



1982

BMW 733i

Electrical

Troubleshooting

Manual

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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.

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1982 BMW 733i Electrical Troubleshooting 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 (CROSSSECTIONAL 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

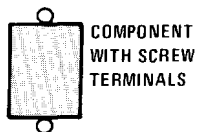
4 SYMBOLS



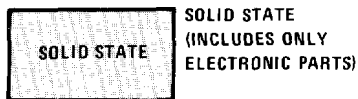
ENTIRE
COMPONENT
SHOWN



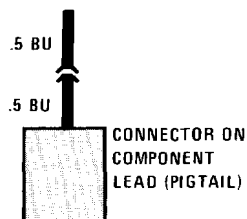
PART OF A
COMPONENT
SHOWN



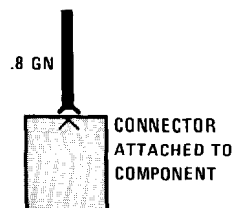
COMPONENT
WITH SCREW
TERMINALS



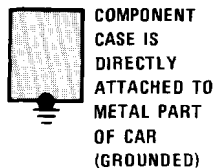
SOLID STATE
(INCLUDES ONLY
ELECTRONIC PARTS)



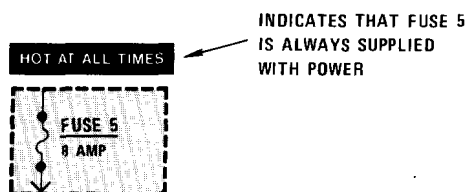
CONNECTOR ON
COMPONENT
LEAD (PIGTAIL)



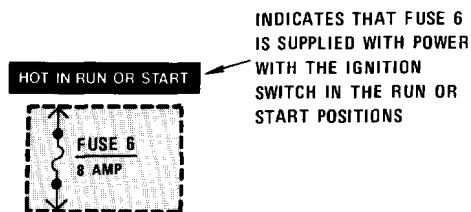
CONNECTOR
ATTACHED TO
COMPONENT



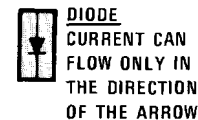
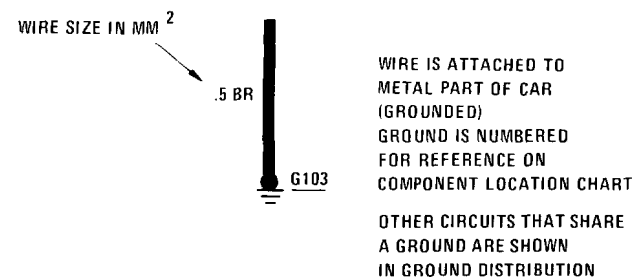
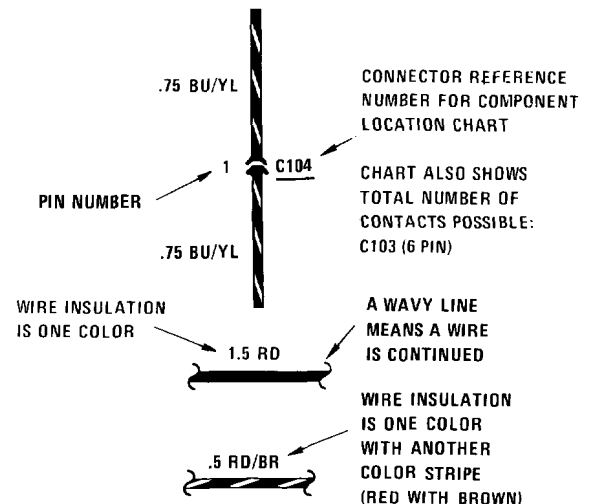
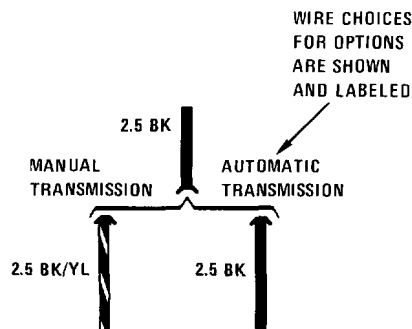
COMPONENT
CASE IS
DIRECTLY
ATTACHED TO
METAL PART
OF CAR
(GROUNDED)



INDICATES THAT FUSE 5
IS ALWAYS SUPPLIED
WITH POWER

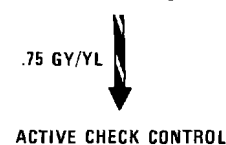


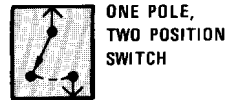
INDICATES THAT FUSE 6
IS SUPPLIED WITH POWER
WITH THE IGNITION
SWITCH IN THE RUN OR
START POSITIONS



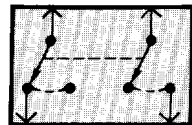
DIODE
CURRENT CAN
FLOW ONLY IN
THE DIRECTION
OF THE ARROW

CIRCUIT REFERENCE --
A WIRE WHICH CONNECTS
TO ANOTHER CIRCUIT



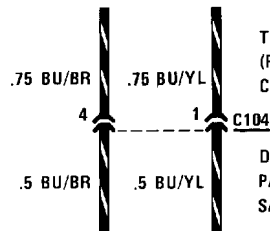


ONE POLE,
TWO POSITION
SWITCH



SWITCHES THAT
MOVE TOGETHER

DASHED LINE SHOWS
A MECHANICAL
CONNECTION
BETWEEN SWITCHES

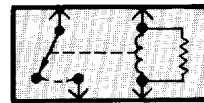


TWO CONNECTIONS
(PINS) IN THE SAME
CONNECTOR

DASHED LINE SHOWS
PARTS OF THE
SAME CONNECTOR

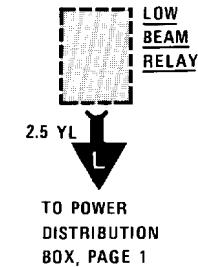
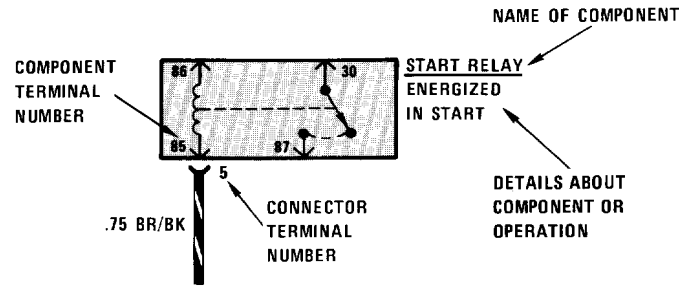


WHEN COIL IS
ENERGIZED, SWITCH
IS PULLED CLOSED

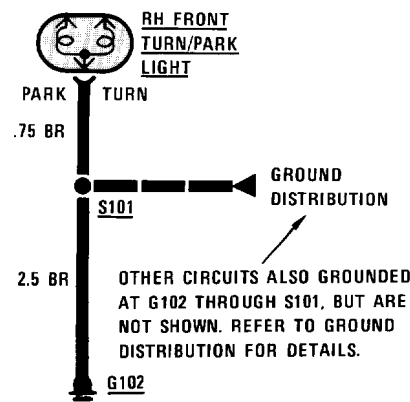
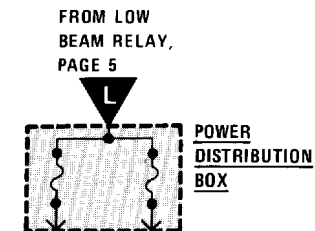
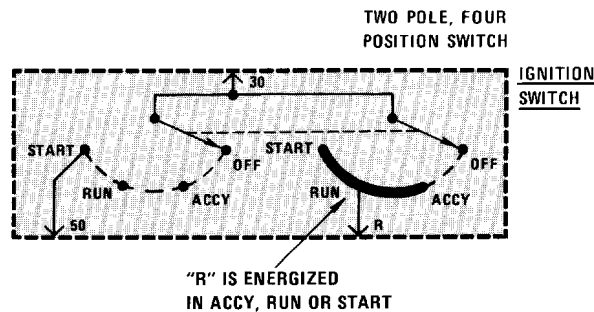


RELAY SHOWN
WITH RESISTOR
ACROSS COIL

RESISTOR ACROSS COIL
IS FOR NOISE
SUPPRESSION



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



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

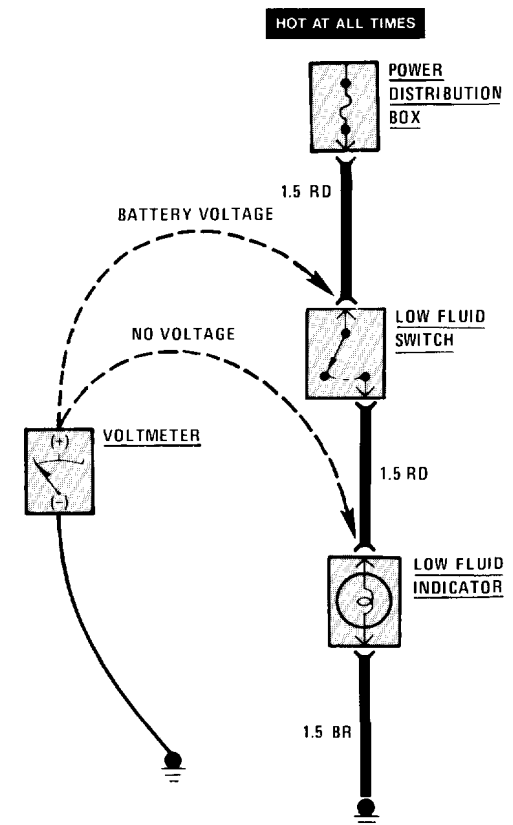
Isolating the problem (Step 3 of TROUBLESHOOTING PROCEDURES) requires the use of a **voltmeter** and/or **ohmmeter**. A voltmeter measures voltage at selected points in a circuit. An ohmmeter measures a circuit's resistance to current flow. It has an internal battery that provides current to the circuit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

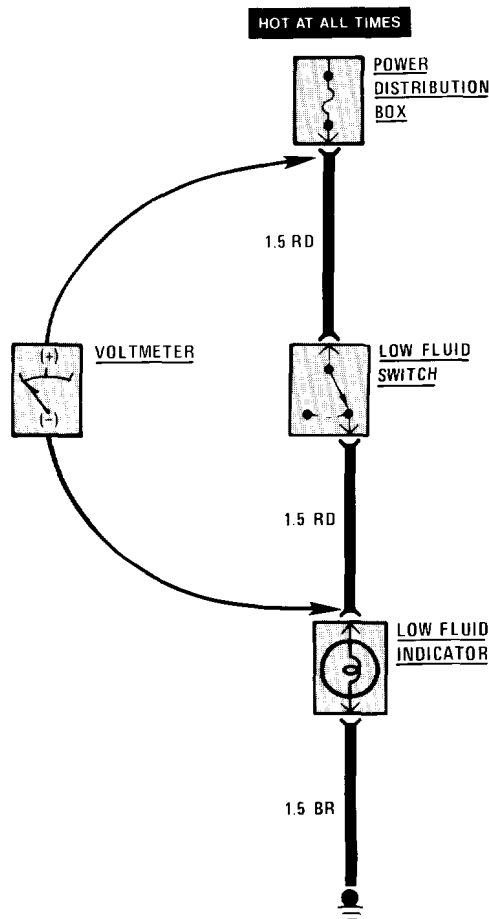


Voltage Test

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.

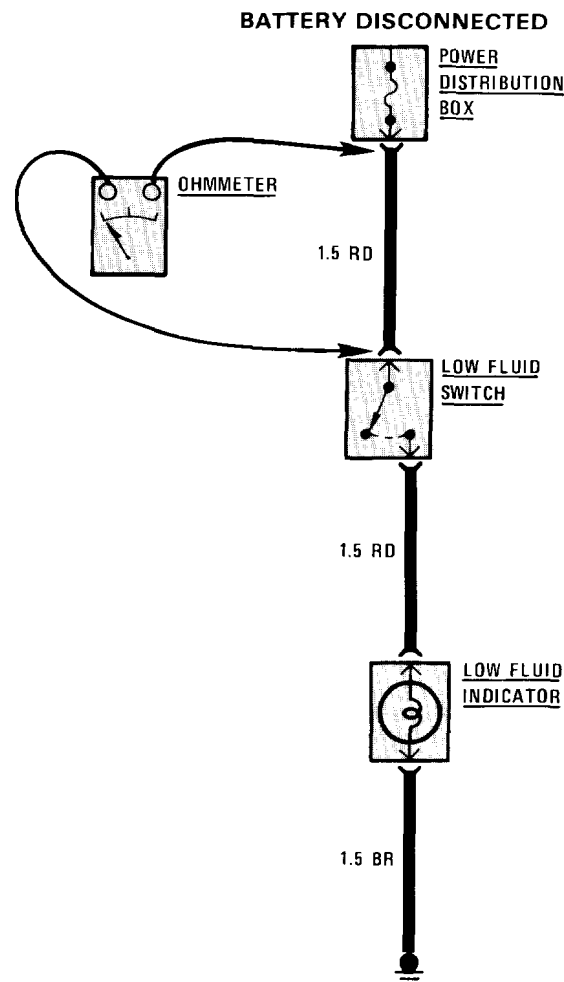
To test for voltage drop, connect the voltmeter leads to connectors at either end of the circuit's suspected problem area. The positive lead should be connected to the connector closest to the power source. The voltmeter will show the voltage drop between these two points.



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.

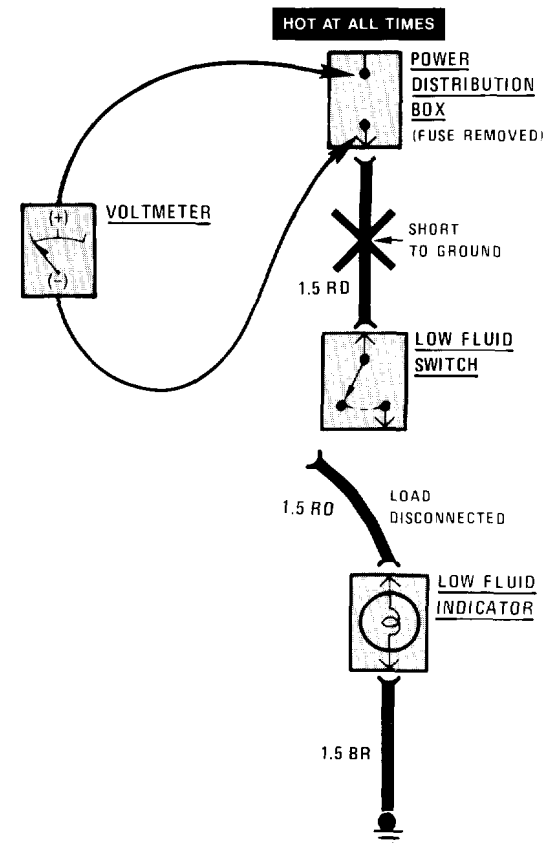


Continuity Test

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.



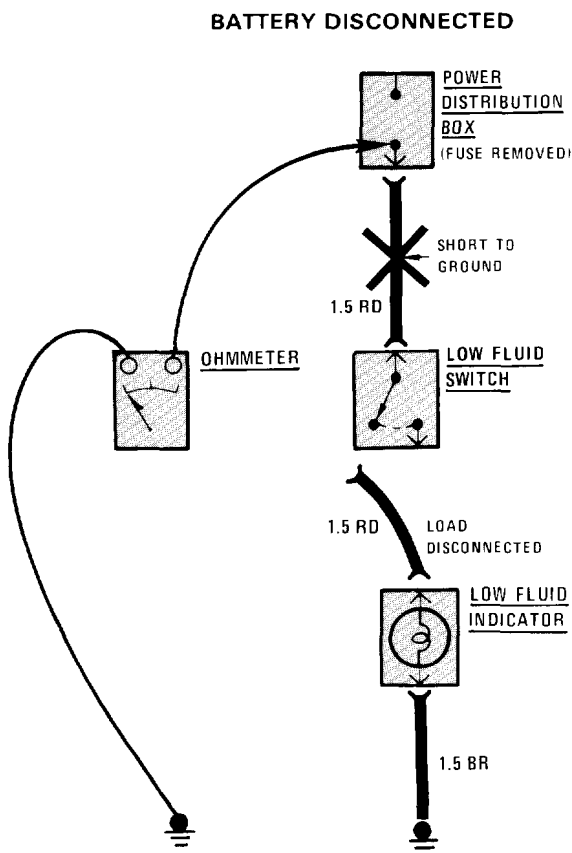
Short Test Using Voltmeter

8 SYSTEMATIC TROUBLESHOOTING

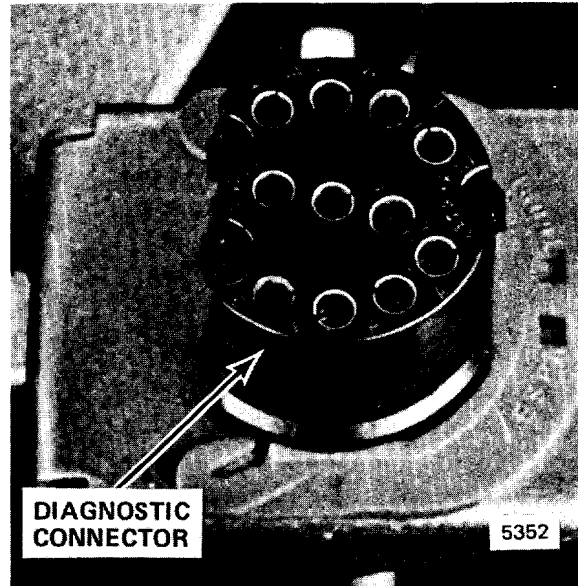
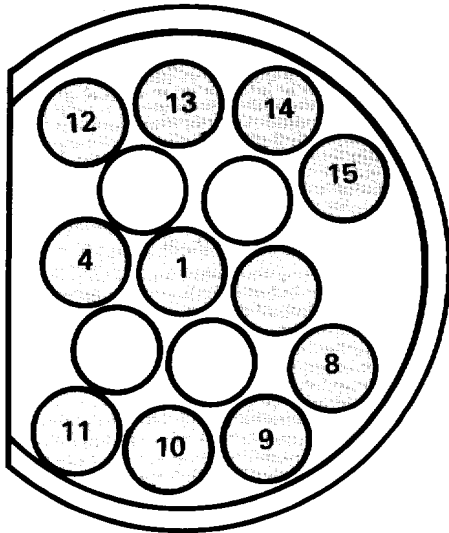
Short Test Using Ohmmeter

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

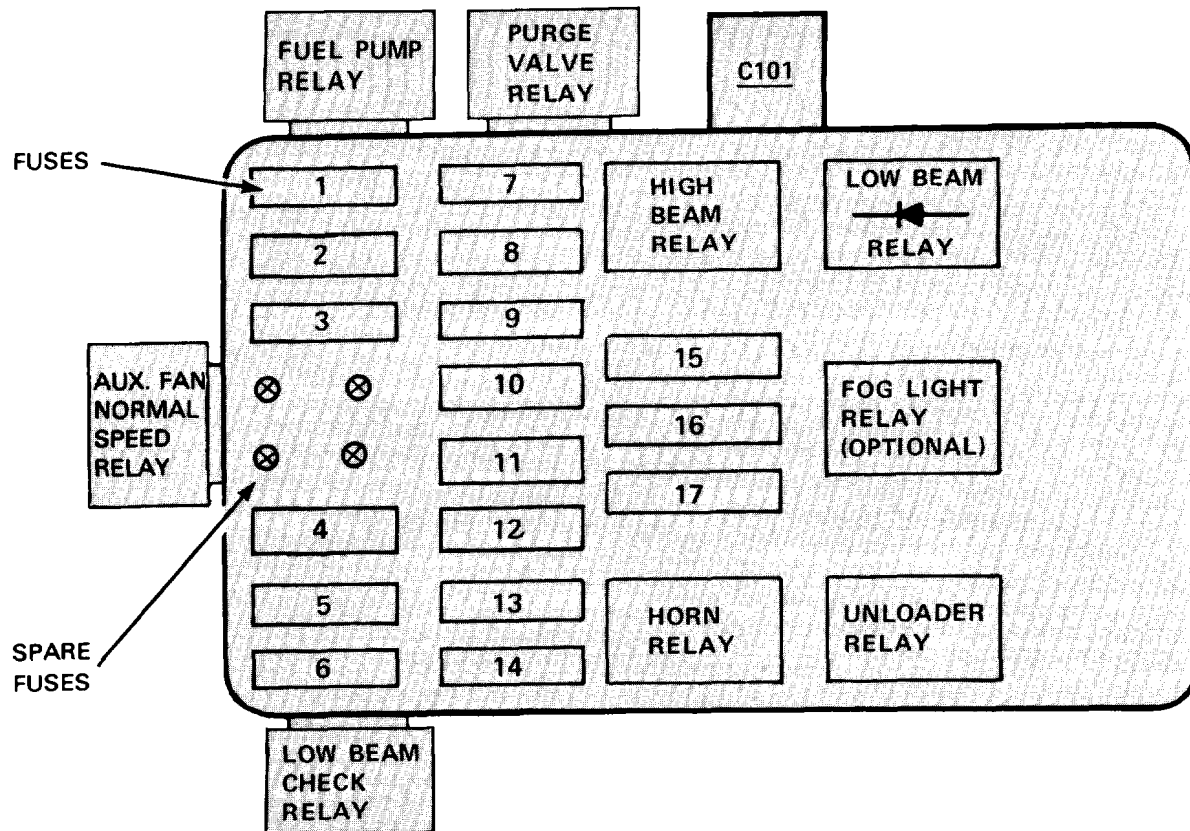


**DIAGNOSTIC CONNECTOR
(TOP FRONT OF ENGINE)**

PIN	WIRE SIZE	WIRE COLOR	CIRCUIT AND COMPONENT CONNECTED
1	1.5	BR	Ground.
4	.5	BR/WT	Gauges/Warning Indicators, Coolant Temperature Sender.
8	.5	YL	Ignition, TDC Sensor.
9		SHIELD	Ignition, TDC Sensor.
10	.5	BK	Ignition, TDC Sensor.
11	2.5	BK/YL	Start, Start Signal.
12	.75	BU	Charge System, Alternator.
13	.75	BK	Ignition Coil
14	2.5	RD	Charge System, Alternator.
15	1.5	GN/YL	Fuel Delivery, Fuel Pump On.

NOTE

On some cars, the position of the Fuel Pump and Purge Valve Relays may be the opposite of what is shown. Check relay wire colors for positive identification.

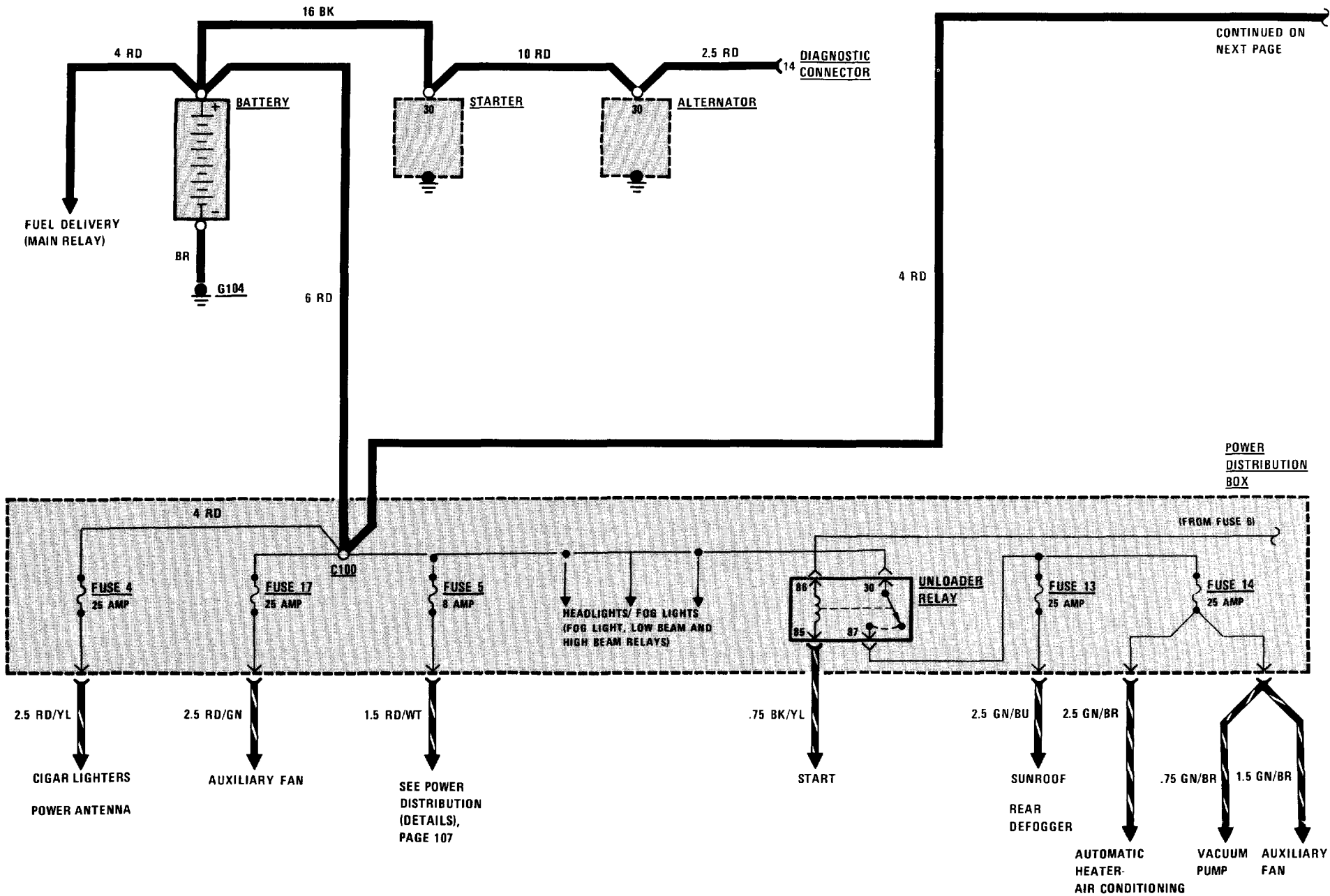


FUSE NO.	SIZE/ COLOR	CIRCUITS PROTECTED	SCHEMATIC PAGE
1	16A(RD)	Fuel Delivery/Evaporative Control; Idle Speed Control.	110 112
2	8A(WT)	Headlights (RH Low Beam).	127
3	8A(WT)	Headlights (LH Low Beam).	127
4	25(BU)	Cigar Lighters.	137
5	8A(WT)	Active Check Control; Auto-Charging Flashlight; Central Locking; Gauges; Glove Box Light; Heated Door Lock; Ignition Key Warning/Seatbelt Warning; Interior Lights; Lights: Turn/Hazard Warning; On-Board Computer; Radio/Power Antenna; Trunk Light.	123 137 142 118 137 138 115 125 128 116 145 131
6	8A(WT)	Active Check Control; Backup Lights/Transmission Range Lights; Brake Lining Warning; Cruise Control; Dash Lights; Gauges; Idle Speed Control; Interior Lights; Power Mirrors; Power Windows; Seatbelt Warning; Speedometer; Warning Indicators.	123 136 124 133 134 118 112 125 144 140 115 118 118

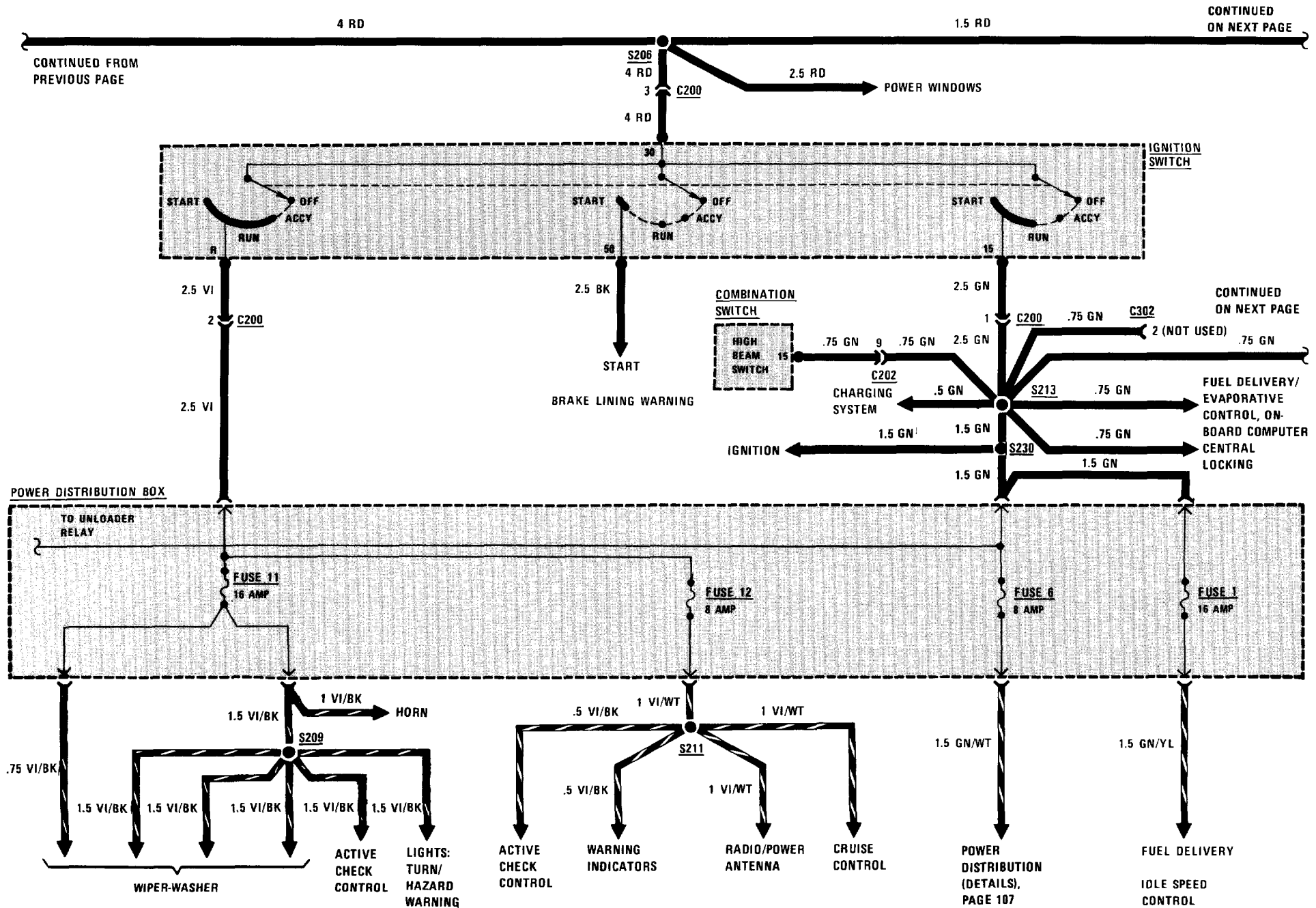
FUSE NO.	SIZE/ COLOR	CIRCUITS PROTECTED	SCHEMATIC PAGE
7	8A(WT)	Headlights (LH, RH High Beams)	127
8	8A(WT)	Headlights (LH, RH High Beams)	127
9	8A(WT)	Active Check Control; Dash Lights; Lights: Front Park/Tail/Underhood; Lights: Rear Marker/License.	122 134 130 131
10	8A(WT)	Active Check Control; Lights: Front Park/Tail.	122 130
11	16A(RD)	Active Check Control; Horns; Lights: Turn/Hazard Warning; Wiper/Washer.	121 138 128 114
12	8A(WT)	Active Check Control; Radio/Power Antenna; Stoplights/Cruise Control; Warning Indicators.	122 145 132 120
13	25A(BU)	Rear Defogger/Sunroof.	139
14	25A(BU)	Automatic Heater-Air Conditioner; Auxiliary Fan; Vacuum Pump.	147 146 146
15	8A(WT)	Fog Lights (RH).	127
16	8A(WT)	Fog Lights (LH).	127
17	25A(BU)	Auxiliary Fan.	146
Power Window Circuit Breaker	25A	Power Windows.	140
In-Line Radio	1A	Radio.	145
Auxiliary Fan Fuses (2)	25A	Auxiliary Fan.	146

104 POWER DISTRIBUTION

(For Component Locations See Page 209)

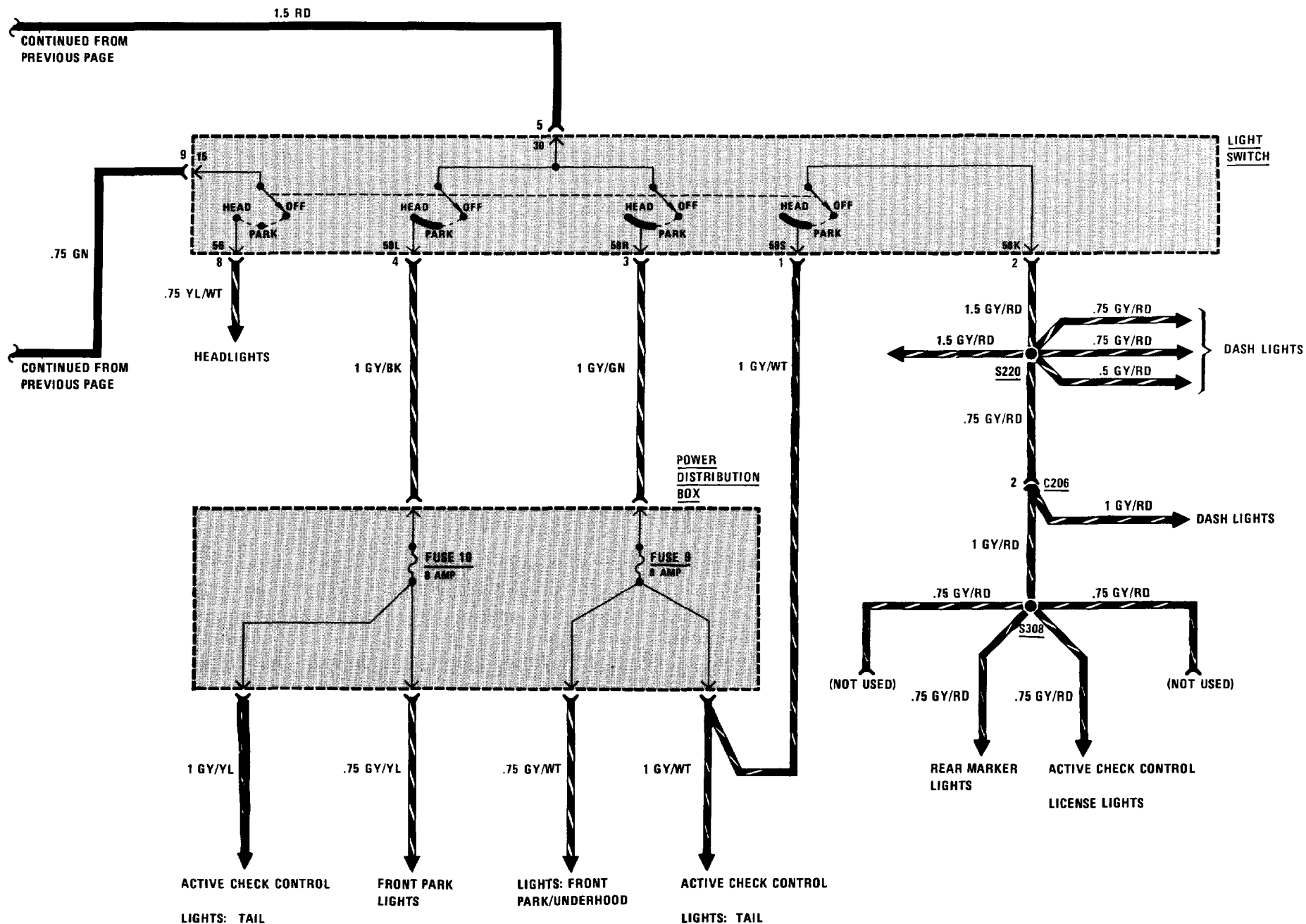


(For Component Locations See Page 209)

