# LiFePO4 BATTERY PURCHASE INFORMATION

For LiTime 48V Lithium Battery Conversion.

**Battery Specifications**

- Manufacturer: LiTime
- Description: LiTime 48V 60Ah Lithium Golf Cart Battery
- Model: L51.2V60-120-GC-64-A200
- Website link

**Battery Purchasing Options**

- Purchase from LiTime (wholesale pricing)
  - Cost: $512 (quoted October 2024, subject to change)
  - Instructions: email LiTime Sales Manager, Lynn Xie at sales01@litime.com and indicate that you were to her by Todd Nelson that you are part of the Purdue evGrandPrix Program.
- Purchase from LiTime (retail pricing)
  - Cost: Varies ~$630-850 (sales occur often, especially on “Amazon Prime days”)
  - Instructions: Purchase the battery from LiTime’s website
- Purchase from Amazon (retail pricing)
  - Cost: Varies ~$630-850 (sales occur often, especially on “Amazon Prime days”)
  - Instructions: Purchase the battery on Amazon
- Purchase from Wal-Mart (retail pricing)
  - Cost: Varies (usually tracks with Amazon pricing)
  - Instructions: Purchase the battery from Wal-Mart

**Recommended Charger**

- LiTime 48V 30A Lithium LiFePO4 Battery Charger
- Cost: varies ~$260-400 (sales occur often, especially on “Amazon Prime days”)
- Purchasing instructions:
  - Option 1: Purchase from LiTime’s website here.
  - Option 2: If purchasing a battery via wholesale pricing, the LiTime Sales Manager may also offer you reduced pricing on the battery charger.

**LiTime Support**

- Manufacturer warranty: 5 years backed by Technical Support within 24 hours.
- Support / Warrant Contact:
  - email: service@litime.com
  - Phone: (+86) 1-812-414-9306
  - In the event, you do not receive a timely response with your issue, email LiTime Sales Manager, Lynn Xie at sales01@litime.com.

# WIRING HARNESS CONVERSION GUIDE

For LiTime 48V Lithium Battery Conversion.

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**OPTION 1: Purchase LiFePO4 Wire Harness from TopKart USA**

- Instructions: Contact Blake Deister – TopKart USA Sales & Marketing Director
- Email: sales@topkartusa.net; Phone: 317-870-3122

**OPTION 2: Convert Lead-Acid Battery Wiring Harness (series spec through Spring 2024) to LiFePO4 Harness**

**Harness A**

1. 2G Red Wire:
    1. Remove out off Anderson connector plug. This wire will not be needed any longer.
2. 2G Green Wire:
    1. Add Anderson Terminal End to one side of wire which will be used to go into the Anderson Plug (+) side.
    2. Swap the other end 1/4” Copper Terminal with a 5/16” Terminal for connecting to battery (+).
    3. 2G Black Wire:
        1. On Copper Terminal end of wire, trim wire 4”.
        2. Replace 1/4” Copper Terminal with 5/16” Copper Terminal
    4. **RECOMMENDED**: Insert wire assembly into 30” wire loom sheath to keep harness together.

**Harness B**

1. Remove all 4 wires out of the existing harness assembly. There will be 2 new harness assemblies created from Harness B.

**Harness B.1**

1. 2G Red Wire:
    1. Wire coming from Anderson connector Plug to Main Fuse, this needs to be lengthen by 4” to be able to run with the Physics Box where it will need to be placed. (see photos below for reference.)
    2. **RECOMMENDED**: Insert wire assembly into 14” wire loom sheath to keep harness together.

**Harness B.2**

1. The 2G Red and Blue wires do not need any modifications. It is recommended that you will Insert wire assembly into 12” wire loom sheath to keep harness together.

