

Common Features

The following are the most common features of hybrids:

Motor Assist:

The electric motor will provide extra power drawn from the battery when the internal combustion engine is performing a more energy intensive activity (e.g. accelerating). The motor assist enables the vehicle to use a smaller more fuel-efficient engine without giving up vehicle performance.

Idle Stop:

Turns off the engine when the vehicle is stopped. Once the accelerator is pressed the engine immediately turns back on. This ensures that the vehicle is not using fuel when the engine is not required to propel the vehicle.

Engine-Off Drive- EV Mode:

The electric motor propels the vehicle at lower speeds. Since the engine is not being used during acceleration or deceleration no fuel is being used and no emissions are being released.

Regenerative Braking:

When decelerating the brakes capture some of the energy and store it in the battery for later use. Read a technical description of regenerative braking."Mild" vs. "Strong" Hybrids

While the term hybrid refers to a type of vehicle there are different levels of "hybridization" among hybrids on the market. Different manufacturers have been implementing their respective hybrid technology packages in different ways.

Two broad terms (and variations of these terms) have evolved to differentiate hybrids based on the features used in a vehicle - Mild and Strong. Generally, a mild hybrid will incorporate Idle Stop and Regenerative Braking while a strong hybrid offers Idle Stop, Regenerative Braking, Motor Assist, and Electric Power Drive. A mild hybrid system has an advantage of costing less but saves less fuel compared to a strong hybrid.

Examples of two different hybrids serving different markets are GM's 2005 model Silverado light truck (a mild hybrid in which the hybrid system is not used for motive power) and Ford's Escape SUV (a strong hybrid).