

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Installation Instructions Part Number

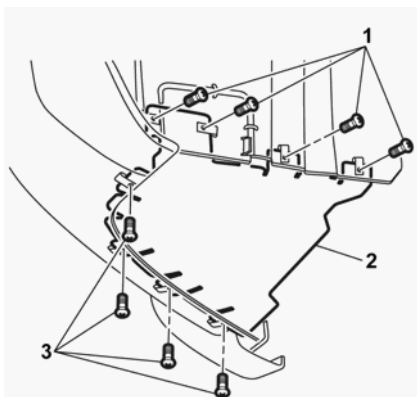
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Kit Contents

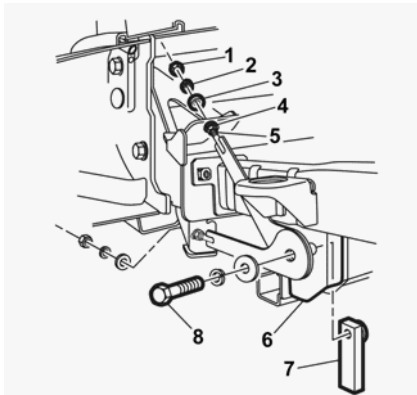
Qty	Description
1	DRL Roo Bar Harness
1	DRL Engine Bay Harness
1	DRL Bracket
5	200mm cable tie
10	Edge clip cable tie
10	Fir tree clip cable tie
2	Heat shrink tube
2	Splice terminal
1	M5 screw
1	M5 washer
1	Relay
1	Relay mounting tab
1	Relay lock
1	Plastic scrivet
1	M8 bolt
1	M8 washer
1	20A J-Case fuse
6	DRL M5 nut
6	DRL M5 bolt
6	DRL M5 washer
1	Instructions

Tools Required

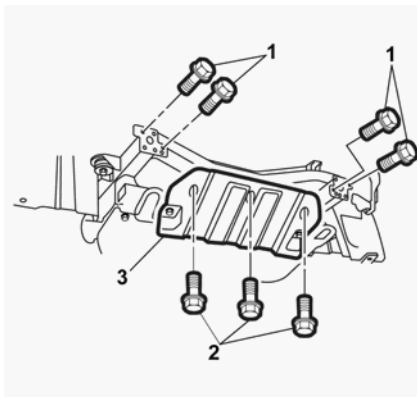
- Phillips Head Screwdriver
- T20 Torx bit
- 10mm, 12mm, 16mm Socket
- Ratchet
- 8mm Drill bit
- Power drill
- 16mm Spanner
- Knife
- Tape Measure
- Torque wrench



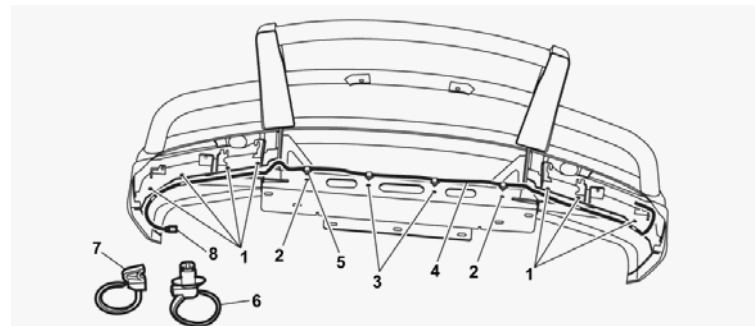
1. Remove the 8 cap head bolts (1,3) retaining the 2 roo bar stone guards (2) and remove the stone guards.



2. Disconnect the foglamps (if fitted).
3. Run the locking nuts (4) on the brace plate studs (5) back 4 turns. Remove the nuts (1), spring washers (2), and flat washer (3) on the ends of studs.
4. Slacken off the M10 bolt (8) that passes through the chassis rail (6) on both sides of the vehicle and remove the bolts, spring washers, washers (7).

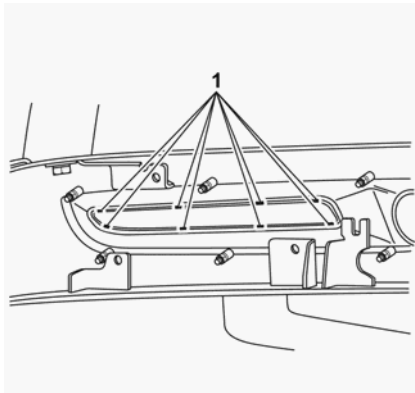


5. Remove the 4 front roo bar retaining bolts (1) from the ends of the vehicle longitudinal's.
6. Remove the 3 lower roo bar retaining bolts (2) which are accessed through the holes in the vehicle front stone guard (3). (Roo Bar not shown)
7. Remove the roo bar assembly from the vehicle.

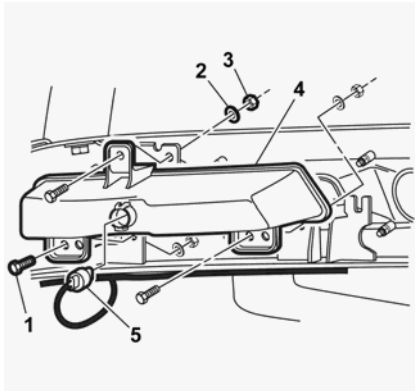


8. Starting with the connector (8) on the LHS, route the DRL roo bar harness (4) across the roo bar as shown. If present clip the DRL roo bar harness clip holes (2, 3) in the centre roo bar attachment beam. If the holes are not present drill 6.5mm holes in the beam at the positions shown. De-burr the holes with the anti-corrosion compound and clip the harness to the roo bar attachment beam.

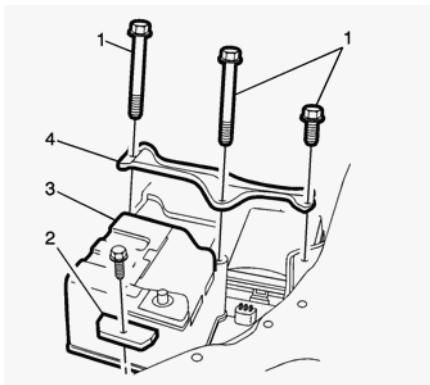
9. Use the green spot tape on each end of the DRL harness to locate the clipping holes in the ends of the roo bar. If the holes are present attach cable tie clips (6) to the under side of the roo bar and cable tie the DRL harness to the roo bar. If the holes are not present attach the edge cli bar support beam at the position of the green spot tape on the DRL harness and cable tie the DRL harness to the roo bar ends.



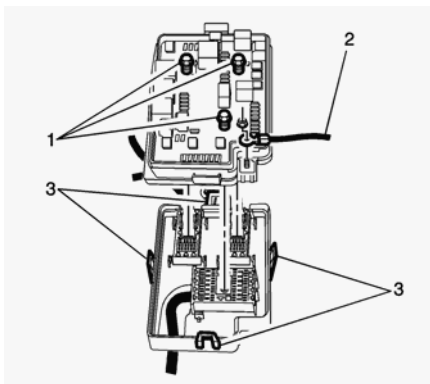
10. Use a sharp knife to carefully cut through the DRL blank holding tabs (1) and remove the blank from the roo bar Bezels.



11. Use the bolts (1) washers (2) and nuts (3) to install the DRL lamp assembly (4) to the roo bar, tighten to 6 N.m of torque and connect the DRL harness (5).

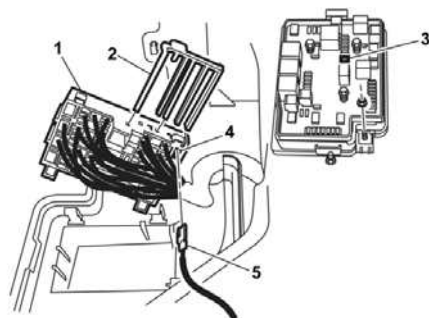


12. Disconnect both the vehicle battery terminals.
13. Remove the bolts (1) and top battery fixing brace (4) and remove the battery cover (3).
14. Remove the front battery fixing bracket (2) and remove the battery from the vehicle.

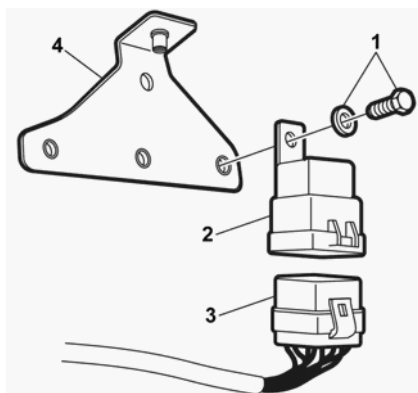


15. Remove the engine bay fuse box cover and remove the battery power supply lead (2) from the side of the fuse box.

16. Use a 10mm socket to remove the 3, 10mm (1) holding the two halves of the fuse box together.
17. Use flat bladed screw drivers to release the 4 plastic clips (3) around the two halves of the fuse box and remove the top portion of the fuse box.

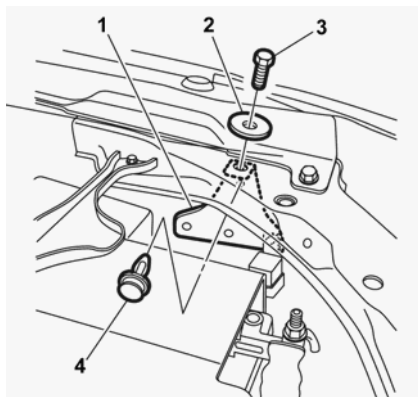


18. Unclip the X2 connector (1) at the back of the fuse box base, remove the X2 lower cover and remove the blue back out locking bar (2) from the harness enters the X2 connector.
19. Fit the terminal (5) on the DRL engine bay harness into cavity K4 (4), the terminal will clip into position, once seated correctly refit the back cover. Reinstall the lower cover and cable tie the DRL harness to the vehicle body harness inside the fuse box.
20. Reassemble the fuse box. Locate the 30A "J" case fuse (3) labelled as "spare". Change the 30A "J" case fuse for the 20A fuse supplied.



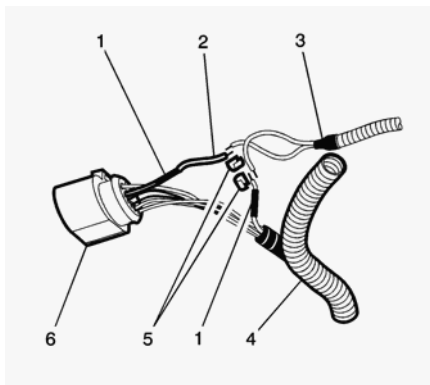
21. Use the bolts and washers supplied (1) to fix the DRL relay (2) to the bracket (4) and connect the DRL harness (3) into the relay.

Note: If the vehicle is fitted with a genuine GM driving light harness the bracket will be present in the vehicle engine bay. Add the DRL relay fixing hole on the driving light bracket and discard the bracket in this kit.

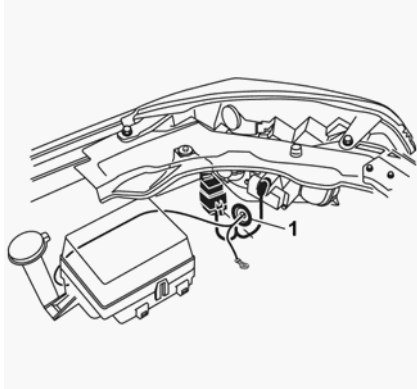


Caution: Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fastener replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use paints, lubricants or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint clamping force and fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage to parts and systems.

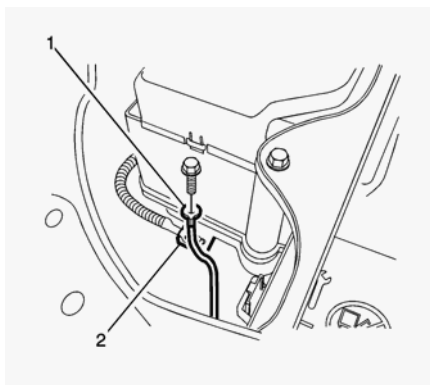
22. Position the DRL relay bracket (1) under the front vehicle cross brace and use the M8 washer (2) and M8 bolt (3) to fix in place. Insert the screw into the side of the bracket and tighten the bolt to 22 N.m of torque.



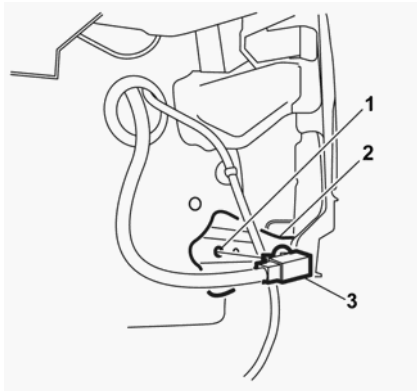
23. Press the clip on the inboard side of the headlamp connector (6) and disconnect the headlamp harness.
24. Carefully peel back the harness sheath (4) to expose 100mm of the harness wiring.
25. Locate the PURPLE/GREY wire (2) and cut it 80mm back from the connector.
26. Strip 10mm of insulation off of each end of the wire. Slip the shrink wrap (1) over the 2 wires and Join the PURPLE/GREY wires from the DR harness (3) to each of the 2 wires in the vehicle harness. Use a crimping tool to apply a crimp box (5) to the joint. Make the solder joints, ensure a smooth bright finish to the joint and apply the shrink wrap over the solder joint.
27. Neatly align the joins in the harness and wrap the wiring harness up with electrical tape.



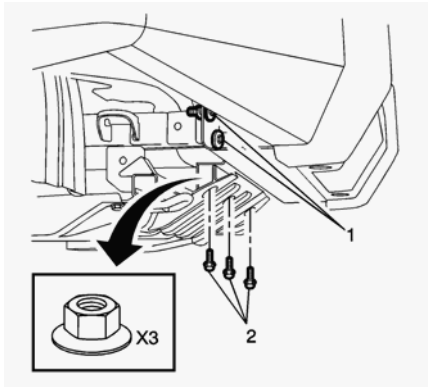
28. Feed the DRL harness connector through the round vehicle harness access opening (1).



29. Take the black DRL engine bay harness wire with the ring terminal (1) and add the ring terminal to the vehicle earth point forward of the vehicle.
30. Reinstall the vehicle battery and reconnect the battery.

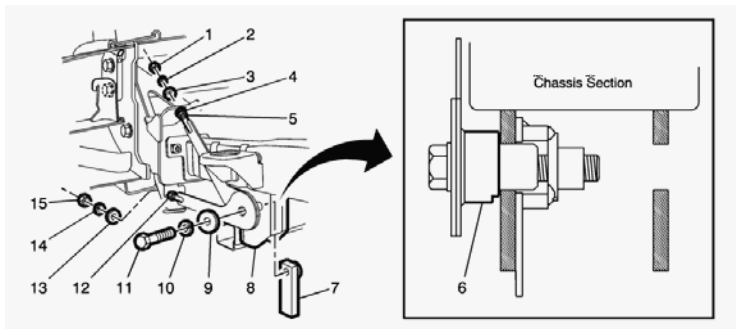


31. From the front of the vehicle, drill a 6.5mm hole (1) in the middle of the fender support bracket (2), de-burr the hole and treat with an anti-rust.
32. Clip on the DRL harness connector (3) to the drilled hole.

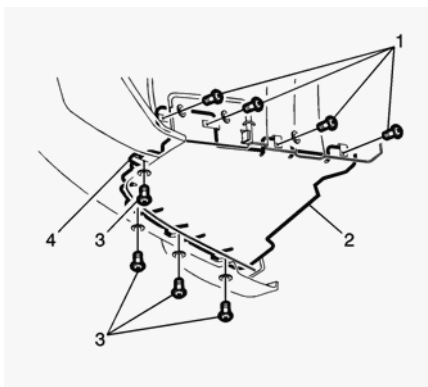


Note: To protect the vehicle bodywork from damage when fitting the roo bar to the vehicle, it is recommended that the areas of the front fenders fascia that the roo bar could come into contact with when being installed be masked.

33. The roo bar is fixed to the vehicle by the bumper beam retaining bolts (1) with M10x30x2.5 washers into the end of the longitudinal, centre the vehicle. Tighten to 59 N.m of torque.
34. Use the lower impact beam fixing bolts (2) the flanged nuts and the 30mm washers supplied to attach the roo bar to the vehicle front stone guard.



35. Run a nut, spring washer, and small M10 washer (4) down the thread of each of the support brace studs (5 & 12). Fit the diagonal support brace (11) through the brackets on the roo bar box section. Place a spring washer (10) and a large M10 flat washer (9) on the stud (5) and pass the bolt through the centre hole in the outer support braces and then through the support brace with the spacer attached (6) into the hole in the chassis rail (8). Pass the nut plate (7) into the chassis rail box section with the spacer plate facing the bolt head and screw the nut plate. Tighten the bolt to 38±5 N.m. of torque.
36. Place a washer (13) and spring washer (14) on the horizontal support brace stud (12). Place the nut (15) onto the stud and run the nut down the studs on the horizontal support brace to 10 N.m and then run the other nut up to the box section bracket and tighten to 10 N.m of torque.
37. Place a washer (3) and spring washer (2) on the diagonal support brace stud (5). Place a nut (1) onto the stud and run the nut down the stud on the diagonal support brace to 10 N.m and then run the other nut up to the box section bracket and tighten to 10 N.m of torque. Repeat on the other side of the vehicle.



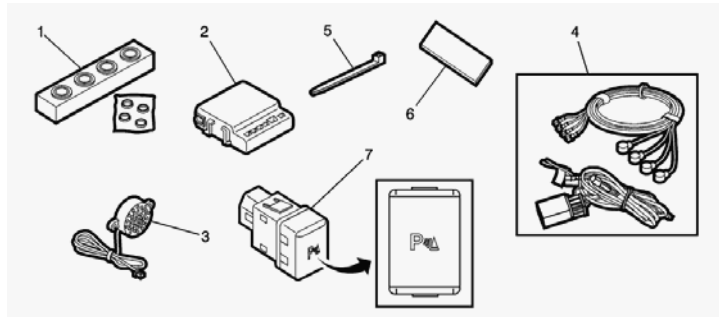
38. Connect the Roo bar DRL harness to the engine bay DRL connector. Reconnect the vehicle fog lamps (if fitted).
39. Fit the outer roo bar stone guards to the under side of the roo bar and use the cap head bolts (3) to fix in place. Tighten the bolts to 9±1.5N.m. Use a sharp object to locate the hole centres in the wheel liner and drill out to 5mm and fit the cap head bolts (1) and washers, tighten to 2.5±0.5N.m.
40. Check the DRL functionality:

- Ensure the vehicle headlights are completely off and the lighting switch is set in the "OFF" position.
- Turn on the vehicle ignition.
- DRL lamps must be active.
- Turn on the vehicle headlights.
- DRL lamps must go off.
- Turn off vehicle ignition.

- Refit all parts removed.
- Place the fitting instructions in the glovebox of the vehicle.

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Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



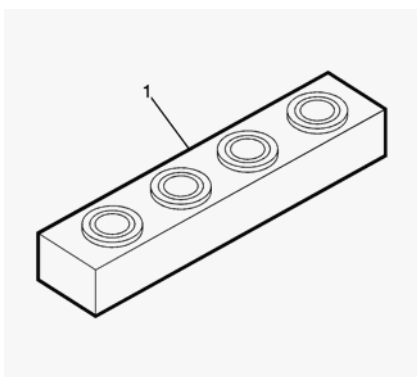
Kit Contents

Item No.	Qty	Description
1	4	Front Object Sensors With Protective Rings
2	1	Front Object Sensor Module
3	1	Front Object Sensor Speaker
4	1	Object Sensor Wire Harness
5	38	Tie Straps
6	1	Module Double Face Tape
7	1	Sensor Switch

Tools Required



Procedure For Painting Sensors



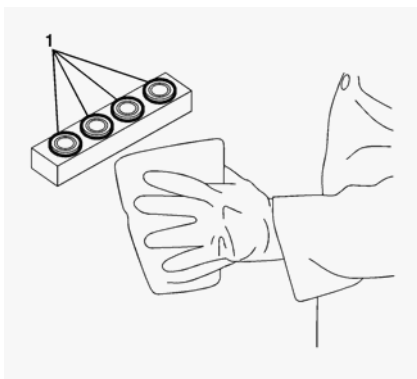
Note: To paint the sensors in the front fascia color, follow the paint procedure steps below.

Note: Always use the painting rings to protect the silicon ring of the sensors.

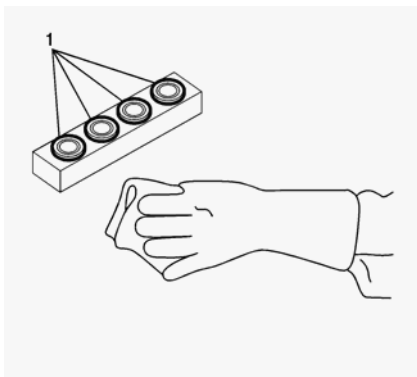
Note: Check the GM plastic front fascia painting procedures for the correct material specifications.

Note: The center part of the sensor is made of pre-coated aluminum and the housing is plastic. Follow correctly the GM paint procedure, so that the sensor painting does not come off in the normal vehicle use.

Note: The sensors are supplied in the carton template for painting.



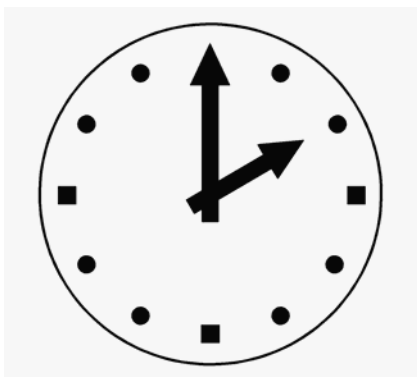
1. Gently sand the surface of the sensors♦(1).



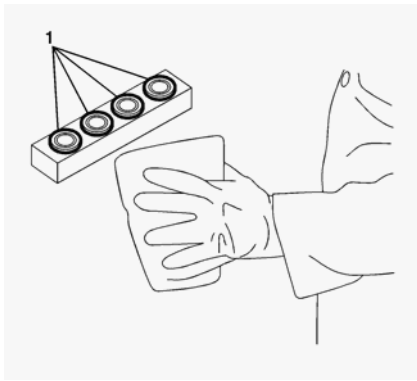
2. Apply degreaser with a clean, dry cloth.
3. After doing so, use other dry and clean cloth, preventing the degreaser from drying in the sensors♦(1).



4. Apply PU primer using an HVLP spray gun♦(1). Refer to GM service manual.



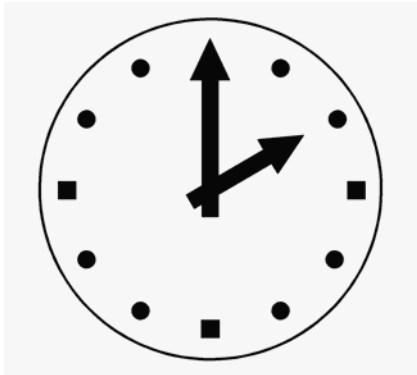
5. Allow primer to dry, for drying and curing time. Refer to GM service manual.



6. Gently sand the surface of the sensors♦(1).



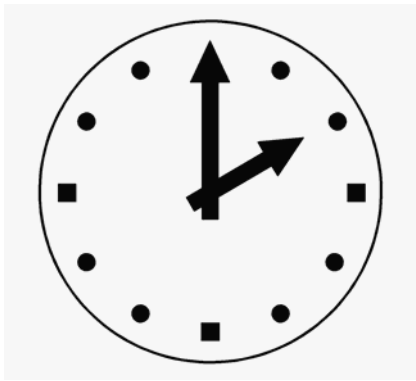
7. Apply paint to the polyester base in the vehicle's color using an HVLP spray gun♦(1). Refer to GM service manual.



8. Allow paint to dry, for drying and curing times. Refer to GM service manual.

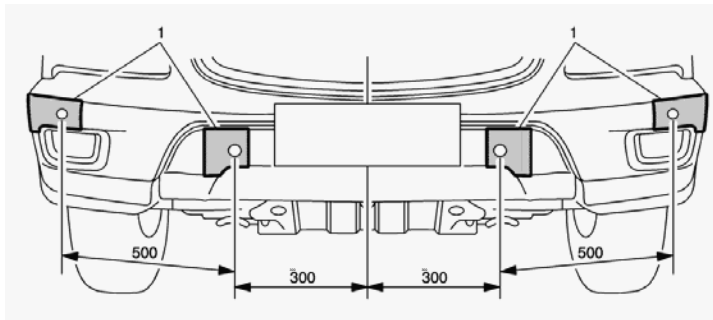


9. Apply PU varnish using an HVLP spray gun♦(1). Refer to GM service manual.



10. Allow PU varnish to dry, for drying and curing times. Refer to GM service manual.

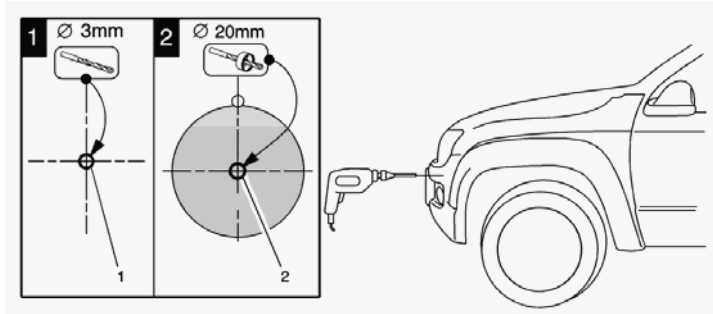
Procedure



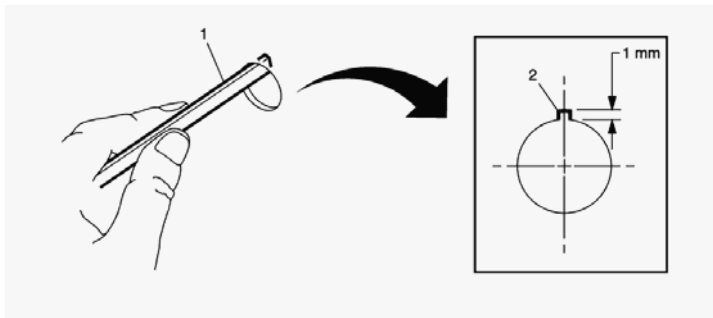
Note: Secure the templates with tape.

Note: Measure is only a reference, use the templates for correct position.

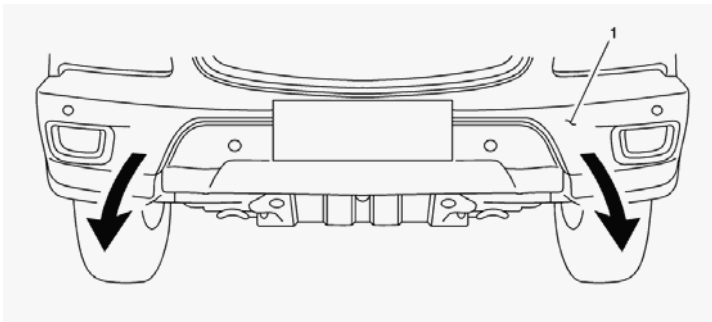
1. Position the templates♦(1) on the front fascia as indicated.



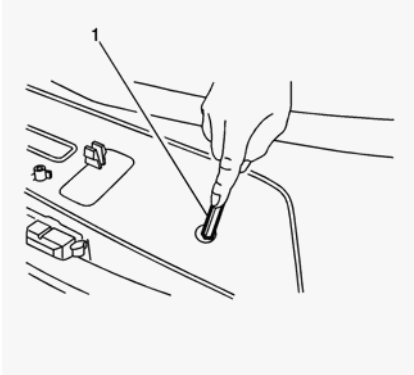
2. Drill 4 centering holes♦(1) with a 3mm diameter drill bit.
3. With a♦20mm hole saw, drill the front fascia♦(2), according to the center measures and holes.



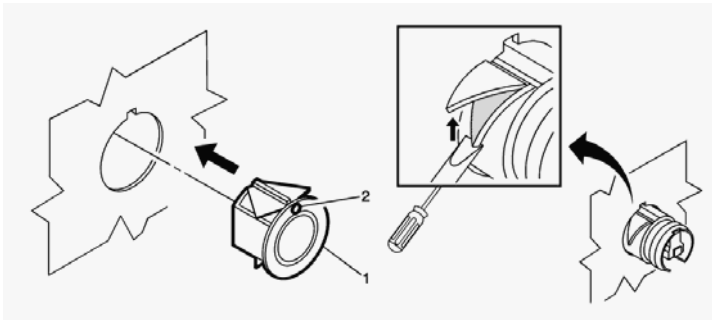
4. Make a shoulder of 1mm♦(2) at the top part of the holes, with a small file♦(1), to fit the sensor key.



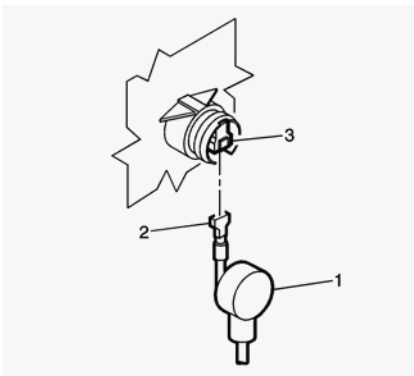
5. Remove the front fascia♦(1) from vehicle. Refer to vehicle service manual.



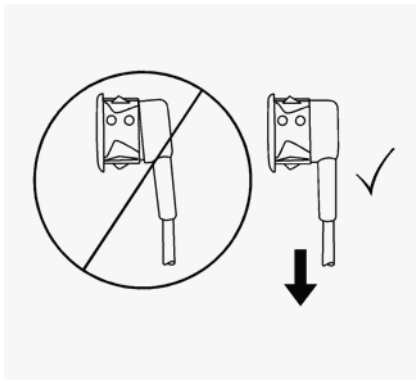
6. From the inner side of the front fascia, remove the burrs of drilled holes with a hand file♦(1).



7. Place the sensors♦(1) in the holes with the point mark♦(2) facing up.



8. Fit the connectors♦(2) in the sensors♦(3).
9. Fit the cover♦(1) of the sensors, checking if they are well fitted, assuring the seal.



Note: If there is an excess of wire inside the cover, it will damage the seal.

10. Pull the wire gently down until it is well strained and the cover of the sensor perfectly fitted all around the sensor.

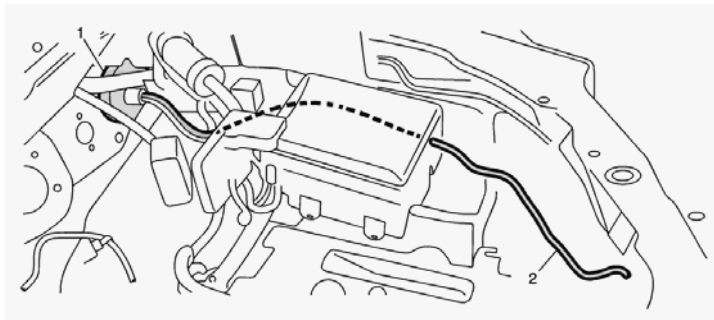
[Sensor Harness Installation RHD](#)



1. Route the harness (1) inside the front fascia (2).
2. Attach the harness on the front fascia with the 7 clips.

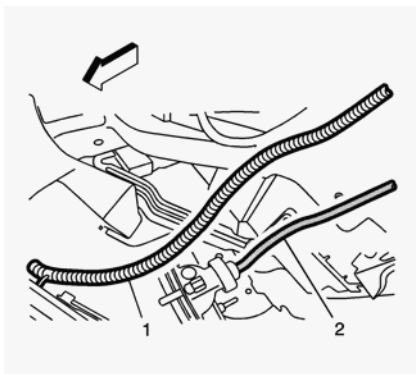
Note: Let some loose wire on each sensor.

Note: Always check of the harness is not pressed, tensioned or bearing sharp or hart surface that can damage it.



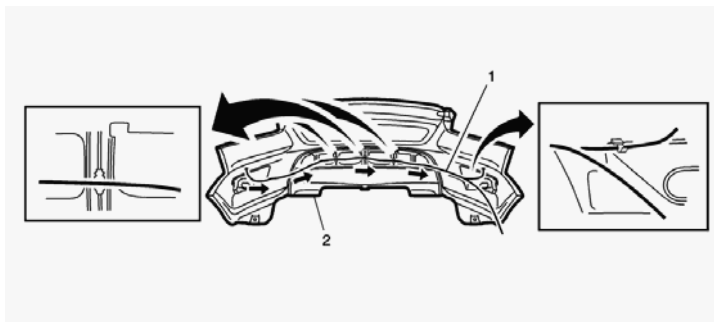
3. Route the harness (2) from the front fascia to the vehicle harness grommet (1) together in the passenger side, passing under the battery.

Note: Fix the harness with straps with the vehicle harness, along the way. Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.



4. Fix the sensor harness (1) together with the fog lamp harness (2) with straps. Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.

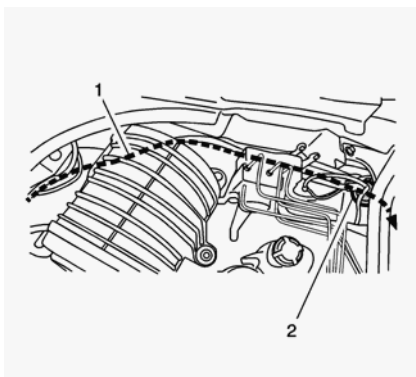
[Sensor Harness Installation LHD](#)



1. Route the harness♦(1) inside the front fascia♦(2).
2. Attach the harness on the front fascia with the 7♦clips.

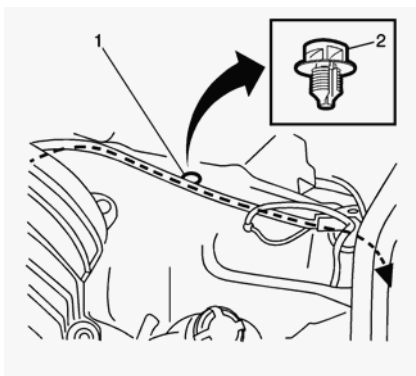
Note: Let some loose wire on each sensor.

Note: Always check of the harness is not pressed, tensioned or bearing sharp or hart surfaces that can damage it.



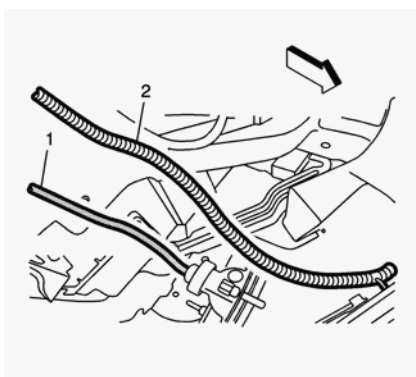
3. Route the harness♦(1) from the front fascia to the vehicle harness grommet♦(2) together in the passenger side, passing under the battery.

Note: Fix the harness with straps with the vehicle harness, along the way. Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.

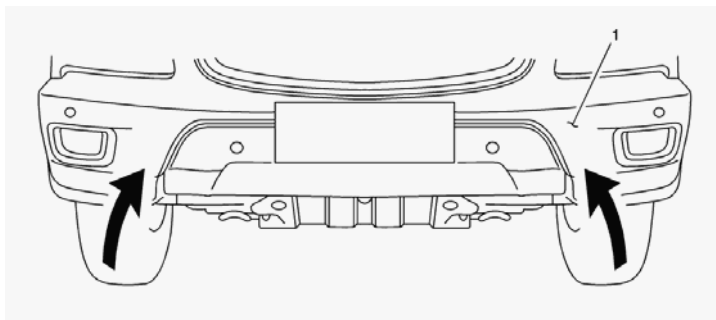


4. For vehicles without main harness, use the clip♦(2) to fix the sensors harness. Install one extra clip (supplied in the kit) in the existing hole♦(1) above the wheel box, in the passenger side.

Note: Fix the harness with straps along the way. Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.



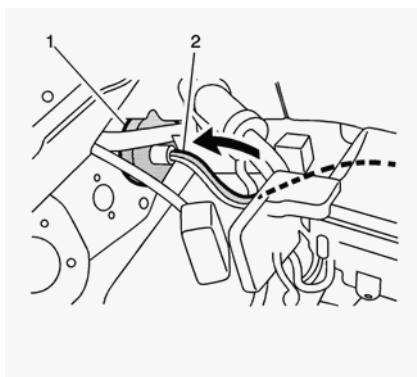
5. Fix the sensor harness♦(2) together with the fog lamp harness♦(1) with straps. Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.