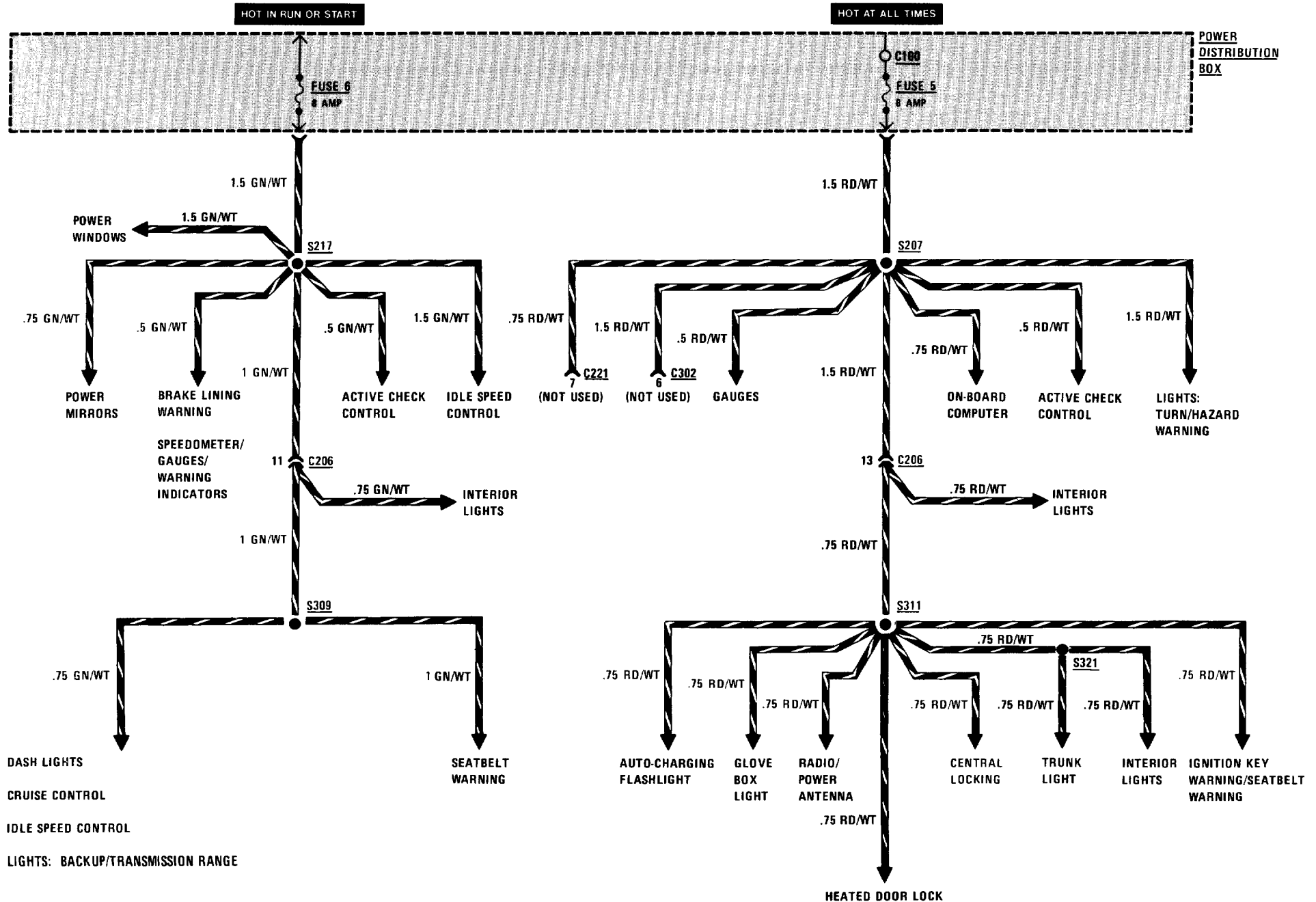


106 POWER DISTRIBUTION

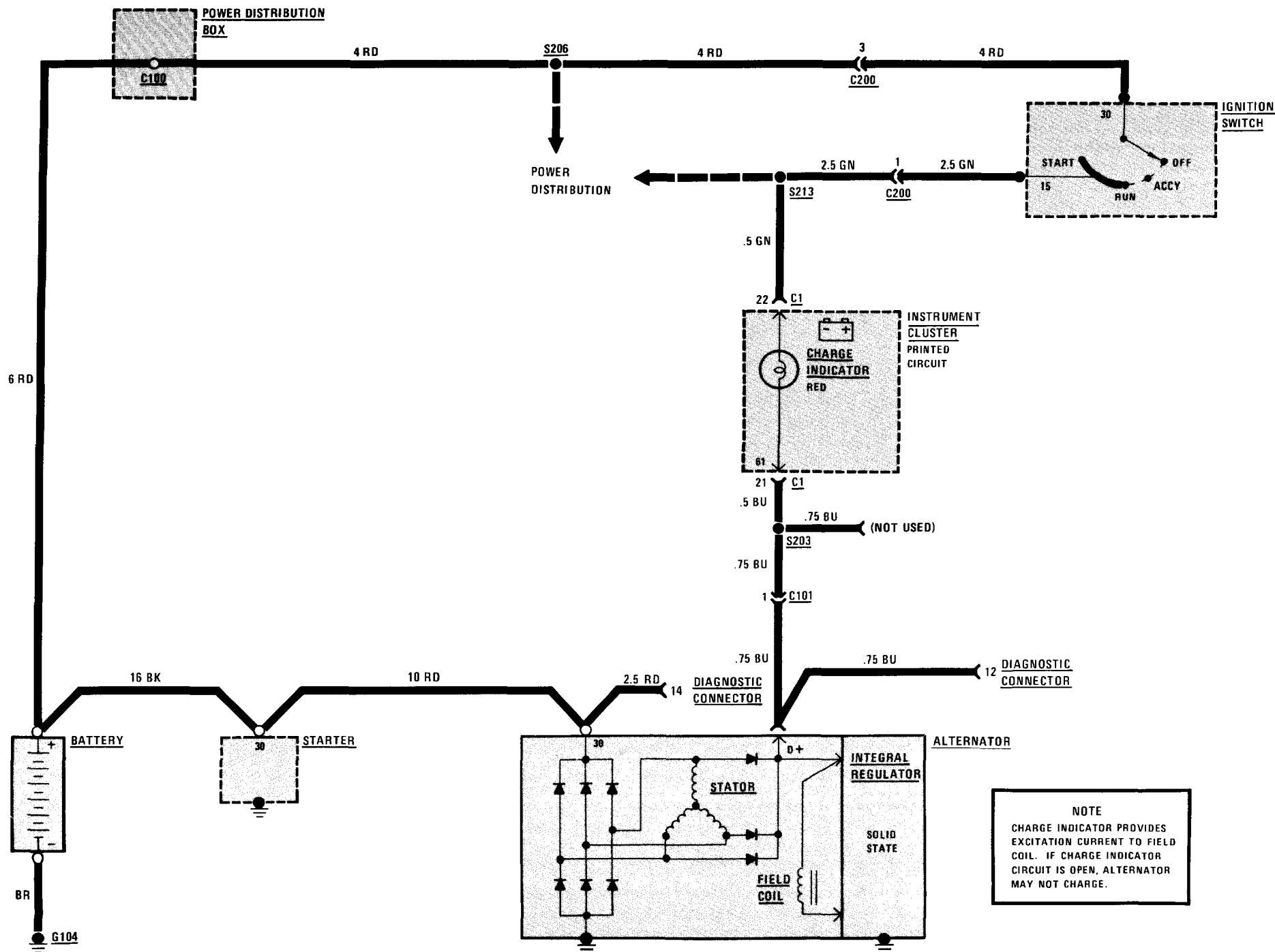
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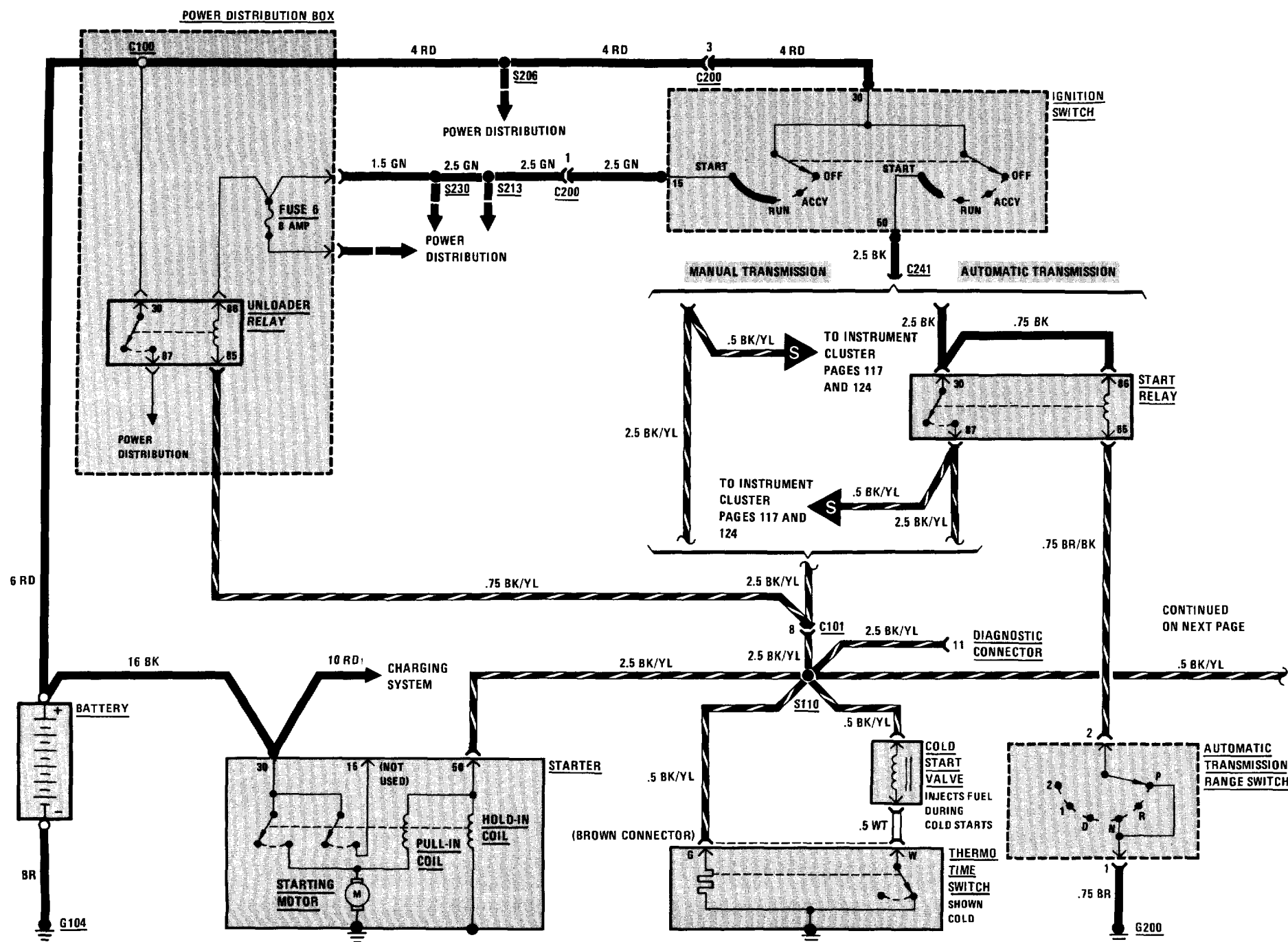


(For Component Locations See Page 209)



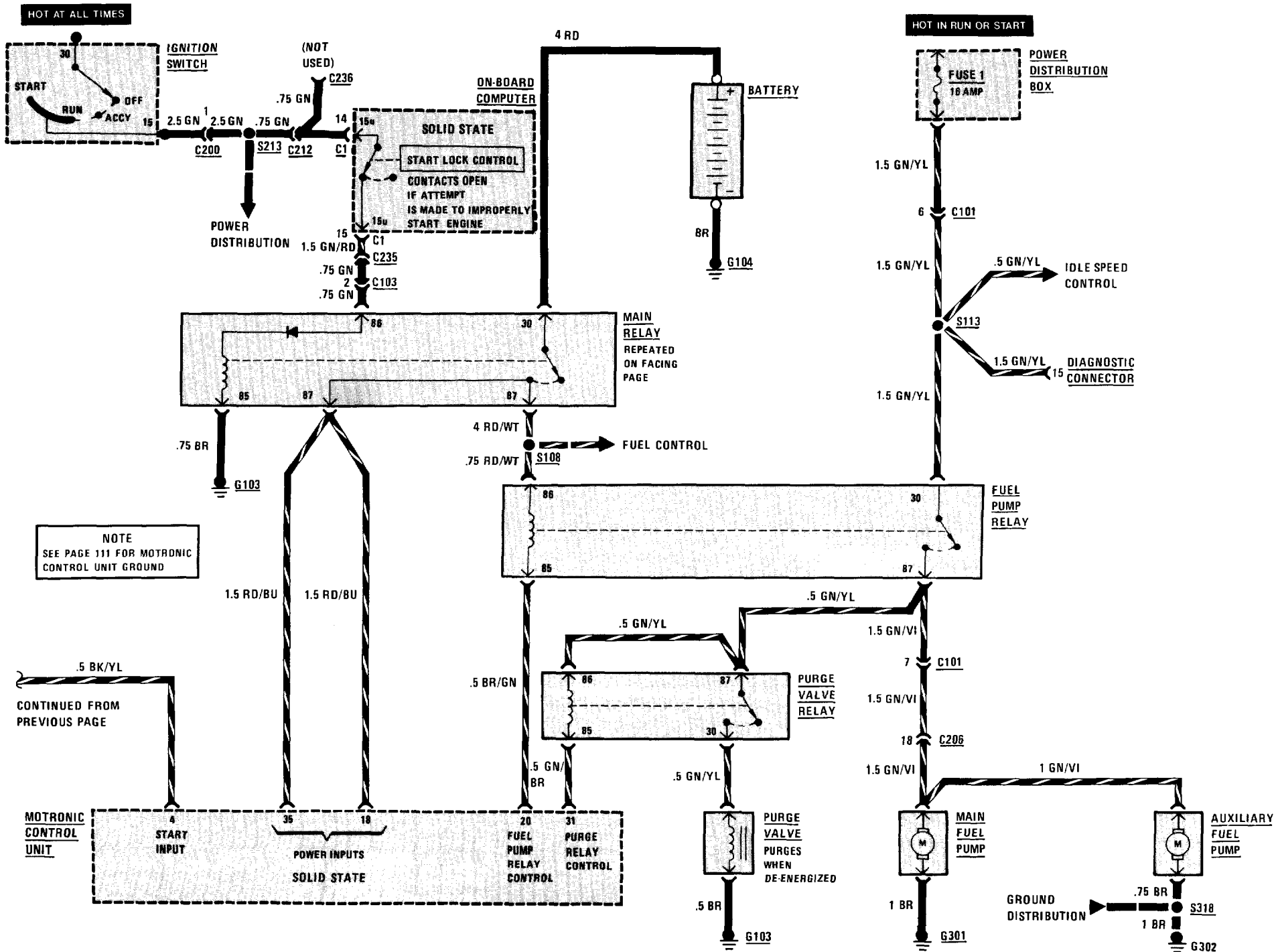
(For Component Locations See Page 203)



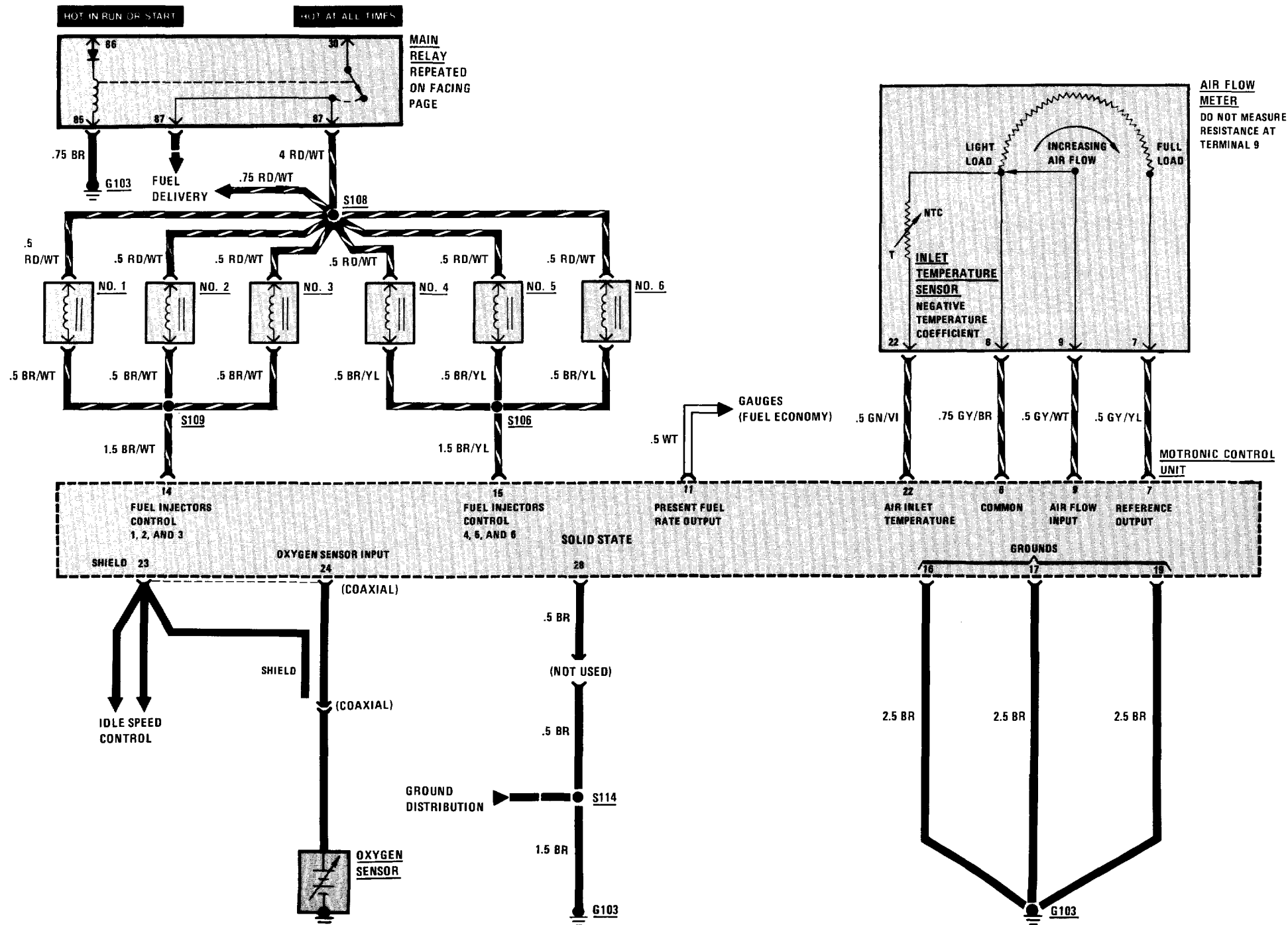


110 FUEL DELIVERY/EVAPORATIVE CONTROL

(For Component Locations See Page 204)

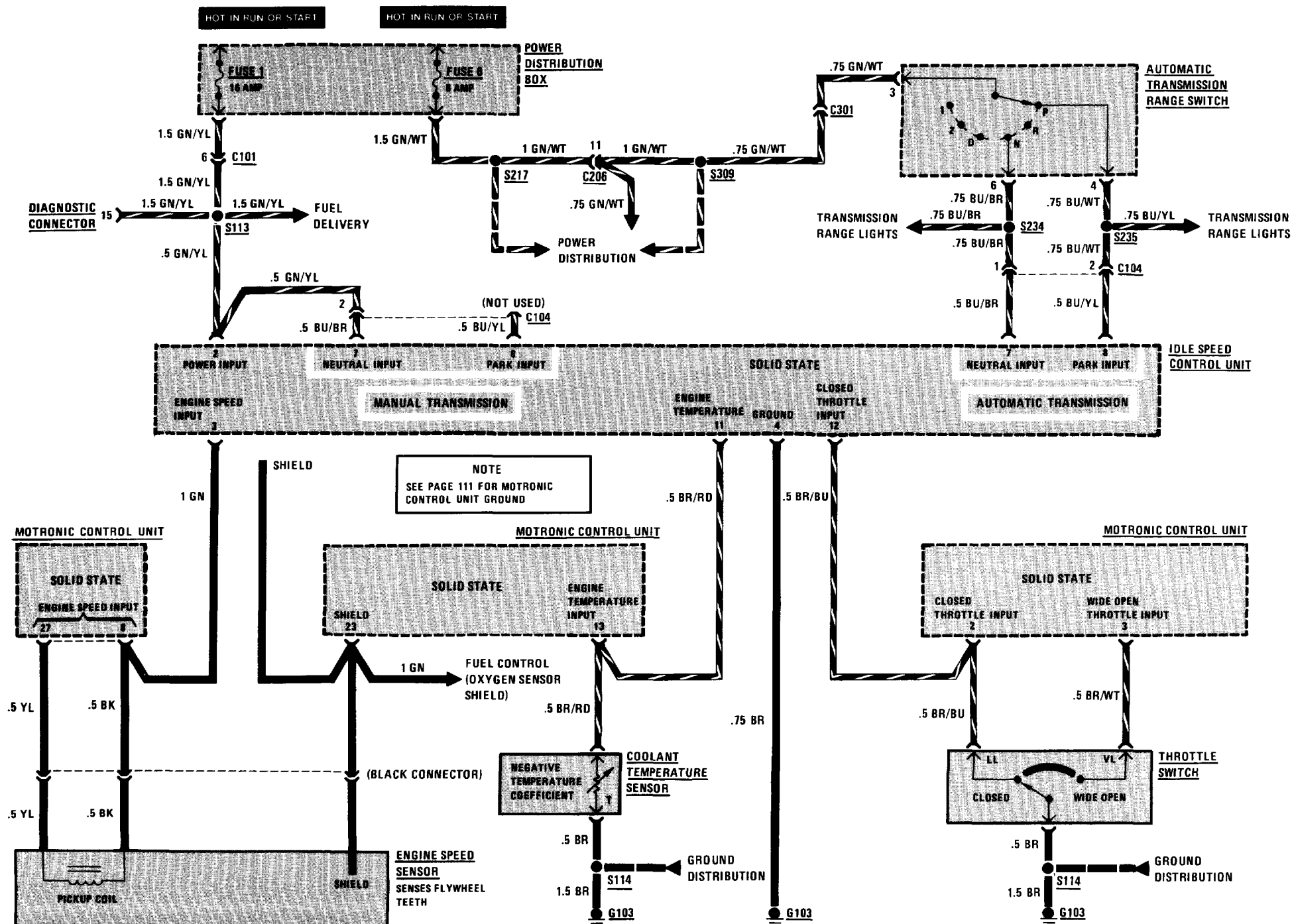


(For Component Locations See Page 204)

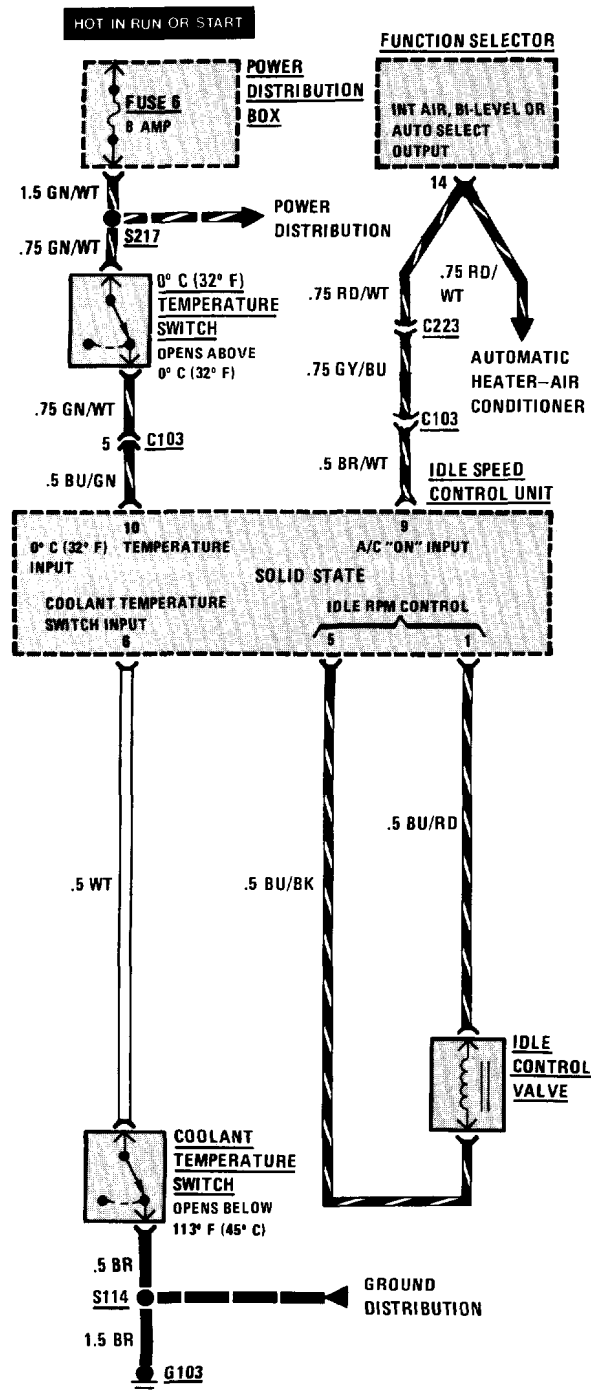


112 IDLE SPEED CONTROL

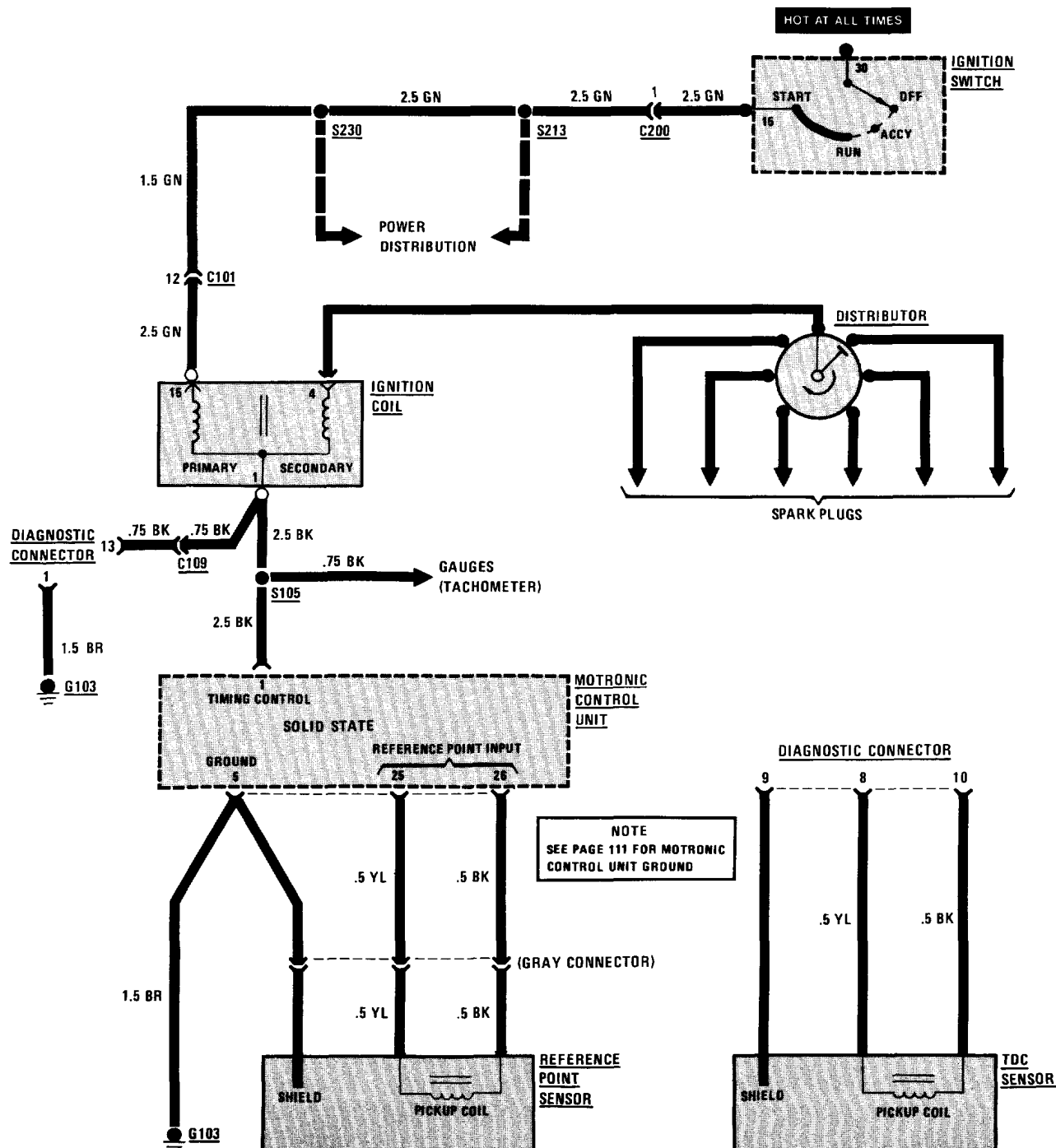
(For Component Locations See Page 206)



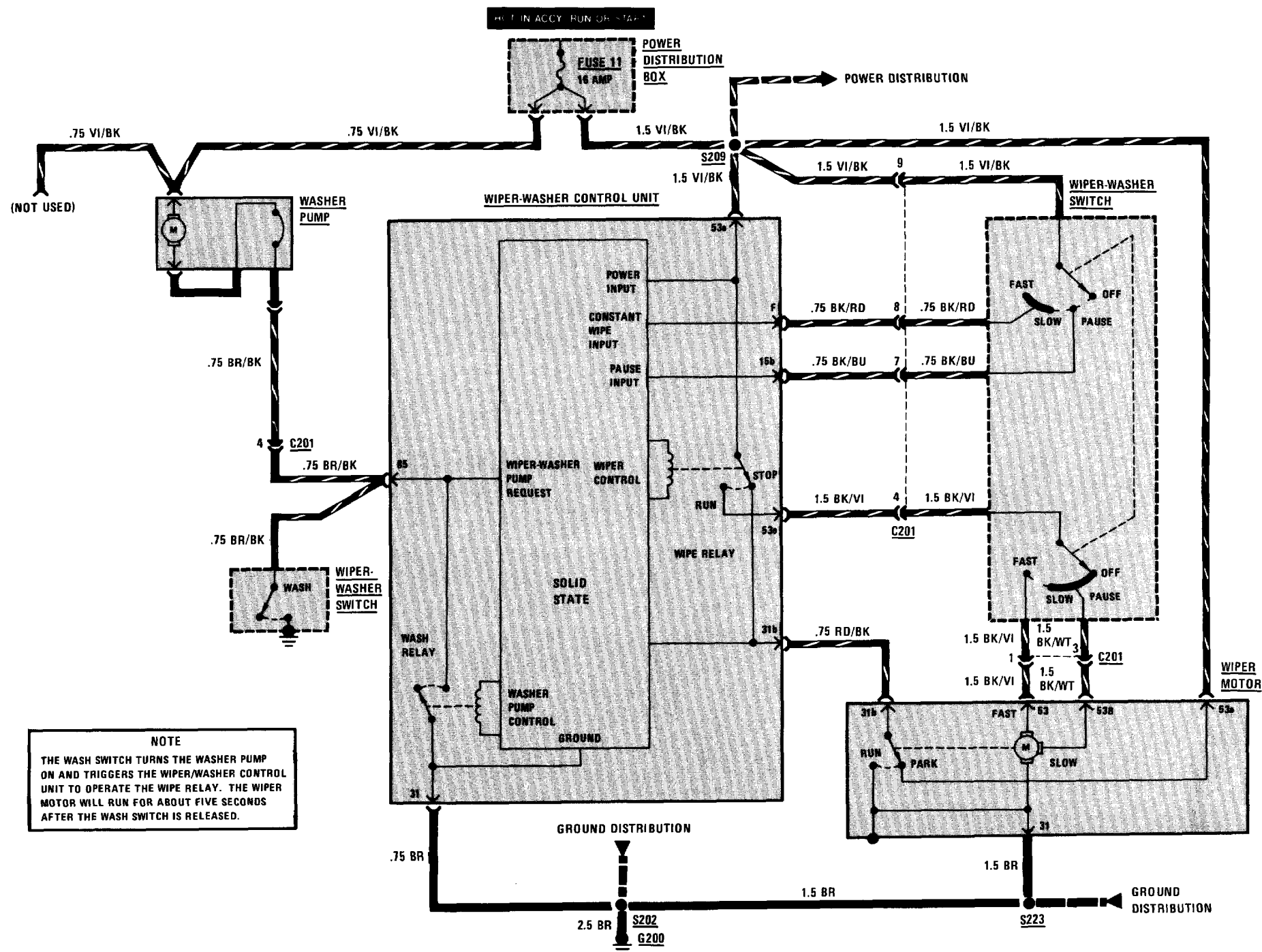
(For Component Locations See Page 206)



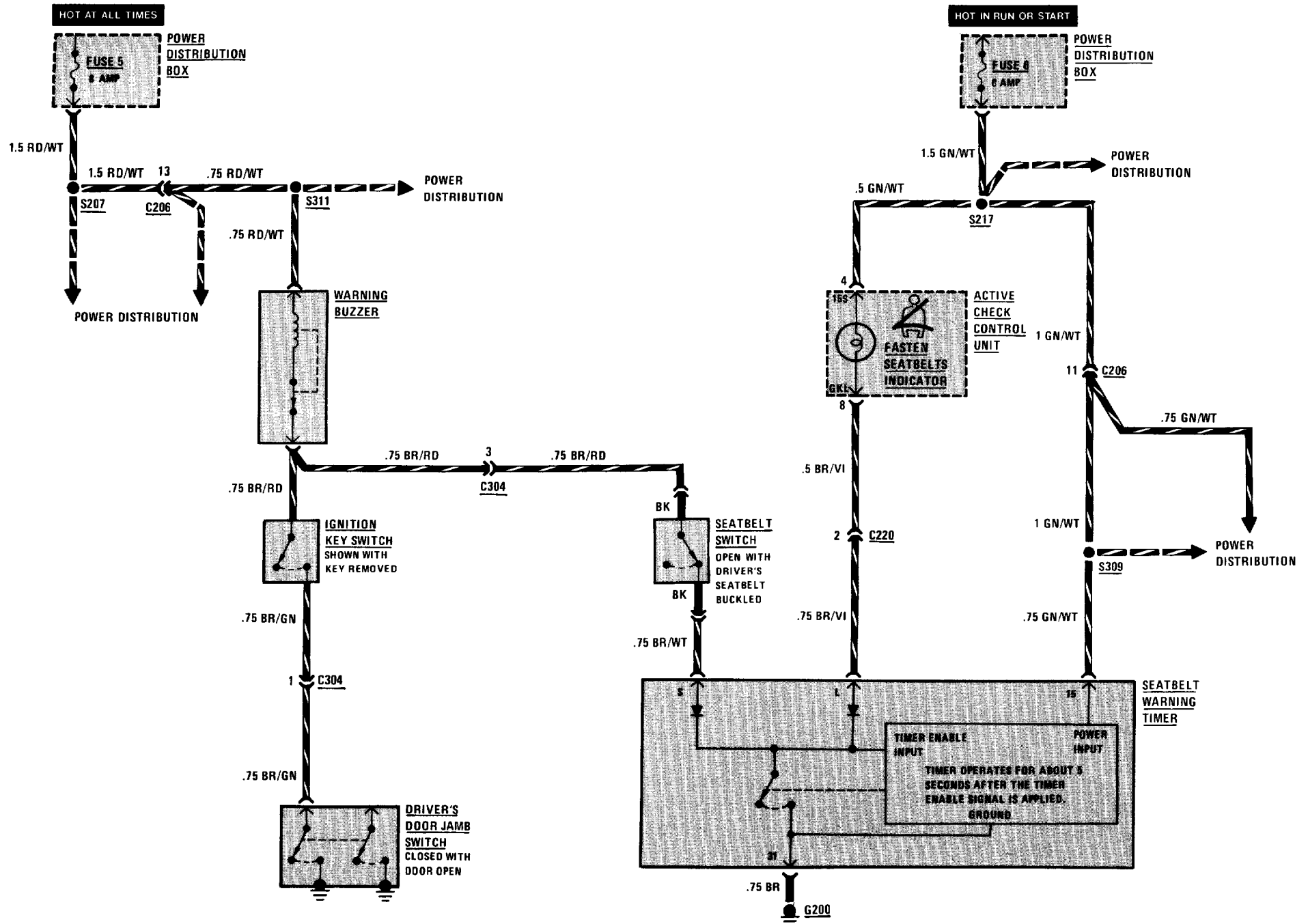
(For Component Locations See Page 206)

