

ACCESSORIES & EQUIPMENT

Lighting - Repair Instructions - CTS Coupe And Wagon

REPAIR INSTRUCTIONS

BRAKE PEDAL POSITION SENSOR CALIBRATION

NOTE: Brake system does not use a brake switch, stoplight switch or brakelight switch. System uses a Brake Pedal Position Sensor to control these functions.

Calibration Criteria

IMPORTANT: Do not apply the brake pedal during the brake pedal position sensor calibration procedure. Any movement of the brake pedal during this procedure will cause the calibration procedure to fail. If this occurs, the brake pedal position sensor (BPPS) calibration must be repeated.

Brake pedal position sensor calibration must be performed after the brake pedal position sensor or body control module (BCM) have been serviced. The calibration procedure will set the brake pedal position sensor home value. This value is used by the BCM to determine the action of the driver applying the brake system and to provide this information to the vehicle subsystems via the GMLAN communication bus.

Calibration Procedure

1. Apply the parking brake.
2. Place the transmission in the PARK position.
3. Install a scan tool.
4. Clear all BCM DTCs before proceeding.
5. Navigate to the Vehicle Control Systems menu.
6. Select Module Setup menu item.
7. Select BCM menu item.
8. Select the BPP Sensor Calibration procedure and follow the directions displayed on the screen.

BRAKE PEDAL POSITION SENSOR REPLACEMENT

NOTE: Brake system does not use a brake switch, stoplight switch or brakelight switch. System uses a Brake Pedal Position Sensor to control these functions.

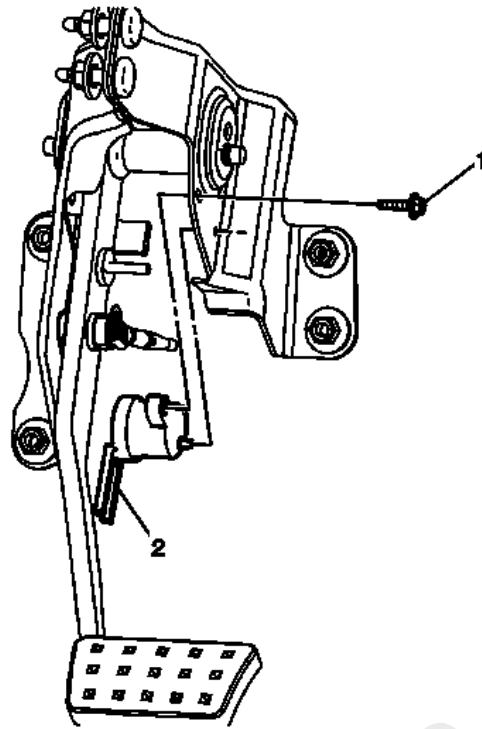


Fig. 1: Brake Pedal Position Sensor
 Courtesy of GENERAL MOTORS COMPANY

Brake Pedal Position Sensor Replacement

Callout	Component Name
Preliminary Procedure - Without disconnecting the steering column from the intermediate shaft, lower and support the steering column. Refer to <u>Steering Column Replacement</u> . - Remove the driver side knee bolster. Refer to <u>Driver Knee Bolster Replacement (Left Hand Drive)</u> , <u>Driver Knee Bolster Replacement (Right Hand Drive)</u> .	
1	Brake Pedal Position Sensor Bolt CAUTION: Refer to <u>Fastener Caution</u> . Procedure Remove the sensor bolt. Tighten 9 N.m (80 lb in)
	Brake Pedal Position Sensor Procedure

2

1. Disconnect the electrical connector.
2. Pull the sensor away from the bracket.
3. Recalibrate the brake pedal position sensor. Refer to **Brake Pedal Position Sensor Calibration**.

DIMMER SWITCH REPLACEMENT

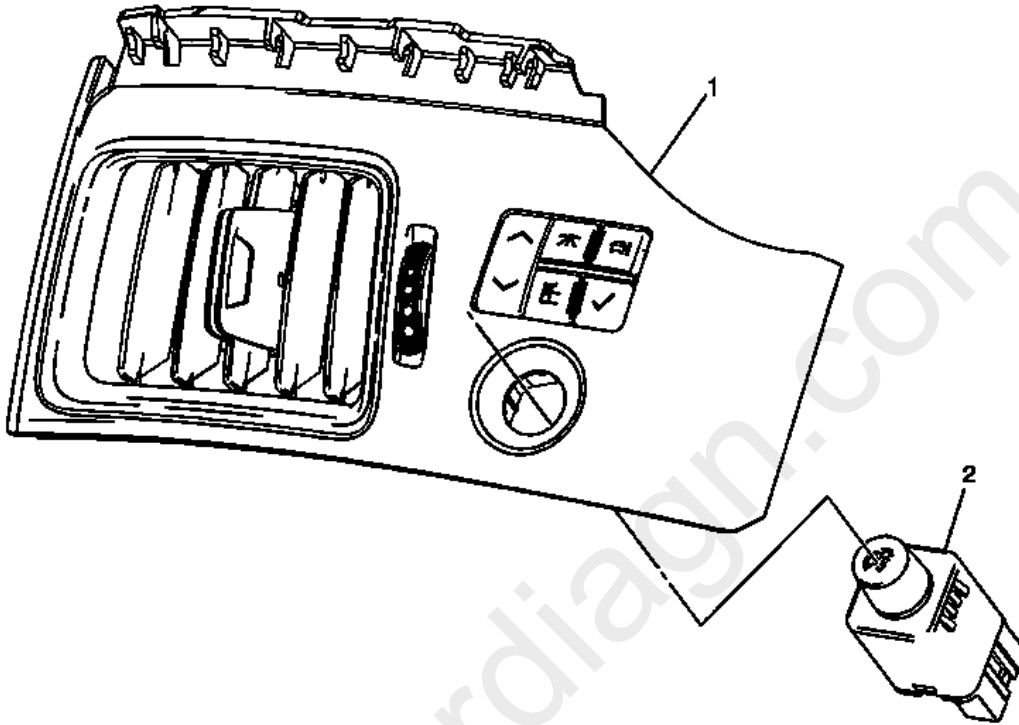


Fig. 2: Instrument Panel Lamp Dimmer Switch
Courtesy of GENERAL MOTORS COMPANY

Dimmer Switch Replacement

Callout	Component Name
1	Instrument Panel Outer Air Outlet Deflector Assembly. Refer to <u>Instrument Panel Outer Air Outlet Deflector Replacement - Left Side</u> .
2	Instrument Panel Lamp Dimmer Switch Assembly Procedure Unsnap the dimmer switch assembly from the outer air deflector.

HEADLAMP AUTOMATIC CONTROL AMBIENT LIGHT SENSOR REPLACEMENT

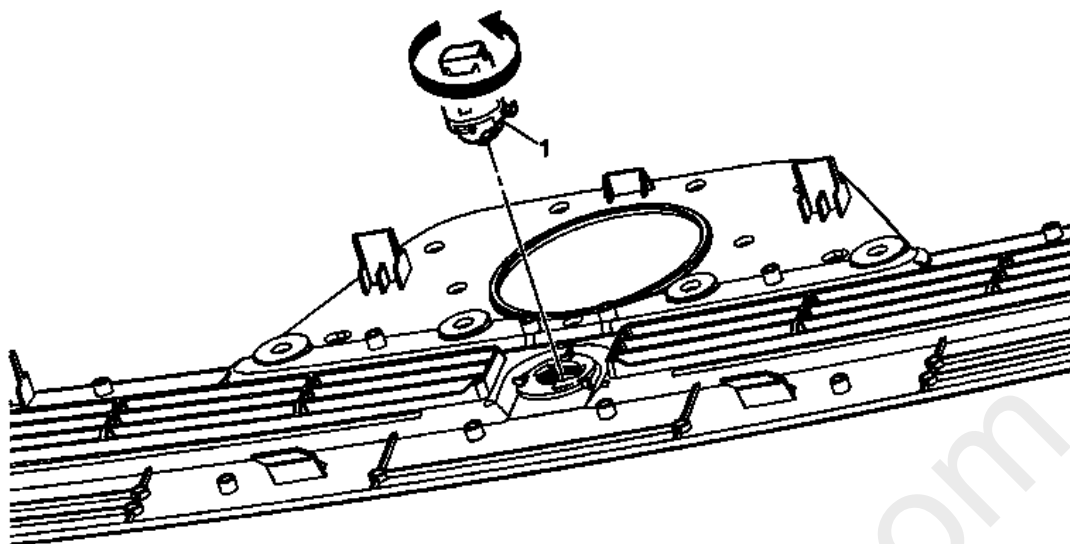


Fig. 3: Headlamp Automatic Control Ambient Light Sensor
Courtesy of GENERAL MOTORS COMPANY

Headlamp Automatic Control Ambient Light Sensor Replacement

Callout	Component Name
Preliminary Procedure Remove the defroster grille. Refer to <u>Windshield Defroster Nozzle Grille Replacement (Left Hand Drive)</u> , <u>Windshield Defroster Nozzle Grille Replacement (Right Hand Drive)</u> .	
1	Headlamp Auto Control Ambient Light Sensor Procedure 1. Disconnect the electrical connector. 2. Twist the sensor counterclockwise.

COURTESY LAMP REPLACEMENT (WAGON)

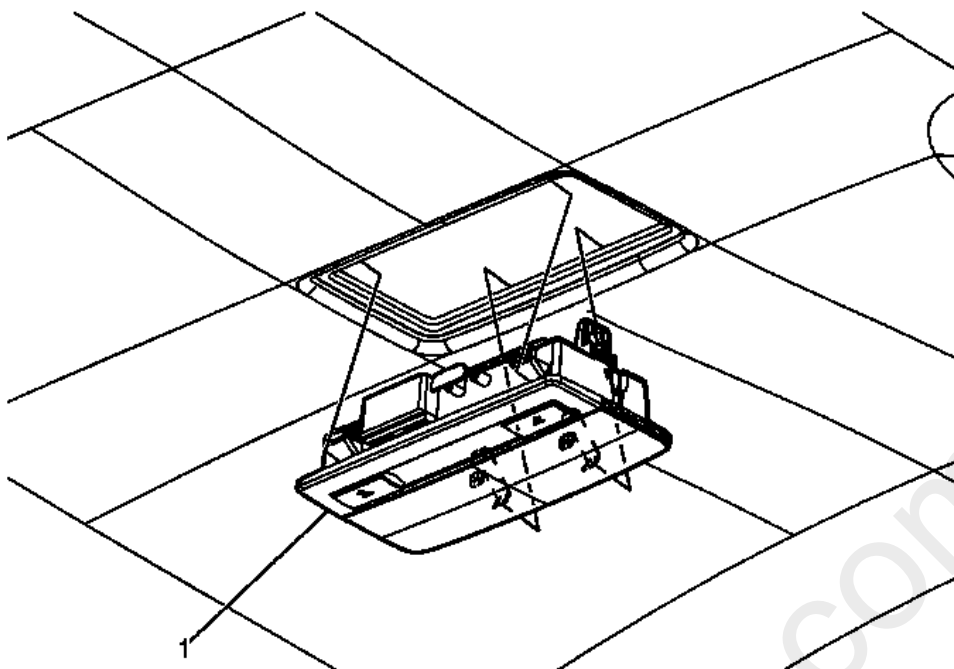


Fig. 4: Courtesy Lamp (Wagon)
Courtesy of GENERAL MOTORS COMPANY

Courtesy Lamp Replacement (Wagon)

Callout	Component Name
1	Courtesy Lamp Procedure 1. Depress the integral four tabs and use a flat-bladed tool to remove the courtesy lamp from the roof console. 2. Disconnect the electrical connector.

DOOR LAMP REPLACEMENT

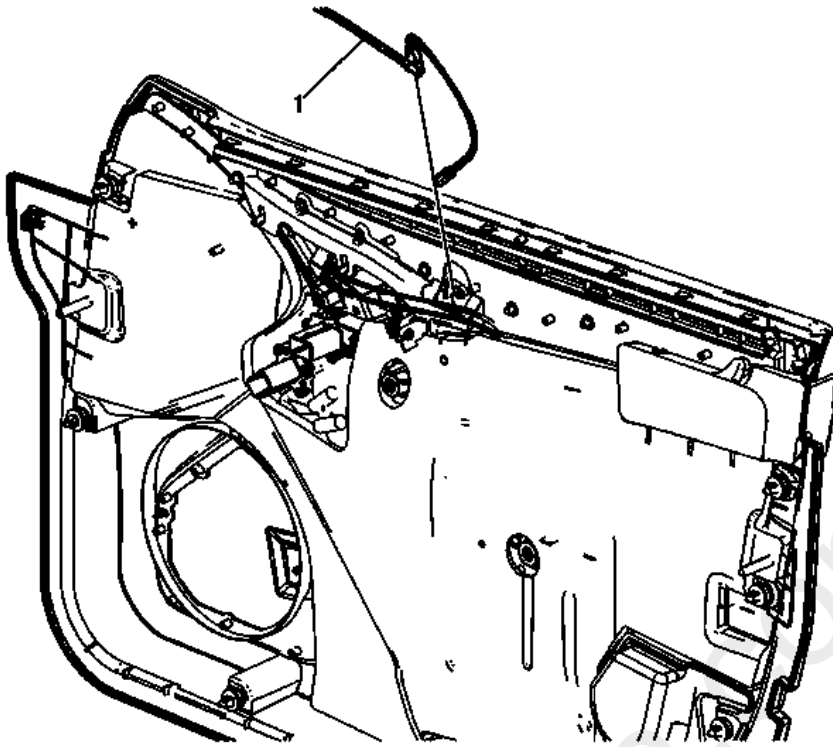


Fig. 5: Door Lamp
 Courtesy of GENERAL MOTORS COMPANY

Door Lamp Replacement

Callout	Component Name
Preliminary Procedure	
1. Remove the front side door trim panel. Refer to <u>Front Side Door Trim Panel Replacement (Coupe)</u> , <u>Front Side Door Trim Panel Replacement (Wagon)</u> . 2. Remove the front side door trim panel applique. Refer to <u>Front Side Door Trim Panel Applique Replacement (Wagon - Upper)</u> , <u>Front Side Door Trim Panel Applique Replacement (Coupe)</u> .	
1	Door Lamp Procedure Disconnect the electrical connectors.

DOOR COURTESY LAMP AND REFLECTOR REPLACEMENT

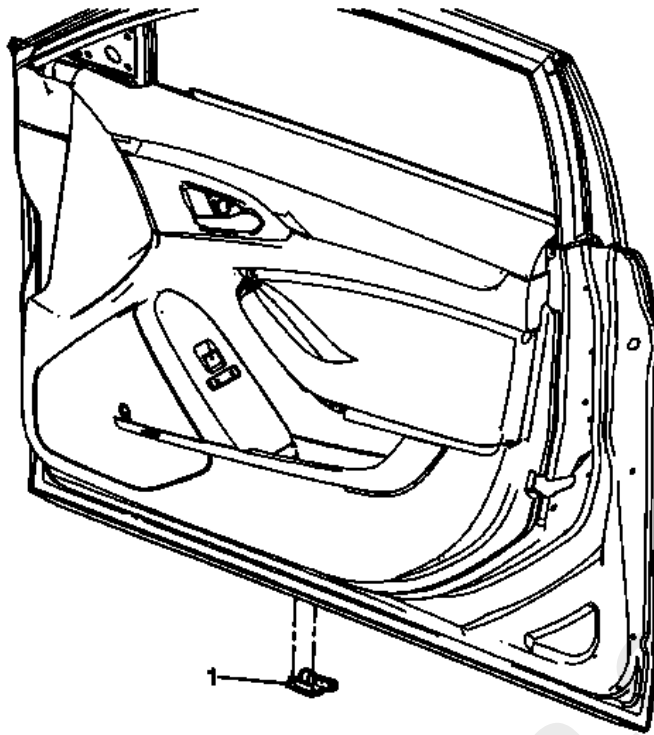


Fig. 6: Identifying Door Courtesy Lamp & Reflector
 Courtesy of GENERAL MOTORS COMPANY

Door Courtesy Lamp and Reflector Replacement

Callout	Component Name
1	Door Courtesy Lamp and Reflector Procedure 1. Depress the clips and use a flat-bladed tool to remove the door courtesy lamp from the door trim panel. 2. Disconnect the electrical connectors.

FRONT SIDE DOOR WARNING LAMP REPLACEMENT

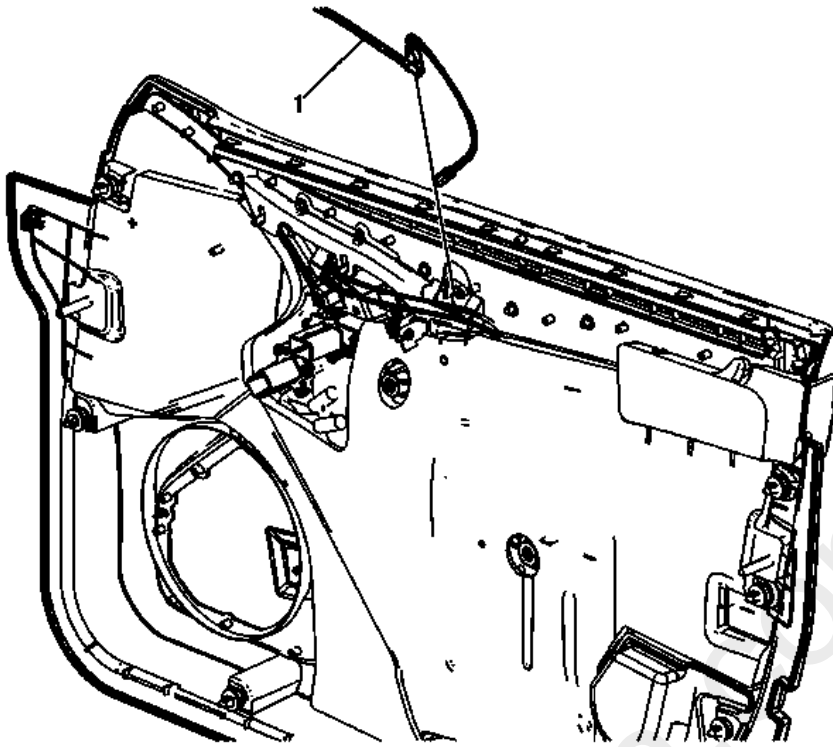


Fig. 7: Door Lamp

Courtesy of GENERAL MOTORS COMPANY

Front Side Door Warning Lamp Replacement

Callout	Component Name
Preliminary Procedure	
1. Remove the front side door trim panel. Refer to <u>Front Side Door Trim Panel Replacement (Coupe)</u> , <u>Front Side Door Trim Panel Replacement (Wagon)</u> . 2. Remove the front side door trim panel applique. Refer to <u>Front Side Door Trim Panel Applique Replacement (Wagon - Upper)</u> , <u>Front Side Door Trim Panel Applique Replacement (Coupe)</u> .	
1	Door Lamp Procedure Disconnect the electrical connectors.

