



1990

BMW 325i Convertible

Electrical

Troubleshooting

Manual

BMW of North America, Inc.
Woodcliff Lake, New Jersey

FOREWORD

In the interests of continuing technical development work we reserve the right to modify designs and equipment.

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Electrical
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Manual

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The purpose of this manual is to show electrical schematics in a manner that makes electrical troubleshooting easier. Electrical components which work together are shown together on one schematic. The Wiper-Washer schematic, for example, shows all of the electrical components in one diagram. At the top of the page is the fuse (positive) that powers the circuit. The flow of current is shown through all wires, connectors, switches, and motors to ground (negative) at the bottom of the page.

Within the schematic, all switches and sensors are shown "at rest," as though the Ignition Switch were off. For identification, component names are underlined and placed next to or above each component. Notes are included, describing how switches and other components work.

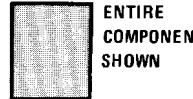
The power distribution schematic shows the current feed through all the connections from the Battery and Alternator to each fuse and the Ignition and Light Switches. If the Power Distribution schematic is combined with any other circuit schematic, a complete picture is made of how that circuit works. The Ground Distribution schematics show how several circuits are connected to common grounds.

All wiring between components is shown exactly as it exists in the vehicle; however, the wiring is not drawn to scale. To aid in understanding electrical operation, wiring inside complicated components has been simplified. The "Solid State" label designates electronic components.

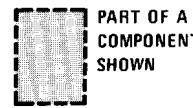
| WIRE SIZE CONVERSION CHART | |
|---|---------------------------------|
| METRIC (CROSSECTIONAL AREA IN MM ²) | AWG (AMERICAN WIRE GAUGE) |
| .5 | 20 |
| .75 | 18 |
| 1 | 16 |
| 1.5 | 14 |
| 2 | 14 |
| 2.5 | 12 |
| 4 | 10 |
| 6 | 8 |
| 8 | 8 |
| 16 | 4 |
| 20 | 4 |
| 25 | 2 |
| 32 | 2 |

| WIRE INSULATION | |
|-----------------|--------|
| ABBREVIATIONS | COLOR |
| BK | BLACK |
| BR | BROWN |
| RD | RED |
| YL | YELLOW |
| GN | GREEN |
| BU | BLUE |
| VI | VIOLET |
| GY | GRAY |
| WT | WHITE |
| PK | PINK |

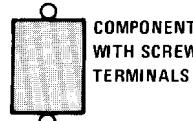
4 SYMBOLS



ENTIRE
COMPONENT
SHOWN



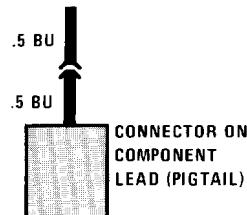
PART OF A
COMPONENT
SHOWN



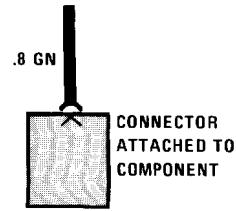
COMPONENT
WITH SCREW
TERMINALS



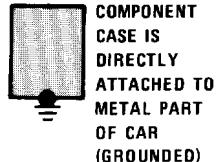
SOLID STATE
(INCLUDES ONLY
ELECTRONIC PARTS)



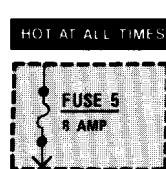
.5 BU
.5 BU
CONNECTOR ON
COMPONENT
LEAD (PIGTAIL)



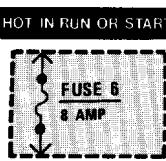
.8 GN
CONNECTOR
ATTACHED TO
COMPONENT



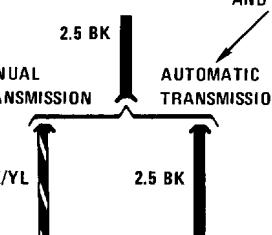
COMPONENT
CASE IS
DIRECTLY
ATTACHED TO
METAL PART
OF CAR
(GROUNDED)



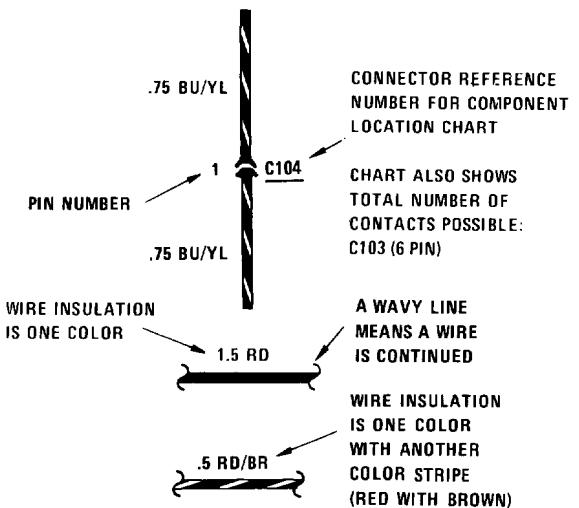
HOT AT ALL TIMES
INDICATES THAT FUSE 5
IS ALWAYS SUPPLIED
WITH POWER



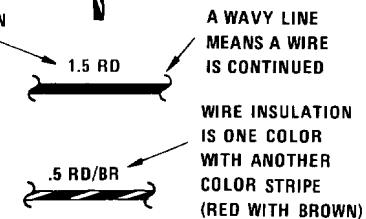
HOT IN RUN OR START
INDICATES THAT FUSE 6
IS SUPPLIED WITH POWER
WITH THE IGNITION
SWITCH IN THE RUN OR
START POSITIONS



WIRE CHOICES
FOR OPTIONS
ARE SHOWN
AND LABELED



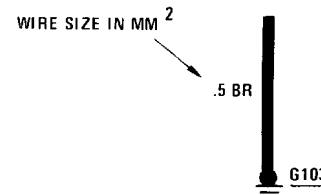
.75 BU/YL
PIN NUMBER
C104
.75 BU/YL
CONNECTOR REFERENCE
NUMBER FOR COMPONENT
LOCATION CHART
CHART ALSO SHOWS
TOTAL NUMBER OF
CONTACTS POSSIBLE:
C103 (6 PIN)



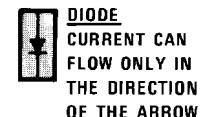
WIRE INSULATION
IS ONE COLOR
1.5 RD
A WAVY LINE
MEANS A WIRE
IS CONTINUED



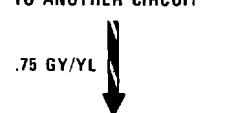
WIRE INSULATION
IS ONE COLOR
.5 RD/BR
WITH ANOTHER
COLOR STRIPE
(RED WITH BROWN)



WIRE SIZE IN MM²
.5 BR
G103
WIRE IS ATTACHED TO
METAL PART OF CAR
(GROUNDED)
GROUND IS NUMBERED
FOR REFERENCE ON
COMPONENT LOCATION CHART
OTHER CIRCUITS THAT SHARE
A GROUND ARE SHOWN
IN GROUND DISTRIBUTION



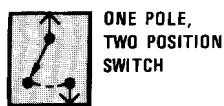
DIODE
CURRENT CAN
FLOW ONLY IN
THE DIRECTION
OF THE ARROW



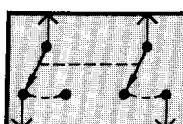
CIRCUIT REFERENCE –
A WIRE WHICH CONNECTS
TO ANOTHER CIRCUIT



.75 GY/YL
ACTIVE CHECK CONTROL

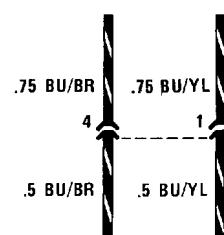


ONE POLE,
TWO POSITION
SWITCH

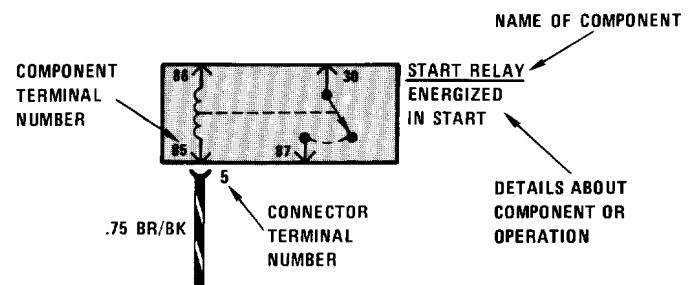


SWITCHES THAT
MOVE TOGETHER

DASHED LINE SHOWS
A MECHANICAL
CONNECTION
BETWEEN SWITCHES



.75 BU/BR .76 BU/YL
4 1 C104
.5 BU/BR .5 BU/YL
DASHED LINE SHOWS
PARTS OF THE
SAME CONNECTOR



NAME OF COMPONENT

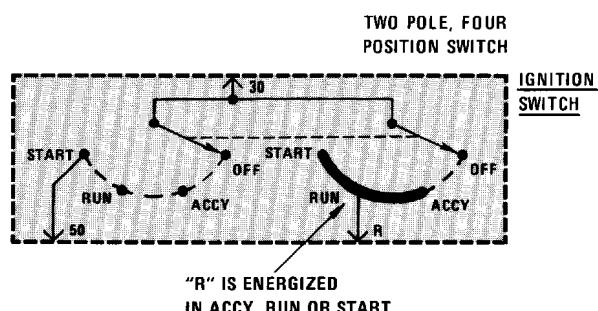
START RELAY
ENERGIZED
IN START

DETAILS ABOUT
COMPONENT OR
OPERATION



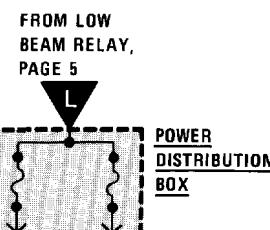
2.5 YL
TO POWER
DISTRIBUTION
BOX, PAGE 1

CURRENT PATH
IS CONTINUED
AS LABELED.
THE ARROW SHOWS
DIRECTION OF CURRENT
FLOW AND IS REPEATED
WHERE CURRENT
PATH CONTINUES.



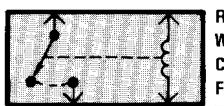
TWO POLE, FOUR
POSITION SWITCH

"R" IS ENERGIZED
IN ACCY, RUN OR START

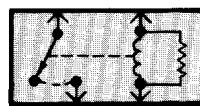


FROM LOW
BEAM RELAY,
PAGE 5

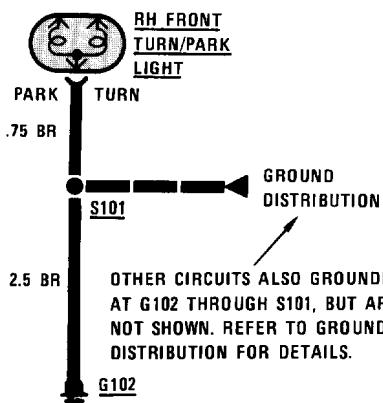
POWER
DISTRIBUTION
BOX



RELAY SHOWN
WITH NO
CURRENT
FLOWING
THROUGH
COIL



RESISTOR ACROSS COIL
IS FOR NOISE
SUPPRESSION



RH FRONT
TURN/PARK
LIGHT

PARK

TURN

.75 BR

S101

GROUND
DISTRIBUTION

2.5 BR
OTHER CIRCUITS ALSO GROUNDED
AT G102 THROUGH S101, BUT ARE
NOT SHOWN. REFER TO GROUND
DISTRIBUTION FOR DETAILS.

G102



LIGHT
EMITTING
DIODE

6 SYSTEMATIC TROUBLESHOOTING

TROUBLESHOOTING PROCEDURE

1. Verify the Problem

Operate the problem circuit to check the accuracy of the complaint. Note the symptoms of the inoperative circuit.

2. Analyze the Problem

Refer to the schematic of the problem circuit in the ETM. Determine how the circuit is supposed to work by tracing the current path(s) from the power feed through the circuit components to ground. Then based on the symptoms you noted in step 1 and your understanding of circuit operation, identify one or more possible causes of the problem.

3. Isolate the Problem

Make circuit tests to prove or disprove the preliminary diagnosis made in step 2. Keep in mind that a logical simple procedure is the key to efficient troubleshooting. Test for the most likely cause of failure first. Try to make tests at points which are easily accessible.

4. Repair the Problem

Once the specific problem is identified, make the repair using the proper tools and safe procedures.

5. Check the Problem

Operate the circuit to check for satisfactory circuit operation. Good repair practice calls for rechecking all circuits you have worked on.

TROUBLESHOOTING TOOLS

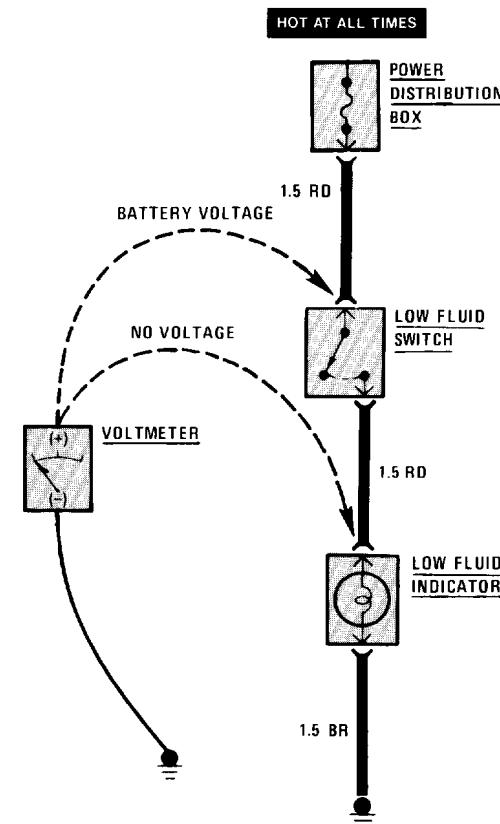
Isolating the problem (Step 3 of TROUBLESHOOTING PROCEDURES) requires the use of a **voltmeter** and/or **ohmmeter**. A voltmeter measures voltage at selected points in a circuit. An ohmmeter measures a circuit's resistance to current flow. It has an internal battery that provides current to the circuit under test. Disconnect the car battery when using an ohmmeter because the battery voltage will cause the ohmmeter to give false readings. Also, do not use an ohmmeter on solid-state components. The voltage that the ohmmeter applies to the circuit could damage these components.

TROUBLESHOOTING TESTS

Voltage Test

This test measures voltage in a circuit. By taking measurements at several points (terminals or connectors) along the circuit, you can isolate the problem.

To take a voltage measurement, connect the negative lead of the voltmeter to the battery's negative terminal or other known good ground. Then connect the positive lead of the voltmeter to the point you want to test. The voltmeter will measure the voltage present at that point in the circuit.

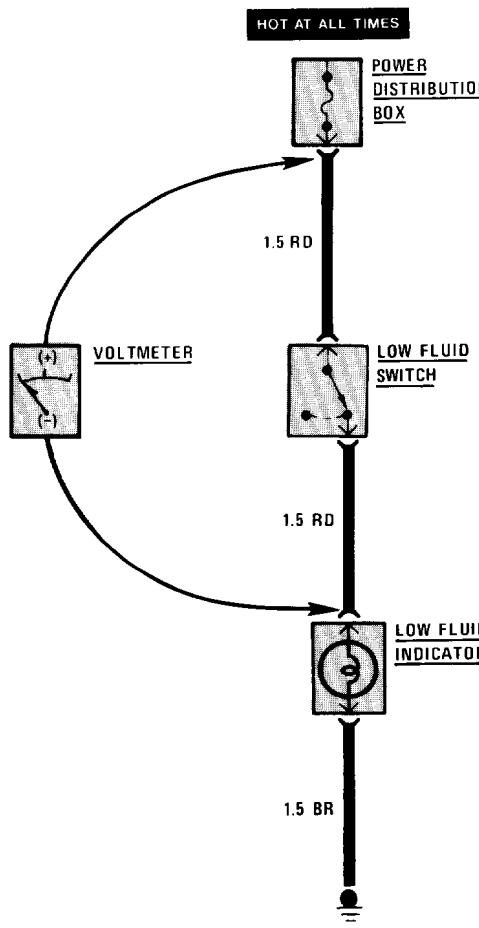


Voltage Test

Voltage Drop Test

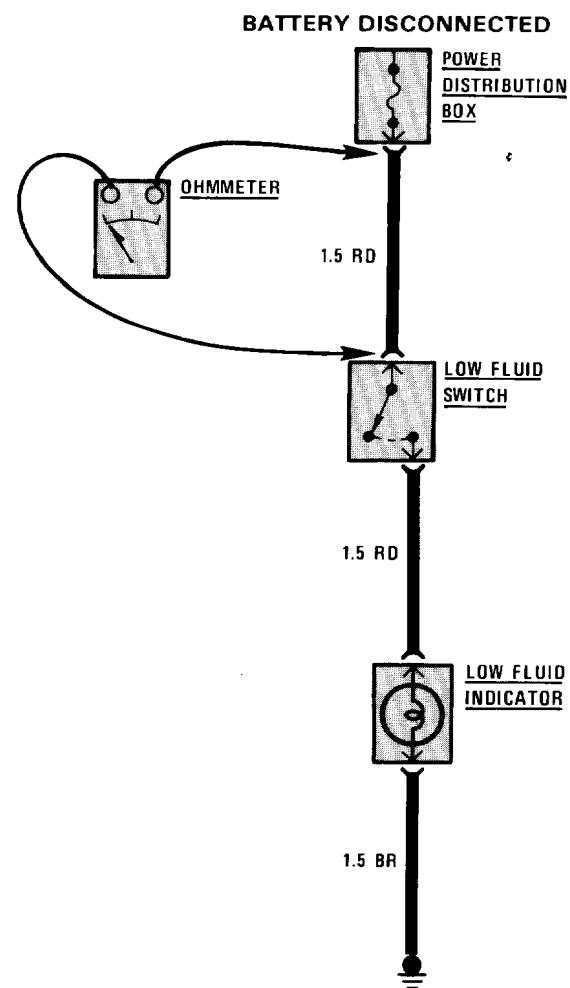
Wires, connectors, and switches are designed to conduct current with a minimum loss of voltage. A voltage drop of more than one volt indicates a problem.

To test for voltage drop, connect the voltmeter leads to connectors at either end of the circuit's suspected problem area. The positive lead should be connected to the connector closest to the power source. The voltmeter will show the voltage drop between these two points.



Continuity Test

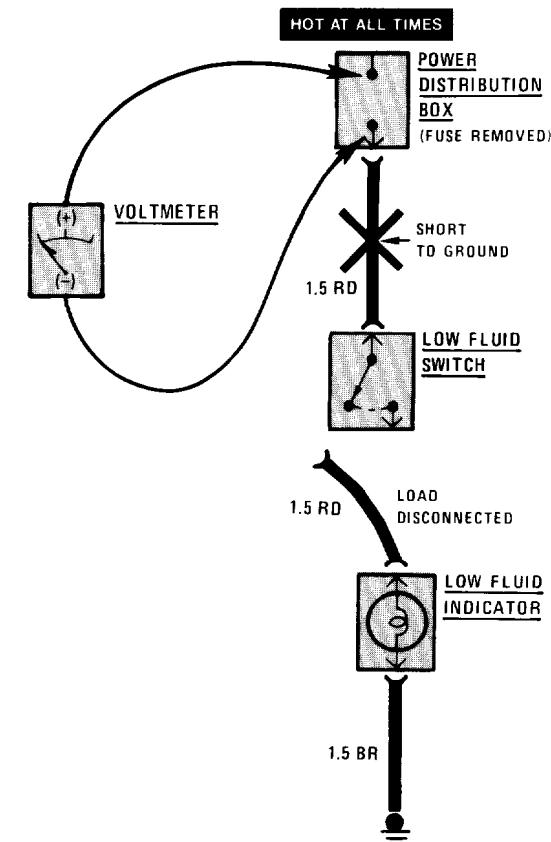
To perform a continuity test, first disconnect the car battery. Then adjust the ohmmeter to read zero while holding the leads together. Connect the ohmmeter leads to connector or terminals at either end of the circuit's suspected problem area. The ohmmeter will show the resistance across that part of the circuit.



Short Test Using Voltmeter

Remove the blown fuse and disconnect the load. Connect the voltmeter leads to the fuse terminals. The positive lead should be connected to the terminal closest to the power source.

Starting near the POWER DISTRIBUTION BOX, move the wire harness back and forth and watch the voltmeter reading. If the voltmeter registers a reading, there is a short to ground in the wiring. Somewhere in the area of the harness being moved, the wire insulation is worn away and the circuit is grounding.



Voltage Drop Test

Continuity Test

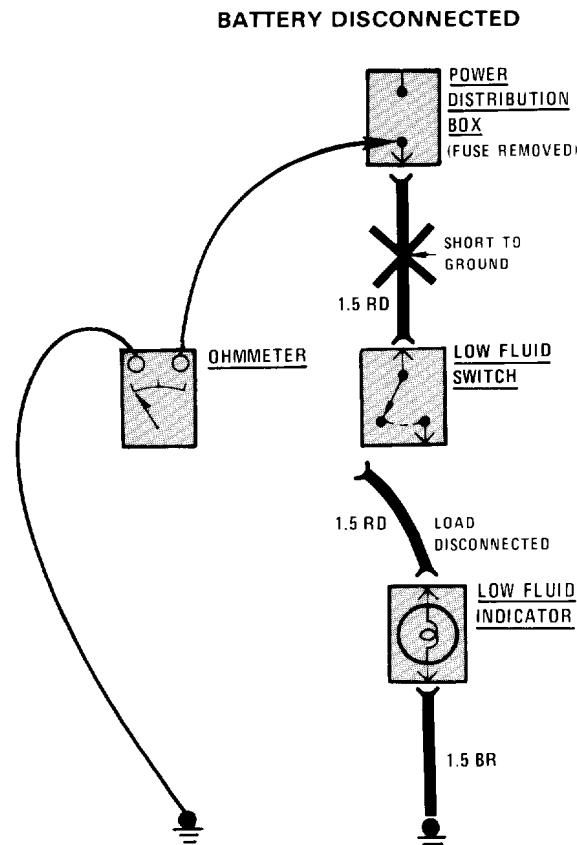
Short Test Using Voltmeter

8 SYSTEMATIC TROUBLESHOOTING

Short Test Using Ohmmeter

Disconnect the battery. Adjust the ohmmeter to read zero while holding the leads together. Remove the blown fuse and disconnect the load. Connect one lead of the ohmmeter to the fuse terminal that is closest to the load. Connect the other lead to a known good ground.

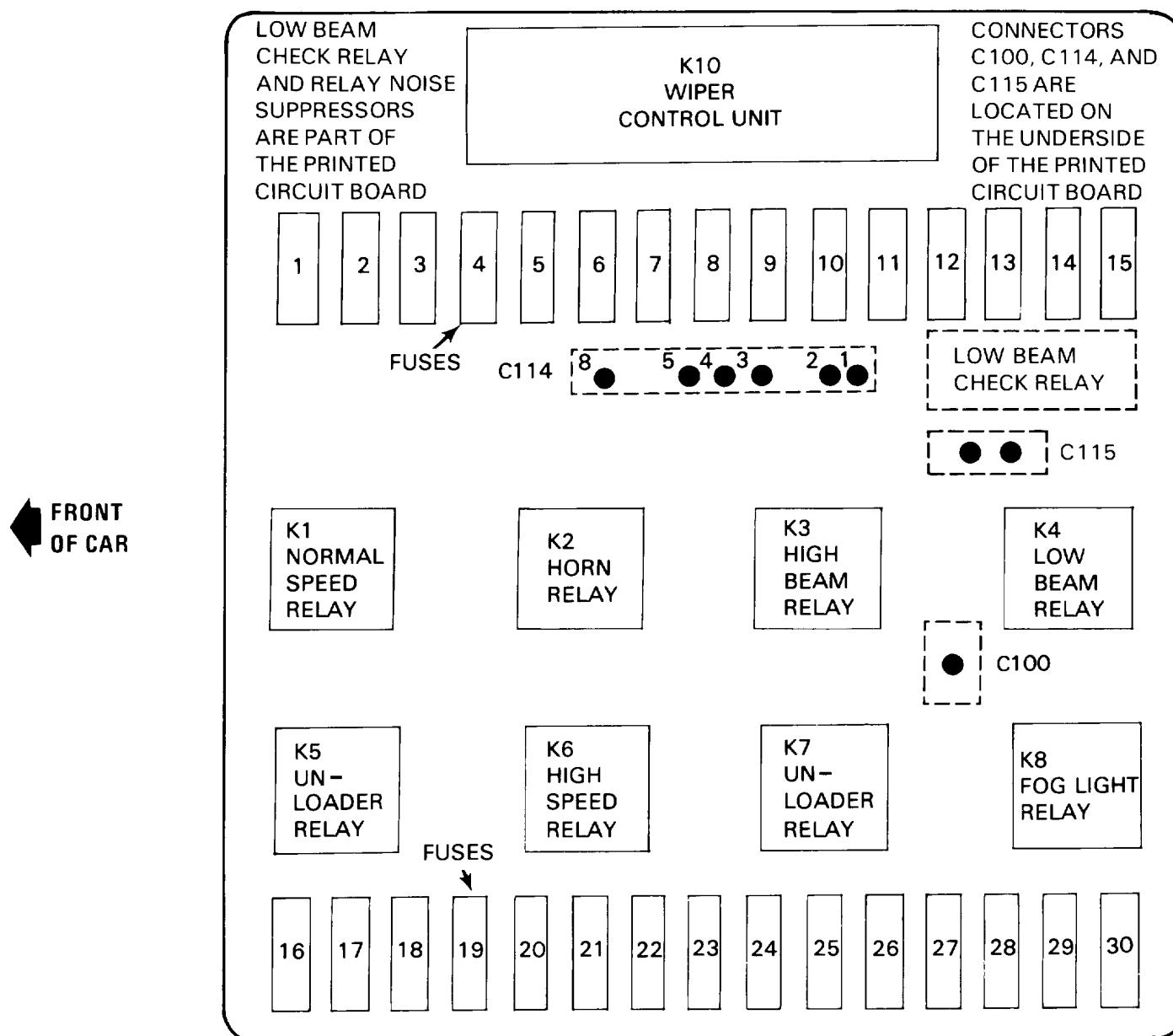
Starting near the POWER DISTRIBUTION BOX, move the wire harness back and forth and watch the ohmmeter reading. Low or no resistance indicates a short to ground in the wiring. Infinitely high resistance indicates no short.



Short Test Using Ohmmeter

0670-0 POWER DISTRIBUTION

POWER DISTRIBUTION BOX

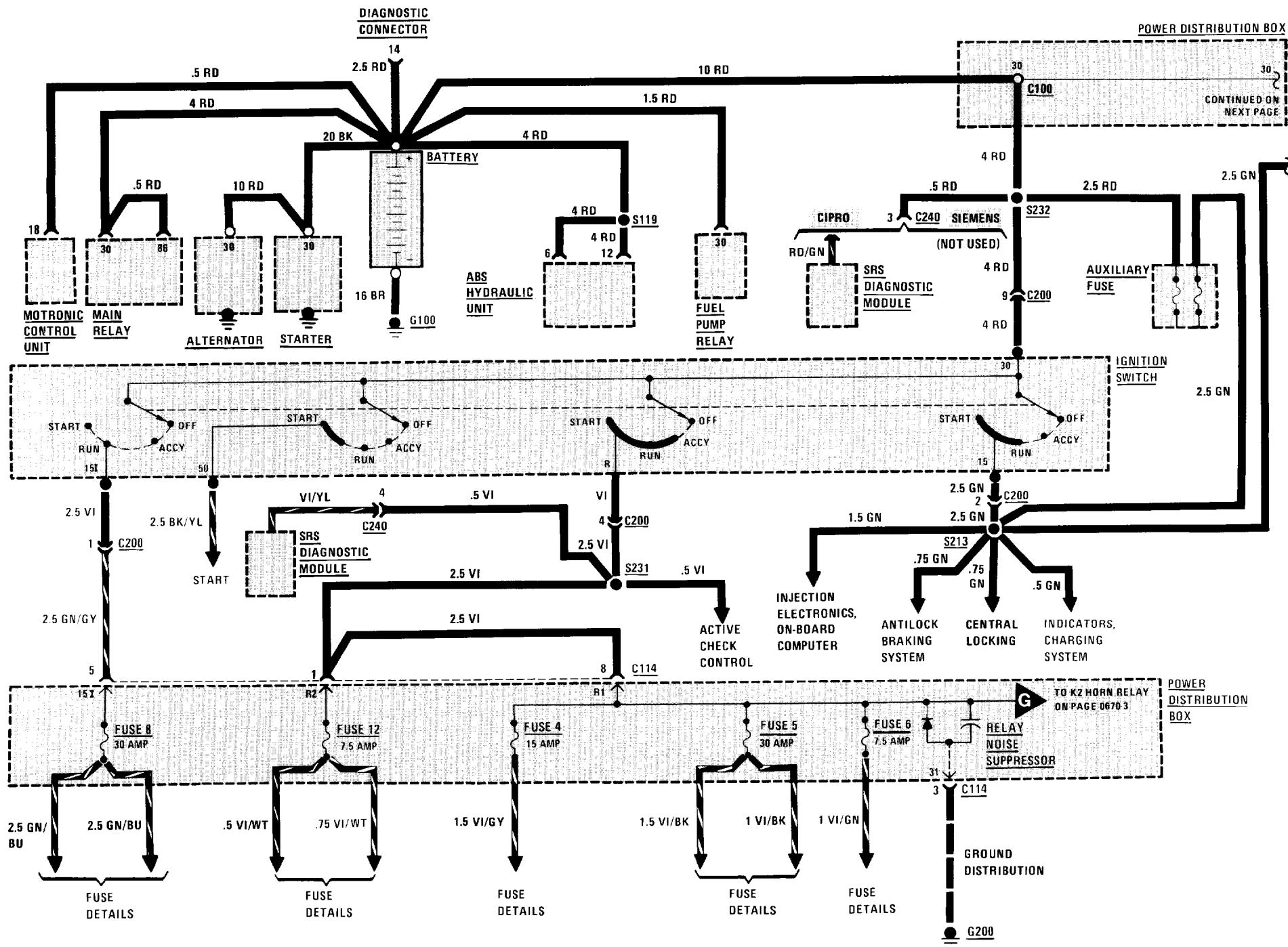


FUSE DATA CHART

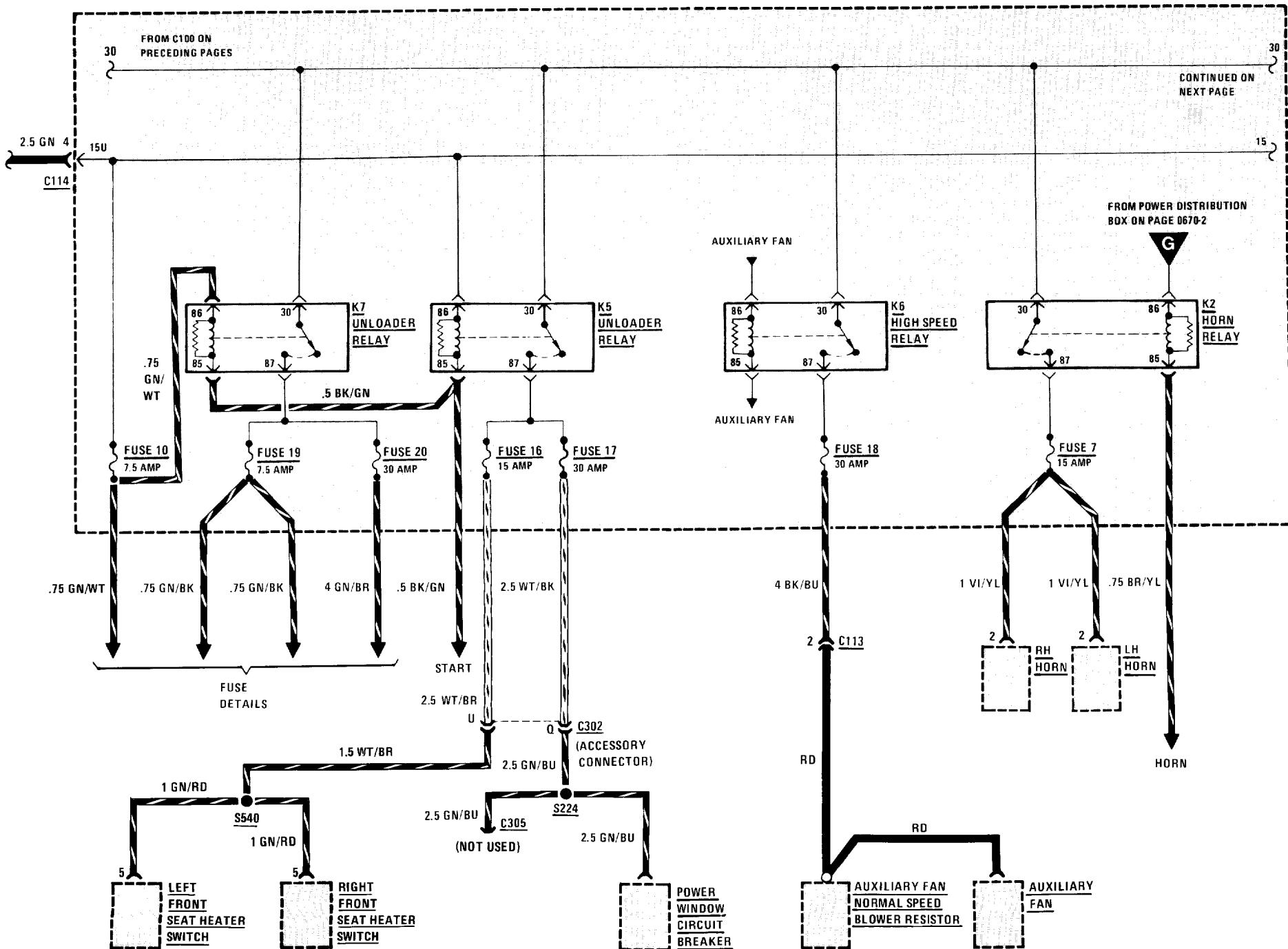
| FUSE NO. | SIZE | CIRCUIT NAME |
|-----------------|-------------|--|
| 1 | 7.5A | Headlights (also fuses 2, 13, 14); High Beam Indicator. |
| 2 | 7.5A | Headlights (also fuses 1, 13, 14). |
| 3 | 15A | Auxiliary Fan (also fuses 18, 19, 20). |
| 4 | 15A | Lights: Turn/Hazard Warning (also fuse 24); Active Check Control (also fuses 6, 10, 21, 22, 23); Glove Box Light. |
| 5 | 30A | Wiper/Washer. |
| 6 | 7.5A | Stop Lights Active Check Control (also fuses 4, 10, 21, 22, 23); Antilock Braking System; Cruise Control (also fuse 10) Map Reading Light. |
| 7 | 15A | Horn. |
| 8 | 30A | Rear Defogger (also fuse 23). |
| 9 | 15A | Injection Electronics (also fuses 10, 11, 21) |
| 10 | 7.5A | Ignition Key Warning/Seatbelt Warning (also Fuse 21'); Service Interval Indicator (also fuse 21); Tachometer/Fuel Economy Gauges (also fuse 21); Gauges/Indicators; Brake Warning System; Back Up Lights; On-Board Computer (also fuses 12, 21, 27); Start; Injection Electronics (also fuses 9, 11, 21); Active Check Control (also fuses 4, 6, 21, 22, 23); Cruise Control (also fuse 6). |
| 11 | 7.5A | Injection Electronics (also fuses 9, 10, 21). |
| 12 | 7.5A | Radio/Antenna (also fuses 21, 27, 28); Speedometer/Indicators; On-Board Computer (also fuses 10, 21, 27). |
| 13 | 7.5A | Headlights (also fuses 1, 2, 14). |
| 14 | 7.5A | Headlights (also fuses 1, 2, 13). |
| 15 | | Not Used. |
| 16 | 15A | Heated Seats. |
| 17 | 30A | Power Windows. |
| 18 | 30A | Auxiliary Fan (also fuses 3, 19, 20). |
| 19 | 7.5A | Auxiliary Fan (also fuses 3, 18, 20); Interior Lights (also fuses 21, 27); Power Mirrors. |

| FUSE NO. | SIZE/COLOR | CIRCUIT NAME |
|-------------------------------------|-------------------|--|
| 20 | 30A | Heater/Air Conditioning; Auxiliary Fan (also fuses 3, 18, 19). |
| 21 | 7.5A | Auto-Charging Flashlight; Ignition Key Warning/Seatbelt Warning (also fuse 10); Injection Electronics (also fuses 9, 10, 11); Interior Lights (also fuses 19, 27); Radio/Antenna (also fuses 12, 27, 28); Trunk Light; Active Check Control (also fuses 4, 6, 10, 22, 23); Service Interval Indicator (also fuse 10); On-Board Computer (also fuses 10, 12, 27); Tachometer/Fuel Economy Gauge (also fuse 10). |
| 22 | 7.5A | Active Check Control (also fuses 4, 6, 10, 21, 23); Lights: Front Park/Tail (also fuse 23); Lights: Front Side Marker (also fuse 23). |
| 23 | 7.5A | Lights: Dash; Lights: Front Park/Tail (also fuse 22); Lights: Front Side Marker (also fuse 22); Lights: Rear Marker/License; Active Check Control (also fuses 4, 6, 10, 21, & 22); Rear Defogger (also fuse 8). |
| 24 | 15A | Lights: Turn/Hazard Warning (also fuse 4). |
| 25 | | Not Used. |
| 26 | | Not Used. |
| 27 | 30A | Interior Lights (also fuses 19, 21); Central Locking; Radio/Antenna (also fuses 12, 21, 28); On-Board Computer (also fuses 10, 12, 21). |
| 28 | 30A | Cigar Lighter; Radio/Antenna (also fuses 12, 21, 27). |
| 29 | 7.5A | Fog Lights (also fuse 30); Fog Light Indicator. |
| 30 | 7.5A | Fog Lights (also fuse 29). |
| POWER WINDOW CIRCUIT BREAKER | | 25A Power Windows |

