Innovation has a brand new color.

Introducing the new
CV-5200 Connection Validation™ Soldering Station

Metcal is raising the bar with a technology that will change hand soldering forever.

Metcal soldering stations have led the way with SmartHeat® technology for 35 years. SmartHeat senses the thermal load and instantly delivers Power on Demand directly to the joint. The embedded, self-regulating heater delivers the right amount of power based on the requirements of the solder joint. This provides a fast, safe and repeatable process with no calibration required.

Currently, the industry standard relies on a visual inspection of the solder joint. Metcal has developed a better way...
Introducing Connection Validation .

CV-5200 Series

Connection Validation™ Soldering Station

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 measureable 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 data and firmware graphics
- Precise tip temperature display
- Integrated Net Power Meter and power graph
- Patented Chip-in-Cartridge technology
  - Closed loop bi-directional communication
  - Stores and records cartridge attributes
  - Provides traceability information
  - Protects power supply from non-conforming cartridges
  - Backwards compatible with MX series power supplies
- Password protection

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

Tip temperature displayed on large color screen.

System Configuration

The CV-5210 soldering station includes:

- CV Power supply
- CV-H1-AV: Advanced hand-piece swith integrated LED light*
- MX-W1AV: TipSaver Workstand*

Additional system configurations will be available soon.
**Can be ordered separetely.*

Technical Specifications

CV-5200 Connection Validation Power Supply	
Ambient Operating Temp.	10 to 40 °C
Max. Enclosure Temp.	55°C
Input Line Voltage	100 – 240 VAC, grounded circuit
Input Line Frequency	50/60 Hz
Rated Power Consumption	125W
Output Power	80W max.
Output Frequency	13.56 MHz
Heating Method	Induction
Display	2.8" Color TFT LCD Display
Resolution	320*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 (mm)	121 x 130 x 235
Power Supply Weight (kg)	3.35
Certification / Marking	CE TUV
Tip-to- Ground Potential	<2mV
Tip-to-Ground Resistance	<2ohms
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=183cm (72"), burn proof, ESD safe
Hand-piece connectors	
RF Connector	F type power connector
LED Power Connector	6 pin DIN
Operation	2 single port or dynamic dual simultaneous
Firmware upgrade	Via USB port and appropriate software with compatible computer and cables.

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CV-5200 Series

Connection Validation™ Soldering Station

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New Cartridge Smart Numbering Scheme

With the introduction of Connection Validation, Metcal is migrating to a new smart numbering convention that is designed to assist the operator or the process engineer in the selection of the correct cartridge for the application.

Cartridge & Heater Series Legend

Cartridge Series

- CVC – Connection Validation Cartridges, Connection Validation enabled
- SMC – Surface Mount Cartridges
- New cartridge series to be added soon

Heater Series – represented by the x in the part number.

- 5-500 series heaters
- 6-600 series heaters
- 7-700 series heaters
- 8-800 series heaters
- 9-900 series heaters

Geometry

BL	Blade	KN	Knife
BV	Bevel	MH	Mini-Hoof
CH	Chisel	QD	Quad
CN	Conical	SC	Slotted Cylindrical
CP	Hollow Cup	SH	Shield
TN	Tunnel	SL	Slot
HF	Hoof	WV	Wave
HK	Hook	FB	Flat Blade
HP	Hot Plate	VC	V-Groove Chisel
HS	Heat Stake	PC	Pin Connector
LG	Long Groove	SK	Socket

Dimensions

Four digit numerical value, which represents the key dimension of the geometry.

Special Designator

Provides an additional level of identification to the cartridge to better identify any unique attributes

A	Access	additional length in one axis, >10mm
D	Deep Taper	
H	High Mass	Similar in design to another tip geometry with increased thermal mass
J	Reach with Taper	additional length >10mm with a change in axis, Taper
L	Long Life	increased tip plating
N	Non-Wetting	1 or more surfaces that are non-wetting
P	Power	reduced length in one-axis, <6.5mm
Q	Square	Square end feature for Flat Blade geometry
R	Reach	additional length >10mm with a change in axis
S	Standard	
T	Taper	Taper with Step
U	Round	Round end feature for Flat Blade geometry
V	Concave	
W	Enlarged Wetting Area	
X	Power & Long Life	reduced length in one-axis, <6.5mm, increased tip plating

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CV-5200 Series

Connection Validation™ Soldering Station

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Cartridge Part Number Cross Reference Table

