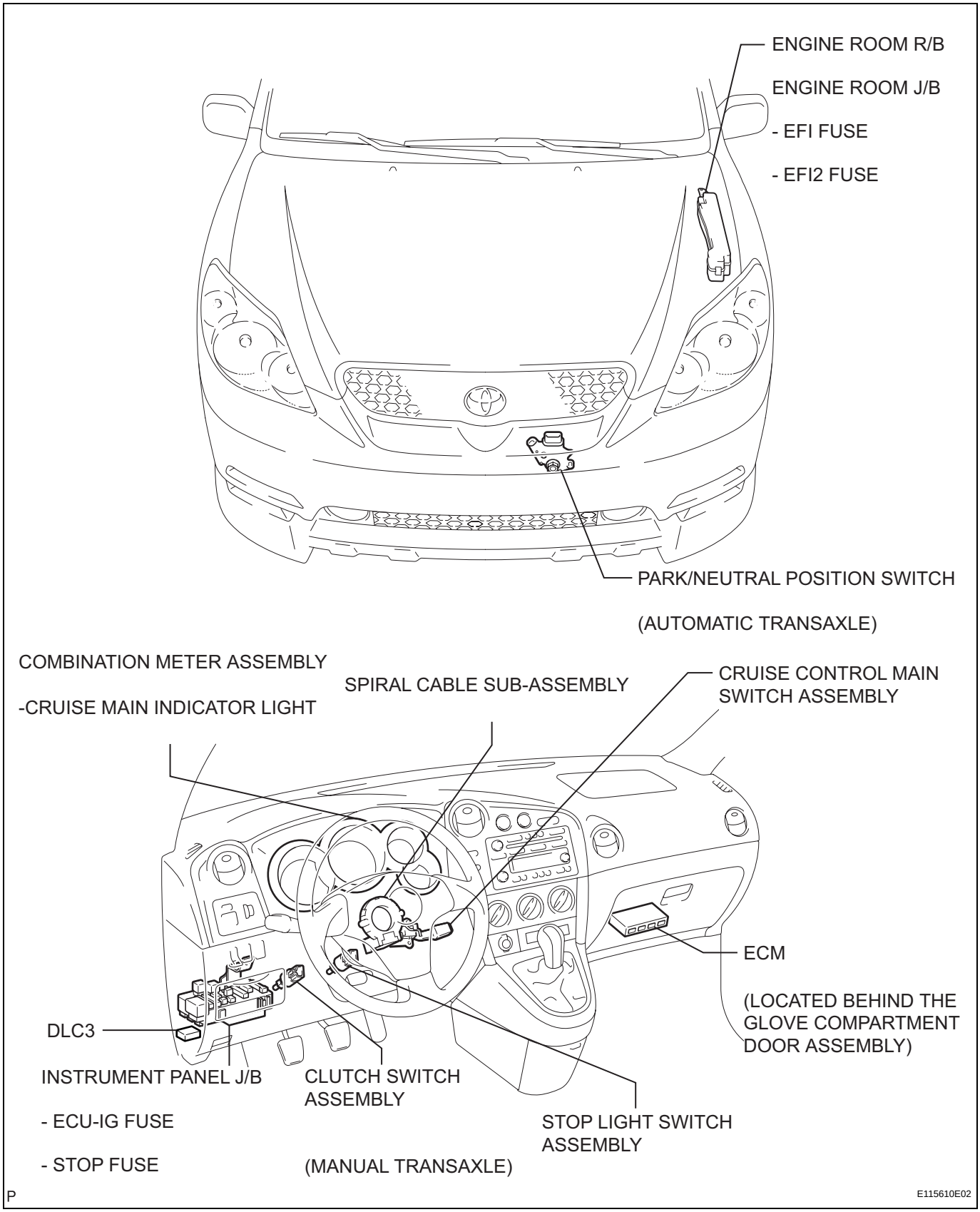
PARTS LOCATION



SYSTEM DESCRIPTION

1. CRUISE CONTROL SYSTEM

The computer which controls the cruise control system is combined with the ECM, and the actuator uses the throttle position sensor and motor. A microcomputer is built into the ECM to control functions including: ON-OFF, - (COAST)/SET, + (ACCEL)/RES (RESUME), CANCEL, vehicle speed operation, motor output control, and overdrive control.

