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**1982**

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**BMW 528e**

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**Electrical**

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**Troubleshooting**

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**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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1992  
BMW 524td  
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.

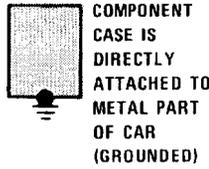
WIRE SIZE CONVERSION CHART	
METRIC (CROSSSECTIONAL AREA IN MM <sup>2</sup> )	AWG (AMERICAN WIRE GAUGE)
.5	20
.75	18
1	16
1.5	14
2	14
2.5	12
4	10
6	8
8	8
16	4
20	4
25	2
32	2

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

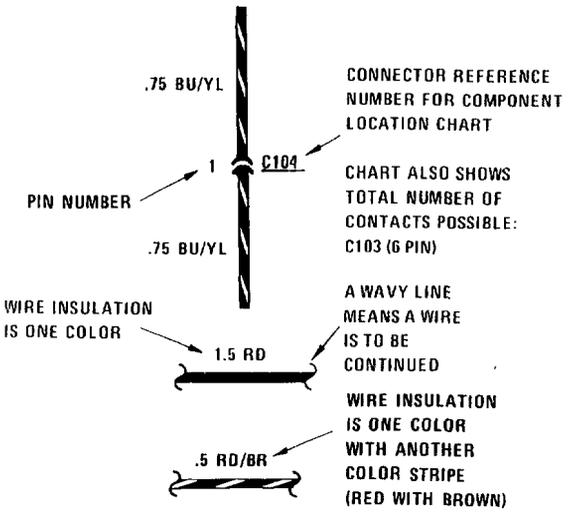
# 4 SYMBOLS



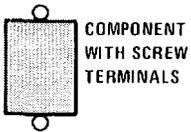
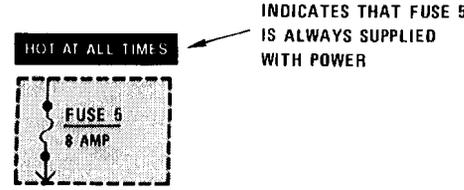
ENTIRE COMPONENT SHOWN



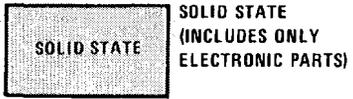
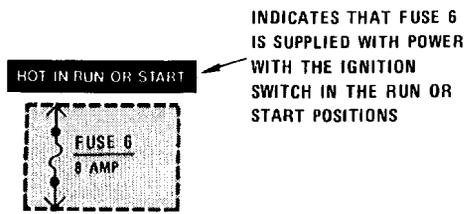
COMPONENT CASE IS DIRECTLY ATTACHED TO METAL PART OF CAR (GROUNDED)



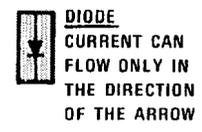
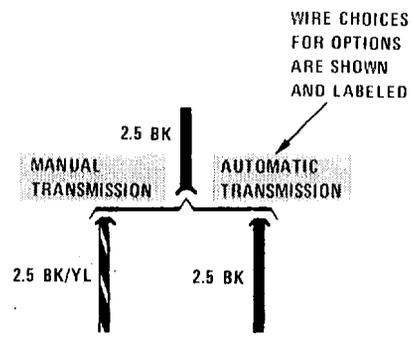
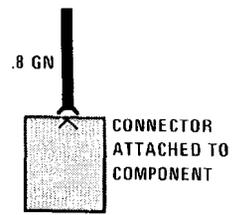
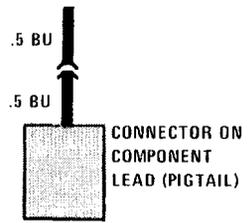
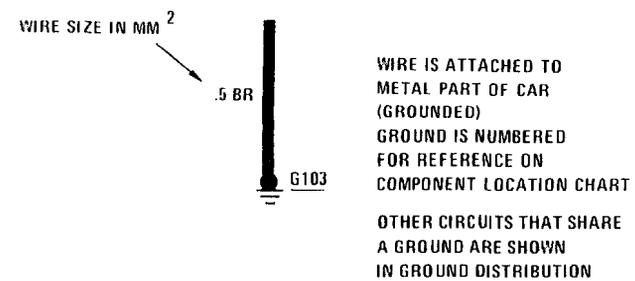
PART OF A COMPONENT SHOWN



COMPONENT WITH SCREW TERMINALS



SOLID STATE (INCLUDES ONLY ELECTRONIC PARTS)

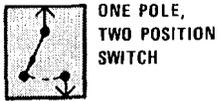


DIODE CURRENT CAN FLOW ONLY IN THE DIRECTION OF THE ARROW

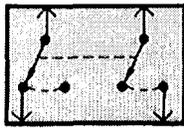
CIRCUIT REFERENCE - A WIRE WHICH CONNECTS TO ANOTHER CIRCUIT



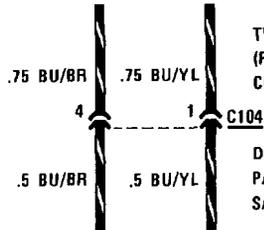
ACTIVE CHECK CONTROL



ONE POLE,  
TWO POSITION  
SWITCH



SWITCHES THAT  
MOVE TOGETHER  
DASHED LINE SHOWS  
A MECHANICAL  
CONNECTION  
BETWEEN SWITCHES



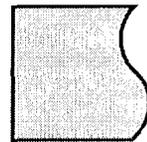
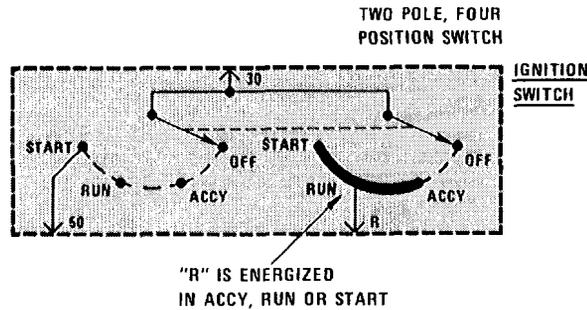
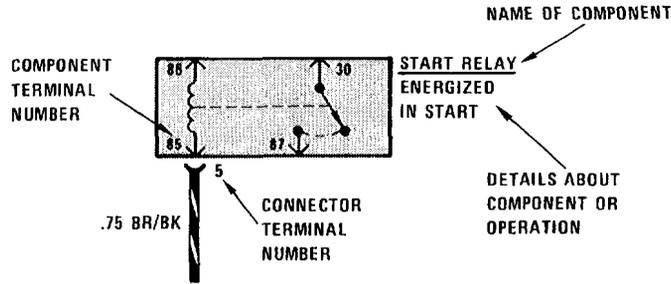
TWO CONNECTIONS  
(PINS) IN THE SAME  
CONNECTOR

DASHED LINE SHOWS  
PARTS OF THE  
SAME CONNECTOR

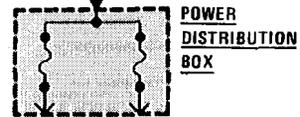
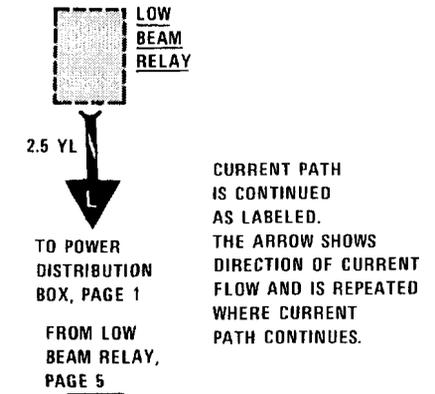
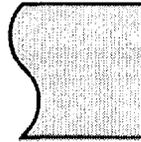


RELAY SHOWN  
WITH NO  
CURRENT  
FLOWING  
THROUGH  
COIL

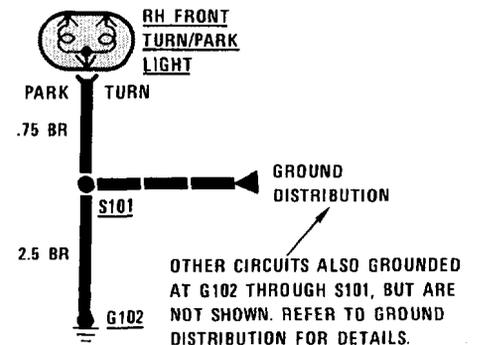
WHEN COIL IS  
ENERGIZED, SWITCH  
IS PULLED CLOSED



TWO PARTS  
OF THE  
SAME  
COMPONENT



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

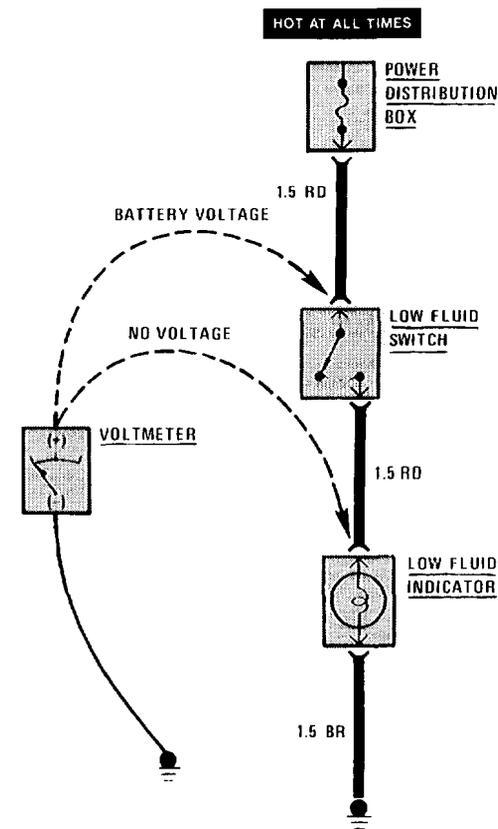
Isolating the problem (Step 3 of TROUBLESHOOTING PROCEDURES) requires the use of a **voltmeter** and/or **ohmmeter**. A voltmeter measures voltage at selected points in a circuit. An ohmmeter measures a circuit's resistance to current flow. It has an internal battery that provides current to the circuit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

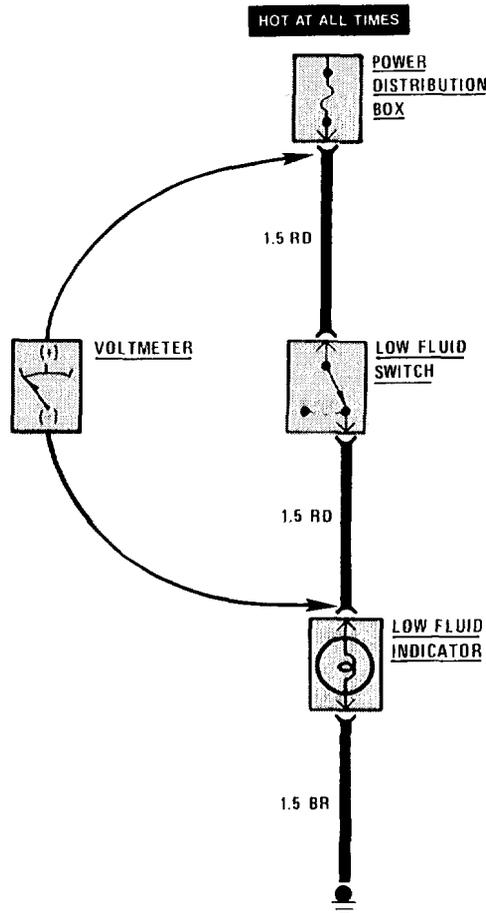


Voltage Test

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.

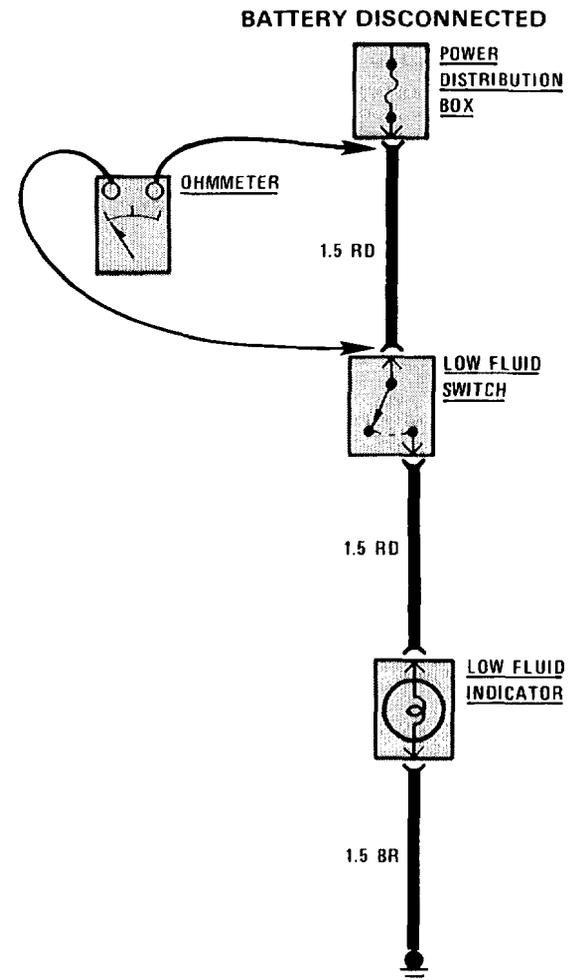
To test for voltage drop, connect the voltmeter leads to connectors at either end of the circuit's suspected problem area. The positive lead should be connected to the connector closest to the power source. The voltmeter will show the voltage drop between these two points.



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.

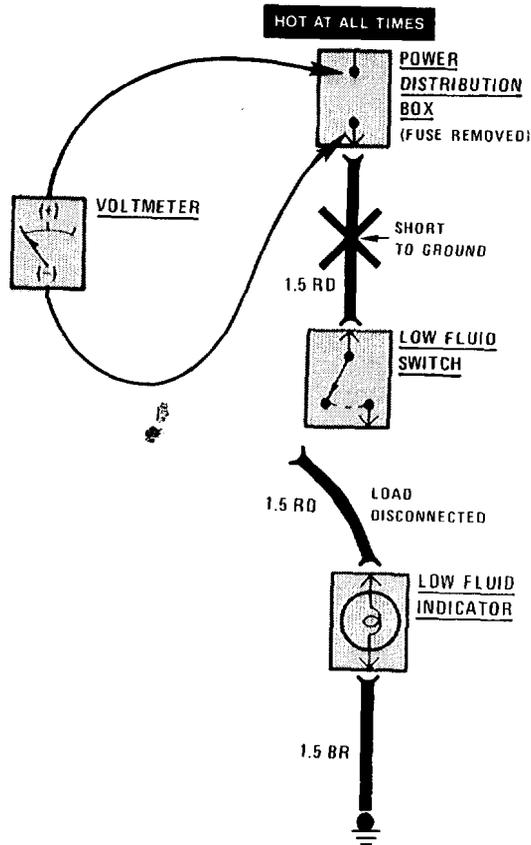


Continuity Test

## 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.

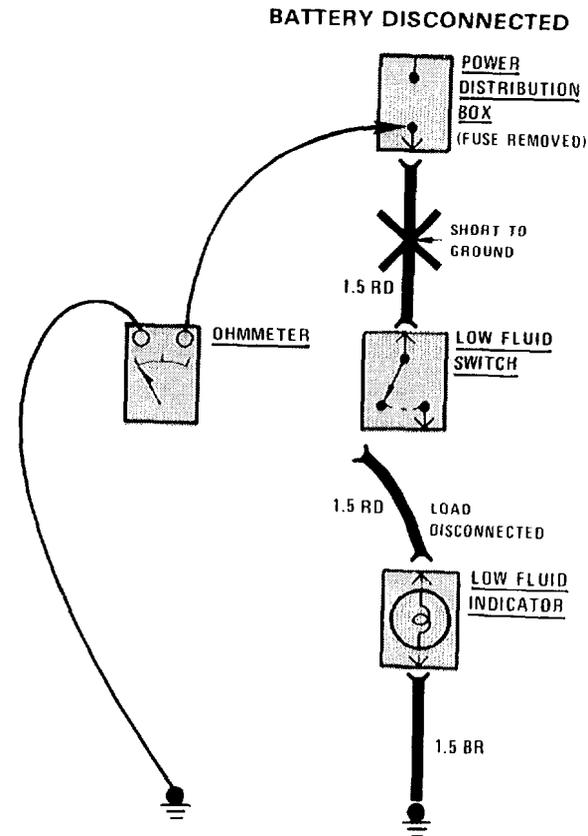


Short Test Using Voltmeter

## 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.

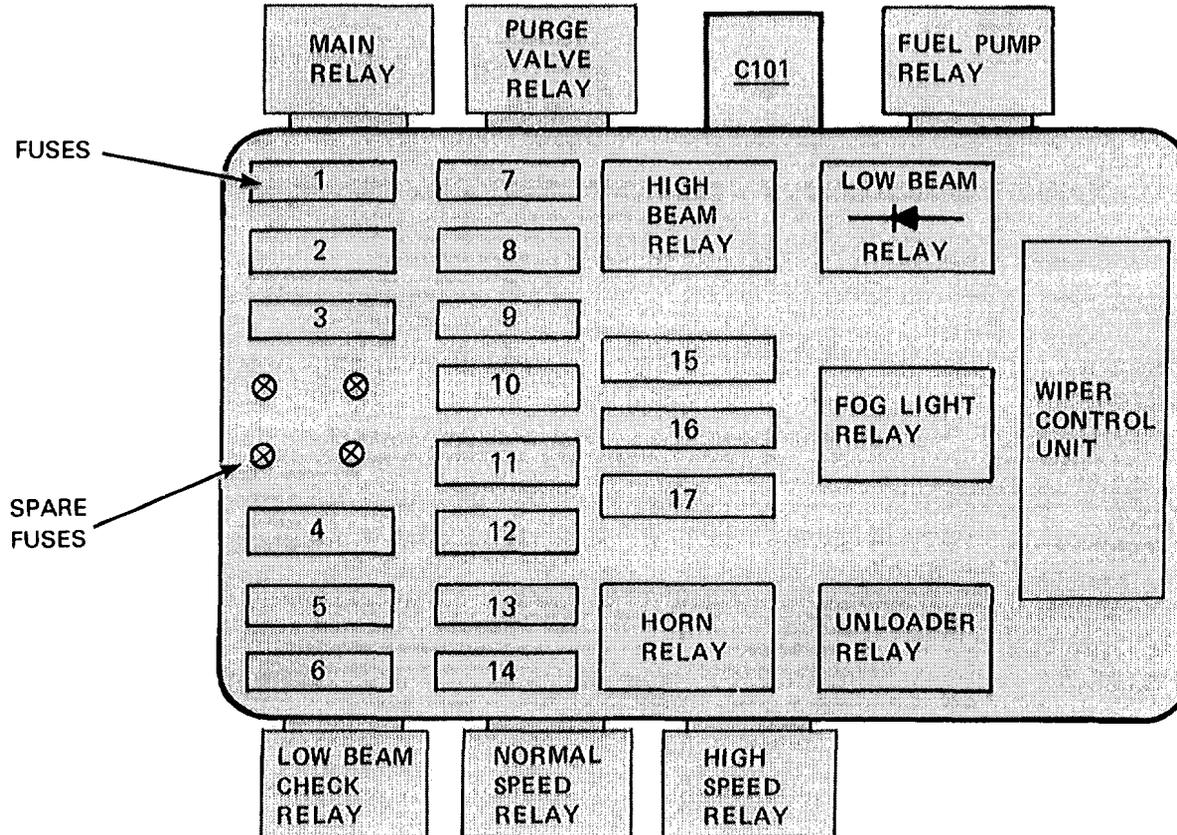


Short Test Using Ohmmeter

**Index—Alphabetical Listing of Electrical Circuits**

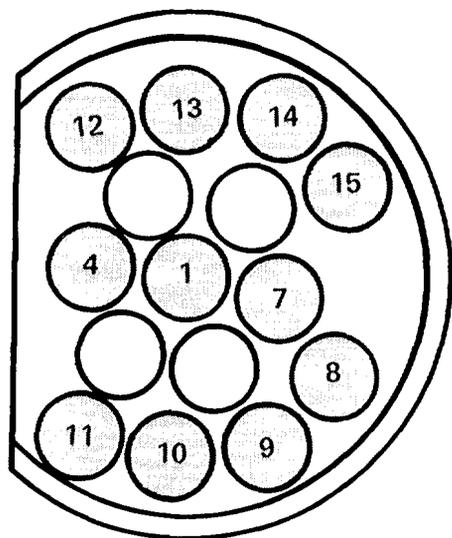
	SCHEMATIC PAGE	COMPONENT LOCATION PAGE		SCHEMATIC PAGE	COMPONENT LOCATION PAGE
Active Check Control .....	119.....	201	Lights (continued)		
Air Conditioning .....	146.....	205	—Front Marker .....	128.....	208
Auto-Charging Flashlight.....	136.....	203	—Front Park.....	128.....	208
Auxiliary Fan .....	145.....	201	—Glove Box .....	136.....	203
Brake Lining Warning .....	122.....	202	—Hazard Warning .....	126.....	208
Central Locking .....	142.....	202	—Headlights .....	124.....	205
Charging System .....	114.....	203	—Interior.....	134.....	207
Cigar Lighter .....	136.....	203	—License .....	129.....	208
Cruise Control.....	130.....	203	—Rear Marker .....	129.....	208
Diagnostic Connector.....	104		—Stoplight.....	130.....	203
Digital Clock .....	136.....	203	—Tail .....	128.....	208
Evaporative Control.....	110.....	204	—Turn .....	126.....	208
Fuel Control.....	111.....	204	—Transmission Range .....	135.....	208
Fuel Delivery .....	110.....	204	—Trunk .....	129.....	208
Fuel Gauge.....	117.....	210	Power Antenna .....	144.....	210
Fuse Data .....	103		Power Distribution.....	105.....	209
Gauges .....	116.....	210	Power Distribution Box .....	102	
Ground Distribution .....	148		Power Mirrors .....	139.....	209
Heater .....	146.....	205	Power Windows .....	140.....	209
Horn .....	137.....	206	Radio .....	144.....	210
Idle Speed Control.....	112.....	206	Rear Defogger.....	138.....	210
Ignition .....	113.....	207	Seatbelt Warning .....	123.....	207
Ignition Key Warning .....	123.....	207	Speedometer .....	116.....	210
Lights			Start .....	109.....	211
—Backup .....	135.....	208	Sunroof.....	137.....	206
—Dash.....	132.....	204	Warning Indicators .....	116.....	210
—Foglights.....	124.....	205	Wiper Washer .....	115.....	211

# 102 POWER DISTRIBUTION BOX



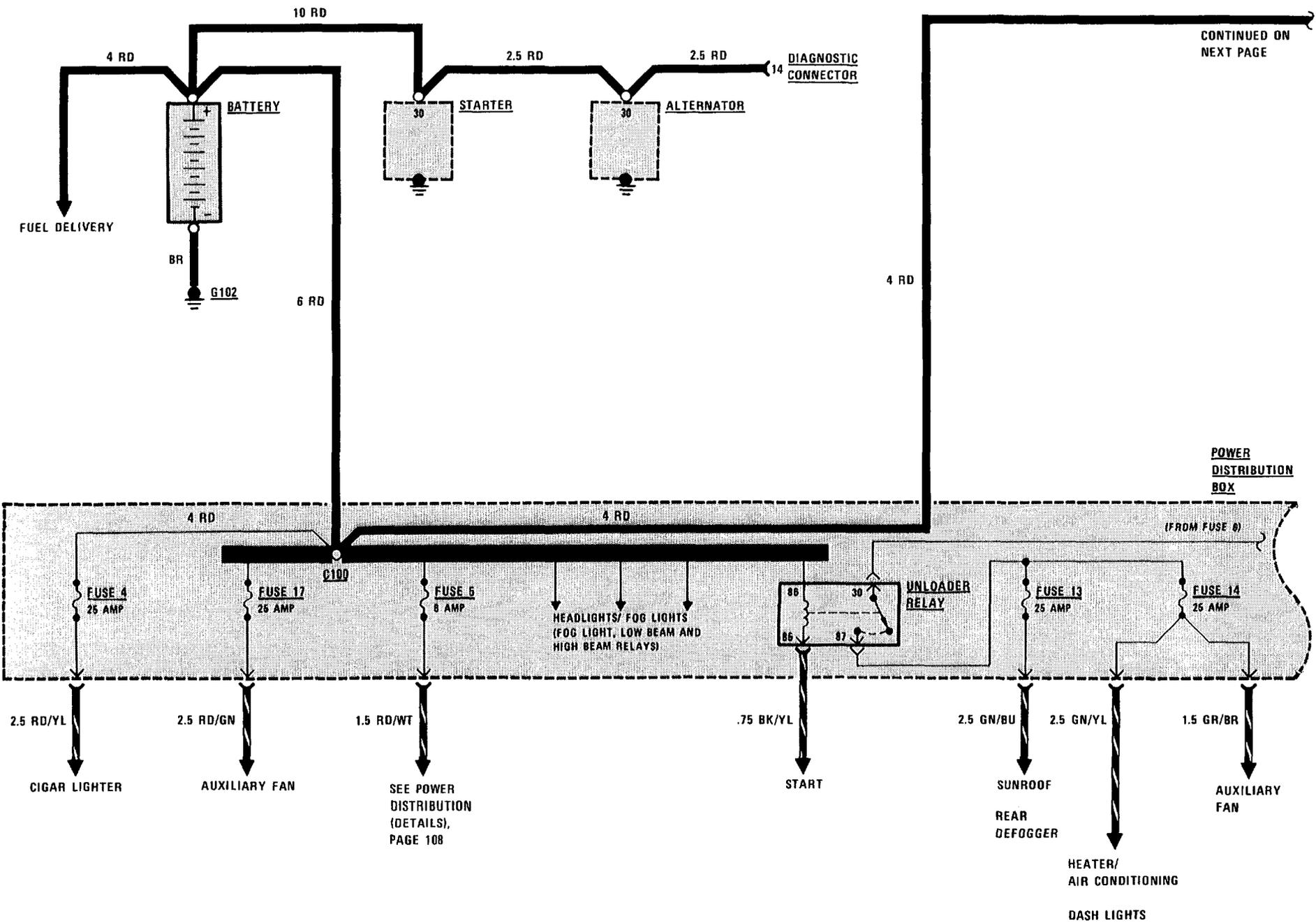
FUSE NO.	SIZE/COLOR	CIRCUITS PROTECTED	SCHEMATIC PAGE
1	16A (RD)	Fuel Delivery/Evaporative Control; Idle Speed Control.	110 112
2	8A (WT)	Active Check Control; Headlights (RH Low Beam).	119 125
3	8A (WT)	Active Check Control; Headlights (LH Low Beam).	119 125
4	25 (BU)	Cigar Lighter	136
5	8A (WT)	Active Check Control; Central Locking; Digital Clock; Gauges; Glove Box Light; Ignition Key Warning/Seatbelt Warning; Interior Lights; Lights: Turn Hazard; Power Antenna; Auto-Charging Flashlight; Trunk Light.	121 142 136 116 136 123 134 126 144 136 129
6	8A (WT)	Active Check Control; Backup Lights/Transmission Range Lights; Brake Lining Warning; Charging System; Cruise Control; Dash Lights; Heater/Air Conditioning; Idle Speed Control; Ignition; Interior Lights; Power Mirrors; Power Windows; Seatbelt Warning; Speedometer; Start Warning Indicators.	121 135 122 114 130 132 147 112, 113 113 134 139 140 123 116 109 118

