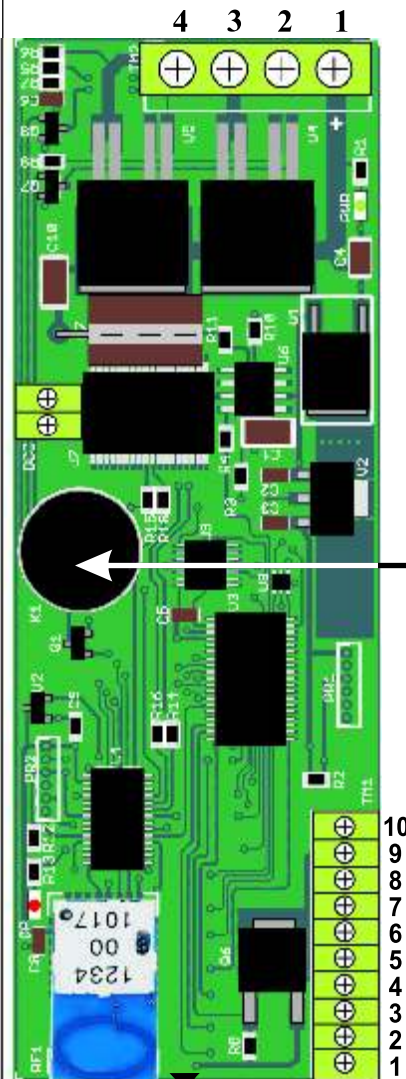


## G3 Decoder Connections



### Radio Module (Internal Antenna Version)

Keep wires and other metal objects away from the receiver or your reception range will decrease.

### TM2 - Battery and Motor Terminals

- #1 Battery Positive (+) Input
- #2 Battery Negative (-) Input
- #3 Motor Terminal A Out
- #4 Motor Terminal B Out

### Warning

The G3 wiring is very different from any of our previous decoders. Failure to correctly hookup the G3 decoder will cause unusual operation or complete failure.

### DCC - Booster Output [2.3A Max]

- #1 DCC Output A
- #2 DCC Output B

### TM1 - External Driver Outputs \*

- #10 V+ from Battery
- #9 \*\*Smoke Module Driver
- #8 Enhanced Lite Driver #4
- #7 Enhanced Lite Driver #3
- #6 Enhanced Lite Driver #2
- #5 Enhanced Lite Driver #1
- #4 Ditch Lite Left Driver
- #3 Ditch Lite Right Driver
- #2 Rear Headlight Driver
- #1 Front Headlight Driver

\* Lamp drivers are all 1.0 Amp maximum  
\*\*Smoke generator is 3 Amp maximum

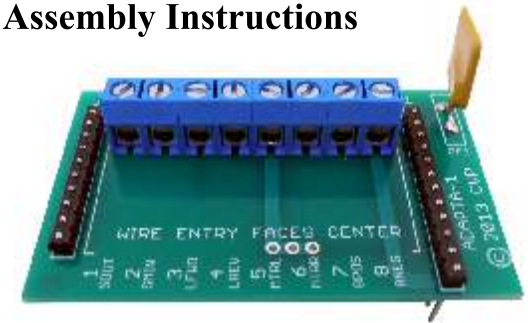
## Adapta Installation Guide For Aristo GP40

If you purchased an assembled Adapta-1 unit, go to page 2

## Adapta-1 Kit Assembly Instructions

### Kit Contents List

- Adapta-1 circuit board
- 2 strips header pins
- Terminal block(s)
- Polyfuse
- This Install Guide



Parts are inserted from the top side (side with white lettering) and soldering is done on the back or bottom side of the circuit board.

**Step 1: Prepare and install terminal block.** If the terminal block comes as a single unit, then insert and solder. If it comes as a group of smaller blocks, slide them together to make a single, 8 terminal block. Orient the terminal block's wire opening towards the center of the board.

