SECTION 8A
ELECTRICAL DIAGNOSIS
1994 CHEVROLET, PONTIAC

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

8A SECTION	SECTION CONTENT	Chevy Camaro	Pontiac Firebird
1	INDEX	Y	Y
2	INTRODUCTION	Y	Y
3	SYMBOLS	Y	Y
4	TROUBLESHOOTING PROCEDURES	Y	Y
5	REPAIR PROCEDURES	Y	Y
9	VEHICLE ZONING	Y	Y
10	POWER DISTRIBUTION	Y	Y
11	FUSE BLOCK DETAILS	Y	Y
14	GROUND DISTRIBUTION	Y	Y
15	RETAINED ACCESSORY POWER (RAP): WITH AU3	Y	Y
20	SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S (3.4L L32)	Y	Y
21	SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P (5.7L LT1)	Y	Y
30	STARTER AND CHARGING	Y	Y
31	COOLANT FANS	Y	Y
32	ENGINE COOLANT HEATER (K05)	Y	Y
33	VEHICLE SPEED SENSOR	Y	Y
34	CRUISE CONTROL (K34)	Y	Y
39	ELECTRONIC TRANSMISSION CONTROLS (M30)	Y	Y
40	HORNS	Y	Y
41	BRAKE WARNING SYSTEM	Y	Y
44	ANTILOCK BRAKES/TRACTION CONTROL (NW9)	Y	Y
47	SUPPLEMENTAL INFLATABLE RESTRAINTS (SIR)	Y	Y
50	DATA LINK CONNECTOR (DLC): PIN ASSIGNMENT	Y	Y
60	HEATER (C41)	Y	Y
61	DEFOGGER (C49)	Y	Y
63	HVAC BLOWER CONTROL (C60)	Y	Y
64	HVAC COMPRESSOR CONTROL (C60)	Y	Y
65	HVAC AIR DELIVERY AND TEMPERATURE CONTROL (REFER TO SECTION 1B)	Y	Y
76	AUDIBLE WARNINGS: TONE	Y	Y
81	INSTRUMENT CLUSTER: WITH GAGES	Y	Y
89	STEERING WHEEL CONTROLS: RADIO (UK3) (REFER TO 8A-150-1)	N/A	Y
91	WIPER/WASHER: PULSE	Y	Y
100	HEADLIGHTS AND FOG LIGHTS: WITHOUT DRL (T61)	Y	Y
102	HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61)	Y	Y

(CONTINUED ON NEXT PAGE)

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(CONTINUED FROM PREVIOUS PAGE)

8A SECTION	SECTION CONTENT	Chevy Camaro	Pontiac Firebird
104	HEADLIGHT DOORS	N/A	Y
110	EXTERIOR LIGHTS	Y	Y
112	BACKUP LIGHTS	Y	Y
114	INTERIOR LIGHTS	Y	Y
117	INTERIOR LIGHTS DIMMING	Y	Y
120	POWER WINDOWS (A31)	Y	Y
121	CONVERTIBLE TOP	Y	Y
130	POWER DOOR LOCKS (AU3)	Y	Y
132	KEYLESS ENTRY (AU0)	Y	Y
133	THEFT DETERRENT SYSTEM: PASS-Key® II	Y	Y
135	HATCH RELEASE (A90)	Y	Y
138	BRAKE TRANSMISSION SHIFT INTERLOCK (AUTOMATIC TRANSMISSION)	Y	Y
140	POWER SEAT: DRIVER 6-WAY (AC3)	Y	Y
141	POWER SEATS: ULTIMA (AQ9)	N/A	Y
147	POWER MIRRORS (DG7)	Y	Y
150	RADIO	Y	Y
200	SERVICE PARTS INFORMATION	Y	Y
201	COMPONENT LOCATION VIEWS	Y	Y
202	HARNESS CONNECTOR FACES	Y	Y
203	HARNESS ROUTING VIEWS	Y	Y

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INTRODUCTION

DIAGNOSTIC INFORMATION

The Electrical Diagnosis section contains the following types of diagnostic information (the way in which the information is arranged may vary from system to system or vehicle to vehicle):

- Electrical Schematics
- Component Location Lists
- Harness Connector Faces
- Troubleshooting Hints
- System Checks
- System Diagnosis
- Circuit Operation Descriptions
- Harness Routing Views

Using these elements together will make electrical troubleshooting faster and easier. Each element is described below.

The **Circuit Schematic** shows the electrical current paths when a circuit is operating properly. It is essential to understand how a circuit *should* work before trying to diagnose a failure.

The **Component Location List** helps to find where the components of a system can be located. A brief statement of the location is given and also a reference to a drawing that shows the component and its connecting wires. These **Component Location Views** are in SECTION 8A-201.

The **Harness Connector Faces** show the cavity or terminal locations in all the 4 pin or larger connectors shown in the schematic. Together with the wire colors and terminals given in the schematic, they help locate test points. The drawings show the connector faces as seen after the harness connector has been disconnected from a component or mating connector.

The **Troubleshooting Hints** offer short-cuts or checks to help determine the cause of a complaint. They are not intended to be a rigid procedure for solving an electrical situation. Rather, Troubleshooting Hints represent a common-sense approach, based on an understanding of the circuit.

The **System Check** gives a summary of how the system should be operated and what should happen. This is especially important when working on a new system. The System Check will help identify symptoms, lead to diagnosis and confirm normal operation of the system after repair.

The **System Diagnosis** provides a procedure to follow that will locate the condition in a circuit causing a malfunction. If your own knowledge of the system and the Troubleshooting Hints have not produced a quick fix, follow the System Diagnosis. All procedures are based on symptoms to assist in locating the condition as fast as possible.

The **Circuit Operation** describes the components and how the circuit works.

Harness Routing Views are found in SECTION 8A-203. These views show the routing of the major wiring harnesses and the in-line connectors between the major harnesses.

SECTION/PAGE NUMBER

Sections are organized by sub-systems with most containing a circuit schematic and the associated text. This makes the section easy to use, since the page number will stay the same year after year. For example, the Cruise Control schematic will always begin on page 8A-34-0. The other information for Cruise Control follows and is paged 8A-34-1, 8A-34-2, etc.

Some sections may have more than one circuit schematic, such as Power Distribution, Interior Lights and Air Conditioning. The circuit of interest can either be located by using the Index or by a quick look through the related section.

All the engine circuits for a particular engine VIN type are in the same section. This makes that section easy to use, since schematics for other engines are not in your way. The Instrument Panel schematics are organized similarly. If you are working on a vehicle with a Digital Cluster, only the schematics that apply to that vehicle's Digital Cluster will be in the section you use. Information on the Indicators and Gages Clusters will be in other sections.

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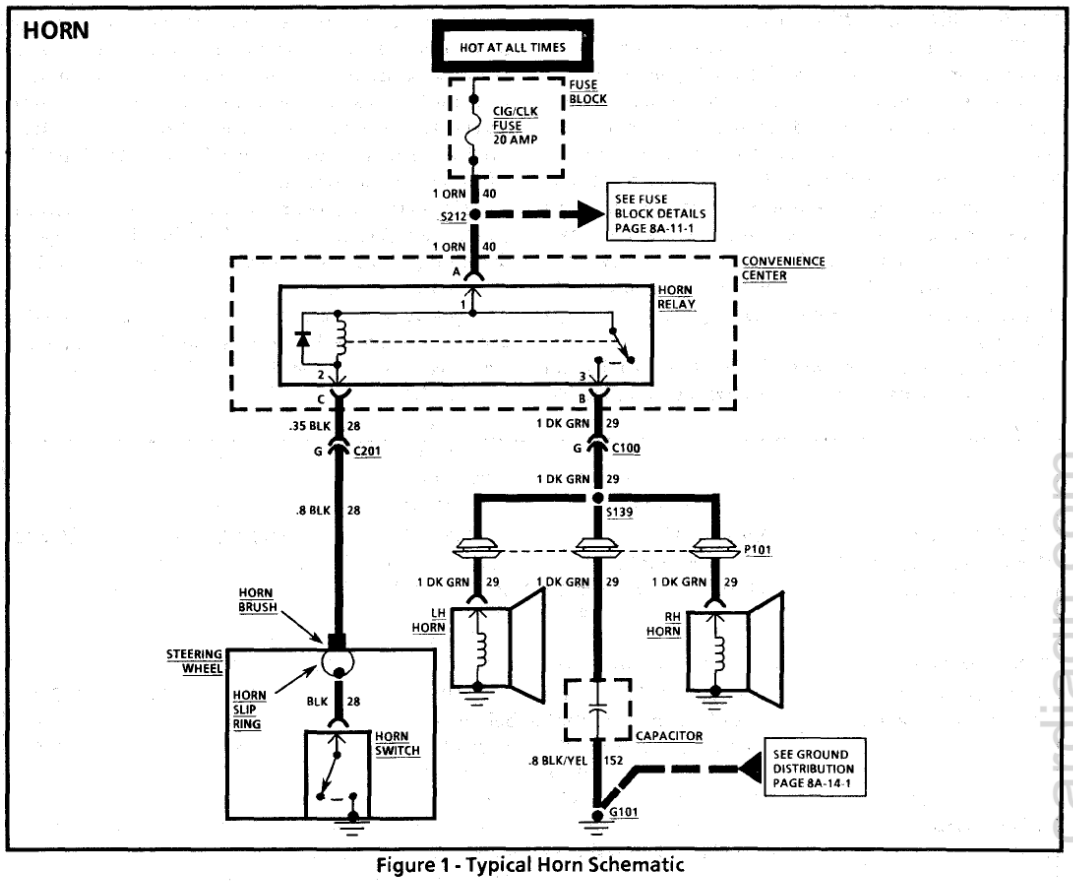


Figure 1 - Typical Horn Schematic

SCHEMATICS

Schematics break the entire electrical system down into individual circuits. Wiring which is not part of the circuit of interest is referenced to another page, where the circuit is shown complete.

Important:

- It is important to realize that no attempt is made on the schematic to represent components and wiring as they physically appear on the vehicle. For example, a 4-foot length of wire is treated no differently in a schematic from one which is only a few inches long. The number of cavities for each connector is listed in the Component Location List. Similarly, switches and other components are shown as simply as possible, with regard to function only.

When diagnosing a Horn problem, the technician would reference the Horn section. The schematic in Figure 1 is a typical example of what would be found in a Horn section of SECTION 8A, along with the following text.

Voltage is applied to the Horn Relay at all times. When the relay coil is grounded by closing the Horn Switch, the relay contacts close. When the relay contacts are closed, both the LH and RH Horns are energized.

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INTRODUCTION

COMPONENT LOCATIONS

To locate the schematic components on the vehicle, use the Component Location List, see Figure 2.

Listed in the left hand column are the components, connectors, grounds and splices shown on the schematic. To the right of the component is the location, "Under RH side of I/P." Reference to LH and RH is made as though the technician was sitting in the driver's seat. On the same line, in the next two columns, are page and figure references for SECTION 8A-201, "Component Location Views." In this case, you are directed to Figure 4 on page 8A-201-1.

Where connectors are listed, the number of cavities is provided. This represents the total number of cavities in the connector, regardless of how many are actually used. This information is provided to help identify connectors on the vehicle. In the far right column is a page reference where a view of the connector face may be found. Connectors with 3 cavities or less are not included in SECTION 8A-202, "Harness Connector Faces."

Grounds are listed next in the table. The location description for G101 reads, "Behind LH Composite Headlamp." You are directed to page 8A-201-8, Figure 14.

Nearly every component, connector, ground or splice shown on a schematic can be pinpointed visually by using the Component Location View figures.

COMPONENT	LOCATION	201-PG	FIG.	CONN
Convenience Center	Under RH side of I/P	1	4	
Fuse Block	Behind I/P Compartment Door	0	2	
CONNECTORS				
C100 (34 cavities)	Mounted to LH Hood Hinge	7	11	202-0
C210 (15 cavities)	Above Convenience Center, behind I/P Compartment	18	23	202-2
GROUNDS				
G101	Behind LH Composite Headlamp	8	14	
SPLICES				
S139	Forward Lamp Wiring Harn, behind RH Composite Headlamp	8	15	
S212	I/P Wiring Harn, behind I/P, above Steering Column	6	8	

Figure 2 - Typical Entries in the Component Location List

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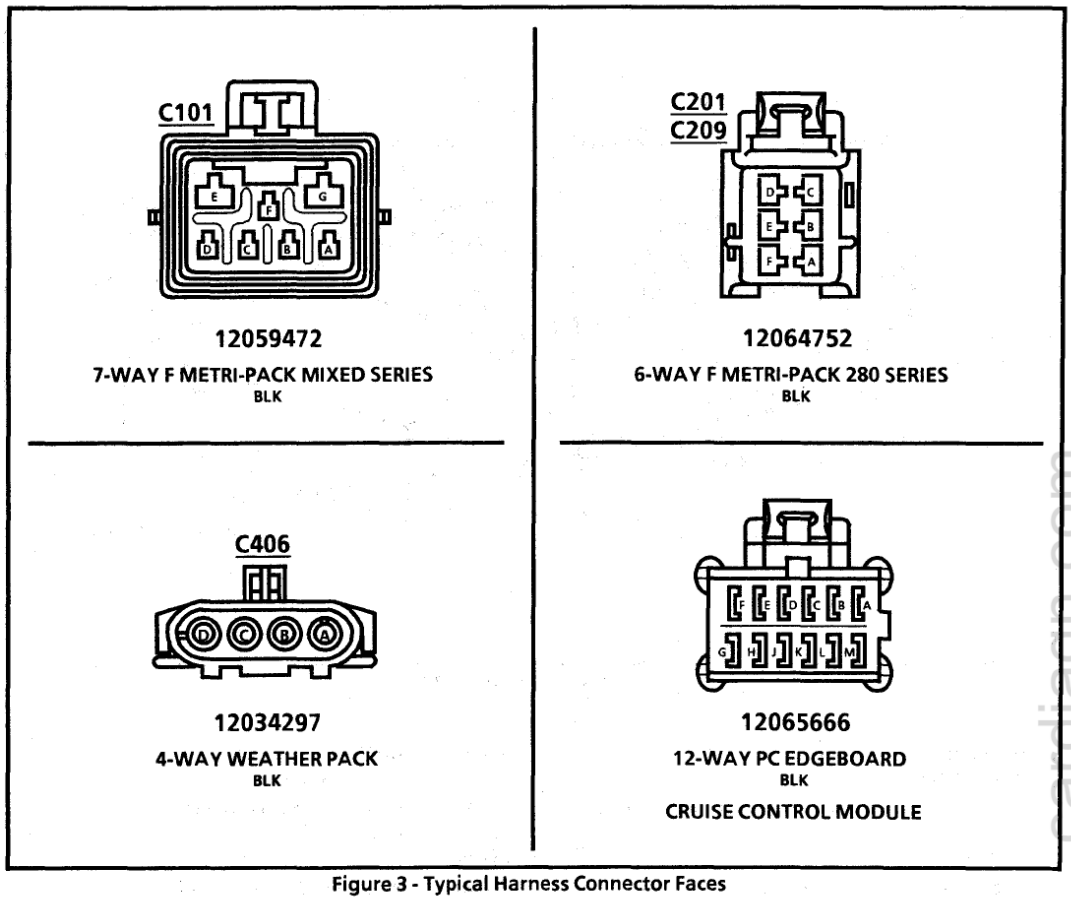


Figure 3 - Typical Harness Connector Faces

HARNESS CONNECTOR FACES

The connectors, see Figure 3, are labeled with the component they are connected to, or the connector number. In addition the color of the connector is given along with the family/series name.

If you need to backprobe a connector while it is on the component (refer to page 8A-4-3 for probing procedures), the order of the terminals must be mentally reversed. The wire color is a help in this situation. If there is more than one wire of the same color, you may need to locate a test point from its terminal number. A useful trick is to imagine that you are probing a terminal from behind the page you are looking at. Then mentally locate that terminal with respect to the keyway or other reference mark.

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INTRODUCTION

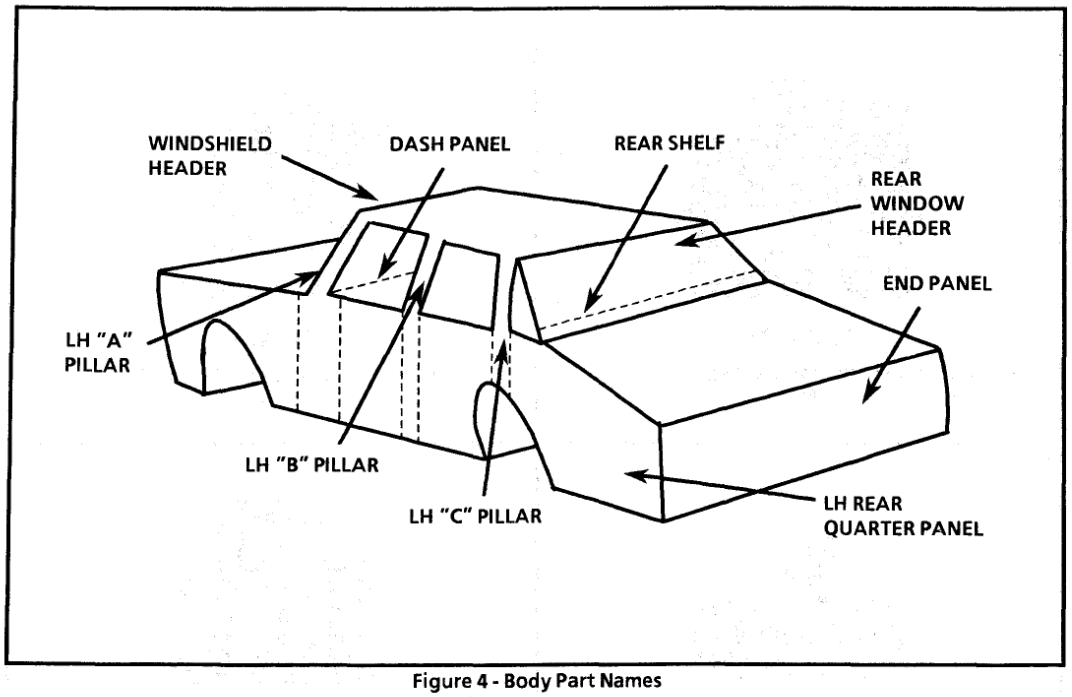


Figure 4 - Body Part Names

OTHER INFORMATION

BODY PART NAMES

Refer to Figure 4 for the correct body part names.

VIN REFERENCES

If schematics for more than one variation of an engine type – V6, for example – are shown, then the schematics will be labeled with VIN designation to distinguish the variations.

SERVICE PARTS IDENTIFICATION LABEL

To aid service and parts personnel in identifying options and parts originally installed, a Service Parts Identification Label has been placed in the vehicle. See SECTION 0A for the location of the label and the definition of the option codes.

ABBREVIATIONS

A/C	Air Conditioning
CCM	Central Control Module
CKT	Circuit
CONN	Connector
EBCM	Electronic Brake Control Module
EBTCM	Electronic Brake and Traction Control Module
ECM	Engine Control Module
HARN	Harness
I/P	Instrument Panel
LH	Left Hand
PCM	Powertrain Control Module
RH	Right Hand
TERM	Terminal

For a list of additional abbreviations, refer to SECTION 0A.

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POWER DISTRIBUTION

The Power Distribution schematic shows the wiring from the Battery and Generator to the Starter Solenoid, Fuse Block, Ignition Switch and Light Switch. The first component after a Fusible Link is also shown. In certain instances, the first component after a Fuse Block fuse and Light Switch is also shown.

The Power Distribution schematic refers to Fuse Block Details or the appropriate section schematics. By using these schematics, power distribution wiring can be followed from the Battery and Generator to the first component after a Fusible Link, Fuse or Light Switch. The ability to follow the power distribution wiring to the first component in each circuit is extremely helpful in locating short circuits which cause fusible links and fuses to open.

Figure 5 is a sample Power Distribution schematic. It shows how voltage is applied from the positive battery terminal to the various circuits on the vehicle. For example, battery voltage is applied to the Starter Solenoid, Fusible Link D, Fuses 1 and 2 in the Fuse Block and the Light Switch in the LH Pod. These fuses are said to be Hot At All Times, since battery voltage is always applied to them.

Notice that battery voltage is also applied to Fusible Link F and Coolant Fan Relay.

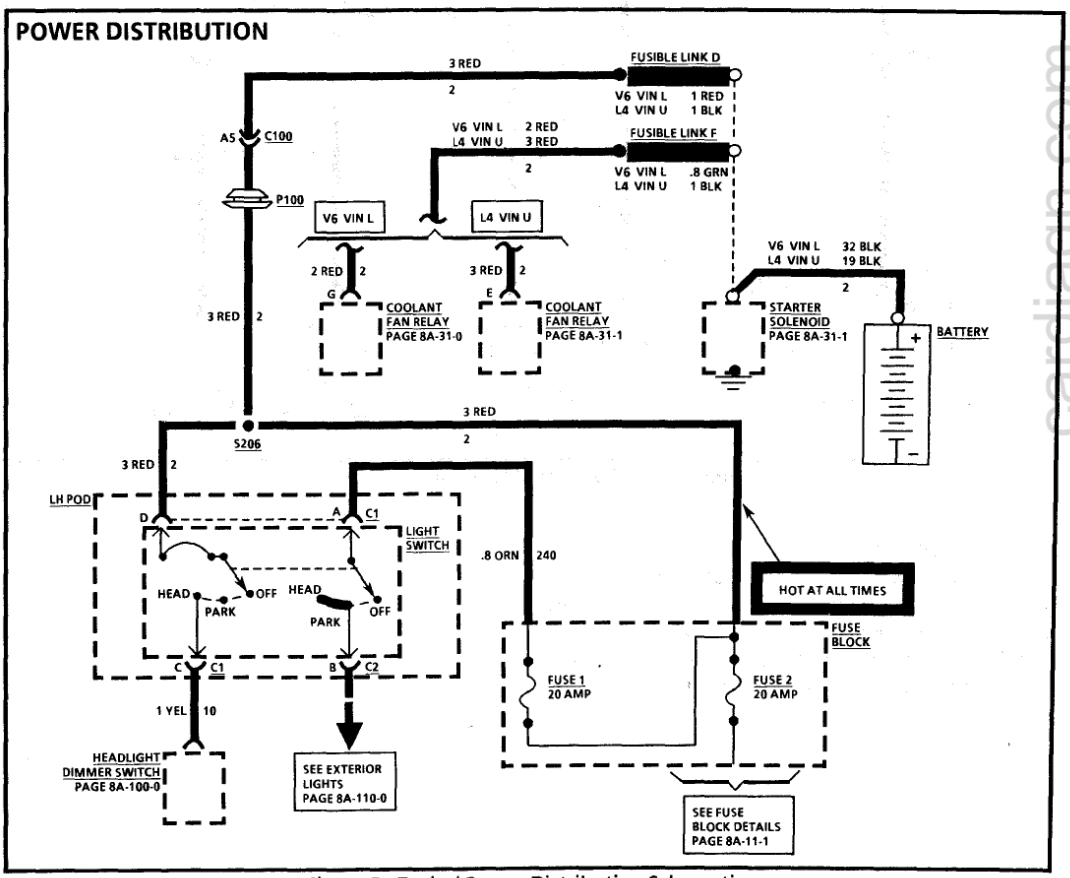


Figure 5 - Typical Power Distribution Schematic

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INTRODUCTION

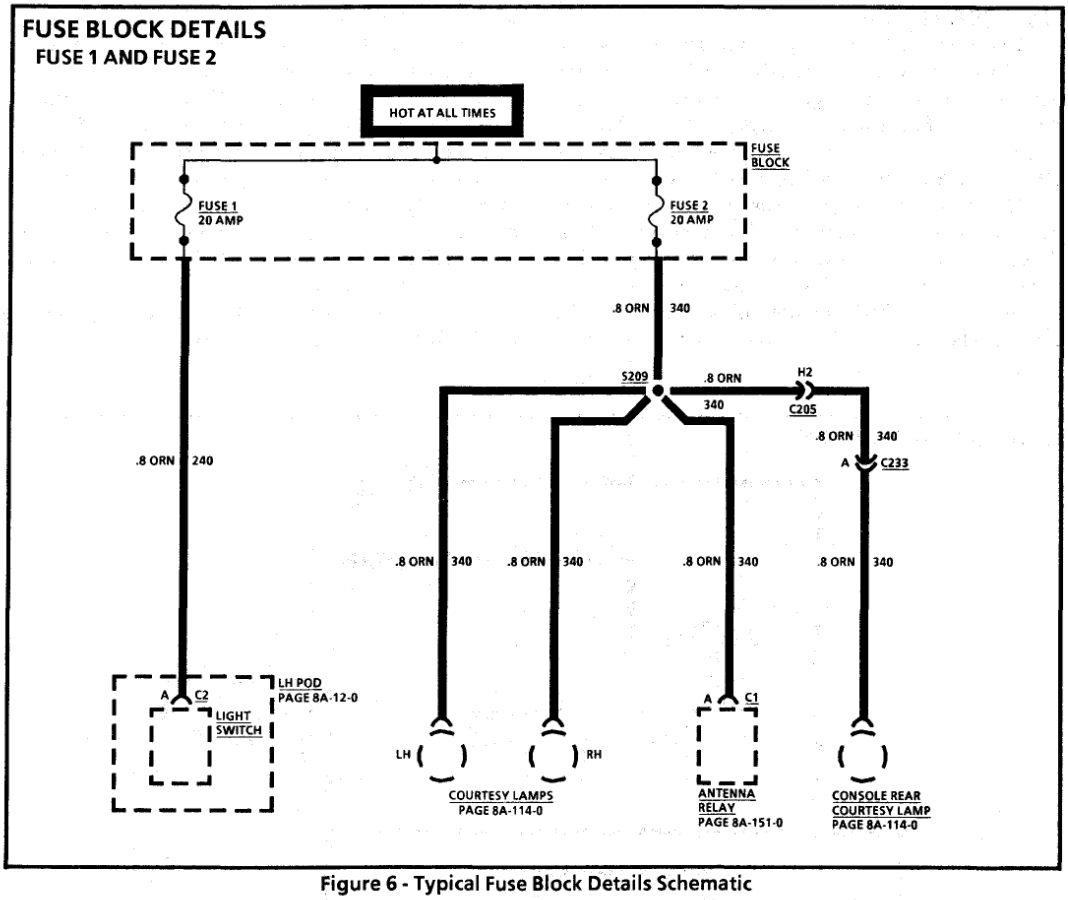


Figure 6 - Typical Fuse Block Details Schematic

FUSE BLOCK DETAILS

The Fuse Block Details schematic, see Figure 6, shows all of the wiring between a fuse and the components connected to the fuse. The Fuse Block Details schematic is extremely helpful in locating a short circuit that causes a fuse to open.

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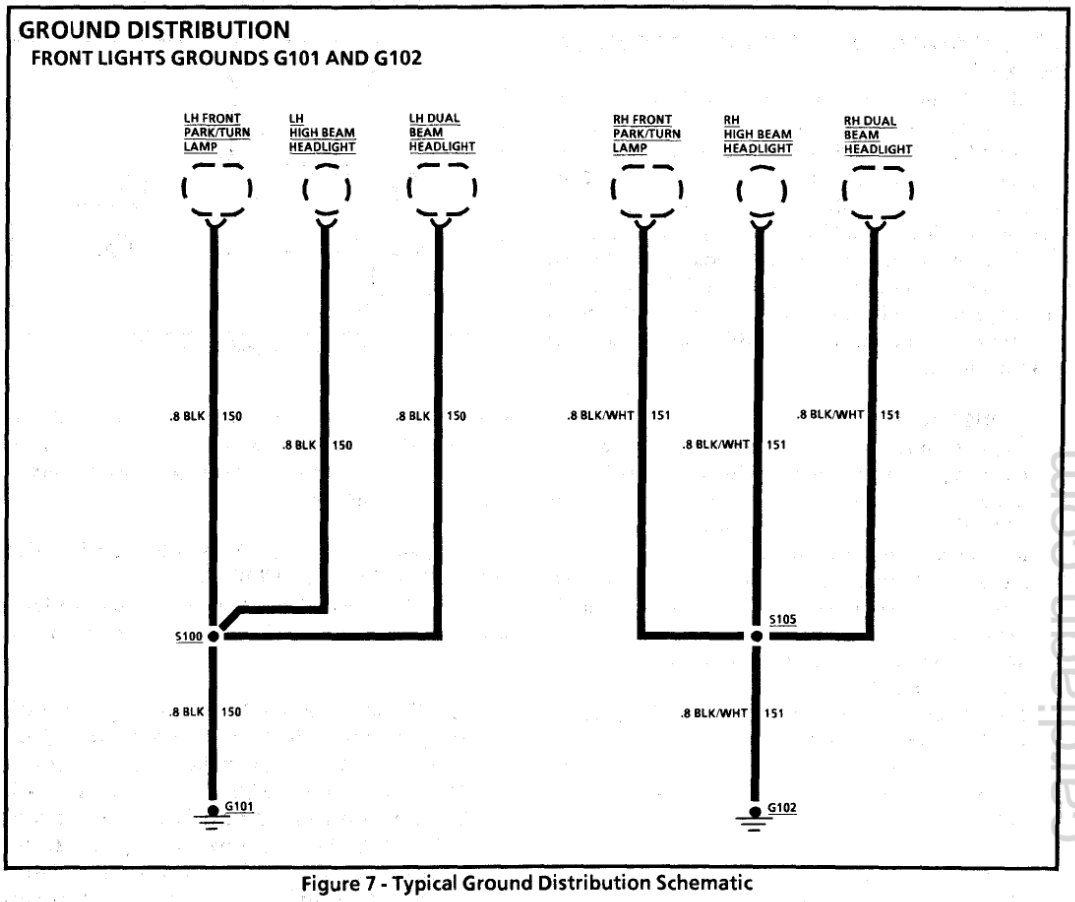


Figure 7 - Typical Ground Distribution Schematic

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GROUND DISTRIBUTION

Figure 7 is a sample Ground Distribution schematic for the Headlamps. It shows exactly which components share each ground. This information can often be a time-saver when troubleshooting ground circuits.

For example, if both Headlamps and the Park/Turn Lamp on one side are out, suspect an open in their common ground wire or the ground connection itself. On the other hand, if one of the lamps work, the ground and the wire up to the splice are good. You have learned this just by inspecting the schematic and knowing the vehicle's symptoms. No actual work on the lighting system was needed.

SYMBOLS

ELECTROSTATIC DISCHARGE (ESD) AND SUPPLEMENTAL INFLATABLE RESTRAINT (SIR)

ELECTROSTATIC DISCHARGE (ESD) SENSITIVE DEVICES

All ESD sensitive components are Solid State and the following information applies to them.

The ESD symbol (Figure 1) is used on schematics (Figure 2) to indicate which components are ESD sensitive. When handling any electronic part, the service technician should follow the guidelines below to reduce any possible electrostatic charge build-up on the service technician's body and inadvertent discharge to the electronic part. If it is not known whether or not a component is ESD sensitive, assume it is susceptible.

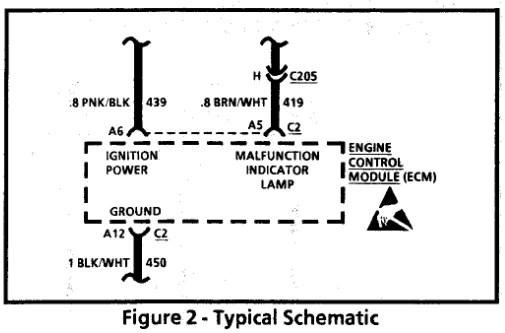


Figure 2 - Typical Schematic

HANDLING PROCEDURES

1. Always touch a known good ground before handling the part. This should be repeated while handling the part and more frequently after sliding across a seat, sitting down from a standing position or walking a distance.
2. Avoid touching electrical terminals of the part, unless so instructed by a written diagnostic procedure.
3. When using a voltmeter, be sure to connect the ground lead first.
4. Do not remove a part from its protective package until it is time to install the part.
5. Before removing the part from its package, ground the package to a known good ground on the vehicle.

MEASURING PROCEDURES

The circuits shown within the boxes are greatly simplified. Do not troubleshoot by measuring resistance at any terminal of these devices unless so instructed by a written diagnostic procedure. Due to the simplification of the schematics, resistance measurements could be misleading, or could lead to electrostatic discharge.

SUPPLEMENTAL INFLATABLE RESTRAINT (SIR) SYSTEM: IF EQUIPPED

The SIR symbol (Figure 3) is used on schematics to alert the technician of the following important caution:

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in SECTION 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in SECTION 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

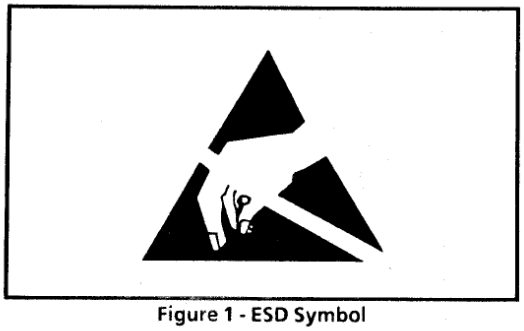


Figure 1 - ESD Symbol

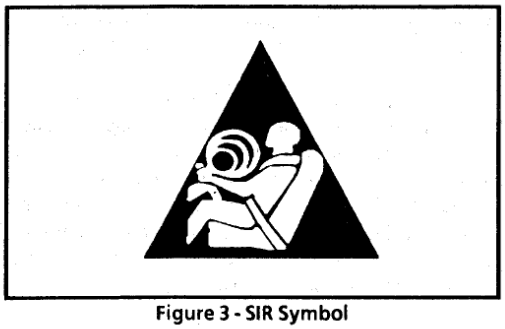
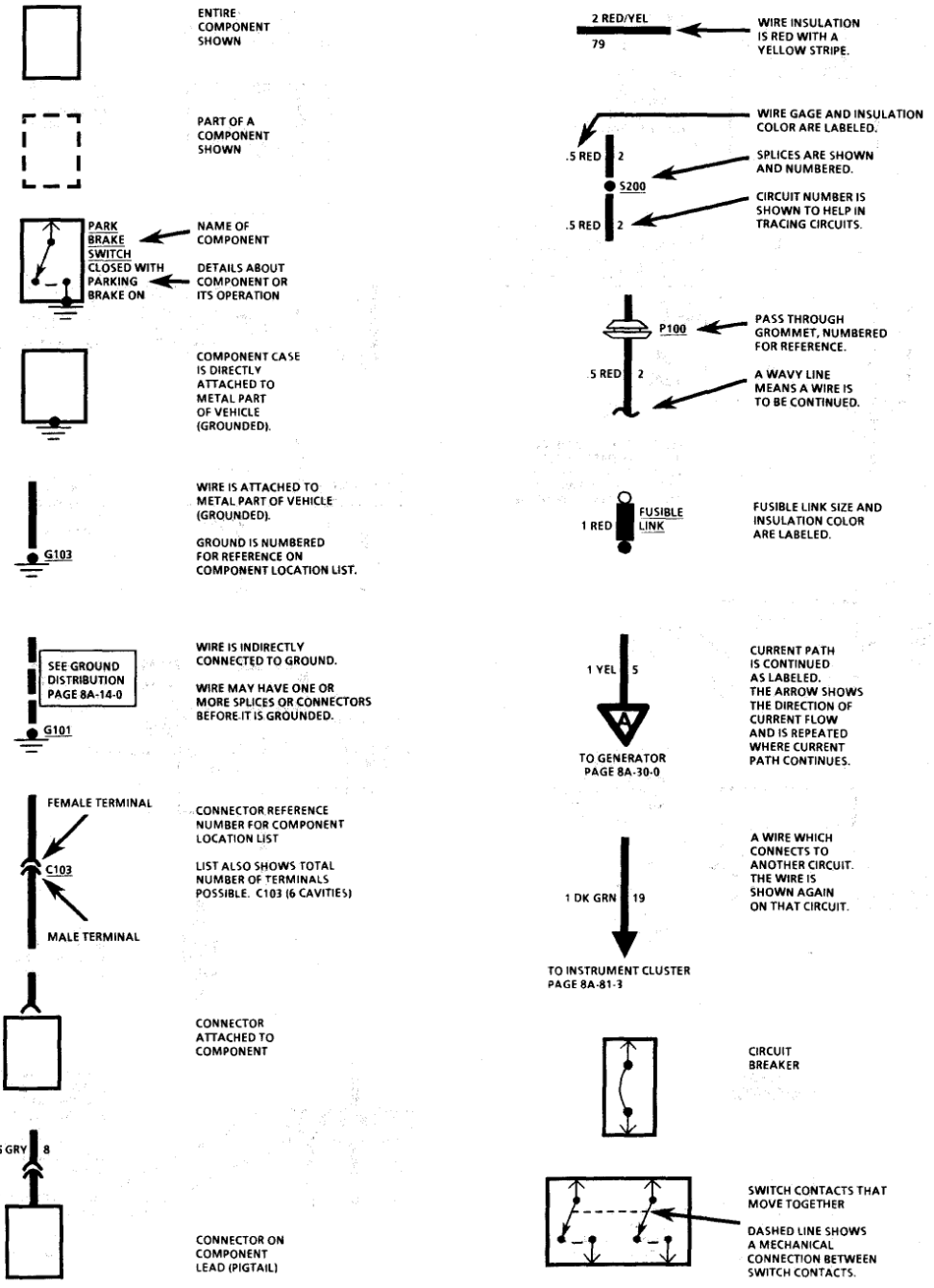


Figure 3 - SIR Symbol

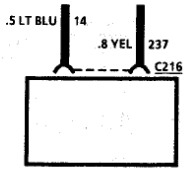
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SYMBOLS



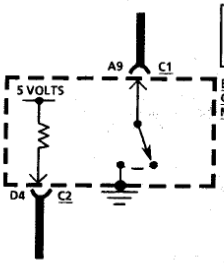
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SYMBOLS



TWO TERMINALS IN THE SAME CONNECTOR

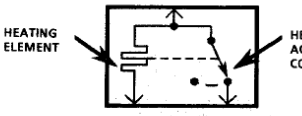
DASHED LINE SHOWS A PHYSICAL CONNECTION BETWEEN PARTS (SAME CONNECTOR).

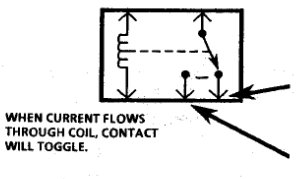


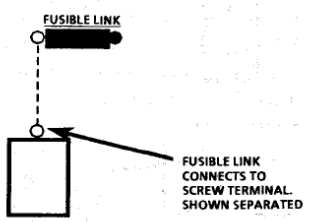
ECM CONNECTOR IDENTIFICATION
C1 - BLACK - 32 WAY
C2 - BLACK - 24 WAY

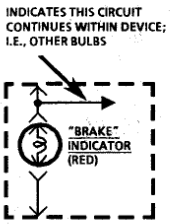
ENGINE CONTROL MODULE (ECM)

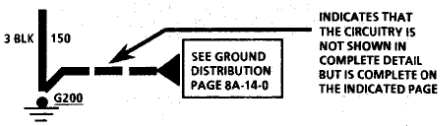
ELECTROSTATIC DISCHARGE (ESD) SENSITIVE DEVICES ARE IDENTIFIED. REFER TO PAGE 8A-3-0 FOR HANDLING AND MEASURING PROCEDURES.

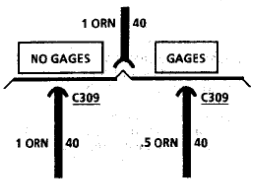


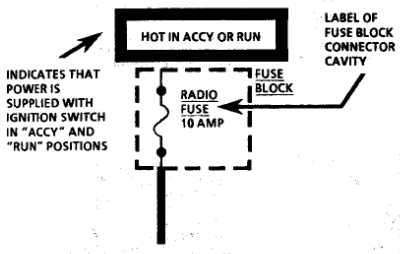






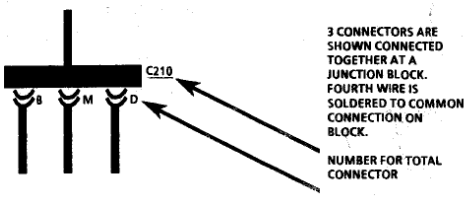




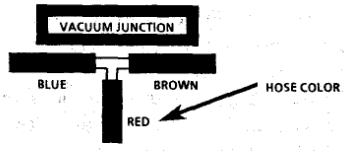


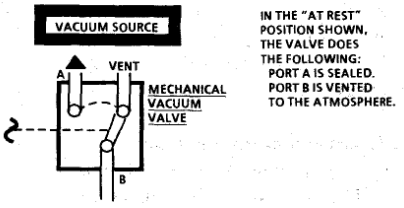


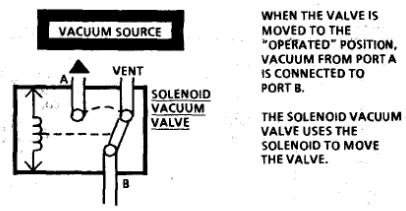
DIODE
ALLOWS CURRENT TO FLOW IN ONE DIRECTION ONLY

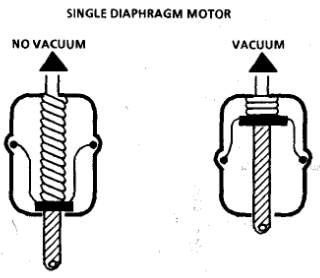


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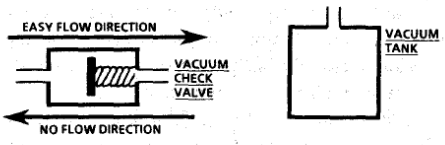


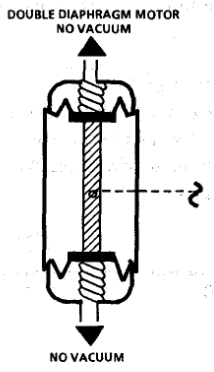


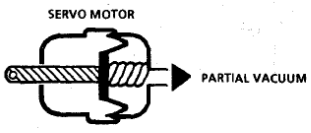




Vacuum Motors operate like electrical solenoids, mechanically pushing or pulling a shaft between two fixed positions. When vacuum is applied, the shaft is pulled in. When no vacuum is applied, the shaft is pushed all the way out by a spring.







Double Diaphragm Motors can be operated by vacuum in two directions. When there is no vacuum, the motor is in the center "at rest" position.

Some Vacuum Motors such as the Servo Motor in the Cruise Control can position the actuating arm at any position between fully extended and fully retracted. The servo is operated by a control valve that applies varying amounts of vacuum to the motor. The higher the vacuum level, the greater the retraction of the motor arm. Servo Motors work like the two position motors; the only difference is in the way the vacuum is applied. Servo Motors are generally larger and provide a calibrated control.

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TROUBLESHOOTING PROCEDURES

BASIC KNOWLEDGE REQUIRED

Without a basic knowledge of electricity, it will be difficult to use the diagnostic procedures contained in this section. You should understand the basic theory of electricity and know the meaning of voltage, current (amps) and resistance (ohms). You should understand what happens in a circuit with an open or a shorted wire. You should be able to read and understand a wiring diagram.

The following four-step troubleshooting procedure is recommended:

Step 1: Check the Problem

Perform a System Check to determine a symptom. Don't waste time fixing part of the problem! Do not begin disassembly or testing until you have narrowed down the possible causes.

Step 2: Read the Electrical Schematic

Study the schematic. Read the Circuit Operation text if you do not understand how the circuit should work. Check circuits that share wiring with the problem circuit. (Shared circuits are shown on Power Distribution, Ground Distribution, Fuse Block Details and Light Switch Details pages.) Try to operate the shared circuits. If the shared circuits work, then the shared wiring is OK. The cause must be within the wiring used only by the problem circuit. If several circuits fail at the same time, chances are the power (fuse) or ground circuit is faulty.

Step 3: Find the fault and repair

- Narrow down the possible causes.
- Use the Troubleshooting Hints.
- Make the necessary measurements or checks as given in the System Diagnosis.

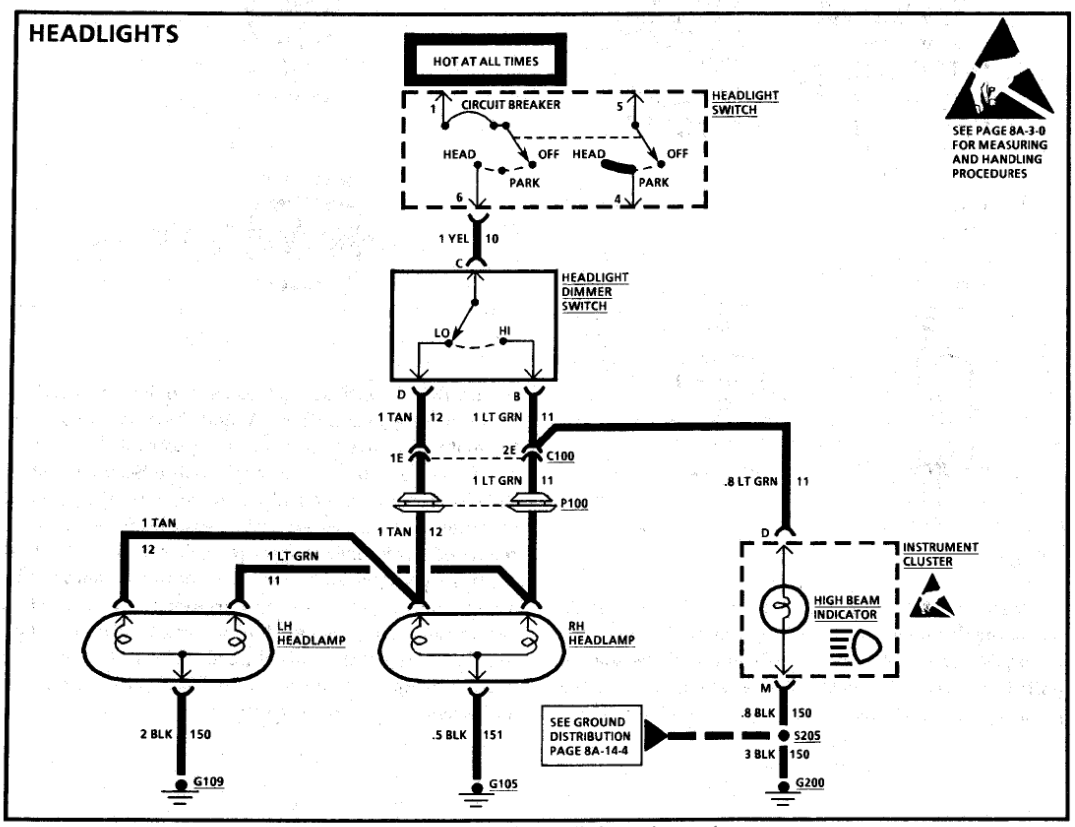


Figure 1 - Typical Headlights Schematic

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- Before replacing a component, check power, signal and ground wires at the component harness connector. If the checks and connections are OK, the most probable cause is component failure.

Step 4: Test the Repair

Repeat the System Check to verify the fault has been corrected and that no other faults were induced during the repair.

Example:

A customer brings in a vehicle and says that the HI beams do not work.

Step 1: Perform a System Check on the Headlight Circuit. You may discover that both LO beams operate. In "HI," you may notice that the HI Beam Indicator comes on, but neither HI beam operates.

Step 2: Read the Headlights Electrical Schematic, see Figure 1. This is the step that will save time and labor. Remember, it is essential to understand how a circuit should work, before trying to figure out why it doesn't.

After you understand how the circuit should operate, read the schematic again, this time keeping in mind what you have learned by operating the circuit.

Since both LO beams work, you know that the Headlight Switch, the YEL wire, the LO contacts of the Headlight Dimmer Switch, terminal "1E" of C100, the TAN wires and grounds G105 and G109 are all good.

Furthermore, since you saw that the HI Beam Indicator came on when the Headlight Dimmer Switch was moved to "HI," you know that the HI contacts of the Headlight Dimmer Switch and the LT GRN wire between the Headlight Dimmer Switch and C100 are good.

At this point, you could test for voltage at the RH Headlamp with the Headlight Dimmer Switch in "HI." However, it is extremely unlikely that the HI beam filaments have burned out in both headlamps, or that both headlamps connections are bad. The cause must be a bad connection at C100, or a break in the LT GRN wire between C100 and the RH Headlamp.

You have quickly narrowed the possible causes down to one specific area, and have *done* absolutely *no* work on the vehicle itself.

Step 3: Find the fault and repair it. Using the Component Location List and the corresponding figure, you can quickly find C100 and the LT GRN wire, locate the exact trouble point and make the repair.

Step 4: Check the repair by performing a System Check on the Headlights Circuit. This, of course, means making sure that both HI beams, both LO beams and the HI Beam Indicator are all working.

Now suppose that the symptoms were different. You may have operated the Headlamps and found that the LO beams were working, but neither the HI beams nor the HI Beam Indicator were working. Looking at the schematic, you might conclude that it is unlikely that both HI beam filaments and the HI Beam Indicator have all burned out at once. The cause is probably the Headlight Dimmer Switch or its connector.

TROUBLESHOOTING TOOLS

Electrical troubleshooting requires the use of common electrical test equipment.

TEST LIGHT/DIGITAL VOLTMETER

Use a test light to check for voltage. A Test Light (J 34142-B) is made up of a 12 volt light bulb with a pair of leads attached. After grounding one lead, touch the other lead to various points along the circuit where voltage should be present. When the bulb goes on, there is voltage at the point being tested.

A DVM can be used instead of a test light. While a test light shows whether or not voltage is present, a DVM indicates how much voltage is present.

An increasing number of circuits include solid state control modules. One example is the Engine Control Module (ECM). Voltages in these circuits should be tested only with a 10-megohm or higher impedance DVM or multimeter (J 39200). Unless directed to within the diagnostics, never use a test light on circuits that contain solid state components, since damage to these components may result.

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TROUBLESHOOTING PROCEDURES

When testing for voltage or continuity at the connection, it is not necessary to separate the two halves of the connector. Unless testing a Weather Pack® connector, always probe the connector from the back. Always check both sides of the connector. An accumulation of dirt and corrosion between contact surfaces is sometimes a cause of electrical problems. A terminal contact checking procedure can be found on page 8A-4-6.

CONNECTOR TEST ADAPTERS

Connector Test Adapter Kit (J 35616-A) is available for making tests and measurements at separated connectors. This kit contains an assortment of probes which mate with many of the types of terminals you will see. Avoid using paper clips and other substitutes since they can damage terminals and cause incorrect measurements.

SELF-POWERED TEST LIGHT

A self-powered test light (J 21008-A) can be used to check for continuity. This tool is made up of a light bulb, Battery and two leads. If the leads are touched together, the bulb will go on.

A self-powered test light is used only on an unpowered circuit. First remove the fuse which feeds the circuit you're working on. Select two specific points along the circuit through which there should be continuity. Connect one lead of the self-powered test light to each point. If there is continuity, the test light circuit will be completed and the bulb will go on.

Never use a self-powered test light on circuits that contain solid state components, since damage to these components may result.

OHMMETER

An ohmmeter can be used instead of a self-powered test light. The ohmmeter shows how much resistance there is between two points along a circuit. Low resistance means good continuity.

Circuits which include any solid state control modules, such as the Engine Control Module (ECM), should be tested only with a 10-megohm or higher impedance digital multimeter (J 39200).

When measuring resistance with a DVM, the vehicle Battery should be disconnected. This will prevent incorrect readings. DVMs apply such a small voltage to measure resistance that the presence of voltages can upset a resistance reading.

Diodes and solid state components in a circuit can cause an ohmmeter to give a false reading. To find out if a component is affecting a measurement, take a reading once, reverse the leads and take a second reading. If the readings differ, the solid state component is affecting the measurement.

FUSED JUMPER WIRE

A fused jumper (J 36169) is available with small clamp connectors providing adaptation to most connectors without damage. This fused jumper wire is supplied with a 20 amp fuse which may not be suitable for some circuits. Do not use a fuse with a higher rating than the fuse that protects the circuit being tested.

NOTICE: A fused jumper may not protect solid state components from being damaged.

SHORT FINDER

Short Finders (J 8681-A) are available to locate hidden shorts to ground. The short finder creates a pulsing magnetic field in the shorted circuit and shows you the location of the short through body trim or sheet metal.

FUSE TESTER

A simple tester (J 34764) can detect a blown fuse. To check a fuse, the tester is applied directly to the fuse in the Fuse Block. Two probes contact the fuse, either into the slots of a flat fuse or to the metal ends of a glass fuse. With power on, a red LED in the tester lights if the fuse is open. The handle of the tester is a tool for removing either type of fuse.

TROUBLESHOOTING TESTS

Always check for aftermarket accessories (non OEM) as the first step in diagnosing electrical problems. If the vehicle is so equipped, disconnect the system to verify that these add-on accessories are not the cause of the problems.

Some possible causes of vehicle problems related to aftermarket accessories include:

1. Power feeds connected to points other than the Battery.
2. Antenna location.
3. Transceiver wiring located too close to vehicle electronic modules or wiring.
4. Poor shielding or poor connectors on antenna feedline.

Refer to 1990/1991 model year bulletin entitled, "Installation Guidelines for Aftermarket Accessories" for specific information.

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PROBING

After probing, when reconnecting connectors or replacing terminals, always be sure to reinstall Connector Position Assurance (CPA) and Terminal Position Assurance (TPA).

Frontprobe

When frontprobing of connectors is required, always use a mating terminal adapter from Connector Test Adapter Kit (J 35616-A). The use of proper adaptors will ensure that proper terminal contact integrity is maintained. For a terminal contact checking procedure, refer to page 8A-4-6.

Backprobe

Only backprobe connector terminals when specifically called for in diagnostic procedures. Since backprobing can be a source of damage to connector terminals, extra care must be taken to avoid deforming the terminal, either by forcing the test probe too far into the cavity or by using too large a test probe.

After backprobing any connector, always check for terminal damage If terminal damage is suspected, check for proper terminal contact, refer to "Checking Terminal Contact," page 8A-4-6.

TESTING FOR VOLTAGE (Figure 2)

1. Connect one lead of a test light to a known good ground When using a DVM, be sure the voltmeter's negative lead is connected to ground.
2. Connect the other lead of the test light or voltmeter to a selected test point (connector or terminal).
3. If the test light illuminates, there is voltage present. When using a DVM, note the voltage reading.

TESTING FOR CONTINUITY (Figure 3)

1. Remove the fuse to the circuit involved.
2. Connect one lead of a self-powered test light or ohmmeter to one end of the part of the circuit you wish to test.
3. Connect the other lead to the other end of the circuit.
4. If the self-powered test light glows, there is continuity. When using an ohmmeter, low or no resistance means good continuity.

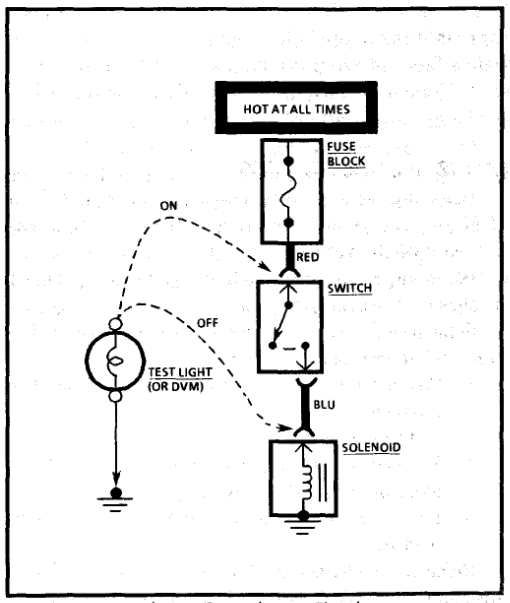


Figure 2 - Voltage Check

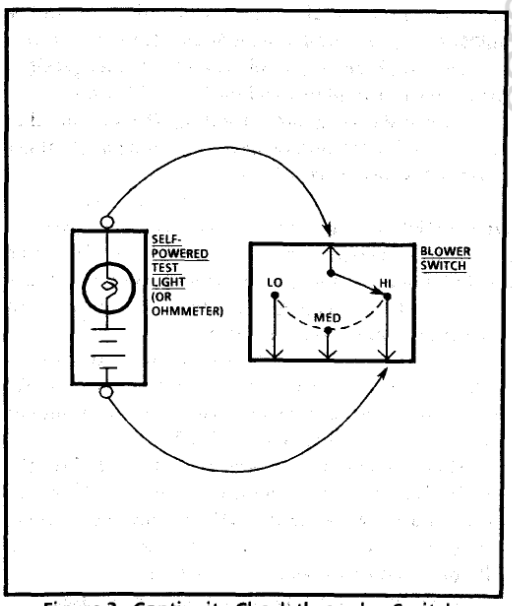


Figure 3 - Continuity Check through a Switch

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TROUBLESHOOTING PROCEDURES

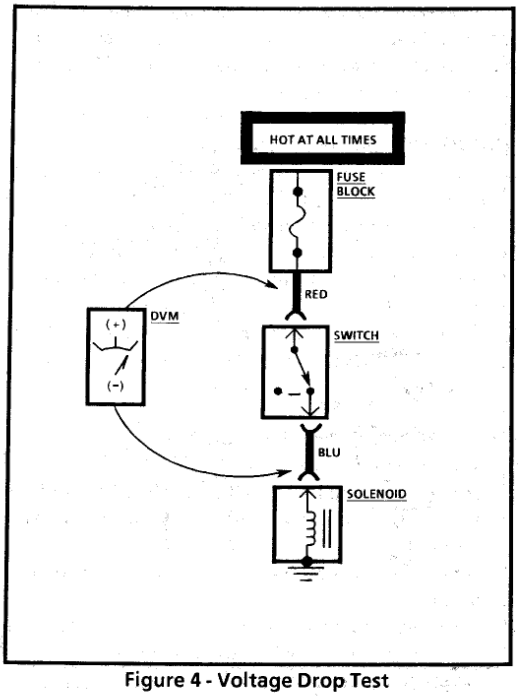


Figure 4 - Voltage Drop Test

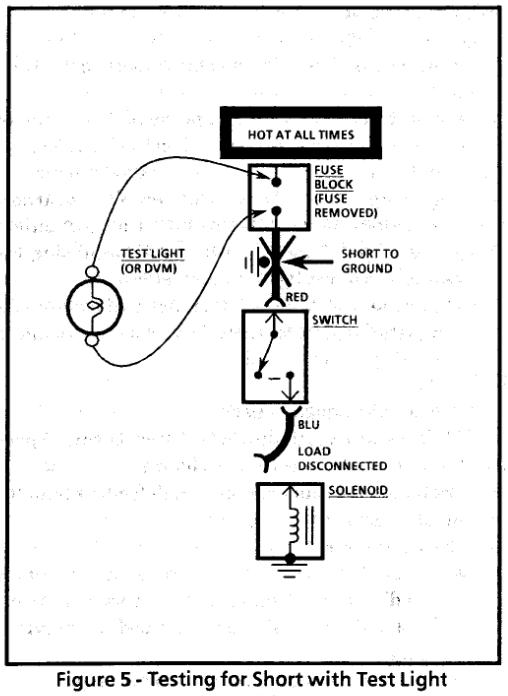


Figure 5 - Testing for Short with Test Light or DVM

TESTING FOR VOLTAGE DROP (Figure 4)

This test checks for voltage being lost along a wire, or through a connection or switch.

1. Connect the positive lead of a DVM to the end of the wire (or to one side of the connection or switch) which is closer to the Battery.
2. Connect the negative lead to the other end of the wire (or the other side of the connection or switch).
3. Operate the circuit.
4. The DVM will show the difference in voltage between the two points.

TESTING FOR SHORT TO GROUND

With a Test Light or DVM (Figure 5)

1. Remove the blown fuse and disconnect the load.
2. Connect a test light or voltmeter across the fuse terminals (be sure that the fuse is powered).
3. Beginning near the Fuse Block, wiggle the harness from side to side. Continue this at convenient points (about 6 inches apart) while watching the test light or DVM.
4. When the test light glows, or the DVM registers, there is a short to ground in the wiring near that point.

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With a Self-Powered Test Light or Ohmmeter (Figure 6)

1. Remove the blown fuse and disconnect the Battery and load.
2. Connect one lead of a self-powered test light or ohmmeter to the fuse terminal on the load side.
3. Connect the other lead to a known good ground.
4. Beginning near the Fuse Block, wiggle the harness from side to side. Continue this at convenient points (about 6 inches apart) while watching the self-powered test light or ohmmeter.
5. When the self-powered test light glows, or the ohmmeter registers, there is a short to ground in the wiring near that point.

Fuses Powering Several Loads

1. Find the schematic in "Fuse Block Details," page 8A-11-0 for the fuse that has blown.
2. Open the first connector or switch leading from the fuse to each load.
3. Replace the fuse.
   - If the fuse blows, the short is in the wiring leading to the first connector or switch. Use a test light or meter as described on previous page.
   - If fuse does not blow, refer to next step.
4. Close each connector or switch until the fuse blows in order to find which circuit has the short. Connect test lamp or meter at the connector to the suspect circuit (disconnected) rather than at the fuse terminals.

JUMP STARTING PROCEDURE

Refer to SECTION 6D-1 for jump starting procedure.

INTERMITTENTS AND POOR CONNECTIONS

Most intermittents are caused by faulty electrical connections or wiring, although occasionally a sticking relay or solenoid can be a problem. Some items to check are:

- Poor mating of connector halves, or terminals not fully seated in the connector body (backed out).
- Dirt or corrosion on the terminals. The terminals must be clean and free of any foreign material which could impede proper terminal contact.

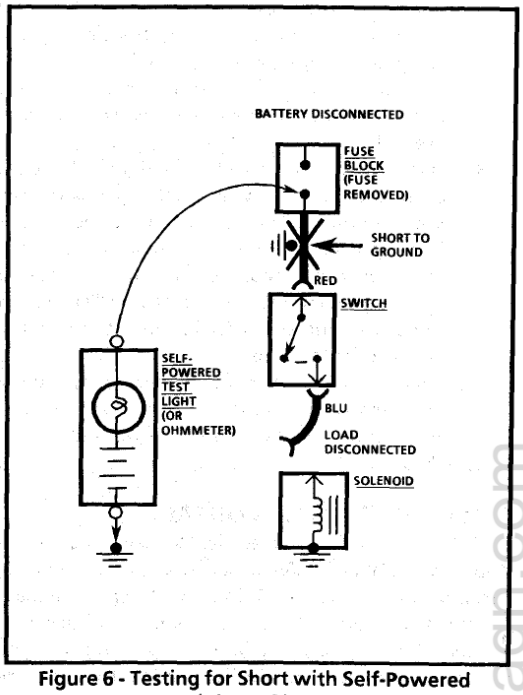


Figure 6 - Testing for Short with Self-Powered Test Light or Ohmmeter

- Damaged connector body, exposing the terminals to moisture and dirt, as well as not maintaining proper terminal orientation with the component or mating connector.
- Improperly formed or damaged terminals. All connector terminals in problem circuits should be checked carefully to ensure good contact tension. Use a corresponding mating terminal to check for proper tension. Refer to "Checking Terminal Contact" in this section for the specific procedure.
- The J 35616-A Connector Test Adapter Kit must be used whenever a diagnostic procedure requests checking or probing a terminal. Using the adapter will ensure that no damage to the terminal will occur, as well as giving an idea of whether contact tension is sufficient. If contact tension seems incorrect, refer to "Checking Terminal Contact" in this section for specifics.

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TROUBLESHOOTING PROCEDURES

- Poor terminal-to-wire connection. Some conditions which fall under this description are poor crimps, poor solder joints, crimping over wire insulation rather than the wire itself, corrosion in the wire-to-terminal contact area, etc.
- Wire insulation which is rubbed through, causing an intermittent short as the bare area touches other wiring or parts of the vehicle.
- Wiring broken inside the insulation. This condition could cause a continuity check to show a good circuit, but if only 1 or 2 strands of a multi-strand-type wire are intact, resistance could be far too high.

To avoid any of the above problems when making wiring or terminal repairs, always follow the instructions for wiring and terminal repair outlined in SECTION 8A-5.

CHECKING TERMINAL CONTACT

When diagnosing an electrical system that utilizes Metri-Pack 150/280/480/630 series terminals (refer to Terminal Repair Kit, J 38125-A, instruction manual, J 38125-4 for terminal identification), it is important to check terminal contact between a connector and component, or between in-line connectors, before replacing a suspect component.

Frequently, a diagnostic chart leads to a step that reads: "Check for poor connection." Mating terminals must be inspected to assure good terminal contact. A poor connection between the male and female terminal at a connector may be the result of contamination or deformation.

Contamination is caused by the connector halves being improperly connected, a missing or damaged connector seal, or damage to the connector itself, exposing the terminals to moisture and dirt. Contamination, usually in underhood or underbody connectors, leads to terminal corrosion, causing an open circuit or intermittently open circuit.

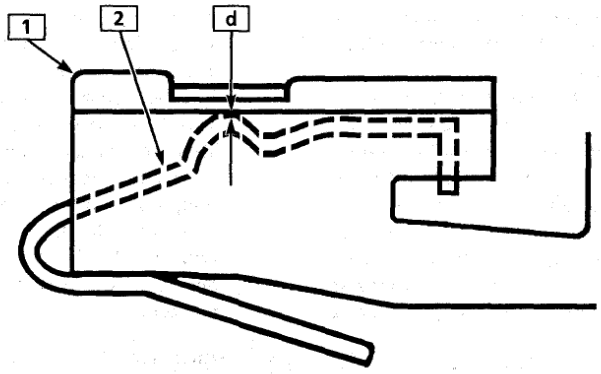
Deformation is caused by probing the mating side of a connector terminal without the proper adapter, improperly joining the connector halves or repeatedly separating and joining the connector halves. Deformation, usually to the female terminal contact tang, can result in poor terminal contact, see figure 7, causing an open or intermittently open circuit.

Follow the procedure below to check terminal contact.

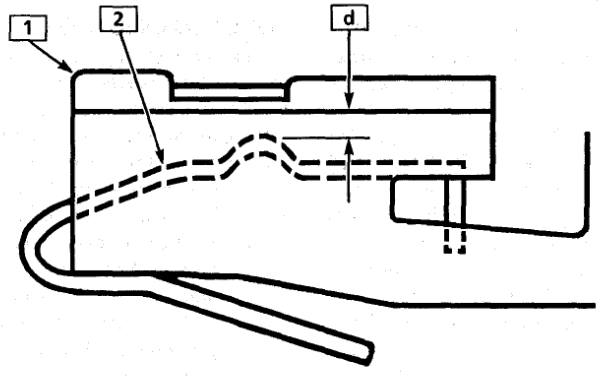
1. Separate the connector halves. Refer to Terminal Repair Kit, J 38125-A, instruction manual, J 38125-4.
2. Inspect the connector halves for contamination. Contamination will result in a white or green build-up within the connector body or between terminals, causing high terminal resistance, intermittent contact or an open circuit. An underhood or underbody connector that shows signs of contamination should be replaced in its entirety: terminals, seals and connector body.
3. Using an equivalent male terminal from the Terminal Repair Kit, J 38125-A, check the retention force of the female terminal in question by inserting and removing the male terminal to the female terminal in the connector body. Good terminal contact will require a certain amount of force to separate the terminals.
4. Using an equivalent female terminal from the Terminal Repair Kit, J 38125-A, compare the retention force of this terminal to the female terminal in question by joining and separating the male terminal to the good female terminal, and then joining and separating the male terminal to the female terminal in question. If the retention force is significantly different between the two female terminals, replace the female terminal in question, refer to Terminal Repair Kit, J 38125-A.

If a visual (physical) check does not reveal the cause of the problem, the vehicle may be able to be driven with a DVM connected to the suspected circuit. An abnormal voltage reading when the problem occurs indicates the problem may be in that circuit.

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d ABOUT EQUAL TO 0, GOOD TERMINAL CONTACT



d MUCH GREATER THAN 0, POOR TERMINAL CONTACT

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1 TYPICAL METRI-PACK 150/280/480/630 SERIES FEMALE TERMINAL (150 SERIES PUSH-TO-SEAT SHOWN)

2 CONTACT TANG

d AMOUNT OF DEFORMATION

Figure 7 - Deformation of a Typical Metri-Pack 150/280/480/630 Series Female Terminal

TROUBLESHOOTING PROCEDURES

DETECTING ELECTRICAL INTERMITTENTS

Use the following procedure to detect intermittent terminal contact or a broken wire with an intermittent connection inside the insulation.

The J 39200 Digital Multimeter has the ability to monitor current, resistance, or voltage while recording the minimum (MIN) and maximum (MAX) values measured. The meter can also be set to display the average (AVG) value measured.

When diagnosing circuits that have voltage applied, use the voltage setting to monitor a connector (or length of a circuit) which is suspected of having an intermittent connection but is currently operating normally.

1. Connect the J 39200 Digital Multimeter to both sides of a suspect connector (still connected) or from one end of a suspect circuit to the other. This will continuously monitor the terminal contacts or length of wire being checked. See "Meter Connections" for examples of the various methods for connecting the meter to the circuit.
2. Set the meter for voltage. Since the "MIN MAX" mode does not use auto ranging, manually select the voltage range necessary before proceeding.
3. Press the "MIN MAX" button. The meter should read "100 ms RECORD" (100 millisecond record) and emit a 1/4 second beep. The meter is now ready to record and will generate an audible tone for any change in voltage. At this point, you may wish to press the "PEAK MIN MAX" button, which will record any voltage variations that occur for at least 1 millisecond.
4. Try to simulate the condition that is potentially causing an intermittent connection, either by wiggling connections or wiring, test driving or performing other operations. If an open or resistance is created, a voltage will be present and the meter will emit a tone for as long as the open or resistance exists. Any change in voltage will cause the meter to emit a tone for no less than 1/4 second. (Listening for a tone while manipulating wiring is very helpful for narrowing in on an intermittent connection.)

   Use the MIN and MAX values when the meter is out of sight or sound range, in noisy areas or for test driving when it may not be possible to monitor the meter.

   To check the MIN and MAX recorded voltages press "MIN MAX" once for MAX and twice for MIN. A variation between MIN and MAX recorded voltages (unless nearly 0 volts) suggests an intermittent open or resistance exists and should be repaired as necessary. Refer to SECTION 8A-5 of any current GM Service Manual for approved repair procedures.

Important:

- The "100 ms RECORD" (100 millisecond record) mode is NOT the amount of time allowed to perform a specific procedure. It is the amount of time used to record each snapshot of information used for calculating "AVG" when in the "MIN MAX" mode.

METER CONNECTIONS

The previous diagnostic procedure was written to detect intermittents using the meter set to voltage. Whether using the current, voltage or resistance setting to detect intermittents, it is necessary to connect the meter to the circuit.

Following are examples of the various methods of connecting the meter to the circuit to be checked:

- Backprobe both ends of the connector and either hold the leads in place while manipulating the connector or tape the leads to the harness for continuous monitoring while performing other operations or test driving. (Do not backprobe "Weather Pack" type connectors.)
- Disconnect the harness at both ends of the suspect circuit where it connects either to a component or to other harnesses.
- Use Connector Test Adapter Kit J 35616-A to connect the meter to the circuit.
- If the system being diagnosed has a specified pinout or breakout box, it may be used to simplify connecting the meter to the circuit or for checking multiple circuits quickly.

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ADDITIONAL INFORMATION

NOTICE: Turn off power to the test circuit before attempting in-circuit resistance measurements to prevent false readings or damage to the meter. Do not use the meter to measure resistance through a solid state module.

Continuity tests that work well for detecting intermittent shorts to ground can be performed by setting the meter to ohms then pressing the "PEAK MIN MAX" button. An audible tone will be heard whenever the meter detects continuity for at least 1 millisecond.

The J 39200 Instruction Manual is a good source of information and should be read thoroughly upon receipt of the meter as well as kept on hand for reference during new procedures.

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REPAIR PROCEDURES

ELECTRICAL REPAIRS

This section provides instruction in the following repairs:

- Circuit Protection
- Typical Electrical Repairs
- Splicing Copper Wire
- Splicing Twisted/Shielded Cable
- Repairing Connectors (Except Weather Pack®)
- Repairing Weather Pack® (Environmental) Connectors
- Terminal Repair

After any electrical repair is made, always test the circuit afterwards by operating the devices in the circuit. This confirms not only that the repair is correct, but also, that it was the cause of the complaint.

CIRCUIT PROTECTION

The purpose of circuit protection is to protect the wiring assembly during normal and overload conditions. An overload is defined as a current requirement that is higher than normal. This overload could be caused by a short circuit or system malfunction. The short circuit could be the result of a pinched or cut wire or an internal device short circuit, such as an electronic module failure.

The circuit protection device is only applied to protect the wiring assembly, and not the electrical load at the end of the assembly. For example, if an electronic component short circuits, the circuit protection device will assure a minimal amount of damage to the wiring assembly. However, it will not necessarily prevent damage to the component.

CIRCUIT PROTECTION DEVICES

There are three basic types of circuit protection devices: Circuit Breaker, Fuse and Fusible Link.

CIRCUIT BREAKERS

A circuit breaker is a protective device designed to open the circuit when a current load is in excess of rated breaker capacity. If there is a short or other type of overload condition in the circuit, the excessive current will open the circuit between the circuit breaker terminals. There are two basic types of circuit breakers used in GM vehicles: cycling and non-cycling.

CYCLING CIRCUIT BREAKER

The cycling breaker will open due to heat generated when excessive current passes through it for a period of time. Once the circuit breaker cools, it will close again after a few seconds. If the cause of the high current is still present it will open again. It will continue to cycle open and closed until the condition causing the high current is removed.

NON-CYCLING CIRCUIT BREAKER

There are two types of non-cycling circuit breakers. One type is mechanical and is nearly the same as a cycling breaker. The difference is a small heater wire within the non-cycling circuit breaker. This wire provides enough heat to keep the bimetallic element open until the current source is removed.

The other type is solid state, called out in this section as Electronic Circuit Breaker (ECB). This device has a Positive Temperature Coefficient. It increases its resistance greatly when excessive current passes through it. The excessive current heats the ECB. As it heats, its resistance increases, therefore having a Positive Temperature Coefficient. Eventually the resistance gets so high that the circuit is effectively open. The ECB will not reset until the circuit is opened, removing voltage from its terminals. Once voltage is removed, the circuit breaker will re-close within a second or two.

FUSES

The most common method of automotive wiring circuit protection is the fuse (Figure 1). A fuse is a device that, by the melting of its element, opens an electrical circuit when the current exceeds a given level for a sufficient time. The action is non-reversible and the fuse must be replaced each time a circuit is overloaded or after a malfunction is repaired.

Fuses are color coded. The standardized color identification and ratings are shown in Figure 2. For service replacement, non-color coded fuses of the same respective current rating can be used.

Examine a suspect fuse for a break in the element. If the element is broken or melted, replace the fuse with one of equal current rating.

There are additional specific circuits with in-line fuses. These fuses are located within the individual wiring harness and will appear to be an open circuit if blown.

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AUTOFUSE

The Autofuse, normally referred to simply as "Fuse," is the most common circuit protection device in today's vehicle. The Autofuse is most often used to protect the wiring assembly between the Fuse Block and the system components.

MAXIFUSE

The Maxifuse was designed to replace the fusible link and Pacific Fuse Elements. The Maxifuse is designed to protect cables, normally between the Battery and Fuse Block, from both direct short circuits and resistive short circuits.

Compared to a fusible link or a Pacific Fuse Element, the Maxifuse performs much more like an Autofuse, although the average opening time is slightly longer. This is because the Maxifuse was designed to be a slower blowing fuse, with less chance of nuisance blows.

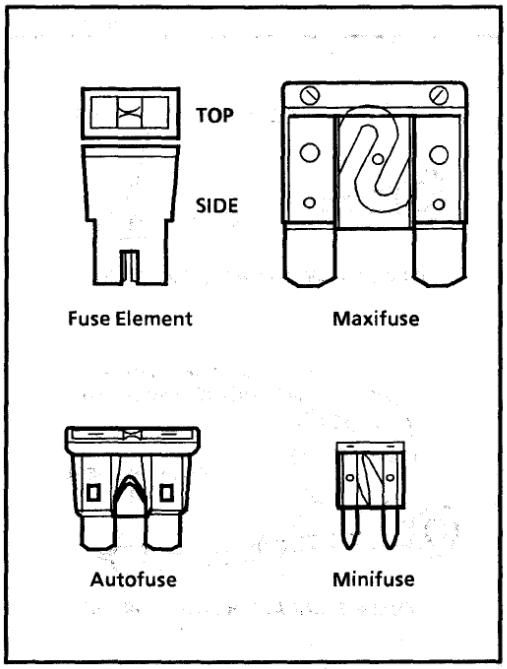


Figure 1 - Fuse Devices

AUTOFUSE

CURRENT RATING	COLOR
3	VIOLET
5	TAN
7.5	BROWN
10	RED
15	BLUE
20	YELLOW
25	NATURAL
30	GREEN

MAXIFUSE

CURRENT RATING	COLOR
20	YELLOW
30	GREEN
40	AMBER
50	RED
60	BLUE
70	BROWN
80	NATURAL

MINIFUSE

CURRENT RATING	COLOR
5	TAN
7.5	BROWN
10	RED
15	BLUE
20	YELLOW
25	WHITE
30	GREEN

PACIFIC FUSE ELEMENT

CURRENT RATING	COLOR
30	PINK
40	GREEN
50	RED
60	YELLOW

Figure 2 - Fuse Rating and Color

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REPAIR PROCEDURES

MINIFUSE

The Minifuse is a smaller version of the Autofuse and has a similar performance. As with the Autofuse, the Minifuse is usually used to protect the wiring assembly between a Fuse Block and system components. Since the Minifuse is a smaller device, it allows for more system specific fusing to be accomplished within the same amount of space as Autofuses.

PACIFIC FUSE ELEMENT/MAXIFUSE

The Pacific Fuse Element and Maxifuse were developed to be a replacement for the fusible link. Like a fusible link, the fuses are designed to protect wiring from a direct short to ground. These elements are easier to service and inspect than a fusible link and will eventually replace fusible links in all future vehicle applications.

FUSIBLE LINKS

In addition to circuit breakers and fuses, some circuits use fusible links to protect the wiring. Like fuses, fusible links are "one-time" protection devices that will melt and create an open circuit (see Figure 3).

Not all fusible link open circuits can be detected by observation. Always inspect that there is battery voltage past the fusible link to verify continuity.

Fusible links are used instead of a fuse in wiring circuits that are not normally fused, such as the ignition circuit. For AWG sizes, each fusible link is four wire gage sizes smaller than the wire it is designed to protect. For example: to protect a 10 gage wire use a 14 gage link or for metric, to protect a 5 mm^2 wire use a 2 mm^2 link (see Figure 6). Links are marked on the insulation with wire-gage size because the heavy insulation makes the link appear to be a heavier gage than it actually is. The same wire size fusible link must be used when replacing a blown fusible link.

Fusible links are available with three types of insulation: Hypalon®, Silicone/GXL (SIL/GXL) and Expanded Duty. All future vehicles that use fusible links will utilize the Expanded Duty type of fusible link. When servicing fusible links, all fusible links can be replaced with the Expanded Duty type. SIL/GXI fusible links can be used to replace either SIL/GXI or Hypalon® fusible links. Hypalon® fusible links can only be used to replace Hypalon® fusible links.

Determining characteristics of the types of fusible links:

- Hypalon® (limited use): only available in .35 mm^2 or smaller and its insulation is one color all the way through.
- SIL/GXL (widely used): available in all sizes and has a white inner core under the outer color of insulation.
- Expanded Duty: available in all sizes, has an insulation that is one color all the way through and has three dots following the writing on the insulation.

Service fusible links are available in many lengths. Choose the shortest length that is suitable. If the fusible link is to be cut from a spool, it should be cut 150-225 mm (approx 6-9 in.) long. NEVER make a fusible link longer than 225 mm (approx 9 in.).

CAUTION: Fusible links cut longer than 225 mm (approx 9 in.) will not provide sufficient overload protection.

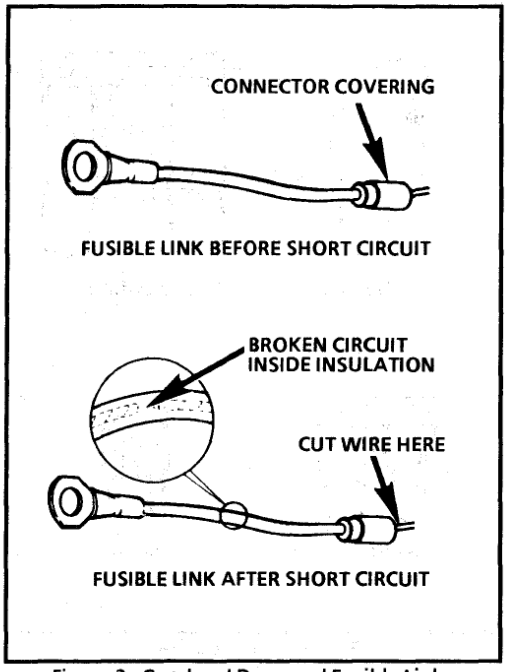


Figure 3 - Good and Damaged Fusible Links

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To replace a damaged fusible link (Figure 4), cut it off beyond the splice. Replace with a repair link. When connecting the repair link, strip wire and use staking-type pliers to crimp the splice securely in two places. For more details on splicing procedures, see "Splicing Copper Wire." Use Crimp and Seal splices whenever possible. When using Splice Clips, refer to page 8A-5-3; when using Crimp and Seal splice sleeves, refer to page 8A-5-6.

To replace a damaged fusible link which feeds two harness wires, cut them both off beyond the splice. Use two repair links, one spliced to each harness wire (see Figure 5).

TYPICAL ELECTRICAL REPAIRS

An open circuit is an incomplete circuit. Power cannot reach the load or reach ground. If a circuit is open, active components do not energize. A short circuit is an unwanted connection between one part of the circuit and either ground or another part of the circuit. A short circuit causes a fuse to blow or a circuit breaker to open.

SHORT CIRCUITS CAUSED BY DAMAGED WIRE INSULATION

- Locate the damaged wire.
- Find and correct the cause of the wire insulation damage.
- For minor damage, tape over the wire. If damage is more extensive, replace the faulty segment of the wire (Refer to the splicing instructions for copper or shielded cable for the correct splicing procedure).

SPLICING COPPER WIRE USING SPLICE CLIPS

Splice Clips are included in the J 38125-A Terminal Repair Kit. The Splice Clip is a general purpose wire repair device. It may not be acceptable for applications having special requirements such as moisture sealing. Refer to the appropriate Service Manual Section to determine if there are any special requirements.

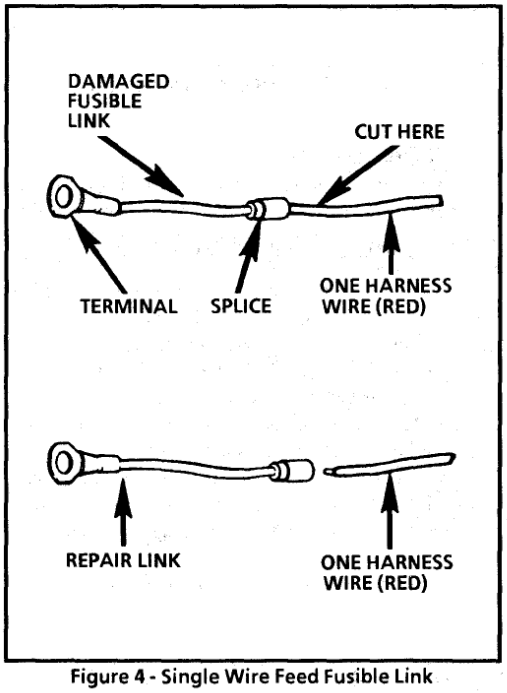


Figure 4 - Single Wire Feed Fusible Link

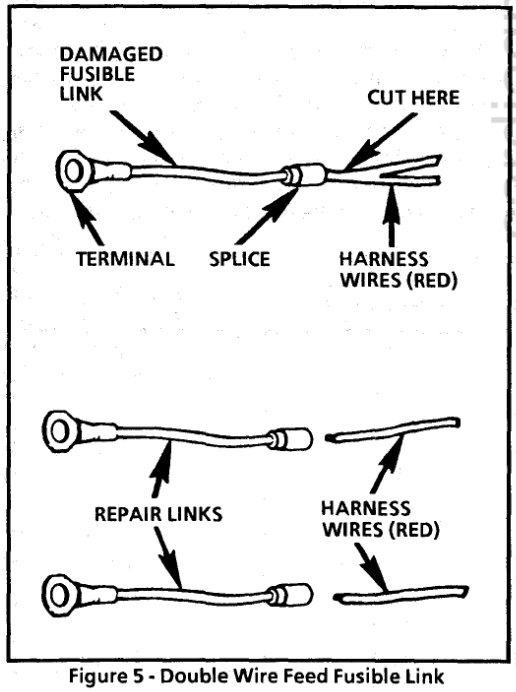


Figure 5 - Double Wire Feed Fusible Link

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REPAIR PROCEDURES

Step 1: Open the Harness

If the harness is taped, remove the tape. To avoid wire insulation damage, use a sewing "seam ripper" to cut open the harness (available from sewing supply stores). If the harness has a black plastic conduit, simply pull out the desired wire.

Step 2: Cut the Wire

Begin by cutting as little wire off the harness as possible. You may need the extra length of the wire later if you decide to cut more wire off to change the location of a splice. You may have to adjust splice locations to make certain that each splice is at least 40 mm ($1\frac{1}{2}$") away from other splices, harness branches or connectors.

Step 3: Strip the Insulation

When replacing a wire, use a wire of the same size as the original wire or larger. The schematics list wire size in metric units. The following table (Figure 6) shows the commercial (AWG) wire sizes that can be used to replace each metric wire size. Each AWG size is either equal to or larger than the equivalent metric size.

To find the correct wire size either find the wire on the schematic page and convert the metric size to the AWG size, or use an AWG wire gage.

If you aren't sure of the wire size, start with the largest opening in the wire stripper and work down until a clean strip of the insulation is removed. Be careful to avoid nicking or cutting any of the wires.

METRIC WIRE SIZES (mm^2)	AWG SIZES
.22	24
.35	22
.5	20
.8	18
1.0	16
2.0	14
3.0	12
5.0	10
8.0	8
13.0	6
19.0	4
32.0	2

Figure 6 - Wire Size Conversion Table

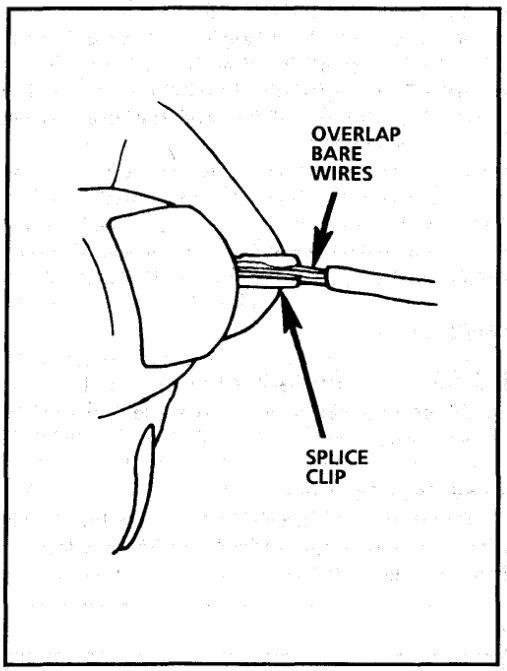


Figure 7 - Centering the Splice Clip

Step 4: Crimp the Wires

Select the proper clip to secure the splice. To determine the proper clip size for the wire being spliced, follow the directions included in the J 38125-A Terminal Repair Kit. Select the correct anvil on the crimper. On most crimpers your choice is limited to either a small or large anvil. Overlap the stripped wire ends and hold them between your thumb and forefinger as shown in Figure 7. Then, center the splice clip under the stripped wires and hold it in place.

- Open the crimping tool to its full width and rest one handle on a firm flat surface.
- Center the back of the splice clip on the proper anvil and close the crimping tool to the point where the former touches the wings of the clip.

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- Make sure that the clip and wires are still in the correct position. Then, apply steady pressure until the crimping tool closes (see Figure 8).
- Before crimping the ends of the clip, be sure that:
  - The wires extend beyond the clip in each direction.
  - No strands of wire are cut loose, and
  - No insulation is caught under the clip.

Crimp the splice again, once on each end. Do not let the crimping tool extend beyond the edge of the clip or you may damage or nick the wires (Figure 9).

Step 5: Solder

Apply 60/40 rosin core solder to the opening in the back of the clip (see Figure 10). Follow the manufacturer's instruction for the solder equipment you are using.

Step 6: Tape the Splice

Center and roll the splicing tape. The tape should cover the entire splice. Roll on enough tape to duplicate the thickness of the insulation on the existing wires. Do not flag the tape. Flagged tape may not provide enough insulation, and the flagged ends will tangle with the other wires in the harness (see Figure 11).

If the wire does not belong in a conduit or other harness covering, tape the wire again. Use a winding motion to cover the first piece of tape (Figure 12).

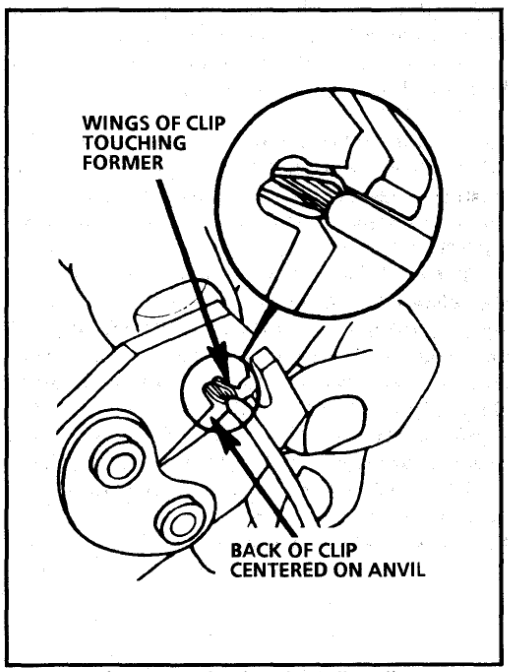


Figure 8 - Crimping the Splice Clip

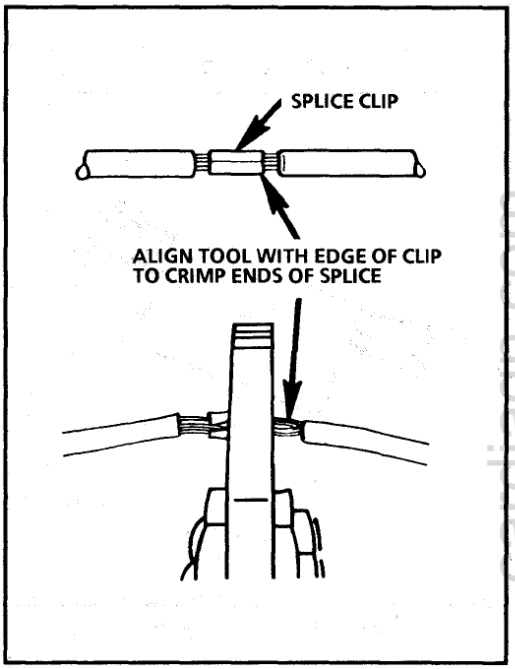


Figure 9 - Completing the Crimp

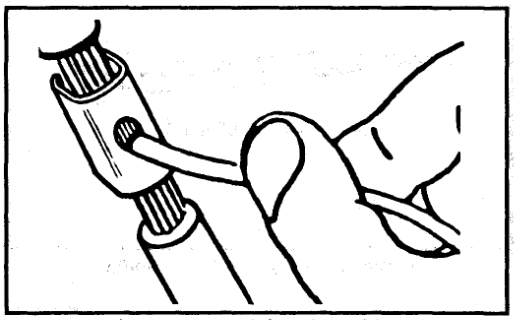


Figure 10 - Applying the Solder

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REPAIR PROCEDURES

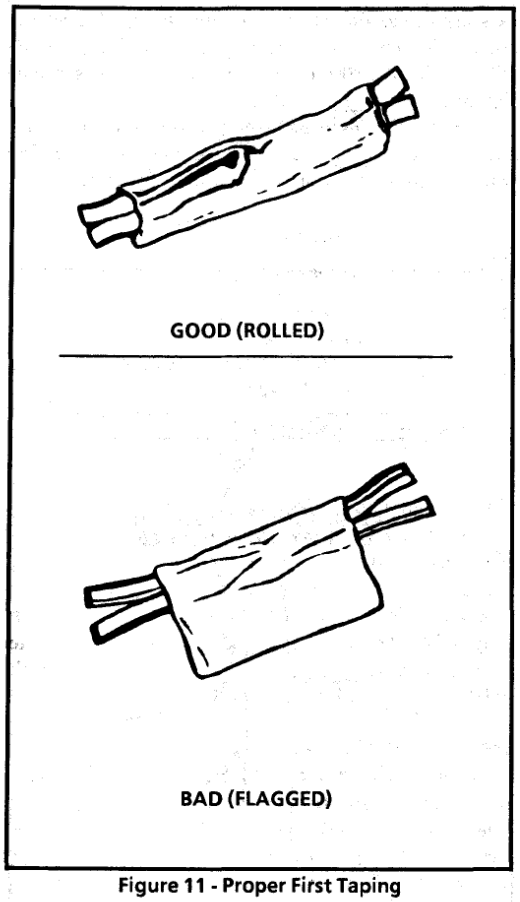


Figure 11 - Proper First Taping

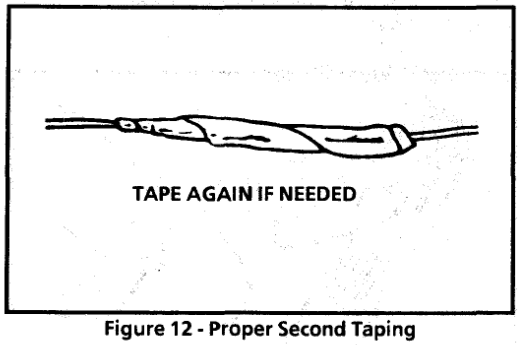


Figure 12 - Proper Second Taping

SPLICING COPPER WIRE USING CRIMP AND SEAL SPLICE SLEEVES

Crimp and Seal splice sleeves may be used on all types of insulation except tefzel and coaxial to form a one to one splice. They are to be used where there are special requirements such as moisture sealing. Refer to the appropriate section of the Service Manual to determine if the Crimp and Seal is necessary. Crimp and Seal splice sleeves are included in the J 38125-A Terminal Repair Kit.

Step 1: Open the Harness

If the harness is taped, remove the tape. To avoid wire insulation damage, use a sewing "seam ripper" to cut open the harness (available from sewing supply stores). The Crimp and Seal splice sleeves may be used on all types of insulation except tefzel and coaxial and may only be used to form a one to one splice.

Step 2: Cut the Wire

Begin by cutting as little wire off the harness as possible. You may need the extra length of wire later if you decide to cut more wire to change the location of a splice. You may have to adjust splice locations to make certain that each splice is at least 40 mm (1.5 in.) away from other splices, harness branches or connectors. This will help prevent moisture from bridging adjacent splices and causing damage.

Step 3: Strip the Insulation

If it is necessary to add a length of wire to the existing harness, be certain to use the same size as the original wire (refer to Figure 6, "Wire Size Conversion Table").

To find the correct wire size either find the wire on the schematic and convert the metric size to the equivalent AWG size or use an AWG wire gage. If unsure about the wire size, begin with the largest opening in the wire stripper and work down until a clean strip of the insulation is removed. Strip approximately 7.5 mm (5/16 in.) of insulation from each wire to be spliced. Be careful to avoid nicking or cutting any of the wires. Check the stripped wire for nicks or cut strands. If the wire is damaged, repeat this procedure after removing the damaged section.

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Step 4: Select and Position the Splice Sleeve

Select the proper splice sleeve according to wire size. The splice sleeves and tool nests are color coded (see following chart).

CRIMP AND SEAL SPLICE SLEEVE CHART

Color splice sleeve	Crimp tool nest color	Wire gage AWG / (metric)
Salmon (yellowish-pink)	Red	20, 18/ (0.5, 0.8)
Blue	Blue	16, 14/ (1.0, 2.0)
Yellow	Yellow	12, 10/ (3.0, 5.0)

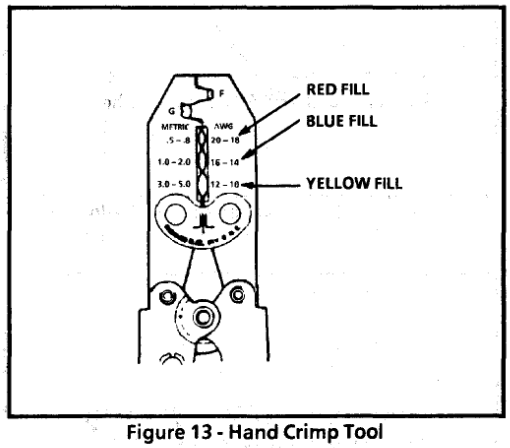


Figure 13 - Hand Crimp Tool

Using the J 38125-8 splice crimp tool (Figure 13), position the splice sleeve in the proper color nest of the hand crimp tool. Place the splice sleeve in the nest so that the crimp falls midway between the end of the barrel and the stop.

The sleeve has a stop in the middle of the barrel to prevent the wire from going further (Figure 14). Close the hand crimper handles slightly to hold the splice sleeve firmly in the proper nest.

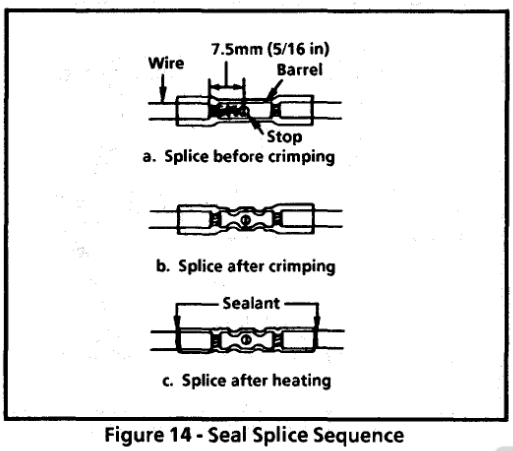


Figure 14 - Seal Splice Sequence

Step 5: Insert Wires into Splice Sleeve and Crimp

Insert the wire into the splice sleeve until it hits the barrel stop and close the handles of the J 38125-8 crimper tightly until the crimper handles open when released. The crimper handles will not open until the proper amount of pressure is applied to the splice sleeve. Repeat steps 4 and 5 for opposite end of the splice.

Step 6: Shrink the Insulation around the Splice

Using the Ultratorch J 38125-5 (follow instructions that accompany Ultratorch), apply heat where the barrel is crimped. Gradually move the heat barrel to the open end of the tubing, shrinking the tubing completely as the heat is moved along the insulation. A small amount of sealant will come out of the end of the tubing when sufficient shrinking is achieved (Figure 14).

SPLICING TWISTED/SHIELDED CABLE

Twisted/shielded cable is sometimes used to protect wiring from electrical noise (stray signals). For example, two-conductor cable of this construction is used between the ECM and the distributor. See Figure 15 for a breakdown of twisted/shielded cable construction.

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REPAIR PROCEDURES

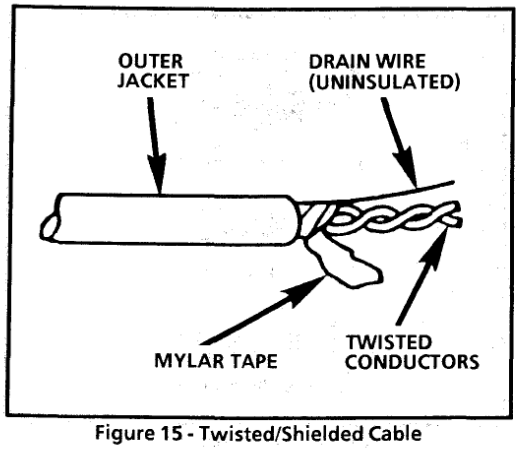


Figure 15 - Twisted/Shielded Cable

Step 1: Remove Outer Jacket

Remove the outer jacket and discard it. Be careful to avoid cutting into the drain wire or the mylar tape.

Step 2: Unwrap the Tape

Unwrap the aluminum/mylar tape, but do not remove it. The tape will be used to rewrap the twisted conductors after the splices have been made.

Step 3: Prepare the Splice

Untwist the conductors. Then, prepare the splice by following the splicing instructions for copper wire presented earlier. Remember to stagger splices to avoid shorts (Figure 16).

Step 4: Re-assemble the Cable

After you have spliced and taped each wire, rewrap the conductors with the mylar tape. Be careful to avoid wrapping the drain wire in the tape.

Next, splice the drain wire following the splicing instructions for copper wire. Then, wrap the drain wire around the conductors and mylar tape (Figure 17).

Step 5: Tape the Cable

Tape over the entire cable using a winding motion (see Figure 18). This tape will replace the section of the jacket you removed to make the repair.

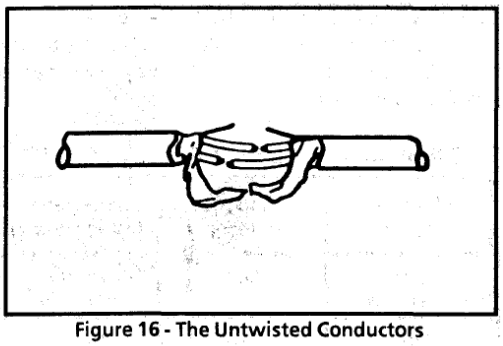


Figure 16 - The Untwisted Conductors

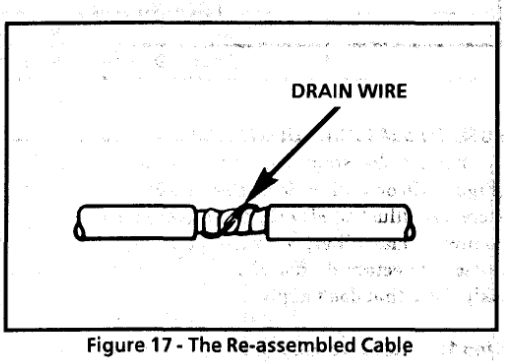


Figure 17 - The Re-assembled Cable

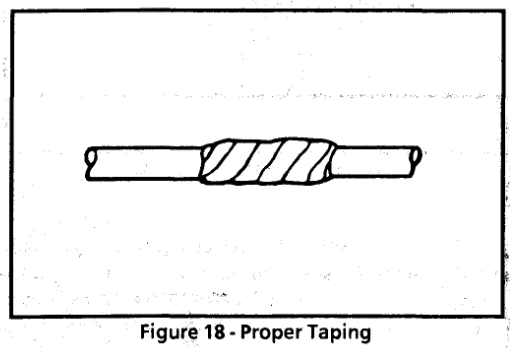


Figure 18 - Proper Taping

REPAIRING CONNECTORS

- The following general repair procedures can be used to repair most types of connectors. The repair procedures are divided into three general groups: Push-to-Seat and Pull-to-Seat and Weather Pack®.
- See "Harness Connector Faces," page 8A-202-0 to determine which type of connector is to be serviced.
- Use the proper Pick(s) or Tool(s) that apply to the terminal.
- The Terminal Repair Kit (J 38125-A) contains further information.

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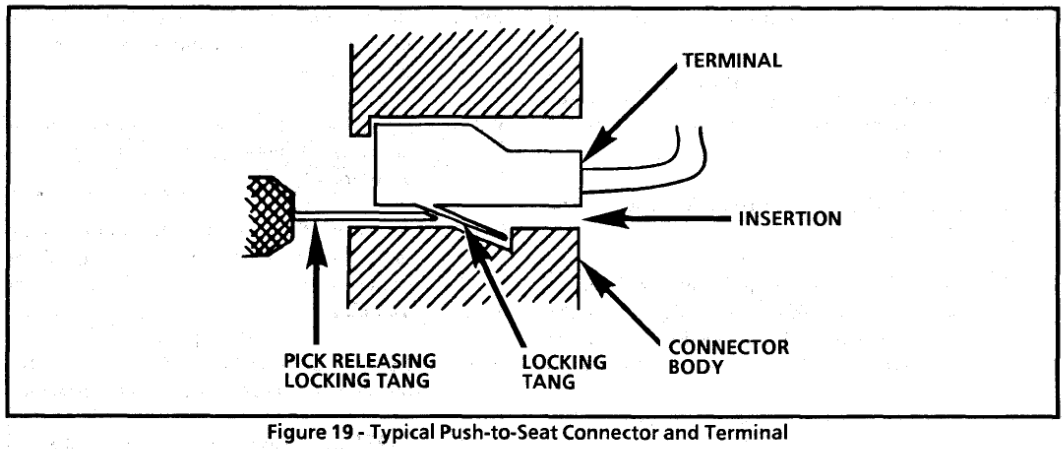


Figure 19 - Typical Push-to-Seat Connector and Terminal

PUSH-TO-SEAT AND PULL-TO-SEAT

Follow the steps below to repair Push-to-Seat (Figure 19) or Pull-to-Seat (Figure 20) connectors. The steps are illustrated with typical connectors. Your connector may differ, but the repair steps are similar. Some connectors do not require all the steps shown. Skip those that don't apply.

Step 1: Remove any CPA (Connector Position Assurance) Locks. CPAs are designed to retain connectors when mated.

Step 2: Remove any TPA (Terminal Position Assurance) Locks. TPAs are designed to keep the terminal from backing out of the connector.