FUSE NO.	SIZE/COLOR	CIRCUITS PROTECTED	SCHEMATIC PAGE
7	8A (WT)	Headlights (RH High Beams)	125
8	8A (WT)	Headlights (LH High Beams)	125
9	8A (WT)	Active Check Control; Headlights/Fog Lights; Lights: Dash Illumination; Lights: Front Park/Front Marker/Tail; Lights: Rear Marker/License.	120 124 132 128 129
10	8A (WT)	Active Check Control; Lights: Front Park/Front Marker/Tail.	120 128
11	16A (RD)	Active Check Control; Horns; Lights: Turn/Hazard; Wiper/Washer.	119 137 126 115
12	8A (WT)	Active Check Control; Radio; Stoplights; Warning Indicators.	120 144 131 118
13	25A (BU)	Rear Defogger; Sunroof.	138 137
14	25A (BU)	Auxiliary Fan; Dash Lights; Heater/Air Conditioning.	145 133 146
15	8A (WT)	Fog Lights (RH).	125
16	8A (WT)	Fog Lights (LH).	125
17	25A (BU)	Auxiliary Fan.	145
Power Window Circuit Breaker	25A	Power Windows.	140
In-Line Radio	1A	Radio.	144



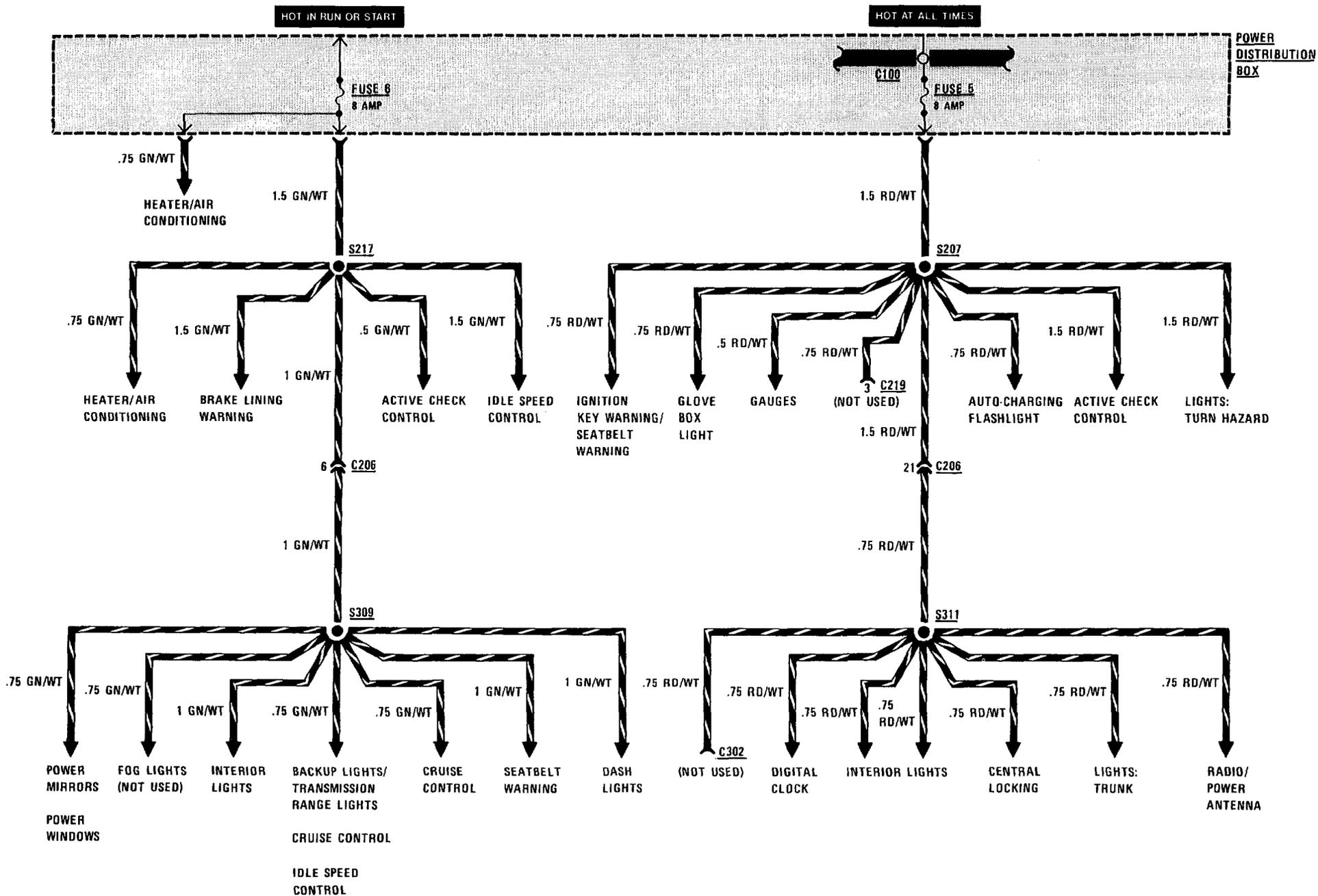
**DIAGNOSTIC CONNECTOR  
(AS MOUNTED ON MANIFOLD)**

PIN	WIRE SIZE	WIRE COLOR	CIRCUIT AND COMPONENT CONNECTED
1	1.5	BR	Ground.
4	.5	BR/VI	Gauges/Warning Indicators, Coolant Temperature Sender.
7	.5	WT/BU	Not Used.
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	1	GN	Idle Speed Control.
14	2.5	RD	Charge System, Alternator.
15	1.5	GN/YL	Fuel Delivery, Fuel Pump On.

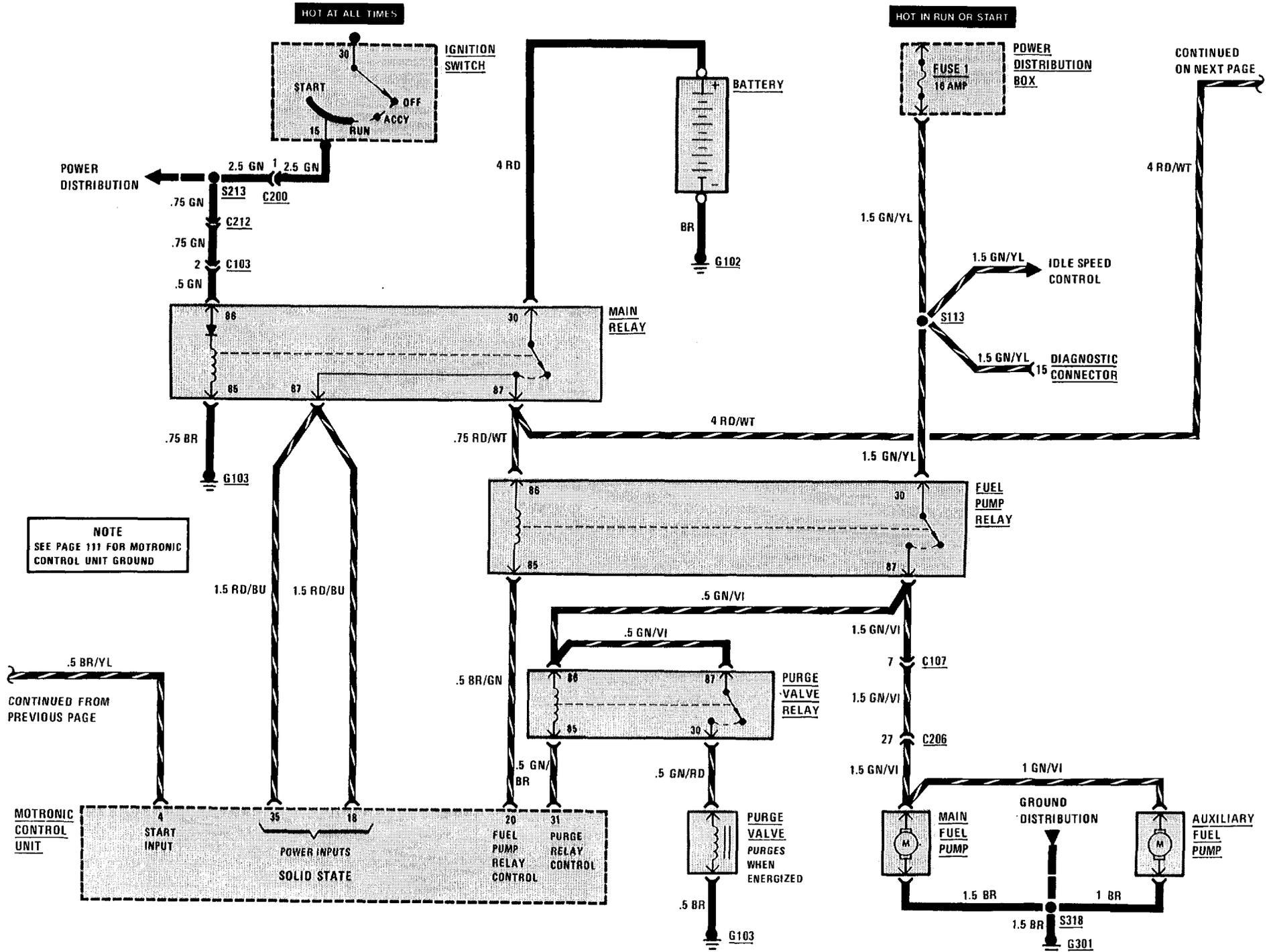


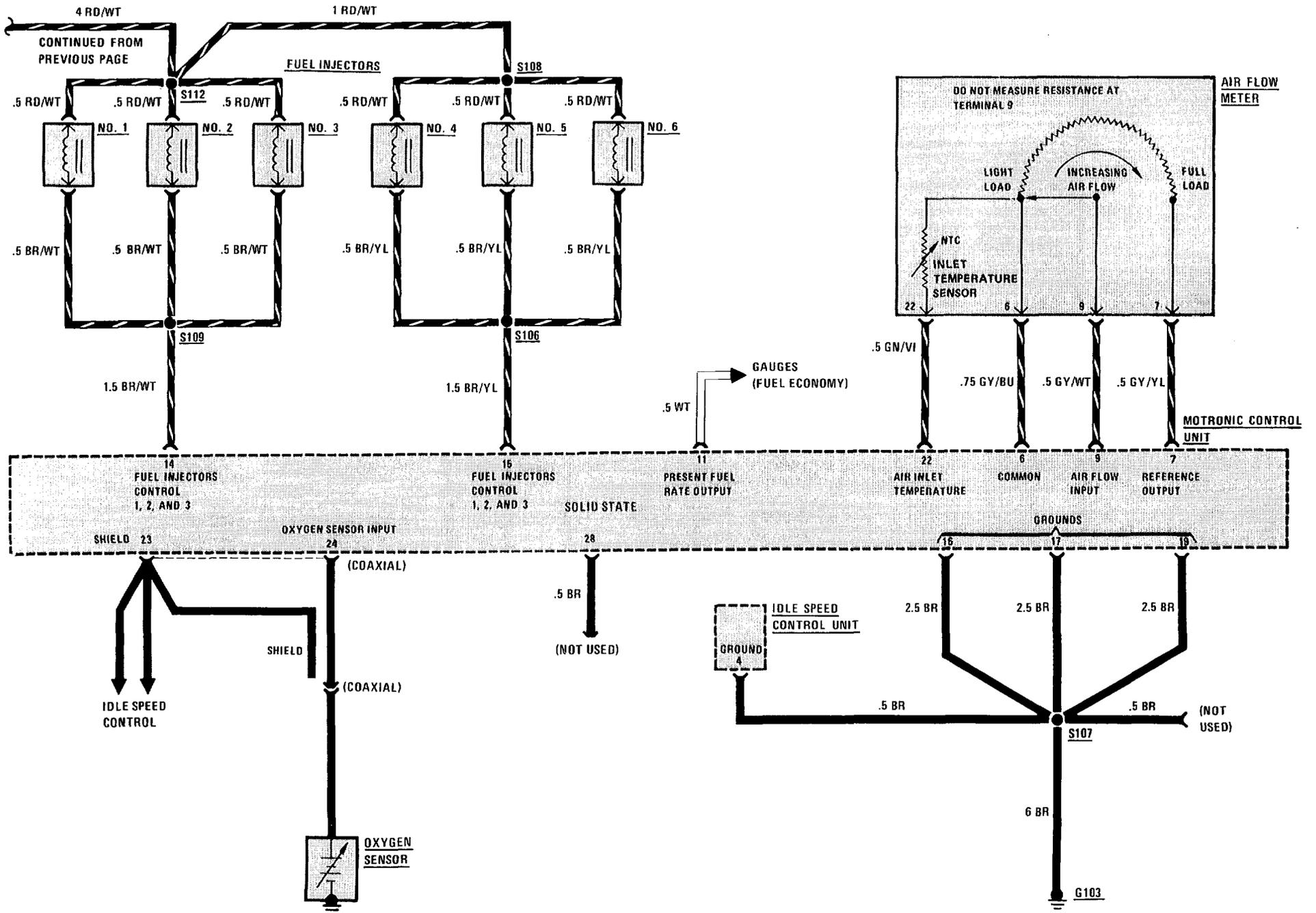


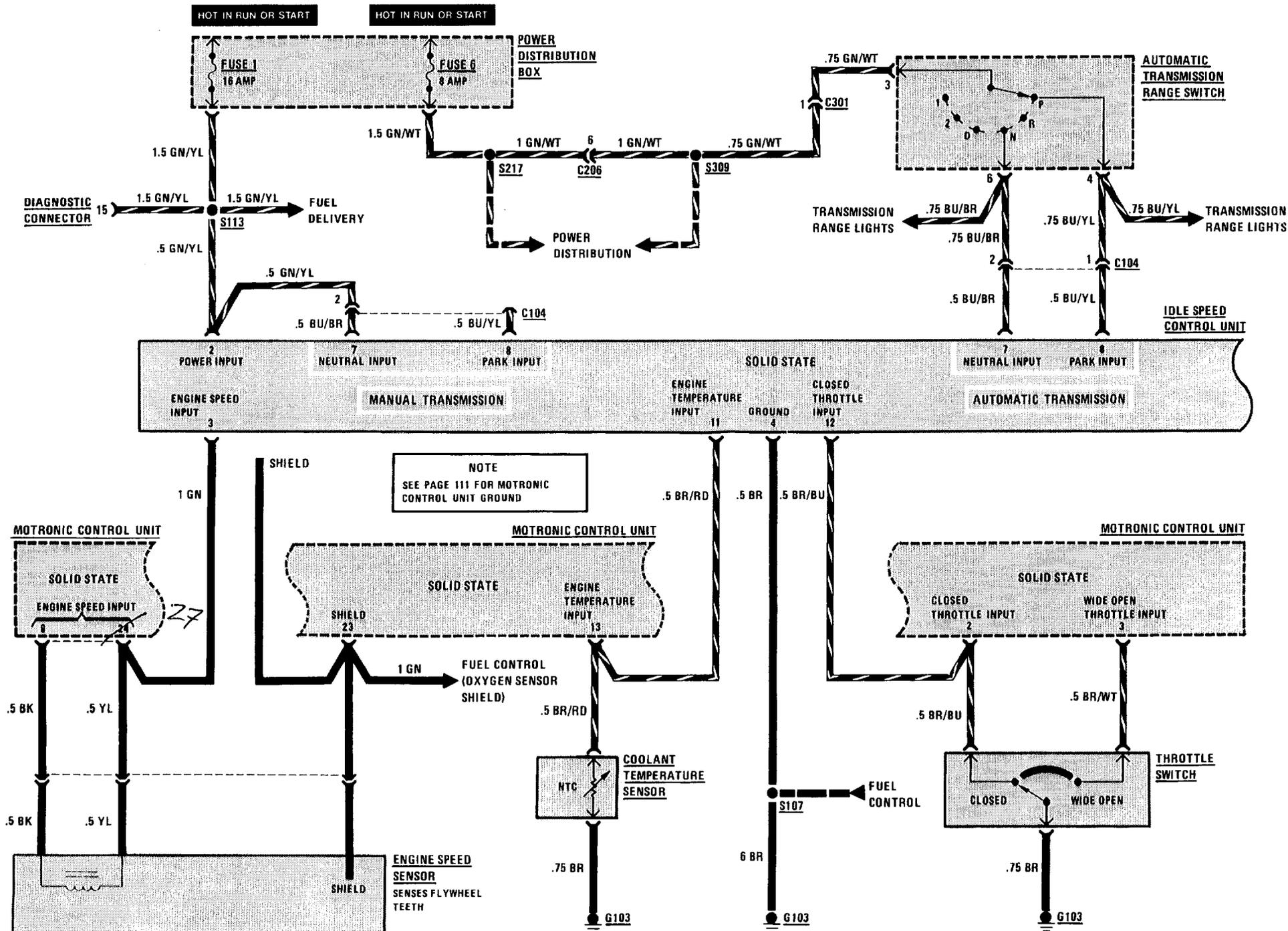




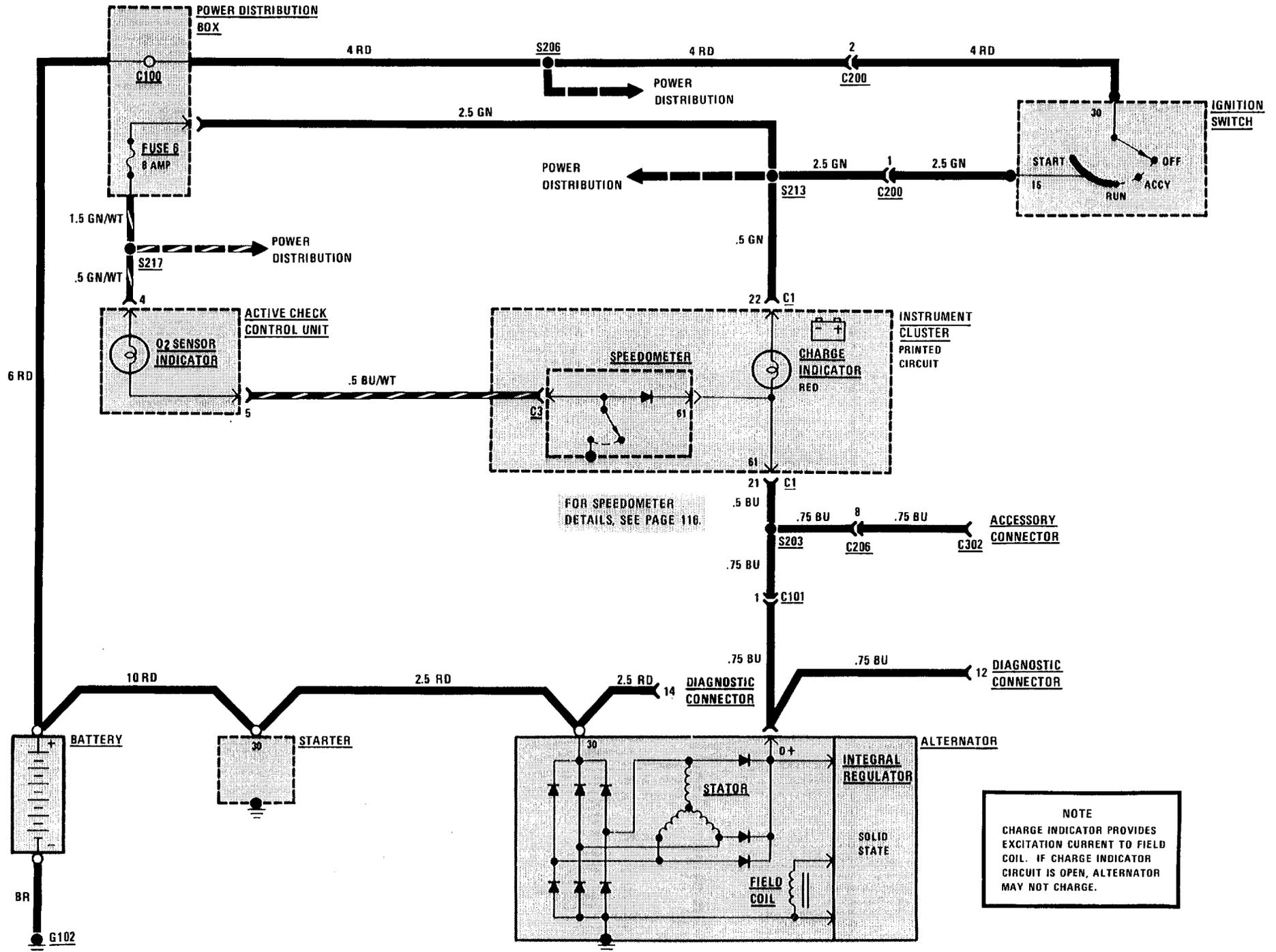


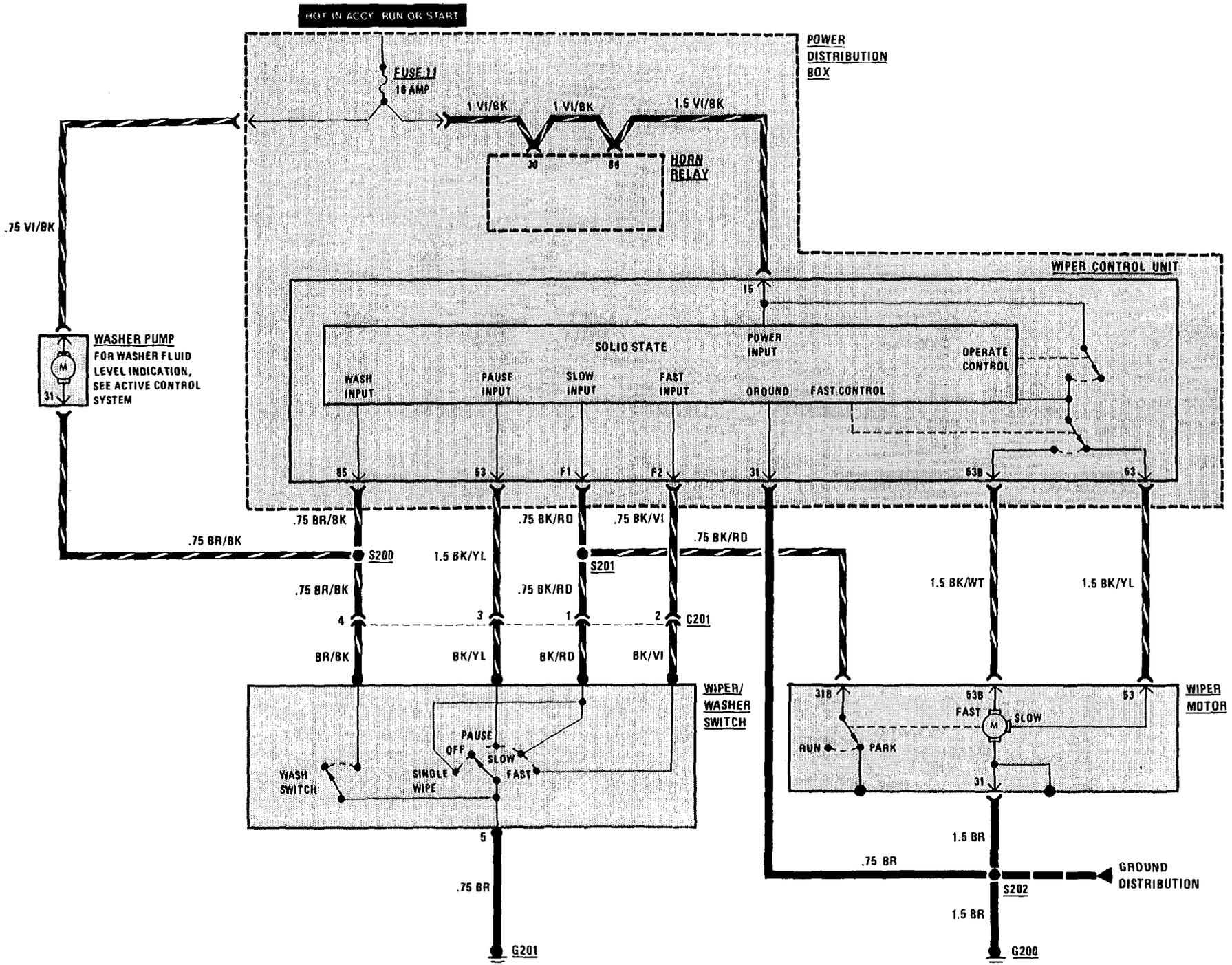




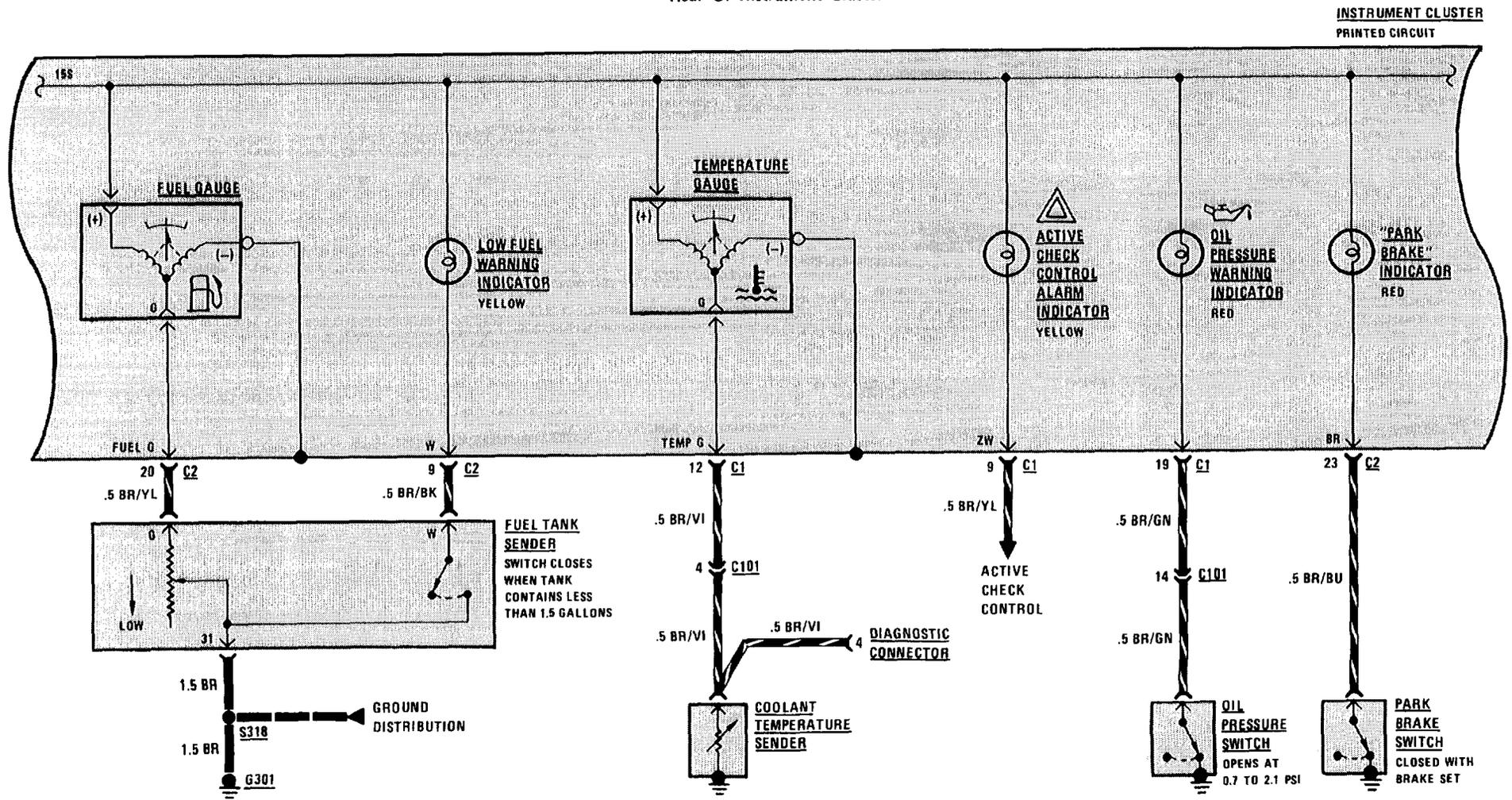
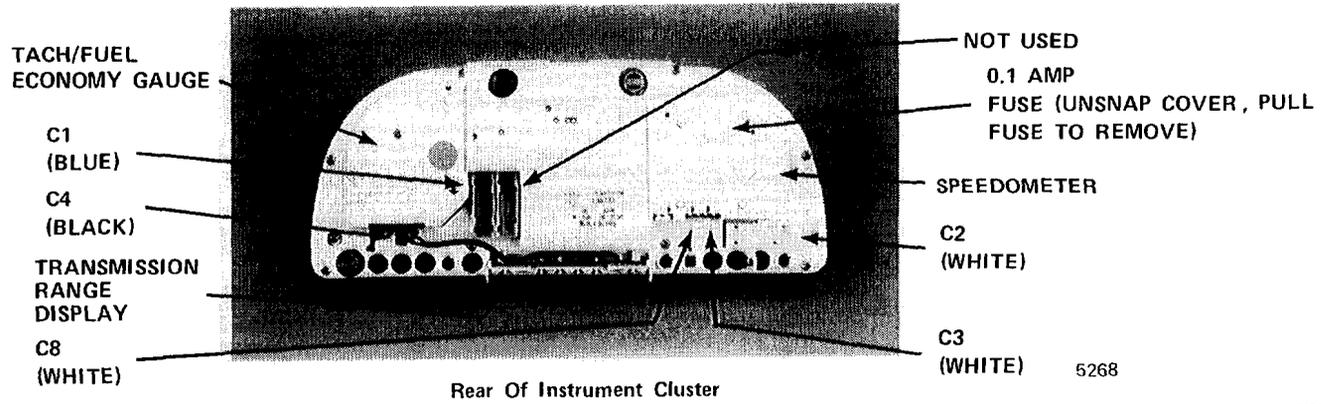