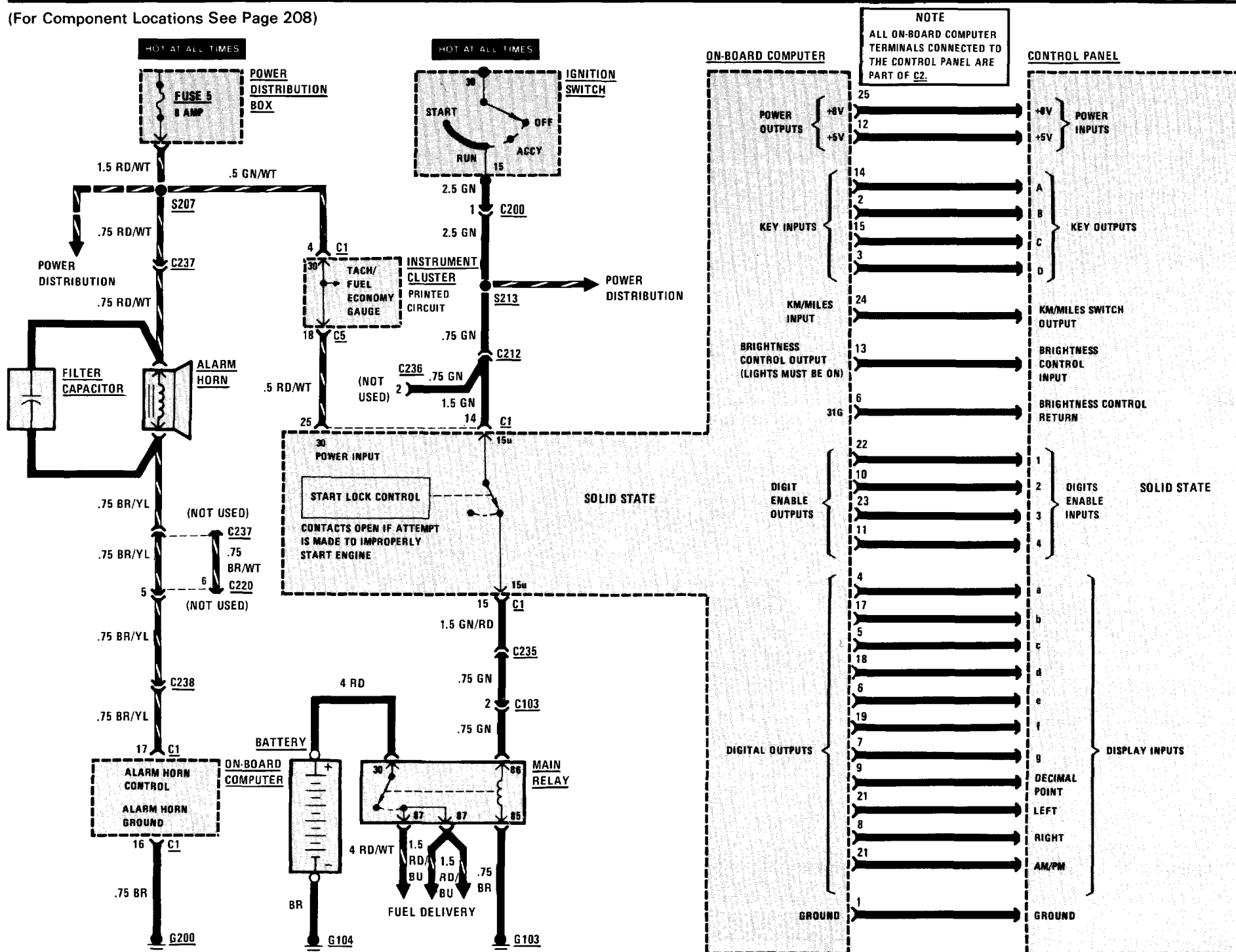


(For Component Locations See Page 212)

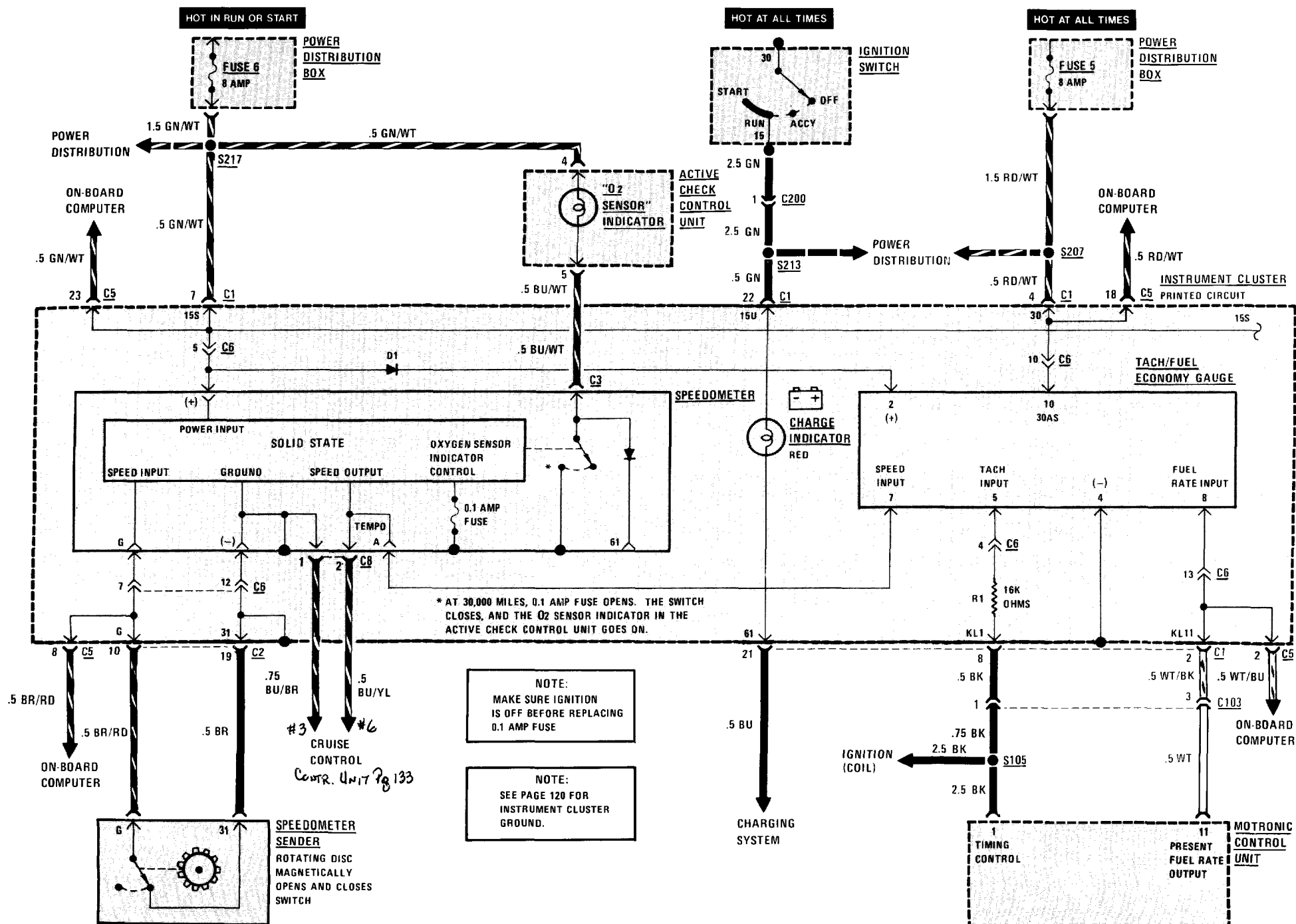


(For Component Locations See Page 207)

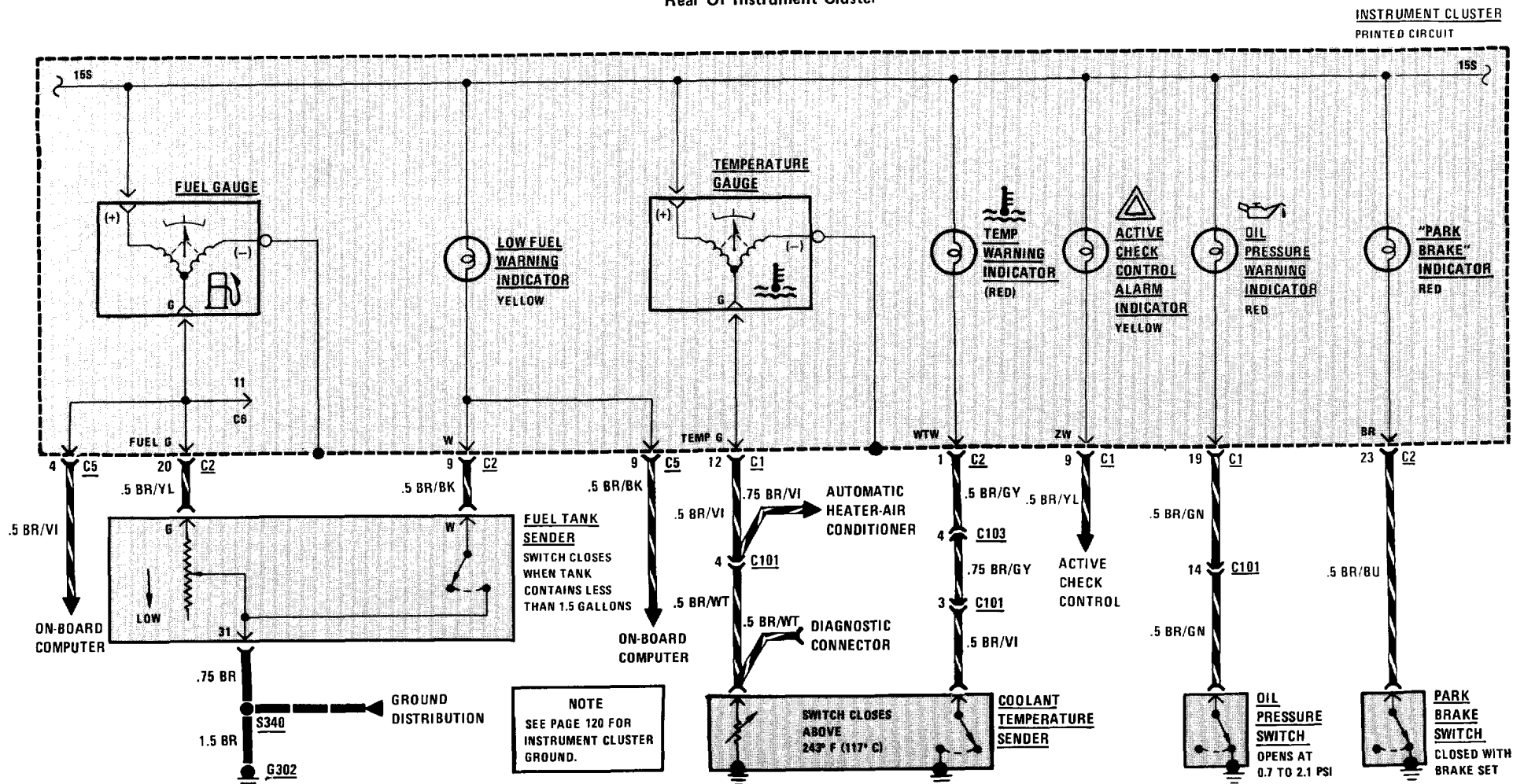
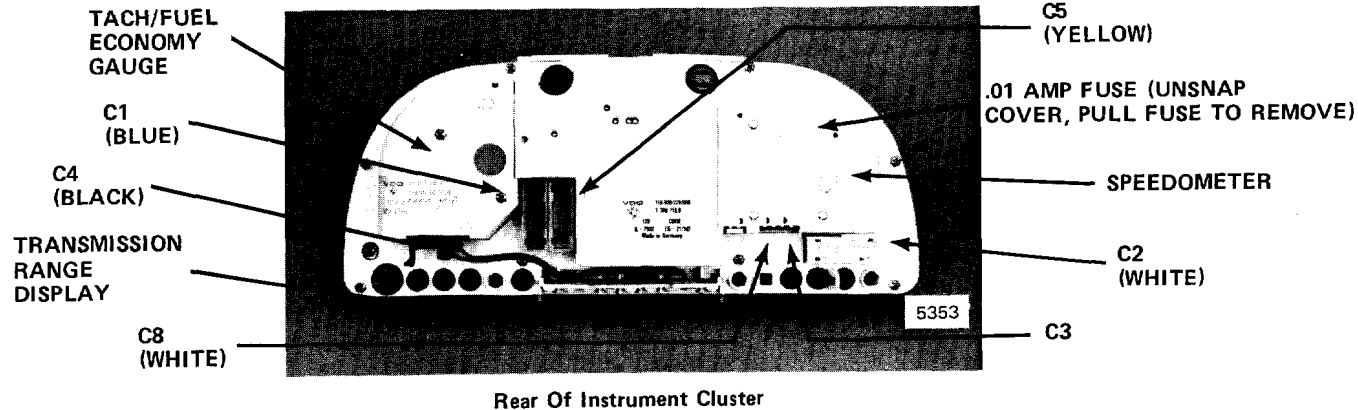




(For Component Locations See Page 211)

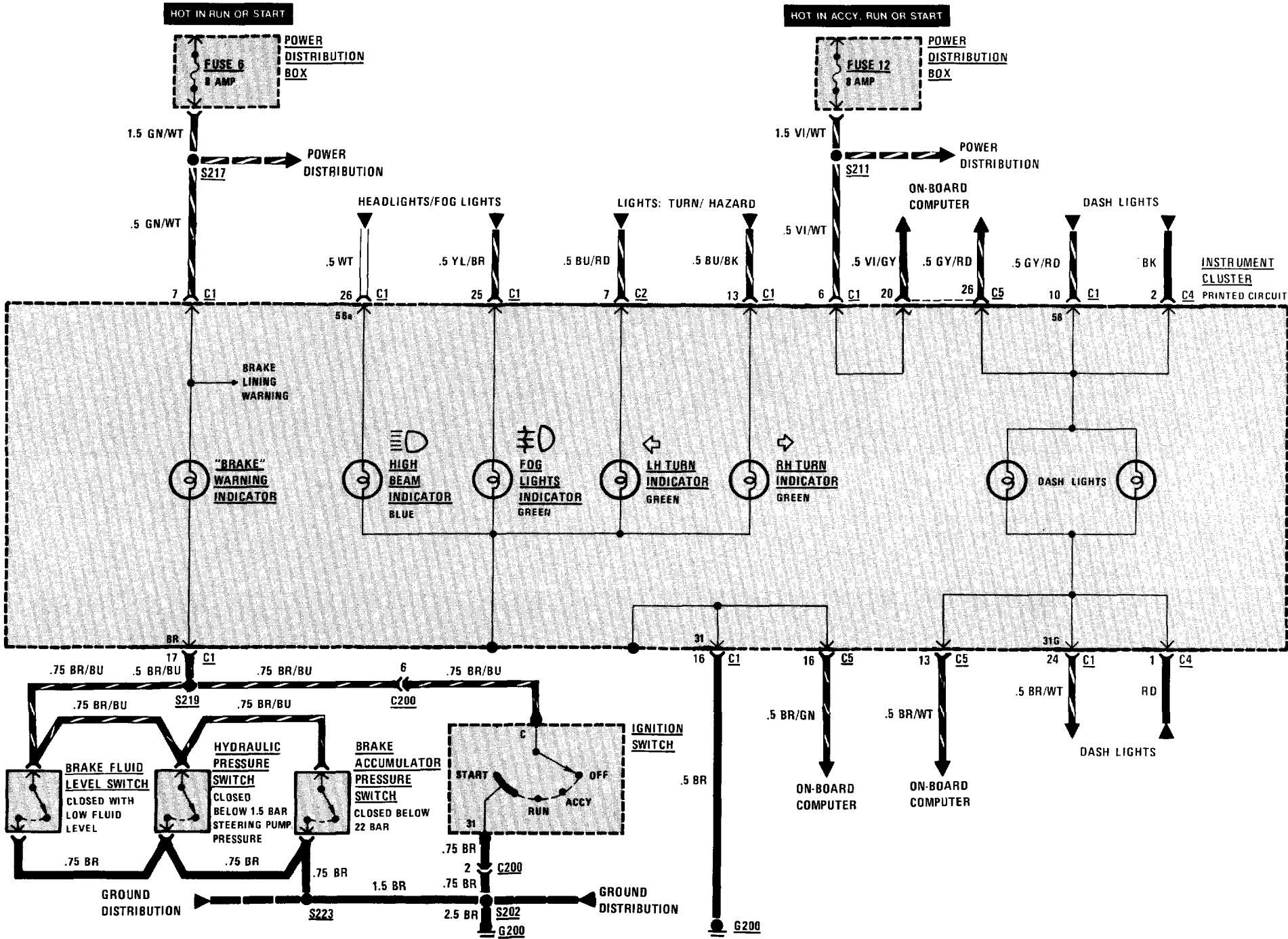


(For Component Locations See Page 211)



120 WARNING INDICATORS

(For Component Locations See Page 211)

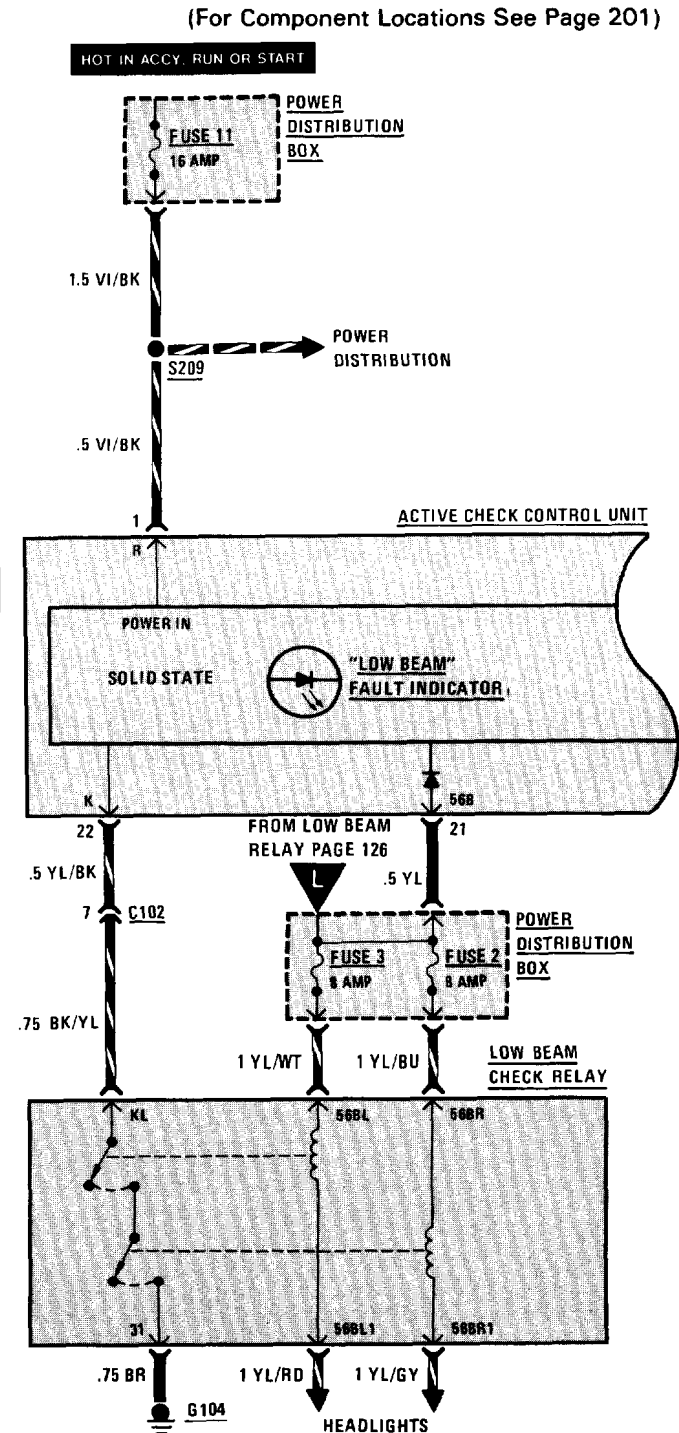


ACTIVE CHECK CONTROL

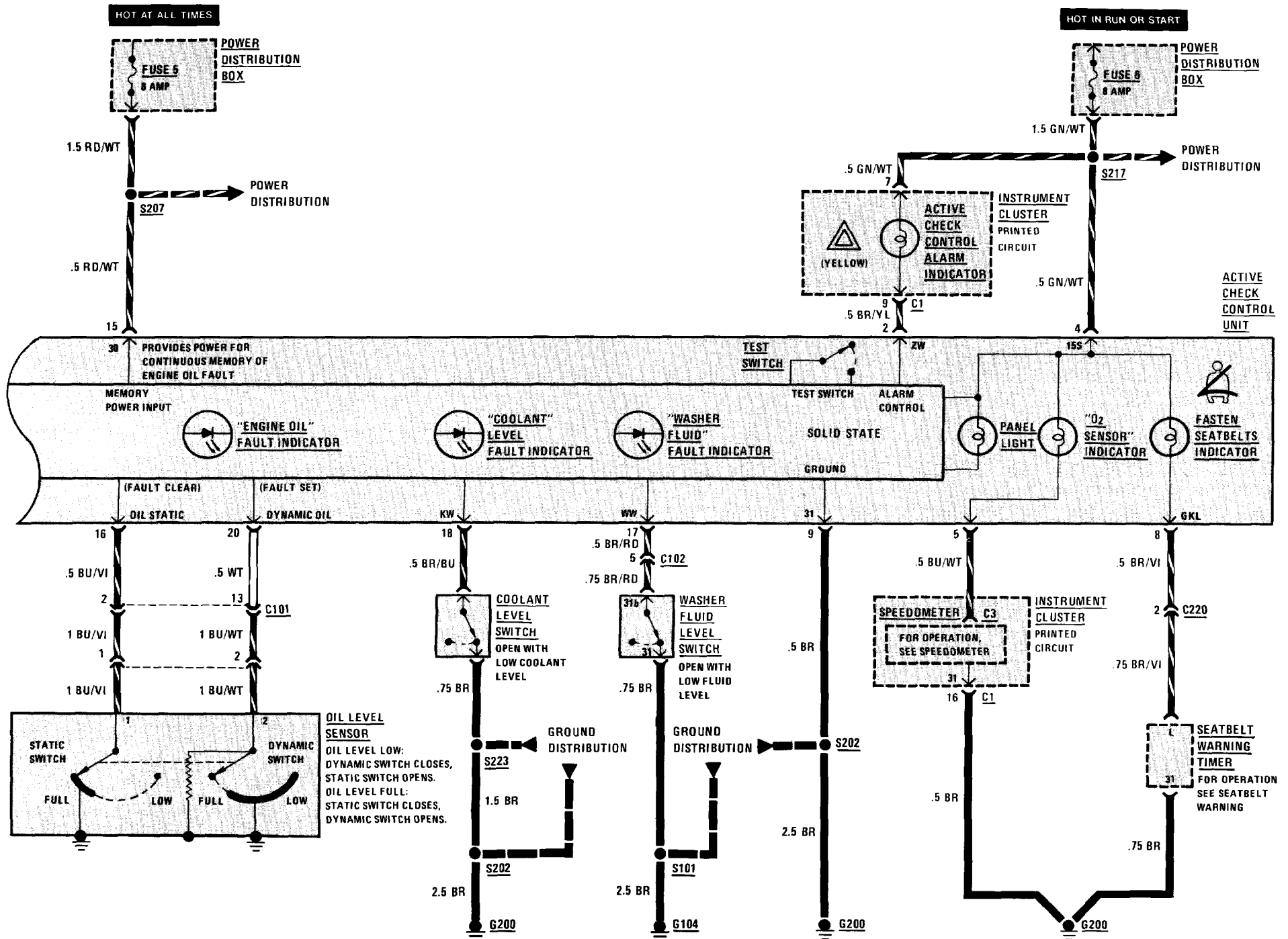
1. When the Ignition Switch is initially placed in "Run," the Active Check Control Alarm Indicator flashes, and the Active Check Control Unit Brake Light LED and panel light illuminate for test purposes. Depressing the brake pedal clears the display.
2. When the Ignition Switch is placed in "Run," fault 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.
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 test 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 light should go on.



Figure 1 - Active Check Control Unit
(Dash, Left Of Steering Column)

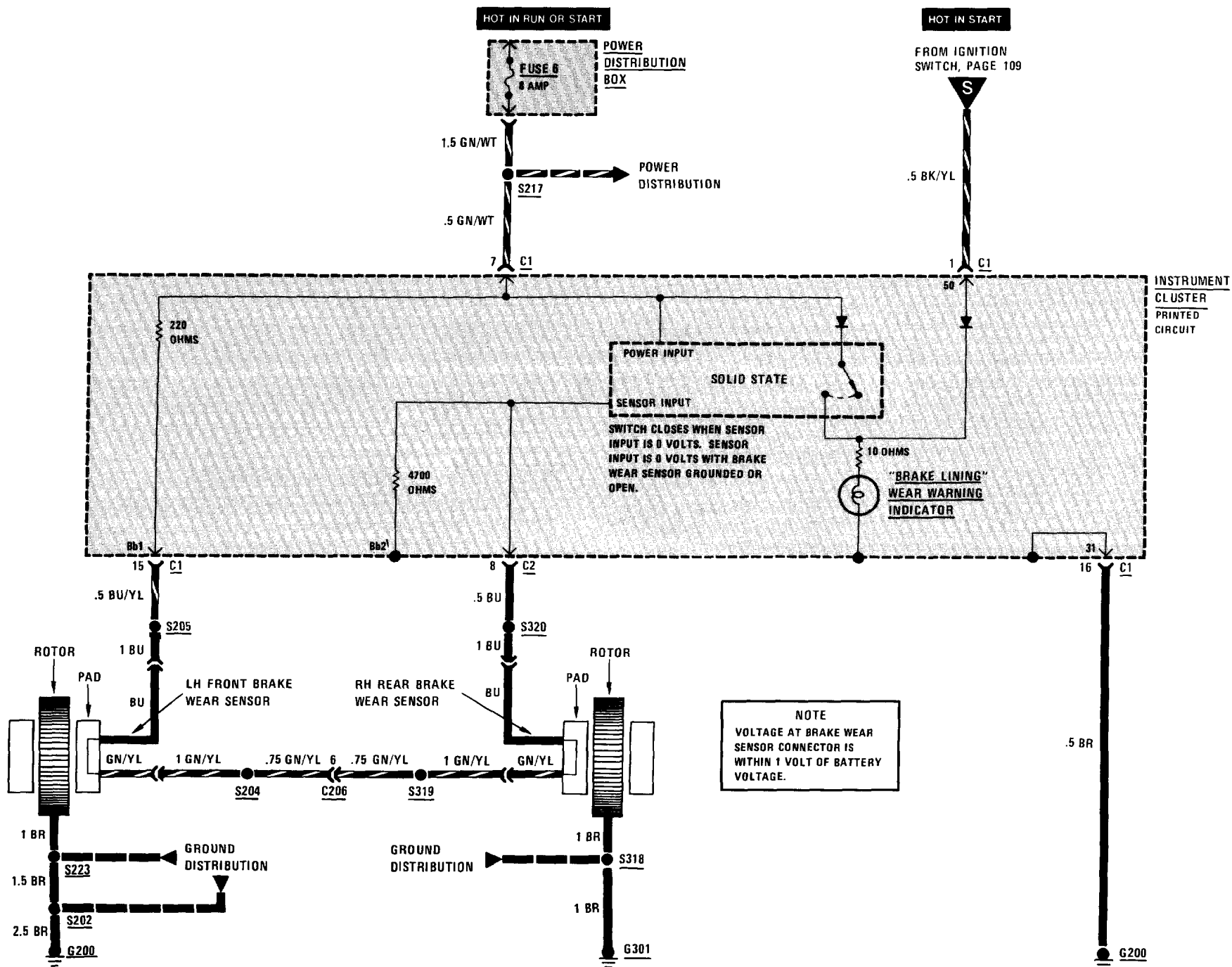


(For Component Locations See Page 201)

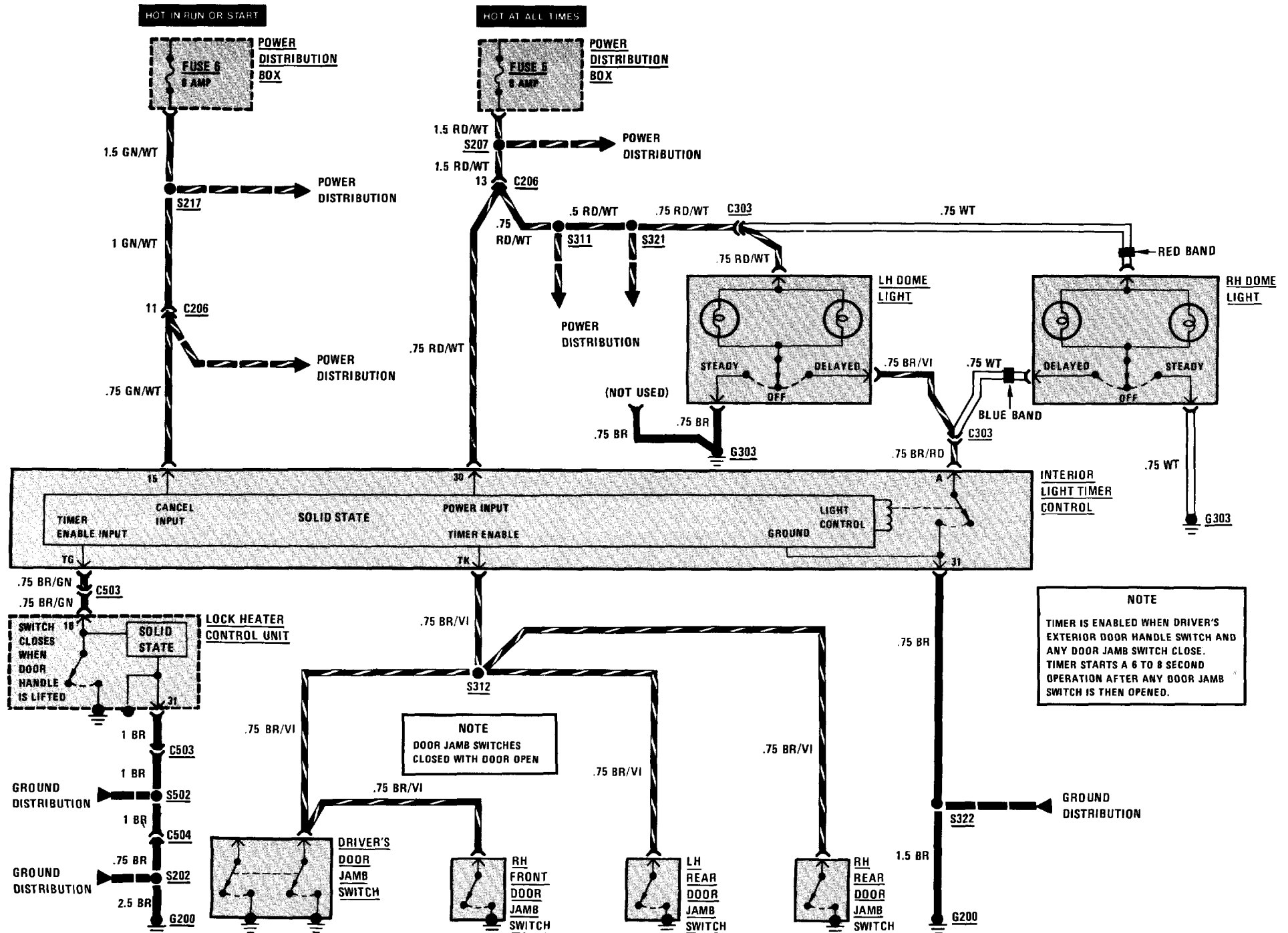


124 BRAKE LINING WARNING

(For Component Locations See Page 202)

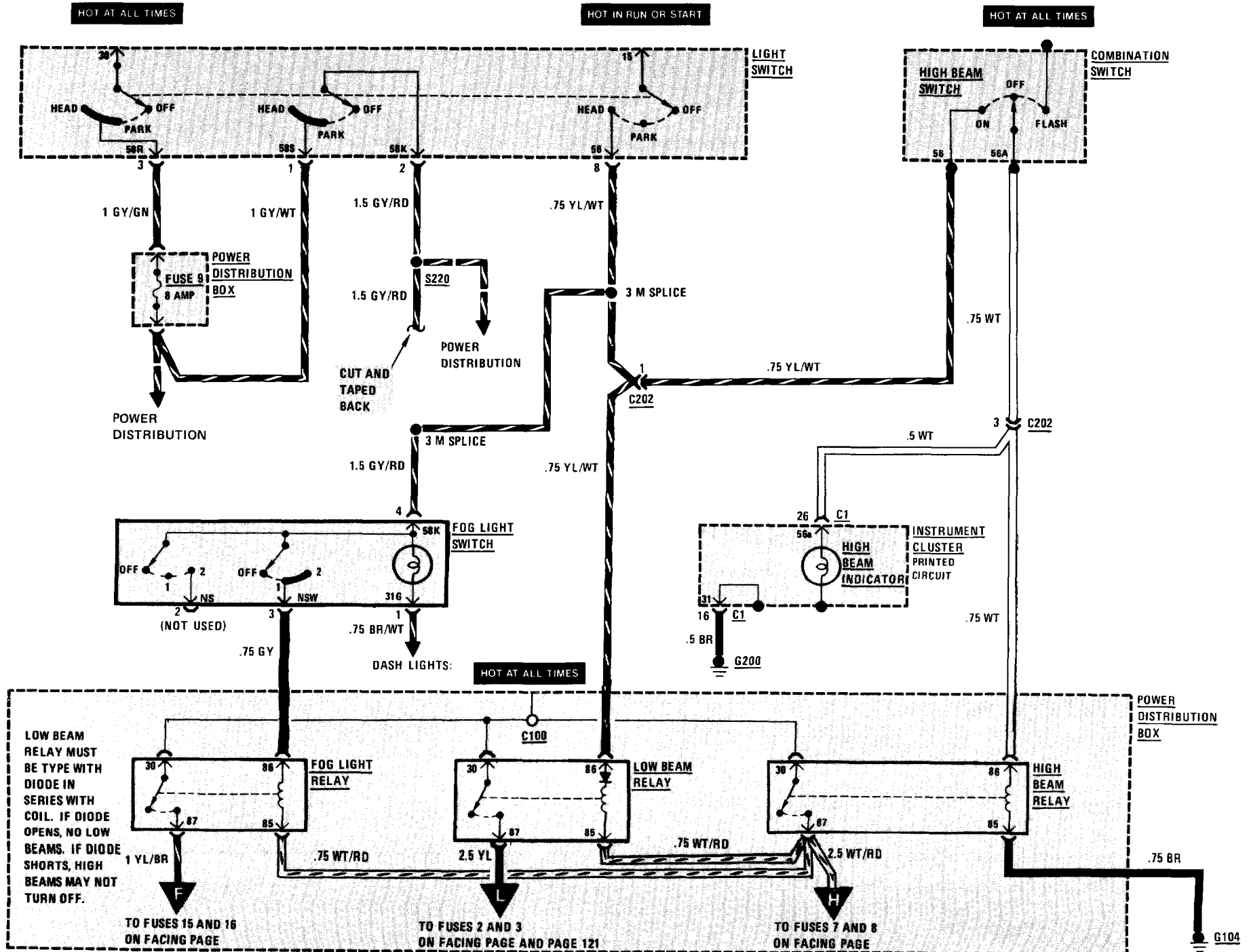


(For Component Locations See Page 207)

