | Standard |
|  <p>Standard</p> | STDC-105 STDC-805 | 1.27 (.05) | 2.03 (.08) | 10.66 (.42) | Standard |
| | STDC-106 STDC-806 | 1.52 (.06) | 2.29 (.09) | 10.41 (.41) | Standard |
| | STDC-107 STDC-807 | 2.41 (.09) | 3.18 (.12) | 9.14 (.36) | Standard |
| | STDC-703L STDC-803L | 0.76 (.03) | 1.68 (.06) | 21.33 (.84) | Long Reach |
|  <p>Long Reach</p> | STDC-704L STDC-804L | 1.02 (.04) | 1.79 (.07) | 21.08 (.83) | Long Reach |
| | STDC-705L STDC-805L | 1.27 (.05) | 2.03 (.08) | 20.82 (.82) | Long Reach |

1 = 700 Series (standard length) and 7 = 700 Series (long reach) for most standard applications.
8 = 800 Series for Ceramic and high thermal demand applications.

SSC Soldering Cartridges

Compatible with: Previous SP200 System and new MFR-1160 & MFR-1161 Systems with MFR-H6-SSC Hand-piece

| SSC SOLDERING CARTRIDGES | | | |
|--|---|---------|---|
| CHISEL |  <p>SSC-671A SSC-771A</p> | CONICAL |  <p>SSC-690A SSC-790A</p> |
| |  <p>SSC-625A SSC-725A</p> | |  <p>SSC-645A SSC-745A</p> |
| |  <p>SSC-638A SSC-738A</p> | |  <p>SSC-622A SSC-722A</p> |
| |  <p>SSC-637A SSC-737A</p> | |  <p>SSC-626A SSC-726A</p> |
| |  <p>SSC-672A SSC-772A</p> | |  <p>SSC-654A SSC-754A</p> |
| |  <p>SSC-642A SSC-742A</p> | |  <p>SSC-601A SSC-701A</p> |
| |  <p>SSC-670A SSC-770A</p> | |  <p>SSC-674A SSC-774A</p> |
| |  <p>SSC-636A SSC-736A</p> | | HOOF |
|  <p>SSC-613A SSC-713A</p> |  <p>SSC-639A SSC-739A</p> | | |
| BEVEL |  <p>SSC-646A SSC-746A</p> | KNIFE |  <p>SSC-661A SSC-761A</p> |
| |  <p>SSC-617A SSC-717A</p> | |  <p>SSC-673A SSC-773A</p> |
| |  <p>SSC-647A SSC-747A</p> | | |

6 = 600 Series for temperature sensitive applications - 7 = 700 Series for most standard applications.

MFR-2200 Series Dual Output

Simultaneous Soldering & Rework Systems



The MFR-2200 Series features dual output capability allowing users to select operation of one hand-piece or two hand-pieces **simultaneously**.

The MFR-2200 Systems below offer a choice of three hand-pieces, however two additional hand-pieces including the desoldering option are also available as upgrade kits (see pages 21 & 23).



| Systems | MFR-PS2200 Power Supply | MFR-H1-SC2 Soldering Cartridge Hand-piece | MFR-H2-ST2 Soldering Tip Hand-piece | MFR-H4-TW Tweezer Hand-piece | WS1 Universal Soldering Workstand | MFR-WSPT Tweezer Workstand |
|-------------------|----------------------------|---|---|------------------------------------|---|----------------------------------|
| Picture Reference | | 1 | 2 | 3 | | |
| MFR-2210 | 1 | 1 | | | 1 | |
| MFR-2220 | 1 | | 1 | | 1 | |
| MFR-2240 | 1 | | | 1 | | 1 |
| MFR-2211 | 1 | 2 | | | 2 | |
| MFR-2222 | 1 | | 2 | | 2 | |
| MFR-2241 | 1 | 1 | | 1 | 1 | 1 |

NEW STYLE MFR Tip and Cartridge Hand-pieces.



Slimmer grip for added comfort and handling.



MFR-1100 Series Single Output

Soldering & Rework Systems



The MFR-1100 Single Output Series is designed to minimize your training investment, maximize application solutions and increase productivity.

This Series is compact and **versatile** and can be used with either a soldering tip, cartridge or tweezers hand-piece. A shop air desoldering option is also available as an upgrade kit (see pages 21 & 23).



| Systems | MFR-PS1100 Power Supply | MFR-H1-SC2 Soldering Cartridge Hand-piece | MFR-H2-ST2 Soldering Tip Hand-piece | MFR-H4-TW Tweezer Hand-piece | MFR-H6-SSC SSC Cartridge Hand-piece | WS1 Soldering Workstand | MFR-WSPT Tweezer Workstand | WS2 Soldering Workstand |
|-------------------|----------------------------|---|---|------------------------------------|---|-------------------------------|----------------------------------|-------------------------------|
| Picture Reference | | 1 | 2 | 3 | 4 | 5 | | 6 |
| MFR-1110 | 1 | 1 | | | | 1 | | |
| MFR-1120 | 1 | | 1 | | | 1 | | |
| MFR-1140 | 1 | | | 1 | | | 1 | |
| MFR-1160 | 1 | | | | 1 | | | 1 |
| MFR-1161 | 1 | 1 | | | 1 | 1 | | 1 |

Note: The MFR-1160 replaces the Metcal SP200 Soldering System. The MFR-H6-SSC hand-piece accepts the same SSC cartridges.