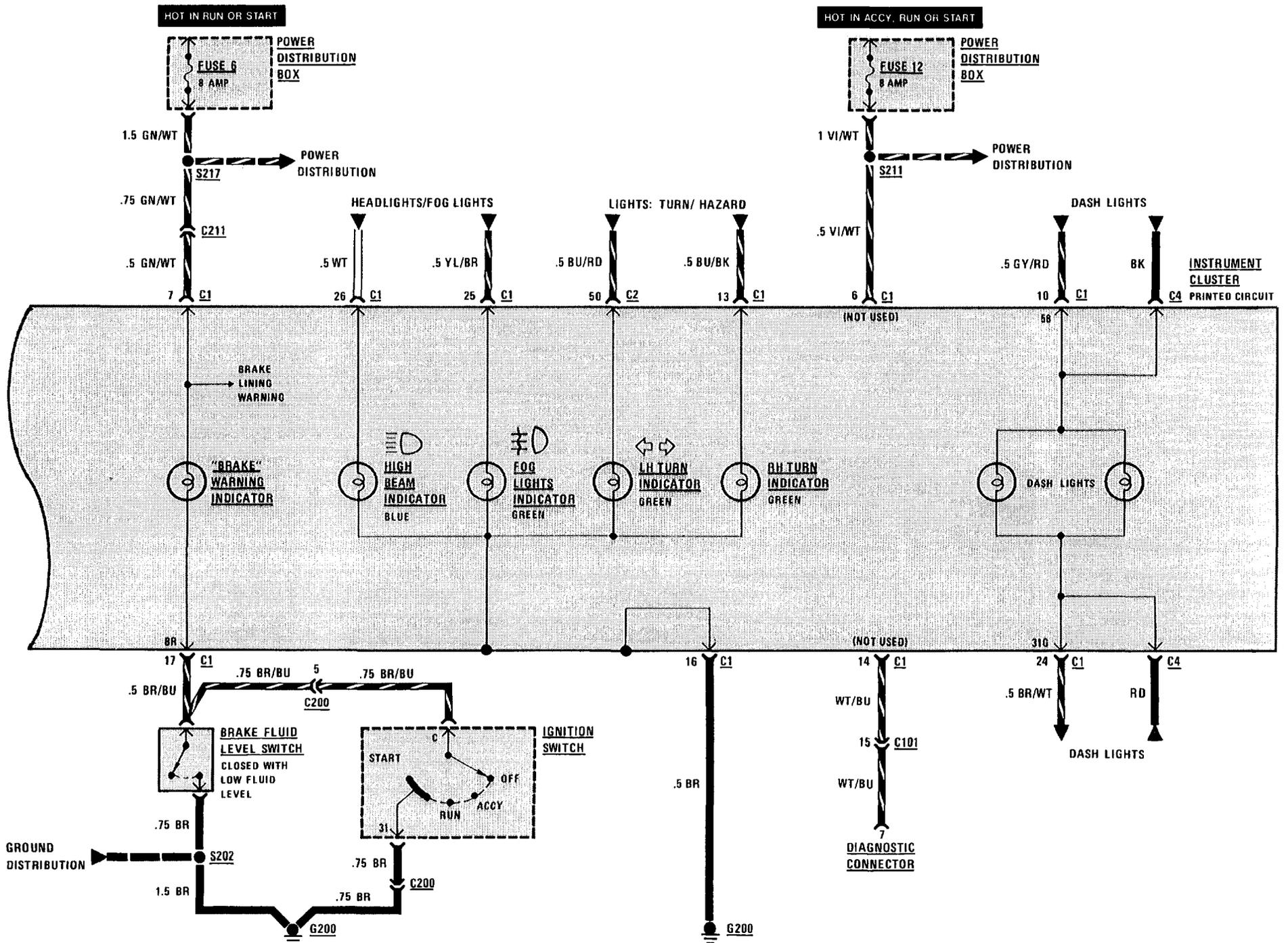












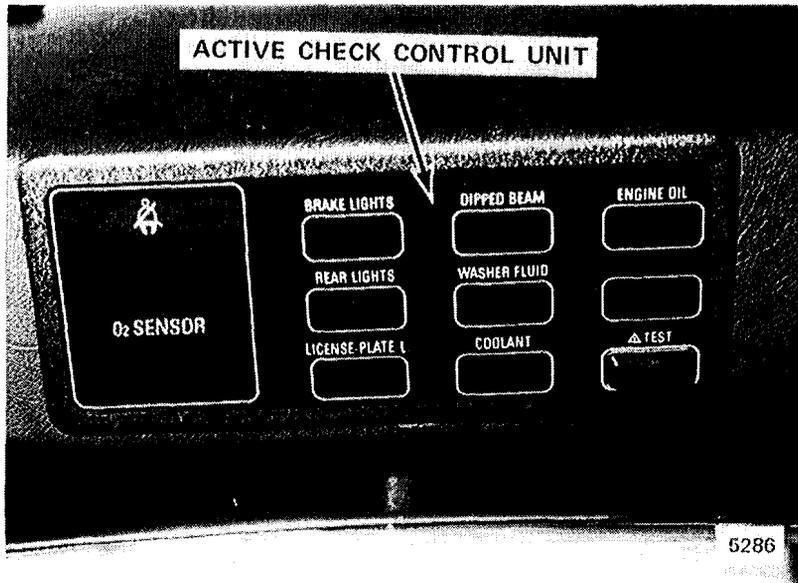
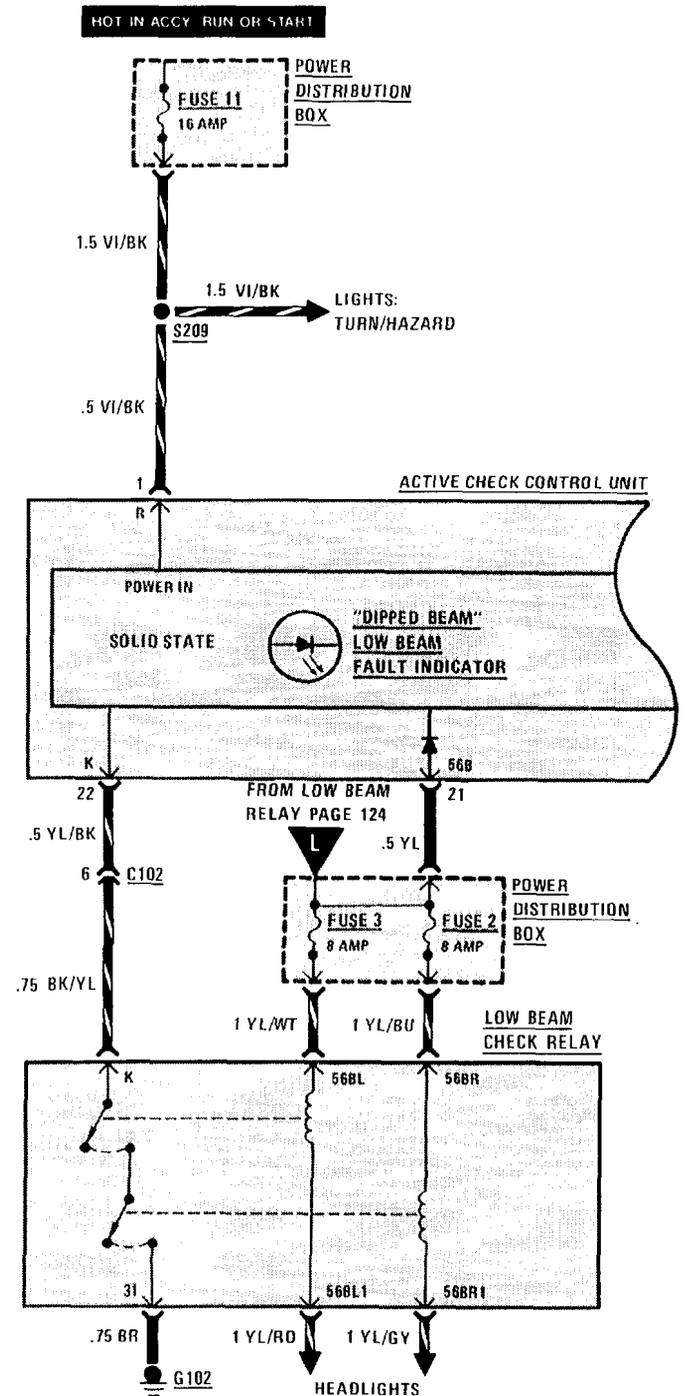
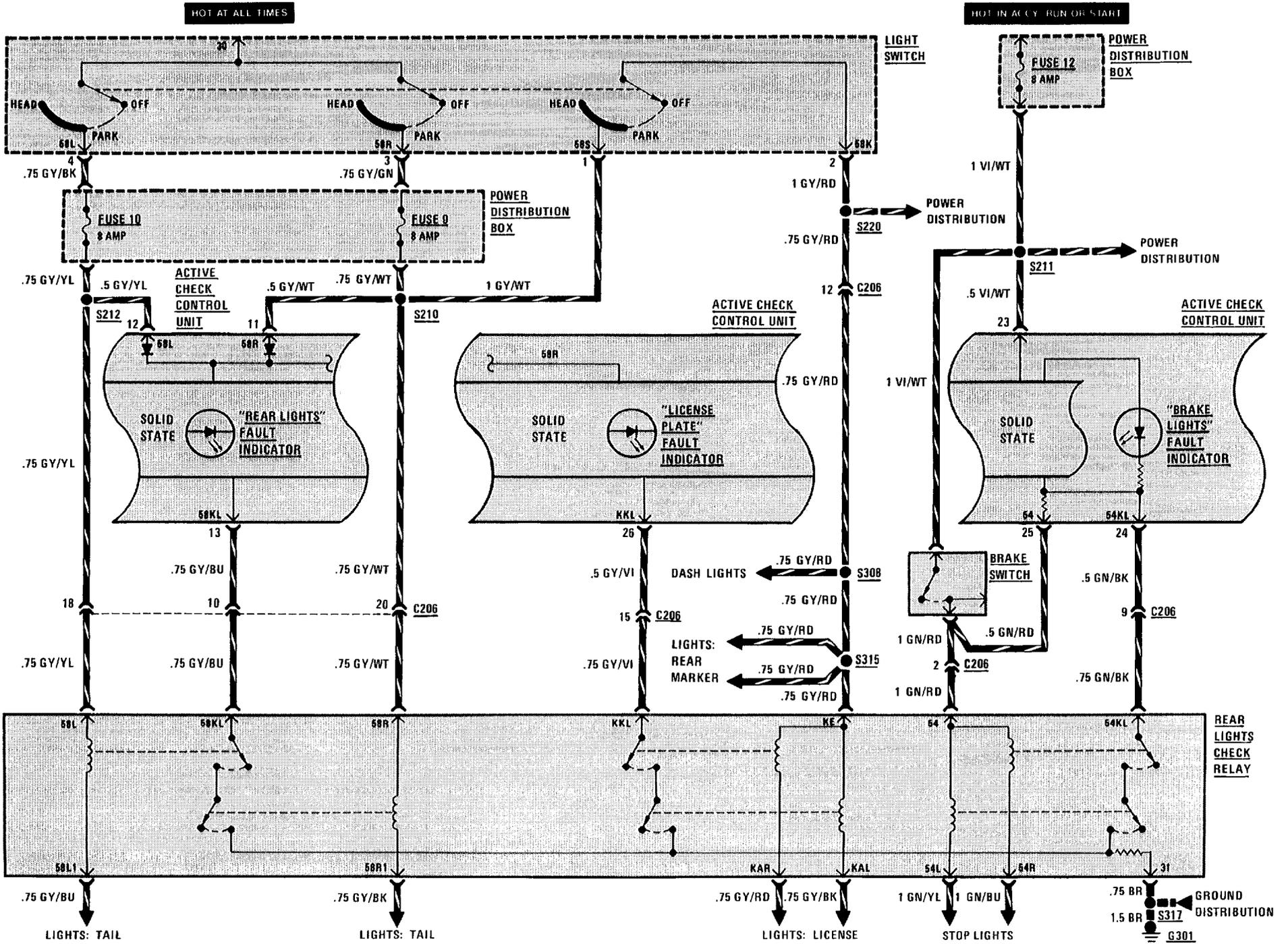


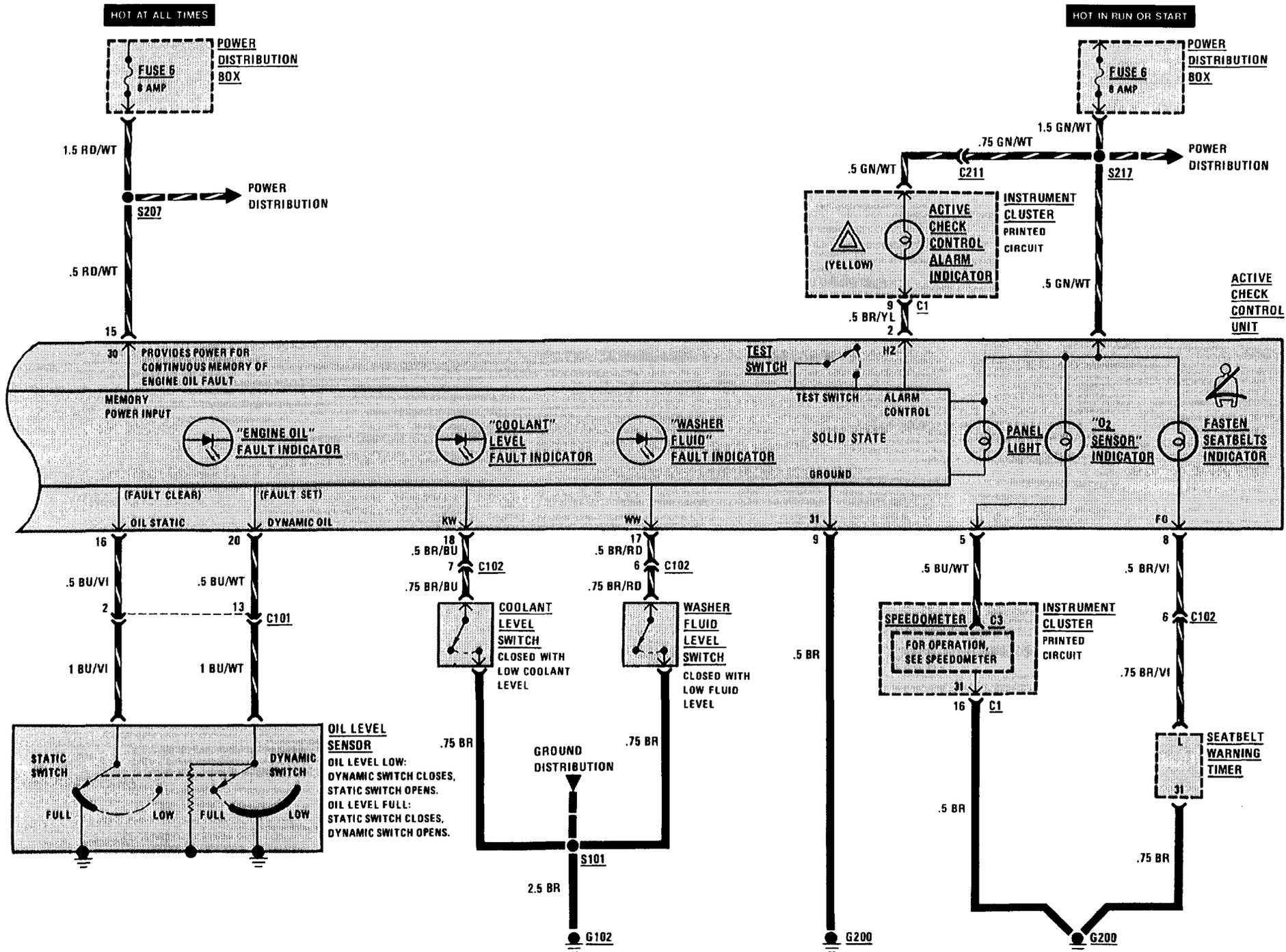
Figure 1 - Above Rear View Mirror

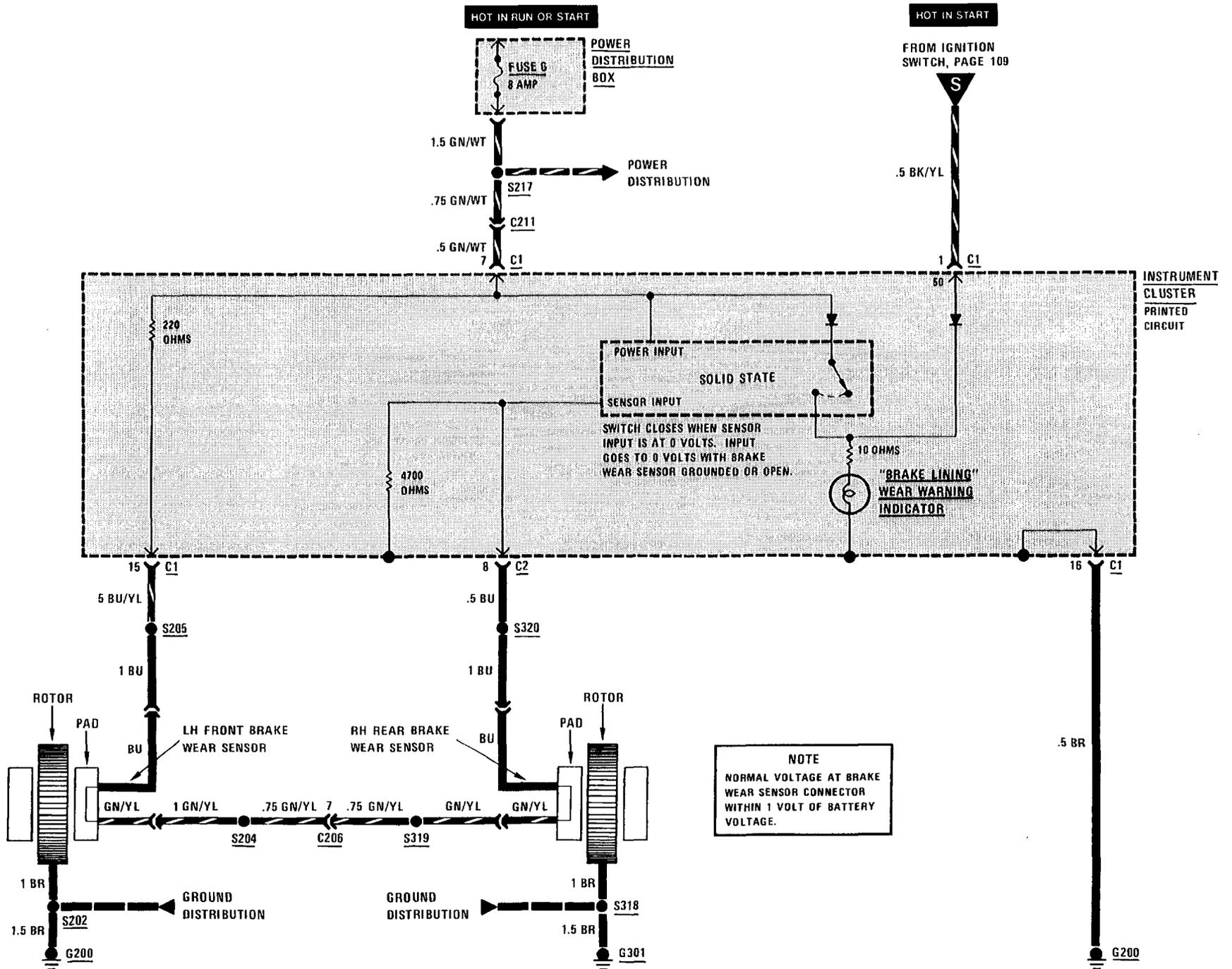
## ACTIVE CHECK CONTROL

1. When the Ignition Switch is initially placed in "Run," the Active Check Control Alarm Indicator flashes, and the Active Check Control Unit LED's light 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.

