

Soldering. Reinvented.



Connection Validation CV-PS5200/CV-PS500



USER GUIDE

English
Deutsche
Français
Italiano
Español
简体中文
繁體中文
日本語
한국어



With power applied, the tip temperature can be $> 300^{\circ}\text{C}$. Failure to observe the following precautions may lead to injury to users or damage the equipment: Do not touch any metallic parts of the cartridge. Always use cartridge removal pad and turn off system when changing cartridges. Do not use near flammable items. Do not use unit for any function other than described in this manual. Use only genuine Metcal replacement parts. Use in a well-ventilated area or with fume extraction. Do not use the equipment with wet hands. Connect only to properly grounded outlets to prevent risk of electric shock. Always place hand-piece back into the work stand to prevent accidental burning of oneself or surrounding objects. Children should be supervised to ensure that they do not play with the appliance. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Bei eingeschaltetem Strom kann die Temperatur der Spitze $> 300^{\circ}\text{C}$ Die Nichtbeachtung der folgenden Vorsichtsmaßnahmen kann zu Verletzungen des Bedieners führen oder das Gerät beschädigen:

Berühren Sie keine Metallteile der Patrone. Immer Patrone Pad. Nicht in der Nähe brennbarer Gegenstände verwenden. Gerät darf nicht für jede andere Funktion als in diesem Handbuch beschrieben. Verwenden Sie nur Original Metcal Ersatzteilen. Verwenden Sie in einem gut belüfteten Raum oder mit Absaugung. Verwenden Sie nicht das Gerät mit nassen Händen. Schließen Sie nur an ordnungsgemäß geerdete Steckdosen, um das Risiko eines elektrischen Schlags zu vermeiden. Immer Ort Handstück wieder in die Arbeit stehen, um ein versehentliches verbrennen oder sich in umliegenden Objekten zu verhindern. Kinder sollten beaufsichtigt werden, um sicherzustellen, dass sie nicht mit dem Gerät spielen. Dieses Gerät ist nicht zur Verwendung durch Personen (einschließlich Kinder) mit eingeschränkten physischen, sensorischen oder geistigen Fähigkeiten oder mangelnder Erfahrung und Wissen, bestimmt, es sei denn sie stehen unter Aufsicht oder ausführliche Anleitung zur Benutzung des Geräts durch eine verantwortliche Person für ihre Sicherheit.

Sous tension, la température de la panne peut être $> 300^{\circ}\text{C}$. Le non-respect des précautions suivantes peut entraîner des blessures à l'utilisateur ou endommager l'équipement :

Ne pas toucher les parties métalliques de la cartouche. Toujours utiliser de tampon encreur. Ne pas utiliser à proximité d'objets inflammables. Ne pas utiliser l'appareil pour toute autre fonction que celle décrite dans ce manuel. Utilisez uniquement des pièces détachées Metcal. Utiliser dans un endroit bien aéré ou avec extraction des fumées. Ne pas utiliser l'appareil avec les mains mouillées. Connectez uniquement des prises correctement mise à la terre pour éviter tout risque de choc électrique. Toujours placer la pièce à main de nouveau dans le travail debout pour éviter les brûlures accidentelles de soi-même ou les objets environnants. Les enfants doivent être surveillés pour s'assurer qu'ils ne jouent pas avec l'appareil. Cet appareil n'est pas destiné à être utilisé par des personnes (y compris les enfants) dont les capacités physiques, sensorielles ou mentales, ou le manque d'expérience et de connaissances, à moins qu'elles n'aient été formées et encadrées pour l'utilisation de cet appareil par une personne responsable de leur sécurité.

Con l'alimentazione, la temperatura della punta può essere $> 300^{\circ}\text{C}$. La mancata osservanza delle seguenti precauzioni può causare lesioni agli utenti o danneggiare l'apparecchiatura:

Non toccare le parti metalliche della cartuccia. Utilizzare sempre pad cartuccia. Non utilizzare in prossimità di materiali infiammabili. Non usare l'unità per qualsiasi funzione diverso da quello descritto nel presente manuale. Utilizzare solo parti di ricambio originali Metcal. Utilizzare in un ambiente ben ventilato o con estrazione dei fumi. Non utilizzare l'apparecchio con le mani bagnate. Collegare solo a prese di messa a terra per evitare il rischio di scosse elettriche. Sempre posto manipolo di nuovo nel lavoro in piedi per evitare combustione accidentale di se stessi o di oggetti circostanti. I bambini devono essere sorvegliati per assicurarsi che non giochino con l'apparecchio. Questo apparecchio non è destinato all'uso da parte di persone (inclusi i bambini) con ridotte capacità fisiche, sensoriali o mentali, o con mancanza di esperienza e conoscenza, a meno che non siano controllati o istruiti all'uso dell'apparecchio da una persona responsabile della loro sicurezza. Questi sistemi vanno tenuti lontani dalla portata dei bambini

Con la energía aplicada, la temperatura de la punta puede ser $> 300^{\circ}\text{C}$. El incumplimiento de las siguientes precauciones puede causar lesiones a los usuarios o dañar el equipo:

No toque las partes metálicas del cartucho. Siempre use la almohadilla cartucho. No lo utilice cerca de productos inflamables. No use la unidad para cualquier otra función que se describe en este manual. Utilice sólo piezas de repuesto originales de Metcal. Use en un área bien ventilada o con extracción de humos. No utilice el aparato con las manos mojadas. Conecte sólo a las tomas de tierra adecuadas para prevenir el riesgo de descarga eléctrica. Siempre coloque la pieza de mano de nuevo en el trabajo destaque para evitar la quema accidental de uno mismo o de los objetos circundantes. Los niños deben ser supervisados para asegurarse de que no jueguen con el aparato. Este aparato no está diseñado para ser utilizado por personas (incluidos niños) con capacidades físicas, sensoriales o mentales, o con falta de experiencia y conocimiento, a menos que hayan recibido supervisión o instrucciones relativas al uso del aparato por una persona responsable de su seguridad

.通電後，烙鐵頭溫度 $> 300^{\circ}\text{C}$ 。不遵守以下注意事項，可能會導致對用戶的傷害或損壞設備：不要觸摸任何金屬部件的墨盒。請務必使用墨盒墊。不要靠近易燃物品的使用。不要使用本手冊中描述的任何功能以外的單位。只使用真正的 METCAL 更換零件。在通風良好的地方使用，或與排煙。不要用濕手使用的設備。僅連接到正確接地的電源插座，以避免觸電的危險。

手件移動到工作站在自己或周圍物體，以防止意外燃燒。應照看好兒童，確保他們不玩耍該產品。本產品不用於降低身體，感官或精神上的能力，或缺乏經驗和知識的人（包括兒童），除非他們已獲得監督或指令關於使用本產品由一個人負責他們的安全。

通电后，烙铁头温度> 300℃。不遵守以下注意事项，可能会导致对用户的伤害或损坏设备：不要触摸任何金属部件的墨盒。请务必使用墨盒垫。不要靠近易燃物品的使用。不要使用本手册中描述的任何功能以外的单位。只使用真正的 METCAL 更换零件。在通风良好的地方使用，或与排烟。不要用湿手使用的设备。仅连接到正确接地的电源插座，以避免触电的危险。手件移动到工作站在自己或周围物体，以防止意外燃烧。应照看好儿童，确保他们不玩耍该产品。本产品不用于降低身体，感官或精神上的能力，或缺乏经验和知识的人（包括儿童），除非他们已获得监督或指令关于使用本产品由一个人负责他们的安全。

電源投入状態で、先端の温度が>300℃であることができます以下の注意事項を守らない場合には、ユーザーへの傷害を引き起こす、または機器に損傷を与える可能性があります。

