

HEADLIGHT DOORS

1998 ACCESSORIES & EQUIPMENT General Motors Corp. - Headlight Doors

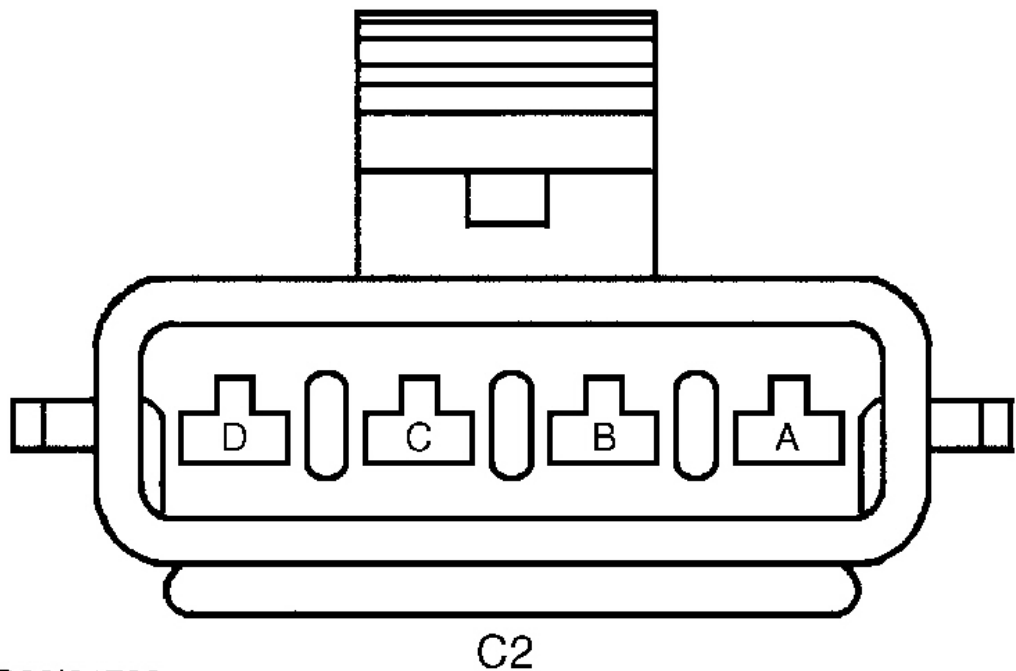
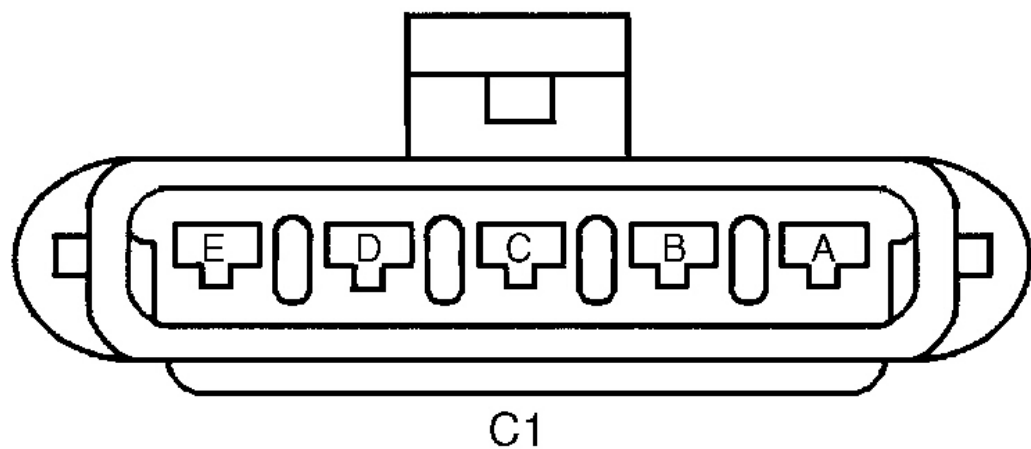
DESCRIPTION & OPERATION

NOTE: Headlight Doors Module (HDM) may also be referred to as headlight opening door actuator control module.