- The ECM compares the driving vehicle speed from the speed sensor with the stored vehicle speed set through the cruise control main switch assembly. The ECM instructs the throttle valve motor of the throttle position sensor and motor to close the valve when the driving vehicle speed is greater than the stored vehicle speed, and instructs it to open the valve when the driving speed is less than the stored speed.
- The ECM receives signals such as ON-OFF, - (COAST)/SET, + (ACCEL)/RES (RESUME), and CANCEL from the cruise control main switch assembly and executes them.
- The ECM turns on the indicator in the combination meter based upon the ON signal from the cruise control main switch assembly.
- The ECM cancels the cruise control system when it detects that the brake pedal is depressed, based on the stop light switch signal.
- The ECM cancels the cruise control system when it detects that the shift position is changed from D to any position except D, based on the park/neutral position switch assembly signal.

2. LIMIT CONTROL

(a) Low speed limit

The lowest possible limit of the speed setting range is set at approximately 40 km/h (25 mph). The cruise control system cannot be set when the driving vehicle speed is below the low speed limit. Cruise control operation will be automatically canceled but the stored vehicle speed will be retained when the vehicle speed drops below the low speed limit 40 km/h (25 mph) while the cruise control is in operation.

(b) High speed limit

The highest possible limit of the speed setting range is set at approximately 200 km/h (125 mph). The cruise control system cannot be set when the driving vehicle speed is over the high speed limit. Speed up using + (ACCEL)/RES (RESUME) with the cruise control main switch assembly also cannot be set beyond the high speed limit.

3. OPERATION OF CRUISE CONTROL

The cruise control main switch operates seven functions: SET, COAST, TAP-DOWN, RESUME, ACCEL, TAP-UP and CANCEL. The SET, TAP-DOWN and COAST functions, and the RESUME, TAP-UP and ACCEL functions are operated with the same switch. The cruise control main switch assembly is an automatic return type switch which turns on only while operating it in each arrow direction and turns off after releasing it.

(a) SET CONTROL

Vehicle speed is stored and constant speed control is maintained when the switch is released from - (COAST)/SET while driving with the cruise control main switch ON-OFF button on (the CRUISE main indicator light is on), and the vehicle speed is within the set speed range (between the low and high speed limits).

(b) COAST CONTROL

The ECM makes the cruise control demanding throttle opening angle zero degrees and decelerates the vehicle (the throttle valve is not fully closed due to idle speed control, etc.) when - (COAST)/SET on the cruise control main switch is pressed and held while the cruise control system is in operation. Vehicle speed, when the cruise control main switch is released from - (COAST)/SET, is stored and constant speed control is maintained.

(c) TAP-DOWN CONTROL

When tapping down on the cruise control main switch to - (COAST)/SET (for approx. 0.5 second) while the cruise control system is in operation, the stored vehicle speed decreases each time by approximately 1.6 km/h (1.0 mph). However, when the difference between the driving and the stored vehicle speed is more than 5 km/h (approx. 3.1 mph), the vehicle speed, when the cruise control main switch is released from - (COAST)/SET, will be stored and constant speed control is maintained.

(d) ACCELERATION CONTROL

The throttle valve motor of the throttle position sensor and motor is instructed by the ECM to open the valve when + (ACCEL)/RES (RESUME) on the cruise control main switch is pressed and held while the cruise control system is in operation. Vehicle speed, when the cruise control main switch is released from + (ACCEL)/RES (RESUME), is stored and the vehicle is controlled at a constant speed.

