

# MIDTRONICS

Advancing  
Battery Management

## GRX-5100

### EV/HEV BATTERY SERVICE TOOL

The Midtronics GRX-5100 Hybrid/EV Battery Station is the industry's first high-voltage hybrid/EV battery service and de-power tool for hybrid and electric vehicles.

Via simple user menu prompts, the GRX-5100 performs full battery pack service with fully controlled and automated processes, including:

- Pack De-powering
- Balancing
- Charging

By enabling service for the battery system at the module level, The GRX-5100 reduces manufacturer warranty costs and repair time and expense for customers.

The station also utilizes USB-based memory, which supports system updates for future vehicle battery systems without a hardware upgrade.

MOTOR Magazine Top 20 Tool Award Winner



*The GRX-5100 features a versatile electrical harness between vehicle batteries and communication systems via unique adapters for each vehicle model.*

## Applications:



- **EV/HEV Battery Service**  
*Dealerships, independent service garages*



- **No-Start Service**  
*Roadside assistance providers, tow operators*



- **Safety/Environmental**  
*Shipping companies, salvage and storage yards, first responders*

## Functions:

**De-Power:** Safely discharges energy from the battery pack or battery sections to make them safe for transportation. De-powering can be performed on battery packs in or out of vehicle.

**Section Balance:** Balances the sections of the battery pack to ensure optimal battery pack operation. Sections are charged or discharged individually to bring the pack into alignment.

**View Pack Info:** Captures the vehicle VIN and generates a detailed status report for the vehicle's battery pack, including temperature sensors and individual cell voltages.



### Supported Vehicles

Make	Model
Alpheon	Alpheon
Buick	Regal, LaCrosse
Chevrolet	Malibu, Volt
Opel	Ampera
Vauxhall	Ampera



# GRX-5100 EV / HEV Battery Service Tool

## Specifications:

Part Number:	Description:	Discharger	Charger
GRX-5100	GRX-5100 EV/HEV Battery Service Tool	<ul style="list-style-type: none"> <li>▪ 0 – 7.5 amperes DC</li> <li>▪ Continuously variable</li> </ul>	<ul style="list-style-type: none"> <li>▪ 0 – 5.0 amperes DC</li> <li>▪ Continuously variable</li> </ul>
A296	Universal Fuse Box ( <i>UFB</i> )	<ul style="list-style-type: none"> <li>▪ 0 – 384 VDC compliant</li> </ul>	<ul style="list-style-type: none"> <li>• Develops maximum current based on AC input power available (100 – 240 VDC)</li> </ul>
A297	Vehicle Interface Module ( <i>VIM</i> )	<ul style="list-style-type: none"> <li>▪ Reverse polarity protected</li> </ul>	
A298	High-voltage interface cable ( <i>UFB to Vehicle</i> )	<ul style="list-style-type: none"> <li>▪ Hard safety disconnect</li> </ul>	
130-000232	High-voltage interface cable ( <i>5100 to UFB</i> )	<ul style="list-style-type: none"> <li>▪ Monitors battery section temperature                             <ul style="list-style-type: none"> <li>• Throttles back current for excessive temperature rise</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ 0 – 384 VDC compliant</li> </ul>
130-000233	12-volt auxiliary power cable		<ul style="list-style-type: none"> <li>▪ Reverse polarity protected</li> </ul>
130-000234	VIM low-voltage cable ( <i>5100 to VIM</i> )	<ul style="list-style-type: none"> <li>▪ Terminates session for temperature limit</li> </ul>	<ul style="list-style-type: none"> <li>▪ Hard safety disconnect</li> </ul>
130-000235	VIM low-voltage cable ( <i>VIM to Battery Pack</i> )	<ul style="list-style-type: none"> <li>▪ Monitors High-voltage leakage to chassis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitors battery section temperature                             <ul style="list-style-type: none"> <li>• Throttles back current for excessive temperature rise</li> </ul> </li> </ul>
130-000237	12-volt auxiliary to clamps adapter cable	<ul style="list-style-type: none"> <li>▪ Terminates session for excessive leakage                             <ul style="list-style-type: none"> <li>• Redundant systems</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Terminates session for temperature limit</li> </ul>
130-000242	High-voltage interface cable ( <i>UFB to Vehicle or Battery Pack</i> )	<ul style="list-style-type: none"> <li>• Throttles back current for excessive temperature rise or restricted air flow</li> </ul>	<ul style="list-style-type: none"> <li>▪ Monitors High-voltage leakage to chassis                             <ul style="list-style-type: none"> <li>• Terminates session for excessive leakage</li> </ul> </li> </ul>
130-000277	VIM low-voltage E-assist cable ( <i>VIM to Battery Pack</i> )	<ul style="list-style-type: none"> <li>• Terminates session for temperature limit</li> </ul>	<ul style="list-style-type: none"> <li>▪ Redundant systems                             <ul style="list-style-type: none"> <li>• Throttles back current for excessive temperature rise or restricted air flow</li> </ul> </li> </ul>
130-000280	Sheathed high-voltage banana jack cables		<ul style="list-style-type: none"> <li>• Terminates session for temperature limit</li> </ul>
130-000303	High-voltage 1/4- inch ring terminal harness		
142-000047	High-voltage alligator clamps		