6. Mount the front fascia(1) in its original positions. Refer to vehicle service manual.

Note: Always check of the wires are not pressed, tensioned or bearing sharp or hot surfaces that can damage them.

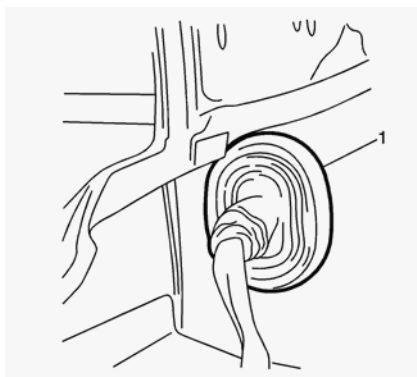
[Harness Grommet RHD](#)



1. Remove the tape existing around the grommet. Pass the harness(2) through the vehicle grommet(1), together with the vehicle harness, in the passenger side.
2. Cover the harness and grommet with new tape in the same way it was before.

Note: Fix the harness with straps, along the way. Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.

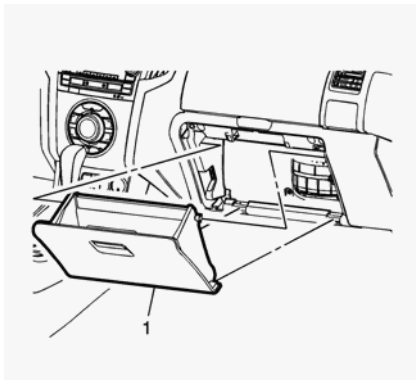
[Harness Grommet LHD](#)



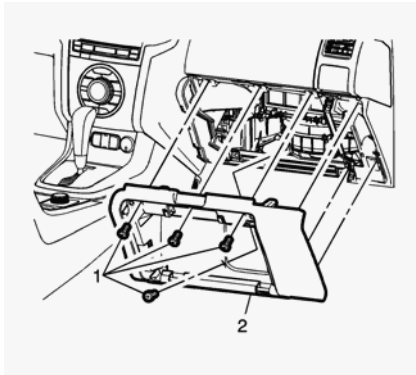
1. Remove the tape existing around the grommet(1).Pass the harness through the vehicle grommet together with the vehicle harness, in the passenger side.
2. Cover the harness and grommet with new tape in the same way it was before.

Note: Fix the harness with straps, along the way. Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.

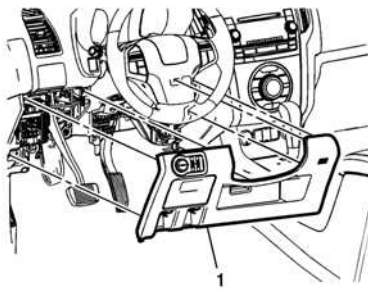
[Remove Trim](#)



1. Squeeze the sides of the instrument panel compartment door assembly allowing the compartment(1) to open past the stops and remove instrument panel compartment.

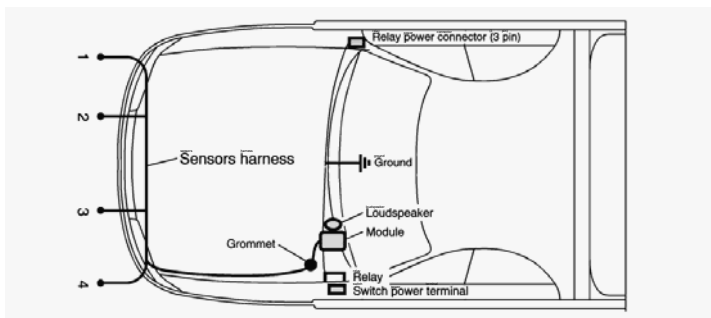


2. Remove the instrument panel lower insulator fasteners(1).
3. Remove the instrument panel lower insulator(2) from vehicle.

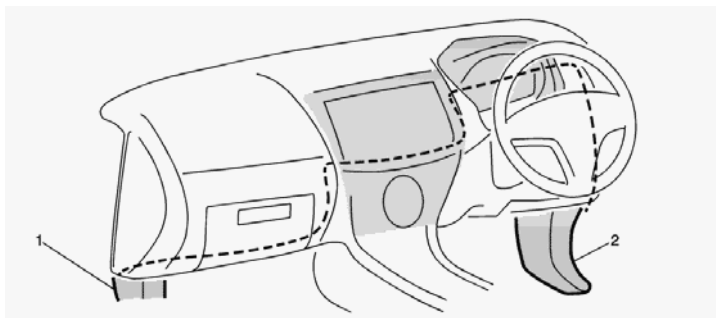


4. Remove the hood latch primary release cable handle. Refer to vehicle service manual.
5. Remove the fuel tank filler door latch release cable lever. Refer to vehicle service manual.
6. Use a flat bladed plastic trim tool in order to release the retainers securing the instrument lower panel(1) to the instrument panel assembly.
7. Disconnect the electrical connections, the data link connector and the inside air temperature sensor.

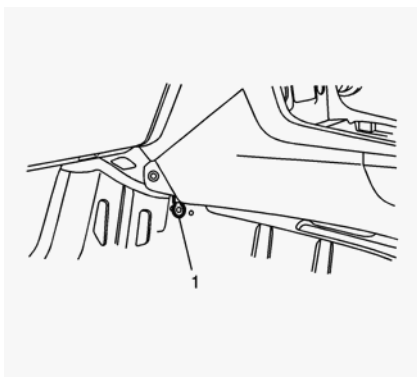
Electrical Connections RHD



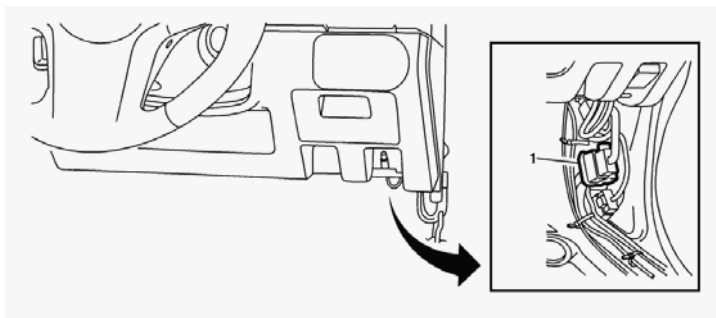
1. Route the power harness behind the dash I/P. The module will be installed above the glove compartment.



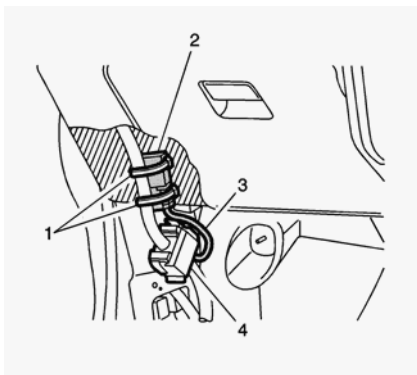
2. Remove the column A cover, the cluster and the A/C control. Refer to vehicle service manual.
3. The relay and switch power terminal will be installed in the passenger side (1) (A column) and the 3-pin connector will be installed in the driver side (2) (A column).



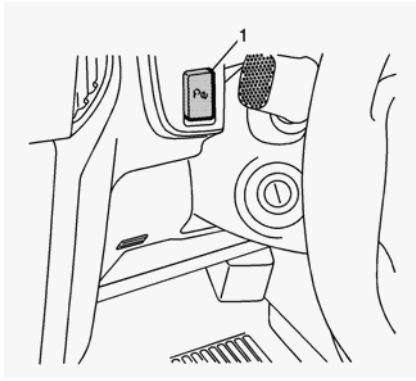
4. Remove the center console pin.
5. Open the carpet to access to ground screw.
6. Connect the power harness ground terminal (1) to the vehicle ground point below the panel, in the passenger side of the central tunnel.



7. Locate the 3-pin connector (1) in the driver side A column near the I/P harness connectors. Connect the power harness 3-pin connector to the vehicle connector.

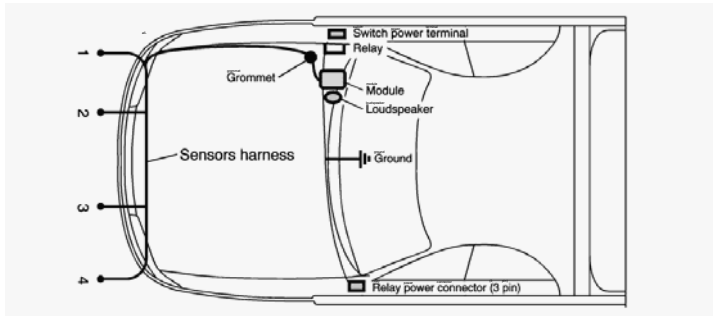


8. Locate the wire (3) with female terminal on the power harness with a LABEL for pickup vehicles.
9. Fit the terminal in cavity D6 of the rear body harness (4) in the (A) column.
10. Isolate the other circuit with label for SUV with PVS Tape on principal harness.
11. Fix the relay (2) and socket with straps (1) on the vehicle harness.

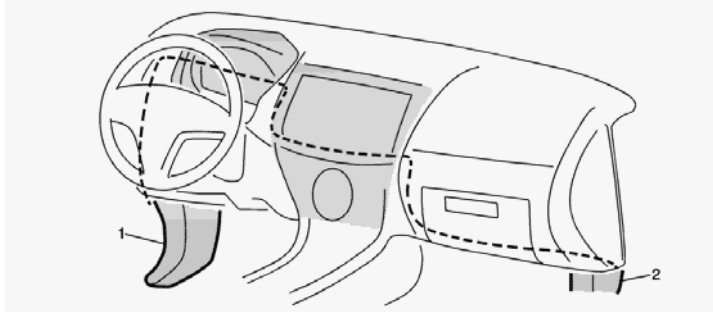


12. Install the switch (1) according to vehicle service manual.
13. Connect the power harness 6-pin connector to the switch.

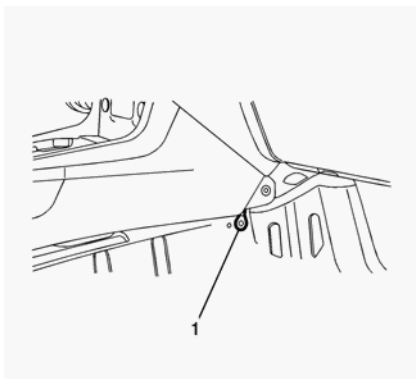
[Electrical Connections LHD](#)



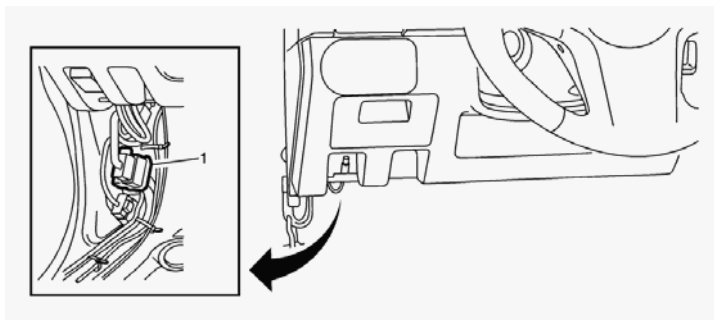
1. Route the power harness behind the dash I/P. The module will be installed above the glove compartment.



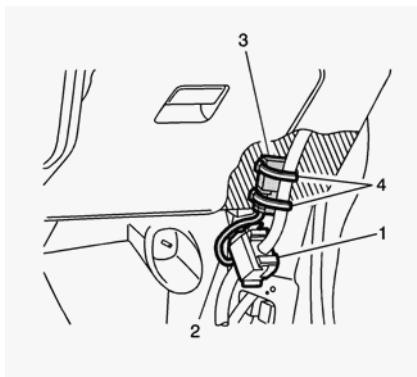
2. Remove the column A cover, the cluster and the A/C control. Refer to vehicle service manual.
3. The relay and switch power terminal will be installed in the passenger side (2) (A column) and the 3-pin connector will be installed in the driver side (1) (A column).



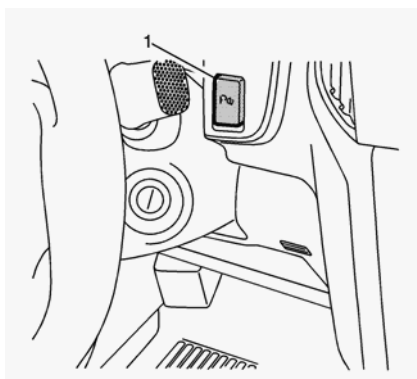
4. Remove the center console pin.
5. Open the carpet to access to ground screw.
6. Connect the power harness ground terminal (1) to the vehicle ground point below the panel, in the passenger side of the central tunnel.



7. Locate the 3-pin connector (1) in the driver side A column near the I/P harness connectors. Connect the power harness 3-pin connector to the vehicle connector.

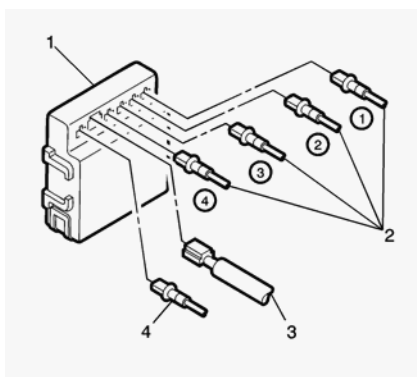


8. Locate the wire (2) with female terminal on the power harness with a LABEL for pickup vehicles.
9. Fit the terminal in cavity D6 of the rear body harness (1) in the (A column), passenger side.
10. Isolate the other circuit with label for SUV with PVS Tape on principal harness.
11. Fix the relay (3) and socket with straps (4) on the vehicle harness.

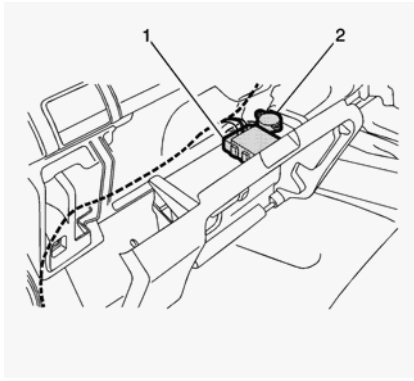


12. Install the switch (1) according to vehicle service manual.
13. Connect the power harness 6-pin connector to the switch.

[Module and Loudspeaker Installation](#)



1. Connect the speaker (4), power harness (3), and sensor (2) connectors to the module (1).



2. Fix the module(1) and loudspeaker(2) with double face tape above the glove compartment frame.
3. Install the parts of the vehicle to its original positions according to vehicle service manual.

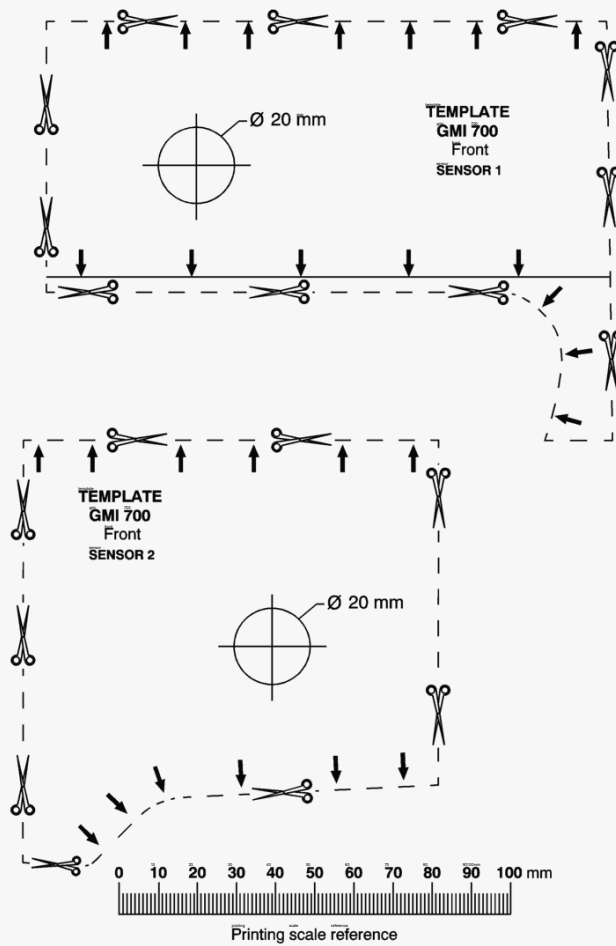
Note: Always check to make sure that the wires are not pressed, tensioned or bearing sharp or hot surfaces that can damage them.

Troubleshooting

Most common failures when installing a ParkMaster Sensor

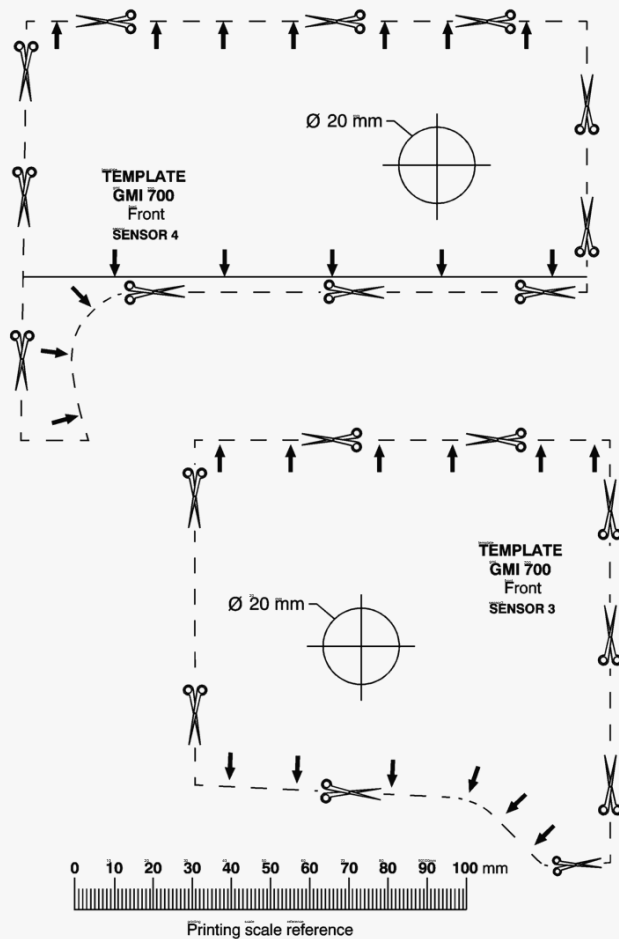
- Key out of position (external mark must be upwards).
 - Sensor harness out of order (1-2-3-4).
 - Very small hole in the front fascia (less than 20mm) or lack of groove for the key.
 - Sensors painted without using the "Painting Ring", thus forming one coat of paint that covers the silicon part.
- Position the vehicle in a place where there are no obstacles at a distance of 2m from the front fascia.
 - Activate the parking brake.
 - Turn the ignition ON without starting the engine.
 - Engage the reverse gear.
 - Does not make any beep:
 - Check the module power wires: Red (+12V of reverse gear light) and Black (ground);
 - Check if the reverse gear light of the vehicle is working.
 - Makes 01 (one) beep and then makes a quasi-continuous signal (error signal):
 - The module is not receiving a signal from one or more sensors. To find more rapidly which of the sensors is not working (emitting ultrasound), gently pass your finger in the core of the sensors to feel a light vibration or approach your ears to the sensor to hear small intermittent snaps. Check the connection and the faulty sensor harness.
 - Makes 01 (one) beep and then makes intermittent signals as if there is an obstacle near the front fascia:
 - Check if all the sensors have the key upwards (external mark must be upwards);
 - Check if the sensor harness is in the right order (1, 2, 3 and 4). An easy way to check it is to turn off one sensor at a time in the module and see which one of them stops working (gently passing your finger on the core of the sensor);
 - Check if the holes are not very tight for the sensor (a hole less than 20mm) and if a 1mm groove has been made for the key;
 - Check if the sensors have been correctly painted by using the "Painting Ring", which does not allow the silicon ring to be painted. If the sensors have been painted without using the "Painting Ring", thus forming one coat of paint that covers the silicon part:
 - Remove the paint on the silicon ring (that divides the core of the external flange) by using a mechanical pencil or the tip of a wire.

Appendix A
Templates for sensors 1 and 2
GMI 700 – Front Bumper



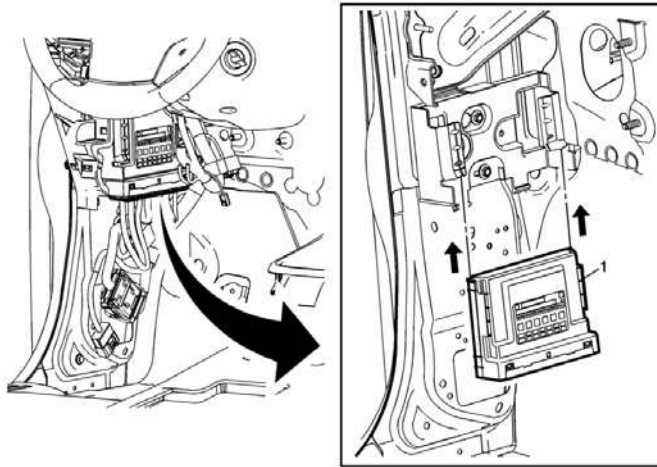
Appendix A

Templates for sensors 3 and 4 GMI 700 – Front Bumper



2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:



Body Control Module Replacement

Callout

Component Name

Preliminary Procedure

1. Remove the instrument lower panel driver side. Refer to Instrument Lower Panel Replacement.
2. Remove the body hinge pillar trim. Refer to Body Hinge Pillar Trim Replacement.

Body Control Module

Procedure

- 1
 1. Unsnap panel fuse block from bracket.
 2. Disconnect the electrical connectors.
 3. Push tabs to release the body control module from the bracket and slide the module downward.
 4. For programming and set up, refer to Control Module References.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

The body control system consists of the body control module (BCM), communications, and various input and outputs. Some inputs, outputs and messages require other modules to interact with the BCM. The BCM also has discrete input and output terminals to control the vehicle's body functions. The BCM is wired to the high speed GMLAN serial data bus, low speed GMLAN serial data bus and Multiple LIN buses and acts as a gateway between them.

[Power Mode Master](#)

This vehicle body control module (BCM) functions as the power mode master (PMM). The ignition switch is a low current switch with multiple discrete ignition switch signals to the PMM for determining the power mode that will be sent over the serial data circuits to the other modules that need this information; the PMM will activate relays and other direct outputs of the PMM as needed. Refer to Power Mode Description and Operation for a complete description of power mode functions.

[Gateway](#)

The body control module (BCM) in this vehicle functions as a gateway or translator. The purpose of the gateway is to translate serial data messages between the GMLAN high speed bus and the GMLAN low speed bus for communication between the various modules. The gateway will interact with each network according to that network's transmission protocol.

All communication between the BCM and a scan tool is on the high speed GMLAN serial data circuits. A lost communication DTC typically is set in modules other than the module with a communication failure.

[Body Control](#)

The various body control module (BCM) input and output circuits are illustrated in the corresponding functional areas on the BCM electrical schematics. Refer to the Body Control System Schematics for more detailed information.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Table 1: [Body Control Module Scan Tool Data Parameters](#)

Table 2: [Body Control Module Scan Tool Output Controls](#)

Body Control Module Scan Tool Data Parameters

Parameter	System State	Expected Value	Definition
<i>Operating Conditions:</i> Ignition ON, Vehicle in Park, All Doors Closed			
5 V Ignition Switch	—	Accessory / Key Out	The scan tool displays Off, Accessory, Run, or Crank. This parameter displays the ignition switch mode.
Accent Lighting 1 Command	—	Varies	This parameter displays the interior lighting ambient 1 command as a percentage.
Accent Lighting 2 Command	—	Varies	This parameter displays the interior lighting ambient 2 command as a percentage.
Accessory	—	Active	The scan tool displays Active or Inactive.
Accessory Power Mode Indicator Command	—	Varies	This parameter displays ignition switch accessory LED PWM command as a percentage.
Accessory Relay Command	—	Active	The scan tool displays Active or Inactive.
Accessory/Retained Accessory Power Relay Command	—	Active	The scan tool displays Active or Inactive. This parameter displays the retained accessory power relay status.
All Doors Lock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the door lock status.
Ambient Light Sensor	—	Varies	The scan tool displays volts. This parameter displays the ambient light sensor signal voltage.
Ambient Light Status	—	Night	The scan tool displays Unknown, Night, or Day. This parameter displays the ambient light level status.
Automatic Headlamps Disable Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp disable switch status.
Automatic Transmission Manual Shift Switch	—	Off	The scan tool displays Off or On. This parameter displays the transmission tap up tap down switch status.
Backup Lamps Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the backup lamps relay status.
Battery Current Sensor	—	Varies	The scan tool displays the battery current in amperes.
Battery Low at Start	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the battery level is low when the vehicle starts.
Battery Reconnect Detected	—	No	The scan tool displays No or Yes when a battery disconnect/reconnect event has been detected.
Battery Voltage	—	Varies	The scan tool displays the current battery voltage.
BCM-Controlled Charging Voltage	—	Active	The scan tool displays Active or Inactive.
BCM-Requested Charging Voltage Reduction	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the BCM has detected a low battery voltage condition.
Boot Software Part Number	—	Varies	The scan tool displays the boot software part number.
Brake Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the brake lamp command status.
Brake Pedal Applied	—	Inactive	The scan tool displays Active or Inactive.

Parameter	System State	Expected Value	Definition
Brake Pedal Initial Travel Position Achieved	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor	—	Varies	This displays Counts. This numeric value is the current brake pedal position.
Brake Pedal Position Sensor High Voltage During Learn	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Learn	—	No	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned.
Brake Pedal Position Sensor Learned Home Position	—	Yes	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned the home position.
Brake Pedal Position Sensor Learned Released Position	—	Yes	The scan tool displays No or Yes. This parameter displays Yes when the brake pedal position sensor has learned the released position.
Brake Pedal Position Sensor Learned Released Position	—	Varies	The scan tool displays volts.
Brake Pedal Position Sensor Learned Released Position	—	Varies	The scan tool displays percentage.
Brake Pedal Position Sensor Low Voltage During Learn	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Move During Learn	—	No	The scan tool displays No or Yes. This parameter displays the brake pedal sensor learn status.
Brake Pedal Position Sensor Pulled Up from Home Position	—	No	The scan tool displays No or Yes.
Brake Pedal Position Sensor Reference	—	Varies	The scan tool displays the brake pedal position as voltage value. This parameter displays the current brake pedal position sensor reference.
Brake Pedal Pulled Up from Home Position	—	No	The scan tool displays No or Yes.
Brake Pedal Pulled Up from Released Position	—	No	The scan tool displays No or Yes.
Brake Transmission Shift Interlock Solenoid Actuator	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the remote start diagnostic status history.
Brake Transmission Shift Interlock Solenoid Actuator Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the last remote start diagnostic status history.
Calculated Brake Pedal Position	—	Varies	The scan tool displays volts.
Calculated Brake Pedal Position	—	Varies	The scan tool displays percentage.
Calibration Part Number 1-20	—	Varies	The scan tool displays the software module calibration part number.
Center Brake Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the center brake lamp status.
Center Stop Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the center stop lamp status.
Central Door Lock Switch on Center Console/Passenger Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door lock switch status.
Child Security Lock Indicator Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the child security lock indicator command status.
Child Security Lock Motors Command	—	Inactive	The scan tool displays Active or Inactive.
Child Security Lock/Window Lockout Switch	—	Inactive	The scan tool displays Active or Inactive.

Parameter	System State	Expected Value	Definition
Child Security Lock/Window Lockout Switch Indicator Command	—	Inactive	The scan tool displays Active or Inactive.
Content Theft Deterrent Alarm Status	—	Disarmed	The scan tool displays Off, Armed, or Disarmed. This parameter displays the content theft alarm status.
Content Theft Deterrent Disarmed Until Vehicle Closed	—	No	The scan tool displays No or Yes. This parameter displays the content theft deterrent system status.
Content Theft Deterrent Mode	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Content Theft Deterrent Trigger History 1-3	—	None	The scan tool displays None, Driver door, Passenger door, Left rear door, Right rear door, Rear closure, Midgate, Tonneau Cover, Hood, Ignition Voltage, Intrusion, Inclination, Telematics enhanced service alarm, Battery reconnect detected, Unauthorized PWM change, Security Indicates Tamper, or Glass Breakage. This parameter displays the content theft deterrent trigger history status.
Courtesy Lamps Duty Cycle Command	—	Varies	This parameter displays the interior lights dimming command as a percentage.
Crank Abort	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Cruise Charging Set Level	—	Varies	This parameter displays cruise charging set level.
Cruise Control Switch Status	—	OFF	The scan tool displays CANCEL, OFF, ON, RESUME, SET or ERROR. This parameter displays the cruise control switch status.
Current Content Theft Deterrent Trigger	—	None	The scan tool displays None, Driver door, Passenger door, Left rear door, Right rear door, Rear closure, Midgate, Tonneau Cover, Hood, Ignition Voltage, Intrusion, Inclination, Telematics enhanced service alarm, Battery reconnect detected, Unauthorized PWM change, Security Indicates Tamper, Glass Breakage. This parameter displays the content theft deterrent current alarm trigger.
Current Driver	—	1-8	This parameter displays the current driver in vehicle.
Disable Battery Saver Relay Command	—	Inactive	The scan tool displays Active or Inactive.
Dome Lamp Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the dome lamp switch status.
Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door Ajar switch status.
Driver Door Key Unlock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Driver Door Unlock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver door unlock command status.
Driver Seat Heating Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Seat Heating/Venting /Cooling Mode	—	Off	The scan tool displays On or Off.
Driver Seat Ventilation Switch	—	Inactive	The scan tool displays Active or Inactive.
Driver Window Learned	—	Yes	The scan tool displays No or Yes.
Driver Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window main control down switch input status.

Parameter	System State	Expected Value	Definition
Driver Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window switch express input status.
Driver Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the driver window switch UP input status.
Driver Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express Down, Express, Up, Error, Inhibit, or Local Switch Overridden. This parameter displays the driver window motor mode status.
Driver Window Motor Reversing Status	—	No	The scan tool displays No or Yes.
Driver Window Motor Sensing System Fault Status	—	No	The scan tool displays No or Yes.
Driver Window Motor Undervoltage Status	—	No	The scan tool displays No or Yes.
Enable Battery Saver Relay Command	—	Inactive	The scan tool displays Active or Inactive.
End Model Part Number	—	Varies	This parameter displays the end model part number.
Engine Stalled	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Environment Identification	—	Unknown	The parameter displays the vehicle environment identification successful status.
Front Fog Lamps Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front fog lamp relay status.
Front Fog Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front fog lamp switch status.
Front Passenger Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the front passenger window down switch status.
Front Passenger Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch express input status.
Front Passenger Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch UP input status.
Front Tire Pressure on Placard	—	Varies	The scan tool displays kPa or PSI. This parameter displays the specified tire pressure placard information programmed in the BCM for tire pressure monitoring.
Fuel Economy Mode Inhibited - Low Charging Voltage	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the fuel economy mode status.
Generator Regulator Setpoint	—	Varies	The scan tool displays percentage.
Glove Box Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the instrument panel compartment release switch status.
Hazard Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the hazard lamps switch status.
Hazard Lamps Switch Backlight Command	—	Varies	The scan tool displays percentage. This parameter displays hazard switch backlight level PWM command status.
Headlamps On Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp on switch status.
Headlamps Flash Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamps flash to pass switch status.
Headlamp Washer Relay Command	—	Inactive	The scan tool displays Active or Inactive.
High Beam Select Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the high beam switch status.
High Beam Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the high beam command status.
Hood Ajar Switch	—	Inactive	This parameter display the remote start diagnostic status history or the last remote start diagnostic status history.

Parameter	System State	Expected Value	Definition
Hood Ajar Switch Signal 1	—	Inactive	This parameter display the remote start diagnostic status history or the last remote start diagnostic status history.
Hood Position	—	CLOSED	The scan tool displays CLOSED, AJAR, or OPENED. This parameter displays the hood position.
Horn Relay Command	—	Inactive	The scan tool displays Active or Inactive.
Horn Switch	—	Inactive	The scan tool displays Active or Inactive.
Idle Boost Level 2-3 Counter	—	Varies	This parameter displays the state of the idle boost level as counts.
Idle Charging Set Level	—	Varies	This parameter displays idle charging set level.
Ignition Mode Switch Dimming Command	—	Varies	The scan tool displays percentage.
Ignition Switch Reference	—	Varies	This parameter displays the ignition switch voltage reference.
Ignition Switch Signal Voltage	—	Varies	This parameter displays the ignition switch signal voltage.
Ignition Switch Status	—	Inactive	This parameter displays the ignition switch status.
Immobilizer Allows Engine To Start	—	Unknown	The scan tool displays Unknown, Incorrect, Not Allowed, or Valid. This parameter displays the immobilizer status.
Immobilizer Automatic Learn Timer	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the automatic learn timer status.
Immobilizer Environment Device 1-4	—	Unknown	The scan tool displays Incorrect, Correct, Not Received, Not Programmed or Unknown. This parameter displays the immobilizer source status.
Immobilizer Password Learn	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the password learn status.
Immobilizer Password Learn Scan Tool Delay	—	Varies	This parameter displays the auto learn timer status.
Immobilizer Security Code Accepted	—	No	The scan tool displays No or Yes.
Immobilizer Security Code Lockout	—	No	The scan tool displays No or Yes.
Immobilizer Security Code Programmed	—	Yes	The scan tool displays No or Yes.
In Park Switch Status	—	On	The scan tool displays On or Off. This parameter displays the park switch status.
Inadvertent Load Command	—	Active	The scan tool displays Active or Inactive.
Indicator Dimming Duty Cycle Command	—	Varies	The scan tool displays percentage. This parameter displays indicator lighting PWM command status.
Interior/Courtesy Lighting Master Switch	—	Door	The scan tool displays Door or other lighting switch status.
Interior Trunk Lid/Liftgate Window Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive.
Key Capture Solenoid Actuator	—	Active	The scan tool display Active or Inactive. This parameter displays column lock input status.
Key Fob 1-4 Battery Status	—	OK	The scan tool displays OK or other key fob battery status. This parameter displays the key fob battery status.
Key Fob 1-4 Function	—	Undefined	The scan tool displays Inactive, Lock, Unlock Driver Door, All Door Unlock, Release Rear Closure, Actuate Left Sliding Door, Actuate Right Sliding door, Panic Alarm, Release Fuel door, Actuate Power Windows, Actuate Folding Top, Start Engine, Stop Engine, Programmed, Locator Alarm, Close Liftgate, Open Liftgate, Stop Liftgate While Closing, Stop Liftgate While opening, Deadlock All Doors, Stop Liftgate Motion, Start Liftgate Motion, Stop Left Sliding Door Motion, Stop Right Sliding Door Motion, Comfort open, or Comfort close. This parameter displays the key fob function status.
Key Fob in Vehicle	—	Inactive	This parameter displays the current key fob in the vehicle.

Parameter	System State	Expected Value	Definition
Key In Cylinder Switch	—	Active	The scan tool displays Active or Inactive.
Key In Cylinder Switch/Key Fob in Vehicle	—	Yes	The scan tool displays No or Yes.
Key in Ignition Status	—	Inactive	The scan tool displays Key Out or Key In. This parameter displays the key in ignition status.
Key Part Number	—	Varies	This parameter displays the key part number.
Key Type	—	Master Key	The scan tool displays Unknown, Master Key, Valet Key, Fleet Key, or Unconfigured. This parameter displays the key type.
Last Door Lock Function	—	All Doors Lock	The scan tool displays NO Action, PC UNDB Lock, PC Unlock, Unlock, Unlock Driver, Unlock Passenger, Unlock Left Rear, Unlock Right Rear, Unlock Cargo Liftgate, Unlock Driver Side, Unlock Passenger Side, Unlock Non Driver, Unlock All, Lock All, DBL Lock, or UNDBL Lock.
LED Backlight Dimming Command	—	Varies	The scan tool displays as a percentage. This parameter displays LED backlight dimming PWM command status.
Left Brake Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left brake lamp command status.
Left Dedicated Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left dedicated daytime running lamp command status.
Left Front Tire Pressure	—	Varies	This parameter displays left front tire pressure in PSI.
Left Front Tire Pressure Sensor Identification	—	Varies	This parameter displays left front tire pressure sensor ID.
Left Front Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes. This parameter display tire pressure monitor system learned status.
Left Front Tire Pressure Sensor Mode	—	Learn Mode — Pressure Triggered	The scan tool parameter displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered.
Left Front Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Left Front Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Left Front Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Left Low Beam/Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays left low beam/daytime running lamp status.
Left Park Lamps Command	—	Varies	The scan tool displays percentage. This parameter displays rear exterior lighting status.
Left Rear Child Security Lock Switch	—	Inactive	This parameter displays Active or Inactive.
Left Rear Door Ajar Switch	—	Inactive	This parameter displays Active or Inactive. This parameter displays the left rear door ajar switch status.
Left Rear Tire Pressure	—	Varies	This parameter displays left rear tire pressure in PSI.
Left Rear Tire Pressure Sensor Identification	—	Varies	This parameter displays left rear tire pressure sensor ID.
Left Rear Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes. This parameter displays tire pressure monitor system learned status.
Left Rear Tire Pressure Sensor Mode	—	Stationary	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered.
Left Rear Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Left Rear Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive. The parameter displays turn lamp outage status.
Left Rear Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.