NOTICE: The TPA must be removed prior to terminal removal and must be replaced when the terminal is repaired and reseated.

Step 3: Open any secondary locks. A secondary lock aids in terminal retention and is usually molded to the connector.

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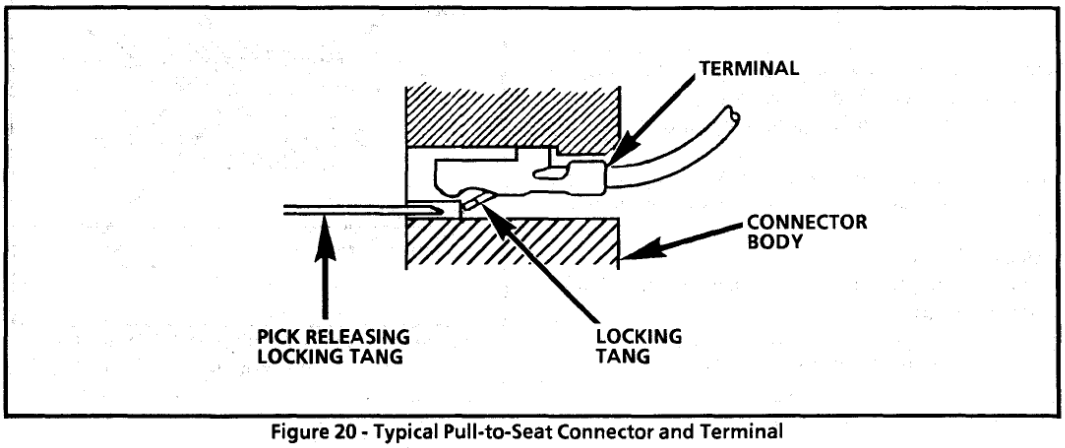


Figure 20 - Typical Pull-to-Seat Connector and Terminal

REPAIR PROCEDURES

Step 4: Separate the connector halves and back out seals.

Step 5: Grasp the lead and push the terminal to the forward most position. Hold the lead at this position.

Step 6: Locate the terminal lock tang in the connector canal.

Step 7: Insert the proper size pick (refer to Terminal Repair Kit J 38125-A) straight into the connector canal at the mating end of the connector.

Step 8: Depress the locking tang to unseat the terminal.

Push-to-Seat – Gently pull on the lead to remove the terminal through the back of the connector.

Pull-to-Seat – Gently push on the lead to remove the terminal through the front of the connector.

NOTICE: Never use force to remove a terminal from a connector.

Step 9: Inspect terminal and connector for damage. Repair as necessary (see "Terminal Repair," page 8A-5-11).

Step 10: Reform lock tang and reseat terminal in connector body. Apply grease if connector was originally equipped with grease.

Step 11: Install any CPAs or TPAs, close any secondary locks and join connector halves.

WEATHER PACK®

Follow the steps below to repair Weather Pack® connectors (Figure 21).

Step 1: Separate the connector halves.

Step 2: Open secondary lock. A secondary lock aids in terminal retention and is usually molded to the connector.

Step 3: Grasp the lead and push the terminal to the forward most position. Hold the lead at this position.

Step 4: Insert the Weather Pack® terminal removal tool into the front (mating end) of the connector cavity until it rests on the cavity shoulder.

Step 5: Gently pull on the lead to remove the terminal through the back of the connector.

NOTICE: Never use force to remove a terminal from a connector.

Step 6: Inspect the terminal and connector for damage. Repair as necessary (see "Terminal Repair," on the following page).

Step 7: Reform the lock tang and reseat terminal in connector body.

Step 8: Close secondary locks and join connector halves.

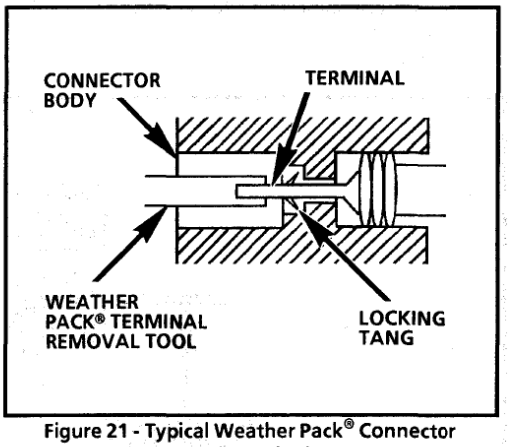


Figure 21 - Typical Weather Pack® Connector and Terminal

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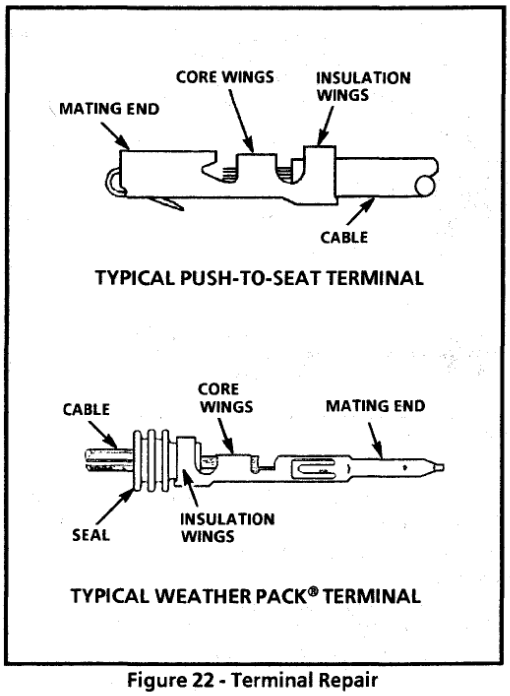


Figure 22 - Terminal Repair

TERMINAL REPAIR

The following repair procedures can be used to repair Push-to-Seat, Pull-to-Seat or Weather Pack® terminals (Figure 22). Some terminals do not require all steps shown. Skip those that don't apply. The Terminal Repair Kit (J 38125-A) contains further information.

Step 1: Cut off terminal between core and insulation crimp (minimize wire loss) and remove seal for Weather Pack® terminals.

Step 2: Apply correct seal per gauge size of wire and slide back along wire to enable insulation removal (Weather Pack® terminals only).

Step 3: Remove insulation.

Step 4: Align seal with end of cable insulation (Weather Pack® terminals only).

Step 5: Position strip (and seal for Weather Pack®) in terminal.

Step 6: Hand crimp core wings.

Step 7: Hand crimp insulation wings (non-Weather Pack®). Hand crimp insulation wings around seal and cable (Weather Pack®).

Step 8: Solder all hand crimped terminals.

DIODE REPLACEMENT

Many vehicle electrical systems use a diode to isolate circuits and protect the components from voltage spikes. When installing a new diode, use the following procedure:

Step 1: Open the Harness

If the diode is taped to the harness, remove all of the tape.

Step 2: Remove Inoperative Diode

Paying attention to current flow direction, remove inoperative diode from the harness with a suitable soldering tool. If the diode is located next to a connector terminal, remove the terminal(s) from the connector to prevent damage from the soldering tool.

Step 3: Strip the Insulation

Carefully strip away a section of insulation next to the old soldered portion of the wire(s). Do not remove any more than is needed to attach the new diode.

Step 4: Install New Diode

Check current flow direction of the new diode, being sure to install the diode with correct bias. Reference the appropriate service manual wiring schematic to obtain the correct diode installation position. Reference Figure 23 for replacement diode symbols and current flow explanations. Attach the new diode to the wire(s) using 60/40 rosin core solder. Use a heat sink (aluminum alligator clip) attached across the diode wire ends to protect the diode from excess heat. Follow the manufacturer's instructions for the soldering equipment you are using.

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REPAIR PROCEDURES

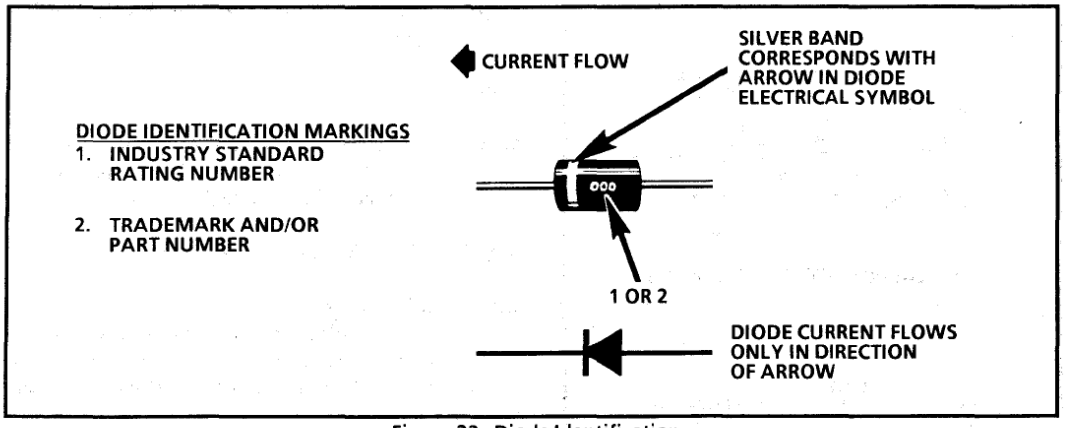


Figure 23 - Diode Identification

Step 5: Install Terminal(s)

Install terminal(s) into the connector body if previously removed in step 2.

Step 6: Tape Diode to Harness

Tape the diode to the harness or connector using electrical tape. To prevent shorts to ground and water intrusion, completely cover all exposed wire and diode attachment points.

ACCEPTABLE DIODE REPLACEMENTS

Diode Brand	Rating Number	RATING	P/N
GMSPO	1N4004	1 amp, 400 PIV	12112421
GMSPO	1N5404	3 amp, 400 PIV	12112422
GMSPO	1N4001	1 amp, 50 PIV	16020519
GMSPO	1N4005	1 amp, 600 PIV	16011840
GMSPO	1N4004	1 amp, 400 PIV	16039386

In the event 1 amp, 50 PIV (Peak Inverse Rating) diodes are unavailable, a universal diode with a 1 amp, 400 PIV rating can be used for the following applications:

- A/C Compressor Clutch
- ABS/4WAL (the ABS Diode on the Delco Moraine is hidden inside of an electrical connector under the carpet at the right panel)
- Wiper
- Charging System (hidden in wire harness)
- Parking Brake (vehicle with ABS)
- Relays
- Solenoids
- Diesel Glow Plug Circuit

HEATED OXYGEN SENSOR (O2S) REPAIR

If the Heated Oxygen Sensor pigtail wiring, connector or terminal is damaged, the entire Oxygen Sensor Assembly must be replaced. Do not attempt to repair the wiring, connector or terminals. In order for the sensor to function properly, it must have provided to it a clean air reference. This clean air reference is obtained by way of the Oxygen Sensor signal and heater wires. Any attempt to repair the wires, connectors or terminals could result in the obstruction of the air reference and degraded Oxygen Sensor performance.

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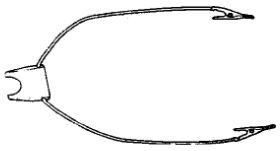
The following guidelines should be used when servicing the Heated Oxygen Sensor:

- Do not apply contact cleaner or other materials to the sensor or vehicle harness connectors. These materials may get into the sensor causing poor performance. Also, the sensor pigtail and harness wires must not be damaged in such a way that the wires inside are exposed. This could provide a path for foreign materials to enter the sensor and cause performance problems.
- Neither the sensor or vehicle lead wires should be bent sharply or kinked. Sharp bends, kinks, etc., could block the reference air path through the lead wire.
- Do not remove or defeat the Oxygen Sensor ground wire (where applicable). Vehicles that utilize the ground wired sensor may rely on this ground as the only ground contact to the sensor. Removal of the ground wire will also cause poor engine performance.
- To prevent damage due to water intrusion, be sure that the peripheral seal remains intact on the vehicle harness connector.

The Engine Harness may be repaired using Packard's Crimp and Splice Seals Terminal Repair Kit J 38125-A. Under no circumstances should repairs be soldered since this could result in the air reference being obstructed.

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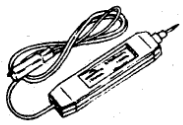
REPAIR PROCEDURES
SPECIAL TOOLS



J 36169
Jumper Wire



J 35689-A
Micro-Pack Connector
Terminal Remover



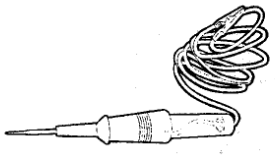
J 34636
Solenoid, Relay and
Circuit Tester



J 35616-A
Connector Test Adapter Kit



J 28742-A
Weather Pack II Terminal Remover



J 34142-B
Unpowered Test Light



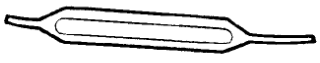
J 8681-A
Universal Short Checker



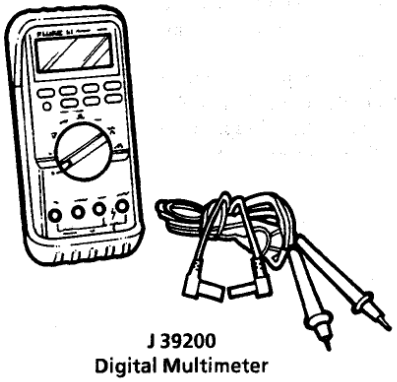
J 22727
Electrical Terminal Remover



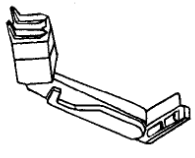
J 21008-A
Self-Powered Test Light



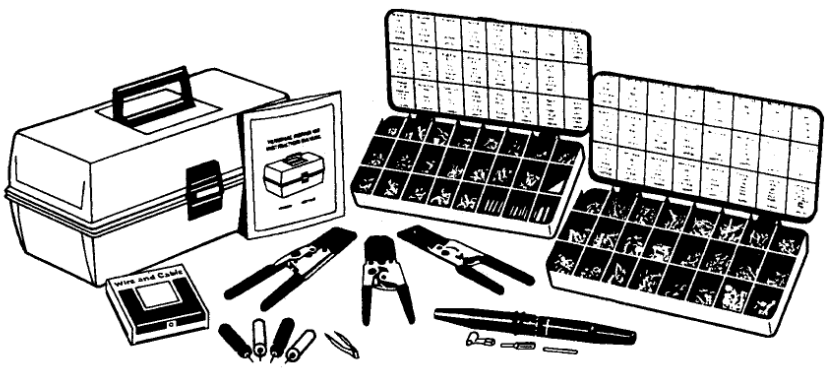
J 33095
Terminal Remover: Micro-Pack,
Com-Pack III and ECM Edgeboard
Connectors



J 39200
Digital Multimeter



J 34764
Autofuse Tester



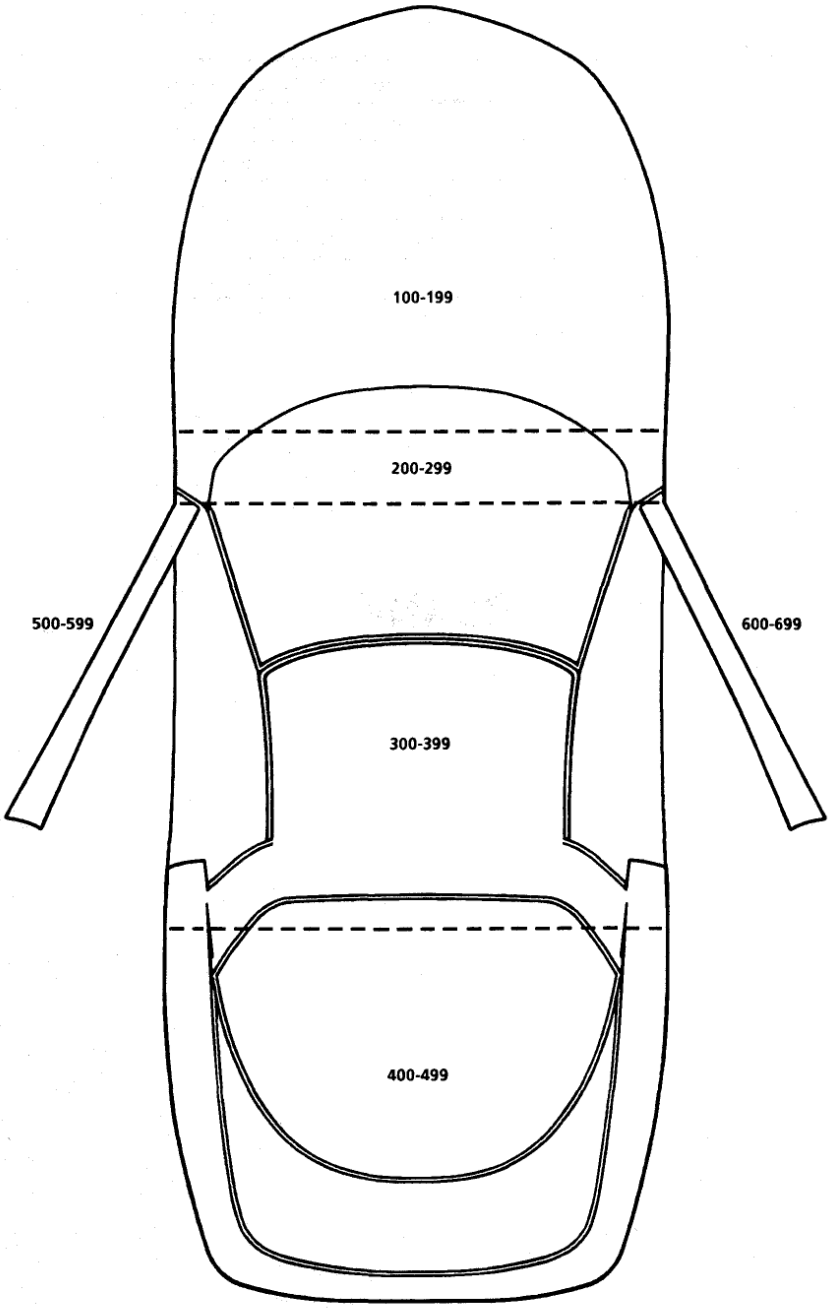
J 38125-A
Terminal Repair Kit

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BLANK

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VEHICLE ZONING



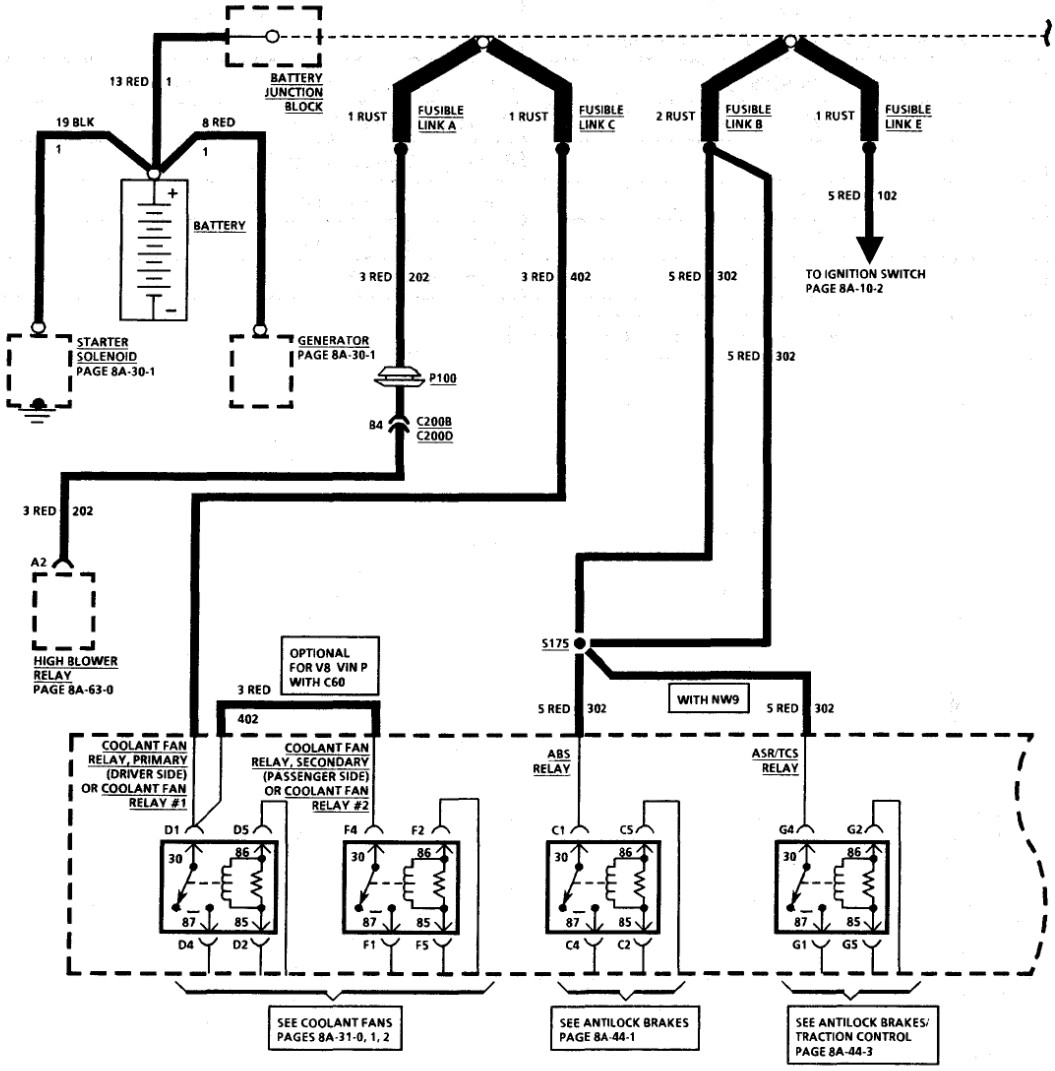
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CALLOUT NUMBERS (For Splices, Connectors and Pass Thru Grommets)	ZONE DESCRIPTION
100-199	All forward of and including dash panel
200-299	Within Instrument Panel area
300-399	Passenger Compartment, forward of hatch
400-499	Hatch area, to rear of vehicle
500-599	To and within left door
600-699	To and within right door

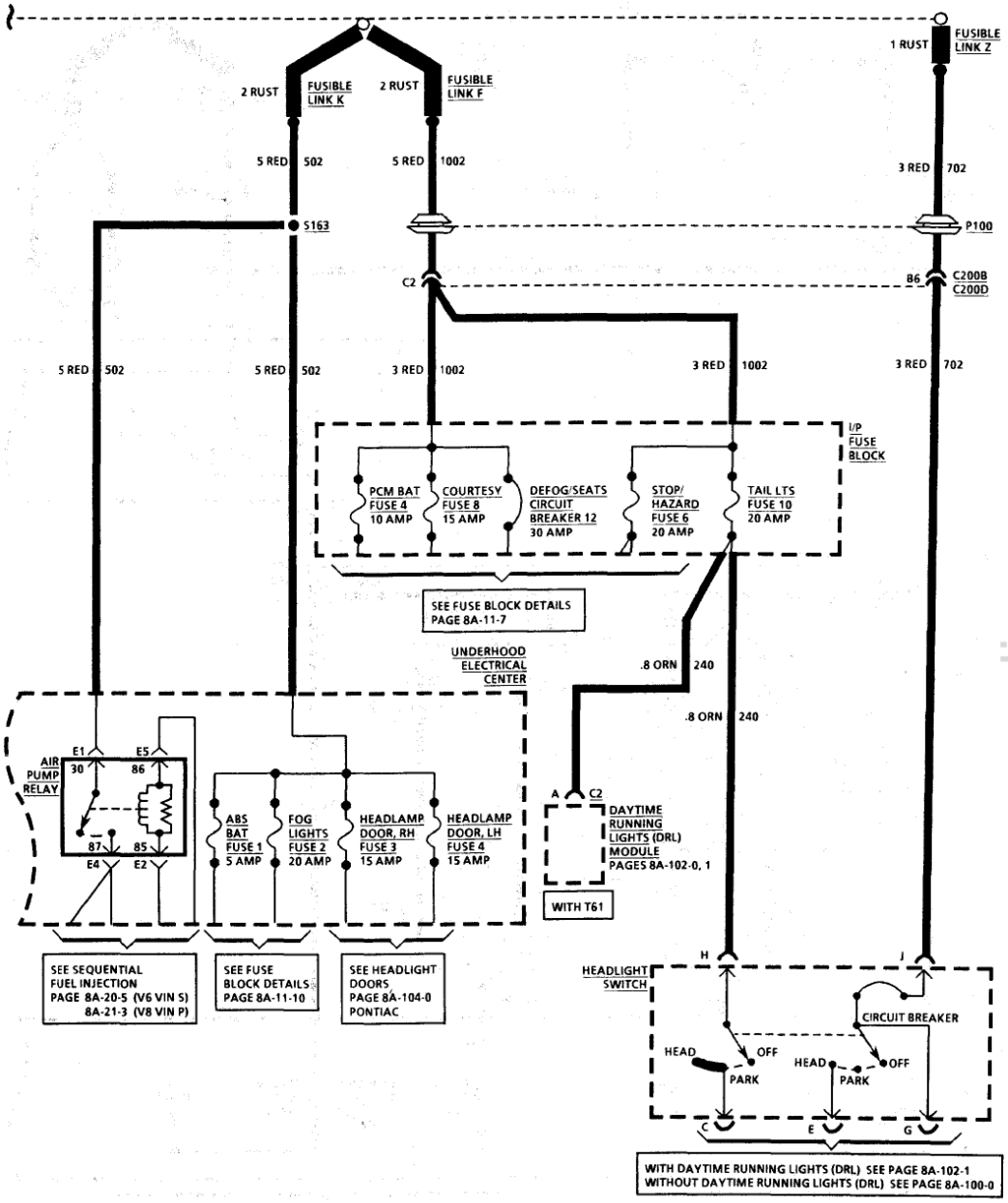
For a Harness Routing View, refer to SECTION 8A-203.

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POWER DISTRIBUTION

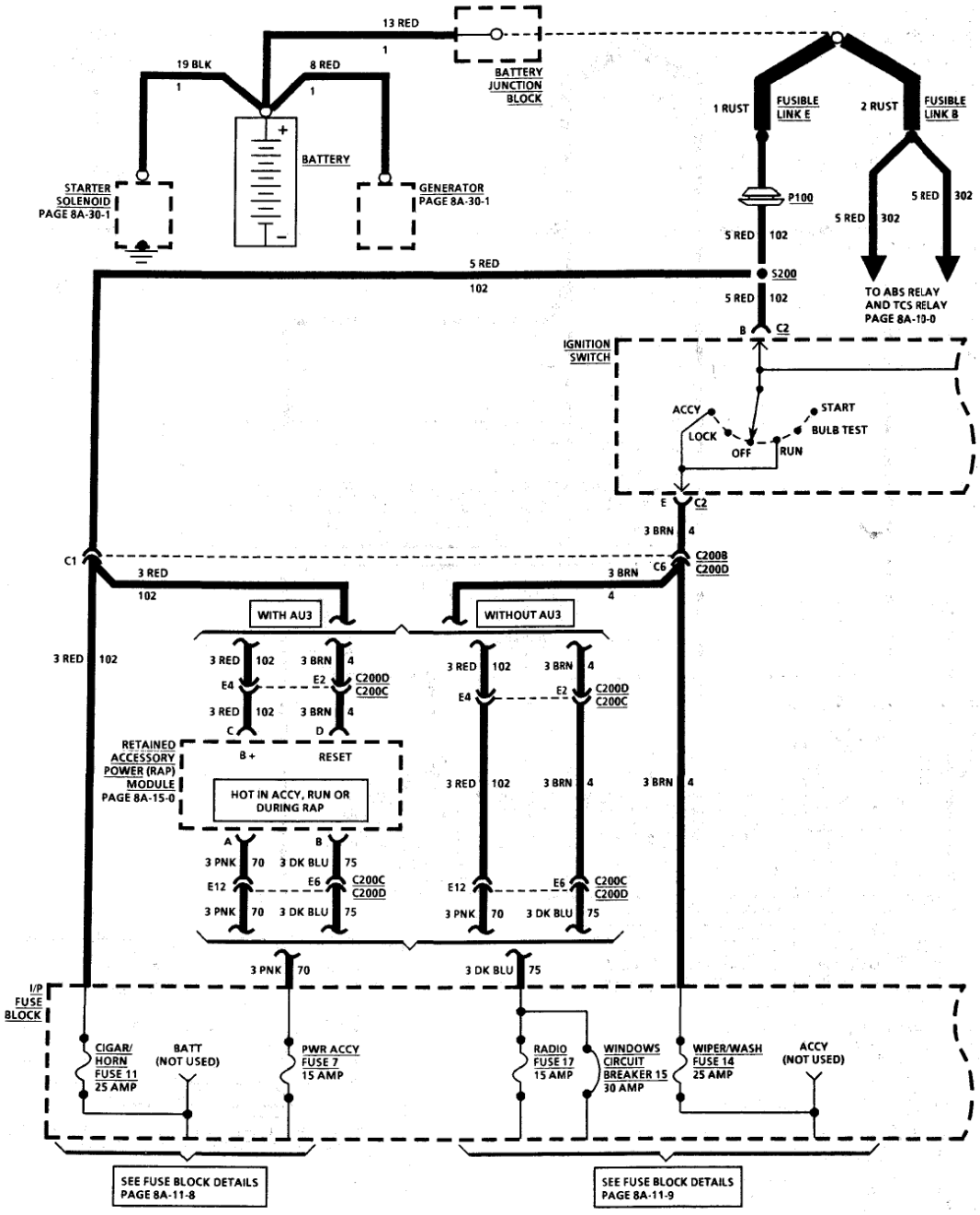


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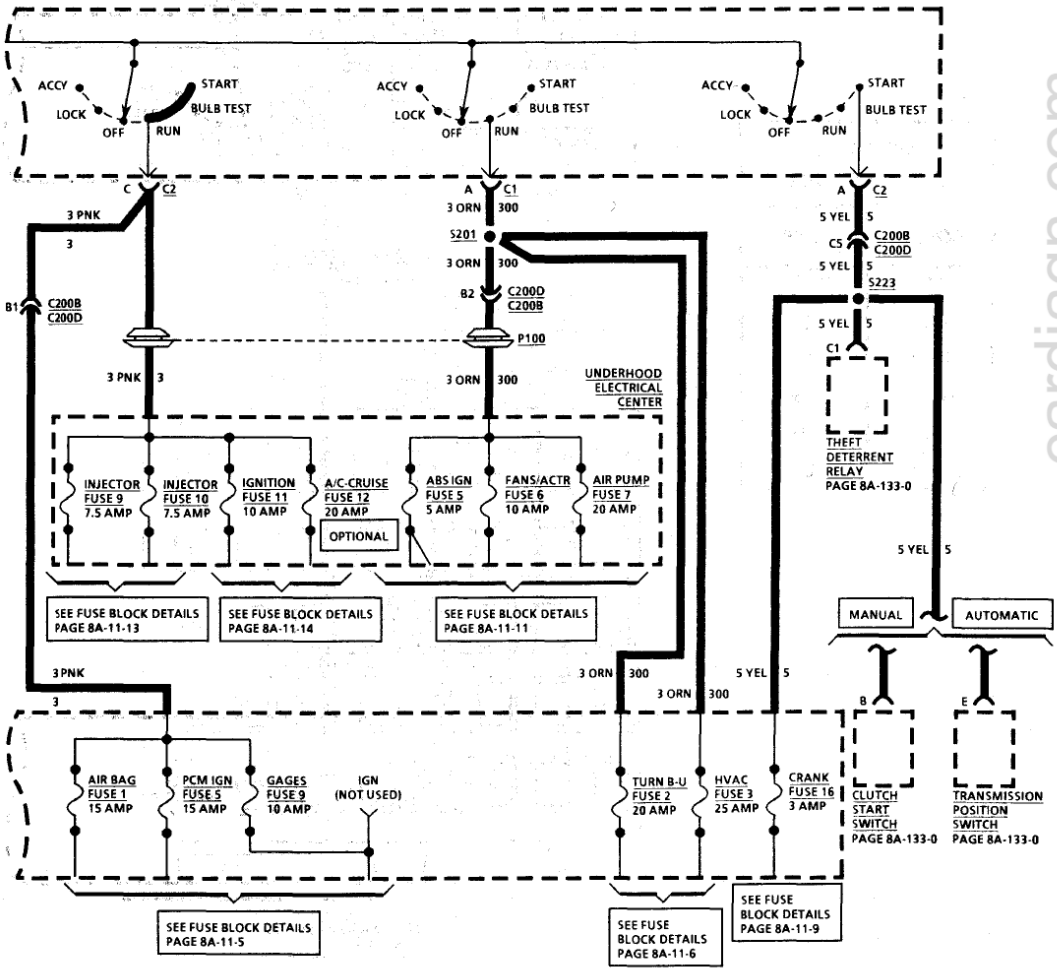


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POWER DISTRIBUTION



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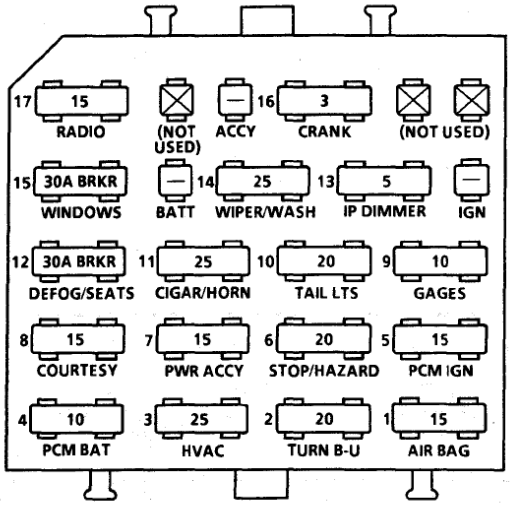
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FUSE BLOCK DETAILS (CHEVY)
I/P FUSE BLOCK

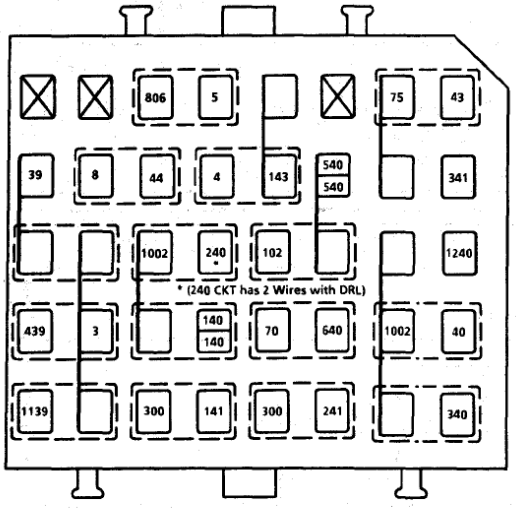
12052685

BASE FUSE BLOCK PACK-CON III
BLK

AUTOFUSE COLOR/RATINGS	
COLOR	AMPS
PPL	3
TAN	5
RED	10
BLUE	15
YEL	20
WHT	25



FRONT VIEW



REAR VIEW

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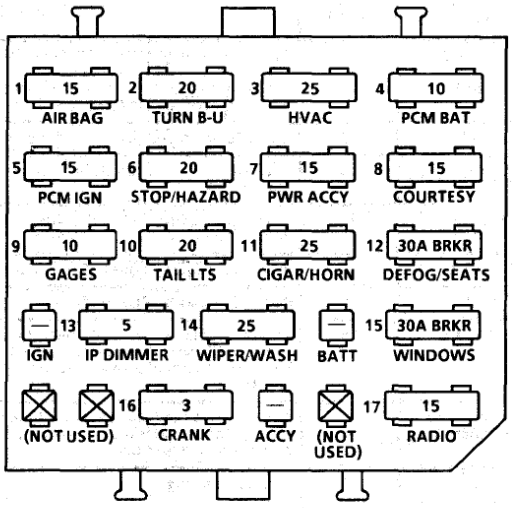
FUSE BLOCK DETAILS (PONTIAC)

I/P FUSE BLOCK

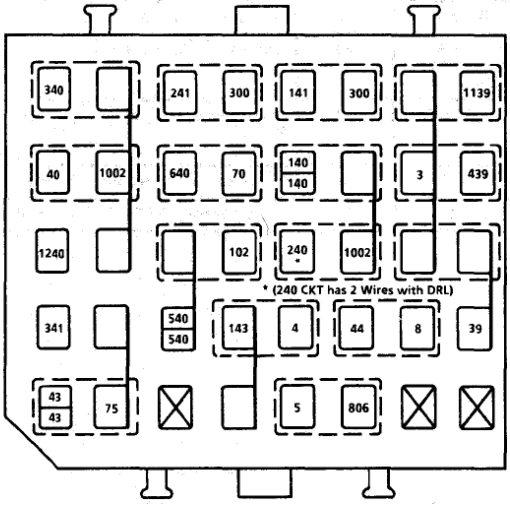
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BASE FUSE BLOCK PACK-CON III
BLK

AUTOFUSE COLOR/RATINGS	
COLOR	AMPS
PPL	3
TAN	5
RED	10
BLUE	15
YEL	20
WHT	25



FRONT VIEW



REAR VIEW

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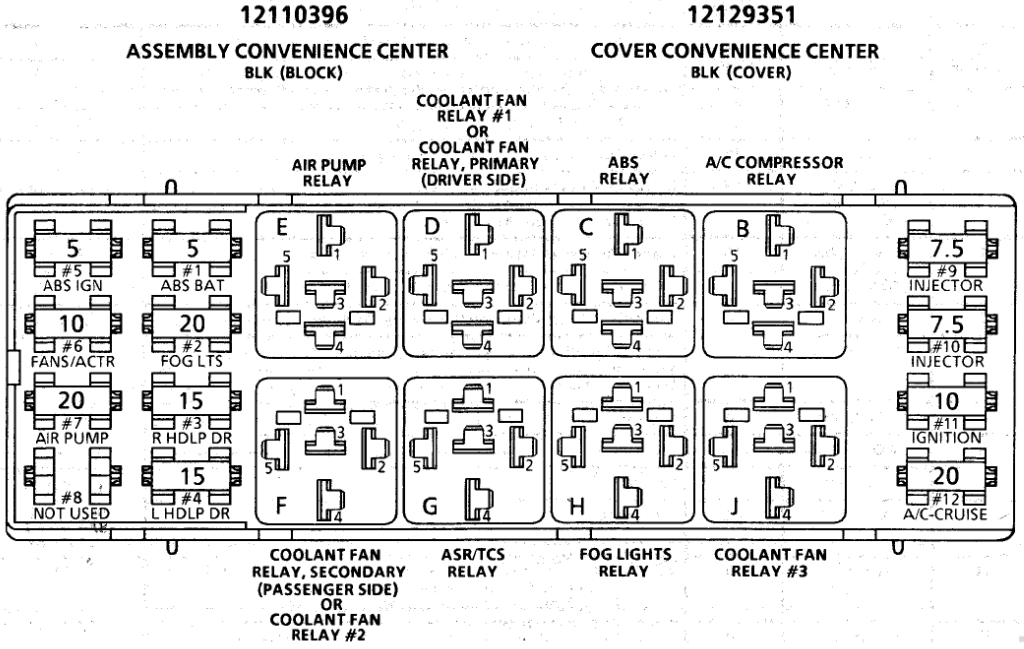
FUSE BLOCK DETAILS

I/P FUSE BLOCK

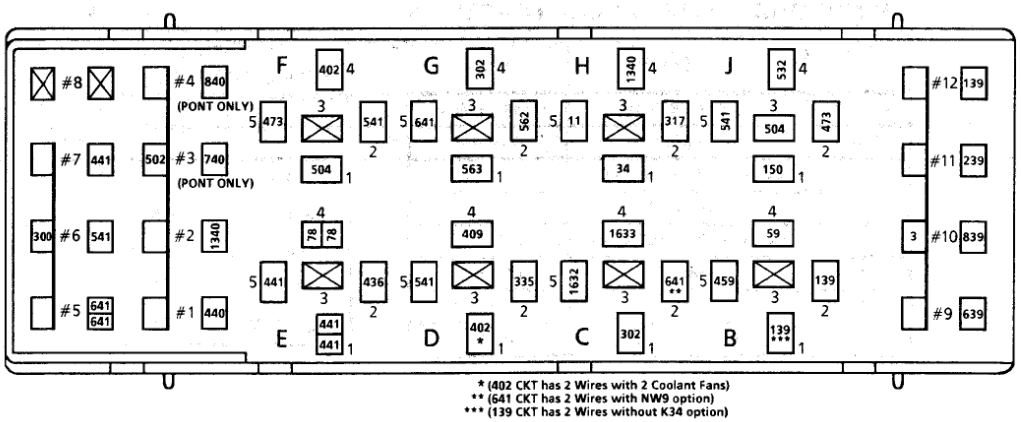
FUSE NUMBER	FUSE NAME	RATING (AMPS)	RELATED CIRCUITRY	PAGE
1	AIR BAG	15	Diagnostic Energy Reserve Module, Dual Pole Arming Sensor	8A-11-5
2	TURN B-U	20	Backup Light Switch, Daytime Running Lights Module, Turn Flasher, Performance/Traction Control Switch, Transmission Position Switch	8A-11-6
3	HVAC	25	HVAC Selector Switch, Rear Defogger	8A-11-6
4	PCM BAT	10	Powertrain Control Module, Instrument Cluster, Theft Deterrent Module	8A-11-7
5	PCM IGN	15	Powertrain Control Module, Theft Deterrent Module, Fuel Pump Relay, Mass Air Flow (MAF) Sensor	8A-11-5
6	STOP/HAZARD	20	Brake Light/Cruise Release Switch, Hazard Flasher	8A-11-7
7	PWR ACCY	15	Power Door Locks, Power Mirrors, Hatch Release	8A-11-8
8	COURTESY	15	Amplifier, Audio Alarm Module, Bose Relay, Hatch Release Relay, Lamps: Console Compartment, I/P Compartment, Dome, Courtesy, Rear Compartment Lamp, Keyless Entry Receiver, Rearview Mirror and Radio	8A-11-8
9	GAGES AND IGN TERMINAL	10	Audio Alarm Module, Daytime Running Lights Module, Diagnostic Energy Reserve Module, Instrument Cluster, Keyless Entry Receiver, Brake Switch Assembly	8A-11-5
10	TAIL LTS	20	Exterior Lighting	With DRL (Z49) 8A-102-1, 3 Without DRL (Z49) 8A-100-0, 2
11	CIGAR/HORN AND BATT TERMINAL	25	Cigar Lighter, Horn Relay	8A-11-8
12 (Circuit Breaker)	DEFOG/SEATS	30	Power Seats, Rear Defogger	8A-11-7
13	I/P DIMMER	5	Interior Lights Dimming	8A-117-0
14	WIPER/WASHER AND ACCY TERMINAL	25	Windshield Wiper/Washer	8A-91-0 or 8A-11-9
15 (Circuit Breaker)	WINDOWS	30	Power Windows, Coolant Level Latching Module, Convertible Top Switch	8A-120-0 or 8A-11-9
16	CRANK	3	Diagnostic Energy Reserve Module	8A-11-9
17	RADIO	15	Radio, Steering Wheel Controls (Radio)	8A-11-9

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FUSE BLOCK DETAILS
UNDERHOOD ELECTRICAL CENTER



TOP VIEW



BACK VIEW

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FUSE BLOCK DETAILS

UNDERHOOD ELECTRICAL CENTER – FUSES

FUSE NUMBER	FUSE NAME	RATING (AMPS)	RELATED CIRCUITRY	PAGE
1	ABS BAT	5	Electronic Brake Control Module or Electronic Brake/Traction Control Module	8A-11-10
2	FOG LTS	20	Fog Lights	8A-11-10
3	HEADLAMP DOOR, RH (PONT ONLY)	15	Headlight Doors Module	8A-11-10
4	HEADLAMP DOOR, LH (PONT ONLY)	15	Headlight Doors Module	8A-11-10
5	ABS IGN	5	Antilock Brake System, Traction Control System	8A-11-11
6	FANS/ACTR	10	Coolant Fan Relays, EVAP Canister Purge Solenoid, Exhaust Gas Recirculation, Reverse Lockout Solenoid, Skip Shift Solenoid, Heated Oxygen Sensors	8A-11-12
7	AIR PUMP	20	Air Pump Relay	8A-11-11
8	NOT USED	–		–
9	INJECTOR	7.5	Fuel Injectors	(V6 VIN S) 8A-11-14, (V8 VIN P) 8A-11-13
10	INJECTOR	7.5	Fuel Injectors	
11	IGNITION	10	V6 VIN S: Camshaft Position Sensor, Crankshaft Position Sensor, Ignition Control Module, Automatic Transmission V8 VIN P: Ignition Coil, Ignition Coil Module, Automatic Transmission	8A-11-15
12	A/C-CRUISE	20	A/C Compressor Relay, Cruise Control Switches and Module	8A-11-15

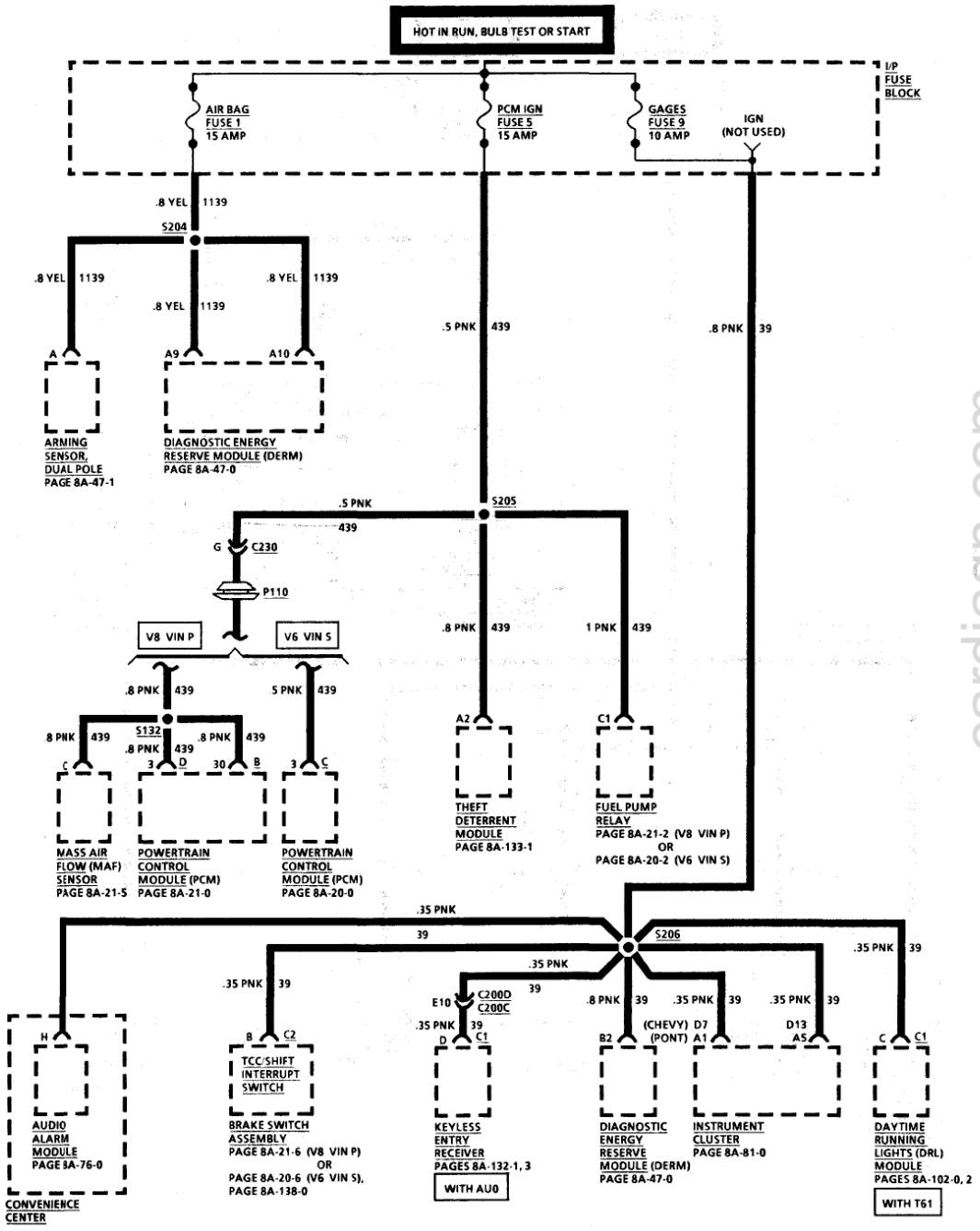
UNDERHOOD ELECTRICAL CENTER – RELAYS

RELAY LOCATION	RELAY NAME	PAGE
B	A/C COMPRESSOR	8A-11-15
C	ABS	8A-11-11
D	COOLANT FAN, PRIMARY	8A-11-12
E	AIR PUMP	8A-11-11
F	COOLANT FAN, SECONDARY	8A-11-12
G	ASR/TCS	8A-11-11
H	FOG LIGHTS	8A-11-10
J	COOLANT FAN #3	8A-11-12

AUTOFUSE FUSE COLOR/RATINGS	
COLOR	AMPS
TAN	5
BROWN	7.5
RED	10
BLUE	15
YELLOW	20

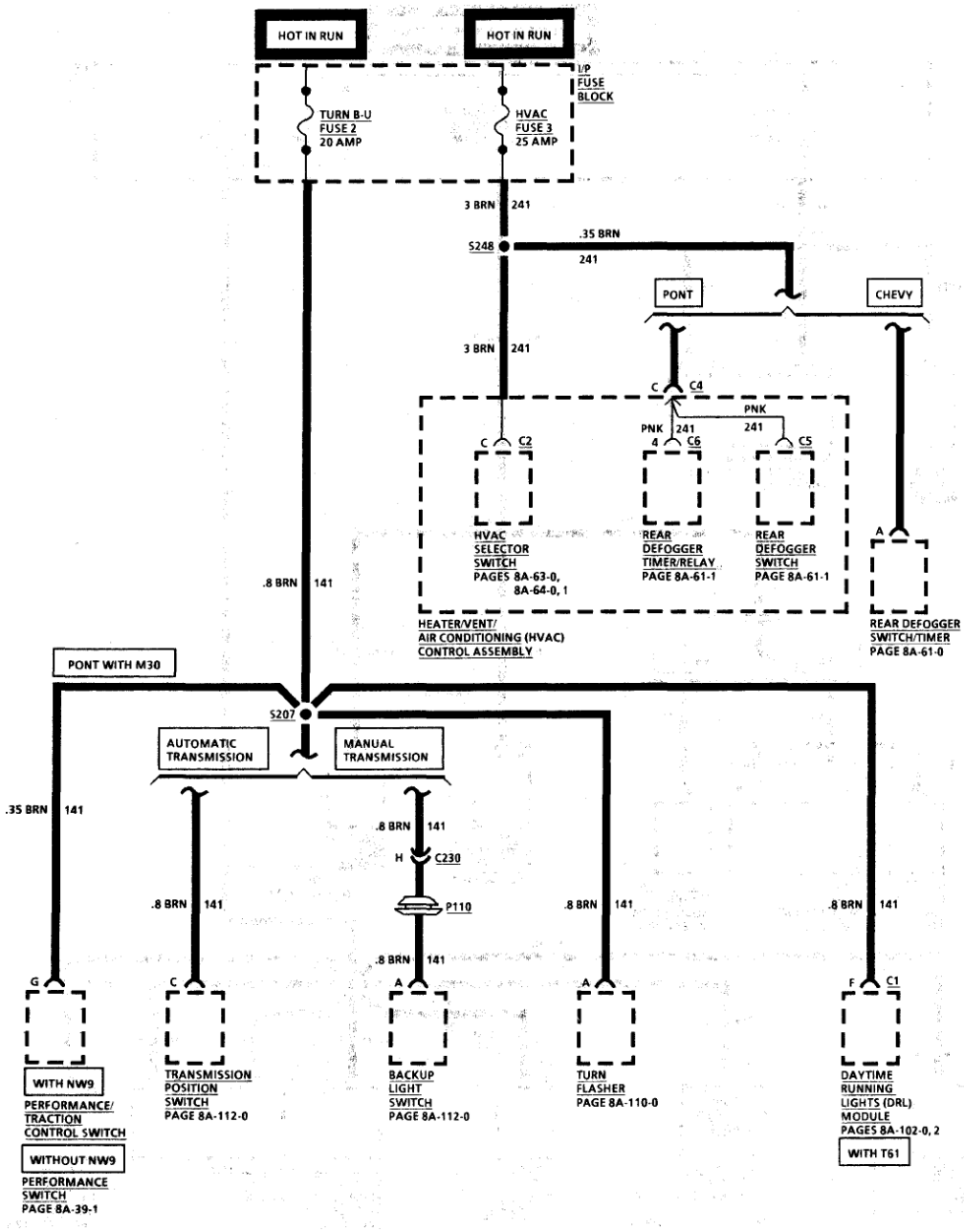
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FUSE BLOCK DETAILS
I/P FUSES 1, 5 AND 9



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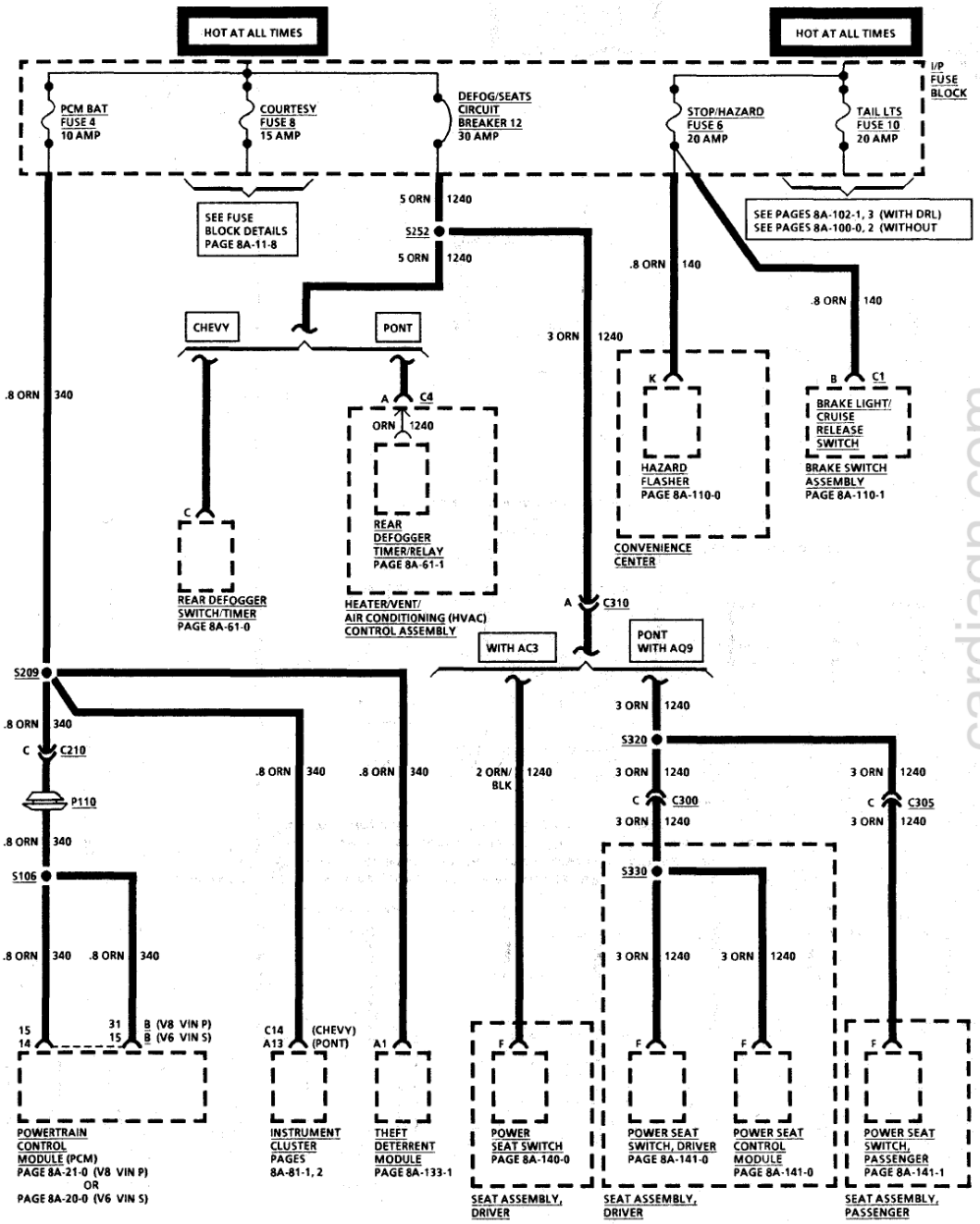
FUSE BLOCK DETAILS
I/P FUSES 2 AND 3



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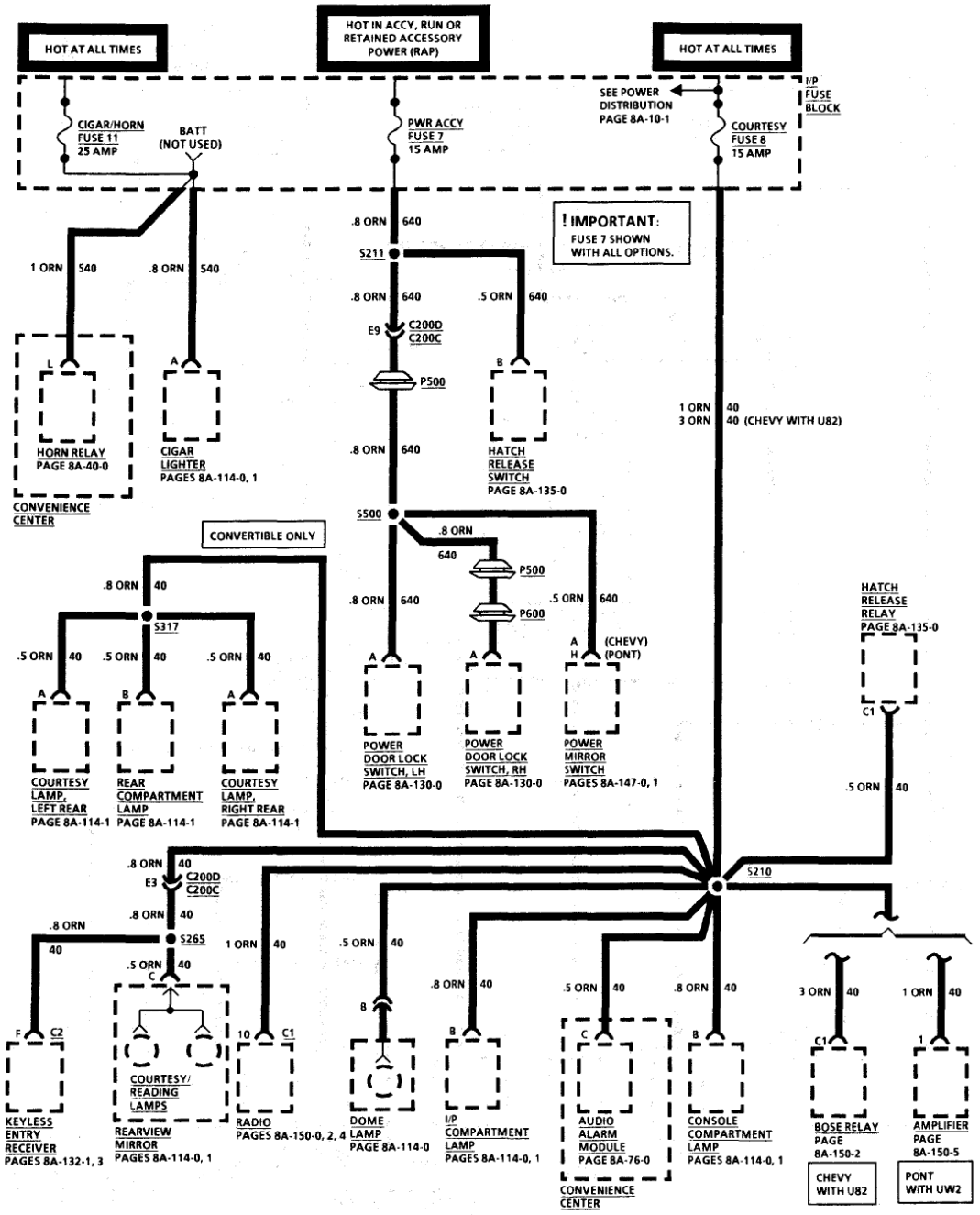
FUSE BLOCK DETAILS

I/P FUSES 4, 6 AND DEFOG/SEATS CIRCUIT BREAKER



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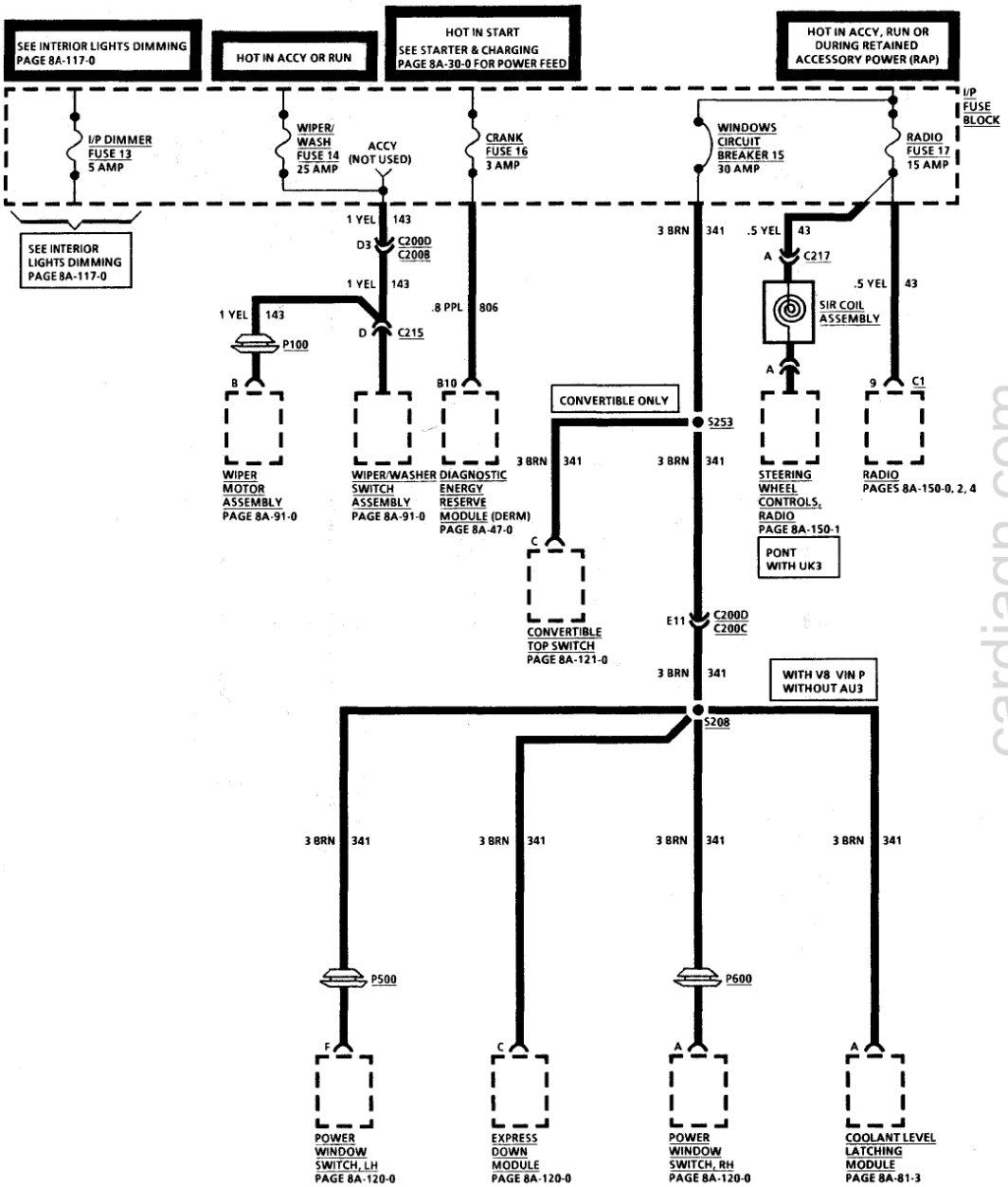
FUSE BLOCK DETAILS
I/P FUSES 7, 8 AND 11



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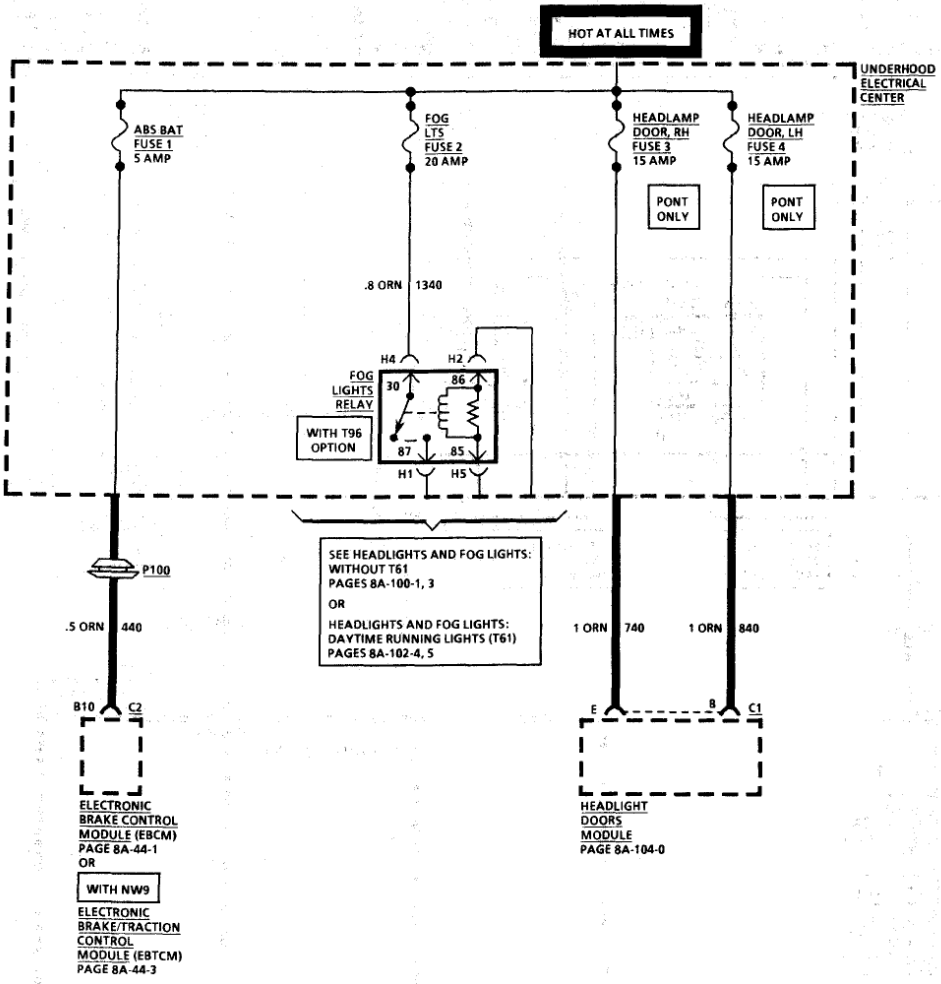
FUSE BLOCK DETAILS

I/P FUSES 13, 14, 16, 17 AND WINDOWS CIRCUIT BREAKER



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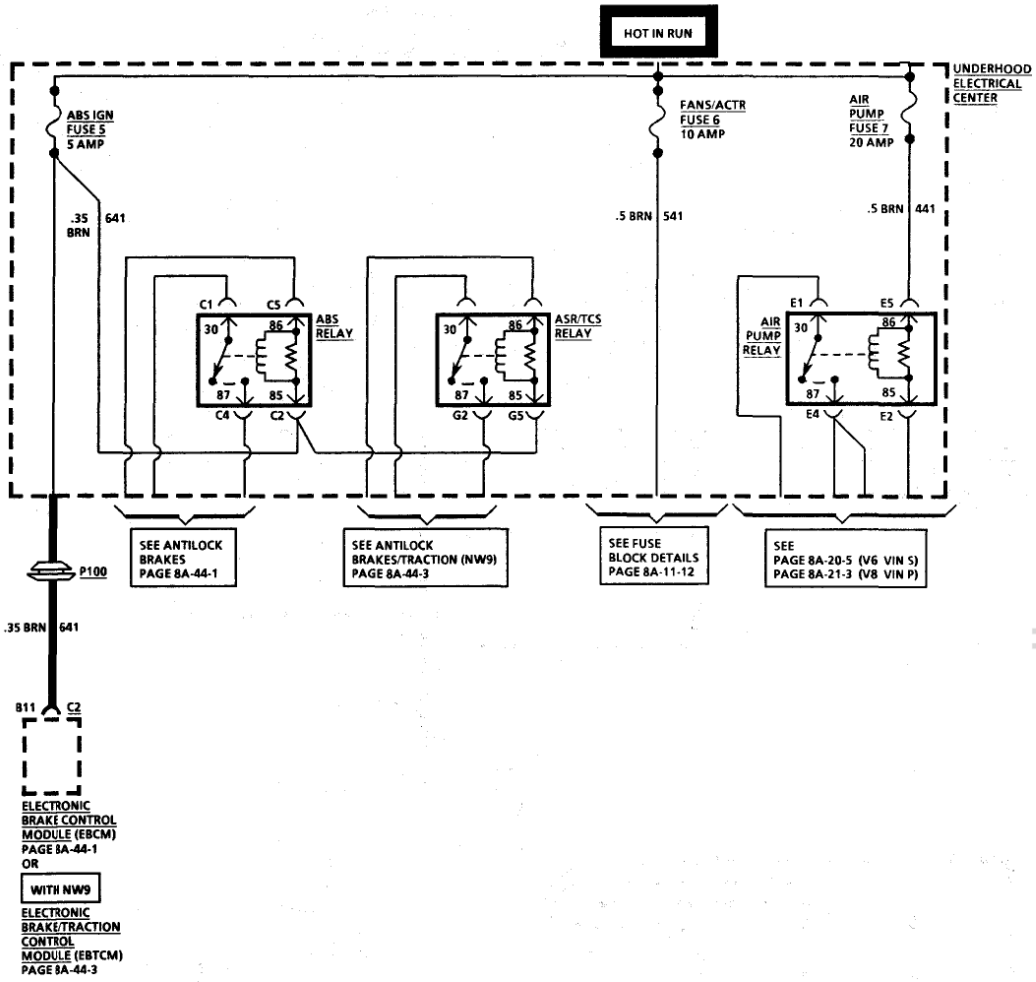
FUSE BLOCK DETAILS
UNDERHOOD FUSES 1, 2, 3, 4 AND FOG LIGHTS RELAY



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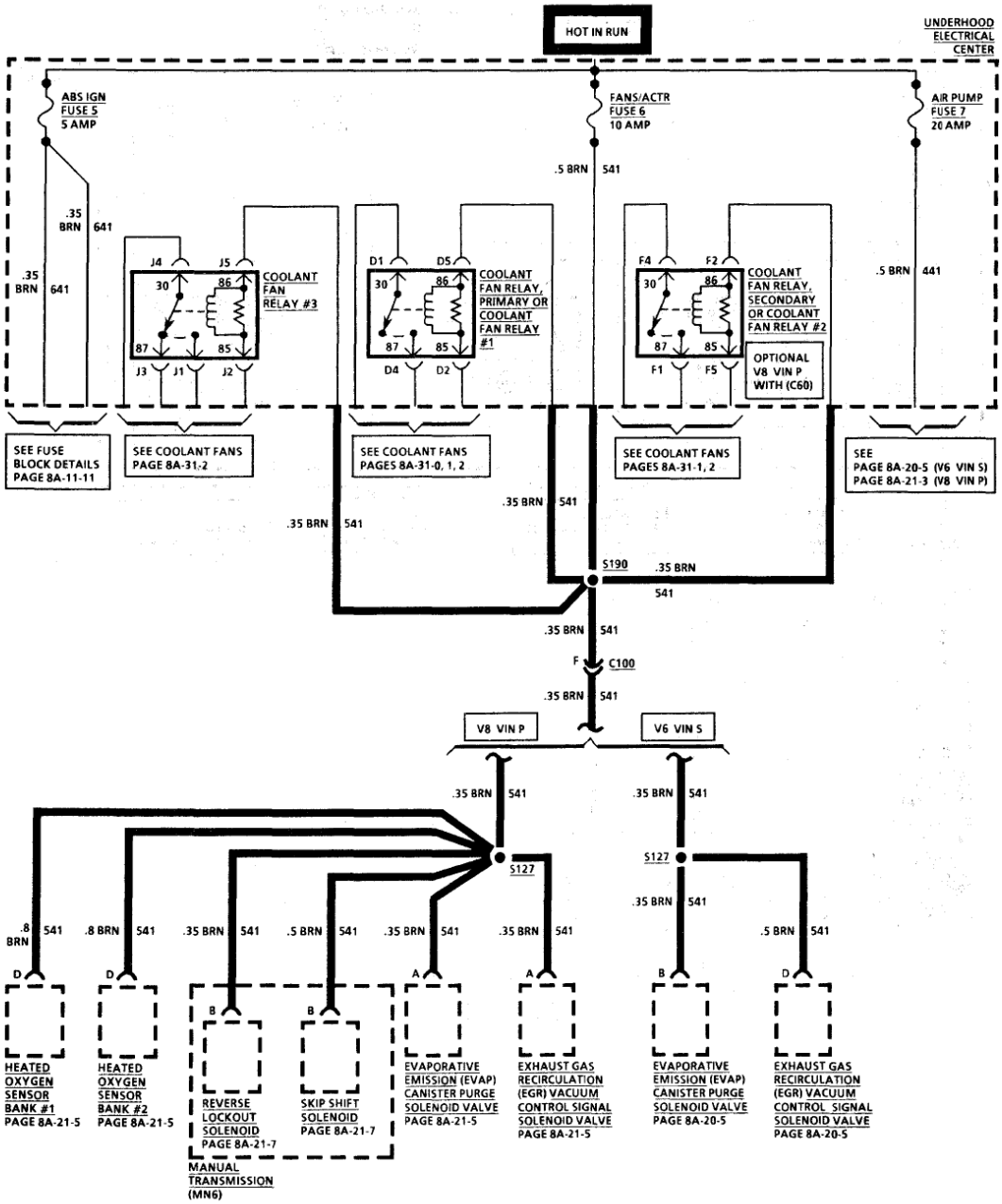
FUSE BLOCK DETAILS

UNDERHOOD FUSES 5 AND 7, ABS RELAY, ASR/TCS RELAY AND AIR PUMP



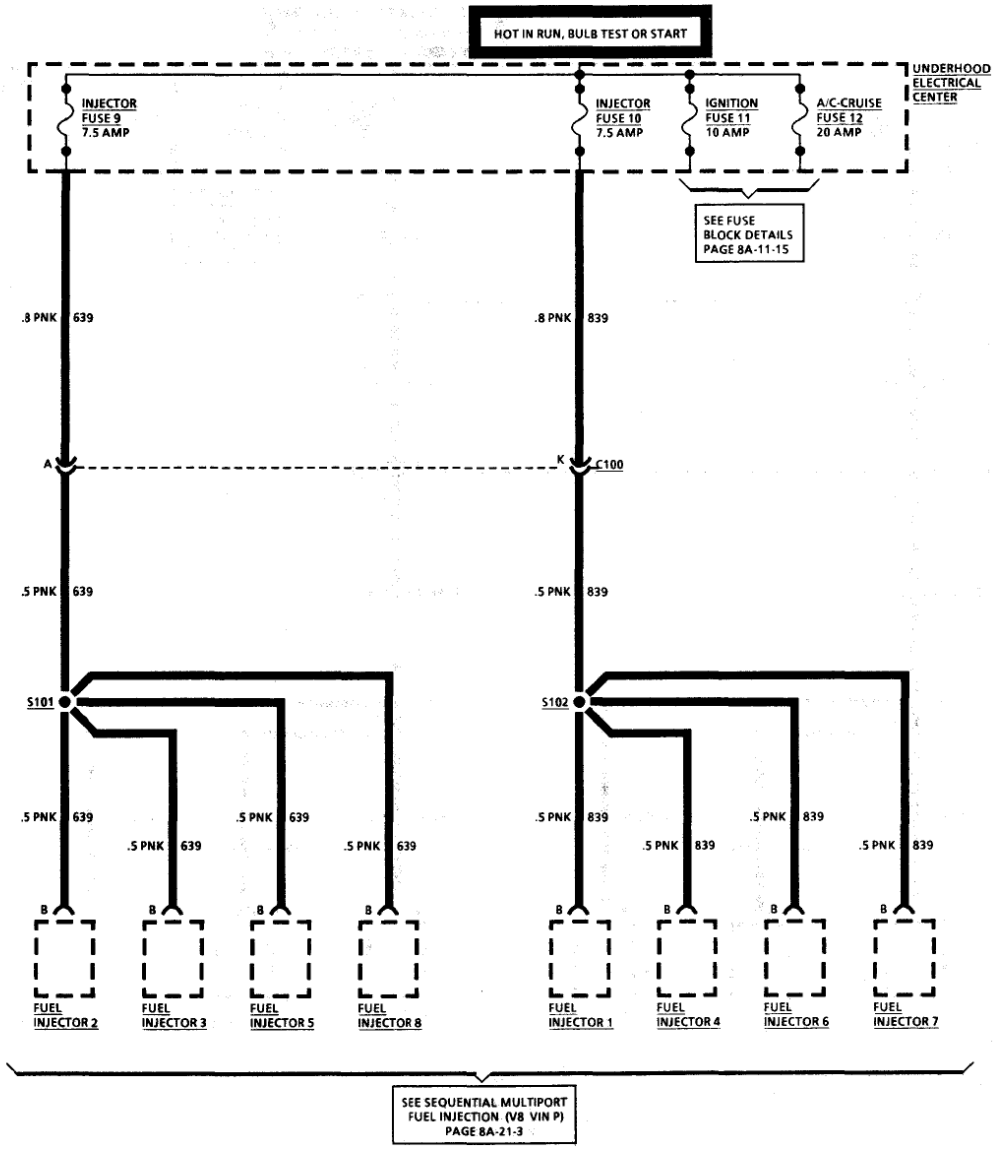
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FUSE BLOCK DETAILS
UNDERHOOD FUSE 6, COOLANT FAN RELAYS



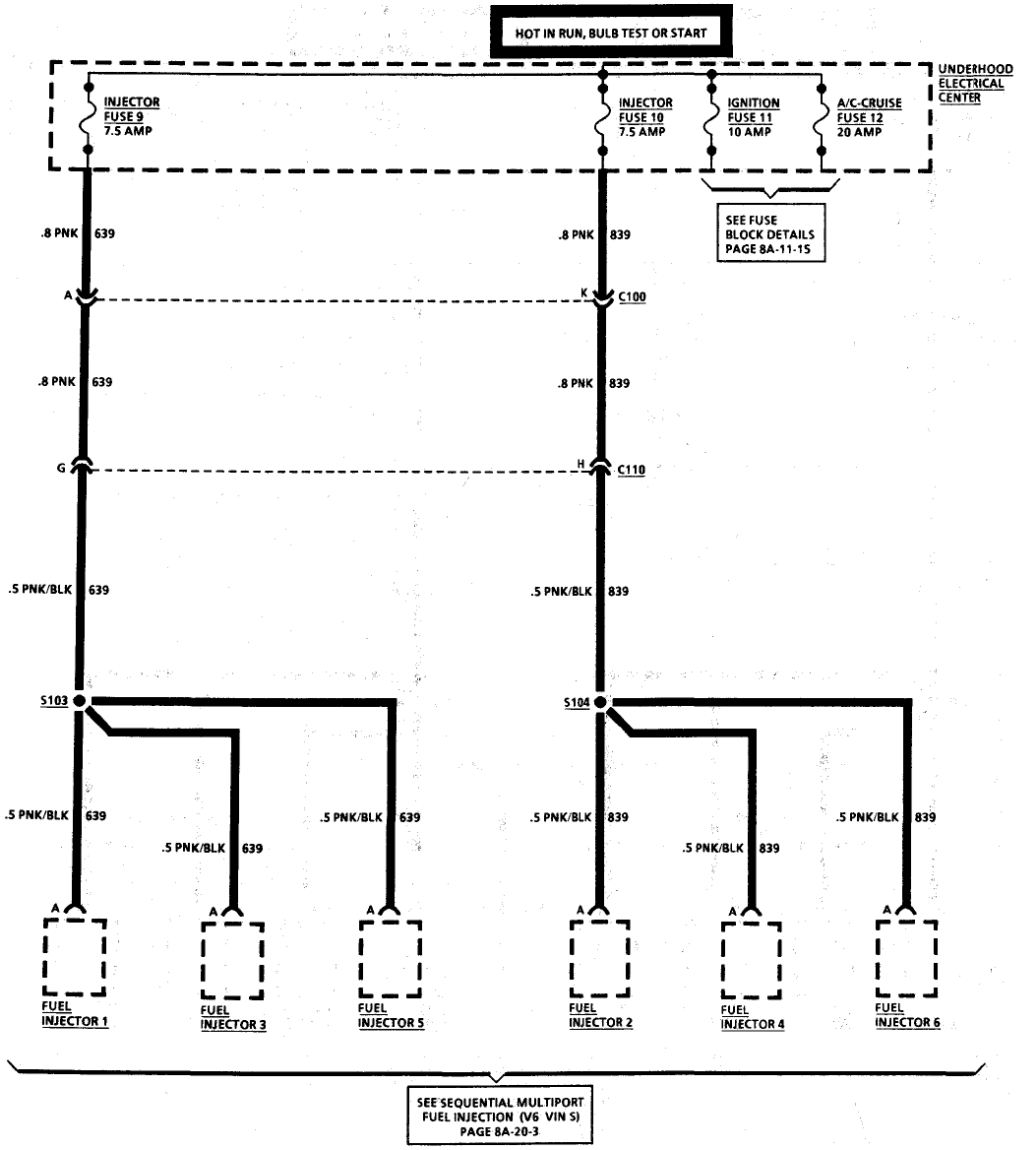
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FUSE BLOCK DETAILS
UNDERHOOD FUSES 9 AND 10 (V8 VIN P)



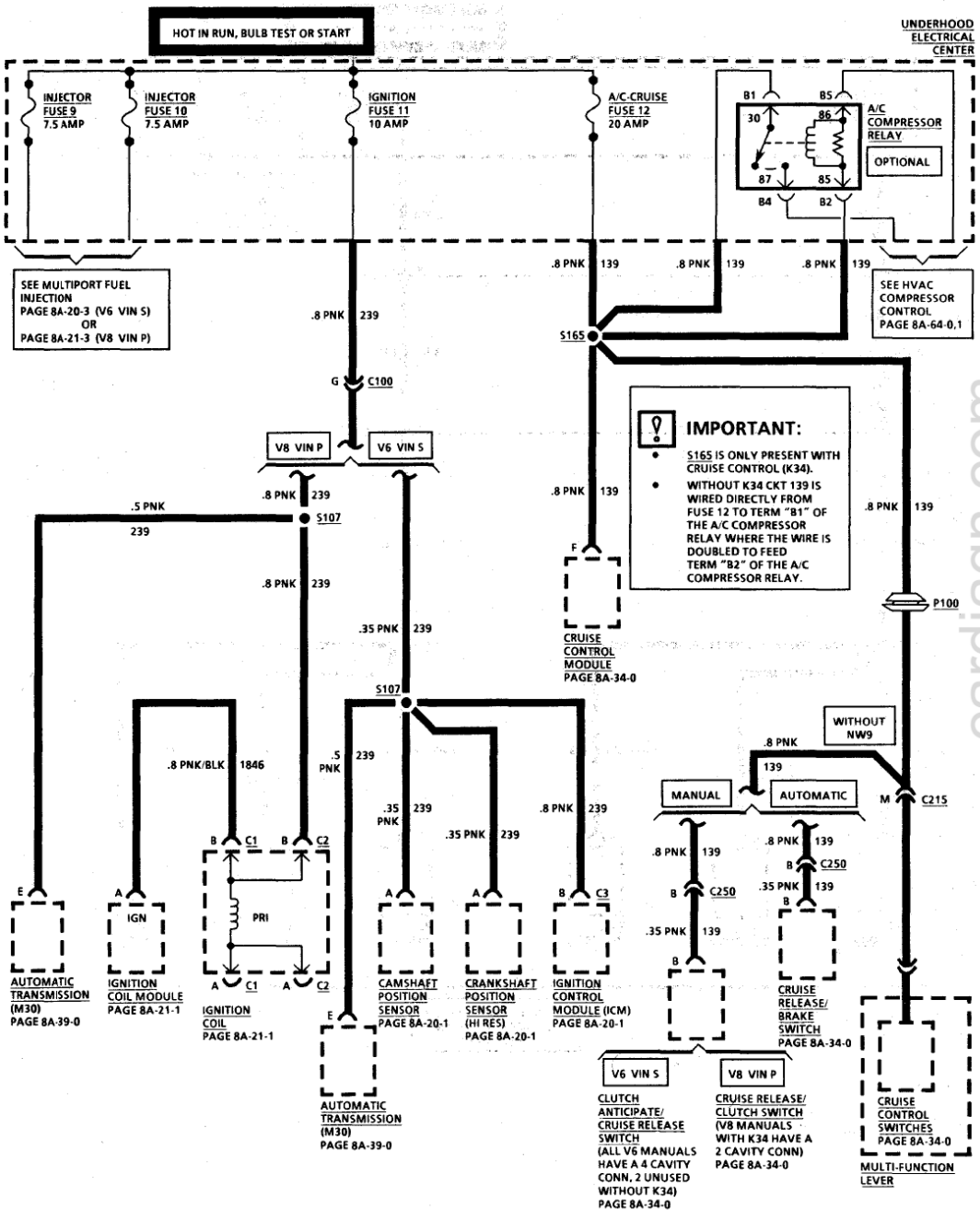
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FUSE BLOCK DETAILS
UNDERHOOD FUSES 9 AND 10 (V6 VIN S)



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FUSE BLOCK DETAILS
UNDERHOOD FUSES 11, 12 AND A/C COMPRESSOR RELAY



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FUSE BLOCK DETAILS

COMPONENT	LOCATION	201-PG	FIG.	CONN
Amplifier (part of UW2 Speaker Option)	Mounted behind Right Rear Armrest, on Rail	44	83	202-9
Arming Sensor, Dual Pole	Mounted to Floor Tunnel Bracket, under console	43	81	202-19
Backup Light Switch (M49) (V6 VIN S)	Middle of Transmission, left side	16	30	
Backup Light Switch (MM6) (V8 VIN P)	Middle of Transmission, right side	26	51	
Bose Relay	Below center A/C Duct, mounted to SIR Bracket	22	41	202-21
Brake Switch Assembly	Mounted in lower hole of brake pedal bracket (2 conn with Automatic), (1 conn with Manual) same switch for both	0	1	
Camshaft Position Sensor (V6 VIN S)	In front top of Engine Block, between Intake and Water Pump	13	24	
Cigar Lighter	Mounted on front of console	43	81	
Clutch Anticipate/ Cruise Release Switch (all V6 Manual)	Mounted in clutch pedal bracket (4 cavity conn)	0	1	202-20
Console Compartment Lamp	Under Console Compartment Door	43	81	
Convenience Center	Left of Steering Column, mounted to bottom of I/P Carrier	8	15	202-20
Convertible Top Switch	Left side of upper console (Chevy) or lower console (Pont)	42	78, 80	202-20
Coolant Level Latching Module	In molded pocket of dash mat, center above floor tunnel	45	84	202-20
Courtesy Lamp, Left Rear	Mounted in left sail panel			
Courtesy Lamp, Right Rear	Mounted in right sail panel			
Crankshaft Position Sensor, HI Resolution (V6 VIN S)	Lower front of Engine Block, pigtail comes out LH side of crank	11	20	
Cruise Control Module	Front LH side of vehicle, mounted to frame rail, forward of wheelhouse	19	36	202-11
Cruise Release/Brake Switch (all with K34)	Mounted in upper hole of brake pedal bracket (2 cavity conn)	0	1	
Cruise Release/Clutch Switch (V8 Manual with K34)	Mounted in clutch pedal bracket (2 cavity conn)	0	1	
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Diagnostic Energy Reserve Module (DERM)	Snapped in bracket, behind RH side of I/P Compartment	8	15	202-12
Dome Lamp	On roof, near hatch	4	6	
Electronic Brake Control Module (EBCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Evaporative Emission (EVAP) Canister Purge Solenoid Valve (V6 VIN S)	Left side of Engine, mounted to Intake Plenum	13	24	

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COMPONENT	LOCATION	201-PG	FIG.	CONN
Evaporative Emission (EVAP) Canister Purge Solenoid Valve (V8 VIN P)	Right center of Engine, mounted to Manifold	26	50	
Exhaust Gas Recirculation (EGR) Vacuum Control Signal Solenoid Valve (V6 VIN S)	Right side of Engine, mounted to Manifold	12	23	202-20
Exhaust Gas Recirculation (EGR) Vacuum Control Signal Solenoid Valve (V8 VIN P)	Left rear of Engine, mounted to Intake Plenum	24	44	
Express Down Module	Mounted to center of dash mat, above floor tunnel	9	17	202-21
Fuel Injectors (V6 VIN S)	Mounted on Intake Manifold, part of Fuel Rail			
Fuel Injectors (V8 VIN P)	Mounted on Intake Manifold, part of Fuel Rail	24	44	
Fuel Pump Relay	Forward of LH kick panel, mounted to foot rest bracket under carpet	7	13	202-21
Hatch Release Relay	Mounted to right side of SIR Bracket, behind I/P	22	41	202-21
Hatch Release Switch	Left of Steering Column, in knee bolster pad	31, 38	60, 67	
Headlight Doors Module	Forward of LH front wheelhouse, mounted to Air Intake	19	36	202-21
Heated Oxygen Sensor Bank #1	Mounted in left Exhaust Manifold	24	44	202-22
Heated Oxygen Sensor Bank #2	Mounted in right Exhaust Manifold	40	72	202-22
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Center of I/P	21	40	202-22
I/P Compartment Lamp	Inside top center of compartment	22	41	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Ignition Coil (V8 VIN P)	Front LH side of Engine	16	29	
Ignition Coil Module (V8 VIN P)	Front LH side of Engine	16	29	202-22
Ignition Control Module (ICM) (V6 VIN S)	Left front of Engine	27	52	202-22
Instrument Cluster	LH side of I/P			202-23
Keyless Entry Receiver	Behind RH side kick panel, in molded pocket	40	71	202-23
Mass Air Flow (MAF) Sensor	Mounted on air duct, in front of Intake Manifold	24	45	
Multi-Function Lever	Left Arm on Steering Column	27	53	
Performance Switch	Mounted in center console behind shifter			202-24
Performance/Traction Control Switch	Mounted in center console behind shifter	42	79	202-24
Power Door Lock Switch, LH	Mounted in left door armrest	18	33	202-24
Power Door Lock Switch, RH	Mounted in right door armrest	18	33	202-24
Power Mirror Switch	Mounted in left door armrest	18	33	202-24
Power Seat Control Module (AQ9)	Under Driver's Seat	47	86	202-24
Power Seat Switch (AC3)	On left side of Driver's Seat	41	76	202-24
Power Seat Switch, Driver (AQ9)	On left side of Driver's Seat	47	86	202-24
Power Seat Switch, Passenger (AQ9)	On right side of Passenger Seat	47	86	202-24
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Power Window Switch, LH	Mounted in left door armrest	18	33	202-27
Power Window Switch, RH	Mounted in right door armrest	18	33	202-27

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FUSE BLOCK DETAILS

COMPONENT	LOCATION	201-PG	FIG.	CONN
Radio	Center of I/P Carrier	36	65	202-16
Rear Compartment Lamp	Center of rear compartment below Hatch Release Actuator	30	58	
Rear Defogger Switch	Part of HVAC Assembly	21	39	
Rear Defogger Switch/Timer	Mounted on I/P knee bolster, right of Steering Column	37	66	202-27
Rear Defogger Timer/Relay	Part of HVAC Assembly	21	39	
Rearview Mirror	Top center of windshield			202-27
Reverse Lockout Solenoid (V8 VIN P Manual)	Rear LH side of Transmission	26	51	
SIR Coil Assembly	Top of Steering Column	3, 34	5, 51	
Skip Shift Solenoid	Center LH side of Transmission	26	51	
Steering Wheel Controls, Radio (UK3)	On Steering Wheel	2	3	202-27
Theft Deterrent Module	In I/P, just right of Radio, attached to Air Bag Bracket	8	15	202-18
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
Turn Flasher	Mounted to bracket, right of Steering Column, above Data Link Conn	8	15	
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
Wiper Motor Assembly	Rear of LH Shock Tower, mounted to dash panel below LH Wiper Mount	10	18	202-28
Wiper/Washer Switch Assembly	In left side of Steering Column, actuated by Multi-Function Lever	3	5	
C100 (10 cavities)	Engine to Forward Lamp Harn, behind LH wheelhouse, attached to PCM bracket	15	28	202-0
C110 (10 cavities) (L32)	Engine to Injector Harn, top center of Intake Manifold	12	22	202-1
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C215 (11 cavities)	Near base of Steering Column	35	64	202-4
C217 (4 cavities)	Near base of Steering Column	34	63	202-19
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
C250 (2 cavities)	Forward Lamp Harn to Clutch Jumper Harn or Switch, near brake/clutch pedal bracket	0, 1	1, 2	
C300 (6 cavities) (AQ9)	Under Driver Seat Assembly	47	86	202-19
C305 (6 cavities) (AQ9)	Under Passenger Seat Assembly	46	85	202-19
C310 (2 cavities)	Between rear mounting bolt of Driver Seat near #3 Rail	6	11	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
P500	Between LH door and "A" pillar	17	31	
P600	Between RH door and "A" pillar	45	84	
S101 (LT1)	Engine Harn, between Injectors 4 and 6 breakouts	26	50	

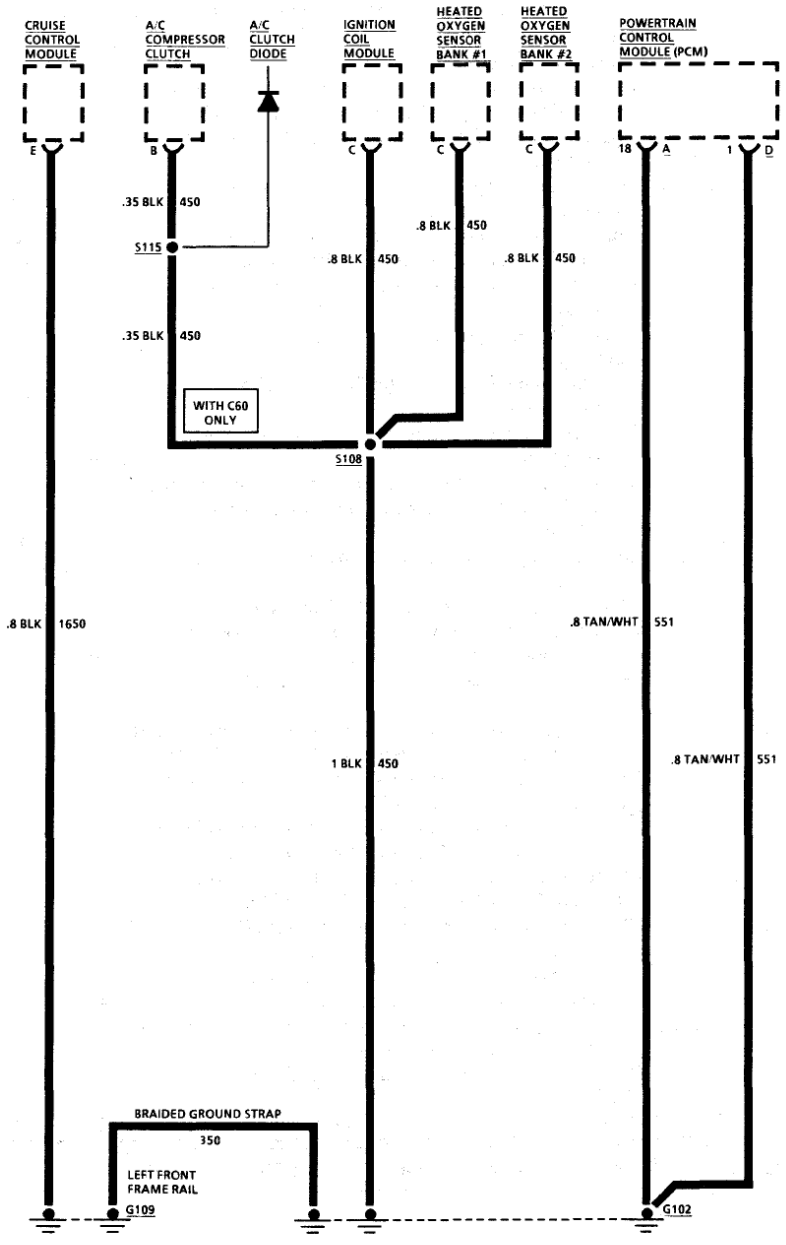
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COMPONENT	LOCATION	201-PG	FIG.	CONN
S102 (LT1)	Engine Harn, approx 5 cm from Injector 3 breakout	24	44	
S103 (L32)	Injector Jumper Harn, approx 7 cm from LH Branch breakout			
S104 (L32)	Injector Jumper Harn, approx 9 cm from Injector 6			
S106 (L32)	Engine Harn, approx 25 cm from PCM Connectors			
S106 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S107 (LT1)	Engine Harn, approx 7 cm from main breakout, at right rear of Engine			
S107 (L32)	Engine Harn, approx 30 cm from C110 breakout	12	22	
S127 (L32)	Engine Harn, approx 13 cm from RH branch			
S127 (LT1)	Engine Harn, approx 8 cm from left clip, on Intake Manifold	24	44	
S132 (LT1)	Engine Harn, approx 2 cm from clip near PCM and main branch			
S165	Forward Lamp Harn, approx 7 cm from Electrical Center breakout			
S190	Forward Lamp Harn, approx 8 cm from Electrical Center breakout	36	68	
S204	I/P Harn, approx 10 cm from Steering Column breakout			
S205	I/P Harn, approx 31 cm from Convenience Center breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S207	I/P Harn, approx 4 cm before DLC breakout			
S208	Cross Car Harn, approx 5 cm from Express Down Module breakout	45	84	
S209	I/P Harn, approx 24 cm from Convenience Center breakout			
S210	I/P Harn, approx 44 cm from Convenience Center (Pont) or 12 cm from RR Defog Switch (Chevy) breakouts			
S211	I/P Harn, approx 4 cm from antenna cable (Chevy) or Convenience Center (Pont) breakouts			
S248	I/P Harn, approx 4 cm before RR Defog Switch (Chevy) or from Instrument Cluster (Pont) breakouts			
S252	I/P Harn, approx 17 cm back from HVAC Controls (Pont) or RR Defogger Switch/Timer (Chevy)			
S253	I/P Harn, approx 35 cm from Convenience Center breakout			
S265	Cross Car Harn, approx 20 cm from Rearview Mirror breakout	45	84	
S317	I/P Harn, approx at rear edge of door below left sail panel			
S320	Seat Jumper Harn, near rosebud under Driver Seat			
S330	Driver Seat Harn, approx 22 cm from Power Seat Switch Conn			
S500	Cross Car Harn, approx 6 cm from Speaker breakout	17	31	

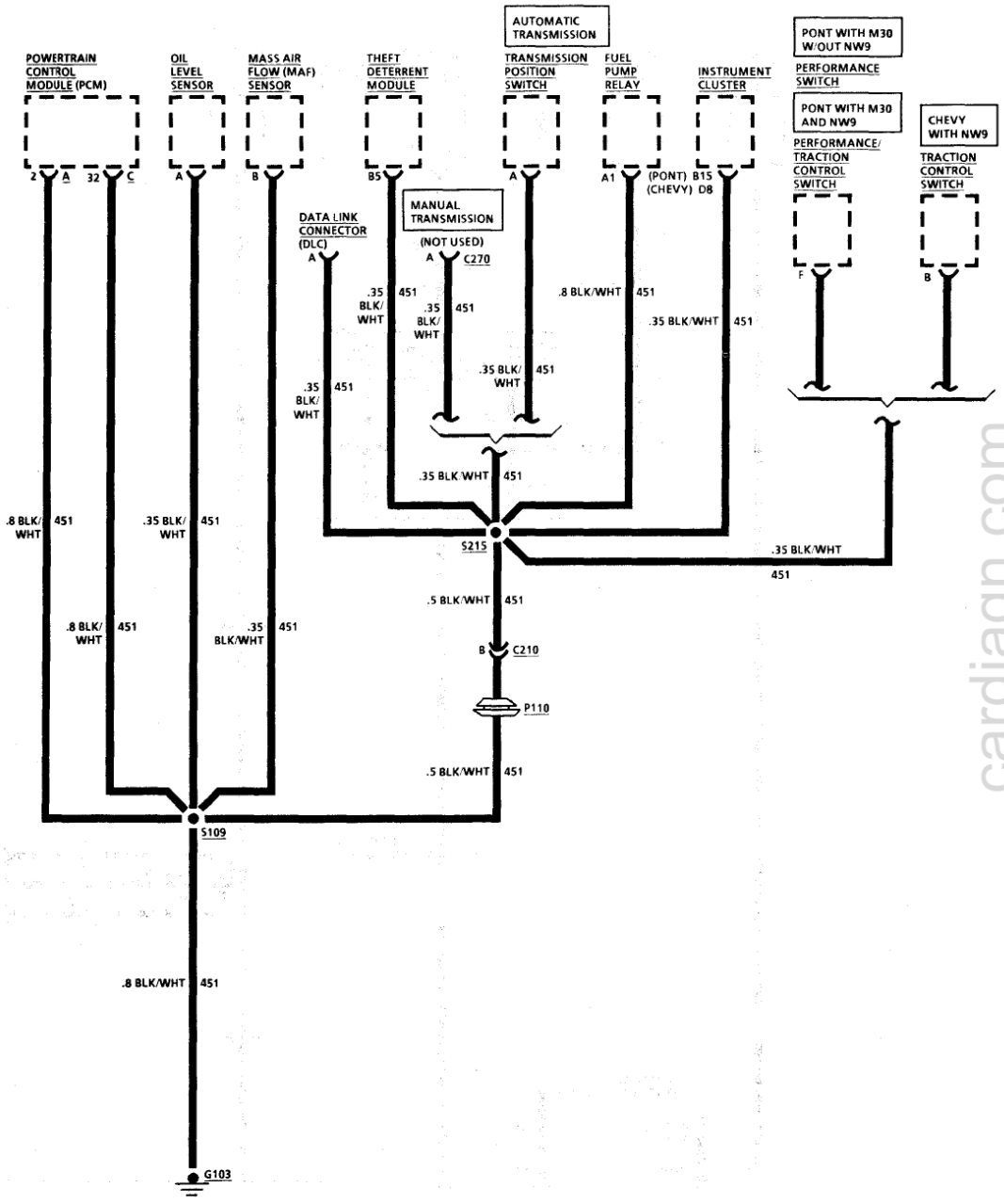
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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GROUND DISTRIBUTION
V8 VIN P