INSTRUMENT PANEL FLOOD LAMP REPLACEMENT - LEFT SIDE

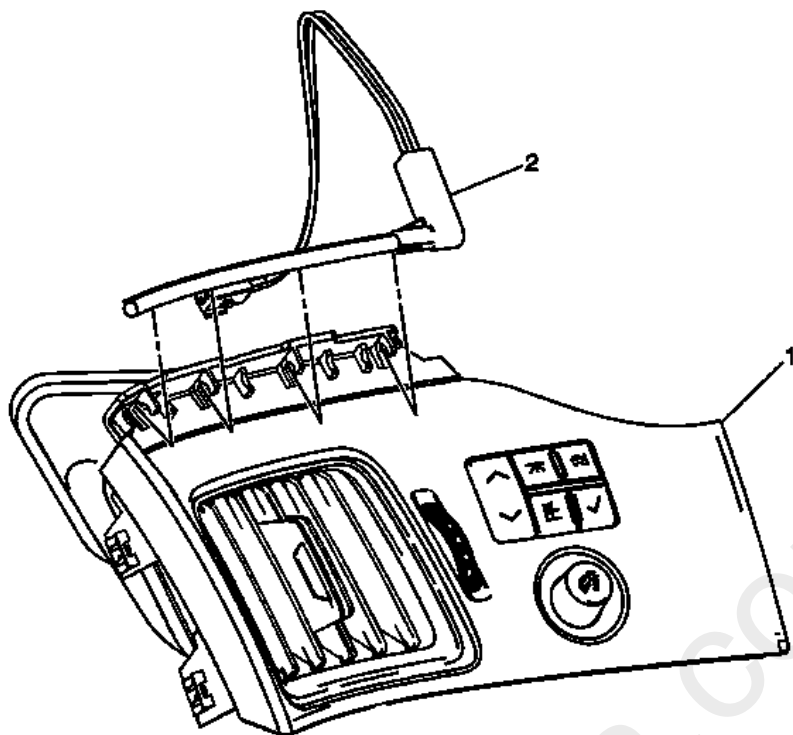


Fig. 8: Instrument Panel Flood Lamp - Left Side
 Courtesy of GENERAL MOTORS COMPANY

Instrument Panel Flood Lamp Replacement - Left Side

Callout	Component Name
1	Instrument Panel Outer Air Outlet Deflector Assembly. Refer to <u>Instrument Panel Outer Air Outlet Deflector Replacement - Left Side</u> .
2	Instrument Panel Flood Lamp Assembly Procedure Unsnap the flood lamp assembly from the outer air deflector.

INSTRUMENT PANEL FLOOD LAMP REPLACEMENT - RIGHT SIDE

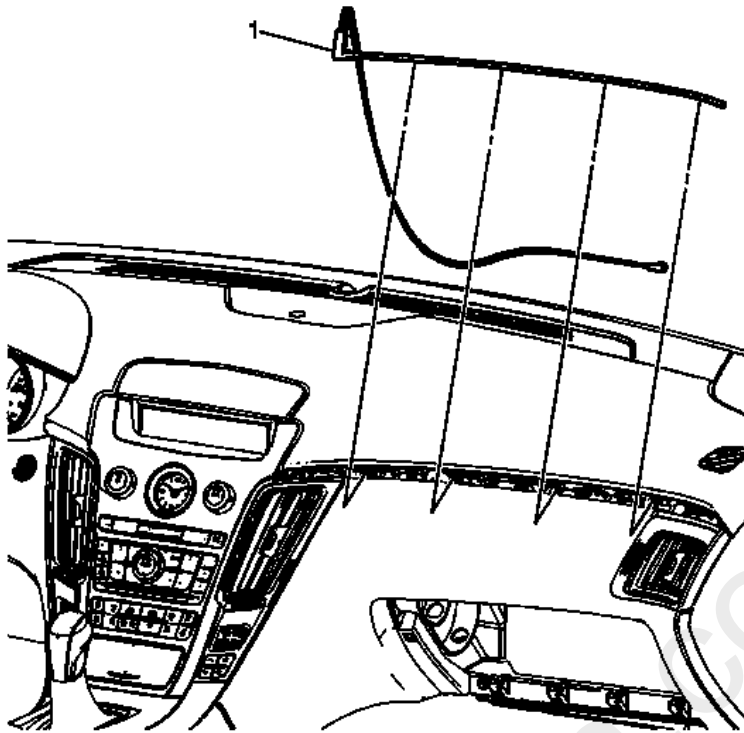


Fig. 9: Instrument Panel Flood Lamp - Right Side
 Courtesy of GENERAL MOTORS COMPANY

Instrument Panel Flood Lamp Replacement - Right Side

Callout	Component Name
Preliminary Procedure	
1. Remove the right instrument panel trim plate applique. Refer to <u>Instrument Panel Trim Plate Applique Replacement - Right Side (Left Hand Drive)</u> , <u>Instrument Panel Trim Plate Applique Replacement - Right Side (Right Hand Drive)</u> . 2. Remove the instrument panel compartment assembly. Refer to <u>Instrument Panel Compartment Replacement (Right Hand Drive)</u> , <u>Instrument Panel Compartment Replacement (Left Hand Drive)</u> .	
1	Instrument Panel Flood Lamp Assembly Procedure 1. Note the routing of the wiring through the instrument panel assembly to ensure proper reinstallation. 2. Disconnect the electrical connector. 3. Unsnap the flood lamp assembly from the instrument panel.

INSTRUMENT PANEL COURTESY LAMP BULB REPLACEMENT

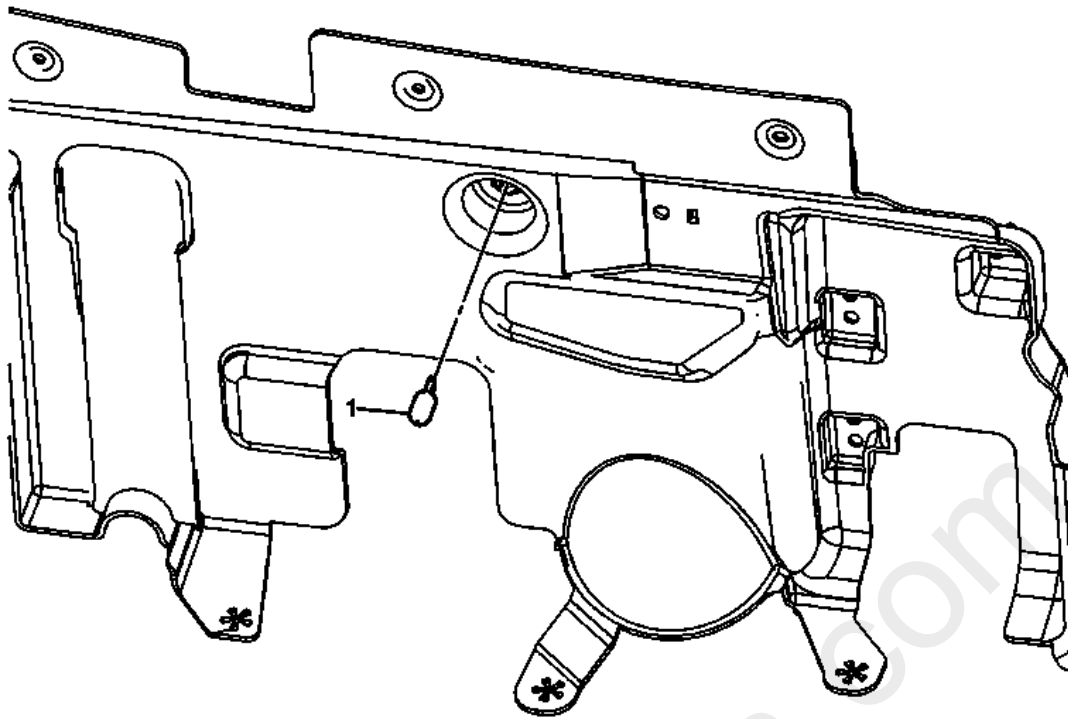


Fig. 10: Instrument Panel Courtesy Lamp Bulb
 Courtesy of GENERAL MOTORS COMPANY

Instrument Panel Courtesy Lamp Bulb Replacement

Callout	Component Name
1	Courtesy Lamp Bulb Procedure Pull the bulb out straight.

OVERHEAD CONSOLE READING LAMP AND BULB REPLACEMENT

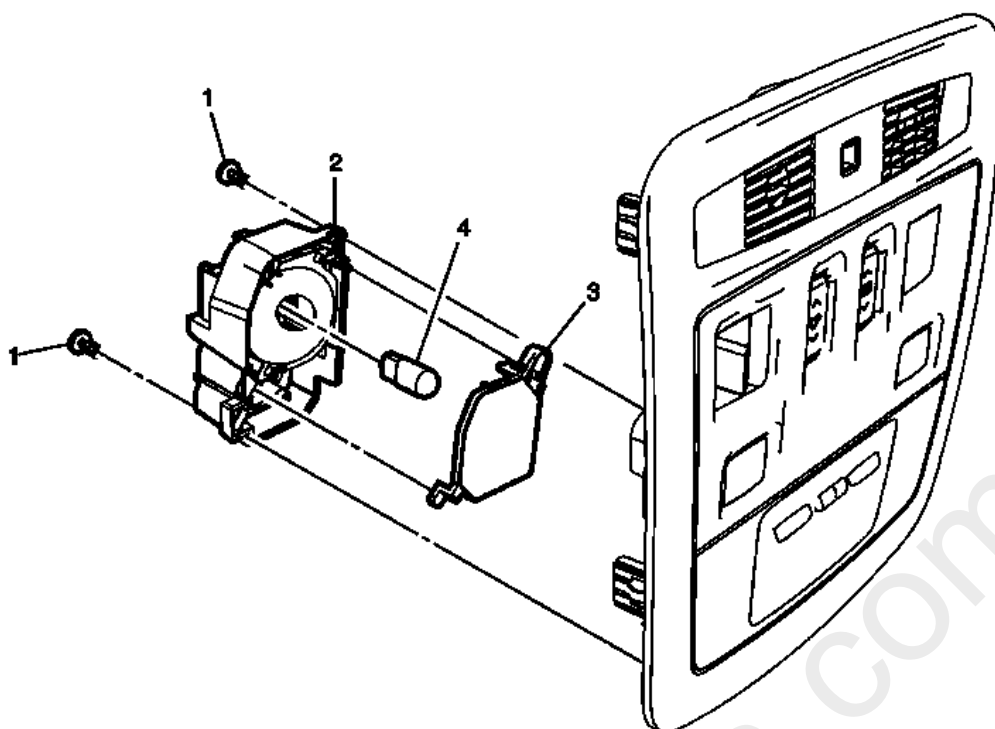


Fig. 11: Overhead Console Reading Lamp and Bulb
 Courtesy of GENERAL MOTORS COMPANY

Overhead Console Reading Lamp and Bulb Replacement

Callout	Component Name
Preliminary Procedure	
Remove the roof console. Refer to <u>Roof Console Replacement</u>	
1	Overhead Console Reading Lamp Screw (Qty: 2) CAUTION: Refer to <u>Fastener Caution</u> Tighten 2 N.m (18 lb in)
2	Overhead Console Reading Lamp Housing
3	Overhead Console Reading Lamp Lens
4	Overhead Console Reading Lamp Bulb Procedure Pull the bulb straight out.

LUMINESCENT LAMP REPLACEMENT - DRIVER OR PASSENGER SEAT

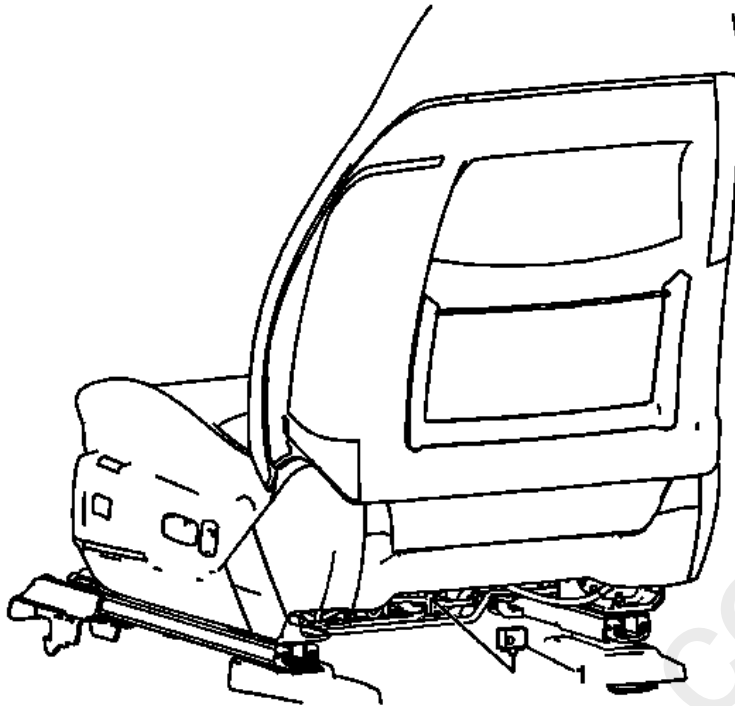


Fig. 12: Luminescent Lamp Replacement - Driver and Passenger Seat
 Courtesy of GENERAL MOTORS COMPANY

Luminescent Lamp Replacement - Driver or Passenger Seat

Callout	Component Name
1	Luminescent Lamp - Front Seat Procedure 1. Disconnect the electrical connector. 2. Squeeze the bottom tabs together and push up to remove.

SUNSHADE ILLUMINATED MIRROR LAMP BULB REPLACEMENT

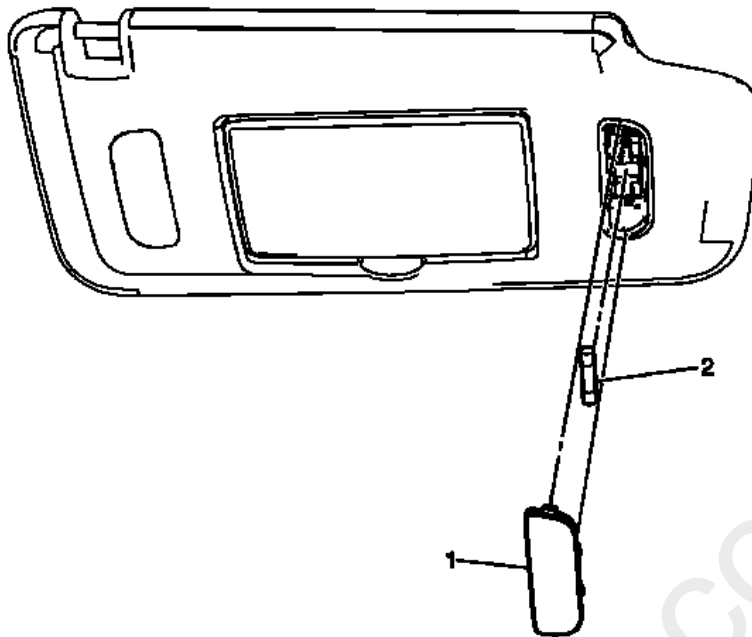


Fig. 13: Sunshade Illuminated Mirror Lamp Bulb
 Courtesy of GENERAL MOTORS COMPANY

Sunshade Illuminated Mirror Lamp Bulb Replacement

Callout	Component Name
1	Lamp Lens Procedure Use a flat-bladed tool and detach the lens.
2	Lamp Bulb

HEADLAMP BALLAST REPLACEMENT (EUROPEAN)

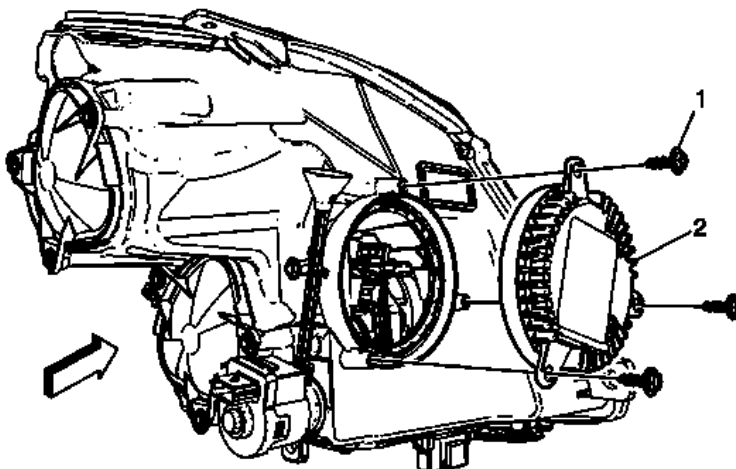


Fig. 14: High Intensity Discharge Headlamp Ballast (European)
 Courtesy of GENERAL MOTORS COMPANY

Headlamp Ballast Replacement (European)

Callout	Component Name
WARNING: The high intensity discharge system produces high voltage and current. In order to reduce the risk of severe shocks and burns, the battery negative cable must be disconnected any time service work is being performed on or around the high intensity discharge system.	
WARNING: The high intensity discharge system produces high voltage and current. To reduce the risk of severe shocks and burns: • Never open the high intensity discharge system ballast or the arc tube assembly starter. • Never probe between the high intensity discharge system ballast output connector and the arc tube assembly.	
Preliminary Procedure Remove the headlamp capsule. Refer to <u>Headlamp Capsule Replacement</u> .	
1	Ballast Assembly Screw (Qty: 3) Hand tighten the screws only, no torque required.
2	Ballast Assembly TIP: Remove the ballast assembly and inspect the sealing gasket prior to installing the new ballast assembly.