Parameter	System State	Expected Value	Definition
Left Rear Window Learned	—	Yes	The scan tool displays No or Yes.
Left Rear Window Main Control Down Switch	—	Inactive	The scan tool display Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Main Control Express Switch	—	Inactive	The scan tool display Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays driver window switch inputs.
Left Rear Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Left Rear Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive.
Left Stop Lamp Command	—	Varies	The scan tool display percentage.
Left Turn Signal Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the left turn signal switch status.
License Plate Lamps Command	—	Inactive	The scan tool displays Active or Inactive.
Load Reduction Level 2-3 Counter	—	Varies	The scan tool display as counts.
Low Beam Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the headlamp low beam relay status.
Manufacturers Enable Counter	—	Varies	This parameter tool displays various counter values.
Master Keys Learned	—	Varies	This parameter displays the total number of master keys learned.
Module Diagnostic Address	—	Varies	This parameter displays module diagnostic address.
Number of Key Fobs In Vehicle	—	1	This parameter displays the number of fobs located in the vehicle.
Odometer	—	Varies	This parameter displays the vehicle mileage.
Outside Rear View Mirror Courtesy Lamp Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays front exterior lighting status.
Park Brake Switch	—	Active	The scan tool displays Active or Inactive. This parameter displays front exterior lighting status.
Park Lamps Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the parklamp switch is activated.
Passenger Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door ajar switch status.
Passenger Door Lock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door lock switch status.
Passenger Door Unlock Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door unlock switch status.
Passenger Door(s) Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Passenger Door(s) Unlock Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger door unlock status.
Passenger Seat Heating Switch	—	Inactive	The scan tool displays Active or Inactive.
Passenger Seat Heating/Venting/Cooling Mode	—	Off	The scan tool displays On or Off.
Passenger Seat Ventilation Switch	—	Inactive	The scan tool displays Active or Inactive.
Passenger Window Learned	—	Yes	The scan tool displays No or Yes. This parameter displays the passenger window learned status.

Parameter	System State	Expected Value	Definition
Passenger Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Passenger Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the passenger window switch status.
Pickup Bed Cargo Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays pickup bed cargo lamp command status.
Previous Key Type	—	Unknown	This parameter displays previous driver identification device type.
Primary Key Status	—	Yes	The scan tool displays No or Yes.
Push Button Ignition Switch	—	Inactive	The scan tool displays Active or Inactive.
Push Button Ignition Switch Voltage	—	Varies	This parameter displays the push button ignition switch voltage.
Rain Sensor	—	Inactive	The scan tool displays Active or Inactive.
Rear Closure Ajar Switch	—	Active	The scan tool displays Active or Inactive.
Rear Closure Cylinder Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Rear Closure Cylinder Unlock Switch	—	Inactive	The scan tool displays Active or Inactive.
Rear Tire Pressure on Placard	—	Varies	This parameter displays the rear tire pressure in kPa or PSI. This parameter displays the specified tire pressure placard information programmed in the BCM for tire pressure monitoring.
Regulated Voltage Control Mode	—	Voltage	The scan tool displays voltage.
Remote Vehicle Start Attempts Exhausted	—	Varies	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history or remaining start attempts.
Remote Vehicle Start Crank Time	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Remote Vehicle Start Disabled by Driver	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Remote Vehicle Start Source	—	Ignition Switch Start	The scan tool displays Ignition Switch Start or Remote Vehicle Start.
Remote Vehicle Starts Exhausted	—	Varies	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history or remaining remote starts.
Right Brake Lamp Command	—	Varies	The scan tool display percentage. This parameter displays right brake lamp PWM command status.
Right Dedicated Daytime Running Lamp Command	—	Varies	The scan tool display percentage. This parameter displays right dedicated DRL PWM command status.
Right Front Tire Pressure	—	Varies	This parameter displays right front tire pressure in PSI.
Right Front Tire Pressure Sensor Identification	—	Varies	This parameter displays right front tire pressure sensor ID.
Right Front Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes.
Right Front Tire Pressure Sensor Mode	—	Stationary	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode or Learn Mode Pressure Triggered.
Right Front Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal, or High.
Right Front Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Right Front Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.

Parameter	System State	Expected Value	Definition
Right Low Beam/Daytime Running Lamp Command	—	Varies	The scan tool displays percentage. This parameter displays right low beam/daytime running lamp status.
Right Park Lamps Command	—	Varies	The scan tool displays percentage. This parameter displays rear exterior lighting status.
Right Rear Child Security Lock Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Door Ajar Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Tire Pressure	—	Varies	This parameter displays right rear tire pressure in PSI.
Right Rear Tire Pressure Sensor Identification	—	Varies	This parameter displays right rear tire pressure sensor ID.
Right Rear Tire Pressure Sensor Location Learned	—	Yes	The scan tool displays No or Yes.
Right Rear Tire Pressure Sensor Mode	—	Learn Mode — Pressure Triggered	The scan tool displays Learn Mode, Undefined, Remeasure Data Mode, Rolling Mode, Enter Off Mode, Exit Off Mode, or Learn Mode Pressure Triggered. This parameter displays the pressure sensor mode status.
Right Rear Tire Pressure Status	—	Normal	The scan tool displays Unknown, Normal, Very Low Pressure, Low, Weak Signal or High. This parameter displays the right rear tire pressure status.
Right Rear Turn Signal Bulb Out Feedback	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Turn Signal/Hazard Lamp Command	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Down Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Express Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Main Control Up Switch	—	Inactive	The scan tool displays Active or Inactive.
Right Rear Window Motor Mode	—	Local Switch Overridden	The scan tool displays Down, Express, Up, Inhibit, or Local Switch Overridden.
Right Rear Window Switch at Door	—	Inactive	The scan tool displays Active or Inactive.
Right Stop Lamp Command	—	Varies	The scan tool displays percentage.
Right Turn Signal Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the right turn signal switch status.
Run Abort	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Run Relay Command	—	Active	The scan tool displays Active or Inactive.
Run/Crank	—	Inactive	The scan tool displays Active or Inactive.
Run/Crank Relay Command	—	Active	The scan tool displays Active or Inactive.
Run/Crank Power Mode Indicator Command	—	Varies	The scan tool displays percentage. This parameter displays ignition switch run LED PWM command status.
Secondary Key Status	—	No	The scan tool displays No or Yes.
Security Indicator Command	—	Varies	The scan tool displays percentage. This parameter displays security LED PWM command status.
Selected Front Tire Type	—	Standard Load	The scan tool displays No Tire Type, Metric Standard Load, Metric Extra Load, Load Range C, Load Range D, or Load Range E. This parameter displays the front tire type.
Selected Rear Tire Type	—	Standard Load	The scan tool displays No Tire Type, Metric Standard Load, Metric Extra Load, Load Range C, Load Range D, or Load Range E. This parameter displays the rear tire type.

Parameter	System State	Expected Value	Definition
Start-Up State of Charge	—	Varies	The scan tool displays percentage. This parameter displays startup state of charge status.
State of Charge	—	Varies	The scan tool displays percentage. This parameter displays state of charge status.
Sunroof Enabled	—	Active	The scan tool displays Active or Inactive.
Sunroof Motor Overtemperature	—	Inactive	The scan tool displays Active or Inactive.
Sunroof Not Learned	—	Inactive	The scan tool displays Active or Inactive.
Sunroof Position	—	Closed	The scan tool displays Closed, Open, Venting, Comfort Open, Closing, Opening. This parameter displays the current sunroof position.
Sunroof Remote Command	—	Inactive	The scan tool displays Sunroof Secure Close, Venting, Close, or Open. This parameter displays the last sunroof remote command.
Sunroof Slide Switch	—	Inactive	The scan tool displays Inactive, Express Open, Open, Express Close, Close, Short to Ground, Short to Battery, or Stuck. This parameter displays the sunroof slide switch status.
Sunroof Tilt Switch	—	Inactive	The scan tool displays Inactive, Open, Close, Short to Ground, Short to Battery or Stuck. This parameter displays the sunroof tilt switch status. When the switch experiences a malfunction Short to Ground, Short to Battery or Stuck will be displayed.
Sunroof/Sunshade Motor Overtemperature	—	Inactive	The scan tool displays Active or Inactive.
Sunroof/Sunshade Switch	—	Inactive	The scan tool displays Inactive, Express Open, Open, Express Close, Close, Short to Ground, Short to Battery, or Stuck. This parameter displays the sunroof or sunshade switch status.
Sunshade Enabled	—	Active	The scan tool displays Active or Inactive.
Sunshade Not Learned	—	Inactive	The scan tool displays Active or Inactive.
Sunshade Position	—	Closed	The scan tool displays Ajar, Closed, Opened, Closing, or Opening. This parameter displays the sunshade position status.
Sunshade Remote Command	—	Inactive	The scan tool displays Close or Open. This parameter displays the last sunshade remote command.
Tamper Status	—	No	The scan tool displays No or Yes.
Telematics Enhanced Service Override Active	—	No	The scan tool displays No or Yes. This parameter displays vehicle theft deterrent system status.
Total Keys Learned	—	Varies	This parameter displays the number of keys learned.
Traction Control Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the traction control switch is active.
Transponder Authentication	—	Initializing	The scan tool displays Inactive, Initializing, ID Received, Password Received, Data Reception Complete, or Data Transmission Complete. This parameter displays the transponder key communication status.
Transponder Key Status	—	OK	The scan tool displays OK, LIN Bus Initialization Malfunction, Antenna Initialization Malfunction, Password Error, No Valid Key Detected, LIN Bus Communication Malfunction, or Antenna Malfunction. This parameter displays the transponder key communication error status.
Trunk Lamp Command	—	Varies	The scan tool displays as percentage.
Trunk Lid/Liftgate Window Exterior Unlatch Switch	—	Inactive	The scan tool displays Active or Inactive.
Trunk Lid/Liftgate Window Unlatch Command	—	Inactive	The scan tool displays Active or Inactive.
Valet Keys Learned	—	Varies	This parameter displays the number of valet keys learned.

Parameter	System State	Expected Value	Definition
Valet Mode Status	—	Inactive	This parameter displays the remote start diagnostic status history or the last remote start diagnostic status history.
Valet switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays Active when the valet switch is on.
Vehicle Identification Number (VIN)	—	Varies	This parameter displays the vehicle identification number.
Window Lockout Switch	—	Inactive	The scan tool displays Active or Inactive.
Window Lockout Switch Indicator Command	—	Inactive	The scan tool displays Active or Inactive.
Windshield Washer Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield washer relay status.
Windshield Washer Switch	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield washer switch status.
Windshield Wiper Park Switch	—	Active	The scan tool displays Active or Inactive.
Windshield Wiper High Speed Relay Command	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper High Speed Switch	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper Motor Relay Command	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield wiper relay status.
Windshield Wiper Stalled During Sweep	—	Inactive	The scan tool displays Active or Inactive.
Windshield Wiper Stalled in Park Position	—	Inactive	The scan tool displays Active or Inactive. This parameter displays the windshield wiper stalled status.
Windshield Wiper Switch	—	Off	The scan tool displays Off, Delay 1, Delay 2, Delay 3, Delay 4, Delay 5, or Low. This parameter displays the windshield wiper switch status.

Body Control Module Scan Tool Output Controls

Scan Tool Output Control	Description
Accent Lighting 1	The BCM activates the accent lighting when you select On. The value should be 100%. All accent lighting should illuminate until commanded Off.
Accent Lighting 2	The BCM activates the accent lighting when you select On. The value should be 100%. All accent lighting should illuminate until commanded Off.
Accessory Power Mode Indicator	The BCM activates the accessory indicator when you select On. The value should be 100%. The yellow LED accessory indicator on start button should illuminate until commanded Off.
Accessory Power Relay	The BCM actuates the accessory power relay when you select On. The accessory power relay should turn on allowing specific vehicle functions to operate.
Accessory/Retained Accessory Power Relay	The BCM actuates the retained accessory power relay when you select On. The retained accessory power relay should turn on allowing specific vehicle functions to operate.
All Doors Lock	The BCM activates all doors lock when you select Lock. All doors should lock.
All Doors Lock/Unlock	The BCM activates all doors lock/unlock when you select Lock/Unlock.
Auxiliary Ignition Run Relay	The BCM controls the Ignition Run Coil Control circuit to turn it On and Off.
Backup Lamps	The BCM actuates the backup lamps relay when you select On. The backup lamps should illuminate until commanded Off. Engine must be running.
Battery Saver Relay	The BCM activates the battery saver relay when you select Enable. This command sets the low power mode relay in the state in which it does not supply power to the non-essential parts of the vehicle. This is used to prevent the battery from being depleted when the vehicle is not used for a long period of time.
Brake Pedal Position Sensor Learn	The BCM activates the brake pedal position sensor learn when you select Learn. The brake pedal position sensor learn procedure should start.
Brake Transmission Shift Interlock Solenoid	The BCM activates the transmission shift interlock solenoid actuator when you select On.

Scan Tool Output Control	Description
Actuator	
Brake Transmission Shift Interlock Indicator	The BCM activates the transmission range indicator when you select On. The transmission range indicator at the shifter should illuminate until commanded Off.
Center Brake Lamp	The BCM activates the center brake lamp when you select On. The center brake lamp should illuminate until commanded Off.
Center Stop Lamp	The BCM activates the center stop lamp when you select On. The center stop lamp should illuminate until commanded Off.
Child Security Lock Indicator	The BCM activates the child security lock indicator when you select On. The child security lock indicator should illuminate until commanded Off.
Child Security Lock Motors	The BCM actuates the child security door motor when you select Lock. The child security doors should lock.
Child Security Lock/Window Lockout Switch Indicator	The BCM activates the child security lock/window lockout switch indicator when you select On. The child security lock/window lockout switch indicator should illuminate until commanded Off.
Clear Driver Window Learned Values	When you select Clear the clear driver window learn procedure should start.
Clear Passenger Window Learned Values	When you select Clear the clear left rear window learn procedure should start.
Courtesy Lamps	The BCM activates the courtesy lamps when you select On. The value should be 100%. The courtesy lamps should illuminate until commanded Off.
Driver Door Unlatch	The BCM activates the output circuit to unlatch the driver door with a passive entry passive start when you select Unlatch. There is NO door handle on this type of vehicle to open the door. Instead, there is a pad that you press to unlatch the door.
Driver Door Unlock	The BCM pulses the driver door unlock motor when you select Unlock. The driver door should unlock.
Driver Window Motor	The BCM activates the driver window motor when you select Up/Down/Stop/Express Up/Express Down. The driver window should follow the appropriate command.
Driver Window Motor Mode	The BCM activates the driver window motor when you select Up/Down/Stop/Express Up/Express Down. The driver window should follow the appropriate command.
Front Fog Lamps	The BCM actuates the front fog lamps relay when you select On. The front fog lamps relay should turn on.
Generator Regulator Setpoint	The BCM changes the output of the generator.
Hazard Lamps Switch Backlight	The BCM activates the hazard lamps switch when you select On. The value should be 100%. The hazard lamps switch backlight should illuminate until commanded Off.
High Beams	The BCM activates the high beam command when you select On. The high beam lights should illuminate. The headlamps have to be on.
Horn Relay	The BCM activates the horn when you select On. The horn should sound.
Inadvertent Load	The BCM activates the inadvertent load command when you select On. (It is an electronic request to shut down an electrical or electronic device that is drawing power from the battery at a time when there should be no activity, usually after the key has been removed from the ignition for a period of time.)
Incandescent Dimming	The BCM activates the incandescent light dimming when you select On. The values should be 100%. The incandescent light dimming should illuminate until commanded Off.
Indicator Dimming	The BCM activates the indicator dimming when you select On. The values should be 100%. The indicator should illuminate until commanded Off.
LED Backlight Dimming	The BCM activates the LED backlight dimming when you select On. The values should be 100%. The LED backlight dimming for control switches should illuminate until commanded Off.
Left Brake Lamp	The BCM activates the left brake lamp when you select On. The values should be 100%. The left brake lamp should illuminate until commanded Off.
Left Dedicated Daytime Running Lamp	The BCM activates the left dedicated daytime running lamp when you select ON. The value changes to 100%. The left daytime running lamp should illuminate.
Left Front Park Lamp	The BCM activates the left front park lamp when you select ON with a value of 100%. The left front park lamp should illuminate.
Left Front Park Lamp/Daytime Running Lamp	The BCM activates the left front park lamp/daytime running lamp when you select ON with a value of 100%. The left front park lamp/daytime running lamp should illuminate.

Scan Tool Output Control	Description
Left Front Turn Signal Lamp	The BCM activates the left front turn signal lamp when you select On. The left front turn signal lamp should illuminate until commanded Off.
Left Headlamp Lamp Low Beam	The BCM activates the left headlamp low beam when you select On. The values should be 100%. The left headlamp low beam should illuminate until commanded Off.
Left Park Lamps	The BCM activates the left park lamps when you select ON with a value of 100%. The left park lamps should illuminate.
Left Rear Park Lamp	The BCM activates the left rear park lamp when you select ON with a value of 100%. The left rear park lamp should illuminate.
Left Rear Stop/Park Lamp	The BCM activates the left rear stop/park lamp when you select ON with a value of 100%. The left rear stop/park lamp should illuminate.
Left Rear Turn Signal Lamp	The BCM activates the left rear turn signal lamp when you select On. The left rear turn signal lamp should illuminate until commanded Off.
Left Rear Turn Signal/Stop Lamp	The BCM activates the left rear turn signal/stop lamp when you select On. The left rear turn signal/stop lamp should illuminate until commanded Off.
Left Rear Window Motor	The BCM activates the left rear window motor when you select Up/Down/Stop/Express Down. The left rear window should follow the appropriate command.
Left Stop Lamp	The BCM activates the left stop lamp when you select ON with a value of 100%. The left stop lamp should illuminate.
Left Trailer Turn Signal Lamp	The BCM activates the left trailer turn signal lamp when you select ON with a value of 100%. The left trailer turn signal lamp should illuminate.
License Plate Lamps	The BCM activates the license plate lamps when you select On. The license plate lights should turn on until commanded Off.
Liftgate Unlatch	The BCM actuates the rear compartment lid release actuator when you select Unlatch. The trunk or liftgate should open.
LIN Bus Device Identification Data	When you select Update the LIN Bus Device part number and calibration part number should be updated.
Low Beam Lamps	The BCM activates the low beam lamps when you select On. The low beam lamps should turn on.
Low Beam Relay	The BCM activates the low beams when you select On. The low beam lights should turn on.
Outside Rear View Mirror Courtesy Lamp	The BCM activates the outside rear view mirror courtesy lamp when you select On. The outside rear view mirror courtesy lamp (at the bottom) should illuminate.
Passenger Door(s) Unlatch	The BCM activates the output circuit to unlatch the passenger door with a passive entry passive start when you select Unlatch. There is NO door handle on this type of vehicle to open the door. Instead, there is a pad that you press to unlatch the door.
Passenger Door(s) Unlock	The BCM pulses the passenger door unlock motor when you select Unlock. The passenger door should unlock.
Passenger Window Motor	The BCM activates the passenger window motor when you select Up/Down/Stop/Express Up/Express Down. The passenger window should follow the appropriate command.
Pickup Bed Cargo Lamp	The BCM activates the pickup bed cargo lamp when you select On. The values should be 100%. The pickup bed cargo lamp should illuminate until commanded Off.
Rear Fog Lamp(s) Relay	The BCM activates the rear fog lamps when you select On. The rear fog lamps should turn on.
Right Brake Lamp	The BCM activates the right brake lamp when you select On. The value should be 100%. The right brake lamp should illuminate until commanded Off.
Right Dedicated Daytime Running Lamp	The BCM activates the right dedicated daytime running lamp when you select On. The value should be 100%. The right daytime running lamp should illuminate.
Right Front Park Lamp	The BCM activates the right front park lamp when you select ON with a value of 100%. The right front park lamp should illuminate.
Right Front Park Lamp/Daytime Running Lamp	The BCM activates the right front park lamp/daytime running lamp when you select ON with a value of 100%. The right front park lamp/daytime running lamp should illuminate.
Right Front Turn Signal Lamp	The BCM activates the right front turn signal lamp when you select On. The right front turn signal/hazard lamp should illuminate.
Right Headlamp Low Beam	The BCM activates the right headlamp low beam when you select On. The right headlamp low beam should illuminate.
Right Park Lamps	The BCM activates the right park lamps when you select ON with a value of 100%. The right park lamps should illuminate.

Scan Tool Output Control	Description
Right Rear Park Lamp	The BCM activates the right rear park lamp when you select ON with a value of 100%. The right rear park lamp should illuminate.
Right Rear Stop/Park Lamp	The BCM activates the right rear stop/park lamp when you select ON with a value of 100%. The right rear stop/park lamp should illuminate.
Right Rear Turn Signal Lamp	The BCM activates the right rear turn signal/hazard lamp when you select On. The right rear turn signal lamp should illuminate until commanded Off.
Right Rear Turn Signal/Stop Lamp	The BCM activates the right rear turn signal/stop lamp when you select On. The right rear turn signal/stop lamp should illuminate until commanded Off.
Right Rear Window Motor	The BCM activates the right rear window motor when you select Up/Down/Stop/Express Down. The right rear window should follow the appropriate command.
Right Stop Lamp	The BCM activates the right stop lamp when you select ON with a value of 100%. The right stop lamp should illuminate.
Right Trailer Turn Signal Lamp	The BCM activates the right trailer turn signal lamp when you select ON with a value of 100%. The right trailer turn signal lamp should illuminate.
Run Relay	The BCM actuates the run relay when you select On. The run relay should turn on.
Run/Crank Relay	The BCM actuates the run/crank relay when you select On. The run/crank relay should turn on.
Run/Start Power Mode Indicator	The BCM activates the run/start lamp when you select On. The value should be 100%. The green LED on engine start/stop button should illuminate until commanded Off.
Security Indicator	The BCM activates the security indicator command when you select On. The security indicator at center of dash (or at DRL sensor) should illuminate until commanded Off.
Stop Lamps	The BCM activates the stop lamps when you select ON with a value of 100%. The stop lamps should illuminate.
Tire Pressure Sensors Learn	The BCM activates the tire pressure sensor learn procedure when you select Learn.
Tire Type/Pressure Selection	When you select OK, you can change tire type and load range.
Trailer Backup Lamps	The BCM activates the trailer backup lamps when you select ON with a value of 100%. The trailer backup lamps should illuminate.
Trailer Park Lamps	The BCM activates the trailer park lamps when you select ON with a value of 100%. The trailer park lamps should illuminate.
Transmission Range Indicator	The BCM activates the transmission range indicator when you select On. The transmission range indicator at the shifter should illuminate until commanded Off.
Trunk Lamp	The BCM activates the trunk lamp when you select On. The value should be 100%. The trunk lamp should illuminate until commanded Off.
Trunk Lid Unlatch	The BCM activates the trunk lid unlatch when you select On. The trunk lid should unlatch.
Window Lockout Switch Indicator	The BCM activates the window lockout switch indicator when you select On. The window lockout switch indicator should illuminate until commanded Off.
Windshield Washer Relay	The BCM actuates the windshield washer relay when you select On. The windshield washer relay should turn on.
Windshield Wiper High Speed Relay	The BCM actuates the windshield wiper high speed relay when you select On. The windshield wiper high speed relay should turn on.
Windshield Wiper Motor Relay	The BCM actuates the windshield wiper motor relay when you select On. The windshield wiper motor relay should turn on.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Note:

- DO NOT program a control module unless directed to by a service procedure or a service bulletin. If the control module is not properly configured with the correct calibration software, the control module will not control all of the vehicle features properly.
- Ensure the programming tool is equipped with the latest software and is securely connected to the data link connector. If there is an interruption during programming, programming failure or control module damage may occur.
- Stable battery voltage is critical during programming. Any fluctuation, spiking, over voltage or loss of voltage will interrupt programming. When required install the *EL-49642* SPS Programming Support Tool to maintain system voltage. If not available, connect a fully charged 12 V jumper or booster pack disconnected from the AC voltage supply. DO NOT connect a battery charger.
- Turn OFF or disable systems that may put a load on the vehicles battery such as; interior lights, exterior lights (including daytime running lights), HVAC, radio, etc.
- During the programming procedure, follow the SPS prompts for the correct ignition switch position.
- Clear DTCs after programming is complete. Clearing powertrain DTCs will set the Inspection/Maintenance (I/M) system status indicators to NO.

Reference Information

Special Tools

- EL-49642* SPS Programming Support Tool
- EL-46079* Tire Pressure Monitor Diagnostic Tool

For equivalent regional tools, refer to Special Tools.

Replace and Program Control Module

To program a replacement K9 Body Control Module (BCM), perform the following procedure:

1. Install *EL-49642* SPS programming support tool.

Note: Make sure the vehicle ignition switch state is in appropriate position for the following step.

- For Key Ignition System, begin with the ignition in the RUN position.
- For Push Button Start System, begin with the vehicle in vehicle OFF power mode. The Service Programming System will power mode the vehicle.

2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K9 Body Control Module - Programming and follow the on-screen instructions.
4. Perform the following for the appropriate ignition type prior to proceeding with the next step:

- Key Ignition System: Key in the ignition and any additional keys must be away from the vehicle at least 3 m.
- Push Button Start System: Keyless entry transmitter must be in the programming pocket. Refer to the owner manual for the exact pocket location. All additional transmitters must be away from the vehicle at least 3 m.

Note: The following programming step may take between 10–12 min and progress will appear to have stopped during this process. This is a normal security timer response and a restart should not be performed. If the DTC B389A set immediately after programming a replacement BCM, the Immobilizer Learn procedure was not properly completed. The Immobilizer Learn procedure needs to be performed again.

- On the SPS Supported Controllers screen, select IMMO Immobilizer Learn - Setup. On the next screen, select Body Control Module IMMO Learn with Existing Transponder or Remote Key and follow the on-screen instructions. When Immobilizer Learn is complete, press the Unlock button on the keyless entry transmitter to allow the keyless entry transmitter to exit the Immobilizer Learn mode.

Note: When performing the Tire Pressure Monitor Sensor Learn during BCM setup, the *EL-46079* tire pressure monitor diagnostic tool must be used to activate each tire pressure sensor for vehicles with UJM.

- For Key Ignition System, begin with the ignition in the RUN position.
- For Push Button Start System, begin with the vehicle in vehicle ON power mode.
- On the SPS Supported Controllers screen, select K9 Body Control Module - Setup (or K9 Body Control Module - Configuration & Setup) and follow the on-screen instructions.
- Check the driver information center display for additional messages regarding further calibration instructions. If there are no additional driver information center instructions present, programming is complete.
- At the end of programming, choose the "Clear DTCs" function on the SPS screen.
- If ABS, Traction Control and/or Stabilitrak indicators are ON and DTC C0161 is set in the K17 Electronic Brake Control Module after performing BCM programming and setup, do the following:

1. Disconnect the scan tool from the X84 Data Link Connector.
2. Ignition OFF, all access doors closed, all vehicle systems OFF, and all keys at least 3 m (9.8 ft) away from the vehicle. It may take up to 2 min to power down.
3. Ignition ON, verify DTC C0161 is in history. If not, repeat the above step to make sure the vehicle is in sleep mode.
4. Use the scan tool to clear the DTCs.

Reprogram Control Module

To program an existing K9 Body Control Module, perform the following procedure:

1. Install *EL-49642* SPS programming support tool.

Note: Make sure the vehicle ignition switch state is in appropriate position for the following step.

- For Key Ignition System, begin with the ignition in the RUN position.
- For Push Button Start System, begin with the vehicle in vehicle ON power mode.

2. Access the Service Programming System (SPS) and follow the on-screen instructions.
3. On the SPS Supported Controllers screen, select K9 Body Control Module - Programming and follow the on-screen instructions.

Note: When performing the Tire Pressure Monitor Sensor Learn during BCM setup, the *EL-46079* tire pressure monitor diagnostic tool must be used to activate each tire pressure sensor for vehicles with UJM.

4. On the SPS Supported Controllers screen, select K9 Body Control Module - Setup (or K9 Body Control Module - Configuration & Setup) and follow the on-screen instructions.
5. Check the driver information center display for additional messages regarding further calibration instructions. If there are no additional driver information center instructions

present, programming is complete.

6. At the end of programming, choose the "Clear DTCs" function on the SPS screen.
7. If ABS, Traction Control and/or StabiliTrak indicators are ON and DTC C0161 is set in the K17 Electronic Brake Control Module after performing BCM programming and setup, do the following:
 1. Disconnect the scan tool from the X84 Data Link Connector.
 2. Ignition OFF, all access doors closed, all vehicle systems OFF, and all keys at least 3 m (9.8 ft) away from the vehicle. It may take up to 2 min to power down.
 3. Ignition ON, verify DTC C0161 is in history. If not, repeat the above step to make sure the vehicle is in sleep mode.
 4. Use the scan tool to clear the DTCs.

[Unsuccessful Programming Recovery.](#)

In the event of an interrupted or unsuccessful programming event, perform the following steps:

1. Ignition ON. Ensure the control module, DLC and programming tool connections are secure and the SPS software is up to date.
 2. Verify the control module can be reprogrammed.
- *If the control module cannot be reprogrammed*
 1. Ignition OFF for one minute, ignition ON.
 2. Verify the control module can be reprogrammed.
 - If the control module cannot be reprogrammed, replace the control module.
 - If the control module can be reprogrammed.
 - All OK.
 - *If the control module can be reprogrammed*
 - All OK.

[Repair Instructions.](#)

Perform the Diagnostic Repair Verification after completing the repair.

Control Module References for Control Module replacement, programming and setup

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Caution: Avoid spilling brake fluid onto painted surfaces, electrical connections, wiring, or cables. Brake fluid will damage painted surfaces and cause corrosion to electrical components. If any brake fluid comes in contact with painted surfaces, immediately flush the area with water. If any brake fluid comes in contact with electrical connections, wiring, or cables, use a clean shop cloth to wipe away the fluid.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Note: This is an overview of different serial data buses used by GM devices to communicate with each others. Use Data Communication Schematics to find out which serial data buses are configured for a specific vehicle.

[Circuit Description](#)

There are many components in a vehicle that rely on information from other sources, transmit information to other sources, or both. Serial data communication networks provide a reliable, cost effective, way for various components of the vehicle to "talk" to one another and share information.

GM uses a number of different communication buses to insure the timely and efficient exchange of information between devices. When compared to each other, some of these buses are different in nature as far as speed, signal characteristics, and behavior. An example of this is the High Speed GMLAN and Low Speed GMLAN buses.

On the other hand, when other buses are compared to each other they have similar characteristics and simply operate in parallel. In this case they are used to group together components which have high interaction. Examples are the High Speed GMLAN, Powertrain Expansion, and Chassis Expansion buses. This allows them to communicate with each other on a bus with reduced message congestion insuring faster and the more timely exchange of information than if all vehicle devices were on a single bus.

The majority of information that exists within a given network generally stays local; however some information will have to be shared on other networks. Control modules designated as Gateway's perform the function of transferring information between the various buses. A Gateway module is connected to at least 2 buses and will interact with each network according to its message strategy and transmission models.

GMLAN provides the capability for a receiving device to monitor message transmissions from other devices in order to determine if messages of interest are not being received. The primary purpose is to allow reasonable default values to be substituted for the information no longer being received. Additionally, a device may set a Diagnostic Trouble Code to indicate that the device it is expecting information from is no longer communicating.

[High Speed GMLAN Circuit Description](#)

A High Speed GMLAN Bus is used where data needs to be exchanged at a high enough rate to minimize the delay between the occurrence of a change in sensor value and the reception of this information by a control device using the information to adjust vehicle system performance.

The High Speed GMLAN serial data network consists of two twisted wires. One signal circuit is identified as GMLAN-High and the other signal circuit is identified as GMLAN-Low. At each end of the data bus there is a 120 Ω termination resistor between the GMLAN-High and GMLAN-Low circuits.

Data symbols (1's and 0's) are transmitted sequentially at a rate of 500 Kbit/s. The data to be transmitted over the bus is represented by the voltage difference between the GMLAN-High signal voltage and the GMLAN-Low signal voltage.

When the two wire bus is at rest the GMLAN-High and GMLAN-Low signal circuits are not being driven and this represents a logic "1". In this state both signal circuits are at the same voltage of 2.5 V. The differential voltage is approximately 0 V.

When a logic "0" is to be transmitted, the GMLAN-High signal circuit is driven higher to about 3.5 V and the GMLAN-Low circuit is driven lower to about 1.5 V. The differential voltage becomes approximately 2.0 (+/- 0.5) V.

[Chassis High Speed GMLAN Circuit Description](#)

The GMLAN Chassis Expansion Bus is basically a copy of the High Speed GMLAN Bus except that its use is reserved for chassis components. This implementation splits message congestion between two parallel buses helping to insure timely message transmission and reception. Sometimes communication is required between the Chassis Expansion Bus and the primary High Speed GMLAN Bus. This is accomplished by using the K17 Electronic Brake Control Module (EBCM) as the Gateway module. Since the High Speed GMLAN Chassis Expansion Bus and primary High Speed GMLAN Bus operate in the same manner, the diagnostics for each are similar.

[Object High Speed GMLAN Circuit Description](#)

The GMLAN Object Bus is basically a copy of the High Speed GMLAN Bus except that its use is reserved for the enhanced safety system. This implementation is used to isolate the heavy communication among the enhanced safety system devices from the other vehicle buses, reducing congestion. The K124 Active Safety Control Module is connected to the Object Bus as well as the Primary High Speed GMLAN Bus, the Chassis Expansion Bus, and the Low Speed GMLAN Bus. The K124 Active Safety Control Module acts as a Gateway module for all required communication between the Object Bus devices and devices on these other vehicle buses. The GMLAN Object Bus operates in the same manner as the Chassis Expansion and Primary High Speed buses and so the diagnostics are similar. The Object Bus is physically partitioned into a Front Object Bus and a Rear Object Bus with each partition having its own communication enable circuit to activate the partition, but functional operation of both is identical. The Front Object Bus standard devices are the K124 Active Safety Control Module, the K109 Frontview Camera Module, and the B233B Radar Sensor Module – Long Range. The Front Object Bus optional devices are the B233LF Radar Sensor Module – Short Range Left Front and the B233RF Radar Sensor Module – Short Range Right Front. The Rear Object Bus is optional and when present will have the K124 Active Safety Control Module and B233R Radar Sensor Module – Short Range Rear on the bus, and optionally the Radar Sensor Module – Short Range Right Rear. All Object Bus components are powered by the K124 Active Safety Control Module via the communication enable circuits, except the K109 Frontview Camera Module which is powered directly by battery.

[Media Oriented Systems Transport \(MOST\) Circuit Description](#)

The MOST Infotainment network is a dedicated high speed multimedia streaming data bus independent from GMLAN. The MOST bus will be configured in a physical hardwired loop with each device within the bus sends and receives data on an assigned MOST addresses in a set order. Each device on the MOST bus will be required to have twisted pair copper wires (2 transmit TX, 2 receive RX, and 1 electronic control line which is a 12 V wakeup signal line). The A11 Radio is the MOST Master and will monitor the bus for vehicle configuration, Infotainment data messages and errors on the bus. The MOST initialization consists of a short 100 ms low voltage pulse on the electronic control line (or MOST control line) connected to all devices contained on the MOST ring. This wakeup message once received by each device, will first respond with a generic device response. Once these initial responses on the MOST bus are reported successfully without error to the A11 Radio, the second data request will record the MOST device addresses, their functionality requirements and capabilities within. The A11 Radio will learn this information and also record the address node sequence on the MOST bus at this point. This node address list will now be stored within the A11 Radio as the MOST bus configuration (called "Last Working MOST ID of Node 1 – 9" on scan tool data display).

