

# HEV/PHEV/EV Battery Diagnostics & Reconditioning Kit

**Product: BDUGENII**

*Kit Includes:*

- *Battery Discharger*
- *Internal DAQ*
- *Programmable Charger*
- *High Voltage Harness*
- *Software*
- *Isolator Bar*
- *Bus Bars*
- *Energy Test Procedure*
- *Power Test Procedure*



The Battery Discharge Unit (BDU) is a microprocessor control test unit that will test the Energy and Power capabilities of Nickel-Metal Hydride or Lithium Ion based hybrid electric vehicle (HEV) battery packs or Plug-In Hybrid Electric Vehicle (PHEV) battery pack units (< 5kW•hrs or 16 amp•hr systems) for accurate State-of-Health (SOH) analysis. By directly connecting to the battery pack modules or, module groups, the BDU microprocessor system can acquire data (data acquisition) that provides accurate battery pack SOH information to support HEV/PHEV Predictive Maintenance program testing or for rebuilding battery pack systems. The direct connection to battery modules or module groups is a superior method of testing batteries when compared to units that try to analyze the battery pack system using only vehicle data

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## BDU Power and Data Connections

This BDU is easily connected for testing and the PC based interface software has been designed for effortless use. After loading the software onto your laptop or PC, a simple USB connection to the BDU is the only data connection necessary to acquire data from the battery pack. The BDU unit is powered by the vehicle or remote 12 volt battery source. There are no 120Vac power requirements for the BDU unit.

## Testing Features of the BDU

### Energy Test

The Energy test determines the true State-of-Charge/Amp•Hour capacity of each battery module or, module group, to determine if there are weak battery cells and compare this data to the battery specifications. This will determine the overall energy condition of the battery pack. The Energy test analyzes how much capacity each battery module is able to store/deliver to the electric propulsion system – a key metric in how much torque the electric propulsion system can produce to assist the internal combustion engine or, how long the vehicle can operate in an electric-only mode. Energy storage ion the battery modules effects overall fuel economy and can also effect HEV or PHEV vehicle acceleration performance.

### Power Test

The Power test determines how much electrical power can be delivered to the electric propulsion system. This important metric determines how much electric assist (hp) during an acceleration event that the electric propulsion system can provide to the engine. This test also helps in determining if a battery pack is power limited but, not energy limited – a key analysis and diagnostic metric for lack of power complaints. Battery pack power level effects acceleration performance and overall fuel economy of an HEV or PHEV vehicle.

## High Voltage Battery Charging Unit

The high voltage battery charger is used to charge the battery pack after completion of the Energy and Power tests. This fully programmable 450V – 2.5 amp charger is more than adequate to charge the battery pack in minimal time to finish charging of the battery pack system.

