



1984

BMW 318i

Electrical

Troubleshooting

Manual

BMW of North America, Inc.
Montvale, New Jersey

FOREWORD

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

Printed in USA

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May 1983

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PN 89 89 1 000 147

1984

BMW 318i

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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



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



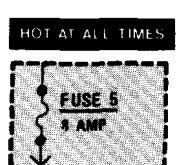
PART OF A
COMPONENT
SHOWN



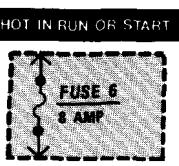
COMPONENT
WITH SCREW
TERMINALS



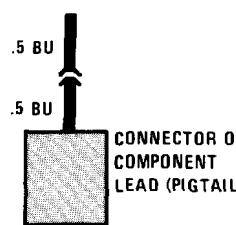
SOLID STATE
(INCLUDES ONLY
ELECTRONIC PARTS)



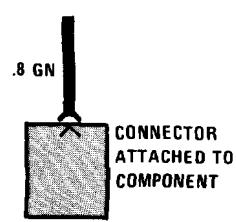
HOT AT ALL TIMES
INDICATES THAT FUSE 5
IS ALWAYS SUPPLIED
WITH POWER



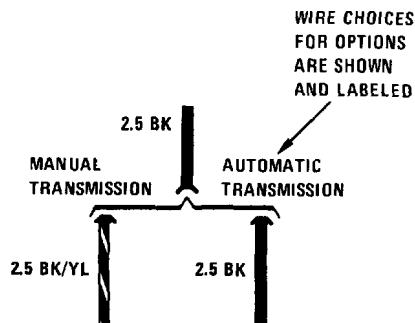
HOT IN RUN OR START
INDICATES THAT FUSE 6
IS SUPPLIED WITH POWER
WITH THE IGNITION
SWITCH IN THE RUN OR
START POSITIONS



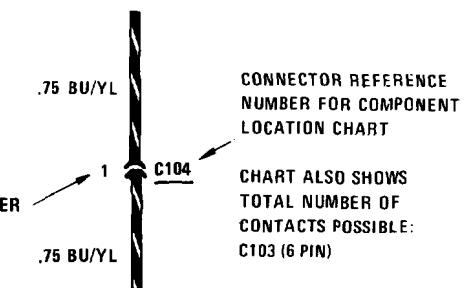
.5 BU
.5 BU
CONNECTOR ON
COMPONENT
LEAD (PIGTAIL)



.8 GN
.8 GN
CONNECTOR
ATTACHED TO
COMPONENT



WIRE CHOICES
FOR OPTIONS
ARE SHOWN
AND LABELED

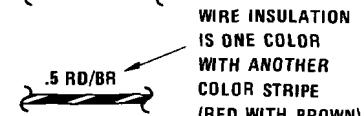


.75 BU/YL
PIN NUMBER
1
.75 BU/YL

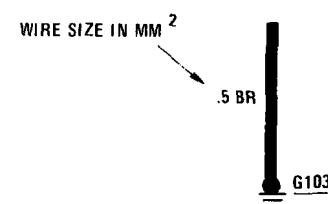
CONNECTOR REFERENCE
NUMBER FOR COMPONENT
LOCATION CHART
CHART ALSO SHOWS
TOTAL NUMBER OF
CONTACTS POSSIBLE:
C103 (6 PIN)



WIRE INSULATION
IS ONE COLOR
1.5 RD



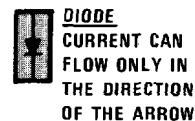
.5 RD/BR
WIRE INSULATION
IS ONE COLOR
WITH ANOTHER
COLOR STRIPE
(RED WITH BROWN)



WIRE SIZE IN MM²
.5 BR

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

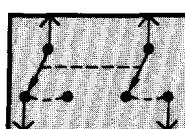
CIRCUIT REFERENCE –
A WIRE WHICH CONNECTS
TO ANOTHER CIRCUIT



.75 GY/YL
ACTIVE CHECK CONTROL

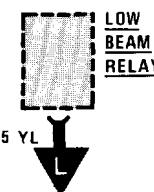
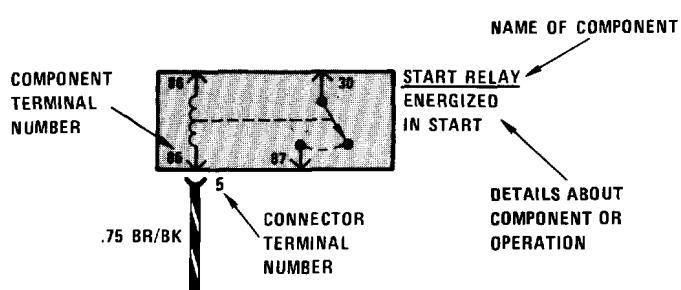


ONE POLE,
TWO POSITION
SWITCH



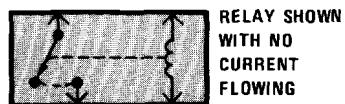
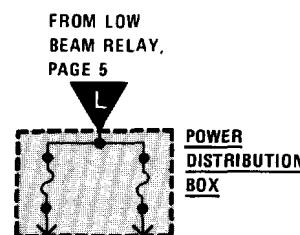
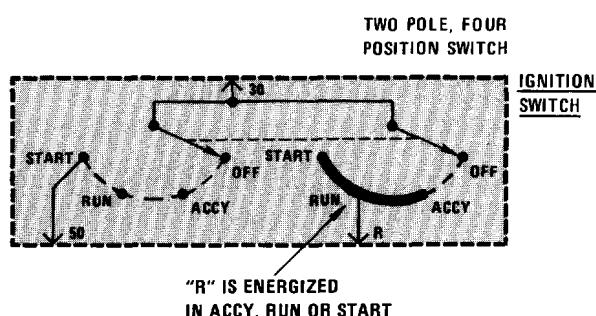
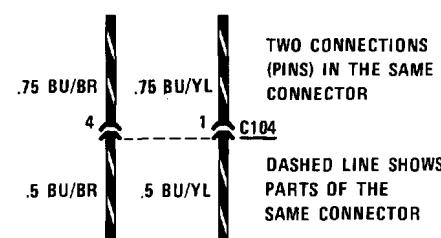
SWITCHES THAT
MOVE TOGETHER

DASHED LINE SHOWS
A MECHANICAL
CONNECTION
BETWEEN SWITCHES

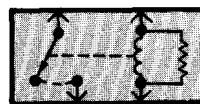


2.5 YL
L
TO POWER
DISTRIBUTION
BOX, PAGE 1

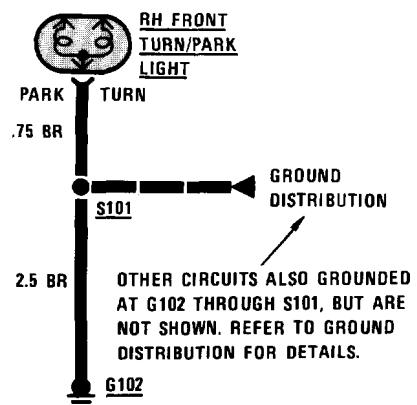
CURRENT PATH
IS CONTINUED
AS LABELED.
THE ARROW SHOWS
DIRECTION OF CURRENT
FLOW AND IS REPEATED
WHERE CURRENT
PATH CONTINUES.



WHEN COIL IS
ENERGIZED, SWITCH
IS PULLED CLOSED



RELAY SHOWN WITH RESISTOR ACROSS COIL
RESISTOR ACROSS COIL IS FOR NOISE SUPPRESSION



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

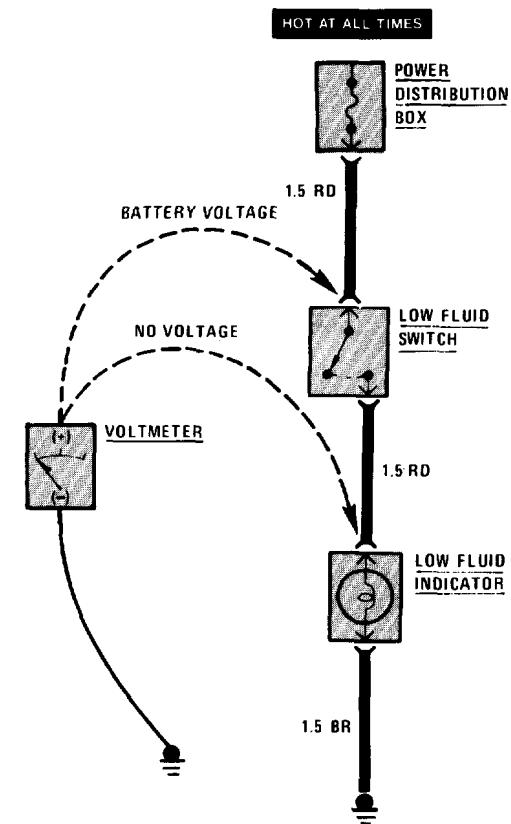
Isolating the problem (Step 3 of TROUBLESHOOTING PROCEDURES) requires the use of a **voltmeter** and/or **ohmmeter**. A voltmeter measures voltage at selected points in a circuit. An ohmmeter measures a circuit's resistance to current flow. It has an internal battery that provides current to the circuit 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.

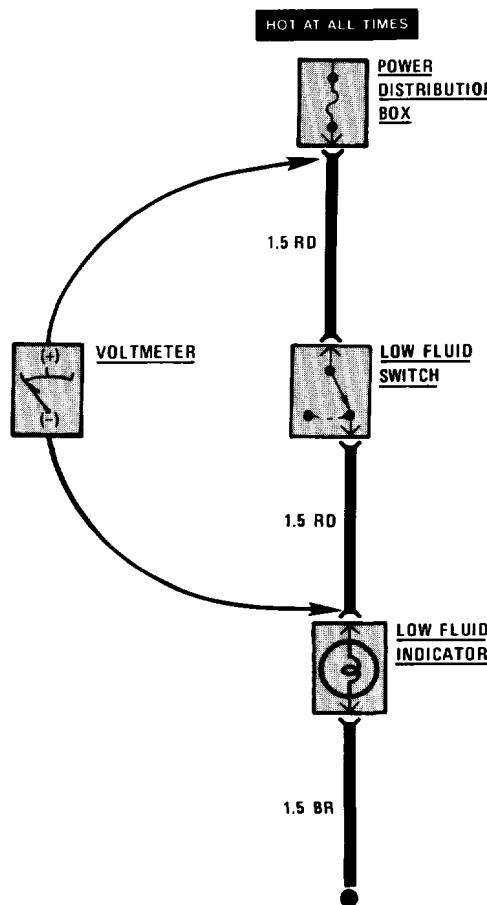


Voltage Test

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.

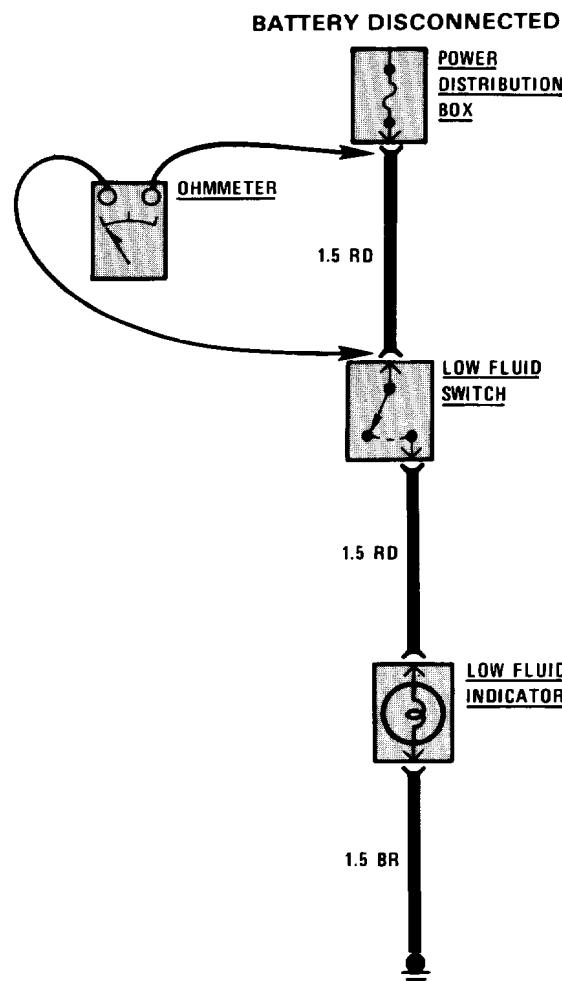
To test for voltage drop, connect the voltmeter leads to connectors at either end of the circuit's suspected problem area. The positive lead should be connected to the connector closest to the power source. The voltmeter will show the voltage drop between these two points.



Voltage Drop Test

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.

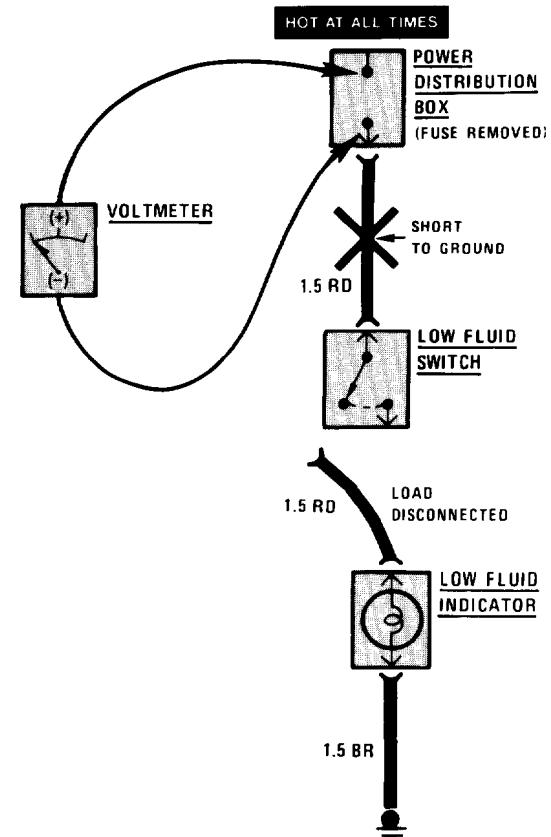


Continuity Test

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.



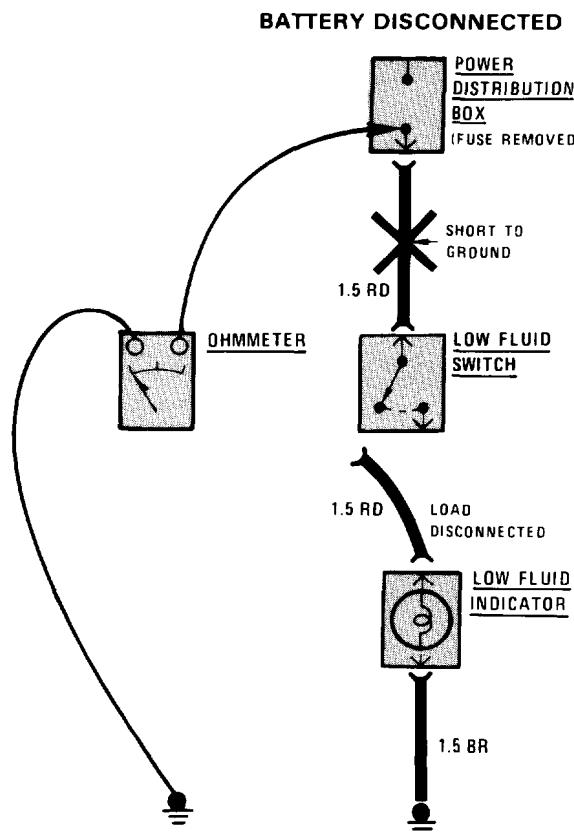
Short Test Using Voltmeter

8 SYSTEMATIC TROUBLESHOOTING

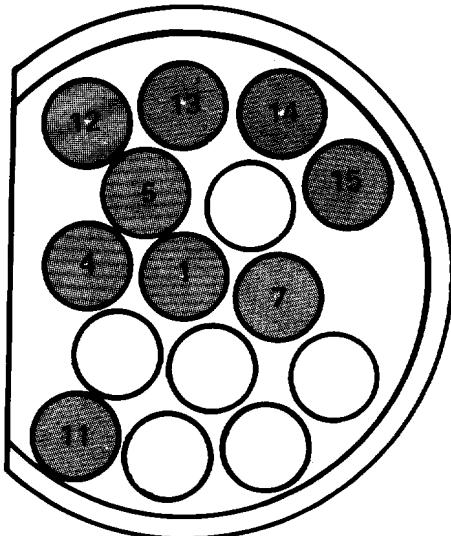
Short Test Using Ohmmeter

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



DIAGNOSTIC CONNECTOR

| PIN | WIRE SIZE | WIRE COLOR | CIRCUIT AND COMPONENT CONNECTED |
|-----|-----------|------------|---|
| 1 | .1.5 | BR | Ground Distribution G101 |
| 4 | .5 | BR/VI | Gauges/Warning Indicators, Coolant Temperature Sender. |
| 5 | .5 | WT/GN | Fuel Control, Injector Control Module (Fuel Rate) |
| 7 | .5 | WT/BU | Service Interval Indicator, Service Interval Processor (Reset). |
| 11 | 2.5 | BK/YL | Start, Start Signal. |
| 12 | .75 | BU | Charge System, Alternator. |
| 13 | .75 | BK | Ignition, Ignition Coil. |
| 14 | 2.5 | RD | Charge System, Alternator. |
| 15 | 1.5 | GN/YL | Idle Speed Control, Idle Speed Control Unit. |

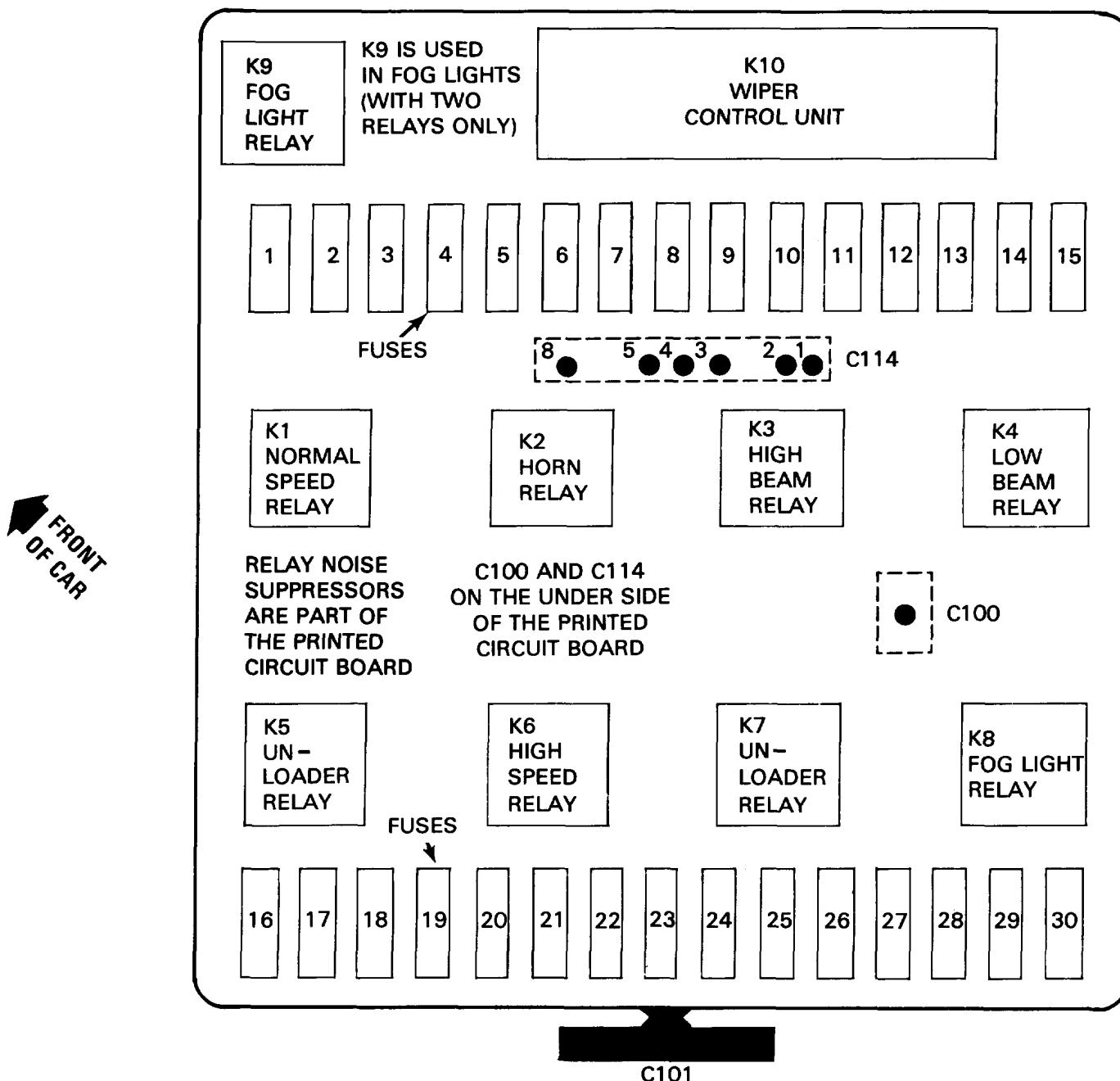


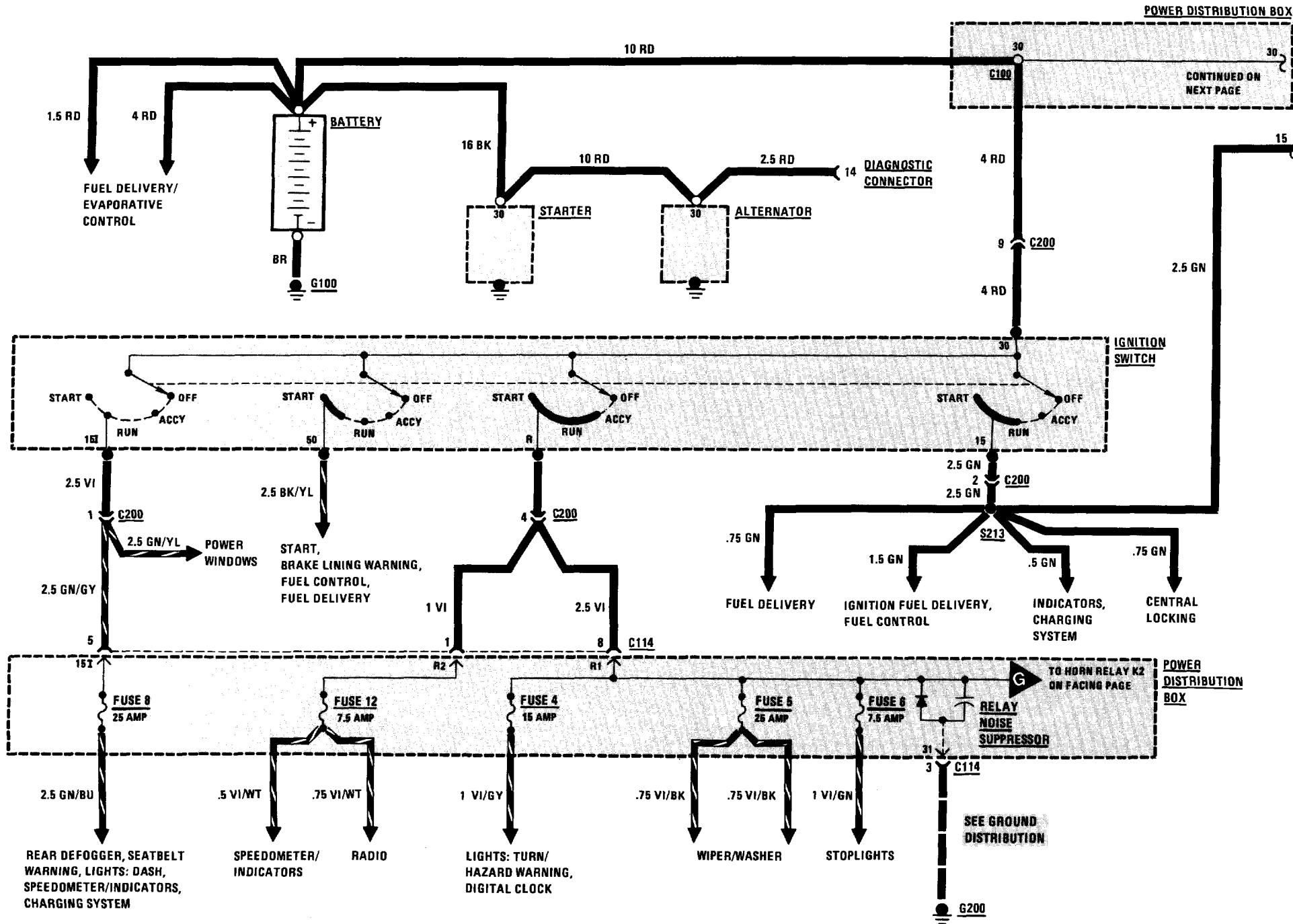
Figure 1 - Behind Left Front Shock Tower

| FUSE NO. | SIZE/COLOR | CIRCUIT NAME |
|----------|--------------|--|
| 1 | 7.5A (BR) | Headlights (also fuses 2, 13, 16). |
| 2 | 7.5A (BR) | Headlights (also fuses 1, 13, 14). |
| 3 | 15A (LT BLU) | Auxiliary Fan (also fuse 18). |
| 4 | 15A (LT BU) | Lights: Turn/Hazard Warning (also fuse 24). |
| 5 | 25A (WT) | Wiper/Washer. |
| 6 | 7.5A (BR) | Stoplights. |
| 7 | 15A (LT BU) | Horn. |
| 8 | 25A (WT) | Lights: Dash Rear Defogger; Seatbelt Warning (also fuse 10); Speedometer/Indicators (also fuse 12). |
| 9 | 15A (LT BU) | Idle Speed Control/Vacuum Advance; Backup Lights. |
| 10 | 7.5A (BR) | Seatbelt Warning (also fuse 8); Service Interval Indicator (also fuse 24); Tachometer/Fuel Economy Gauges (also fuse 24); Gauges/Indicators; Brake Warning System. |
| 11 | 15A (LT BU) | Fuel Delivery. |
| 12 | 7.5A (BR) | Radio (also fuse 21); Speedometer/Indicators (also fuse 8). |
| 13 | 7.5A (BR) | Headlights (also fuses 1, 2, 14). |
| 14 | 7.5A (BR) | Headlights (also fuses 1, 2, 13). |
| 15 | | Not Used. |
| 16 | | Not Used. |
| 17 | 15A (LT BU) | Accessory Connector.(Not Used) |
| 18 | 30A (LT GN) | Auxiliary Fan (also fuses 3, 19). |
| 19 | 7.5A (BR) | Auxiliary Fan (also fuses 3, 18); Interior Lights (also fuses 21, 22, 27). Power Mirrors. |

| FUSE NO. | SIZE/COLOR | CIRCUIT NAME |
|----------|-------------|--|
| 20 | 30A (LT GN) | Heater/Air Conditioning (also fuse 28). |
| 21 | 7.5A (BR) | Auto-Charging Flashlight; Digital Clock; Glove Box Light; Ignition Key Warning; Interior Lights (also fuses 14, 22, 27); Radio (also fuses 12); Trunk Light. |
| 22 | 7.5A (BR) | Interior Lights (also fuses 19, 21, 27); Lights: Front Park/Tail; Lights: Front Side Marker. |
| 23 | 7.5A (BR) | Lights: Dash; Lights: Front Park/Tail; Lights: Front Side Marker; Lights: Rear Marker/License. |
| 24 | 15A (LT BU) | Lights: Turn/Hazard Warning (also fuse 4); Tachometer/Fuel Economy Gauges (also fuse 10); Service Interval Indicator (also fuse 10). |
| 25 | 25A (WT) | Not Used. |
| 26 | 25A (WT) | Not Used. |
| 27 | 25A (WT) | Interior Lights (also fuses 19, 21, 22). Central Locking. |
| 28 | 25A (WT) | Cigar Lighter; Power Antenna. |
| 29 | 7.5A (BR) | Fog Lights. |
| 30 | 7.5A (BR) | Fog Lights. |

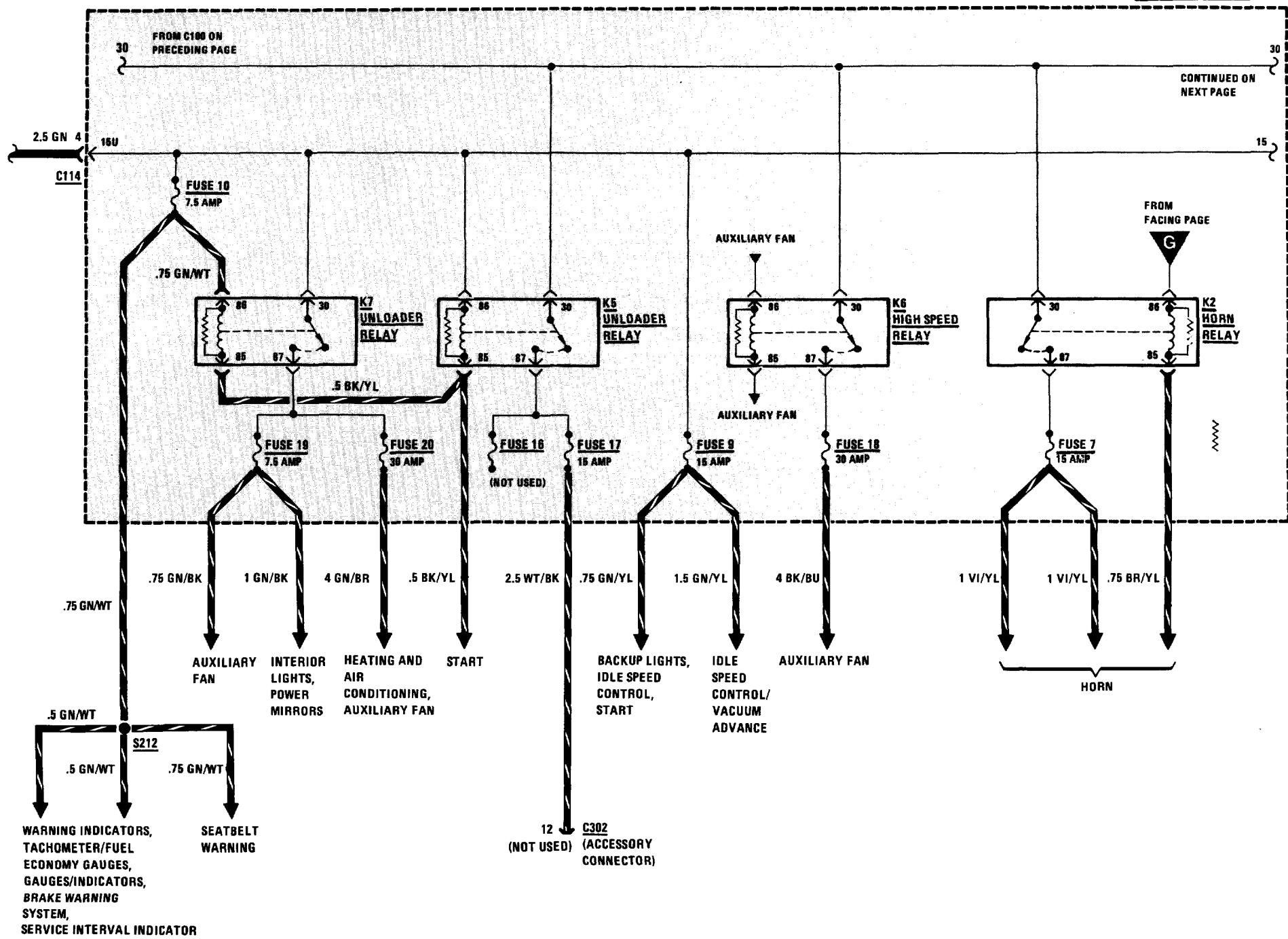
104 POWER DISTRIBUTION

(For Component Locations See Page 201)



(For Component Locations See Page 201)