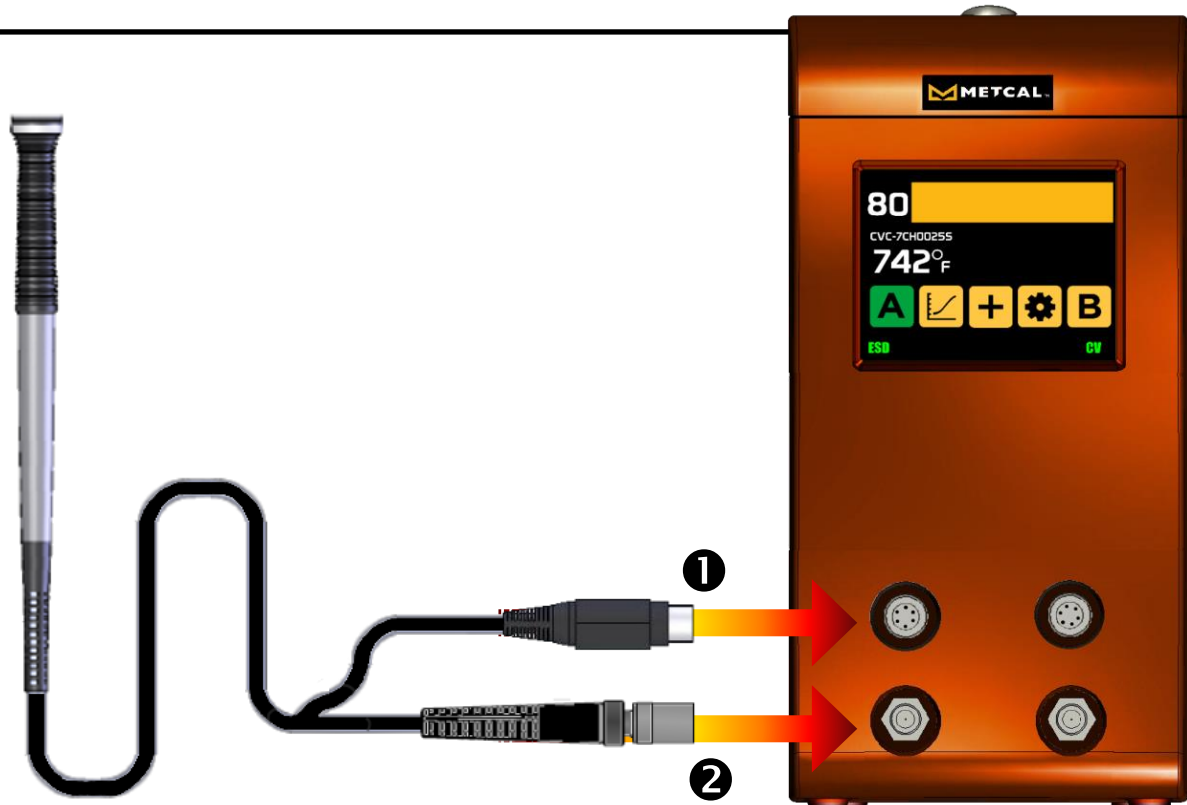
カートリッジのいずれかの金属部分に触れないでください。常にカートリッジパッドをご使用ください。燃えやすいものの近くで使用しないでください。このマニュアルで説明するより他にどのような機能のためにユニットを使用しないでください。純正先端の交換部品を使用しています。換気の良い場所で、またはヒューム抽出して使用してください。濡れた手で機器を使用しないでください。感電の危険を防止するために、適切に接地されたコンセントにのみ接続します。常に仕事に場所ハンドピースバックは、自分や周囲のオブジェクトを誤って燃焼を防止するために立っている。子供たちは、アプライアンスに再生されないことを保証するために指示されるべきである。このアプライアンスは減少物理的、感覚的または精神的能力、または経験や知識の欠如を有する者（子供を含む）で使用するものではありません彼らは監督やその安全性の責任者によるアプライアンスの使用に関する指示を与えられている場合を除きます。

전력 응용으로, 팁 온도> 300 ° C. 될 수 있습니다 다음과 같은주의 사항을 준수하지 않으면 사용자가 부상으로 이어질하거나 장비가 손상 될 수 있습니다 :

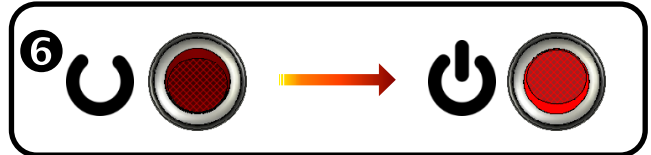
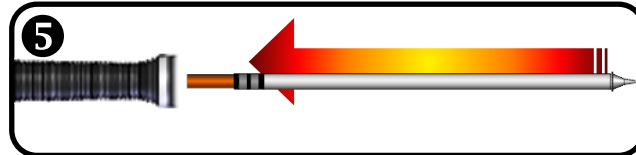
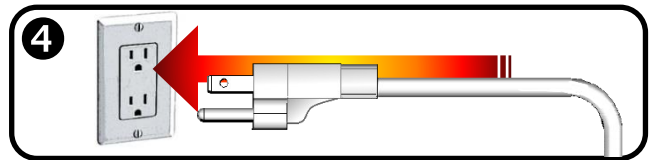
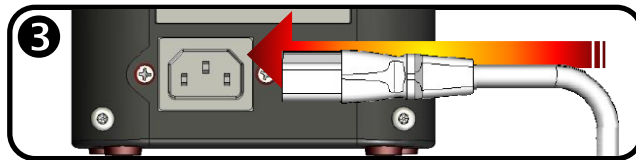
카트리지의 금속 부분을 만지지 마십시오. 항상 카트리지 패드를 사용합니다. 타기 쉬운 물건 근처에 사용하지 마십시오. 이 설명서에 설명 된 이외의 기능에 대한 장치를 사용하지 마십시오. 정품 Metcal 교체 부품을 사용합니다.환기가 잘되는 공간이나 연기 추출로 사용합니다. 젖은 손으로 장비를 사용하지 마십시오. 전기 충격의 위험을 방지하기 위해 제대로 접지 된 콘센트에만 연결합니다. 항상 일에 장소 손 피스 등이 자신이나 주변 물체의 실수로 레코딩을 방지하기 위해 서. 어린이들은 어플라이언스와 함께 재생되지 않도록 감독해야 합니다. 이 어플라이언스는 감소 신체적, 감각적 또는 정신적 능력, 또는 경험과 지식의 부족과 명 (어린이 포함)이 사용하기에 적합하지 않습니다들이 감독이나 안전에 대한 책임있는 사람에 의한 기기의 사용에 관한 지침을 제공해서도 안됩니다.

-
- Please visit Metcal's web page (www.metcal.com) where you will find available information on systems, accessories, technical notes, user guide, and more.
 - Bitte besuchen Sie Metcal Webseite (www.metcal.com), wo Sie verfügbaren Informationen über Systeme, Zubehör, technische Hinweise, Bedienungsanleitung und mehr finden.
 - S'il vous plaît visitez la page Web du Metcal (www.metcal.com) où vous trouverez des informations disponibles sur les systèmes, les accessoires, les notes techniques, guide de l'utilisateur, et plus encore.
 - Si prega di visitare la pagina web Metcal (www.metcal.com), dove si trovano le informazioni disponibili sui sistemi, accessori, note tecniche, manuale d'uso, e altro ancora.
 - Por favor, visite la página web de Metcal (www.metcal.com) donde encontrará la información disponible sobre los sistemas, accesorios, notas técnicas, instrucciones de uso, y más.
 - METCAL的網頁（www.metcal.com），在那裡你會找到可用的信息系統，配件，技術說明，用戶指南，請訪問。
 - METCAL的网页（www.metcal.com），在那里你会找到可用的信息系统，配件，技术说明，用户指南，请访问。
 - あなたはシステム、アクセサリ、テクニカルノート、ユーザーガイド、および多くで利用可能な情報を見つける先端のウェブページ（www.metcal.com）をご覧ください。
 - 당신은 시스템, 액세서리, 기술 정보, 사용자 가이드, 등에서 사용 가능한 정보를 찾을 수 Metcal의 웹 페이지 (www.metcal.com)를 방문하시기 바랍니다.

