Florida tinkerer develops hybird electric alternative to traditional gasoline auto

By Richard Truett
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You can just imagine the shock a gas station attendant would get opening the fuel filler door on Doug Cobb's 1984 Honda.

He would find two regular electrical plug receptacles — and no place to put the gasoline.

Mr. Cobb, owner of Solar Car Corp., and his band of associates yanked the engine out of a 1984 Civic and replaced it with a high-performance electric motor that gets part of its energy from the sun.

A special battery charger developed by Mr. Cobb and his engineers allows the Honda to be plugged into a standard wall socket and quickly recharged. There are also two ways to generate electricity while the vehicle is in motion.

There's still a Honda engine under the hood, but it is an eight-horsepower, one-cylinder unit that can be used to power the car for longer distances at higher speeds, such as cruising on interstates, or it can run a generator and charge the vehicle's batteries.

Mr. Cobb designed what he calls a "two-stage" brake pedal. Touch it, and you hear a click and the car begins to slow down slightly. Before the brakes actually are engaged the momentum of the car is used to drive a generator that puts back into the battery pack some of the energy used to accelerate the car.

It's all in the name of efficiency that four ways are used to get power to the batteries, Mr. Cobb says. That's key to making electric and hybrid vehicles practical, usable forms of transportation.

Because Mr. Cobb's Honda can run on either gasoline or electricity, it is called a hybrid car.

Auto industry officials think that hybrid cars — those that are driven by two power sources such as a combination of fossil fuel or hydrogen and electric power — may be one of the best future alternatives to traditional gasoline-powered cars that are destroying the environment.

For Mr. Cobb, the future is now.

He and a few engineers have worked a minor miracle in a short time for a little money using existing technology.

In just two months and for only $20,000, using easily acquired parts and technology, they've built a hybrid car that accelerates as well as most gasoline-powered four-cylinder vehicles, and that has a projected cruising range of 100 miles, longer if you park it in the sun.

Here's how it works: The outside of the white Honda is covered with solar cells that use the sun to generate electricity that is stored in a special battery pack located where the gas tank — now removed — used to be. Solar power is how most of the car's energy is generated.

A spritely amount of acceleration comes from a torquey electric motor that is connected to the original Honda five-speed manual transmission.

It gets complicated when Mr. Cobb explains how all the various mechanical parts of the Honda hybrid car function.

There's a good reason why Mr. Cobb sometimes sounds like Dr. Emmett Brown, the fast-talking whiz from the "Back to the Future" movies who turned a DeLorean into a time machine. Mr. Cobb is a master electrician, an electrical contractor and a devoted tinkerer who believes that by assembling already existing technology, he can help put the brakes on automotive pollution.