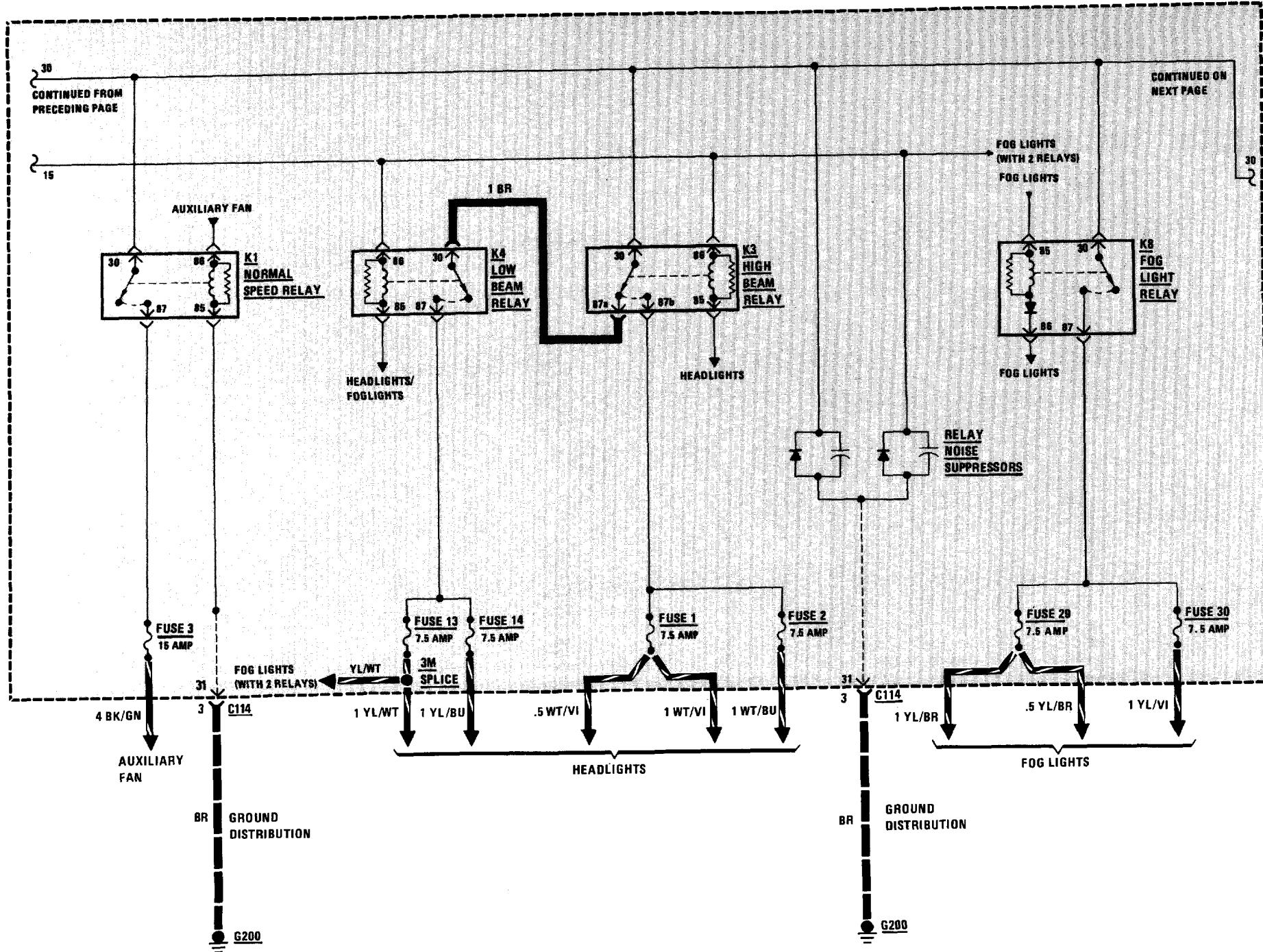
POWER DISTRIBUTION BOX



106 POWER DISTRIBUTION

(For Component Locations See Page 201)

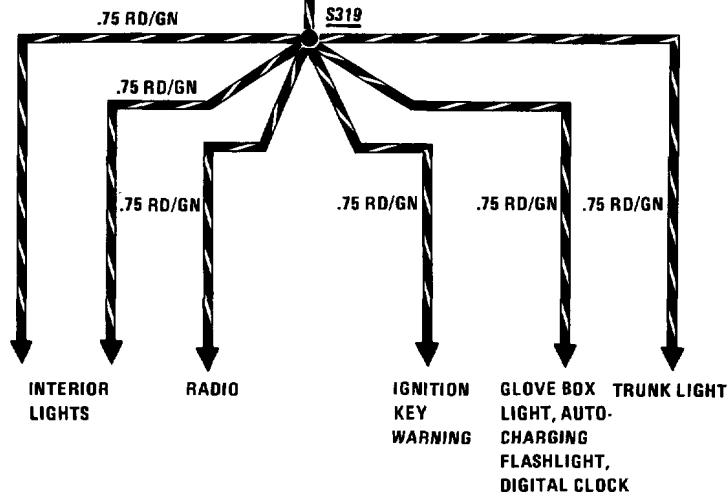
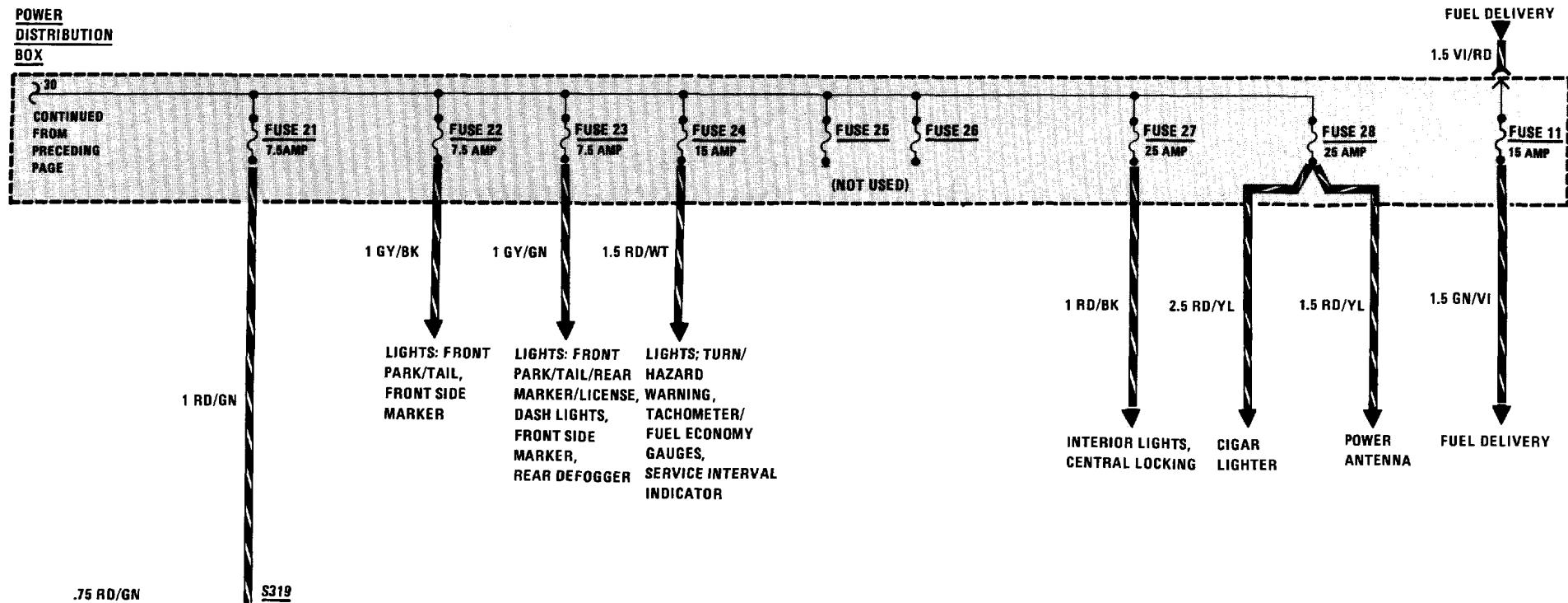
POWER DISTRIBUTION BOX



POWER DISTRIBUTION 107

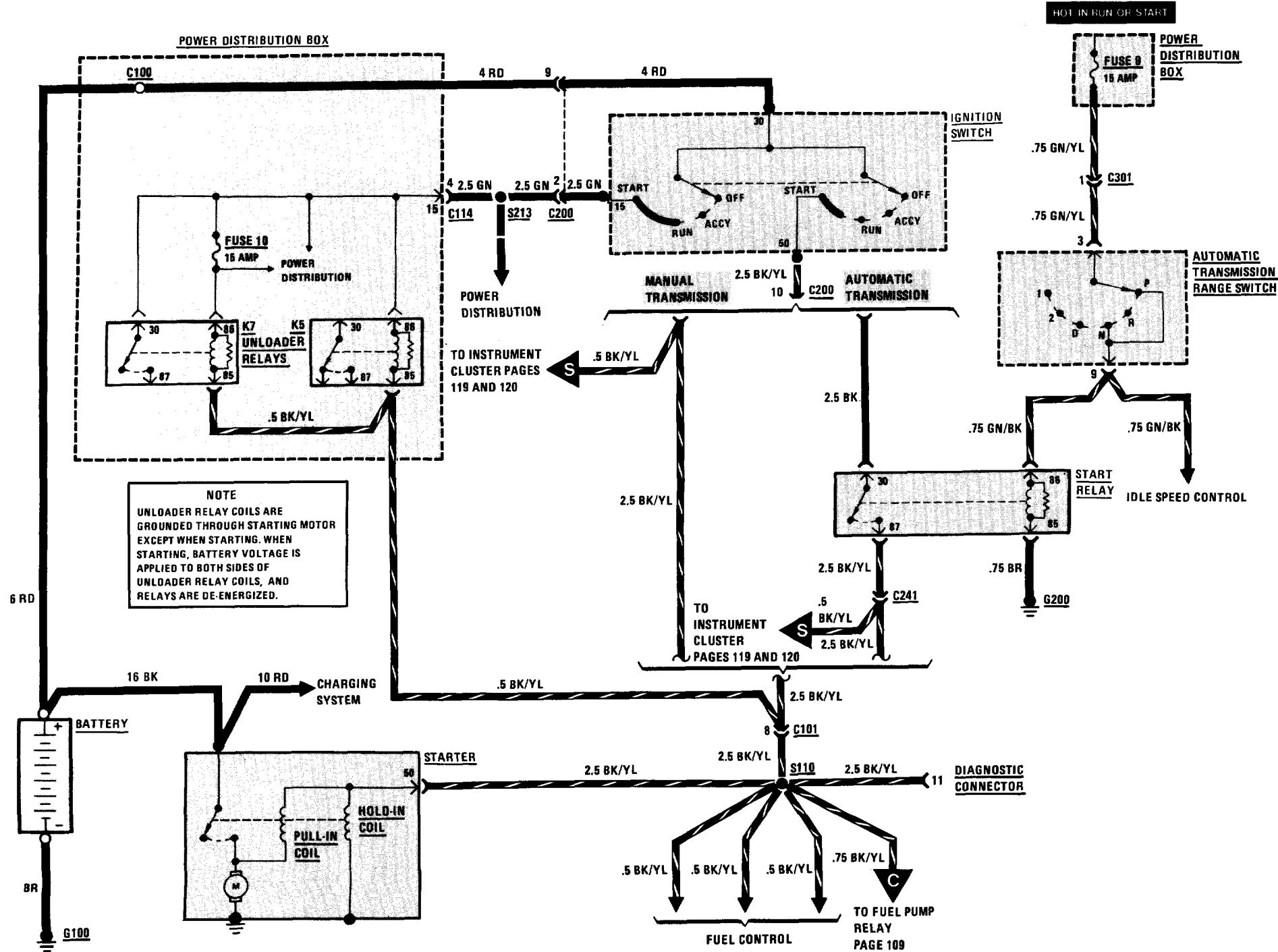
(For Component Locations See Page 201)

**POWER
DISTRIBUTION
BOX**

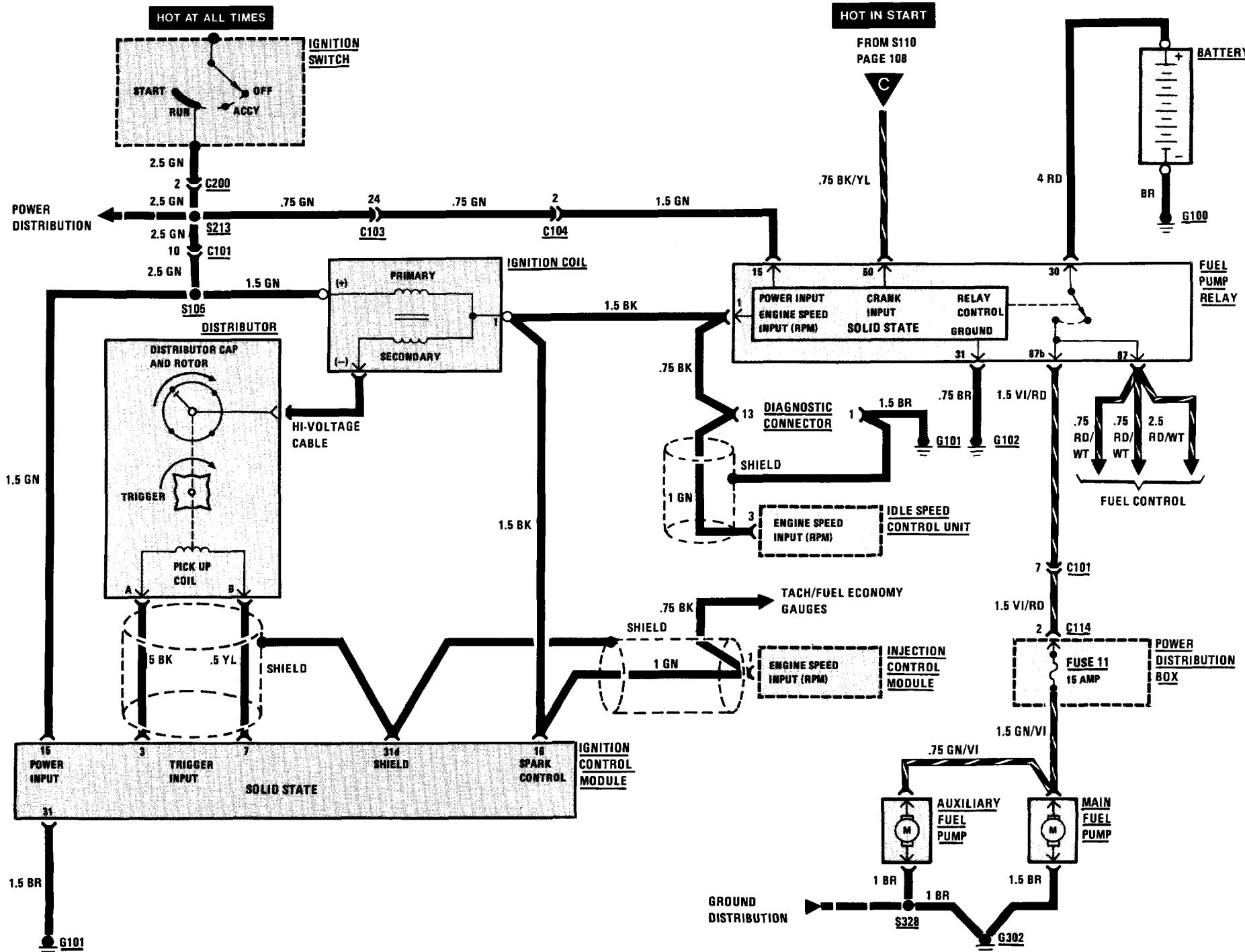


108 START

(For Component Locations See Page 201)

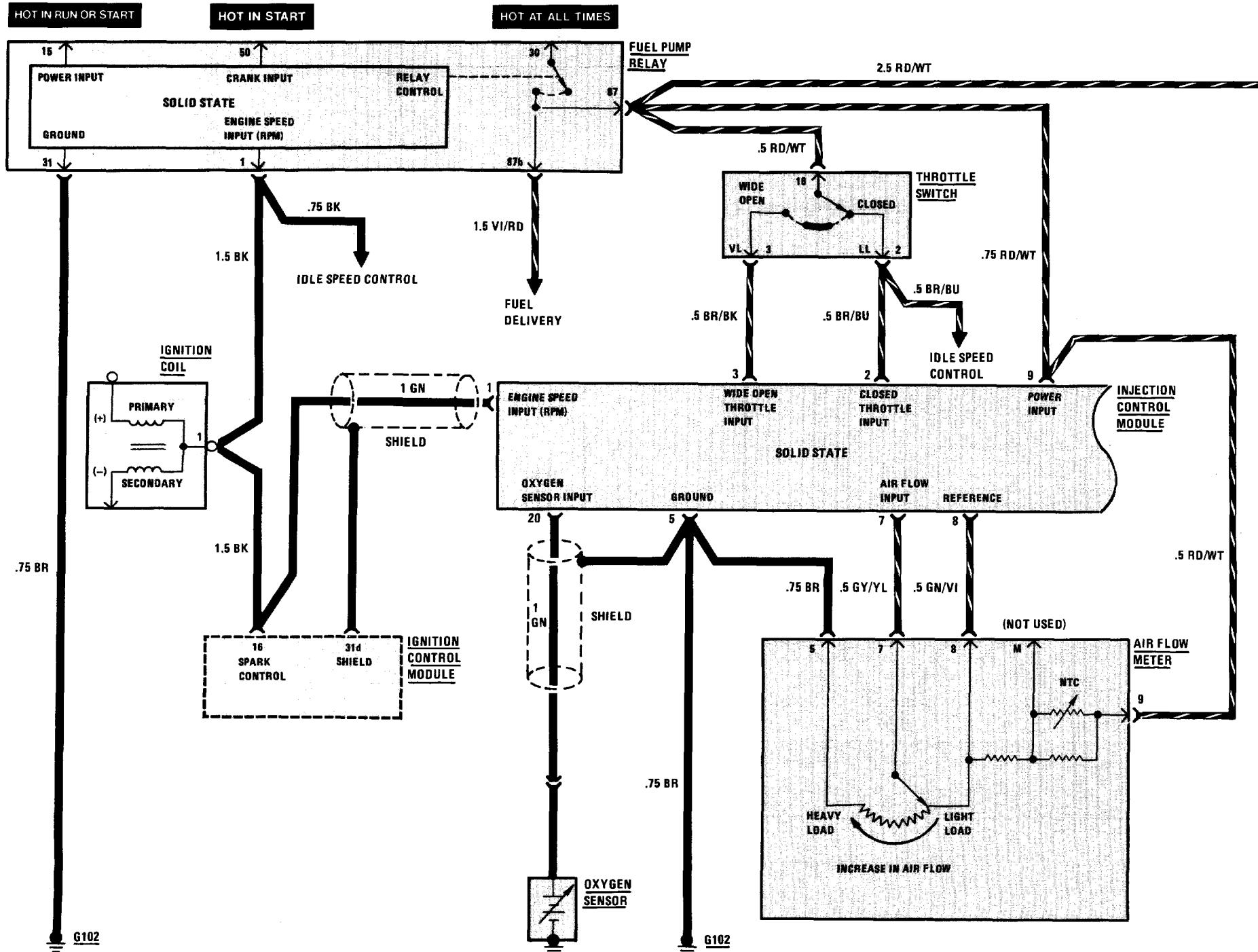


(For Component Locations See Page 201)

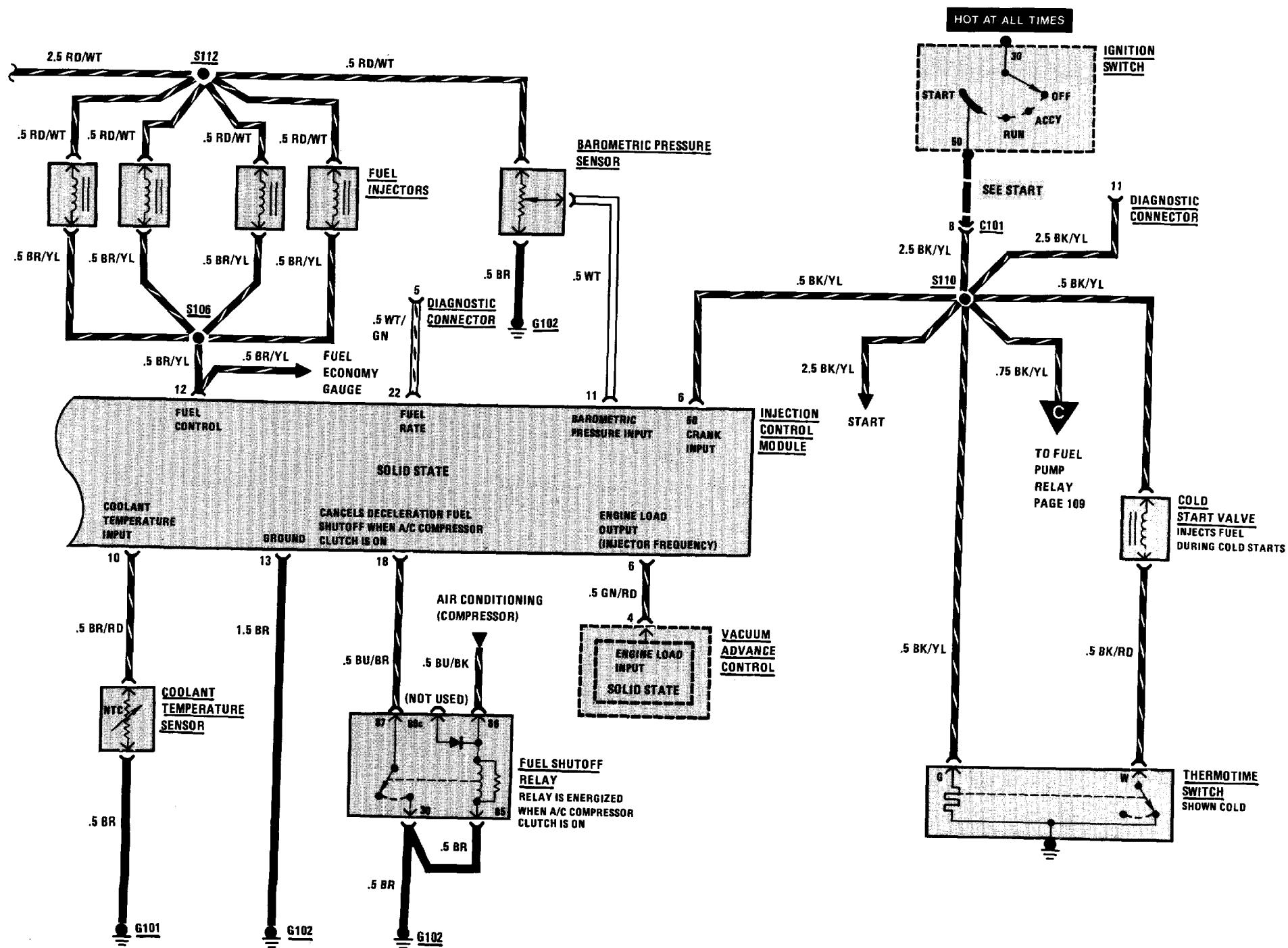


110 FUEL CONTROL

(For Component Locations See Page 202)

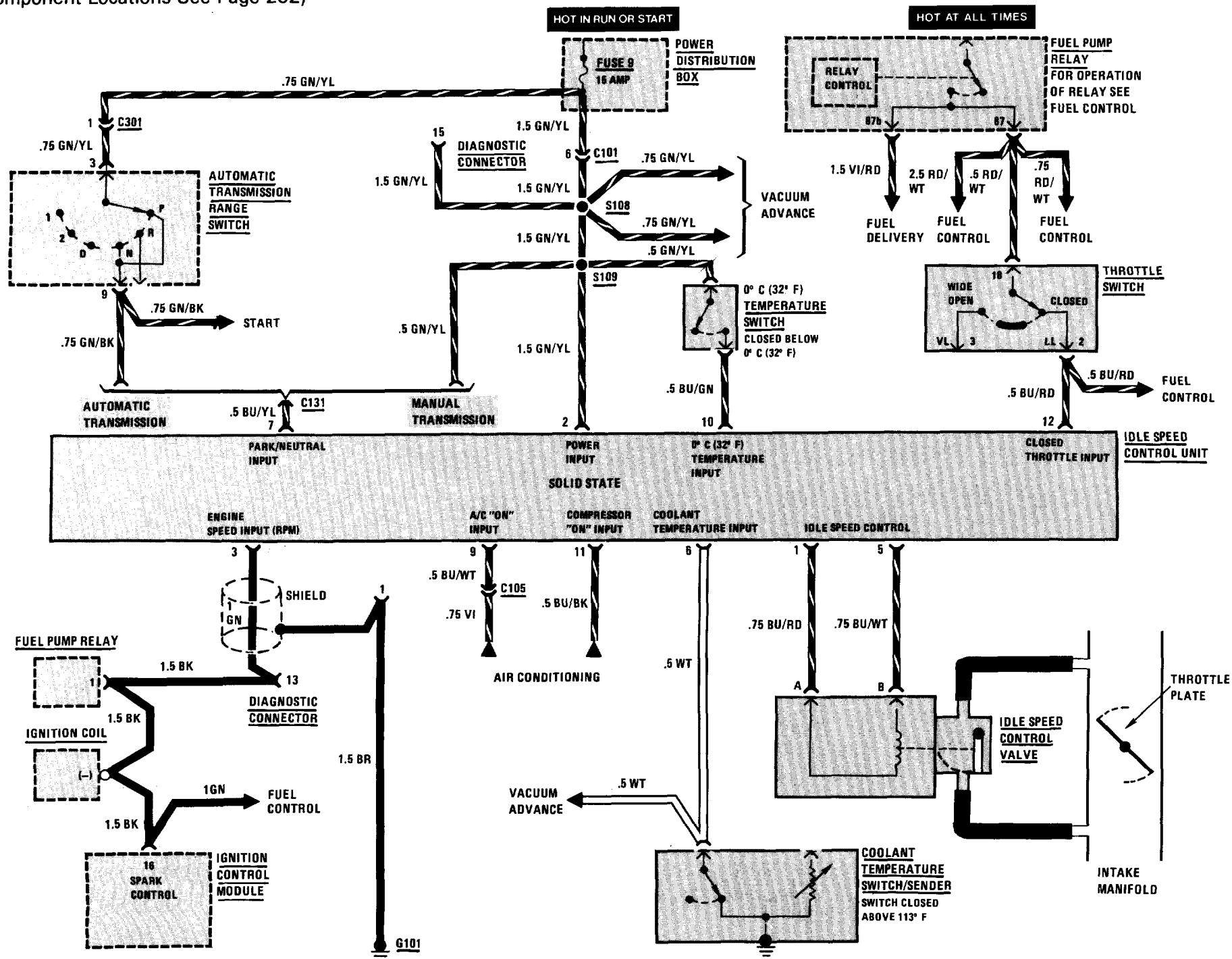


(For Component Locations See Page 202)

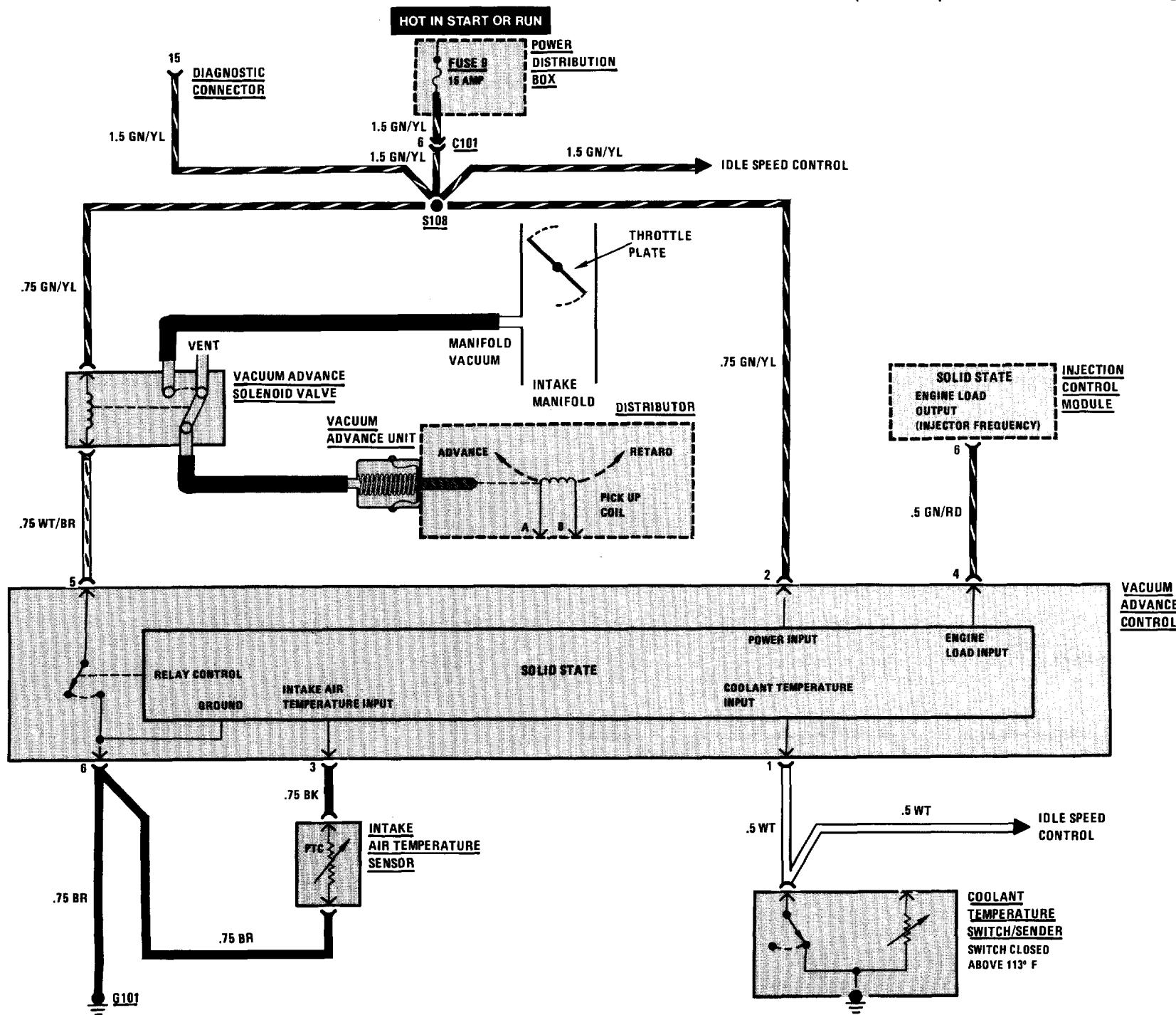


112 IDLE SPEED CONTROL

(For Component Locations See Page 202)

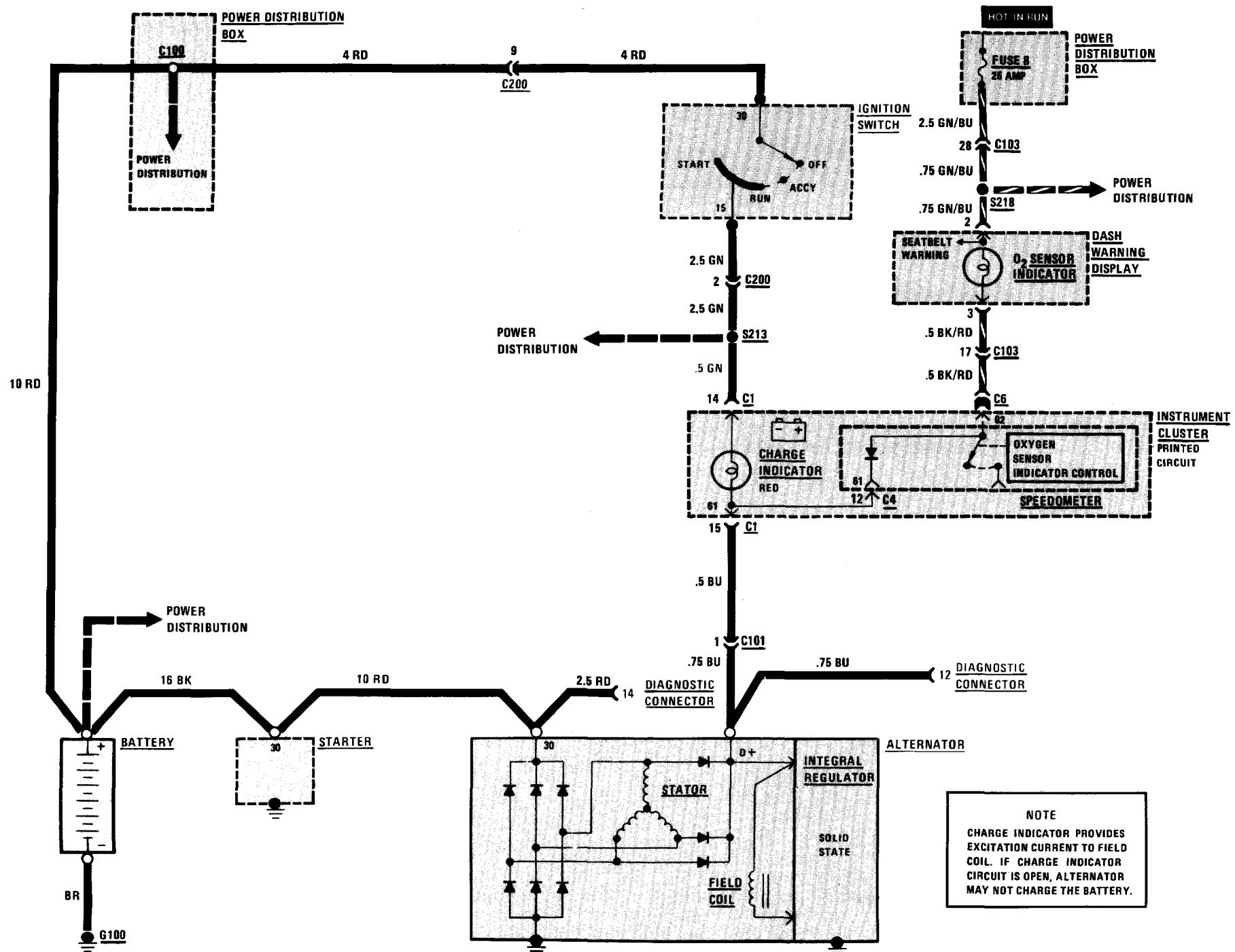


(For Component Locations See Page 203)

