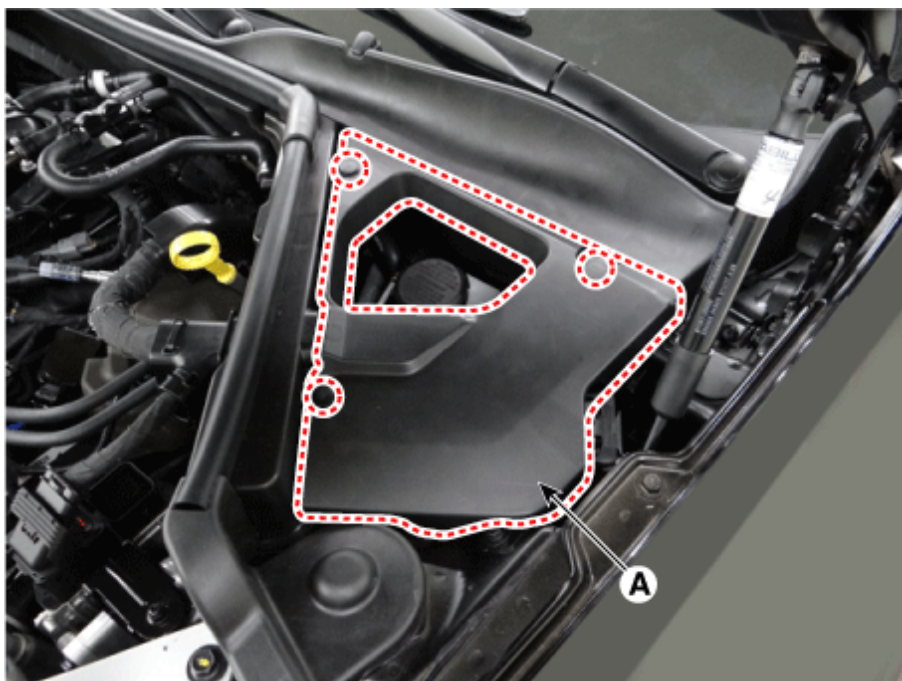Please rate this document after reviewing at the bottom of this page.

## REMOVAL

1. Switch "OFF" the ignition and disconnect the negative (-) battery terminal.
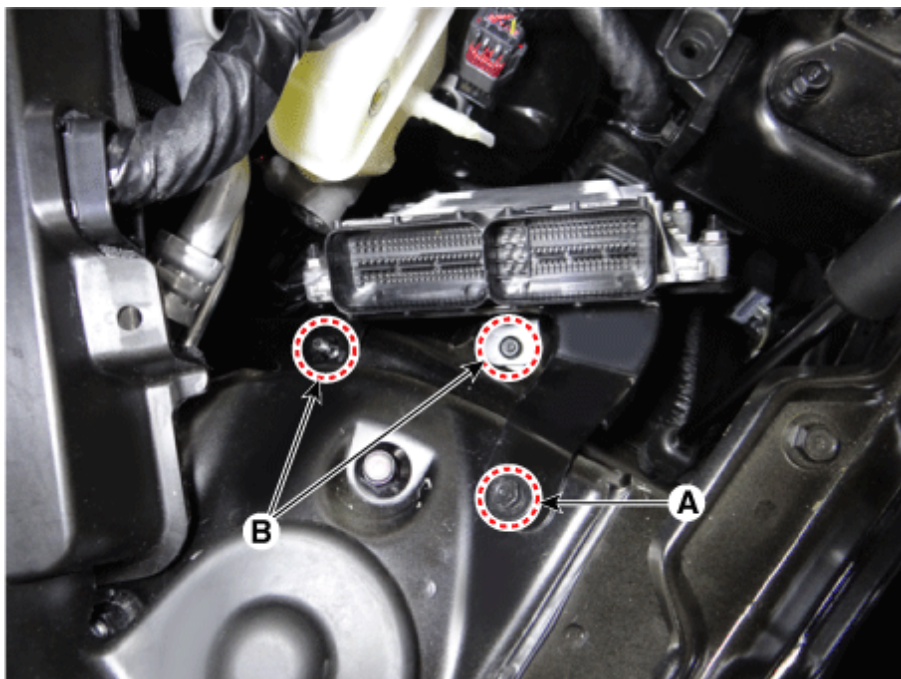
2. Remove the engine side cover (A).



