

1982
BMW 733i
Electrical
Troubleshooting
Manual

BMW of North America, Inc. Montvale, New Jersey

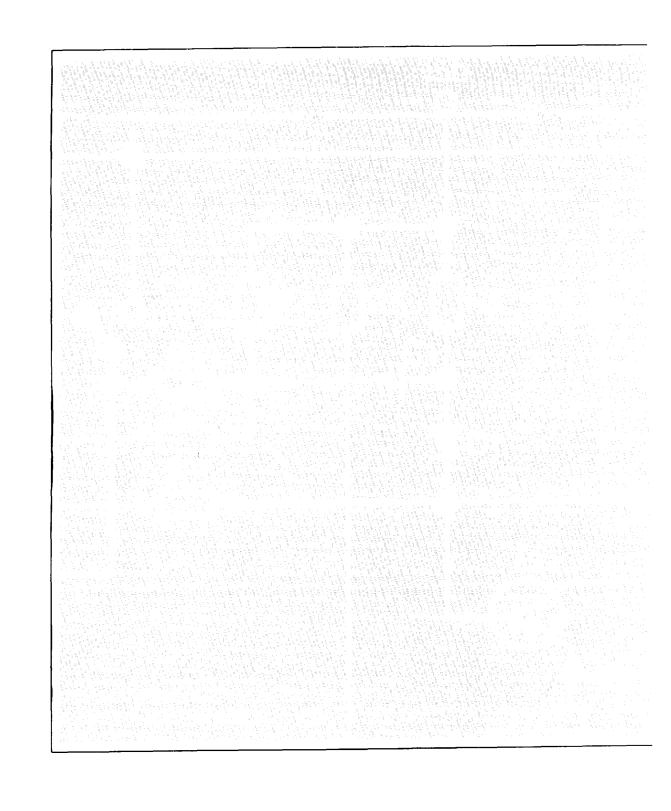
#### **FOREWORD**

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

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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.

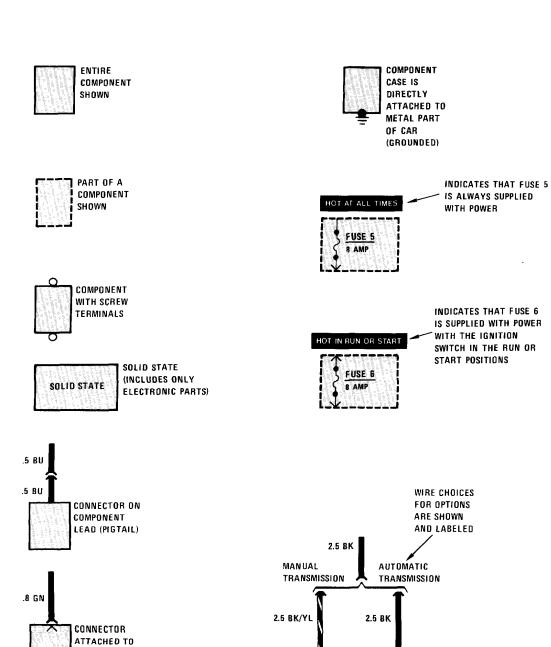
The power distribution schematic shows the current feed through all the connections from the Battery and Alternator to each fuse and the Ignition and Light Switches. If the Power Distribution schematic is combined with any other circuit schematic, a complete picture is made of how that circuit works.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

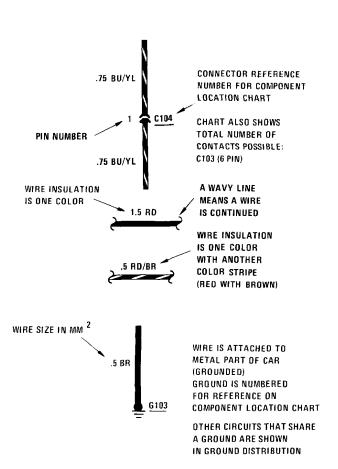
All wiring between components is shown exactly as it exists in the vehicle; however, the wiring is not drawn to scale. To aid in understanding electrical operation, wiring inside complicated components has been simplified. The "Solid State" label designates electronic components.

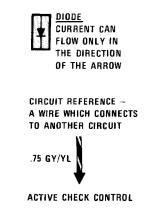
WIRE SIZE CONVERSION CHART			
METRIC (CROSSECTIONAL AREA IN MM²)	AWG (AMERICAN WIRE GAUGE)		
.5 .75 1 1.5 2 2.5 4 6 8 16 20 25 32	20 18 16 14 12 10 8 8 4 4 2 2		

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

COMPONENT







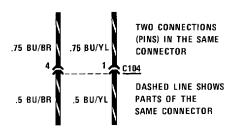


ONE POLE, TWO POSITION SWITCH

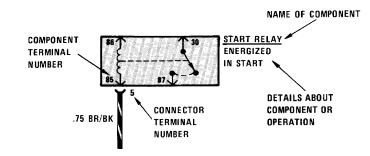


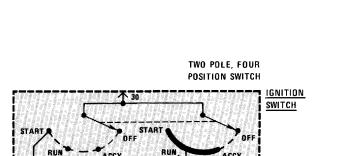
SWITCHES THAT **MOVE TOGETHER** DASHED LINE SHOWS A MECHANICAL CONNECTION

BETWEEN SWITCHES

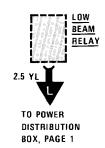


COIL

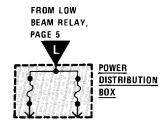


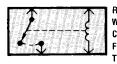






**CURRENT PATH** IS CONTINUED AS LABELED. THE ARROW SHOWS DIRECTION OF CURRENT FLOW AND IS REPEATED WHERE CURRENT PATH CONTINUES.



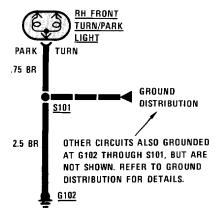


WHEN COIL IS ENERGIZED, SWITCH IS PULLED CLOSED



RESISTOR ACROSS COIL IS FOR NOISE SUPPRESSION







#### 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

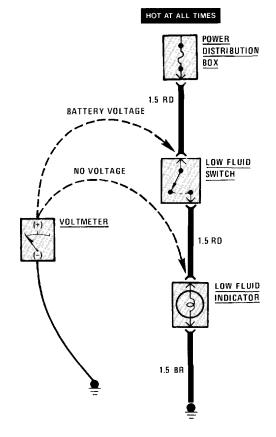
Isolating the problem (Step 3 of TROUBLESHOOTING PROCEDURES) requires the use of a voltmeter and/or ohmmeter. A voltmeter measures voltage at selected points in a circuit. An ohmmeter measures a circuit's resistance to current flow. It has an internal battery that provides current to the circuit under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

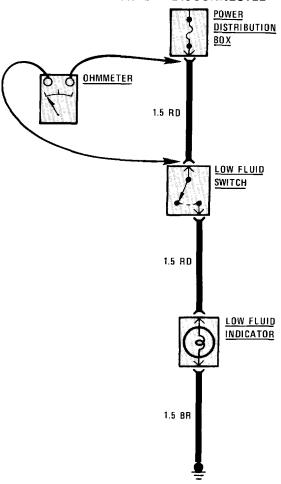
# HOT AT ALL TIMES DISTRIBUTION BOX 1.5 RD VOLTMETER LOW FLUID SWITCH 1.5 RD LOW FLUID INDICATOR 1.5 BR

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.

#### **BATTERY DISCONNECTED**

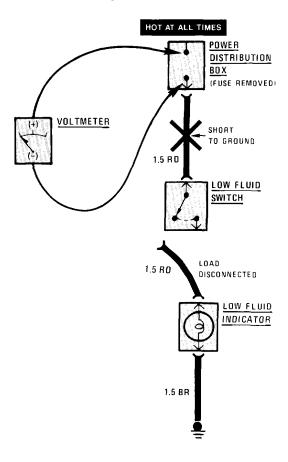


Continuity Test

## 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.



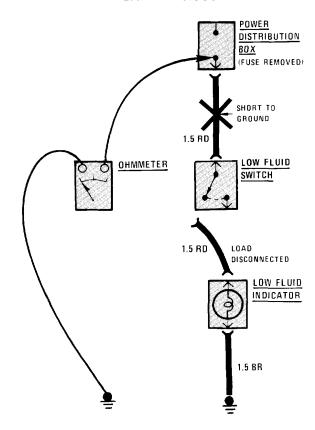
Short Test Using Voltmeter

#### Short Test Using Ohmmeter

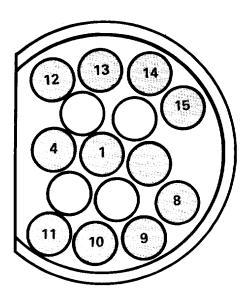
Disconnect the battery. Adjust the ohmmeter to read zero while holding the leads together. Remove the blown fuse and disconnect the load. Connect one lead of the ohmmeter to the fuse terminal that is closest to the load. Connect the other lead to a known good ground.

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.

#### **BATTERY DISCONNECTED**



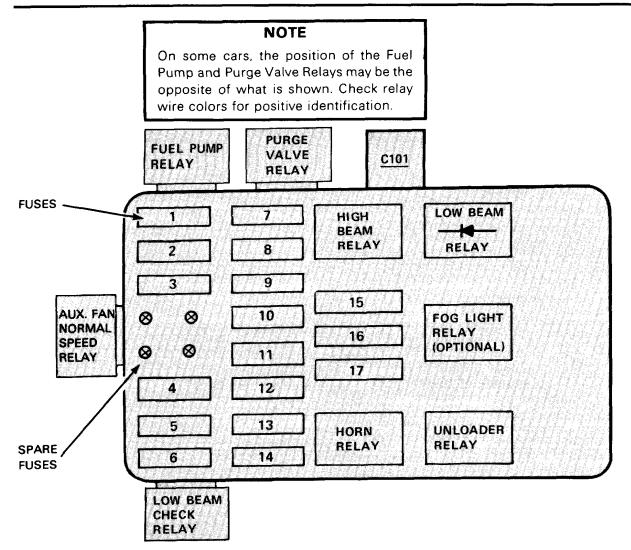
Short Test Using Ohmmeter





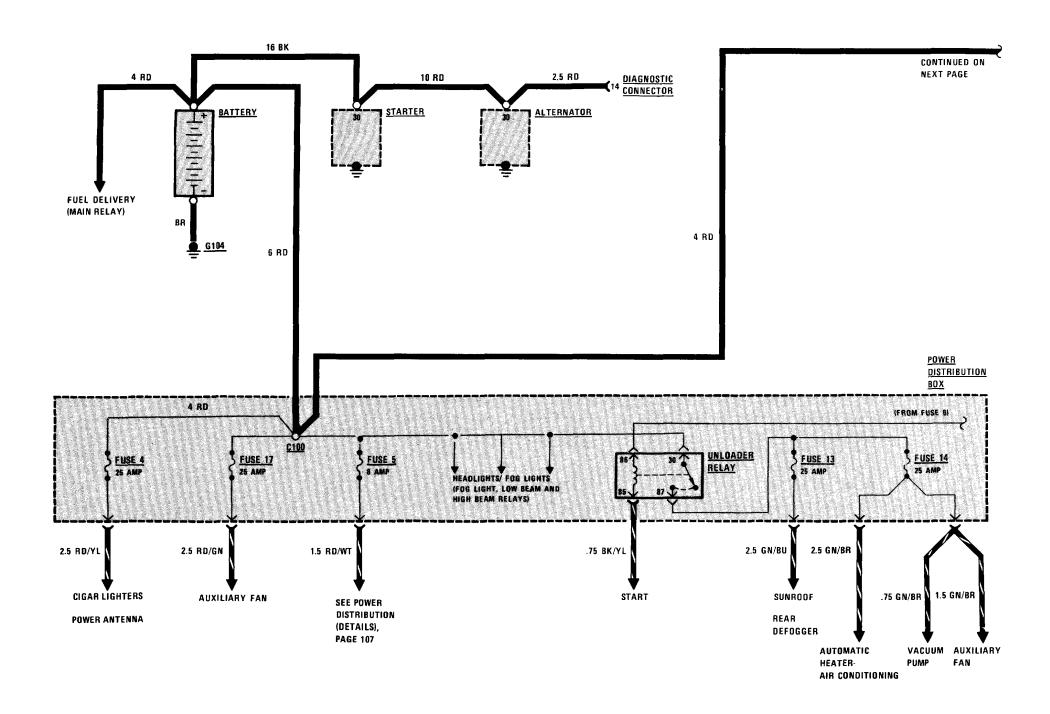
# DIAGNOSTIC CONNECTOR (TOP FRONT OF ENGINE)

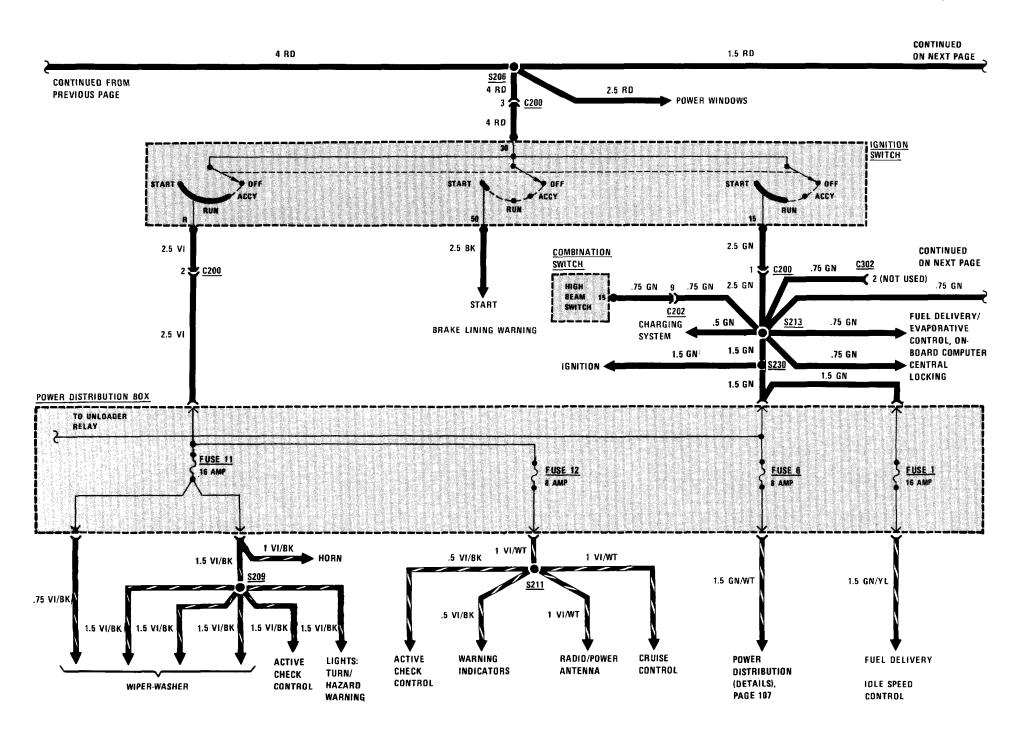
PIN	WIRE SIZE	WIRE COLOR	CIRCUIT AND COMPONENT CONNECTED
1	1.5	BR	Ground.
4	.5	BR/WT	Gauges/Warning Indicators, Coolant Temperature Sender.
8	.5	YL	Ignition, TDC Sensor.
9		SHIELD	Ignition, TDC Sensor.
10	.5	BK	Ignition, TDC Sensor.
11	2.5	BK/YL	Start, Start Signal.
12	.75	BU	Charge System, Alternator.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

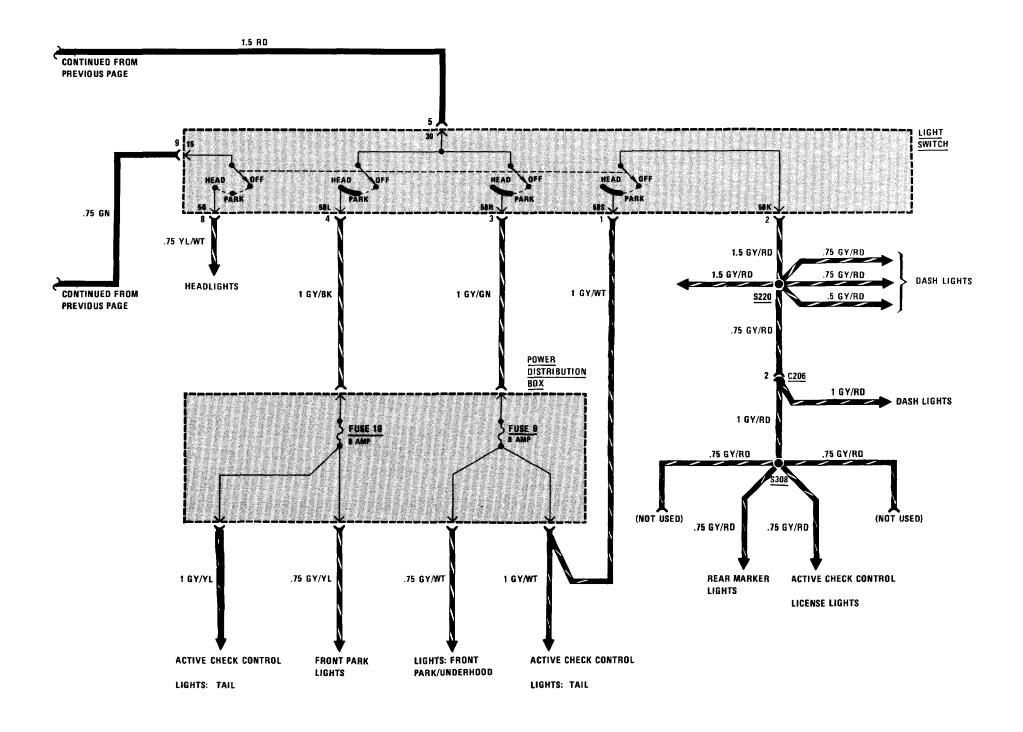


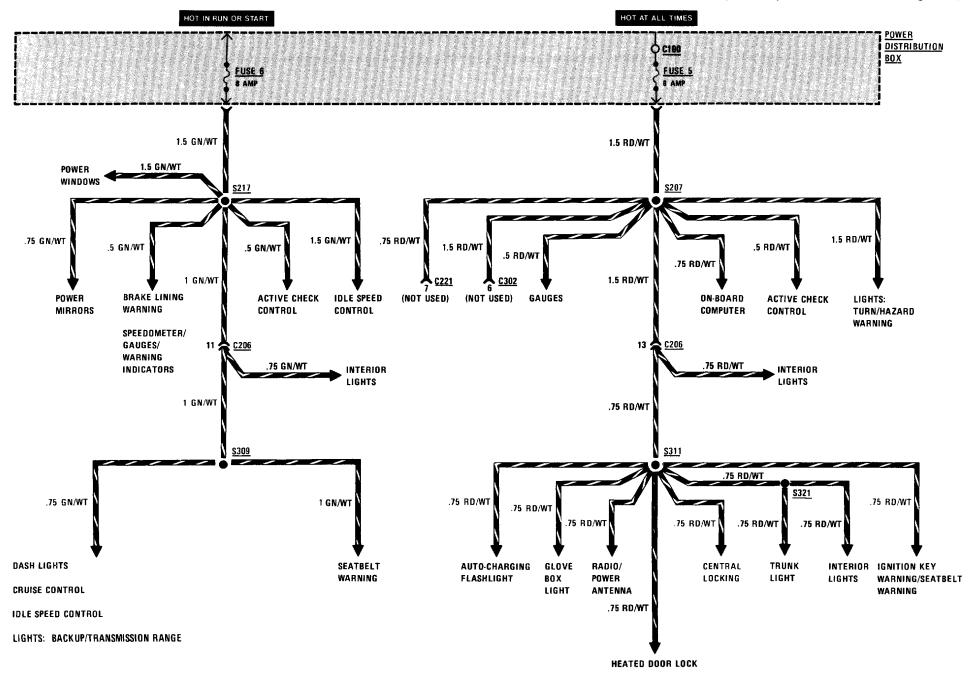
FUSE NO.	SIZE/ COLOR	CIRCUITS PROTECTED	SCHEMATIC PAGE
1	16A(RD)	Fuel Delivery/Evaporative Control; Idle Speed Control.	110 112
2	8A(WT)	Headlights (RH Low Beam).	127
3	8A(WT)	Headlights (LH Low Beam).	127
4	25(BU)	Cigar Lighters.	137
5	8A(WT)	Active Check Control; Auto-Charging Flashlight; Central Locking; 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