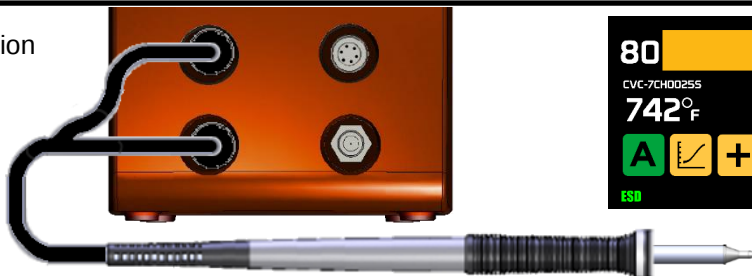
SETUP



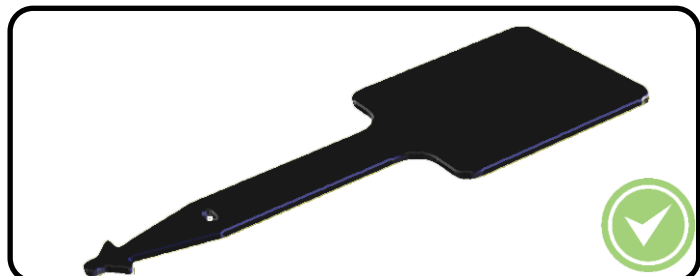
*CV-PS5200 Shown



★With Password Protection enabled, a password is required to proceed.



WARNING// 警告// WARNUNG// 警告//ATTENZIONE//AVERTISSEMENT// 警告//ADVERTENCIA//경고



CONNECTION VALIDATION OPERATION

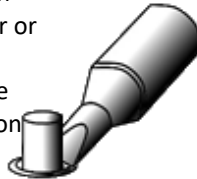
- Pick a tip that **maximizes contact area** between the solder joint and tip. Maximizing contact area gives the most efficient heat transfer, producing high quality solder joints quickly.
- Pick a tip that allows good access to the solder joint. Shorter tip lengths allow quicker response. Longer or angled tips may be needed for soldering densely populated boards.
- Pick the lowest temperature cartridge that will accomplish the task. This minimizes the potential for thermal damage.

Enable CV through the Setup Screen

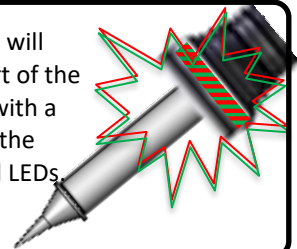


The system may flash the green and red lights and an optional beep may sound when the tip is cleaned or in the work stand. This is normal and does not signal the start of a solder event.

1. Remove the hand-piece from the work stand. Clean your tip using a sulfur-free sponge & de-ionized water or Metcal's brass pad.
2. Place the tip in contact with the land and lead to be soldered. This starts the heat flowing to the connection area. It may be necessary to apply a small amount of solder to start the transfer.

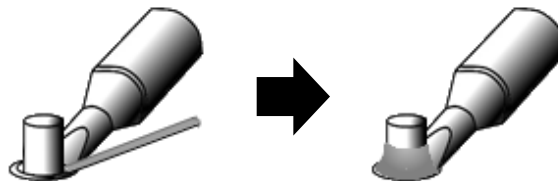


3. The system will signal the start of the solder event with a quick flash of the green **and** red LEDs.



If the system does not signal the start of the solder event, your tip selection is too large for the load or thermal contact with the load to be soldered is insufficient. This may be prevalent with small, fine tip geometries with minimal surface area.

4. The thermal bridge is formed by touching the solder to the same junction, then moving the solder wire to the opposite side of the land. This causes the liquid solder to move toward the heat source to complete the solder joint.



5. Wait for the CV system to signal the end of the solder event.



Or



6. Promptly remove the soldering tip from the solder joint

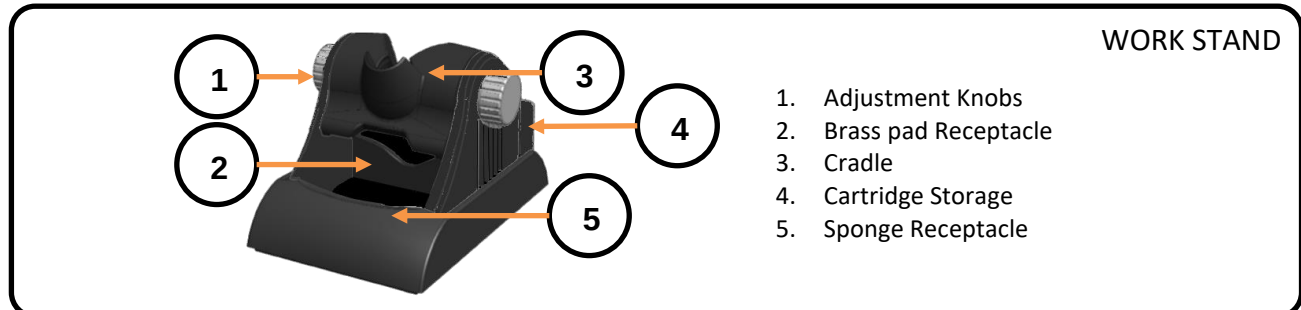
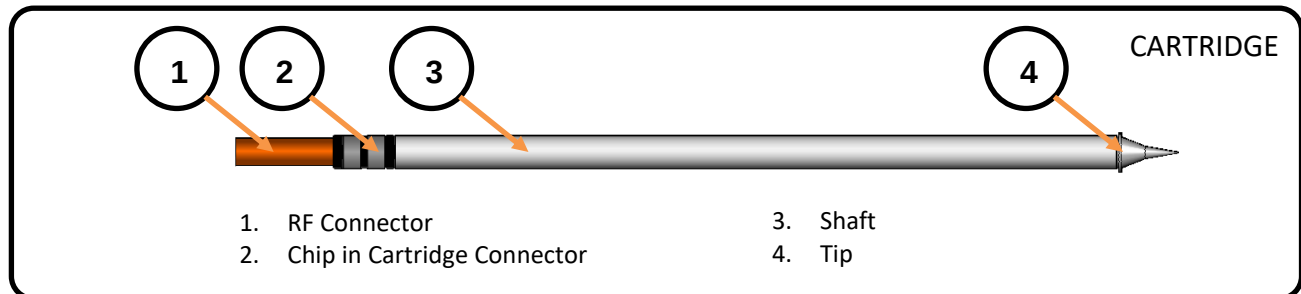
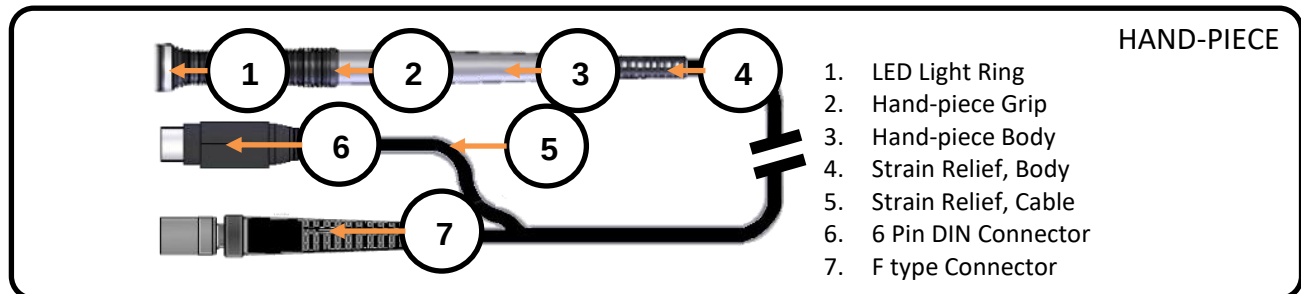
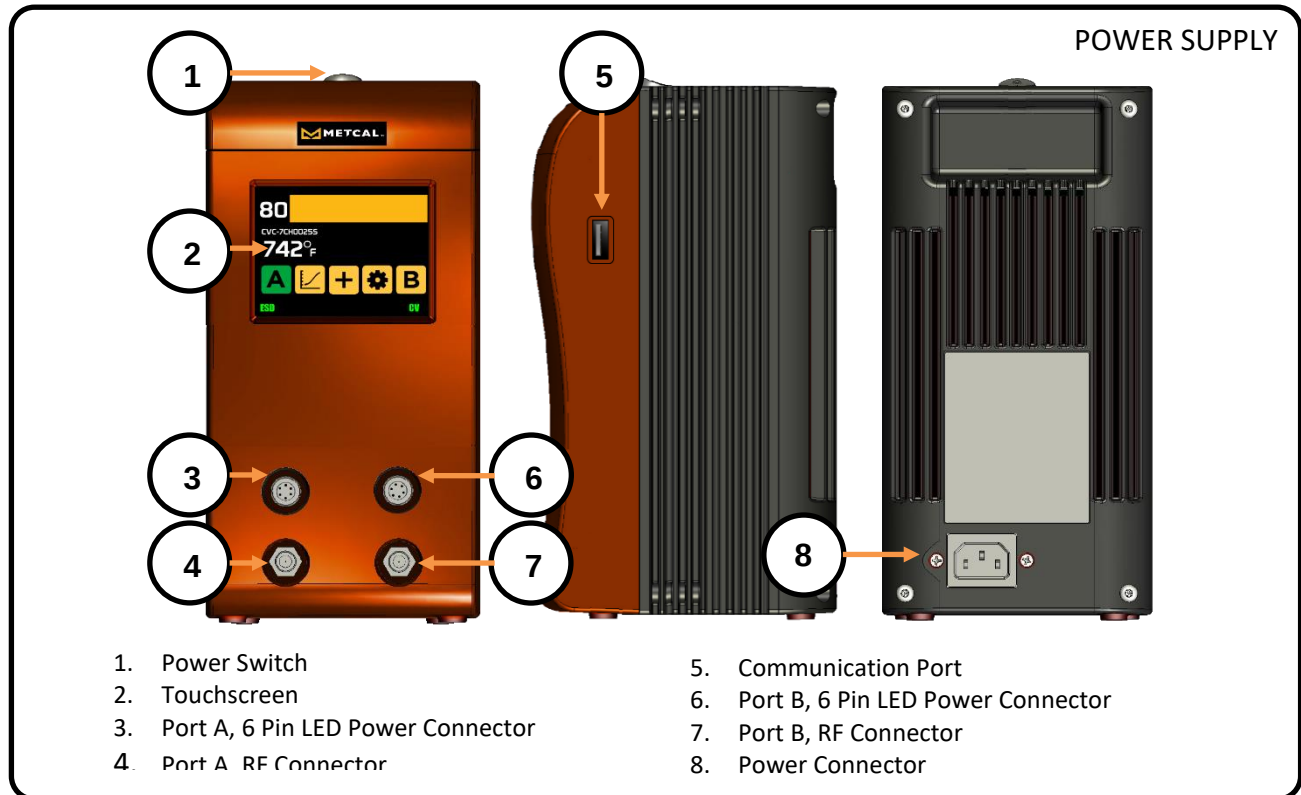