SxP
Soldering Cartridges

RxP
Rework Cartridges

Full range on pages 29-30

SxV
Soldering Tips

CxV
Blade Tips

Full range on pages 26-27

TxP
Tweezer Cartridges

Full range on page 31

SSC
Soldering Cartridges
(Previous SP200 System)

Full range on page 17

MFR-1100 & MFR-2200 Series

Soldering & Rework Systems



MFR-2200 and MFR-1100 series



MFR-2200, MFR-1100 and MFR-1300 series (shown on page 14)

Key Features & Benefits

- ▶ SmartHeat® Technology provides exceptional power for high thermal demand applications
- ▶ Single or Dual simultaneous outputs allow for single or dual hand-piece use
- ▶ Five hand-pieces available for increased application solutions for soldering, desoldering (upgrade kit) and rework on one system
- ▶ Each hand-piece has a comprehensive range of cartridges or tips for maximum flexibility
- ▶ Ergonomic hand-pieces for operator safety and comfort

Other Accessories Available:

| | |
|-----------------|---|
| MFR-CA3 | Coil Assembly for Tip Hand-piece (MFR-H2-ST2) |
| WS1G | Auto-sleep Workstand, Green |
| MFR-PM70 | Power Meter |
| AC-CP2 | Cartridge / Tip Removal Pad |
| AC-BP | Brass Pad (for Workstand) - Pack of 10 |

Technical Specifications

| Power Supply | MFR-1100 | MFR-2200 |
|--------------------------------|--|---|
| Ambient Operating Temperature | 10 - 40°C (50°F - 104°F) | 10 - 40°C (50°F - 104°F) |
| Maximum Enclosure Temperature | 55°C (131°F) | 55°C (131°F) |
| Input Line Voltage | 100 - 240 VAC | 100 - 240 VAC |
| Power Consumption | 70 Watts maximum | 130 Watts maximum |
| Input Line Frequency | 50/60 Hz grounded circuit * | 50/60 Hz grounded circuit * |
| Output Power | 60 Watts at 22°C * | 60 Watts at 22°C per output (2 outputs)* |
| Output Frequency | 450 KHz | 450 KHz |
| Power Cord (3-wire) | 183 cm 18/3 SJT | 183 cm 18/3 SJT |
| Dimensions (approx.) W x D x H | 90mm (3.5") x 142mm (5.6") x 197mm (7.8") | 170mm (7") x 200mm (8") x 152.5mm (6") |
| Weight | 2.3kg (5.05 lbs) | 2.97 kg (6.55 lbs) |
| Surface Resistivity | 10 ⁵ -10 ⁹ Ohms | 10 ⁵ -10 ⁹ Ohms |
| Certification / Marking | cTUVus, CE | cTUVus, CE |

Soldering Handle and Coil Assembly

| | | |
|--------------------------------|--|--|
| Tip-to-Ground Potential | < 2 mV RMS | < 2 mV RMS |
| Tip-to-Ground Resistance | <2 ohms | <2 ohms |
| Idle Temperature Repeatability | ± 1.1°C (2°F) in still air | ± 1.1°C (2°F) in still air |
| Handle Cord Assembly Length | 122 cm – burn proof, ESD safe | 122 cm – burn proof, ESD safe |
| Connector | 8-pin circular DIN | 8-pin circular DIN |
| Workstand W x D x H | 100 mm (4") x 200 mm (8") x 100 mm (4") | 100 mm (4") x 200 mm (8") x 100 mm (4") |
| Workstand Weight | 0.69 kg (1.51 lbs) | 0.69 kg (1.51 lbs) |

* RF SmartHeat Technology provides greater power. More details at www.metcal.com/smarheat

MFR-1150 Single Output

Soldering & Desoldering Systems with Venturi

The MFR-1150 Desolder System with Venturi Workstand provides a compact and easy **shop air option**.

Key Features & Benefits

- ▶ Venturi workstand
- ▶ 2 in 1 Desolder hand-piece (Pistol or Pencil)
- ▶ **MFR-H5-DS & MFR-WSDSX are compatible for use with all MFR systems (available under MFR-UK5 upgrade kit)**
- ▶ Uses DxP desolder cartridges and replaceable coil assembly (MFR-HDCA)



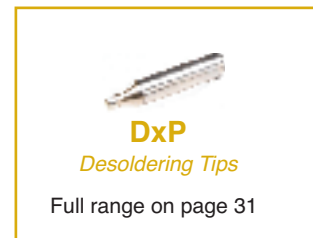
| Part No. | Description |
|-------------------|--|
| MFR-1150 | Complete System |
| <i>Includes:</i> | |
| MFR-PS1100 | Power Supply |
| MFR-H5-DS | Desolder hand-piece |
| MFR-WSDSX | Workstand with venturi box for desolder hand-piece |
| MFR-FTKIT | Fittings and air hose kit |
| AC-TC | Desolder tip cleaner tool |

