



Understanding and Diagnosing Hybrid / Electric Vehicles

Understanding

- Advantages of Hybrid vehicles
- Different types of hybrids
- Major hybrid subsystems shared by all hybrid vehicles
- Electric assist and regeneration, autostop, Honda valve pause engine shutdown, Toyota synergy power split system, Ford systems
- Batteries, battery management, Inverters, DC to DC conversion, DC to 3 phase AC inverter, 3 phase synchronous drive motors, drive by wire, brake by wire, electric power steering, electric AC.
- Proper safety techniques for working on HV/High Power electronics. CAN and other serial networks in Hybrids, and much more. We dig into the hardware hands on, and explore all aspects of the Hybrid drive.

Our hands on HEV class focuses on giving you a working knowledge of current and future Hybrid technology, and the proper techniques necessary to safely diagnose, repair and service Hybrid Vehicles.

Diagnosing

- Overview of sub systems, What sensors the BCM, MCM, Power inverter look at and how that information is used to control all aspects of the hybrid drive
- Scan tool shoot out to determine best tool for the money Enhanced and OEM.
- Cat III test equipment, Labscope, DVOM, hi and low current probes, and Megohmmeter, how to use them to speed your diagnosis.
- The value of current ramping and reference waveforms for quick localization of problems.
- Getting the information you need for proper troubleshooting of hybrid systems.

Instructors will guide you through this 3 day, 30 plus hour no nonsense class. Each instructor has unique qualifications that make this class a one of a kind learning experience. All of our instructors have been involved with hands on hybrid training and curriculum development.

Instructor: "G" Jerry Truglia

