delro d650 user guide vFeb2023

Welcome to your d650! We want you to have the best experience possible with the device, and to help ensure that, here is some basic info to help you along the way.

It's likely you won't need to concern yourself with most of the info below, but should you run into any dramatic connection/resistance issues, battery life concerns, or are unsure how to take care of the device, here's all the info you'll need. While there are quite a few components making up the device, it really does not require much, if any, maintenance.

The very first thing I suggest doing once you have a battery in the device is to enable the Direct Adjustment Mode (DAM).
One of, if not the, coolest features of our customized ec23d board is the "Direct Adjustment Mode".
With this mode enabled, when you simply press up or down, the power/temp will immediately adjust up or down (similar to an Evolv board), eliminating the need to cycle through the menus to make these adjustments. To ensure this setting is enabled, follow these steps:

- Click up or down 3 times then cycle through the menus using up or down until you reach the Extended Menu and wait until the 0 is highlighted, then click up or down again
- Wait until the "Mod" menu is highlighted then click up or down again
- Use up or down to cycle through the different settings until you reach "MenuOnClk" then set this to 0 and hit the fire button.
- Wait until the screen turns off and you will now be in DAM

Troubleshooting Quick Tips:

- Disassembling and reassembling the 510 parts, c frame, and ground screw will take care of 99% of any connection, resistance, or power-related issues, but there are a few other things to check as well, as mentioned below.
- The dicodes ec23d electronic contains all the information you could ever need to view your current performance or diagnose any connection-related issues (resistance or battery) you may be experiencing.

Connection:

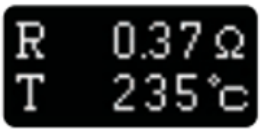
Resistance is reading too high or too low?

- If you notice the vape changes dramatically (either noticeably weaker, or stronger) first try adjusting the 510-securing nut from inside the tank compartment a little. Try removing the securing nut and the 510 threaded insert and cleaning the opening in the c frame (*more info on the 510 securing note below*). Reassemble and make sure your tip/510 nut is tight and secure. Remember, that just quickly pulsing the coil may not give an accurate reading. Actually fire the device for a few seconds a couple of times then recheck.
    - If this does not solve the issue, simply remove the ground screw at the base of the c frame, remove both 510 nuts, then reassemble and that should take care of it by cleaning the threads off.
    - **Considerations:**
        - Keep in mind that the resistance is only displayed in tenths, so the actual reading will be round up or down to whole numbers.
        - It's also important to keep in mind that if the securing nut is too loose the 510 insert can lift off the c frame resulting in a bad connection.
        - Another important factor to remember is that as a coil ages or builds up "corrosion", your resistance will increase. I have personally also had times where I have found the coil post screws loosen a tiny amount so check there too.
        -

delro d650 user guide vFeb2023

- It's important to remember that coil temperature, or the coil connection in the atomizer, can cause small fluctuations in resistance as well, so if you are pulsing the coil and it is fluctuating, that's ok, but if you see a huge difference in resistance - say from what should be a 0.5ohm coil and its reading 1ohm or more – continue troubleshooting.

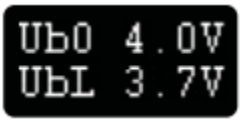
- Additional resistance troubleshooting can be performed using the Resistance menu:
    - To access this menu:
        a. Direct Adjustment Mode: Click up or down, wait a beat then click the fire button, then click the up button once
        b. In factory default mode: Click up or down three times then click up once.
    - This menu displays the resistance to the hundredths as well as the temp (in temp mode). When the resistance is highlighted, you can continue to pulse a signal to the coil by pressing up or down. It's kind of awkward to do this, but you can make adjustments to the drip tip and keep pressing up or down to see the resistance change until it is stable.
        a. First fire the device for 3-5 seconds before you attempt this to obtain the "in use" resistance.



Battery Health:

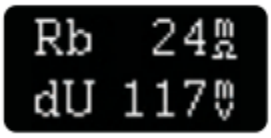
Battery life seems short, or battery voltage is sagging more than 0.4v (for a coil ~0.5 ohm and 35 watts or lower) or 0.6v (for ~0.7ohm and over 35 watts).