3. Disconnect the ECM Connector (A).



4. Remove the ECM bracket assembly after loosening the mounting bolt (A) and nuts (B).
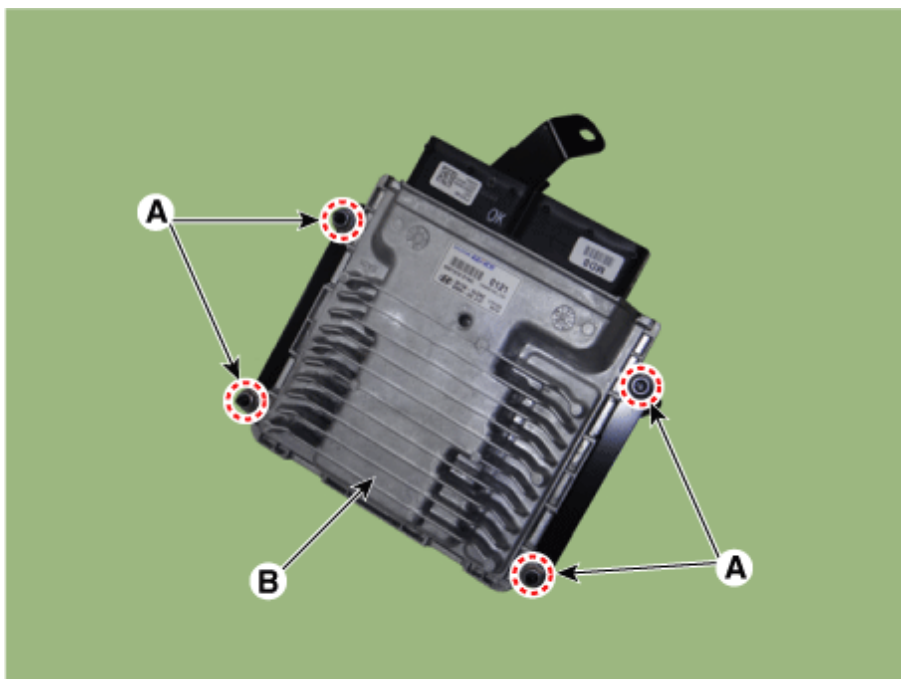   **ECM mounting bolt/nut:**
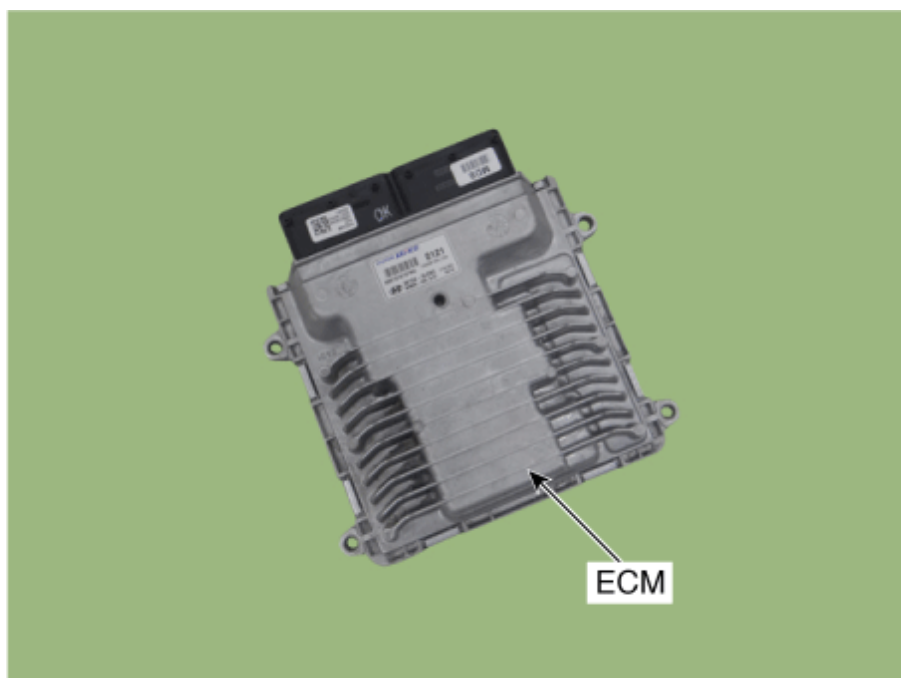   9.8 - 11.8 N·m (1.0 - 1.2 kgf·m,7.2 - 8.7 lb·ft)

