

# PRO-GUIDE<sup>®</sup>

## LITHIUM GOLF BATTERY USER MANUAL



## WARRANTY INFORMATION

SERIAL NUMBER:

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PURCHASE DATE:

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PRO-GUIDE is a registered trademark of 

[proguidebatteries.com](http://proguidebatteries.com)

# THANK YOU FOR PURCHASING PRO-GUIDE.

PRO-GUIDE prides itself in the development & design of high-performance lithium batteries. Our lithium batteries are designed with an integrated battery management system to maximize safety and reliability in your cart.

## PACKING LIST



LFP Battery

SOC Gauge

Wiring Harness

Charger

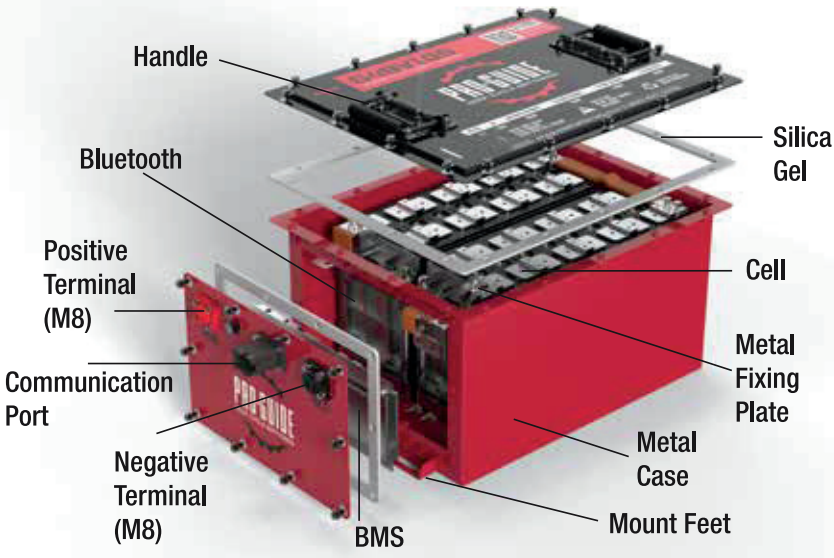
110V Receptacle

Voltage Converter

## OVERVIEW

PRO-GUIDE Lithium EV batteries are equipped with an integrated battery management system with:

- Cell balancing
- Battery voltage monitoring
- Battery current monitoring
- Pre warning when battery capacity is less than 20% (Gauge will beep)
- Battery temperature monitoring (integrated temperature sensor)



## INSTALLATION STEPS

### ATTENTION:

Before installing, make sure that all appliances are turned off.

1. Open the golf cart compartment, you will see your original lead-acid or AGM batteries.
2. Take a photo of the wiring setup or draw a template to insure you reconnect all cables to the correct terminal.
3. Disconnect all the wires safely and pull out your old batteries.
4. Fasten the bracket we offer in the compartment as the base if needed.
5. Install the charger into the compartment.
6. Replace your old receptacle with the new one we offer (for safety, this step is necessary).
7. Install the gauge and ON/OFF button on dashboard of your cart.
8. Install the wiring harness which will be used to connect battery communication port, ON/OFF button, and gauge.
9. Before placing pack into cart, ensure the power button is off and there's no voltage to the terminals
10. Install the appropriate mounting bracket into your cart if needed.
11. Put the battery pack into compartment and fasten the pack to the bracket base.
12. Connect wiring harness with battery ON/OFF button and gauge.
13. Connect battery positive and negative terminal to positive and negative

- of your cart.
14. Connect battery positive and negative terminal to positive and negative of the charger.
    - a. Mount the voltage converter, connect to the battery and accessories if needed.
    - b. For E-Z-GO RXV, attach the blue wire from the old receptacle to the positive terminal of the battery.
  15. Now you can turn on the ON/OFF button to check the cart powers on and is functional.
  16. After installation, charge the battery fully.
  17. Register the battery at <https://proguidebatteries.com/product-registration/>

Installation by an authorized technician is encouraged, but installation can be done when instructions are fully followed. Call 1-800-827-3232 for troubleshooting support.

## OPERATION

### Power ON

Press the ON/OFF button once (Found at the end of the wiring harness), allow 3-5 seconds for the LED indicator on the switch to light up. The gauge also will light up and display the current State of Charge (SOC), indicating that the battery is powered on and ready to work.

### Power OFF

Press the ON/OFF button once, allow 3-5 seconds for the LED indicator on the switch & gauge to turn off. The battery is now off. Please Note, if the button or gauge is on, the battery still has power.

### Automatic Shutdown

If the SOC of the battery pack is higher than 20% and there has been no draw for 7 days, it will go into Automatic Shutdown mode.

If the SOC of battery pack is equal or less than 20% and there's been no draw for 24 hours, it will automatically shut down as well.