HEADLAMP ASSEMBLY OR HEADLAMP BULB AND/OR CORNERING, SIDEMARKER, PARK, TURN SIGNAL BULB REPLACEMENT (TT6)

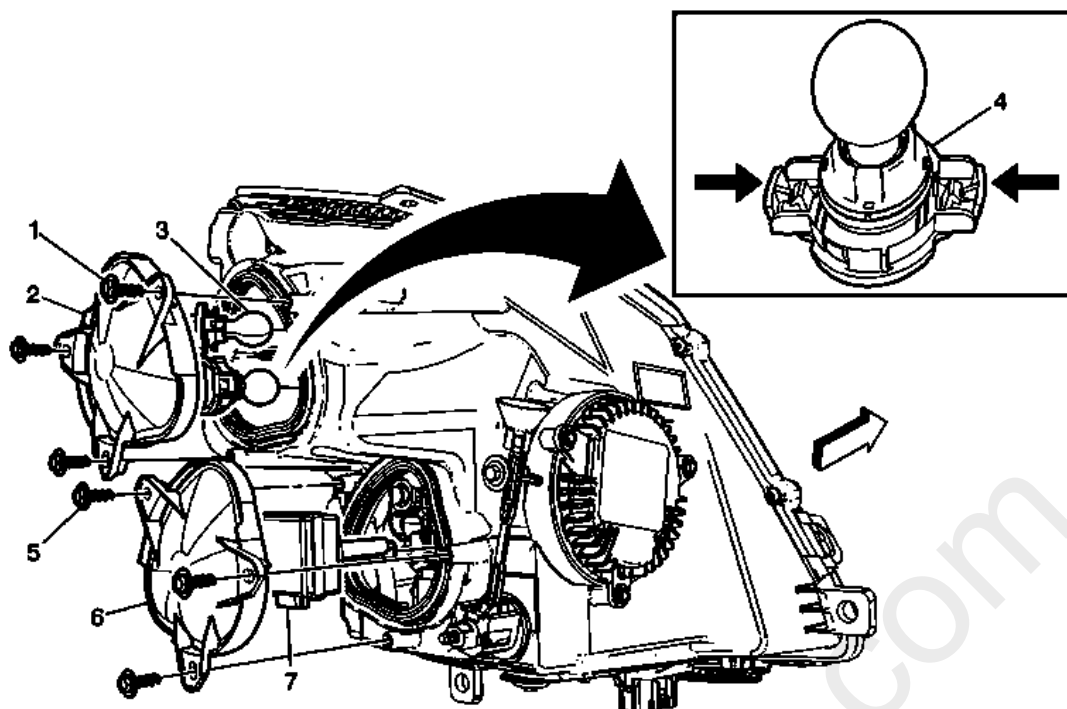


Fig. 15: Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarkers, Park, Turn Signal Bulb (TT6)

Courtesy of GENERAL MOTORS COMPANY

Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarkers, Park, Turn Signal Bulb Replacement (TT6)

Callout	Component Name
WARNING: The high intensity discharge system produces high voltage and current. In order to reduce the risk of severe shocks and burns, the battery negative cable must be disconnected any time service work is being performed on or around the high intensity discharge system. WARNING: The high intensity discharge system produces high voltage and current. To reduce the risk of severe shocks and burns: • Never open the high intensity discharge system ballast or the arc tube assembly starter. • Never probe between the high intensity discharge system ballast output connector and the arc tube assembly. Preliminary Procedure Remove the headlamp capsule. Refer to Headlamp Capsule Replacement.	
1	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
2	Accessory Cap TIP: Inspect and ensure the accessory cap seal is properly seated prior to installing the

	accessory cap cover.
3	Turn Signal Lamp Bulb WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Disconnect the electrical connector from the bulb socket. 2. Rotate the bulb socket counter-clockwise and remove from the headlamp assembly. 3. Replace the bulb as needed.
4	Daytime Running Lamp Bulb (DRL) WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Disconnect the electrical connector from the bulb socket. 2. Pinch the bulb socket locking tabs and pull the bulb socket from the headlamp assembly. 3. Replace the bulb as needed.
5	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
6	Accessory Cap TIP: Inspect and ensure the seal is properly seated prior to installing the accessory cap.
7	Headlamp Bulb with Ballast WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Rotate counter-clockwise and unlock the bulb ballast assembly and remove from the headlamp composite. 2. Disconnect the electrical connector from the bulb ballast.

HEADLAMP ASSEMBLY OR HEADLAMP BULB AND/OR CORNERING, SIDEMARKER, PARK, TURN SIGNAL BULB REPLACEMENT (TT7)

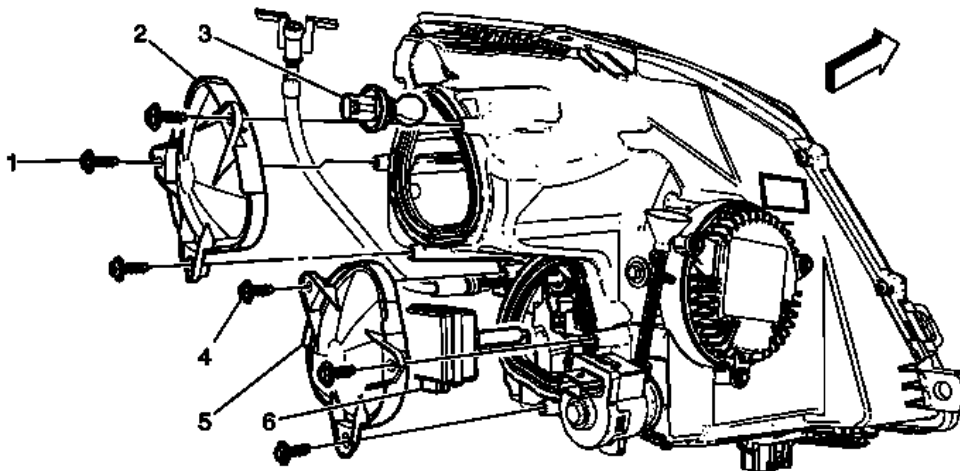


Fig. 16: Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarkers, Park, Turn Signal Bulb Replacement (TT7)

Courtesy of GENERAL MOTORS COMPANY

Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarkers, Park, Turn Signal Bulb Replacement (TT7)

Callout	Component Name
WARNING: The high intensity discharge system produces high voltage and current. In order to reduce the risk of severe shocks and burns, the battery negative cable must be disconnected any time service work is being performed on or around the high intensity discharge system.	
WARNING: The high intensity discharge system produces high voltage and current. To reduce the risk of severe shocks and burns: • Never open the high intensity discharge system ballast or the arc tube assembly starter. • Never probe between the high intensity discharge system ballast output connector and the arc tube assembly.	
Preliminary Procedure Remove the headlamp capsule. Refer to Headlamp Capsule Replacement .	
1	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
2	Accessory Cap TIP: Inspect and ensure the accessory cap seal is properly seated prior to installing the accessory cap cover.
3	Directional Bulb WARNING: Refer to Halogen Bulb Warning .
Procedure	

	1. Rotate the bulb socket from the headlamp assembly. 2. Disconnect the electrical connector from the bulb socket.
4	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
5	Accessory Cap TIP: Inspect and ensure the seal is properly seated prior to installing the accessory cap.
6	Headlamp Bulb with HID Ballast WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Rotate counter-clockwise and unlock the bulb ballast assembly and remove from the headlamp composite. 2. Disconnect the electrical connector from the bulb HID ballast.

HEADLAMP ASSEMBLY OR HEADLAMP BULB AND/OR CORNERING, SIDEMARKER, PARK, TURN SIGNAL BULB REPLACEMENT (TT8)

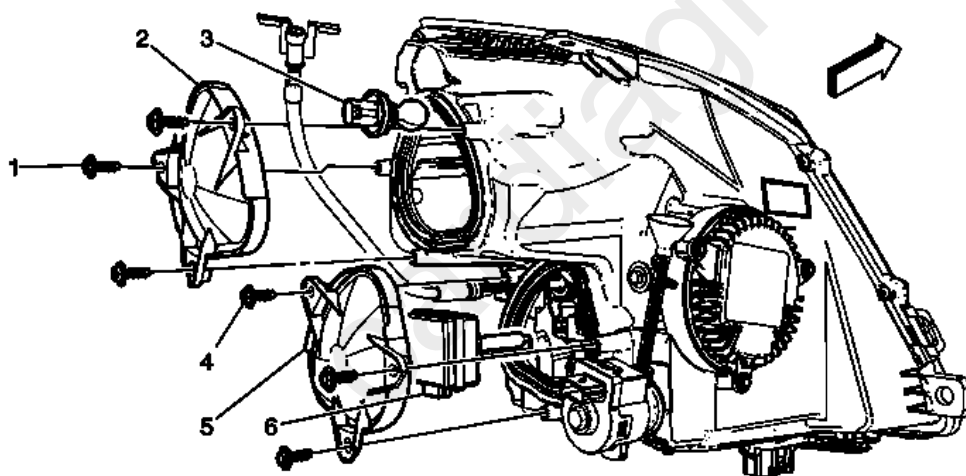


Fig. 17: Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarker, Park, Turn Signal Bulb (TT8)

Courtesy of GENERAL MOTORS COMPANY

Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarker, Park, Turn Signal Bulb Replacement (TT8)

Callout	Component Name
WARNING: The high intensity discharge system produces high voltage and current. In order to reduce the risk of severe shocks and burns, the battery negative cable must be disconnected any time service work is being performed on or around the high intensity discharge system.	

WARNING:

The high intensity discharge system produces high voltage and current. To reduce the risk of severe shocks and burns:

- Never open the high intensity discharge system ballast or the arc tube assembly starter.
- Never probe between the high intensity discharge system ballast output connector and the arc tube assembly.

Preliminary Procedure Remove the headlamp capsule. Refer to **Headlamp Capsule Replacement**.

1	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
2	Accessory Cap TIP: Inspect and ensure the accessory cap seal is properly seated prior to installing the accessory cap cover.
3	Directional Bulb WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Rotate the bulb socket from the headlamp assembly. 2. Disconnect the electrical connector from the bulb socket.
4	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
5	Accessory Cap TIP: Inspect and ensure the seal is properly seated prior to installing the accessory cap.
6	Headlamp Bulb with HID Ballast WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Rotate counter-clockwise and unlock the bulb ballast assembly and remove from the headlamp composite. 2. Disconnect the electrical connector from the bulb HID ballast.

HEADLAMP ASSEMBLY OR HEADLAMP BULB AND/OR CORNERING, SIDEMARKER, PARK, TURN SIGNAL BULB REPLACEMENT (WITHOUT TT6/TT7/TT8/T84/T85)

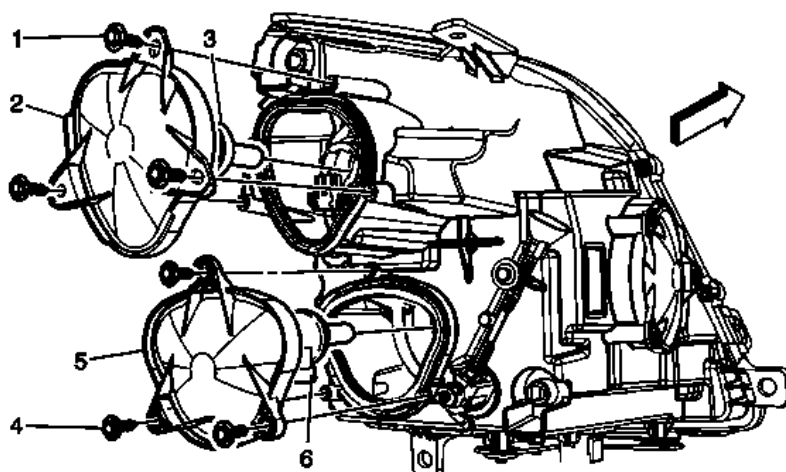


Fig. 18: Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarkers, Park, Turn Signal Bulb (Minus TT6/TT7/TT8/T84/T85)

Courtesy of GENERAL MOTORS COMPANY

Headlamp Assembly or Headlamp Bulb and/or Cornering, Sidemarkers, Park, Turn Signal Bulb Replacement (Without TT6/TT7/TT8/T84/T85)

Callout	Component Name
Preliminary Procedure Remove the headlamp capsule. Refer to Headlamp Capsule Replacement .	
1	Accessory Cap Screw TIP: Hand tighten only, the accessory cap screws.
2	Accessory Cap TIP: Inspect and ensure the seal is properly seated prior to installing the cap.
3	Low Beam Bulb WARNING: Refer to Halogen Bulb Warning . Procedure 1. Disconnect the electrical connector from the bulb socket. 2. Turn the bulb socket counter-clockwise and remove.
4	Accessory Cap Screw TIP: Hand tighten only, the accessory cap screws.
5	Accessory Cap TIP: Inspect and ensure the seal is properly seated prior to installing the cap.
6	High Beam Bulb WARNING: Refer to Halogen Bulb Warning .

Procedure

1. Disconnect the electrical connector from the bulb socket.
2. Turn the bulb socket counter-clockwise and remove.

HEADLAMP CAPSULE REPLACEMENT

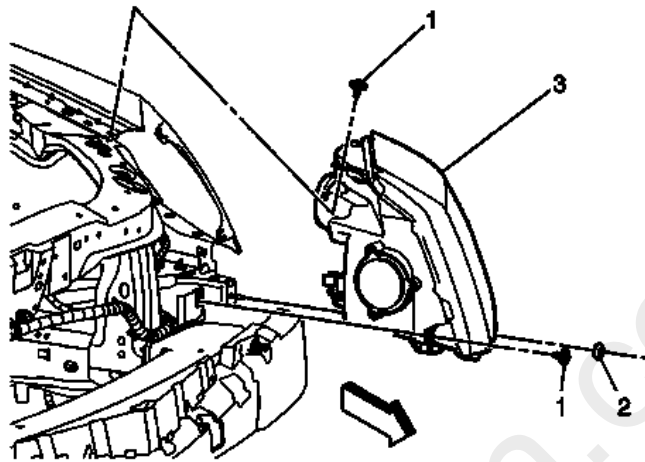


Fig. 19: Headlamp Capsule

Courtesy of GENERAL MOTORS COMPANY

Headlamp Capsule Replacement

Callout	Component Name
WARNING: The high intensity discharge system produces high voltage and current. In order to reduce the risk of severe shocks and burns, the battery negative cable must be disconnected any time service work is being performed on or around the high intensity discharge system. WARNING: The high intensity discharge system produces high voltage and current. To reduce the risk of severe shocks and burns: • Never open the high intensity discharge system ballast or the arc tube assembly starter. • Never probe between the high intensity discharge system ballast output connector and the arc tube assembly.	
Preliminary Procedure 1. Open and support the hood. 2. Remove the front bumper fascia. Refer to Front Bumper Fascia Replacement . 3. Disconnect the headlamp electrical connector at the base of the headlamp assembly.	
	Headlamp Capsule Assembly Bolt (Qty: 2)

1	CAUTION: Refer to <u>Fastener Caution</u> . Tighten 6 N.m (53 lb in)
2	Headlamp Capsule Assembly Nut Tighten 6 N.m (53 lb in)
3	Headlamp Capsule Assembly TIP: Carefully move the headlamp capsule assembly upward and outward in order to remove.

HEADLAMP BRACKET REPLACEMENT

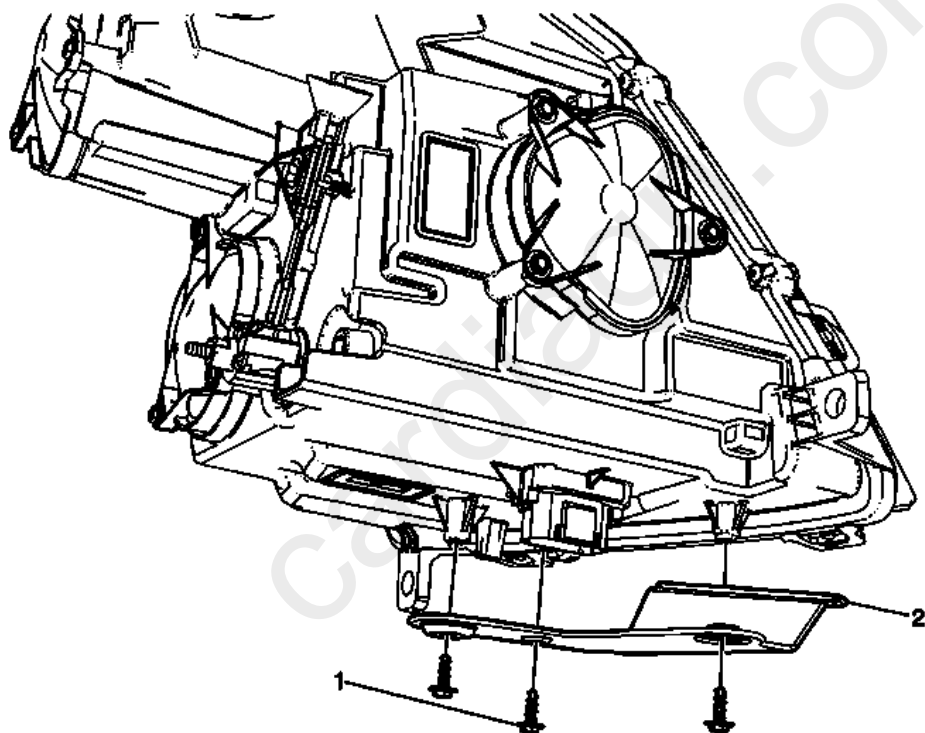


Fig. 20: Headlamp Bracket
Courtesy of GENERAL MOTORS COMPANY

Headlamp Bracket Replacement

Callout	Component Name
Preliminary Procedure Remove the headlamp capsule. Refer to <u>Headlamp Capsule Replacement</u> .	
1	Headlamp Bracket Screw (Qty: 3) Procedure Hand tighten the screws only, in order to secure the bracket to the bottom of the headlamp

	assembly.
2	Headlamp Bracket

HEADLAMP AIMING

Aiming Headlamps (Visual Aim)

IMPORTANT: Some state and local laws specify requirements for headlamp aim. All of these laws must be complied with when performing any headlamp aiming operations.