When MOST receive, transmit, or control line faults are detected, transmit/receive messages will not be received as expected from the wakeup request. The A11 Radio and the K74 Human Machine Interface Control Module will then perform diagnostics to isolate these MOST faults. If the MOST control line is shorted low to 0 V for excess amount of time, the A11 Radio will set a U2098 DTC and K74 Human Machine Interface Control Module will set a U0029 02 DTC. At this point the MOST bus will be unable to communicate until the shorted MOST control line is repaired.

Once the shorted MOST control line diagnostics pass, the A11 Radio will attempt to resend the initial short pulse attempts up to 3 times on the MOST control line. If the expected responses are not received, the A11 Radio continues into a failure mode setting a U0028 DTC and will continue on to send one 300 ms long pulse, which will enable the furthest upstream transmitting device to become the surrogate MOST Master in this MOST fault/diagnostic mode. When the A11 Radio receives this new MOST Master identity, the surrogate MOST master device can be identified based on scan tool data parameter "Surrogate MOST Master Node Upstream Position". The scan tool should be used to determine the MOST bus configuration and direction by utilizing the "Last Working MOST ID of Node 1 – 9" parameters from the A11 Radio data display. When a fault is present, it will indicate the newly enabled "Surrogate MOST Master Node Upstream Position" from the A11 Radio. This will assist in determining where the MOST bus/control is at fault. The MOST device upstream from the surrogate MOST master device, transmit, receive, or control lines will be the suspect areas for diagnostics at this point. These faults can be associated with any of the MOST transmit, receive, or control line twisted copper wires or possibly an internal device fault.

The K74 Human Machine Interface Control Module will set a U0029 00 DTC when it diagnoses a MOST bus not communicating properly after one attempt. When the DTC U0029 00 is set by the K74 Human Machine Interface Control Module without the corresponding DTC U0028 from the A11 Radio, it will be an indication of an intermittent wiring/device condition.

[CAN Graphical Interface \(CGI\) Circuit Description](#)

This bus is used by the Entertainment sub-system to transfer high-rate display graphics between the A11 Radio and the P17 Info Display Module and/or Radio/HVAC Control. The electrical characteristics of the CAN Graphical Interface (CGI) Bus are very similar to the High Speed GMLAN Bus. The message strategy and construction of messages are different however. Sometimes communication is required between the CAN Graphical Interface Bus and the Low Speed GMLAN Bus. This is accomplished by using the A11 Radio as the Gateway module. Since the CAN Graphical Interface Bus and primary High Speed GMLAN Bus have similar electrical characteristics, the diagnostics for each are similar.

In the case where the P17 Info Display Module and Radio/HVAC Control are separate devices the P17 Info Display Module is responsible for passing information between the A11 Radio and the Radio/HVAC Control. The A11 Radio interfaces only with the P17 Info Display Module and the P17 Info Display Module then communicates with the Radio/HVAC Control through a Local Interconnect Network (LIN) interface.

A bus wake up signal will be generated by the A11 Radio or by the P17 Info Display Module when the system functionality is required. The communication function of the CAN Graphical Interface shall be enabled or disabled based on the voltage level of the Center Stack Wake. The network will stay awake as long as the circuit voltage is driven low, to less than 1.5 V. Communications are disabled with a high circuit voltage around 5.0 V.

The A11 Radio can execute a warm reset of the P17 Info Display Module if the P17 Info Display Module fails to respond to the A11 Radio's request. The Center Stack Reset is a low-asserted pull down output (less than 1.5 V) from the A11 Radio to the P17 Info Display Module and has the same electrical characteristics as those for the Center Stack Wake signal defined above.

Mid Speed GMLAN Circuit Description

The Mid Speed GMLAN Bus is very similar to the High Speed GMLAN Bus except that it uses a slower transmission rate of 125 Kbit/s. This bus is intended for use where the system response time demands that a large amount of data be transmitted in a relatively short amount of time, such as updating a graphics display. As such it has usually been used for infotainment applications. Sometimes communication is required between the Low Speed GMLAN Bus and the Mid Speed GMLAN Bus. This is accomplished by using the A11 Radio as the Gateway module. Since the Mid Speed GMLAN Bus and primary High Speed GMLAN Bus operate in a similar manner, the diagnostics for each are similar.

Low Speed GMLAN Circuit Description

Low Speed GMLAN Bus is used in applications where a high data rate is not required which allows for the use of less complex components. It is typically used for operator controlled functions where the response time requirements are slower than those required for dynamic vehicle control.

The Low Speed GMLAN Serial Data Network consists of a single wire, ground referenced bus with high side voltage drive. During on road vehicle operation data symbols (1's and 0's) are transmitted sequentially at the normal rate of 33.3 Kbit/s. For component programming only, a special high speed data mode of 83.3 Kbit/s may be used.

Unlike the high speed dual wire networks, the single wire low speed network does not use terminating resistors at either end of the network.

The data symbols to be transmitted over the bus are represented by different voltage signals on the bus. When the Low Speed GMLAN Bus is at rest and is not being driven, there is a low signal voltage of approximately 0.2 V. This represents a logic "1". When a logic "0" is to be transmitted, the signal voltage is driven higher to around 4.0 V or higher.

Local Interconnect Network (LIN) Circuit Description

The Local Interconnect Network (LIN) Bus consists of a single wire with a transmission rate of 10.417 Kbit/s. This bus is used to exchange information between a master control module and other smart devices which provide supporting functionality. This type of configuration does not require the capacity or speed of either a High Speed GMLAN Bus or Low Speed GMLAN Bus and is thus relatively simpler.

The data symbols (1's and 0's) to be transmitted are represented by different voltage levels on the communication bus. When the LIN Bus is at rest and is not being driven, the signal is in a high voltage state of approximately V_{batt}. This represents a logic "1". When a logic "0" is to be transmitted, the signal voltage is driven low to about ground (0.0 V).

Communication Enable Circuit Description

Devices on High Speed GMLAN Bus enable or disable communication based on the voltage level of the communication enable circuit. When the circuit voltage is high (around 12 V), communications are enabled. When the circuit is low, communications are disabled.

Data Link Connector (DLC)

The X84 Data Link Connector (DLC) is a standardized 16-cavity connector. Connector design and location is dictated by an industry wide standard, and is required to provide the following:

- Pin 1 Low speed GMLAN communications terminal
- Pin 2 Class 2 communications terminal
- Pin 3 Mid speed GMLAN serial bus (+) terminal or Object high speed GMLAN serial bus (+) terminal
- Pin 4 Scan tool power ground terminal
- Pin 5 Common signal ground terminal
- Pin 6 High speed GMLAN serial data bus (+) terminal
- Pin 7 Keyword communications terminal
- Pin 11 Mid speed GMLAN serial bus (-) terminal or Object high speed GMLAN serial bus (-) terminal
- Pin 12 Chassis high speed GMLAN serial bus (+) terminal
- Pin 13 Chassis high speed GMLAN serial bus (-) terminal
- Pin 14 High speed GMLAN serial data bus (-) terminal
- Pin 16 Scan tool power, battery positive voltage terminal

Serial Data Reference

The scan tool communicates over the various buses on the vehicle. When a scan tool is installed on a vehicle, the scan tool will try to communicate with every device that could be optioned into the vehicle. If an option is not installed on the vehicle, the scan tool will display No Comm (or Not Connected) for that optional device. In order to avert misdiagnoses of No Communication with a specific device, refer to Data Link References for a list of devices, the buses they communicate with, and the RPO codes for a specific device.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

Electrical Power Management

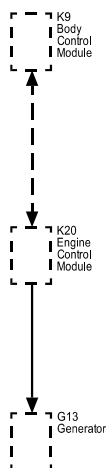
The electrical power management is used to monitor and control the charging system and alert the driver of possible problems within the charge. The electrical power management system makes the most efficient use of the generator output, improves the battery state-of-charge, extends battery life, and manages system electrical loads.

The load shed operation is a means of reducing electrical loads during a low voltage or low battery state-of-charge condition.

The idle boost operation is a means of improving generator performance during a low voltage or low battery state-of-charge condition.

Each electrical power management function, either idle boost or load shed, is discrete. No two functions are active at the same time. Idle boost 1 must be active before idle boost 2 can be active. The criteria used by the body control module (BCM) to regulate management are outlined below:

Electrical Power Management Block Diagram



Function	Battery Temperature Calculation	Battery Voltage Calculation	Amp-Hour Calculation	Action Taken
Idle Boost 1 Start	Less Than -15°C (5°F)	Less Than 13 V	—	First level Idle Boost requested
Idle Boost 1 Start	—	—	Battery has a net loss greater than 0.6 Ah	First level Idle Boost requested
Idle Boost 1 Start	—	Less Than 10.9 V	—	First level Idle Boost requested
Idle Boost 1 End	Greater Than -15°C (5°F)	Greater Than -12 V	Battery has a net loss less than 0.2 Ah	First level Idle Boost request cancelled
Load Shed 1 Start	—	—	Battery has a net loss of 4 Ah	Rear Defrost, H Mirrors, Heated Cycled OFF for of their cycle

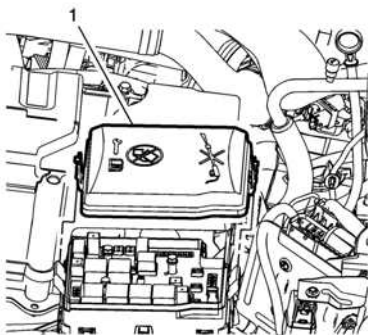
Function	Battery Temperature Calculation	Battery Voltage Calculation	Amp-Hour Calculation	Action Taken
Load Shed 1 Start	—	Less Than 10.9 V	—	Rear Defrost, H Mirrors, Heated cycled OFF for of their cyc
Load Shed 1 End	—	Greater Than 12 V	Battery has a net loss of less than 2 Ah	Clear Load Sh
Idle Boost 2 Start	—	—	Battery has a net loss greater than 1.6 Ah	Second level boost reques
Idle Boost 2 Start	—	Less Than 10.9 V	—	Second level boost reques
Idle Boost 2 End	—	Greater Than 12 V	Battery has a net loss less than 0.8 Ah	Second level boost requ cancelled
Idle Boost 3 Start	—	—	Battery has a net loss of 10 Ah	Third level Idle requested
Idle Boost 3 Start	—	Less Than 10.9 V	—	Third level Idle requested
Idle Boost 3 End	—	Greater Than 12 V	Battery has a net loss of less than 6.0 Ah	Third level Idle request cancell
Load Shed 2 Start	—	Less Than 10 V	Battery has a net loss greater than 12 Ah	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle. BATTERY SA' ACTIVE messa be displayed o DIC
Load Shed 2 Start	—	Less Than 10.9 V	—	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle. BATTERY SA' ACTIVE messa be displayed o DIC
Load Shed 2 End	—	Greater Than 12.6 V	Battery has a net loss of less than 10.5 Ah	Clear Load Sh
Load Shed 3 Start	—	Less Than 11.9 V	Battery has a net loss greater than 20 Ah	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle. BATTERY SA' ACTIVE messa be displayed o DIC
Load Shed 3 End	—	Greater Than 12.6 V	Battery has a net loss of less than 15 Ah	Clear Load Sh

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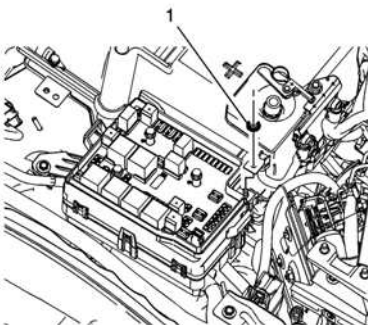
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

1. Disconnect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection.



2. Remove the front compartment fuse block covers (1).



3. Disconnect the positive battery cable (1).



4. Loosen the junction block bolts (1).

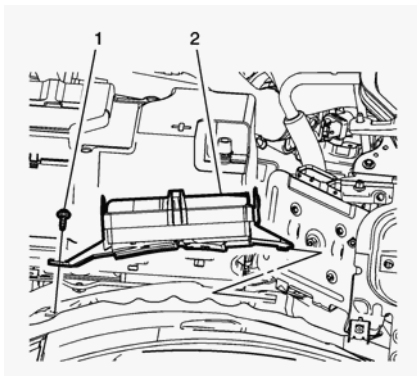


5. Unclip the fuse block from the front compartment fuse block housing (1). Remove the electrical connectors from the front compartment fuse block housing.



6. Disconnect the wiring harness from the junction block base.
7. Remove the junction block bolt (1) from the block base.
8. Remove the junction block base (2) from the inner wheelhouse.

[Installation Procedure](#)



1. Position the junction block base tab (2) to the inner wheelhouse slot.

Caution: Refer to Fastener Caution.

2. Install the junction block base bolt (1) and tighten to **9 N·m (79 lb in)**.

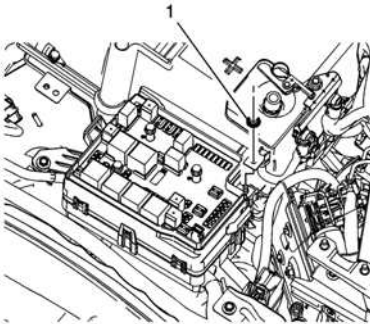


3. Install the fuse block to the front compartment fuse block housing (1). Position the electrical connectors to the front compartment fuse block housing.

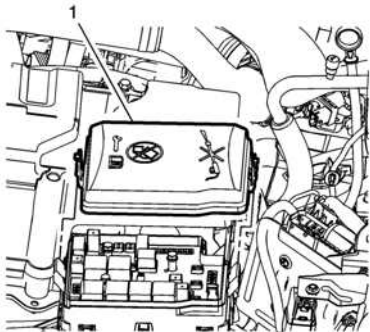
Front Compartment Fuse Block Replacement



4. Install the junction block to the base.
5. Install the junction block bolts (1) and tighten to **9 N•m (79 lb in)**.



6. Position the positive battery cable to the junction block.
7. Install wiring harness electrical steering (1).



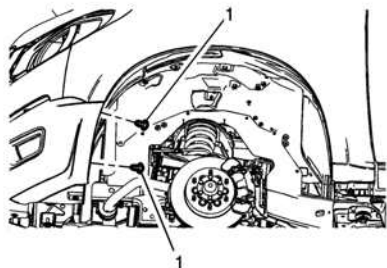
8. Install the front compartment fuse block cover (1).
9. Connect the battery negative cable. Refer to Battery Negative Cable Disconnection and Connection.

2013 Chevrolet Colorado

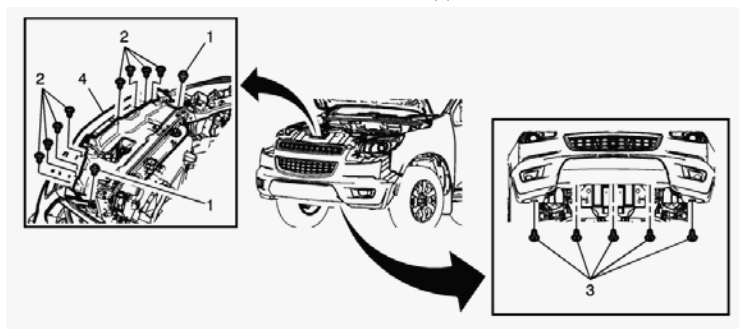
Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

Procedure

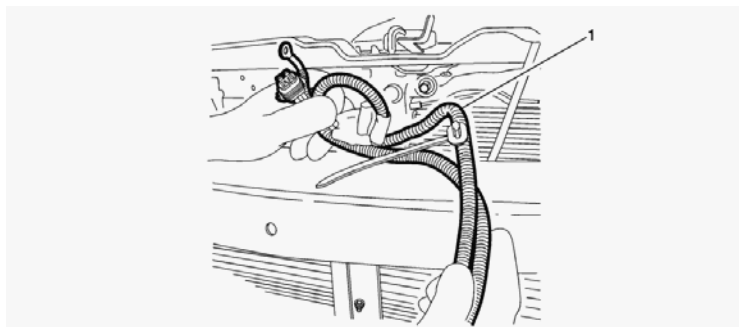
1. Ensure the ignition switch is in the OFF position, and remove the ignition key.



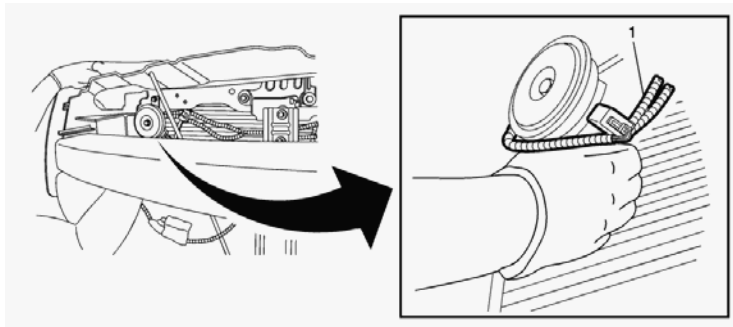
2. Remove the front wheel house liner to fascia screws (1).



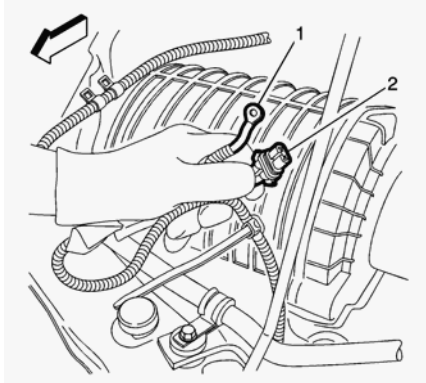
3. Remove the front bumper fascia bolts (1).
4. Remove the front bumper fascia top screws (2).
5. Remove the front bumper fascia lower bolts (3).
6. Carefully push a small nylon wedge between the fascia and the front fascia guide. Insert a small flat-bladed tool into the fascia slot and snap one at a time and pull on the fascia at the same time to gradually remove the fascia from the front fascia guide.
7. Disconnect any electrical connectors.
8. Remove front bumper fascia (4) from vehicle.



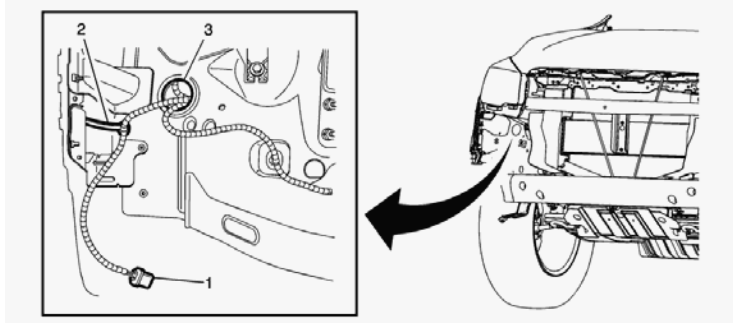
9. Starting at the vehicle center support, route the fog lamp harness (1) through the center hole.



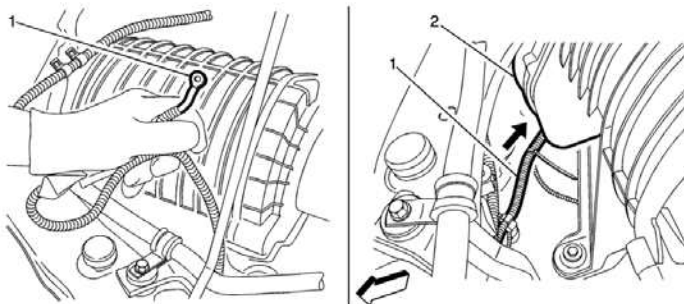
10. Continue to route fog lamp harness (1) to the right side of the vehicle behind horn assembly.



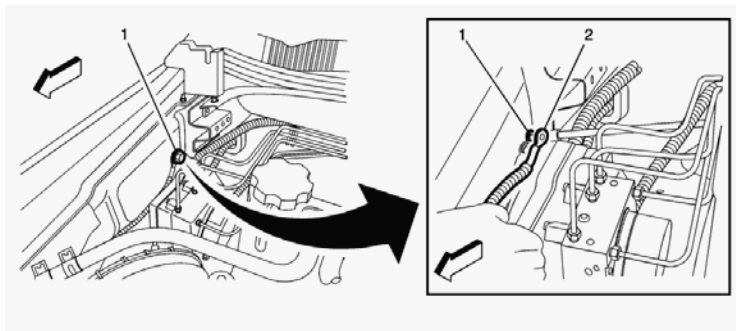
11. Pass the right side fog lamp harness ground (1) and connector (2) between the radiator support and the air cleaner assembly.



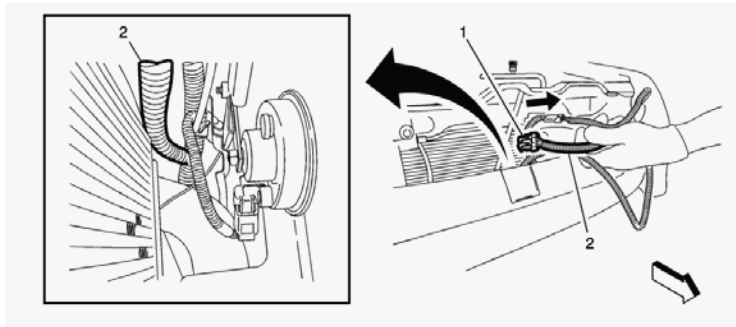
12. Pass the fog lamp connector (1) through the right side hole (3) of the front support.
13. Attach the harness clip (2) to the front support.



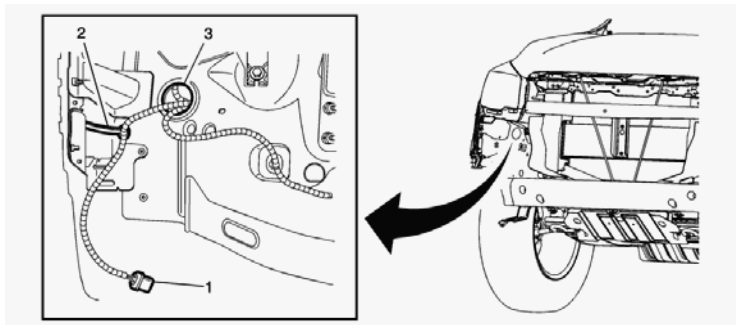
14. Pass the ground harness (1) under the air cleaner assembly (2).



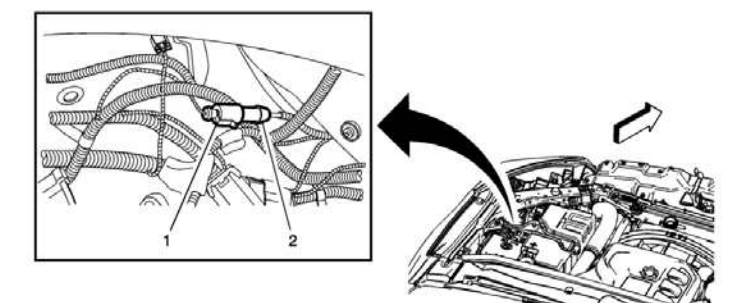
15. Remove the first ground bolt (1) and attach harness ground (2) to ground bolt.
16. Reinstall ground bolt and tighten.



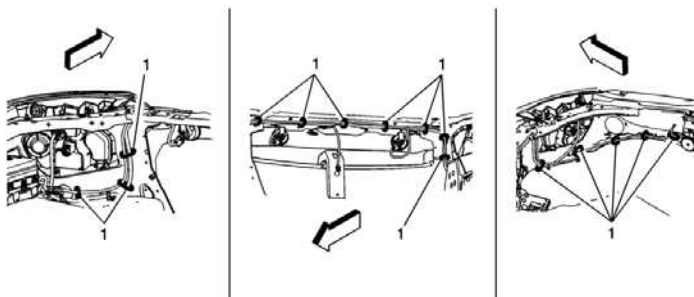
17. Pass the other fog lamp connector (1) and in-line connector with harness (2) to the left side of the vehicle behind horn assembly.



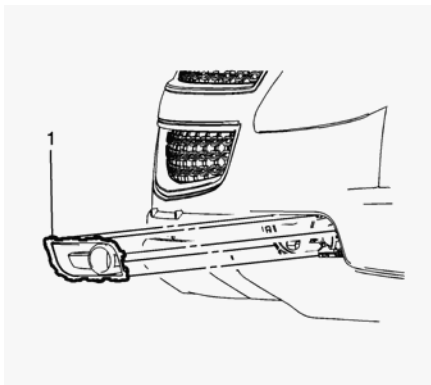
18. Pass the fog lamp connector (1) through the left side hole (2) of the front support.
19. Attach the harness clip (3) to the front support.



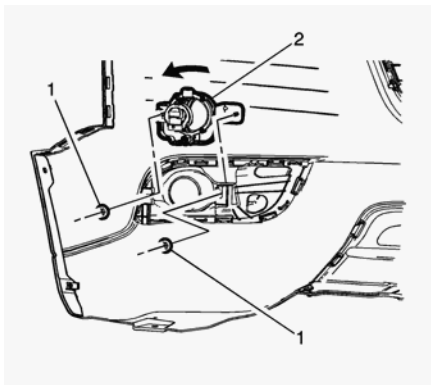
20. Locate the spare front body harness connector (1) and connect with fog lamp in-line connector (2).
21. Secure connectors with electrical tape.



22. Secure the fog lamp harness to the front lamp harness using the 15 cable straps (1).



23. Install the lower fascia grilles (1) to the fascia ensuring that the tabs are secure to the fascia.

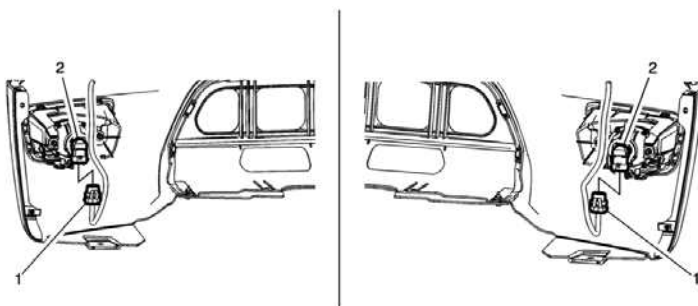


Caution: Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint strength, and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage to the fastener or the system.

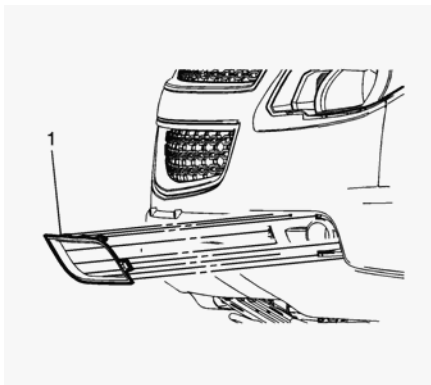
24. Install the fog lamp assembly (2) to the grille and secure with the nuts (1).

Tighten

Tighten the fog lamp nuts to 3 Y (26 lb in).

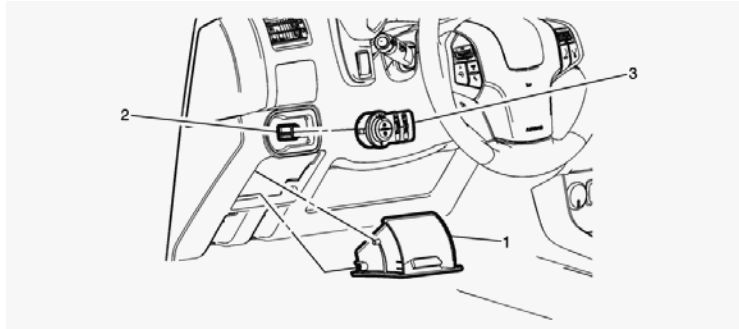


25. Connect the fog lamp harness connectors (1) to the fog lamps (2).



26. Install the bezels (1) to the lower fascia grilles, ensuring that the retaining tabs are secure.

27. Reinstall front bumper fascia assembly.

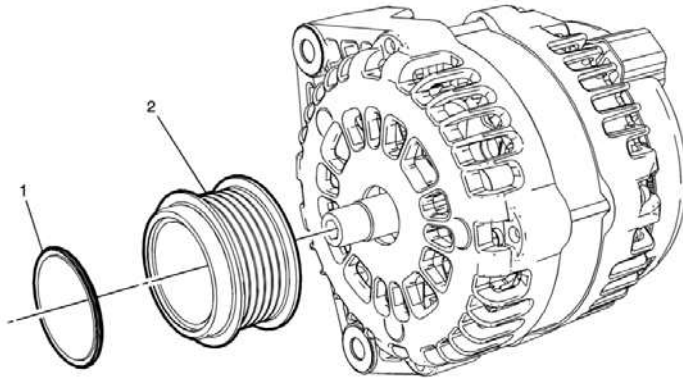


28. Open instrument panel compartment (1) while depressing the sides, remove compartment from instrument panel.
29. Disconnect electrical connector (2) from headlamp switch (3).
30. Depress tabs and remove headlamp switch (3) from vehicle.
31. Install new headlamp/fog lamp switch assembly to instrument panel.
32. Connect electrical connector to new headlamp/fog lamp switch.
33. Reinstall instrument panel compartment.
34. Access the Service Programming System (SPS). On the SPS Supported Controllers screen, select BCM Body Control Module – Prog and follow the on-screen instructions.
35. Access the Service Programming System (SPS). On the SPS Supported Controllers screen, select IPC Instrument Cluster– Configur and follow the on-screen instructions.
36. Test the function of the fog lamps by turning switch on.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:



Generator Pulley Replacement

Callout	Component Name
Preliminary Procedures	

1. Remove the generator. Refer to Generator Replacement.
2. Remove the generator pulley fastener cover.

Special Tools

EN-50629 Generator Pulley Removal Tool

- | | |
|---|------------------------|
| 1 | Generator Pulley Cover |
|---|------------------------|

Generator Pulley

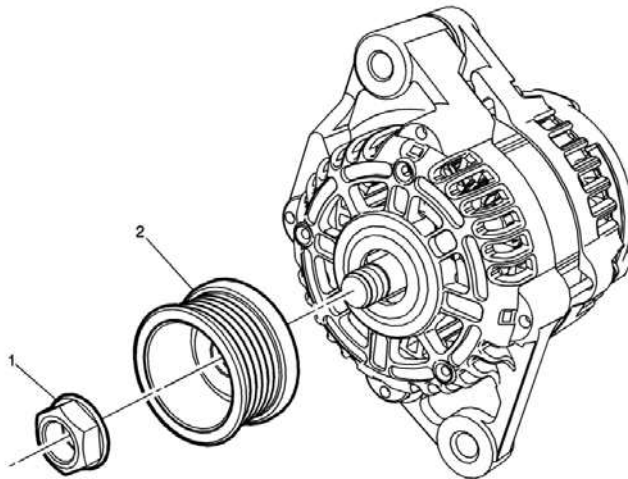
Procedure

2

1. Remove the generator cover (1).
2. Remove the generator pulley using the EN-50629 generator pulley removal tool.

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**



Generator Pulley Replacement

Callout

Component Name

Preliminary Procedure

Remove the generator. Refer to Generator Replacement.

Special Tools

S9906702-1 Generator Pulley Removal Tool

For equivalent regional tools, refer to Special Tools.

Generator Pulley Fastener

Caution: Refer to Fastener Caution.

1

Tighten

58 Y (43 lb ft)

2

Generator Pulley

2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**
Fuel Delivery: | **Fuel:**

Electrical Power Management

The electrical power management is used to monitor and control the charging system and alert the driver of possible problems within the charge electrical power management system makes the most efficient use of the generator output, improves the battery state-of-charge, extends battery manages system electrical loads.

The load shed operation is a means of reducing electrical loads during a low voltage or low battery state-of-charge condition.

The idle boost operation is a means of improving generator performance during a low voltage or low battery state-of-charge condition.

Each electrical power management function, either idle boost or load shed, is discrete. No two functions are active at the same time. Idle boost incremental steps, idle boost 1 must be active before idle boost 2 can be active. The criteria used by the body control module (BCM) to regulate management are outlined below:

Function	Battery Temperature Calculation	Battery Voltage Calculation	Amp-Hour Calculation	Action Taken
Idle Boost 1 Start	Less Than -15°C (5°F)	Less Than 13 V	—	First level Idle boost requested
Idle Boost 1 Start	—	—	Battery has a net loss greater than 0.6 AH	First level Idle boost requested
Idle Boost 1 Start	—	Less Than 10.9 V	—	First level Idle boost requested
Idle Boost 1 End	Greater Than -15°C (5°F)	Greater Than -12 V	Battery has a net loss less than 0.2 AH	First level Idle boost request cancelled
Load Shed 1 Start	—	—	Battery has a net loss of 4 AH	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle
Load Shed 1 Start	—	Less Than 10.9 V	—	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle
Load Shed 1 End	—	Greater Than 12 V	Battery has a net loss of less than 2 AH	Clear Load Shed
Idle Boost 2 Start	—	—	Battery has a net loss greater than 1.6 AH	Second level boost requested
Idle Boost 2 Start	—	Less Than 10.9 V	—	Second level boost requested
Idle Boost 2 End	—	Greater Than 12 V	Battery has a net loss less than 0.8 AH	Second level boost request cancelled
Idle Boost 3 Start	—	—	Battery has a net loss of 10.0 AH	Third level Idle boost requested
Idle Boost 3 Start	—	Less Than 10.9 V	—	Third level Idle boost requested
Idle Boost 3 End	—	Greater Than 12 V	Battery has a net loss of less than 6.0 AH	Third level Idle boost request cancelled
Load Shed 2 Start	—	Less Than 10.9 V	Battery has a net loss greater than 12 AH	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle. BATTERY SA ACTIVE message be displayed on DIC

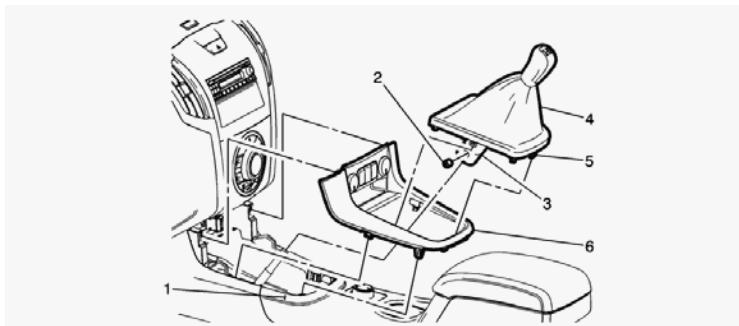
Function	Battery Temperature Calculation	Battery Voltage Calculation	Amp-Hour Calculation	Action Take
Load Shed 2 Start	—	Less Than 10.9 V	—	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle. BATTERY SA ACTIVE messa be displayed o DIC
Load Shed 2 End	—	Greater Than 12.6 V	Battery has a net loss of less than 10.5 AH	Clear Load Sh
Load Shed 3 Start	—	Less Than 11.9 V	Battery has a net loss greater than 20 AH	Rear Defrost, H Mirrors, Heated cycled OFF for of their cycle. BATTERY SA ACTIVE messa be displayed o DIC
Load Shed 3 End	—	Greater Than 12.6 V	Battery has a net loss of less than 15 AH	Clear Load Sh

2013 Chevrolet Colorado

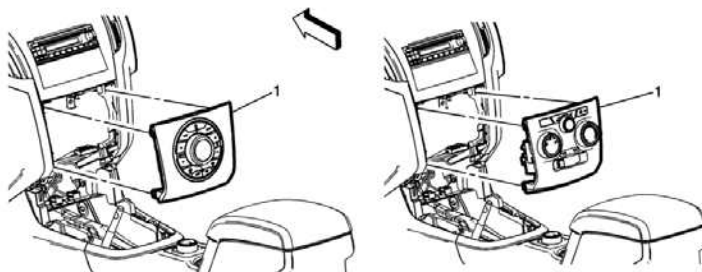
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

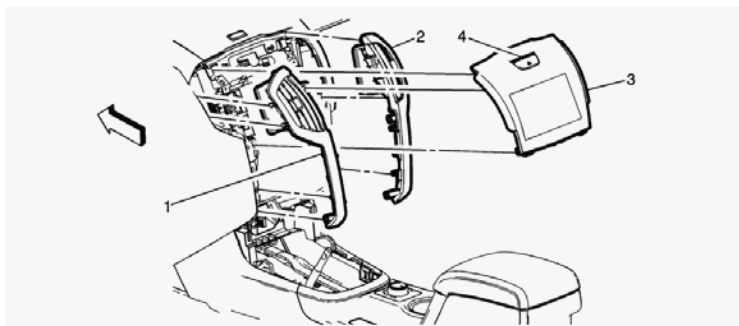
Procedure



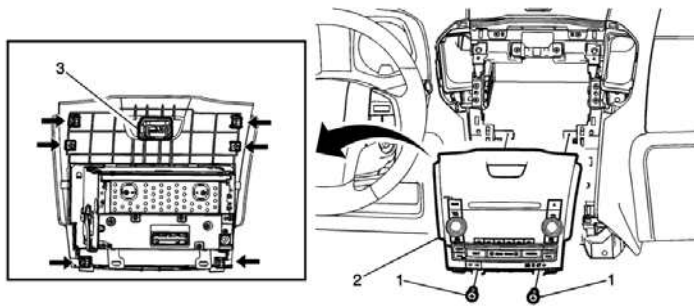
1. If equipped with manual transmission and console, using a flat bladed trim tool, carefully release the four retaining tabs (5) on each side in order to disengage the boot retainers from the floor console shift opening bezel (6).
2. Pull the boot (4) upward to access the control lever set screw (2).
3. Remove the shift lever set screw (2) and remove the shift lever assembly (3) from the control lever.
4. Using a flat bladed plastic trim tool, release the eight retainers securing the front floor console transmission shift opening bezel (6) to the console assembly.
5. Disconnect the electrical connections.