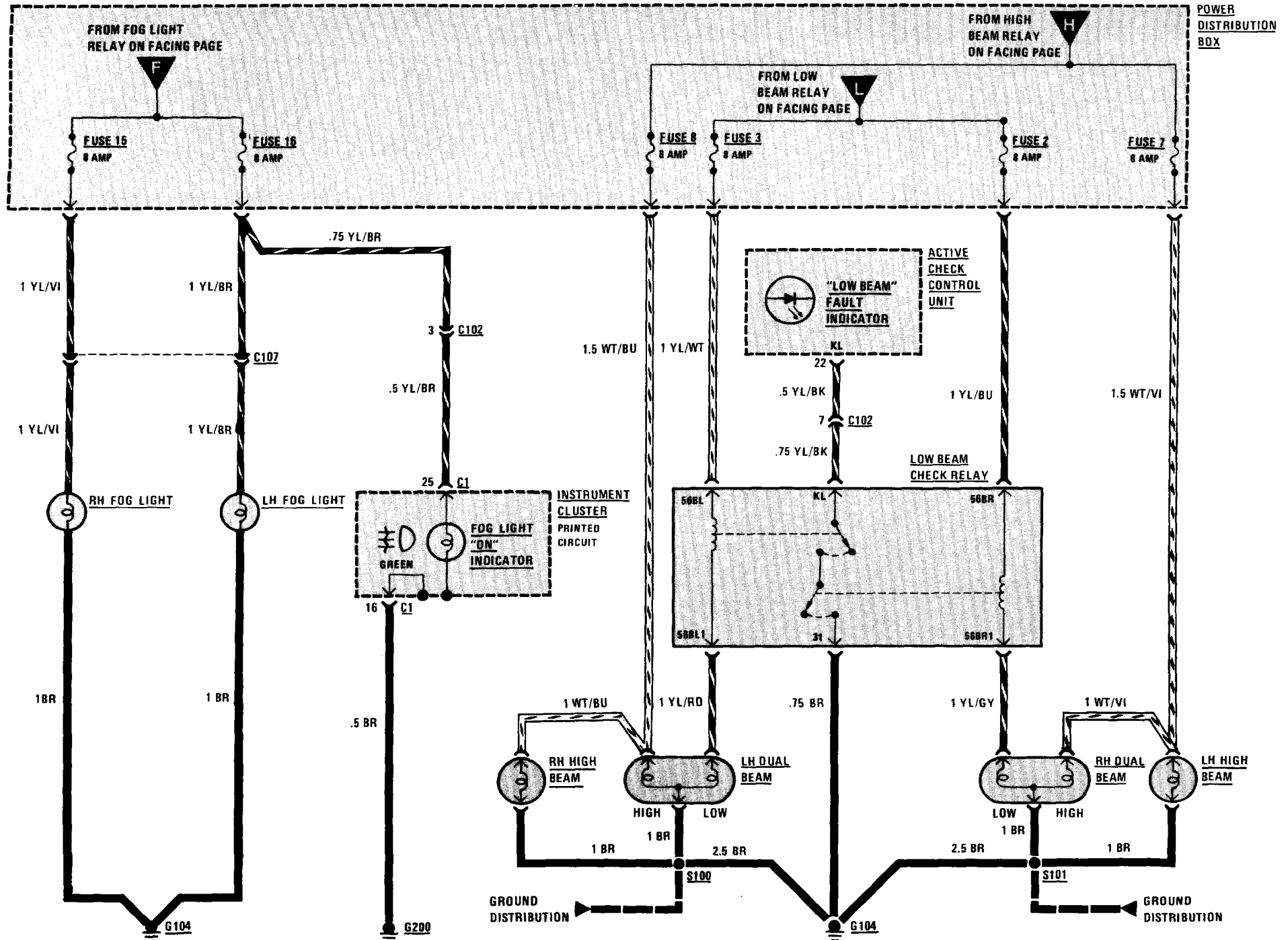


126 HEADLIGHTS (CONTROL)/FOG LIGHTS (CONTROL)

(For Component Locations See Page 205)

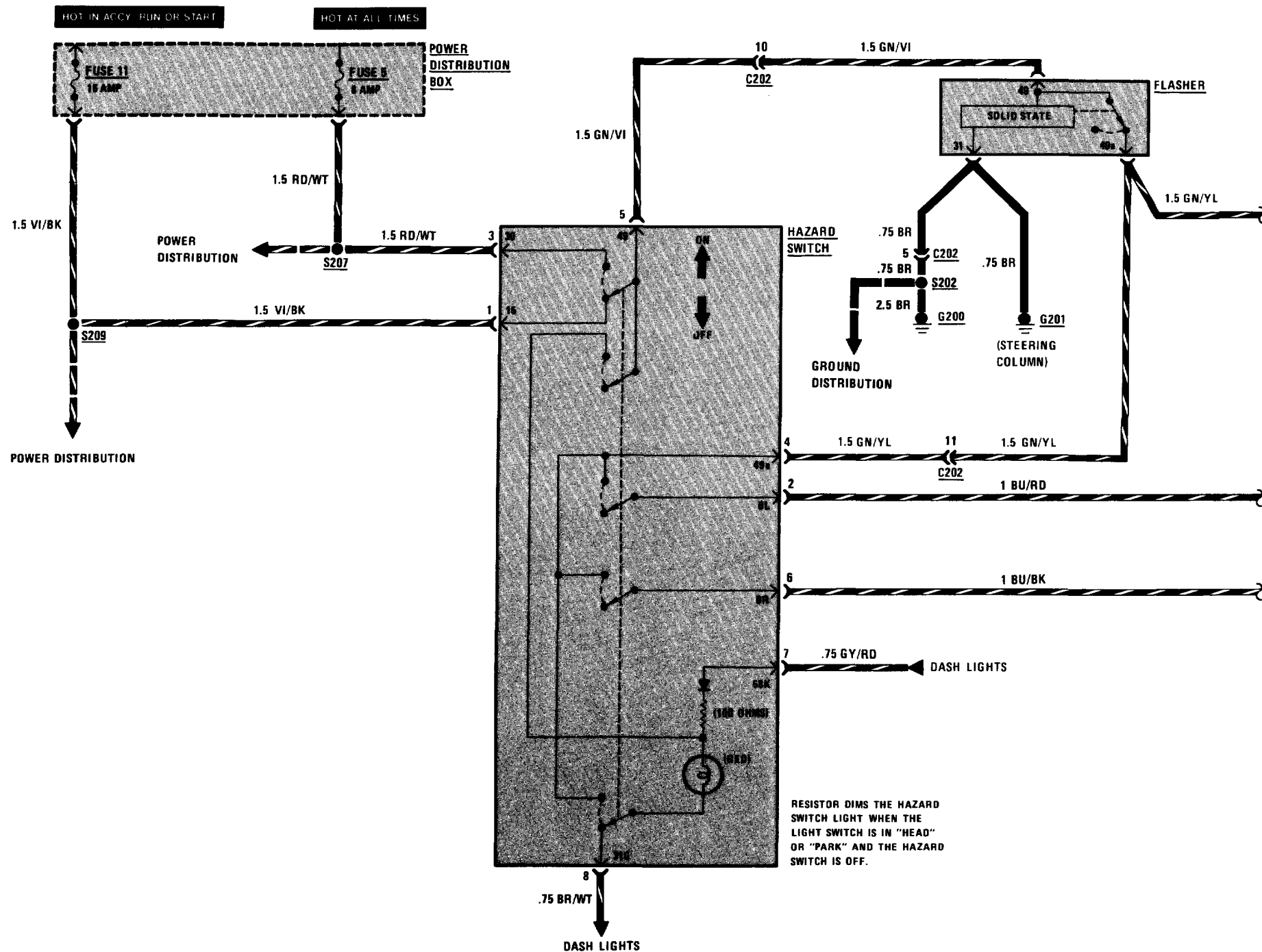


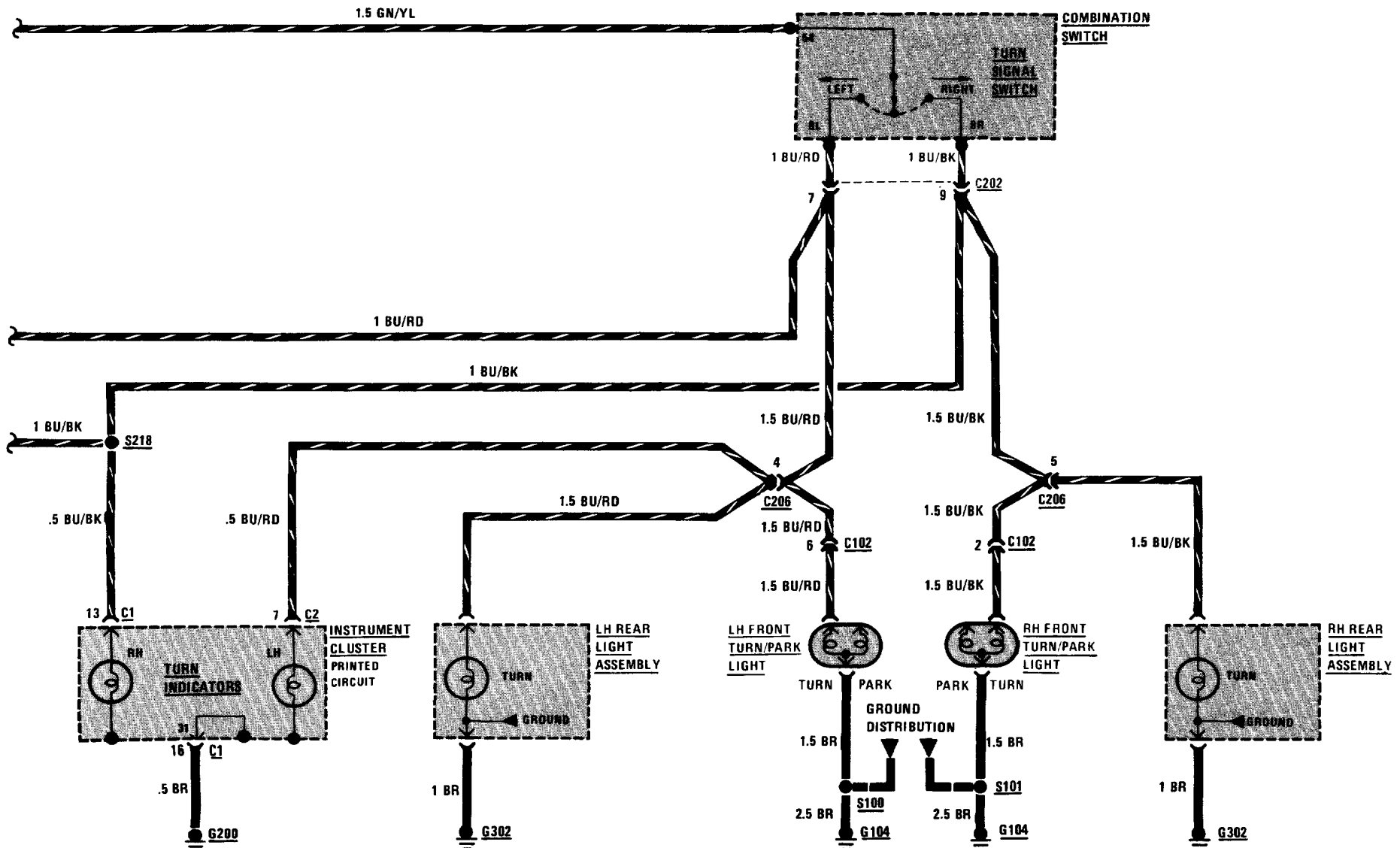
(For Component Locations See Page 205)



128 LIGHTS: TURN/HAZARD WARNING

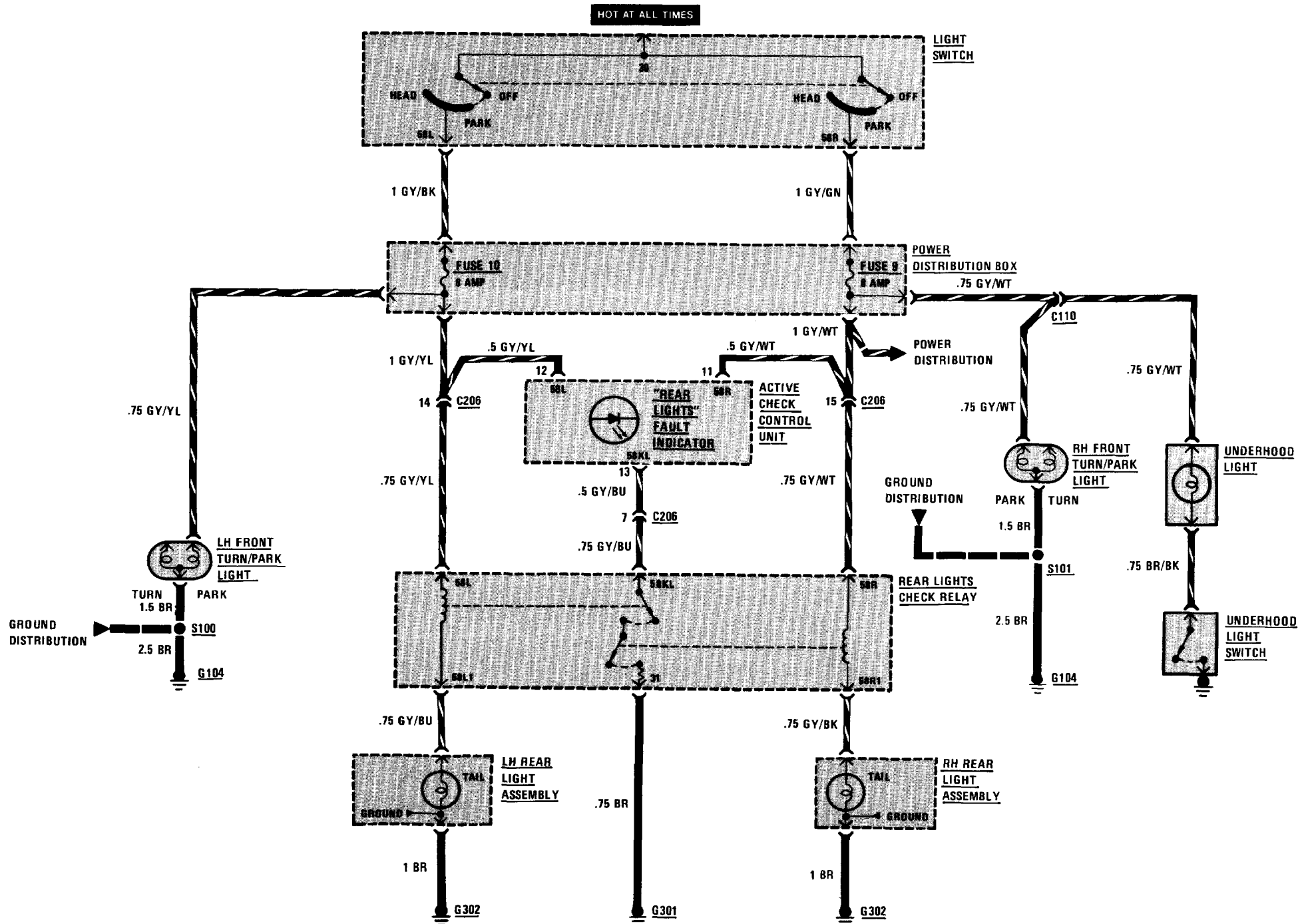
(For Component Locations See Page 208)



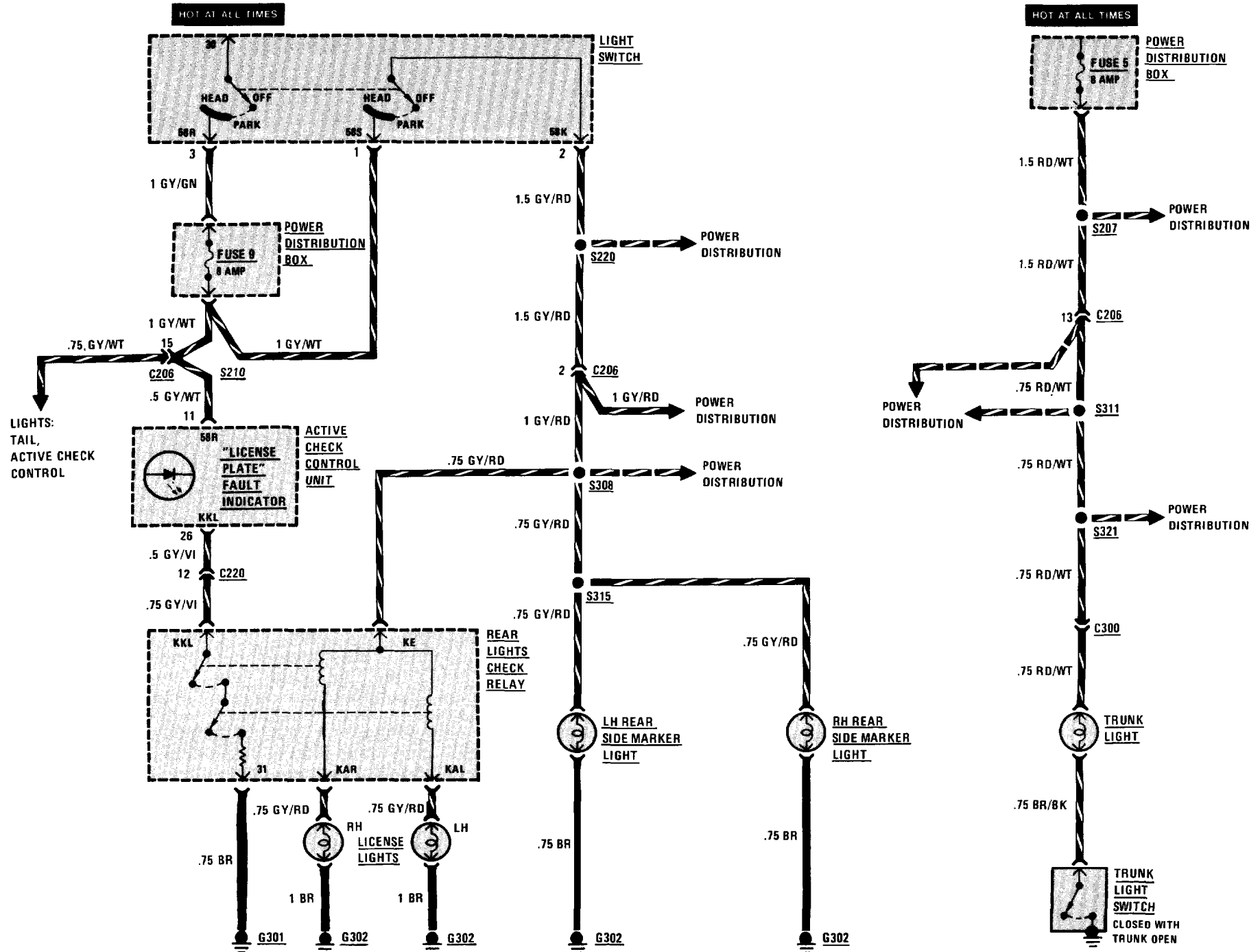


130 LIGHTS: FRONT PARK/TAIL/UNDERHOOD

(For Component Locations See Page 207)

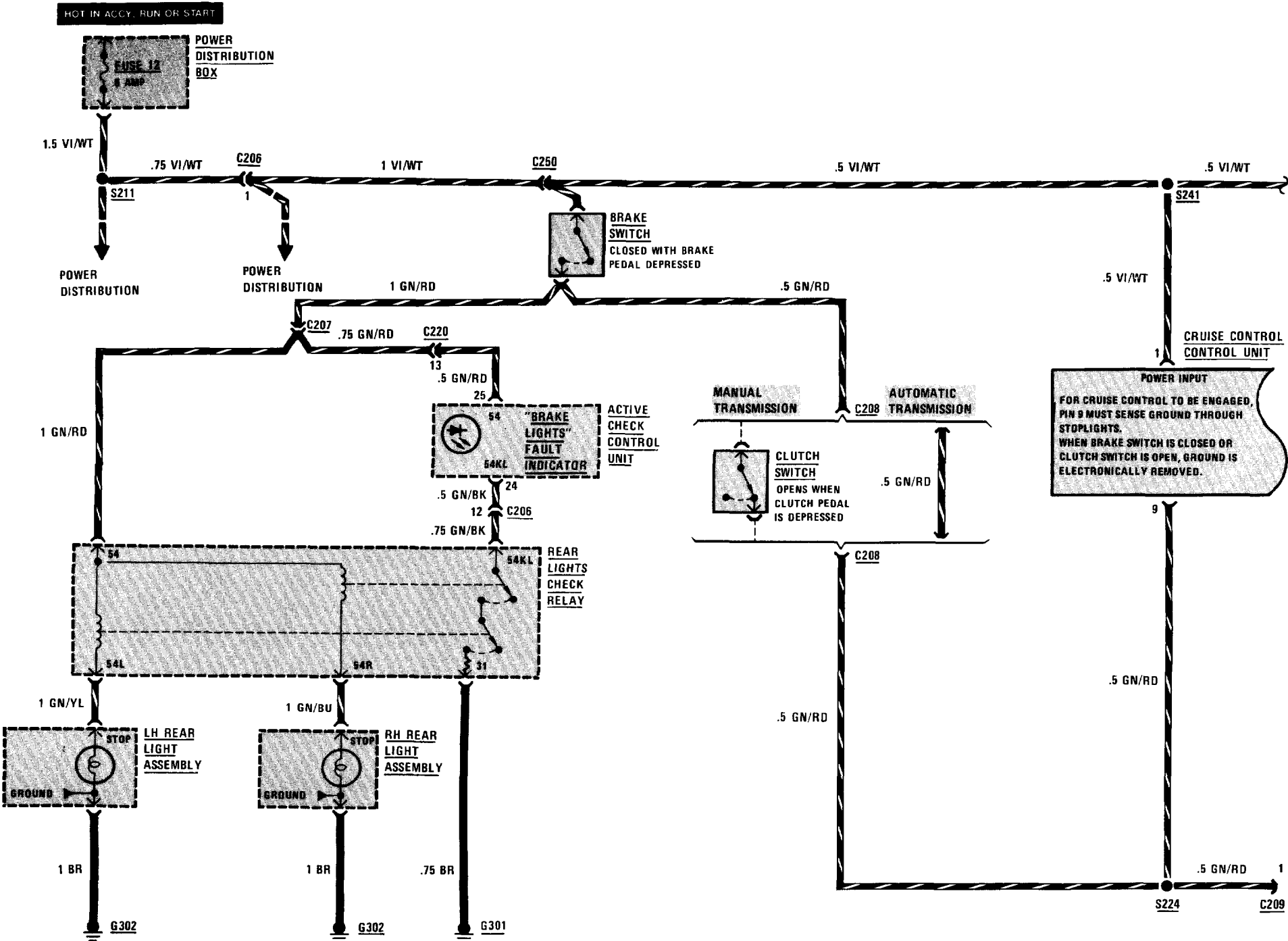


(For Component Locations See Page 208)

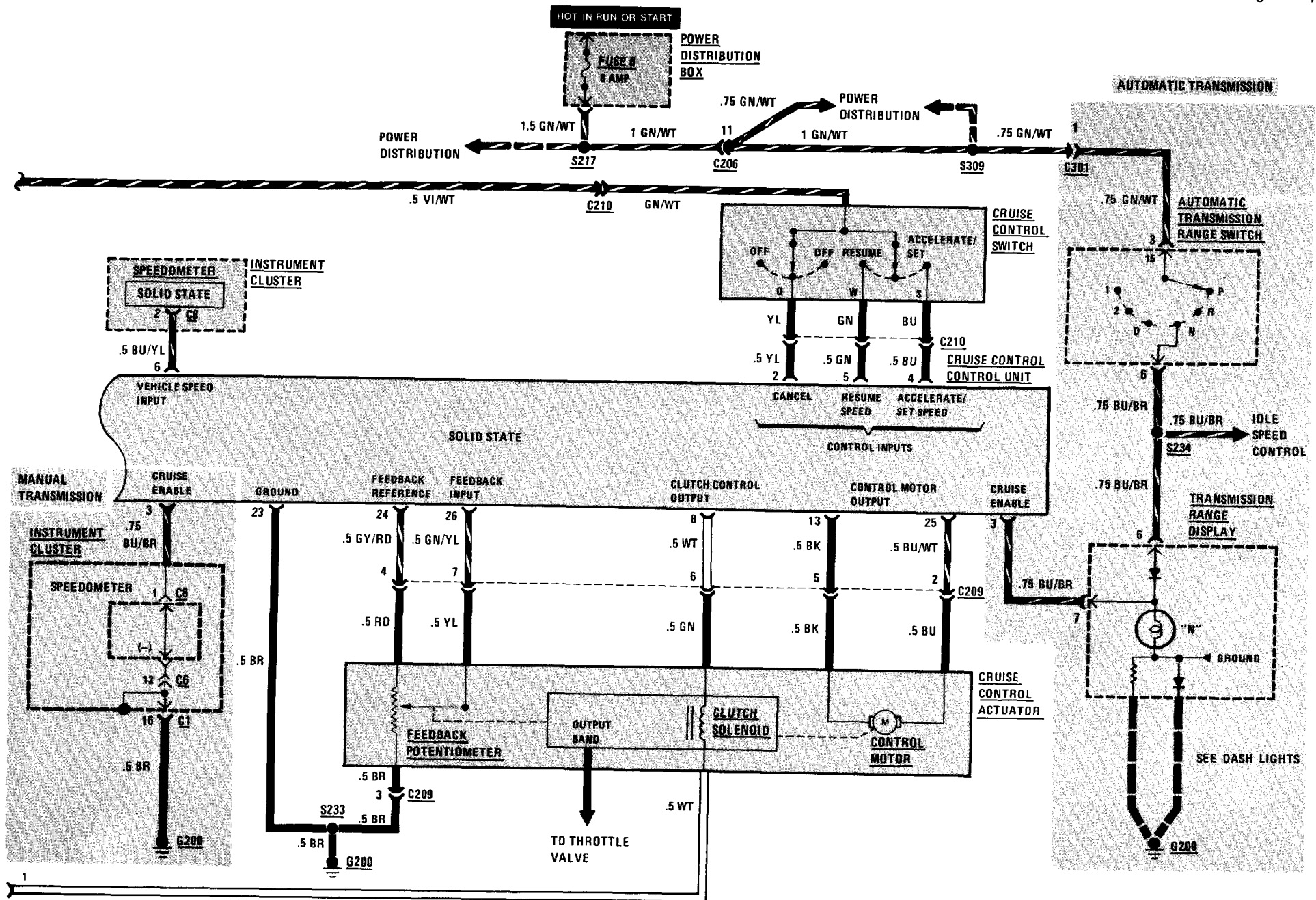


132 STOPLIGHTS/CRUISE CONTROL

(For Component Locations See Page 212)

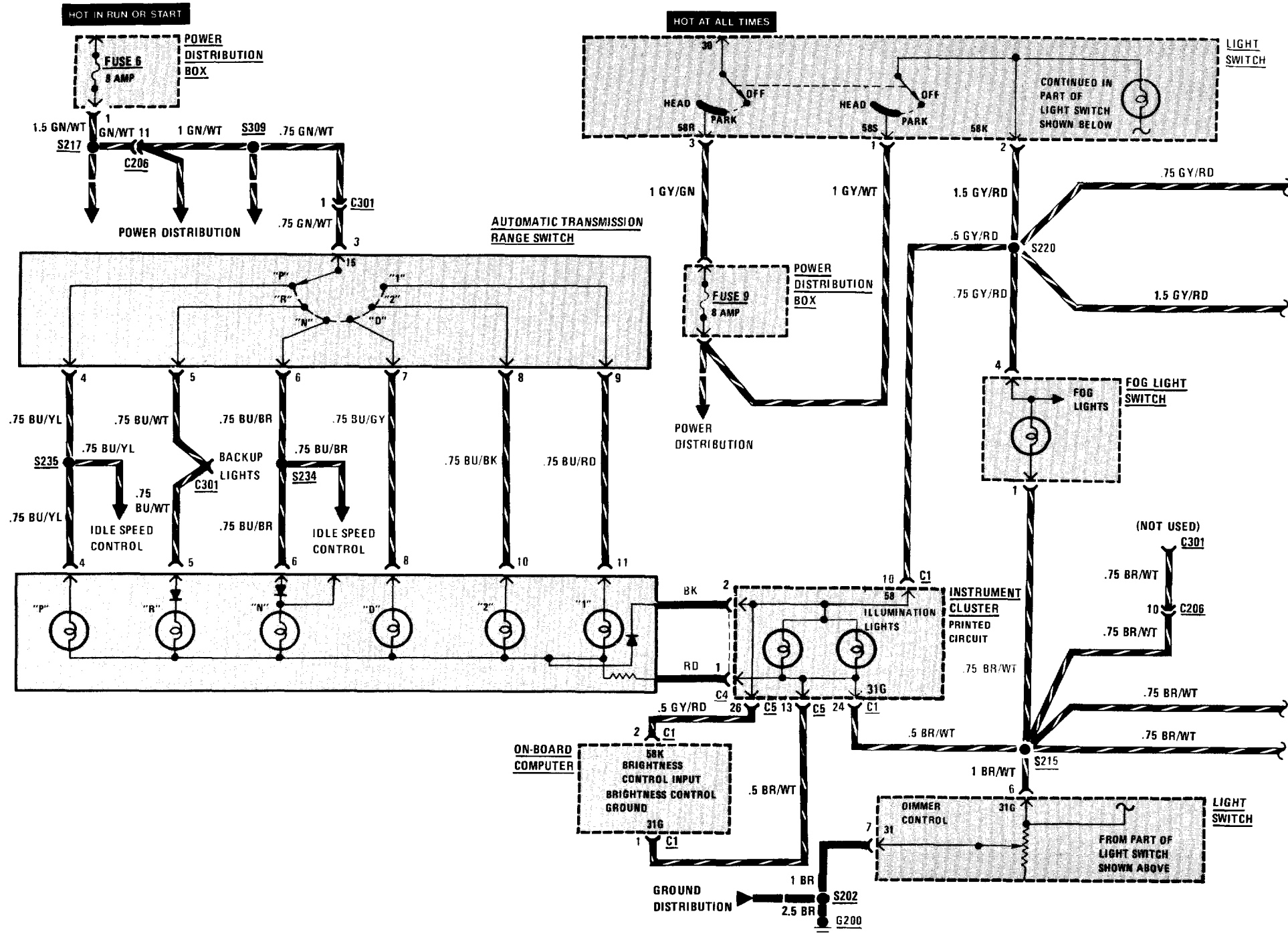


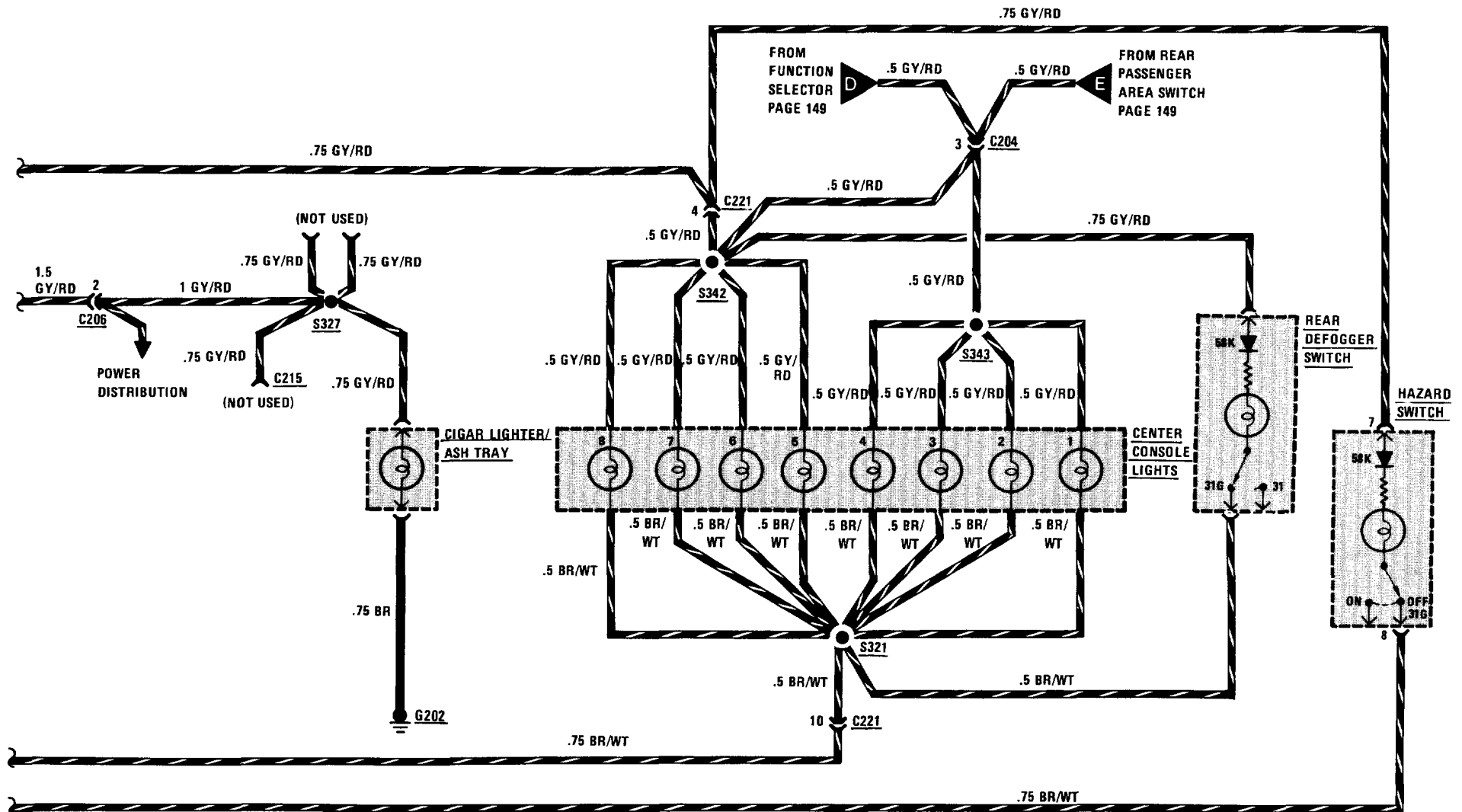
(For Component Locations See Page 212)



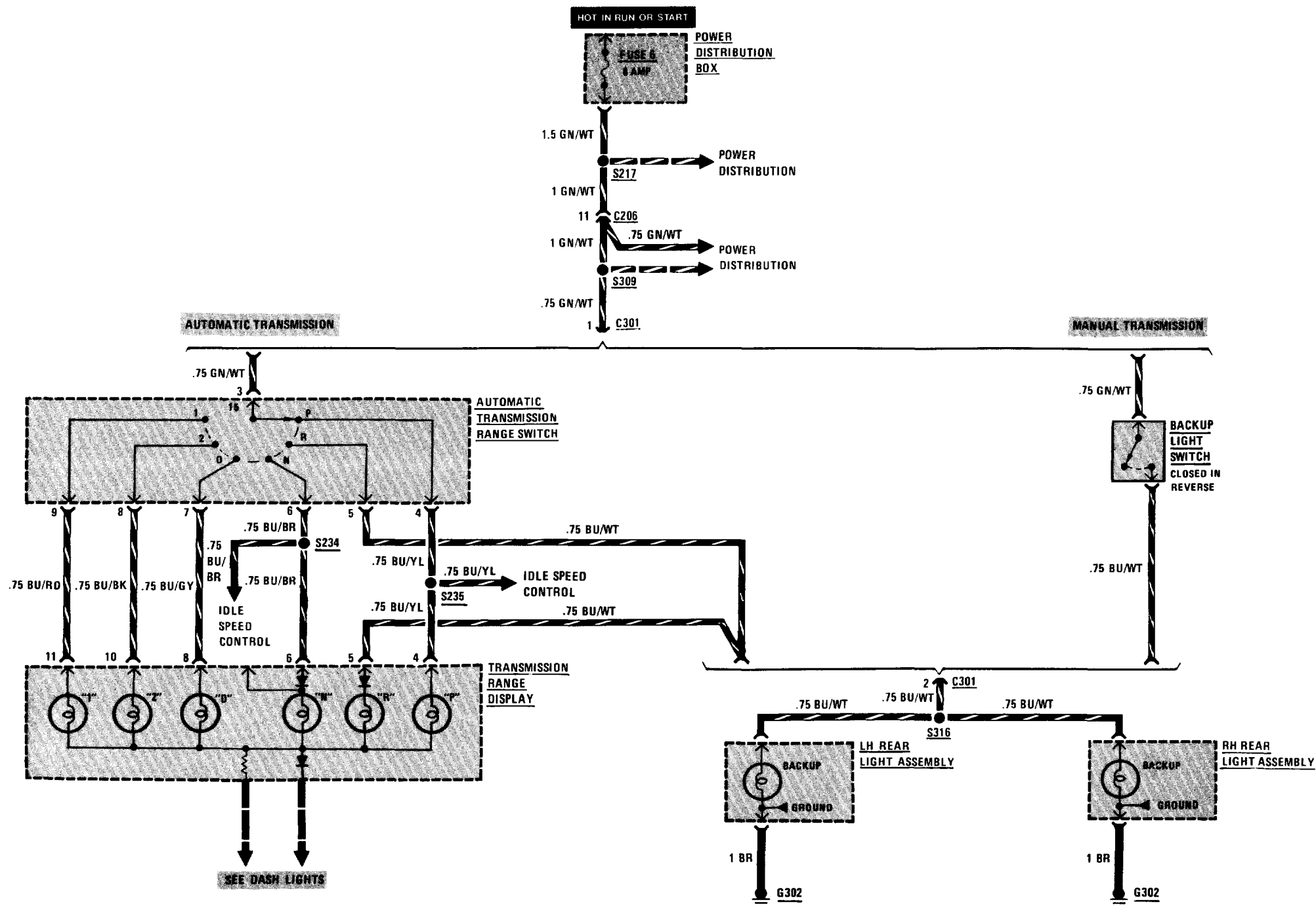
134 DASH LIGHTS

(For Component Locations See Page 204)