Technical Specifications

| MFR-PS1100 Power Supply | |
|-------------------------|---|
| Input Line Voltage | 100-240 VAC |
| Power Consumption | 65 Watts max. |
| Input Line Frequency | 50/60Hz * |
| Output Power | 60 Watts Max * |
| Output Frequency | 450 KHz |
| Dimensions W x D x H | 90mm x 200mm x 152.5mm (3.5" x 8" x 6") |

* RF SmartHeat Technology provides greater power. More details at www.metcal.com/smartheat

| MFR-1150 System | |
|--------------------------------|---------------------------------------|
| Idle Tip temperature stability | +/- 1.1°C (2°F) in still air |
| Ambient Operating Temperature | 10 - 40°C (50 - 104°F) |
| Maximum Enclosure Temperature | 55°C (131°F) |
| Tip to ground Potential | <2mV |
| Tip to ground resistance | <2 Ohms |
| Surface resistivity | 10 ⁵ – 10 ⁹ Ohm |
| Approvals | cTUVus, CE |



Collection chamber replacement



Remove grip for Pencil config.



MFR-UK5 Upgrade Kit
Compatible with all MFR Series Power Supplies

| MFR-H5-DS Desolder Hand-piece | |
|--------------------------------|--|
| Power Cord (3-wire) | 183cm (72") |
| Solder Hand-piece cable length | 152 cm (60"), burn proof, ESD safe |
| Hand piece connector | 8 pin power connector |
| MFR-WSDSX Workstand | |
| Input voltage | 24V |
| Input power | 15W |
| Workstand dimensions | 100mm x 200mm x 140mm (4" x 8" x 5.5") |
| Noise level | < 55 dB |
| Recommended Air pressure input | 550kPa (80PSI) - Shop air only |
| Vacuum suction force | 0.85 bar (25" Hg) |

MFR-1300 Dual Switchable Output

Soldering & Desoldering Systems with Internal Air

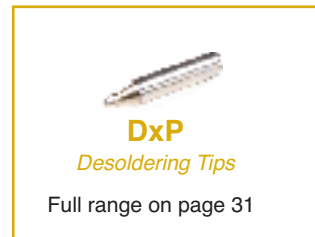
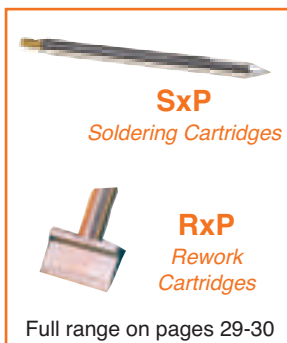
The MFR-1300 Desoldering and Rework System features a innovative desoldering hand-piece and a power supply with an **internal pump** providing 0.7 bar of vacuum suction force making through-hole desoldering easy.

Key Features & Benefits

- ▶ Self-contained powerful vacuum pump
- ▶ 2 in 1 ergonomic and flexible hand-piece
- ▶ Recyclable collection chamber with increased capacity
- ▶ Quick and easy change collection chamber
- ▶ Dual switchable output
- ▶ Powered by Smartheat® Technology
- ▶ Compatible with previous MFR Desolder range



| Part No. | Description |
|-------------------|---|
| MFR-1350 | Desolder System with Internal Pump* |
| MFR-1351 | Solder / Desolder System with Internal Pump** |
| <i>Includes:</i> | |
| MFR-PS1300 | Power Supply |
| MFR-H5-DS | Desolder hand-piece* |
| MFR-H1-SC2 | Solder Cartridge hand-piece* |
| MFR-WSDSU | Workstand for Desolder hand-piece* |
| WS1 | Workstand for Solder hand-piece* |



Technical Specifications

| | MFR-1350/51 |
|----------------------------------|---|
| Input Line Voltage | 100-240 VAC |
| Input Line Frequency | 50/60Hz |
| Power Consumption | 110 Watts max. (Power Supply MFR-PS1300) |
| Output Power | 60 Watts Max * |
| Output Frequency | 450 KHz * |
| Idle Tip temperature stability | +/- 1.1°C (2°F) in still air |
| Ambient Operating Temperature | 10 - 40°C (50 - 104°F) |
| Maximum Enclosure Temperature | 55°C (131°F) |
| Noise level | < 55 dB |
| Vacuum suction force | 0.7 bar (21in Hg at Vacuum pump at sea level) |
| Power Cord (3-wire) | 183cm (72") |
| Desolder Hand-piece cable length | 152 cm (60"), burn proof, ESD safe |
| Solder Hand-piece cable length | 122 cm (48"), burn proof, ESD safe |
| Hand piece connector | 8 pin power connector |
| Tip to ground Potential | <2mV |
| Tip to ground resistance | <2 Ohms |
| Surface Resistivity | 10 ⁵ – 10 ⁹ Ohms |
| Approvals | cTUVus, CE |
| Dimensions (approx.) W x D x H | 170mm x 200mm x 152.5mm (7" x 8" x 6") |
| Workstand dimensions | 100mm x 200mm x 100mm (4" x 8" x 4") |

