CONSTANT SPEED CRUISE SYSTEM

35

GENERAL INFORMATION

Description

Turn on the constant speed cruise control switch after vehicle reaches a certain speed. Set vehicle speed can be maintained by constant speed cruise control without depressing accelerator pedal. Cruise control system consists of following components:

- Constant speed cruise control indicator
- Constant speed cruise control switch (multi-function switch)

Do not use cruise control in following situations. Otherwise, it may result in a loss of vehicle control and cause an accident, resulting in serious injury or even death.

- In traffic congestion areas.
- On roads with sharp bends.
- On winding roads.
- On wet and slippery roads, such as those covered with rain, ice or snow.
- On steep hills. Vehicle speed may be higher (or lower) than set speed.
- In emergency lanes.

Operation

Constant speed cruise system mainly consists of constant speed cruise control switch and constant speed cruise control indicator.

With constant speed cruise control switch on, press SET/- button of cruise control switch when vehicle speed is within range of 40 km/h to 130 km/h, then constant speed cruise system starts to operate.

Cruise control switch is connected with BCM, which monitors and outputs different input states to ECU via CAN system. Based on current vehicle speed, ECU controls electronic throttle valve opening angle, so as to enable normal driving without depressing accelerator pedal.

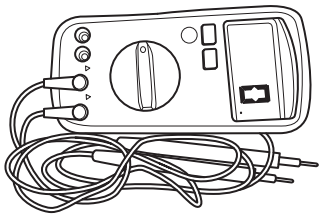
Specifications

Torque Specifications

Description	Torque (N·m)
Ground Wire Harness Fixing Screw	0.7 ± 0.2
Steering Wheel Quick Button Trim Cover Fixing Screw	0.7 ± 0.2

