# PCT-100 Focused Convection Preheater

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

Unlike conventional preheaters, the PCT-100 Focused Convection Preheater directly targets the underside of the PCB providing a substantial thermal boost for lead-free processes.

## 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

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| Part No. | | Description |
|---|---|---|
| **PCT-100-11** | 1 | Preheater 115V |
| **PCT-100-21** | 1 | Preheater 230V |
| **PCT-101-11** | 2 | Preheater 115V with Arm Rest |
| **PCT-101-21** | 2 | Preheater 230V with Arm Rest |
| **PCT-102-11** | 3 | Preheater 115V with Arm Rest and Boardholder |
| **PCT-102-21** | 3 | Preheater 230V with Arm Rest and Boardholder |
| **PCT-103-11** | | Preheater 115V with Arm Rest and Integrated Boardholder |
| **PCT-103-21** | | Preheater 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 53) |
| **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

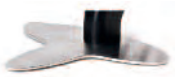
| | |
|---|---|
| Input Voltage | 115 V (PCT-100-11)<br>230 V (PCT-100-21) |
| Heater Rating | 450 W |
| Storage Temperature | -10°C—60°C<br>(14°F—140°F) |
| Environmental Temperature | 0°C—40°C<br>(32°F—104°F) |
| Air Flow | 9.88 cfm (280 l/min) |
| Control Temperature | Variable up to 300°C<br>(572°F) |
| Surface Resistivity ESD | $10^6\Omega$ - $10^{11}\Omega$ |
| Dimensions (L x W x H) | 205 x 155 x 65 mm<br>(8" x 6.1" x 2.6") |
| Weight | 1.6 kg (3.5 lbs) |
| Certificate/Approvals | cTUVus, CE |

# Adjustable Tool Holder & Board Holders

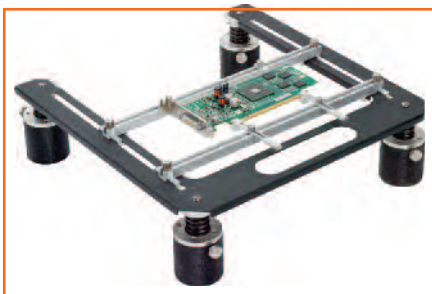
## ATH-1100A Adjustable Tool Holder

- 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, ½" 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.



## 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 open-ended.

Accommodate boards 12" (305mm) x 12" (305mm)

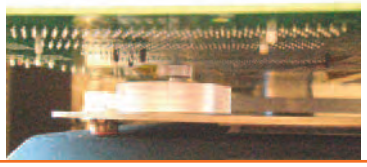
**BH-100** Board Holder. Recommended for use with the PCT-100 Pre-heater

Accommodate boards 3.5" (89mm) x 7" (178mm)

**BH-010** Integrated Boardholder for PCT-100

Minimum PCB size is 0.60" (15mm)

**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

# HCT-900 Handheld 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 |

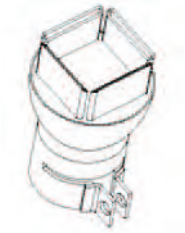
The HCT-900 can be used for the removal and replacing of electronic components, including lead-free, from 0201 up to 304 pin QFP.

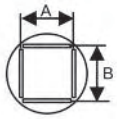
# HCT-900 Handheld Convection Tool

## Nozzle Selection

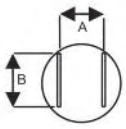
The HCT-900 is supplied with a standard single jet H-D50 (0.2", 5.0mm) nozzle. In addition, two rework nozzle kits, predefined for specific applications, are available, as well as a full selection of nozzles.

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

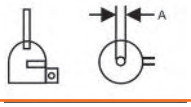





| Model | Chip Type | A mm (in) | B mm (in) |
|---|---|---|---|
| H-P20 | PLCC-20 | 11.9 (0.47") | 11.9 (0.46") |
| H-P28 | PLCC-28 | 14.5 (0.57") | 14.5 (0.57") |
| H-P32 | PLCC-32 | 16.9 (0.67") | 14.3 (0.56") |
| H-P44 | PLCC-44 | 19.5 (0.77") | 19.5 (0.77") |
| H-P52 | PLCC-52 | 21.0 (0.83") | 21.0 (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") |




| Model | Chip Type | A mm (in) | B mm (in) |
|---|---|---|---|
| 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 |
|---|---|
| H-D25 | 2.5 mm (0.1") |
| H-D50 | 5.0 mm (0.2") |
| H-D120 | 12.0 mm (0.47") |