5. Remove the ECM(B) after loosening the mounting nuts (A).

   **ECM bracket mounting bolt/nut:**
   9.8 - 11.8 N·m (1.0 - 1.2 kgf·m,7.2 - 8.7 lb·ft)

ECM

## INSTALLATION

1. Install in the reverse order of removal.

## ECM PROBLEM INSPECTION PROCEDURE

1. TEST ECM GROUND CIRCUIT: Measure resistance between ECM and chassis ground using the backside of ECM harness connector as ECM side check point. If the problem is found, repair it.

   **Specification:** Below 1Ω

2. TEST ECM CONNECTOR: Disconnect the ECM connector and visually check the ground terminals on ECM side and harness side for bent pins or poor contact pressure. If the problem is found, repair it.

3. If problem is not found in steps 1 and 2, the ECM could be faulty. In this case, make sure that there are no DTC's before replacing the ECM with a new one, and then check the vehicle again. If DTC's are found, examine them first before replacing the ECM.

4. RE-TEST THE ORIGINAL ECM: Install the original ECM (possibly broken) into a known-good vehicle and check the vehicle. If the problem reoccurs, replace the original ECM with a new one. If problem does not reoccur, this is an intermittent problem. (Refer to "Intermittent Problem Inspection Procedure" in Basic Inspection Procedure.)

## ADJUSTMENT

### ECM Neutral Mode procedure (With Immobilizer)

- After replacing the ECM of the vehicle with the immobilizer, the following procedure must be performed.

   **[If installing a used ECM]**

1) Perform "ECM Neutral Mode" procedure using KDS.
   (Refer to "Body Electrical System - "Immobilizer System - Repair procedures")

2) After finishing "ECM Neutral Mode", perform "Key Teaching" procedure using KDS.
   (Refer to "Body Electrical System - "Immobilizer System - Repair procedures")

   **[If installing a new ECM]**
   Perform "Key Teaching" procedure using KDS.
   (Refer to "Body Electrical System - "Immobilizer System - Repair procedures")

# ECM Neutral Mode procedure (With Smart key)

- After replacing the ECM of the vehicle with the smart key system (button start), the following procedure must be performed.

   **[If installing a used ECM]**

1) Perform "ECM Neutral Mode" procedure using KDS.
   (Refer to "Body Electrical System - "Smart key System - Repair procedures")

2) After finishing "ECM Neutral Mode", turn IGN ON then OFF using the smart key or start button. Then the ECM learns information on the smart key automatically.
   (Refer to "Body Electrical System - "Smart key System - Repair procedures")

   **[If installing a new ECM]**
   Turn IGN ON then OFF using the smart key or start button. Then the ECM learns information on the smart key automatically.
   (Refer to "Body Electrical System - "Smart key System - Repair procedures")

# ETC module learning procedure

Perform ETC module learning after replacing the ETC module.
**(Refer to Electronic Throttle Control System - "Adjustment")**

# VIN programming procedure

VIN (Vehicle Identification Number) is a number with the vehicle information (Maker, Vehicle Type, Vehicle Line/Series, Body Type, Engine Type, Transmission Type, Model Year, Plant Location and so forth. For more information, please refer to the group "GI" in this SERVICE MANUAL). When replacing an ECM, the VIN must be programmed in the ECM. If there is no VIN in ECM memory, the fault code (DTC P0630) will be set.

> ⚠ **CAUTION**
>
> VIN cannot be changed once it is programmed. Confirm carefully when writing the VIN.

1. Select "VIN Writing" function in "Vehicle S/W Management".

2. Select "Write VIN" in "ID Register" menu.



3. Enter the VIN.

**⚠ CAUTION**

Before entering the VIN, confirm again as it cannot be changed once programmed.

**Write VIN**

[Write VIN]

This function is used to write the VIN into the ECM's memory.

A new ECM requires that this function be performed following

installation. Failure to perform this function will result in MIL

illumination with DTC P0630. After confirming the written VIN,

ECU will erase the fault code and MIL.

Press [OK] button, if you are ready.

Ok     Cancel

**\* Thanks for your cooperation for the more quality. Please surely rate this document before closing.**