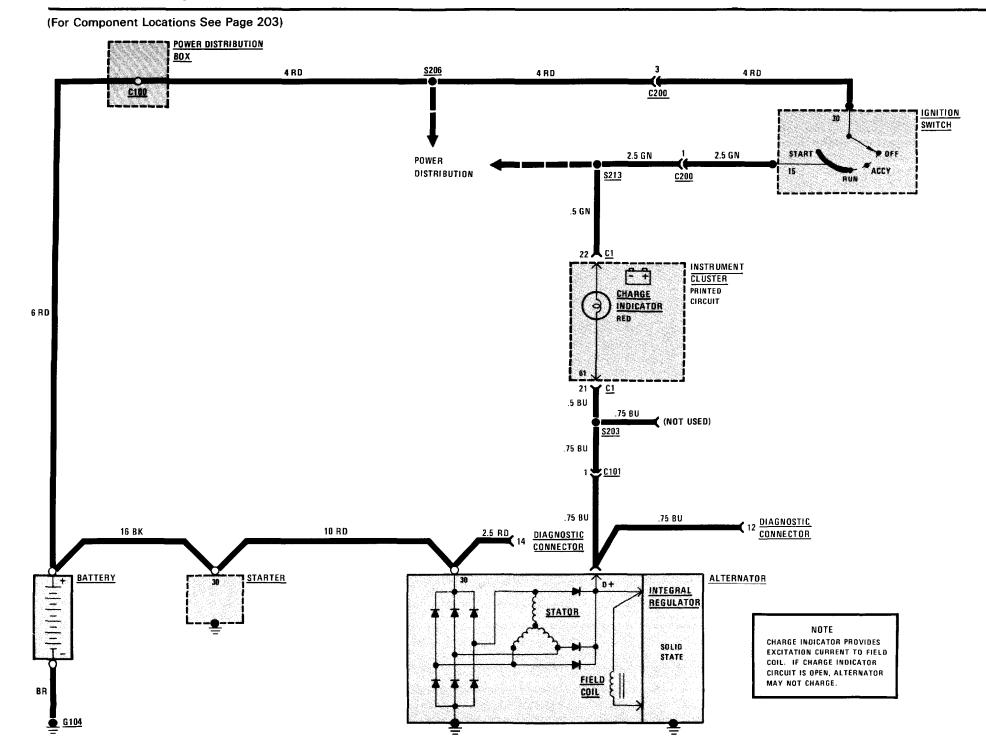
FUSE NO.	SIZE/ COLOR	CIRCUITS PROTECTED	SCHEMATIC PAGE
7	8A(WT)	Headlights (LH, RH High Beams)	127
8	8A(WT)	Headlights (LH, RH High Beams)	127
9	8A(WT)	Active Check Control; Dash Lights; Lights: Front Park/Tail/Underhood; Lights: Rear Marker/License.	122 134 130 131
10	8A(WT)	Active Check Control; Lights: 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)		Auxiliary Fan.	146

