■ FUNCTION

The cruise control system has the following functions:

Function	Outline	
Constant Speed Control	1GR-FE Engine	The ECM compares the actual vehicle speed with the set speed and if the vehicle speed is higher than the set speed, it activates the throttle control motor in the throttle closing direction. If the vehicle speed is lower than the set speed, it activates the throttle motor in the throttle opening direction.
	1KD-FTV Engine	The ECM compares the actual vehicle speed with the set speed. If the vehicle speed is higher than the set speed, the ECM decreases the injection volume by regulating the EDU. If the vehicle speed is lower than the set speed, the ECM increases the injection volume by regulating the EDU.
Set Control	When the cruise control switch is pressed to the SET/– side and released while the vehicle is running within a cruising speed control range [approx. 40 km/h (25 mph) or more] with the main switch turned on, the ECM stores the vehicle speed and controls it at that speed constantly.	
Low Speed Limit Control	The low speed limit is the lowest speed that the cruise control can be set at and is designed at approx. 40 km/h (25 mph). The cruise control cannot be set below that speed. If the vehicle speed drops below that speed while running in cruise control mode, the cruise control is canceled automatically. However, the set speed is kept in the memory.	
Accelerator Control	When the driver keeps the cruise control switch pushed to the RES/+ side while the vehicle is running in cruise control mode, the system accelerates the engine in the following manner: on the models with the 1GR-FE engine, the system actuates the throttle control motor in the direction to open the throttle; and on the models with the 1KD-FTV engine, the system controls the EDU to increase the injection volume. As the vehicle continues to accelerate, the ECM stores the vehicle speed at the time the driver's hand is released from the cruise control switch. From then on, the ECM controls the vehicle at that speed.	
Tap-up Control	When the difference between the actual vehicle speed and the set speed is less than 5 km/h (3 mph), the set speed can be increased by approx. 1.6 km/h (1 mph) each time by operating the cruise control switch to the RES/+ side quickly within approx. 0.6 seconds.	
Coast Control	1GR-FE Engine	When the cruise control switch is kept pushed to the SET/– side while running in cruise control mode, the throttle control motor is energized in the throttle closing direction and the vehicle keeps decelerating. The ECM stores the vehicle speed when the hand is released from the cruise control switch. From then on, the ECM controls the vehicle speed at that speed constantly.
	1KD-FTV Engine	When the cruise control switch is kept pushed to the SET/– side while the vehicle is running in cruise control mode, the ECM decreases the injection volume by regulating the EDU. As the vehicle continues to decelerate, the ECM stores the vehicle speed at the time the driver's hand is released from the cruise control switch. From then on, the ECM continues to control the vehicle at that speed.
Tap-down Control	When the difference between the actual vehicle speed and the set speed is less than 5 km/h (3 mph), the set speed can be lowered by approx. 1.6 km/h (1 mph) each time by operating the cruise control switch to the SET/– side quickly within approx. 0.6 seconds.	
Resume Control	After cruise control mode is canceled by any of the cancel switches, that mode can be resumed and controlled at the set speed by operating the cruise control switch in the RES/+ direction providing that the vehicle speed has not dropped below the low speed limit [approx. 40 km/h (25 mph)]. ● If the vehicle speed is below the low speed limit, the system will not delete the speed in the memory, allowing cruise control mode to be resumed once the vehicle speed reaches above the low speed limit.	

(Continued)

Function	Outline
Manual Cancel Control	If any of the following signals are sent to the ECM while the vehicle is running in cruise control mode, cruise control mode is canceled accordingly. ● Stop light switch ON signal (Depress the brake pedal) ● Clutch start switch OFF signal (Depress the clutch pedal/ models with manual transmission) ● D position circuit in neutral start switch OFF signal (models with automatic transmission) The shift lever is moved from D or 4 to any position except D or 4*1 The shift lever is moved from D or 3 to any position except D or 4*2 ● CANCEL switch on signal ● Main switch off signal
Automatic Cancel Control	When any of the following conditions occurs during cruise control driving, the speed that is set in the memory is cleared to cancel cruise control mode. Furthermore, the CRUISE control indicator light blinks until the main switch is turned off, and the operation of the cruise control is disabled until the main switch is turned on again. ● Stop light switch open or short circuit ● The vehicle speed signal abnormal
	When any of the following conditions occurs during cruise control driving, the speed that is set in the memory is cleared to cancel cruise control mode. Furthermore, the CRUISE control indicator light is turned off, and the operation of the cruise control is restricted until these malfunctions are resolved. ● ETCS-i malfunction*1 ● Common-rail fuel injection system abnormal*2
	When any of the following conditions occurs during cruise control driving, the speed that is set in the memory is cleared to cancel cruise control mode. Furthermore, the CRUISE control indicator light blinks until the main switch is turned off, and the operation of the cruise control is disabled until the ignition switch is turned off again. ● Stop light switch input signal abnormal ● Cancel circuit abnormal ● Microcomputer in ECM abnormal*2
	When any of the following conditions occurs during cruise control driving, cruise control is canceled. (Cruise control can be restarted.) ● The vehicle speed falls below the low speed limit (approx. 40 km/h). The set speed in the memory is maintained. ● The vehicle speed drops more than 16 km/h below the speed set for uphill driving. The set speed in the memory is cleared.
Other Cancellation Items	● While the vehicle is being driven under cruise control mode, cruise control mode will be canceled if the VSC is activated. (The set speed will be retained in memory.)*3 ● When the ignition switch is turned off, set speed in the memory is cleared.
Shift-down Control	When the vehicle is cruising uphill, shift-down control may be performed by the ECT (Electronic Control Transmission). The ECM permits the ECT ECU to shift up when the ECM judges the end of cruising uphill based on the throttle valve angle. If shift-down control is performed during accelerator or resume control, the ECM permits the ECT ECU to shift up after accelerator or resume control is completed.
Diagnosis	When the ECM does not receive a vehicle speed signal for a predetermined period of time during cruising, or when cruise control is canceled (automatic cancel) by a malfunction in the cruise control switch, stop light switch or vehicle speed signal, the engine immediately blinks the CRUISE main indicator light on the combination meter on and off five times to alert the driver of the system malfunction. The contents of malfunctions are coded and stored in the ECM.

*1: Models with 1GR-FE engine
*2: Models with 1KD-FTV engine
*3: Models with VSC

■ DIAGNOSIS

- When cruise control is canceled (automatic cancel) by a malfunction, the ECM immediately blinks the CRUISE control indicator light on the combination meter to alert the driver of the system malfunction. The contents of malfunctions are coded and stored in the ECM.
- An intelligent tester II can be used to read 5-digit codes. For details, see the Hilux Repair Manual.