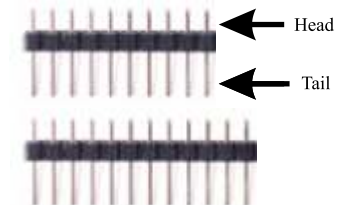


**Step 2: Solder each terminal.** Take care to use sufficient heat such that the terminal and the solder pad are properly soldered. Make sure the terminal strip is flush and square with the circuit board. The image shows what a good solder joint looks like. Do not clip the terminals - they are short enough to not interfere with other objects below the board.



**Step 3: If Necessary, Prepare The Header Strips.** If the strips are not precut to the proper number of pins, trim the strips to create one strip of 10 pins and one strip of 12 pins. Use your wire cutters to cut between the pins where the plastic is grooved. The strip will easily break apart at that location. Discard the left over pins.

**Step 4: Insert and solder the header strips.** Insert the long set of pins (the tail pins) through the holes from the top side of the board. Make sure the plastic is flush to the circuit board. Don't allow it to tilt up on one end during soldering. Solder carefully and inspect for solder bridges between pins. Trim the head of the pin flush to the plastic strip.



**Step 6: Insert polyfuse and solder.** There is no polarity to the polyfuse. Make sure the fuse is close to the board. However, don't bend the pins too much or the polyfuse may fracture. Solder carefully and trim the leads to the top of the solder joints. Make sure there are no solder bridges.

**Final Check:** Verify the header pins are trimmed. Inspect solder joints for bridges, cold joints or missed joints. Your Adapta-1 board is ready for use.

CVP Products P.O. Box 835772

Richardson, TX 75083-5772

www.cvpusa.com

See The AirWire Website Doc Center For Updates To This Install Guide

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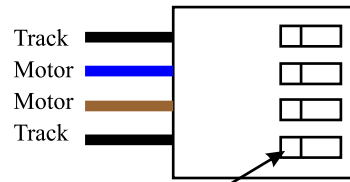
## Aristo GP40 Installation Using External Power Switch

The following drawings and photos are specific to the Aristo GP40 locomotive. The Airwire G3 decoder uses the Adapta-1 for easy hookup to the GP40. Be sure to remove the track pickups or damage to the G3 decoder will occur.

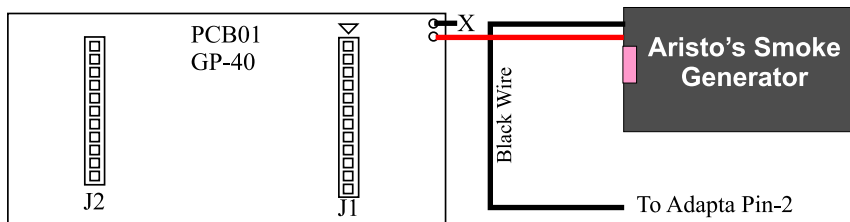
**Disconnect Track Power Pickups:** There are two track pickup plugs, one on each end of the locomotive. The rear track plug connects to circuit board PCB04 and the front track pickup plug connects to circuit board PCB05. The two outside black wires connect to the track pickups and these must be disconnected from the plug. **DO NOT DISCONNECT THE MOTOR WIRES OR THE LOCO WILL NOT RUN.**

There are small metal tabs that lock the wire and pin into the socket. Use an X-ACTO knife blade with a very sharp point to gently depress the metal tab of the pin while pulling on the wire. The pin and the wire will slip out of the socket. Wrap the each exposed pin with electrical tape to prevent it from shorting to the chassis. Reconnect the plug to the circuit board.

