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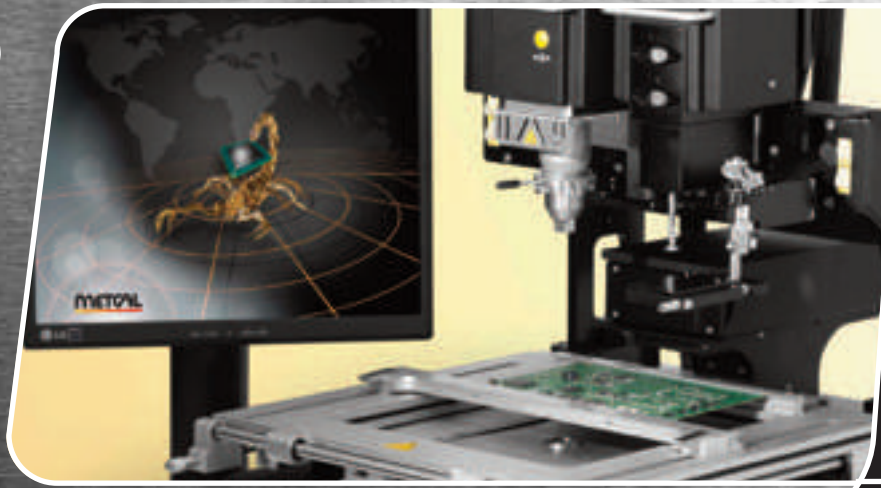
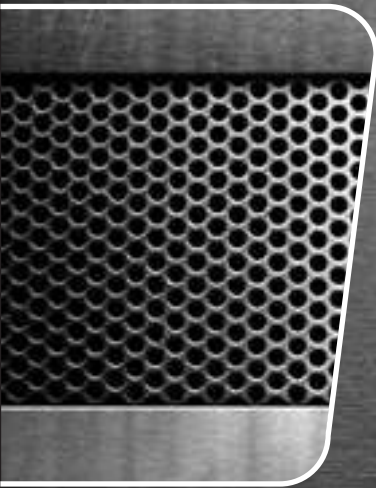
ELECTRONICS BENCH TOOL SOLUTIONS

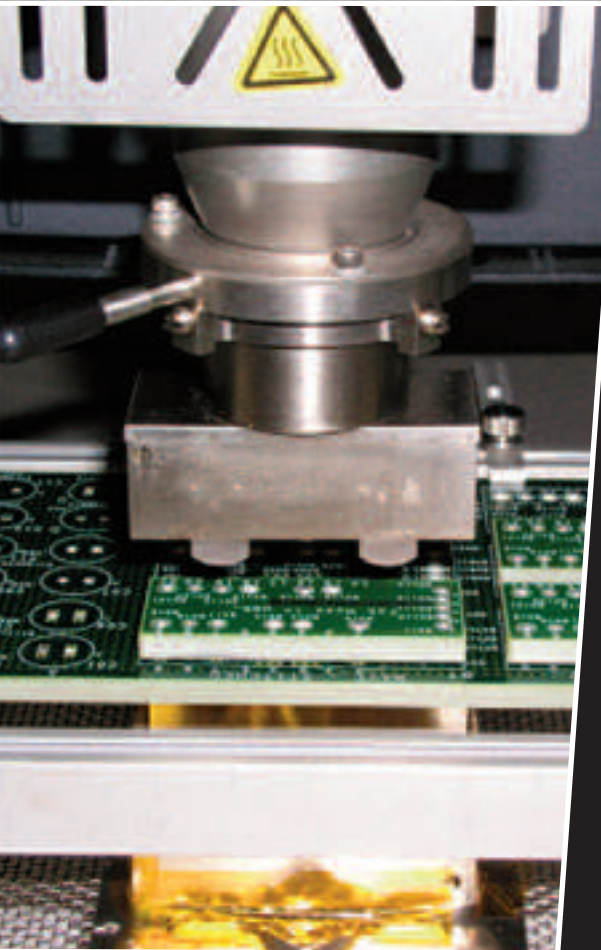
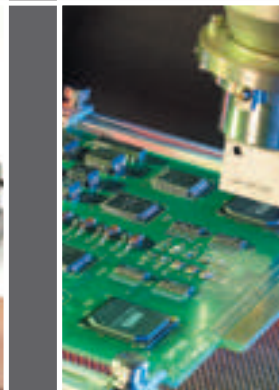
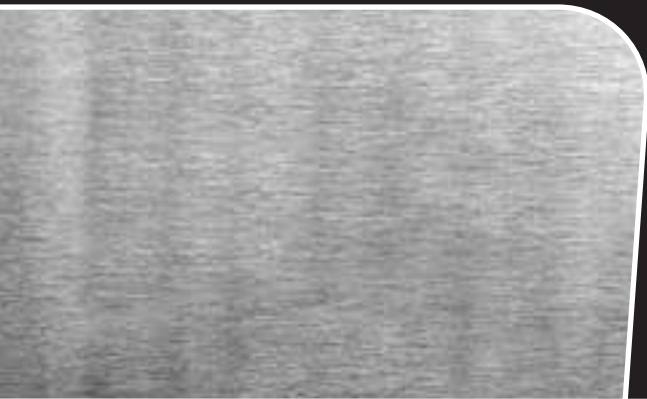
HAND SOLDERING,
DESOLDERING AND
REWORK

CONVECTION
REWORK

FUME
EXTRACTION

FLUID
DISPENSING





HAND SOLDERING

CONVECTION REWORK

DELIVERING CORE TECHNOLOGICAL ADVANTAGES WITH BEST-IN-CLASS PERFORMANCE.

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FUME EXTRACTION



FLUID DISPENSING

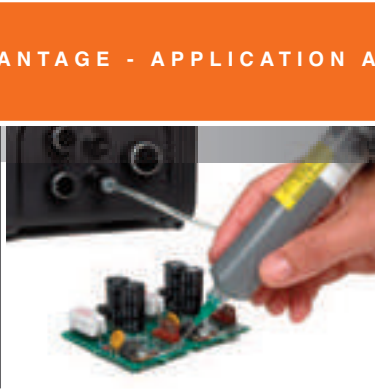


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We are committed to understanding the product needs of our customers, and supply professional grade products that are innovative, reliable, price competitive and easy to use.

METCAL

Metcal is part of the OK International family and provides expert product support and responsive customer service, with localization to meet regional market needs.

SERVING THE ELECTRONICS ASSEMBLY INDUSTRY FOR OVER 30 YEARS

Hand Soldering, Desoldering &

Single Port



PS-900
Production Soldering



MFR-1100 Series
Soldering / Desoldering / Rework

Dual Port Switchable



MFR-1300 Series
Soldering / Desoldering



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

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
Soldering / Rework



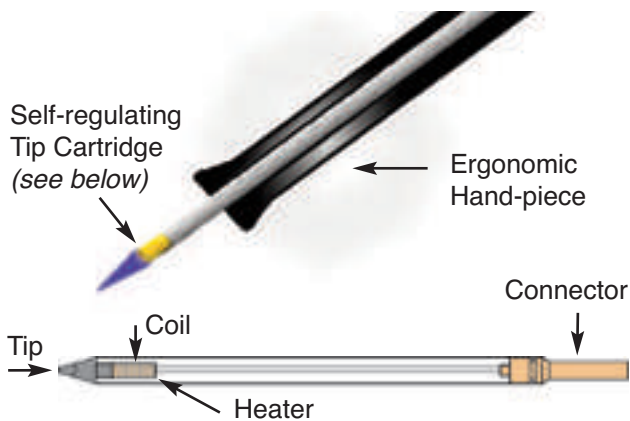
MX-5200 Series
Soldering / Desoldering / Rework



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

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 SmartHeat® Video on 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 has been restored, can the MX-5000 be restarted and soldering operations can be resumed.

Built-in power indication meter with digital display and bar graph that dynamically provides the operator with feedback on the status of the soldering operation. Whether using a large mass rework tip for QFPs or a fine-point soldering tip, the power indication meter is a 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 (Programmable sleep from 10 to 120min): 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 feature allows an operator to set the desired time to cut off power to the hand-piece.



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.

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.

Soldering cartridges:
PTTC Series, 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.

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

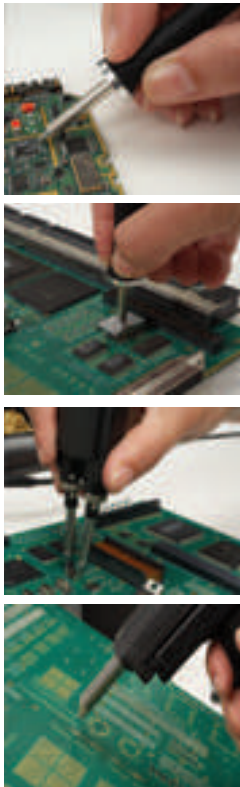
NOTE: Unit requires
shop air for desoldering.

MX-5200 Dual Simultaneous

Soldering, Desoldering & Rework Systems

HAND-PIECES & CARTRIDGES

The 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.



Hand-pieces

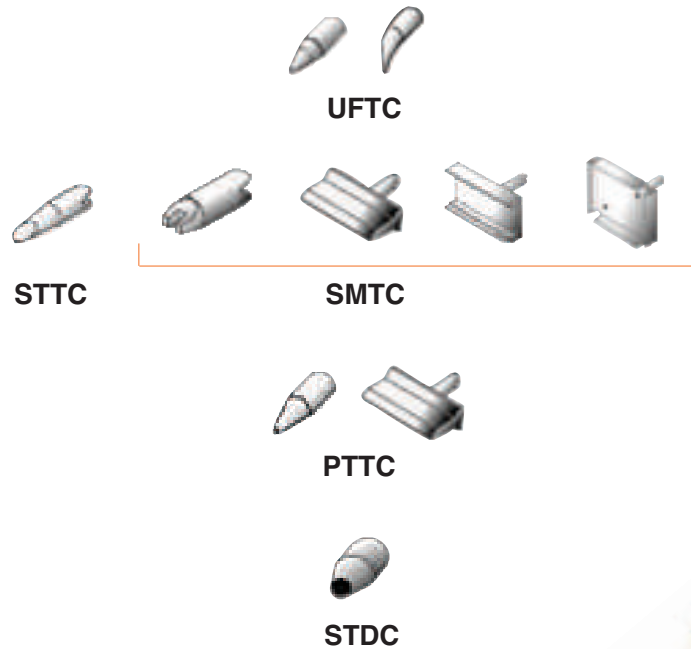
MX-H2-UF
Metcal
UltraFine™
Hand-piece

MX-H1-AV
Metcal
Advanced™
Hand-piece

MX-PTZ
Metcal
Precision
Tweezer
Hand-piece

MX-DS1
Metcal
Desoldering
Hand-piece

Cartridges



Note: The hand-pieces shown above are backward compatible with the MX-5000 and MX-500 systems. Cartridges are not included with the hand-pieces.

| | | |
|-------------|---------------------------------|---------------------------|
| STTC | Soldering Cartridges | See Series on pages 16-17 |
| UFTC | Ultra Fine Soldering Cartridges | See Series on page 18 |
| SMTC | Rework Cartridges | See Series on pages 19-20 |
| PTTC / TATC | Tweezer / Talon Cartridges | See Series on page 21 |
| STDC | Desoldering Cartridges | See Series on page 22 |



| Hand-pieces and Grips | |
|-----------------------|---|
| MX-H1-AV | Metcal Advanced™ Hand-piece with cord, soldering and rework, three grips included |
| MX-H1GR 1 | 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 2 | Grip Metcal Advanced™ Hand-piece with green knob pattern |
| MX-H2-UF | Metcal UltraFine™ Hand-piece with cord, fine soldering, three grips included |
| MX-H2GR 5 | Grip Metcal UltraFine™ Hand-piece with black sleeve in ring pattern |
| MX-H2GRS 4 | 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-PTZ | Metcal Precision Tweezers, SMD rework |
| MX-DS1 | 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 |

MX-5200 Dual Simultaneous

Soldering, Desoldering & Rework Systems

WORKSTANDS & ACCESSORIES

| Workstands and Accessories | |
|--|---|
| MX-W1AV | 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 | 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 |
| AC-Y10 | Yellow sponge, pack of 10 |
| AC-BP | Brass pad, pack of 10 |
| AC-BRUSH-P | Soft Brass Brush, pack of 6 |
| MX-CP1 | Cartridge removal pad |
| Note: cartridges not included with hand-pieces | |
| 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-P | 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 |

Note: Users of the MX-500 System that have either an MX-RM3E Hand-piece or an MX-TALON Tweezer Hand-piece can still use these hand-pieces with the MX-5200 System. However, for improved operator comfort and ergonomics, the new Metcal Advanced™ Hand-piece (STTC and SMTC cartridges) and the MX-PTZ Precision Tweezers are highly recommended.



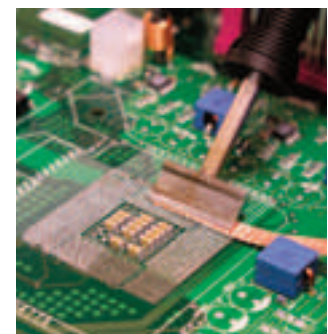
Through hole desoldering with the MX-DS1 hand-piece.

| UPGRADE KITS GUIDE: HAND-PIECE AND WORKSTAND | | | | | | | |
|--|-------------|----------|---|--------------------------------------|------------|---------|---------|
| PART NUMBER | Hand-pieces | | | | Workstands | | |
| | MX-H1-AV | MX-H2-UF | 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 | | | | ✓ | | | ✓ |

Upgrade kits include a hand-piece and a workstand. Upgrade kits are a recommended option when adding a hand-piece to ensure that the matching Auto-Sleep Workstand is used.

TECHNICAL SPECIFICATIONS

| | |
|-----------------------------------|--|
| Ambient Operating Temperature | 10 - 40°C |
| Maximum Enclosure Temperature | 55°C |
| Input Line Voltage | 100 - 240 VAC, grounded circuit |
| Input Line Frequency | 50/60 Hz |
| Power Consumption | 125W |
| Output Power | Single mode: 80 Watts max. per channel Dual Mode: 80 Watts shared dynamically |
| Output Frequency | 13.56 MHz |
| Power Cord 3-Wire | 183 cm (72") SJT |
| 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=122 cm (48"), burn proof, ESD safe |
| Hand-piece Connector | F connector |
| Workstand Dimensions w x d x h | 8.6 cm (3.4") x 19.1 cm (7.5") x 8.3 cm (3.3") |
| Weight of the power supply | 7.4 lbs (3.35 kg) |
| Weight of the workstand | 1.05 lbs (.476 kg) |



BGA pad cleaning with SMTC blade tip cartridge. See full range on page 20.

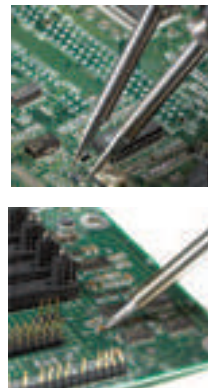
MFR-2200 Series Dual Output

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 11 & 13).



| Systems | MFR-PS2200 Power Supply | MFR-H1-SC Soldering Cartridge Hand-piece | MFR-H2-ST 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 |



MFR-H2-ST
Tip Soldering
Hand-Piece

MFR-H1-SC
Cartridge Soldering
Hand-Piece



Full range on pages 27-28



Full range on pages 24-25



Full range on page 29

MFR-1100 Series Single Output

Soldering & Rework Systems



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

This Series is compact and **versatile**. It can be used with either a soldering tip, cartridge or tweezers hand-piece. A desoldering option is also available as an upgrade kit (see pages 11 & 13).



| Systems | MFR-PS1100 Power Supply | MFR-H1-SC Soldering Cartridge Hand-piece | MFR-H2-ST 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 27-28

SxV
Soldering Tips

CxV
Blade Tips

Full range on pages 24-25

TxP
Tweezer Cartridges

Full range on page 29

SSC
Soldering Cartridges
(**METAL** SP200 System)

Full range on page 23

MFR-1100 & MFR-2200 Series

Soldering & Rework Systems



Systems from both MFR-2200 and MFR-1100 series can be locked together for increased flexibility.