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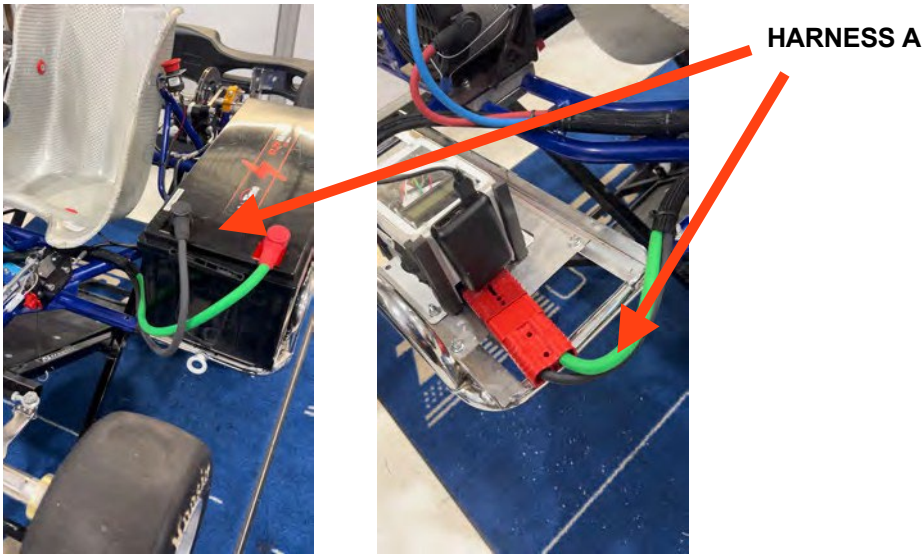
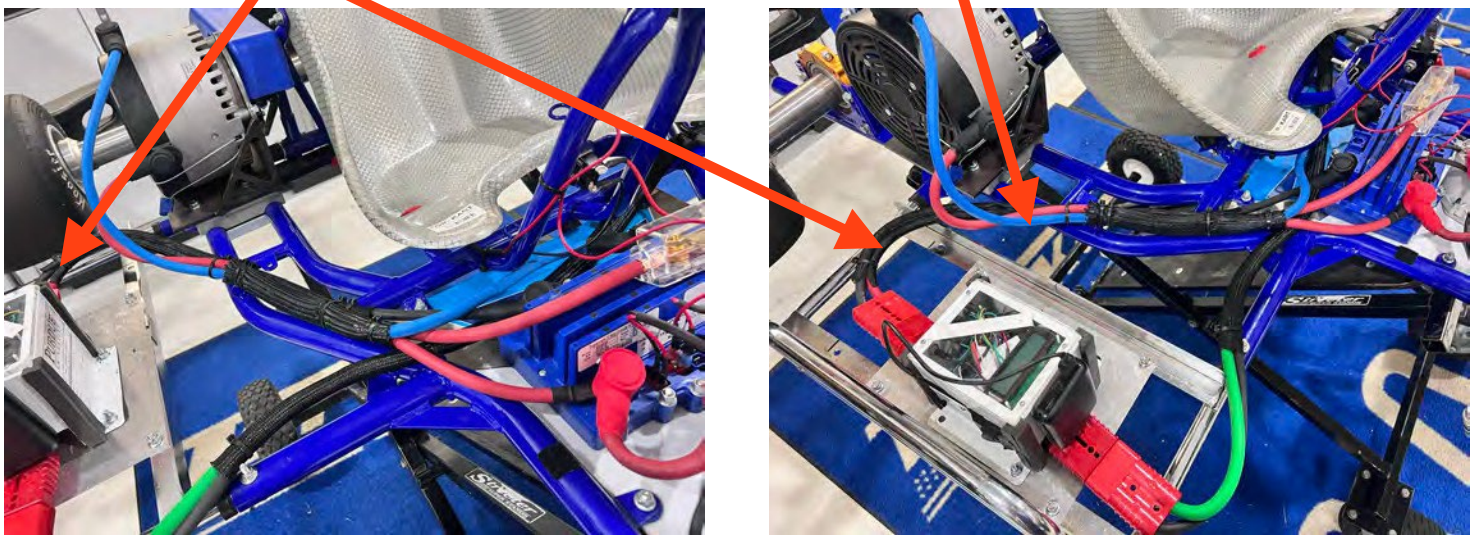
**REFERENCE PHOTOS**



# BATTERY SUPPORT CONVERSION GUIDE

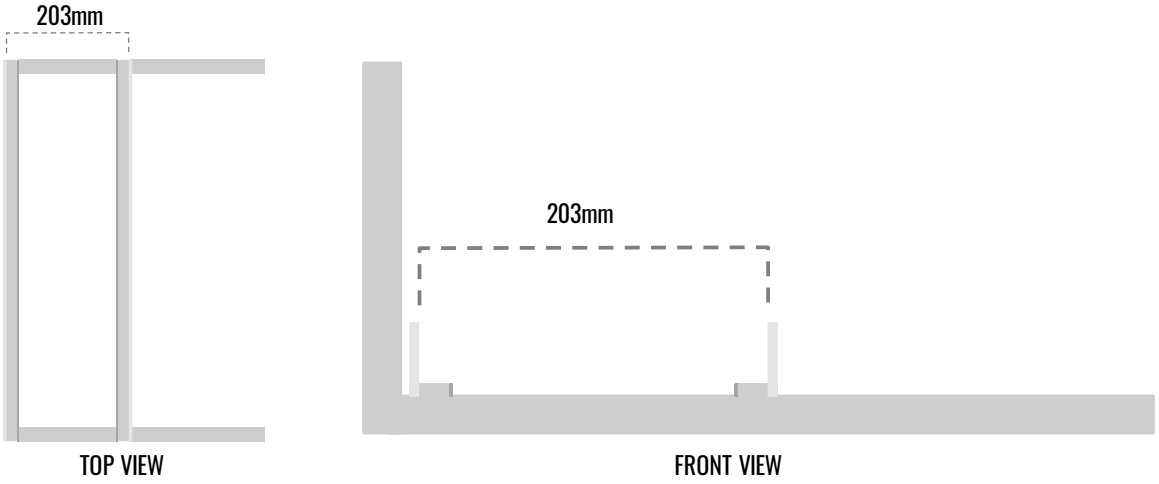
For LiTime 48V Lithium Battery Conversion.