### Inputs

- AC Main Power
  - 100-240 VAC 50/60 Hz
  - 12A maximum
  - Continuously monitored for maximum charge rate
  - > 0.95 PFC
  - 89% efficiency
- Control Inputs
  - RS-232 power
  - USB – A
  - USB – B
  - Wi-Fi

### Input / Output

- Independent CAN BUS (2)
- LIN (1)
- Digital I/O (8)

### Communications

- Wi-Fi
- USB-A (record data with thumb drive)
- RS-232 (PC interface)

### Certifications

- CE
- UL 1012
- CAN/CSA C22.2#107.1

### User Interface

- GRX graphical screen
- Alphanumeric keypad with two hot keys

### Housing

- High-strength anodized aluminum

### Dimensions

- 13 in H x 29 in W x 17 in D (33.02 cm H x 73.66 cm W x 43.18 cm D)

### Weight

- 53 lbs (24.04 kg)
- Shipping weight including accessories/cables: 75 lbs (34.02 kg)



## Hybrid/EV, Automotive, Heavy-Duty, and Powersports Solutions

The GRX-5100, designed for high-voltage Hybrid/EV battery pack service, is the latest in the GRX product line.

Innovative GRX products feature advanced diagnostic and maintenance capabilities to create complete, flexible and expandable solutions.



### For EV Battery Modules

#### GRX-5000 EV Battery Module Diagnostic Station

The GRX-5000 EV is a diagnostic/service platform designed to perform module-level diagnostics and balancing for battery packs with removable modules – an extremely economical alternative to replacement of a full battery pack due to individual module failure.

The GRX-5000 diagnostic routine can pinpoint the specific module or modules requiring service.

The battery pack is then removed and disassembled to the module level, the faulty battery module is replaced, and the pack re-assembled and re-installed in the vehicle.

To confirm that the full pack functions correctly with the replacement module, the GRX-5000 also performs a balancing function to ensure it matches the correct State of Charge/State of Health for the given pack

### For Automotive, Heavy-Duty & Powersports Batteries

#### GRX-3000 Battery Diagnostic Station

Fast, accurate and reliable, the GRX-3000 can determine, often in less than five minutes, the difference between a recoverable battery and one that is not. Diagnostic charging is uniquely designed to continuously monitor the charging progression. Each session is customized and highly controlled charging stops as soon as a battery can be returned to the customer or is determined to require replacement.

Defective batteries with open welds and shorts are identified rapidly and recoverable batteries are quickly and safely charged, putting your customers back on the road faster.

The GRX-3000 diagnostic station delivers better efficiency in the shop, clearer test results and more accurate preventative maintenance decisions by helping to eliminate guesswork and wasted time charging defective batteries.

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