MFR-2200: Three position switch. Select left, right or center (both ports operational) to power hand-pieces

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
- ▶ Hand-pieces are ergonomic for operator safety and comfort

Other Accessories Available:

| | |
|-----------------|--|
| MFR-CA2 | Coil Assembly for Tip Hand-piece (MFR-H2-ST) |
| 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 |
| Input Line Frequency | 50/60 Hz grounded circuit | 50/60 Hz grounded circuit |
| Power Consumption | 70 Watts maximum | 130 Watts maximum |
| 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) |

MFR-1150 Single Output

Soldering & Desoldering Systems with Venturi

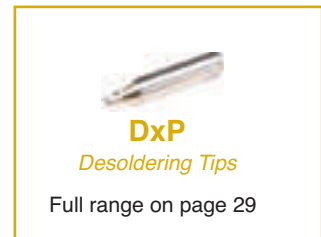
The MFR-1150 Desolder System with Venturi Workstand provides a compact and easy **shop air option**.

Key Features & Benefits

- ▶ Venturi workstand
- ▶ 2 in 1 Desolder hand-piece
- ▶ **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 | Tip cleaner |



Technical Specifications

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

| 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 pump
- ▶ 2 in 1 ergonomic and flexible hand-piece
- ▶ 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-SC* | 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 (RF SmartHeat® Power) |
| 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") |



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-SC | 3 Cartridge Solder / Rework Hand-piece (MFR-1100 & MFR-2200) |
| MFR-H2-ST | 4 Tip Solder Hand-piece (MFR-1100 & MFR-2200) |
| MFR-CA2 | Coil Assembly for MFR-H2-ST Hand-piece (MFR-1100 & MFR-2200) |
| MFR-H4-TW | 5 Precision Tweezer Hand-piece (MFR-1100 & MFR-2200) |
| MFR-H6-SSC | 6 SSC Cartridge Solder Hand-piece (MFR-1100 & MFR-2200) |
| 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 |

Upgrade Kits

| | |
|-------------|---|
| MFR-UK1 | Solder Cartridge Hand-piece (MFR-H1-SC) and Workstand (WS1) |
| MFR-UK2 | Solder Tip Hand-piece (MFR-H2-ST) 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-P | 15 Soft Brass Brush (Pack of 6) |
| 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 |



PS-900 Production Soldering



The PS-900 provides power and exceptional 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 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 |



SxV
Soldering Tips

Full range on pages 24-25

CxV
Blade Tips

Full range on pages 24-25

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 Coil Assembly |



PHT
Light Load, Fine
Access Soldering Tips

Full range on page 26



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 |
| Input Line Frequency | 50/60 Hz |
| Power Consumption | 90 Watts max. |
| Output Power | 60 Watts max. at 22°C ambient temperature |
| 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") |

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") |



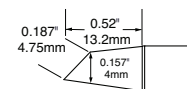
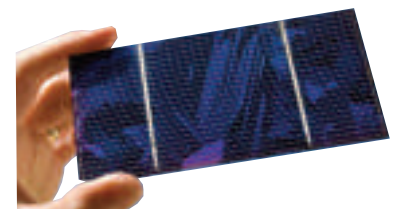
Tip Soldering Hand-Piece with PS-CA3 Coil Assembly

PS-900-Solar



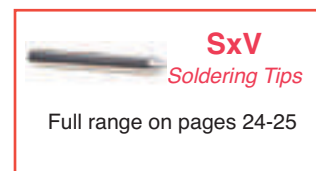
Key Features & Benefits

- ▶ Superior photo voltaic tabbing and buss soldering
- ▶ Lower 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



STV-DRH440A
Hoof Tip 4mm (.157")

| 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 |





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.



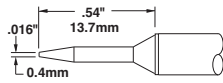
STTC Soldering Cartridges



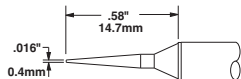
STTC SOLDERING CARTRIDGES

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

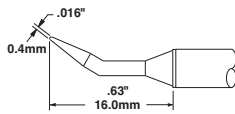
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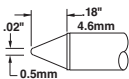
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STTC-106
STTC-806



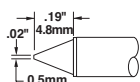
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STTC-045
STTC-145
STTC-845



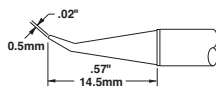
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STTC-140
STTC-840



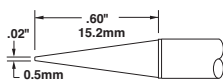
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STTC-111



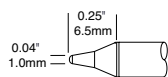
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STTC-816



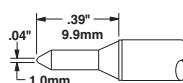
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STTC-844



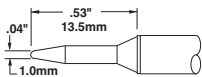
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STTC-843



STTC-101P
STTC-801P

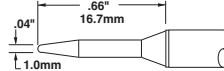


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STTC-031
STTC-131

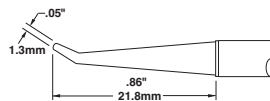


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STTC-001
STTC-101

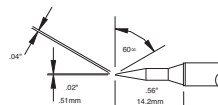
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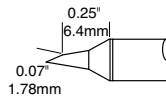
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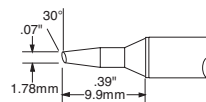
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STTC-141
STTC-841



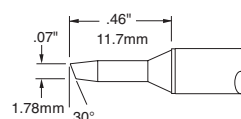
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STTC-146
STTC-846



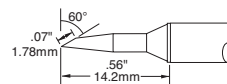
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STTC-135



STTC-505
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STTC-105



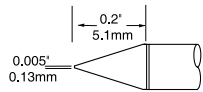
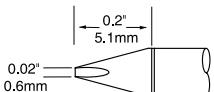
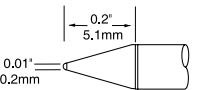
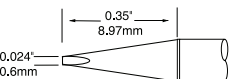

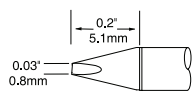
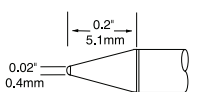
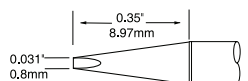
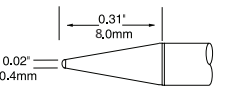
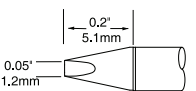
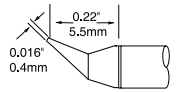
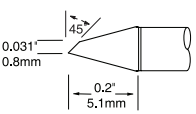
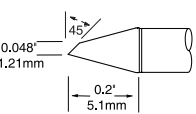
STTC-547
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STTC-147
STTC-847

BEVEL

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



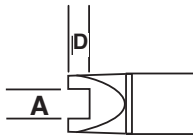
| UFTC ULTRAFINE SOLDERING CARTRIDGES | | Compatible with: MX-5000 and MX-5200 Systems and MX-H2-UF hand-piece | | | |
|-------------------------------------|---|--|--------|---|-------------|
| CONICAL |  | UFTC-7CN01 | CHISEL |  | UFTC-7CH06 |
| |  | UFTC-7CN02 | |  | UFTC-7CHL06 |
| |  | UFTC-7CNB02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

7 = 700 Series for most standard applications

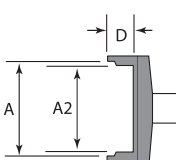
SMTC Rework Cartridges

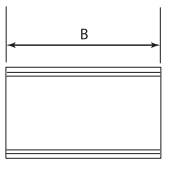
Compatible with: MX-500, MX-5000 and MX-5200 Systems / MX-RM3E and MX-H1-AV hand-pieces
 All dimensions shown are in mm (inches)

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 | |

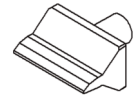


| TUNNEL |  | A | A2 | D | B | SMT TYPE |
|------------------------|--|----------------------|----------------|-----------------|-------------------|---------------|
| | | SMTC-004 SMTC-104 | 5.08 (.20) | 5.08 (.20) | 2.3 (.90) | 4.32 (.17) |
| SMTC-006 SMTC-106 | 5.08 (.20) | 5.08 (.20) | 2.3 (.90) | 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.
 8 = 800 Series for Ceramic and high thermal demand 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 |
| | SMTC-1121 | (.330) | (.330) | (.100) | (.330) | (.330) | PLCC 20 | |
| | SMTC-0112 | 10.16 | 9.14 | 3.80 | 10.16 | 9.14 | SQFP 64 (EJA) | SMTC-560 SMTC-060 SMTC-160 SMTC-860 |
| | SMTC-1112 | (.400) | (.360) | (.150) | (.400) | (.360) | | |
| | SMTC-0120 | 11.18 | 11.18 | 2.54 | 11.18 | 11.18 | TQFP 44 | SMTC-561 SMTC-061 SMTC-161 SMTC-861 |
| | SMTC-1120 | (.440) | (.440) | (.100) | (.440) | (.440) | | |
| | SMTC-1159 | 12.19 | 11.18 | 2.79 | 13.21 | 12.19 | PLCC 28 | SMTC-562 SMTC-062 SMTC-162 SMTC-862 |
| | SMTC-0113 | 12.70 | 11.56 | 3.80 | 12.70 | 11.56 | | |
| | SMTC-1113 | (.500) | (.455) | (.150) | (.500) | (.455) | PLCC 32 | SMTC-0BL050 SMTC-1BL050 SMTC-8BL050 |
| | SMTC-1116 | 12.70 | 11.43 | 3.80 | 15.24 | 13.97 | | |
| | SMTC-1132 | 13.34 | 12.32 | 2.79 | 13.34 | 12.32 | TQFP 80 | SMTC-0BL100 SMTC-1BL100 SMTC-8BL100 |
| | SMTC-0118 | 15.49 | 14.48 | 2.79 | 15.49 | 14.48 | | |
| | SMTC-1118 | (.610) | (.570) | (.110) | (.610) | (.570) | VQFP 100 (EJA) | SMTC-0BL150 SMTC-1BL150 SMTC-8BL150 |
| | SMTC-043 | 16.51 | 16.51 | 3.30 | 22.48 | 22.48 | | |
| SMTC-143 | (.650) | (.650) | (.130) | (.885) | (.885) | Rectangular | SMTC-0BL250 SMTC-1BL250 SMTC-8BL250 | |
| SMTC-014 | 17.78 | 16.76 | 3.80 | 17.78 | 16.76 | 25mm (1.0") Long | | |
| SMTC-114 | (.700) | (.660) | (.150) | (.700) | (.660) | PLCC 44 | SMTC-0BL350 SMTC-1BL350 SMTC-8BL350 | |
| SMTC-117 | 20.32 | 19.30 | 3.80 | 20.32 | 19.30 | 35mm (1.38") Long | | |
| SMTC-118 | 25.27 | 19.30 | 3.80 | 25.27 | 19.30 | PLCC 68 | | |
| SMTC-144 | 26.42 | 26.42 | 3.30 | 26.42 | 26.42 | QFP 100 Square | | |
| HOOF | SMTC-5175 SMTC-0175 SMTC-1175 SMTC-8175 | | | | | | | |
| | SMTC-5174 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-5170 SMTC-0170 SMTC-1170 | | | | | | | |
| | SMTC-5147 SMTC-0147 SMTC-1147 SMTC-8147 | | | | | | | |
| | HOOK & CONICAL | SMTC-5172 SMTC-0172 SMTC-1172 SMTC-8172 | | | | | | |
| SMTC-5171 SMTC-0171 SMTC-1171 SMTC-8171 | | | | | | | | |
| SMTC-5161 SMTC-0161 SMTC-1161 | | | | | | | | |
| SMTC-5173 SMTC-1173 SMTC-8173 | | | | | | | | |
| STTC-1173P STTC-8173P | | | | | | | | |

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> |


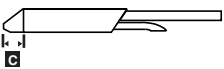
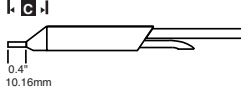
| TATC TALON CARTRIDGES | |
|--|-----------------|
| <p>0.49" 12.45mm</p> <p>0.02" 0.5mm</p> <p>0.13" 0.35mm</p> | <p>TATC-609</p> |
| <p>0.49" 12.45mm</p> <p>0.02" 0.5mm</p> <p>0.047" 1.2mm</p> | <p>TATC-601</p> |
| <p>0.05" 1.27mm</p> <p>3.75" 95.25mm</p> | <p>TATC-608</p> |
| <p>0.10" 2.54mm</p> <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>0.33" 8.38mm</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 |

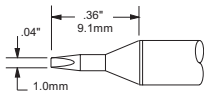
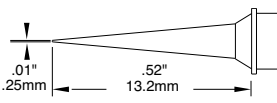
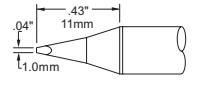
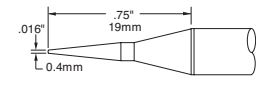
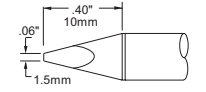
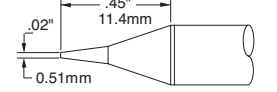
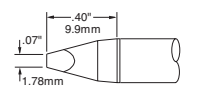
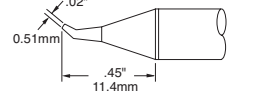
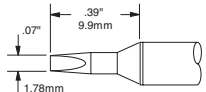
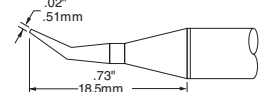
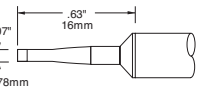
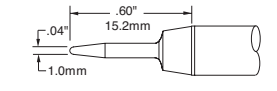
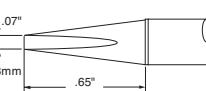
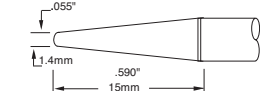
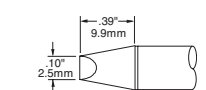
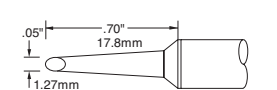
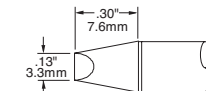
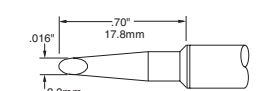
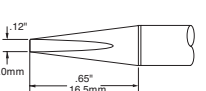
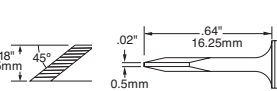
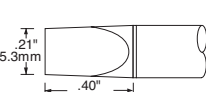
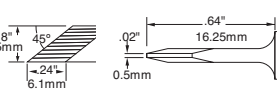
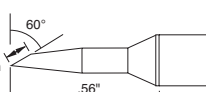
1 = 700 Series (standard length) and 7 = 700 Series (long reach) for most standard applications.
8 = 800 Series for Ceramic and high thermal demand applications.