Headlight doors are actuated by reversible electric motors mounted near each headlight door. Battery voltage is applied at all times to terminals "B" and "E" of Headlight Doors Module (HDM) 5-pin connector C1. See **Fig. 1** . Module also has a 4-pin connector C2 which supplies output voltage to door motors.

Depending on model and headlight switch position (or daytime running lights module, if equipped), battery voltage is applied to terminals "A" and "C" of HDM 5-pin connector to activate HDM. See **WIRING DIAGRAMS** .

Based on voltage inputs from headlight switch, HDM directs voltage through 4-pin connector to headlight door motors to actuate headlight doors. To reverse motor direction, HDM reverses circuit polarity. HDM determines when doors are fully open, closed or jammed, and turns off power to motors to prevent overload.



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Fig. 1: Identifying Headlight Doors Module Connector Terminals
 Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATIONS

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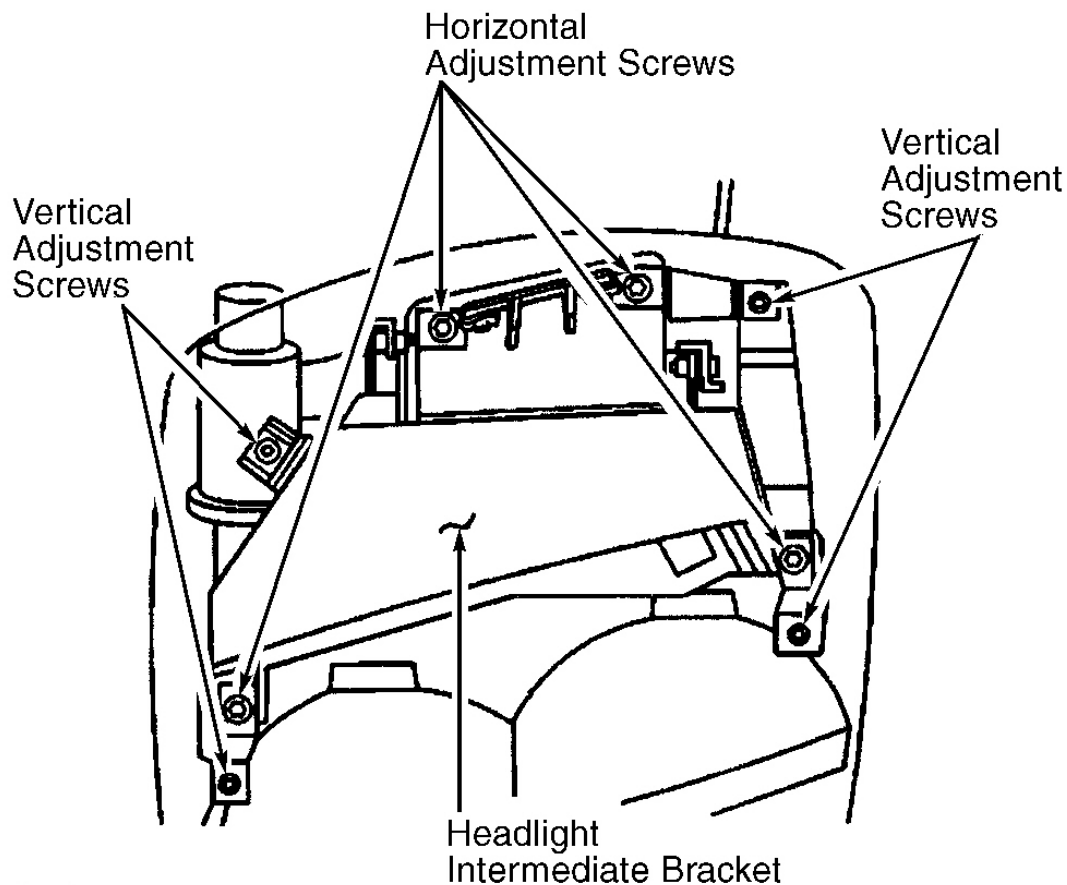
Application	Location
Headlight Doors Module (HDM)	Below Right Headlight