* RF SmarHeat Technology provides greater power. More details at www.metcal.com/smarheat



Pencil



Pistol

Accessories and Spare Parts

For MFR and PS Series

Hand-pieces and replacement coils

| | | |
|------------|---|---|
| PS-HC3 | | Soldering Handle with PS-CA3 Coil Assembly (PS-900) |
| PS-H3 | 1 | Soldering Handle without Coil Assembly (PS-900) |
| PS-CA3 | 2 | Coil Assembly for PS-HC3 / PS-H3 Hand-piece (PS-900) |
| MFR-H1-SC2 | 3 | Cartridge Solder / Rework Hand-piece (MFR) |
| MFR-H2-ST2 | 4 | Tip Solder Hand-piece (MFR) |
| MFR-CA3 | | Coil Assembly for MFR-H2-ST2 Hand-piece (MFR) |
| MFR-H4-TW | 5 | Precision Tweezer Hand-piece (MFR) |
| MFR-H6-SSC | 6 | SSC Cartridge Solder Hand-piece (MFR) |
| MFR-H5-DS | 7 | Desolder Hand-piece |
| MFR-HSREC | | Cartridge Solder / Rework Hand-piece with long cord (1.83m / 6ft) |
| MFR-HSRLR | 8 | Cartridge Solder / Rework Hand-piece with long reach access |

Workstands

| | | |
|------------|----|--|
| WS1 | | Universal Auto Sleep Workstand |
| WS2 | | Round Auto Sleep Workstand |
| WS2-NS | 9 | Solder Workstand (PS-900) |
| MFR-WSPT | 10 | Non Sleeper Precision Tweezer Workstand |
| MFR-WSDSX | 11 | Venturi Workstand for Desolder Hand-piece |
| MFR-WSDSU | | Non Sleeper Workstand for Desolder Hand-piece |
| WS1CB | | Solder Rework Cradle Replacement for WS1 Workstand |
| WS2CB | | Solder Rework Cradle Replacement for WS2 Workstand |
| MFR-WSDSCB | | Replacement cradle for all MFR Desolder Workstands |
| AC-PTP-1 | | Rubber tip cleaning pad insert* (1) |
| AC-PTP-3 | | Rubber tip cleaning pad insert* (3) |
| AC-PTP-10 | | Rubber tip cleaning pad insert* (10) |

* for all rectangular MFR workstands

Upgrade Kits

| | | |
|-------------|--|---|
| MFR-UK1 | | Solder Cartridge Hand-piece (MFR-H1-SC2) and Workstand (WS1) |
| MFR-UK2 | | Solder Tip Hand-piece (MFR-H2-ST2) and Workstand (WS1) |
| MFR-UK4 | | Tweezer Cartridge Hand-piece (MFR-H4-DS) and Workstand (MFR-WSPT) |
| MFR-UK5 | | Desolder Hand-piece (MFR-H5-DS) and Workstand (MFR-WSDSX) |
| MFR-UK6 | | Solder Cartridge Hand-piece (MFR-H6-SSC) and Workstand (MFR-WS2) |
| MFR-H5-DS-C | | Desolder Hand-piece (MFR-H5-DS) and Workstand cradle (MFR-WSDSCB) |

Lead-Free Process Identification

| | | |
|--------|----|---|
| WS1G | 12 | Green Universal Auto Sleep Workstand |
| WS2G | | Green Solder Workstand (PS-900) |
| WS1CG | | Green Solder Rework Cradle Replacement for WS1 Workstand |
| WS2CG | | Green Solder Rework Cradle Replacement for WS2 Workstand |
| AC-CK1 | 13 | Green Identification Ring for OKi Cartridges (Pack of 50) |
| AC-CK3 | | Green Identification Ring for SSC Cartridges (Pack of 50) |
| AC-CK4 | 14 | Green Identification Ring for OKi Tips (Pack of 50) |

Miscellaneous Accessories

| | | |
|----------|----|--|
| AC-BRUSH | 15 | Soft Brass Brush |
| AC-CP2 | | Cartridge and Tip Removal Pad |
| AC-FX1 | 16 | Fume Extraction Kit |
| AC-IK | | Interlocking / Mounting Kit |
| MFR-PM70 | | Power Meter for MFR Series |
| PS-PM900 | | Power Meter for PS-900 |
| AC-Y10 | | Yellow Sponge for WS1 Workstand (Pack of 10) |
| AC-YS4 | | Yellow Sponge Round for WS2 Workstand (Pack of 10) |
| AC-BP | | Brass Pad (Pack of 10) |