SSC Soldering Cartridges

Compatible with: MFR-1160 System and 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> | |  <p>SSC-639A SSC-739A</p> |
| |  <p>SSC-613A SSC-713A</p> | |  <p>SSC-661A SSC-761A</p> |
| |  <p>SSC-646A SSC-746A</p> | |  <p>SSC-673A SSC-773A</p> |
|  <p>SSC-617A SSC-717A</p> |  <p>SSC-647A SSC-747A</p> | | |
| BEVEL |  <p>SSC-667A SSC-767A</p> | | |

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



SxV Soldering Tips



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

| SxV SOLDERING TIPS | | | 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 | | |
| | NEW | SFV-CH50A STV-CH50A SCV-CH50A | | |
| | SFV-CH15AR STV-CH15AR SCV-CH15AR | SFV-CH50AR STV-CH50AR SCV-CH50AR | | |
| | SFV-CH15 STV-CH15 SCV-CH15 | SFV-CH50 STV-CH50 SCV-CH50 | | |
| | SFV-CHB15 STV-CHB15 SCV-CHB15 | CONICAL | | |
| | SFV-CH18AR STV-CH18AR SCV-CH18AR | | | SFV-CNL03AR STV-CNL03AR SCV-CNL03AR |
| | SFV-CH20 STV-CH20 SCV-CH20 | | | NEW |
| | NEW | | | SFV-CNB04A STV-CNB04A SCV-CNB04A |
| SFV-CH25AR STV-CH25AR SCV-CH25AR | SFV-CN05A STV-CN05A SCV-CN05A | | | |
| | NEW | | | |
| | NEW | | | |
| | SFV-CNB04AR STV-CNB04AR SCV-CNB04AR | | | |
| | 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 and MFR-H2-ST hand-pieces, PS-CA3 and MFR-CA2 Coil Assemblies

| SxV SOLDERING TIPS | | | |
|--------------------|--|---|-------------|
| CONICAL | | SFV-CN05AR STV-CN05AR SCV-CN05AR | HOOF |
| | | SFV-CN05 STV-CN05 SCV-CN05 | |
| | | SFV-CNB05 STV-CNB05 SCV-CNB05 | |
| | | SFV-CNL10A STV-CNL10A SCV-CNL10A | |
| | | SFV-CNL10AR STV-CNL10AR SCV-CNL10AR | |
| | | SFV-CNL10 STV-CNL10 SCV-CNL10 | |
| | | SFV-CNL14 STV-CNL14 SCV-CNL14 | |
| | | SFV-DRH20 STV-DRH20 SCV-DRH20 | |
| | | SFV-CNL20 STV-CNL20 SCV-CNL20 | |
| | | SFV-WV20 STV-WV20 SCV-WV20 | |
| KNIFE | | SFV-DRK45A STV-DRK45A SCV-DRK45A | HOOF |
| | | SFV-DRK50 STV-DRK50 SCV-DRK50 | |
| | SFV-DRH420AR STV-DRH420AR SCV-DRH420AR | | |
| | SFV-DRH20CP STV-DRH20CP SCV-DRH20CP | | |
| | SFV-DRH430AR STV-DRH430AR SCV-DRH430AR | | |
| | SFV-DRH420A STV-DRH420A SCV-DRH420A | | |
| | SFV-DRH30CP STV-DRH30CP SCV-DRH30CP | | |
| | SFV-DRH440R STV-DRH440R SCV-DRH440R | | |
| | SFV-DRH640AR STV-DRH640AR SCV-DRH640AR | | |
| | SFV-DRH40CP STV-DRH40CP SCV-DRH40CP | | |
| | SFV-DRH440A STV-DRH440A SCV-DRH440A | | |
| | SFV-DRK30AR STV-DRK30AR SCV-DRK30AR | | |
| | 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 | | |
| | | | KNIFE | |
| | | | | 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 | |
| | | | PHT-755437 PHT-655437 | |
| | | | 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 | | SFP-CH10 STP-CH10 SCP-CH10 | CONICAL | | 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 | | BEVEL | | SFP-BLV10 STP-BLV10 SCP-BLV10 | |
| | | SFP-CH35 STP-CH35 SCP-CH35 | | | HOOF | | 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 | | | |
| | | | KNIFE | | SFP-DRK50 STP-DRK50 SCP-DRK50 | | |

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RxP Rework Cartridges

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

| RxP REWORK CARTRIDGES | | A | B | D | SMT TYPE | | | |
|-----------------------|--|----------------------|-----------------|-----------------|-----------------|----------------------|-----------------|---------|
| BLADE | | RFP-BL1 RCP-BL1 | 10 (0.41) | - | - | - | | |
| | | RFP-BL2 RCP-BL2 | 15.6 (0.62) | - | - | - | | |
| | | RFP-BL3 RCP-BL3 | 22.1 (0.87) | - | - | - | | |
| 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 |

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

TxP Tweezer Cartridges

DxP Desoldering Tips

Compatible with: MFR-1140, MFR-2240, MFR2241 Systems and MFR-H4-TW hand-piece

| TxP Tweezer Cartridges | | | |
|------------------------|--|-------------------------------------|--|
| 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") |

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)

| DxP Desoldering Tips | | 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 |

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

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

Convection Rework Overview

SEMI-AUTOMATED SYSTEMS



APR-5000-DZ Rework Systems



APR-5000-XLS Rework Systems

B O A R D S

F O R L A R G E B O A R D S

C O N V E C T I O N T O O L S



HCT-1000 Programmable Convection Tool

D I G I T A L



HCT-900 Convection Tool

A N A L O G

Scorpion Rework System

The Scorpion Advanced Package Rework System ensures both accurate component placement and custom tailored reflow profiles in one user friendly, single platform rework system.

The challenges of array package rework, and the inability to easily inspect placement accuracy, call for a solution that allows for simultaneous viewing of Printed Circuit Board pads and component balls for accurate placement.

The Scorpion Rework System fills this need with quick, accurate placement through the use of an all new vision system employing dual image overlay technology. This new vision system features LED lighting both top and bottom for shadow-free component visualization and component alignment. The HD camera is ready to go out of the box.

The two-head design allows the Scorpion Rework System to be tailored to the users specific rework needs and allows precision alignment of the smallest BGAs, QFNs and Micro SMDs with the highest accuracy. The open-ended board holder fits a wide variety of large, small and odd-shaped boards while allowing precise positioning over the patented dual subzone preheater.

The standard auto-profile mode ensures fast and easy profile creation with a minimum of setup time. By selecting your temperature targets any operator can quickly and accurately create reflow profiles for a wide variety of boards, and then save them in memory for future use.

Source temperatures and time intervals can be modified “On-the-Fly”, eliminating the need to wait for the current profile to terminate before modifications can be made. Precise solder joint temperatures are measured and displayed on a real time graphical display, thus providing the necessary data to accurately and easily establish the optimum reflow profile for each particular application within minutes.

Systems

APR-1100-SRS

Scorpion Rework System
with SmartPlace Technology



APR-1200-SRS

Scorpion Rework System,
SmartPlace Technology &
Precision Placement Package



Upgrade Kits

APR-SRS-UK1

Precision Placement
Package

APR-SRS-UK2

Contactless IR Sensor

APR-SRS-UK3

Side-view Camera

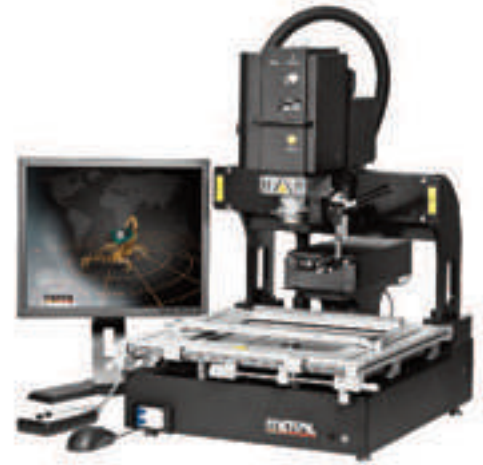
(see details on page 34)



Scorpion Rework System

Hardware Features

- Desktop sized
- 2800W dual zone preheater with 550W top heater
- Single phase 208-240VAC, 50/60Hz, 13A
- Design allows customers to customize the unit to meet their needs
- A 343mm (13.5") x open-ended PCB holder with micrometer adjustment
- Mechanical X and Z axis movement on linear bearings for long-life and minimal maintenance
- Component is retracted automatically at the end of reflow when removing parts
- Linux-based integral computer
- External USB for file transfer
- High definition SmartPlace vision system which uses dual CMOS sensors to assist in the placement of components and requires no calibration
- Optional Precision Placement Head for ultra fine pitch components with placement accuracy of .0254mm (.001") (APR-SRS-UK1)
- Contactless IR sensor for auto start at pre-determined temperatures (APR-SRS-UK2)
- New side-view camera for increased reflow visibility (APR-SRS-UK3)



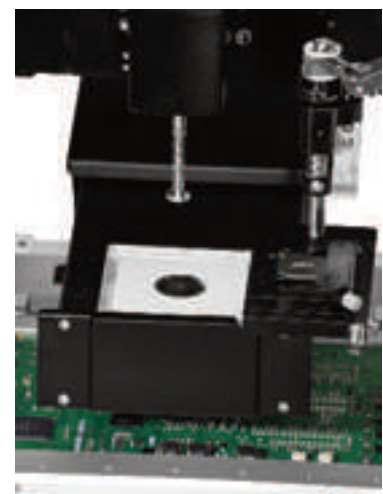
Software Features

- Auto-Profiling
- On the fly profile management of target set points, adding and subtracting time zones, and profile measurement points
- Real time graphical display of solder joint temperatures
- Internal storage of profile data with expansion and transfer via a USB flash drive
- Graphics-based user interface for simple operation
- Simple heater calibration
- Password protection for operators and engineers



Smartplace Technology Vision System Features

- Dual, full color HD camera
- Synchronized 50x Zoom
- 45mm x 45mm (1.77" x 1.77") viewing area
- Selectable camera transition
- Diffused LED lighting for shadow-free component alignment



Operations Features

- Uses existing APR-5000 Series reflow and vacuum nozzles
- Precision Placement head uses pick and place machine nozzles
- Small footprint, 457mm x 559 mm x 660mm (18"x 22" x 26")
- Made in the USA

Scorpion Rework System

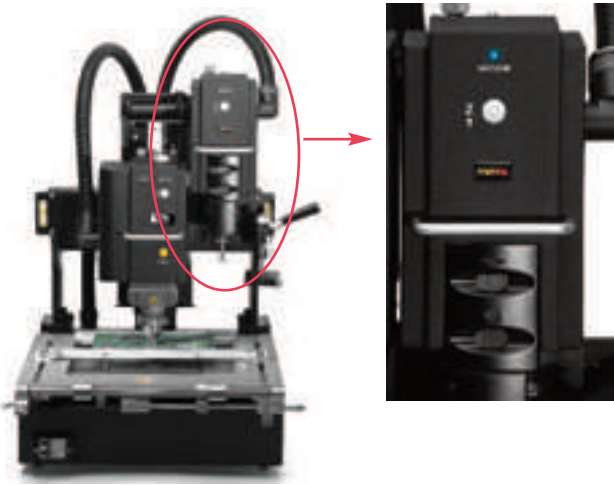
Upgrade Kits

APR-SRS-UK1 Precision Placement Head

For placement accuracy to 0.0015" (.038mm)

Also included with kit:

| | |
|---------|-------------------------------------|
| UBS-SRS | Under Board Support |
| PNZ-07 | Vacuum Pick-Up Nozzle, 0.7mm O/D |
| PNZ-24 | Vacuum Pick-Up Nozzle, 2.4mm O/D |
| PNZ-80 | Vacuum Pick-Up Nozzle, 8.0mm O/D |
| PNZ-AD | Nozzle Adaptor for Fine Placer Head |



APR-SRS-UK2 Contactless IR Sensor

Features a remote temperature sensor to ensure repeatability



APR-SRS-UK3 Side-view Camera

Facilitate visibility of reflow



Technical Specifications

| | |
|---------------|---|
| Input Voltage | 208-240VAC, 50/60Hz, 13 Amp Single Phase |
|---------------|---|

Power Consumption

| | |
|--------------|-------|
| System Total | 2800W |
|--------------|-------|

Pre-Heater

| | |
|---------------|-------|
| Inner Zone* | 900W |
| Outer Zone* | 1800W |
| Reflow Heater | 550W |

* both heaters can be used at the same time

Temperature Control Type

| |
|------------------------------------|
| Closed-Loop Control (Thermocouple) |
|------------------------------------|

Maximum Source Temperature

| | |
|---------------------------|---|
| Reflow Head | 400°C (752°F) |
| Pre-Heater (Inner/Outer) | 350°C (662°F) |
| Airflow Control | Pre-Set to 8, 16 & 24/min |
| Supply | 24V DC Blower |
| Operating Temperature | 5°C (41°F) to 40°C (104°F) |
| Maximum Relative humidity | 80% at 31°C (88°F) decreasing linearly to 50% at 40°C (104°F) |
| Maximum Altitude | 2000m (6500 ft) |
| Pollution Degree | 2 per IEC 644 |
| Insulation category | II |

Component Handling

| | |
|-------------|--------------------------------------|
| Max. Size | 45mm x 45mm (1.77" x 1.77") |
| Min. Size | 0.51mm x 0.25mm (0.020" x 0.010") |
| Max. Weight | 55 g (1.94 oz) |

PCB Handling Capability

| | |
|----------------|----------------------------|
| Max. Size | 343mm (13.5") x open-ended |
| Max. Thickness | 6mm (0.25") |
| Rework Area | 305mm x 305mm (12" x 12") |

Vision

| | |
|--------------------|-----------------------------|
| Max. Field of View | 45mm x 45mm (1.77" x 1.77") |
|--------------------|-----------------------------|

System

| | |
|-------------------------|---|
| Dimensions W x D x H | 457mm x 559mm x 660mm (18" x 22" x 26") |
| Weight | 63.5kg (140lbs) |
| System Warranty | One-year parts & labor 90 days heaters & lamps |
| Approvals | TUV German standards, CE |

Scorpion Rework System

Accessories

Included with APR-1100-SRS and APR-1200-SRS

| | |
|------------|--|
| FSL-SRS-3 | Long spring PCB Finger 3mm (Pack 3) |
| FSS-SRS-3 | Short spring PCB Finger 3mm (Pack 3) |
| AC-TC3 | Thermocouple Multi-Colored Set, 36 Gauge (qty 2) |
| VNZ-ORINGK | O-Ring Kit (assortment, qty 5 for each of the 4 sizes) |
| SRS-VRT | Placement Verification Kit |
| VNZ-12 | Vacuum Pick-Up Nozzle, 12mm, Reflow Head |
| VNZ-08 | Vacuum Pick-Up Nozzle, 8mm, Reflow Head |
| VNZ-05 | Vacuum Pick-Up Nozzle, 5mm, Reflow Head |
| VNZ-01 | Vacuum Pick-Up Nozzle, 1mm, Reflow Head |
| AC-RP | Nozzle Removal Pad |
| APR-VRT | Vacuum Nozzle Removal Tool |
| 20987 | CSP Adjustable V Block |
| 19782 | BGA Adjustable V Block |
| KAP-100 | Pre-cut Kapton Tape (qty 100) |
| UBS-SRS | Under Board Support |

Included with APR-1200-SRS only

| | |
|--------|---|
| PNZ-07 | Vacuum Pick-up Nozzle, 0.7mm O/D |
| PNZ-24 | Vacuum Pick-up Nozzle, 2.4mm O/D |
| PNZ-80 | Vacuum Pick-up Nozzle, 8.0mm O/D |
| PNZ-AD | Nozzle adapter for Precision Placement Head |

Optional Accessories

| | |
|-----------------|--|
| FSL-6MM-SRS-3 | Long PCB fingers, 6mm clip (pack of 3) |
| FSS-6MM-SRS-3 | Short PCB fingers, 6mm clip (pack of 3) |
| SRS-AK | Accessories Kit |
| VAC-P100 | Vacuum assist plate kit (pack of 100) |
| VNZ12-ORING | 12mm O-Rings (pack of 50) |
| VNZ08-ORING | 8mm O-Rings (pack of 50) |
| VNZ05-ORING | 5mm O-Rings (pack of 50) |
| VNZ-005 | Vacuum Pick-up Nozzle, 0.5mm O/D, 10mil hole |
| PF-1 | Solder Paste/Flux Prep Plate |
| APR-OPTICAL-KIT | Optical Calibration Kit |

Reflow Nozzles & other accessories - See page 39

The Scorpion system accepts the full range of APR and QX series reflow nozzles. Flux transfer plates and solder paste plates are available to ensure repeatable process control during the replacement operation.



