



Frequently Asked Questions

HOW DOES TRIK-L-START™ WORK? TRIK-L-START™ is a "diversion charger" - Basically, it "steals" a little bit of current from your house battery charger, diverting it to keep your engine starting battery(s) charged. Since it is DC-powered, it does not require any direct connection to AC power - No extension cords or AC wiring required.

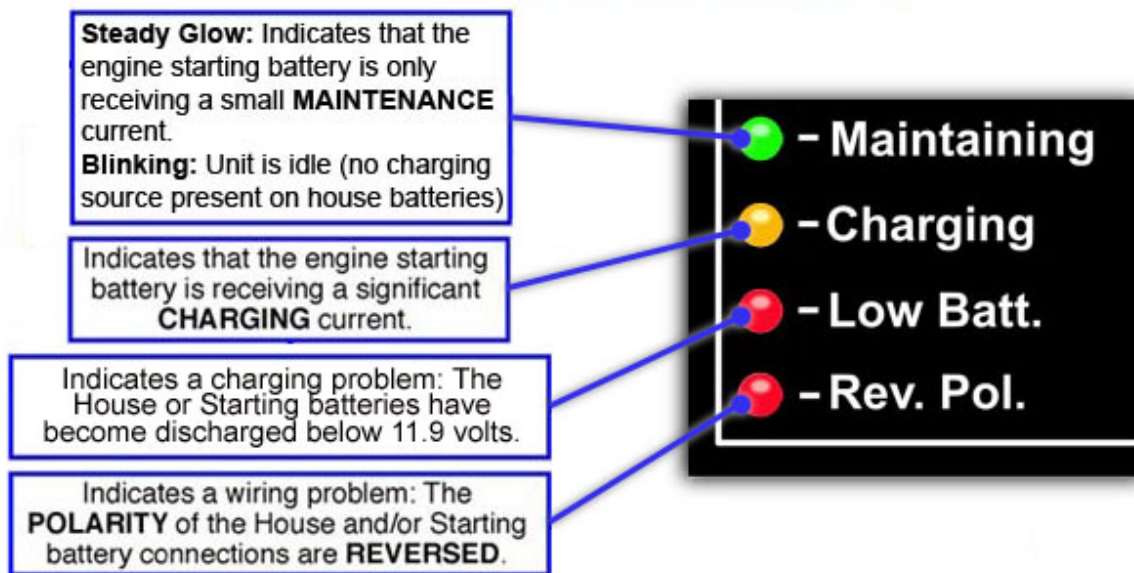
WILL TRIK-L-START™ WORK WITH MY DIESEL (OR GASOLINE) STARTING BATTERIES? Yes, TRIK-L-START™ is designed for both diesel and gas engines, and works with either single or multiple starting batteries. Its robust 10 amp maximum output is powerful enough to keep even the largest Cummins/Cat/Detroit Diesel dual-battery bank fully charged, but won't overcharge the single starting battery used with most gas-engine motorcoaches.

DOES TRIK-L-START™ EVER NEED TO BE TURNED OFF OR DISCONNECTED? No, most owners leave TRIK-L-START™ connected all the time. Unlike most AC-powered chargers, TRIK-L-START™ causes no significant drain on your batteries when it's not charging. When you're dry-camped, no current is allowed to flow in the reverse direction (i.e., from the starting to house batteries), so your engine always has full cranking power - even if your house batteries are completely discharged. Finally, TRIK-L-START™ does not interfere with the normal operation of your engine alternator while you're driving. It's completely worry-free - Install it, and forget it!

WILL TRIK-L-START™ OVERCHARGE MY BATTERIES? No, TRIK-L-START™ maintains your starting battery(s) at approximately 0.2 volts below your house battery voltage. This is considered to be the ideal setting for starting batteries, and virtually eliminates water loss and gassing. Maintained in this manner, your starting battery(s) should last for many years.