**In automatic shutdown state, press the ON/OFF button TWICE to restart the battery.** (One time to reset the button and the second time to POWER ON the pack)

*The Automatic Shutdown will keep the battery from self-discharging while not in use.*

# ALARMS

## Low Power Warning

When the SOC of the battery pack is lower than 20% the gauge will beep, and the gauge warning will flash. Please charge the battery immediately to ensure the battery does not go into automatic shutdown.

## Other warnings

- High temperature
- Over-discharge
- Over-current

If you hear a warning alarm from the gauge, please slow down or stop to check immediately. Otherwise, the BMS protection may be triggered and cause a shutdown. After the warning stops, the battery can work again.

## LOW VOLTAGE PROTECTION

Low Voltage Protection (LVP) is the final protection layer in the Pro-Guide G Line. In the G36V line LVP mode happens when any one of the cells in the pack falls lower than 2.2V per cell, or the total voltage of the pack is roughly 28V. In the G48V line LVP happens when any one of the cells in the pack falls lower than 2.2V per cell, or the total voltage of the pack is roughly 38V. In the G72V line LVP happens when any one of the cells in the pack falls lower than 2.2V per cell, or the total voltage of the pack is roughly 55V.

If your pack goes into LVP mode, there is only one way to bring it back to a normal state of health. Press the ON-OFF switch twice to power the battery on and begin charging immediately. The cart will not release from LVP mode until you get each Cell above 2.2V, and again you can only charge it AFTER you have cycled the ON-OFF button.

## CHARGING

This battery needs to be charged with a designated charger that comes with the bundle, otherwise it may cause insufficient charging or battery damage.

This battery can be charged in the On or Off Status, but when the battery is in automatic shutdown mode, it will need to be reset then charged.

*Please note, whether on or off, the gauge will illuminate while charging.*

It's best to fully charge the battery after use, so that the SOC gauge will recalibrate to 100% for a more accurate SOC measurement.

During frequent use we recommend you fully charge the battery every 2 weeks. Once Charged, the battery can be left connected to the charger.

## STORAGE

We recommend fully charging before long-term storage.

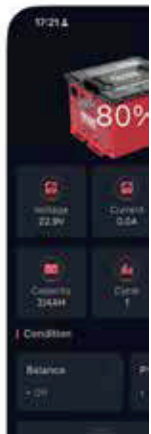
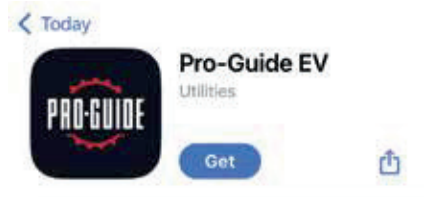
We recommend that the charger only be left connected for 90 days without disconnecting. This allows the charger to reset, and cycle through the algorithm.

After long-term storage, please fully charge the battery before use.

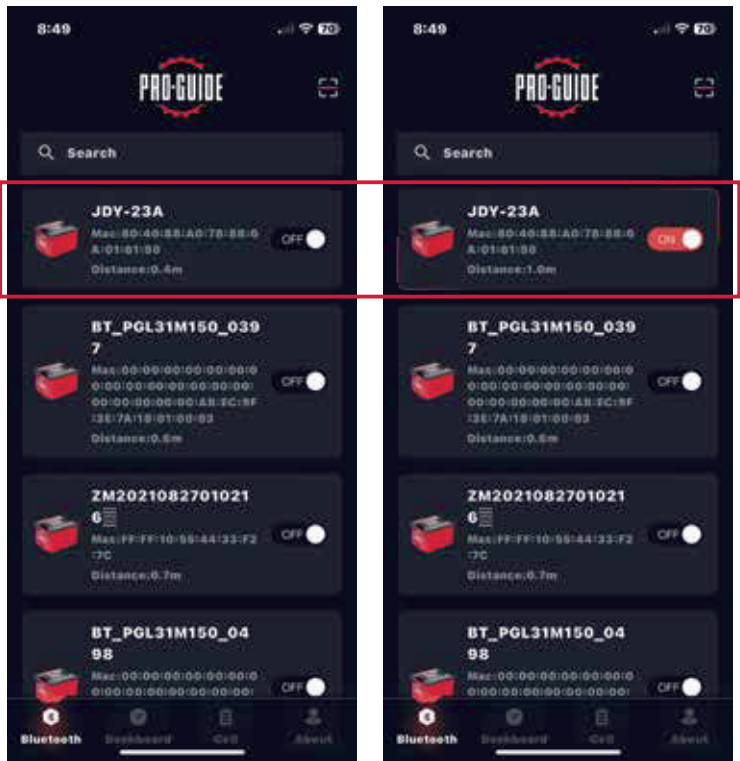
## BLUETOOTH

Connect your phone to your battery with Bluetooth, you can monitor the battery's status or even troubleshoot if needed with the PRO-GUIDE EV app. For example, you can monitor the battery's real-time SOC, SOH, capacity, voltage, current, temperature, and warnings on this app.

