

Turn your truck into a generator

No matter how good your battery-powered saw or drill is, sometimes you need a plug-in tool to get the job done. Don't have an AC receptacle nearby? Well, if you have a truck, you already have most of the makings of a rolling AC generator. Just install an AC inverter and you'll have about 1,800 watts at your fingertips. The basic setup runs about \$450, and the upscale version (with auxiliary battery and isolator relay) about \$700. The installation takes just a few hours and requires only a drill and hand tools.

Component shopping

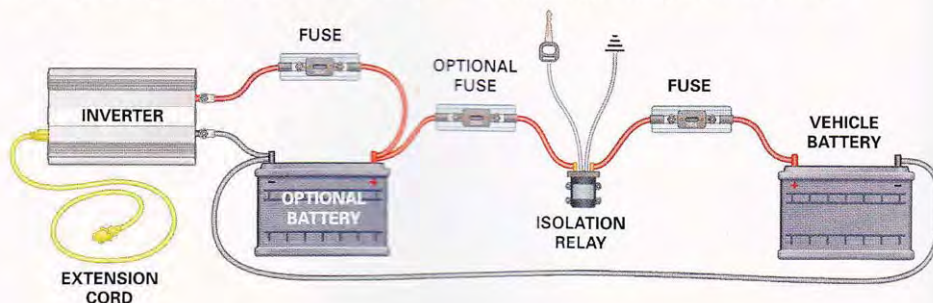
AC inverters come in two styles: modified and pure sine wave. A modified sine wave inverter (such as the AIMS No. PWRINV1800W; \$189 from theinverterstore.com) is less expensive and works great with power tools. For "cleaner" power to run a computer, TV or portable tool battery charger, buy a pure sine wave inverter. Be sure it has built-in overload, over-temperature, over-and-under voltage and fault protection, as well as neutral isolation.

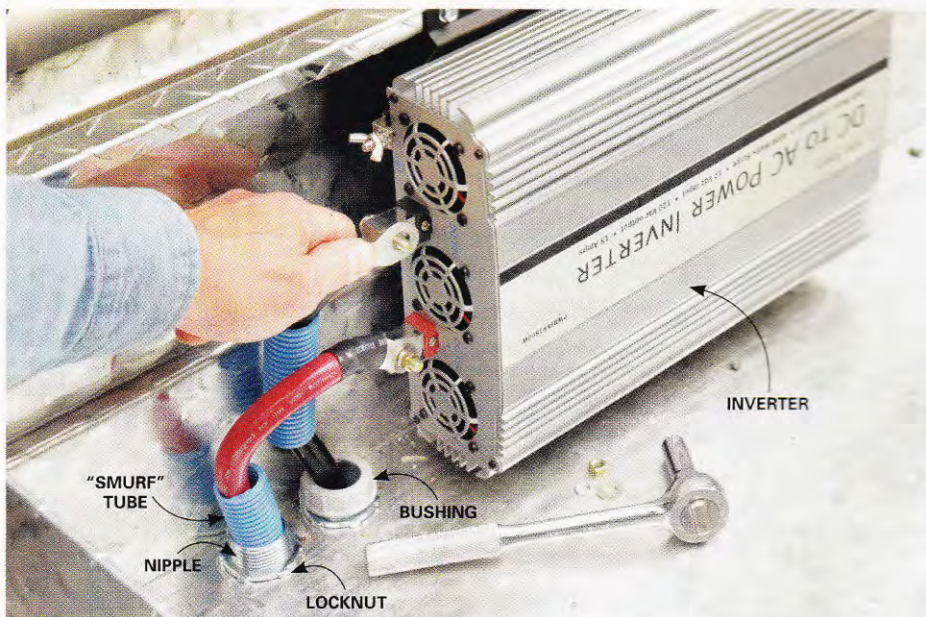
You'll also need one 200-amp fuse block/fuse kit (two if you add a second battery and three if you add a battery isolator). Order separate lengths of 1/0 cable for the positive and negative connections. Adding a 100Ah valve regulated lead acid (VRLA) absorbed glass mat (AGM) battery is optional. It adds about \$200 to the cost, but it helps prevent alternator overheating and helps maintain the voltage under heavy loads. Add an isolation relay (\$60) at the same time to prevent draining your main battery.