Headlamp aim should be checked:

- When a new headlamp capsule is installed.
- If service or repairs to the front end area have (or may have) disturbed the headlamps or their mounting.
- Suspension components have been replaced or repaired.
- The area will consist of a level surface large enough to allow for a vehicle and an additional 7.62 m (25 ft) measured from face of lamps to the front of the aiming screen.
- The screen will be 1.52 m (5 ft) high x 3.66 m (12 ft) wide with a matte white surface well shaded from extraneous light, and properly adjusted to the floor on which the vehicle stands. Provisions may be made for moving the screen so it can be aligned parallel with the vehicle.
- The screen shall be provided with a fixed vertical centerline, 2 laterally adjustable vertical tapes, and 1 vertically adjustable horizontal tape.
- If a regular commercial aiming screen is not available, the screen may consist of a vertical wall having a clear uninterrupted area approximately 1.83 m (6 ft) high and 3.66 m (12 ft) wide. The surface should be finished with a washable non-gloss white paint.

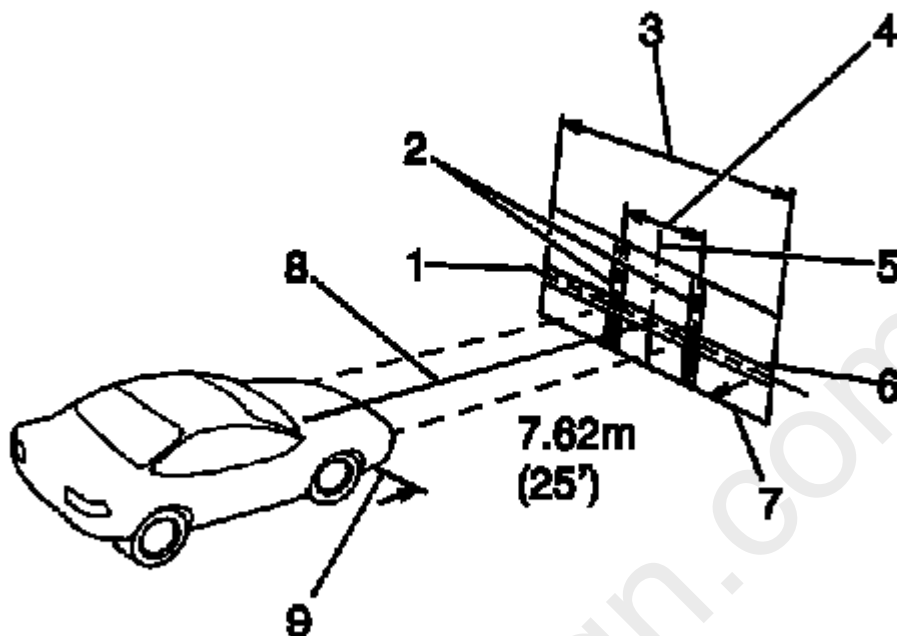


Fig. 21: Headlamp Aiming/Adjusting
Courtesy of GENERAL MOTORS COMPANY

- After the aiming screen has been set up in its permanent location, it is necessary to paint a reference line on the floor directly under the lens of the lamps to indicate the proper location of the headlamps when they are being aimed:
 - Distance between headlamps (1)
 - Center line of screen (2)
 - Adjustable vertical pointer (3)
 - Adjustable horizontal tape (4)
 - Diagram of light screen (5)
 - Vertical center line ahead of right headlamp pointer position (6)
 - 7.62 m (25 ft) (7)
 - Car centerline axis (8)

Prior to aiming the headlamps, the following steps must be taken:

1. Remove any snow, ice or mud from the vehicle.

2. The vehicle must have a full tank of gas.
3. Stop all other work on the vehicle.
4. If any service has been performed on the vehicle, make sure that all of the components are back in their original place.
5. The vehicle must be on a level surface.

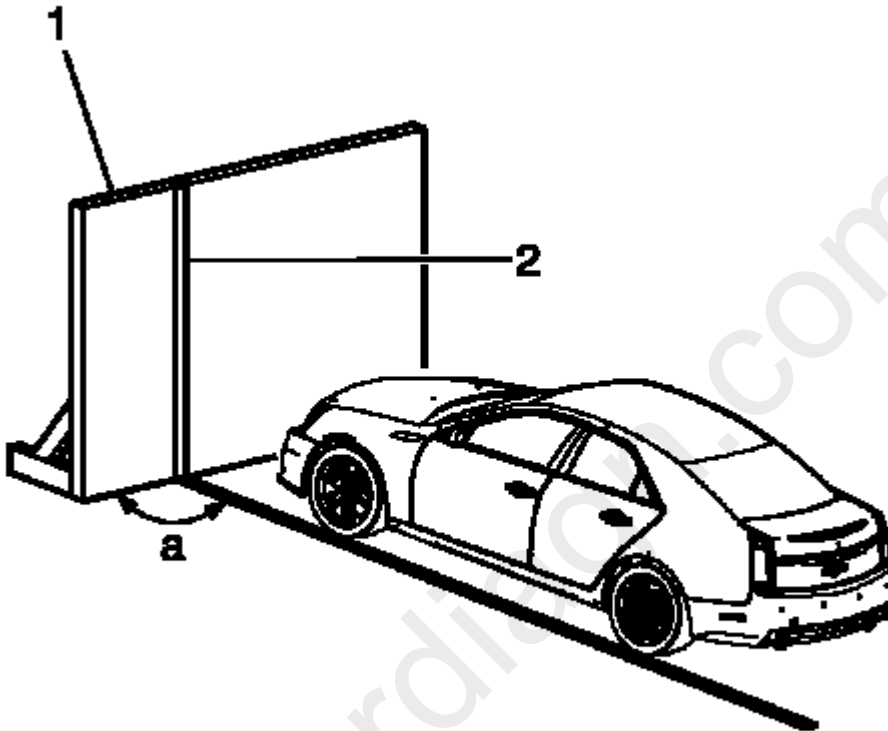


Fig. 22: View of Vertical Reference Line
Courtesy of GENERAL MOTORS COMPANY

6. The vehicle left tires must be aligned with the reference line extending from the screen with the headlamps aligned with the vertical reference line (2).
7. Do not load any cargo in the vehicle.
8. The vehicle must contain 1 person or 72.56 kg (160 lb) on the driver's seat.
9. Inflate the tires to the proper pressure.
10. Simulate the vehicle loads if the intended use of the vehicle is for hauling heavy loads or towing a trailer.
11. Rock the vehicle in order to stabilize the suspension.
12. Turn ON the headlamps to low beam and observe the left and the top edges of the high intensity zone on the screen. The edges of the high intensity zone should fall within the specifications.

Headlamp Aiming Procedure

1. Open the hood.

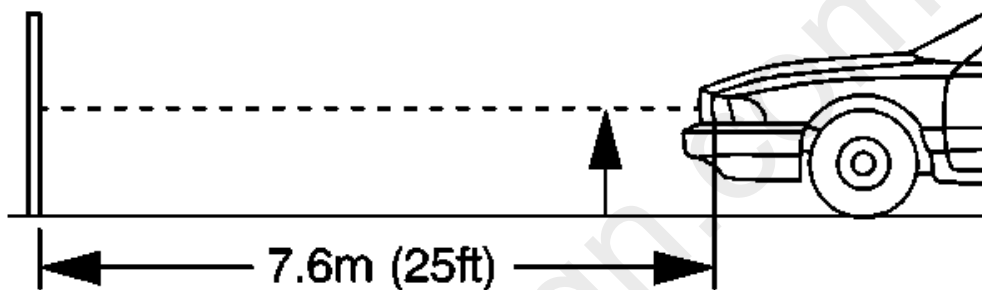


Fig. 23: Measuring Distance Between Headlamps Face & Aiming Screen
Courtesy of GENERAL MOTORS COMPANY

2. Measure from the floor to the center of the headlamp bulb, some headlamps have an aim dot marked on the headlamp lens.
3. At the screen, measure from the floor and place the horizontal tape at the measured distance.
4. Measure from the reference line on the floor to the left headlamp bulb centerline.
5. At the screen, measure from the reference line and place the vertical tape at the measured distance.
6. Measure from the reference line on the floor to the right headlamp bulb centerline.
7. At the screen, measure from the reference line and place the vertical tape at the measured distance.

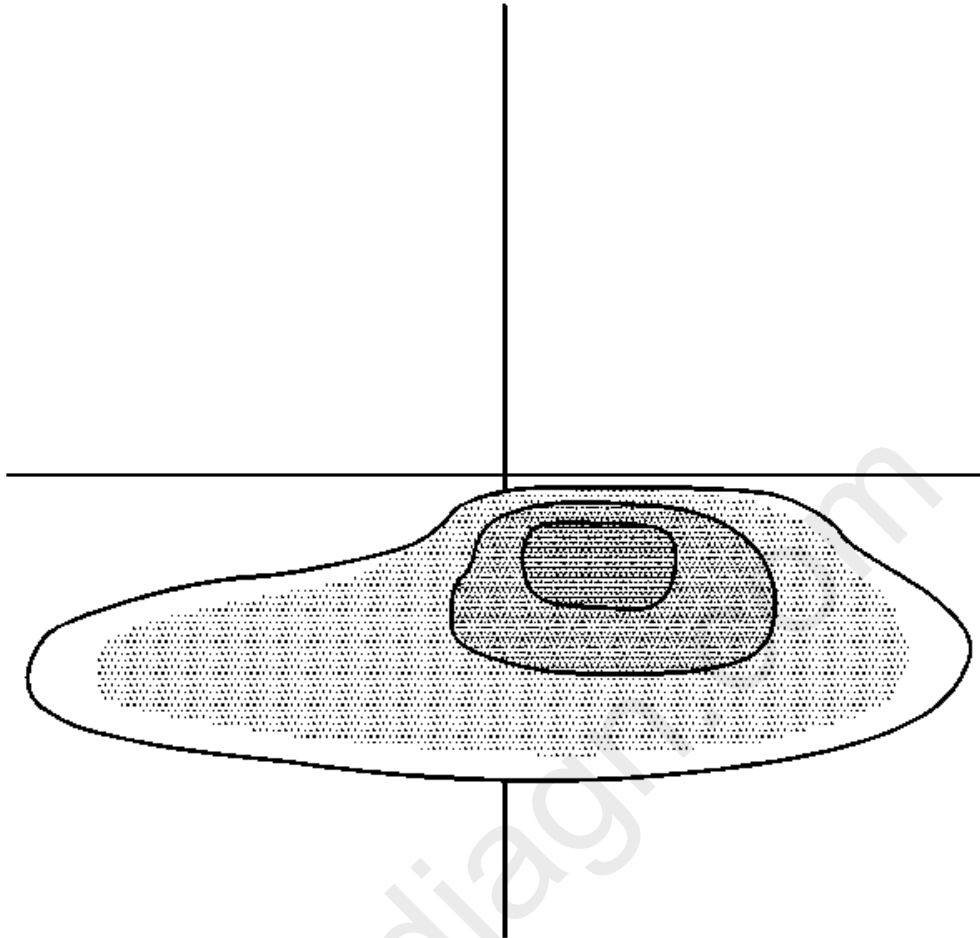


Fig. 24: Identifying Right Side Low Beam Proper Screen Positioning
Courtesy of GENERAL MOTORS COMPANY

IMPORTANT: Do not cover the headlamp, this may cause excessive heat build up.

8. Turn on the low beam headlamps and block the light from projecting onto the screen from the passenger side headlamp.

IMPORTANT: Horizontal headlamp adjustment does not exist.

9. Adjust the vertical aim of the headlamps to the specifications required by the state and the local authorities, or as shown in step number 8.
10. Rotate the headlamp adjuster to change the vertical aim of the headlamp.
11. Repeat the aiming procedure for the passenger side headlamp while blocking the light from projecting onto the screen from the driver side headlamp.
12. Close the hood.

HEADLAMP LEVELING FRONT SUSPENSION HEIGHT SENSOR REPLACEMENT

Removal Procedure

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Remove the front tire and wheel assembly. Refer to Tire and Wheel Removal and Installation .

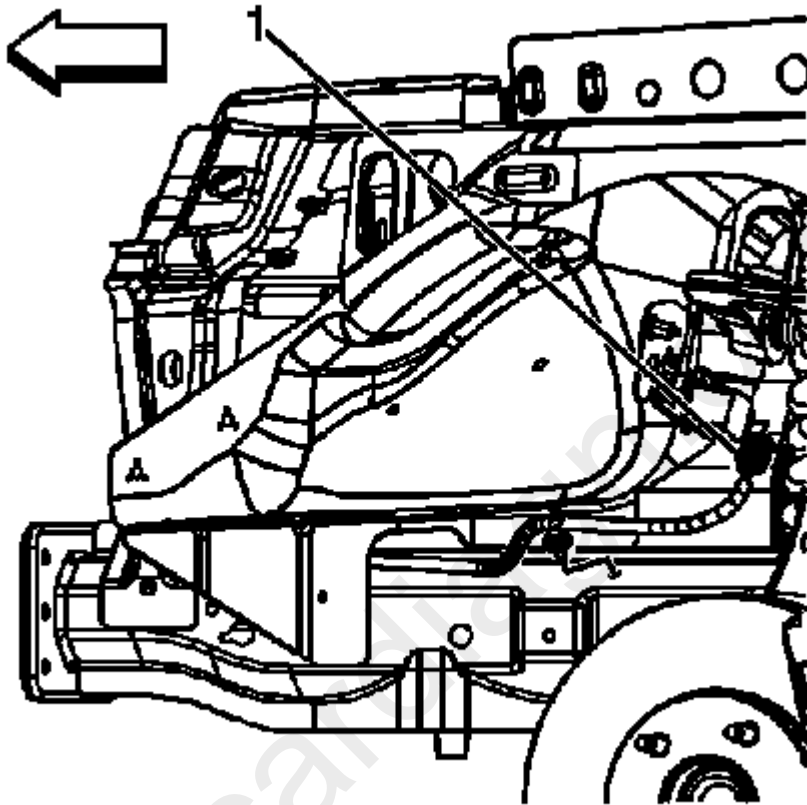


Fig. 25: View Of Front Headlamp Leveling Sensor Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

3. Disconnect the electrical connector (1).

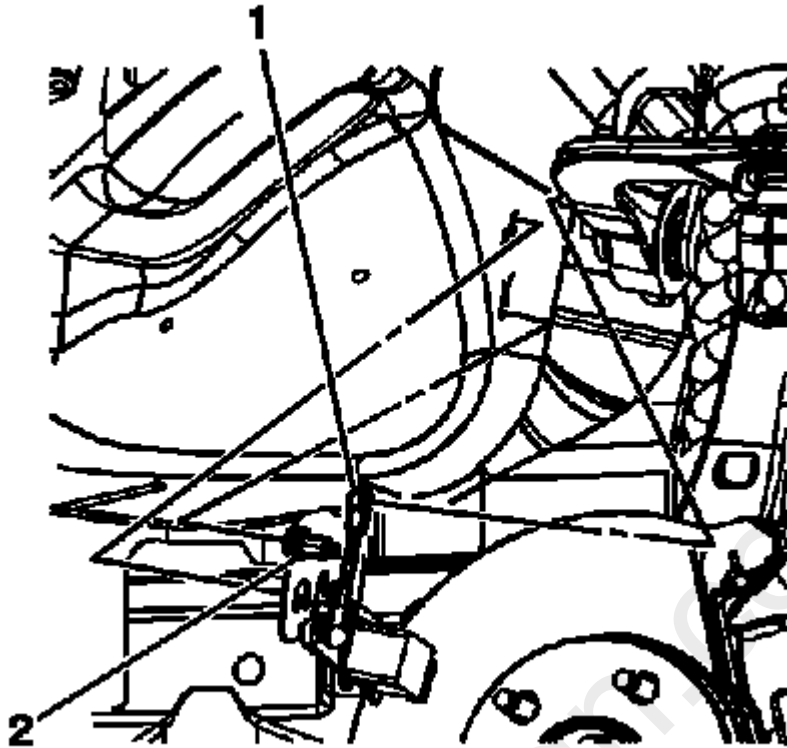


Fig. 26: View Of Ball & Socket
Courtesy of GENERAL MOTORS COMPANY

4. Disconnect the ball and socket (1) from upper control arm.
5. Loosen the clinch nut (2) from the stud.
6. Rotate and remove the sensor from the wheelhouse panel.

