

Product Name :

Hybrid System Model - Electrical Operation, Toyota Prius

Product Code :

TechnicalLab0395

Description :

Hybrid System Model - Electrical Operation, Toyota Prius

We all wish we had our own hybrid automobile to take apart, re-purpose, and use to show others exactly how this fascinating piece of technology works. Just because this may not be a possibility for you doesn't mean you can communicate the basics of hybrid technology. Using this educational model it's easy to:

- Demonstrate a Motor Driven solid model of a parallel hybrid system that is used in the Toyota Prius.
- Teach the 5 stages of the hybrid system: Light Acceleration, Normal Driving, Full Acceleration, Deceleration and Stopping, and when the HV Battery is Charging.
- Show a motor driven example of this system with operation panel for students to understand the input of the engine motor.
- Have an economical and effective means of delivering hands-on interaction.
- Have a working model made from durable metal and resin that will last for years to come.

This model contains illustrations that demonstrate how the Prius operates in various driving modes:

>>During Light Acceleration:

During light acceleration at low speeds, the vehicle is powered by the electric motor. The gasoline engine is shut off.

>>During Normal Driving:

During normal driving, the vehicle is powered mainly by the gasoline engine. The gasoline engine also powers the generator to recharge the battery pack.

>>During Full Acceleration:

During full acceleration, such as climbing a hill, both the gasoline engine and the electric motor power the vehicle.

>>During Deceleration and Stopping:

During deceleration, such as when braking, the vehicle regenerates kinetic energy from the front wheels to produce electricity that recharges the battery pack. When the vehicle is stopped, the gasoline engine and electric motor are off. However, the vehicle remains on and operational.

>>When the HV Battery is Charging:

When the HV battery voltage is lowered to a certain value, the engine output increases to charge the HV battery (the engine rotates while the motor is fixed).

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