

How to Check and Change the Delta-Q QuiQ Charging Algorithm

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Intended Readers

The purpose of this manual is to provide a qualified car mechanic or technician with the information to correct the addressed service issues. Check with ZAP if you are unsure who to have do the work. ZAP is not responsible for damage to your vehicle or personal injury for work done by non-qualified personnel.

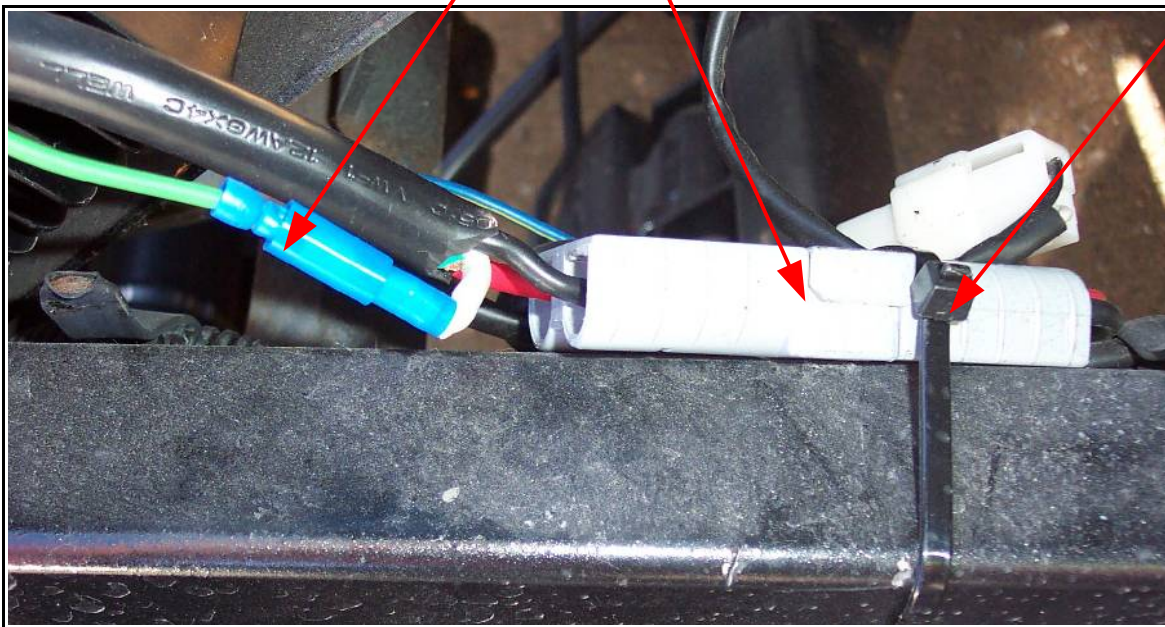
This service bulletin describes how to check (and change if necessary) the battery charging algorithm in the Delta-Q "QuiQ" charger. This charger is black and yellow with big cooling fins and no fan.

Note, this bulletin does not apply to the BC2-7215B (Chinese) Charger who's algorithm can not be changed. This charger is silver and blue and contains a fan.

How to Check Your Algorithm

It is very important that your charger is set for the proper charging algorithm. Failure to do so may lead to under or over charging, both of which may lead to premature battery failure and shortened range.

1. Unplug the AC charging cord if plugged in and wait at least 30 seconds. If the bottom red error light is flashing, wait until the light quits flashing and then wait an additional 30 seconds.
2. Pull out (turn on) the large red master cutoff switch under the driver's seat.
3. Disconnect the charger's thermistor and Anderson connectors. You may need to cut a tie wrap.



4. If your charger does not have an Anderson connector, disconnect the positive lead of the charger from the most positive terminal of your traction batter pack. In this case there will be three wires connected to this battery terminal, a large power wire, a smaller wire for the 72V accessories (DC/DC, heater, relay and contactor coil power) and the third smaller wire to the charger.
5. Plug in your charging cord.
6. Now the charger runs an LED light test. This flashes and sequences through all the lights to verify that they are working. This test takes several seconds and you should verify that every LED light lights up at least once.
7. After the LED test the charger should enter the “Display algorithm” state for 11 seconds.
8. Verify that the correct algorithm is selected as described in the “Read Current Algorithm” section below.
9. If the bottom red light starts flashing you have not entered the correct mode. Unplug the charging cord and wait until the red light stops flashing plus another 30 seconds.
10. Now repeat this entire procedure again.

Read Current Algorithm

You know you have reached the mode where you can read the currently selected algorithm when the 80% LED blinks. The algorithm number is displayed by flashing this LED the number of times for the algorithm selected, then pause and then blink the number again. A two digit number is displayed by the blinking signal for the first digit, a short pause, the blinking signal for the second digit and then a long pause.