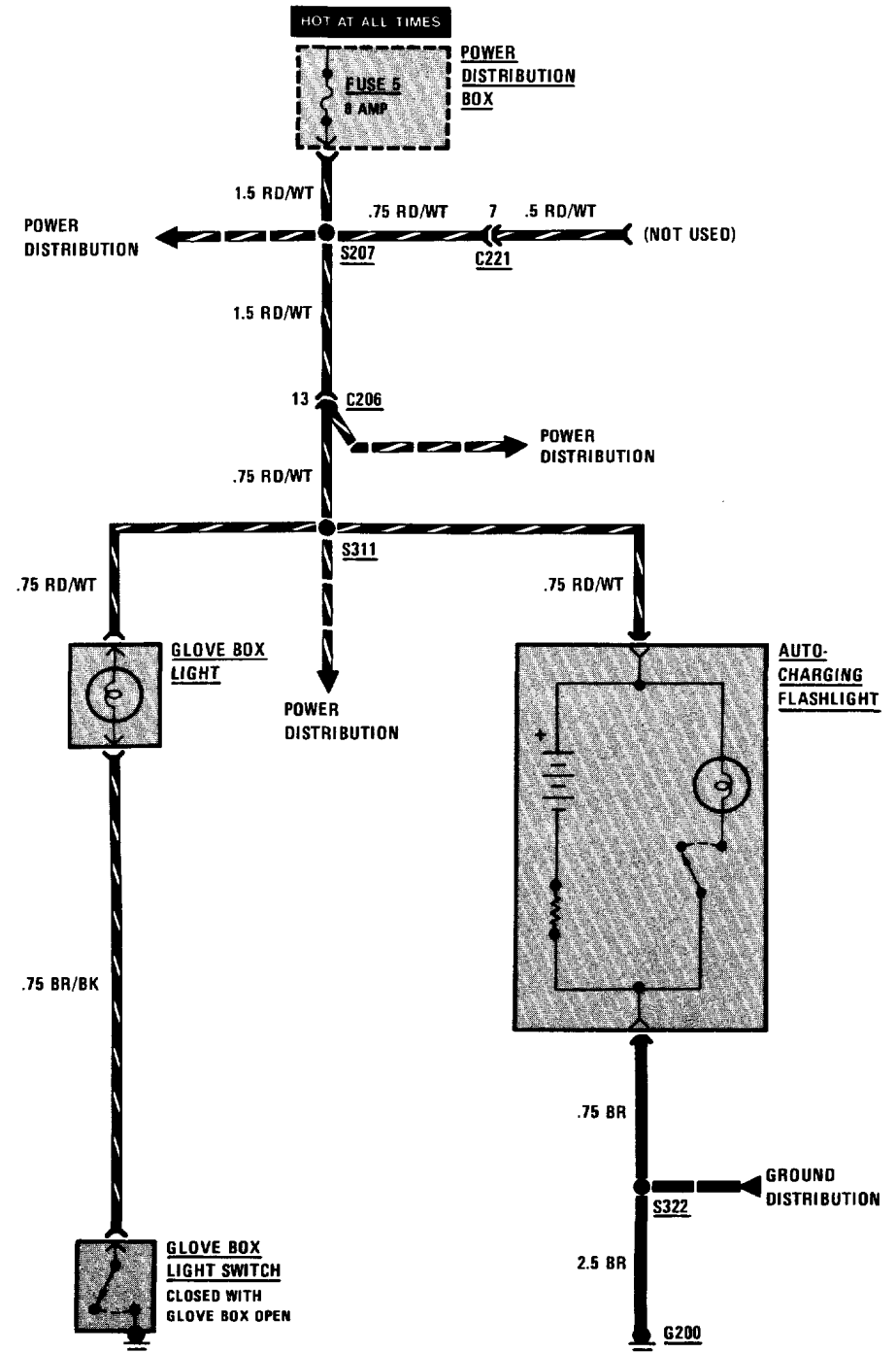
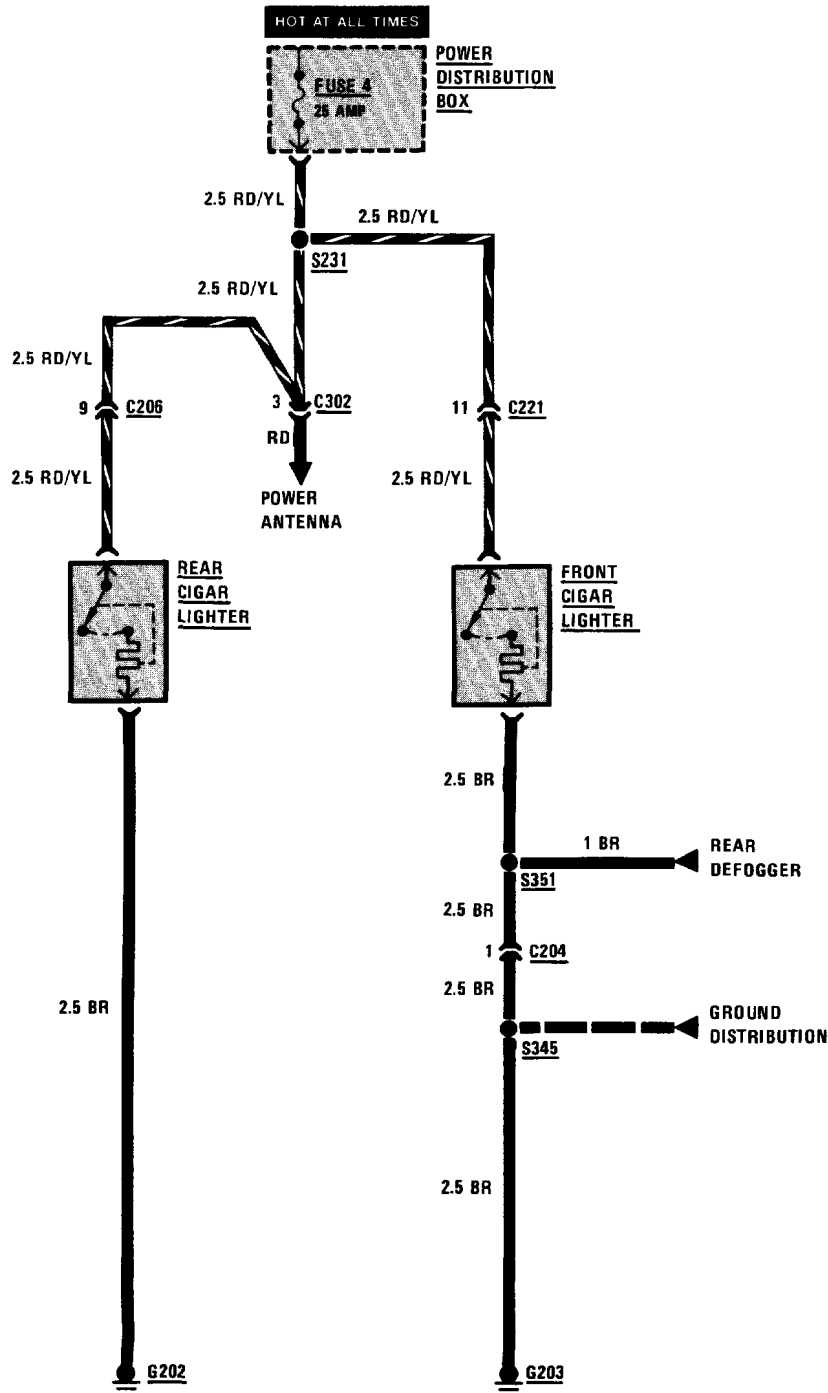




(For Component Locations See Page 207)

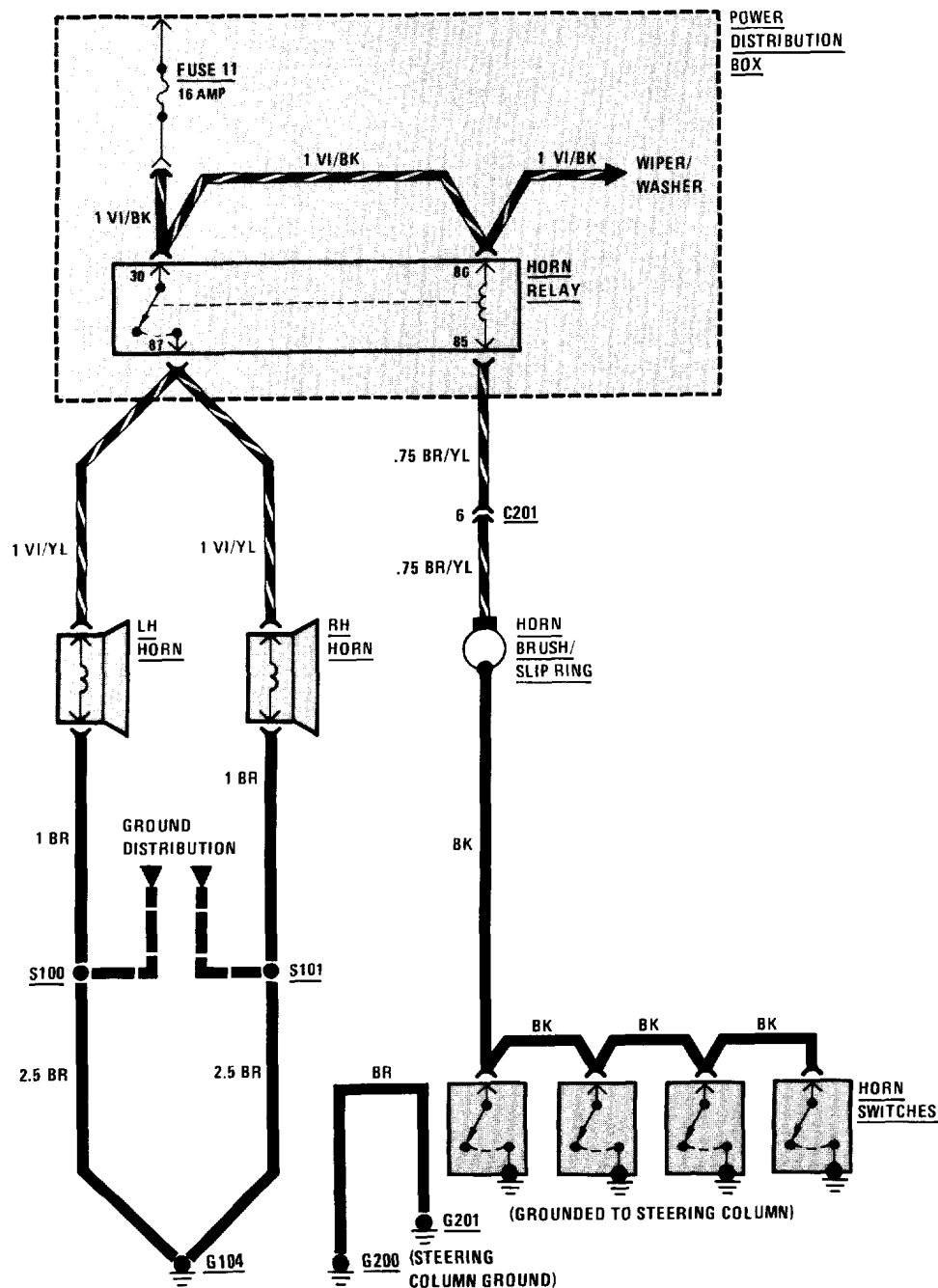


(For Component Locations See Page 203)



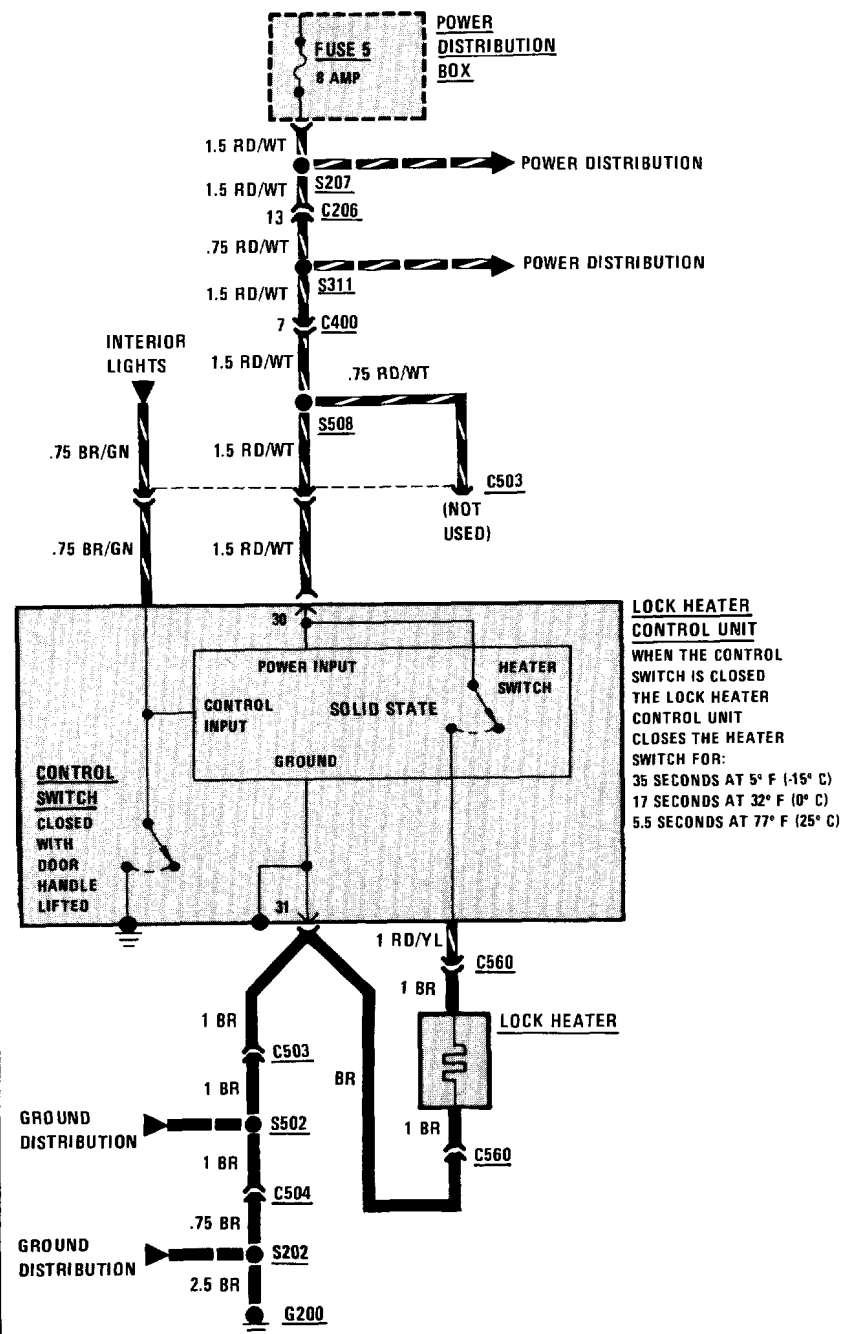
(For Component Locations See Page 205)

HOT IN ACCY. RUN OR START

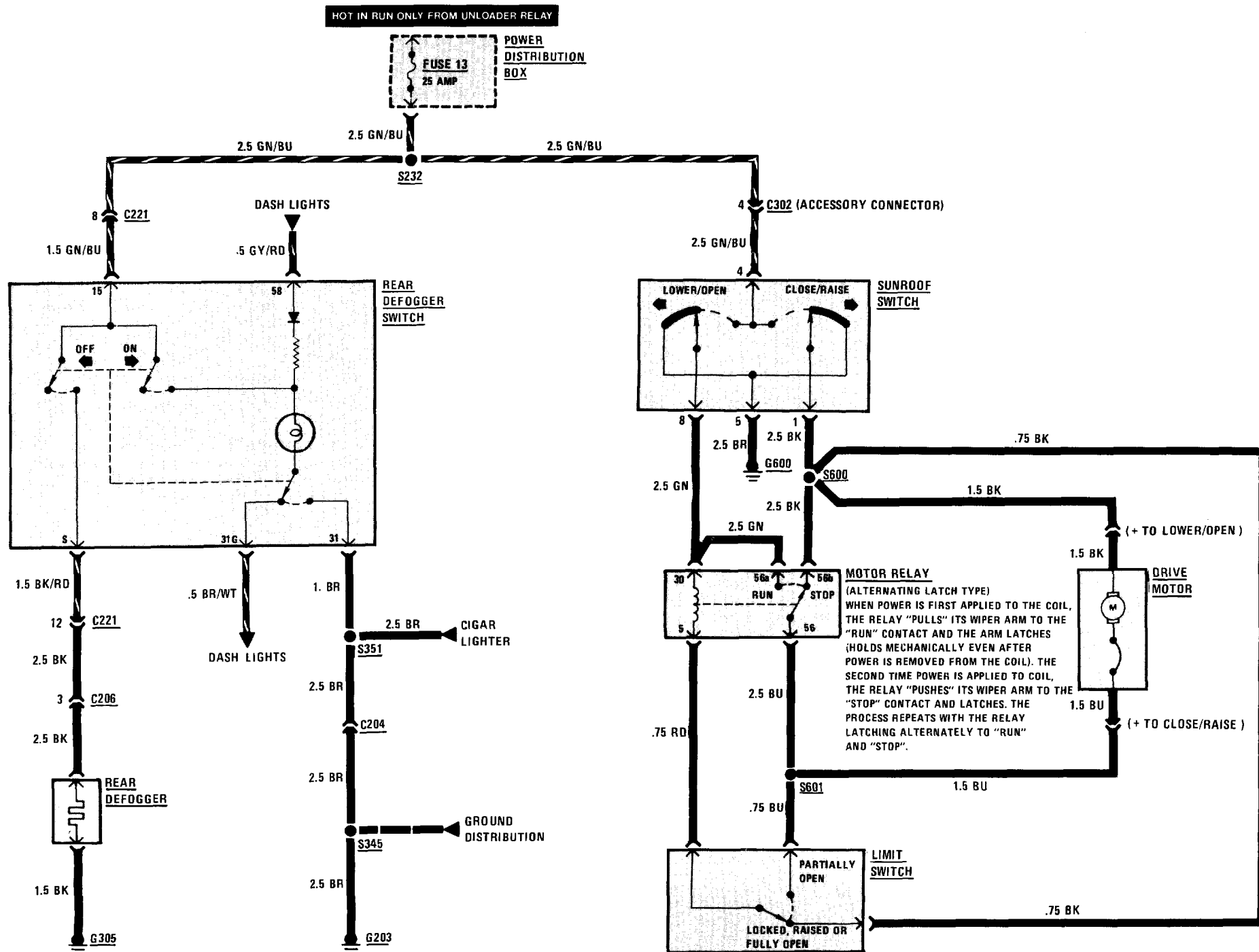


(For Component Locations See Page 205)

HOT AT ALL TIMES

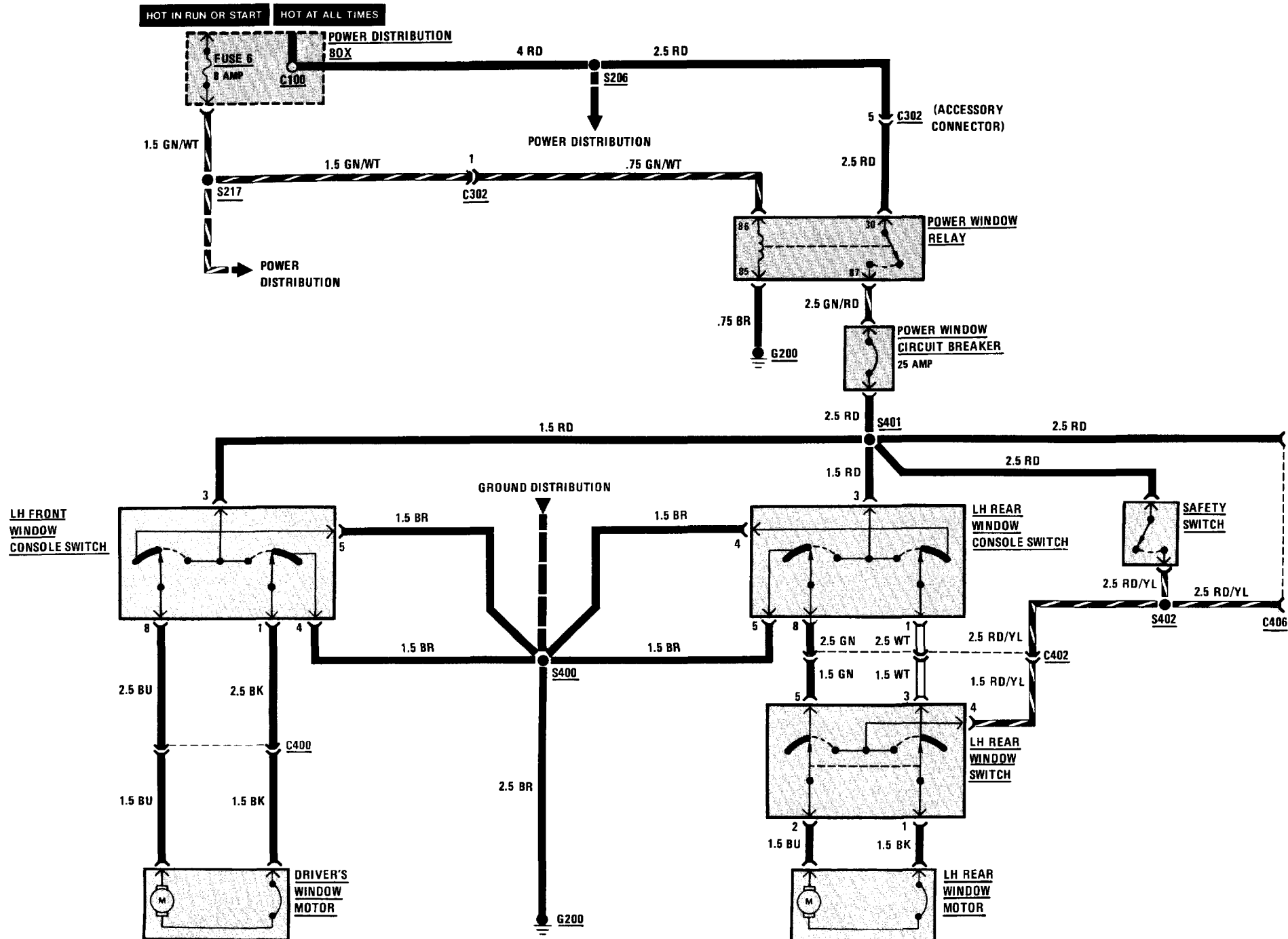


(For Component Locations See Page 211)

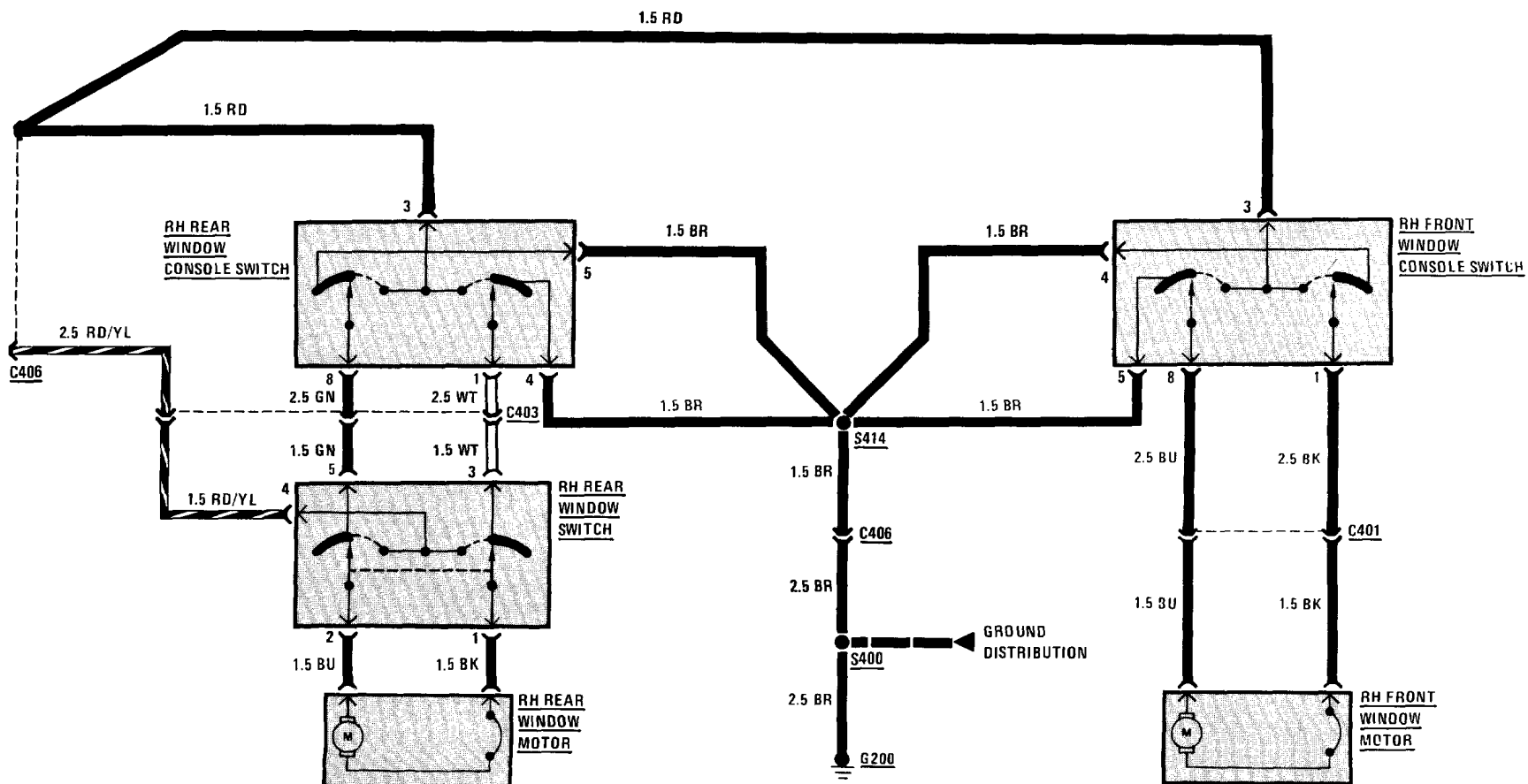


140 POWER WINDOWS

(For Component Locations See Page 210)

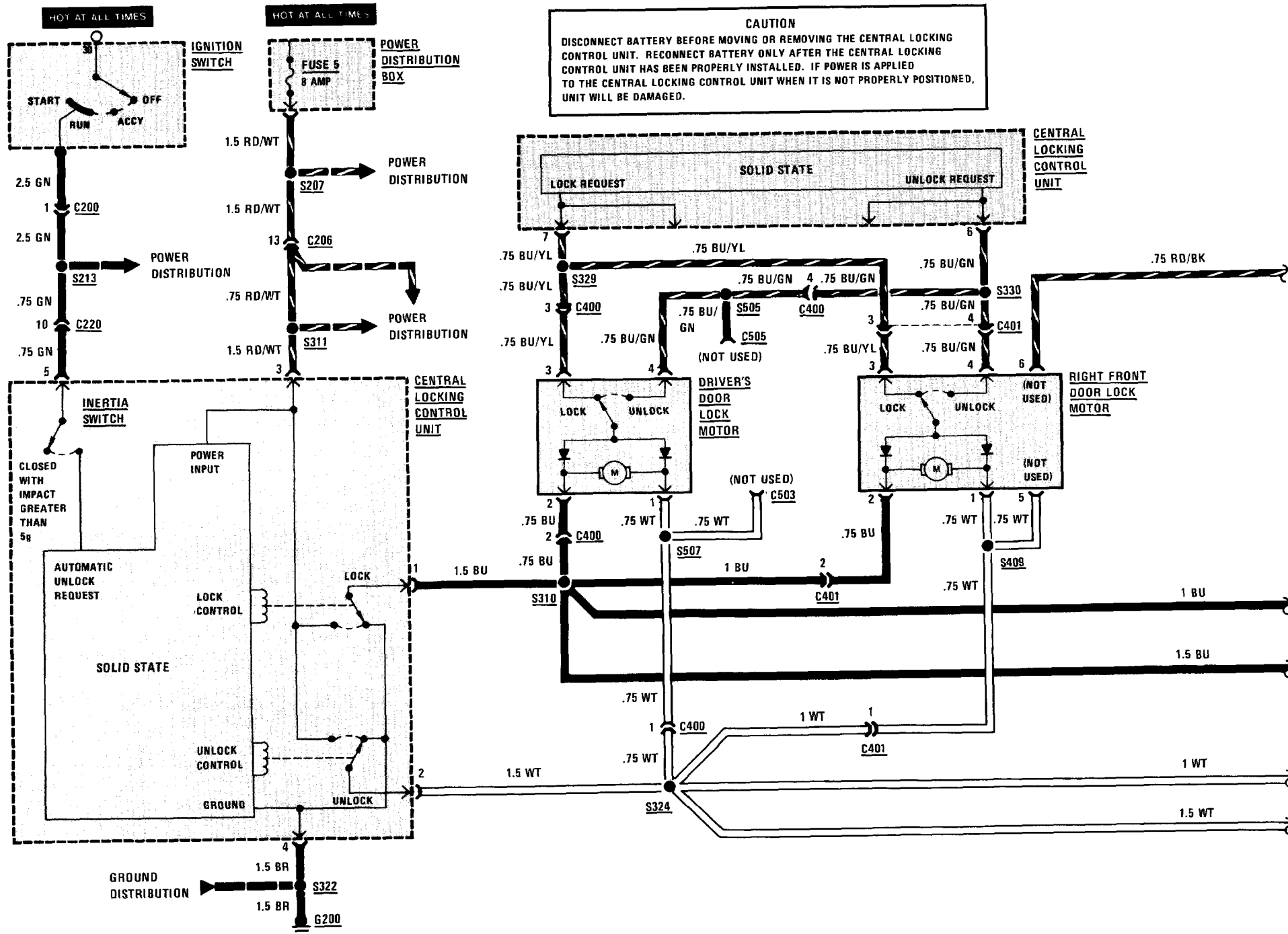


(For Component Locations See Page 210)



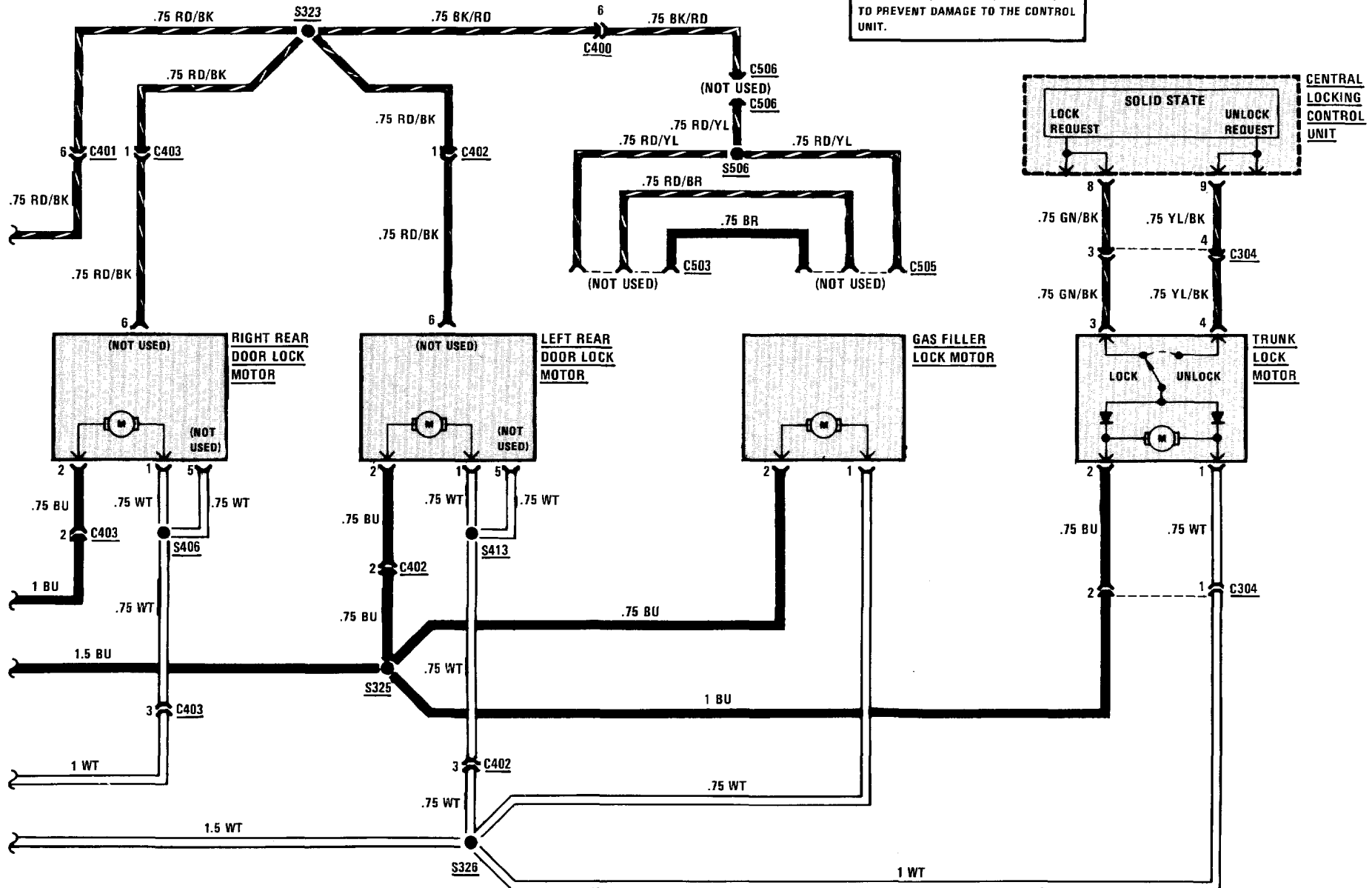
142 CENTRAL LOCKING (SELECT)

(For Component Locations See Page 203)



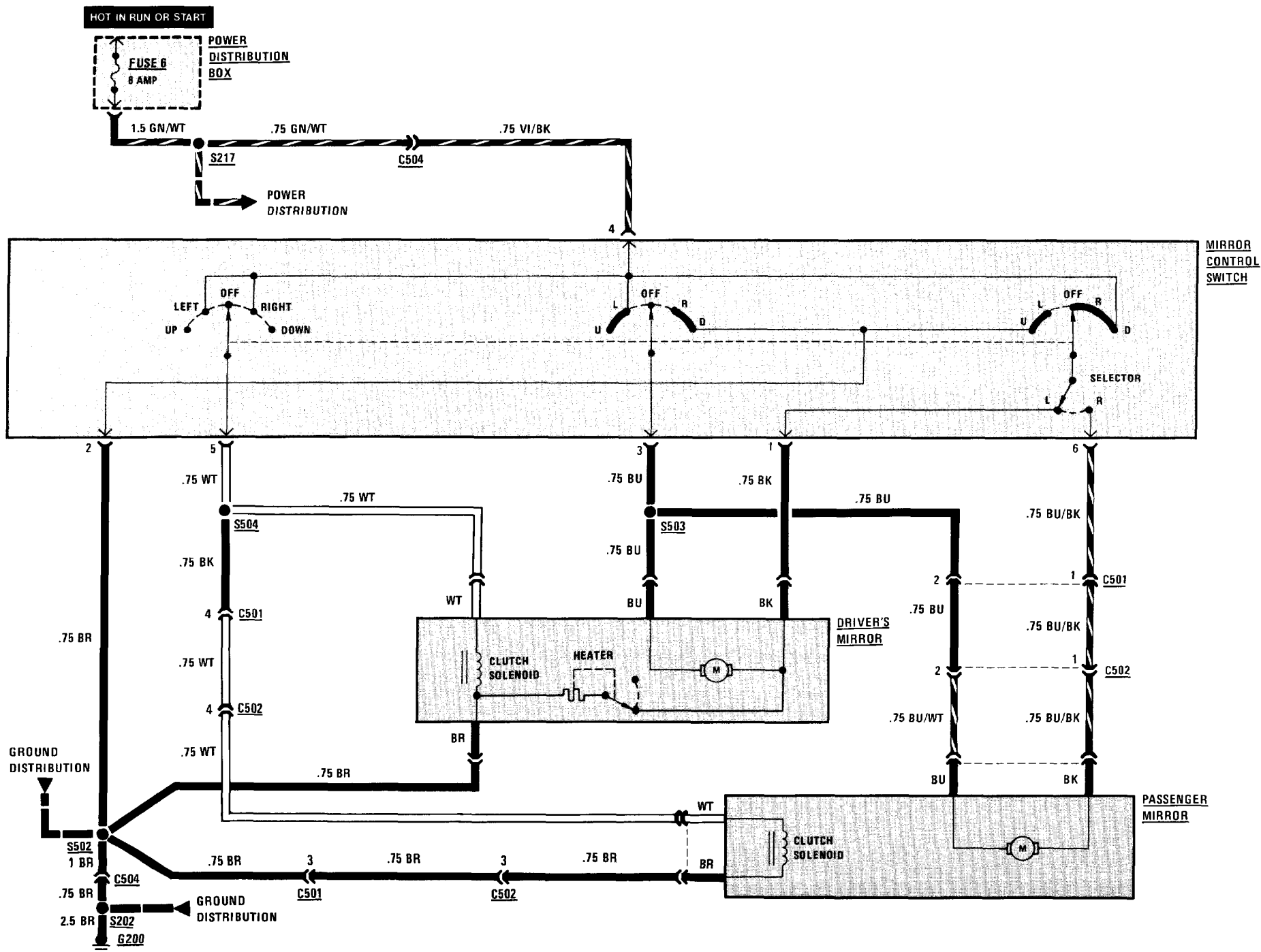
(For Component Locations See Page 203)

CAUTION
DO NOT OPERATE THE SYSTEM MORE THAN 8 TIMES IN QUICK SUCCESSION TO PREVENT DAMAGE TO THE CONTROL UNIT.

