

Description

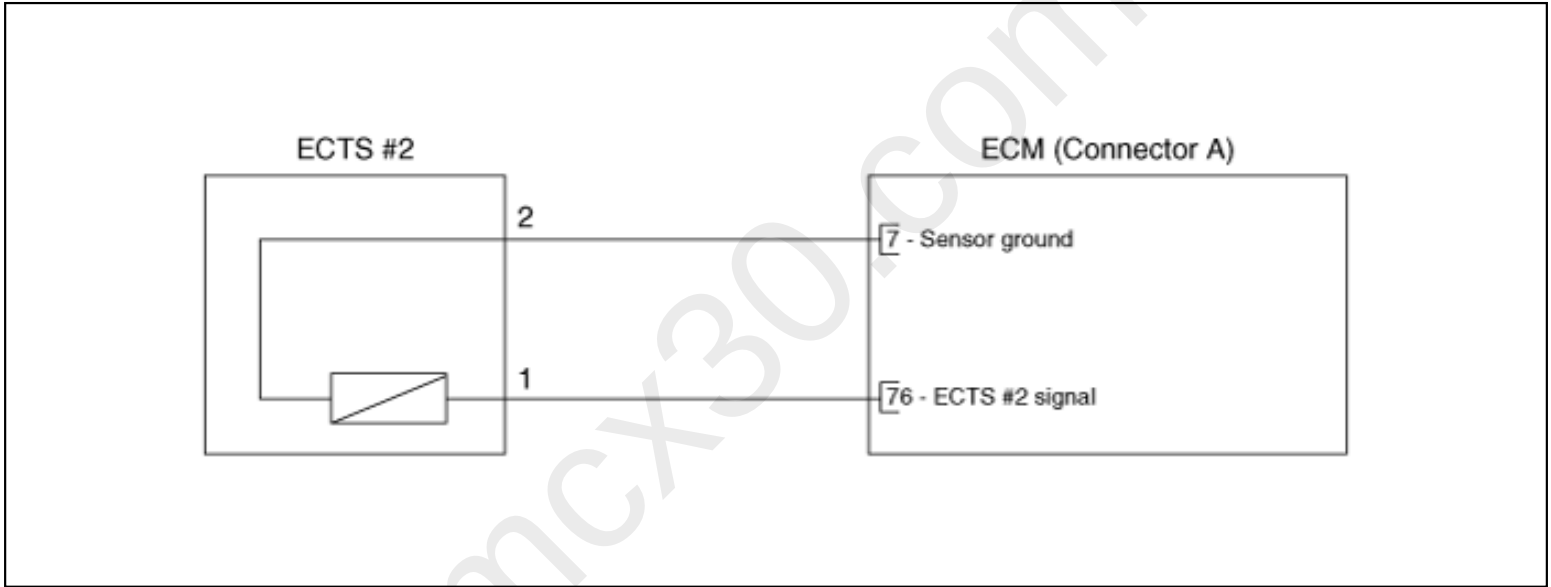
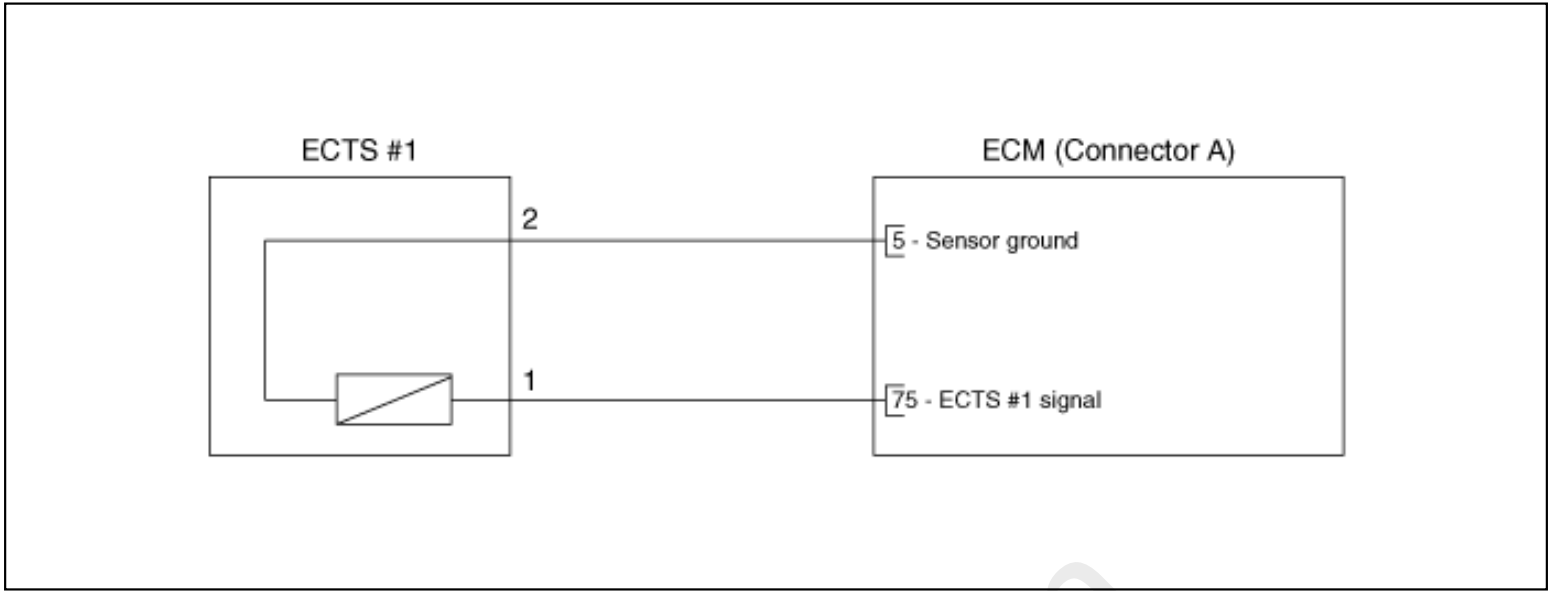
The Engine Coolant Temperature Sensor (ECTS) is located in the cylinder block and cylinder head, and measures the temperature of the engine coolant. The thermistor of the cooling water temperature and resistance has a negative temperature coefficient (NTC) where the resistance decreases when the temperature rises and the resistance increases when the temperature decreases. The ECTS # 1 mounted on the cylinder head measures the coolant temperature from the engine, and the ECTS # 2 mounted on the cylinder block measures the coolant temperature entering the engine. The ECTS # 1 and the ECTS # 2 deliver the cooling water temperature to the ECM (Engine Control Module), which delivers the signal to the Thermal Management Module valve (TMM). The TMM that receives the signal controls the flow of coolant to adjust the coolant temperature. In addition, the ECTS calibrates the fuel injection quantity and the ignition timing based on the information of the cooling water temperature to prevent the engine failure and an engine-hunting during a cold start test.