Wait for the LED light to extinguish before starting the next solder joint.



- An immediate red light after solder event detection indicates the tip is improperly sized to the joint.
- A red light after approximately 8 seconds indicates too small of a tip or too low of a temperature was selected.

HARDWARE FEATURES



SOFTWARE FEATURES

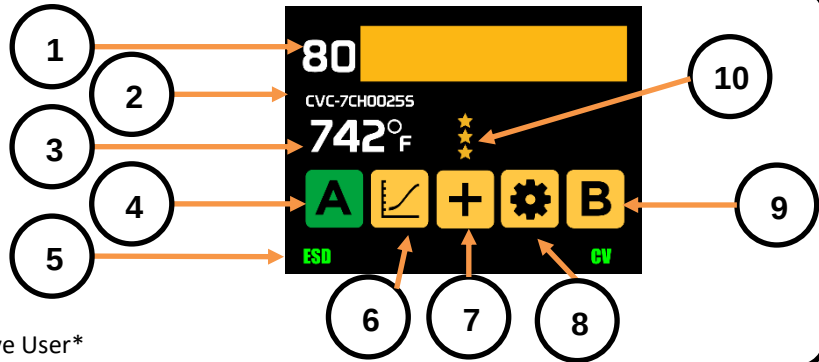
BOOT SCREEN

1. Connection Validation logo
2. CV5200 Series - 80W
CV500 Series - 40W
3. Firmware Version

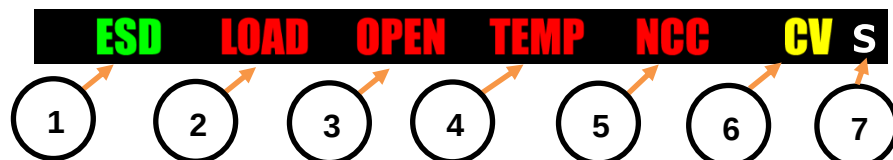
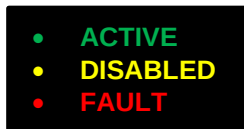


OPERATIONS SCREEN

1. Net Power Meter
2. Port A Cartridge ID
3. Port A Tip Temperature
4. Select Port A
5. System Message Bar
6. Select Power Graph
7. CV-PS5200 Dual Simultaneous Enable/Disable (Link)
8. Setup
9. Select Port B
10. Active User*



SYSTEM MESSAGE BAR



1. Ground Fault Detection
2. Failure to Load Firmware in Dual Simultaneous Mode
3. No cartridge detected
4. Over Temperature
5. Non-Conforming Cartridge
6. Connection Validation
7. Auto Sleep Indicator



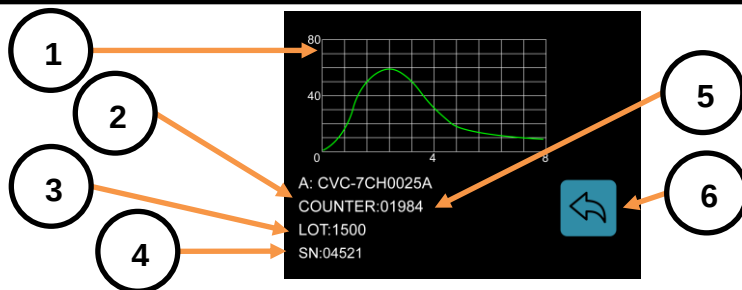
CV-PS5200 Note: In some cases, the user may experience either "Open Error" or "Load Error" when removing a tip from the handpiece in dual-simultaneous mode.

It is recommended that the user cycles the power when swapping tips in dual-simultaneous mode to recover from either of these error messages.

General Safety Note: It is highly recommended that the user shut off the power supply when changing the cartridge.

