

# Pressure Sensor Replacement - 2005-2009 GX470 4.7L

## Installation Instructions

The factory Secondary Air Injection System (SAIS) pressure sensor for this vehicle is located underneath the intake manifold and bolted to the main SAIS Air Switching Valve. When this sensor or wiring has been damaged it cannot be accessed for replacement or testing without removing the intake manifold. Because the SAIS will no longer operate with the bypass kit installed the sensor only needs to reference atmospheric pressure. When installing as an add-on to a SAIS Bypassed Kit the factory pressure sensor can be replaced by wiring a new sensor directly into the ECM while cutting the old sensor loose without having to remove the intake manifold. When installed underneath the dash the sensor is protected from the environment and the vacuum tube nipple can remain open (without connection). It is very important that these connections are done well and do not create any added resistance.

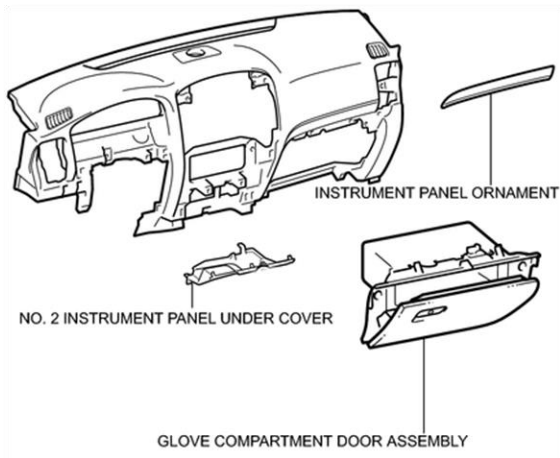


Figure 1 - Dash Components

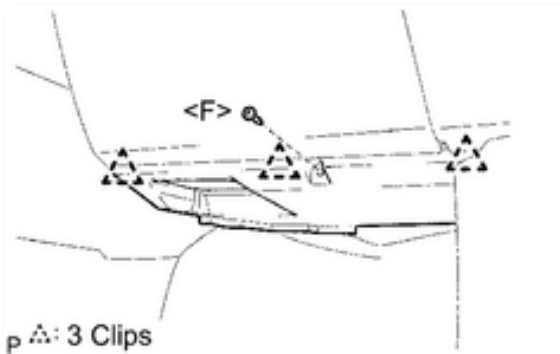


Figure 2 - No. 2 Instrument Panel Under Cover

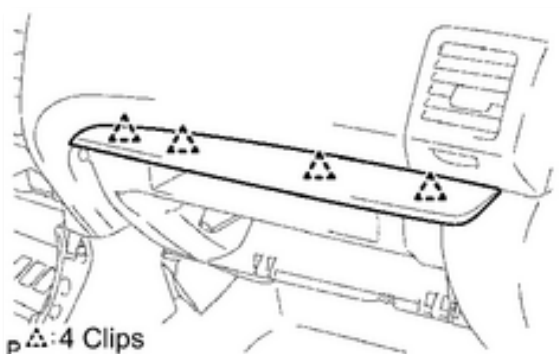


Figure 4 - Instrument Panel Ornament

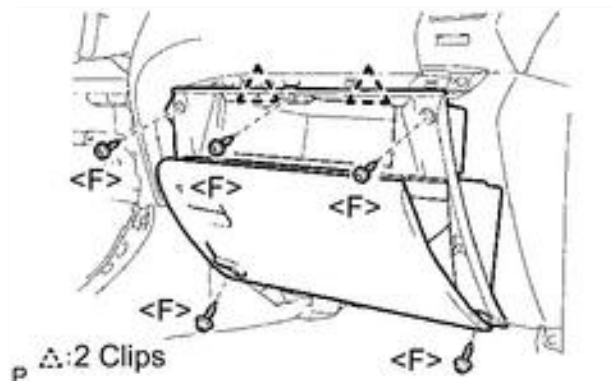


Figure 3 - Glove Box Compartment

- 1) Access the ECM located behind the passenger side dash.
- 2) Remove the No.2 Instrument Panel Under Cover underneath the Glove Box Compartment. There is one screw and 3 clips holding it up. See Figure 2.
- 3) Carefully remove the Instrument Panel Ornament (trim piece) above the glovebox. Carefully prying it off using a non-marking tool and surface protection, there are 4 clips securing it to the dash. This will expose the screws holding the Glove Box Compartment. See Figure 3.
- 4) Remove the Glove Box Compartment, there are 2 clips and 4 screws holding it to the dash. This will give you access to the ECM. See Figure 4.

