

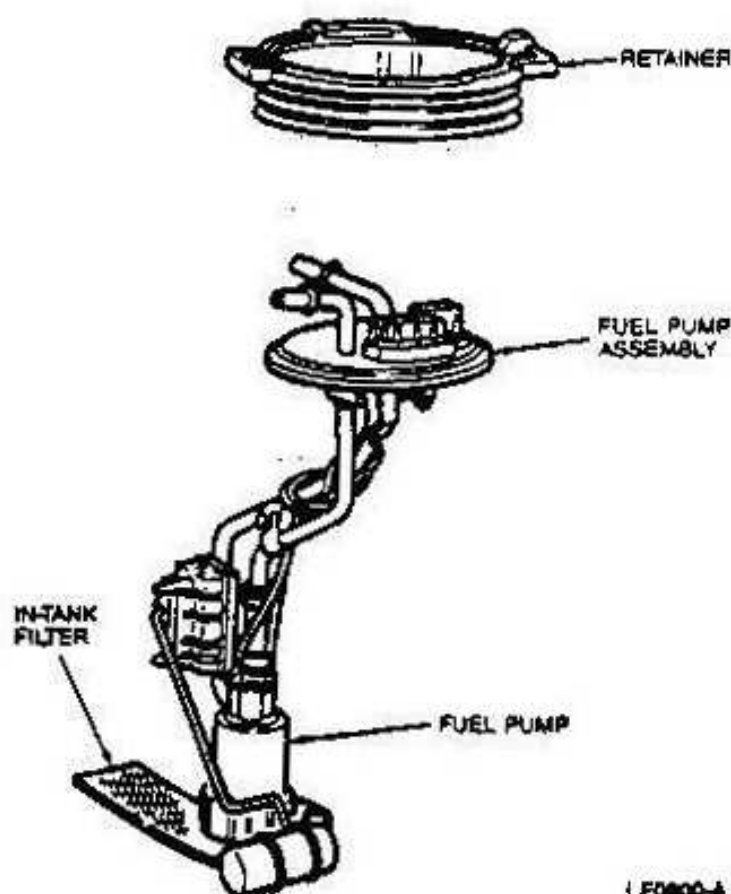
## SECTION 24-35 Electronic Fuel Pump

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### DESCRIPTION

The Laforza is equipped with a single electronic fuel pump. The fuel pump is a high-pressure unit, and is attached to an assembly mounted to the fuel tank. The fuel pump assembly and retainer are accessible through a hole in the sheet metal beneath the luggage compartment carpeting.

**WARNING: DO NOT SMOKE, OR CARRY LIT TOBACCO OR AN OPEN FLAME OF ANY TYPE WHEN WORKING ON OR NEAR FUEL-RELATED COMPONENTS. HIGHLY FLAMMABLE MIXTURES ARE ALWAYS PRESENT AND MAY BE IGNITED, RESULTING IN POSSIBLE INJURY.**



LF0800-A

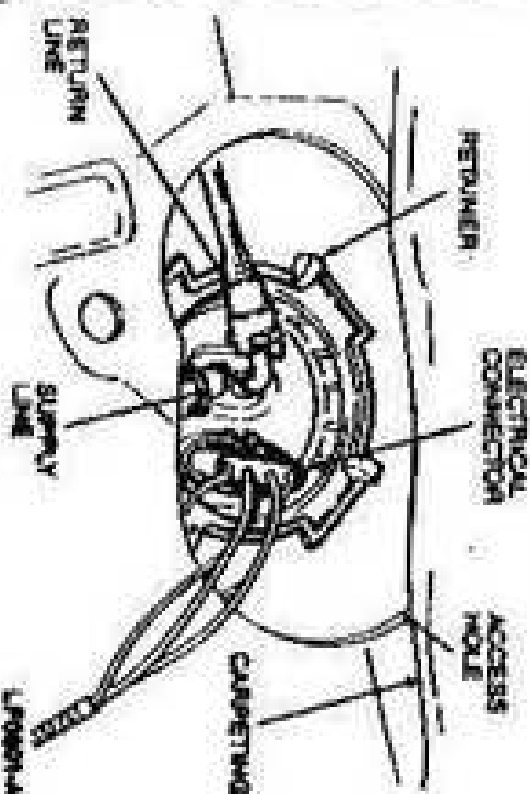
## REMOVAL AND INSTALLATION

### Fuel Pump

#### Removal

**CAUTION:** The fuel system contains pressurized fuel even after vehicle shut down, and will maintain this pressure for a long period of time.

1. Relieve the fuel pressure. Refer to Section 24-01.
2. Remove the sill panel and loosen all other components as necessary to access the luggage compartment carpeting. Refer to Sections 45-03 and 45-26.
3. Push the carpeting towards front of the vehicle to expose the fuel pump access hole.



4. Disconnect the electrical connector.
5. Tag and disconnect the fuel lines.
6. Unscrew the retainer and remove it.

7. Remove the fuel pump assembly, being careful not to knock the pickup filter off and into the fuel tank.
8. Cover the access hole to prevent excessive gasoline fumes from escaping the fuel tank.
9. Remove the pickup filter from the fuel pump.
10. Disconnect the two electrical leads to the fuel pump.
11. Disconnect the hose from the fuel pump.
12. Remove the fuel pump from the assembly.

#### Installation

1. Install the fuel pump on the assembly.
2. Connect the hose to the fuel pump.
3. Connect the electrical leads to the fuel pump.
4. Install the pickup filter onto the fuel pump.
5. Remove the cover from the access hole.
6. Position the fuel pump assembly into the fuel tank, being careful not to knock off the pickup filter.
7. Install the retainer.
8. Connect the fuel lines.
9. Connect the electrical connector.
10. Test the fuel pump for proper operation by running the engine.
11. Pull the luggage compartment carpeting back to its proper position.
12. Install the sill panel and tighten all other necessary components.

DIAGNOSIS AND TESTING (Continued)

Electrical System Operation

At all times, battery voltage is applied through fuse link 'E' and the Y wires to the contacts of the EEC power relay and the fuel pump relay. When the coil of the EEC power relay is activated, the contacts of the EEC power relay are pulled closed and voltage is applied through this relay to the coil of the fuel pump relay. With a ground applied to the coil of the fuel pump relay by the T/LG wire of the electronic engine controls, the contacts of the fuel pump relay are pulled closed and voltage is now applied through

the BR wire to the inertia switch. With the inertia switch closed, current flows through the inertia switch and the PK/BK wire to the fuel pump. Under these conditions, the fuel pump will operate with a ground applied to the circuit through the BK wire of the fuel pump and G500. When the contacts of the fuel pump relay are closed, a signal to the electronic engine controls is supplied through the BR wire to allow monitoring of system operation.

Fuel gauge operation is described in Section 33-01.