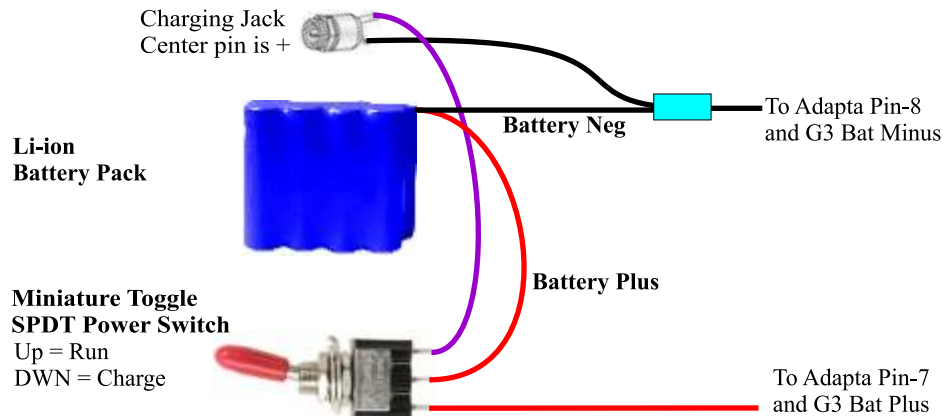
**Locate and Identify PCB01.** This board is the main circuit board inside the GP40. It is where the Adapata-1 board plugs in. There needs to be a minor modification to allow the G3 to control the smoke generator. Unsolder the black wire going to the smoke generator or cut it as close to the pcb01 as possible - shown with the X. The black wire needs to be long enough to connect to the Adapta-1 board.