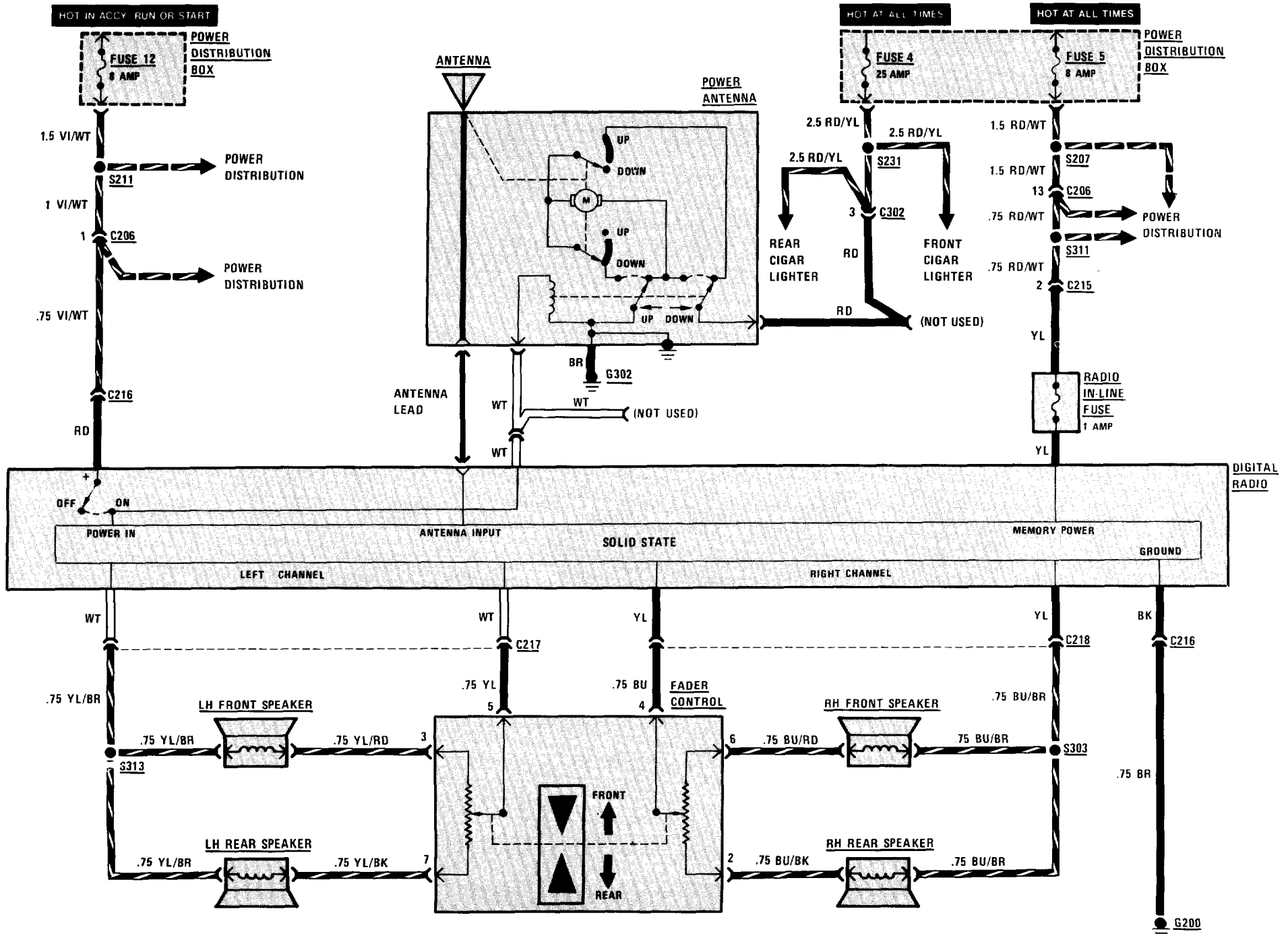


144 POWER MIRRORS

(For Component Locations See Page 210)

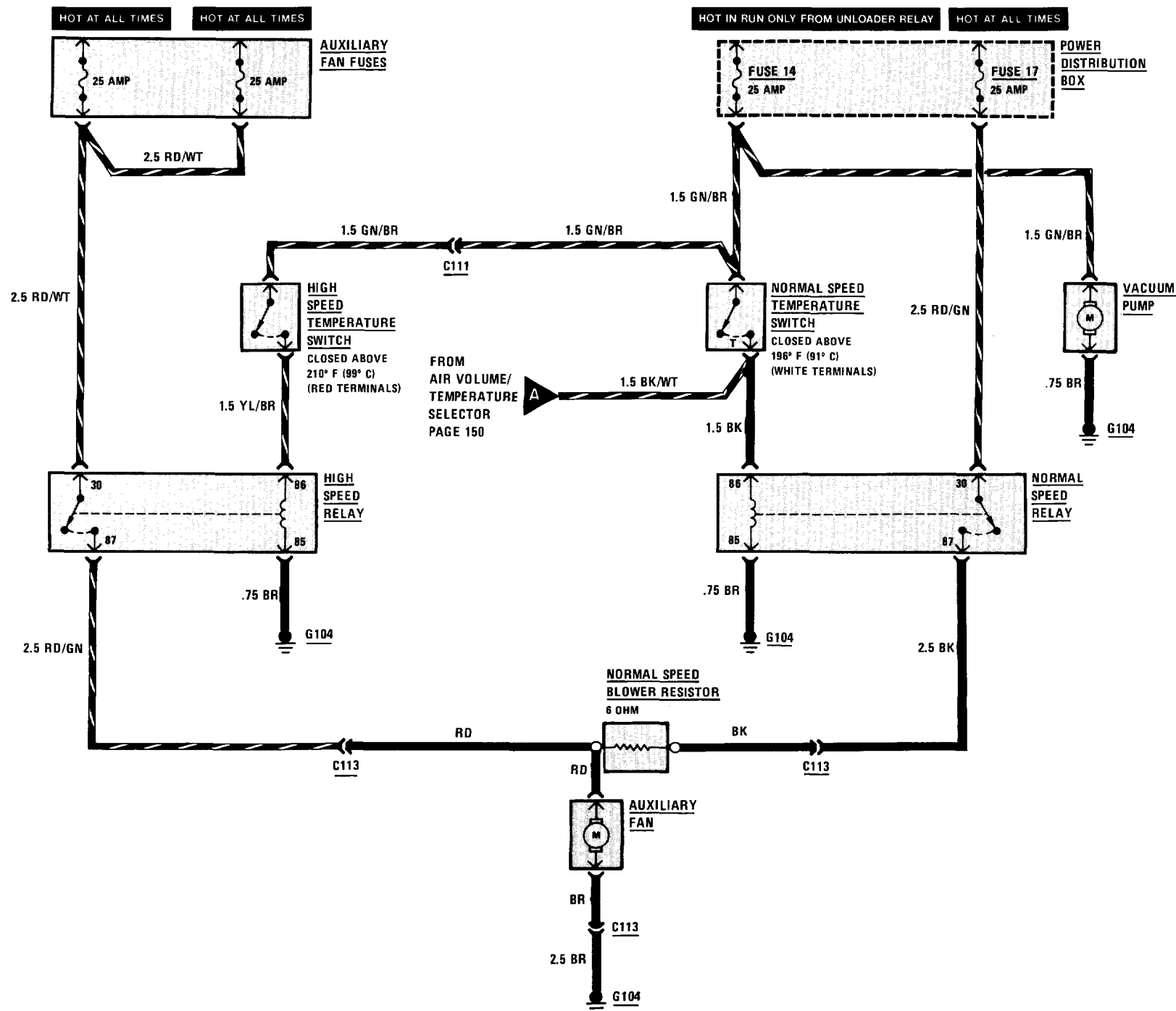


(For Component Locations See Page 210)

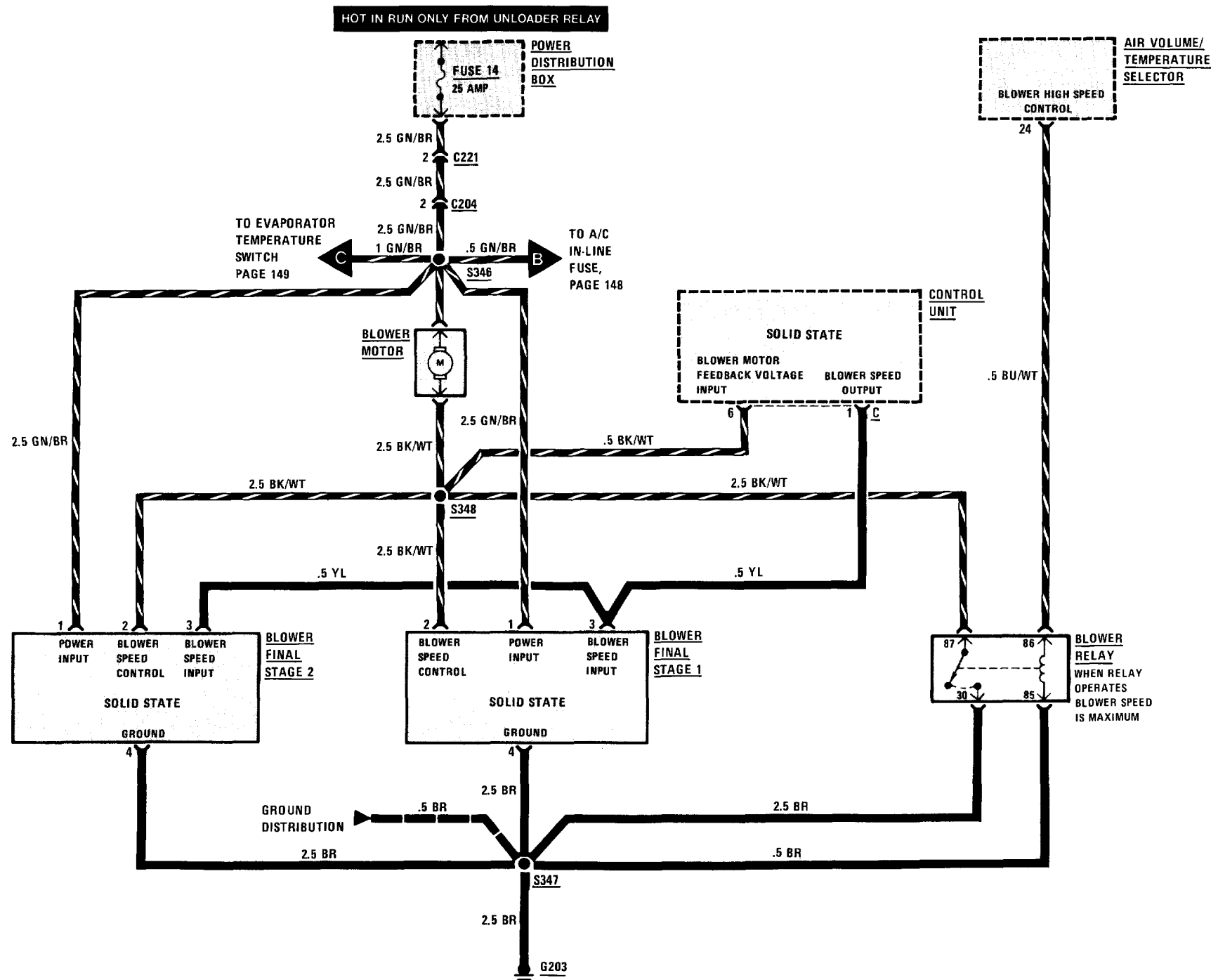


146 AUXILIARY FAN/VACUUM PUMP

(For Component Locations See Page 202)



(For Component Locations See Page 201)



(For Component Locations See Page 201)

HOT IN RUN ONLY FROM UNLOADER RELAY

FROM S346,
PAGE 147

.5 GN/BR

A/C IN-LINE
FUSE
5 AMP

.5 GN/BR

3

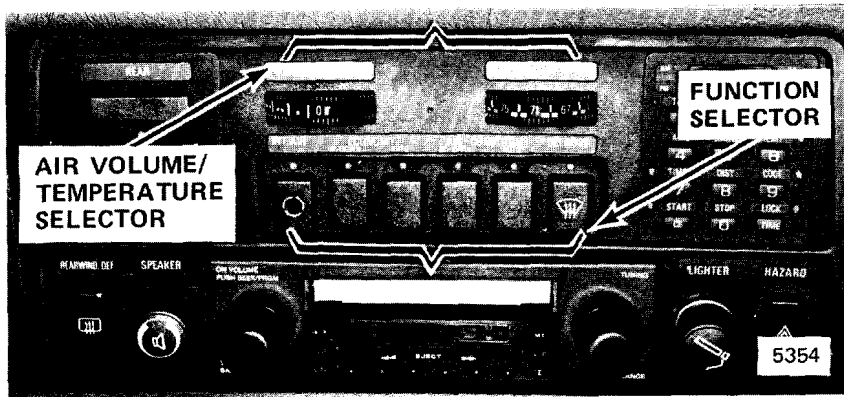
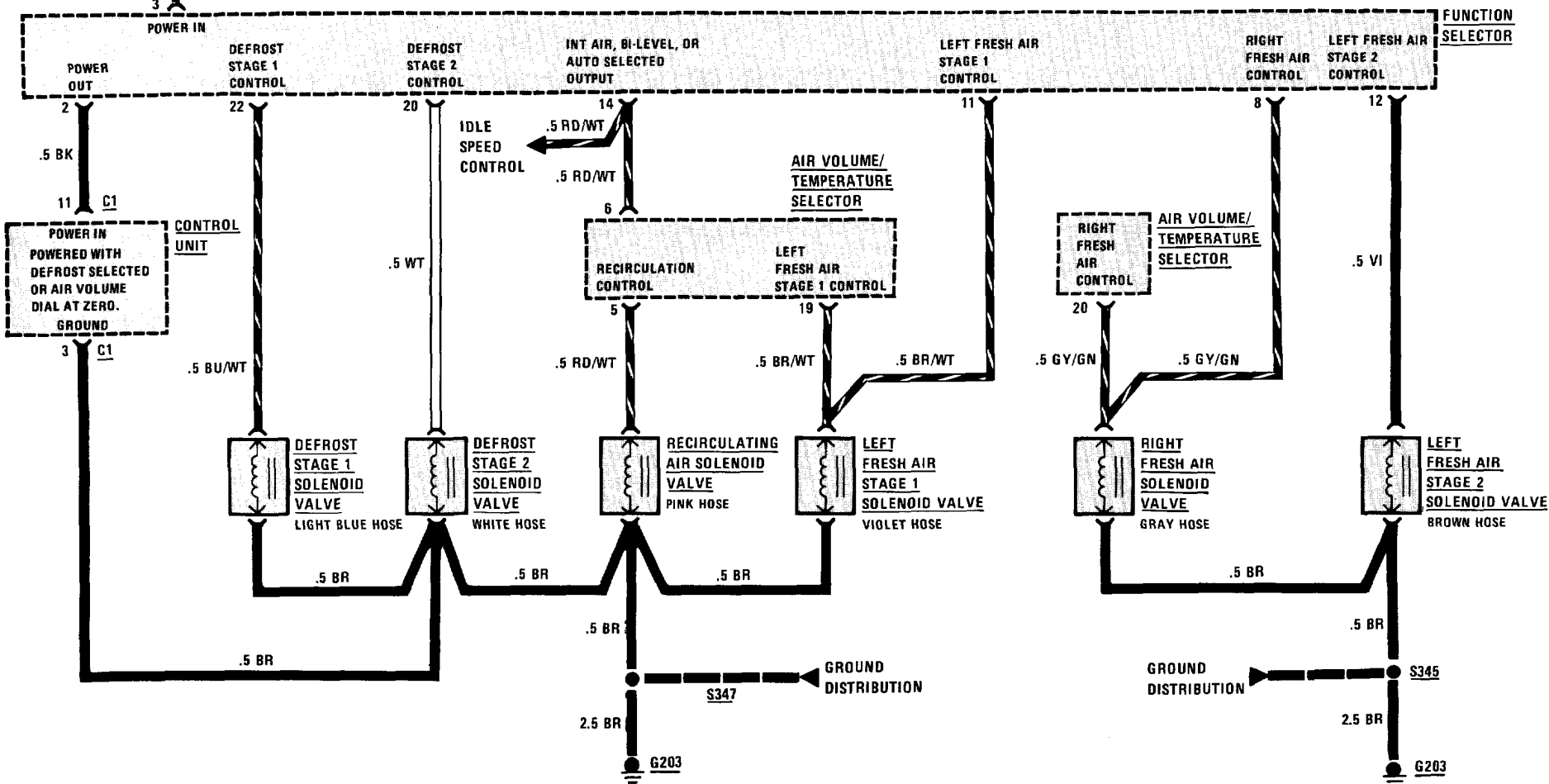
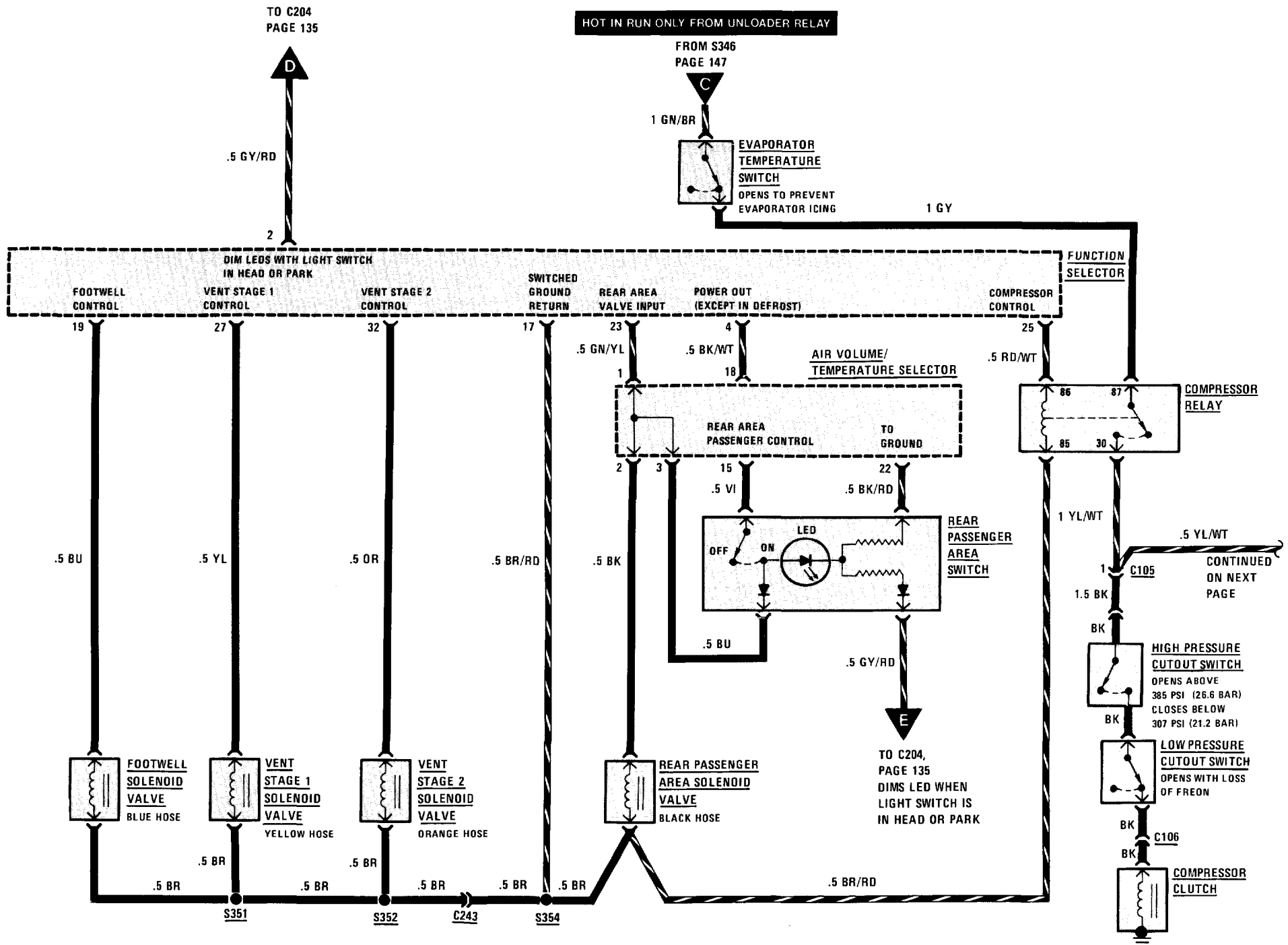


Figure 1 - At Center Console

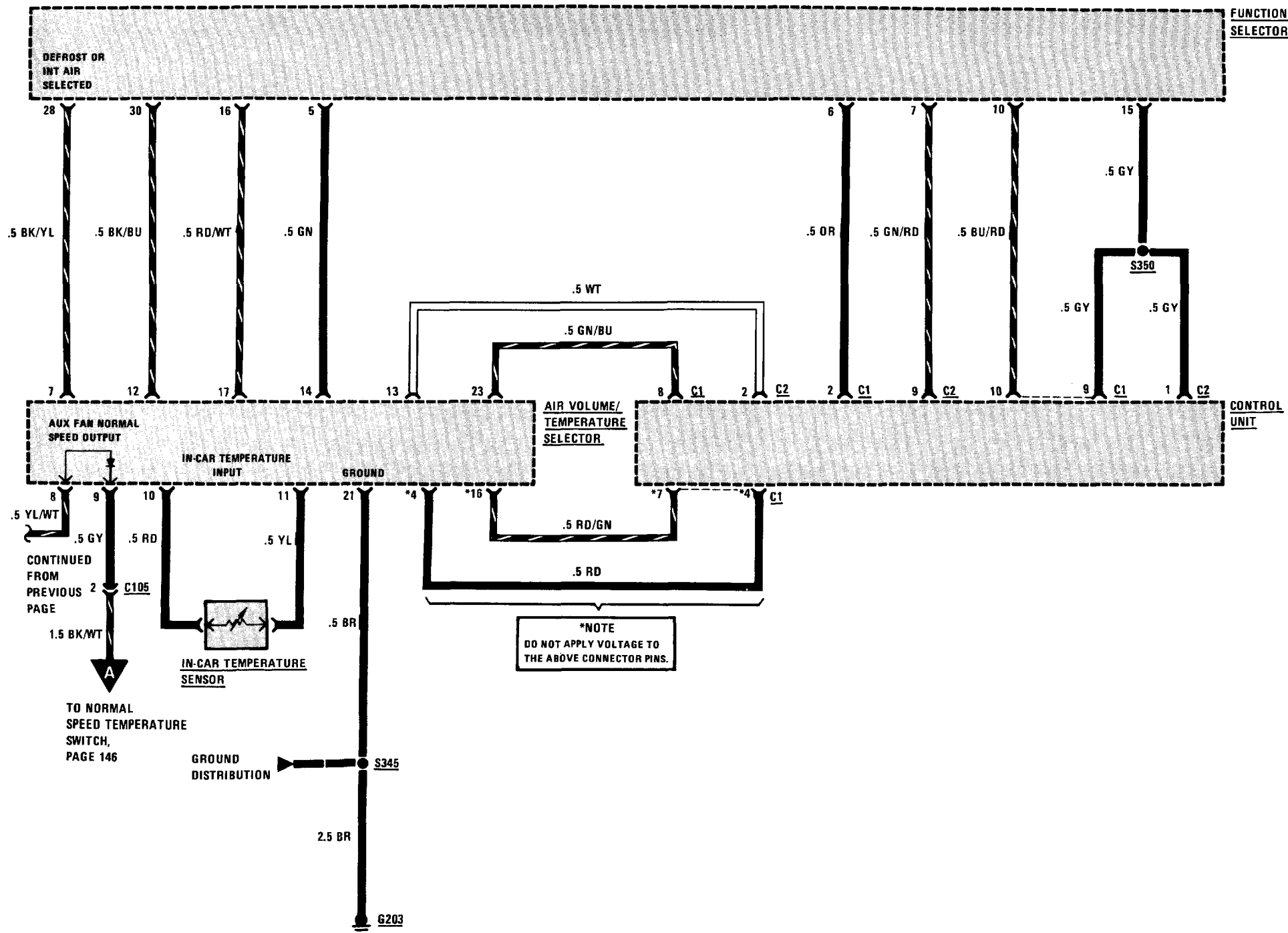


(For Component Locations See Page 201)

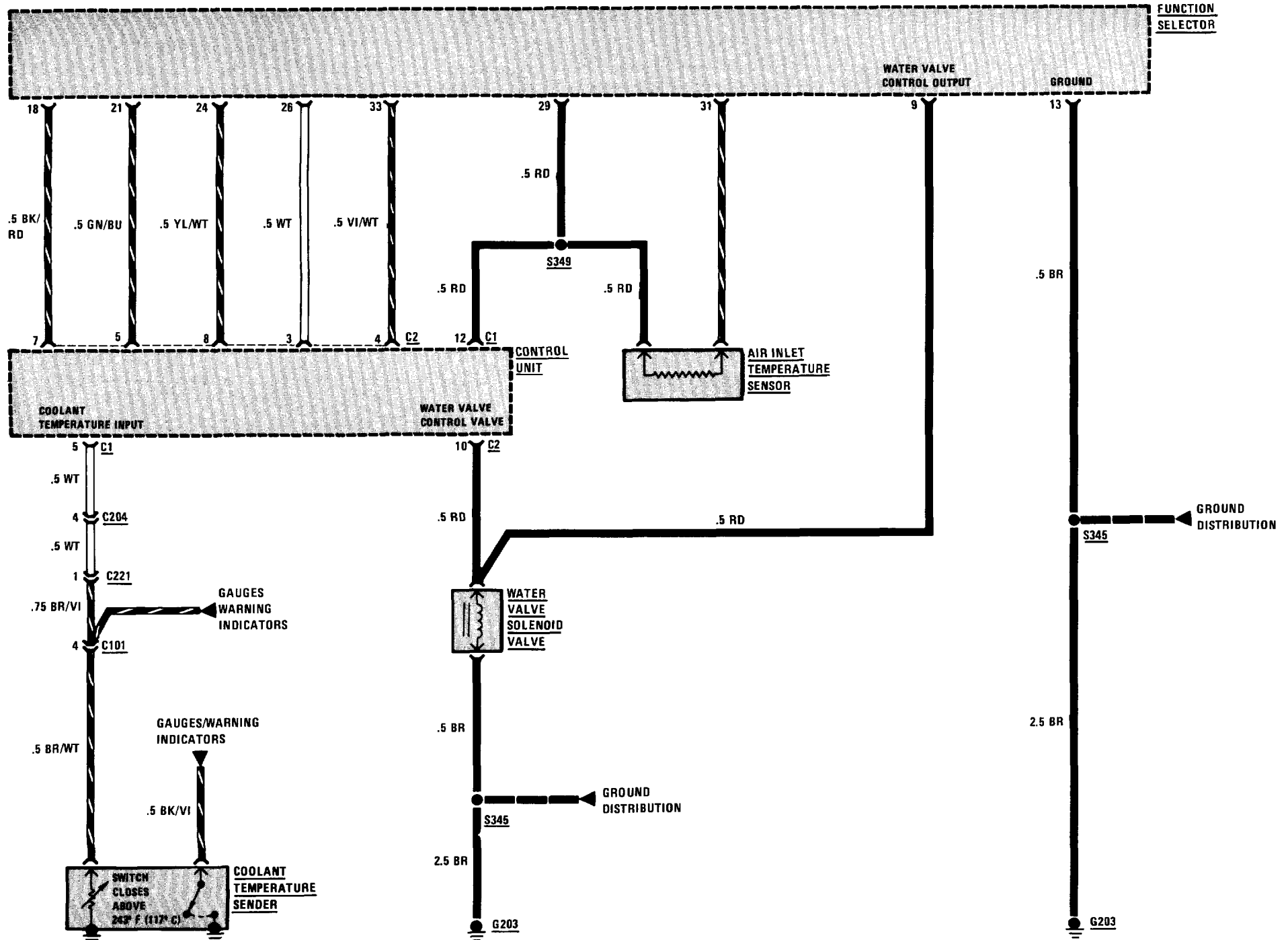


150 AUTOMATIC HEATER-AIR CONDITIONER (TEMPERATURE CONTROL)

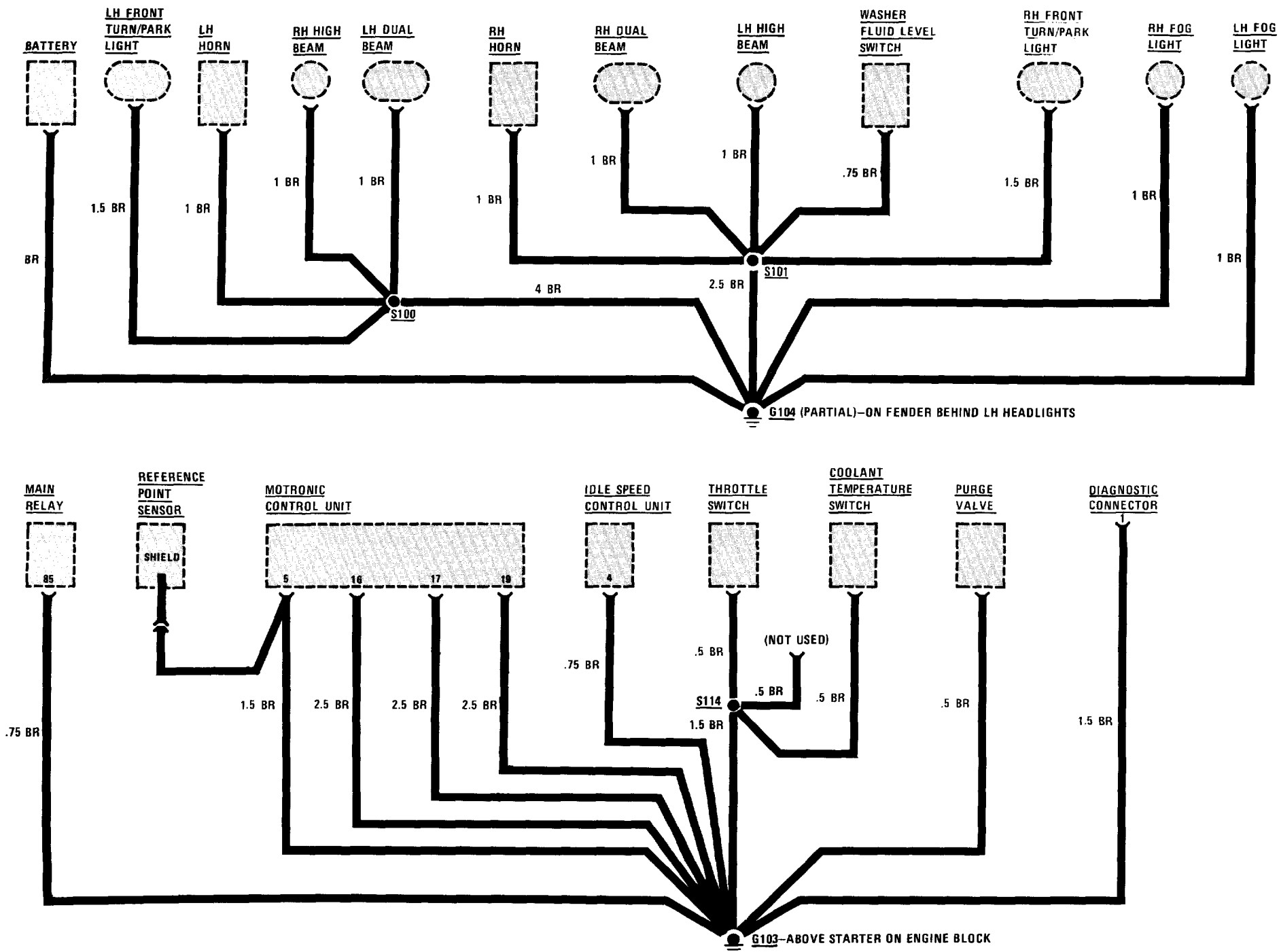
(For Component Locations See Page 201)

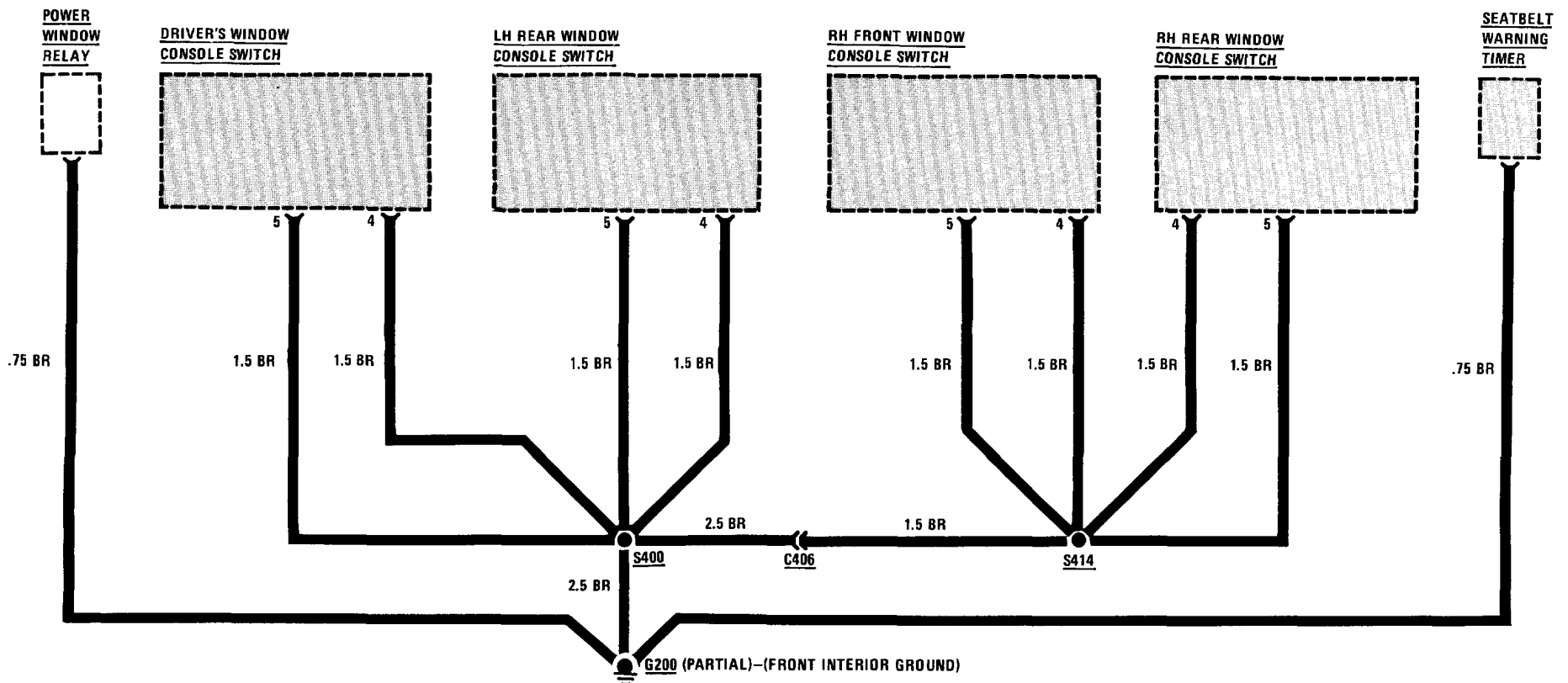
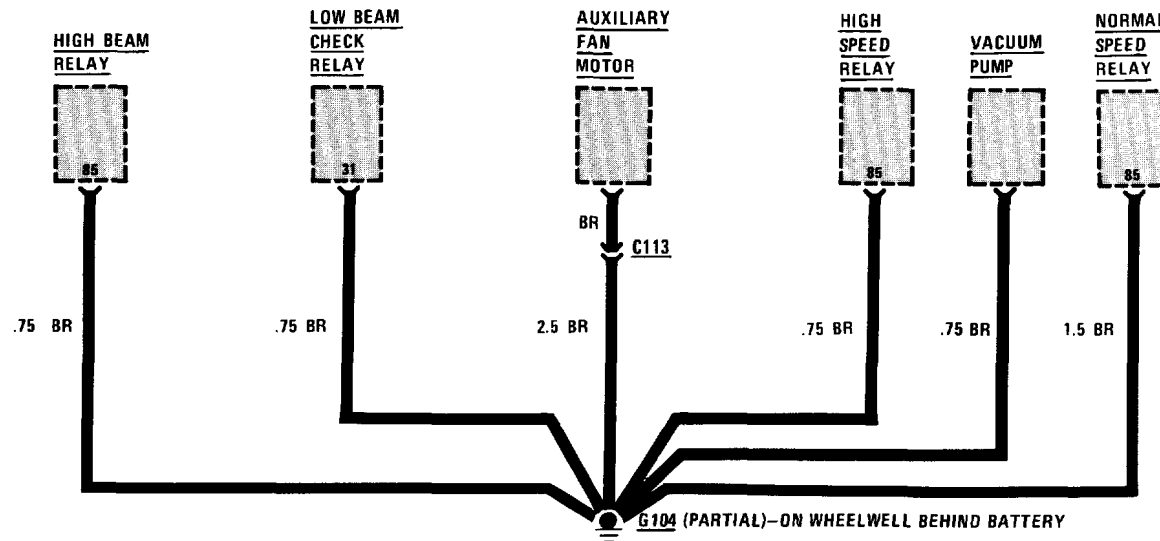