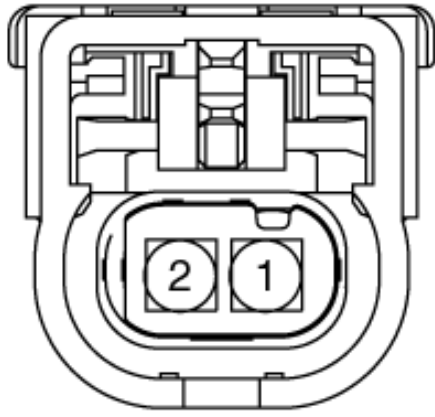
Specification

Temperature [°C (°F)]	Resistance (kΩ)
-40 (-40)	41.74 - 54.54
-30 (-22)	23.54 - 29.94
-20 (-4)	14.13 - 16.83
-10 (14)	8.39 - 10.22
0 (32)	5.28 - 6.29
10 (50)	3.42 - 4.00
20 (68)	2.31 - 2.59
30 (86)	1.55 - 1.86
40 (104)	1.08 - 1.21
50 (122)	0.77 - 0.85
60 (140)	0.56 - 0.61
70 (158)	0.41 - 0.44
80 (176)	0.31 - 0.33
90 (194)	0.23 - 0.25
100 (212)	0.18 - 0.19

Circuit
Diagram



Harness Connector



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Inspection

1. Turn ignition switch OFF.
2. Remove the engine coolant temperature sensor (ECTS).
(Refer to the Engine Coolant Temperature Sensor - "Removal")
3. After immersing the thermistor of the sensor into engine coolant, measure resistance between ECTS terminals 1 and 2.
4. Check that the resistance is within the specification.