Press down on metal tab to release pin

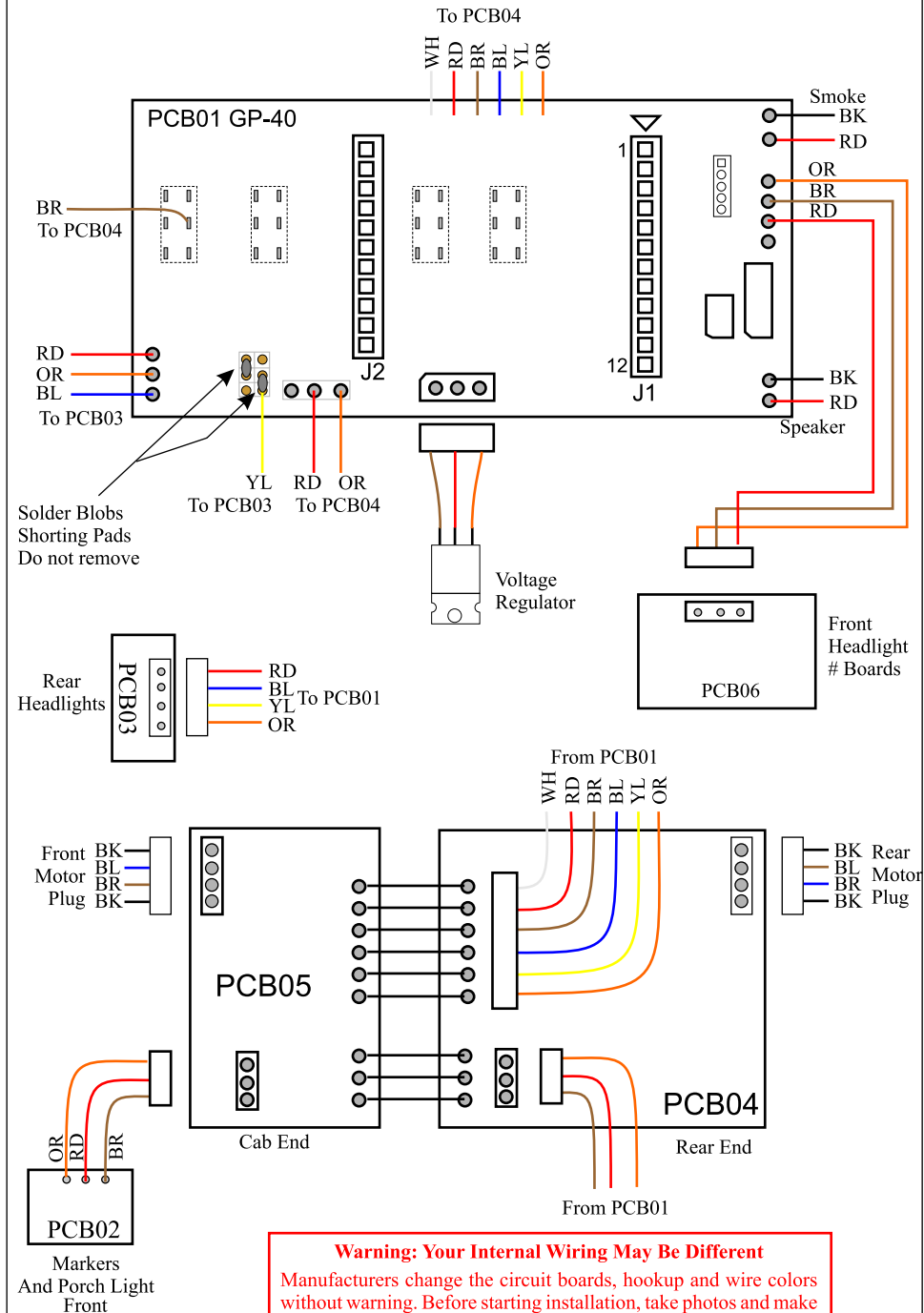


**Hook Up Diagram For Battery, Switch and Charging Jack** is below. Use #20 AWG wire, stranded is best. The battery and charging jack are polarity sensitive. Use two different colored wires to identify the positive and negative wires. Reversal of the polarity will damage the G3 decoder. Use heatshrink tubing to insulate all connections and solder joints.



See page 6 for an alternate method to hookup the battery that makes use of the Aristo GP40's built in power switch.

## Aristo GP40 Internal Circuit Board Wiring



### Warning: Your Internal Wiring May Be Different

Manufacturers change the circuit boards, hookup and wire colors without warning. Before starting installation, take photos and make a drawing of the colors and hookup inside your locomotive for reference.