(For Component Locations See Page 201)

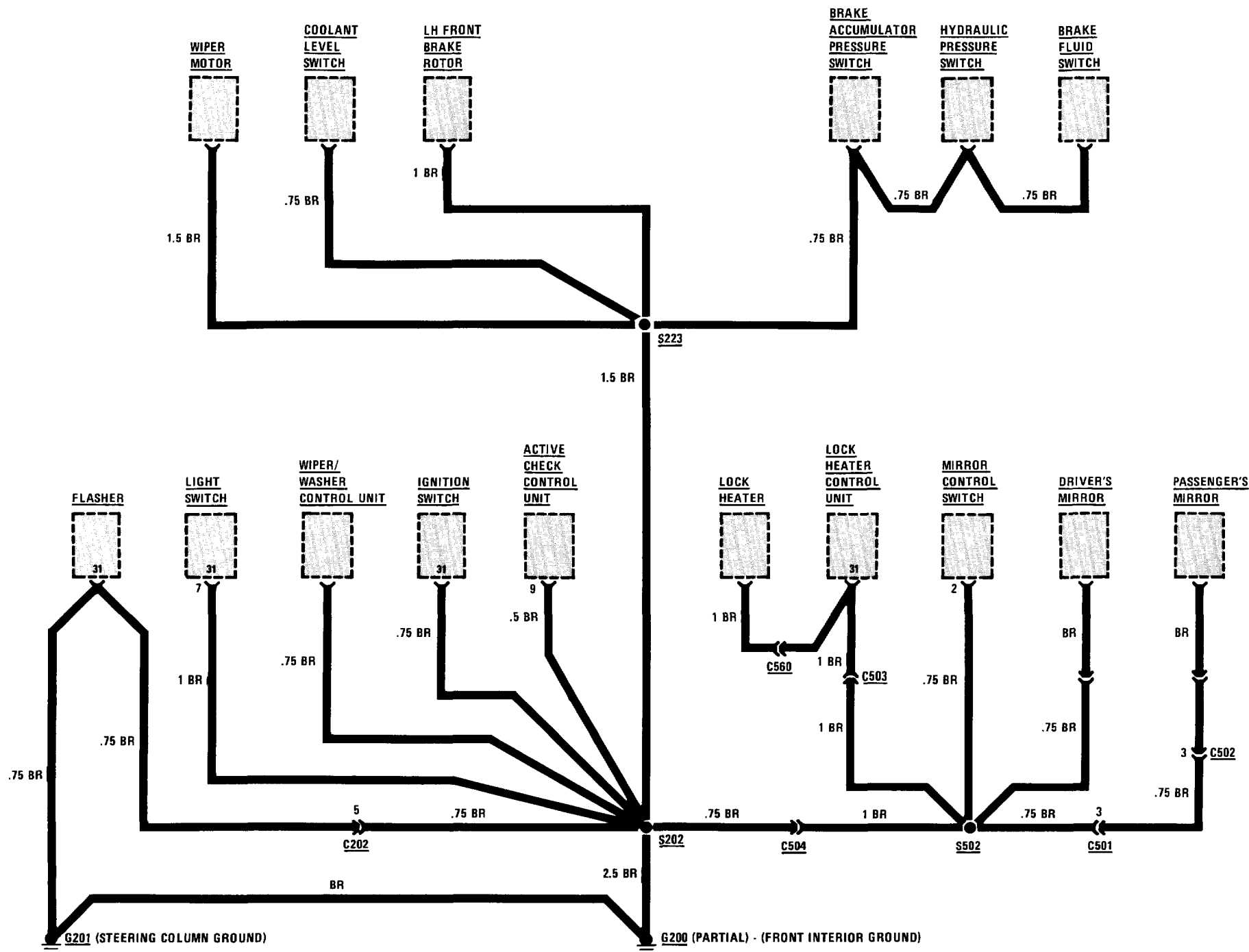


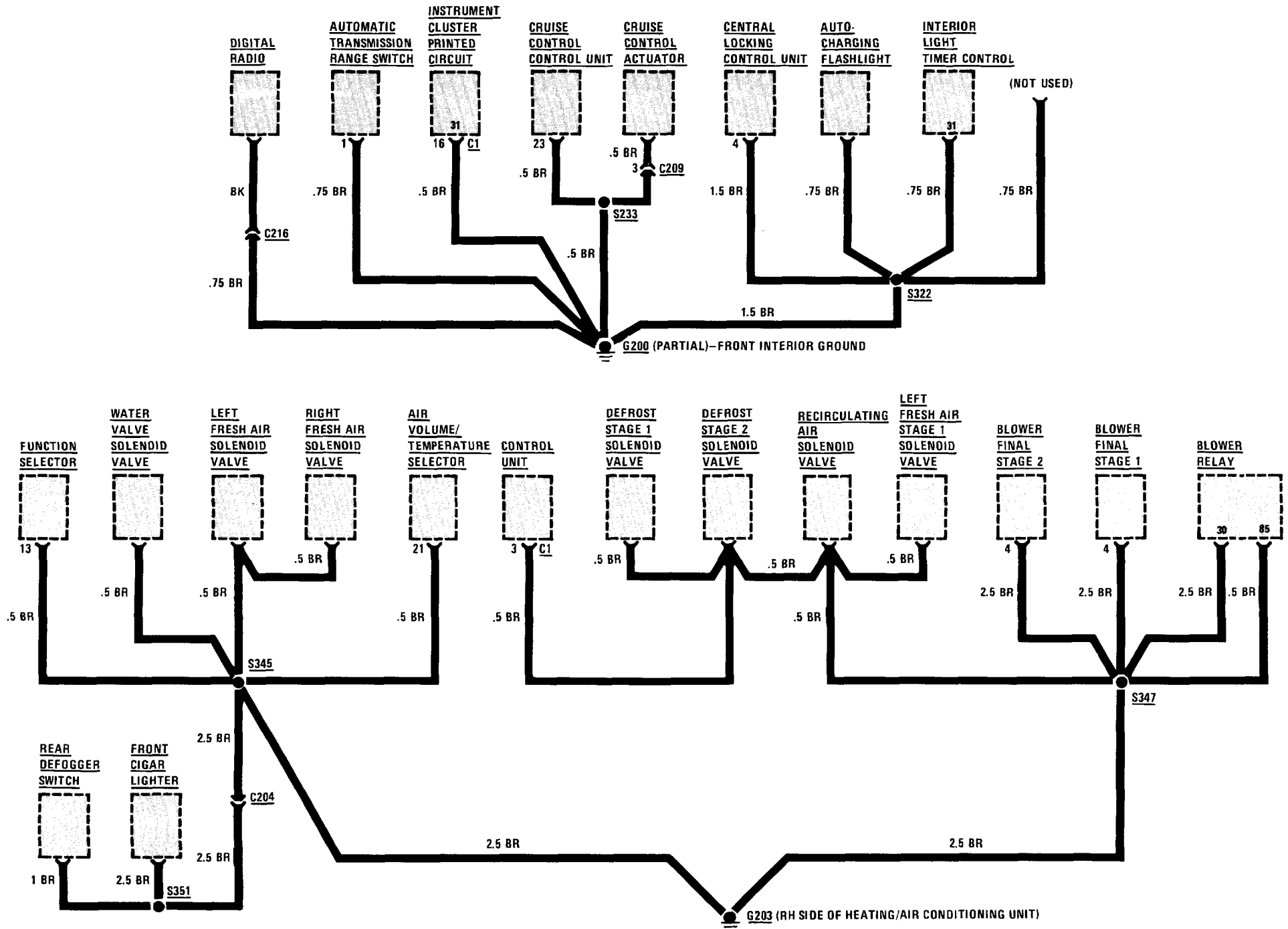
152 GROUND DISTRIBUTION

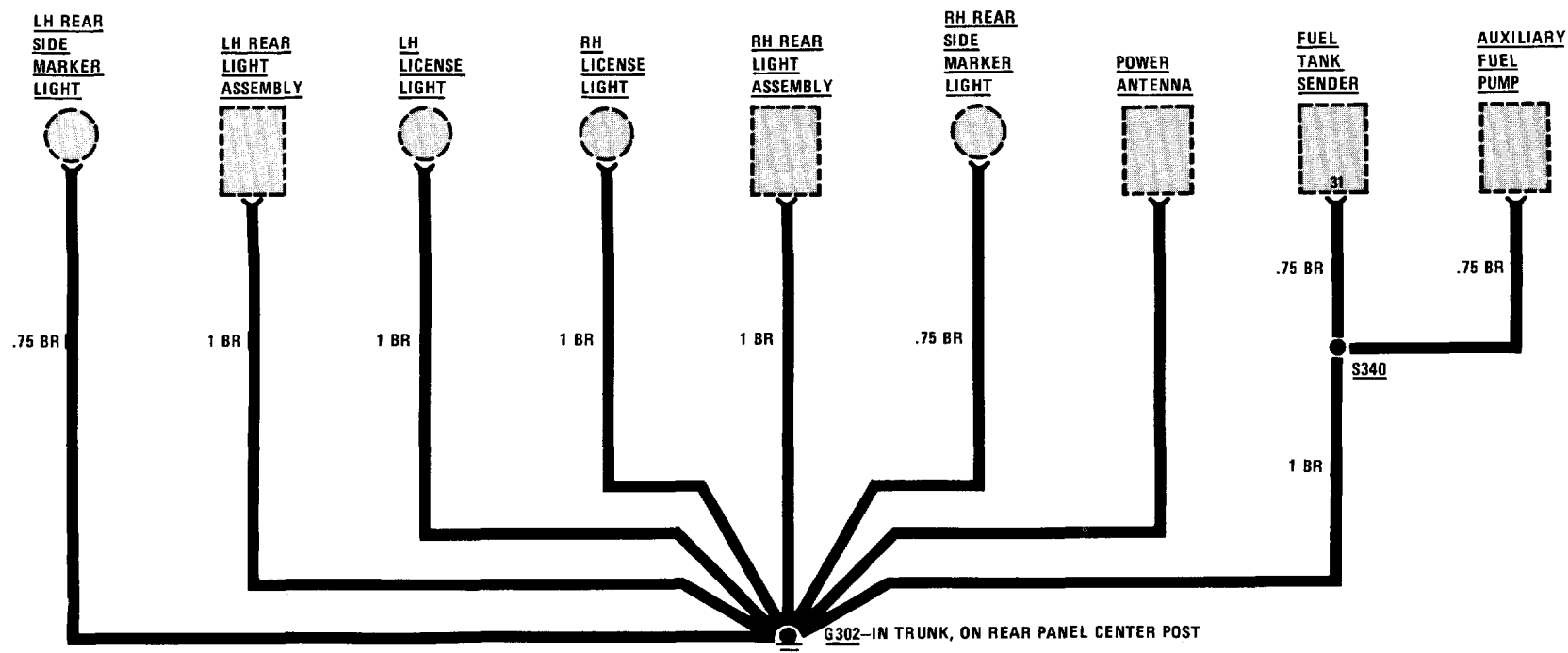
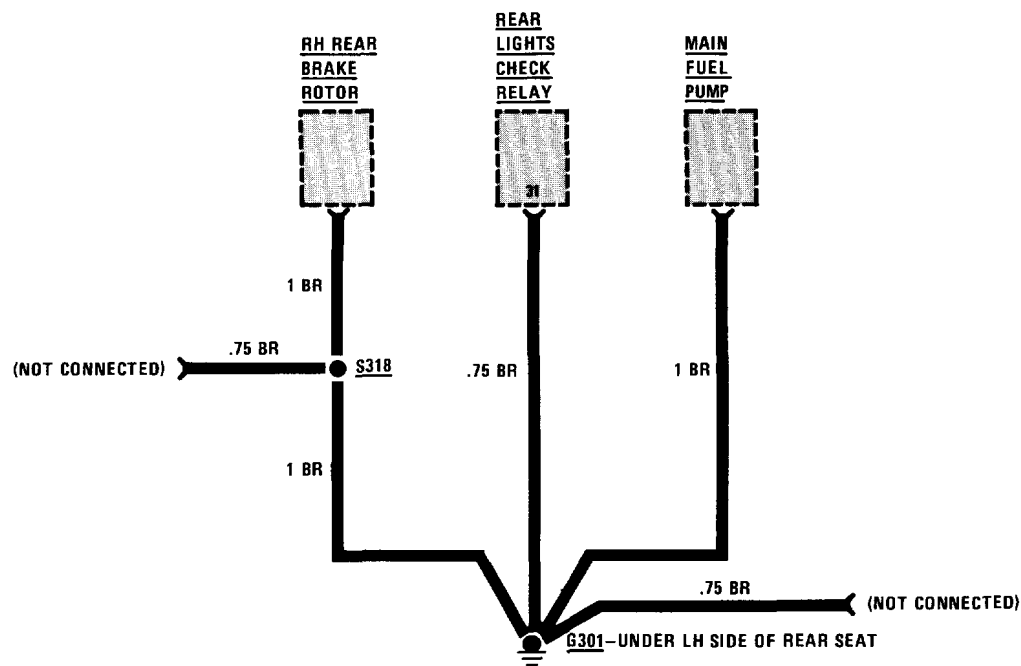




154 GROUND DISTRIBUTION







ACTIVE CHECK CONTROL

Active Check Control Unit	Dash, left of steering column	121-1
Brake Switch	Above brake pedal	
Coolant Level Switch	Top left side of coolant reservoir	209-1
Low Beam Check Relay	On left side of power distribution box	201-1
Oil Level Sensor	Bottom of engine oil pan	
Power Distribution Box	Top front of left front wheel well	209-2
Rear Lights Check Relay	Under left side of rear seat	207-2
Seatbelt Warning Timer	Under LH side of dash	
Washer Fluid Level Switch	Ahead of right front wheel well, in reservoir	
C101 (17 pin)	On right side of power distribution box	201-1
C102 (7 pin)	In power distribution box	
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C207 (1 pin)	Near brake switch	
C220 (13 pin)	Under LH dash, on body electrical bracket...	207-1
C250 (2 pin)	Under LH side of dash near brake switch	
G104 (Main Body Ground)	Left fender, behind headlights	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G301 (Rear Interior Ground) ..	Under left side of rear seat	207-2

AUTOMATIC HEATER-AIR CONDITIONER

A/C In-Line Fuse	Below dash, right of console	202-1
Air Inlet Temp. Sensor	Under center of fresh air intake cowl	213-5
Air Volume/Temp. Selector ...	Center of dash, in console	214-1
Blower Final Stage 1	In right blower fan housing	204-1
Blower Final Stage 2	In left blower fan housing	204-1
Blower Motor	Under center of fresh air intake cowl	201-2
Blower Relay	Under center of fresh air intake cowl	201-2
Compressor Relay	Under center of fresh air intake cowl	201-2
Control Unit	Left side of evaporator housing	
Coolant Temperature Sender ..	Front of engine, on thermostat housing	211-2
Defrost Stage 1 Solenoid Valve	Left side of evaporator housing	
Defrost Stage 2 Solenoid Valve	Left side of evaporator housing	
Evaporator Temp. Switch	On support stand for blower motor	
Footwell Solenoid Valve	Behind center console	
Function Selector	Center of dash, in console	
In-Car Temperature Sensor	Center of dash, in console	205-2
LH Fresh Air Stage 1 Sol. Valve	Behind center console	
LH Fresh Air Stage 2 Sol. Valve	Left side of evaporator housing	

(Chart continued on next page)

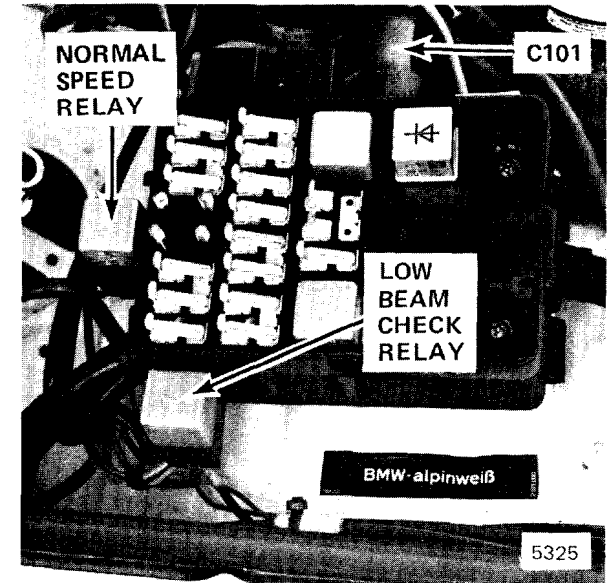


Figure 1 - Above Left Wheel Well

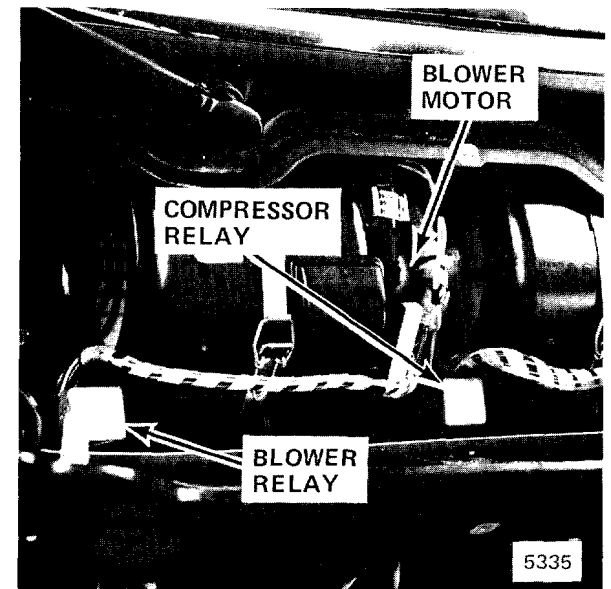


Figure 2 - Under Center Of Fresh Air Intake Cowl

202 COMPONENT LOCATIONS

(Continued)

Low Pressure Cutout Switch ..	On receiver-dryer below washer reservoir	
Power Distribution Box	Top front of left front wheel well	209-2
Rear Pass. Area Solenoid Valve	Behind center console	
Rear Passenger Area Switch...	Center of dash, in console.....	205-2
Recirculation Air Solenoid Valve	Left side of evaporator housing	
Right Fresh Air Solenoid Valve	Behind center console	
Vent Stage 1 Solenoid Valve ..	Behind center console	
Vent Stage 2 Solenoid Valve ..	Behind center console	
Water Valve Solenoid Valve ...	Kick panel, right of console.....	202-1
C105 (2 pin)	Behind right side of dash, above glove box ..	203-2
C106 (1 pin)	Near compressor clutch	
C204 (6 pin)	Behind center console	
C221 (12 pin)	Below dash, right of console	202-1
C243 (1 pin)	Behind center console	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	

AUXILIARY FAN/VACUUM PUMP

Auxiliary Fan Fuses	Left fender, left of battery	205-1
High Speed Relay.....	Left fender, left of battery	205-1
High Speed Temperature Switch	Lower right side of radiator (red terminals) ..	202-2
Normal Speed Blower Resistor	Ahead of radiator, on auxiliary fan shield	
Normal Speed Relay	On front side of power distribution box	201-1
Normal Speed Temperature Switch	Lower right side of radiator (white terminals)	202-2
Power Distribution Box	Top front of left front wheel well.....	209-2
Vacuum Pump.....	Right of left front shock tower	213-4
C111 (2 pin)	Lower right side of radiator.....	202-2
C113 (3 pin)	On auxiliary fan shield	
G104 (Main Body Ground)	Left fender, behind headlights	

BRAKE LINING WARNING

Power Distribution Box	Top front of left front wheel well	209-2
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G301 (Rear Interior Ground) ..	Under left side of rear seat	207-2

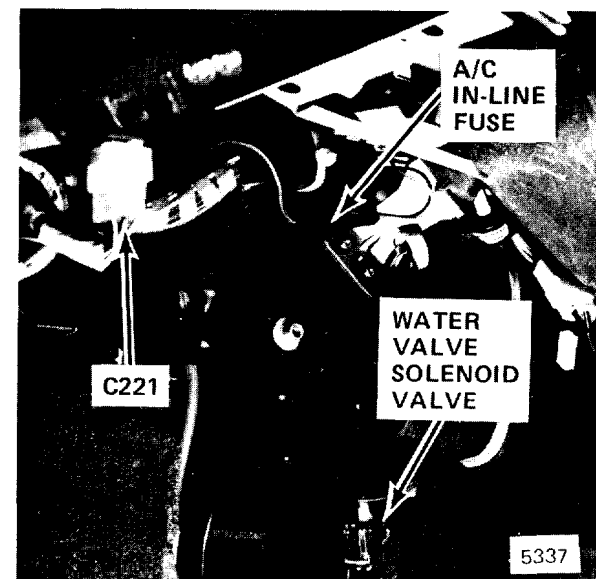


Figure 1 - Upper Right Side Of Console

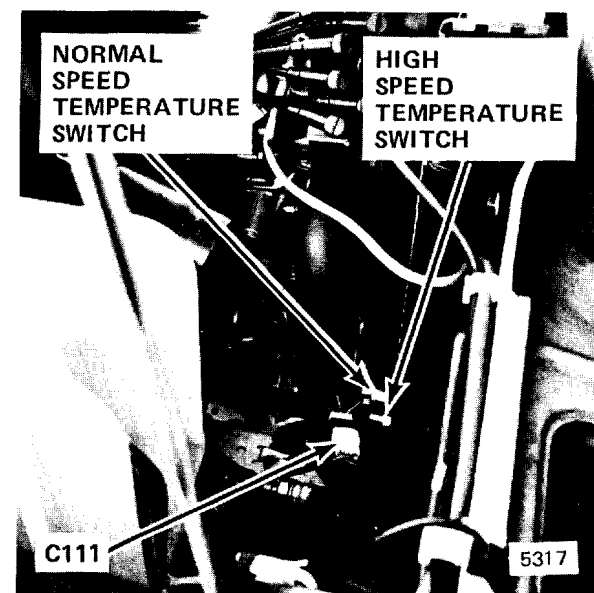


Figure 2 - Behind Right Headlights

CENTRAL LOCKING

Central Locking Control Unit ..	Under dash, above left speaker	213-6
Driver's Door Lock Motor	In left front door	
Gas Filler Lock Motor	In trunk, behind left rear wheel well	214-5
Ignition Switch	Upper part of steering column	
Left Rear Door Lock Motor	In left rear door	
Power Distribution Box	Top front of left front wheel well	209-2
Right Front Door Lock Motor	In right front door	
Right Rear Door Lock Motor ..	In right rear door	
Trunk Lock Motor	In trunk lid, near trunk lock	
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C220 (13 pin)	Under dash, left of steering column	207-1
C304 (7 pin)	Base of left trunk hinge	210-2
C400 (7 pin)	Under LH dash, at body electrical bracket ...	
C401 (7 pin)	Under right side of dash, right of glove box .	214-2
C402 (3 pin)	In left center pillar	
C403 (3 pin)	In right center pillar	
C503 (8 pin)	In driver's door	
C505 (4 pin)	Under dash, left of steering column	207-1
C506 (2 pin)	In driver's door, taped to harness	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	

CHARGING SYSTEM

Active Check Control Unit	Dash, left of steering column	121-1
Diagnostic Connector	Top front of engine	213-3
Ignition Switch	Upper part of steering column	
Power Distribution Box	Top front of left front wheel well	209-2
Starter	Lower rear left side of engine	
C101 (17 pin)	On right side of power distribution box	201-1
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
G104 (Main Body Ground)	Left fender, behind headlights	

CIGAR LIGHTER/GLOVE BOX LIGHT/

AUTO-CHARGING FLASHLIGHT

Auto-Charging Flashlight	Stored in glove box	
Glove Box Light Switch	Under right side of dash, above glove box ...	203-2

(Chart continued on next page)

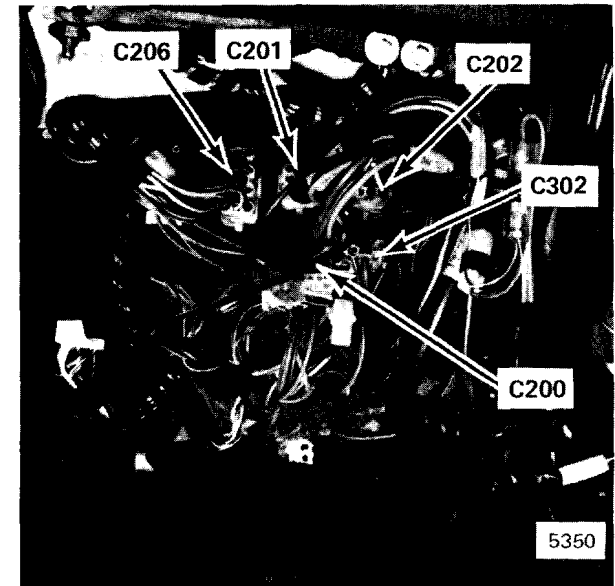


Figure 1 - Under LH Dash

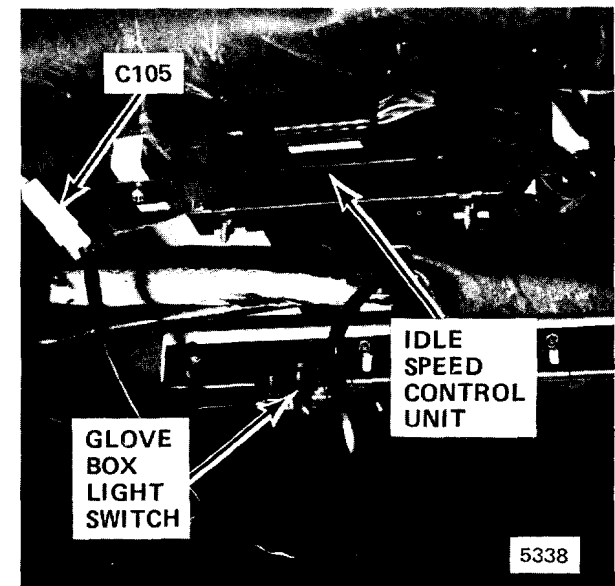


Figure 2 - Above Glove Box

204 COMPONENT LOCATIONS

(Continued)

Power Distribution Box	Top front of left front wheel well	209-2
C204 (6 pin)	Behind center console	
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C221 (12 pin)	Below dash, right of console	202-1
C302 (Accessory Connector) ..	Under LH dash, on body electrical bracket...	203-1
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G202	Center console	

DASH LIGHTS

Auto. Trans. Range Switch	On left side of shift lever	
Fog Light Switch	Under LH side of instrument cluster	
Hazard Switch	Dash, right of radio	214-1
On-Board Computer	Behind left speaker	208-2
Power Distribution Box	Top front of left front wheel well	209-2
Rear Defogger Switch	Dash, left of radio.....	205-2
C204 (6 pin)	Behind center console	
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C215 (2 pin)	Behind radio	
C216 (2 pin)	Behind radio	
C221 (12 pin)	Below dash, right of console	202-1
C301 (3 pin)	In center console, ahead of shift lever	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G202	Center console	

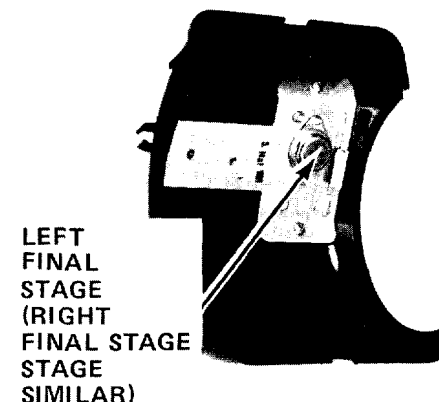
FUEL CONTROL

Air Flow Meter	Top right side of engine	206-2
Main Relay	Behind right front shock tower.....	204-2
Motronic Control Unit	Behind right speaker	211-1
Oxygen Sensor	Rear of engine, in exhaust manifold.....	204-2
G103 (Engine Ground)	Top rear of engine	206-2

FUEL DELIVERY/EVAPORATIVE CONTROL

Auxiliary Fuel Pump.....	Top left side of fuel tank, under trunk	214-4
Diagnostic Connector.....	Top front of engine	213-3
Fuel Pump Relay.....	On right side of power distribution box.....	209-2

(Chart continued on next page)



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Figure 1 - Removed Left Blower Fan Housing Cover

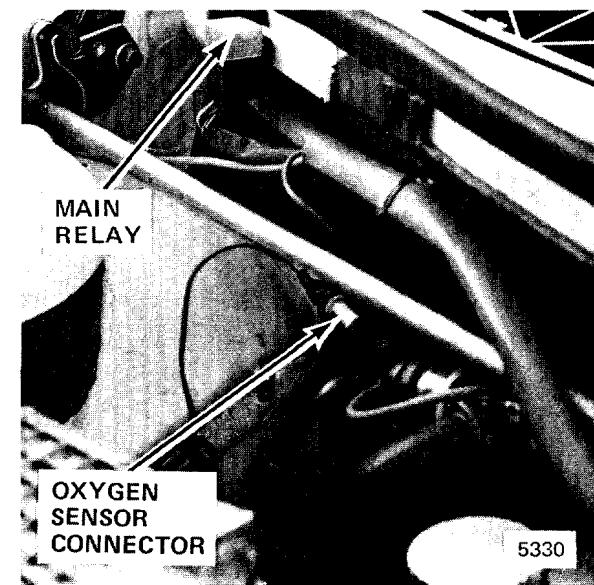


Figure 2 - Behind Right Front Shock Tower

(Continued)

Ignition Switch	Upper part of steering column	
Main Fuel Pump	Under car, ahead of left rear axle	
Main Relay	Behind right front shock tower.....	204-2
Motronic Control Unit	Behind right speaker	211-1
Power Distribution Box	Top front of left front wheel well	209-2
Purge Valve Relay	On right side of power distribution box.....	209-2
Purge Valve	Right of power distribution box	213-4
C101 (17 pin)	On right side of power distribution box.....	201-1
C103 (6 pin)	Behind right speaker	211-1
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C212 (1 pin)	Under left side of dash, near steering column	
G103 (Engine Ground)	Top rear of engine	206-2
G104 (Main Body Ground)	Left fender, behind headlights	
G301 (Rear Interior Ground) ..	Under left side of rear seat	207-2
G302 (Trunk Ground)	In trunk, on rear panel center support.....	208-1



Figure 1 - Ahead Of Left Front Wheel Well

HEADLIGHT (CONTROL/POWER)/FOG LIGHTS (CONTROL/POWER)

Active Check Control Unit	Dash, left of steering column	121-1
Combination Switch	Upper left side of steering column	206-1
Fog Light Switch	Under LH side of instrument cluster	
Low Beam Check Relay	On left side of power distribution box	201-1
Power Distribution Box	Top front of left front wheel well	209-2
C102 (7 pin)	In power distribution box	
C107 (2 pin)	Taped to harness, left of battery	205-1
C202 (12 pin)	Under LH dash, on body electrical bracket...	203-1
G104 (Main Body Ground)	Left fender, behind headlights	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	

HORN/HEATED DOOR LOCK

Lock Heater Control Unit	In left front door	
Lock Heater	In left front door	
Power Distribution Box	Top front of left front wheel well	209-2
C201 (9 pin)	Under LH dash, on body electrical bracket...	203-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C400 (7 pin)	Under LH dash, at body electrical bracket	

(Chart continued on next page)

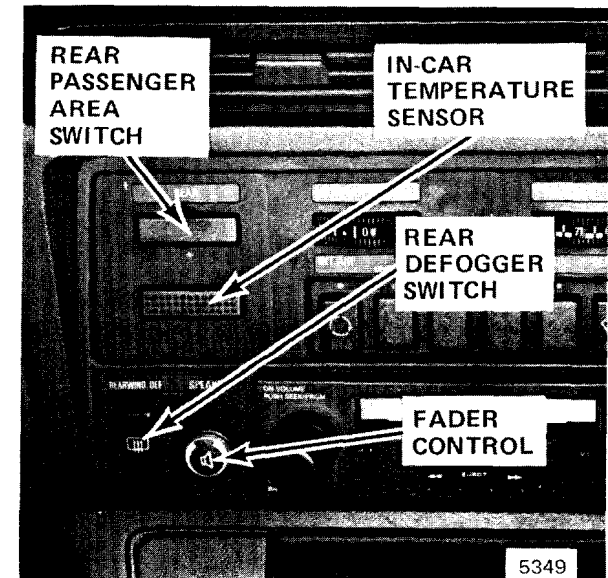


Figure 2 - Center Of Dash

(Continued)

C503 (8 pin)	In driver's door	
C504 (2 pin)	Under dash, left of steering column	
C560 (2 pin)	In driver's door	
G104 (Main Body Ground)	Left fender, behind headlights	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G201 (Column Ground)	Upper left side of steering column	206-1

IDLE SPEED CONTROL

0°C Temperature Switch	On left inlet of blower motor housing	212-2
Auto. Trans. Range Switch	On left side of shift lever	
Coolant Temperature Sensor ..	Front of engine, top of thermostat housing ..	211-2
Coolant Temperature Switch ..	Front of engine, top of thermostat housing ..	211-2
Diagnostic Connector.....	Top front of engine	213-3
Engine Speed Sensor	On transmission bell housing	206-2
Idle Control Valve	Top center of engine	213-2
Idle Speed Control Unit	Under right side of dash, above glove box...	203-2
Motronic Control Unit	Behind right speaker	211-1
Power Distribution Box	Top front of left front wheel well	209-2
Throttle Switch	Top LH side of engine, below throttle body ..	213-2
C101 (17 pin)	On right side of power distribution box.....	201-1
C103 (6 pin)	Behind right speaker	211-1
C104 (2 pin)	Behind right speaker	211-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C301 (3 pin)	In center console, ahead of shift lever	
G103 (Engine Ground)	Top rear of engine	206-2

IGNITION

Diagnostic Connector.....	Top front of engine	213-3
Ignition Coil	On right fender, behind headlights	
Ignition Switch	Upper part of steering column	
Motronic Control Unit	Behind right speaker	211-1
Reference Point Sensor	On transmission bell housing	206-2
C101 (17 pin)	On right side of power distribution box.....	201-1
C109 (1 pin)	Taped to harness, near ignition coil	
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
G103 (Engine Ground)	Top rear of engine	206-2

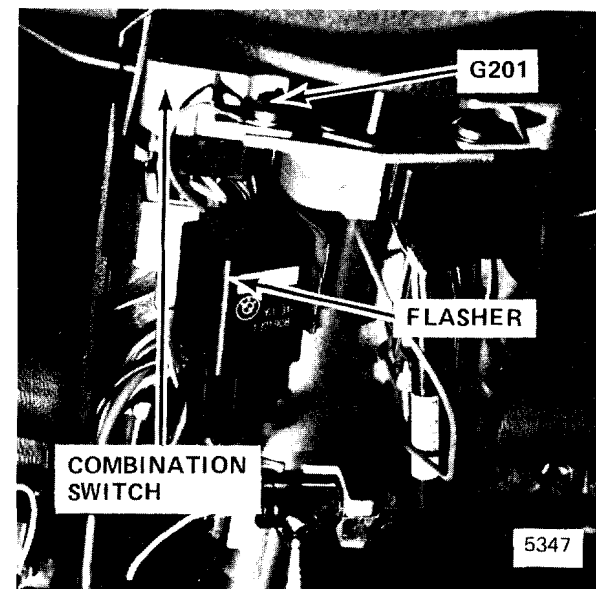


Figure 1 - Upper Underside Of Column

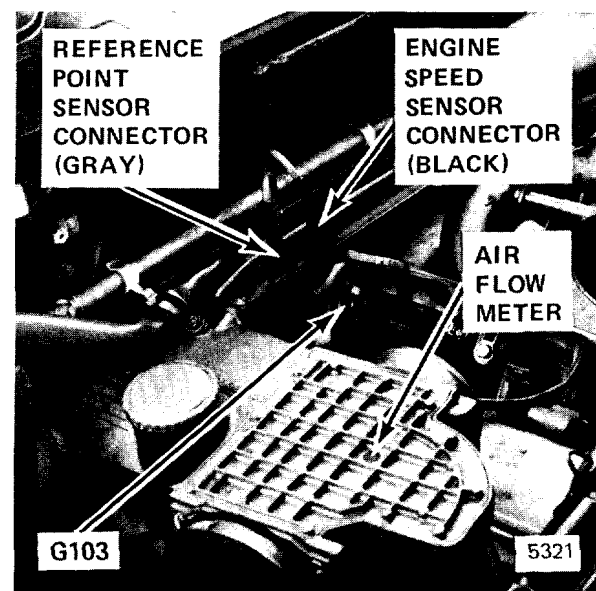


Figure 2 - Top Rear Of Engine

IGNITION KEY WARNING/SEATBELT WARNING

Active Check Control Unit	Dash, left of steering column	121-1
Ignition Key Switch	In upper part of steering column	
Power Distribution Box	Top front of left front wheel well	209-2
Seatbelt Switch	In driver's seatbelt buckle	
Seatbelt Warning Timer	Under LH side of dash	
Warning Buzzer	Upper left side of steering column	212-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C220 (13 pin)	Under LH dash, on body electrical bracket...	207-1
C304 (7 pin)	Base of left trunk hinge	210-2
G200 (Front Interior Ground) ..	On dash frame, left of steering column	