VNZ Nozzles



CSP / BGA Adjustable V Block



Under Board Support



Accessories Kit



NZA Nozzles

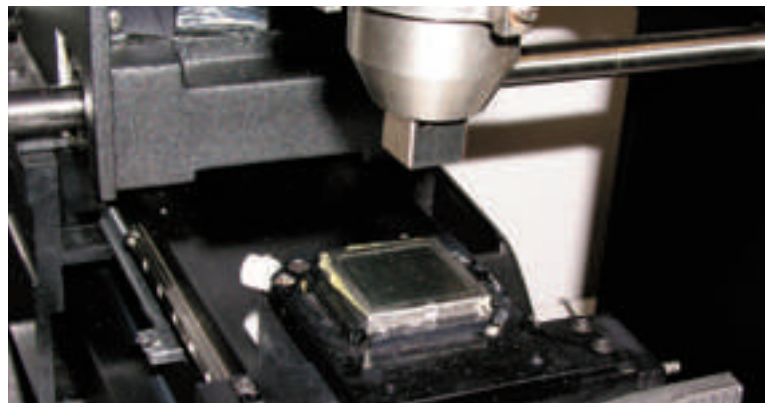
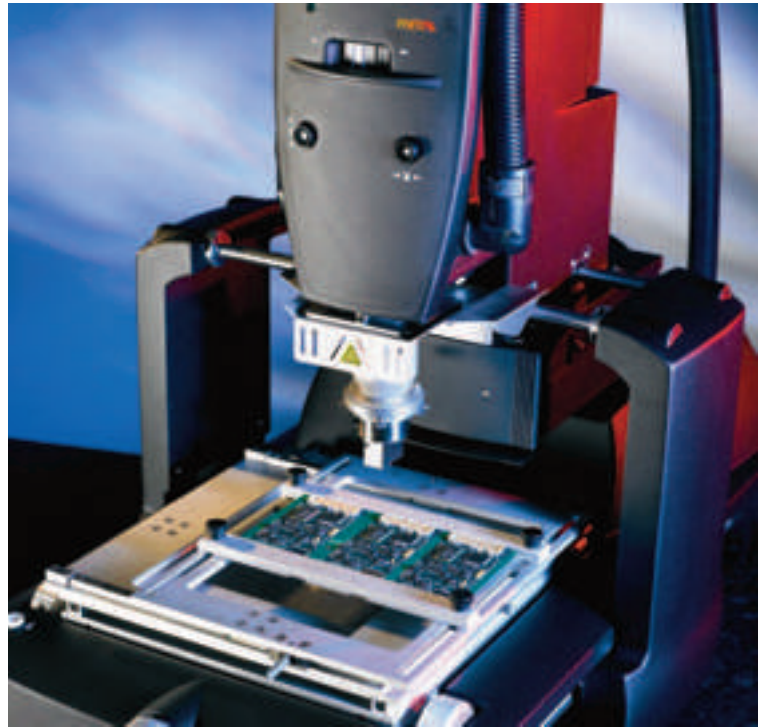
APR-5000-DZ Advanced Package Rework System

The APR-5000-DZ Advanced Package Rework System provides closed-loop control, optimized vision and precise component placement on a compact platform of 19" x 30" (483mm x 762mm). Self contained pumps are standard on this compact platform allowing for easy benchtop setup.

Capable of handling boards up to 15" x 7.75" (381mm x 197mm) with standard fixtures (larger PCB Holder options exist if required) with a placement accuracy to 0.001" (0.025mm) and interconnection pitches as low as 0.012" (0.3mm), the APR-5000-DZ is ideal for reworking smaller assemblies such as cell phones and laptop computers.

The APR-5000-DZ System incorporates powerful, efficient and fast response convective top reflow heater and bottom dual zone pre-heaters for delivering fast ramp and tight delta temperature control horizontally, across the surface of PCBs up to 0.25" (6.35mm) thick, and vertically between the die and ball of the reworked components.

The single reflow/placement head can be moved to the correct position for rework allowing PCB assemblies with 2" (50mm) underside components to be stationary mounted above the pre-heater. An optional XY table (APR-TAB) can be added to minimize operator fatigue and is ideal for small PCB assemblies with less than .25" (6.4mm) underside components. In addition, the APR-5000-DZ-TAB is an APR-5000-DZ system with a pre-assembled XY table.



APR-5000-DZ System configurations and technical specifications on pages 40-41

APR-5000-XLS Advanced Package Rework System

The APR-5000-XLS Advanced Package Rework System provides board capability with small board precision. This system performs precise, cost effective rework of the widest range of PCBs and component types, from large boards up to 24.5" x 24.5" (622mm x 622mm) to components down to 0.020" x 0.010" (0.5mm x 0.25mm).

The flexible APR-5000-XLS System incorporates dual stage pre-heaters and has the thermal capacity and control to execute precise profiles of both large and small PCBs, delivering uniform temperature control horizontally, across the surface of PCBs up to 0.25" (6.35mm) thick, and vertically between the die and ball of the reworked component.

Motorized X,Y, Z adjustments speed placement and help ensure process repeatability. In addition, motorized Theta axis provides 360° rotation to simplify component orientation. Together, these advanced controls reduce operator fatigue, improve placement accuracy and provide process consistency.

Featured on the APR-5000-XLS Advanced Package Rework System is an innovative Split Vision System, which allows operators to view the opposite corners of a component, including splitting on rectangular components, with the necessary magnification to make its placement and registration fast and accurate.

Improved performance

New features:

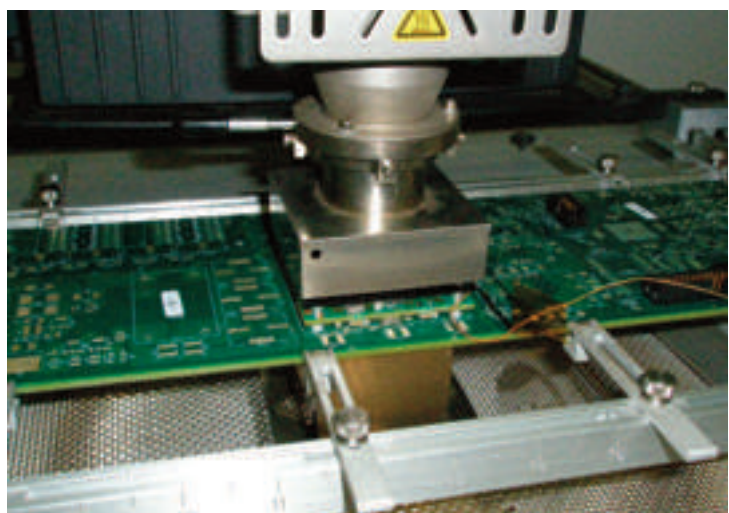
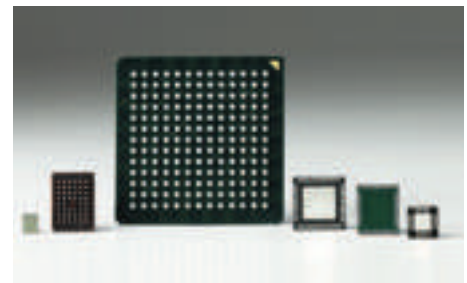
- New dual simultaneously operating subzones provides additional power for faster and safer rework operations.
- New software enables fast and easy profiling
- New subzone design speeds up the process while allowing the operating temperatures to remain lower protecting the component and PCB

Key benefits:

- Increased Productivity
- Precise thermal control across critical assembly regions
- Reduction of rework cycle time protects the component under rework from thermal damage.
- Better management of the narrow lead-free process window without reaching excessive peak temperatures that damage components, connectors, other solder joints and the PCB substrate



New circuit breaker / power switch with easy front access



APR-5000-XLS System configurations and technical specifications on pages 40-41

Accessories

Component Stenciling Templates

Metcal has designed a unique tool, Component Stenciling Templates, for printing on the underside of components. This easy procedure is designed for use on PBGA, CBGA, CSP balled devices as well as Land Grid Array (LGA) components. This is an ideal process for small components and situations where traditional stencil access is limited by the close proximity of adjacent components.

Dip Transfer

This process involves dipping a component into gel flux, depositing an exact amount of flux. This process is quick, consistent and clean, and negates the need to clean after reflow. Available for both solder balled and leaded devices. All kits are supplied with a metal spatula. Ideally select a dip plate that is half the diameter of the solder balls on components.

Tape Feeder

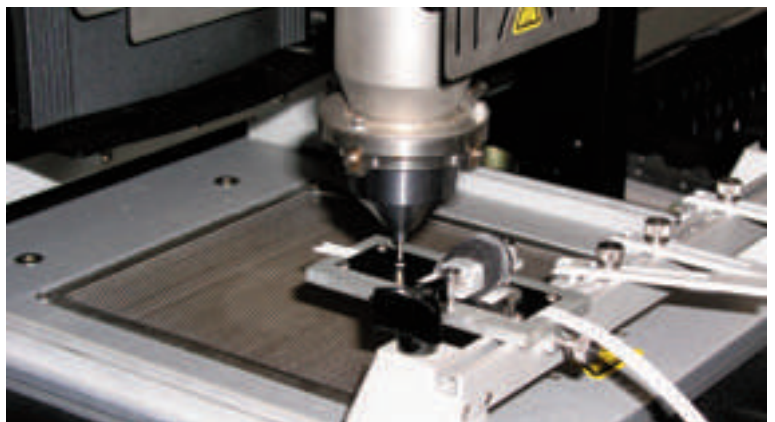
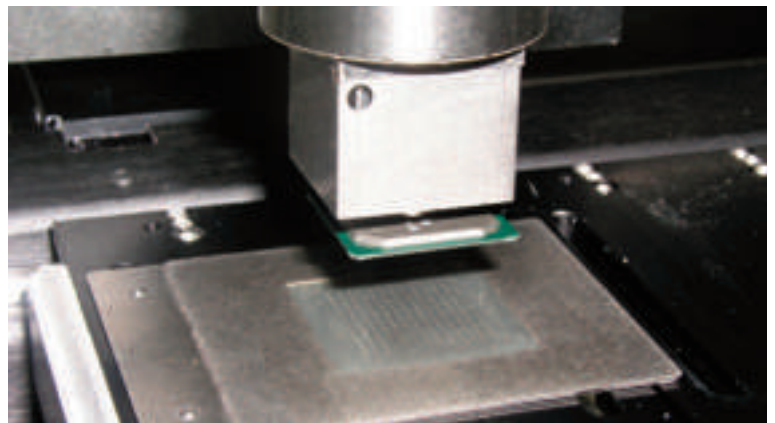
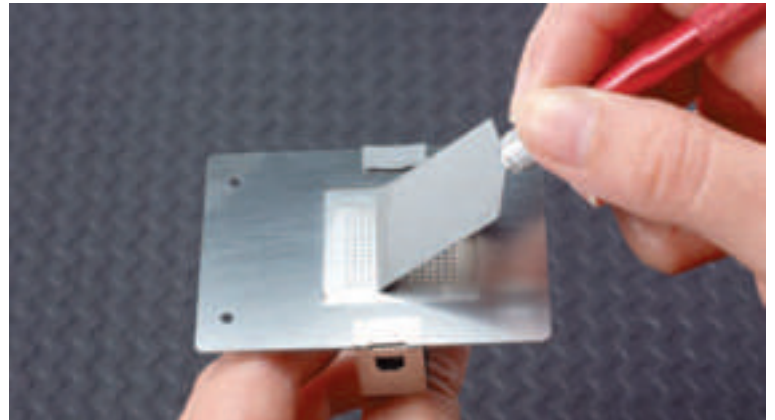
Picking up small surface mount components with tweezers is not practical and may damage the component. This is a unique way of presenting small components to a rework machine.

Demo PCB Kit

The board includes chip resistors, LLP, Micro SMD, QFP, PLCC, Fusion Packs, BGA and POP components to provide a versatile demonstration tool. It has also been pre drilled to allow for thermocouple attachment. Details of nozzles and rework process for the relevant component are printed on the back of the PCB.

Nozzles

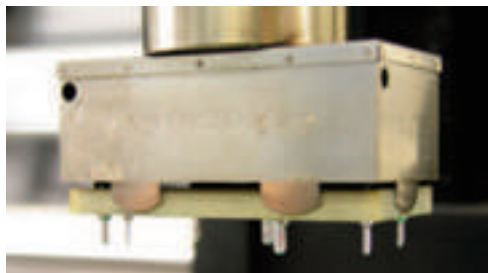
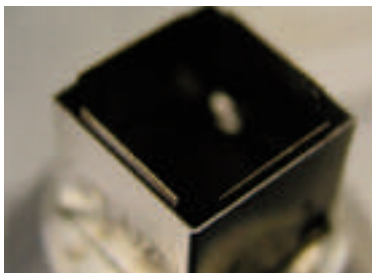
A comprehensive range of standard reflow nozzles available to suit the most common array packages is available. The reflow nozzle works with vacuum pickup, the tweezer nozzle works with devices with limited area or multilayer structure by providing mechanical tweezer action pickup instead of vacuum pickup e.g. PoP, sockets, connectors, inductors, potentiometers and through-hole components.



Accessories & Nozzles

| Part No. | DESCRIPTION |
|--------------------|--|
| BRP-KIT-LGA100-04 | Full kit (3pcs) w/ base fixture, pattern & body plates for LGA100-0.4mm (also incl. clamp & squeegee) |
| BRP-KIT-BASE | BRP kit base fixture only |
| BRP-KP-LGA100-04 | Kit plates (2pcs), pattern and body plates only (minus base) for LGA100-0.4mm |
| BRP-KIT-FUSION-216 | Full kit (3pcs) w/ base fixture, pattern & body plates for Fusion pack 216 (incl. clamp & squeegee) |
| BST-256-100 | Standard BST plate, clamp & squeegee, PBGA 256, 1.0mm pitch |
| BST-256-127 | Standard BST plate, clamp & squeegee, PBGA 256, 1.27mm pitch |
| BST-388-127 | Standard BST plate, clamp & squeegee, PBGA 388, 1.27mm pitch |
| BRP-KP-FUSION-216 | Kit plates pattern & body plates only (minus base) for Fusion pack 216 |
| TF-1T | Tape Feeder, Micro SMD with thumbwheel |
| TF-2T | Tape Feeder, 0603 and 0402 with thumbwheel |
| TF-3T | Tape Feeder, 0201 with thumbwheel |
| NZA-490-490* | APR Reflow Nozzle 49mm x 49mm |
| NZA-450-450 | APR Reflow Nozzle 45mm x 45mm |
| NZA-400-400* | APR Reflow Nozzle 40mm x 40mm |
| NZA-350-350* | APR Reflow Nozzle 35mm x 35mm |
| NZA-300-300 | APR Reflow Nozzle 30mm x 30mm |
| NZA-270-270 | APR Reflow Nozzle 27mm x 27mm |
| NZA-250-290 | APR Reflow Nozzle 25mm x 29mm |
| NZA-230-230* | APR Reflow Nozzle 23mm x 23mm |
| NZA-280-150 | APR Reflow Nozzle 28 mm x 15 mm |
| NZA-200-200** | APR Reflow Nozzle 20 mm x 20 mm |
| NZA-180-180*** | APR Reflow Nozzle 18 mm x 18 mm |
| NZA-150-150** | APR Reflow Nozzle 15 mm x 15 mm |
| NZA-130-130*** | APR Reflow Nozzle 13 mm x 13 mm |
| NZA-100-100*** | APR Reflow Nozzle 10 mm x 10 mm |
| NZA-080-095*** | APR Reflow Nozzle 8 mm x 9.5 mm |
| NZA-080-080** | APR Reflow Nozzle 8 mm x 8 mm |
| NZA-060-060*** | APR Reflow Nozzle 6 mm x 6 mm |
| NZA-030-ROUND | APR Reflow Nozzle 3mm ID round |
| NZA-TW-180-180 | APR Tweezer Nozzle 18mm x 18mm |
| NZA-TW-150-150 | APR Tweezer Nozzle 15 mm x 15 mm |
| NZA-TW-130-130 | APR Tweezer Nozzle 13 mm x 13 mm |
| NZA-TW-100-100 | APR Tweezer Nozzle 10 mm x 10 mm |
| NZA-TW-080-080 | APR Tweezer Nozzle 8 mm x 8 mm |
| NZA-TW-060-060 | APR Tweezer Nozzle 6 mm x 6 mm |
| NZA-555-555-CGA | APR Reflow Nozzle 55.5mm x 55.5mm (column grid array nozzle) |
| NZA-470-470-CGA | APR Reflow Nozzle 47mm x 47mm (column grid array nozzle) |
| NZA-355-455-CGA | APR Reflow Nozzle 35.5mm x 45.5mm (column grid array nozzle) |
| NZA-350-350-CGA | APR Reflow Nozzle 35mm x 35mm (column grid array nozzle) |
| DTP-BGA | Set of 3 plates, apertures 28, 35 & 45mm, depth 0.012" (0.30mm) used for 1.27mm pitch 30 Mil BGA balls (.76mm) |
| DTP-CSP | Set of 3 plates, apertures 10, 16 & 21mm, depth 0.006" (0.15mm) BGA/CSP used for BGAs with 12 Mil balls (.3mm dia) |
| DTP-40-8 | 8 Mil dip plate standard for 1mm pitch BGA with 20 Mil balls 0.02" (0.5mm) |
| DTBK-USMD | Kit, uSMD Flux Transfer Blocks, set of 2 blocks, depth 0.003" (0.08mm) and 0.004" (0.10mm) used for solder balls 6-8 Mil (.15-2mm dia) |
| DTBK-FC | Kit, Flip Chip Flux Transfer Blocks, set of 2 blocks, depth 0.001" (0.025mm) and 0.002" (0.051mm) |
| APR-NK | APR-5000 Nozzle Kit (*Includes 1 of each) |
| APR-NK-CSP | APR-5000 CSP and Micro SMD Nozzle Kit (**Includes 1 of each) |

