05JDO–01

SYSTEM DESCRIPTION

1. ENGINE IMMOBILIZER SYSTEM DESCRIPTION

The engine immobilizer system is designed to prevent the vehicle from being stolen. This system uses a transponder key ECU that stores the key codes of authorized ignition keys. If an attempt is made to start the engine using an unauthorized key, the ECU sends a signal to the ECM to prohibit fuel delivery and ignition, effectively disabling the engine.

2. FUNCTION OF MAIN COMPONENT

Component	Outline
Transponder key coil/amplifier	When key is inserted in ignition key cylinder, key coil receives key's code. Then amplifier amplifies ID code and outputs it to transponder key ECU.
Unlock warning switch	Detects if key is in ignition key cylinder and outputs results to transponder key ECU.
ECM	Through SFI communication, ECM receives ID verification results from transponder key ECU. ECM also verifies ECUs. Then judgement of whether or not to immobilizer engine is made.
Security indicator	Depending on operation of theft warning ECU (theft deterrent ECU), interior security indicator lamp illuminates or starts blinking.

3. SYSTEM FUNCTION

When the transponder key ECU detects that the key unlock warning switch is ON, the ECU provides current to the transponder key coil and produces a faint electric wave. A transponder chip in the key grip and receives the faint electric wave. Upon receiving the faint electric wave, the transponder chip outputs a key ID code signal. The transponder key coil receives this signal, the transponder key amplifier amplifies it, and then the signal is transmitted to the ECU.

The ECU matches the key's ID code with the vehicle's ID code, which was previously registered in the ECU, and then communicates the results to the ECM using SFI communication.

After the identification results show that the key's ID code matches the vehicle's ID code and the ECU has confirmed their match: 1) the immobilizer system does not immobilizer the engine and the engine starting controls (fuel injection control and ignition control) enter standby mode; and 2) the ECU transmits a security indicator signal that communicates "indicator off" to the theft warning ECU (theft deterrent ECU). Then, the theft warning ECU turns off the security indicator lamp.