INTERIOR LIGHTS

Interior Light Timer	Under LH dash, on body electrical bracket...	213-6
Lock Heater Control Unit	In left front door	
Power Distribution Box	Top front of left front wheel well	209-2
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C303 (2 pin)	In headliner, above LH dome light	214-3
C503 (8 pin)	In driver's door	
C504 (2 pin)	Under dash, left of steering column	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G303	Above left B pillar	

LIGHTS: BACKUP/TRANSMISSION RANGE

Auto. Trans. Range Switch	On left side of shift lever	
Backup Light Switch	On left side of manual transmission	
Power Distribution Box	Top front of left front wheel well	209-2
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C301 (3 pin)	In center console, ahead of shift lever	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G302 (Trunk Ground)	In trunk, on rear panel center support	208-1

LIGHTS: FRONT PARK/TAIL/UNDERHOOD

Active Check Control Unit	Dash, left of steering column	121-1
Power Distribution Box	Top front of left front wheel well	209-2
Rear Lights Check Relay	Under left side of rear seat	207-2

(Chart continued on next page)

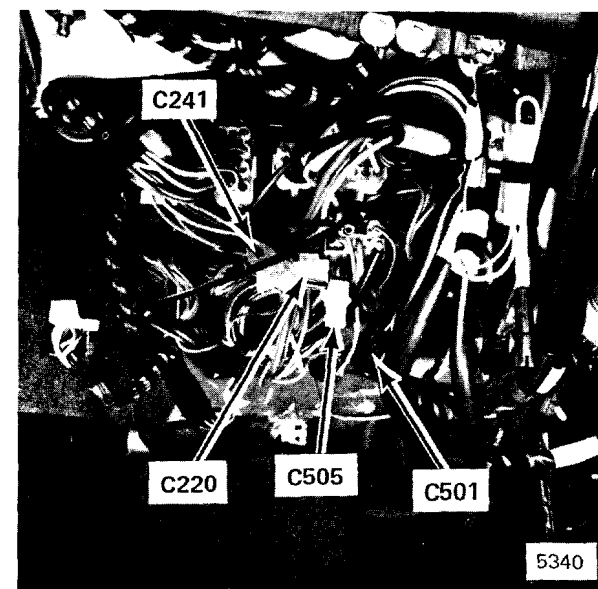


Figure 1 - Under Left Side Of Dash

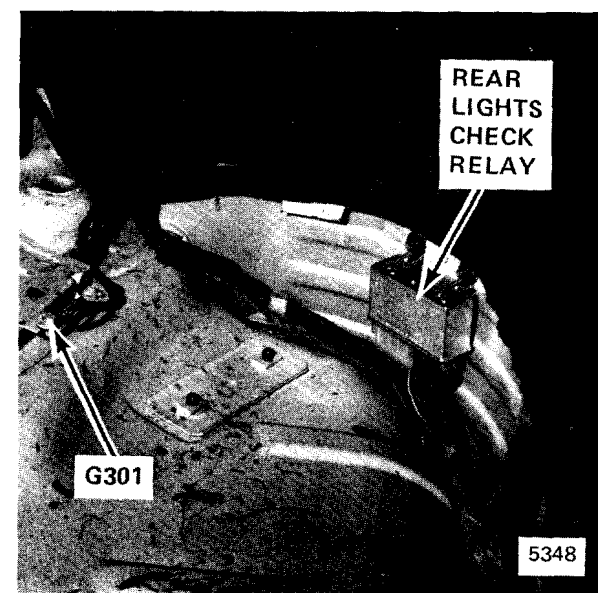


Figure 2 - Under Left Side Of Rear Seat

(Continued)

Underhood Light Switch	Under RH rear corner of hood, near latch plate	
C110 (1 pin)	Behind right headlights	213-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
G104 (Main Body Ground)	Left fender, behind headlights	
G301 (Rear Interior Ground) ..	Under left side of rear seat	207-2
G302 (Trunk Ground)	In trunk, on rear panel center support	208-1

LIGHTS: REAR MARKER/LICENSE/TRUNK

Active Check Control Unit	Dash, left of steering column	121-1
Power Distribution Box	Top front of left front wheel well	209-2
Trunk Light Switch	In trunk lid, near trunk lock	
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C220 (13 pin)	Under dash, left of steering column	207-1
C300 (1 pin)	Base of left trunk hinge	210-2
G301 (Rear Interior Ground) ..	Under left side of rear seat	207-2
G302 (Trunk Ground)	In trunk, on rear panel center support	208-1

LIGHTS: TURN/HAZARD WARNING

Combination Switch	Upper left side of steering column	206-1
Flasher	Upper left side of steering column	206-1
Hazard Switch	Dash, right of radio	214-1
Power Distribution Box	Top front of left front wheel well	209-2
C102 (7 pin)	In power distribution box	
C202 (12 pin)	Under LH dash, on body electrical bracket...	203-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
G104 (Main Body Ground)	Left fender, behind headlights	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G201 (Column Ground)	Upper left side of steering column	206-1
G302 (Trunk Ground)	In trunk, on rear panel center support	208-1

ON-BOARD COMPUTER

Alarm Horn	Ahead of RH side of coolant reservoir	213-4
Chime	Top center of dash, under grill	

(Chart continued on next page)

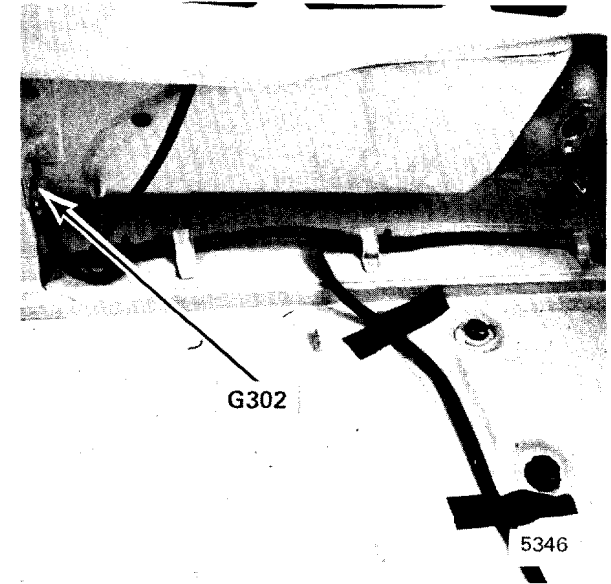


Figure 1 - Rear Left Side Of Trunk

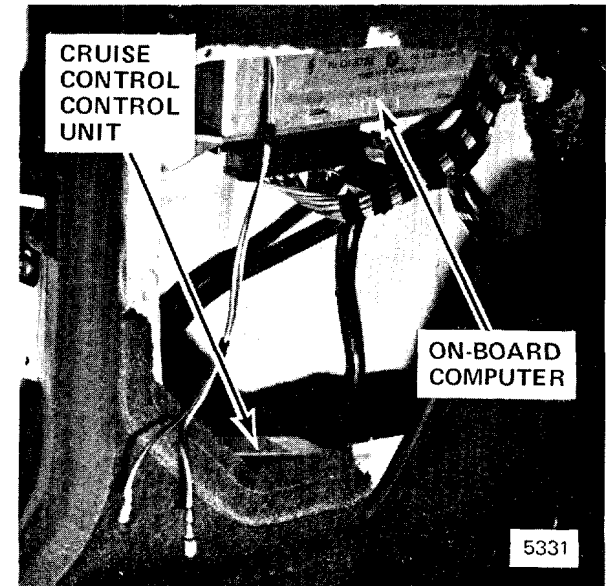


Figure 2 - Behind Left Speaker

(Continued)

Control Panel	Center of dash	214-1
Filter Capacitor	Ahead of coolant reservoir	213-4
Ignition Switch	Upper part of steering column	
Main Relay	Behind right front shock tower	204-2
On-Board Computer	Behind left speaker	208-2
Outside Temperature Sender ..	Under front bumper, left side	
Power Distribution Box	Top front of left front wheel well	209-2
C103 (6 pin)	Behind right speaker	211-1
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
C212 (1 pin)	Under left side of dash, near steering column	
C220 (13 pin)	Under dash, left of steering column	207-1
C235 (1 pin)	Under left side of dash, near steering column	
C236 (2 pin)	Under left side of dash, near steering column	
C237 (3 pin)	Behind brake fluid reservoir	209-1
C238 (1 pin)	Near body electrical bracket	
C239 (4 pin)	Near body electrical bracket	
C240 (1 pin)	Taped to harness, near body electrical bracket	
C242 (2 pin)	Near body electrical bracket	
G103 (Engine Ground)	Top rear of engine	206-2
G104 (Main Body Ground)	Left fender, behind headlights	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	

POWER DISTRIBUTION

Combination Switch	Upper left side of steering column	206-1
Diagnostic Connector	Top front of engine	213-3
Ignition Switch	In upper part of steering column	
Power Distribution Box	Top front of left front wheel well	209-2
Starter	Lower rear left side of engine	
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
C202 (12 pin)	Under LH dash, on body electrical bracket...	203-1
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C221 (12 pin)	Below dash, right of console	202-1
C302 (Accessory Connector) ..	Under LH dash, on body electrical bracket...	203-1
G104 (Main Body Ground)	Left fender, behind headlights	

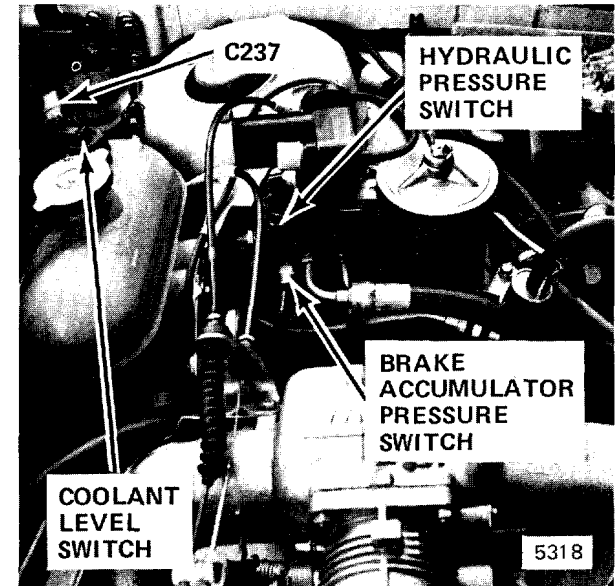


Figure 1 - Left Rear Of Engine Compartment

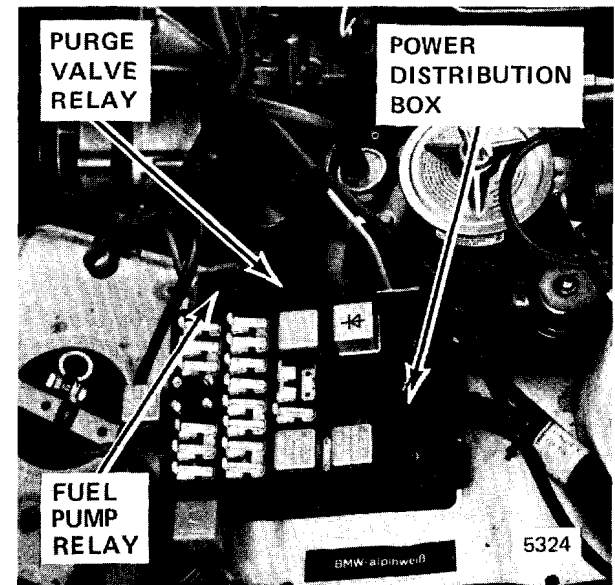


Figure 2 - Top Left Front Wheel Well

POWER MIRRORS

Mirror Control Switch	On driver's door, above arm rest	
Power Distribution Box	Top front of left front wheel well	209-2
C501 (4 pin)	Under dash, left of steering column	207-1
C502 (7 pin)	Under right side of dash, right of glove box	214-2
C504 (2 pin)	Under dash, left of steering column	
G200 (Front Interior Ground).	On dash frame, left of steering column	

POWER WINDOWS

Power Distribution Box	Top front of left front wheel well	209-2
Power Window Circuit Breaker	Below dash, left of console	210-1
Power Window Relay	Under LH dash, on body electrical bracket...	
Rear Window Switches	In rear doors	
Safety Switch	On shift console	
Window Console Switches	On shift console	
Window Motors	In each door	
C400 (7 pin)	Under LH dash, at body electrical bracket ...	
C401 (7 pin)	Under right side of dash, right of glove box .	214-2
C402 (3 pin)	In left center pillar	
C403 (3 pin)	In right center pillar	
G200 (Front Interior Ground)..	On dash frame, left of steering column	

RADIO/POWER ANTENNA

Fader Control	Dash, left of radio.....	205-2
Power Distribution Box	Top front of left front wheel well	209-2
Radio In-Line Fuse	Behind radio	
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C215 (2 pin)	Behind radio	
C216 (2 pin)	Behind radio	
C217 (2 pin)	Behind radio	
C218 (2 pin)	Behind radio	
C222 (1 pin)	Behind radio	
C302 (Accessory Connector)..	Under LH dash, on body electrical bracket...	203-1
G200 (Front Interior Ground)..	On dash frame, left of steering column	
G302 (Trunk Ground)	In trunk, on rear panel center support	208-1

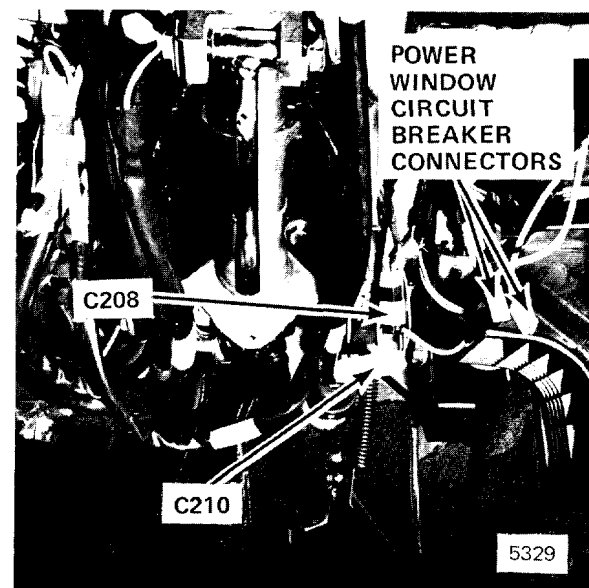


Figure 1 - Under Dash, Left Of Console

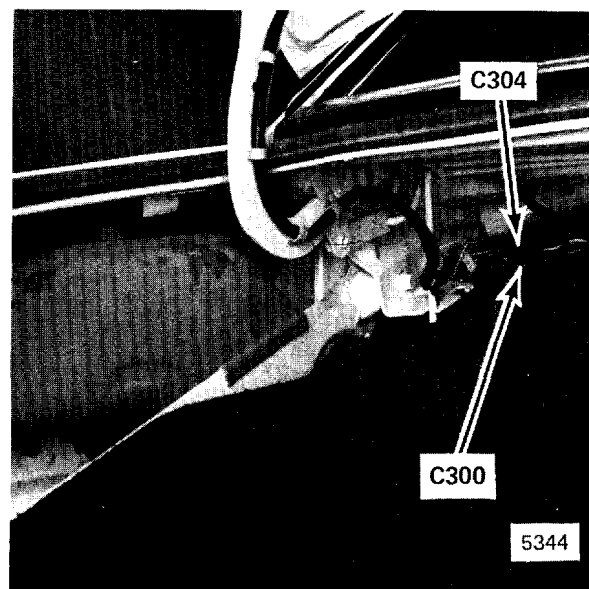


Figure 2 - Front Left Side Of Trunk

REAR DEFOGGER/SUNROOF

Drive Motor	Behind header, above rear view mirror	
Limit Switch	Behind header, above rear view mirror	
Motor Relay	Behind header, above rear view mirror	
Power Distribution Box	Top front of left front wheel well	209-2
Rear Defogger Switch	Dash, left of radio.....	205-2
Sunroof Switch	Above rear view mirror	
C204 (6 pin)	Behind center console	
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C221 (12 pin)	Below dash, right of console	202-1
C302 (Accessory Connector) ..	Under LH dash, on body electrical bracket...	203-1
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G600	Near sunroof switch	

SPEEDOMETER/GAUGES/WARNING INDICATORS

Active Check Control Unit	Dash, left of steering column	
Brake Accum. Pres. Switch	Right of right front shock tower.....	209-1
Brake Fluid Level Switch	To left of engine, on brake fluid reservoir	
Coolant Temperature Sender ..	Front of engine, on thermostat housing	211-2
Diagnostic Connector.....	Top front of engine	213-3
Fuel Tank Sender	Top left side of fuel tank, under trunk	214-4
Hydraulic Pressure Switch	Right of right front shock tower.....	209-1
Ignition Switch	Upper part of steering column	
Motronic Control Unit	Behind right speaker	211-1
Oil Pressure Switch	Left rear end of cylinder head	
Parking Brake Switch	In shift console, at base of parking brake	
Power Distribution Box	Top front of left front wheel well	209-2
Speedometer Sender	In rear of differential	
C101 (17 pin)	On right side of power distribution box.....	201-1
C103 (6 pin)	Behind right speaker	211-1
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G302 (Trunk Ground)	In trunk, on rear panel center support.....	208-1

START

Auto. Trans. Range Switch	On left side of shift lever	
Cold Start Valve	Between intake ports 3 and 4	
Diagnostic Connector.....	Top front of engine	213-3
Ignition Switch	Upper part of steering column	

(Chart continued on next page)

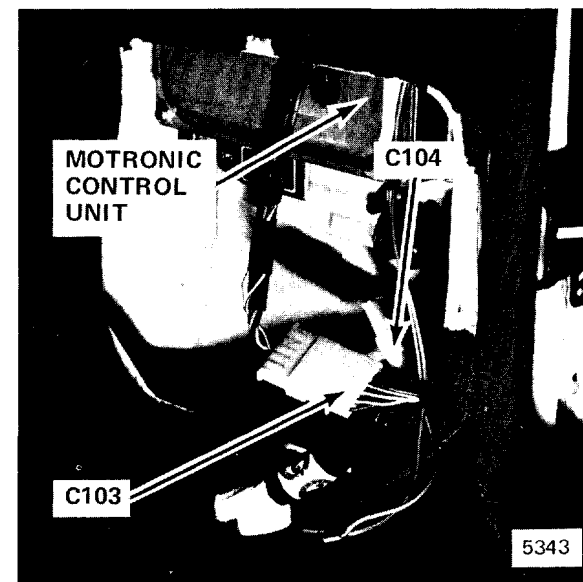


Figure 1 - Behind Right Speaker

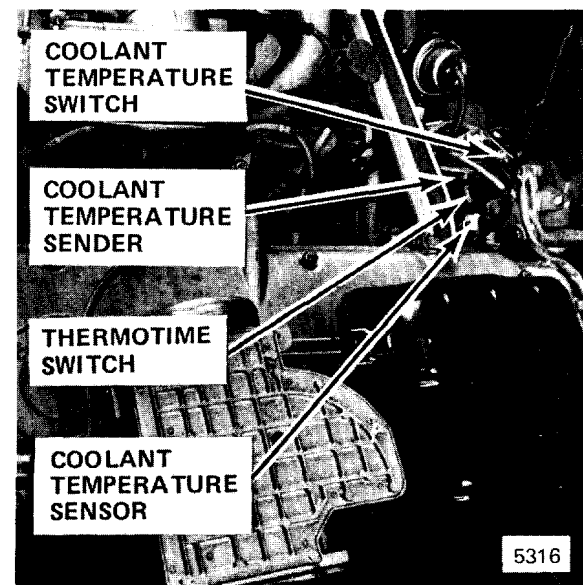


Figure 2 - Top Front Of Engine

(Continued)

Power Distribution Box	Top front of left front wheel well	209-2
Start Relay	Under LH dash, on body electrical bracket	
Starter	Lower rear left side of engine	
Thermostat Switch	Front of engine, top of thermostat housing ..	211-2
C101 (17 pin)	On right side of power distribution box	201-1
C200 (6 pin)	Under LH dash, on body electrical bracket...	203-1
C241 (1 pin)	Under dash, left of steering column	207-1
G104 (Main Body Ground)	Left fender, behind headlights	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	

STOPLIGHTS/CRUISE CONTROL

Active Check Control Unit	Dash, left of steering column	121-1
Auto. Trans. Range Switch	On left side shift lever	
Brake Switch	Above brake pedal	
Clutch Switch	Above clutch pedal	
Cruise Control Actuator	Right of power distribution box	205-1
Cruise Control Control Unit ...	Behind left speaker	208-2
Cruise Control Switch	Upper right side of steering column	212-1
Power Distribution Box	Top front of left front wheel well	209-2
Rear Lights Check Relay	Under left side of rear seat	207-2
C206 (18 pin)	Under LH dash, on body electrical bracket...	203-1
C207 (1 pin)	Near brake switch	
C208 (1 pin)	Above accelerator pedal	210-1
C209 (7 pin)	Under dash, above left speaker	213-6
C210 (4 pin)	Above accelerator pedal	210-1
C220 (13 pin)	Under dash, left of steering column	207-1
C250 (2 pin)	Under LH side of dash near brake switch	
C301 (3 pin)	In center console, ahead of shift lever	
G200 (Front Interior Ground) ..	On dash frame, left of steering column	
G301 (Rear Interior Ground) ..	Under left side of rear seat	207-2
G302 (Trunk Ground)	In trunk, on rear panel center support	208-1

WIPER-WASHER

Power Distribution Box	Top front of left front wheel well	209-2
Washer Pump	Ahead of right front wheel well, in reservoir	
Wiper Motor	Under left side fresh air intake cowl	212-2
Wiper/Washer Switch	Upper right side of steering column	212-1
C201 (9 pin)	Under LH dash, on body electrical bracket...	203-1
G200 (Front Interior Ground) ..	On dash frame, left of steering column	

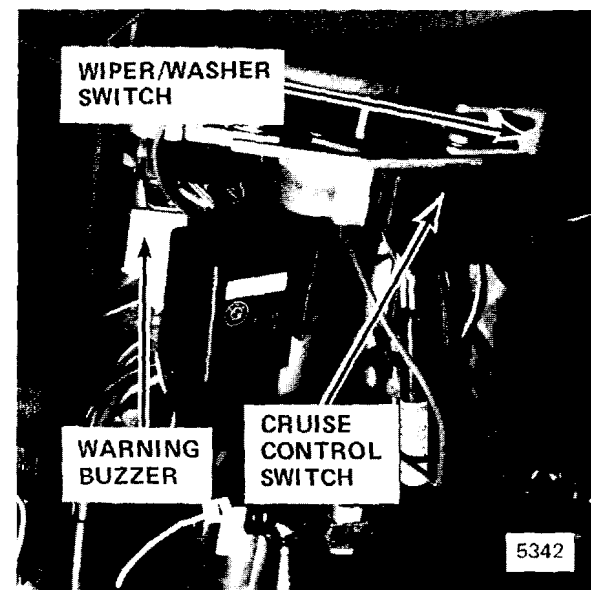


Figure 1 - Upper Underside Of Column

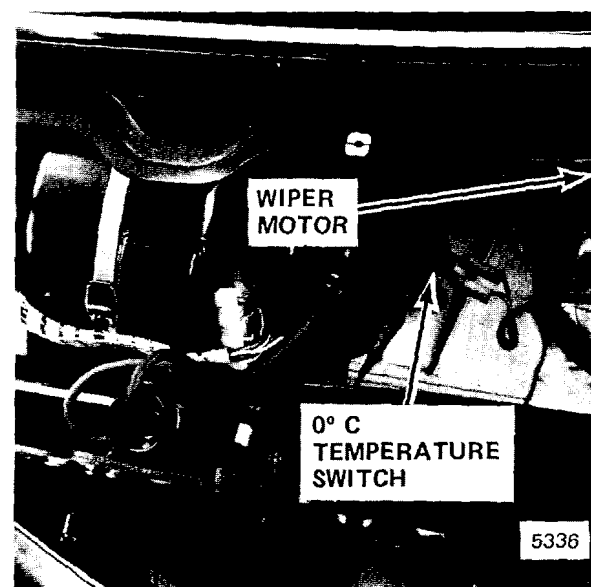


Figure 2 - Under Center Of Fresh Air Intake Cowl

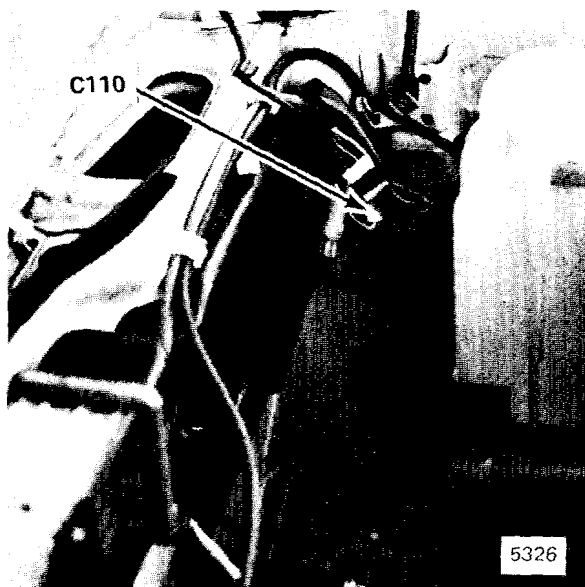


Figure 1 - Behind Right Headlights

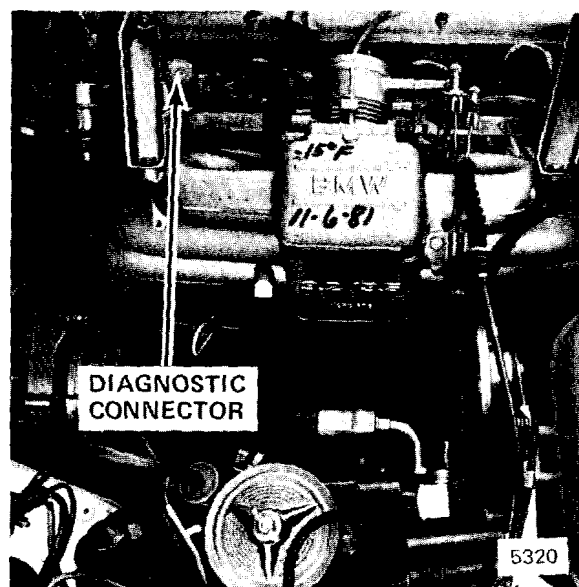


Figure 3 - Top Left Side Of Engine



Figure 5 - Under Center Of Fresh Air Intake Cowl

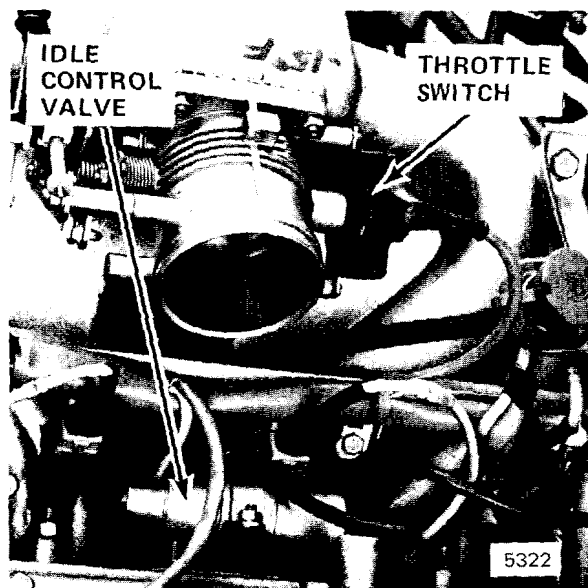


Figure 2 - Top Center Of Engine

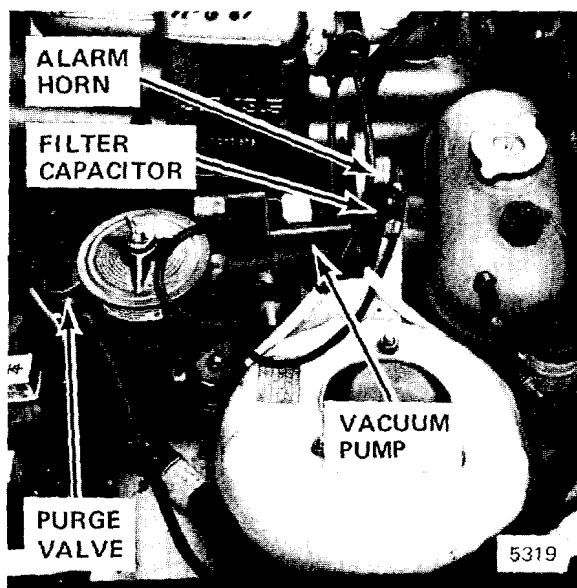


Figure 4 - Left Rear Of Engine Compartment

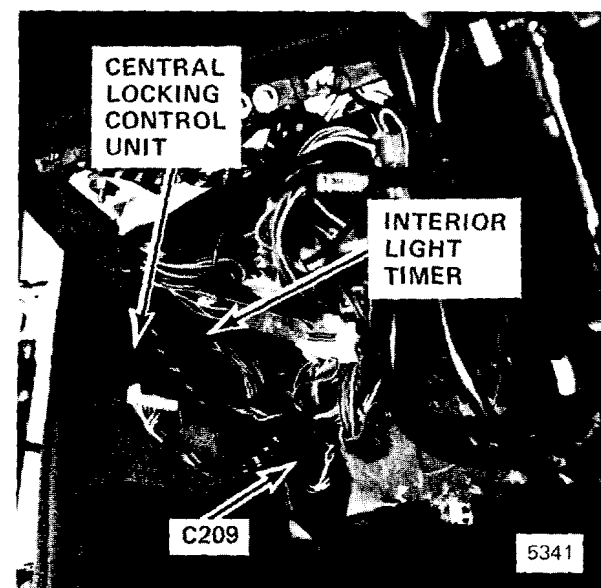


Figure 6 - Under Left Side Of Dash

214 COMPONENT LOCATIONS

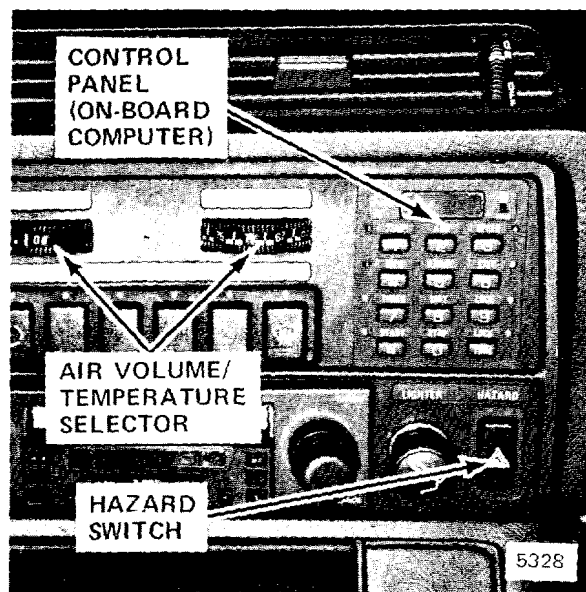


Figure 1 - Center Of Dash

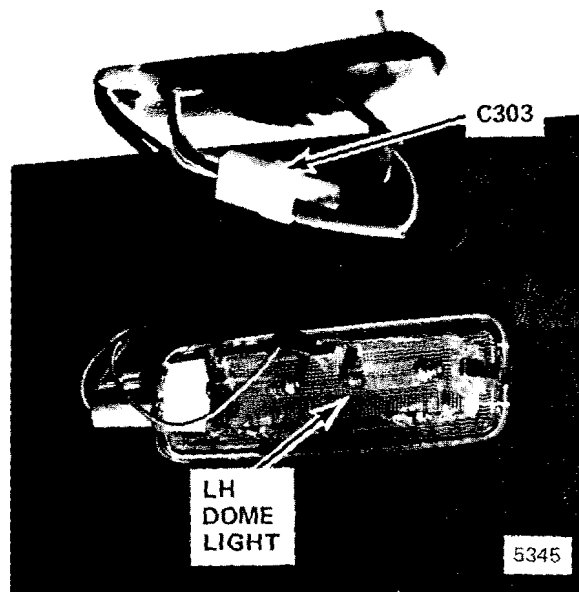


Figure 3 - Header, Above Left B Pillar

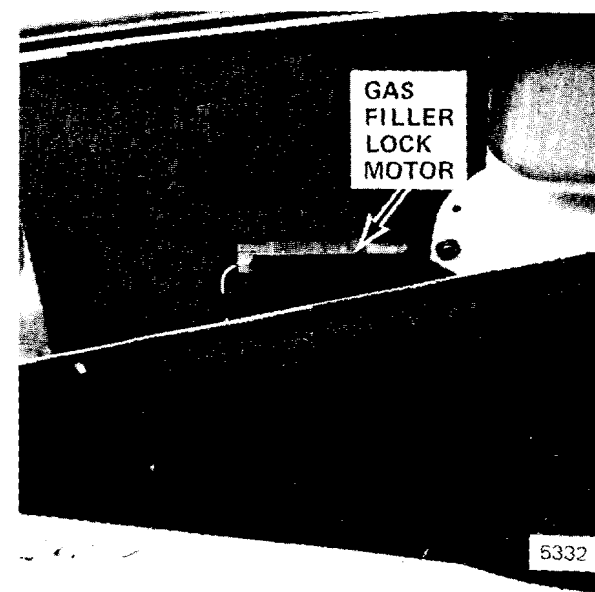


Figure 5 - Behind Left Rear Wheel Well

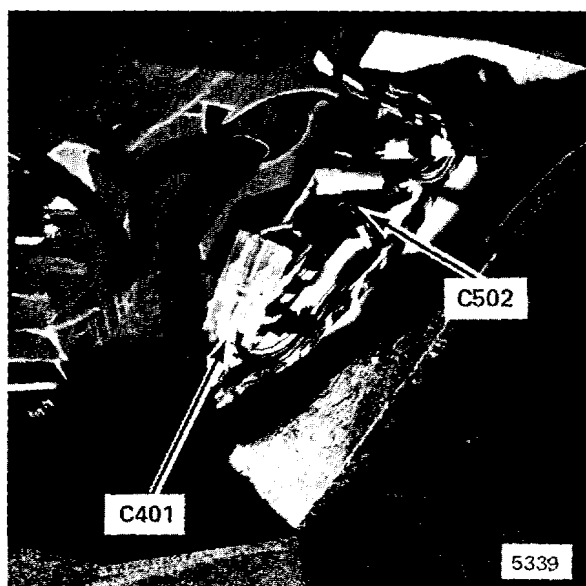


Figure 2 - Right Of Glove Box

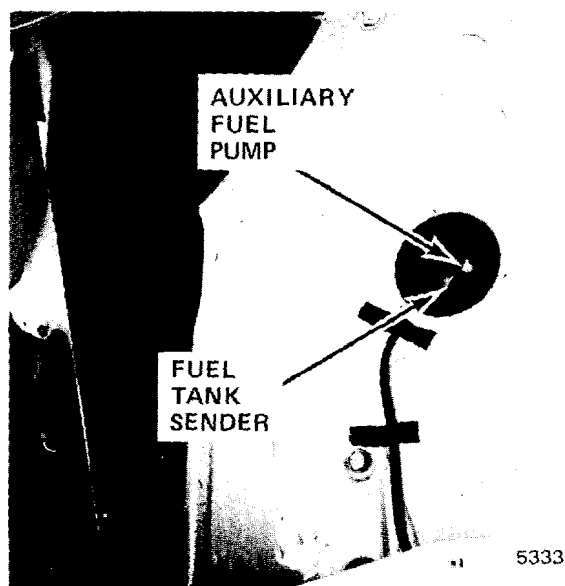


Figure 4 - Bottom Left Side Of Trunk

