

# Grinspector Setup

The Grinspector receives commands from a computer telling it to connect the battery either to a load bank for discharging or a charger for charging.

A Cycle Analyst is used as the brain of the Grinspector, controlling the charge/discharge switches and reporting data back to the PC. This requires custom Grinspector firmware running on a V2 CA. If you did not purchase the Grinspector with a CA attached, you will need to install the special Grinspector firmware on the device. For the latest firmware and updated instructions check here: <http://www.ebikes.ca/product-info/grinspector.html#firmware>

If you have not used Grin's products with a PC before, you may need to install the USB-serial-port driver so the PC can recognize the communication cable. The driver can be found here: <http://www.ebikes.ca/product-info/cycle-analyst-3.html#drivers-and-details>

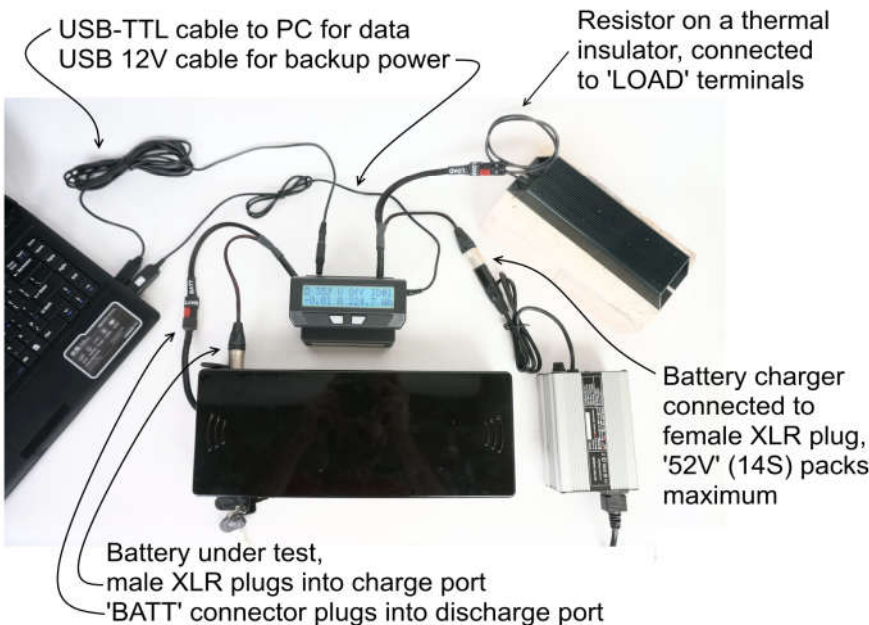
Two USB cables are included, one for data and one for power. Communication requires the 'USB TTL' cable be connected between the computer's USB port and the Grinspector's 3.5mm jack. The cable marked '12V' is a power adapter. This is not required but if the battery being tested cuts off its output the Grinspector will shut off as well. The 12V power adapter allows the Grinspector to stay on despite the battery tripping off.

The Grinspector uses external load resistors to discharge the pack, they get hot! Our Dual Resistor Load Bank uses natural convection and a full enclosure to keep the heat at bay. If you're using bare resistors, mount them to a surface that can handle the heat.

**Data Cable**  
 (Required)

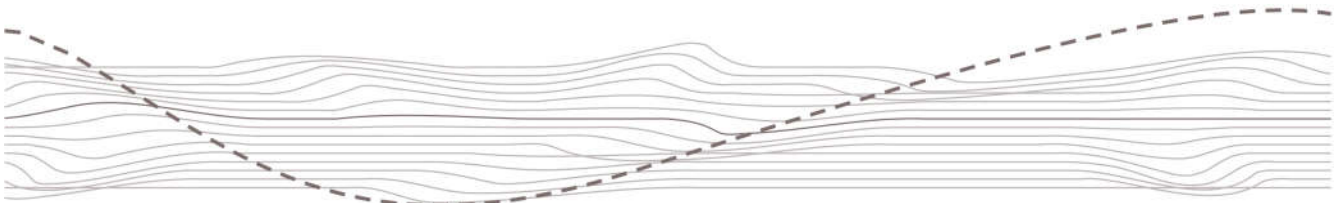


**Power Cable**  
 (Optional)



The diagram to the left shows how all the components are plugged in for cycle testing packs. Grin has standardized on XLR connectors for charging and Anderson connectors for discharging though these may be changed if you have different standards.