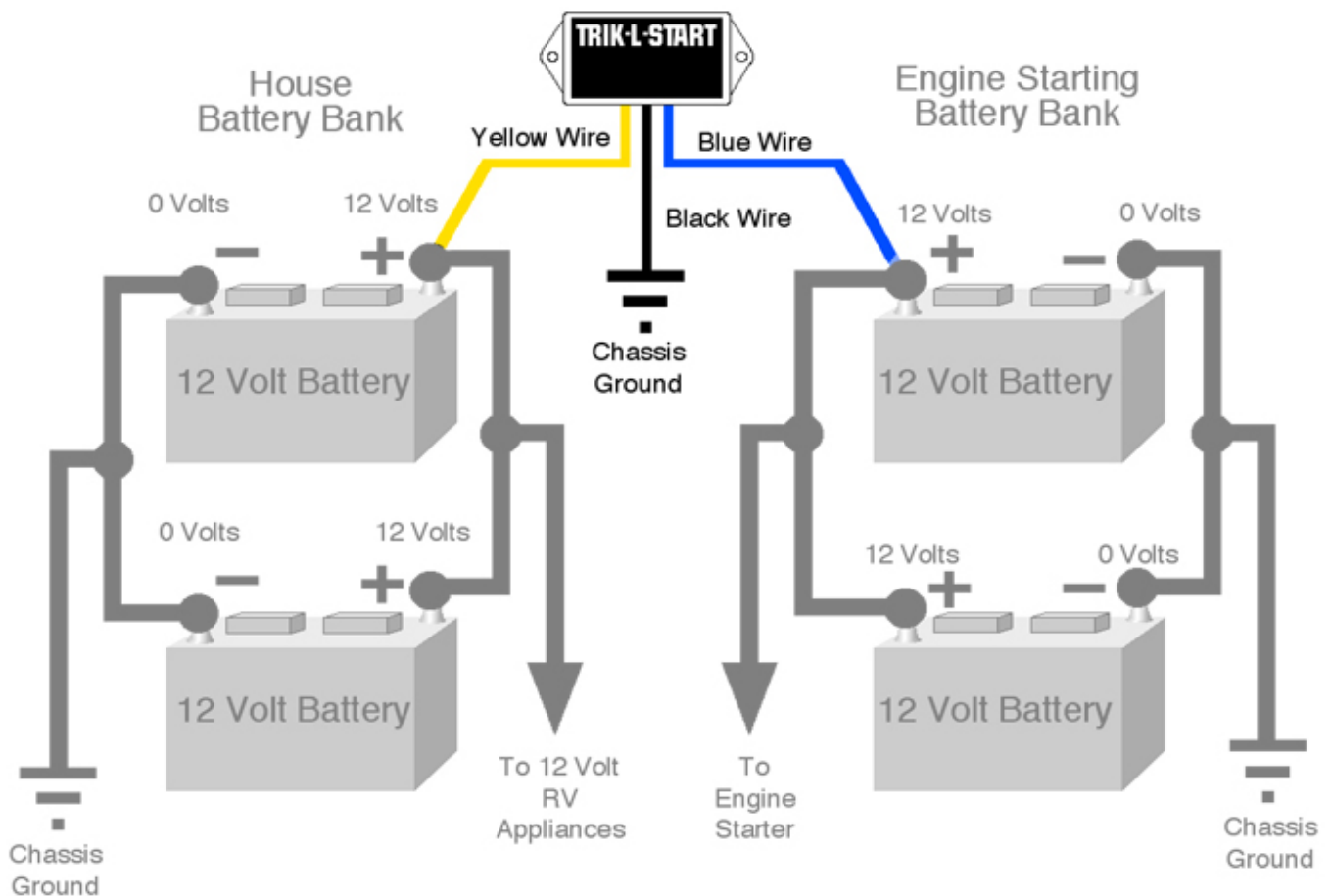
I STORE MY MOTOR HOME WITHOUT ANY AC HOOKUPS. CAN TRIK-L-START™ BE USED TO DRAW POWER FROM MY HOUSE BATTERIES TO KEEP MY STARTING BATTERIES CHARGED? No, TRIK-L-START™ only works when there is a house battery charging source (i.e., DC power converter, inverter/charger or solar panels) present. In the absence of this charging source, TRIK-L-START™ is effectively disconnected, and doesn't supply any charge to your starting battery(s).

WHAT DO THE INDICATOR LIGHTS MEAN?