0670-2 POWER DISTRIBUTION

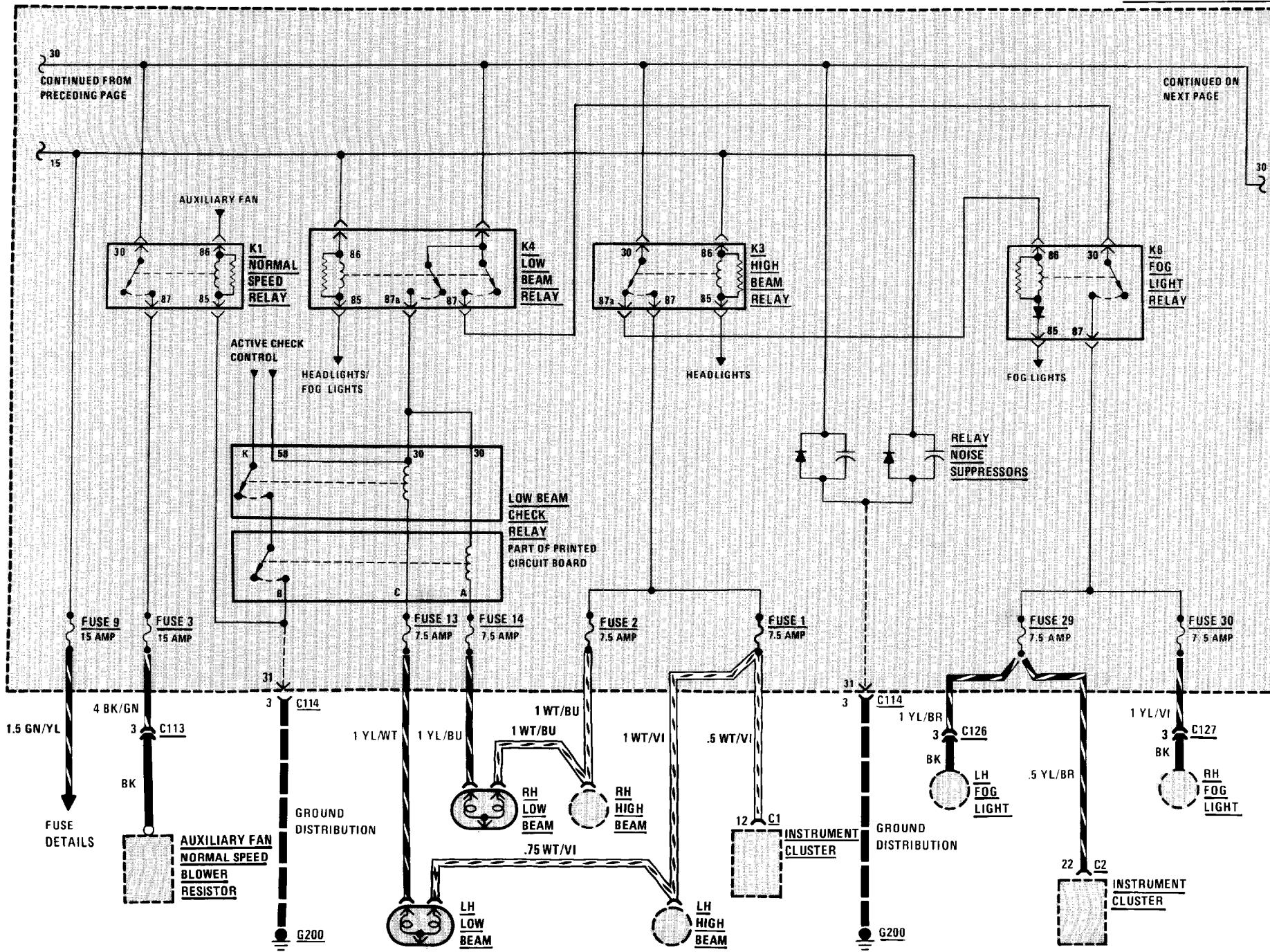


POWER DISTRIBUTION BOX



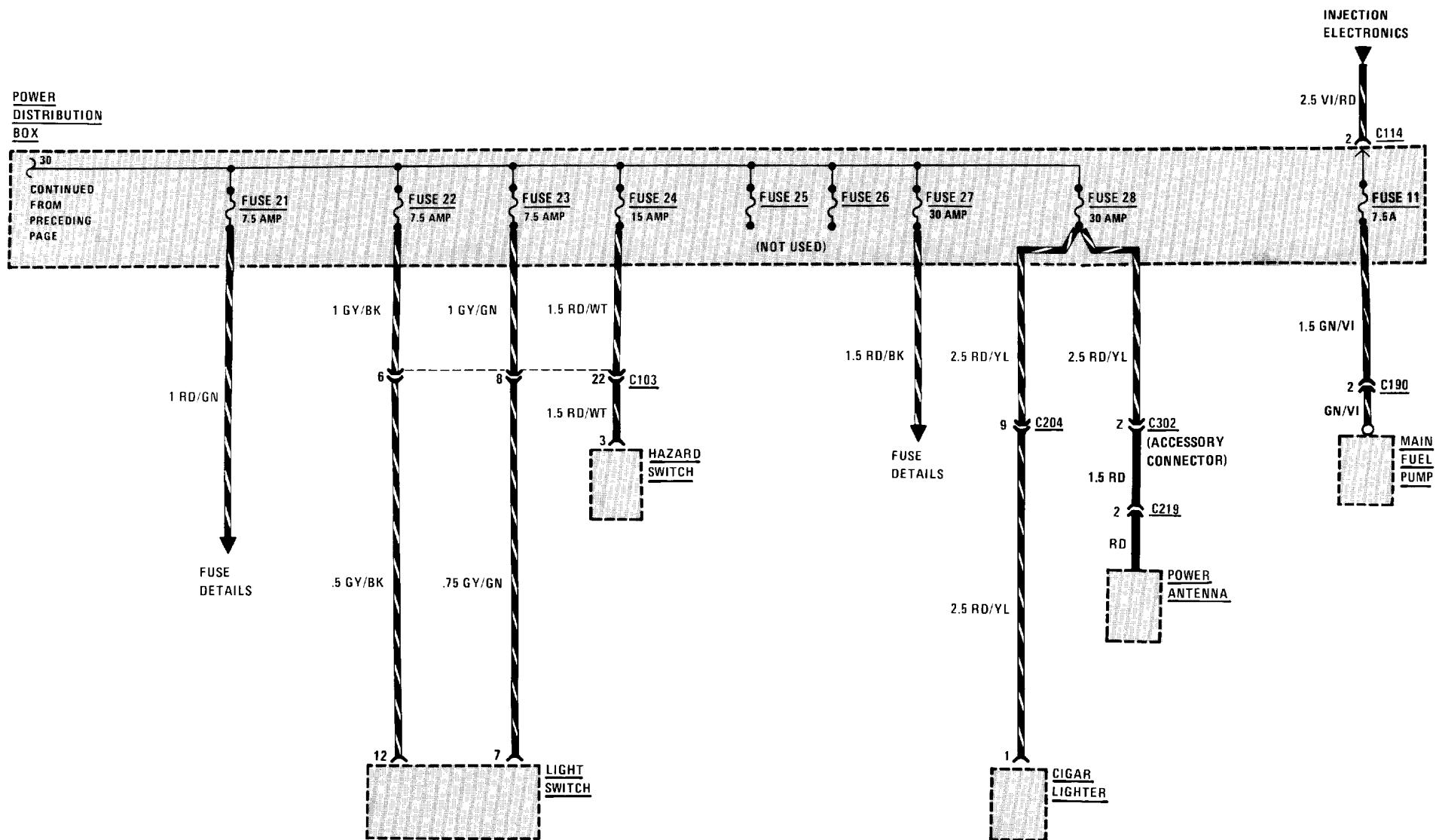
0670-4 POWER DISTRIBUTION

POWER DISTRIBUTION BOX



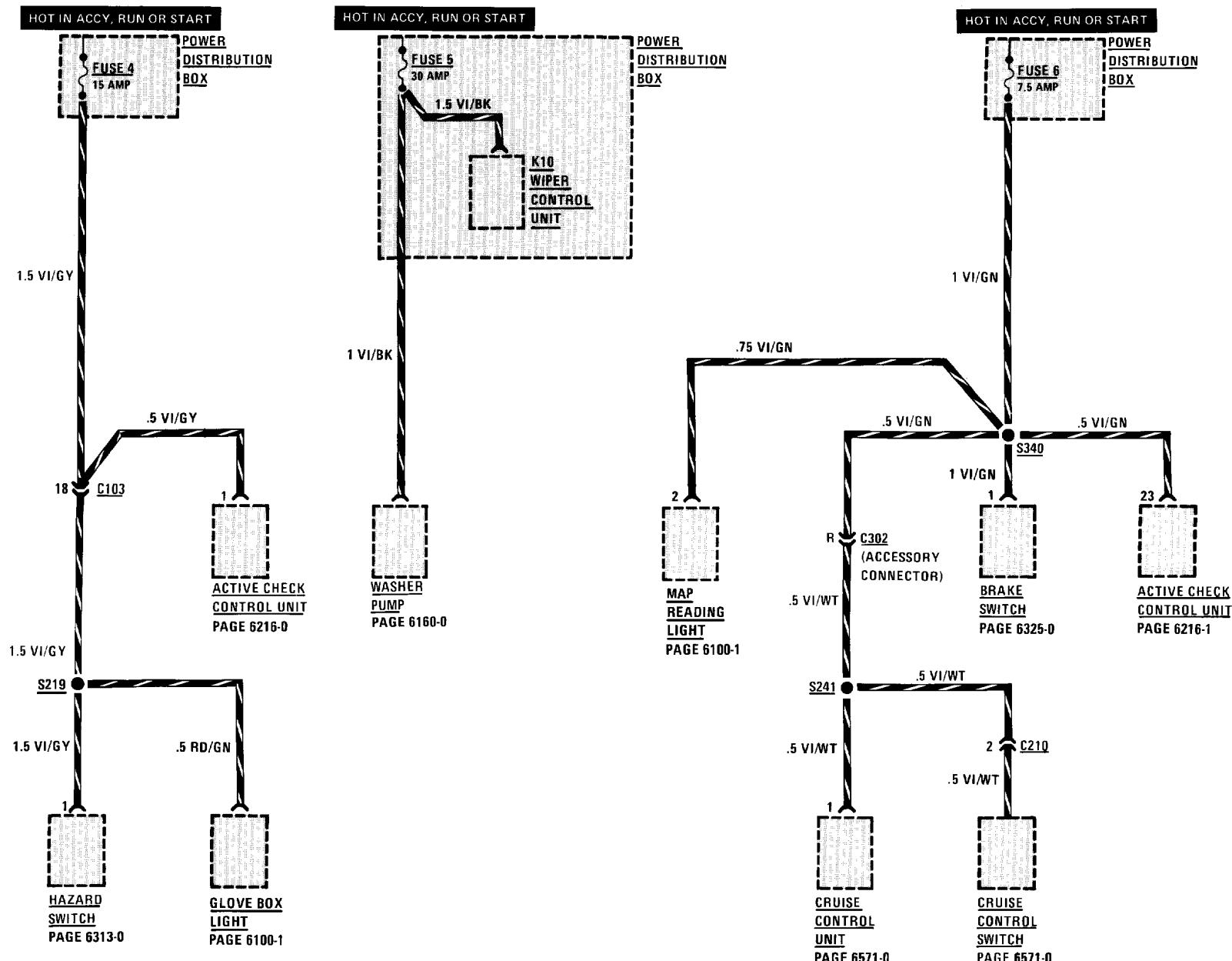
POWER
DISTRIBUTION
BOX

**CONTINUED
FROM
PRECEDING
PAGE**

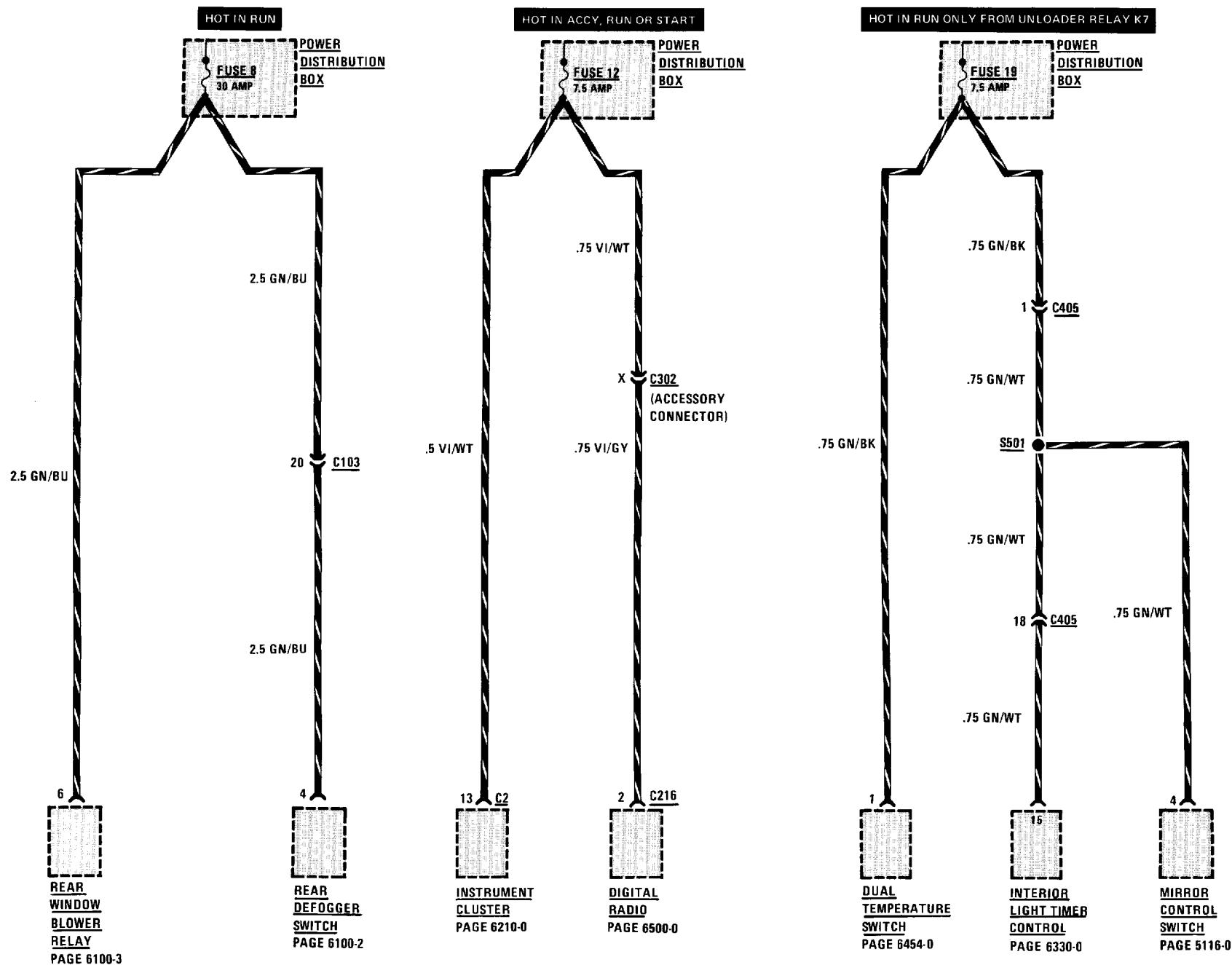


0670-6 POWER DISTRIBUTION

FUSE DETAILS: FUSES 4, 5, AND 6

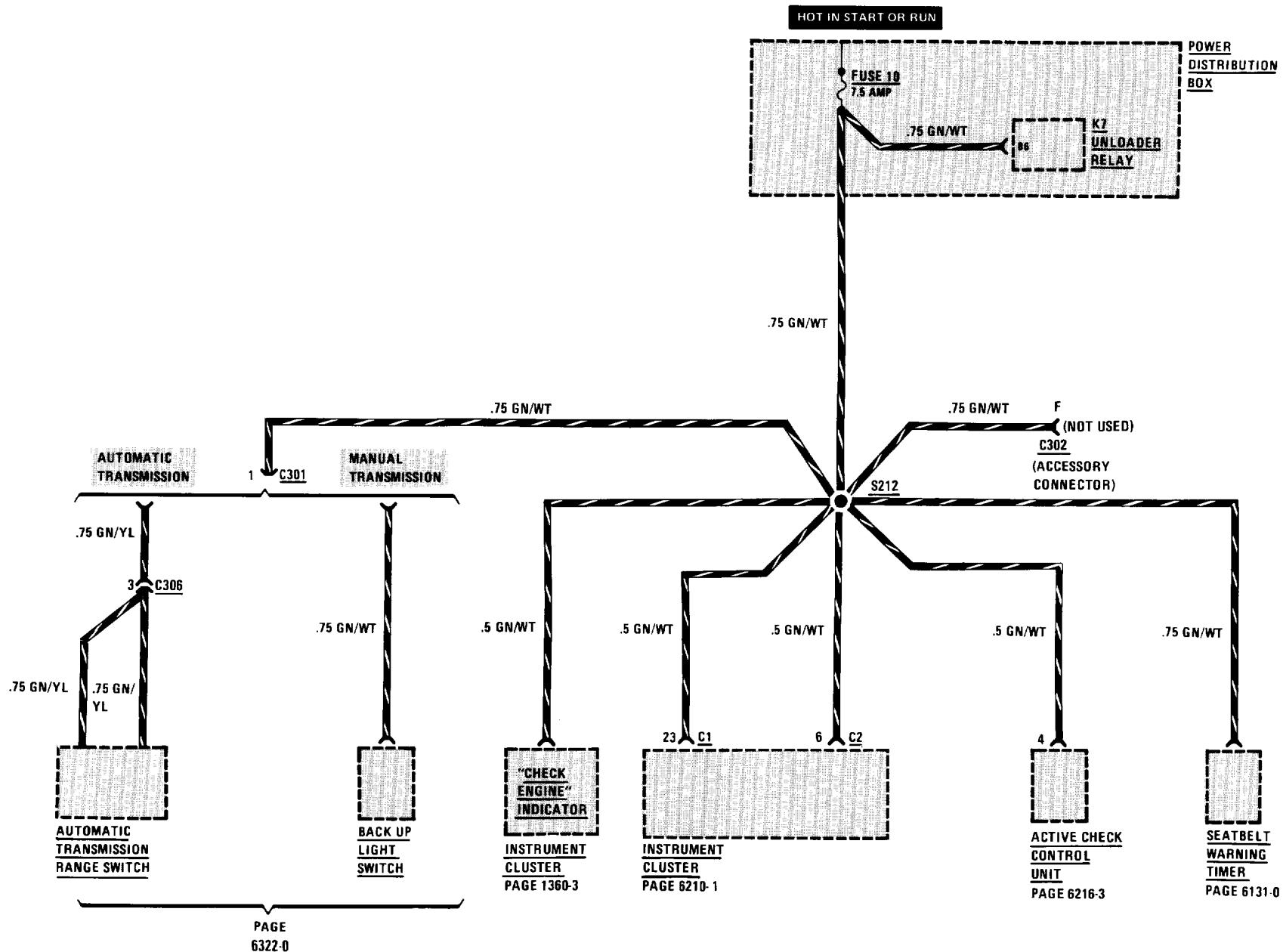


FUSE DETAILS: FUSES 8, 12 AND 19

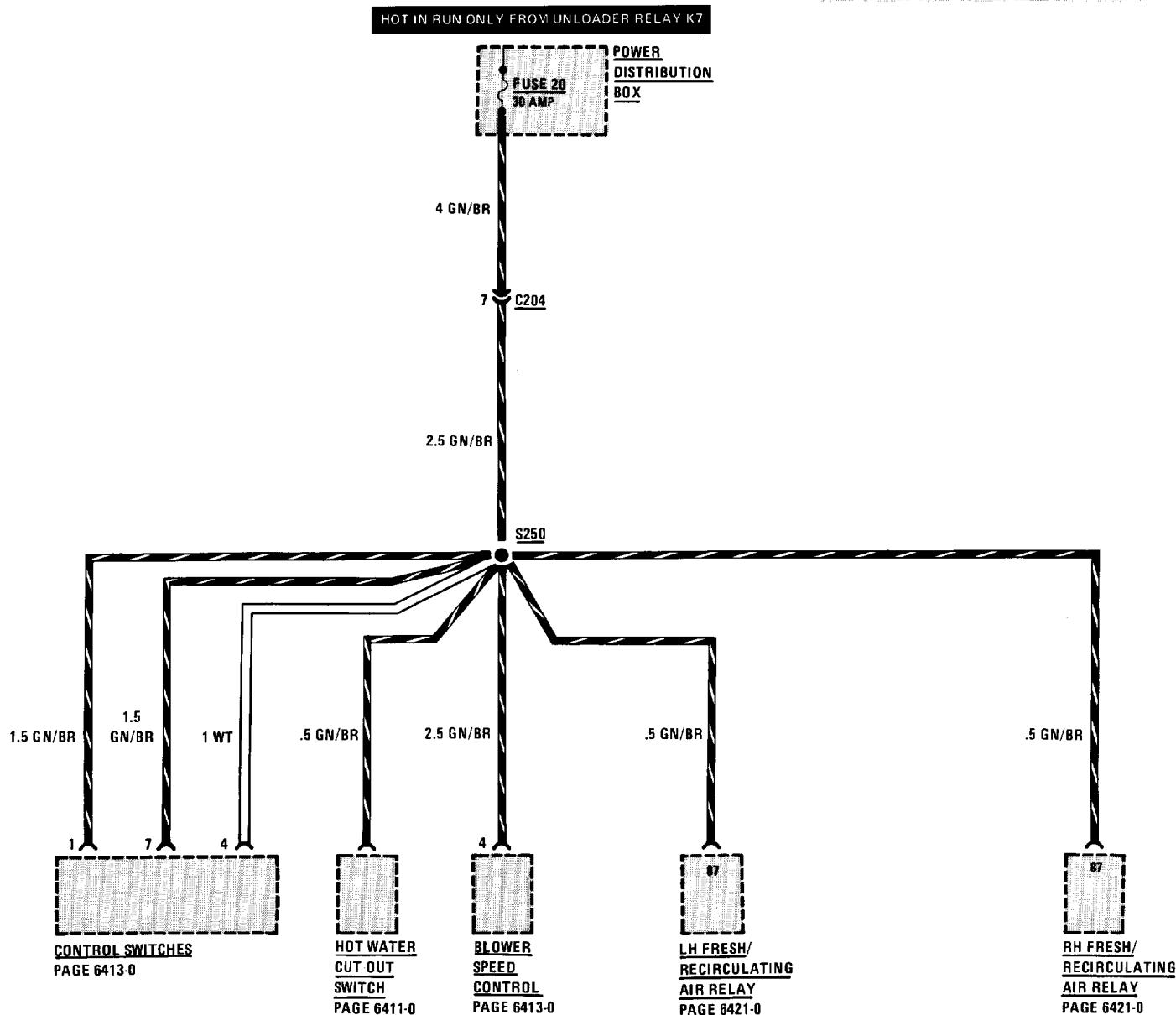


0670-8 POWER DISTRIBUTION

FUSE DETAILS: FUSE 10

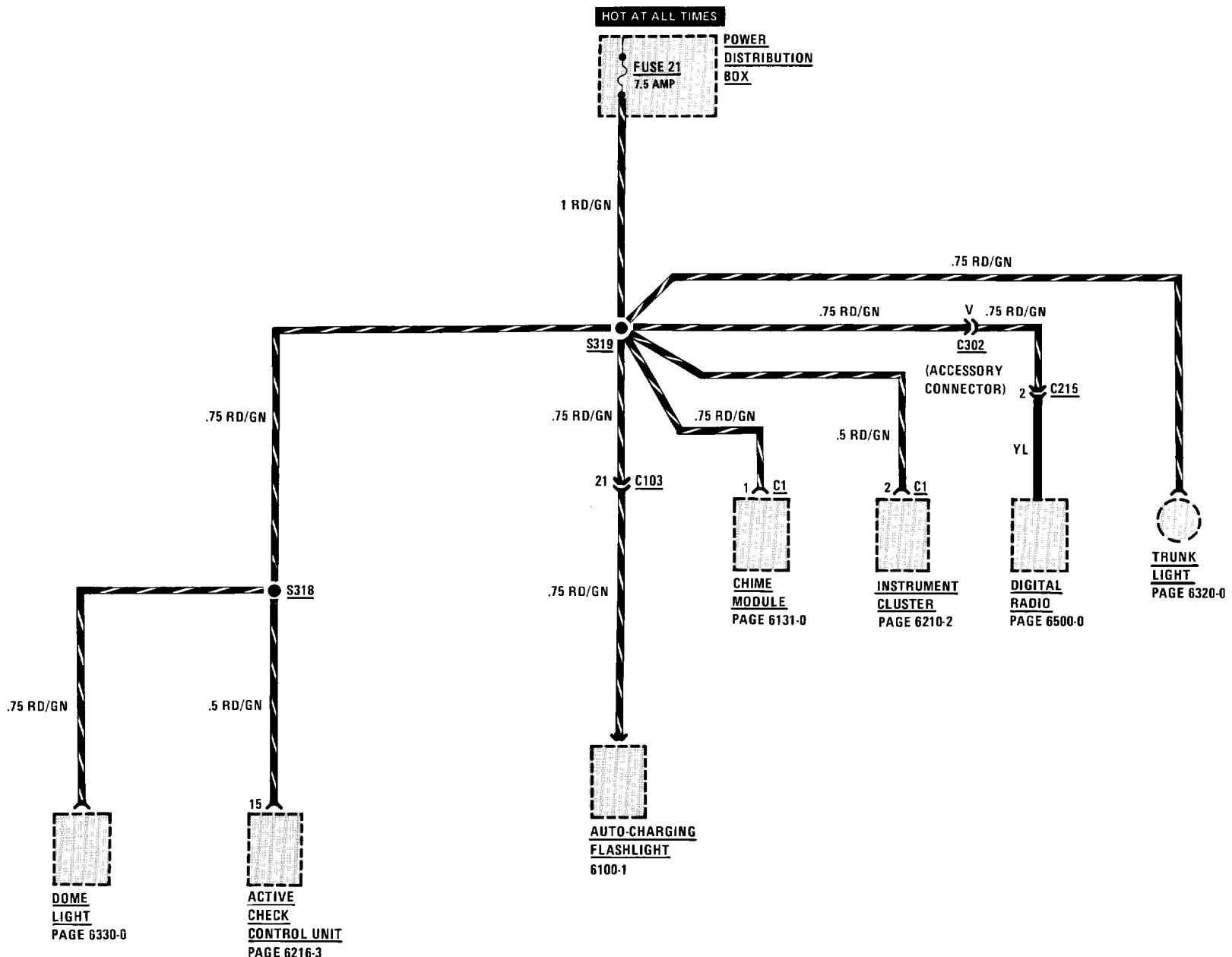


FUSE DETAILS: FUSE 20

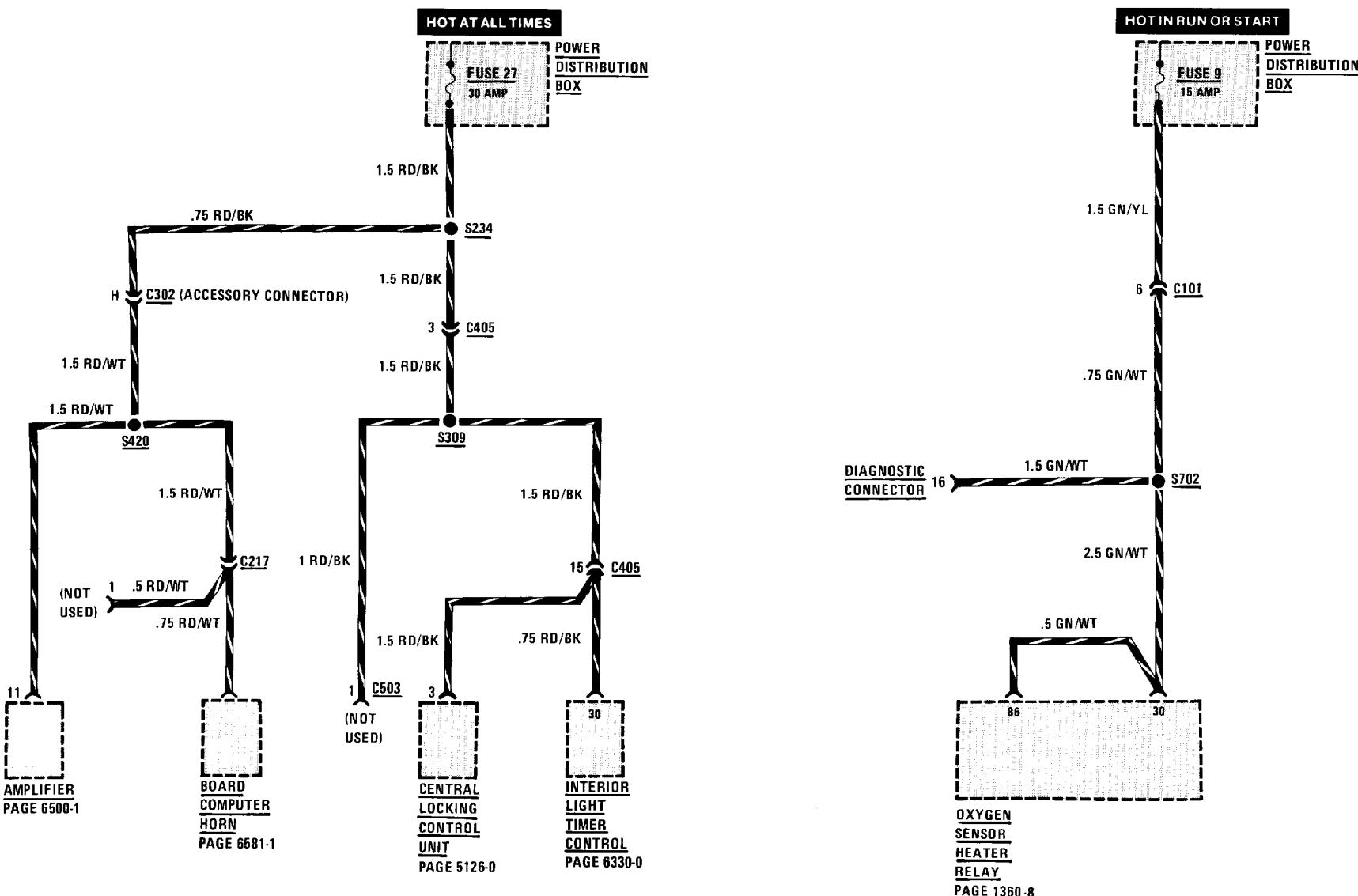


0670-10 POWER DISTRIBUTION

FUSE DETAILS: FUSE 21

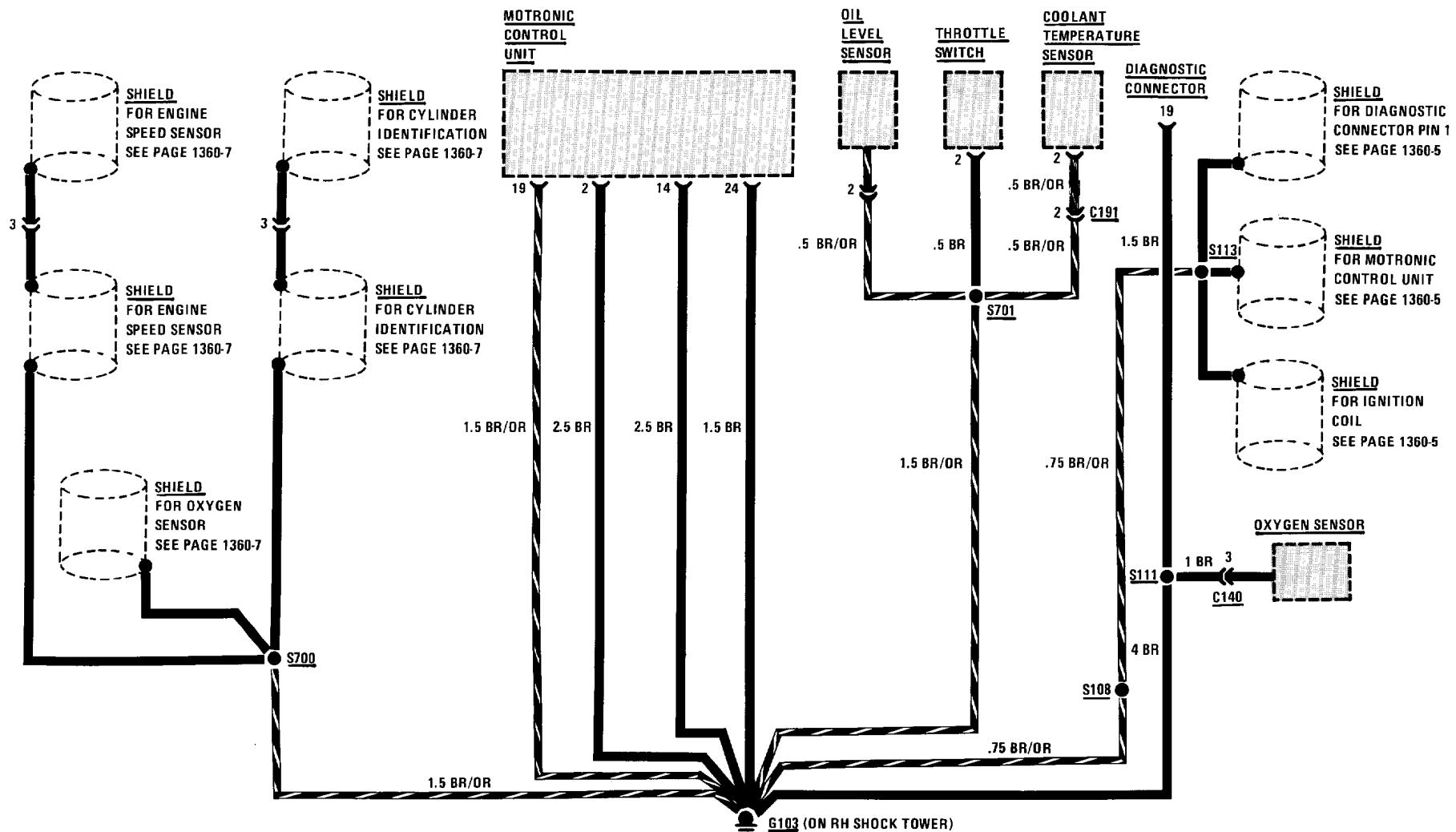


FUSE DETAILS: FUSES 9 AND 27

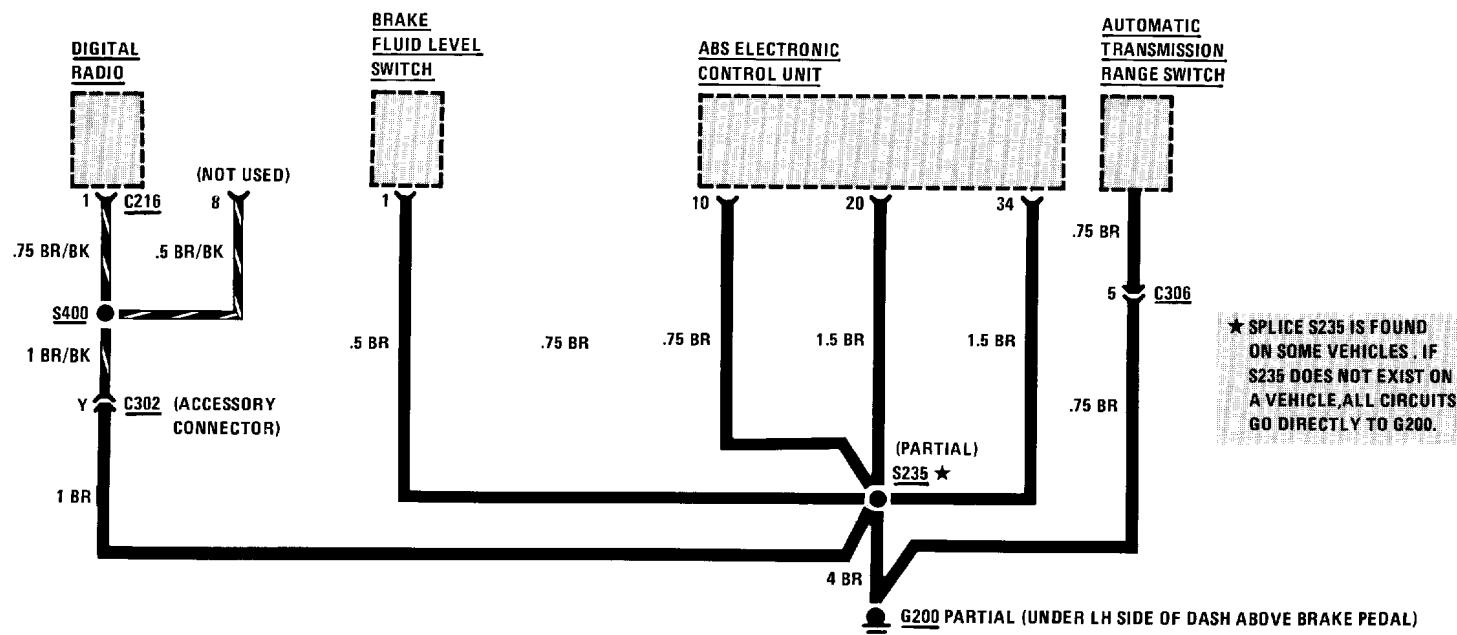
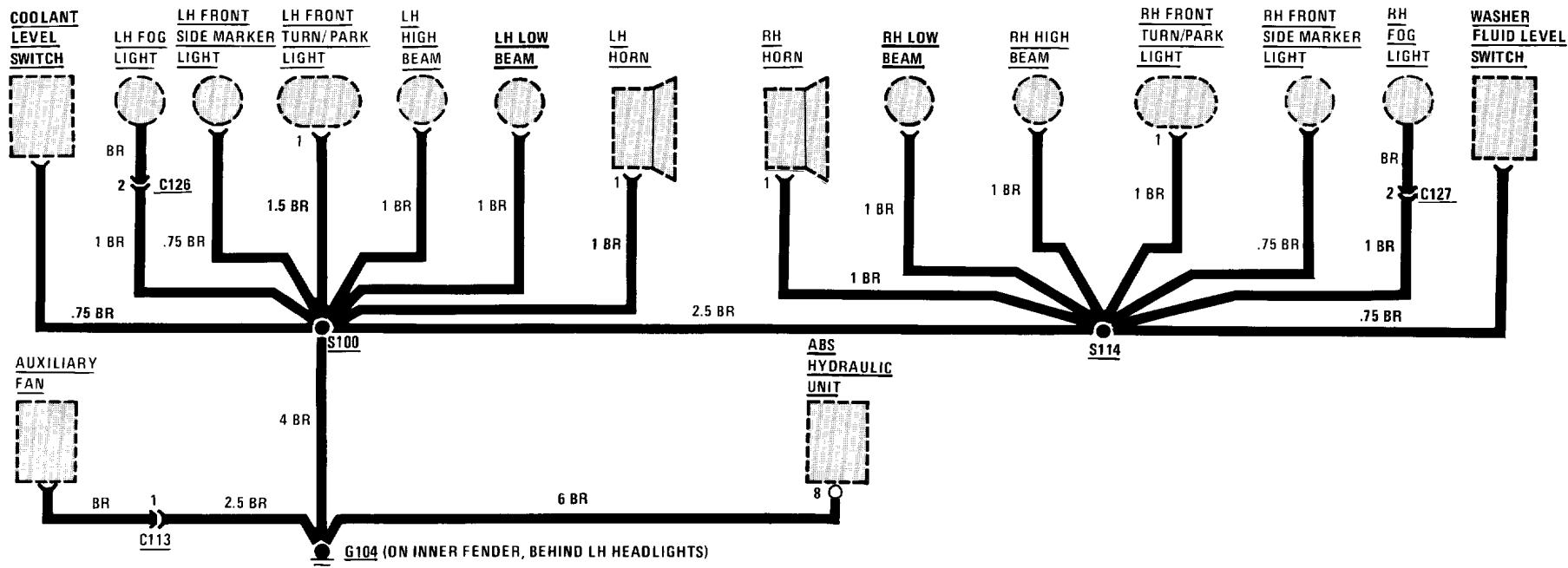


0670-12 POWER DISTRIBUTION

GROUND DISTRIBUTION: G103

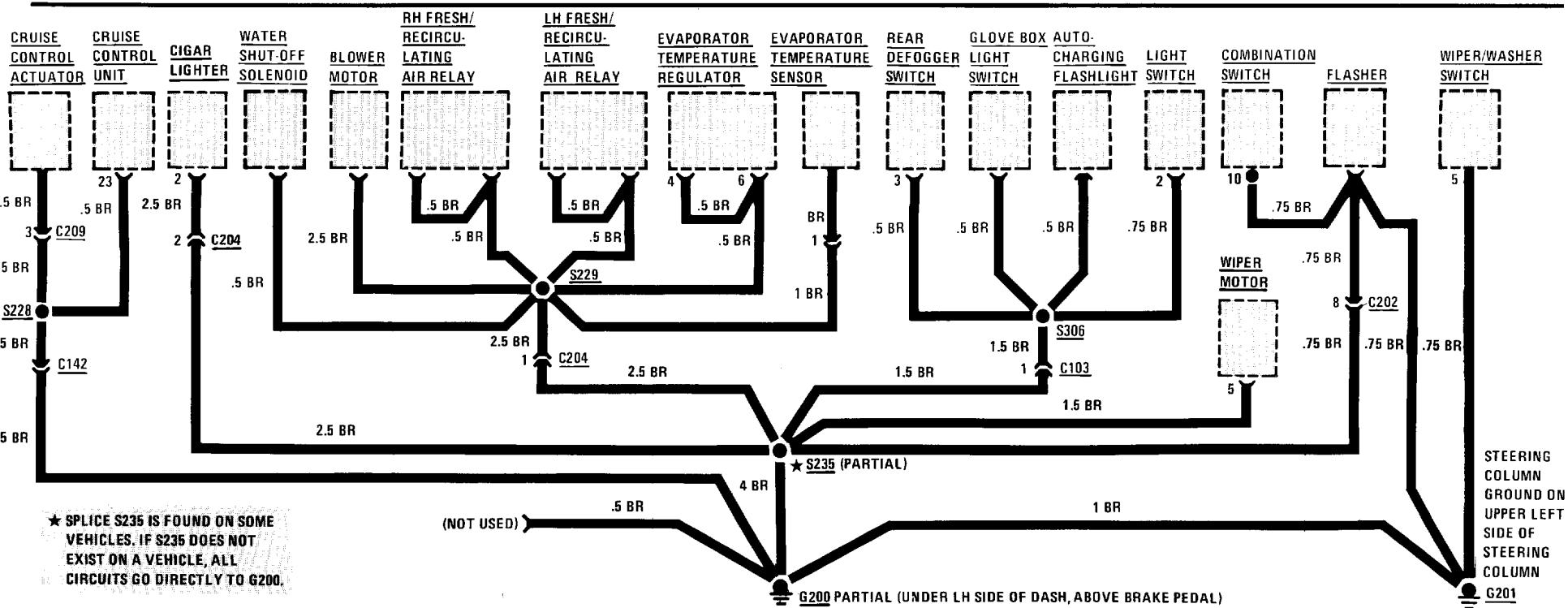
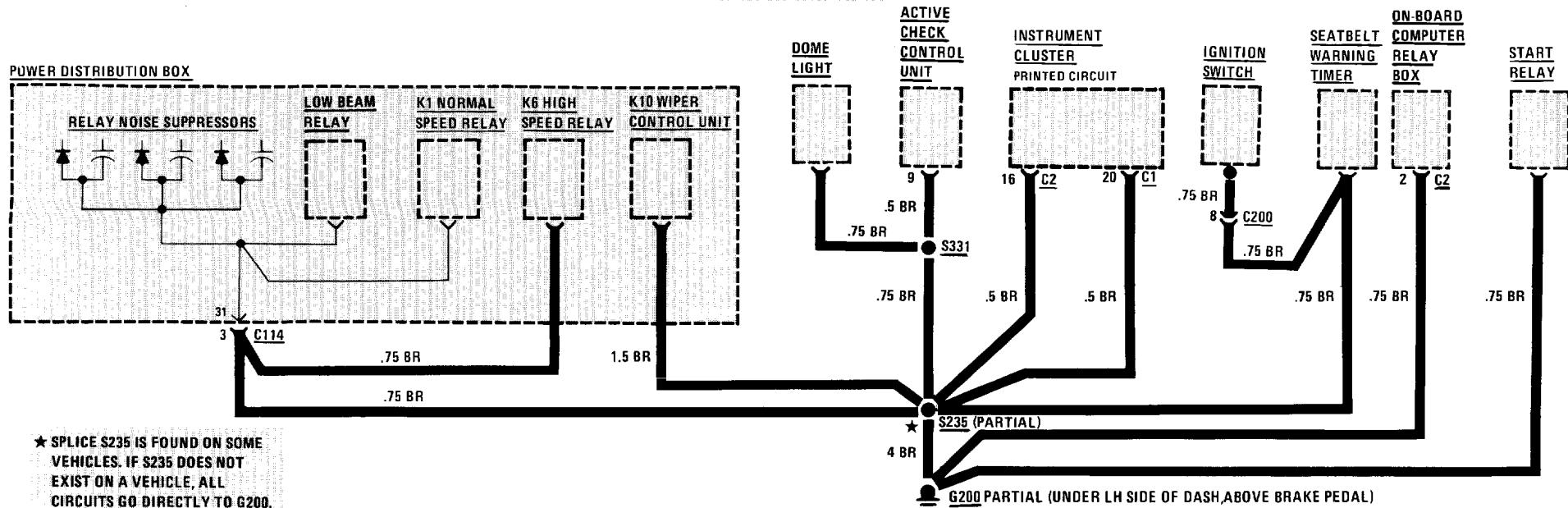


GROUND DISTRIBUTION: G104 AND G200 (PARTIAL)

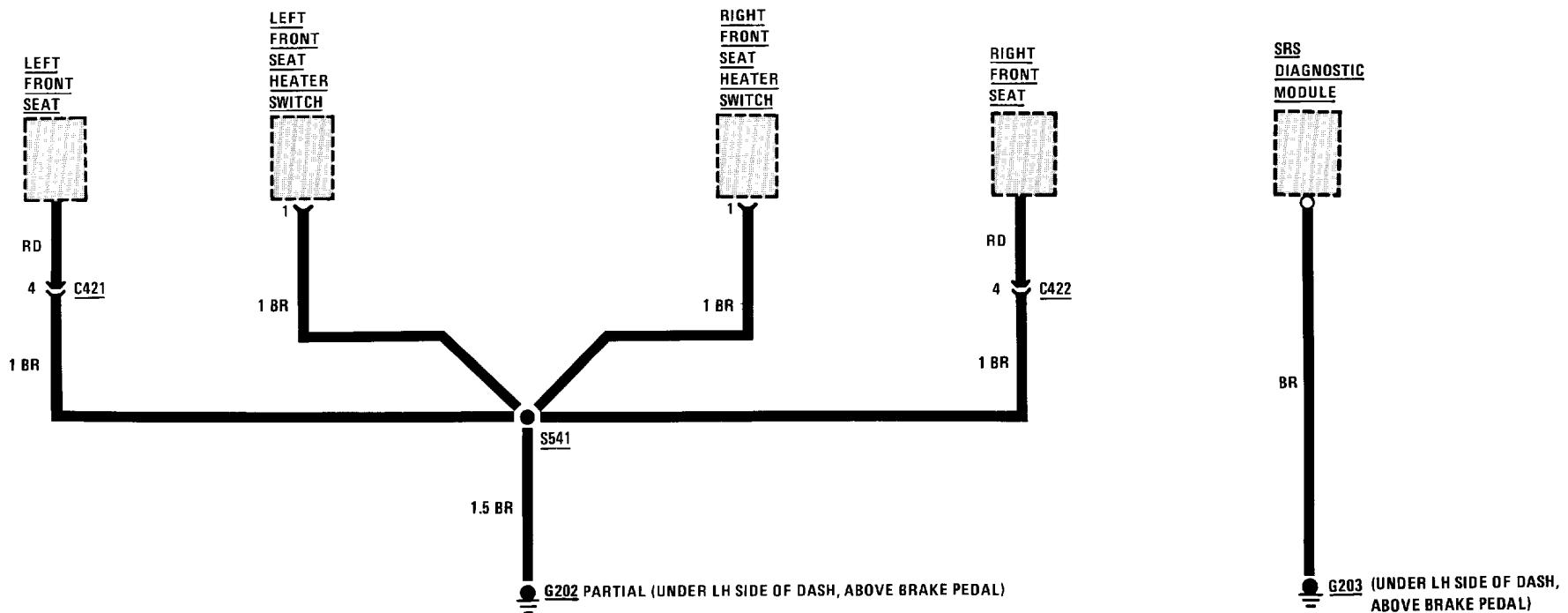
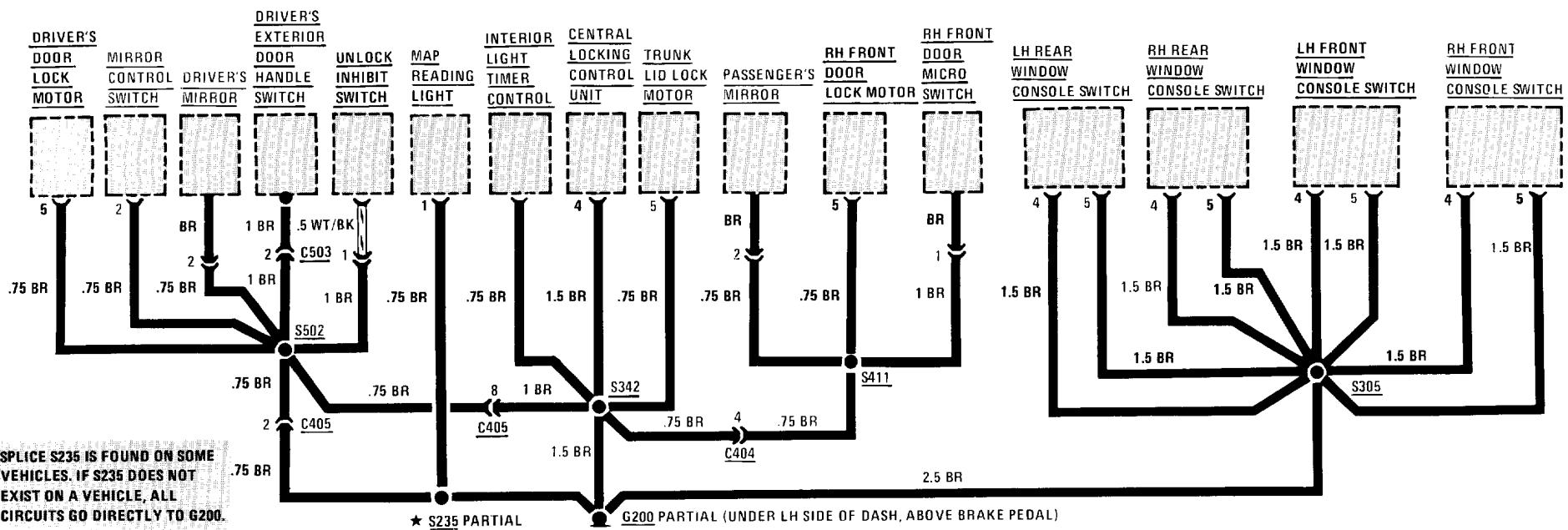


0670-14 POWER DISTRIBUTION

GROUND DISTRIBUTION: G200 (PARTIAL) AND G201

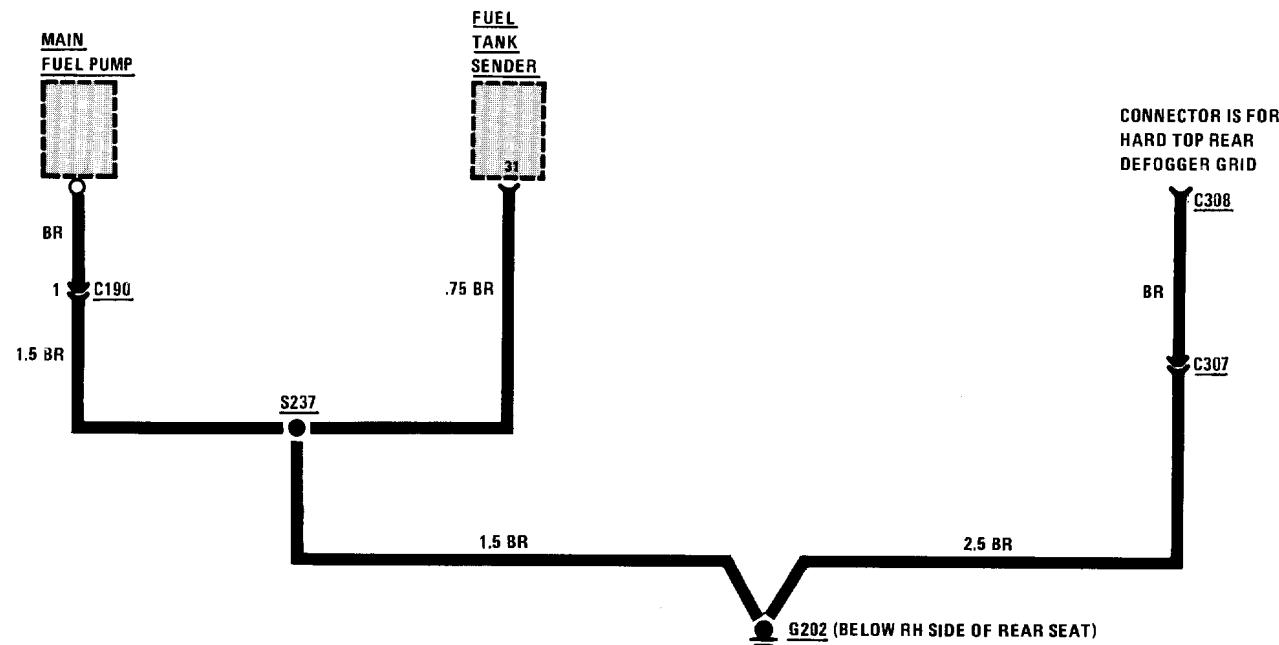
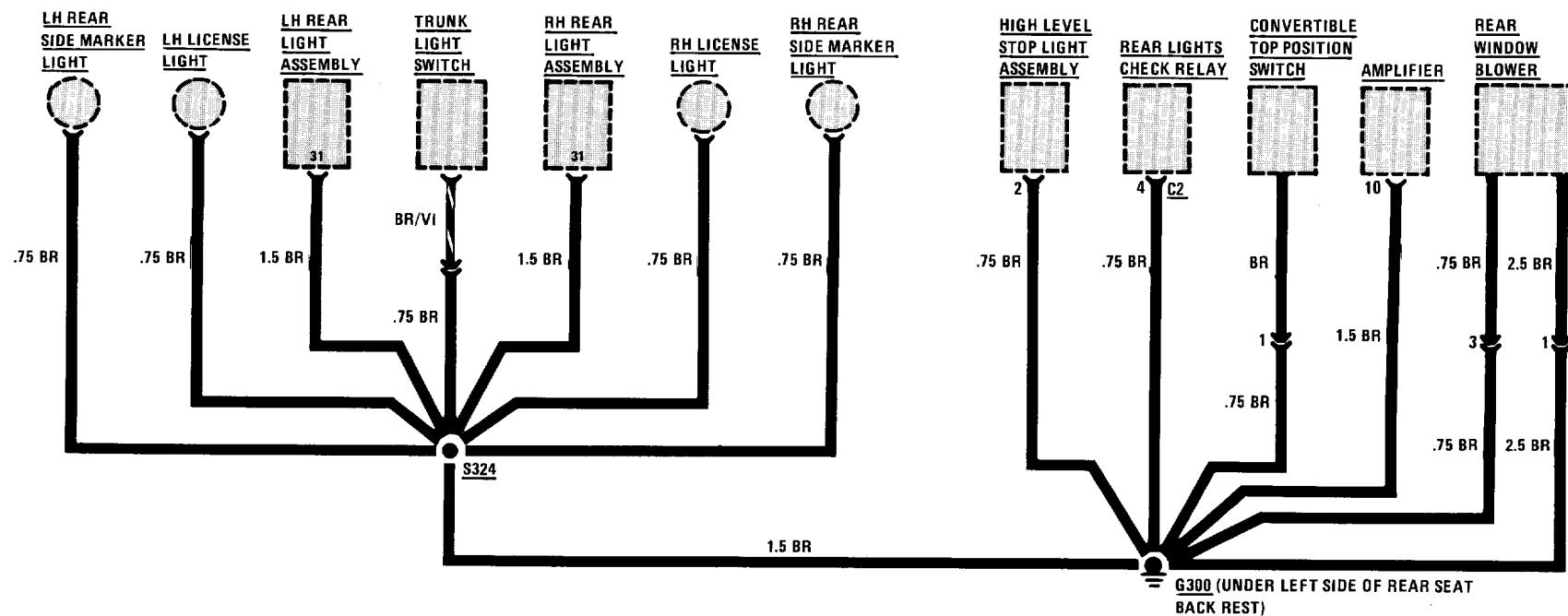


GROUND DISTRIBUTION: G200 (PARTIAL) AND G202 (PARTIAL)