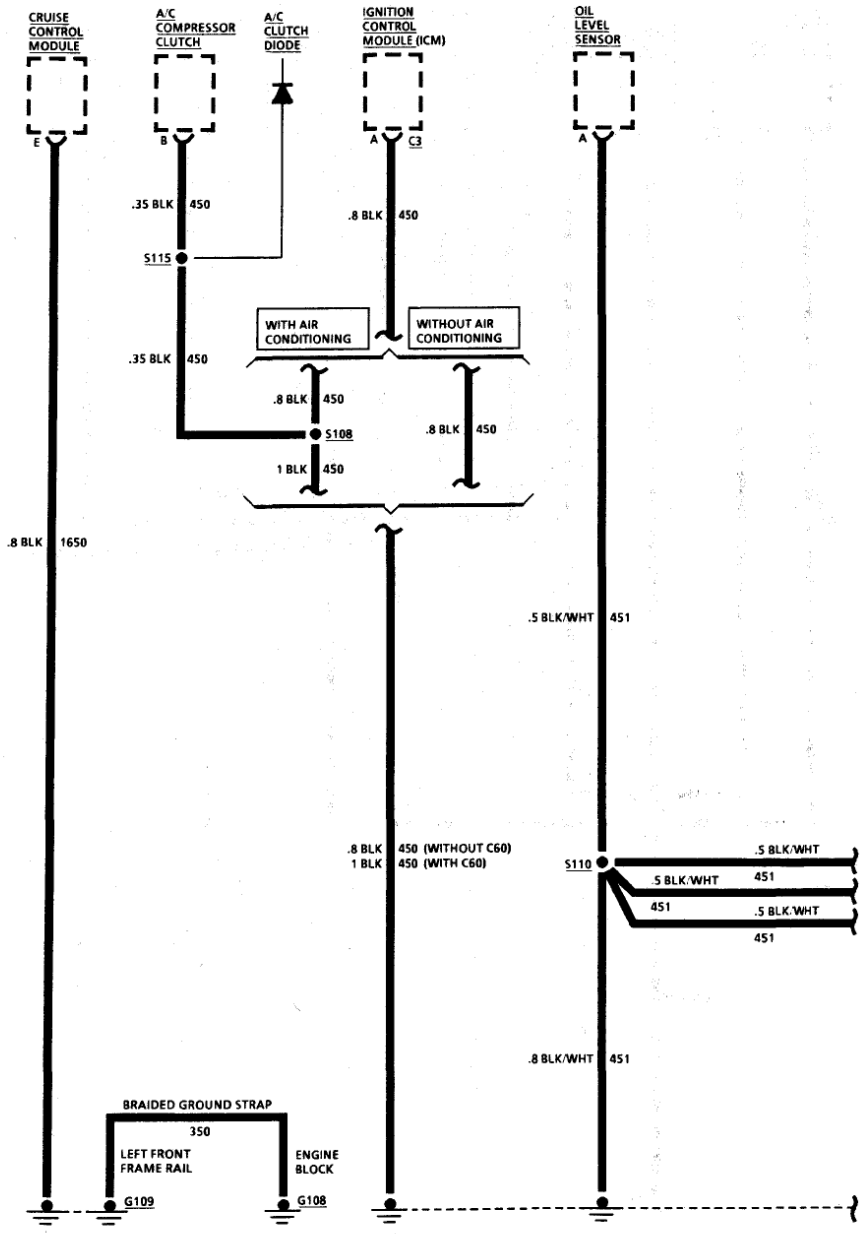


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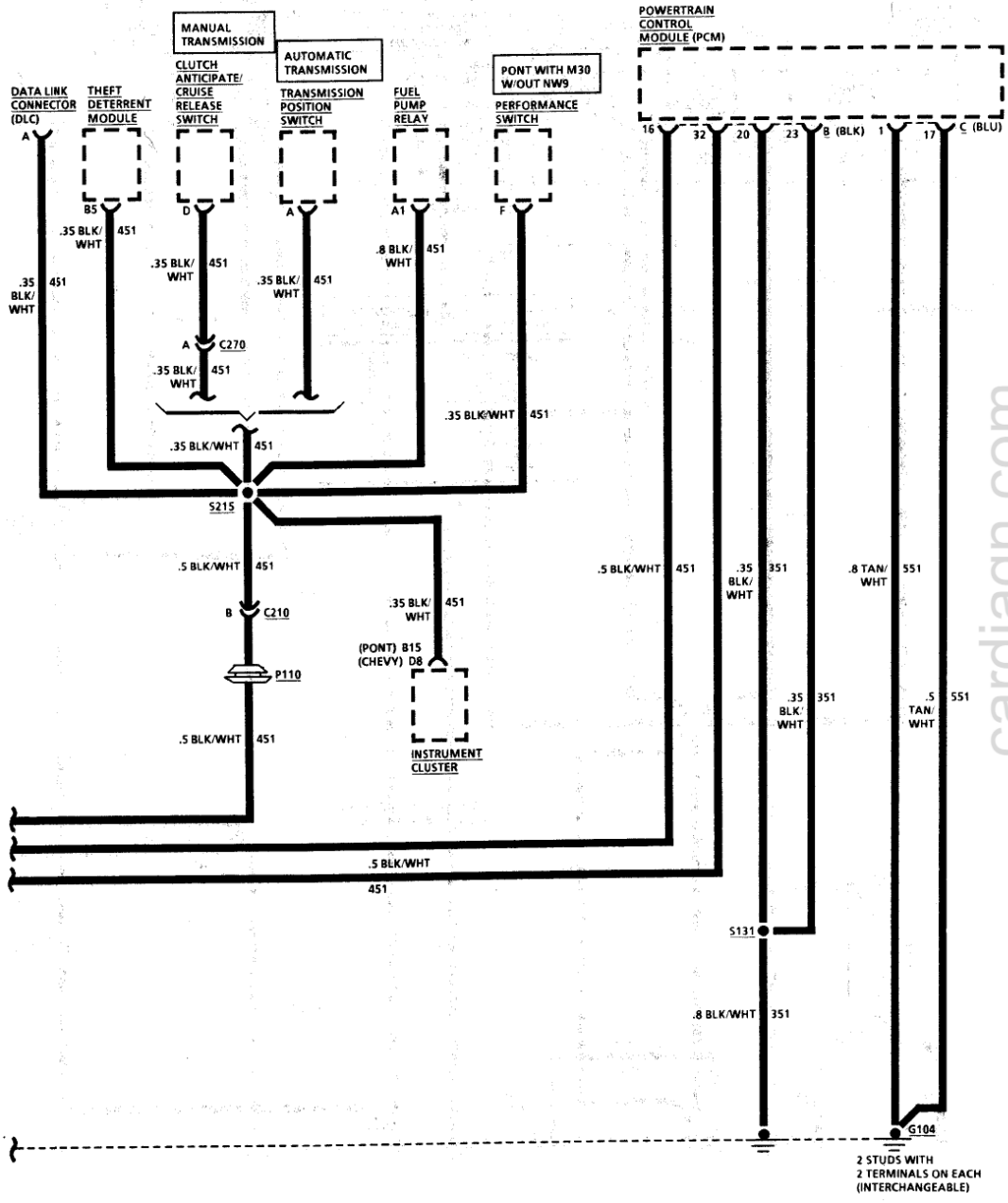


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GROUND DISTRIBUTION
V6 VIN S



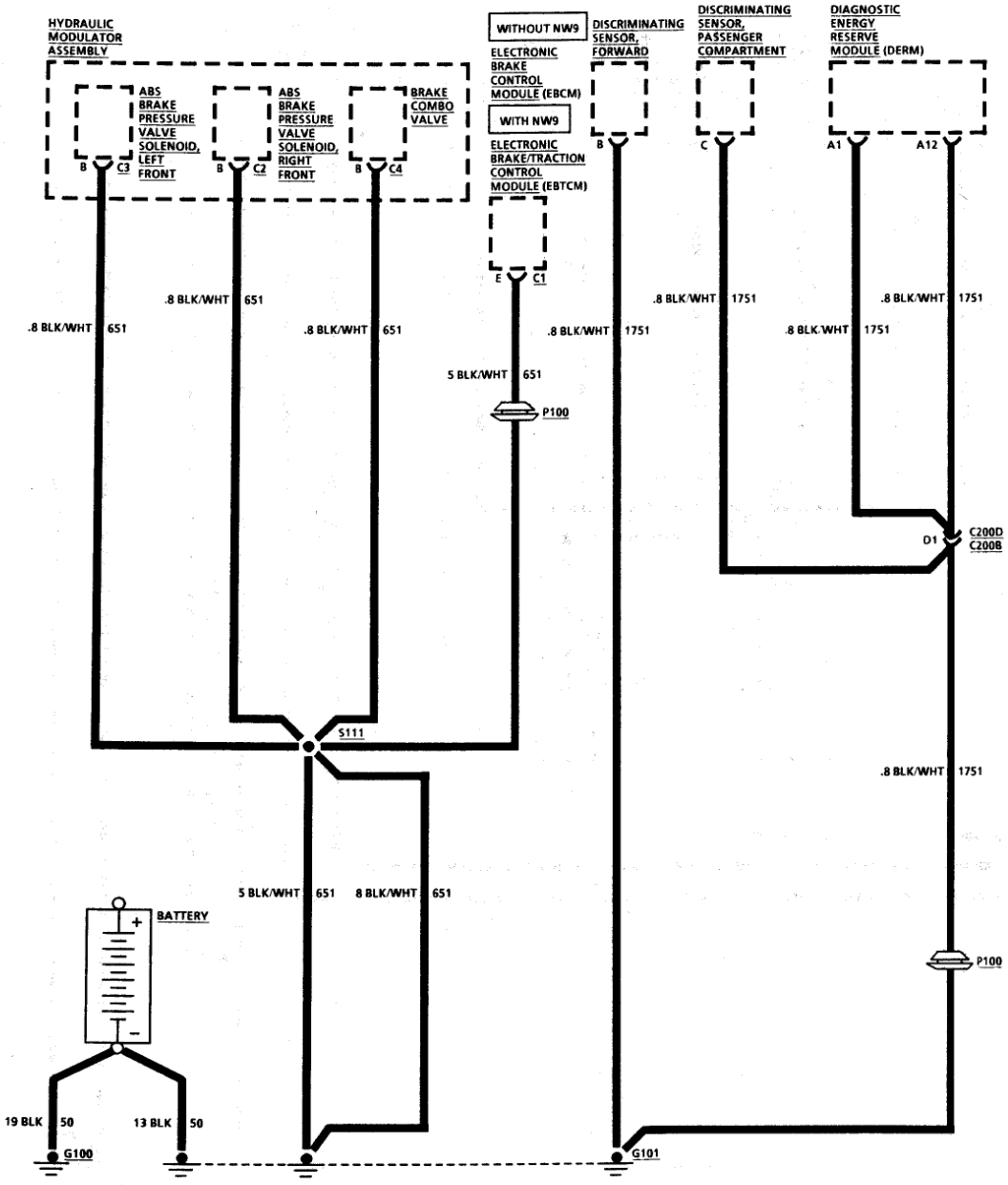
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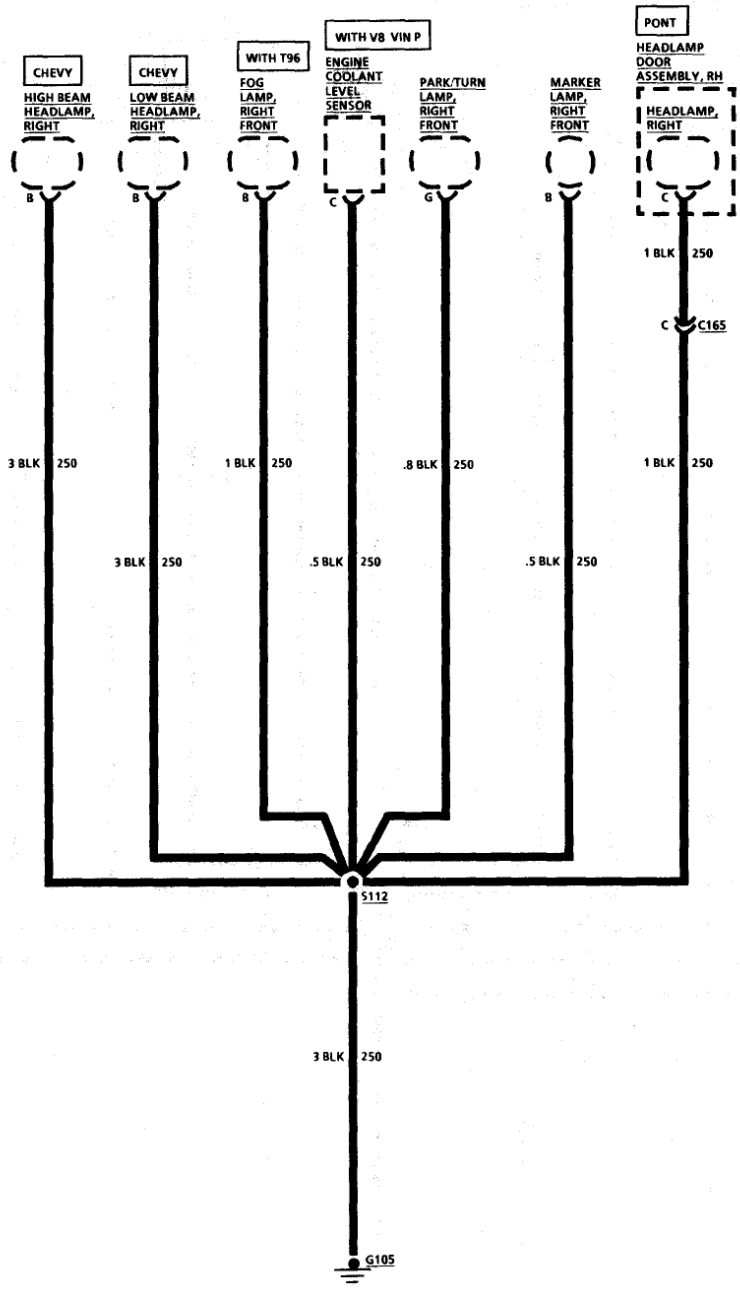
GROUND DISTRIBUTION

ANTILOCK BRAKE SYSTEM (ABS) OR TRACTION CONTROL SYSTEM (NW9) AND SUPPLEMENTAL INFLATABLE RESTRAINT (SIR)



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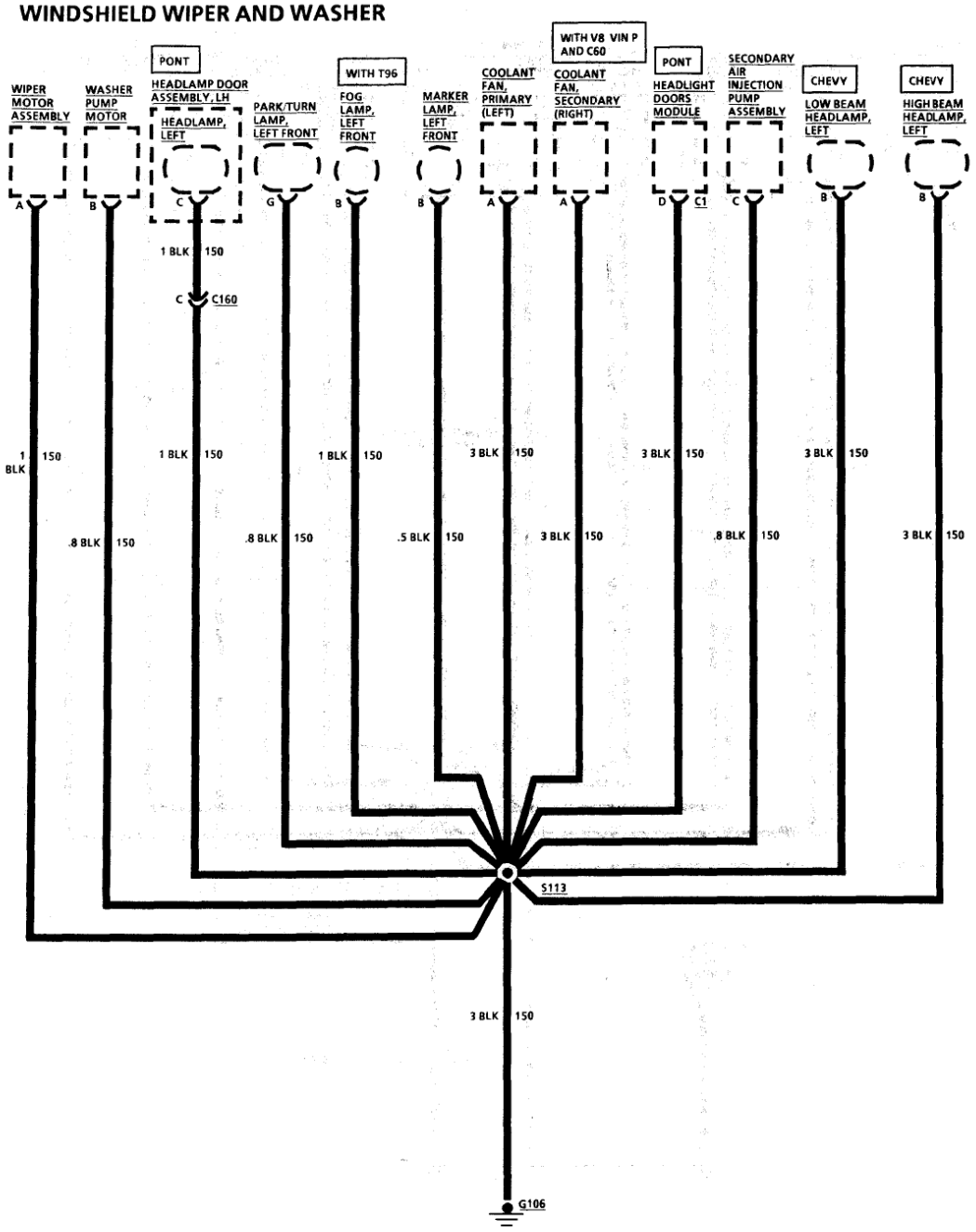
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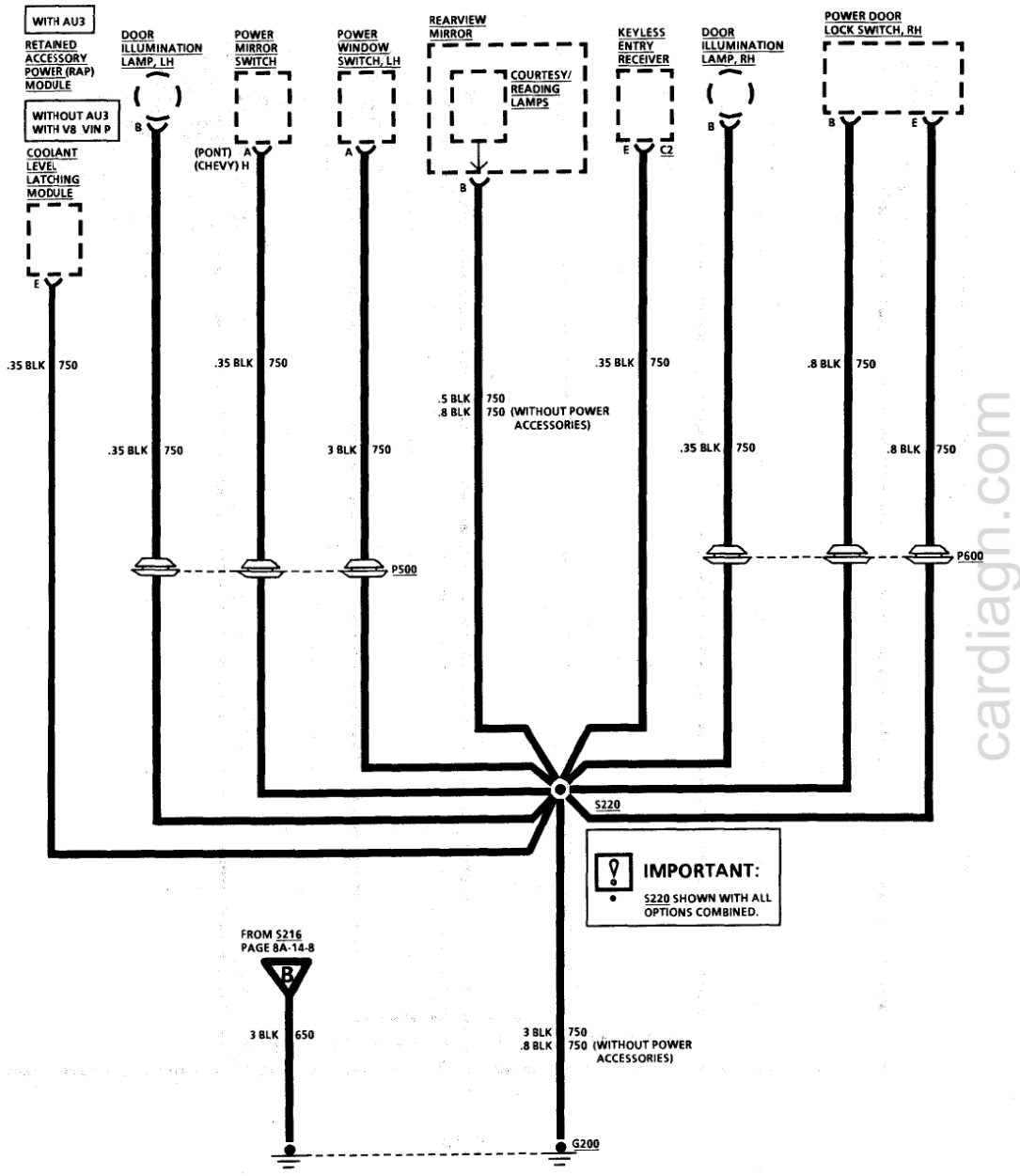
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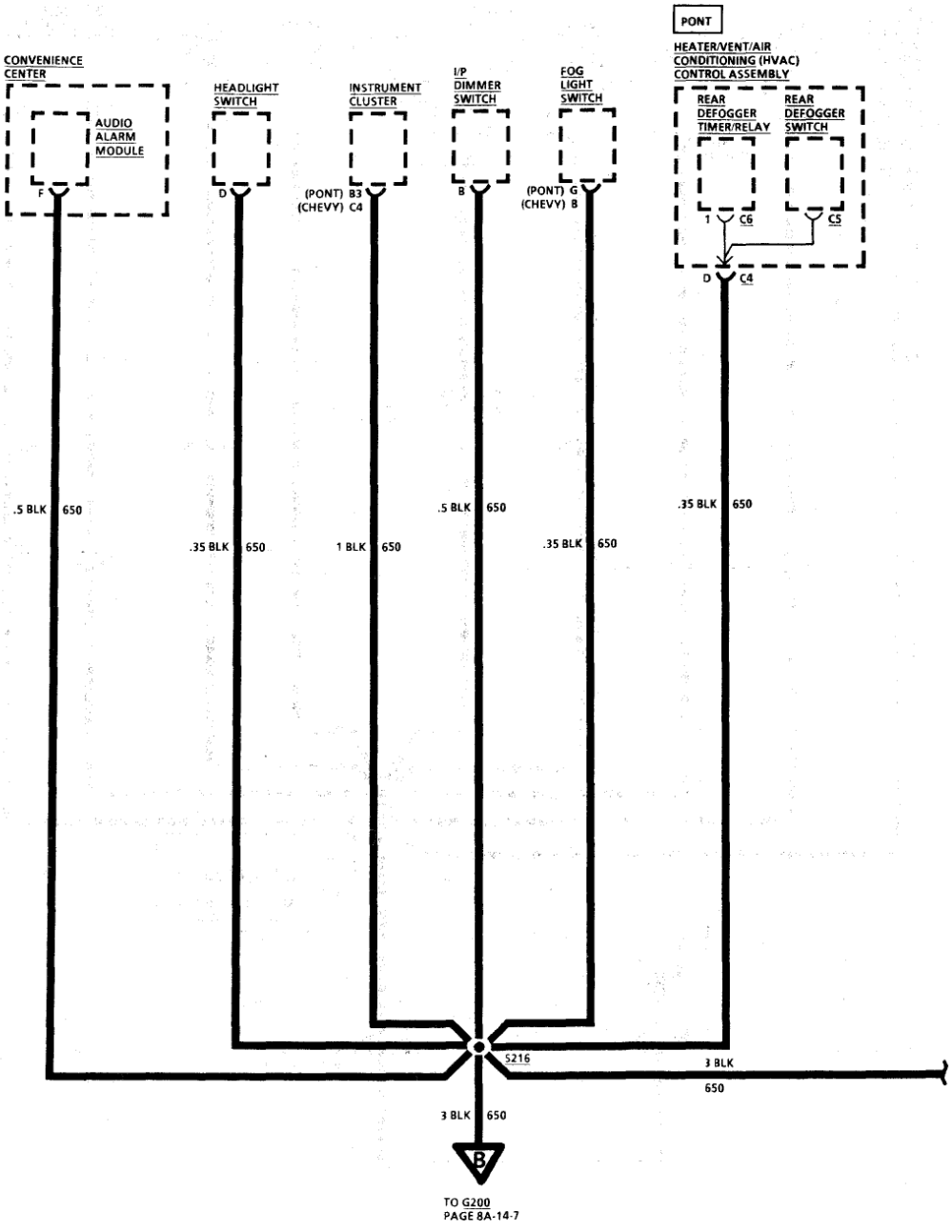
GROUND DISTRIBUTION
POWER DOORS, LOCKS, MIRRORS AND WINDOWS



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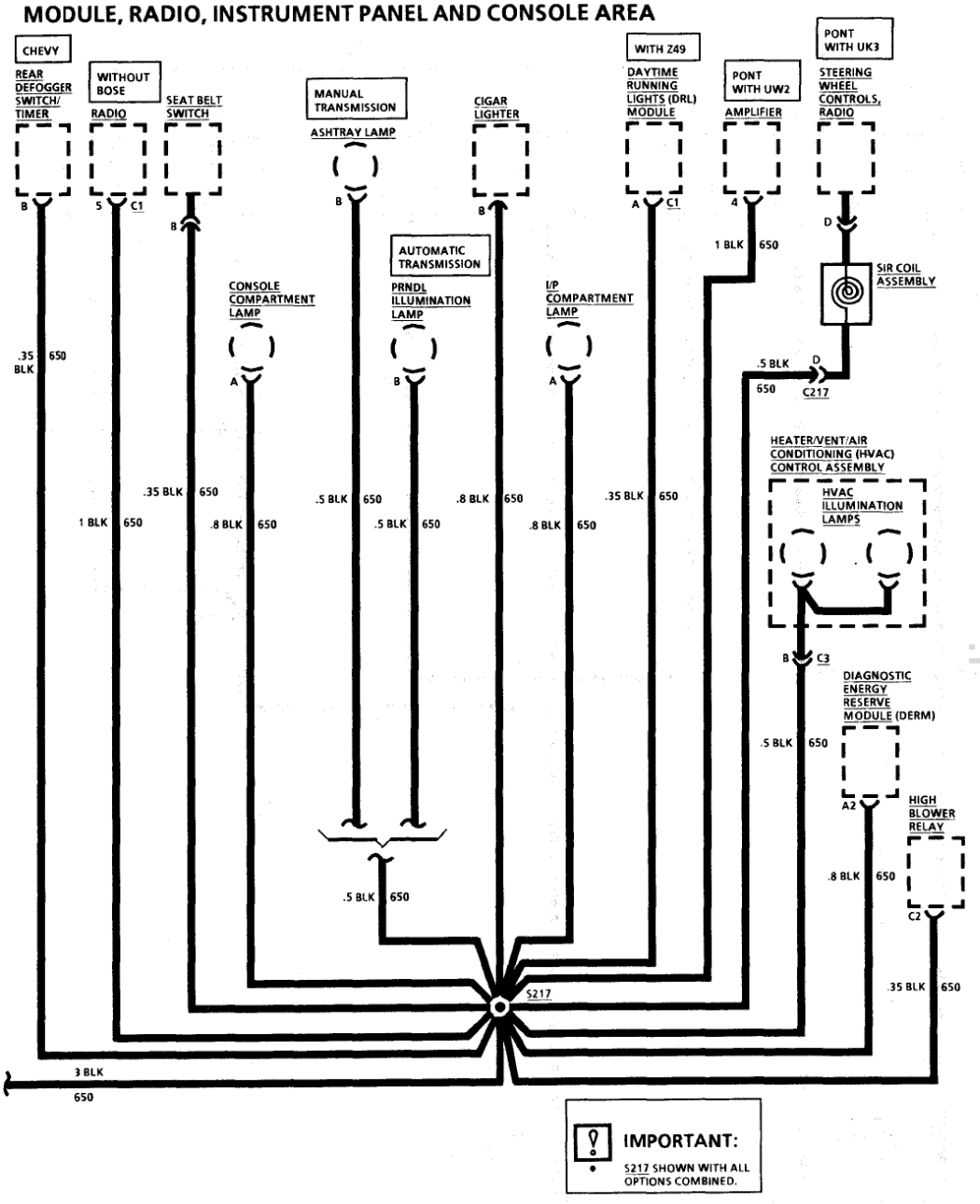
AUDIO ALARM MODULE, HATCH RELEASE, LIGHT SWITCHES, POWER SEATS AND REAR DEFOGGER



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DIAGNOSTIC ENERGY RESERVE MODULE (DERM), DAYTIME RUNNING LIGHTS (DRL) MODULE, RADIO, INSTRUMENT PANEL AND CONSOLE AREA



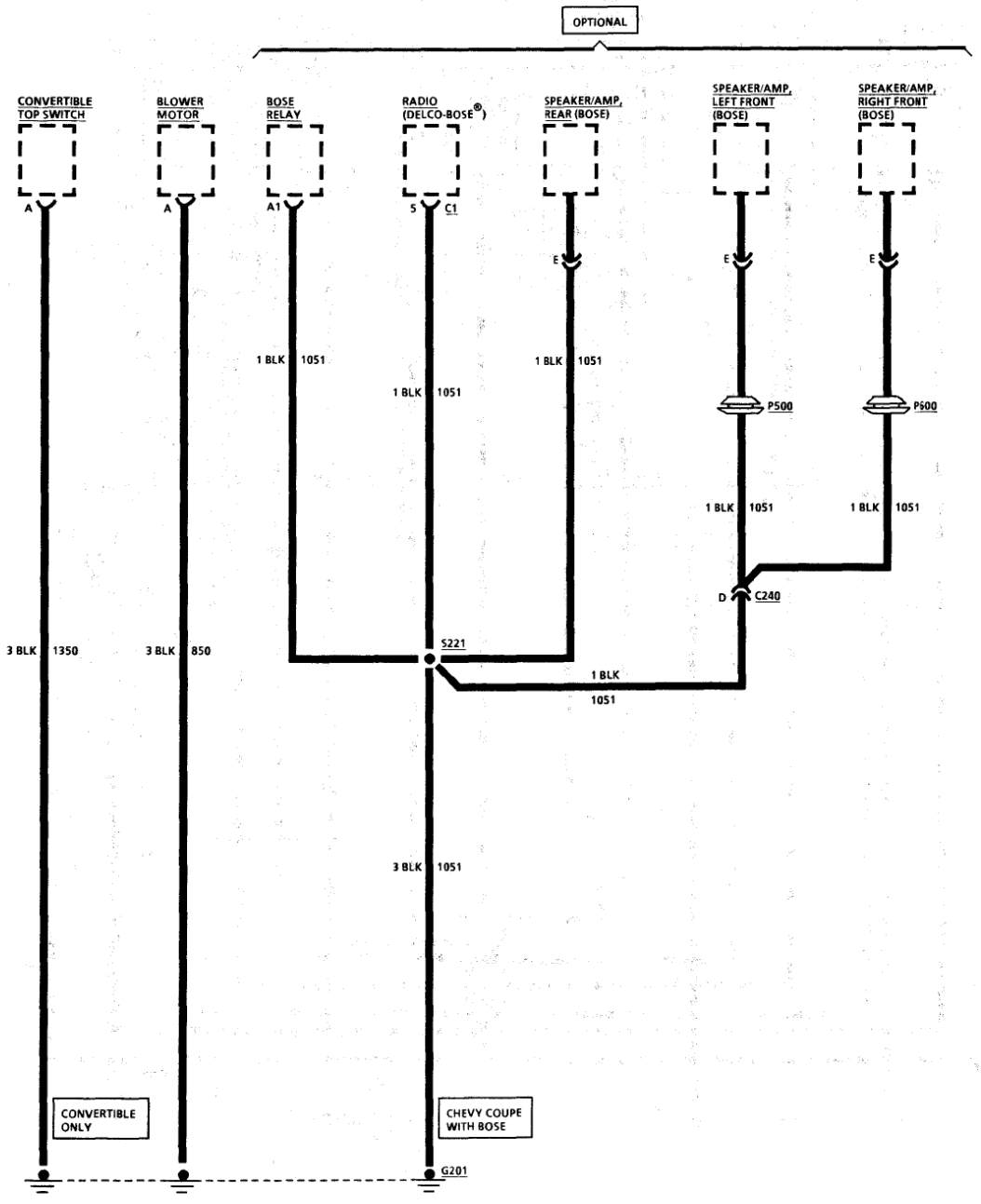
IMPORTANT:

S217 SHOWN WITH ALL OPTIONS COMBINED.

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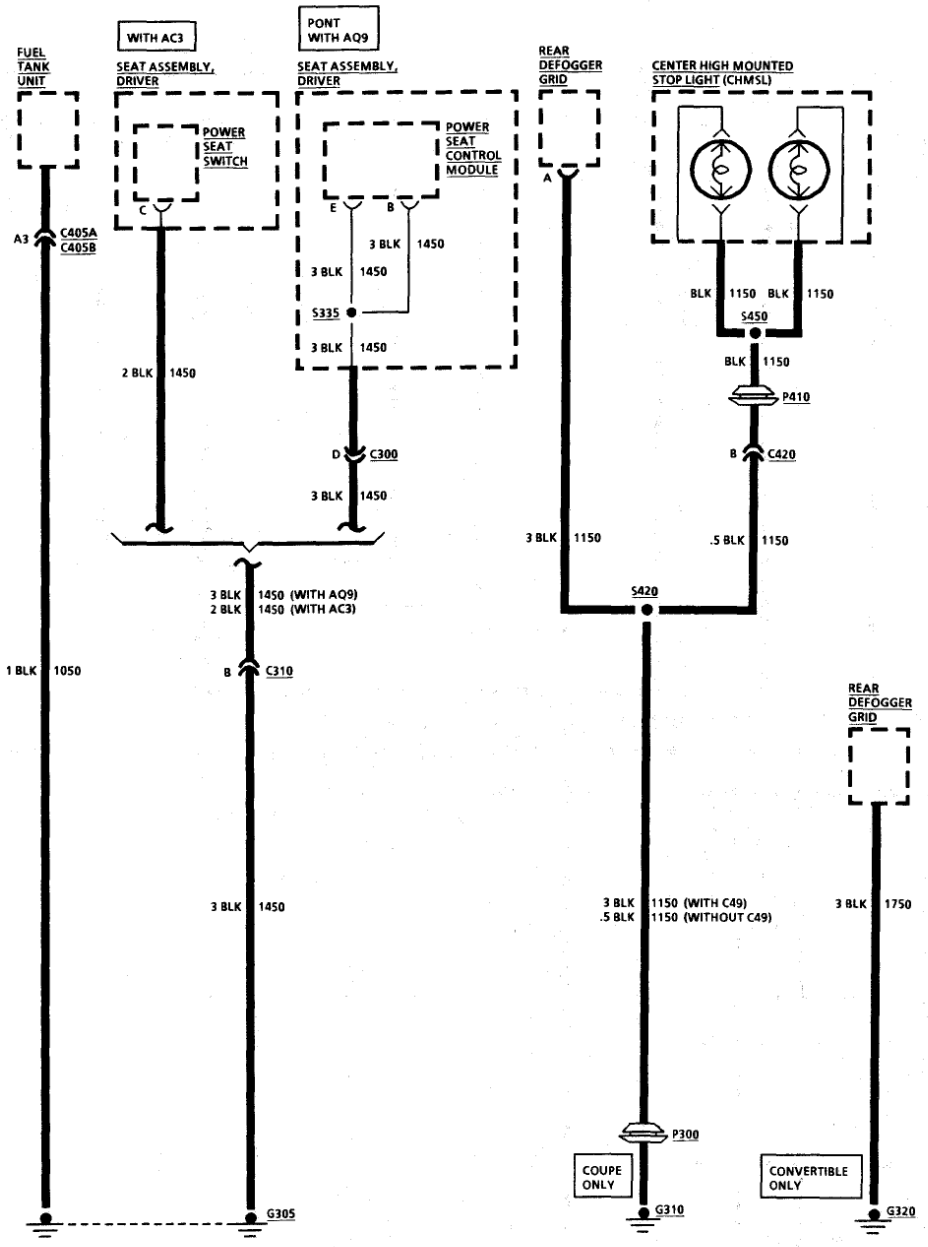
BLOWER MOTOR, BOSE RADIO AND CONVERTIBLE TOP SWITCH



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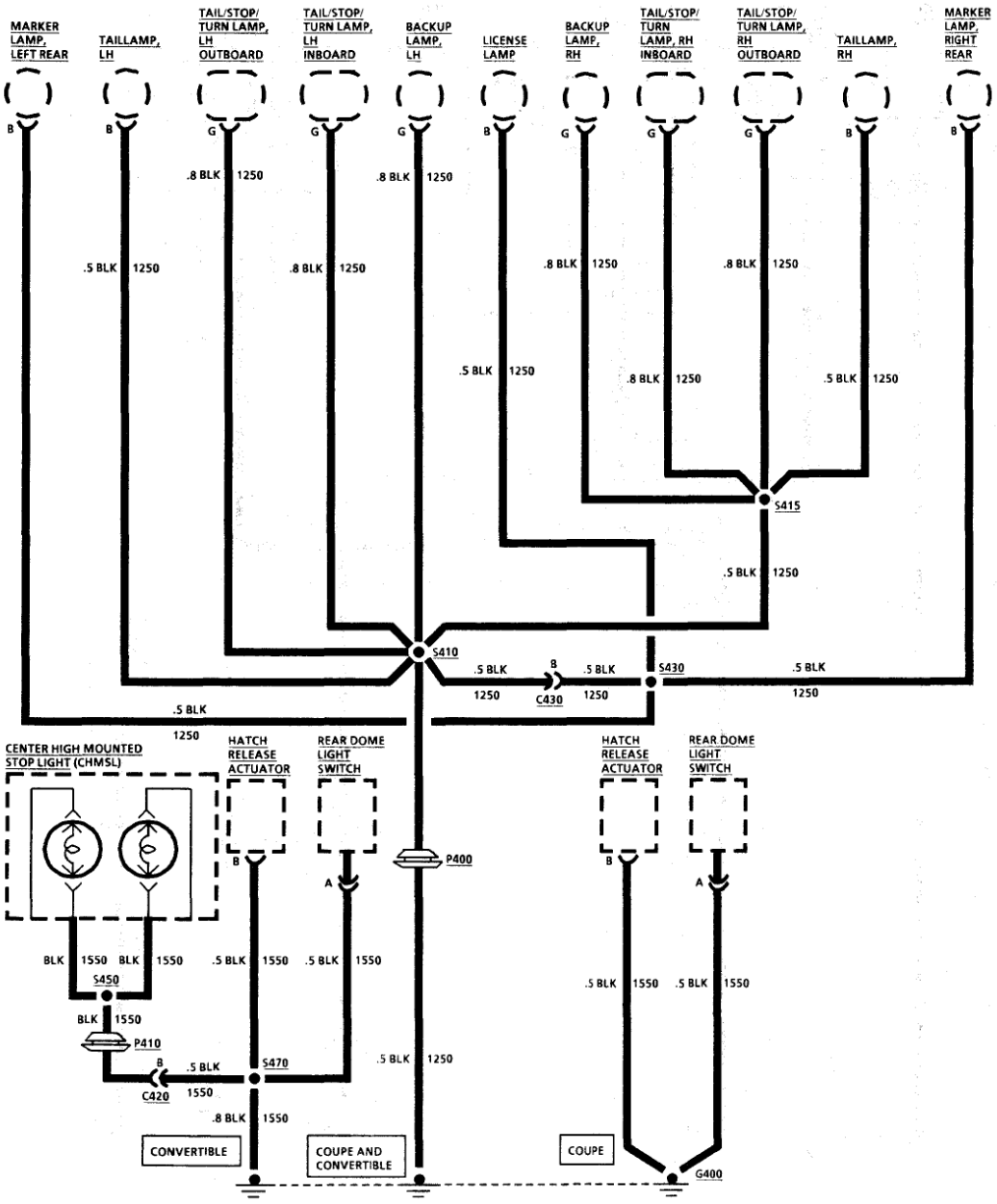
GROUND DISTRIBUTION

FUEL PUMP/SENDER, POWER SEATS, REAR DEFOGGER, CHMSL



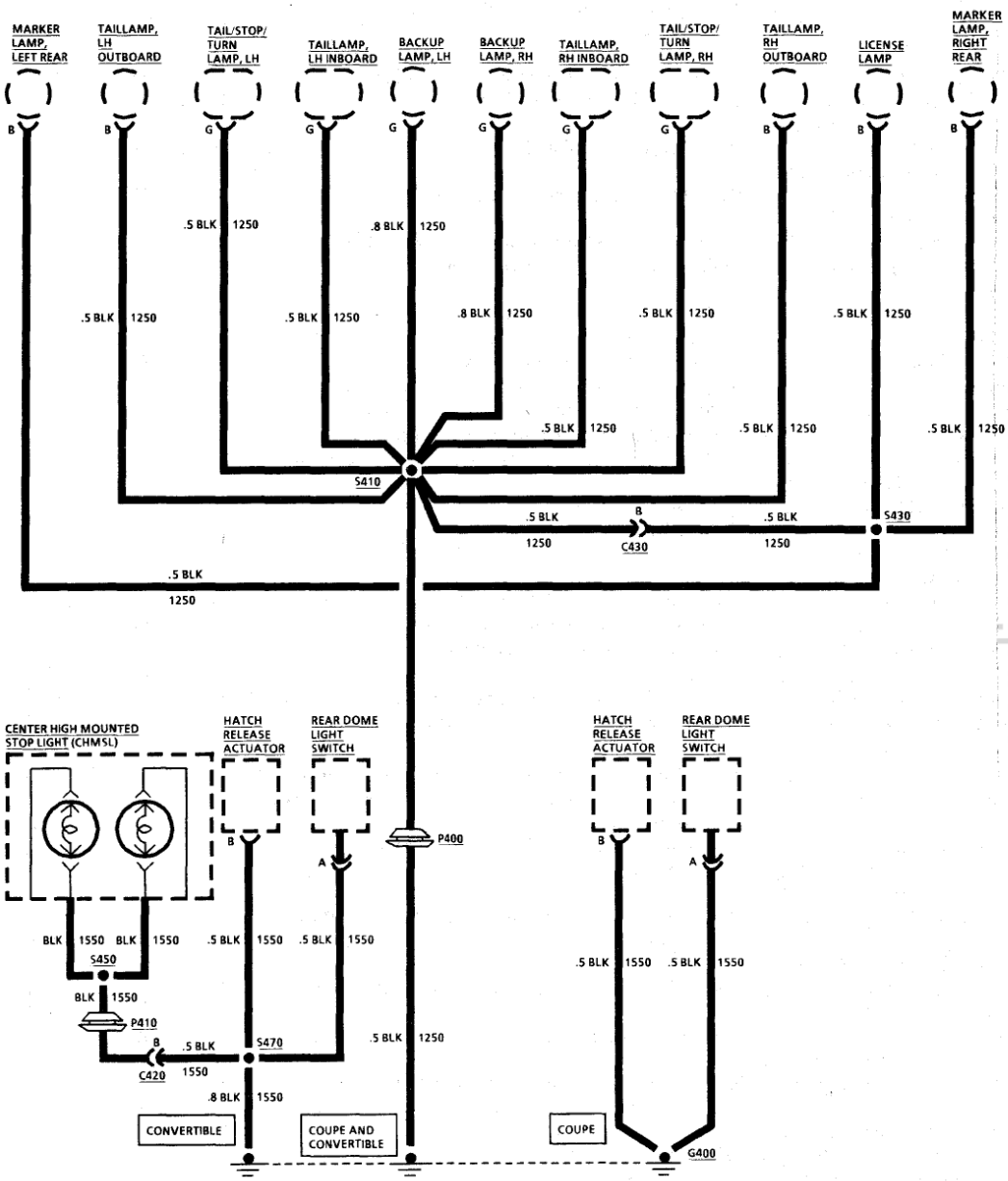
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GROUND DISTRIBUTION (PONTIAC)
REAR LIGHTS



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GROUND DISTRIBUTION (CHEVROLET)
REAR LIGHTS



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GROUND DISTRIBUTION

COMPONENT	LOCATION	201-PG	FIG.	CONN
A/C Clutch Diode (V6 VIN S)	Sealed in Harn, 10 cm from A/C Compressor Clutch Conn	28	54	
A/C Clutch Diode (V8 VIN P)	Sealed in Harn, 12 cm from Generator breakout	14	26	
A/C Compressor Clutch	RH side of Engine, below Generator	14, 28	26, 54	
ABS Brake Pressure Valve Solenoid, LF	Part of Hydraulic Modulator Assembly	39	68	
ABS Brake Pressure Valve Solenoid, RF	Part of Hydraulic Modulator Assembly	39	68	
Amplifier (part of UW2 Speaker Option)	Mounted behind Right Rear Armrest, on Rail	44	83	202-9
Ashtray Lamp (Auto Trans)	Lighting Tube from PRNDL Lamp			
Ashtray Lamp (Manual Trans)	Rearward of shifter, in ashtray	43	82	
Backup Lamp, LH	Mounted in Taillamp Assembly	32, 33	61, 62	
Backup Lamp, RH	Mounted in Taillamp Assembly	32, 33	61, 62	
Battery	RH front of Engine Compartment	19	35	
Blower Motor	Under lower RH side of I/P, mounted in HVAC Module	20	37	
Bose Relay	Below center A/C Duct, mounted to SIR Bracket	22	41	202-21
Brake Combo Valve (ABS)	Part of Hydraulic Modulator Assembly, inward side	39	68	
Center High Mounted Stop Light (CHMSL)	Rear center of Spoiler			
Cigar Lighter	Mounted on front of console	43	81	
Clutch Anticipate/ Cruise Release Switch (all V6 Manual)	Mounted in clutch pedal bracket (4 cavity conn)	0	1	202-20
Console Compartment Lamp	Under Console Compartment Door	43	81	
Convenience Center	Left of Steering Column, mounted to bottom of I/P Carrier	8	15	202-20
Convertible Top Switch	Left side of upper console (Chevy) or lower console (Pont)	42	78, 80	202-20
Coolant Fans	Behind radiator			
Coolant Level Latching Module	In molded pocket of dash mat, center above floor tunnel	45	84	202-20
Cruise Control Module	Front LH side of vehicle, mounted to frame rail, forward of wheelhouse	19	36	202-11
Data Link Conn (DLC)	Mounted to I/P Tie Bar, below and right of Steering Column			202-11
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Diagnostic Energy Reserve Module (DERM)	Snapped in bracket, behind RH side of I/P Compartment	8	15	202-12
Discriminating Sensor, Forward	Mounted to center of front end Tie Bar, near hood latch	19	36	
Discriminating Sensor, Passenger Compartment	Mounted to upper dash, just right of Steering Column Support Bracket	20	38	
Door Illumination Lamp, LH	Behind door trim panel	17	31	
Door Illumination Lamp, RH	Behind door trim panel	17	31	
Electronic Brake Control Module (EBCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13

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COMPONENT	LOCATION	201-PG	FIG.	CONN
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Engine Coolant Level Sensor (V8 VIN P)	Mounted on upper right side of radiator	19	35	
Fog Lamp, Left Front	Lower LH side of front Fascia			
Fog Lamp, Right Front	Lower RH side of front Fascia			
Fog Light Switch	Lower LH side of I/P	37, 38	66, 67	202-21
Fuel Pump Relay	Forward of LH kick panel, mounted to foot rest bracket under carpet	7	13	202-21
Fuel Tank Unit	Under rear of vehicle			
Hatch Release Actuator	Center of end panel, in Cargo Compartment	30	57	
Headlamp, Left (PONT)	LH front of vehicle	23	43	
Headlamp, Right (PONT)	RH front of vehicle			
Headlight Doors Module	Forward of LH front wheelhouse, mounted to Air Intake	19	36	202-21
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
Heated Oxygen Sensor Bank #1	Mounted in left Exhaust Manifold	24	44	202-22
Heated Oxygen Sensor Bank #2	Mounted in right Exhaust Manifold	40	72	202-22
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Center of I/P	21	40	202-22
High Beam Headlamp, Left (CHEVY)	Exterior, left front			
High Beam Headlamp, Right (CHEVY)	Exterior, right front			
High Blower Relay	Under I/P, above left side of floor tunnel	42	77	
Hydraulic Modulator Assembly	Front left of Engine Compartment	39	68	
I/P Compartment Lamp	Inside top center of compartment	22	41	
I/P Dimmer Switch	Lower LH side of I/P	37, 38	66, 67	202-23
Ignition Coil Module (V8 VIN P)	Front LH side of Engine	16	29	202-22
Ignition Control Module (ICM) (V6 VIN S)	Left front of Engine	27	52	202-22
Instrument Cluster	LH side of I/P			202-23
Keyless Entry Receiver	Behind RH side kick panel, in molded pocket	40	71	202-23
License Lamp	Center of rear Fascia, above license plate	31	59	
Low Beam Headlamp, Left (CHEVY)	Exterior, left front			
Low Beam Headlamp, Right (CHEVY)	Exterior, right front			
Marker Lamp, Left Front	Exterior, left front	17	32	
Marker Lamp, Left Rear	Exterior, left rear	31	59	
Marker Lamp, Right Front	Exterior, right front	17	32	
Marker Lamp, Right Rear	Exterior, right rear	31	59	
Mass Air Flow (MAF) Sensor	Mounted on air duct, in front of Intake Manifold	24	45	
Oil Level Sensor	Lower left side of Engine, in oil pan	11, 24	20, 44	
Park/Turn Lamp, Left Front	Exterior, left front	17	32	
Park/Turn Lamp, Right Front	Exterior, right front	17	32	

(CONTINUED ON NEXT PAGE)

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GROUND DISTRIBUTION

(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Performance Switch	Mounted in center console behind shifter			202-24
Performance/Traction Control Switch	Mounted in center console behind shifter	42	79	202-24
Power Door Lock Switch, RH	Mounted in right door armrest	18	33	202-24
Power Mirror Switch	Mounted in left door arrmrest	18	33	202-24
Power Seat Control Module (AQ9)	Under Driver's Seat	47	86	202-24
Power Seat Switch (AC3)	On left side of Driver's Seat	41	76	202-24
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Power Window Switch, LH	Mounted in left door armrest	18	33	202-27
PRNDL Illumination Lamp (Auto Trans)	Under console, left of Shifter	43	81	
Radio	Center of I/P Carrier	36	65	202-16
Rear Defogger Grid	Mounted on rear windshield	4	7	
Rear Defogger Switch (PONT)	Part of HVAC Assembly	21	39	
Rear Defogger Switch/Timer (CHEVY)	Mounted on I/P knee bolster, right of Steering Column	37	66	202-27
Rear Defogger Timer/Relay (PONT)	Part of HVAC Assembly	21	39	
Rear Dome Light Switch	Center of end panel, in Cargo Compartment	30	57	
Rearview Mirror	Top center of windshield			202-27
Retained Accessory Power (RAP) Module	In molded pocket of dash mat, center above floor tunnel	9	17	202-27
Seat Belt Switch	Part of Driver's Seat Buckle Assembly	43	81	
Secondary Air Injection Pump Assembly	Front LH Frame Rail, in Engine Compartment	11	21	
SIR Coil Assembly	Top of Steering Column	3, 34	5, 51	
Speaker/Amp, Left Front (BOSE)	Mounted in left door	17	31	202-27
Speaker/Amp, Rear (BOSE)	Mounted in left rear Cargo Compartment trim	5	8	202-27
Speaker/Amp, Right Front (BOSE)	Mounted in right door	17	31	202-27
Steering Wheel Controls, Radio (UK3)	On Steering Wheel	2	3	202-27
Taillamp, LH Inboard (CHEVY)	Exterior, left rear	32	61	
Taillamp, RH Inboard (CHEVY)	Exterior, right rear	32	61	
Taillamp, LH Outboard (CHEVY)	Exterior, left rear	32	61	
Taillamp, RH Outboard (CHEVY)	Exterior, right rear	33	62	
Taillamp, LH (PONT)	Exterior, left rear	33	62	
Taillamp, RH (PONT)	Exterior, right rear	33	62	
Tail/Stop/Turn Lamp, LH (CHEVY)	Exterior, left rear	32	61	
Tail/Stop/Turn Lamp, RH (CHEVY)	Exterior, right rear	32	61	

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COMPONENT	LOCATION	201-PG	FIG.	CONN
Tail/Stop/Turn Lamp, LH Inboard (PONT)	Exterior, left rear	33	62	
Tail/Stop/Turn Lamp, LH Outboard (PONT)	Exterior, left rear	33	62	
Tail/Stop/Turn Lamp, RH Inboard (PONT)	Exterior, right rear	33	62	
Tail/Stop/Turn Lamp, RH Outboard (PONT)	Exterior, right rear	33	62	
Theft Deterrent Module	In I/P, just right of Radio, attached to Air Bag Bracket	8	15	202-18
Traction Control Switch	Left side of upper console	42	78	
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
Washer Pump Motor	Front of vehicle, below Engine Hood Latch	25	46	
Wiper Motor Assembly	Rear of LH Shock Tower, mounted to dash panel below LH Wiper Mount	10	18	202-28
C160 (3 cavities)	LH Headlight to Forward Lamp Harn Jumper, behind Headlight Door Bracket	23	43	
C165 (3 cavities)	RH Headlight to Forward Lamp Harn Jumper, behind Headlight Door Bracket	23	43	
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C217 (4 cavities)	Near base of Steering Column	34	63	202-19
C240	Under RH side of I/P, behind kick panel	20	37	202-19
C270 (2 cavities)	I/P Harn to Clutch Jumper Harn, near brake/clutch pedal bracket	1	2	
C300 (6 cavities) (AQ9)	Under Driver Seat Assembly	47	86	202-19
C310 (2 cavities)	Between rear mounting bolt of Driver Seat near #3 Rail	6	11	
C405A (4 cavities)	Part of Pass Thru Conn, forward of rear axle, to Fuel Tank Unit	5	9	202-8
C405B (10 cavities)	Part of Pass Thru Conn, forward of rear axle, to Pass Thru Panel	5	9	202-8
C420	LH side of Hatch, between Hatch Frame and plastic panel	4	7	
C430 (2 cavities)	Between Rear Fascia and rear end panel, on LH side	32, 33	61, 62	
G100 (L32)	Bolted to Belt Tension Bracket Bolt, lower RH front of Engine (1 ring, 1 wire)	13	25	
G100 (LT1)	Bolted to RH side of Engine Block, same bolt used for A/C Compressor if equipped (1 ring, 1 wire)	39	69	
G101	Top of RH Shock Tower (3 rings, 5 wires)	10	19	
G102 (LT1)	LH front of Engine Block, just below head (4 rings, 3 wires and braided strap)	23	40	
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
G105	Near top RH side of radiator, in top of T-Bar	19	36	
G106	Near top LH side of radiator, in top of T-Bar	19	35	
G108 (L32)	Braided ground strap, bolted to forward left side of Engine Block	11	20	
G109	Bolted to left front frame rail (2 rings,1 wire and braided strap)	11	21	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	

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(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
G201	Near base of RH "A" pillar, bolted to I/P Mounting Stud behind kick panel (1 ring, 1 wire)	9	16	
G305	Bolted to Floor Pan Bar #2, under Driver's Seat (2 rings, 2 wires, with AC3/AQ9), (1 ring, 1 wire without AC3/AQ9)	6	11	
G310	Bolted to roof, left of Dome Lamp (1 ring, 1 wire)	4	6	
G320	Bolted to body frame above RH rear wheelhouse			
G400	Bolted to Hatch Release Bracket in Rear Compartment (2 rings, 3 wires Coupe) or (2 rings, 2 wires Convertible)	30	57	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
P300	In rear center of roof, near Dome Lamp	4	7	
P400	Left rear in end gate panel	30	57	
P410	In left side spoiler			
P500	Between LH door and "A" pillar	32	49	
P600	Between RH door and "A" pillar	32	49	
S108 (L32)	Engine Harn, approx 4 cm from braided ground strap	11	20	
S108 (LT1)	Engine Harn, approx 17 cm from Injector 3 breakout	24	44	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S111	Forward Lamp Harn, approx 3 cm from Wiper Motor Assembly breakout			
S112	Forward Lamp Harn, approx 10 cm from G105 breakout			
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			
S115 (L32)	Engine Harn, approx 10 cm from A/C Compressor Clutch Conn	28	54	
S115 (LT1)	Engine Harn, approx 12 cm from Generator breakout	14	26	
S131 (L32)	Engine Harn, approx 17 cm from RH branch			
S215	I/P Harn, approx 30 cm before DLC breakout			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S221	I/P Harn, approx 7 cm from DERM breakout			
S335	Driver Seat Harn, approx 12 cm from Power Seat Control Module Conn			
S410	Rear Body Harn, approx 7 cm from Left Backup Lamp breakout	33	62	
S415	Rear Body Harn, approx 20 cm from Left Backup Lamp breakout	33	62	
S420	Hatch Harn, approx 7 cm from P300	4	7	
S430	Rear Fascia Harn, approx 5 cm from License Lamp breakout	31	59	
S450	CHMSL Jumper Harn, approx 15 cm from bulbs			
S470	I/P Harn, approx 24 cm from Hatch Release Actuator			

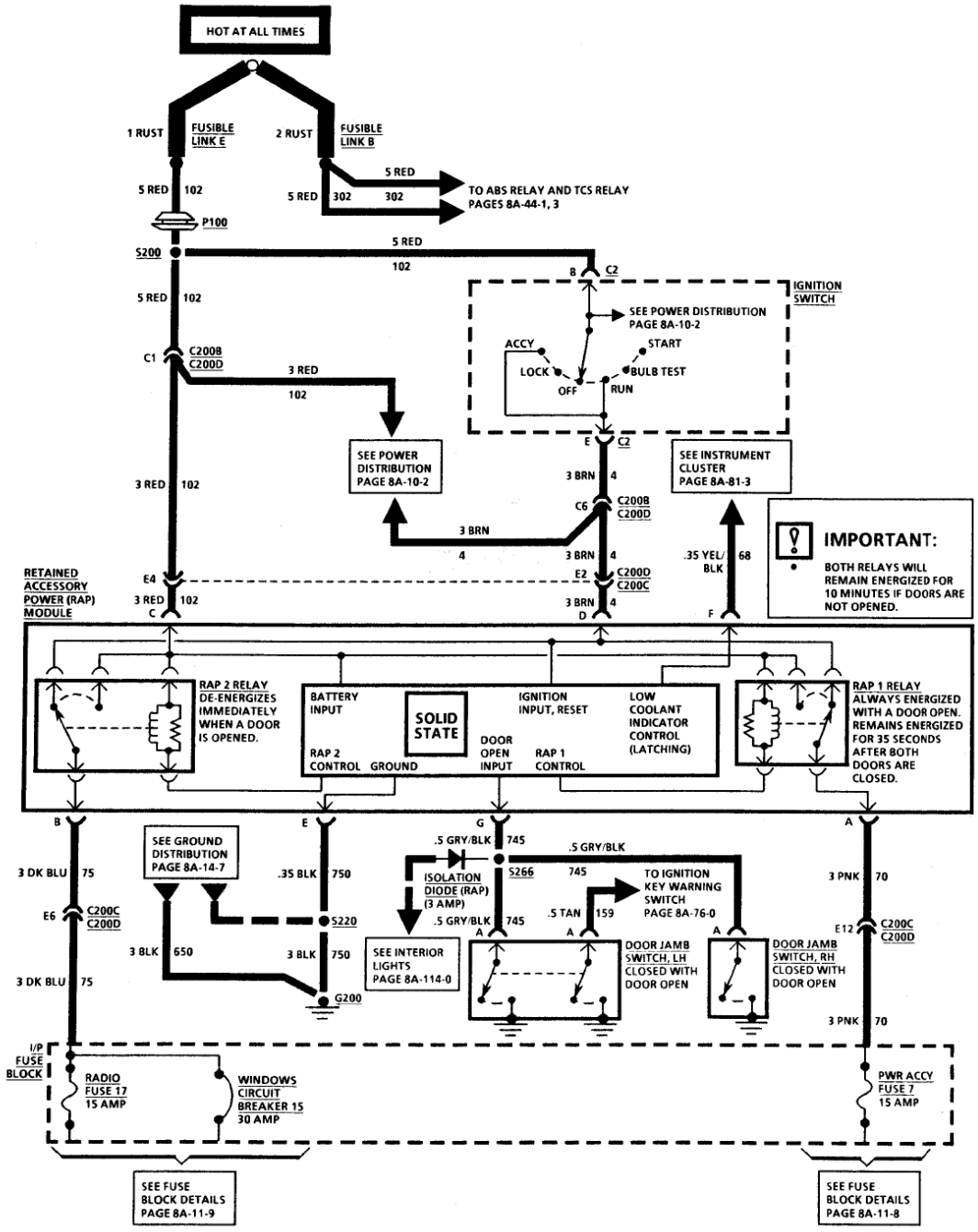
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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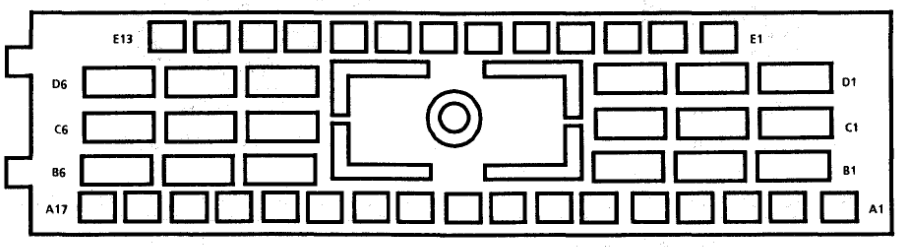
RETAINED ACCESSORY POWER (RAP): WITH AU3



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C200D

I/P HARNESS TO FORWARD LAMP/CROSS CAR HARNESS



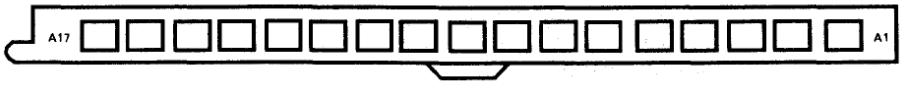
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M - CONNECTOR
F - TERMINAL

48-WAY M METRI-PACK MIXED SERIES
BLK

C200A

FORWARD LAMP HARNESS TO I/P HARNESS

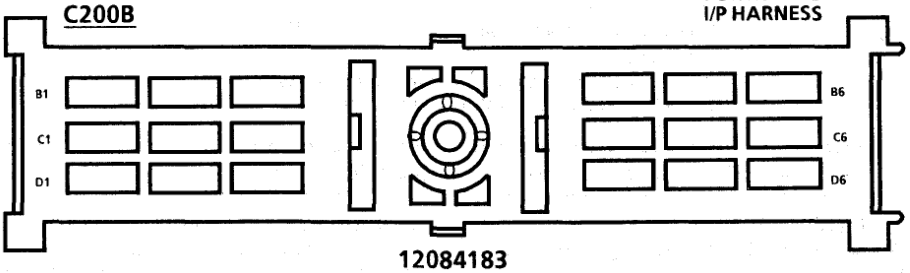


12047842

17-WAY F METRI-PACK 150 SERIES
BLK

C200B

FORWARD LAMP HARNESS TO I/P HARNESS

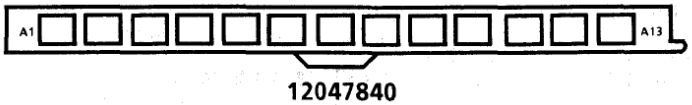


12084183

18-WAY F METRI-PACK MIXED SERIES
BLK

C200C

CROSS CAR HARNESS TO I/P HARNESS



12047840

13-WAY F METRI-PACK 280 SERIES
GRY

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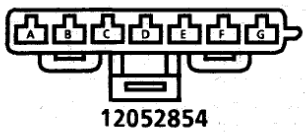
RETAINED ACCESSORY POWER (RAP): WITH AU3



12010966

5-WAY F 56 SERIES
BLU

IGNITION SWITCH (C2)



12052854

7-WAY F METRI-PACK 280 SERIES
BLK

RETAINED ACCESSORY POWER (RAP) MODULE

COMPONENT	LOCATION	201-PG	FIG.	CONN
Door Jamb Switch, LH	Near base of LH "A" pillar	45	84	
Door Jamb Switch, RH	Near base of RH "A" pillar	32	49	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Ignition Switch	Part of Steering Column	34	63	202-23
Isolation Diode (RAP)	Sealed in Harn, approx 9 cm right of Rearview Mirror breakout	45	84	
Retained Accessory Power (RAP) Module	In molded pocket of dash mat, center above floor tunnel	9	17	202-27
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S200	Forward Lamp Harn, approx 5 cm from EBCM breakout	8	14	
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S266	Cross Car Harn, approx 9 cm from Rearview Mirror breakout	45	84	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Check Fusible Link E for open.
2. Check Window Circuit Breaker 15, Radio Fuse 17 and PWR ACCY Fuse 7 for an open. If open, replace fuse or circuit breaker. If fuse blows again or circuit breaker reopens, use schematics and DVM to check suspect power circuits for a short to ground potential, either through a faulty component or wiring.
3. Check for poor connections at C200 terminals "C1", "E2", "E4", "E6" and "E12".
4. Check that G200 is clean and tight.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedures.

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SYSTEM CHECK

ACTION	NORMAL RESULTS
[1] • Ignition "OFF." • Open either LH or RH door.	• Power Door Locks, Hatch Release and Power Mirrors all operate as long as a door is open. • Radio and Power Windows do not operate.
[2] • Close doors.	• Power Door Locks, Hatch Release and Power Mirrors all continue to operate for approximately 35 seconds. • Radio and Power Windows do not operate.
[3] • Ignition Switch to "ACCY" or "RUN."	• Power Door Locks, Hatch Release and Power Mirrors all operate as long as the Ignition Switch is in "ACCY" or "RUN." • Radio and Power Windows operate as long as the Ignition Switch is in "ACCY" or "RUN."
[4] • Ignition Switch to "OFF."	• Power Door Locks, Hatch Release and Power Mirrors all operate for approximately 10 minutes. • Radio and Power Windows operate for approximately 10 minutes.
[5] • Ignition Switch to "RUN." • Ignition Switch to "OFF." • Open either LH or RH door.	• Power Door Locks, Hatch Release and Power Mirrors all operate as long as a door is open. • Radio and Power Windows are disabled immediately when a door is opened.
[6] • Close doors.	• Power Door Locks, Hatch Release and Power Mirrors all continue to operate for approximately 35 seconds. • Radio and Power Windows do not operate.

Important:

- If aftermarket equipment is installed on any circuit(s) for the Retained Accessory Power (RAP) System and a problem exists with the Retained Accessory Power System operation, disconnect the aftermarket equipment and retest.
- These diagnostic procedures assume related fuse(s) or circuit breaker(s) and the circuitry to their related components are all good.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Components on PWR ACCY Fuse 7, Radio Fuse 17 and Windows Circuit Breaker 15 totally inoperative.	Chart #1	8A-15-5
Retained Accessory Power (RAP) Feature inoperative, components on PWR ACCY Fuse 7, Radio Fuse 17 and Windows Circuit Breaker 15 operate with Ignition Switch in "RUN" or "ACCY" only.	Chart #2	8A-15-5

(CONTINUED ON NEXT PAGE)

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RETAINED ACCESSORY POWER (RAP): WITH AU3

(CONTINUED FROM PREVIOUS PAGE)

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Components on Windows Circuit Breaker 15 and Radio Fuse 17 totally inoperative, components on PWR ACCY Fuse 7 operate normally.	Chart #3	8A-15-6
Components on Windows Circuit Breaker 15 and Radio Fuse 17 do not operate during Retained Accessory Power (RAP), operation is normal with Ignition Switch in "ACCY" or "RUN" (components on PWR ACCY Fuse 7 operate normally during RAP).	Replace Retained Accessory Power (RAP) Module.	
Components on PWR ACCY Fuse 7 totally inoperative, components on Windows Circuit Breaker 15 and Radio Fuse 17 operate normally.	Chart #4	8A-15-6
Components on PWR ACCY Fuse 7 do not operate during Retained Accessory Power (RAP), operation is normal with Ignition Switch in "ACCY" or "RUN" (components on Circuit Breaker 15 and Radio Fuse 17 operate normally during RAP).	Replace Retained Accessory Power (RAP) Module.	
Retained Accessory Power (RAP) deactivates when another vehicle system is used (otherwise RAP times out normally).	• If use of Interior Lights causes deactivation of Retained Accessory Power (RAP), check Isolation Diode (RAP). • Narrow in on system causing deactivation and shield or filter power and grounds to component, then retest system. • If unable to correct complaint, contact technical assistance.	
Retained Accessory Power (RAP) deactivates before specified time has elapsed (deactivation not caused by the use of other vehicle systems).	• Refer to System Check to make sure the RAP System is not operating properly. • Check for technical service bulletins. If above checks do not correct symptom, replace Retained Accessory Power (RAP) Module.	
PWR ACCY Fuse 7 receives voltage continuously (past the approximately 10 minute period) with doors closed and Ignition Switch in "OFF."	• Check for short to B + in CKT 70. • Check for short to ground through CKT 745, including a bad Door Jamb Switch. • Check for poor connections at RAP Module Connector. If OK, replace Retained Accessory Power (RAP) Module.	
Radio Fuse 17 and Windows Circuit Breaker 15 receive voltage continuously (past the approximately 10 minute period) with doors open and Ignition Switch in "OFF."	• Check for short to B + in CKT 75. If OK, replace Retained Accessory Power (RAP) Module.	
• Power Door Locks do not operate when one or both doors are opened. • Power Door Locks only operate with Ignition "ON," or for 10 minutes after Ignition is turned "OFF." (Opening the door does not disable the 10 minute timer or enable "PWR ACCY" Fuse 7.)	• Check for bad Door Jamb Switch on side of entry. • Check for open in CKT 745. • Check for poor connection at RAP Module. If OK, replace Retained Accessory Power (RAP) Module.	

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CHART #1
COMPONENTS ON PWR ACCY FUSE 7, RADIO FUSE 17 AND WINDOWS CIRCUIT BREAKER 15 TOTALLY INOPERATIVE

IMPORTANT:

- THIS CHART ASSUMES RELATED FUSE(S) OR CIRCUIT BREAKER(S) AND THE CIRCUITRY TO THEIR RELATED COMPONENTS ARE ALL GOOD, AND INSTALLED AFTERMARKET EQUIPMENT IS NOT A PROBLEM.

- IGNITION SWITCH TO "RUN."
- WITH A TEST LIGHT TO GROUND, BACKPROBE RETAINED ACCESSORY POWER (RAP) MODULE CONN TERM "D". IS TEST LIGHT "ON"?

YES

CHECK FOR:
- POOR CONNECTIONS AT RETAINED ACCESSORY POWER (RAP) MODULE CONNECTOR.
- POOR CONNECTIONS AT C200 TERM "E6" AND TERM "E12".
- WIRING DAMAGE THAT MAY CAUSE AN OPEN IN CKT 70 AND CKT 75.

IF ABOVE CHECKS ARE OK, REPLACE RETAINED ACCESSORY POWER (RAP) MODULE.

NO

- WITH A TEST LIGHT TO GROUND, BACKPROBE IGNITION SWITCH CONN C2 TERM "B". IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE IGNITION SWITCH CONN C2 TERM "E". IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTION AT C200 TERM "C6" AND TERM "E2". IF OK, REPAIR OPEN IN CKT 4 BETWEEN IGNITION SWITCH AND RETAINED ACCESSORY POWER (RAP) MODULE.

NO

- CHECK FOR POOR CONNECTION AT IGNITION SWITCH. IF OK, REPLACE IGNITION SWITCH.

NO

- CHECK FOR OPEN IN FUSIBLE LINK "E". IF OK, REPAIR OPEN IN CKT 102 BETWEEN IGNITION SWITCH AND FUSIBLE LINK.

CHART #2
RETAINED ACCESSORY POWER (RAP) FEATURE INOPERATIVE, COMPONENTS ON PWR ACCY FUSE 7, RADIO FUSE 17 AND WINDOWS CIRCUIT BREAKER 15 OPERATE WITH IGNITION SWITCH IN "RUN" OR "ACCY" ONLY

IMPORTANT:

- THIS CHART ASSUMES RELATED FUSE(S) OR CIRCUIT BREAKER(S) AND THE CIRCUITRY TO THEIR RELATED COMPONENTS ARE ALL GOOD, AND INSTALLED AFTERMARKET EQUIPMENT IS NOT A PROBLEM.

- WITH A TEST LIGHT TO GROUND, BACKPROBE RETAINED ACCESSORY POWER (RAP) MODULE CONN TERM "C". IS TEST LIGHT "ON"?

YES

- DISCONNECT RETAINED ACCESSORY POWER (RAP) MODULE CONNECTOR.
- CONNECT A TEST LIGHT BETWEEN TERMINALS "C" AND "E" OF THE RAP MODULE CONNECTOR. IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTIONS AT RETAINED ACCESSORY POWER (RAP) MODULE CONNECTOR.
- IF OK, REPLACE RETAINED ACCESSORY POWER MODULE. (IF POWER ACCY FUSE RECEIVES VOLTAGE CONTINUOUSLY WITH DOORS CLOSED AND IGNITION SWITCH "OFF," CHECK FOR A SHORT TO GROUND THROUGH CKT 745, INCLUDING A BAD RAP ISOLATION DIODE OR DOOR JAMB SWITCH.)

NO

- CHECK FOR POOR CONNECTIONS AT RAP MODULE CONNECTOR.
- IF OK, CHECK FOR OPEN IN CKT 750 BETWEEN RAP MODULE AND G200.

NO

- CHECK FOR POOR CONNECTION AT C200 TERM "C1" AND TERM "E4". IF OK, REPAIR OPEN IN CKT 102 BETWEEN RETAINED ACCESSORY POWER (RAP) MODULE CONNECTOR AND S200.

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RETAINED ACCESSORY POWER (RAP): WITH AU3

CHART #3

COMPONENTS ON WINDOWS CIRCUIT BREAKER 15 AND RADIO FUSE 17 TOTALLY INOPERATIVE, COMPONENTS ON PWR ACCY FUSE 7 OPERATE NORMALLY

IMPORTANT:

- THIS CHART ASSUMES RELATED FUSE(S) OR CIRCUIT BREAKER(S) AND THE CIRCUITRY TO THEIR RELATED COMPONENTS ARE ALL GOOD, AND INSTALLED AFTERMARKET EQUIPMENT IS NOT A PROBLEM.

- IGNITION SWITCH TO "RUN."
- WITH A TEST LIGHT TO GROUND, FRONTPROBE RADIO FUSE 17. IS TEST LIGHT "ON"?

NO

- WITH A TEST LIGHT TO GROUND, BACKPROBE RAP MODULE CONN TERM "B". IS TEST LIGHT "ON"?

NO

- CHECK FOR POOR CONNECTION AT RAP MODULE CONN TERM "B". IF OK, REPLACE RAP MODULE.

YES

- CHECK FOR POOR CONNECTION AT C200 TERM "E6". IF OK, REPAIR OPEN IN CKT 75 BETWEEN RAP MODULE CONNECTOR AND I/P FUSE BLOCK.

YES

- CHECK I/P FUSE BLOCK FOR POOR WIRE CONNECTIONS OR POSSIBLE DAMAGE.
- IF OK, REFER TO "RADIO," PAGE 8A-150-0.

CHART #4

COMPONENTS ON PWR ACCY FUSE 7 TOTALLY INOPERATIVE, COMPONENTS ON WINDOWS CIRCUIT BREAKER 15 AND RADIO FUSE 17 OPERATE NORMALLY

IMPORTANT:

- THIS CHART ASSUMES RELATED FUSE(S) OR CIRCUIT BREAKER(S) AND THE CIRCUITRY TO THEIR RELATED COMPONENTS ARE ALL GOOD, AND INSTALLED AFTERMARKET EQUIPMENT IS NOT A PROBLEM.

- IGNITION SWITCH TO "RUN."
- WITH A TEST LIGHT TO GROUND, FRONTPROBE PWR ACCY FUSE 7. IS TEST LIGHT "ON"?

NO

- WITH A TEST LIGHT TO GROUND, BACKPROBE RAP MODULE CONN TERM "A". IS TEST LIGHT "ON"?

NO

- CHECK FOR POOR CONNECTION AT RAP MODULE CONN TERM "A". IF OK, REPLACE RAP MODULE.

YES

- CHECK FOR POOR CONNECTION AT C200 TERM "E12". IF OK, REPAIR OPEN IN CKT 70 BETWEEN RAP MODULE CONNECTOR AND I/P FUSE BLOCK.

YES

- CHECK I/P FUSE BLOCK FOR POOR WIRE CONNECTIONS OR POSSIBLE DAMAGE.
- IF OK, REFER TO "POWER DOOR LOCKS," PAGE 8A-130-0.

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CIRCUIT OPERATION

The Retained Accessory Power (RAP) System is designed to increase convenience and provide increased security. Some Vehicle Systems will remain operational for approximately 10 minutes after the Ignition Switch is turned to "OFF" or until a door is opened. Other systems will also be operational with Ignition Switch "OFF" whenever a door is open or for approximately 35 seconds after both doors are closed.

PWR ACCY FUSE 7 OPERATION

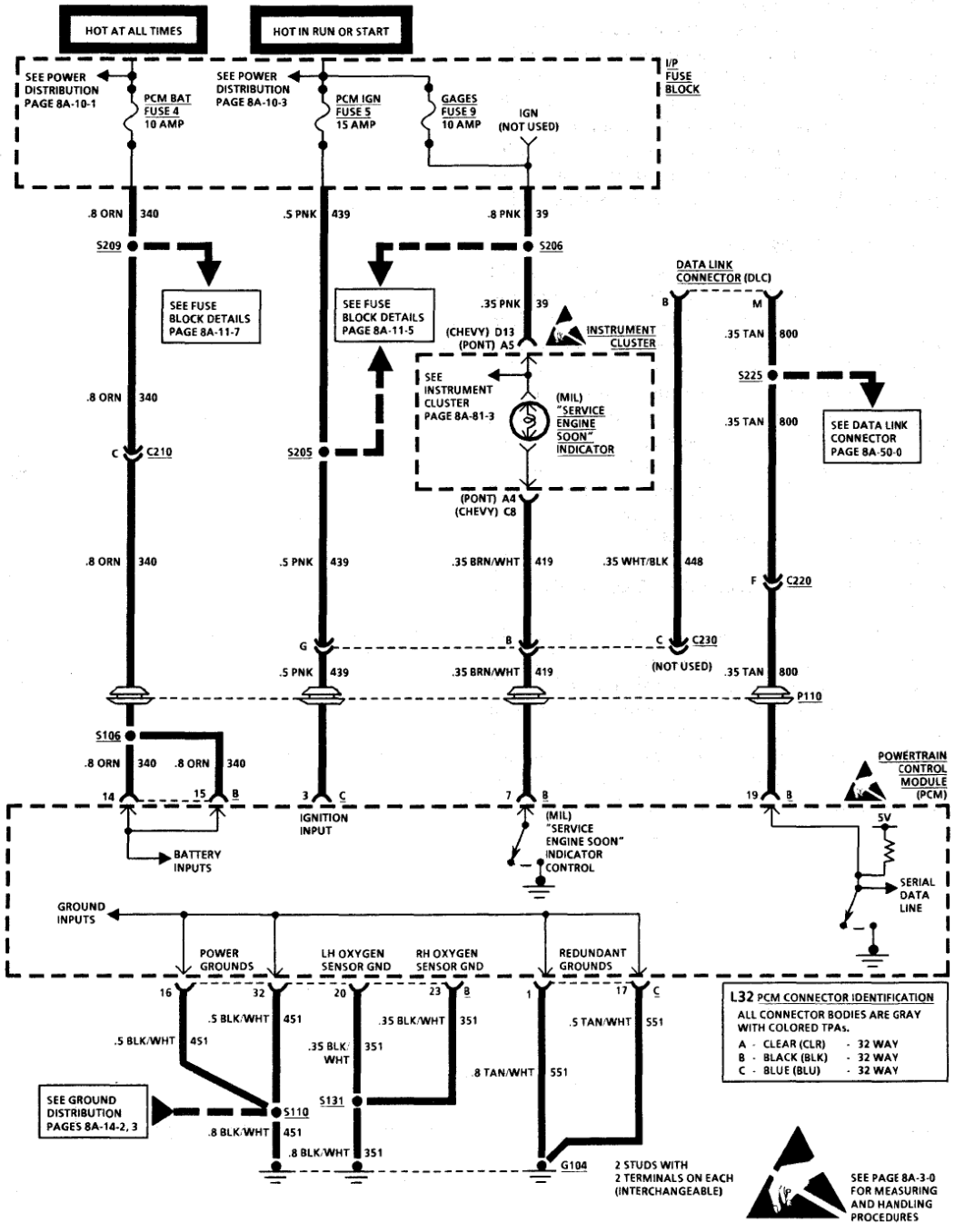
The Retained Accessory Power (RAP) Module will enable the Power Door Locks, Hatch Release and Power Mirrors to operate with the Ignition Switch in "OFF" whenever either door is open or for 35 seconds after both doors are closed. All components on this circuit will be enabled as long as the Ignition Switch is in "ACCY" or "RUN." After the Ignition Switch is turned to "OFF" and both doors remain closed, the components on this circuit will be enabled for approximately 10 minutes. If either door opens, the 10 minute timer cancels, and the components remain enabled as long as a door is opened.

RADIO FUSE 17 AND WINDOWS CIRCUIT BREAKER OPERATION

The Retained Accessory Power (RAP) Module will enable the Radio, Power Windows and Convertible Top to operate whenever the Ignition Switch is in "ACCY" or "RUN." After the Ignition Switch is turned to "OFF" and both doors remain closed, the Radio, Power Windows and Convertible Top will be enabled for approximately 10 minutes. If either door opens, these components will be disabled immediately.

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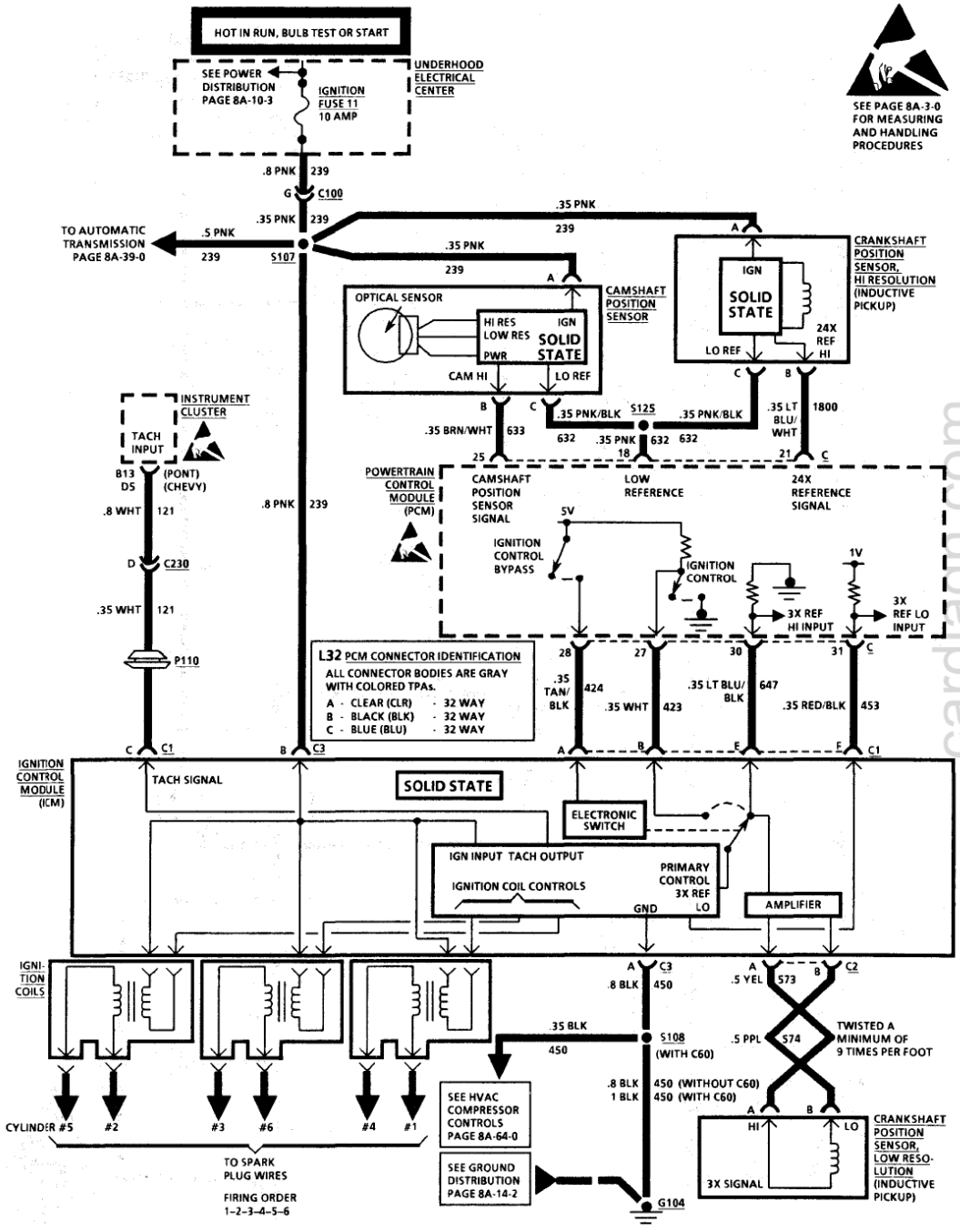
SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S
DATA LINK, GROUND AND POWER



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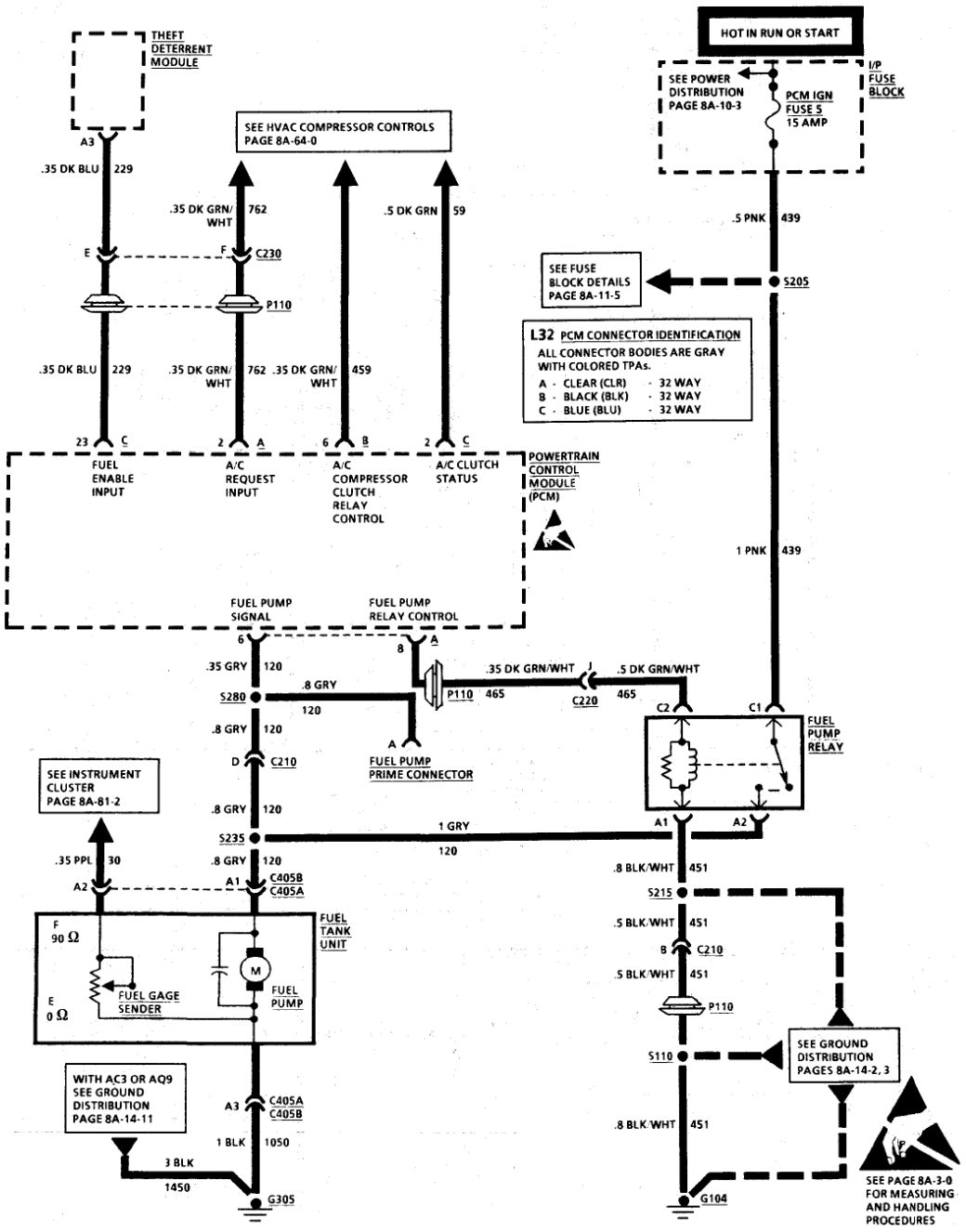
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IGNITION



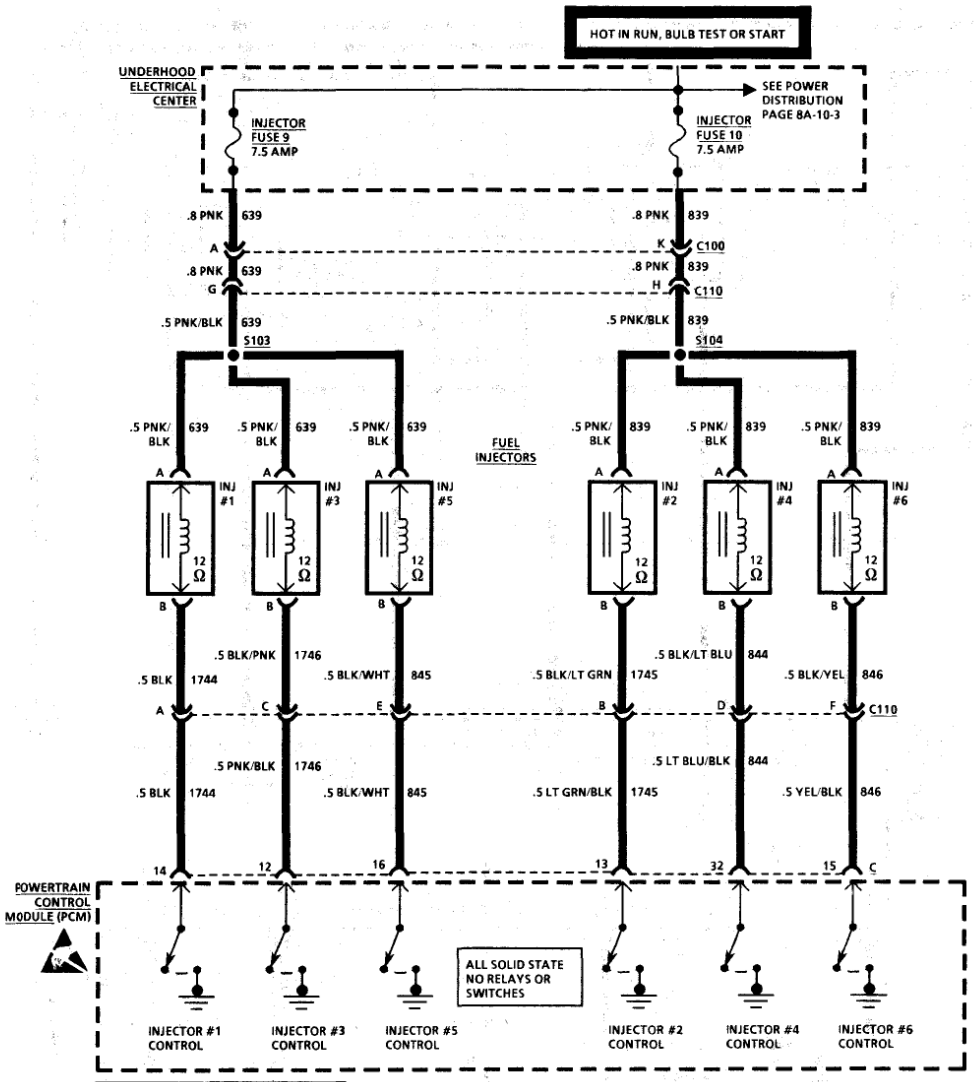
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FUEL PUMP, HVAC AND PASS-Key® II INPUT



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INJECTORS

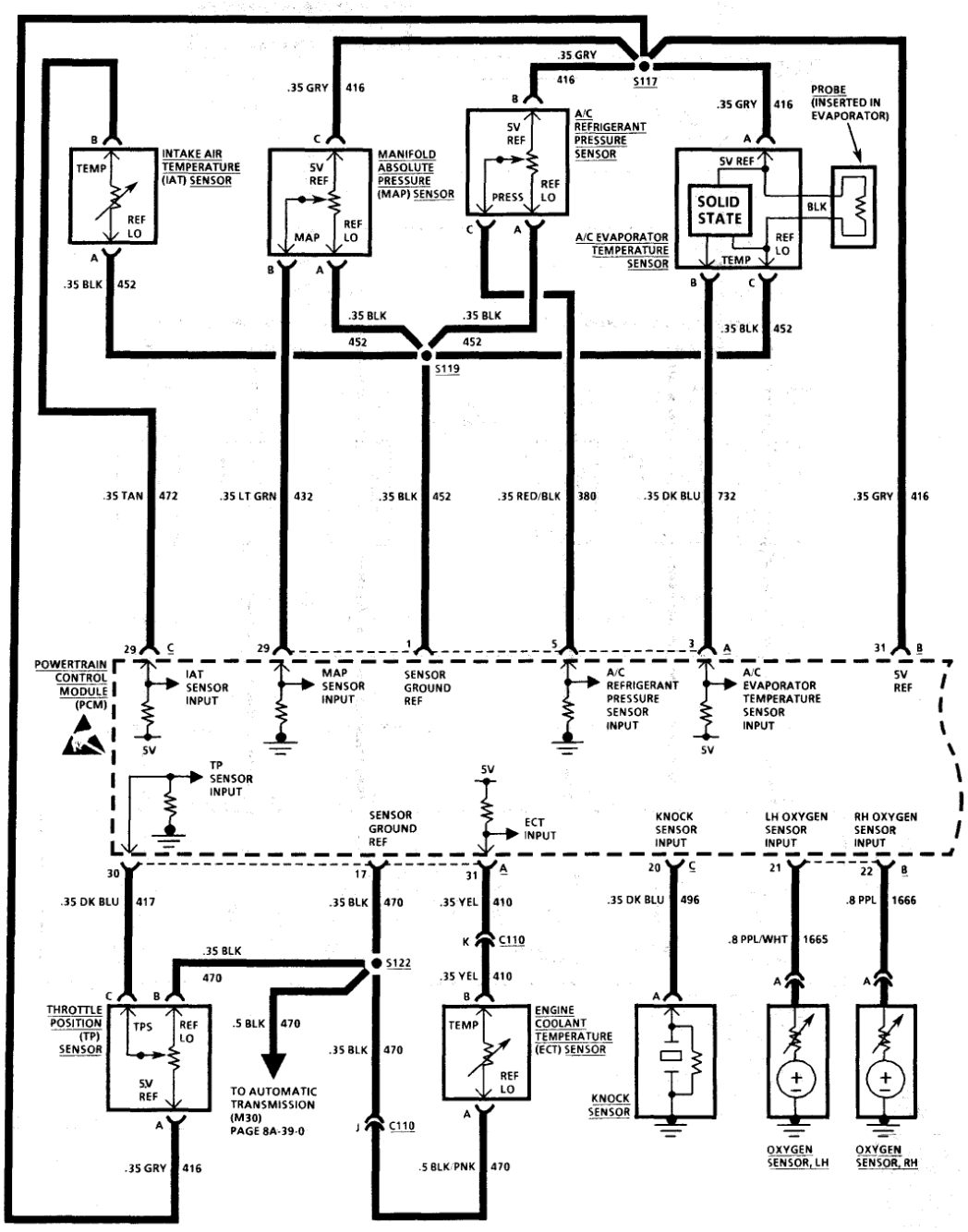


L32 PCM CONNECTOR IDENTIFICATION
ALL CONNECTOR BODIES ARE GRAY WITH COLORED TPAs.
A - CLEAR (CLR) - 32 WAY
B - BLACK (BLK) - 32 WAY
C - BLUE (BLU) - 32 WAY

SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES

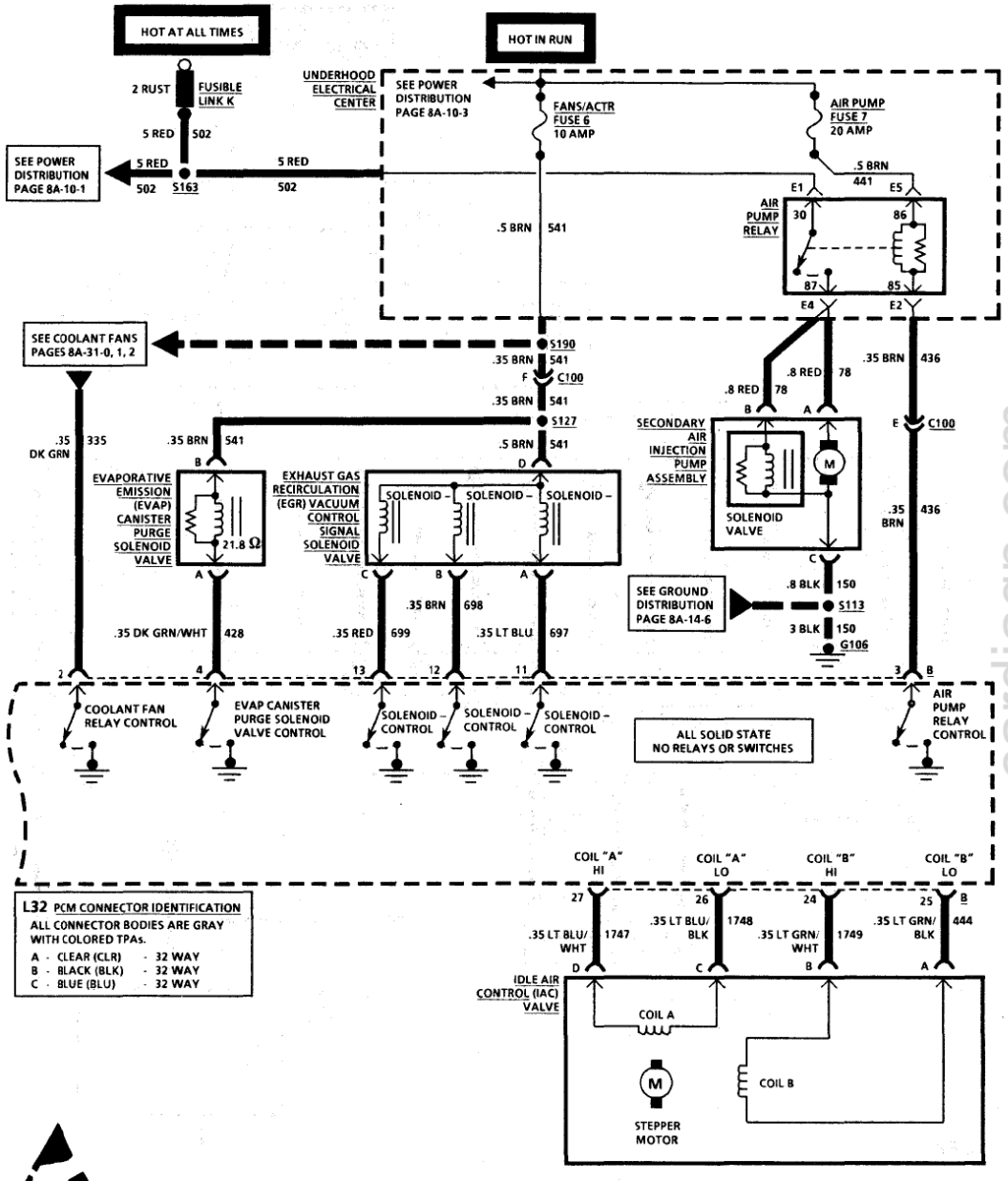
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SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S
ENGINE DATA SENSORS



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CONTROLLED DEVICES

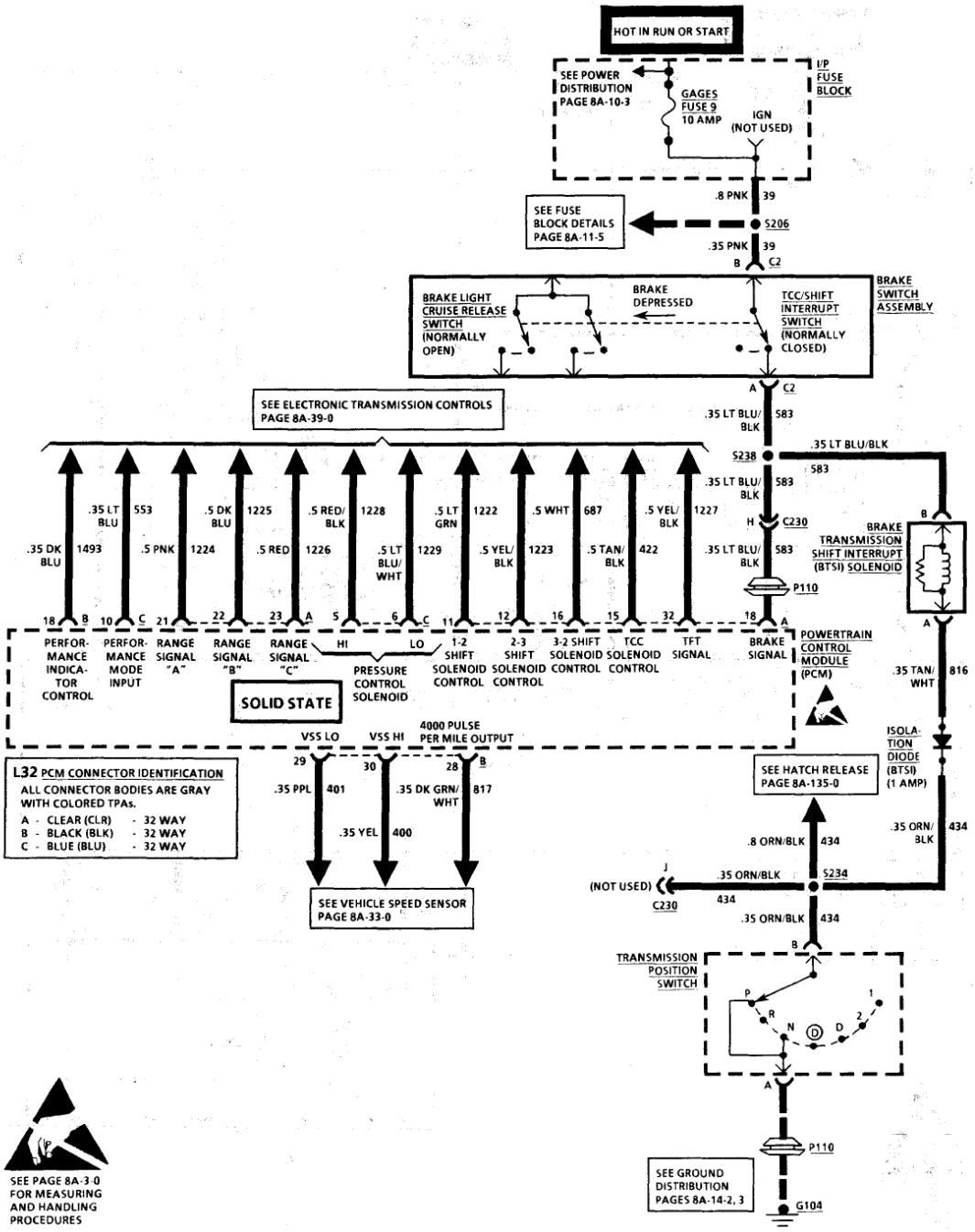


L32 PCM CONNECTOR IDENTIFICATION
ALL CONNECTOR BODIES ARE GRAY WITH COLORED TPAs.
A - CLEAR (CLR) - 32 WAY
B - BLACK (BLK) - 32 WAY
C - BLUE (BLU) - 32 WAY

SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES

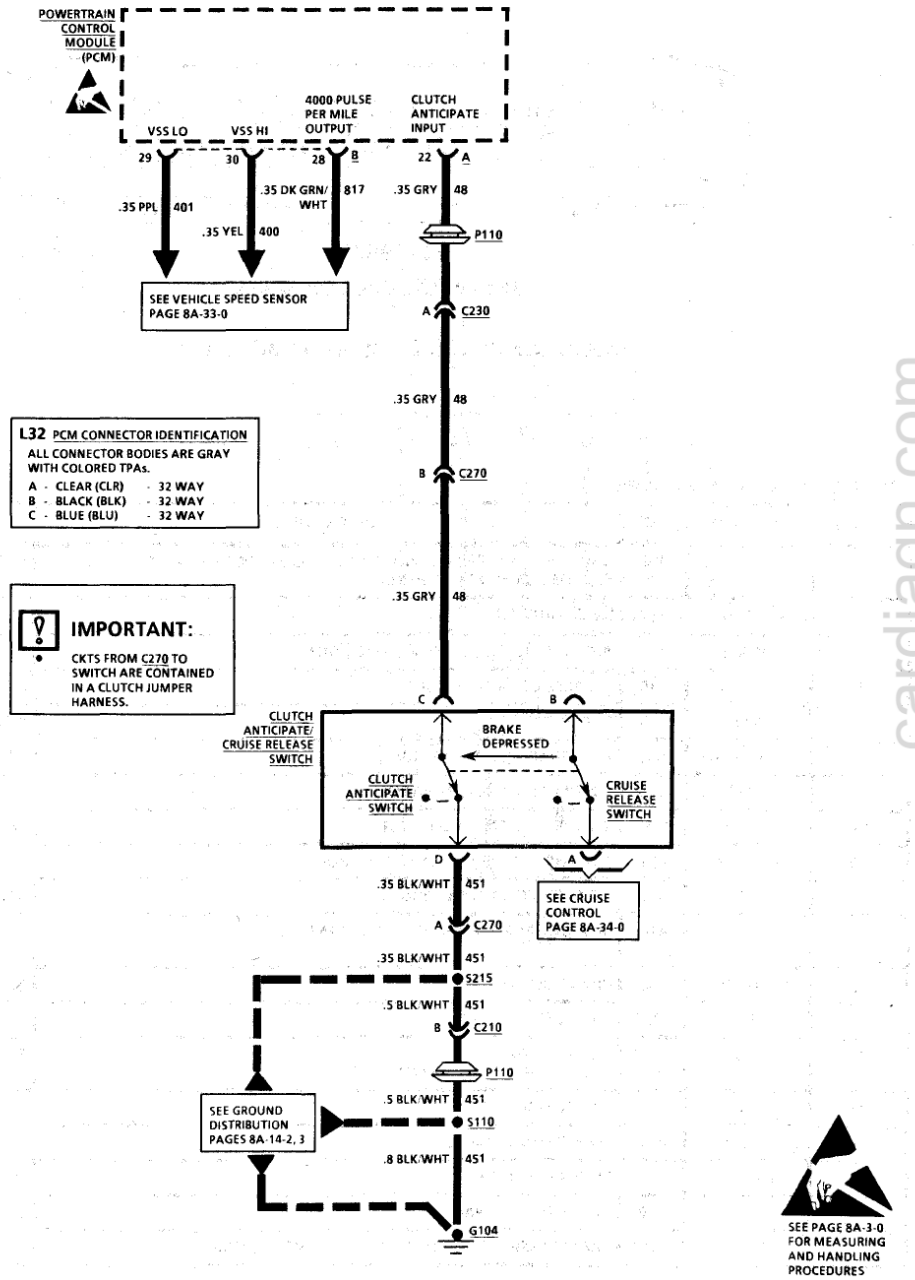
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SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S
AUTOMATIC TRANSMISSION CONTROLS (M30) AND VSS