Headlight Switch	Right Side Of Steering Column
Underhood Electrical Center	Above Battery

ADJUSTMENTS

HEADLIGHT DOORS

1. Open hood. Disconnect negative battery cable. Turn manual headlight control knob counterclockwise to raise headlight. Disconnect headlight assembly electrical connector. Remove headlight bezel.
2. Remove both headlight opening door side retaining screws. Lower headlight manually. Remove retaining screws at rear of headlight opening door. Remove headlight opening door.
3. If horizontal adjustment is necessary, loosen headlight intermediate bracket-to-headlight assembly retaining screws. See **Fig. 2** .
4. Position headlight intermediate bracket as required and retighten retaining screw to 17 INCH lbs. (1.9 N.m).
5. If vertical adjustment is necessary, tighten vertical adjusting screws to lower, or loosen screws to raise headlight door. See **Fig. 2** .
6. To adjust headlight opening door stop position, tighten or loosen door stop screw as necessary.
7. To install headlight opening door, reverse removal procedure. Inspect fit of headlight opening door to hood, fender and front fascia. If fit is unsatisfactory, repeat steps 3) through 6).
8. If fit is satisfactory, install bezel. To complete bezel installation, reverse removal procedure.



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Fig. 2: Identifying Headlight Door Opening Adjustment Screws
Courtesy of GENERAL MOTORS CORP.

TROUBLE SHOOTING

1. Check headlight door fuses No. 3 (10-amp) and No. 4 (10-amp) located in underhood electrical center.
2. Check for poor contact at headlight door motor connectors and ground contacts. Check for proper installation of aftermarket electronic equipment which may affect other systems.
3. Check for broken or partially broken wire inside insulation which would cause system malfunction, but check good in continuity/voltage check.
4. Check door linkage for mechanical binding before performing electrical tests, as high torque load may cause headlight door motors to stop operating before reaching end of travel.

SYSTEM TESTING

CAUTION: HDM contains solid-state circuitry. DO NOT apply voltage (ohmmeter or

other source) to HDM internal circuits.

CAUTION: DO NOT plug in headlight doors module unless battery is connected and headlight switch is in OFF position.

NOTE: Headlight doors may be opened and closed manually by rotating knob on headlight door motor.

BOTH HEADLIGHT DOORS ALWAYS OPEN

1. Check headlight system operation. If headlights operate properly, go to next step. If headlights do not operate properly, locate and repair problem in headlight system. See **WIRING DIAGRAMS** .
2. Turn headlights OFF. Disconnect 5-pin Headlight Doors Module (HDM) connector C1. See **Fig. 1** . Using DVOM, check voltage between HDM connector C1, terminal "C" (Dark Green wire) and ground. If battery voltage exists, go to next step. If battery voltage does not exist, go to step 5).
3. Check for continuity between HDM connector C1, terminal "D" (Black wire) and ground. If continuity exists, go to step 5). If continuity does not exist, repair open in Black wire between connector C1 and splice pack No. 100. See **WIRING DIAGRAMS** . Recheck system operation.
4. Replace HDM. Recheck system operation.
5. Disconnect underhood electrical connector C3. Using DVOM, check continuity between underhood electrical center connector C3, terminal "B" (Orange wire) and HDM connector C1, terminal "C" (Orange wire). If continuity exists, go to next step. If continuity does not exist, go to step 9).
6. Disconnect underhood electrical center connector C2. Using DVOM, check voltage between underhood electrical center connector C2, terminal E6 (Dark Green wire) and ground. If battery voltage exist go to next step. If battery voltage does not exist, go to step 8).
7. Replace underhood electrical center. Recheck system operation.
8. Disconnect connector C209. See **WIRING DIAGRAMS** . Check continuity in Dark Green wire between underhood electrical center connector C2, terminal E6 and connector C209 terminal "T". If continuity exists, go to next step. If continuity does not exist, repair open in Dark Green wire between underhood electrical center connector C2 and connector C209.
9. Replace headlight switch. Recheck system operation.