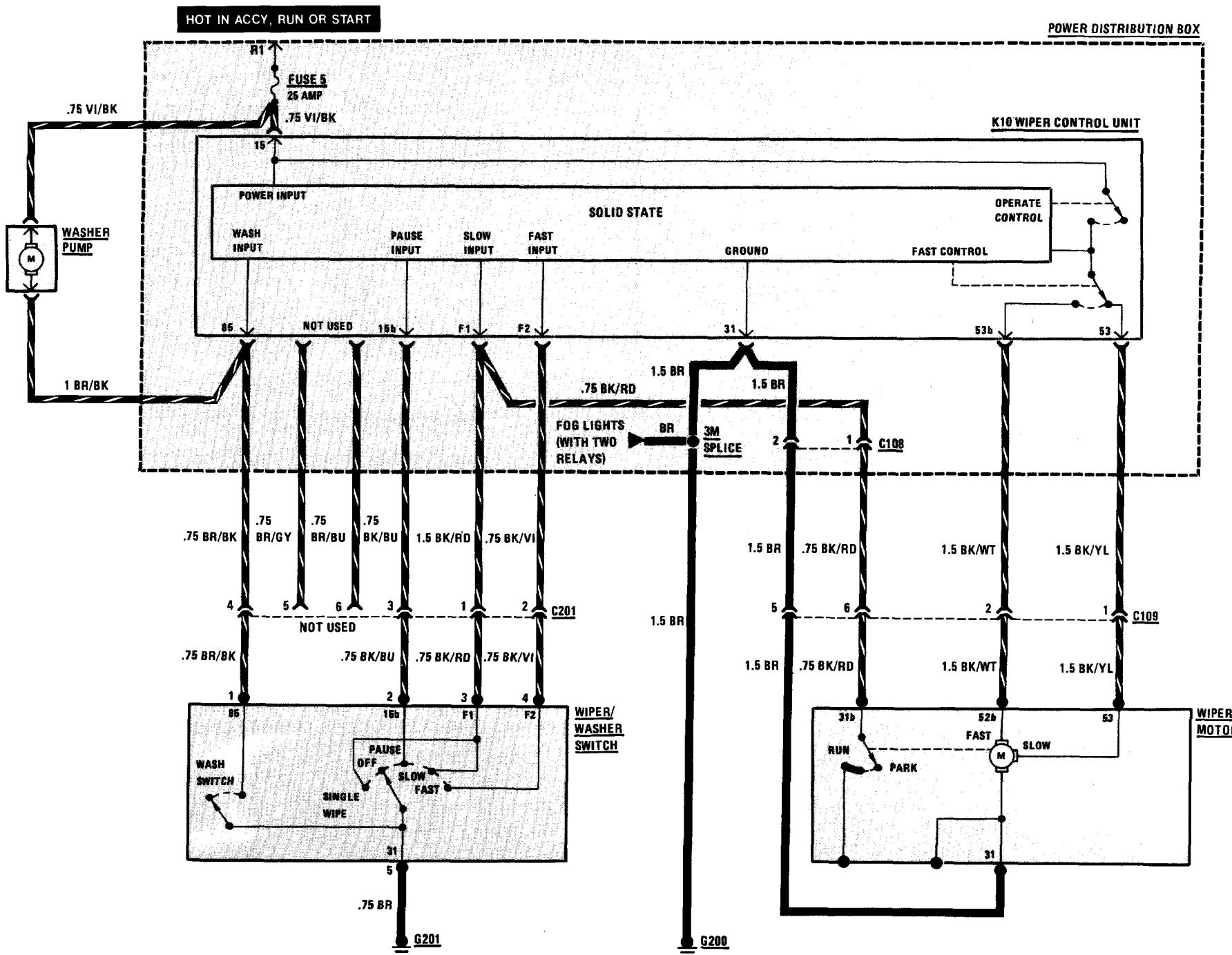


114 CHARGING SYSTEM

(For Component Locations See Page 203)

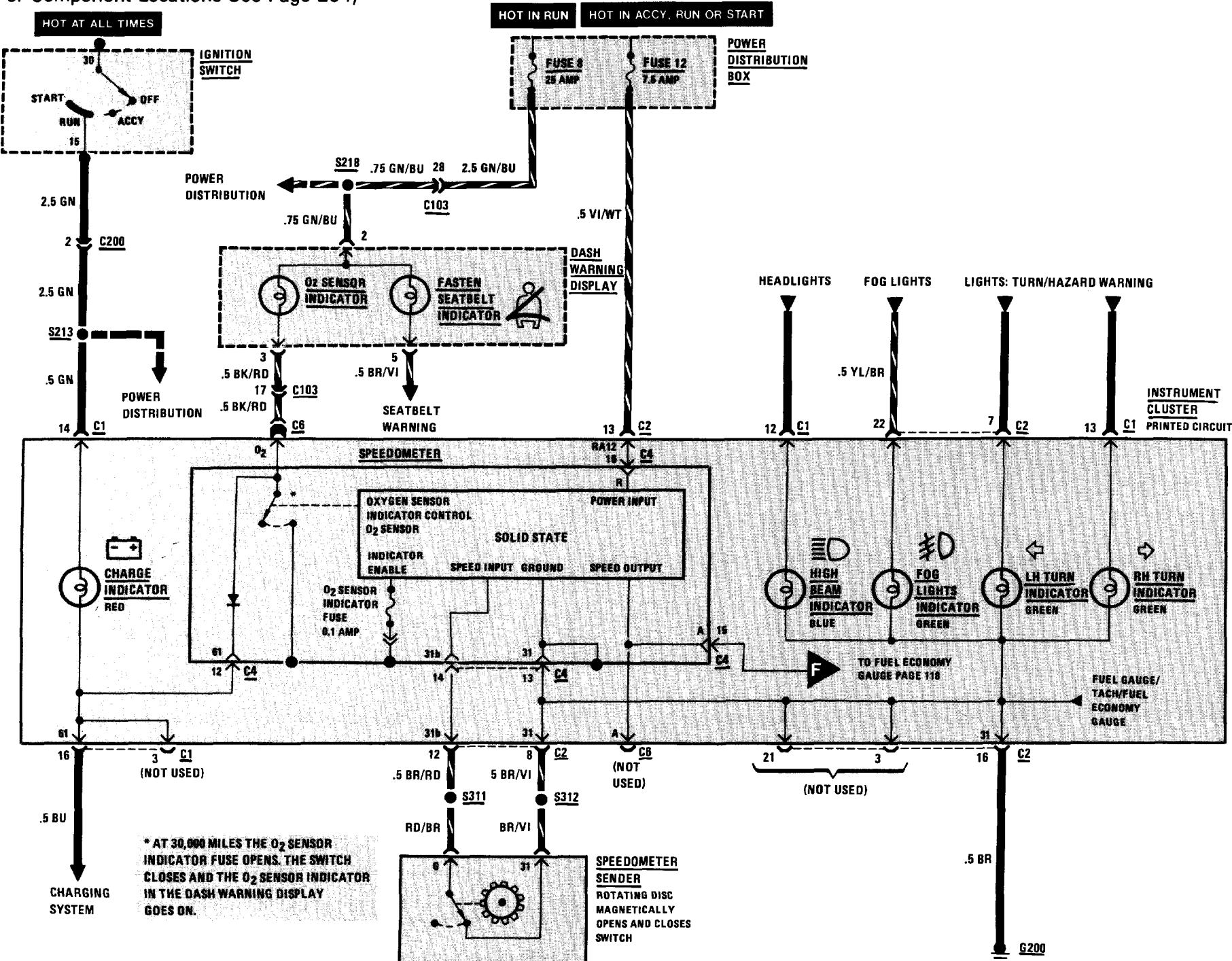


(For Component Locations See Page 203)

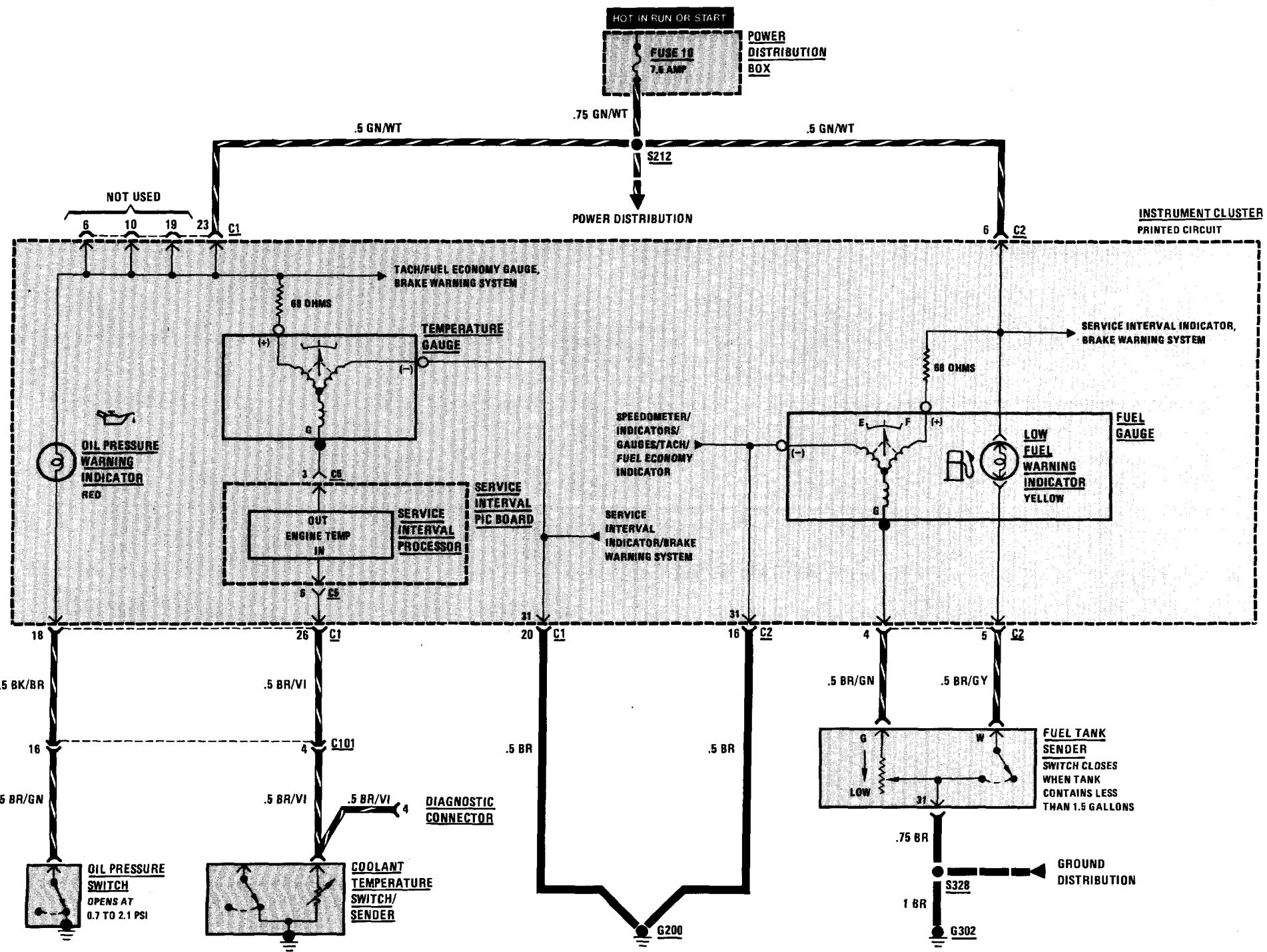


116 SPEEDOMETER/INDICATORS

(For Component Locations See Page 204)

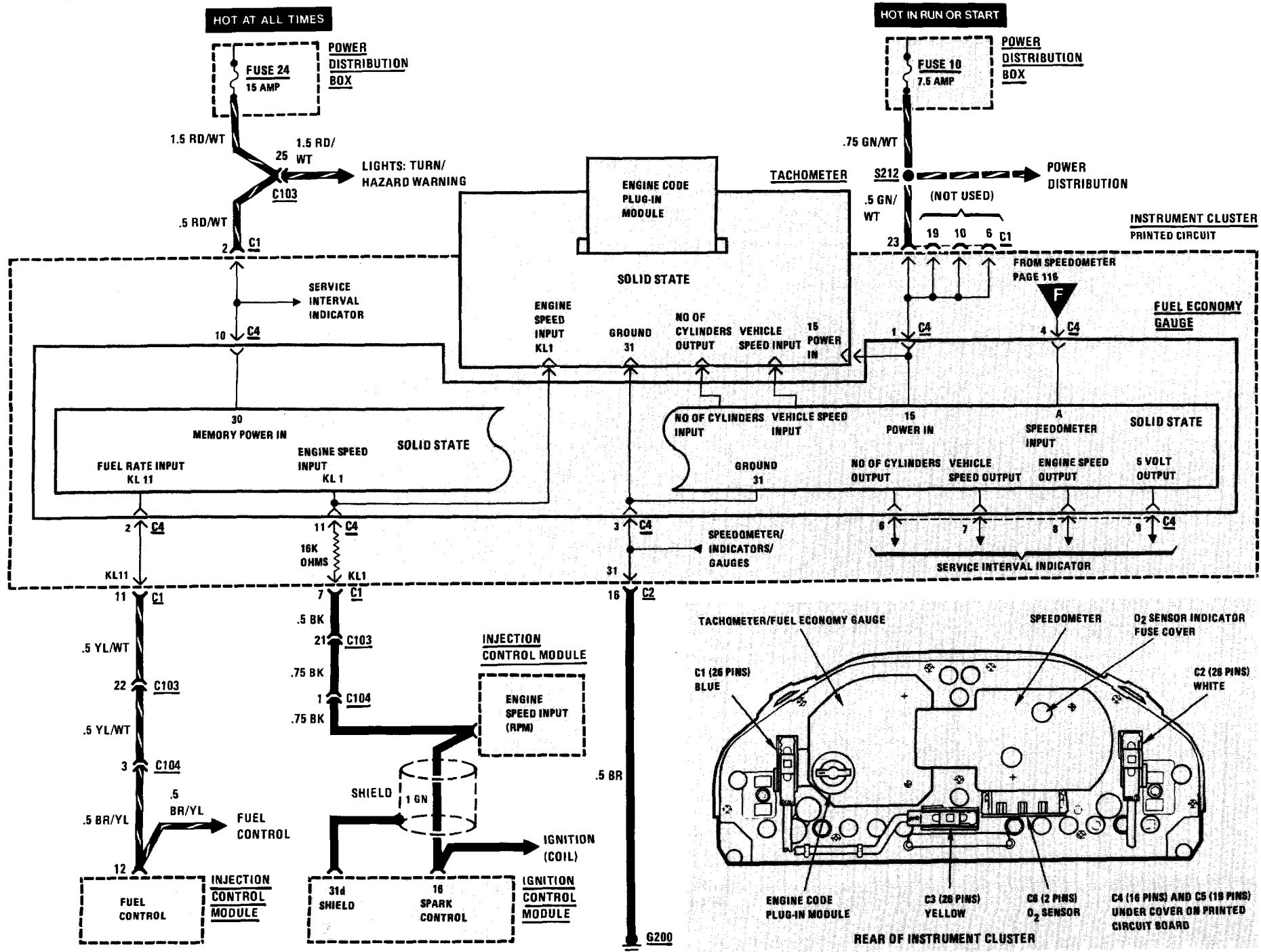


(For Component Locations See Page 204)

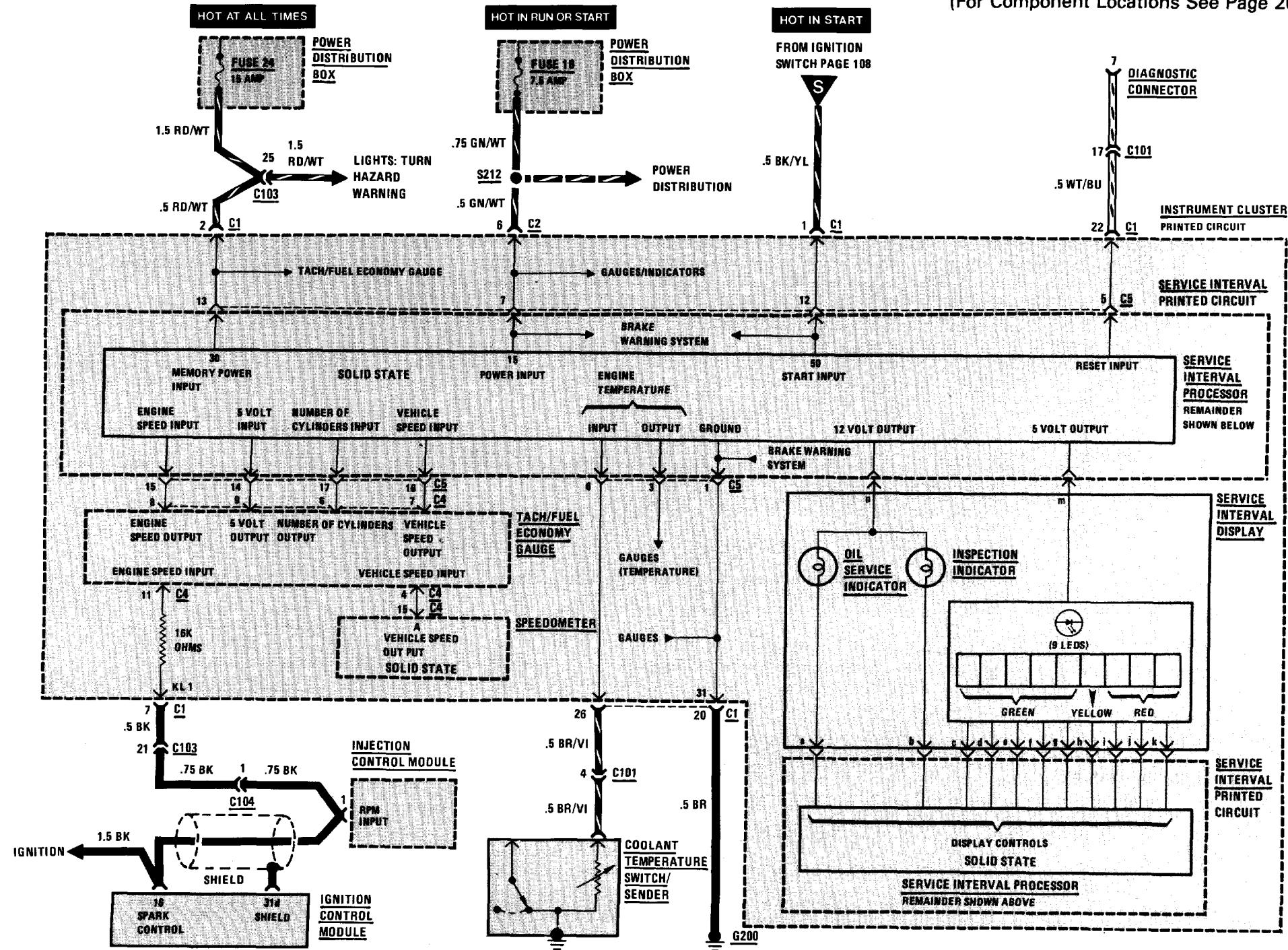


118 TACHOMETER/FUEL ECONOMY GAUGE

(For Component Locations See Page 204)

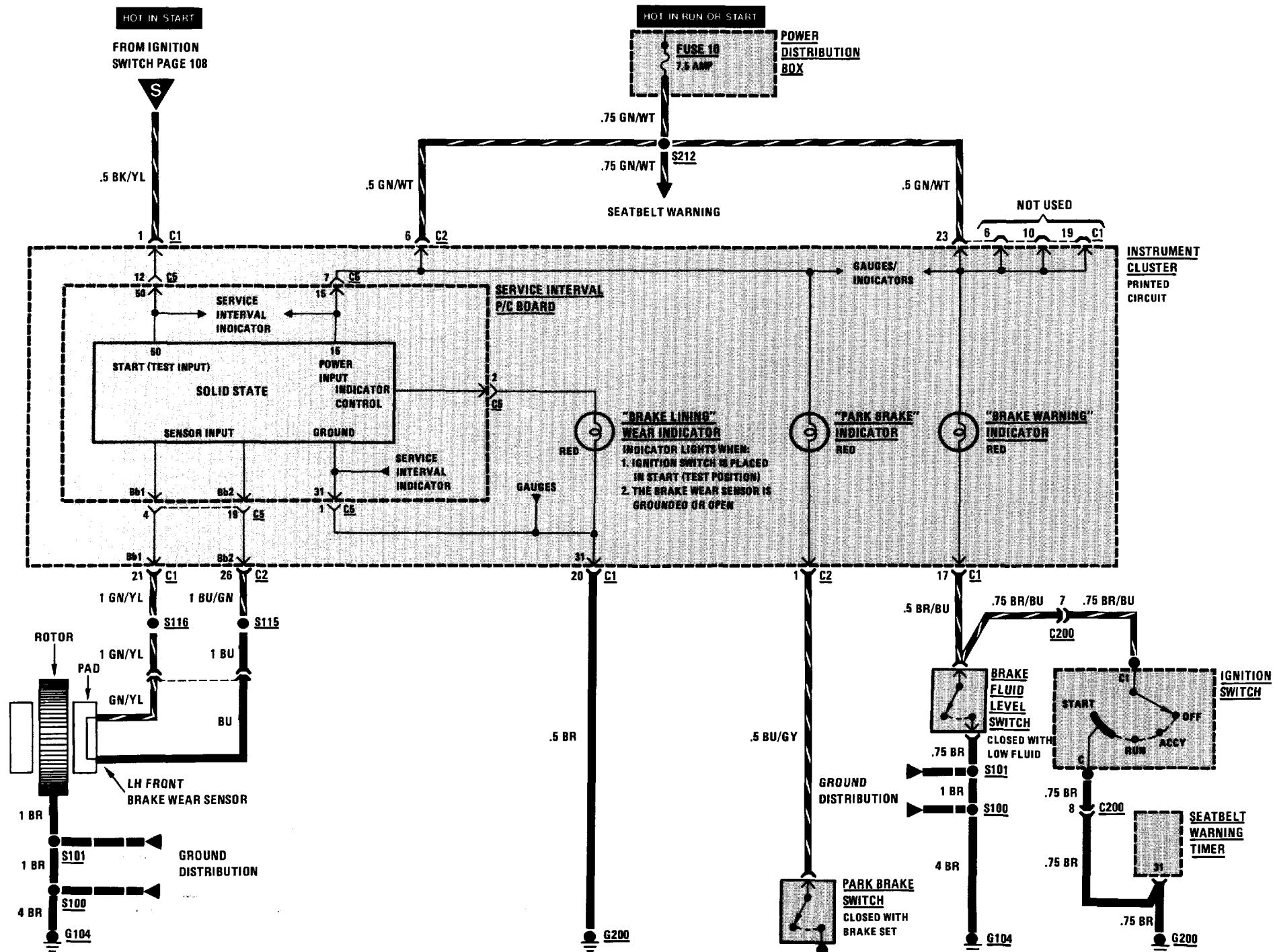


(For Component Locations See Page 204)



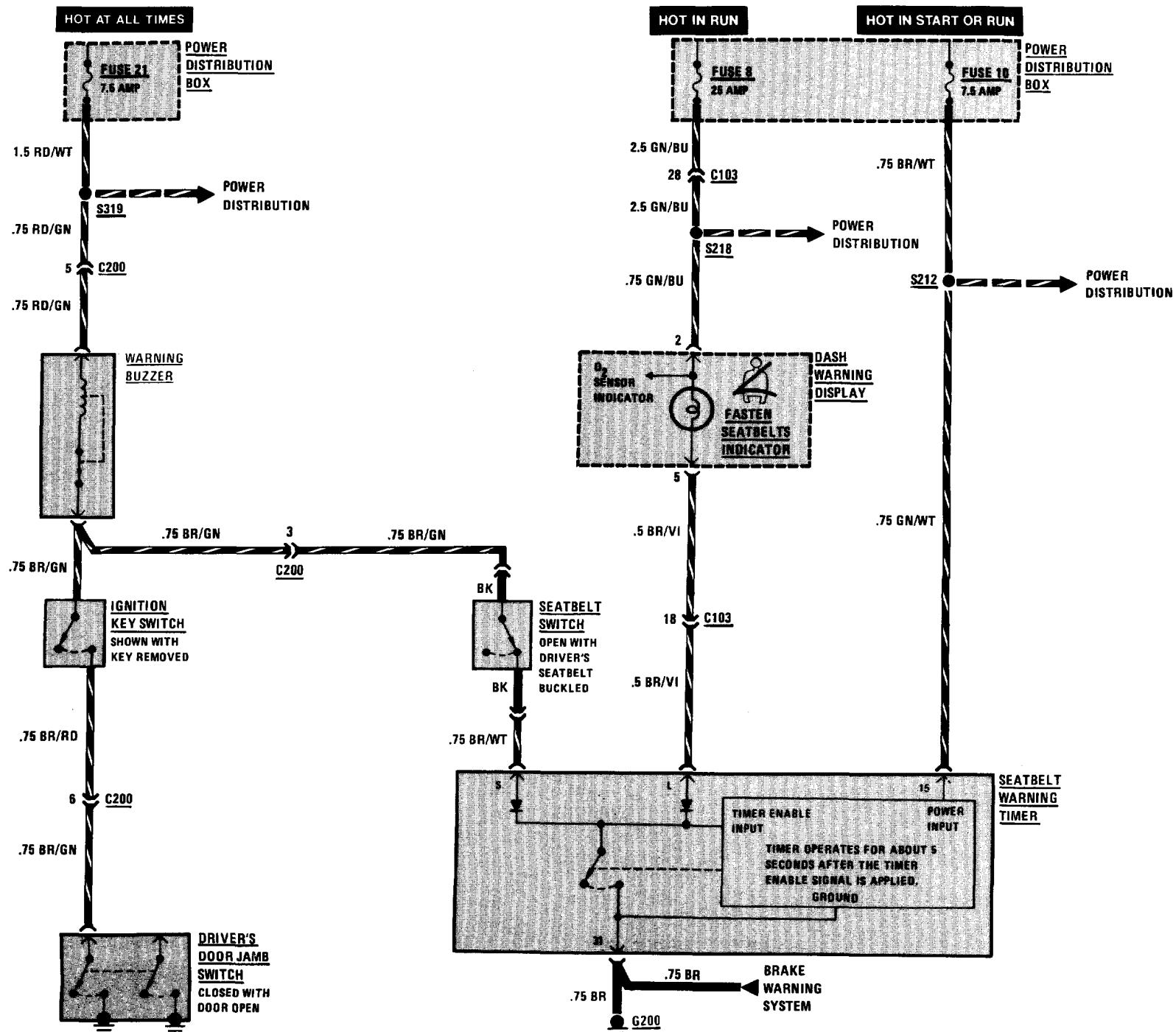
120 BRAKE WARNING SYSTEM

(For Component Locations See Page 205)



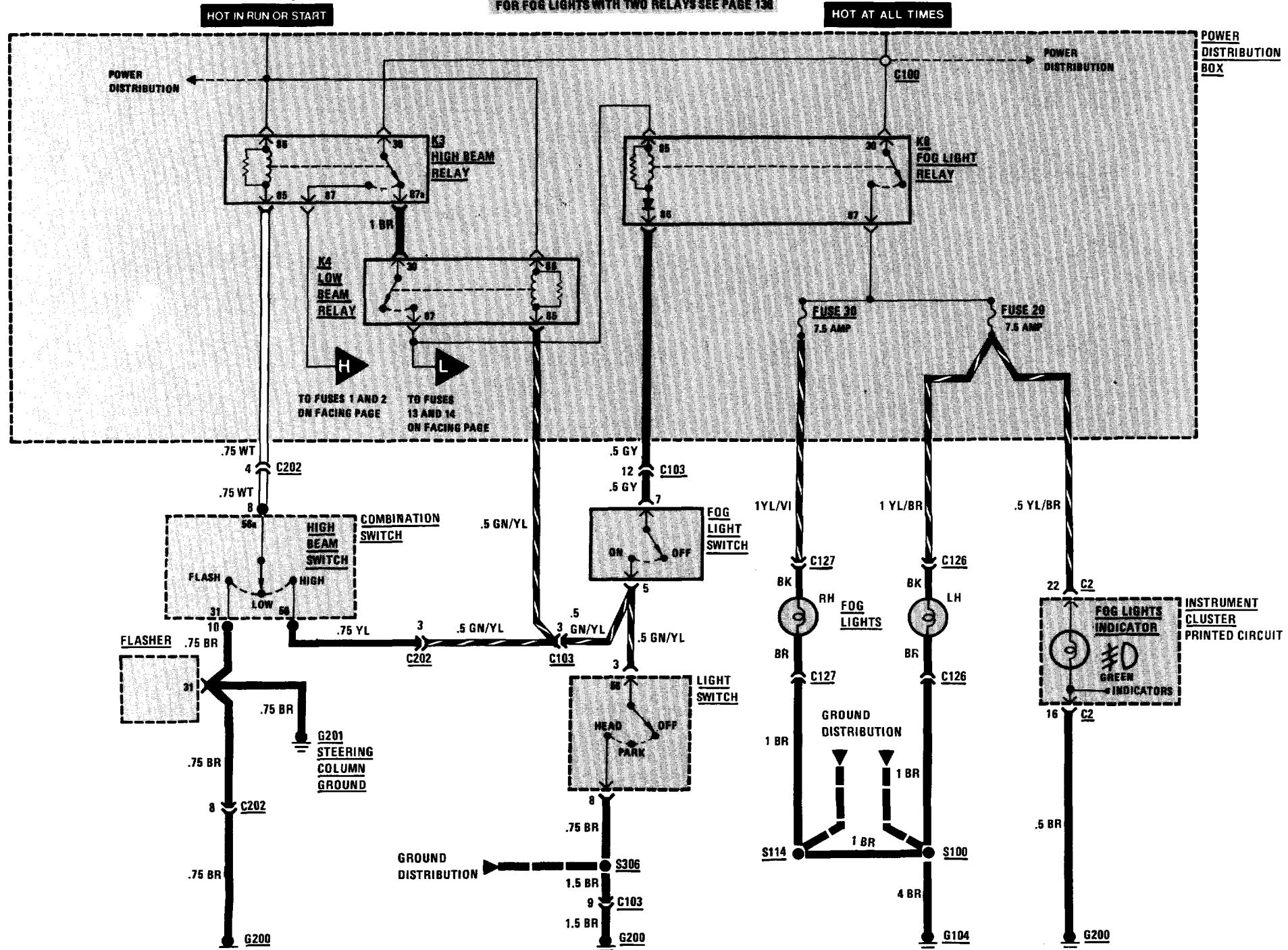
IGNITION KEY WARNING/SEATBELT WARNING 121

(For Component Locations See Page 205)