- On the main screen, when you press the fire button you will first see the resting battery voltage (Ub0) for 2 seconds, followed by the voltage under load with the current settings (UbL). In general, a voltage sag of 0.4v or less is desirable and reflects a healthy circuit and battery.
- There is also a dedicated submenu which displays the resting battery voltage (Ub0) and the voltage under load (UbL) which is a great way to quickly see what kind of voltage sag you are experiencing. To give you an idea, when I am vaping a 0.5ohm coil at 28w, I want the voltage sag to be at or less than 0.4v. Of course, expect that to be higher or lower depending on how you vape, and the health of your battery plays a big part in this.
    - To access this menu:
        - Direct Adjustment Mode: Click up or down, wait a beat then click the fire button, then click the up button twice.
        - In factory default mode: Click up or down three times then click up twice.
- If you have just installed a freshly charged battery, check the Ub0 value and it will tell you what your battery voltage *actually* is. As batteries age, even though a charger may say the battery is charged, the battery has diminished capacity and can no longer hold 4.1v.



delro d650 user guide vFeb2023

- Additionally, once the Ub0 and UbL values are highlighted, you can click up or down to see a more detailed reading.



  - **Rb:** The total resistance throughout the device - the contacts, solder joints, and the internal resistance of the battery – all combined is displayed as Rb. A healthy, good quality, battery will be anywhere from as low as 15mOhm and a lesser quality or older battery up to 80mOhm. The resistance within the device will average around 10mOhm.
    - When I am checking this, I want to see a total Rb value under 40mOhm.
  - **dU:** The dU value is a more detailed reading of the voltage sag in mV. Again, 0.4v (or 400mV) or under is a good reading in general.

- If all values from these two menus confirm your battery and connection are ok, first try installing a new, freshly charged, battery and recheck the Rb and dU values.
- If these values are still high, try removing the c frame by removing the ground screw at the base of the device, the 510 securing nut and the 510 threaded insert, then slide the frame off. Wipe the top opening and ground screw pocket in the frame out with a paper towel, wipe the threads from all parts, and reinstall.
  - Often simply removing and reinstalling these parts will do the trick as it cleans the threads off.

510 securing nut tips:

- The easiest way to remove the securing nut is to find the notch furthest to the left and use your fingernail (or the included multitool as needed) and press the notch down (lefty loosy) to get it started. Then you can use any notch to spin it off. It's just easier to use the notch furthest to the left to get more torque on it to get it started.
  NOTE: When you first get the device there will be more resistance when attempting to loosen or tighten the securing nut. Add a dab of juice to your finger and run it around the o ring to help it spin in the mod.
  - Try to use the multitool only when necessary to minimize any damage to the coatings on this part.
  - When you thread the securing nut back on, be sure this is fully threaded on and tight.
    i. If it is too loose the 510 can lift up from the frame resulting in a bad connection.

Maintenance:

- The device will run perfectly fine without constant attention, however, it's good practice to keep things clean!
- Remove the frame and the battery spring and simply give all exposed surfaces a wipe with a paper towel.
  - **NOTE:** If you experience any big leaks from your tank into the mod that sit for a while, it's possible juice will make it up under the top of the frame – only in extreme cases.

delro d650 user guide vFeb2023

Spares included with the device:

- Airflow gasket.
- 510 securing nut o ring.
- 3 x silicone button inserts.
- 2 x black T3 torx board emblem screws.
- 2 x SS T3 torx board emblem screws.
- 2 x black T6 torx faceplate screws.
- 2 x SS T6 torx faceplate screws.
- FF preorder mods only:
    - Black out Kit – DLC coated 510, 510 securing nut, and M4 ground screw
    - SS kit – Raw SS 510, 510 securing nut, and M4 ground screw
        - Remember, on the initial release, the threads in the 510 were slightly off. We found that only Mission tips wouldn't thread but it's possible there are others. The gold plated 510s thread perfectly fine with everything we tested.
        - New black and SS 510s are being made and if you would like those, please contact one of the jgmw/delro facebook group admins or send an email to: delromods@gmail.com

Errors:

Note: Most errors that present with the board are connection-related, most-often having something to do with your tip/RBA/coil. The ec23d electronic is very accurate but also a bit sensitive.

Flashing "Rb" where battery voltage is normally displayed:

- This essentially means that the circuit through the coil is not stable resulting in excess current skipping the coil. Simply unthread and thread your tip securely in place and that should take care of it.
    - See both the Resistance and Battery sections above if this persists.

0 OvrVolt error:

- This means there is an excessive voltage peak. It is most-often also related to the connection within the RBA/drip tip. Loosen and secure the tip, then when the "OvrVolt" text is highlighted, click up or down to clear the error. If this keeps occurring, try removing the ground screw and the 510 threaded parts, then reassemble.
    - If this persists, check your RBA/coil connections and reassemble.

LowBatt error:

- This one is self-explanatory. Your battery voltage to the coil is dropping below the low voltage cutoff setting found in the extended menu settings. Either your battery is old or needs to be charged. Go into the Rb/dU menu to check how much voltage is being consumed throughout the circuit.
    - See Battery section above

delro d650 user guide vFeb2023

06 Extended Functions Menu (Page 1: Overview)