Desoldering Accessories

| | | |
|-----------|----|---|
| MFR-DC10 | 17 | Disposable Collection Chamber for MFR-H5-DS (pack of 10) |
| MFR-DC100 | | Disposable Collection Chamber for MFR-H5-DS (pack of 100) |
| MFR-HDCA | 18 | Coil Assembly for MFR Desolder Hand-piece |
| MFR-PG | | Replacement Pistol grip for MFR-H5-DS Hand-piece |
| AC-SK1 | | Seal Kit Collection Chamber (pack of 2) |
| AC-VP | | Vacuum Port |
| AC-VL | | ESD Air Hose |
| AC-VPF | | Vacuum Port Filter (pack of 5) |
| LM-PS | | Power supply for MFR-WSDSX with multi plug adapters |
| AC-TC | | Desoldering Tip Cleaner Tool |



PS-900 Production Soldering



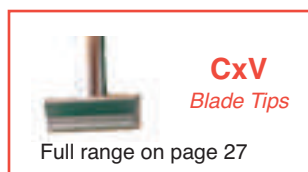
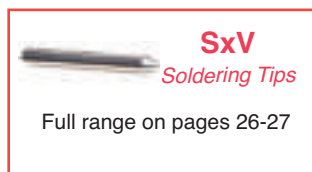
The PS-900 provides power and exceptional SmartHeat thermal control in a **small benchtop footprint**.

Key Features & Benefits

- ▶ SmartHeat® temperature control
- ▶ Ergonomic, lightweight handle
- ▶ Rugged cast aluminum housing
- ▶ Added plating thickness to tips
- ▶ Low cost, quick-change heater coil

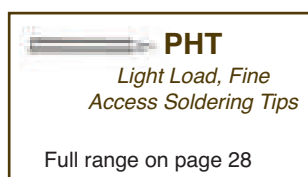


| Part No. | Description |
|-------------------------------------|--|
| PS-900 | Complete System |
| <i>Includes:</i> | |
| PS-PW900 1 | Power Supply |
| PS-HC3 2 | Hand-piece (PS-H3) and Coil Assembly (PS-CA3) |
| WS2-NS 3 | Workstand, Black |
| SFV-CH15A 6 | Economical and Affordable Chisel Solder Tip 1.5mm (.06") |
| <i>Other Accessories Available:</i> | |
| PS-H3 4 | Hand-piece only, NO PS-CA3 Coil Assembly |
| PS-CA3 5 | Coil Assembly for SxV Soldering Tips and CxV Blade Tips ONLY |
| WS2 | Auto-sleep Workstand, Black |
| WS2G | Auto-sleep Workstand, Green |
| AC-CP2 | Tip Removal Pad |



ONLY AVAILABLE ON PS-900 SYSTEM AND FOR USE WITH PHT TIPS

| | |
|-----------------|---|
| PS-CA1 7 | Coil Assembly for PHT Soldering Tips ONLY |
| PS-HC1 | Hand-piece (PS-H3) and Coil Assembly (PS-CA1) |
| PS-H3 8 | Hand-piece only, NO PS-CA1 Coil Assembly |



PS-900 Production Soldering

Technical Specifications

Power Supply

| | |
|-------------------------------|--|
| Ambient Operating Temperature | 10 - 40°C |
| Maximum Enclosure Temperature | 65°C |
| Input Line Voltage | 100 - 240 VAC |
| Power Consumption | 90 Watts max. |
| Input Line Frequency | 50/60 Hz * |
| Output Power | 60 Watts max.* |
| Output Frequency | 450 KHz |
| Power Cord (3-wire) | 183 cm 18/3 SJT |
| Dimensions W x D x H | 80 x 160 x 115 mm (3.1" x 6.3" x 4.5") |

* RF SmartHeat Technology provides greater power. More details at www.metcal.com/smartheat

Soldering Handle and Coil Assembly

| | |
|--------------------------------|--|
| Tip-to-Ground Potential | < 2 mV |
| Tip-to-Ground Resistance | < 2 ohms |
| Idle Temperature Repeatability | ± 1.1°C in still air |
| Handle Cord Assembly Length | 122 cm – burn proof, ESD safe |
| Connector | 3-pin power connector |
| Overall length (with tip) | 230 mm (9.06") with standard tips |
| Grip diameter | 13 mm (0.51") |
| Tip to grip | 58 mm (2.28") |
| Tip shaft diameter | 8.0 mm (0.31") |
| Tip length | 82 mm (3.23") to 93 mm (3.66") (typical) |
| Workstand W x D x H | 105 x 175 x 90 mm (4.1" x 6.9" x 3.5") |



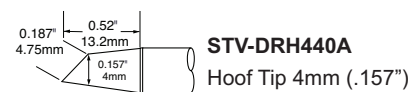
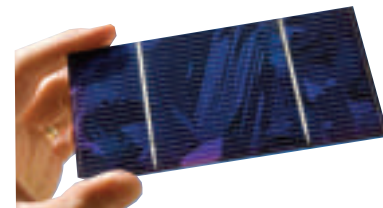
Tip Soldering Hand-Piece with PS-CA3 Coil Assembly