## Hookup Diagram To Use The Built-In Power Switch

This connection method is a bit more complicated but allows the use of the GP40's built in power switch. The complication comes from the need to modify the internal circuit boards.

The first task is to locate circuit board PCB04. The boards are labeled and the correct one will look like the drawing below. Next, carefully remove the large plug from its socket on PCB04. This plug has 6 wires of different colors.

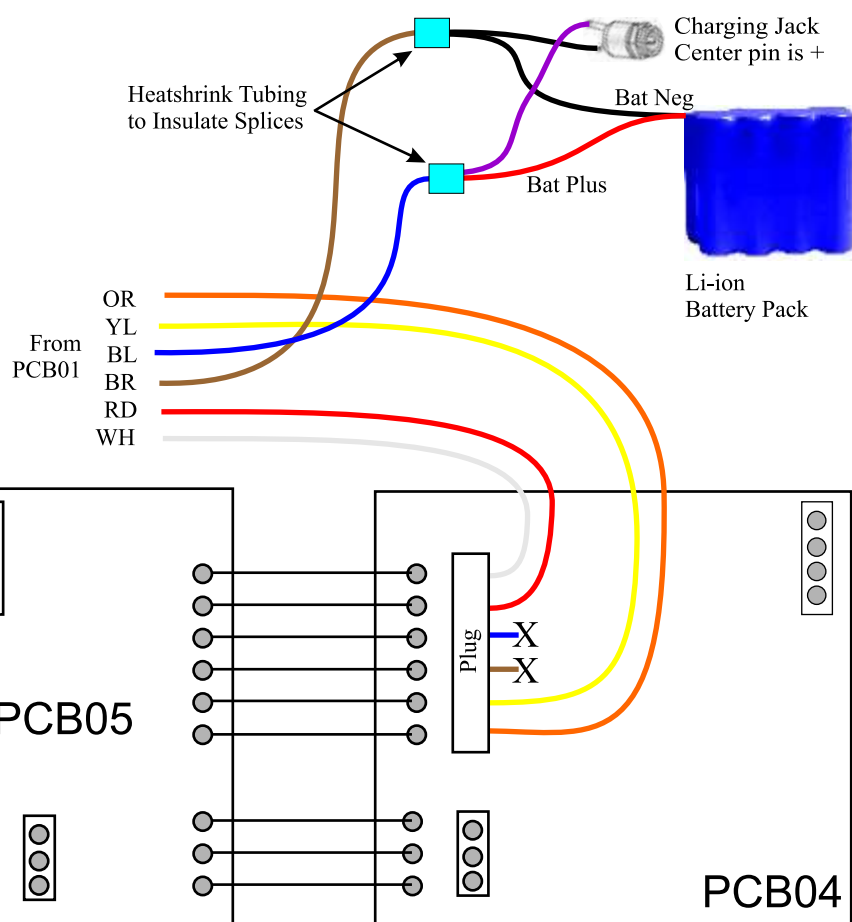
Locate and cut the blue and brown wires from the plug at the X. Make the cut as close to the plug as possible. Insert the plug back into its socket.