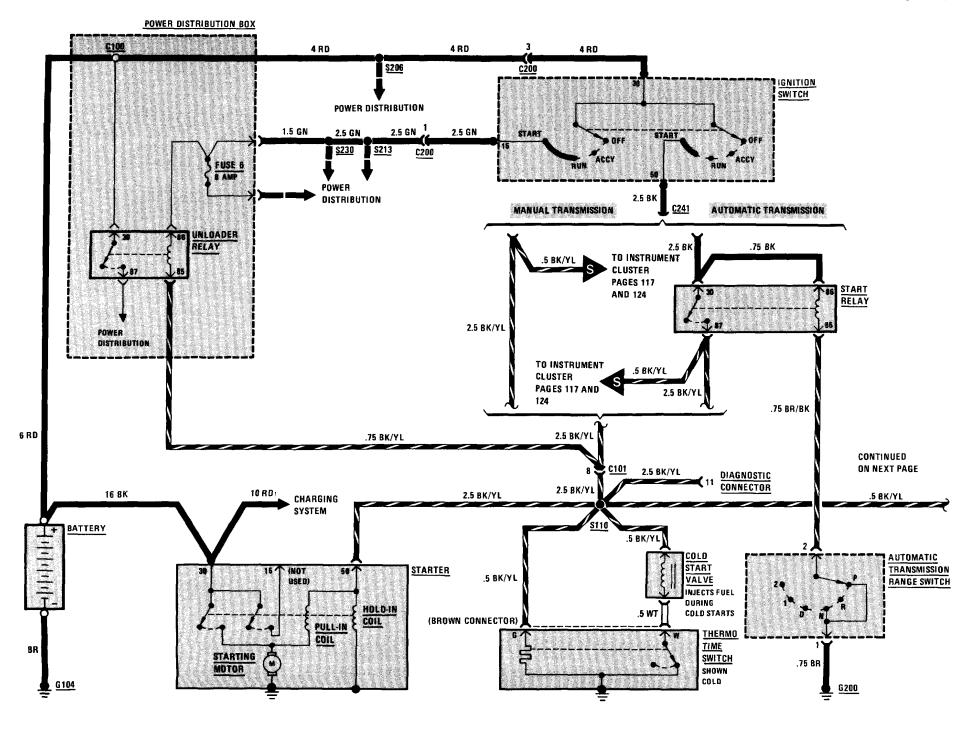


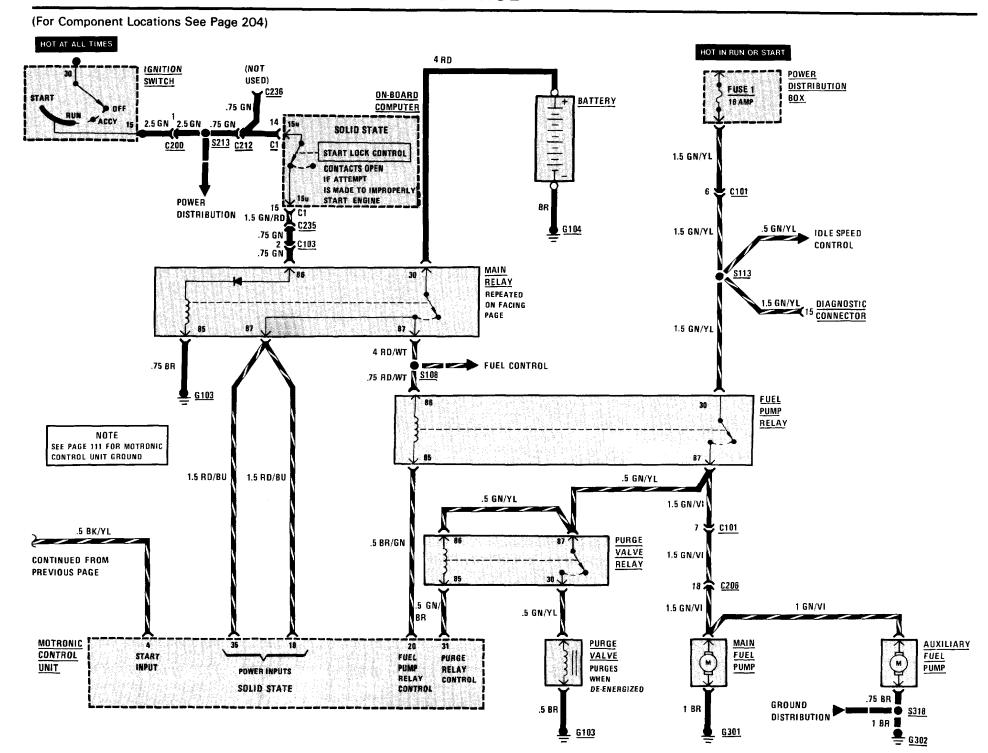


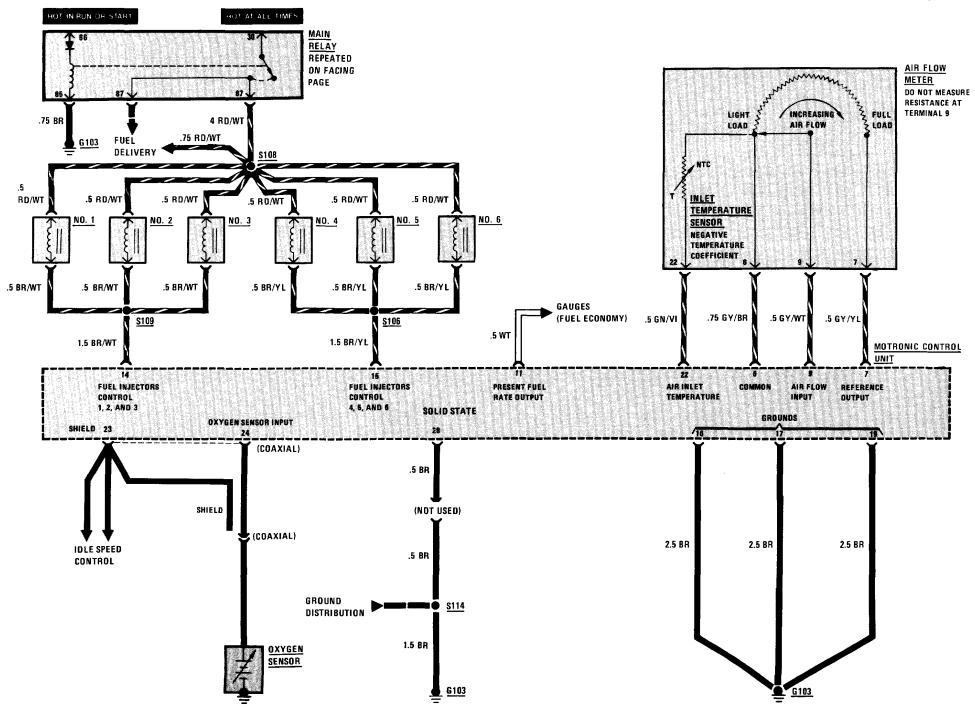


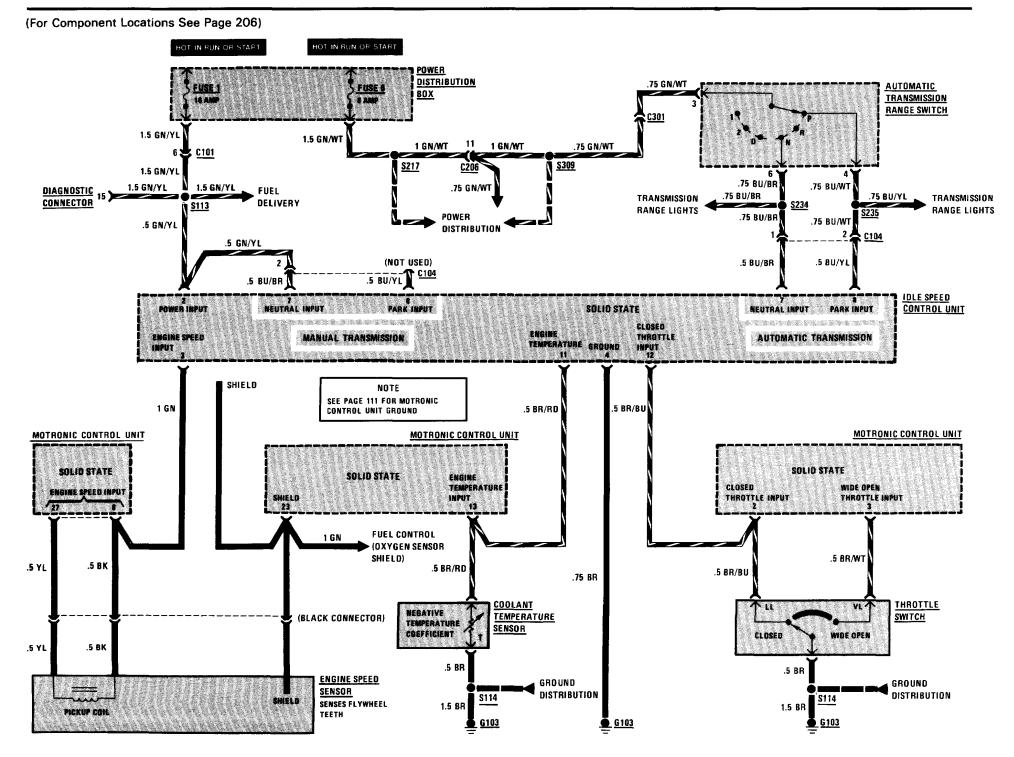












IGNITION

SWITCH

HOT AT ALL TIMES

DISTRIBUTOR

SPARK PLUGS

DIAGNOSTIC CONNECTOR

.5 YL

SHIELD

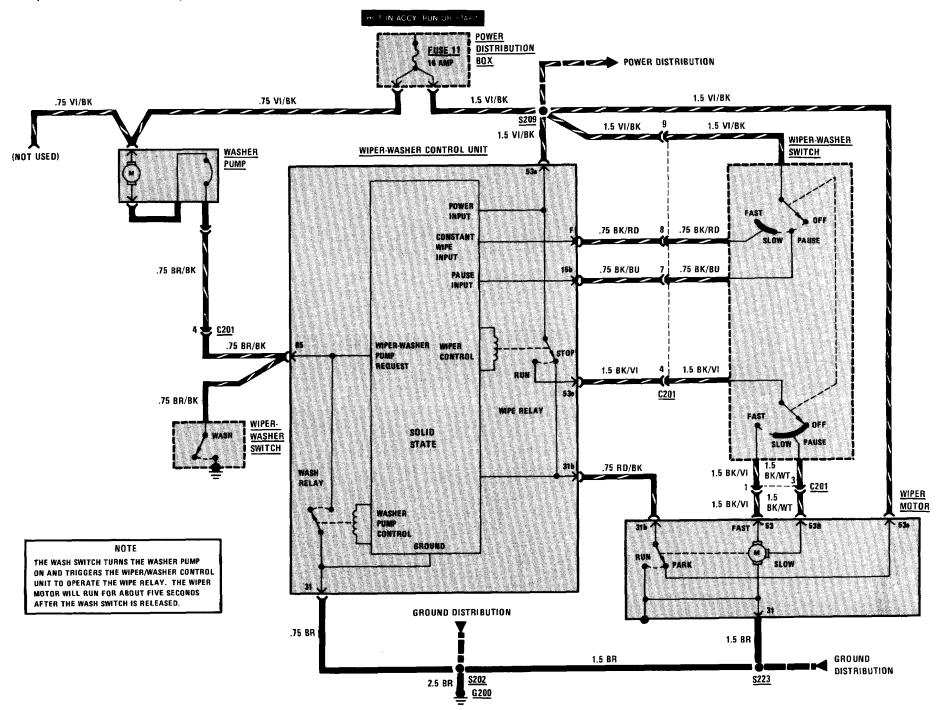
.5 BK

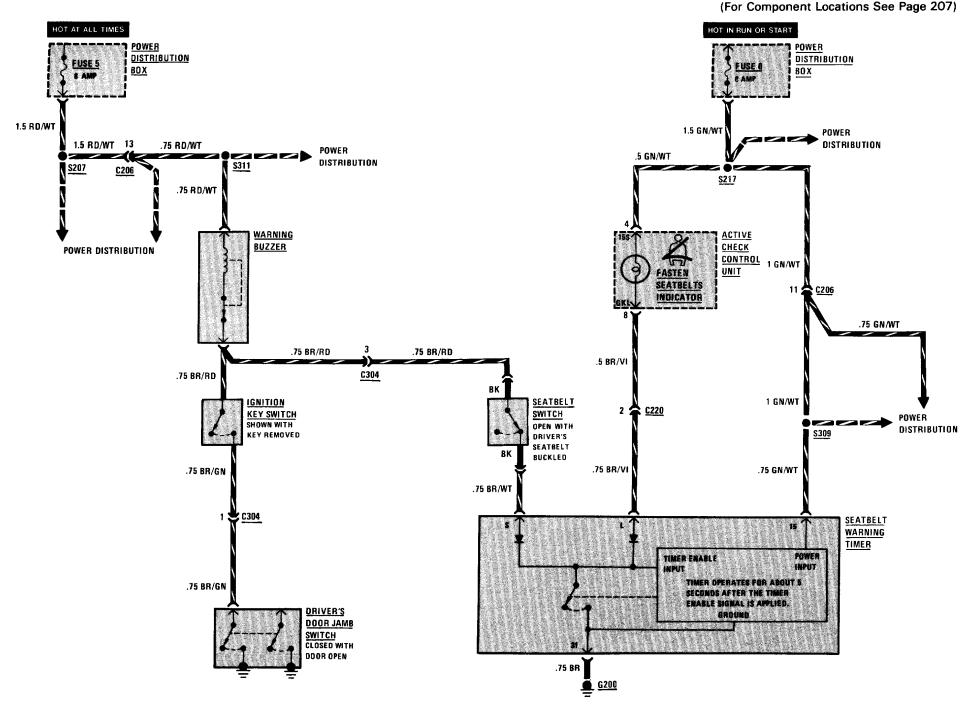
PICKUP COIL

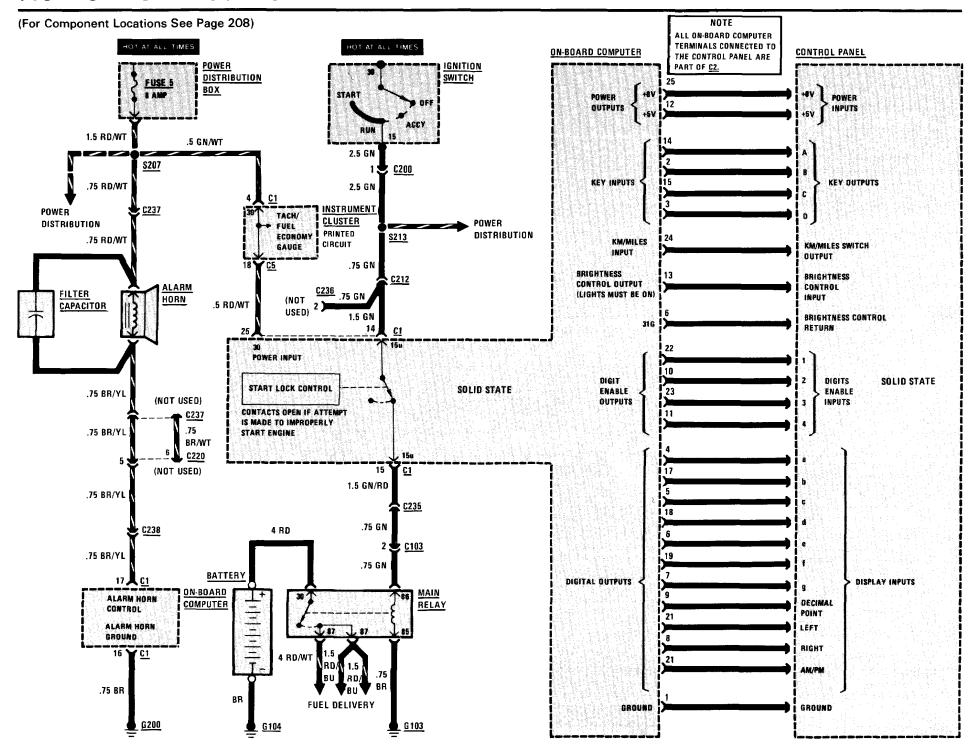
SENSOR

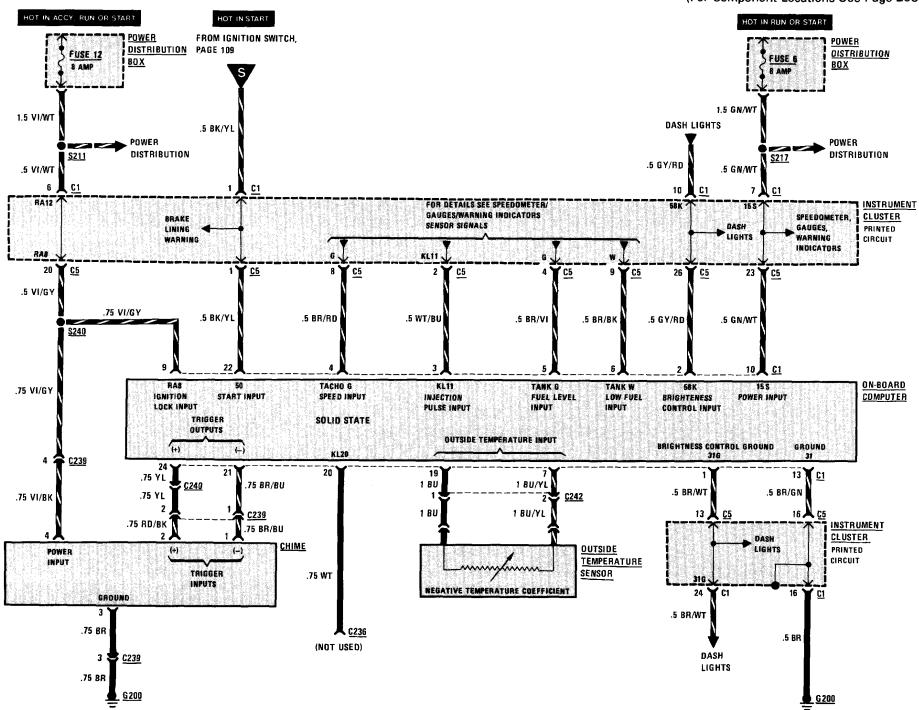
2.5 GN

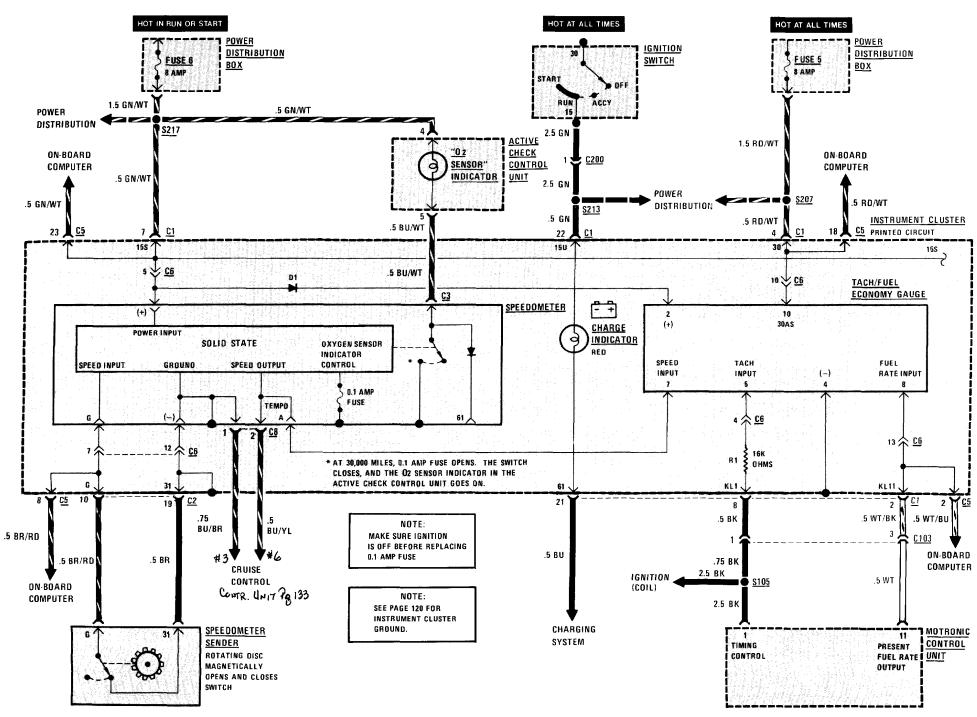
(For Component Locations See Page 206) (For Component Locations See Page 206) HOT IN RUN OR START **FUNCTION SELECTOR POWER** DISTRIBUTION FUSE 6 INT AIR, BI-LEVEL OR 2.5 GN 2.5 GN BOX B AMP AUTO SELECT OUTPUT <u>S230</u> <u>\$213</u> C200 1.5 GN/WT 1.5 GN DISTRIBUTION .75 GN/WT .75 RD/ POWER DISTRIBUTION .75 RD/WT TEMPERATURE SWITCH 12 🕿 <u>C101</u> OPENS ABOVE AUTOMATIC .75 GY/BU 0° C (32° F) HEATER-AIR 2.5 GN CONDITIONER .75 GN/WT 5 春 C103 .5 BR/WT IGNITION **IDLE SPEED** .5 BU/GN COIL CONTROL UNIT O'C (32'F) TEMPERATURE A/C "ON" INPUT PRIMARY SECONDARY SOLID STATE COOLANT TEMPERATURE IDLE RPM CONTROL SWITCH INPUT DIAGNOSTIC 13 .75 BK \_.75 BK CONNECTOR C109 .75 BK GAUGES (TACHOMETER) <u>S105</u> 2.5 BK 1.5 BR .5 BU/RD MOTRONIC <u>€ G103</u> TIMING CONTROL CONTROL UNIT SOLID STATE .5 BU/BK .5 WT REFERENCE POINT INPUT GROUND NOTE SEE PAGE 111 FOR MOTRONIC IDLE CONTROL UNIT GROUND .5 YL .5 BK CONTROL VALVE COOLANT TEMPERATURE (GRAY CONNECTOR) 1.5 BR **OPENS BELOW** .5 YL .5 BK 113' F (45' C) .5 BR REFERENCE GROUND S114 POINT DISTRIBUTION SHIELD SENSOR 1.5 BR PICKUP COIL <u>€ G103</u> <u>G 103</u>



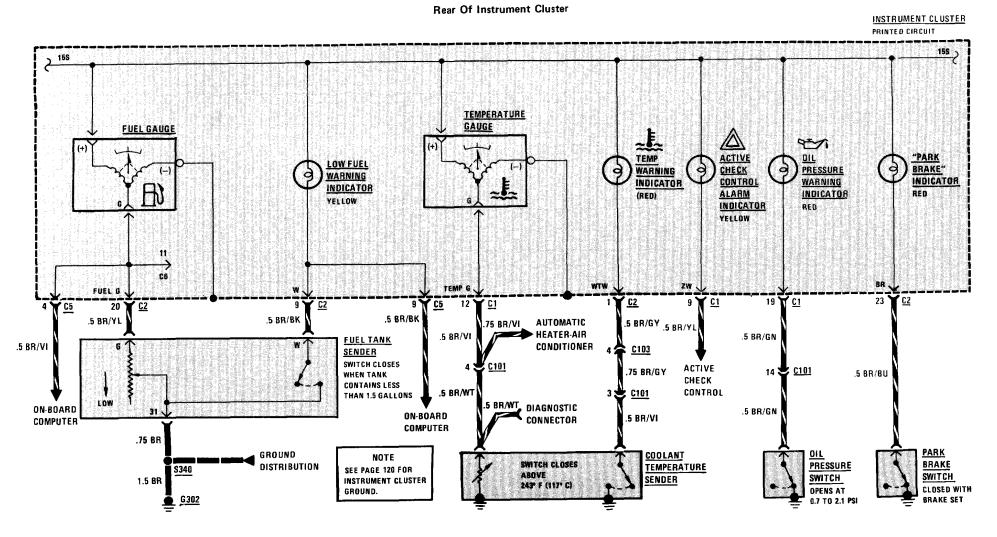


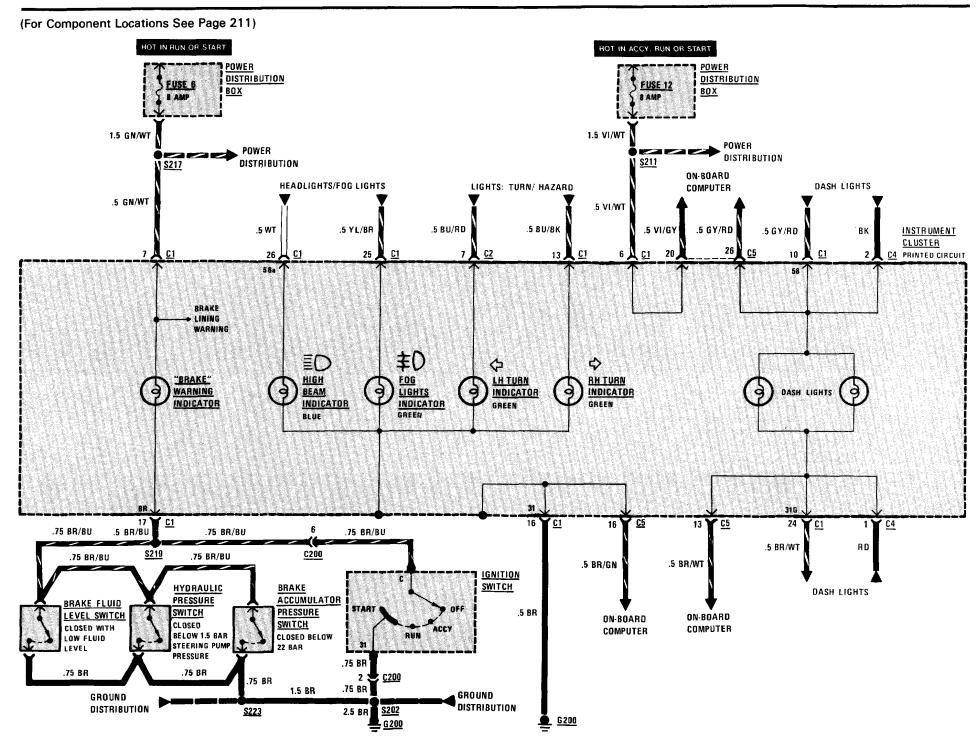






(For Component Locations See Page 211) TACH/FUEL (YELLOW) **ECONOMY GAUGE** .01 AMP FUSE (UNSNAP COVER, PULL FUSE TO REMOVE) C1 (BLUE) C4 - SPEEDOMETER (BLACK) **TRANSMISSION** C2 RANGE (WHITE) **DISPLAY** 5353 C3 **C8** (WHITE)



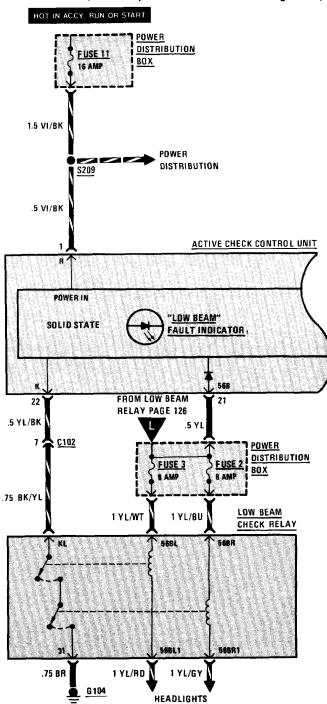


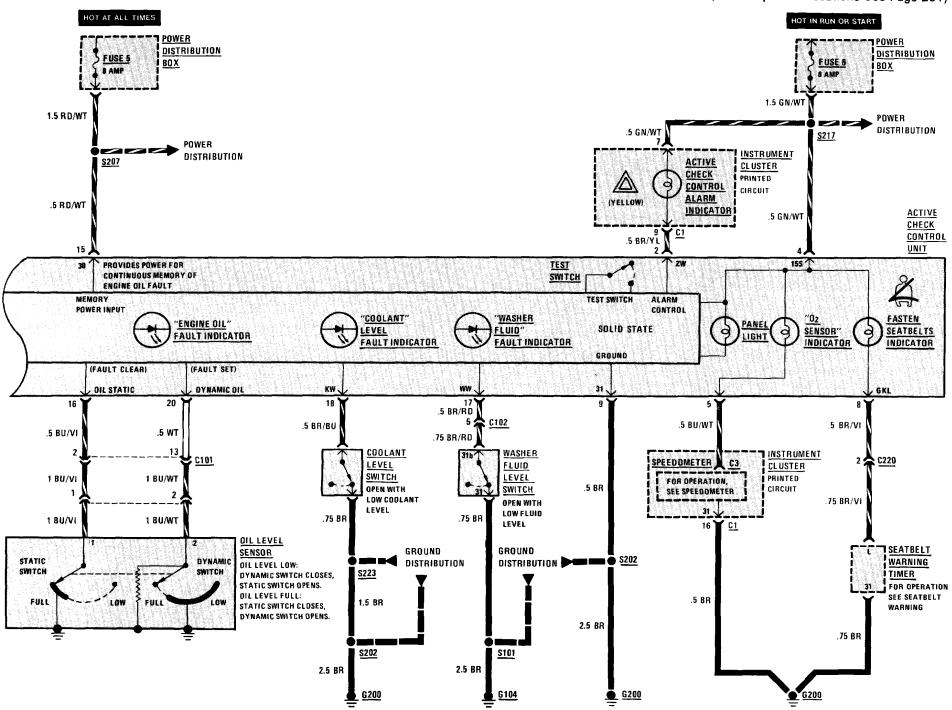
## **ACTIVE CHECK CONTROL**

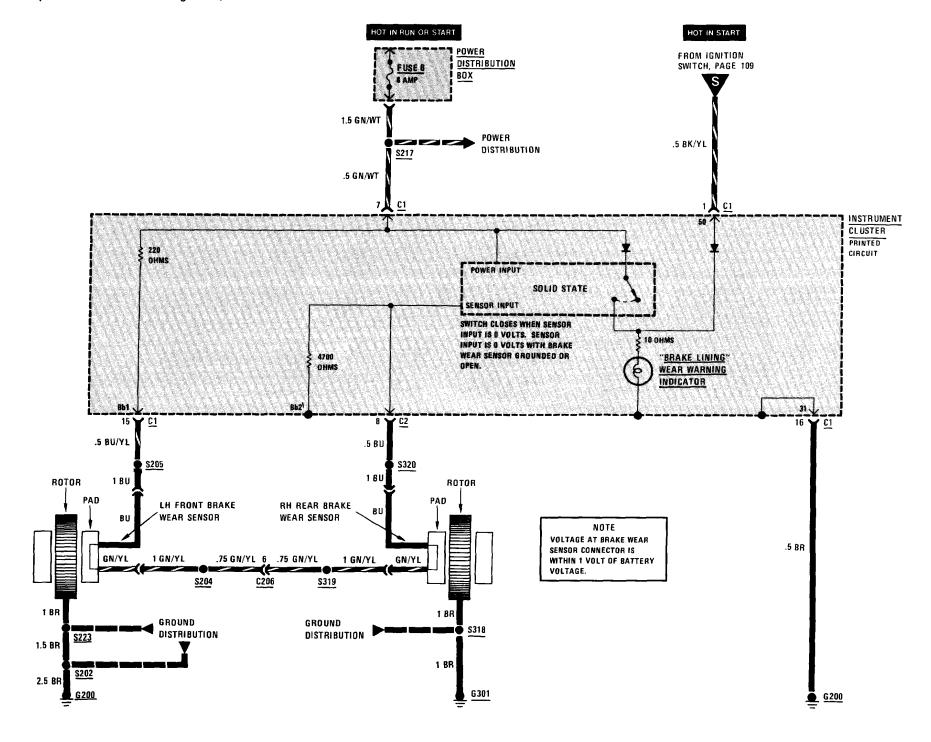
- 1. When the Ignition Switch is initially placed in "Run," the Active Check Control Alarm Indicator flashes, and the Active Check Control Unit Brake Light LED and panel light illuminate for test purposes. Depressing the brake pedal clears the display.
- When the Ignition Switch is placed in "Run," fault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

