

District III EMS
Quality & Improvement
“Case of the Month – September 2005”
Hybrid Vehicle Safety

*If you have any questions or comments, please feel free to contact me at
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The growing popularity of hybrid vehicles is a step toward cleaner air and less dependence on gasoline. But for rescuers at accident scenes, they represent a potential new danger: a network of high-voltage circuitry that may require some precise cutting to save a trapped victim. That worries those who must cut into cars to rescue people inside.

Hybrids draw power from two sources, typically a gas or diesel engine combined with an electric motor. The battery powering the electric motor carries as much as 500 volts, more than 40 times the strength of a standard battery.

Manufacturers assure us that if the ignition switch is turned off and the 12-volt battery is disconnected these cars “should” be safe to work on, but they stop short of saying that there definitely won’t be high voltage in the electrical cables.

Take home message: Proceed with caution. Disable the electrical system. Do not cut any portion of the orange high-voltage wiring harness. Do not touch any bare or exposed wires of this high-voltage system. Do not tamper with the high voltage battery pack.



Published guidelines for the safe extrication of victims from a hybrid crash are as follows:

QUICK REFERENCE GUIDE

Hybrid Vehicle Emergency Procedures

- Hybrid vehicle identification.
- Vehicle stabilization.
- Access to passenger compartment.
- Turn key OFF and remove from ignition.
- Check that green light goes out.
- Disconnect 12-volt battery.
 - There are a number of different hybrid models on the market today, the most popular being the Honda Insight and Toyota Prius
 - Turning off the ignition key should shut down the electrical system and prevent the flow of current into the cables from the battery or motor
 - It is suggested that the key be removed from the ignition and placed on the dash where all rescuers can see it
 - After the key is removed from the ignition, the standard 12-volt battery is disconnected in the usual way. The battery on the Prius is located inside the driver's rear wheelwell within the trunk. On the Insight, the 12-volt battery is under the hood. Disconnecting the battery cable disables the high-voltage battery controller, which prevents electric current from flowing into the orange cables from the high-voltage battery.
 - Do not cut the orange conduits that contain the high voltage lines, or try to disconnect the high voltage battery packs.