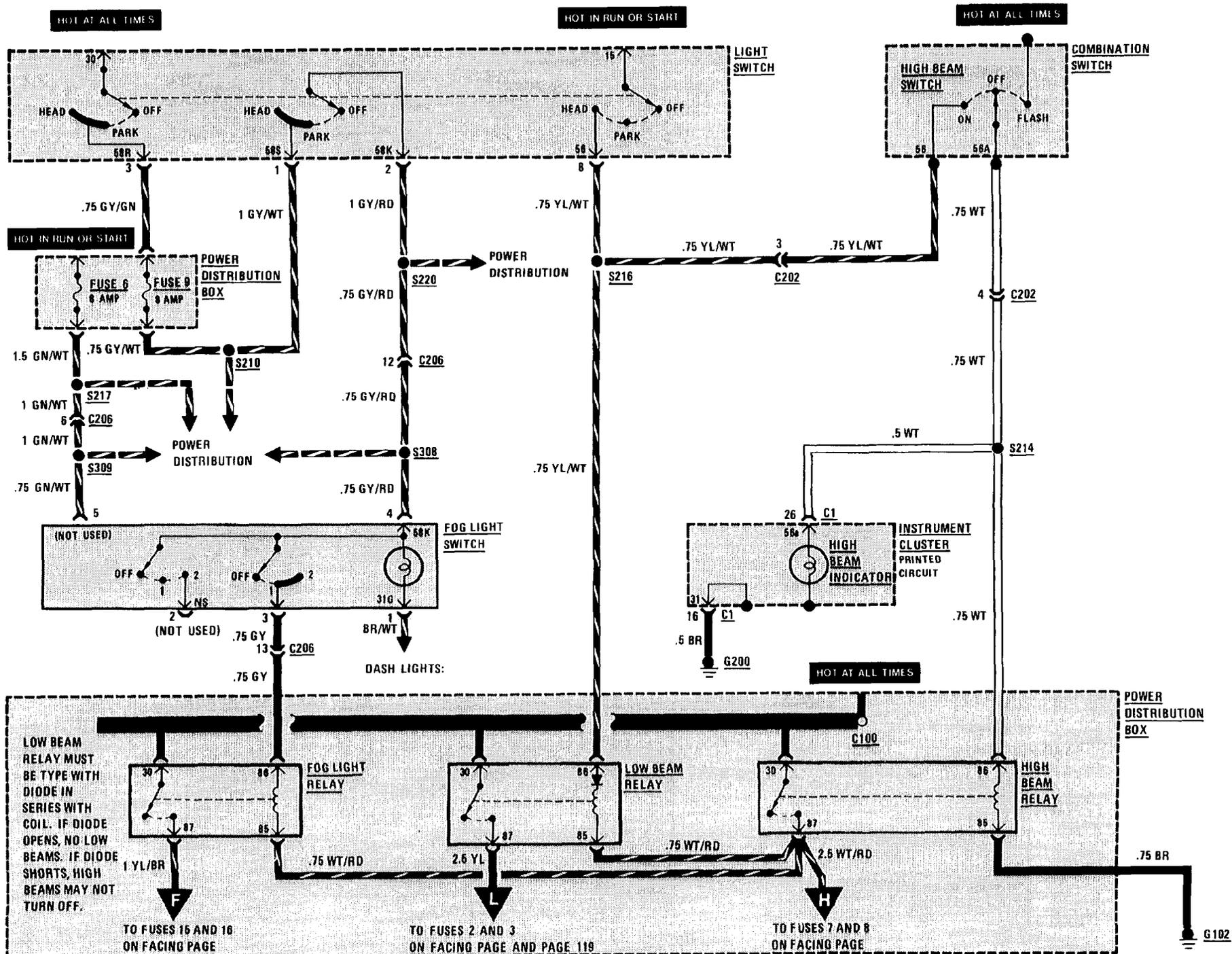






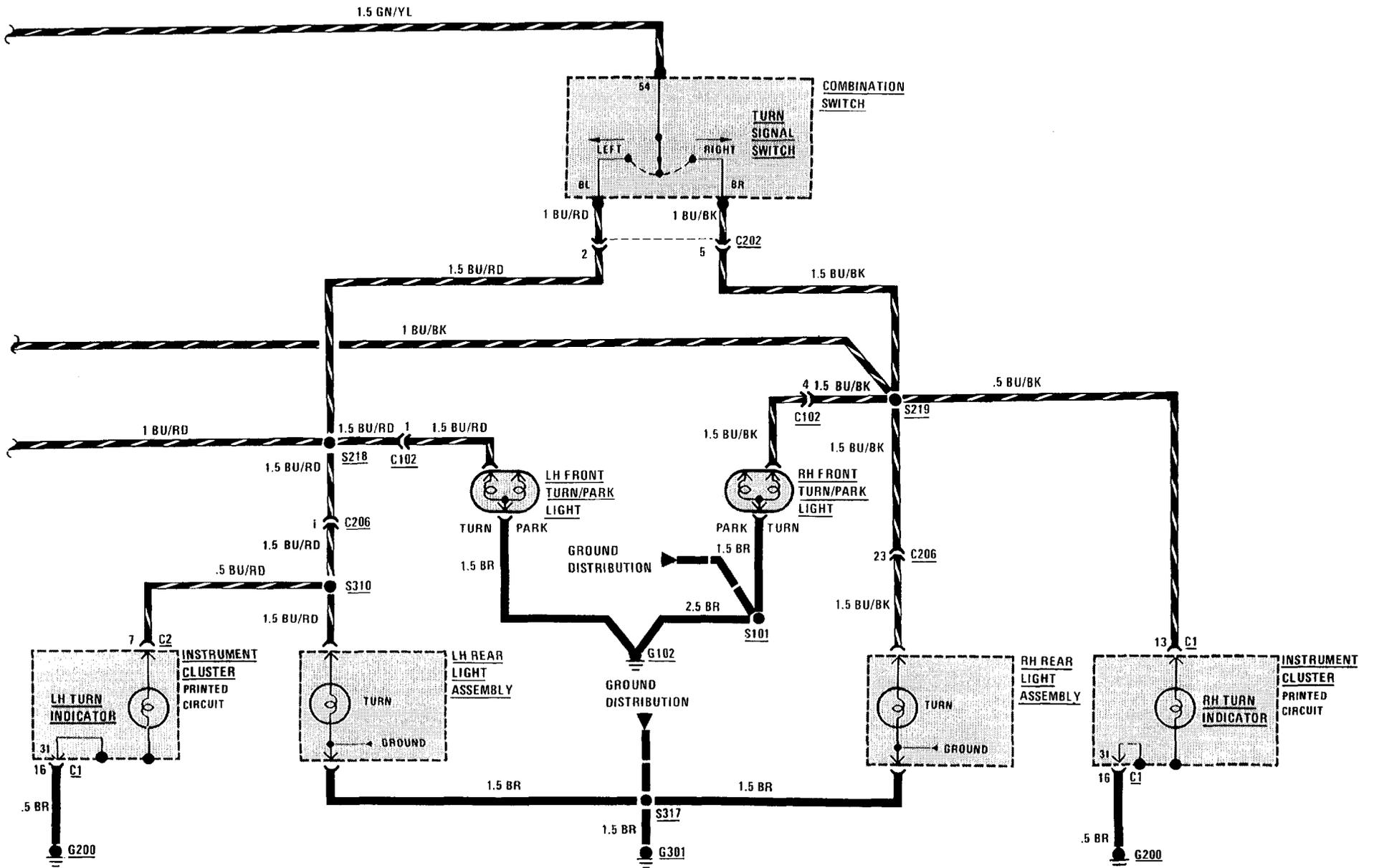


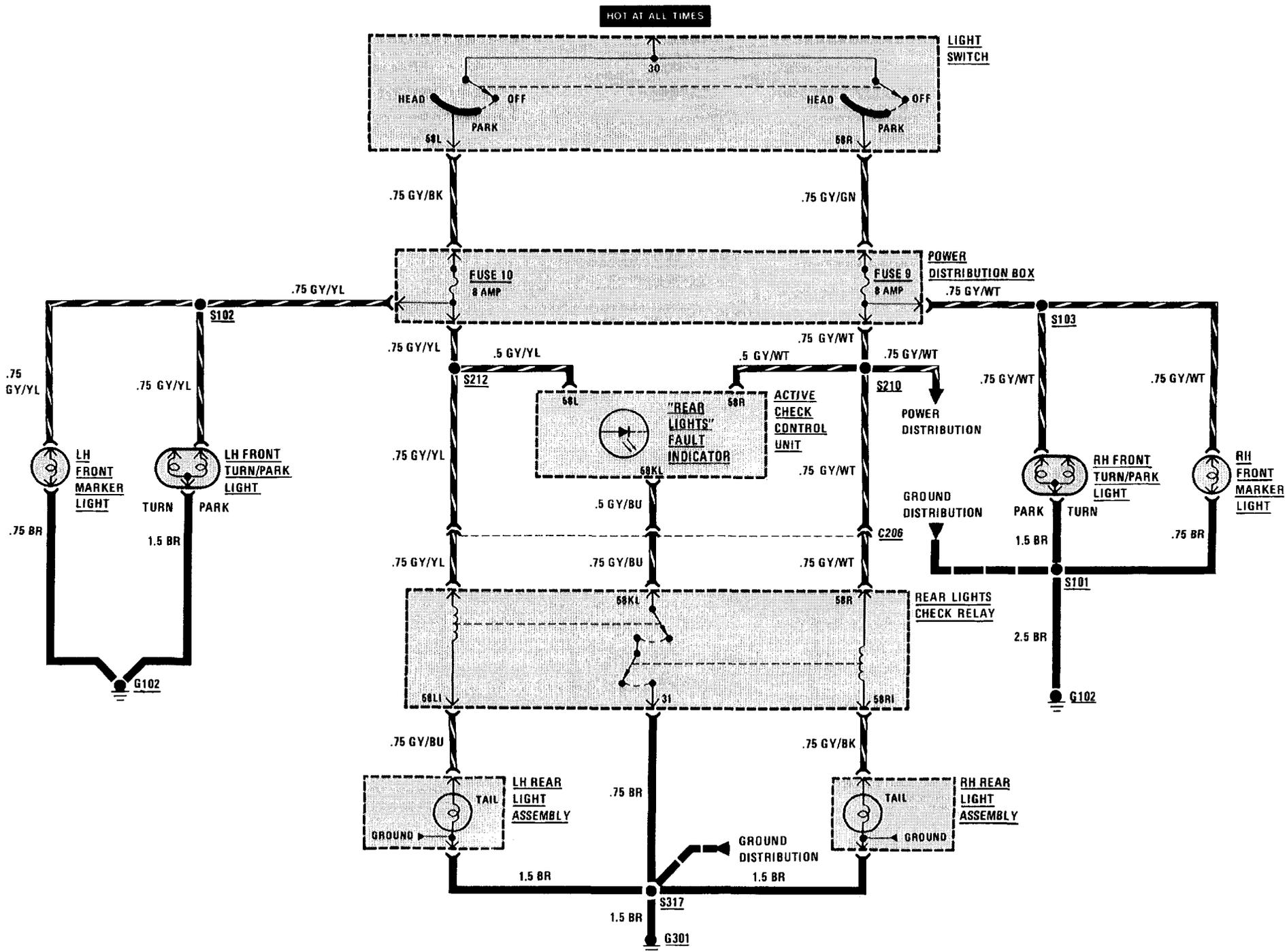


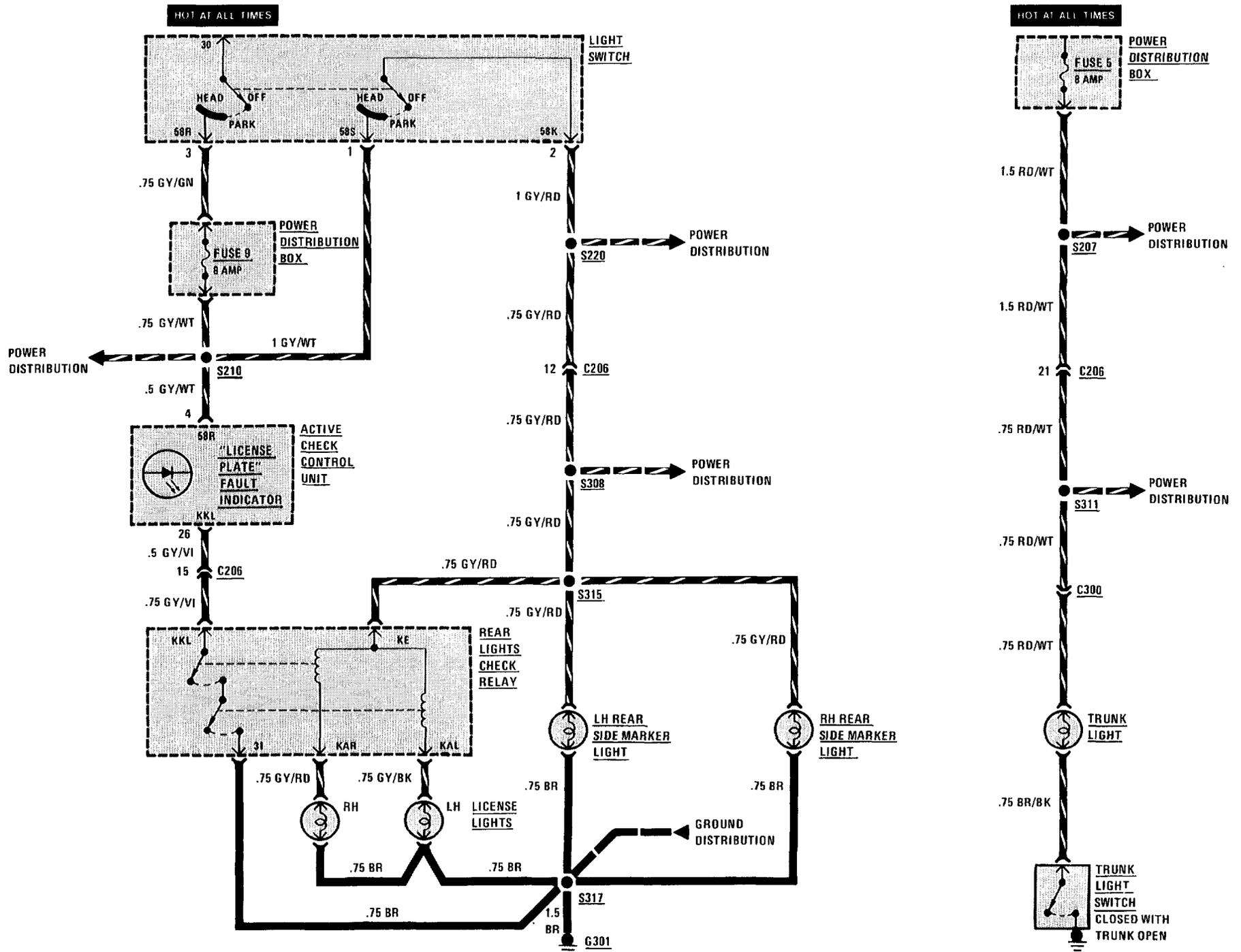


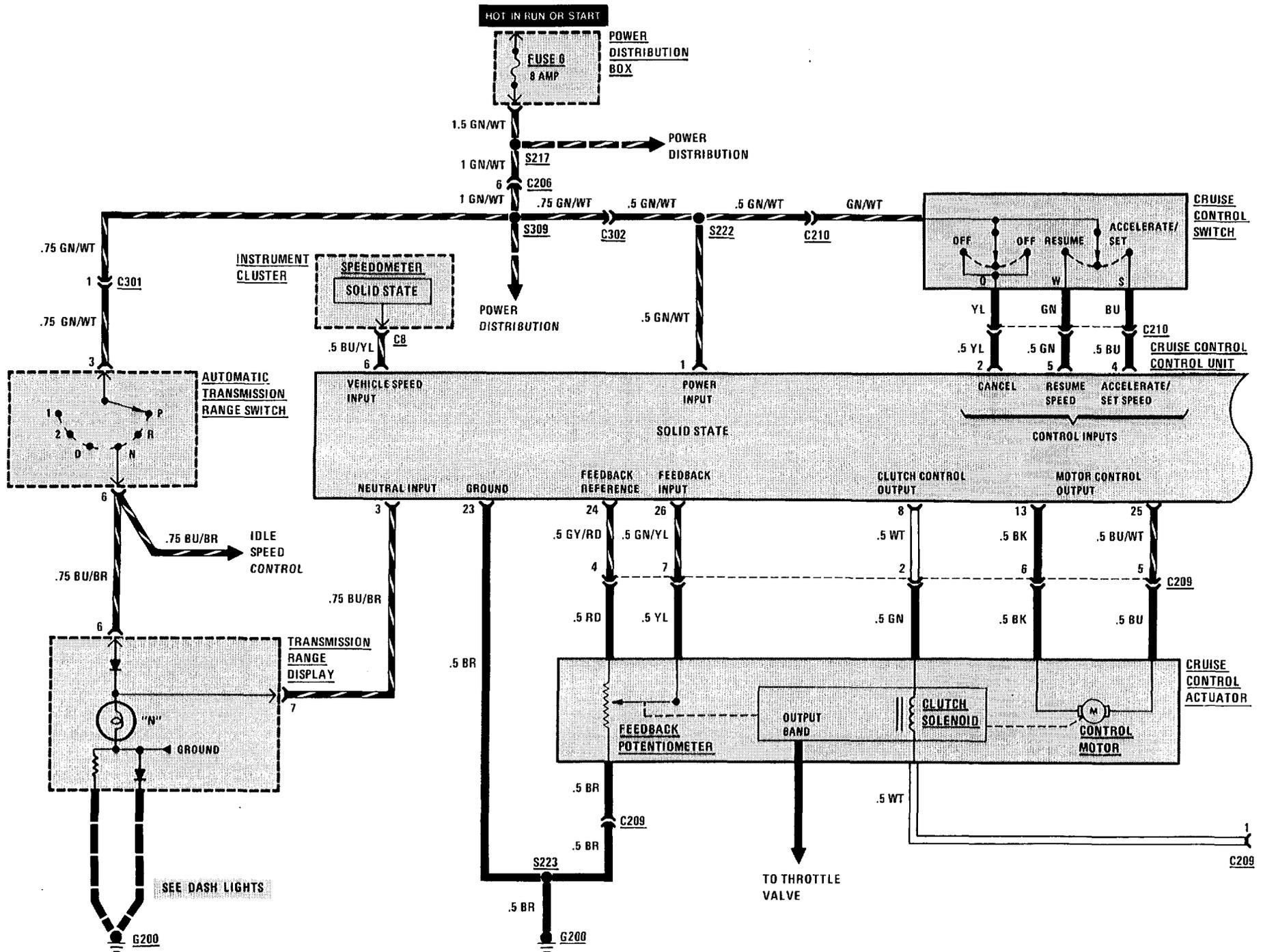










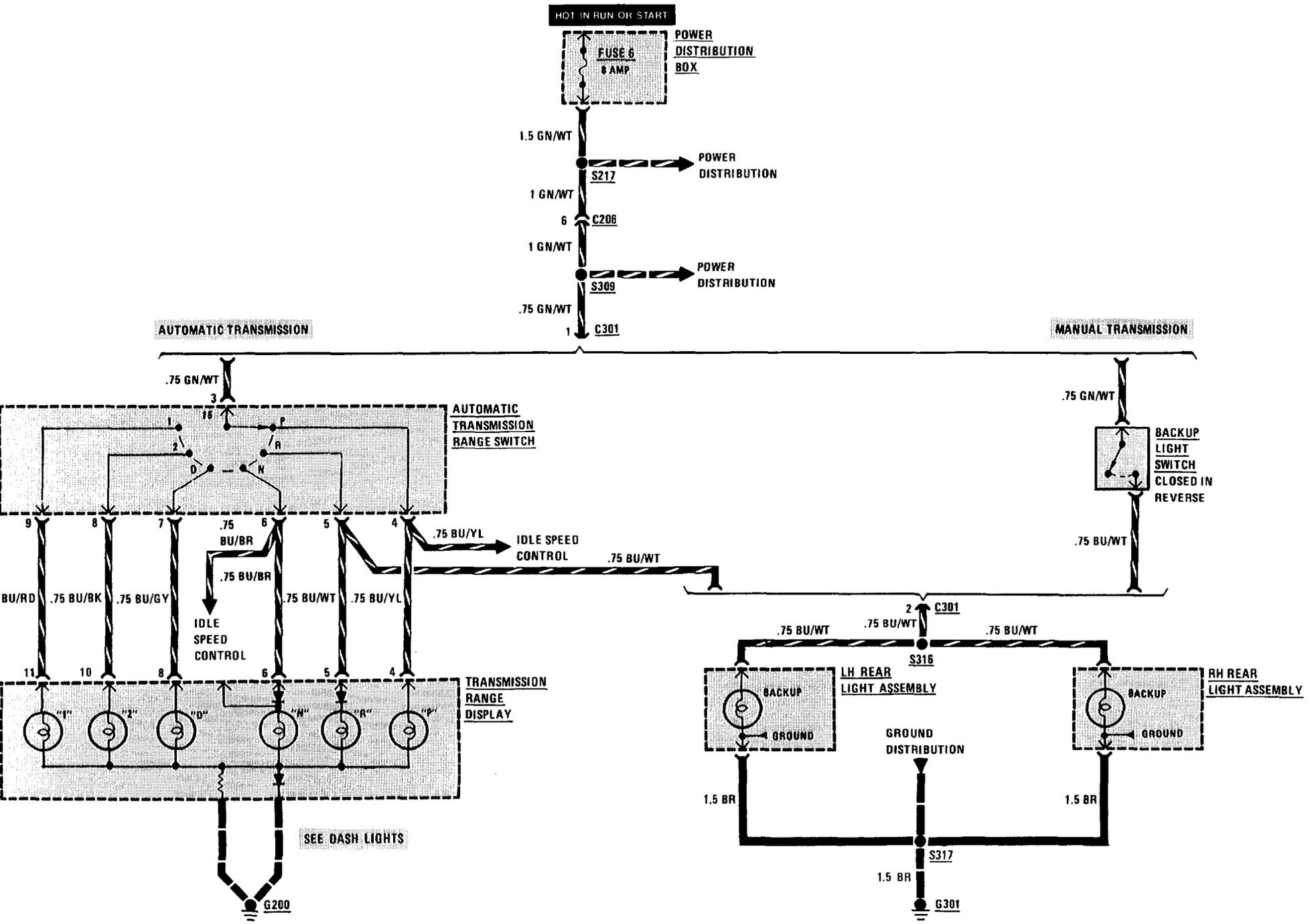


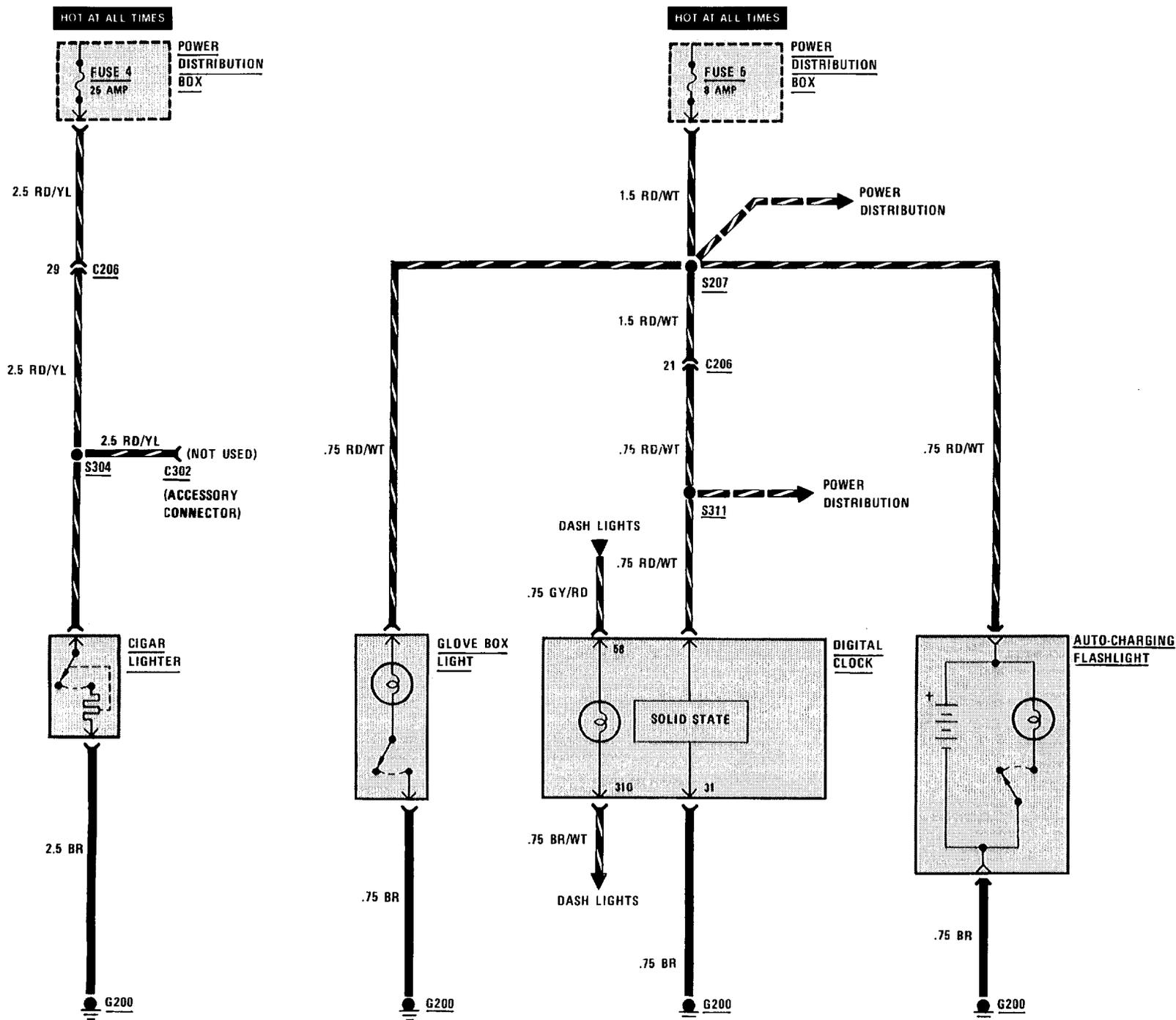




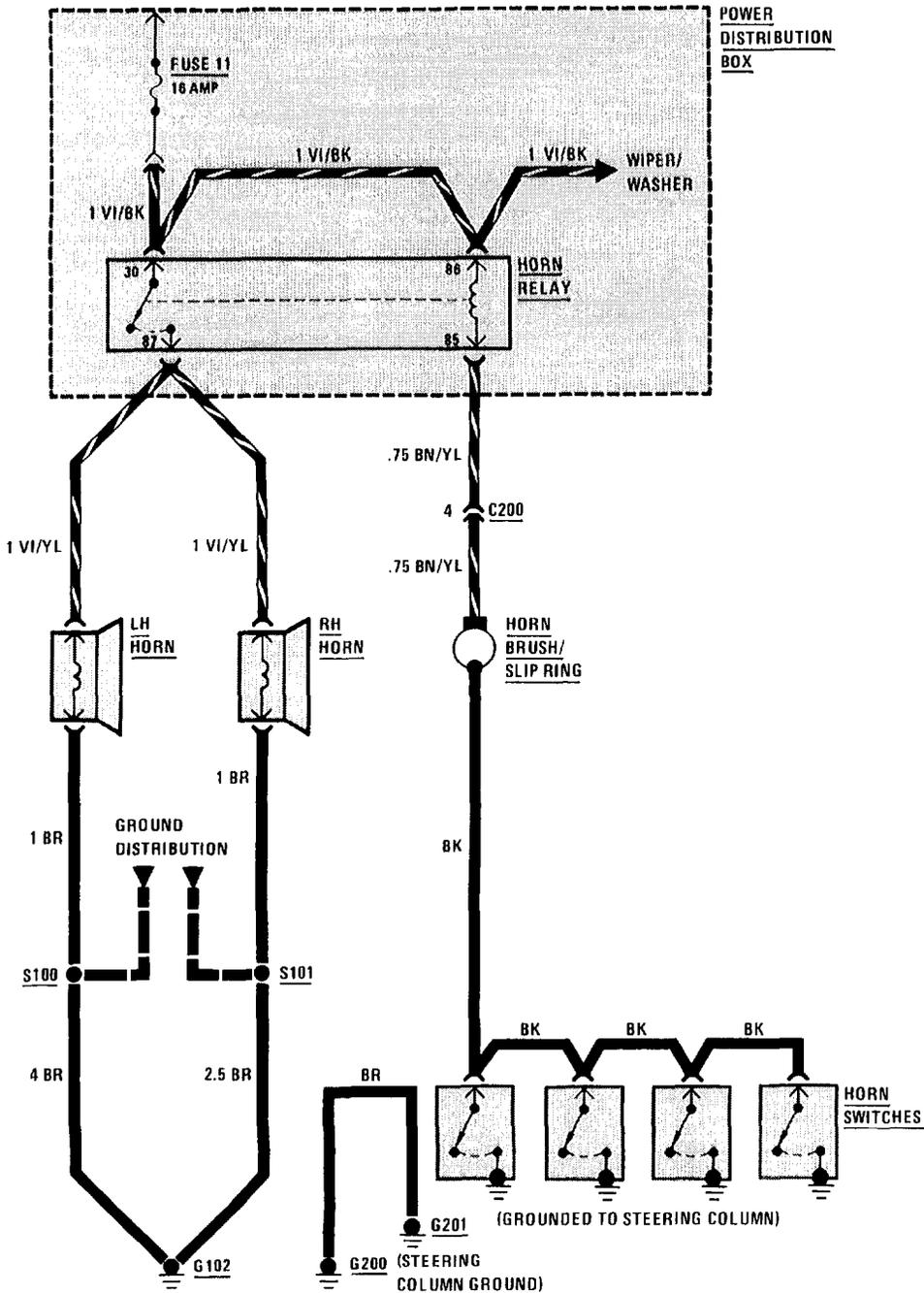




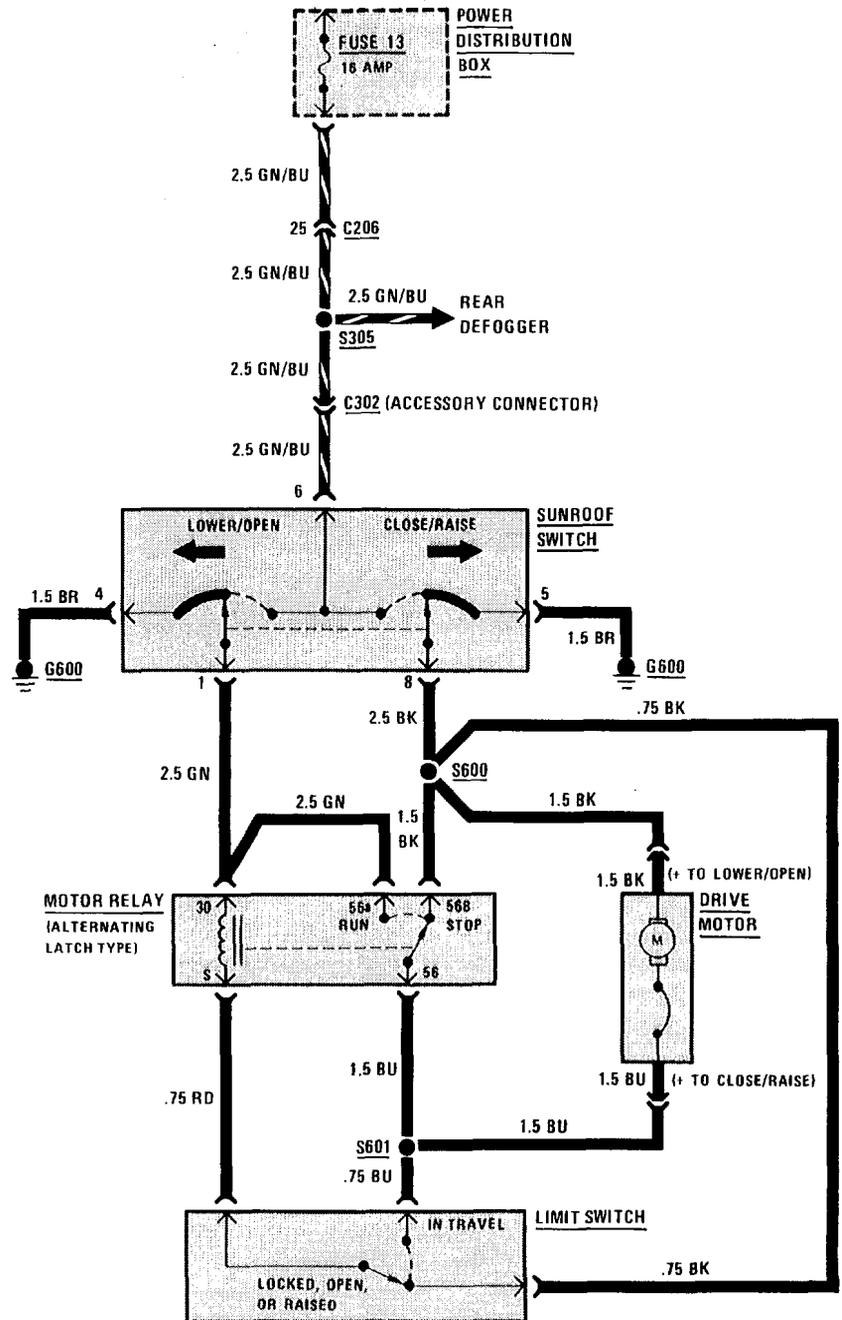




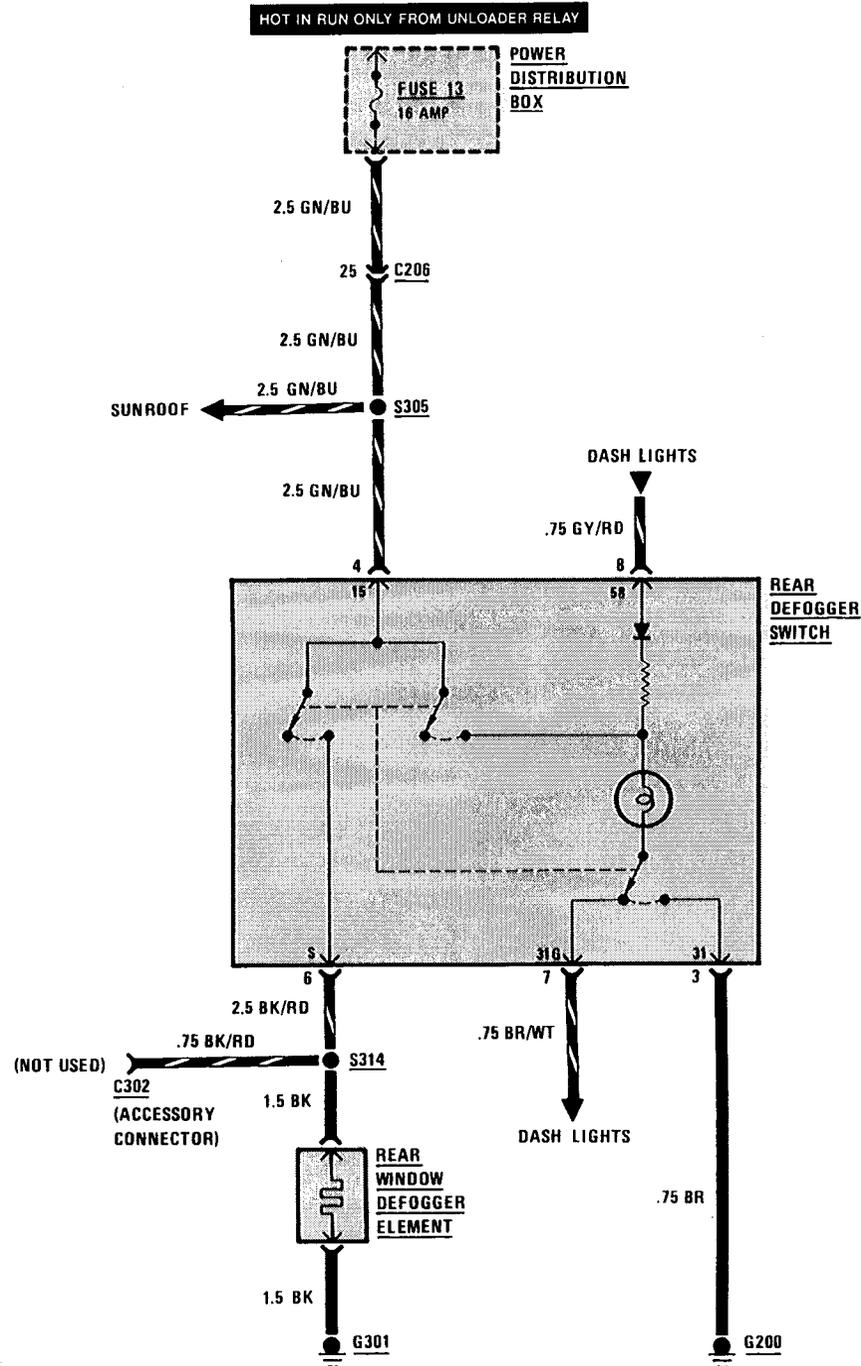
HOT IN ACCY. RUN OR START

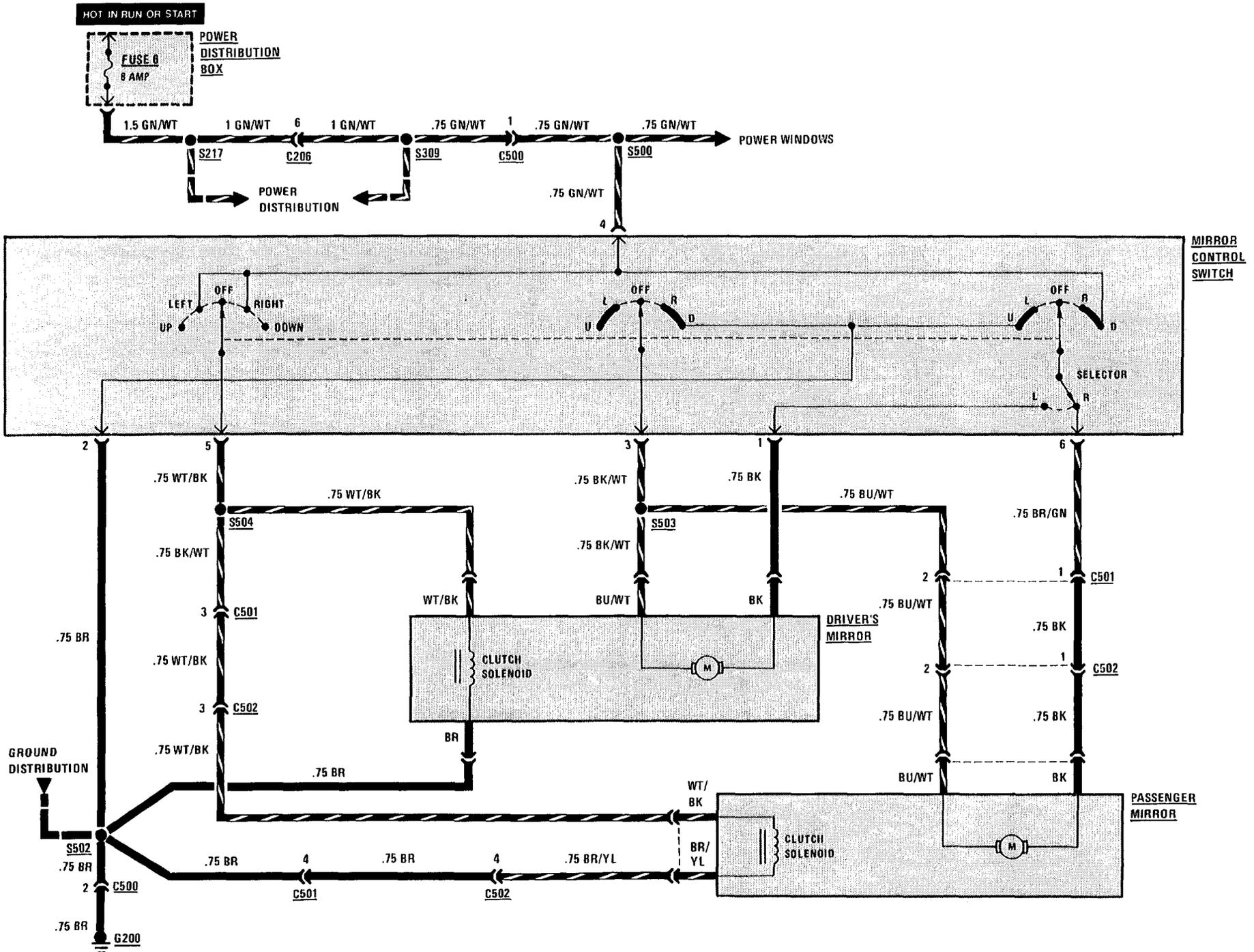


HOT IN RUN ONLY FROM UNLOADER RELAY