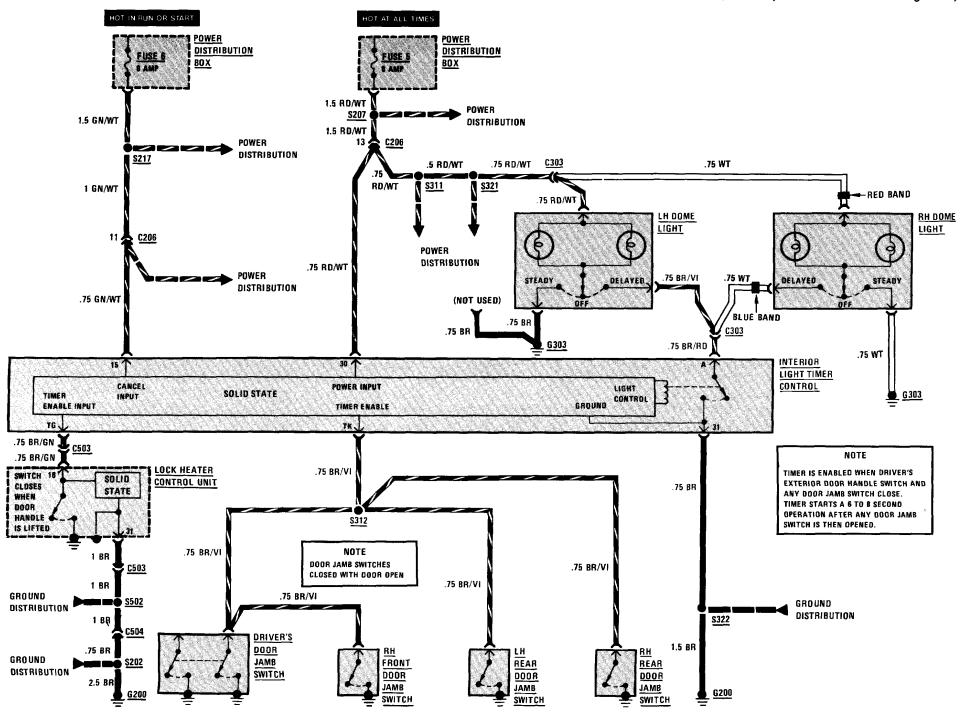


Figure 1 - Active Check Control Unit
(Dash, Left Of Steering Column)

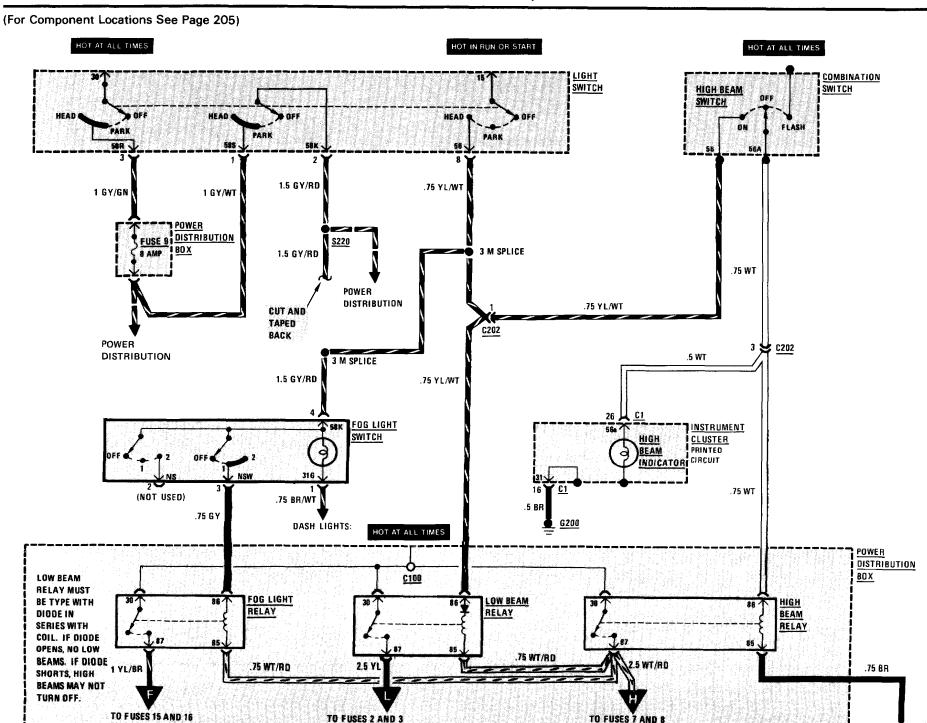








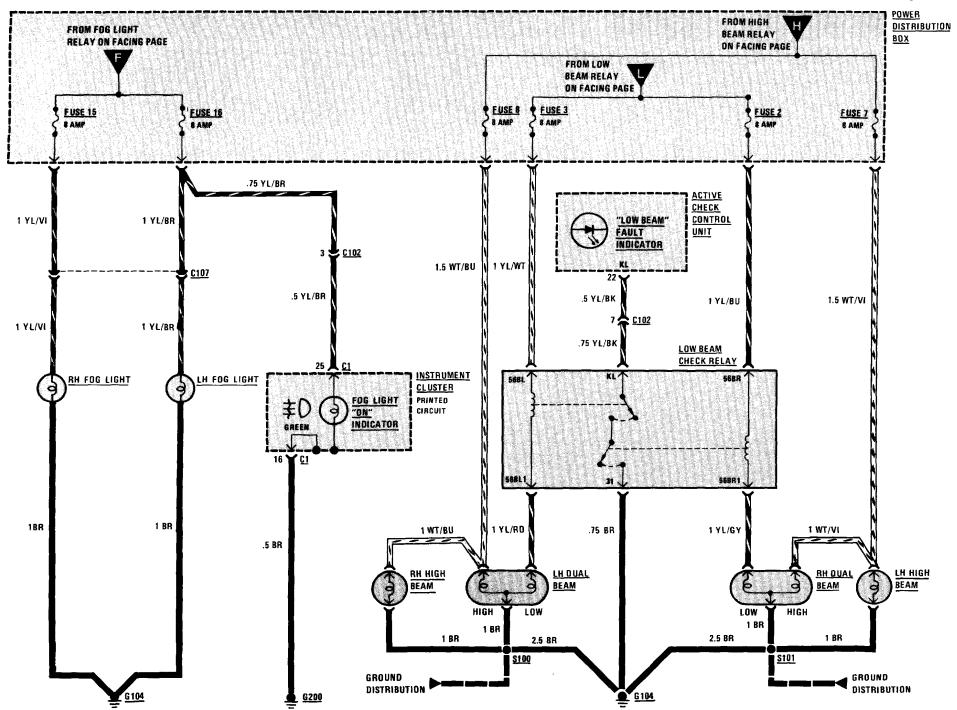
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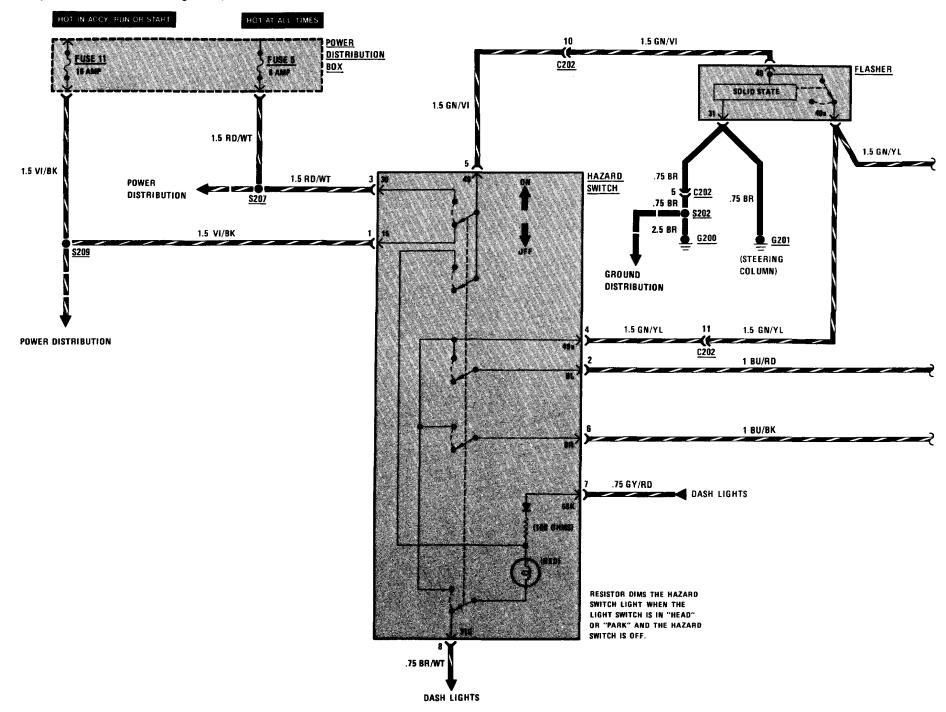
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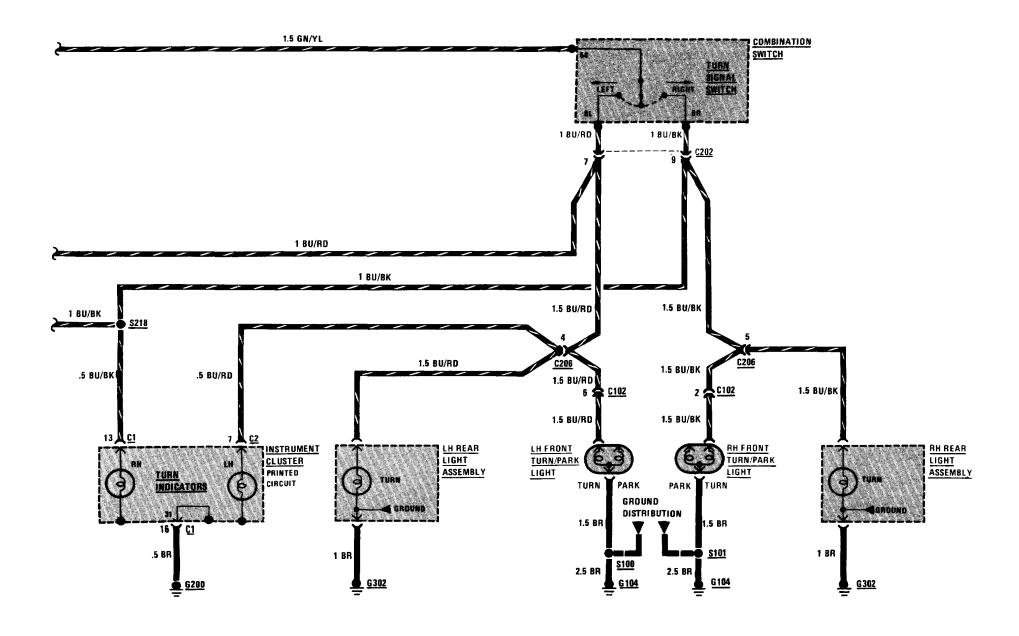
G104



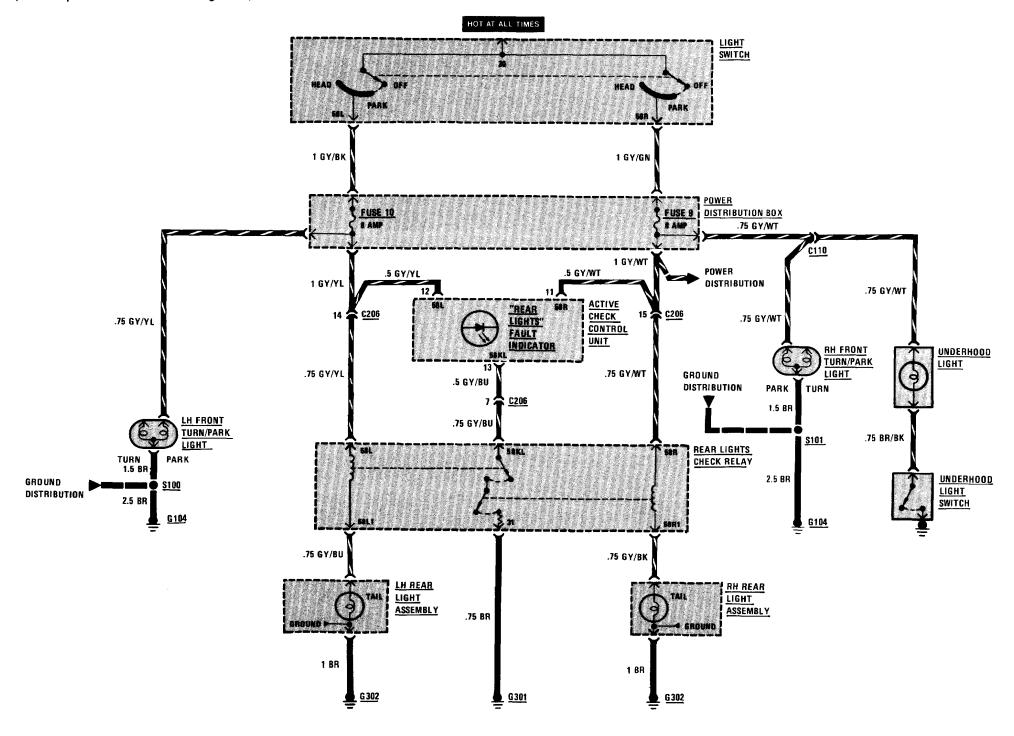
(For Component Locations See Page 208)



(For Component Locations See Page 208)

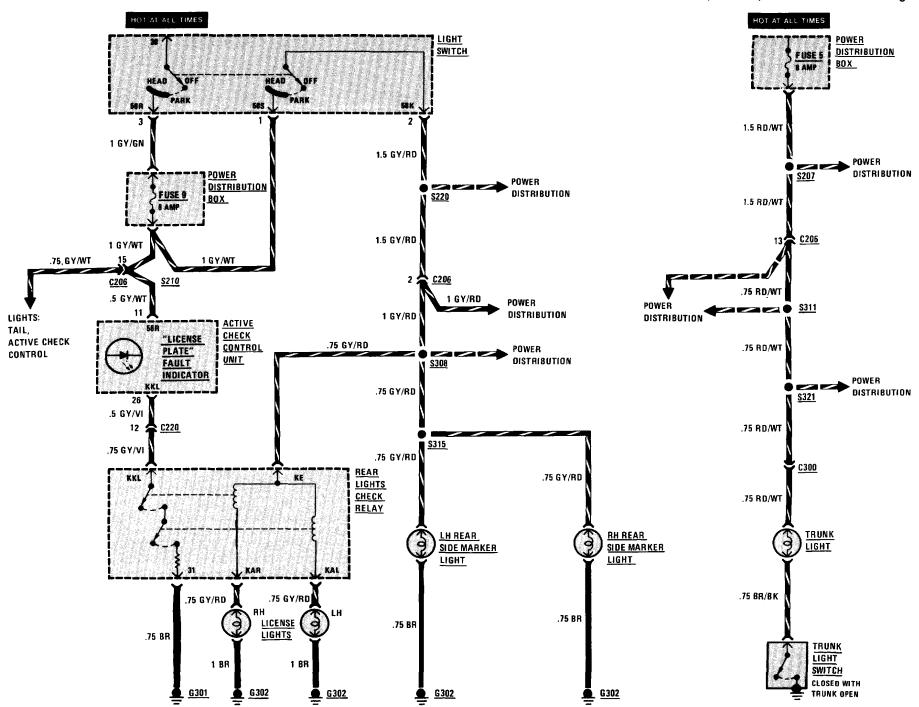


(For Component Locations See Page 207)

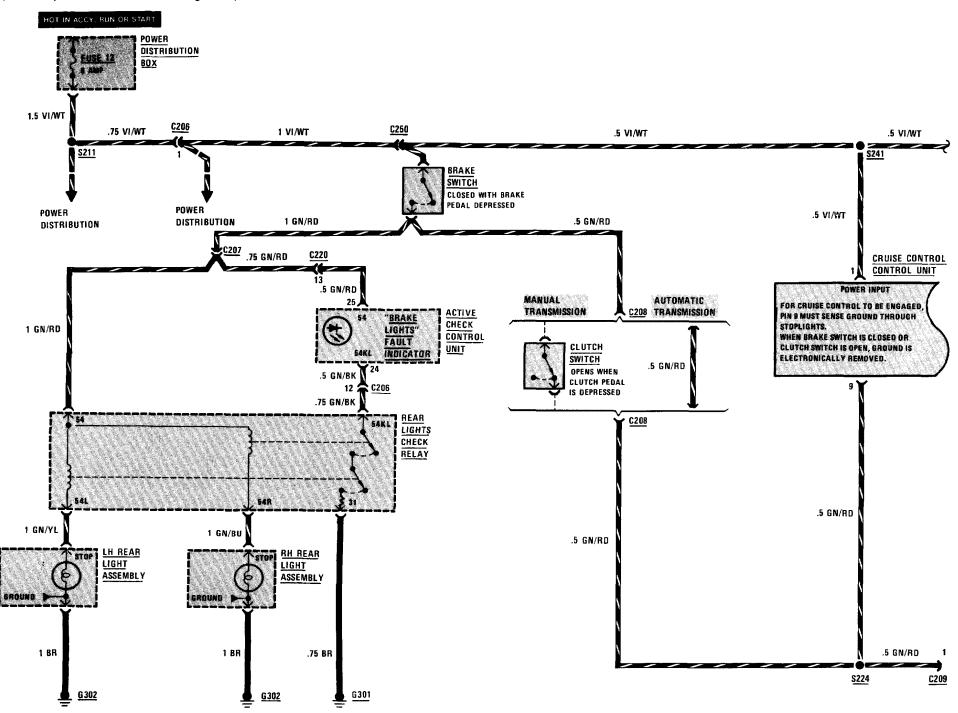


131

(For Component Locations See Page 208)