TROUBLESHOOTING HINTS

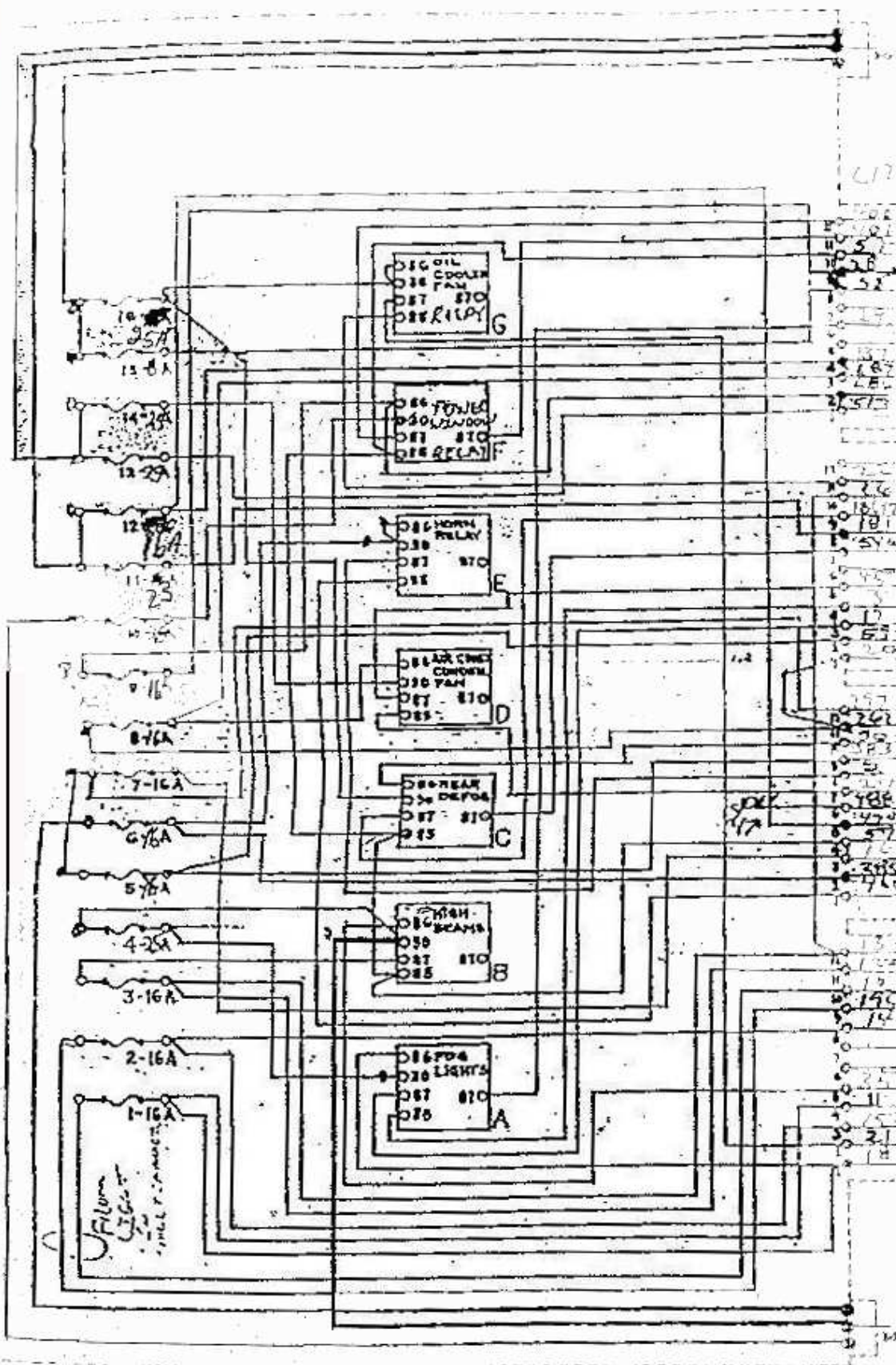
CONDITION	POSSIBLE CAUSE	CORRECTIVE ACTION
<ul style="list-style-type: none"><li>Fuel Pump does not operate.</li></ul>	<ul style="list-style-type: none"><li>Inertia Switch is open.</li><li>Fuse Link "E" is open.</li><li>Fuel Pump Relay not operating.</li><li>No voltage at PK/BK wire of Fuel Pump with prior checks completed.</li><li>Poor continuity of BK wire from Fuel Pump to G500.</li><li>Malfunctioning Fuel Pump.</li></ul>	<ul style="list-style-type: none"><li>Reset Inertia Switch.</li><li>Check continuity of Fuse Link and replace if required.</li><li>Check Y, R, T/LG, and BR wires for opens or shorts to ground between Relay and Fuse Link "E," Inertia Switch, and Electronic Engine Controls. Check Fuse Link "F" and EEC Power Relay. Also check connections for looseness or corrosion. If no concerns are found, check Fuel Pump Relay and replace if necessary.</li><li>Check for opens or shorts to ground in PK/BK wire. Check applicable connections for looseness and corrosion.</li><li>Check for opens in BK wire. Also check connection at G500. Repair as required.</li><li>Replace Fuel/Pump Sender Unit.</li></ul>
<ul style="list-style-type: none"><li>Fuel Gauge does not operate properly.</li></ul>	<ul style="list-style-type: none"><li>See Section 33-01.</li></ul>	<ul style="list-style-type: none"><li>See Section 33-01.</li></ul>

