



PARALLEL BATTERY

INSTALLATION / USER GUIDE

Important Warranty Information



VOIDS WARRANTY

Confirm parallel battery voltage matches system/cart voltage before connecting.

Do not use power tools your when tightening the terminal bolts. Over tightening can strip the terminal and will void warranty.

Charge Batteries before use, batteries are stored and shipped at partial charge.



Installing Allied Batteries

Use hand tools only and ensure the cable rings have solid flush contact with the battery terminal; largest diameter (high current) cables attach to battery terminals first for lowest resistance. It is recommended to take a photo of the battery wiring in the cart before removal; take note of the wires attached to system positive and system negative. Lead Acid batteries are wired in Series, Allied Lithium batteries are wired in Parallel. Common cart voltages include 36V (38.4V) / 48V (51.2V) / 72V (76.8V), please confirm all Allied Batteries are the same voltage and match your motor/controller system voltage. Remove Lead Acid Batteries and install Allied Lithium Batteries.

Parallel Batteries make common connections only. Positive (red) only connects to positive, likewise Negative (black) only connects to negative. Parallel Batteries must match cart controller voltage (36V/48V/72V), do **not** connect parallel batteries in series to protect from high voltages which will destroy electronics, and **can cause personal injury**. Parallel connections increase Amp-hour capacity (x3 30Ah = 90Ah; x5 36Ah = 180Ah).

Connect cables – Connect SoC negative, charger negative, and cart negative to battery negative terminal (black); connect all other parallel battery negative terminals (black) together with 4awg-2awg cables. Connect SoC positive, charger positive, and cart positive to battery positive terminal (red); connect all other parallel battery positive terminals (red) together with 4awg-2awg cables. *See paralleling diagram below for general connections and accessory connections.

Allied State of Charge Meter (SoC)

After Installing the SoC select your carts voltage.

- Tap “Menu”
- Then hold “Menu” until screen blinks
- While screen is blinking tap “Menu” until the correct Voltage appears (36V or 48V)
- Wait until blinking stops and this setting will save.

For absolute voltage tracking, press menu button once to switch from percentage mode to voltage mode.

15 Minute Rule - For accurate readings from the Allied Lithium SOC Meter the cart must be at rest for 15 minutes. While the cart is in motion the SOC percentage and voltage is instantaneous tracking and will jump around. We suggest installing to the outer seat wall or under the seat of the golf cart and using adhesive Velcro to attach to a surface.

12V Stepdown Converters

To use 12V accessories like lights, fans, heaters, and stereos on a 36V/48V/72V golf cart system a properly sized stepdown converter is needed. Match the output current of the converter to the input current needs of all connected accessories. It is recommended to connect converters to cart/system isolator switch to reduce battery leakage currents when cart is not in use; always confirm isolator switch can handle accessory current plus motor/controller current (additional isolator switch or direct manual connect/disconnect may be needed). Note that use of accessories and converters will reduce overall mileage per charge and varies greatly with accessory current usage.

Best Practices to ensure the maximum life of the batteries

Charging – Allied Batteries do not ship fully charged. We suggest plugging in the Allied Lithium Charger to fully charge the batteries. Lead acid chargers will not top-off or fully charge lithium batteries.

The Allied Lithium Charger “Amp” read out (Bottom Number) will decrease from around 15A to 0A at the end of charge. When you see 0A or the green LED, there is no more charge being put into battery and the charging is complete. Unplug charger and let batteries rest for 15 minutes. The SOC meter should also read 100%.

Note: When the charger is plugged in and charging the SOC will usually read 100%, this does not necessarily mean the batteries are charged. Charger will confirm end of charge cycle. The battery voltage can be measured with the SoC during a charge cycle by pressing the menu button.

It is recommended to charge lithium batteries after every use. Lithium batteries can be topped off before use as well for additional runtime. Do not keep charger plugged in for more than 12Hrs or overnight. Using a shutoff timer may help for automatic charger disconnect. This will ensure longest battery life.

Note: It is best to wait 15 minutes or so between charging and discharging to allow batteries to cool and stabilize.