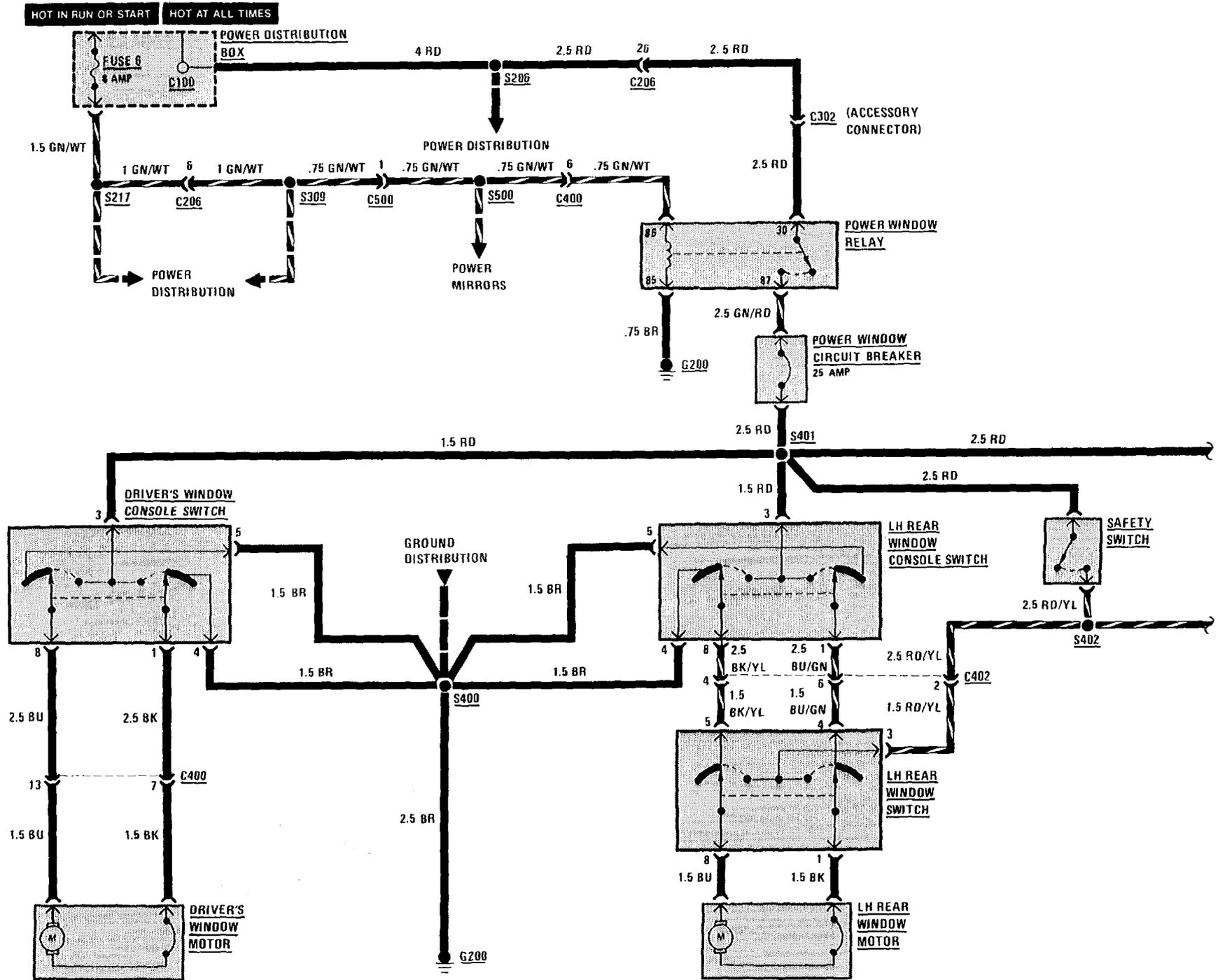


# 138 REAR DEFOGGER





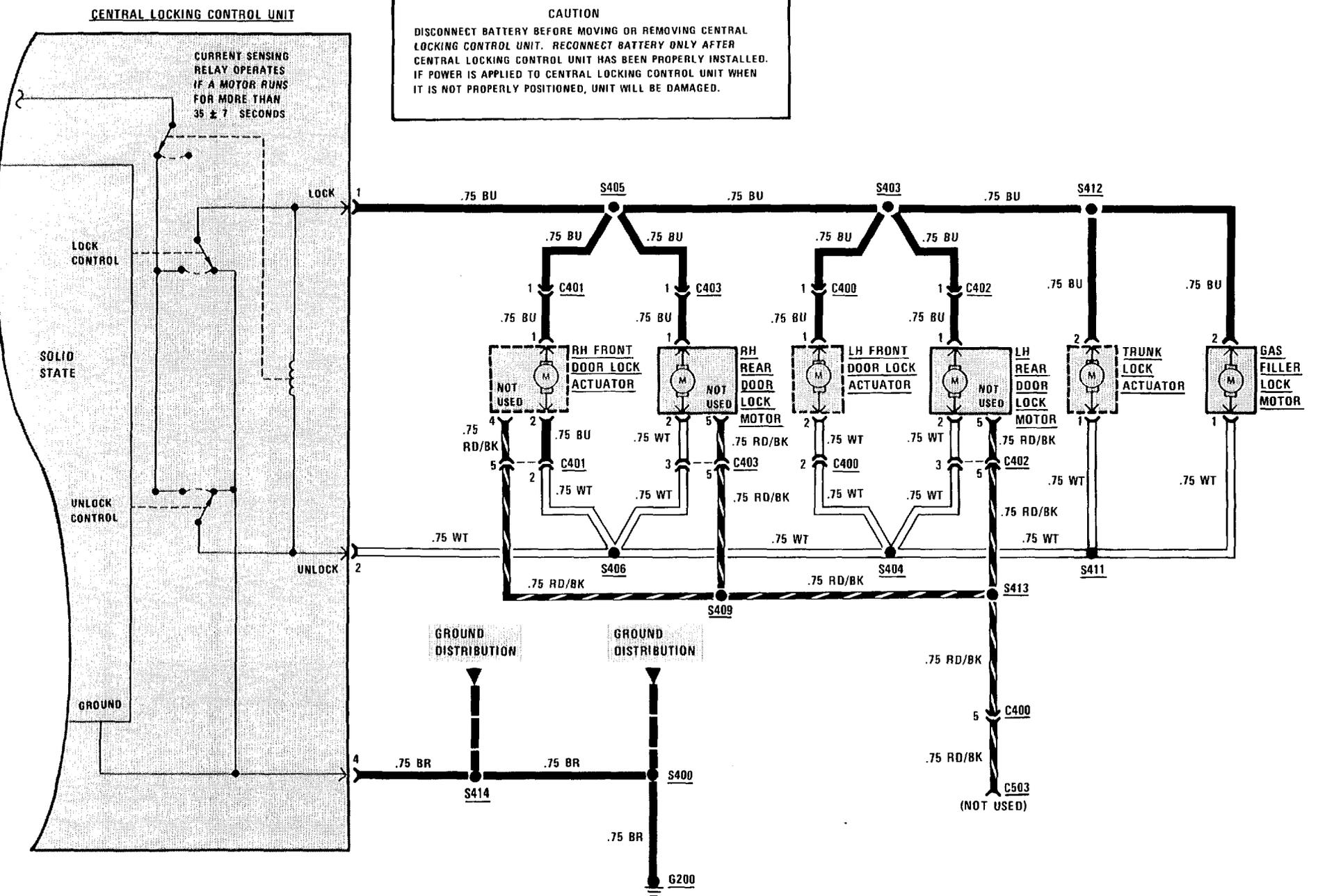
# 140 POWER WINDOWS

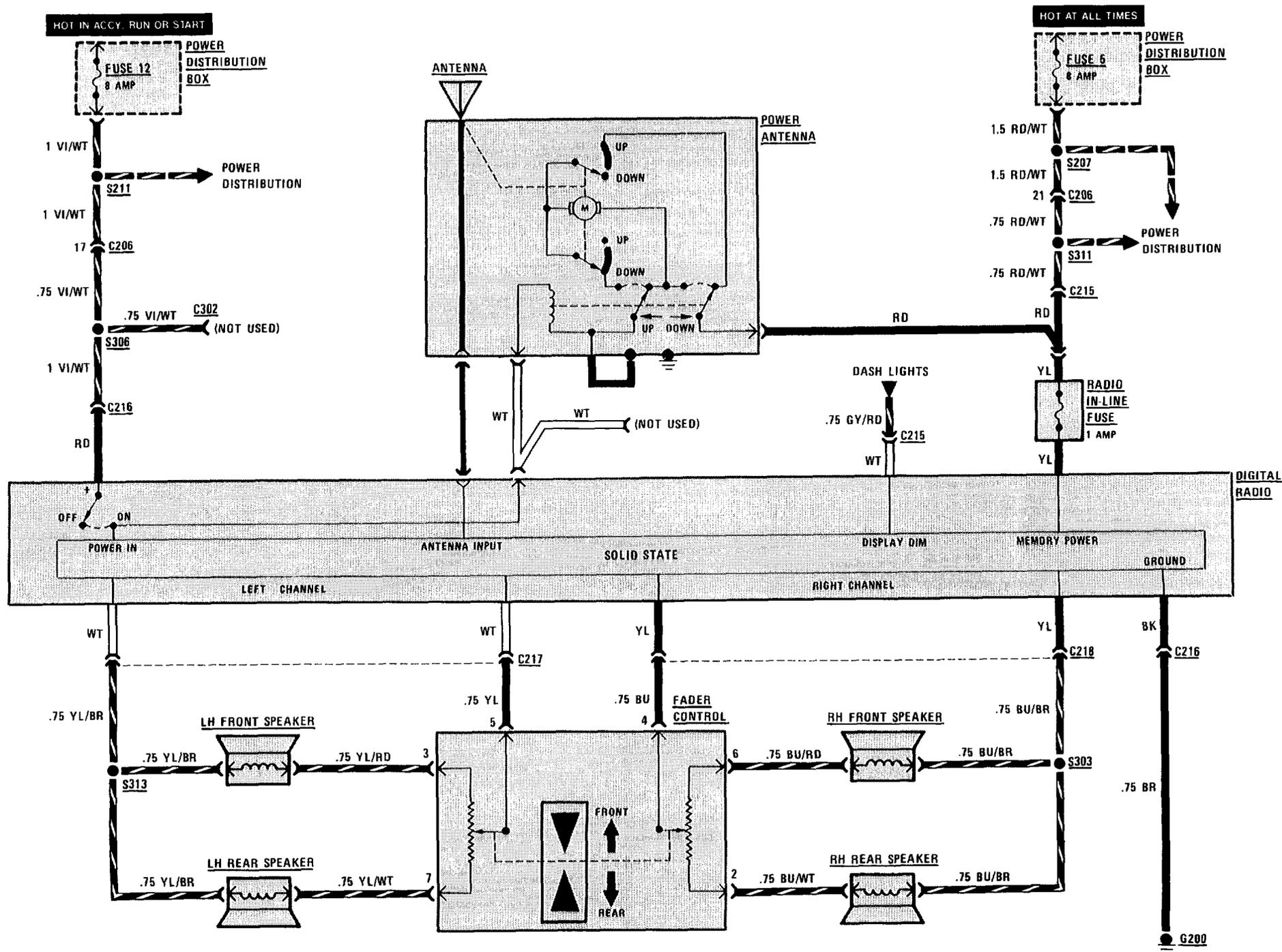


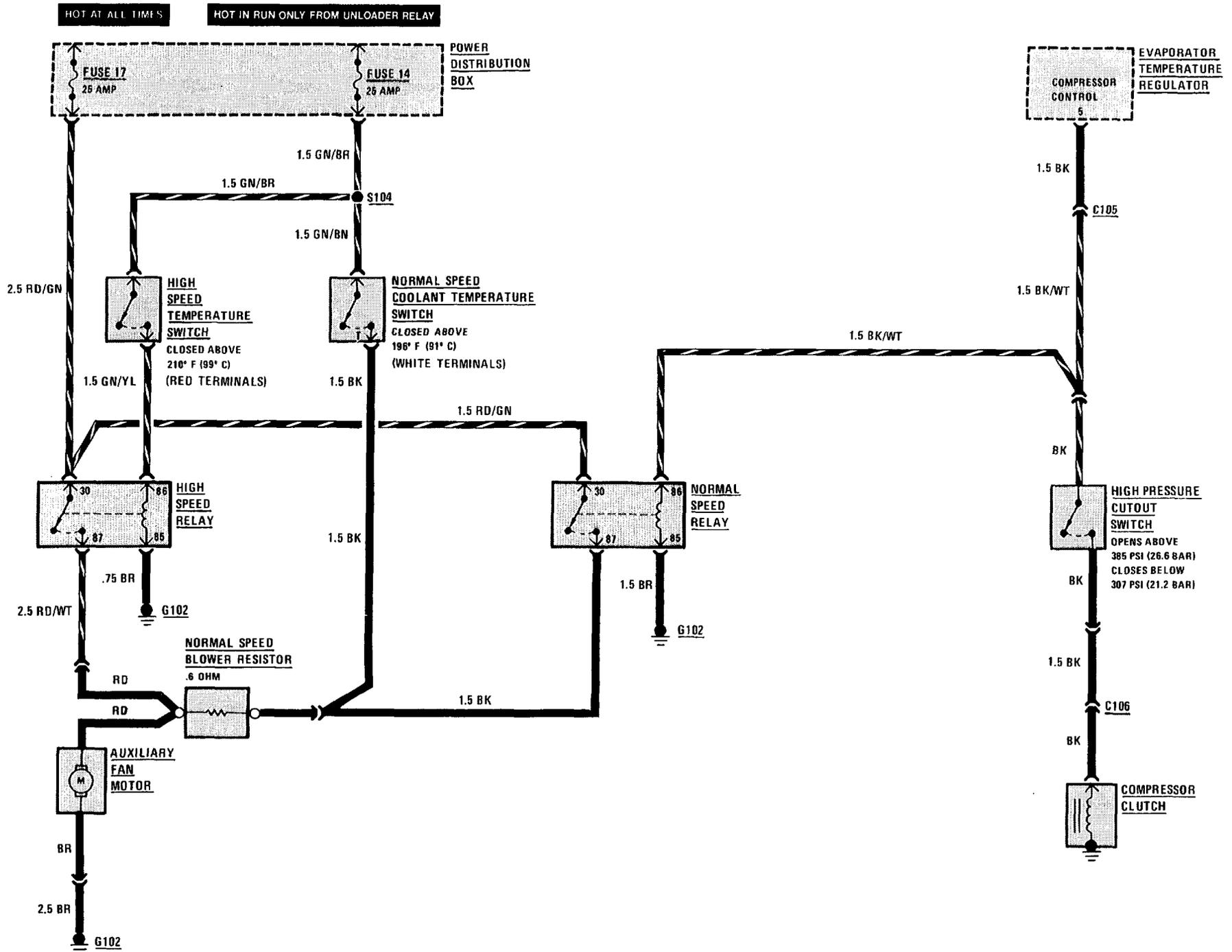


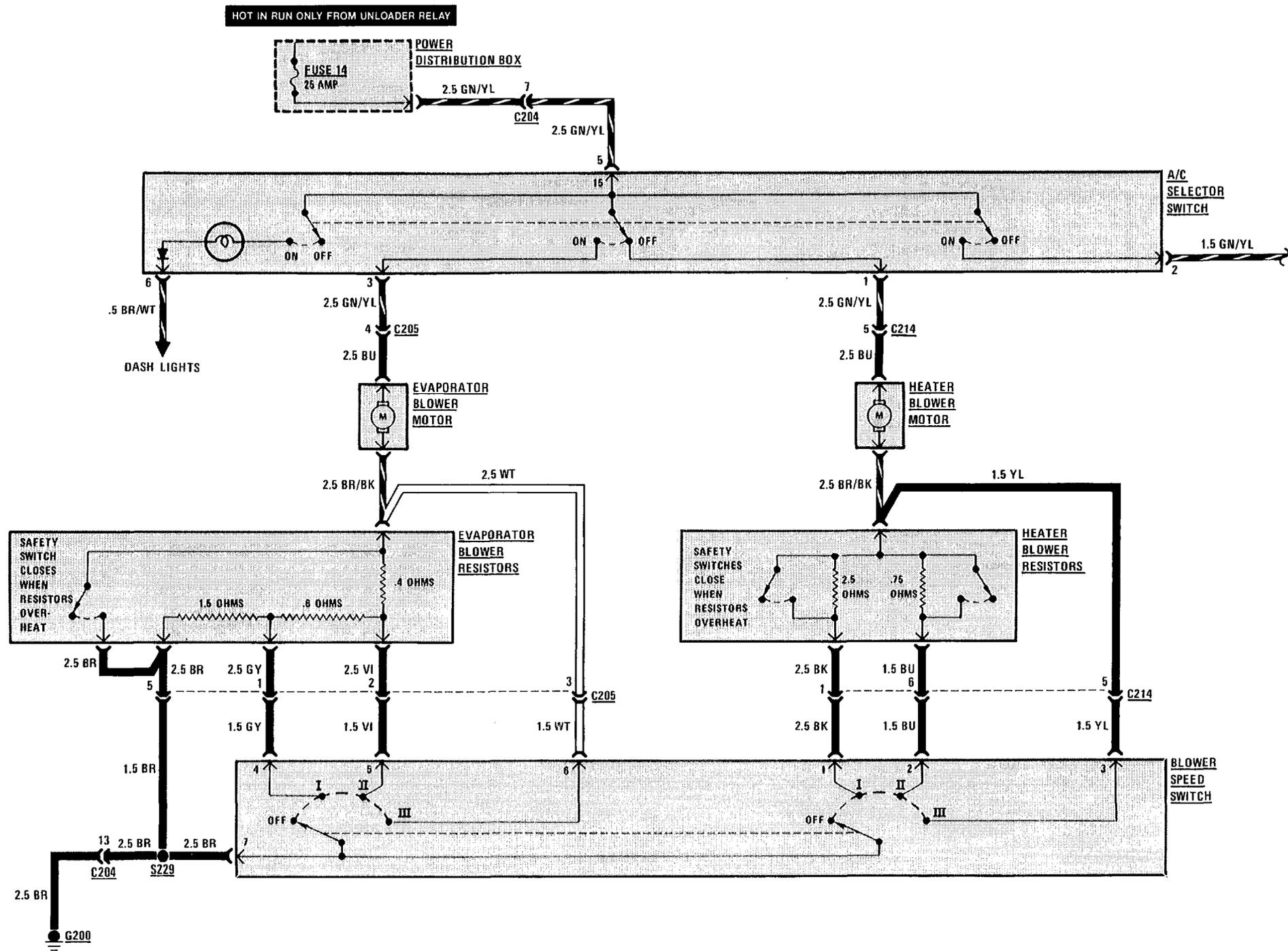


**CAUTION**  
 DISCONNECT BATTERY BEFORE MOVING OR REMOVING CENTRAL LOCKING CONTROL UNIT. RECONNECT BATTERY ONLY AFTER CENTRAL LOCKING CONTROL UNIT HAS BEEN PROPERLY INSTALLED. IF POWER IS APPLIED TO CENTRAL LOCKING CONTROL UNIT WHEN IT IS NOT PROPERLY POSITIONED, UNIT WILL BE DAMAGED.