CLP0000A

### System Schematic







Power windows  
Power windows  
Ground  
Wiper switch power feed  
Radio

Fog light indicator

To Light switch power

From Ign. switch acc. feed  
Power seats

OIL TEMP SWITCH

TO FOG LIGHT SWITCH

REAR WINDOW DEFOG

AIR FLOW DISTRIBUTION UNIT

HORN VIBRATOR

AIR FLOW CONTROL VALVE

FROM FOG LIGHT SWITCH

TO FOG LIGHTS

POWER WINDOWS

COIL, SEE POWER

C133 - Run

EXTENSION, SEE POWER

FROM LIGHT SWITCH

FROM LIGHT SWITCH

TO HORN

FROM LIGHT SWITCH

WIPER SWITCH

INTERIOR LIGHTS, OR LIN

CRUISE

ENGINE ACCESSORY

EMERGENCY FLASHER

FROM HORN BUTTON

C135

LEFT HIGH BEAM

RIGHT HIGH BEAM

FROM LIGHT SWITCH-12

FROM LIGHT SWITCH-12

PARK LIGHTS LEFT SIDE

FROM LIGHT BEAM SW

RIGHT LOW BEAM

PARK LIGHTS RIGHT

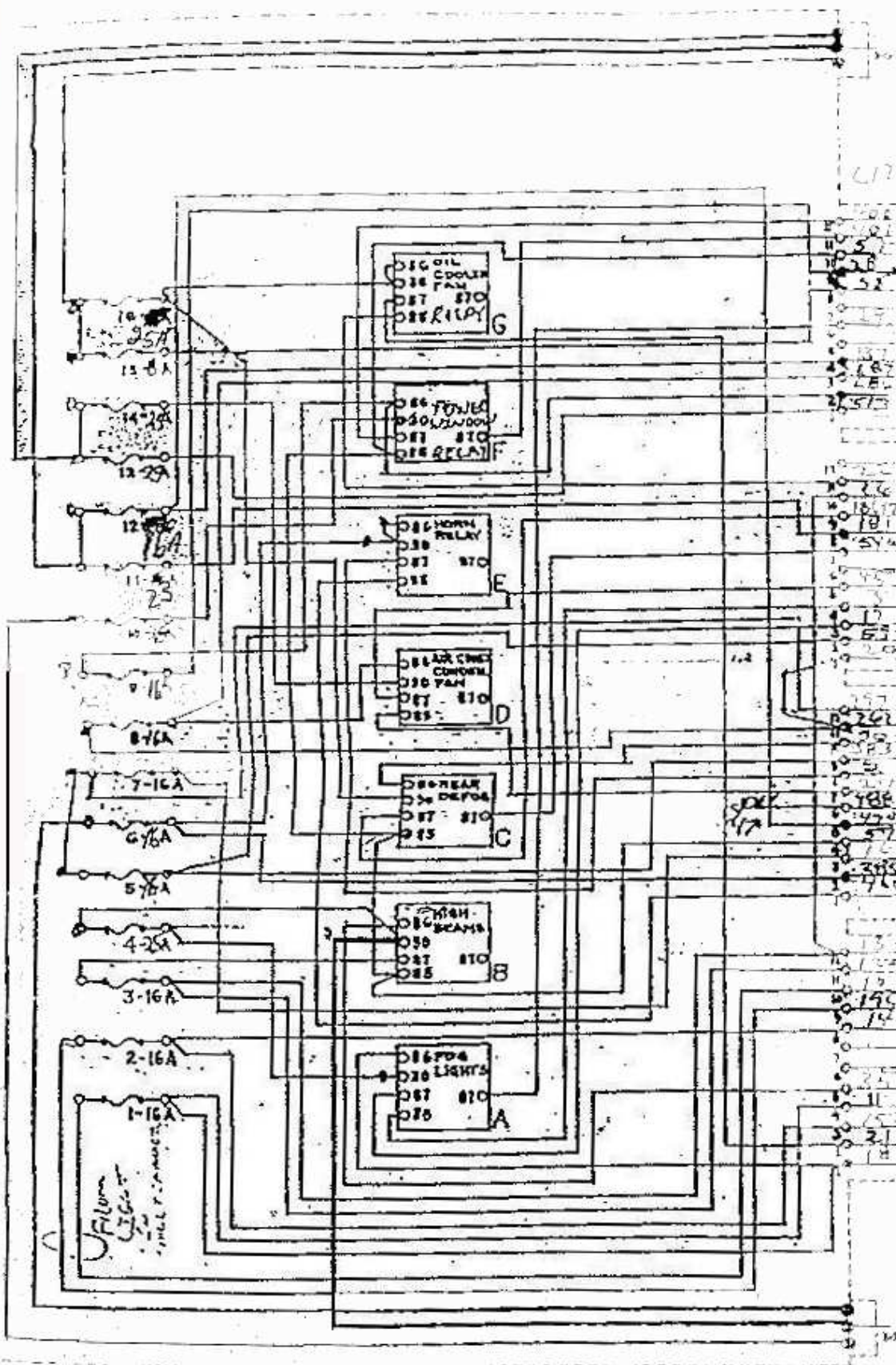
GIL COBBLE PDI

LEFT LOW BEAM

4	8	12
3	7	11
2	6	10
1	5	9

CONNECTOR PIN ARRANGEMENT





Power Windows  
Power windows  
Ground  
Wiper switch power feed  
Radio

Fog light indicator

To Light switch power

From Ign. switch acc. feed  
Power seats

OIL TEMP SWITCH  
TO FOG LIGHT SWITCH  
REAR WINDOW DEFOG  
AIR FLOW DISTRIBUTION UNIT  
HORN RELAY

REAR CHASE COOL FAN  
FROM FOG LIGHT SWITCH  
TO FOG LIGHTS  
POWER THROUGH  
COIL, RELAY POWER

FROM LIGHT SWITCH-12  
FROM LIGHT SWITCH-12  
PARK LIGHTS LEFT SIDE  
FROM LIGHT BEAM SW  
RIGHT LOW BEAM  
PARK LIGHTS RIGHT  
OIL COOL FAN  
LEFT LOW BEAM

FROM LIGHT SWITCH-12  
FROM LIGHT SWITCH-12  
PARK LIGHTS LEFT SIDE  
FROM LIGHT BEAM SW  
RIGHT LOW BEAM  
PARK LIGHTS RIGHT  
OIL COOL FAN  
LEFT LOW BEAM

FROM LIGHT SWITCH-12  
FROM LIGHT SWITCH-12  
PARK LIGHTS LEFT SIDE  
FROM LIGHT BEAM SW  
RIGHT LOW BEAM  
PARK LIGHTS RIGHT  
OIL COOL FAN  
LEFT LOW BEAM

4	8	12
3	7	11
2	6	10
1	5	9

CONNECTOR PIN ARRANGEMENT

## HEADLIGHT SYSTEM

32.02

### HOW THE CIRCUIT WORKS

Battery voltage is applied at all times through Fuse 12 and the BR wire to the Headlight portion of the Combination Switch. When the Switch is turned to the Low Beam position, voltage is applied through the Switch and the O/LB wire to Fuse 1 and the W-R and R/BK wire of the Headlights. Since the Headlights are permanently grounded, the Low Beam portions will light whenever the Switch is in the Low Beam position.

If the Headlight portion of the Combination Switch is turned to the High Beam position, battery voltage is applied through Fuse 12, the BR wire, the Combination Switch and the O/W wire to the coil portion of the High Beam Relay. Since the Coil of the Relay receives a ground through the BK wire and G101 at all times, the contacts of the Relay are pulled closed. Voltage is now applied through Fuse Link "D", the R wire, the closed contacts of the High Beam Relay, Fuse 3, and the GN/W and GN/BK wires to the High Beam portion of the Headlights.