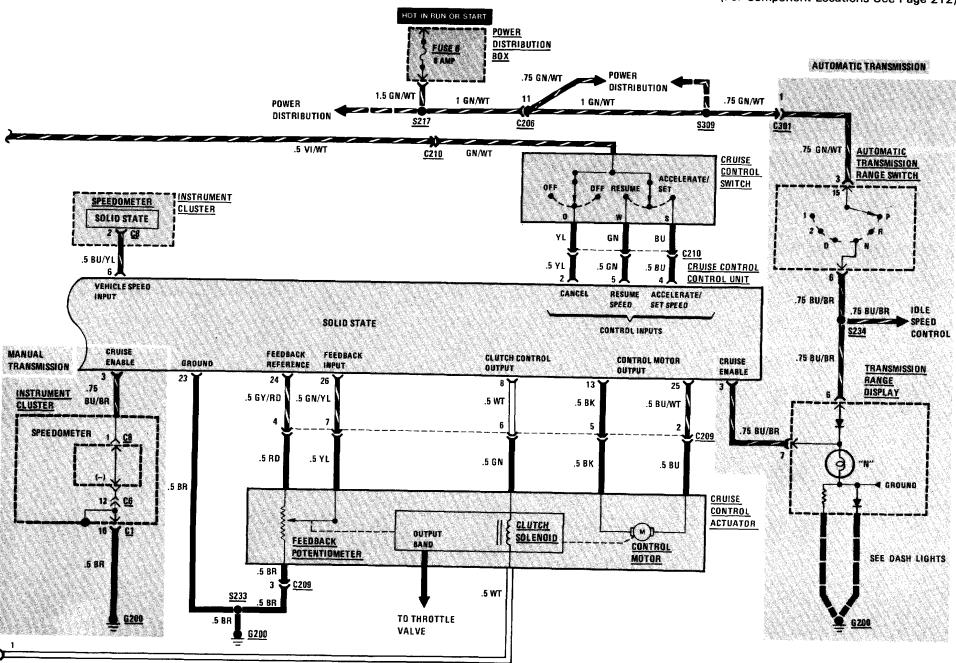


(For Component Locations See Page 212)

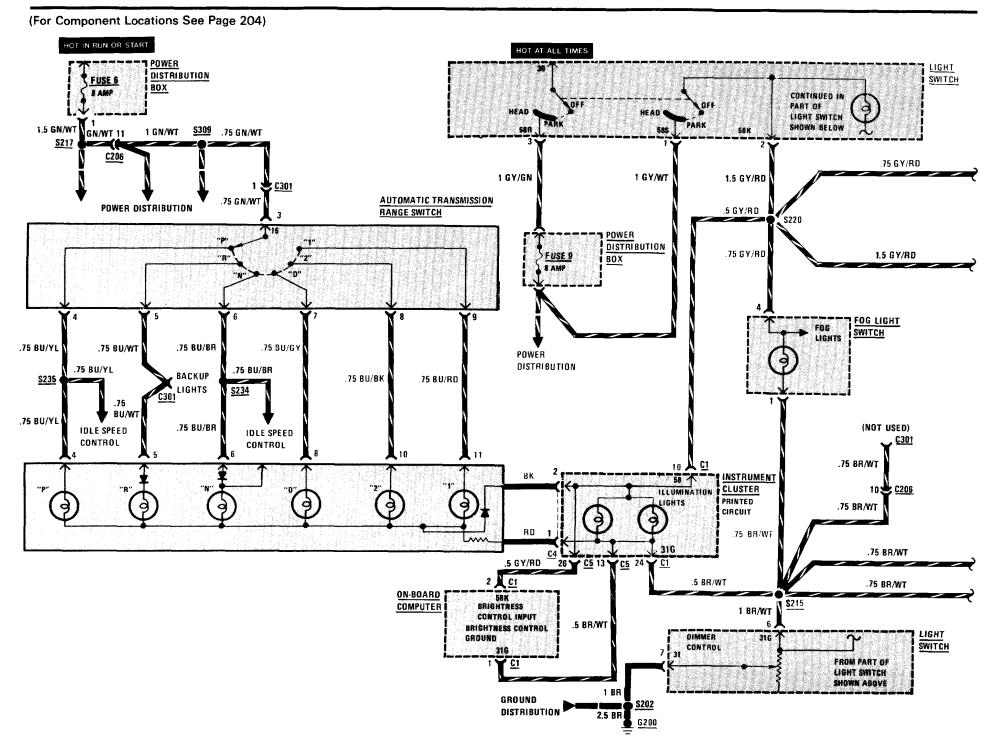


(For Component Locations See Page 212)

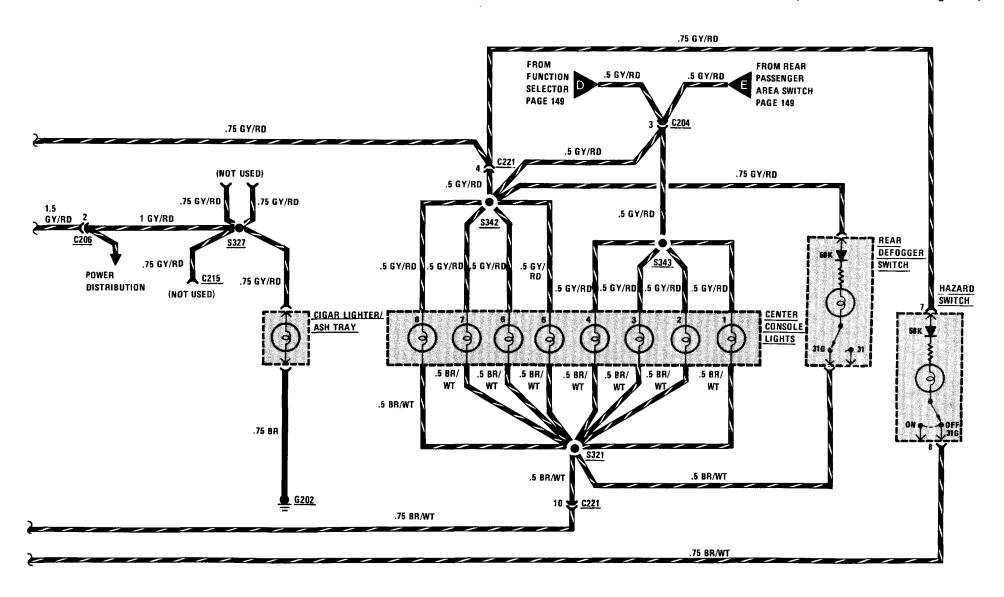
133



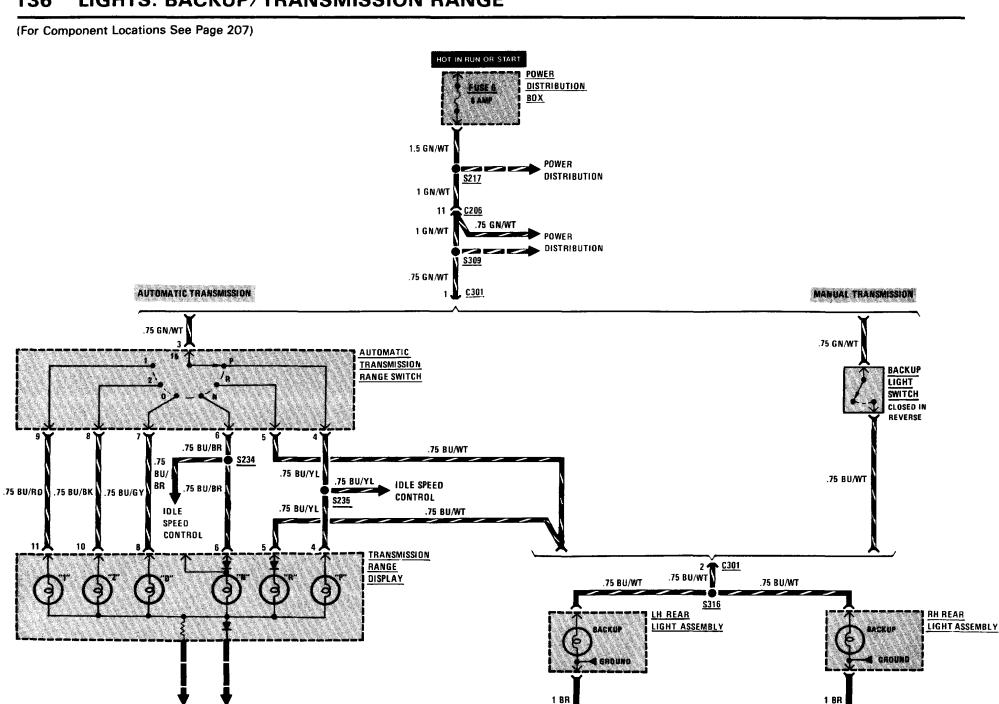
C209



(For Component Locations See Page 204)



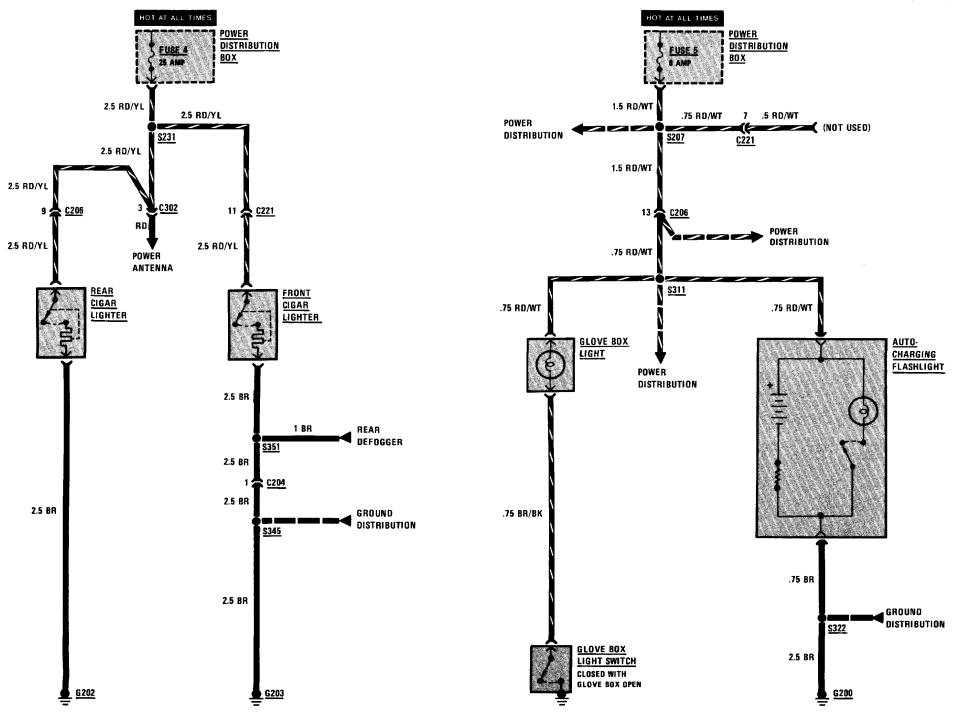
SEE DASH LIGHTS



G302

G302

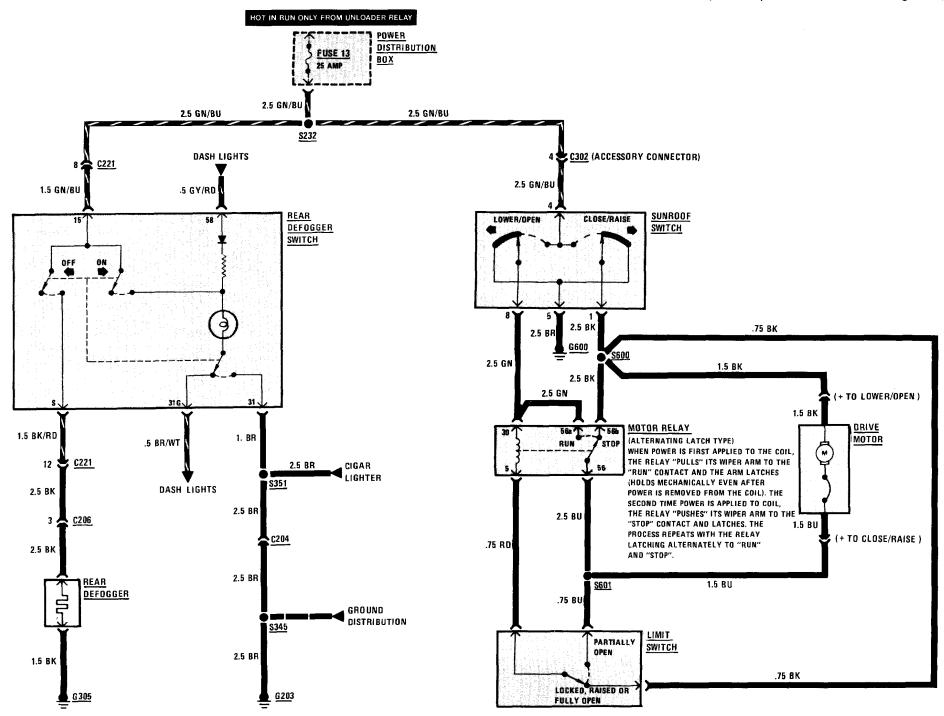
(For Component Locations See Page 203)



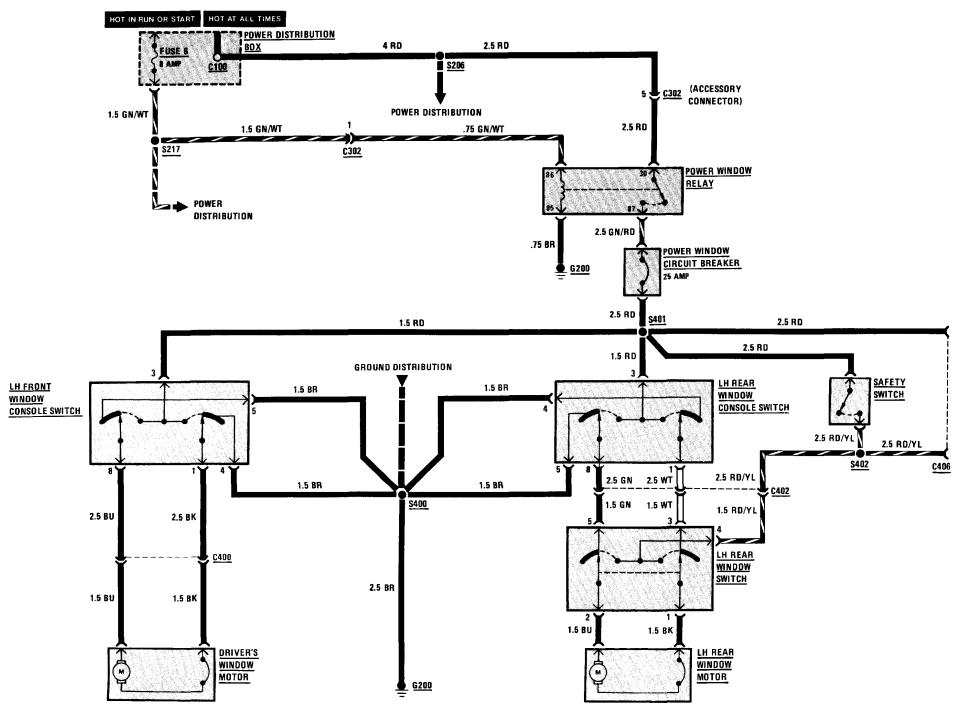
# **HEATED DOOR LOCK**

(For Component Locations See Page 205) (For Component Locations See Page 205) HOT AT ALL TIMES HOT IN ACCY. RUN OR START DISTRIBUTION FUSE 5 DISTRIBUTION BOX 8 AMP BOX FUSE 11 16 AMP 1.5 RD/WT POWER DISTRIBUTION 1 VI/BK 1 VI/BK WIPER/ 1.5 RD/WT N S207 WASHER 13 🏠 <u>C206</u> 1 VI/BK .75 RD/WT POWER DISTRIBUTION HORN 1.5 RD/WT 86 / RELAY INTERIOR 1.5 RD/WT LIGHTS .75 RD/WT <u>\$508</u> .75 BR/GN 1.5 RD/WT C503 .75 BR/YL (NOT USED) 6 春 <u>C201</u> .75 BR/GN 1.5 RD/WT 1 VI/YL 1 VI/YL .75 BR/YL LOCK HEATER 30 CONTROL UNIT WHEN THE CONTROL HORN POWER INPUT HEATER SWITCH IS CLOSED HORN HORN BRUSH/ THE LOCK HEATER CONTROL SLIP RING SOLID STATE CONTROL UNIT INPUT CLOSES THE HEATER GROUND SWITCH FOR: CONTROL 35 SECONDS AT 5° F (-15° C) SWITCH 17 SECONDS AT 32° F (0° C) 1 BR CLOSED 5.5 SECONDS AT 77° F (25° C) WITH DOOR GROUND 1 BR HANDLE BK DISTRIBUTION LIFTED 31 1 RD/YL <u>C560</u> 1 BR S100 S101 1 BR LOCK HEATER C503 ВK BR 1 BR GROUND 2.5 BR BR <u>\$502</u> 2.5 BR DISTRIBUTION C560 SWITCHES 1 BR C504 .75 BR GROUND S202 DISTRIBUTION (GROUNDED TO STEERING COLUMN) 2.5 BR G200 (STEERING <u>G200</u> COLUMN GROUND)

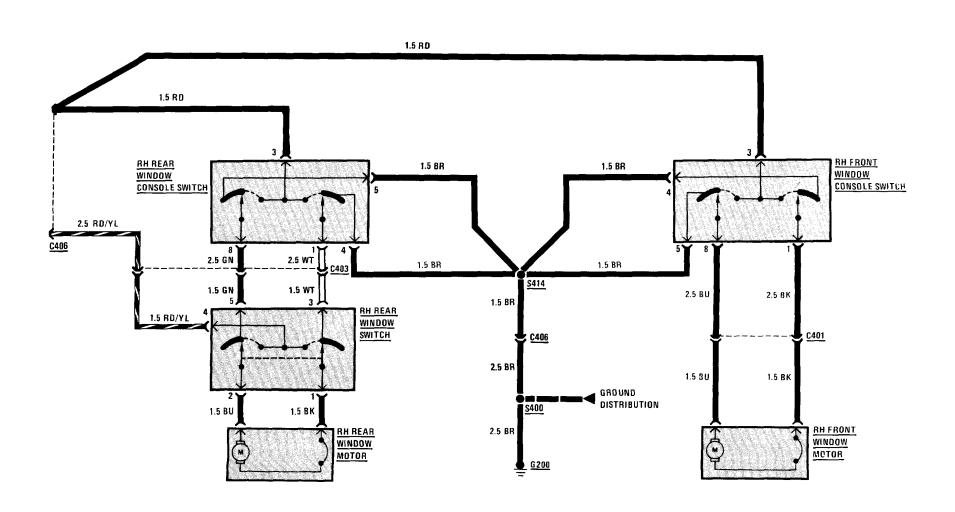
(For Component Locations See Page 211)