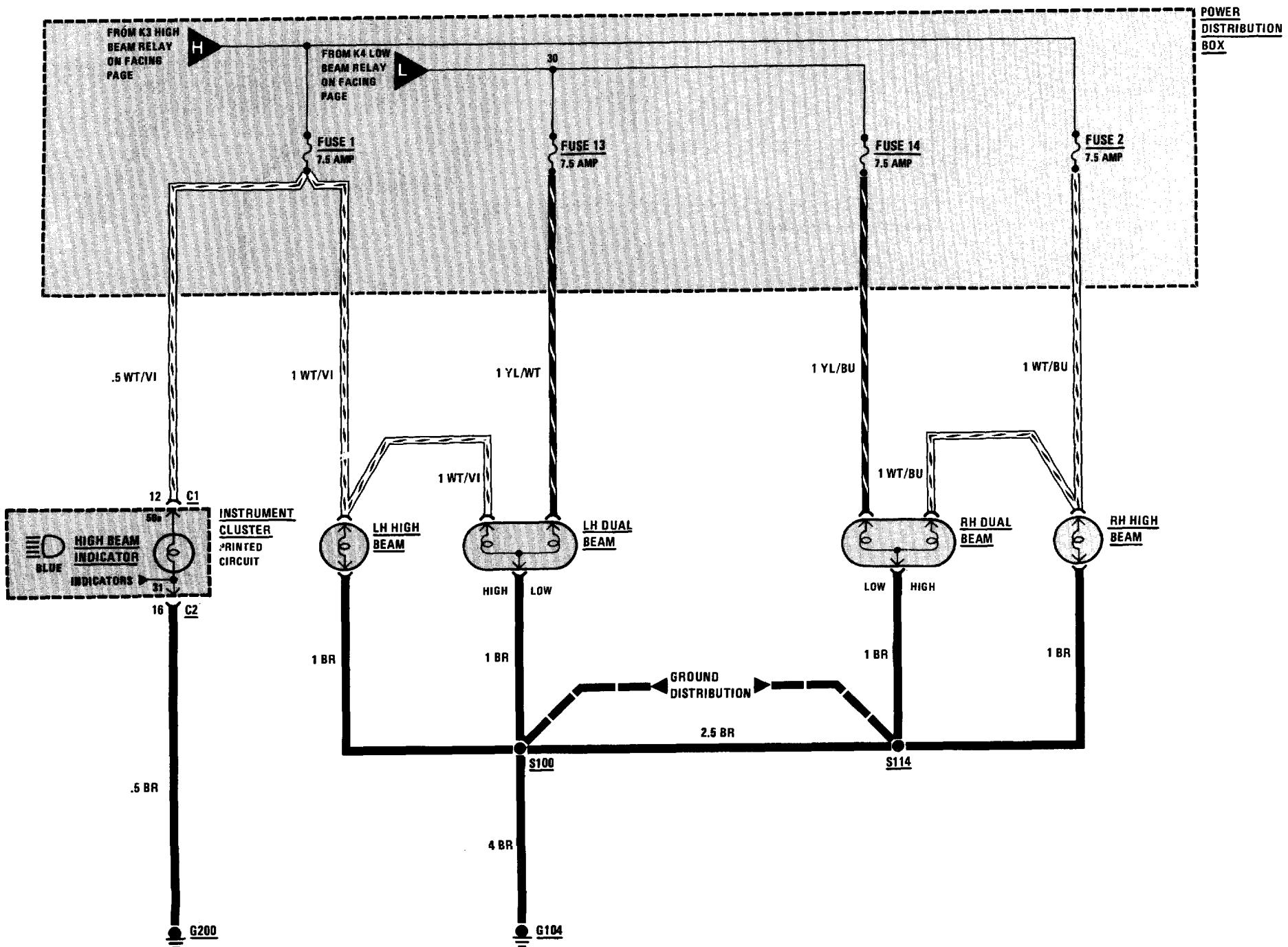


122 HEADLIGHTS (CONTROL)/FOG LIGHTS (WITH ONE RELAY)

(For Component Locations See Page 205)

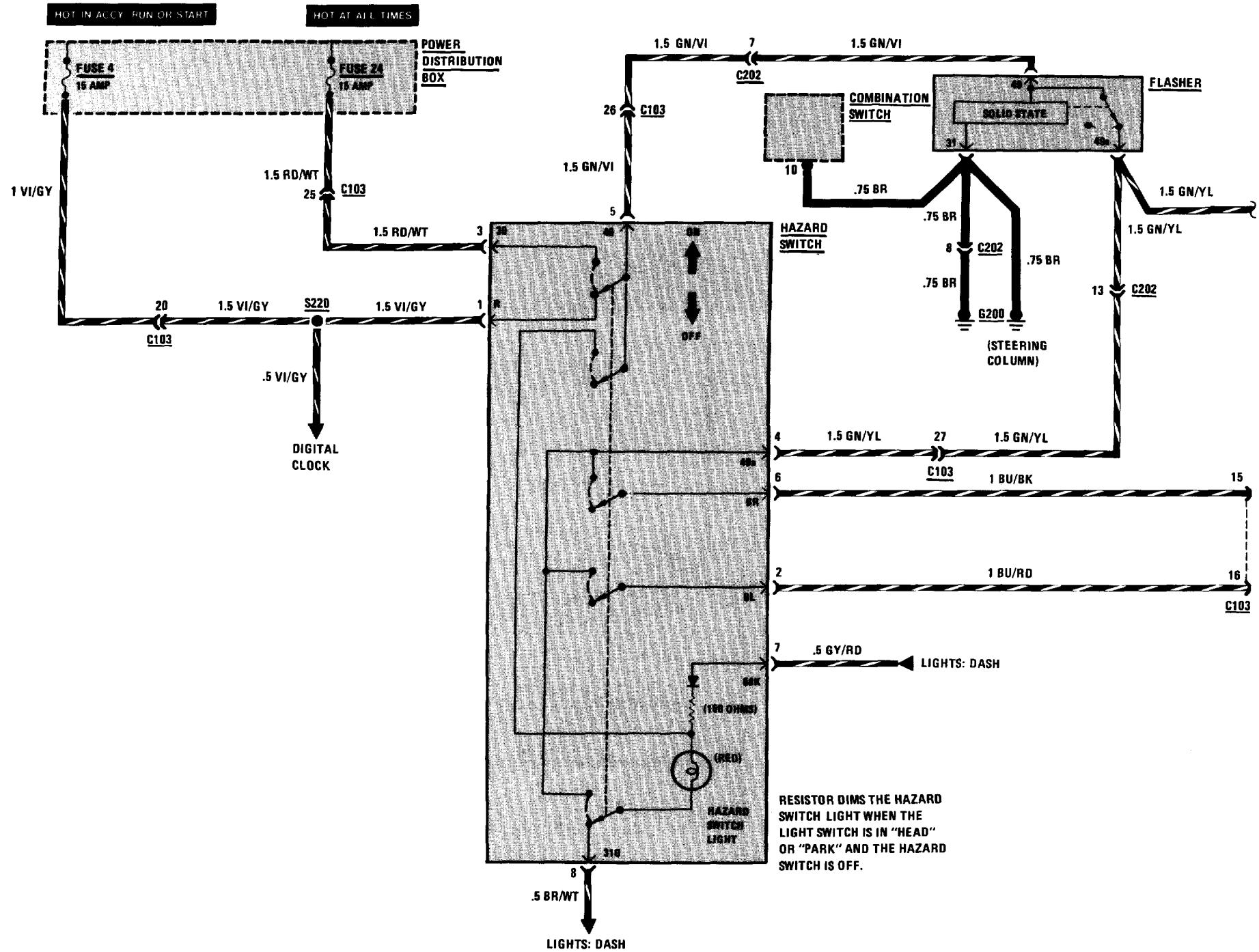


(For Component Locations See Page 205)

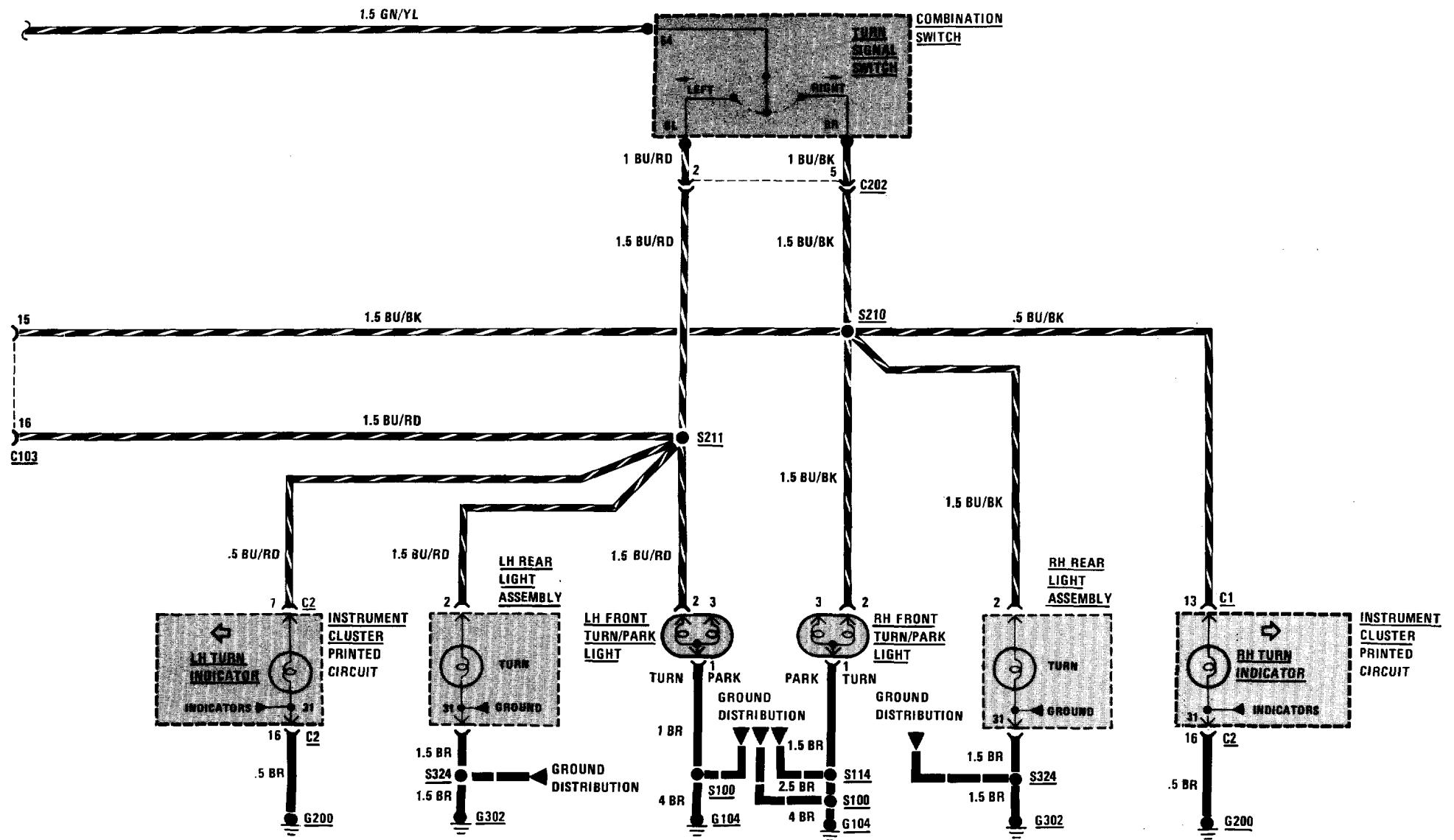


124 LIGHTS: TURN/HAZARD WARNING

(For Component Locations See Page 206)

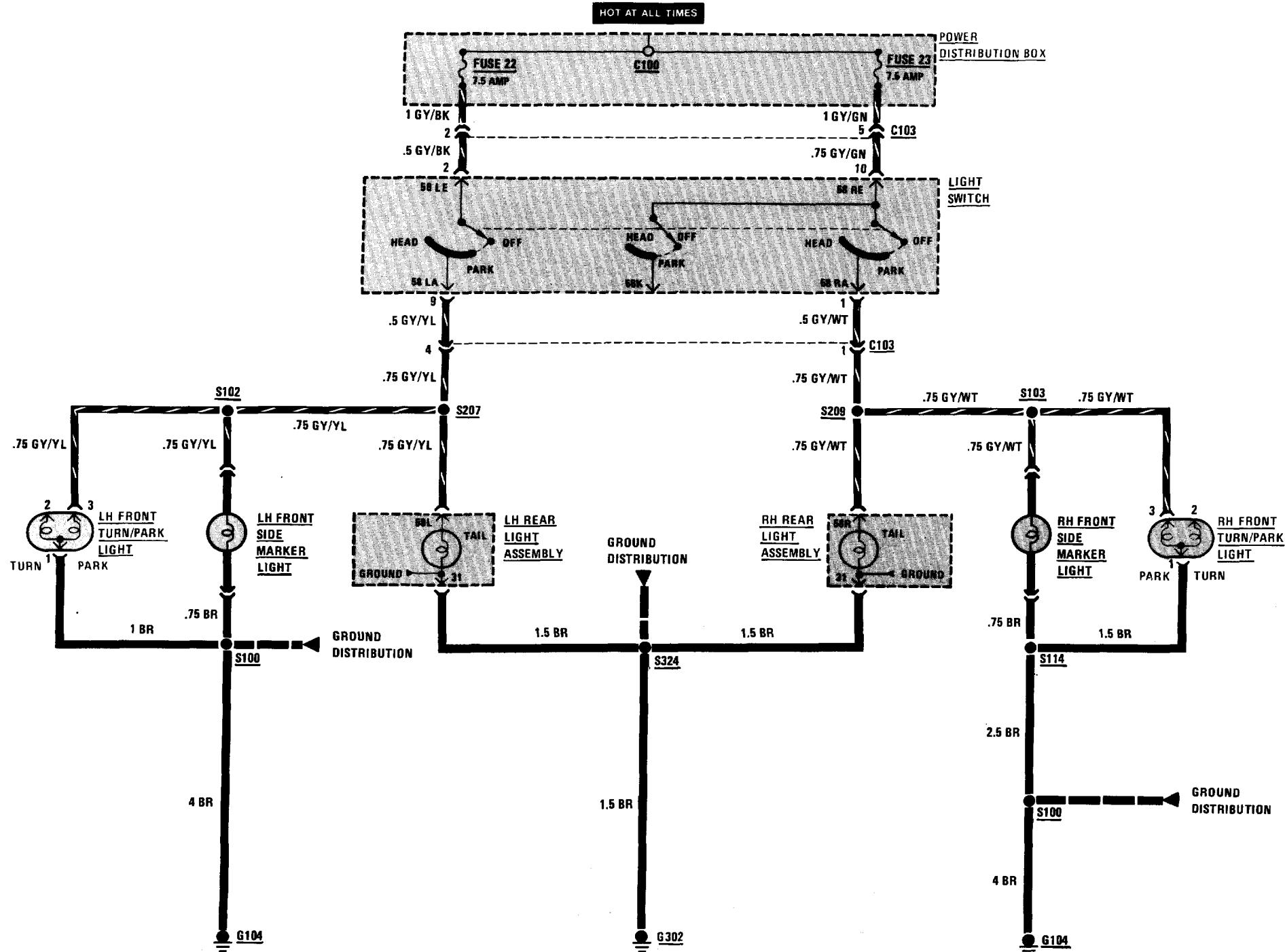


(For Component Locations See Page 206)

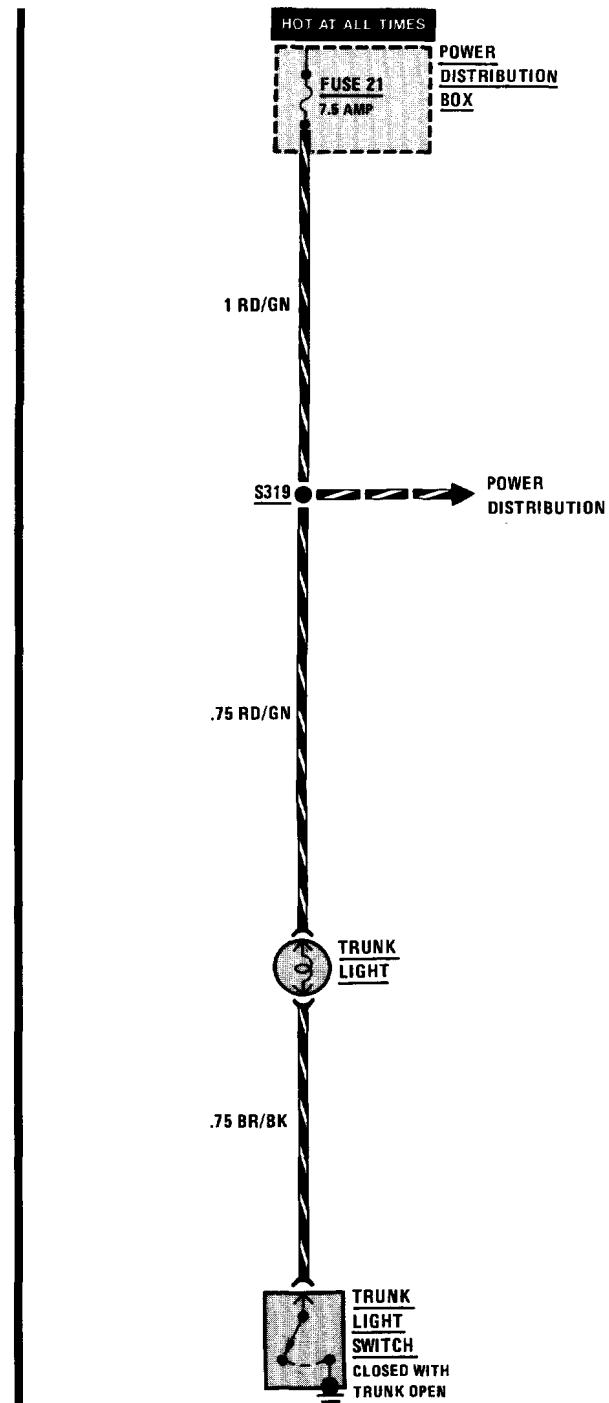
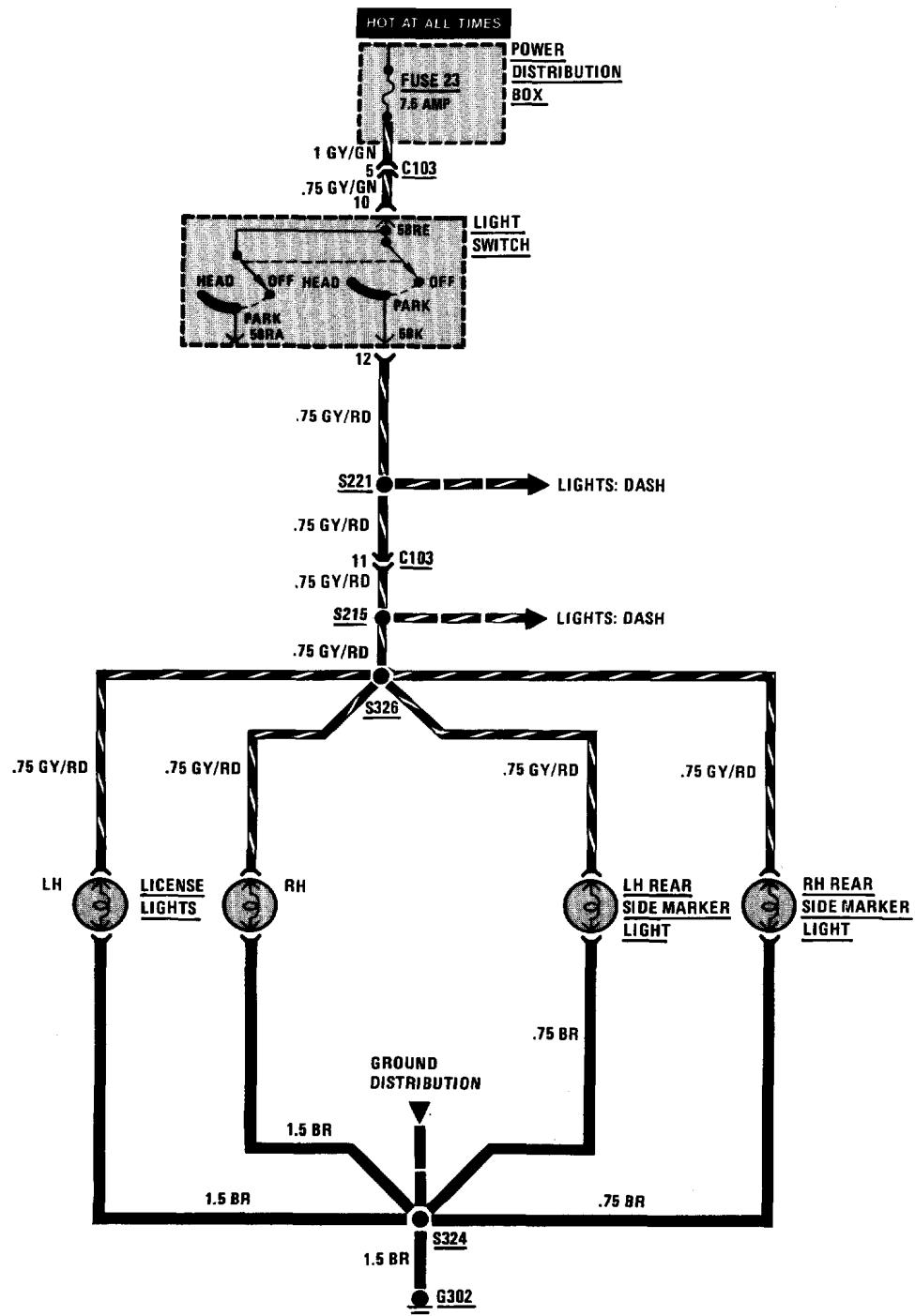


126 LIGHTS: FRONT PARK/FRONT SIDE MARKER/TAIL

(For Component Locations See Page 206)

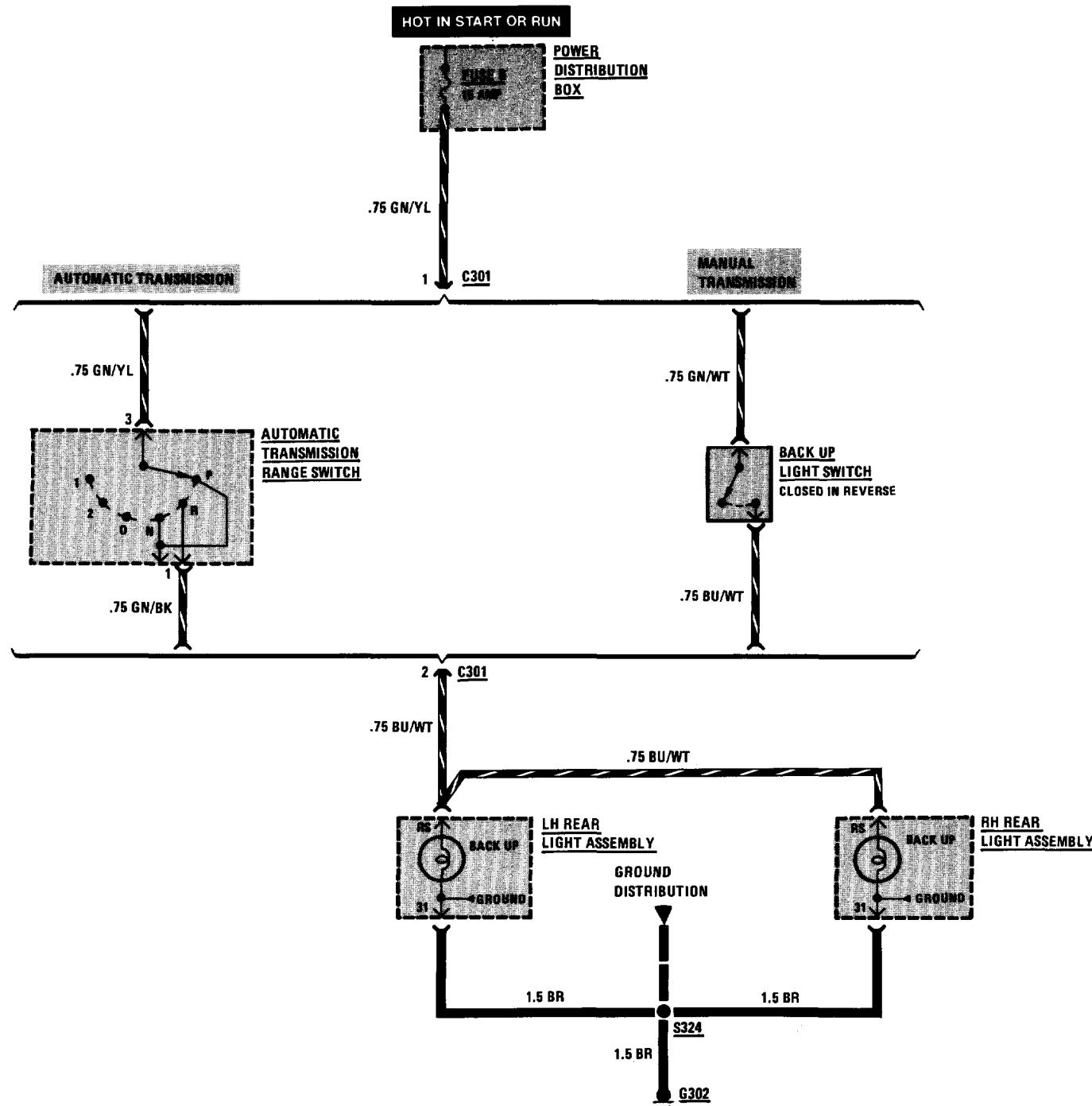


(For Component Locations See Page 206)

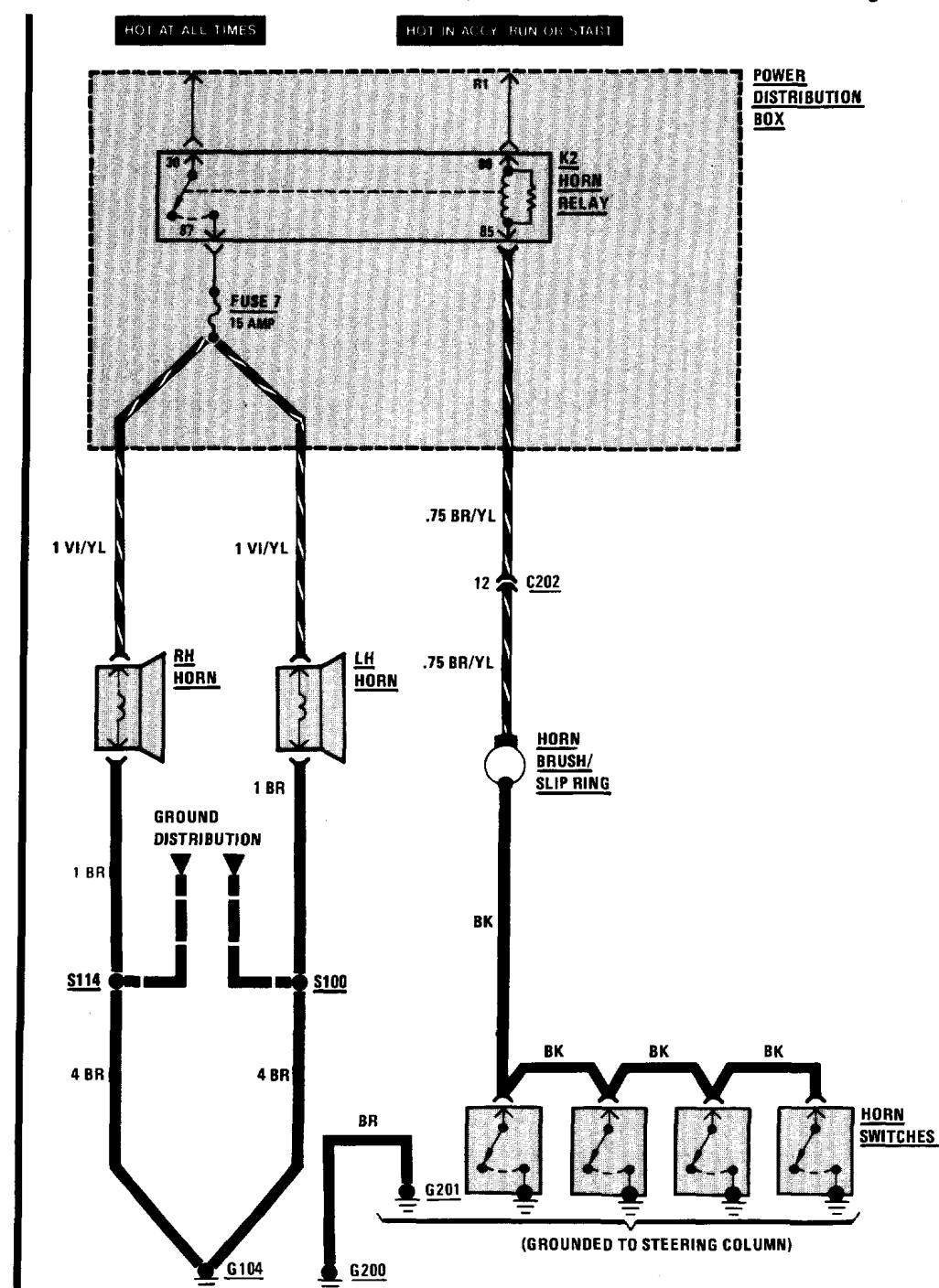
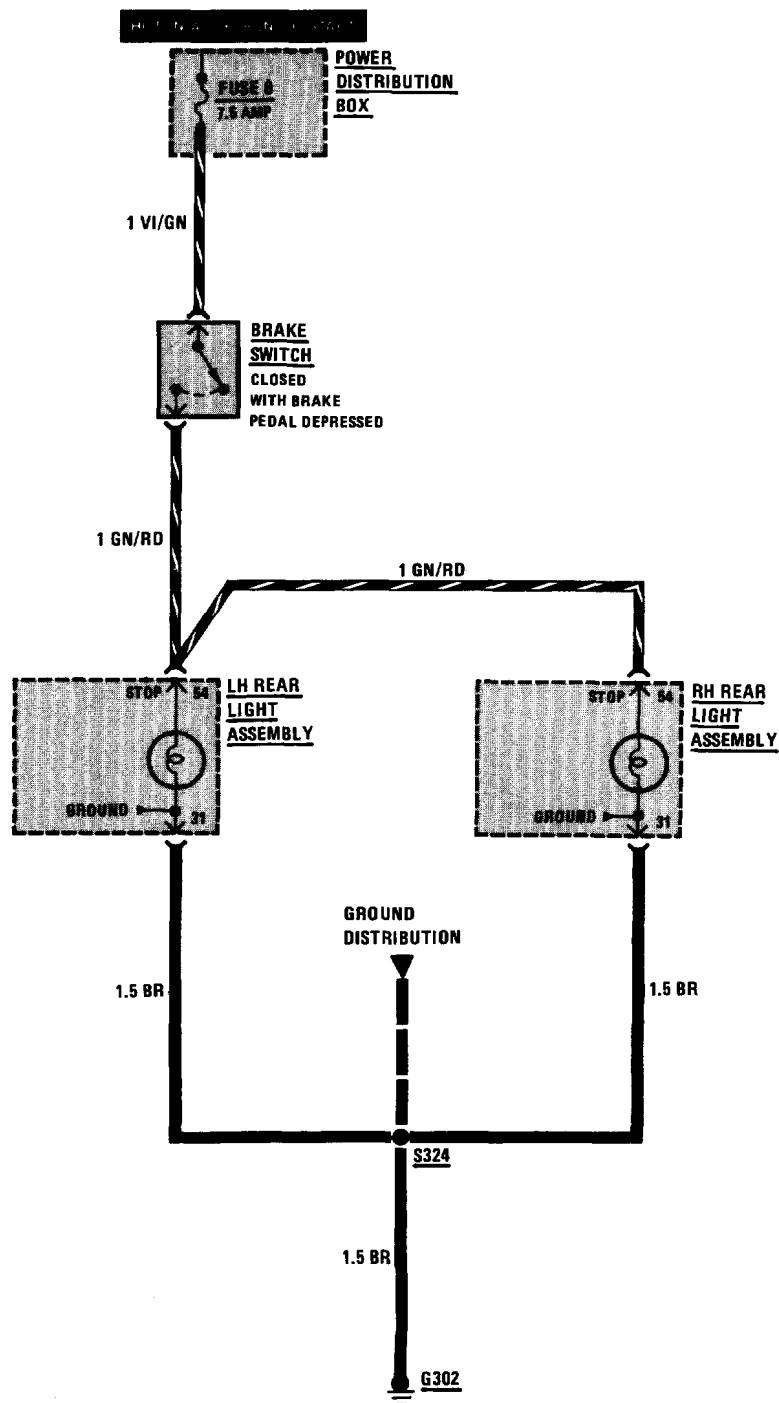


128 BACK UP LIGHTS

(For Component Locations See Page 206)

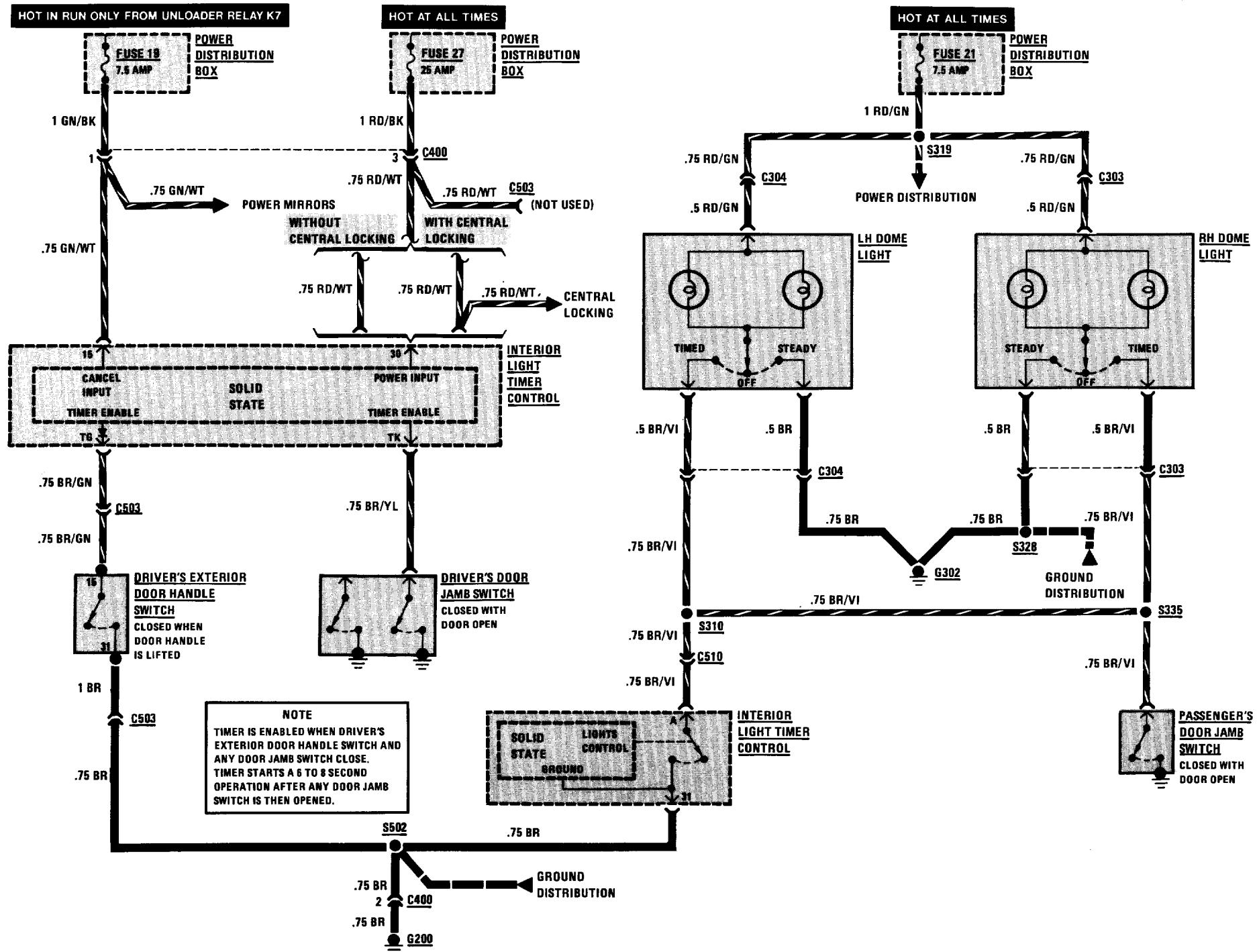


(For Component Locations See Page 206)