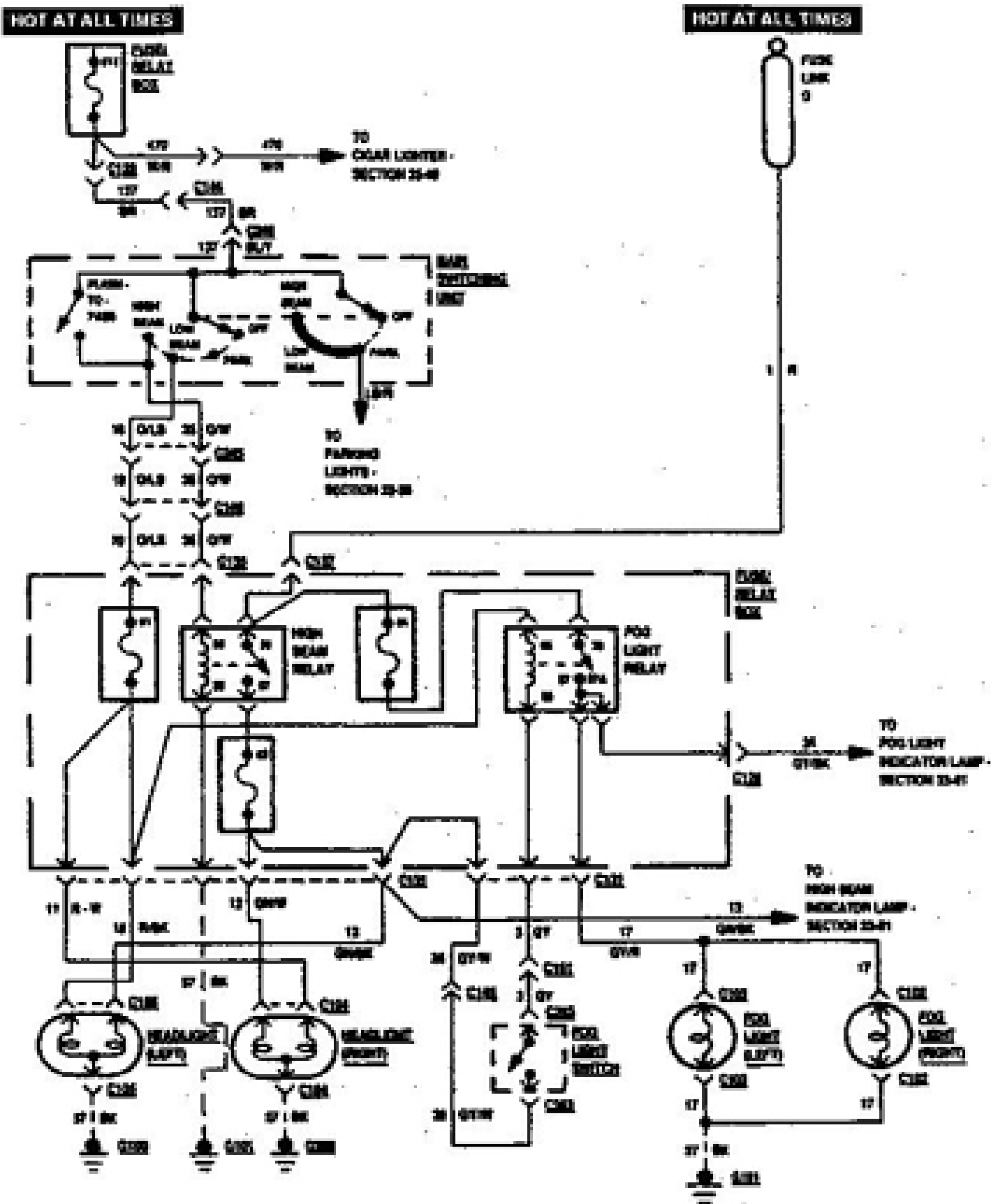
If the Flash-to-Pass switch portion of the Combination Switch is pulled closed, then the High Beam portion of the Headlights will be powered as described above for as long as the switch is closed. This can be done with the Headlight portion of the Combination Switch in either OFF or Low Beam and with the Fog Lights in either OFF or ON.

### *Fog Lights*

With the Headlight portion of the Combination Switch in the Low Beam position, voltage is applied through the O/LB wire and Fuse 1 to the coil of the Fog Light Relay. When the Fog light Switch is pressed, a ground is applied to the coil of the Relay through the GY wire, the Fog Light Switch, the GY/W wire, the GN/BK wire and High Beam side of the Left Headlight. At this point, the contacts of the Fog Light Relay are pulled closed and voltage is applied through Fuse Link "D", the R wire, Fuse 4, the closed contacts and the GY/R wires to the Fog Lights. A permanent ground is supplied to the Fog Lights through the GY/R wires, which splice into the BK wire and G101.

DIAGNOSIS AND TESTING

System Schematic



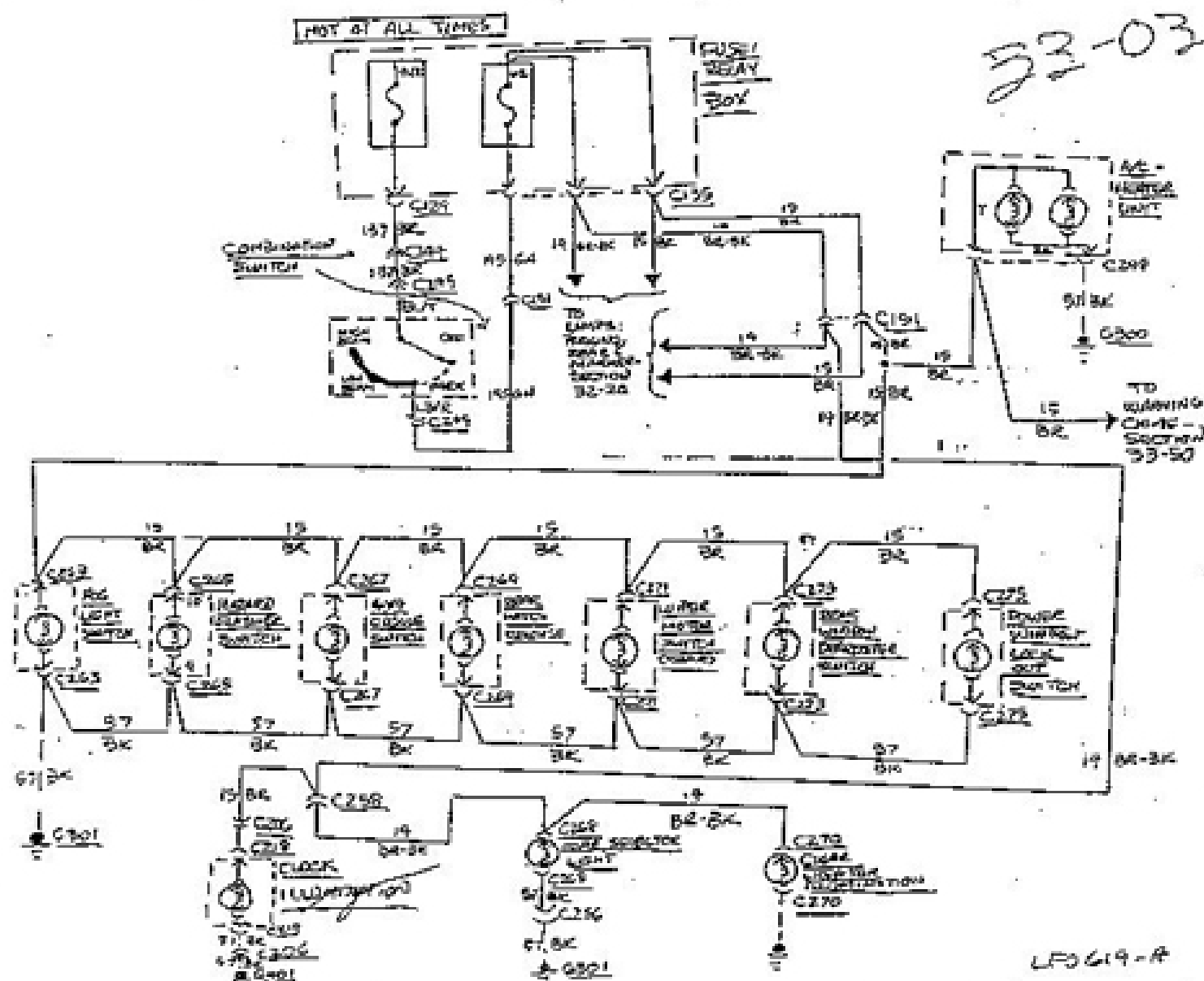


# INSTRUMENT CLUSTER/PANEL ILLUMINATION

33.03

## HOW THE CIRCUIT WORKS

Battery voltage is applied at all times through Fuse 12, the BR and BL/Y wires to the headlight portion of the Combination Switch. When the Combination Switch is turned to any position other than OFF, voltage is applied through the GN wire, Fuse 2 and the BR wires to the Instrument Panel Switch Illumination lights. At this time voltage is also applied through the BR wires to the Illumination Lights of the AC/Heater Unit. The Instrument Panel Switch Illumination Lights are permanently grounded through the BK wires and G301. The AC/Heater illumination lights are permanently grounded through the BK wire leading to G300. Fuse 2 also supplies voltage to the Clock Illumination, the Gear Selector Light, and the Cigar Lighter Illumination with the Combination Switch in any position other than OFF.