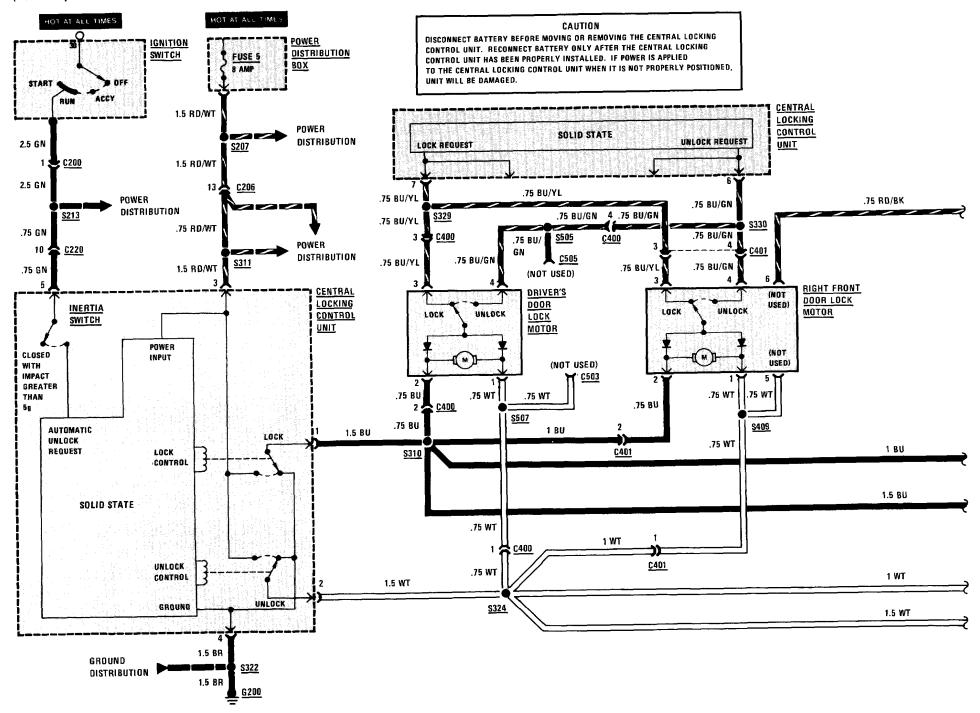
(For Component Locations See Page 210)



(For Component Locations See Page 210)

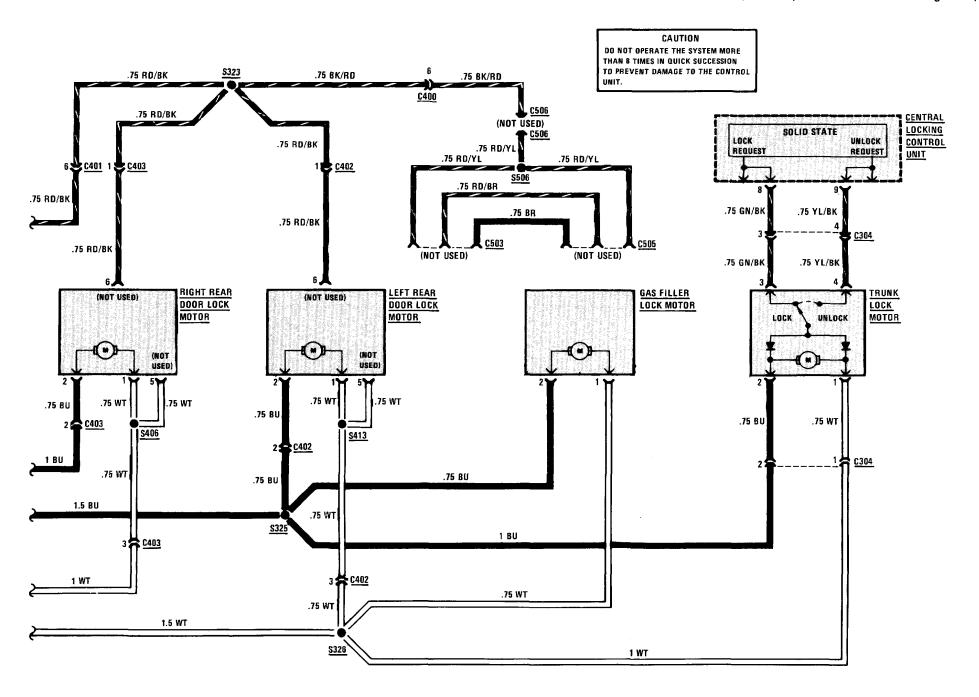


(For Component Locations See Page 203)

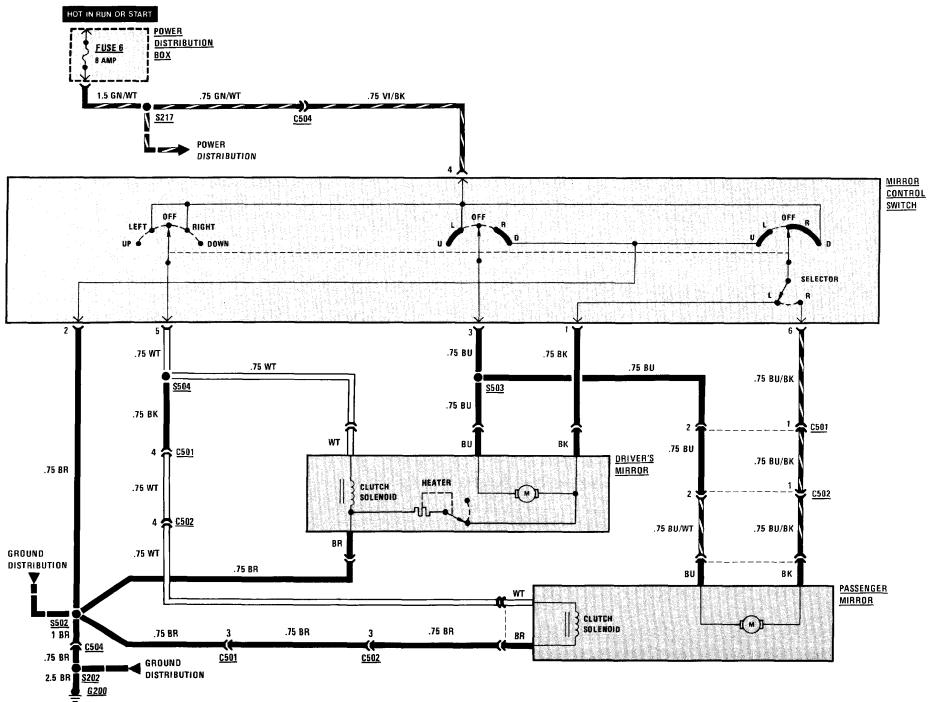


(For Component Locations See Page 203)

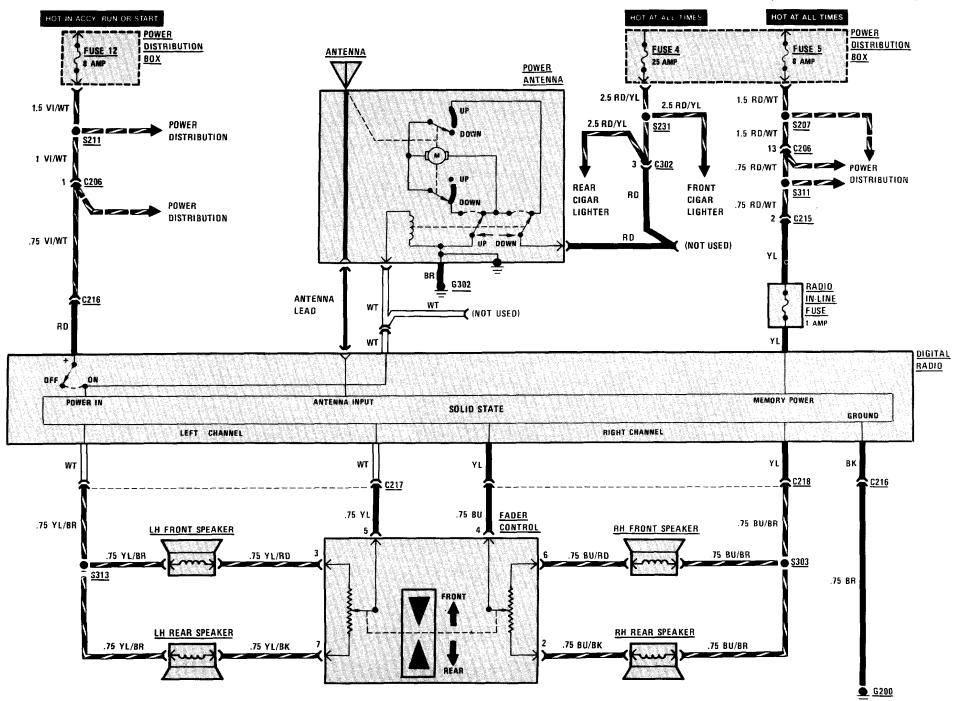
143



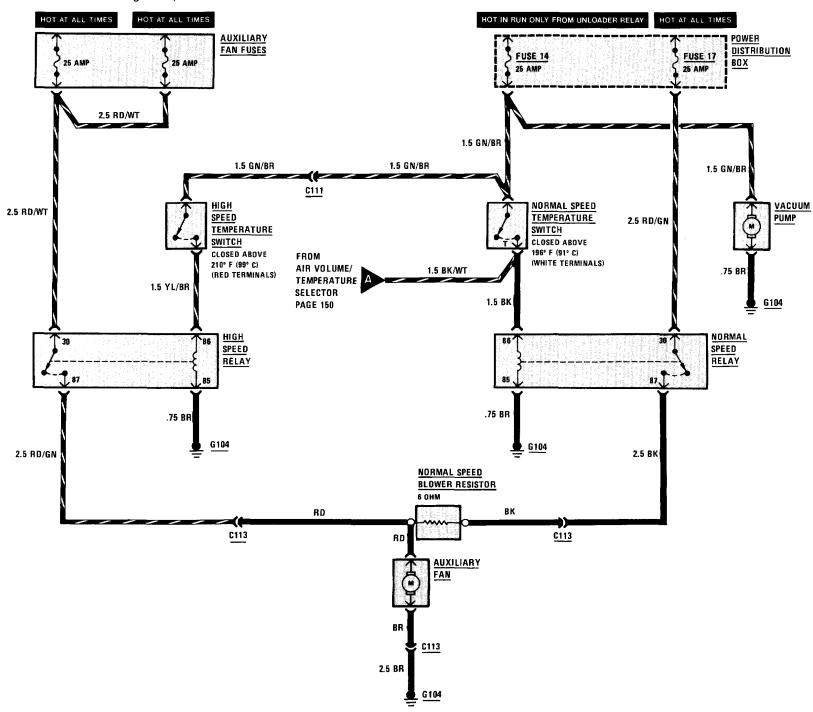




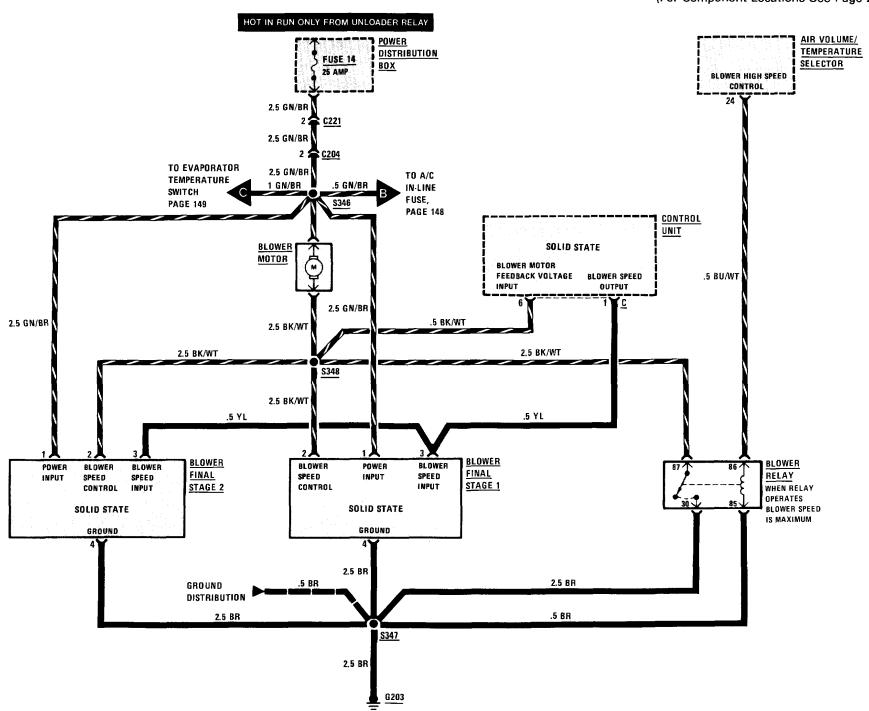
(For Component Locations See Page 210)

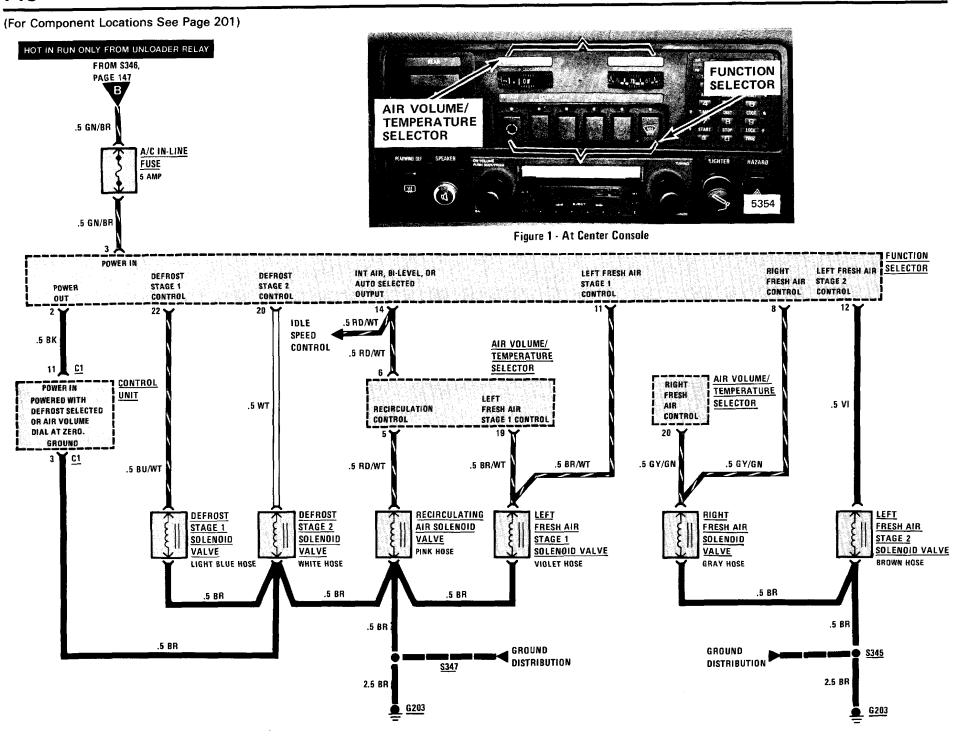


(For Component Locations See Page 202)



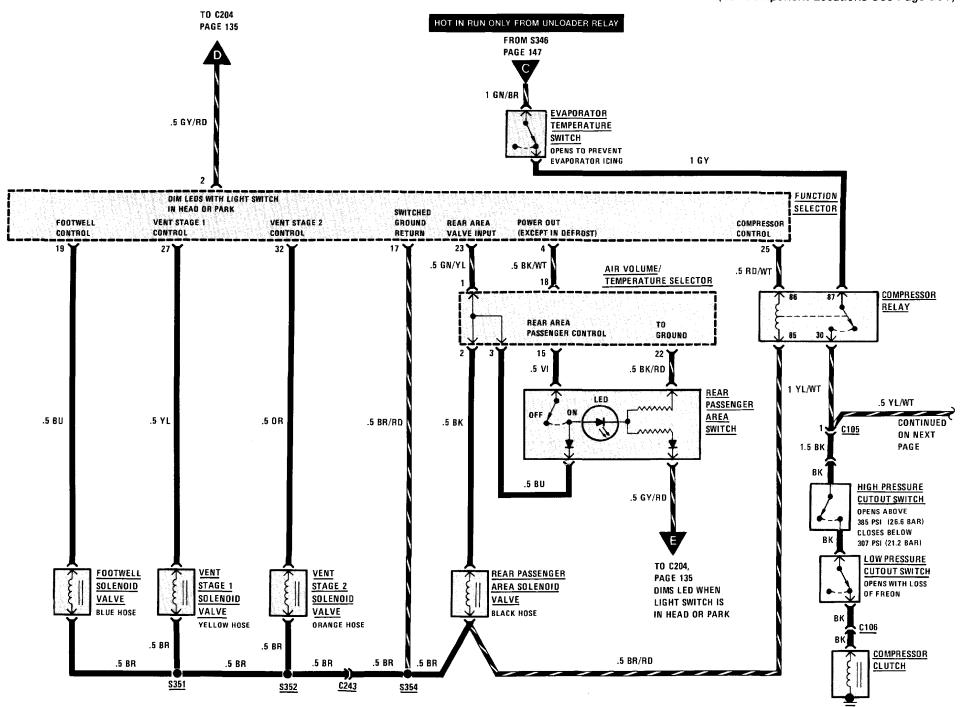
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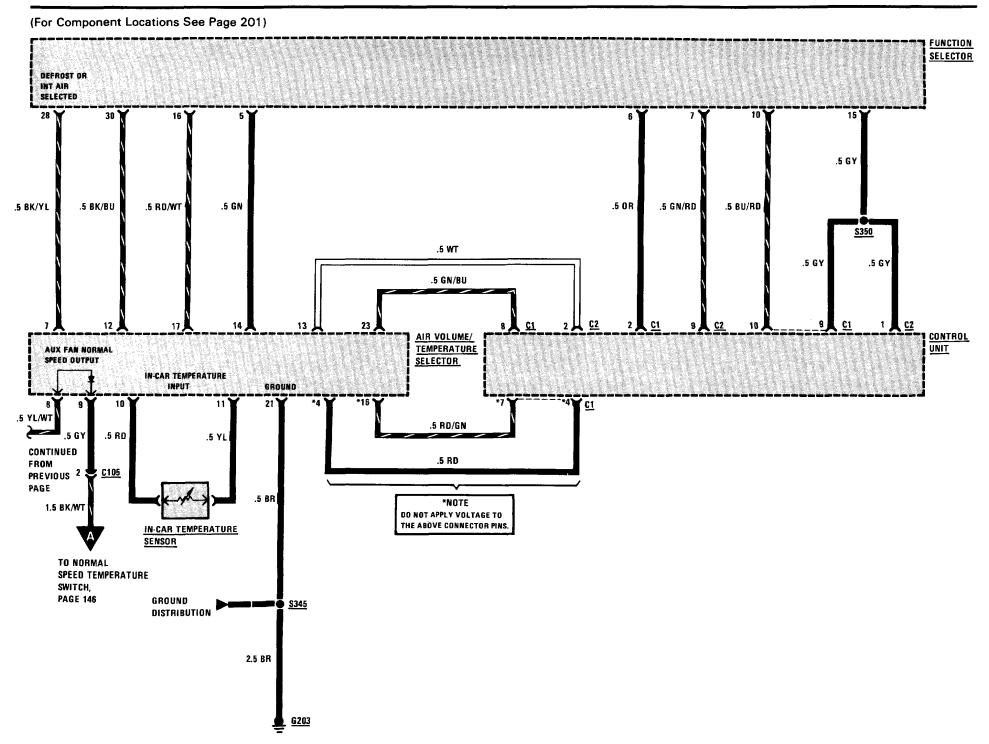