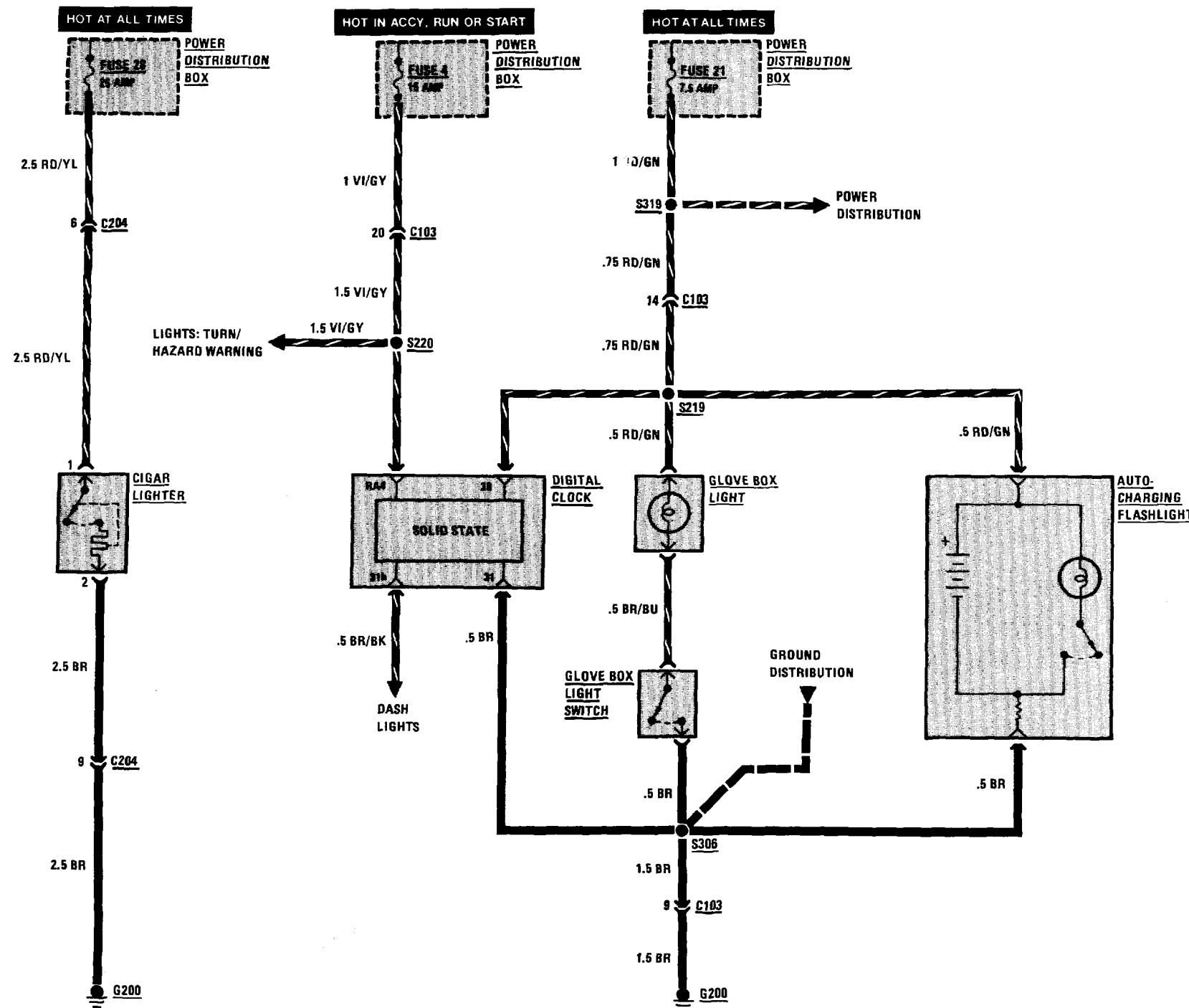
130 INTERIOR LIGHTS

(For Component Locations See Page 207)



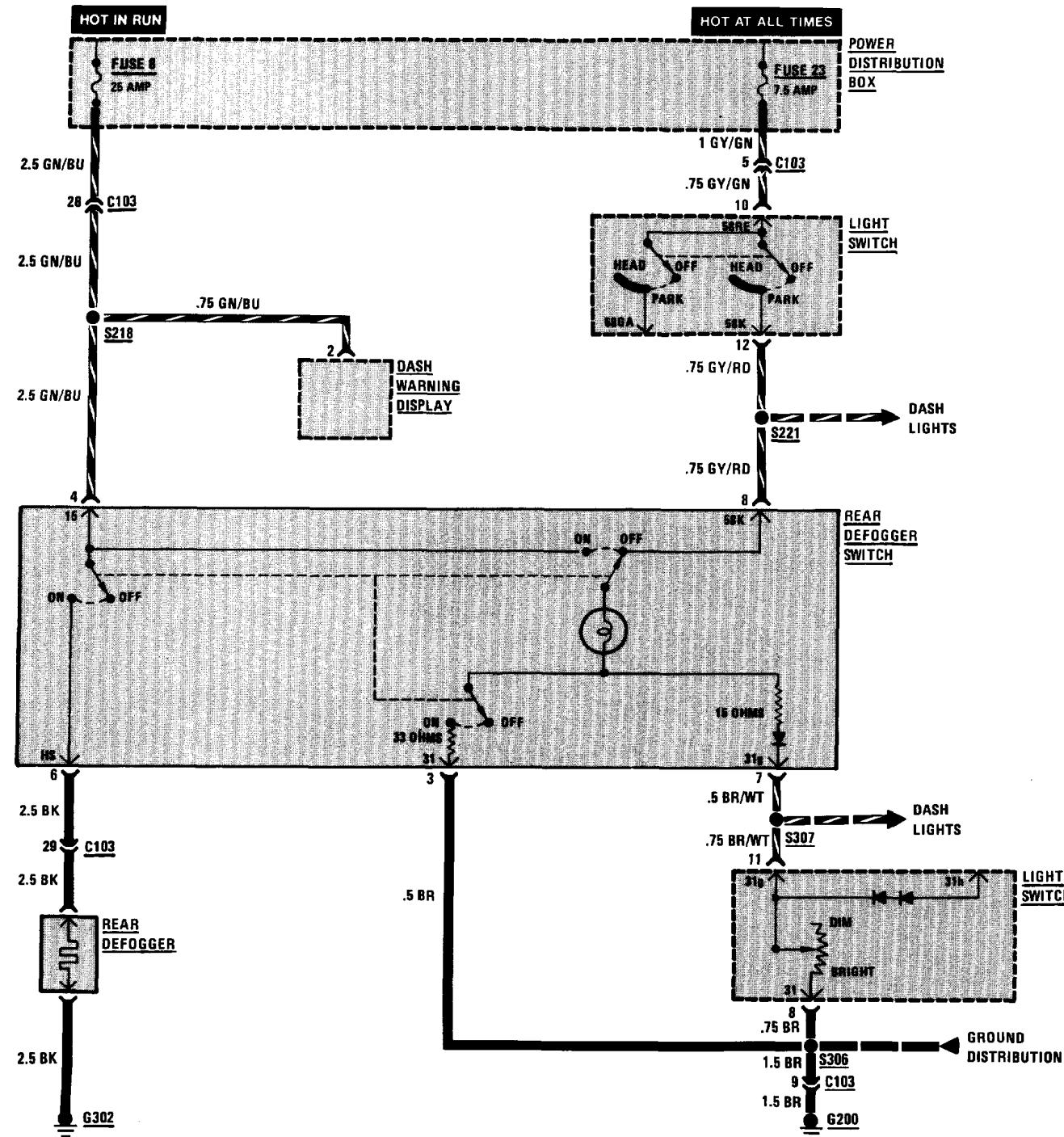
CIGAR LIGHTER/DIGITAL CLOCK/GLOVE BOX LIGHT/AUTO-CHARGING FLASHLIGHT 131

(For Component Locations See Page 207)

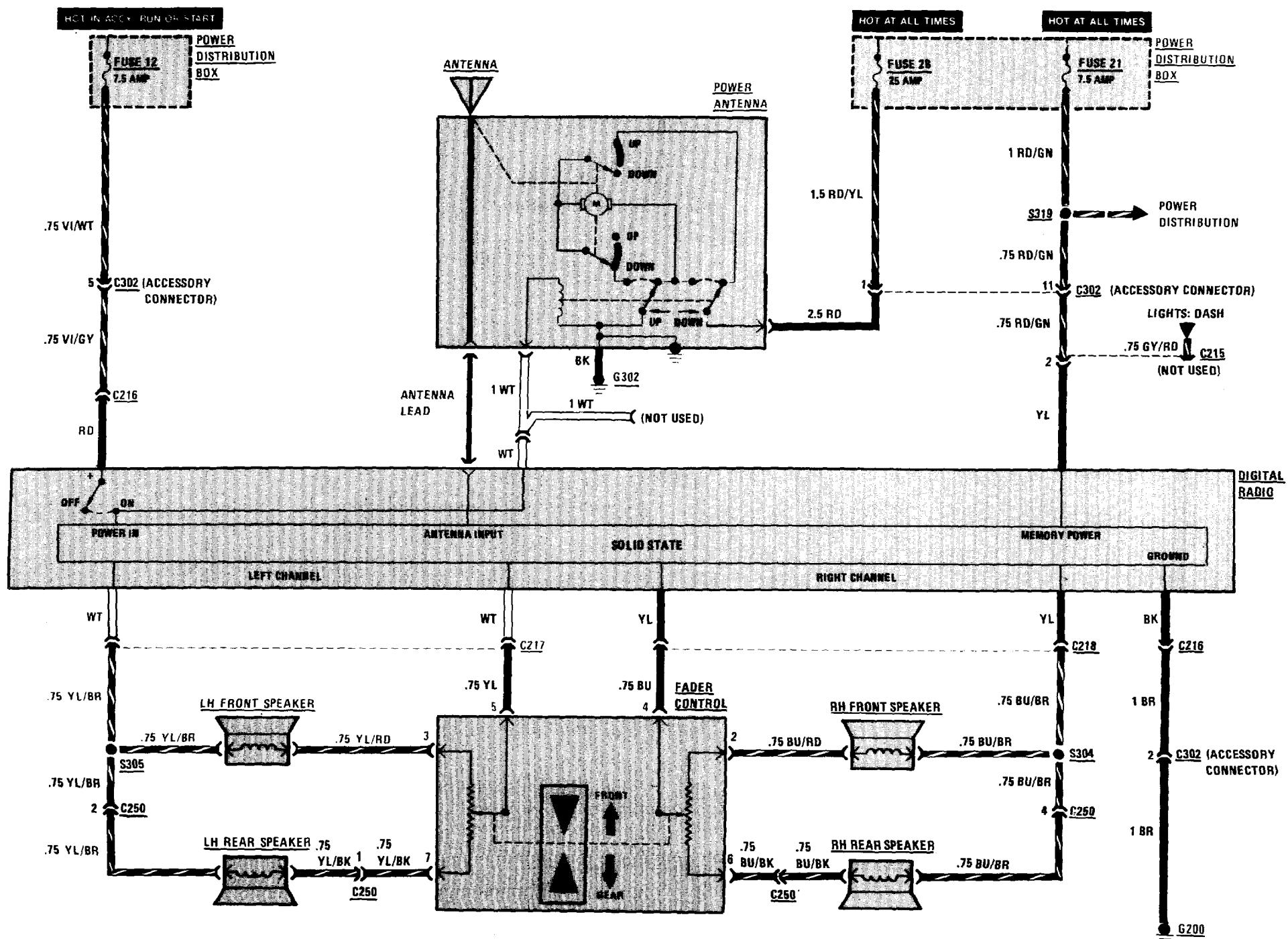


132 REAR DEFOGGER

(For Component Locations See Page 207)

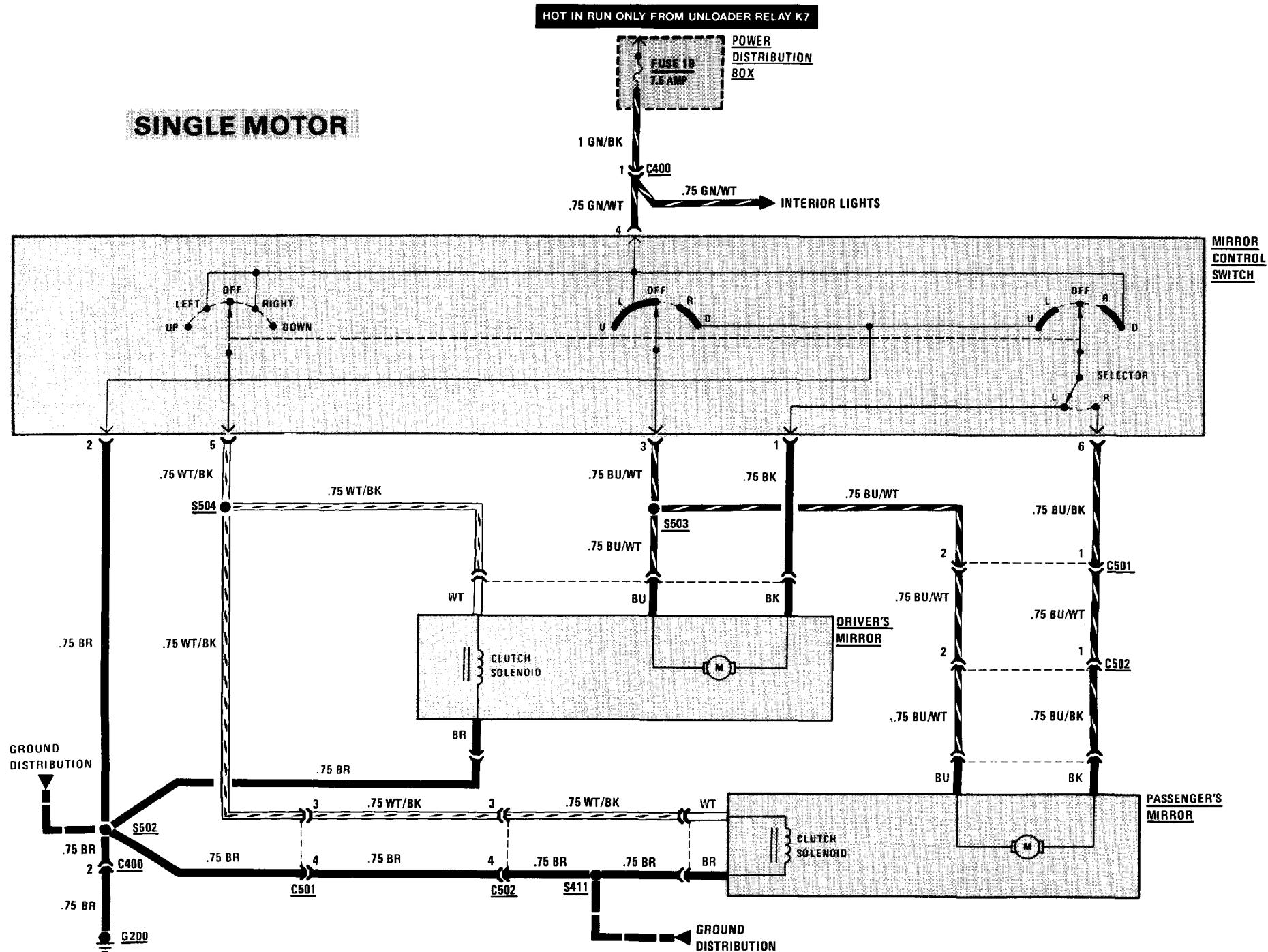


(For Component Locations See Page 207)



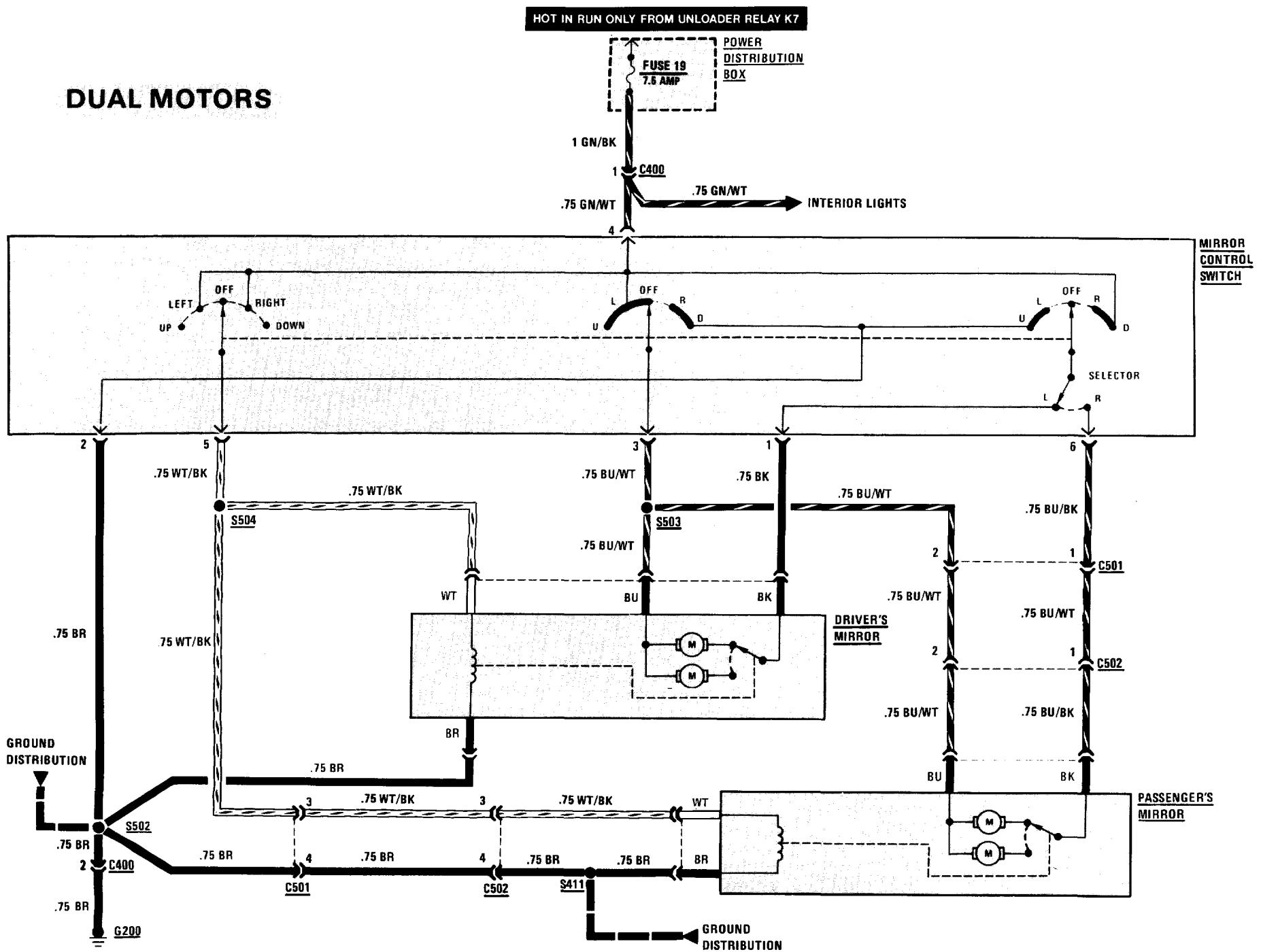
134 POWER MIRRORS

(For Component Locations See Page 208)



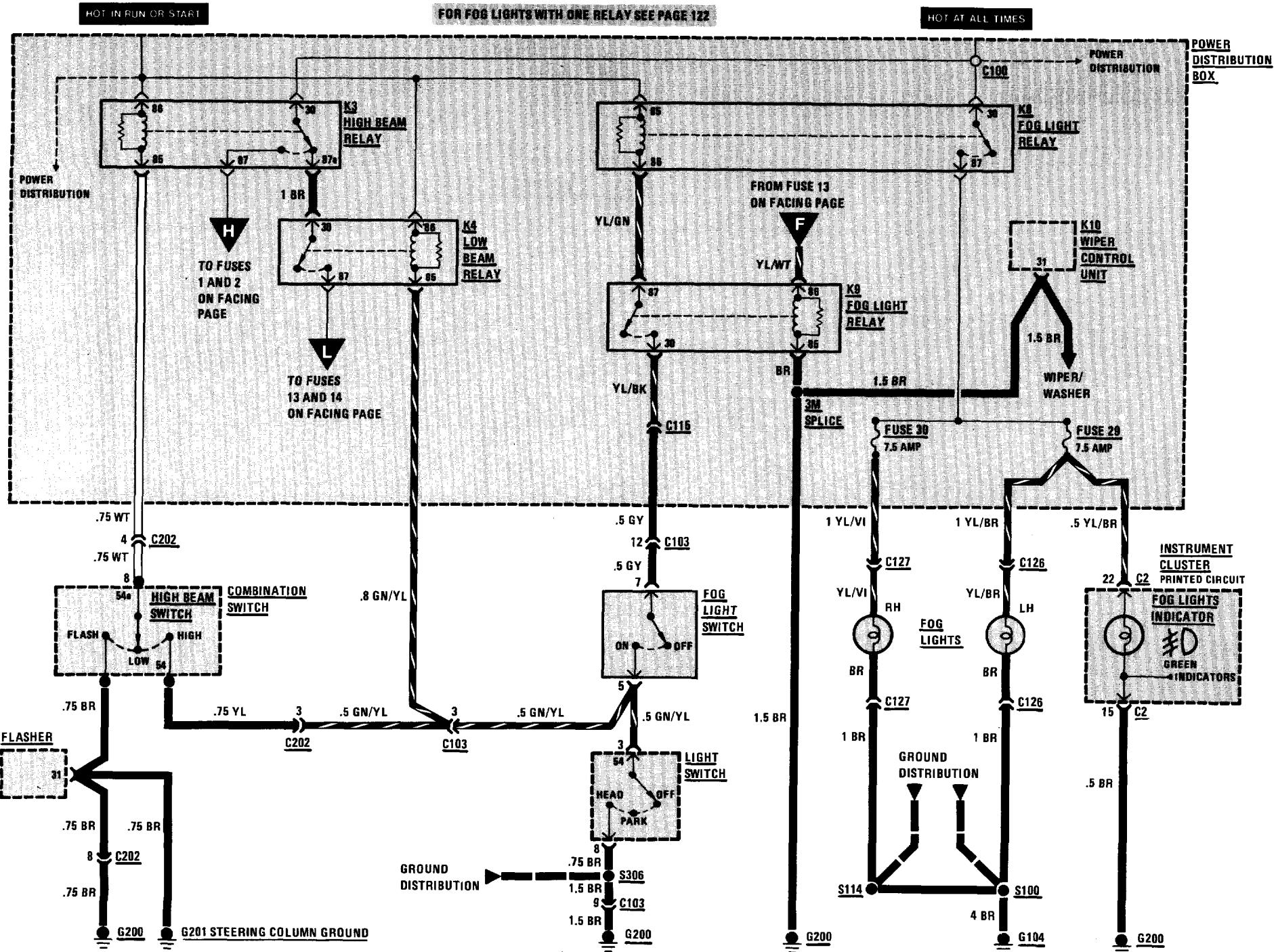
(For Component Locations See Page 208)

DUAL MOTORS

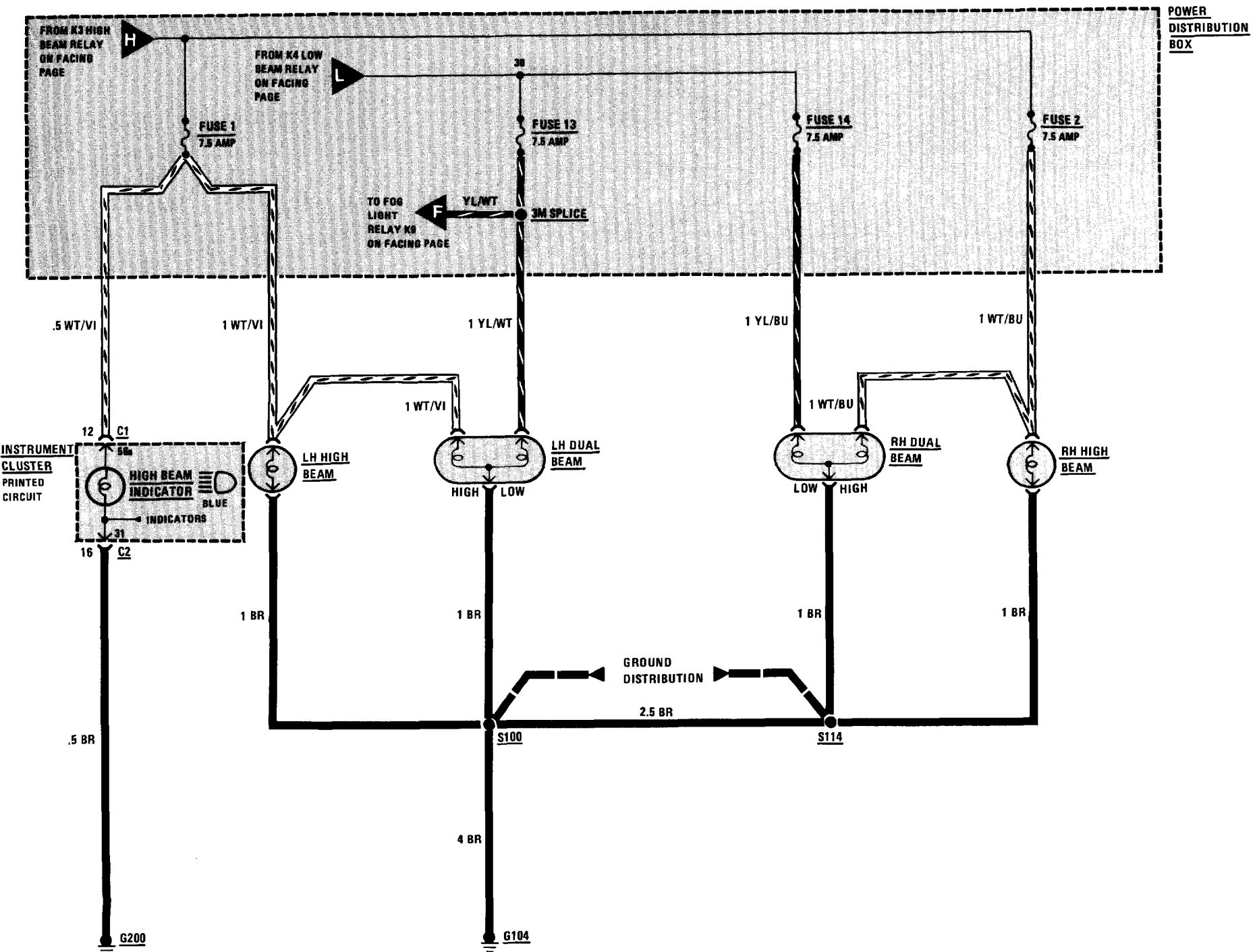


136 HEADLIGHTS (CONTROL)/FOG LIGHTS (WITH TWO RELAYS)

(For Component Locations See Page 205)

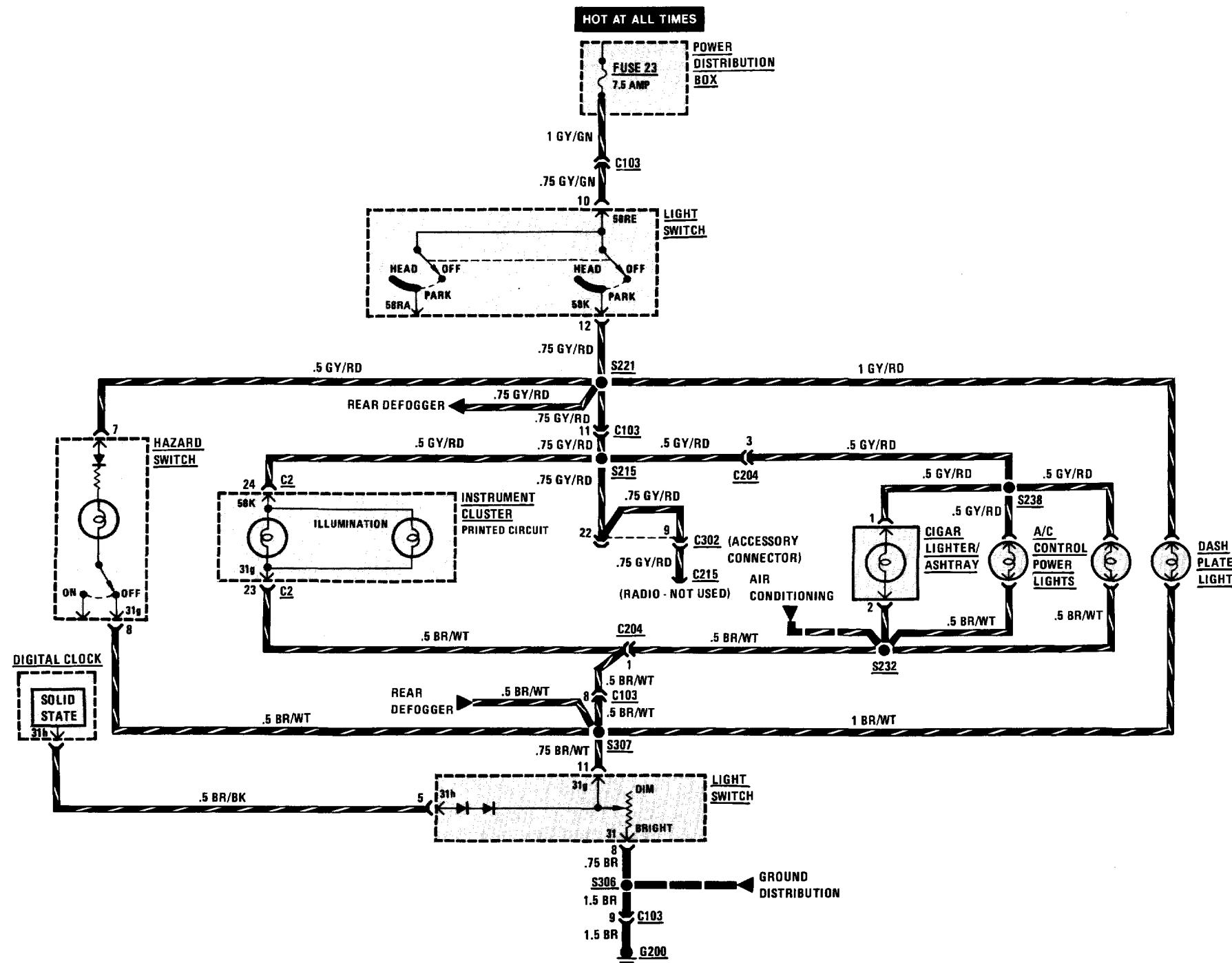


(For Component Locations See Page 205)