Specification : Refer to "Specification"

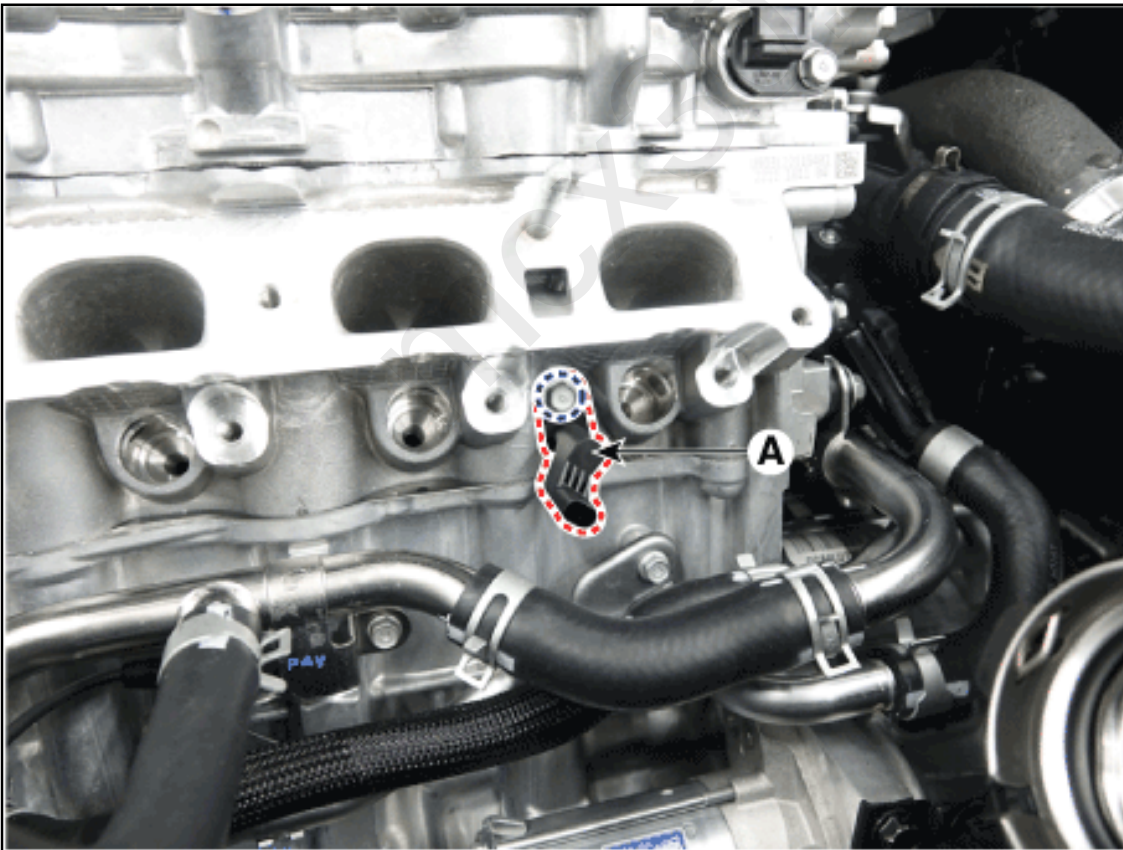
Removal

ECTS #1

1. Turn ignition switch OFF and disconnect the battery negative (-) terminal.
2. Remove the intake manifold.
(Refer to Engine Mechanical System - "Intake Manifold")
3. Disconnect the ETC connector.
4. Loosen the mounting bolt (A).