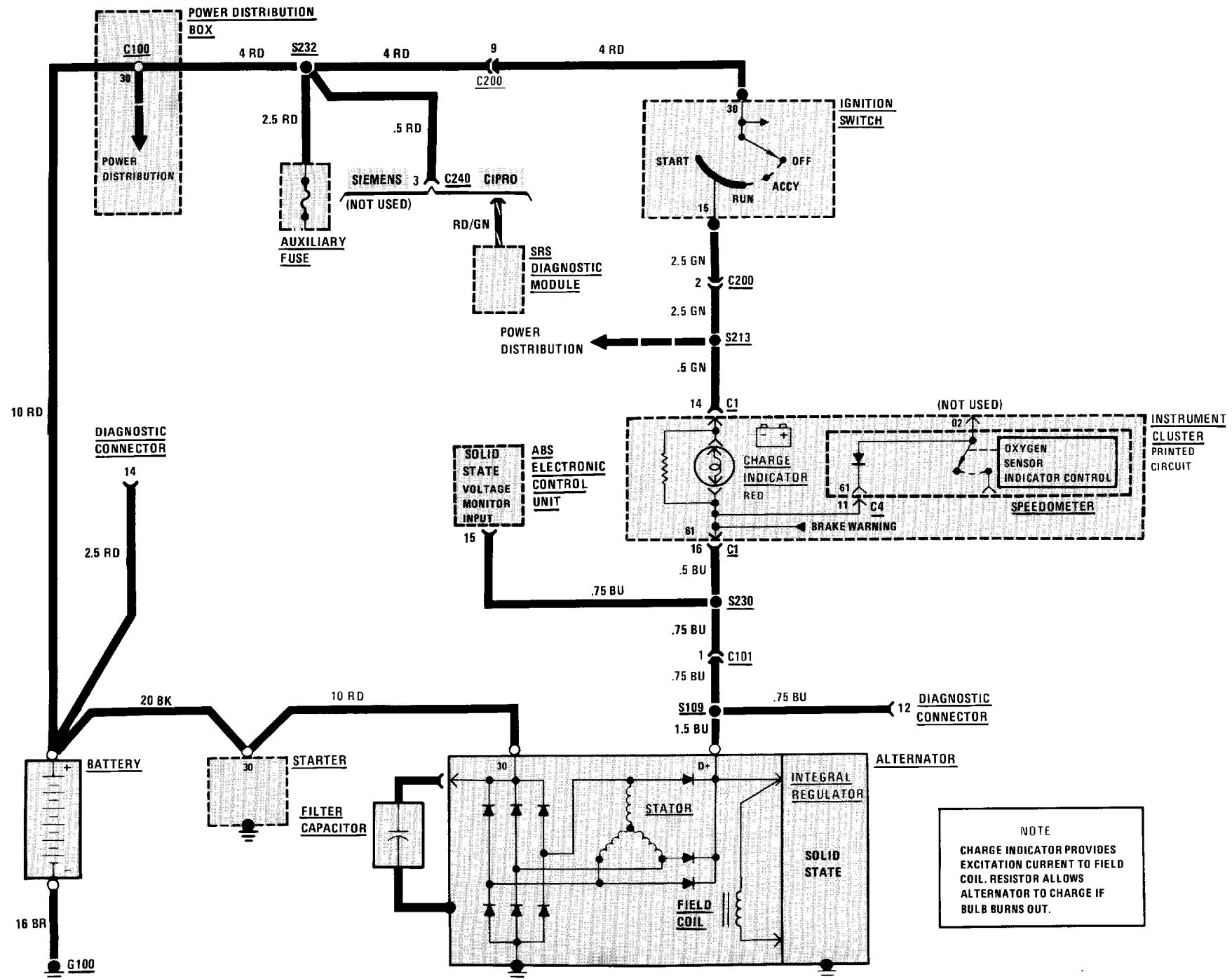


0670-16 POWER DISTRIBUTION

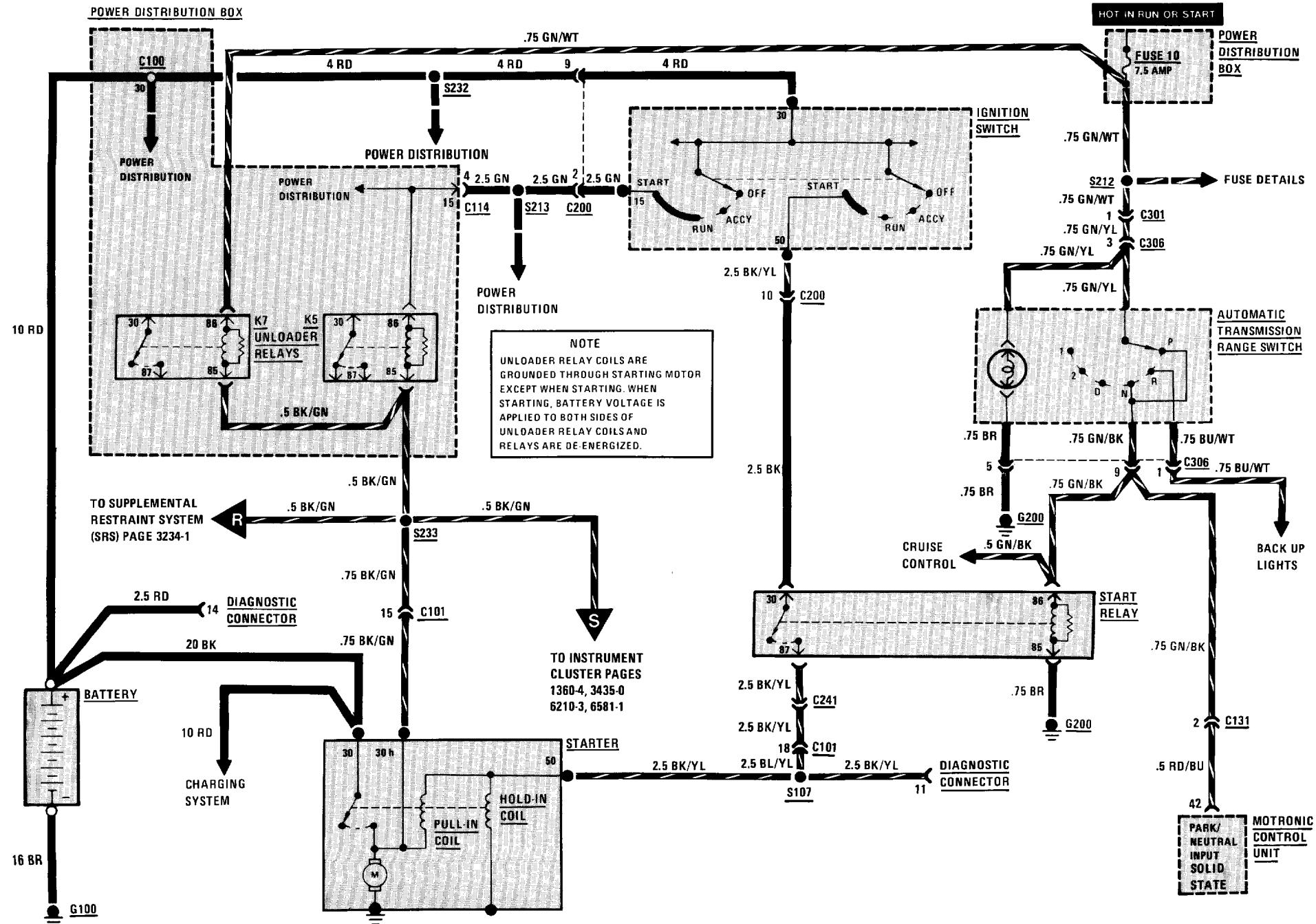
GROUND DISTRIBUTION: G202 AND G300



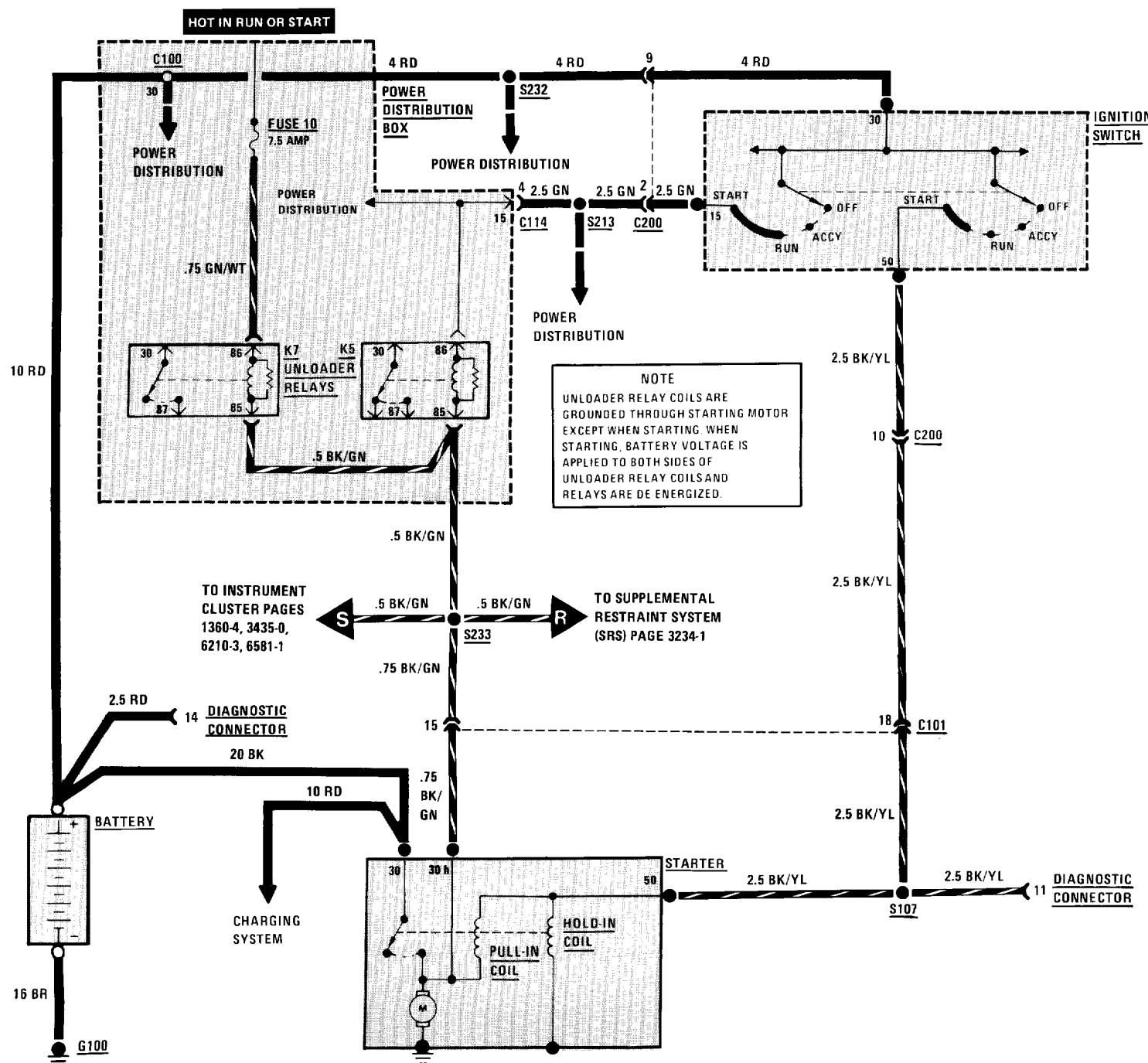
1230-0 CHARGE



AUTOMATIC TRANSMISSION

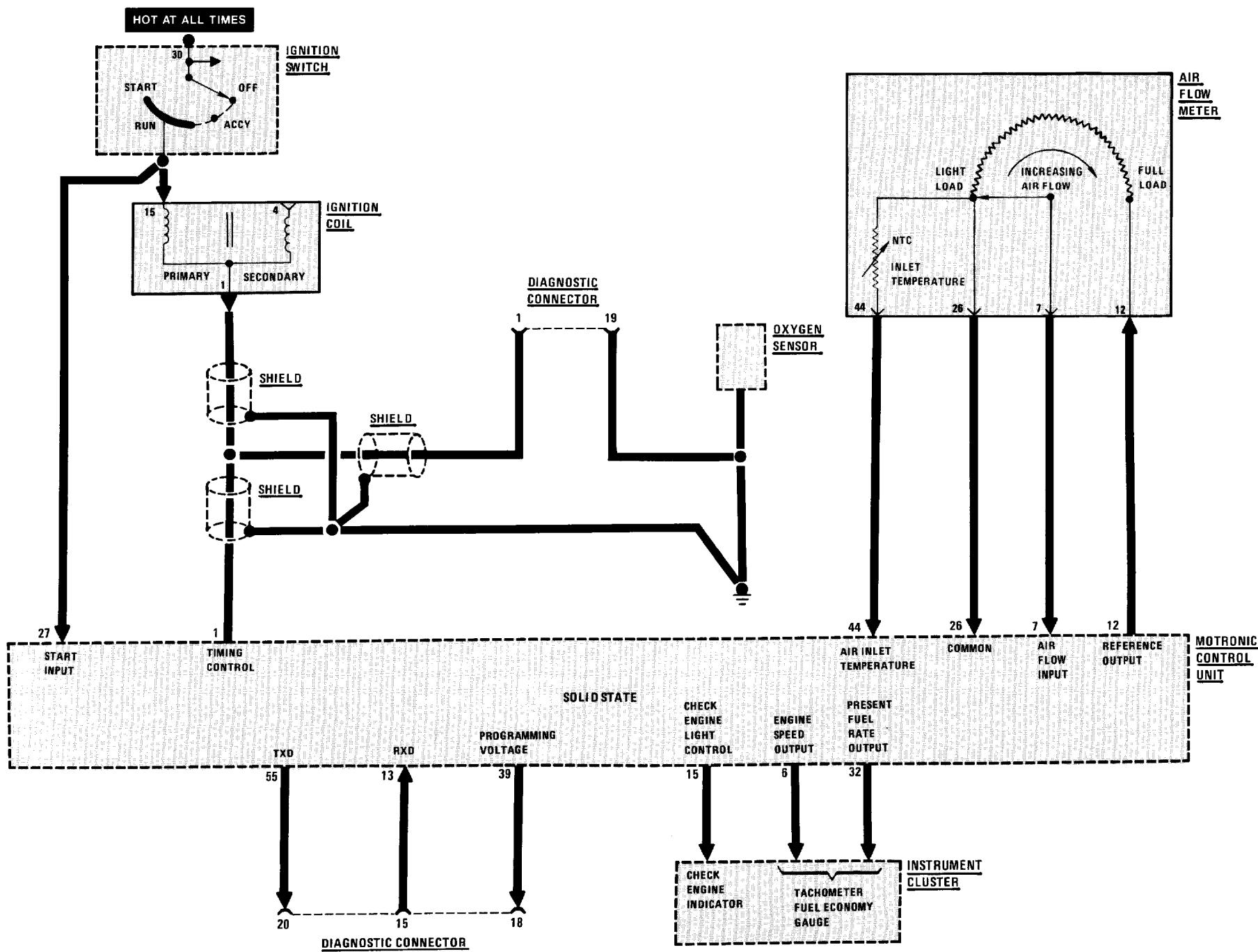


MANUAL TRANSMISSION

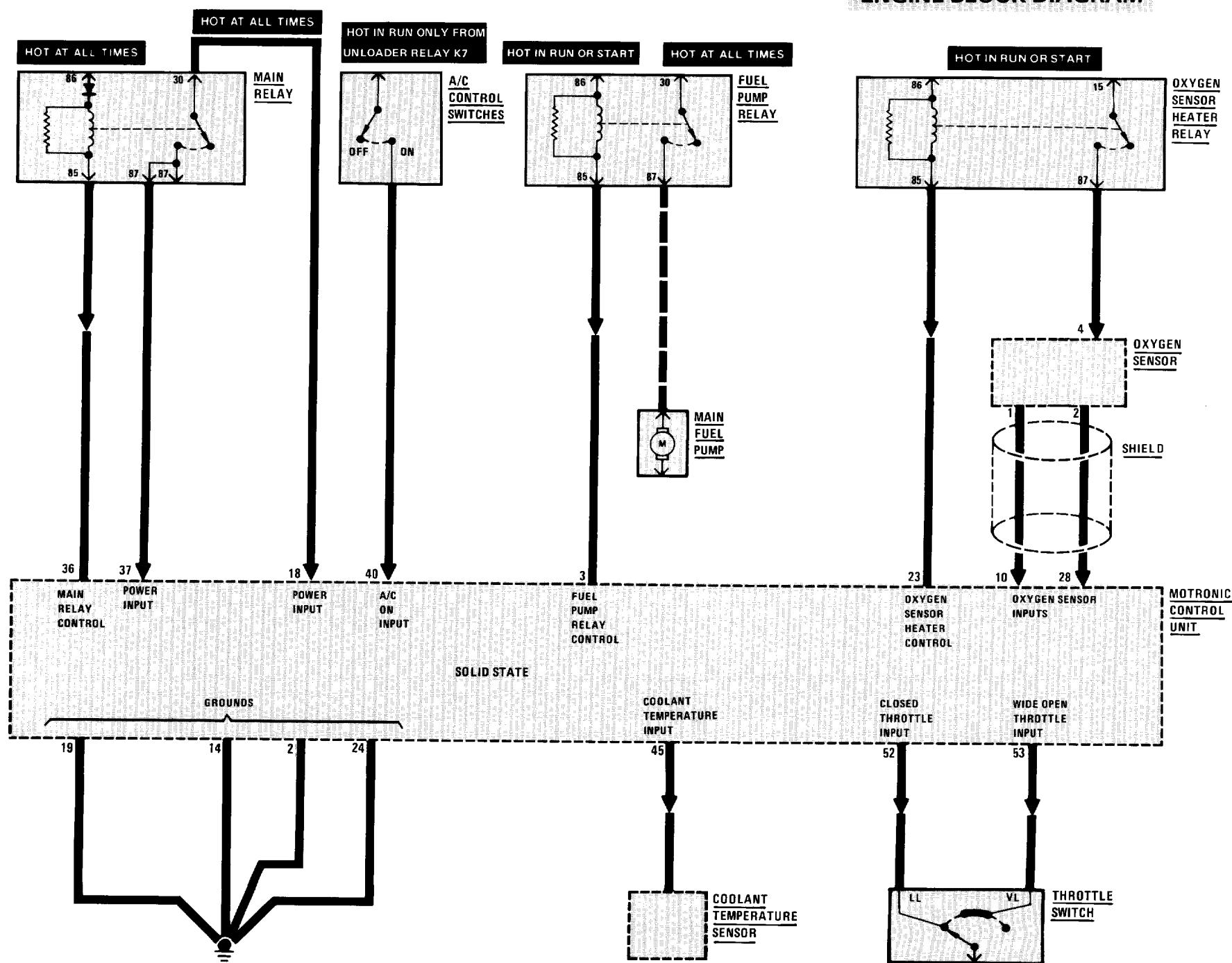


1360-0 INJECTION ELECTRONICS

ENGINE BLOCK DIAGRAM

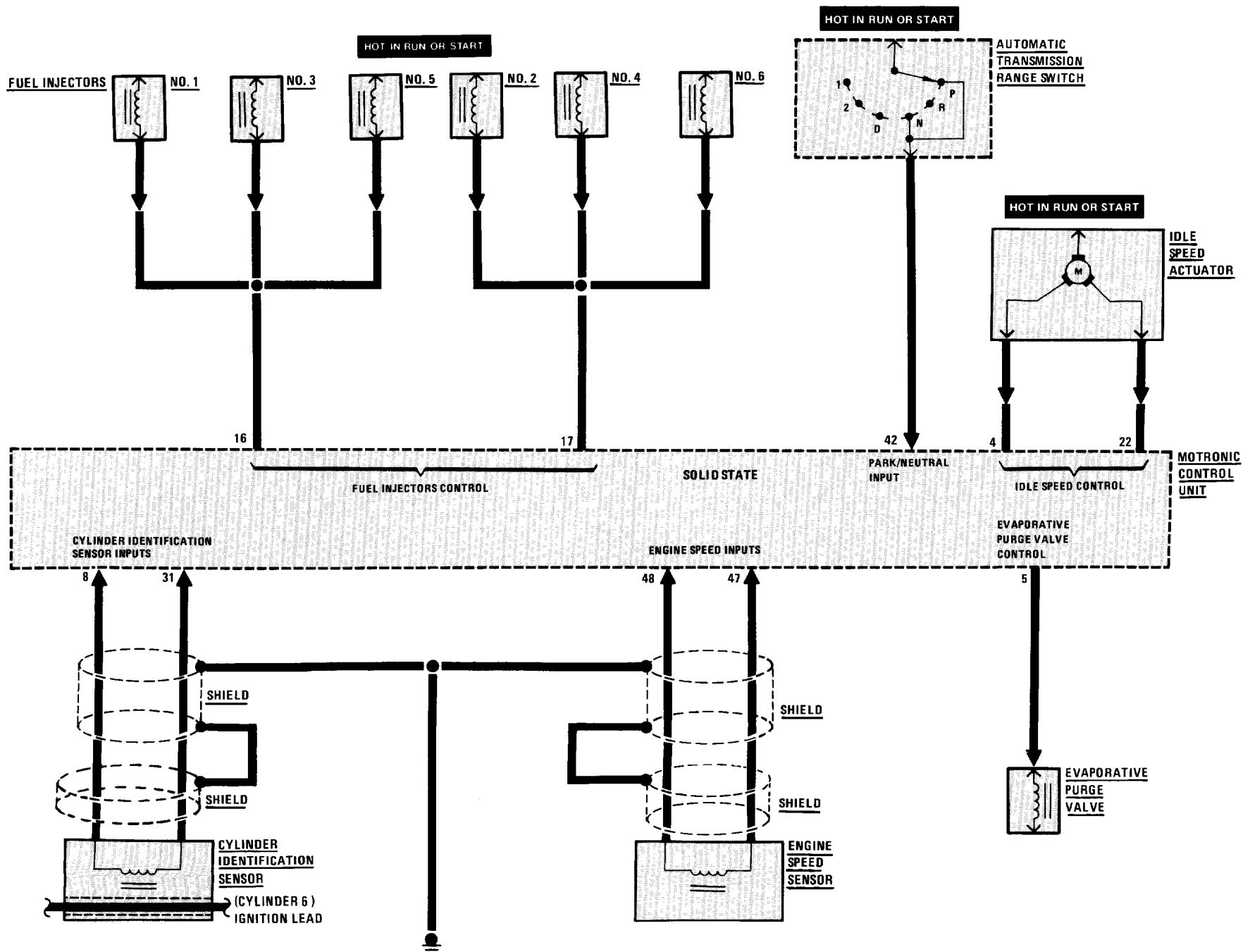


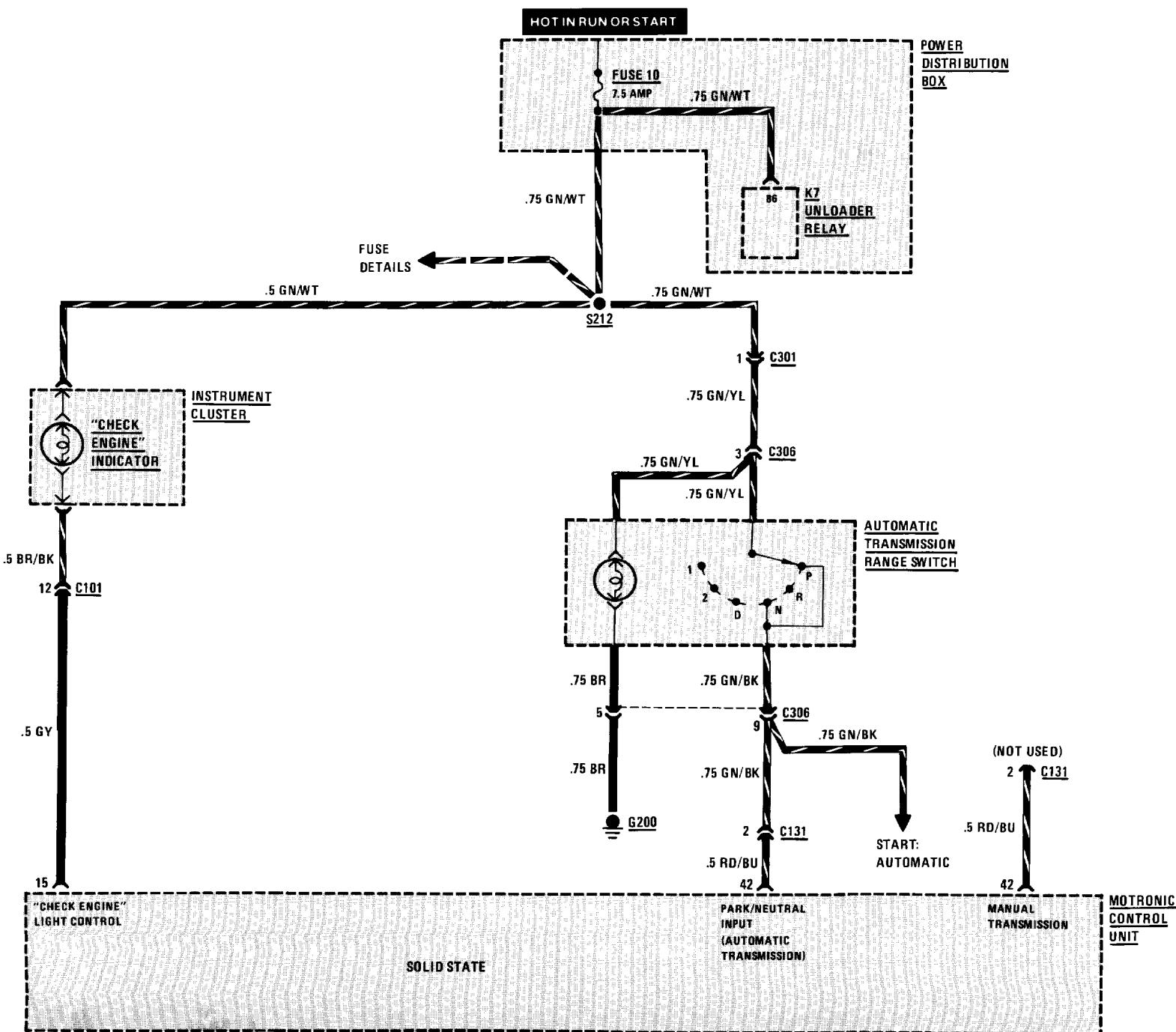
ENGINE BLOCK DIAGRAM



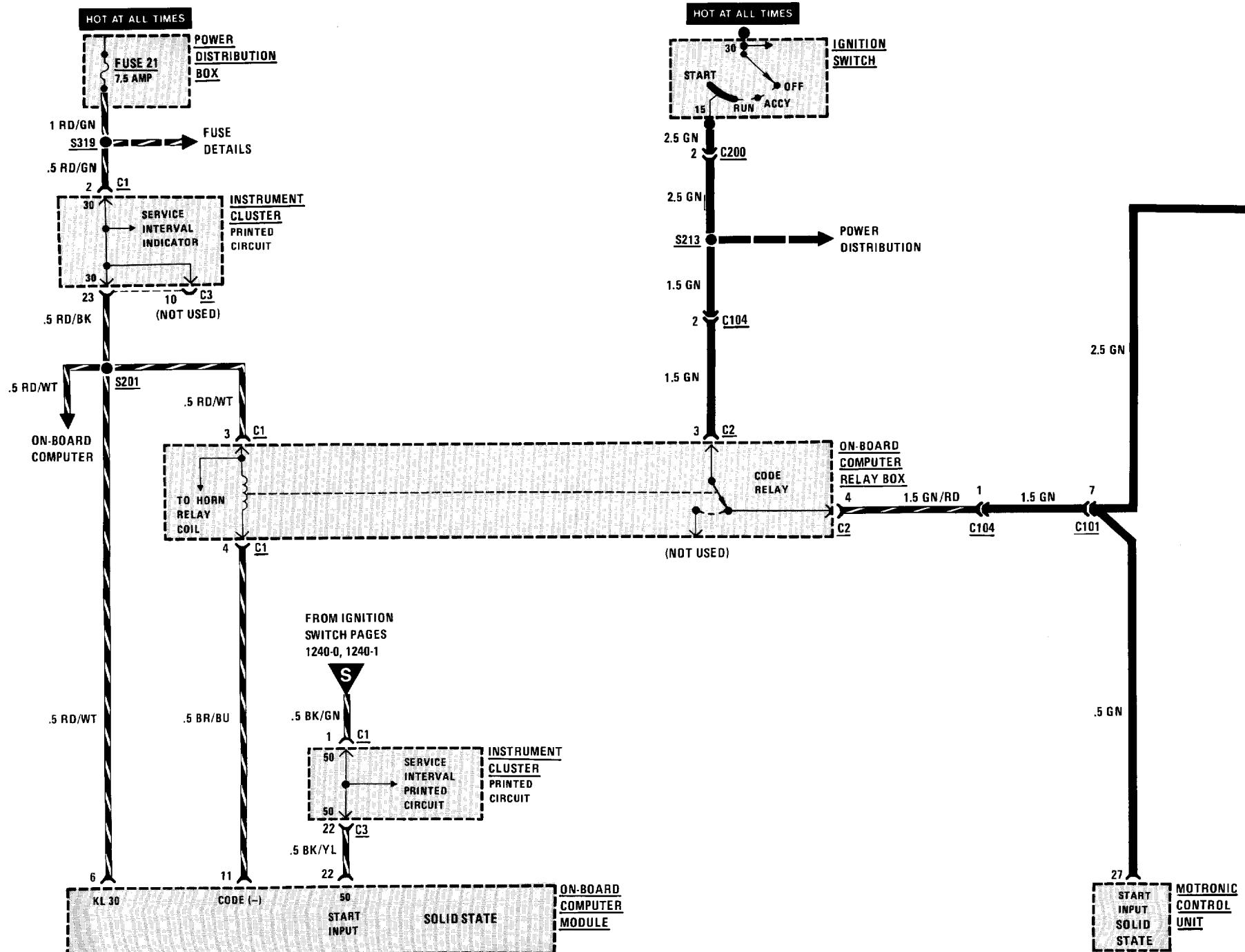
1360-2 INJECTION ELECTRONICS

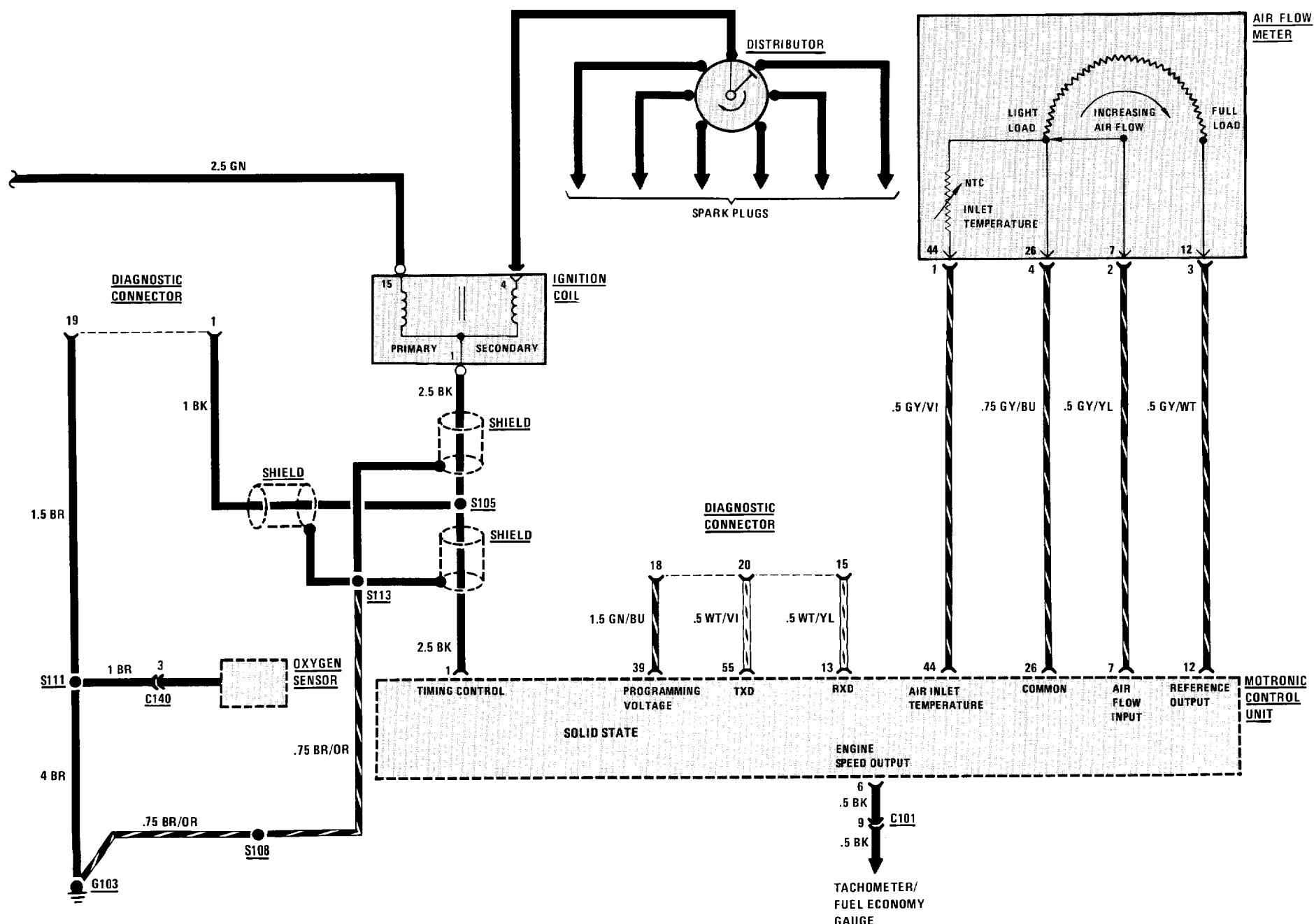
ENGINE BLOCK DIAGRAM



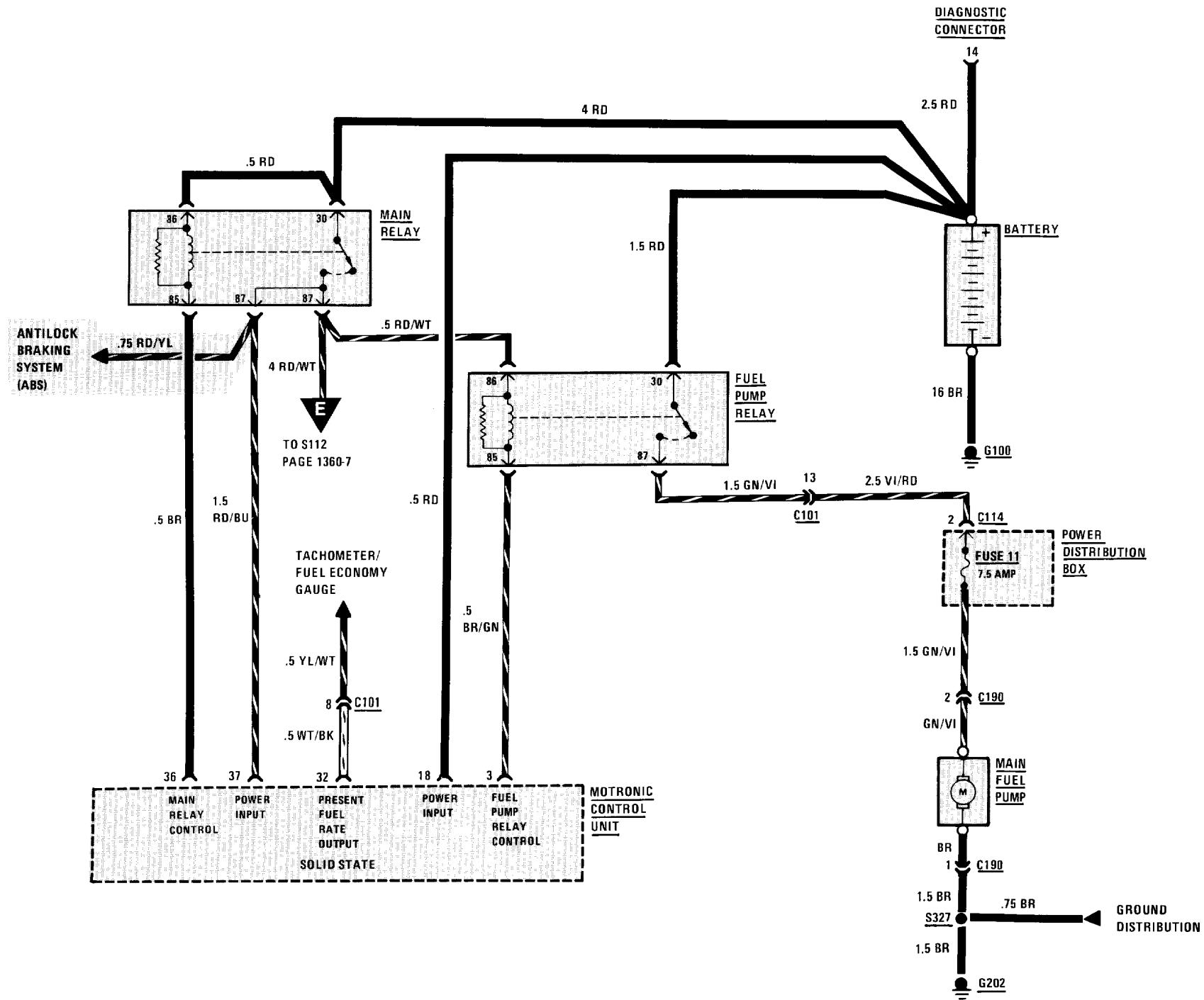


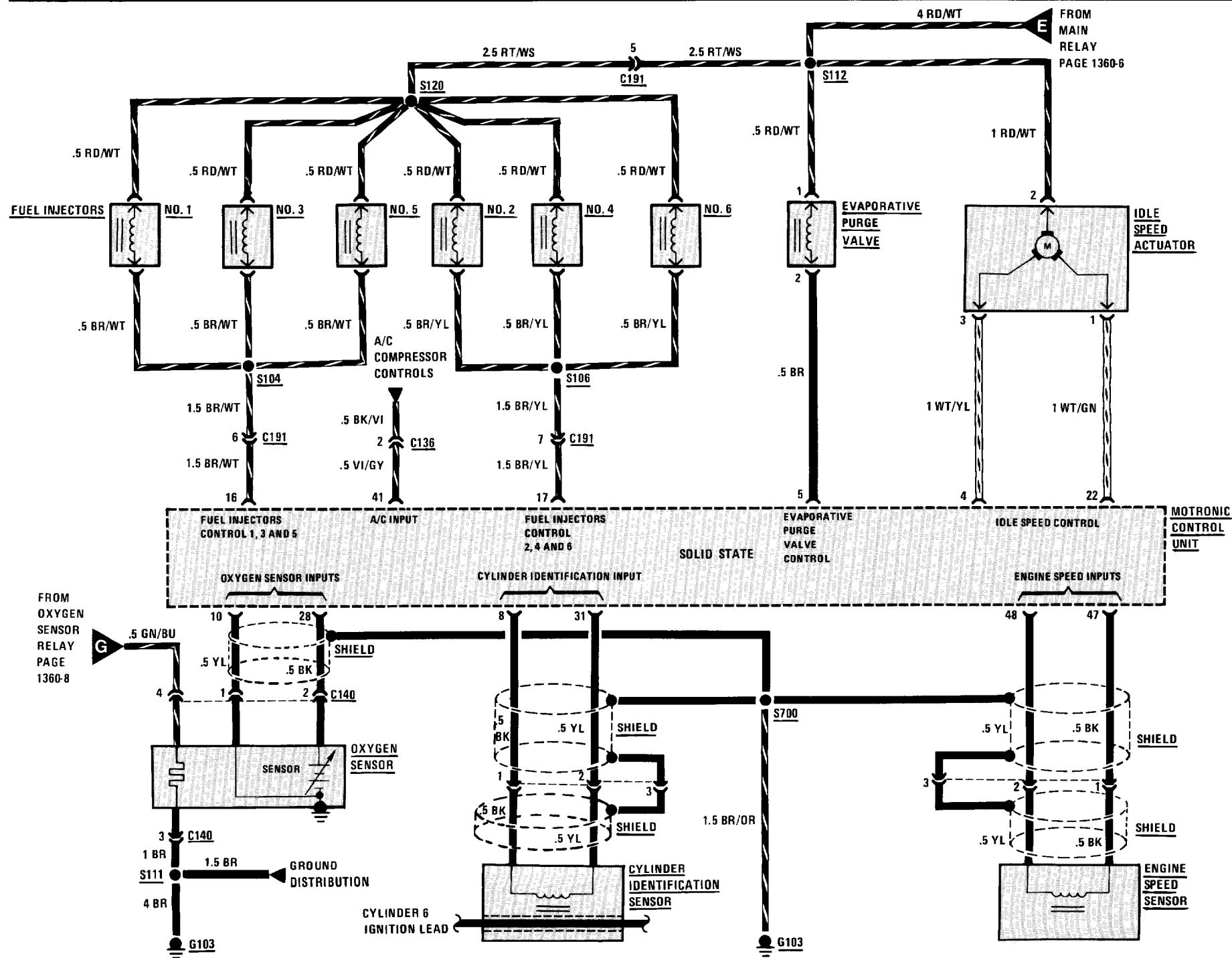
1360-4 INJECTION ELECTRONICS



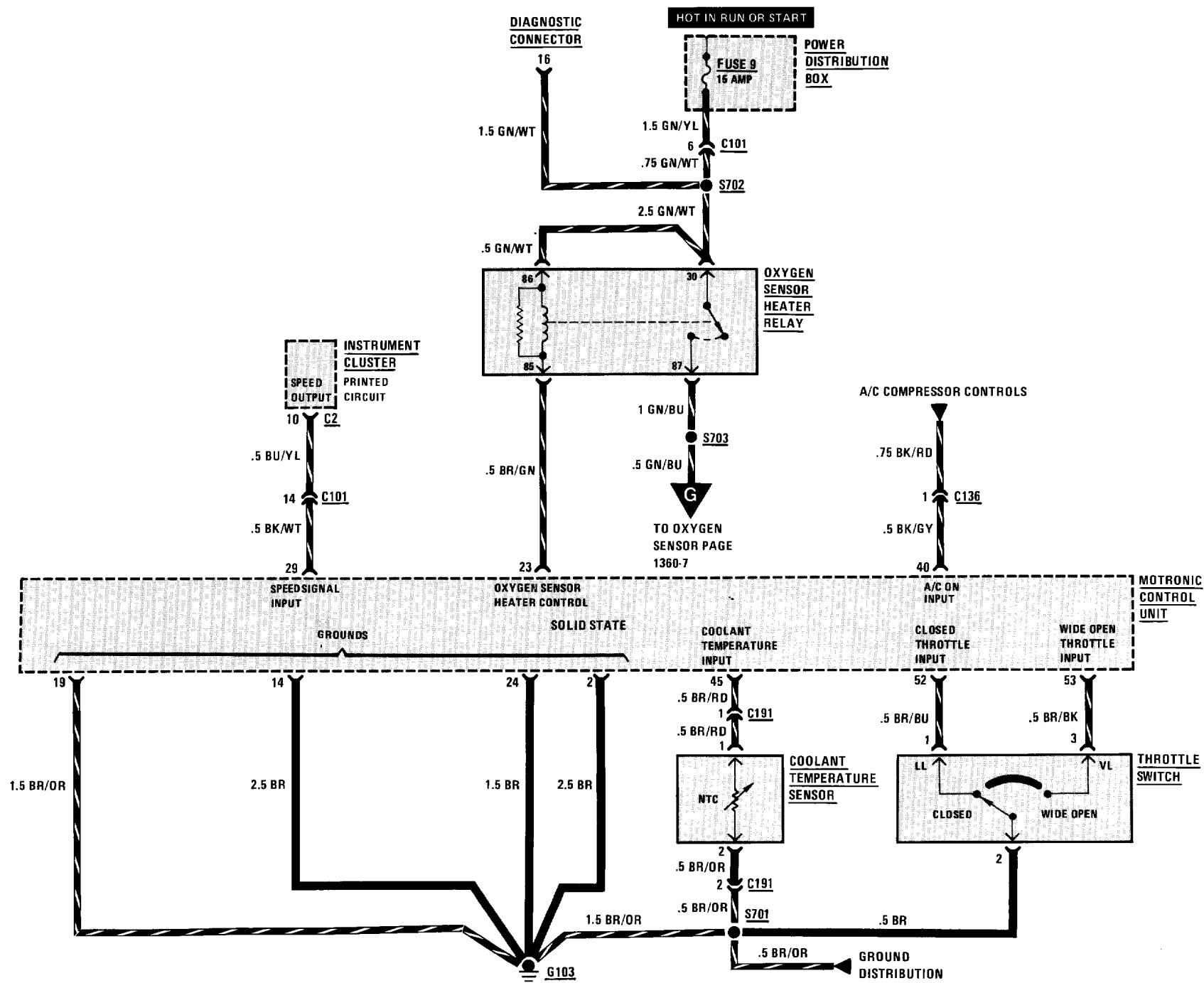


1360-6 INJECTION ELECTRONICS

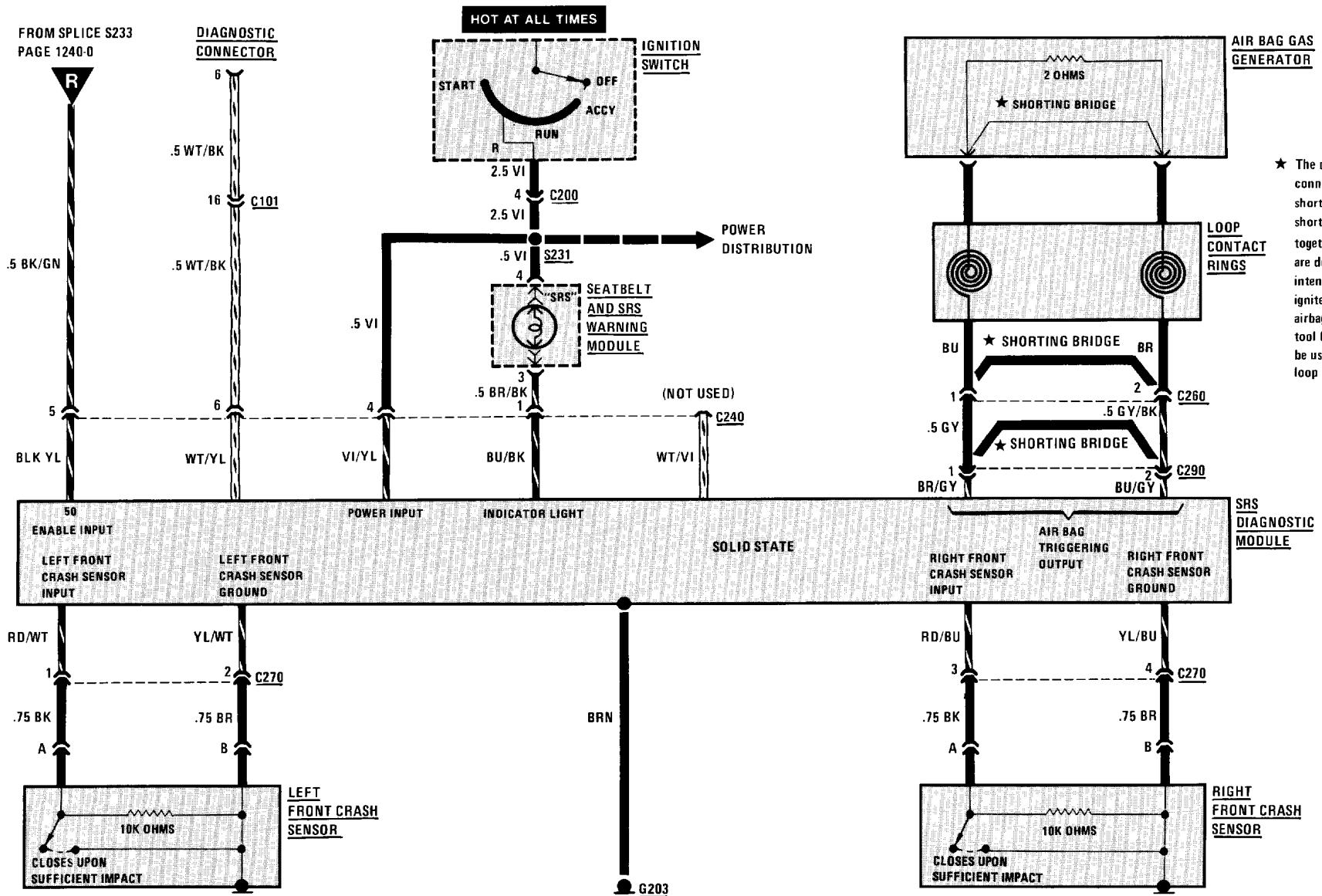




1360-8 INJECTION ELECTRONICS

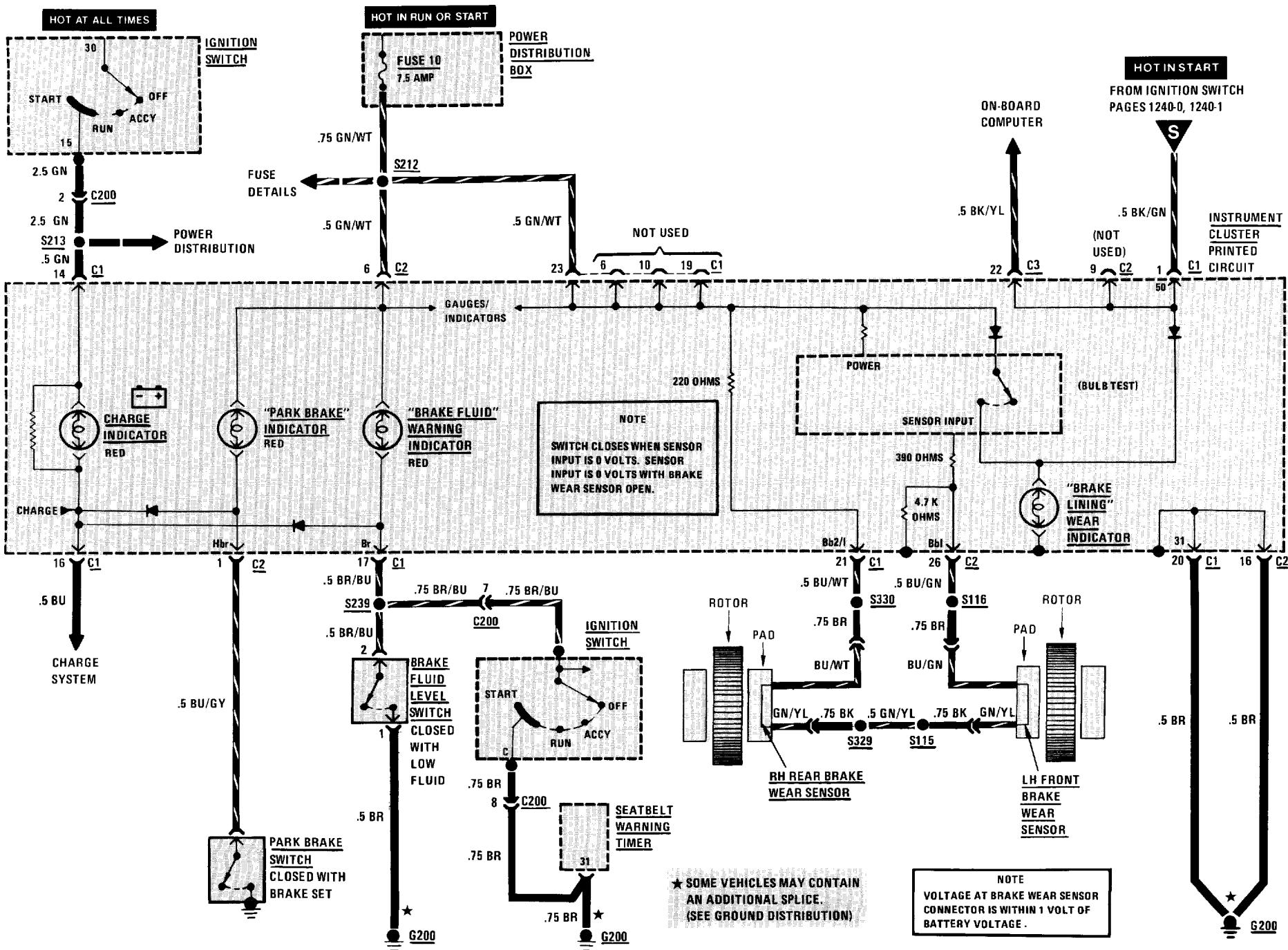


3234-0 SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

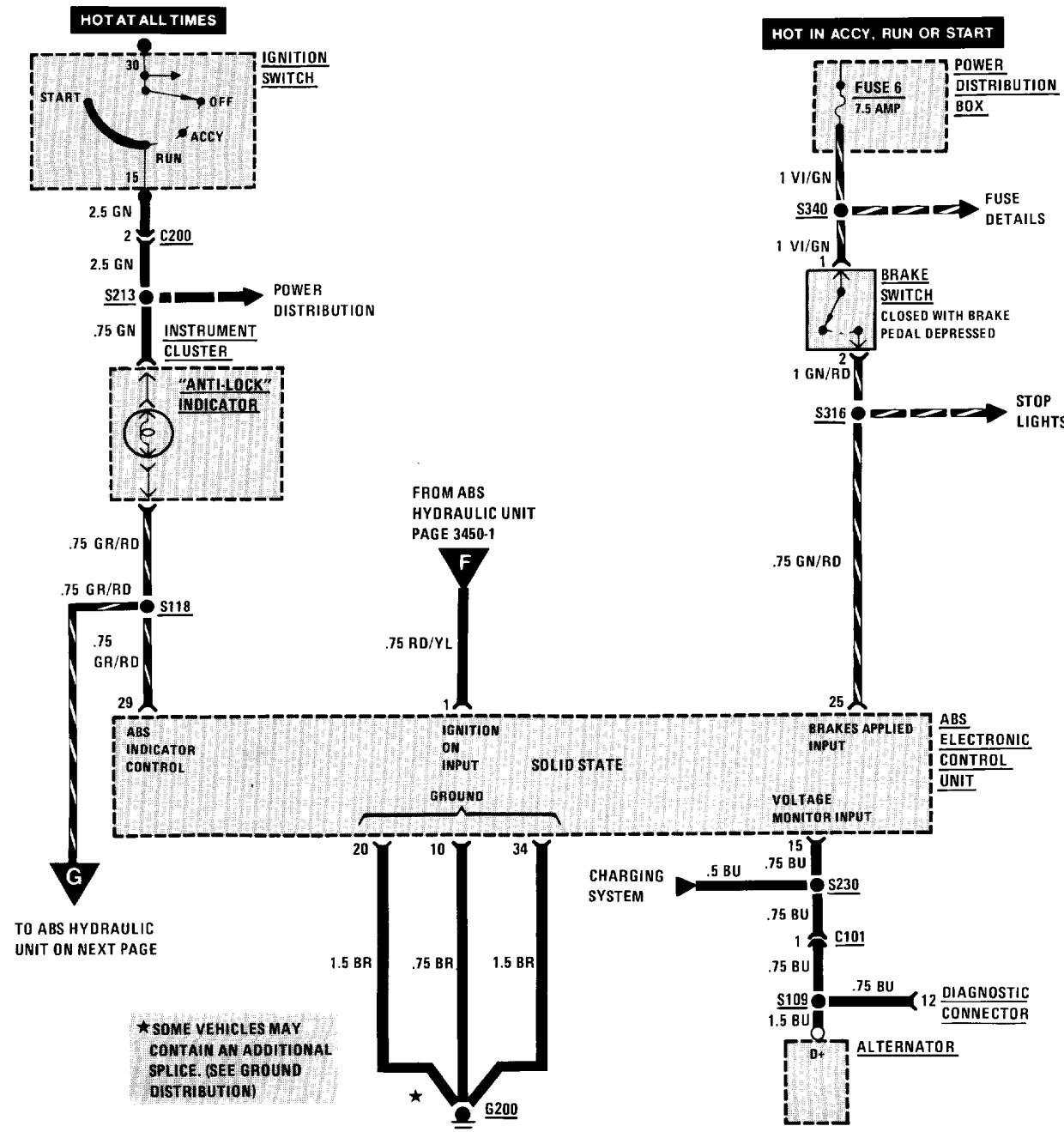


★ The driver's airbag generator connectors are fitted with shorting bridges. The bridges short the generator leads together when the connectors are demated to prevent unintentional triggering of the igniter when working on the airbag system. Only special tool 62 1260 (test lead) may be used to check the wire loop and igniter resistance.

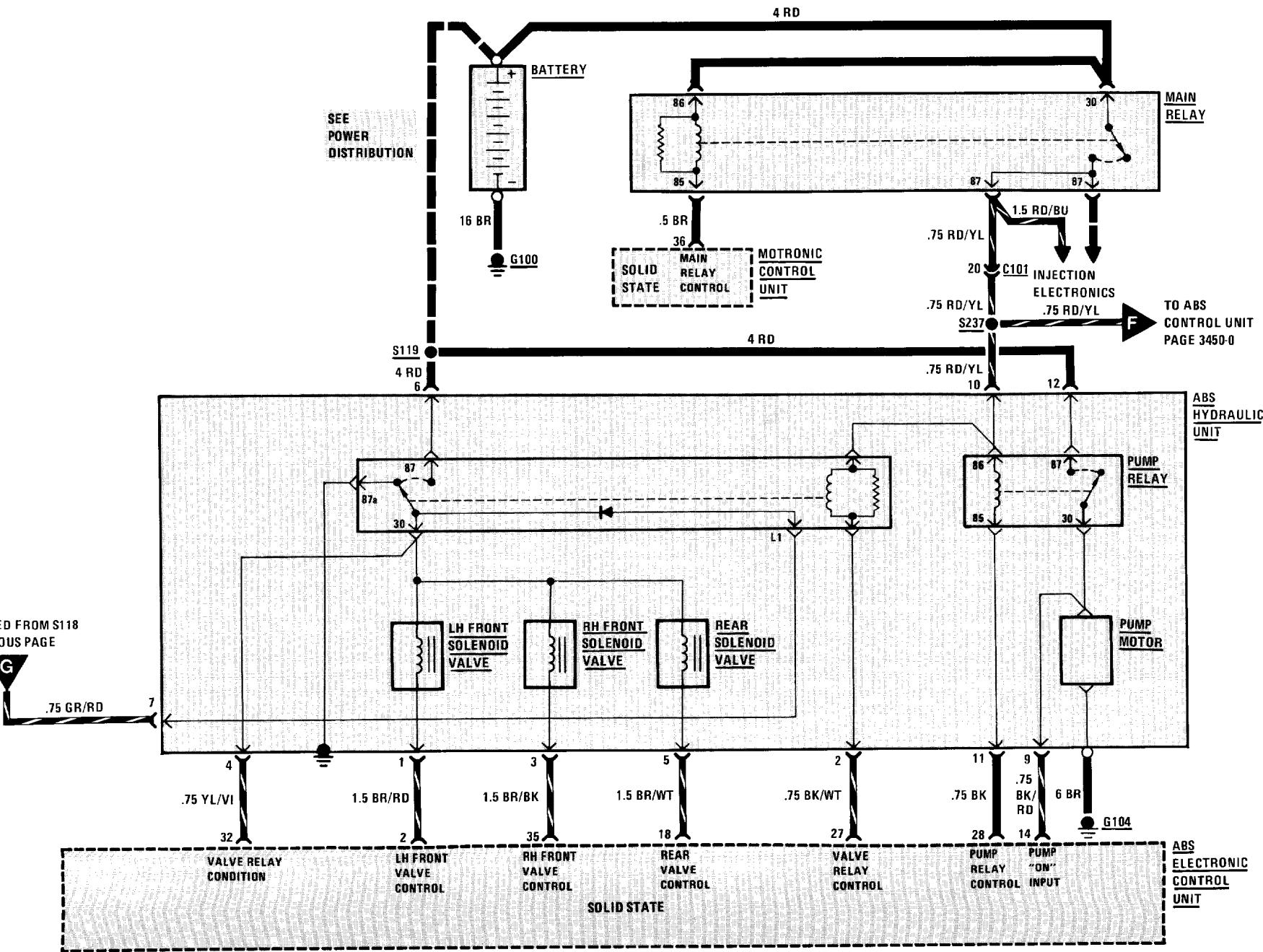
3435-0 BRAKE WARNING SYSTEM



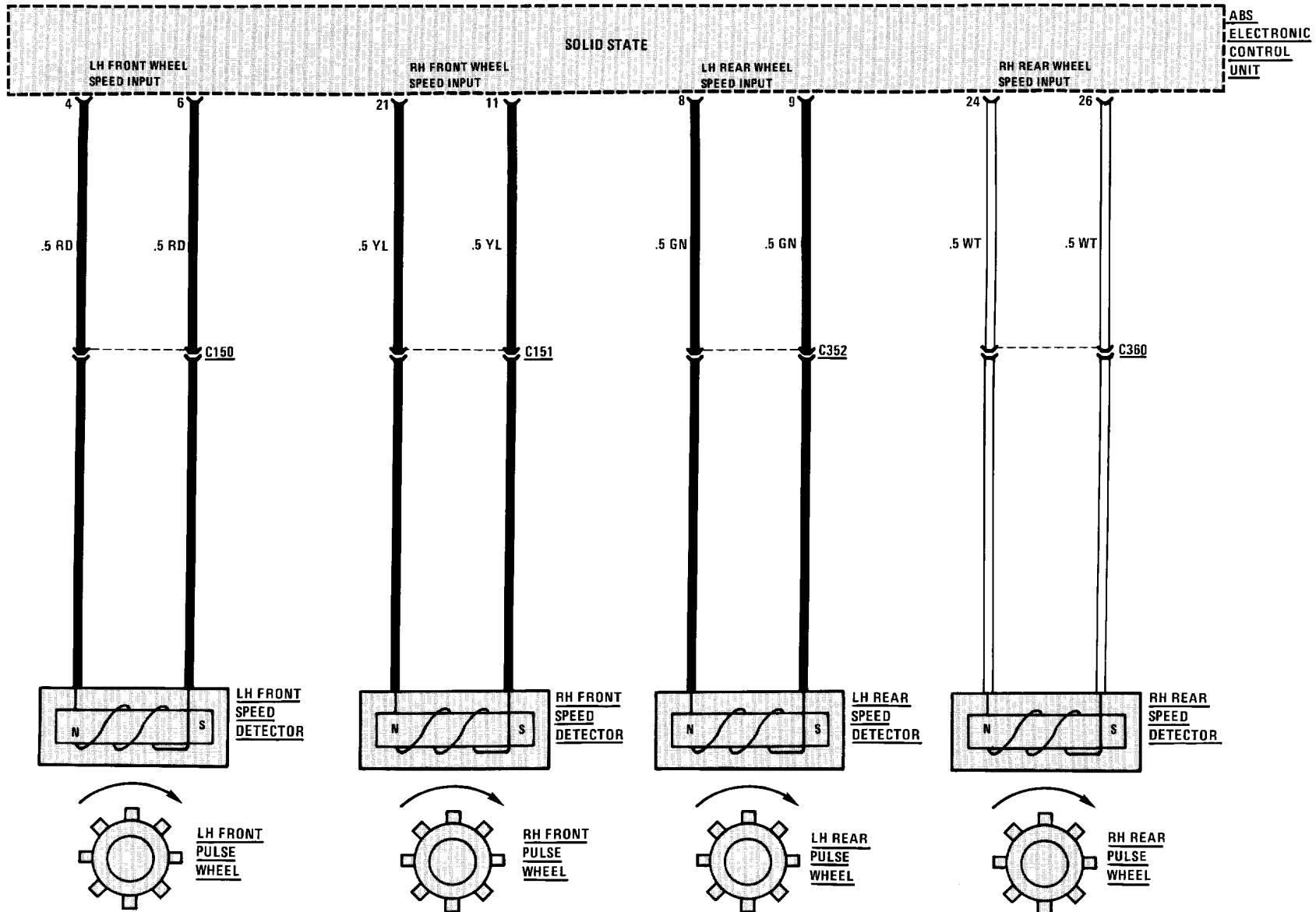
3450-0 ANTILOCK BRAKING SYSTEM (ABS)



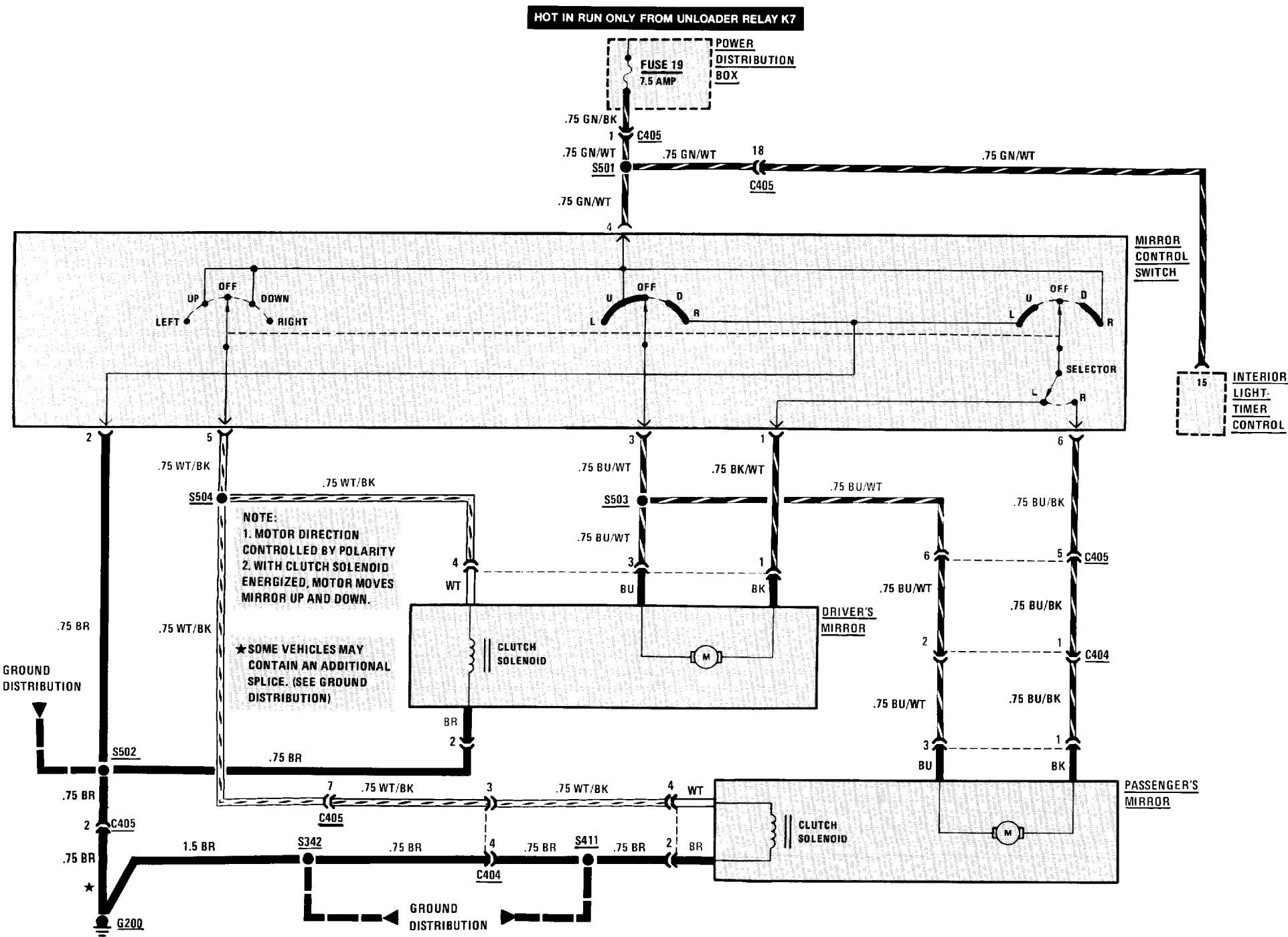
ANTILOCK BRAKING SYSTEM (ABS) 3450-1



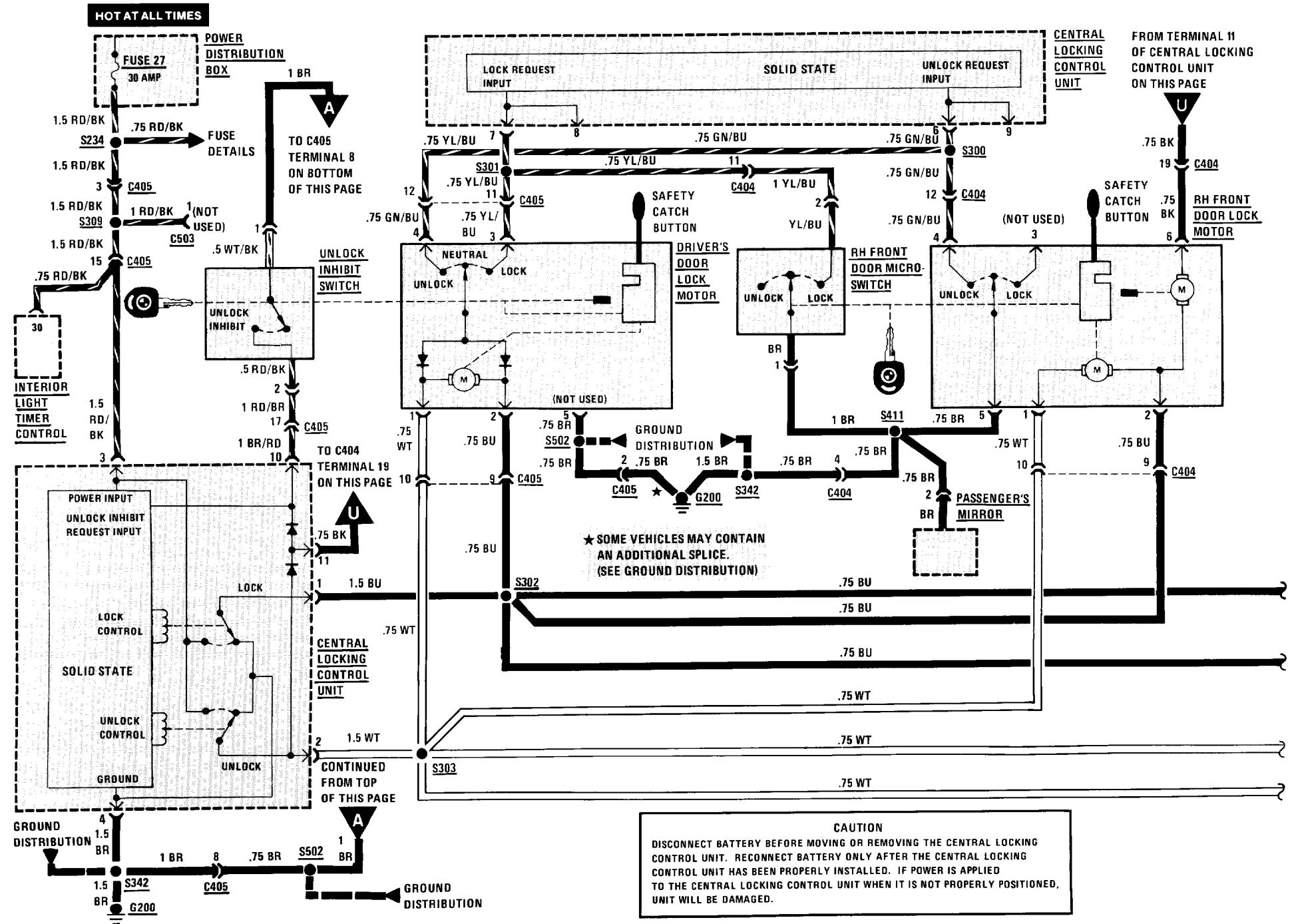
3450-2 ANTILOCK BRAKING SYSTEM (ABS)

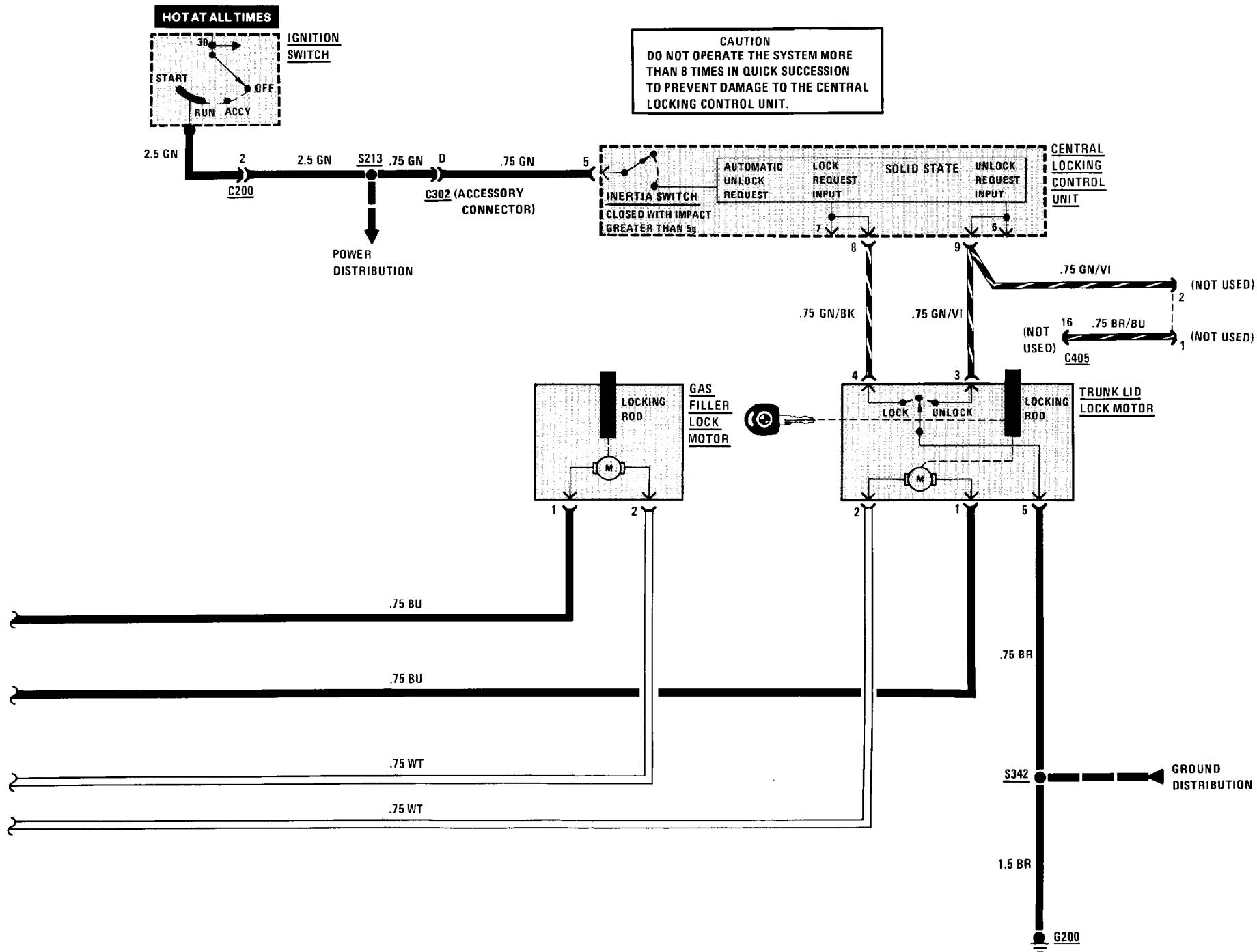


5116-0 POWER MIRRORS



5126-0 CENTRAL LOCKING





5126A-0 CENTRAL LOCKING

TROUBLESHOOTING HINTS

1. Check Fuse by operating the Interior Light Timer for either Dome Light.
2. If all locks stay in Unlock Inhibit, check the wires to terminal 10 of the Central Locking Unit for a short to ground.

SYSTEM CHECK

- Operate controls in sequence listed in the System Check Table.
- Refer to Repair Action for the Response received (tests follow the System Check Table).
- After any repair, repeat System Check to verify proper system operation.

NOTE: Before replacing any system component, check all connectors, splices, and wiring to that component.

SYSTEM CHECK TABLE

| OPERATION | RESPONSE | REPAIR ACTION |
|---|--|--|
| 1. Insert the key in the Driver's door and turn to LOCK | All doors lock | None, proceed to Operation 2 |
| | Some doors lock | Repair/replace the suspect Door Lock Motor Circuit |
| | No doors lock | Proceed to Operation 4 |
| 2. Turn the key to UNLOCK INHIBIT (clockwise until key is horizontal) | All doors double lock (Safety Catch Buttons cannot be pulled up by hand) | None, proceed to Operation 3 |
| | Driver's door double locks and only some of the other doors double lock | Repair/replace the suspect Door Lock Motor |
| | Driver's door double locks but all the other doors do not double lock | Perform Test B |
| | Driver's door does not double lock | Mechanical problem, see BMW Workshop Manual |

SYSTEM CHECK TABLE (CONT'D)

| OPERATION | RESPONSE | REPAIR ACTION |
|--|---------------------------|---|
| 3. Turn the key to UNLOCK | All doors unlock | None, proceed to Operation 4 |
| | Some doors unlock | Repair/replace the suspect Door Lock Motor circuit |
| | No doors unlock | Proceed to Operation 5 |
| 4. Insert the key in the Passenger's door and turn to LOCK | All doors lock | If the doors did not lock in Operation 1, repair/replace the Driver's Door Lock Switch, otherwise proceed to Operation 5 |
| | Some doors lock | Repair/replace the suspect Door Lock Motor circuit |
| | No doors lock | If all the doors locked in Operation 1, repair/replace the Right Front Door Microswitch. If the doors did not lock in Operation 1, perform Test A |
| 5. Insert the key in the Passenger's door and turn to UNLOCK | All doors unlock | If all the doors did not unlock in Operation 3, repair/replace the Driver's Door Lock Switch, otherwise proceed to Operation 6 |
| | Some doors unlock | Repair/replace the suspect Door Lock Motor |
| | No doors unlock | If all the doors unlocked in Operation 3, repair/replace the Passenger's Door Lock Switch. If the doors did not unlock in Operation 3, perform Test C |
| 6. Get in the car and close and lock all doors Turn the Ignition Switch to RUN | Doors remain locked | None, proceed to Operation 7 |
| | Doors unlock | Repair/replace the Central Locking Control Unit |
| 7. Get out of the car Insert the key in the Driver's door and turn to LOCK Unlock each of the doors by pulling up the Safety Catch Buttons | All doors can be unlocked | None, proceed to Operation 8 |
| | All doors remain secure | Disconnect the connector from the Central Locking Control Unit and check for a short to ground in the wires at terminal 11. <ul style="list-style-type: none">• If short to ground is not present, replace the Central Locking Control Unit.• If short to ground is present isolate wiring from Door Lock Motors one at a time to find short |

5126A-2 CENTRAL LOCKING

SYSTEM CHECK TABLE (CONT'D)

| OPERATION | RESPONSE | REPAIR ACTION |
|--|----------------------------|--|
| 8. Insert the key in the Trunk Cylinder Switch. Turn the key to LOCK | Trunk locks | None, proceed to Operation 9 |
| | Trunk does not lock | If the doors lock, repair/replace the Trunk Lock Motor Circuit or Trunk Lock Motor If the doors do not lock, repair/replace the Trunk Switch Repair/replace the Central Locking Control Unit if the Trunk Switch Circuit is OK |
| 9. Turn the key to UNLOCK | Trunk unlocks | None, proceed to Operation 10 |
| | Trunk does not unlock | If the doors unlock, repair/replace the Trunk Lock Motor circuit or Trunk Lock Motor If the doors do not unlock, repair/replace the Trunk Switch Repair/replace the Central Locking Control Unit if the Trunk Switch Circuit is OK |
| 10. Turn the key back to LOCK | Gas Filler locks | None, proceed to Operation 11 |
| | Gas Filler does not lock | Repair/replace the Gas Filler Lock Motor circuit |
| 11. Turn the key to UNLOCK | Gas Filler unlocks | None |
| | Gas Filler does not unlock | Repair/replace the Gas Filler Lock Motor circuit |

- If all results are normal, the system is OK.

SYSTEM DIAGNOSIS

- Do the following tests when directed by the System Check Table.

A: CONTROL UNIT LOCK TEST (TABLE 1)

| Measure: VOLTAGE At: CONTROL UNIT CONNECTOR (Connected) | | |
|--|--------------------|------------------|
| Measure Between | Correct Voltage | For Diagnosis |
| 3 & Ground | Battery | See 1 |
| 3 & 4 | Battery | See 2 |
| <ul style="list-style-type: none"> • If the voltages are correct, proceed to Table 2. | | |
| <ol style="list-style-type: none"> 1. Check the wire to terminal 3 for an open. 2. Check the wire from terminal 4 for an open to ground (see schematic). | | |

A: CONTROL UNIT LOCK TEST (TABLE 2)

| Connect: A FUSED JUMPER At: CONTROL UNIT CONNECTOR (Connected) | | |
|---|-------------------|------------------|
| Jumper Between | Correct Result | For Diagnosis |
| 7 & Ground | Doors lock | See 1 |
| <ul style="list-style-type: none"> • If the result is correct, repair/replace the switches and related wiring (see schematic). | | |
| <ol style="list-style-type: none"> 1. Proceed to Table 3. | | |

A: CONTROL UNIT LOCK TEST (TABLE 3)

| Connect: FUSED JUMPERS At: CONTROL UNIT CONNECTOR (Disconnected) | | |
|--|----------------|---------------|
| Jumper Between | Correct Result | For Diagnosis |
| 1 & 3 | Doors lock | See 1 |
| 2 & 4 | | |
| <ul style="list-style-type: none"> If the result is correct, replace the Central Locking Control Unit. <ol style="list-style-type: none"> Check wire from terminal 1 to splice and wire from terminal 3 to splice for opens (see schematic). | | |

B: UNLOCK INHIBIT TEST

| Connect: A FUSED JUMPER At: CONTROL UNIT CONNECTOR (Connected) | | |
|---|-------------------|---------------|
| Jumper Between | Correct Result | For Diagnosis |
| 10 & Ground | Doors double lock | See 1 |
| <ul style="list-style-type: none"> If the result is correct, check the wires from terminal 10 to ground for opens (see schematic). Replace the Unlock Inhibit Switch if the wires and connections are OK. <ol style="list-style-type: none"> Check the wires from terminal 11 for opens (see schematic). If the wires and connections are OK, replace the Central Locking Control Unit. | | |

C: CONTROL UNIT UNLOCK TEST

| Connect: A FUSED JUMPER At: CONTROL UNIT CONNECTOR (Connected) | | |
|---|----------------|---------------|
| Jumper Between | Correct Result | For Diagnosis |
| 6 & Ground | Doors unlock | See 1 |
| <ul style="list-style-type: none"> If the result is correct, repair/replace the switches and related wiring (see schematic). <ol style="list-style-type: none"> Replace the Central Locking Control Unit. | | |

CIRCUIT DESCRIPTION

The Central Locking System is controlled by the Central Locking Control Unit. This unit senses when a lock switch is moved by a key and sends the appropriate signal to drive the Motors. The Central Locking Control Unit controls the Door Locks, Gas Filler Lock and Trunk Lock. The unit also has an Inertia Switch which closes on impact greater than 5g. If in RUN or START, the locks are then unlocked.

Lock

When the Key is inserted into a lock and turned clockwise, the Lock Switch moves to LOCK and grounds terminal 7 of the Central Locking Control Unit. The unit then activates the Lock Relay and applies voltage from Fuse 27 to the Lock Motor, which is grounded through the WT wire, Central Locking Control Unit and BR wire. The Lock Motor then pulls the lock down. The door locks also control the Trunk Lock and Gas Filler Lock.

Unlock

When the key is turned counterclockwise, terminal 6 of the Central Locking Control Unit is grounded through the Lock Switch. The Central Locking Control Unit activates the Unlock Relay and applies voltage from Fuse 27, through terminal 2 to the Lock Motor. The motor is grounded through the BU wire, Central Locking Control Unit terminal 1. The polarity is reversed and the motor pushes the lock up.

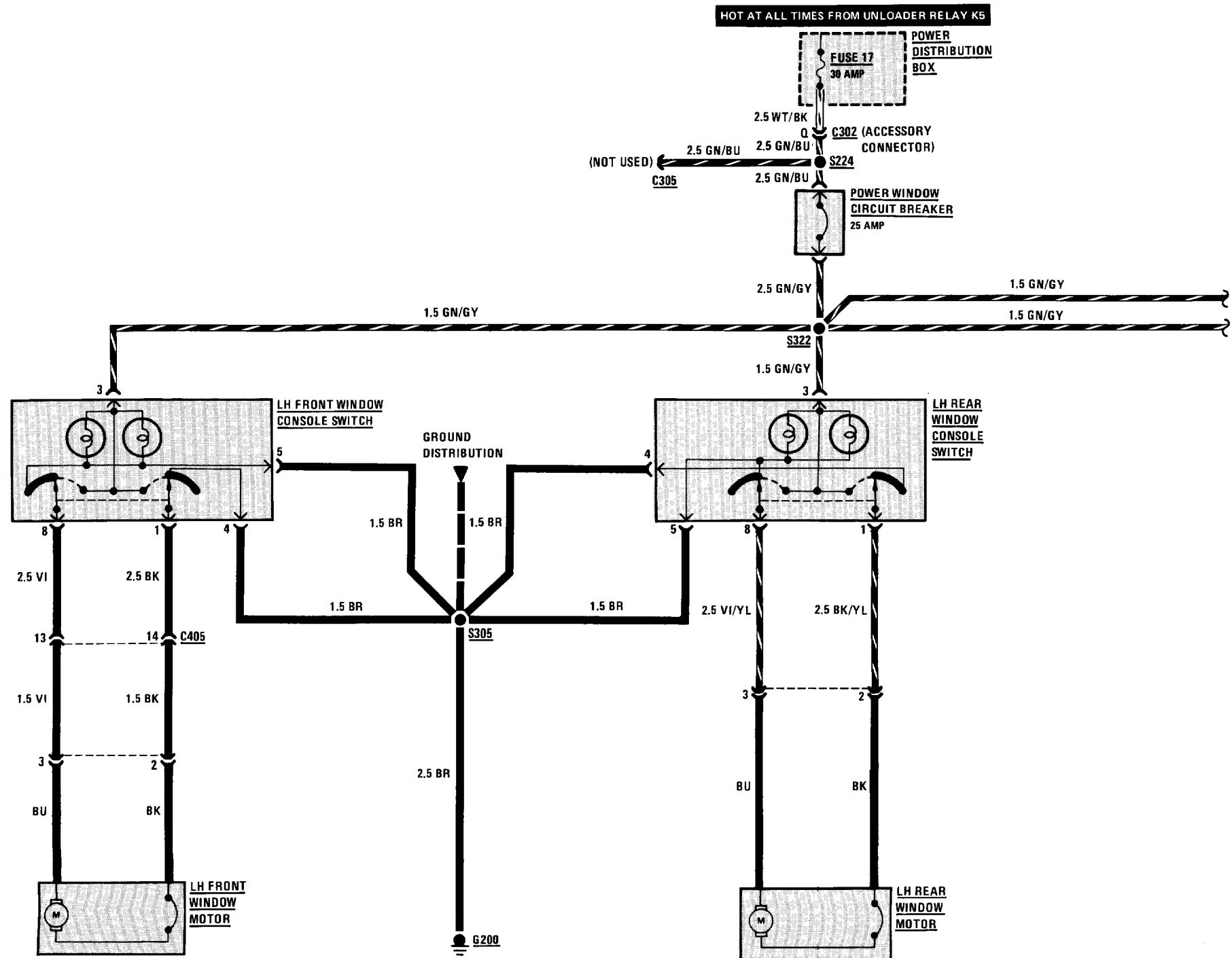
Unlock Inhibit

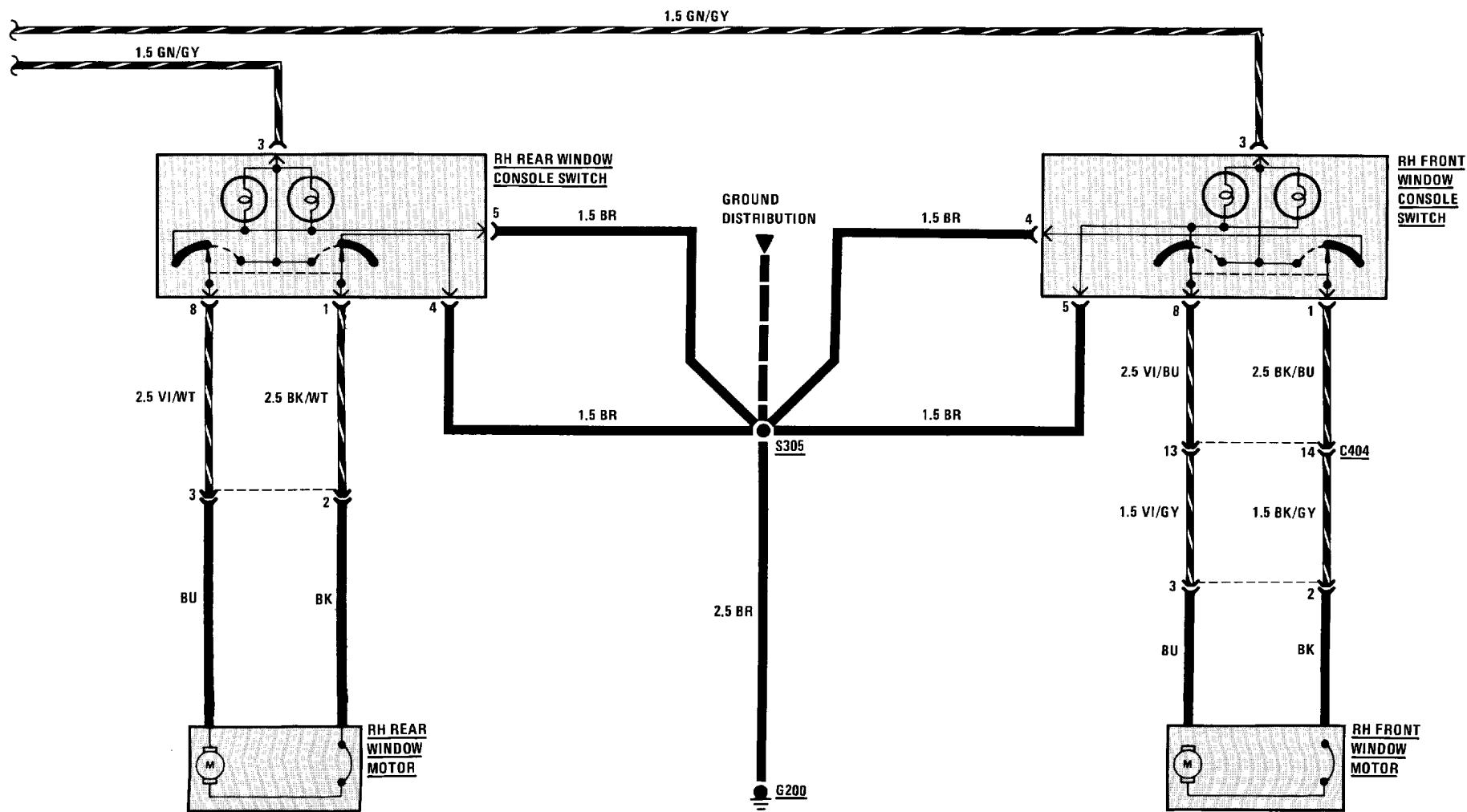
When the key is inserted into the Driver's Lock and turned clockwise past the LOCK position, the Unlock Inhibit mechanism is engaged. Mechanically inserting a bar into the driver's lock prevents unlocking through use of the Safety Catch Button. When in the Unlock Inhibit position, ground is applied to the Unlock Inhibit motors in the other lock units. The Central Locking Control Unit is grounded at terminal 10 and then activates the Lock Relay. Voltage is applied to the Unlock Inhibit motors through terminal 1. They are activated and engage the other Unlock Inhibit mechanisms. The direction of the motors is reversed when the doors are unlocked (see Unlock).

Trunk Lock

The Trunk Lock operates in a manner similar to the Door Locks.

