

# Quick Start Guide

## 24V Lithium Battery Charger

**Note:** Please read these installation notes carefully before attempting to fit this upgrade. If you are still unsure after reading these instructions, do not attempt the fitting. These instructions are supplied on the basis that the installer is competent and has a basic understanding of electrics.

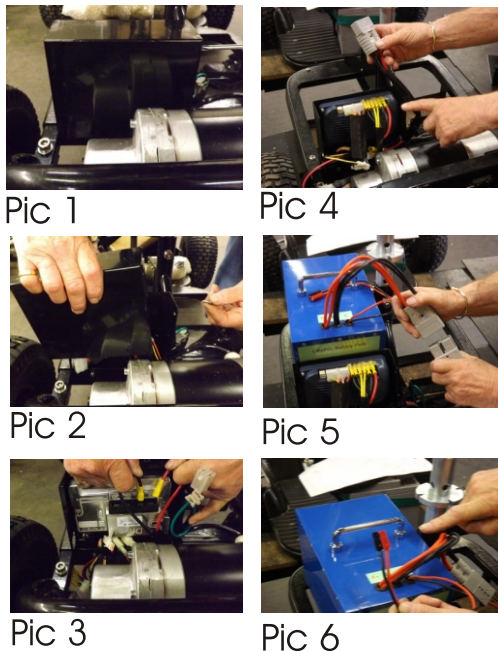
**Powerhouse Golf** cannot accept responsibility for damaged component or injury to person(s) if incorrectly fitted. These instructions are assuming that the battery is for use on **Powerhouse Golf** Pro range golf buggies with Curtis or S-Drive relay.

### Step 1. Removing old wiring.

1. Place buggy in a well lit area on a flat surface. Make sure buggy cannot roll. Remove a) Seat. b) Original batteries. C) Remove metal battery restrictor(s) from right side of battery tray (if applicable).
2. Remove self tapping screw on side of metal box behind battery. (Pic 1). Lift lid vertically away.  
If the buggy is a steering wheel model and is fitted with an S-Drive, take care not to pull lid to hard as the battery indicator is tethered to the lid.)
3. With a pair of snipping pliers, clip off any plastic ties holding the "Power lead" to frame of buggy.
4. **IMPORTANT.** Take note where the **Red+** and **black -** wires are connected to the "controller".  
a) Curtis controller b) S-Drive controller (as applicable)
5. With a pair of pliers, ease off the yellow plugs. Do not force them.
6. Pull Power lead back through hole in the metal box. (Pic 3)

### Step 2. Re-fitting new battery and Lead.

1. Pass new "Lithium Power lead" through hole in metal box (Pic 4).
2. **IMPORTANT.** Push yellow connections on to "control box" terminals. Take great care these are the correct way around as permanent damage will be caused to battery and controller. (Curtis Controller or S-Drive controller as applicable)
3. Pull lead through and fasten in place with plastic ties.
4. Check all wiring and connections are tight and show no signs of burning. Including other wires in the box.
5. Refit lid, taking care not to snag any wires. Gently lower lid until you can see small hole through end. Align screw and nip up.
6. Lift battery into battery tray on right side (as you are sat on it)
7. Firmly press the two halves of the Anderson connectors together. (Pic 5)
8. Remove tools, securing objects away, and fit seat.
9. Ensure lever on back is in "driving position"
10. Turn key and test drive. Your battery will be charged enough to test your buggy is working correctly.
11. If all is well remove battery from buggy to charge.



24V Powerhouse Lithium Battery Specifications		
	18 Hole Battery	27+ Hole Battery
Construction Type	LiFePO4 (Lithium ion Phosphate)	
Size (mm)	W170 x L160 x H95	W170 x L160 x H125
Weight	7.8kg	10.2
Capacity	30A	47A
Voltage output (Max)	24-26	24-26
Life expectancy (Cycles)	In excess of 1000	In excess of 1000
Warranty	2 Year Limited*	2 Years limited*
Charger Type	Lithium Red to Green	Lithium Red Green
Charger time	6-12 hrs	8-14 hrs
Battery technology (BMS)	Full battery management	Full battery management
Connection	3 Pin Din	3 pin din
Operating Temperature	1-30 Degree**	1-30 Degree**
Compliance	Exceeds all EU Directives	Exceeds all EU Directives

\*Full details on our web site. \*\*Do not let battery stand in -Zero conditions.