## HOW THE CIRCUIT WORKS

### *Tail, License, and Side Marker Lights*

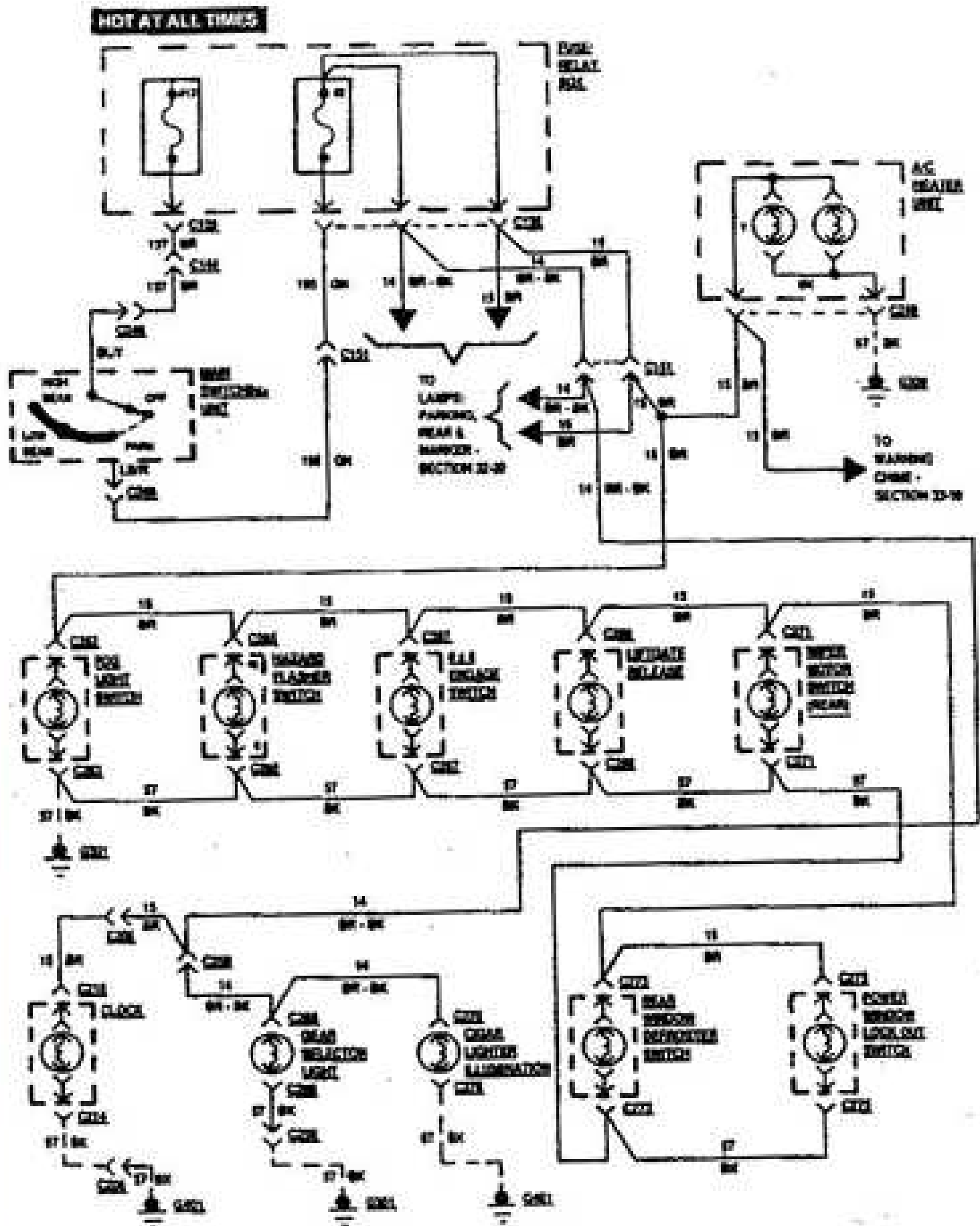
Battery voltage is applied at all times through Fuse 12 and the BR wire to the Combination Switch. With the Combination Switch in any position other than OFF, voltage is applied through the Combination Switch, the GN wire and Fuse 2 to the Tail, License, and Side Marker Lights. All of these lights feature a permanent ground.

### *Stop and Backup Lights*

With the ignition in ACC, RUN, or START, battery voltage is applied through fuse 10 and the GN/R wire to the Brake Light Switch. Voltage is also applied through the O and P/O wires to the Neutral Safety Switch. When the Brakes are applied, the Brake Light Switch is closed and voltage is then applied through the Brake Light Switch and the GN wires to the Stop Lights and High Mount Brake Light.