If you see the red error light blinking you did not enter algorithm viewing mode and you must repeat the above described procedures to reenter the algorithm display mode. Note, the algorithm display mode times out after 11 seconds and then the red error light again will start flashing.

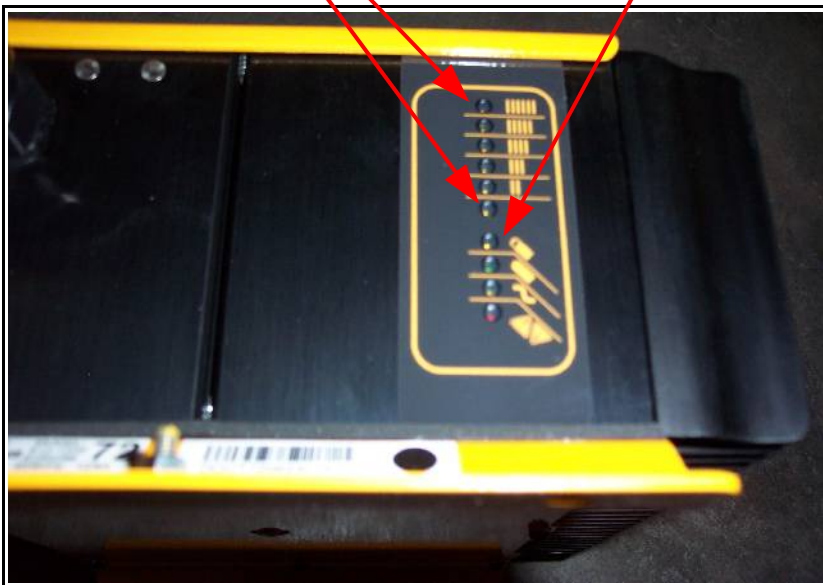
There are about 80 different algorithms that can be preloaded but only 10 can be loaded into your charger at a time. Below is a typical list:

1. 1 Trojan T105
2. 3 T105 DV/DT CP
3. 4 US battery USB2200
4. 5 *Trojan 30/31XHS (Use this with Discover or Interstate DCMO100 AGM)
5. 6 **Deka 8G31 Gel (Use this one if you have Deka batteries)
6. 7 J305 DV/DT CP
7. 8 Concorde 10xAh AGM
8. 27 Crown CR-325
9. 37 Trojan T105 DV/DT CP-42V pack w/ 48V charger
10. 43 Discover 200-400Ah AGM

Note that the first number indicates the memory location for the algorithm in your charger (1-10). The second number is the algorithm number stored in that memory location.

Currently algorithm 5 (*Trojan 30/31XHS) is used for the Discover AGM EV31A-A, EV12A-A and Interstate DCM 0100 batteries and algorithm 6 is used for the Deka 8G31 batteries.

One of these six lights may (but not on every model) also be lit when the algorithms in memory locations 1-6 are selected. When accessing memory locations 7-10, none of the lights will indicate and the only way to know the algorithm is by the flashing signal on the 80% LED.



How to Change the Algorithm

Now, while the current algorithm is being displayed (within the 11 second window):

1. Plug the Anderson connector in for 3 seconds +/- ½ second and then unplug. If you don't have the Anderson connector then simply touch the positive lead of the charger to the battery

terminal (from which it had been removed) for 3 seconds and remove.

2. Below is a picture of the technique for connecting and disconnecting the Anderson connector for a 3 second period.



- 3.
4. The next memory location with new algorithm will then be selected about 3 seconds after unplugging.
5. You can then observe the algorithm selected by the flashing signal on the 80% light as described above.
6. Repeat until you select the correct algorithm.
7. If you select the next memory location after 10 it wraps around to memory location 1 again.
8. Note, you have up to 30 seconds to select the next algorithm after each new one is selected.
9. To save the selected algorithm, plug the Anderson connector together permanently and after approximately 10 seconds you will hear the charger's output relay click to begin charging.
10. If you are simply touching the battery with the charger lead, hold it on the terminal for approximately 10 seconds until you hear the charger's output relay click.
11. The new algorithm is now permanently saved.
12. Now disconnect the AC power and just to make sure that the new algorithm has been properly set, repeat "Read current algorithm" procedure to verify that the new algorithm has been set.

After verification, unplug the AC power and:

1. Reconnect your thermistor plug if it had been disconnected.
 2. Permanently plug in the Anderson connector or bolt the three wires back on to your battery terminal.
 3. Now plug in the AC charging cord and make sure that one of the charging current LEDs (one of the top 6 lights) comes on to indicate proper charging.
 4. Make sure the bottom red LED light does not come on which would indicate a charging fault. This could occur if for instance your red emergency off button under the seat is not on or the Anderson connector has not been reconnected.
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