PS-900-Solar



Key Features & Benefits

- ▶ Superior photo voltaic tabbing and buss soldering
- ▶ SmartHeat reduces thermal stress on solar cells
- ▶ Reduces the likelihood of micro-cracking
- ▶ Produces a controlled, high quality solder joint
- ▶ Calibration-free system
- ▶ Specially designed STV-DRH440A hoof tip for high performance



| Part No. | Includes |
|--------------|---|
| PS-900-Solar | PS-PW900 Power Supply, PS-900-PC9 Hand-piece with long cord (274cm / 9ft) & PS-CA3 Coil Assembly , STV-DRH440A soldering tip, WS2-NS Workstand, AC-CP2 tip removal pad |



SxV Soldering Tips



Compatible with: PS-900, MFR-1120, MFR-2220, MFR-2222 Systems, PS-HC3, MFR-H2-ST and MFR-H2-ST2 hand-pieces, PS-CA3, MFR-CA2 and MFR-CA3 Coil Assemblies

| SxV SOLDERING TIPS | | | | |
|--------------------|---|--------|---|--|
| CHISEL | NEW SFV-CH10A STV-CH10A SCV-CH10A | CHISEL | SFV-CH25 STV-CH25 SCV-CH25 | |
| | SFV-CH10AR STV-CH10AR SCV-CH10AR | | SFV-CH30AR STV-CH30AR SCV-CH30AR | |
| | SFV-CH10 STV-CH10 SCV-CH10 | | NEW SFV-CH50A STV-CH50A SCV-CH50A | |
| | NEW SFV-CH15A STV-CH15A SCV-CH15A | | SFV-CH50AR STV-CH50AR SCV-CH50AR | |
| | SFV-CH15AR STV-CH15AR SCV-CH15AR | | SFV-CH50 STV-CH50 SCV-CH50 | |
| | SFV-CHB15 STV-CHB15 SCV-CHB15 | | CONICAL | SFV-CNL03AR STV-CNL03AR SCV-CNL03AR |
| | SFV-CH18AR STV-CH18AR SCV-CH18AR | | | NEW SFV-CNB04A STV-CNB04A SCV-CNB04A |
| | SFV-CH20 STV-CH20 SCV-CH20 | | | NEW SFV-CN05A STV-CN05A SCV-CN05A |
| | NEW SFV-CH24A STV-CH24A SCV-CH24A | | | SFV-CNB04AR STV-CNB04AR SCV-CNB04AR |
| | SFV-CH25AR STV-CH25AR SCV-CH25AR | | | SFV-CNL04 STV-CNL04 SCV-CNL04 |

F = FR4 / Fiber Glass, for most standard applications T = Temperature Sensitive C = Ceramic for high thermal demand applications.

SxV Soldering Tips

CxV Blade Tips



Compatible with: PS-900, MFR-1120, MFR-2220, MFR-2222 Systems, PS-HC3, MFR-H2-ST and MFR-H2-ST2 hand-pieces, PS-CA3, MFR-CA2 and MFR-CA3 Coil Assemblies

| SxV SOLDERING TIPS | | | | | |
|--------------------|--|---|-----------|---|--|
| CONICAL | | SFV-CN05AR STV-CN05AR SCV-CN05AR | HOOF | | SFV-DRH420AR STV-DRH420AR SCV-DRH420AR |
| | | SFV-CN05 STV-CN05 SCV-CN05 | | | SFV-DRH20CP STV-DRH20CP SCV-DRH20CP |
| | | SFV-CNB05 STV-CNB05 SCV-CNB05 | | | SFV-DRH430AR STV-DRH430AR SCV-DRH430AR |
| | | SFV-CNL10A STV-CNL10A SCV-CNL10A | | | SFV-DRH630AR STV-DRH630AR SCV-DRH630AR |
| | | SFV-CNL10AR STV-CNL10AR SCV-CNL10AR | | | SFV-DRH420A STV-DRH420A SCV-DRH420A |
| | | SFV-CNL10 STV-CNL10 SCV-CNL10 | | | SFV-DRH30CP STV-DRH30CP SCV-DRH30CP |
| | | SFV-CNL14 STV-CNL14 SCV-CNL14 | | | SFV-DRH440R STV-DRH440R SCV-DRH440R |
| | | SFV-DRH20 STV-DRH20 SCV-DRH20 | | | SFV-DRH640AR STV-DRH640AR SCV-DRH640AR |
| | | SFV-CNL20 STV-CNL20 SCV-CNL20 | | | SFV-DRH40CP STV-DRH40CP SCV-DRH40CP |
| | | SFV-WV20 STV-WV20 SCV-WV20 | | | SFV-DRH440A STV-DRH440A SCV-DRH440A |
| KNIFE | | SFV-DRK45A STV-DRK45A SCV-DRK45A | | SFV-DRK30AR STV-DRK30AR SCV-DRK30AR | |
| | | SFV-DRK50 STV-DRK50 SCV-DRK50 | | SFV-DRK45AR STV-DRK45AR SCV-DRK45AR | |
| | | | | | |
| | | CxV BLADE TIPS | A | | |
| | | | CFV-BL100 | CCV-BL100 | 10mm (.40") |
| | | | CFV-BL250 | CCV-BL250 | 25mm (1") |
| | | | CFV-BL350 | CCV-BL350 | 35mm (1.4") |
| | | | CFV-BL400 | CCV-BL400 | 40mm (1.6") |
| | | | CFV-BL500 | CCV-BL500 | 50mm (2") |

F = FR4 / Fiber Glass, for most standard applications T = Temperature Sensitive C = Ceramic for high thermal demand applications.