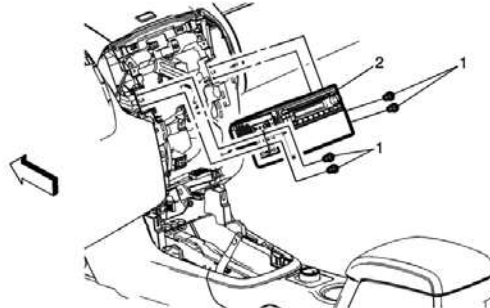
6. Using a flat bladed plastic trim tool, remove the air conditioning control panel (1) by disengaging the clips from the instrument panel.
7. Disconnect the necessary electrical connections and cables.



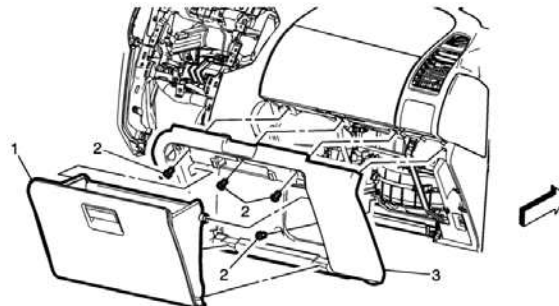
8. Using a flat bladed plastic trim tool, release the retainers securing the instrument panel center trim plate (3) to the instrument panel as equipped with (UGP) radio or opening cover assembly.
9. Disconnect the electrical connections.
10. Remove the hazard switch (4) from the instrument panel center trim plate.
11. Using a flat bladed plastic trim tool, release the retainers securing the instrument panel center air outlet grilles (1), (2) to the instrument panel assembly.



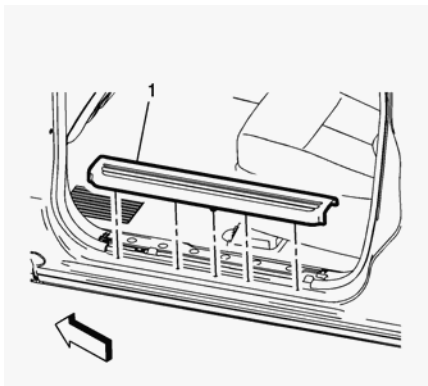
12. If equipped with (UCG) radio, remove the two screws (1) from the radio assembly (2).
13. Using a flat bladed plastic trim tool, release the six retainers securing the radio (2) to the instrument panel assembly.
14. Disconnect the electrical connections.
15. Remove the hazard switch (3) from the radio.



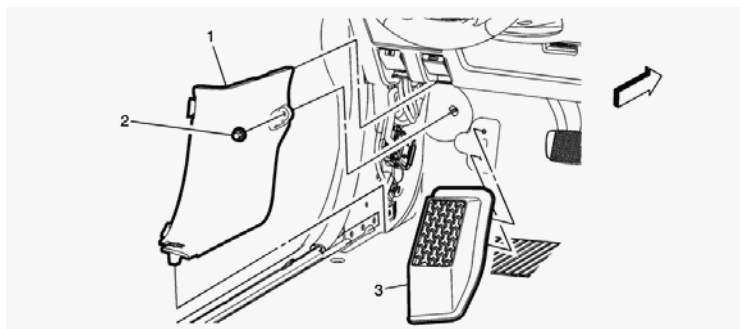
16. If equipped with (UGP) radio or opening cover, remove the screws (1) and remove radio (2) or opening cover from the instrument panel.
17. Disconnect electrical connectors from radio.



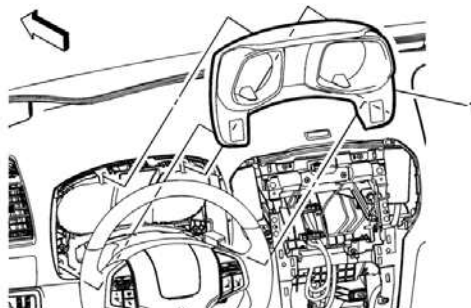
18. Open the instrument panel compartment door (1).
19. Squeeze the sides of the instrument panel compartment door assembly allowing the compartment to open past the stops.
20. Lift compartment door assembly and release from instrument lower panel (3).
21. Remove the fasteners (2) from the instrument lower panel (3).
22. Using a flat bladed plastic trim tool, release the retainers and remove the instrument lower panel.



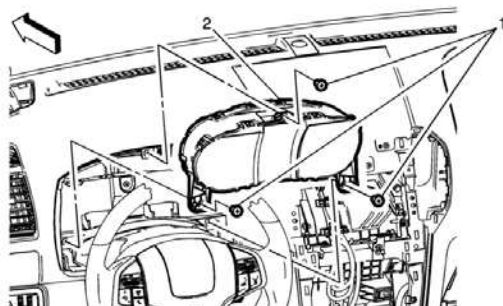
23. Grasp the front side door sill trim plate (1) and pull the sill plate away from the body to release the fasteners.



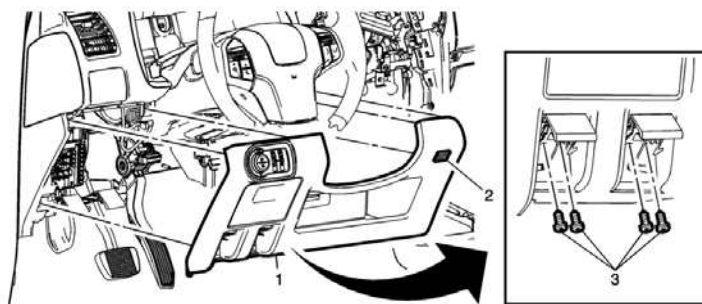
24. Using a flat bladed plastic trim tool, release the driver footrest (3) from the driver footrest bracket.
25. Remove the body hinge pillar trim assembly retainer (2).
26. Grasp the body hinge pillar trim panel (1) and gently pull the panel away from the body to release the fasteners.
27. Slide the panel forward so the panel unhooks from around the front door frame.



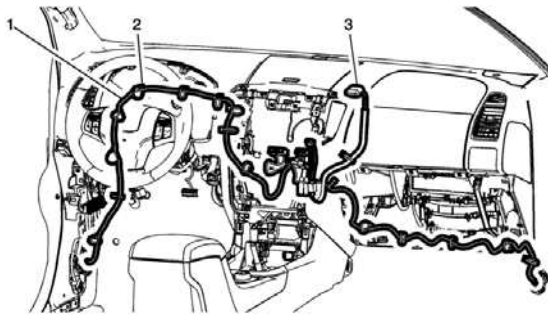
28. Using a flat bladed plastic trim tool, release the retainer clips securing the cluster trim plate (1) to the instrument panel assembly.
29. Disconnect electrical connections, if applicable.



30. Remove the fasteners (1) and remove the instrument cluster.
31. Disconnect the electrical connections.



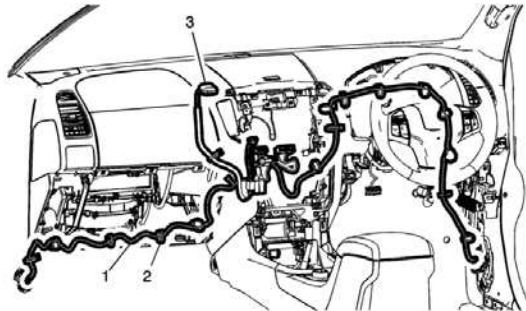
32. Remove the screws (3) from the fuel and hood latch release handles.
33. Use a flat bladed plastic trim tool in order to release the retainers securing the instrument lower panel (1) to the instrument panel asser
34. Disconnect the electrical connections, the data link connector and the inside air temperature sensor (2).



Note: Step 35, 36, 37 and 38 are for (Brazil) vehicles only.

Note: REVERSE wire is routed to the right side of vehicle and HAND/PARK BRAKE wire is routed to the left side of vehicle.

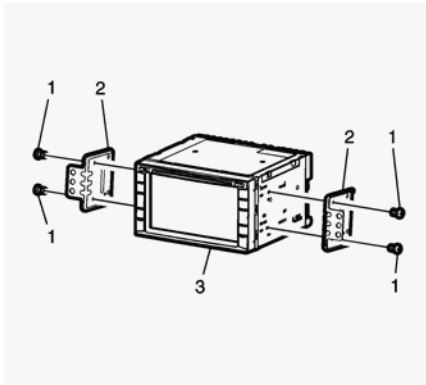
35. Route the new radio harness (1) along the vehicle instrument panel harness and secure to harness with the supplied cable ties (2).
36. Install REVERSE harness terminal into pin B6 of connector X204
37. Install HAND/PARK BRAKE harness terminal into pin B7 of connector X210
38. Connect the radio wire harness to the vehicle harness.
39. Position the GPS receiver (3) on the instrument panel reinforcement bar above radio.



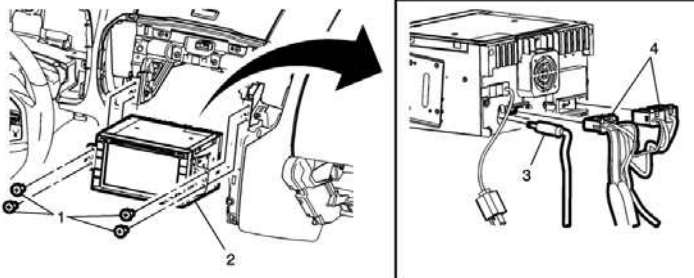
Note: Steps 39, 40, 41 and 42 are for (Thailand) vehicles only.

Note: REVERSE wire is routed to the left side of vehicle and HAND/PARK BRAKE wire is routed to the right side of vehicle.

40. Route the new radio harness (1) along the vehicle instrument panel harness and secure to harness with the supplied cable ties (2).
41. Install REVERSE harness terminal into pin B6 of connector X204
42. Install HAND/PARK BRAKE harness terminal into pin B7 of connector X210
43. Connect the radio wire harness to the vehicle harness.
44. Position the GPS receiver (3) on the instrument panel reinforcement bar above radio.

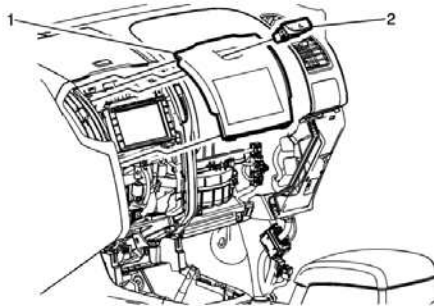


45. Attach the radio brackets (2) to the replacement radio (3) with the screws (1).



Note: Before positioning the replacement radio into the instrument panel, check that all wire are at the lower position while the hazard sw be above radio.

46. Position the replacement radio (2) to the instrument panel and connect electrical connections (3), (4).
47. Install the screws (1) to the radio.



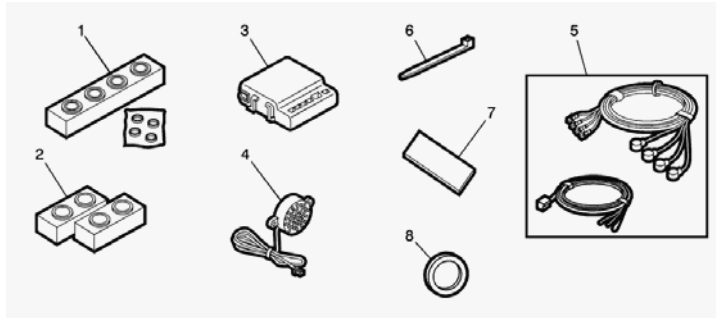
48. Install the hazard switch (2) to the new instrument panel center trim plate (1).
49. Connect electrical connector and install instrument panel center trim plate to instrument panel.
50. Reinstall all previous removed trim panels and components.
51. Check functionality of radio by referring to owners manual.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Note: For GM Holden instalaltion, refer to local Service Bulletin.

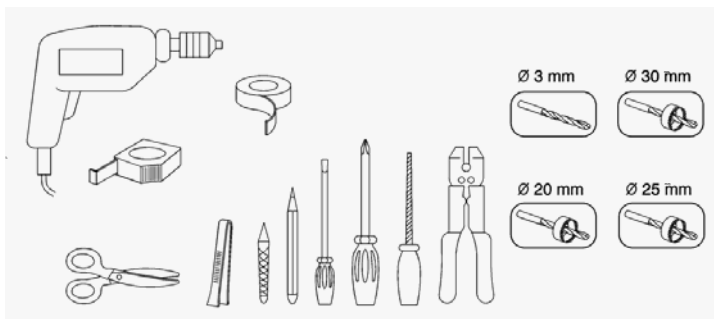
Note: For GM Holden Truck/SUV, sensors must be mounted in Black as received.



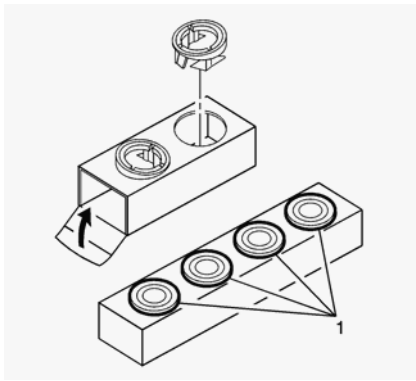
Kit Contents

Item No.	Qty	Description
1	4	Sensor
2	4	Angle Adaptor
3	1	Module
4	1	Loudspeaker
5	1	Set with Sensor and Power Harness
6	38	Tie Strap
7	1	Module Double Face Tape
8	2	Rubber Washers

[Tools Required](#)



[Procedure For Painting Sensors](#)



Note: For GM Holden Truck/SUV, sensors must be mounted in Black as received.

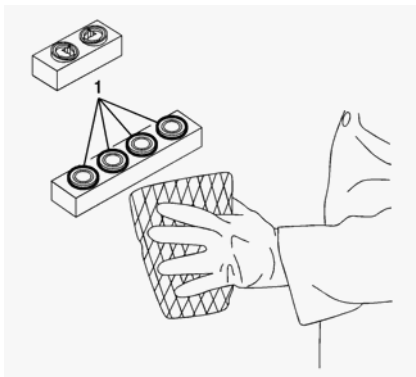
To paint the sensors in the bumper color, follow the paint procedure steps below.

Caution: Always use the painting rings to protect the silicon ring of the sensors. Check the GM plastic bumper painting procedures for the correct material specifications.

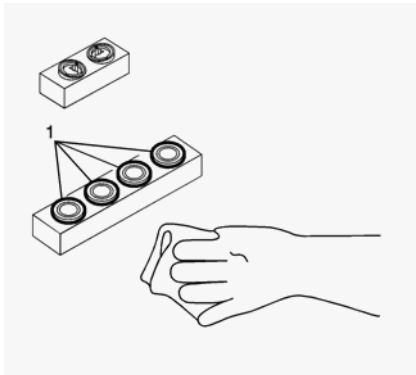
Caution: The center part of the sensor is made of pre-coated aluminum and the housing is plastic. Follow correctly the GM painting procedure, so that the sensor paint does not come off of the vehicle in normal use.

Note: The sensors are supplied in the carton template for painting.

- Sensors 1 and 4: For body color bumper application, sensor must be painted in the bumper color.
For chrome bumper application, sensor must be painted in Anthracite color (step pad color).
 - Sensors 2 and 3: Always paint in Anthracite color (Step pad color), because they are installed in the plastic step pad.
1. To paint the sensors (1) in the bumper color, follow the paint procedure steps below.



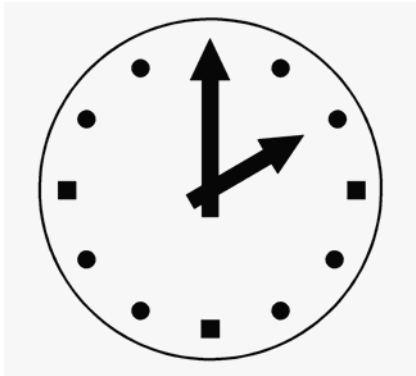
2. Sandpaper the surface of the sensors (1) gently.



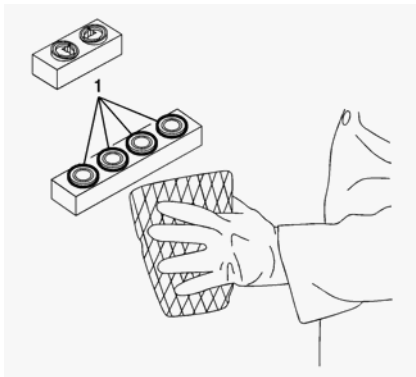
3. Apply the degreaser with a dry and clean cloth.
4. After doing so, use other dry and clean cloth, preventing the degreaser from drying in the sensors (1).



5. Apply Primer PU with HVLP (High Volume Low Pressure) spray gun (1).



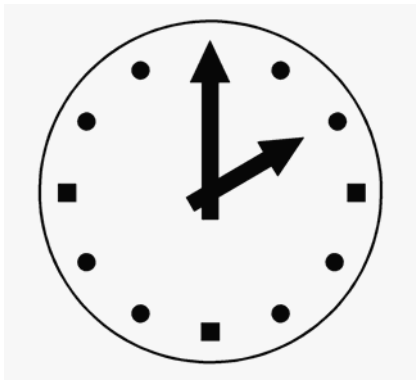
6. Wait for the drying time (see drying time).



7. Sandpaper the surface of the sensors (1) gently.



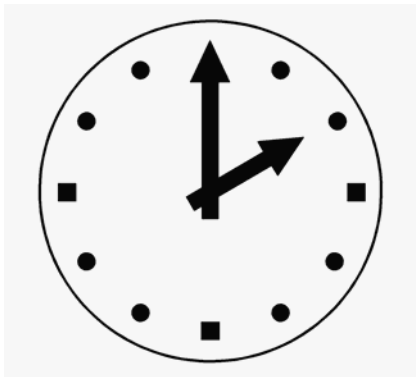
8. Apply Polyester-based paint in the vehicle color with HVLP gun (1).



9. Wait for the drying time (see drying time).

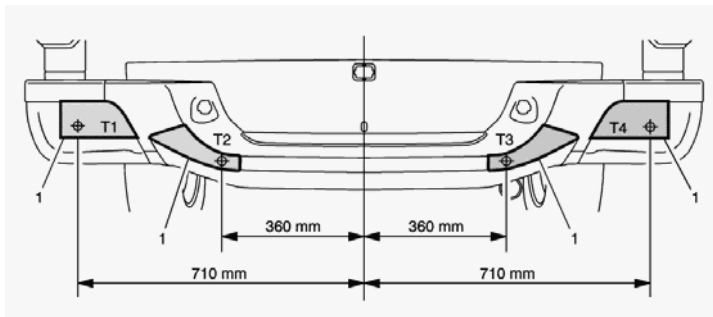


10. Apply PU Varnish with HVLP gun (1).

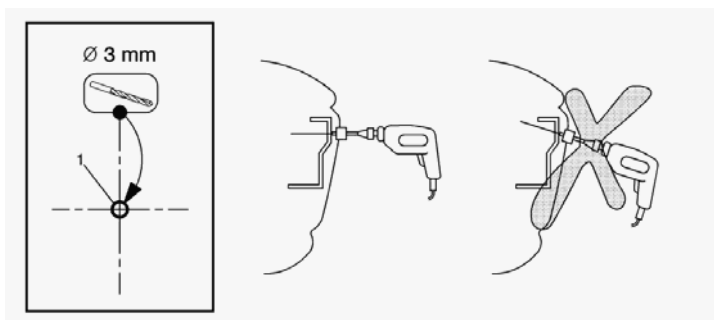


11. Wait for the drying time (see drying time).

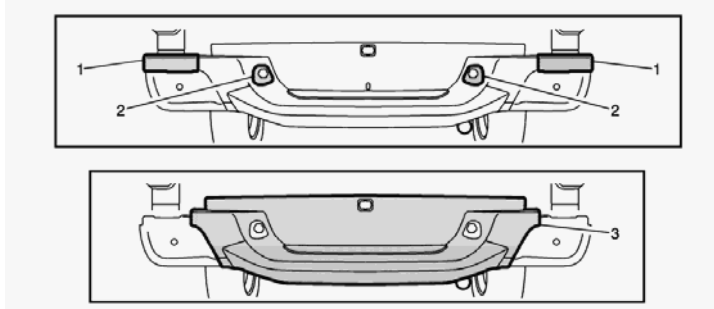
[Installation Procedure](#)



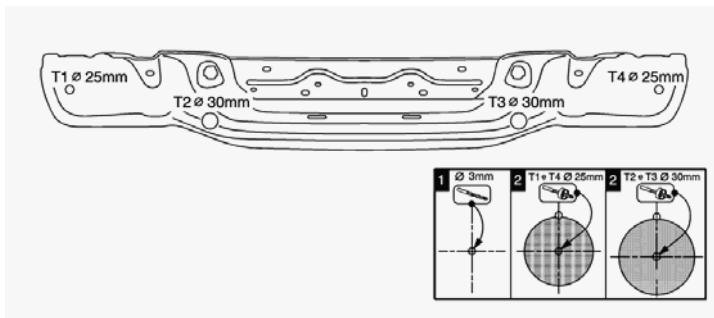
1. Place the templates (1) on the bumper as indicated;
Fix the templates with a tape.



2. Drill the four center holes (1) with a 3 mm diameter drill bit. In the sensors 2 and 3 you must drill the plastic cover and the metallic core of the bumper.

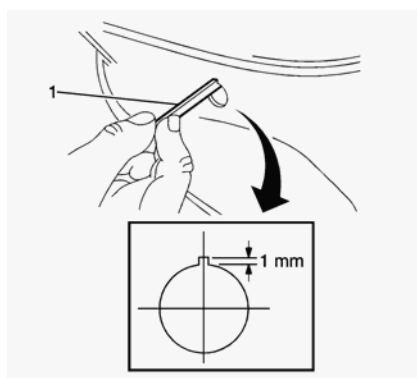


3. Remove the license plate lamps (2) and the side plastic cover (1) of the bumper. Refer to the vehicle Service Manual.
4. Remove the plastic cover (3) of the bumper. Refer to the vehicle Service Manual.

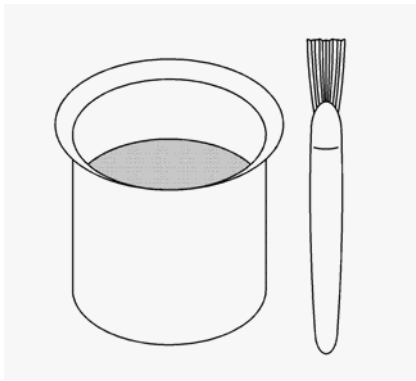


5. With a hole saw, drill the bumper (ONLY THE METALLIC PART), according to the center measures and holes.

Note: Do not drill the plastic part.



6. For Sensors T1 and T4, make a shoulder (1) of 1 mm at the TOP part of the holes, with a small file, to fit the sensor key.
7. Remove the burrs of the holes with a file (1).



8. After drilling and removing the burrs of the bumper, paint the damaged metallic parts following the GM metal sheet painting procedure in order to prevent sheet corrosion.
9. Use the:

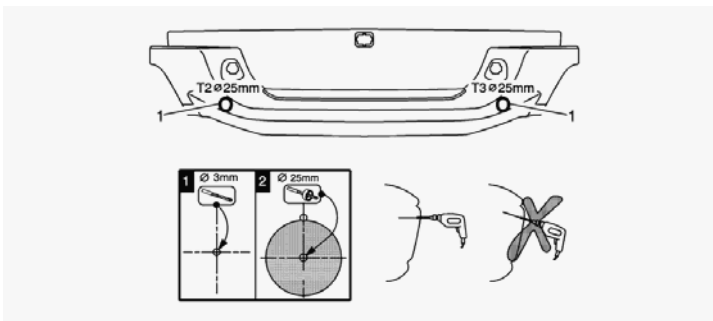
- 615S – Dupont VariPrime Basecoat Phosphatizant Bicomponent +
- 3344XS – Dupont Productive Primer VSX ChromaPremier Pro

Note: For chrome bumper, follow the specific instructions below.

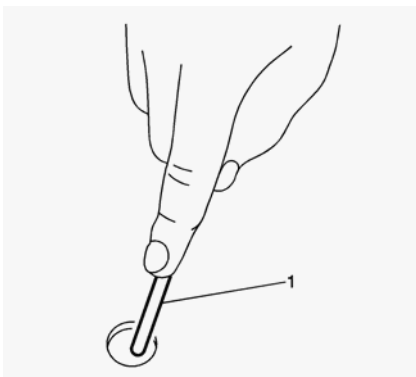
- Vehicles with CHROME bumper:
- To protect the chrome finish of the bumper, apply the following products according to the supplier technical specifications.

- 615S – Dupont VariPrime Basecoat Phosphatizant Bicomponent +
- 3344XS – Dupont Productive Primer VSX ChromaPremier Pro

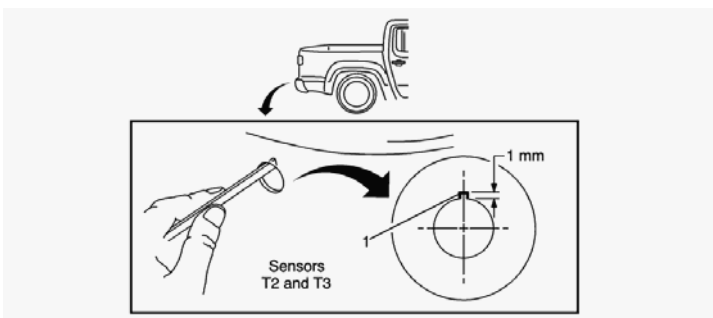
Note: Use of sandpaper described on the product procedures is not necessary.



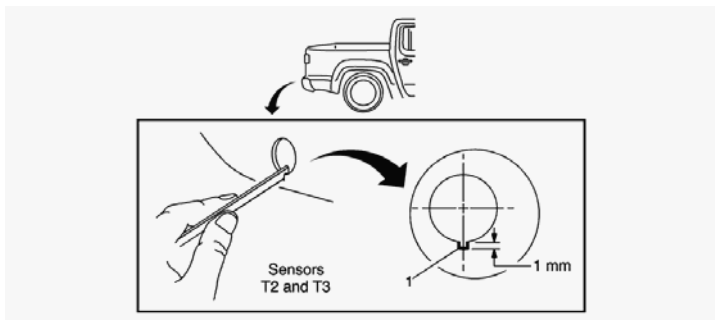
- Make a hole (1) with a hole saw of 25 mm.



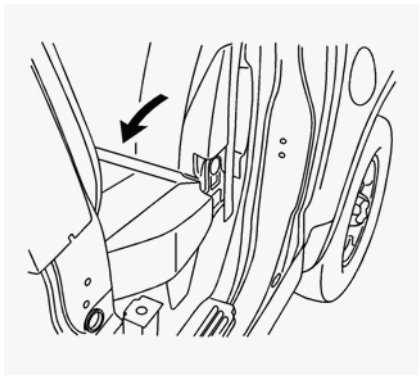
- After drilling remove the burrs of the hole of the plastic cover.
- Remove the burrs of the holes with a file.



- For vehicles with LOW STANCE, make a shoulder (1) of 1 mm at the top part of the holes, according to TEMPLATES with a small file, to fit the angle adapter key.



- For vehicles with HIGH STANCE, make a shoulder (1) of 1 mm at the bottom part of the holes, according to TEMPLATES with a small file, to fit the angle adapter key.

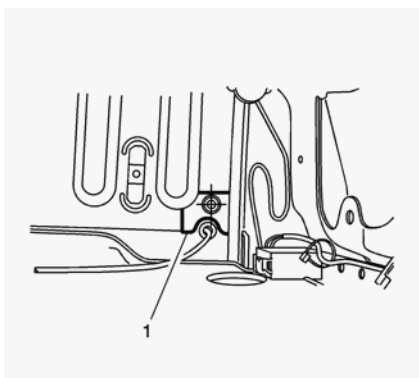


- To pass the sensors harness to the inner part of the vehicle cabin, it is necessary to make a hole in the metallic sheet close to the cable pass of the lid cable (driver side LHD – passenger side RHD).

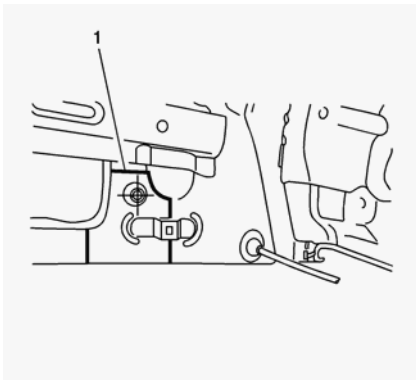


- To access the metallic sheet of the cabin, refer the GM disassembling procedures of the necessary parts (seats, finishes and sills) of the left side of the vehicle (driver side LHD – passenger side RHD).

Note: The passing holes should be done in the metallic sheet. Use the templates in the Appendix according to the vehicle model (Regular, Crew or Extended Cab).

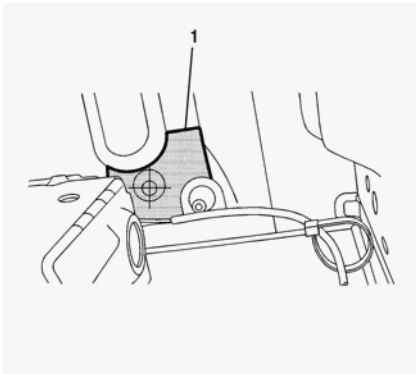


- Regular Cab:
 1. Locate the Regular Cab Grommet Template in the Appendix and cut it in the dashed lines.
 2. Place the template (1) in the metal sheet and fix it with tape.



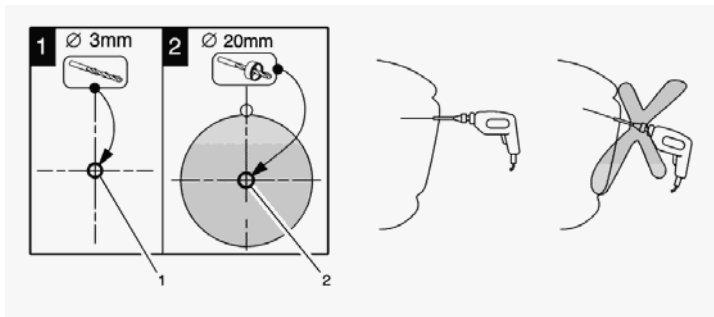
- Crew Cab:

1. Locate the Crew Cab Grommet Template in the Appendix and cut it in the dashed lines.
2. Place the template (1) in the metal sheet and fix it with tape.

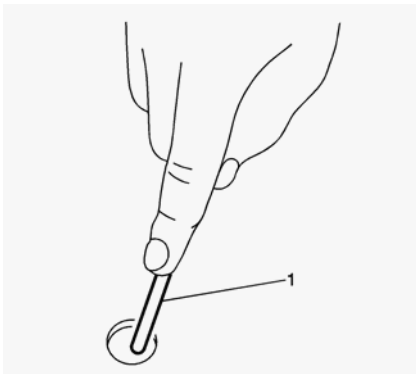


- Extended Cab:

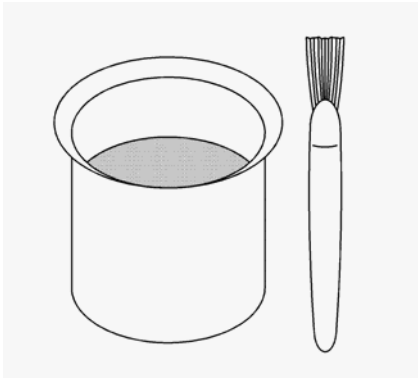
1. Locate the Extended Cab Grommet Template in the Appendix and cut it in the dashed lines.
2. Place the template (1) in the metal sheet and fix it with tape.



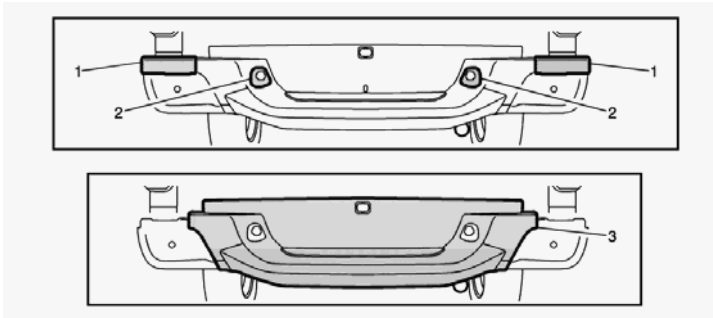
- Drill the center hole (1) with a 3 mm diameter drill bit
- Check if the back side of the metal sheet is free of obstacles or vehicle parts before proceeding with the hole saw drilling.
- Make a hole (2) with a hole saw of 20 mm to pass the sensors harness.



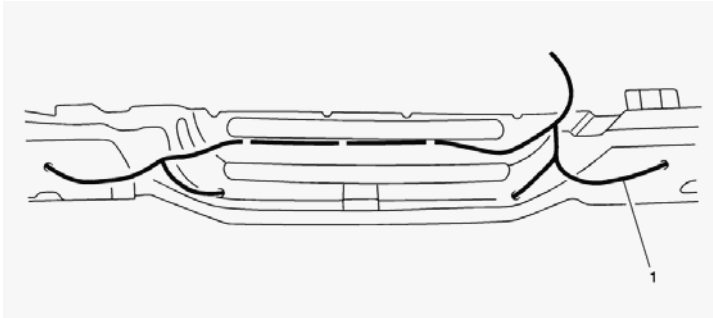
- After drilling and removing the burrs (1) of the hole of the grommet position.



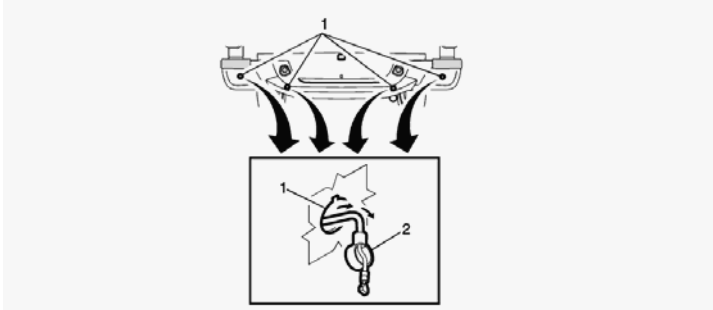
- Paint the damaged metallic parts following the GM metal sheet painting procedure in order to prevent sheet corrosion.
- Use the 615S – Dupont VariPrime Basecoat Phosphatizant Bicomponent +
- 3344XS – Dupont Productive Primer VSX ChromaPremier Pro
- Wait the necessary dry time.