(*** 1 included in both kits)



Custom Nozzle Program
available including Tweezer
versions. Contact us: www.metcal.com

Part Numbers

| Part No. | SYSTEMS DESCRIPTION |
|--|---|
| APR-5000-DZ-ML | 200-240 VAC Advanced Package Rework System |
| APR-5000-DZ-TAB-ML | 200-240 VAC Advanced Package Rework System with XY Table |
| APR-5000-XLS-ML | 200-240 VAC Advanced Package Rework System with Split Vision |
| APR-5000-XL-ML | 200-240 VAC Advanced Package Rework System |
| Systems will be configured with desktop PC and monitor. | |
| Systems Include (*APR-5000-DZ/-TAB, **APR-5000-XL / -XLS, ***APR-5000-DZ-TAB) | |
| VNZ-19 | Vacuum Pick-Up Nozzle 19mm O/D** |
| VNZ-12 | Vacuum Pick-Up Nozzle 12mm O/D |
| VNZ-08 | Vacuum Pick-Up Nozzle 8mm O/D |
| VNZ-05 | Vacuum Pick-Up Nozzle 5mm O/D |
| VNZ-03 | Vacuum Pick-Up Nozzle 3mm O/D (2.39mm/.094" internal & 3.17mm/.128" external) |
| VNZ-01 | Vacuum Pick-Up Nozzle 1mm O/D (.76mm/.03" internal & 1.56mm/.06" external) |
| VNZ-005 | Vacuum pick up nozzle 0.5mm OD (.25mm/.010" int. & 1.02-0.76mm/.04-.03" ext.) |
| FS-APR | PCB Support Finger Short (4 included)* |
| FSS-APR | PCB Support Finger Short (8 included)** |
| FSL-APR | PCB Support Finger Short (4 included with APR-5000, 8 with APR-5000-XLS/XL) |
| UBS-APR | Under Board Support* |
| UBS-APR-XL | Under Board Support** |
| APR-TC3 | Colour Fine Gauge Thermocouples (includes 3)* |
| APR-TC5 | Colour Fine Gauge Thermocouples (includes 5)** |
| 19782 | Adjustable BGA Centering Nest** |
| 20987 | Adjustable CSP Centering Nest |
| 20534 | Squeegee Blade Holder for Printing |
| APR-TAB | XY Table*** |
| SOFT-APR-5000-DZ | Installation Software* |
| SOFT-APR-5000-XL | Installation Software** |
| APR-XL-PHNK | Pre-Heater Nozzle Kit** includes: Software, Pre Heater Nozzle 50mm, Pre Heater Nozzle 45mm, Pre Heater Nozzle 35mm, Pre Heater Nozzle, Base |
| Optional Accessories | |
| FS-APR-2 | PCB Support Finger Short (Pack of 2) |
| FL-APR-2 | Large PCB Support Finger Long for PCBs from 2.2mm to 6mm (Pack of 2) |
| FSL-APR-2 | PCB Spring Support Finger Long (Pack of 2) |
| FSS-APR-2 | PCB Spring Support Finger Short (Pack of 2) |
| FLS-APR-2 | Large PCB Finger Short for PCBs from 2.2mm to 6mm (Pack of 2) |
| FLL-APR-2 | Large PCB Finger Long for PCBs from 2.2mm to 6mm (Pack of 2) |
| FLSS-APR-2 | Large PCB Spring Finger Short for PCBs from 2.2mm to 6mm (Pack of 2) |
| FLSL-APR-2 | Large PCB Spring Finger Long for PCBs from 2.2mm to 6mm (Pack of 2) |
| PF-1 | Print Preparation Plate |
| VAC-P100 | Self-adhesive plates for removal of non-uniform components |
| APR-LRK | PCB Large Rail Kit (for use on APR-5000-DZ) - Fits boards up to 12" x 12" (30.5cm x 30.5cm) |
| APR-TAB | XY board holder and placement table for APR-5000-DZ |

Technical Specifications

| TECHNICAL SPECIFICATIONS | | |
|---|--|---|
| | APR-5000-DZ/TAB | APR-5000-XLS/XL |
| Input Voltage | 200 - 240 VAC 50/60 Hz 20 Amp Single Phase | 200 - 240 VAC 50/60 Hz 25 Amp Single Phase |
| Power Consumption: | | |
| System Total | 2600 W | 5100 W |
| Pre-Heater: | | |
| Inner Zone | 900 W | 1400 W |
| Outer Zone | 1800 W | 2800 W |
| Reflow Heater | 550 W | 550 W |
| Temperature Control Type | Closed-Loop Control (RTD Sensors) | Closed-Loop Control (RTD Sensors) |
| Maximum Source Temperature: | | |
| Reflow Head | 400°C (752°F) | 400°C (752°F) |
| Pre-Heater | 350°C (662°F) | 350°C (662°F) |
| Airflow Control | Pre-Set to 8,16 &24 l/min, | Pre-Set to 8,16 &24 l/min |
| Supply | Self-Contained Pump | Self-Contained Pump |
| Nitrogen Input (requires 65psi or 4.6 bar) | Standard Feature (requires 65psi or 4.6 bar) | Standard Feature |
| Component Handling | | |
| Maximum Size | 49 mm x 49 mm (1.9" x 1.9") | 40 x 40 mm (1.6" x 1.6") XL, 55 mm x 55 mm (2.16" x 2.16") XLS |
| Minimum Size | 0.51 x 0.25 mm (0.020" x 0.010") | 0.51 mm x 0.25 mm (0.020" x 0.010") |
| Maximum Weight | 55g (1.94oz) | 55g (1.94oz) or 84g (3oz) with VNZ-19 |
| PCB Handling Capability | X x Y | |
| Standard | 381 mm x 197 mm (15" x 7.75") | 622 mm x 622 mm (24.5" x 24.5") |
| With optional large rail kit APR-LRK | 381 mm x 273 mm (15" x 10.75") | Not available |
| Rework Area | X x Y | |
| Head Adjustment | 228 mm x 197 mm (9" x 7.75") | 622 mm x 622 mm (24.5" x 24.5") |
| Aligned inner preheater and reflow heater | 165 x 165 mm (6.5" x 6.5") not suggested without XY table | 445 mm x 445 mm (17.5" x 17.5") |
| Maximum Thickness | 6 mm (0.25") | 6 mm (0.25") |
| XY Table | Standard on APR-5000-DZ-TAB-ML Optional on APR-5000-DZ-ML | Not available |
| Vision | | |
| Maximum Field of View | 40mm x 40mm (1.6" x 1.6") | 55mm x 55mm (2.2" x 2.2") |
| Optional Split Field (APR-5000-XLS) | Not available | Corner crossover on large component |
| System Dimensions W x D x H | 483 x 762 x 762 mm (19" x 30" x 30") | 914 x 914 x 838 mm (36" x 36" x 33") |
| Weight | 60 kg (130 lbs) | 100 kg (220 lbs) |
| System Warranty | 1 Year (Excluding Consumables) | 1 Year (Excluding Consumables) |
| Agency Approvals | CE, cETLus | CE, cTUVus, GS |

| Other Accessories | |
|-------------------|---|
| APR-MRS-DEMOPCB | Demonstration PCB |
| APR-MRS-DEMOKIT | Demonstration PCB Kit with BGA, LGA and other components (see list below) |

List of components included with the APR-MRS-DEMOKIT:

- 5 x res, zero Ohm, 0201SMR-PA-10K-0
- 5 x res, zero Ohm, 0402SMR-PA-10K-0
- 5 x res, zero Ohm, 0603SMR-PA-10K-0
- 5 x micro SMD, 4 bump, 0.5 mm pitch
- 5 x micro SMD, 5 bump, 0.5 mm pitch
- 5 x micro SMD, 8 bump, 0.5 mm pitch
- 5 x micro SMD, 10 bump, 0.5 mm pitch
- 5 x LLP LDA16A
- 5 x LLP, plastic, Quad 4x4x0.75 mm body,16LD, 0.5 mm pitch
- 5 x LLP, plastic, Quad 5x4x0.75 mm body 24LD, 0.5 mm pitch
- 5 x LLP, plastic, Quad 7x7x0.75 mm body 44LD, 0.5 mm pitch
- 4 x PBGA 27 mm 256 balls, 1.27 mm pitch
- 3 x PBGA 17 mm 256 balls, 1.0 mm pitch
- 1 x PBGA 35 mm 388 balls, 1.27 mm pitch
- 1 x POP Bottom 305 balls 12 mm, 0.5 mm pitch
- 1 x Top of POP 128 balls 12 mm, 0.65 mm pitch
- 4 x CVBGA (thin BGA) 97 balls 5 mm, 0.4 mm pitch
- 4 x LGA/MLF100 pin 12 mm fine pitch, 0.4 mm pitch
- 4 x PLCC 44 pin 16 mm, 1.27 mm pitch
- 4 x QFP 44 10 mm by 10 mm, 0.8 mm pitch
- 4 x QFP 100 14 mm by 20 mm, 0.65 mm pitch
- 4 x CTBGA 228 12 mm by 12 mm, 0.5 mm pitch
- 1 x fusion pack (combination 116 QFN & 100 QFP in one package .4 mm pitch)

MRS-1100A Modular Rework System



The MRS-1100A Modular Rework System is an integrated convection rework system for the removal and reflow of BGA/CSP and SMT components.

The MRS-1100A is comprised of a hand held convection tool, preheater, adjustable tool holder, and free-standing board holder to create a manually assisted rework system. A series of nozzles, targeting a variety of applications, and optional light magnifier round out the product offering for this system.

With standard features such as programmability, a digital display, program storage of up to 50 profiles, this system is not only versatile, but also easy and efficient to work with. A choice of board holders and accessories are available that make the system capable of handling multiple sizes of PCBs.

The MRS-1100A allows you the choice of using either the embedded profiling capability that can be configured to operate at a fixed temperature, or a four zone programming option. The unit also allows the temperature to be controlled either at the heat output (internal) or at the board (external). The “external” control function uses a thermocouple which can be placed on the board or a component.

Key Features & Benefits

- ▶ Digital display for repeatable temperature settings and profile control
- ▶ Automatic control of the preheater for simple operation
- ▶ Easy profile creation for operator repeatability
- ▶ Integrated vacuum pickup for easy component removal
- ▶ Hand held or tool holder mounted for operator comfort
- ▶ Manual mode for quick setup
- ▶ External thermocouple for process setup and verification
- ▶ Digital controlled airflow for repeatable results
- ▶ X, Y, Z and Theta controls for component alignment
- ▶ Adjustable PCB holder for easy change outs
- ▶ Automatic vacuum lift off at the end of the cycle
- ▶ Password lockout of programmed profiles

The 4 components of the MRS-1100A are:

1. HCT-1000 Programmable Hand Held Convection Tool.
2. PCT-1000 Programmable Pre-heater.
3. ATH-1100A Adjustable Tool Holder.
4. BH-2000 Free standing board holder.

| Part No. | Description |
|-----------|-----------------------|
| MRS-1100A | Modular Rework System |

The 4 components of the MRS system can also be ordered separately.

HCT-1000 Programmable Hand Held Convection Tool



The HCT-1000 is a fully Programmable Hand Held Convection Tool offering **fast and easy removal and placement of SMT components.**

The HCT-1000 stands out as a versatile convection rework tool. It can be used on its own or as part of the MRS-1100A Modular Rework System for more complex applications.

The system comes equipped with a 5mm nozzle and nozzle adapter. In addition, a wide range of nozzles is available.

Key Features & Benefits

- ▶ Integrated vacuum pickup for easy component removal
- ▶ Profile creation for operator repeatability and storage for up to 50 user defined profiles
- ▶ Manual mode for quick setup
- ▶ External thermocouple for process setup and verification
- ▶ Hand-piece controls for heater and vacuum
- ▶ IProgrammable, digitally controlled airflow for repeatable results
- ▶ Multiple modes of operation: manual, 4 zone heating (with the MRS-1100A System)
- ▶ The HCT-1000 is connected to the PCT-1000 via a cable when used as part of the MRS System
- ▶ May be used with ATH-1100A Adjustable Tool Holder

Technical Specifications

| | |
|--------------------------|--|
| Size | 229 x 178 x 152mm (9" x 7" x 6") |
| Weight | 5.4kg (12 lbs.) |
| Rated Power | 600 W |
| Input Voltage | 100-240 VAC, 50/60 Hz |
| Storage | 0°C to 50°C Temperature (32°F to 122°F) |
| Air Flow | 5-25 l/minute |
| Source Temperature Range | Up to 450°C (840°F) |
| Vacuum Pump | 15" Hg (381mm Hg) |
| Noise Level | <55 dB |

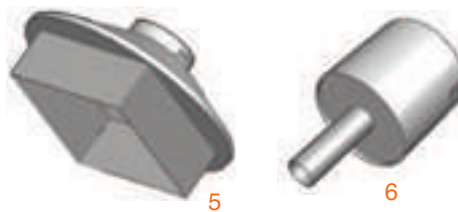
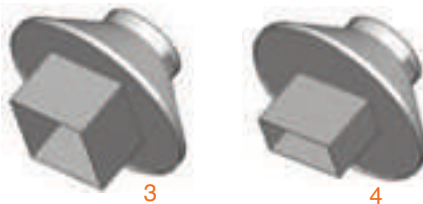
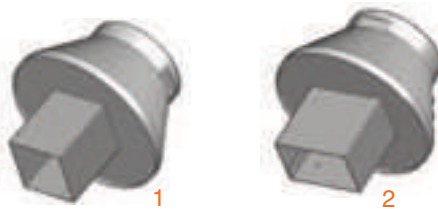
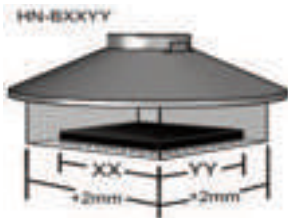
| Part No. | Description |
|--------------|---|
| HCT-1000 | Programmable Hand Held Convection Tool |
| Includes: | |
| HCT-PS1000 | HCT-1000 Power Supply |
| HCT-HV1 | Hand-piece with integral vacuum, cord and connector |
| HCTA-VC-KIT | Vacuum Cup kit, one of each * (see below) |
| HCTA-TH1 | Hand-piece Tool Holder |
| HNA-1 | Nozzle Adapter |
| HCTA-NW1 | Nozzle Wrench |
| AC-TCK-36-36 | Thermocouple 36 AWG, pack of 2 |
| HCTA-CC | Communications Cable 4ft |
| HN-J0005 | 5mm Ø nozzle |

Accessories

| | |
|----------------------|---------------------------------------|
| HCT-FS2 1 | Footswitch, Dual, HCT-1000 |
| HCT-HTRASSY | Heater Assembly |
| AC-TCK-40-36 | Thermocouple 40 AWG, pack of 2 |
| HCTA-VC50-5 * | Vacuum Cup, 3/16" (5.00mm), pack of 5 |
| HCTA-VC64-5 * | Vacuum Cup, 1/4" (6.4mm), pack of 5 |
| HCTA-VC80-5 * | Vacuum Cup, 5/16" (8mm), pack of 5 |
| HCTA-VC11-5 * | Vacuum Cup, 7/16" (11mm), pack of 5 |



HCT-1000 Programmable Hand Held Convection Tool



HN Series Nozzles

A series of 14 Nozzles are available for use with the MRS-1000 / HCT-1000. The nozzles fit applications reworking components of all sizes from (including, but not limited to) BGAs, QFPs, LGAs, PLCC and SOIC. A custom nozzle program is also available.