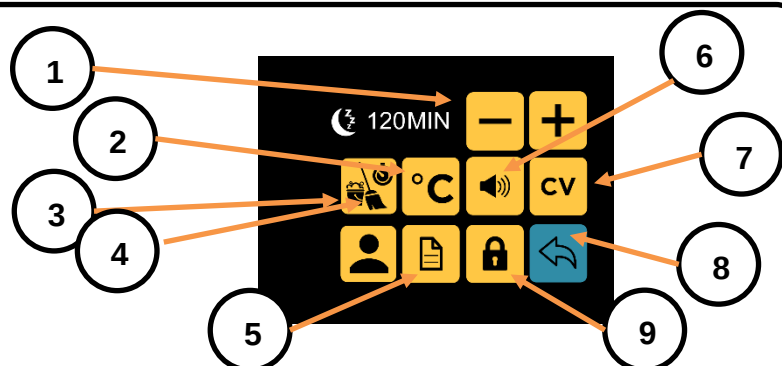
POWER GRAPH SCREEN

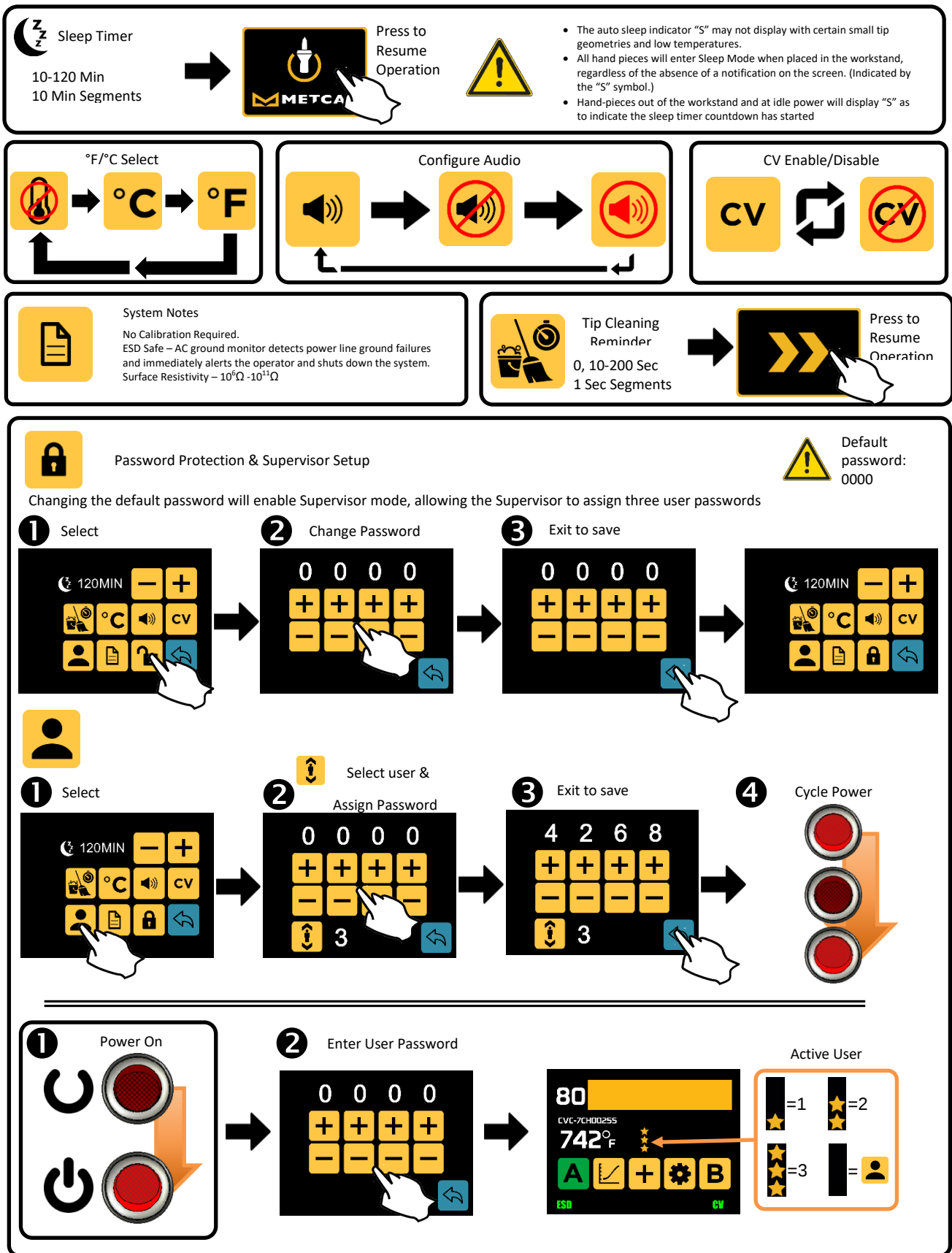
1. Power vs. Time graph
2. Cartridge ID
3. Cartridge Production Lot Code
4. Cartridge Serial Number
5. Solder Event Counter
6. Return



SETUP SCREEN

1. Sleep Timer Setup
2. °F/°C Select
3. Tip Cleaning Reminder
4. Supervisor Access
5. System Notes
6. Configure Audio
7. CV Enable/Disable
8. Return
9. Password Protection





SPECIFICATIONS

Power Supply		CV-PS5200	CV-PS500
Ambient Operating Temperature		10 to 40°C	
Maximum Enclosure Temperature		55°C	
Input Line Voltage		100 – 240 VAC, grounded circuit	
Input Frequency		50/60 Hz	
Power Consumption		125W	45W(Nominal) 85W(Max)
Operation		2 single port or dynamic dual simultaneous*	2 Single Port
Output Power (per channel)		80W*	40W
Output Line Frequency		13.56 MHz	
Tip-to- Ground Potential		<2mV	
Tip-to-Ground Resistance		<2 ohms	
Tip Temperature Accuracy		Meets or Exceeds IPC J-STD-001	
Idle Temperature Stability		± 1.1°C in still air	
Display		2.8" Color TFT LCD Display	
Resolution		320*240 RGB	
Size		2.8" Diagonal	
Active Area		43.20 x 57.60 mm	
Connections			
RF Connector		F type power connector	
LED Power Connector		6 pin DIN	
Power		IEC C14 Male	
Communications		USB A Female	
Surface Resistivity		10 ⁶ Ω -10 ¹¹ Ω	
Dimensions (w x d x h) (mm)		121 x 130 x 235	121 x 121 x 220
(w x d x h) (in)		4.8 x 5.1 x 9.3	4.8 x 4.8 x 8.66
Weight (kg)		3.35	2.65
(lbs.)		7.4	5.84
Hand-piece		CV-H1-AV	
Cable Length		1220 mm, burn proof, ESD safe	
Hand-piece connector			
RF Connector		F type power connector	
LED Power Connector		6 pin DIN	
LEDs		3 green / 3 red	
Hand-piece Temperature (Holding)		<55°C	
Workstand		CV-W1AV	
Dimensions (w x d x h) (mm)		86 x 191 x 830	
(w x d x h) (in)		3.4 x 7.5 x 3.3	
Weight (kg)		.476	
(lbs.)		1.05	

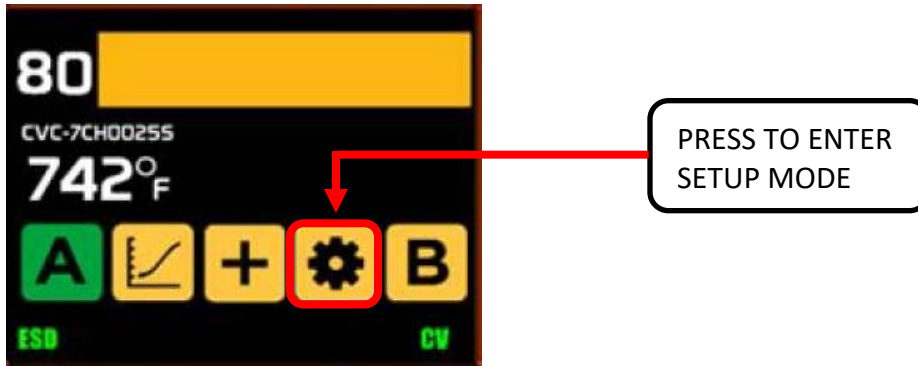
*Dual simultaneous mode – 80W shared dynamically, CV disabled

RESTRICTED TIP / LOCKOUT FEATURE - Firmware v1.60.01 +

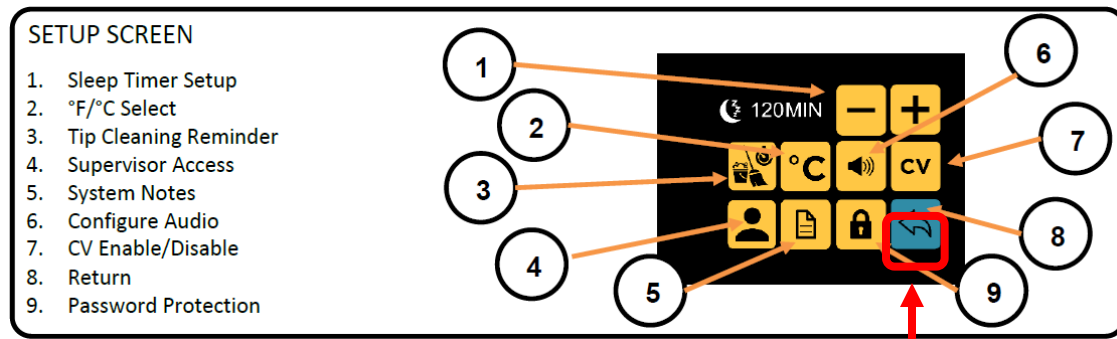
- **NOTE – In order to use this feature both the ADMIN PASSWORD MODE and OPERATOR PASSWORD must be enabled**