Figure A The complete system layout

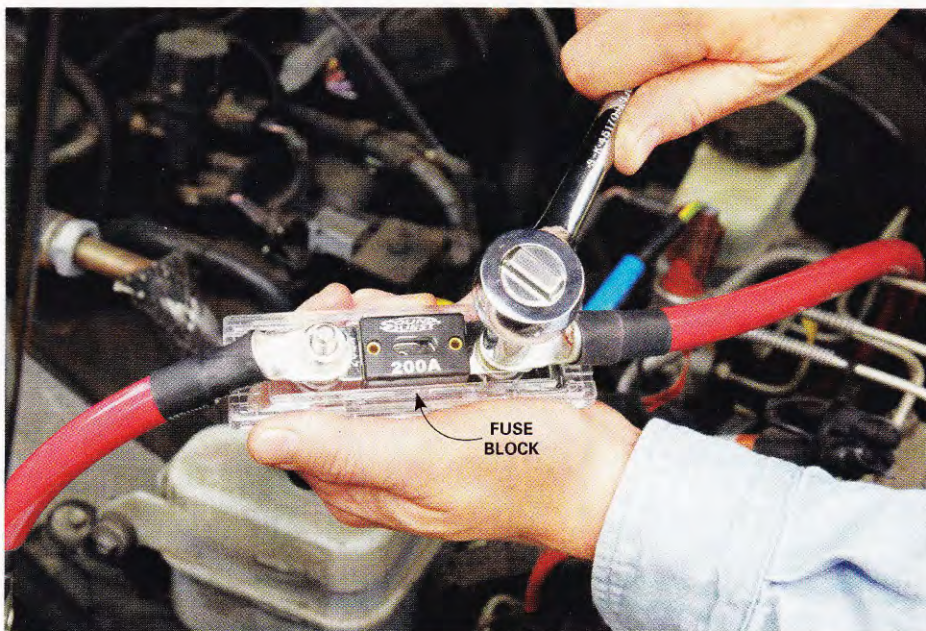
Locate one fuse block between the main battery and the relay. Mount a second one after the relay. Install the third one between the auxiliary battery and the inverter.





1 THREAD THE CABLES AND CONNECT

Pop 1-in. chase nipples into the holes in the bed and the box and spin on locknuts. Then push the “smurf” tube and cable through the nipples and connect them to the inverter.



2 SECURE THE FUSE BLOCK

Clamp the cable ring terminals under the serrated washers and install the fuse. Then tighten the nut and install the protective cover.

Select a mounting location

Inverters create a lot of heat, so mount yours in a spot with adequate airflow like your truck bed toolbox or on the floor behind the driver’s seat. Open the toolbox lid or the cab door when the inverter’s in use.

Run the cabling

Every vehicle is different, so I can’t give you a “one-size-fits-all” wiring scheme. But the most important rule is to keep both cables away from the engine block, pulleys, steering components, and the exhaust manifold and pipes. And run a separate negative cable from the inverter back to the main battery. To protect the cables under the vehicle, run them (especially the positive cable) inside flexible plastic 3/4-in. conduit. (This Carlon Flex-Plus Blue product, nicknamed “smurf” conduit by electricians, is available in 10-ft. lengths in the electrical department at home centers.) Then drill two 1-in. holes in the truck bed and two in the toolbox and install electrical fittings (**Photo 1**). Next, mount the inverter.

Mount the optional battery isolation relay under the hood and connect the trigger wire to a switch-powered “hot” wire. Install the optional auxiliary battery close to the inverter. See **Figure A** for the complete wiring diagram.

Finish the job at the battery

Connect the positive cable to a fuse block before attaching it to the battery (**Photo 2**). Finish the job by connecting the negative cable to the battery.

ASK THE MECHANIC

Octane woes

Q I put 87 octane in a vehicle that requires 93 octane. My buddy told me the computer is smart enough to compensate and I shouldn’t worry. But now my “Check Engine” light is on and I’m really worried. What should I do?



A Your buddy was partially right. The computer is smart enough to detect the pre-ignition knock caused by the lower octane. To compensate, the computer retards the ignition timing. But sometimes that’s not enough to prevent misfires and you can end up with a “Check Engine” light.

There’s an easy fix, though. Just zip on down to the auto parts store and buy a few bottles of octane booster. Follow the directions on the label for the correct amount to add to your tank. Then drive the beast and refill with 93 octane when you reach a half tank. The “Check Engine” light should go out by itself and the computer should return your engine to normal soon thereafter.