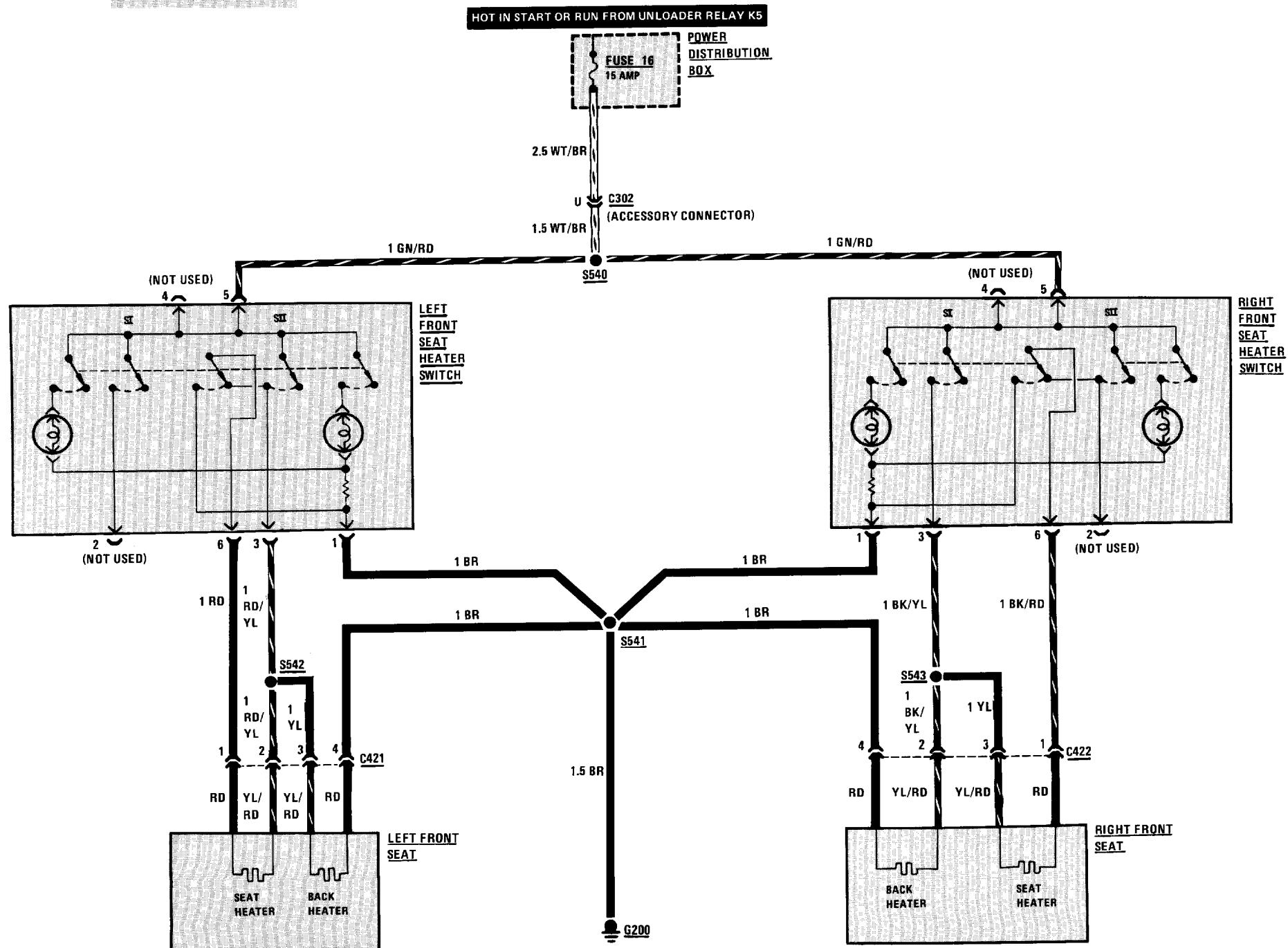
5133-0 POWER WINDOWS





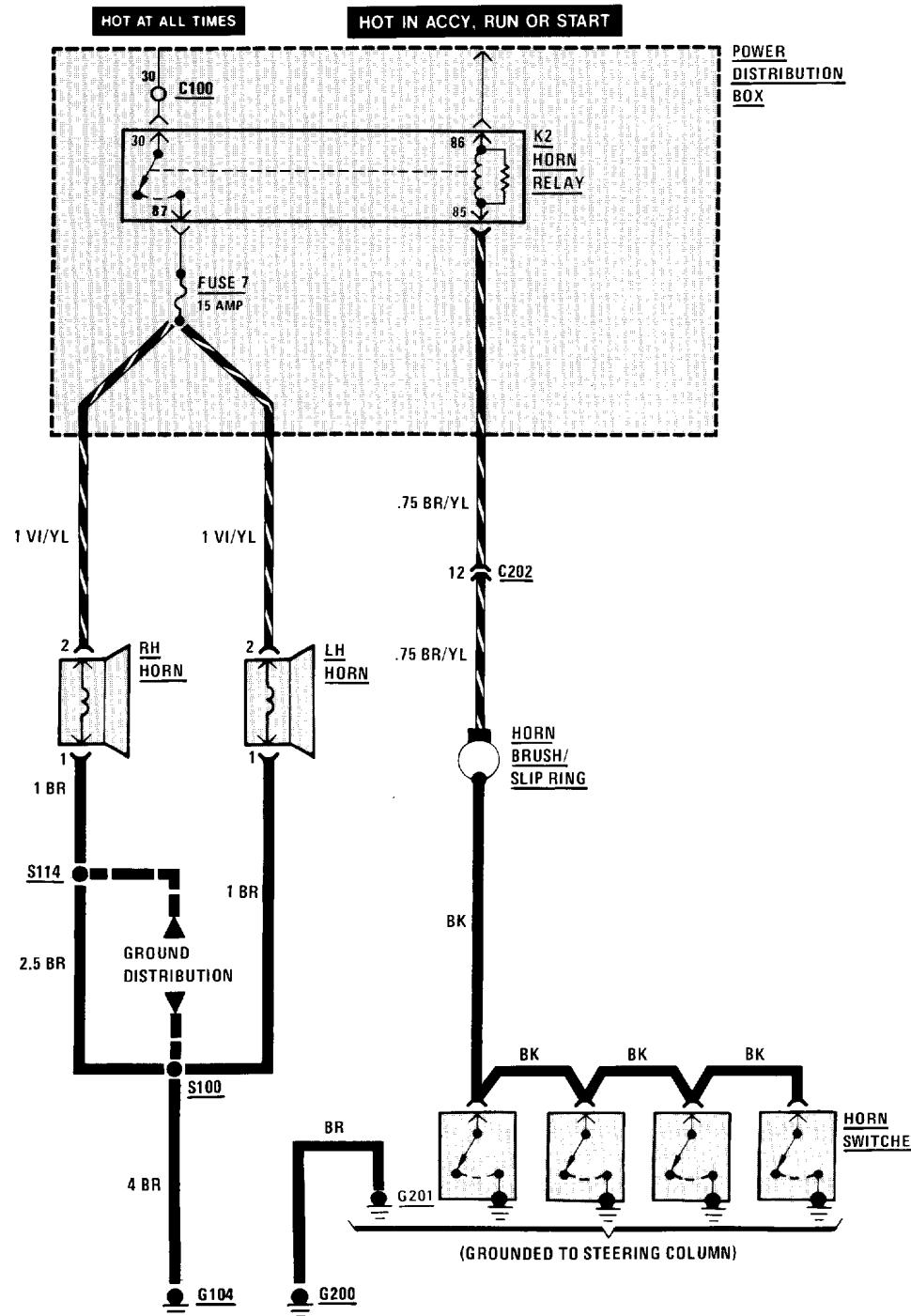
5200-0 SEATS

HEATED SEATS

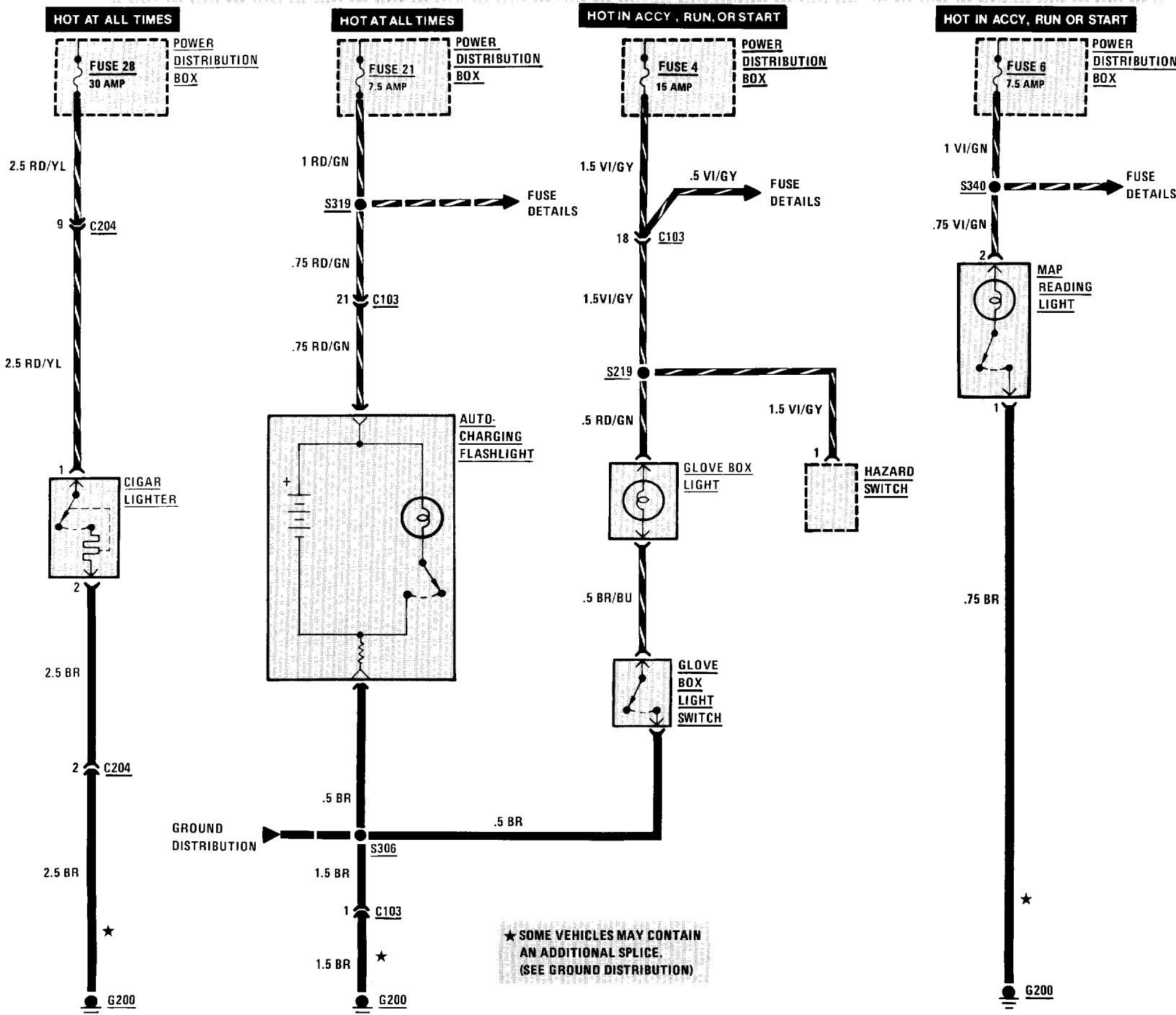


6100-0 BODY ELECTRICAL

HORNS

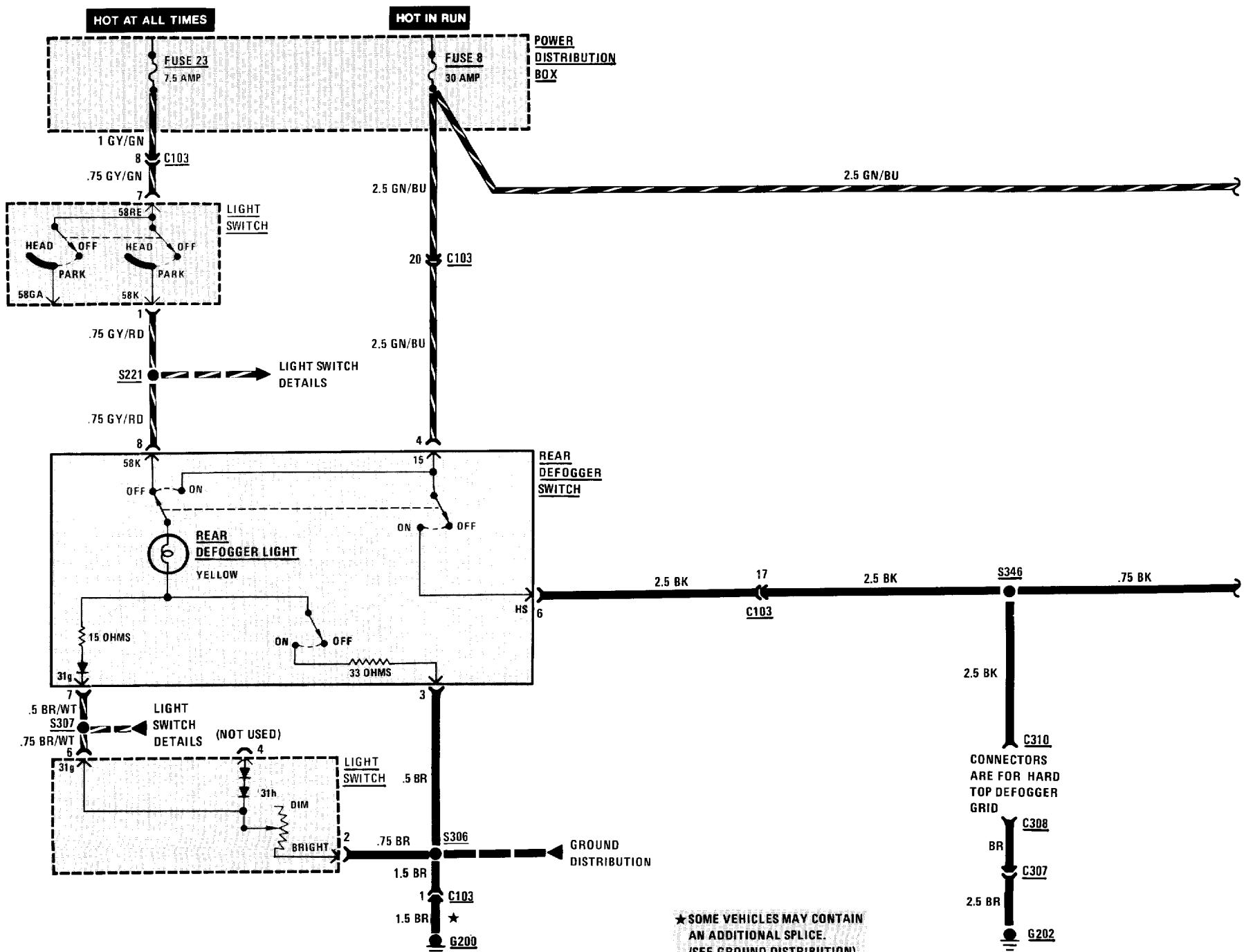


CIGAR LIGHTER/GLOVE BOX LIGHT/AUTO-CHARGING FLASHLIGHT/MAP READING LIGHT

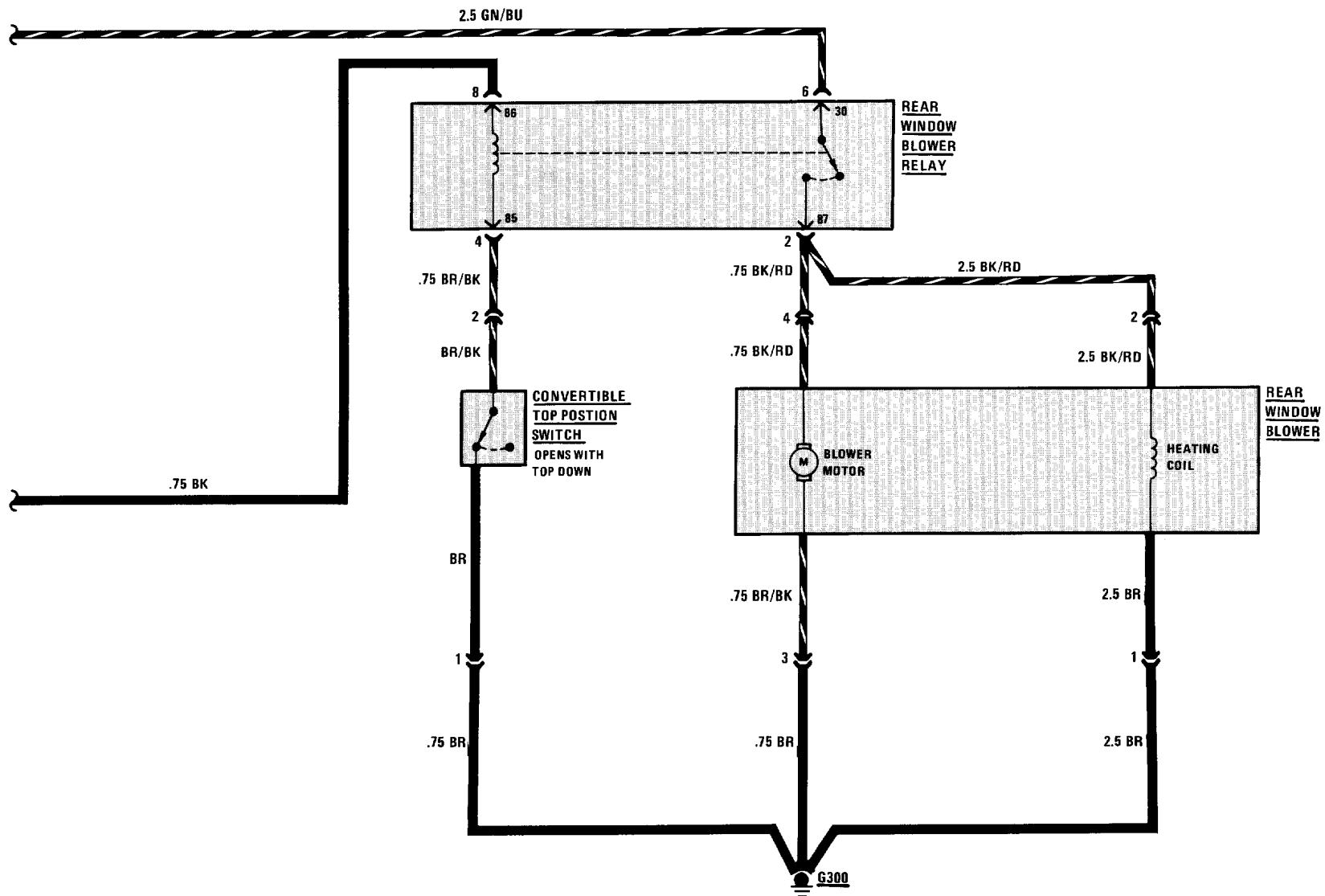


6100-2 BODY ELECTRICAL

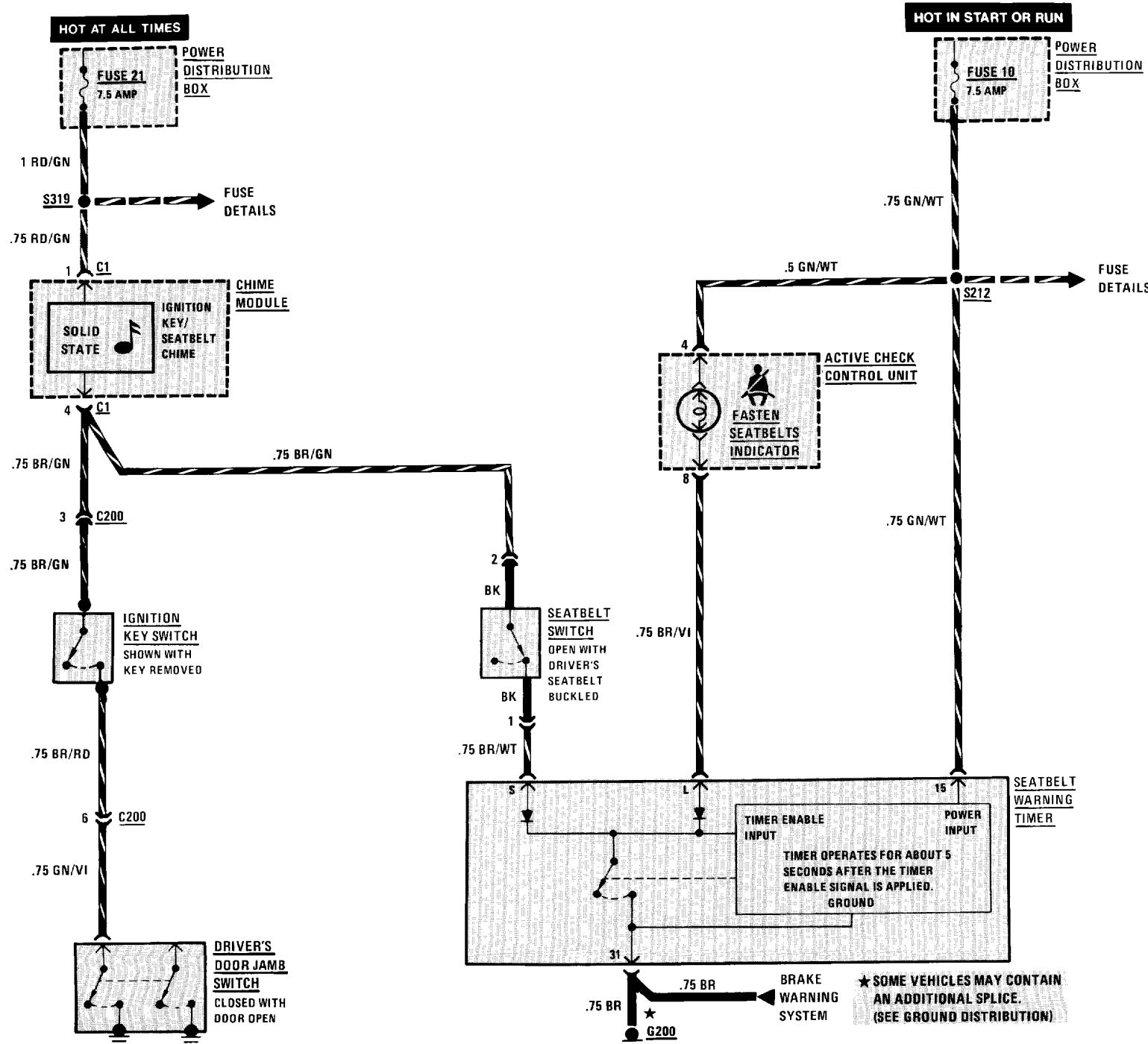
REAR DEFOGGER



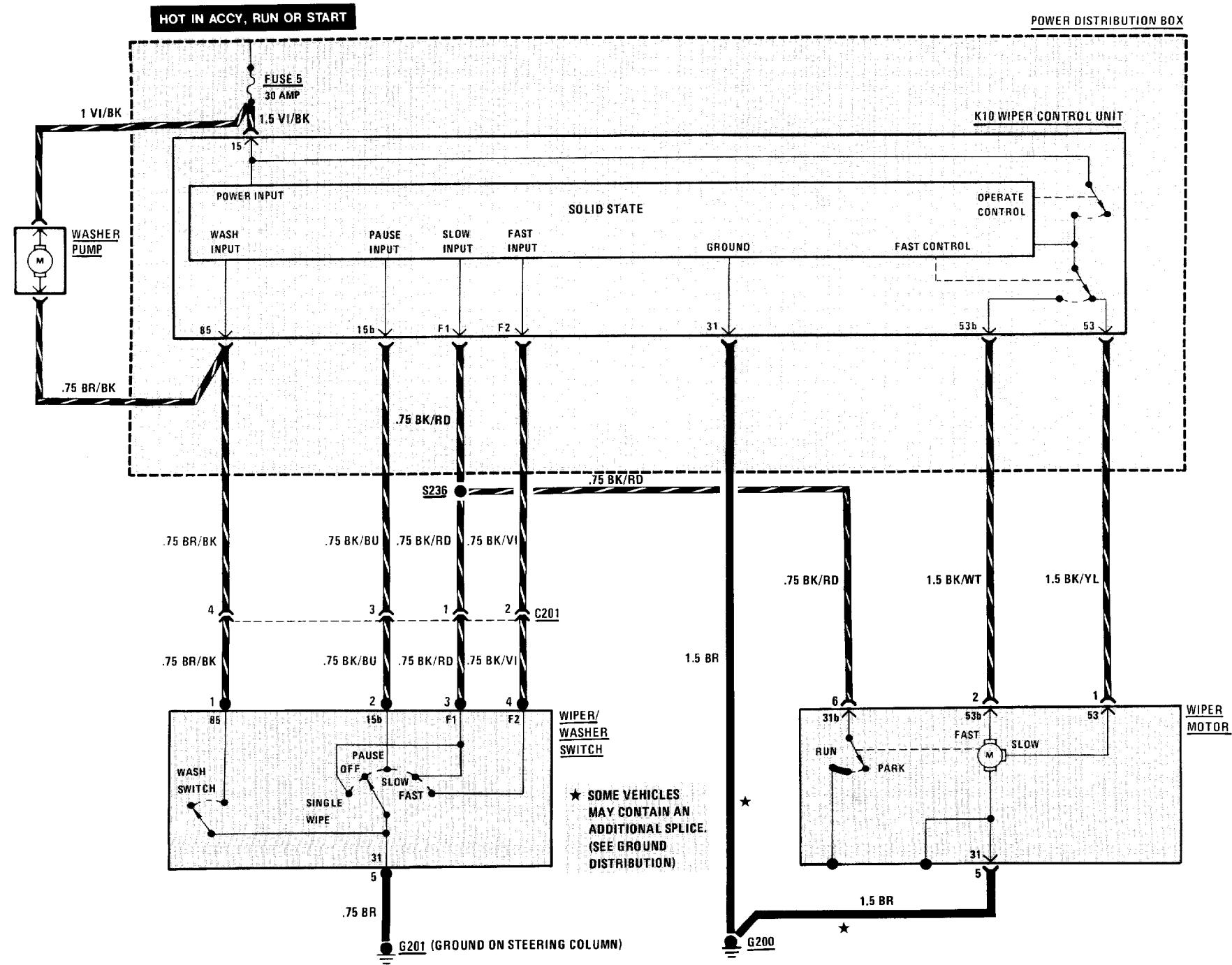
REAR DEFOGGER



6131-0 IGNITION KEY WARNING/SEATBELT WARNING

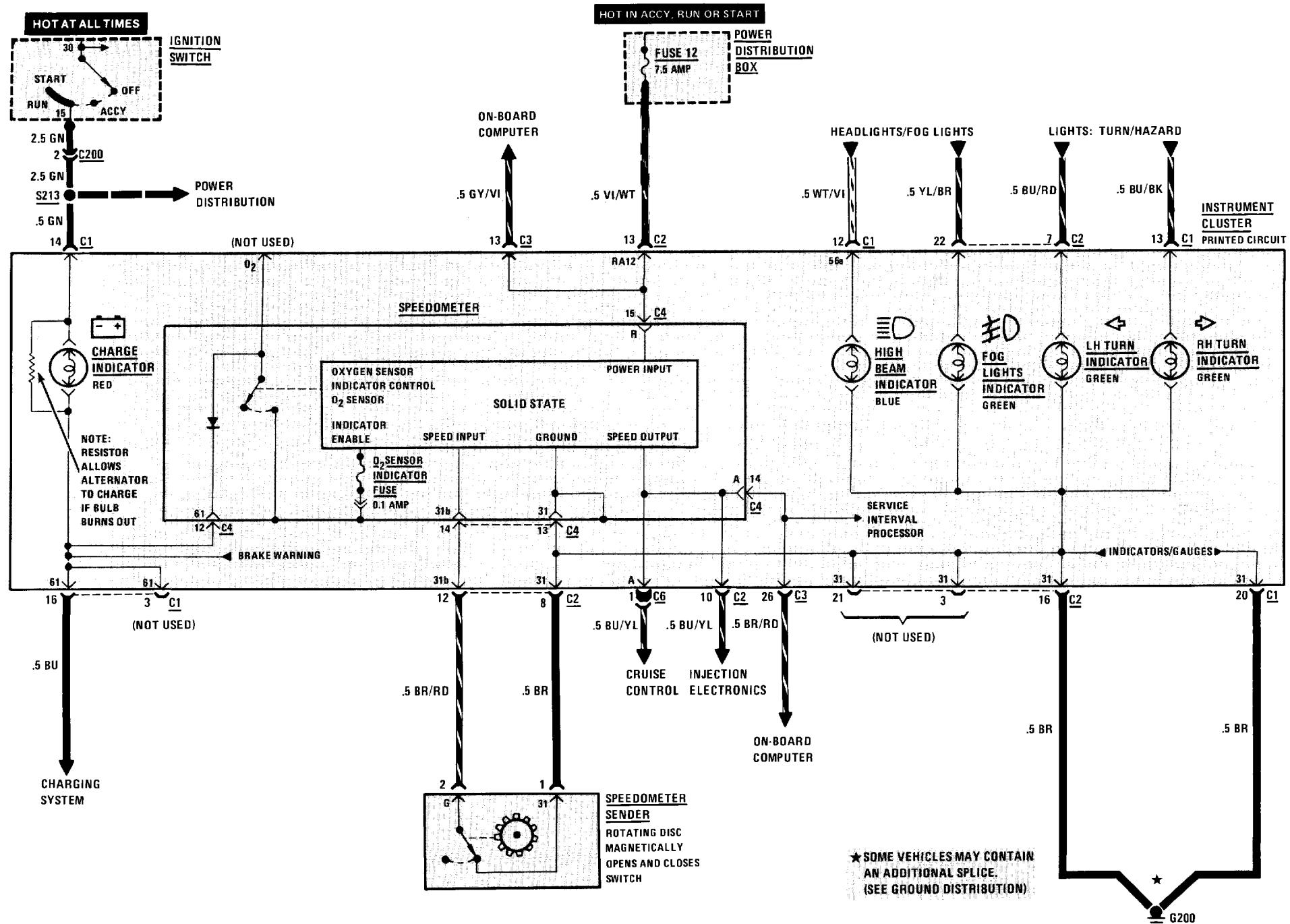


6160-0 WIPER/WASHER

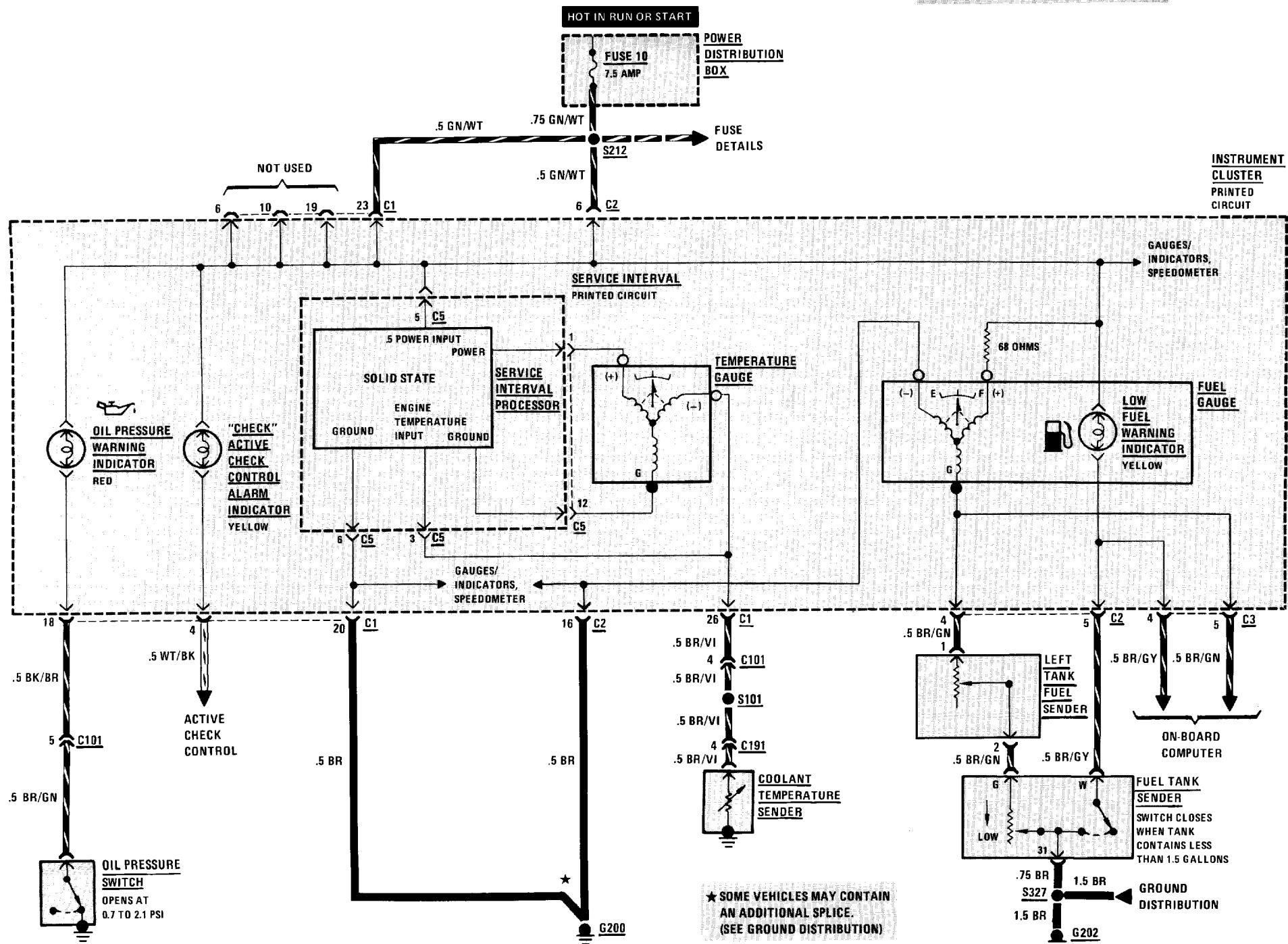


6210-0 INSTRUMENT CLUSTER

SPEEDOMETER/INDICATORS

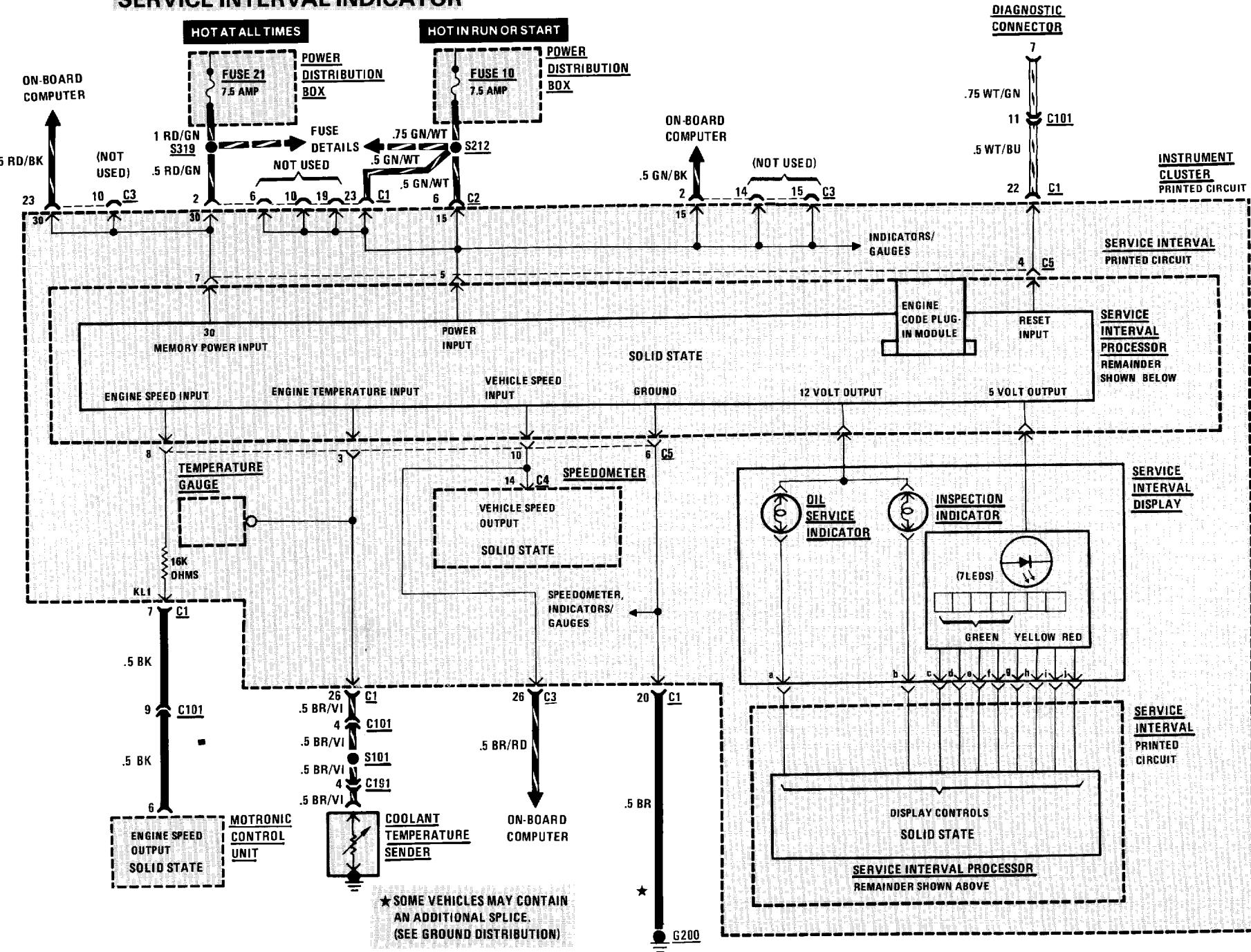


GAUGES/INDICATORS

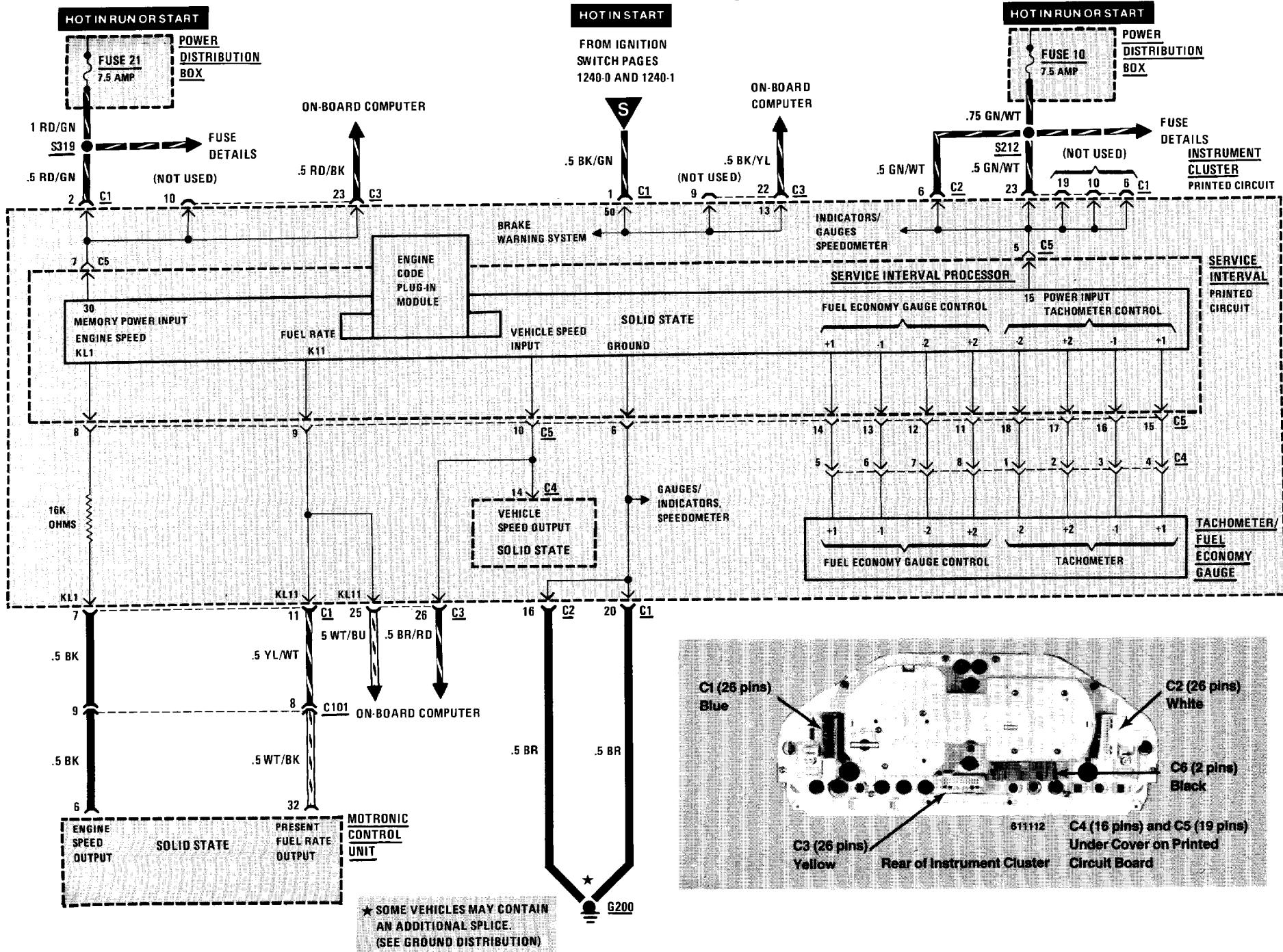


6210-2 INSTRUMENT CLUSTER

SERVICE INTERVAL INDICATOR



TACHOMETER/FUEL ECONOMY GAUGE



6216-0 ACTIVE CHECK CONTROL

ACTIVE CHECK CONTROL

1. When the Ignition Switch is initially placed in RUN, the Active Check Control Arm Indicator flashes, and the Active Check Control Unit Brake Light LED and panel light illuminate for test purposes. Depressing the brake pedal clears the display.

2. When the Ignition Switch is placed in "Run," fault monitoring begins. To monitor the low beams, rear lights, or license lights, those circuits must be on. The brake lights are monitored only while the brake pedal is depressed. An exception to this is when all Brake Light Circuits are open a fault will be indicated with the Ignition Switch in RUN.

3. When a fault occurs, the alarm indicator flashes, the appropriate LED fault indicator lights, and the panel light goes on for five seconds. Depressing the check button will clear the alarm indicator, but the LED fault indicator remains on.

4. To test the unit, depress the test button. The LED fault indicators and the panel lights should go on.

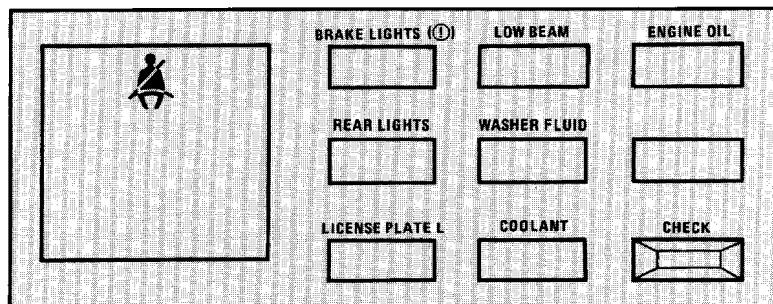
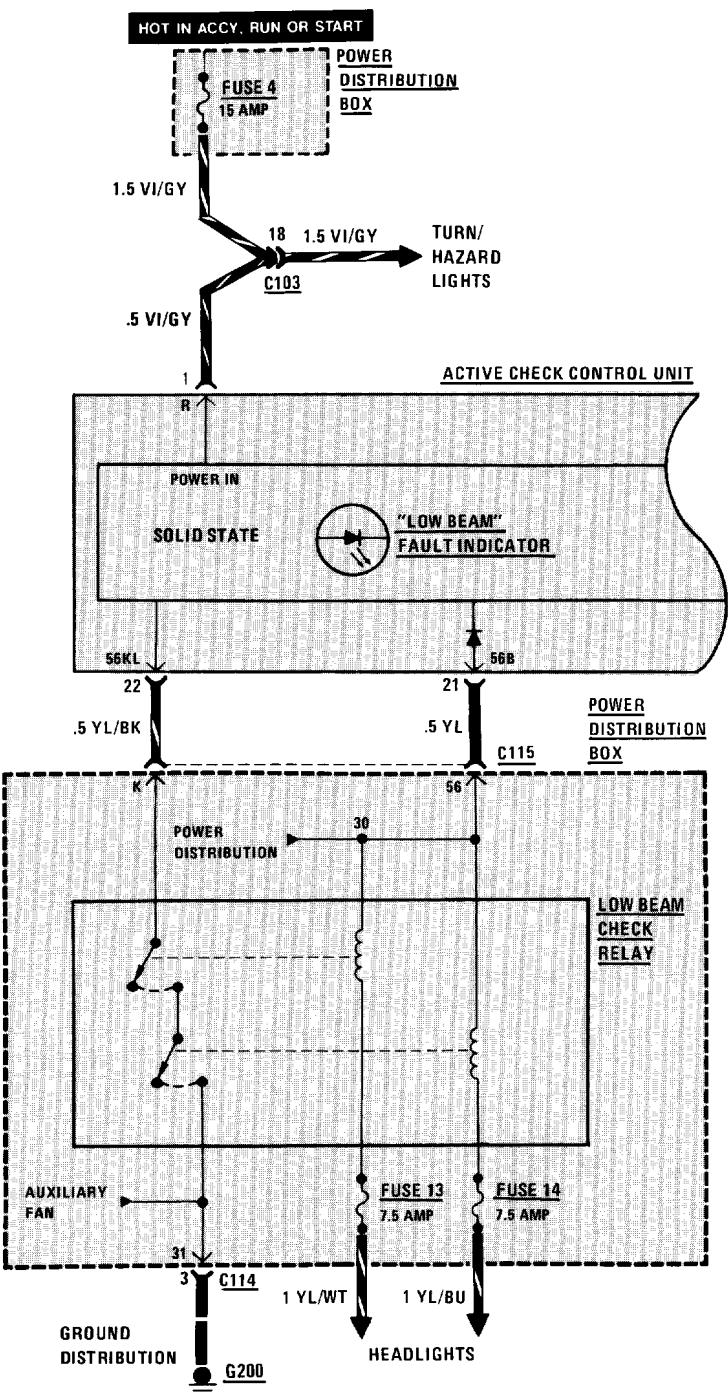
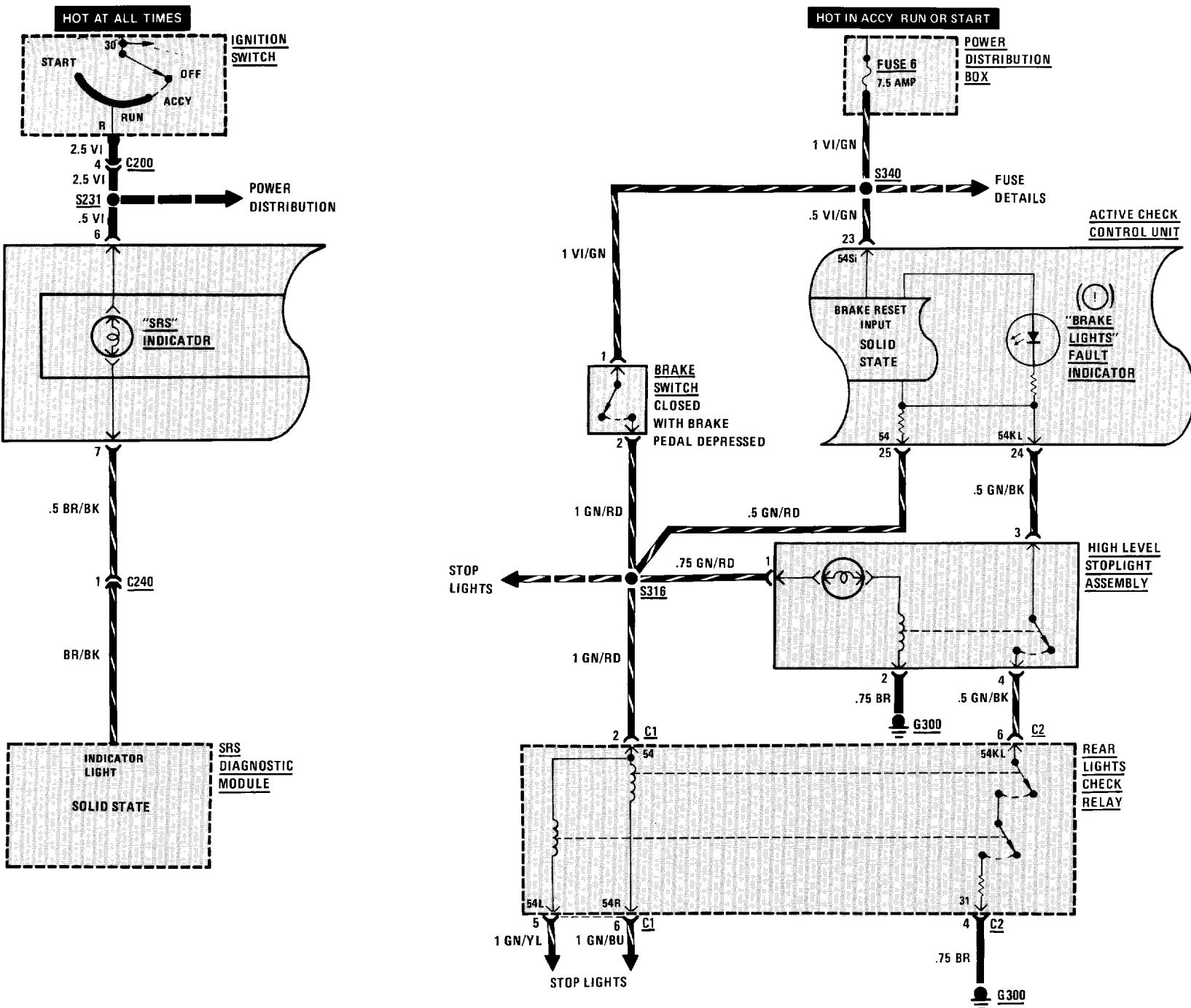
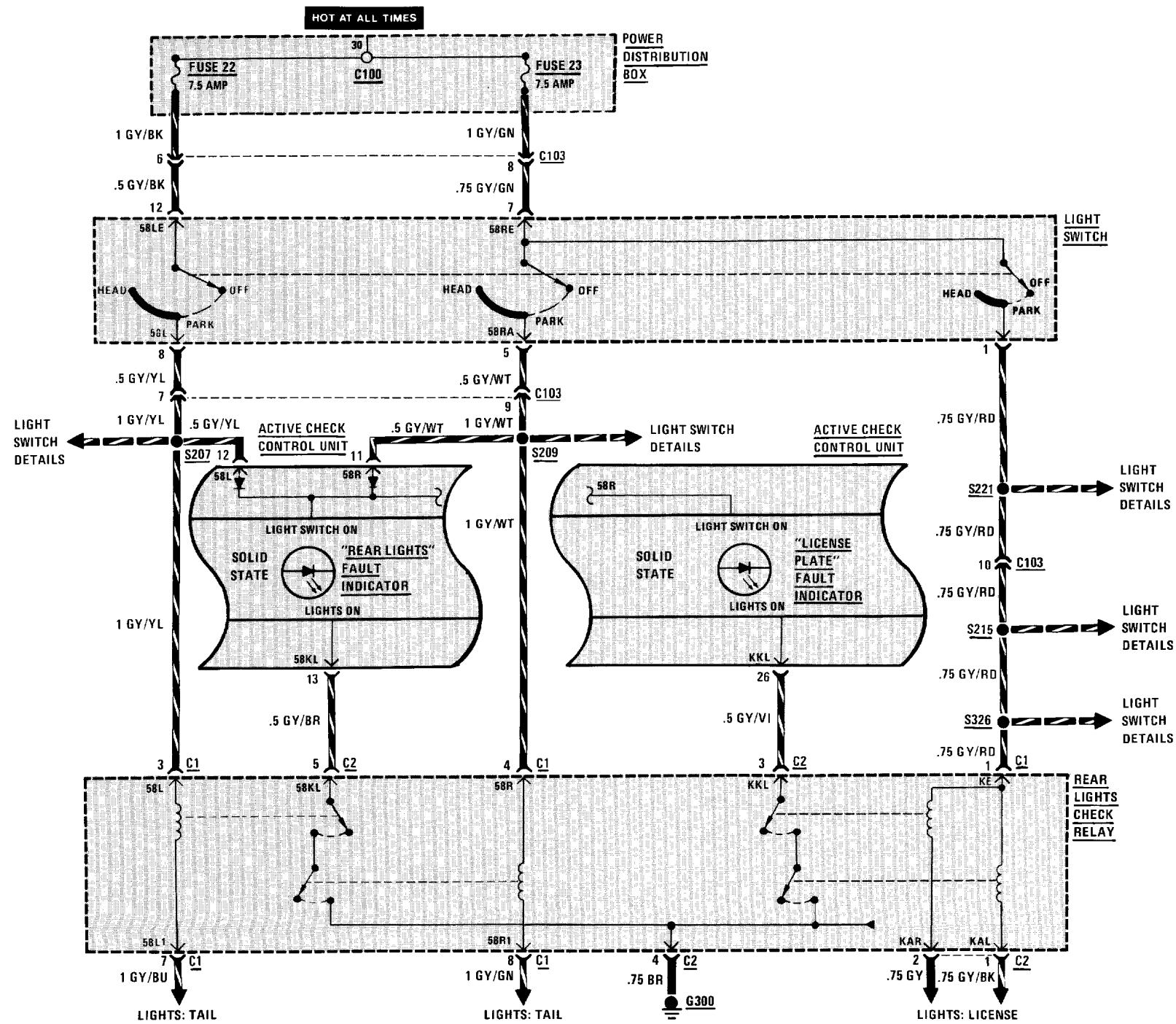