Installation Procedure

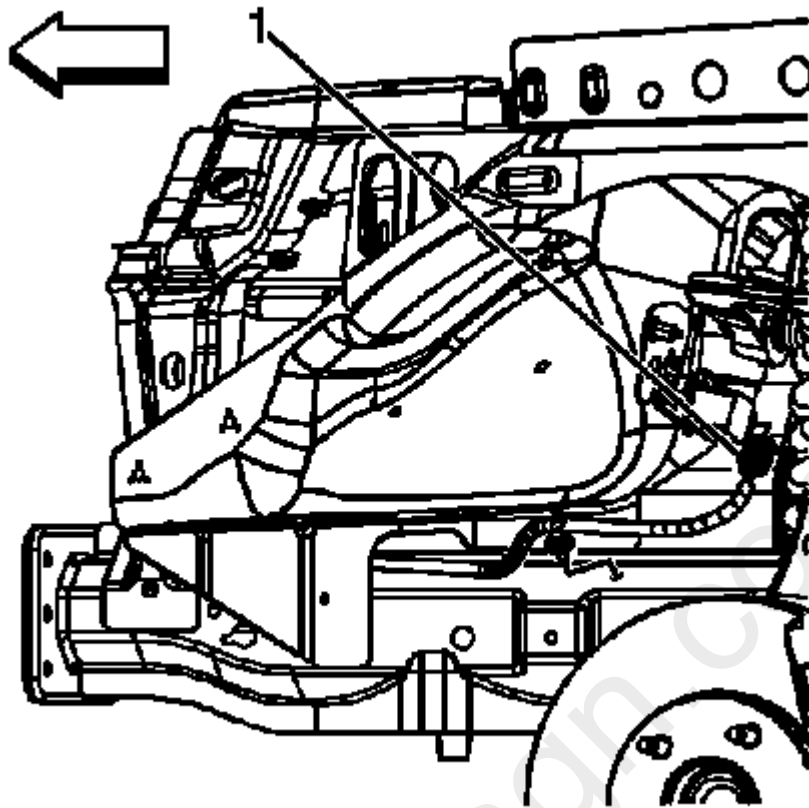


Fig. 27: View Of Front Headlamp Leveling Sensor Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

1. Position and rotate the sensor (1) and the locking tab into the holes in the wheelhouse panel.

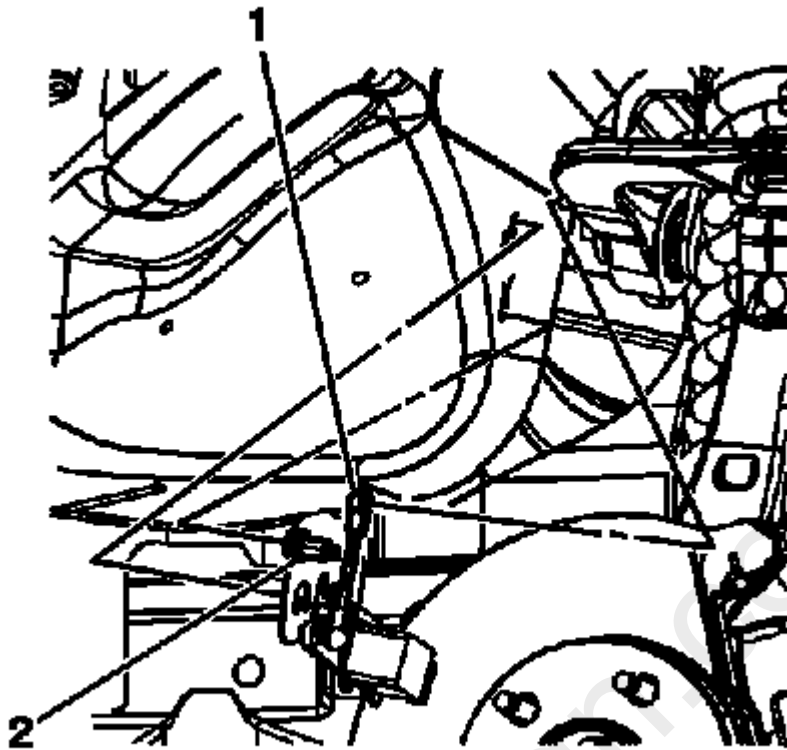


Fig. 28: View Of Ball & Socket

Courtesy of GENERAL MOTORS COMPANY

CAUTION: Refer to Fastener Caution .

2. Secure the clinch nut (2) on the stud to the wheelhouse panel and tighten to 9 N.m (80 lb in).
3. Lock the ball socket (1) to upper control arm ball stud.

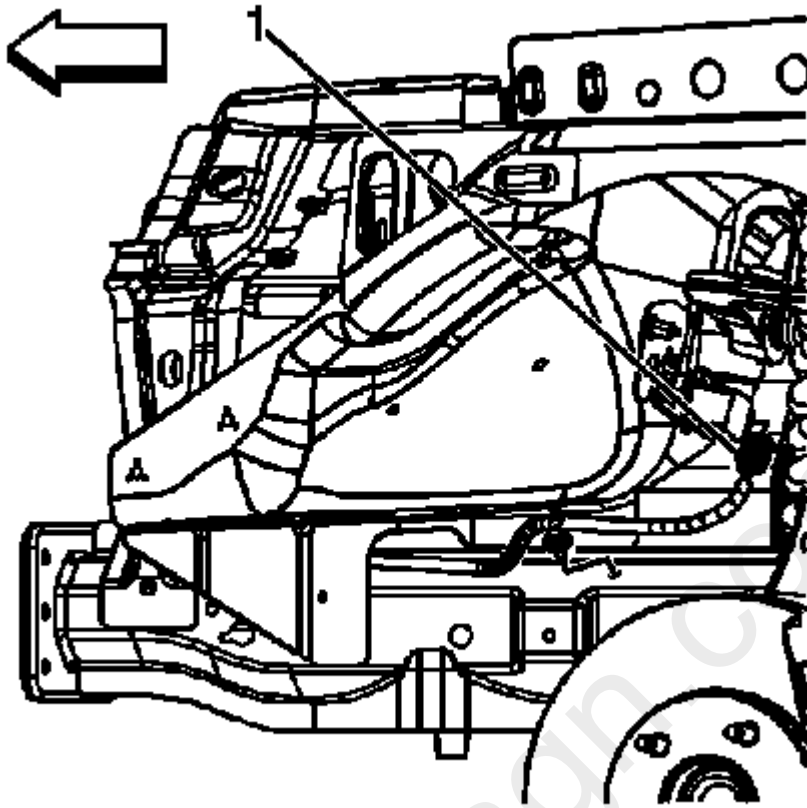


Fig. 29: View Of Front Headlamp Leveling Sensor Electrical Connector
Courtesy of GENERAL MOTORS COMPANY

4. Connect the electrical connector (1) to the sensor assembly.
5. Install the tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
6. Lower the vehicle.
7. Set up and program the headlamp control module. Refer to **Control Module References** .

HEADLAMP LEVELING REAR SUSPENSION HEIGHT SENSOR REPLACEMENT

Removal Procedure

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** .
2. Remove the right rear tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .

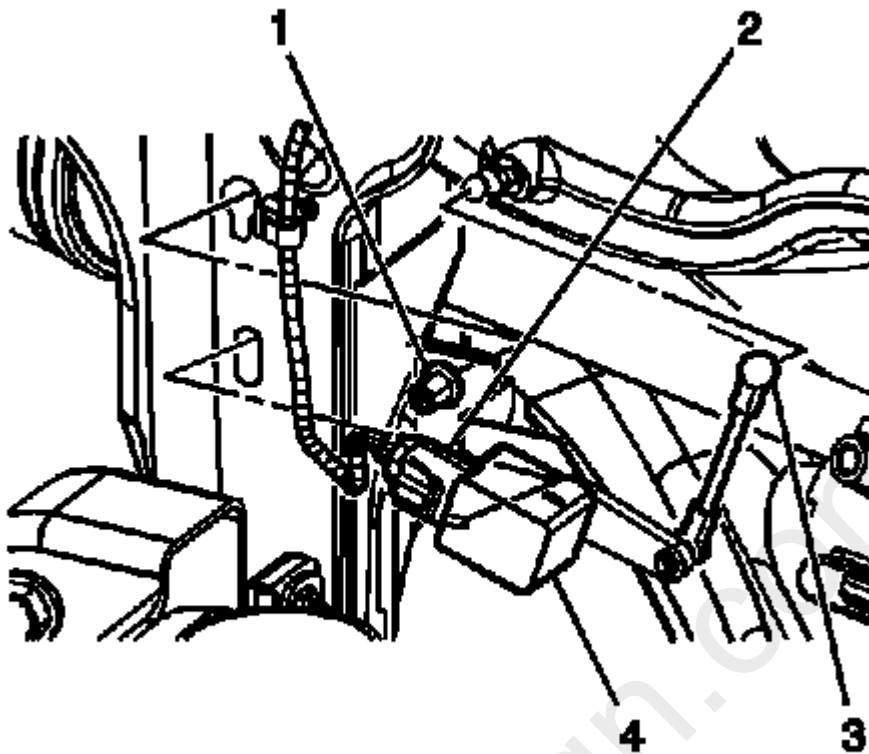


Fig. 30: View Of Rear Headlamp Leveling Sensor
Courtesy of GENERAL MOTORS COMPANY

3. Disconnect electrical connector (2).
4. Disconnect the ball and socket (3) from vehicle.
5. Loosen the clinch nut (1) from the sensor.
6. Remove the sensor from the vehicle.

Installation Procedure

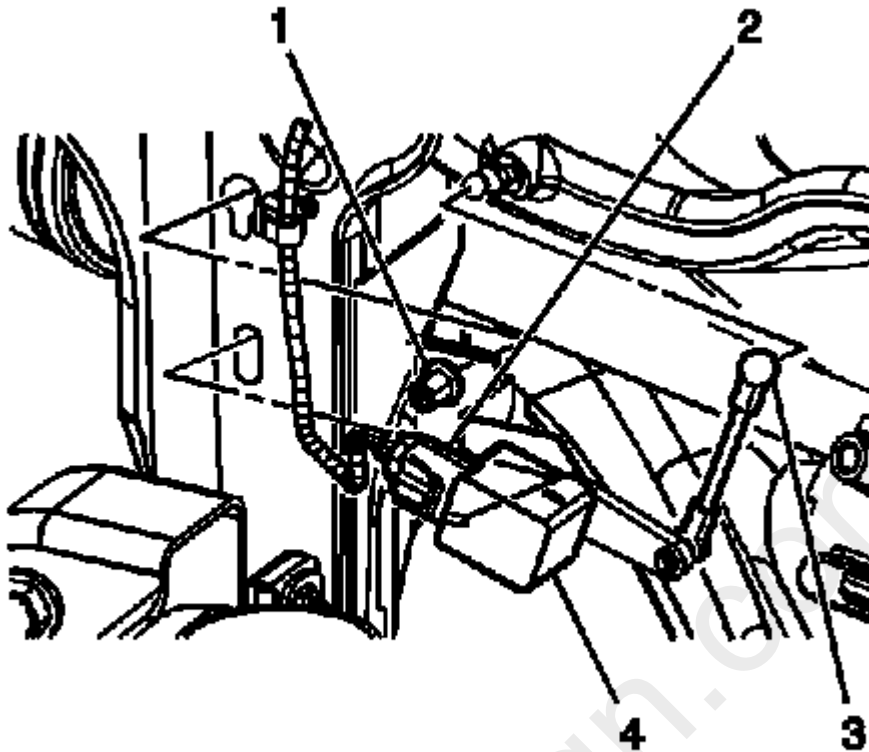


Fig. 31: View Of Rear Headlamp Leveling Sensor
Courtesy of GENERAL MOTORS COMPANY

1. Position the sensor (3) to the vehicle and engage the locking tab to the wheelhouse bracket.
2. Secure the clinch nut (1) in order to secure the sensor (4) to the vehicle.

Tighten

Tighten 9 N.m (80 lb in).

3. Secure the ball and socket (3) to sensor (4).
4. Connect electrical connector (2) to the sensor (4).
5. Install the right tire and wheel assembly. Refer to **Tire and Wheel Removal and Installation** .
6. Lower the vehicle.
7. Set up and program the headlamp control module. Refer to **Control Module References** .

HEADLAMP CONTROL MODULE REPLACEMENT

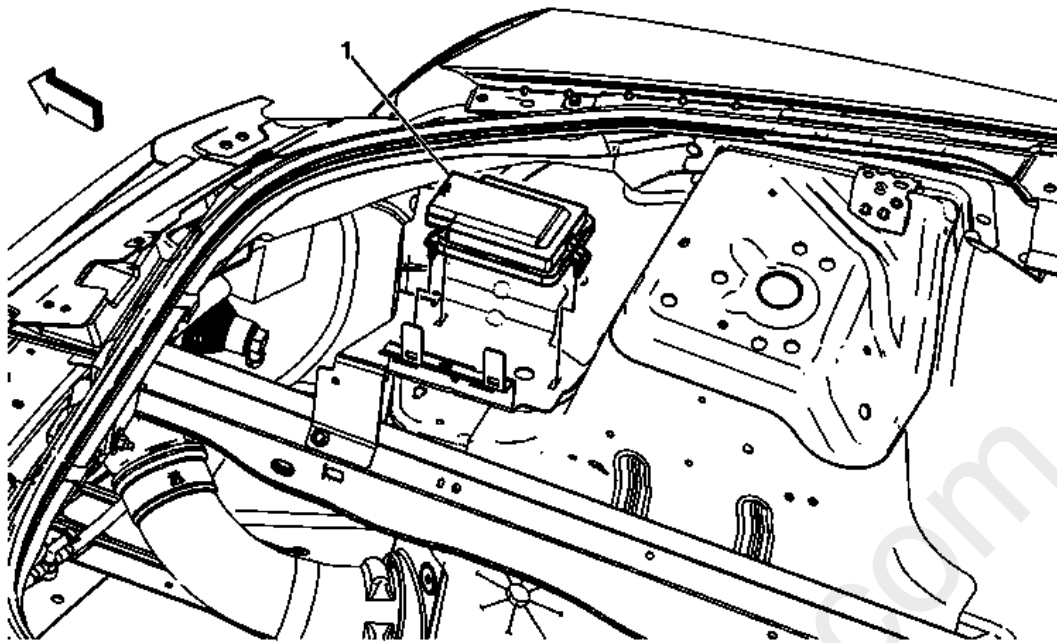


Fig. 32: Headlamp Control Module
 Courtesy of GENERAL MOTORS COMPANY

Headlamp Control Module Replacement

Callout	Component Name
Preliminary Procedure Remove the underhood electrical center. Refer to <u>Underhood Electrical Center or Junction Block Replacement</u> .	
1	Headlamp Control Module Procedure 1. Disconnect the electrical connectors. 2. Unsnap the module from the bracket. 3. Refer to <u>Control Module References</u> for programming and set up procedures.

FRONT FOG LAMP REPLACEMENT (V-SERIES)

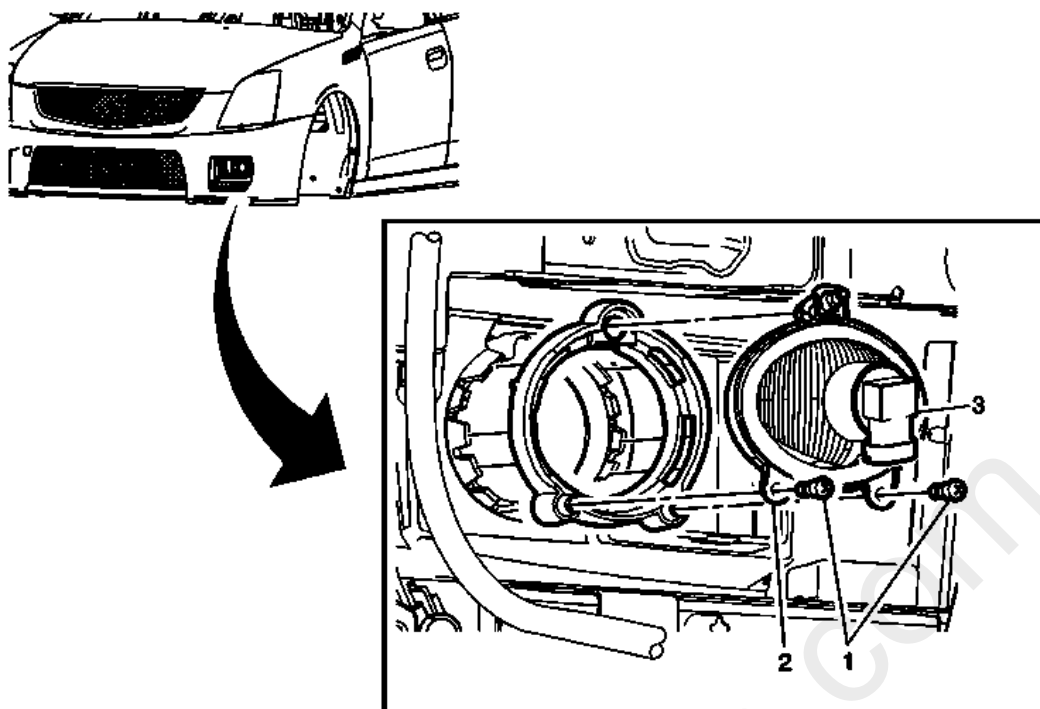


Fig. 33: Identifying Front Fog Lamp (CTS-V)
 Courtesy of GENERAL MOTORS COMPANY

Front Fog Lamp Replacement (V-Series)

Callout	Component Name
Preliminary Procedures	
1. Remove either the LF or RF wheelhouse extension. Refer to <u>Wheelhouse Extension Replacement</u> . 2. Disconnect the fog lamp bulb socket electrical connector.	
1	Front Fog Lamp Screw (Qty: 2) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 2 N.m (18 lb in)
2	Front Fog Lamp Procedure Remove the fog lamp from the front bumper fascia.
	Front Fog Lamp Bulb WARNING:

3	Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Turn the bulb counter-clockwise and remove from the fog lamp assembly. 2. Aim the fog lamps after replacement. Refer to <u>Fog Lamp Aiming</u>.
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FRONT FOG LAMP BULB REPLACEMENT

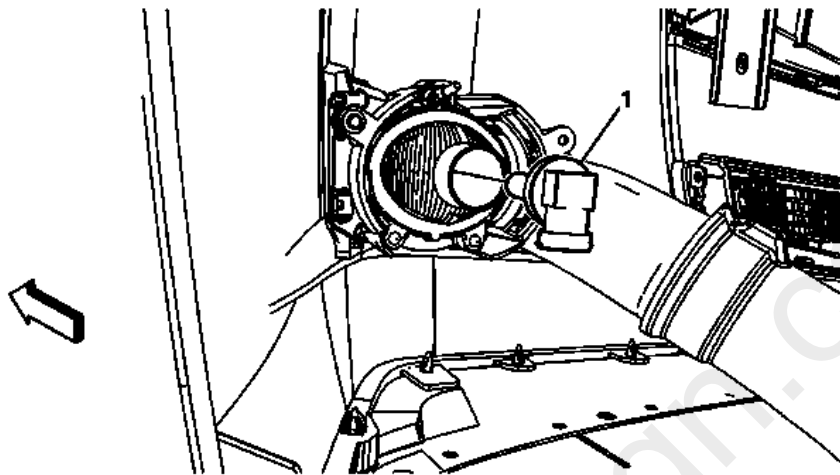


Fig. 34: Front Fog Lamp Bulb
 Courtesy of GENERAL MOTORS COMPANY

Front Fog Lamp Bulb Replacement

Callout	Component Name
Preliminary Procedures 1. Remove either the LF or RF wheelhouse liner extension. Refer to <u>Wheelhouse Extension Replacement</u> . 2. Disconnect the fog lamp bulb socket electrical connector.	
1	Front Fog Lamp Bulb Socket WARNING: Refer to <u>Halogen Bulb Warning</u> . TIP: Turn the bulb socket counterclockwise and remove from the lamp assembly.