Nozzle Measurement and Selection

The nozzle part number (the digits after the "B") represents the size of the component. 2mm have been added to each side of the internal nozzle dimension to allow for component access.

| Part Number | | Component Size | Components |
|-------------|---|-----------------|--------------------------|
| HN-B0707 | 1 | 7mm X 7mm | CSP, LGA44 |
| HN-B1010 | 1 | 10mm X 10mm | CSP, LGA178, LCC28 |
| HN-B1414 | 1 | 14mm X 14mm | CSP, QFP, TQFP100 |
| HN-B1408 | 2 | 14mm X 8mm, | CSP, SOIC24M |
| HN-B1515 | 3 | 15mm X 15mm | BGA |
| HN-B1818 | 3 | 18mm X 18mm | PLC44, CSP, TQFP100, BGA |
| HN-B2525 | 3 | 25mm x 25mm | BGA, PLCC68 |
| HN-B1809 | 4 | 18.2mm X 8.5mm | SOLJ28, SOIC28M, TSOP32 |
| HN-B2519 | 4 | 24.5mm X 18.5mm | QFP100, QFP80 |
| HN-B2727 | 5 | 27mm X 27mm | BGA |
| HN-B3232 | 5 | 32mm X 32mm | BGA |
| HN-B3535 | 5 | 35mm X 35mm | BGA |
| HN-B4040 | 5 | 40mm X 40mm | BGA |
| HN-J0005 | 6 | 5mm Ø Diameter | DISCRETE |

Nozzle Accessories

| | | |
|----------|---|----------------|
| HCT-NC | 7 | Nozzle Carrier |
| HNA-1 | 8 | Nozzle Adapter |
| HCTA-NW1 | 9 | Nozzle Wrench |



Metcal offers a full custom program for nozzles not available within the standard offering shown above. Please contact us: www.metcal.com

PCT-1000 Programmable Pre-heater



The PCT-1000 is a fully Programmable Pre-heater offering **more heat, lower temperatures for faster and higher quality results.**

The PCT-1000 provides users exceptional ability to increase heat capacity with highly controlled thermal output.

The PCT-1000 can be used as a stand alone unit or as part of the MRS-1000 Modular Rework System.

Key Features & Benefits

- ▶ Adds heat capacity and enables lower process temperatures
- ▶ Used in a variety of processes including soldering, desoldering, SMD rework
- ▶ Provides faster production rates while lowering overall process temperatures.
- ▶ 2 modes: manual for constant heater temperature and profile for greater control
- ▶ 4 programmable heating zones and 1 cooling zone
- ▶ Storage for up to 50 user defined profiles for easy set-up
- ▶ Heater control with temperature controlled either at the heater output or at the board
- ▶ High efficiency vortex heater design maximizes ramp to temperature for increased productivity

| Part No. | Description |
|--------------|----------------------------------|
| PCT-1000 | 1 Programmable Preheater |
| Includes: | |
| PCT-FS1 | 2 PCT-1000 Foot Switch |
| AC-TCK-36-36 | 3 Thermocouple 36 AWG, pack of 2 |

Technical Specifications

| | |
|--------------------------|-------------------------------------|
| Size | 330 x 203 x 76mm (13" x 8" x 3") |
| Weight | 3.4kg (7.5 lbs) |
| Rated Power | 1200 W |
| Input Voltage | 100-240 VAC, 50/60 Hz |
| Storage Temperature | 0°C to 50°C (32°F to 122°F) |
| Air Flow | 19 cfm |
| Source Temperature Range | 25°C to 400°C (77°F to 752°F) |
| Operational Modes | Setup, Run, Manual, Active Setup |
| Display | LCD 20 x 4 display segments |
| Number of Programs | 50 memory locations |
| Number of Zones | 5 (4 Heat Zones, 1 Cool Down Zone) |



Adjustable Tool Holder Light Magnifier & Board Holders

ATH-1100A Adjustable Tool Holder LM-1000A Light Magnifier



- ▶ Designed to work with the HCT-1000 or as part of the MRS-1100A System.
- ▶ Uses the Advanced Head Assembly which features 4" of Z axis adjustment, 1/2" fine adjustment of the X & Y axis as well as 30° θ adjustment.
- ▶ Features locking hand-piece retainer, Z axis stop and mounting configurations for stand-alone operation or integrated as part of the MRS-1100A.
- ▶ Sturdy and easy to attach to the PCT-1000 Programmable Preheater when incorporated into the MRS System.
- ▶ Can be attached to the PCT-1000 or used as a standalone unit



ATH-BASE Optional Base plate for ATH-1100A when used as a standalone unit.

Add on

- ▶ For use as a standalone unit or as part of the MRS-1100A System for increased visibility
- ▶ Integrated light and magnifier
- ▶ Features a 4x magnification lens and an integrated LED lighting system for shadow free illumination
- ▶ LM-BP base plate included



Technical Specifications

| | |
|---------------|---------------|
| Magnification | 4x |
| Lighting | 8 LEDs, white |
| Power | 24V DC |
| Lens Size | 90mm diameter |
| ESD Safe | |

Board Holders



BH-2000

The BH-2000 is a free-standing board holder that provides a solid and stable base for a variety of PCB's. The unit features easily adjustable rails to accommodate boards 8" (203mm) x 12" (305mm).



BH-100 Board Holder. Recommended for use with the PCT-100 Pre-heater



BH-010 Integrated Boardholder for PCT-100

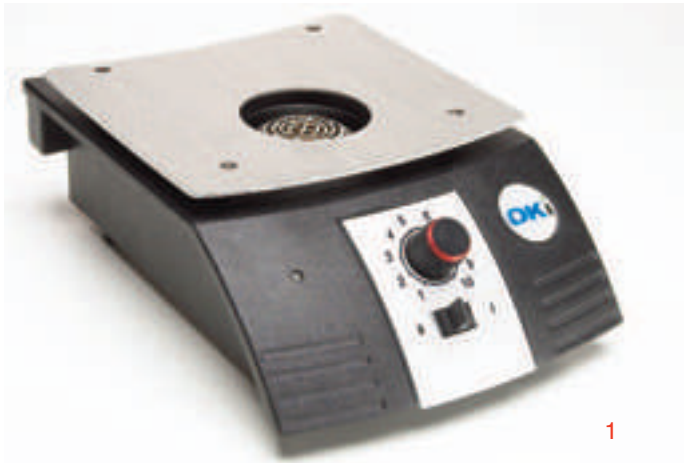


BH-1000 Post-Rail Board Holder. Includes: 4 posts, 2 rails with sliding clips, 4 support pins and flat-head support



BH-PK1000 Board Holder Pin Kit. Includes: 2 discs, 2 long pins, 2 short pins

PCT-100 Focused Convection Pre-heater



Key Features & Benefits

- ▶ For hand soldering, through-hole desoldering, hot air SMT rework, lead-free, multi-layer boards and assemblies with large ground planes
- ▶ Improved process time and exceptional control of potentially damaging temperatures
- ▶ Vented top plate allows the PCB to be placed directly over the heater for maximum heat transfer
- ▶ Integrated or stand-alone board holder
- ▶ Optional adjustable-angle arm rest

The PCT-100 is a focused convection pre-heater that is designed to **provide extra heat capacity** for demanding applications.

Unlike conventional pre-heaters, the PCT-100 Focused Convection Pre-heater directly targets the underside PCB providing a substantial thermal boost for lead-free processes.

| Part No. | Description |
|------------|--|
| PCT-100-11 | 1 Pre-heater 115V |
| PCT-100-21 | 1 Pre-heater 230V |
| PCT-101-11 | 2 Pre-heater 115V with Arm Rest |
| PCT-101-21 | 2 Pre-heater 230V with Arm Rest |
| PCT-102-11 | 3 Pre-heater 115V with Arm Rest and Boardholder |
| PCT-102-21 | 3 Pre-heater 230V with Arm Rest and Boardholder |
| PCT-103-11 | Pre-heater 115V with Arm Rest and Integrated Boardholder |
| PCT-103-21 | Pre-heater 230V with Arm Rest and Integrated Boardholder |
| PCT-1HE-11 | Heating Element Replacement for PCT-100 115V |
| PCT-1HE-21 | Heating Element Replacement for PCT-100 230V |
| BH-010 | Integrated Boardholder for PCT-100 (see page 40) |
| BH-100 | 4 Boardholder for PCT-100 |
| PCT-AR | 5 Arm Rest for PCT-100 |
| PCT-ARPAD | Replacement Pad for Arm Rest PCT-AR |

Technical Specifications

| | |
|---------------------------|--|
| Input Voltage | 115 V (PCT-100-11) 230 V (PCT-100-21) |
| Heater Rating | 450 W |
| Storage Temperature | -10°C—60°C (14°F—140°F) |
| Environmental Temperature | 0°C—40°C (32°F—104°F) |
| Air Flow | 0.2 CFM (280 l/min) |
| Control Temperature | Variable up to 300°C (572°F) |
| Surface Resistivity ESD | 10 ⁶ Ω - 10 ¹¹ Ω |
| Dimensions (L x W x H) | 205 x 155 x 65 mm (8" x 6.1" x 2.6") |
| Weight | 1.6 kg (3.5 lbs) |
| Certificate/Approvals | cTUVus, CE |



HCT-900 Hand Held Convection Tool



The HCT-900 Hand Held Convection Tool offers a **low cost, versatile rework solution** for a wide variety of production and rework application challenges:

- ▶ Rework a wide range of simple and complex SMT components
- ▶ Rework pin in-hole devices such as sockets and connectors
- ▶ Remove solder shorts and splashes by using it with solder braid and flux
- ▶ Plastic applications such as applying shrink wrap to components

Key Features & Benefits

- ▶ Versatile Hot Air Tool for soldering and desoldering applications
- ▶ Robust and compact design
- ▶ Analog controls for both airflow and heat
- ▶ Closed loop feedback circuit controls the temperature
- ▶ Unique low noise air pump (less than 45 db) provides precise airflow control
- ▶ Fully ESD compliant



A closed loop feedback circuit allows the desired temperature to be achieved and maintained regardless of changes in the volume of airflow.

| Part No. | Description |
|------------|------------------------------------|
| HCT-900-11 | 115V Hand Held Convection Tool |
| HCT-HE-11 | Heating Element, Replacement, 115V |
| HCT-900-21 | 230V Hand Held Convection Tool |
| HCT-HE-21 | Heating Element, Replacement, 230V |

The HCT-900 can be used for the removal and refitting of electronic components, including lead-free, from 0201 up to 304 pin QFP.



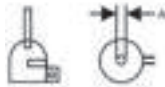
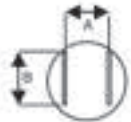
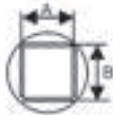
HCT-900 Hand Held Convection Tool

Nozzle Selection

The HCT-900 is supplied with a standard single jet H-D50 (0.2", 5.0mm) nozzle. In addition, two rework nozzle kits, predefined for specific applications, are available, as well as a full selection of nozzles.



| | |
|---------------|---|
| NZKT-1 | Nozzle Kit for Chip Resistors, SOIC & TSOP Packages. Includes (one each): |
| | • H-D25 • H-SL16 • H-SL28 |
| | • H-SOJ40 • H-TS48 |
| NZKT-2 | Nozzle Kit for PLCC, QFP & BQFP packages. Includes (one each): |
| | • H-P20 • H-P44 • H-P84 |
| | • H-Q1420 • H-Q2626 |



| Model | Chip Type | A mm (in) | B mm (in) |
|---------|---------------------|--------------|--------------|
| H-P20 | PLCC-20 | 11.9 (0.47") | 11.9 (0.46") |
| H-P28 | PLCC-28 | 14.5 (0.57") | 14.5 (0.57") |
| H-P32 | PLCC-32 | 16.9 (0.67") | 14.3 (0.56") |
| H-P44 | PLCC-44 | 19.5 (0.77") | 19.5 (0.77") |
| H-P52 | PLCC-52 | 21.0 (0.83") | 21.0 (0.83") |
| H-P68 | PLCC-68 | 27.1 (1.07") | 27.1 (1.07") |
| H-P84 | PLCC-84 | 32.4 (1.28") | 32.4 (1.28") |
| H-Q07 | QFP-48 | 8.4 (0.33") | 8.4 (0.33") |
| H-Q10 | QFP-44 | 13.4 (0.53") | 13.4 (0.53") |
| H-Q14 | QFP-52,80 | 17.3 (0.68") | 17.3 (0.68") |
| H-Q1420 | QFP-64,80,100 | 23.4 (0.92") | 18.1 (0.71") |
| H-Q28 | QFP-120,128,144,160 | 31.2 (1.23") | 31.2 (1.23") |
| H-BQ23 | BQFP-100 | 22.4 (0.88") | 22.4 (0.88") |
| H-Q3232 | QFP-240 | 34.5 (1.36") | 34.5 (1.36") |
| H-BQ38 | BQFP-196 | 37.7 (1.48") | 37.7 (1.48") |
| H-Q2626 | QFP-208 | 29.8 (1.17") | 29.8 (1.17") |
| H-S16 | SOIC 14,16 | 6.8 (0.27") | 10.2 (0.4") |
| H-SL16 | SOL 14,16 | 10.6 (0.41") | 10.8 (0.43") |
| H-SL20 | SOL 20,20J | 10.6 (0.41") | 13.3 (0.52") |
| H-SL24 | SOL 24,24J | 10.6 (0.41") | 15.9 (0.63") |
| H-SL28 | SOL 28 | 10.6 (0.41") | 18.4 (0.72") |
| H-SL44 | SOL 44 | 16.0 (0.41") | 27.9 (1.1") |
| H-SOJ32 | SOJ 32 | 13.5 (0.53") | 20.6 (0.81") |
| H-SOJ40 | SOJ 40 | 13.5 (0.53") | 25.4 (1.0") |
| H-TS24 | TSOP 20-24 | 17.0 (0.67") | 7.1 (0.28") |
| H-TS32 | TSOP 28-32 | 21.0 (0.83") | 9.1 (0.36") |
| H-TS40 | TSOP 40 | 21.0 (0.83") | 10.8 (0.43") |
| H-TS48 | TSOP 48 | 21.0 (0.83") | 13.3 (0.52") |
| H-TSW24 | TSOP 20-24 | 10.2 (0.4") | 18.4 (0.72") |
| H-TSW44 | TSOP 24-28/40-44 | 12.7 (0.5") | 19.8 (1.78") |
| Model | ø A (mm) | | |
| H-D25 | 2.5 (0.1") | | |
| H-D50 | 5.0 (0.2") | | |
| H-D120 | 12.0 (0.47") | | |

Technical Specifications

| | |
|---------------------------|--|
| Input Line Voltage | 230 V HCT-900-21 / 115V HCT-900-11 |
| Power | 320 W |
| Air Pump Type | Diaphragm |
| Air Flow | 6-25 l/min |
| Control Temperature | 100°C - 500°C (212°F - 932°F) |
| Dimensions (L x W x H) | 210 x 170 x 140 mm (8.7" x 6.7" x 5.5") |
| Noise Level | Less than 46 dBA |
| Surface Resistivity | Unit: 10 ⁵ Ω - 10 ⁶ Ω. Hand-piece & tube: 10 ⁷ Ω - 10 ¹¹ Ω |
| Weight | 4.7Kg (10.4 lbs) |
| Certification / Approvals | cTUVus, CE |

Portable Fume Extraction Systems

BVX-100 Benchtop Single User Arm/Plenum System

Key Features & Benefits

- ▶ Low noise unit
- ▶ Portable, single user fume extraction system
- ▶ No external ducting or compressor needed
- ▶ Unit easily fits on any bench-top or under-bench
- ▶ Innovative adaptor transforms the plenum into an arm
- ▶ Powerful 85m³/hr-airflow rate
- ▶ Immediate extraction of fumes, particles and vapors
- ▶ Two filtration configurations: heavy soldering and light dust or light duty organic solvent and adhesive applications
- ▶ Bi-coloured LED light indicates when the filters are blocked and require replacing



| Part No. | Description |
|----------|--|
| BVX-101 | Bench-Top, single user arm/plenum system, Pre-HEPA-Gas |
| BVX-103 | Bench-Top, single user arm/plenum system, Pre-Gas |

Filters

| | |
|--------|---------------------------------|
| FG-BVX | Deep Bed Gas Filter |
| FM-BVX | Main Filter (Combined HEPA/Gas) |
| FP-BVX | Pre-Filter (Pack of 5) |

Accessories

| | |
|----------|---|
| BVX-ADT | Replacement Arm-To-Plenum Adaptor |
| BVX-IADT | Inverted Arm Adaptor, ESD Safe |
| BVX-BCK | Under Bench Mounting Bracket |
| BVX-CH01 | Connection hose, 50mm (2") diameter, 1.8m (6') long |
| BVX-TB01 | Table bracket with 2 C-clamps |



Filters are easy to remove and replace.

