

5. Engine Control System

General

The engine control system of the 1HD-FTE engine on the new Land Cruiser (100 series) is basically same in construction and operation as that of the 1HD-FTE engine on the previous model.

The engine control system for the 1HD-FTE engine has following systems.

System	Outline	New		Previous
		Australia and General Countries	Europe	Australia and General Countries
Fuel Injection Volume Control	Based on the signals received from the sensors, the engine ECU determines the fuel injection volume in accordance with the engine condition.	○	○	○
Fuel Injection Timing Control	Based on the signals received from the sensors, the engine ECU determines the fuel injection timing in accordance with the engine condition.	○	○	○
Idle Speed Control	The engine ECU determines the idle speed in accordance with the engine condition, and controls the fuel injection volume in order to achieve the target idle speed.	○	○	○
Stable Idling Control	Corrects the fuel injection volume that is directed to each cylinder during idling, thus reducing engine vibration.	○	○	○
Cruise Control	Controls the vehicle speed by regulating the injection volume in accordance with the instructions received from the cruise control ECU that is integrated in the engine ECU	○	○	○
Intake Restrictor Control	Fully close the intake restrictor valve in order to reduce the vibration when the engine is stopped.	○	○	○
EGR Control	Controls the EGR volume in accordance with the engine condition.	—	—	○
	Based on the signals received from the sensors, the engine ECU determines the EGR volume via EGR valve and intake restrictor valve in accordance with the engine condition.	○	○	—
Turbo Pressure Control	Based on the signals received from the sensors, the engine ECU controls the actuator via VRV in accordance with the engine condition.	—	○	—
Intake Heater Control	Controls the length of time when the current is applied to the intake heater in accordance with the coolant temperature.	○	○	○
Air Conditioner Cut-off Control	<ul style="list-style-type: none"> By turning the air conditioning compressor ON or OFF in accordance with the engine condition, drivability is maintained. Also controls the power heater on the models equipped with a power heater. 	○	○	○
Engine Immobiliser	Prohibits fuel delivery and ignition if an attempt is made to start the engine with an invalid ignition key.	○	○	○
Diagnosis	When the engine ECU detects a malfunction, the engine ECU diagnoses and memorizes the failed section.	○	○	○
Fail-Safe	When the engine ECU detects a malfunction, the engine ECU stops or controls the engine according to the data already stored in the memory.	○	○	○