The Shade Tree Mechanic

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Turning Up the Power

Those of you who drive vehicles with 6-volt systems know the electrical accessory challenges that can occur, even on shorter trips. You may leave home with your phone fully charged, but if you're using a navigation app, the battery can be quickly depleted and if you're not prepared how do you recharge that phone?

Or, if you're using a stand-alone navigation device such as a Garmin how long will the internal battery last before it needs a recharge? Again, how do you recharge it once it's low?

As both of our vehicles use 6-volt systems we've been in this situation more than once. When we leave for a tour, we prepare and take along a portable battery jump starter with an auxiliary 12-volt outlet (aka cigarette lighter outlet) but it's not always on board for those shorter trips.

In the past I've talked with a few others who are in the same situation and they have used step-up converters to provide a 12-volt power supply in their 6-volt vehicle. I've also considered doing the same and finally went online and started looking.

Step-up converters to convert 6-volt to 12-volt are available and are often sold by old car part suppliers being intended for use with sound systems. The only catch is they can be rather expensive in this form.

I did some searching on Amazon and found a couple of sources of 6-volt to 12-volt step-up converters at very reasonable prices. The one I purchased was only $13.99 and is capable of providing three amps of 12-volt power or 36 watts.

While this isn't much power it is capable of powering most cell phones or navigation devices. I checked our phone chargers and they only use about five watts while our Garmin power supply uses about 10 watts. Both of these are easily powered by this step-up converter. If you plan to use one, make sure to check your devices for power consumption.

Step-up converter that I purchased showing simple wiring detail.

Cigarette lighter extension cord that was used shown alongside the step-Up converter.

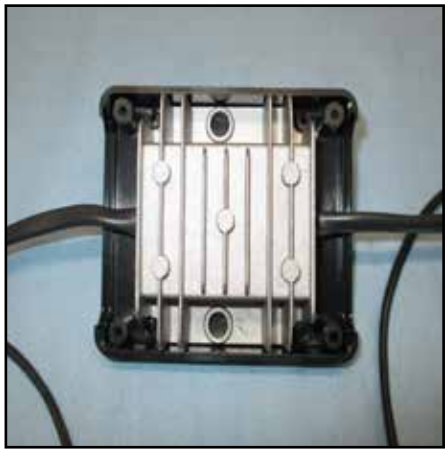
The converter I bought comes with lead wires for both the 6-volt input and the 12-volt output and the connections are simple, power and ground for each. Wiring this step-up converter to the male and female ends of a cigarette lighter extension cord makes a converter that can be easily moved from car to car.

Along with the converter I found some small plastic boxes, referred to as project boxes, that are just the right sized to securely hold this converter. Once assembled the box helps to pro-

tect the converter and makes the finished project look more complete.

To avoid the need for the extension cord the converter could also be spliced into the wiring for the lighter outlet. However, this wouldn't work in our cars as their 6-volt electrical systems use a positive ground while the 12-volt supply needs to be a currently conventional negative ground.

The cigarette lighter housings in both cars are metal and provide ground through direct contact with the dash. If the step-up converter were "upstream" and the power and ground were flipped, the lighter housing would become a direct short back to ground. Not a good thing as sparks and old vehicles just don't play well together!



Project box is just the right size to snugly hold the converter.

Completed project is compact and has a finished look.

Another option to recharge a cell phone is a portable battery pack. We've used these and they are compact and work well but you have to remember to charge them and take them along.

Portable battery packs are a good option for keeping a cell phone charged when 12-volt power is not available in the vehicle. Some even offer a flashlight but they also need to be charged.

For those devices that use more power than the step-up converter can supply, there is always a portable battery jump starter. These are available in a number of amperage ratings to power those higher demand electrical accessories and are priced according to the power they can provide.

By storing a portable battery jump starter in the trunk and running an appropriately sized wire into the passenger compartment a 6-volt vehicle can make use of all kinds of 12-volt electrical accessories. Turn signals for a car that was never equipped, an electric windshield wiper motor in place of a weak vacuum wiper motor or even a modern sound system. The list could go on and on.

A portable jump starter is also convenient as it can be easily removed from the vehicle and taken inside for charging. But, make sure you remember to keep the charging cord with the jump starter.

Fortunately, there are ways to live with a 6-volt vehicle in today's 12-volt accessory world. You just need to decide what approach works best for you.

Portable battery jump starters are available in traditional style with a 12-volt power outlet and a USB outlet in some models. Smaller, lighter models as shown in front typically offer only a USB outlet and most have a flashlight.