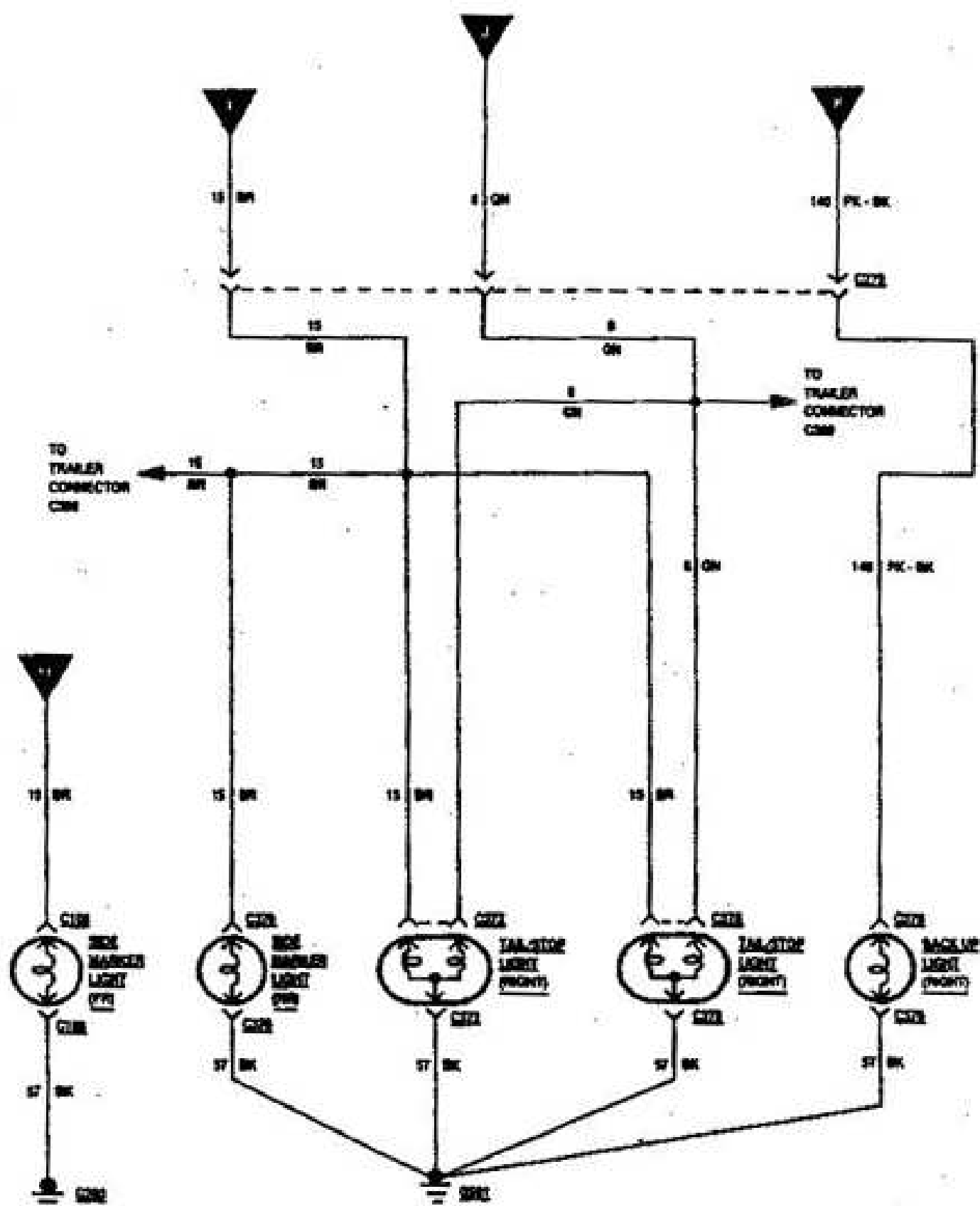
When the vehicle gear selector is placed in Reverse, voltage is applied through the closed Neutral Safety Switch and the PK-BL wires to the Backup Lights. These lights are permanently grounded through G500 and G501.

### System Schematic



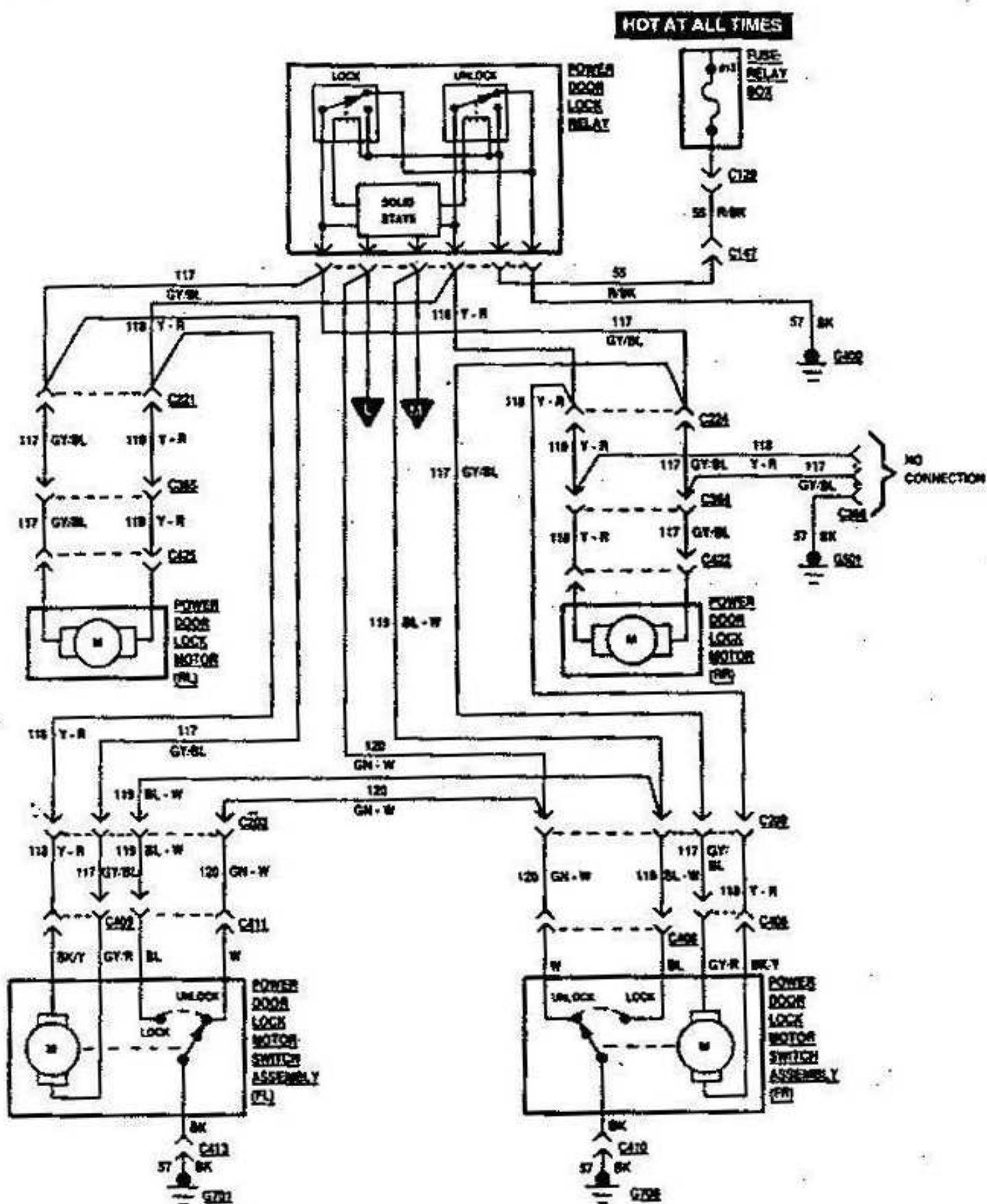




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## DIAGNOSIS AND TESTING

## System Schematic



## POWER DOOR LOCKS

44.16

### HOW THE CIRCUIT WORKS

Battery voltage is applied at all times through Fuse 15 and the R/BK wire to the Power Door Lock Relay. The Power Door Lock Relay is actually comprised of a LOCK relay and an UNLOCK relay. When the system is at rest, the contacts of both relays are grounded through G400. When the lever or door lock of either Power Door Lock Motor/Switch Assembly is moved to LOCK, a ground for the internal timer of the Power Door Lock Relay is supplied through the active lever, the contacts of the LOCK relay are pulled closed and current flows through the closed contacts and the GY/BL wires to all of the Power Door Lock Motors. The ground for the Power Door Lock Motors is through the inactivated contacts of the UNLOCK relay and G400. The Power Door Lock Motors will operate until the doors are locked and Motor operation is ceased. The internal timer of the Power Door Lock Relay will continue relay operation until the Motor travel is complete.