Running Batteries / Cart to 0% / Battery Dropout

Lithium Batteries can be drained to 0%, however it is not recommended to drain to 0% often as this can unbalance internal cells. If the batteries do go down to 0% the cart will stop running and simply needs to be recharged.

While driving the cart, if a sudden loss of power occurs (battery dropout), then shortly after re-engages, this is due to undersized battery capacity for cart power demands. Amp-hour capacity is a measure of runtime as well as performance

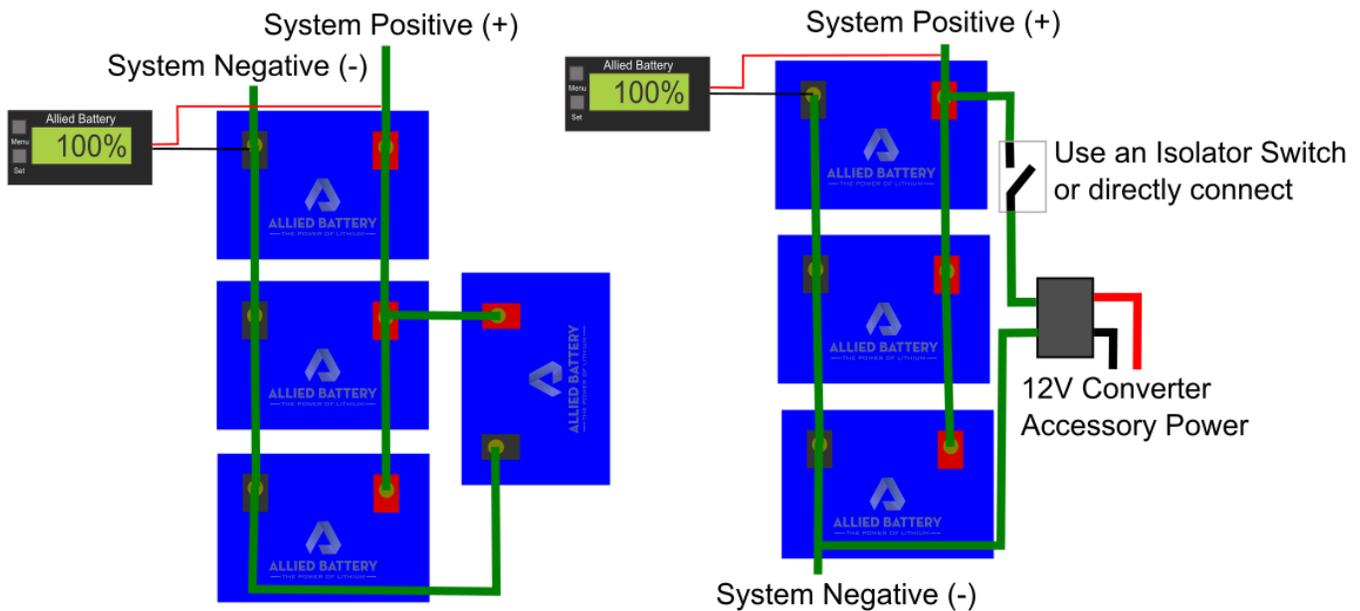
capability. Higher amp-hour ratings (more batteries in parallel) will greater improve current sourcing capability. Contact Allied Battery manufacturer for recommended sizing for performance and distance needs.

Winterization / Storage

It is recommended to charge the batteries full before long term storage. Do not keep the charger plugged in. Isolate the batteries by putting the cart in tow mode, or manually disconnecting the positive or negative terminal of all loads; this will stop leakage currents through batteries. Electronics, converters, controllers, etc. will draw small leakage currents over time, disconnect any of these types of loads from the batteries when not in use to prevent over discharge. When ready to use again, reconnect any disconnected wires, fully charge the batteries, then engage solenoid in run mode.

Parallel System Wiring Examples

For more examples and how-to videos please visit our website: AlliedLithium.com



Cart Specific Information

Club Car 48V - (1995-2013) - To use the required Allied Lithium Charger, Club Cars from 95-13 must have the Onboard Computer bypassed. If the OBC is not bypassed then any non-factory charger (including the Allied Lithium Charger) will not engage and/or charge the batteries.