Figure 1 - Active Check Control Unit Above Rear View Mirror

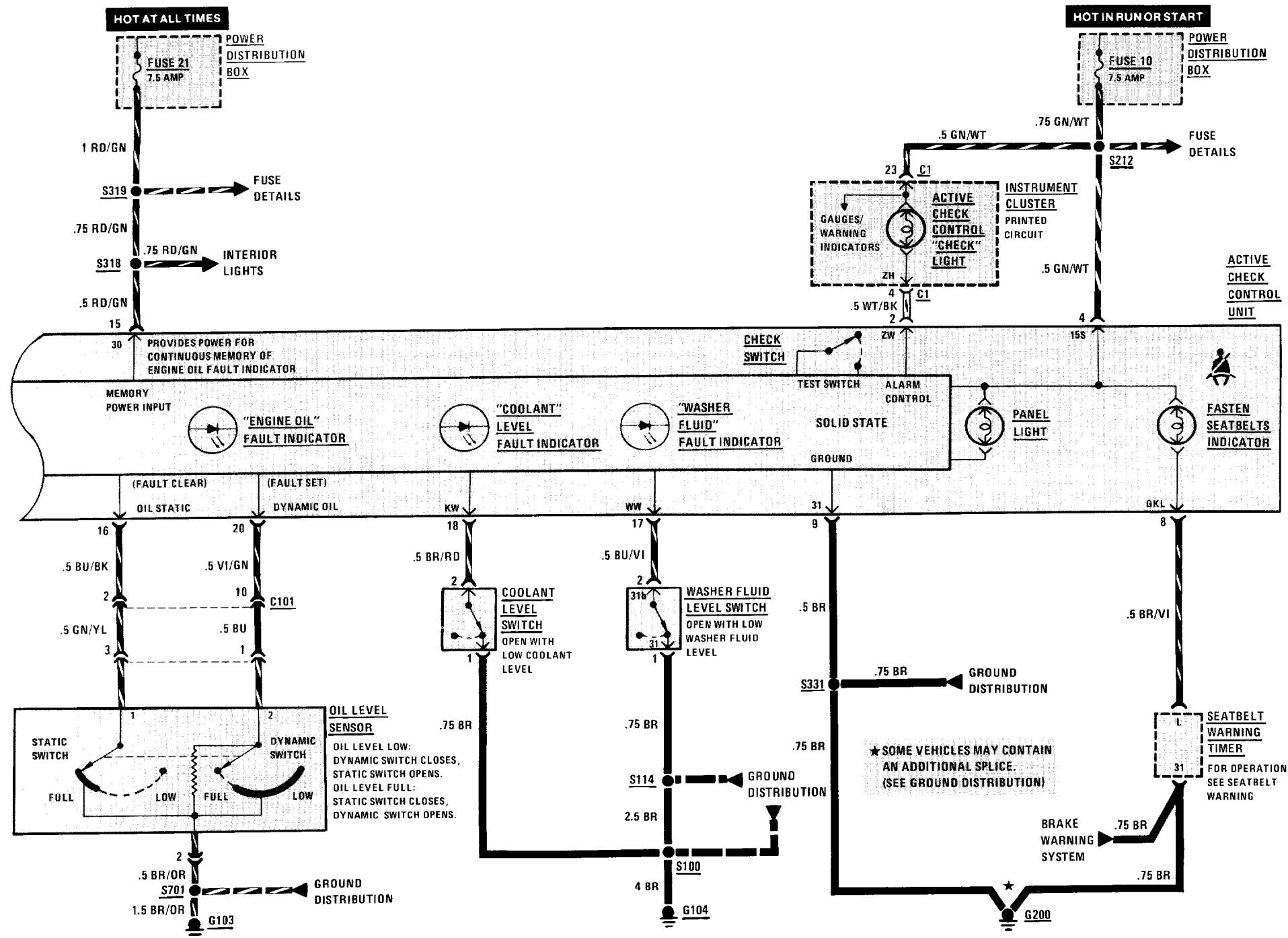




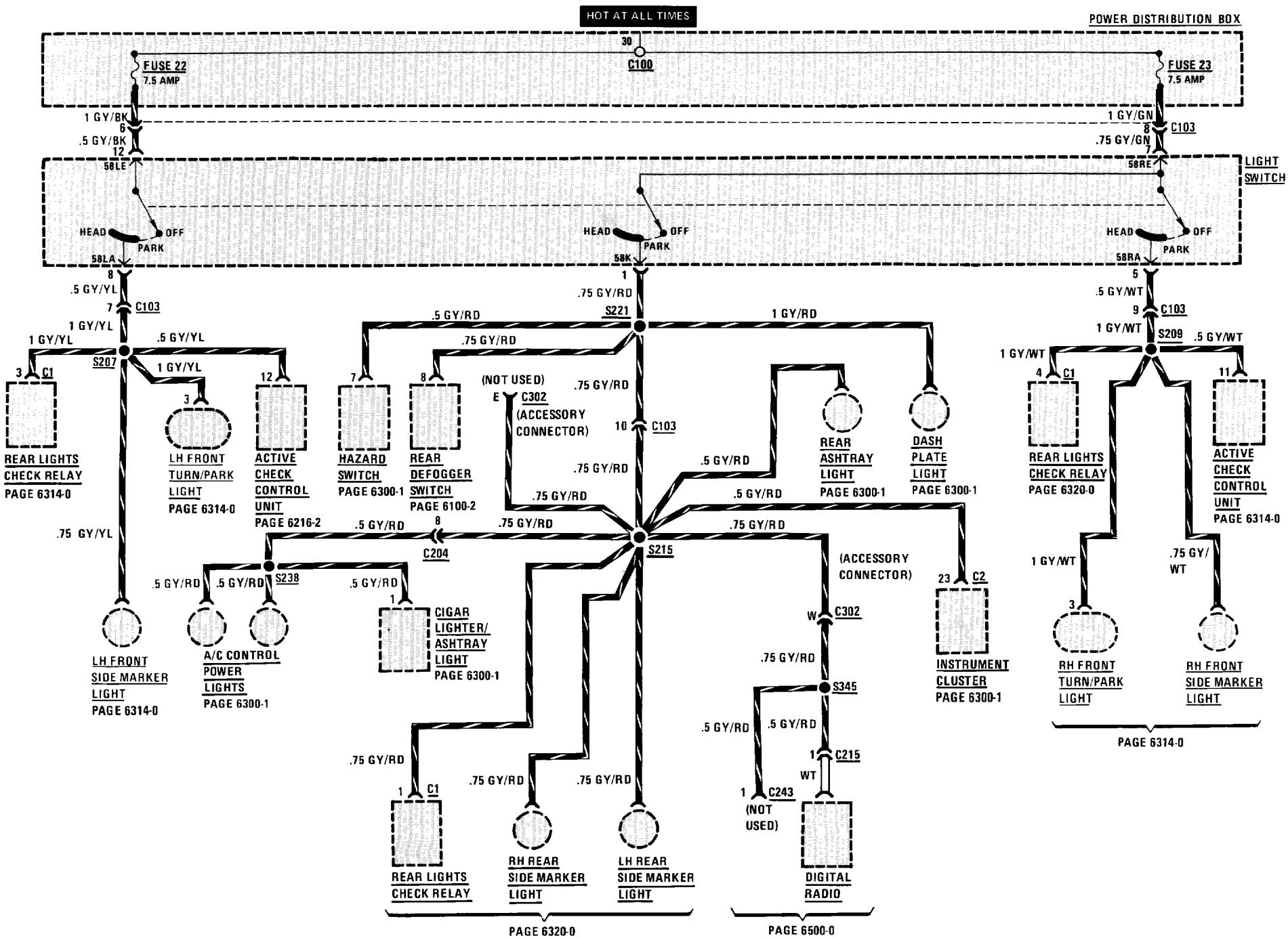
6216-2 ACTIVE CHECK CONTROL



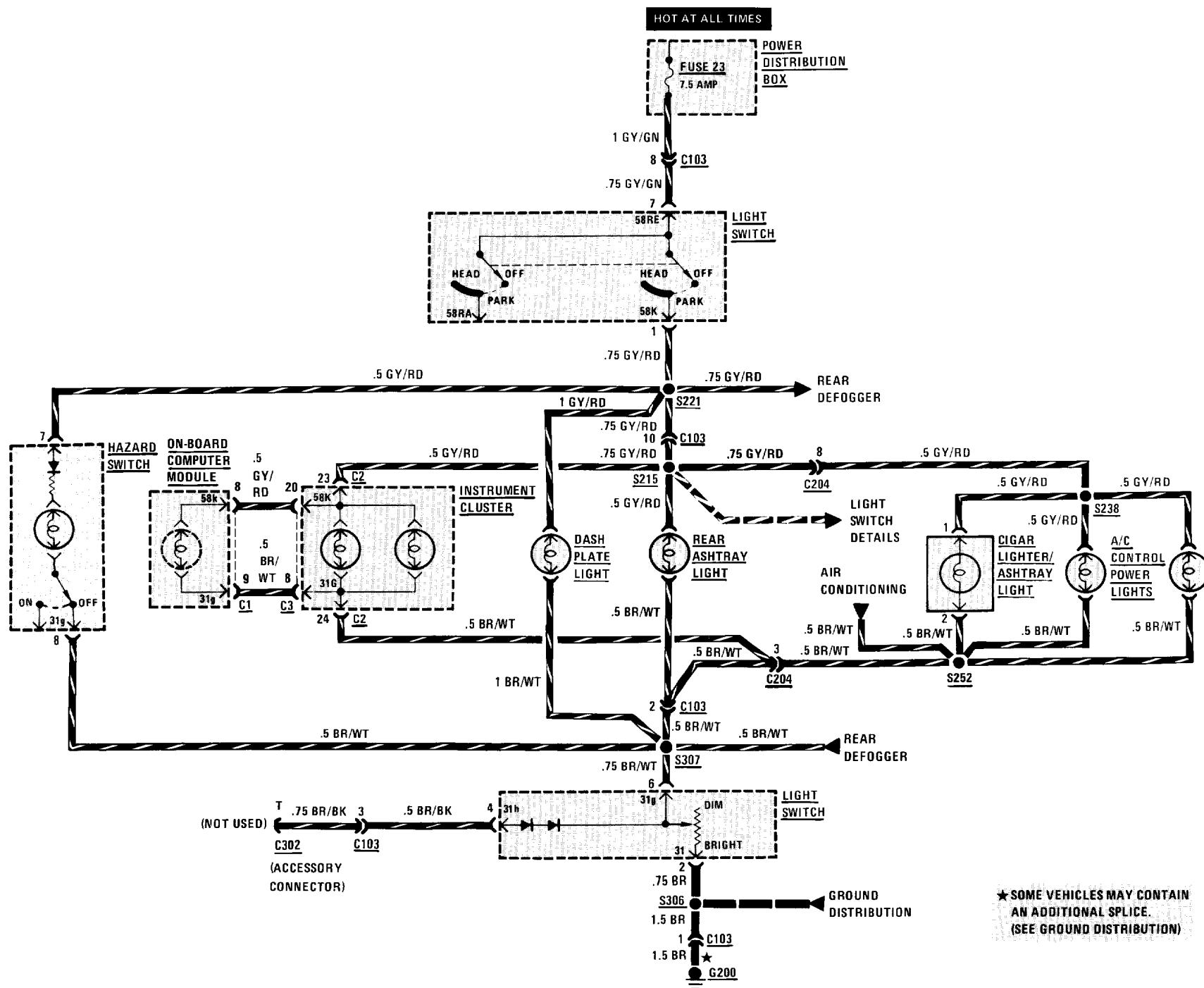
ACTIVE CHECK CONTROL 6216-3



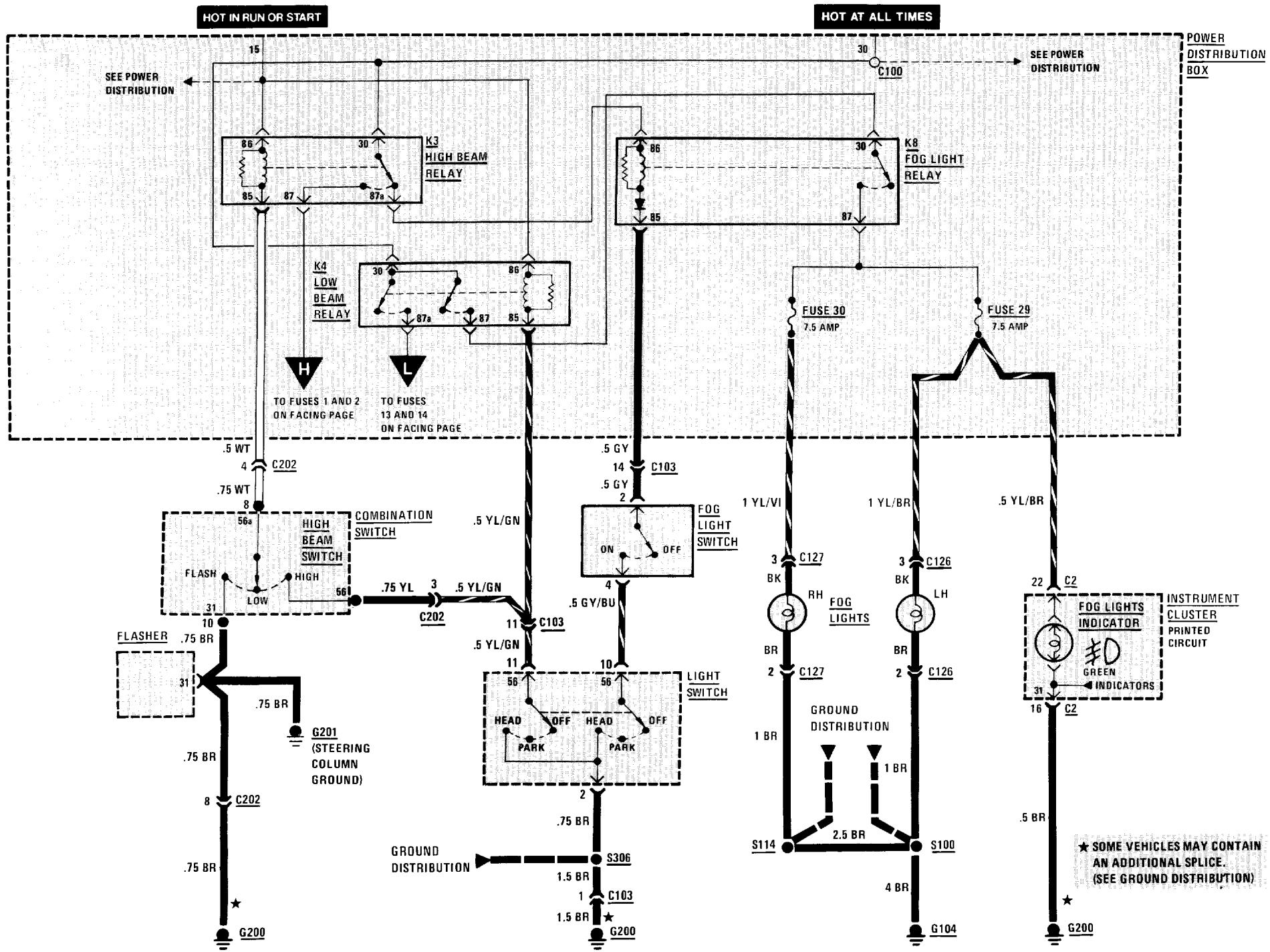
6300-0 LIGHT SWITCH DETAILS

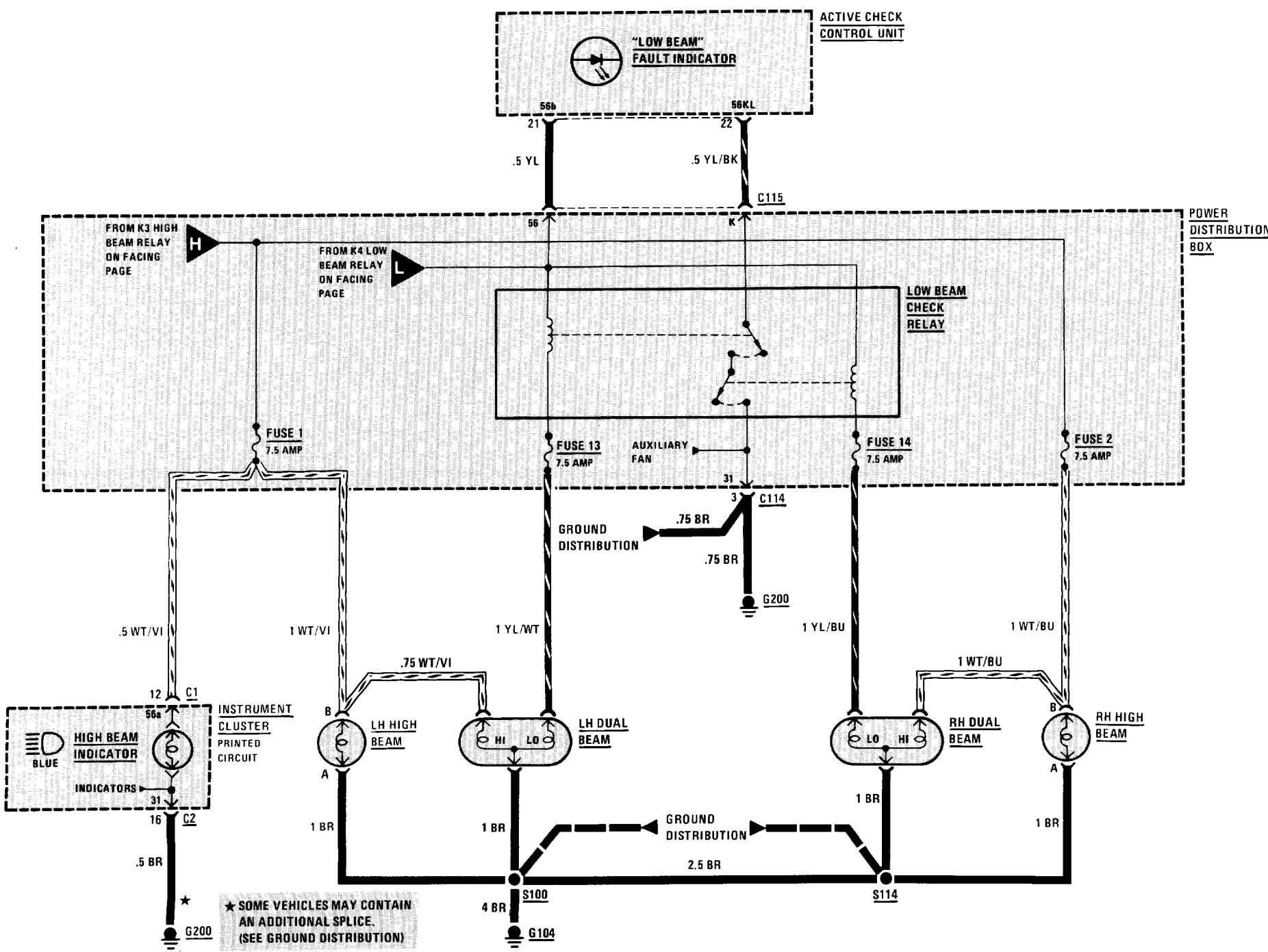


DASH LIGHTS

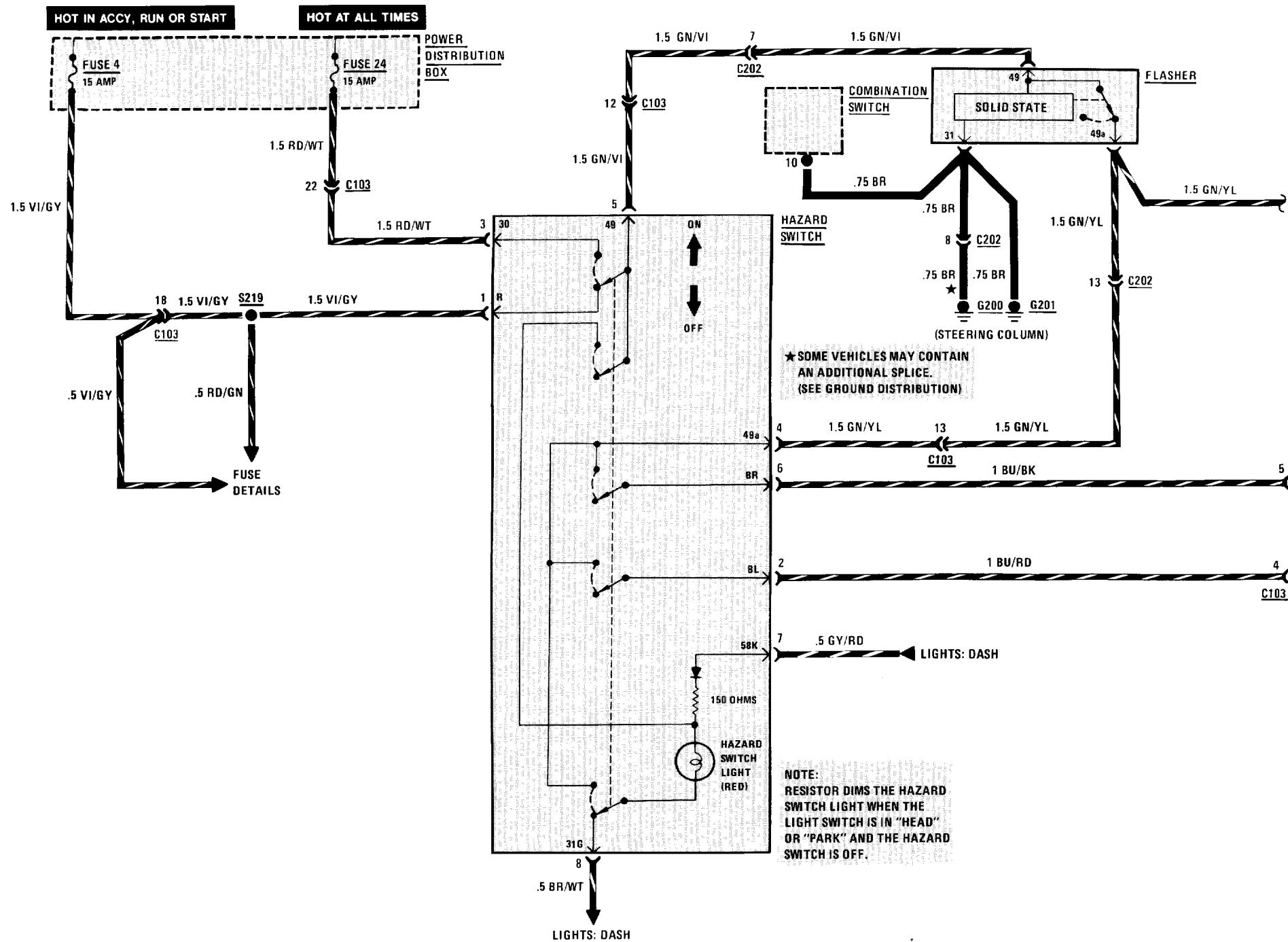


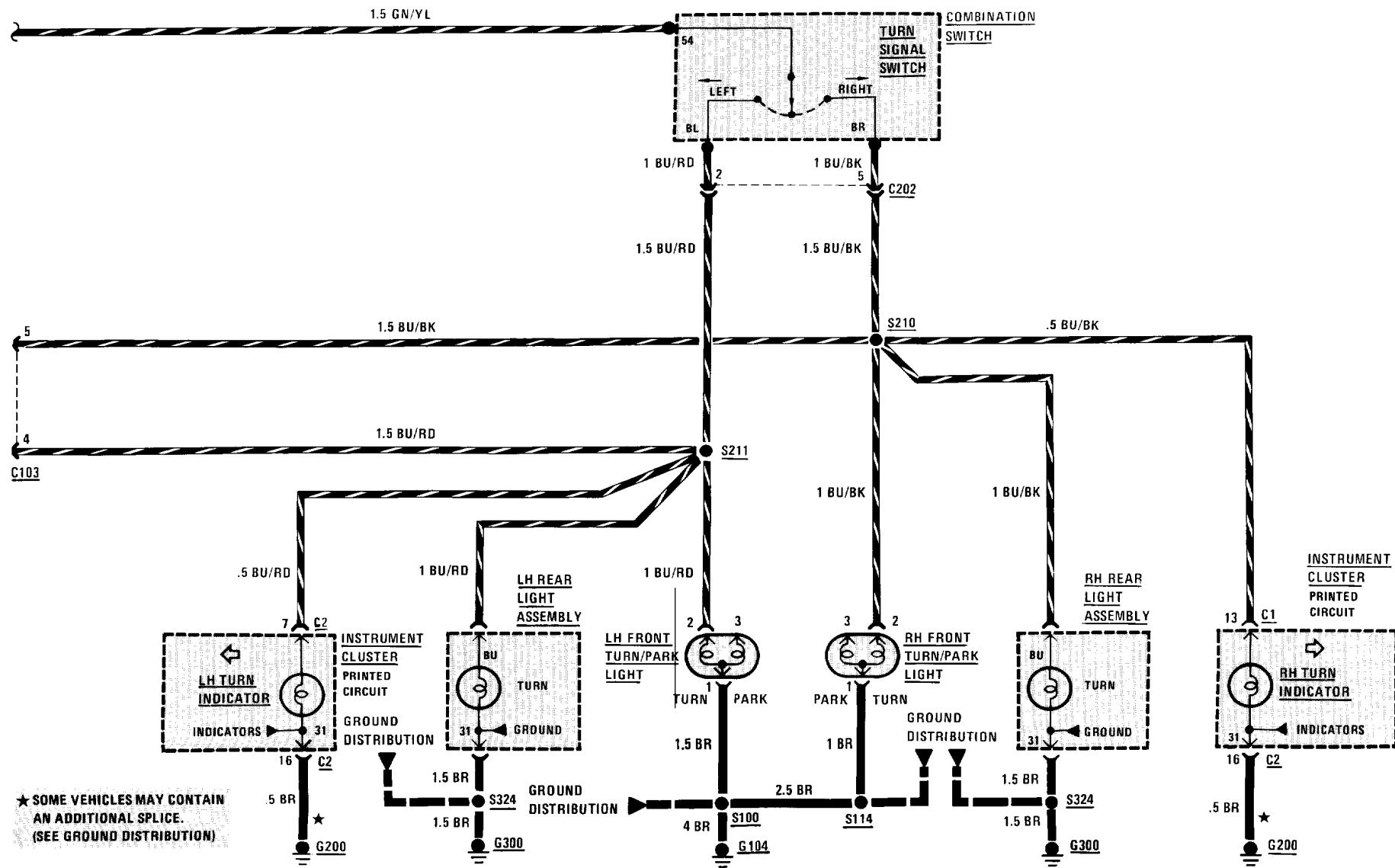
6312-0 HEADLIGHTS/FOG LIGHTS



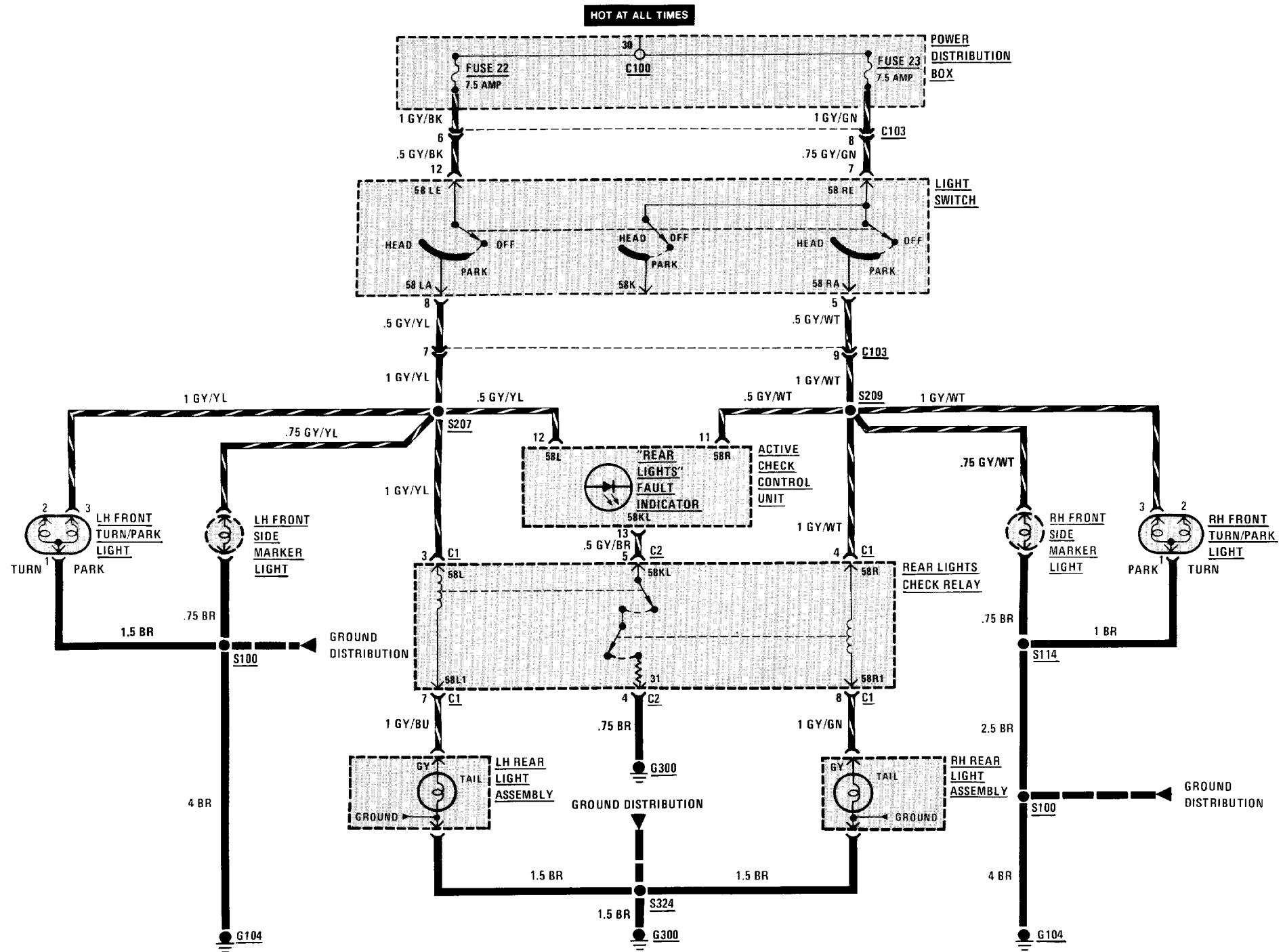


6313-0 TURN/HAZARD LIGHTS

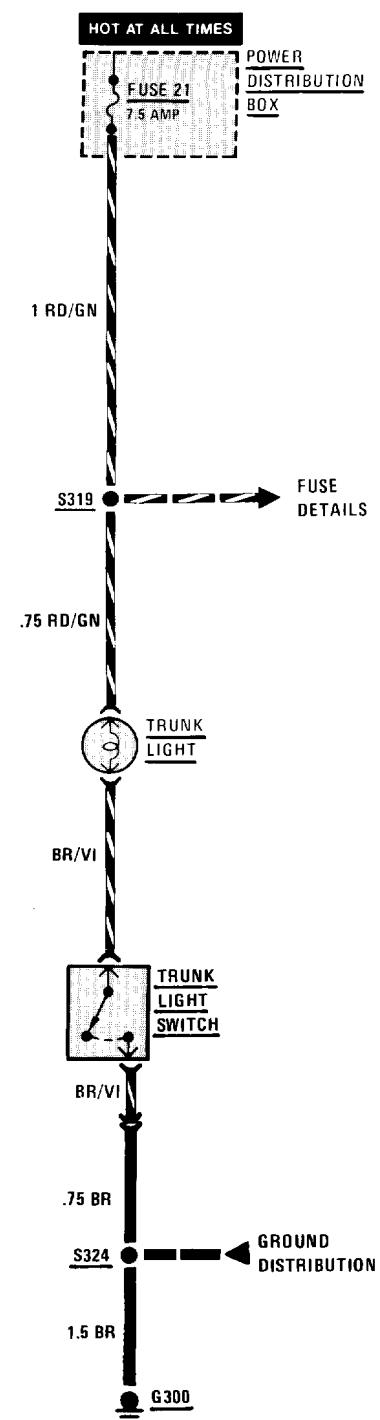
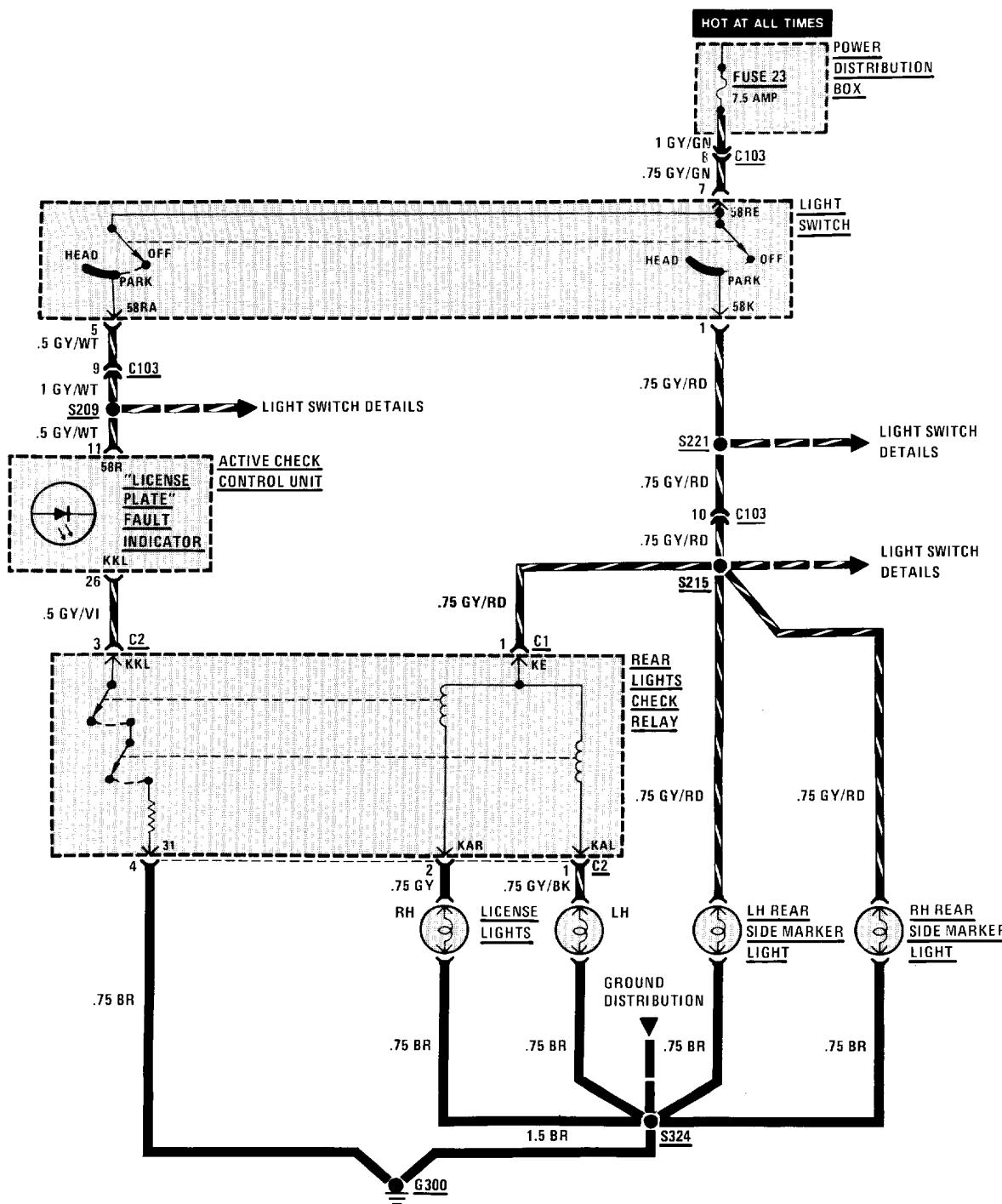




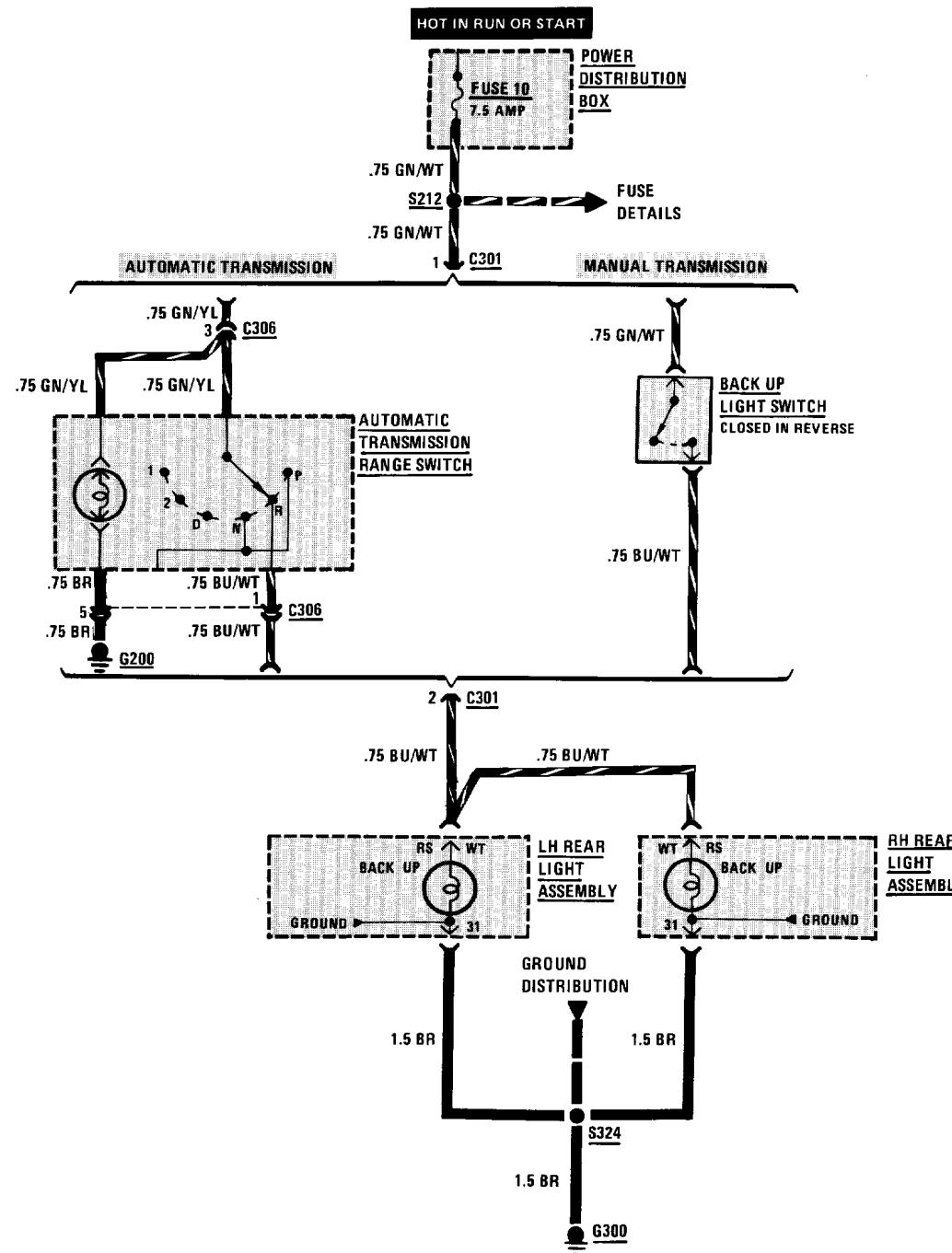
6314-0 PARK/TAI/LFRONT MARKER LIGHTS



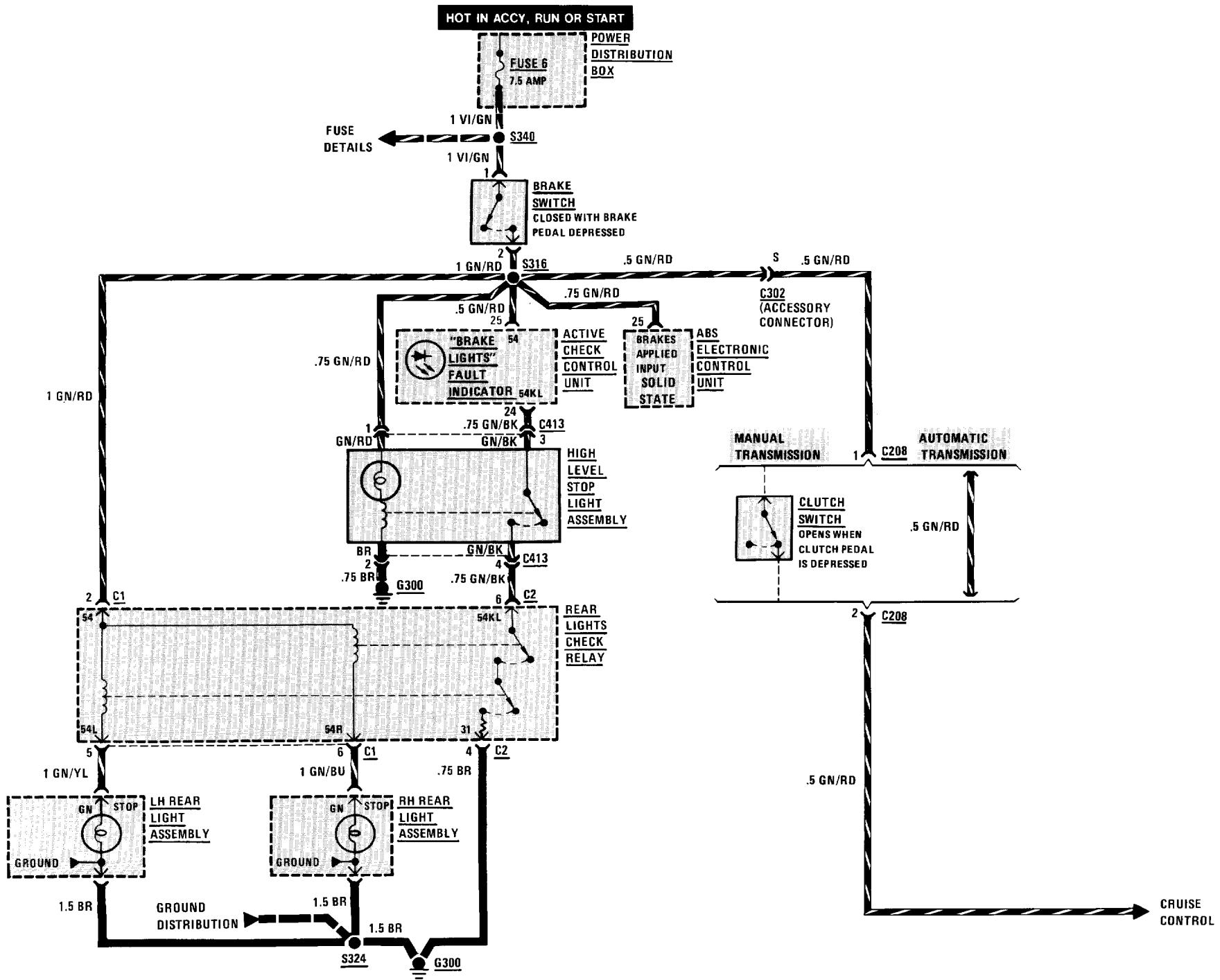
6320-0 REAR MARKER/LICENSE/TRUNK LIGHTS



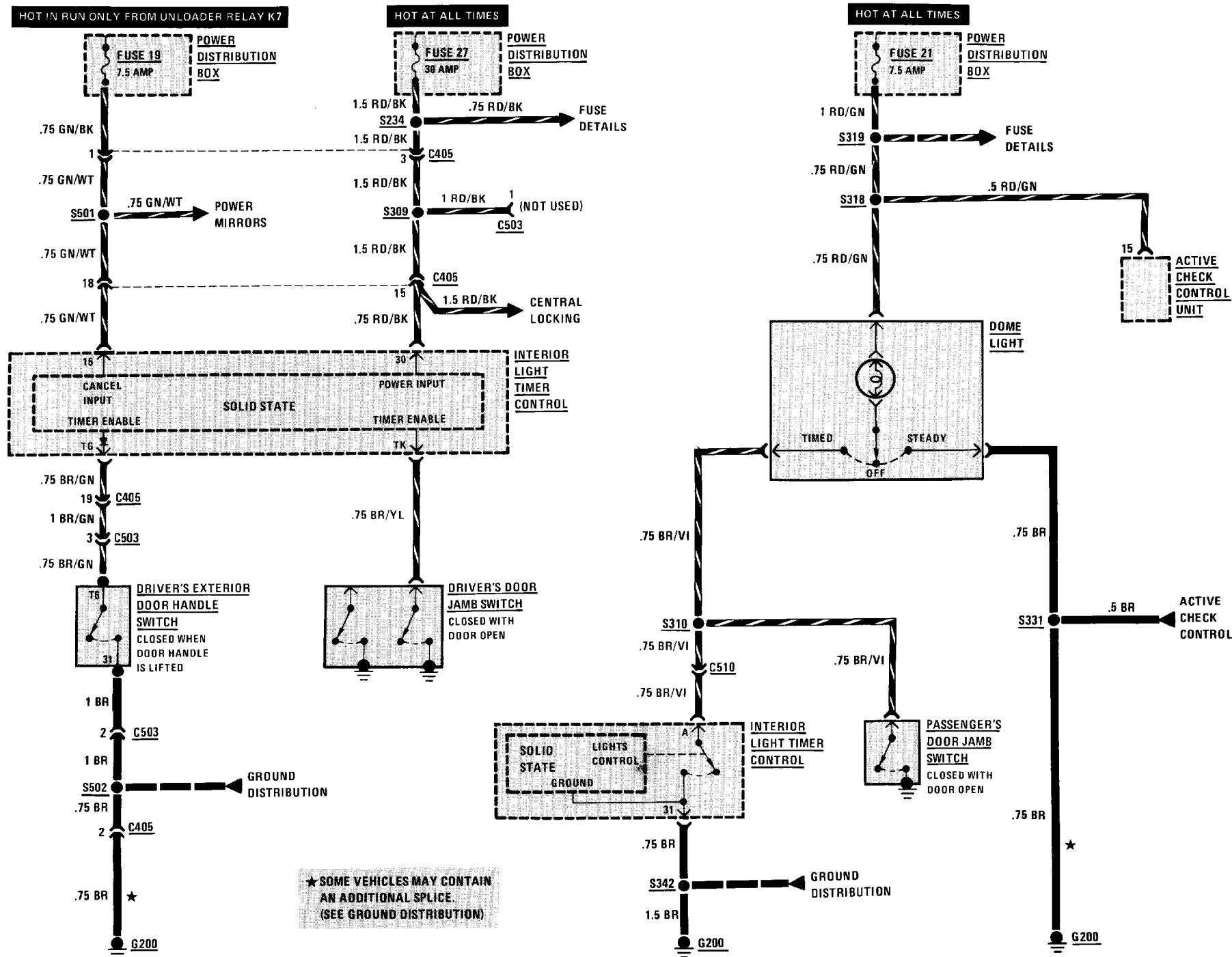
6322-0 BACK UP LIGHTS



6325-0 STOP LIGHTS



6330-0 INTERIOR LIGHTS



6410-0 HEATING AND AIR CONDITIONING

SYSTEM CHECK

This procedure provides an overall check of the Heating and Air Conditioning System. Each of the steps can be performed without disassembly or the use of tools.

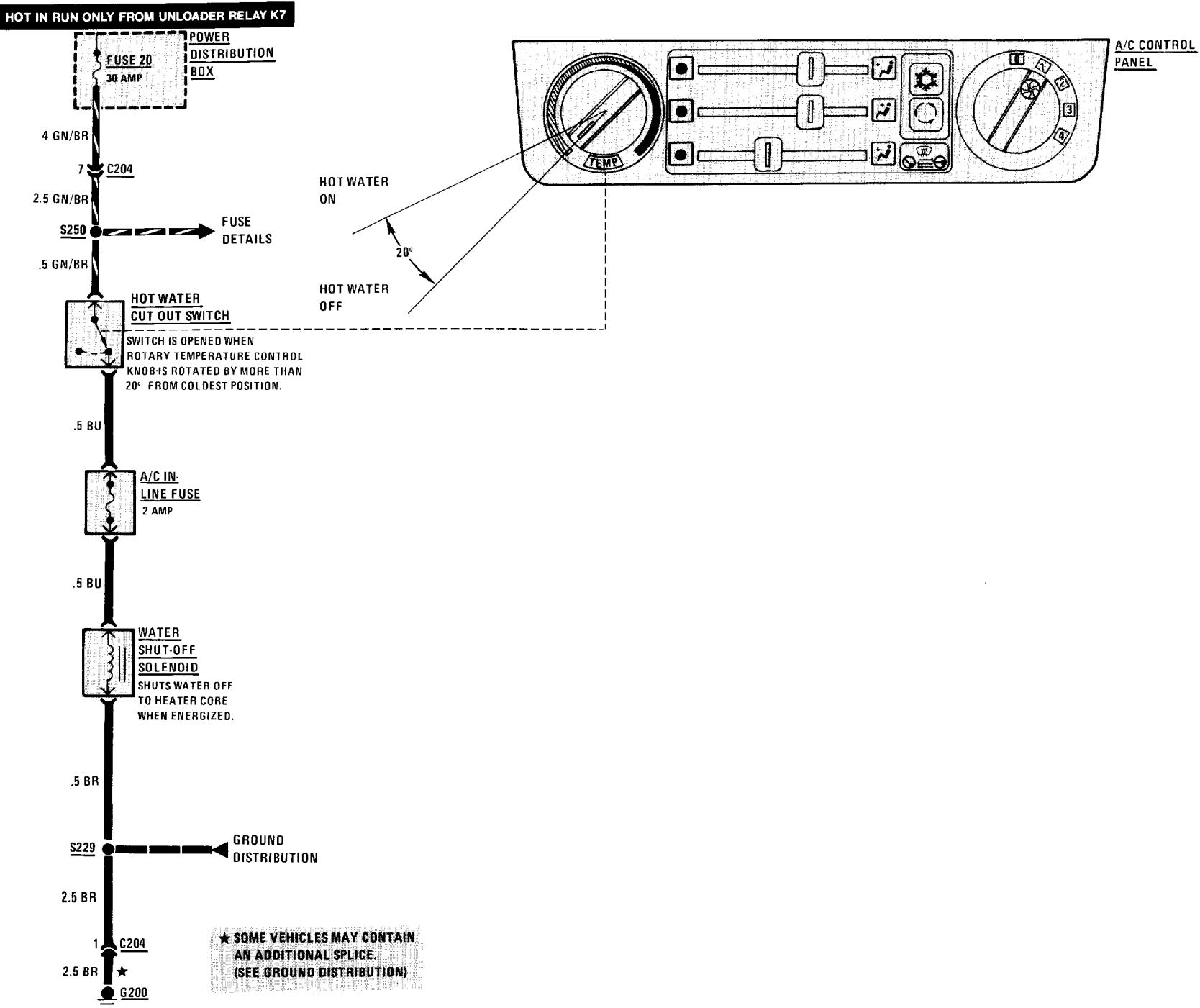
Complete this procedure with the temperature outside the car above 60 degrees F (16 degrees C) and the engine warm and running at idle.

SYSTEM CHECK TABLE

| SET: Temperature Control fully counterclockwise Upper and Lower Slide Levers to extreme left Center Slide Lever to extreme right Blower Speed Control at 0 (OFF) | |
|---|---|
| ACTION | NORMAL RESULT |
| Press Fresh/Recirculating Air Switch (ON). Release A/C button (OFF). | Fresh/Recirculating pushbutton lights. Blower runs slowly. |
| Rotate Blower Speed Control through steps 1 to 4 | Blower speed increases at each step to maximum speed at Step 4 |
| Press Fresh/Recirculating Air Switch to release it (OFF) | Fresh/Recirculating button is no longer lit. Outside air is drawn into car. (The sound of Flap Door Motors may be heard repositioning flaps.) |
| Rotate Temperature Control at least 1/4 turn clockwise | Air flow becomes warm |
| Depress A/C button (ON) | A/C button lights. A/C Compressor runs. Auxiliary Cooling Fan runs. |
| Press A/C button to release it (OFF) | A/C button is no longer lit. A/C Compressor turns off. Auxiliary Cooling Fan turns off. |
| Set Blower Speed Control to 0 (OFF) | Blower turns off |

6411-0 A/C TEMPERATURE CONTROL

HEATING AND AIR CONDITIONING (HOT WATER CONTROL)



CIRCUIT OPERATION

The Water Shut-Off Solenoid controls the flow of engine coolant through the heater core. When the solenoid is energized, coolant flow is shut off to allow maximum cooling from the air conditioning system. The Water Shut-Off Solenoid is controlled by the Hot Water Cut-Off Switch, which is part of the A/C Control Panel TEMP Control.

Battery voltage is applied through Fuse 20 to the Hot Water Cut-Off Switch when the Ignition Switch is in RUN. The Hot Water Cut-Off Switch is closed when the TEMP Control is rotated fully counterclockwise (coldest position), and opens when the control is rotated more than 20 degrees in a clockwise direction. When the switch is closed, battery voltage is applied through the A/C In-Line Fuse to the Water Shut-Off Solenoid. The solenoid is energized and shuts off the coolant flow through the heater core.

The Water Shut-Off Solenoid and A/C In-Line Diode are protected by the A/C In-Line Fuse. If any failures occur in the solenoid, the fuse will isolate them to prevent the failures from affecting other parts of the heating and air conditioning circuits.

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Diagnosis.

 1. Check that Water Shut-Off Solenoid connector is firmly seated.
 2. Check the A/C In-Line Fuse.
 - Go to Heating and Air Conditioning (6410-0) System Check for a guide to normal operation.
 - Go to System Diagnosis for diagnostic tests.

SYSTEM DIAGNOSIS

- Do the following test if the Water Shut-Off Solenoid does not operate normally.

WATER SHUT-OFF SOLENOID TEST (TABLE 1)

Measure: VOLTAGE
At: WATER SHUT-OFF SOLENOID CONNECTOR (Disconnected)

Conditions:

- Ignition Switch: RUN
- A/C Control Panel TEMP Control: FULLY COUNTERCLOCKWISE

| Measure Between | Correct Voltage | For Diagnosis |
|---|-----------------|---------------|
| BU & Ground | Battery | See 1 |
| BU & or BR | Battery | See 2 |
| • Rotate A/C Control Panel TEMP Control to Mid-Position | | |
| BU & Ground | 0 Volts | See 3 |

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- If all voltages are correct, replace the Water Shut-Off Solenoid.

 1. Check the BU wire and A/C In-Line Fuse for an open. If wire and fuse are good, go to Table 2.
 2. Check the BR wire for an open to ground. Check that connector C204 is properly mated.
 3. Check BU wire for a wire-to-wire short to voltage. If wire is good, replace the A/C Control Panel TEMP Control.

WATER SHUT-OFF SOLENOID TEST (TABLE 2)

Measure: VOLTAGE
At: HOT WATER CUT-OFF SWITCH CONNECTOR (Disconnected)

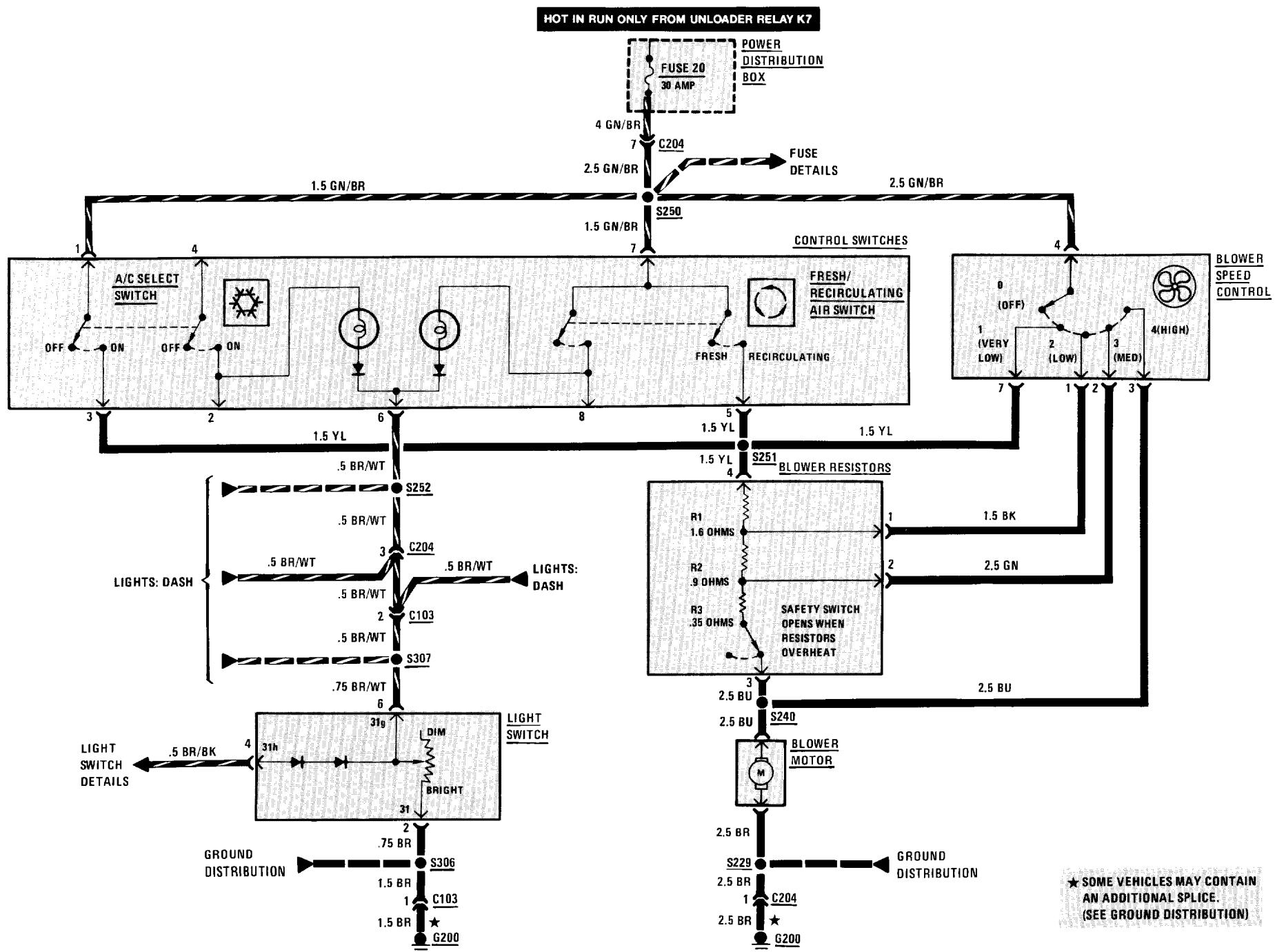
Conditions:

- Ignition Switch: RUN
- Water Shut-Off Solenoid: CONNECTED

| Measure Between | Correct Voltage | For Diagnosis |
|---|-----------------|---------------|
| GN/BR & Ground | Battery | See 1 |
| GN/BR & BU | Battery | See 2 |
| • If both voltages are correct, replace the A/C Control Panel TEMP Control. | | |
| 1. Check the GN/BR wire for an open back to Fuse 20. 2. Check the BU wire for an open. | | |

6413-0 A/C BLOWER CONTROLS

HEATING AND AIR CONDITIONING (BLOWER CONTROLS)



CIRCUIT OPERATION

With the Ignition Switch in RUN, battery voltage is applied to the Control Switches and the Blower Speed Control through the GN/BR wires. If either the A/C Select Switch or the Fresh/Recirculating Air Switch are ON or the Blower Speed Control is in position 1, battery voltage is applied through the YL wire to the Blower Resistors and the Blower Motor.

The Blower Motor is a variable speed motor which runs at a speed proportional to the voltage applied to it. With all of the Blower Resistors in the circuit, the voltage applied to the motor is reduced so the motor runs at a low speed.

As the Blower Speed Control is moved through positions 2 and 3, some of the resistors are bypassed, allowing more voltage to be applied to the Blower Motor, which then runs at a higher speed. When the Blower Speed Control is moved to position 4, battery voltage is applied directly to the Blower Motor, which then runs at maximum speed.

The Blower Resistors dissipate heat because of the current flowing through them. They are cooled by the air flow from the blower. If there is insufficient air flow to cool the resistors, the safety switch will open, shutting the Blower Motor off until the resistors have cooled.

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Diagnosis.
1. Check Fuse 20 by visual inspection.
 2. If Blower will run in high only, check the Blower Resistors' Safety Switch for an open.

- Go to Heating and Air Conditioning (6410-0) System Check for a guide to normal operation.
- Go to System Diagnosis for diagnostic tests.

SYSTEM DIAGNOSIS

- Do the tests listed for your symptom in the Symptom Table below.
- Tests follow the Symptom Table.

SYMPTOM TABLE

| SYMPTOM | DO TEST |
|--|---------|
| Blower Motor does not run in any speed setting | B |
| Blower runs only in HIGH (does not run in any other speed setting) | B |
| Blower does not run in some modes | A |
| Blower does not run with A/C ON or in Recirculating mode | A |
| A/C Select Switch or Fresh/Recirculating Air Switch does not light | A |

A: CONTROL SWITCH VOLTAGE TEST

Measure: VOLTAGE

At: CONTROL SWITCHES CONNECTOR
(Disconnected)

Conditions:

- Ignition Switch: RUN
- Blower Speed Control: OFF

| Measure Between | Correct Voltage | For Diagnosis |
|----------------------|-----------------|---------------|
| 1 (GN/BR) & Ground | Battery | See 1 |
| 1 (GN/BR) & 3 (YL) | Battery | See 2 & 4 |
| 7 (GN/BR) & Ground | Battery | See 1 |
| 7 (GN/BR) & 5 (YL) | Battery | See 2 & 4 |
| 7 (GN/BR) & 6(BR/WT) | Battery | See 3 |

- If all voltages are correct, do Test B.
- 1. Check the GN/BR wire for an open.
- 2. Check the YL wire for an open.
- 3. Check the BR/WT wire for an open.
- 4. If voltage is not present between the GN/BR wire and both the YL wires (terminals 3 and 5), do Test B.

6413-2 A/C BLOWER CONTROLS

B: BLOWER SPEED CONTROL TEST

Measure: VOLTAGE
AT: BLOWER SPEED CONTROL CONNECTOR (Disconnected)

Conditions:

- Ignition Switch: RUN
- A/C Select Switch: ON (Depressed)
- Fresh/Recirculating Air Switch: FRESH (Not Depressed)

| Measure Between | Correct Voltage | For Diagnosis |
|--|-----------------|-------------------|
| 4 (GN/BR) & Ground | Battery | See 1 |
| 7 (YL) & Ground | Battery | See 2 |
| • A/C Select Switch: OFF (Not Depressed) | | |
| 7 (YL) & Ground | 0 Volts | See 3 |
| 4 (GN/BR) & 7 (YL) | Battery | See 4, 8, 9, & 10 |
| 4 (GN/BR) & 1 (BK) | Battery | See 5, 8, 9, & 10 |
| 4 (GN/BR) & 2 (GN) | Battery | See 6, 8, 9, & 10 |
| 4 (GN/BR) & 3 (BU) | Battery | See 7 & 10 |

- If all voltages are correct, replace the Blower Motor.
- 1. Check the GN/BR wire for an open.
- 2. Check the YL wire for an open between Blower Speed Control and splice S231.
- 3. Check the YL wire for a wire to wire short to voltage.

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4. Check the YL wire for an open between splice S231 and the Blower Resistors.
5. Check the BK wire for an open.
6. Check the GN wire for an open.
7. Check the BU wire for an open.
8. If voltage is not present at the YL wire, but is present at the GN wire or BK wire, replace the Blower Resistors.
9. If voltage is not present at the YL, BK or GN wires, check for an open Blower Resistors' Safety Switch.
10. If voltage is not present at the YL, BK, GN and BU wires, do Test C.

C: BLOWER MOTOR TEST

Measure: VOLTAGE
At: BLOWER MOTOR CONNECTOR (Disconnected)

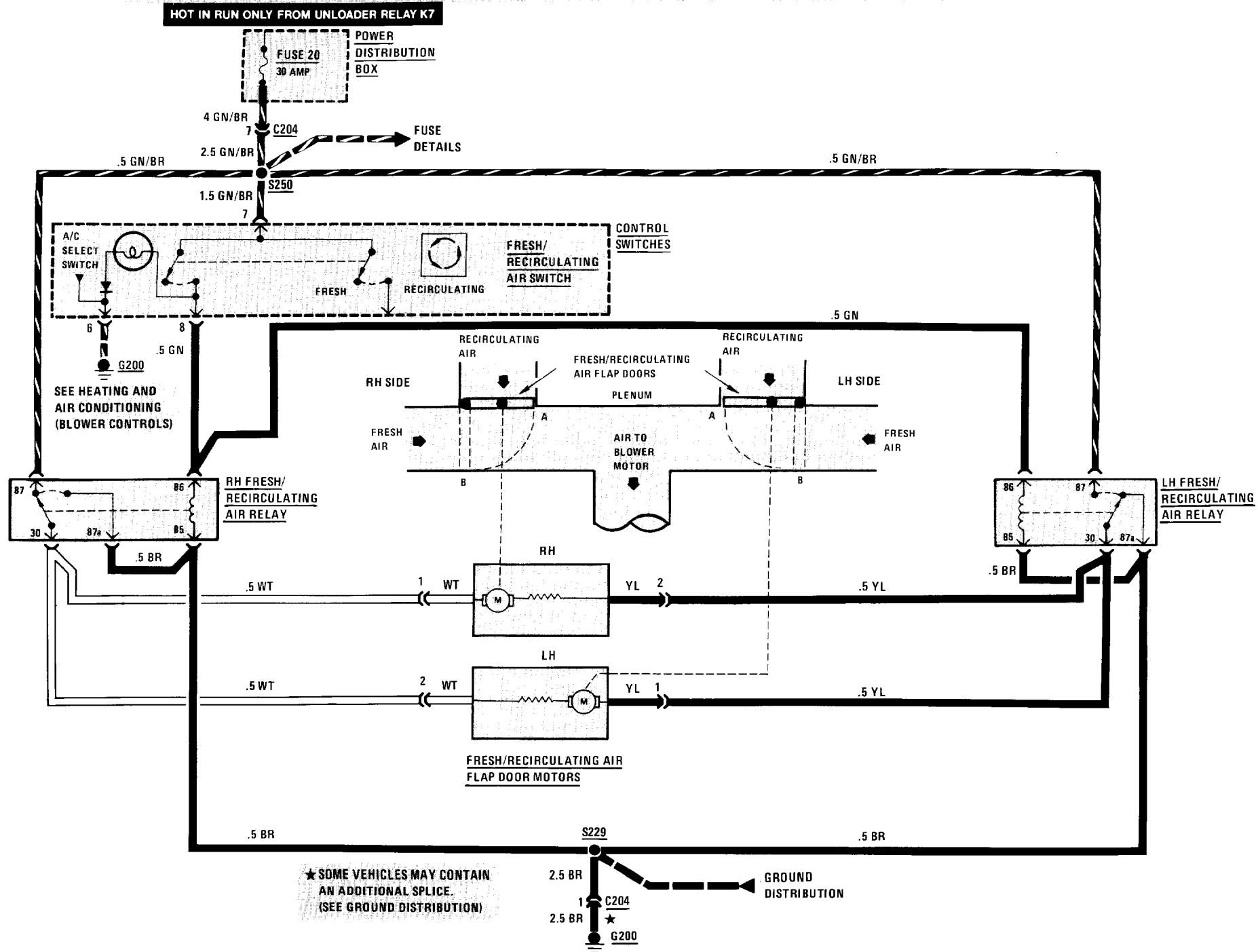
Conditions:

- Ignition Switch: RUN
- A/C Select Switch: ON
- Blower Speed Control: HIGH

| Measure Between | Correct Voltage | For Diagnosis |
|--|-----------------|---------------|
| BU & Ground | Battery | See 1 |
| BU & BR | Battery | See 2 |
| • If both voltages are correct, replace the Blower Motor. | | |
| 1. Check the BU wire for an open. If wire is good, recheck Test B. | | |
| 2. Check the BR wire to ground G200 for an open. | | |

6421-0 A/C AIR DELIVERY CONTROL

HEATING AND AIR CONDITIONING (FRESH/RECIRCULATING AIR CONTROLS)



CIRCUIT OPERATION

When the Ignition Switch is in RUN, battery voltage is applied to terminal 7 of the Control Switches, the normally open contacts of the LH Fresh/Recirculating Air Relay, and the normally closed contacts of the RH Fresh/Recirculating Air Relay. If the Fresh/Recirculating Air Switch is not depressed (open), battery voltage is applied through the normally closed contacts of the RH Fresh/Recirculating Air Relay to both Fresh/Recirculating Air Flap Door Motors and then to ground through the normally closed contacts of the LH Fresh/Recirculating Air Relay. Both motors operate and move the Fresh/Recirculating Air Flap Doors to position A, allowing fresh air to enter the blower.

When the Fresh/Recirculating Air Switch is depressed (closed), battery voltage is applied through the switch to both the LH and RH Fresh/Recirculating Air Relay coils. Both relays are energized. Battery voltage is then applied through the closed contacts of the LH Fresh/Recirculating Air Relay to the Flap Door Motors, and to ground through the closed contacts of the RH Fresh/Recirculating Air Relay. Since the voltage is now applied to the Flap Door Motors in the opposite direction, the motors reverse direction and move the Fresh/Recirculating Air Flap Doors to position B, allowing only recirculating air to enter the blower. Both of the Air Flap Door Motors remain energized continuously. When the doors reach the end of their travel, the motors stall and hold the doors in position.

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Diagnosis.

 1. Check that LH and RH Fresh/Recirculating Air Relays are firmly seated.
 2. Check that LH and RH Fresh/Recirculating Air Relay pigtail connectors are properly mated.
 - Go to Heating and Air Conditioning (6410-0) System Check for a guide to normal operation.
 - Go to System Diagnosis for diagnostic tests.

SYSTEM DIAGNOSIS

- Do the tests below if the Fresh/Recirculating Air Flap Doors do not operate.

A: FRESH/RECIRCULATING AIR FLAP DOOR MOTOR VOLTAGE TEST

Measure: VOLTAGE
At: FRESH/RECIRCULATING AIR FLAP DOOR MOTOR PIGTAIL CONNECTORS
 (Disconnected)

Conditions:

- Ignition Switch: RUN
- Fresh/Recirculating Air Switch:
RELEASED (FRESH)

| Measure Between | Correct Voltage | For Diagnosis |
|-----------------|-----------------|---------------|
| WT and Ground | Battery | See 1 |
| WT and YL | Battery | See 2 |
| YL and Ground | Battery | See 3 |

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| YL and WT | Battery | See 3 |
|--|---------|-------|
| • If all voltages are correct, replace the inoperative motor. | | |
| 1. Check the WT wire for an open. If wire is good, do Test B for RH Air Relay. | | |
| 2. Check the YL wire for an open. If wire is good, do Test B for LH Air Relay. | | |
| 3. Do Test B for both Air Relays. | | |

B: FRESH/RECIRCULATING AIR RELAY VOLTAGE TEST

Measure: VOLTAGE
At: FRESH/RECIRCULATING AIR RELAY CONNECTOR (Disconnected)

Conditions:

- Ignition Switch: RUN
- Fresh/Recirculating Air Switch:
DEPRESSED (RECIRCULATING)
- Fresh/Recirculating Air Flap Door Motor Connectors: CONNECTED

| Measure Between | Correct Voltage | For Diagnosis |
|-----------------------|-----------------|---------------|
| 87 (GN/BR) and Ground | Battery | See 1 |
| 86 (GN) and Ground | Battery | See 2 |
| 86 (GN) and 85 (BR) | Battery | See 3 |
| 86 (GN) and 87a (BR) | Battery | See 3 |

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- If all voltages are correct, replace the suspect Fresh/Recirculating Air Relay.
- 1. Check the GN/BR wire for an open.
- 2. Check the GN wire back to the Control Switches for an open. If wire is good, do Test C.
- 3. Check the BR wire for an open.

C: CONTROL SWITCHES VOLTAGE TEST

Measure: VOLTAGE
At: CONTROL SWITCHES CONNECTOR
(Disconnected)

Condition:

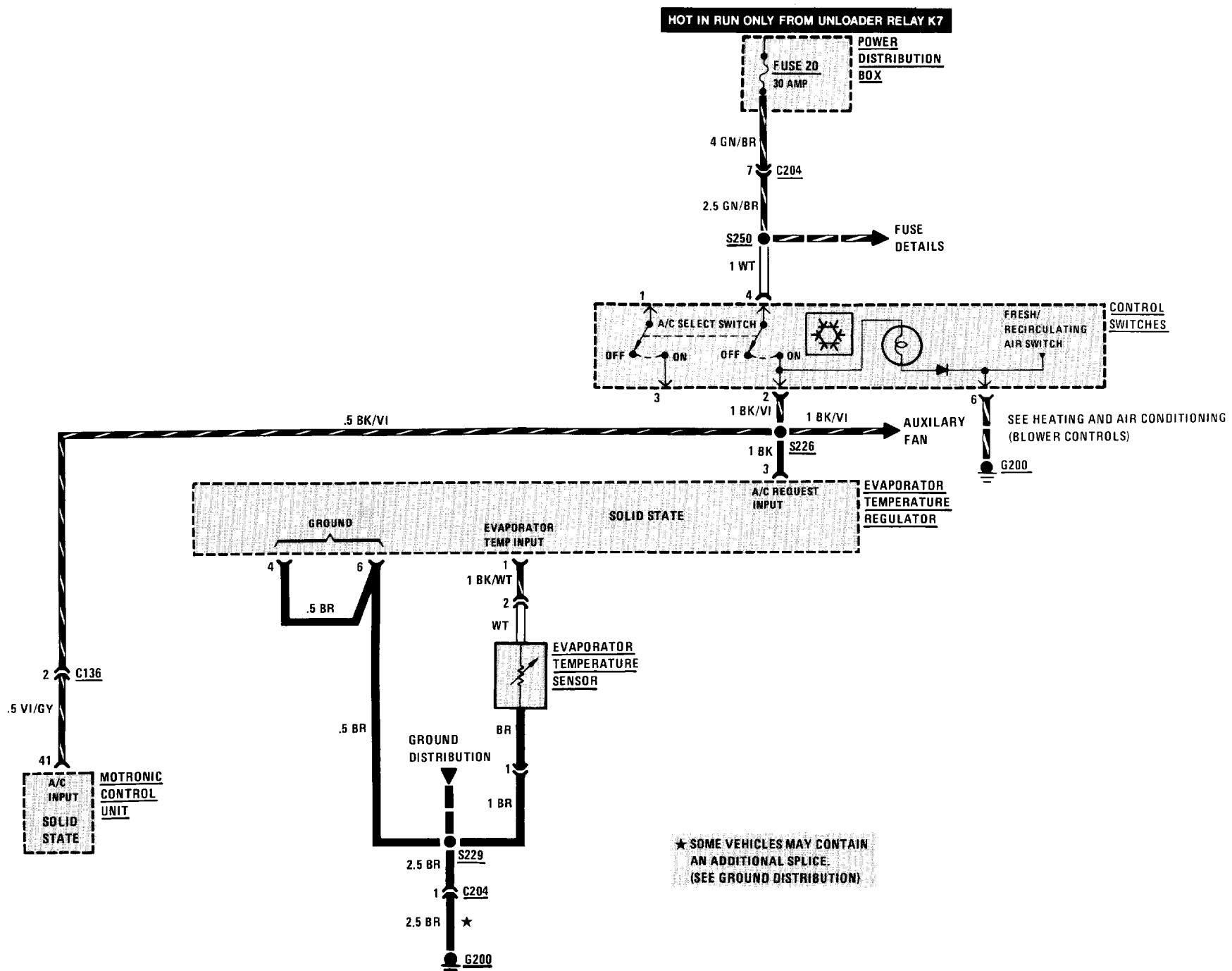
- Ignition Switch: RUN

| Measure Between | Correct Voltage | For Diagnosis |
|--------------------|-----------------|---------------|
| 7 (GN/BR) & Ground | Battery | See 1 |
| 7 (GN/BR) & 8 (GN) | Battery | See 2 |

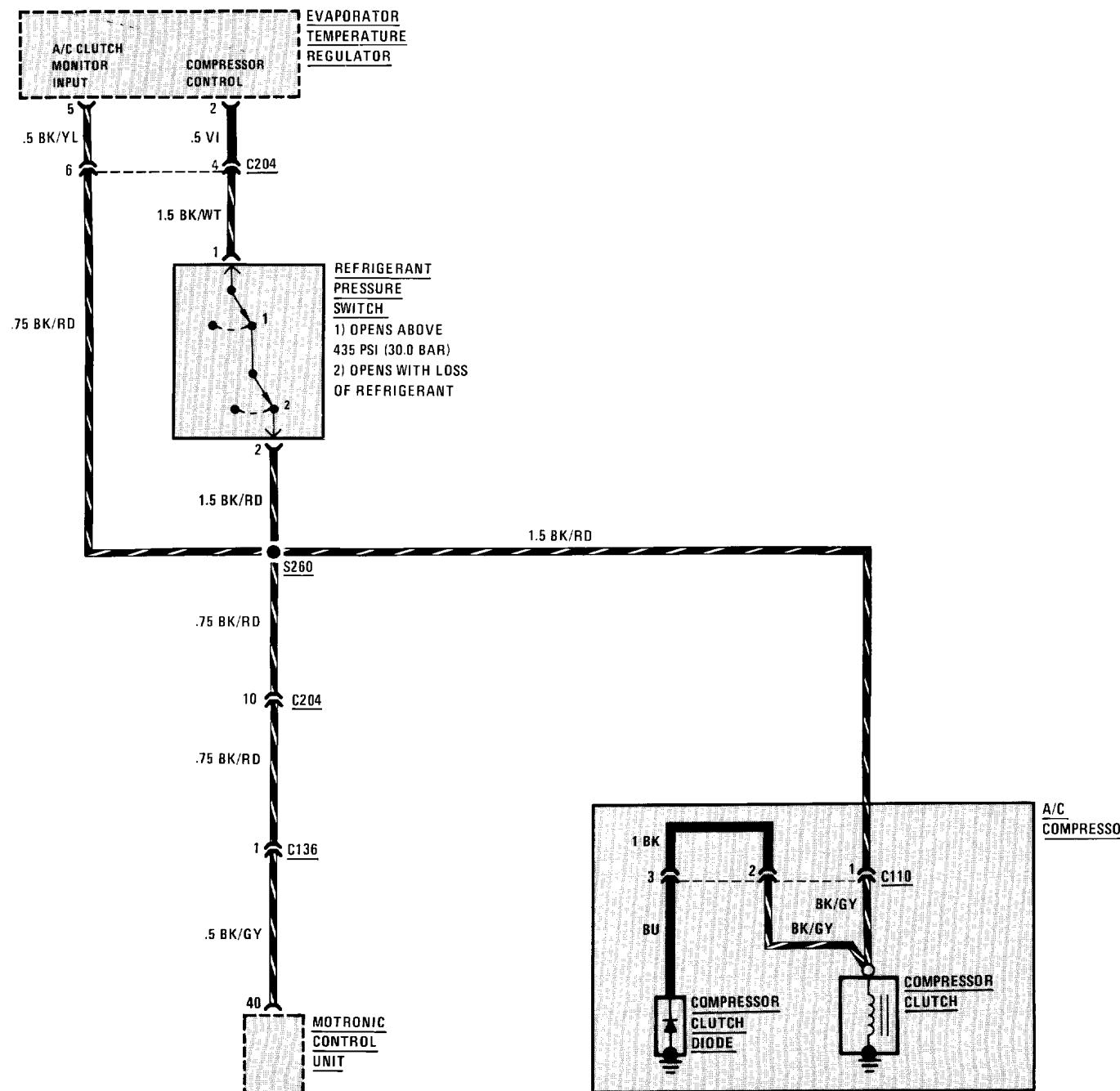
- If both voltages are correct, replace the Control Switches.
- 1. Check the GN/BR wire for an open. If wire is good, check that connector C204 is properly mated.
- 2. Check the GN wire for an open between the Control Switches and the LH and RH Fresh/Recirculating Air Relays.