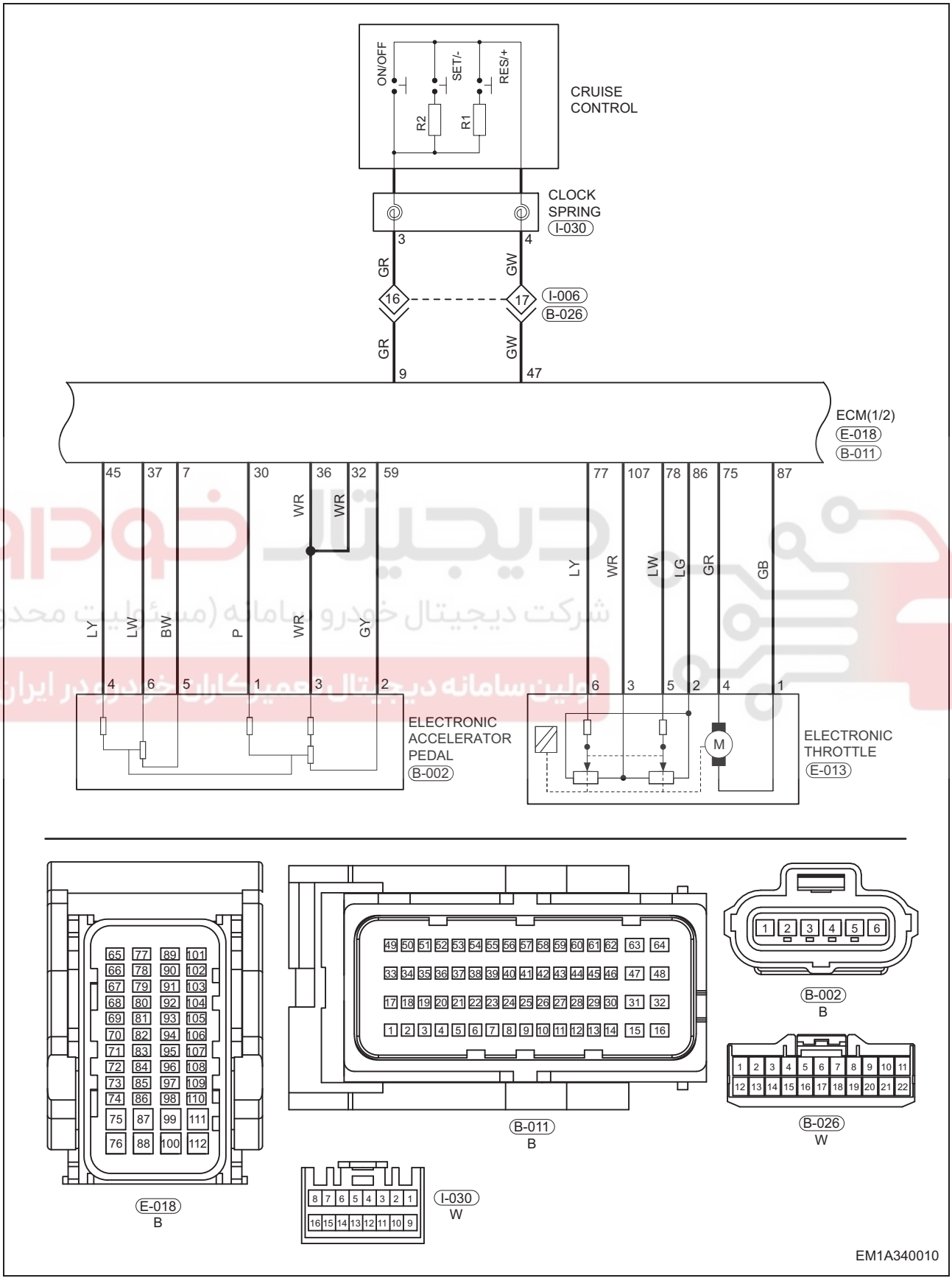
Tool

General Tool

Digital Multimeter	 RCH0000002

Circuit Diagram

Cruise Control System



DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:
Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair or adjust faulty components, or replace as necessary.

Symptom	Suspected Area	See page
Vehicle speed cannot be set (cruise control indicator turns off)	Constant speed cruise control switch	35-8
	Wire harness or connector	-
	Body Control Module (BCM)	-
Vehicle speed cannot be set (cruise control indicator turns on)	Constant speed cruise control switch	35-8
	Wire harness or connector	-
	Instrument cluster	-
	Body Control Module (BCM)	-
Turning off cruise control switch does not cancel cruise control	Constant speed cruise control switch	35-8
	Wire harness or connector	-
	Body Control Module (BCM)	-
	ECM	06-293
Depressing brake pedal does not cancel cruise control	Wire harness or connector	-
	Body Control Module (BCM)	-
	ECM	06-293

Diagnosis Tool

Digital Multimeter

When using digital multimeter:

- Troubleshoot electrical malfunctions and wire harness system.
- Look for basic fault.
- Measure voltage, current and resistance.

Intermittent DTC Troubleshooting

If malfunction is intermittent, perform the followings:

- Check if connectors are loose.
- Check if wire harnesses are worn, pierced, pinched or partially broken.
- Wiggle related wire harnesses and connectors and observe if signal is interrupted in related circuit.
- Look for the data that has changed or the DTC to reset during wiggle test.
- Look for broken, bent, protruded or corroded terminals.
- Inspect mounting areas of Engine Control Module (ECM), wire harnesses or wire harness connectors and so on for damage, foreign matter, etc. that will cause incorrect signals.
- Check and clean all wire harness connectors and grounding parts related to malfunction.
- Remove Engine Control Module (ECM) from malfunctioning vehicle and install it to a new vehicle and perform test. If DTC cannot be cleared, there is malfunction in Engine Control Module (ECM). If DTC can be cleared, reinstall Engine Control Module (ECM) to original vehicle.
- If multiple trouble codes were set, refer to circuit diagrams to look for any common ground circuit or power supply circuit applied to the DTC.
- Refer to any Technical Bulletin that may apply to malfunction.

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect normal operation of circuit. Check the ground points as follows:

1. Remove ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in good condition.
4. Reinstall ground bolt or nut securely.
5. Check if add-on accessories interfere with ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check if they are installed correctly. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

Diagnosis Procedure

HINT:
Use following procedures to troubleshoot the constant speed cruise system.

1	**Vehicle brought to workshop**

NEXT

2	**Check battery voltage**

Standard voltage: 11 to 14 V

If voltage is below 11 V, recharge or replace battery before proceeding to next step.

NEXT

3	**Customer problem analysis**

NEXT

4	**Check for DTCs**

NEXT

5	**Troubleshoot according to Diagnostic Trouble Code (DTC) chart, then go to step 8**

NEXT

6	**Adjust, repair or replace**

NEXT

7	**Conduct test and confirm malfunction has been repaired**

NEXT

8	**End**

ON-VEHICLE SERVICE

Constant Speed Cruise Control Switch

Removal

HINT:
Constant speed cruise control switch is located on multi-function switch.

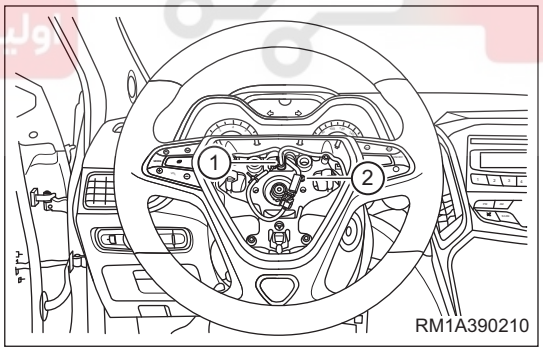
⚠ WARNING

- Be sure to read the precautions for SRS airbag before removing steering wheel quick button (See page 31-90).