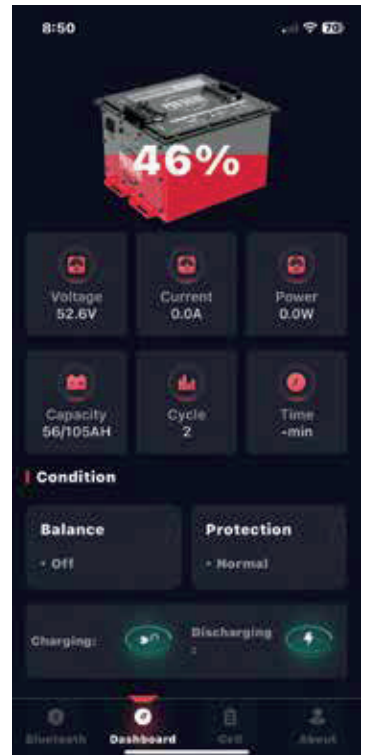
Scan the QR code below or search for the PRO-GUIDE EV in the IOS or Google Playstore



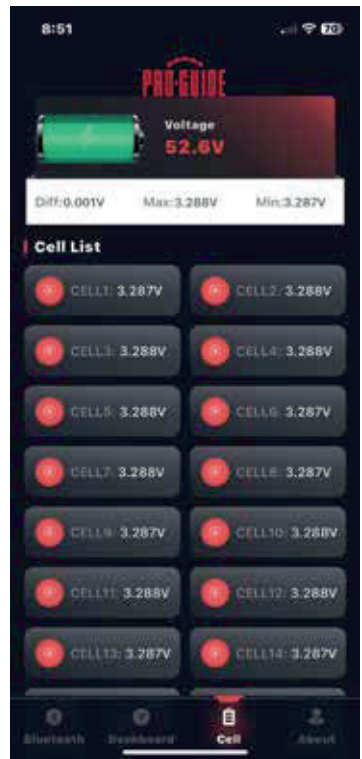
After installing the PRO-GUIDE EV app, open it. It will search nearby connectible batteries (powered on) and display it's Bluetooth ID. To connect to your battery, toggle the on / off button on your battery's ID.



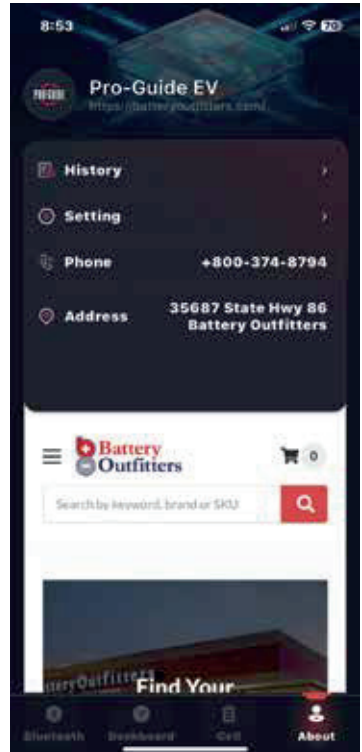
In the dashboard page, you can monitor the battery's real-time State of Health (SOH) including SOC, voltage, current, power, capacity, cycles, charging time, BMS temperature, ambient temperature, cell temperature, cell balancing, and protection.



In the Cell Page, you can monitor the detailed voltage of each cell in the battery, highest voltage, the lowest voltage, voltage difference, average voltage, and voltage of each cell.



In the About page, you can select the History Tab to check the battery's, history, firmware and hardware version.



# SPECIFICATIONS

Below are the specifications of our golf cart lithium batteries.

UNIT SPECIFICATIONS	G48V105	G36V105	G48V150	G48V210	G72V105
Nominal Voltage	51.2V	38.4V	51.2V	51.2V	70.4V
Nominal Capacity	105Ah	105Ah	150Ah	210Ah	105Ah
Stored Energy	5376Wh	4032Wh	7680Wh	10752Wh	7392Wh
Protection Level	IP67				
Continuous Discharge Current	200A	200A	300A	300A	250A
120S Discharge Current	250A	250A	400A	400A	300A
15S Discharge Current	300A	300A	500A	500A	500A
2S Discharge Current	700A	700A	1000A	1000A	1000A
Discharge Cut off Voltage	40V	30V	40V	40V	55V
Charge Cut off Voltage	57.6V	43.2V	57.6V	57.6V	79.2V
Standard Charge Current	0.15-.5C or 15-50A				
Max Charge Current	1C or 100A				
15S Regen	300A	300A	500A	500A	500A
Self Discharge	3% Per Month				
Cycle Life	>3500 Cycles				