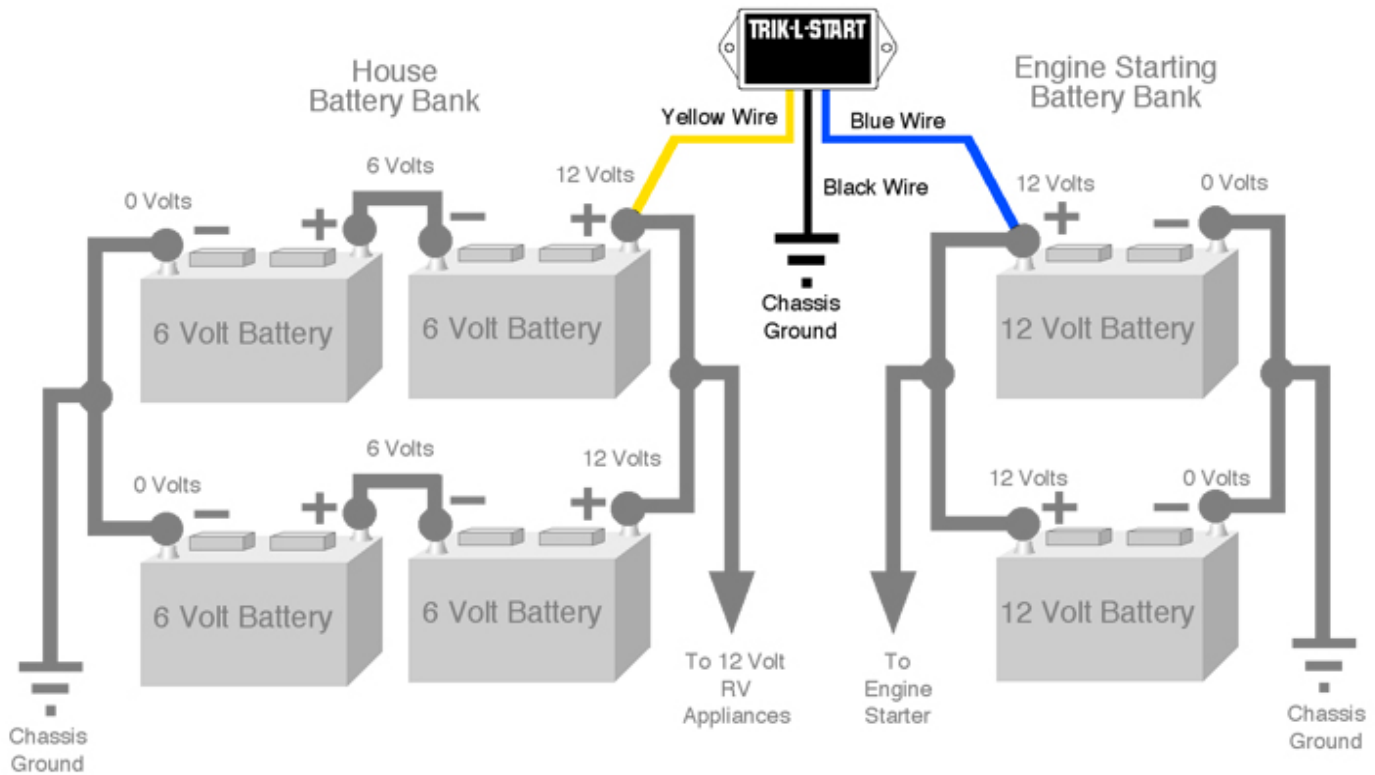


HOW IS TRIK-L-START™ CONNECTED? TRIK-L-START™ has just three wires to connect - the Yellow wire connects to the positive terminal on one of your house batteries, the Blue wire connects to the positive terminal on (one of) your starting battery(s), and the Black wire connects to chassis ground. Battery clips are supplied for hooking up your TRIK-L-START™ with quick, temporary connections, although most owners eventually connect it permanently with the crimp-type ring terminals that are supplied with each unit. Illustrated instructions for both temporary and permanent installation are also included.

On motor homes that have several starting batteries, the motor home manufacturer usually connects all of them in **parallel**, in order to produce 12 volts. Similarly, on motor homes that have several 12 volt house batteries, the motor home manufacturer has connected all of the house batteries in **parallel** - which means that TRIK-L-START™ can be connected to the positive posts on any of the house and starting batteries:

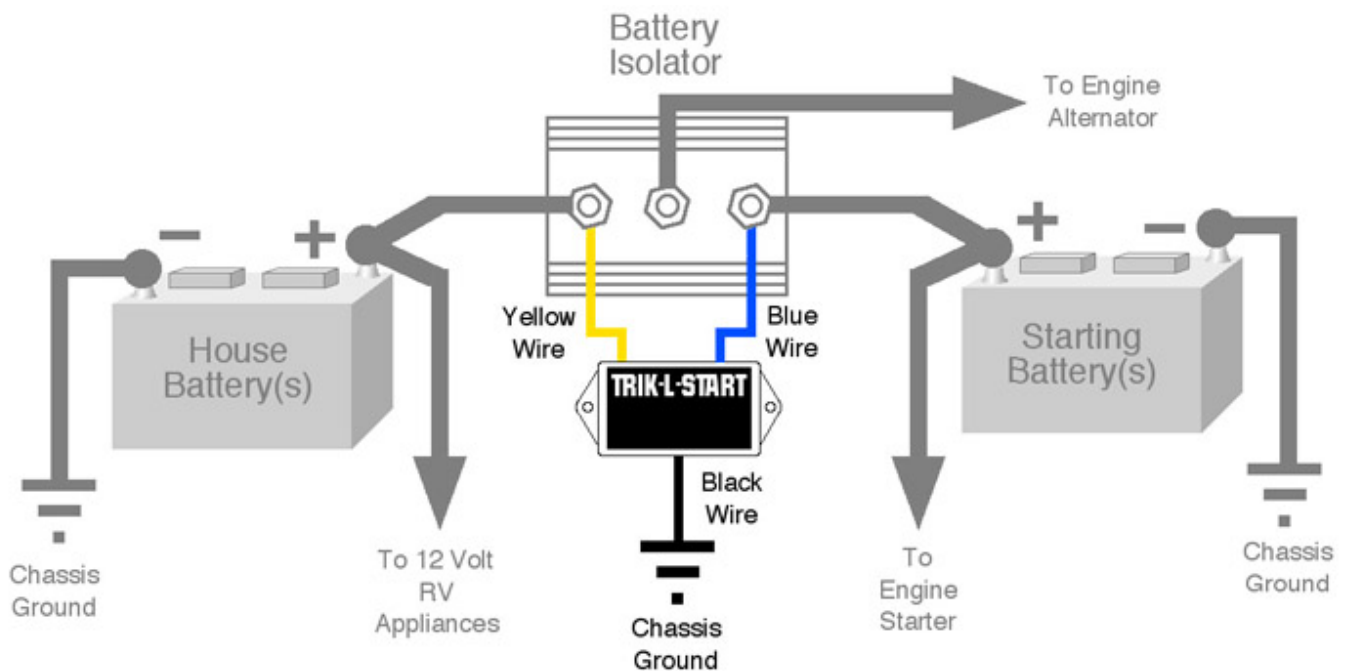


On motor homes that instead use 6 volt golf cart batteries for the house battery bank, the motor home manufacturer has connected pairs of these batteries in **series** to produce 12 volts - which means that TRIK-L-START™ should be connected to the positive post of a house battery that has 12 volts present - **NOT** to the positive post of a house battery that has just 6 volts on it:



Note that accidentally connecting TRIK-L-START™ to the wrong spot won't damage anything - You just won't be able to use it until the error is corrected.