REAR FOG LAMP REPLACEMENT (T79)

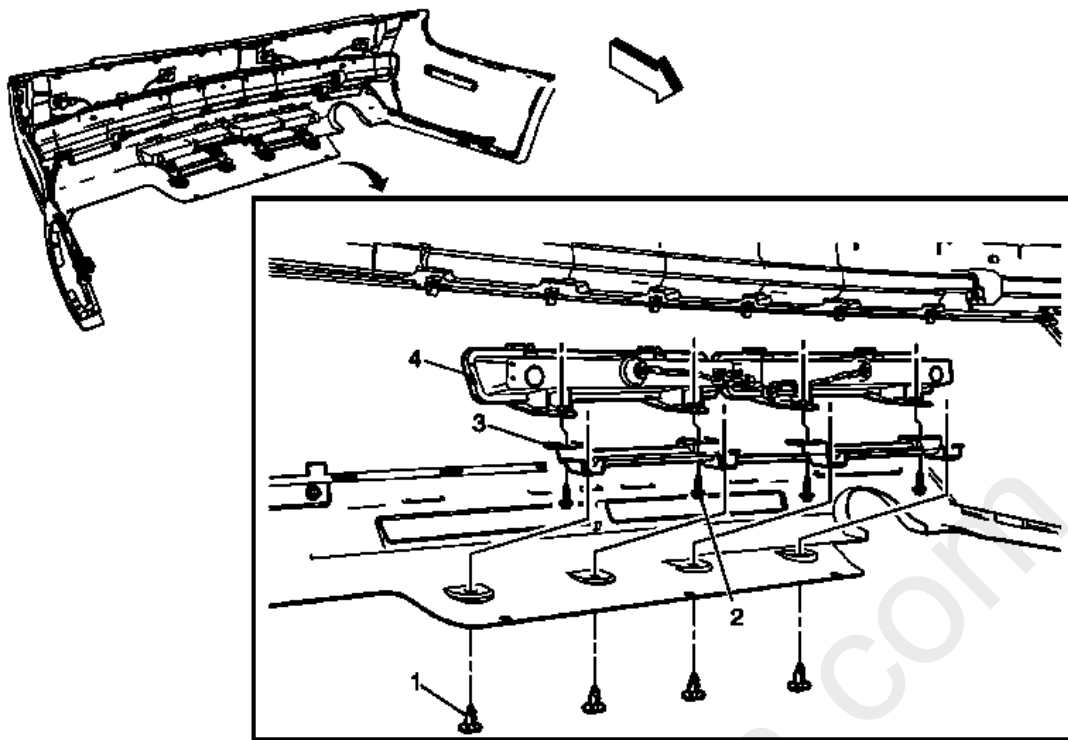


Fig. 35: Rear Fog Lamp (T79)
Courtesy of GENERAL MOTORS COMPANY

Rear Fog Lamp Replacement (T79)

Callout	Component Name
1	Rear Fascia Insert Retainer (Qty: 4) Procedure 1. Release only two retainers from one lamp assembly if only servicing one lamp. 2. Rotate the fog lamp from the retainer tabs on the rear bumper fascia insert in order to remove.
2	Fog Lamp Bracket Screw (Qty 4) CAUTION: Refer to <u>Fastener Caution</u> . TIP: Remove only two screws if servicing one lamp assembly. Tighten 1.5 N.m (13 lb in)
3	Rear Fog Lamp Bracket
4	Rear Fog Lamp Assembly TIP: Disconnect the electrical connector from the main harness on the lamp being serviced.

FOG LAMP AIMING

Adjustment Procedure

Proper road illumination and safety require the fog lamps to be aimed. The front fog lamp aim should be checked when a new front fog lamp assembly is installed, or if any service repairs have been performed to the vehicle which disturb the front fog lamp mounting or the vehicle ride height.

There are no horizontal adjustments for aiming the front fog lamp assemblies on this vehicle.

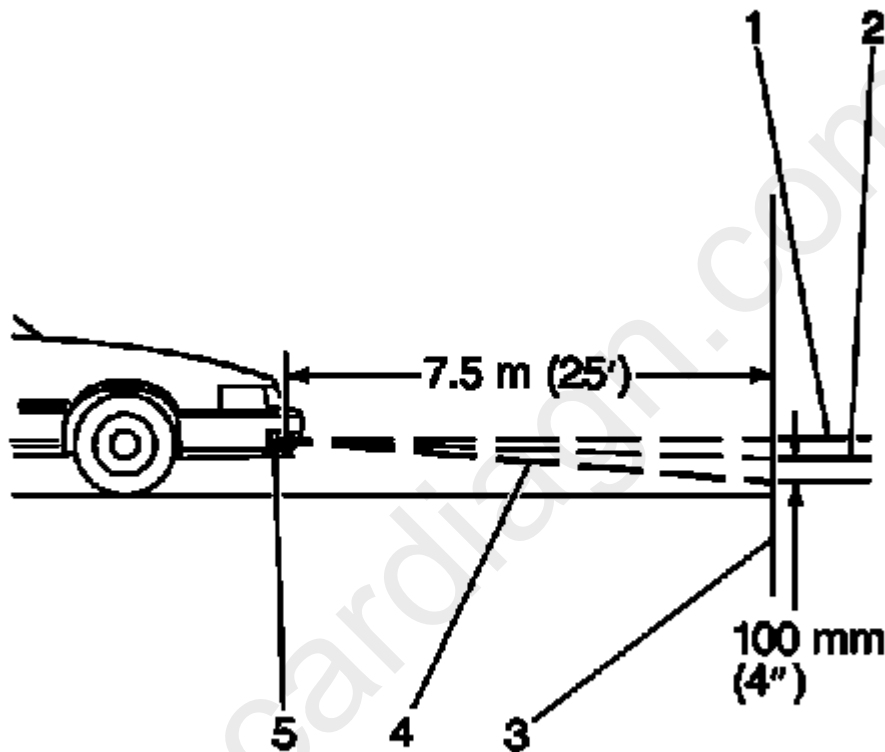


Fig. 36: Fog Lamp Aiming Procedure Distances
Courtesy of GENERAL MOTORS COMPANY

1. To ensure accurate vertical front fog lamp aiming, first perform the following steps to prepare the vehicle.
 - Make sure that all the components are in place on the vehicle, the tires are properly inflated, and there is not any mud or snow clinging to the vehicle.
 - Stop all other operations of work on the vehicle.
 - Make sure the fuel level is 1/2 full or more.
 - Jounce the vehicle to settle the suspension.
 - Place the vehicle on a level surface 7.6 m (25 ft) from the target screen.

- Measure the distance from the floor to the center of the fog lamp (5).
 - Using this measurement, mark the horizontal centerline of the fog lamp (1) on the target screen directly in front of the vehicle.
 - Start the vehicle in order to level the electronic suspension.
 - Turn off the vehicle.
2. Turn the front fog lamps ON.

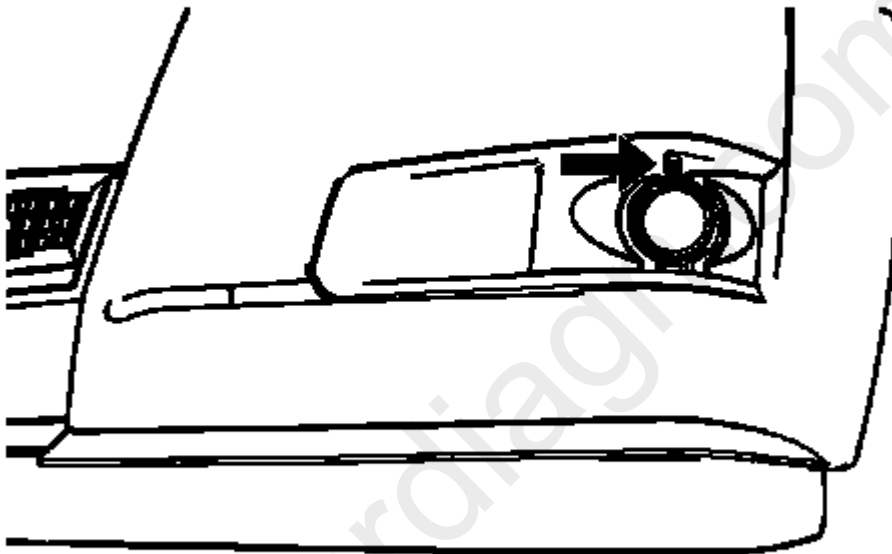


Fig. 37: Fog Lamp Vertical Adjusting Screw
Courtesy of GENERAL MOTORS COMPANY

3. Through the opening in the front bumper fascia above the fog lamp is the fog lamp vertical adjusting screw, as indicated.
4. Adjust the fog lamp up or down until the top edge of the high intensity zone on the screen is 102 mm (4 in) below the horizontal centerline.
5. Turn OFF the front fog lamps.

FRONT POSITION LAMP BULB REPLACEMENT

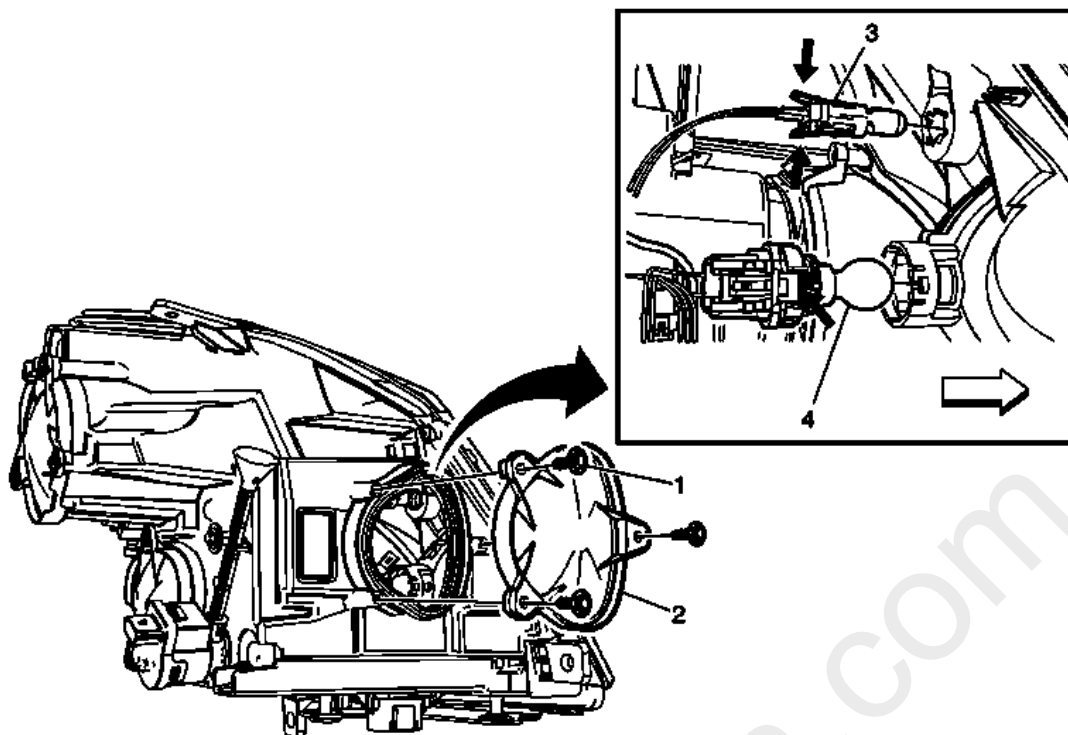


Fig. 38: Identifying Position Lamp Bulb
 Courtesy of GENERAL MOTORS COMPANY

Front Position Lamp Bulb Replacement

Callout	Component Name
Preliminary Procedure	
Remove the headlamp capsule. Refer to <u>Headlamp Capsule Replacement</u> .	
1	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
2	Accessory Cap TIP: Inspect and ensure the accessory cap seal is properly seated prior to installing the accessory cap cover.
3	Position Lamp Bulb Socket WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Pinch the tabs on the position lamp bulb socket and pull the bulb socket from the headlamp assembly. 2. Remove and replace the bulb.
	Park Signal Lamp Bulb

4	Procedure 1. Pinch the tabs on the bulb socket and pull the bulb socket from the headlamp assembly. 2. Disconnect the electrical connector from the bulb socket. 3. Remove and replace the bulb.
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FRONT SIDE TURN SIGNAL LAMP REPLACEMENT

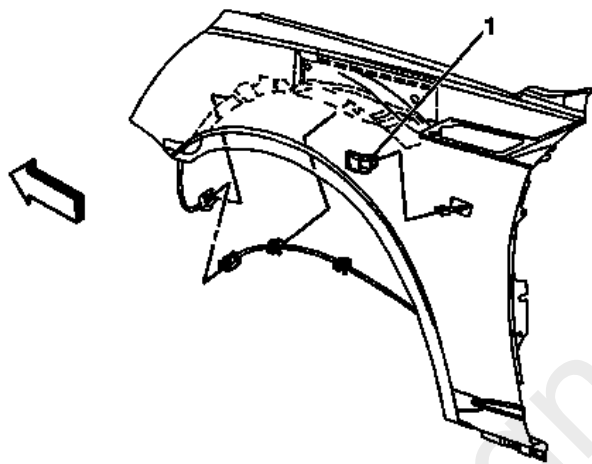


Fig. 39: Front Side Turn Signal Lamp
 Courtesy of GENERAL MOTORS COMPANY

Front Side Turn Signal Lamp Replacement

Callout	Component Name
Preliminary Procedure Apply two layers of masking tape to the rear edge of the lamp assembly in order to protect the painted surface when removing the lamp from the fender.	
1	Front Side Turn Signal Lamp Procedure 1. Using a small flat-bladed tool, depress the locking tab at the rear edge of the turn signal lamp assembly. 2. Pull the lamp outward away from the fender. 3. Disconnect the electrical connector to remove the lamp assembly. 4. Rotate the bulb socket from the lamp. 5. Replace the bulb as needed.

PARKING AND TURN SIGNAL LAMP BULB REPLACEMENT

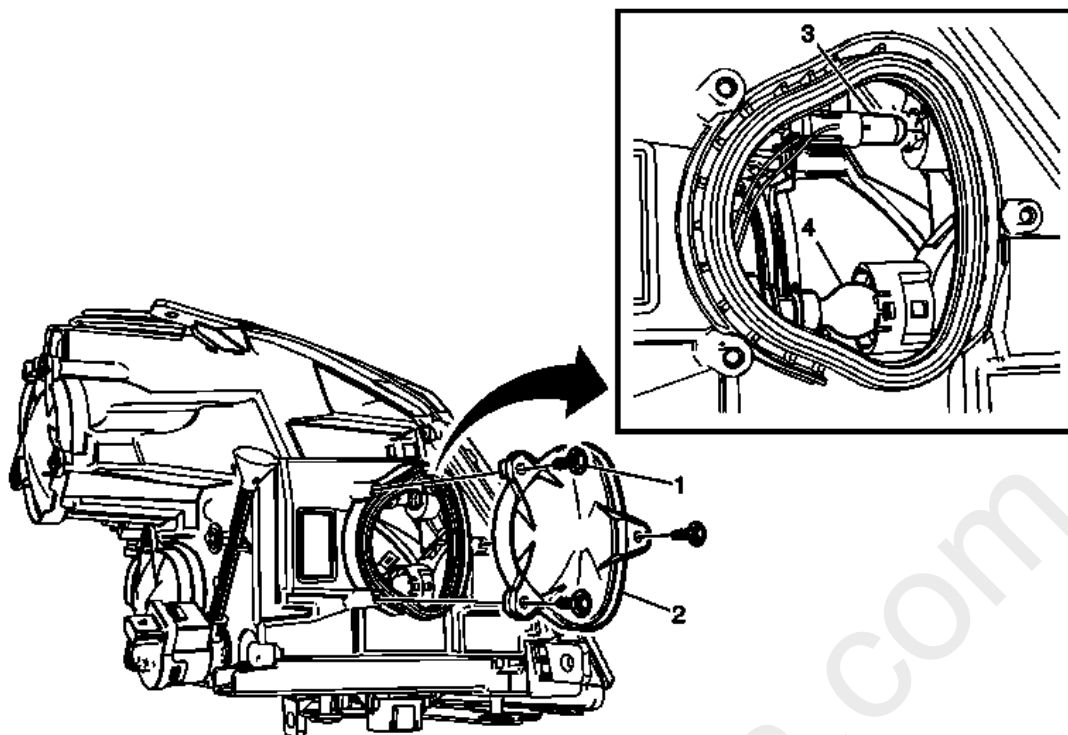


Fig. 40: Park/Turn Signal Lamp Bulb
 Courtesy of GENERAL MOTORS COMPANY

Parking and Turn Signal Lamp Bulb Replacement

Callout	Component Name
Preliminary Procedure	
Remove the headlamp capsule. Refer to <u>Headlamp Capsule Replacement</u> .	
1	Accessory Cap Screw (Qty: 3) TIP: Hand tighten only, the accessory cap screws.
2	Accessory Cap TIP: Inspect and ensure the accessory cap seal is properly seated prior to installing the accessory cap cover.
3	Turn Signal Lamp Bulb WARNING: Refer to <u>Halogen Bulb Warning</u> . Procedure 1. Pinch the tabs on the bulb socket and pull the bulb socket from the headlamp assembly. 2. Disconnect the electrical connector from the bulb socket. 3. Remove and replace the bulb.
	Park Signal Lamp Bulb