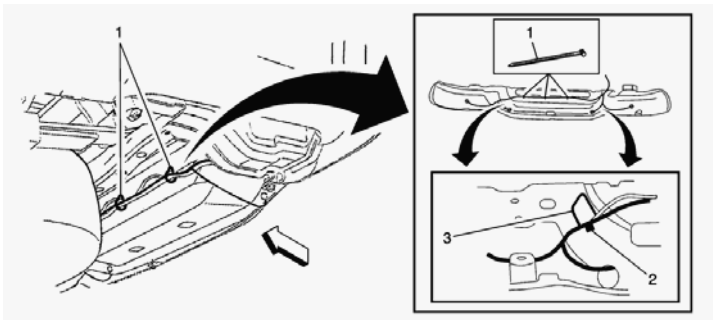
- Mount the plastic cover (3) of the bumper. Refer to the vehicle Service Manual.
- Mount the plastic cover (1) of the bumper and license plate lamps (2). Refer to the vehicle Service Manual.



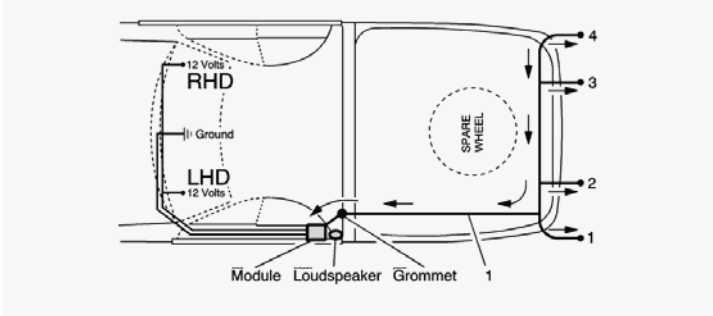
- Position the harness (1) in the inner part of the bumper together with the license plate harness.



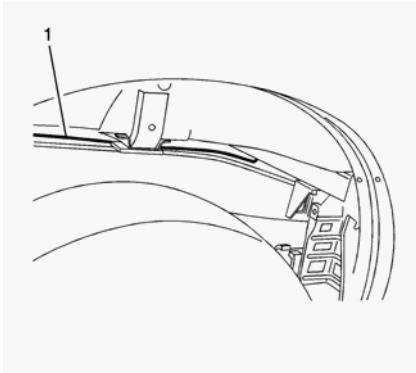
- Route the harness (2) through the holes (1) to the outside part and let them hanging outside the bumper to fit them later in the transducers.



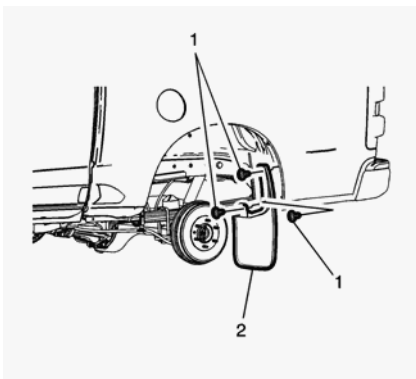
- Fix the harness on the bumper with straps (1) and clips (2).
- Fix the clips (2) of the harness in the metal sheet holes (3) of the license plate light.



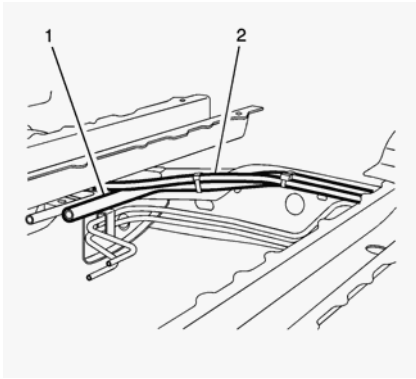
- Pass the Sensors Harness (1) through the frame rail along the original harness of the vehicle to the cabin.



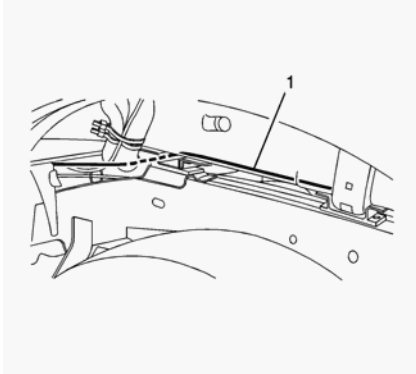
- Fix the sensors harness (1) to the original harness of the vehicle with straps.
- Note:** Do not fix the sensor harness to the brake line tubes and/or fuel hose.



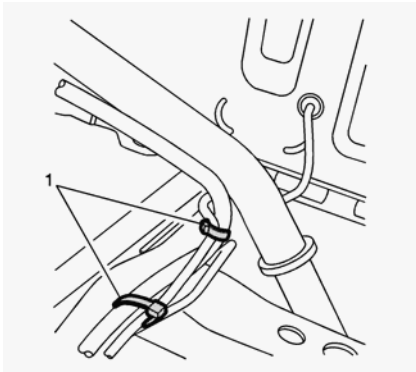
- Remove the mud flap guard screws (1).
- Remove the rear mud flap guard (2).



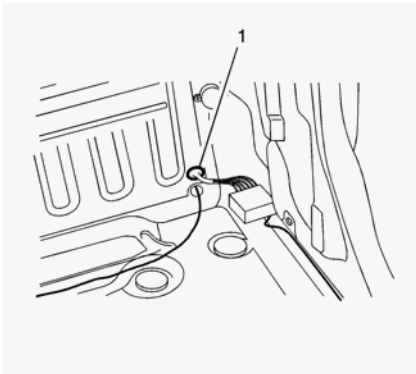
- Attach the rear park assist harness (2) with the tie straps on the cannister hose (1).



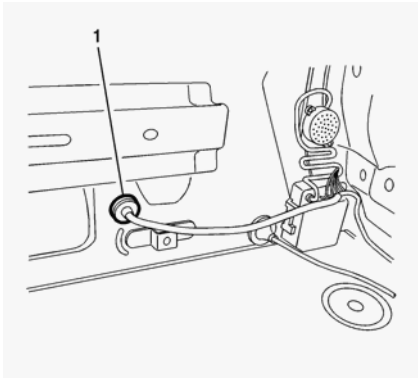
- Pass the Sensors Harness (1) (connectors side of the module) into the vehicle cabin through the hole of the metallic sheet.
Note: Do not fix the sensor harness to the brake line tubes and/or fuel hose.



- Pass the rear park assist harness behind the cannister hose and attach with tie straps
- Attach the rear park assist harness with tie strap (1) in the chassis harness.

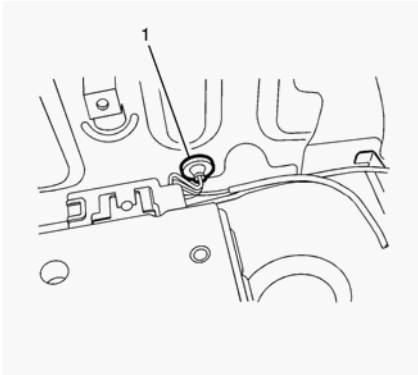


- Regular Cab:
Fit the harness grommet (1) to the position.



- Crew Cab:

Fit the harness grommet (1) to the position.



- Extended Cab:

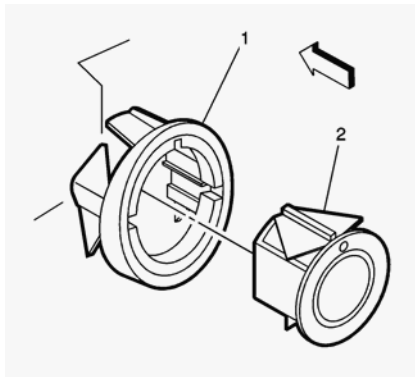
Fit the harness grommet (1) to the position.

[Sensors Fitting](#)

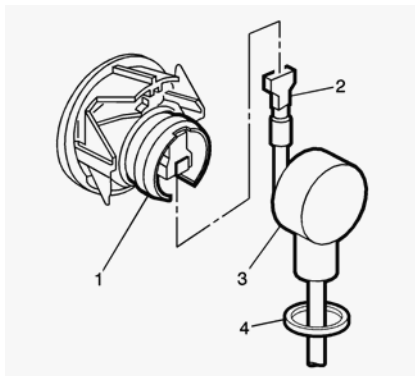
Low Stance

Note: Vehicles version LOW STANCE, must use the sensors and angle adapters with key in the UPPER POSITION, aligning key with key.

1. Sensors 1 and 4:

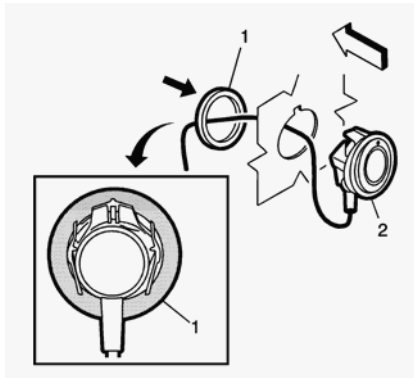


1. Fit the sensors in the angle adapters (1) with key (2) in the UPPER POSITION, aligning key with key.

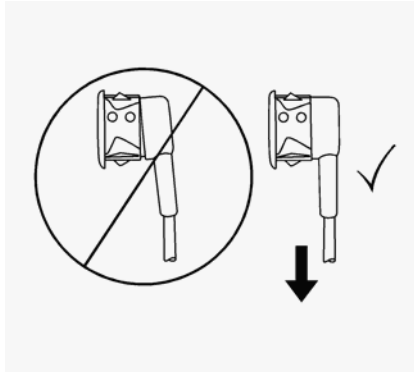


2. Sensors 1 and 4 must use the rubber washers (4) behind the bumper, therefore, insert the rubber washer in the harness. It will be installed later, behind the bumper.

3. Fit the connectors (2) in the sensors (1).
4. Fit the cover (3) of the sensors, checking if they are well fitted, assuring the seal.

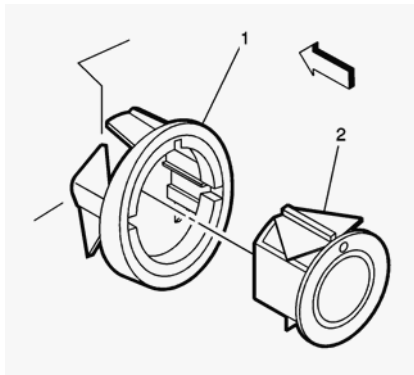


5. After installing the sensor with angle adapter in the bumper, push the rubber washer against the bumper (from behind) to position it between the sensor wings and the bumper. This will lock the sensor in position and avoid vibration.

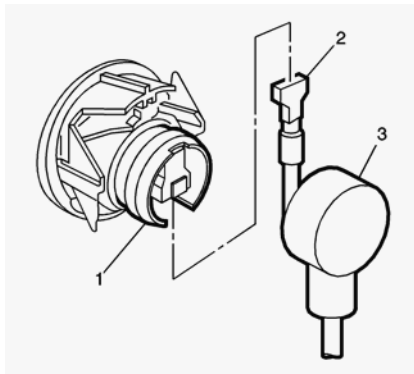


Note: If there is an excess of wire inside the cover, it will damage the seal. Pull the wire gently down until it is well strained and the cover of the sensor perfectly fitted all around the sensor.

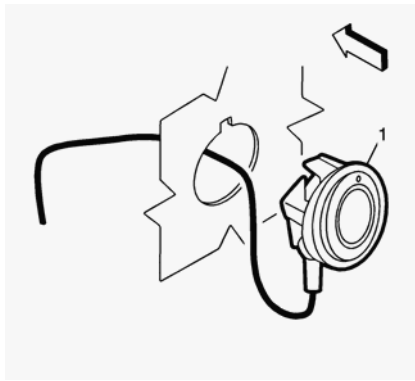
2. Sensors 2 and 3:



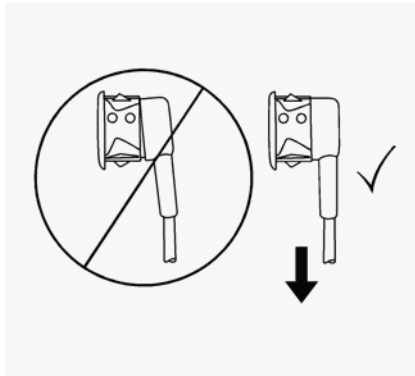
1. Fit the sensors in the angle adapters with key in the UPPER POSITION, aligning key with key.



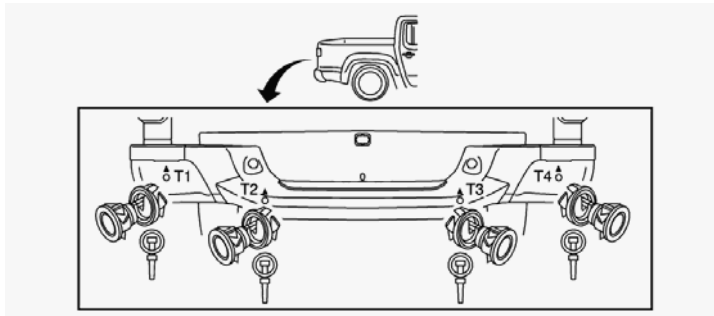
2. Sensors 2 and 3 don't need the rubber washers as they are installed in the plastic step pad.
3. Fit the connectors (2) in the sensors (1).
4. Fit the cover (3) of the sensors, checking if they are well fitted, assuring the seal.



5. Place the sensors (1) 2 and 3 with angle adapters in the holes with the point mark (of sensors) facing up.



Note: If there is an excess of wire inside the cover, it will damage the seal. Pull the wire gently down until it is well strained and the cover of the sensor perfectly fitted all around the sensor.

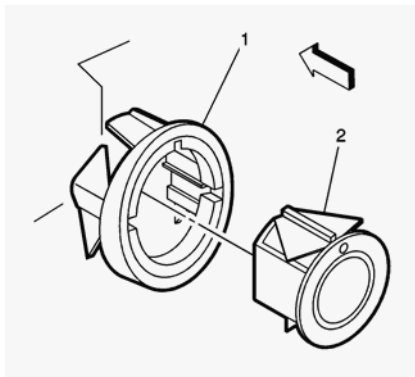


Note: Vehicles with LOW STANCE, MUST use 4 ANGLE ADAPTERS (T1, T2, T3 and T4) with all keys (sensor and angle adapters) in the UPPER POSITION.

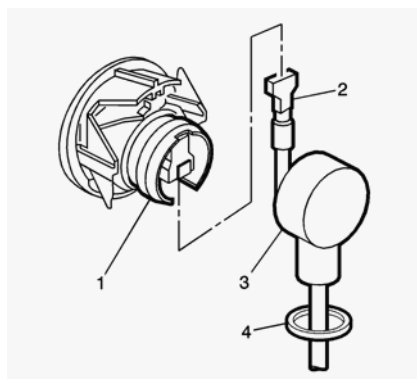
High Stance

Note: Vehicles version HIGH STANCE, must use different sensor and angle adapter positions (key position). Follow the steps bellow for correct installation.

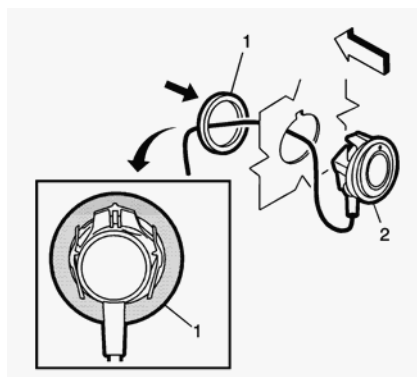
1. Sensors 1 and 4:



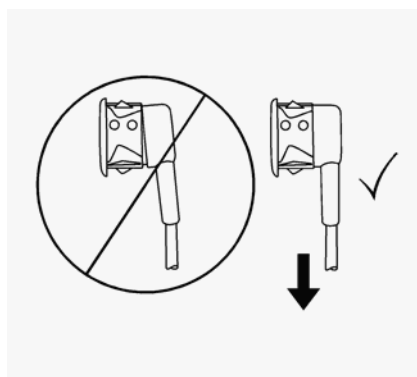
1. Fit the sensors in the angle adapters (1) with key (2) in the UPPER POSITION, aligning key with key.



2. Sensors 1 and 4 must use the rubber washers (4) behind the bumper, therefore, insert the rubber washer in the harness. It will be installed later, behind the bumper.
3. Fit the connectors (2) in the sensors (1).
4. Fit the cover (3) of the sensors, checking if they are well fitted, assuring the seal.

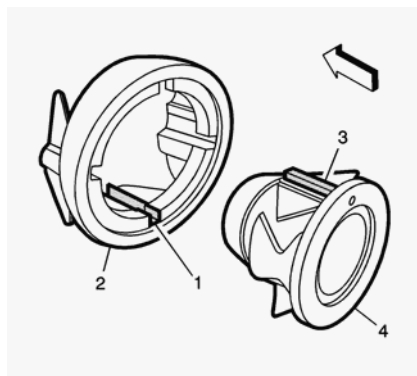


5. After installing the sensor with angle adapter in the bumper, push the rubber washer against the bumper (from behind) to position it between the sensor wings and the bumper. This will lock the sensor in position and avoid vibration.



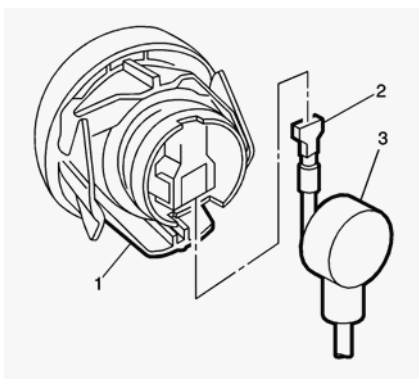
Note: If there is an excess of wire inside the cover, it will damage the seal. Pull the wire gently down until it is well strained and the cover of the sensor perfectly fitted all around the sensor.

2. Sensors 2 and 3:

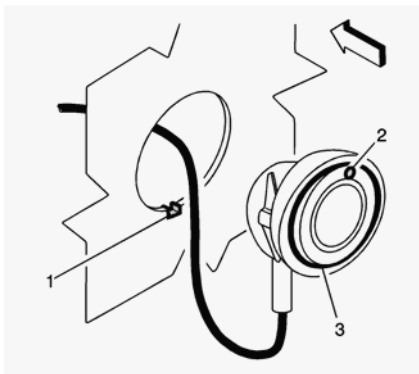


1. Fit the sensors (4) in the angle adapters (2) aligning the keys, as shown in the drawing with:

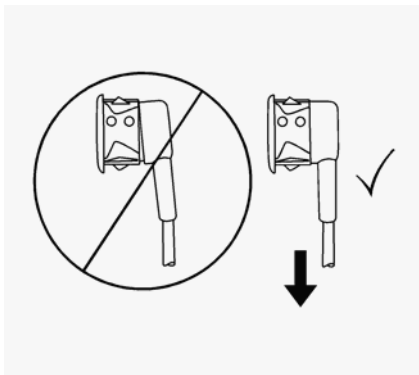
- Sensor key: UP
- Angle adapter key: DOWN



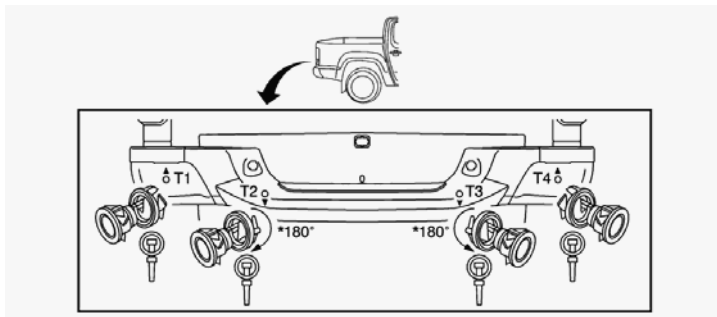
- Sensors 2 and 3 don't need the rubber washers as they are installed in the plastic step pad.
- Fit the connectors (2) in the sensors (1).
- Fit the cover (3) of the sensors, checking if they are well fitted, assuring the seal.



- Place the sensors (3) 2 and 3 with angle adapters in the holes with the keys (1) facing down. Check with the sensors point mark (2) are facing up.

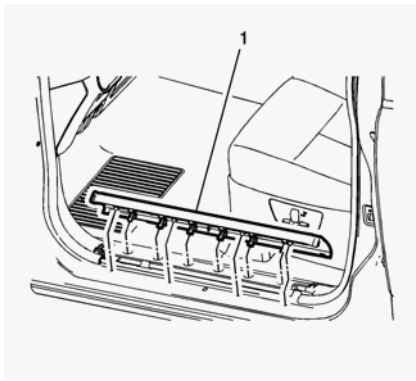


Note: If there is an excess of wire inside the cover, it will damage the seal. Pull the wire gently down until it is well strained and the cover of the sensor perfectly fitted all around the sensor.

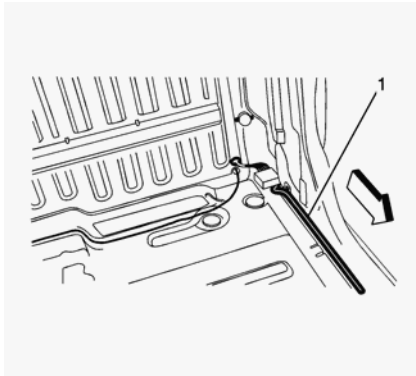


Note: Only for HIGH STANCE you should rotate the angle adapters 180° in sensors T2 and T3.

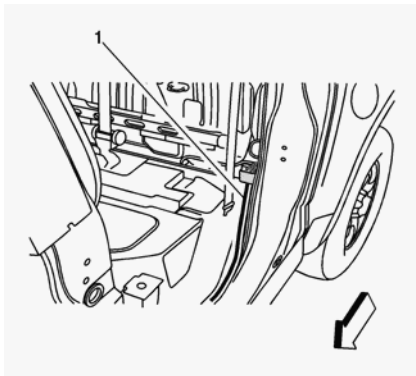
[Power Harness Route](#)



1. Grasp the left front side door sill trim plate (1) and pull the sill plate away from the body to release the fasteners.



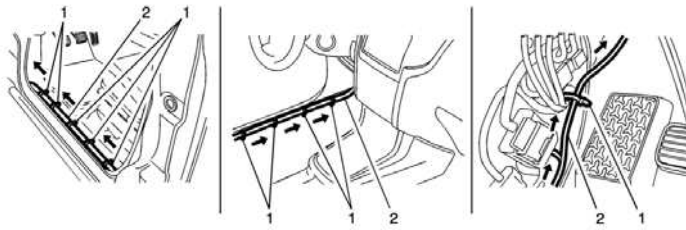
2. Regular Cab:
Route the Power Harness (1) through the sill to the vehicle panel direction.



3. Crew Cab:
Route the Power Harness (1) through the sill to the vehicle panel direction.



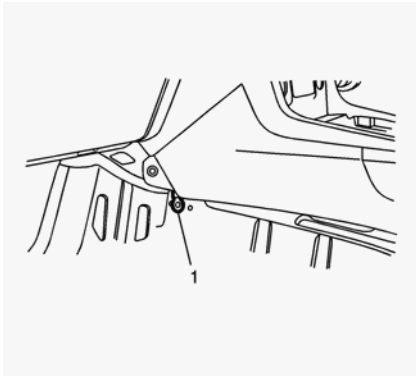
4. Extended Cab:
Route the Power Harness (1) through the sill to the vehicle panel direction.



5. Fix the power harness (2) with straps (1).

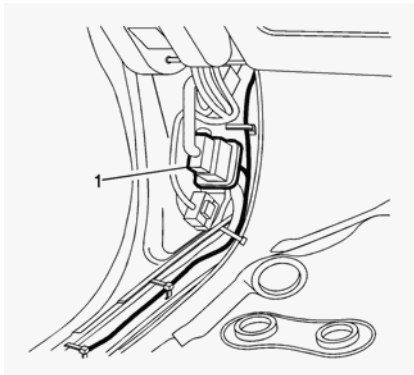
[Electrical Connections](#)

RHD Ground:



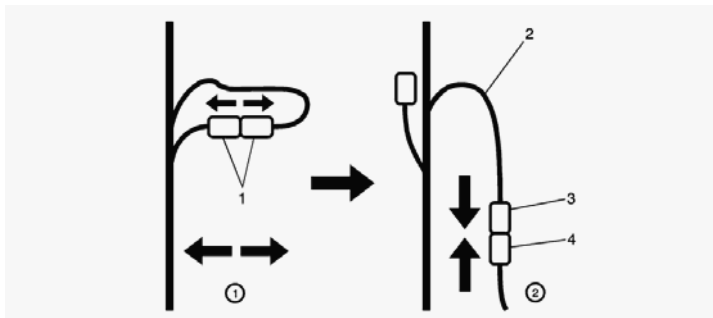
Connect the sensor harness ground terminal (1) to the vehicle ground point below the panel, in the passenger side of the central tunnel.

InLine connector for vehicle with trailer hitch module:



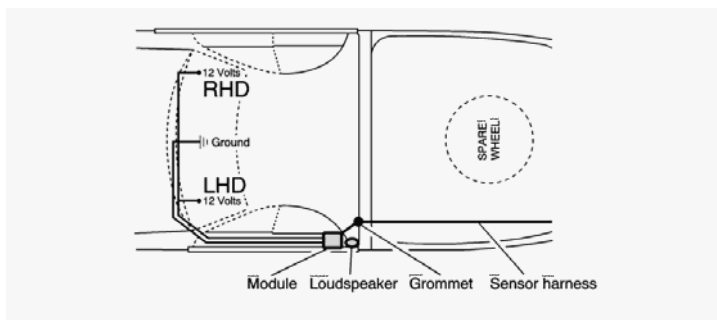
1. InLine connector:

Locate the InLine connector (1) existing in the passenger side, behind or next to the IP connector.



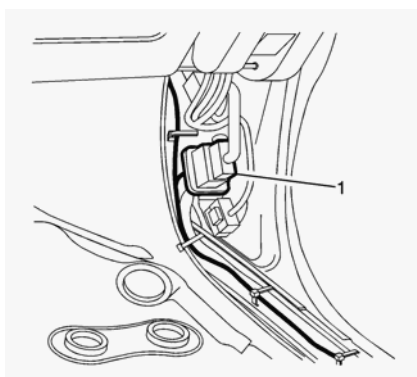
2. Disconnect the InLine of the sensor power harness (1).
3. Connect the Female connector (3) of the sensor power harness (2) to the vehicle trailer harness (4) on the passenger side of the vehicle.

Note: Fix the male connector of the sensor power harness to the harness with straps in order to prevent vibration and noise.

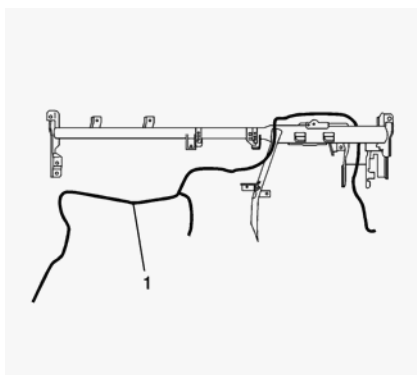


4. Connection of the RED wire to the rear lamp+12:

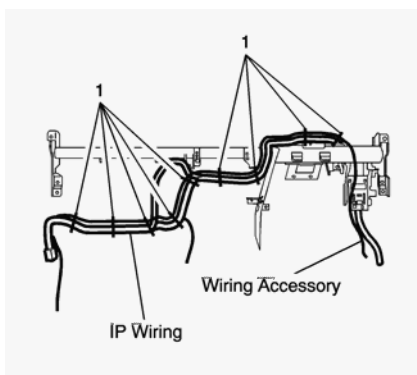
Note: The connections of +12 Volts vary according to the vehicle model. Find the references below:



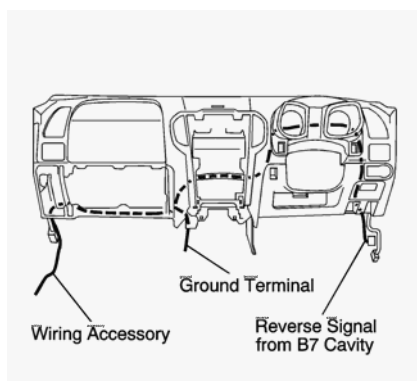
5. Fit the terminal in position B7 of the I/P connector (1) in the A column.



6. Route the harness (1) together with the I/P harness behind the instrument panel to the I/P connector in the A column in the driver side.

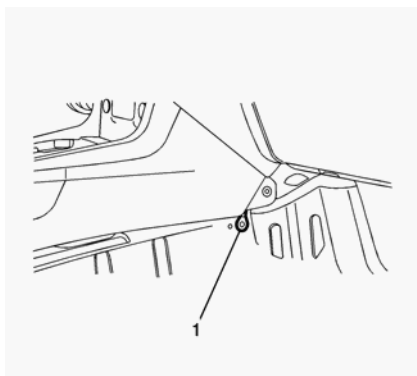


7. Install the tie straps (1) following the I/P wiring route.

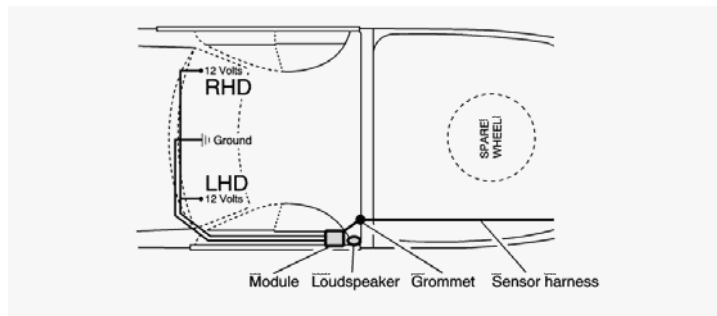


8. Final view of console panel.

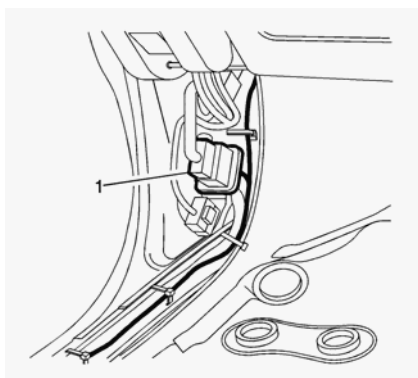
LHD Ground:



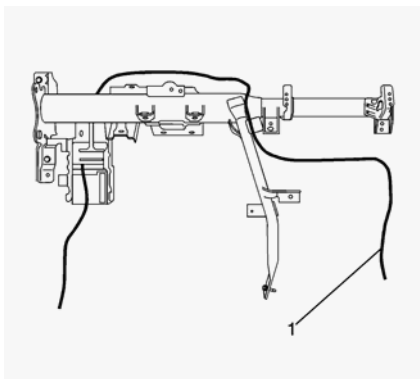
1. Connect the sensor harness ground terminal (1) to the vehicle ground point below the panel, in the passenger side of the central tunnel.



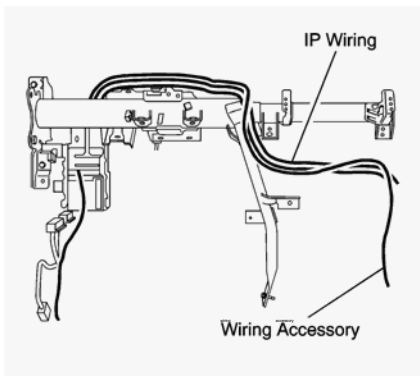
2. The connections of +12 Volts vary according to the vehicle model. Find the references below:
3. Connection of the red wire to the Rear Light +12:



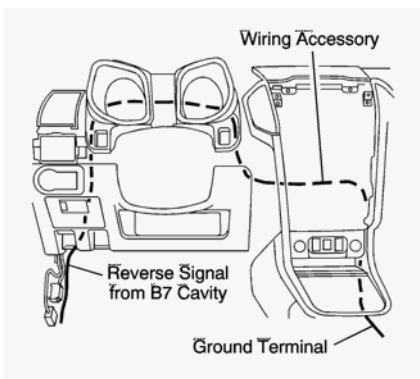
- LHD:
Fit the terminal in Position B7 of the IP connector (1) in the A column.



- Route the harness (1) together with the I/P harness behind the instrument panel to the I/P connector in the A column in the driver side.

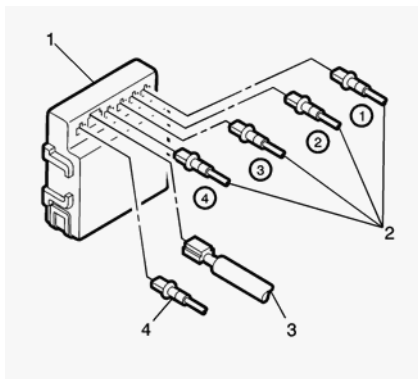


- Attach tie straps following the I/P wiring route.

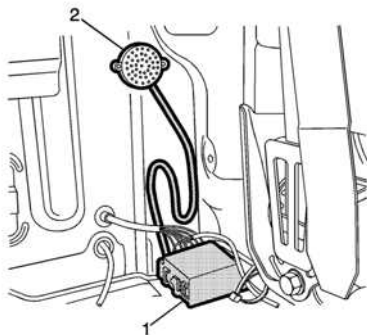


- Final view of console panel.

[Module and Loudspeaker Installation](#)

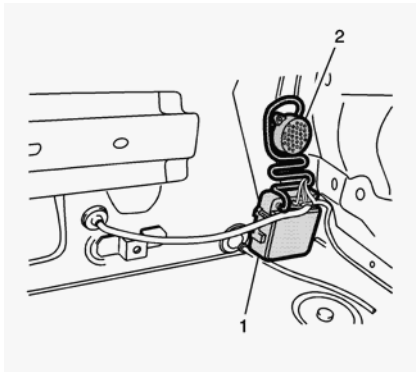


1. Connect the sensors harness (2), power harness (3) and loudspeaker (4) to the module (1) .
2. Fix the module and loudspeaker with double-face tape in the position shown in the drawings bellow, according to the vehicle model.



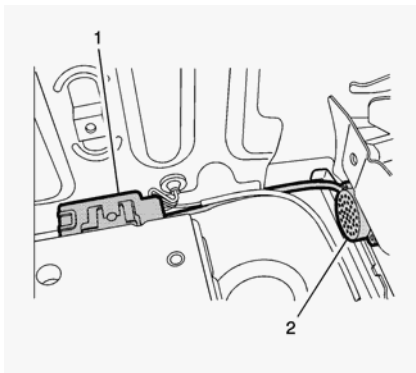
3. Regular Cab:

Fix the extra length of the loudspeaker harness with straps, to avoid vibration and noise.



4. Crew Cab:

Fix the extra length of the loudspeaker harness with straps, to avoid vibration and noise.



5. Extended Cab:

Fix the extra length of the loudspeaker harness with straps, to avoid vibration and noise.

Note: For vehicles with a towbar fitted, prior to re-installing any interior trim, proceed to Module Setup for setup procedures.

6. Mount the parts of the vehicle in its original positions according to GM procedures. Always check of the wires are not pressed, tensioned or bearing sharp or hot surfaces that can damage them.

[Troubleshooting](#)

Most common failures when installing the ParkMaster Sensor:

- Key out of position (external mark must be upwards).
- Sensor harness out of order (1-2-3-4).
- Blue Wire (Programming) turned on, that is, without having been cut.
- No programming.
- Wrong programming.
- Very small hole in the bumper (less than 20mm) or lack of groove for the key.
- In a metal bumper:
 - Very small hole or lack of groove for the key.
 - No painting in the hole spot (corrosion ends up compressing the sensor).
 - No rubber washer behind the bumper to compensate the plate thickness.
- Sensors painted without using the "Painting Ring", thus forming one coat of paint that covers the silicon part.