STEP 1: ADMIN PASSWORD MODE

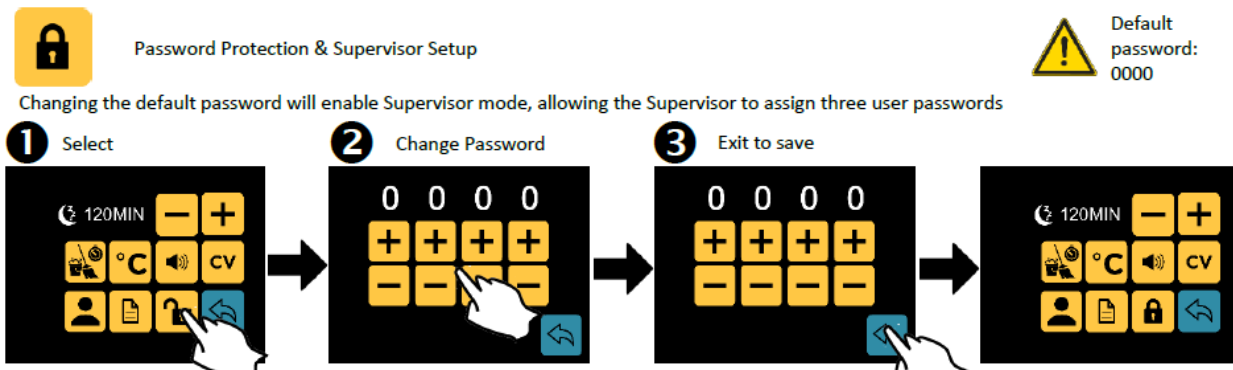
- Turn CV-PS5200 power supply ON
- Press setup button to enter SETUP MODE



- IN SETUP MODE, press button # 9 for ADMIN Password Protection



- Enter 4-digit ADMINISTATOR/ADMIN/SUPERVISOR PASSWORD using the [-][+] buttons



- Exit Setup Mode, turn unit OFF (unless proceeding with next steps)

STEP 2: ADDING CV TIP PART NUMBERS TO TIP RESTRICTED LIST

NOTE: Tip part numbers can only be added to TIP RESTRICTED LIST/TIP LOCKOUT setup screen when in ADMINISTRATOR/ADMIN/SUPERVISOR MODE

NOTE: The tip that is currently inserted into the CV hand-piece will be the tip part number to add to the restricted tip list. There are 12x fields for 12x CV tip p/n to be added to the restricted tip list

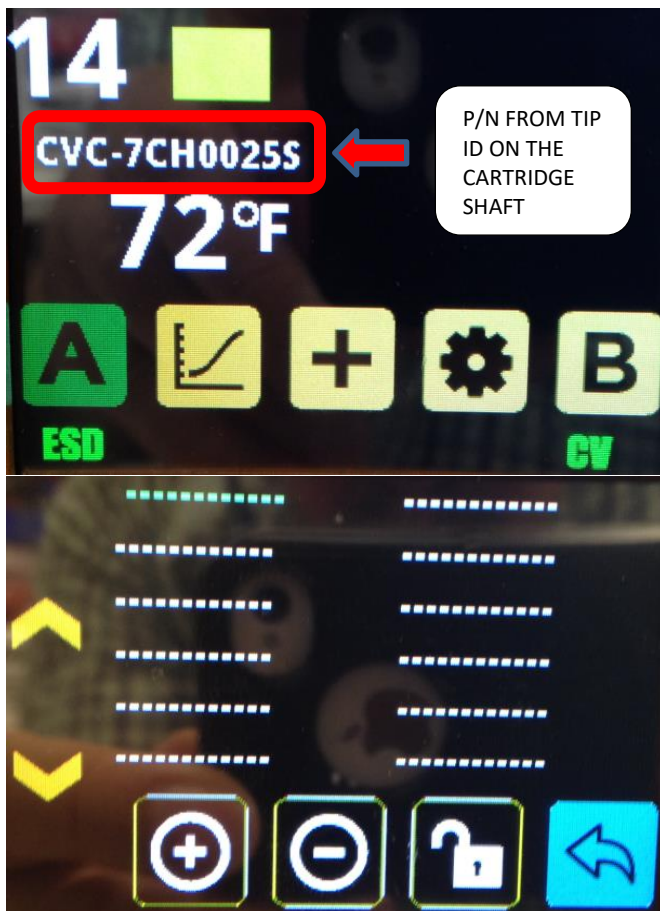
- Insert physical CVC tip part number to add to Tip Restricted List into the CV hand-piece
- Turn CV-PS5200 power supply ON
- Noted CV tip part number on screen from tip ID; this is the part number available for adding to the restricted tip list.
- Press setup button to enter SETUP MODE and enter 4 digit ADMIN PASSWORD using the [-][+] buttons
- Press TIP RESTRICTED LIST button (tip icon)
- Press the [+] button to add CV tip part number to the restricted tip list
- Press the LOCK button to enable tip lockout mode
- Exit tip restricted list screen; Exit setup mode



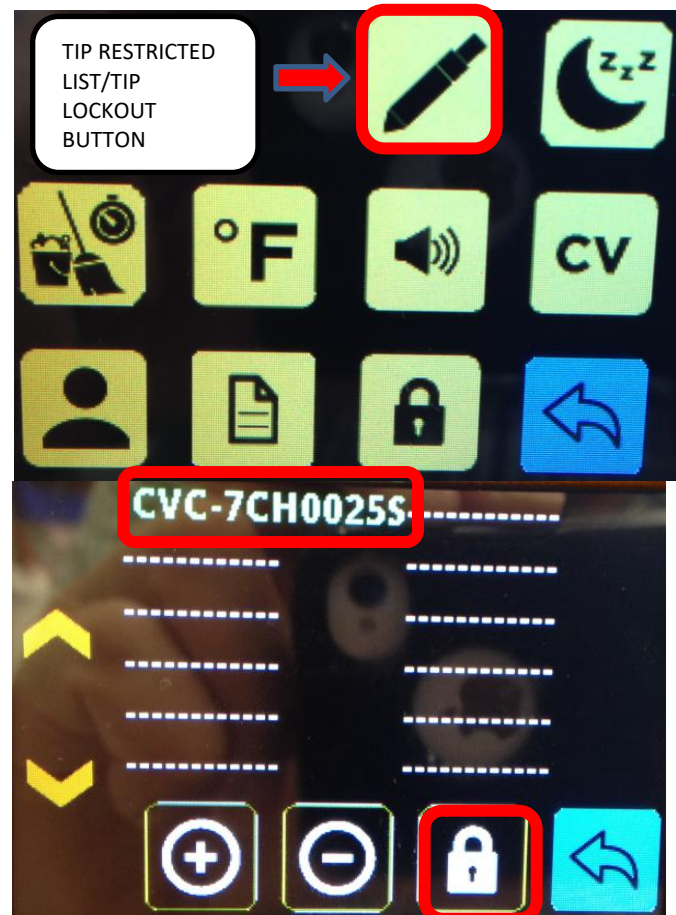
IMPORTANT: Tip list changes will NOT save unless exiting to FUNCTION SCREEN