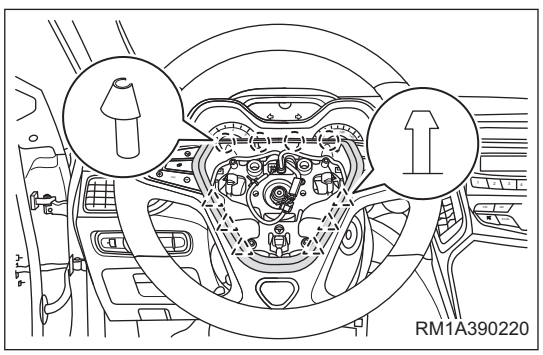
CAUTION

- Be sure to wear necessary safety equipment to prevent accidents, when removing constant speed cruise control switch.
- DO NOT damage the clip on steering wheel quick button trim cover, when removing constant speed cruise control switch.

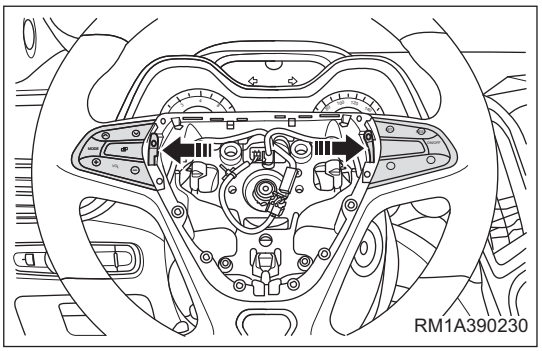
1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the driver airbag (See page 31-89).
4. Remove the steering wheel quick button trim cover.
   a. Disconnect steering wheel quick button connector (1), and remove fixing screw (2) from ground wire harness.
   (Tightening torque: 0.7 ± 0.2 N·m)



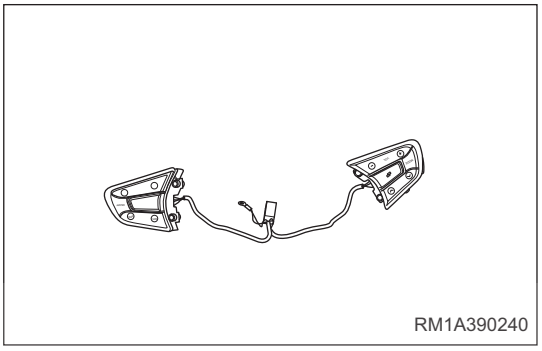
   b. Using a screwdriver wrapped with protective tape, pry off steering wheel quick button trim cover strips.



5. Remove the steering wheel quick button.
   a. Using a screwdriver wrapped with protective tape, pry up claws (arrow) on steering wheel quick button.

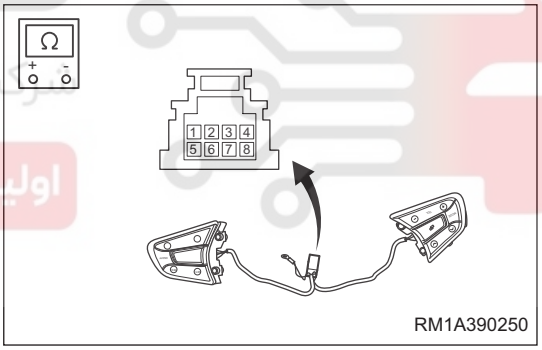


   b. Remove the steering wheel quick button.



Inspection

1. Check the constant speed cruise control switch.
   a. Check constant speed cruise control switch for damage. Replace if necessary.
   b. Check constant speed cruise control switch connector for damage or poor terminal connection. Replace if necessary.
   c. Using a digital multimeter, check for continuity between terminals of constant speed cruise control switch according to table below.



Multimeter Connection	Switch Condition	Specified Condition
Terminal 1 - Terminal 2	ON	Continuity
Terminal 1 - Terminal 2	Press RES/+ when in ON position	2.2 kΩ
Terminal 1 - Terminal 2	Press SET/- when in ON position	0.6 kΩ

If result is not as specified, replace steering wheel quick button.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to prevent damage to other components, when installing constant speed cruise control switch.
- Install each connector into place when installing constant speed cruise control switch.
- Tighten fixing screw to specified torque when installing constant speed cruise control switch.
- Check steering wheel quick button for normal operation, after installing constant speed cruise control switch.