Current Part Number	New Part Number	Description
STTC-x46	CVC-xBV6005A	CARTRIDGE, BEVEL, 0.51MM (0.02 IN), 60DEG
STTC-x47P	CVC-xBV6018P	CARTRIDGE, BEVEL, 1.78MM (0.07 IN), 60DEG
STTC-x47	CVC-xBV6018R	CARTRIDGE, BEVEL, 1.78MM (0.07 IN), 60DEG
STTC-x25P	CVC-xCH0010P	CARTRIDGE, CHISEL, 1MM (0.04 IN), 30DEG
STTC-x25	CVC-xCH0010S	CARTRIDGE, CHISEL, 1MM (0.04 IN), 30DEG
STTC-x38P	CVC-xCH0014P	CARTRIDGE, CHISEL, 1.5MM (0.06 IN), 30DEG
STTC-x99	CVC-xCH0015R	CARTRIDGE, CHISEL, BENT, 1.5MM (0.06 IN), 30DEG
STTC-x38	CVC-xCH0015S	CARTRIDGE, CHISEL, 1.35MM (0.053 IN), DEG
STTC-x42	CVC-xCH0018A	CARTRIDGE, CHISEL, LONG, 1.78MM (0.07 IN), 60DEG
STTC-x37LL	CVC-xCH0018L	CARTRIDGE, CHISEL, 1.78MM(0.07IN), 30DEG, LL
STTC-x37P	CVC-xCH0018P	CARTRIDGE, CHISEL, 1.78MM (0.07 IN), 30DEG
STTC-x98	CVC-xCH0018R	CARTRIDGE, CHISEL, BENT, 1.78MM (0.07 IN), 30DEG
STTC-x37	CVC-xCH0018S	CARTRIDGE, CHISEL, 1.78MM (0.07 IN), 30DEG
STTC-x36P	CVC-xCH0025P	CARTRIDGE, CHISEL, 2.5MM (0.1 IN), 30DEG
STTC-x36	CVC-xCH0025S	CARTRIDGE, CHISEL, 2.5MM (0.1 IN), 30DEG
STTC-x13	CVC-xCH0030S	CVC-xCH0030S, CARTRIDGE, CHISEL, 3MM (0.12 IN), 90DEG
STTC-x03	CVC-xCH0034S	CARTRIDGE, CHISEL 3.04MM
STTC-x65	CVC-xCH0050A	CARTRIDGE, CHISEL, 5MM (0.2 IN)
STTC-x17	CVC-xCH0050S	CVC-xCH0050S, CARTRIDGE, CHISEL, LARGE, 5MM (0.2 IN), 30DEG
STTC-x20	CVC-xCH2238A	CARTRIDGE, TURBO, 500 SER, 12O CHISEL 1/8 X 7/8
STTC-x90	CVC-xCN0003A	CARTRIDGE, CONICAL, 0.25MM (0.01 IN)
STTC-x45P	CVC-xCN0004P	CARTRIDGE, CONICAL, 0.4MM (0.016 IN)
STTC-x26	CVC-xCN0004R	CARTRIDGE, CONICAL, BENT, 0.4MM (0.016 IN), 30DEG
STTC-x22	CVC-xCN1404S	CARTRIDGE, CONICAL, 0.4MM (0.016 IN)
STTC-x43	CVC-xCN0005A	CARTRIDGE, CONICAL, 0.5MM (0.02 IN)
STTC-x44	CVC-xCN0005R	CARTRIDGE, CONICAL, BENT, 0.5MM (0.02 IN), 30DEG
STTC-x11	CVC-xCN0005S	CVC-xCN0005S, CARTRIDGE, CONICAL, 0.5MM (0.02 IN)
STTC-x01	CVC-xCN0010A	CARTRIDGE, CONICAL, 1MM (0.04 IN)
STTC-x01P	CVC-xCN0010P	CARTRIDGE, CONICAL, 1MM (0.04 IN)
STTC-x41	CVC-xCN0013R	CARTRIDGE, CONICAL, BENT,LONG,1.27MM(0.05 IN)30DEG
STTC-x06	CVC-xCN1418A	CARTRIDGE, CONICAL, 1.78MM (0.07 IN)
STTC-x45	CVC-xCN1504A	CARTRIDGE, CONICAL, 0.4MM (0.016 IN)
STTC-x40	CVC-xCN1604R	CARTRIDGE, CONICAL, BENT, 0.4MM (0.016 IN), 30DEG
STTC-x07	CVC-xCN1710A	CARTRIDGE, CONICAL, LONG, 1MM (0.04 IN)
SMTC-x167	SMC-xHF6015S	CARTRIDGE, HOOF, 1.5MM (0.06 IN), 60 DEG
SMTC-x147	SMC-xHF6033S	CARTRIDGE, HOOF, 3.3MM (0.13 IN), 60 DEG
SMTC-x172	SMC-xHK0005S	CARTRIDGE, HOOK, LONG, 0.5MM (0.02 IN)

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