BOTH HEADLIGHT DOORS ALWAYS CLOSED

1. Check headlight system operation. If headlights operate properly, go to next step. If headlights do not operate properly, locate and repair problem in headlight system. See **WIRING DIAGRAMS** .
2. Turn headlights on. Disconnect 5-pin Headlight Doors Module (HDM) connector C1. See **Fig. 1** . Using DVOM, check voltage between HDM connector C1, terminal "C" (Dark Green wire) and ground. If battery voltage exists, go to next step. If battery voltage does not exist, go to step 5).
3. Check for continuity between HDM connector C1, terminal "D" (Black wire) and ground. If continuity exists, go to step 5). If continuity does not exist, repair open in Black wire between HDM connector C1 and splice pack No. 100. See **WIRING DIAGRAMS** . Recheck system operation.

4. Replace HDM. Recheck system operation.
5. Disconnect underhood electrical connector C3. Using DVOM, check continuity between underhood electrical center connector C3, terminal "B" (Orange wire) and HDM connector C1, terminal "A" (White wire). If continuity exists, go to next step. If continuity does not exist, go to step 9).
6. Disconnect underhood electrical center connector C2. Using DVOM, check voltage between underhood electrical center connector C2, terminal F4 (White wire) and ground. If battery voltage exist go to next step. If battery voltage does not exist, go to step 8).
7. Replace underhood electrical center. Recheck system operation.
8. Disconnect connector C209. See **WIRING DIAGRAMS** . Check continuity in Dark Green wire between underhood electrical center connector C2, terminal F4 and connector C209, terminal "S". If continuity exists, go to next step. If continuity does not exist, repair open in White wire between underhood electrical center connector C2 and connector C209.
9. Replace headlight switch. Recheck system operation.

REMOVAL & INSTALLATION

WARNING: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See **COMPUTER RELEARN PROCEDURES** article in **GENERAL INFORMATION** section before disconnecting battery.

NOTE: Headlight doors may be opened and closed manually by rotating knob on headlight door motor.

HEADLIGHT ASSEMBLY

Removal

1. Open hood. Disconnect negative battery cable. Turn manual headlight control knob counterclockwise to raise headlight. Disconnect headlight assembly electrical connector. Remove headlight bezel. Remove front fascia lower closeout panel. Remove brake caliper cooling duct.
2. On right headlight, disconnect Headlight Doors Module (HDM) electrical connector. On right and left headlight, support headlight assembly. Remove 3 headlight bracket-to-headlight stud plate nuts. Remove 2 headlight bracket-to-frame rail bolts. Carefully remove headlight assembly from vehicle.

Installation

Position headlight assembly in vehicle. Loosely install 2 headlight bracket-to-frame rail bolts. Loosely install 3 headlight bracket-to-headlight stud plate nuts. Starting with upper location, tighten headlight bracket-to-frame rail bolts to 15 ft. lbs. (20 N.m). Starting with upper inner location, tighten headlight bracket-to-headlight stud plate nuts to 89 INCH lbs. (10 N.m). To complete installation, reverse removal procedure. Recheck system operation.

HEADLIGHT MOTOR/ACTUATOR

Removal & Installation

1. Remove appropriate headlight assembly. See **HEADLIGHT ASSEMBLY** . Disconnect headlight bulb wiring harnesses. Mark linkage-to-motor placement for installation reference. Remove nut securing headlight assembly pivot arm to headlight motor/actuator. Remove 3 motor-to-headlight assembly bolts. Remove headlight motor/actuator.
2. To install, reverse removal procedure. Tighten headlight motor-to-headlight assembly bolts to 60 INCH lbs. (6.8 N.M). Tighten headlight assembly pivot arm nut to 50 INCH lbs. (5.6 N.m).

HEADLIGHT DOORS MODULE (HDM)

Removal & Installation

1. Open hood. Disconnect negative battery cable. Turn manual headlight control knob counterclockwise to raise right headlight. Disconnect right headlight assembly electrical connector.
2. Remove front fascia right lower closeout panel. Release and reposition brake caliper cooling duct. Disconnect HDM electrical connector. Remove nuts, and remove HDM from vehicle. To install, reverse removal procedure.