## OPTION 1: Purchase new Side Support Bar from TopKart USA

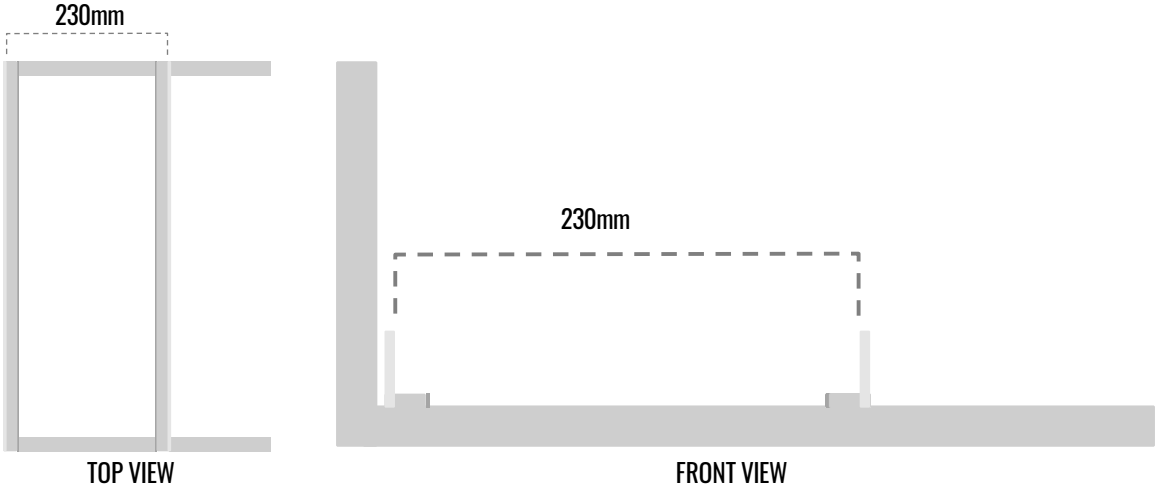
- Instructions: Contact Blake Deister – TopKart USA Sales & Marketing Director
  - Email: sales@topkartusa.net; Phone: 317-870-3122

## OPTION 2: Modify Lead-Acid Battery Side Support Bar

## EXISTING BATTERY / SIDE SUPPORT BAR




## UPDATED BATTERY / SIDE SUPPORT BAR




### STEPS FOR CONVERSION

1. Cut off inner L bracket that is welded onto support.
2. Shift bracket over so that the inside to inside faces of the L brackets reach 230mm (23cm).
3. Re-weld bracket onto the support bar.

# OPTION 1: Purchase new Battery Support Bracket from TopKart USA

- Instructions: Contact Blake Deister – TopKart USA Sales & Marketing Director
  - Email: sales@topkartusa.net; Phone: 317-870-3122

# OPTION 2: Construct Battery Support Bracket

Below is an example bracket that meets evGP Technical requirements. This exact bracket is not required, and teams are welcome to design and build their own battery attachment mechanisms. To pass Technical Inspection, the bracket must securely fix the battery to the chassis under racing conditions. The Technical Inspectors have the final decision.

## Example Bracket:

**Starting material:** 1/8" thick, 1" wide, 48" long aluminum flat bar. Sources: Home Depot; Lowes
**Tools needed:** Vice, rubber mallet, tape measure, Sharpie, hacksaw, drill, 1/4" drill bit, disc sander
**Drawing:**


**Procedure:**

1. Bend #1: Measure 0.75" from end of bar and mark straight line with a sharpie marker. Place bar in vice with marked line at the top of the vice and close vice firmly. With one hand, hold the end of the bar that is sticking out of the vice and with the other, tap the bar with a rubber mallet a few inches from the top of the vice and continue tapping until the bar is bent just past 90 degrees.
2. Bend #2: Measure 8.5" from inside of bend #1, mark a straight line and bend the bar in the vice in the same manner as bend #1.
3. Bend #3: Measure 21.5" from the inside of bend #2 and make the bend in the vice.
4. Bend #4: Measure 8.5" from the inside of bend #3 and make the bend in the vice.
5. Measure 0.75" from the inside of bend #4, mark a straight line, and cut off excess stock from the bracket.
6. Use disc sander to round the edges of the 0.75" sections.
7. Create bolt holes:
   a. On the front and rear bar of the left side pod, drill a 0.25" hole (vertically) at the mid-point of the battery.
   b. On the battery bracket, drill a 0.25" hole in the center of both of the 0.75" sections
8. Wrap entire bracket with electrical tape to electrically insulate.
9. Use M6 x 1.5" cap head bolts with lock washer to install battery bracket and contain the battery to the sidepod.

Fully Assembled Battery Bracket