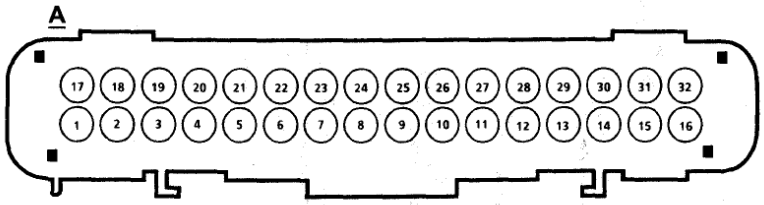
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SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S
MANUAL TRANSMISSION CONTROLS (MM5) AND VSS



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SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S



12129025

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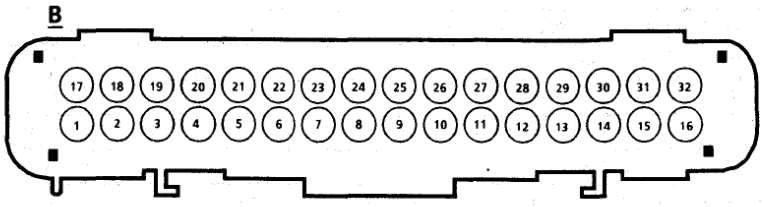
CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129022 (CLR)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

POWERTRAIN CONTROL MODULE (PCM) (V6 VIN S)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
1	BLK	452	MAP, IAT, A/C REFRIGERANT AND A/C EVAPORATOR TEMPERATURE SENSORS GROUND REFERENCE	DTC(s) 22, 23, 33, 71
2	DK GRN/WHT	762	A/C REQUEST	SEC C10
3	DK BLU	732	A/C EVAPORATOR TEMPERATURE SIGNAL	DTC(s) 71, 73
5	RED/BLK	380	A/C REFRIGERANT PRESSURE SIGNAL	DTC(s) 66, 70
6	GRY	120	FUEL PUMP SIGNAL	DTC 54
8	DK GRN/WHT	465	FUEL PUMP RELAY CONTROL	DTC 54
11	LT GRN	1222	1-2 SHIFT SOLENOID CONTROL	SEC C8
12	YEL/BLK	1223	2-3 SHIFT SOLENOID CONTROL	SEC C8
15	TAN/BLK	422	TORQUE CONVERTER CLUTCH ENABLE	SEC C8, DTC 90
16	WHT	687	3-2 SHIFT SOLENOID CONTROL	SEC C8
17	BLK	470	SENSOR GROUND FOR ECT AND TP SENSORS	DTC(s) 15, 21, 22, 58, 59
18	LT BLU/BLK	583	BRAKE SIGNAL	DTC 37
21	PNK	1224	RANGE SIGNAL "A"	DTC 28
22 22	DK BLU GRY	1225 48	RANGE SIGNAL "B" CLUTCH ANTICIPATE SWITCH (M/T)	SEC C8
23	RED	1226	RANGE SIGNAL "C"	DTC 28
29	LT GRN	432	MAP SENSOR SIGNAL	DTC(s) 33, 34, 44
30	DK BLU	417	TP SENSOR SIGNAL	DTC(s) 21, 22
31	YEL	410	ECT SENSOR SIGNAL	DTC(s) 14, 15
32	YEL/BLK	1227	TRANSMISSION FLUID TEMPERATURE SENSOR SIGNAL	DTC(s) 58, 59

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CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129021 (BLK)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

POWERTRAIN CONTROL MODULE (PCM) (V6 VIN S)

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**CAVITIES NOT LISTED ARE NOT USED

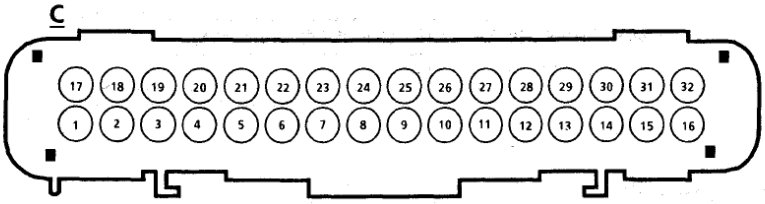
CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
2	DK GRN	335	COOLANT FAN RELAY CONTROL	SEC C12
3	BRN	436	SECONDARY AIR INJECTION SYSTEM AIR BYPASS SOLENOID	SEC C6
4	DK GRN/WHT	428	EVAP CANISTER PURGE SOLENOID VALVE CONTROL	SEC C3
6	DK GRN/WHT	459	A/C COMPRESSOR CLUTCH RELAY CONTROL	DTC 68
7	BRN/WHT	419	MIL (SERVICE ENGINE SOON) INDICATOR CONTROL	CHART A-1
11	LT BLU	697	EGR #1 CONTROL	DTC 75
12	BRN	698	EGR #2 CONTROL	DTC 76
13	RED	699	EGR #3 CONTROL	DTC 77
14	ORN	340	BATTERY (KEEP ALIVE MEMORY)	CHART A-3
15	ORN	340	BATTERY (KEEP ALIVE MEMORY)	CHART A-3
16	BLK/WHT	451	PCM GROUND	CHART A-1
18	DK BLU	1493	2ND GEAR START MODE INDICATOR LAMP CONTROL - PERFORMANCE	SEC C8
19	TAN	800	SERIAL DATA	CHART A-1
20	BLK/WHT	351	LEFT O2S GROUND	DTC(s) 13, 44, 45
21	PPL/WHT	1665	LEFT O2S SIGNAL	DTC(s) 13, 44, 45
22	PPL	1666	RIGHT O2S SIGNAL	DTC(s) 63, 64, 65
23	BLK/WHT	351	RIGHT O2S GROUND	DTC(s) 63, 64, 65
24	LT GRN/WHT	1749	IAC COIL "B" HIGH	DTC 35
25	LT GRN/BLK	444	IAC COIL "B" LOW	DTC 35

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SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S

(CONTINUED FROM PREVIOUS PAGE)

CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
26	LT BLU/BLK	1748	IAC COIL "A" LOW	DTC 35
27	LT BLU/WHT	1747	IAC COIL "A" HIGH	DTC 35
28	DK GRN/WHT	817	BUFFERED SPEED OUTPUT (4000 PULSES/MILE)	DTC 24
29	PPL	401	VSS INPUT LOW	DTC(s) 24, 72
30	YEL	400	VSS INPUT HIGH	DTC(s) 24, 72
31	GRY	416	5 VOLT REFERENCE, MAP, TP AND A/C PRESSURE SENSORS	DTC(s) 22, 34, 66, 67, 70, 71, 73
32	BLK/WHT	451	PCM GROUND	FIG A-1



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CONNECTOR ASSEMBLY BREAKDOWN

TPA	- 12129023 (BLU)
SEAL	- 12146093
STRAIN RELIEF	- 12129028
CONNECTOR	- 12129025

POWERTRAIN CONTROL MODULE (PCM) (V6 VIN S)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
1	TAN/WHT	551	PCM GROUND	FIG A-1
2	DK GRN	59	A/C CLUTCH STATUS	DTC(s) 68, 69
3	PNK	439	IGNITION FEED	DTC (s) 53, 96
5	RED/BLK	1228	PRESSURE CONTROL SOLENOID HI	DTC 93
6	LT BLU/WHT	1229	PRESSURE CONTROL SOLENOID LO	DTC 93
10	LT BLU	553	2ND START MODE SWITCH SIGNAL- PERFORMANCE	SEC C8
12	PNK/BLK	1746	INJECTOR DRIVER CYLINDER #3	CHART #A-3
13	LT GRN/BLK	1745	INJECTOR DRIVER CYLINDER #2	CHART #A-3
14	BLK	1744	INJECTOR DRIVER CYLINDER #1	CHART #A-3
15	YEL/BLK	846	INJECTOR DRIVER CYLINDER #6	CHART #A-3
16	BLK/WHT	845	INJECTOR DRIVER CYLINDER #5	CHART #A-3

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CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
17	TAN/WHT	551	PCM GROUND	FIG A-1
18	PNK/BLK	632	REFERENCE LOW CAMSHAFT AND CRANKSHAFT SENSORS	SEC C4
20	DK BLU	496	KNOCK SENSOR SIGNAL	DTC 43
21	LT BLU/WHT	1800	24X REFERENCE SIGNAL	DTC 36
23	DK BLU	229	FUEL ENABLE SIGNAL	DTC 46
25	BRN/WHT	633	CAMSHAFT POSITION SENSOR SIGNAL	DTC 17
27	WHT	423	IGNITION CONTROL	DTC 41
28	TAN/BLK	424	IGNITION CONTROL BYPASS	DTC 42
29	TAN	472	IAT SENSOR SIGNAL	DTC(s) 23, 25
30	LT BLU/BLK	647	3X REFERENCE HIGH	DTC 82
31	RED/BLK	453	3X REFERENCE LOW	SEC C4
32	LT BLU/BLK	844	INJECTOR DRIVER CYLINDER #4	CHART #A-3

COMPONENT	LOCATION	201-PG	FIG.	CONN
A/C Evaporator Temperature Sensor	Mounted in Evaporator Core	20	37	
A/C Refrigerant Pressure Sensor	Above RH Shock Tower, forward of A/C Compressor Low Pressure Cut Off Switch	19	35	
Brake Switch Assembly	Mounted in lower hole of brake pedal bracket (2 conn with Automatic), (1 conn with Manual) same switch for both	0	1	
Brake Transmission Shift Interrupt (BTSI) Solenoid	In console, under PRNDL Display	22	42	
Camshaft Position Sensor	In front top of Engine Block, between Intake and Water Pump	13	24	
Clutch Anticipate/ Cruise Release Switch (all V6 Manual)	Mounted in clutch pedal bracket (4 cavity conn)	0	1	202-20
Crankshaft Position Sensor, HI Resolution	Lower front of Engine Block, pigtail comes out LH side of crank	11	20	
Crankshaft Position Sensor, LO Resolution	Lower RH side of Engine Block, has no pigtail	28	54	
Data Link Conn (DLC)	Mounted to I/P Tie Bar, below and right of Steering Column			202-11
Engine Coolant Temperature (ECT) Sensor	Mounted in front top of Engine, under plenum			
Evaporative Emission (EVAP) Canister Purge Solenoid Valve	Left side of Engine, mounted to Intake Plenum	13	24	
Exhaust Gas Recirculation (EGR) Vacuum Control Signal Solenoid Valve	Right side of Engine, mounted to Manifold	12	23	202-20
Fuel Injectors	Mounted on Intake Manifold, part of Fuel Rail			

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SEQUENTIAL MULTIPORT FUEL INJECTION: V6 VIN S

(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Fuel Pump Prime Conn	Top rear of RH Shock Tower, 1 way conn out of Harn	15	28	
Fuel Pump Relay	Forward of LH kick panel, mounted to foot rest bracket under carpet	7	13	202-21
Fuel Tank Unit	Under rear of vehicle			
Fusible Links	Above RH shock tower	10	19	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Idle Air Control (IAC) Valve	Right front on Throttle Body	29	56	202-22
Ignition Control Module (ICM)	Left front of Engine	27	52	202-22
Instrument Cluster	LH side of I/P			202-23
Intake Air Temperature (IAT) Sensor	Mounted on air duct, in front of Intake Manifold	24	45	
Isolation Diode (BTSI)	Sealed in Harn, approx 6 cm from DERM breakout			
Knock Sensor	In bottom RH side of Engine Block	28, 40	54, 72	
Manifold Absolute Pressure (MAP) Sensor	Mounted to RH side of Intake Manifold	12, 26	23, 50	
Oxygen Sensor, LH	Mounted in left Exhaust Manifold	13	24	
Oxygen Sensor, RH	Mounted in right Exhaust Manifold	12	23	
Powertrain Control Module (PCM)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Secondary Air Injection Pump Assembly	Front LH Frame Rail, in Engine Compartment	11	21	
Theft Deterrent Module	In I/P, just right of Radio, attached to Air Bag Bracket	8	15	202-18
Throttle Position (TP) Sensor	Mounted to right front side of intake	14, 29	27, 56	
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C100 (10 cavities)	Engine to Forward Lamp Harn, behind LH wheelhouse, attached to PCM bracket	15	28	202-0
C110 (10 cavities)	Engine to Injector Harn, top center of Intake Manifold	12	22	202-1
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
C270 (2 cavities)	I/P Harn to Clutch Jumper Harn, near brake/clutch pedal bracket	1	2	
C405A (4 cavities)	Part of Pass Thru Conn, forward of rear axle, to Fuel Tank Unit	5	9	202-8
C405B (10 cavities)	Part of Pass Thru Conn, forward of rear axle, to Pass Thru Panel	5	9	202-8
G104	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
G106	Near top LH side of radiator, in top of T-Bar	19	35	

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COMPONENT	LOCATION	201-PG	FIG.	CONN
G305	Bolted to Floor Pan Bar #2, under Driver's Seat (2 rings, 2 wires, with AC3/AQ9), (1 ring, 1 wire without AC3/AQ9)	6	11	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S103	Injector Jumper Harn, approx 7 cm from LH Branch breakout			
S104	Injector Jumper Harn, approx 9 cm from Injector 6			
S106	Engine Harn, approx 25 cm from PCM Connectors			
S107	Engine Harn, approx 30 cm from C110 breakout	12	22	
S108	Engine Harn, approx 4 cm from braided ground strap	11	20	
S110	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			
S117	Engine Harn, approx 5 cm from main branch and PCM breakout			
S119	Engine Harn, at RH Oxygen Sensor breakout	12	23	
S122	Engine Harn, approx 4 cm from MAP Sensor breakout	12	23	
S125	Engine Harn, approx 3 cm from MAP Sensor breakout	12	23	
S127	Engine Harn, approx 13 cm from RH branch			
S131	Engine Harn, approx 17 cm from RH branch			
S163	Forward Lamp Harn, approx 7 cm from Electrical Center breakout			
S190	Forward Lamp Harn, approx 8 cm from Electrical Center breakout	36	68	
S205	I/P Harn, approx 31 cm from Convenience Center breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S209	I/P Harn, approx 24 cm from Convenience Center breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S225	I/P Harn, approx 4 cm before DLC breakout			
S234 (Automatic)	I/P Harn, approx 4 cm from G201 breakout			
S235	I/P Harn, approx 7 cm from G200 breakout	7	13	
S238 (Automatic)	I/P Harn, approx 7 cm from Center Console breakout			
S280	Engine Harn, approx 14 cm from C220 breakout			

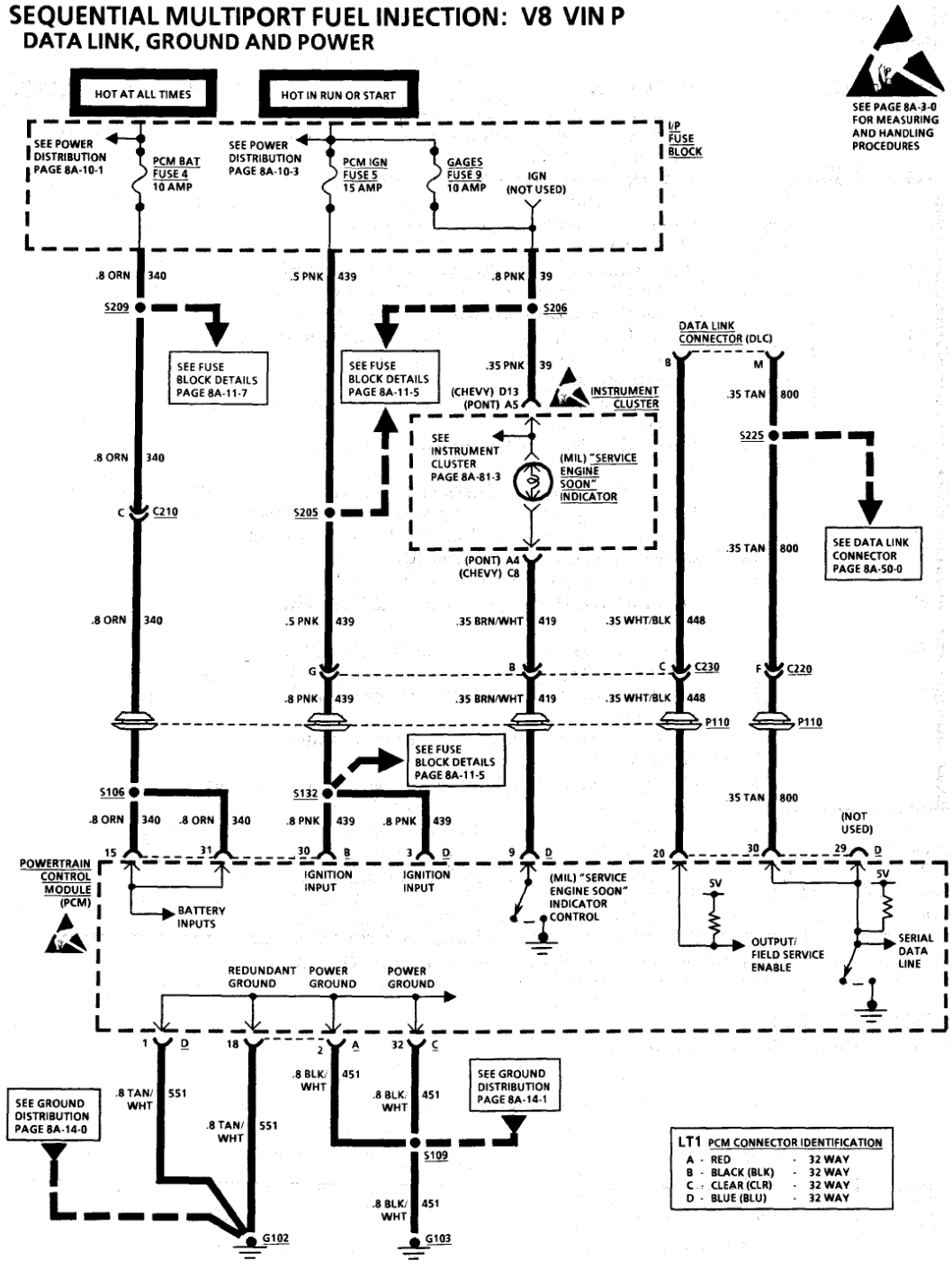
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

- Refer to SECTION 6E3 for diagnosis.

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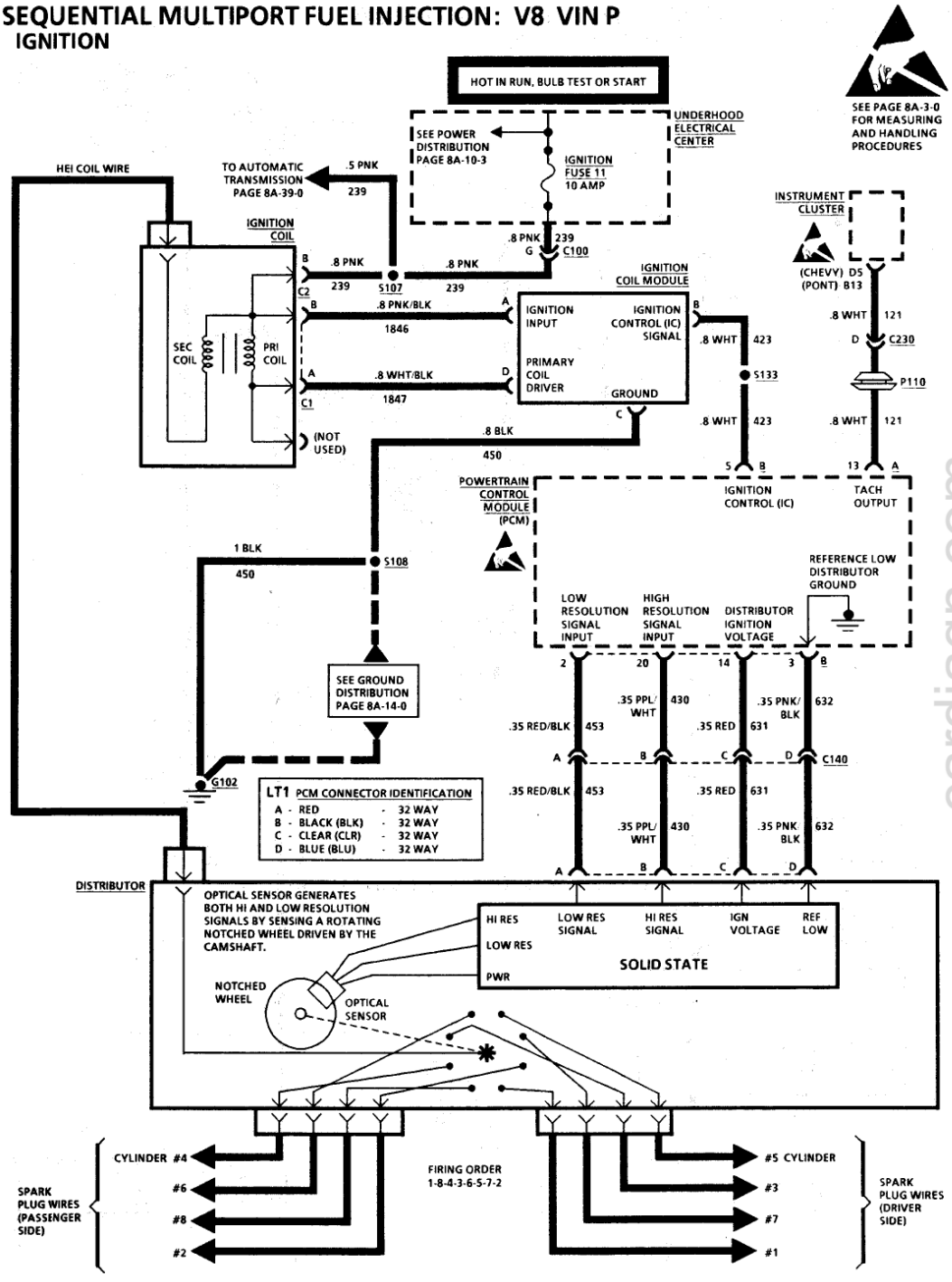
SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P
DATA LINK, GROUND AND POWER



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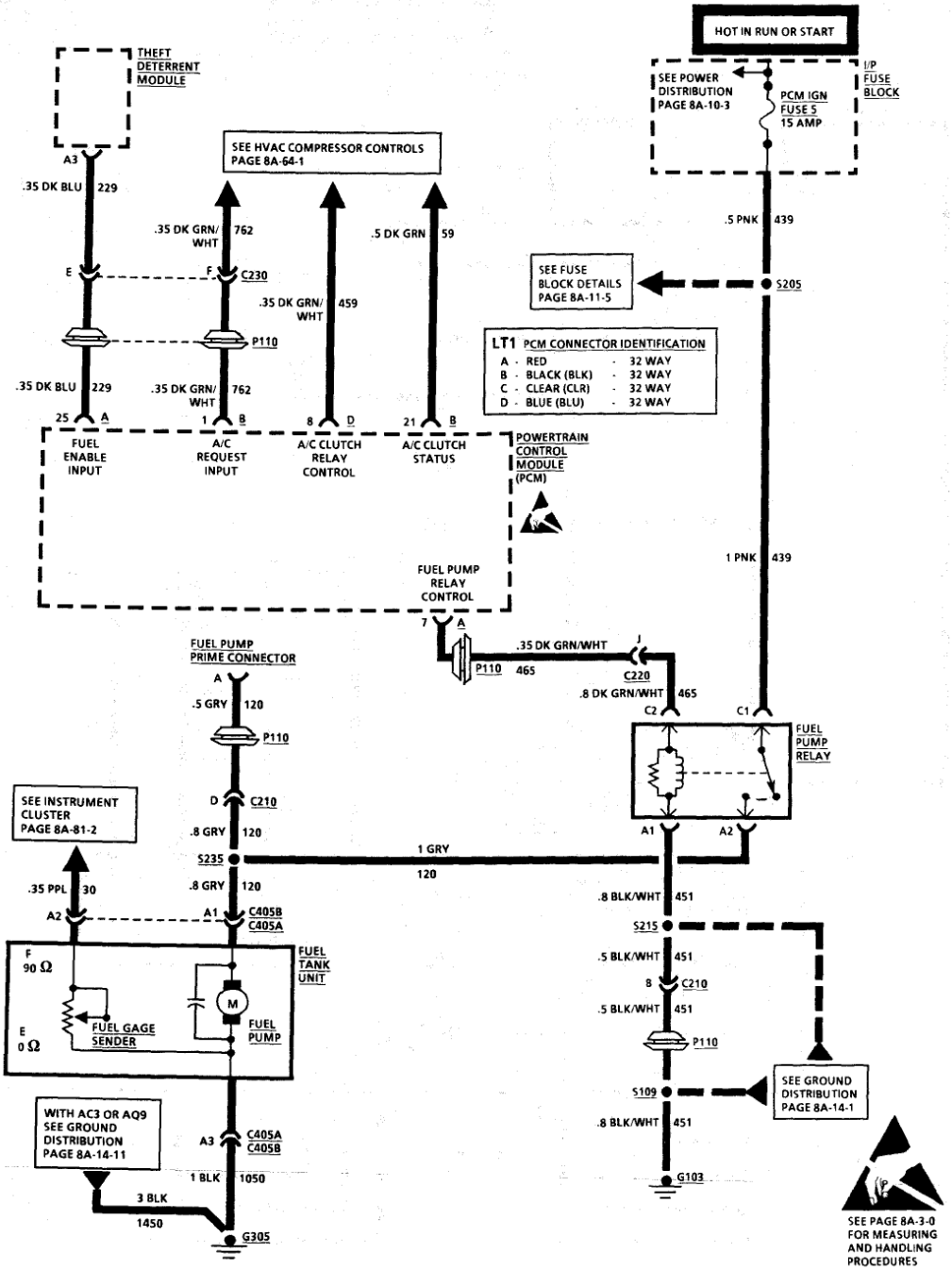
SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P

IGNITION



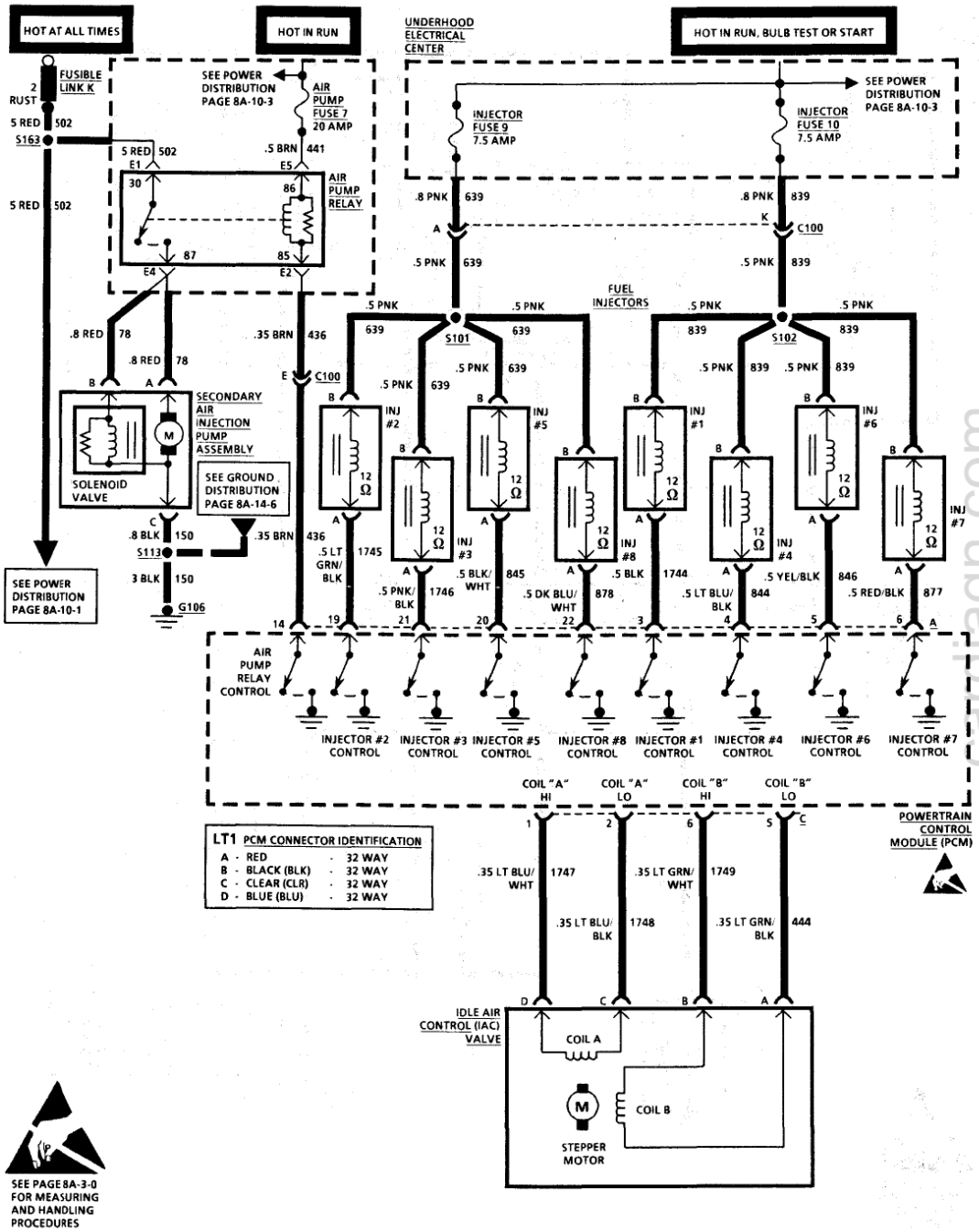
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SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P
FUEL PUMP, HVAC AND PASS-KEY®II INPUT



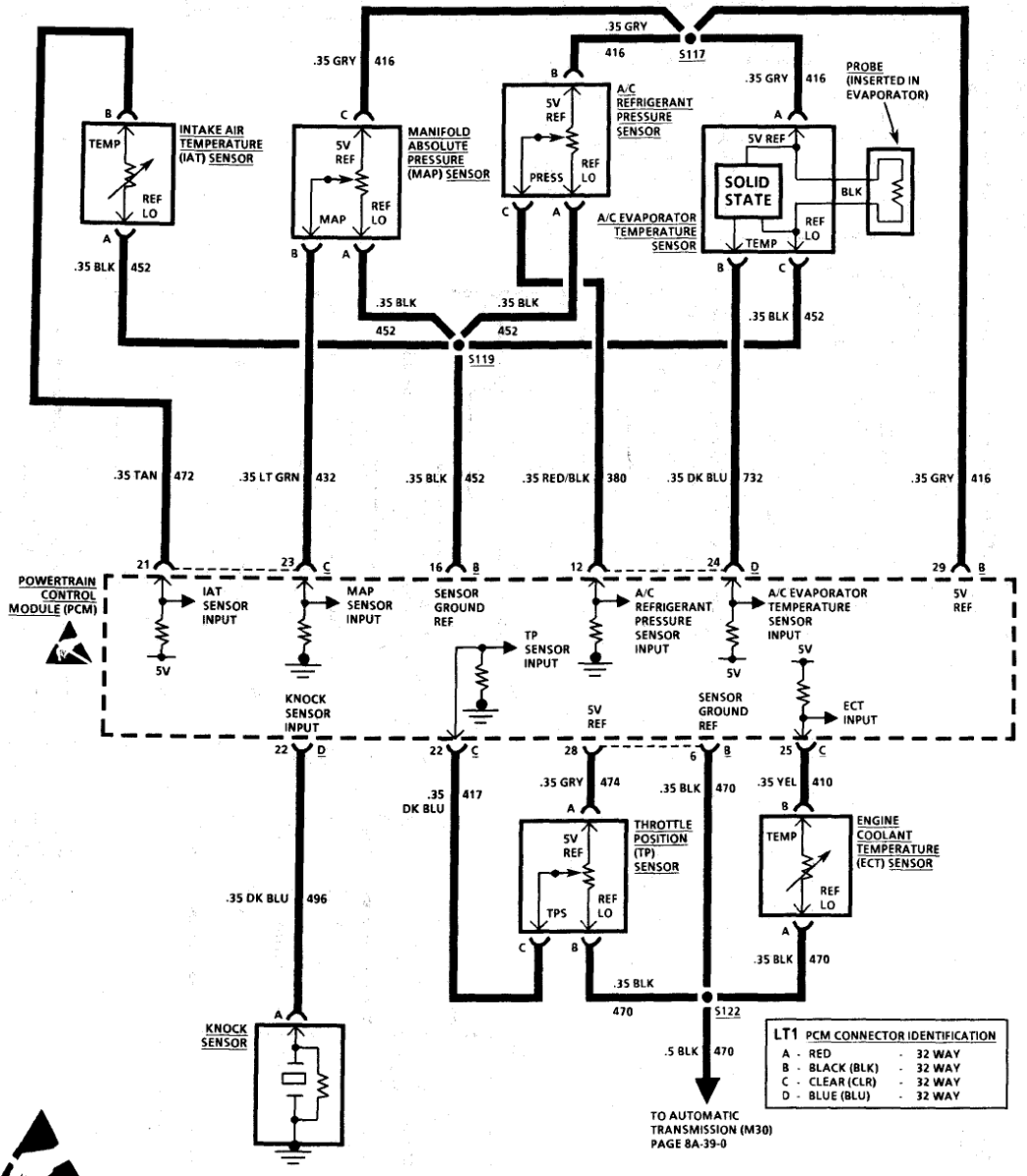
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SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P
CONTROLLED DEVICES AND INJECTORS



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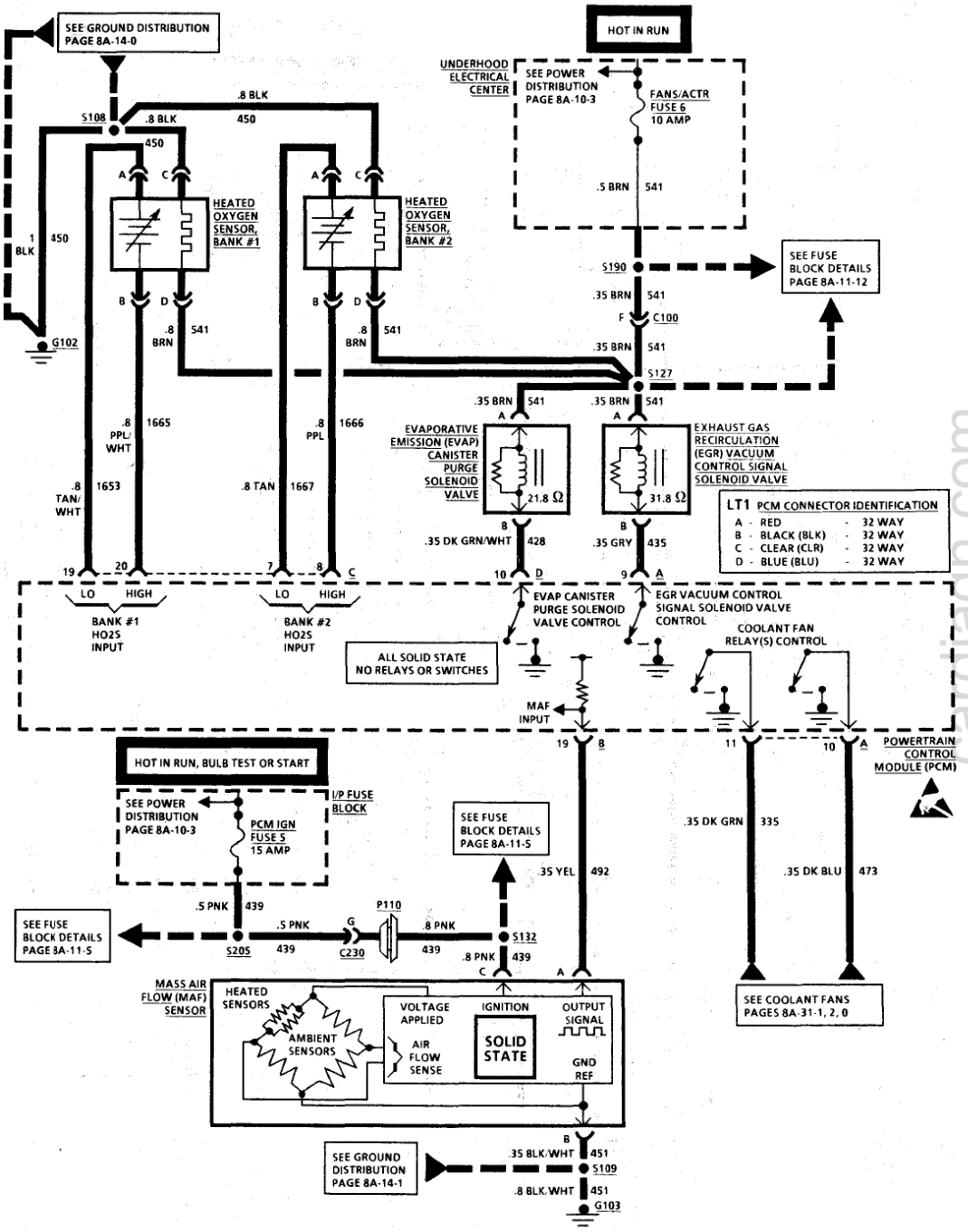
SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P
ENGINE DATA SENSORS



SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES

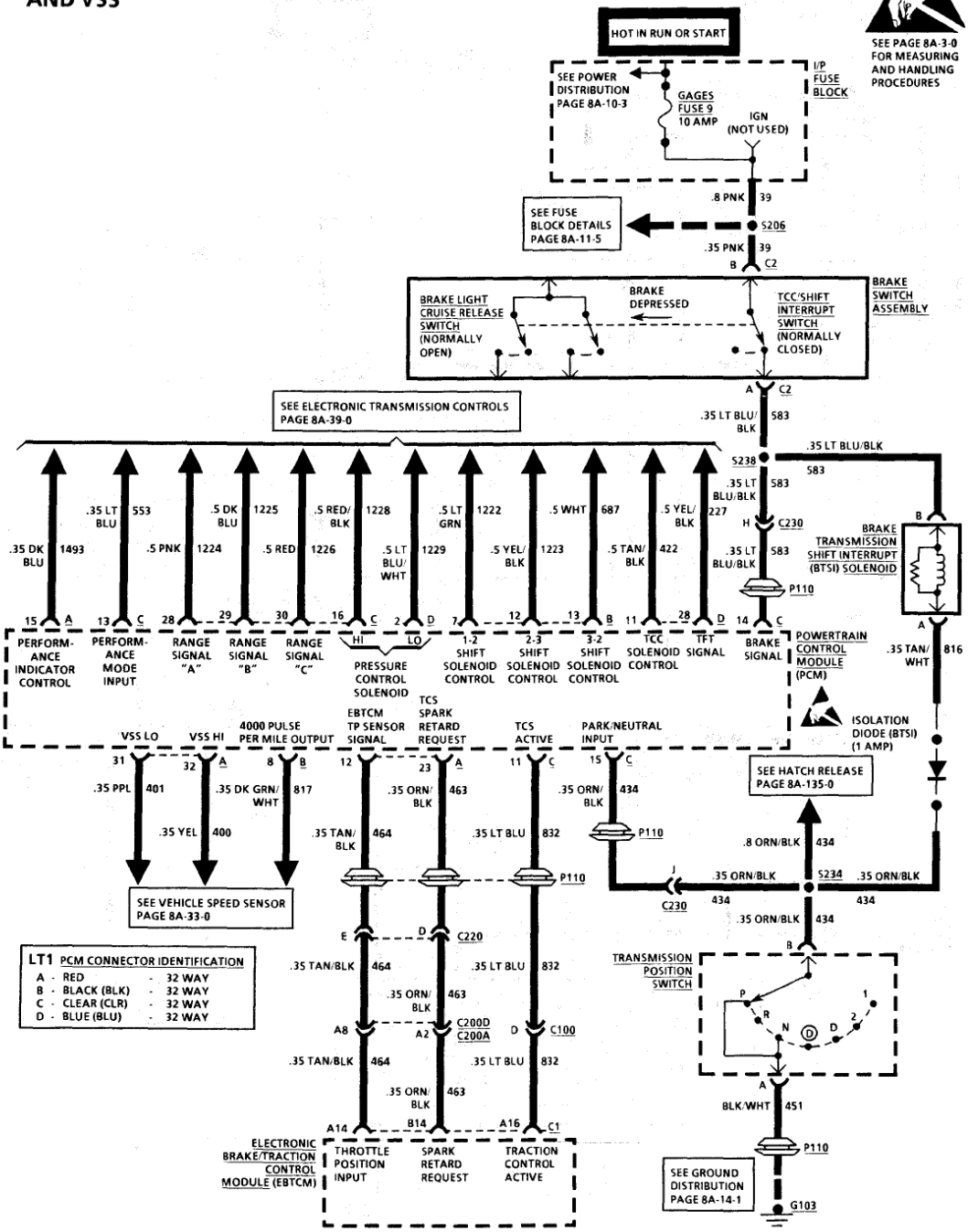
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SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P
CONTROLLED DEVICES, ENGINE DATA SENSORS



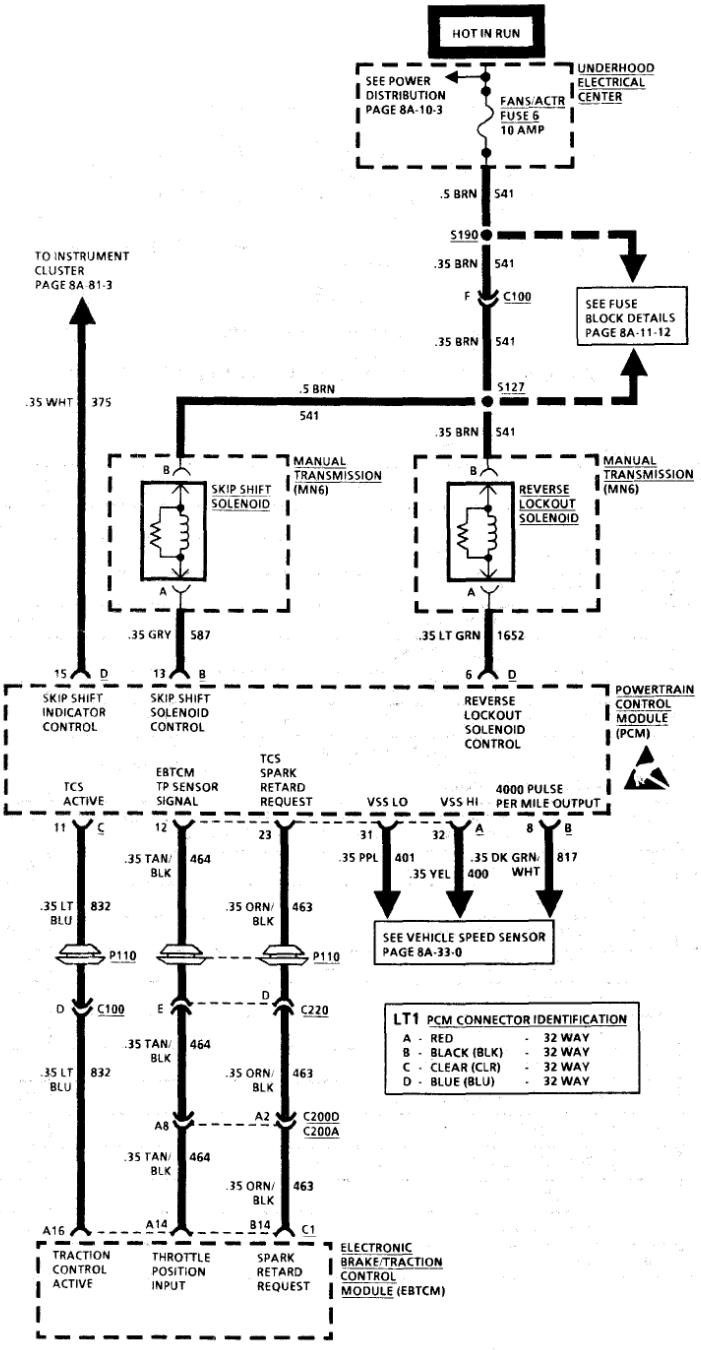
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SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P
AUTOMATIC TRANSMISSION CONTROLS (M30), TRACTION CONTROL (NW9) AND VSS



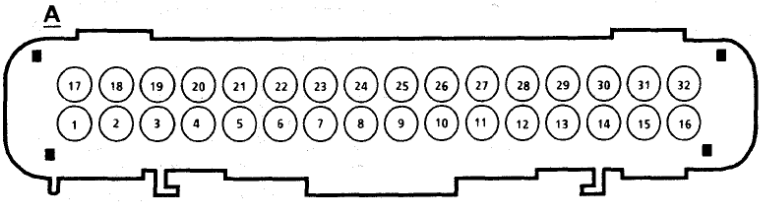
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SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P
MANUAL TRANSMISSION CONTROLS (MN6), TRACTION CONTROL (NW9) AND VSS



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SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P



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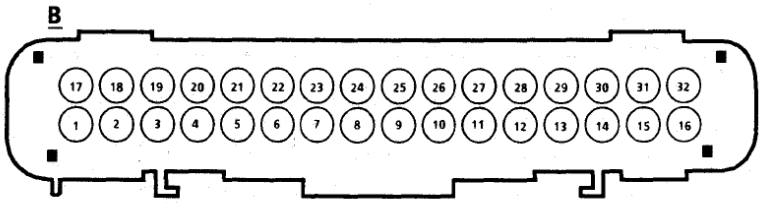
32-WAY F MICRO-PACK 100 SERIES
NAT
POWERTRAIN CONTROL MODULE (PCM) (V8 VIN P)

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129024 (RED)
SEAL	- 12146093
STRAIN RELIEF	- 12129028
CONNECTOR	- 12129025

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
2	BLK/WHT	451	PCM GROUND	SECTION B
3	BLK	1744	FUEL INJECTOR #1 CONTROL	DTC 18
4	LT BLU/BLK	844	FUEL INJECTOR #4 CONTROL	DTC 18
5	YEL/BLK	846	FUEL INJECTOR #6 CONTROL	DTC 18
6	RED/BLK	877	FUEL INJECTOR #7 CONTROL	DTC 18
7	DK GRN/WHT	465	FUEL PUMP RELAY CONTROL	CHART A-5
9	GRY	435	EGR VACUUM CONTROL SIGNAL SOLENOID VALVE CONTROL	DTC 27, SECTION C7
10	DK BLU	473	SECONDARY COOLANT FAN RELAY CONTROL (WITH C60 EARLY PRODUCTION) OR COOLANT FAN RELAY #2 AND #3 CONTROL (WITH C60 LATER PRODUCTION)	SECTION C12
11	DK GRN	335	PRIMARY COOLANT FAN RELAY CONTROL (EARLY PRODUCTION) OR COOLANT FAN RELAY#1 CONTROL (LATER PRODUCTION)	DTC 27, SECTION C12
12	TAN/BLK	464	EBTCM TP SENSOR SIGNAL	REFER TO SECTION 5E2
13	WHT	121	TACH OUTPUT	DTC 99
14	BRN	436	AIR PUMP RELAY CONTROL	DTC 29, SECTION C6
15	DK BLU	1493	PERFORMANCE INDICATOR CONTROL	SECTION C8
18	TAN/WHT	551	PCM GROUND	SECTION B
19	LT GRN/BLK	1745	FUEL INJECTOR #2 CONTROL	DTC 18
20	BLK/WHT	845	FUEL INJECTOR #5 CONTROL	DTC 18
21	PNK/BLK	1746	FUEL INJECTOR #3 CONTROL	DTC 18
22	DK BLU/WHT	878	FUEL INJECTOR #8 CONTROL	DTC 18
23	ORN/BLK	463	TRACTION CONTROL SYSTEM SPARK RETARD REQUEST	REFER TO SECTION 5E2
25	DK BLU	229	FUEL ENABLE SIGNAL	DTC 46
31	PPL	401	VSS GROUND	DTC(s) 24, 72
32	YEL	400	VSS SIGNAL	DTC(s) 24, 72

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CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129021 (BLK)
SEAL	- 12146093
STRAIN RELIEF	- 12129028
CONNECTOR	- 12129025

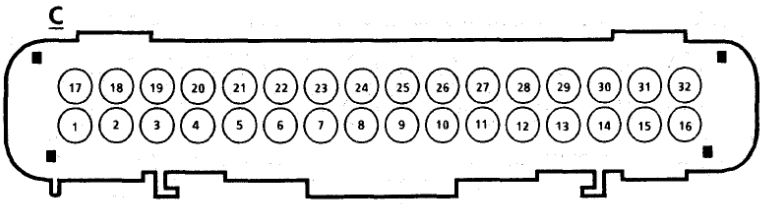
POWERTRAIN CONTROL MODULE (PCM) (V8 VIN P)

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**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
1	DK GRN/WHT	762	A/C REQUEST	SECTION C10
2	RED/BLK	453	LOW RESOLUTION SIGNAL	DTC 16, SECTION C4
3	PNK/BLK	632	DISTRIBUTOR REFERENCE LOW SIGNAL	SECTION C4
5	WHT	423	IGNITION CONTROL (IC)	DTC(s) 41, 42, SECTION C4
6	BLK	470	TP SENSOR, ECT GROUND REFERENCE	DTC(s) 58, 59
7	LT GRN	1222	1-2 SHIFT SOLENOID CONTROL	DTC 82
8	DK GRN/WHT	817	VSS OUTPUT (4000 PPM)	DTC 97
12	YEL/BLK	1223	2-3 SHIFT SOLENOID CONTROL	DTC 81
13	GRY WHT	587 687	SKIP SHIFT SOLENOID CONTROL 3-2 SHIFT SOLENOID CONTROL	DTC 84
14	RED	631	DISTRIBUTOR IGNITION FEED	SECTION C4
15	ORN	340	BATTERY FEED	CHART A-1
16	BLK	452	IAT, MAP, A/C REFRIGERANT, A/C EVAP TEMP SENSORS GROUND REFERENCE	DTC(s) AFFECTED
19	YEL	492	MAF SIGNAL	DTC 48
20	PPL/WHT	430	HIGH RESOLUTION SIGNAL	DTC 36
21	DK GRN	59	A/C CLUTCH STATUS	DTC 69, SECTION C10
28	GRY	474	+5 VOLTS REFERENCE	DTC(s) AFFECTED
29	GRY	416	+5 VOLTS REFERENCE	DTC(s) AFFECTED
30	PNK	439	IGNITION FEED	CHART A-1
31	ORN	340	BATTERY FEED	CHART A-1

SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P



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32-WAY F MICRO-PACK 100 SERIES
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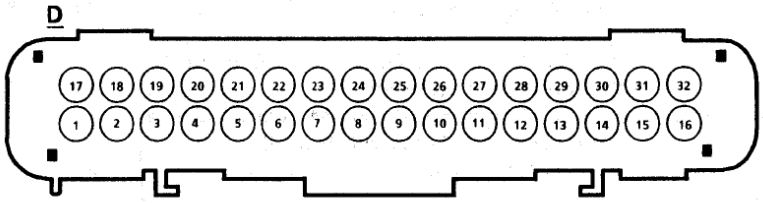
CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129022 (CLR)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

POWERTRAIN CONTROL MODULE (PCM)
(V8 VIN P)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
1	LT BLU/WHT	1747	IAC COIL "A" HIGH	SECTION C2
2	LT BLU/BLK	1748	IAC COIL "A" LOW	SECTION C2
5	LT GRN/BLK	444	IAC COIL "B" LOW	SECTION C2
6	LT GRN/WHT	1749	IAC COIL "B" HIGH	SECTION C2
7	TAN	1667	BANK #2 HO2S LOW	DTC 63
8	PPL	1666	BANK #2 HO2S HIGH	DTC(s) 63, 64, 65
11	LT BLU	832	TRACTION CONTROL SYSTEM ACTIVE	DTC 74
13	LT BLU	553	PERFORMANCE MODE INPUT	SECTION C8
14	LT BLU/BLK	583	BRAKE SIGNAL	DTC(s) 37, 38
15	ORN/BLK	434	PNP SIGNAL	CHART C-1A
16	RED/BLK	1228	PRESSURE CONTROL SOLENOID HIGH	DTC 73
19	TAN/WHT	1653	BANK #1 HO2S LOW	DTC 13
20	PPL/WHT	1665	BANK #1 HO2S HIGH	DTC(s) 13, 44, 45
21	TAN	472	IAT SIGNAL	DTC(s) 23, 25
22	DK BLU	417	TP SENSOR SIGNAL	DTC(s) 21, 22
23	LT GRN	432	MAP SIGNAL	DTC(s) 33, 34
25	YEL	410	ECT SIGNAL	DTC(s)14, 15
28	PNK	1224	RANGE SIGNAL "A"	DTC 28
29	DK BLU	1225	RANGE SIGNAL "B"	SECTION C8
30	RED	1226	RANGE SIGNAL "C"	DTC 28
32	BLK/WHT	451	PCM GROUND	SECTION B

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32-WAY F MICRO-PACK 100 SERIES
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CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129023 (BLU)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

POWERTRAIN CONTROL MODULE (PCM) (V8 VIN P)

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**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	6E3 REFERENCE
1	TAN/WHT	551	PCM GROUND	SECTION B
2	LT BLU/WHT	1229	PRESSURE CONTROL SOLENOID LOW	DTC 73
3	PNK	439	IGNITION FEED	DTC (s) 50, 53, 75
6	LT GRN	1652	REVERSE LOCKOUT SOLENOID CONTROL	DTC 83, SECTION C8
8	DK GRN/WHT	459	A/C CLUTCH RELAY CONTROL	DTC 70, SECTION C10
9	BRN/WHT	419	MIL (SERVICE ENGINE SOON) INDICATOR CONTROL	CHARTS A-1, A-2
10	DK GRN/WHT	428	EVAP CANISTER PURGE SOLENOID VALVE CONTROL	DTC 26, SECTION C3
11	TAN/BLK	422	TCC SOLENOID CONTROL	DTC 90
12	RED/BLK	380	A/C REFRIGERANT PRESSURE SENSOR SIGNAL	DTC(s) 66, 67
15	WHT	375	SKIP SHIFT INDICATOR CONTROL	DTC 91
20	WHT/BLK	448	OUTPUT/FIELD SERVICE ENABLE TERMINAL	CHART A-2
22	DK BLU	496	KNOCK SENSOR SIGNAL	DTC 43
24	DK BLU	732	A/C TEMPERATURE SENSOR SIGNAL	DTC (s) 66, 67
28	YEL/BLK	1227	TRANSMISSION FLUID TEMPERATURE SENSOR SIGNAL	DTC 58, 59
30	TAN	800	SERIAL DATA	CHART A-2

SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P

COMPONENT	LOCATION	201-PG	FIG.	CONN
A/C Evaporator Temperature Sensor	Mounted in Evaporator Core	20	37	
A/C Refrigerant Pressure Sensor	Above RH Shock Tower, forward of A/C Compressor Low Pressure Cut-off Switch	19	35	
Brake Switch Assembly	Mounted in lower hole of brake pedal bracket (2 conn with Automatic), (1 conn with Manual) same switch for both	0	1	
Brake Transmission Shift Interrupt (BTSI) Solenoid	In console, under PRNDL Display	22	42	
Data Link Conn (DLC)	Mounted to I/P Tie Bar, below and right of Steering Column			202-11
Distributor	In front center of Engine	41	74	202-20
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Engine Coolant Temperature (ECT) Sensor	Front of Engine, mounted in water pump	24	45	
Evaporative Emission (EVAP) Canister Purge Solenoid Valve	Right center of Engine, mounted to Manifold	26	50	
Exhaust Gas Recirculation (EGR) Vacuum Control Signal Solenoid Valve	Left rear of Engine, mounted to Intake Plenum	24	44	
Fuel Injectors	Mounted on Intake Manifold, part of Fuel Rail	24	44	
Fuel Pump Prime Conn	Top rear of RH Shock Tower, 1 way conn out of Harn	15	28	
Fuel Pump Relay	Forward of LH kick panel, mounted to foot rest bracket under carpet	7	13	202-21
Fuel Tank Unit	Under rear of vehicle			
Fusible Links	Above RH Shock Tower	10	19	
Heated Oxygen Sensor Bank #1	Mounted in left Exhaust Manifold	24	44	202-22
Heated Oxygen Sensor Bank #2	Mounted in right Exhaust Manifold	40	72	202-22
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Idle Air Control (IAC) Valve	Right front on Throttle Body	14	27	202-22
Ignition Coil	Front LH side of Engine	16	29	
Ignition Coil Module	Front LH side of Engine	16	29	202-22
Instrument Cluster	LH side of I/P			202-23
Intake Air Temperature (IAT) Sensor	Mounted on air duct, in front of Intake Manifold	24	45	
Isolation Diode (BTSI)	Sealed in Harn, approx 6 cm from DERM breakout			
Knock Sensor	In bottom RH side of Engine Block	28, 40	54, 72	
Manifold Absolute Pressure (MAP) Sensor	Mounted to RH side of Intake Manifold	12, 26	23, 50	
Mass Air Flow (MAF) Sensor	Mounted on air duct, in front of Intake Manifold	24	45	
Powertrain Control Module (PCM)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26

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COMPONENT	LOCATION	201-PG	FIG.	CONN
Reverse Lockout Solenoid (Manual)	Rear LH side of Transmission	26	51	
Secondary Air Injection Pump Assembly	Front LH Frame Rail, in Engine Compartment	11	21	
Skip Shift Solenoid	Center LH side of Transmission	26	51	
Theft Deterrent Module	In I/P, just right of Radio, attached to Air Bag Bracket	8	15	202-18
Throttle Position (TP) Sensor	Mounted to right front side of intake	14, 29	27, 56	
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C100 (10 cavities)	Engine to Forward Lamp Harn, behind LH wheelhouse, attached to PCM bracket	15	28	202-0
C140 (4 cavities)	Right side of Intake Plenum, attached to Evaporator Solenoid Valve	26	50	202-19
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
C405A (4 cavities)	Part of Pass Thru Conn, forward of rear axle, to Fuel Tank Unit	5	9	202-8
C405B (10 cavities)	Part of Pass Thru Conn, forward of rear axle, to Pass Thru Panel	5	9	202-8
G102	Front of LH cylinder head (3 rings, 3 wires and braided strap)	16	29	
G103	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
G106	Near top LH side of radiator, in top of T-Bar	19	35	
G305	Bolted to Floor Pan Bar #2, under Driver's Seat (2 rings, 2 wires, with AC3/AQ9), (1 ring, 1 wire without AC3/AQ9)	6	11	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S101	Engine Harn, between Injectors 4 and 6 breakouts	26	50	
S102	Engine Harn, approx 5 cm from Injector 3 breakout	24	44	
S106	Engine Harn, approx 4 cm from main branch and PCM breakout			
S107	Engine Harn, approx 7 cm from main breakout at right rear of Engine			
S108	Engine Harn, approx 17 cm from Injector 3 breakout	24	44	
S109	Engine Harn, approx 4 cm from main branch and PCM breakout			
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			

(CONTINUED ON NEXT PAGE)

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SEQUENTIAL MULTIPORT FUEL INJECTION: V8 VIN P

(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
S117	Engine Harn, approx 5 cm from clip near PCM and main branch			
S119	Engine Harn, approx 18 cm from main branch and PCM breakout			
S122	Engine Harn, approx 25 cm from main branch and PCM breakout			
S127	Engine Harn, approx 8 cm from left clip, on Intake Manifold	24	44	
S132	Engine Harn, approx 2 cm from clip near PCM and main branch			
S133	Engine Harn, approx 11 cm from Injector 3 breakout	24	44	
S163	Forward Lamp Harn, approx 7 cm from Electrical Center breakout			
S190	Forward Lamp Harn, approx 8 cm from Electrical Center breakout	36	68	
S205	I/P Harn, approx 31 cm from Convenience Center breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S209	I/P Harn, approx 24 cm from Convenience Center breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S225	I/P Harn, approx 4 cm before DLC breakout			
S234 (Automatic)	I/P Harn, approx 4 cm from G201 breakout			
S235	I/P Harn, approx 7 cm from G200 breakout	7	13	
S238 (Automatic)	I/P Harn, approx 7 cm from center console breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

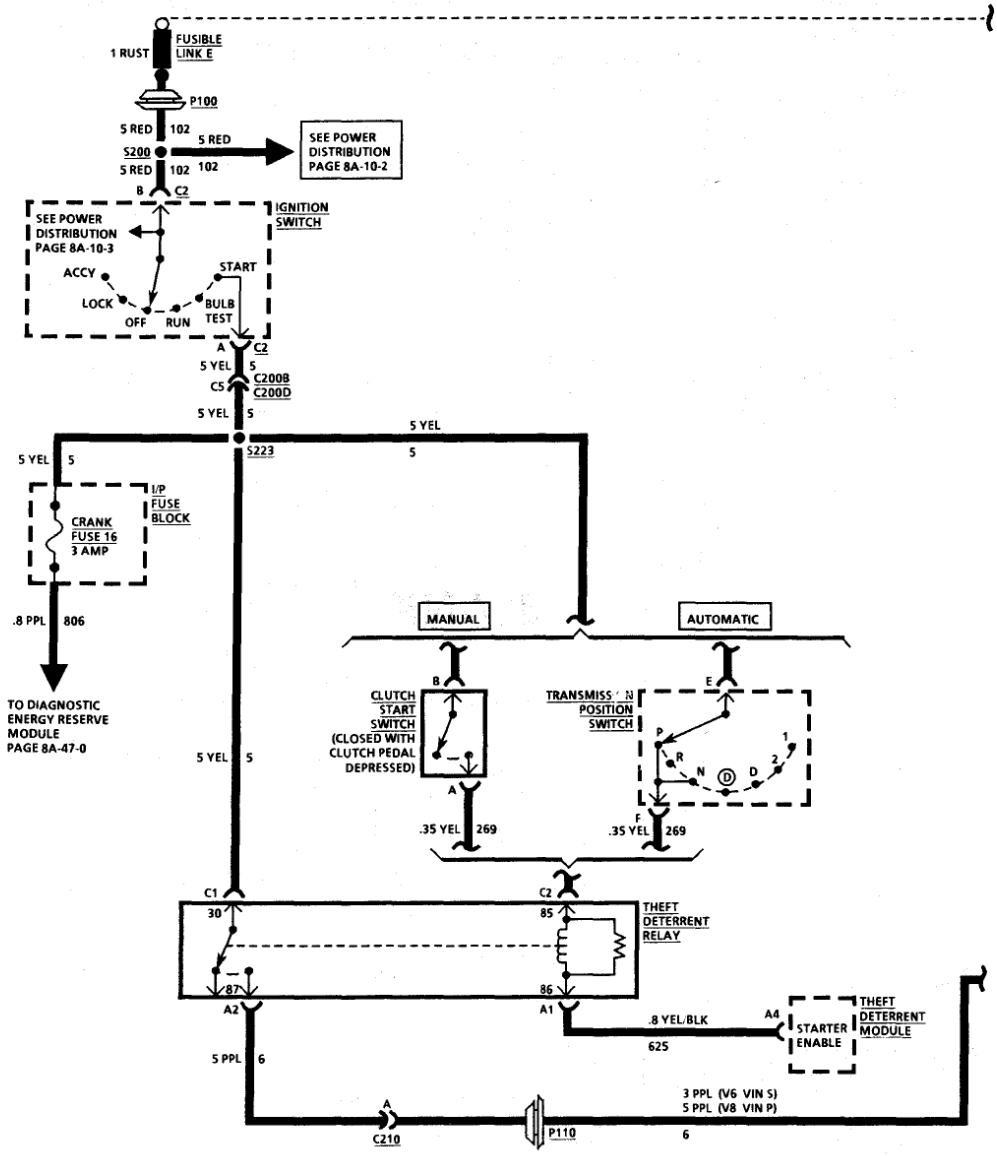
- Refer to SECTION 6E3 for diagnosis.

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STARTER AND CHARGING

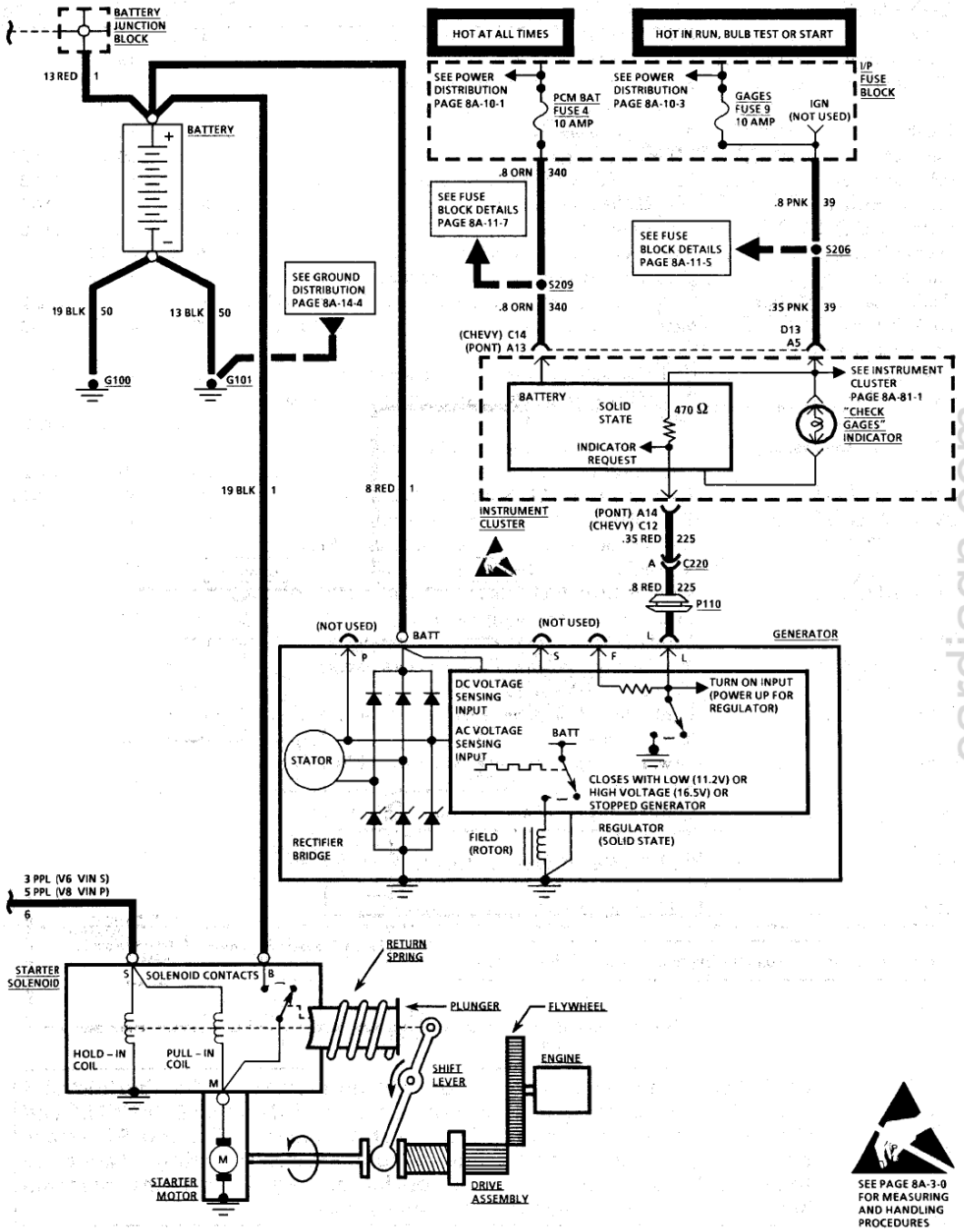


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SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.



SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES

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STARTER AND CHARGING

COMPONENT	LOCATION	201-PG	FIG.	CONN
Battery	RH front of Engine Compartment	19	35	
Battery Junction Block	Top of RH Shock Tower	10	19	
Clutch Start Switch	Mounted to clutch pedal bracket, behind Convenience Center	0	1	
Fusible Links	Above RH Shock Tower	10	19	
Generator	RH front of Engine	14, 29	26, 56	202-21
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Ignition Switch	Part of Steering Column	34	63	202-23
Instrument Cluster	LH side of I/P			202-23
Starter Motor	Bottom of RH side of Engine	28, 40	54, 72	
Starter Solenoid	Bottom of RH side of Engine, above Starter Motor	28, 40	54, 72	
Theft Deterrent Module	In I/P, just right of Radio, attached to Air Bag Bracket	8	15	202-18
Theft Deterrent Relay	Mounted to right side of SIR Bracket, behind I/P	22	41	202-27
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
G100 (L32)	Bolted to Belt Tension Bracket Bolt, lower RH front of Engine (1 ring, 1 wire)	13	25	
G100 (LT1)	Bolted to RH side of Engine Block, same bolt used for A/C Compressor if equipped (1 ring, 1 wire)	39	69	
G101	Top of RH Shock Tower (3 rings, 5 wires)	10	19	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S200	Forward Lamp Harn, approx 5 cm from EBCM breakout	8	14	
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S209	I/P Harn, approx 24 cm from Convenience Center breakout			
S223	I/P Harn, approx 11 cm before DLC breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

STARTER

1. Visually inspect the hydrometer (built into Battery).
   - Green eye – Battery is charged.
   - Dark eye – Charge and load test Battery, refer to SECTION 6D1. If Battery passes load test, refer to System Diagnosis, page 8A-30-3.
   - Clear or light yellow eye – Battery electrolyte is low. Replace Battery.
2. Always note condition of "SECURITY" Indicator if Engine does not crank. If the indicator stays "ON" or flashes continuously, refer to "Theft Deterrent System," page 8A-133-0.
3. Check that Starter Solenoid terminals "S" and "B" and Battery connections are clean and tight.
4. Check that Fusible Link E is undamaged. If Fusible Link E is open, check for a short to ground through CKT 5 or CKT 6.
5. Check that G100 and G101 are clean and tight.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

CHARGING SYSTEM

1. Visually inspect the hydrometer (built into Battery).
   - Green eye – Battery is charged.
   - Dark eye – Charge and load test Battery, refer to SECTION 6D1. If Battery passes load test, refer to System Diagnosis, page 8A-30-3.
   - Clear or light yellow eye – Battery electrolyte is low. Replace Battery.
2. Check Gages Fuse 9 for open.
3. Check that the Generator connector and Generator "BAT" terminal are both clean and tight.
4. Check that the Battery connections are clean and tight.
5. Check Generator belt.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

Important:

- The following tests are designed for engines and batteries at normal operating temperatures and assumes that there are no engine symptoms which would cause a no-start symptom. The Battery must be in a charged state before doing diagnosis. To use the tests under other conditions could result in misdiagnosis.

Important:

- Perform the On-Board Diagnostic System Check described in SECTION 6E3 to be certain no trouble codes are stored in PCM memory which may lead to misdiagnosis, specifically Diagnostic Trouble Code (DTC) 46, indicating a problem in the PASS-Key®II Fuel Enable circuit.
- Always note condition of "SECURITY" Indicator if Engine will not crank. If the indicator stays "ON" or flashes continuously, refer to "Theft Deterrent System," page 8A-133-0.

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STARTER AND CHARGING

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Engine does not crank, Starter Solenoid does not click.	Chart #1	8A-30-4
Starter Solenoid clicks, but Engine cranks slowly or not at all.	Chart #2	8A-30-6
Battery is undercharged or overcharged.	Chart #3	8A-30-7
"CHECK GAGES" Indicator on at all times.	Refer to page 8A-81-1.	
"CHECK GAGES" Indicator inoperative.	Refer to page 8A-81-1.	
Slower or no crank only after extended periods of vehicle non-use.	See Parasitic Load Test. Refer to SECTION 6D1.	

CHART #1
ENGINE DOES NOT CRANK, STARTER SOLENOID DOES NOT CLICK

IMPORTANT:
- BATTERY MUST BE IN A CHARGED STATE TO AVOID MISDIAGNOSIS. FOR BATTERY CHARGING OR TESTING, REFER TO SECTION 6D1.
- IF "SECURITY" INDICATOR STAYS "ON" OR FLASHERS CONTINUOUSLY, REFER TO "THEFT DETERRENT SYSTEM," PAGE 8A-133-0 (NORMAL BULB CHECK IS APPROXIMATELY 5 SECONDS.
- TO AVOID MISDIAGNOSIS, CHECK FOR DIAGNOSTIC TROUBLE CODES. SEE SECTION 6E3.

- DISCONNECT THEFT DETERRENT RELAY.
- ATTACH A TEST LIGHT BETWEEN THEFT DETERRENT RELAY CONN TERM "A1" AND B+.
- WHILE OBSERVING TEST LIGHT, TURN IGNITION SWITCH TO "START."
  DOES TEST LIGHT ILLUMINATE?

YES

- CONNECT A TEST LIGHT BETWEEN THEFT DETERRENT RELAY CONN TERM "C1" AND GROUND.
- WHILE OBSERVING TEST LIGHT, TURN IGNITION SWITCH TO "START."
  DOES TEST LIGHT ILLUMINATE?

YES

- CONNECT A TEST LIGHT BETWEEN THEFT DETERRENT RELAY CONN TERM "C2" AND GROUND.
- WHILE OBSERVING TEST LIGHT, TURN IGNITION SWITCH TO "START."
  DOES TEST LIGHT ILLUMINATE?

YES

IMPORTANT:
- DO NOT ALLOW STARTER TO CRANK LONGER THAN 15 SECONDS OR DAMAGE TO THE STARTER MAY OCCUR.
- ATTACH A 30 AMP FUSED JUMPER BETWEEN THEFT DETERRENT RELAY CONN TERM "C1" AND TERM "A2".
- TRANSMISSION IN "PARK" OR "NEUTRAL" (AUTO TRANS) OR WITH CLUTCH PEDAL DEPRESSED (MANUAL TRANS).
- IGNITION SWITCH TO "START."
  DOES ENGINE CRANK?

A (CONTINUED ON NEXT PAGE)

NO

REFER TO "THEFT DETERRENT SYSTEM PASS-Key®II", SECTION 8A-133, CHART #1.

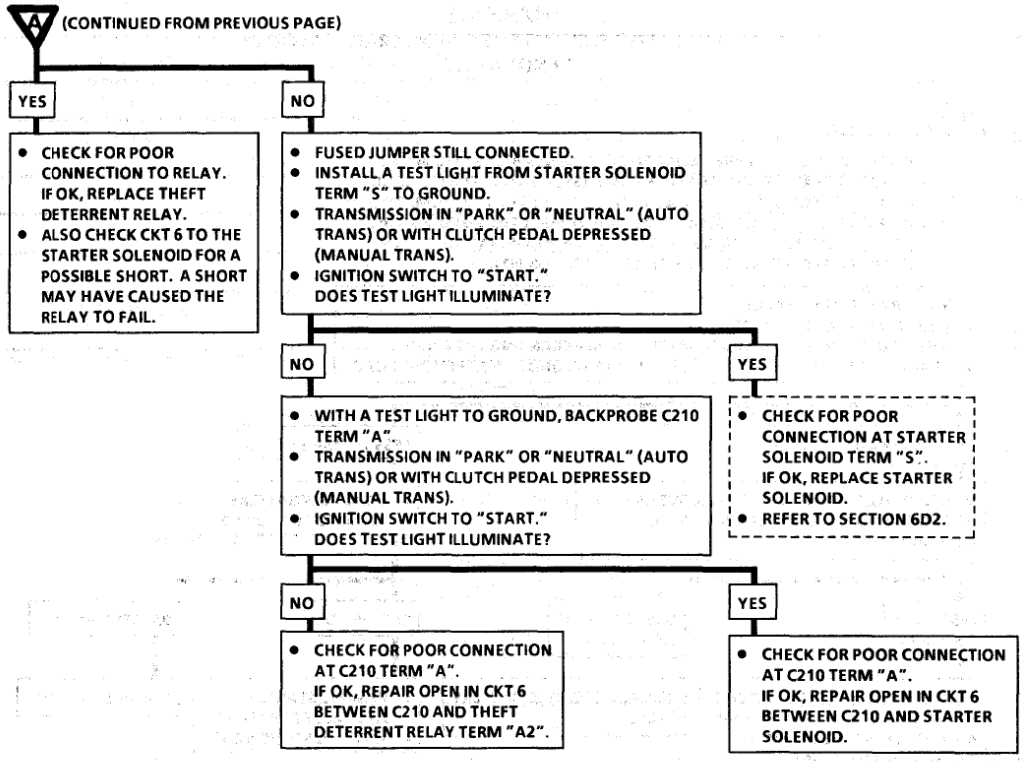
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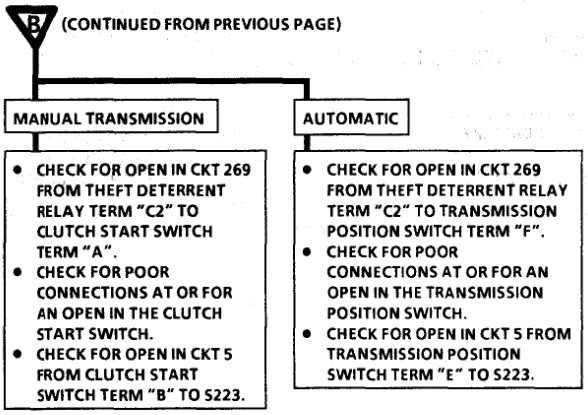
CHECK FOR OPEN IN CKT 5 OR OPEN IN POWER FEED CKT 102 INCLUDING IGNITION SWITCH AND FUSIBLE LINK E.

NO

B (CONTINUED ON NEXT PAGE)

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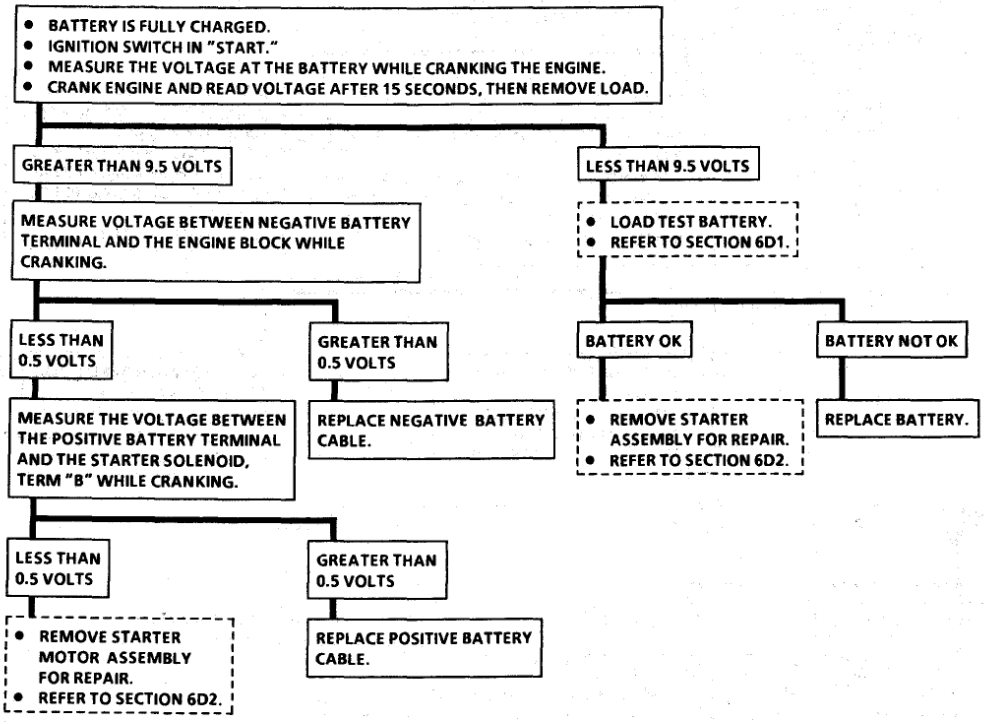
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STARTER AND CHARGING

CHART #2
STARTER SOLENOID CLICKS BUT ENGINE CRANKS SLOWLY
OR NOT AT ALL

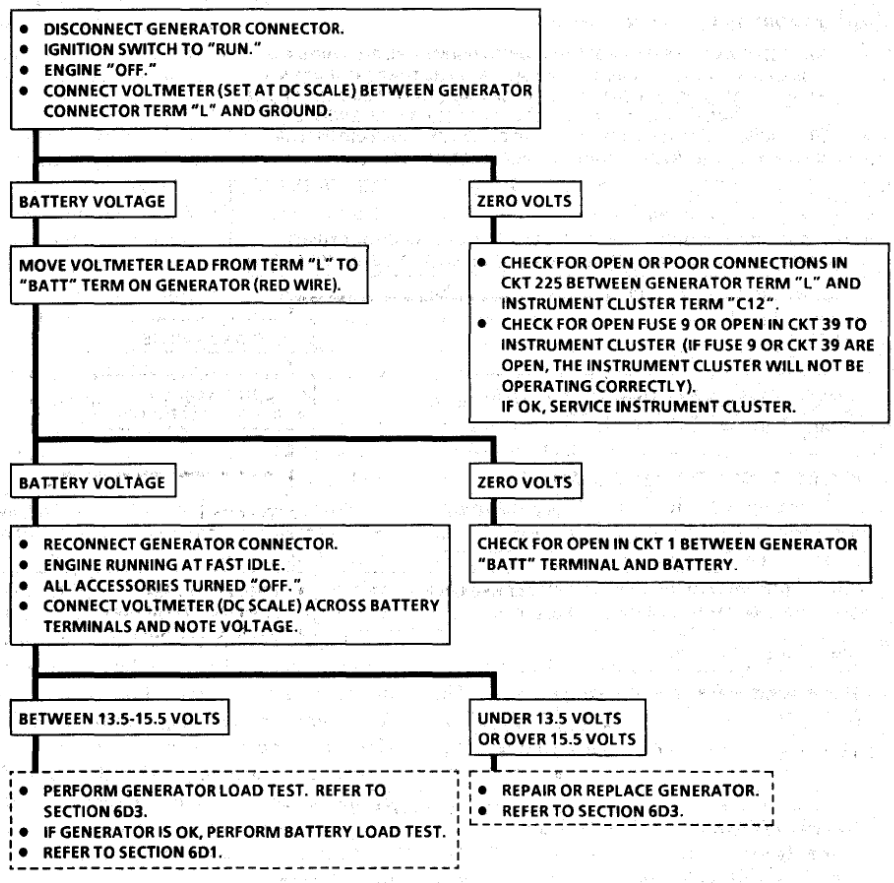
IMPORTANT:

- THE FOLLOWING TESTS ARE DESIGNED FOR ENGINES AND BATTERIES AT NORMAL OPERATING TEMPERATURES AND ASSUME THAT THERE ARE NO ENGINE SYMPTOMS WHICH WOULD CAUSE A NO-START SYMPTOM. TO USE THE TESTS UNDER OTHER CONDITIONS COULD RESULT IN MISDIAGNOSIS.
- BATTERY MUST BE IN A CHARGED STATE TO AVOID MISDIAGNOSIS. FOR BATTERY CHARGING OR TESTING, REFER TO SECTION 6D1.



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CHART #3
BATTERY UNDERCHARGED OR OVERCHARGED



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STARTER AND CHARGING

CIRCUIT OPERATION

BATTERY

Refer to SECTION 6D1.

CHARGING (ALSO REFERENCE SECTION 6D3)

The Generator provides voltage to operate the vehicle's electrical system and to charge its Battery. A magnetic field is created when current flows through the Rotor. This field rotates as the Rotor is driven by the Engine, creating an AC voltage in the Stator windings. The AC voltage is converted to DC by the Rectifier Bridge and is supplied to the electrical system at the Battery terminal.

The Generator's Regulator uses digital techniques to supply the Rotor current and thereby control the output voltage. The Rotor current is proportional to the width of the electrical pulses supplied by the Regulator. When the Ignition Switch is placed in "RUN," voltage is supplied to terminal "L", turning on the Regulator. Narrow width pulses are supplied to the Rotor, creating a weak magnetic field. When the Engine is started, the Regulator senses Generator rotation by detecting AC voltage at the Stator through an internal wire. Once the Engine is running, the Regulator varies the field current by controlling the pulse width. This regulates the Generator output voltage for proper Battery Charging and Electrical System Operation.

The Digital Regulator controls the Charge Indicator light with a Solid State lamp driver. The lamp driver turns "ON" the light whenever an undervoltage, overvoltage or stopped Generator is detected.

STARTER (ALSO REFERENCE SECTION 6D2)

When the Ignition Switch is moved to the "START" position, voltage is supplied to the normally open contacts of the Theft Deterrent Relay. Voltage is also supplied through, either the Transmission Position Switch (Automatic Transmission) when in "PARK" or "NEUTRAL," or Clutch Start Switch (Manual Transmission) when the clutch pedal is depressed, to the Theft Deterrent Relay Coil. The Theft Deterrent Module energizes the Theft Deterrent Relay by grounding one side of the Relay Coil only when the Theft Deterrent System has not been activated (See "Theft Deterrent System," page 8A-133-0).

When the Theft Deterrent Relay is energized, the normally open contacts close, completing the circuit to the Starter Solenoid. When the Starter Solenoid circuit is completed, both the Hold-In and Pull-In Windings are energized. The circuit through the Pull-In Winding is completed to ground through the Starter Motor. The windings work together magnetically to pull in and hold in the Plunger. The Plunger moves the Shift Lever. This action causes the Drive Assembly to rotate as it engages the Flywheel ring gear on the Engine. At the same time, the Plunger also closes the solenoid switch contacts in the Starter Solenoid. Full battery voltage is then applied directly to the Starter Motor and it cranks the Engine.

As soon as the Solenoid Switch contacts close, voltage is no longer applied to the Pull-In Winding since battery voltage is applied to both ends of the windings. The Hold-In Winding remains energized and its magnetic field is strong enough to hold the Plunger, the Shift Lever and the Drive Assembly Solenoid Switch contacts in place to continue cranking the Engine.

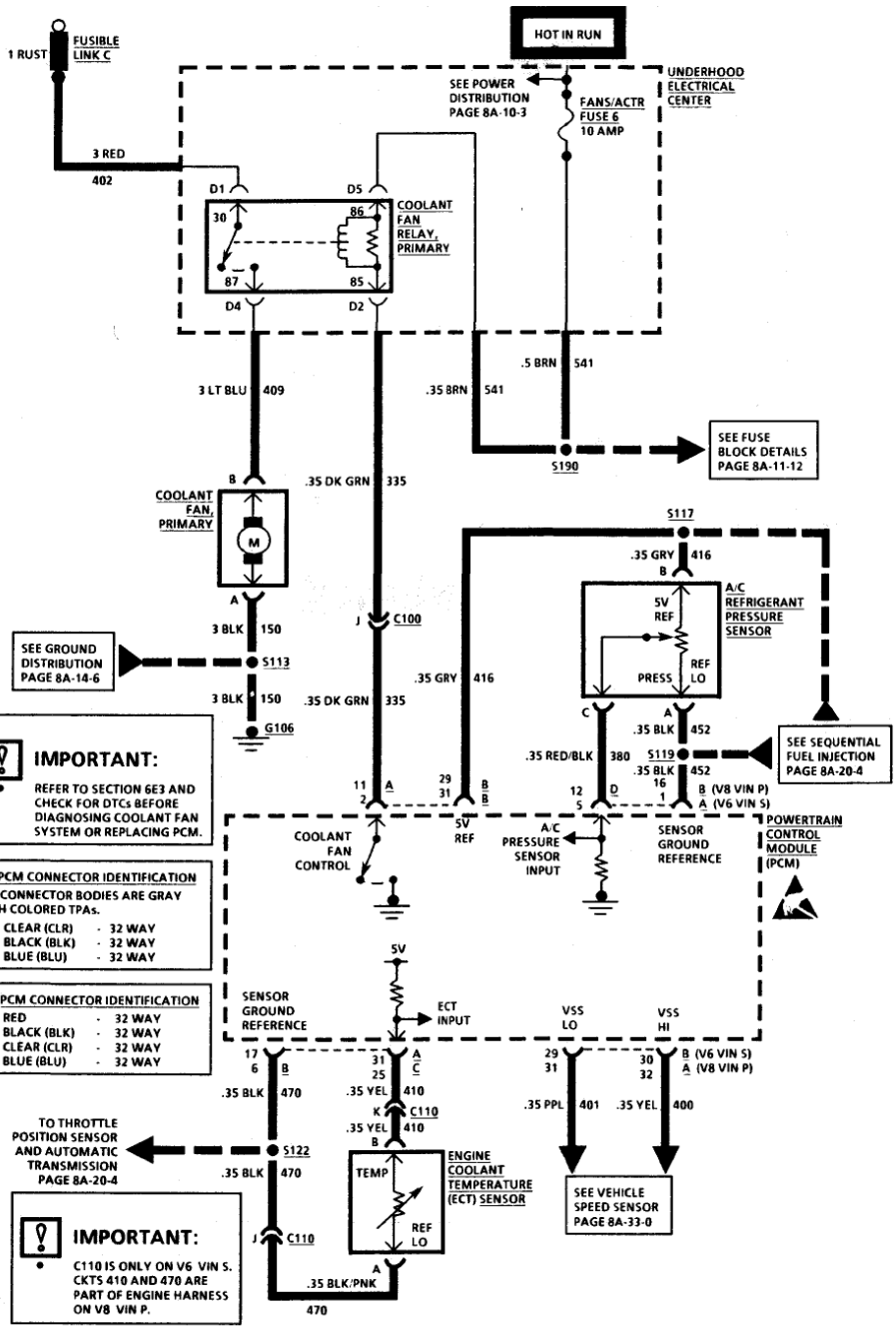
When the Ignition Switch is released from the "START" position, battery voltage is removed from the PPL wire and the junction of the two windings. Voltage is applied through the motor contacts to both windings to ground at the end of the Hold-In Windings. However, the direction of current flow through the Pull-In Winding is now opposite the direction of the current flow when the winding was first energized. The magnetic fields of the Pull-In and Hold-In Windings now oppose one another. This action of the windings, with the help of the Return Spring, causes the Drive Assembly to disengage and the Solenoid Switch contacts to open simultaneously. As soon as the contacts open, the starter circuit is turned "OFF."

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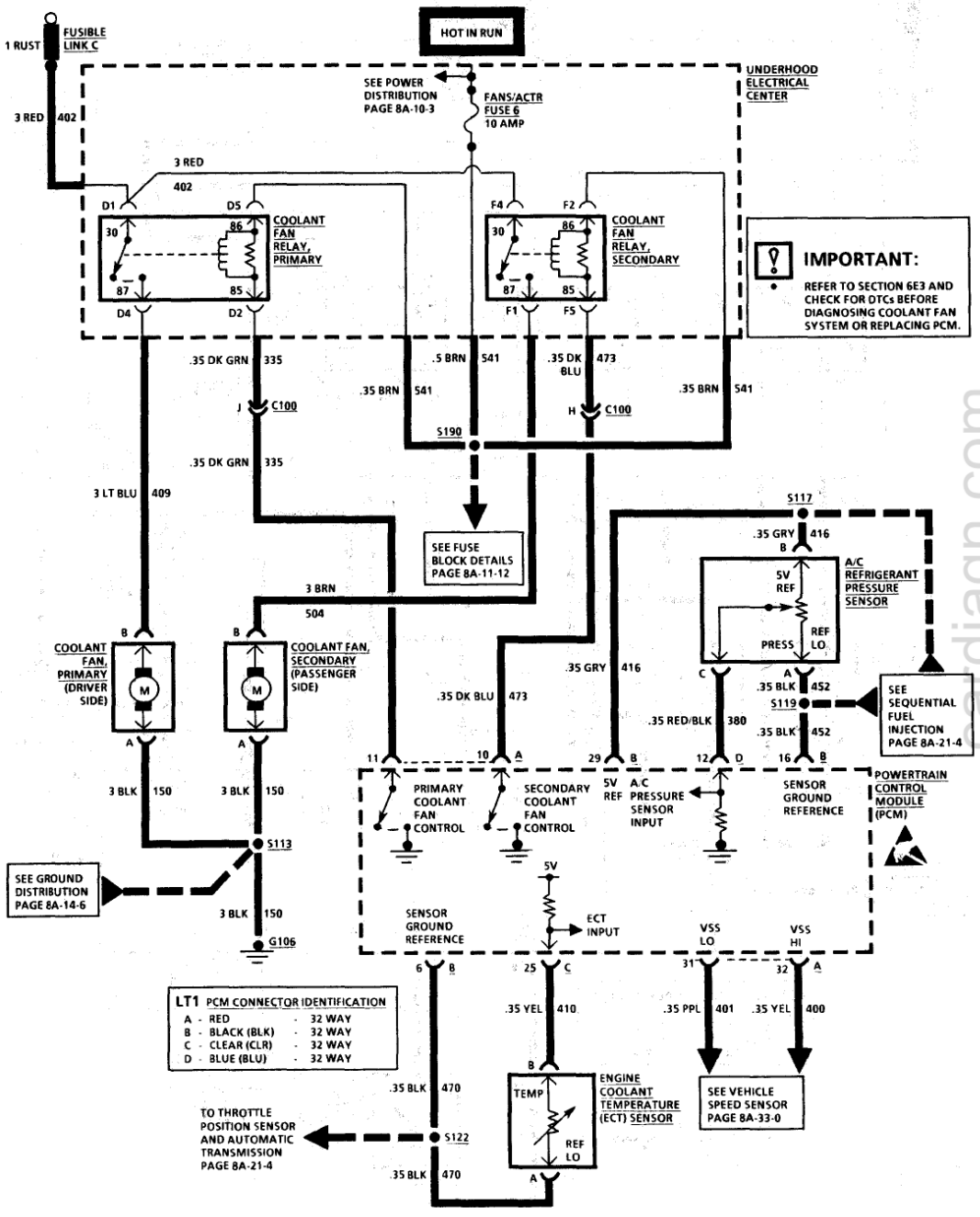
COOLANT FANS
V6 VIN S OR V8 VIN P (WITH C41)



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COOLANT FANS

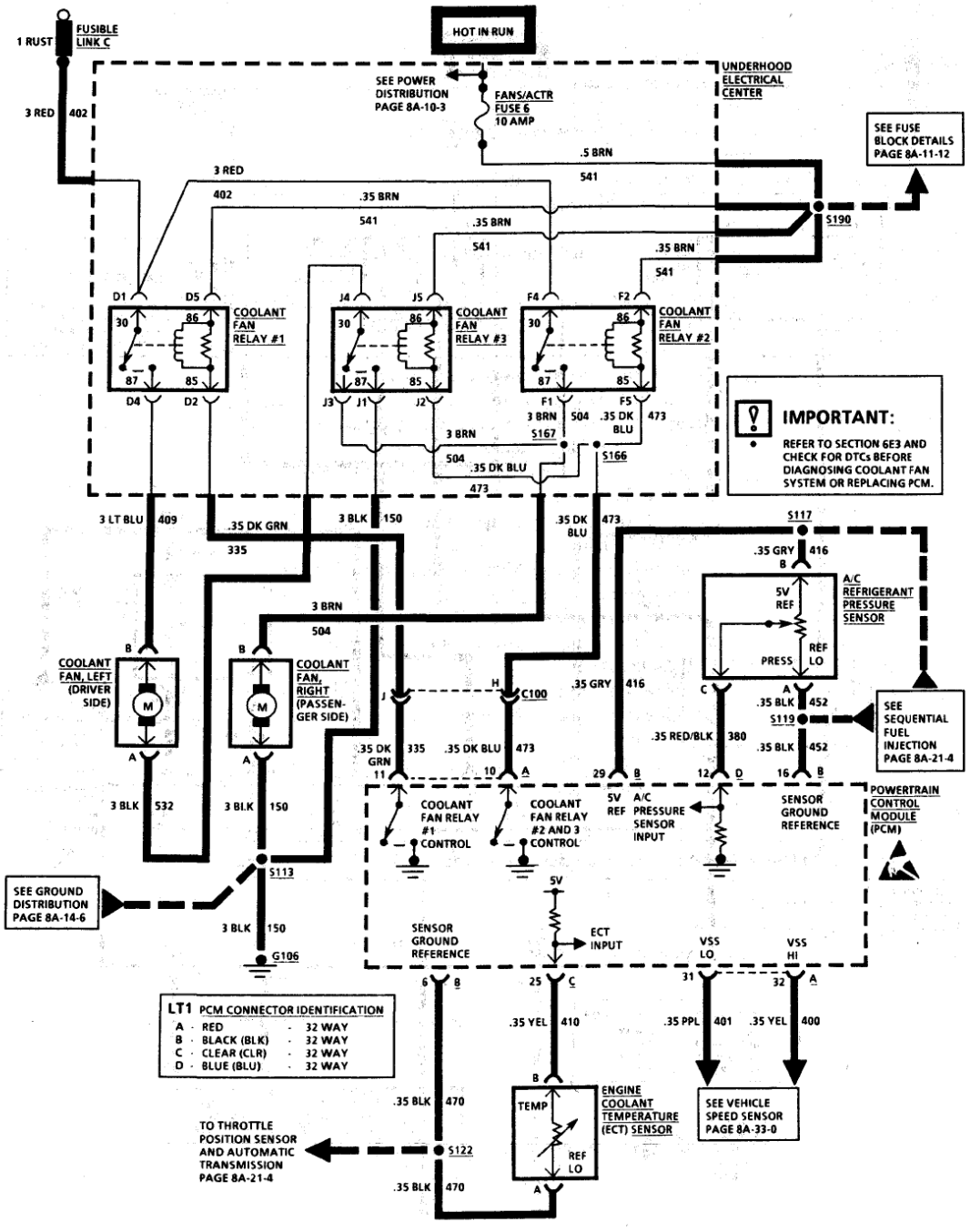
V8 VIN P (WITH C60) EARLY PRODUCTION VEHICLES



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COOLANT FANS

V8 VIN P (WITH C60) ALL OTHER VEHICLES



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COOLANT FANS

COMPONENT	LOCATION	201-PG	FIG.	CONN
A/C Refrigerant Pressure Sensor	Above RH Shock Tower	19	35	
Coolant Fans	Behind radiator			
Engine Coolant Temperature (ECT) Sensor (V6 VIN S)	Mounted in front top of Engine, under plenum			
Engine Coolant Temperature (ECT) Sensor (V8 VIN P)	Front of Engine, mounted in water pump	24	45	
Fusible Links	Above RH Shock Tower	10	19	
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C100 (10 cavities)	Engine to Forward Lamp Harn, behind LH wheelhouse, attached to PCM bracket	15	28	202-0
C110 (10 cavities) (L32)	Engine to Injector Harn, top center of Intake Manifold	12	22	202-1
G106	Near top LH side of radiator, in top of T-Bar	19	35	
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			
S117 (L32)	Engine Harn, approx 5 cm from main branch and PCM breakout			
S117 (LT1)	Engine Harn, approx 5 cm from clip near PCM and main branch			
S119 (L32)	Engine Harn, at RH Oxygen Sensor breakout	12	23	
S119 (LT1)	Engine Harn, approx 18 cm from main branch and PCM breakout			
S122 (L32)	Engine Harn, approx 4 cm from MAP Sensor breakout	12	23	
S122 (LT1)	Engine Harn, approx 25 cm from main branch and PCM breakout			
S190	Forward Lamp Harn, approx 8 cm from Electrical Center breakout	36	68	

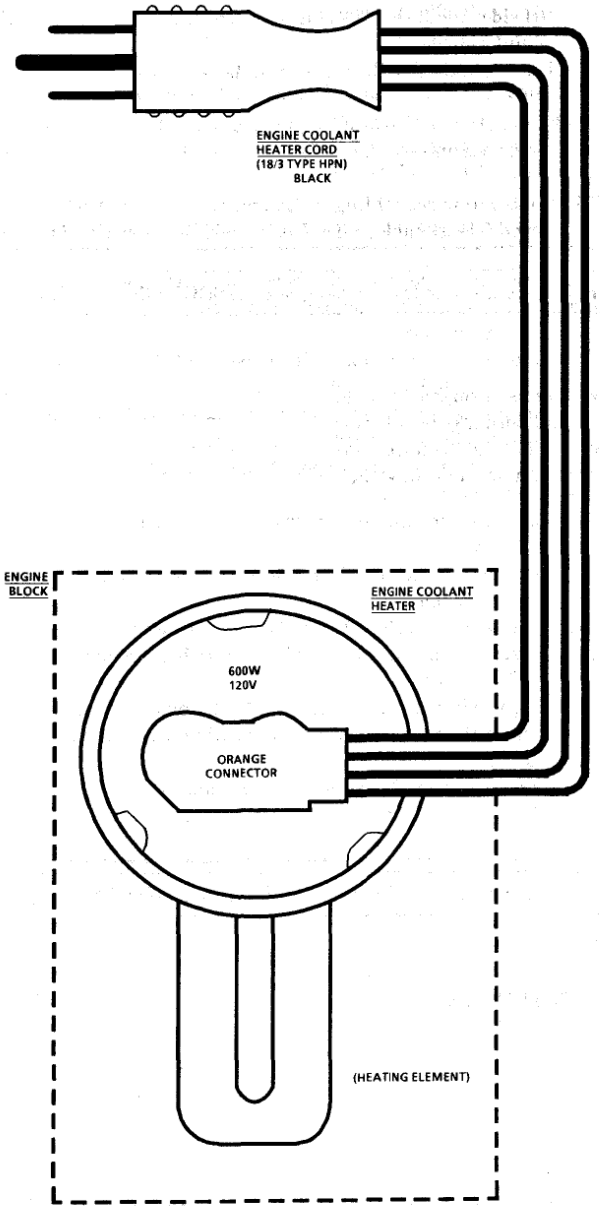
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

- For Diagnosis, refer to SECTION 6E3.

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ENGINE COOLANT HEATER: (K05)



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COMPONENT	LOCATION	201-PG	FIG.	CONN
Engine Coolant Heater (V6 VIN S)	RH side, middle bottom of Engine, in block	28	54	
Engine Coolant Heater (V8 VIN P)	LH side of Engine Block, near Oil Level Sensor			
Engine Coolant Heater Cord (V6 VIN S)	Routed from RH side of Engine to positive Battery cable, strapped on	19	35	
Engine Coolant Heater Cord (V8 VIN P)	Routed from rear of Engine Compartment, strapped to hood release cable, near Underhood Electrical Center	19	36	

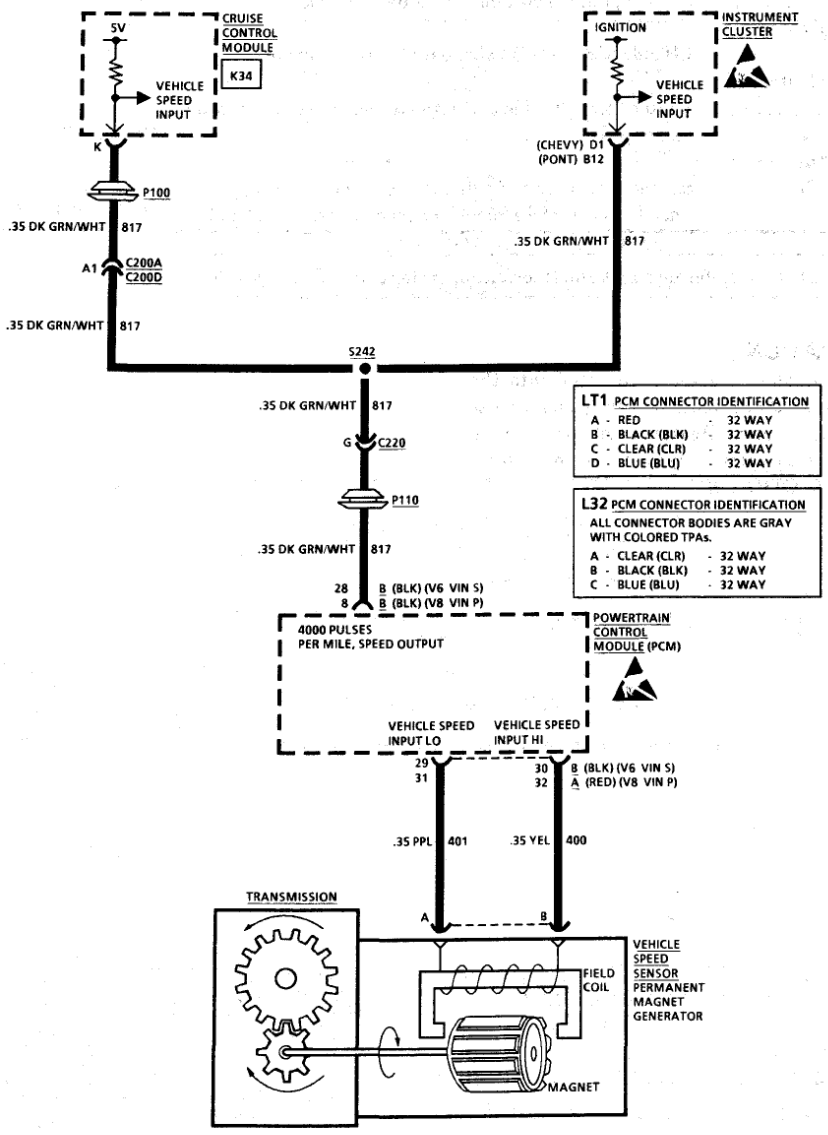
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

CIRCUIT OPERATION

The Engine Coolant Heater is inserted into the Engine Block where there would normally be a Freeze Plug. The Engine Coolant Heater is not connected to the vehicle's 12 volt electrical system. For on-vehicle Service, refer to SECTION 9E.