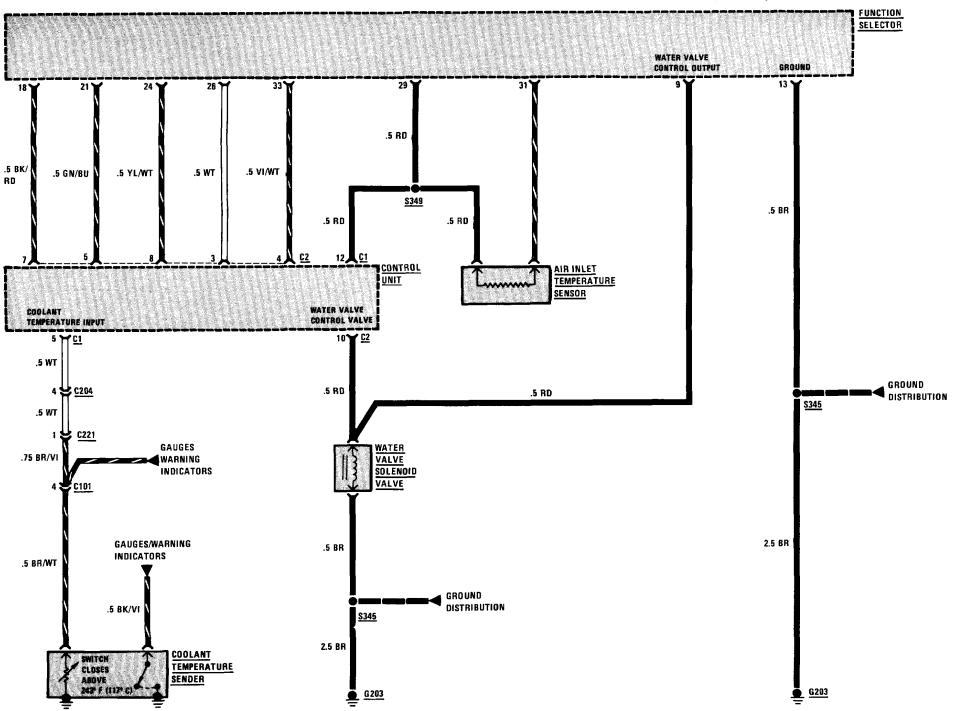
## AUTOMATIC HEATER-AIR CONDITIONER (AIR COMPRESSOR CONTROL)

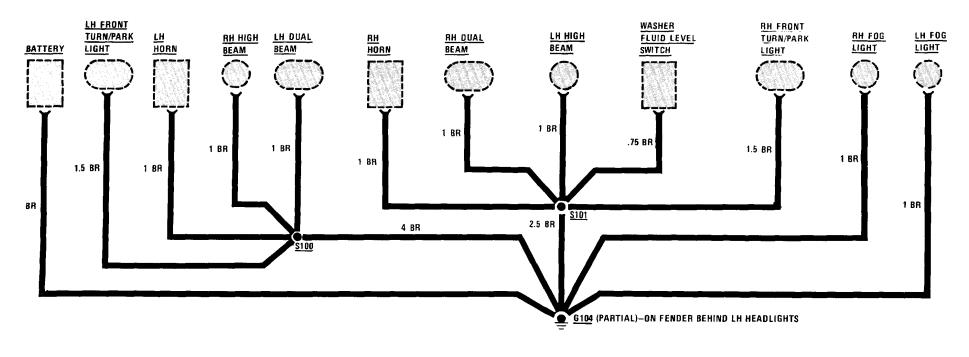
(For Component Locations See Page 201)

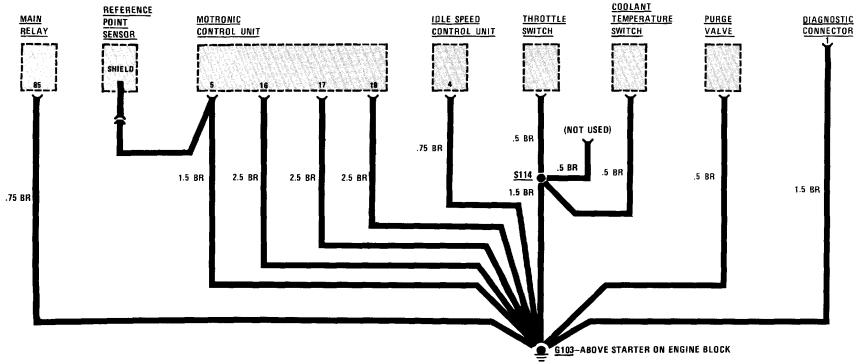


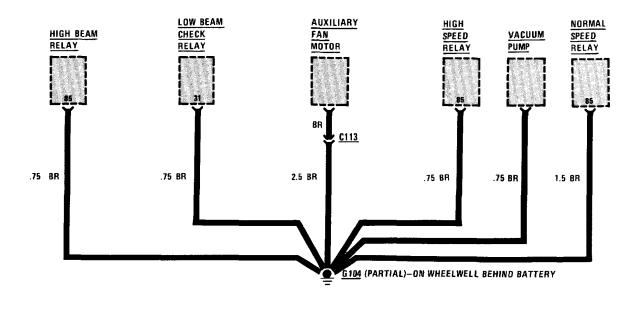


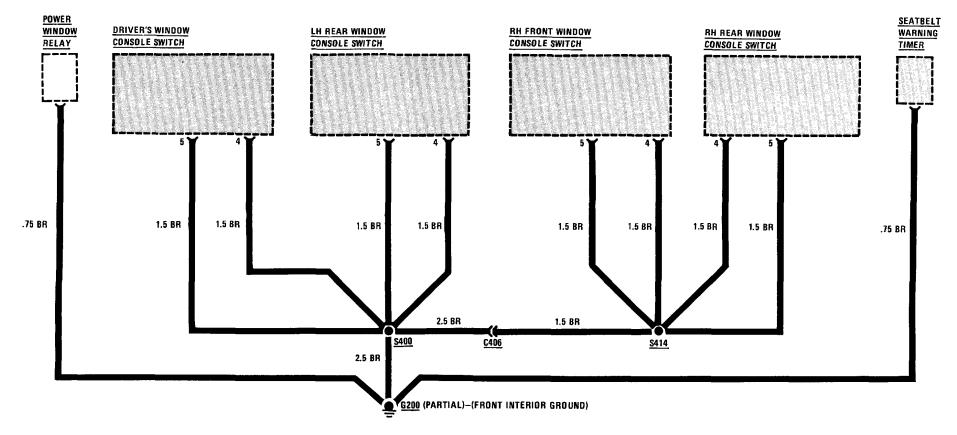
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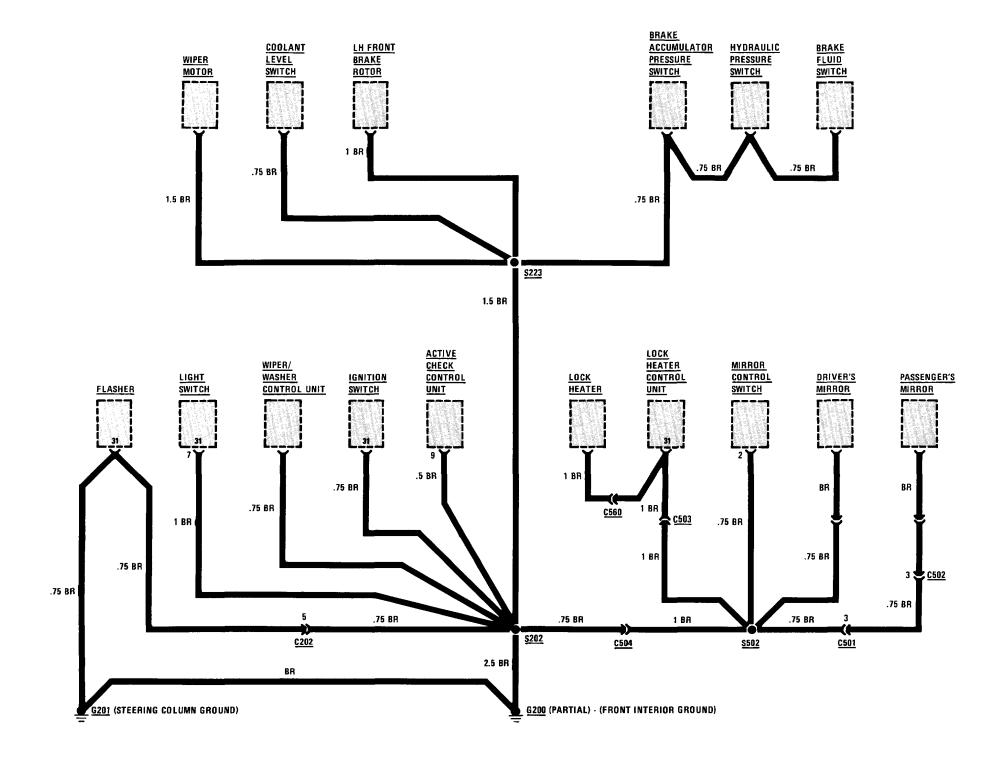


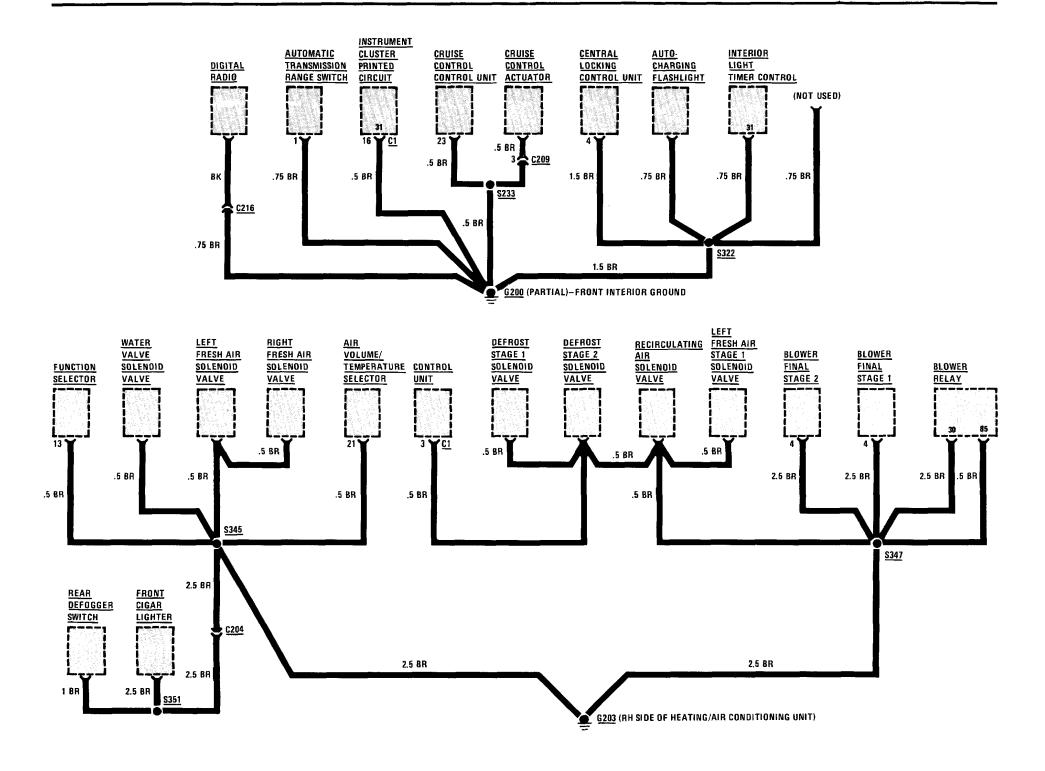


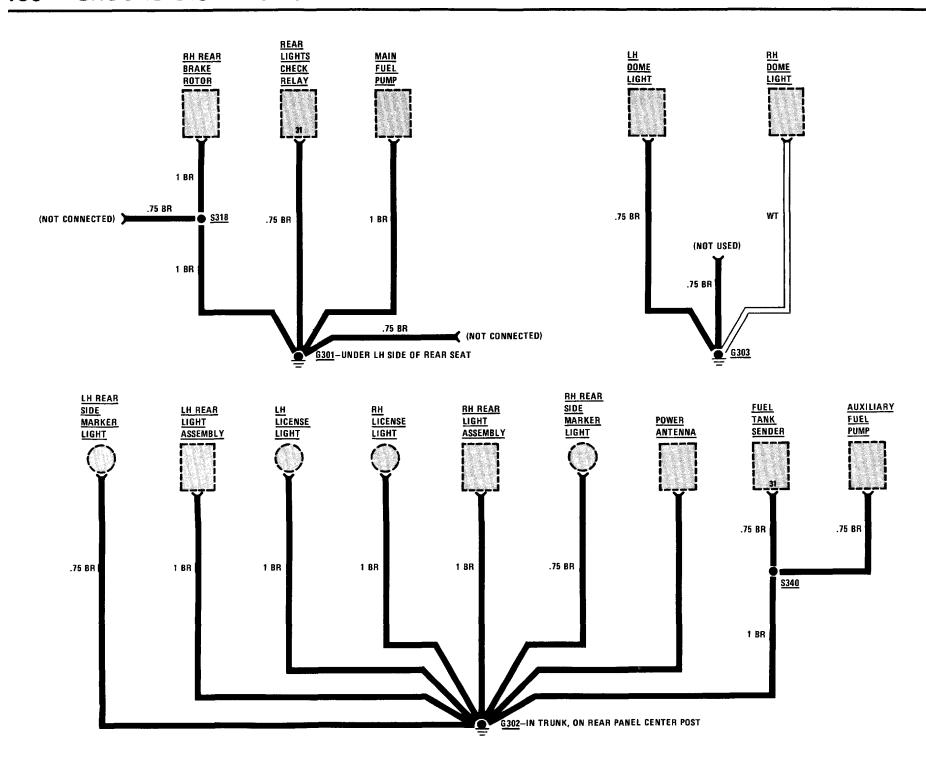












### **ACTIVE CHECK CONTROL**

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

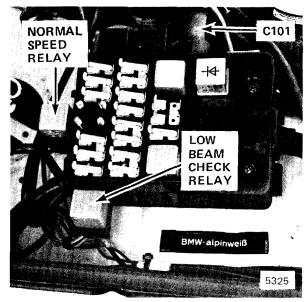


Figure 1 - Above Left Wheel Well

# **AUTOMATIC HEATER-AIR CONDITIONER**

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

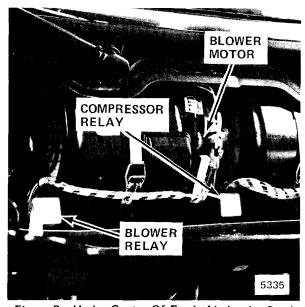


Figure 2 - Under Center Of Fresh Air Intake Cowl

(Chart continued on next page)

G301 (Rear Interior Ground) ...

### (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 - 1C243 (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 - 1High 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

Under left side of rear seat .....