INSERT CV TIP INTO CV HAND-PIECE



TIP RESTRICTED LIST; 12x fields for 12x tip p/n

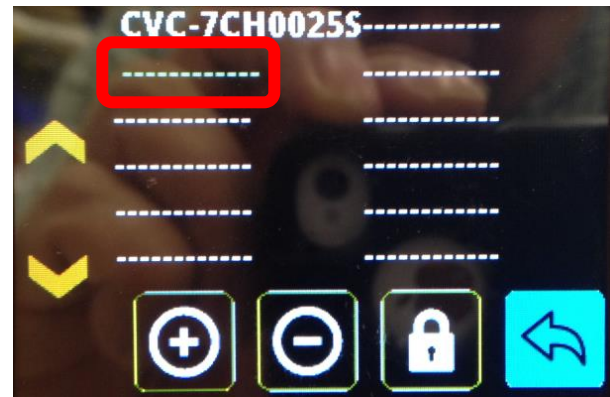
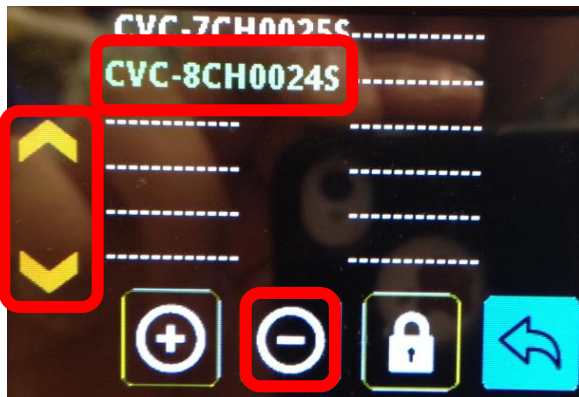


Press [+] to add tip p/n in handle to 'approved' list
Press lock button to 'lock' to enable tip lockout mode

To REMOVE CV tip part number from restricted tip list:

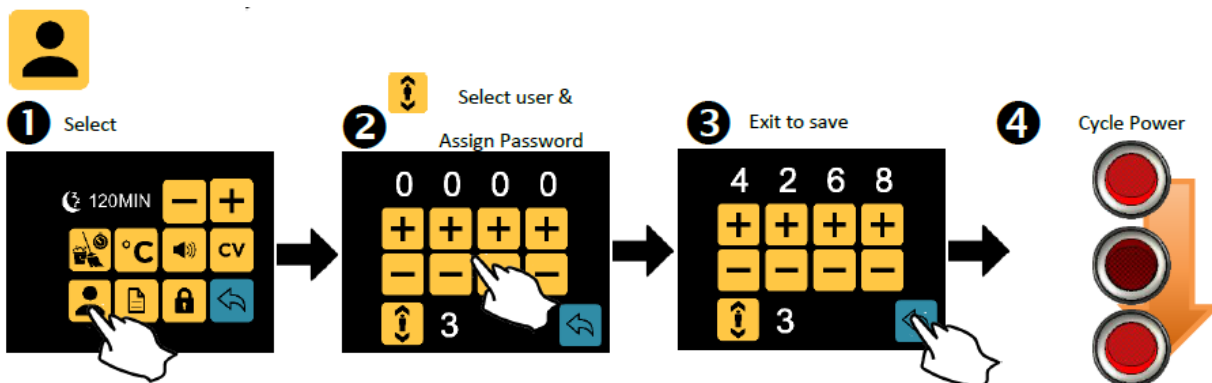
- i. Press setup button to enter SETUP MODE and enter 4 digit ADMIN PASSWORD using the [-][+] buttons. Press TIP RESTRICTED LIST button (tip icon)
- j. Press up or down buttons to select tip part number to REMOVE from list
- k. Selected tip part number will be in GREEN COLOR
- l. Press the [-] button to REMOVE selected CV tip part number from list
- m. Exit tip restricted list screen; Exit setup mode

IMPORTANT: Tip list changes will NOT save unless exiting to FUNCTION SCREEN



STEP 3: ENABLE OPERATOR PASSWORD MODE (allows for 3x Operator passwords)

- a. Press setup button to enter SETUP MODE and enter 4 digit ADMIN PASSWORD using the [-][+] buttons
- b. Press Operator Password button to enter Operator Password screen
- c. Use bottom operator # button to select between Operator # 1, 2, 3
- d. Enter 4-digit numerical OPERATOR PASSWORD using the [-][+] buttons
- e. Exit tip restricted list screen; Exit setup mode
- f. Turn unit OFF



STEP 4: OPERATION WITH RESTRICTED TIP LIST/TIP LOCKOUT ENABLED

- Turn CV-PS5200 power supply ON
- 4-digit OPERATOR PASSWORD SCREEN should appear
- enter 4 digit OPERATOR PASSWORD using the [-][+] buttons
- Enter SOLDER FUNCTION screen;

The 'STAR(S)' symbols on top of [+] dual port button on screen indicate Operator # (corresponding to operator password used)
(1x 'star' * = Operator 1; 2x 'stars' ** = Operator # 2; 3x stars ***= Operator # 3)

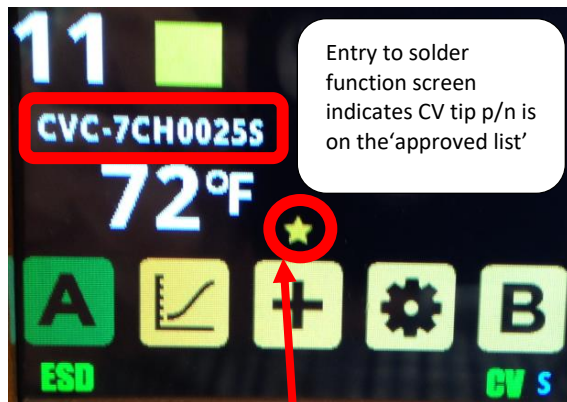
CV TIP ON 'APPROVED'/RESTRICTED TIP LIST:

If CV tip inserted into handle is on the 'approved'/restricted tip list, there will be operator solder function for single port mode LEFT and RIGHT and DUAL port mode selection.

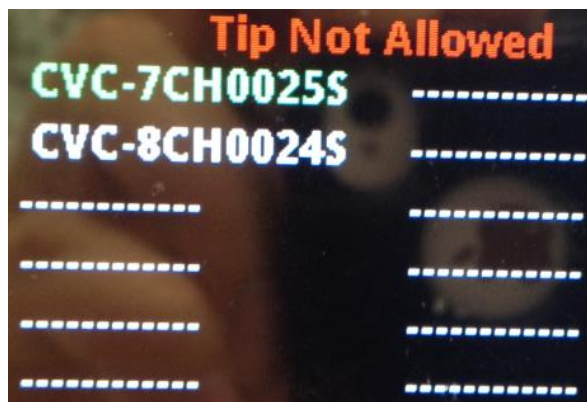
CV TIP NOT ON 'APPROVED'/RESTRICTED TIP LIST = TIP LOCKOUT

If CV tip inserted into handle is NOT on the 'approved'/restricted tip list, there will be ERROR MSG for 'TIP LOCKOUT' stating 'TIP NOT ALLOWED'

System will CHECK CV tip ID for 'approved' tip part number on SYSTEM START-UP, PORT CHANGE, and PORT RESET (tip inserted into 'open' hand-piece)



of 'stars' indicates Operator #
For example, 1x star * = Operator # 1

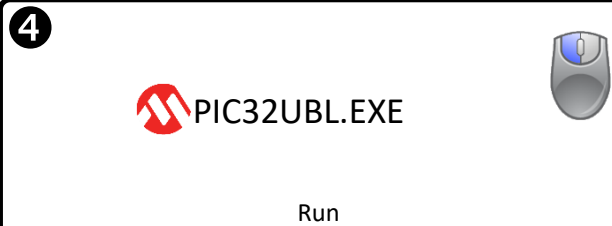
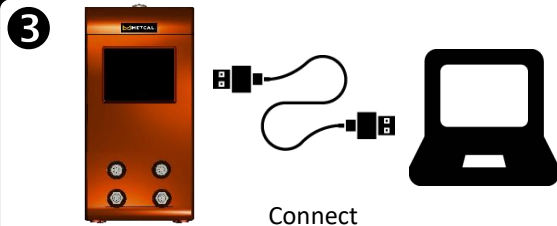


CV TIP NOT on approved/restricted tip list will generate ERROR MSG 'TIP NOT ALLOWED' and show list of approved tips on the restricted list. In this example, CVC-7CH0025S and CVC-8CH0024S are the only 2x tips that are 'approved' to work with the CV System