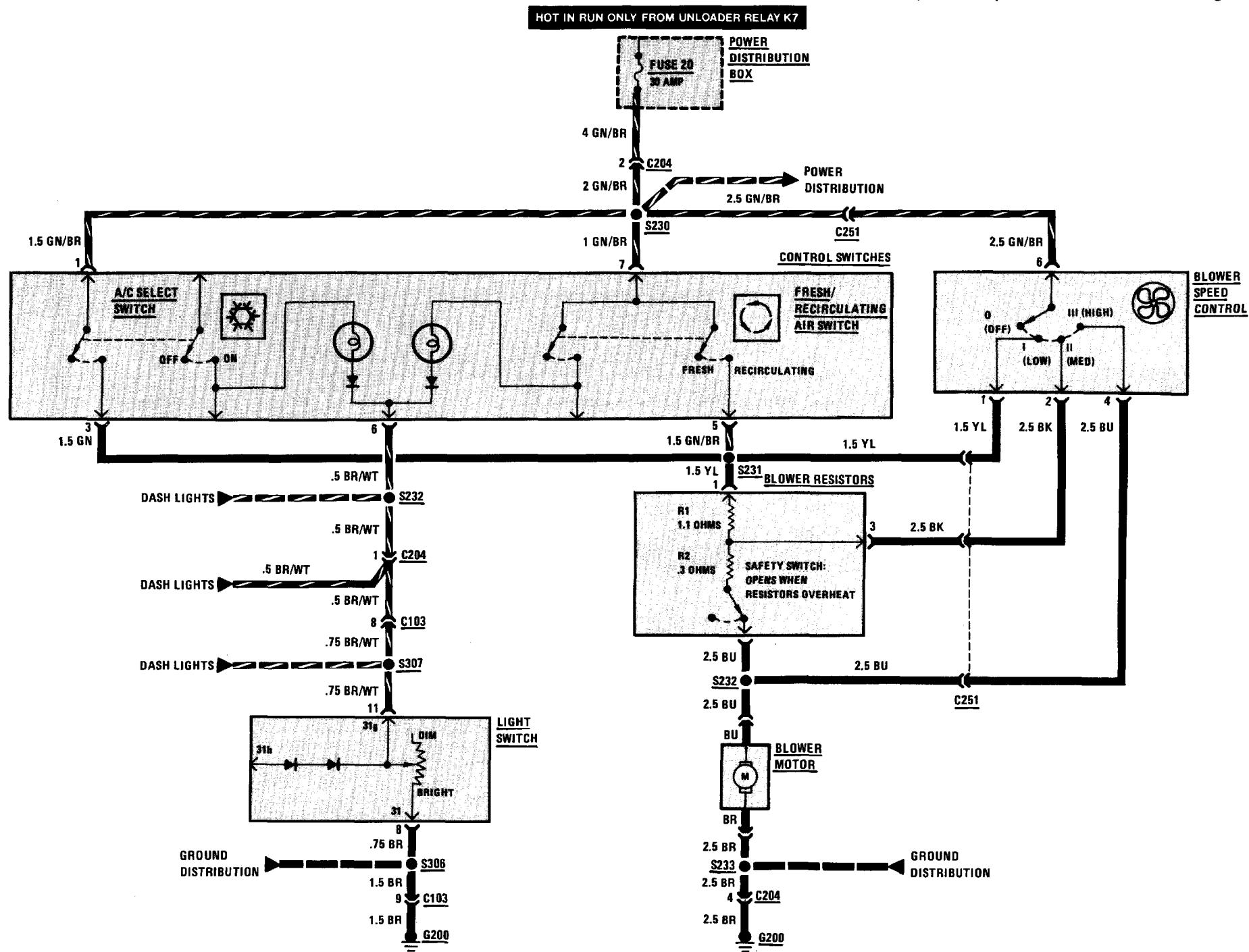
138 DASH LIGHTS

(For Component Locations See Page 208)



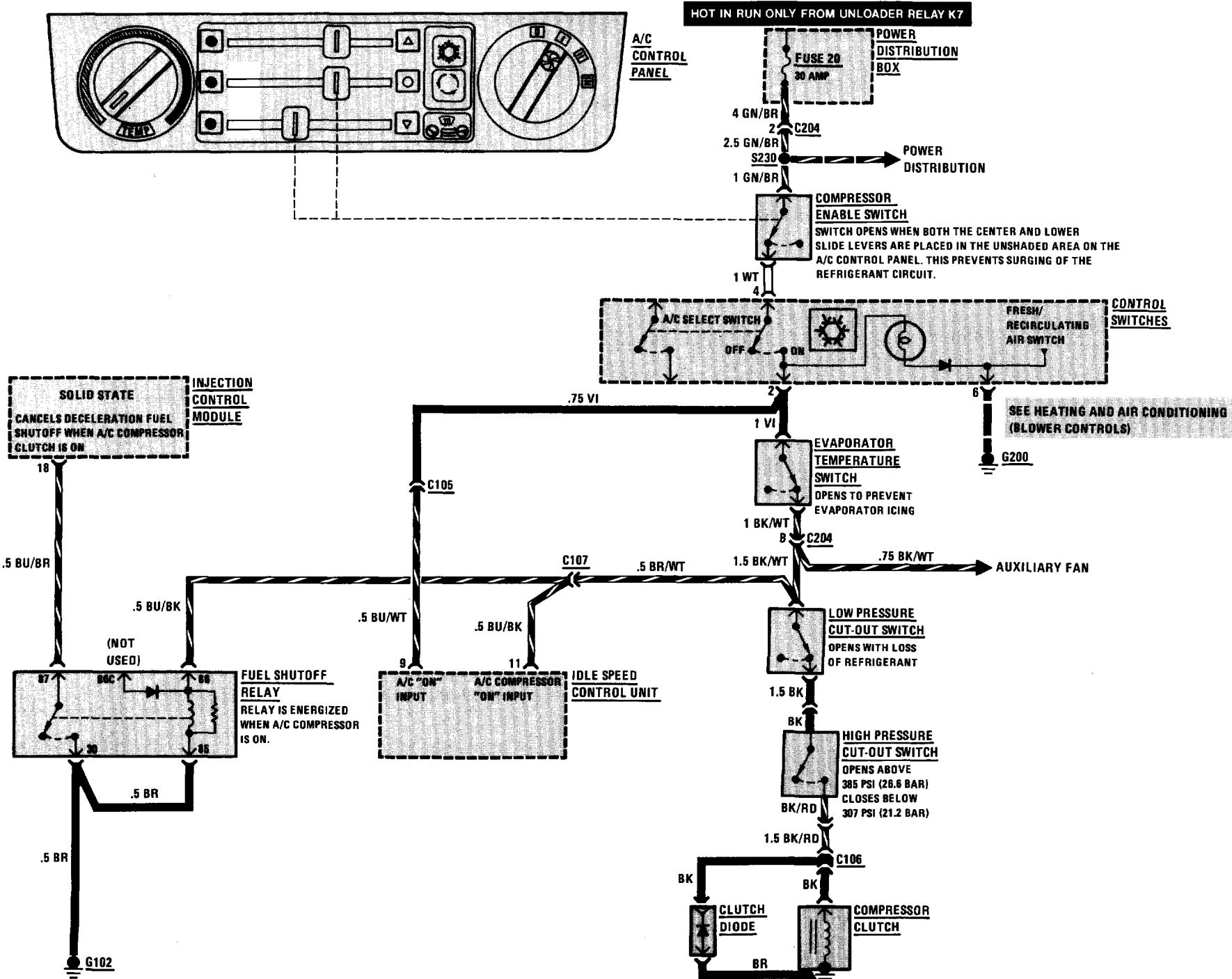
HEATING AND AIR CONDITIONING (BLOWER CONTROLS) 139

(For Component Locations See Page 208)

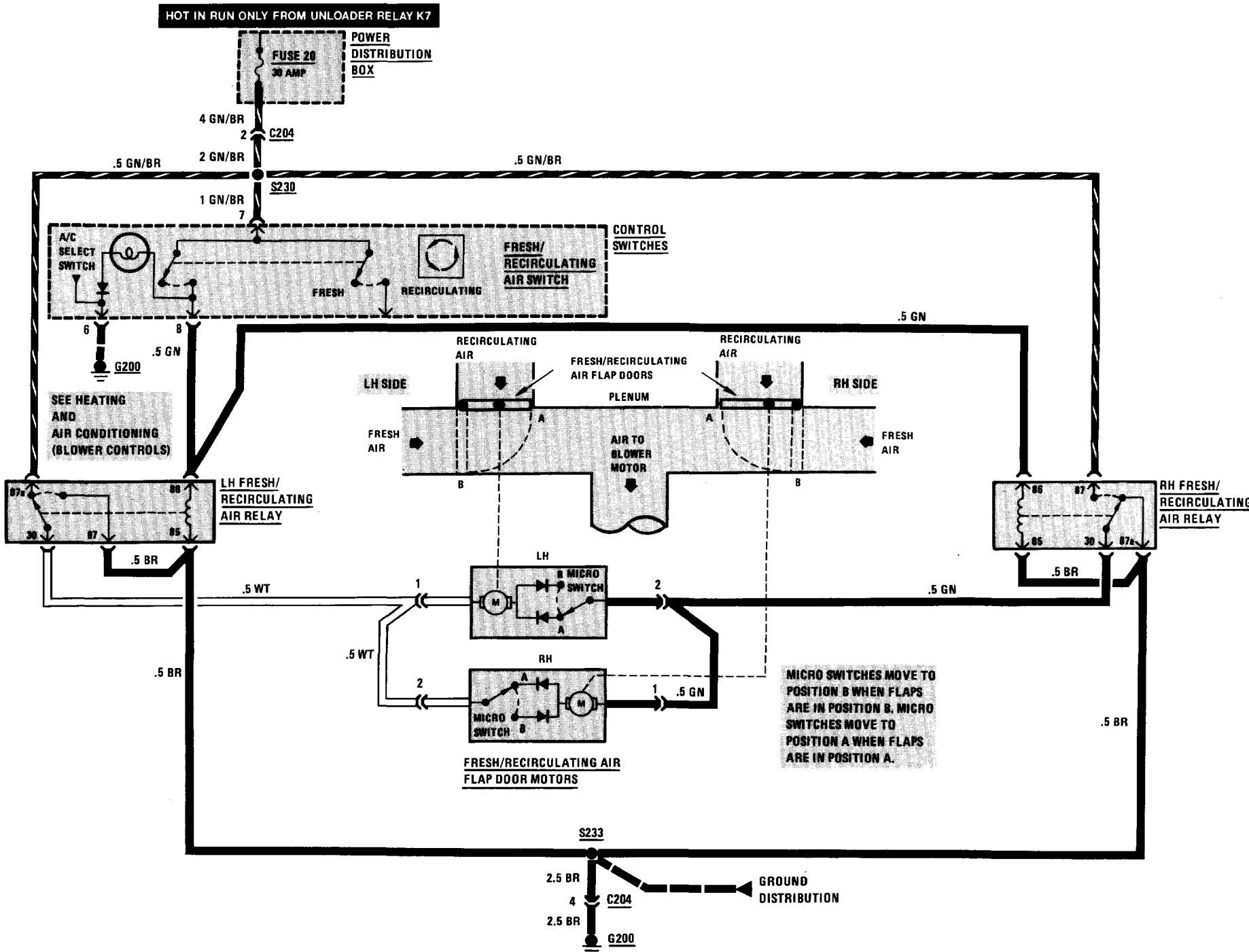


140 HEATING AND AIR CONDITIONING (COMPRESSOR CONTROLS)

(For Component Locations See Page 208)

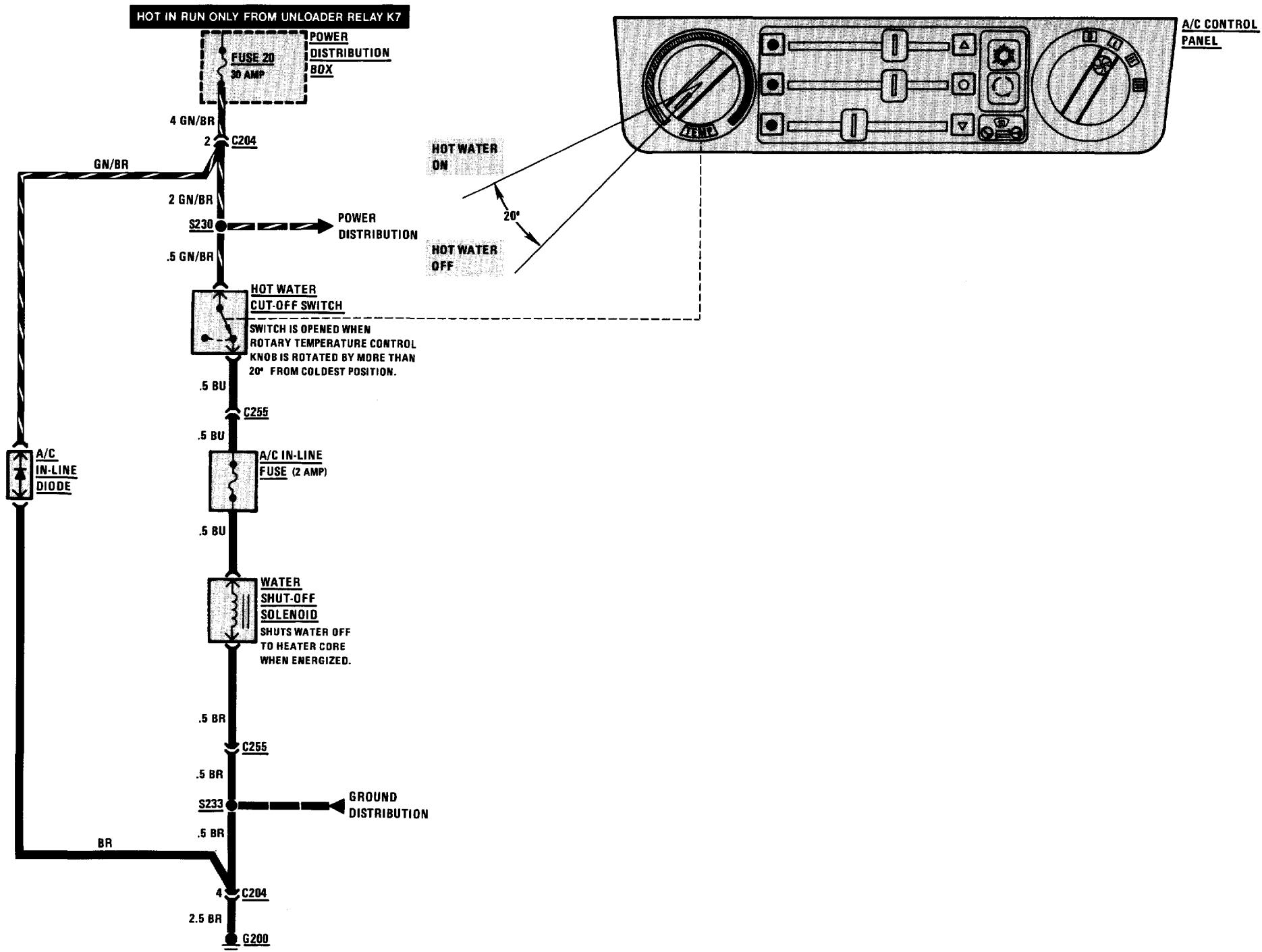


(For Component Locations See Page 208)

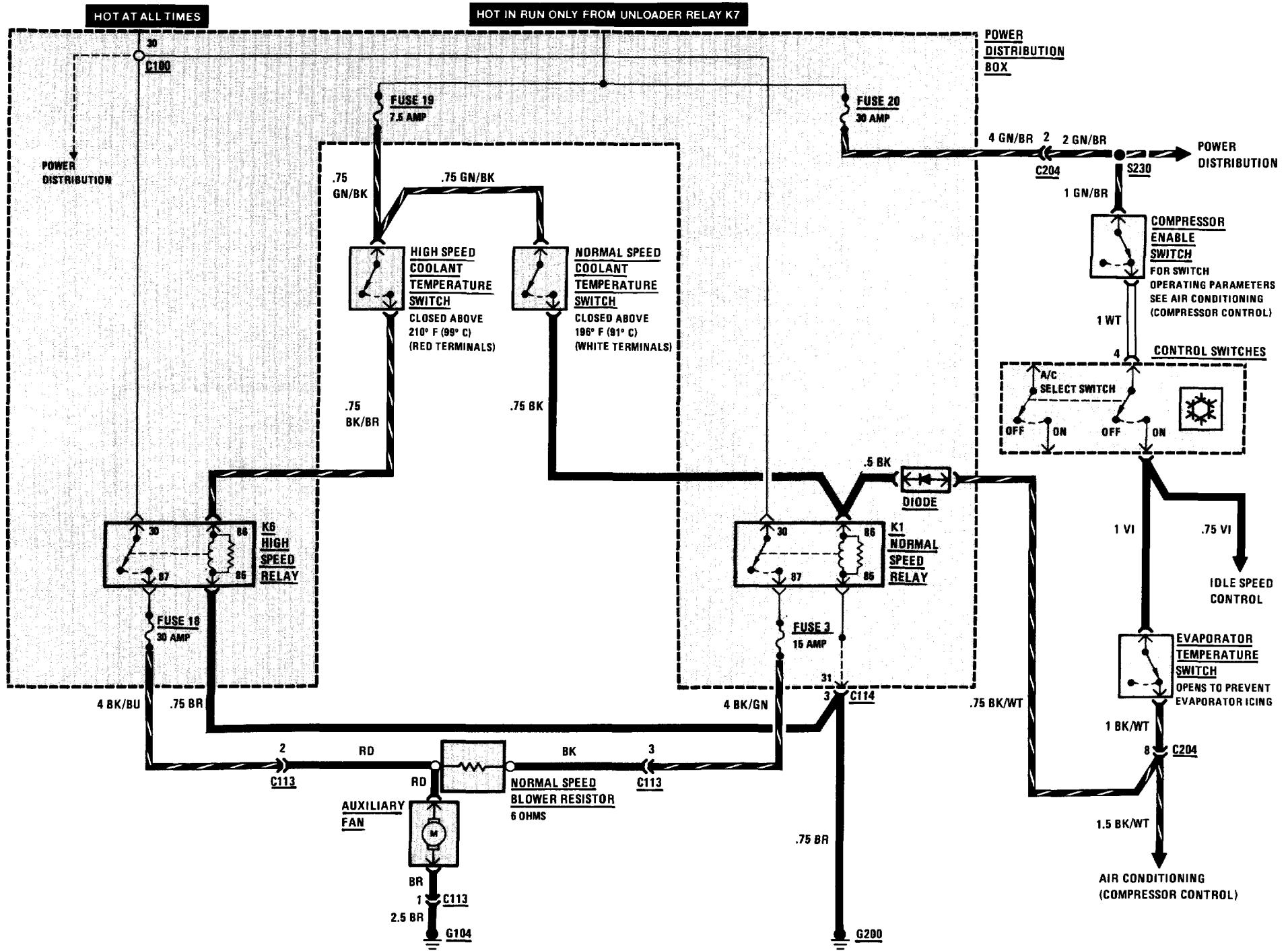


142 HEATING AND AIR CONDITIONING (HOT WATER CONTROL)

(For Component Locations See Page 208)

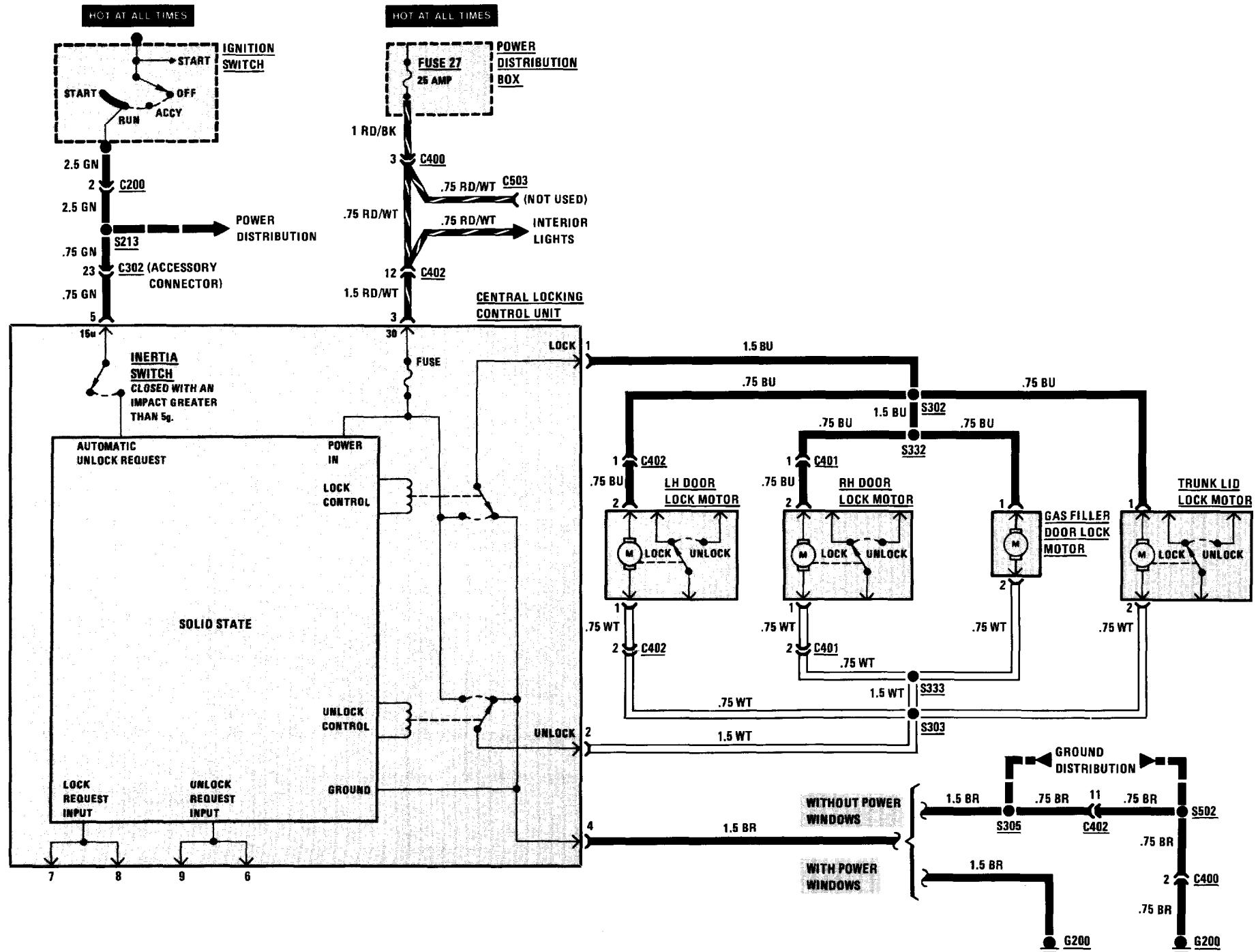


(For Component Locations See Page 209)

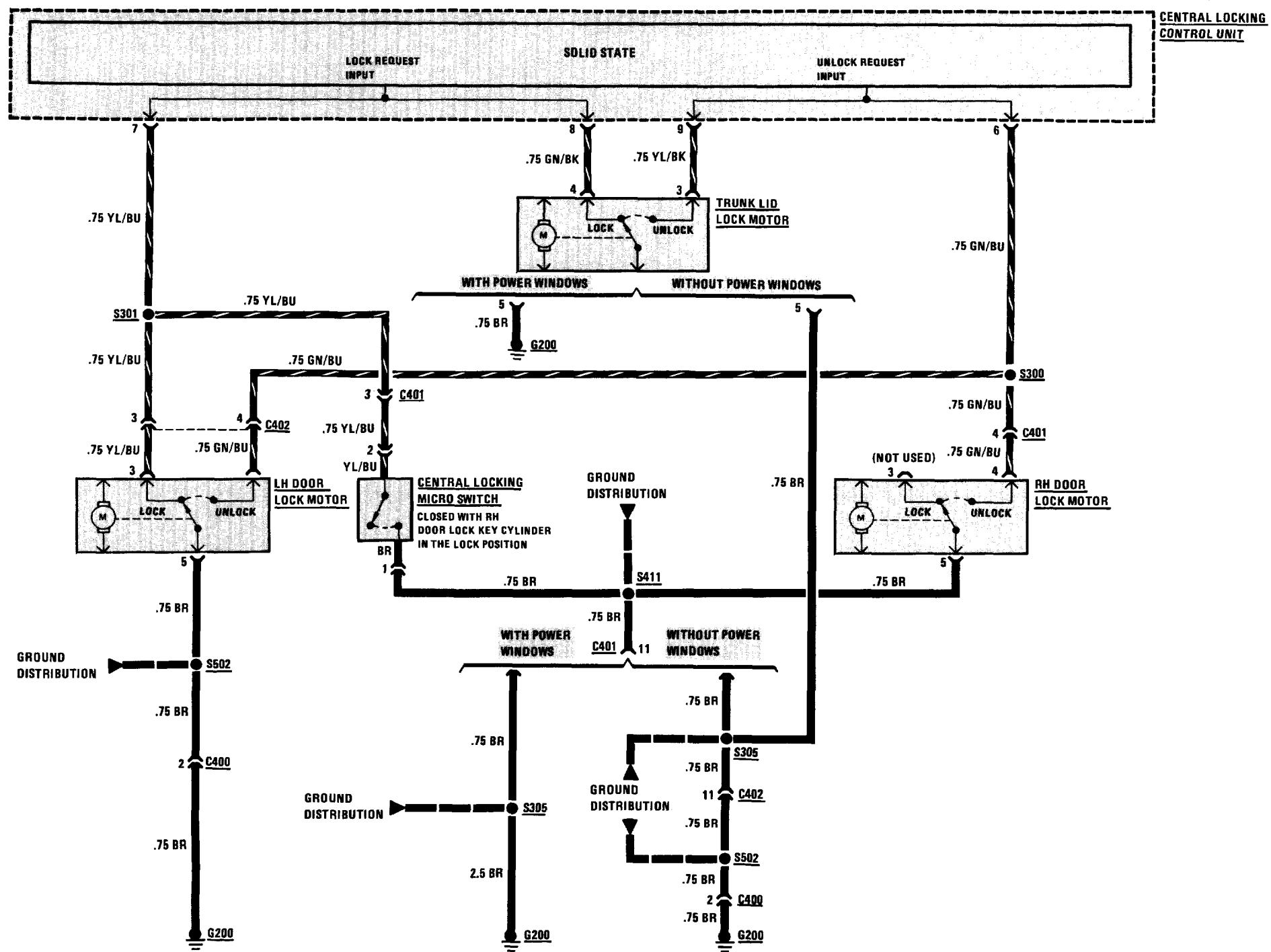


144 CENTRAL LOCKING (CONTROL)

(For Component Locations See Page 209)

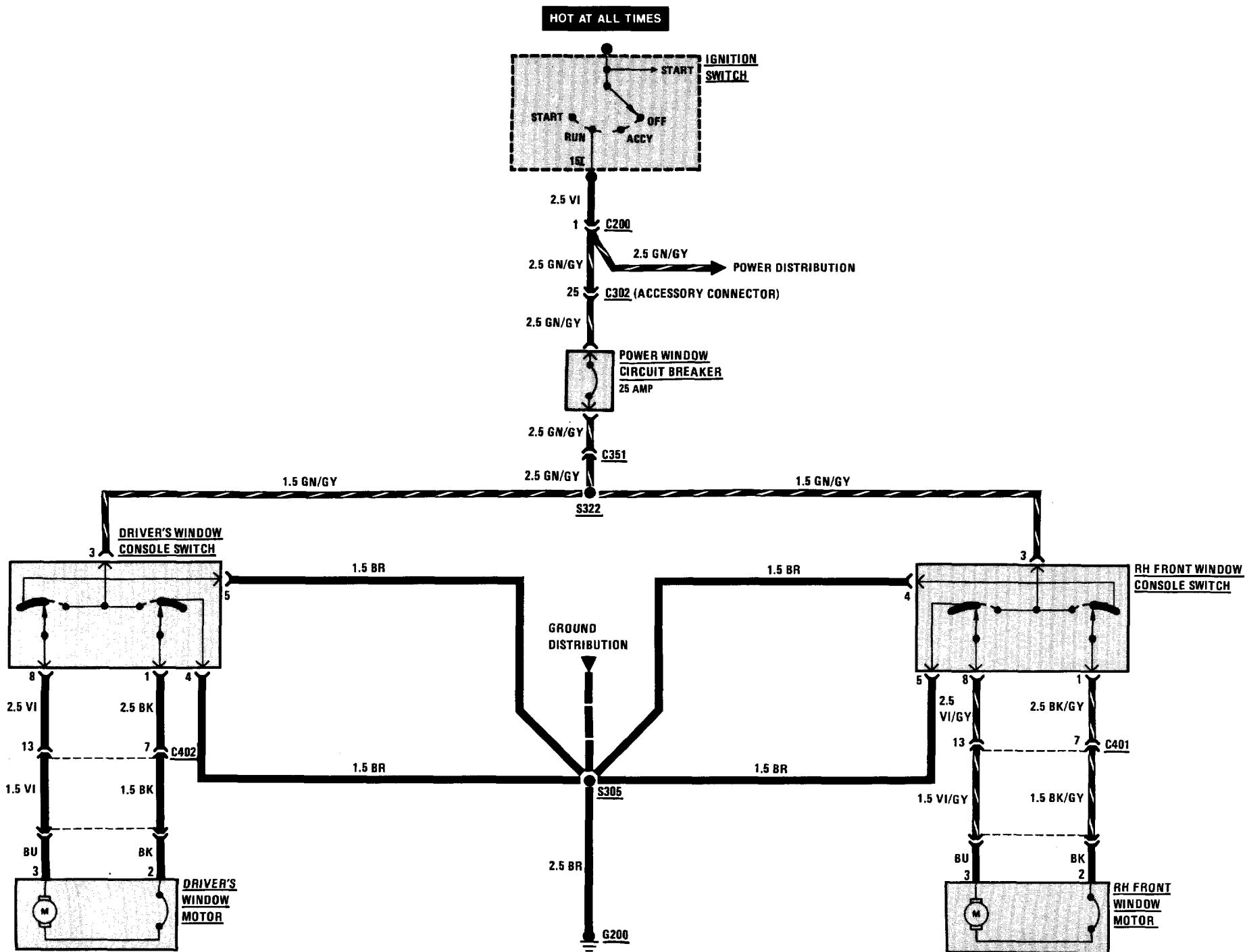


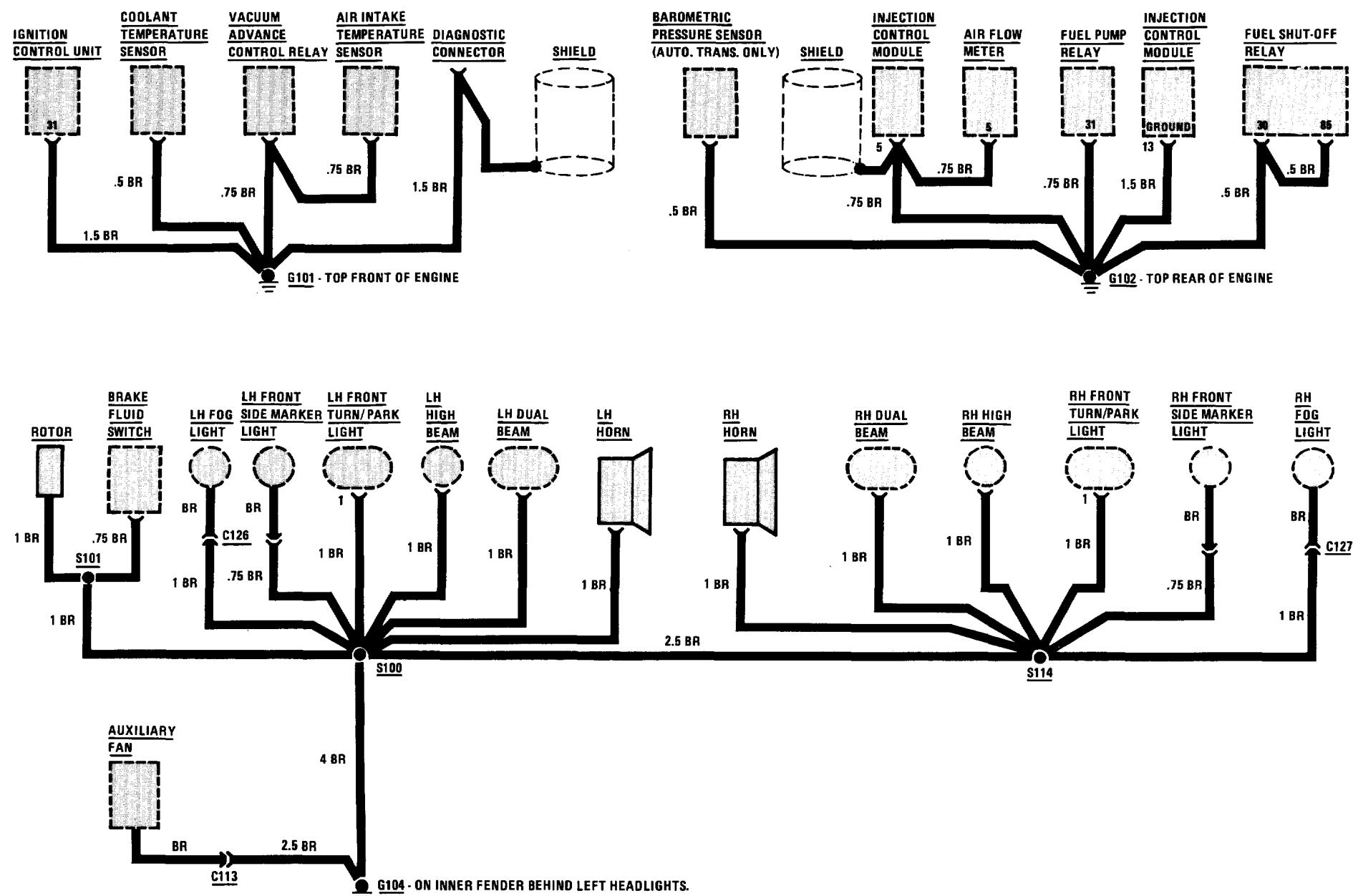
(For Component Locations See Page 209)