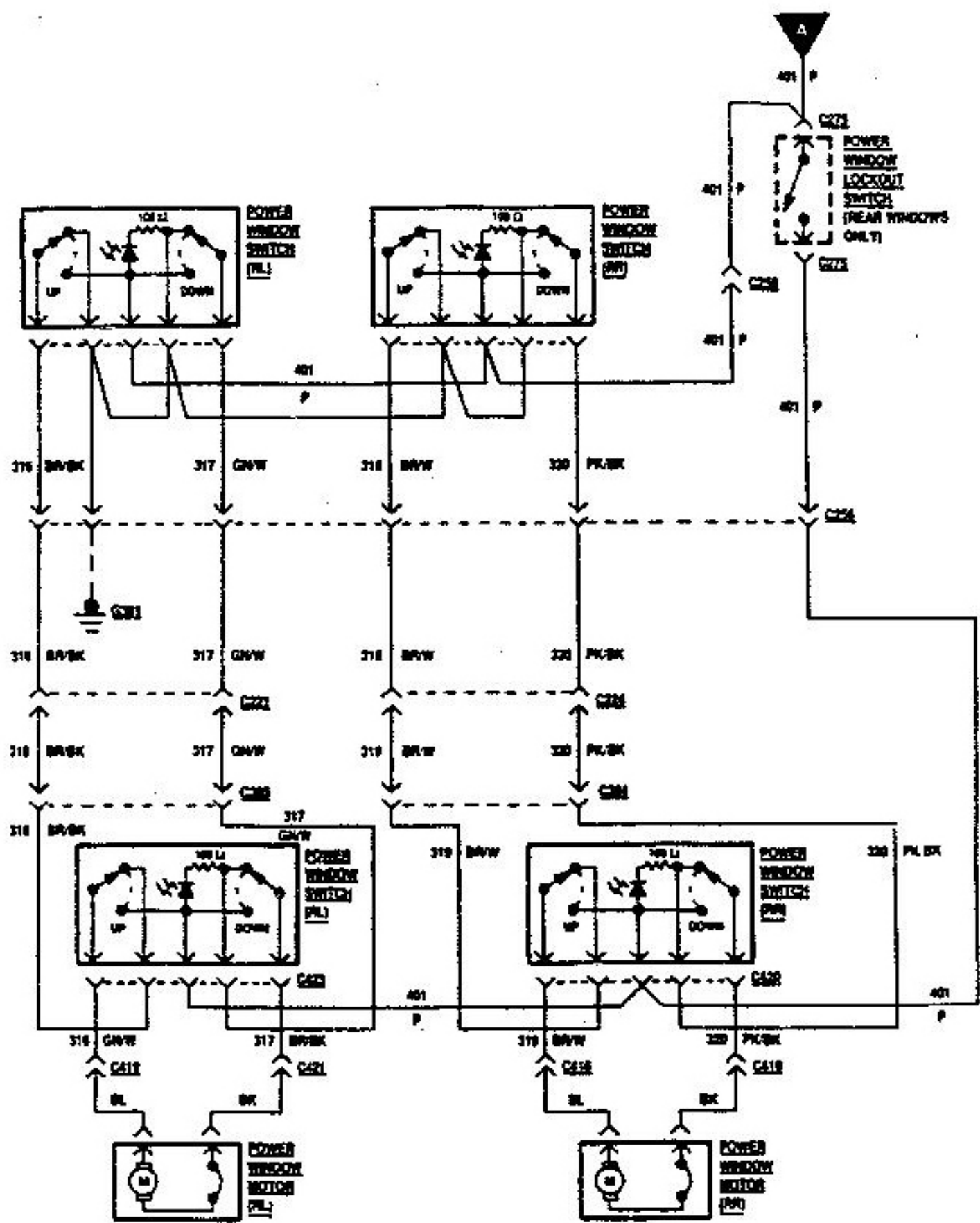
When the lever or door lock of either Power Door Lock Motor/Switch Assembly is moved to UNLOCK, a ground for the internal timer of the Power Door Lock Relay is supplied through the activated switch, the contacts of the UNLOCK relay are pulled closed and current flows through the closed contacts and BK/Y wires to all of the Power Door Lock Motors. The ground for the Power Door Lock Motors is now through the inactivated contacts of the LOCK relay and G400. The Power Door Lock Motors are now operating in the opposite direction from in LOCK.

All doors will also be unlocked whenever the Rear Hatch Release Switch is pressed. This is accomplished by providing a ground to the internal timer of the Power Door Lock Relay to activate the UNLOCK relay and complete Power Door Lock Motor activation and unlocking the described previously.

### *Rear Hatch Release*

Battery voltage is supplied at all times through Fuse 11 the W wire to the coil and contacts of the Rear Hatch Relay. When the Rear Hatch Release Switch is pressed, a ground for the coil of the Rear Hatch Release is provided through the W/BL wire, the closed Rear Hatch Release Switch, the BK wire, and G301. At this point, the contacts of the Rear Hatch Relay are pulled closed, and current flows through the R wire, the Rear Hatch Release Solenoid, and the BK wire to G501. With current flow, the Rear Hatch Release Solenoid will be activated and the Rear Hatch unlocked. As described above, the releasing of the Rear Hatch will unlock all doors of the vehicle.

# DIAGNOSIS AND TESTING (Continued)





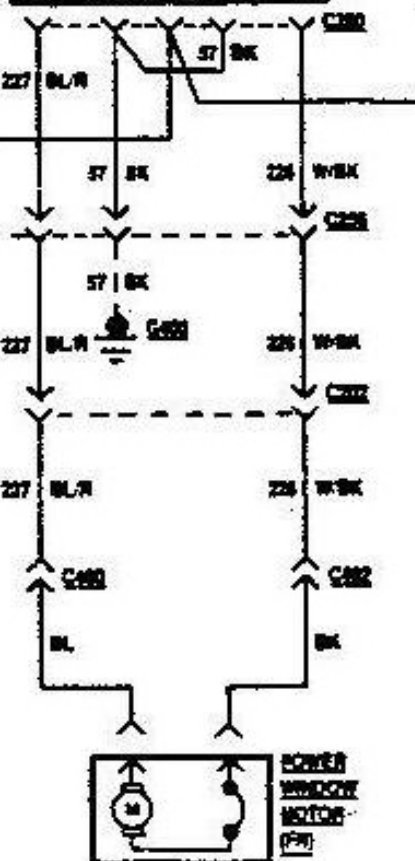
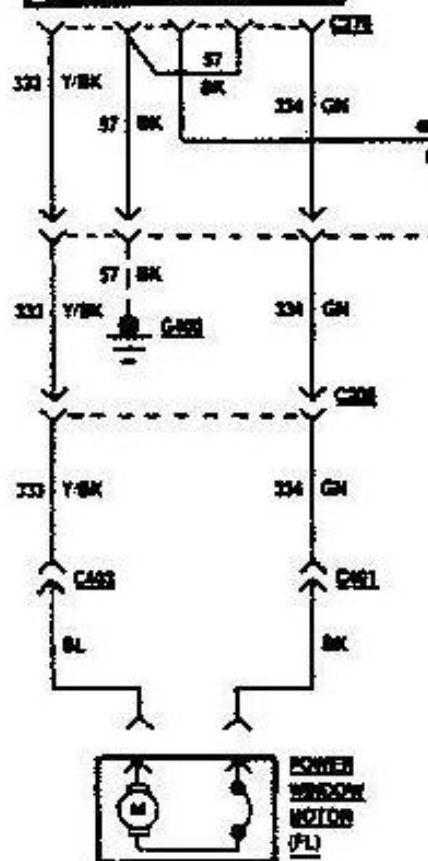
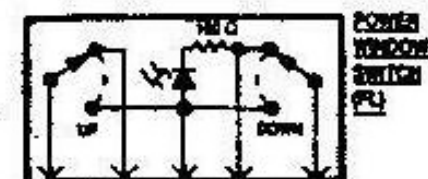
## DIAGNOSIS AND TESTING