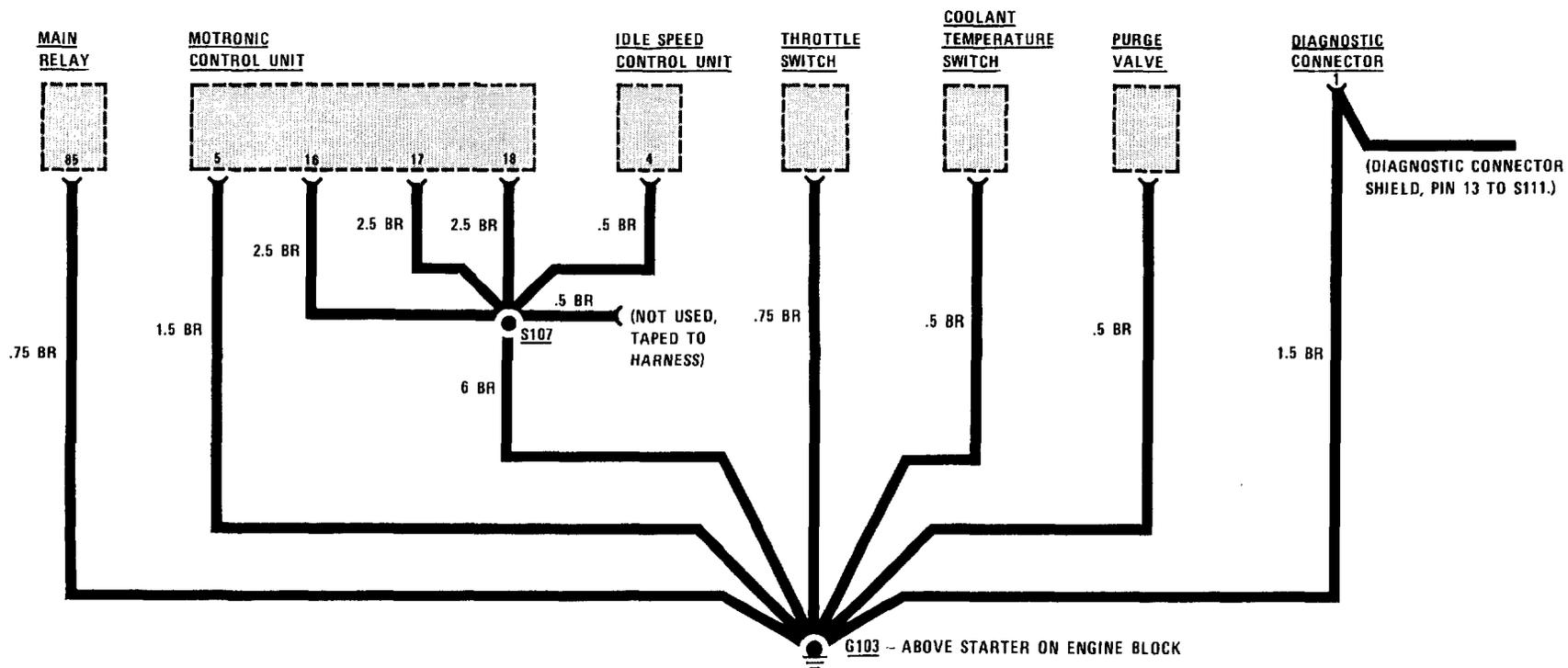
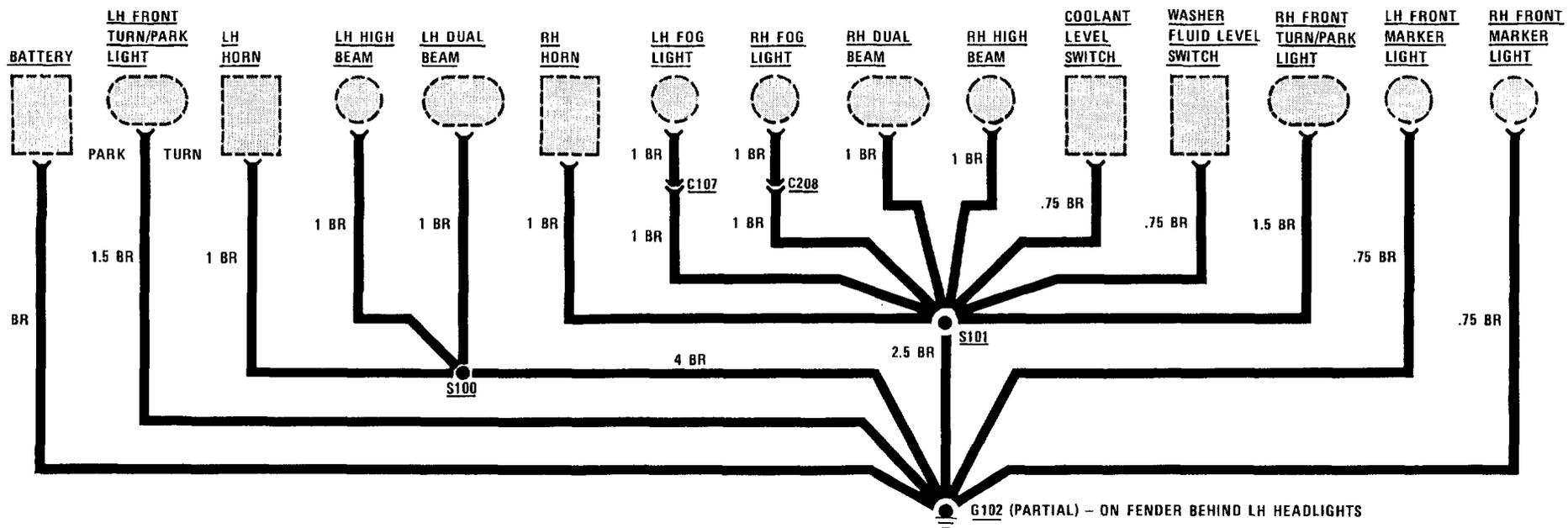


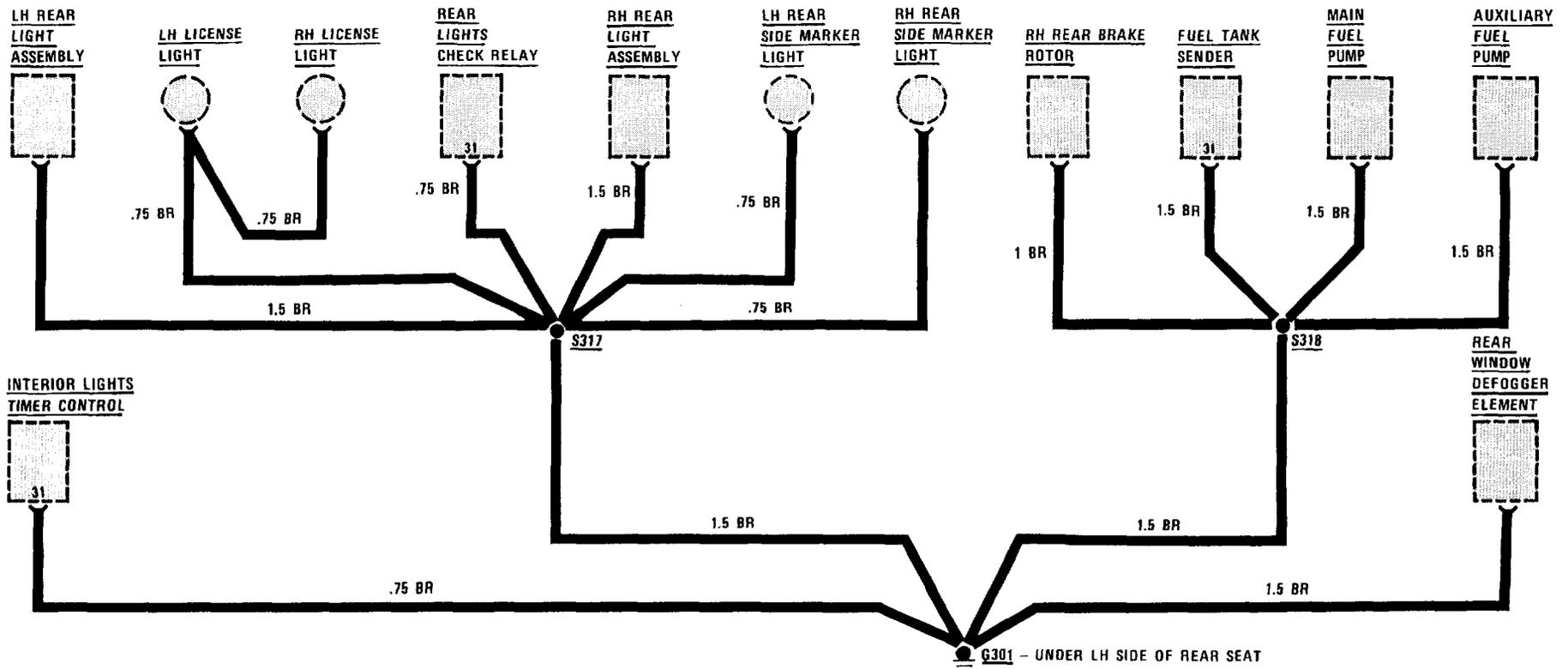
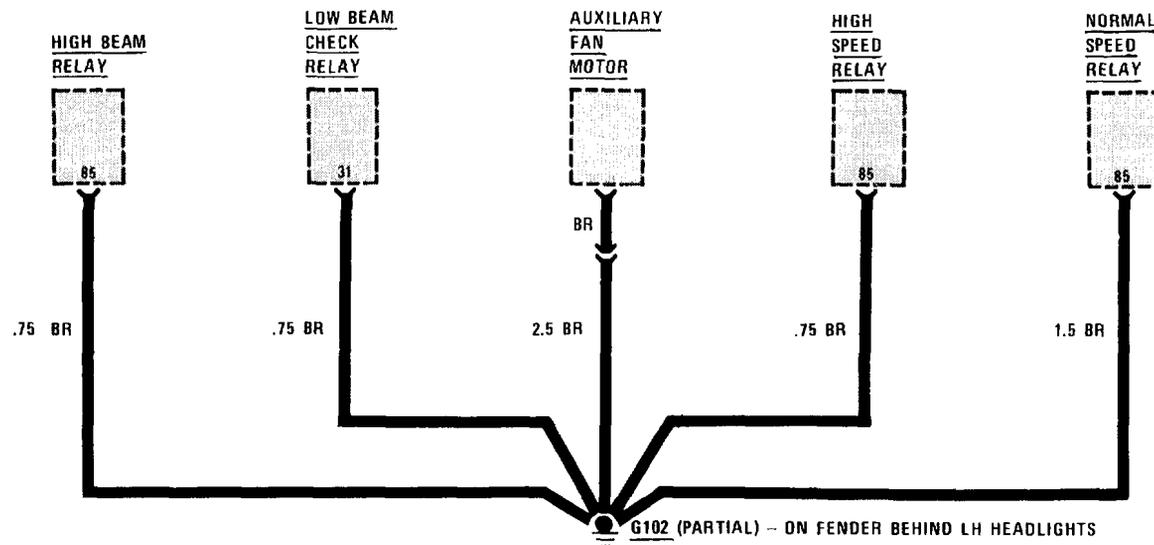




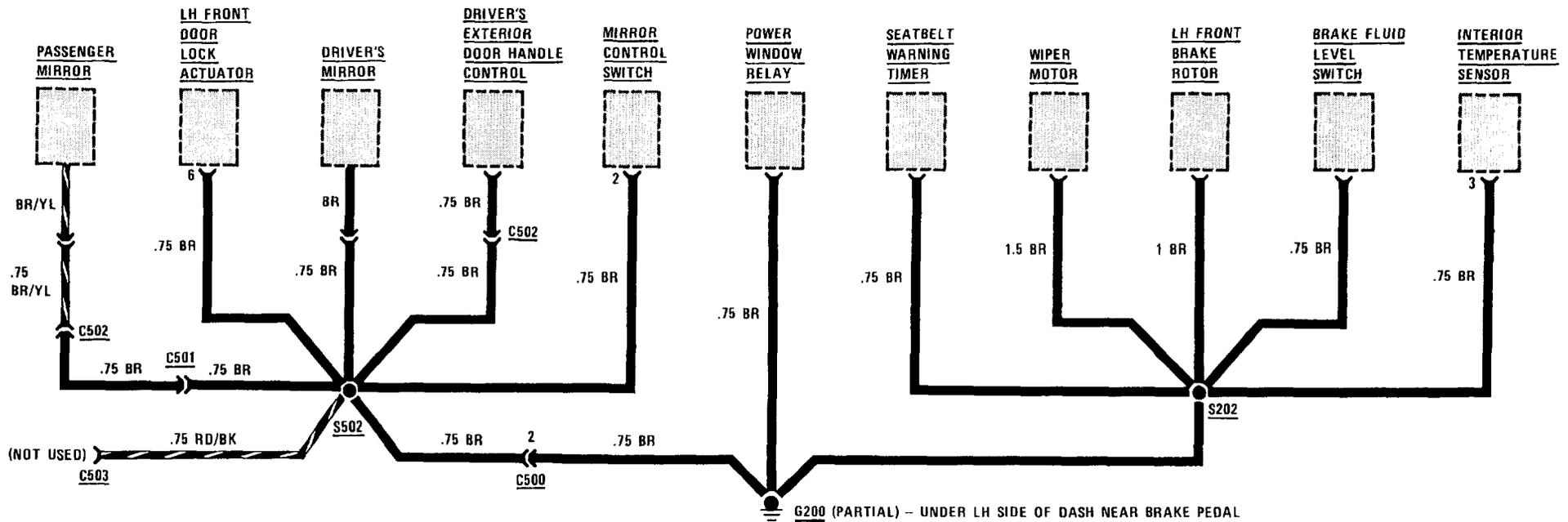
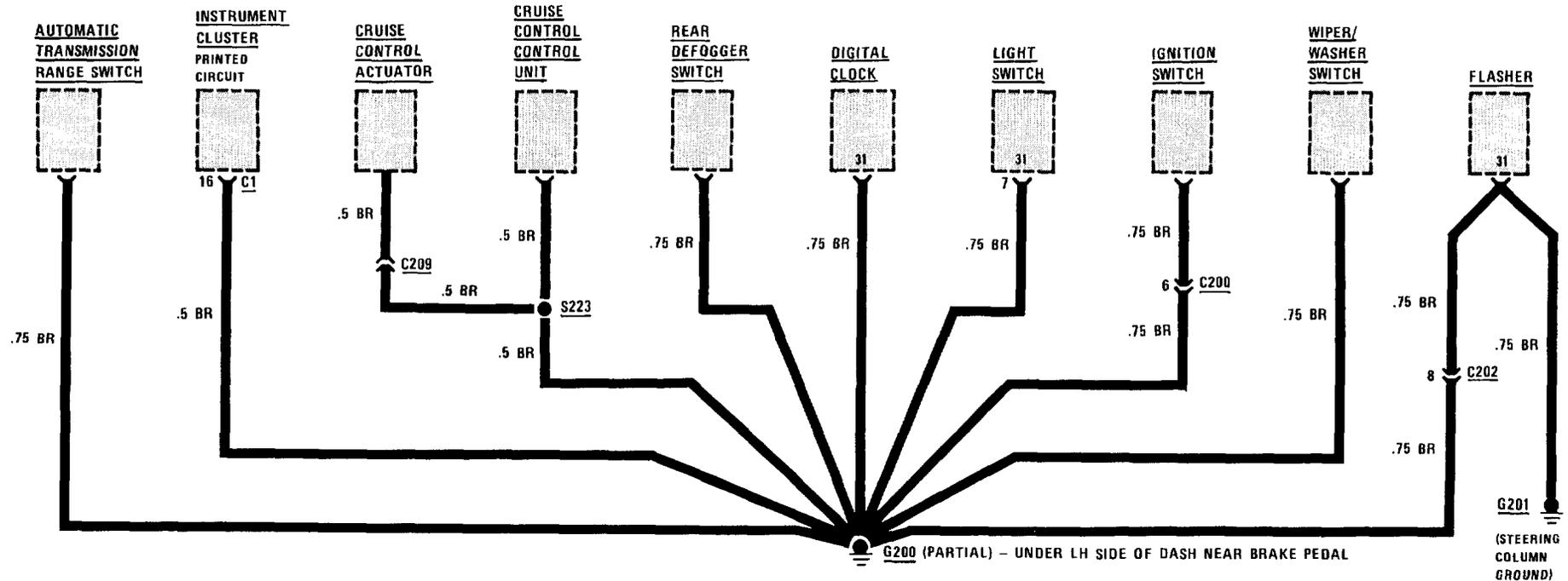


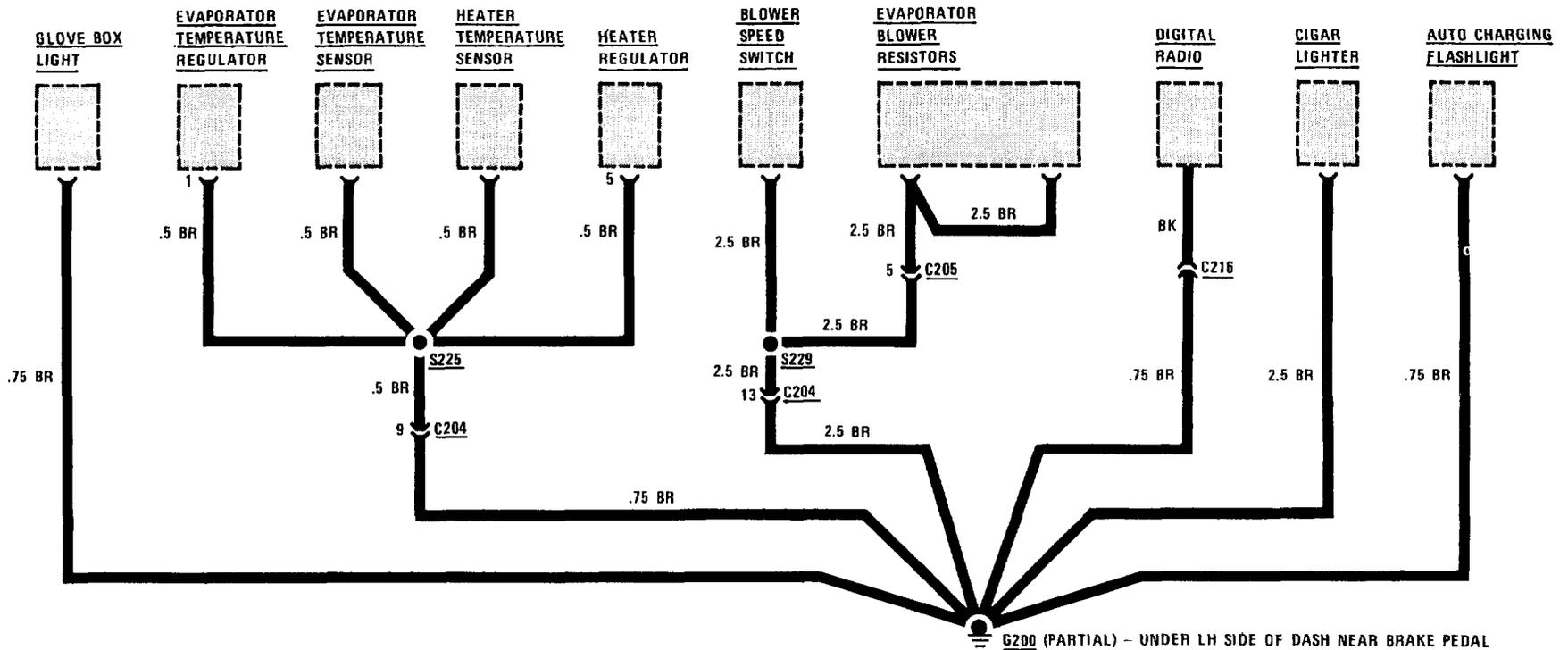
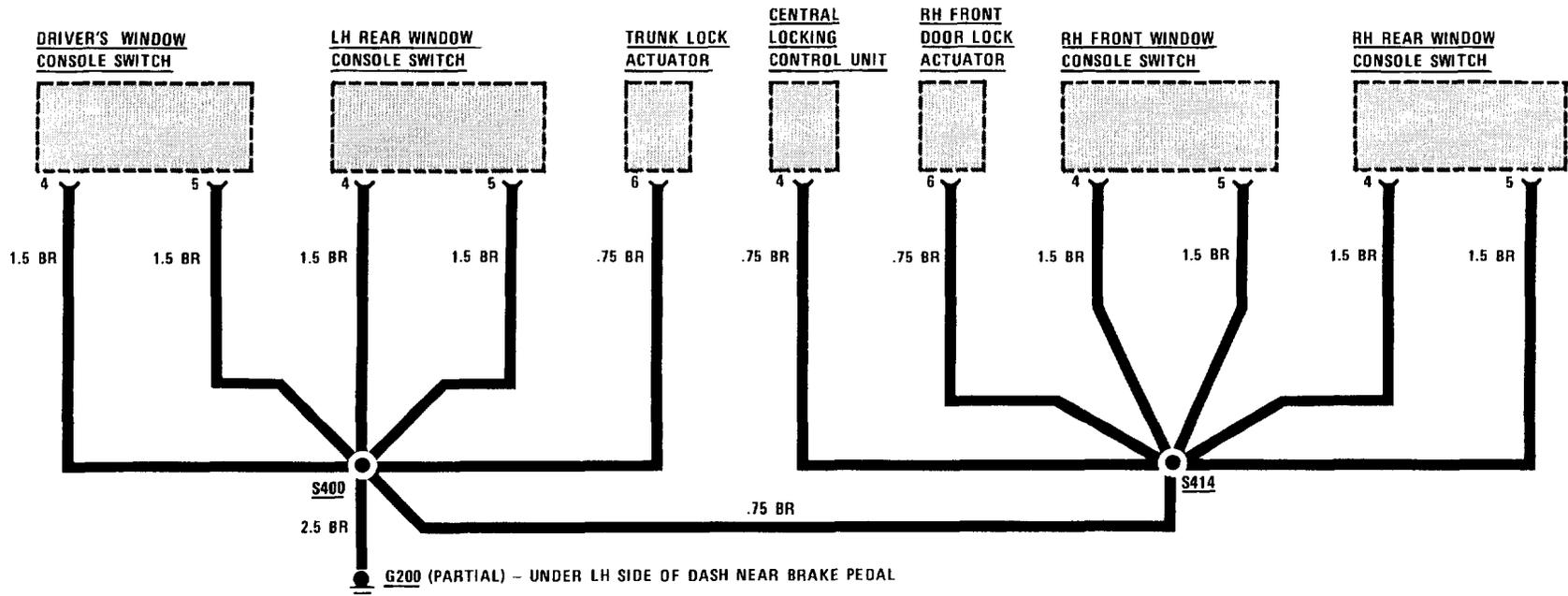
# 148 GROUND DISTRIBUTION (G102, G103)





# 150 GROUND DISTRIBUTION (G200)





**ACTIVE CHECK CONTROL**

Active Check Control Unit ..	Above rear view mirror .....	119-1
Brake Switch .....	Above brake pedal .....	213-2
Coolant Level Switch .....	In expansion tank on RH front wheel well ...	212-3
Low Beam Check Relay ....	Attached to power distribution box .....	213-1
Oil Level Sensor .....	Bottom of engine oil pan .....	210-2
Power Distribution Box ....	On LH front wheel well .....	202-1
Rear Lights Check Relay ...	Mounted on trunk lock support .....	201-1
Seatbelt Warning Timer ....	Under LH side of dash .....	212-1
Washer Fluid Level Switch .	In reservoir, behind RH headlights.....	211-1
C101 (17 pin).....	In power distribution box .....	205-1
C102 (7 pin) .....	In power distribution box .....	205-1
C206 (29 pin).....	On connector bracket under RH side of dash	206-1
C211 (1 pin) .....	Under LH side of dash taped to harness	
G102 (main body ground) .	On fender well behind LH headlights .....	203-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G301 (rear interior ground)	Under LH side of rear seat .....	208-1

**AUXILIARY FAN**

Auxiliary Fan Motor .....	Forward of radiator .....	214-3
Compressor Clutch .....	In compressor lower RH front of engine ....	214-4
Evaporator Temp. Regulator	On LH side of heater/evaporator housing ..	214-5
High Pressure Cutout Switch	On receiver-drier behind RH headlights.....	207-1
High Speed Relay.....	Attached to power distribution box .....	201-2
High Speed Temp. Switch ..	On upper LH side of radiator (red terminals)	214-2
Normal Speed Relay .....	Attached to power distribution box .....	201-2
Normal Speed Resistor.....	On auxiliary fan shield, ahead of radiator ...	214-3
Normal Speed Temp. Switch	On upper LH side of radiator (white terminals)	214-2
Power Distribution Box ....	On LH front wheel well .....	202-1
C105 (1 pin) .....	At RH wheel well, below coolant reservoir ..	212-3
C106 (1 pin) .....	Near air conditioning compressor .....	214-4
G102 (main body ground) .	On fender well behind LH headlights .....	203-1

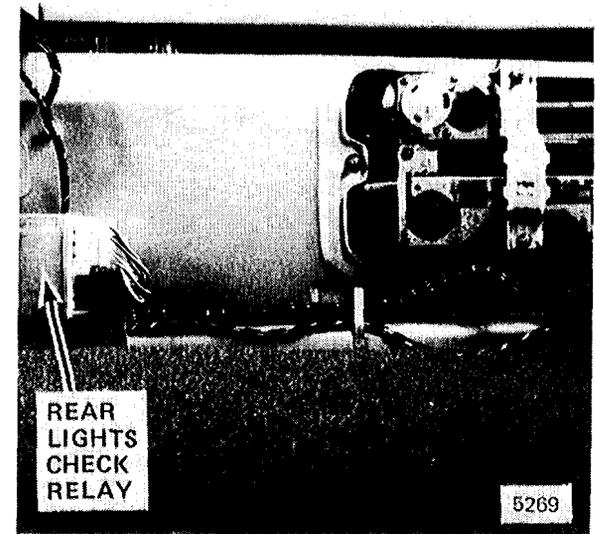


Figure 1 - Rear LH Side Of Trunk

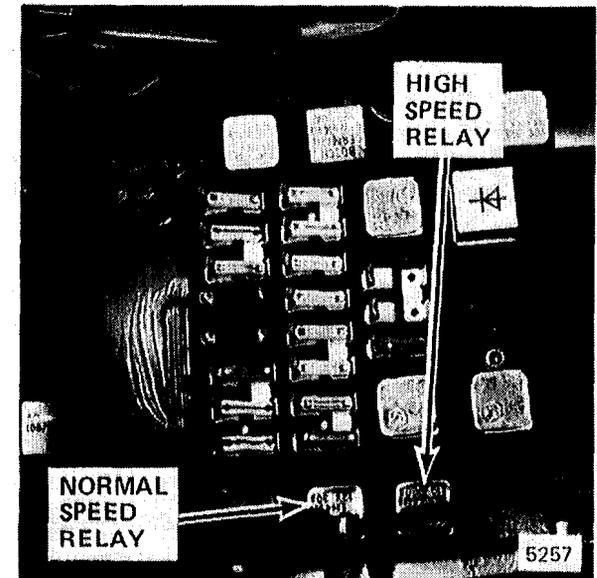


Figure 2 - Top Of LH Front Wheel Wheel

### BRAKE LINING WARNING

Power Distribution Box	On LH front wheel well	202-1
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C211 (1 pin)	Under LH side of dash taped to harness	
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G301 (rear interior ground)	Under LH side of rear seat	208-1

### CENTRAL LOCKING

Central Locking Control Unit	Above RH side of glove box	
Gas Filler Lock Motor	In trunk, right of power antenna	
Ignition Switch	Upper part of steering column	
LH Front Door Lock Actuator	In LH front door	
LH Rear Door Lock Motor	In LH rear door	
Power Distribution Box	On LH front wheel well	202-1
RH Front Door Lock Actuator	In RH front door	
RH Rear Door Lock Motor	In RH rear door	
Trunk Lock Actuator	In rear panel of trunk	
C200 (10 pin)	On LH side of steering column	203-2
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash	212-1
C400 (13 pin)	Behind LH front speaker	
C401 (13 pin)	Behind RH front speaker	213-3
C402 (6 pin)	At LH rear door grommet	
C403 (6 pin)	At RH rear door grommet	
C404 (4 pin)	In bottom rear of driver's door	202-2
C405 (2 pin)	In trunk near trunk lock	
C500 (6 pin)	Behind LH front speaker	
C503 (4 pin)	Bottom rear of driver's door	202-2
G200 (front interior ground)	Under LH side of dash, near brake bracket	