Club Car 48V - (2014-Current) - Compatible with required Allied Lithium Charger (No bypass needed).

EZGO TXT- Compatible with required Allied Lithium Charger.

EZGO RXV- Compatible with required Allied Lithium Charger.

Avoid discharging the RXV batteries to 0%. If this does happen the brakes can lock up and must be reset. To reset brake disconnect one of the cables in the series and then reconnect, there is reserve energy in battery that will release the brake and allow the charger to engage.

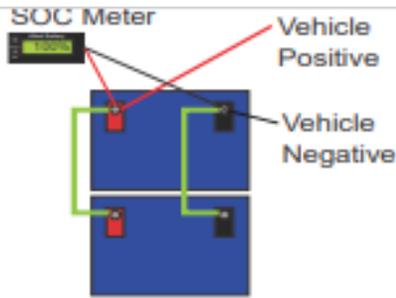
Star Car- Compatible with required Allied Lithium Charger.

Yamaha G14-G19 / GMAX - Compatible with required Allied Lithium Charger.

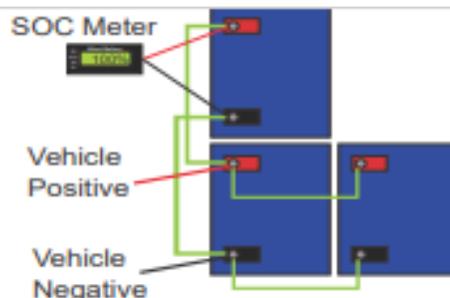
Yamaha Drive and Drive 2- Compatible with required Allied Lithium Charger.

Polaris EV | Custom Cart- Available charging harness for non built-in charging connector.

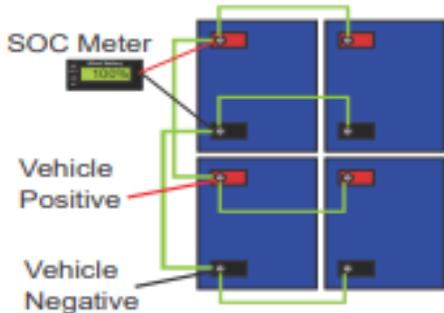
For disclaimer and additional information visit AlliedLithium.com