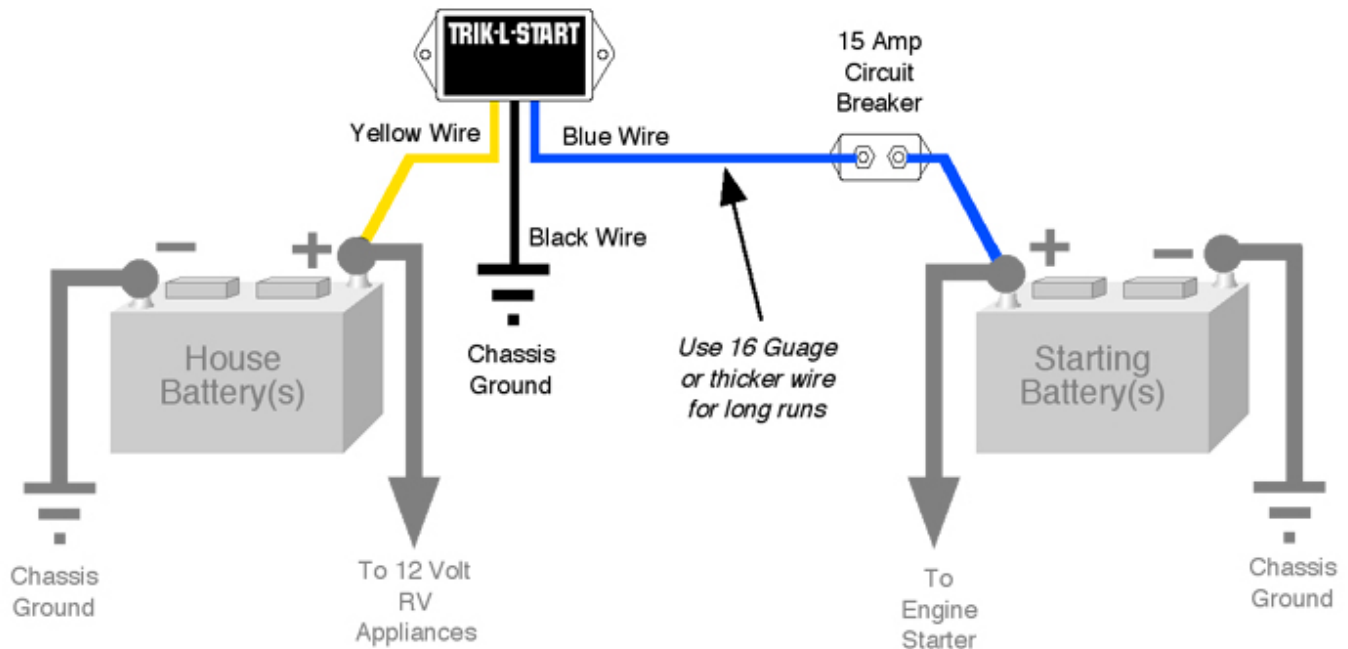
MY HOUSE AND STARTING BATTERIES ARE LOCATED A LONG DISTANCE APART FROM EACH OTHER. HOW DO I CONNECT THEM TO TRIK-L-START™? You can easily connect TRIK-L-START™ at your battery isolator or emergency start relay, thereby eliminating the need to route long wires to each battery bank:



This is also a convenient place to permanently mount the TRIK-L-START™ unit, using the included quick-crimp ring terminals and mounting screws. The installation instructions describe how to find your isolator or

emergency start relay, how to identify each wire connected to it, and how to connect TRIK-L-START™ to it. Also, for Winnebago/Itasca owners, the Winnebago website has downloadable wiring diagrams for most recent models (click [HERE](#) to access them). These diagrams are useful in identifying the location of the isolator or relay on your particular coach.

In the event that you can't locate your isolator (or can't gain access to it), extra wire can be spliced on to the TRIK-L-START™ unit in order to reach both battery banks. 16 gauge or thicker wire is recommended. For safety's sake, the wire end which is located a considerable distance away from the TRIK-L-START™ should have a 15 or 20 amp circuit breaker installed (immediately next to point where this end of the wire connects to the distant battery):



Failure to include this protection would allow the distant battery to supply almost unlimited current to a short circuit located anywhere along the wire's run, causing a potential fire hazard. A 15 amp waterproof circuit breaker is available for \$12.95 (free shipping) - Click [HERE](#) to order it separately, or click [HERE](#) to order it along with a TRIK-L-START™.

I WOULD LIKE TO INSTALL FUSES ON TRIK-L-START'S WIRES - IS THERE ANY PROBLEM WITH DOING THIS? Although TRIK-L-START™ is rated to carry 10 amps continuously, it is capable of momentarily passing considerably more current than that, until the built-in current limiting kicks in.

For this reason, **we don't recommend using a fuse** - Most fuses will blow faster than TRIK-L-START's built-in current limiting responds, rendering the unit inoperative until the blown fuse is discovered and replaced.

TRIK-L-START's built-in current limiting provides adequate protection in most installations that don't have long wire runs, without requiring any additional circuit protection. However, if you still want to install your own protection, **a self-resetting 15 or 20 amp DC circuit breaker is recommended in lieu of a fuse**. This ensures that even if the circuit breaker trips due some momentary overload, it will still reset on its own after the overload subsides. You can order a breaker [HERE](#), or buy one at most auto parts stores.