6452-0 A/C COMPRESSOR CONTROLS

HEATING AND AIR CONDITIONING (COMPRESSOR CONTROLS)



HEATING AND AIR CONDITIONING (COMPRESSOR CONTROLS)



6452-2 A/C COMPRESSOR CONTROLS

CIRCUIT OPERATION

When the Ignition Switch is in RUN, battery voltage is applied through Fuse 20 to the A/C Select Switch. When the A/C Select Switch is pressed voltage is applied to terminal 3 of the Evaporator Temperature Regulator. The Evaporator Temperature Regulator applies voltage from terminal 2 to the Compressor Clutch through the Refrigerant Pressure Switch.

The Refrigerant Pressure Switch will disengage the Compressor Clutch when refrigerant pressure rises above 435 PSI (30.0 Bar), or when a loss of refrigerant brings the pressure below 21 PSI (1.5 Bar). The Evaporator Temperature Regulator will detect the High Pressure Cut-Out Switch opening at terminal 5 and will turn off the output voltage at the Compressor Control terminal. The Evaporator Temperature Regulator will not allow the Compressor Clutch to be turned on again until circuit continuity has been restored between terminals 5 and 2. The Evaporator Temperature Regulator tests for continuity by momentarily applying voltage at the Compressor Control every 8 to 10 seconds. Voltage at the A/C Clutch Monitor Input indicates continuity. The Evaporator Temperature Regulator will continue to apply voltage at the on Compressor Control output, which will energize the Compressor Clutch.

Clutch Diode

Whenever the Compressor Clutch is de-energized, the collapsing magnetic field induces a voltage in the winding. The Clutch Diode provides a path for the resulting current.

A/C On Input

When the Compressor Clutch is turned on, voltage is applied to terminal 29 of the Motronic Control Unit. The Motronic Control Unit uses this signal increase idle speed to compensate for the increased engine load from the Compressor Clutch engaging.

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Diagnosis.
 1. Check Fuse 20 by visual inspection.
 2. Check that Compressor Clutch connector is firmly seated.
- Go to Heating and Air Conditioning (6410A-0) System Check for a guide to normal operation.
- Go to System Diagnosis for diagnostic tests.

SYSTEM DIAGNOSIS

- Do the tests listed for your symptom in the Symptom Table below.
- Tests follow the Symptom Table.

SYMPTOM TABLE

| | |
|---|---|
| Compressor Clutch does not engage | A |
| Engine idle speed is not high enough when Compressor Clutch engages | D |

A: A/C ISOLATION TEST (TABLE 1)

| | | |
|--|-----------------|---------------|
| Measure: VOLTAGE At: EVAPORATOR TEMPERATURE REGULATOR (Disconnected) Conditions: <ul style="list-style-type: none">• Ignition Switch: RUN (Engine need not be running)• A/C Selector Switch: ON (Depressed) | | |
| Measure Between | Correct Voltage | For Diagnosis |
| 3 & Ground | Battery | See 1 |

• If voltage is correct, go to Table 2.
1. Go to Test E.

A: A/C ISOLATION TEST (TABLE 2)

Connect: FUSED JUMPER
At: EVAPORATOR TEMPERATURE REGULATOR (Disconnected)
Conditions:

- Ignition Switch: RUN
- A/C Selector Switch: ON (Depressed)

| Connect Across | Correct Result | For Diagnosis |
|----------------|----------------|---------------|
|----------------|----------------|---------------|

| | | |
|-------|---------------------------|-------|
| 2 & 3 | Compressor Clutch Engages | See 1 |
|-------|---------------------------|-------|

- If result is correct go to Test C.
- 1. Go to Test B.

B: PRESSURE SWITCH TEST

Measure: RESISTANCE
At: EVAPORATOR TEMPERATURE REGULATOR CONNECTOR (Disconnected)
Conditions:

- Ignition Switch: OFF
- Negative Battery Terminal: DISCONNECTED

| Measure Between | Correct Resistance | For Diagnosis |
|-----------------|---------------------------|---------------|
| 2 & Ground | Approximately 3 to 4 ohms | See 1 |

- If measurement is correct replace the Evaporator Temperature Regulator.
- 1. Check for an open Refrigerant Pressure Switch, A/C Temperature Switch, or associated wiring (see schematic). If Refrigerant Pressure Switch is open, check refrigerant pressure to be sure it is normal before replacing the switch. If the switches and related wiring are OK, replace the Compressor Clutch.

C: EVAPORATOR TEMPERATURE REGULATOR VOLTAGE AND RESISTANCE TEST

Measure: RESISTANCE
At: EVAPORATOR TEMPERATURE REGULATOR CONNECTOR (Disconnected)
Conditions:

- Ignition Switch: OFF
- Negative Battery Terminal: DISCONNECTED

| Measure Between | Correct Resistance | For Diagnosis |
|-----------------|--|---------------|
| 1 & Ground | Approximately 3.5K to 4.5K ohms at 70 °F (21 °C) | See 1 |
| 4 & Ground | Less than 0.5 ohms | See 2 |
| 6 & Ground | Less than 0.5 ohms | See 2 |
| 5 & 2 | Less than 0.5 ohms | See 3 |

- If all resistances are correct but Compressor Clutch does not operate normally, replace the Evaporator Temperature Regulator.
- 1. Check the BK/WT wire for an open or a short to ground (see schematic). Check the BR wire for an open (see schematic). If wires are good, replace the Evaporator Temperature Sensor.
- 2. Check the BR wire for an open (see schematic).
- 3. Check BK/RD for an open between terminal 5 and the Refrigerant Pressure Switch.

6452-4 A/C COMPRESSOR CONTROLS

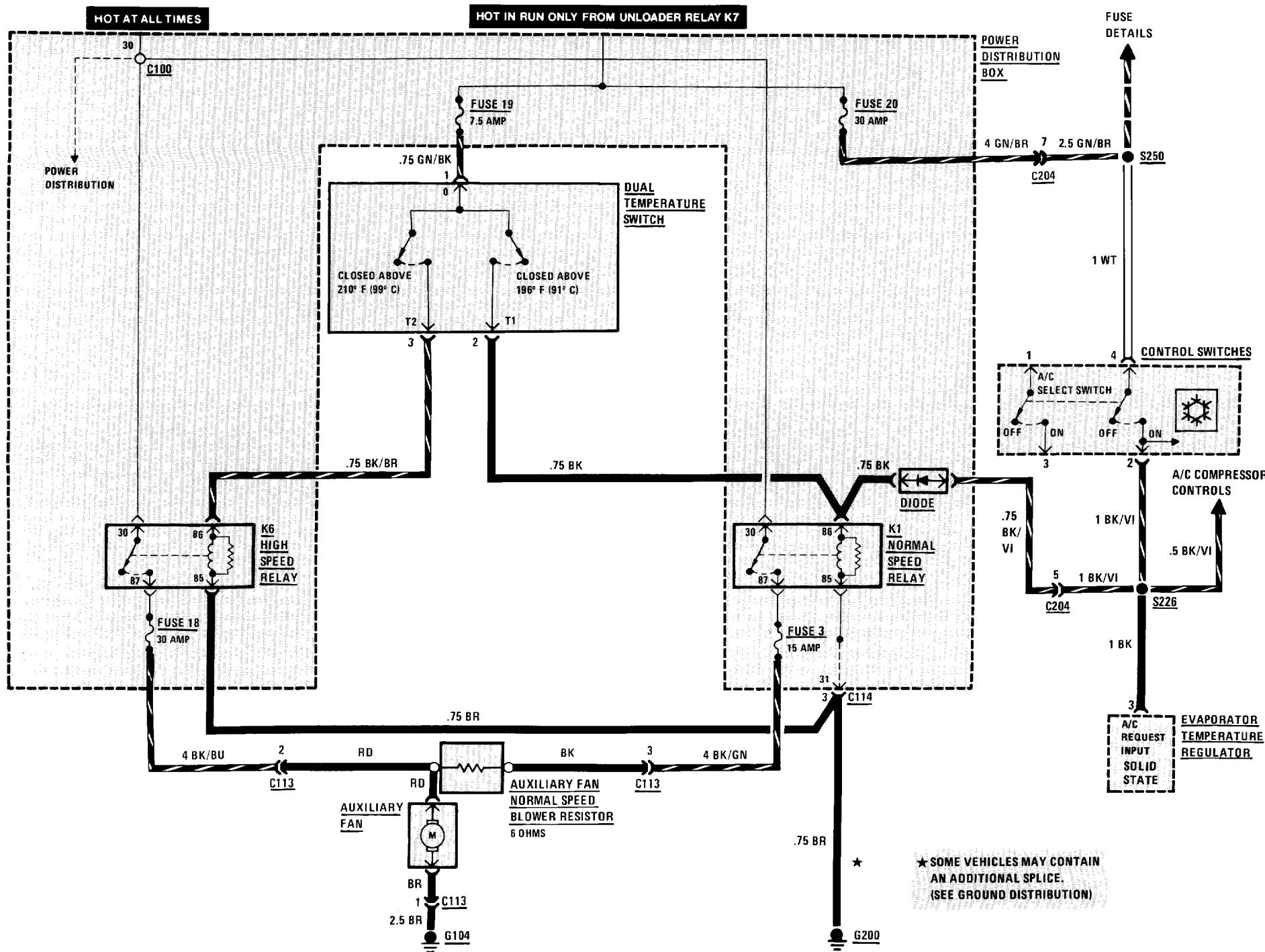
D: IDLE SPEED CONTROL VOLTAGE TEST

| Measure: VOLTAGE At: MOTRONIC CONTROL UNIT CONNECTOR (Connected — Universal Adapter) | | |
|--|-----------------|---------------|
| Conditions: <ul style="list-style-type: none">• Ignition Switch: RUN• A/C Control Panel: A/C ON• Temperature Outside Car: Above 60 degrees F (16 degrees C) | | |
| | | |
| Measure Between | Correct Voltage | For Diagnosis |
| 40 (BK/GY) & Ground | Battery | See 1 |
| 41 (VI/GY) & Ground | Battery | See 2 |
| <ul style="list-style-type: none">• If the voltage is correct, repair/replace the Motronic Control Unit.1. Check for an open in the BL/WT and BK/RD wires.2. Check for an open in the VI/GY and BK/VI wires. | | |

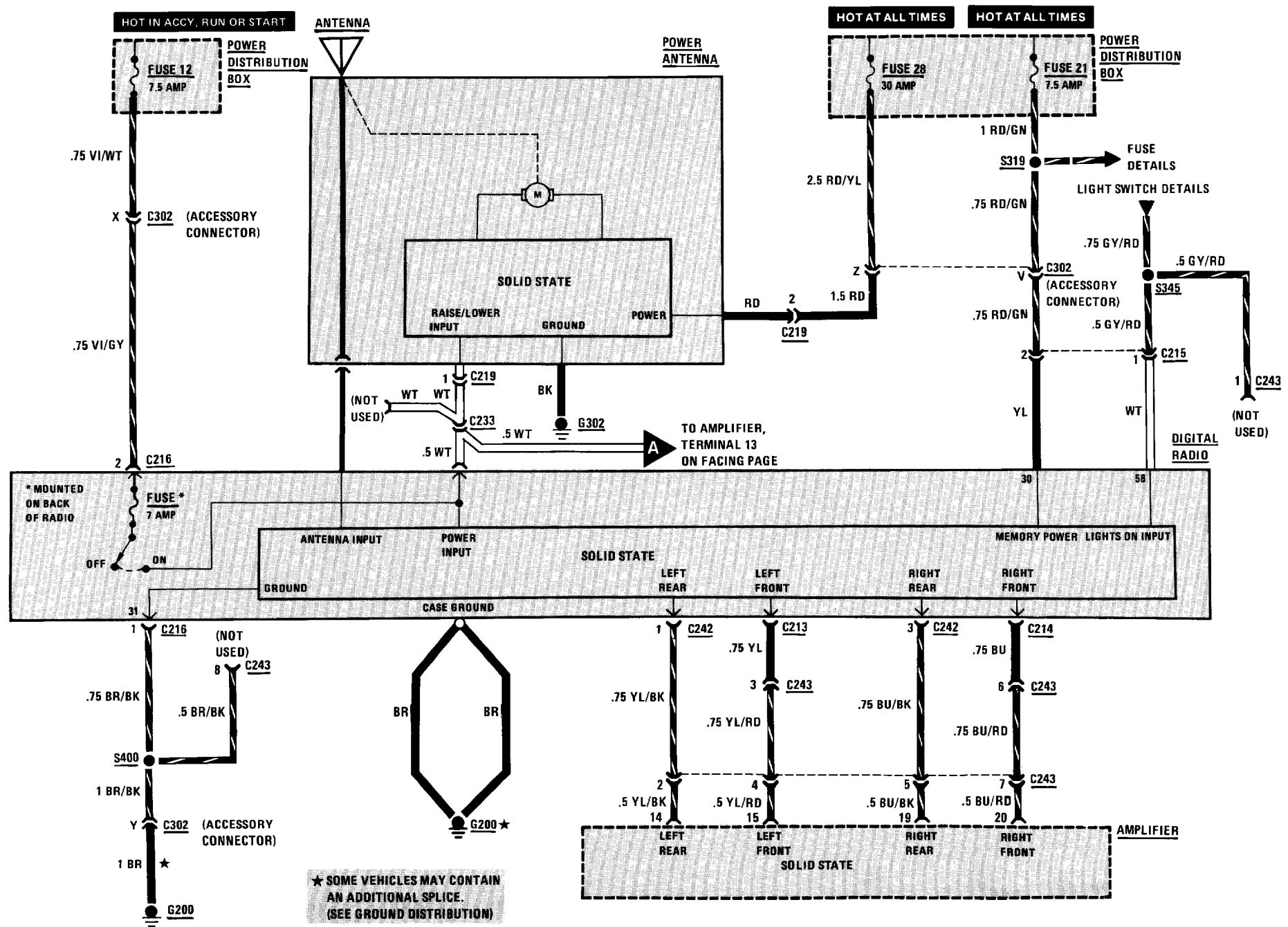
E: A/C SELECT SWITCH VOLTAGE TEST

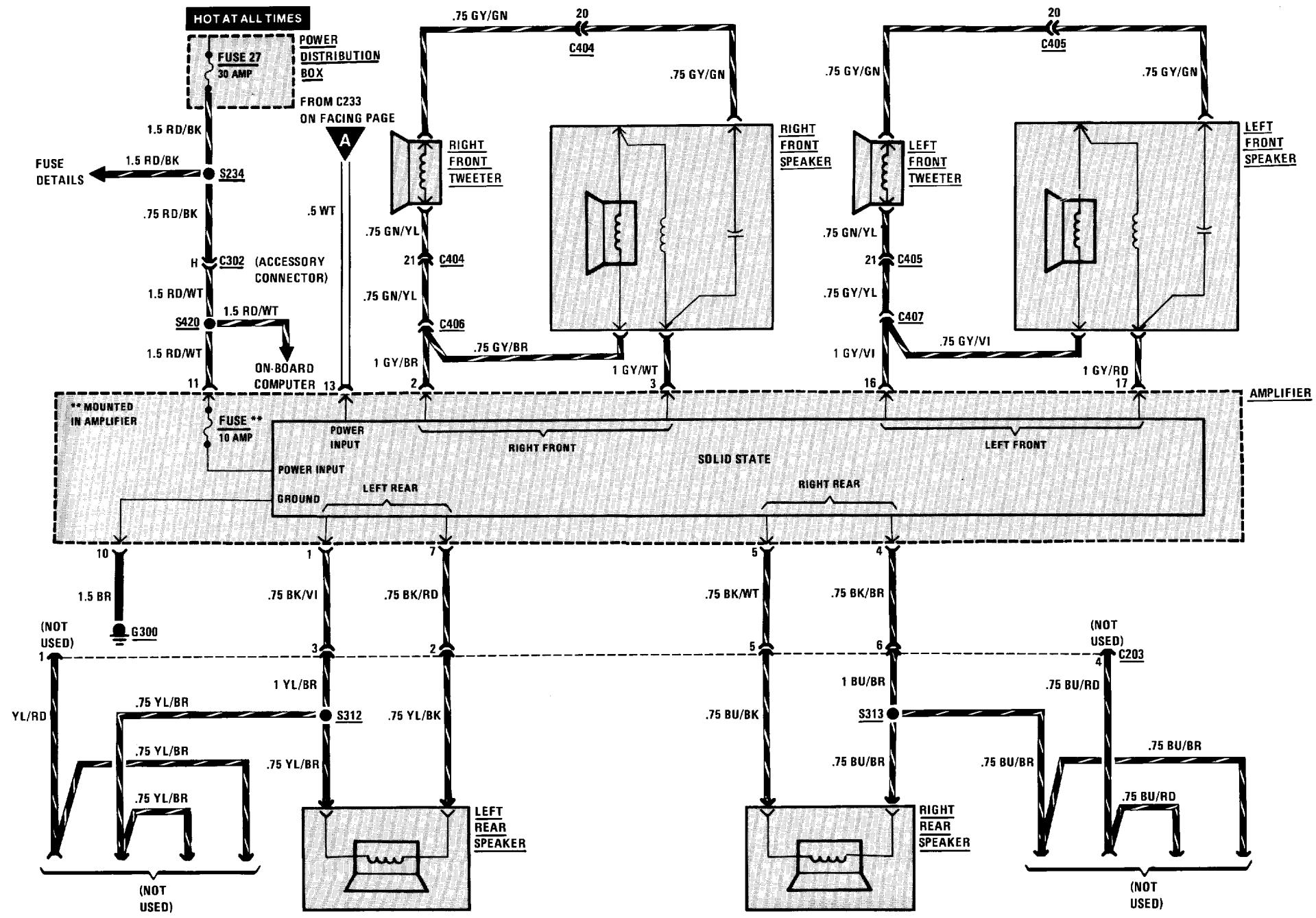
| Measure: VOLTAGE At: CONTROL SWITCHES CONNECTOR (Connected) | | |
|--|-----------------|---------------|
| Conditions: <ul style="list-style-type: none">• Ignition Switch: RUN• A/C Control Panel: A/C ON• Temperature Outside Car: Above 60 degrees F (16 degrees C) | | |
| | | |
| Measure Between | Correct Voltage | For Diagnosis |
| 4 (WT) & Ground | Battery | See 1 |
| 2 (BK/VI) & Ground | Battery | See 2 |
| <ul style="list-style-type: none">• If both voltages are correct, check connections at Evaporator Temperature Regulator.1. Check for an open in the WT and GN/BR wires.2. Replace the A/C Select Switch. | | |

6454-0 AUXILIARY FAN



6500-0 RADIO/ANTENNA





6500A-0 RADIO/ANTENNA

CIRCUIT OPERATION

With the Ignition Switch in ACCY, RUN or START, Fuse 12 provides voltage to turn on the three components in the system. When the Radio Switch is on, voltage is applied to the Radio and the Amplifier. This voltage is used to control the individual unit's main power supply.

Fuse 21 constantly supplies voltage to the Memory Power Input of the Radio. This allows the Radio to maintain the present settings while it is turned off.

The Amplifier receives constant power at terminal 11 from Fuse 27. When the Radio is on, voltage is applied to terminal 13 to enable the Amplifier.

The actual Radio signal originates at the Antenna. It is supplied to the Radio, processed, and output from the Left Channel and Right Channel Outputs. The signal is then input to the Left Front, Left Rear, Right Front and Right Rear Inputs to the Amplifier. After amplification, the signal is output to the corresponding speakers.

TROUBLESHOOTING HINTS

- Try the following checks before doing the System Check.
 1. Check power input to the Radio by observing if Instrument Cluster Indicators light.
 2. Check memory power to Radio by checking operation of the Glove Box Light.
 3. Check power input to the Amplifier.
 4. Check that the Antenna is properly connected.
 5. Before troubleshooting a suspect Speaker, check all connections to that Speaker.
 6. If display shows "CODE" and Radio will not operate, the individual Anti-Theft Code must be entered. Refer to "Anti-Theft" instruction booklet.
 7. Check Radio Fuse located on back of Radio.
 8. Check Amplifier Fuse located on back of Amplifier.
 9. For Radios without sound system. If a speaker is inoperative switch with a good speaker. If still inoperative, check related wiring. Remove Radio for service if wiring is OK.

SYSTEM CHECK

- Use the System Check Table as a guide to normal operation.
- Refer to System Diagnosis for a list of symptoms and diagnostic steps.

SYSTEM CHECK TABLE

| ACTION | NORMAL RESULT |
|---|--|
| With Ignition Switch in RUN, turn Radio ON. | Digital display lights. Sound is emitted from all Speakers. |
| Operate Fader Control. | Sound volume varies from front to rear. |

- Refer to System Diagnosis when a result is not normal.

SYSTEM DIAGNOSIS

- Do the tests listed for your symptom in the Symptom Table below.
- Tests follow the Symptom Table.

SYMPTOM TABLE

| SYMPTOM | FOR DIAGNOSIS |
|--|---------------|
| Radio does not work (no display, no sound). | Do Test A |
| Digital display lights, but there is no sound. | Do Test B |
| LH Speakers or RH Speakers do not operate. | Do Test C |

(Continued on next page)

(Continued from previous page)

| | |
|--|-----------|
| An individual Speaker does not operate. | Do Test D |
| Excessive noise comes from all speakers. | Do Test E |

A: RADIO POWER TEST

| Measure: VOLTAGE At: RADIO CONNECTOR C216 (Disconnected) or CONNECTOR C215 (Disconnected) Condition: • Ignition Switch: RUN | | |
|--|-----------------|---------------|
| Measure Between | Correct Voltage | For Diagnosis |
| C216/2 & Ground | Battery | See 1 |
| C216/2 & C216/1 | Battery | See 2 |
| C215/2 & Ground | Battery | See 3 |

- If all voltages are correct, check wire from connector C215 to Radio for an open. If wire is OK, remove Radio for service.
- 1. Check power input wire for an open
- 2. Check ground wire for an open to ground. Make sure ground G200 is clean and tight.
- 3. Check memory power supply wire for an open.

B: AMPLIFIER POWER TEST

| Measure: VOLTAGE At: AMPLIFIER CONNECTOR (Disconnected) Conditions: • Ignition Switch: RUN • Radio: ON | | |
|--|-----------------|---------------|
| Measure Between | Correct Voltage | For Diagnosis |
| 11 & Ground | Battery | See 1 |
| 11 & 18 | Battery | See 2 |
| 13 & Ground | Battery | See 3 |
| 11 & 10 | Battery | See 4 |

• If all voltages are correct, go to Test C.
 1. Check power supply wire for an open.
 2. Check Amplifier ground to Amplifier for an open to ground. Make sure ground G200 is clean and tight.
 3. Check Amplifier "Radio On" wire for an open.
 4. Check wire from terminal 10 for an open to ground. Make sure ground G106 is clean and tight.

C: FADER SIGNAL TEST (WITH SOUND SYSTEM)

| Measure: VOLTAGE At: AMPLIFIER CONNECTOR (Disconnected) Conditions: • Ignition Switch: RUN • Radio: ON | | |
|--|-----------------------|---------------|
| Measure Between | Correct Voltage | For Diagnosis |
| 14 & Ground | Approximately 6 Volts | See 1 |
| 15 & Ground | Approximately 6 Volts | See 1 |
| 19 & Ground | Approximately 6 Volts | See 1 |
| 20 & Ground | Approximately 6 Volts | See 1 |

• If all voltages are correct but sound was not present, remove Amplifier for service.
 1. Check between Radio and Amplifier for an open in the wiring. If wire is OK, remove Radio for service.

6500A-2 RADIO/ANTENNA

D: SUSPECT SPEAKER TEST

| Connect: OHMMETER At: SUSPECT SPEAKER (Disconnected) Condition: <ul style="list-style-type: none">• Ohmmeter set on Rx 1 scale or Diode Check Scale | | |
|--|----------------|---------------|
| Action | Correct Result | For Diagnosis |
| Connect Ohmmeter across Speaker Terminals | Speaker "pops" | See 1 |
| <ul style="list-style-type: none">• If the result is correct, check wires to the Amplifier or Radio for opens or shorts. If wires are OK, check the related wire between Radio and Amplifier. If OK, remove Radio for service.1. Replace the suspect Speaker. | | |

E: NOISE DIAGNOSIS

With Radio on and noise present, unplug the Antenna at the back of the Radio.

- If noise is no longer present, it was being picked up by the Antenna. Perform Antenna Noise Test.
- If noise persists, it is coming in the Radio wiring. Refer to the following Noise Symptom Table.

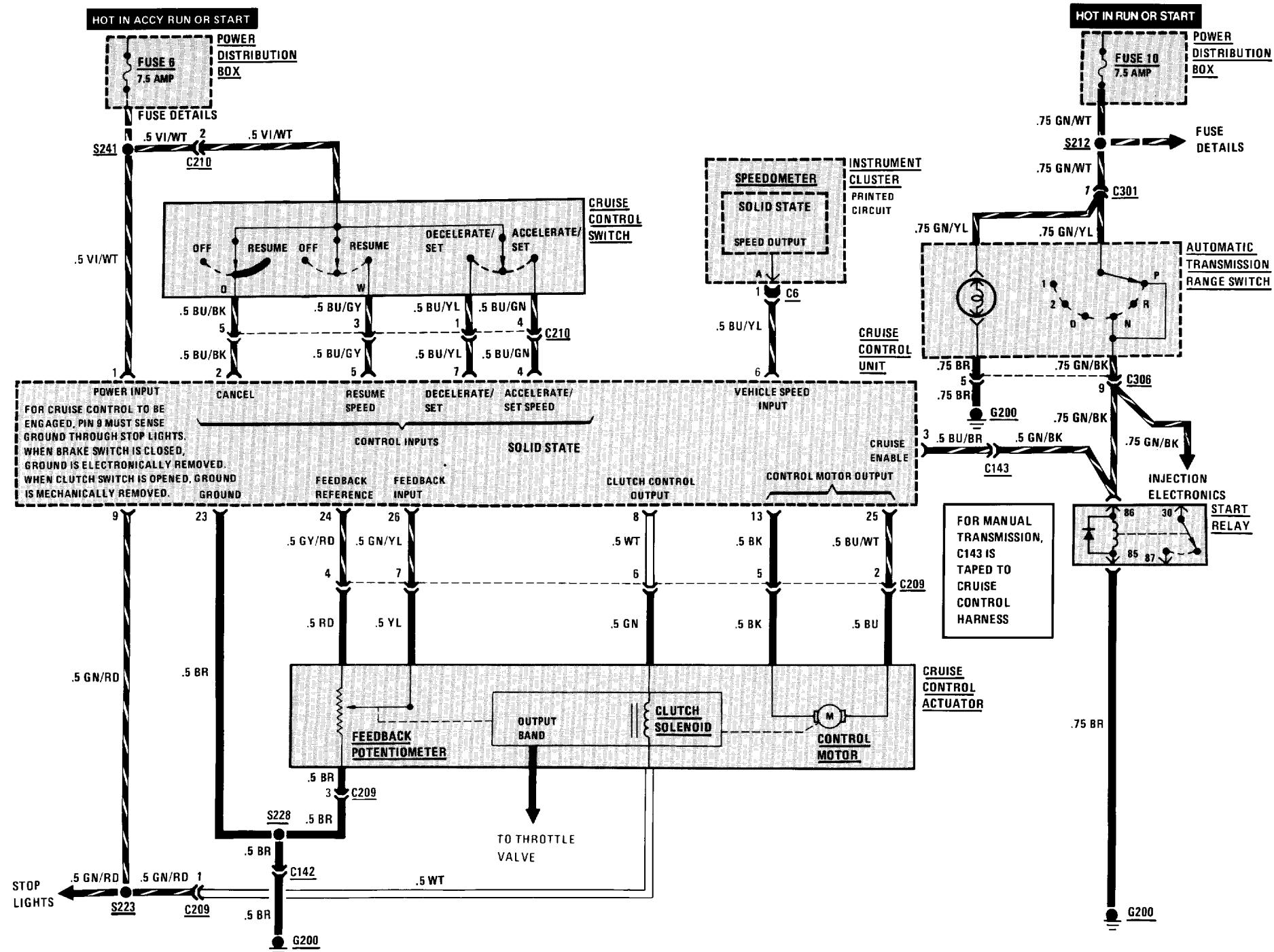
ANTENNA NOISE TEST

| Measure: RESISTANCE At: ANTENNA | | |
|---|---------------------------------------|---------------|
| Measure Between | Correct Resistance | For Diagnosis |
| Antenna Plug Base & Ground | Less than 3 Ohms | See 1 |
| Antenna Plug Tip & Antenna Plug Base | Greater than 1 Megaohm (open circuit) | See 2 |
| <ul style="list-style-type: none">• If both resistances are correct, check the hood ground strap. If OK, substitute different Antenna at Radio. If good, replace Antenna. If noise is still present, refer to Noise Symptom Table.1. Check ground contact at Antenna base. If necessary, install a braided ground strap from the Antenna Base to Chassis ground. Check for an open in the Antenna Cable.2. Check for a short to ground at the Antenna or Antenna cable. | | |

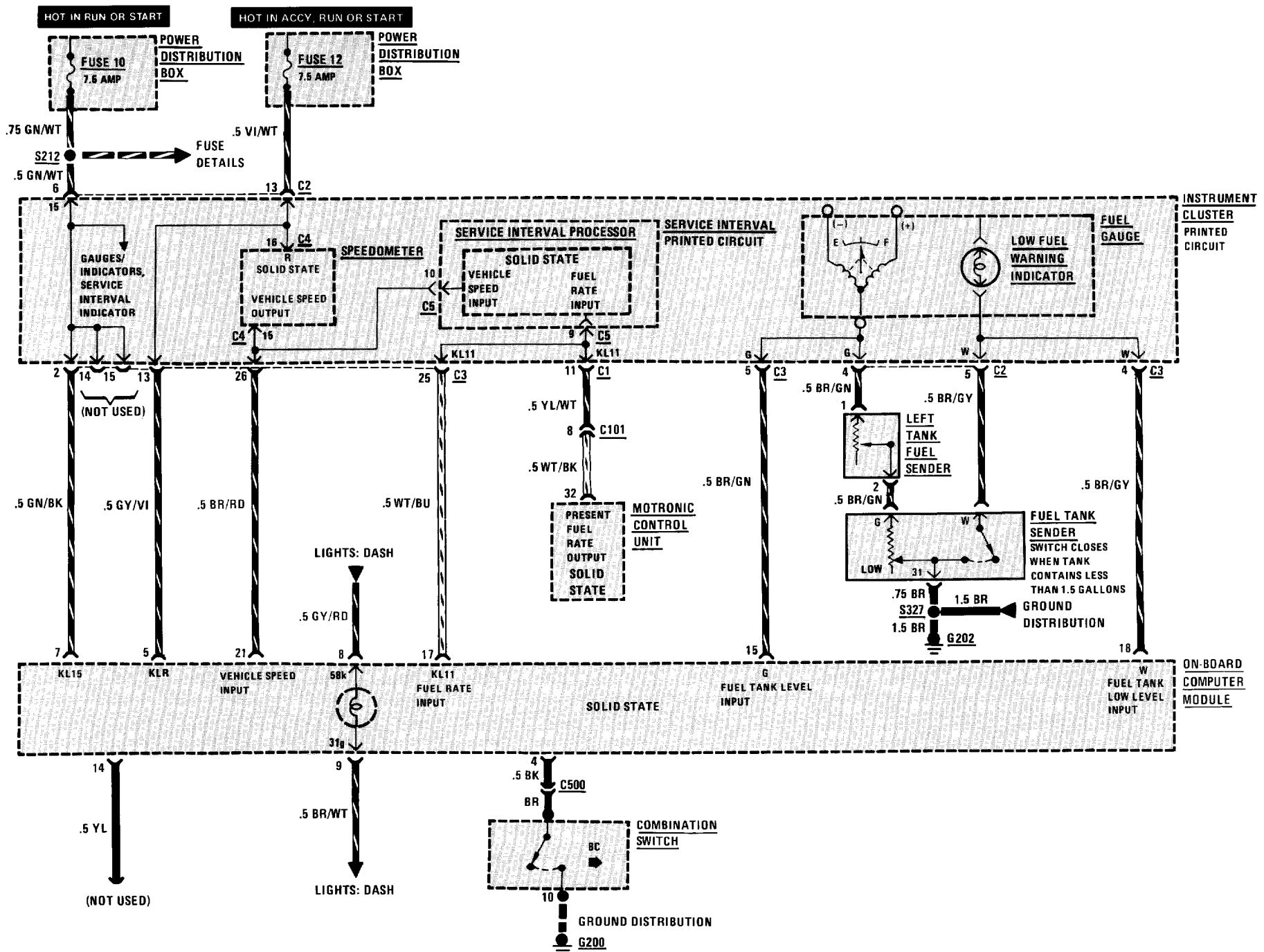
NOISE SYMPTOM TABLE

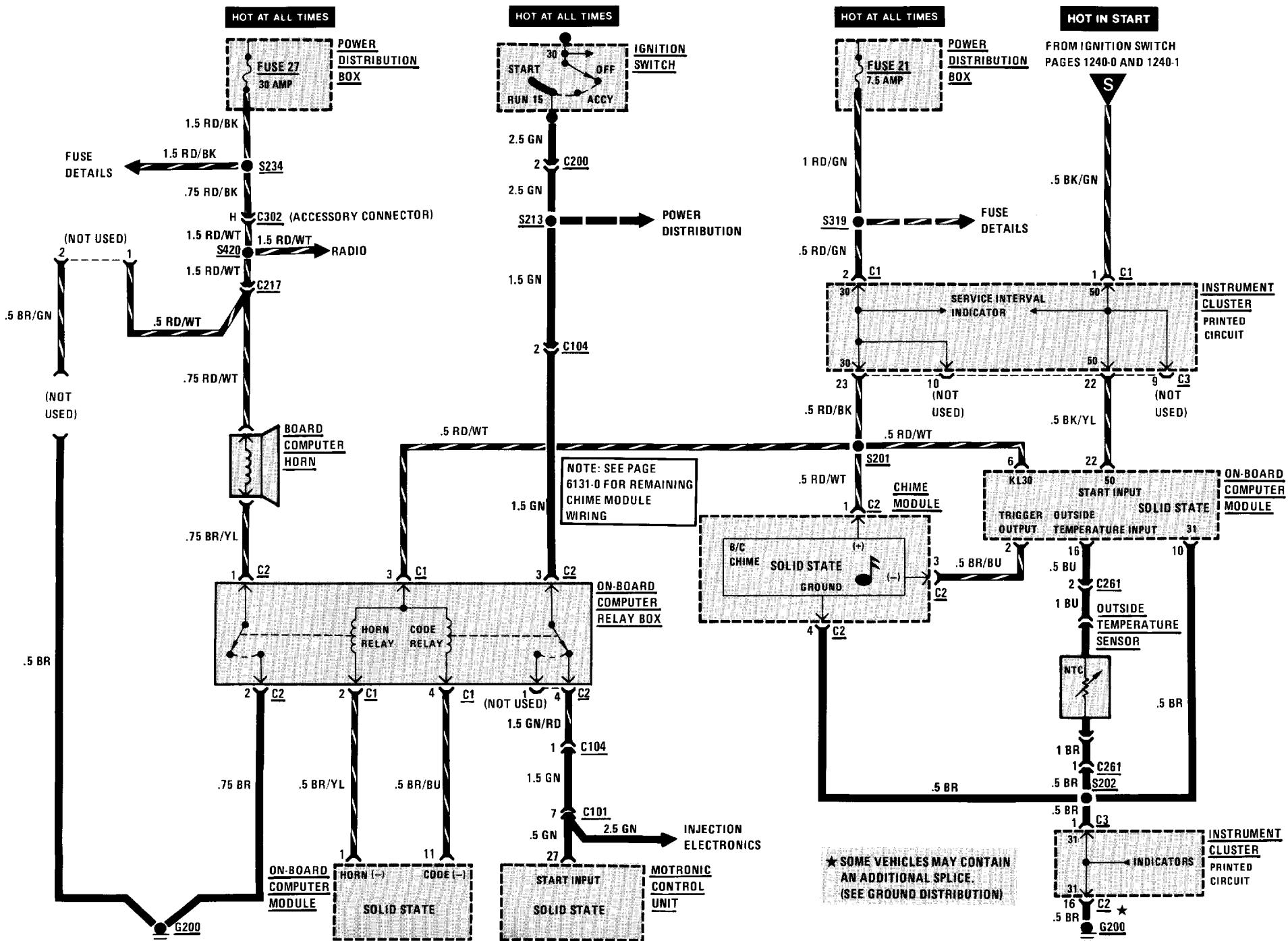
| SYMPTOM | POSSIBLE CAUSE | REPAIR ACTION |
|--|------------------|--|
| Harsh popping or crackling noise present when ignition on-changes with engine rpm. | Ignition Noise | <ul style="list-style-type: none"> • Check for proper distributor cap shielding. • Check shielding ground strap. If not present, install. • Check for defective spark plug or spark plug wire. • Reroute spark plug wires laying against anything that could be transmitting noise to the Radio (wiring or sensor leads traveling into the passenger compartment). • Check engine/firewall ground strap and engine hood/body ground strap. • Check if engine hood is closing properly. • Connect dedicated ground strap to Radio. • Replace distributor cap and rotor. |
| High whine or howling that changes with engine rpm. | Alternator noise | <ul style="list-style-type: none"> • Connect dedicated ground strap to Radio. • Run a direct wire from Battery to Alternator. |
| AM only is weak and noisy. | AM alignment | <ul style="list-style-type: none"> • Remove Radio for service. |
| FM only is weak and noisy. | FM alignment | <ul style="list-style-type: none"> • Remove Radio for service. |

6571-0 CRUISE CONTROL



6581-0 ON-BOARD COMPUTER





7000-0 COMPONENT LOCATION VIEWS

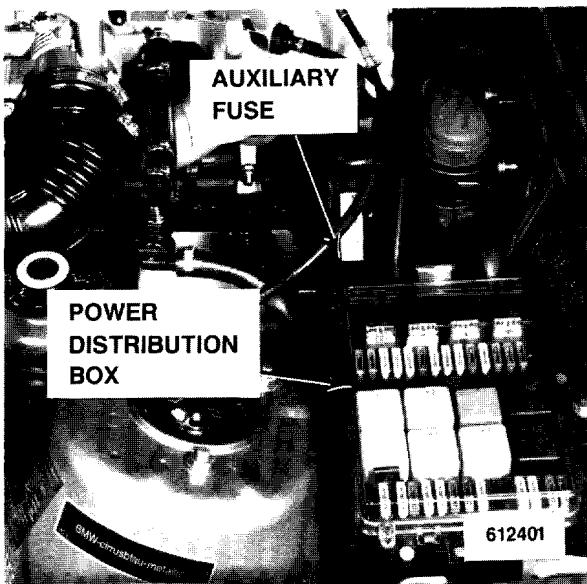


Figure 1 - LH Rear of Engine Compartment

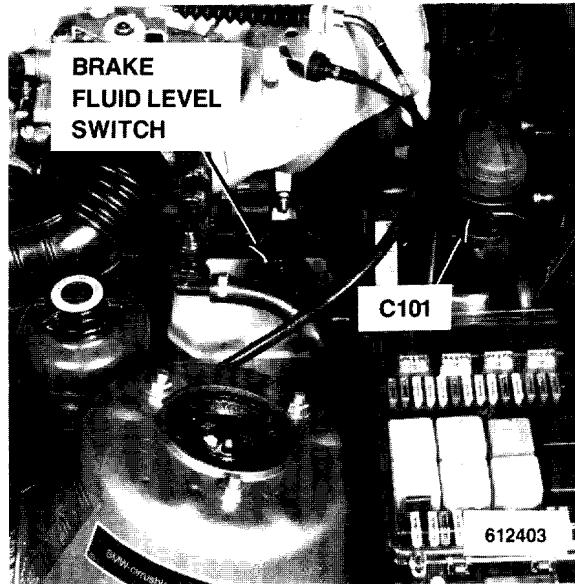


Figure 3 - LH Rear of Engine Compartment

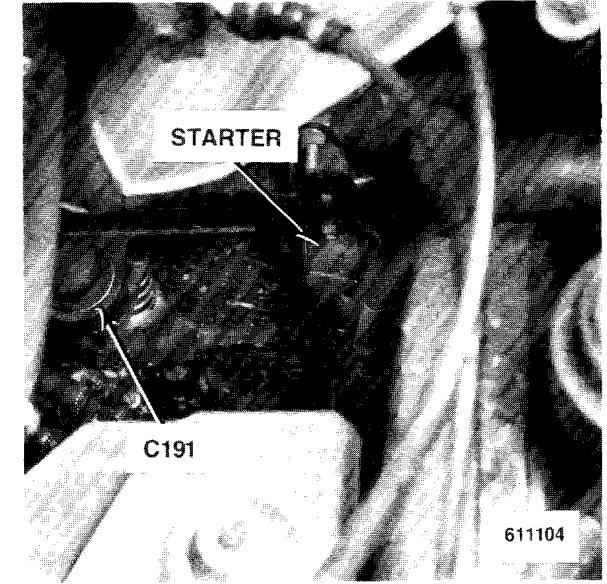


Figure 5 - Lower LH Rear of Engine

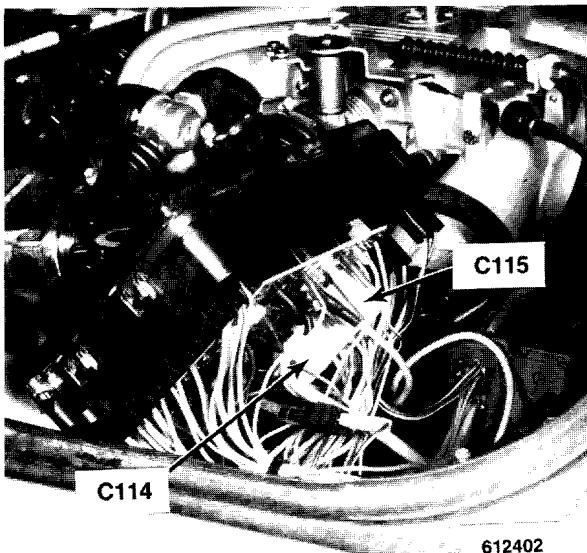


Figure 2 - LH Rear of Engine Compartment
(Inside Power Distribution Box)

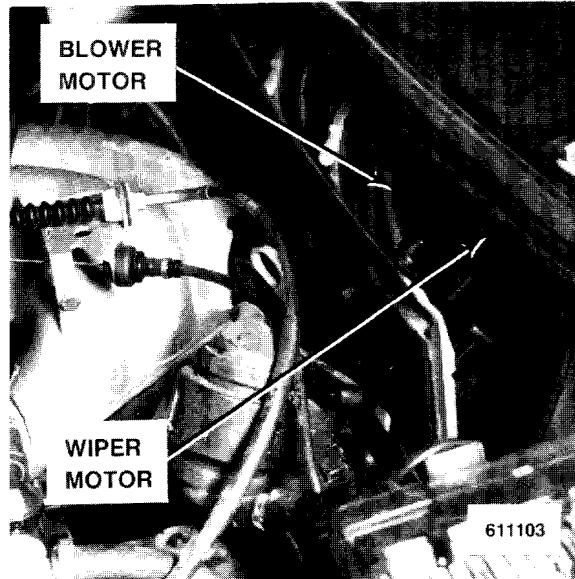


Figure 4 - Behind Fresh Air Intake Cowl

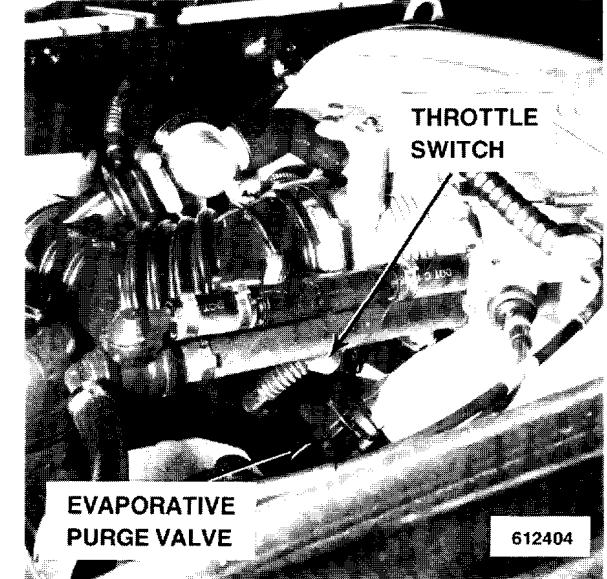


Figure 6 - LH Side of Engine

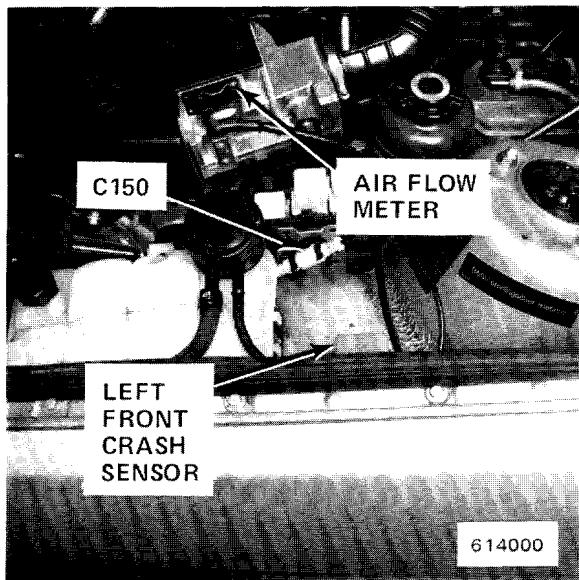


Figure 1 - Forward of LH Shock Tower
(Relay Cover Removed)

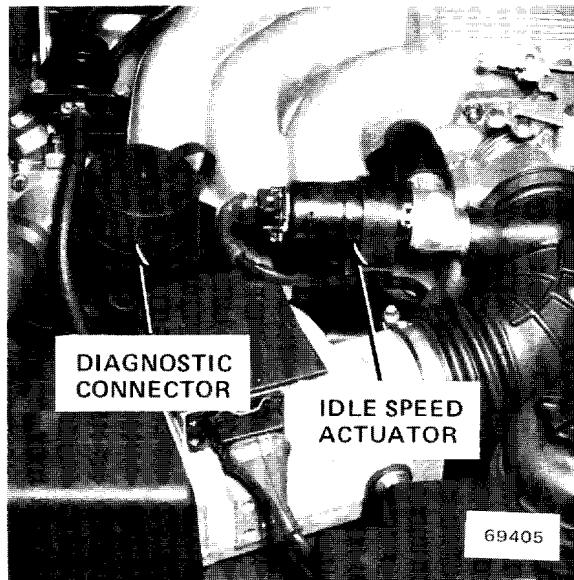


Figure 3 - LH Front of Engine

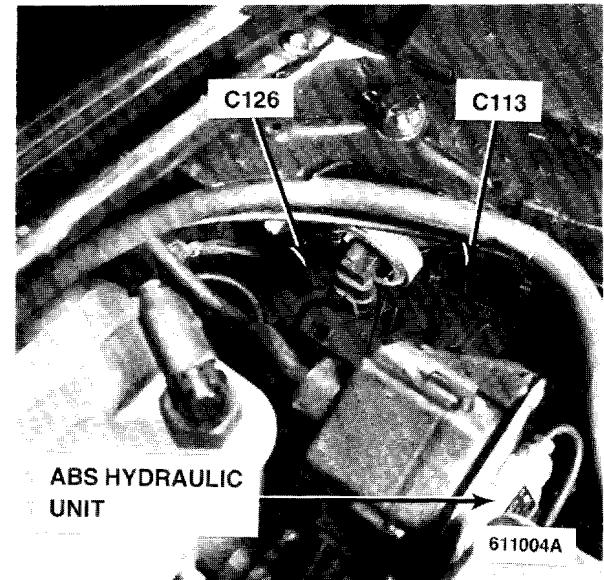


Figure 5 - LH Front Corner of Engine
Compartment

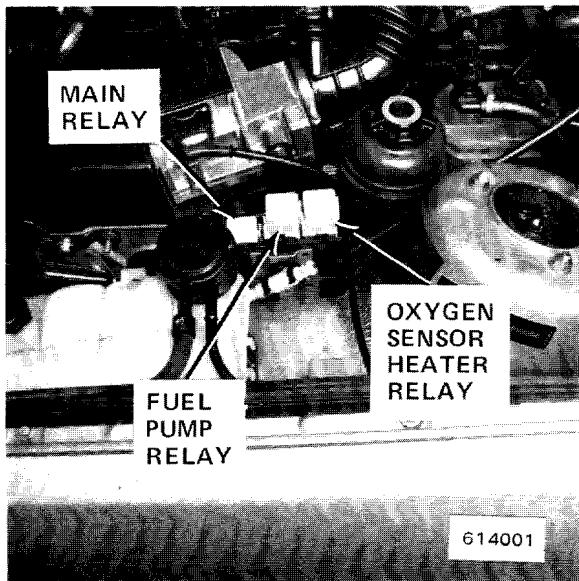


Figure 2 - Forward of LH Shock Tower
(Relay Cover Removed)

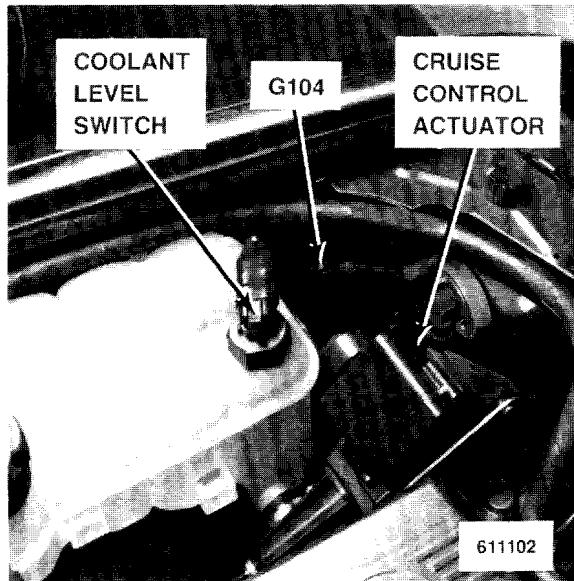


Figure 4 - LH Front Corner of Engine
Compartment

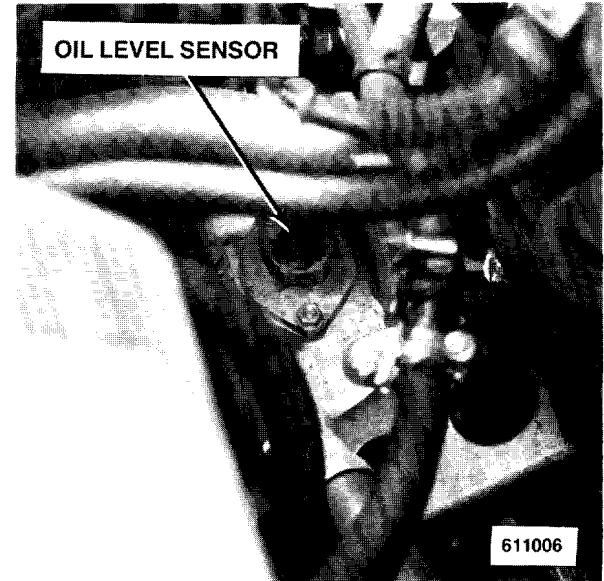


Figure 6 - Lower LH Side of Engine

7000-2 COMPONENT LOCATION VIEWS

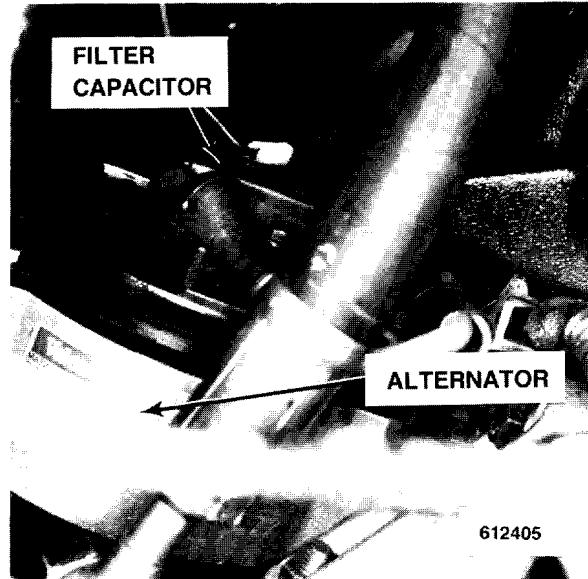


Figure 1 - Lower LH Front of Engine
(From Below Car)