Technical Specifications

| | | |
|---------------------------------|---|--|
| Static Pressure (suction force) | 1250 Pa (5"WC) | 850 Pa (3.5"WC) |
| Fan Capacity | 110m ³ /h (65 cfm) | 250m ³ /h (150 cfm) |
| Flow Rate (with filter) | 85m ³ /h (50 cfm) | 2 x 75m ³ /h (45 cfm) |
| Air Inlets/Number of Stations | 1 | 2 |
| HEPA Efficiency | 99.97% at 0.3 micron | 99.97% at 0.3 micron |
| Noise Level | < 55 db A | < 55 db A |
| Dimensions (W x D x H) | 300mm x 230mm x 290mm (11.8" x 9.1" x 11.4") | 508mm x 254mm x 388mm (20" x 10" x 15.3") |
| Weight | 9kg (20lbs) | 9kg (20lbs) |
| Voltage | 100-240 VAC | 100-240 VAC |
| Frequency | 50-60 Hz | 50-60 Hz |
| Power | 85 watt | 85 watt |
| Certification | UL, CSA, CE | UL, CSA, CE |
| | | 3.6 m (12') Max duct run |

BVX-200 Two Stations Portable Filter Unit

Key Features & Benefits

- ▶ Two station design for dynamic fume extraction
- ▶ New brushless motor, quiet operation
- ▶ Complete portability, placed under or next to the bench-top
- ▶ Fitted with 2x 50mm (2") Ø arms or 1x 63mm (2.5") Ø arm
- ▶ Main filter has a HEPA efficiency of 99.97% at 0.3 micron, and an activated carbon filter to remove additional gases
- ▶ Deep-bed gas filter for high capacity of gas filtration, such as cleaning with solvents or conformal coatings
- ▶ Audible alarm informs operators when filters need replacing
- ▶ Easy access on/off remote switch



| Part No. | Description |
|--------------|--|
| BVX-201 | Filter unit for 2 stations, Pre-HEPA-Gas |
| BVX-203 | Filter unit for 2 stations, Pre-Deep Bed Gas |
| BVX-201-KIT | Filter unit with 2 BVX-ARML, Pre-HEPA-Gas |
| BVX-201-KIT1 | Filter unit with 2 BVX-ARM-K1, Pre-HEPA-Gas |

Filters

| | |
|-----------|-------------------------|
| FP-BVX200 | Pre-Filter (Pack of 5) |
| FM-BVX200 | Main Filter HEPA Carbon |
| FG-BVX200 | Deep Bed Gas Filter |

Accessories

| | |
|------------|--|
| BVX-ARM-K1 | BVX-ARM 760mm (30") with 1.8m (6') long hose & table bracket w/ C-clamps |
| BVX-ARM-K2 | BVX-ARM 760mm (30") & table bracket w/ C-clamps |
| BVX-ARM | Arm flexible ESD safe, 760mm (30") |
| BVX-ARML | Arm flexible ESD safe, 1.5m (59") with arm clip |
| BVX-TB01 | Table bracket with 2 C-clamps |
| BVX-CH01 | Connection hose, 50mm (2") diameter, 1.8m (6') |
| BVX-CH02 | Connection hose, 50mm (2") diameter, 3.6m (12') |
| RPS-1 | Remote power switch (for use with BVX-200 only) |

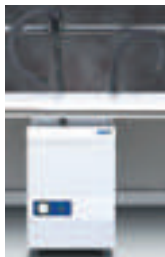
Multi-function Extraction Systems

MFX-2200C Particle Fume Extraction System

The multi-user MFX-2200C Fume Extraction System provides the ultimate performance in a compact size that easily fits under most workbenches. It is ideal for removing solder fumes and filtering laser fumes.

Key Features & Benefits

- ▶ Excellent air flow performance
- ▶ Large, pleated pre-filter
- ▶ HEPA filter rating of 99.97% at 0.3 micron
- ▶ Casters as standard
- ▶ Dust filter seal keeps filter housing clean
- ▶ Minimum operating noise
- ▶ Compact size, unit fits under most workbenches
- ▶ Connects up to 4 Omniflex arms with rectangular nozzle (EA1122) or large hood (EA1126)
- ▶ Connects up to 8 BVX arms or 8 Omniflex arms with tapered nozzle (EA1124)



| Part No. | Description |
|-------------|--|
| MFX-2200C-A | Particle Fume Extraction System Analog 110V |
| MFX-2206C-A | Particle Fume Extraction System Analog 230V |
| MFX-2200C-D | Particle Fume Extraction System Digital 110V |
| MFX-2206C-D | Particle Fume Extraction System Digital 230V |

Filters

| | |
|-----------|--|
| FIL22P030 | Prefilter Pleated 60% Efficiency (Pack of 2) |
| FIL22H070 | Combination Filter HEPA/Carbon |

Accessories

| | |
|--------|--|
| AC2204 | Top cover with 2 air inlets Ø100mm (4") and 2 air inlets Ø 63mm (2.5") |
|--------|--|

Technical Specifications

| | 110V Units | 230V Units |
|------------------------|-----------------------|----------------------|
| Air Inlet Openings | 4 x Ø2.5" | 4 x Ø63mm |
| Fan Capacity | 600 cfm | 900m ³ /h |
| Flow Rate | 400 cfm | 600m ³ /h |
| HEPA Efficiency | 99.97% at 0.3 micron | 99.97% at 0.3 micron |
| Static Pressure | 4.5" WC Max | 1075 Pa |
| Power Supply | 100-120VAC, 60Hz | 220-240VAC, 50Hz |
| Power | 400 Watt | 400 Watt |
| Noise Level | 58 dbA | 58 dbA |
| Dimensions (W x D x H) | 17.7" x 20.7" x 26.4" | 450 x 525 x 670mm |
| Weight | 93 lbs | 43 Kg |
| Certification | UL, CSA | CE |
| Max duct run | 100' | 30 m |

Controls and Filter Monitor

- ▶ Unit On/Off Switch with power indicator
- ▶ Thermal overload protection
- ▶ Analog models with filter status gauge
- ▶ Digital models with filter status indicator lights and other control options



MFX-2200G Gas Fume Extraction System

The MFX-2200G Fume Extraction System has been specifically designed for the removal of gases and vapors from a range of heavy duty bench-top applications, including solvent cleaning, gluing/bonding and conformal coatings.



Key Features & Benefits

- ▶ High capacity gas filter cartridge ensures a long dwell-time of the gases inside the filter media
- ▶ Large, pleated pre-filter
- ▶ Casters as standard
- ▶ Minimum operating noise
- ▶ Provides air flow for two exhaust cabinets
- ▶ The unit lid features 100mm (4") and 63mm (2.5") air inlet flanges suitable for the connection of exhaust arms or cabinets

| Part No. | Description |
|-------------|---|
| MFX-2200G-A | Gas Fume Extraction System Analog 110V |
| MFX-2206G-A | Gas Fume Extraction System Analog 230V |
| MFX-2200G-D | Gas Fume Extraction System Digital 110V |
| MFX-2206G-D | Gas Fume Extraction System Digital 230V |

Filters

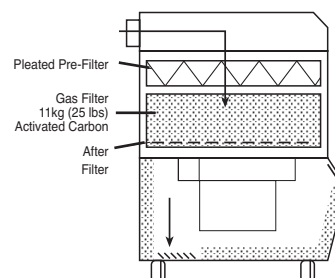
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|-----------|-----------------------------------|
| FIL22P040 | Prefilter Pleated 85% Efficiency |
| FIL22G010 | Gas Filter Cartridge 11kg (25lbs) |
| FIL22G020 | Carbon Refill Kit 11kg (25lbs) |

Accessories

| | |
|--------|---|
| AC2202 | Top cover with 4 air inlets Ø 63mm (2.5") |
|--------|---|

Technical Specifications

| | 110V Units | 230V Units |
|------------------------|-----------------------|----------------------|
| Air Inlet Openings | 2xØ4" & 2xØ2.5" | 2xØ100mm & 2xØ63mm |
| Fan Capacity | 600 cfm | 900m ³ /h |
| Flow Rate | 350 cfm | 550m ³ /h |
| Static Pressure | 4.5" WC Max | 1075 Pa |
| Power Supply | 100-120VAC, 60Hz | 220-240VAC, 50Hz |
| Power | 400 Watt | 400 Watt |
| Noise Level | 58 dbA | 58 dbA |
| Dimensions (W x D x H) | 17.7" x 20.7" x 26.4" | 450 x 525 x 670mm |
| Weight | 115 lbs | 52 Kg |
| Certification | UL, CSA | CE |
| Max duct run | 100' | 30 m |



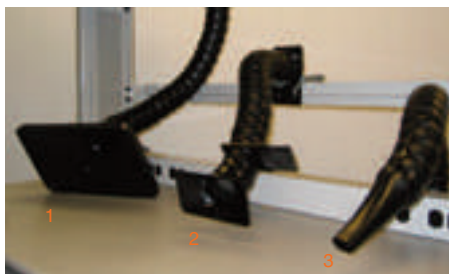
Omniflex & BVX Arms



The **Omniflex Arms** (Ø63mm) are designed for higher airflow rates and effective fume capture from greater distances. A unique ball/socket design provides an unmatched flexibility in manoeuvring and positioning. The arms can be adjusted in working length or radius, simply by adding or removing Omniflex components. ESD conformance is ensured through the use of fully conductive material.

Key Features & Benefits

- ▶ 140m³/h (85cfm) air flow rating (varies with nozzle)
- ▶ 63mm (2.5") diameter
- ▶ 0.6m (24") long with optional extensions of 300mm (12")



| Part No. | Description |
|------------|---|
| EA1122 | 2 Omniflex Arm ESD with Rectangular Nozzle |
| EA1124 | 3 Omniflex Arm ESD with Tapered Nozzle |
| EA1126 | 1 Omniflex Arm ESD with Large Hood 350 x 212mm (14" x 8.5") |
| Q-AD426530 | Replacement nozzle - Rectangular |
| Q-AD426550 | Replacement nozzle - Tapered |
| Q-AD426560 | Replacement nozzle - Large Hood |
| AC1101 | 4 Damper for Omniflex Arm |
| AC1102 | Omniflex Arm Extension 30cm (12") |

**BVX-200 series is only rated for one EA1122 arm, one EA1126 arm or two EA1124 arms.*



The **BVX Arms** (Ø50mm) are most economic solution while providing good airflow rates and high flexibility. The spiral rolled duct can be tightened in stiffness and can be positioned precisely. The BVX Arm-K2 kit includes a mounting plate and c-clamps for universal mounting. A Y-connection piece is available to connect two BVX Arms to one hose.

Key Features & Benefits

- ▶ 75m³/h (45cfm) air flow rating
- ▶ 50mm (2") ducting with 40mm (1.75") nozzle
- ▶ 760mm (30") long
- ▶ BVX Arms compatible with all units



| Part No. | Description |
|------------|---|
| BVX-ARM-K1 | 5 1 BVX-ARM 760mm (30") long with 1.8m (6') long hose and table bracket with C-clamps |
| BVX-ARM-K2 | 1 BVX-ARM 760mm (30") long and table bracket with C-clamps |
| BVX-ARM | Arm flexible ESD safe, 760mm (30") long |
| BVX-ARML | Arm flexible ESD safe, 1.5m (59") long with arm clip |

Connection Hoses for Omniflex and BVX Arms

| | | |
|--------|---|--|
| CH0251 | 6 | Connection Hose 2.5m xØ63mm (8" x 2.5") with clamps |
| CH0252 | 6 | Connection Hose 3.5m xØ63mm (12" x 2.5") with clamps |
| CH0253 | 6 | Connection Hose 7.5m xØ63mm (25" x 2.5") with clamps |
| AC2025 | 7 | Y-Piece for Ø63mm (2.5") hose with clamps |

Tip Extraction & Exhaust Cabinet

BTX-208 Portable Tip Extraction Unit

Key Features & Benefits

- ▶ High performance extraction directly from the tip of any iron
- ▶ Easy extraction network configuration for up to 8 benches
- ▶ Complete portability. Designed for under-bench installation
- ▶ Main filter has a HEPA efficiency of 99.97% at 0.3 micron, and an activated carbon filter to remove gases
- ▶ Both pre- and main- filters can be changed independently
- ▶ Plug-and-play ducting system for simple, flexible low cost solution and fast installations
- ▶ Universal hose connection kit

| Part No. | Description |
|----------|---|
| BTX-208 | Filter Unit for 8 Tip Extraction Stations, Pre/HEPA/Gas |

Filters

| | |
|-----------|-----------------------------------|
| FP-BVX200 | Pre-Filters (pack of 5) |
| FM-BVX200 | Main Filter, HEPA 99.95% / Carbon |

Iron Adapter Kits

| | |
|--------|--|
| AC-FX1 | Universal tip extraction iron adapter clip |
|--------|--|



CONNECTION KITS:

| | |
|------------|---|
| BTX-CK2-25 | Connection Kit for 2-4 stations with 2.5m (8') Long Hose |
| BTX-CK4-50 | Connection Kit for 4-8 stations with 5m (16') Long Hose |
| BTX-CK4-75 | Connection Kit for 4-8 stations with 7.5m (25') Long Hose |

Individual Parts

| | | |
|------------|---|---|
| CH0121 | 1 | Flexible Hose Ø35mm x 2.5m (8') Long |
| CH0122 | 1 | Flexible Hose Ø35mm x 5m (16') Long |
| CH0123 | 1 | Flexible Hose Ø35mm x 7.5m (25') Long |
| AC-TX001-4 | 2 | Couplings with 2 Glands 5.6mm (pack of 4) |
| 18566S-5 | 3 | End Plug (Pack of 5) |
| AC-TX002-2 | 4 | T-Piece Connector (pack of 2) |
| 19115S-10 | 5 | Pipe Clip (pack of 10) |

| CONNECTION KITS | | BTX-CK2-25 | BTX-CK4-50 | BTX-CK4-75 |
|------------------------|--------------------------------|------------|------------|------------|
| Max number of stations | single-row bench | 2 | 4 | 4 |
| | double-row bench | 4 | 8 | 8 |
| | | Qty | Qty | Qty |
| 1 | Flexible Hose Ø35mm (1.25") | 2.5m (8") | 5.0m (16") | 7.5m (25") |
| 2 | Coupling with 2 Glands 5.6mm 2 | 4 | 4 | |
| 3 | End Plug | 1 | 2 | 2 |
| 4 | T-piece Connector | 0 | 1 | 1 |
| 5 | Pipe Clip | 2 | 5 | 5 |
| - | Roll of Vinyl Tape | 1 | 1 | 1 |

Technical Specifications

| | |
|-------------------------|--|
| Max. number of stations | 8 |
| Flow Rate per station | >28 l/min |
| Noise Level | < 55 db A |
| Dimensions (W x D x H) | 508mm x 254mm x 388mm (20" x 10" x 15.3") |
| Weight | 9kg (20lbs) |
| Voltage | 100-240 VAC |
| Frequency | 50-60 Hz |
| Power | 85 Watt |
| Max Duct Run | 30m (100') |
| Certification | UL/CSA/CE |



EC1800 Exhaust Cabinet

The EC1800 is an ideal bench top exhaust cabinet for applications such as volatile vapors and gases with high toxic levels.

A hinged and clear viewing panel maintains excellent visibility while at the same time reducing the airflow demand on the cabinet.



Key Features & Benefits

- ▶ Bench Top exhaust cabinet
- ▶ Offers operators high levels of protection
- ▶ Easy Assembly
- ▶ Dimensions (W x D x H) 760 x 510 x 560mm (30" x 20" x 22")
- ▶ Connection Flange Ø100mm (4")
- ▶ Requires MFV-2200G-A/D Gas Fume Filtration System

| Part No. | Description |
|----------|--|
| EC1800 | Exhaust Cabinet with clear viewing panel |
| CH0047 | Connection hose 2.5m (8') Long Ø100mm (4") with Clamps |

DX-250 /-350 Digital Dispensers

DX-250 Series Digital Dispenser



The DX-250 Series is a high performance Digital Dispenser. Complete with a range of accessories, the micro-air dispensing system unites affordability with high accuracy and repeatability for exceptional results.