(e) TAP-UP CONTROL
When tapping up on the cruise control main switch to + (ACCEL)/RES (RESUME) (for approx. 0.5 second) while the cruise control system is in operation, the stored vehicle speed increases each time by approximately 1.6 km/h (1.0 mph). However, when the difference between the driving and the stored vehicle speed is more than 5 km/h (approx. 3.1 mph), the stored vehicle speed will not be changed.

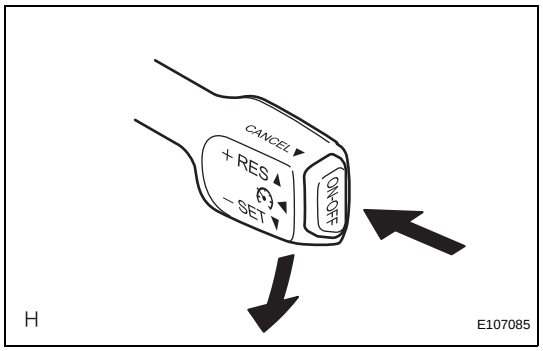
(f) RESUME CONTROL
If cruise control operation was cancelled under the manual cancel condition (other than by turning cruise control main switch ON-OFF button off), and if driving speed is within the limit range, pushing the cruise control main switch to + (ACCEL)/RES (RESUME) restores vehicle speed memorized at the time of cancellation, and maintains constant speed control. Even when cruise control is canceled automatically due to the vehicle speed decreasing below the low speed limit, since the stored vehicle speed remains in the memory.

(g) MANUAL CANCEL CONTROL
Doing any of the following cancels the cruise control system while in operation. (The stored vehicle speed in the ECM is maintained.)
- Depressing the brake pedal
- Depressing the clutch pedal (Manual Transaxle)
- Moving the shift lever to any position except D (Automatic Transaxle)
- Pushing the cruise control main switch to CANCEL
- Pushing the cruise control main switch ON-OFF button off (The stored vehicle speed in the ECM is not maintained.)

(h) OTHER CANCEL CONTROL
Cruise control will be halted if VSC starts operation while driving (Vehicle speed will be memorized).

4. AUTO CANCEL (FAIL-SAFE)
This system has an automatic cancellation function (fail-safe) (for details, See page CC-12).

ROAD TEST



1. PROBLEM SYMPTOM CONFIRMATION

(a) Inspect the SET function.
(1) Push the ON-OFF button on.
(2) Drive at the required speed (40 km/h (25 mph) or higher).
(3) Push the cruise control main switch to - (COAST)/SET.
(4) After releasing the switch, check that the vehicle cruises at the set speed.

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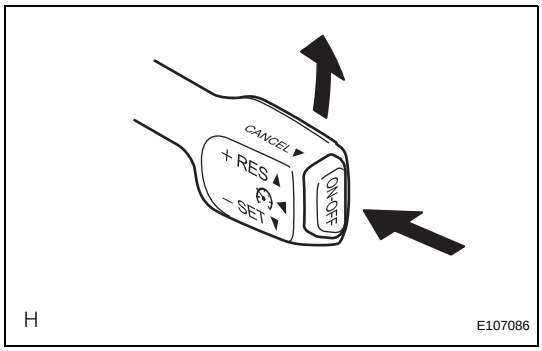
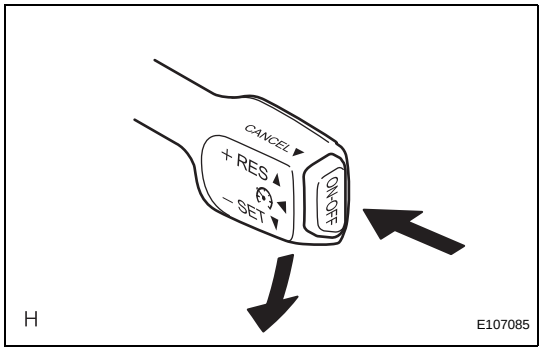
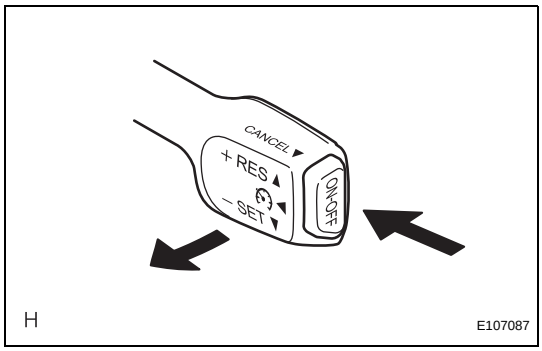