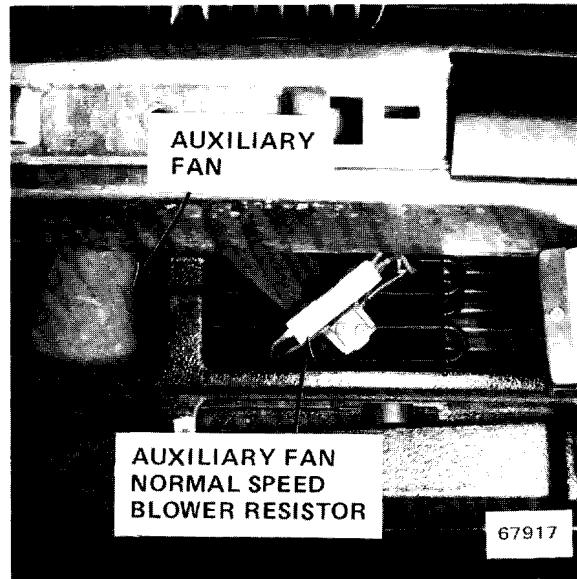


Figure 3 - Behind Center of Front Bumper

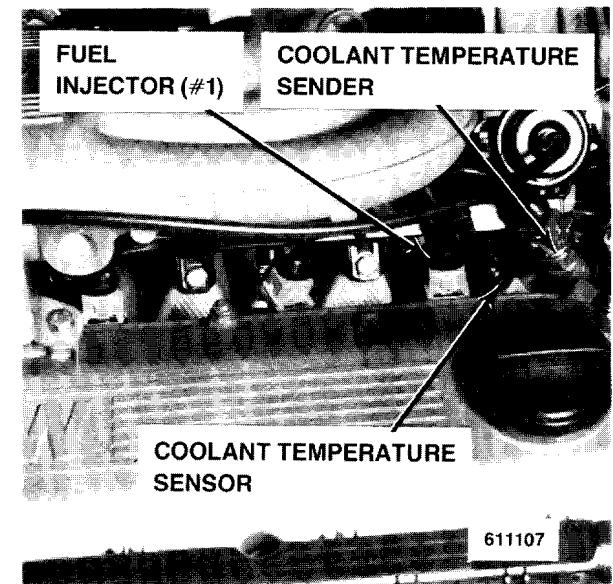


Figure 5 - Top Front of Engine

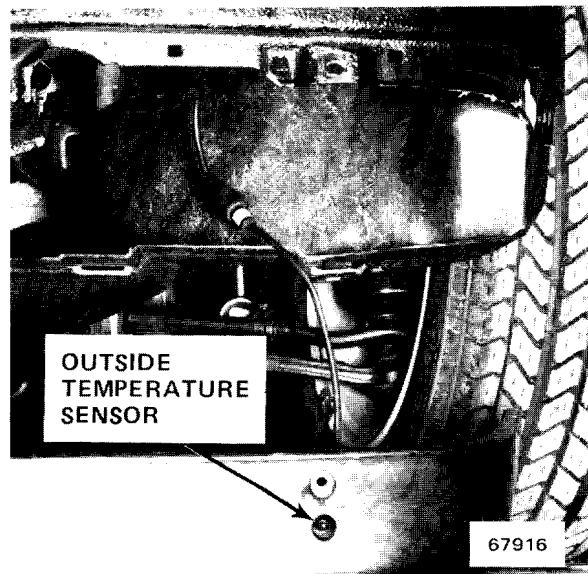


Figure 2 - Behind LH Side of Front Bumper

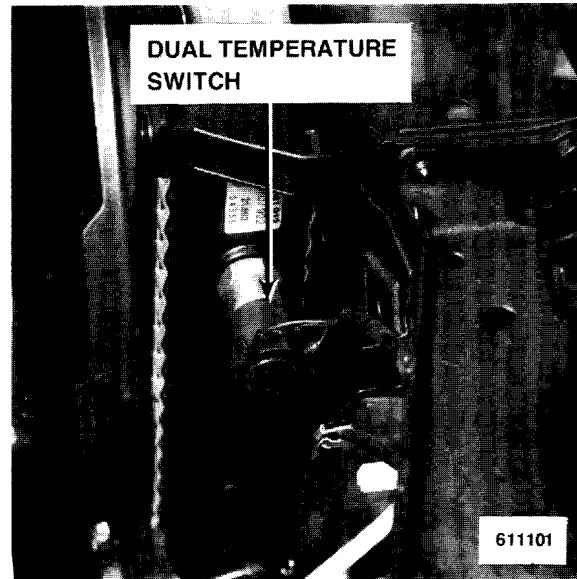


Figure 4 - Top RH Side of Radiator

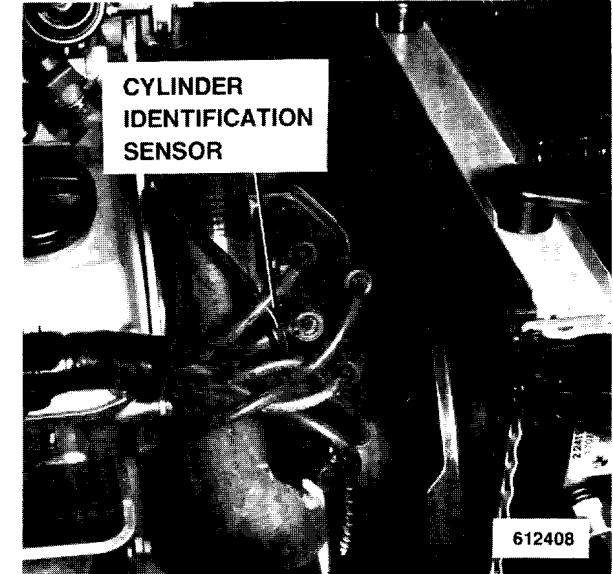


Figure 6 - RH Front of Engine

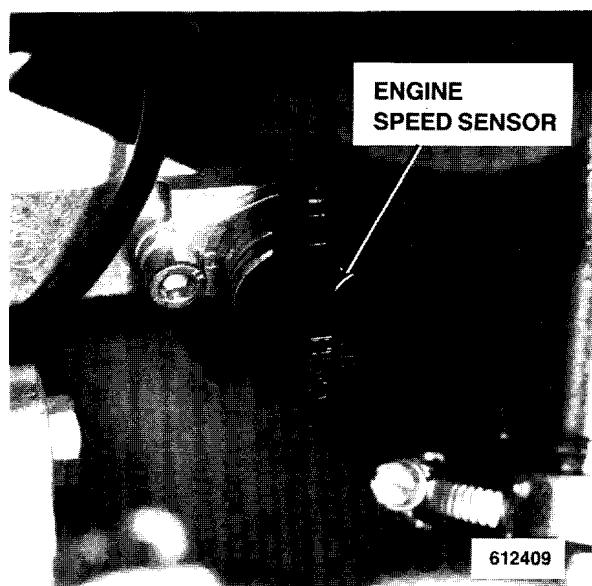


Figure 1 - Lower RH Front of Engine



Figure 3 - Lower RH Front of Engine

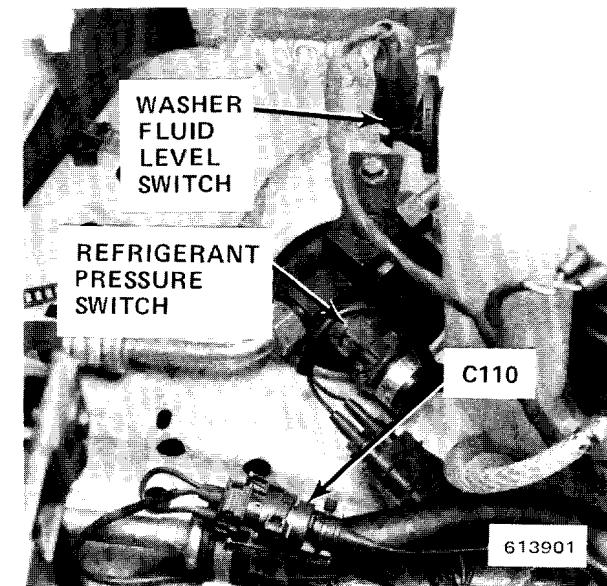


Figure 5 - RH Front of Engine Compartment

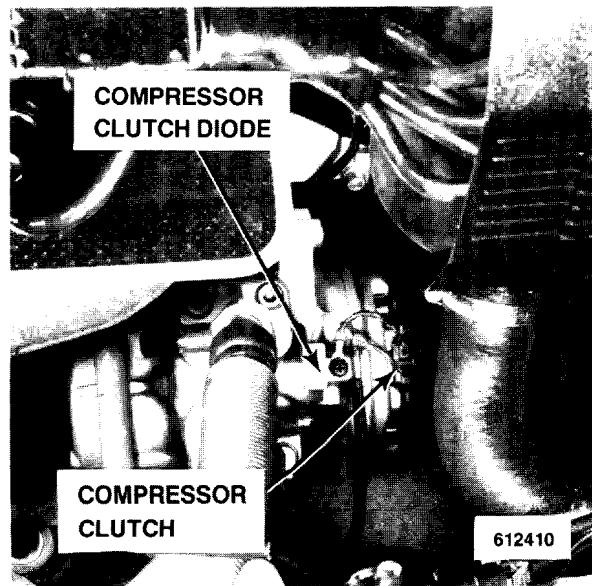


Figure 2 - Lower RH Front of Engine

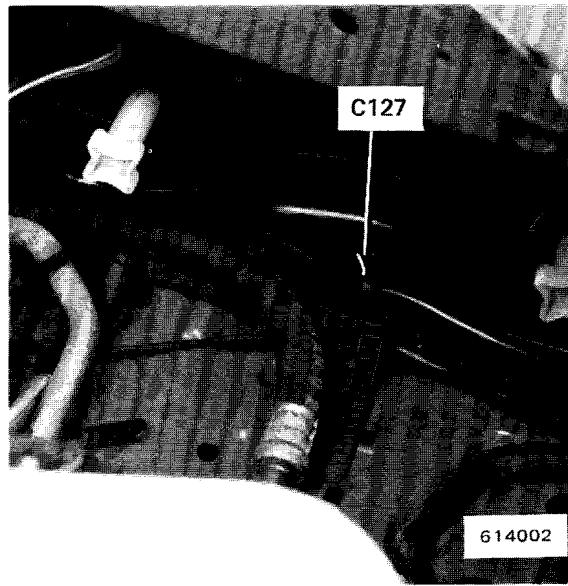


Figure 4 - RH Front Corner of Engine Compartment

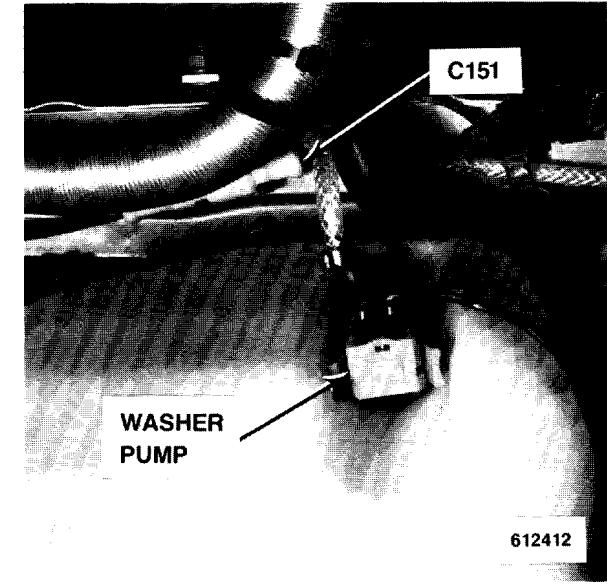


Figure 6 - RH Side of Engine Compartment

7000-4 COMPONENT LOCATION VIEWS

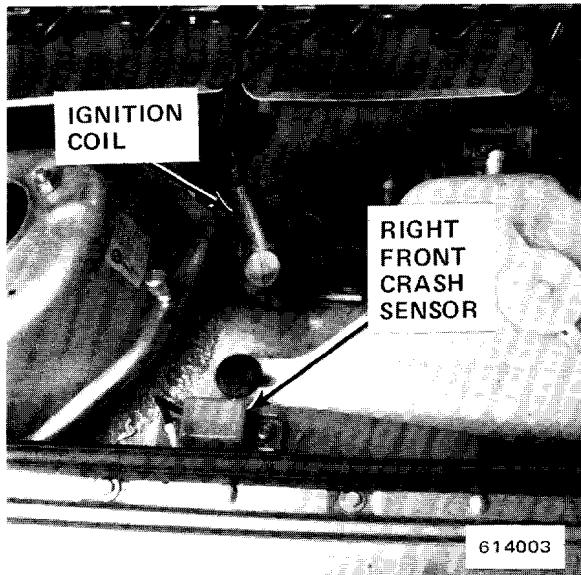


Figure 1 - RH Side of Engine Compartment

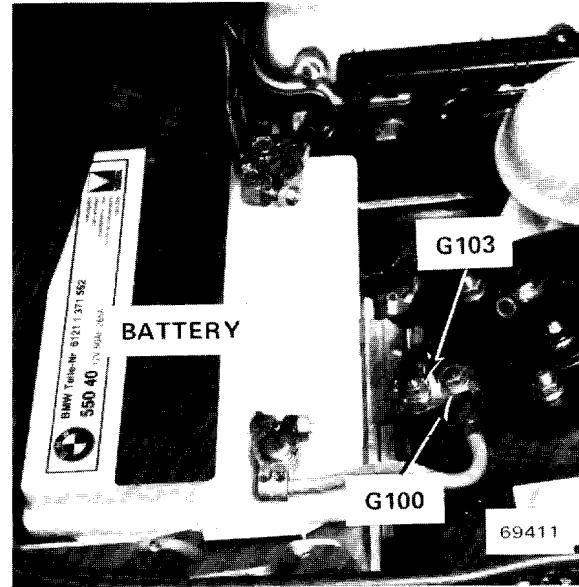


Figure 3 - RH Rear of Engine Compartment

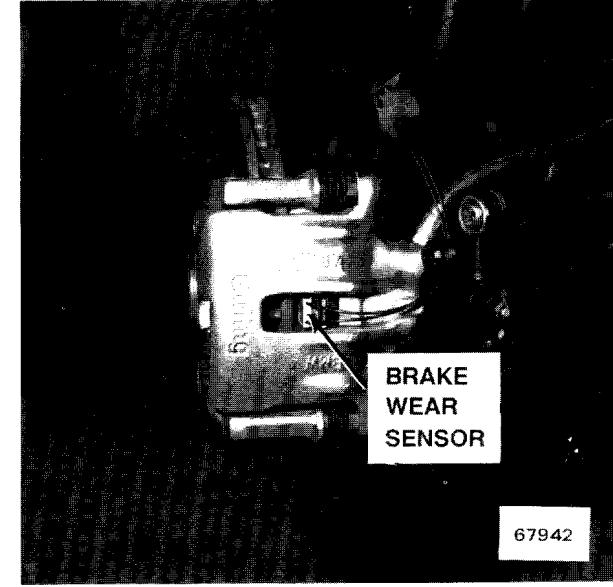


Figure 5 - LH Front Brake Assembly
(Wheel Removed)
(RH Rear Similar)

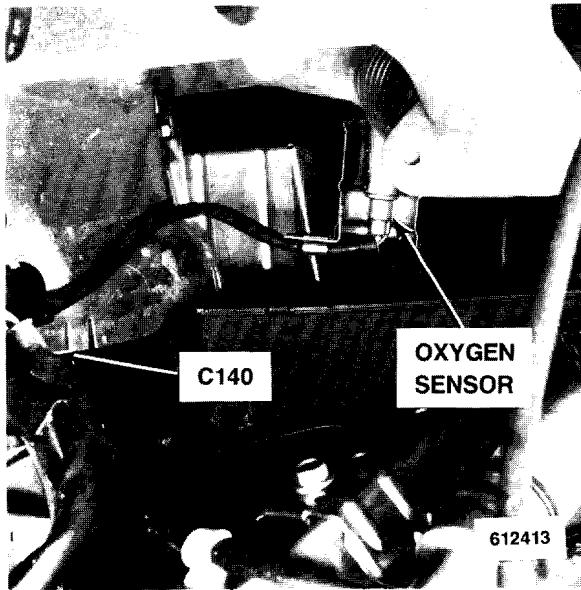


Figure 2 - Lower RH Rear of Engine

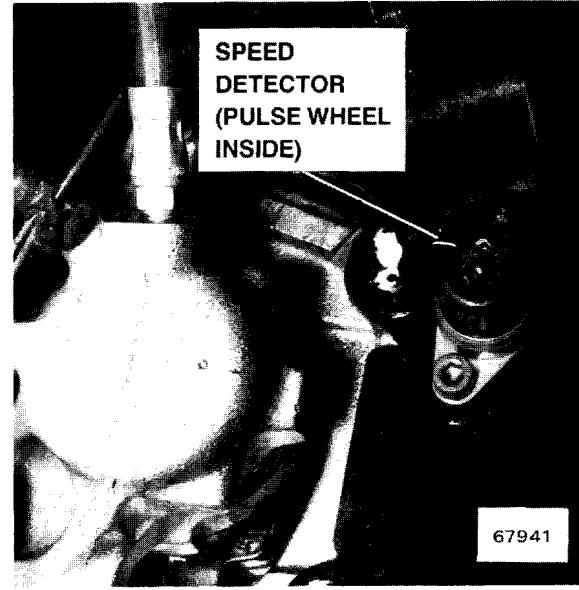


Figure 4 - LH Front Spindle Assembly
(All Others Similar)

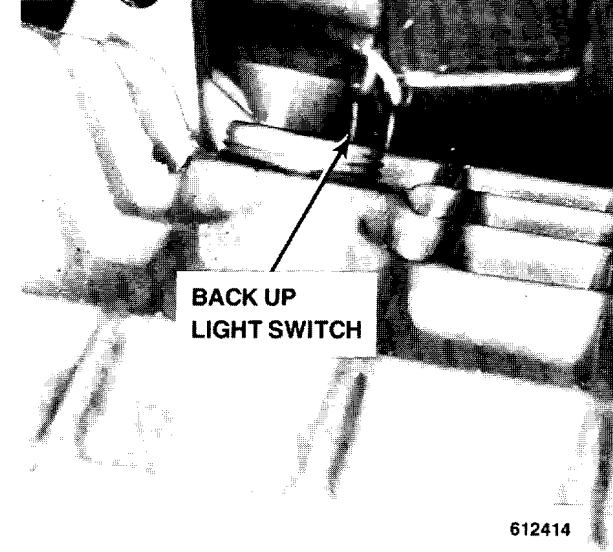


Figure 6 - RH Side of Transmission

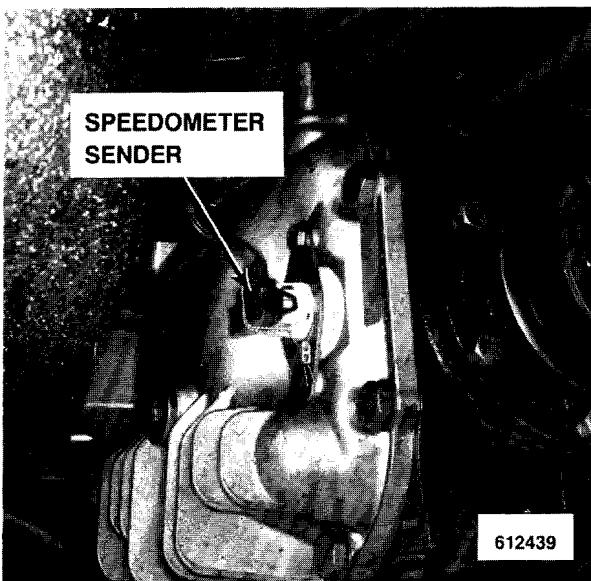


Figure 1 - Rear of Rear Differential

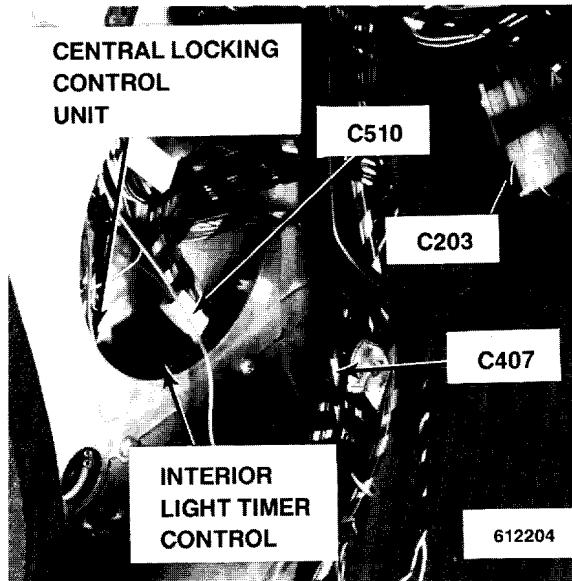


Figure 3 - LH Kick Panel
(Speaker Removed)

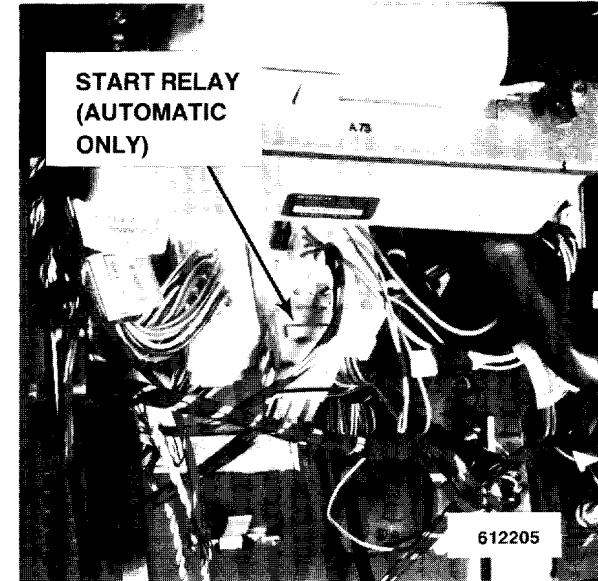


Figure 5 - Below LH Side of Dash,
Left of Steering Column

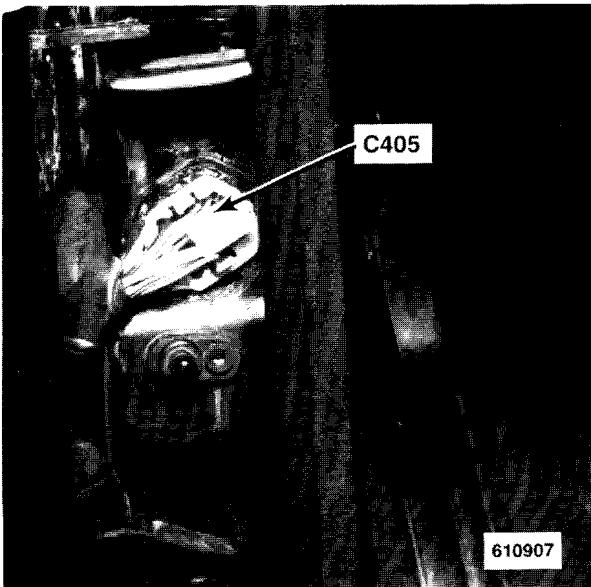


Figure 2 - Above LH Front Door Jamb Switch

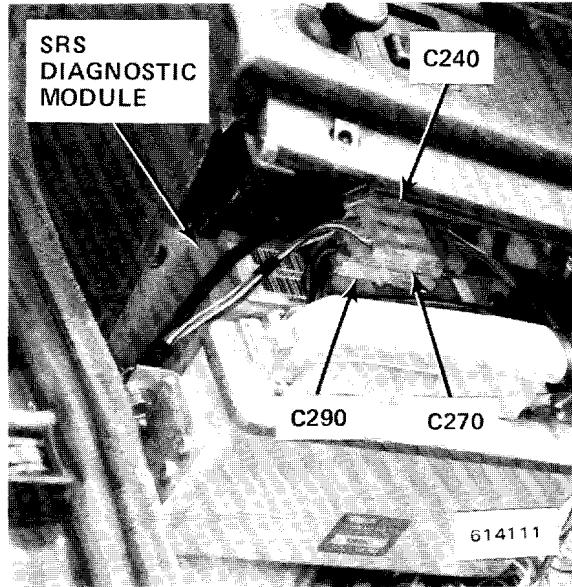


Figure 4 - Below LH Side of Dash,
Left of Steering Column
(325i Shown; 325iC Similar)

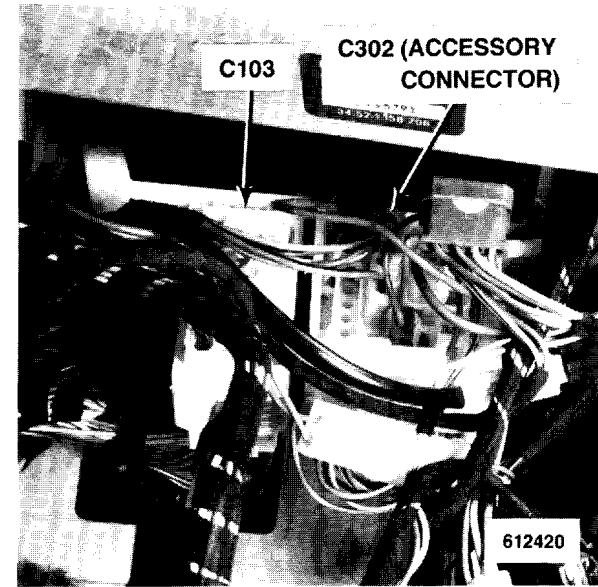


Figure 6 - Below LH Side of Dash,
Left of Steering Column

7000-6 COMPONENT LOCATION VIEWS

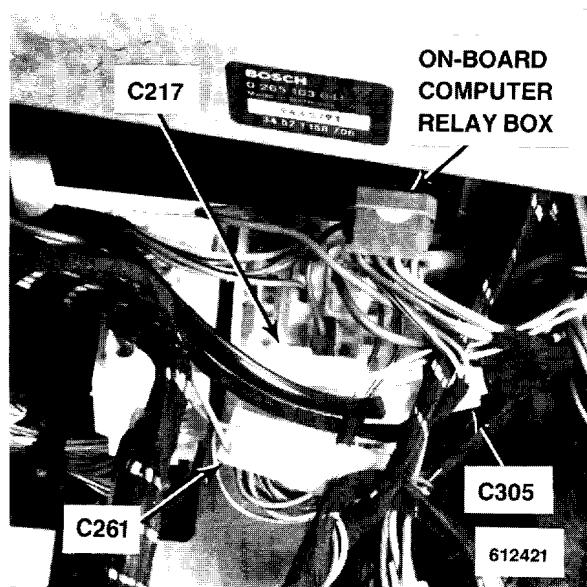


Figure 1 - Below LH Side of Dash,
Left of Steering Column

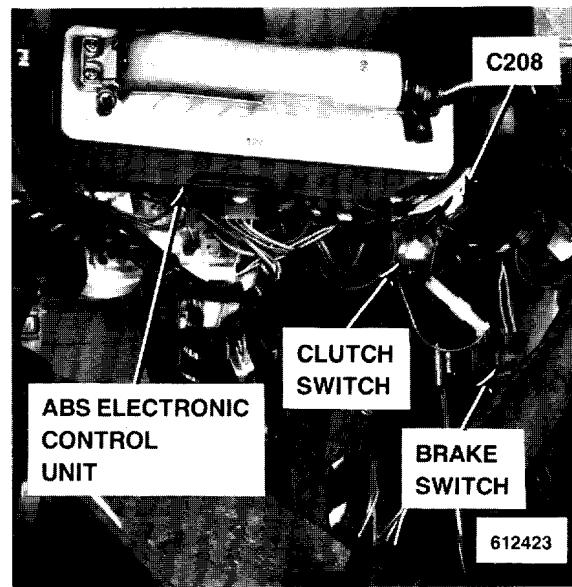


Figure 3 - Below LH Side of Dash,
Left of Steering Column

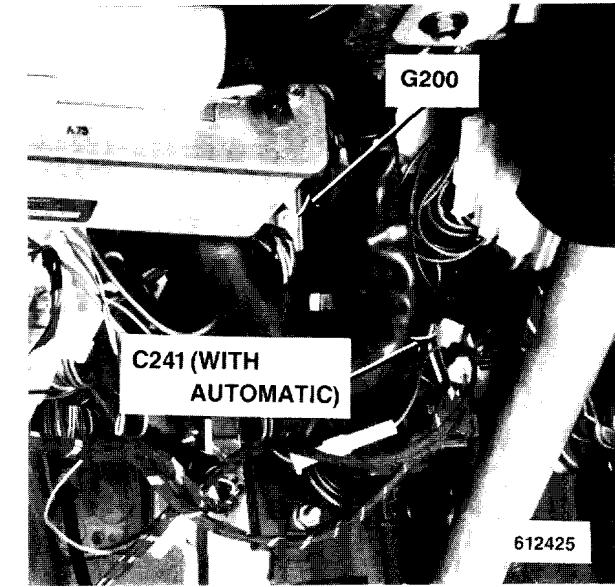


Figure 5 - Below LH Side of Dash,
Left of Steering Column

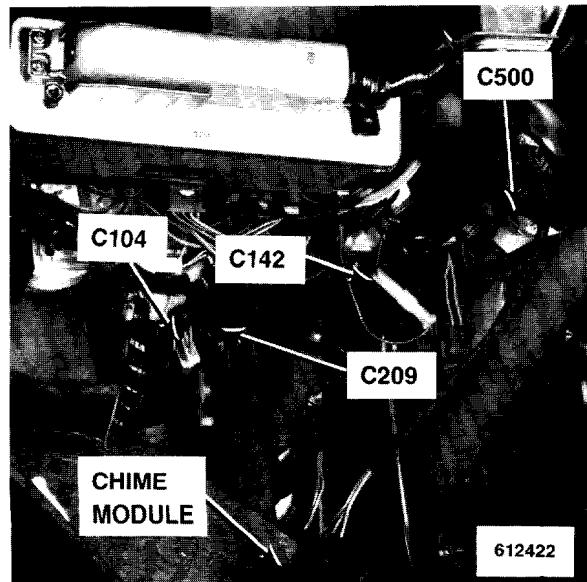


Figure 2 - Below LH Side of Dash,
Left of Steering Column

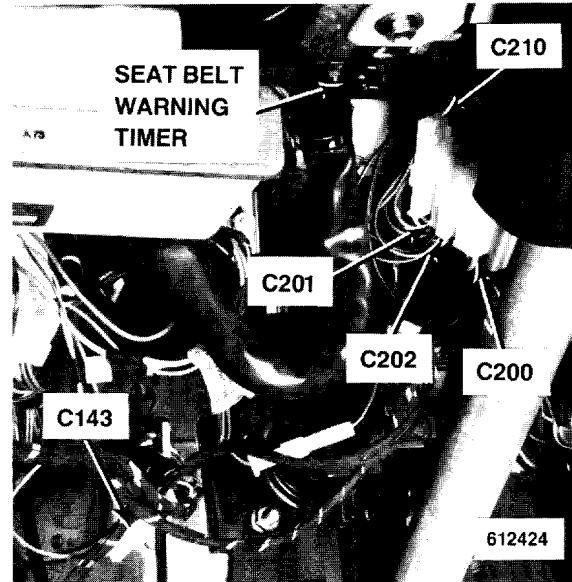


Figure 4 - Below LH Side of Dash,
Left of Steering Column

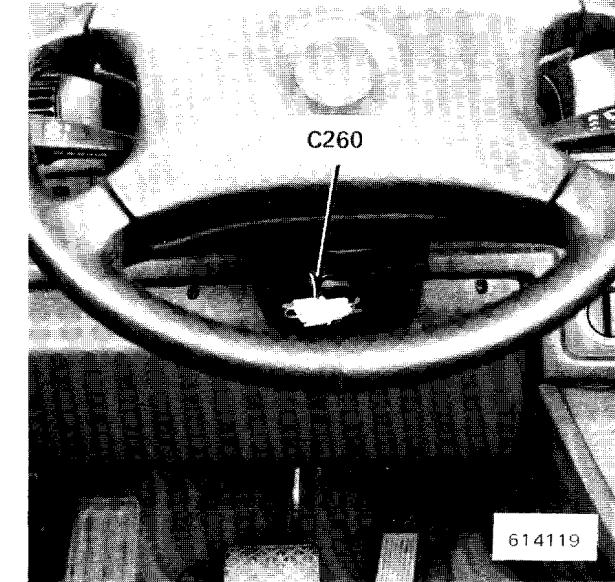


Figure 6 - Underside of Steering Column

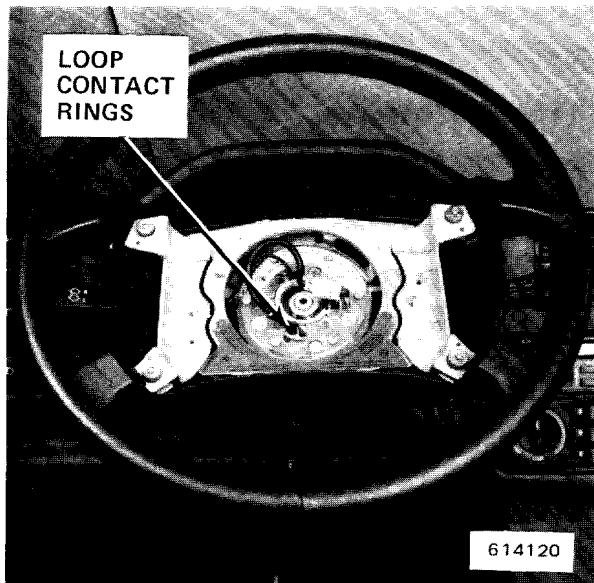


Figure 1 - Top of Steering Column
(Air Bag Gas Generator Removed)

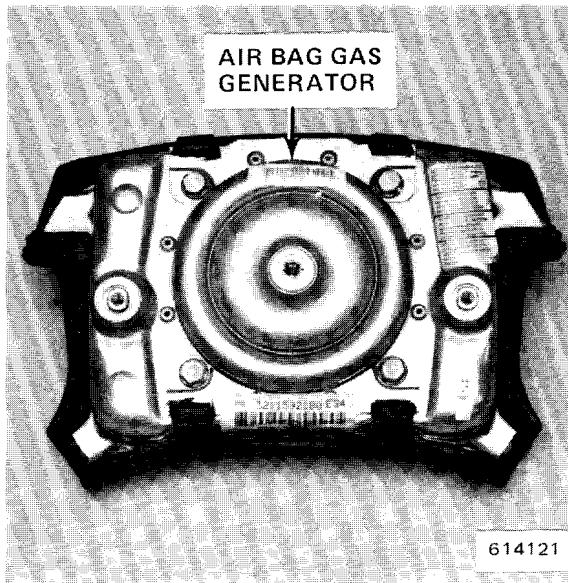


Figure 3 - Inside Steering Wheel
(Removed From Car)

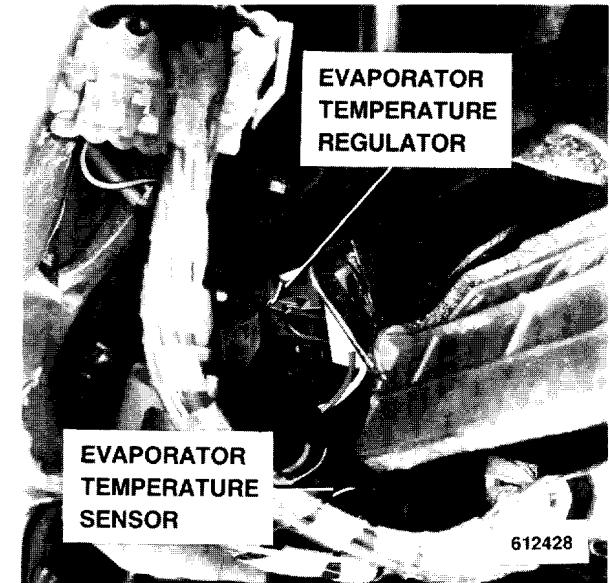


Figure 5 - LH Side of Evaporator Housing

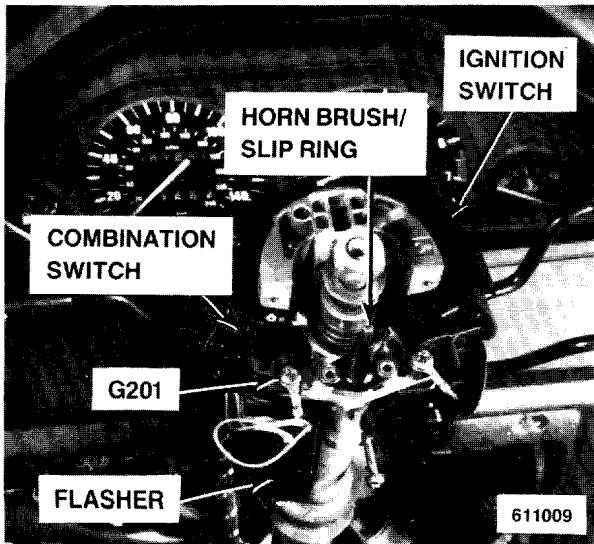


Figure 2 - Top of Steering Column
(Steering Wheel Removed)

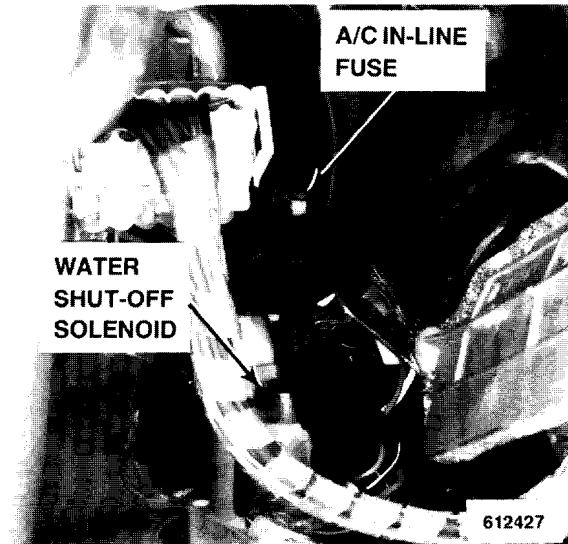


Figure 4 - LH Side of Evaporator Housing

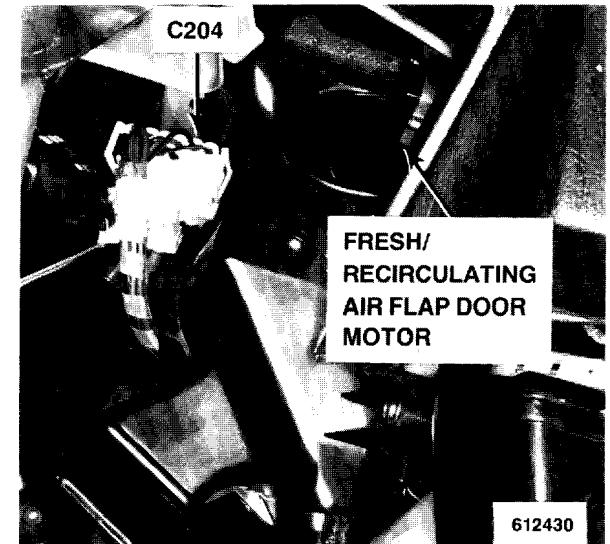


Figure 6 - LH Side of Evaporator Housing

7000-8 COMPONENT LOCATION VIEWS

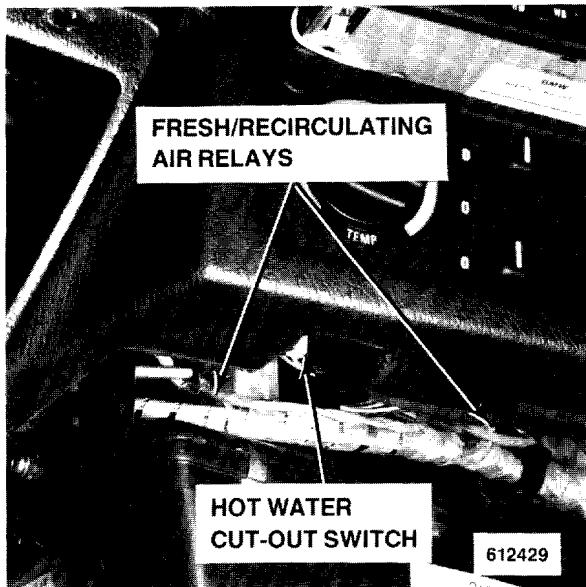


Figure 1 - Behind Center of Dash

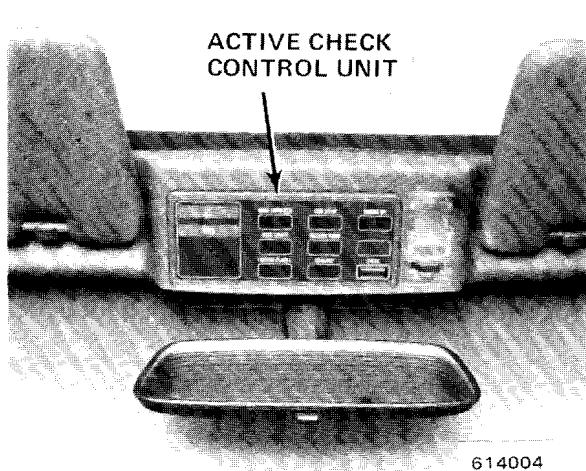


Figure 2 - Center of Windshield Header

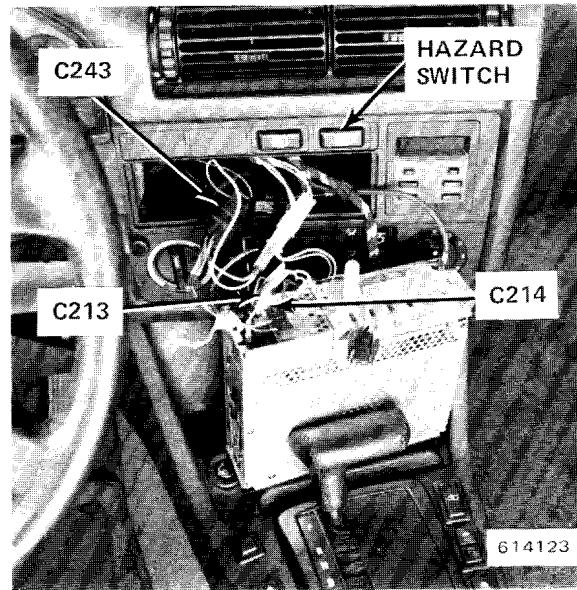


Figure 3 - Behind Center of Dash
(325i Shown; 325iC Similar)

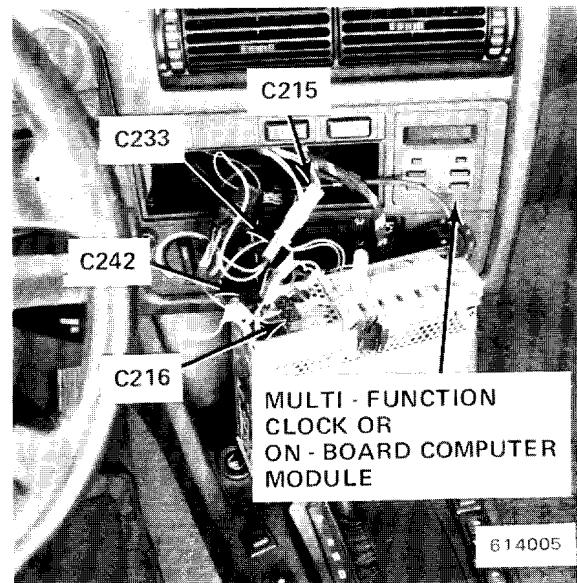


Figure 4 - Behind Center of Dash
(325i Shown; 325iC Similar)

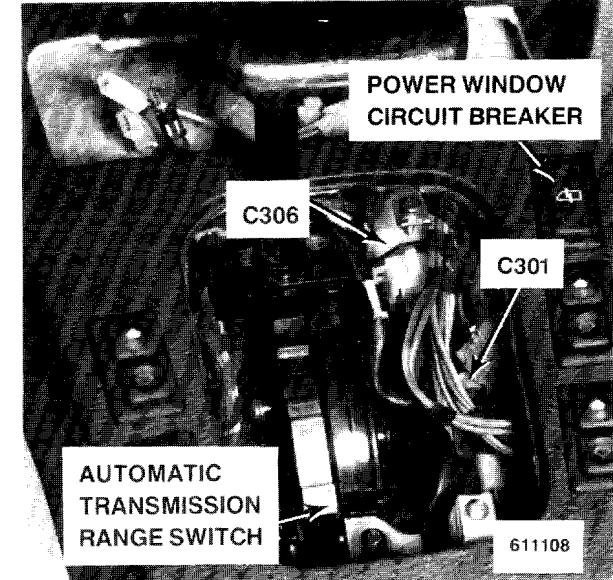


Figure 5 - Below Center Console

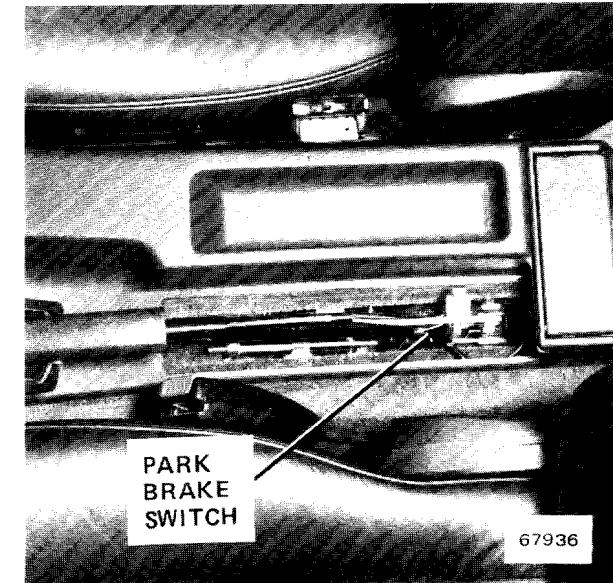


Figure 6 - Below Rear of Center Console

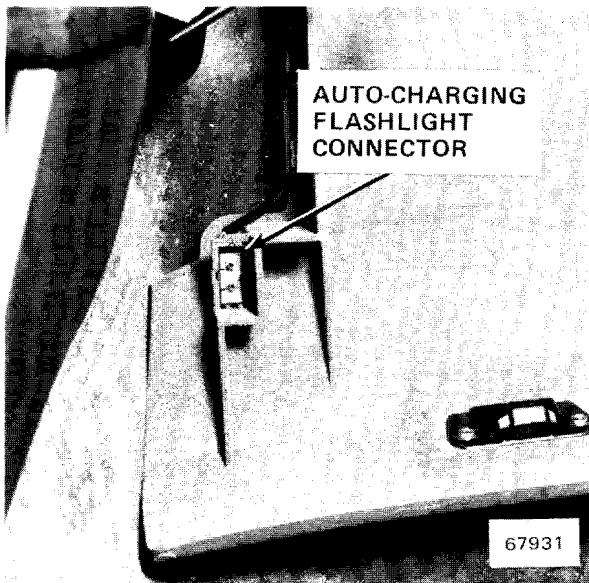


Figure 1 - LH Side of Glove Box

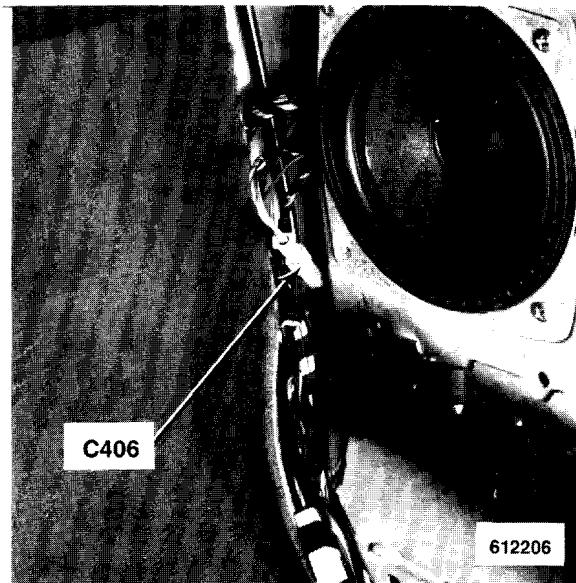


Figure 3 - RH Kick Panel

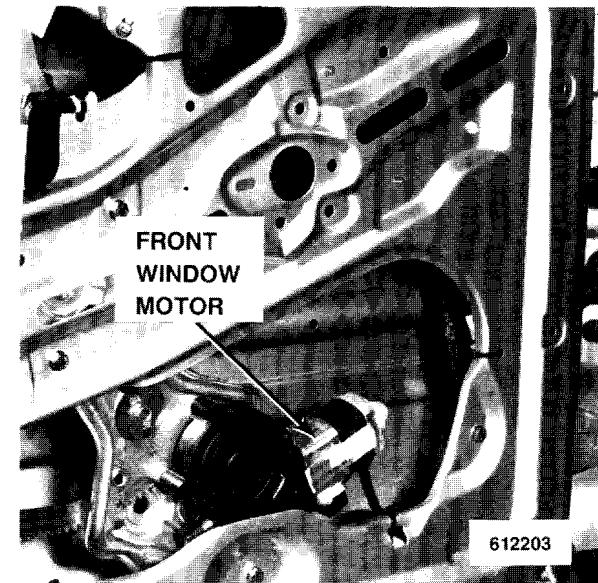


Figure 5 - Inside Front of LH Front Door
(RH Similar)

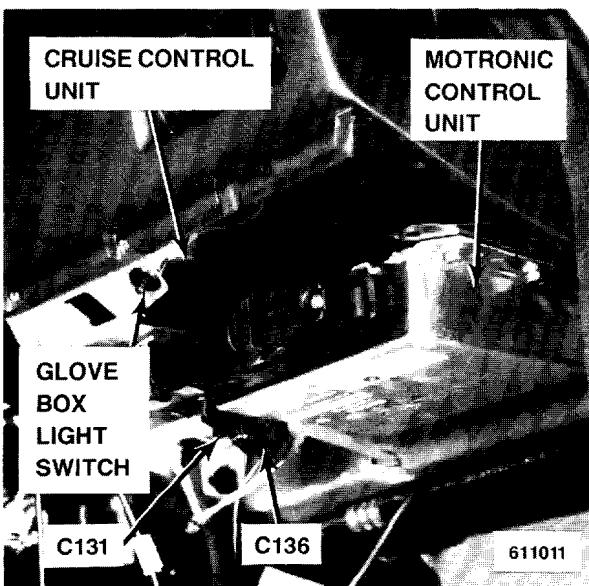


Figure 2 - Below RH Side of Dash,
Above Glove Box

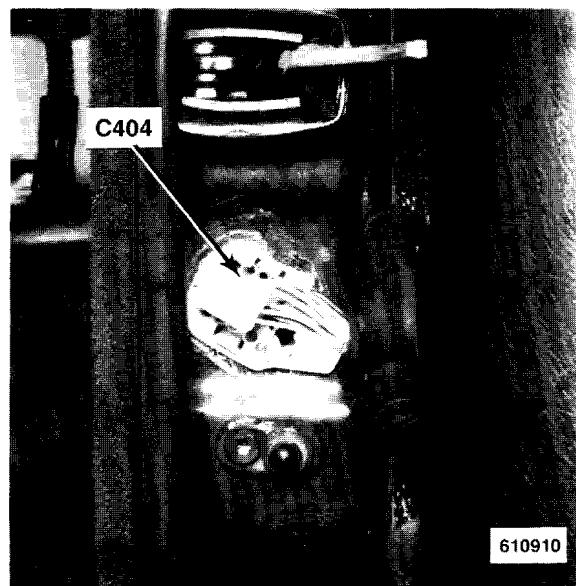


Figure 4 - Above RH Front Door Jamb Switch

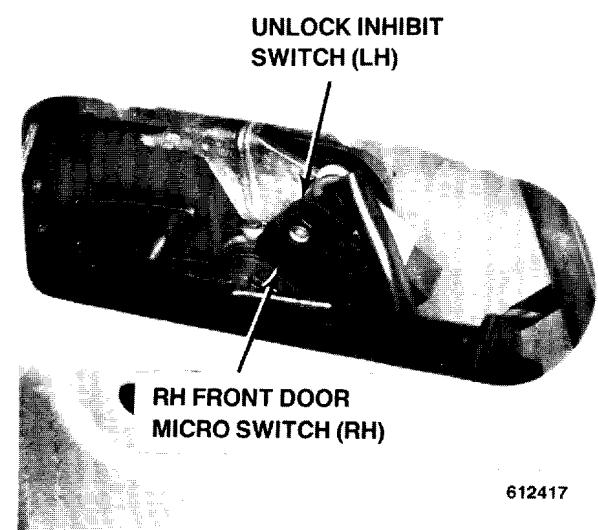


Figure 6 - Inside Rear of LH Front Door
(RH Similar)

7000-10 COMPONENT LOCATION VIEWS



Figure 1 - Inside Rear of LH Front Door

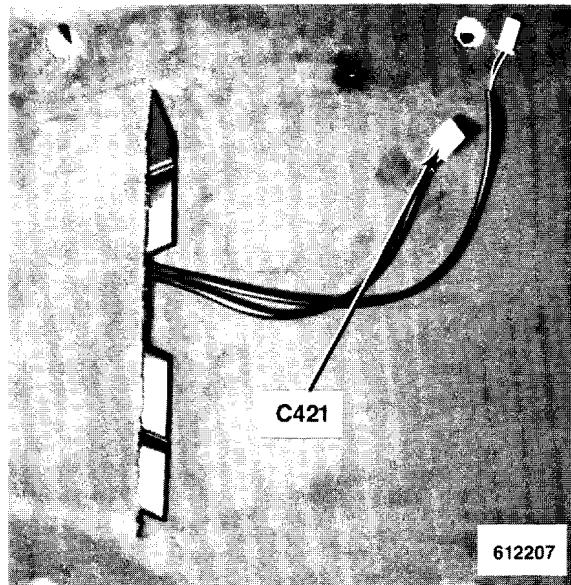


Figure 3 - Below LH Front Seat



Figure 5 - LH Side of Soft Top
Stowage Compartment

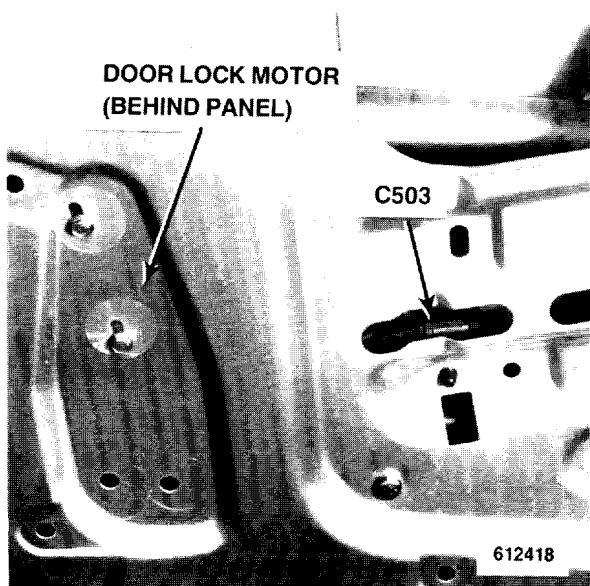


Figure 2 - Inside Rear of LH Front
Door (RH Similar)

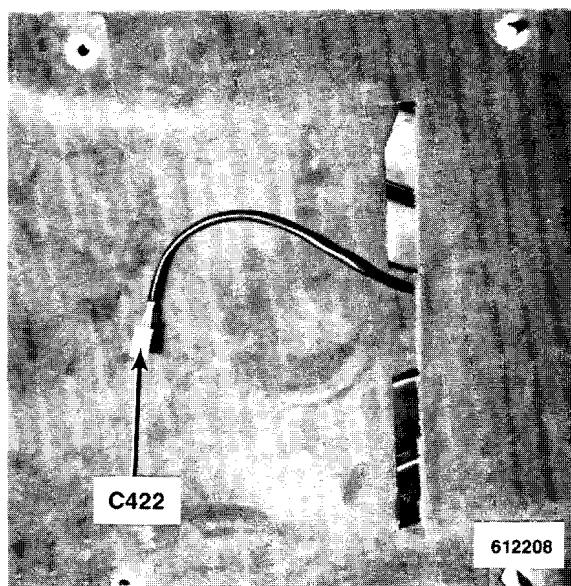


Figure 4 - Below RH Front Seat

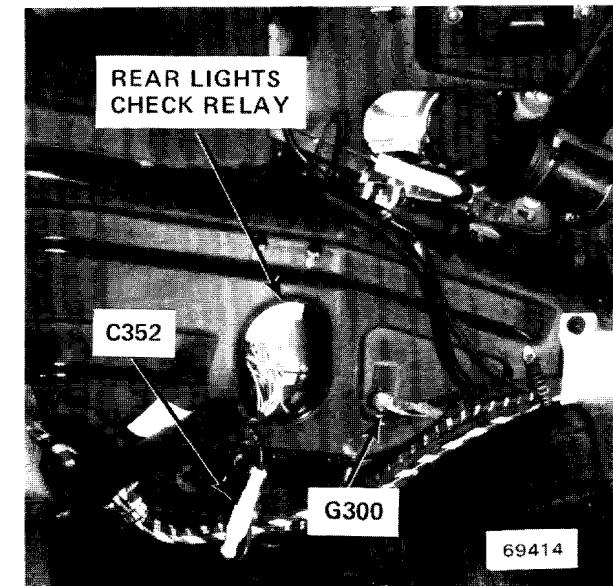


Figure 6 - Below LH Side of Rear Seat

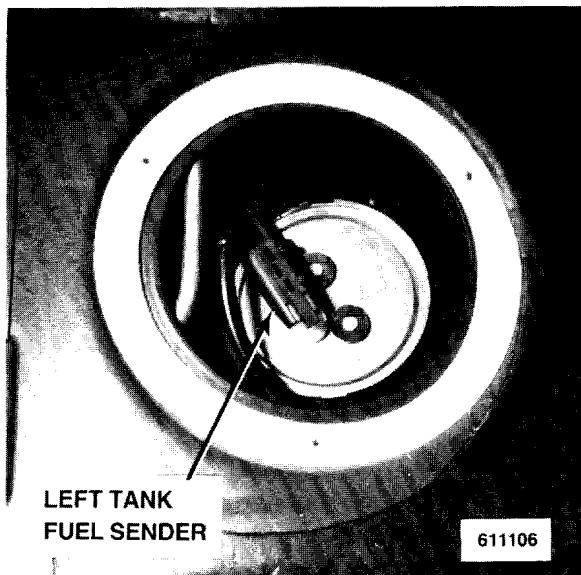


Figure 1 - Below LH Side of Rear Seat

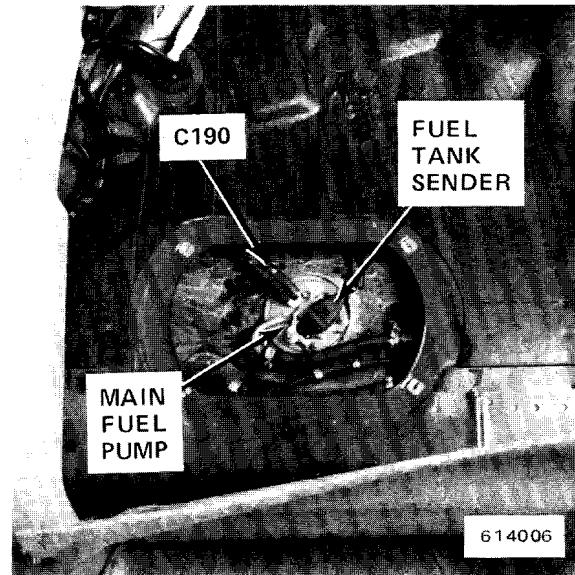


Figure 3 - Below RH Side of Rear Seat



Figure 5 - RH Side of Soft Top
Stowage Compartment

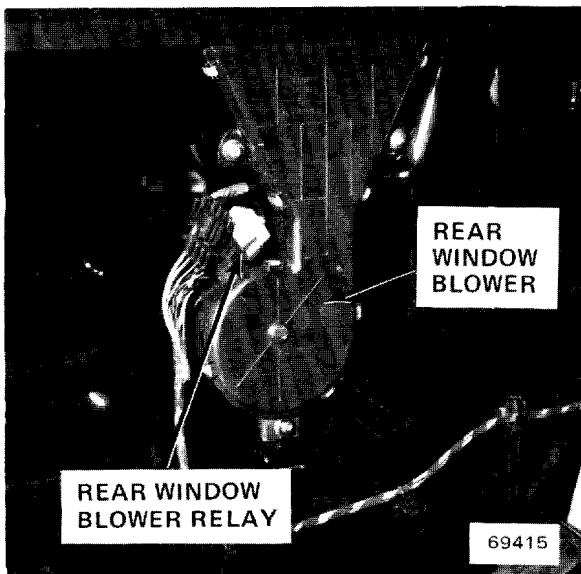


Figure 2 - Behind Center of Rear Seat

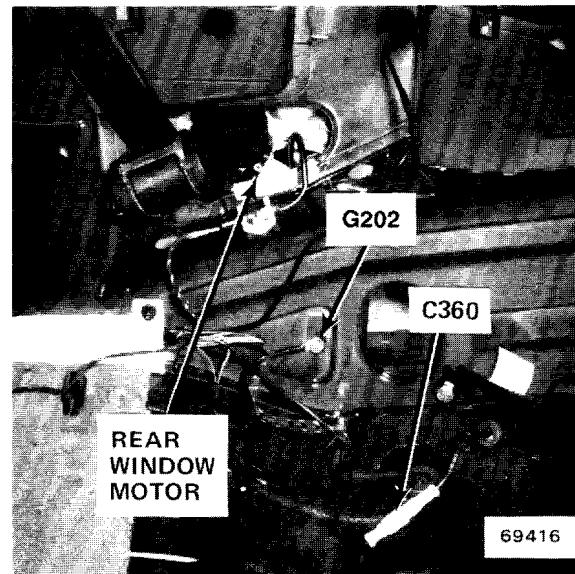


Figure 4 - RH Rear of Passenger
Compartment (LH Similar)

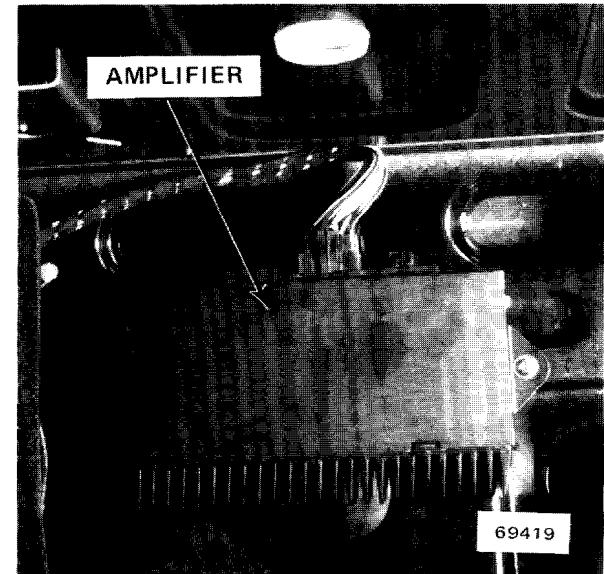


Figure 6 - LH Front of Trunk

7000-12 COMPONENT LOCATION VIEWS

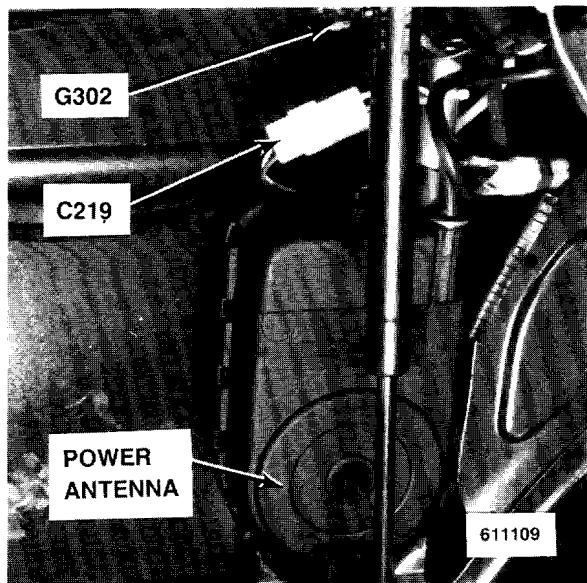


Figure 1 - LH Side of Trunk

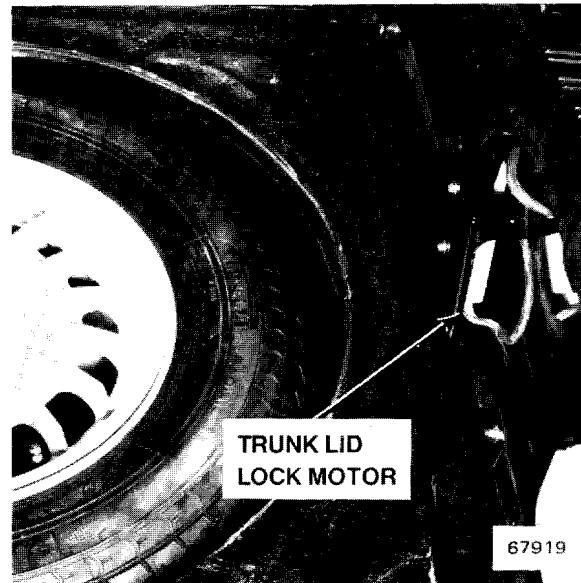


Figure 3 - Center Rear of Trunk

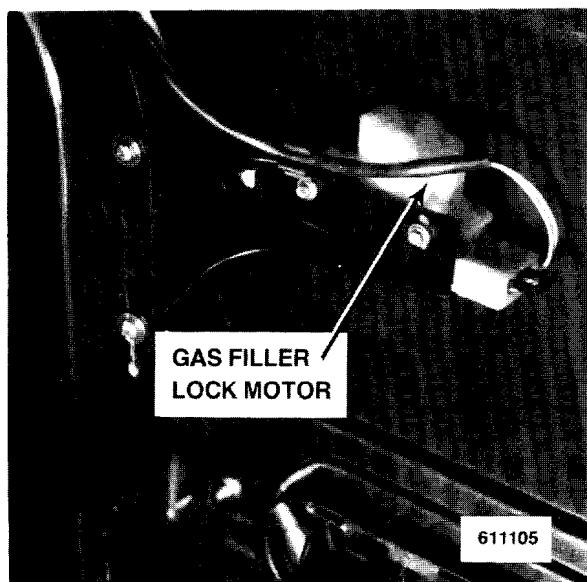


Figure 2 - RH Side of Trunk

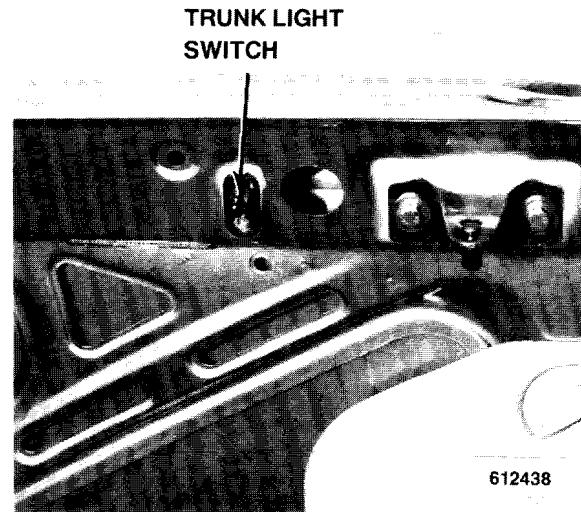


Figure 4 - LH Rear of Trunk Lid

8000-0 SPLICE LOCATION VIEWS

INDEX

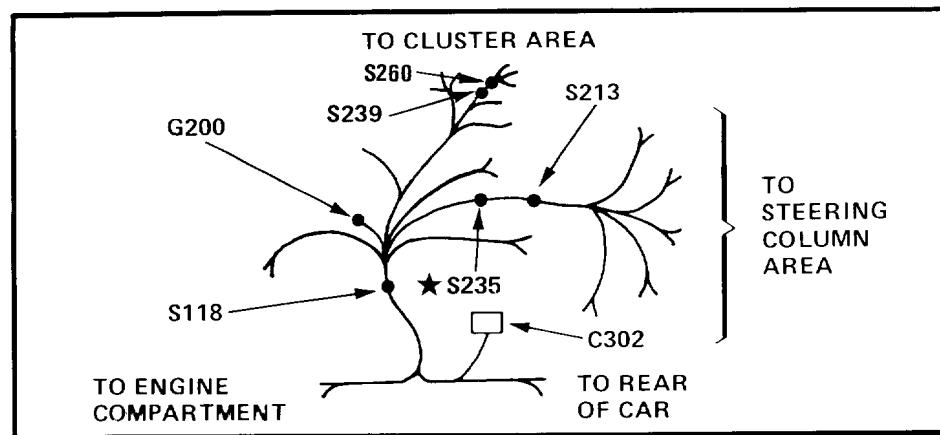
This index lists all the splices in the vehicle, the harness location of each splice, and the page on which each splice appears. The drawings after the index show how the harnesses are routed through the vehicle and the location of the splices on the harnesses.

| SPLICE | HARNESS | PAGE NUMBER | SPLICE | HARNESS | PAGE NUMBER |
|--------|-------------------|-------------|--------|------------------|-------------|
| S100 | MAIN | 8000-2 | S229 | AIR CONDITIONING | NOT SHOWN |
| S101 | ENGINE | 8000-3 | S230 | MAIN | 8000-2 |
| S104 | ENGINE | 8000-3 | S231 | MAIN | 8000-2 |
| S105 | ENGINE | 8000-3 | S232 | MAIN | 8000-2 |
| S106 | ENGINE | 8000-3 | S233 | MAIN | 8000-2 |
| S107 | ENGINE | 8000-3 | S234 | MAIN | 8000-2 |
| S108 | ENGINE | 8000-3 | S235 | MAIN | 8000-2 |
| S109 | ENGINE | 8000-5 | S236 | MAIN | 8000-2 |
| S111 | ENGINE | 8000-3 | S237 | MAIN | 8000-2 |
| S112 | ENGINE | 8000-3 | S239 | MAIN | 8000-2 |
| S113 | ENGINE | 8000-3 | S240 | AIR CONDITIONING | NOT SHOWN |
| S114 | MAIN | 8000-2 | S250 | AIR CONDITIONING | NOT SHOWN |
| S115 | MAIN | 8000-2 | S251 | AIR CONDITIONING | NOT SHOWN |
| S116 | MAIN | 8000-2 | S252 | AIR CONDITIONING | NOT SHOWN |
| S118 | MAIN | 8000-2 | S260 | MAIN | 8000-2 |
| S119 | MAIN | 8000-2 | S300 | DOOR | 8000-4 |
| S120 | ENGINE | 8000-3 | S301 | DOOR | 8000-4 |
| S201 | ON-BOARD COMPUTER | 8000-6 | S302 | DOOR | 8000-4 |
| S202 | ON-BOARD COMPUTER | 8000-6 | S303 | DOOR | 8000-4 |
| S207 | MAIN | 8000-2 | S305 | DOOR | 8000-4 |
| S209 | MAIN | 8000-2 | S306 | INSTRUMENT PANEL | 8000-5 |
| S210 | MAIN | 8000-2 | S307 | INSTRUMENT PANEL | 8000-5 |
| S211 | MAIN | 8000-2 | S308 | DOOR | 8000-4 |
| S212 | MAIN | 8000-2 | S309 | DOOR | 8000-4 |
| S213 | MAIN | 8000-2 | S310 | MAIN | 8000-2 |
| S215 | MAIN | 8000-2 | S312 | MAIN | 8000-2 |
| S219 | INSTRUMENT PANEL | 8000-5 | S313 | MAIN | 8000-2 |
| S221 | INSTRUMENT PANEL | 8000-5 | S316 | MAIN | 8000-2 |
| S228 | CRUISE CONTROL | NOT SHOWN | S319 | DOOR | 8000-2 |
| | | | S322 | DOOR | 8000-4 |