- 5) Disconnect Connector E5 as identified in Figure 5.
- 6) Remove any wrap or cover from the wire bundle of Connector E5 to make it easier to separate and work on the individual wires.

- 7) Strip a small section of insulation from the **Light Green/Black** wire of Pin 23 without cutting the wire. Strip the end of the **Red** Pressure Sensor Replacement wire and wrap around the exposed section of the **Light Green/Black** wire. Solder together to create a tap splice and insulate with electrical tape.

- 8) Cut the **White/Blue** Wire of Pin 32 a couple of inches away from the connector. Strip the ends of the cut **White/Blue** wire from connector E8 and the White wire of the replacement pressure sensor. Twist and solder these two wires together to create a butt splice. Insulate the connection with electrical tape.

- 9) Insulate the cut end of the **White/Blue** wire that is coming from the wire bundle (damaged factory pressure sensor) with electrical tape and leave disconnected. This effectively disconnects the bad pressure sensor under the intake manifold.

- 10) Strip a small section of insulation from the **Brown** wire of Pin 28 without cutting the wire. Strip the end of the **Black** Pressure Sensor Replacement wire and wrap around the exposed section of the **Brown** wire. Solder together to create a tap splice and insulate with electrical tape.

- 11) Secure the sensor underneath the dash with electrical tape or zip ties. The vacuum nipple on the sensor is to remain open and unconnected.

- 12) Reconnect E5 to the ECM, clear the trouble codes and make sure the problem is resolved before reinstalling the glovebox.

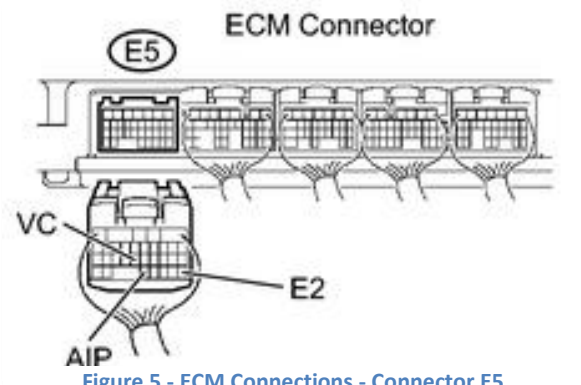


Figure 5 - ECM Connections - Connector E5

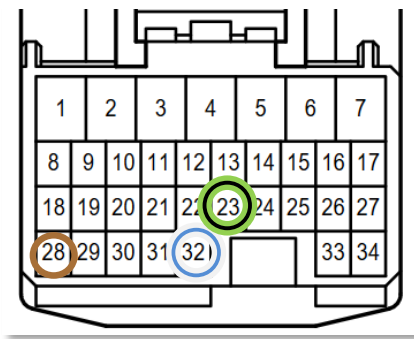


Figure 3 –Looking into the terminals of connector E8 Wire colors shown are coming out the back of the connector

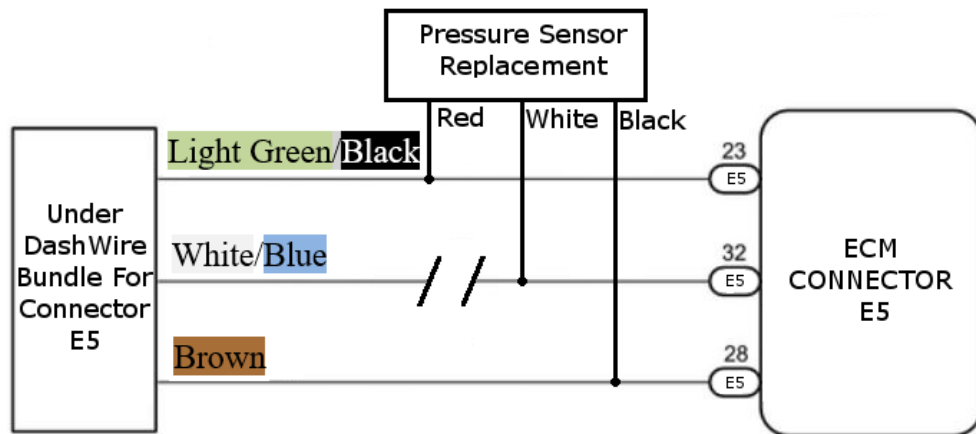


Figure 4 - Pressure Sensor Connection Diagram