The blue and brown wires connect to the battery and charging jack. The brown connects to battery negative and the blue wire connects to battery plus as shown. Insulate all connections and/or splices with heatshrink tubing.

**Warning: Reversing the brown and blue wires will damage the G3 decoder.**

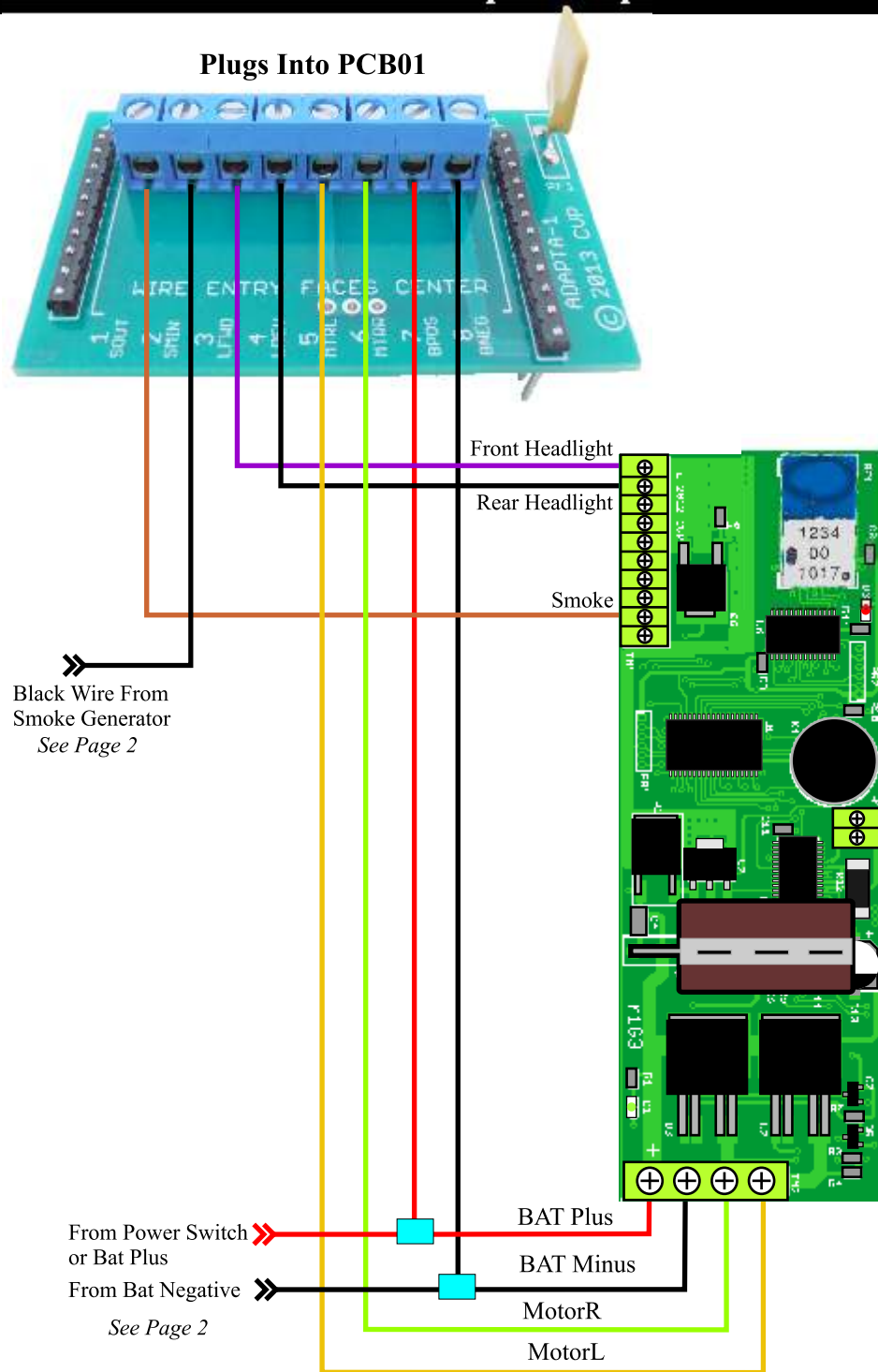
The G3 and the smoke generator use the same hookup as shown on page 3.