Figure 1 - Top Of LH Front Wheel Well

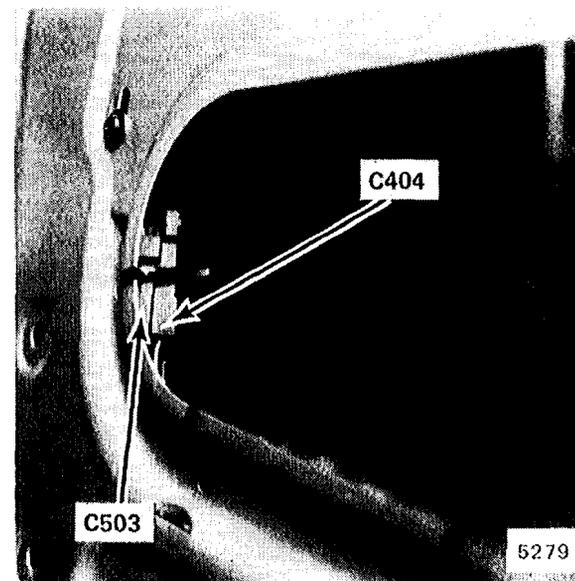


Figure 2 - Inside Driver's Door

**CHARGING SYSTEM**

Active Check Control Unit ..	Above rear view mirror .....	119-1
Diagnostic Connector .....	LH side of engine .....	103-1
Ignition Switch .....	Upper part of steering column	
Power Distribution Box .....	On LH front wheel well .....	202-1
Starter .....	Lower rear LH side of engine	
C101 (17 pin) .....	In power distribution box .....	205-1
C200 (10 pin) .....	On LH side of steering column .....	203-2
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash .....	212-1
G102 .....	On fender behind LH headlights .....	203-1

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

Auto-Charging Flashlight...	In glove box	
Power Distribution Box .....	On LH front wheel well .....	202-1
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash .....	212-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	

**CRUISE CONTROL/STOPLIGHTS**

Active Check Control Unit ..	Above rear view mirror .....	119-1
Auto. Trans. Range Switch .	On LH side of shift lever	
Brake Switch .....	Above brake pedal .....	213-2
Clutch Switch .....	Above clutch pedal	
Cruise Control Actuator .....	Forward of power distribution box .....	203-1
Cruise Control Control Unit	Mounted on left under-dash cover .....	203-2
Cruise Control Switch .....	On RH side of steering column .....	209-1
Power Distribution Box .....	On LH front wheel well .....	202-1
Rear Lights Check Relay ...	Mounted on trunk lock support .....	201-1
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C207 (1 pin) .....	Near brake switch	
C208 (2 pin) .....	Near clutch pedal .....	206-1
C209 (7 pin) .....	Near cruise control control unit .....	203-2
C210 (4 pin) .....	On LH side of steering column .....	203-2
C301 (2 pin) .....	In center console, ahead of shift lever	

(Chart continued on next page)

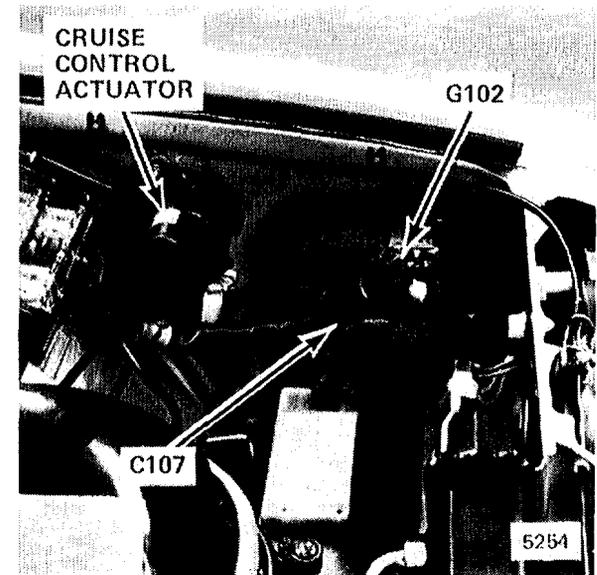


Figure 1 - Above Battery

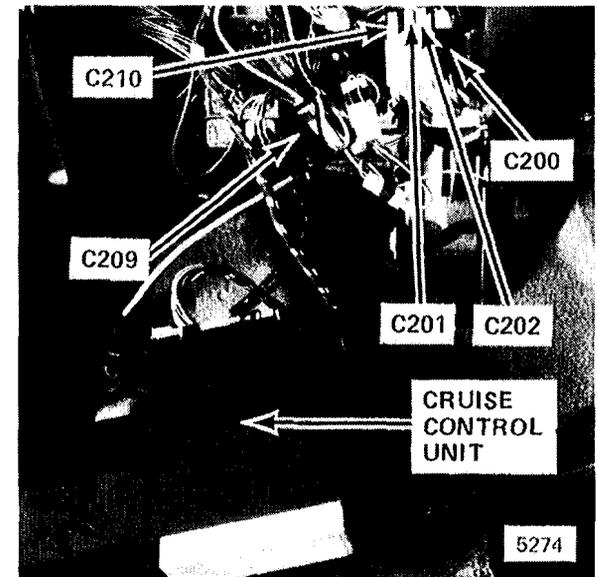


Figure 2 - Lower LH Side Of Dash

## 204 COMPONENT LOCATIONS

(continued)

C302 (accessory connector)	Under LH side of dash	212-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G301 (rear interior ground)	Under LH side of rear seat	208-1

### DASH LIGHTS

A/C Selector Switch	In center console	210-1
Auto. Trans. Range Switch	On LH side of shift lever	
Fog Light Switch	Under LH side of instrument cluster	213-2
Hazard Switch	To right of instrument cluster	
Power Distribution Box	On LH front wheel well	202-1
Rear Defogger Switch	RH side of instrument cluster	
C204 (13 pin)	On LH side of heater/evaporator housing	214-5
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C301 (2 pin)	In center console, ahead of shift lever	
G200 (front interior ground)	Under LH side of dash, near brake bracket	

### FUEL CONTROL

Air Flow Meter	LH side of engine	212-2
Fuel Injectors	On top of engine, at intake parts	206-2
Idle Speed Control Unit	Under RH side of dash, above glove box	204-1
Motronic Control Unit	Above glove box	204-1
Oxygen Sensor	In exhaust manifold at rear of engine	212-3
G103 (engine ground)	Above starter on engine block	214-1

### FUEL DELIVERY/EVAPORATIVE CONTROL

Auxiliary Fuel Pump	In fuel tank, under trunk	213-5
Diagnostic Connector	LH side of engine	103-1
Fuel Pump Relay	On power distribution box	204-2
Ignition Switch	Upper part of steering column	
Main Fuel Pump	Forward and right of differential housing	
Main Relay	On power distribution box	204-2
Motronic Control Unit	Above glove box	204-1
Power Distribution Box	On LH front wheel well	202-1
Purge Valve	Behind RH headlights	207-1
Purge Valve Relay	On power distribution box	202-1

(Chart continued on next page)

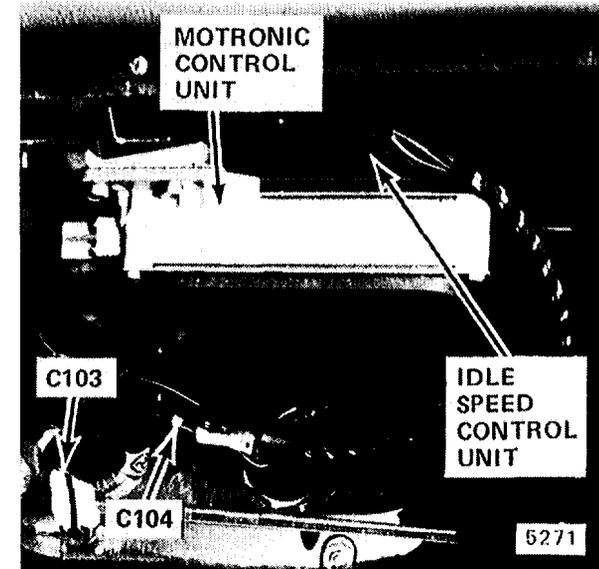


Figure 1 - Below RH Side Of Dash

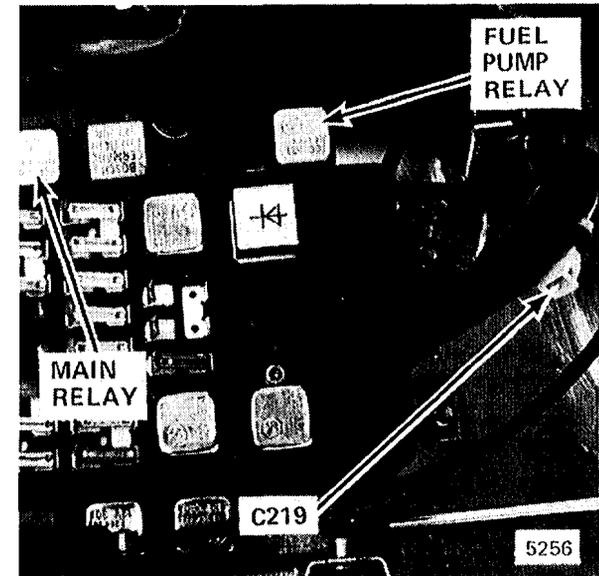


Figure 2 - Top Of LH Front Wheel Well

(continued)

C103 (6 pin) .....	RH side of dash near Motronic control unit	204-1
C200 (10 pin) .....	On LH side of steering column .....	203-2
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C212 (1 pin) .....	Under LH side of dash taped to harness	
G102 (main body ground) .	On fender well behind LH headlights .....	203-1
G103 (engine ground) .....	Above starter on engine block .....	214-1
G301 (rear interior ground)	Under LH side of rear seat .....	208-1

**HEADLIGHTS/FOGLIGHTS**

Active Check Control Unit ..	Above rear view mirror .....	119-1
Combination Switch .....	On LH side of steering column .....	209-1
Low Beam Check Relay ....	Attached to power distribution box .....	213-1
Power Distribution Box ....	On LH front wheel well .....	202-1
C102 (7 pin) .....	In power distribution box .....	205-1
C107 (2 pin) .....	Behind LH headlights .....	203-1
C108 (2 pin) .....	Behind RH headlights .....	211-1
C202 (13 pin) .....	On LH side of steering column .....	203-2
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
G102 (main body ground) .	On fender well behind LH headlights .....	203-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	

**HEATER/AIR CONDITIONING**

A/C Selector Switch .....	In center console .....	210-1
Blower Speed Switch .....	In center console .....	214-6
Compressor Clutch .....	In compressor lower RH front of engine ....	214-4
Evaporator Blower Motor ..	Under center of dash .....	205-2
Evaporator Blower Resistors	On RH side of evaporator housing .....	205-2
Evaporator Temp. Regulator	On LH side of heater/evaporator housing ..	214-5
Evaporator Temp. Sensor ..	In evaporator, above evaporator blower motor	
Heater Blower Motor .....	Below windshield, behind cover panel	
Heater Blower Resistors ....	Below heater cover motor	
Heater Regulator .....	Behind A/C selector switch .....	210-1
Heater Temperature Sensor	LH side heater/evaporator, near heater core	214-5
High Pressure Cutout Switch	On receiver-drier behind RH headlights .....	207-1
Idle Speed Control Unit ....	Under RH side of dash, above glove box .....	204-1
Interior Temp. Sensor .....	Mounted in left under-dash cover .....	213-2
Power Distribution Box ....	On LH front wheel well .....	202-1
Water Shutoff Valve .....	Below brake master cylinder	

(Chart continued on next page)

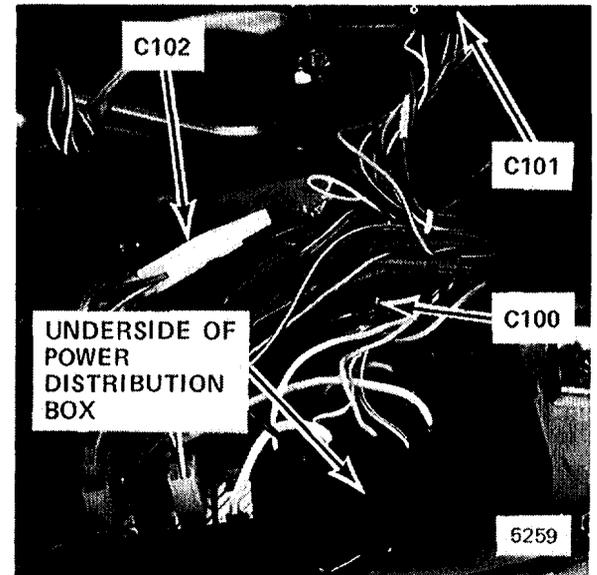


Figure 1 - Top Of LH Front Wheel Well

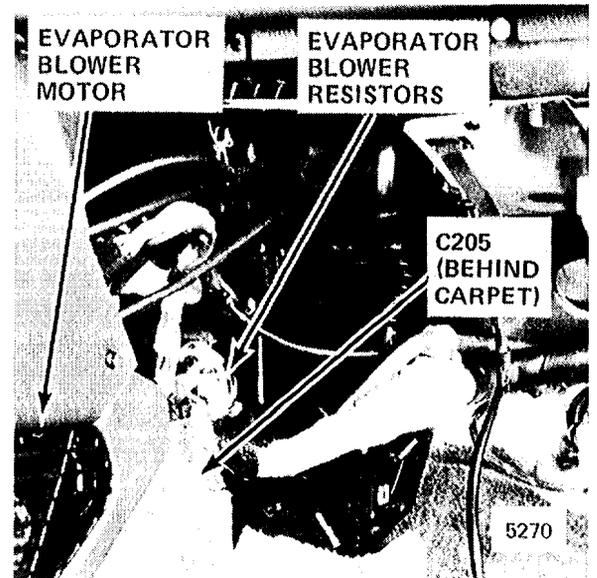


Figure 2 - RH Side Of Upper Console

(continued)

C103 (6 pin)	RH side of dash near Motronic control unit	204-1
C105 (1 pin)	At RH wheel well, below coolant reservoir	212-3
C204 (13 pin)	On LH side of heater/evaporator housing	214-5
C205 (6 pin)	On RH side of heater/evaporator housing	205-2
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C214 (6 pin)	Behind center of dash, near heater blower	
G200 (front interior ground)	Under LH side of dash, near brake bracket	

**HORN / SUNROOF**

Drive Motor	Behind header, above rear view mirror	
Horn Brush/Slip Ring	Under hub of steering wheel	207-2
Horn Switches	In each spoke on steering wheel	
Limit Switch	Behind header, above rear view mirror	
Motor Relay	Behind header, above rear view mirror	
Power Distribution Box	On LH front wheel well	202-1
Sunroof Switch	Above rear view mirror	
C200 (10 pin)	On LH side of steering column	203-2
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash	212-1
G102 (main body ground)	On fender well behind LH headlights	203-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G600	Near sunroof switch	

**IDLE SPEED CONTROL**

-5° Temperature Switch	On right inlet of heater blower housing	
Auto. Trans. Range Switch	On LH side of shift lever	
Coolant Temperature Sensor	On top of thermostat housing, front of engine	206-2
Coolant Temperature Switch	On back of thermostat housing	211-2
Diagnostic Connector	LH side of engine	103-1
Engine Speed Sensor	On transmission bell housing	212-4
Idle Control Valve	Top rear RH side of engine	212-3
Idle Speed Control Unit	Under RH side of dash, above glove box	204-1
Motronic Control Unit	Above glove box	204-1
Power Distribution Box	On LH front wheel well	202-1
Throttle Switch	Top LH side of engine below throttle body	212-5
C103 (6 pin)	RH side of dash near Motronic control unit	204-1
C104 (2 pin)	RH side of dash near Motronic control unit	204-1
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C301 (2 pin)	In center console, ahead of shift lever	
G103 (engine ground)	Above starter on engine block	214-1

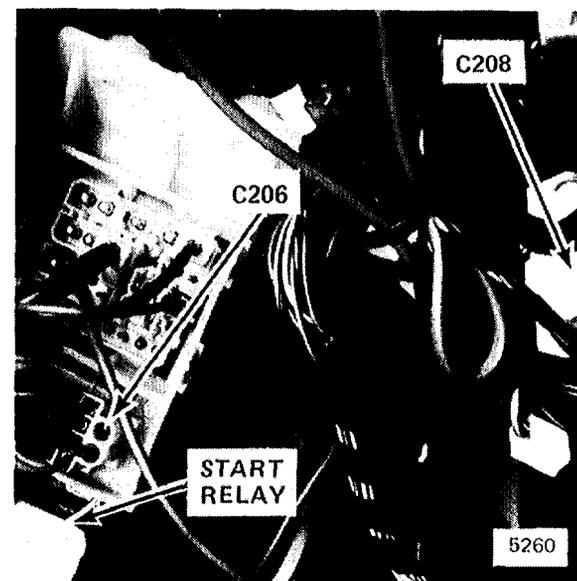


Figure 1 - Lower LH Side Of Dash

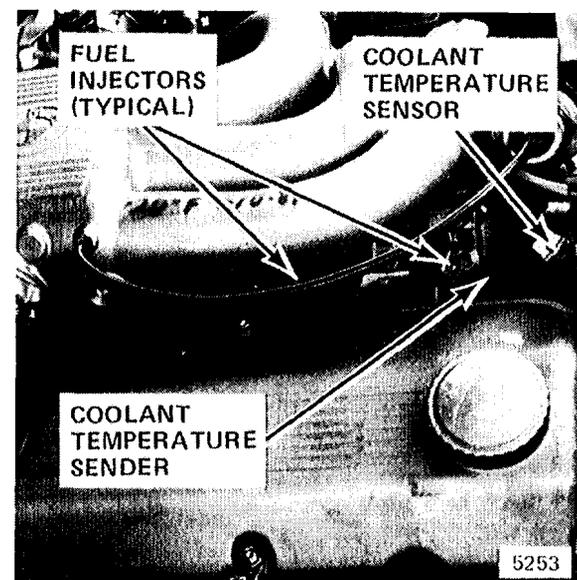


Figure 2 - Top RH Side Of Engine

**IGNITION**

Diagnostic Connector .....	LH side of engine .....	103-1
Ignition Coil .....	On fender well, behind RH headlights .....	207-1
Ignition Switch .....	Upper part of steering column	
Motronic Control Unit .....	Above glove box .....	204-1
Power Distribution Box .....	On LH front wheel well .....	202-1
Reference Point Sensor .....	On transmission bell housing .....	212-4
TDC Sensor .....	Above crankshaft vibration damper	
C101 (17 pin) .....	In power distribution box .....	205-1
C200 (10 pin) .....	On LH side of steering column .....	203-2
G103 (engine ground) .....	Above starter on engine block .....	214-1

**IGNITION KEY WARNING/SEATBELT WARNING**

Active Check Control Unit ..	Above rear view mirror .....	119-1
Ignition Key Switch .....	In upper portion steering column	
Power Distribution Box .....	On LH front wheel well .....	202-1
Seatbelt Switch .....	In driver's seatbelt buckle	
Seatbelt Warning Timer .....	Under LH side of dash .....	212-1
Warning Buzzer .....	In upper part of steering column .....	207-2
C200 (10 pin) .....	On LH side of steering column .....	203-2
C203 (2 pin) .....	At upper end of steering column .....	208-2
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	

**INTERIOR LIGHTS**

Exterior Door Handle Switch	In upper LH corner of driver's door .....	213-4
Ignition Switch .....	Upper part of steering column	
Interior Light Timer Control	Under LH side of dash .....	212-1
Power Distribution Box .....	On LH front wheel well .....	202-1
C200 (10 pin) .....	On LH side of steering column .....	203-2
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash .....	212-1
C303 (2 pin) .....	In headliner, near LH dome light	
C500 (6 pin) .....	Behind LH front speaker	
C503 (5 pin) .....	Bottom rear of driver's door .....	202-2
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G301 (rear interior ground)	Under LH side of rear seat .....	208-1

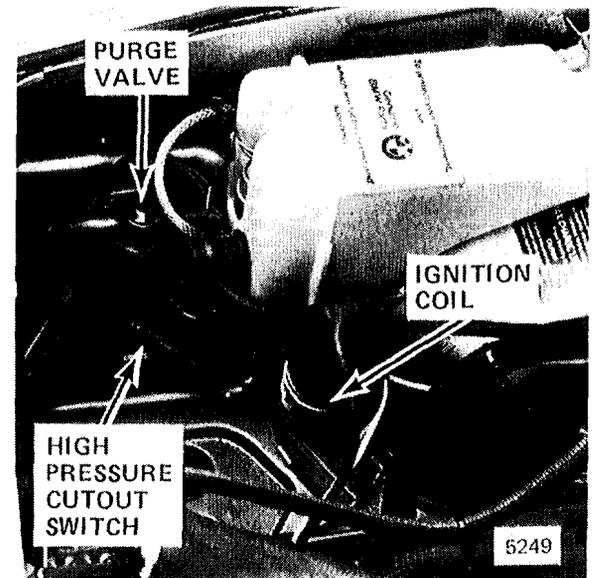


Figure 1 - Forward Of Washer Reservoir

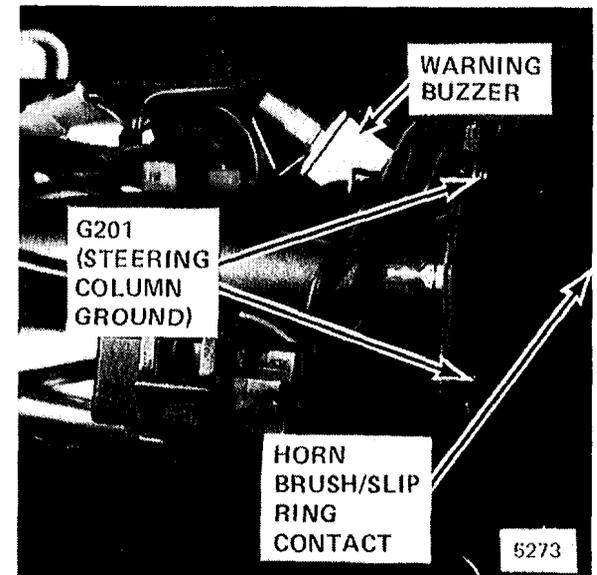


Figure 2 - Upper Part Of Steering Column

**LIGHTS: BACKUP/TRANSMISSION RANGE**

Auto. Trans. Range Switch	On LH side of shift lever	
Back Up Light Switch	On LH side of transmission	
Power Distribution Box	On LH front wheel well	202-1
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C301 (2 pin)	In center console, ahead of shift lever	
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G301 (rear interior ground)	Under LH side of rear seat	208-1

**LIGHTS: FRONT PARK/FRONT MARKER/TAIL**

Active Check Control Unit	Above rear view mirror	119-1
Power Distribution Box	On LH front wheel well	202-1
Rear Lights Check Relay	Mounted on trunk lock support	201-1
C206 (29 pin)	On connector bracket under RH side of dash	206-1
G102 (main body ground)	On fender well behind LH headlights	203-1
G301 (rear interior ground)	Under LH side of rear seat	208-1

**LIGHTS: REAR MARKER/LICENSE/TRUNK**

Active Check Control Unit	Above rear view mirror	119-1
Power Distribution Box	On LH front wheel well	202-1
Rear Lights Check Relay	Mounted on trunk lock support	201-1
Trunk Light Switch	In trunk lid near trunk lock	
C206 (29 pin)	On connector bracket under RH side of dash	206-1
C300 (2 pin)	Near trunk light	
G301 (rear interior ground)	Under LH side of rear seat	208-1

**LIGHTS: TURN/HAZARD WARNING**

Active Check Control Unit	Above rear view mirror	119-1
Combination Switch	On LH side of steering column	209-1
Flasher	Upper part of steering column	208-2
Hazard Switch	To right of instrument cluster	
Power Distribution Box	On LH front wheel well	202-1
C102 (7 pin)	In power distribution box	205-1
C202 (13 pin)	On LH side of steering column	203-2
C206 (29 pin)	On connector bracket under RH side of dash	206-1
G102 (main body ground)	On fender well behind LH head lights	203-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G201 (column ground)	Upper part of steering column	207-2
G301 (rear interior ground)	Under LH side of rear seat	208-1

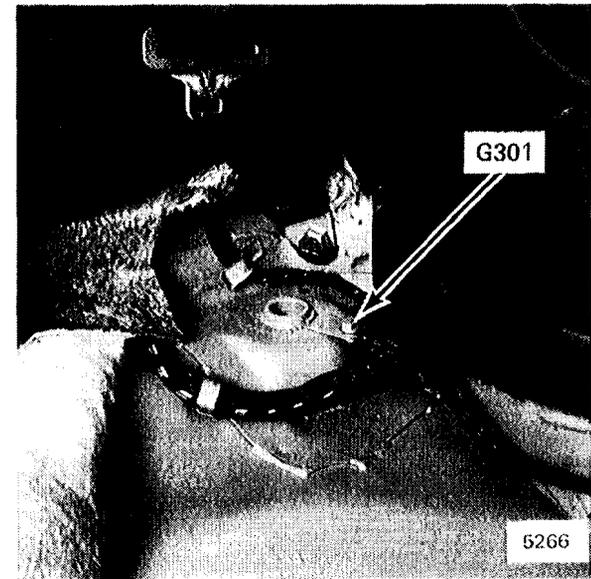


Figure 1 - Under LH Rear Seat

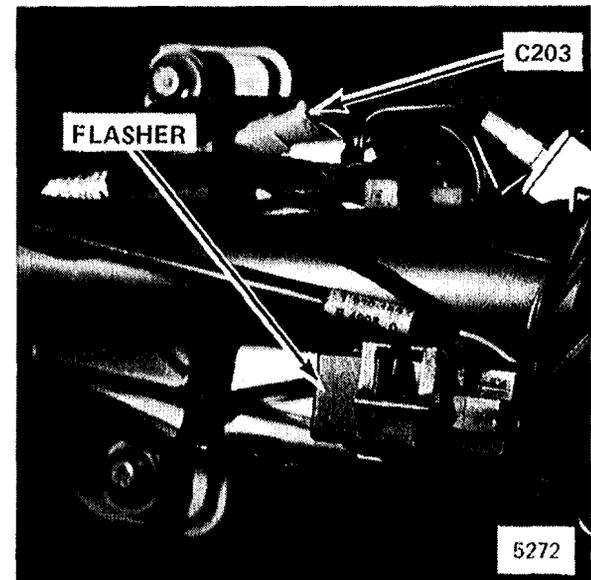


Figure 2 - Upper Part Of Steering Column

**POWER DISTRIBUTION**

Combination Switch .....	On LH side of steering column .....	209-1
Diagnostic Connector.....	LH side of engine .....	103-1
Ignition Switch .....	Upper part of steering column	
Power Distribution Box ....	On LH front wheel well .....	202-1
Starter .....	Lower rear LH side of engine	
C200 (10 pin).....	On LH side of steering column .....	203-2
C202 (13 pin).....	On LH side of steering column .....	203-2
C206 (29 pin).....	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash .....	212-1
G102 (main body ground) .	On fender well behind LH head lights .....	203-1

**POWER MIRRORS**

Mirror Control Switch.....	On driver's door	
Power Distribution Box ....	On LH front wheel well .....	202-1
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C400 (13 pin) .....	Behind LH front speaker	
C500 (6 pin) .....	Behind LH front speaker	
C501 (4 pin) .....	Behind LH front speaker	
C502 (4 pin) .....	Behind RH front speaker .....	213-3
G200 (front interior ground)	Under LH side of dash, near brake bracket	

**POWER WINDOWS**

Power Distribution Box ....	On LH front wheel well .....	202-1
Power Window Circuit Brkr.	Mounted in left under dash cover .....	213-6
Power Window Relay .....	Under LH side of dash .....	212-1
Rear Window Switches ....	In rear doors	
Safety Switch .....	On shift console .....	209-2
Window Console Switches .	On shift console .....	209-2
Window Motors .....	In each door	
C206 (29 pin).....	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash .....	212-1
C400 (13 pin).....	Behind LH front speaker	
C401 (13 pin).....	Behind RH front speaker .....	213-1
C402 (6 pin) .....	At LH rear door grommet	
C403 (6 pin) .....	At RH rear door grommet	
C500 (6 pin) .....	Behind LH front speaker	
G200 (front interior ground)	Under LH side of dash, near brake bracket	