## Charging

1. Your battery will need to be charged for an initial 12hrs prior to the first time of use.
2. See notes on charger light sequence on reverse side.
3. You do not need to separate the "Anderson connector" in order to charge your battery.
4. Battery can only be charged with the battery charger supplied. Do not use any other type of charger.
5. To charge the battery, connect 3 pin lead from the charger to the 3 pin din plug on the battery, (Pic 6), then plug in to mains supply and switch on.
6. **IMPORTANT.** From this point forward, **DO NOT** use the on board charging point on your buggy. Damage will be caused to battery and controller if a charger is connected to this plug. (Existing Buggy, new buggy will have charger plug removed).
7. After the LED 2 light has returned to green on the charger, and the charging sequence is complete, you may remove the charger plug. Do not leave the battery charger connected to the battery but disconnected from the mains, this will allow the charger to discharge the battery. Always remove leads from charger and supply (Socket).

## Other Charging and battery advice.

1. Always charge the battery after use, no matter how short the use is.
2. Charge the battery on any standard 110/230-240v mains supply.
3. Always charge the battery as soon as possible after use. Max 36 hrs. Never leave in a discharged state.
4. Always charge in well ventilated area between 5 and 35 Degrees C. If the air temperature is likely to fall below Zero, remove the battery, do not store in -0 conditions.
5. Always make sure the fan is operational and can be heard whilst charging. Do not use if it is not.
6. Make sure charger is always positioned for charging on a firm non flammable surface.
7. Do not use charger to charge any other battery or use any other charger to charge Powerhouse Lithium battery.
8. Do not attempt to remove or open the charger or battery compartments at any time.
9. The battery should be removed from charging as soon as it is possible after charging cycle is complete.

## Detailed Charging Procedure

1. The battery is supplied with a nominal charge and should be fully charged at least 12 hrs prior to first use. This can be done before any wiring modifications are made to your buggy so that you are ready to use without delay.
2. Turn on power switch on charger and the battery will start its charging cycle.
3. Check lighting sequence as below

- A) LED 1 ● Red - Charger has power  
 b) LED 2 ● Red/- Battery charging  
 c) LED 2 ● Green - Battery Fully charged



4. A charging cycle can take from 3-12 hrs depending on level of discharge, Battery age and capacity.

**Note: Always check that battery status indicator on charger is "Amber" before walking away from your battery. This will show that your battery is actually charging.**

## Troubleshooting.

### Q. The buggy will not complete a full round.

- A.** Make sure the battery is fully charged prior to use. Always charge the battery again as near as possible prior to use. If excessive loads are met whilst the buggy is climbing the battery will shut down. Stop and allow the battery to recover (2-3mins). In extreme cases, disconnect battery lead and reconnect it. This should re set the battery. If this happens on a regular basis, please contact Powerhouse Golf for assistance.

### Q. The battery losses power half way around a course that it has managed before.

- A.** Check battery has completed a full charge. Check all tyres are inflated to correct pressure. The buggy is being used to complete more holes, check the user weight limit of the buggy and the conditions are in keeping with the buggys limitations.

### Q. The battery does not seem to take a charge.

- A.** The Battery management system (BMS) built into the battery is designed to protect the battery condition. If low battery level is detected, due to the battery been left discharged for a long period of time, the battery will shut down. Also check battery charger is cooling (fan spinning) during charging. If everything seems normal and still no charging sequence Please contact Powerhouse Golf for assistance

### Q. My battery Indicator shows full at all times, even after 18 holes.

- A.** A lithium battery works in a completely different way to conventional lead acid batterie(s). Under normal use a Lithium battery will maintain full voltage right up until the battery is depleted. Therefore the battery indicator, that works on voltage to gauge the power will show full. It is only at the very end of the round and beyond, depending on conditions, that the battery will show low power. You can use the buggy until it stops without fear of damage as it will be protected. Remember however, once the buggy stops, it will not be possible to get off the buggy and walk along side to get back to the club house as a depleted Lithium battery is out of power!