These user friendly fluid dispensing systems include a digital timer with a rotary control time knob for easy setup and a vacuum suck-back control for all viscosities of fluids.

Key Features & Benefits

- ▶ Small footprint and lightweight
- ▶ Economical dispenser
- ▶ Highly accurate and repeatable micro-air dispensing
- ▶ Digital timer and vacuum controls
- ▶ Available in two versions of operating pressure: 0 to 100 psi for general applications, and 0 to 15 psi for specific low viscosity applications
- ▶ Packaged ready to use with a universal power supply, foot switch, air hose, sample tips, syringe barrels and adapter.
- ▶ I/O Interface for robotic applications

| Part No. | Description |
|----------|---|
| DX-250 | Digital Dispenser 0 to 100 psi (0 to 6.9 bar) |
| DX-255 | Digital Dispenser 0 to 15 psi (0 to 1.0 bar) |

Technical Specifications

| | |
|-------------------|---|
| Size (W x L x H) | 152mm x 165mm x 178mm (6" x 6.5" x 7") |
| Weight | 1.2Kg (2.6 lb) |
| Cycle Rate | 600 cycle/minute |
| Timing Range | 0.020 to 60.000 seconds |
| Timing Tolerances | +/- 0.001% |
| Input Voltage | 100-240 VAC |
| Input Frequency | 50-60 Hz |
| Cycle Mode | TIMED, PURGE |
| I/O Interface | Initiated by voltage or contact closure |
| Certification | CE, TUV-GS, NRTL |
| Warranty | 1 year |



DX-350 Series Digital Dispenser



The DX-350 Series is a microprocessor-driven and fully digital Dispenser. Intuitive to use, the DX-350 dispenses low, medium and high-viscosity fluids accurately and consistently.

The firmware provides the option of programming up to 10 varied, sequenced or individual shots.

The DX-350 includes an adjustable vacuum-driven "suck-back" to control material "tailing" and waste.

Key Features & Benefits

- ▶ Small footprint and lightweight
- ▶ 10 programmable dispense routines and 4 operating modes
- ▶ Digital timer, pressure and vacuum read-outs
- ▶ Accurate reproduction of sequences of beads or dots
- ▶ Adjustable vacuum feature for controlling drips of fluid between dispense cycles
- ▶ Available in two versions of operating pressure: 0 to 100 psi for general applications, and 0 to 15 psi for specific low viscosity applications
- ▶ Packaged ready to use with a universal power supply, foot switch, air hose, sample tips, syringe barrels and adapter
- ▶ I/O Interface for robotic applications

| Part No. | Description |
|----------|---|
| DX-350 | Digital Dispenser 0 to 100 psi (0 to 6.9 bar) |
| DX-355 | Digital Dispenser 0 to 15 psi (0 to 1.0 bar) |

Technical Specifications

| | |
|-------------------|---|
| Size (W x L x H) | 152mm x 165mm x 178mm (6" x 6.5" x 7") |
| Weight | 1.2Kg (2.6 lb) |
| Cycle Rate | 1200 cycle/minute |
| Timing Range | 0.008 to 60.000 seconds |
| Timing Tolerances | +/- 0.001% |
| Input Voltage | 100-240 VAC |
| Input Frequency | 50-60 Hz |
| Memories | 10 programmable |
| Cycle Mode | TIMED, INTERRUPT, TEACH, PURGE |
| I/O Interface | Initiated by voltage or contact closure |
| Certification | CE, TUV-GS, NRTL |
| Warranty | 1 year |



Dispensing Tips

TE Tips Series



- ▶ Stainless-steel cannula with a double Helix polypropylene hub
- ▶ Burr-free and electro-polished cannula for unobstructed and consistent material flow
- ▶ Silicone and chloride free
- ▶ Sold in packs of 50

| Gauge | 1/4" (6.35mm) | 1/2" (12.7mm) | 1" (25.4mm) | 1-1/2" (38.1mm) |
|-------|------------------|------------------|----------------|--------------------|
| 14 | | 914050-TE | 914100-TE | 914150-TE |
| 15 | | 915050-TE | 915100-TE | 915150-TE |
| 18 | 918025-TE | 918050-TE | 918100-TE | 918150-TE |
| 20 | 920025-TE | 920050-TE | 920100-TE | 920150-TE |
| 21 | 921025-TE | 921050-TE | 921100-TE | 921150-TE |
| 22 | 922025-TE | 922050-TE | 922100-TE | 922150-TE |
| 23 | 923025-TE | 923050-TE | 923100-TE | 923150-TE |
| 25 | 925025-TE | 925050-TE | | |
| 27 | 927025-TE | 927050-TE | | |
| 30 | 930025-TE | 930050-TE | | |
| 32 | 932025-TE | | | |
| 34 | 934025-TE | | | |



TE Bent Tip Series

- ▶ Precision bent tips at 45° and 90° angles
- ▶ Perfect for dispensing fluid in hard to reach places
- ▶ Sold in packs of 50

| 1/2" (12.7mm) 1-1/2" (38.1mm) | | | |
|-------------------------------|--------------|--------------|--------------|
| Gauge | 90° | 45° | 45° |
| 14 | 914050-90BTE | 914050-45BTE | 914150-45BTE |
| 15 | 915050-90BTE | 915050-45BTE | |
| 18 | 918050-90BTE | 918050-45BTE | 918150-45BTE |
| 20 | 920050-90BTE | 920050-45BTE | |
| 21 | 921050-90BTE | 921050-45BTE | 921150-45BTE |
| 22 | 922050-90BTE | 922050-45BTE | |
| 23 | 923050-90BTE | 923050-45BTE | |
| 25 | 925050-90BTE | 925050-45BTE | |
| 27 | 927050-90BTE | 927050-45BTE | |
| 30 | 930050-90BTE | 930050-45BTE | |

Color Coding and Gauge For TE Series and TE Bent Tips

| | Gauge | Colour | I.D. (inches) | I.D.(mm) |
|--|-------|----------|---------------|----------|
| | 14 | Olive | 0.063 | 1.600 |
| | 15 | Grey | 0.054 | 1.371 |
| | 18 | Green | 0.033 | 0.838 |
| | 20 | Pink | 0.024 | 0.610 |
| | 21 | Purple | 0.020 | 0.508 |
| | 22 | Blue | 0.016 | 0.406 |
| | 23 | Orange | 0.013 | 0.330 |
| | 25 | Red | 0.010 | 0.254 |
| | 27 | Clear | 0.008 | 0.203 |
| | 30 | Lavender | 0.006 | 0.152 |
| | 32 | Yellow | 0.004 | 0.102 |

BT Series



- ▶ Double Helix Brush Tips for "spread" applications such as glues and other materials.
- ▶ Soft brush is made of Red Sable
- ▶ Stiff brush is made of Nylon
- ▶ Available in packs of 12.

| Gauge | Soft Bristle | Stiff Bristle |
|-------|--------------|---------------|
| 16 | 916BT-SOFT | 916BT-STIFF |
| 18 | 918BT-SOFT | 918BT-STIFF |
| 22 | 922BT-SOFT | 922BT-STIFF |



TS-P Plastic Series Tips

- ▶ Flexible tips allow access to hard to reach areas
- ▶ 1-1/2" but length can also be customized
- ▶ Ideal for CA applications
- ▶ Both hub and cannula are made from polypropylene
- ▶ Sold in packs of 50

| Gauge | Colour | TS-P Needle |
|-------|--------|-------------|
| 15 | Grey | 915150-PTS |
| 16 | Brown | 916150-PTS |
| 18 | Pink | 918150-PTS |
| 20 | Yellow | 920150-PTS |
| 22 | Black | 922150-PTS |
| 25 | Red | 925150-PTS |

TT Series Tips



- ▶ Molded in high density polyethylene with UV light block additive
- ▶ Include a double Helix luer lock hub
- ▶ Tapered tip prevents blockage and increases the flow of high viscosity materials
- ▶ Sold in packs of 50

| Gauge | Colour | TT Needle |
|-------|--------|-------------|
| 14 | Olive | 914125-DHUV |
| 16 | Grey | 916125-DHUV |
| 18 | Green | 918125-DHUV |
| 20 | Pink | 920125-DHUV |
| 22 | Blue | 922125-DHUV |
| 25 | Red | 925125-DHUV |
| 27 | Clear | 927125-DHUV |



Dispensing Tip Kit

- ▶ Kit contains a selection of most popular TE, TE Bent and TT tips

900-NK Dispensing Tip Kit

Dispensing Consumables

NEW



End Caps

- ▶ Designed to seal large end of the syringe barrel
- ▶ Ensure no contaminants come in contact with material during storage
- ▶ Made from polyethylene
- ▶ Available in packs of 50

| Size | End Cap |
|---------|-----------|
| 3cc | 903-ECB |
| 5cc | 905-ECB |
| 10cc | 910-ECB |
| 30/55cc | 93055-ECB |



Air Powered Pistons

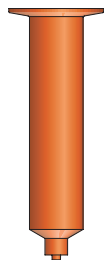
- ▶ Wiper Pistons provide a seal for low to medium viscosity fluids
- ▶ Straight Wall Pistons for reduced stringing with medium to high viscosity fluids
- ▶ Both styles of pistons are made from polyethylene
- ▶ Sold in packs of 50



NEW

| Size | Wiper Piston (White) | Straight Wall (Red) | Easy Flow (Blue) |
|---------|----------------------|---------------------|------------------|
| 3cc | 903-WW | 903-SWR | 903-EFB |
| 5cc | 905-WW | 905-SWR | 905-EFB |
| 10cc | 910-WW | 910-SWR | 910-EFB |
| 30/55cc | 93055-WW | 93055-SWR | 93055-EFB |

| | 700 Series Color | Application Examples |
|----------------------|------------------|---|
| Smooth Piston | Blue | Anaerobic, epoxy, flux, SMA, oil, silicone, UV |
| Tighter Piston | White | Any fluid used on a mechanical rod/gun including UV |
| Straight Wall Piston | Red | SMA, Solder paste, viscous grease |



Syringe barrels

- ▶ Unique ultra-low draft of inner diameter yield high accuracy and stability
- ▶ Industry compliant silicone / chloride free, low friction polypropylene
- ▶ 3 colours: Natural for most generic applications, Amber for protection of UV/visible light block (up to 520nm), Black for total light block
- ▶ Sold in packs of 50

| Size | Natural | Dark Amber | Black |
|------|---------|------------|-------|
| 3cc | 903-N | 903-D | 903-B |
| 5cc | 905-N | 905-D | 905-B |
| 10cc | 910-N | 910-D | 910-B |
| 30cc | 930-N | 930-D | 930-B |
| 55cc | 955-N | 955-D | 955-B |



Tip Cap

- ▶ Use to seal syringe barrel when not in use
- ▶ Fits all syringe sizes
- ▶ Blue stand up tip cap that enables the syringe barrel to stand upright
- ▶ Made from polypropylene
- ▶ Sold in packs of 50

| | |
|----------|--------------------------------------|
| 900-ORTC | Tip Care Double Helix Thread, Orange |
| 900-BTC | Tip Care Double Helix Thread, Black |
| 900-STC | Stand-up Tip Cap, Blue |



NEW

Syringe Assembly Kits

- ▶ Packaged together in ready-to-use kits of 50 each (syringe and Wiper Piston, without piston inserted)

| Size | Natural |
|------|---------|
| 3cc | 903-NW |
| 5cc | 905-NW |
| 10cc | 910-NW |
| 30cc | 930-NW |
| 55cc | 955-NW |



Manual Syringe Barrels **NEW**

- ▶ Provide simple and quick dispensing solutions without the need for compressed air
- ▶ Molded from Polypropylene resin, manual plungers
- ▶ Compatible with a wide range of dispensing fluids
- ▶ Pistons are made from thermoplastic rubber
- ▶ Available dry or with lubrication
- ▶ Sold in packs of 50

| Part No. | Description |
|----------|---------------------------------|
| 903-PL | Manual Plunger, 3cc |
| 903-PRD | Manual Piston Rubber, 3cc |
| 903-PRL | Manual Piston Rubber, Lub, 3cc |
| 905-PL | Manual Plunger, 5cc |
| 905-PRD | Manual Piston Rubber, 5cc |
| 905-PRL | Manual Piston Rubber, Lub, 5cc |
| 910-PL | Manual Plunger, 10cc |
| 910-PRD | Manual Piston Rubber, 10cc |
| 910-PRL | Manual Piston Rubber, Lub, 10cc |
| 930-PL | Manual Plunger, 30cc |
| 930-PRD | Manual Piston Rubber, 30cc |
| 930-PRL | Manual Piston Rubber, Lub, 30cc |

Foot Valve Dispenser & Accessories

924-DFV Series Foot Valve Dispenser



The 924-DFV Series Foot Valve Dispenser offers increased production combined with dispenser economy. Floor mounted, they have a built in pressure regulator, pressure gauge and a unique fast-dump, three-way air valve. Output rate and shot size are operator controlled.

The 924-DFV is the ideal basic dispensing unit for most

general applications of adhesives, sealants, coatings and compounds.

The 924-DFV-VAC features a vacuum suck-back to prevent very thin materials from dripping to reduce tailing or stringing with thicker materials.

Key Features & Benefits

- ▶ Ideal for applications where electricity is prohibited
- ▶ Robust design
- ▶ Floor mounted conserves bench space
- ▶ No programming required

| Part No. | Description |
|-------------|----------------------------------|
| 924-DFV | Foot Valve Dispenser |
| 924-DFV-VAC | Foot Valve Dispenser with Vacuum |

Technical Specifications

| | |
|--------------------|---|
| Size (W x L x H) | 124mm x 206mm x 121mm (8.1" x 4.9" x 4.7") |
| Weight | 1.8Kg (4 lb) |
| Input Pressure | 100 psi max (6.9 bar) |
| Operating Pressure | Up to 100 psi (6.9 bar) |
| Cycle Mode | Manual |
| Vacuum Force | Up to 15" of Hg (924-DFV-VAC only) |
| Warranty | 1 year |



Receiver Head Assembly

- ▶ Connecting link between time/pressure controllers and Syringe assemblies
- ▶ Provides a safe connection for accident proof dispensing
- ▶ Available with 3 or 6 feet of tubing
- ▶ Includes: receiver head with O-ring, tubing and male quick connector
- ▶ Receiver heads are made of Delrin®
- ▶ Sold individually



| Size | 3' Hose | 6' Hose |
|---------|------------|------------|
| 3cc | 903-3RHB | 903-6RHB |
| 5cc | 905-3RHB | 905-6RHB |
| 10cc | 910-3RHB | 910-6RHB |
| 30/55cc | 93055-3RHB | 93055-6RHB |

Replacement O-rings for Receiver Head

- ▶ Sold in packs of 10

| Size | EPR O-ring | VITON O-ring |
|---------|------------|--------------|
| 3cc | P3015EPK | P3019VPK |
| 5cc | P3016EPK | P3020VPK |
| 10cc | P3017EPK | P3021VPK |
| 30/55cc | P3018EPK | P3022VPK |



Manual Syringe Gun

- ▶ Lightweight barrel applicator gun
- ▶ Provides excellent control for medium/high viscosity products
- ▶ Easy to use. No dripping or mess

| Size | Manual Syringe Gun | Plunger Rod |
|------|--------------------|-------------|
| 10cc | 910-MSG | 71000ROD |
| 30cc | 930-MSG | 73000ROD |

Vacuum Pencil

- ▶ Use for pick and place function
- ▶ Stand-alone vacuum pick-up requires shop air
- ▶ Optional Mixed Kit of Vacuum Cups also available



| | |
|--------|-------------------------|
| TS8120 | Vacuum Pick Up Assembly |
|--------|-------------------------|

Syringe Holder

- ▶ Use for 900 Series syringes

| | |
|--------|----------------|
| SH-300 | Syringe Holder |
|--------|----------------|



Finger Switch Assembly

- ▶ Use with OKi dispensers and syringes in place of a foot pedal
- ▶ Provides control at your finger tip

| | |
|--------|--|
| DX9010 | Finger Switch Assembly for DX Series Dispenser |
|--------|--|

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