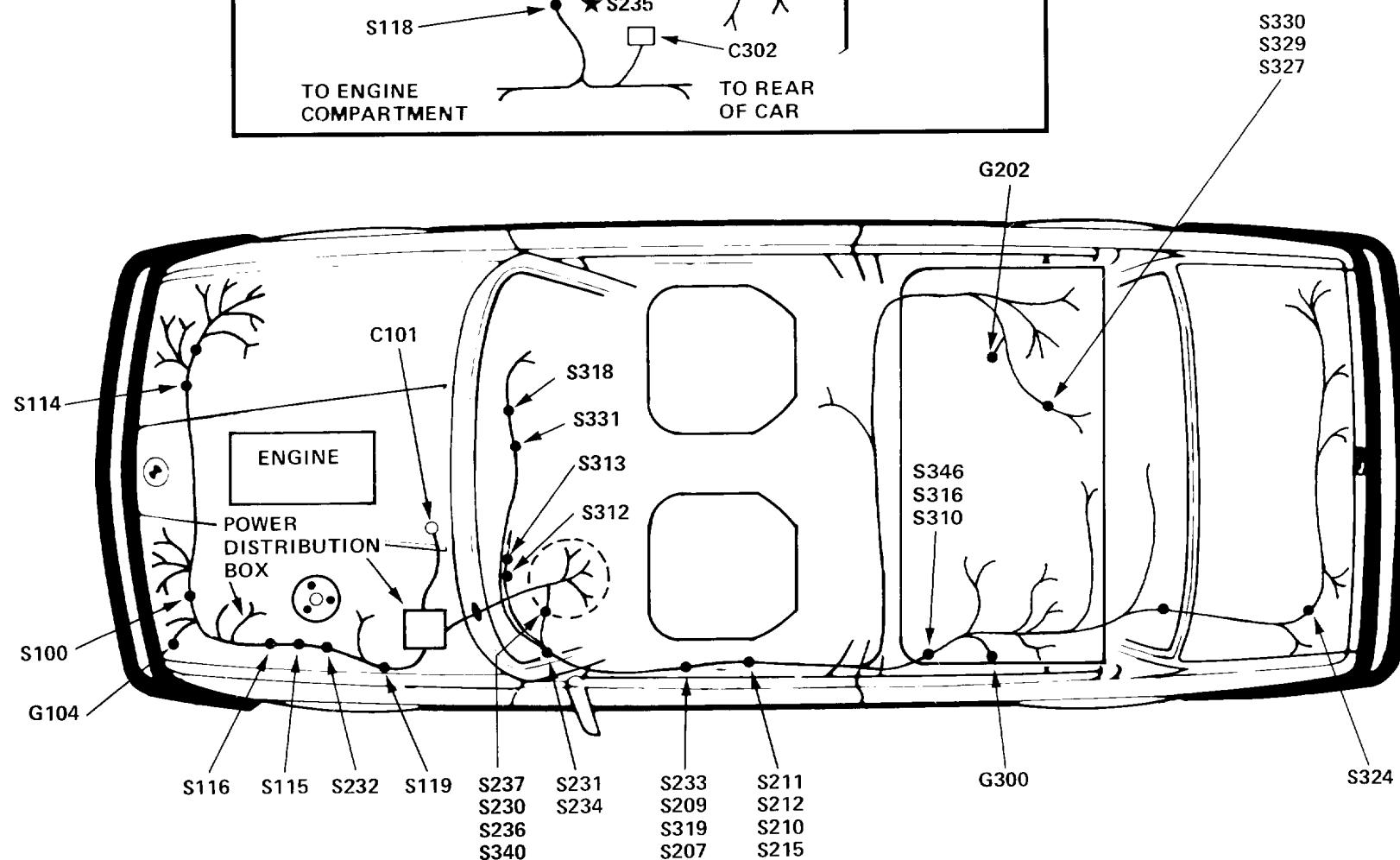
| SPLICE | HARNESS | PAGE NUMBER |
|--------|--------------|-------------|
| S324 | MAIN | 8000-2 |
| S327 | MAIN | 8000-2 |
| S329 | MAIN | 8000-2 |
| S330 | MAIN | 8000-2 |
| S332 | DOOR | 8000-3 |
| S333 | DOOR | 8000-4 |
| S340 | MAIN | 8000-2 |
| S342 | DOOR | 8000-4 |
| S345 | RADIO | NOT SHOWN |
| S346 | MAIN | 8000-2 |
| S400 | RADIO | NOT SHOWN |
| S403 | RADIO | NOT SHOWN |
| S404 | RADIO | NOT SHOWN |
| S411 | DOOR | 8000-4 |
| S420 | RADIO | NOT SHOWN |
| S501 | DOOR | 8000-4 |
| S502 | DOOR | 8000-4 |
| S503 | DOOR | 8000-4 |
| S504 | DOOR | 8000-4 |
| S540 | HEATED SEATS | NOT SHOWN |
| S541 | HEATED SEATS | NOT SHOWN |
| S542 | HEATED SEATS | NOT SHOWN |
| S543 | HEATED SEATS | NOT SHOWN |
| S700 | ENGINE | 8000-3 |
| S701 | ENGINE | 8000-3 |
| S702 | ENGINE | 8000-3 |
| S703 | ENGINE | 8000-3 |

8000-2 SPLICE LOCATION VIEWS

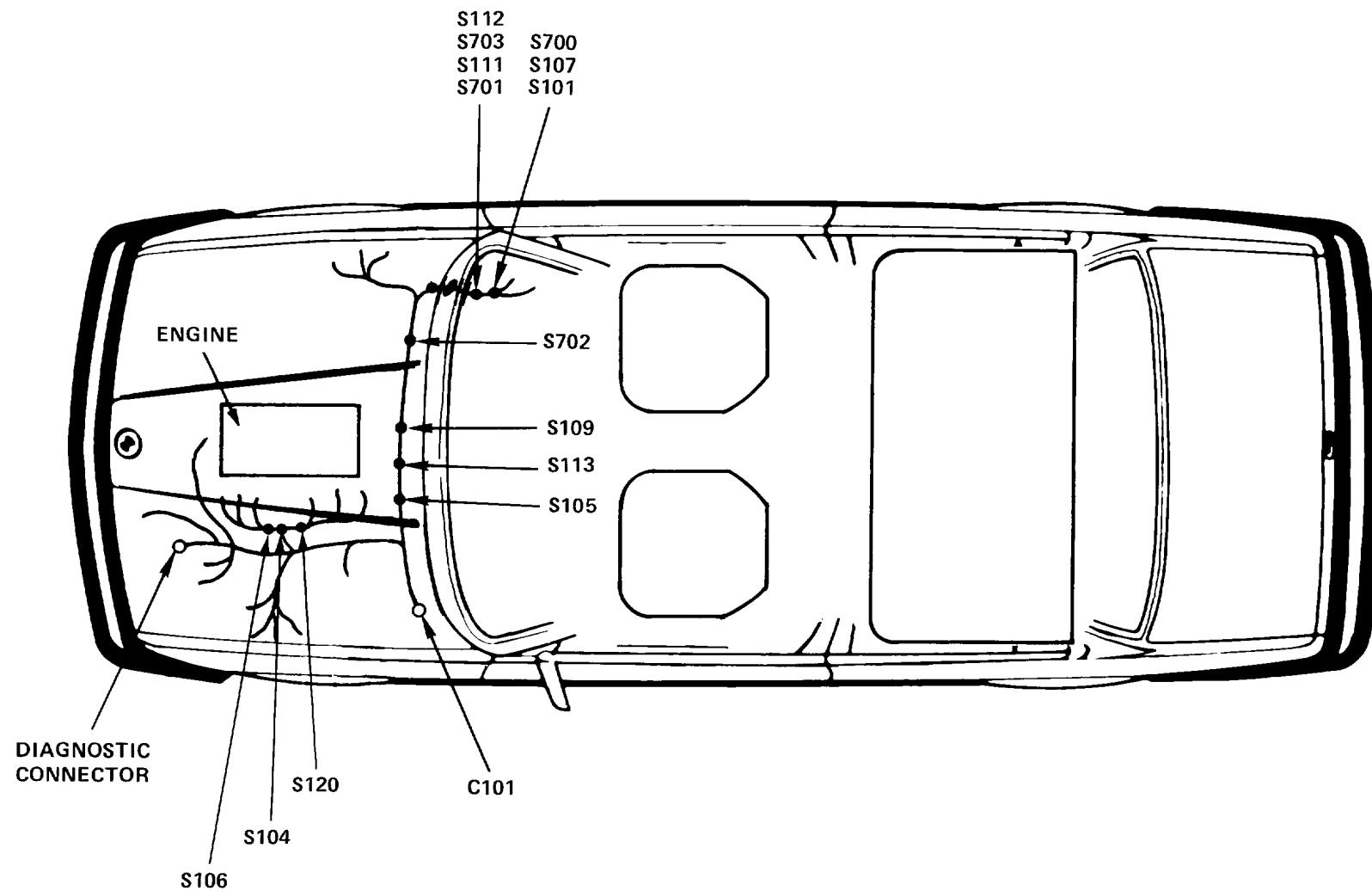
MAIN HARNESS SPLICE LOCATIONS



★ S235 MAY NOT EXIST ON ALL VEHICLES

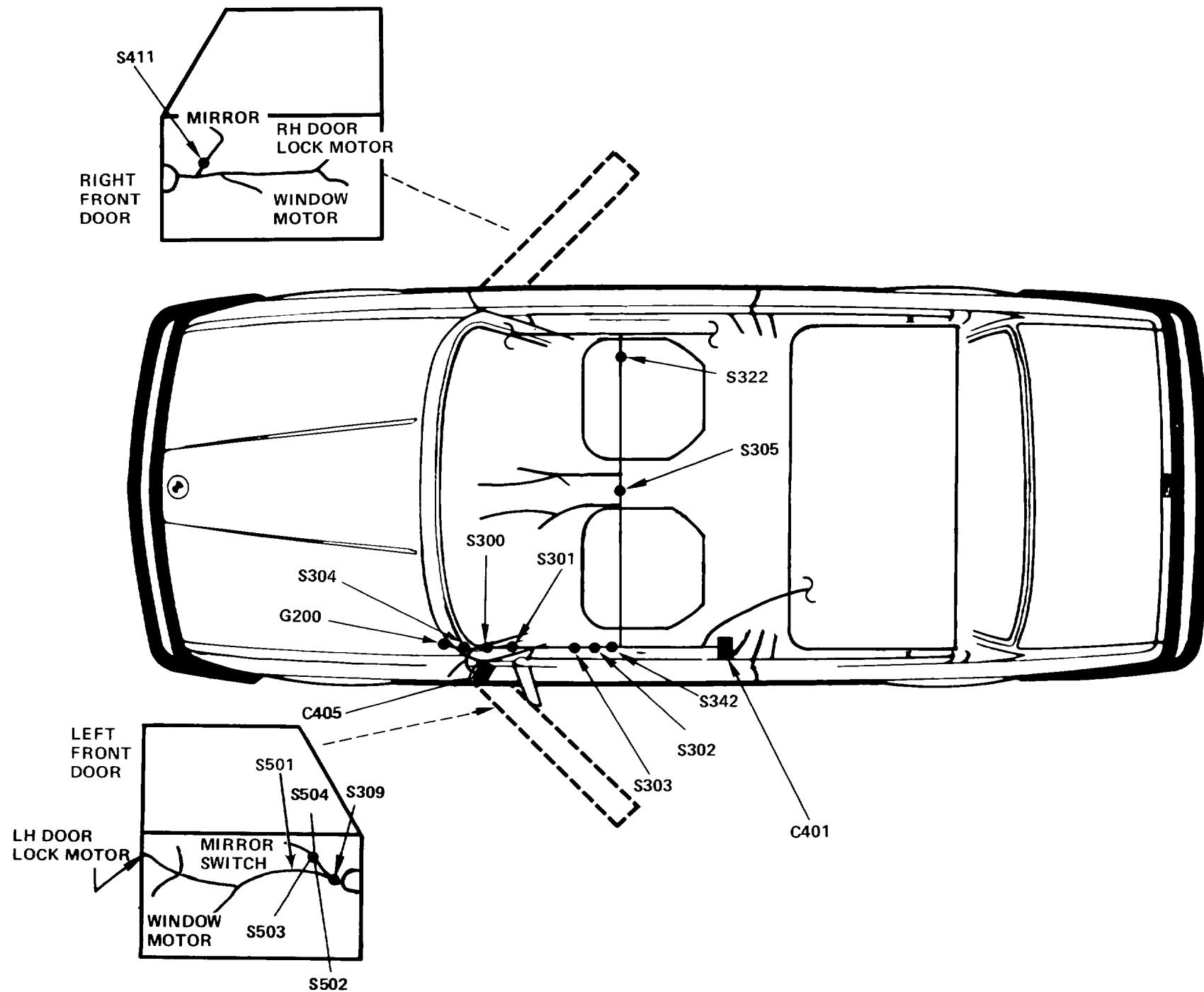


ENGINE HARNESS SPLICE LOCATIONS

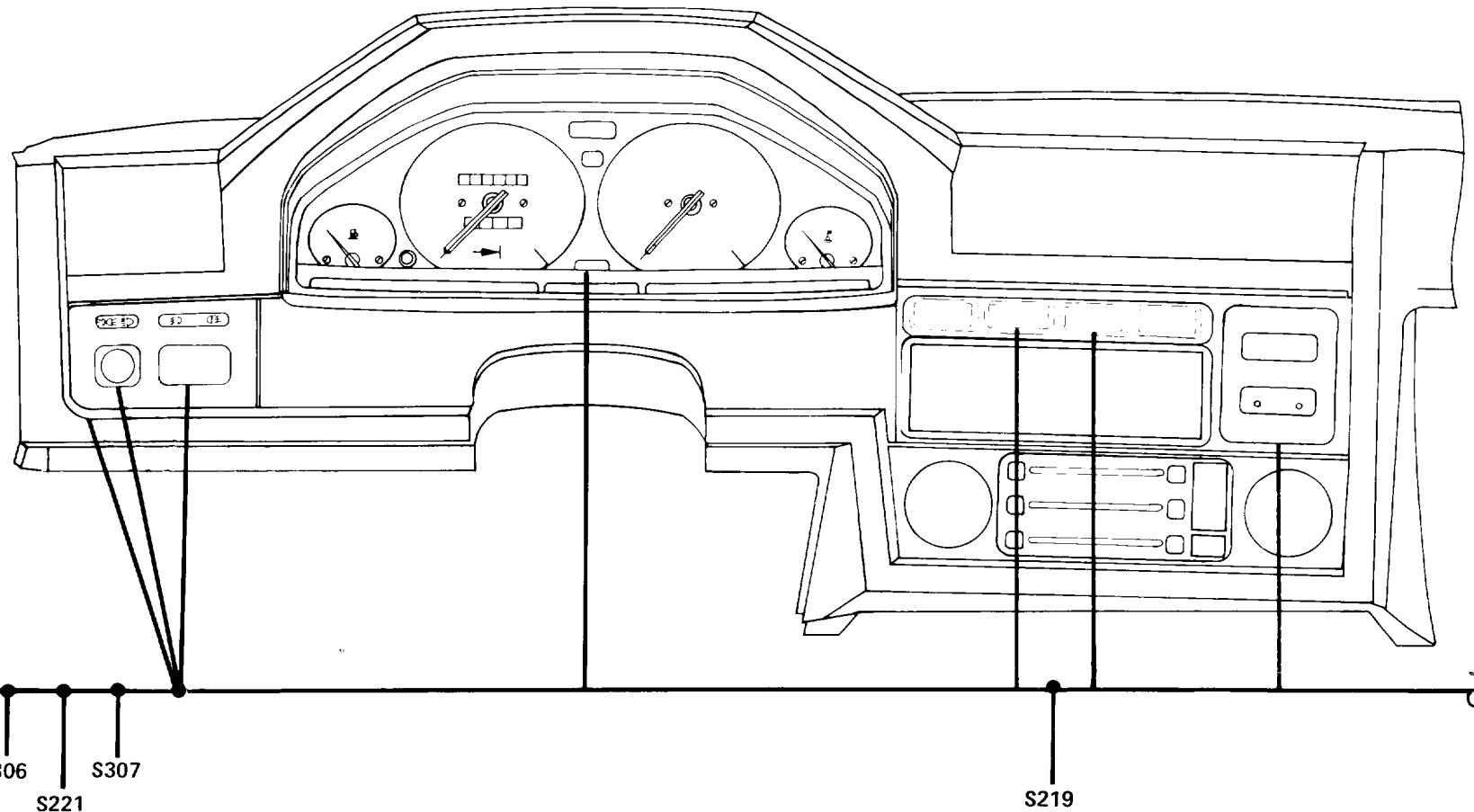


8000-4 SPLICE LOCATION VIEWS

DOOR HARNESS SPLICE LOCATIONS

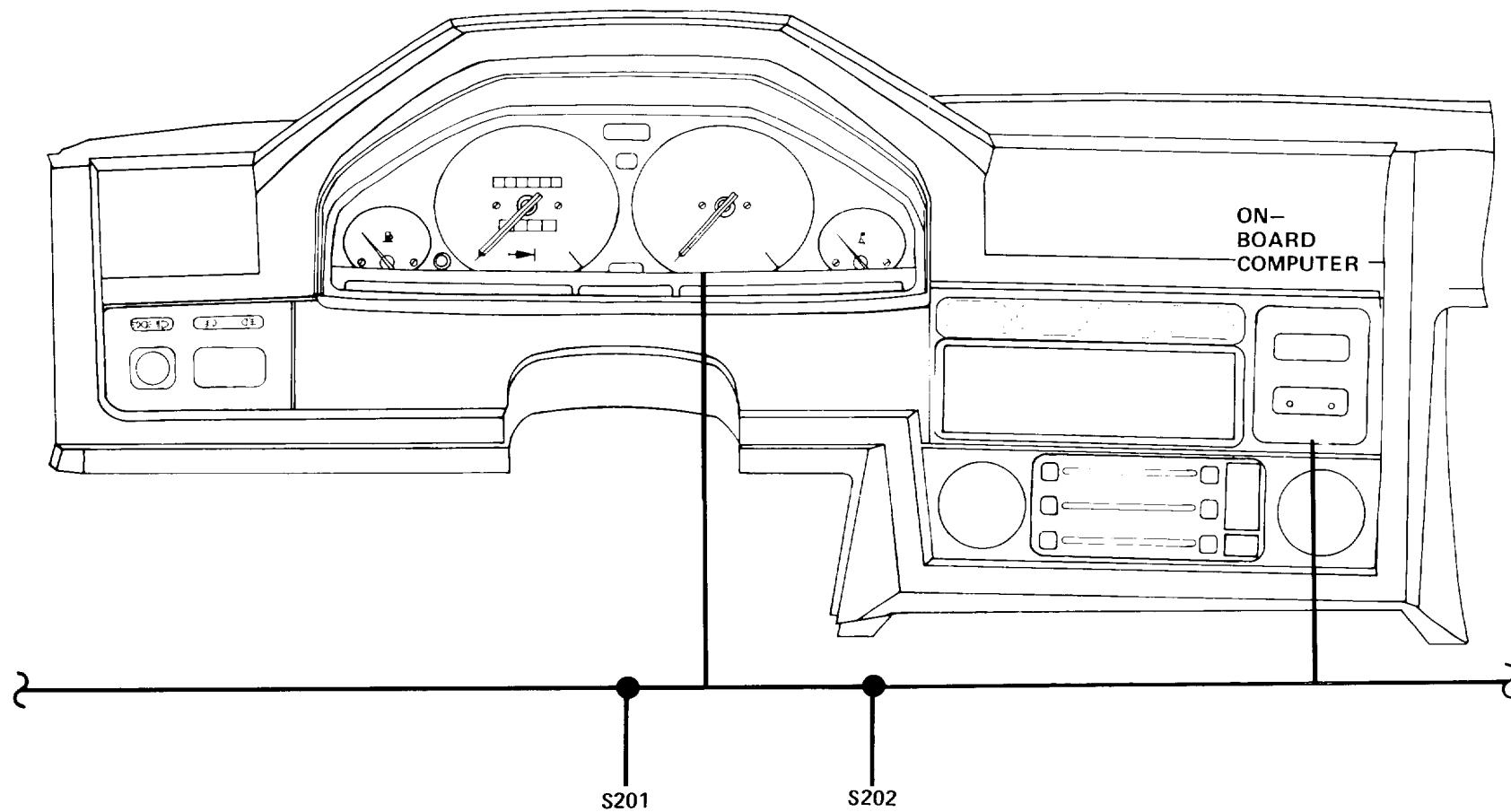


INSTRUMENT PANEL HARNESS SPLICE LOCATION



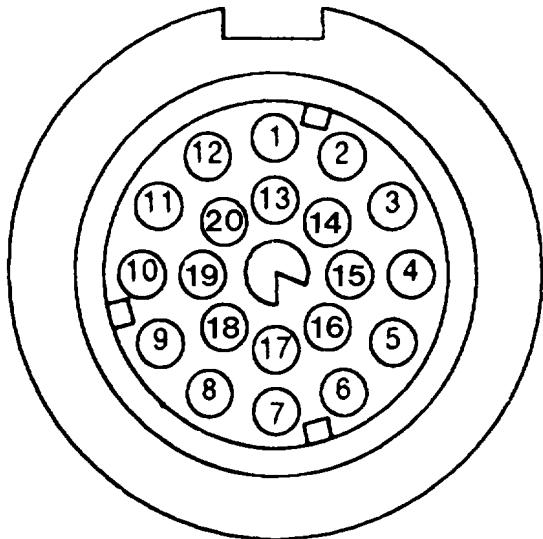
8000-6 SPLICE LOCATION VIEWS

ON-BOARD COMPUTER HARNESS SPLICE LOCATIONS



8500-0 CONNECTOR VIEWS

DIAGNOSTIC CONNECTOR



DIAGNOSTIC CONNECTOR FACE

| Pin | Wire Size | Wire Color | Circuit and Component Connected |
|-----|-----------|------------|--|
| 1 | 1 | BK | Ignition Coil, Motronic Control Unit |
| 6 | .5 | WT/BK | SRS Connector |
| 7 | .5 | WT/BU | Service Interval Indicator, Service Interval Processor (Reset) |
| 11 | 2.5 | BK/YL | Starter, Start Signal (50) |
| 12 | .75 | BU | Charge, Alternator (D+) |
| 14 | 2.5 | RD | Battery (+) |
| 15 | .5 | BK/YL | Motronic Control Unit (RXD) |
| 16 | 1.5 | GN/WT | Oxygen Sensor/Power (318is) |
| 18 | .5 | GN/BU | Motronic Control Unit (Programming Voltage) |
| 19 | 1.5 | BR | Ground Distribution (G103) |
| 20 | .5 | WT/VI | Motronic Control Unit (TXD) |

ACCESSORY CONNECTOR

CIRCUITS USING C302 (ACCESSORY CONNECTOR)

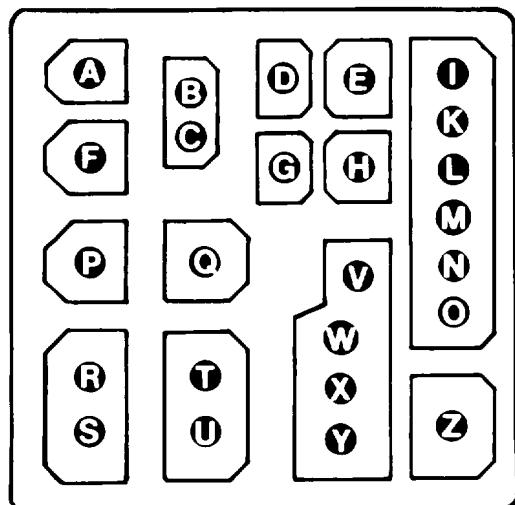
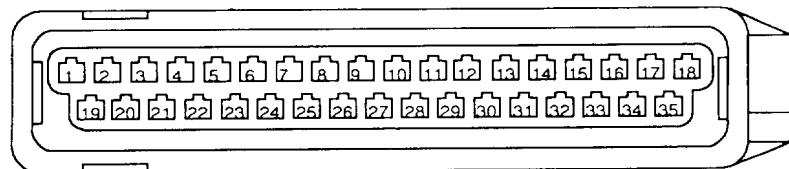


Figure 1-C302 (Accessory Connector)
Front View—Under LH Side
of Dash Ahead of Pedal Assembly

| TERMINAL | CIRCUIT | TERMINAL | CIRCUIT |
|----------|---------------------|----------|-------------------|
| A | Not Used | N | Not Used |
| B | Not Used | O | Not Used |
| C | Anti-Lock Braking | P | Not Used |
| D | Not Used | Q | Power Windows |
| E | Not Used | R | Anti-Lock Braking |
| F | Not Used | S | Cruise Control |
| G | Anti-Lock Braking | T | Not Used |
| H | Multifunction Clock | U | Not Used |
| V | | V | Radio |
| W | | W | Radio |
| X | | X | Radio |
| Y | | Y | Radio |
| Z | | Z | Power Antenna |
| I | | | |
| J | | | |
| K | | | |
| L | | | |
| M | | | |

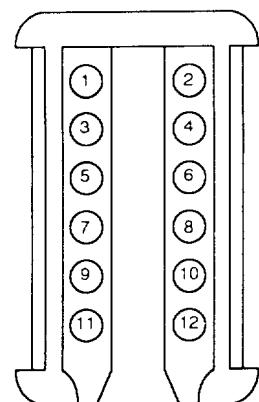
8500-2 CONNECTOR VIEWS

B350002.04



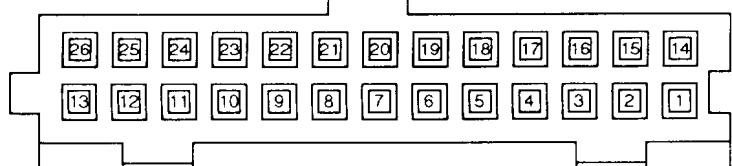
Mating Face
ABS CONTROL UNIT

B120014



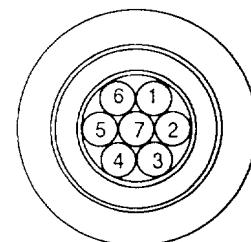
Wiring Face
ABS HYDRAULIC UNIT

B260002.01



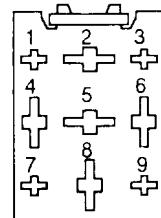
Mating Face
ACTIVE CHECK CONTROL

B070008.00



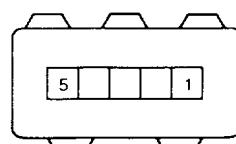
Mating Face
AIR FLOW METER
318is

B090001.14



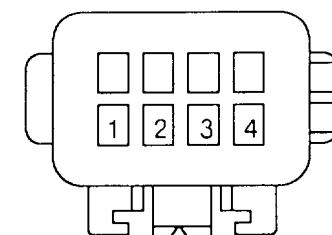
Mating Face
ABS NEUTRAL
INPUT RELAY

B050010.00

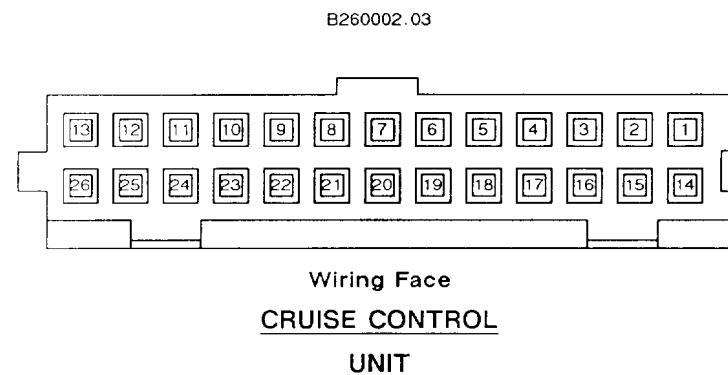
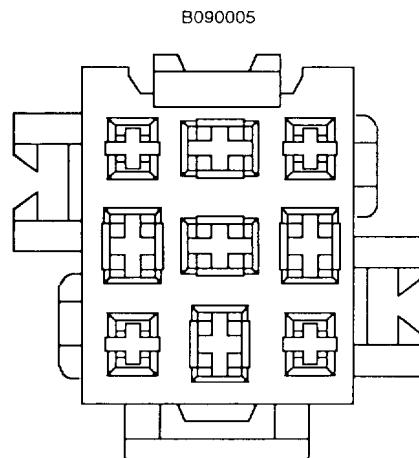


Mating Face
AIR FLOW METER
325i/is, M3, 325ix, 325ic

B080012

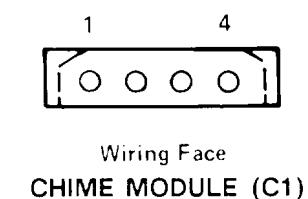
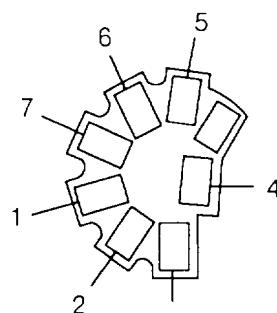


Wiring Face
AUXILIARY FUSE



B080014.00

Wiring Face
BLOWER SPEED CONTROL

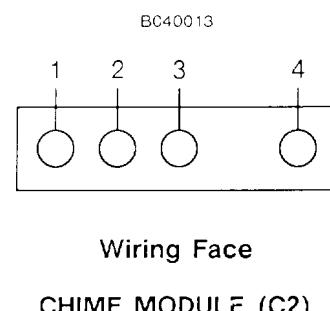
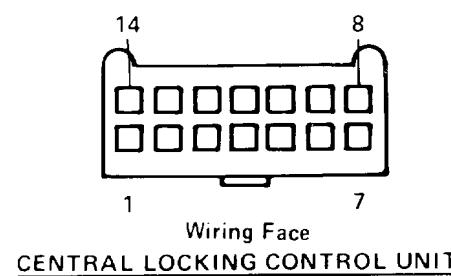


B030015.03

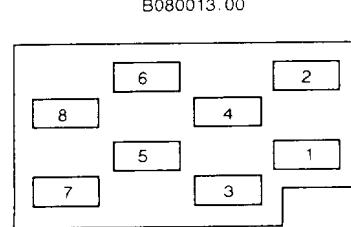
Wiring Face
BAROMETRIC PRESSURE
SENSOR



Wiring Face
BLOWER RESISTORS

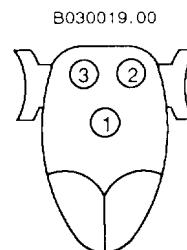


8500-4 CONNECTOR VIEWS



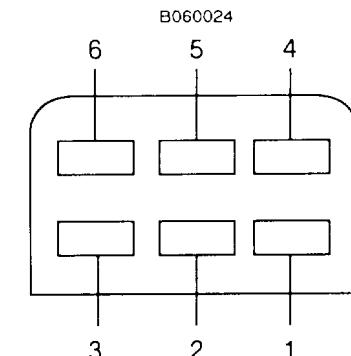
Wiring Face

CONTROL SWITCHES



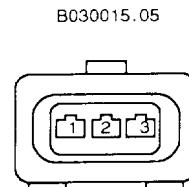
Wiring Face

DUAL TEMPERATURE SWITCH



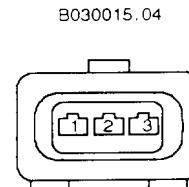
Wiring Face

EVAPORATOR TEMPERATURE REGULATOR



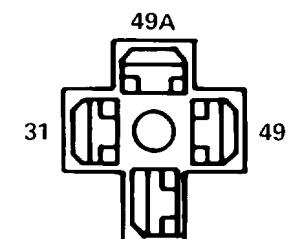
Mating Face

CYLINDER IDENTIFICATION SENSOR

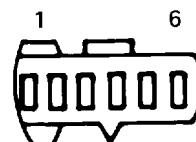


Wiring Face

ENGINE SPEED SENSOR

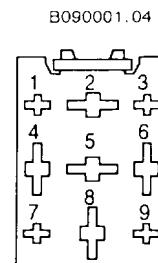


Wiring Face
FLASHER



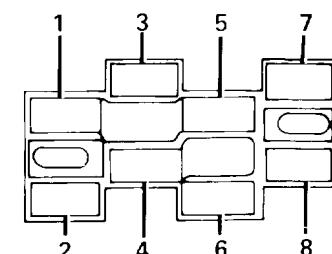
Wiring Face

DOOR LOCK MOTOR



Mating Face

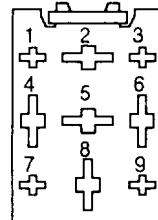
EVAPORATIVE PURGE VALVE RELAY



Wiring Face

FOG LIGHT SWITCH

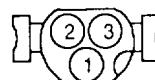
B090001.17



Mating Face

FRESH/RECIRCULATING AIR RELAY

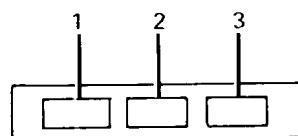
B030017.00



Wiring Face

FRONT TURN/PARK LIGHT

325i/325is, 325ix

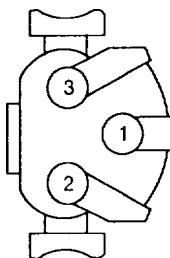


Wiring Face

FRONT TURN/PARK LIGHT

325ic, M3

B030025.00

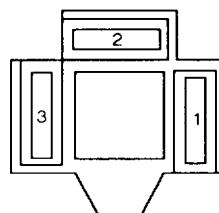


Mating Face

FRONT TURN/PARK LIGHT

318is

B030015.09

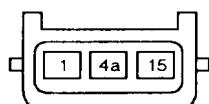


Mating Face

HEADLIGHTS

Low and High Beams

B030015.08

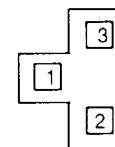


Mating Face

IGNITION COILS

318is

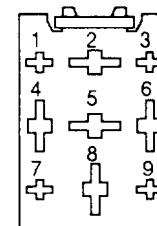
B030020.00



Wiring Face

INSTRUMENT CLUSTER (C6)

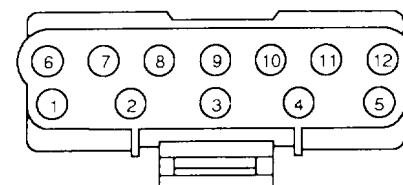
B090001.16



Mating Face

INTERIOR LIGHT TIMER CONTROL

B120006.00

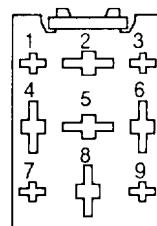


Wiring face

LIGHT SWITCH

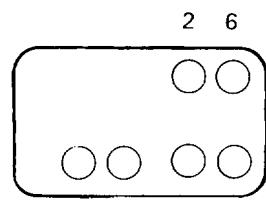
8500-6 CONNECTOR VIEWS

B090001.06



Mating Face

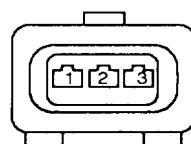
MAIN RELAY



Mating Face

MIRROR CONTROL SWITCH

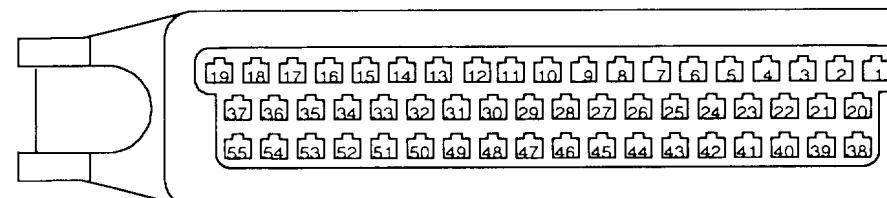
B030015.06



Wiring Face

OIL LEVEL SENSOR

B550001.02

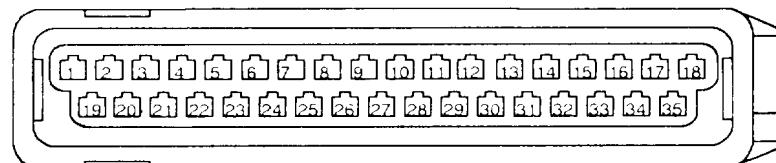


Mating Face

MOTRONIC CONTROL UNIT

All except M3 and 318is

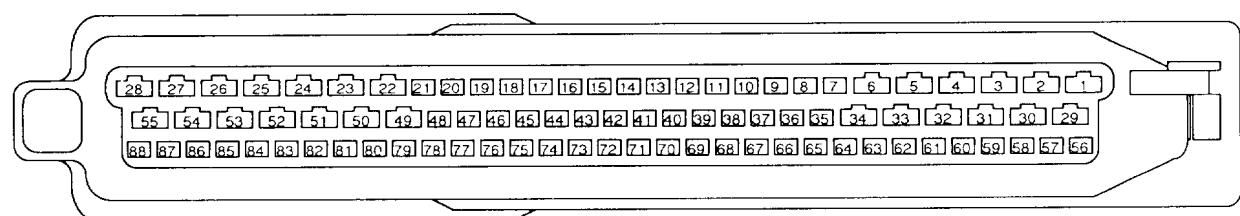
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Mating Face

MOTRONIC CONTROL UNIT

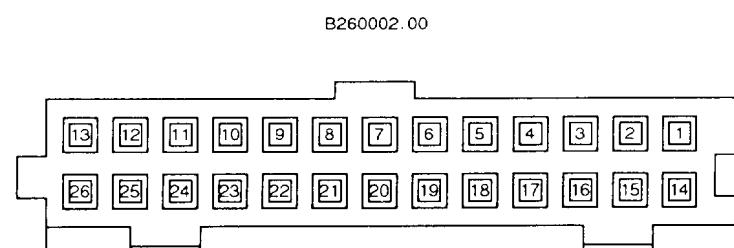
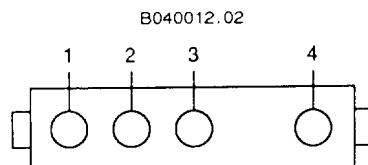
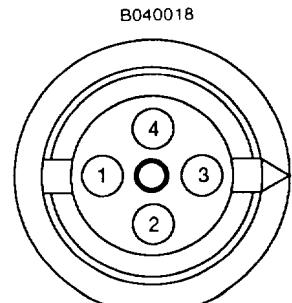
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Mating Face

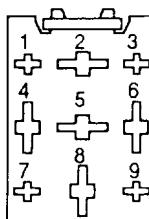
MOTRONIC CONTROL UNIT

318is

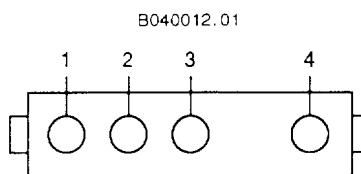
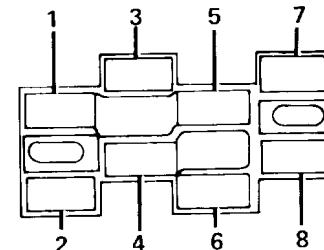
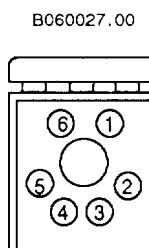
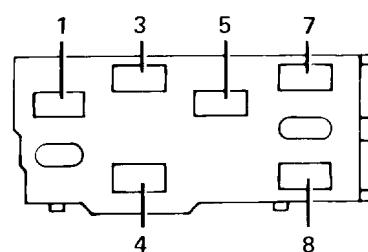
ON - BOARD COMPUTER MODULEON - BOARD COMPUTER
RELAY BOX (C2)OXYGEN SENSOR HEATER

318is

B090001.05



Mating Face

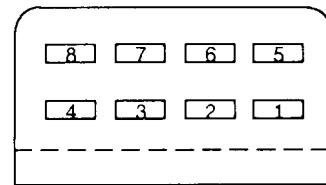
OXYGEN SENSOR HEATER RELAYPOWER MIRRORSREAR DEFOGGER SWITCHREAR LIGHT ASSEMBLYREAR LIGHT ASSEMBLYPOWER WINDOW SWITCHES

Wiring Face

318is

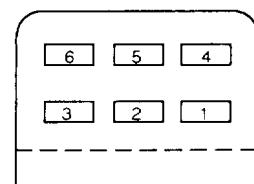
8500-8 CONNECTOR VIEWS

B080015.01



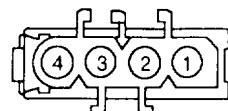
REAR LIGHTS CHECK RELAY (C1)

B060028 .01



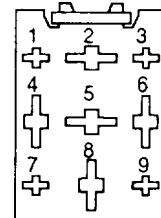
REAR LIGHTS CHECK RELAY (C2)

B0400002.03



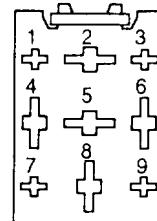
REAR WINDOW
BLOWER

B090001.14



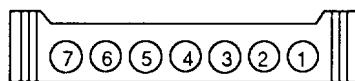
REAR WINDOW BLOWER RELAY

B090001.05



SEATBELT WARNING TIMER

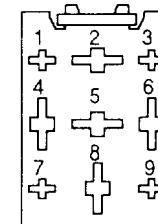
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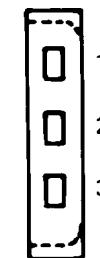
SEATBELT AND SRS WARNING MODULE

318is

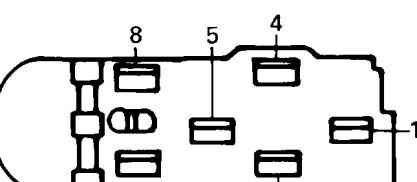
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START RELAY

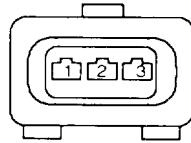


SUNROOF MOTOR (CI)

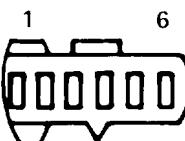


SUNROOF SWITCH

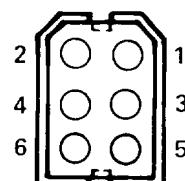
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Wiring Face

THROTTLE SWITCH, POTENTIOMETER

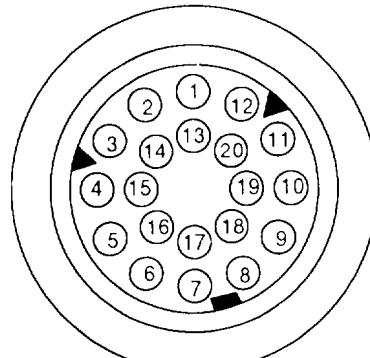
Wiring Face

TRUNK LID LOCK MOTOR

Wiring Face

WIPER MOTOR

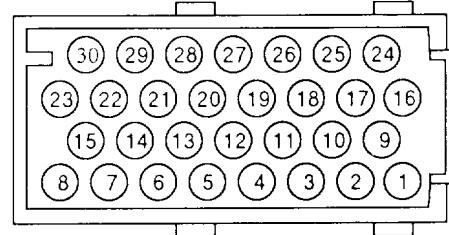
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Wiring Face

C101

B300001.00



Wiring Face

C103

B030004.02



Mating Face

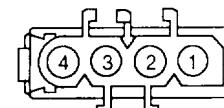
C110C113

8

1

Wiring Face
C114

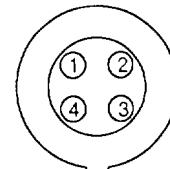
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Wiring Face

C107C131C136C270

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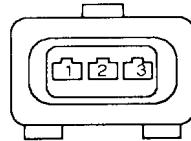


Wiring Face

C140

8500-10 CONNECTOR VIEWS

B030015.06



Wiring Face

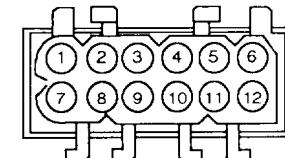
C152, C153, C154



Wiring Face

C201

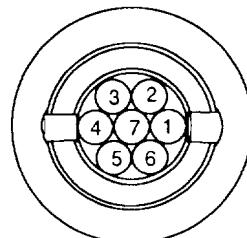
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Wiring Face

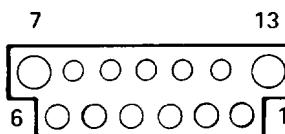
C204

B070002.00



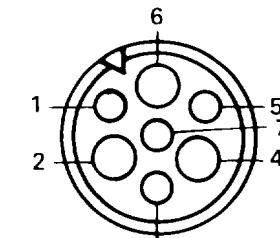
Wiring Face

C191



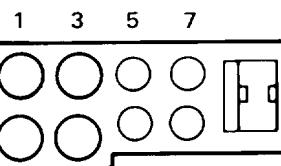
Wiring Face

C202



Wiring Face

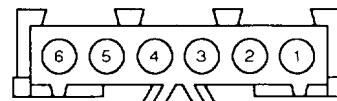
C209



Wiring Face

C200

B060032.00



Wiring Face

C203

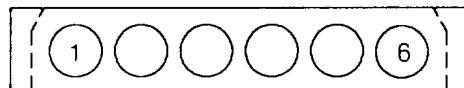
B070004.00



Wiring Face

C210

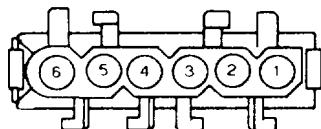
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Wiring Face

C240

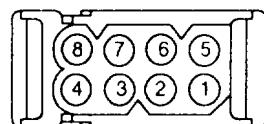
B060003 03



Mating Face

C242

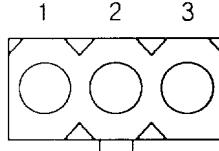
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Mating Face

C243

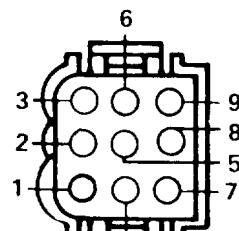
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Wiring Face

C303

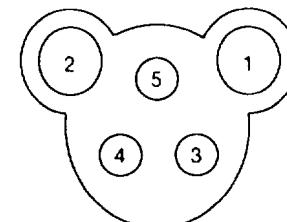
C304



Wiring Face

C306

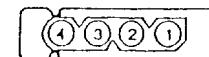
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Wiring Face

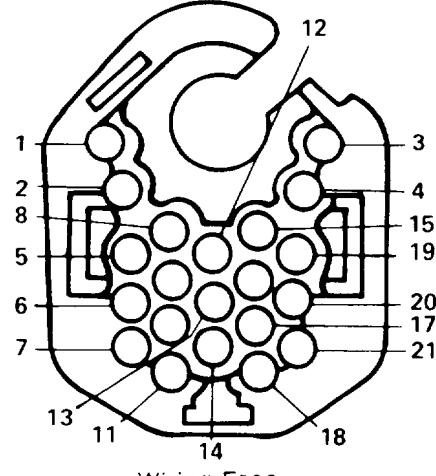
C413

B040004.00



C421

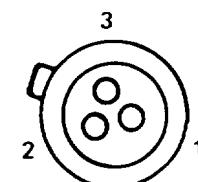
C422



Wiring Face

C404

C405



Wiring Face

C503

9000-0 COMPONENT LOCATION CHART

| COMPONENTS | | Page-Figure |
|--|---|-------------|
| A/C In-Line Fuse | LH rear side of evaporator housing | 7000- 7-4 |
| ABS Electronic Control Unit . . . | Behind LH side of dash, above hood release | 7000- 6-3 |
| ABS Hydraulic Unit | LH front corner of engine compartment | 7000- 1-5 |
| Active Check Control Unit | Above rear view mirror | 7000- 8-2 |
| Air Bag Gas Generator | Center of steering wheel | 7000- 7-3 |
| Air Flow Meter | LH front of engine compartment, behind air cleaner | 7000- 1-1 |
| Alternator | Lower LH front of engine | 7000- 2-1 |
| Amplifier | LH front corner of trunk | 7000-11-6 |
| Auto-Charging Flashlight | Inside LH side of glove box | 7000- 9-1 |
| Automatic Transmission Range Switch | At base of gear shift lever | 7000- 8-5 |
| Auxiliary Fan. | In front of radiator | 7000- 2-3 |
| Auxiliary Fan Normal Speed Blower Resistor | In front of radiator, LH side of auxiliary fan | 7000- 2-3 |
| Auxiliary Fuse | LH rear of engine compartment, on power distribution box | 7000- 0-1 |
| Back Up Light Switch. | Top RH side of transmission | 7000- 4-6 |
| Battery | RH rear corner of engine compartment | 7000- 4-3 |
| Blower Motor | Inside fresh air intake cowl | 7000- 0-4 |
| Blower Resistors | Inside fresh air intake cowl, inside blower motor housing | |
| Board Computer Horn | Behind LH corner of front bumper | |
| Brake Fluid Level Switch. | LH side of engine compartment, on brake fluid reservoir | 7000- 0-3 |
| Brake Switch | Behind LH side of dash, on brake pedal support | 7000- 6-3 |
| Brake Wear Sensors. | On LH front and RH rear brake calipers | 7000- 4-5 |
| Central Locking Control Unit . . . | Inside LH kick panel, below LH front speaker | 7000- 5-3 |
| Chime Module. | Mounted on LH dash hush panel | 7000- 6-2 |
| Clutch Switch. | Behind LH side of dash, on clutch pedal support | 7000- 6-3 |
| Combination Switch | Upper LH side of steering column | 7000- 7-2 |
| Compressor Clutch | Lower RH front of engine, on A/C compressor | 7000- 3-2 |
| Compressor Clutch Diode | Lower RH front of engine, on A/C compressor | 7000- 3-2 |
| Convertible Top Position Switch | LH side of soft top stowage compartment | 7000-10-5 |
| Coolant Level Switch. | Front of LH front wheel well, in coolant reservoir | 7000- 1-4 |
| Coolant Temperature Sender. . . | Top front of engine, top of thermostat housing | 7000- 2-5 |
| Coolant Temperature Sensor. . . | Top front of engine, top of thermostat housing | 7000- 2-5 |
| Cruise Control Actuator | LH front corner of engine compartment | 7000- 1-4 |
| Cruise Control Unit | Behind RH side of dash, above glove box | 7000- 9-2 |
| Cylinder Identification Sensor . . | Top RH front of engine, near distributor | 7000- 2-6 |
| Diagnostic Connector. | Top LH front of engine | 7000- 1-3 |
| Door Lock Motors | Rear part of each door | 7000-10-2 |

COMPONENTS

Page-Figure

| | | |
|--------------------------------------|--|-----------|
| Driver's Exterior Door Handle | | |
| Switch | In top rear of LH front door | 7000-10-1 |
| Dual Temperature Switch | Top RH side of radiator | 7000- 2-4 |
| Engine Speed Sensor | Lower RH front of engine. | 7000- 3-1 |
| Evaporative Purge Valve | LH side of engine, below throttle body. | 7000- 0-6 |
| Evaporator Temperature | | |
| Regulator | On LH side of evaporator housing | 7000- 7-5 |
| Evaporator Temperature Sensor. | On LH side of evaporator housing | 7000- 7-5 |
| Filter Capacitor | Lower LH front of engine, on alternator | 7000- 2-1 |
| Flasher | Upper part of steering column | 7000- 7-2 |
| Fresh/Recirculating Air Flap Door | | |
| Motors. | Behind A/C face plate, on either side of evaporator housing. | 7000- 7-6 |
| Fresh/Recirculating Air Relays . . . | Behind A/C face plate | 7000- 8-1 |
| Front Window Motors | Forward part of each door | 7000- 9-5 |
| Fuel Injectors | Below intake manifold, at each cylinder | 7000- 2-5 |
| Fuel Pump Relay | Front of LH front shock tower, on bracket | 7000- 1-2 |
| Fuel Tank Sender. | Below RH side of rear seat, top of fuel tank | 7000-11-3 |
| Gas Filler Lock Motor | RH side of trunk, behind RH wheel well | 7000-12-2 |
| Glove Box Light Switch | Behind RH side of dash, above glove box | 7000- 9-2 |
| Hazard Switch | In center of dash, above digital radio | 7000- 8-3 |
| Horn Brush/Slip Ring | In upper part of steering column | 7000- 7-2 |
| Horns | Behind LH corner of front bumper | |
| Hot Water Cut-Out Switch | Behind center of dash, near rotary temperature control | 7000- 8-1 |
| Idle Speed Actuator | Top LH side of engine | 7000- 1-3 |
| Ignition Coil | On RH front wheel well, forward of shock tower. . . | 7000- 4-1 |
| Ignition Key Switch | Part of ignition switch, in upper part of steering column | |
| Ignition Switch | Top RH side of steering column | 7000- 7-2 |
| Interior Light Timer Control . . . | Inside LH kick panel, below LH front speaker | 7000- 5-3 |
| Left Front Crash Sensor | LH side of engine compartment, front of shock tower | 7000- 1-1 |
| Left Tank Fuel Sender | Below LH side of rear seat | 7000-11-1 |
| Loop Contact Rings | Inside steering wheel, below air bag gas generator . | 7000- 7-1 |
| Main Fuel Pump | Below RH side of rear seat, in fuel tank | 7000-11-3 |
| Main Relay | Front of LH front shock tower, on bracket | 7000- 1-2 |
| Motronic Control Unit | Behind RH side of dash, above glove box | 7000- 9-2 |
| Multi-Function Clock | Center of dash, RH side of digital radio | 7000- 8-4 |
| Oil Level Sensor | Top LH side of oil pan | 7000- 1-6 |
| Oil Pressure Switch | Lower RH front of engine, below oil filter | 7000- 3-3 |
| On-Board Computer Module . . . | Center of dash, RH side of digital radio | 7000- 8-4 |

9000-2 COMPONENT LOCATION CHART

| COMPONENTS | | Page-Figure |
|--|--|-------------|
| On-Board Computer Relay Box | Behind LH side of dash, near ABS electronic control unit | 7000- 6-1 |
| Outside Temperature Sensor | Behind LH corner of front bumper, on splash guard | 7000- 2-2 |
| Oxygen Sensor | Lower RH rear of engine compartment, on exhaust manifold | 7000- 4-2 |
| Oxygen Sensor Heater Relay | Front of LH front shock tower, on bracket | 7000- 1-2 |
| Park Brake Switch | At base of parking brake | 7000- 8-6 |
| Power Antenna | LH side of trunk, behind LH wheel well | 7000-12-1 |
| Power Distribution Box | LH rear corner of engine compartment | 7000- 0-1 |
| Power Window Circuit Breaker | On center console, near gear shift lever | 7000- 8-5 |
| Pulse Wheels | On respective wheels, in brake housing | 7000- 4-4 |
| Rear Lights Check Relay | Inside front of LH rear quarter panel, behind trim panel | 7000-10-6 |
| Rear Window Blower | Behind center of rear seat back | 7000-11-2 |
| Rear Window Blower Relay | Behind center of rear seat back, on rear window blower | 7000-11-2 |
| Rear Window Motors | Inside front of each rear quarter panel, behind trim panel | 7000-11-4 |
| Refrigerant Pressure Switch | Behind RH headlight, on receiver dryer | 7000- 3-5 |
| RH Front Door Micro Switch | In top rear of RH front door | 7000- 9-6 |
| Right Front Crash Sensor | RH side of engine compartment, front of shock tower | 7000- 4-1 |
| Seatbelt Switch | In driver's seatbelt buckle assembly | |
| Seatbelt Warning Timer | Behind LH side of dash, on electrical bracket | 7000- 6-4 |
| Speed Detectors | On respective wheels, in brake housing | 7000- 4-4 |
| Speedometer Sender | On rear of rear differential | 7000- 5-1 |
| SRS Diagnostic Module | Behind LH side of dash, above ABS electronic control unit | 7000- 5-4 |
| Start Relay | Behind LH side of dash, on accessory connector bracket | 7000- 5-5 |
| Starter | Lower LH rear of engine | 7000- 0-5 |
| Throttle Switch | LH side of engine, below throttle body | 7000- 0-6 |
| Trunk Lid Lock Motor | On trunk lock center support | 7000-12-3 |
| Trunk Light Switch | Top center of trunk lid | 7000-12-4 |
| Unlock Inhibit Switch | In top rear of LH front door | 7000- 9-6 |
| Washer Fluid Level Switch | Behind RH headlight, in windshield washer fluid reservoir | 7000- 3-5 |
| Washer Pump | Ahead of RH front wheel well, on washer fluid reservoir | 7000- 3-6 |
| Water Shut-Off Solenoid | LH side of evaporator housing | 7000- 7-4 |
| Wiper Motor | Inside LH side of fresh air intake cowl | 7000- 0-4 |

CONNECTORS

| | | Page-Figure |
|-------------------------------------|---|-------------|
| C101 (20 pins) | Next to power distribution box, mounted on engine dash | 7000- 0-3 |
| C103 (30 pins) | Behind LH side of dash, on body electrical bracket | 7000- 5-6 |
| C104 (2 pins) | Behind LH side of dash, near accessory connector | 7000- 6-2 |
| C110 (3 pins) | RH front of engine compartment | 7000- 3-5 |
| C113 (3 pins) | LH front corner of engine compartment | 7000- 1-5 |
| C114 (8 pins) | LH rear corner of engine compartment, on power distribution box | 7000- 0-2 |
| C115 (2 pins) | LH rear corner of engine compartment, on power distribution box | 7000- 0-2 |
| C126 (3 pins) | LH front corner of engine compartment | 7000- 1-5 |
| C127 (3 pins) | RH front corner of engine compartment | 7000- 3-4 |
| C131 (2 pins) | Behind RH side of dash, above glove box | 7000- 9-2 |
| C136 (4 pins) | Behind RH side of dash, above glove box | 7000- 9-2 |
| C140 (4 pins) | Lower RH rear of engine compartment, under battery tray | 7000- 4-2 |
| C142 (1 pin) | Behind LH side of dash, near steering column | 7000- 6-2 |
| C143 (1 pin) | Behind LH side of dash, near accessory connector | 7000- 6-4 |
| C150 (2 pins) | Front of LH front shock tower, on bracket | 7000- 1-1 |
| C151 (2 pins) | Front of RH front wheel well | 7000- 3-6 |
| C190 (2 pins) | Below RH side of rear seat | 7000-11-3 |
| C191 (7 pins) | Lower LH side of engine | 7000- 0-5 |
| C200 (10 pins) | Behind LH side of dash, on steering column | 7000- 6-4 |
| C201 (6 pins) | Behind LH side of dash, on steering column | 7000- 6-4 |
| C202 (13 pins) | Behind LH side of dash, on steering column | 7000- 6-4 |
| C203 (6 pins) | Behind LH side of dash, near LH kick panel | 7000- 5-3 |
| C204 (12 pins) | Behind LH side of dash, RH side of steering column | 7000- 7-6 |
| C208 (2 pins) (Automatic) | Behind LH side of dash, on C204 | |
| C208 (2 pins) (Manual) | Behind LH side of dash, on brake pedal support | 7000- 6-3 |
| C209 (7 pins) | Behind LH side of dash, near brake pedal support | 7000- 6-2 |
| C210 (7 pins) | Behind LH side of dash, on steering column | 7000- 6-4 |
| C213 (1 pin) | Behind center of dash, on digital radio | 7000- 8-3 |
| C214 (1 pin) | Behind center of dash, on digital radio | 7000- 8-3 |
| C215 (2 pins) | Behind center of dash, behind digital radio | 7000- 8-4 |
| C216 (2 pins) | Behind center of dash, on digital radio | 7000- 8-4 |
| C217 (1 pin) | Behind LH side of dash, near accessory connector | 7000- 6-1 |
| C219 (2 pins) | LH side of trunk, above LH wheel well | 7000-12-1 |
| C233 (1 pin) | Behind center of dash, near digital radio | 7000- 8-4 |
| C240 (6 pins) | Behind LH side of dash, on SRS diagnostic module bracket | 7000- 5-4 |
| C241 (1 pin) | Behind LH side of dash, above steering column | 7000- 6-5 |

9000-4 COMPONENT LOCATION CHART

CONNECTORS

| | | Page-Figure |
|--|--|-------------|
| C242 (4 pins) | Behind center of dash, on digital radio | 7000- 8-4 |
| C243 (8 pins) | Behind center of dash, near digital radio. | 7000- 8-3 |
| C260 (2 pins) | Underside of steering column, above access panel . | 7000- 6-6 |
| C261 (2 pins) | Behind LH side of dash, near accessory connector.. | 7000- 6-1 |
| C270 (4 pins) | Behind LH side of dash, on SRS diagnostic module bracket | 7000- 5-4 |
| C290 (2 pins) | Behind LH side of dash, on SRS diagnostic module bracket | 7000- 5-4 |
| C301 (2 pins) | Below center console, near gear shift lever. | 7000- 8-5 |
| C302 (25 pins) Accessory Connector | Behind LH side of dash, on body electrical bracket.. | 7000- 5-6 |
| C305 (1 pin) | Behind LH side of dash, near accessory connector.. | 7000- 6-1 |
| C306 (9 pins) | Below center console, near gear shift lever. | 7000- 8-5 |
| C307 (1 pin) | RH side of soft top stowage compartment, on hard top mounting post | 7000- 8-5 |
| C308 (1 pin) | RH side of soft top stowage compartment, on hard top mounting post | 7000-11-5 |
| C310 (1 pin) | LH side of soft top stowage compartment, on hard top mounting post | 7000-10-5 |
| C352 (2 pins) | Below LH side of rear seat | 7000-10-6 |
| C360 (2 pins) | Below RH side of rear seat | 7000-11-4 |
| C404 (21 pins) | Above RH front door jamb switch | 7000- 9-4 |
| C405 (21 pins) | Above LH front door jamb switch | 7000- 5-2 |
| C406 (1 pin) | Below RH front speaker. | 7000- 9-3 |
| C407 (1 pin) | Below LH front speaker | 7000- 5-3 |
| C413 (4 pins) | Top center of trunk, inside high level stop light assembly | |
| C421 (4 pins) | Below LH front seat assembly | 7000-10-3 |
| C422 (4 pins) | Below RH front seat assembly | 7000-10-4 |
| C500 (1 pin) | Behind LH side of dash, near steering column . . . | 7000- 6-2 |
| C503 (3 pins) | In lower rear of LH front door | 7000-10-2 |
| C510 (1 pin) | Inside LH kick panel, above LH front speaker . . . | 7000- 5-3 |

GROUNDS

| | | |
|---------------|--|-----------|
| G100. | On RH shock tower. | 7000- 4-3 |
| G103. | On RH shock tower. | 7000- 4-3 |
| G104. | On inner fender, behind LH headlight. | 7000- 1-4 |
| G200. | Behind LH side of dash, above brake pedal . . . | 7000- 6-5 |
| G201. | Upper LH side of steering column | 7000- 7-2 |
| G202. | Below RH side of rear seat. | 7000-11-4 |
| G300. | Below LH side of rear seat. | 7000-10-6 |
| G302. | LH side of trunk, behind LH wheel well | 7000-12-1 |