To find the problem with the sensor installation, follow the steps below:

1. Position the vehicle in a place where there are no obstacles at a distance of 2m from the rear bumper.

2. Activate the parking brake.
3. Turn the ignition ON without starting the engine.
4. Engage the reverse gear
5. When engaging the reverse gear, the sensor:
 - Does not make any beep:
 - Check the module power wires: Red (+12V of reverse gear light) and Black (ground).
 - Check if the reverse gear light of the vehicle is working.
 - Makes 01 (one) beep and then makes a quasi-continuous signal (error signal):

The module is not receiving a signal from one or more sensors. To find more rapidly which of the sensors is not working (emitting ultrasound), gently pass your finger in the core of the sensors to feel a light vibration or approach your ears to the sensor to hear small intermittent snaps. Check the connection and the faulty sensor harness.
 - Makes 01 (one) beep and then makes intermittent signals as if there is an obstacle near the bumper:
 - Check if all the sensors have the key upwards (external mark must be upwards).
 - Check if the sensor harness is in the right order (1, 2, 3 and 4). An easy way to check it is to turn off one sensor at a time in the module and see which one of them stops working (gently passing your finger on the core of the sensor).
 - Check if the holes are not very tight for the sensor (a hole less than 20mm) and if a 1mm groove has been made for the key.
 - Make the programming again.
 - Makes 02 (two) beeps:

The module is in diagnostic mode (blue wire turned on). Program the module as indicated in the module step.
- If the vehicle has a metal bumper and the sensor is beeping continuously, remove the sensors and check:
 - If the sensors are not very tight in the hole (leave a small gap) and if a recess has been made for the keys.
 - If the metal has been painted after drilled. If not, remove the rust with a file and paint the damaged metallic parts in order to prevent sheet corrosion. Let the paint dry before you encase the sensor in the place again.
- Check if the sensors have been correctly painted by using the "Painting Ring", which does not allow the silicon ring to be painted. If the sensors have been painted without using the "Painting Ring", thus forming one coat of paint that covers the silicon part:

Remove the paint on the silicon ring (that divides the core of the external flange) by using a mechanical pencil or the tip of a wire.

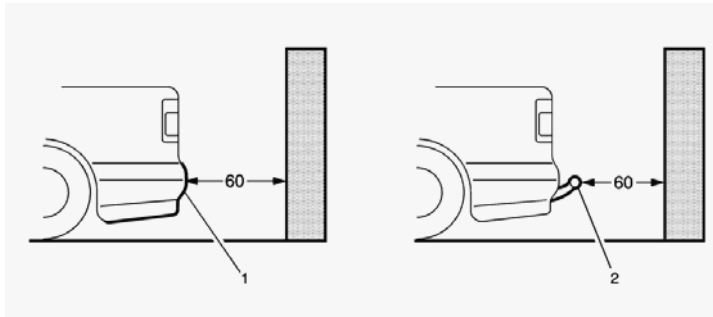
Module Setup

Set-up and Self-diagnostic procedure:

Note: The module is pre-programmed for the GMI 700 without trailer hitch.

Note: Trailer hitch: If the vehicle has a trailer hitch installed, program the module, according to the procedure below, to recognize and compensate the hitch.

1. Setup Procedure:



2. Place the limit of the car (bumper (1) or trailer hitch (2)) at a distance of 60cm from a flat surface (ex. wall). The surface must be flat, vertical and parallel to the vehicle bumper.
3. Activate the parking brake of the vehicle.
4. The BLUE wire loop in the power harness is interrupted. Remove the insulating tape that is covering the end of the two BLUE wires located approximately 200mm from the RPA module and connect them together for Set-up procedure.
5. Turn the ignition ON without starting the engine.
6. Engage the reverse gear to activate the parking sensor.
7. Two short beeps from the speaker inform that the procedure is started.
8. After a two-minute delay at maximum, the speaker will:
 1. Make a continuous beep (_____), informing that the procedure has been successful:
 1. Disengage the reverse gear.
 2. Turn the ignition key OFF.
 3. Interrupt the blue wire loop and isolate the wire ends with insulating tape.
 2. Make an intermittent beep (_ _ _), informing that there is a problem:
 1. Check the sensor position order (1-2-3-4 or 4-3-2-1).
 2. Check the distance from the limit of the car (bumper or existing hook) to the wall (60cm).
 3. Check if all the sensor internal gibes (KEY) or external dots are pointing UP.
 4. Check the diameter of the hole drilled on the bumper. It must have a 20mm diameter and a cut in the upper side to fit the gibes (key).
 5. Re-start Set-up procedure (item 1).
 3. Make no sound (), informing that there is a connection problem on the sensor harness;

Rear Parking Assist Alarm Sensor Package Installation (Pickup)

1. Check the harness.
2. Check the harness connectors on the sensors.
3. Check the harness connectors on the module.
4. Re-start Set-up procedure (item 1).
5. and Repeat this procedure.

Note: For an easy location of the sensor that is not working, turn on the parking sensor and check if all the sensors are emitting ultra-sonic signals. You can do this by gently touching the center part of the sensor with your fingertip. You will feel the sensor vibrating or not vibrating. You can also try to hear the clicking sound by approaching the sensors to your ears.

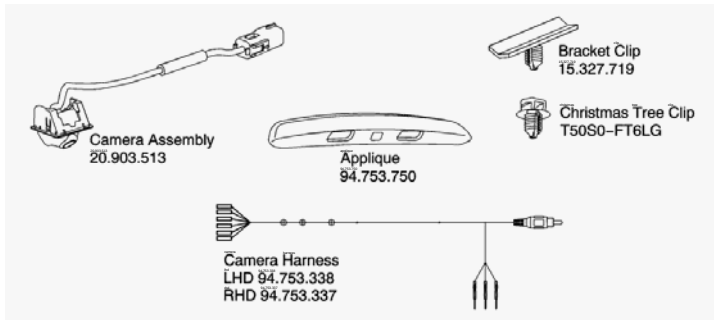
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

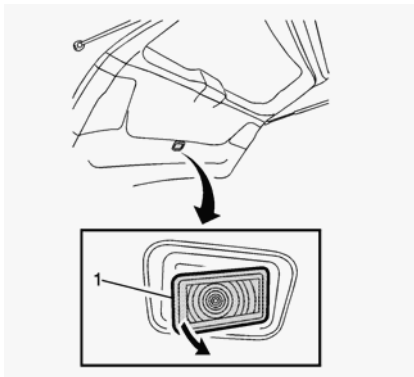
Table 1: [RVC Connector](#)

Table 2: [RVC Connections](#)

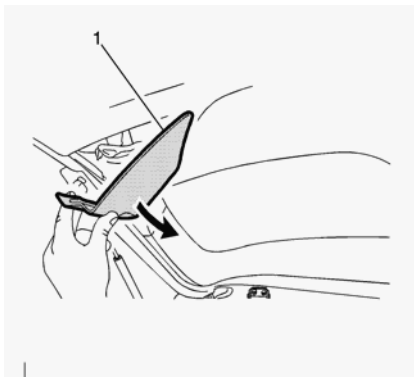
[Kit Contents](#)



[Installation Instructions](#)



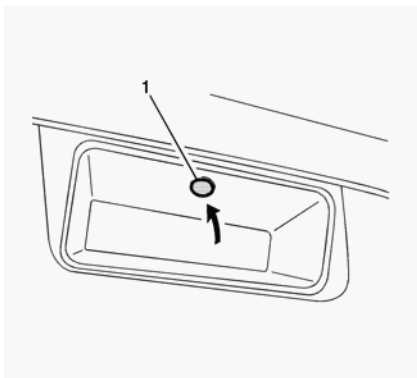
1. Remove the lamp (1) of the plastic cover on the trunk door. Refer to vehicle service manual.



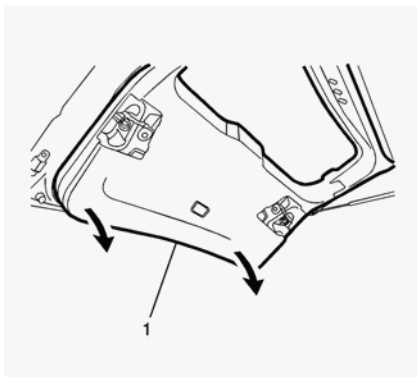
2. Remove the two lateral lids (1) to have access to the tail lights.



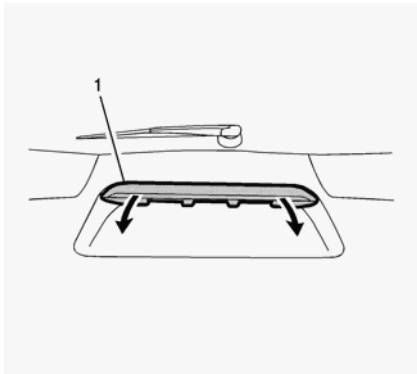
3. Remove the top plastic cover (1) of the trunk door. Refer to vehicle service manual.



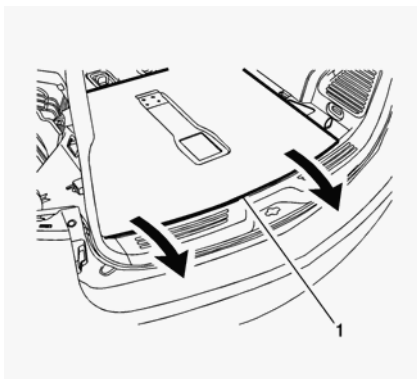
4. Remove the bolt (1) inside the trunk door handle. Refer to vehicle service manual.



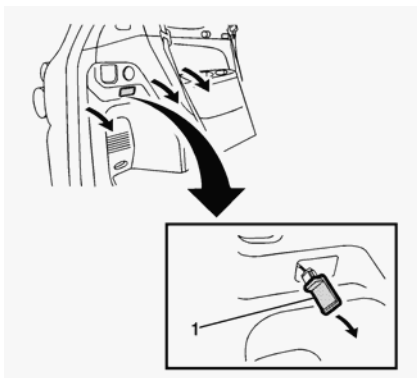
5. Remove the bottom cover (1) of the liftgate. Refer to vehicle service manual.



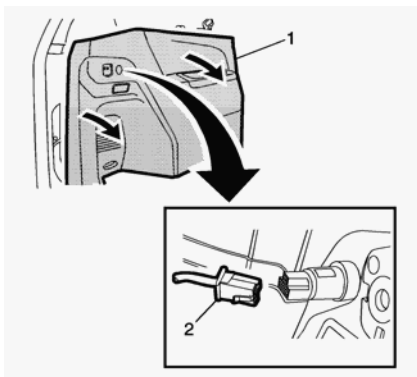
6. Remove the external applique (1) from the liftgate. Refer to vehicle service manual.



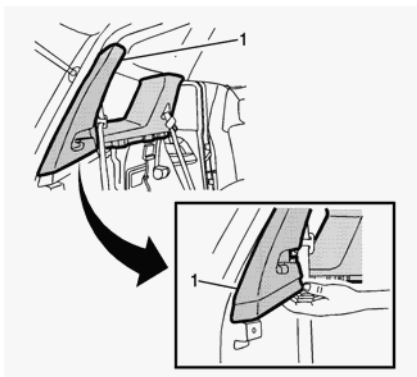
7. Remove the luggage carrier (1). Refer to vehicle service manual.



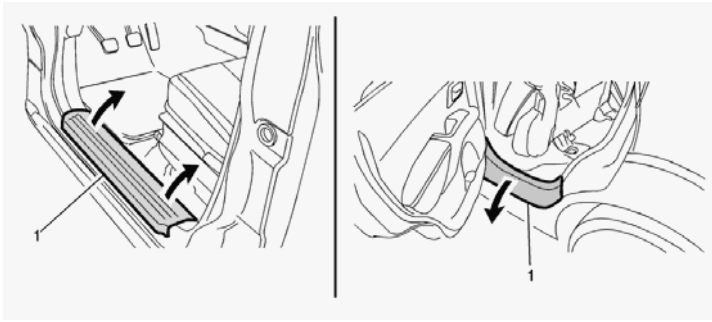
8. Remove the lamp (1) from the left quarter trim panel. Refer to vehicle service manual.



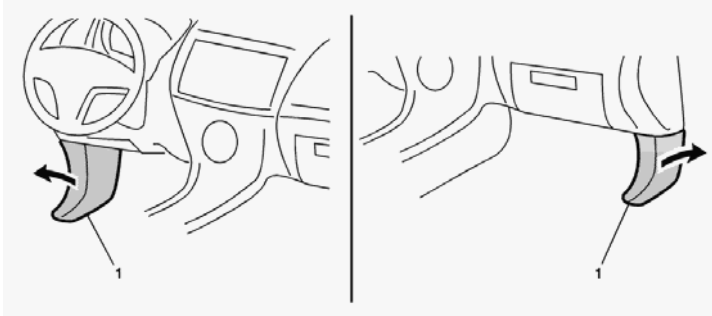
9. Disconnect APO harness (2)
10. Remove the left side quarter trim panel (1). Refer to vehicle service manual.



11. Remove the left C/D column cover (1). Refer to vehicle service manual.

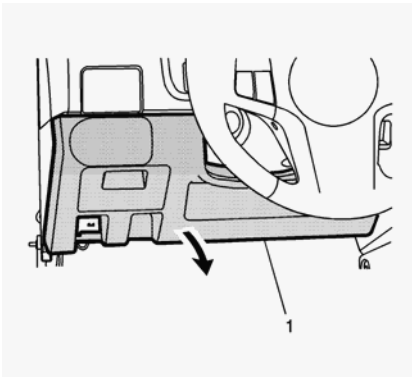


12. Remove the left side sill plates (1). Refer to vehicle service manual.

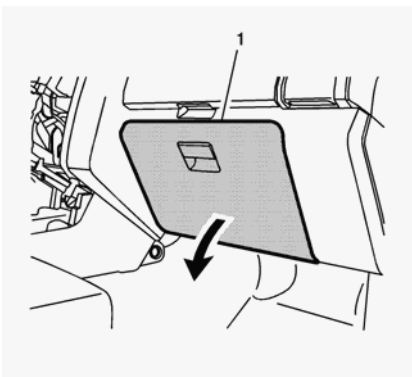


Note: The following images are LHD vehicle.

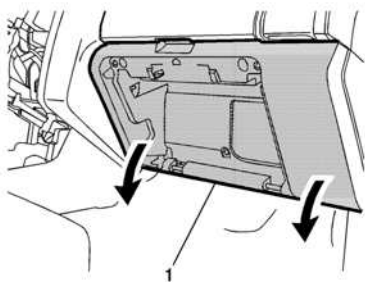
13. For RHD follow the same procedures but in opposite sides.
14. Remove the body hinge pillar trim panels (1). Refer to vehicle service manual.



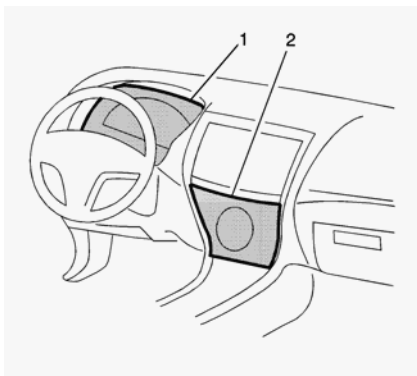
15. Remove the instrument lower panel (1). Refer to vehicle service manual.



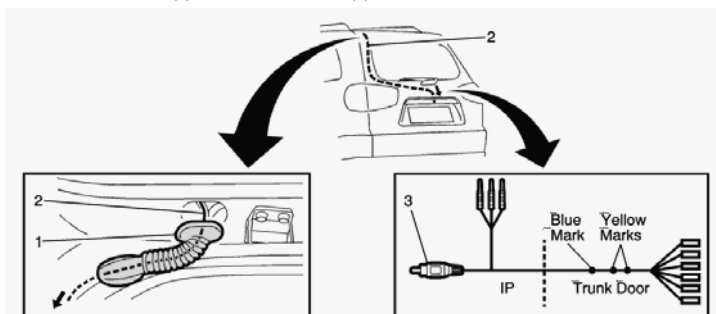
16. Remove the instrument panel compartment door (1). Refer to vehicle service manual.



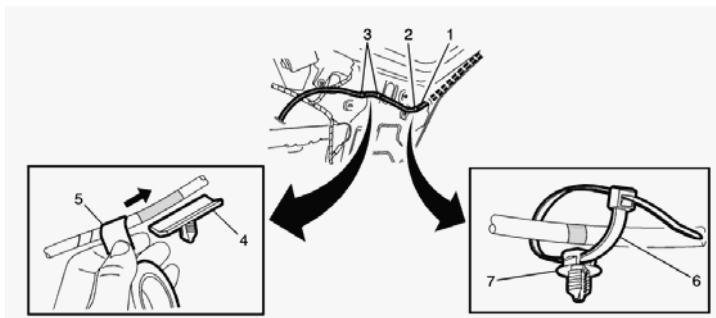
17. Remove the instrument lower panel (1). Refer to vehicle service manual.



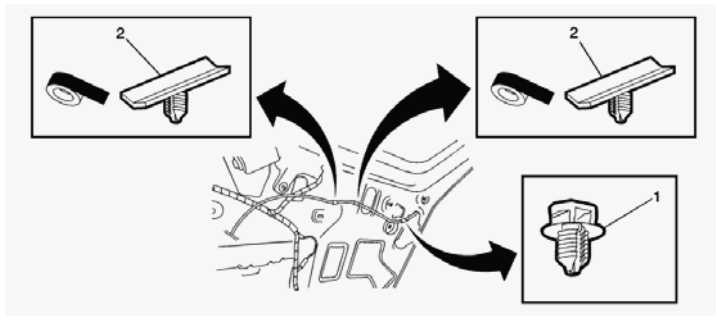
18. Remove the cluster (1) and the A/C Control (2). Refer to vehicle service manual.



19. Remove the trunk door left grommet (1) and pass the harness (3) inside, together with the vehicle harness (2).

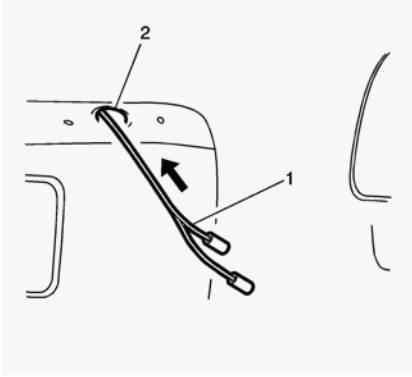


20. Route the harness (1) through the trunk door.
 21. Position the two Christmas Tree Brackets (4) in the yellow marks (3) of the camera harness and fix them with tape (5).
 22. Position the Christmas Tree Clip (7) in the BLUE mark (2) of the camera harness and fix with the tie strap (6).

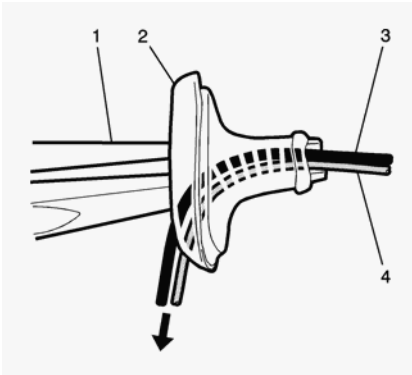


23. Insert the Christmas Tree Clip (1) and Brackets (2) in the existing holes of the trunk door metal sheet.

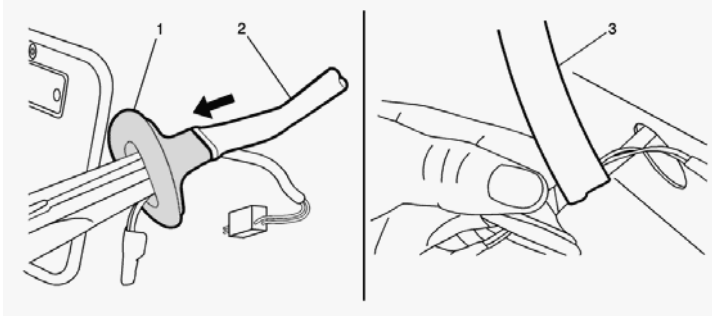
Note: Fix the Rear View Camera harness along the way, always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.



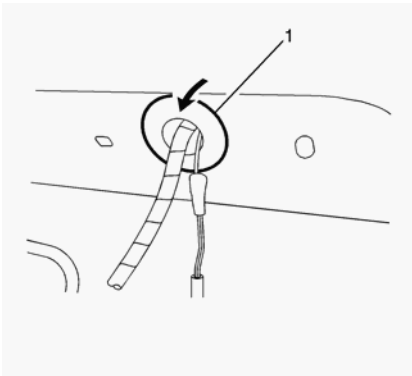
24. Remove the license plate harness grommet (to push to inner trunk door).
 25. Pass the camera harness (1) through the hole (2) from the inside to the outside part of the trunk door.



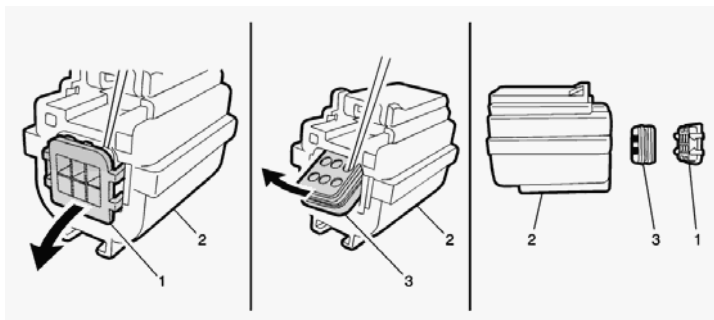
26. Open the grommet (2) with a plier (1) and pass the camera harness (3) together with the license plate harness (4).



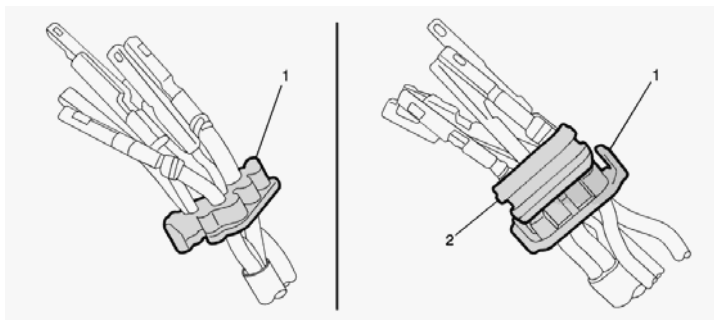
27. Cover the harness (2) and grommet end (1) with tape (3).



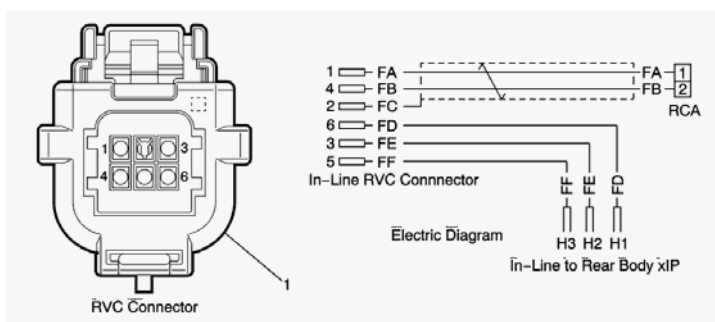
28. Install the grommet in its original position.



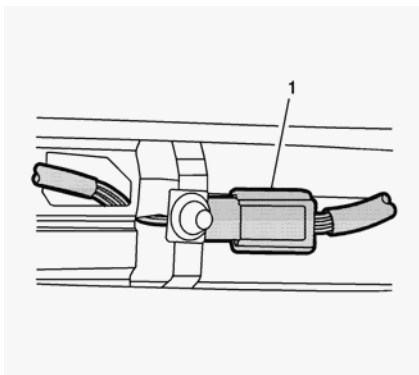
29. Remove the protection tape of the camera harness terminals.
30. Remove the lock (1) and seal (3) of the connector (2).



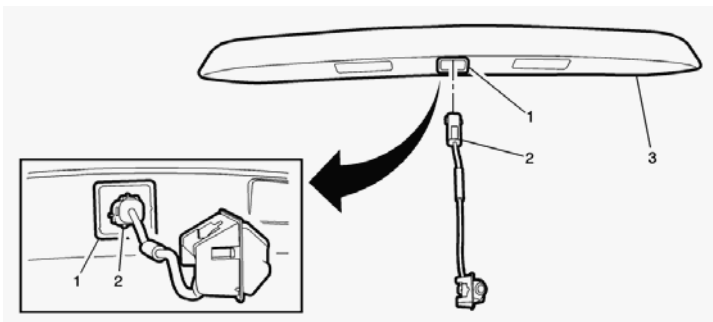
31. Pass the terminals through the connector red lock (1) and blue seal (2).



- Grey/Yellow: Position 01
- Shield: Position 02
- Green/White: Position 03
- White/Blue: Position 04
- Black/White: Position 05
- Violet/Black: Position 06
- Insert the terminals on the respective position of the connector (1), checking if they are locked in place.



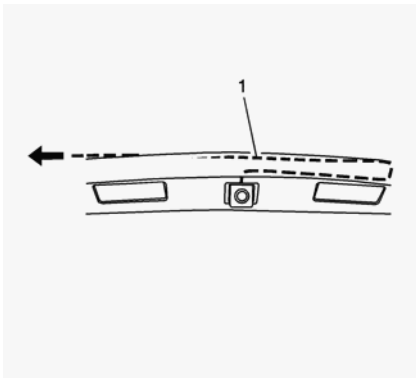
- Slide the seal and lock into the connector (1).



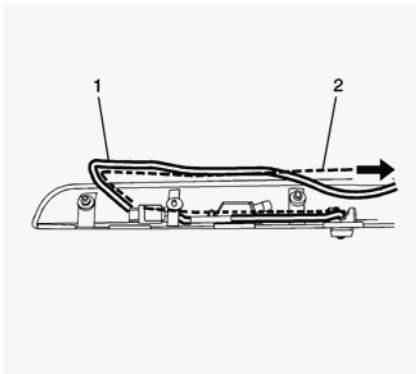
- Pass the camera harness (2) through the square (1) hole in the center of the applique (3).



- Install the camera (1) and check if it is locked in place.



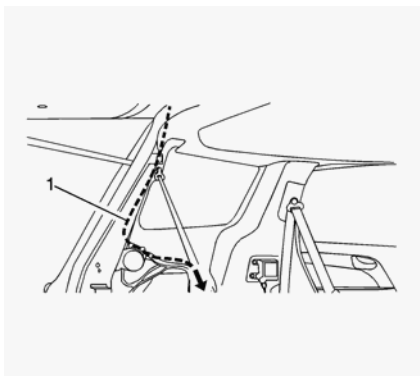
- Route the camera harness (1) in the inner part of the applique.



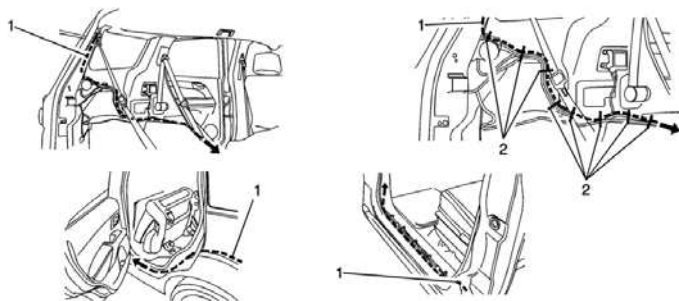
- Connect the camera harness (2) to the vehicle harness (1) and the license plate harness to the two lamps.



- Install the applique (1). Refer to vehicle service manual.

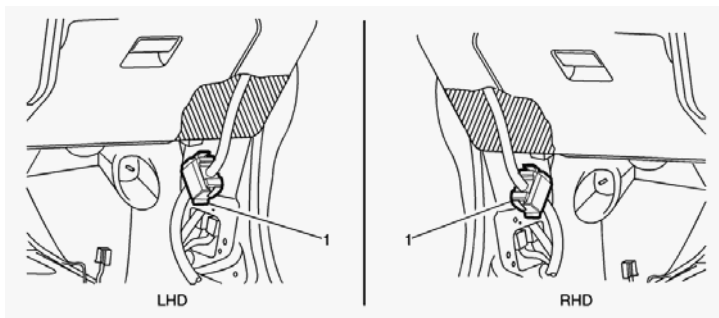


- Pass the camera harness (1) through the D Column hole, behind the seat belt.

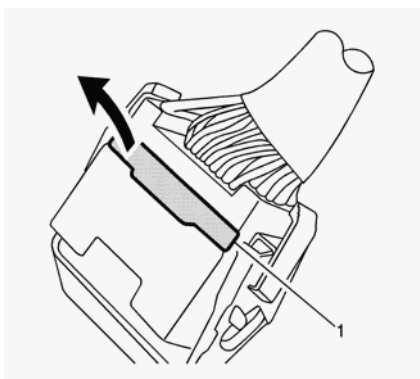


- Route the harness (1) together with the Rear Body Vehicle Harness all the way to the A Column on the left side of the vehicle, fixing them together with tie straps (2).

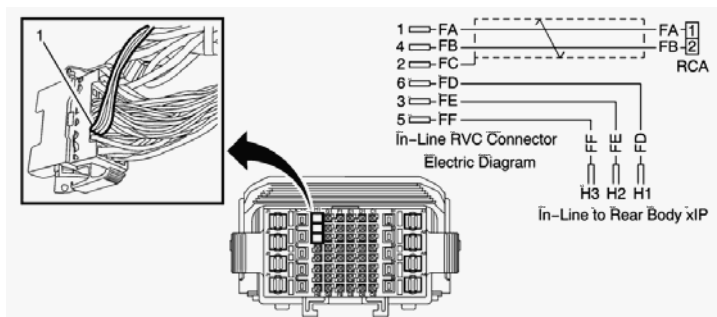
Note: Always check of the harness is not pressed, tensioned or bearing sharp or hot surfaces that can damage it.



- Locate the IP connector (1) existing in the passenger side, in the A column behind or next to the IP.

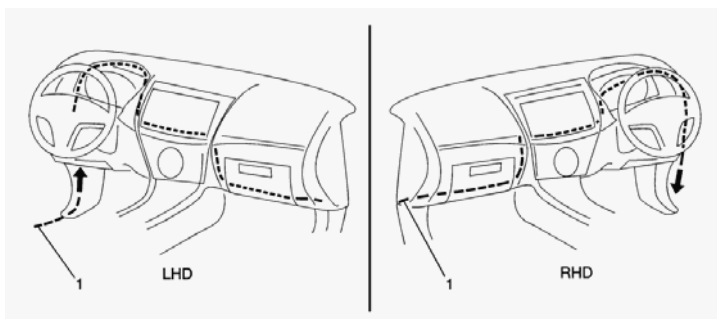


- Remove the lock (1) of the IP connector to insert the terminals.



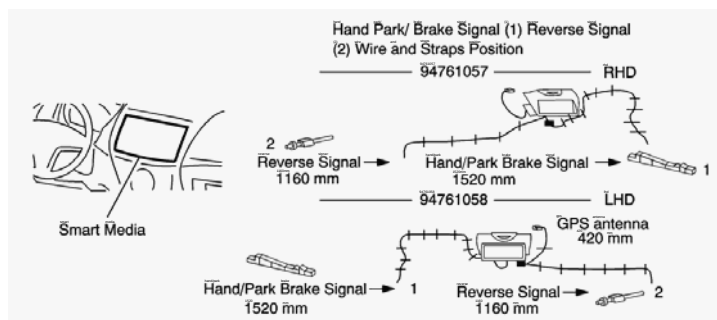
- Violet/Black: Position H1
- Green/White: Position H2
- Black/White: Position H3
- Insert the terminals (1) of the IP connector in the positions:
H1, H2 e H3.

[Rear View Camera Harness Route \(Behind IP\)](#)



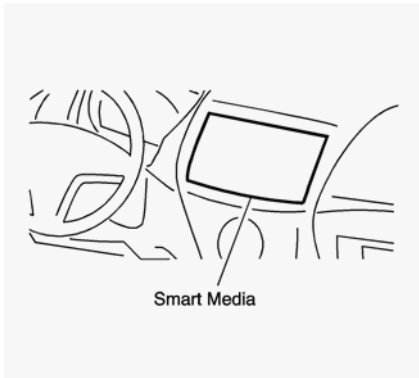
Secure the Rear View Camera Harness accessory (1) with straps on main Harness of Instrument Panel.

[Smart Media Connections](#)

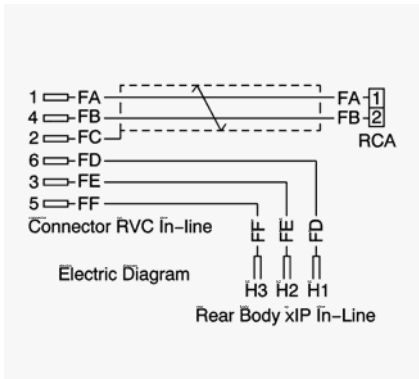


- Connect the RCA connector to the video VCD connector of the Smart Media.
- Turn ON the vehicle ignition.
- Engage rear gear and check if the Smart Media show the camera image.
- If the camera image does not show, follow the Troubleshooting.

[Troubleshooting](#)



1. For the Smart Media show the camera image, the system need the Reverse signal it is correctly connected, according to Smart Media manual.
2. Check the Smart Media manual.
3. Check the Electric Diagram and all connections;



RVC Connector

Wire	Position
Violet/Black	H1
Green/White	H2
Black/White	H3

RVC Connections

Cod.	#(mm2)	Color	Terminal	Pos.	Conec.
FA (*)	0.35	Grey/Yellow	SAIT-A03T-M064 RCA	—	1
FB (*)	0.35	White/Blue	SAIT-A03T-M064 RCA	—	2
FC (*)	0.35	Shield	SAIT-A03T-M064 —	—	—
FD	0.50	Violet/Black	SAIT-A03T-M064 928918-1	—	—
FE	0.50	Green/White	SAIT-A03T-M064 928918-1	—	—
FF	0.50	Black/White	SAIT-A03T-M064 928918-1	—	—

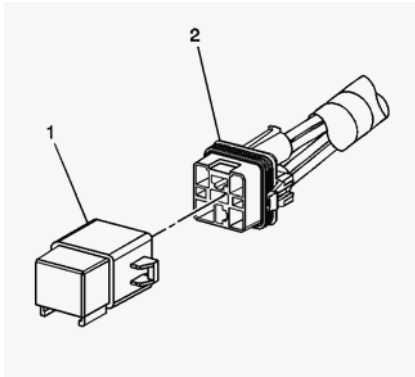
Note: (*) Twisted shielded cable

Note: After check the connections, engaged rear gear and check the image in the Smart Media again.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

[Removal Procedure](#)

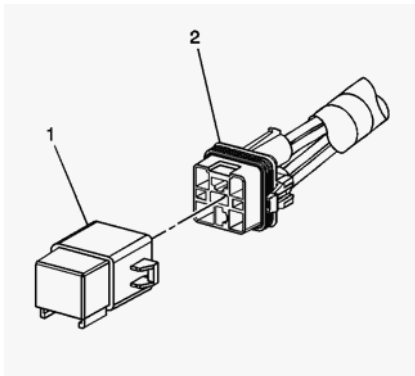


1. Locate the relay. Refer to the Master Electrical Component List to locate the relay in the vehicle.
2. Remove any fasteners which hold the relay in place.
3. Remove any connector position assurance (CPA) devices or secondary locks.

Note: Use care when removing a relay in a wiring harness when the relay is secured by fasteners or tape.

4. Separate the relay (1) from the wire harness connector (2).

[Installation Procedure](#)



1. Connect the relay (1) to the wire harness connector (2).
2. Install any connector position assurance (CPA) devices or secondary locks.
3. Install the relay using any fasteners or tape that originally held the relay in place.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Special Tools

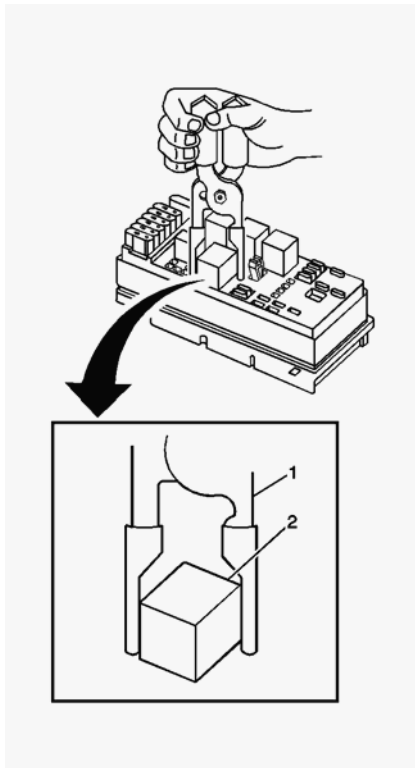
EL-43244 Relay Puller Pliers

[Removal Procedure](#)

1. Remove the electrical center cover.

Note:

- o Always note the orientation of the relay.
 - o If equipped with a notch style relay; observe the location of the notch on the old relay to verify the new relay is installed with the notch in the same location.
 - o Ensure that the electrical center is secure, as not to put added stress on the wires or terminals.
2. Locate the relay. Refer to Electrical Center Identification Views to locate the electrical center where the relay exists.