4	Procedure 1. Pinch the tabs on the bulb socket and pull the bulb socket from the headlamp assembly. 2. Disconnect the electrical connector from the bulb socket. 3. Remove and replace the bulb.
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HIGH MOUNT STOP LAMP REPLACEMENT (V-SERIES)

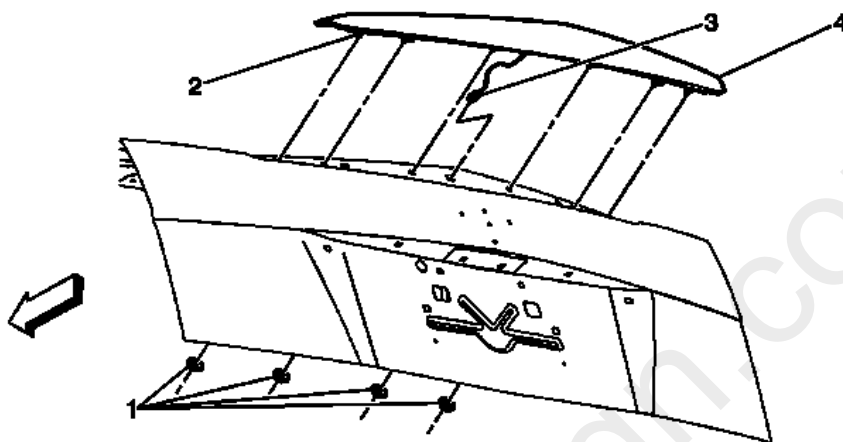


Fig. 41: High Mount Stop Lamp (CTS-V)
 Courtesy of GENERAL MOTORS COMPANY

High Mount Stop Lamp Replacement (V-Series)

Callout	Component Name
Preliminary Procedure 1. Open the rear compartment lid. 2. Remove the rear compartment lid inner panel trim. Refer to <u>Rear Compartment Lid Inner Panel Trim Replacement (Coupe)</u>.	
1	High Mount Stop Lamp Nut (Qty: 4) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 4 N.m (35 lb in)
2	High Mount Stop Lamp Retainer (Qty: 2) TIP: Squeeze the retainer tabs inward and push the lamp assembly tabs outward in order to remove the lamp assembly from the rear compartment lid.
3	High Mount Stop Lamp Electrical Connector

4

High Mount Stop Lamp Assembly

TIP: The stop lamp assembly is a Light Emitting Diode (LED) and is serviced as an assembly. Ensure the nine foam gaskets are in place prior to installing the new high mounted stop lamp to the rear compartment lid.

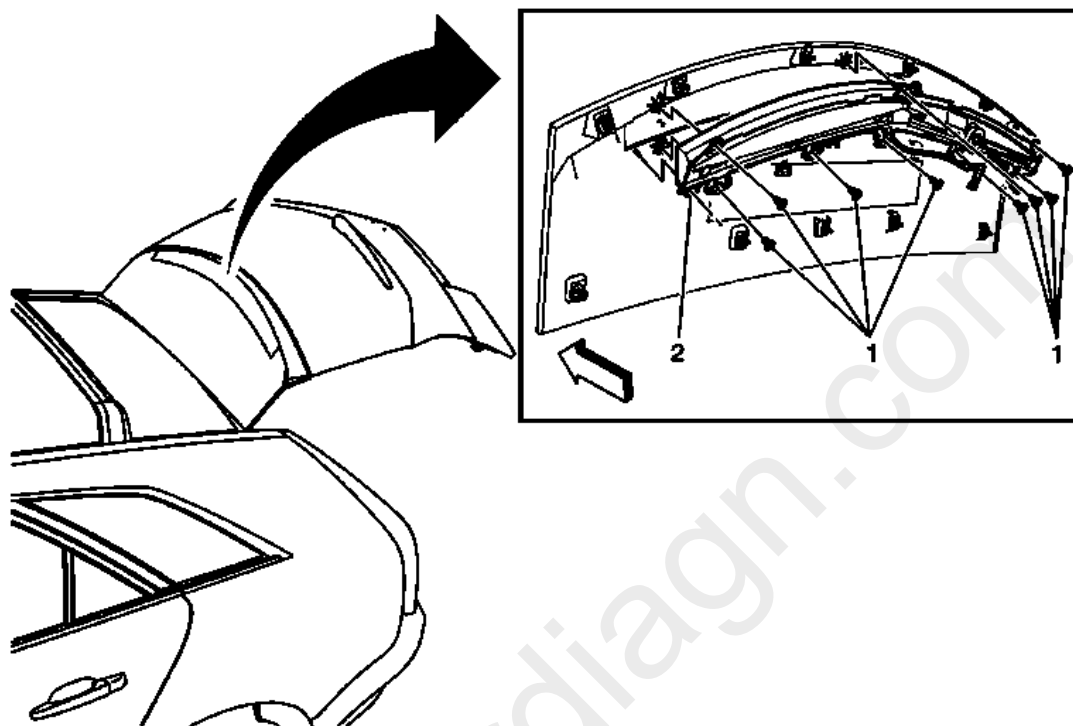
HIGH MOUNT STOP LAMP REPLACEMENT (WAGON)

Fig. 42: High Mount Stop Lamp (Wagon)

Courtesy of GENERAL MOTORS COMPANY

High Mount Stop Lamp Replacement (Wagon)

Callout	Component Name
Preliminary Procedures	
1. Open and support the liftgate.	
2. Remove the liftgate upper applique. Refer to <u>Liftgate Upper Applique Replacement (Wagon)</u> .	
3. Disconnect the electrical connector for the radio antenna cable extension cable assembly.	
1	High Mount Stop Lamp Nut (Qty: 8) CAUTION: Refer to <u>Fastener Caution</u> . Tighten

	2.5 N.m (22 lb in)
2	High Mount Stop Lamp Assembly Procedure 1. Remove the lamp assembly from the alignment pins on the underside of the liftgate upper applique. 2. Remove the rear window washer nozzle from the high mount stop lamp assembly. 3. The high mount stop lamp is a Light Emitted Diode (LED) and is serviced as an assembly.

HIGH MOUNT STOP LAMP REPLACEMENT (COUPE)

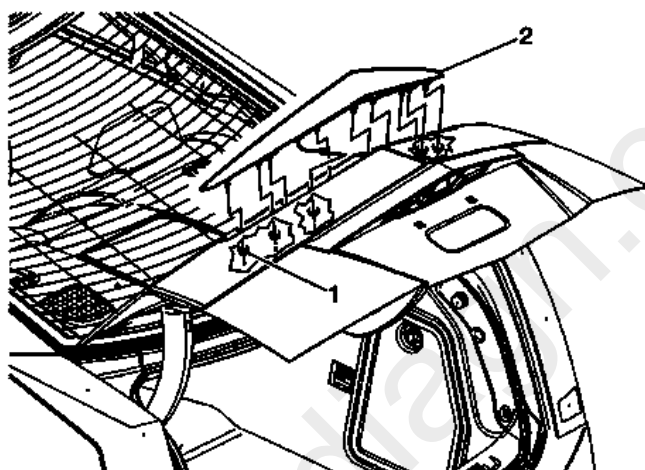


Fig. 43: High Mount Stop Lamp & Nuts (Coupe)
 Courtesy of GENERAL MOTORS COMPANY

High Mount Stop Lamp Replacement (Coupe)

Callout	Component Name
Preliminary Procedure 1. Open the rear compartment lid. 2. Remove the rear compartment lid inner panel trim. Refer to <u>Rear Compartment Lid Inner Panel Trim Replacement (Coupe)</u> .	
1	High Mount Stop Lamp Nut (Qty: 6) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 4 N.m (35 lb in)

High Mount Stop Lamp Assembly

Procedure

1. Disconnect the electrical connector from the rear compartment lid harness.
2. Disengage the electrical harness grommet from the rear compartment lid.
3. Release the two retainers securing the high mount stop lamp to the rear compartment lid.
4. Remove the high mount stop lamp from the rear compartment lid.

TIP: The stop lamp assembly is a Light Emitting Diode (LED) and is serviced as an assembly. Ensure the foam gaskets are in place prior to installing the new high mounted stop lamp to the rear compartment lid.

CARGO LAMP REPLACEMENT (WAGON)

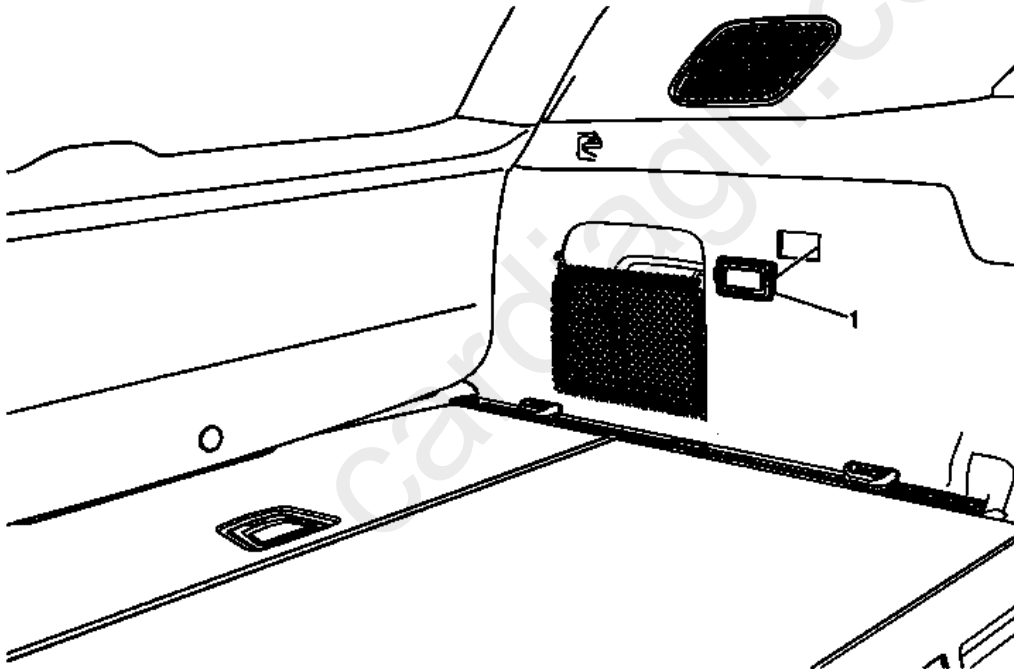


Fig. 44: Cargo Lamp (Wagon)

Courtesy of GENERAL MOTORS COMPANY

Cargo Lamp Replacement (Wagon)

Callout	Component Name
1	Cargo Lamp
Procedure	

1. Using a flat bladed tool, release cargo lamp from trim panel.
2. Disconnect the electrical connector.

REAR LICENSE PLATE LAMP REPLACEMENT (V-SERIES)

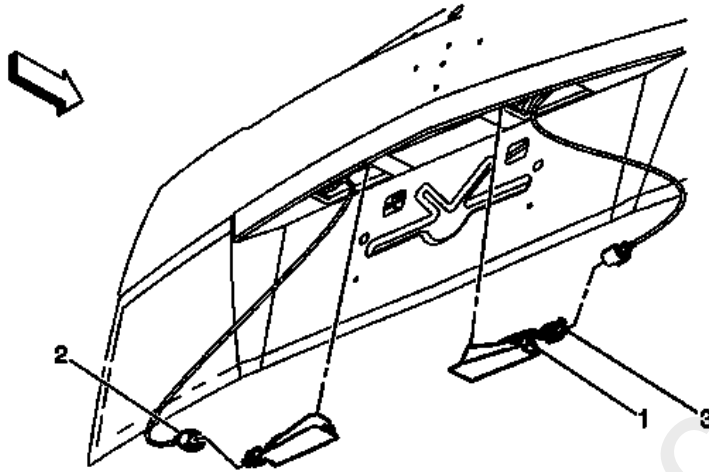


Fig. 45: Rear License Lamp (CTS-V)

Courtesy of GENERAL MOTORS COMPANY

Rear License Plate Lamp Replacement (V-Series)

Callout	Component Name
Preliminary Procedure	
Depress the outside of the rear license plate lamp with a flat-bladed tool and pull the lamp inward to remove the lamp from the rear compartment lid lower molding assembly.	
1	Rear License Plate Lamp Assembly
2	License Plate Lamp Electrical Connector TIP: Rotate the bulb socket a quarter turn counter-clockwise and remove the lamp housing.
3	Rear License Plate Lamp Bulb Socket TIP: Pull the bulb straight out of the bulb socket.

REAR LICENSE PLATE LAMP REPLACEMENT (WAGON)

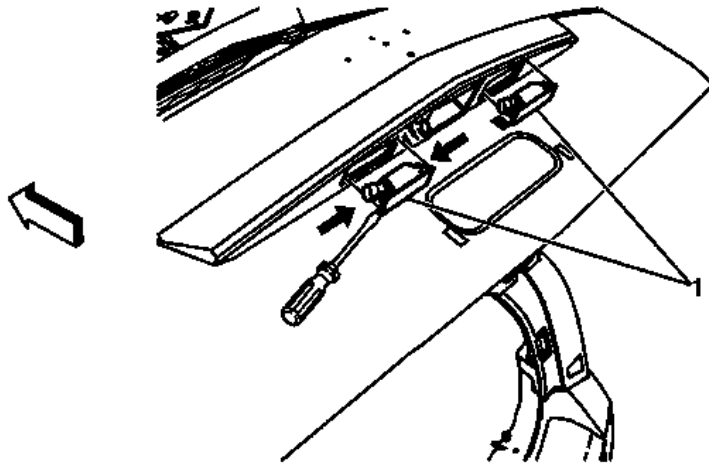


Fig. 46: Rear License Plate Lamp (Wagon)
 Courtesy of GENERAL MOTORS COMPANY

Rear License Plate Lamp Replacement (Wagon)

Callout	Component Name
Preliminary Procedure Open and support the liftgate assembly.	
1	Rear License Plate Lamp Procedure 1. Depress the tab on the left side license plate lamp. 2. Pull the lamp downward from the center liftgate panel opening. 3. Rotate and remove the electrical lamp socket from the lamp. 4. Replace the lamp bulb, as needed.

REAR LICENSE PLATE LAMP REPLACEMENT (COUPE)

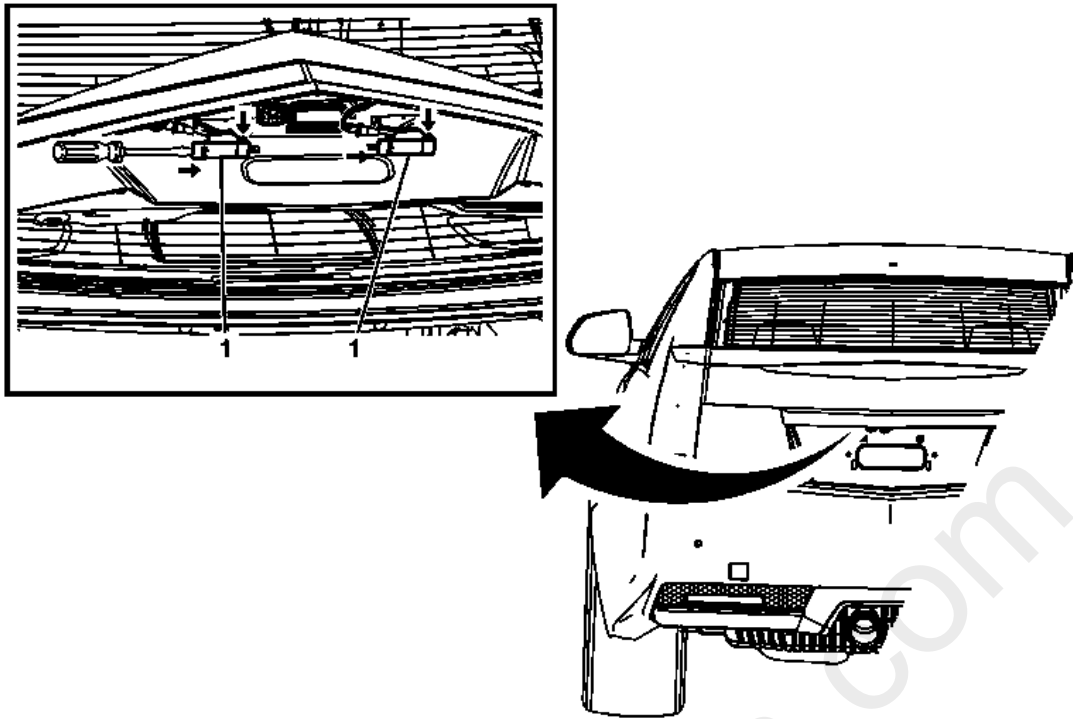


Fig. 47: Rear License Plate Lamp (Coupe)
 Courtesy of GENERAL MOTORS COMPANY

Rear License Plate Lamp Replacement (Coupe)

Callout	Component Name
Preliminary Procedure Depress the outside of the rear license plate lamp with a flat-bladed tool and pull the lamp inward to remove the lamp from the rear compartment lid lower applique assembly.	
1	Rear License Plate Lamp Assembly Procedure 1. Rotate the bulb socket a quarter turn counter-clockwise and remove the bulb lamp socket from the housing. 2. Replace bulbs as needed.