WIRING DIAGRAMS

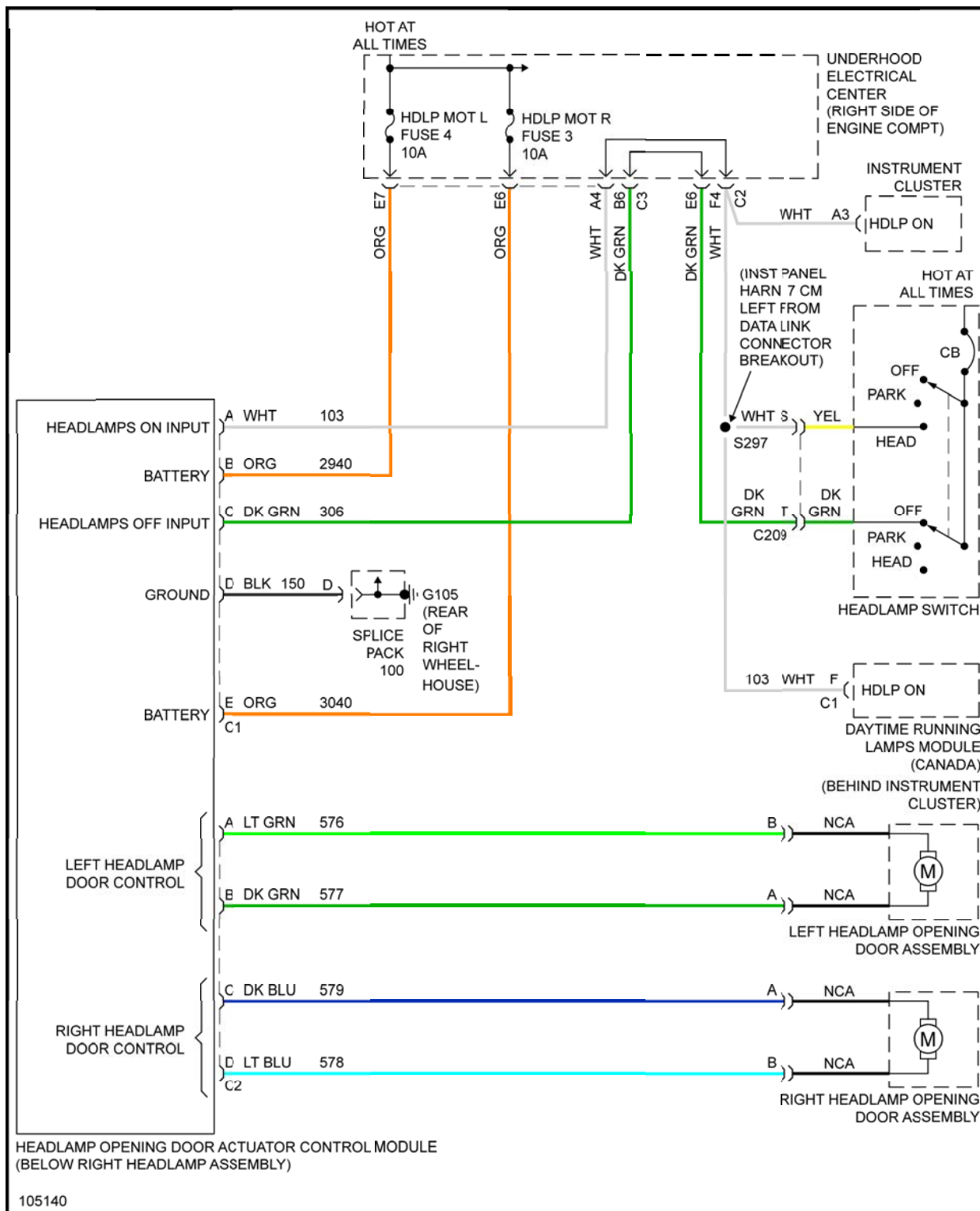


Fig. 3: Headlight Doors Wiring Diagram