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VEHICLE SPEED SENSOR



LT1 PCM CONNECTOR IDENTIFICATION

A - RED	-	32 WAY
B - BLACK (BLK)	-	32 WAY
C - CLEAR (CLR)	-	32 WAY
D - BLUE (BLU)	-	32 WAY

L32 PCM CONNECTOR IDENTIFICATION

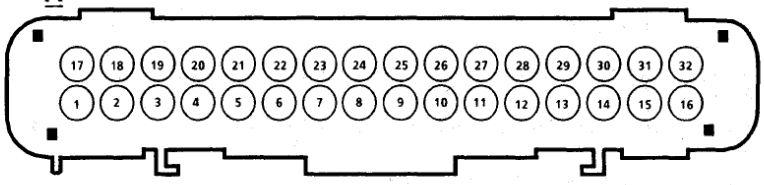
ALL CONNECTOR BODIES ARE GRAY WITH COLORED TPAs.

A - CLEAR (CLR)	-	32 WAY
B - BLACK (BLK)	-	32 WAY
C - BLUE (BLU)	-	32 WAY

SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES

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A

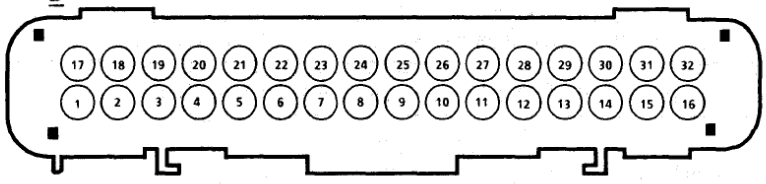


12129025

32-WAY F MICRO-PACK 100 SERIES
NAT
POWERTRAIN CONTROL MODULE (PCM) (V8 VIN P)

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129022 (CLR)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

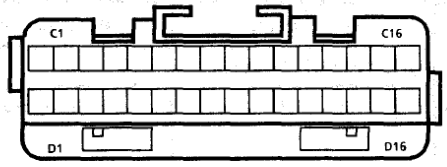
B



12129025

32-WAY F MICRO-PACK 100 SERIES
NAT
POWERTRAIN CONTROL MODULE (PCM) (V6 VIN S)

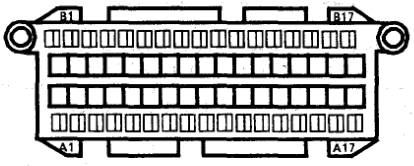
CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129021 (BLK)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025



12045575

32-WAY F MICRO-PACK 100 SERIES
BLK

INSTRUMENT CLUSTER (CHEVY)



12065803

34-WAY F MICRO-PACK 100 SERIES
BLK

INSTRUMENT CLUSTER (PONT)

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VEHICLE SPEED SENSOR

COMPONENT	LOCATION	201-PG	FIG.	CONN
Cruise Control Module	Front LH side of vehicle, mounted to frame rail, forward of wheelhouse	19	36	202-11
Instrument Cluster	LH side of I/P			202-23
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Vehicle Speed Sensor (M30 Automatic)	Rear LH side of Transmission			
Vehicle Speed Sensor (M49 or MM6 Manual)	Rear LH side of Transmission	16, 26	30, 51	
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S242	I/P Harn, approx 26 cm from Instrument Cluster Conn			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

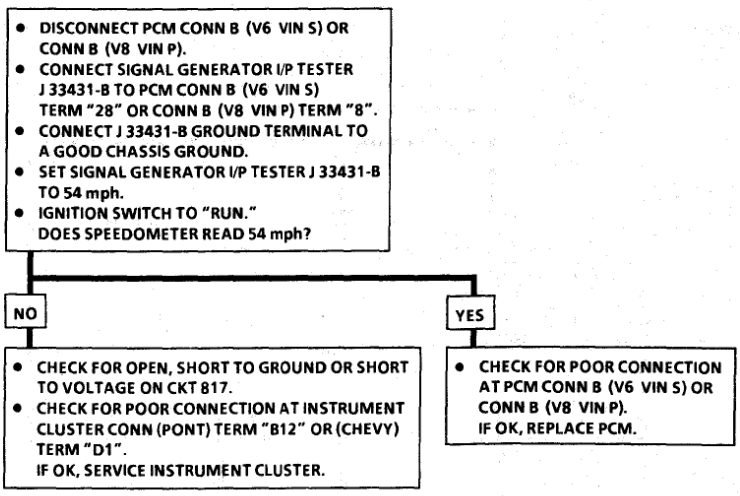
- Refer to the Symptom Table for the appropriate diagnostic procedures.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Speedometer inoperative. DTC 24 set.	Refer to SECTION 6E3.	
Speedometer and Cruise Control inoperative; DTC 24 not set.	Chart #1	8A-33-3
Speedometer inoperative. DTC 24 not set. Cruise Control operates.	Check for open in CKT 817 between S242 and Instrument Cluster Connector. Also check for poor connection at terminal "B12". If OK, service Instrument Cluster.	

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CHART #1
SPEEDOMETER AND CRUISE CONTROL INOPERATIVE; CODE 24 NOT SET

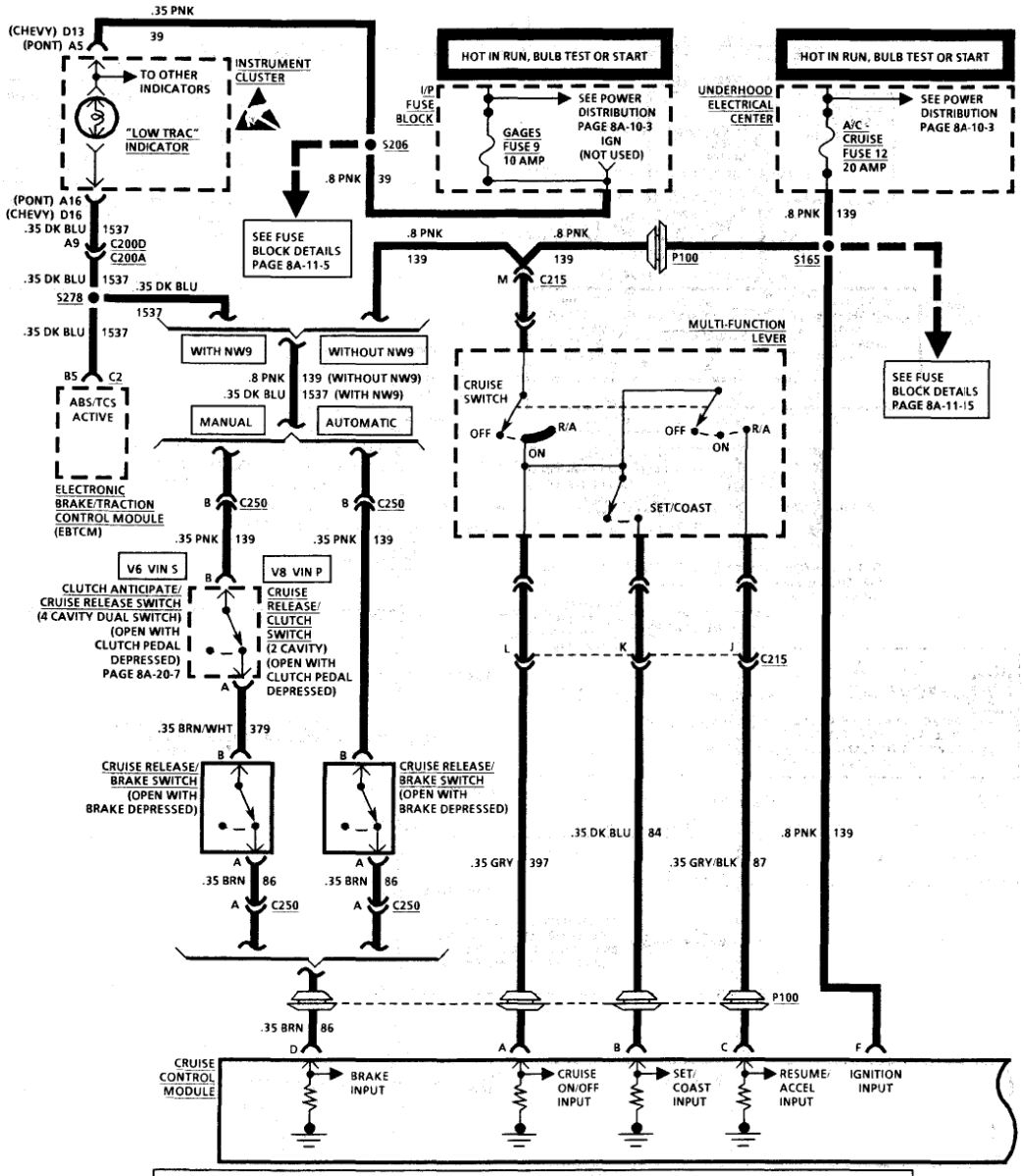


CIRCUIT OPERATION

The Vehicle Speed Sensor is a gear-driven Permanent Magnet Generator housed in the vehicle's Transaxle. This sensor generates a sine wave output with a frequency proportional to vehicle speed. The PCM converts this signal to an output that is switched to ground at a frequency of 4000 pulses per mile at the DK GRN/WHT wire (CKT 817), which feeds the Instrument Cluster and Cruise Control Module.

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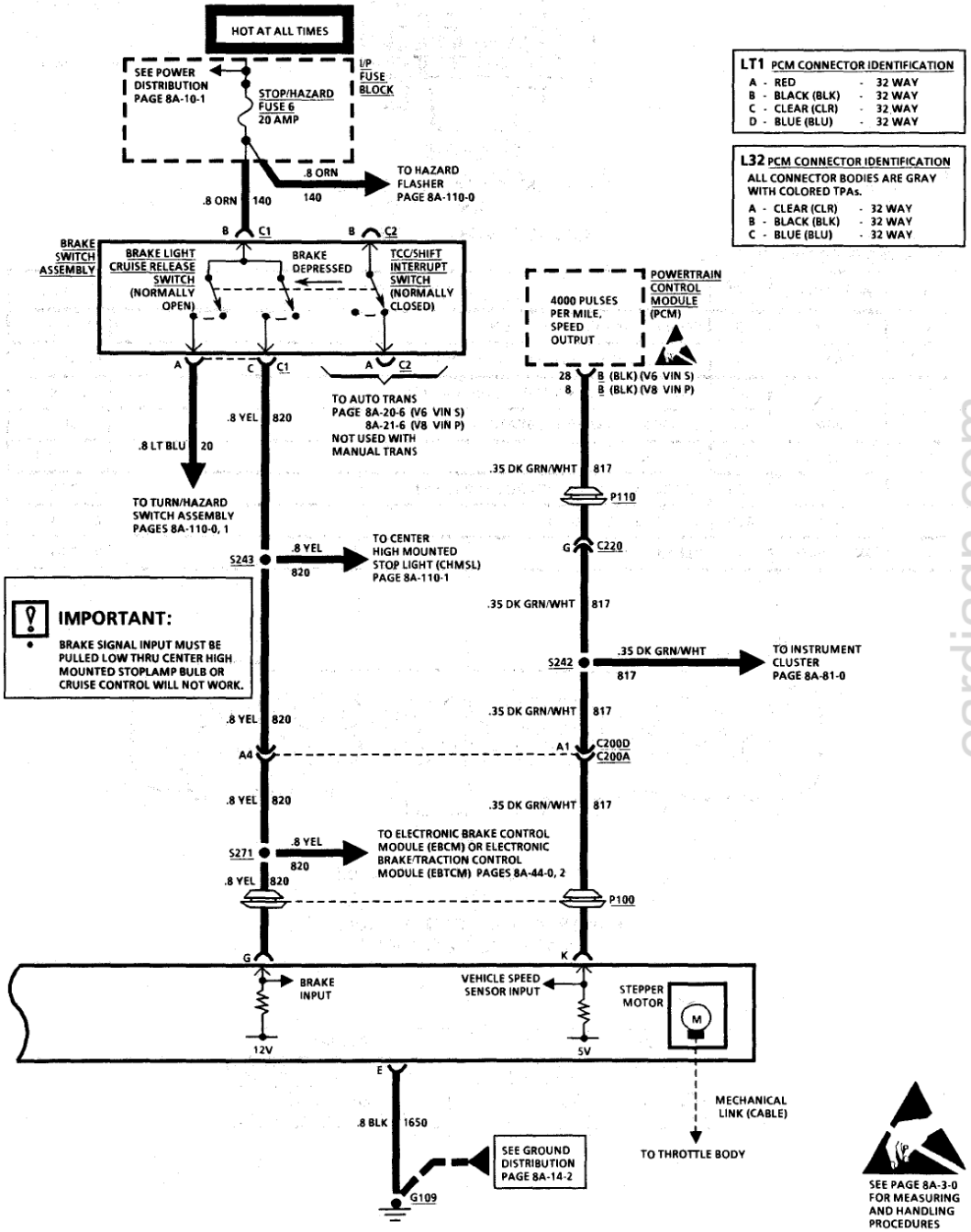
CRUISE CONTROL (K34)



IMPORTANT:

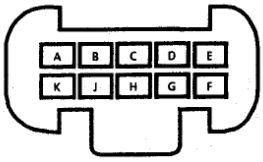
- THE "SET TO GET CRUISE" FEATURE REQUIRES THE OPERATOR TO SET AN INITIAL SPEED BY USING THE "SET/COAST" BUTTON BEFORE THE "RESUME/ACCEL" SLIDER SWITCH WOULD BE ACTIVE.
- THE "BRAKE BEFORE CRUISE" FEATURE REQUIRES THE CRUISE MODULE TO SEE BRAKE INPUT AT TERMINAL "D" TO CHANGE STATES ONCE EACH IGNITION CYCLE BEFORE ALLOWING CRUISE TO OPERATE. (LATER PRODUCTION VEHICLES REQUIRE BRAKE INPUT AT EITHER TERMINAL "D" or "G").

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CRUISE CONTROL (K34)



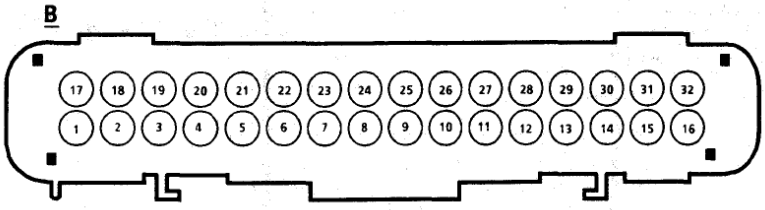
12065425

10-WAY F METRI-PACK 150 SERIES
BLK

CRUISE CONTROL MODULE

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	GRY	397	CRUISE CONTROL SWITCH - ON	8A-34-0
B	DK BLU	84	CRUISE CONTROL SWITCH - SET/COAST	8A-34-0
C	GRY/BLK	87	CRUISE CONTROL SWITCH - RESUME/ACCEL	8A-34-0
D	BRN	86	CRUISE RELEASE/BRAKE SWITCH OUTPUT	8A-34-0
E	BLK	1650	GROUND	8A-14-0, 2
F	PNK	139	POWER FEED FROM A/C-CRUISE FUSE #12	8A-34-0
G	YEL	820	BRAKE DEPRESSED INPUT	8A-34-1
K	DK GRN/WHT	817	VEHICLE SPEED SIGNAL	8A-34-1



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32-WAY F MICRO-PACK 100 SERIES
NAT

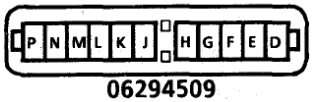
POWERTRAIN CONTROL MODULE
(V6 VIN S) AND (V8 VIN P)

V6 VIN S	
CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129021 (BLK)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

V8 VIN P	
CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129021 (BLK)
SEAL	- 12146093
STRAIN RELIEF	- 12129028
CONNECTOR	- 12129025

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C215



FORWARD LAMP HARNESS TO STEERING COLUMN HARNESS

06294509

11-WAY F PACK-CON I

BLK

COMPONENT	LOCATION	201-PG	FIG.	CONN
Brake Switch Assembly	Mounted in lower hole of brake pedal bracket (2 conn with Automatic), (1 conn with Manual) same switch for both	0	1	
Clutch Anticipate/ Cruise Release Switch (all V6 Manual)	Mounted in clutch pedal bracket (4 cavity conn)	0	1	202-20
Cruise Control Module	Front LH side of vehicle, mounted to frame rail, forward of wheelhouse	19	36	202-11
Cruise Release/Brake Switch (all with K34)	Mounted in upper hole of brake pedal bracket (2 cavity conn)	0	1	
Cruise Release/Clutch Switch (V8 Manual with K34)	Mounted in clutch pedal bracket (2 cavity conn)	0	1	
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Instrument Cluster	LH side of I/P			202-23
Multi-Function Lever	Left Arm on Steering Column	27	53	
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C215 (11 cavities)	Near base of Steering Column	35	64	202-4
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
C250 (2 cavities)	Forward Lamp Harn to Clutch Jumper Harn or Switch, near brake/clutch pedal bracket	0, 1	1, 2	
G109	Bolted to left front frame rail (2 rings,1 wire and braided strap)	11	21	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S165	Forward Lamp Harn, approx 7 cm from Electrical Center breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S242	I/P Harn, approx 26 cm from Instrument Cluster Conn			
S243	I/P Harn, approx 14 cm from Fuel Pump Relay breakout	7	13	
S271	Forward Lamp Harn, approx 19 cm from breakout inboard of P100	8	14	
S278	Forward Lamp Harn, approx 9 cm from EBCM breakout			

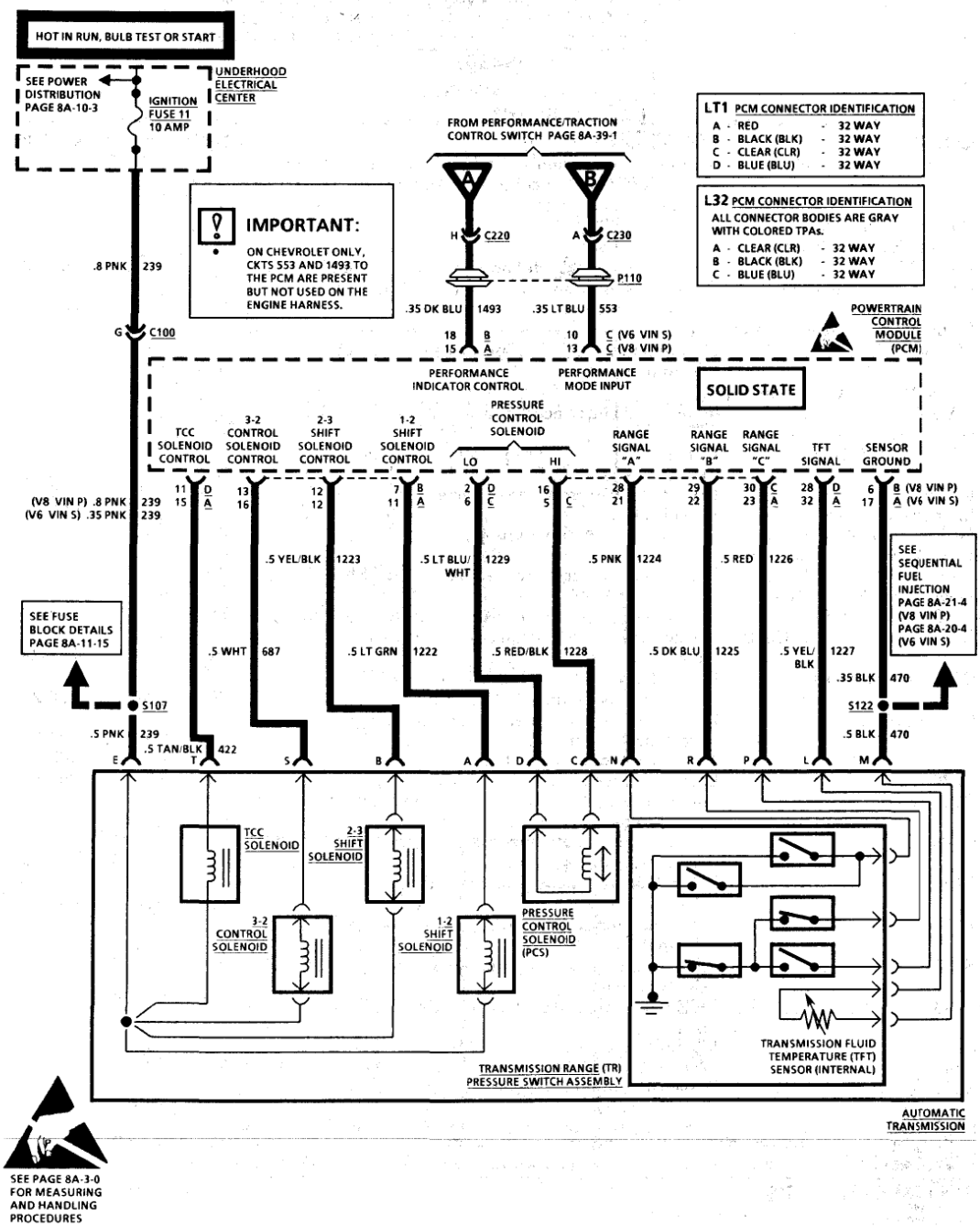
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

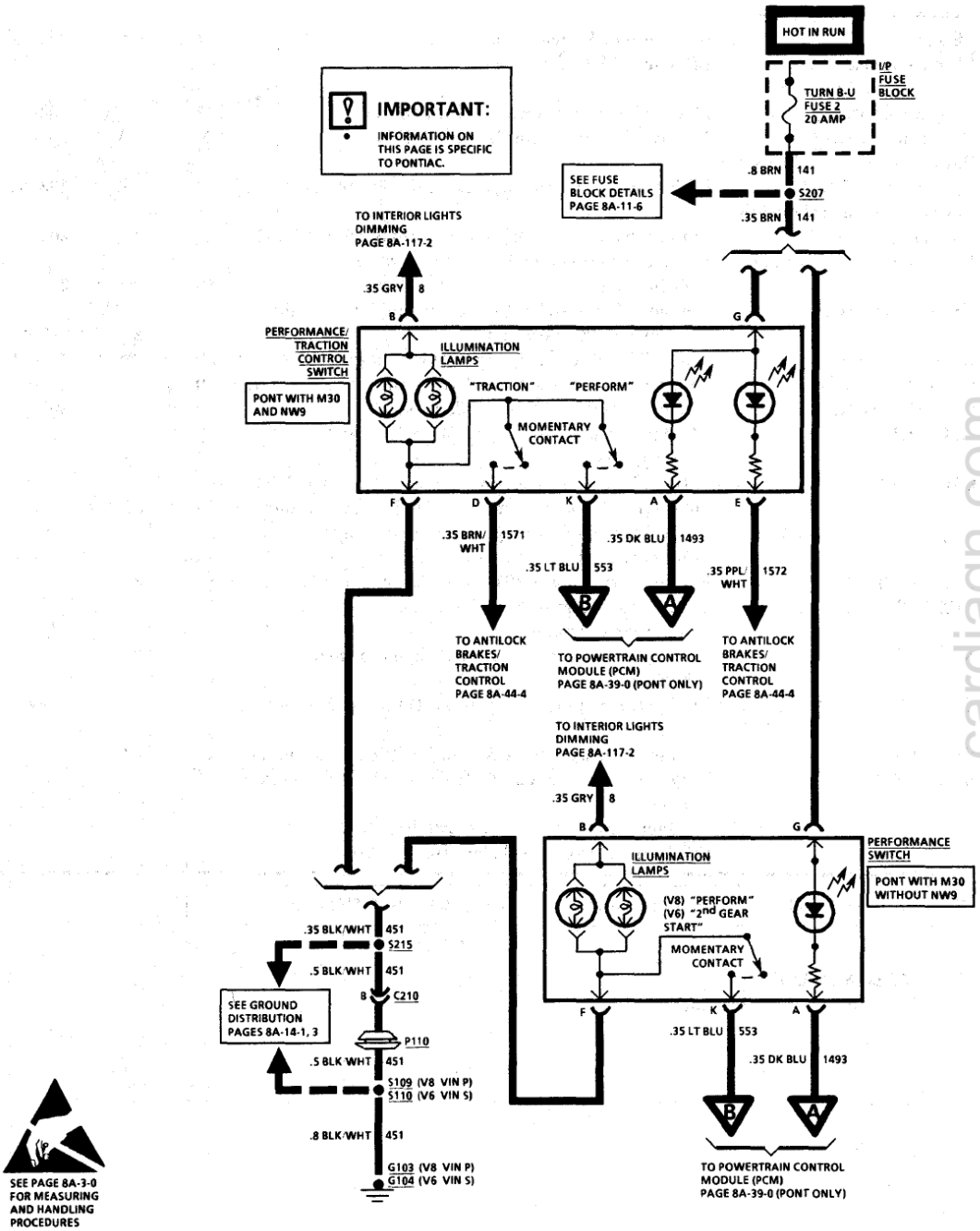
- For Diagnosis, refer to SECTION 9B.

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ELECTRONIC TRANSMISSION CONTROLS



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ELECTRONIC TRANSMISSION CONTROLS

COMPONENT	LOCATION	201-PG	FIG.	CONN
Automatic Transmission Conn	RH center of Transmission	41	73	202-10
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Performance/Traction Control Switch	Mounted in center console behind shifter	42	79	202-24
Performance Switch	Mounted in center console behind shifter			202-24
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C100 (10 cavities)	Engine to Forward Lamp Harn, behind LH wheelhouse, attached to PCM bracket	15	28	202-0
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S107 (L32)	Engine Harn, approx 30 cm from C110 breakout	12	22	
S107 (LT1)	Engine Harn, approx 7 cm from main breakout at right rear of Engine			
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S122 (L32)	Engine Harn, approx 4 cm from MAP Sensor breakout	12	23	
S122 (LT1)	Engine Harn, approx 25 cm from main branch and PCM breakout			
S207	I/P Harn, approx 4 cm before DLC breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

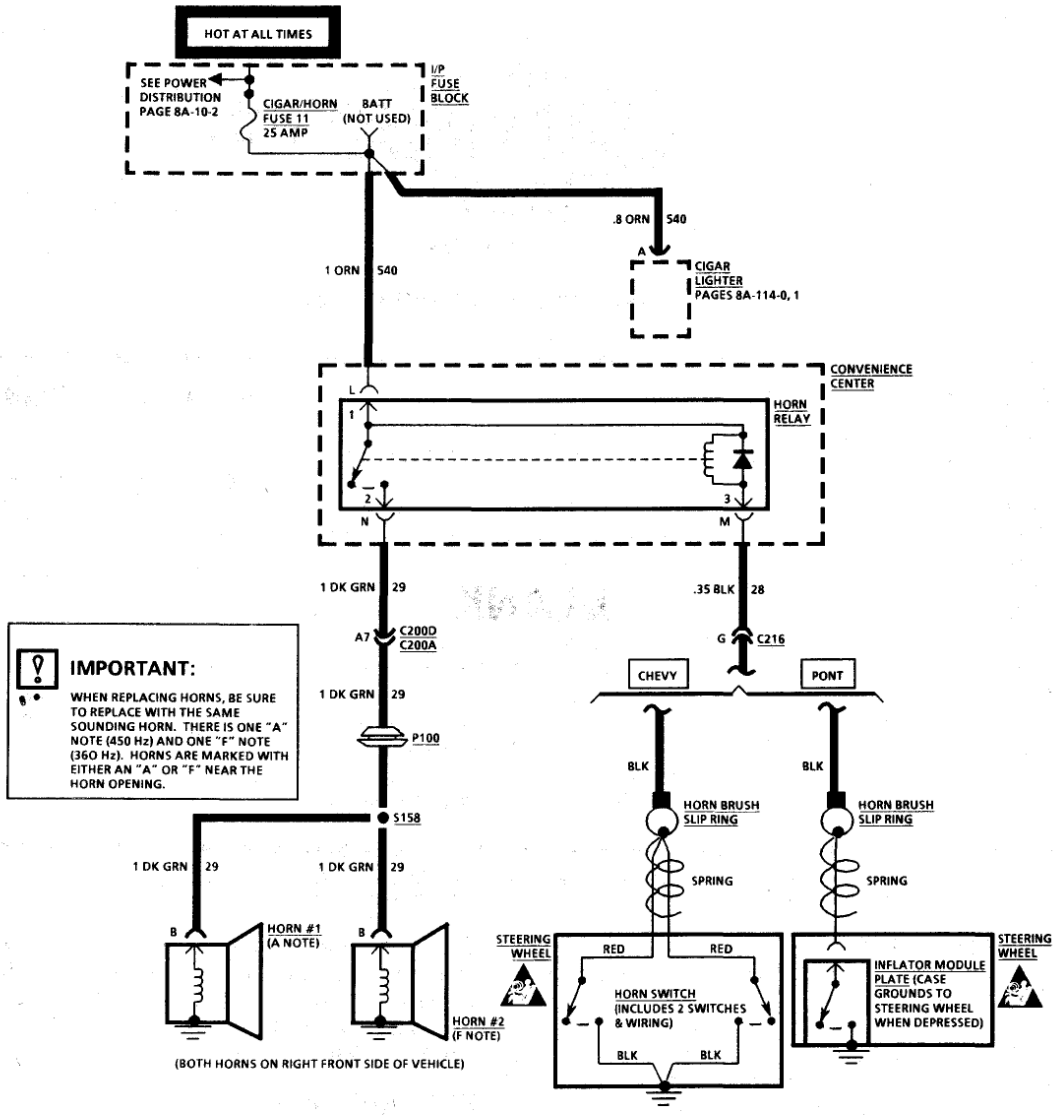
- Refer to SECTION 6E3 for diagnosis.

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HORNS



IMPORTANT:

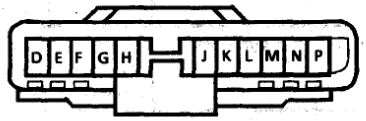
WHEN REPLACING HORNS, BE SURE TO REPLACE WITH THE SAME SOUNDING HORN. THERE IS ONE "A" NOTE (450 Hz) AND ONE "F" NOTE (360 Hz). HORNS ARE MARKED WITH EITHER AN "A" OR "F" NEAR THE HORN OPENING.

SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

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C216



F – CONN
M – TERM

12004147

11-WAY F PACK-CON I
BLK

I/P HARNESS TO STEERING COLUMN HARNESS

COMPONENT	LOCATION	201-PG	FIG.	CONN
Cigar Lighter	Mounted on front of console	43	81	
Convenience Center	Left of Steering Column, mounted to bottom of I/P Carrier	8	15	202-20
Horn #1 (A note)	RH side, front of vehicle directly below Headlamps	19	35	
Horn #2 (F note)	RH side, front of vehicle directly below Headlamps	19	35	
Horn Switch	In Steering Wheel	2	3	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C216 (11 cavities)	Attached to base of Steering Column	34	63	202-5
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S158	Forward Lamp Harn, approx 7 cm from breakout on horn branch			

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For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check Fuse 7. An accessory plugged into the Cigar Lighter may have caused an overload.
- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

HORNS

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Horns inoperative from switch(es).	Chart #1	8A-40-2
Horns inoperative from one switch only (Chevrolet).	Check for open in BLK or RED wire leading to inoperative switch. If OK, replace Horn Switch as necessary.	
One Horn inoperative.	Remove connector from inoperative Horn. Attach one end of a fused jumper to B +. Momentarily touch the other end to the Horn. If the Horn sounds, repair open in CKT 29. If the Horn does not sound, check the Horn for a clean and tight ground at its case. If OK, replace Horn.	
Horns "ON" at all times.	Chart #2	8A-40-3

CHART #1
HORNS INOPERATIVE FROM SWITCH(ES)

- CHECK FUSE 7. IS FUSE 7 OPEN?

NO

- REMOVE HORN RELAY.
- CONNECT A TEST LIGHT FROM CONVENIENCE CENTER TERM "L" TO GROUND. DID TEST LIGHT COME "ON"?

YES

- CONNECT A TEST LIGHT FROM THE CONVENIENCE CENTER TERM "L" TO TERM "M".
- PRESS HORN SWITCH. DID TEST LIGHT COME "ON"?

YES

- RECONNECT HORN RELAY.
- BACKPROBE CONVENIENCE CENTER TERM "N" WITH A TEST LIGHT TO GROUND.
- PRESS HORN SWITCH. DID TEST LIGHT COME "ON"?

(A) (CONTINUED ON NEXT PAGE)

NO

- DISCONNECT C216.
- CONNECT A TEST LIGHT FROM CONVENIENCE CENTER TERM "L" TO C216 TERM "G" (STEERING COLUMN SIDE).
- PRESS HORN SWITCH. DID TEST LIGHT COME "ON"?

YES

REPAIR OPEN IN CKT 28 BETWEEN C216 AND HORN RELAY.

NO

- CHECK FOR OPEN IN BLK WIRES ATTACHED TO HORN BRUSH SLIP RING AND FOR CONTACT AT THE SLIP RING, OR CHECK FOR CLEAN AND TIGHT GROUND AT CASE OF HORN SWITCHES (CHEVY) OR CONNECTION AT INFLATOR MODULE (PONT). IF OK, REPLACE HORN SWITCH(ES) AS NECESSARY.

YES

- REMOVE HORN RELAY.
- CONNECT A TEST LIGHT FROM CONVENIENCE CENTER TERM "L" TO GROUND. DID TEST LIGHT COME "ON"?

NO

- CHECK FOR A SHORT TO GROUND THROUGH CKT 540 OR CKT 29, REPAIR AS NECESSARY. IT IS POSSIBLE THAT AN ACCESSORY PLUGGED INTO THE CIGAR LIGHTER MAY HAVE CAUSED THE OVERLOAD.
- REPLACE FUSE 7.

NO

REPAIR OPEN IN CKT 540 OR POWER FEED TO FUSE 7.

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CHART #1 (continued)
HORNS INOPERATIVE FROM BOTH SWITCHES

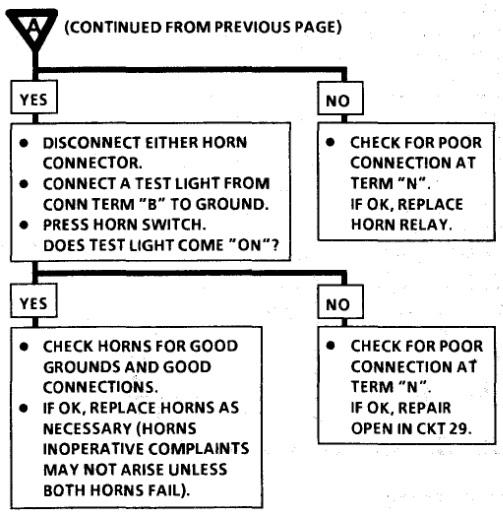
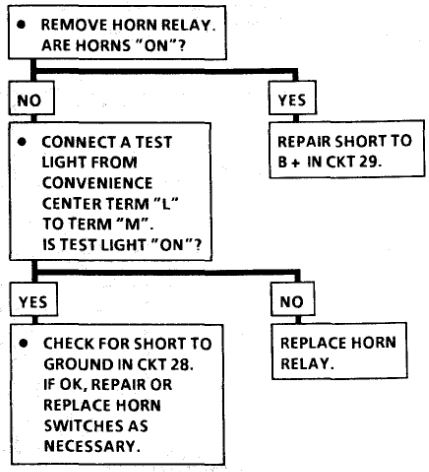


CHART #2
HORNS "ON" AT ALL TIMES



CIRCUIT OPERATION

CHEVROLET

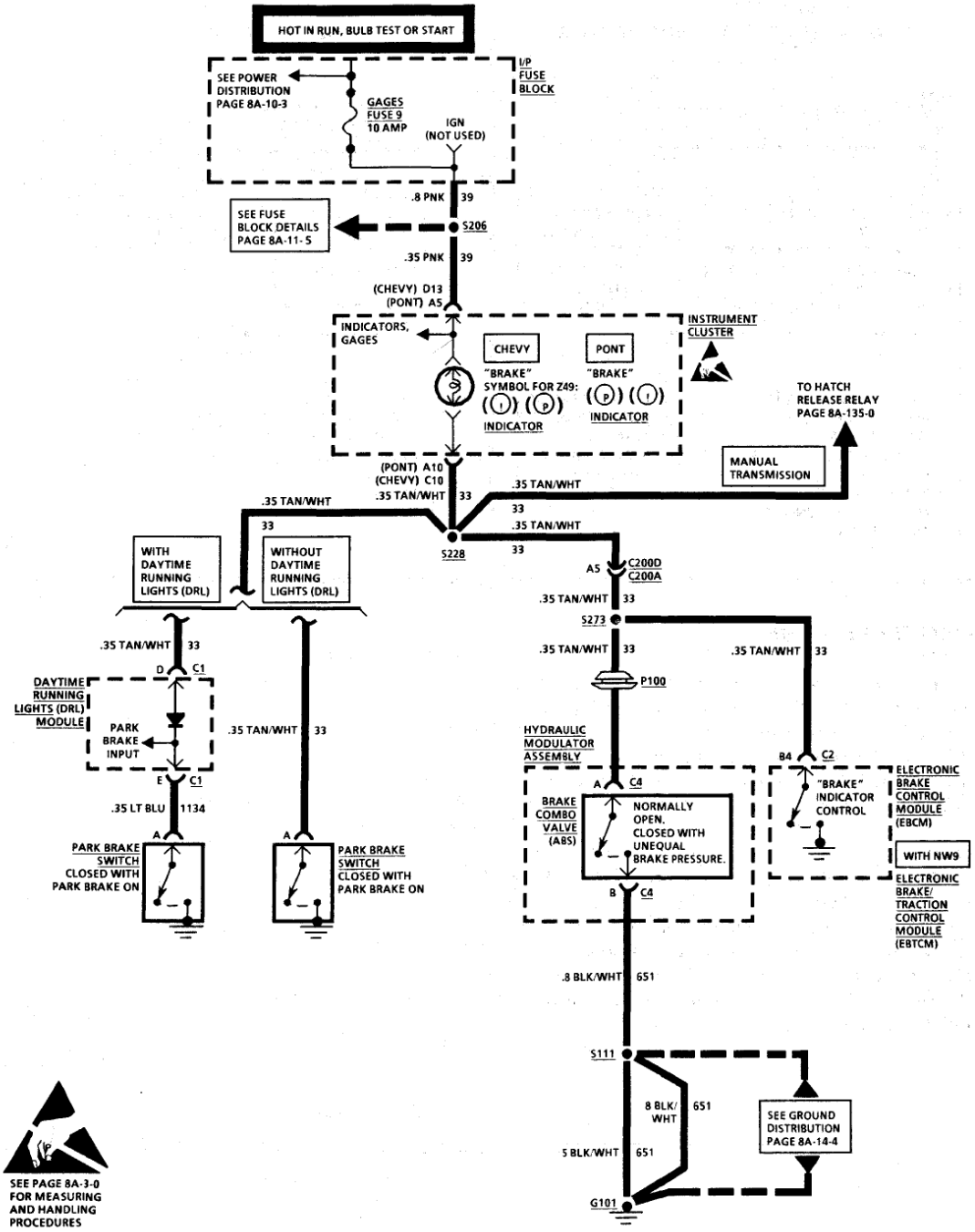
Battery voltage is applied at all times to the Horn Relay at terminal "L". When a Horn Switch is pressed, it provides a ground to the Horn Relay Coil. The Horn Relay contacts close, applying battery voltage to the horns. The horns continue to sound until the Horn Switch is released.

PONTIAC

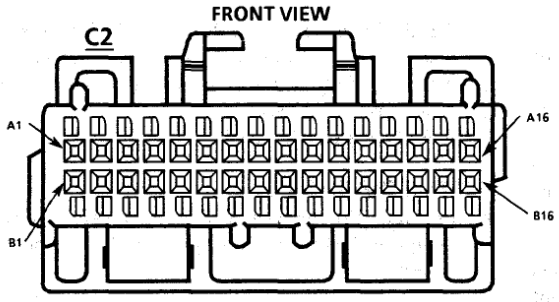
Battery voltage is applied at all times to the Horn Relay at terminal "L". A ground path is provided through a spring loaded plate to energize the Horn Relay, whenever the Inflator Module is pressed. The Horn Relay contacts close, applying battery voltage to the horns. The horns continue to sound until the Inflator Module is released.

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BRAKE WARNING SYSTEM



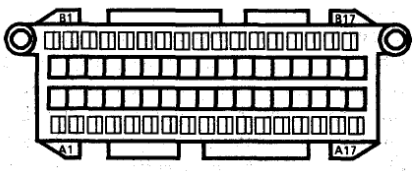
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32-WAY F MICRO-PACK 100 SERIES
DK RED

ELECTRONIC BRAKE CONTROL MODULE (EBCM)
OR
ELECTRONIC BRAKE/TRACTION CONTROL MODULE (EBTCM)



12065803

34-WAY F MICRO-PACK 100 SERIES
BLK

INSTRUMENT CLUSTER

COMPONENT	LOCATION	201-PG	FIG.	CONN
Brake Combo Valve (ABS)	Part of Hydraulic Modulator Assembly, inward side	39	68	
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Electronic Brake Control Module (EBCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Hydraulic Modulator Assembly	Front left of Engine Compartment	39	68	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Instrument Cluster	LH side of I/P			202-23
Park Brake Switch	In console, at base of Park Brake Lever	43	81	
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G101	Top of RH Shock Tower (3 rings, 5 wires)	10	19	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S111	Forward Lamp Harn, approx 3 cm from Wiper Motor Assembly breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S228	I/P Harn, approx 15 cm before DLC breakout			
S273	Forward Lamp Harn, approx 25 cm from breakout inboard of P100	8	14	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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BRAKE WARNING SYSTEM

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check for Antilock Brake or Traction Control DTC(s).
- Check for an open GAGES Fuse 9.
- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedures.

SYSTEM CHECK

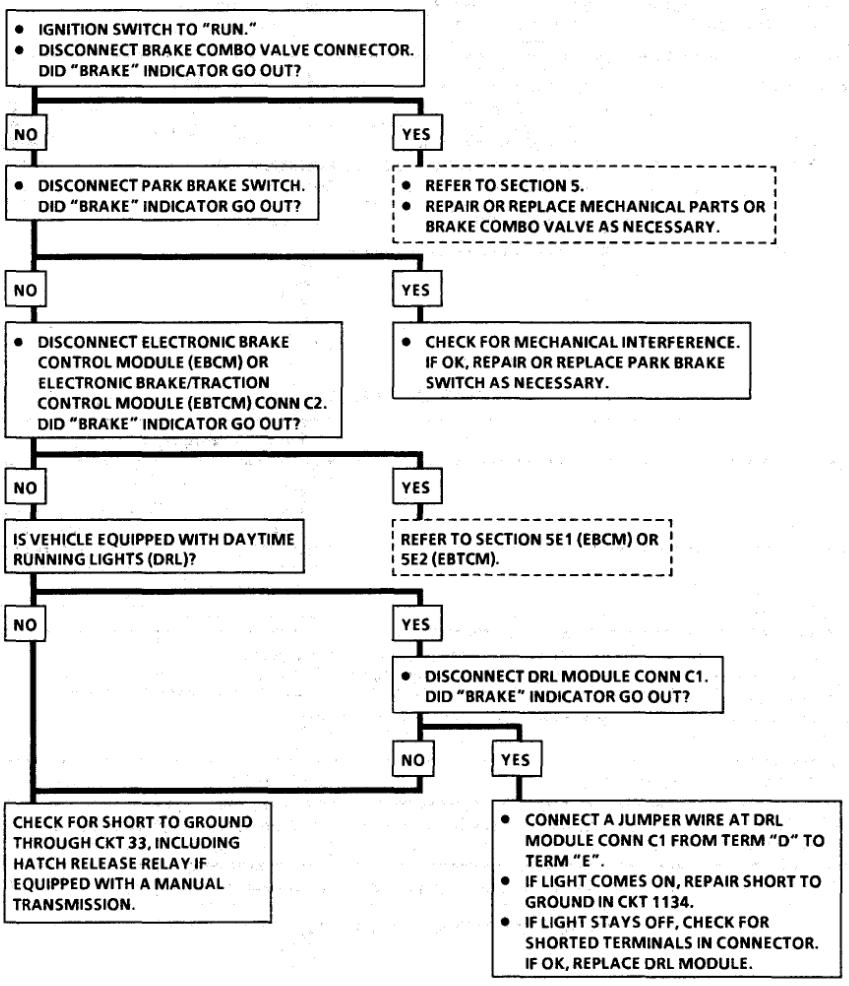
ACTION	NORMAL RESULTS
[1] • Park Brake released. • Turn Ignition Switch to "RUN" position.	"BRAKE" Indicator lights for approximately 3 seconds then goes "OFF."
[2] • Ignition Switch in "RUN." • Apply Park Brake.	"BRAKE" Indicator lights.
[3] • Release Park Brake.	"BRAKE" Indicator does not light.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
"BRAKE" Indicator remains on with Ignition Switch in "RUN" and Park Brake released.	Chart #1	8A-41-3
"BRAKE" Indicator does not turn on for only one condition.	Chart #2	8A-41-4

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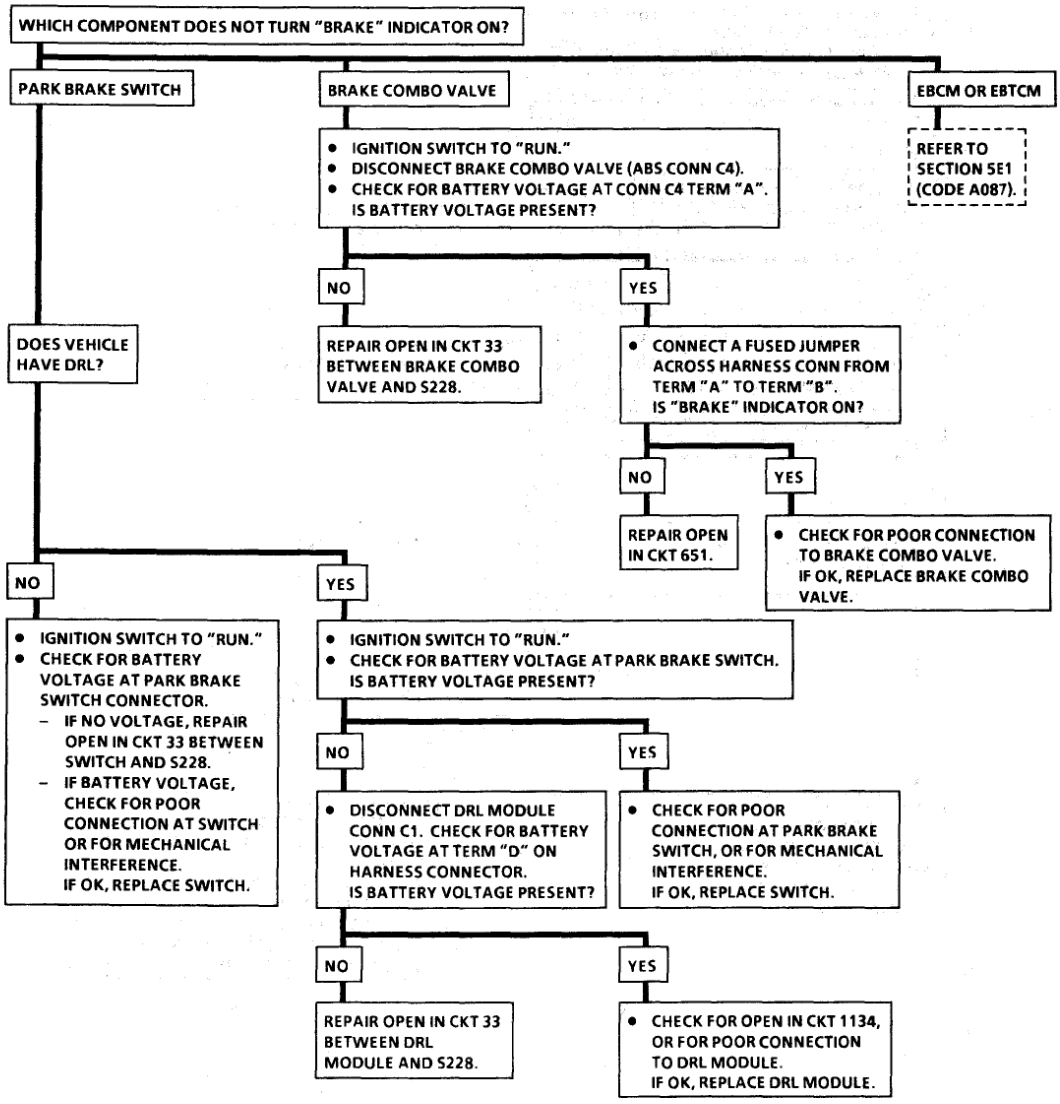
CHART #1
"BRAKE" INDICATOR REMAINS ON WITH IGNITION SWITCH IN "RUN" AND PARK BRAKE RELEASED



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BRAKE WARNING SYSTEM

CHART #2
"BRAKE" INDICATOR DOES NOT TURN ON FOR ONLY ONE CONDITION



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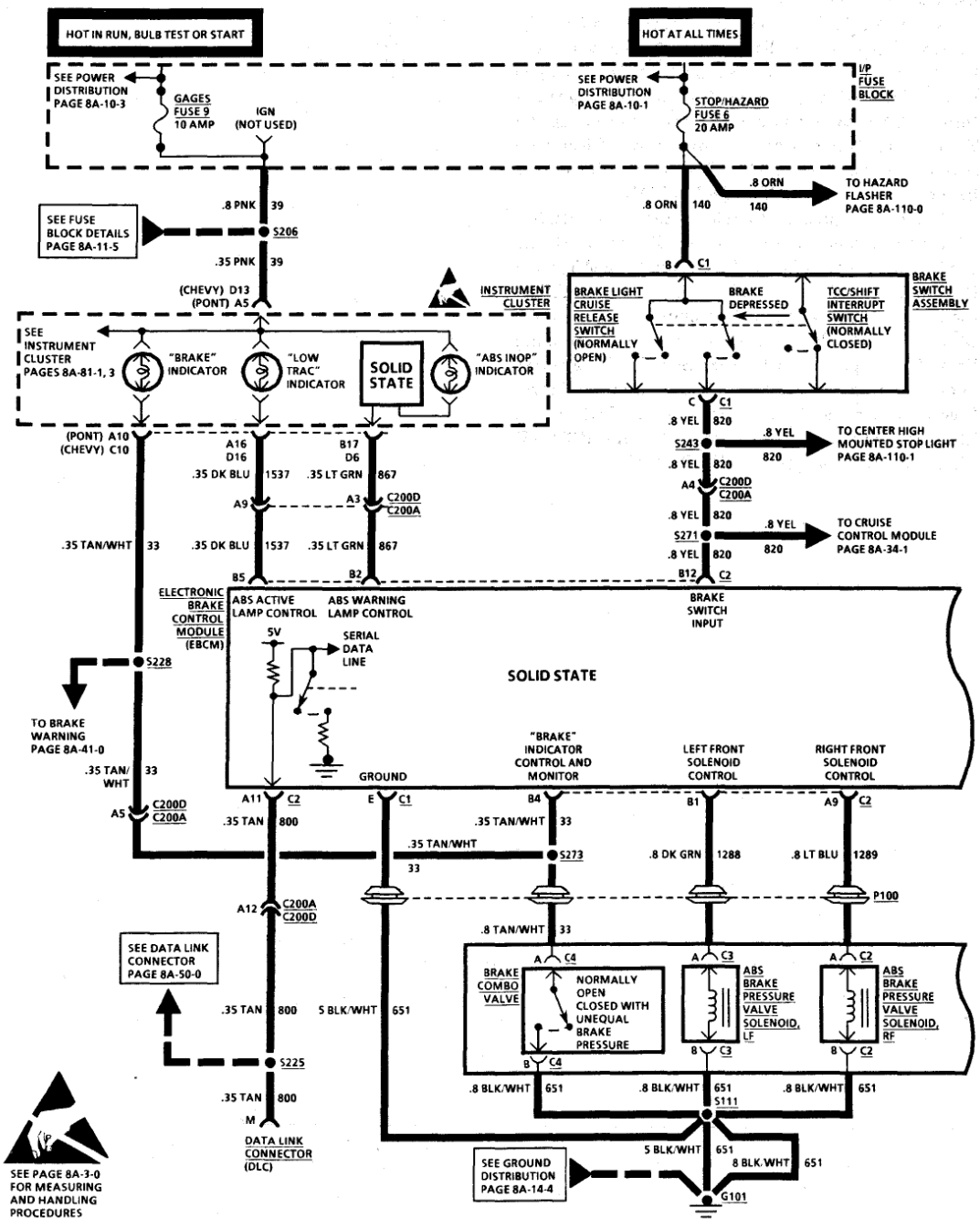
CIRCUIT OPERATION

When the Ignition Switch is turned to "RUN," "BULB TEST" or "START," voltage is applied to the Instrument Cluster through CKT 39 from Gages Fuse 9. The "BRAKE" Indicator receives a ground through CKT 33 by any one of three components: the Park Brake Switch, Brake Combo Valve, Electronic Brake Control Module (EBCM) or the Electronic Brake/Traction Control Module (EBTCM).

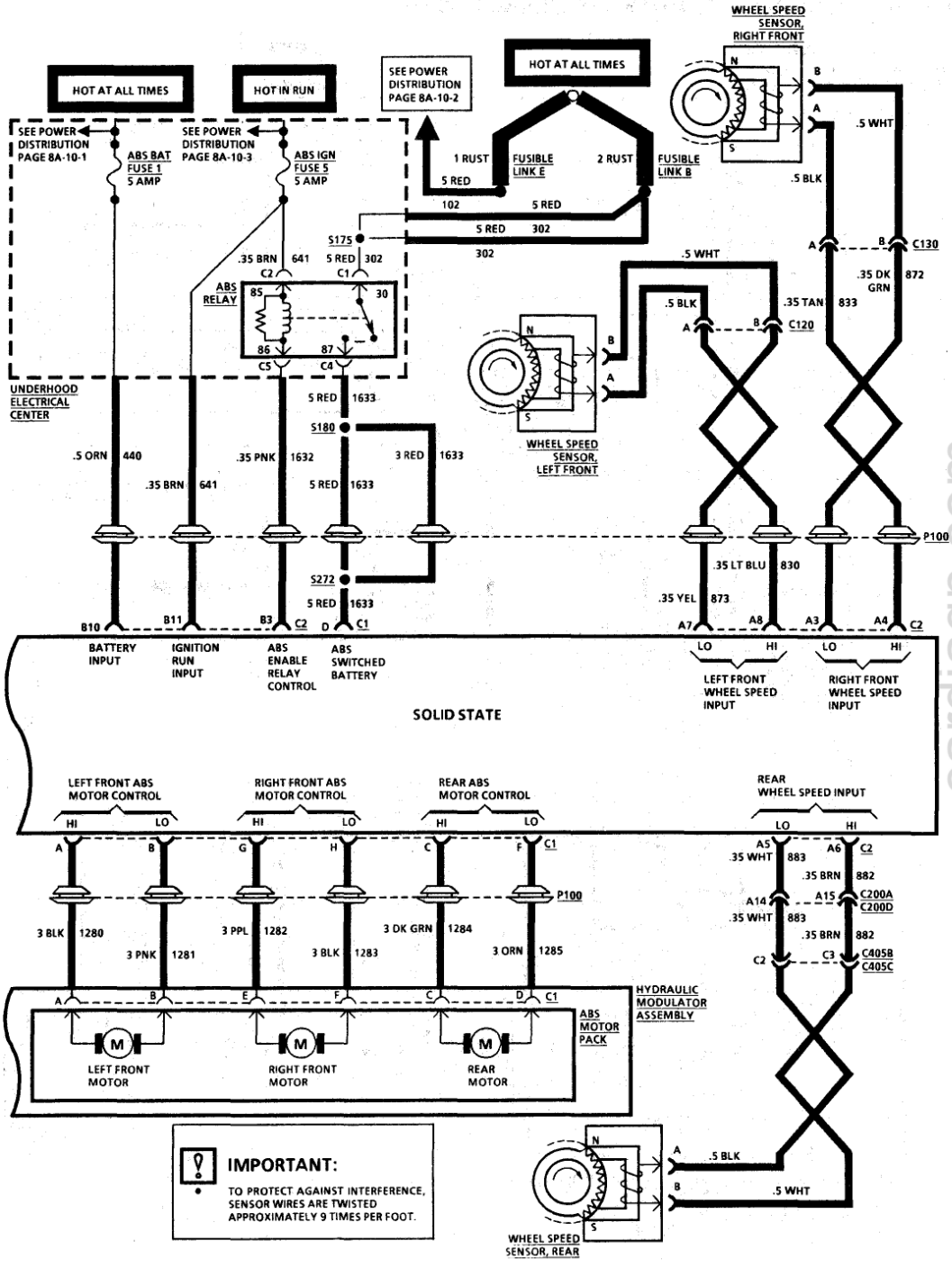
When the Ignition Switch is turned to "RUN," CKT 33 is grounded through the Electronic Brake Control Module (EBCM) or Electronic Brake/Traction Control Module (EBTCM), illuminating the "BRAKE" Indicator for approximately 3 seconds. When the Park Brake is set, the Park Brake Switch closes, grounding CKT 33 through the Park Brake Switch. For a better understanding of when the Brake Combo Valve, Electronic Brake Control Module (EBCM) or the Electronic Brake/Traction Control Module (EBTCM) will ground CKT 33, refer to SECTION 5E1.

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ANTILOCK BRAKES (WITHOUT NW9)

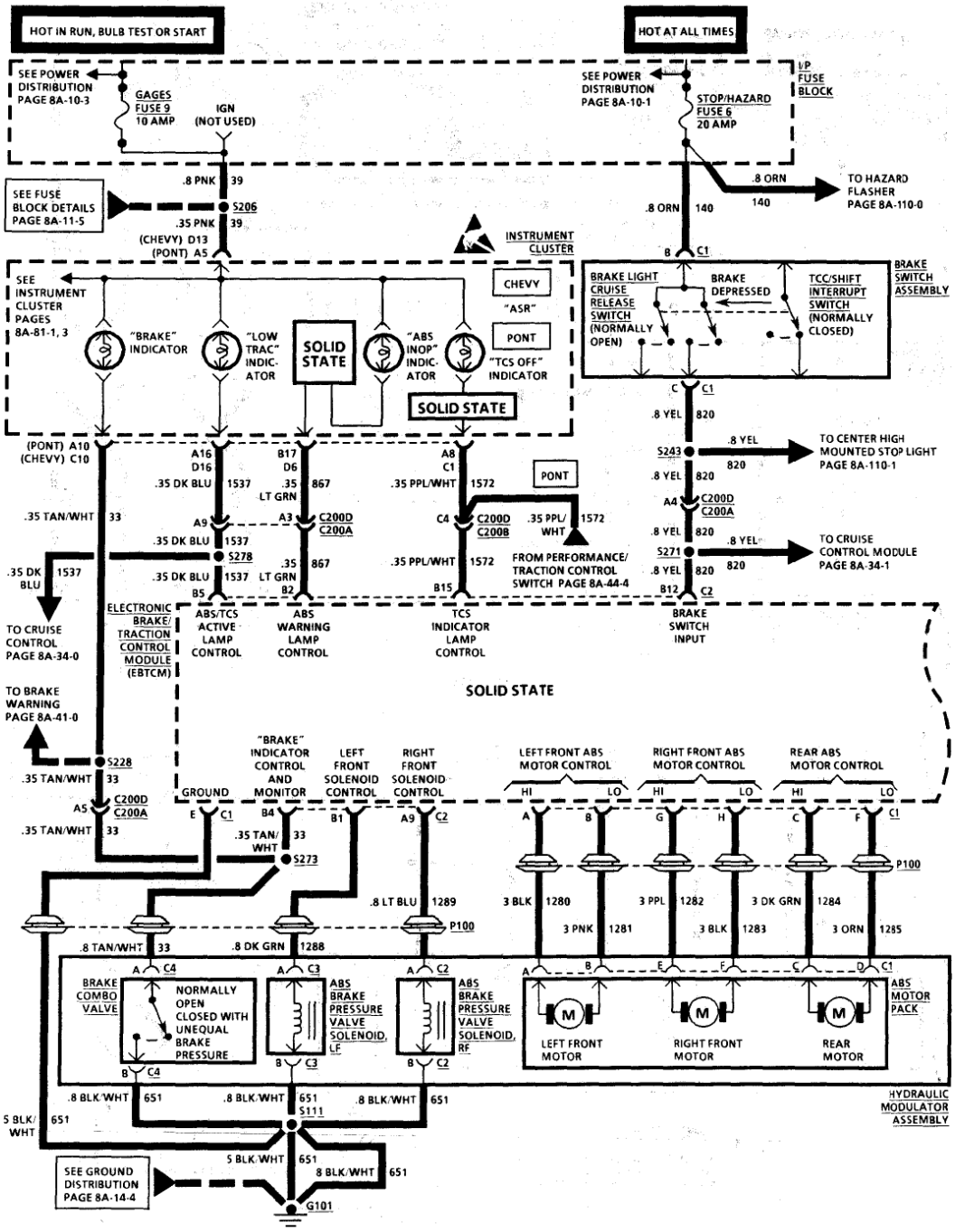


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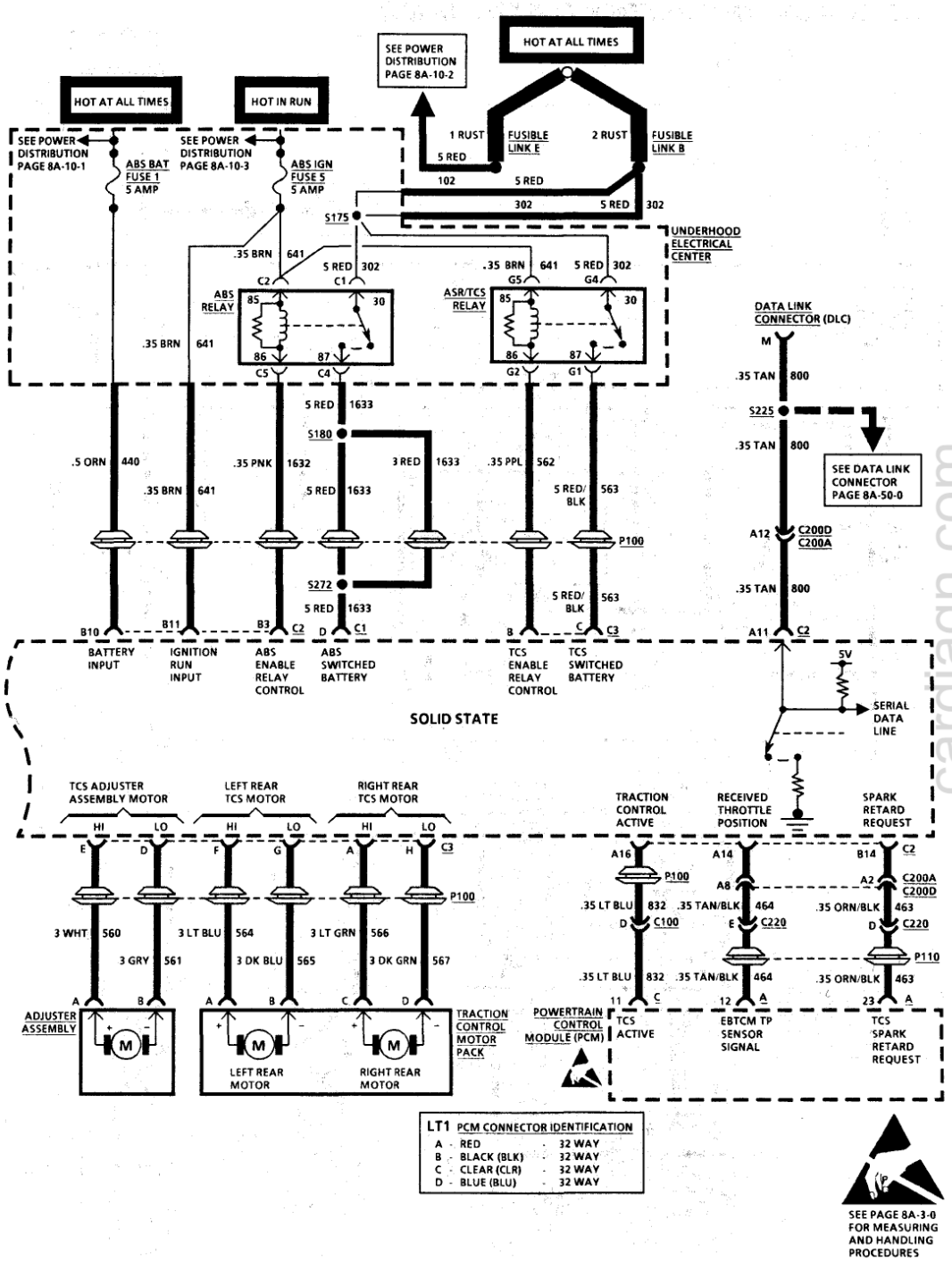


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ANTILOCK BRAKES/TRACTION CONTROL (NW9)

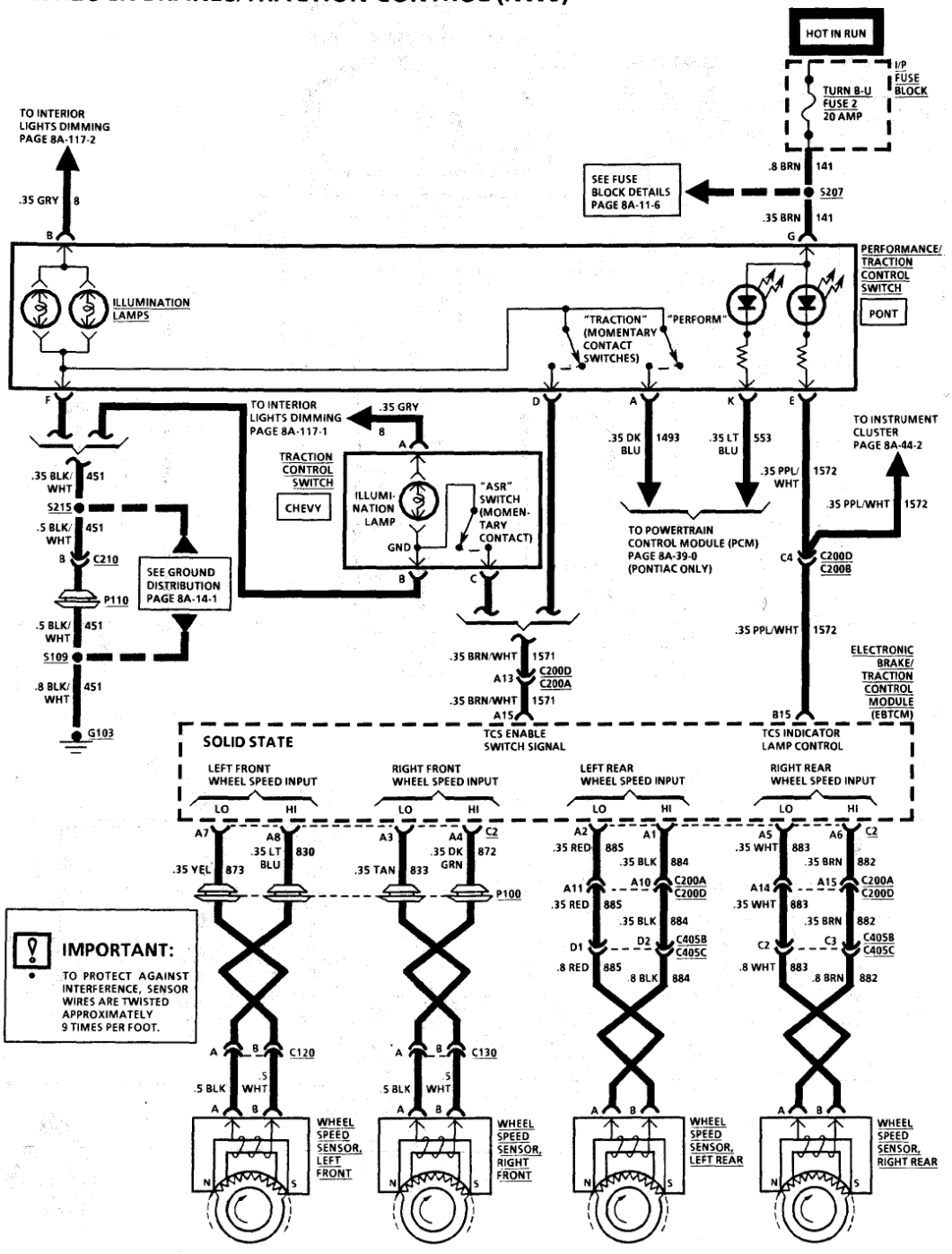


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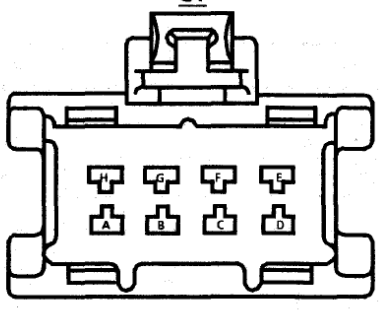
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ANTILOCK BRAKES/TRACTION CONTROL (NW9)



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C1

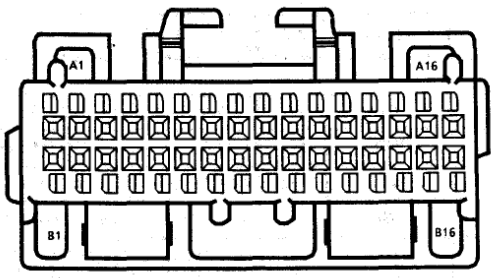


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8-WAY F METRI-PACK 280 FLX LK
LT GRY

ELECTRONIC BRAKE CONTROL MODULE (EBCM)
OR
ELECTRONIC BRAKE/TRACTION
CONTROL MODULE (EBTCM)

C2

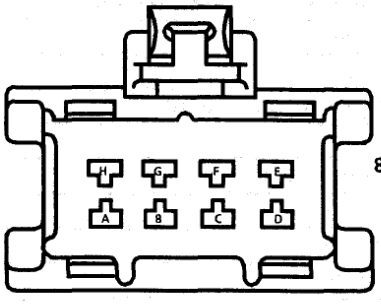


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32-WAY F MICRO-PACK 100 SERIES
DK RED

ELECTRONIC BRAKE CONTROL MODULE (EBCM)
OR
ELECTRONIC BRAKE/TRACTION
CONTROL MODULE (EBTCM)

C3 (WITH NW9)



12129088

8-WAY F METRI-PACK 280 SERIES FLX LK
BLK

ELECTRONIC BRAKE/TRACTION
CONTROL MODULE (EBTCM)

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**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C1				
A	BLK	1280	LEFT FRONT ABS MOTOR FEED	8A-44-1, 2
B	PNK	1281	LEFT FRONT ABS MOTOR RETURN	8A-44-1, 2
C	DK GRN	1284	REAR ABS MOTOR FEED	8A-44-1, 2
D	RED	1633	ABS RELAY OUTPUT - SWITCHED TO BATTERY	8A-44-1, 3
E	BLK/WHT	651	GROUND	8A-44-0, 2
F	ORN	1285	REAR ABS MOTOR RETURN	8A-44-1, 2
G	PPL	1282	RIGHT FRONT ABS MOTOR FEED	8A-44-1, 2
H	BLK	1283	RIGHT FRONT ABS MOTOR RETURN	8A-44-1, 2

(CONTINUED ON NEXT PAGE)

ANTILOCK BRAKES/TRACTION CONTROL (NW9)

(CONTINUED FROM PREVIOUS PAGE)

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C2				
A1	BLK	884	LEFT REAR WHEEL SPEED SENSOR SIGNAL (WITH NW9)	8A-44-4
A2	RED	885	LEFT REAR WHEEL SPEED SENSOR RETURN (WITH NW9)	8A-44-4
A3	TAN	833	RIGHT FRONT WHEEL SPEED SENSOR RETURN	8A-44-1, 4
A4	DK GRN	872	RIGHT FRONT WHEEL SPEED SENSOR SIGNAL	8A-44-1, 4
A5 A5	WHT WHT	883 883	REAR WHEEL SPEED SENSOR RETURN RIGHT REAR WHEEL SPEED SENSOR RETURN (WITH NW9)	8A-44-1 8A-44-4
A6 A6	BRN BRN	882 882	REAR WHEEL SPEED SENSOR SIGNAL RIGHT REAR WHEEL SPEED SENSOR SIGNAL (WITH NW9)	8A-44-1 8A-44-4
A7	YEL	873	LEFT FRONT WHEEL SPEED SENSOR RETURN	8A-44-1, 4
A8	LT BLU	830	LEFT FRONT WHEEL SPEED SENSOR SIGNAL	8A-44-1, 4
A9	LT BLU	1289	RIGHT FRONT SOLENOID FEED	8A-44-0, 2
A11	TAN	800	SERIAL DATA SIGNAL	8A-50-0
A14	TAN/BLK	464	THROTTLE POSITION SENSOR SIGNAL (WITH NW9)	8A-44-3
A15	BRN/WHT	1571	TRACTION CONTROL SYSTEM ENABLE SWITCH SIGNAL (WITH NW9)	8A-44-4
A16	LT BLU	832	TRACTION CONTROL ACTIVE (WITH NW9)	8A-44-3
B1	DK GRN	1288	LEFT FRONT SOLENOID FEED	8A-44-0, 2
B2	LT GRN	867	ABS WARNING INPUT TO INSTRUMENT CLUSTER (SOLID STATE)	8A-44-0, 2
B3	PNK	1632	ABS ENABLE FEED TO RELAY	8A-44-1, 3
B4	TAN/WHT	33	"BRAKE" INDICATOR LAMP (SWITCHED GROUND)	8A-44-0, 2
B5	DK BLU	1537	"LOW TRAC" INDICATOR LAMP CONTROL	8A-44-0, 2
B10	ORN	440	POWER FEED FROM ABS BAT FUSE #1	8A-44-1, 3
B11	BRN	641	POWER FEED FROM ABS IGN FUSE #5	8A-44-1, 3
B12	YEL	820	BRAKE DEPRESSED INPUT	8A-44-0, 2
B14	ORN/BLK	463	SPARK RETARD REQUEST (WITH NW9)	8A-44-3
B15	PPL/WHT	1572	"ASR" (CHEVY) OR "TCS OFF" (PONT) INDICATOR LAMP CONTROL (WITH NW9)	8A-44-2, 4
C3 (WITH NW9)				
A	LT GRN	566	RIGHT REAR TCS MOTOR FEED	8A-44-3
B	PPL	562	TCS ENABLE FEED TO RELAY	8A-44-3
C	RED/BLK	563	TCS RELAY OUTPUT - SWITCHED TO BATTERY	8A-44-3
D	GRY	561	THROTTLE RELAXER MOTOR RETURN	8A-44-3
E	WHT	560	THROTTLE RELAXER MOTOR FEED	8A-44-3
F	LT BLU	564	LEFT REAR TCS MOTOR FEED	8A-44-3
G	DK BLU	565	LEFT REAR TCS MOTOR RETURN	8A-44-3
H	DK GRN	567	RIGHT REAR TCS MOTOR RETURN	8A-44-3

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COMPONENT	LOCATION	201-PG	FIG.	CONN
ABS Brake Pressure Valve Solenoid, LF	Part of Hydraulic Modulator Assembly	39	68	
ABS Brake Pressure Valve Solenoid, RF	Part of Hydraulic Modulator Assembly	39	68	
ABS Motor Pack	Part of Hydraulic Modulator Assembly	39	68	202-19
Adjuster Assembly	LH top center of Engine	41	75	
Brake Combo Valve (ABS)	Part of Hydraulic Modulator Assembly, inward side	39	68	
Brake Switch Assembly	Mounted in lower hole of brake pedal bracket (2 conn with Automatic), (1 conn with Manual) same switch for both	0	1	
Data Link Conn (DLC)	Mounted to I/P Tie Bar, below and right of Steering Column			202-11
Electronic Brake Control Module (EBCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Fusible Links	Above RH Shock Tower	10	19	
Hydraulic Modulator Assembly	Front left of Engine Compartment	39	68	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Instrument Cluster	LH side of I/P			202-23
Performance/Traction Control Switch	Mounted in center console behind shifter	42	79	202-24
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Traction Control Motor Pack	Mounted to left front frame rail, below Hydraulic Modulator	39	70	202-28
Traction Control Switch	Left side of upper console	42	78	
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
Wheel Speed Sensor, Left Front	Middle of left front steering knuckle	25	47	
Wheel Speed Sensor, Left Rear	Mounted to rear backing plate of wheel disc	28	55	
Wheel Speed Sensor, Rear	Top of Rear Differential	20	38	
Wheel Speed Sensor, Right Front	Middle of right front steering knuckle	25	47	
Wheel Speed Sensor, Right Rear	Mounted to rear backing plate of wheel disc	28	55	
C100 (10 cavities)	Engine to Forward Lamp Harn, behind LH wheelhouse, attached to PCM bracket	15	28	202-0
C120 (2 cavities)	LH Wheel Speed Sensor Pigtail, mounted to LH Frame Rail			

(CONTINUED ON NEXT PAGE)

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ANTILOCK BRAKES/TRACTION CONTROL (NW9)

(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
C130 (2 cavities)	RH Wheel Speed Sensor Pigtail, mounted to RH Frame Rail			
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
C405B (10 cavities)	Part of Pass Thru Conn, forward of rear axle, to Pass Thru Panel	5	9	202-8
C405C (4 cavities)	Part of Pass Thru Conn, forward of rear axle, to Speed Sensor (ABS)	5	9	202-8
G101	Top of RH Shock Tower (3 rings, 5 wires)	10	19	
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S111	Forward Lamp Harn, approx 3 cm from Wiper Motor Assembly breakout			
S175	Forward Lamp Harn, approx 12 cm from Electrical Center breakout	39	68	
S180	Forward Lamp Harn, approx 16 cm from Electrical Center breakout	36	68	
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S207	I/P Harn, approx 4 cm before DLC breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S225	I/P Harn, approx 4 cm before DLC breakout			
S228	I/P Harn, approx 15 cm before DLC breakout			
S243	I/P Harn, approx 14 cm from Fuel Pump Relay breakout	7	13	
S271	Forward Lamp Harn, approx 19 cm from breakout inboard of P100	8	14	
S272	Forward Lamp Harn, approx 18 cm from breakout inboard of P100	8	14	
S273	Forward Lamp Harn, approx 25 cm from breakout inboard of P100	8	14	
S278	Forward Lamp Harn, approx 9 cm from EBCM breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

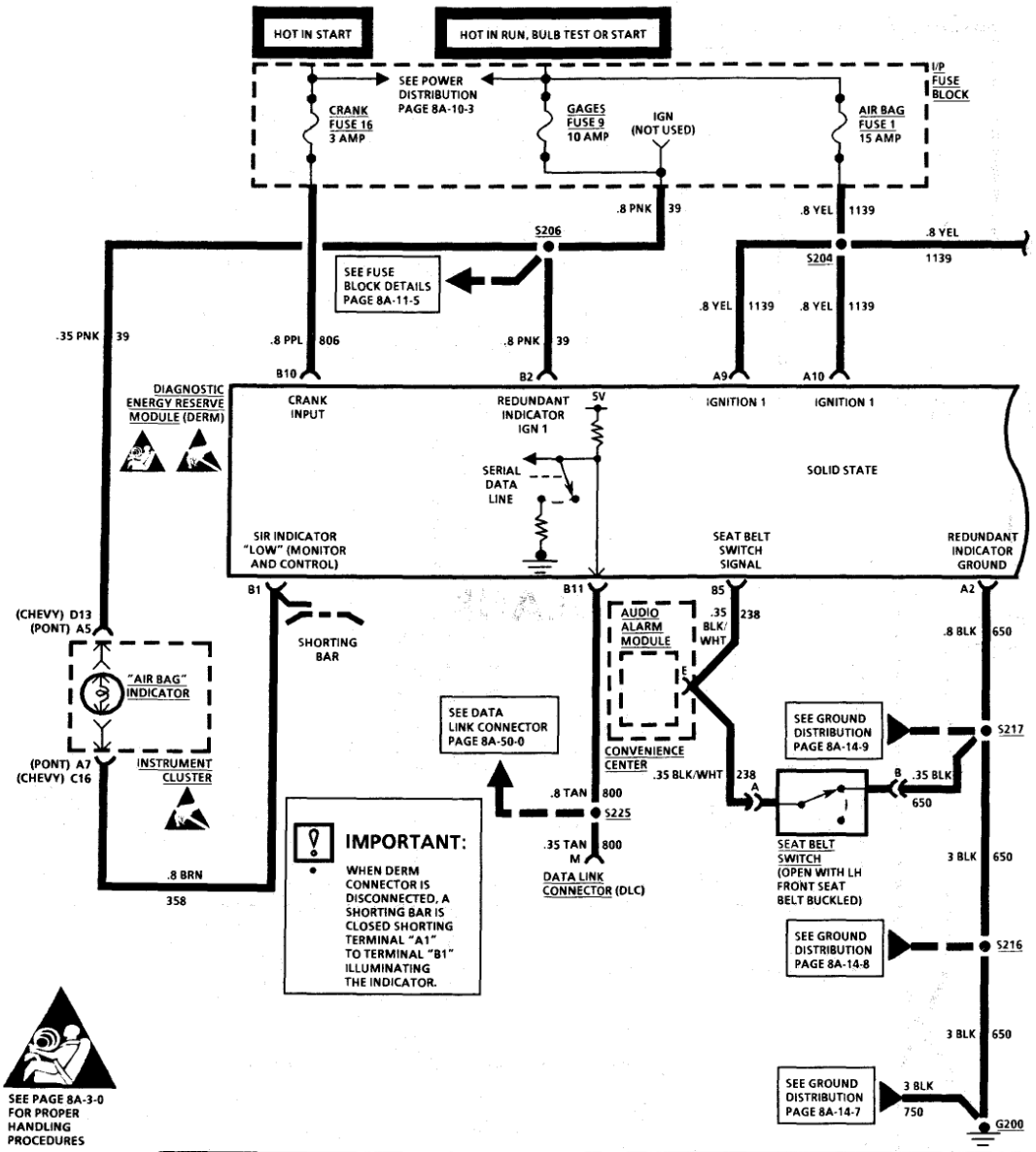
- Refer to SECTION 5E1 or 5E2 for Diagnosis.

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SUPPLEMENTAL INFLATABLE RESTRAINTS (SIR)

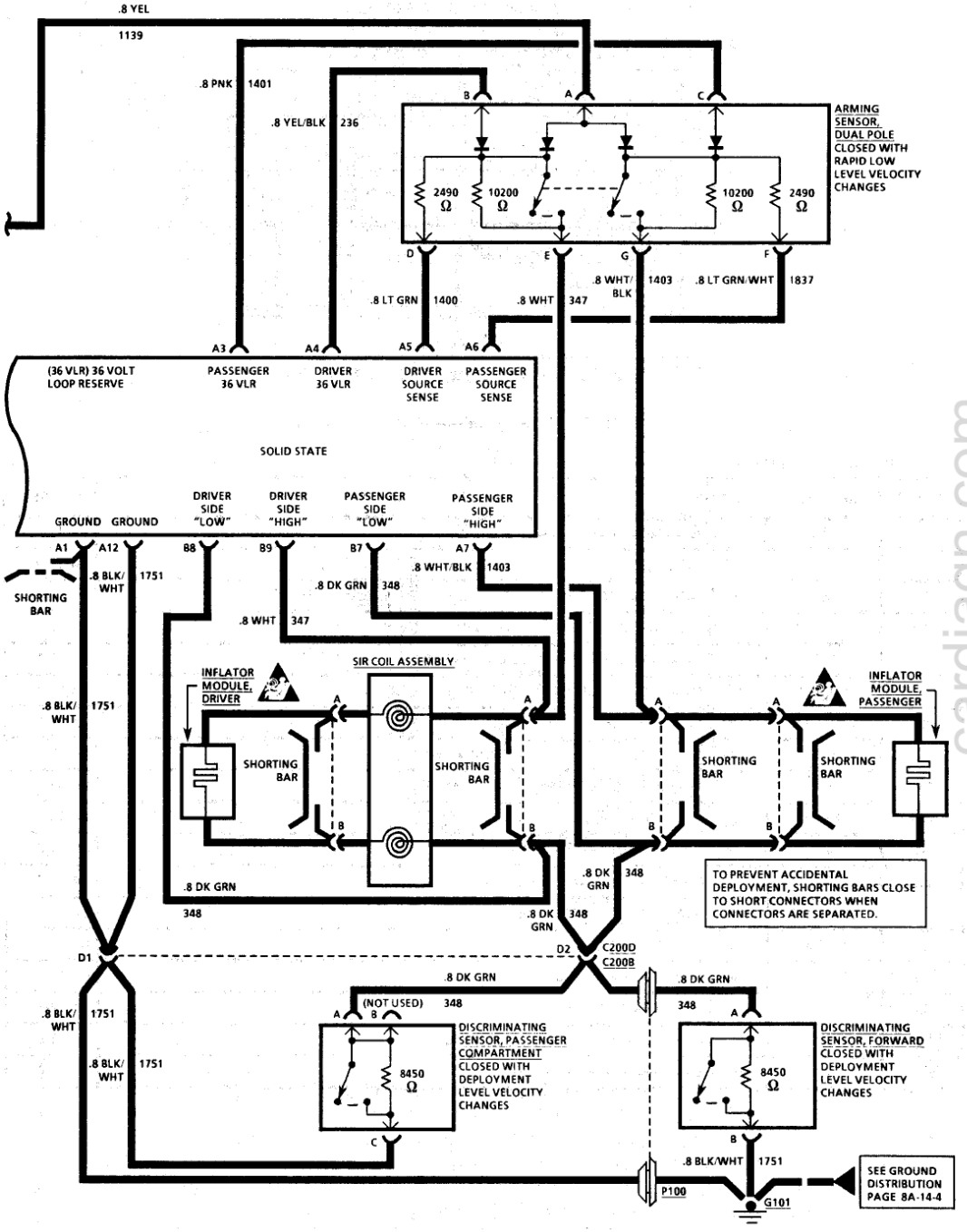


SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES

SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES

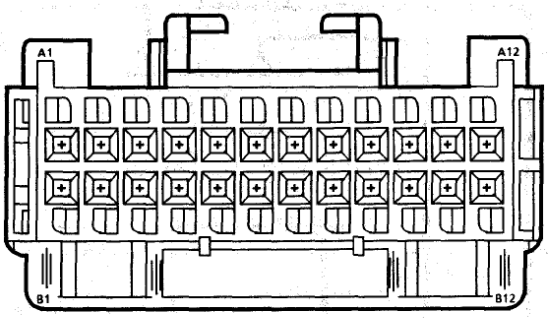
CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

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SUPPLEMENTAL INFLATABLE RESTRAINTS (SIR)



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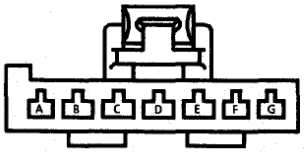
24-WAY F MICRO-PACK 100 SERIES
YEL

DIAGNOSTIC ENERGY RESERVE MODULE (DERM)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A1	BLK/WHT	1751	GROUND	8A-14-4
A2	BLK	650	GROUND	8A-14-8, 9
A3	PNK	1401	DUAL ARMING SENSOR FEED - PASSENGER - 36 VOLT	8A-47-1
A4	YEL/BLK	236	DUAL ARMING SENSOR FEED - DRIVER - 36 VOLT	8A-47-1
A5	LT GRN	1400	DUAL ARMING SENSOR SIGNAL - DRIVER	8A-47-1
A6	LT GRN/WHT	1837	DUAL ARMING SENSOR SIGNAL - PASSENGER	8A-47-1
A7	WHT/BLK	1403	INFLATOR FEED - PASSENGER	8A-47-1
A9	YEL	1139	POWER FEED FROM AIR BAG FUSE #1	8A-47-0, 1
A10	YEL	1139	POWER FEED FROM AIR BAG FUSE #1	8A-47-0, 1
A12	BLK/WHT	1751	GROUND	8A-14-4
B1	BRN	358	AIR BAG INDICATOR LAMP FEED	8A-47-0
B2	PNK	39	POWER FEED FROM GAGES FUSE #9	8A-11-5
B5	BLK/WHT	238	SEAT BELT SWITCH SIGNAL	8A-47-0
B7	DK GRN	348	SIR INFLATOR OUTPUT	8A-47-1
B8	DK GRN	348	SIR INFLATOR OUTPUT	8A-47-1
B9	WHT	347	INFLATOR FEED - DRIVER	8A-47-1
B10	PPL	806	POWER FEED FROM CRANK FUSE #16	8A-11-9
B11	TAN	800	SERIAL DATA SIGNAL	8A-50-0

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7-WAY F METRI-PACK 280 SERIES
YEL

ARMING SENSOR, DUAL POLE

COMPONENT	LOCATION	201-PG	FIG.	CONN
Arming Sensor, Dual Pole	Mounted to Floor Tunnel Bracket, under console	43	81	202-19
Convenience Center	Left of Steering Column, mounted to bottom of I/P Carrier	8	15	202-20
Data Link Conn (DLC)	Mounted to I/P Tie Bar, below and right of Steering Column			202-11
Diagnostic Energy Reserve Module (DERM)	Snapped in bracket, behind RH side of I/P Compartment	8	15	202-12
Discriminating Sensor, Forward	Mounted to center of front end Tie Bar, near hood latch	19	36	
Discriminating Sensor, Passenger Compartment	Mounted to upper dash, just right of Steering Column Support Bracket	20	38	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Inflator Module, Driver	Mounted on Steering Wheel	2	3	
Inflator Module, Passenger	Mounted on right side of I/P			
Instrument Cluster	LH side of I/P			202-23
Seat Belt Switch	Part of Driver's Seat Buckle Assembly	43	81	
SIR Coil Assembly	Top of Steering Column	3, 34	5, 51	
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G101	Top of RH Shock Tower (3 rings, 5 wires)	10	19	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S204	I/P Harn, approx 10 cm from Steering Column breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S225	I/P Harn, approx 4 cm before DLC breakout			

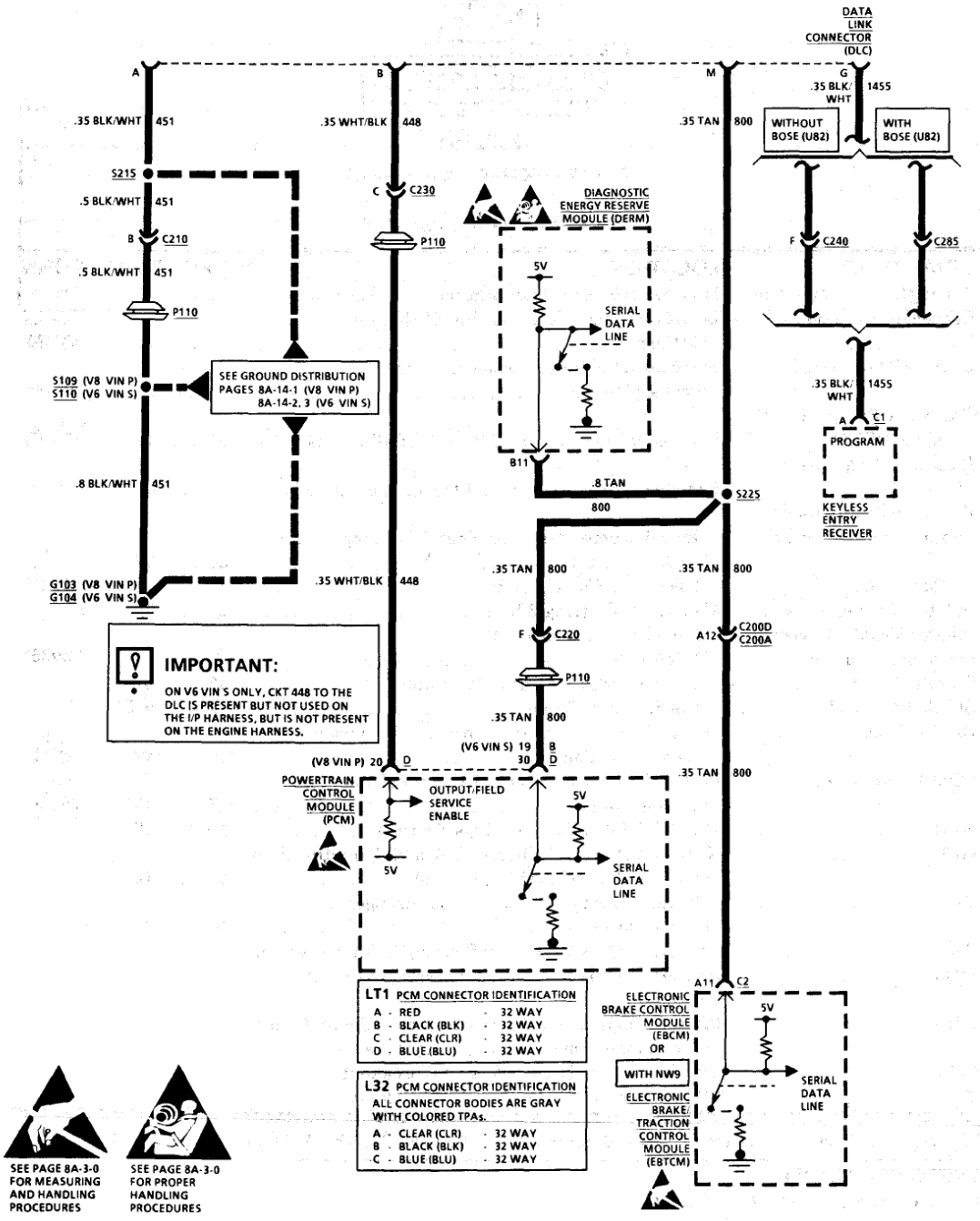
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

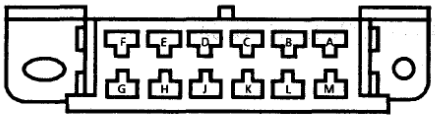
- Refer to SECTION 9J-A for diagnosis.

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DATA LINK CONNECTOR (DLC): PIN ASSIGNMENT



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12-WAY F METRI-PACK 280 SERIES
BLK
DATA LINK CONNECTOR (DLC)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	BLK/WHT	451	GROUND	8A-14-1, 2, 3
B	WHT/BLK	448	DIAGNOSTIC REQUEST, PCM	8A-20-0, 8A-21-0
G	BLK/WHT	1455	PROGRAM INPUT, KEYLESS ENTRY RECEIVER	8A-132-1
M	TAN	800	SERIAL DATA LINE, DIAGNOSTIC ENERGY RESERVE MODULE (DERM), ELECTRONIC BRAKE CONTROL MODULE (EBCM), ELECTRONIC BRAKE/TRACTION CONTROL MODULE (EBTCM) AND PCM	8A-50-0

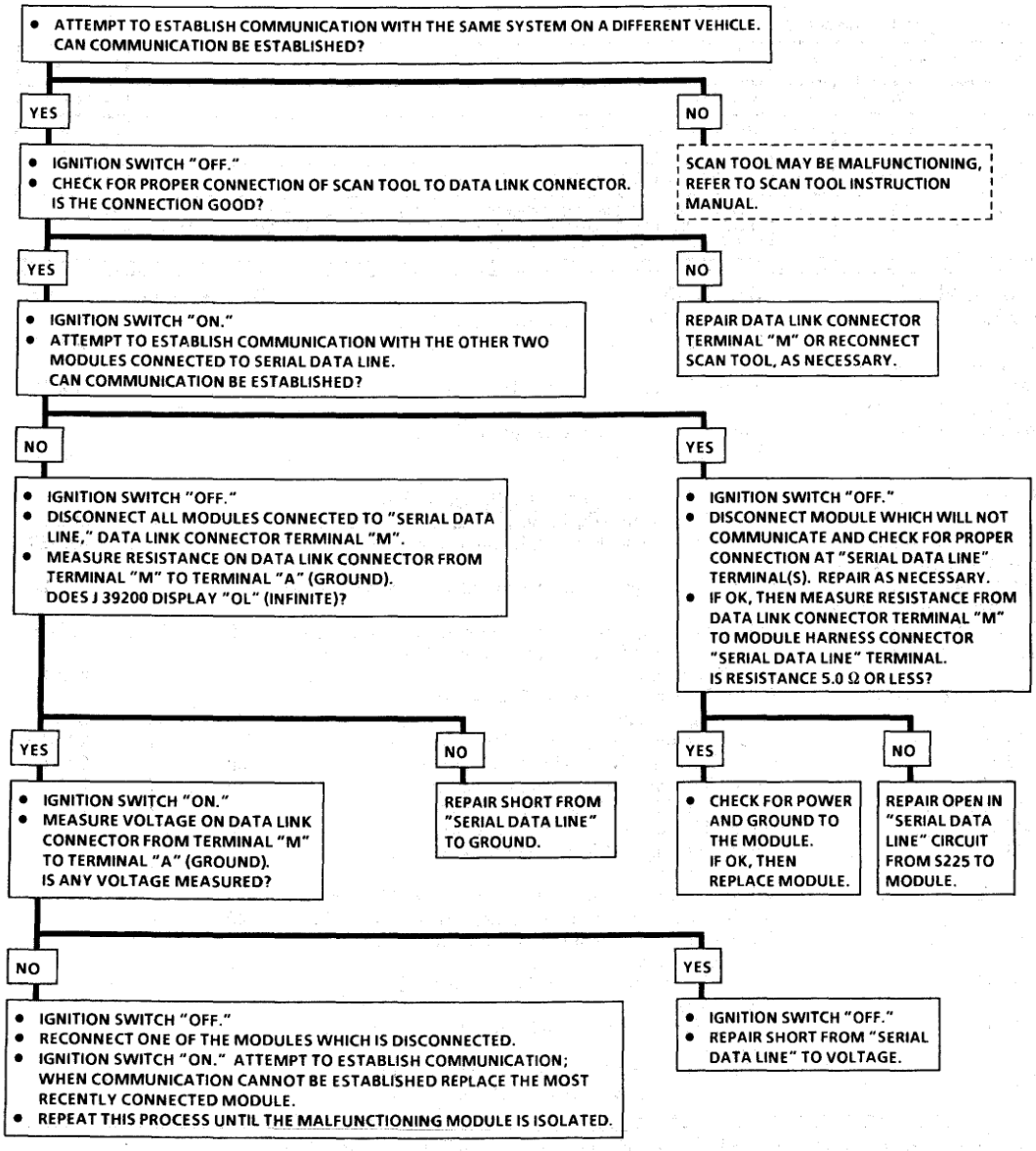
COMPONENT	LOCATION	201-PG	FIG.	CONN
Data Link Conn (DLC)	Mounted to I/P Tie Bar, below and right of Steering Column			202-11
Diagnostic Energy Reserve Module (DERM)	Snapped in bracket, behind RH side of I/P Compartment	8	15	202-12
Electronic Brake Control Module (EBCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Keyless Entry Receiver	Behind RH side kick panel, in molded pocket	40	71	202-23
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
C240 (6 cavities)	Under RH side of I/P, behind kick panel	20	37	202-19
C285 (1 cavity)	Under RH side of I/P, behind kick panel	20	37	
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S225	I/P Harn, approx 4 cm before DLC breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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DATA LINK CONNECTOR (DLC): PIN ASSIGNMENT

SERIAL DATA LINE DIAGNOSIS

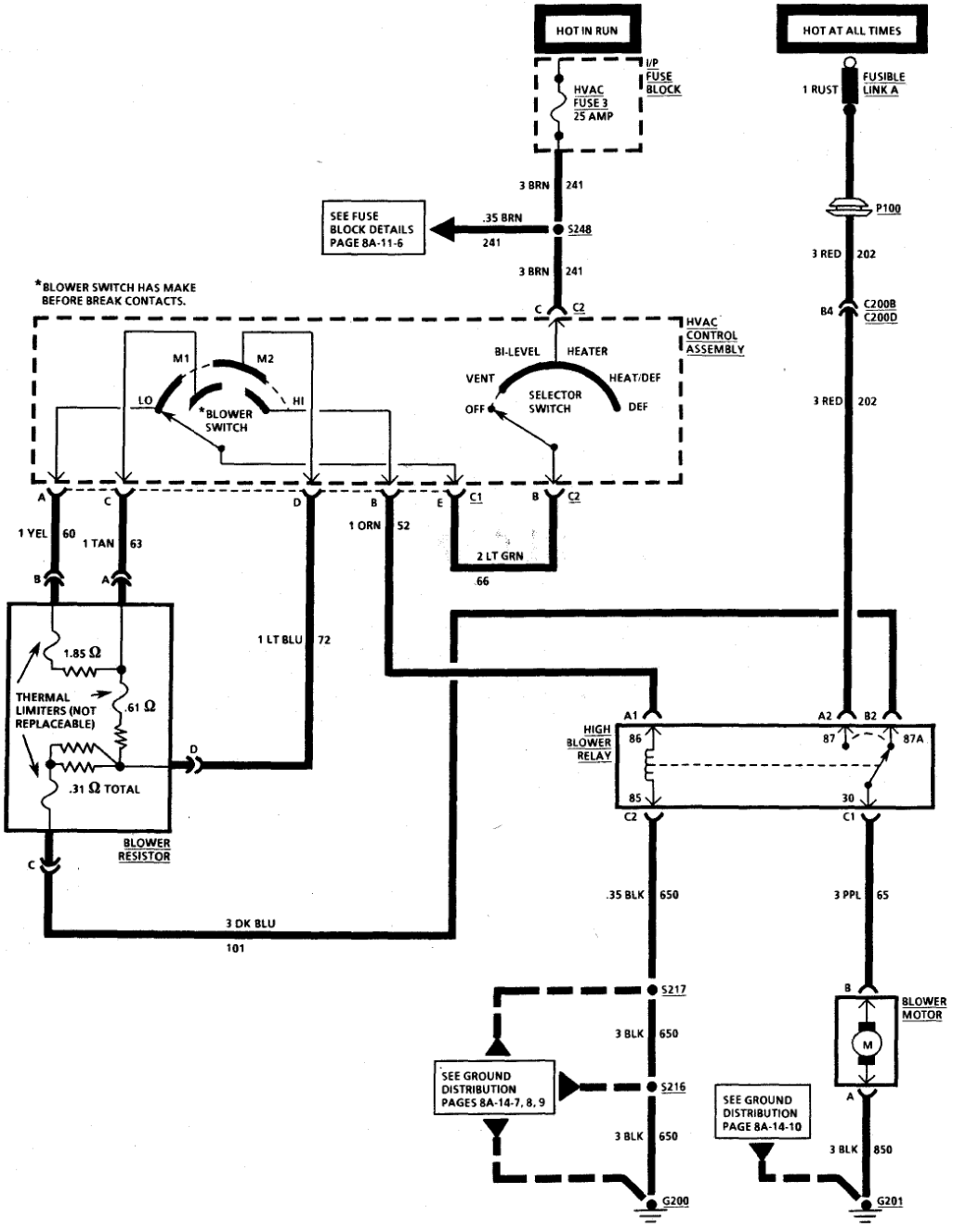


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HEATER (C41)



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COMPONENT	LOCATION	201-PG	FIG.	CONN
Blower Motor	Under lower RH side of I/P, mounted in HVAC Module	20	37	
Blower Resistor	In HVAC Module, forward and left of Temperature Control Cable Attachment			202-20
Blower Switch	Part of HVAC Control Assembly	21	39	
Fusible Links	Above RH Shock Tower	10	19	
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Center of I/P	21	40	202-22
High Blower Relay	Under I/P, above left side of floor tunnel	42	77	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Selector Switch	Part of HVAC Control Assembly	21	39	
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G201	Near base of RH "A" pillar, bolted to I/P Mounting Stud behind kick panel (1 ring, 1 wire)	9	16	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S248	I/P Harn, approx 4 cm before RR Defog Switch (Chevy) or from Instrument Cluster (Pont) breakouts			

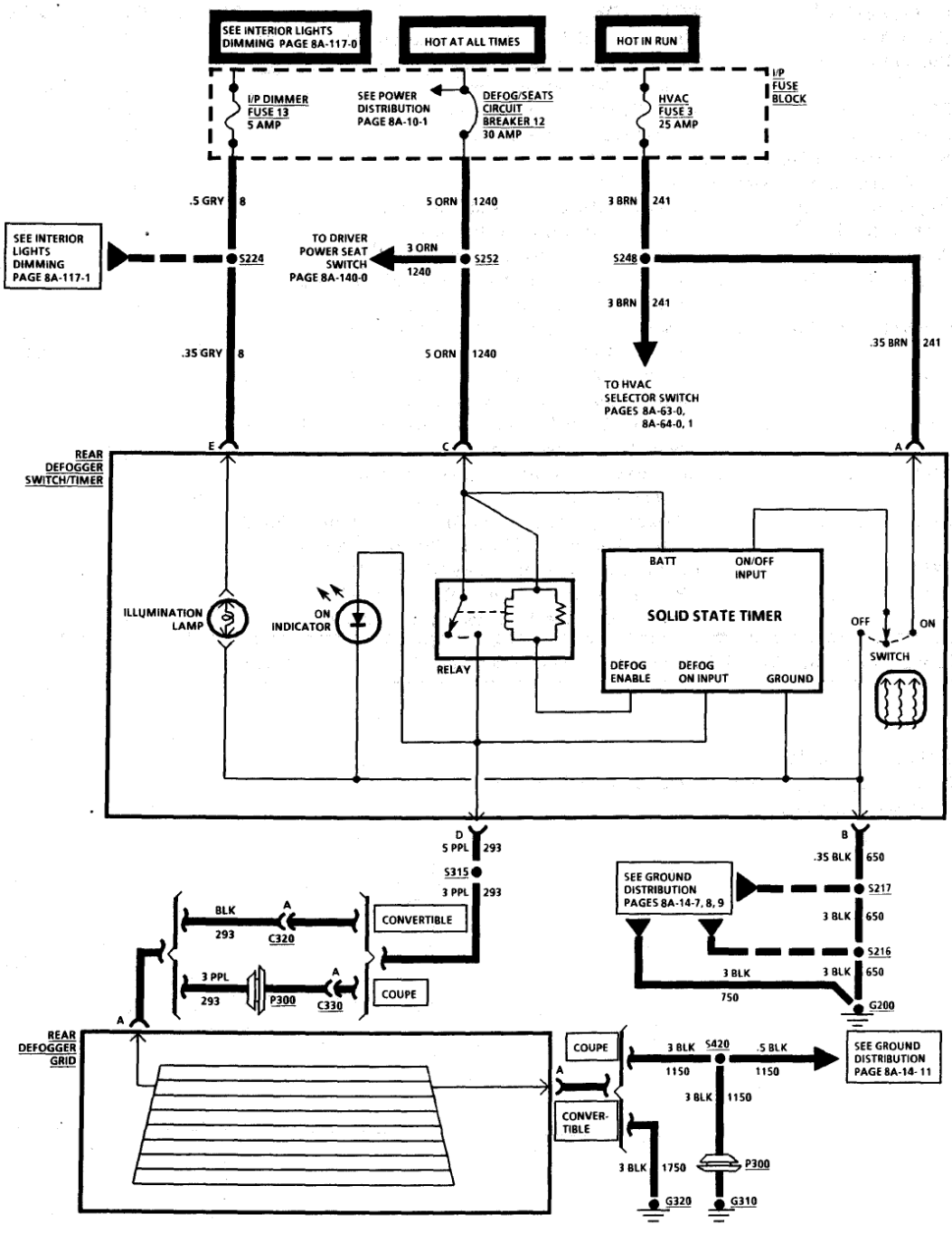
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

- For Diagnosis, refer to "HVAC Blower Controls (C60)," page 8A-63-0.