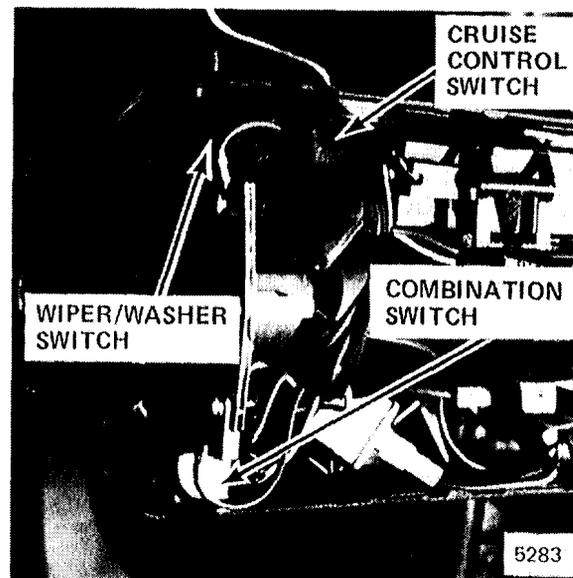


Figure 1 - Upper Part Of Steering Column

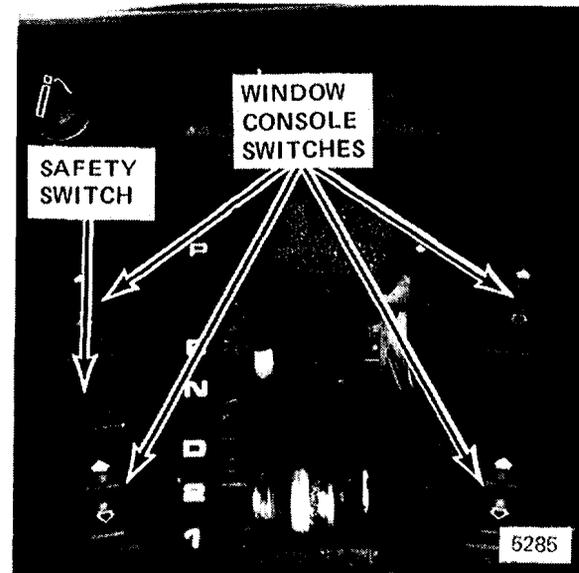


Figure 2 - Shift Console Near Shift Lever

### RADIO/POWER ANTENNA

Fader Control .....	In upper part of center console .....	210-1
Power Distribution Box ....	On LH front wheel well .....	202-1
Radio In-Line Fuse .....	Behind radio	
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C215 (2 pin) .....	Behind radio	
C216 (2 pin) .....	Behind radio	
C217 (2 pin) .....	Behind radio	
C218 (2 pin) .....	Behind radio	
C302 (accessory connector)	Under LH side of dash .....	212-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	

### REAR DEFOGGER

Power Distribution Box ....	On LH front wheel well .....	202-1
Rear Defogger Switch .....	RH side of instrument cluster	
C206 (29 pin) .....	On connector bracket under RH side of dash	206-1
C302 (accessory connector)	Under LH side of dash .....	212-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G301 (rear interior ground)	Under LH side of rear seat .....	208-1

### SPEEDOMETER/GAUGES/WARNING INDICATORS

Active Check Control Unit ..	Above rear view mirror .....	119-1
Brake Fluid Level Switch ...	On brake fluid reservoir, at LH rear of engine	214-1
Coolant Temperature Sender	On thermostat housing, front of engine .....	206-2
Diagnostic Connector .....	LH side of engine .....	103-1
Fuel Tank Sender .....	Top RH side of fuel tank, under trunk .....	213-5
Ignition Switch .....	Upper part of steering column	
Motronic Control Unit .....	Above glove box .....	204-1
Oil Pressure Switch .....	RH side of engine, below oil filter .....	210-2
Park Brake Switch .....	In shift console at base of parking brake	
Power Distribution Box ....	On LH front wheel well .....	202-1
Speedometer Sender .....	In rear of differential	
C101 (17 pin) .....	In power distribution box .....	205-1
C103 (6 pin) .....	RH side of dash near Motronic control unit	204-1
C200 (10 pin) .....	On LH side of steering column .....	203-2
C211 (1 pin) .....	Under LH side of dash taped to harness	
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G301 (rear interior ground)	Under LH side of rear seat .....	208-1

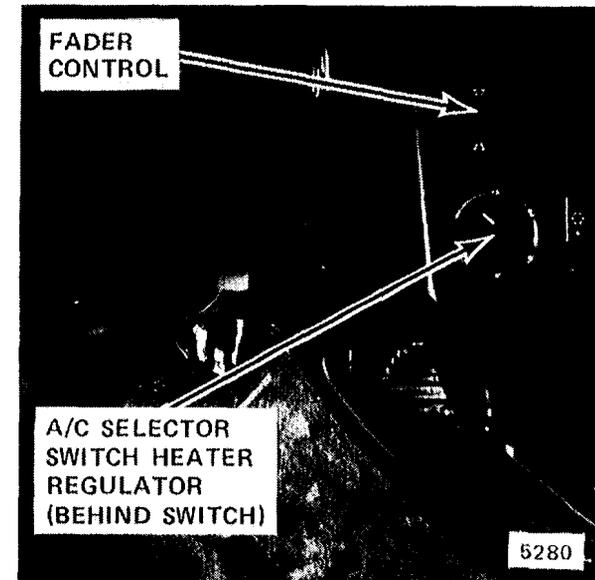


Figure 1 - Upper Console Below Dash

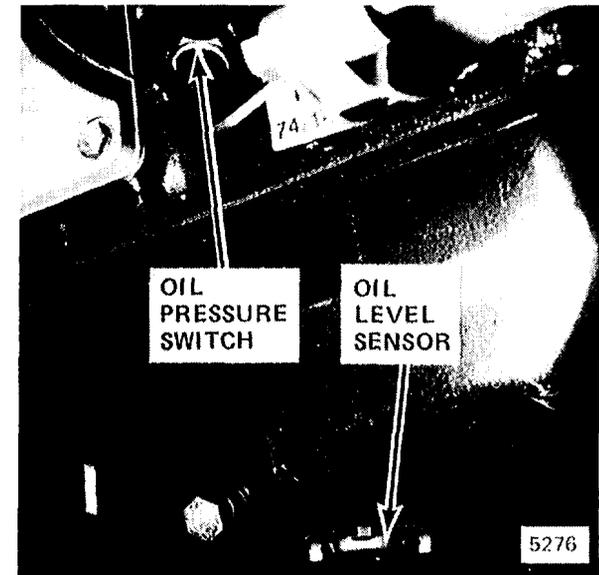


Figure 2 - RH Side Of Oil Pan

**START**

Auto. Trans. Range Switch .	On LH side of shift lever	
Cold Start Valve .....	RH side of engine .....	212-4
Diagnostic Connector.....	LH side of engine .....	103-1
Ignition Switch .....	Upper part of steering column	
Power Distribution Box ....	On LH front wheel well .....	202-1
Start Relay .....	On connector bracket under LH side of dash	206-1
Starter .....	Lower rear LH side of engine	
Thermo-Time Switch .....	On front of thermostat housing .....	211-2
C101 (17 pin) .....	In power distribution box .....	205-1
C200 (10 pin) .....	On LH side of steering column .....	203-2
C213 (1 pin) .....	Near start relay under LH side of dash.....	213-2
G102 (main body ground) .	On fender well behind LH head lights .....	203-1
G200 (front interior ground)	Under LH side of dash, near brake bracket	

**WIPER-WASHER**

Power Distribution Box ....	On LH front wheel well .....	202-1
Washer Pump .....	Forward of RH front wheel well, in reservoir	211-1
Wiper Motor .....	Above brake master cylinder	
Wiper/Washer Switch .....	On RH side of steering column.....	209-1
C201 (6 pin) .....	On LH side of steering column .....	203-2
G200 (front interior ground)	Under LH side of dash, near brake bracket	
G201 (column ground) ....	Upper part of steering column .....	207-2

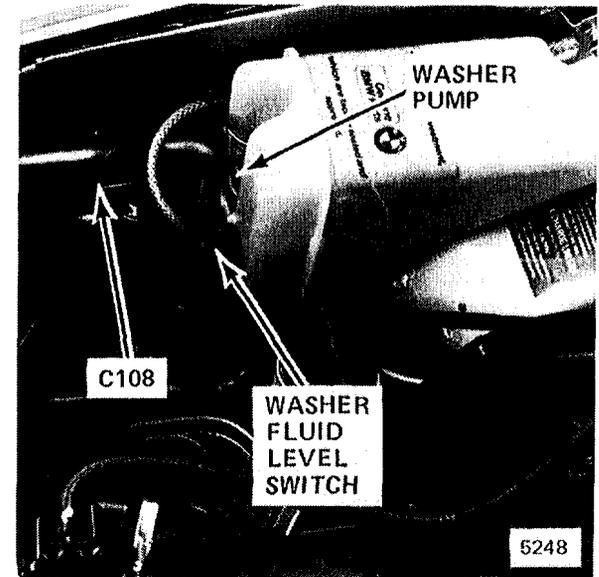


Figure 1 - Forward Of Washer Reservoir

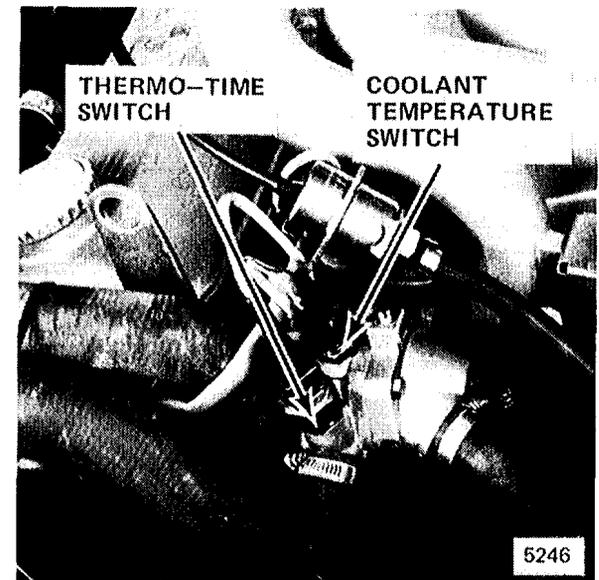


Figure 2 - Top Front Of Engine

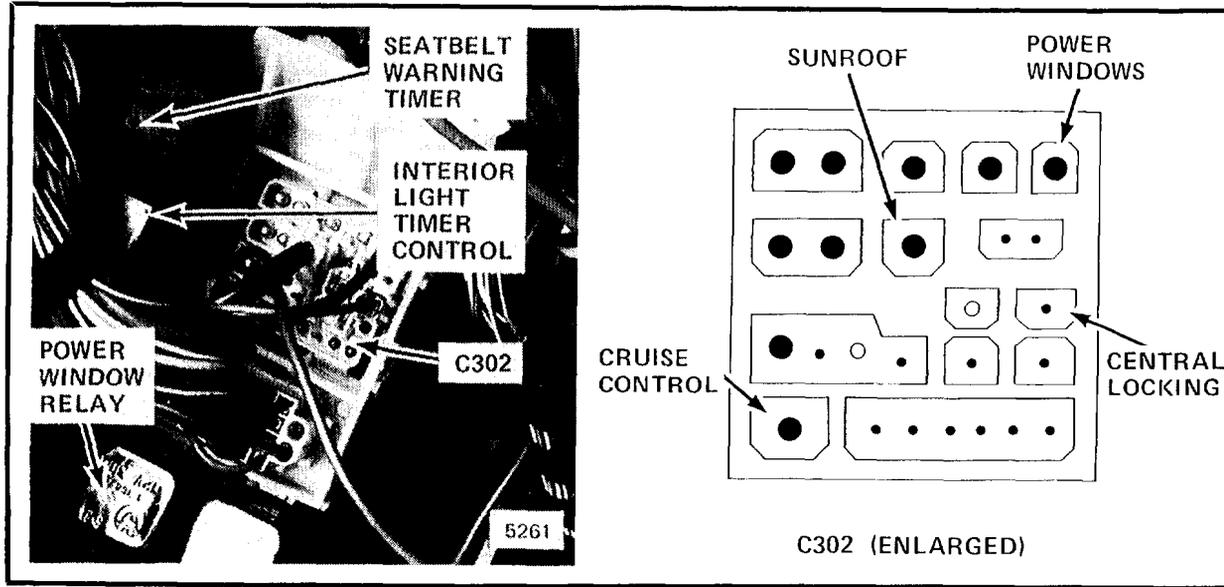


Figure 1 - Lower LH Side Of Dash

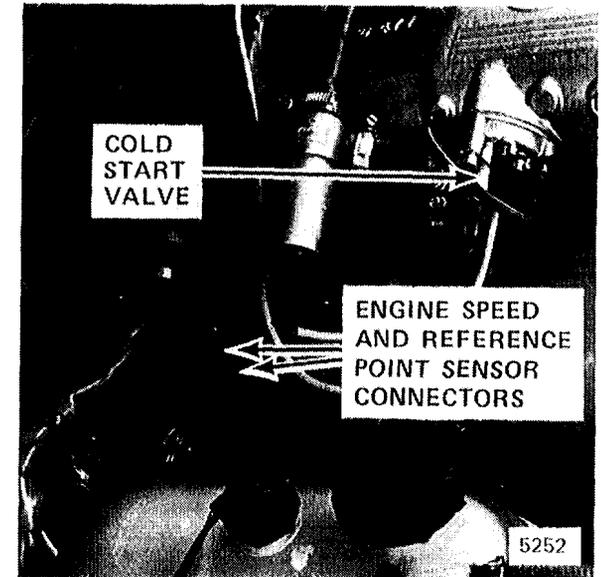


Figure 4 - RH Rear Side Of Engine



Figure 2 - Top Front LH Side Of Engine

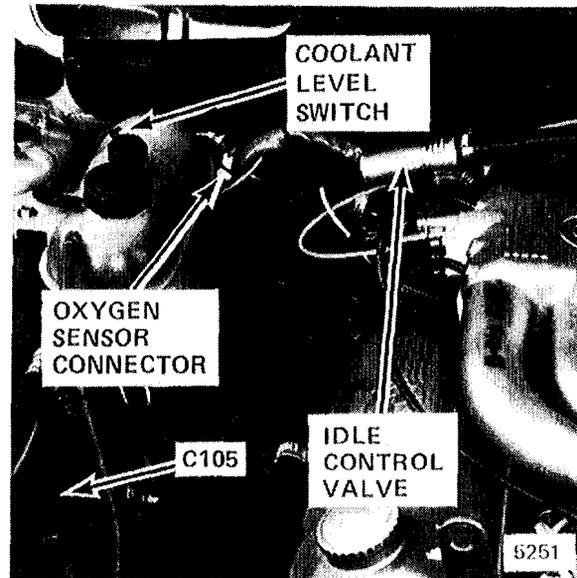


Figure 3 - Left Of RH Front Wheel Well

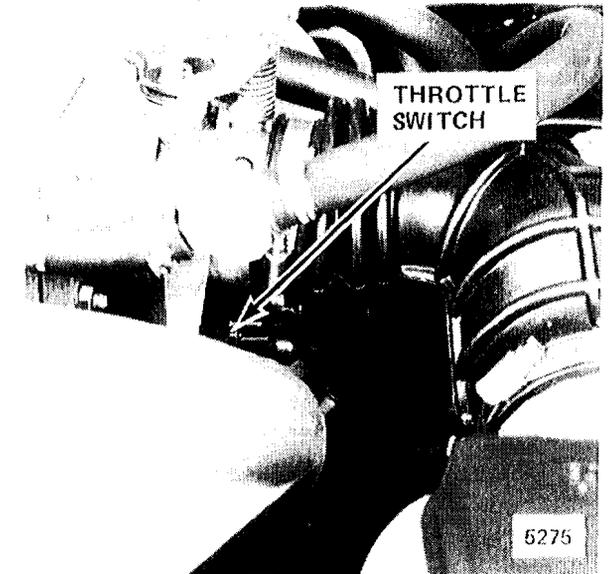


Figure 5 - Below Throttle

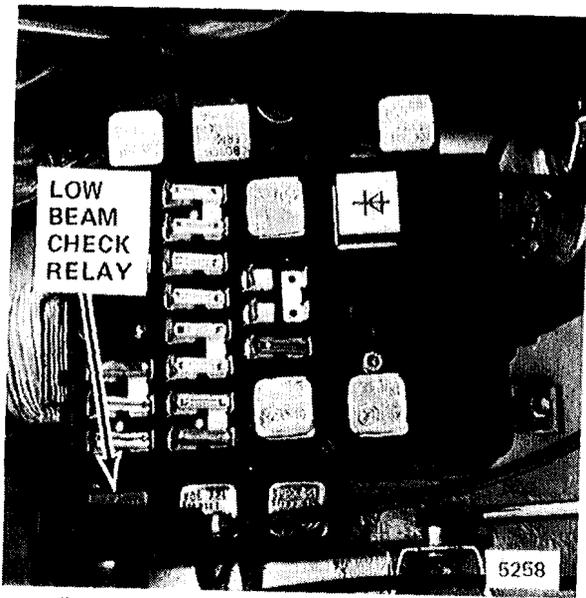


Figure 1 - Top Of LH Front Wheel Well

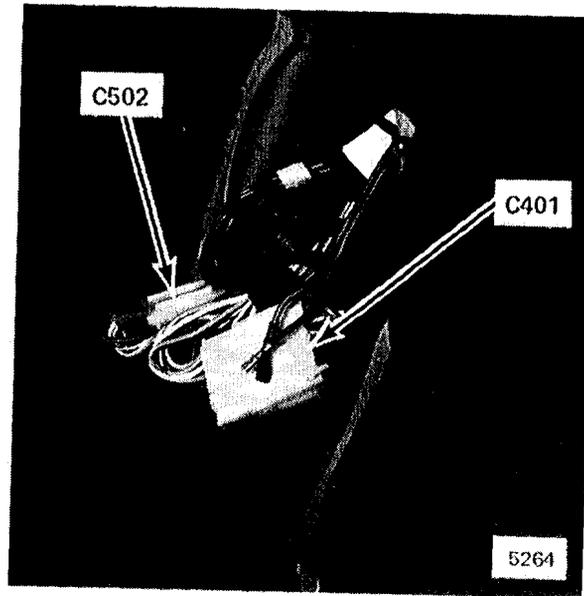


Figure 3 - RH Shroud

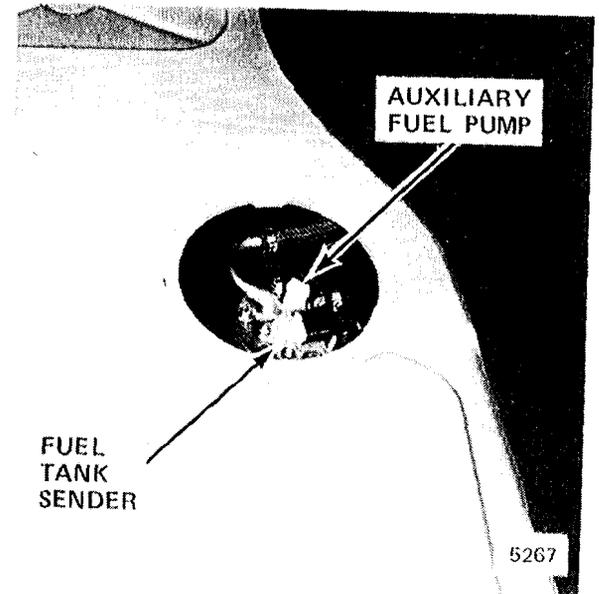


Figure 5 - Bottom RH Side Of Trunk

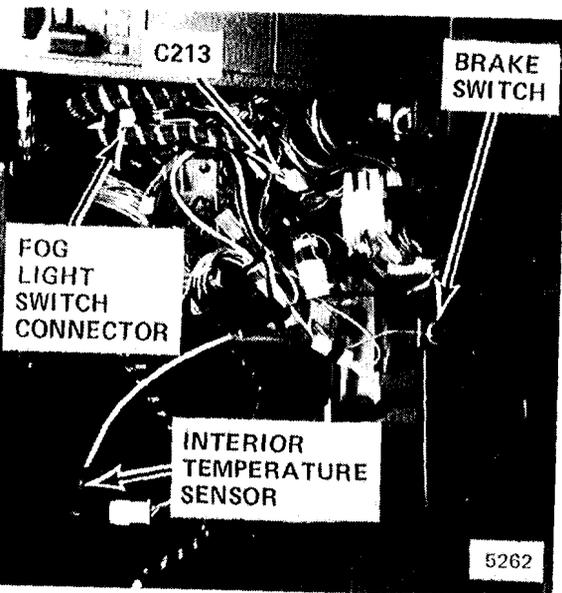


Figure 2 - Lower LH Side Of Dash



Figure 4 - Inside Driver's Door

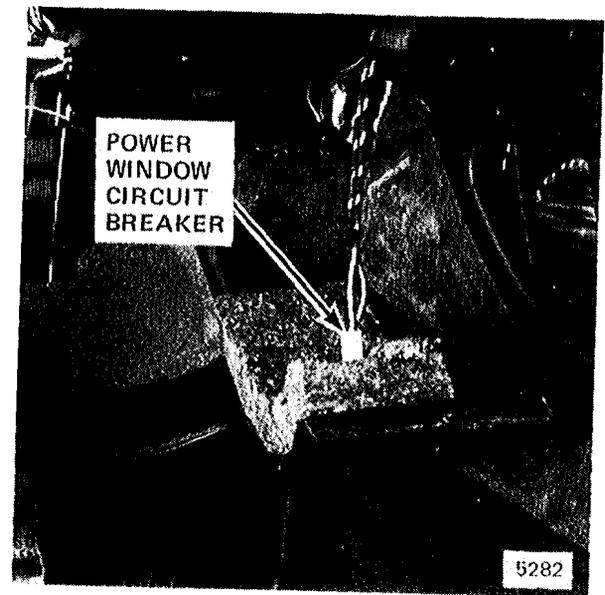


Figure 6 - Left Of Upper Console

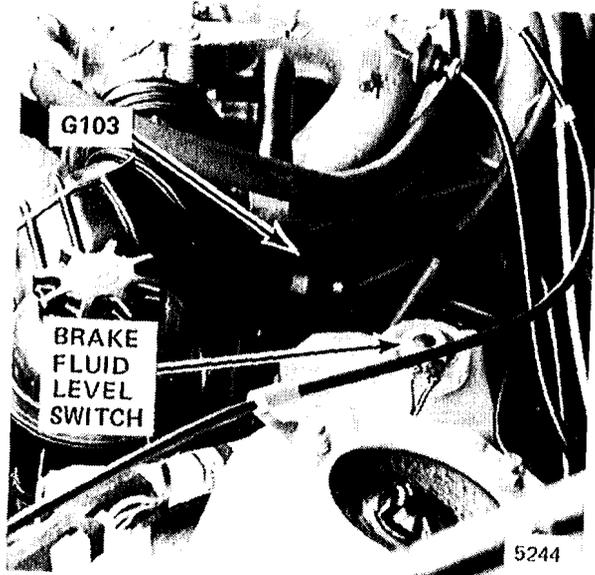


Figure 1 - LH Rear Side Of Engine

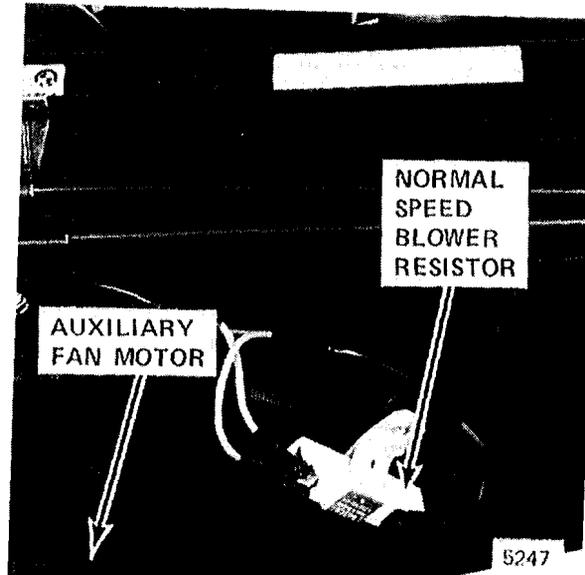


Figure 3 - Forward Of Radiator

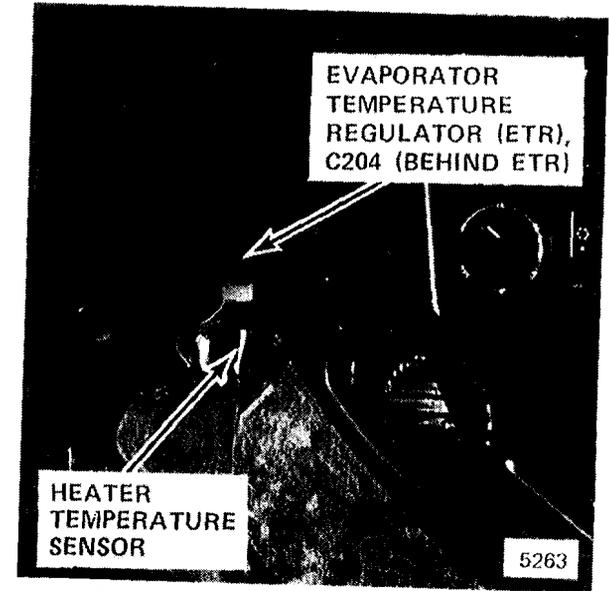


Figure 5 - LH Side Of Upper Console

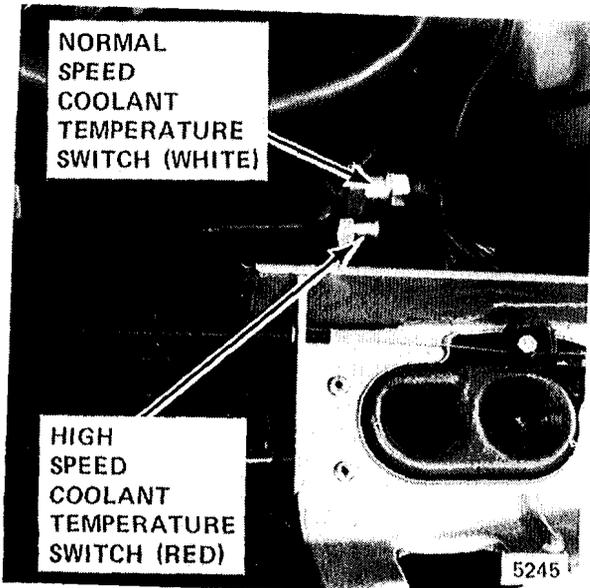


Figure 2 - LH Side Of Radiator

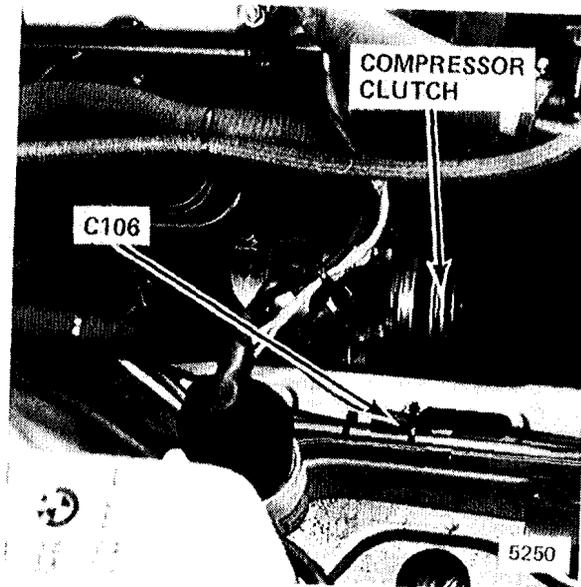


Figure 4 - Below Washer Reservoir



Figure 6 - RH Side Of Upper Console