Without a charger, the discharge test can still characterize batteries and create reports but it won't do automatic charge/discharge cycling.



The software component of the test station allows you to set the voltage cutoff, charge time, cycles and other test details. It is possible to save all these parameters as a stored profile for future tests. When initially downloaded there are some default profiles that may be appropriate for your batteries. The actual discharge current for the test is not controlled by software but rather by the external load resistors.

The station ID is set at the CA and will be reported here with a good connection. With multiple Grinspectors, assign each one a unique ID

Set the serial number of the pack to have it recorded on the generated pdf report

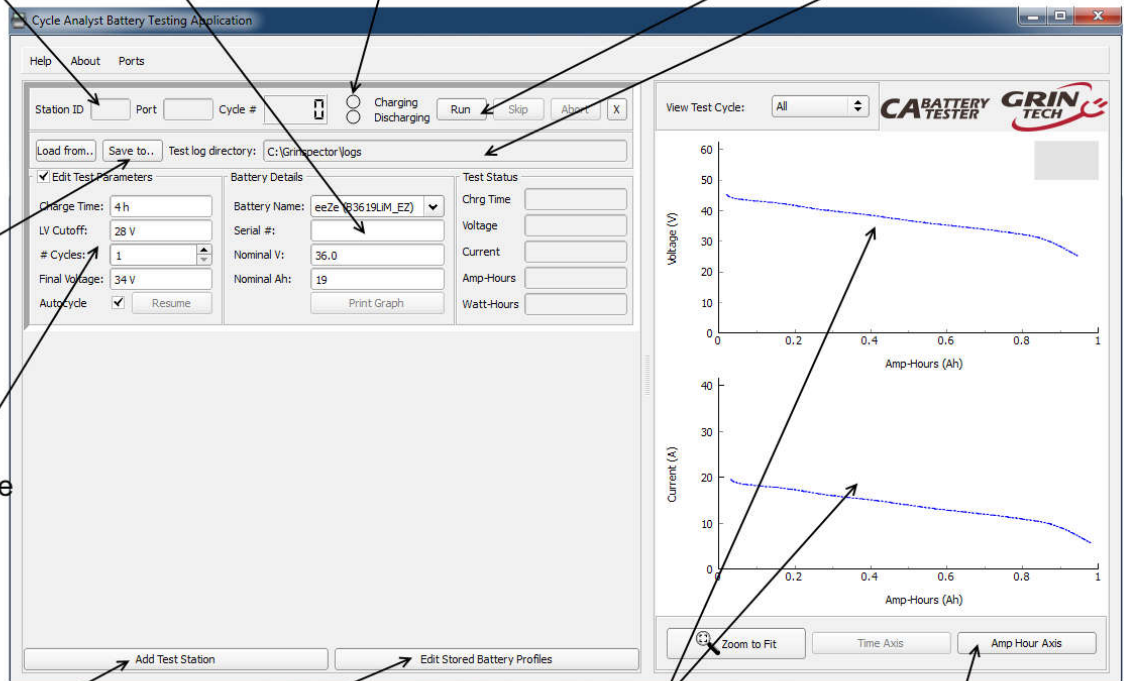
Green for charging and red for discharging, double yellow indicates a communication error

Begin battery test cycle

Logged data and the test report will be saved here by default

The save directory can be changed, a local drive is recommended given the update frequency during a test

Test parameters can be changed live during the test, they are not saved to the profile after the test



Multiple Grinspector test stations can be connected and run simultaneously

Existing battery profiles can be edited and new profiles added

Live graphs of discharge plots (no charging graph)

The x-axis can represent either time or amp-hours

The test is started by hitting 'Run'. This will begin with a charge cycle. If the battery is already charged you can hit 'Skip' to move on to the discharge portion of the test right away.

The 'Print Graph' button is available once a test is completed. It will create a PDF report and save it to the test log directory. The banner at the top of your test reports can be customized. In the Grinspector program directory under /Images is an image called report\_header.png. Save your modified version with the same dimensions and format to create a custom banner for your reports.