THE INSTALLATION INSTRUCTIONS DESCRIBE HOW TO PERMANENTLY WIRE TRIK-L-START™ TO MY MOTOR HOME'S "BATTERY ISOLATOR" OR "EMERGENCY START" RELAY. HOWEVER, IS THERE A PROBLEM WITH CONNECTING TRIK-L-START™ DIRECTLY TO THE BATTERY POSTS

INSTEAD? Either approach is fine. There are several advantages to connecting to the relay or isolator: (1.) The connections aren't exposed to battery acid, and (2.) it avoids the need for long wire runs between TRIK-L-START™ and widely-separated battery compartments. However, in situations where the relay or isolator can't be located (or is difficult to access), connections directly to the battery posts will work just fine.

MY ENGINE STARTING BATTERIES RUN DOWN WHENEVER I HAVEN'T DRIVEN THE COACH RECENTLY, BUT I JUST USE THE "EMERGENCY START" SWITCH TO GET THE ENGINE STARTED. IS THERE ANYTHING WRONG WITH THIS APPROACH? Unlike house batteries, engine starting batteries are

typically **NOT** of a deep-cycle design, and thus don't tolerate repeated deep discharges - Even a few deep discharges can permanently reduce their capacity and shorten their lifespan. So, in order to get acceptable service life out of your starting batteries, it is essential that they not be allowed to run down beyond the point where they can start the engine without assistance from the house batteries. TRIK-L-START™ helps accomplish this, by keeping the starting batteries in a fully-charged state. **RESULT:** No need to use the "Emergency Start" switch, and **MUCH** longer starting battery life.

IN THE ABSENCE OF ANY AC HOOKUPS, WILL TRIK-L-START™ KEEP MY STARTING BATTERIES CHARGED IF I RUN MY GENERATOR FOR A FEW HOURS EVERY WEEK? TRIK-L-START's maximum charging current is 10 amps, which means that it will supply up to 10 amp-hours of charge to your starting battery(s) for every hour of generator operation. Unfortunately, the parasitic loads in some motorhomes are large enough to drain 20 to 100 amp-hours over a week's time! Obviously, it would take many hours of generator operation to replenish this many amp-hours at TRIK-L-START's 10 amp maximum rate. For this reason, occasionally running the generator to recharge your starting battery(s) may be too time-consuming and wasteful of fuel to be practical. A much better solution is to either leave the motorhome connected to AC shore power, or install a solar panel - with either of these charging sources present, TRIK-L-START™ will do a VERY efficient job of keeping your starting battery(s) charged.

CAN TRIK-L-START™ BE USED WITH GELL OR AGM BATTERIES? Yes - TRIK-L-START™ is compatible with all lead-acid battery chemistries - Gell, Absorbed Glass Mat, and Flooded-Cell.

CAN TRIK-L-START™ BE USED WITH LITHIUM BATTERIES? We don't recommend it - TRIK-L-START's turn-on and turn-off characteristics are optimized for lead-acid batteries (Gell, Absorbed Glass Mat, and Flooded-Cell), and are not user-adjustable. Lithium batteries require turn-on and turn-off characteristics that are quite different from those of lead-acid batteries. If you have lithium house batteries - or anticipate installing them sometime in the future - we recommend using our [AMP-L-START™](#) instead, which has a user-adjustable setting specifically for lithium batteries.

DOES TRIK-L-START™ HAVE A DESULFATOR FEATURE? No - Although plate desulfation is sometimes useful on deep-cycle house batteries, it serves little purpose on batteries that are not routinely deep-cycled (i.e., engine starting batteries).

WHAT HAPPENS WHEN THE ENGINE IS RUNNING? TRIK-L-START™ is effectively disconnected from both sets of batteries whenever the engine is running, and will not affect your alternator's normal operation.

MY COACH HAS BATTERY DISCONNECT SWITCHES - HOW SHOULD THEY BE SET? Whenever TRIK-L-START™ is in operation, we recommend that your house and/or chassis battery switches be left in their CONNECTED positions. This ensures that TRIK-L-START™ is effectively connected to both battery banks, and to your house battery charger. When the RV is in storage (i.e., no house battery charging source or solar panels are operating), you might want to move them to their DISCONNECTED positions, in order to minimize the battery drain from various parasitic loads in your motor home.

I HAVE SOLAR PANELS CONNECTED TO MY HOUSE BATTERIES, BUT THEY DON'T KEEP MY STARTING BATTERY(S) CHARGED. WILL TRIK-L-START™ FIX THIS? Yes, TRIK-L-START™ will divert part of the current produced by your solar panels to keep your starting battery(s) charged. This makes it perfect for long-term storage applications in areas where shore power isn't available.