## Technical Specifications

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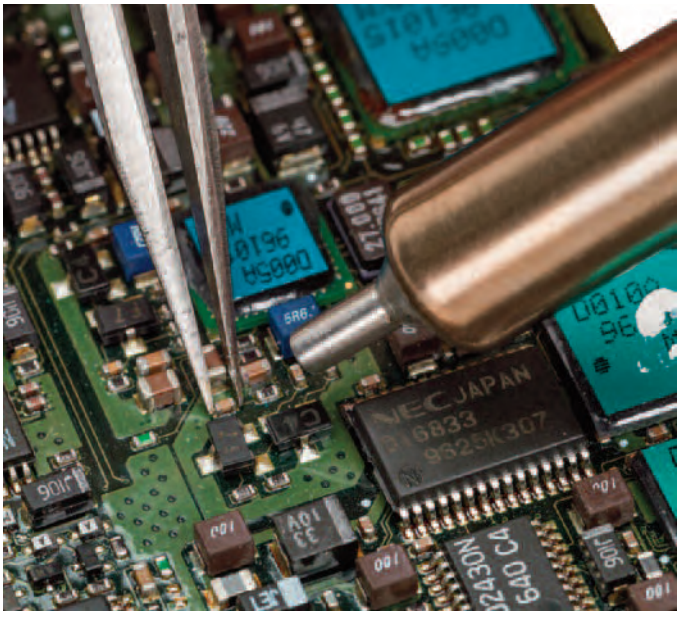
|---|---|
| Input Line Voltage | 230 V HCT-900-21 / 115V HCT-900-11 |
| Power | 320 W |
| Air Pump Type | Diaphragm |
| Air Flow | 6-25 l/min |
| Control Temperature | 100ºC - 500ºC (212ºF - 932ºF) |
| Dimensions (L x W x H) | 210 x 170 x 140 mm (8.7" x 6.7" x 5.5") |
| Noise Level | Less than 46 dBA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

# HCT2-120 Digital Hot Air Pencil

The HCT2-120 Hot Air Pencil is the latest addition to Metcal's offering of convection rework tools. This digital handheld convection tool is **ideally suited for light rework applications, which use smaller components and integrated circuits.**

As component miniaturization continues (i.e. 01005 components) the ergonomics of a pencil allow a user more freedom to access and rework components on the board without affecting adjacent parts. Larger hand-held convection systems commonly reflow and dislodge adjacent components due to a higher minimum airflow.

The HCT2-120's small nozzle sizes and precise and controllable airflow and temperature allow the operator to target only the desired component.

## Key Features & Benefits

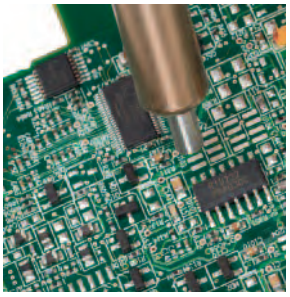
- 120 Watt Ceramic Heater and Dual Stage Air Pump: Provides the power and performance needed to deliver the right amount of thermal energy.
- Digital Airflow and Temperature Controls: Two LED displays provide a graphical and numerical representation of the desired airflow and temperature.
- Fast Response and Performance: A microprocessor controlled, closed loop feedback system provides fast heating, precise and stable temperature control.
- Standby Mode: When the hand-piece is placed into the workstand, the temperature will drop increasing heater life.
- Universal Power Supply: Automatically senses the input line voltage and adjusts accordingly, which allows for worldwide operation without adaptors or a change in performance.
- Ergonomic and Light Weight Hand-Piece that feels like a pencil, with a rubber grip. Increases operator comfort
- Nozzles: Six nozzles (1.5 mm – 4.0 mm) are included in the unit with a nozzle holder inside the workstand.
- Easily Change Heaters and Nozzles: Both can be changed in seconds, as shown below:

# HCT2-120 Digital Hot Air Pencil

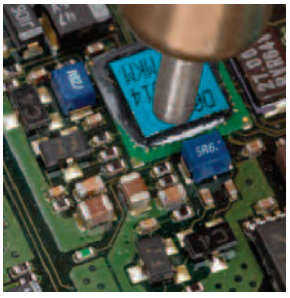
## Applications

The HCT2-120 was developed for very small surface mount component sizes (1206's and smaller) and low board densities. For denser PCBA's or applications with heavy copper planes; boards >4 layers; or components larger than 5mm², use of a Metcal preheater (see pages 51 and 52) may be necessary.


| Part No. | | Description |
|---|---|---|
| HCT2-120 | | Digital Hot Air Pencil |
| Includes: | | |
| HCT-HTR120 | 1 | 120W Easy Change Heater |
| HN-120KIT-6 | 2 | Pack of 6 nozzles (1.5mm, 2.0mm, 2.5mm, 3.0mm, 3.5 mm and 4.0 mm) |
| HCT-WS120 | 3 | Workstand with nozzle holder |
| AC-CP2 | | Heatproof nozzle removal pad |

SOICs



0201s

1210s

## Technical Specifications

| | |
|---|---|
| Ambient Operating Temperature | 10 to 40°C |
| Input Line Voltage | 100 – 240 VAC, grounded circuit |
| Input Frequency | 50/60 Hz |
| Rated Power | 75W |
| Air Flow | 1.5 – 7.0 LPM |
| Noise Level | Typically under 52dBA at max airflow |
| Output Temperature Range | 100°-450°C |
| Temperature Stability | 10% of display value ( > 250°C) |
| Certifications / Markings | cNRTLus, CE, RoHS + WEEE |
| Surface Resistivity | 105 Ω -109 Ω /sq |
| Power Supply Dimensions w x d x h | 10.6 cm (4.2") x 21.3 cm (8.4") x 17.0cm (6.7") |
| Workstand Dimensions w x d x h | 7.6 cm (3.0") x 16.8 cm (6.6") x 8.6 cm (3.4") |
| Weight of the Power Supply | 5.8 lbs. (2.63 kg) |
| Weight of the Workstand | 0.9 lbs. (.4 kg) |