## System Schematic

HOT IN ACC, RUN AND START

FROM IGNITION  
SWITCH -  
SECTION 31-20

HOT AT ALL TIMES

FUSE  
RELAY  
BOXPOWER  
WINDOW  
RELAYTO MOONROOF -  
SECTION 48-12

A

With the ignition in ACC, RUN, or START, battery voltage is applied through Fuse 10 to coil of the Power Window Relay. Since the coil receives a permanent ground through the BK wire and G101, the coil pulls the Relay contacts closed and time the ignition if not OFF. With the contacts of the Power Window Relay closed, battery voltage is applied through Fuse 10, the contacts of the Relay and the P wires to the Power Window Switches of the center console and the Power Window Lockout Switch. In the rest position, all of the center console switches are grounded through the BK wires and G400 for the Front Switches and G301 for the Rear Switches. A light emitting diode contained in the Switch illuminates whenever voltage is supplied to the switches through the Power Window Relay.

When a center console Front Switch is pressed UP, current flows through the closed UP contacts of the pressed switch, the affected Power Window Motor and the grounded UP Switch contacts. When downward movement of a front window is desired, the associated switch is pressed to supply voltage to the DOWN contacts. Current now flows through the closed DOWN contacts and the associated Power Window Motor to the grounded UP contacts of the pressed Power Window Switch. When downward movement of a window is desired, operation of the current is through the closed DOWN contacts and the associated Power Window Motor will reverse direction from upward movement.

When a center console Rear Window Switch is pressed, current flows through the P wire to the center console Rear Window Switches and the pressed contacts of the switch and the contacts of the corresponding rear door mounted Power Window Switch to the affected Power Window Motor. A ground for the Motor is supplied through the corresponding rear door mounted Power Window Switch and the opposite contacts of the pressed center console Rear Window Switch. The Power Window Lockout Switch allows the driver to disable the rear door mounted Power Window Switches. When the Power Window Lockout Switch is closed, voltage is supplied to the rear door mounted Power Window Switches through the P wire. If a rear door mounted Power Window Switch is pressed in the downward direction with the contacts of the Power Window Lockout Switch closed, current flows through the DOWN contacts of the Power Window Switch to the applicable Power Window Motor. The ground for the Power Window Motor is supplied through the closed UP contacts of the pressed switch, the BR/W or BL/BK wire, and the UP contacts of the corresponding center console mounted Power Window Switch to G301. Upward movement of the window will reverse Switch contacts and supply a ground through the GN/W or PK/BK wires and the UP contacts of the corresponding center console mounted Power Window Switch.

## TROUBLESHOOTING HINTS

* Single Light does not illuminate.	* Blown Bulb. * Corroded Socket	* Replace Bulb. * Clean or replace Socket.
* Rear Interior Lights inoperative.	* No voltage at affected light. * Poor continuity of BK wire from light to ground.	* Check for opens in power feed of light * Check for opens in BK wires. Check connection to ground.
* A/C Heater Unit illumination lights inoperative with Instrument Panel Switch illumination lights.	* No voltage at BR wire of C248. * Poor continuity of BK wire from Unit to G300. * Poor continuity of Y and BK wires of Unit.	* Check for opens in BR wire. * Check for opens in BK wire. * Check for opens in Y and BK wires.
* Instrument Panel Switch illumination lights inoperative with A/C-Heater Unit lights operating.	* Poor continuity of BR wire from C151 to Fog Light Switch. * Poor continuity of BK wire from Fog Light Switch to G301.	* Check for opens in BR wire. * Check for opens in BK wire.
* Certain Instrument Panel illumination lights operative while others are not.	* Poor continuity of BR wire between operative and inoperative lights. * Poor continuity of BK wire between operative and inoperative lights.	* Check for opens in BR wire between operative and inoperative lights. * Check for opens in BK wire between operative and inoperative lights.
* Clock Illumination, Gear Selector Light and Cigar Lighter Illumination inoperative with exterior lights ON.	* Poor continuity of BR-BK wire from C151 to C256.	* Check for opens in BR-BK wire.
* Gear Selector Light and Cigar Lighter Illumination inoperative.	* Poor continuity of BR-BK wire between C258 and C268.	* Check for opens in BR-BK wire.

### System Schematic





## ◆ WINDSHIELD WIPERS ◆

35.60

### HOW THE CIRCUIT WORKS

With the ignition in ACC, RUN, or START, battery voltage is applied through Fuse 9 and the O-BK wire to the Wiper Motor. When the Wiper Switch is moved to the LOW position, current flows through the Switch and the LB wire to the L terminal of the wiper Motor and the Motor operates at a low speed. A ground for the Motor is supplied at all times through G401. When the Switch is moved to the HIGH position, current flows through the Switch and the GY wire to the H terminal of the Wiper Motor and the Motor operates at a high speed.

If the Wiper Switch is turned to INT, current flows through the Switch and the BL-R wire to the closed "1" contacts of the Wiper Motor and the L terminal of the Wiper Motor. The "1" contacts of the internal relay are closed through the application of voltage on the BL-BK wire and a ground supplied by the Timer. This operation will continue until one sweep of the wipers is completed. At this point, the Timer will cease to supply a ground to the coil of the internal relay of the Wiper Motor and the contacts of the relay will move to the "2" position. Current now flows through the BL-BK wire to the RUN section of the internal switch of the Wiper Motor and the L terminal of the Wiper Motor. Since the movement of the Motor controls the arm of the internal switch, current will flow in this manner until the internal switch is moved to the PARK position by the Motor and is grounded. After a pause the Timer will pull the contacts of the internal relay to the "1" position and the process will repeat. After the completion of any windshield wiper usage and with the Wiper Switch in OFF, voltage will be applied through the BL-BK wire and the RUN contacts of the internal switch of the Wiper Motor to the arm of the internal switch, contacts "2" position and the L terminal of the Motor to complete parking of the wipers.

DIAGNOSIS AND TESTING (Continued)