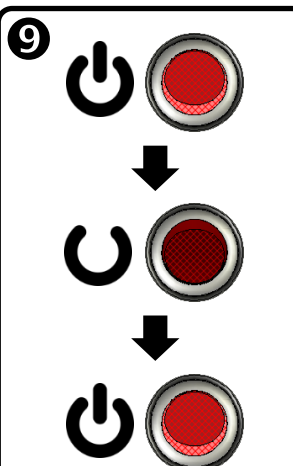
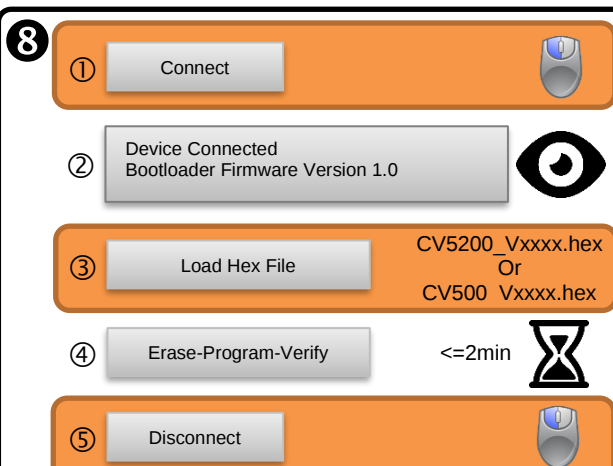
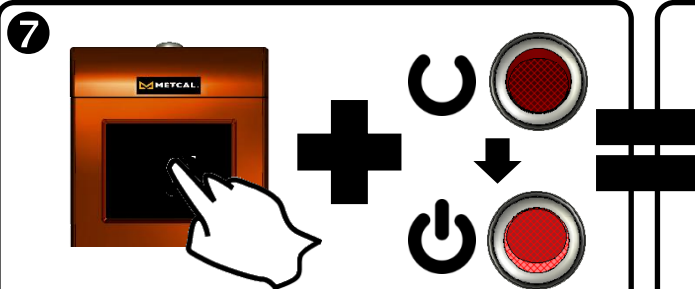
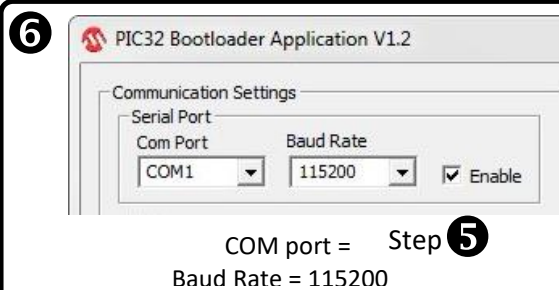
FIRMWARE UPGRADE

1 Download AN1388 Source Code and CV5200rX.XX.XX hex or CV500rX.XX.XX hex from www.metcal.com/resources/CV_comm

2 1st time users download & unzip FIRMWARE-AN1388-Source-Code-2014-02-14.zip. Install the software.



5 Verify COM port of the FT232R USB/UART in the Windows Device Manager. The PIC32 Bootloader will only recognize COM ports 1-9. If needed, change the assigned COM port to a Port within range.



Updating the firmware from v1.41 or earlier will require a system reset. Contact Metcal technical support at Support@okininternational.com for system reset instructions

DATA COLLECTION

1



Download
www.metcal.com/resources/CV_data

2



Install

3



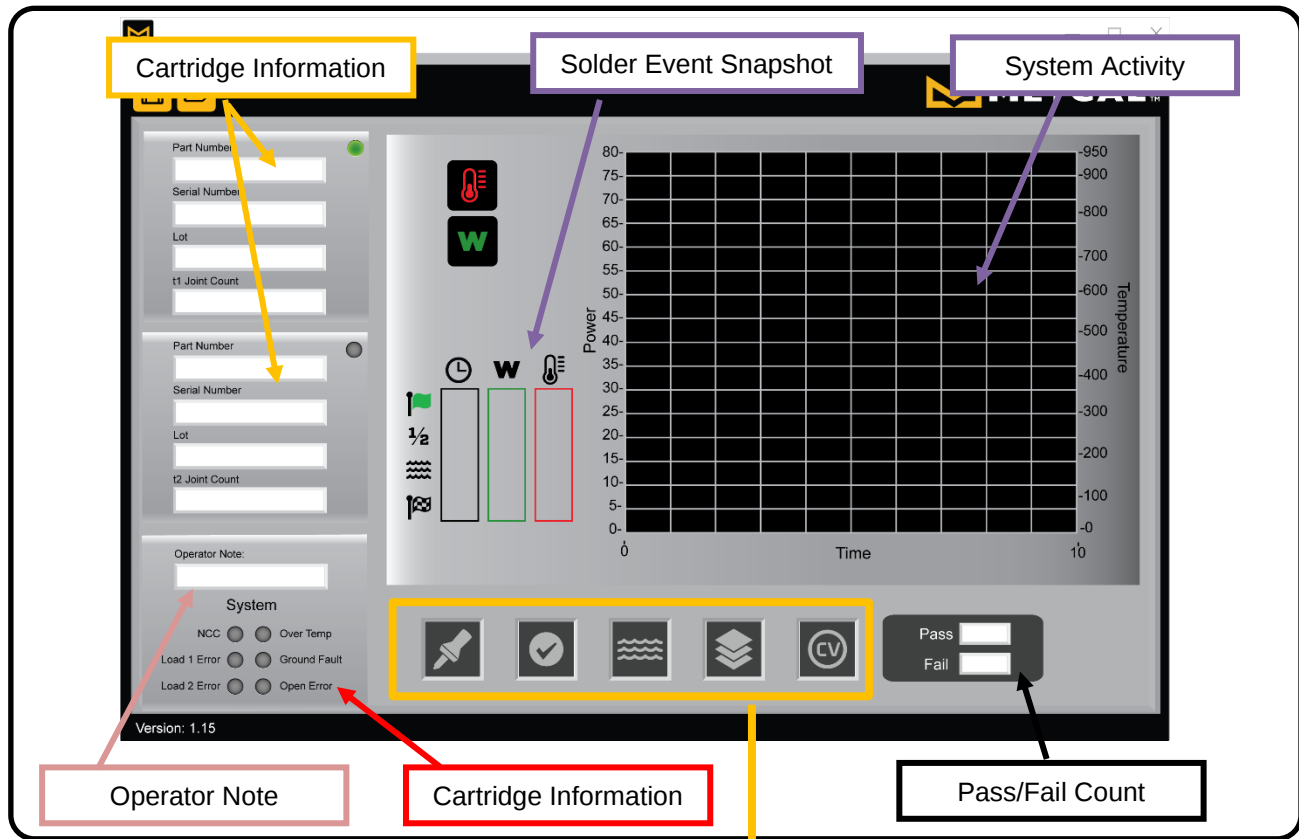
Connect



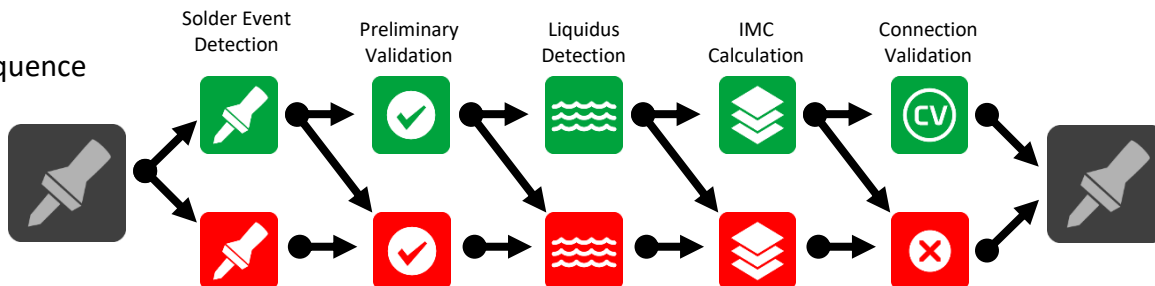
4



Run



Sequence



Visit <http://www.okinternational.com/CV-5210-Connection-Validation-Soldering-Station> for more information