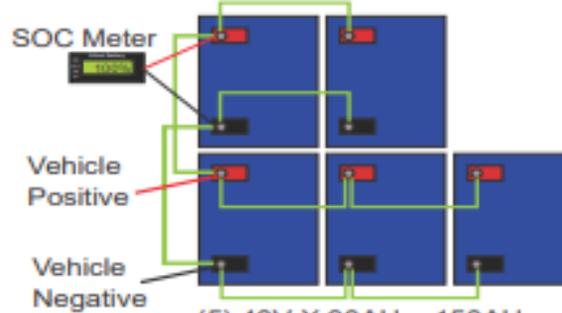
(2) 48V x 30AH = 60AH



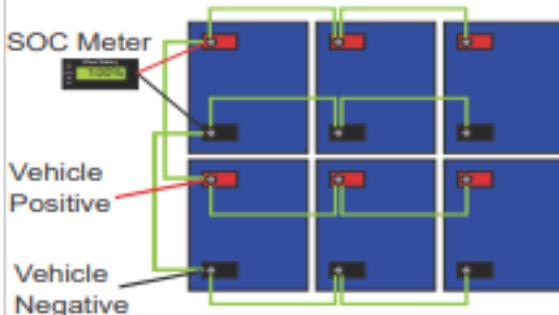
(3) 48V x 30AH = 90AH



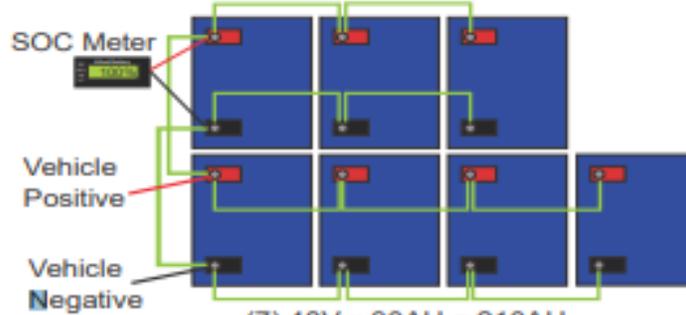
(4) 48V x 30AH = 120AH



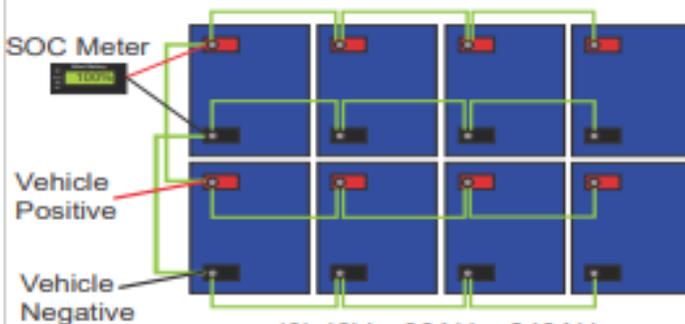
(5) 48V X 30AH = 150AH



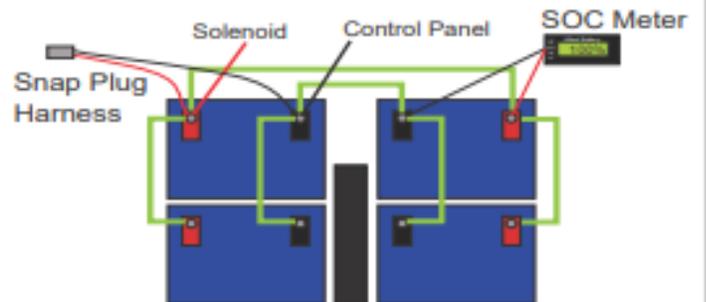
(6) 48V x 30AH = 180AH



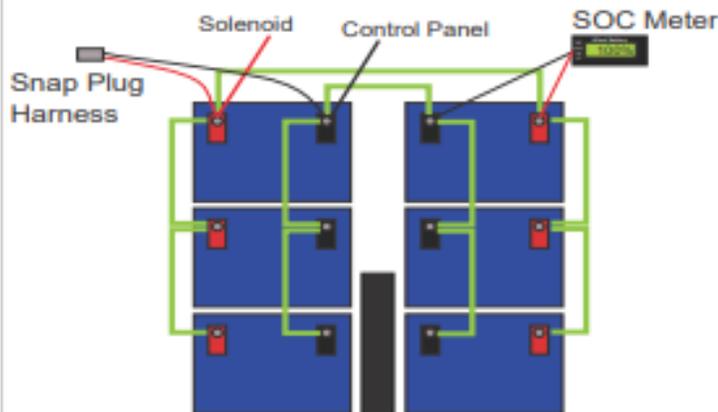
(7) 48V x 30AH = 210AH



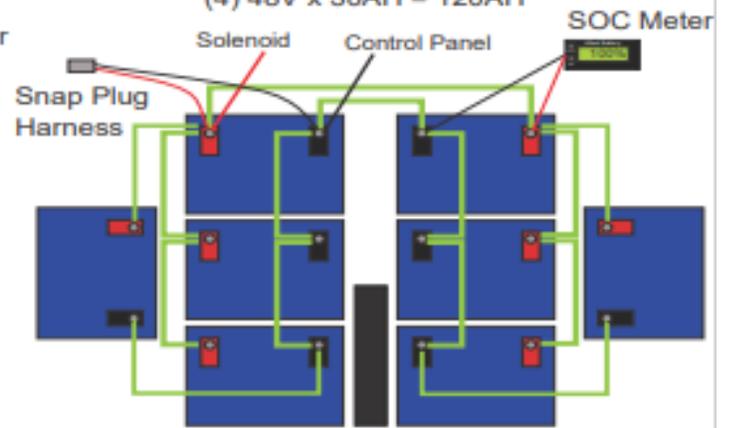
(8) 48V x 30AH = 240AH



Polaris Ranger EV
(4) 48V x 30AH = 120AH



Polaris Ranger EV
(6) 48V x 30AH = 180AH



Polaris Ranger EV
(8) 48V x 30AH = 240AH