

Perfect for SMD Rework





CV-500 Series Connection Validation™ **Soldering System**

The intermetallic compound thickness is critical in the formation of a solder joint. Connection Validation (CV) evaluates the quality of the solder joint by calculating the intermetallic compound formation and provides closed loop feedback to the operator.

CV provides feedback to the operator via the LED light ring integrated in the hand-piece. It takes the risk associated with the variables involved in the soldering activity and removes the success and failure determination of a good solder joint out of the hands of the operator.

CV complements the skill of the operator to judge the quality of a solder joint by introducing an objective method of evaluating solder joint quality. This systemic and objective approach provides repeatability and a measurable standard to the soldering process.

Features and Benefits

- •SmartHeat® Power on Demand Technology
- Patented Connection Validation IMC Formation Technology
- •2.8" color touchscreen with bold graphics
- •Communications Port for process traceability and firmware updates
- •Integrated Net Power Meter
- Precise tip temperature display
- Patented Chip-in-Cartridge technology
 - Stores and records cartridge attributes
 - Provides traceability information
 - Protects power supply from non-conforming cartridges
 - Cartridges are backwards compatible with MX series
- Password protection



LED equipped hand piece signals to operator when a good solder joint is formed.



Tip temperature displayed on large color screen.

Part Number	Description
CV-510	Solder System Includes:
CV-PS500	Power Supply*
CV-H1-AV	Advanced hand-piece for CV with LED Light*
CV-CP1	Cartridge Removal Pad*
CV-W1AV	TipSaver™ Workstand* Can be ordered separately*
CV-UK1	Upgrade Kit, CV Advanced Hand-piece and Worstand (also available)

Technical Specification

Power Supply CV-PS500		
Ambient Operating Temp.	10 - 40 °C	
Max. Enclosure Temp.	55 °C	
Input Line Voltage	100 - 240 VAC, grounded	
Input Line Frequency	50/60 Hz	
Rated Power Consumption	45 W (nominal), 85 W (max.)	
Output Power	40 W (max.)	
Output Frequency	13.56 MHz	
Heating Method	SmartHeat®	
Display	2.8" Color TFT LCD Display	
Resolution	320 x 240, RGB	
Size	2.8" Diagonal	
Active Area	43.20 x 57.60 mm	
Connections	Single Port	
Communications	USB	
Power Supply Dim. W x D x H	121 x 121 x 222 mm	
Power Supply Weight	3.35 kg	
Certification / Marking	CE, TUV	
Tip-to- Ground Potential	< 2 mV	
Tip-to-Ground Resistance	< 2 Ohm	
Idle Temperature Stability	1.1 °C in still air	
Tip Temperature Accuracy	Meets or exceeds IPC J-STD-001 Standard	
Hand-piece cable length	L = 183 cm , burn proof, ESD-safe	
Hand-piece connectors		
RF Connector	F-type power connector	
LED Power Connector	6 pin DIN	
Operation	2 single ports	
Firmware upgrade	Via USB port and appropriate software with compatible computer and cables.	



CV-500 Series Connection Validation™ **Soldering System**

Hand-pieces and Upgrade Kits

Metcal offers six different hand-pieces and upgrade kits for the Connection Validation Soldering system. These ergonomic hand-pieces transform the CV system into a complete soldering solution for a wide variety of applications.

UltraFine Hand-piece & UltraFine Tweezer Hand-piece

Metcal's UltraFine hand-pieces add a specialty tool for soldering and rework of very small components, restricted access or high-density component packaging on a PCB.



Key Features and Benefits:

Improved temperature control: Metcal's SmartHeat® inside means lower risk of overshooting delicate components

Very fast heat-up speed means you can get to your next task even faster

Ergonomic, lightweight hand-piece keeps you comfortable even on large industrial jobs

Designed for use under a microscope

Compatible with UFC cartridges and available in 600 and 700 series temperatures for the UltraFine hand-piece.

Compatible with UFT cartridges and available in 600 and 700 series for the UltraFine Tweezers hand-piece

Part Number	Description
CV-H2-UF	UltraFine Hand-piece for CV systems
CV-UK2	Upgrade Kit, UltraFine Hand-piece and Workstand
CV-H4-UFT	UltraFine Tweezer Hand-piece for CV System
CV-UK4-UFT	Upgrade Kit, Ultrafine Tweezer Hand-piece
	and Workstand

Precision Tweezer Hand-piece

Transform the Connection Validation Soldering Systems into a rework system for applications requiring the removal of surface mount components from 1 x 1 mm on up.



Adjustable tip alignment for both height and rotation ensures co-planarity of the cartridges

Dual position pitch-switch enables adjustment to the component width, improving operator ergonomics

Lightweight and ergonomic hand-piece

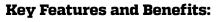
Quick change cartridges with keyway to prevent misalignment

For use with PTC Tweezer cartridges

Part Number	Description
CV-H4-PTZ	Precision Tweezer Hand-piece for CV System
CV-UK4	Upgrade Kit, Precision Tweezer Hand-piece and
	Workstand

Desolder Hand-piece

Transform the Connection Validation Soldering Systems into a rework system for applications requiring the removal of solder such as through hole components.



Designed for plated through hole component desoldering

Ergonomic easy-to-grip handle

The hand-piece requires shop air for operation

Compatible with DSC cartridges. Available in 700, 800 and 900 series temperatures

Part Number	Description
CV-H5-DS	Desolder Hand-piece for CV System with Airline Kit and Accessories
CV-H5-DSHP	Desolder Hand-piece only
CV-UK5	Upgrade Kit, Desolder Hand-piece, Workstand Airline Kit and Accessories



CV-500 Series Connection Validation™ **Soldering System**

Solder Wire Feeder Hand-piece

Metcal's Solder Wire Feeder System adds control and convenience to your soldering process. The digital controls, high performance and its ability to handle multiple solder wire diameters provide repeatability and functionality to your process.



Improved temperature control: Metcal's SmartHeat® inside means lower risk of overshooting delicate components

Very fast heat-up speed means you can get to your next task even faster

Compatible with solder diameters from 0.5 to 1.27 mm

Compatible with CVC and SMC series cartridges for standard applications

Part Number	Description
CV-H7-AV	Solder Wire Feeder Advanced Hand-piece for CV
	System
CV-UK7	Upgrade Kit, Solder Wire Feeder, Advanced
	Hand-piece, Workstand and accessories

Introducing the All-New CV Monitoring Software

Improve your solder process traceability and create a performance baseline using CV's intelligent cartridges plus CV-5000 Monitor software. Using our Connection Validation patented technology, CV Monitor software allows you to capture solder process information over time for each joint when attached to the communication port.

Now that you have a baseline, you can quickly analyze your soldering performance, identify changes in your solder conditions and make changes to your process. Download the free CV-5000 Monitor software and start monitoring your process.

You'll get...

- Power demand
- Tip temperature
- Solder time
- Data collection for improved process control
- •Intermetallic Compound (IMC) Formation*

*Metcal exclusive



Download the free software to get started www.Metcal.com