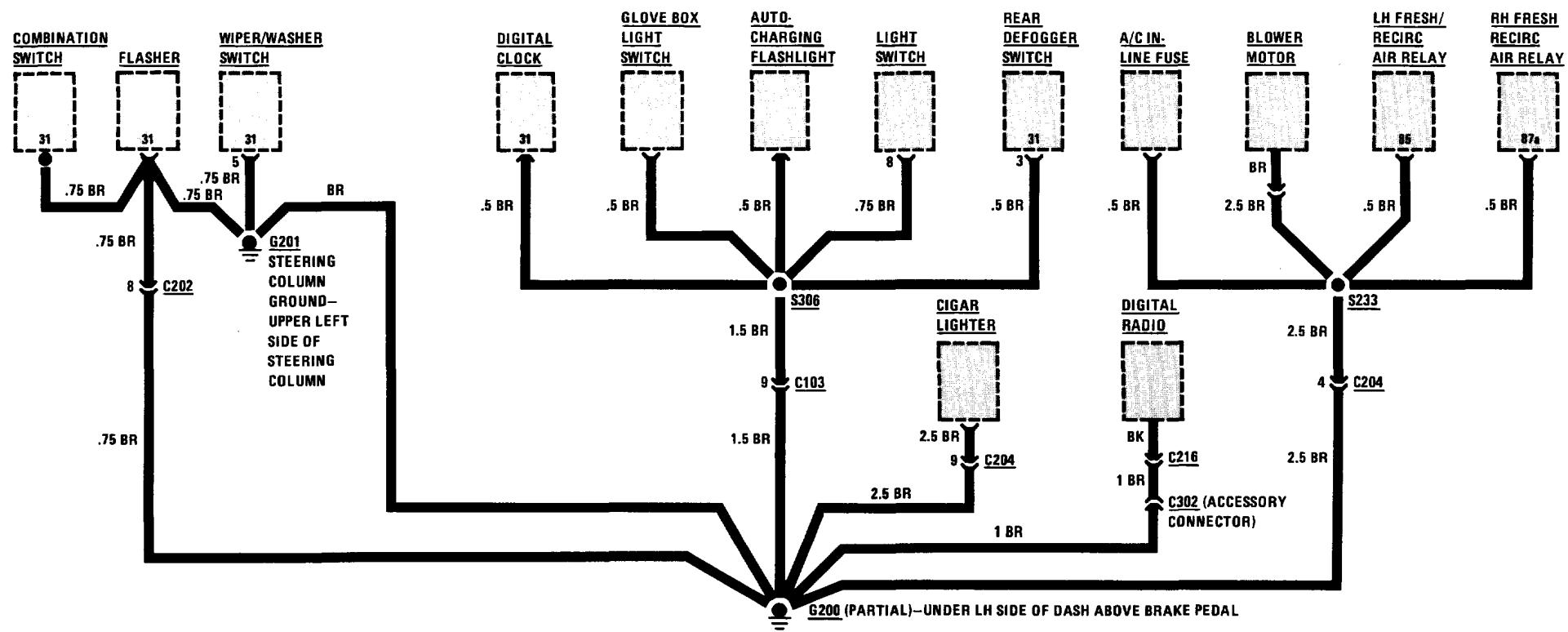
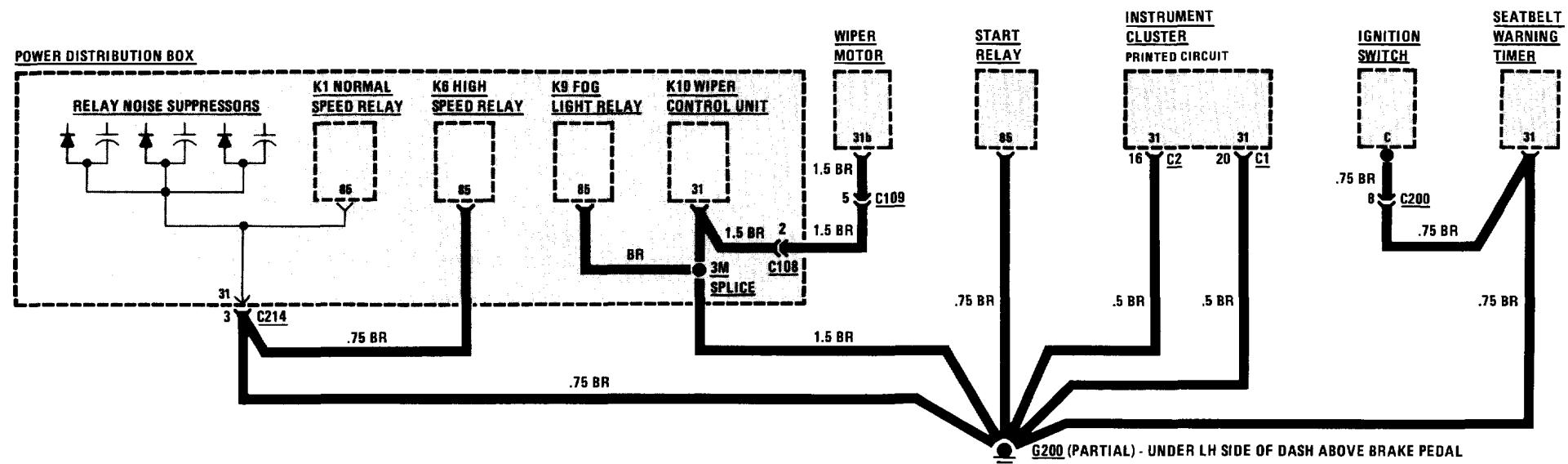
146 POWER WINDOWS

(For Component Locations See Page 210)

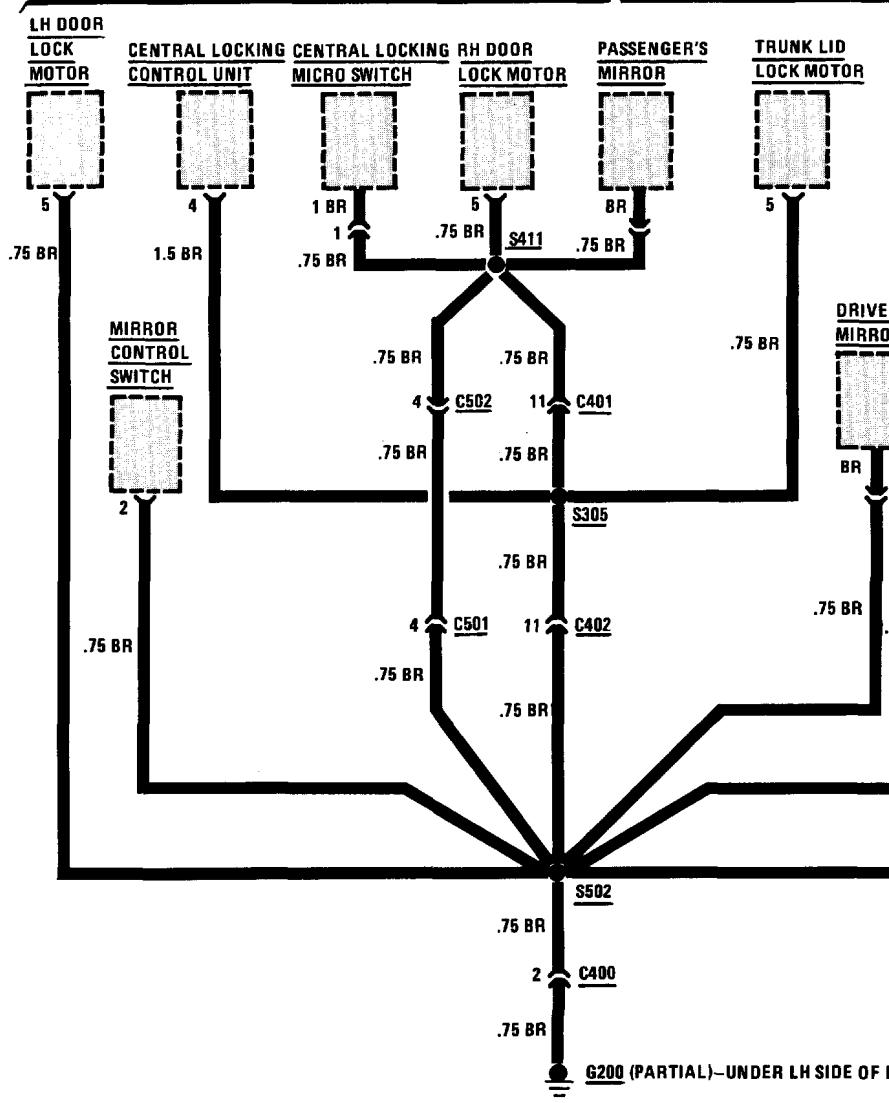




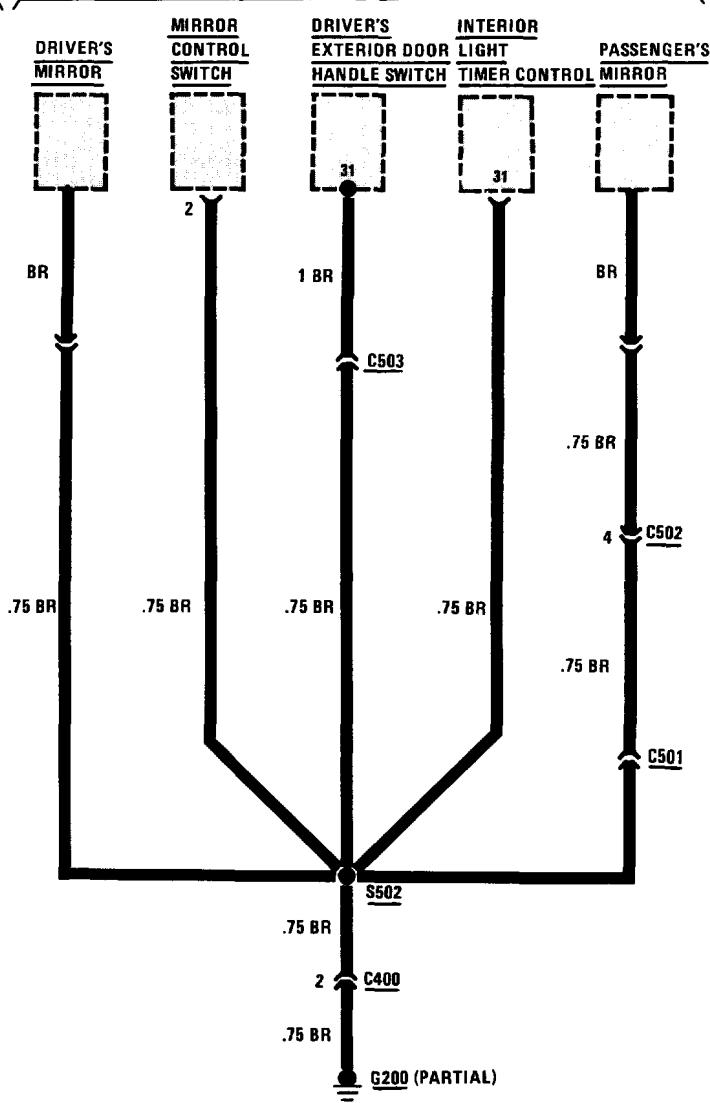
148 GROUND DISTRIBUTION (G200 PARTIAL AND G201)



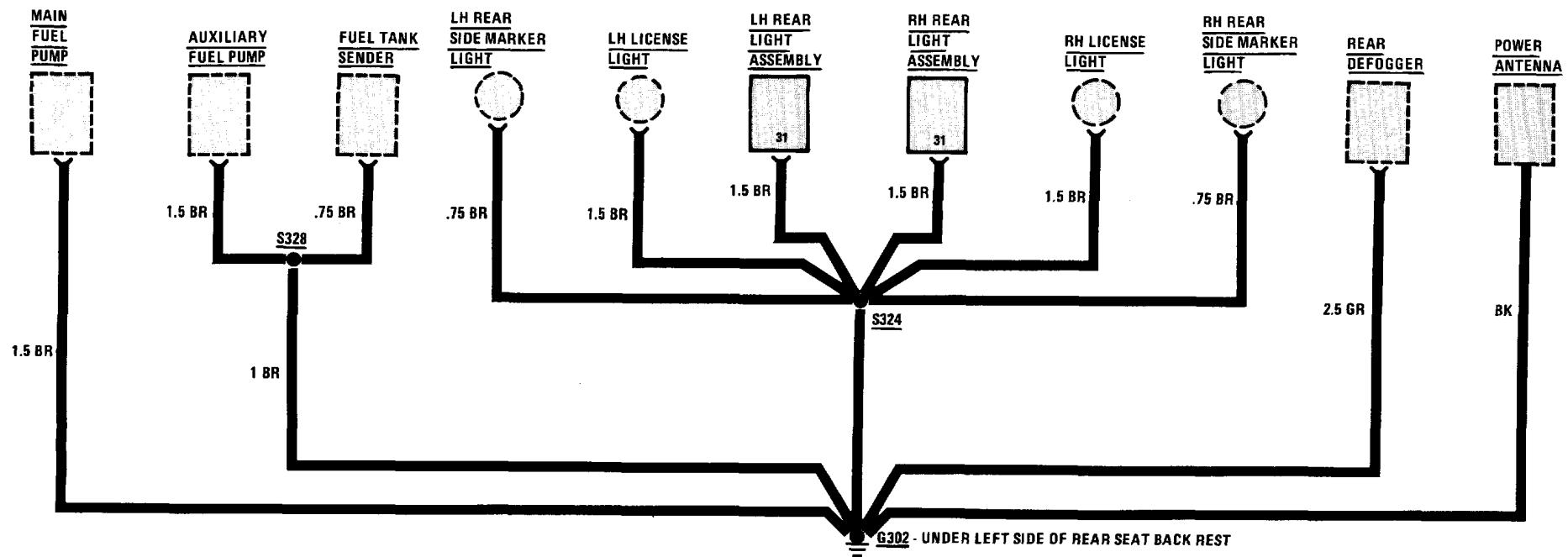
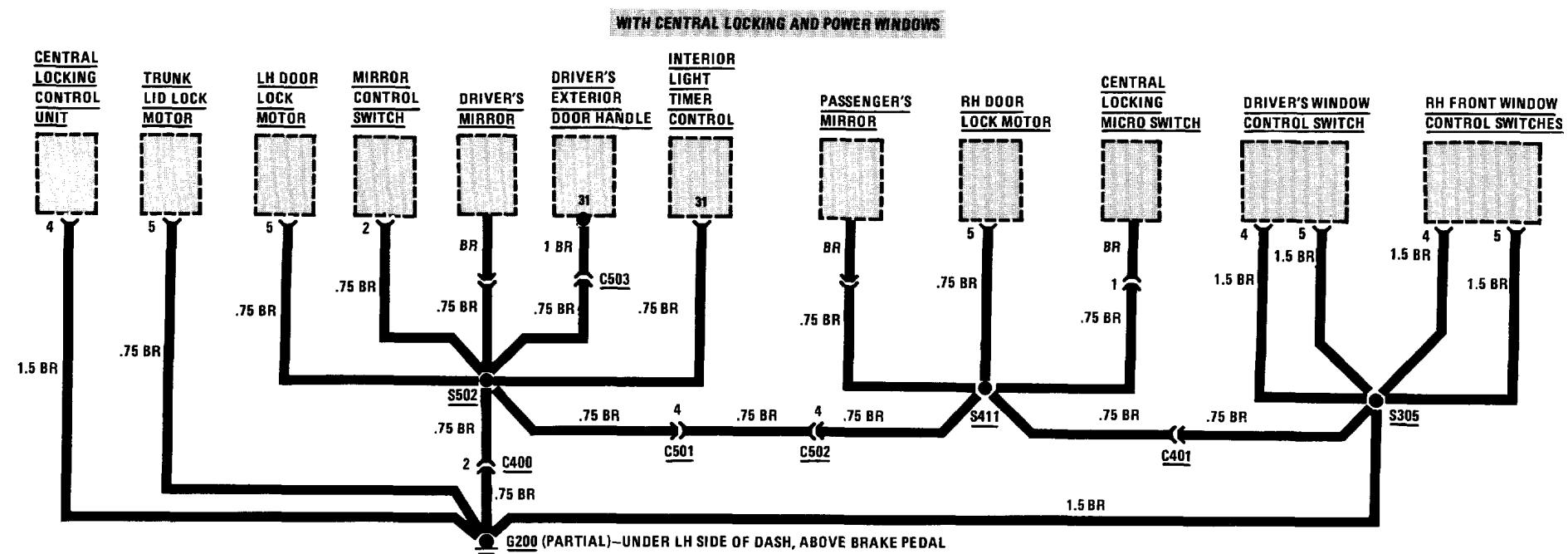
CENTRAL LOCKING WITHOUT POWER WINDOWS



POWER MIRRORS AND INTERIOR LIGHTS WITH CENTRAL LOCKING OR POWER WINDOWS



150 GROUND DISTRIBUTION (G302 AND G200 PARTIAL)



POWER DISTRIBUTION

| | | |
|-------------------------------|---|-------|
| Diagnostic Connector | Top front of engine | 202-2 |
| Ignition Switch | Upper part of steering column | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C200 (9 pins) | Under left side of dash, on steering column ... | 201-1 |
| C302 (25 pins) Accy Connector | Upper left corner of driver's footwell | 211-3 |
| G100..... | Behind right front shock tower | |
| G200..... | Under left side of dash, above brake pedal .. | 210-2 |

START

| | | |
|-------------------------------|---|-------|
| Automatic Trans. Range Switch | At base of shift lever | |
| Diagnostic Connector | Top front of engine | 202-2 |
| Ignition Switch | Upper part of steering column | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Start Relay | Upper left corner of drivers footwell | |
| C101 (19 pins) | On power distribution box | 201-1 |
| C200 (9 pins) | Under left side of dash, on steering column | 210-1 |
| C241 (1 pins) | Behind instrument panel, above steering column | 208-2 |
| C301 (2 pins) | At base of shift level | |
| G100..... | Behind right front shock tower | |
| G200 | Under left side of dash, above brack pedal.. | 210-2 |

IGNITION/FUEL DELIVERY

| | | |
|--------------------------------|---|-------|
| Auxiliary Fuel Pump | In fuel tank..... | 209-1 |
| Diagnostic Connector | Top front of engine | 202-2 |
| Fuel Pump Relay | On bracket in front of left front shock tower | 201-2 |
| Idle Speed Control Unit | Right side of dash, above glove box..... | 202-1 |
| Ignition Coil | On right front wheel well | |
| Ignition Control Module | On bulkhead, above brake booster | 203-2 |
| Ignition Switch | Upper part of steering column | |
| Injection Control Module | Right side of dash, above glove box..... | 202-1 |
| Main Fuel Pump..... | Under car, in front of left rear wheel | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C101 (19 pins) | On power distribution box | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |



Figure 1 - Behind Left Front Shock Tower

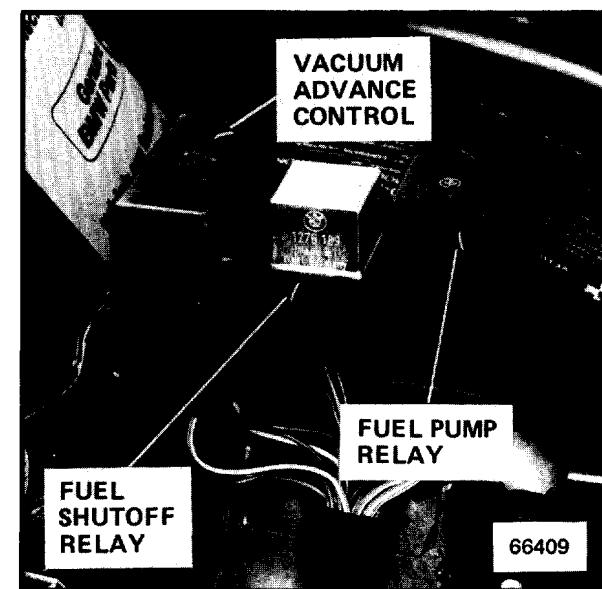


Figure 2 - Forward Of Left Front Shock Tower

202 COMPONENT LOCATIONS

(continued)

| | | |
|---------------------|---|-------|
| C104 (3 pins) | Right side of dash, above glove box | 212-6 |
| C200 (9 pins) | Under left side of dash, on steering column | 210-1 |
| G100..... | Behind right front shock tower | |
| G101..... | Top front of engine | 203-1 |
| G102..... | Top rear of engine | |
| G302..... | Under left side of rear seat | 209-2 |

FUEL CONTROL

| | | |
|--------------------------------|--|-------|
| Air Flow Meter | Behind air cleaner | 204-1 |
| Barometric Pressure Sensor... | Mounted on air intake housing | 205-2 |
| Cold Start Valve | Top center of engine..... | 203-1 |
| Coolant Temperature Sensor .. | Front of engine, top of thermostat housing ... | 202-2 |
| Diagnostic Connector | Top front of engine | 202-2 |
| Fuel Pump Relay | On bracket in front of left front shock tower | 201-2 |
| Fuel Shutoff Relay..... | On bracket in front of left front shock tower | 201-2 |
| Ignition Coil | On right front wheel well | |
| Ignition Control Module | On bulkhead, above brake vacuum booster... | 203-2 |
| Ignition Switch..... | Upper part of steering column | |
| Injection Control Module | Right side of dash, above glove box..... | 202-1 |
| Oxygen Sensor..... | RH rear of engine, in exhaust manifold | |
| Thermotime Switch..... | Front of engine, top of thermostat housing ... | 202-2 |
| Throttle Switch..... | Below rear of throttle body | |
| Vacuum Advance Control | On bracket in front of left front shock tower | 201-2 |
| C101 (19 pins) | On power distribution box | 201-1 |
| G101..... | Top front of engine | 203-1 |
| G102..... | Top rear of engine | |

IDLE SPEED CONTROL

| | | |
|--|--|-------|
| 0°C (32°F) Temp Switch | On bulkhead, behind distributor | 207-1 |
| Automatic Trans. Range Switch | At base of shift lever | |
| Coolant Temperature Switch/Sender | Front of engine, top of thermostat housing ... | 202-2 |
| Diagnostic Connector | Top front of engine | 202-2 |
| Fuel Pump Relay | On bracket in front of left front shock tower | 201-2 |
| Idle Speed Control Unit | Right side of dash, above glove box..... | 202-1 |
| Idle Speed Control Valve..... | Top rear of engine | 203-1 |



Figure 1 - Below Right Side Of Dash

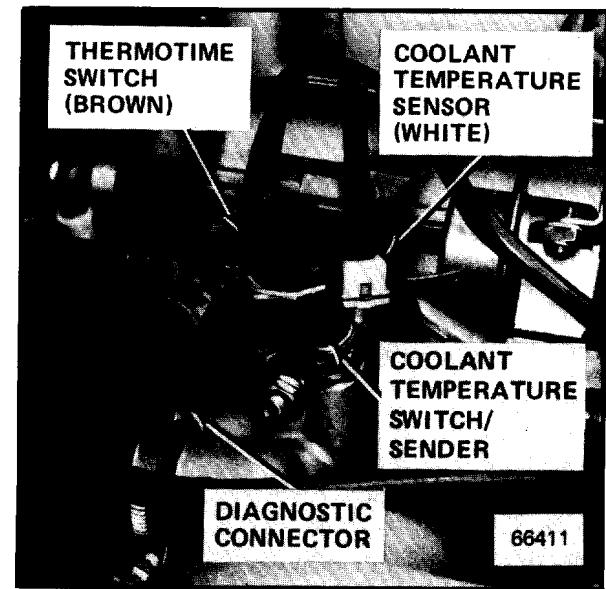


Figure 2 - Top Left Front Of Engine

(continued)

| | | |
|-------------------------------|---|-------|
| Ignition Coil | On right front wheel well | |
| Ignition Control Module | On bulkhead, above brake vacuum booster ... | 203-2 |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Throttle Switch..... | Below rear of throttle body | |
| C101 (19 pins) | On power distribution box | 201-1 |
| C105 (1 pin) | Right side of evaporator housing | |
| C131 (1 pin) | Right side of dash, above glove box | 212-6 |
| C301 (2 pins) | At base of shift lever | |
| G101 | Top front of engine | 203-1 |

VACUUM ADVANCE

| | | |
|--|--|-------|
| Coolant Temperature Switch/Sender | Front of engine, top of thermostat housing ... | 202-2 |
| Diagnostic Connector | Top front of engine | 202-2 |
| Ignition Control Module | On bulkhead, above brake vacuum booster ... | 203-2 |
| Intake Air Temp Sensor | In air intake, behind left headlights | 204-2 |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Vacuum Advance Control | On bracket in front of left front shock tower | 201-2 |
| Vacuum Advance Solenoid Valve | On bulkhead, above brake vacuum booster ... | 203-2 |
| Vacuum Advance Unit | On distributor | |
| C101 (19 pins) | On power distribution box | 201-1 |
| G101..... | Top front of engine | 203-1 |

CHARGING SYSTEM

| | | |
|------------------------------|--|-------|
| Dash Warning Display | Top center of dash | |
| Diagnostic Connector | Top front of engine | 202-2 |
| Ignition Switch | Upper part of steering column | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C101 (19 pins) | On power distribution box | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C200 (9 pins) | Under left side of dash, on steering column | 210-1 |
| G100..... | Behind right front shock tower | |

WIPER/WASHER

| | | |
|------------------------------|---|-------|
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Washer Pump | Ahead of right front wheel well, on reservoir | 206-2 |

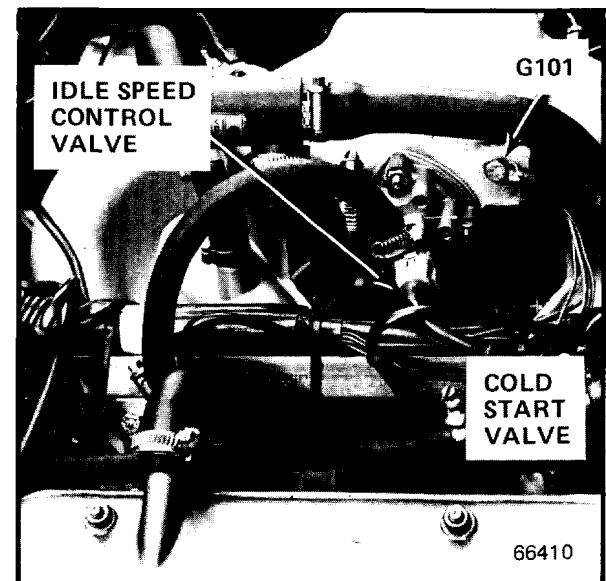


Figure 1 - Top Center Of Engine

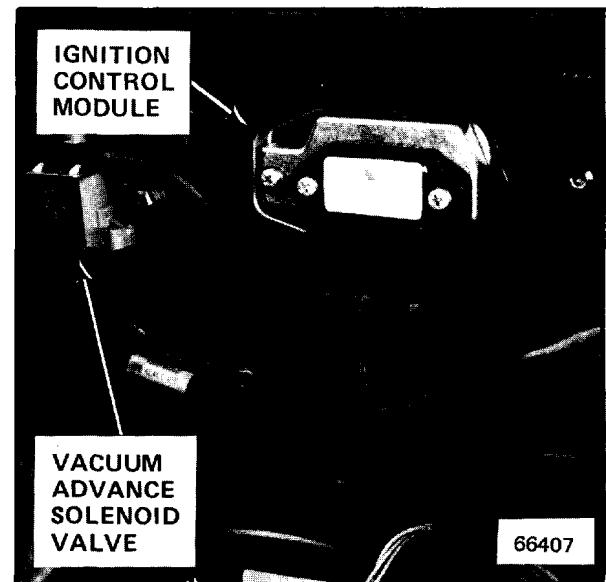


Figure 2 - Left Rear Corner Of Engine Compartment

204 COMPONENT LOCATIONS

(continued)

| | | |
|-------------------------------------|---|-------|
| Wiper Motor | Under left side freshair intake cowl | |
| Wiper/Washer Switch | Upper right side of steering column | |
| C201 (6 pins) | Under left side of dash, on steering column ... | 210-1 |
| C108 | In power distribution box | |
| C109 | Near Wiper Motor | |
| G200..... | Under left side of dash, above brake pedal .. | 210-2 |
| G201 (Steering Column Ground) | Upper left side of steering column | |

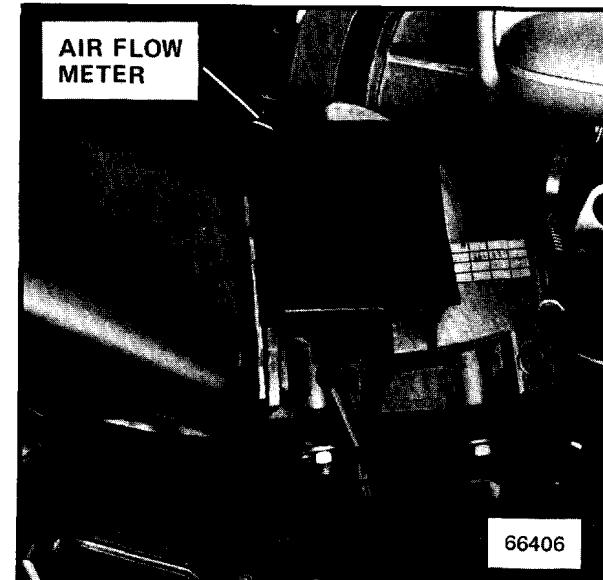


Figure 1 - Left Front Corner Of Engine Compartment

SPEEDOMETER/INDICATORS/GAUGES

| | | |
|--|--|-------|
| Coolant Temperature Switch/Sender | Front of engine, top of thermostat housing ... | 202-2 |
| Dash Warning Display | Top center of dash | |
| Diagnostic Connector | Top front of engine | 202-2 |
| Fuel Tank Sender | Top of fuel tank | 209-1 |
| Ignition Switch | Upper part of steering column | |
| Oil Pressure Switch..... | On top rear of cylinder head | |
| Power Distribution Box | At top rear of left front wheel well | 201-1 |
| Speedometer Sender | In rear of differential | |
| C101 (19 pins) | On power distribution box | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C200 (9 pins)..... | Under left side of dash, on steering column | 210-1 |
| G200..... | Under left side of dash, above brake pedal .. | 210-2 |
| G302..... | Under left side of rear seat | 209-2 |

TACHOMETER/FUEL ECONOMY GAUGE

| | | |
|--------------------------------|---|-------|
| Ignition Control Module | On bulkhead, above brake vacuum booster ... | 203-2 |
| Injection Control Module | Right side of dash, above glove box..... | 202-1 |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C104 (3 pins)..... | Right side of dash, above glove box..... | 212-6 |
| G200..... | Under left side of dash, above brake pedal .. | 210-2 |

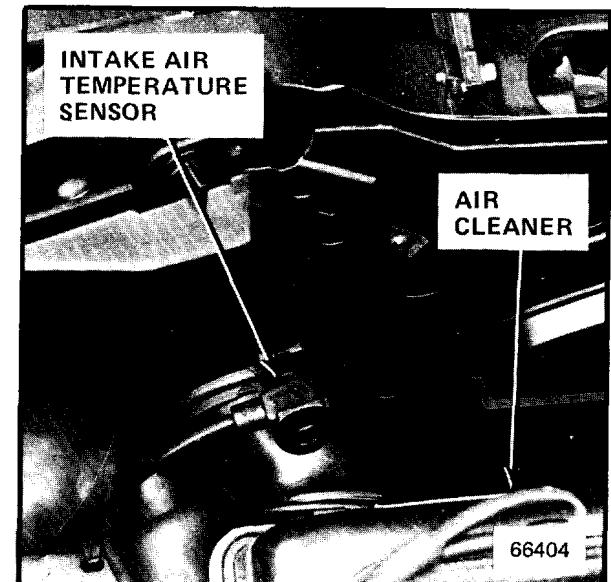


Figure 2 - Left Front Corner Of Engine Compartment

SERVICE INTERVAL INDICATOR

| | | |
|--|--|-------|
| Coolant Temperature Switch/Sender | Front of engine, top of thermostat housing ... | 202-2 |
| Ignition Control Module | On bulkhead, above brake vacuum booster ... | 203-2 |

(continued)

| | | |
|--------------------------------|---|-------|
| Injection Control Module | Right side of dash, above glove box..... | 202-1 |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C101 (19 pins) | On power distribution box | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C104 (3 pins) | Right side of dash, above glove box..... | 212-6 |
| G200..... | Under left side of dash, above brake pedal .. | 210-2 |