Tightening Torque :

9.8 - 11.8 N.m (1.0 - 1.2 kgf.m, 7.2 - 8.7 lb-ft)



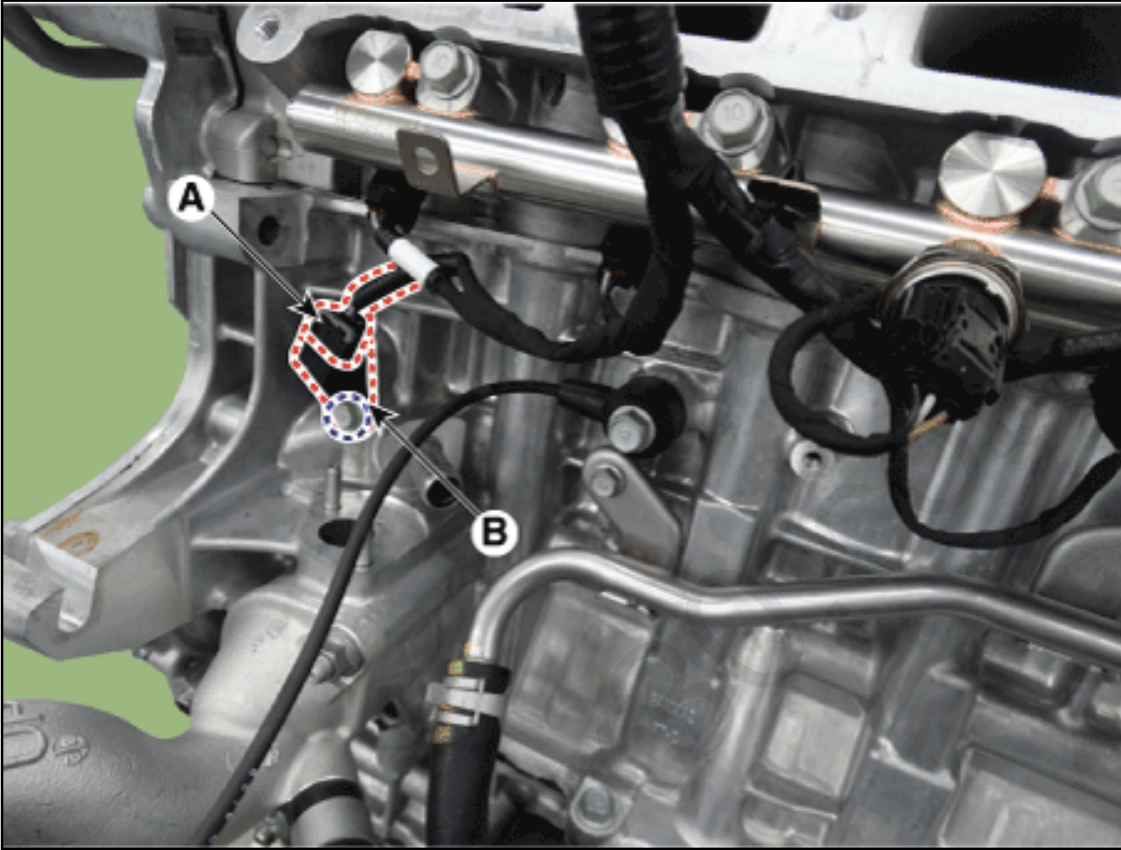
ECTS #2

1. Turn ignition switch OFF and disconnect the battery negative (-) terminal.

2. Remove the MHSB.
(Refer to Engine Electrical System - "Mild Hybrid Starter Generator (MHSB)")
3. Disconnect the ECTS connector (A).
4. Remove the ECTS after loosening the mounting bolt (B).

Tightening Torque :

9.8 - 11.8 N.m (1.0 - 1.2 kgf.m, 7.2 - 8.7 lb-ft)



Installation



- Install the component with the specified torques.
- Note that internal damage may occur when the component is dropped. If the component has been dropped, inspect before installing.



- Insert the sensor in the installation hole and be careful not to damage.

1. Install in the reverse order of removal.