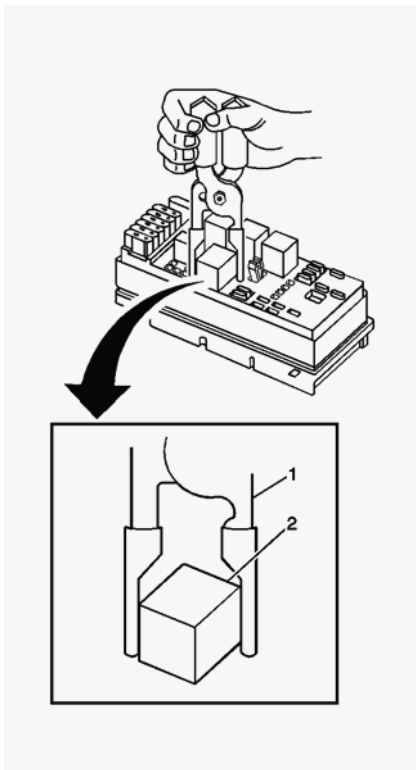
3. Using the EL-43244 (1) position the tool on opposing corners of the relay (2).

Caution: Use EL-43244 to pull the relay straight out from the electrical center terminals. The use of pliers or a flat bladed tool could damage the electrical center.

4. Remove the relay (2) from the electrical center.

[Installation Procedure](#)

Relay Replacement (Within an Electrical Center)

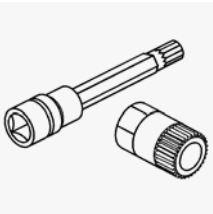


1. Install the relay (2) in the same position as removed.
2. Install the electrical center cover.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

Illustration	Tool Number/Description
	EN 6372 KM 6372 Counterhold
	J 38758 Parasitic Draw Test Switch
	J 41450-B Universal CS Generator Tester Harness
	J 42000 Battery Tester
	J 45681 Jumper Harness

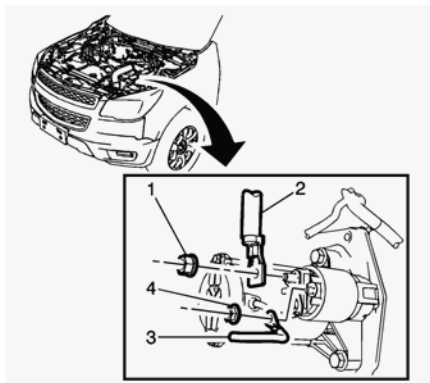
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

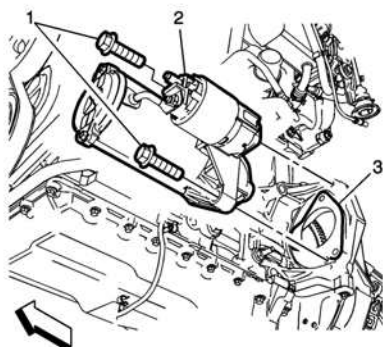
Fuel Delivery: | Fuel:

Removal Procedure

1. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Remove the engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
3. Remove the left front wheel assembly. Refer to Tire and Wheel Removal and Installation.

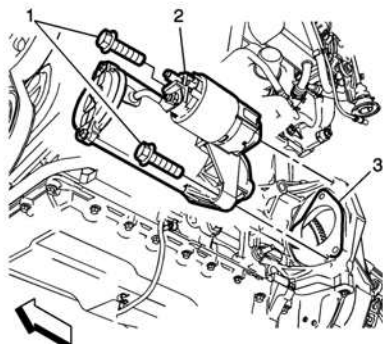


4. Remove the battery positive cable fastener (1) and remove the battery positive cable (2) from the starter solenoid.
5. Remove the engine harness fastener (4) and the engine harness terminal (3) from the starter solenoid.



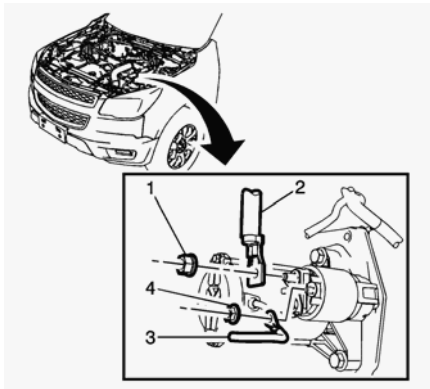
6. Remove the starter mounting fasteners (1) and the gasket (3).
7. Remove the starter (2) from the engine compartment.

Installation Procedure



Caution: Refer to Fastener Caution.

1. Install the starter (2) and gasket (3) to the engine block. Tighten the fasteners (1) to **50 Y (37 lb ft)**.



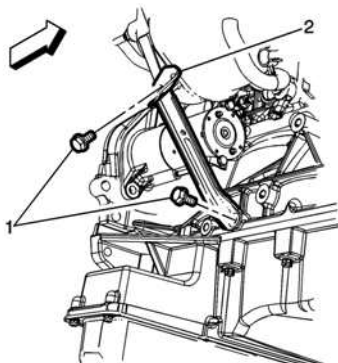
2. Install the battery positive cable (2) to the starter solenoid and tighten the fastener (1) to **10 Y (89 lb in)**.
3. Install the engine harness terminal (3) to the starter solenoid and tighten the fastener (4) to **4 Y (44 lb in)**.
4. Install the engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
5. Install the left front wheel assembly. Refer to Tire and Wheel Removal and Installation.
6. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.

2013 Chevrolet Colorado

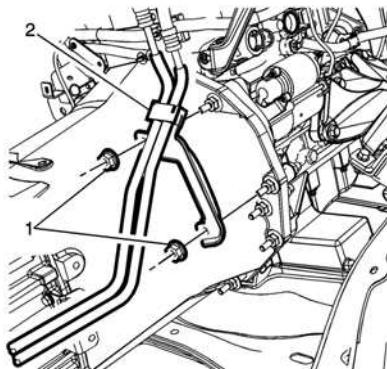
Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Removal Procedure

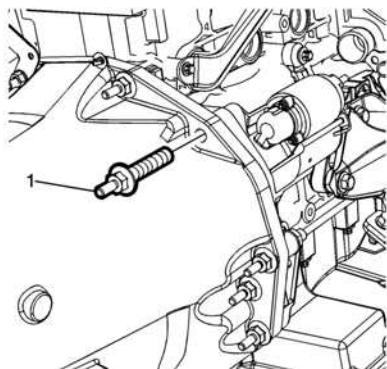
1. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Remove the battery positive cable. Refer to Battery Positive Cable Replacement.



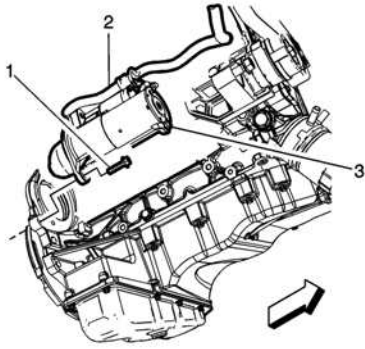
3. Remove the intake manifold brace fasteners (1) and remove the intake manifold brace (2).



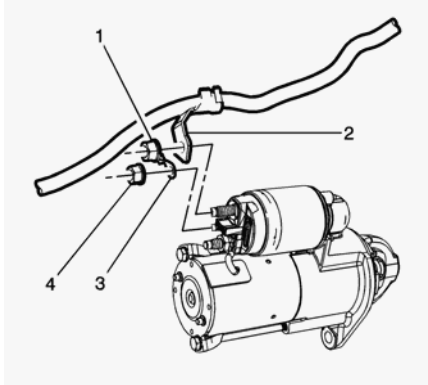
4. Remove the fuel feed and return bracket fasteners (1) and remove the fuel feed and return bracket (2).



5. Remove the starter mounting fastener (1) from the transmission .

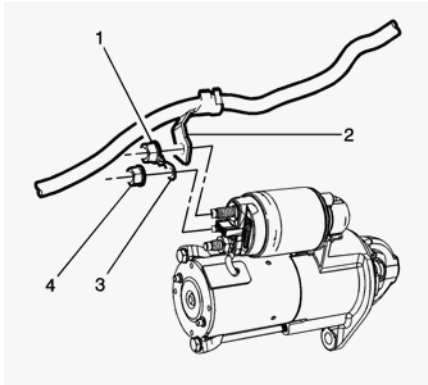


6. Remove the starter mounting fastener (1) and the battery positive cable (2) with the starter (3), from the engine compartment.



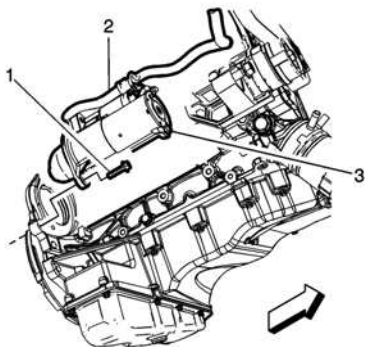
7. Place the starter in a suitable vice.
8. Remove the battery positive fastener (1) and the battery positive terminal (2), from the starter solenoid.
9. Remove the battery positive fastener (4) and the battery positive terminal (3), from the starter solenoid.

Installation Procedure

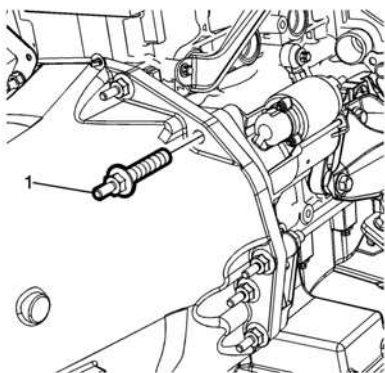


Caution: Refer to Fastener Caution.

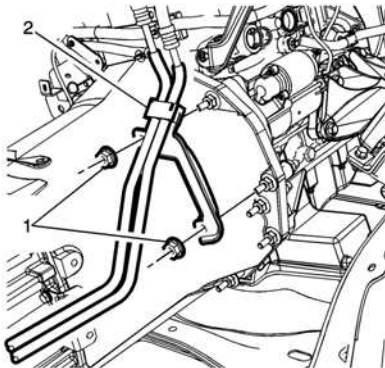
1. Place the starter in a suitable vice and install the battery positive terminal (3) to the starter solenoid. Tighten the fastener (4) to **9 Y (80 lb in)**.
2. Install the battery positive terminal (2) to the starter solenoid and tighten the fastener (1) to **9 Y (80 lb in)**.



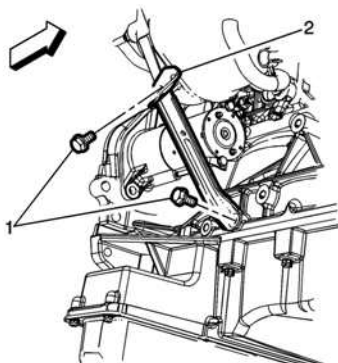
3. Install the starter (3) with the battery positive cable (2) and tighten the starter mounting fastener (1) to **45 Y (37 lb ft)**.



4. Install the starter mounting stud/fastener (1) from the transmission side and tighten to **50 Y (37 lb ft)**.



5. Install the fuel feed and return bracket (2) and tighten the fasteners (1) to **17 Y (12 lb ft)**.



6. Install the intake manifold brace (2) and tighten the fasteners (1) to **22 Y (16 lb ft)**.
7. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.

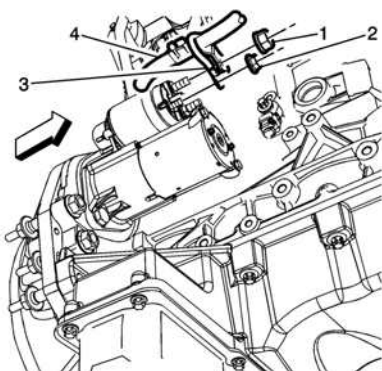
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:

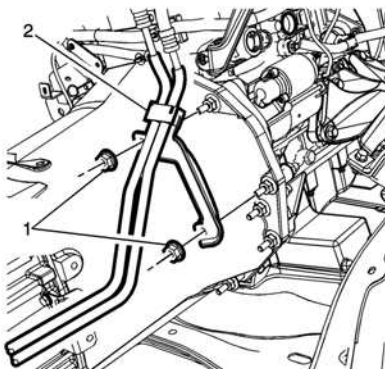
Fuel Delivery: | Fuel:

Removal Procedure

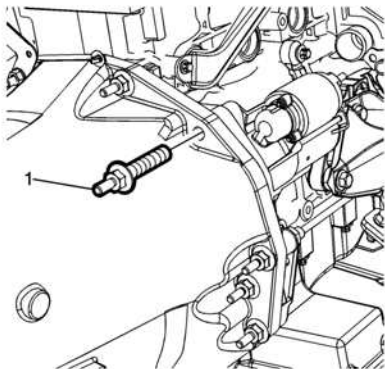
1. raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.



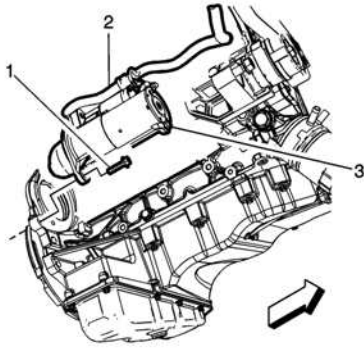
3. Remove the battery positive cable fastener (1) and terminal (4) from the starter solenoid.
4. Remove the engine harness fastener (2) and terminal (3) from the starter solenoid.



5. Remove the fuel feed and return bracket fasteners (1) and remove the fuel feed and return bracket (2).

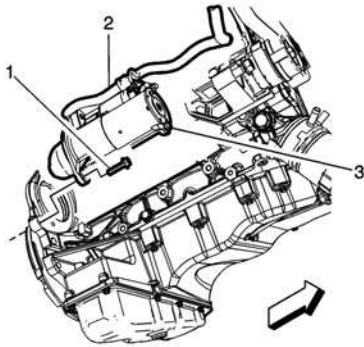


6. Remove the starter mounting fastener (1) from the transmission .



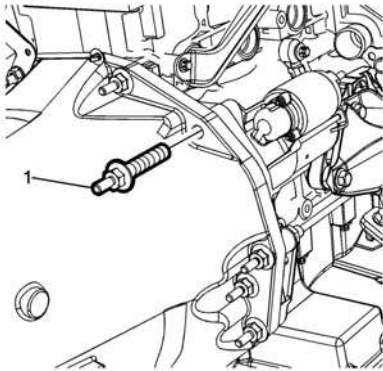
7. Remove the starter mounting fastener (1) and remove the starter (2) from the engine compartment.

[Installation Procedure](#)

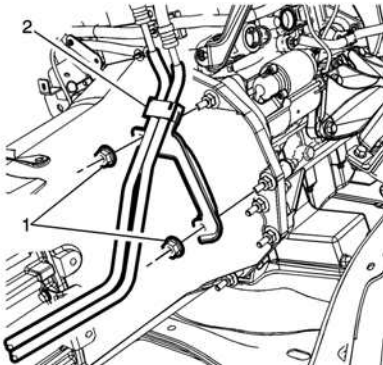


Caution: Refer to Fastener Caution.

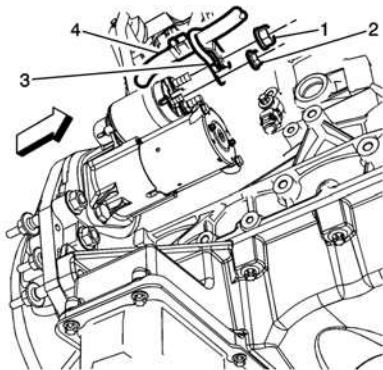
1. Install the starter (2) and tighten the starter mounting fastener (1) to **45 Y (37 lb ft)**.



2. Install the starter mounting stud/fastener (1) on the transmission side and tighten to **50 Y (37 lb ft)**.



3. Install the fuel feed and return bracket (2) and tighten the fasteners (1) to **17 Y (12 lb ft)**.



4. Install the engine harness terminal (3) and tighten the fastener (2) to **9 Y (80 lb in)**.
5. Install the battery positive cable terminal (4) and tighten the fastener (1) to **9 Y (80 lb in)**.
6. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.

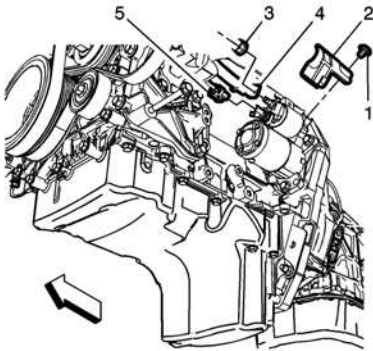
2013 Chevrolet Colorado

Submodel: | **Engine Type:** | **Liters:**

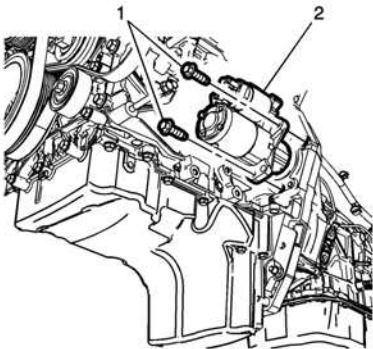
Fuel Delivery: | **Fuel:**

Removal Procedure

1. Disconnect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.
2. Remove the left side engine mount. Refer to Engine Mount Replacement - Left Side.
3. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
4. Remove the left front engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.

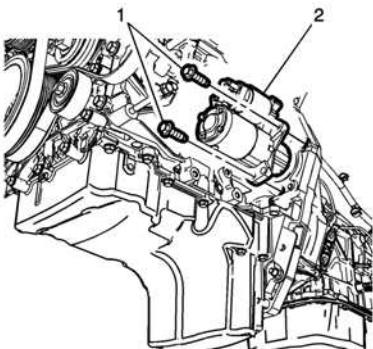


5. Remove the starter heat shield fastener (1) and the starter heat shield (2).
6. Remove the battery positive cable fastener (3) and remove the battery positive cable (4) from the starter solenoid.
7. Disconnect the engine harness connector (5) from the starter.



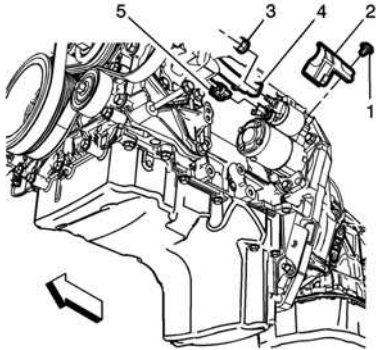
8. Remove the starter mounting fasteners (1) and the starter assembly (2), from the engine compartment.

Installation Procedure



Caution: Refer to Fastener Caution.

1. Install the starter (2) and tighten the fasteners (1) to **58 Y (43 lb ft)**.



2. Connect the engine harness connector (5) to the starter solenoid.
3. Install the battery positive cable terminal (4) to the starter solenoid and tighten the fastener (1) to **10 Y (89 lb in)**.
4. Install the starter heat shield (2) and tighten the fastener (1) to **5 Y (44 lb in)**.
5. Install the engine lower front splash shield. Refer to Engine Lower Front Splash Shield Replacement.
6. Install the left side engine mount. Refer to Engine Mount Replacement - Left Side.
7. Connect the negative battery cable. Refer to Battery Negative Cable Disconnection and Connection.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

The starter motors are non-repairable starter motors. They have pole pieces that are arranged around the armature. Both solenoid windings are energized. The pull-in winding circuit is completed to the ground through the starter motor. The windings work together magnetically to pull and hold in the plunger. The plunger lever. This action causes the starter drive assembly to rotate on the armature shaft spline as it engages with the flywheel ring gear on the engine. Movement of the plunger also closes the solenoid switch contacts in the starter solenoid. Full battery voltage is applied directly to the starter motor and it cranks the engine.

As soon as the solenoid switch contacts close, current stops flowing through the pull-in winding because battery voltage is applied to both ends of the hold-in winding remains energized. Its magnetic field is strong enough to hold the plunger, shift lever, starter drive assembly, and solenoid switch contacts closed to continue cranking the engine. When the engine starts, pinion overrun protects the armature from excessive speed until the switch is opened.

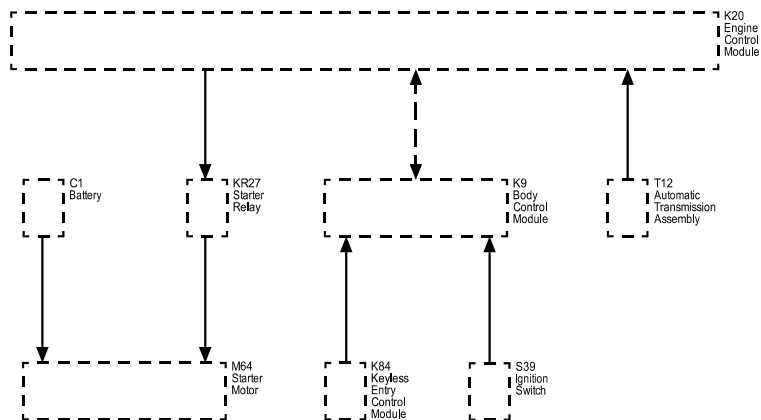
When the ignition switch is released from the START position, the START relay opens and battery voltage is removed from the starter solenoid S terminal from the motor contacts through both windings to the ground at the end of the hold-in winding. However, the direction of the current flow through the pull-in winding is now opposite the direction of the current flow when the winding was first energized.

The magnetic fields of the pull-in and hold-in windings now oppose one another. This action of the windings, along with the help of the return spring, causes the starter drive assembly to disengage and the solenoid switch contacts to open simultaneously. As soon as the contacts open, the starter circuit is turned off.

Circuit Description (Key Start)

When the ignition switch is placed in the Start position, a discrete signal is supplied to the body control module (BCM) notifying it that the ignition switch has been turned to the Start position. The BCM then sends a message to the engine control module (ECM) notifying it that CRANK has been requested. The ECM verifies that the transmission is in Park or Neutral. If it is, the ECM then supplies 12 volts to the control circuit of the crank relay. When this occurs, battery voltage is supplied through the switch side of the crank relay to the S terminal of the starter solenoid.

Starting System Block Diagram



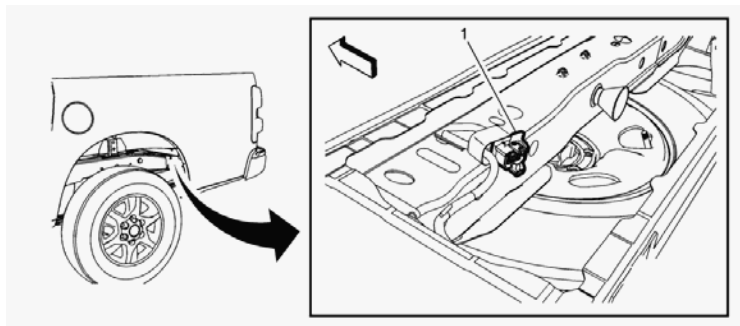
(HW)	Hard-Wired
(DD)	Serial Data - GMLAN High Speed
(HW)	Hard-Wired
(HW)	Hard-Wired
(HW)	Hard-Wired
(HW)	Hard-Wired
(HW)	Hard-Wired
(K20)	K20 Engine Control Module
(C1)	C1 Battery
(KR27)	KR27 Starter Relay
(K9)	K9 Body Control Module
(T12)	T12 Automatic Transmission Assembly
(M64)	M64 Starter Motor
(K84)	K84 Keyless Entry Control Module
(S39)	S39 Ignition Switch

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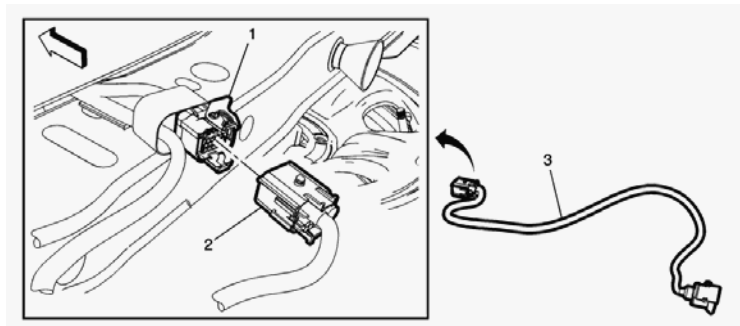
Submodel: | Engine Type: | Liters:

Fuel Delivery: | Fuel:

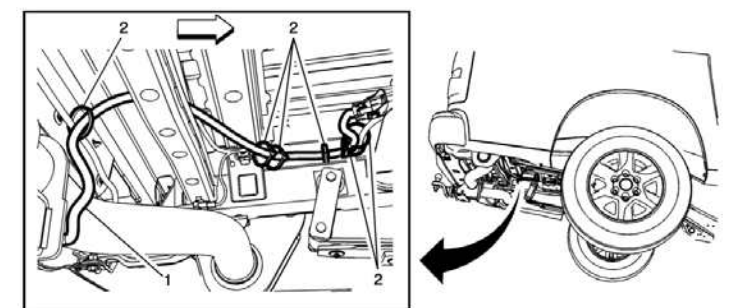
Procedure



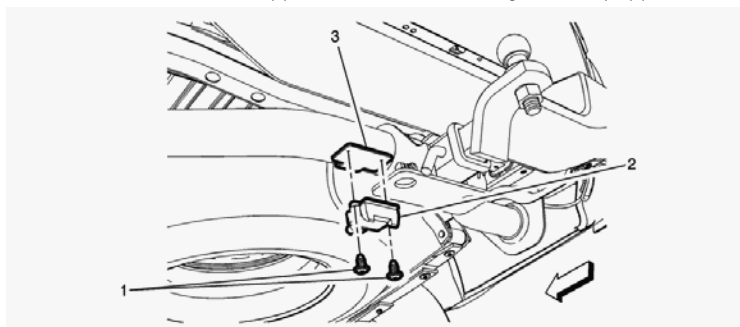
1. On the left rear side of vehicle frame, locate the in-line trailer harness connector (1).



2. Connect the in-line connector (2) of the accessory trailer hitch harness (3) to the existing in-line connector (1) on vehicle.



3. Secure the trailer hitch harness (1) to the chassis harness using six tie straps (2).



Caution: Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint

and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage systems.

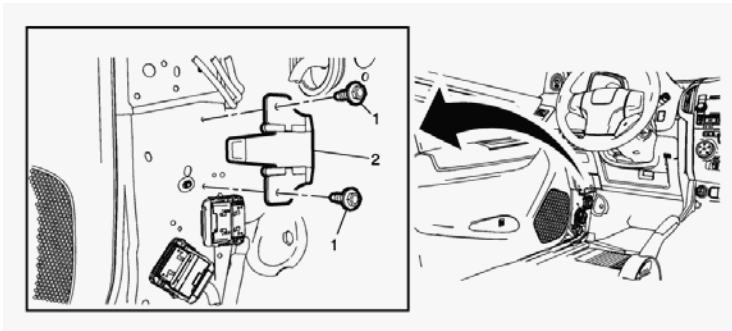
4. Install the trailer hitch harness connector (2) to the tab (3) of the hitch using the two screws (1).

Tighten

Tighten the two screws to 8 Y (6 lb ft).



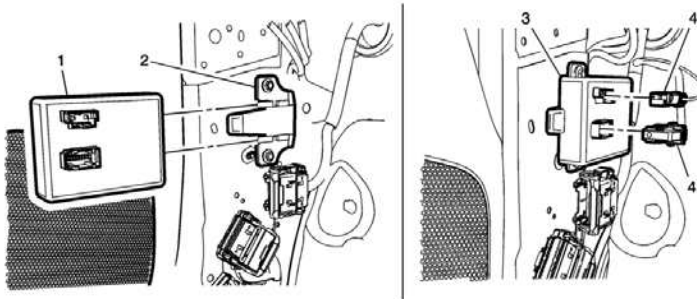
5. Remove the footrest if necessary.
6. Remove the left front side door sill trim plate.
7. Remove the left front body hinge pillar trim assembly retainer (1).
8. Grasp the left front body hinge pillar trim panel (2) and gently pull the panel away from the body to release the fasteners. Slide the panel unhooks from around the front door frame.



9. Install the trailer hitch module bracket (2) to the left front body hinge pillar and secure with the two bolts (1).

Tighten

Tighten the two bolts to 8 Y (6 lb ft).

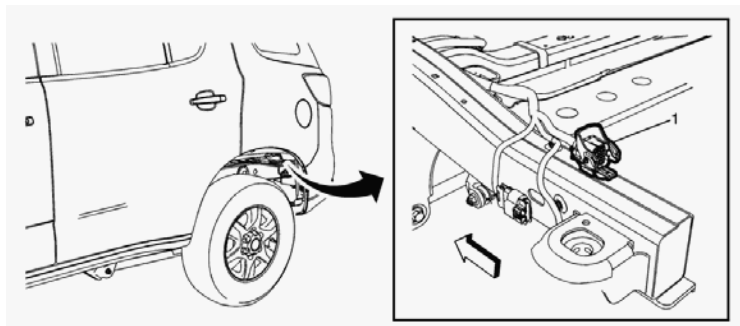


10. Install the trailer hitch module (1) to the trailer hitch module bracket (2).
11. Locate the two existing harness connectors (4) and connect to module (3).
12. Reinstall all removed components to vehicle.
13. Program the trailer lamp control module. Refer to Trailer Lamp Control Module Programming and Setup.

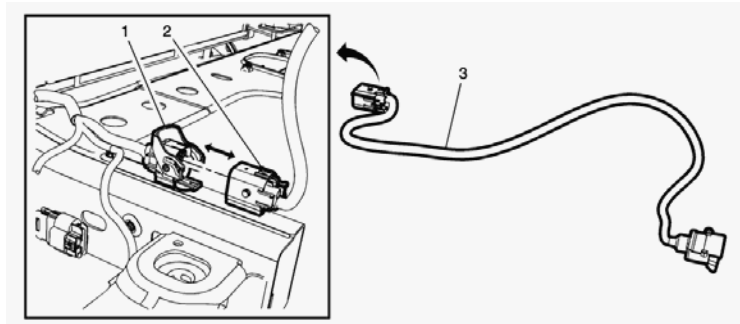
2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

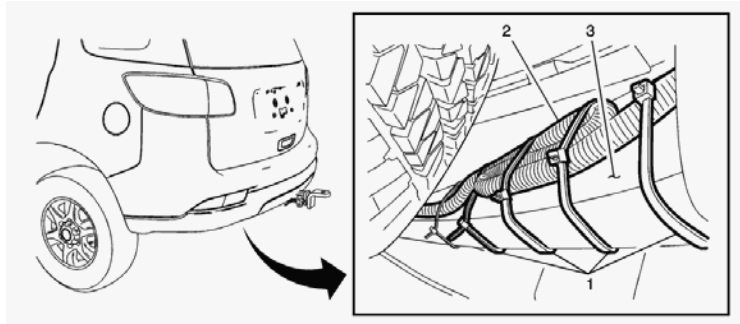
Procedure



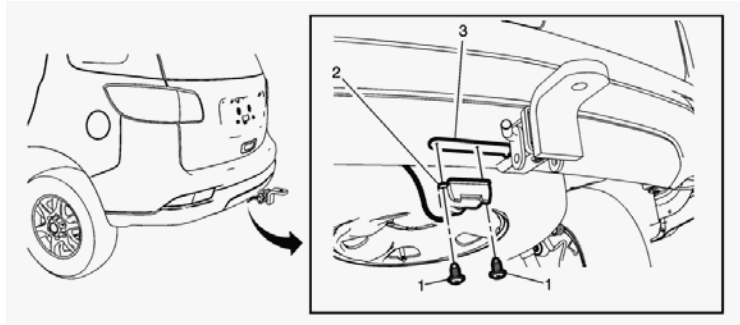
1. On the left rear side of vehicle frame, locate the in-line trailer harness connector (1).



2. Connect the in-line connector (2) of the accessory trailer hitch harness (3) to the existing in-line connector (1) on vehicle.



3. Secure the trailer hitch harness (3) to the back side of the trailer hitch (3) using four tie straps (1).



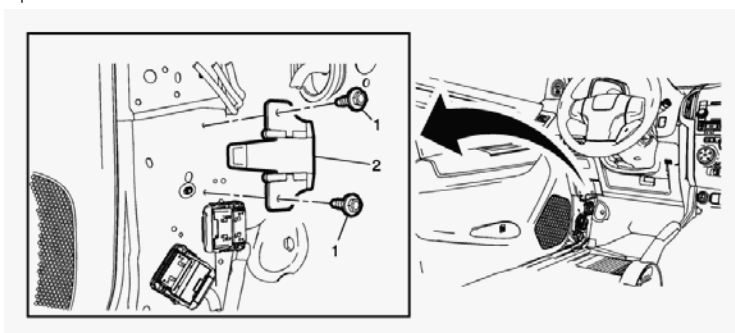
Caution: Use the correct fastener in the correct location. Replacement fasteners must be the correct part number for that application. Fasteners requiring replacement or fasteners requiring the use of thread locking compound or sealant are identified in the service procedure. Do not use lubricants, or corrosion inhibitors on fasteners or fastener joint surfaces unless specified. These coatings affect fastener torque and joint

and may damage the fastener. Use the correct tightening sequence and specifications when installing fasteners in order to avoid damage systems.

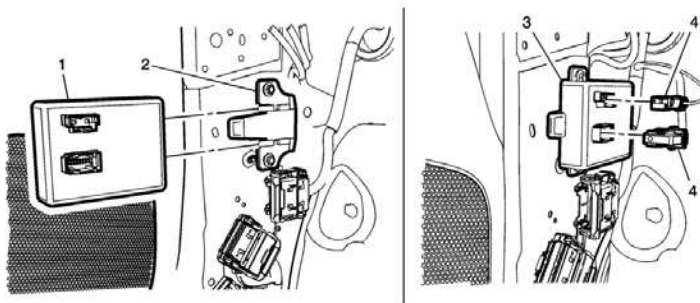
4. Install the trailer hitch harness connector (2) to the tab (3) of the hitch using the two screws (1).
Tighten
Tighten the two screws to 8 Y (6 lb ft).



5. Remove the footrest if necessary.
6. Remove the left front side door sill trim plate.
7. Remove the left front body hinge pillar trim assembly retainer (1).
8. Grasp the left front body hinge pillar trim panel (2) and gently pull the panel away from the body to release the fasteners. Slide the panel unhooks from around the front door frame.



9. Install the trailer hitch module bracket (2) to the left front body hinge pillar and secure with the two bolts (1).
Tighten
Tighten the two bolts to 8 Y (6 lb ft).



10. Install the trailer hitch module (1) to the trailer hitch module bracket (2).
11. Locate the two existing harness connectors (4) and connect to module (3).
12. Reinstall all removed components to vehicle.
13. Program the trailer lamp control module. Refer to Trailer Lamp Control Module Programming and Setup.

2013 Chevrolet Colorado

Submodel: | Engine Type: | Liters:
Fuel Delivery: | Fuel:

Ensure that the following conditions exist in order to prepare for trailer lighting control module programming or configuration:

1. The battery is fully charged.
2. The MDI data link connectors are secure.
3. The scan tool is loaded with the most current software version.
4. All disconnected modules and devices are reconnected securely.
5. This entire procedure has been reviewed before proceeding.

The following service instructions reflect either a re-programming or configuration event performed to complete a repair procedure.

Trailer Lighting Control Module Programming

Do not re-program the trailer lighting control module unless directed by a service procedure or a service bulletin.

1. Access the Service Programming System (SPS) and follow the on-screen instructions. Refer to Service Programming System (SPS).
2. On the SPS Supported Controllers screen, select Trailer Interface (Control) Module – Programming and follow the on-screen instructions.
3. Clear DTCs after completing the programming procedure.

If the trailer lighting control module fails to accept the program, verify all scan tool and trailer lighting control module connections are secure.

Trailer Lighting Control Module Configuration/Reconfiguration and Setup

If the trailer lighting control module is replaced or installed as an after sales accessory, both the configuration/reconfiguration and setup procedures must be performed.

1. Access the Service Programming System (SPS) and follow the on-screen instructions. Refer to Service Programming System (SPS).
2. On the SPS Supported Controllers screen, select Trailer Interface (Control) Module – Configuration and Setup.
3. On the Control Module – Configuration and Setup Function(s) screen, select both ECU Configuration/Reconfiguration and ECU Setup menu options and follow the on-screen instructions.
4. Clear DTCs after completing the configuration/reconfiguration and setup procedures.

If the trailer lighting control module fails to accept the configuration/reconfiguration and setup procedures, verify all scan tool and trailer lighting control module connections are secure.