207-2



Figure 1 - Upper Right Side Of Console

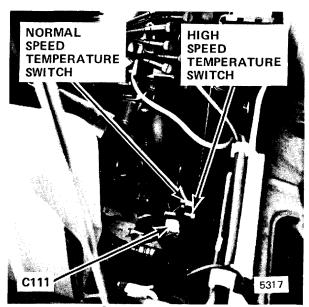


Figure 2 - Behind Right Headlights

213-6

214-5

209-2

203-1

203-1

207-1

210-2

214-2

207-1

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

### **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

	Stored in glove box Under right side of dash, above glove box	203-2
(Chart continued on next page)		

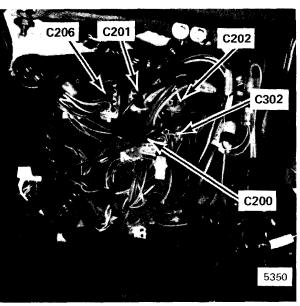


Figure 1 - Under LH Dash

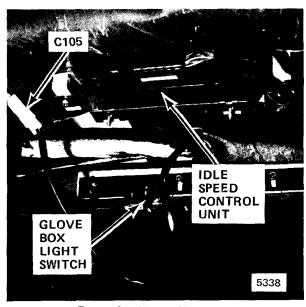


Figure 2 - Above Glove Box

(Continued)		
(Continued)  Power Distribution Box C204 (6 pin) C206 (18 pin) C221 (12 pin) C302 (Accessory Connector) G200 (Front Interior Ground) G202	Top front of left front wheel well	209-2 203-1 202-1 203-1
DASH LIGHTS		
Auto. Trans. Range Switch Fog Light Switch Hazard Switch On-Board Computer Power Distribution Box Rear Defogger Switch C204 (6 pin) C206 (18 pin) C215 (2 pin) C216 (2 pin) C221 (12 pin) C301 (3 pin) G200 (Front Interior Ground) G202	On left side of shift lever Under LH side of instrument cluster Dash, right of radio Behind left speaker Top front of left front wheel well Dash, left of radio Behind center console Under LH dash, on body electrical bracket Behind radio Behind radio Below dash, right of console In center console, ahead of shift lever On dash frame, left of steering column Center console	214-1 208-2 209-2 205-2 203-1
FUEL CONTROL		
Air Flow Meter	Top right side of engine	206-2 204-2 211-1 204-2 206-2
FUEL DELIVERY/EVAPO	RATIVE CONTROL	
Auxiliary Fuel Pump  Diagnostic Connector  Fuel Pump Relay	Top left side of fuel tank, under trunk  Top front of engine  On right side of power distribution box	214-4 213-3 209-2
(Chart continued on next page)		



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Figure 1 - Removed Left Blower Fan Housing Cover

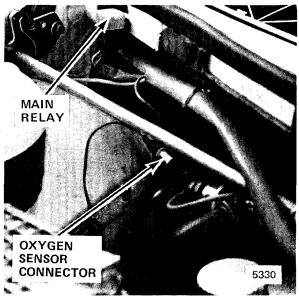


Figure 2 - Behind Right Front Shock Tower

#### (Continued) Ignition Switch ..... Upper part of steering column Under car, ahead of left rear axle Main Fuel Pump ..... Main Relay ..... Behind right front shock tower..... 204-2 Motronic Control Unit ...... Behind right speaker ..... 211-1 Power Distribution Box ..... 209-2 Top front of left front wheel well ..... Purge Valve Relay ..... On right side of power distribution box..... 209-2 Purge Valve ..... Right of power distribution box ..... 213-4C101 (17 pin)..... On right side of power distribution box..... 201-1 C103 (6 pin) ...... Behind right speaker ..... 211-1 Under LH dash, on body electrical bracket... C200 (6 pin) ..... 203-1 C206 (18 pin)..... Under LH dash, on body electrical bracket... 203-1 Under left side of dash, near steering column C212 (1 pin) ..... 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

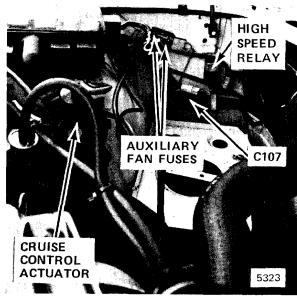


Figure 1 - Ahead Of Left Front Wheel Well

# 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	

# REAR PASSENGER AREA SWITCH REAR DEFOGGER SWITCH FADER CONTROL

Figure 2 - Center Of Dash

### HORN/HEATED DOOR LOCK

Lock Heater Control Unit Lock Heater		
C201 (9 pin)	Top front of left front wheel well	203-1

(Chart continued on next page)

(Continued) C503 (8 pin)	In driver's door Under dash, left of steering column In driver's door Left fender, behind headlights On dash frame, left of steering column Upper left side of steering column	206-1
IDLE SPEED CONTROL		
O°C Temperature Switch Auto. Trans. Range Switch Coolant Temperature Sensor Coolant Temperature Switch Diagnostic Connector Engine Speed Sensor Idle Control Valve Idle Speed Control Unit Motronic Control Unit Power Distribution Box Throttle Switch C101 (17 pin) C103 (6 pin) C104 (2 pin) C206 (18 pin) C301 (3 pin)	On left inlet of blower motor housing On left side of shift lever Front of engine, top of thermostat housing Front of engine, top of thermostat housing Top front of engine On transmission bell housing Top center of engine Under right side of dash, above glove box Behind right speaker Top front of left front wheel well Top LH side of engine, below throttle body On right side of power distribution box Behind right speaker Behind right speaker Under LH dash, on body electrical bracket In center console, ahead of shift lever	212-2 211-2 213-3 206-2 213-2 203-2 211-1 209-2 213-2 201-1 211-1 211-1 203-1
G103 (Engine Ground)	Top rear of engine	206-2
IGNITION		0.4.0.0
Diagnostic Connector  Ignition Coil  Ignition Switch  Motronic Control Unit  Reference Point Sensor  C101 (17 pin)	Top front of engine On right fender, behind headlights Upper part of steering column Behind right speaker On transmission bell housing On right side of power distribution box	213-3 211-1 206-2 201-1
C109 (1 pin)	Taped to harness, near ignition coil	202.1
C200 (6 pin)	Under LH dash, on body electrical bracket  Top rear of engine	203-1 206-2

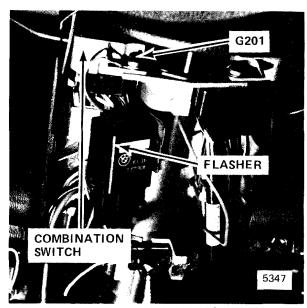


Figure 1 - Upper Underside Of Column

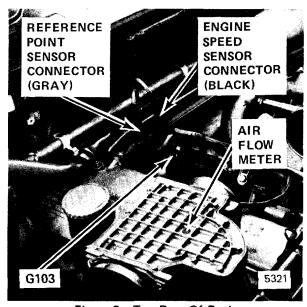


Figure 2 - Top Rear Of Engine

IGNITION KEY WARNIN	G/SEATBELT WARNING	
Active Check Control Unit	Dash, left of steering column	121-1
Ignition Key Switch	In upper part of steering column  Top front of left front wheel well  In driver's seatbelt buckle  Under LH side of dash	209-2
Warning Buzzer	Upper left side of steering column Under LH dash, on body electrical bracket	212-1 203-1
C206 (18 pin)	Under LH dash, on body electrical bracket	207-1
C304 (7 pin)	Base of left trunk hinge	210-2
INTERIOR LIGHTS		
Interior Light Timer Lock Heater Control Unit	Under LH dash, on body electrical bracket In left front door	213-6
Power Distribution Box	Top front of left front wheel well	209-2
C206 (18 pin)	Under LH dash, on body electrical bracket In headliner, above LH dome light	203-1 214-3
C503 (8 pin)	In driver's door Under dash, left of steering column	
G200 (Front Interior Ground) G303	On dash frame, left of steering column Above left B pillar	
LIGHTS: BACKUP/TRAN	ISMISSION RANGE	
Auto. Trans. Range Switch	On left side of shift lever	
Backup Light Switch Power Distribution Box	On left side of manual transmission  Top front of left front wheel well	209-2
C206 (18 pin)	Under LH dash, on body electrical bracket In center console, ahead of shift lever	203-1
G200 (Front Interior Ground) G302 (Trunk Ground)	On dash frame, left of steering column In trunk, on rear panel center support	208-1
LIGHTS: FRONT PARK/	TAIL/UNDERHOOD	
Active Check Control Unit  Power Distribution Box	Dash, left of steering column	121-1 209-2
Rear Lights Check Relay	Under left side of rear seat	207-2
(Chart continued on next page)		

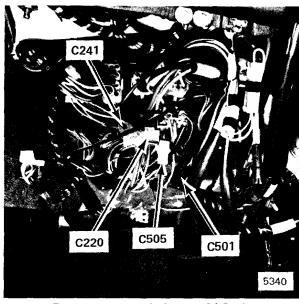


Figure 1 - Under Left Side Of Dash

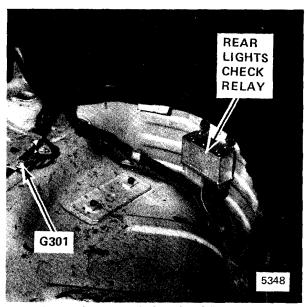


Figure 2 - Under Left Side Of Rear Seat

(Continued)		
Underhood Light Switch C110 (1 pin) C206 (18 pin) G104 (Main Body Ground)	Under RH rear corner of hood, near latch plate Behind right headlights	213-1 203-1
G301 (Rear Interior Ground)	Under left side of rear seat	207-2 208-1
LIGHTS: REAR MARKER	/LICENSE/TRUNK	
Active Check Control Unit Power Distribution Box Trunk Light Switch	Dash, left of steering column	121-1 209-2
C206 (18 pin)	Under LH dash, on body electrical bracket Under dash, left of steering column Base of left trunk hinge	203-1 207-1 210-2
G301 (Rear Interior Ground) G302 (Trunk Ground)	Under left side of rear seat	207-2 208-1
LIGHTS: TURN/HAZARD	WARNING	
Combination Switch	Upper left side of steering column Upper left side of steering column Dash, right of radio Top front of left front wheel well	206-1 206-1 214-1 209-2
C102 (7 pin)	In power distribution box Under LH dash, on body electrical bracket Under LH dash, on body electrical bracket Left fender, behind headlights On dash frame, left of steering column	203-1 203-1
G201 (Column Ground) G302 (Trunk Ground)	Upper left side of steering column In trunk, on rear panel center support	206-1 208-1
ON-BOARD COMPUTER		
Alarm Horn	Ahead of RH side of coolant reservoir Top center of dash, under grill	213-4
(Chart continued on next page)		

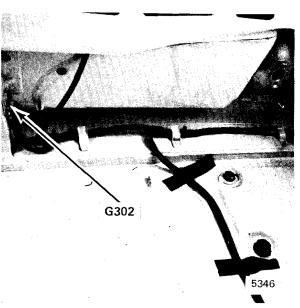


Figure 1 - Rear Left Side Of Trunk

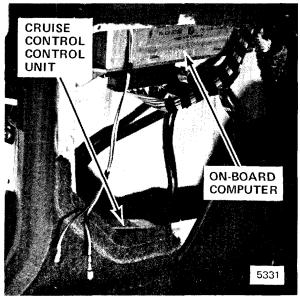


Figure 2 - Behind Left Speaker

(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	200.2
Power Distribution Box	Top front of left front wheel well	209-2 211-1
C103 (6 pin)	Behind right speaker	203-1
C200 (6 pin)	Under left side of dash, near steering column	203-1
C220 (13 pin)	Under dash, left of steering column	207-1
C235 (1 pin)	Under left side of dash, near steering column	207
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

Under LH dash, on body electrical bracket...

Left fender, behind headlights

203-1

C302 (Accessory Connector)..

G104 (Main Body Ground) ....

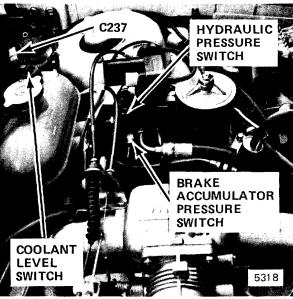


Figure 1 - Left Rear Of Engine Compartment



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

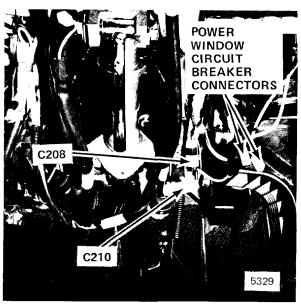


Figure 1 - Under Dash, Left Of Console

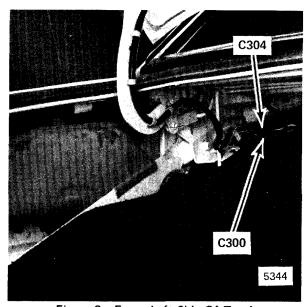


Figure 2 - Front Left Side Of Trunk

### **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**

(Chart continued on next page)

_	Between intake ports 3 and 4 Top front of engine	213-3
Ignition Switch	, e	

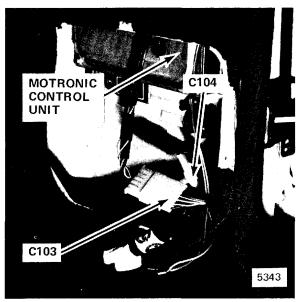


Figure 1 - Behind Right Speaker

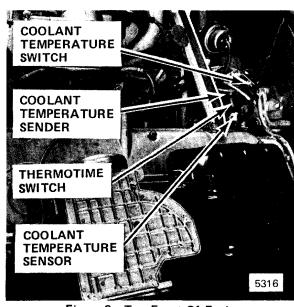


Figure 2 - Top Front Of Engine

(Continued)		
Power Distribution Box Start Relay Starter	Top front of left front wheel well Under LH dash, on body electrical bracket Lower rear left side of engine	209-2
Thermotime Switch	Front of engine, top of thermostat housing On right side of power distribution box Under LH dash, on body electrical bracket Under dash, left of steering column Left fender, behind headlights On dash frame, left of steering column	211-2 201-1 203-1 207-1
STOPLIGHTS/CRUISE C	ONTROL	
Active Check Control Unit  Auto. Trans. Range Switch  Brake Switch	Dash, left of steering column On left side shift lever Above brake pedal	121-1
Clutch Switch Cruise Control Actuator	Above clutch pedal Right of power distribution box	205-1
Cruise Control Control Unit	Behind left speaker	208-2 212-1
Cruise Control Switch  Power Distribution Box	Upper right side of steering column  Top front of left front wheel well	209-2
Rear Lights Check Relay C206 (18 pin) C207 (1 pin)	Under left side of rear seat	207-2 203-1
C208 (1 pin)	Above accelerator pedal	210-1
C210 (4 pin)	Under dash, above left speaker	213-6 210-1
C210 (4 pin)	Under dash, left of steering column  Under LH side of dash near brake switch In center console, ahead of shift lever On dash frame, left of steering column	207-1
G301 (Rear Interior Ground) G302 (Trunk Ground)	Under left side of rear seat	207-2 208-1
WIPER-WASHER		
Power Distribution Box	Top front of left front wheel well	209-2
Washer Pump	Ahead of right front wheel well, in reservoir 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  On dash frame, left of steering column	203-1

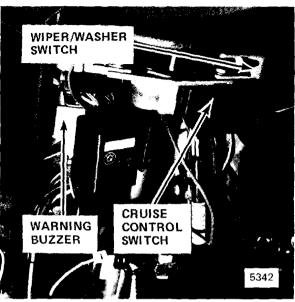


Figure 1 - Upper Underside Of Column

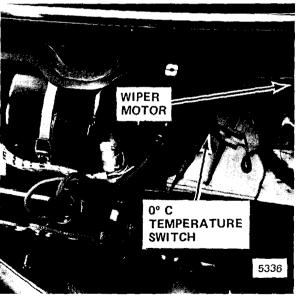


Figure 2 - Under Center Of Fresh Air Intake Cowl

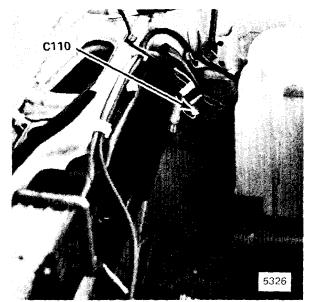


Figure 1 - Behind Right Headlights

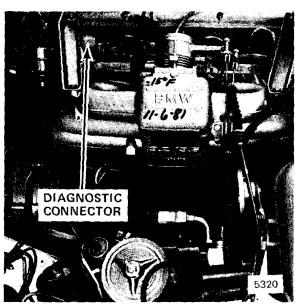


Figure 3 - Top Left Side Of Engine

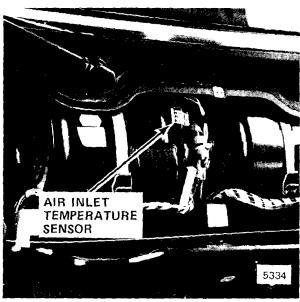


Figure 5 - Under Center Of Fresh Air Intake Cowl

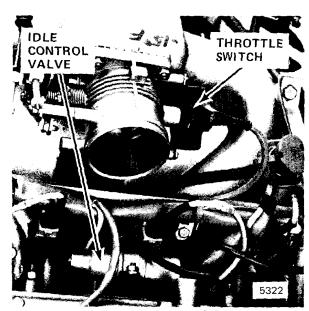


Figure 2 - Top Center Of Engine

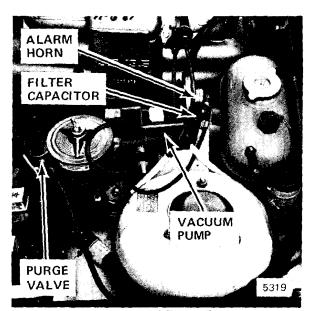


Figure 4 - Left Rear Of Engine Compartment

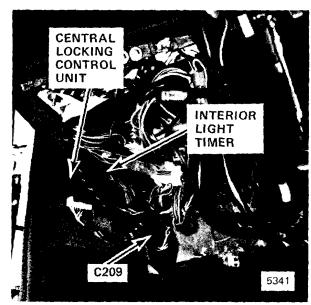


Figure 6 - Under Left Side Of Dash

# 214 COMPONENT LOCATIONS

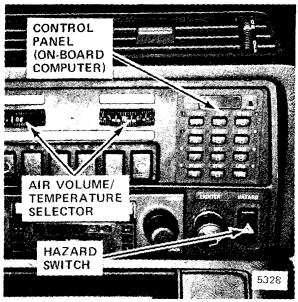


Figure 1 - Center Of Dash

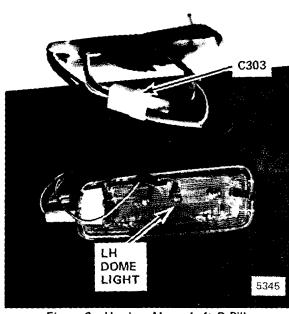


Figure 3 - Header, Above Left B Pillar

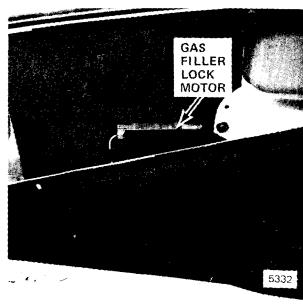


Figure 5 - Behind Left Rear Wheel Well

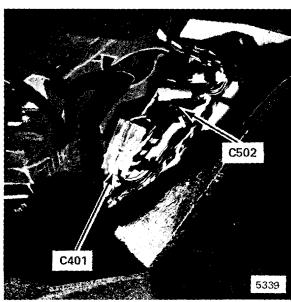


Figure 2 - Right Of Glove Box

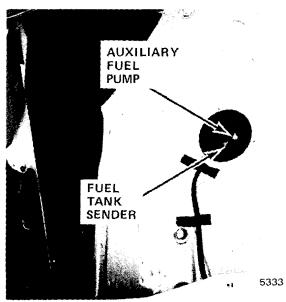


Figure 4 - Bottom Left Side Of Trunk