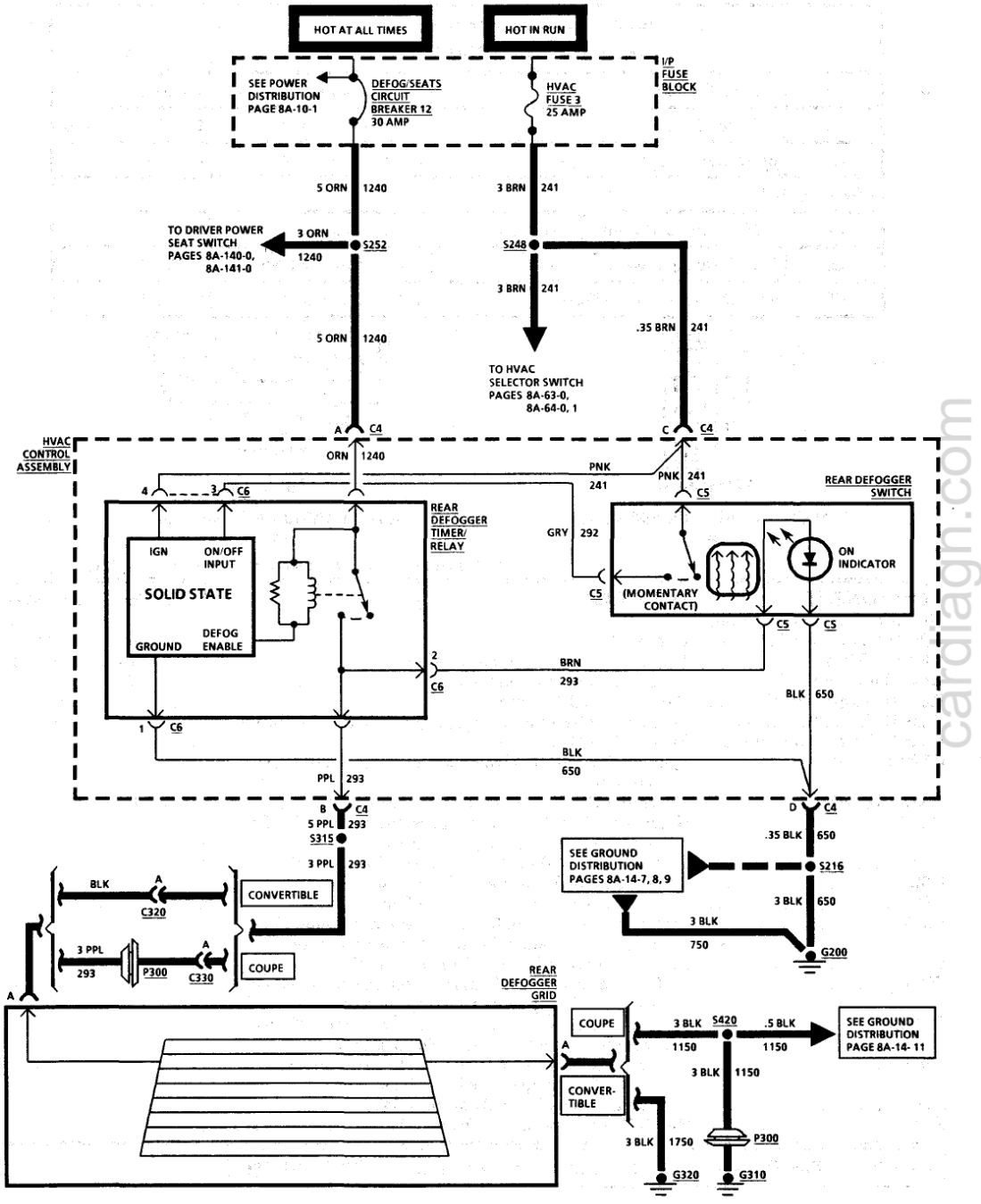
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DEFOGGER (CHEVY)



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DEFOGGER (PONTIAC)

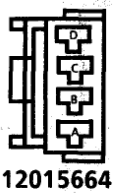


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DEFOGGER

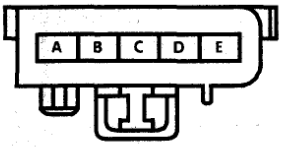
HVAC CONTROL ASSEMBLY CONNECTOR DESCRIPTIONS			PAGE
C1	Blower Switch	5-Way Connector	8A-63-0
C2	Selector Switch	3-Way Connector	8A-63-0, 8A-64-0
C3	Illumination Lamps Jumper	2-Way Connector	8A-117-1
PONTIAC ONLY			
C4	HVAC Control Assembly to I/P Harness	4-Way Connector	8A-61-1
C5	Rear Defogger Switch	Four 1-Way Connectors	8A-61-1
C6	Rear Defogger Timer/Relay	4-Way Connector	8A-61-1

C4



12015664

4-WAY F METRI-PACK 630 SERIES
BLK



12059296

5-WAY F METRI-PACK 480 SERIES
RED

REAR DEFOGGER SWITCH/TIMER CONNECTOR (CHEVY)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Center of I/P	21	40	202-22
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Rear Defogger Grid	Mounted on rear windshield	4	7	
Rear Defogger Switch	Part of HVAC Assembly	21	39	
Rear Defogger Switch/Timer	Mounted on I/P knee bolster, right of Steering Column	37	66	202-27
Rear Defogger Timer/Relay	Part of HVAC Assembly	21	39	
C320 (1 cavity)	Under left Interior Garnish Molding above left rear wheelhouse			
C330 (3 cavities)	Hatch to I/P Harn, center of roof near Dome Lamp	4	6	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G310	Bolted to roof, left of Dome Lamp (1 ring, 1 wire)	4	6	
G320	Bolted to body frame above RH rear wheelhouse			
P300	In rear center of roof, near Dome Lamp	4	7	
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S224	I/P Harn, approx 4 cm from Instrument Cluster (Pont) or from RR Defog Switch (Chevy) breakouts			
S248	I/P Harn, approx 4 cm before RR Defog Switch (Chevy) or from Instrument Cluster (Pont) breakouts			
S252	I/P Harn, approx 17 cm back from HVAC Controls (Pont) or RR Defogger Switch/Timer (Chevy)			
S315	I/P Harn, approx 19 cm from conn C410			
S420	Hatch Harn, approx 7 cm from P300	4	7	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Check Fuse 3. If open, refer to Chart #2.
2. Check Rear Defogger Grid for opens, refer to SECTION 10-2.
3. Check that grounds G200, G310 and G320 are clean and tight.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedure(s).

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SYSTEM CHECK (CHEVY)

ACTION	NORMAL RESULTS
[1] • Engine running. • Turn Rear Defogger Control Switch to "ON" and release.	Switch returns to "REST" position. Rear Defogger Indicator is "ON" and Rear Defogger Grid becomes warm. Defogger Grid(s) and Indicator turn "OFF" in approximately 10 minutes.
[2] • After first 10 minute time period, with Engine still running, turn Rear Defogger Control Switch to "ON" and release.	Switch returns to "REST" position. Indicator and Defogger Grid(s) remain "ON" for approximately 5 minutes and then turn "OFF."

SYSTEM CHECK (PONTIAC)

ACTION	NORMAL RESULTS
[1] • Engine running. • Press Rear Defogger Switch once and release.	Switch returns to "REST" position. Rear Defogger Indicator is "ON" and Rear Defogger Grid becomes warm. Indicator and Rear Defogger Grid turn "OFF" in approximately 10 minutes.
[2] • Press Rear Defogger Switch once and release.	Switch returns to "REST" position. Indicator and Rear Defogger Grid remain "ON" for 5 minutes and then turn "OFF."
[3] • Press Rear Defogger Switch once and release. • Press Rear Defogger Switch a second time and release.	Indicator and Rear Defogger Grid remain "ON" until the Rear Defogger Switch is pressed a second time.

DEFOGGER

SYMPTOM TABLE (CHEVY)

SYMPTOM	PROCEDURE	PAGE NUMBER
Rear Defogger Grid inoperative, Indicator may or may not light.	Chart #1	8A-61-5
Indicator inoperative, but Rear Defogger Grid operates normally.	Replace Rear Defogger Switch/Timer.	
Rear Defogger Grid and Indicator will not cycle "ON/OFF" for 10 minutes or 5 minutes.	Replace Rear Defogger Switch/Timer.	
Rear Defogger Control Switch does not return to "REST" position.	Replace Rear Defogger Switch/Timer.	
Illumination Lamp inoperative.	Refer to "Interior Lights," page 8A-117-0.	
Fuse #3 blows when attempting to operate rear defogger.	Chart #5	8A-61-8

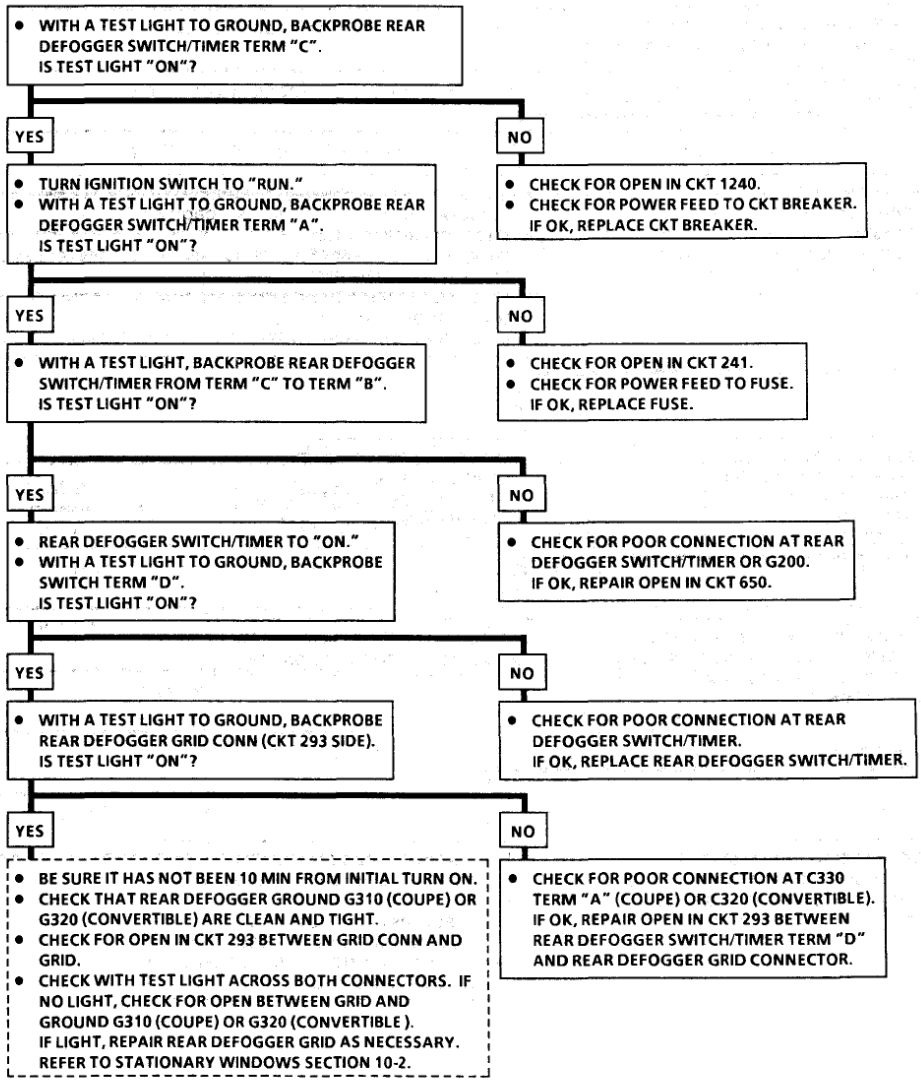
SYMPTOM TABLE (PONTIAC)

SYMPTOM	PROCEDURE	PAGE NUMBER
Rear Defogger Grid and Indicator inoperative.	Chart #2	8A-61-6
Rear Defogger Grid inoperative but Indicator operates normally.	Chart #3	8A-61-7
Indicator inoperative but Rear Defogger Grid operates normally.	Chart #4	8A-61-8
Rear Defogger Grid and Indicator operative, but will not cycle "ON/OFF" for 10 minutes or 5 minutes.	Replace Rear Defogger Timer/Relay.	
Rear Defogger Switch does not return to "REST" position.	Replace Rear Defogger Switch.	
Fuse #3 blows when attempting to operate rear defogger.	Chart #5	8A-61-8

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CHART #1

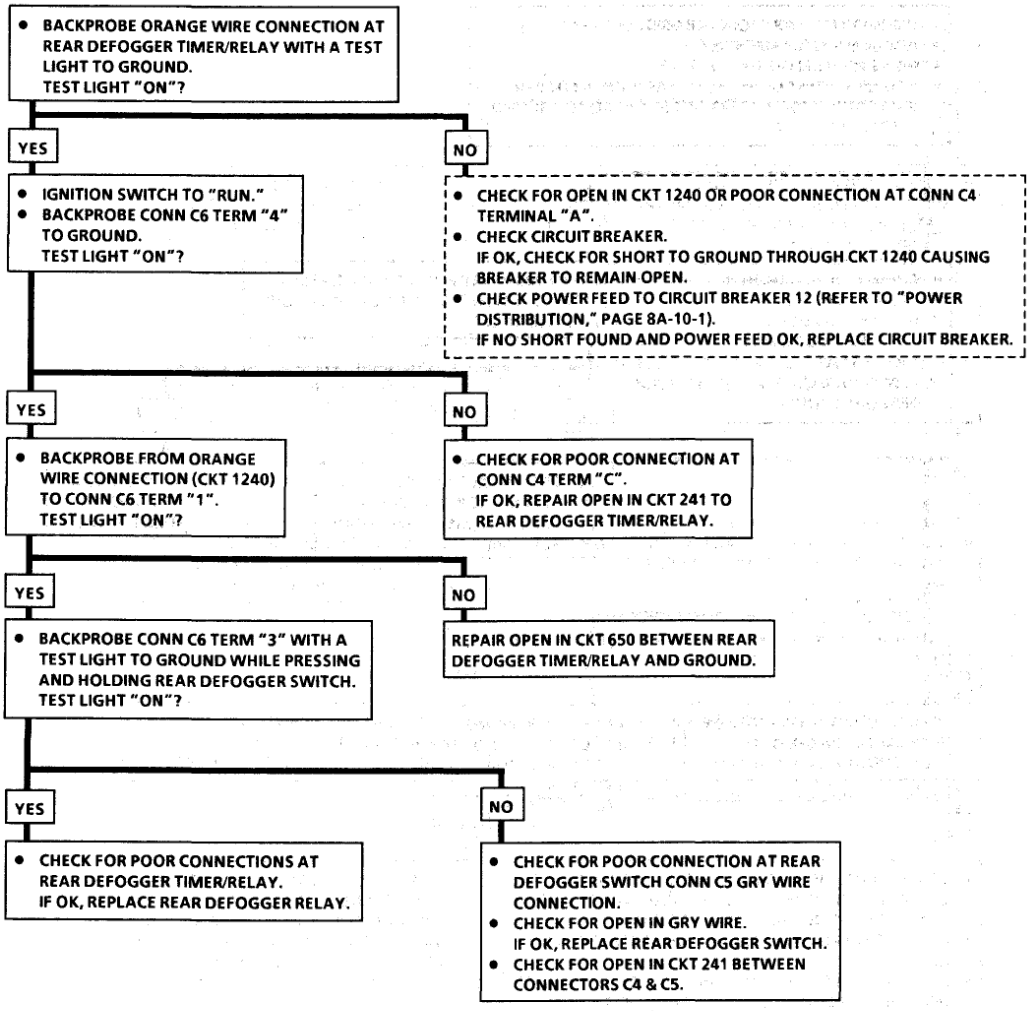
REAR DEFOGGER GRID INOPERATIVE. INDICATOR MAY OR MAY NOT LIGHT.



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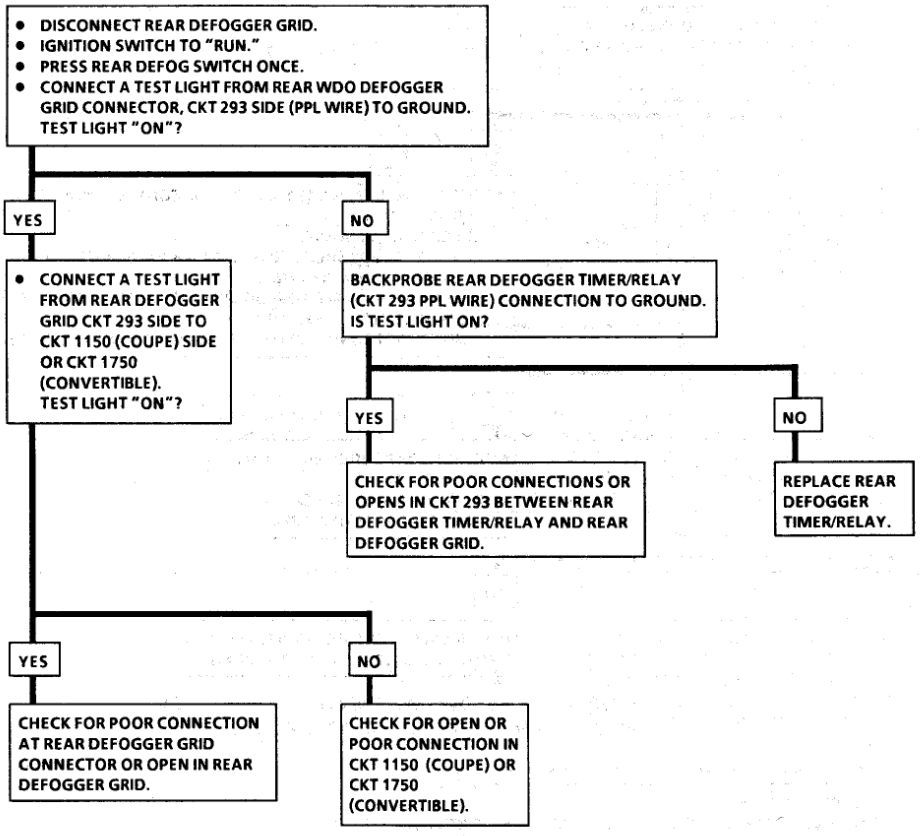
DEFOGGER

CHART #2
REAR DEFOGGER GRID AND INDICATOR INOPERATIVE



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CHART #3
REAR DEFOGGER GRID INOPERATIVE BUT INDICATOR OPERATES NORMALLY



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DEFOGGER

CHART #4
INDICATOR INOPERATIVE BUT REAR DEFOGGER GRID OPERATES NORMALLY

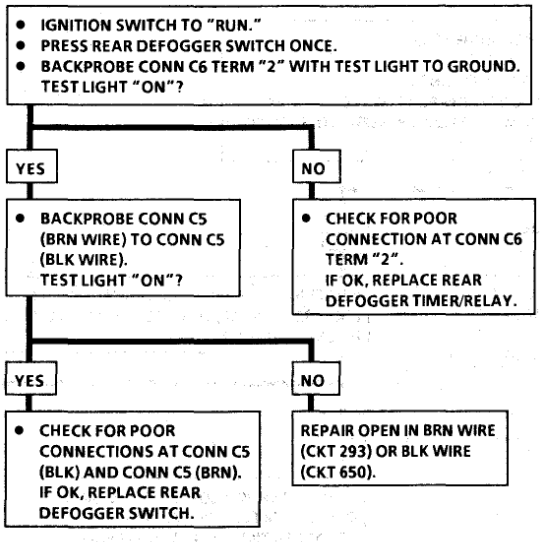
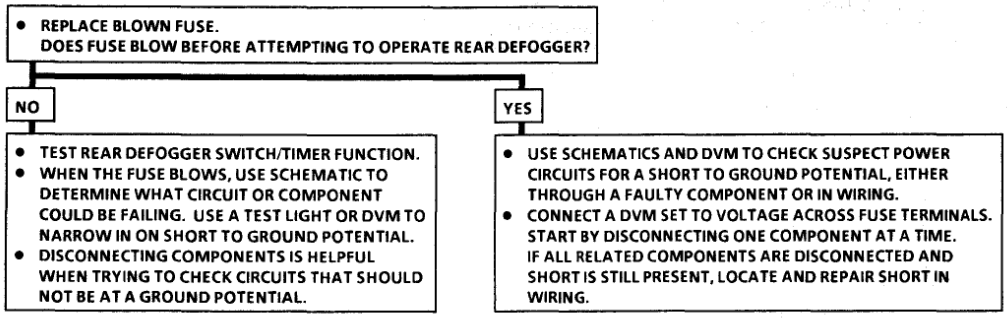


CHART #5
HVAC FUSE 3 REPEATEDLY BLOWS WHENEVER IGNITION IS "ON" OR WHEN ATTEMPTING TO USE REAR DEFOGGER



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CIRCUIT OPERATION (CHEVY)

When the Ignition Switch is turned to "RUN," voltage is applied from Fuse 3 to the Rear Defogger Switch. When the Rear Defogger Switch is turned to "ON," voltage is momentarily applied to the Rear Defogger Solid State Timer through CKT 241. With voltage applied to the Rear Defogger Timer On/Off Input, the Solid State Timer will energize the Internal Relay which applies voltage to the Rear Defogger Grid. The Relay remains closed until the defog cycle is complete or the Rear Defogger Switch/Timer is turned "OFF."

When the internal contacts of the Rear Defogger Relay are closed, voltage from Circuit Breaker 12 is applied to the indicator and to CKT 293.

The Rear Defogger Switch contains an internal timer to control the time the internal contacts are closed. When the Ignition Switch is turned to "RUN" and the Rear Defogger Switch is turned to "ON" for the first time, the defog cycle lasts 10 minutes. Further operation will result in 5 minute defog cycles. The defog cycle is reset to 10 minutes when the Ignition Switch is turned to "OFF" and back to "RUN."

CIRCUIT OPERATION (PONTIAC)

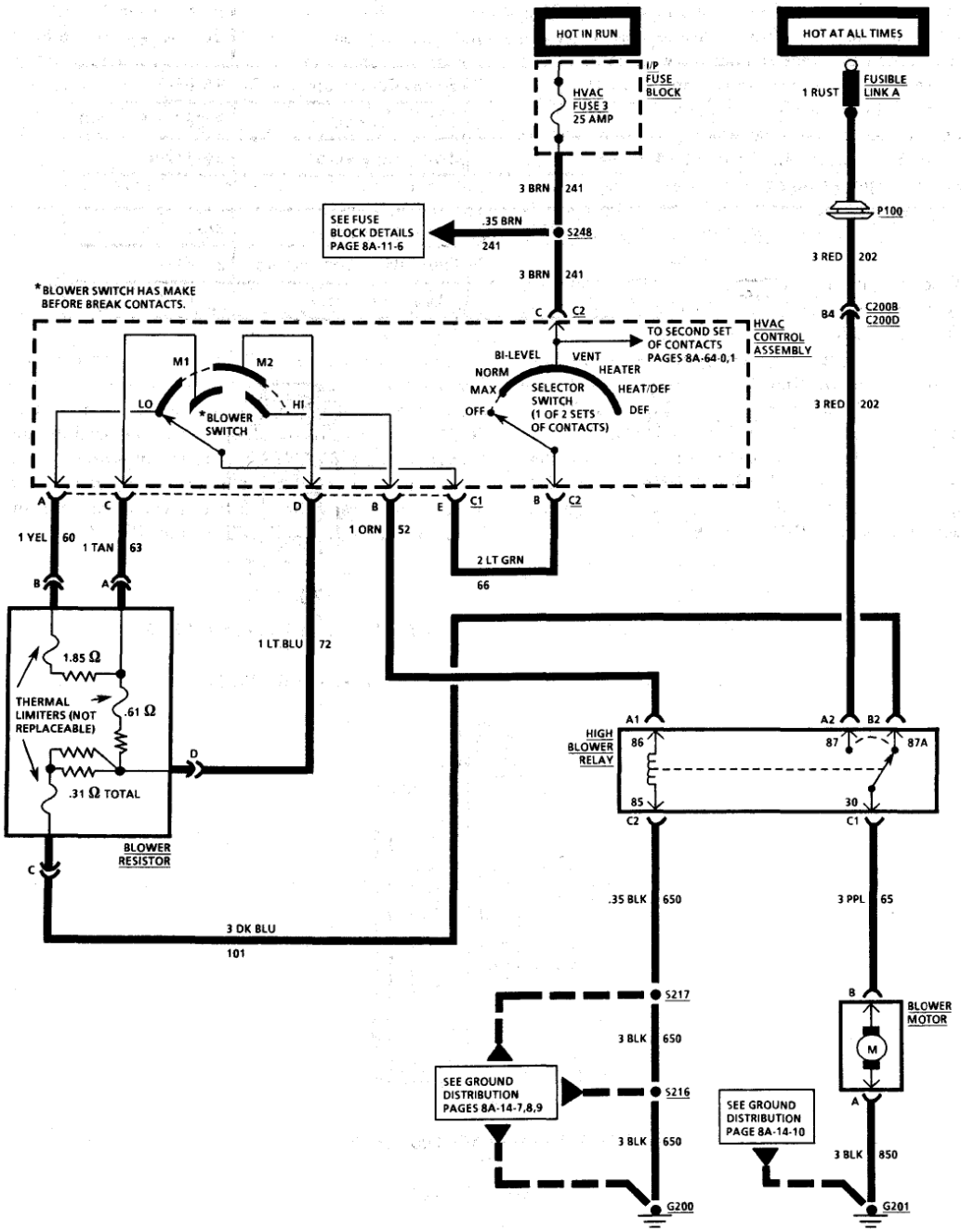
When the Ignition Switch is turned to "RUN," voltage is applied through the HVAC Fuse to the Rear Defogger Switch and the Rear Defogger Timer/Relay. When the Rear Defogger Switch is pressed, voltage is momentarily applied to the Rear Defogger Timer/Relay through CKT 292. When voltage is applied to the Rear Defogger Timer/Relay, the Rear Defogger Timer/Relay will close the internal contacts. The internal contacts remain closed until the defog cycle is complete or Rear Defogger Switch is pressed a second time.

When the internal contacts of the Rear Defogger Timer/Relay are closed, voltage is applied to the Rear Defogger Grid and Indicator.

The Rear Defogger Timer/Relay contains an internal timer to control the time the internal contacts are closed. When the Ignition Switch is turned to "RUN" and the Rear Defogger Switch pressed for the first time, the defog cycle lasts 10 minutes and further operation will result in 5 minutes defog cycles. The defog cycle is reset to 10 minutes when the Ignition Switch is turned to "OFF" and back to "RUN."

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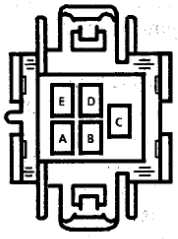
HVAC BLOWER CONTROL (C60)



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HVAC CONTROL ASSEMBLY CONNECTOR DESCRIPTIONS			PAGE
C1	Blower Switch	5-Way Connector	8A-63-0
C2	Selector Switch	3-Way Connector	8A-63-0, 8A-64-0
C3	Illumination Lamps Jumper	2-Way Connector	8A-117-1
PONTIAC ONLY			
C4	HVAC Control Assembly to I/P Harness	4-Way Connector	8A-61-1
C5	Rear Defogger Switch	Four 1-Way Connectors	8A-61-1
C6	Rear Defogger Timer/Relay	4-Way Connector	8A-61-1

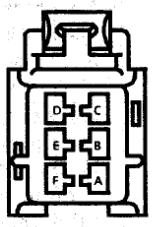
C1



12020813

5-WAY F METRI-PACK 630 SERIES
BLK

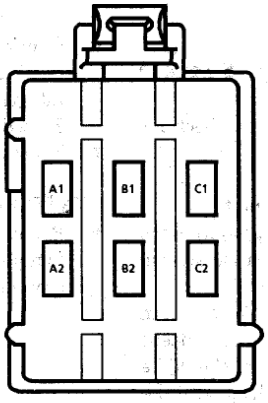
HVAC BLOWER SWITCH (C1)



12064752

6-WAY F METRI-PACK 280 SERIES
BLK

BLOWER RESISTOR



12110541

6-WAY F METRI-PACK 280 FLX LK
BLK

HIGH BLOWER RELAY

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HVAC BLOWER CONTROL (C60)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Blower Motor	Under lower RH side of I/P, mounted in HVAC Module	20	37	
Blower Resistor	In HVAC Module, forward and left of Temperature Control Cable Attachment			202-20
Blower Switch	Part of HVAC Control Assembly	21	39	
Fusible Links	Above RH Shock Tower	10	19	
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Center of I/P	21	40	202-22
High Blower Relay	Under I/P, above left side of floor tunnel	42	77	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Selector Switch	Part of HVAC Control Assembly	21	39	
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G201	Near base of RH "A" pillar, bolted to I/P Mounting Stud behind kick panel (1 ring, 1 wire)	9	16	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S248	I/P Harn, approx 4 cm before RR Defog Switch (Chevy) or from Instrument Cluster (Pont) breakouts			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Check HVAC Fuse 3 for open. If open, check for short to ground through CKT 241.
2. Check Fusible Link A.
3. Check that G201 and G200 are clean and tight.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedures.

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SYSTEM CHECK

ACTION	NORMAL RESULTS
[1] • Ignition Switch in "RUN." • Blower Switch in "LO." • Selector Switch in "VENT."	Blower Motor runs at low speed.
[2] • Blower Switch in "M1".	Blower Motor runs faster than in low speed.
[3] • Blower Switch in "M2".	Blower Motor runs faster than "M1" speed.
[4] • Blower Switch in "HI."	Blower Motor runs at high speed.
[5] • Put Selector Switch in "VENT," "BI-LEV," "HEAT," "DEFOG" and "DEF."	Blower continues to run at high speed.
[6] • Put Selector Switch in "OFF."	Blower Motor stops.

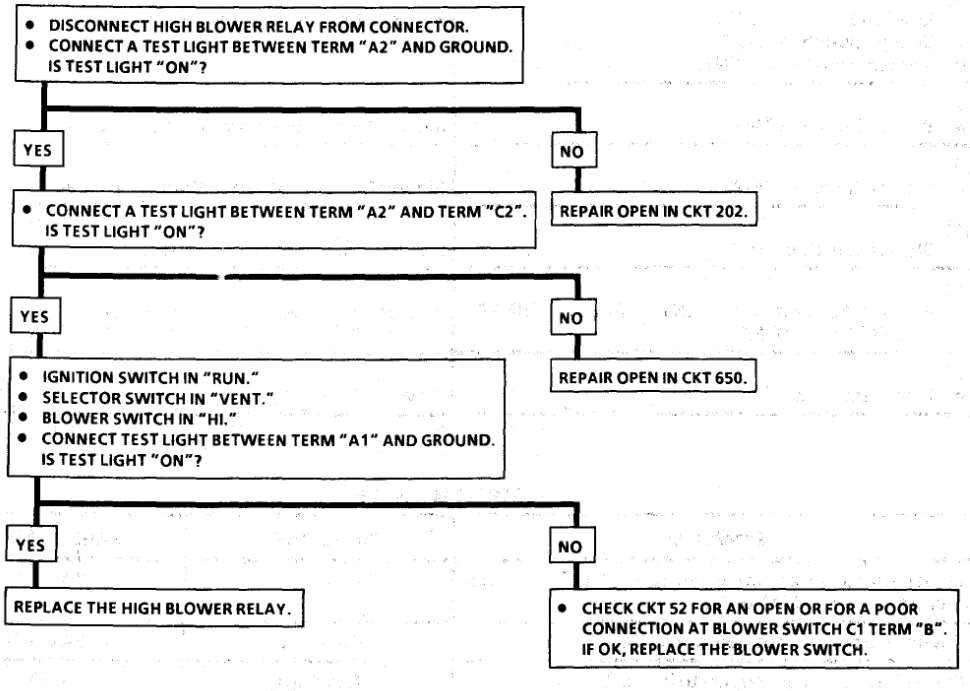
SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Blower Motor does not operate in "HI," but does operate in "LO," "M1" or "M2".	Chart #1	8A-63-4
Blower Motor does not operate at all.	Chart #2	8A-63-5
Blower Motor will only operate in "HI."	Chart #3	8A-63-6
One Blower speed inoperative, other than "HI."	Chart #4	8A-63-6
Blower Motor operates in "HI" continuously with Ignition Switch "OFF."	• Disconnect High Blower Relay. • If Blower Motor stops, replace High Blower Relay. • If Blower Motor continues to run, repair short to B + in CKT 101.	

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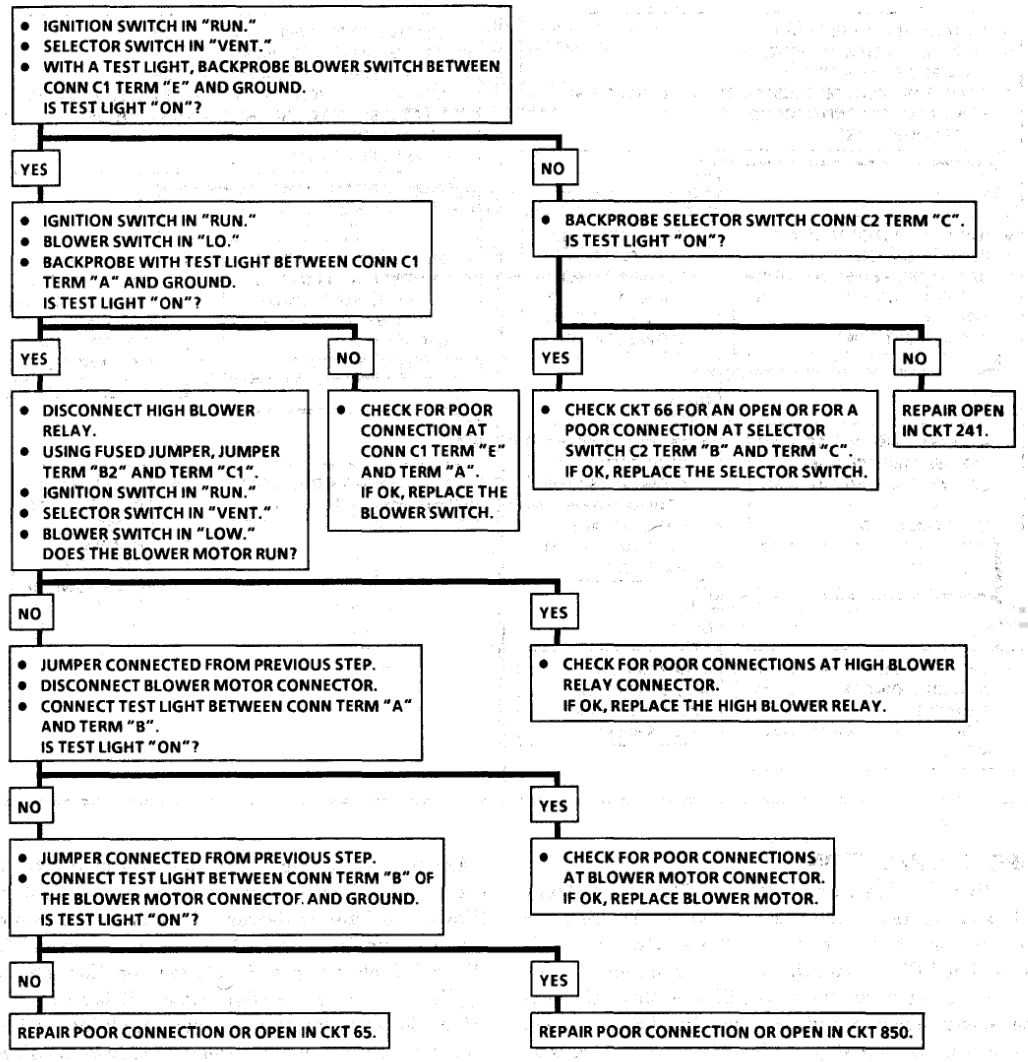
HVAC BLOWER CONTROL (C60)

CHART #1
BLOWER MOTOR DOES NOT OPERATE IN "HI," BUT DOES OPERATE IN "LO," "M1" OR "M2"



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CHART #2
BLOWER MOTOR DOES NOT OPERATE AT ALL



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HVAC BLOWER CONTROL (C60)

CHART #3
BLOWER MOTOR WILL ONLY OPERATE IN "HI"

- IGNITION SWITCH IN "RUN."
- SELECTOR SWITCH IN "VENT."
- BLOWER SWITCH IN "LO."
- BACKPROBE WITH TEST LIGHT BETWEEN BLOWER RESISTOR CONN TERM "B" AND GROUND.

IS TEST LIGHT "ON"?

YES
- IGNITION SWITCH IN "RUN."
- BLOWER SWITCH IN "LO".
- BACKPROBE BETWEEN BLOWER RESISTOR CONN TERM "C" AND GROUND.

IS TEST LIGHT "ON"?

YES
- BACKPROBE WITH TEST LIGHT BETWEEN HIGH BLOWER RELAY CONN TERM "B2" AND GROUND.

IS TEST LIGHT "ON"?

YES
- CHECK FOR POOR CONNECTION AT HIGH BLOWER RELAY CONN TERM "B2".

IF OK, REPLACE HIGH BLOWER RELAY.

NO

REPAIR OPEN IN CKT 101 BETWEEN BLOWER RESISTOR AND HIGH BLOWER RELAY.

NO
- CHECK FOR POOR CONNECTION AT BLOWER RESISTOR CONNECTOR.

IF OK, REPLACE BLOWER RESISTOR ASSEMBLY.

NO
- CHECK FOR POOR CONNECTION AT BLOWER SWITCH CONN C1 TERM "A".

IF OK, REPLACE THE BLOWER SWITCH.

CHART #4
ONE BLOWER SPEED INOPERATIVE, OTHER THAN "HI"

- DISCONNECT BLOWER RESISTOR CONN.
- IGNITION SWITCH TO "RUN."
- BLOWER SWITCH IN SUSPECT POSITION.
- CONNECT TEST LIGHT FROM SUSPECT TERMINAL (LO = B, M1 = A, M2 = D) TO GROUND (HARNESS SIDE OF CONNECTOR).

IS TEST LIGHT "ON"?

NO
- BACKPROBE WITH A TEST LIGHT BETWEEN CONN C1 OF THE SUSPECT TERMINAL (LO = A, MI = C, M2 = D) AND GROUND.

IS TEST LIGHT "ON"?

YES

REPAIR OPEN IN SUSPECT CIRCUIT (LO = 60, M1 = 63, M2 = 72).

NO
- CHECK FOR POOR CONNECTION AT SUSPECT TERMINAL.

IF OK, REPLACE BLOWER SWITCH.

YES
- CHECK FOR POOR CONNECTION AT SUSPECT TERMINAL OF BLOWER RESISTOR CONN.

IF OK, REPLACE THE BLOWER RESISTOR.

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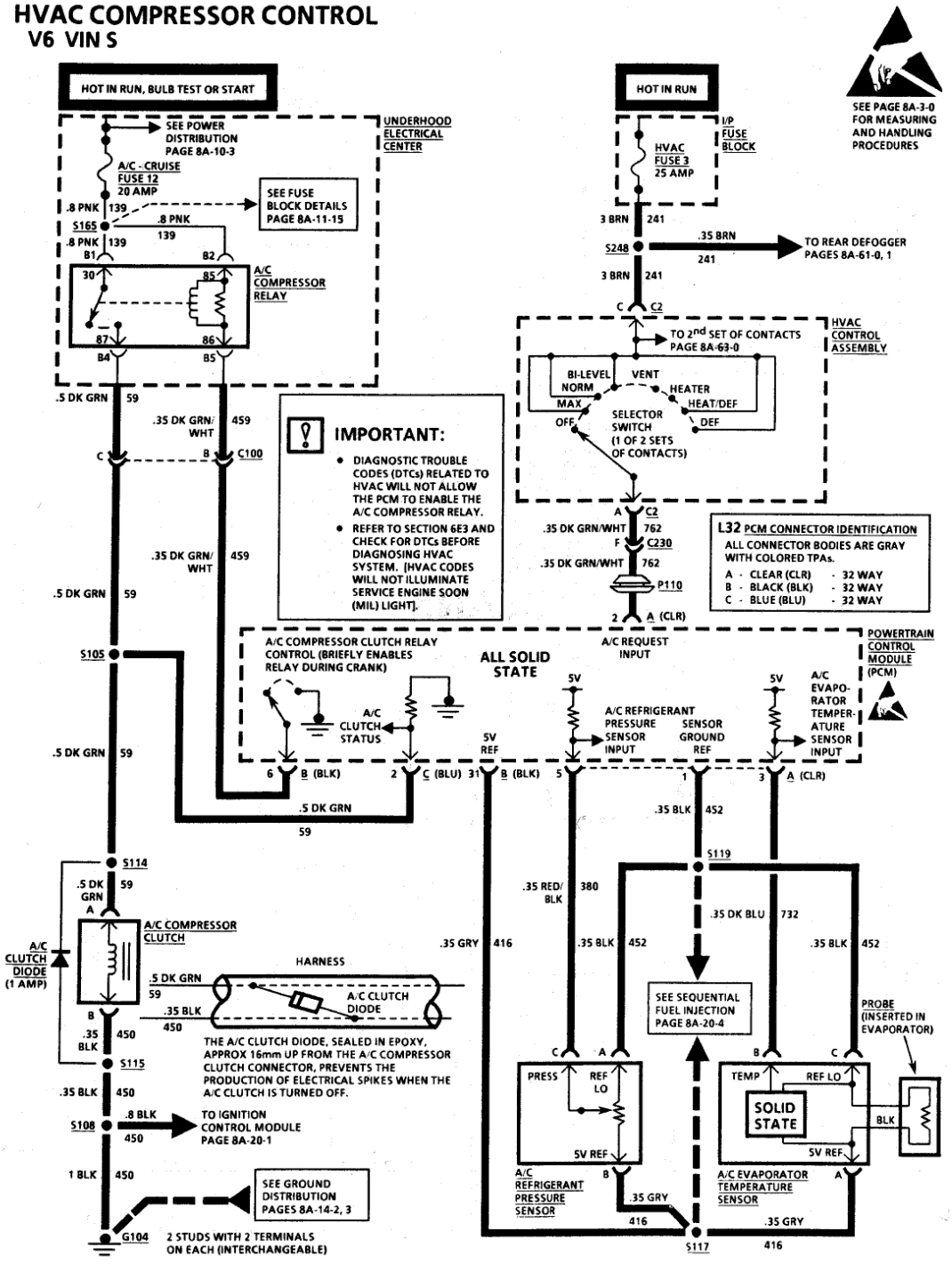
CIRCUIT OPERATION

With the Ignition Switch in "RUN," battery voltage is applied to the Selector Switch. The Selector Switch applies power to the Blower Switch in all modes but "OFF." With the Blower Switch set to "LO," battery voltage is applied to the Blower Motor through the Blower Resistor and the normally closed contacts of the High Blower Relay. The Blower Motor runs at low speed. When the Blower Switch is in the "M1" or "M2" positions, the operation is similar to the operation in "LO" except the resistance through the Blower Resistor is decreased, causing the Blower Motor to run faster in "M1" and even faster in "M2". When "HI" blower speed is selected, the Blower Switch applies voltage to the High Blower Relay coil. The High Blower Relay is energized, applying voltage from CKT 202 through the relay directly to the Blower Motor. The Blower Motor then runs at high speed.

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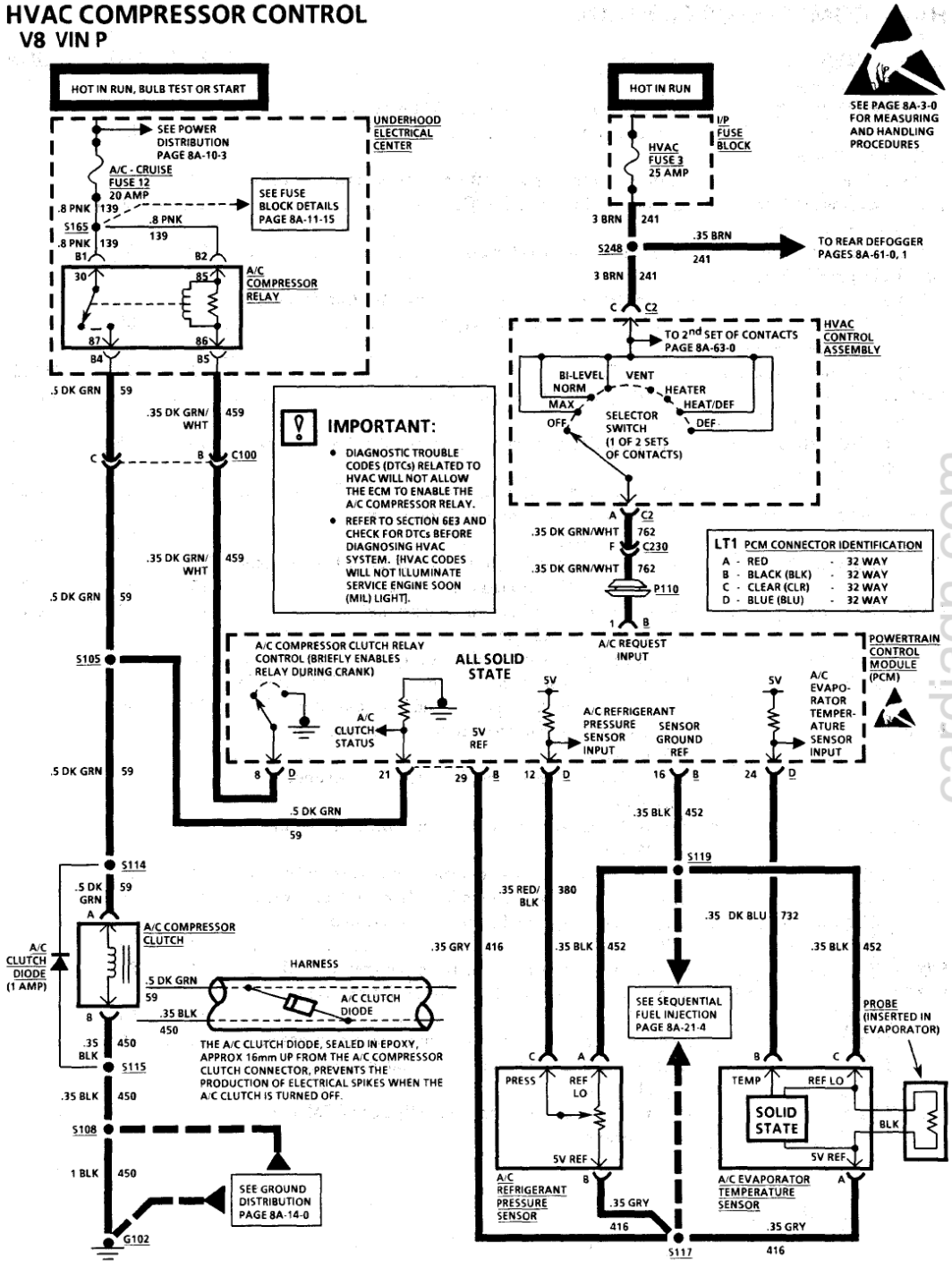
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HVAC COMPRESSOR CONTROL
V6 VIN S



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HVAC COMPRESSOR CONTROL
V8 VIN P



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HVAC COMPRESSOR CONTROL

COMPONENT	LOCATION	201-PG	FIG.	CONN
A/C Clutch Diode (V6 VIN S)	Sealed in Harn, 10 cm from A/C Compressor Clutch Conn	28	54	
A/C Clutch Diode (V8 VIN P)	Sealed in Harn, approx 12 cm from Generator breakout	14	26	
A/C Compressor Clutch	RH side of Engine, below Generator	14, 28	26, 54	
A/C Evaporator Temperature Sensor	Mounted in Evaporator Core	20	37	
A/C Refrigerant Pressure Sensor	Above RH Shock Tower, forward of A/C Compressor Low Pressure Cut-off Switch	19	35	
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Center of I/P	21	40	202-22
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C100 (10 cavities)	Engine to Forward Lamp Harn, behind LH wheelhouse, attached to PCM bracket	15	28	202-0
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
G102 (LT1)	Front of LH cylinder head (3 rings, 3 wires and braided strap)	16	29	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S105 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S105 (LT1)	Engine Harn, approx 11 cm from main branch and PCM breakout			
S108 (L32)	Engine Harn, approx 4 cm from braided ground strap	11	20	
S108 (LT1)	Engine Harn, approx 17 cm from Injector 3 breakout	24	44	
S114 (L32)	Engine Harn, approx 10 cm from A/C Compressor Clutch Conn	28	54	
S114 (LT1)	Engine Harn, approx 12 cm from Generator breakout	14	26	
S115 (L32)	Engine Harn, approx 10 cm from A/C Compressor Clutch Conn	28	54	
S115 (LT1)	Engine Harn, approx 12 cm from Generator breakout	14	26	
S117 (L32)	Engine Harn, approx 5 cm from main branch and PCM breakout			
S117 (LT1)	Engine Harn, approx 5 cm from clip near PCM and main branch			

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COMPONENT	LOCATION	201-PG	FIG.	CONN
S119 (L32)	Engine Harn, at RH Oxygen Sensor breakout	12	23	
S119 (LT1)	Engine Harn, approx 18 cm from main branch and PCM breakout			
S165	Forward Lamp Harn, approx 7 cm from Electrical Center breakout			
S248	I/P Harn, approx 4 cm before RR Defog Switch (Chevy) or from Instrument Cluster (Pont) breakouts			

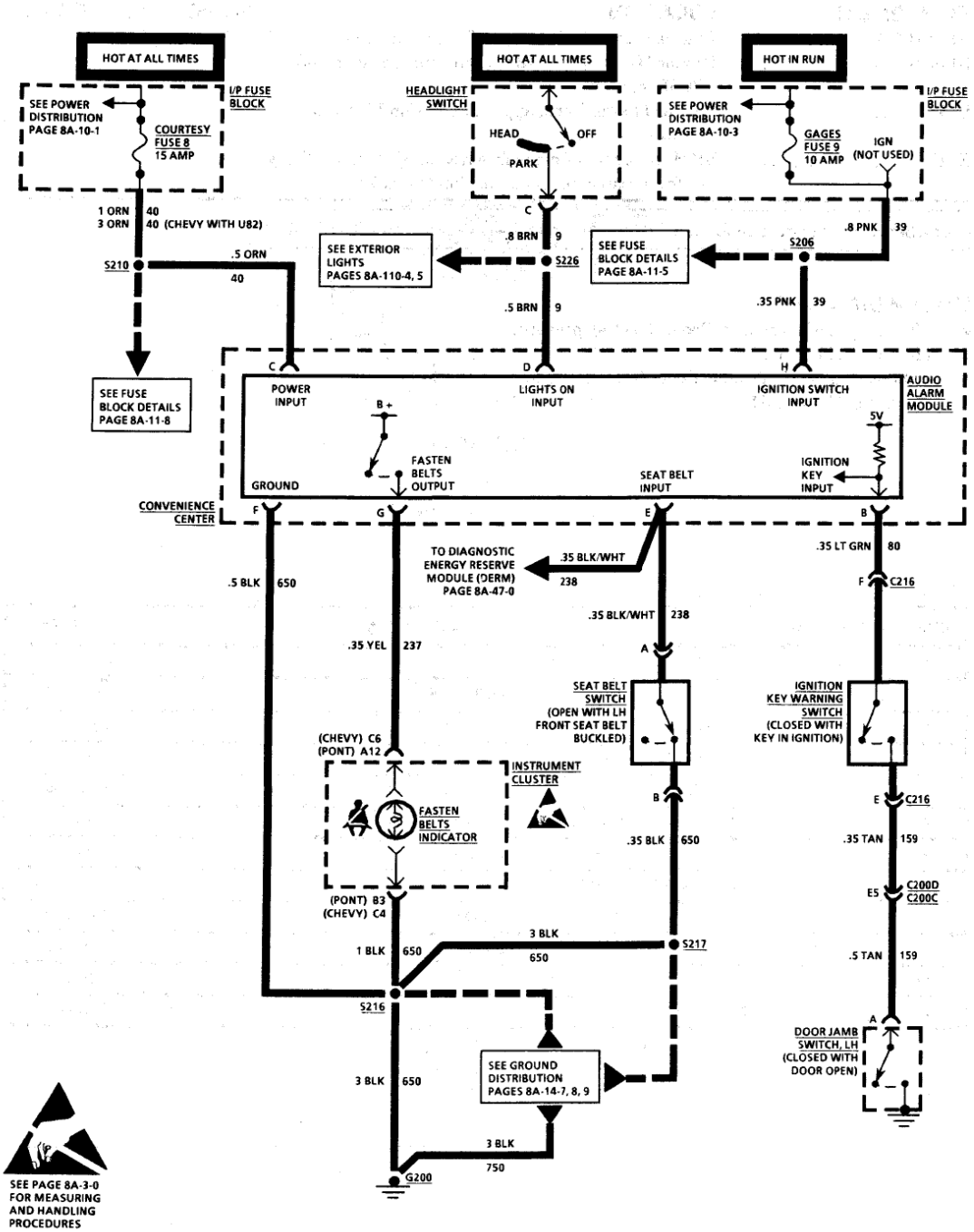
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

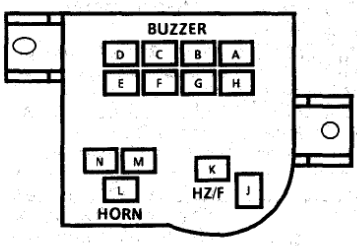
- With Diagnostic Trouble Codes (DTCs) present, refer to SECTION 6E3.
- Without Diagnostic Trouble Codes (DTCs) present, refer to SECTION 1B1.

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AUDIBLE WARNINGS: TONE



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12015999

BLK

CONVENIENCE CENTER

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
B	LT GRN	80	KEY-IN-IGNITION SIGNAL	8A-76-0
C	ORN	40	POWER FEED FROM COURTESY FUSE #8	8A-11-8
D	BRN	9	PARK LIGHT ON FEED	8A-76-0
E	BLK/WHT	238	SEAT BELT SWITCH SIGNAL	8A-76-0
F	BLK	650	GROUND	8A-14-8
G	YEL	237	SEAT BELT INDICATOR LAMP CONTROL	8A-76-0
H	PNK	39	POWER FEED FROM GAGES FUSE #9	8A-11-5
J	BRN	27	HAZARD FLASHER OUTPUT	8A-110-4
K	ORN	140	POWER FEED FROM STOP/HAZARD FUSE #6	8A-11-7
L	ORN	540	POWER FEED FROM CIGAR/HORN FUSE #7	8A-11-8
M	BLK	28	HORN RELAY CONTROL	8A-40-0
N	DK GRN	29	HORN FEED	8A-40-0

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AUDIBLE WARNINGS: TONE

COMPONENT	LOCATION	201-PG	FIG.	CONN
Convenience Center	Left of Steering Column, mounted to bottom of I/P Carrier	8	15	202-20
Door Jamb Switch, LH	Near base of LH "A" pillar	45	84	
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Ignition Key Warning Switch	Part of Steering Column	3	5	
Instrument Cluster	LH side of I/P			202-23
Seat Belt Switch	Part of Driver's Seat Buckle Assembly	43	81	
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C216 (11 cavities)	Attached to base of Steering Column	34	63	202-5
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S210	I/P Harn, approx 44 cm from Convenience Center (Pont) or 12 cm from RR Defog Switch (Chevy) breakouts			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S226	I/P Harn, approx 10 cm from Instrument Cluster breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check that G200 is clean and tight.
- If Ignition Key warning is inoperative check the LH Door Jamb Switch or for open in CKT 159.
- If all warning chimes are inoperative, check Courtesy Fuse 8 for open.
- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedure(s).

SYSTEM CHECK

ACTION	NORMAL RESULTS
[1] LIGHTS "ON" WARNING • Remove Ignition Key from Ignition Switch. • Headlamp Switch to "PARK" or "HEAD." • Headlamp Switch to "OFF."	Lights "ON" Warning sounds as long as the Headlight Switch is in "HEAD" or in "PARK."
[2] IGNITION KEY WARNING • Ignition Key in Ignition Switch. • Ignition Switch to "OFF." • Open LH door. • Close LH door.	Ignition Key Warning Tone sounds as long as the LH door is open.

(CONTINUED ON NEXT PAGE)

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(CONTINUED FROM PREVIOUS PAGE)

SYSTEM CHECK

ACTION	NORMAL RESULTS
[3] IGNITION KEY WARNING • Driver's seat belt latched. • Ignition Switch to "RUN." • Open LH door. • Close LH door.	No tone sounds.
[4] SEAT BELT WARNING • Ignition Switch to "OFF." • Close LH door. • Driver's seat belt unlatched. • Ignition Switch to "RUN."	Seat Belt Warning Tone sounds for 5 to 8 seconds. Fasten Belts Indicator stays "ON."
[5] SEAT BELT WARNING • Close LH door. • Latch driver's seat belt. • Ignition Switch to "OFF" and back to "RUN."	Seat Belt Warning Tone does not sound and does not illuminate.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
All warnings inoperative.	Chart #1	8A-76-4
Ignition Key Warning inoperative.	Chart #2	8A-76-4
Seat Belt Warning inoperative.	Chart #3	8A-76-5
Fasten Belts Indicator "ON" continuously.	Chart #4	8A-76-5
Fasten Belts Indicator inoperative.	Chart #5	8A-76-5
Lights "ON" Warning inoperative.	Check for poor connection at Convenience Center terminal "D" or open in CKT 9 to the Audio Alarm Module. If OK, replace Audio Alarm Module.	
Lights "ON" Warning sounds continuously with Ignition Switch in "RUN."	Check for poor connection at Convenience Center terminal "H" or open in CKT 39 to the Audio Alarm Module. If OK, replace Audio Alarm Module.	
Ignition Key Warning sounds when LH front door is open and key is not in Ignition Switch.	Check for short to ground in CKT 80. If OK, replace Ignition Key Warning Switch.	
Ignition Key Warning continues to sound when LH front door is closed and Ignition Switch is in "RUN."	Check for poor connection at Convenience Center terminal "H" or open in CKT 39 to the Audio Alarm Module.	
Seat Belt Warning sounds continuously.	Check for short to ground in CKT 238 or for Seat Belt Switch stuck closed. If OK, replace Audio Alarm Module.	

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AUDIBLE WARNINGS: TONE

CHART #1
ALL WARNINGS INOPERATIVE

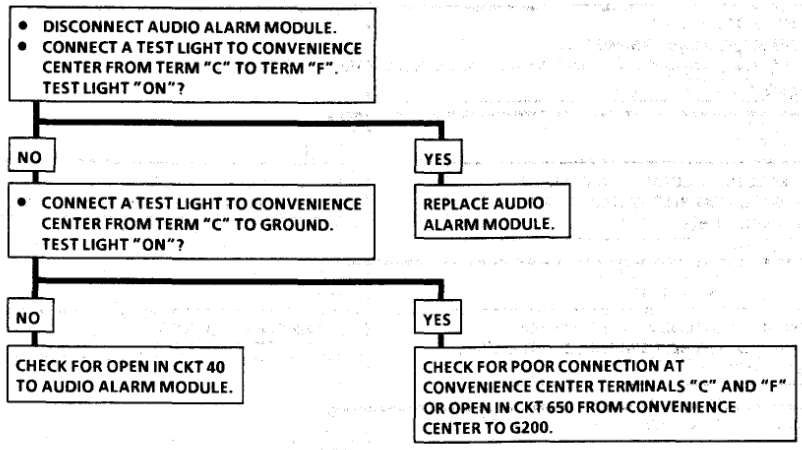
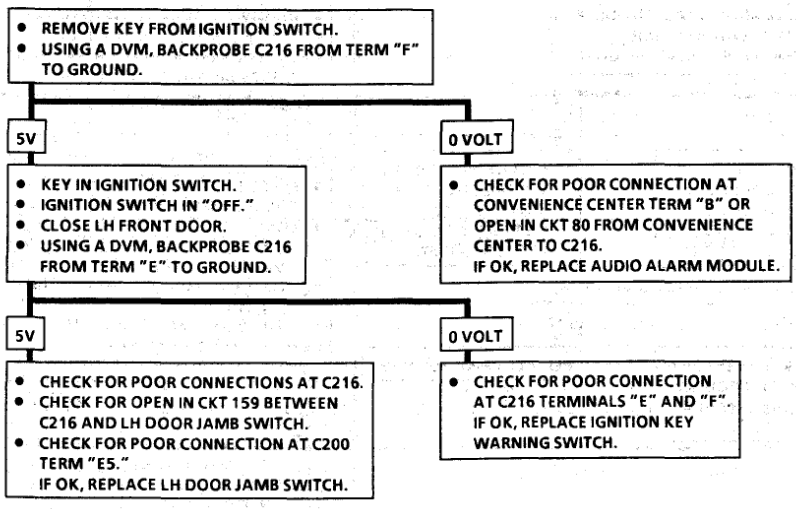


CHART #2
IGNITION KEY WARNING INOPERATIVE



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CHART #3
SEAT BELT WARNING INOPERATIVE

- SEAT BELT NOT BUCKLED.
- DISCONNECT AUDIO ALARM MODULE.
- WITH TEST LIGHT, BACKPROBE CONVENIENCE CENTER FROM TERM "C" TO TERM "E". IS TEST LIGHT "ON"?

NO
- BACKPROBE FROM CONVENIENCE CENTER TERM "G" TO SEAT BELT SWITCH CONN TERM "A". IS TEST LIGHT "ON"?

YES
- CHECK FOR POOR CONNECTION AT TERM "E". IF OK, REPLACE AUDIO ALARM MODULE.

NO
- BACKPROBE FROM CONVENIENCE CENTER TERM "G" TO SEAT BELT SWITCH CONN TERM "B". IS TEST LIGHT "ON"?

YES
REPAIR OPEN IN CKT 238.

NO
REPAIR OPEN IN CKT 650.

YES
- CHECK SEAT BELT SWITCH CONNECTION. IF OK, REPLACE SEAT BELT SWITCH.

CHART #4
FASTEN BELTS INDICATOR "ON" CONTINUOUSLY

- REMOVE AUDIO ALARM MODULE.
- IGNITION SWITCH TO "RUN." FASTEN BELTS INDICATOR "ON"?

NO
- PROBE WITH A TEST LIGHT BETWEEN SEAT BELT SWITCH CONN TERM "A" AND B+. IS TEST LIGHT "ON"?

YES
- CHECK FOR SHORT TO VOLTAGE TO CKT 237. IF OK, REPLACE INSTRUMENT CLUSTER PRINTED CIRCUIT.

YES
- CHECK CKT 238 FOR A SHORT TO GROUND. IF OK, REPLACE SEAT BELT SWITCH.

NO
REPLACE CHIME MODULE.

CHART #5
FASTEN BELTS INDICATOR INOPERATIVE

- REMOVE AUDIO ALARM MODULE.
- CONNECT A FUSED JUMPER FROM B+ TO THE CONVENIENCE CENTER TERM "G". FASTEN BELTS INDICATOR "ON"?

NO
- FUSED JUMPER STILL CONNECTED.
- CONNECT A TEST LIGHT TO INSTRUMENT CLUSTER CONN FROM TERM "A12" (PONT) OR "C6" (CHEVY). TO GROUND. TEST LIGHT "ON"?

YES
- CHECK FOR POOR CONNECTION AT AUDIO ALARM MODULE. IF OK, REPLACE AUDIO ALARM MODULE.

NO
REPAIR OPEN IN CKT 237 BETWEEN CONVENIENCE CENTER AND INSTRUMENT CLUSTER.

YES
- CHECK FOR POOR CONNECTION AT INSTRUMENT CLUSTER CONNECTOR.
- CHECK FASTEN BELTS INDICATOR LAMP. IF OK, REPLACE INSTRUMENT CLUSTER PRINTED CIRCUIT.

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AUDIBLE WARNINGS: TONE

CIRCUIT OPERATION

The Audio Alarm Module generates a single tone for: Lights "ON" Warning, Ignition Key Warning and Fasten Belts Warning.

LIGHTS "ON" WARNING

When the Headlamp Switch is in "PARK" or "HEAD," voltage is applied to the Lights "ON" Input of the Audio Alarm Module. When the Ignition Switch is turned out of the "RUN" position, voltage is removed from the Ignition Switch Input of the Audio Alarm Module. When voltage is present at the Lights "ON" Input and no voltage applied to the Ignition Switch Input, the Audio Alarm Module will sound the Lights "ON" Warning.

IGNITION KEY WARNING

The Audio Alarm Module applies voltage at all times to the Ignition Key Warning Switch. When the Ignition Key is placed into the Ignition Switch, the Ignition Key Warning Switch is closed. When the LH front door is open, the LH Front Door Jamb Switch closes the circuit to ground. The Audio Alarm Module senses a voltage drop at the Ignition Key Input and will sound the Ignition Key Warning.

FASTEN BELTS WARNING

The Audio Alarm Module applies voltage to the Seat Belt Switch at all times. The Audio Alarm Module senses a voltage drop at the Seat Belt Input through the closed contacts of the Seat Belt Switch when the driver's seat belt is unlatched. When the driver's seat belt is latched, the Seat Belt Switch is opened and the Audio Alarm Module senses voltage at the Seat Belt Input. When the Ignition Switch is turned to "RUN," voltage is applied to the Audio Alarm Module Ignition Switch Input. When voltage is present at the Ignition Switch Input and zero volt at the Seat Belt Input, the Audio Alarm Module will sound the Fasten Belts Warning for 5 to 8 seconds. If voltage is present at the Ignition Switch Input and the Seat Belt Input, the Audio Alarm Module will disable the Fasten Belts Warning.

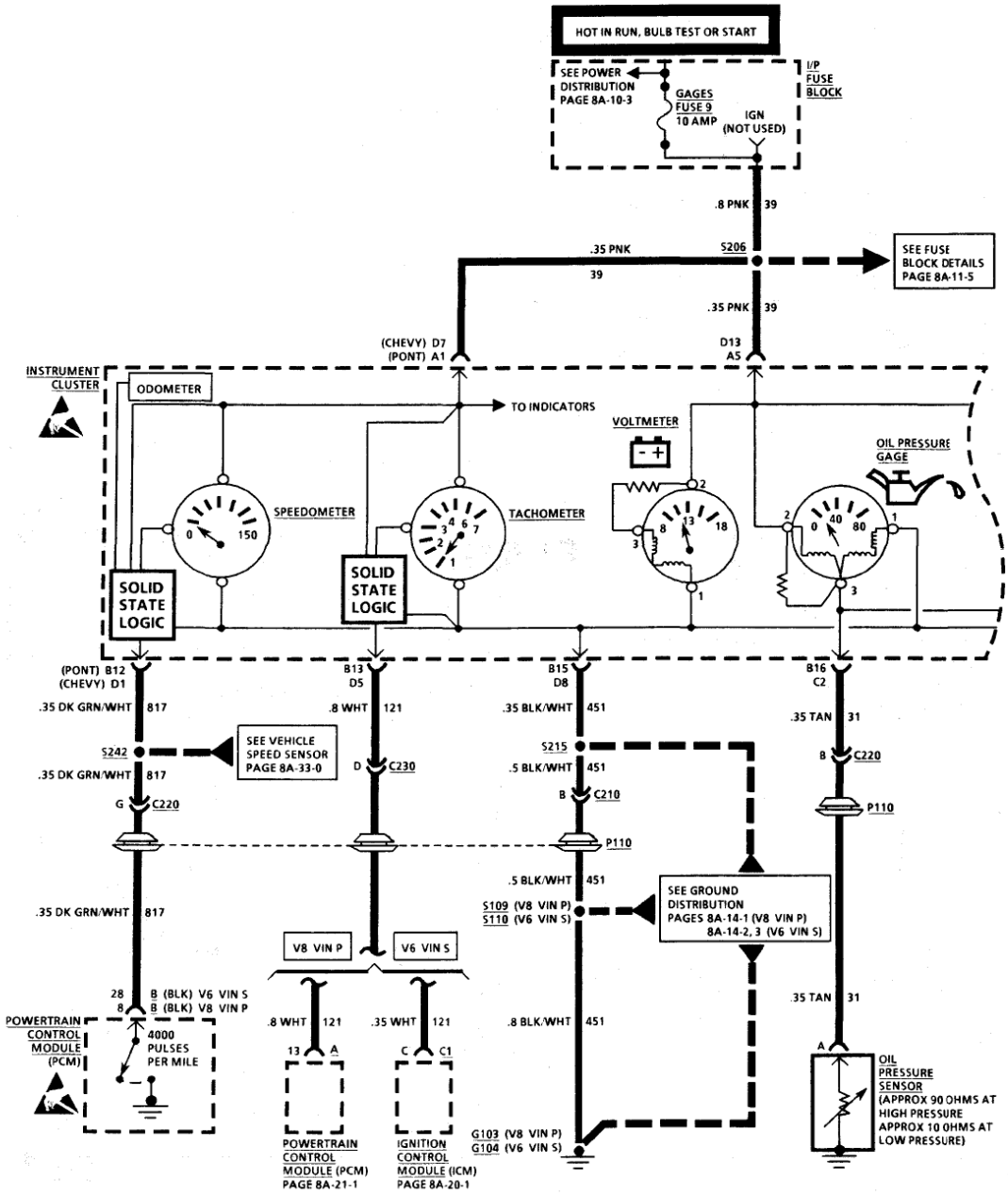
When the Ignition Switch is turned to "RUN," the Audio Alarm Module senses voltage at the Ignition Switch Input. When voltage is applied to the Ignition Switch Input, the Audio Alarm Module applies voltage to the Fasten Belts Indicator for 5 to 8 seconds independent of the Seat Belt Switch and Fasten Belts Warning.

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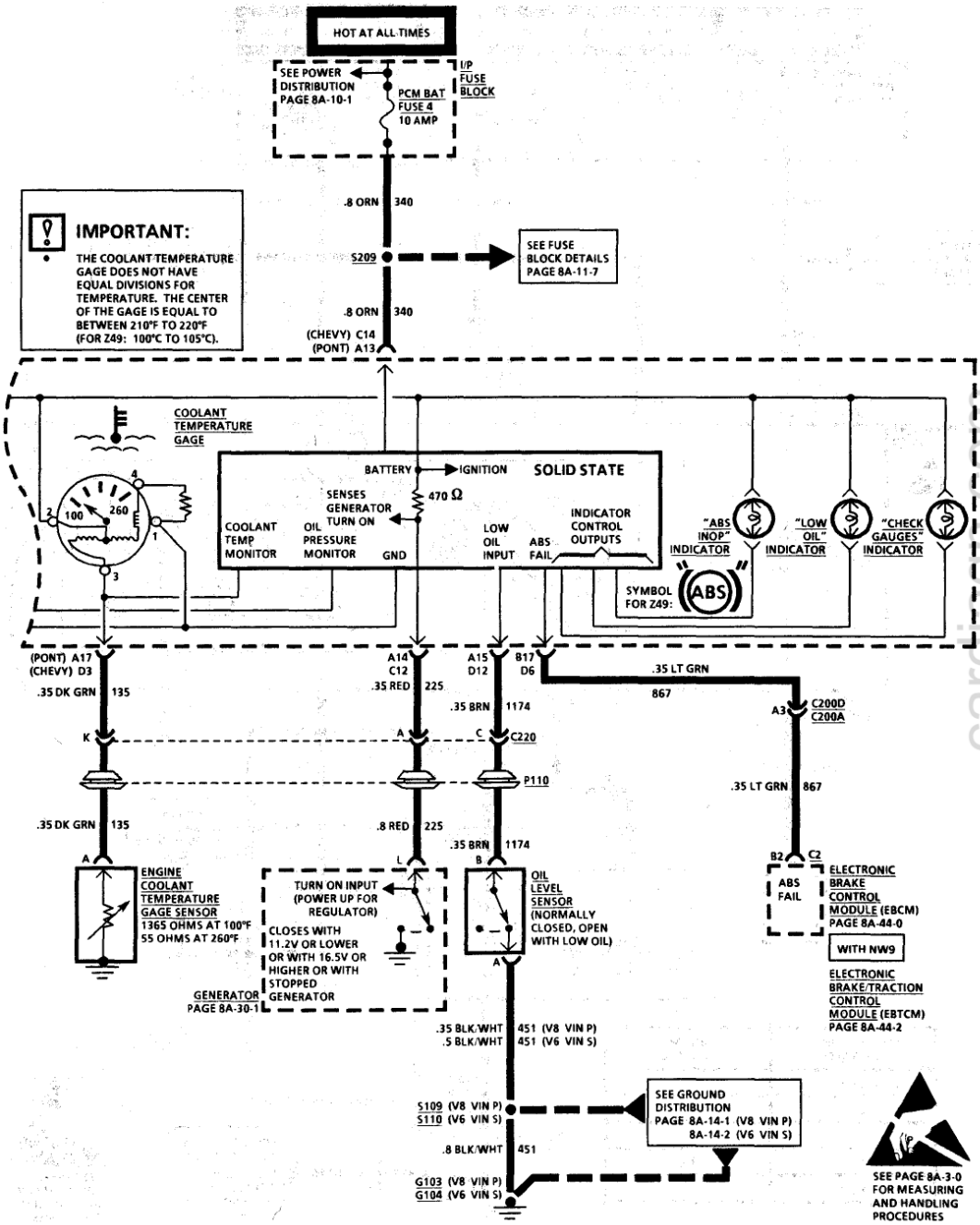
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INSTRUMENT CLUSTER: WITH GAGES

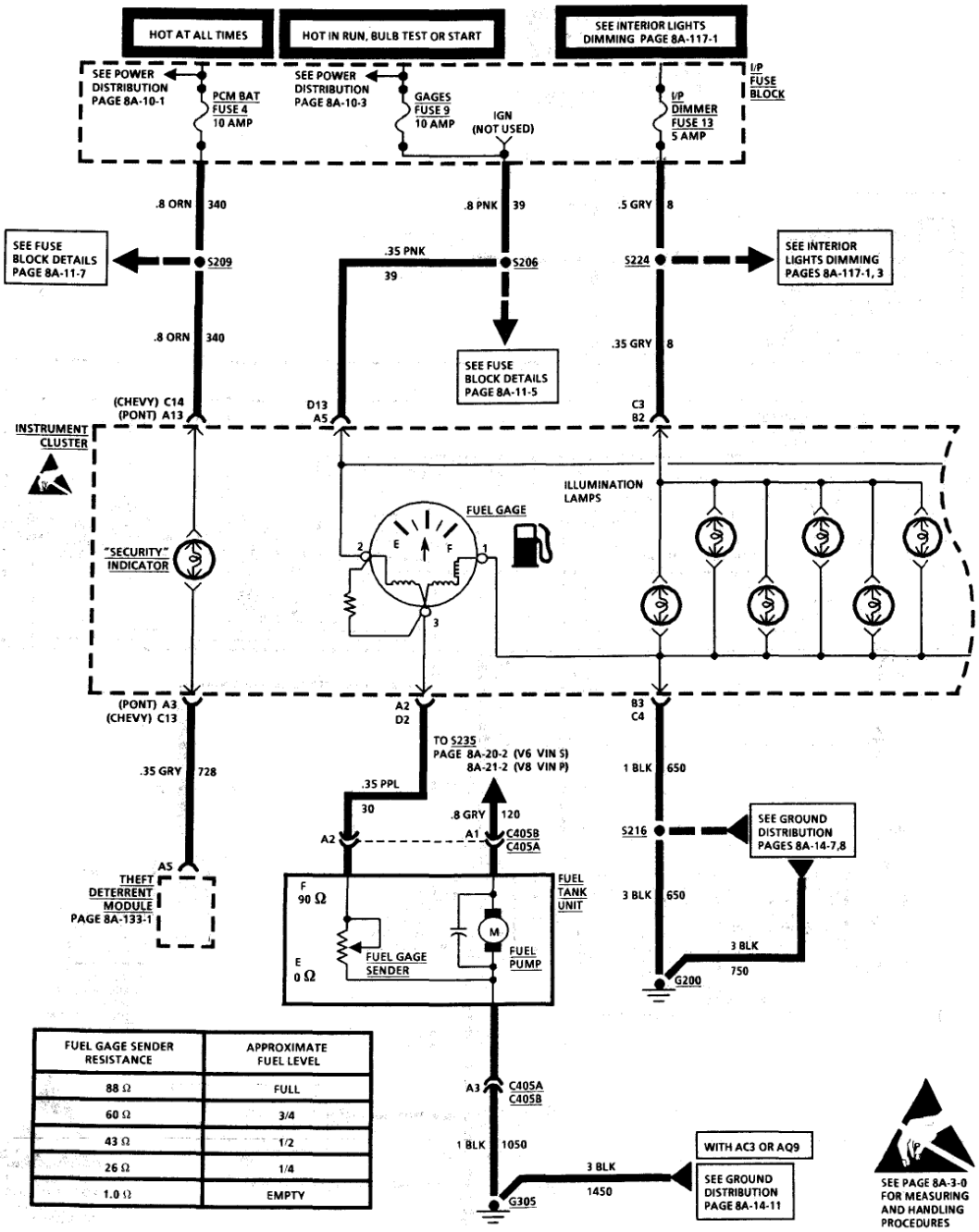


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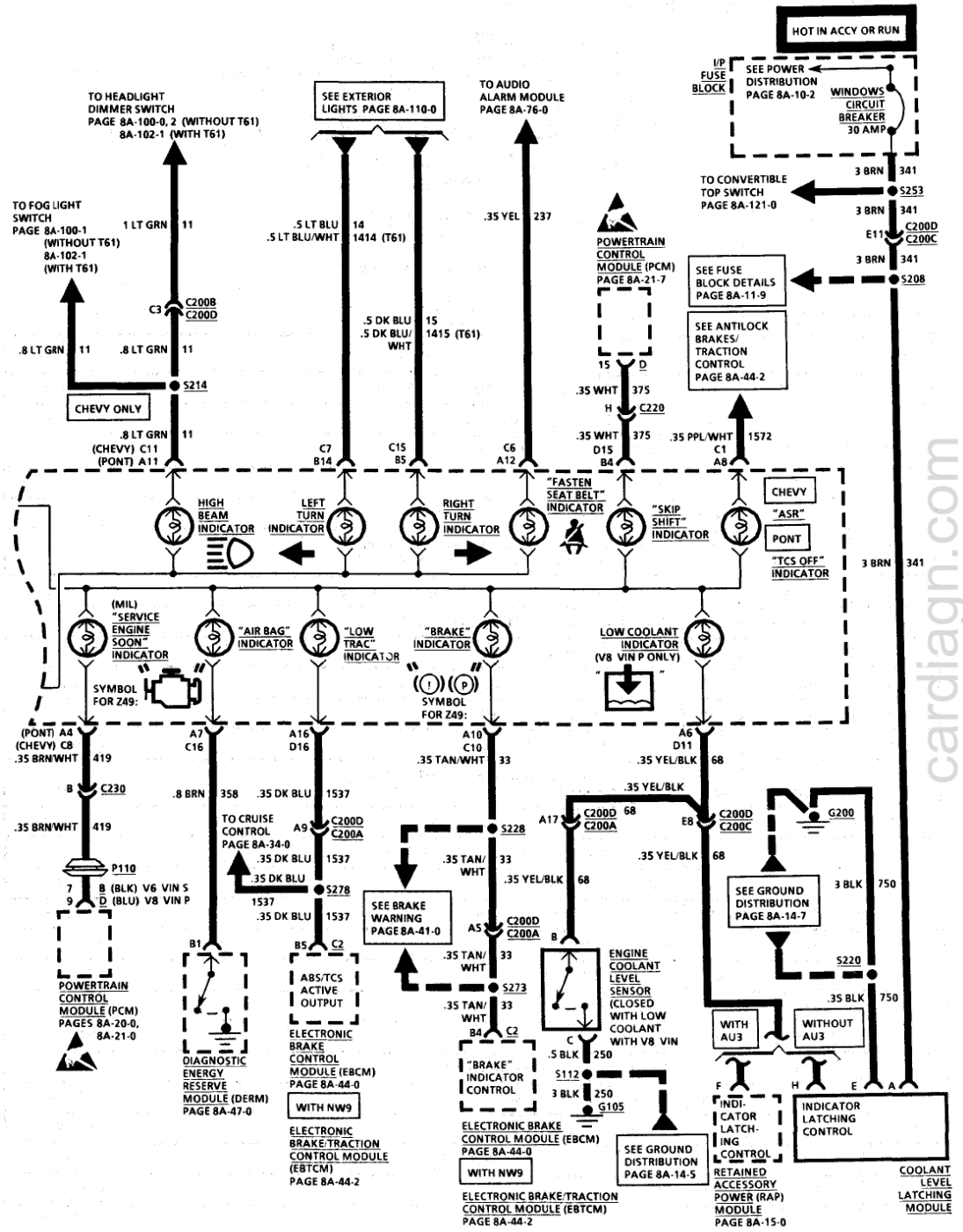
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INSTRUMENT CLUSTER: WITH GAGES



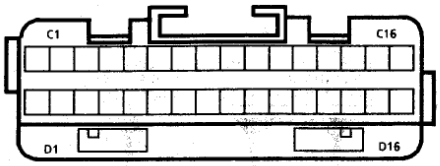
FUEL GAGE SENDER RESISTANCE	APPROXIMATE FUEL LEVEL
88 Ω	FULL
60 Ω	3/4
43 Ω	1/2
26 Ω	1/4
1.0 Ω	EMPTY

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INSTRUMENT CLUSTER: WITH GAGES



12045575

32-WAY F MICRO-PACK 100 SERIES
BLK

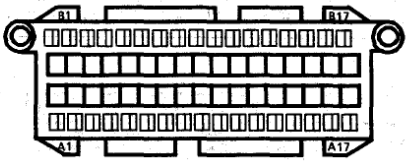
INSTRUMENT CLUSTER

(CHEVY)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C1	PPL/WHT	1572	"ASR" INDICATOR LAMP CONTROL (WITH NW9)	8A-81-3
C2	TAN	31	OIL PRESSURE INDICATOR CONTROL	8A-81-0
C3	GRY	8	I/P ILLUMINATION LAMPS FEED	8A-81-2
C4	BLK	650	GROUND	8A-14-8
C6	YEL	237	SEAT BELT INDICATOR LAMP CONTROL	8A-81-3
C7 C7	LT BLU LT BLU/WHT	14 1414	(DOMESTIC) LEFT TURN SIGNAL SWITCH OUTPUT (WITH T61) LEFT TURN SIGNAL SWITCH OUTPUT	8A-81-3 8A-81-3
C8	BRN/WHT	419	SERVICE ENGINE SOON INDICATOR LAMP CONTROL	8A-81-3
C10	TAN/WHT	33	BRAKE WARNING INDICATOR LAMP CONTROL	8A-81-3
C11	LT GRN	11	HIGH BEAM HEADLIGHTS ON	8A-81-3
C12	RED	225	GENERATOR OUTPUT - INDICATOR CONTROL	8A-81-1
C13	GRY	728	SECURITY INDICATOR LAMP CONTROL	8A-81-2
C14	ORN	340	POWER FEED FROM PCM BAT FUSE 4	8A-11-7
C15 C15	DK BLU DK BLU/WHT	15 1415	(DOMESTIC) RIGHT TURN SIGNAL SWITCH OUTPUT (WITH T61) RIGHT TURN SIGNAL SWITCH OUTPUT	8A-81-3 8A-81-3
C16	BRN	358	AIR BAG INDICATOR CONTROL	8A-81-3
D1	DK GRN/WHT	817	VEHICLE SPEED SIGNAL - 4000 PULSES PER MILE	8A-81-0
D2	PPL	30	FUEL GAGE SIGNAL	8A-81-2
D3	DK GRN	135	COOLANT TEMPERATURE SENSOR SIGNAL	8A-81-1
D5	WHT	121	TACHOMETER SIGNAL	8A-81-0
D6	LT GRN	867	ABS FAIL SIGNAL	8A-81-1
D7	PNK	39	POWER FEED FROM GAGES FUSE 9	8A-11-5
D8	BLK/WHT	451	GROUND	8A-14-1, 2, 3
D11	YEL/BLK	68	LOW COOLANT LEVEL INDICATOR CONTROL	8A-81-3
D12	BRN	1174	OIL LEVEL SENSOR SIGNAL	8A-81-1
D13	PNK	39	POWER FEED FROM GAGES FUSE 9	8A-11-5
D15	WHT	375	"SKIP SHIFT" INDICATOR LAMP CONTROL	8A-81-3
D16	DK BLU	1537	ABS ACTIVE OUTPUT	8A-81-3

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12065803

34-WAY F MICRO-PACK 100 SERIES
BLK
INSTRUMENT CLUSTER

(PONTIAC)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A1	PNK	39	POWER FEED FROM GAGES FUSE 9	8A-11-5
A2	PPL	30	FUEL GAGE SIGNAL	8A-81-2
A3	GRY	728	SECURITY INDICATOR LAMP CONTROL	8A-81-2
A4	BRN/WHT	419	SERVICE ENGINE SOON INDICATOR LAMP CONTROL	8A-81-3
A5	PNK	39	POWER FEED FROM GAGES FUSE 9	8A-11-5
A6	YEL/BLK	68	LOW COOLANT LEVEL INDICATOR CONTROL	8A-81-3
A7	BRN	358	AIR BAG INDICATOR CONTROL	8A-81-3
A8	PPL/WHT	1572	"TCS OFF" INDICATOR LAMP CONTROL (WITH NW9)	8A-81-3
A10	TAN/WHT	33	BRAKE WARNING INDICATOR LAMP CONTROL	8A-81-3
A11	LT GRN	11	HIGH BEAM HEADLIGHTS ON	8A-81-3
A12	YEL	237	SEAT BELT INDICATOR LAMP CONTROL	8A-81-3
A13	ORN	340	POWER FEED FROM PCM BAT FUSE 4	8A-11-7
A14	RED	225	GENERATOR OUTPUT INDICATOR CONTROL	8A-81-1
A15	BRN	1174	OIL LEVEL SENSOR SIGNAL	8A-81-1
A16	DK BLU	1537	"LOW TRAC" INDICATOR LAMP CONTROL	8A-81-3
A17	DK GRN	135	COOLANT TEMPERATURE SENSOR SIGNAL	8A-81-1
B2	GRY	8	I/P ILLUMINATION LAMPS FEED	8A-81-2
B3	BLK	650	GROUND	8A-14-8
B4	WHT	375	"SKIP SHIFT" INDICATOR LAMP CONTROL	8A-81-3
B5 B5	DK BLU DK BLU/WHT	15 1415	(DOMESTIC) RIGHT TURN SIGNAL SWITCH OUTPUT (WITH T61) RIGHT TURN SIGNAL SWITCH OUTPUT	8A-81-3 8A-81-3
B12	DK GRN/WHT	817	VEHICLE SPEED SIGNAL - 4000 PULSES PER MILE	8A-81-0
B13	WHT	121	TACHOMETER SIGNAL	8A-81-0
B14 B14	LT BLU LT BLU/WHT	14 1414	(DOMESTIC) LEFT TURN SIGNAL SWITCH OUTPUT (WITH T61) LEFT TURN SIGNAL SWITCH OUTPUT	8A-81-3 8A-81-3
B15	BLK/WHT	451	GROUND	8A-14-1, 2, 3
B16	TAN	31	OIL PRESSURE INDICATOR CONTROL	8A-81-0
B17	LT GRN	867	ABS FAIL SIGNAL	8A-81-1

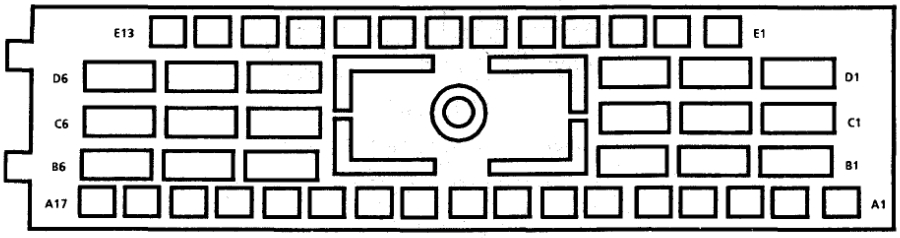
car.diagn.com

INSTRUMENT CLUSTER: WITH GAGES

FOR CONNECTOR CHART, SEE SECTION 8A-202.

I/P HARNESS TO FORWARD LAMP/CROSS CAR HARNESS

C200D



12077822

M - CONNECTOR
F - TERMINAL

48-WAY M METRI-PACK MIXED SERIES
BLK

C200A

FORWARD LAMP HARNESS TO I/P HARNESS

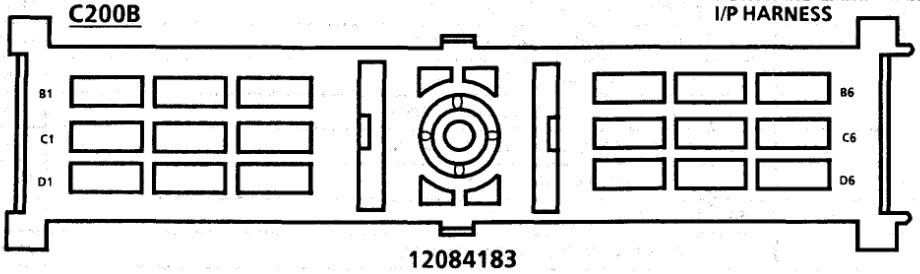


12047842

17-WAY F METRI-PACK 150 SERIES
BLK

C200B

FORWARD LAMP HARNESS TO I/P HARNESS



12084183

18-WAY F METRI-PACK MIXED SERIES
BLK

C200C

CROSS CAR HARNESS TO I/P HARNESS



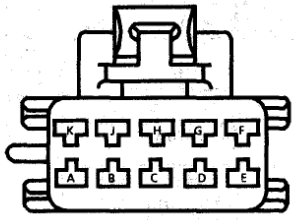
12047840

13-WAY F METRI-PACK 280 SERIES
GRY

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FOR CONNECTOR CHART, SEE SECTION 8A-202.

C220



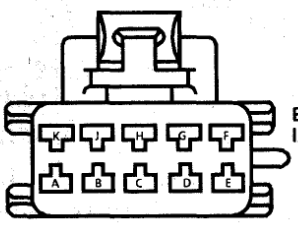
ENGINE HARNESS TO I/P HARNESS

12064769

10-WAY F METRI-PACK 150 SERIES
WHT

FOR CONNECTOR CHART, SEE SECTION 8A-202.

C230



ENGINE HARNESS TO I/P HARNESS

12064871

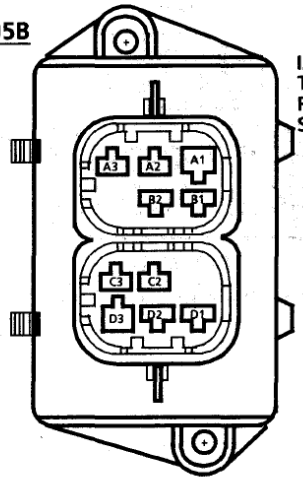
10-WAY F METRI-PACK 150 SERIES
BLU

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INSTRUMENT CLUSTER: WITH GAGES

FOR CONNECTOR CHART, SEE SECTION 8A-202.

C405B

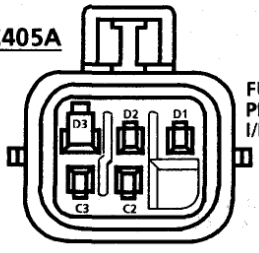


I/P HARNESS TO FUEL TANK UNIT PIGTAIL/ REAR WHEEL SPEED SENSOR JUMPER HARNESS

12092789

10-WAY M METRI-PACK 150, 280 SERIES
BLK

C405A

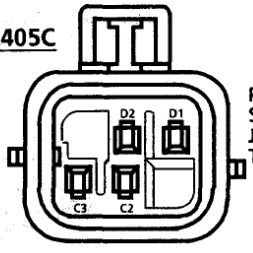


FUEL TANK UNIT PIGTAIL TO I/P HARNESS

12110481

5-WAY F METRI-PACK 150, 280 SERIES
RED

C405C



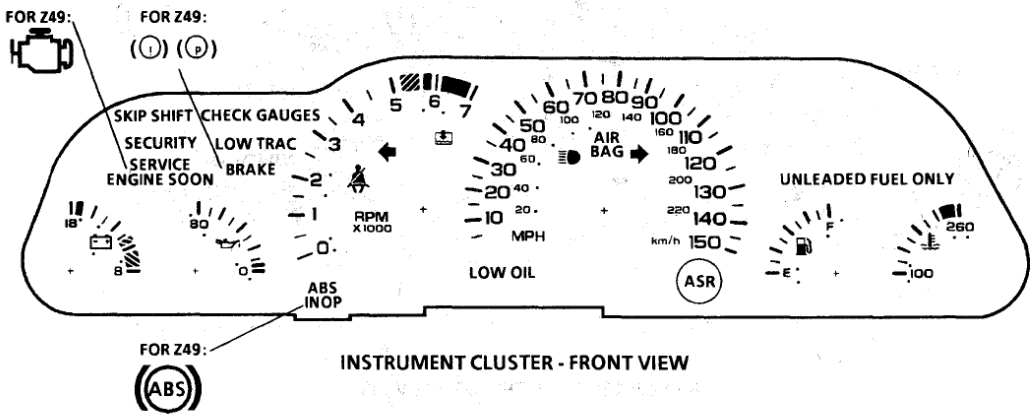
REAR WHEEL SPEED SENSOR JUMPER HARNESS TO I/P HARNESS

12092800

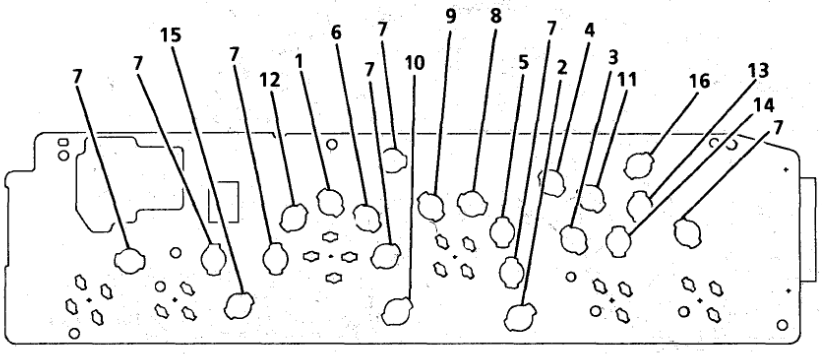
4-WAY F METRI-PACK MIXED SERIES
BLK

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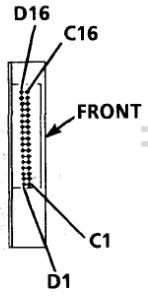
INSTRUMENT CLUSTER: WITH GAGES (CHEVY)



INSTRUMENT CLUSTER - FRONT VIEW



INSTRUMENT CLUSTER - REAR VIEW



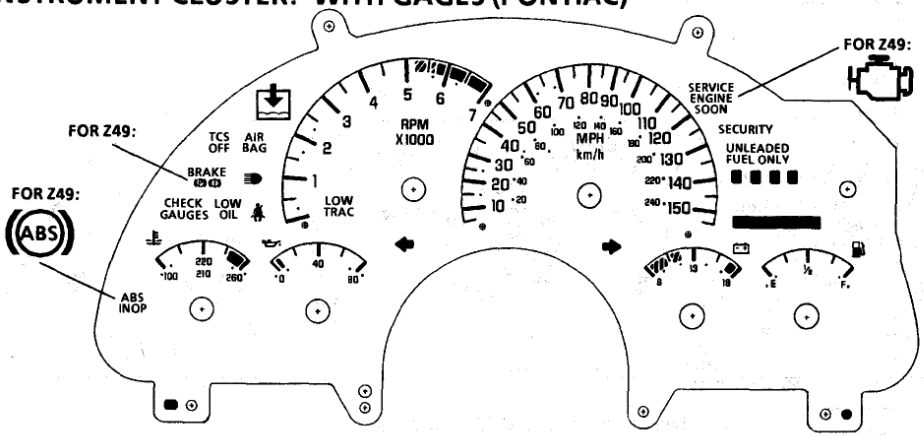
INSTRUMENT CLUSTER - SIDE VIEW

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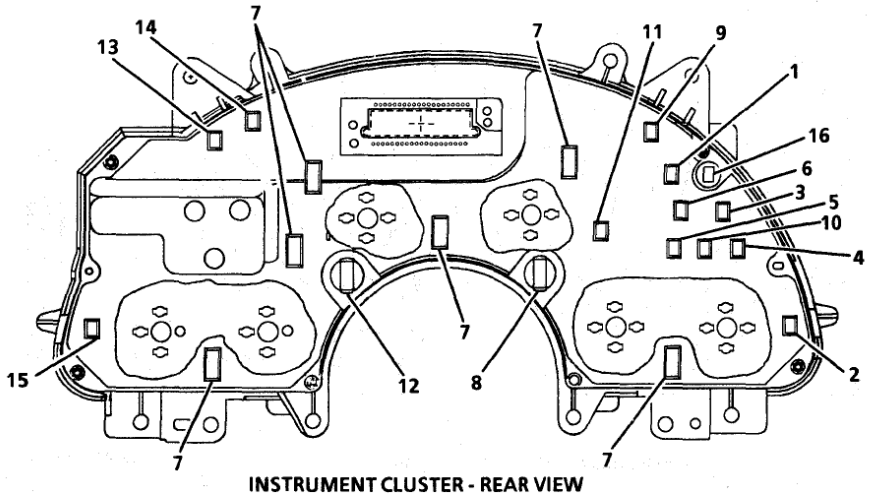
LAMP LOCATION LEGEND

1	"AIR BAG" Indicator Lamp	9	Low Coolant Indicator Lamp (V8 only)
2	"ABS INOP" Indicator Lamp	10	"LOW OIL" Indicator Lamp
3	"BRAKE" Indicator Lamp	11	"LOW TRAC" Indicator Lamp
4	"CHECK GAUGES" Indicator Lamp	12	Right Turn Indicator Lamp
5	Fasten Seat Belt Indicator Lamp	13	"SECURITY" Indicator Lamp
6	High Beam Indicator Lamp	14	"SERVICE ENGINE SOON" Indicator Lamp
7	Illumination Lamp	15	"ASR" Indicator Lamp
8	Left Turn Indicator Lamp	16	"SKIP SHIFT" Indicator Lamp

INSTRUMENT CLUSTER: WITH GAGES (PONTIAC)



INSTRUMENT CLUSTER - FRONT VIEW



INSTRUMENT CLUSTER - REAR VIEW

LAMP LOCATION LEGEND

1	"AIR BAG" Indicator Lamp	9	Low Coolant Indicator Lamp (V8 only)
2	"ABS INOP" Indicator Lamp	10	"LOW OIL" Indicator Lamp
3	"BRAKE" Indicator Lamp	11	"LOW TRAC" Indicator Lamp
4	"CHECK GAUGES" Indicator Lamp	12	Right Turn Indicator Lamp
5	Fasten Seat Belt Indicator Lamp	13	"SECURITY" Indicator Lamp
6	High Beam Indicator Lamp	14	"SERVICE ENGINE SOON" Indicator Lamp
7	Illumination Lamp	15	"SKIP SHIFT" Indicator Lamp
8	Left Turn Indicator Lamp	16	"TCS OFF" Indicator Lamp

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COMPONENT	LOCATION	201-PG	FIG.	CONN
Coolant Level Latching Module	In molded pocket of dash mat, center above floor tunnel	45	84	202-20
Diagnostic Energy Reserve Module (DERM)	Snapped in bracket, behind RH side of I/P Compartment	8	15	202-12
Electronic Brake Control Module (EBCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Electronic Brake/Traction Control Module (EBTCM)	Under I/P, next to LH hinge pillar, just above Pass Thru Grommet	8	14	202-13
Engine Coolant Level Sensor (V8 VIN P)	Mounted on upper right side of radiator	19	35	
Engine Coolant Temperature Gage Sensor (V6 VIN S)	Left front of Engine, mounted in Head	27	52	
Engine Coolant Temperature Gage Sensor (V8 VIN P)	Mounted in LH Head, between 1 and 3 Cylinders	16	29	
Fuel Tank Unit	Under rear of vehicle			
Generator	RH front of Engine	14, 29	26, 56	202-21
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Ignition Control Module (ICM) (V6 VIN S)	Left front of Engine	27	52	202-22
Instrument Cluster	LH side of I/P			202-23
Oil Level Sensor	Lower left side of Engine, in oil pan	11, 24	20, 44	
Oil Pressure Sensor (V6 VIN S)	Lower left side of Engine, above oil filter	11	20	
Oil Pressure Sensor (V8 VIN P)	Mounted to top center of Engine block, rear of manifold	26	50	202-23
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Retained Accessory Power (RAP) Module	In molded pocket of dash mat, center above floor tunnel	9	17	202-27
Theft Deterrent Module	In I/P, just right of Radio, attached to Air Bag Bracket	8	15	202-18
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C220 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-6
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
C405A (4 cavities)	Part of Pass Thru Conn, forward of rear axle, to Fuel Tank Unit	5	9	202-8
C405B (10 cavities)	Part of Pass Thru Conn, forward of rear axle, to Pass Thru Panel	5	9	202-8
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	

(CONTINUED ON NEXT PAGE)

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INSTRUMENT CLUSTER: WITH GAGES

(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G305	Bolted to Floor Pan Bar #2, under Driver's Seat (2 rings, 2 wires, with AC3/AQ9), (1 ring, 1 wire without AC3/AQ9)	6	11	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S208	Cross Car Harn, approx 5 cm from Express Down Module breakout	45	84	
S209	I/P Harn, approx 24 cm from Convenience Center breakout			
S214	I/P Harn, approx 7 cm from G200 breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S224	I/P Harn, approx 4 cm from Instrument Cluster (Pont) or from RR Defog Switch (Chevy) breakouts			
S228	I/P Harn, approx 15 cm before DLC breakout			
S242	I/P Harn, approx 26 cm from Instrument Cluster Conn			
S253	I/P Harn, approx 35 cm from Convenience Center breakout			
S273	Forward Lamp Harn, approx 25 cm from breakout inboard of P100	8	14	
S278	Forward Lamp Harn, approx 9 cm from EBCM breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

For Instrument Cluster removal and replacement, refer to SECTION 8C.

1. It is possible to have an open circuit to an indicator within the Cluster, though unlikely. Check circuits from suspect socket to connector terminals before replacing Cluster for an indicator problem.
2. If more than one gage or indicator are inoperative, check the appropriate fuse and ground before continuing.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedures.

