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| **Title:** CRUISE CONTROL: CRUISE CONTROL SYSTEM: CRUISE CONTROL; 2013 MY RAV4 [12/2012 - ] | | |

# CRUISE CONTROL

### 1. FUNCTION OF MAIN COMPONENTS

| COMPONENT | | FUNCTION |
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| Cruise Control Main Switch Assembly | ON/OFF Button | Turns on/off the power to the cruise control system. |
| | Cancel | A cancel signal can be output to the ECM through the operation of this switch. |
| | +RES | The acceleration function and resume control function can be performed by operating this switch. A signal is output to the ECM when this switch is operated. |
| | -SET | The deceleration function and set control function can be performed by operating this switch. A signal is output to the ECM when this switch is operated. |
| Speed Sensor | | Detects the vehicle speed and transmits a signal via the skid control ECU to the ECM. |
| Throttle Body Assembly | Throttle Control Motor | Adjusts the throttle valve to the limiter position in accordance with signals from the ECM. |
| | Throttle Position Sensor | Transmits the throttle valve position information to the ECM. |
| Stop Light Switch Assembly | | Detects the depressing of the brake pedal and transmits a signal to the ECM. |
| Park/Neutral Position Switch Assembly | | Detects the shift lever position and transmits a signal to the ECM. |
| Combination Meter Assembly | Cruise Main Indicator Light | • Illuminates when the ON/OFF button has been pressed to turn the cruise control system on.<br>• If the ECM detects a malfunction, this light illuminates in yellow to warn the driver. |
| | Cruise SET Indicator Light | Illuminates when the -SET switch on the cruise control main switch assembly has been pressed to set the cruise control system. |
| ECM | | • Controls the cruise control system in accordance with signals from the switches and sensors.<br>• If the ECM detects a malfunction in the cruise control system, it will store a Diagnostic Trouble Code (DTC). |

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| Transmission Control Switch | Detects the shift lever upward or downward position switch operation and transmits a signal to the ECM. |

## 2. FUNCTION

(a) The cruise control system has the following functions:

| FUNCTION | OUTLINE |
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| Set Control | When the ON/OFF button is turned on and the cruise control main switch assembly is pressed to the -SET direction and released, the ECM stores the vehicle speed in the memory and continues to control the vehicle at that speed. The set speed is between 40 km/h (25 mph) and 200 km/h (125 mph). Furthermore, when the cruise control system is running, the cruise SET indicator light on the combination meter assembly illuminates. |
| Coast Control | When the cruise control main switch assembly is kept pushed to the -SET direction while the cruise control system is running, the throttle control motor is energized in the throttle closing direction, and the vehicle keeps decelerating. The ECM stores the vehicle speed when the cruise control main switch assembly is released. From then on, the ECM controls the vehicle speed at that speed constantly. |
| 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 approx. 1.6 km/h (1 mph) each time by operating the cruise control main switch assembly in the -SET direction quickly within approx. 0.6 seconds. |
| Accelerator Control | When the cruise control main switch assembly is kept pushed to the +RES direction while the cruise control system is running, the throttle control motor is energized in the throttle opening direction. The vehicle keeps accelerating and the ECM stores the vehicle speed when the cruise control main switch assembly is released. From then on, the ECM controls the vehicle speed at that speed constantly. |
| 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 approx. 1.6 km/h (1 mph) each time by operating the cruise control switch in the +RES direction quickly within approx. 0.6 seconds. |
| Low Speed Limit Control | The low speed limit is the lowest speed that the cruise control system can be set to and is set at approx. 40 km/h (25 mph). The cruise control system cannot be set below that speed. If the vehicle speed drops below that speed while the cruise control system is running, the cruise control system is canceled automatically. |
| Resume Control | After the cruise control system is canceled for any reason other than a malfunction or operating the ON/OFF button, the mode can be resumed and controlled at the set speed by operating the cruise control switch in the +RES direction when the vehicle speed returns above the low speed limit (approx. 40 km/h [25 mph]). |
| Shift Down Control | When the vehicle is traveling uphill using cruise control, automatic transmission control may cause the transmission to shift down. During shift down control, when the end of uphill travel is determined, the transmission will shift up after a certain period of time. When the transmission shifts down during the accelerator control or the resume control, the transmission will shift up after the accelerator control or the resume control ends. |
| Manual Cancel | If any of the following signals is sent to the ECM while the cruise control system is running, the cruise control system is canceled accordingly:<br>• Stop light switch assembly on signal (depress the brake pedal)<br>• D position circuit in the parl/neutral position switch assembly off signal (the shift |

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| Control | lever is moved from D to N).<br>• The 1st, 2nd or 3rd range is selected in the S mode position.<br>• CANCEL switch on signal<br>• ON/OFF button off signal |
| Automatic Cancel Control | When any of the following conditions occurs while the cruise control system is running, the set speed in the memory is cleared to cancel the cruise control system. Furthermore, the cruise main indicator light turns on in yellow until the ON/OFF button is turned off, and the operation of the cruise control system is disabled until the ON/OFF button is turned on again.<br>• The stop light switch assembly has an open or short circuit.<br>• The vehicle speed signal is abnormal. |
| | When any of the following conditions occurs while the cruise control system is running, the set speed in the memory is cleared to cancel the cruise control system. Furthermore, the operation of the cruise control system is disabled until the ON/OFF button is turned on again.<br>• The ETCS-i has a malfunction. |
| | When any of the following conditions occurs while the cruise control system is running, the set speed in the memory is cleared to cancel the cruise control system. Furthermore, the cruise main indicator light turns on in yellow until the ON/OFF button is turned off, and the operation of the cruise control system is disabled until the ignition switch is turned off.<br>• The stop light switch input signal is abnormal.<br>• The cancel circuit has a malfunction. |
| | When the following condition occurs while the cruise control system is running, the cruise control system is canceled. The cruise control system can be resumed at the set speed by operating the cruise control main switch assembly in the -SET or +RES direction providing that the vehicle speed is above the lower speed limit (approx. 40 km/h [25 mph]).<br>• The vehicle speed falls below the low speed limit (approx. 40 km/h [25 mph]). The set speed in the memory is maintained. |
| | When the following condition occurs while the cruise control system is running, the cruise control system is canceled. The cruise control system can be resumed at the set speed by operating the cruise control main switch assembly in the -SET direction providing that the vehicle speed is above the lower speed limit (approx. 40 km/h [25 mph]).<br>• The vehicle speed drops more than 16 km/h (10 mph) below the set speed. The set speed in the memory is cleared. |
| Other Cancellation Items | While the vehicle is being driven under cruise control system, cruise control will be canceled if the VSC is activated. The set speed in the memory is maintained. |

## 3. DIAGNOSIS

(a) If a malfunction occurs in the cruise control system, the ECM cancels the cruise control system. The ECM turns the cruise main indicator light in yellow to inform the driver of a malfunction. At this time, the ECM memorizes the malfunction in the form of a 5-digit Diagnostic Trouble Code (DTC). For details of the DTC, refer to the Repair Manual.