BRAKE WARNING SYSTEM

| | | |
|--------------------------------|--|-------|
| Brake Fluid Level Switch | Left of engine, on brake fluid reservoir | 208-1 |
| Ignition Switch | Upper part of steering column | |
| Park Brake Switch | At base of parking brake | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Seatbelt Warning Timer..... | Above brake pedal | 210-2 |
| C200 (9 pins)..... | Under left side of dash, on steering column | 210-1 |
| G104..... | On inner fender, behind left headlights..... | 211-1 |
| G200..... | Under left side of dash, above brake pedal .. | 210-2 |

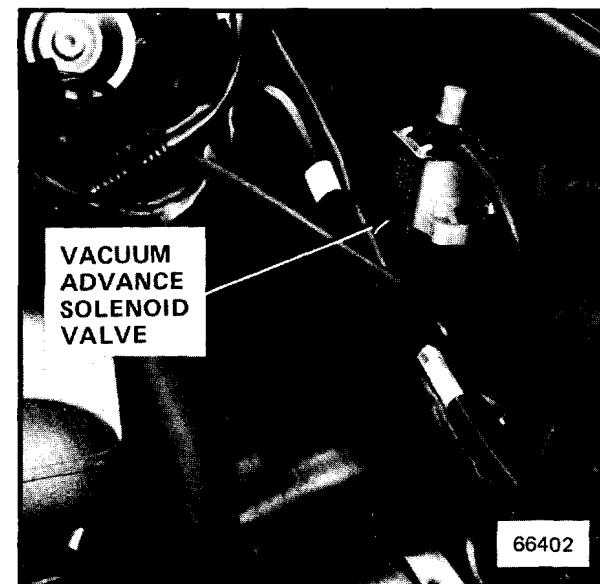


Figure 1 - Above Brake Vacuum Booster

IGNITION KEY WARNING/SEATBELT WARNING

| | | |
|------------------------------|--|-------|
| Dash Warning Display | Top center of dash | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Seatbelt Switch | In driver's seatbelt buckle | |
| Seatbelt Warning Timer..... | Above brake pedal | 210-2 |
| Warning Buzzer | Upper part of steering column | |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C200 (9 pins) | Under left side of dash, on steering column .. | 210-1 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |

HEADLIGHTS/FOG LIGHTS

| | | |
|------------------------------|--|-------|
| Combination Switch | Upper left side of steering column | |
| Flasher | Upper part of steering column | |
| Fog Light Switch | On dash, left of steering column | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C126 (2 pins) | Behind left headlights..... | 211-1 |
| C127 (2 pins) | Behind right headlights | 211-2 |

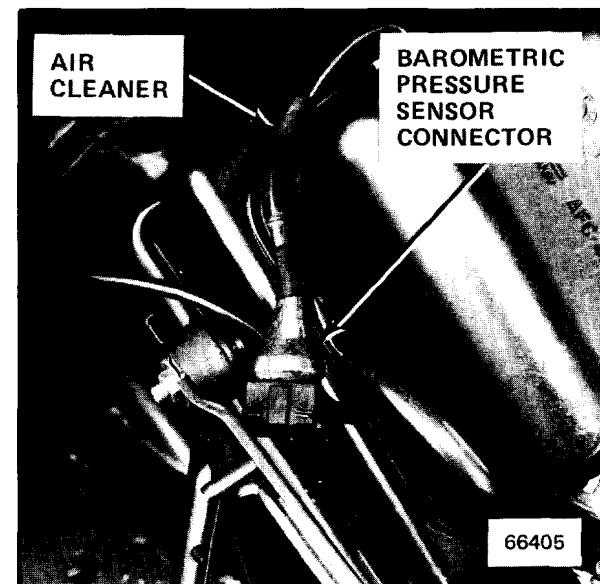


Figure 2 - Left Front Corner Of Engine Compartment (Manual Transmission Shown)

(continued)

| | | |
|----------------------|--|-------|
| C202 (13 pins) | Under left side of dash, on steering column .. | 210-1 |
| G104..... | On inner fender, behind left headlights..... | 211-1 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |

LIGHTS: TURN/HAZARD WARNING

| | | |
|-------------------------------|--|-------|
| Combination Switch | Upper left side of steering column | |
| Flasher | Upper part of steering column | |
| Hazard Switch | In center console, above radio | 212-5 |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C200 (9 pins) | Under left side of dash, on steering column .. | 210-1 |
| C202 (13 pins) | Under left side of dash, on steering column .. | 210-1 |
| G104..... | On inner fender, behind left headlights..... | 211-1 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |
| G201 (Steering Column Ground) | Upper left side of steering column | |
| G302..... | Under left side of rear seat | 209-2 |

LIGHTS: FRONT PARK/FRT SIDE MARKER/TAIL/REAR MARKER/LICENSE/TRUNK

| | | |
|------------------------------|--|-------|
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| G104..... | On inner fender, behind left headlights..... | 211-1 |
| G302..... | Under left side of rear seat | 209-2 |

BACK UP LIGHTS

| | | |
|-------------------------------|---|-------|
| Automatic Trans. Range Switch | At base of shift lever | |
| Backup Light Switch | On transmission | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C301 (2 pins) | At base of shift lever | |
| G302 | Under left side of rear seat | 209-2 |

STOPLIGHTS/HORN

| | | |
|----------------------------|--------------------------|-------|
| Brake Switch..... | Above brake pedal | 212-3 |
| Horn/Brush Slip Ring | In upper steering column | |

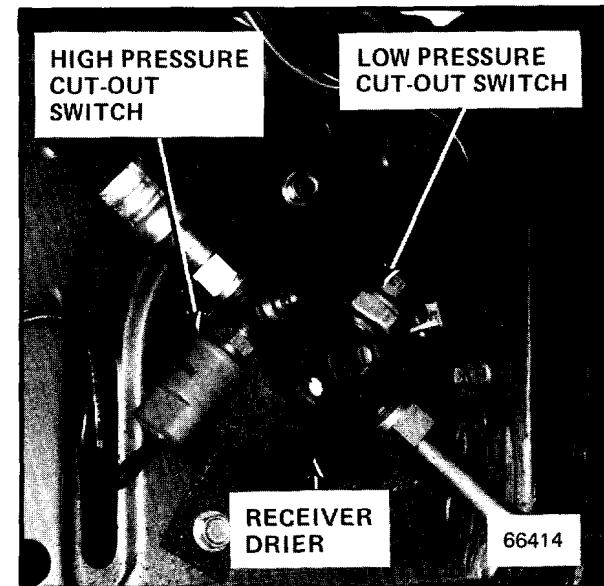


Figure 1 - Behind Right Headlights

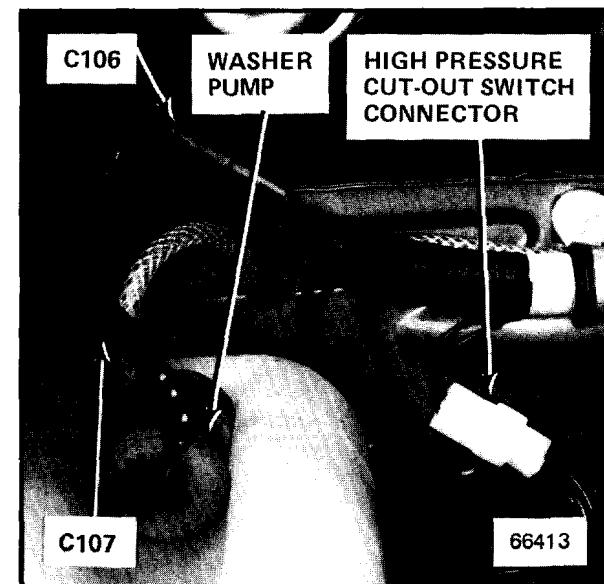


Figure 2 - Right Front Corner Of Engine Compartment

(continued)

| | | |
|-------------------------------|--|-------|
| Power Distribution Box | At top rear of left front wheel well | 201-1 |
| C202 (13 pins) | Under left side of dash, on steering column .. | 210-1 |
| G104..... | On inner fender, behind left headlights..... | 211-1 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |
| G201 (Steering Column Ground) | Upper left side of steering column | |
| G302..... | Under left side of rear seat | 209-2 |

INTERIOR LIGHTS

| | | |
|--|--|-------|
| Driver Exterior Door Handle Switch..... | In rear of left door | 212-1 |
| Interior Light Timer Control ... | Below left front speaker | |
| Power Distribution Box | At top rear of left front wheel well | 201-1 |
| C303 (3 pins)..... | At base of right "B" pillar | |
| C304 (3 pins)..... | At base of left "B" pillar | |
| C400 (6 pins) | Behind and above left front speaker | |
| C503 (3 pins)..... | In rear of door..... | 212-2 |
| C510 (1 pin)..... | Behind and above left front speaker | |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |
| G302..... | Under left side of rear seat | 209-2 |

CIGAR LIGHTER/DIGITAL CLOCK/GLOVE BOX LIGHT/AUTOCHARGING FLASHLIGHT

| | | |
|--------------------------------|--|-------|
| Auto-Charging Flashlight | In glove box | |
| Glove Box Light | In right underdash cover, in glove box | |
| Power Distribution Box | At top rear of left front wheel well | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C204 (9 pins)..... | Under left side of dash | 212-3 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |

REAR DEFOGGER

| | | |
|------------------------------|--|-------|
| Dash Warning Display | Top center of dash | |
| Power Distribution Box | At top rear of left front wheel well | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |
| G302..... | Under left side of rear seat | 209-2 |



Figure 1 - Bulkhead Behind Distributor

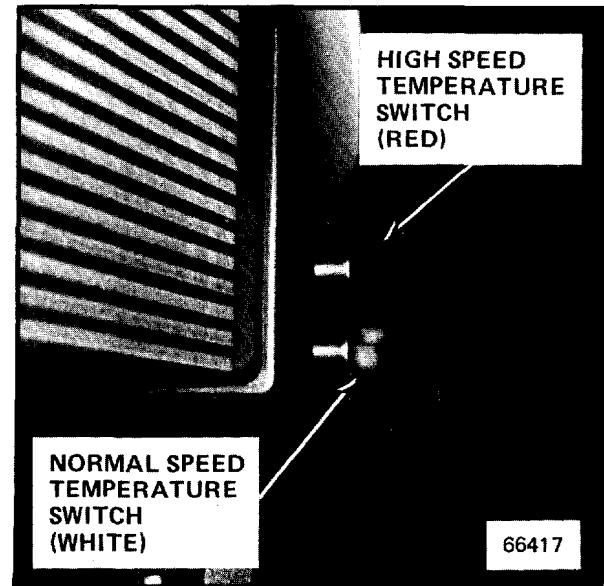


Figure 2 - Bottom Left Rear Of Radiator

RADIO/POWER ANTENNA

| | | |
|-------------------------------|--|-------|
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C250 (7 pins) | Behind right side of center console | 208-2 |
| C302 (25 pins) Accy Connector | Upper left corner of driver's footwell | 211-3 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |
| G302..... | Under left side of rear seat | 209-2 |

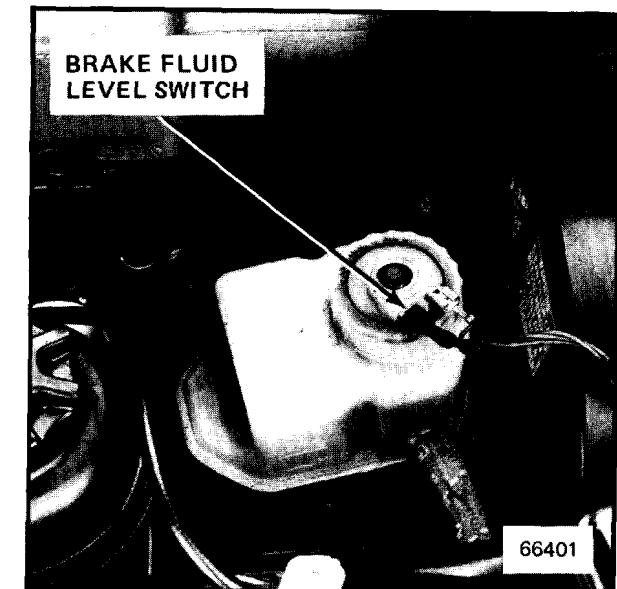


Figure 1 - LH Rear Of Engine Compartment

POWER MIRRORS

| | | |
|------------------------------|--|-------|
| Mirror Control Switch | On driver's door, above arm rest | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C400 (6 pins) | Behind and above left front speaker | |
| C501 (4 pins)..... | Upper left corner of drivers footwell..... | 211-3 |
| C502 (4 pins)..... | Above and behind right rear speaker | 212-2 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |

DASH LIGHTS

| | | |
|-------------------------------|--|-------|
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C204 (9 pins)..... | Under left side of dash, on steering column .. | 210-1 |
| C302 (25 pins) Accy Connector | Upper left corner of driver's footwell | 211-3 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |

HEATING AND AIR CONDITIONING

| | | |
|--|---|-------|
| A/C In-Line Diode..... | Left side of evaporator housing | |
| A/C In-Line Fuse | Left side of evaporator housing | |
| Blower Motor | Behind center console, in evaporator housing | |
| Blower Resistors | Behind center console, in evaporator housing | |
| Clutch Diode..... | Near washer pump | |
| Evaporator Temperature Switch | Left side of evaporator housing | |
| Fuel Shutoff Relay | On bracket in front of left front shock tower | 201-2 |
| High Pressure Cut-Out Switch | On receiver dryer | 206-2 |
| Fresh/Recir. Air Relays | Behind A/C face plate | |
| Fresh/Recir. Air Flap Door Motors | Behind A/C face plate | 208-2 |
| Hot Water Cut-Off Switch | Behind A/C face plate | |
| Idle Speed Control Unit | Right side of dash, above glove box | 202-1 |
| Ignition Control Module | On bulkhead, above brake vacuum booster ... | 203-2 |



Figure 2 - Behind Right Side Of Center Console

(continued)

| | | |
|------------------------------|--|-------|
| Low Pressure Cut-Out | | |
| Switch..... | Behind right headlights | 206-2 |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Water Shut-Off Solenoid..... | Left side of evaporator housing | |
| C103 (29 pins) | Upper left corner of driver's footwell | 211-3 |
| C105 (1 pin) | Right side of evaporator housing | 212-6 |
| C106 (1 pin) | Near washer pump | 206-1 |
| C107 (2 pins) | Near washer pump | 206-1 |
| C204 (9 pins) | Under left side of dash, on steering column .. | 212-3 |
| C251 (4 pins) | Behind A/C face plate | |
| C255 | Left side of evaporator housing | |
| G200 | Under left side of dash, above brake pedal . | 210-2 |

AUXILIARY FAN

| | | |
|-------------------------------|--|-------|
| Auxiliary Fan | In front of condensor | |
| Compressor Enable Switch ... | Behind A/C face plate | |
| Evaporator Temperature Switch | Left side of evaporator housing | |
| High Speed Temperature | | |
| Switch..... | Bottom left rear of radiator | 207-2 |
| Normal Speed Blower | | |
| Resistor | On auxiliary fan shroud | |
| Normal Speed Temperature | | |
| Switch..... | Bottom left rear of radiator | 207-2 |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| C113 (3 pins) | Behind left headlights..... | 211-1 |
| C204 (9 pins) | Under left side of dash, on steering column .. | 210-1 |
| G104..... | On inner fender, behind left headlights..... | 212-3 |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |

CENTRAL LOCKING SYSTEM

| | | |
|---------------------------------|--|-------|
| Central Locking Control Unit... | Below and behind left front speaker | |
| Central Locking Micro | | |
| Switch..... | Rear of right door, at lock cylinder | 212-4 |
| Door Lock Motors | Rear part of each door | 212-4 |
| Gas Filler Door Lock Motor.... | Behind right rear inner wheel well | |
| Ignition Switch | Upper part of steering column | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Trunk Lid Lock Motor | On trunk lock center support | |

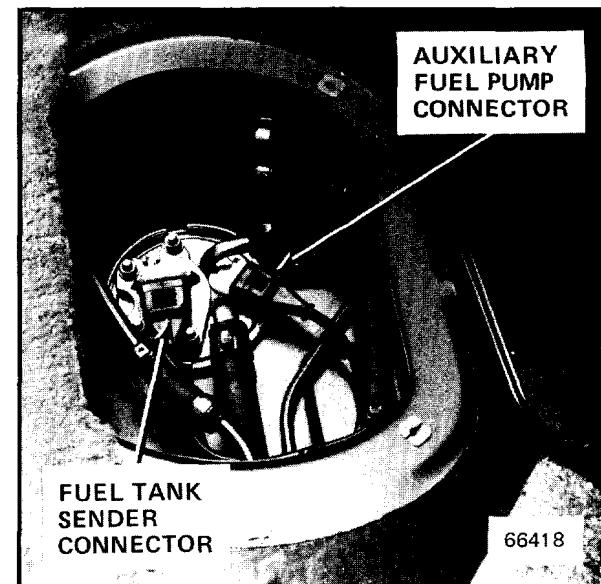


Figure 1 - Under Right Side Of Rear Seat

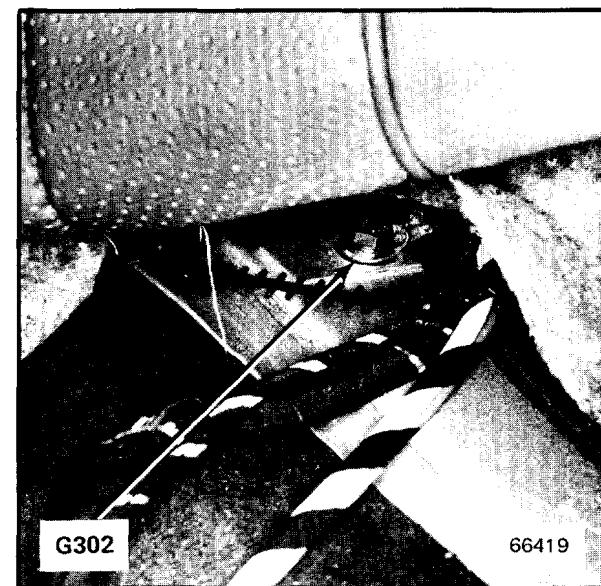


Figure 2 - Left Side Of Rear Seat Back Rest

210 COMPONENT LOCATIONS

(continued)

| | | |
|-------------------------------------|--|-------|
| C200 (9 pins) | Under left side of dash, on steering column .. | 210-1 |
| C302 (25 pins) Accy Connector | Upper left corner of driver's footwell | 211-3 |
| C400 (6 pins) | Behind and above left front speaker | |
| C401 (13 pins) | Above and behind right front speaker | |
| C402 (13 pins) | Above and behind left front speaker | |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |

POWER WINDOWS

| | | |
|---------------------------------------|--|-------|
| Ignition Switch | Upper part of steering column | |
| Power Distribution Box | At top rear of left front wheel well..... | 201-1 |
| Power Window Circuit Breaker | On center console, above radio..... | 212-5 |
| Power Window Motors | Forward part of each door | |
| C200 (9 pins) | Under left side of dash, on steering column .. | 210-1 |
| C302 (25 pins) Accy Connector | Upper left corner of driver's footwell | 211-3 |
| C351 (1 pin) | Behind center console | |
| C401 (13 pins) | Above and behind right front speaker | |
| C402 (13 pins) | Above and behind left front speaker | |
| G200..... | Under left side of dash, above brake pedal.... | 210-2 |



Figure 1 - Under Left Side Of Dash

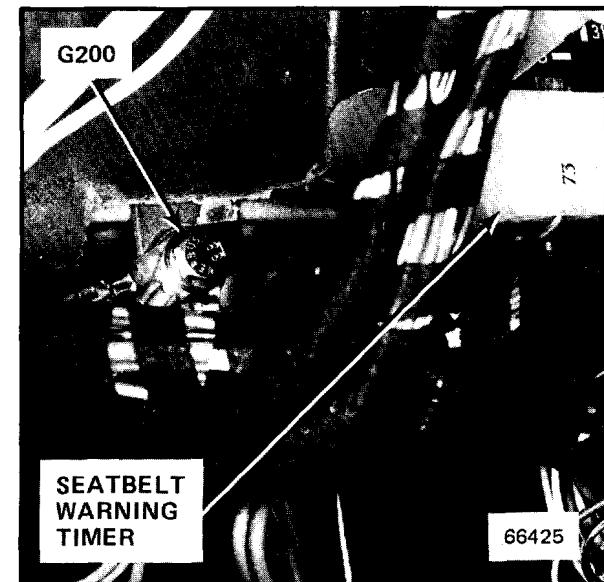


Figure 2 - Above Pedal Assembly

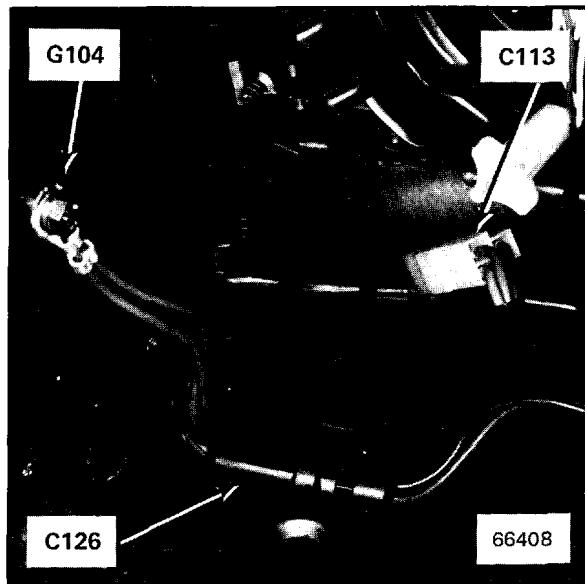


Figure 1 - Behind Left Headlights

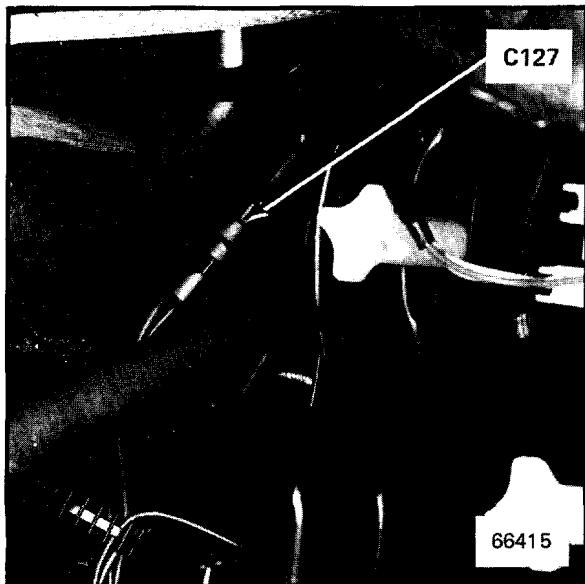
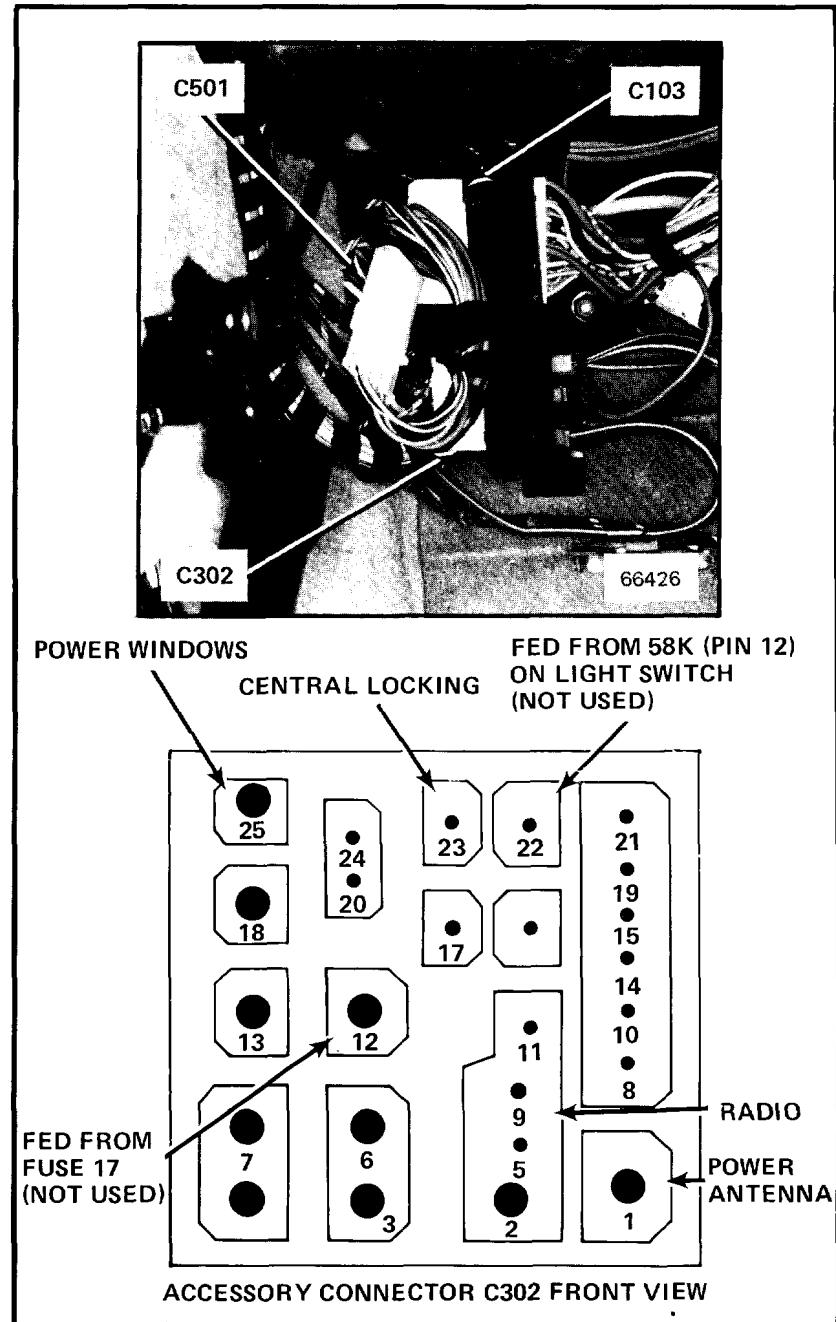


Figure 2 - Behind Right Headlights

Figure 3 - Under Left Side Of Dash
Ahead Of Pedal Assembly

212 COMPONENT LOCATIONS

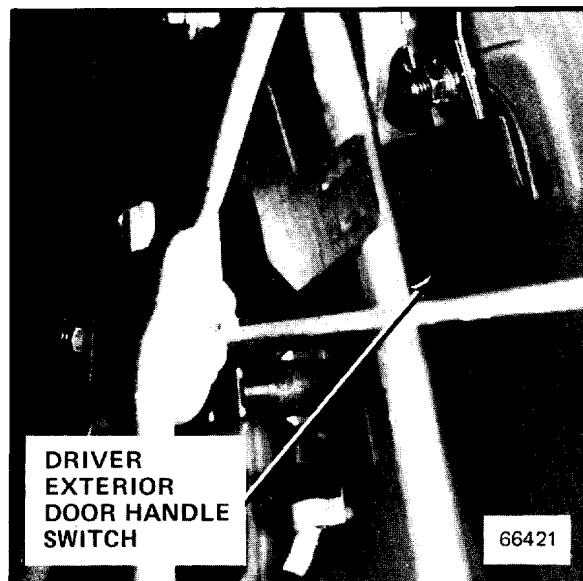


Figure 1 - Rear Of Left Door

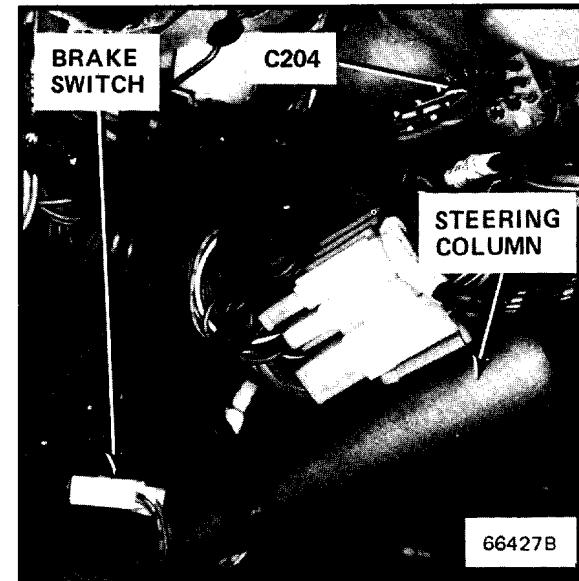


Figure 3 - Under Left Side Of Dash

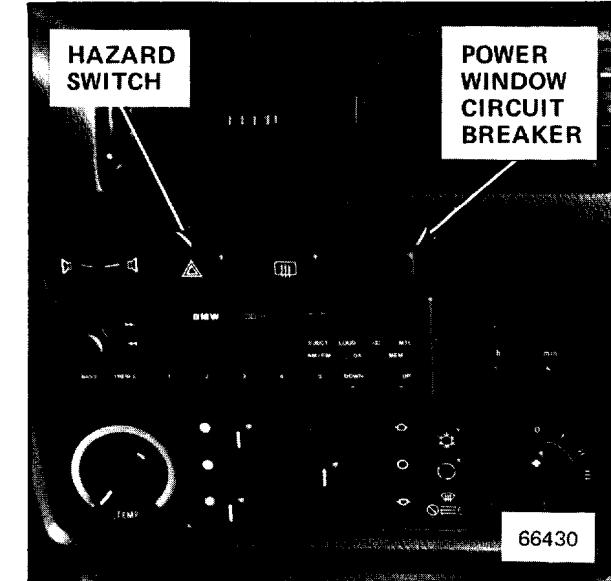


Figure 5 - Center Console

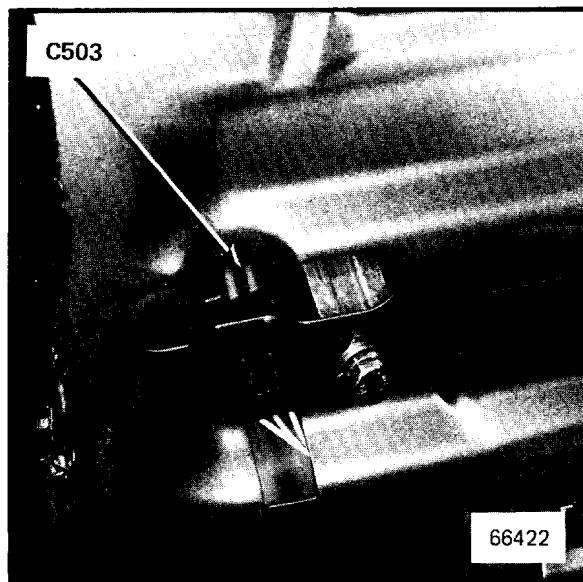


Figure 2 - Rear Of Left Door

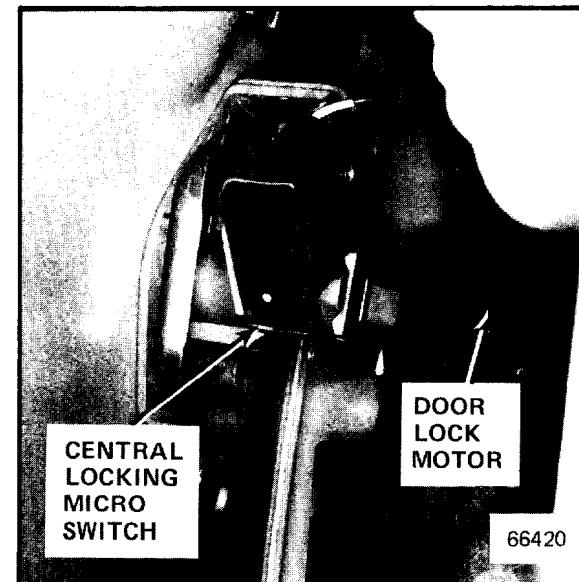


Figure 4 - Rear Of Right Door

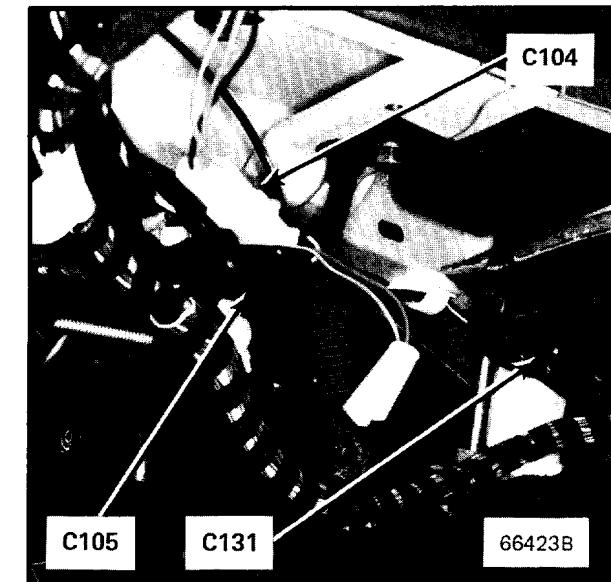


Figure 6 - Behind Right Side Of Dash