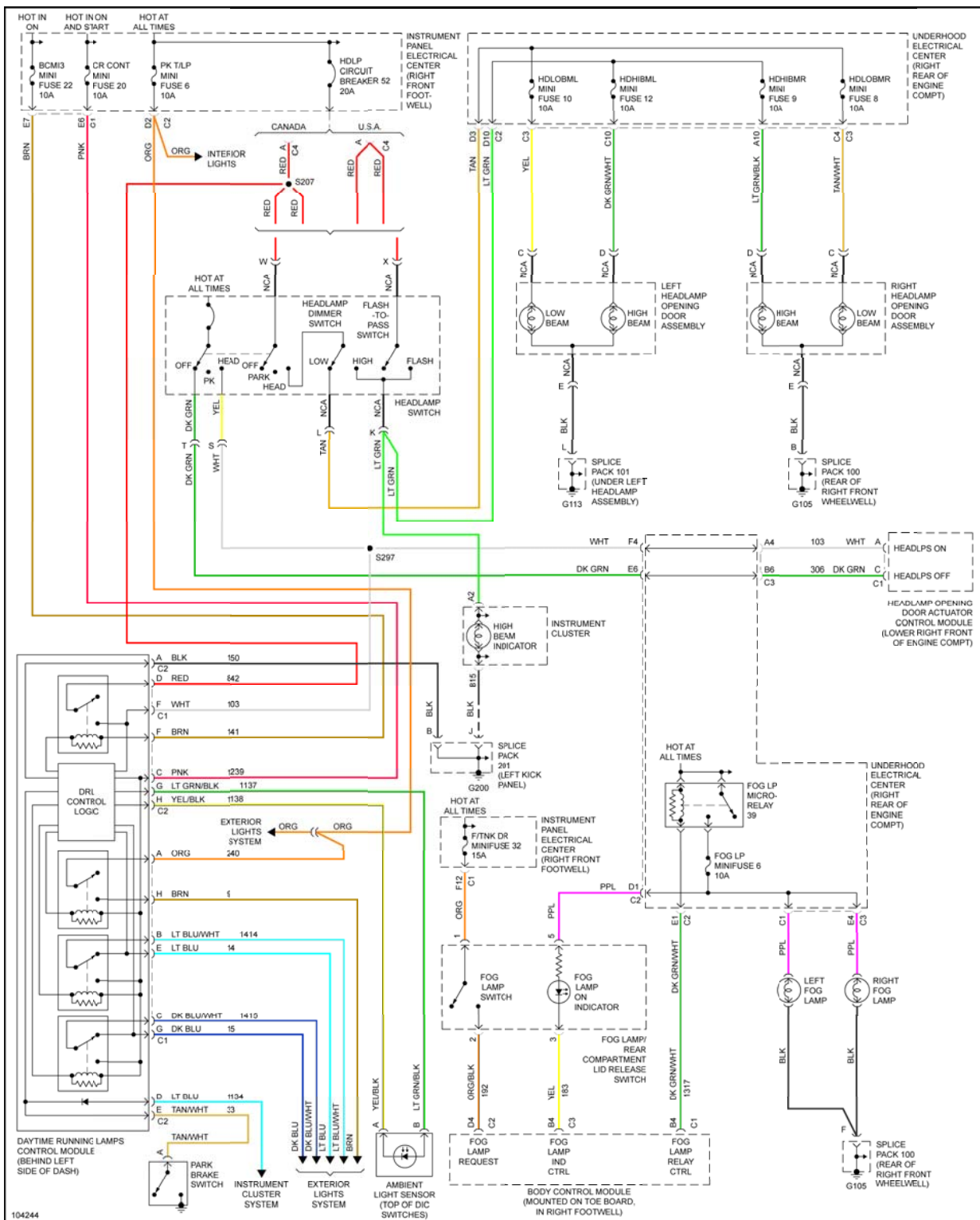


Fig. 4: Headlight System & Daytime Running Lights Wiring Diagram

