

THS II (TOYOTA HYBRID SYSTEM II)

■ DESCRIPTION

1. General

Under the “Hybrid Synergy Drive” concept, the '07 Camry Hybrid model uses THS II (Toyota Hybrid System II). This system optimally effects cooperative control of a 2AZ-FXE engine and a high-speed, high-output MG2 through a hybrid transaxle that provides excellent transmission performance.

Furthermore, it uses a variable-voltage system consisting of a high-output HV battery with a nominal voltage of DC 244.8 V, and a boost converter that boosts the operating voltage of the system to a maximum voltage of DC 650 V.

2. Driving Performance

This system uses a variable-voltage system that consists of a boost converter to boost the operating voltage to a maximum voltage of DC 650 V. It is able to drive the MG1 (Motor Generator No.1) and MG2 at a high voltage, and minimizes the electrical loss associated with the supply of electric power at a smaller current. Thus, it is able to operate the MG1 and MG2 at high speeds and high outputs.

A high driving force is achieved through the synergy effect of the high-speed, high-output MG2 and the high-efficiency 2AZ-FXE engine.

3. Fuel Economy Performance

- By optimizing the internal construction of MG2, this system realizes a high level of regenerative capability, thus realizing a high level of fuel economy performance.
- This system stops the engine while the vehicle is idling, and stops the engine as much as possible under conditions in which the operating efficiency of the engine is poor, allowing the vehicle to operate using only MG2. Under the conditions in which the operating efficiency of the engine is favorable, the engine operates to drive the vehicle using MG1 while generating electricity. Thus, this system effects the input-output control of driving energy in a highly efficient manner to realize a high level of fuel economy.