## TEMPERATURE SPECIFICATIONS

Operating Temperature	
Charge	32°F-131°F (0°C-55°C)
Discharge	-4°F-131°F (-20°C-55°C)
Charging Temperature	32°F-131°F (0°C-55°C)
Discharging Temperature	-4°F-131°F (-20°C-55°C)
Storage Temperature	
1 Month	-4°F-131°F (-20°C-55°C)
1 Year	32°F-95°F (0°C-35°C)

## SLEEP SPECIFICATIONS

Sleep Timer	
SOC<20%	24 Hours
SOC>20%	1 Week
Bluetooth	Enabled
CAN	Enabled

## MEASUREMENTS

Length	18.1 in	14.6 in	32.3 in	33.9 in	21.7 in
Width	13.4 in	13.4 in	13.4 in	13.4 in	13.4 in
Height	9.8 in	9.8 in	9.9 in	9.9 in	9.9 in
Weight	99 lbs	81 lbs	155 lbs	200 lbs	132 lbs

# PGL Golf Limited Warranty Statement

PRO-GUIDE Batteries ("Manufacturer") warrants each Pro-Guide®-branded battery sold by PRO-GUIDE or any of its authorized distributors or dealers in the United States to be free from defects in material and workmanship for a period of 10 years (5 years free replacement & 5 years pro-rata) from the date of purchase as evidenced by the original receipt (the "Warranty Period"). To activate the 10-year warranty, batteries must be registered within 30 days of purchase.

## Transferable

The above warranty ("Limited Warranty") applies only to the original purchaser of the battery. However, it may be transferred to another person or entity through a one-time warranty transfer. Warranty will NOT restart. To transfer the warranty, re-register the battery at <https://proguidebatteries.com/product-registration/> or contact customer service via email at [support@proguidebatteries.com](mailto:support@proguidebatteries.com) or by calling 1-800-827-3232.

## NOT COVERED BY THIS WARRANTY

The Manufacturer has no obligation under this Warranty for any defects or damage to the Battery ("Product") arising from abuse, mishandling, or any of the following conditions:

### Improper Installation

- Damage due to insecure or insufficiently secured connections, loose terminal connections, undersized cabling, or reverse polarity installation.
- **Any series or parallel connections** for desired voltage and AH requirements.

### Improper Storage

- Failure to disconnect the battery from devices that draw power.
- Failure to charge the battery for over one year, which is necessary to maintain battery cell health.
- Inappropriate storage conditions as defined in the battery owner's manual, including exposure to extreme temperatures (above 131°F or below -4°F), fire, water submersion, pressure washing, or storing the battery in a completely discharged state.

### Environmental Damage

- Exposure to extreme hot or cold temperatures beyond the specified range while in use.

### Mechanical Damage

- Damage due to over-tightening and stripping of the terminals.
- Not using an approved lithium charger.

- Using the product for applications other than those intended, such as repeated engine starting or drawing more amps than specified.

### **Misapplication**

- Using an improperly sized battery for the application.
- Applying incorrect voltage to the application.

### **Tampering and Physical Damage**

- Batteries with destroyed or tampered manufacturing date codes.
- Breakage, punctures, freezing, wreckage, water damage, or melted and broken terminals.
- Damage caused during shipping or mishandling.
- Products that have been opened, modified, or tampered with.

### **Extreme Cycling Applications**

- Batteries used in extreme cycling applications where they are cycled to more than 80% depth of discharge repeatedly within 24-hour periods.

Batteries purchased from non-authorized dealers of Pro-Guide carry no warranty.

The Limited Warranty does not cover failures that occur outside North America.

This Limited Warranty specifically excludes service calls, towing, loss of time, inconvenience, loss of use of the vehicle, freight, lost wages, lost profits, or any other consequential or incidental damages.

For Technical Support

Warranty claims can be made by the end-user/owner of the application or a PRO-GUIDE authorized dealer. All requests must begin by contacting PRO-GUIDE customer service. The customer service team will review and respond with the necessary technical assistance.

If technical assistance does not resolve the issue and the claim is covered under warranty:

The Pro-Guide will send approval for the product to be sent back at the expense of the end-user/owner to Pro-Guide.

Every box must include:

- A copy of the PGL Warranty Evaluation Form (supplied by Pro-Guide customer service team)
- A copy of proof of purchase

If these items are not included, the item will be returned to the sender.

**Product Testing** The manufacturer will test the product to determine if it was affected by the listed non-covered conditions, such as defects or damage arising from abuse or mishandling.

## **HOW TO MAKE A CLAIM**

Email [support@proguidebatteries.com](mailto:support@proguidebatteries.com) or call 1-800-827-3232

Warranties are for repair, replacement, or substitution only, at PRO-GUIDE's sole discretion. Refunds are not available. Warranty will NOT restart.