PHT Soldering Tips



| PHT SOLDERING TIPS | | Compatible with: PS-800, PS-800E and PS-900 Systems and PS-CA1 Coil Assembly | |
|--------------------|----------------------------|--|---------|
| CHISEL | | PHT-750315 PHT-650315 | CONICAL |
| | | PHT-750325 PHT-650325 | |
| | | PHT-750326 PHT-650326 | |
| | | PHT-750335 PHT-650335 | |
| | | PHT-751355 PHT-651355 | |
| | | PHT-751367 PHT-651367 | |
| CONICAL | | PHT-751384 PHT-651384 | HOOF |
| | | PHT-752017 PHT-652017 | |
| | | PHT-752327 PHT-652327 | |
| | | PHT-752035 PHT-652035 | |
| | | PHT-752335 PHT-652335 | |
| | | PHT-752337 PHT-652337 | |
| | | PHT-753035 PHT-653035 | |
| | | PHT-752057 PHT-652057 | |
| | | PHT-753067 PHT-653067 | |
| | | PHT-753077 PHT-653077 | |
| | PHT-754627 PHT-654627 | | |
| | PHT-754667 PHT-654667 | | |
| | PHT-754687 PHT-654687 | | |
| | PHT-754487F PHT-654487F | | |
| | PHT-654497 PHT-754497 | | |
| | PHT-654697 | | |
| KNIFE | | PHT-755437 PHT-655437 | KNIFE |
| | | PHT-755477 PHT-655477 | |

75 = 750 Series for most standard applications - 65 = 650 Series for temperature sensitive applications

SxP Soldering & Rework Cartridges



SxP SOLDERING & REWORK CARTRIDGES

Compatible with: MFR-1110, MFR-1161, MFR-1351, MFR-2211, MFR-2241 Systems and MFR-H1-SC hand-piece

| CHISEL | | CONICAL | |
|--------|-------------------------------------|--------------|--|
| | SFP-CH10 STP-CH10 SCP-CH10 | | SFP-CN04 STP-CN04 SCP-CN04 |
| | SFP-CH15 STP-CH15 SCP-CH15 | | SFP-CNB04 STP-CNB04 SCP-CNB04 |
| | SFP-CHB15 STP-CHB15 SCP-CHB15 | | SFP-CNL04 STP-CNL04 SCP-CNL04 |
| | SFP-CH20 STP-CH20 SCP-CH20 | | SFP-CN05 STP-CN05 SCP-CN05 |
| | SFP-CHL20 STP-CHL20 SCP-CHL20 | | SFP-CNB05 STP-CNB05 SCP-CNB05 |
| | SFP-CH25 STP-CH25 SCP-CH25 | | SFP-CNL06 SCP-CNL06 |
| | SFP-CH30 STP-CH30 SCP-CH30 | | SFP-BVL10 STP-BVL10 SCP-BVL10 |
| | SFP-CH35 STP-CH35 SCP-CH35 | | SFP-DRH05 STP-DRH05 SCP-DRH05 |
| | SFP-CH50 STP-CH50 SCP-CH50 | | SFP-DRH610 STP-DRH610 SCP-DRH610 |
| | | | SFP-DRH15 STP-DRH15 SCP-DRH15 |
| | | | SFP-DRH615 STP-DRH615 SCP-DRH615 |
| | | | SFP-DRH35 STP-DRH35 SCP-DRH35 |
| | | | SFP-DRK50 STP-DRK50 SCP-DRK50 |
| | | KNIFE | |

F = FR4 / Fiber Glass, for most standard applications T = Temperature Sensitive C = Ceramic for high thermal demand applications.

RxP Rework Cartridges

Compatible with: MFR-1110, MFR-1161, MFR-1351, MFR-2211, MFR-2241 Systems, MFR-H1-SC and MFR-H1-SC2 hand-pieces. All dimensions shown are in mm (inches)