I'M PLUGGED INTO SHORE POWER MOST OF THE TIME, IN ORDER TO KEEP MY HOUSE BATTERIES CHARGED. WILL TRIK-L-START™ STILL WORK THIS WAY? Absolutely! As long as something is supplying a charge to your house batteries (regardless of whether it happens to be your DC converter, an AC inverter with built-in battery charger, a set of solar panels, or even a wind charger), TRIK-L-START™ will divert some of that current to keep your starting battery(s) charged.

I USE 6-VOLT GOLF CART BATTERIES FOR MY HOUSE BATTERY BANK. CAN TRIK-L-START™ STILL BE USED WITH THIS CONFIGURATION? Yes, since these batteries are series-connected in pairs to obtain 12 volts, they work no differently with TRIK-L-START™ than ordinary 12-volt batteries (see connection diagrams above).

HOW DOES THE LOW BATTERY ALARM WORK? Revision F and later TRIK-L-STARTs constantly measure the voltage from the house and starting battery banks. If either of these voltages drops below the point at which the battery has less than approx. 20 percent of its charge remaining (11.9 volts), the **Low Batt.** light illuminates, and a warning beeper sounds.

CAN THE LOW BATTERY ALARM BE DISABLED? Yes, the audible alarm can be disabled by disconnecting the TRIK-L-START from BOTH battery banks for a few seconds, and then RE-CONNECTING THE **STARTING BATTERY FIRST** (blue and black wires). From then on, as long as the TRIK-L-START is connected to either battery bank, no audible alarm will sound.

To re-enable the audible alarm, repeat the same procedure, but instead RE-CONNECT THE **HOUSE BATTERY FIRST** (yellow and black wires).

(NOTE: Disabling the Low Battery audible alarm has no effect on the Low Batt. indicator light - It still remains operational regardless of whether the audible alarm is enabled or disabled.)

HOW DO I KNOW THAT TRIK-L-START IS WORKING PROPERLY? Here's a handy test: After plugging your motorhome into AC shore power and turning on your DC power converter or inverter/charger, turn on your motorhome's headlights for a few minutes. The headlights should drain enough current from the starting battery(s) to activate TRIK-L-START™, resulting in either its **CHARGING** or **MAINTAINING** lights being lit. If either of these lights is lit, the unit is working properly. Note that during this test, your house batteries **MUST** be receiving a charge (from either your DC power converter or inverter/charger) - In the absence of any house battery charging source, TRIK-L-START™ will not maintain your starting battery(s).

WHAT'S THE DIFFERENCE BETWEEN TRIK-L-START™ AND OTHER BATTERY MAINTENANCE CHARGERS ON THE MARKET?

1. DC-POWERED: Most other battery maintenance chargers are designed to operate on AC power. Consequently, they only work when AC power is available, and they don't work with solar panels. Also, they aren't designed to be wired permanently into the motorcoach (i.e, they require connection to an extension cord). However, since TRIK-L-START™ is DC powered, it doesn't require a separate connection to AC power, thereby avoiding the electrical shock and fire hazards associated with running an extension cord into the engine or battery compartment. Furthermore, TRIK-L-START™ works when solar panels are the only charging source for your house batteries. This makes it perfect for situations where the RV is stored where AC power isn't available.

2. FULLY SEALED: Unlike most other maintenance chargers, TRIK-L-START™ is totally sealed - waterproof, dustproof and shockproof. It doesn't need to be mounted in a dry location, and is small enough (about the size of a bar of soap) to fit in the tightest spots.

3. BETTER PRICE, QUALITY AND SUPPORT: TRIK-L-START™ costs less than most other maintenance chargers. It's made in America, and backed by lifetime technical support - One email puts you in touch with the engineer who designed it.

HOW LONG IS THE WARRANTY? One year.

HOW DO I OBTAIN WARRANTY SERVICE OR TECHNICAL SUPPORT? Please e-mail us, with a brief description of the problem. Here's our e-mail address:

support@LSLProducts.net

In your e-mail, it's always helpful to include (1.) your house and starting battery DC voltages while the problem is occurring, measured at the TRIK-L-START, and (2.) what the indicator lights are doing (i.e., which ones on lit, are they flashing or glowing steadily, etc.) . This is very useful in trouble-shooting the problem.

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