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SYSTEM CHECK (for Indicators)

ACTION	NORMAL RESULTS
[1] • Turn Ignition Switch from "OFF" to "RUN."	– "AIR BAG" Indicator will flash 7 to 9 times, then go out. – "ABS INOP" Indicator is "ON" for approximately 3 seconds. – "TCS OFF" (Pont) or "ASR" (Chevy) Indicator "ON" approximately 3 seconds. – "BRAKE" Indicator "ON" approximately 3 seconds. – "CHECK GAUGES" Indicator is "ON" continuously. – "LOW OIL" Indicator is "ON" for approximately 1 second. – "LOW COOLANT" Indicator "ON" approximately 1 second. – "LOW TRAC" Indicator "ON" approximately 3 seconds. – "SECURITY" Indicator is "ON" for approximately 5 seconds. – Fasten Seat Belt Indicator "ON" if not buckled.
[2] • Turn Ignition Switch slowly through "BULB TEST" to "START."	– (MIL) "SERVICE ENGINE SOON" Indicator "ON" momentarily at "START" then goes "OFF."

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Instrument Cluster Illumination Lamps are inoperative or do not dim properly.	See "Interior Lights Dimming," SECTION 8A-117.	
GAGES		
Coolant Temperature Gage always indicates Cold.	Chart #1	8A-81-15
Coolant Temperature Gage always indicates Hot.	Chart #2	8A-81-15
Coolant Temperature Gage appears inaccurate.	Chart #3	8A-81-15
Fuel Gage always indicates Empty.	Chart #4	8A-81-16
Fuel Gage always indicates Full.	Chart #5	8A-81-16
Fuel Gage appears inaccurate.	Chart #6	8A-81-17
Oil Pressure Gage always indicates High Pressure.	Chart #7	8A-81-18
Oil Pressure Gage always indicates Low Pressure.	Chart #8	8A-81-18
Oil Pressure Gage appears inaccurate.	Chart #9	8A-81-18
Speedometer inoperative or inaccurate.	See "Vehicle Speed Sensor," SECTION 8A-33.	
Tachometer inoperative or inaccurate.	Chart #10	8A-81-19
Voltmeter inoperative or inaccurate.	Chart #11	8A-81-19
INDICATORS		
"ABS INOP" Indicator problem.	See SECTION 5E1.	

(CONTINUED ON NEXT PAGE)

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INSTRUMENT CLUSTER: WITH GAGES

(CONTINUED FROM PREVIOUS PAGE)

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
"AIR BAG" Indicator problem.	See SECTION 9JA.	
"BRAKE" Indicator problem.	See "Brake Warning," SECTION 8A-41.	
"CHECK GAUGES" Indicator always "ON."	Chart #12	8A-81-20
"CHECK GAUGES" Indicator does not turn "ON."	Chart #13	8A-81-20
Fasten Seat Belt Indicator problem.	See "Audible Warnings," SECTION 8A-76.	
High Beam Indicator problem.	See "Headlights and Fog Lights," SECTION 8A-100 (without DRL), SECTION 8A-102 (with DRL).	
Low Coolant Indicator does not turn "ON."	Chart #14	8A-81-21
Low Coolant Indicator always "ON" (coolant level OK).	Chart #15	8A-81-22
Low Coolant Indicator turns "ON" and "OFF" intermittently while driving.	Check for an open or poor connection in CKT 68 between C200C and Retained Accessory Power Module (with AU3) or Coolant Level Latching Module (without AU3). Also check power and ground to the Coolant Level Latching Module. If circuits and connections are good, replace the respective module. **NOTICE:** The module should keep the indicator "ON" (latched) for entire Ignition cycle after the Engine Coolant Level Sensor detects a low.	
"LOW OIL" Indicator does not turn "ON" when oil level is low.	Chart #16	8A-81-23
"LOW OIL" Indicator stays "ON" when oil level is OK.	Chart #17	8A-81-23
"LOW TRAC" Indicator problem.	See SECTION 5E1.	
"SECURITY" Indicator problem.	See SECTION 9D.	
"TCS OFF" (Pont) or "ASR" (Chevy) Indicator problem.	See SECTION 5E2.	
"SKIP SHIFT" Indicator problem.	See SECTION 6E3.	
Low Coolant Indicator turns "ON" with bulb check but does not turn "ON" when coolant level is low.	Replace Low Coolant Level Sensor.	
(MIL) "SERVICE ENGINE SOON" Indicator problem.	See SECTION 6E3.	
Turn Indicator problem, Left or Right.	See "Exterior Lights," SECTION 8A-110.	
POWER AND GROUNDS		
More than 1 gage or indicator inoperative.	Disconnect Instrument Cluster and connect a Test Light across the appropriate power and ground terminals. Test Light "ON"? - Check connector for poor connection to Cluster. If OK, replace Instrument Cluster. Test Light "OFF"? - Repair open in power or ground circuit to Cluster.	

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CHART #1
COOLANT TEMPERATURE GAGE ALWAYS INDICATES COLD

- IGNITION "ON" – ENGINE "OFF."
- DISCONNECT ENGINE COOLANT TEMPERATURE GAGE SENSOR CONNECTOR.
- CONNECT A JUMPER BETWEEN TERM "A" OF CONNECTOR AND GROUND.
- COOLANT TEMP GAGE SHOULD MOVE ALL THE WAY TO THE RIGHT (HOT). DOES IT?

YES

- CHECK FOR POOR CONNECTION. IF OK, REPLACE THE ENGINE COOLANT TEMPERATURE GAGE SENSOR.

NO

- CHECK CKT 135 FOR A POOR CONNECTION OR AN OPEN. IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER.

CHART #2
COOLANT TEMPERATURE GAGE ALWAYS INDICATES HOT

- IGNITION "ON" – ENGINE "OFF."
- DISCONNECT ENGINE COOLANT TEMPERATURE GAGE SENSOR CONNECTOR. DOES THE GAGE MOVE BACK TO THE LEFT (COLD)?

YES

REPLACE THE ENGINE COOLANT TEMPERATURE GAGE SENSOR.

NO

- CHECK FOR A SHORT TO GROUND IN CKT 135. IF OK, REPAIR/REPLACE THE INSTRUMENT CLUSTER.

CHART #3
COOLANT TEMPERATURE GAGE APPEARS INACCURATE

- IGNITION "ON" – ENGINE "OFF."
- DISCONNECT ENGINE COOLANT TEMPERATURE GAGE SENSOR CONNECTOR.
- USING I/P TESTER J 33431 OR EQUIVALENT, CONNECT ONE RED CLIP LEAD FROM THE TESTER TO THE SENSOR CONNECTOR TERM "A". CONNECT THE OTHER RED CLIP LEAD TO GROUND.
- ADJUST THE RESISTANCE DIALS OF THE TESTER TO 1400 OHMS AND THEN 55 OHMS.
- THE COOLANT TEMP GAGE SHOULD REGISTER COLD AND THEN HOT. DOES IT?

YES

REPLACE THE ENGINE COOLANT TEMPERATURE GAGE SENSOR.

NO

- CHECK FOR A POOR CONNECTION OR HIGH RESISTANCE IN CKT 135. IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER.

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INSTRUMENT CLUSTER: WITH GAGES

CHART #4
FUEL GAGE ALWAYS INDICATES EMPTY

- ASSUMES OTHER GAGES ARE OPERATING NORMALLY.
- DISCONNECT FUEL TANK UNIT CONN C405A.
- IGNITION "ON" – ENGINE "OFF."
  DOES FUEL GAGE INDICATE FULL?

NO

- IGNITION "OFF."
- DISCONNECT INSTRUMENT CLUSTER CONN.
- IGNITION "ON" – ENGINE "OFF."
- CONNECT A TEST LIGHT FROM TERM "D13" TO TERM "D2" (CHEVY) OR TERM "A5" TO TERM "A2" (PONT).
  IS TEST LIGHT "ON"?

NO

REPAIR/REPLACE INSTRUMENT CLUSTER.

YES

REPAIR SHORT TO GROUND IN CKT 30.

YES

- REPLACE FUEL GAGE SENDER, PART OF FUEL TANK UNIT.
- REFER TO SECTION 6C.

CHART #5
FUEL GAGE ALWAYS INDICATES FULL
(VERIFY THAT FUEL TANK IS NOT ACTUALLY FULL)

- DISCONNECT FUEL TANK UNIT CONN C405A.
- CONNECT A FUSED JUMPER TO C405B TERM "A2" (10-WAY CONN MOUNTED TO PANEL) TO GROUND.
- IGNITION "ON" – ENGINE "OFF."
  DOES FUEL GAGE INDICATOR MOVE TO EMPTY?

YES

- IGNITION "OFF."
- CONNECT FUSED JUMPER FROM C405B TERM "A2" TO TERM "A3" (10-WAY CONN MOUNTED TO PANEL).
- IGNITION "ON" – ENGINE "OFF."
  DOES FUEL GAGE INDICATOR STAY ON EMPTY?

YES

- IGNITION "OFF."
- CHECK FOR OPEN IN CKT 1050 OR CKT 30 TO FUEL TANK UNIT, OR FOR POOR CONNECTION AT C405.
  IF OK, REPLACE FUEL GAGE SENDER, PART OF FUEL TANK UNIT.
- REFER TO SECTION 6C (A SHORT TO B + ON CKT 30 COULD CAUSE AN ALWAYS FULL INDICATOR CONDITION, THOUGH UNLIKELY).

NO

REPAIR OPEN IN CKT 1050 BETWEEN G305 AND C405, OR POOR GROUND AT G305.

NO

- CHECK FOR OPEN IN CKT 30 BETWEEN C405B AND INSTRUMENT CLUSTER, OR FOR BAD CONNECTION AT CLUSTER CONN TERM "D2" (CHEVY) OR TERM "A2" (PONT).
  IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER (A SHORT TO B + ON CKT 30 COULD CAUSE AN ALWAYS FULL INDICATOR CONDITION, THOUGH UNLIKELY).

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CHART #6
FUEL GAGE APPEARS INACCURATE

- DISCONNECT FUEL TANK UNIT CONN C405A.
- USING I/P TESTER J 33431, CONNECT ONE RED CLIP LEAD FROM THE TESTER TO C405B TERM "A2" (10-WAY CONN MOUNTED TO PANEL). CONNECT THE OTHER RED CLIP LEAD TO GROUND.
- SET TESTER TO "0" OHMS.
- IGNITION "ON" – ENGINE "OFF."
  DOES FUEL GAGE INDICATE EMPTY?

IMPORTANT:

- IF A J 33431 IS UNAVAILABLE, RESISTORS OF EQUAL VALUE MAY BE USED.

YES

- SET RESISTANCE TO "90" OHMS FOR 1 MINUTE OR UNTIL GAGE READS FULL, THEN SLOWLY REDUCE RESISTANCE TO "0" OHMS OVER 1 MINUTE'S TIME.
  AS RESISTANCE VALUES CHANGE, DOES GAGE INDICATOR CHANGE VALUES EQUAL TO THE TABLE BELOW?

YES

- CHECK FOR INTERMITTENT OPEN IN CKT 1050 OR FOR POOR GROUND CONNECTION.
- CHECK FUEL TANK UNIT WIRES FOR DAMAGE.
- CHECK FOR MECHANICAL CLEARANCE BETWEEN FLOAT AND TANK INTERIOR.
- IF THE CONNECTIONS ARE LOOSE OR CORRODED, OR WIRES SHORTED, REPAIR AS REQUIRED.
  IF OK, REPLACE FUEL GAGE SENDER (REFER TO SECTION 6C).

NO

- CHECK CKT 30 AND CONNECTORS TO CLUSTER AND FUEL TANK UNIT FOR A RESISTIVE OPEN OR POOR CONNECTION. (A TOTALLY OPEN CKT 30 WOULD CAUSE GAGE TO READ FULL, A SHORT TO GROUND WOULD READ EMPTY.)
  IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER.

NO

- CHECK CKT 30 AND CONNECTORS TO CLUSTER AND FUEL TANK UNIT FOR A RESISTIVE OPEN OR POOR CONNECTION. (A TOTALLY OPEN CKT 30 WOULD CAUSE GAGE TO READ FULL, A SHORT TO GROUND WOULD READ EMPTY.)
  IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER.

FUEL GAGE SENDER RESISTANCE	APPROXIMATE FUEL LEVEL
88 Ω	FULL
60 Ω	3/4
43 Ω	1/2
26 Ω	1/4
1.0 Ω	EMPTY

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INSTRUMENT CLUSTER: WITH GAGES

CHART #7
OIL PRESSURE GAGE ALWAYS INDICATES HIGH PRESSURE

IMPORTANT:
- CHECK FOR PROPER OIL LEVEL, THEN CHECK OIL PRESSURE WITH A MECHANICAL GAGE BEFORE PROCEEDING. IF NOT OK, REFER TO SECTION 6A.

- IGNITION "ON" – ENGINE "OFF."
- DISCONNECT OIL PRESSURE SENSOR CONNECTOR.
- CONNECT A JUMPER BETWEEN TERM "A" OF CONNECTOR AND GROUND.
  DOES GAGE MOVE BACK TO THE LEFT (LO PRESSURE)?

YES
- CHECK FOR POOR CONNECTION.
  IF OK, REPLACE OIL PRESSURE SENSOR.

NO
- CHECK FOR A POOR CONNECTION OR OPEN IN CKT 31.
  IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER.

CHART #8
OIL PRESSURE GAGE ALWAYS INDICATES LOW PRESSURE

IMPORTANT:
- CHECK FOR PROPER OIL LEVEL, THEN CHECK OIL PRESSURE WITH A MECHANICAL GAGE BEFORE PROCEEDING. IF NOT OK, REFER TO SECTION 6A.

- IGNITION "ON" – ENGINE "OFF."
- DISCONNECT OIL PRESSURE SENSOR CONNECTOR.
  DOES OIL PRESSURE GAGE MOVE ALL THE WAY TO THE RIGHT (HIGH PRESSURE)?

YES

REPLACE OIL PRESSURE SENSOR.

NO
- CHECK FOR SHORT TO GROUND IN CKT 31.
  IF OK, REPAIR/REPLACE THE INSTRUMENT CLUSTER.

CHART #9
OIL PRESSURE GAGE APPEARS INACCURATE

IMPORTANT:
- CHECK FOR PROPER OIL LEVEL, THEN CHECK OIL PRESSURE WITH A MECHANICAL GAGE BEFORE PROCEEDING. IF NOT OK, REFER TO SECTION 6A.

- IGNITION "ON" – ENGINE "OFF."
- DISCONNECT OIL PRESSURE SENSOR CONNECTOR.
- USING I/P TESTER J 33431 OR EQUIVALENT, CONNECT ONE RED CLIP LEAD TO THE SENSOR CONNECTOR TERM "A" AND CONNECT THE OTHER RED CONNECTOR TO GROUND.
- SET THE RESISTANCE DIALS ON THE TESTER TO 0 OHMS, 40 OHMS AND 100 OHMS.
- THE OIL PRESSURE GAGE SHOULD GO FROM LO PRESSURE TO APPROXIMATELY 30 psi, AND THEN TO HIGH PRESSURE.
  DOES IT?

YES

REPLACE OIL PRESSURE SENSOR.

NO
- CHECK CKT 31 FOR POOR OR CORRODED CONNECTIONS.
  IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER.

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CHART #10
TACHOMETER INOPERATIVE OR INACCURATE
(ASSUMES ENGINE RUNS NORMALLY)

- (V6 VIN S) DISCONNECT IGNITION CONTROL MODULE CONN C1 (6-WAY).
  (V8 VIN P) DISCONNECT THE POWERTRAIN CONTROL MODULE CONN A.
- USE I/P TESTER J 33431 WITH J 33431-10 HARNESS OR EQUIVALENT.
  (V6 VIN S) CONNECT THE TESTER TO CONN C1 TERM "C" AND GROUND.
  (V8 VIN P) CONNECT THE TESTER TO CONN A TERM "13" OF THE POWERTRAIN CONTROL MODULE
- SET THE TESTER TO 54 mph (60 Hz).
- IGNITION "ON" – ENGINE "OFF."
  DOES THE TACHOMETER INDICATE APPROXIMATELY 1200 rpm FOR (V6 VIN S) OR 900 rpm FOR (V8 VIN P)?

YES

- (V6 VIN S) CHECK FOR POOR CONNECTION AT IGNITION CONTROL MODULE CONN C1.
  IF OK, REPLACE IGNITION CONTROL MODULE.
- (V8 VIN P) CHECK FOR POOR CONNECTION AT POWERTRAIN CONTROL MODULE CONN A TERM "13".
  IF OK, REPLACE POWERTRAIN CONTROL MODULE.

NO

- CHECK FOR AN OPEN, SHORT TO GROUND OR B + IN CKT 121.
  IF OK, REPAIR/REPLACE INSTRUMENT CLUSTER.

CHART #11
VOLTMETER INOPERATIVE OR INACCURATE

- IGNITION "ON" – ENGINE "OFF."
- CONNECT A DVM SET TO DC SCALE TO THE POSITIVE AND NEGATIVE TERMINALS OF THE BATTERY.
  DOES THE VOLTMETER AT THE INSTRUMENT CLUSTER CLOSELY MATCH THE VOLTAGE READING ON THE DVM?

YES

- START ENGINE AND AGAIN MEASURE THE VOLTAGE ACROSS THE BATTERY TERMINALS.
  DOES THE VOLTMETER IN THE INSTRUMENT CLUSTER STILL CLOSELY MATCH THE DVM?

YES

NO TROUBLE FOUND.

NO

REPAIR/REPLACE INSTRUMENT CLUSTER.

NO

REPAIR/REPLACE INSTRUMENT CLUSTER.

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INSTRUMENT CLUSTER: WITH GAGES

CHART #12
"CHECK GAUGES" INDICATOR ALWAYS "ON"

- ENGINE RUNNING AT IDLE.
- MEASURE SYSTEM VOLTAGE ACROSS BATTERY. IS VOLTAGE MORE THAN 16.5 VOLTS OR LESS THAN 11.2 VOLTS?

NO

- CHECK FOR PCM DIAGNOSTIC TROUBLE CODES RELATIVE TO CHARGING SYSTEM, OIL PRESSURE OR TEMPERATURE.
- REFER TO SECTION 6E.
- VERIFY COOLANT TEMPERATURE IS BELOW APPROXIMATELY 252°F FOR V6 VIN S OR BELOW 244°F FOR V8 VIN P.
- VERIFY OIL PRESSURE IS ABOVE 8.3 psi (MINIMUM FOR PUMP). ANYTHING BELOW 3 TO 5 psi SHOULD CAUSE CHECK GAGES LIGHT TO TURN "ON." ARE ALL OK?

NO

- FOR THE SPECIFIC SYSTEM INDICATING A PROBLEM CONDITION, REPAIR MECHANICAL OR ELECTRICAL FAILURE.
- SEE GAGES CHARTS IN THIS SECTION.

YES

- CHECK FOR OPEN OR POOR CONNECTION IN CKT 225. (IF CIRCUIT IS OPEN, GENERATOR WILL NOT GENERATE VOLTAGE AND VEHICLE MAY BE RUNNING ONLY ON BATTERY POWER.) IF OK, REPLACE INSTRUMENT CLUSTER.

YES

- REPAIR CHARGING SYSTEM.
- REFER TO SECTION 6D3.

CHART #13
"CHECK GAUGES" INDICATOR DOES NOT TURN "ON"

- START ENGINE WHILE MONITORING "CHECK GAUGES" INDICATOR (SEE VIEW OF CLUSTER FOR LOCATION). DID "CHECK GAUGES" INDICATOR TURN "ON" FOR APPROXIMATELY 1 SECOND? ("CHECK GAUGES" INDICATOR WILL STAY ON CONTINUOUSLY IF ENGINE IS NOT STARTED.)

YES

- IS THERE AN INDICATION OF A PROBLEM WITH ONE OF THE FOLLOWING SYSTEMS?
  - CHARGING SYSTEM
  - COOLANT TEMPERATURE
  - OIL PRESSURE

YES

- FOR GAGE FAILURE INDICATIONS, SEE SYMPTOM TABLE TO REFERENCE SPECIFIC CHARTS.
- FOR SYSTEM FAILURES:
  - CHARGING SYSTEM, REFER TO SECTION 6D3
  - COOLANT TEMPERATURE, REFER TO SECTION 6B
  - OIL PRESSURE, REFER TO SECTION 6A2A (V6 VIN S) SECTION 6A3A (V8 VIN P).

NO

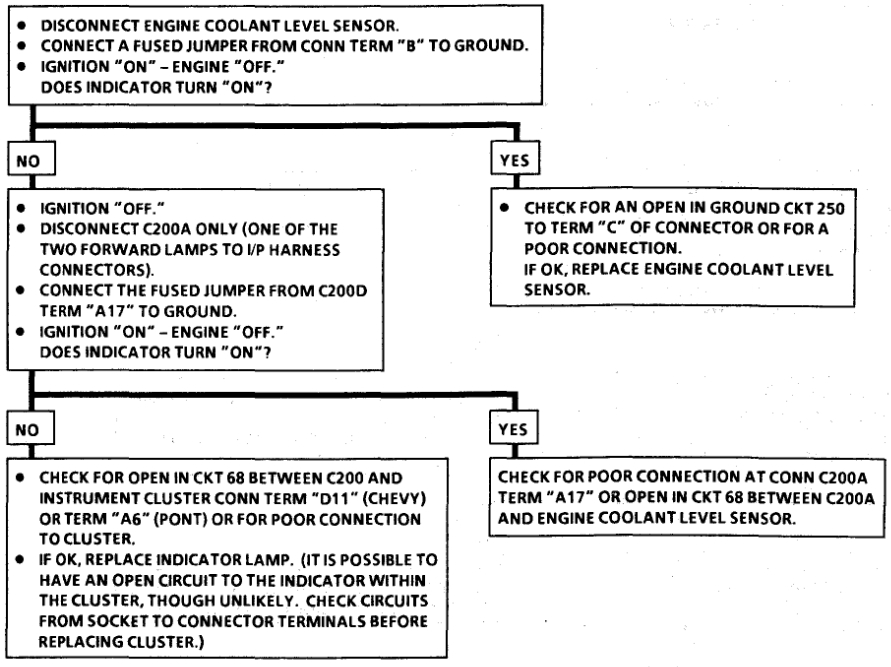
- REPLACE "CHECK GAUGES" INDICATOR LAMP.
- CYCLE IGNITION FROM "OFF" TO "ON" AGAIN. IF INDICATOR DOES NOT TURN ON, REPAIR/REPLACE INSTRUMENT CLUSTER.

NO

SYSTEM OPERATING NORMALLY. NO TROUBLE FOUND.

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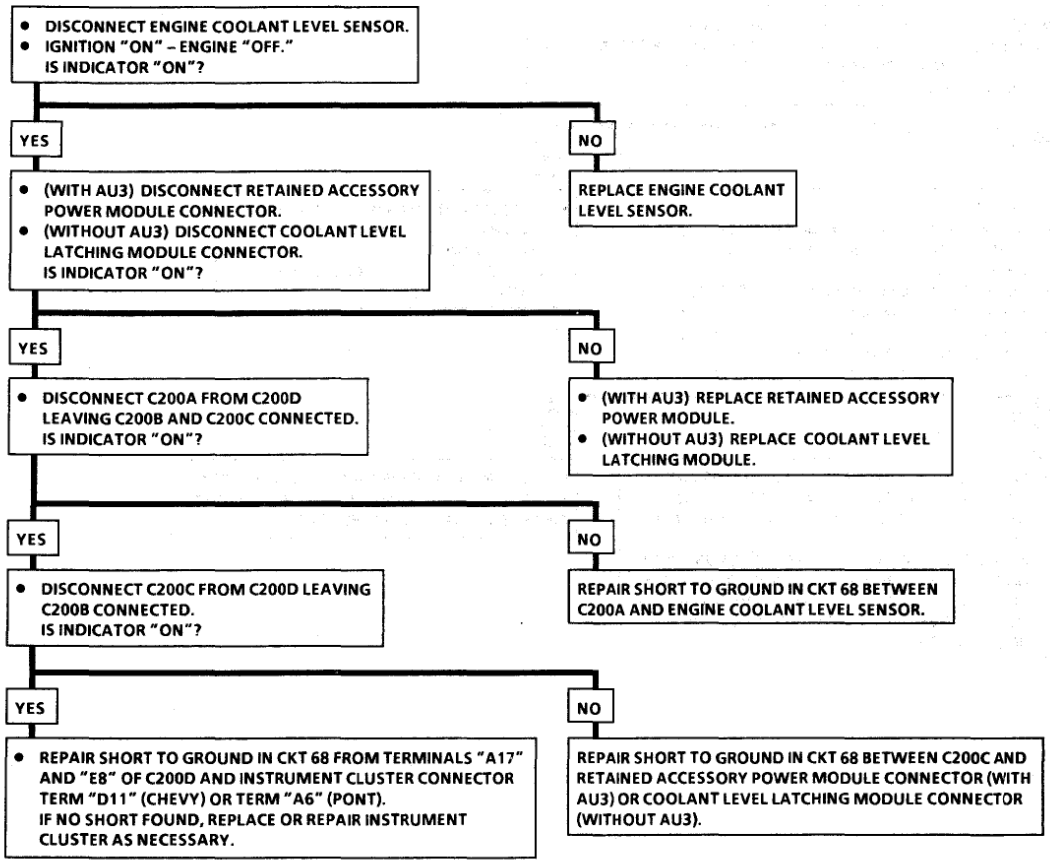
CHART #14
"LOW COOLANT" INDICATOR DOES NOT TURN "ON"
(ASSUMES OTHER INDICATORS OPERATE NORMALLY)



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INSTRUMENT CLUSTER: WITH GAGES

CHART #15
"LOW COOLANT" INDICATOR ALWAYS "ON"
(COOLANT LEVEL OK)



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CHART #16
"LOW OIL" INDICATOR DOES NOT TURN "ON" WHEN OIL LEVEL IS LOW

IMPORTANT:

- DUE TO THE PROGRAMMING OF THE CLUSTER, THE "LOW OIL" INDICATOR WILL NOT TURN "ON" IF A LOW OIL CONDITION HAS OCCURRED WHILE ENGINE IS RUNNING. LET ENGINE COOL APPROXIMATELY 45 MINUTES THEN KEY "ON" BEFORE PERFORMING DIAGNOSTICS.

- TURN IGNITION FROM "OFF" TO "ON" WHILE MONITORING "LOW OIL" INDICATOR (SEE VIEW OF CLUSTER FOR LOCATION). DID "LOW OIL" INDICATOR TURN "ON" FOR APPROXIMATELY 1 SECOND?

NO

- REPLACE "LOW OIL" INDICATOR LAMP.
- CYCLING IGNITION FROM "OFF" TO "ON" AGAIN. IF INDICATOR DOES NOT TURN ON, REPAIR/REPLACE INSTRUMENT CLUSTER.

YES

- IGNITION "OFF," WAIT A MINIMUM OF 35 MINUTES FOR CLUSTER'S COLD OIL DRAINBACK CALCULATION TO CLEAR.
- DISCONNECT OIL LEVEL SENSOR CONNECTOR.
- IGNITION "ON" – ENGINE "OFF." DOES "LOW OIL" INDICATOR COME "ON" AND STAY "ON"?

NO

- CHECK FOR A SHORT TO GROUND IN CKT 1174. IF OK, REPLACE INSTRUMENT CLUSTER.

YES

- VERIFY THERE IS A LOW OIL CONDITION.
- IF LOW OIL, REPLACE OIL LEVEL SENSOR.

CHART #17
"LOW OIL" INDICATOR STAYS "ON" WHEN OIL LEVEL IS OK

- IGNITION "OFF," WAIT A MINIMUM OF 35 MINUTES FOR CLUSTER'S COLD OIL DRAINBACK CALCULATION TO CLEAR.
- DISCONNECT OIL LEVEL SENSOR CONNECTOR.
- JUMPER THE HARNESS CONNECTOR FROM TERM "A" TO TERM "B".
- IGNITION "ON" – ENGINE "OFF." DOES INDICATOR TURN "ON" FOR APPROXIMATELY 1 SECOND THEN GO "OFF"?

YES

- VERIFY OIL LEVEL TO BE CORRECT.
- IF OIL LEVEL IS OK, CHECK FOR POOR CONNECTION AT OIL LEVEL SENSOR CONNECTOR. IF OK, REPLACE OIL LEVEL SENSOR.

NO

- IGNITION "OFF."
- JUMPER STILL CONNECTED AT SENSOR CONN.
- DISCONNECT INSTRUMENT CLUSTER.
- CONNECT A TEST LIGHT FROM TERM "D12" (CHEVY) OR TERM "A15" (PONT) TO B+. IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTION TO CLUSTER AT TERM "D12" (CHEVY) OR TERM "A15" (PONT). IF OK, REPLACE INSTRUMENT CLUSTER.

NO

REPAIR OPEN IN GROUND CKT 451 OR CKT 1174.

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INSTRUMENT CLUSTER: WITH GAGES

CIRCUIT OPERATION

The Instrument Cluster contains Analog Gages and Indicators. Some Gages and Indicators are controlled by solid state controls within the Cluster; some are controlled by direct circuits into the Cluster from other components. These operations are described here briefly.

"ABS INOP" INDICATOR, FOR Z49: 

See SECTION 5E1.

"AIR BAG" INDICATOR
See SECTION 9J.

"ASR" INDICATOR (CHEVY)
See SECTION 5E2.

"BRAKE" INDICATOR, FOR Z49: 

See "Brake Warning," page 8A-41-5.

"CHECK GAUGES" INDICATOR

The Instrument Cluster's internal circuitry monitors three inputs for determining when to illuminate the "CHECK GAUGES" Indicator.

The "CHECK GAUGES" Indicator is provided a ground for illumination when:

1. The Coolant Temperature Sensor indicates above normal temperature (252°F for V6 VIN S or 244°F for V8 VIN P).
2. The Instrument Cluster senses the Generator turn on input is at ground potential. The Generator pulls CKT 225 low with system voltage at or below 11.2v or with 16.5v or higher, also pulled low if Generator is stopped.
3. The Oil Pressure Sensor indicates below normal pressure. The minimum rating for the pump is 8.3 psi, though the sensor will be approximately 3 to 5 psi at 10 ohms which will cause the "CHECK GAUGES" Indicator to illuminate (maximum pressure should be about 90 ohms at the sensor).
4. The Instrument Cluster performs a bulb check function for approximately one second after Ignition "ON."

COOLANT TEMPERATURE GAGE

The Coolant Temperature Gage contains internal coils that create magnetic fields when current flows though them. The current through the coils varies depending on the Coolant Temperature Sensor resistance (approximately 55 ohms at 260°F (hot) and approximately 1365 ohms at 100°F). The varying sensor resistance causes the current through the coils to fluctuate. The magnetic fields of the coils move the pointer.

"FASTEN SEAT BELT" INDICATOR
See "Audible Warnings," page 8A-76-0.

FUEL GAGE

The Fuel Gage contains internal coils that create magnetic fields when current flows through them. The current through the coils varies depending on the Fuel Gage Sender resistance (see Fuel Level/Resistance Chart). The varying sender resistance causes the current through the coils to fluctuate. The magnetic fields of the coils move the pointer.

HIGH BEAM INDICATOR

The High Beam Indicator has system voltage applied to it whenever the Headlights are "ON" and the Headlight Dimmer Switch is on "HIGH." The Indicator has a constant ground and will illuminate whenever system voltage is applied.

"LOW COOLANT" INDICATOR (V8 VIN P)

The "LOW COOLANT" Indicator has system voltage applied in "RUN," "BULB TEST" or "START." The Indicator requires a ground for illumination. There are two ways the Indicator receives a ground:

1. During bulb check through the Engine Coolant Level Sensor.
2. Whenever the Engine Coolant Level Sensor detects a low coolant condition.

The Engine Coolant Level Sensor performs a bulb check by grounding the circuit to the indicator for approximately one second after Ignition "ON." When a low coolant condition occurs, a ground path is supplied through the Engine Coolant Level Sensor to the Indicator. At the same time, ground is supplied through the Engine Coolant Level Sensor to the Retained Accessory Power Module (with AU3) or Coolant Level Latching Module (without AU3). The module is designed to provide a continuous ground path to the Indicator for the remainder of the Ignition cycle in which a momentary low coolant condition occurred. (The module provides its own ground to the Indicator until the Ignition is turned "OFF." This is called latching.)

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"LOW OIL" INDICATOR

The Instrument Cluster's internal circuitry will only check the Oil Level Sensor at Ignition "ON" if Drainback Times are met (35 minutes after Ignition "OFF" if the Engine was still cold, or 4 minutes after Ignition "OFF" if the Engine was hot. Hot is defined as running for at least 17 minutes). Drainback Timer sets at Ignition "OFF." The sensor has normally closed contacts that are open under a low oil condition. After determining a low oil condition exists, the "LOW OIL" Indicator is provided a ground for illumination. The Indicator also receives a ground for approximately one second during the Cluster's bulb check function right after Ignition "ON."

"LOW TRAC" INDICATOR

See SECTION 5E1.

OIL PRESSURE GAGE

The Oil Pressure Gage contains internal coils that create magnetic fields when current flows through them. The current through the coils varies depending on the Oil Pressure Sensor resistance. (Low pressure resistance is approximately 10 ohms, high pressure resistance is approximately 90 ohms.) The varying sensor resistance causes the current through the coils to fluctuate. The magnetic fields of the coils move the pointer.

"SECURITY" INDICATOR

See SECTION 9D.

"SKIP SHIFT" INDICATOR

See SECTION 6E3.

(MIL) "SERVICE ENGINE SOON" INDICATOR, FOR Z49:



See SECTION 6E3.

SPEEDOMETER

See "Vehicle Speed Sensor," page 8A-33-0.

TACHOMETER

The Tachometer displays Engine speed in Revolutions Per Minute (RPM). Voltage pulses from the Ignition Control Module (V6 VIN S) or the Powertrain Control Module (V8 VIN P) are interpreted by solid state logic circuits within the Cluster. The solid state circuits process the pulses and put out a signal that drives the pointer of the meter. The pointer is moved with magnetic fields created from coils within the Tachometer.

"TCS OFF" INDICATOR (PONT)

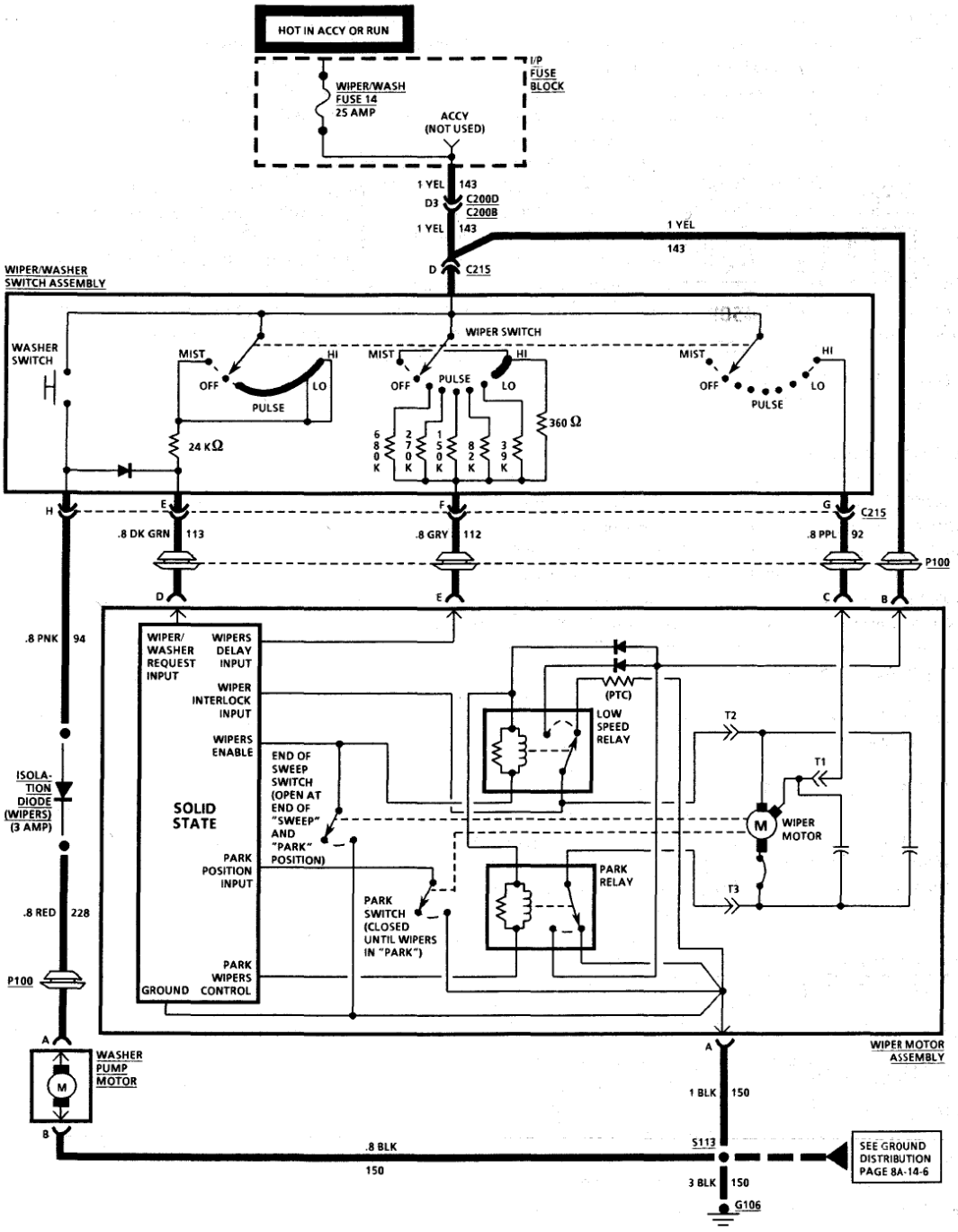
See SECTION 5E2.

VOLTMETER

The Voltmeter measures the vehicle's electrical system voltage during run or stopped conditions. The Voltmeter has two coils internally that create magnetic fields. These coils are made of a different amount of windings and are in series with a calibrated resistance. Any voltage between 8 to 18 volts will create a magnetic field that will move the pointer to the appropriate voltage indication.

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WIPER/WASHER: PULSE



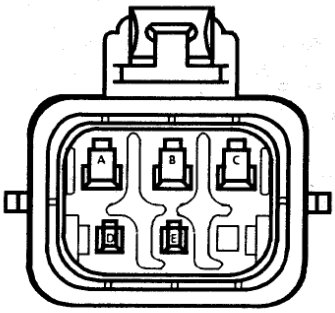
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C215 FORWARD LAMP HARNESS TO STEERING COLUMN HARNESS



06294509

11-WAY F PACK-CON I
BLK



12129126

5-WAY F METRI-PACK MIXED SERIES
BLK

WIPER MOTOR ASSEMBLY

COMPONENT	LOCATION	201-PG	FIG.	CONN
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Isolation Diode (Wipers)	Approx 10 cm from C215 breakout, in Forward Lamp Harn	35	64	
Washer Pump Motor	Front of vehicle, below Engine Hood Latch	25	46	
Wiper Motor Assembly	Rear of LH Shock Tower, mounted to dash panel below LH Wiper Mount	10	18	202-28
Wiper/Washer Switch Assembly	In left side of Steering Column, actuated by Multi-Function Lever	3	5	
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C215 (11 cavities)	Near base of Steering Column	35	64	202-4
G106	Near top LH side of radiator, in top of T-Bar	19	35	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			

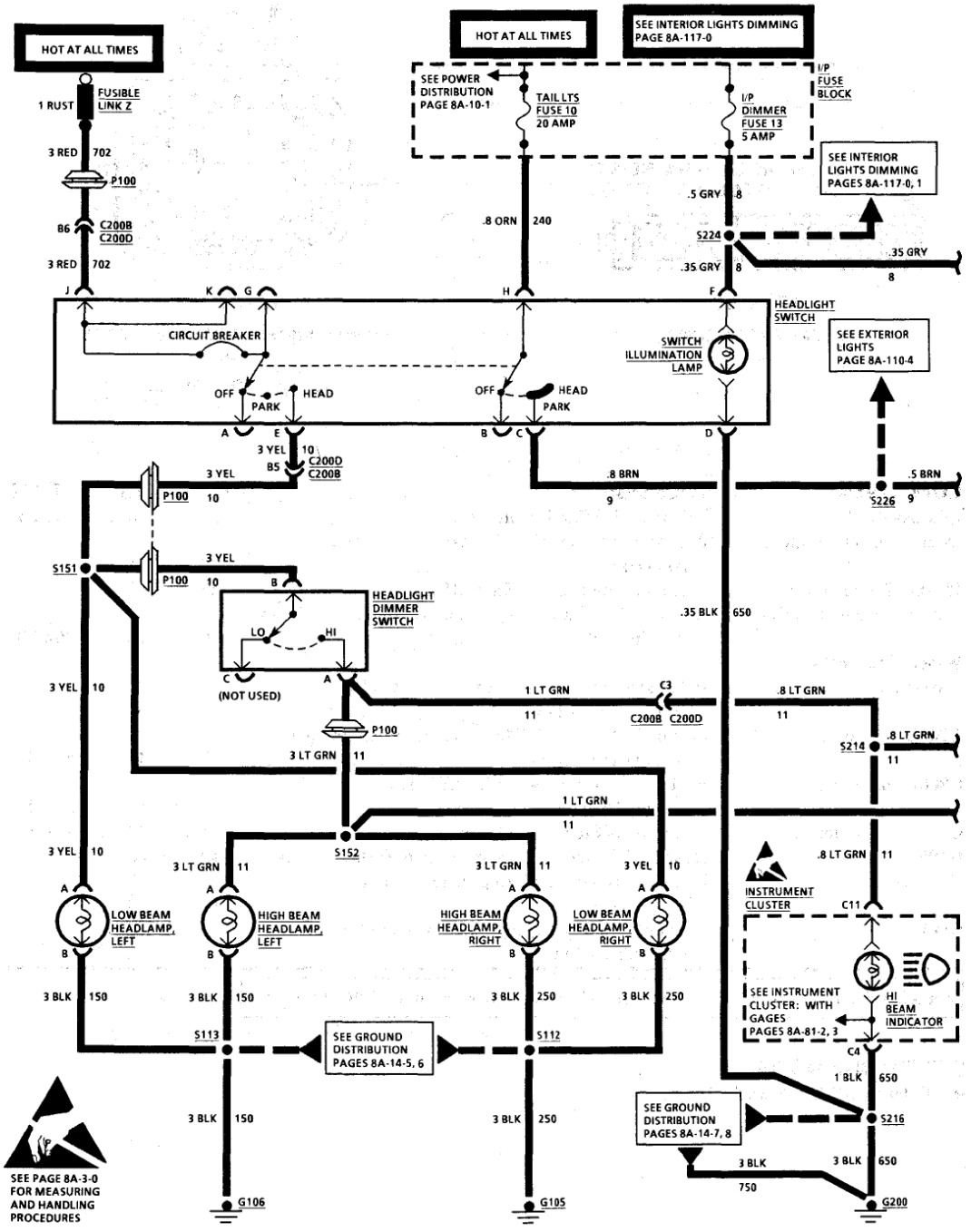
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

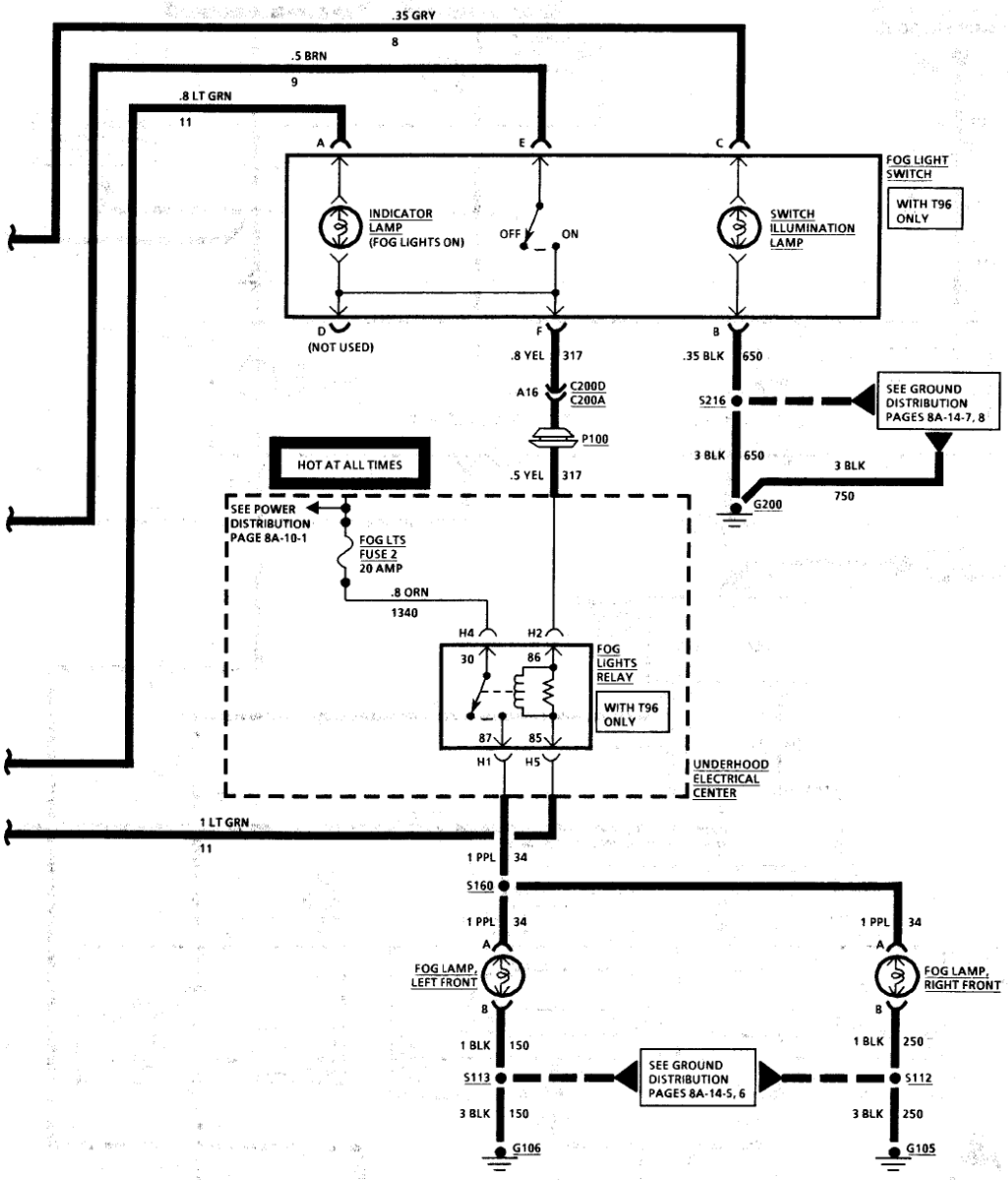
- Refer to SECTION 8E for Diagnosis.

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HEADLIGHTS AND FOG LIGHTS (CHEVY)
WITHOUT DRL (T61)

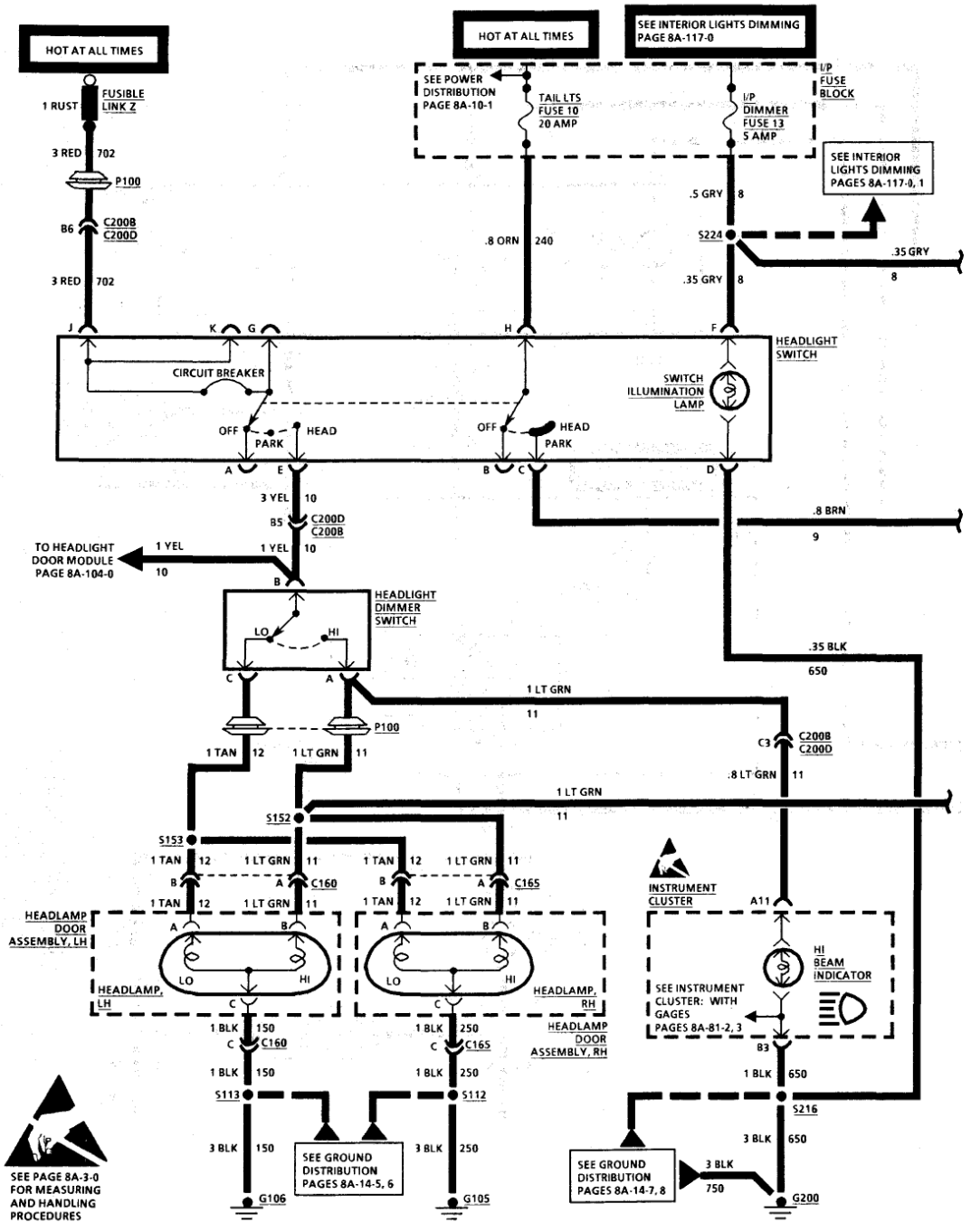


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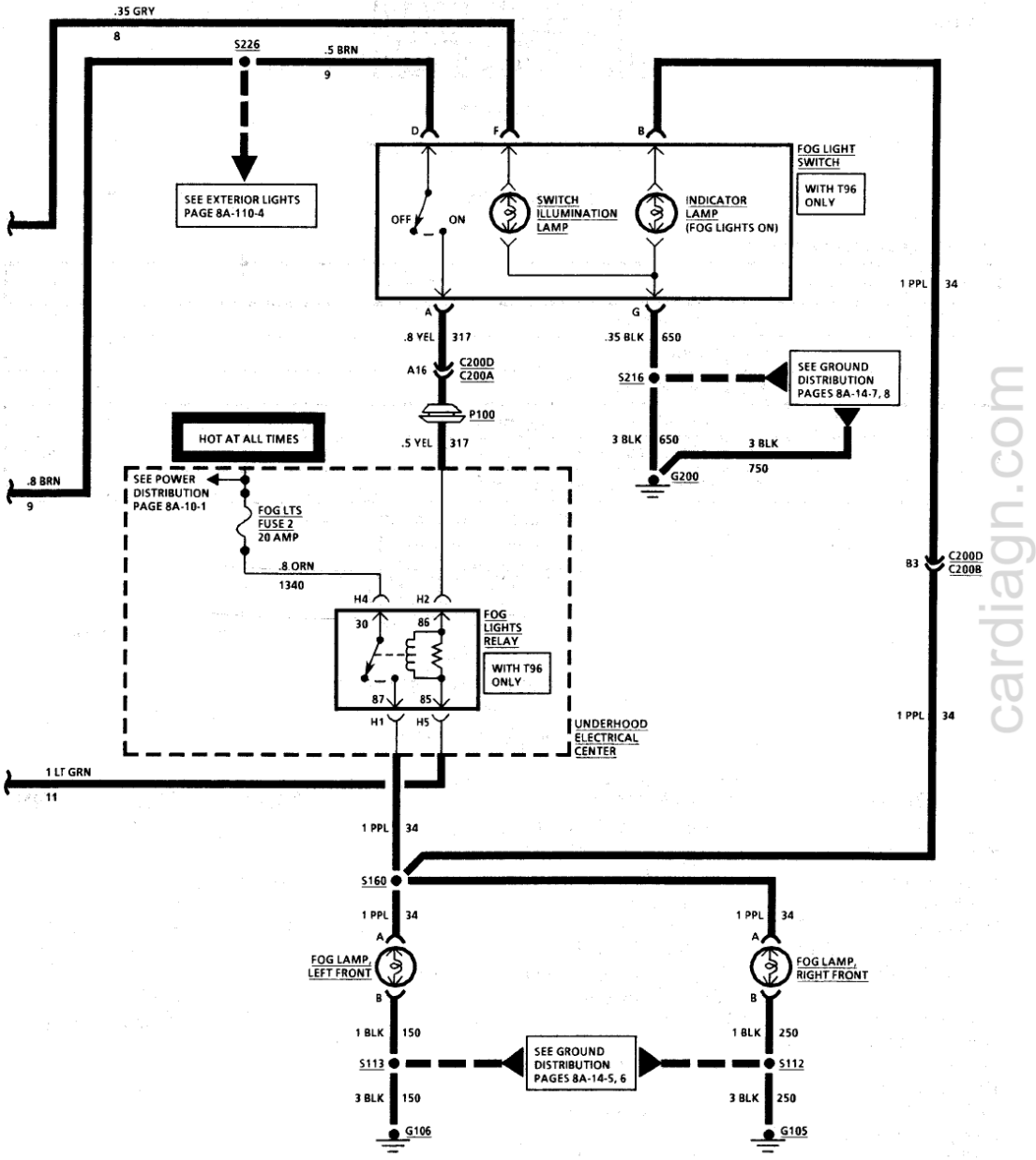


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HEADLIGHTS AND FOG LIGHTS (PONTIAC)
WITHOUT DRL (T61)

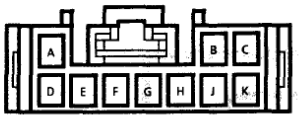


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HEADLIGHTS AND FOG LIGHTS
WITHOUT DRL (T61)



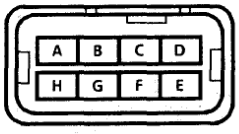
12129077

10-WAY F METRI-PACK 280 SERIES
BLK

HEADLIGHT SWITCH

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C	BRN	9	PARK LAMP FEED	8A-100-0, 2
D	BLK	650	GROUND	8A-14-8
E	YEL	10	HEADLIGHTS ON	8A-100-0, 2
F	GRY	8	POWER FEED FROM I/P DIMMER FUSE #13	8A-100-0, 2
H	ORN	240	POWER FEED FROM TAIL LTS FUSE #10	8A-100-0, 2
J	RED	702	POWER FEED FROM FUSIBLE LINK Z	8A-100-0, 2



12045688

8-WAY M METRI-PACK 150 SERIES
BLK

FOG LIGHT SWITCH

COMPONENT	LOCATION	201-PG	FIG.	CONN
Fog Lamp, Left Front	Lower LH side of front Fascia			
Fog Lamp, Right Front	Lower RH side of front Fascia			
Fog Light Switch	Lower LH side of I/P	37, 38	66, 67	202-21
Fusible Links	Above RH Shock Tower	10	19	
Headlamp, Left (Pont)	LH front of vehicle	23	43	
Headlamp, Right (Pont)	RH front of vehicle			
Headlight Dimmer Switch	Part of Steering Column, activated by Multi-Function Lever	3, 35	5, 52	
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
High Beam Headlamp, Left (Chevy)	Exterior, left front			
High Beam Headlamp, Right (Chevy)	Exterior, right front			
Low Beam Headlamp, Left (Chevy)	Exterior, left front			
Low Beam Headlamp, Right (Chevy)	Exterior, right front			

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COMPONENT	LOCATION	201-PG	FIG.	CONN
Instrument Cluster	LH side of I/P			202-23
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C160 (3 cavities)	LH Headlight to Forward Lamp Harn Jumper, behind Headlight Door Bracket	23	43	
C165 (3 cavities)	RH Headlight to Forward Lamp Harn Jumper, behind Headlight Door Bracket	23	43	
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G105	Near top RH side of radiator, in top of T-Bar	19	36	
G106	Near top LH side of radiator, in top of T-Bar	19	35	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S112	Forward Lamp Harn, approx 10 cm from G105 breakout			
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			
S151	Forward Lamp Harn, at Electrical Center breakout			
S152	Forward Lamp Harn, approx 8 cm from Electrical Center breakout			
S153	Forward Lamp Harn, at Air Pump breakout			
S160	Forward Lamp Harn, approx 4 cm from Coolant Fan breakout			
S214	I/P Harn, approx 7 cm from G200 breakout			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S224	I/P Harn, approx 4 cm from Instrument Cluster (Pont) or from RR Defog Switch (Chevy) breakouts			
S226	I/P Harn, approx 10 cm from Instrument Cluster breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Always suspect an open lamp filament before proceeding with diagnostics.
2. Make sure Lamp Connectors are free from corrosion.
3. Check that grounds G200, G106 and G105 are clean and tight.
4. Check Fusible Link Z for open.
5. Check TAIL LTS Fuse 10 and I/P Dimmer Fuse 13 for open. If fuse(s) are open, refer to Chart #15 in this section.
6. On Pontiac Models if Headlamp door(s) do not open and Headlamps do not illuminate, repair Headlamp door(s) failure first. See "Headlight Doors," page 8A-104-0.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedures.

HEADLIGHTS AND FOG LIGHTS
WITHOUT DRL (T61)

SYMPTOM TABLE (CHEVY)

SYMPTOM	PROCEDURE	PAGE NUMBER
LO Beam and HI Beam Headlights are inoperative.	Chart #1	8A-100-8
LO Beam Headlights inoperative, HI Beam Headlights operate normally.	Chart #3	8A-100-9
HI Beam Headlights inoperative, LO Beam Headlights operate normally.	Chart #4	8A-100-9
HI Beam Indicator inoperative, HI Beam Headlights operate normally.	Chart #5	8A-100-9
One LO Beam or one HI Beam Headlamp inoperative.	Chart #8	8A-100-10
LO beams or HI beams do not turn "OFF."	Chart #9	8A-100-10
HI Beam Headlights and LO Beam Headlights "ON" at the same time.	Check for short to B + in CKTs 11 and 12. If OK, replace Headlamp Dimmer Switch.	
Fog Lights do not turn "ON" but Park Lights operate normally.	Chart #12	8A-100-12
Fog Lights do not turn "OFF."	Chart #13	8A-100-13
One Fog Lamp inoperative.	Chart #14	8A-100-13
Fog Lights "ON" Indicator Lamp on; Fog Light Switch inoperative but Fog Lights operate normally.	Check for: • Poor connection at C200 terminal "B3". • Open in CKT 34 between S160 and Fog Light Switch. • Open in CKT 650 to ground. • Poor connections at Fog Light Switch. If OK, replace Fog Light Switch.	
Fuse(s) blows when replaced or when attempting to use lighting system.	Chart #15	8A-100-14

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SYMPTOM TABLE (PONTIAC)

SYMPTOM	PROCEDURE	PAGE NUMBER
LO Beam and HI Beam Headlights are inoperative.	Chart #2	8A-100-8
LO Beam Headlights inoperative, HI Beam Headlights operate normally.	Chart #6	8A-100-10
HI Beam Headlights inoperative, LO Beam Headlights operate normally.	Chart #7	8A-100-10
HI Beam Indicator inoperative, HI Beam Headlights operate normally.	Chart #5	8A-100-9
One LO Beam or one HI Beam Headlamp inoperative.	Chart #10	8A-100-11
LO Beams or HI Beams do not turn "OFF."	Chart #11	8A-100-11
HI Beam Headlights and LO Beam Headlights "ON" at the same time.	Check for short to B+ in CKTs 11 and 12. If OK, replace Headlamp Dimmer Switch.	
Fog Lights do not turn "ON" but Park Lights operate normally.	Chart #12	8A-100-12
Fog Lights do not turn "OFF."	Chart #13	8A-100-13
One Fog Lamp inoperative.	Chart #14	8A-100-13
Fog Lights "ON" Indicator Lamp on; Fog Light Switch inoperative but Fog Lights operate normally.	Check for: • Poor connection at C200 terminal "B3". • Open in CKT 34 between S160 and Fog Light Switch. • Open in CKT 650 to ground. • Poor connections at Fog Light Switch. If OK, replace Fog Light Switch.	
Fuse(s) blows when replaced or when attempting to use lighting system.	Chart #15	8A-100-14

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HEADLIGHT AND FOG LIGHTS
WITHOUT DRL (T61)

CHART #1 (CHEVY ONLY)
LO BEAM AND HI BEAM HEADLIGHTS ARE INOPERATIVE

- WITH A TEST LIGHT, BACKPROBE HEADLIGHT SWITCH CONN TERM "J" TO GROUND. IS TEST LIGHT "ON"?

YES

- HEADLIGHT SWITCH TO "HEAD."
- CONNECT A TEST LIGHT FROM HEADLIGHT SWITCH CONN TERM "E" TO GROUND. IS TEST LIGHT "ON"?

NO

- CHECK FOR POOR CONNECTION AT HEADLIGHT SWITCH. IF OK, REPLACE HEADLIGHT SWITCH.

YES

- CHECK FOR POOR CONNECTION AT C200 TERM "B5". IF OK, REPAIR OPEN IN CKT 10 BETWEEN HEADLIGHT SWITCH AND S151.

NO

- CHECK FOR POOR CONNECTION AT C200 TERM "B6".
- CHECK FUSIBLE LINK Z FOR OPEN. IF OK, REPAIR OPEN IN CKT 702 BETWEEN HEADLIGHT SWITCH AND FUSIBLE LINK Z.

CHART #2 (PONTIAC ONLY)
LO BEAM AND HI BEAM HEADLIGHTS ARE INOPERATIVE

- HEADLIGHT SWITCH TO "HEAD."
- CONNECT A TEST LIGHT FROM HEADLIGHT DIMMER SWITCH CONN TERM "B" TO GROUND. IS TEST LIGHT "ON"?

YES

- CONNECT A TEST LIGHT FROM HEADLIGHT SWITCH CONN TERM "E" TO GROUND. IS TEST LIGHT "ON"?

NO

- CHECK FOR AN OPEN IN CKT 702, AN OPEN IN FUSIBLE LINK Z OR A POOR CONNECTION AT C200.
- CHECK FOR POOR CONNECTION AT HEADLIGHT SWITCH. IF OK, REPLACE HEADLIGHT SWITCH.

YES

- CHECK FOR POOR CONNECTION AT HEADLIGHT DIMMER SWITCH. IF OK, REPLACE HEADLIGHT DIMMER SWITCH.

YES

- CHECK FOR POOR CONNECTION AT C200 TERM "B5". IF OK, REPAIR OPEN IN CKT 10 BETWEEN HEADLIGHT SWITCH AND HEADLIGHT DIMMER SWITCH.

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CHART #3 (CHEVY ONLY)
LO BEAM HEADLIGHTS INOPERATIVE, HI BEAM HEADLIGHTS OPERATE NORMALLY

- HEADLIGHT SWITCH TO "HEAD."
- DISCONNECT A LO BEAM HEADLAMP CONNECTOR.
- WITH A TEST LIGHT TO GROUND, PROBE TERM "A" OF HEADLAMP CONN. IS TEST LIGHT ON?

YES

- CHECK FOR POOR CONNECTIONS AT HEADLIGHT CONNECTORS. IF OK, CHECK FOR MULTIPLE HEADLAMP FAILURE.

NO

CHECK S151 FOR OPEN IN CKT 10 TO LO BEAM HEADLIGHTS.

CHART #4 (CHEVY ONLY)
HI BEAM HEADLIGHTS INOPERATIVE, LO BEAM HEADLIGHTS OPERATE NORMALLY

- HEADLIGHT SWITCH TO "HEAD."
- HEADLIGHT DIMMER SWITCH TO "HI". IS HI BEAM INDICATOR "ON"?

NO

- HEADLIGHT SWITCH TO "HEAD."
- HEADLIGHT DIMMER SWITCH TO "HI."
- WITH A TEST LIGHT TO GROUND, BACKPROBE HEADLIGHT DIMMER SWITCH CONN TERM "B". IS TEST LIGHT "ON"?

NO

REPAIR OPEN IN CKT 10 BETWEEN HEADLAMP DIMMER SWITCH AND S151.

YES

- CHECK FOR POOR CONNECTION AT HEADLIGHT DIMMER SWITCH. IF OK, REPLACE HEADLIGHT DIMMER SWITCH.

YES

CHECK FOR OPEN IN CKT 11 BETWEEN HEADLIGHT DIMMER SWITCH TERM "A" AND S152.

CHART #5
HI BEAM INDICATOR INOPERATIVE, HI BEAM HEADLIGHTS OPERATE NORMALLY

- REMOVE INSTRUMENT CLUSTER.
- HEADLIGHT SWITCH TO "HEAD."
- HEADLIGHT DIMMER SWITCH TO "HI."
- PROBE INSTRUMENT CLUSTER CONN TERM "A11" WITH A DIGITAL MULTIMETER TO GROUND.
- MEASURE VOLTAGE.

0 VOLTS

CHECK FOR POOR CONNECTION AT C200 OR OPEN IN CKT 11 BETWEEN HEADLIGHT DIMMER SWITCH CONN AND INSTRUMENT CLUSTER CONN.

B+

- CHECK FOR POOR CONNECTION AT INSTRUMENT CLUSTER CONNECTOR TERM "A11".
- CHECK FOR MISSING OR DAMAGED HI BEAM INDICATOR LAMP OR POOR CONNECTION AT THE INSTRUMENT CLUSTER PRINTED CIRCUIT.
- CHECK PRINTED CIRCUIT FOR DAMAGE OR FLAWS.

REPLACE OR REPAIR AS NECESSARY.

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HEADLIGHTS AND FOG LIGHTS
WITHOUT DRL (T61)

CHART #6 (PONT ONLY)
LO BEAM HEADLIGHTS INOPERATIVE, HI BEAM HEADLIGHTS OPERATE NORMALLY

- HEADLIGHT SWITCH TO "HEAD."
- HEADLIGHT DIMMER SWITCH "LO."
- BACKPROBE HEADLIGHT DIMMER SWITCH CONN TERM "C" WITH A TEST LIGHT TO GROUND.

IS TEST LIGHT "ON"?

NO

- CHECK FOR POOR CONNECTION AT HEADLIGHT DIMMER SWITCH. IF OK, REPLACE HEADLIGHT DIMMER SWITCH.

YES

CHECK FOR OPEN IN CKT 12 BETWEEN THE HEADLIGHT DIMMER SWITCH TERM "C" AND S153.

CHART #7 (PONT ONLY)
HI BEAM HEADLIGHTS INOPERATIVE, LO BEAM HEADLIGHTS OPERATE NORMALLY

- HEADLIGHT SWITCH TO "HEAD."
- HEADLIGHT DIMMER SWITCH TO "HI".

IS HI BEAM INDICATOR "ON"?

NO

- CHECK FOR POOR CONNECTION AT HEADLIGHT DIMMER SWITCH. IF OK, REPLACE HEADLIGHT DIMMER SWITCH.

YES

CHECK FOR OPEN IN CKT 11 BETWEEN HEADLIGHT DIMMER SWITCH TERM "A" AND S152.

CHART #8 (CHEVY ONLY)
ONE LO BEAM OR ONE HI BEAM HEADLAMP INOPERATIVE

- DISCONNECT INOPERATIVE HEADLAMP CONN.
- HEADLIGHT SWITCH TO "HEAD."
- HEADLIGHT DIMMER SWITCH TO "HI" IF HI BEAM IS INOPERATIVE.
- CONNECT A TEST LIGHT FROM HEADLAMP CONN TERM "A" (LO BEAM) OR TERM "A" (HI BEAM) TO GROUND.

IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTION AT HEADLAMP CONN.
- (LH) CHECK FOR OPEN IN GROUND CKT 150.
- (RH) CHECK FOR OPEN IN GROUND CKT 250. IF OK, REPLACE HEADLAMP.

NO

- (HI BEAM) REPAIR OPEN IN CKT 11 BETWEEN S152 AND INOPERATIVE HEADLAMP CONN.
- (LO BEAM) REPAIR OPEN IN CKT 10 BETWEEN S151 AND INOPERATIVE HEADLAMP CONN.

CHART #9 (CHEVY ONLY)
LO BEAMS OR HI BEAMS DO NOT TURN "OFF"

- (LO BEAMS) DISCONNECT HEADLIGHT SWITCH CONN FROM HEADLIGHT SWITCH.
- (HI BEAMS) DISCONNECT CONNECTOR FROM HEADLIGHT DIMMER SWITCH.

DO HEADLIGHTS TURN "OFF"?

YES

- (LO BEAMS) REPLACE HEADLIGHT SWITCH.
- (HI BEAMS) REPLACE HEADLIGHT SWITCH.

NO

- (LO BEAMS) REPAIR SHORT TO B+ IN CKT 10.
- (HI BEAMS) REPAIR SHORT TO B+ IN CKT 11.

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CHART #10 (PONT ONLY)
ONE LO BEAM OR ONE HI BEAM HEADLAMP INOPERATIVE

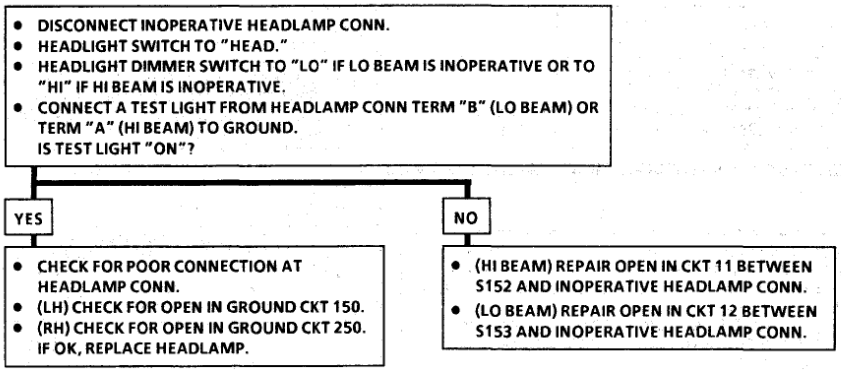
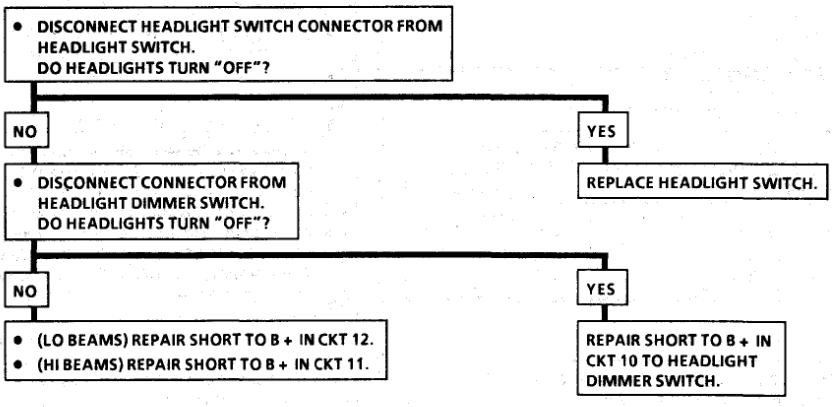


CHART #11 (PONT ONLY)
LO BEAMS OR HI BEAMS DO NOT TURN "OFF"



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HEADLIGHTS AND FOG LIGHTS
WITHOUT DRL (T61)

CHART #12
FOG LIGHTS DO NOT TURN "ON" BUT PARK LIGHTS OPERATE NORMALLY

- HEADLIGHT SWITCH TO "PARK."
- WITH A TEST LIGHT TO GROUND, BACKPROBE FOG LIGHT SWITCH CONN TERM "E" (CHEVY) OR TERM "D" (PONT). IS TEST LIGHT "ON"?

YES

- HEADLIGHT SWITCH TO "PARK."
- FOG LIGHT SWITCH TO "ON."
- WITH A TEST LIGHT TO GROUND, BACKPROBE FOG LIGHT SWITCH CONN TERM "F" (CHEVY) OR TERM "A" (PONT). IS TEST LIGHT "ON"?

YES

- HEADLIGHT SWITCH TO "PARK."
- FOG LIGHT SWITCH TO "ON."
- REMOVE FOG LIGHTS RELAY FROM UNDERHOOD ELECTRICAL CENTER.
- WITH A TEST LIGHT TO GROUND, PROBE FOG LIGHTS RELAY CAVITY "H2" IN THE UNDERHOOD ELECTRICAL CENTER. IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT TO GROUND, PROBE FOG LIGHTS RELAY CAVITY "H4" IN THE UNDERHOOD ELECTRICAL CENTER. IS TEST LIGHT "ON"?

YES

- CONNECT A FUSED JUMPER FROM FOG LIGHTS RELAY CAVITIES "H4" TO "H1" IN UNDERHOOD ELECTRICAL CENTER. DO FOG LIGHTS TURN "ON"?

YES

- WITH A TEST LIGHT TO B+, PROBE FOG LIGHTS RELAY CAVITY "H5" IN UNDERHOOD ELECTRICAL CENTER. IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTIONS AT FOG LIGHTS RELAY. IF OK, REPLACE FOG LIGHTS RELAY.

NO

- CHECK FOR POOR CONNECTION AT FOG LIGHT SWITCH CONN TERM "E" (CHEVY) OR TERM "D" (PONT). IF OK, REPAIR OPEN IN CKT 9 BETWEEN FOG LIGHT SWITCH AND S226.

NO

- CHECK FOR POOR CONNECTIONS AT FOG LIGHT SWITCH CONN TERM "F" AND TERM "E" (CHEVY) OR TERM "A" AND TERM "D" (PONT). IF OK, REPLACE FOG LIGHT SWITCH.

NO

- CHECK FOR POOR CONNECTION AT C200 TERM "A16."
- IF OK, REPAIR OPEN IN CKT 317 BETWEEN FOG LIGHT SWITCH AND FOG LIGHTS RELAY LOCATED IN UNDERHOOD ELECTRICAL CENTER.

NO

- CHECK FOG LIGHTS FUSE 2 LOCATED IN UNDERHOOD ELECTRICAL CENTER FOR OPEN.
- IF OPEN, CHECK FOR OPEN OR SHORT TO GROUND THROUGH CKTS 1340 AND 34 INCLUDING FAULTY RELAY. IF FUSE CONTINUES TO BLOW, REFER TO CHART #15 IN THIS SECTION.

NO

- IF FOG LIGHT SWITCH "ON" INDICATOR LIGHT ILLUMINATES WITH FUSED JUMPER INSTALLED, CHECK FOR POOR CONNECTIONS AT FOG LAMP BULBS.
- IF OK, CHECK FOR MULTIPLE BULB FAILURE.
- IF FOG LIGHT SWITCH "ON" INDICATOR LIGHT DOES NOT ILLUMINATE WITH FUSED JUMPER INSTALLED, CHECK FOR OPEN IN CKT 34 BETWEEN FOG LIGHTS RELAY AND S160.

NO

REPAIR OPEN IN CKT 11 BETWEEN FOG LIGHTS RELAY AND S152.

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CHART #13
FOG LIGHTS DO NOT TURN "OFF"

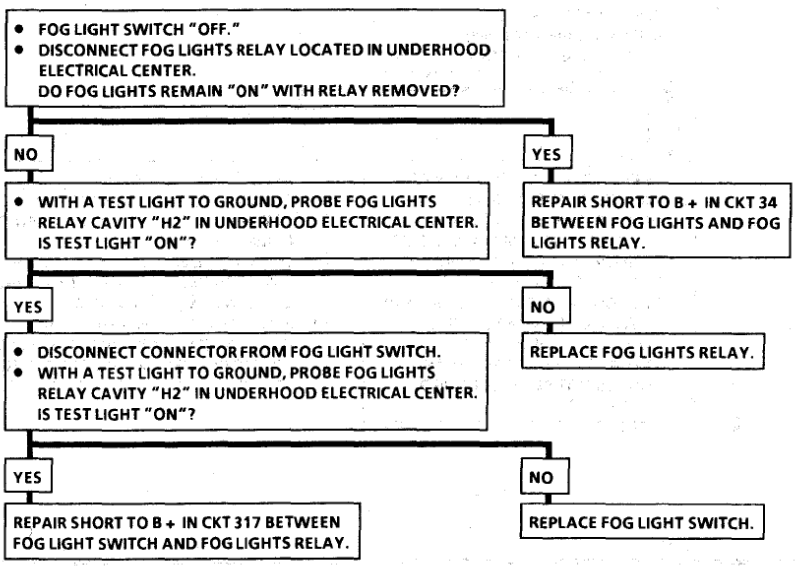
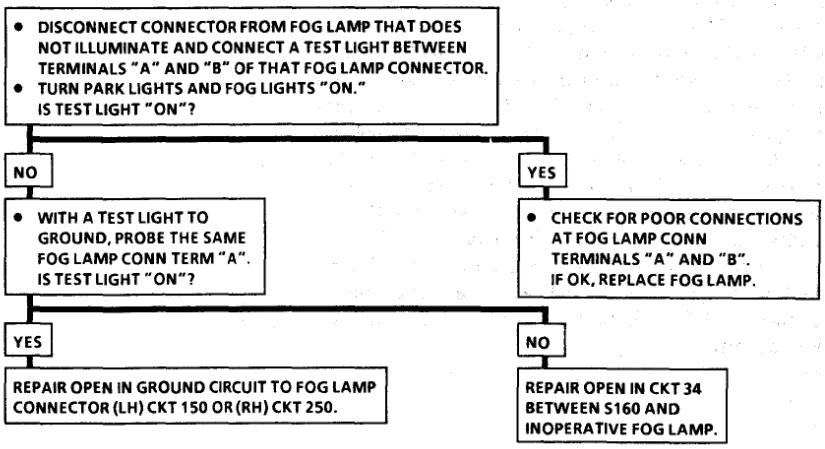


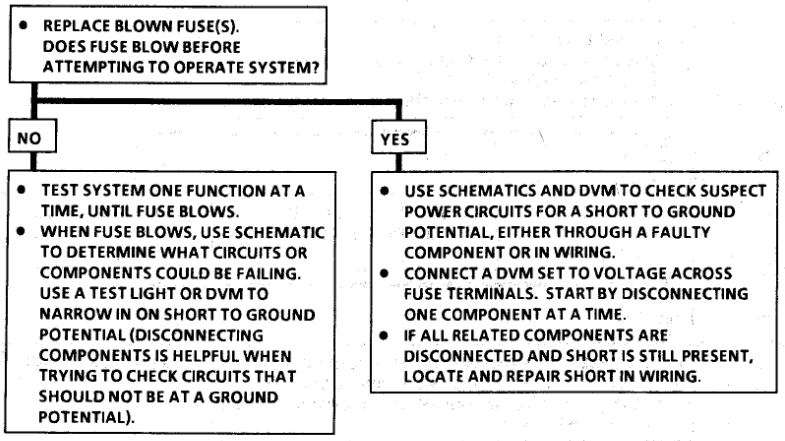
CHART #14
ONE FOG LAMP INOPERATIVE



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HEADLIGHTS AND FOG LIGHTS
WITHOUT DRL (T61)

CHART #15
FUSE(S) BLOWS WHEN REPLACED OR WHEN ATTEMPTING TO USE LIGHTING SYSTEM



CIRCUIT OPERATION (CHEVY)
HEADLIGHTS

Voltage is applied to the Headlight Switch at all times from Fusible Link Z. When the Headlight Switch is in "HEAD," voltage is applied directly from the Headlight Switch through CKT 10 to the LO Beam Headlamps. Voltage is also applied through CKT 10 to the Headlight Dimmer Switch. When the Headlight Dimmer Switch is placed in "HI," voltage is applied through the closed contacts of the Dimmer Switch to the HI Beam Headlamps and the HI Beam Indicator. When HI Beams are selected both the LO Beam Headlamps and HI Beam Headlamps will be illuminated. The LO Beam Headlamps, HI Beam Headlamps, and HI Beam Indicator are permanently grounded so that when battery voltage is applied, the lamps operate.

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CIRCUIT OPERATION (PONTIAC)

HEADLIGHTS

Voltage is applied to the Headlight Switch at all times from Fusible Link Z. When the Headlight Switch is in "HEAD," voltage is applied to the HI and LO Beam Circuits through the Headlight Dimmer Switch.

At the same time, this voltage is applied to the Headlamp Door Motor Assemblies, which allows the doors to open.

When the Headlight Switch is moved to "HEAD" and the Headlight Dimmer Switch is placed in "LO," voltage is applied through the closed contacts of the Headlight Dimmer Switch to the LO Beam Circuit of the Headlights. When the Headlight Dimmer Switch is placed in "HI," battery voltage is applied to the HI Beam circuit of the Headlights, and the HI Beam Indicator. The LH Headlamp, RH Headlamp, and the HI Beam Indicator are permanently grounded so that when battery voltage is applied, the lamps operate.

FOG LIGHTS

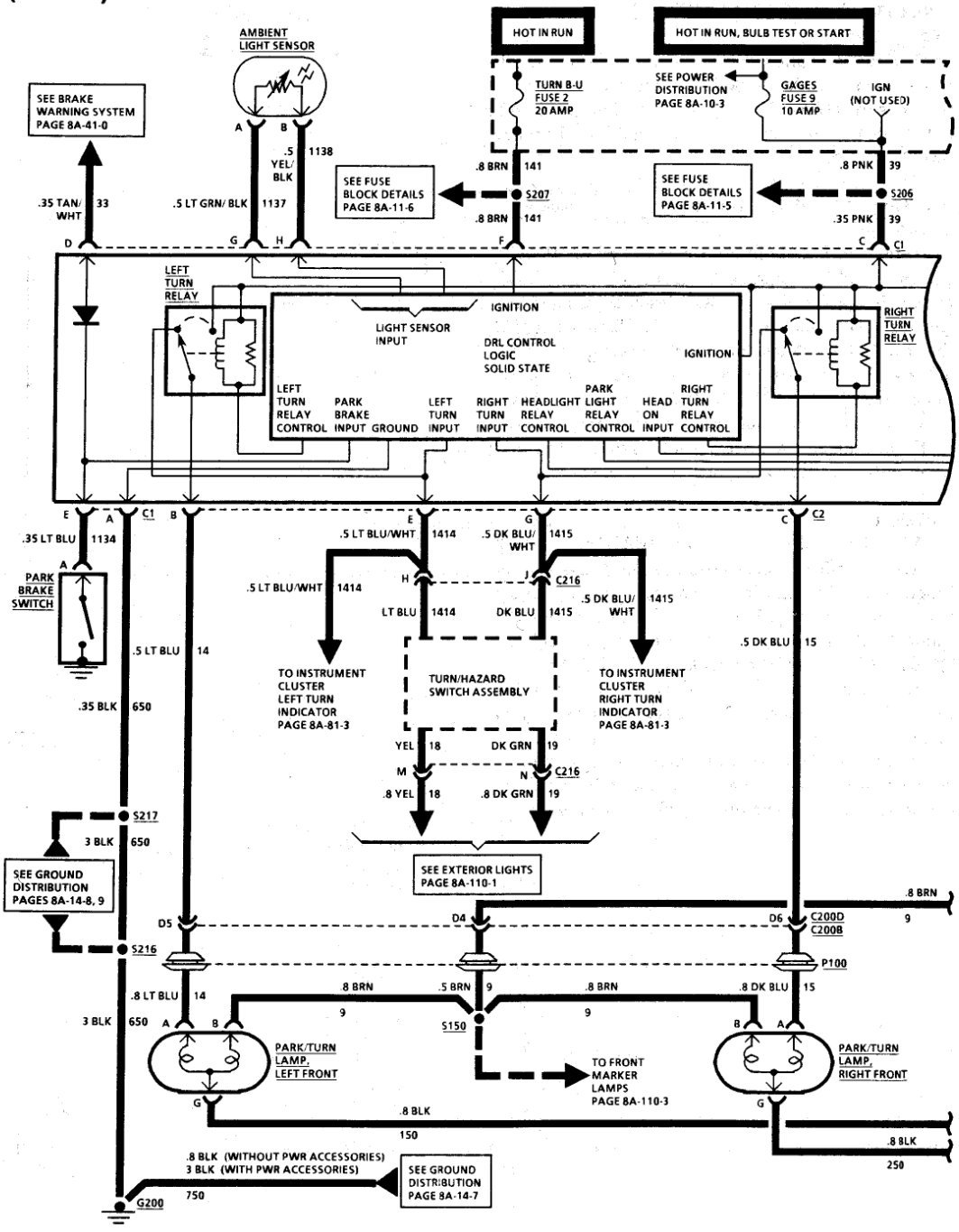
With the Headlight Switch in "HEAD" or "PARK," voltage is applied to one side of the Fog Light Switch. When the Fog Light Switch is closed, voltage is applied to one side of the Fog Lights Relay Coil, energizing the relay (the other side of the coil is grounded through the HI Beam Filament of the Headlamps).

When energized, the normally open contacts of the Fog Lights Relay close, allowing voltage to be applied to the Fog Lights.

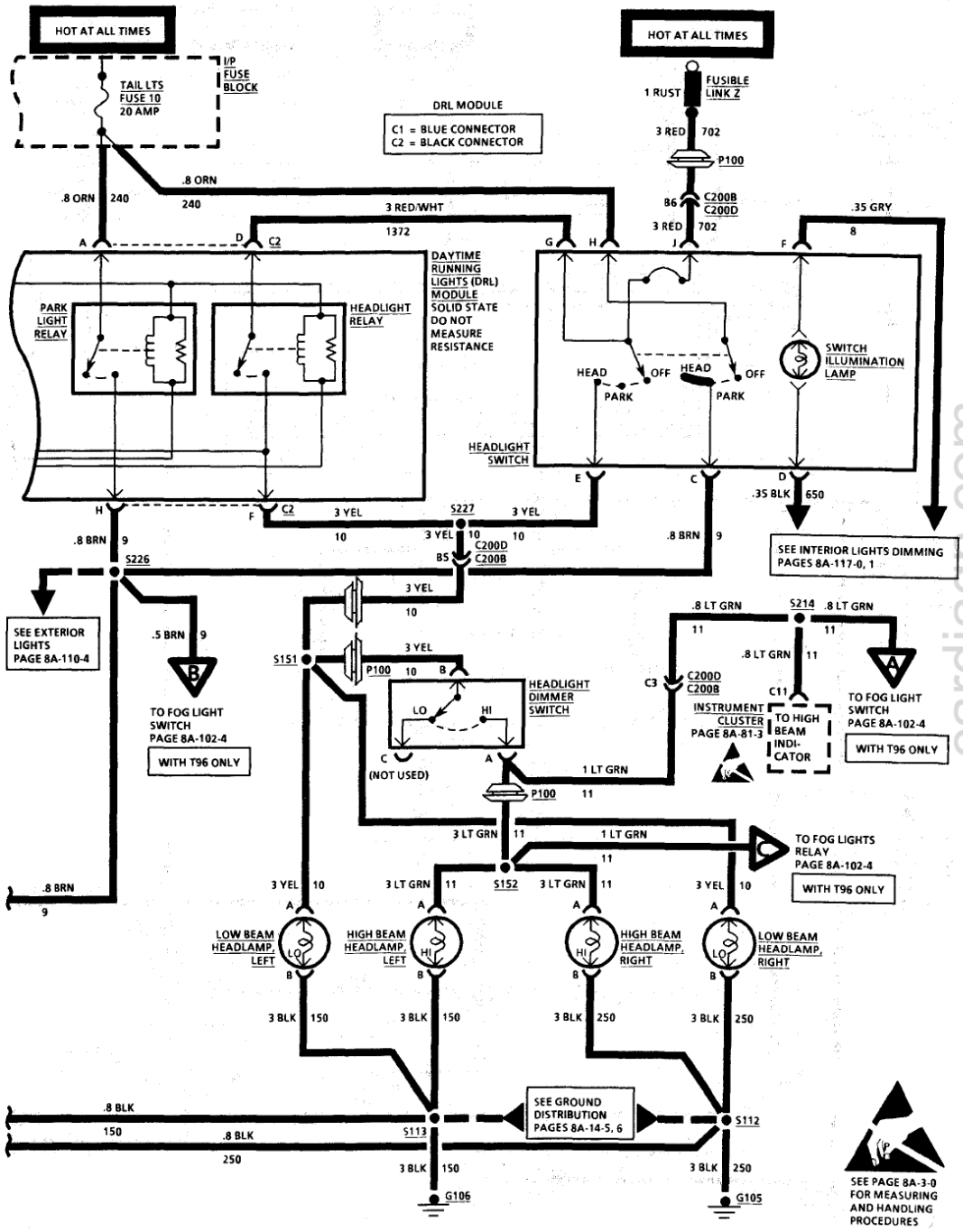
When the HI Beams are activated, ground is removed to one side of the Fog Lights Relay Coil, de-energizing the relay and turning off the Fog Lights.

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HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61) (CHEVY)

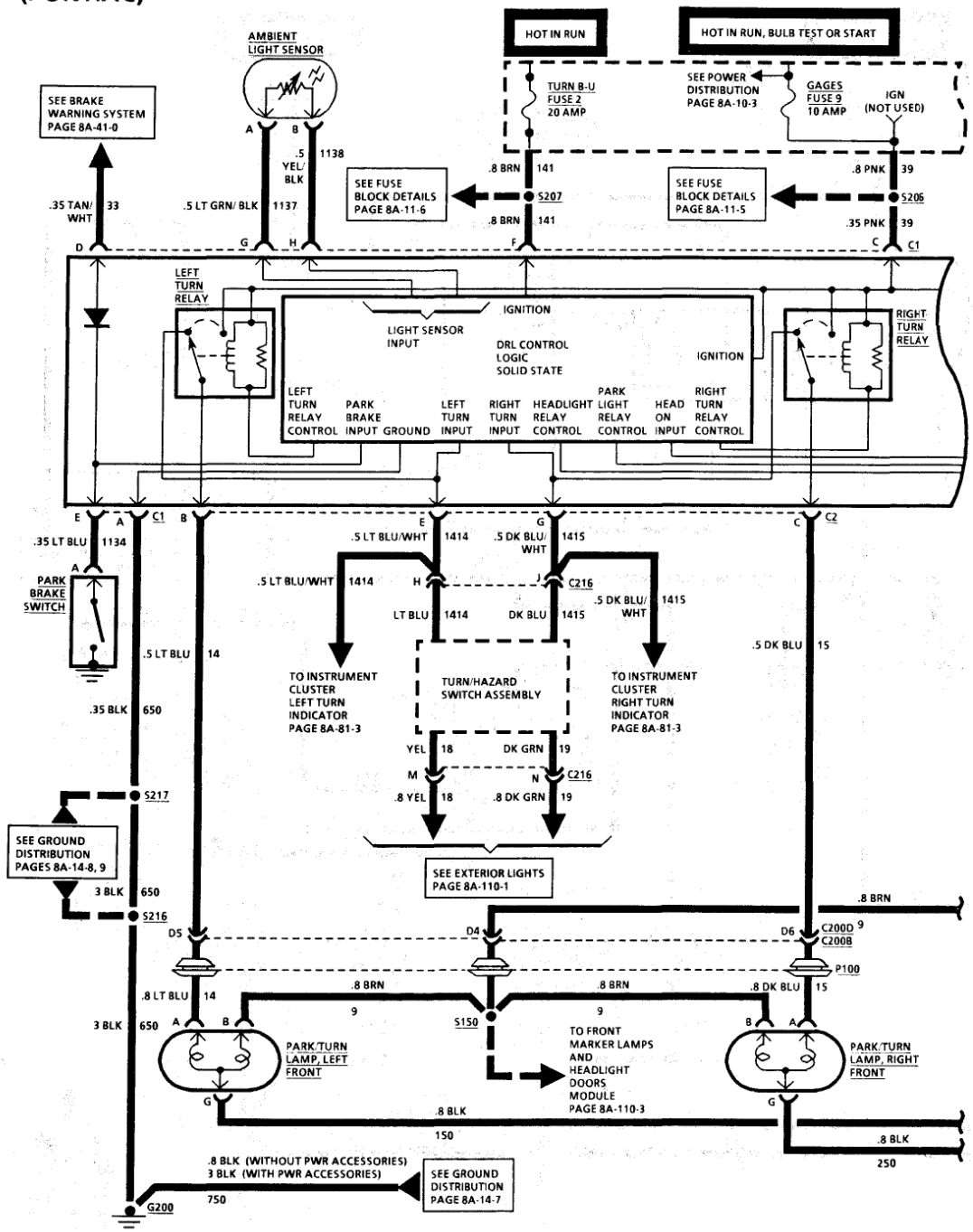


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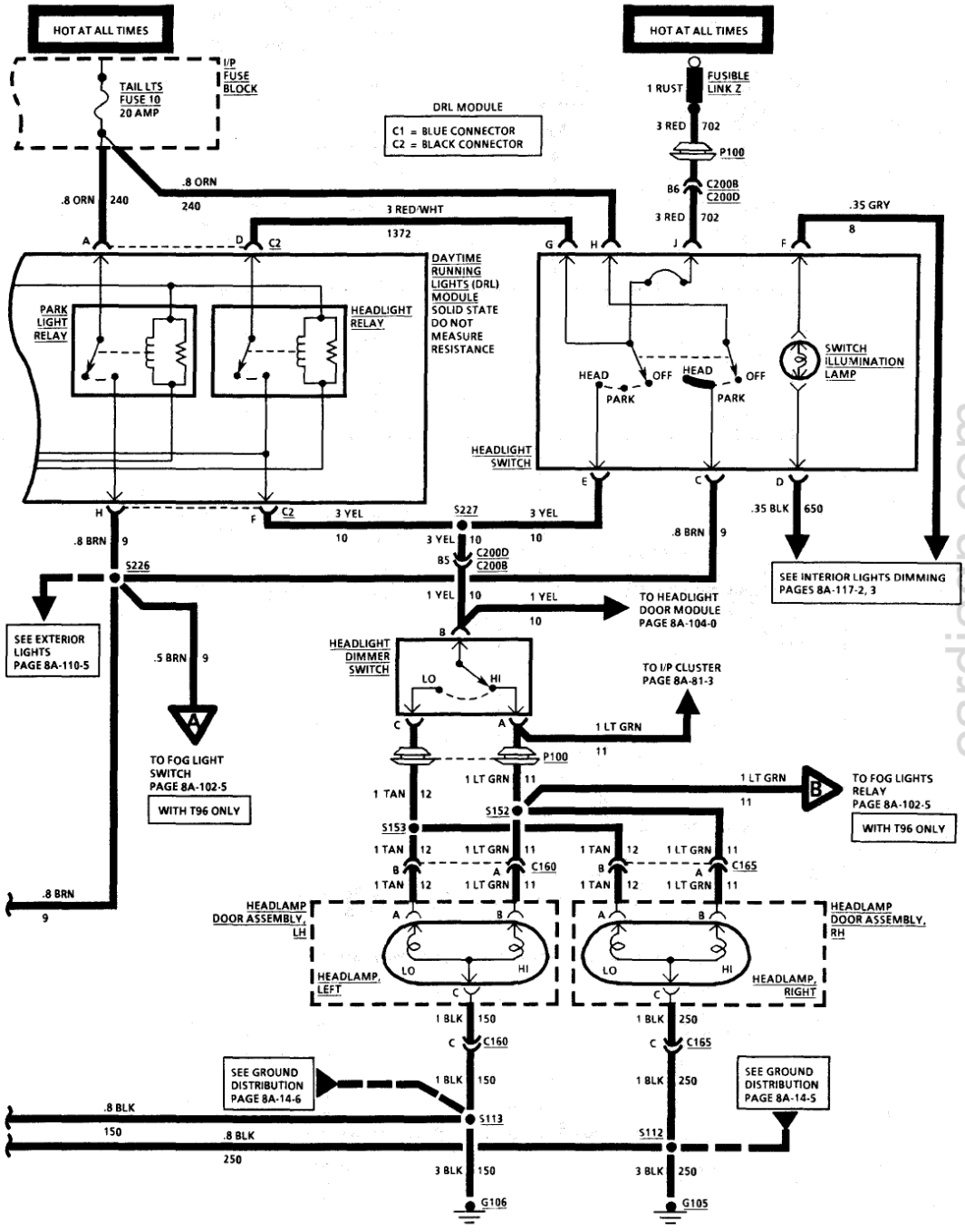


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HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61) (PONTIAC)

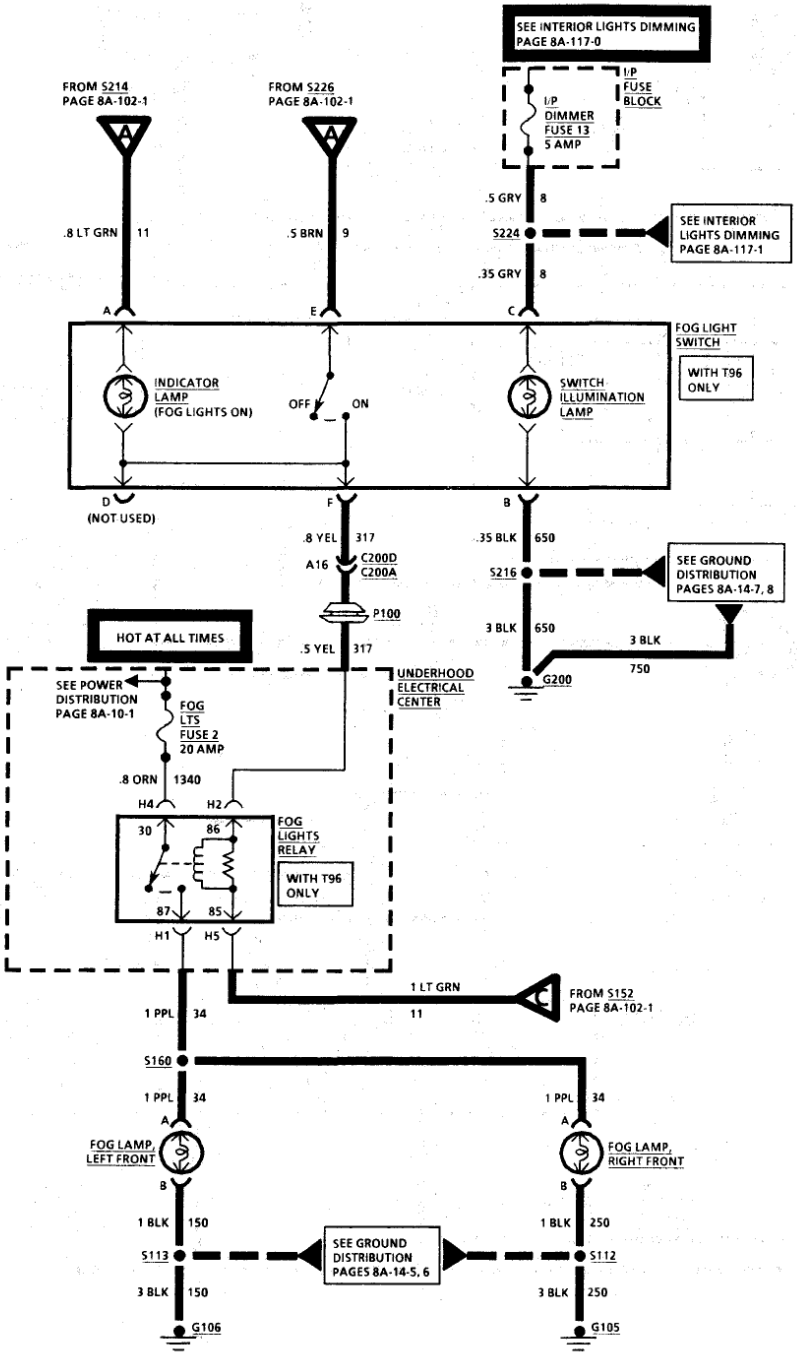


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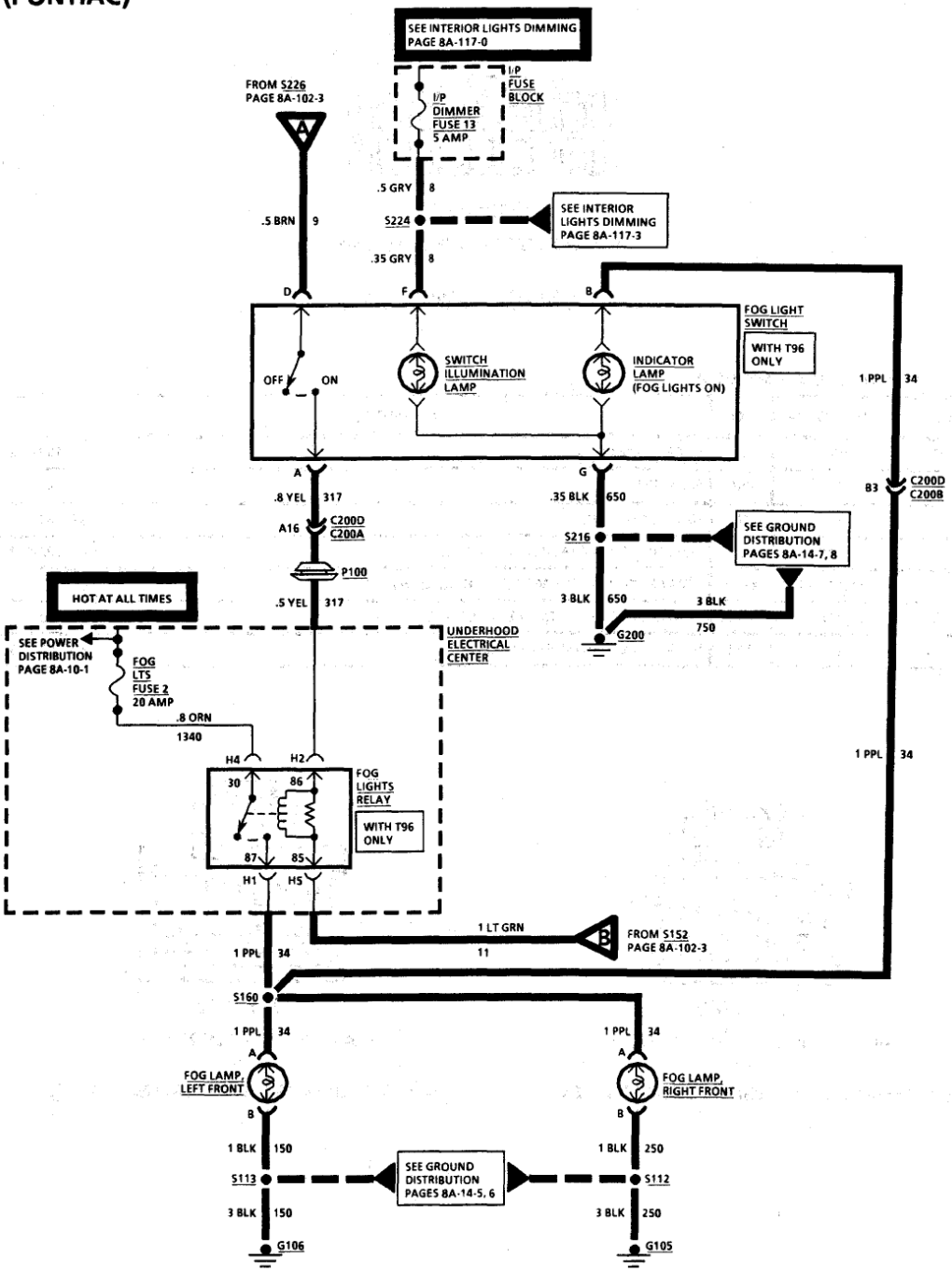
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HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61) (CHEVY)



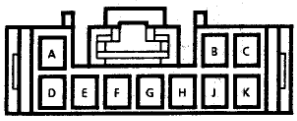
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HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61) (PONTIAC)



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HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61)



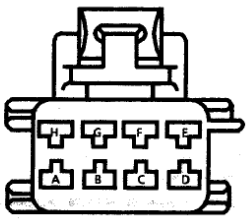
12129077

10-WAY F METRI-PACK 280 SERIES
BLK

HEADLIGHT SWITCH

**CAVITIES NOT LISTED ARE NOT USED

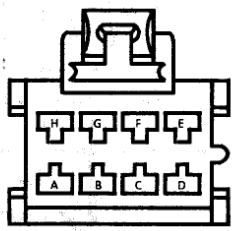
CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C	BRN	9	PARK LAMP FEED	8A-102-1, 3
D	BLK	650	GROUND	8A-14-8
E	YEL	10	HEADLIGHTS ON	8A-102-1, 3
F	GRY	8	POWER FEED FROM I/P DIMMER FUSE #13	8A-102-1, 3
G	RED/WHT	1372	POWER FEED TO DRL MODULE - HEADLIGHT RELAY	8A-102-1, 3
H	ORN	240	POWER FEED FROM TAIL LTS FUSE #10	8A-102-1, 3
J	RED	702	POWER FEED FROM FUSIBLE LINK Z	8A-102-1, 3



12064766

8-WAY F METRI-PACK 150 SERIES
BLU

DAYTIME RUNNING LIGHTS (DRL) MODULE C1

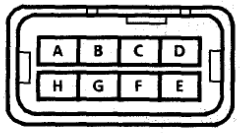


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8-WAY F METRI-PACK 280 SERIES
BLK

DAYTIME RUNNING LIGHTS (DRL) MODULE C2

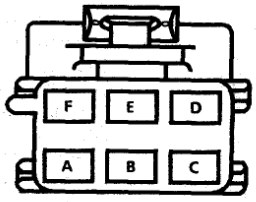
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8-WAY M METRI-PACK 150 SERIES
BLK

FOG LIGHT SWITCH (PONT)



12064762

6-WAY F METRI-PACK 150 SERIES
GRY

FOG LIGHT SWITCH (CHEVY)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Ambient Light Sensor	Mounted in top of I/P, near Defrost Grill	22	41	
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Fog Lamp, Left Front	Lower LH side of front Fascia			
Fog Lamp, Right Front	Lower RH side of front Fascia			
Fog Light Switch	Lower LH side of I/P	37, 38	66, 67	202-21
Fusible Links	Above RH Shock Tower	10	19	
Headlamp, Left (Pont)	LH front of vehicle	23	43	
Headlamp, Right (Pont)	RH front of vehicle			
Headlight Dimmer Switch	Part of Steering Column, activated by Multi-Function Lever	3, 35	5, 64	
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
High Beam Headlamp, Left (Chevy)	Exterior, left front			
High Beam Headlamp, Right (Chevy)	Exterior, right front			
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Instrument Cluster	LH side of I/P			202-23
Low Beam Headlamp, Left (Chevy)	Exterior, left front			
Low Beam Headlamp, Right (Chevy)	Exterior, right front			
Park Brake Switch	In console, at base of Park Brake Lever	43	81	
Park/Turn Lamp, Left Front	Exterior, left front	17	32	
Park/Turn Lamp, Right Front	Exterior, right front	17	32	
Turn/Hazard Switch Assembly	Part of Steering Column	3	5	
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C160 (3 cavities)	LH Headlight to Forward Lamp Harn Jumper, behind Headlight Door Bracket	23	43	
C165 (3 cavities)	RH Headlight to Forward Lamp Harn Jumper, behind Headlight Door Bracket	23	43	
C200A (17 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2

(CONTINUED ON NEXT PAGE)

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HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61)

(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
C216 (11 cavities)	Attached to base of Steering Column	34	63	202-5
G105	Near top RH side of radiator, in top of T-Bar	19	36	
G106	Near top LH side of radiator, in top of T-Bar	19	35	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S112	Forward Lamp Harn, approx 10 cm from G105 breakout			
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			
S150	Forward Lamp Harn, approx 22 cm forward of Electrical Center breakout, on lighting branch			
S151	Forward Lamp Harn, at Electrical Center breakout			
S152	Forward Lamp Harn, approx 8 cm from Electrical Center breakout			
S153	Forward Lamp Harn, at Air Pump breakout			
S160	Forward Lamp Harn, approx 4 cm from Coolant Fan breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S207	I/P Harn, approx 4 cm before DLC breakout			
S214	I/P Harn, approx 7 cm from G200 breakout			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S224	I/P Harn, approx 4 cm from Instrument Cluster (Pont) or from RR Defog Switch (Chevy) breakouts			
S226	I/P Harn, approx 10 cm from Instrument Cluster breakout			
S227	I/P Harn, approx 10 cm from Convenience Center breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Make sure Headlights and Park Lights operate normally when using the Light Switch before proceeding with Daytime Running Lamp (DRL) diagnosis.
2. Make sure the Brake Warning System is functioning properly. DRL will not turn "ON" if Park Brake is "ON."
3. Check Fusible Link Z for open.
4. Check Turn B-U Fuse 2, Gages Fuse 9 and TAIL LTS Fuse 10 for open. If fuse(s) are blown, replace fuse(s). If fuse(s) re-blows, check for short to ground through the suspected circuit(s).