(b) Inspect the + (ACCEL) function.
(1) Push the ON-OFF button on.
(2) Drive at the required speed (40 km/h (25 mph) or higher).
(3) Push the cruise control main switch to - (COAST)/SET.
(4) Check that vehicle speed increases while the cruise control main switch is pushed to + (ACCEL)/RES (RESUME), and that the vehicle cruises at the newly set speed when the switch is released.
(5) Momentarily push the cruise control main switch to + (ACCEL)/RES (RESUME) and then immediately release it. Check that vehicle speed increases by approximately 1.6 km/h (1.0 mph) (Tap-up function).

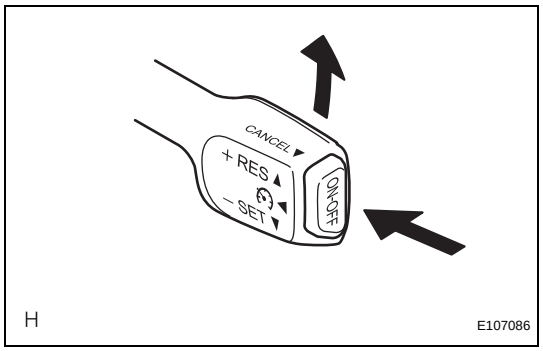


(c) Inspect the - (COAST) function.
(1) Push the ON-OFF button on.
(2) Drive at the required speed (40 km/h (25 mph) or higher).
(3) Push the cruise control main switch to - (COAST)/SET.
(4) Check that vehicle speed decreases while the cruise control main switch is pushed to - (COAST)/SET, and that the vehicle cruises at the newly set speed when the switch is released.
(5) Momentarily push the cruise control main switch to - (COAST)/SET, and then immediately release it. Check that vehicle speed decreases by approximately 1.6 km/h (1.0 mph) (Tap-down function).



(d) Inspect the CANCEL function.
(1) Push the ON-OFF button on.
(2) Drive at the required speed (40 km/h (25 mph) or higher).
(3) Push the cruise control main switch to - (COAST)/SET.
(4) When doing one of the following, check that the cruise control system is cancelled and that the normal driving mode is reset.
- Depressing the brake pedal
- Depressing the clutch pedal (Manual Transaxle)
- Moving the shift lever to any position except D (Automatic Transaxle)
- Pushing the ON-OFF button off
- Pulling the cruise control main switch to CANCEL

Reference:
Cruise control will be halted if VSC starts operation while driving.



(e) Inspect the RES (RESUME) function.
  (1) Push the ON-OFF button on.
  (2) Drive at the required speed (40 km/h (25 mph) or higher).
  (3) Push the cruise control main switch to - (COAST)/SET.
  (4) When doing one of the following, check that the cruise control system is cancelled and that the normal driving mode is reset.
    - Depressing the brake pedal
    - Depressing the clutch pedal (Manual Transaxle)
    - Moving the shift lever to any position except D (Automatic Transaxle)
    - Pulling the cruise control main switch to CANCEL
  (5) After pushing the cruise control main switch to + (ACCEL)/RES (RESUME) at a driving speed of more than 40 km/h (25 mph), check that the vehicle restores the speed prior to the cancellation.