| RxP REWORK CARTRIDGES | | | | | | | | |
|-----------------------|--|----------------------|-----------------|-----------------|-----------------|----------------------|-----------------|---------|
| BLADE | | | A | B | D | SMT TYPE | | |
| | | RFP-BL1 RCP-BL1 | 10 (0.41) | - | - | - | | |
| | | RFP-BL2 RCP-BL2 | 15.6 (0.62) | - | - | - | | |
| TUNNEL | | RFP-DL1 RCP-DL1 | 5.18 (0.204) | 10.16 (0.40) | 3.22 (0.127) | Tunnel SOIC-14-16 | | |
| | | RFP-DL2 RCP-DL2 | 5.18 (0.204) | 4.32 (0.17) | 2.29 (.09) | Tunnel SOIC-8 | | |
| | | RFP-DL3 RCP-DL3 | 6.86 (.270) | 11.15 (0.44) | 2.29 (.09) | Tunnel SOIC-16 | | |
| SLOT | | RFP-SL1 RCP-SL1 | 2.34 (.092) | 1.37 (.054) | 1.78 (.07) | 0805 Chip Package | | |
| | | RFP-SL2 RCP-SL2 | 3.48 (.137) | 1.63 (.064) | 1.78 (.07) | 1206 Chip Package | | |
| QUAD | | RFP-QD4 RCP-QD4 | 12.70 (.500) | 11.43 (.450) | 3.81 (.150) | 15.24 (.600) | 13.97 (.550) | PLCC 32 |
| | | RFP-QD6 RCP-QD6 | 17.78 (.700) | 16.76 (.660) | 3.81 (.150) | 17.78 (.700) | 16.76 (.660) | PLCC 44 |
| | | RFP-QD7 RCP-QD7 | 25.27 (.995) | 24.38 (.960) | 5.59 (.220) | 25.27 (.995) | 24.38 (.960) | PLCC 68 |
| | | RFP-QD10 RCP-QD10 | 20.32 (.800) | 19.30 (.760) | 3.81 (.150) | 20.32 (.800) | 19.30 (.760) | PLCC 52 |
| | | RFP-QD15 RCP-QD15 | 13.34 (.525) | 12.32 (.485) | 2.79 (.110) | 13.34 (.525) | 12.32 (.485) | TQFP 80 |
| | | RFP-QD19 RCP-QD19 | 16.13 (.635) | 16.13 (.635) | 3.30 (.130) | 16.13 (.635) | 16.13 (.635) | QFP 44 |
| | | RFP-QD20 RCP-QD20 | 16.51 (.650) | 16.51 (.650) | 3.30 (.130) | 22.48 (.885) | 22.48 (.885) | QFP 100 |

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TxP Tweezer Cartridges DxP Desoldering Tips

| TxP Tweezer Cartridges | | Compatible with: MFR-1140, MFR-2240, MFR2241 Systems and MFR-H4-TW hand-piece | |
|------------------------|--|---|--|
| BLADE | | TFP-BLP1 TTP-BLP1 TCP-BLP1 | 1.0mm x 14mm (.04" x .55") |
| | | TFP-BLP2 TTP-BLP2 TCP-BLP2 | 2.0mm x 14mm (.08" x .55") |
| | | TFP-CNP1 TTP-CNP1 TCP-CNP1 | Conical 0.4mm x 19.1mm (.015" x .75") |
| HEAVY DUTY | | | A |
| | | TFP-BLH40 TTP-BLH40 TCP-BLH40 | 6.35mm (.25") |
| | | TFP-BLH50 TTP-BLH50 TCP-BLH50 | 16mm (.62") |
| | | TFP-BLH60 TTP-BLH60 TCP-BLH60 | 20.5mm (.81") |
| | | TFP-BLH70 TTP-BLH70 TCP-BLH70 | 28mm (1.1") |

| DxP Desoldering Tips | | Compatible with: MFR-1150, MFR-1350, MFR-1351 systems with MFR-H5-DS hand-piece and previous MFR-DSX, -DSI, -SDX, -SDI Systems with MFR-HDS hand-piece. All dimensions shown are in mm (inches) | | |
|--|----------------------|--|----------------|------------|
| | | A | B | TYPE |
| <p>Standard</p> <p>Long Reach</p> | DFP-CN2 DCP-CN2 | 0.64 (.025) | 1.78 (.070) | Standard |
| | DFP-CN3 DCP-CN3 | 0.76 (.030) | 2.03 (.080) | Standard |
| | DFP-CN4 DCP-CN4 | 1.02 (.040) | 2.28 (.090) | Standard |
| | DFP-CN5 DCP-CN5 | 1.27 (.050) | 2.64 (.104) | Standard |
| | DFP-CN6 DCP-CN6 | 1.52 (.060) | 2.84 (.112) | Standard |
| | DFP-CN7 DCP-CN7 | 2.41 (.095) | 3.63 (.143) | Standard |
| | DFP-CNL3 DCP-CNL3 | 0.76 (.030) | 2.03 (.080) | Long Reach |
| | DFP-CNL4 DCP-CNL4 | 1.02 (.040) | 2.28 (.090) | Long Reach |
| | DFP-CNL5 DCP-CNL5 | 1.27 (.050) | 2.64 (.104) | Long Reach |

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Convection Rework Overview

SYSTEMS SERIES

M A N U A L A N D M O D U L A R S Y S T E M S



MRS-1100A Modular Rework System



APR Scorpion Rework Systems

F O R S M A L L T O M E D I U M

HANDHELD SERIES

P R E - H E A T E R S



PCT-1000 Programmable Pre-Heater



PCT-100 Pre-Heater

D I G I T A L

A N A L O G



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