Don't forget to remove the track power pickups as described on page 2.



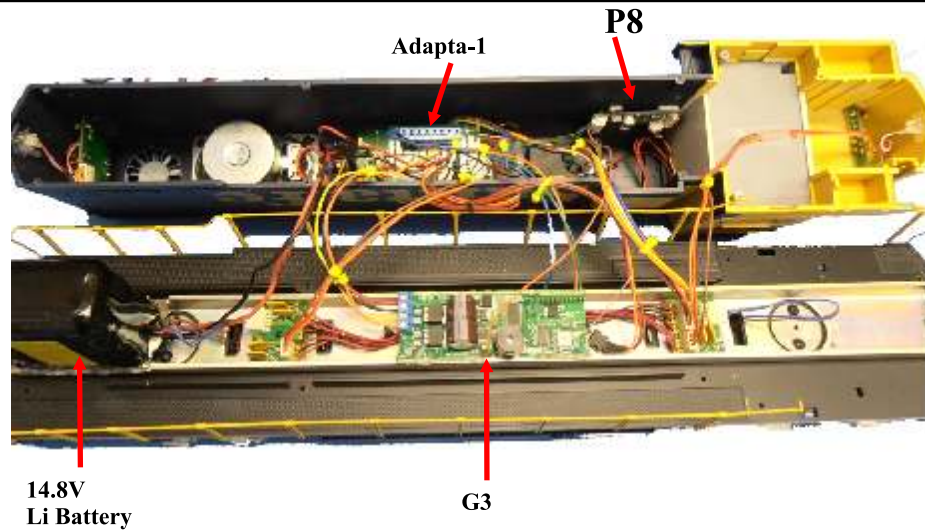
## G3 Decoder Hookup To Adapta-1

### Plugs Into PCB01





## Aristo GP40

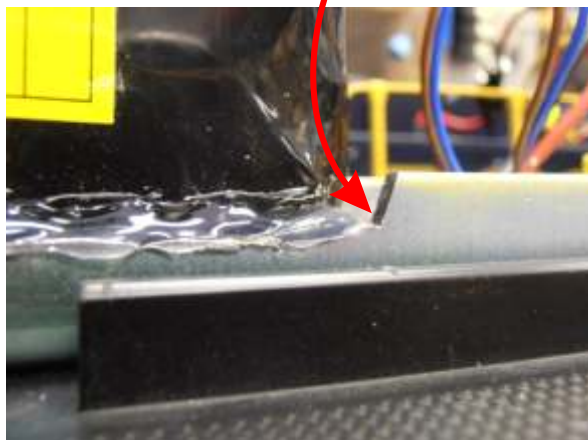
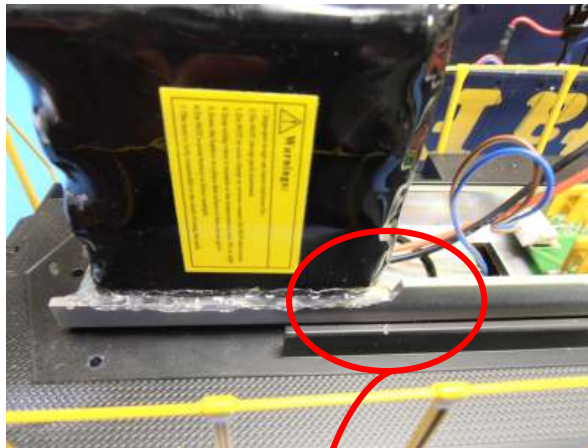


### Battery Mounting

The width of the CVP battery interferes with metal chassis lip.

Cut away some of the lip metal lip on both sides of the battery to allow it to sit centered in the frame.

The battery is mounted with hot-melt glue or silicone adhesive.



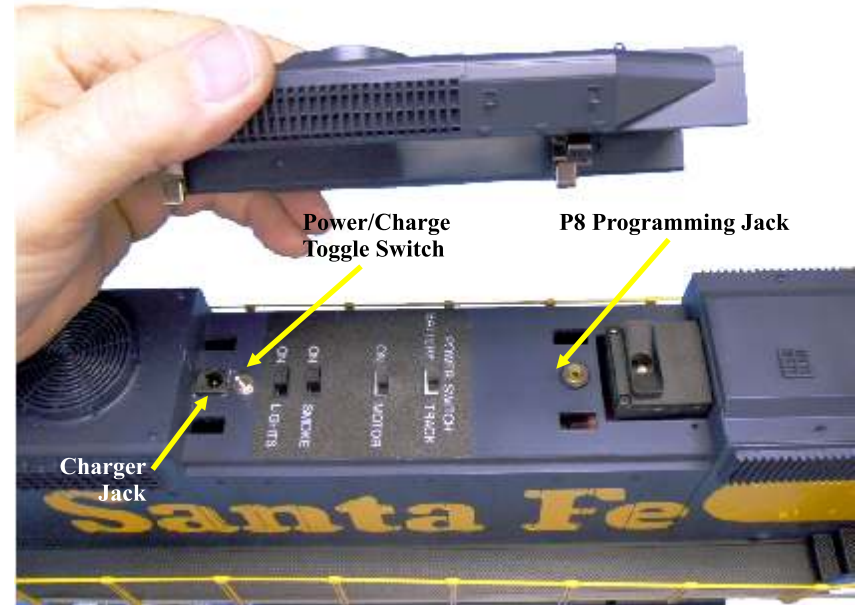
### A Tip From The Experts

Take some photographs of your installation and make your own installation reference drawing. Note anything unusual or different or where you had any problems. You might remember how you installed it today but what about 6 months from now, or a year from now?

## Aristo GP40

### Taking Advantage of The Removable Roof Section

This photo shows the location and use of an external SPDT toggle switch to select RUN or CHARGE. The charging jack is mounted near the toggle switch and the P8 programming jack is next to the smoke generator.



### G3 Decoder Mounting

The G3 decoder is mounted to the chassis with silicone adhesive. Never allow the adhesive to be smeared onto the top or bottom of the board. This adhesive is conductive until it is 100% cured and dry. Notice that it is only used along the OUTSIDE edge of the G3. This installation used the G3 with the external antenna. The whip has been bent vertical for better reception.