REAR LICENSE PLATE LAMP WIRING HARNESS REPLACEMENT (COUPE)

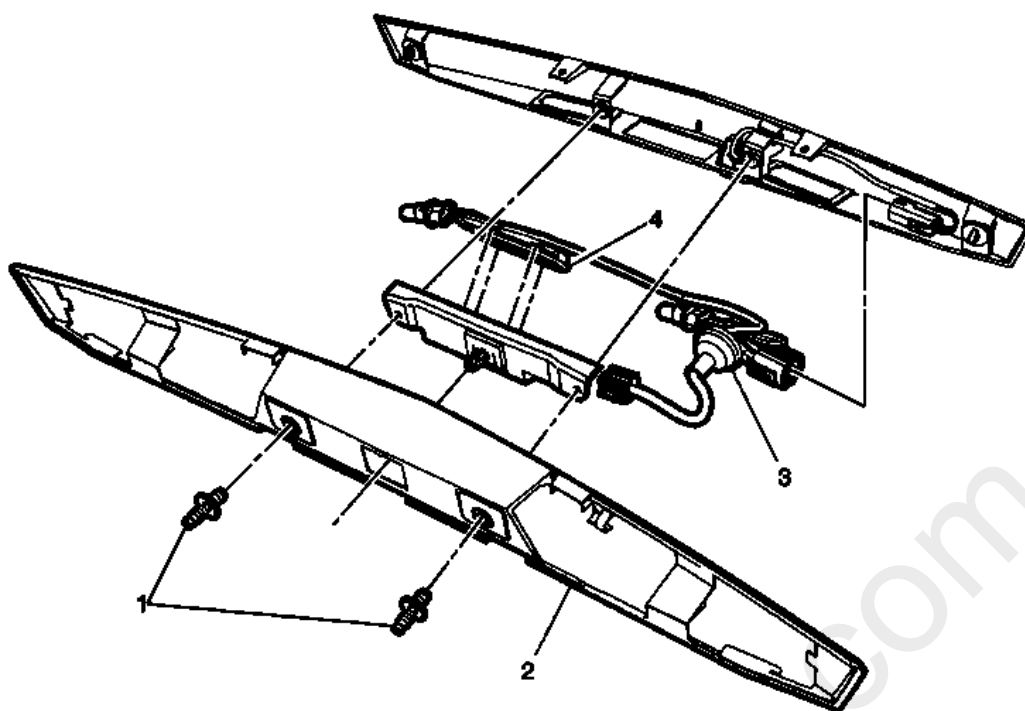


Fig. 48: Rear License Plate Lamp Wiring Harnesses, Access Plate & Studs (Coupe)
 Courtesy of GENERAL MOTORS COMPANY

Rear License Plate Lamp Wiring Harness Replacement (Coupe)

Callout	Component Name
Preliminary Procedure Remove the rear compartment lid lower molding. Refer to <u>Rear Compartment Lid Lower Molding Replacement (Coupe)</u> .	
1	Access Plate Stud (Qty: 2) CAUTION: Refer to <u>Fastener Caution</u> . Procedure Hand tighten.
2	Access Plate
3	Rear License Plate Lamp Wiring Harness Procedure 1. Disconnect the electrical harness from the applique. 2. Disconnect the electrical harness from the rearview camera, if equipped.
	Rear License Plate Lamp Wiring Harness

Procedure	
4	1. Depress the retainer clip and push outward to remove the touch pad from the touch pad mounting plate. 2. Replace the license plate bulbs if needed.

REAR LICENSE PLATE LAMP WIRING HARNESS REPLACEMENT (WAGON)

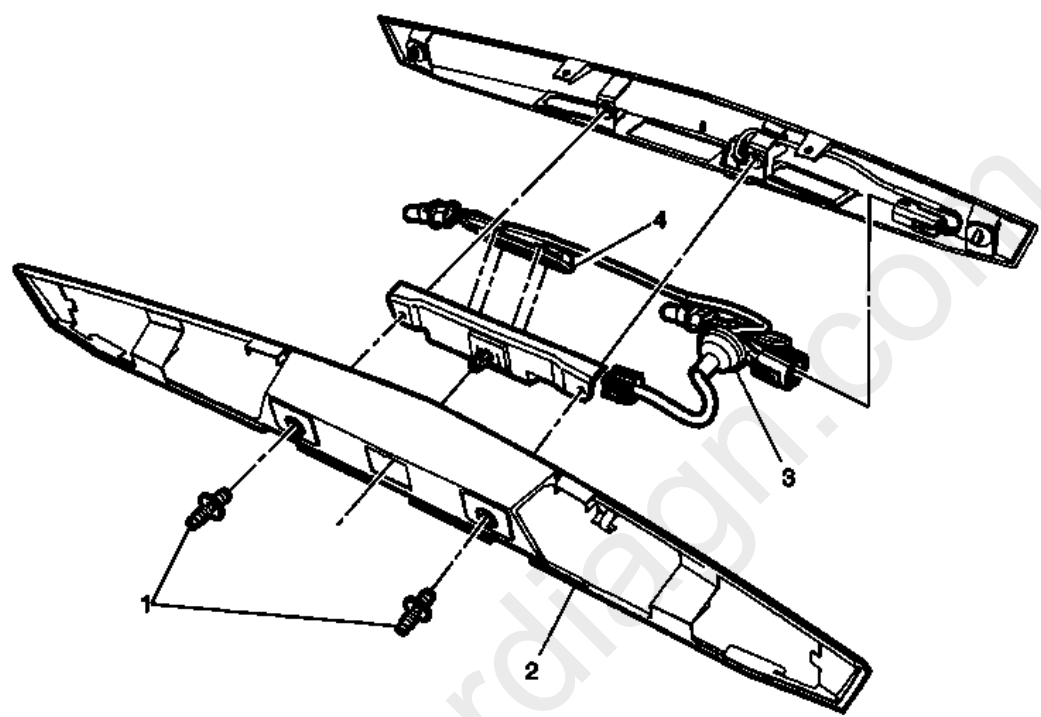


Fig. 49: Rear License Plate Lamp Wiring Harnesses, Access Plate & Studs (Wagon)
 Courtesy of GENERAL MOTORS COMPANY

Rear License Plate Lamp Wiring Harness Replacement (Wagon)

Callout	Component Name
Preliminary Procedure Remove the liftgate center applique. Refer to <u>Liftgate Center Applique Replacement (Wagon)</u> .	
1	Access Plate Stud (Qty: 2) CAUTION: Refer to <u>Fastener Caution</u> . Procedure Hand tighten.
2	Access Plate

3	Rear License Plate Lamp Wiring Harness Procedure 1. Disconnect the electrical harness from the applique. 2. Disconnect the electrical harness from the rearview camera, if equipped.
4	Rear License Plate Lamp Wiring Harness Procedure 1. Depress the retainer clip and push outward to remove the touch pad from the touch pad mounting plate. 2. Replace the license plate bulbs if needed.

TAIL LAMP REPLACEMENT (V-SERIES)

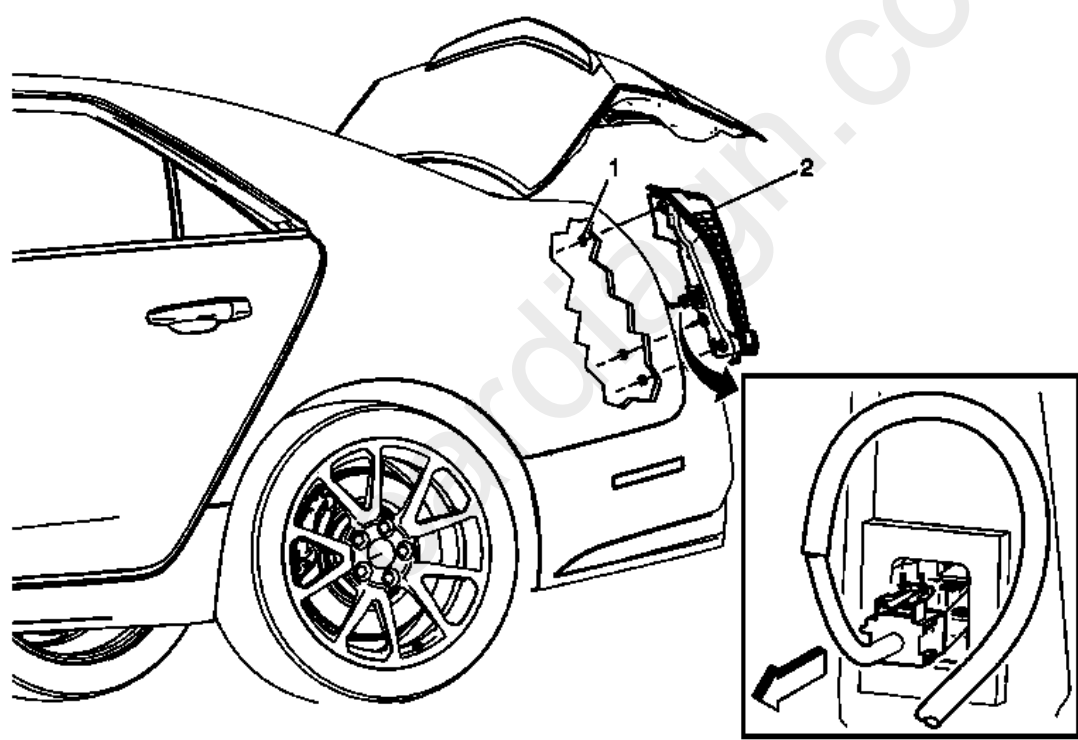


Fig. 50: Tail Lamp (CTS-V)
 Courtesy of GENERAL MOTORS COMPANY

Tail Lamp Replacement (V-Series)

Callout	Component Name
Preliminary Procedures 1. Open the rear compartment lid.	

	2. Pull back on the rear compartment trim panel to expose the tail lamp assembly nut, and reposition the trim panel on reinstallation . 3. Disengage the rear compartment weatherstrip from the rear tail lamp being serviced.
1	Tail Lamp Assembly Nut (Qty: 3) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 6 N.m (53 lb in)
2	Tail Lamp Assembly Procedure 1. Pull the top of the lamp assembly slightly outward. 2. Pull the lamp rearward in order to disconnect the two outer locator pins from the bodyside outer panel. 3. Lift and slightly swing left, for the left tail lamp, right for the right tail lamp, in order to clear the rear bumper fascia 4. Extreme care should be taken when disconnecting the tail lamp electrical connector from the tail lamp housing. 5. Use only a flat-bladed tool, 3/8" (9.5 mm) wide at the tip and insert the flat-blade between the upper tail lamp housing and electrical connector locking tab. 6. Carefully insert the flat-blade no more than 5/8" (15.8 mm) deep into the tail lamp electrical connector opening. 7. Depress the locking tab, downward on top of the electrical connector and pull to disconnect the electrical connector from the tail lamp assembly. 8. Remove the tail lamp assembly.

TAIL LAMP REPLACEMENT (WAGON)

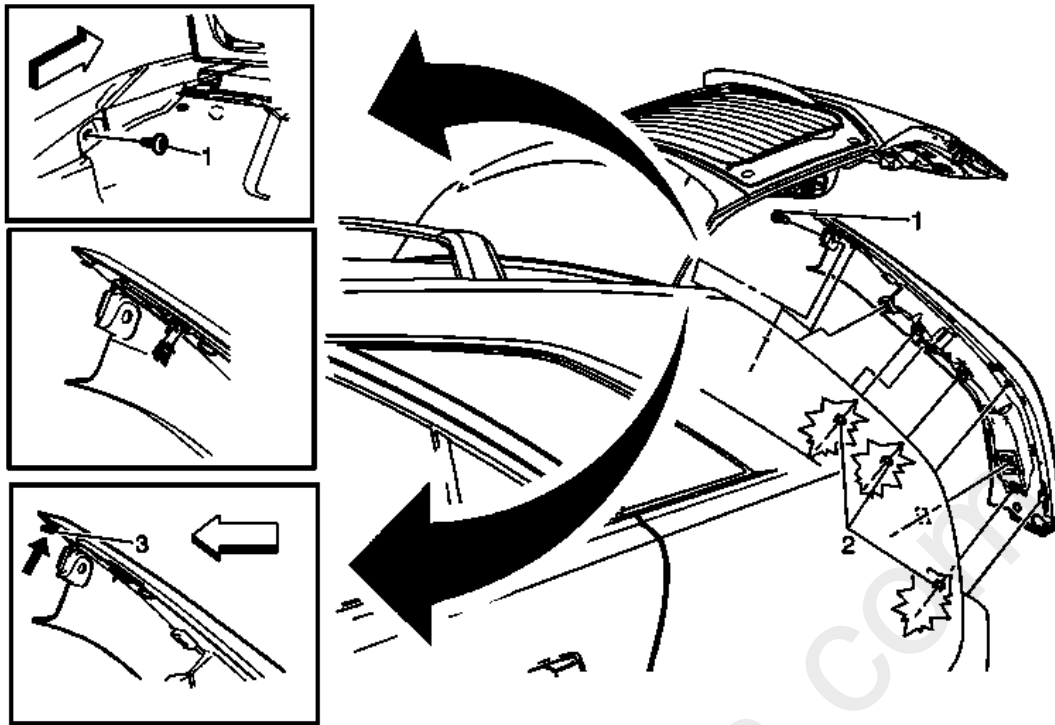


Fig. 51: Tail Lamp, Nuts & Rear Liftgate Molding Screw (Wagon)
 Courtesy of GENERAL MOTORS COMPANY

Tail Lamp Replacement (Wagon)

Callout	Component Name
Preliminary Procedure 1. Open and support the liftgate assembly. 2. Pull the liftgate weatherstrip seal inward away from the tail lamp watershed flange for the lamp being serviced. 3. For the passenger side tail lamp, remove the side access panel door and battery cover. 4. Remove the bodyside rear window garnish molding. Refer to <u>Body Side Window Rear Garnish Molding Replacement (Wagon)</u> . 5. For the driver side tail lamp, remove the bodyside lower trim panel. Refer to <u>Body Side Lower Trim Panel Replacement (Wagon)</u> .	
1	Quarter Panel Upper Rear Liftgate Opening Molding Screw CAUTION: Refer to <u>Fastener Caution</u> . Tighten 1.5 N.m (13 lb in)
	Tail Lamp Assembly Nut (Qty: 3)

2	Tighten 6 N.m (53 lb in)
3	Tail Lamp Assembly Procedure 1. Grasp the center of the lamp and pull slightly rearward. 2. Pull the lamp assembly downward slightly in order to release the upper tail lamp hook from the luggage carrier side rail end cap. 3. Extreme care should be taken when disconnecting the tail lamp electrical connector from the tail lamp housing. 4. Use only a flat-bladed tool 3/8" (9.5 mm) wide at the tip and insert the flat-blade between the upper lamp housing and electrical connector locking tab. 5. Carefully insert the flat-blade no more than 5/8" (15.8 mm) deep into the tail lamp electrical connector opening. 6. Depress the locking tab, downward on top of the electrical connector and pull to disconnect the electrical connector from the tail lamp assembly. 7. Remove the tail lamp assembly. 8. Upon installation loosen rear bumper fascia and retainers at the base of the tail lamp being serviced. 9. Ensure the upper tail lamp assembly hook is positioned into the luggage carrier side rail end cap, the lower tail lamp assembly pin is positioned into the bodyside grommet, and rear bumper fascia tab is secured to the tail lamp bracket prior to seating the upper tail lamp retention clip. 10. The integral pin is used for alignment purposes when aligning lamp assembly to the bodyside quarter panel. 11. If the upper retention clip (center view) is pulled from the locator tab, reposition the clip slightly to one side or the other of the witness marks on the tab to ensure positive retention of the clip on the locator tab to the bodyside outer panel of the vehicle.

TAIL LAMP REPLACEMENT (COUPE)

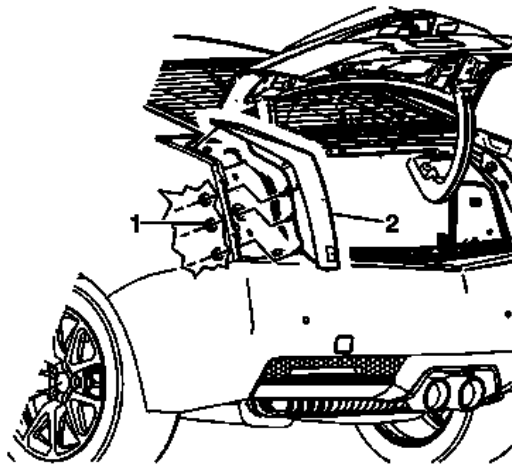


Fig. 52: Tail Lamp & Nuts (Coupe)
 Courtesy of GENERAL MOTORS COMPANY

Tail Lamp Replacement (Coupe)

Callout	Component Name
Preliminary Procedures 1. Open the rear compartment lid. 2. Pull back on the rear compartment trim panel to expose the tail lamp assembly nut, and reposition the trim panel on reinstallation. 3. Disengage the rear compartment weather-strip from the rear tail lamp area.	
1	Tail Lamp Assembly Nut (Qty: 3) CAUTION: Refer to <u>Fastener Caution</u> . Tighten 6 N.m (53 lb in)
2	Tail Lamp Assembly Procedure 1. Pull the top of the lamp assembly slightly outward. 2. Pull the lamp rearward in order to disconnect the two outer locator pins from the bodyside outer panel. 3. Lift and slightly swing left, for the left tail lamp, right for the right tail lamp, in order to clear the rear bumper fascia. 4. Extreme care should be taken when disconnecting the tail lamp electrical connector from the tail lamp housing. 5. Use only a flat-bladed tool 3/8" (9.5 mm) wide at the tip and insert the flat-blade

between the upper lamp housing and electrical connector locking tab.

6. Carefully insert the flat-blade no more that 5/8" (15.8 mm) deep into the tail lamp electrical connector opening.
7. Depress the locking tab, downward on top of the electrical connector and pull to disconnect the electrical connector from the tail lamp assembly.
8. Remove the tail lamp assembly.

IMPORTANT:

Upon tail lamp installation, ensure the tail lamp seal is in position first, secure the tail lamp to the vehicle second, then connect the tail lamp electrical connector third.

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