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a systemdisconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0)
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

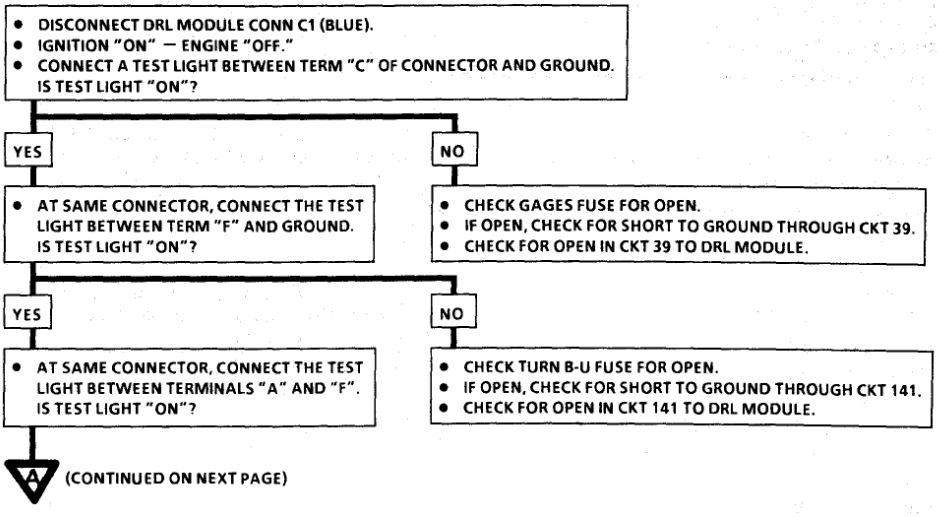
- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

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SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
DRL will not turn "ON."	Chart #1	8A-102-9
DRL operates normally in daytime, but Park Lights and Headlights will not turn "ON" automatically at dark.	Chart #2	8A-102-11
Park Lights will not turn "ON" automatically at dark (Headlights turn "ON" OK).	Chart #3	8A-102-11
Headlights will not turn "ON" automatically at dark (Park Lights turn "ON" OK).	Chart #4	8A-102-11
Park Lights always stay "ON" during daylight hours (Headlights remain "OFF").	Chart #5	8A-102-12
Headlights always stay "ON" during daylight hours (Park Lights remain "OFF").	Chart #6	8A-102-12
Park Lights and Headlights remain "ON" during daylight hours.	Chart #5 Chart #6	8A-102-12 8A-102-12
LH Front Turn Signal inoperative.	Chart #7	8A-102-12
RH Front Turn Signal inoperative.	Chart #8	8A-102-13
Fog Lights entire system inoperative or individual lamp inoperative.	For diagnosis, refer to "Headlights," SECTION 8A-100.	

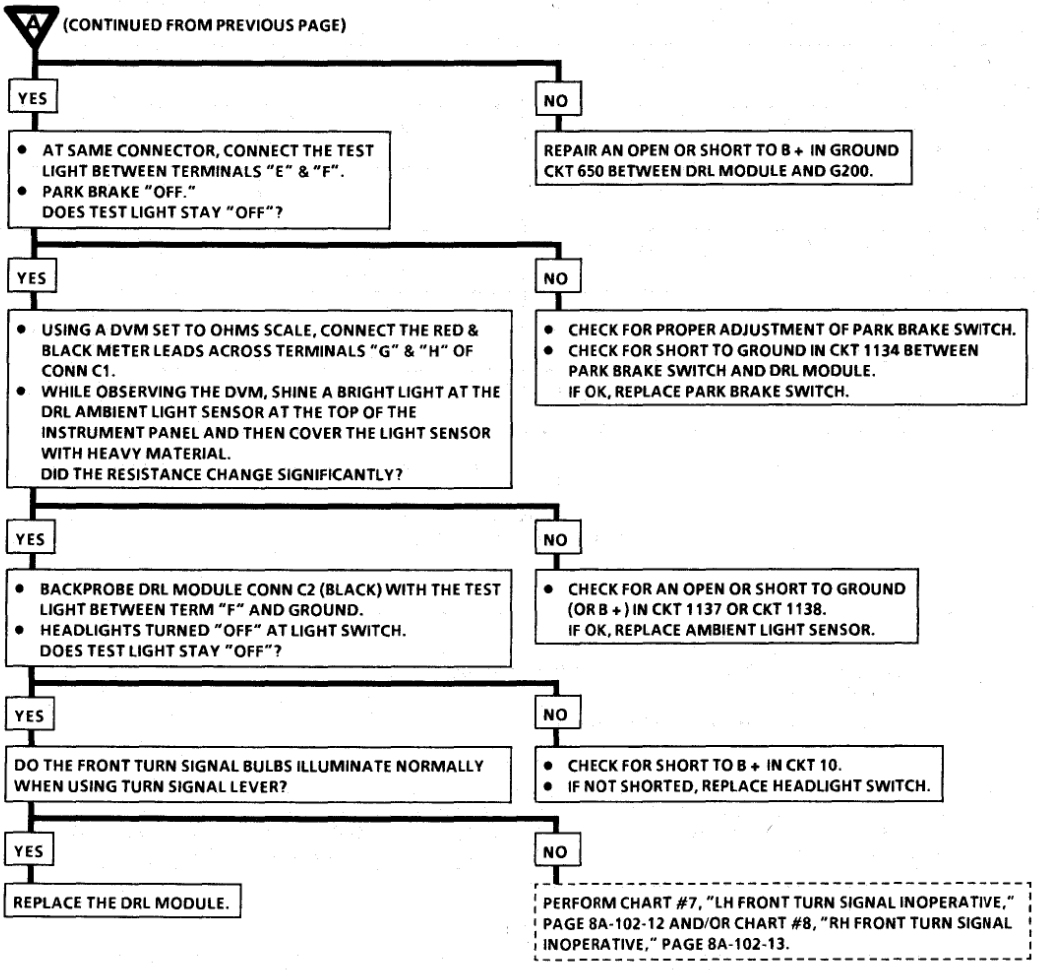
CHART #1
DRL WILL NOT TURN "ON"



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HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61)

CHART #1 (continued)
DRL WILL NOT TURN "ON"



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CHART #2

DRL OPERATES NORMALLY IN DAYTIME, BUT PARK LIGHTS AND HEADLIGHTS DO NOT TURN "ON" AUTOMATICALLY AT DARK

IMPORTANT:

- MAKE SURE PARK LIGHTS AND HEADLIGHTS OPERATE PROPERLY FROM HEADLIGHT SWITCH BEFORE PROCEEDING. IF NOT, REFER TO "EXTERIOR LIGHTS," SECTION 8A-110 FOR PARK LIGHT DIAGNOSIS AND/OR "HEADLIGHTS," SECTION 8A-100 FOR HEADLIGHT DIAGNOSIS.

- DISCONNECT DRL MODULE CONN C1 (BLUE).
- USING A DVM SET TO THE OHMS SCALE, CONNECT THE RED & BLACK METER LEADS ACROSS TERMINALS "G" & "H" OF C1.
- WHILE OBSERVING THE RESISTANCE ON THE DVM, SHINE A BRIGHT LIGHT INTO THE DRL AMBIENT LIGHT SENSOR (AT THE TOP OF THE INSTRUMENT PANEL), THEN COVER THE LIGHT SENSOR WITH A PIECE OF HEAVY MATERIAL.
  DID THE RESISTANCE MEASUREMENTS CHANGE SIGNIFICANTLY?

YES

- CHECK FOR POOR CONNECTION AT THE DRL MODULE.
  IF OK, REPLACE THE DRL MODULE.

NO

- CHECK FOR AN OPEN, SHORT TO GROUND, OR SHORT TO B + IN CKT 1137 OR CKT 1138.
  IF OK, REPLACE DRL AMBIENT LIGHT SENSOR.

CHART #3

PARK LIGHTS WILL NOT TURN "ON" AUTOMATICALLY AT DARK (HEADLIGHTS TURN "ON" OK)

IMPORTANT:

- MAKE SURE PARK LIGHTS OPERATE NORMALLY FROM HEADLIGHT SWITCH BEFORE PROCEEDING. IF NOT OPERATING NORMALLY, REFER TO "EXTERIOR LIGHTS," SECTION 8A-110 FOR DIAGNOSIS.

- DISCONNECT DRL MODULE CONN C2 (BLACK).
- IGNITION "ON" – ENGINE "OFF."
- CONNECT A TEST LIGHT BETWEEN TERM "A" OF CONNECTOR AND GROUND.
  IS TEST LIGHT "ON"?

YES

- RECONNECT CONN C2.
- COVER DRL AMBIENT LIGHT SENSOR WITH HEAVY MATERIAL.
- BACKPROBE CONN C2 WITH THE TEST LIGHT BETWEEN TERM "H" AND GROUND.
  IS TEST LIGHT "ON"?

YES

REPAIR OPEN IN CKT 9 BETWEEN DRL MODULE AND S226.

NO

- CHECK FOR POOR CONNECTION AT DRL MODULE CONN C2 TERM "H".
  IF OK, REPLACE DRL MODULE.

NO

- CHECK FOR OPEN TAIL LTS FUSE.
- IF OPEN, CHECK FOR SHORT TO GROUND THROUGH CKT 240.
- CHECK FOR OPEN IN CKT 240 BETWEEN I/P FUSE BLOCK AND DRL MODULE.

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CHART #4

HEADLIGHTS WILL NOT TURN "ON" AUTOMATICALLY AT DARK (PARK LIGHTS TURN "ON" OK)

IMPORTANT:

- MAKE SURE HEADLIGHTS OPERATE NORMALLY FROM HEADLIGHT SWITCH BEFORE PROCEEDING. IF NOT, REFER TO "HEADLIGHTS," SECTION 8A-100 FOR DIAGNOSIS.

- DISCONNECT DRL MODULE CONN C2 (BLACK).
- CONNECT A TEST LIGHT BETWEEN TERM "D" OF CONNECTOR AND GROUND.
  IS TEST LIGHT "ON"?

YES

- CONNECT A FUSED JUMPER BETWEEN TERM "F" AND TERM "D" OF DRL MODULE CONN C2.
  DO HEADLIGHTS TURN "ON"?

YES

- CHECK FOR POOR CONNECTIONS AT DRL MODULE CONN C2.
  IF OK, REPLACE DRL MODULE.

NO

REPAIR OPEN IN CKT 10 BETWEEN DRL MODULE AND S227.

NO

- CHECK FOR AN OPEN IN CKT 1372 BETWEEN HEADLIGHT SWITCH AND DRL MODULE.
  IF OK, REPLACE LIGHT SWITCH.

HEADLIGHTS AND FOG LIGHTS: DAYTIME RUNNING LIGHTS (T61)

CHART #5
PARK LIGHTS ALWAYS STAY "ON" DURING DAYLIGHT HOURS (HEADLIGHTS REMAIN "OFF")

- DISCONNECT DRL MODULE CONN C2 (BLACK). DO PARK LIGHTS TURN "OFF"?

YES → REPLACE DRL MODULE.

NO
- REPAIR SHORT TO B + IN CKT 9.
- FOR A COMPLETE CIRCUIT SCHEMATIC REFER TO "EXTERIOR LIGHTS," SECTION 8A-110.

CHART #6
HEADLIGHTS ALWAYS STAY "ON" DURING DAYLIGHT HOURS (PARK LIGHTS REMAIN "OFF")

- DISCONNECT DRL CONN C2 (BLACK). DO HEADLIGHTS TURN "OFF"?

YES → REPLACE DRL MODULE.

NO
- CHECK FOR SHORT TO B + IN CKT 10.
- REFER TO "HEADLIGHTS," SECTION 8A-100 FOR FURTHER DIAGNOSIS.

CHART #7
LH FRONT TURN SIGNAL INOPERATIVE

IMPORTANT:
- MAKE SURE THE DRL SYSTEM OPERATES NORMALLY (FRONT TURN SIGNAL BULBS ILLUMINATE DURING DAYLIGHT HOURS) BEFORE PROCEEDING. IF NOT OPERATING CORRECTLY, PERFORM CHART #1, "DRL WILL NOT TURN 'ON.'"

- IGNITION "ON" — ENGINE "OFF."
- WITH A TEST LIGHT TO GROUND, BACKPROBE DRL MODULE CONN C2 TERM "E". DOES TEST LIGHT ILLUMINATE (OR FLASH ON & OFF) WHEN TURN SIGNAL LEVER IS MOVED TO THE "LEFT TURN" POSITION?

YES
- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERM "B" AND GROUND. DOES TEST LIGHT ILLUMINATE WHEN THE TURN SIGNAL LEVER IS MOVED TO THE "LEFT TURN" POSITION?

YES
- CHECK FOR INTERMITTENT CONNECTIONS IN CKT 14.

NO
- CHECK FOR POOR CONNECTIONS AT DRL MODULE CONN C2 TERMINALS "E" AND "B". IF OK, REPLACE DRL MODULE.

NO
- CHECK FOR POOR CONNECTION AT DRL MODULE.
- CHECK FOR AN OPEN IN CKT 1414 BETWEEN TURN/HAZARD SWITCH ASSEMBLY AND DRL MODULE.
- IF OK, REFER TO "EXTERIOR LIGHTS," SECTION 8A-110 FOR FURTHER DIAGNOSIS.

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CHART #8
RH FRONT TURN SIGNAL INOPERATIVE

IMPORTANT:

- MAKE SURE THE DRL SYSTEM OPERATES NORMALLY (FRONT TURN SIGNAL BULBS ILLUMINATE DURING DAYLIGHT HOURS) BEFORE PROCEEDING.
  IF NOT OPERATING CORRECTLY, PERFORM CHART #1, "DRL WILL NOT TURN 'ON.'"

- IGNITION "ON" – ENGINE "OFF."
- WITH A TEST LIGHT TO GROUND, BACKPROBE DRL MODULE CONN C2 TERM "G". DOES TEST LIGHT ILLUMINATE (OR FLASH ON & OFF) WHEN TURN SIGNAL LEVER IS MOVED TO THE "RIGHT TURN" POSITION?

YES

- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERM "C" AND GROUND. DOES TEST LIGHT ILLUMINATE WHEN THE TURN SIGNAL LEVER IS MOVED TO THE "RIGHT TURN" POSITION?

YES

CHECK FOR INTERMITTENT CONNECTIONS IN CKT 15.

NO

- CHECK FOR POOR CONNECTION AT DRL MODULE CONN C2 TERMINALS "C" AND "G". IF OK, REPLACE DRL MODULE.

NO

- CHECK FOR POOR CONNECTION AT DRL MODULE.
- CHECK FOR AN OPEN IN CKT 1415 BETWEEN TURN/HAZARD SWITCH ASSEMBLY AND DRL MODULE.
- IF OK, REFER TO "EXTERIOR LIGHTS," SECTION 8A-110 FOR FURTHER DIAGNOSIS.

CIRCUIT OPERATION

The Daytime Running Lamp (DRL) system consists of a Control Module and an Ambient Light Sensor.

During daylight hours, the DRL Module turns "ON" the Front Turn Signal Lights if 1.) Ignition is "ON," 2.) The Headlights are "OFF" and 3.) If the Park Brake is "OFF." As darkness approaches, the DRL Module will turn "OFF" the Front Turn Signal Lights and turn "ON" the Park Lights and Headlights.

The DRL Module determines daylight or nighttime hours by receiving voltage from the Ambient Light Sensor. As darkness approaches the Ambient Light Sensor will change resistance and thus change the voltage received by the DRL Module.

The Control Logic within the DRL Module receives its voltage from the Turn B-U Fuse 2 and the Gages Fuse 9. The Gages Fuse also supplies voltage to the relays within the DRL Module and supplies voltage to the Front Turn Signal bulbs during DRL operation through the Left and Right DRL Relays within the DRL Module. The Headlight Switch supplies voltage for the Headlights, through the Headlight Relay contacts within the DRL Module, during nighttime hours. The Tail Fuse supplies voltage to the Park Lights during nighttime hours.

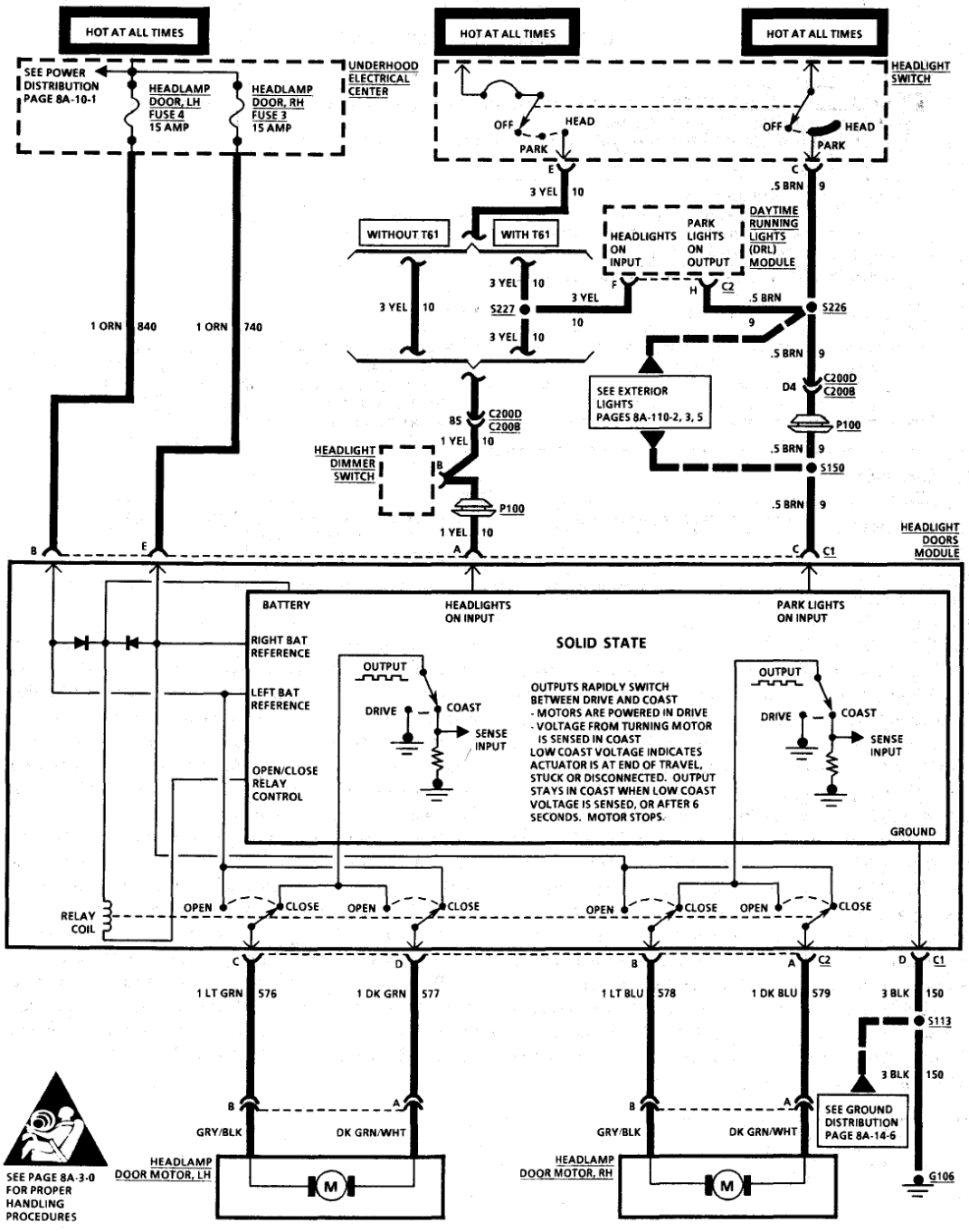
During DRL operation, the Turn Signals and Hazard Flasher will operate normally. The Park Lights and/or the Headlights may be operated manually at any time by using the Light Switch.

The DRL Module will not operate if the system voltage is less than 9 volts or greater than 18 volts.

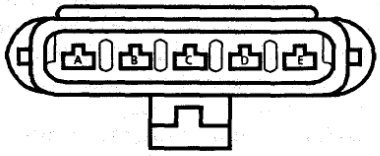
When the Park Lights/Headlights are turned "OFF," and the Ambient Light Sensor indicates a night condition, the Park Lights will illuminate when Ignition Switch is moved to "CRANK" position.

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HEADLIGHT DOORS



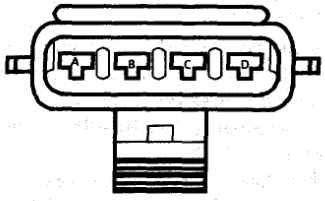
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15300030

5-WAY F METRI-PACK 280 SERIES
BLK

HEADLIGHT DOORS MODULE (C1)



15300029

4-WAY F METRI-PACK 280 SERIES
BLK

HEADLIGHT DOORS MODULE (C2)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Headlamp Door Motor, LH	LH front of vehicle			
Headlamp Door Motor, RH	RH front of vehicle	23	43	
Headlight Dimmer Switch	Part of Steering Column, activated by Multi-Function Lever	3, 35	5, 64	
Headlight Doors Module	Forward of LH front wheelhouse, mounted to Air Intake	19	36	202-21
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
Underhood Electrical Center	LH side of Engine Compartment, forward of wheelhouse	19	36	202-28
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G106	Near top LH side of radiator, in top of T-Bar	19	35	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			
S150	Forward Lamp Harn, approx 22 cm forward of Electrical Center breakout, on lighting branch			
S226	I/P Harn, approx 10 cm from Instrument Cluster breakout			
S227	I/P Harn, approx 10 cm from Convenience Center breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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HEADLIGHT DOORS

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Before doing Electrical Diagnosis, check the mechanical linkages attached to the Headlamp Doors for binding, breakage, etc.
2. Check for corrosion at the Headlamp Door Motor connector terminals.
3. If Headlamp Doors open slowly, check that G106 is clean and tight and also that the battery is good and fully charged.
4. If Headlamp Doors open only partially and no problems were found with mechanical linkages on Headlamp Doors, perform Chart #1.
5. If Headlamp Doors pop up without requesting Headlights, check for bulletins to determine if a correction is necessary.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Both Headlamp Doors remain open or closed.	Chart #1	8A-104-3
LH Headlamp Door stays open or closed.	Chart #2	8A-104-3
RH Headlamp Door stays open or closed.	Chart #3	8A-104-4

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CHART #1
BOTH HEADLAMP DOORS REMAIN OPEN OR CLOSED

IMPORTANT:
- IF HEADLIGHTS STAY ON ALL THE TIME OR DO NOT TURN ON AT ALL, REFER TO "HEADLIGHTS," PAGE 8A-100-0.

- DISCONNECT CONN C1 AT HEADLIGHT DOORS MODULE.
- CONNECT A TEST LIGHT BETWEEN TERMINALS "D" & "E" OF CONNECTOR AND THEN BETWEEN TERMINALS "D" & "B". TEST LIGHT SHOULD ILLUMINATE BOTH TIMES. DOES IT?

YES

- CONNECT THE TEST LIGHT BETWEEN TERMINALS "A" & "D" OF C1. DOES THE TEST LIGHT ILLUMINATE WHEN HEADLIGHTS ARE TURNED "ON"?

YES

- CHECK FOR POOR CONNECTION AT HEADLIGHT DOORS MODULE. IF OK, REFER TO CHARTS 2 & 3 FOR INDIVIDUAL HEADLAMP DOOR DIAGNOSIS. IF OK, REPLACE HEADLIGHT DOORS MODULE.

NO

- REPAIR OPEN IN CKT 10 BETWEEN HEADLIGHT DIMMER SWITCH AND HEADLIGHT DOORS MODULE.

NO

- CHECK FOR OPEN IN GROUND CKT 150 FROM HEADLIGHTS DOOR MODULE TO G106.
- CHECK LH AND RH HEADLAMP DOOR FUSES FOR OPEN ALSO CHECK FOR OPEN IN CKT 740 AND CKT 840.
- IF FUSE(S) ARE BLOWN CHECK FOR SHORT TO GROUND THROUGH CKT 740 AND/OR CKT 840.

CHART #2
LH HEADLAMP DOOR STAYS OPEN OR CLOSED

- DISCONNECT LH HEADLAMP DOOR MOTOR 2-WAY CONNECTOR.
- CONNECT A FUSED JUMPER FROM THE BATTERY POSITIVE TERMINAL TO TERM "A" OF DOOR MOTOR 2-WAY CONNECTOR.
- CONNECT A JUMPER FROM TERM "B" OF CONNECTOR TO GROUND.
- IF DOOR WAS OPEN, IT SHOULD NOW CLOSE. DOES IT?

YES

- REVERSE THE WIRES TO TERMINALS "A" & "B" (GROUND TO TERM "A").
- IF DOOR WAS CLOSED, IT SHOULD NOW OPEN. DOES IT?

YES

- CHECK FOR A SHORT TO GROUND, SHORT TO B + OR AN OPEN IN THE TWO WIRES FROM THE HEADLIGHT DOORS MODULE TO THE HEADLAMP DOOR MOTOR CONNECTOR (CKTS 576 & 577).
- IF WIRES ARE OK, REPLACE THE HEADLIGHT DOORS MODULE.

NO

- REPLACE THE LH HEADLAMP DOOR MOTOR ASSEMBLY.

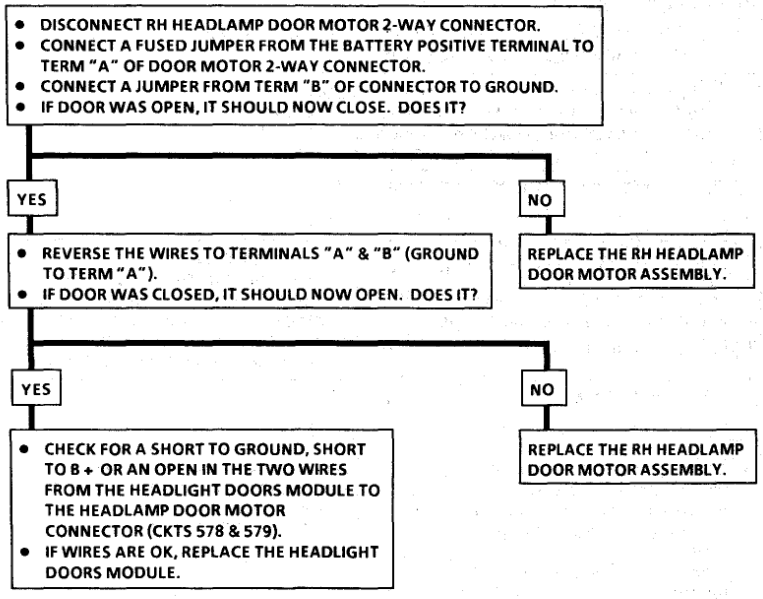
NO

- REPLACE THE LH HEADLAMP DOOR MOTOR ASSEMBLY.

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HEADLIGHT DOORS

CHART #3
RH HEADLAMP DOOR STAYS OPEN OR CLOSED



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CIRCUIT OPERATION

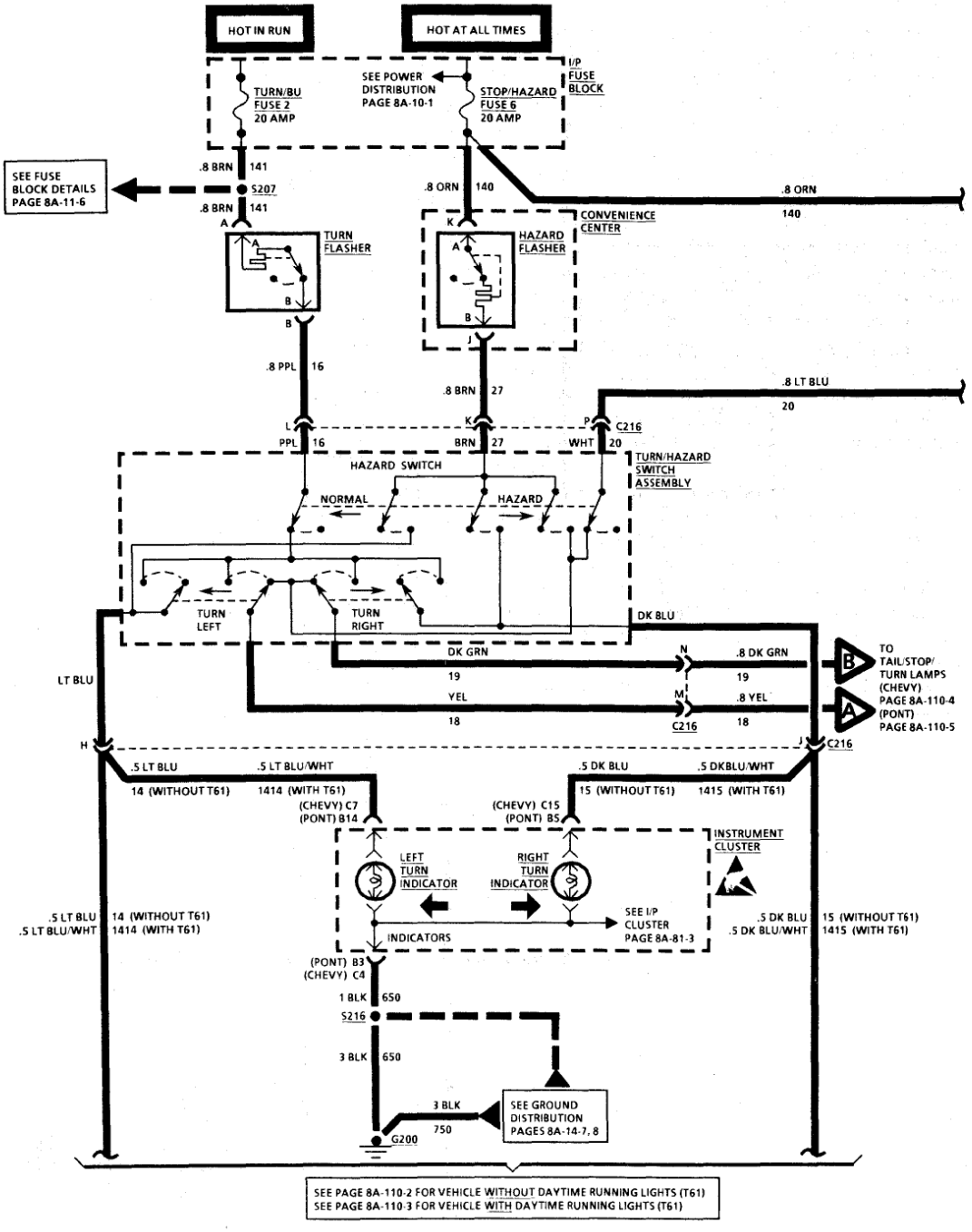
Voltage to open the Headlamp Doors and to power the solid state circuitry is applied to the Headlight Doors Module at all times at terminals "B" and "E" of C1. When the Headlights are turned "ON", voltage is applied to terminal "A" of C1 as a request for the Headlamp Doors to open.

When the Headlights are turned "ON", ground is applied to the relay coil within the Headlight Doors Module. The relay contacts close and voltage is applied to the Headlamp Door Motor Assemblies. Ground is provided for the motors through the solid state circuitry until the Headlamp Doors are open. The ground circuit for each Headlamp Door Motor is rapidly switched within the Headlight Doors Module between a ground potential and a high impedance sense input. This input monitors for a fully open Headlamp Door and will allow ground to be provided until open or up to 6 seconds. A difficult to open or obstructed door will be sensed as fully open and ground will be removed by the module.

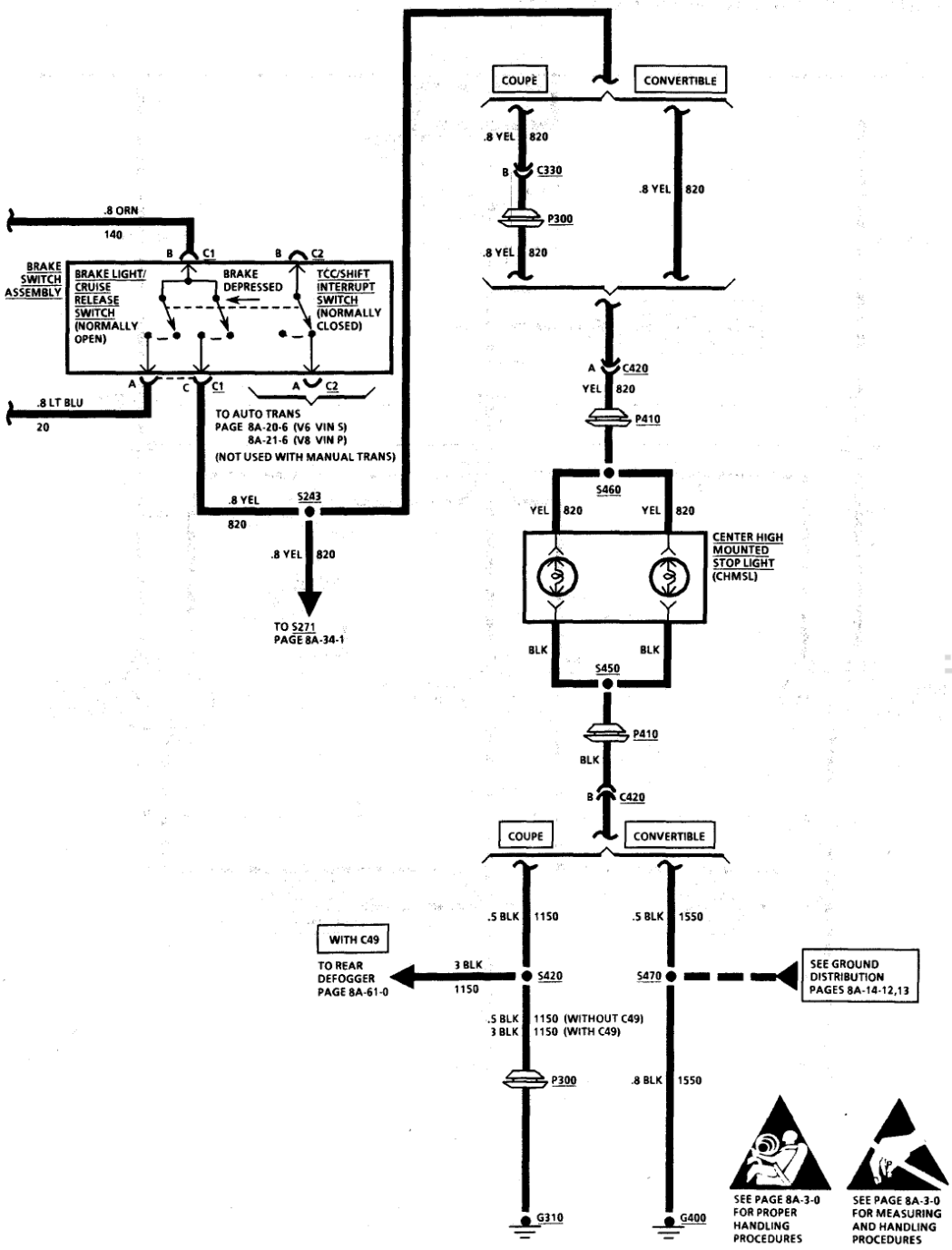
When the Headlights are turned "OFF", the ground to the relay coil within the module is removed. The contacts then return to the normally closed position which switches power and ground to the Headlamp Door Motors. The Headlamp Door Motors run in the opposite direction to close the Headlamp Doors. The ground circuit operation within the module is the same during the closing sequence as during the opening sequence.

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EXTERIOR LIGHTS
TURN/HAZARD/STOP

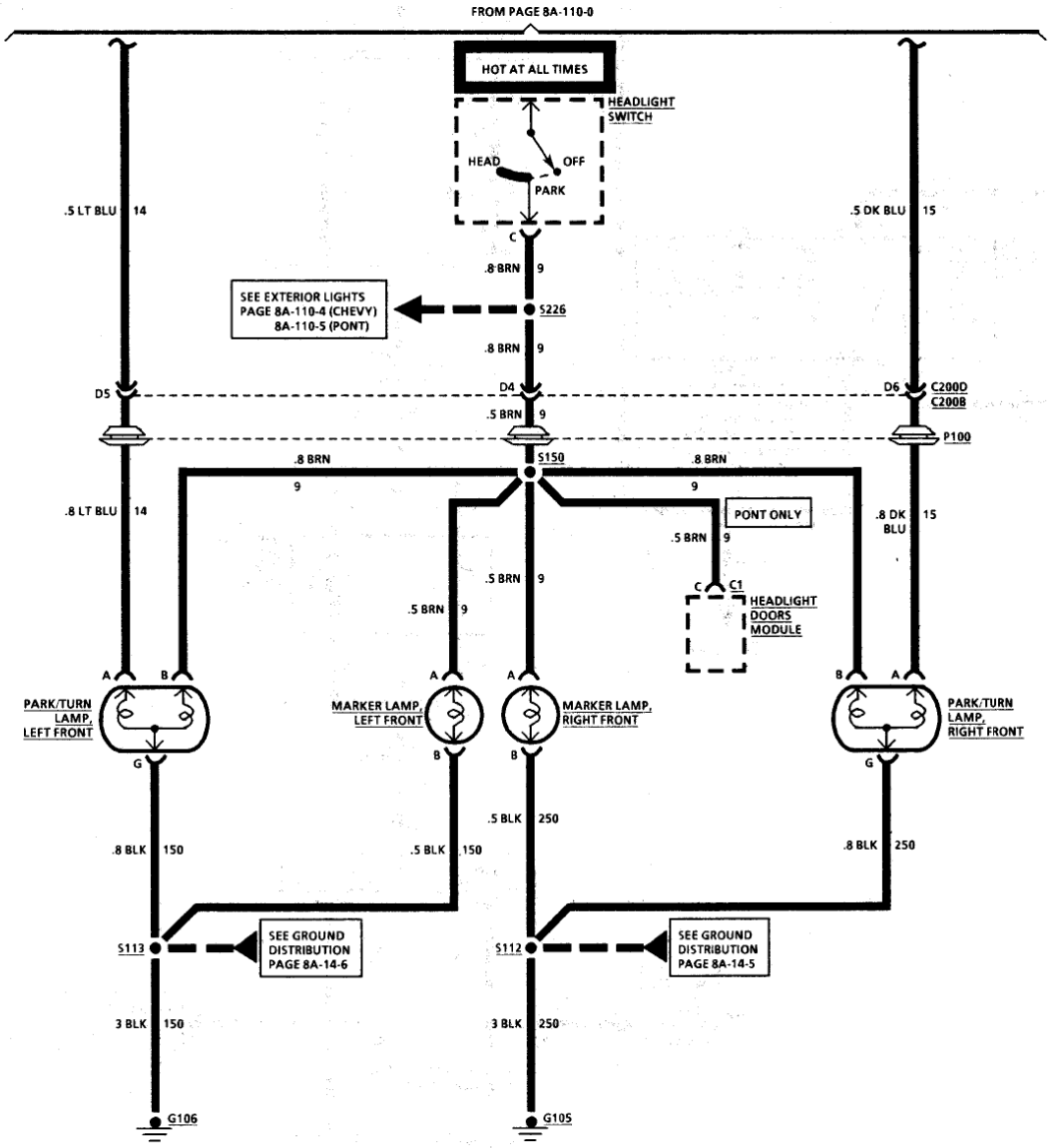


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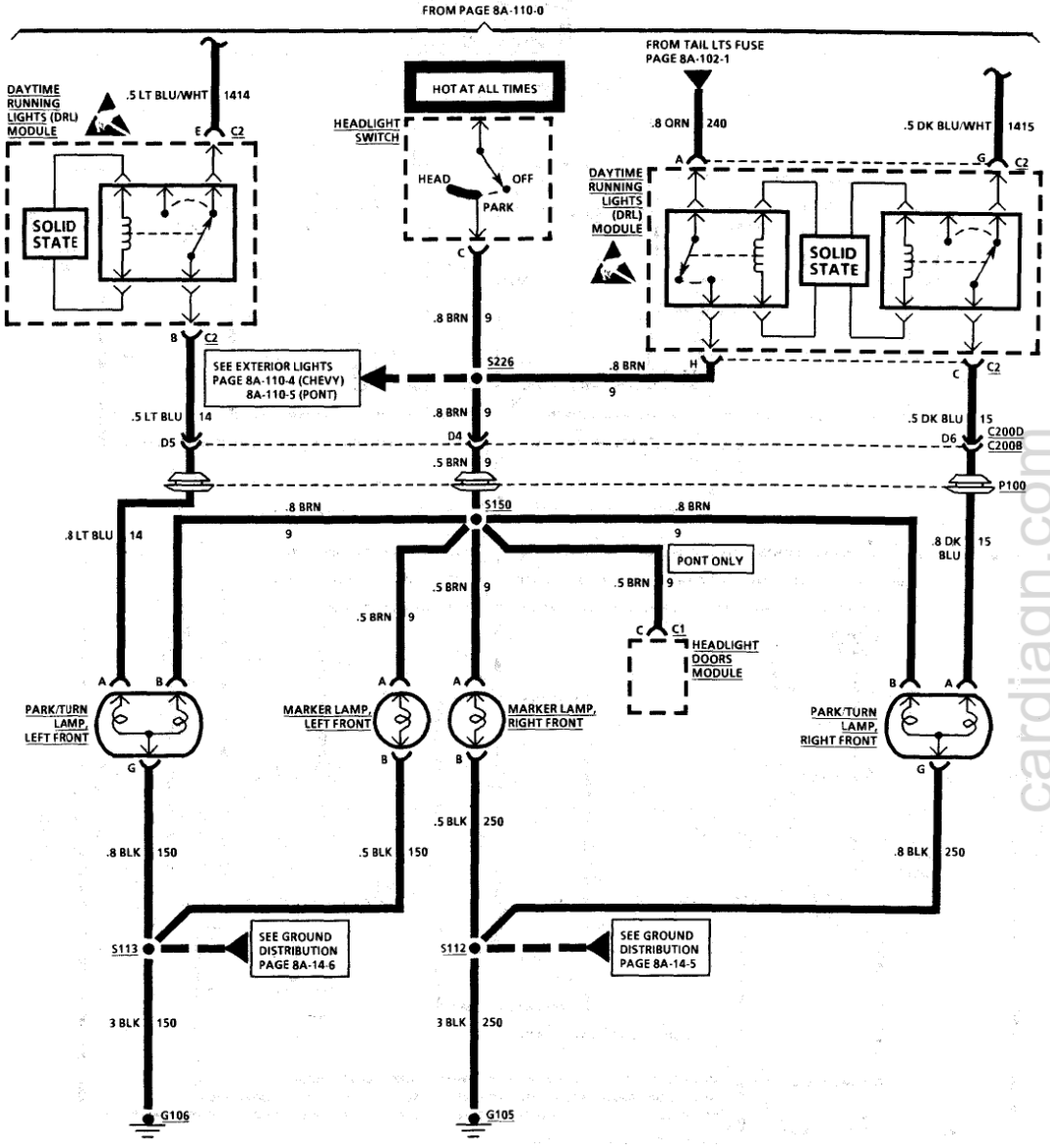
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EXTERIOR LIGHTS
WITHOUT DAYTIME RUNNING LIGHTS (T61)



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EXTERIOR LIGHTS
WITH DAYTIME RUNNING LIGHTS (T61)





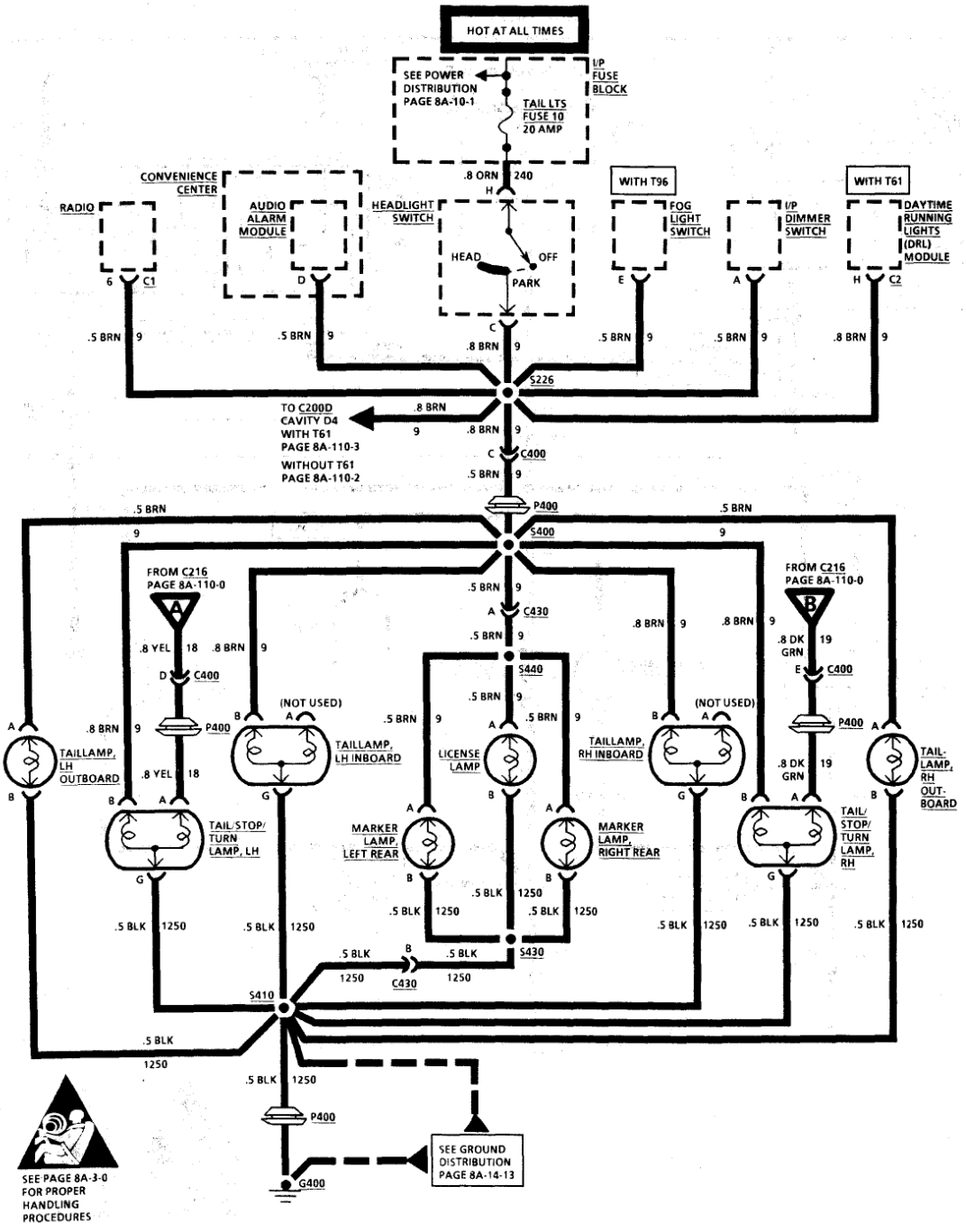
SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES



SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES

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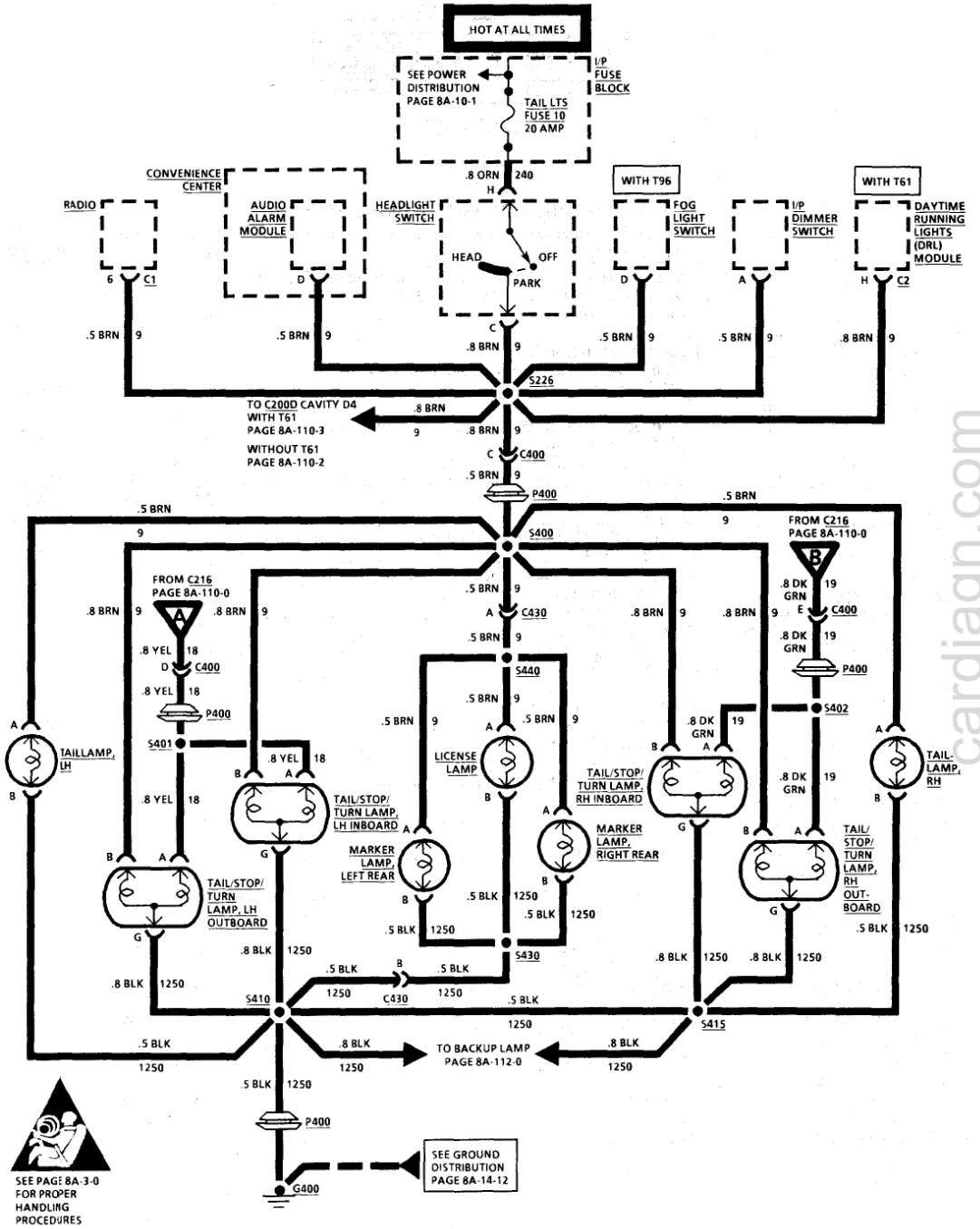
EXTERIOR LIGHTS (CHEVY)
REAR MARKER/LICENSE/TAIL/STOP/TURN



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EXTERIOR LIGHTS (PONTIAC)

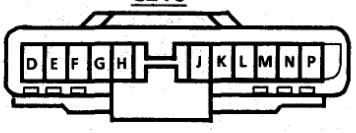
REAR MARKER/LICENSE/TAIL/STOP/TURN



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EXTERIOR LIGHTS

C216



12004147

11-WAY F PACK-CON I
BLK

I/P HARNESS TO STEERING COLUMN HARNESS

COMPONENT	LOCATION	201-PG	FIG.	CONN
Brake Switch Assembly	Mounted in lower hole of brake pedal bracket (2 conn with Automatic), (1 conn with Manual) same switch for both	0	1	
Center High Mounted Stop Light (CHMSL)	Rear center of Spoiler			
Convenience Center	Left of Steering Column, mounted to bottom of I/P Carrier	8	15	202-20
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Fog Light Switch	Lower LH side of I/P	37, 38	66, 67	202-21
Headlight Doors Module	Forward of LH front wheelhouse, mounted to Air Intake	19	36	202-21
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
I/P Dimmer Switch	Lower LH side of I/P	37, 38	66, 67	202-23
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Instrument Cluster	LH side of I/P			202-23
License Lamp	Center of rear Fascia, above license plate	31	59	
Marker Lamp, Left Front	Exterior, left front	17	32	
Marker Lamp, Left Rear	Exterior, left rear	31	59	
Marker Lamp, Right Front	Exterior, right front	17	32	
Marker Lamp, Right Rear	Exterior, right rear	31	59	
Park/Turn Lamp, Left Front	Exterior, left front	17	32	
Park/Turn Lamp, Right Front	Exterior, right front	17	32	
Radio	Center of I/P Carrier	36	65	202-16
Taillamp, LH (Pont)	Exterior, left rear	33	62	
Taillamp, LH Inboard (Chevy)	Exterior, left rear	32	61	
Taillamp, LH Outboard (Chevy)	Exterior, left rear	32	61	
Taillamp, RH Inboard (Chevy)	Exterior, right rear	32	61	
Taillamp, RH Outboard (Chevy)	Exterior, right rear	32	61	
Taillamp, RH (Pont)	Exterior, right rear	33	62	
Tail/Stop/Turn Lamp, LH (Chevy)	Exterior, left rear	32	61	
Tail/Stop/Turn Lamp, LH Inboard (Pont)	Exterior, left rear	33	62	
Tail/Stop/Turn Lamp, LH Outboard (Pont)	Exterior, left rear	33	62	
Tail/Stop/Turn Lamp, RH (Chevy)	Exterior, right rear	32	61	
Tail/Stop/Turn Lamp, RH Inboard (Pont)	Exterior, right rear	33	62	
Tail/Stop/Turn Lamp, RH Outboard (Pont)	Exterior, right rear	33	62	

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COMPONENT	LOCATION	201-PG	FIG.	CONN
Turn Flasher	Mounted to bracket, right of Steering Column, above Data Link Conn	8	15	
Turn/Hazard Switch Assembly	Part of Steering Column	3	5	
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C216 (11 cavities)	Attached to base of Steering Column	34	63	202-5
C330 (3 cavities)	Hatch to I/P Harn, center of roof near Dome Lamp	4	6	
C400 (6 cavities)	LH Rear Cargo Compartment, between rear end panel and carpet	30	57	202-19
C420 (2 cavities)	LH side of Hatch, between Hatch Frame and plastic panel	4	7	
C430 (2 cavities)	Between Rear Fascia and rear end panel, on LH side	32, 33	61, 62	
G105	Near top RH side of radiator, in top of T-Bar	19	36	
G106	Near top LH side of radiator, in top of T-Bar	19	35	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G310	Bolted to roof, left of Dome Lamp (1 ring, 1 wire)	4	6	
G400	Bolted to Hatch Release Bracket in Rear Compartment (2 rings, 3 wires Coupe) or (2 rings, 2 wires Convertible)	30	57	
P100	Left side in dash panel, Engine to Passenger Compartment	19	36	
P300	In rear center of roof, near Dome Lamp	4	7	
P400	Left rear in end gate panel	30	57	
P410	In left side spoiler			
S112	Forward Lamp Harn, approx 10 cm from G105 breakout			
S113	Forward Lamp Harn, approx 13 cm from Electrical Center breakout			
S150	Forward Lamp Harn, approx 22 cm forward of Electrical Center breakout, on lighting branch			
S207	I/P Harn, approx 4 cm before DLC breakout			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S226	I/P Harn, approx 10 cm from Instrument Cluster breakout			
S243	I/P Harn, approx 14 cm from Fuel Pump Relay breakout	7	13	
S400	Rear Body Harn, approx 13 cm from Left Backup Lamp (Pont) or 20 cm from P400 branch (Chevy) breakouts	32	61	
S401	Rear Body Harn, approx 19 cm forward of P400	30	57	
S402	Rear Body Harn, approx 16 cm forward of P400	30	57	
S410	Rear Body Harn, approx 7 cm from Left Backup Lamp breakout	33	62	
S415	Rear Body Harn, approx 20 cm from Left Backup Lamp breakout	33	62	
S420	Hatch Harn, approx 7 cm from P300	4	7	
S430	Rear Fascia Harn, approx 11 cm from License Lamp breakout	31	59	
S440	Rear Fascia Harn, approx 5 cm from License Lamp breakout	31	59	
S450	CHMSL Jumper Harn, approx 15 cm from bulbs			
S460	CHMSL Jumper Harn, approx 15 cm from bulbs			
S470	I/P Harn, approx 24 cm from Hatch Release Actuator			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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EXTERIOR LIGHTS

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Make sure all lamps are operational before replacing flashers.
- Refer to System Diagnosis.

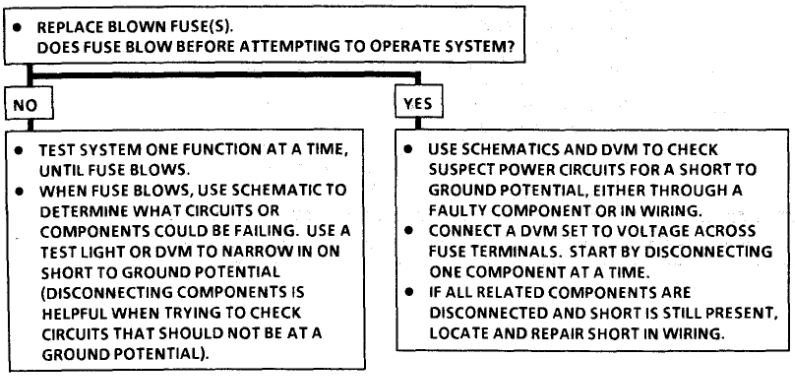
SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedures.
- For Daytime Running Lights (DRL) related failures, refer to "Headlights and Fog Lights: Daytime Running Lights (T61)," page 8A-102-0.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Fuse(s) blows when replaced or when attempting to use lighting system.	Chart #1	8A-110-8
Entire lighting system inoperative.	Use schematics and DVM or test light to check suspect power circuits and ground circuits for opens or poor connections.	
Individual lamp inoperative.	• Determine if lamp is defective. • Check for corrosion or poor connection at socket. If OK, use schematic and DVM or test light to check suspect circuits.	

CHART #1
FUSE(S) BLOWS WHEN REPLACED OR WHEN ATTEMPTING TO USE LIGHTING SYSTEM

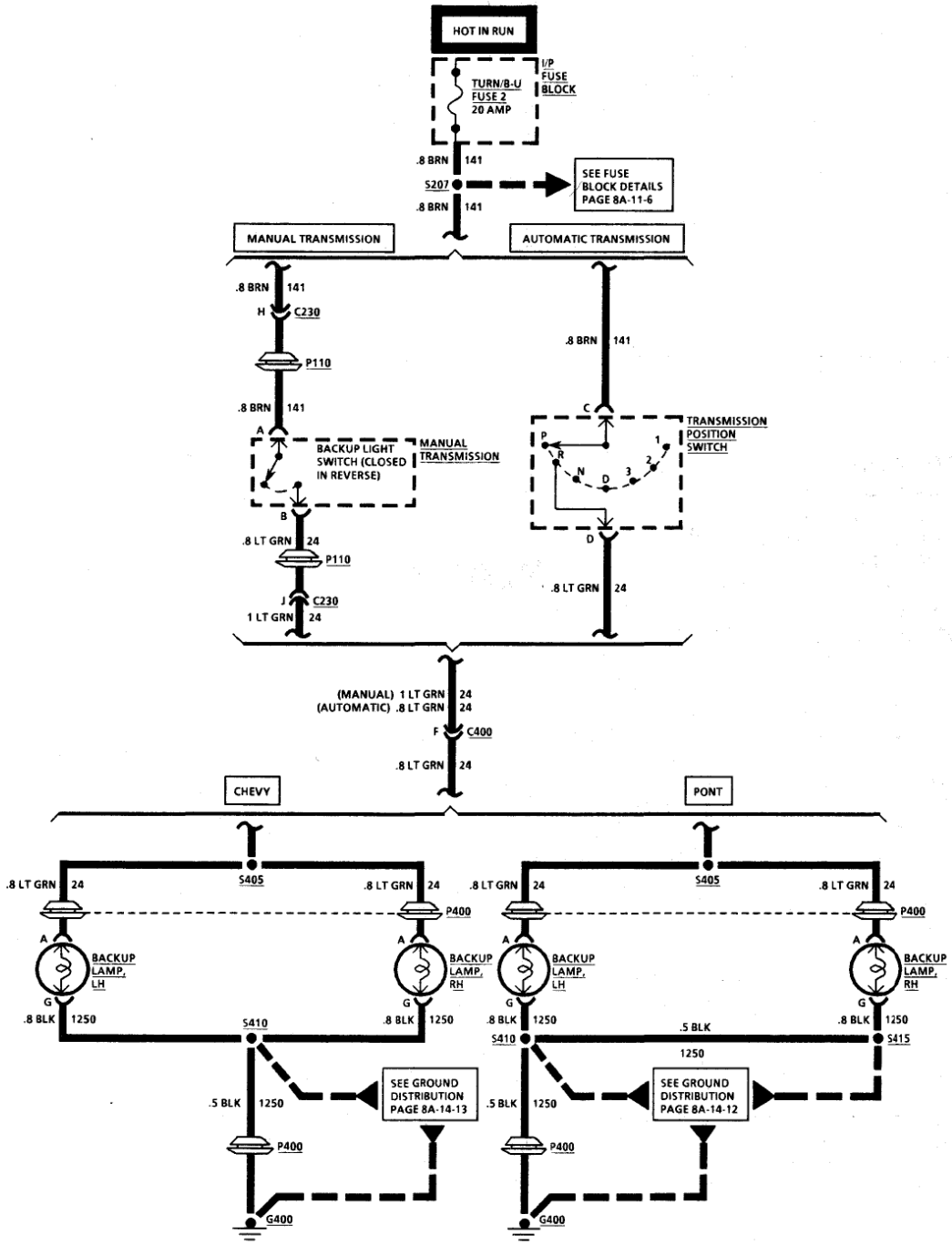


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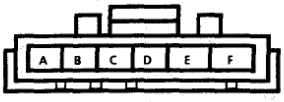
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BACKUP LIGHTS



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12015307

6-WAY F METRI-PACK MIXED SERIES
BLK

TRANSMISSION POSITION SWITCH

COMPONENT	LOCATION	201-PG	FIG.	CONN
Backup Lamp, LH	Mounted in Taillamp Assembly	32, 33	61, 62	
Backup Lamp, RH	Mounted in Taillamp Assembly	32, 33	61, 62	
Backup Light Switch (M49) (V6 VIN S)	Middle of Transmission, left side	16	30	
Backup Light Switch (MM6) (V8 VIN P)	Middle of Transmission, right side	26	51	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
C400 (6 cavities)	LH Rear Cargo Compartment, between rear end panel and carpet	30	57	202-19
G400	Bolted to Hatch Release Bracket in Rear Compartment (2 rings, 3 wires Coupe) or (2 rings, 2 wires Convertible)	30	57	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
P400	Left rear in end gate panel	30	57	
S207	I/P Harn, approx 4 cm before DLC breakout			
S405	Rear Body Harn, approx 12 cm forward of P400	30	57	
S410	Rear Body Harn, approx 7 cm from Left Backup Lamp breakout	33	62	
S410 (Chevy)	Rear Body Harn, approx 27 cm from P400 branch breakout	32	61	
S415	Rear Body Harn, approx 20 cm from Left Backup Lamp breakout	33	62	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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BACKUP LIGHTS

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

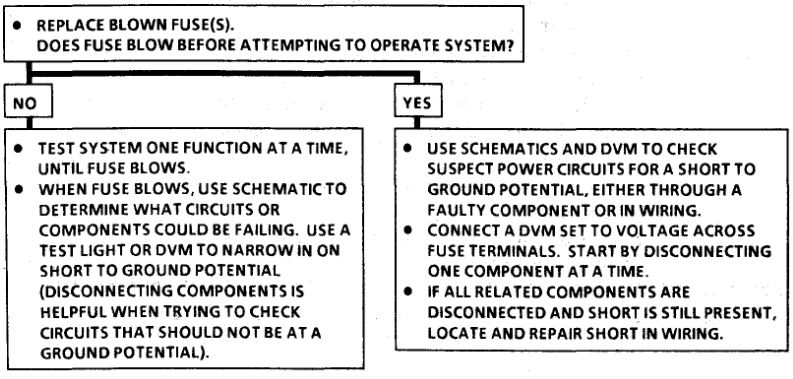
SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedures.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Fuse(s) blows when replaced or when attempting to use lighting system.	Chart #1	8A-112-2
Both lights inoperative.	Use schematics and DVM or test light to check suspect power circuits and ground circuits for opens or poor connections. Repair or replace as necessary.	
Individual lamp inoperative.	• Determine if lamp is defective. • Check for corrosion or poor connection at socket. If OK, use schematic and DVM or test light to check suspect circuits.	

CHART #1
FUSE(S) BLOWS WHEN REPLACED OR WHEN ATTEMPTING TO USE LIGHTING SYSTEM

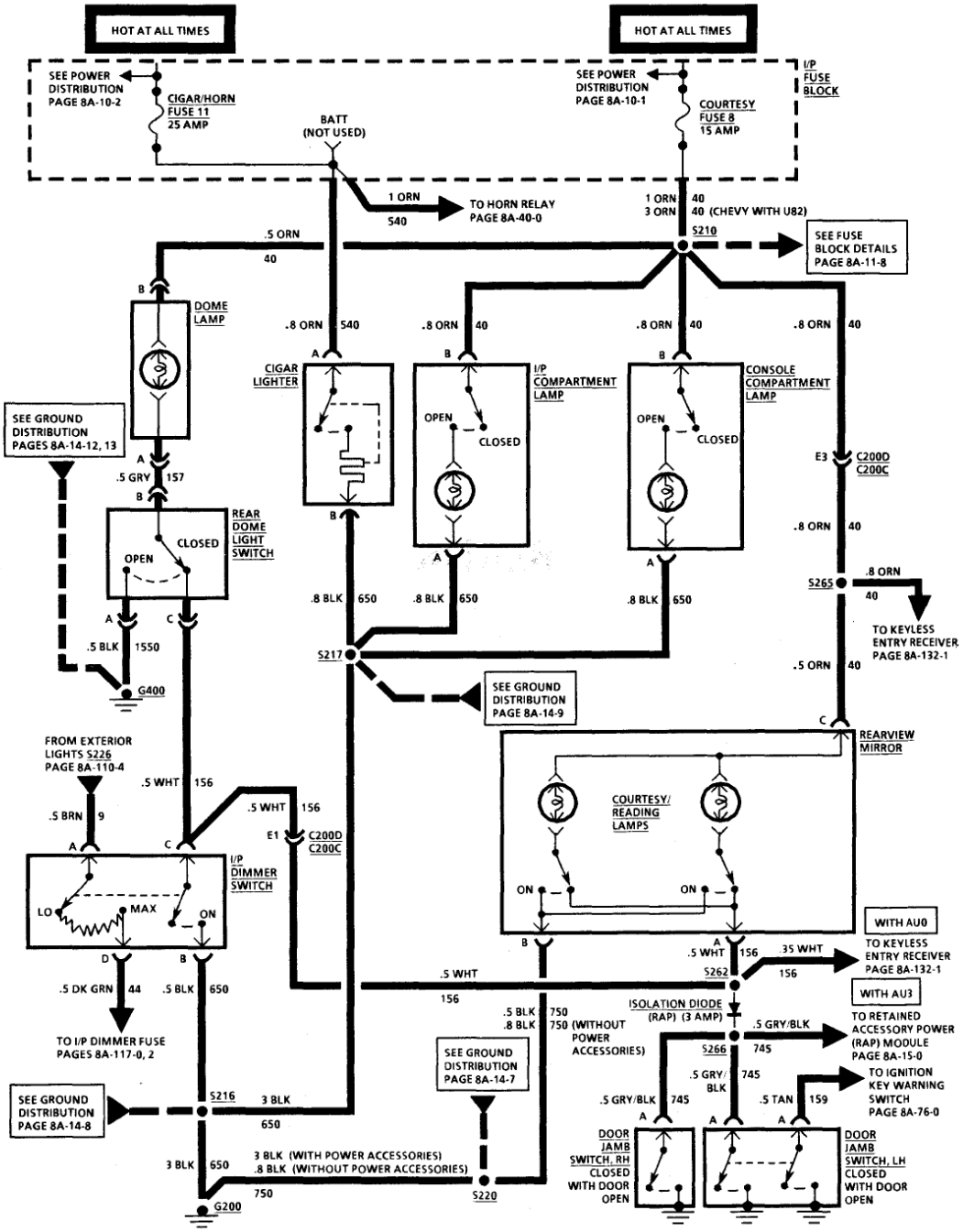


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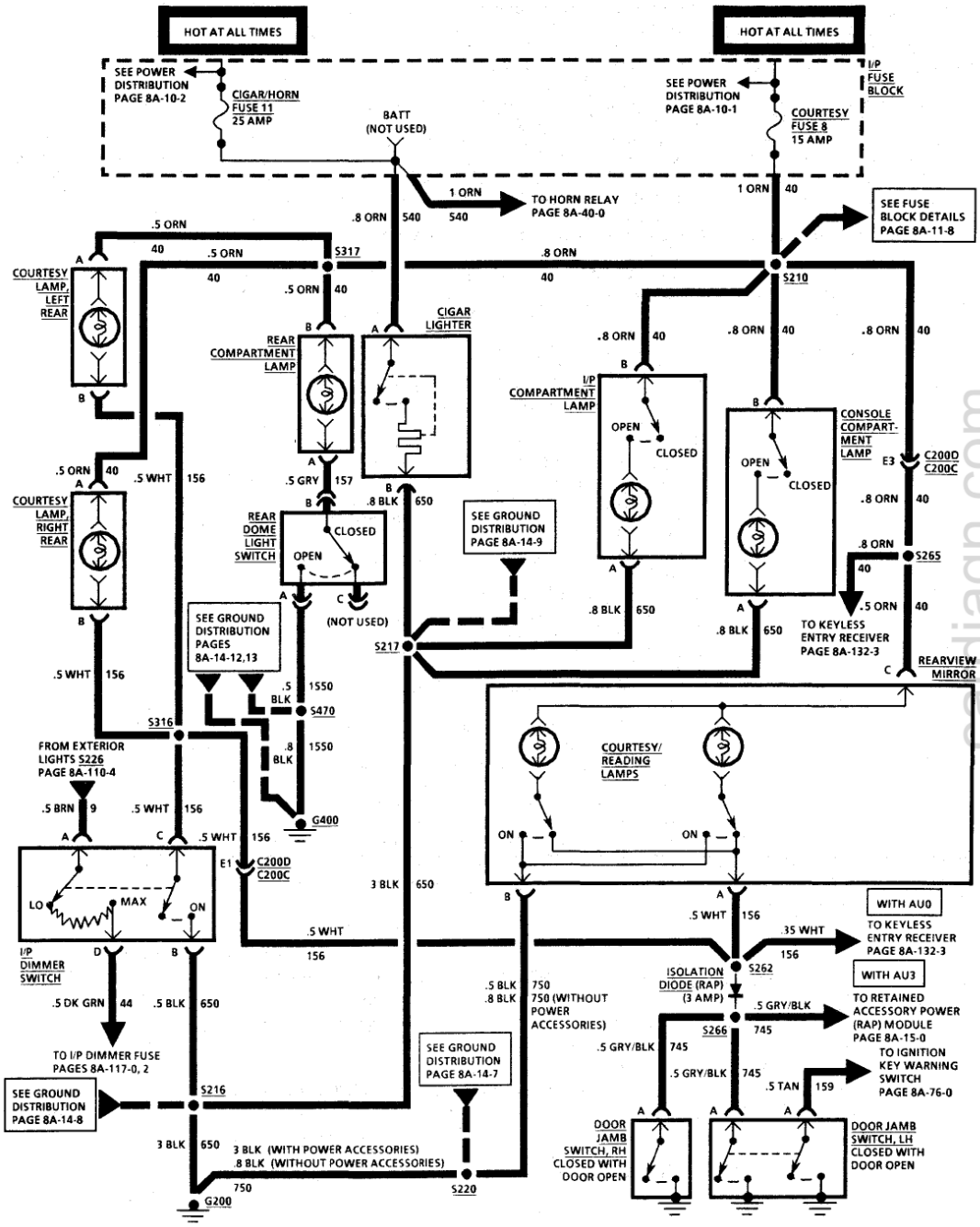
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INTERIOR LIGHTS
COUPE



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INTERIOR LIGHTS
CONVERTIBLE



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INTERIOR LIGHTS

COMPONENT	LOCATION	201-PG	FIG.	CONN
Cigar Lighter	Mounted on front of console	43	81	
Console Compartment Lamp	Under Console Compartment Door	43	81	
Courtesy Lamp, Left Rear	Mounted in left sail panel			
Courtesy Lamp, Right Rear	Mounted in right sail panel			
Dome Lamp	On roof, near hatch	4	6	
Door Jamb Switch, LH	Near base of LH "A" pillar	45	84	
Door Jamb Switch, RH	Near base of RH "A" pillar	32	49	
I/P Compartment Lamp	Inside top center of compartment	22	41	
I/P Dimmer Switch	Lower LH side of I/P	37, 38	66, 67	202-23
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Isolation Diode (RAP)	Sealed in Harn, approx 9 cm right of Rearview Mirror breakout	45	84	
Rear Compartment Lamp	Center of rear compartment below Hatch Release Actuator	30	58	
Rear Dome Light Switch	Center of end panel, in Cargo Compartment	30	57	
Rearview Mirror	Top center of windshield			202-27
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G400	Bolted to Hatch Release Bracket in Rear Compartment (2 rings, 3 wires Coupe) or (2 rings, 2 wires Convertible)	30	57	
S210	I/P Harn, approx 44 cm from Convenience Center Pont or 12 cm from RR Defog Switch (Chevy) breakouts			
S216	I/P Harn, approx 5 cm from Convenience Center breakout			
S217	I/P Harn, approx 23 cm before DLC breakout			
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S262	Cross Car Harn, approx 9 cm from Rearview Mirror breakout	45	84	
S265	Cross Car Harn, approx 20 cm from Rearview Mirror breakout	45	84	
S266	Cross Car Harn, approx 9 cm from Rearview Mirror breakout	45	84	
S316	I/P Harn, approx at rear edge of door below left sail panel			
S317	I/P Harn, approx at rear edge of door below left sail panel			
S470	I/P Harn, approx 24 cm from Hatch Release Actuator			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedures.

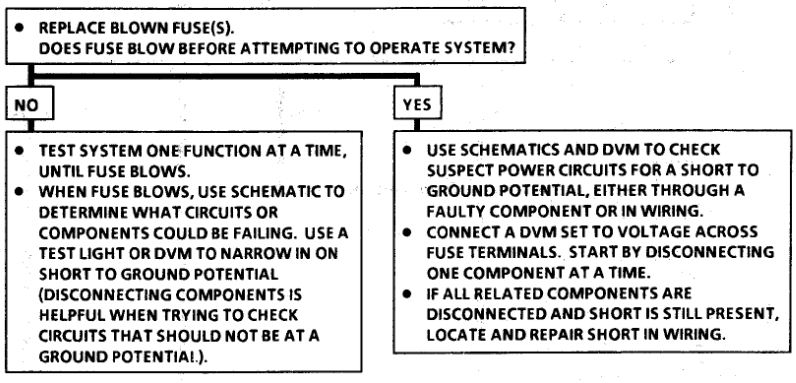
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SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Fuse(s) blows when replaced or when attempting to use lighting system.	Chart #1	8A-114-3
Entire lighting system inoperative.	Use schematics and DVM or test light to check suspect power circuits and ground circuits for opens or poor connections. Repair or replace as necessary.	
Individual lamp inoperative.	• Determine if lamp is defective. • Check for corrosion or poor connection at socket. If OK, use schematic and DVM or test light to check suspect circuits.	

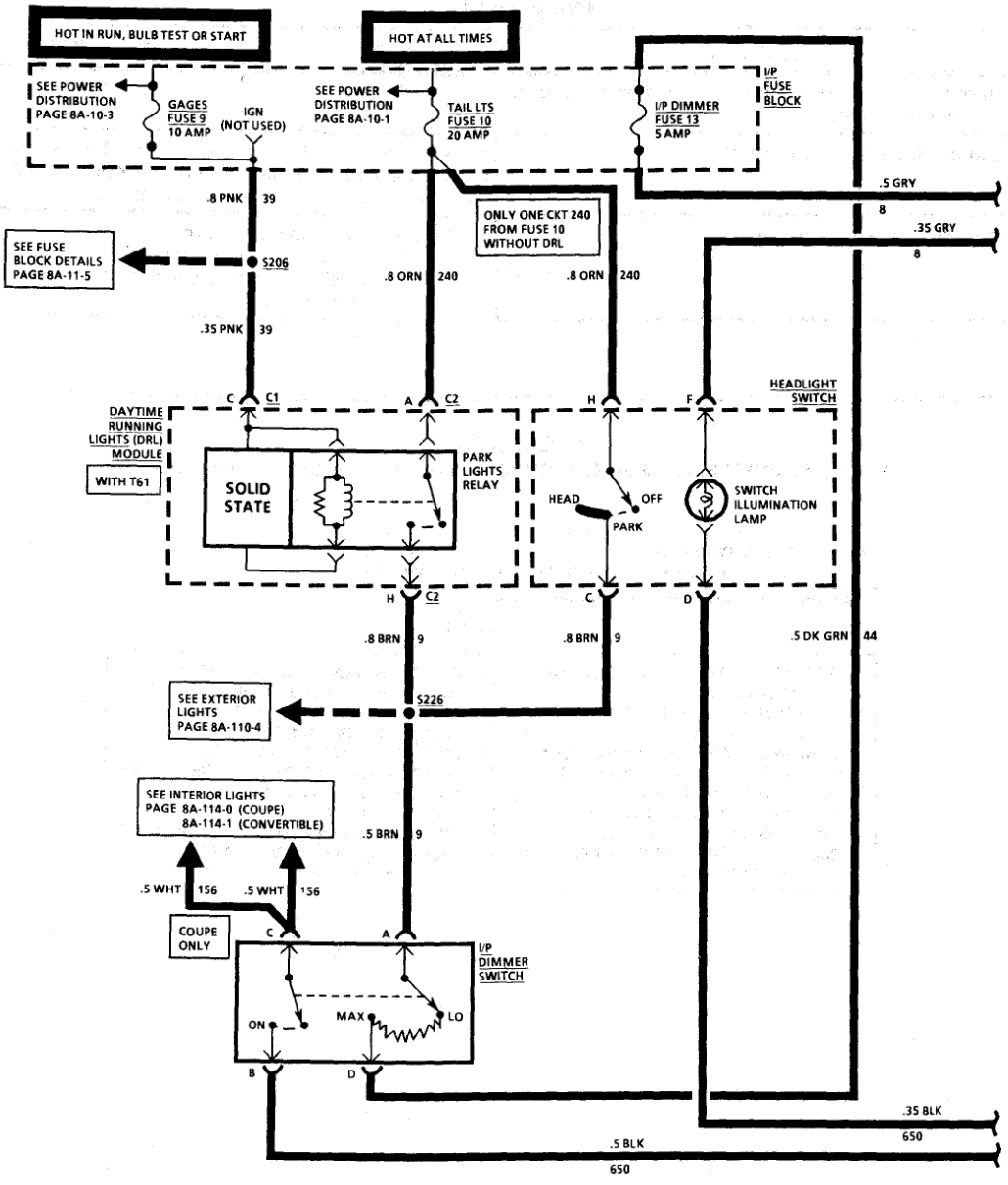
CHART #1

FUSE(S) BLOWS WHEN REPLACED OR WHEN ATTEMPTING TO USE LIGHTING SYSTEM

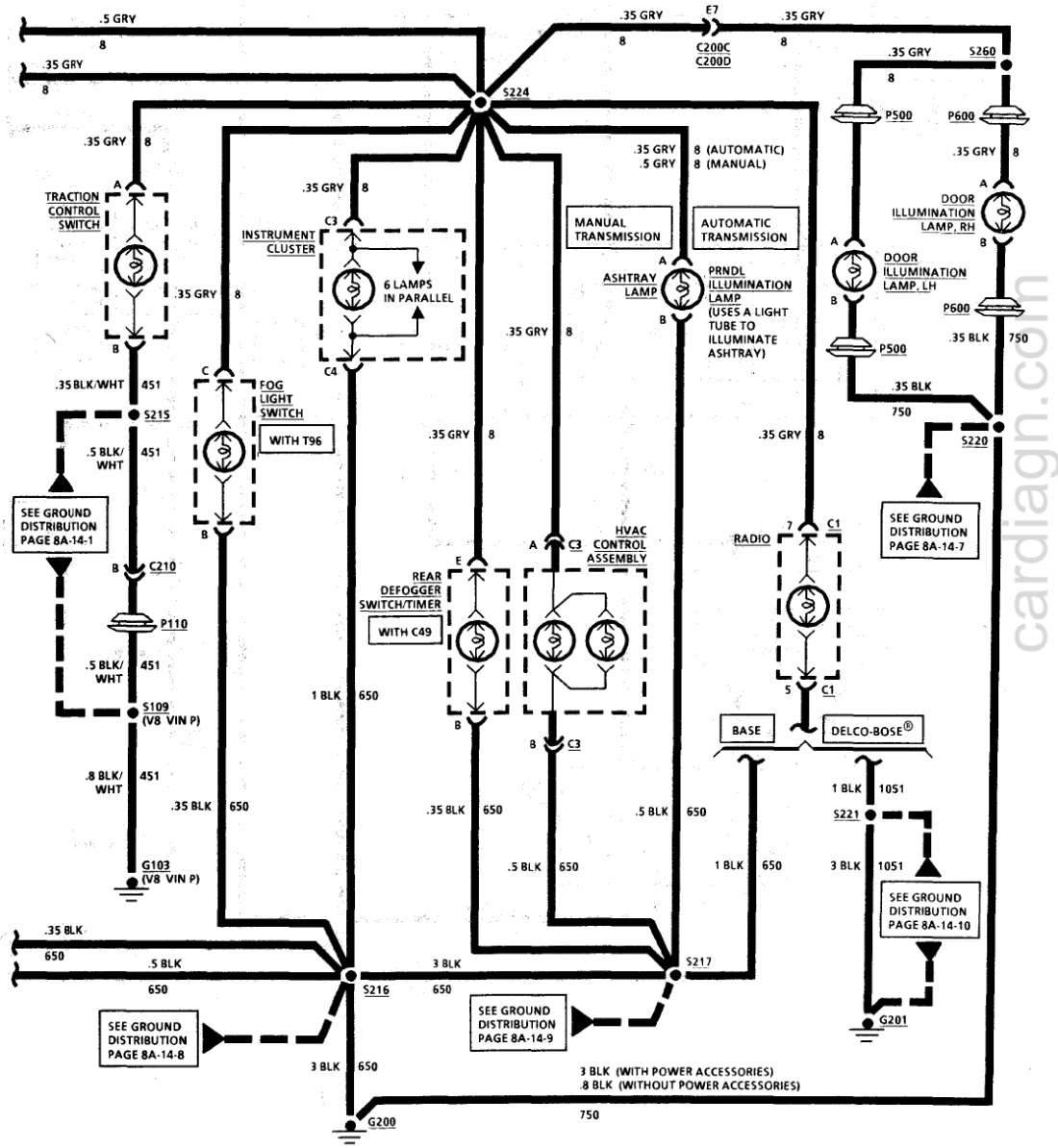


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INTERIOR LIGHTS DIMMING (CHEVY)

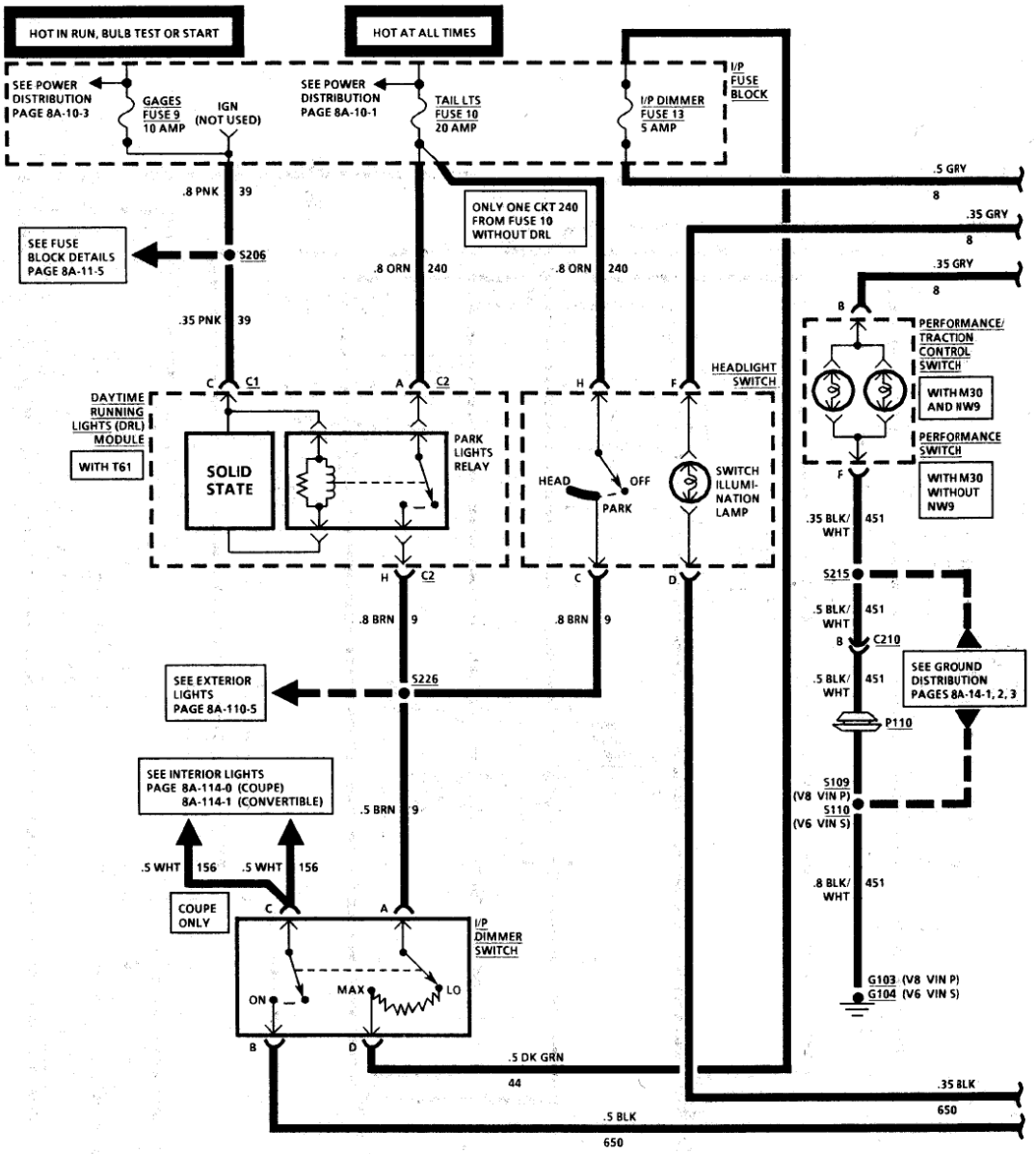


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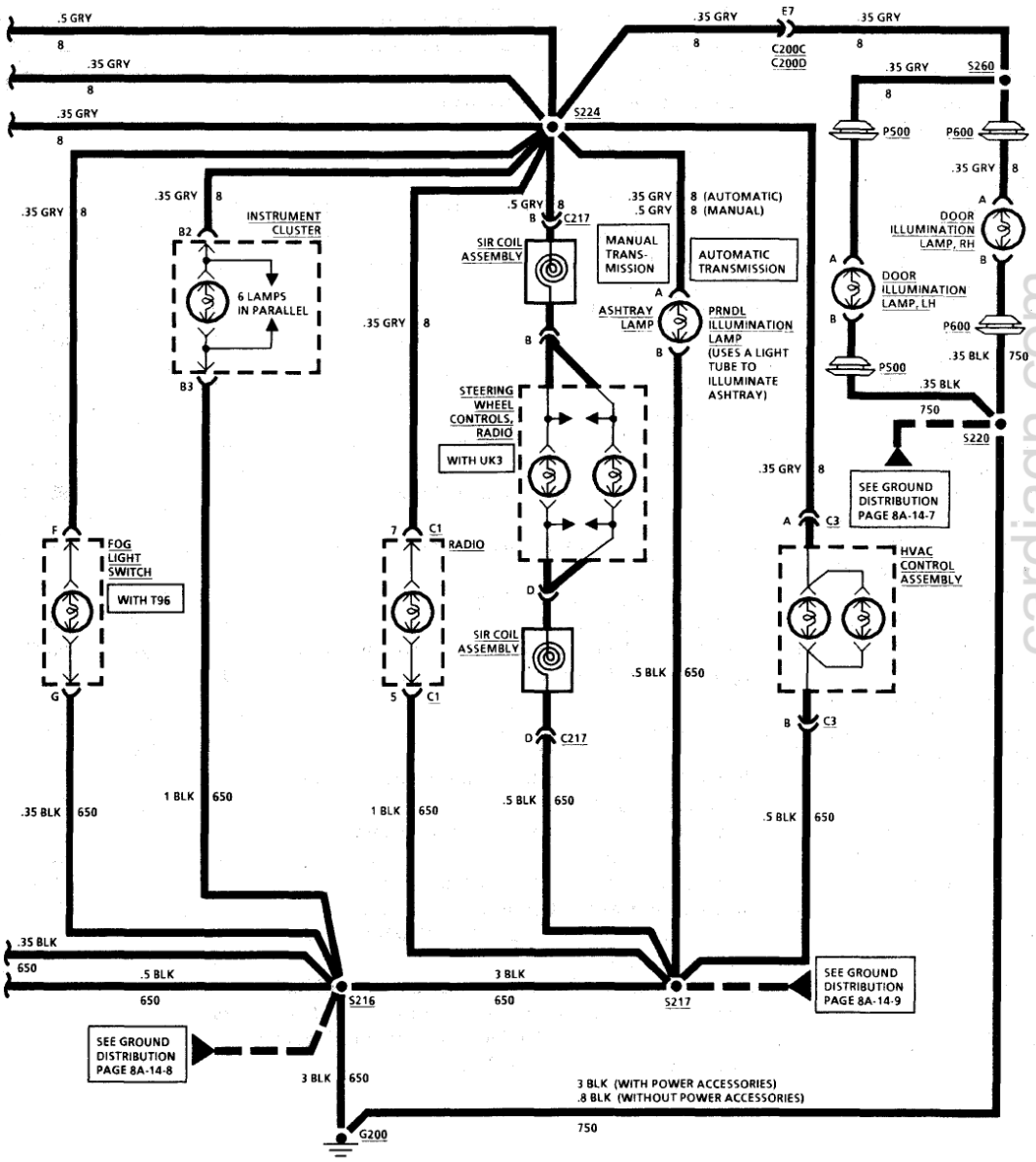


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INTERIOR LIGHTS DIMMING (PONTIAC)

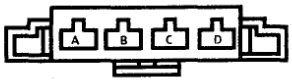


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INTERIOR LIGHTS DIMMING



12034060

4-WAY F METRI-PACK 480 SERIES
NAT (WHT)

I/P DIMMER SWITCH

COMPONENT	LOCATION	201-PG	FIG.	CONN
Ashtray Lamp (Auto Trans)	Lighting Tube from PRNDL Lamp			
Ashtray Lamp (Manual Trans)	Rearward of shifter, in ashtray	43	82	
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Door Illumination Lamp, LH	Behind door trim panel	17	31	
Door Illumination Lamp, RH	Behind door trim panel	17	31	
Fog Light Switch	Lower LH side of I/P	37, 38	66, 67	202-21
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Center of I/P	21	40	202-22
I/P Dimmer Switch	Lower LH side of I/P	37, 38	66, 67	202-23
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Instrument Cluster	LH side of I/P			202-23
Performance Switch	Mounted in center console behind shifter			202-24
Performance/Traction Control Switch	Mounted in center console behind shifter	42	79	202-24
PRNDL Illumination Lamp (Auto Trans)	Under console, left of Shifter	43	81	
Radio	Center of I/P Carrier	36	65	202-16
Rear Defogger Switch/Timer	Mounted on I/P knee bolster, right of Steering Column	37	66	202-27
SIR Coil Assembly	Top of Steering Column	3, 34	5, 51	
Steering Wheel Controls, Radio (UK3)	On Steering Wheel	2	3	202-27
Traction Control Switch	Left side of upper console	42	78	
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C217 (4 cavities)	Near base of Steering Column	34	63	202-19
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	

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COMPONENT	LOCATION	201-PG	FIG.	CONN
G201	Near base of RH "A" pillar, bolted to I/P Mounting Stud behind kick panel (1 ring, 1 wire)	9	16	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
P500	Between LH door and "A" pillar	17	31	
P600	Between RH door and "A" pillar	45	84	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S221	I/P Harn, approx 7 cm from DERM breakout			
S224	I/P Harn, approx 4 cm from Instrument Cluster (Pont) or from RR Defog Switch (Chevy) breakouts			
S226	I/P Harn, approx 10 cm from Instrument Cluster breakout			
S260	Cross Car Harn, approx 13 cm from Rearview Mirror breakout	45	84	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.
- With DRL suspect failures, for a better understanding of the DRL System, refer to the Circuit Operation and Circuit Mechanization in SECTION 8A-102.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedures.

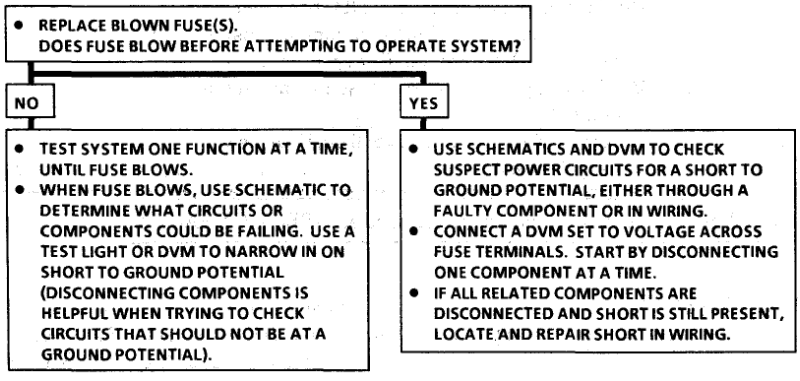
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INTERIOR LIGHTS DIMMING

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Fuse blows when replaced or when attempting to use lighting system.	Chart #1	8A-117-6
Entire lighting system inoperative.	Use schematics and DVM or test light to check suspect power circuits and ground circuits for opens or poor connections. Repair or replace as necessary.	
Individual lamp inoperative.	• Determine if lamp is defective. • Check for corrosion or poor connection at socket. If OK, use schematic and DVM or test light to check suspect circuits.	

CHART #1
FUSE BLOWS WHEN REPLACED OR WHEN ATTEMPTING TO USE LIGHTING SYSTEM

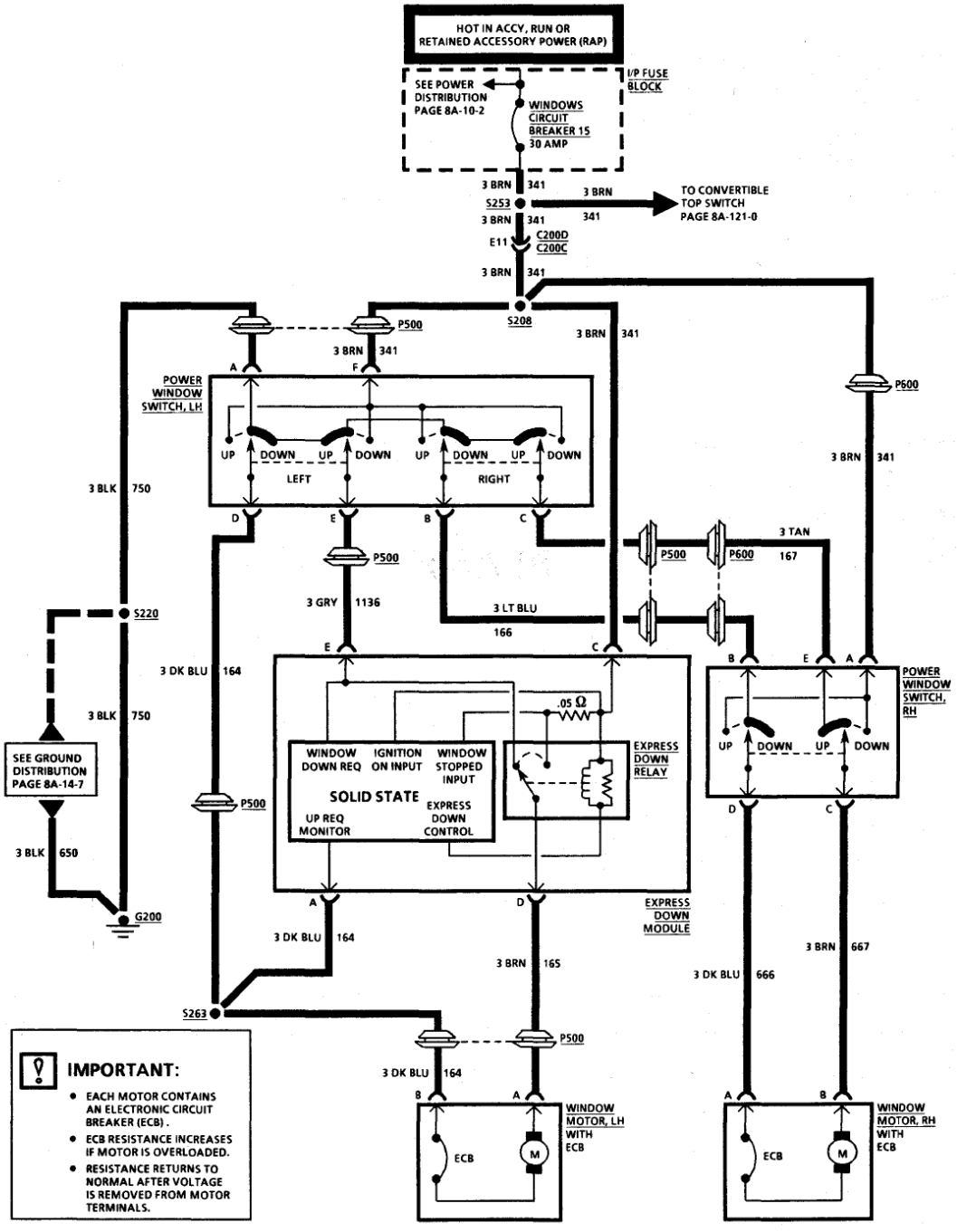


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POWER WINDOWS (A31)



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COMPONENT	LOCATION	201-PG	FIG.	CONN
Express Down Module	Mounted to center of dash mat, above floor tunnel	9	17	202-21
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Power Window Switch, LH	Mounted in left door armrest	18	33	202-27
Power Window Switch, RH	Mounted in right door armrest	18	33	202-27
Window Motor, LH	Inside LH door	17	31	
Window Motor, RH	Inside RH door	17	31	
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
P500	Between LH door and "A" pillar	17	31	
P600	Between RH door and "A" pillar	45	84	
S208	Cross Car Harn, approx 5 cm from Express Down Module breakout	45	84	
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S253	I/P Harn, approx 35 cm from Convenience Center breakout			
S263	Cross Car Harn, approx 16 cm from C200 breakout	45	84	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. If both windows are inoperative, check windows Circuit Breaker 15 for open. If open, check for short to ground through CKT 341.
- Check for poor connection at C200 terminal "E11".
2. If windows move slowly, check that:
   - Windows free of mechanical binding and pivot joints and tracks are properly lubed.
   - Battery is fully charged.
   - Ground G200 is clean and tight.
3. If the Express Down Feature does not work, but window moves down with each switch depression, check for poor connection at Express Down Module terminal "A" or open in CKT 164 from Express Down Module to S263.
- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedure(s).

SYSTEM CHECK

ACTION	NORMAL RESULTS
[1] • Operate each window "UP" and "DOWN" from the Master Power Window Switch Assembly.	Each window operates quietly and smoothly, with no sticking. LH Front Window rolls down all the way without the switch being held (Express Down Feature).
[2] • Operate each window from its individual Window Switch.	Each window operates quietly and smoothly, with no sticking.

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POWER WINDOWS (A31)

IMPORTANT:

- FOR A BETTER UNDERSTANDING OF THE RETAINED ACCESSORY POWER (RAP) OPERATION, REFER TO CIRCUIT OPERATION AT THE END OF THIS SECTION.

SYMPTOM TABLE

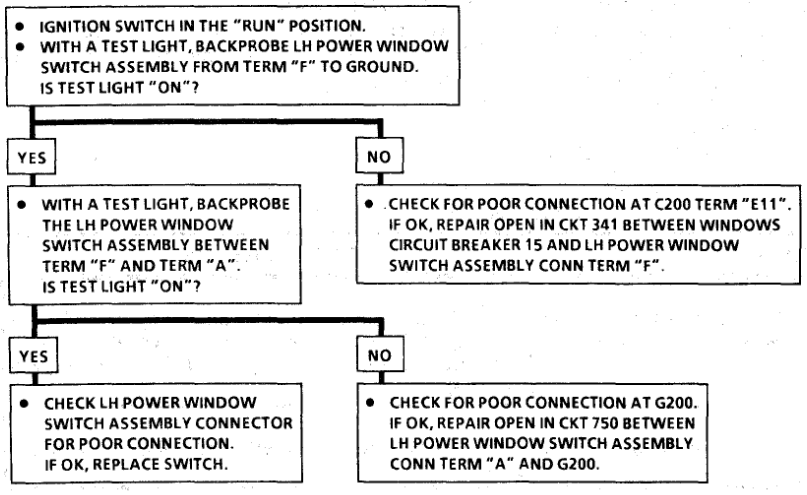
SYMPTOM	PROCEDURE	PAGE NUMBER
Both Power Windows inoperative from both switches.	Chart #1	8A-120-2
Power Windows inoperative from the LH Switch, RH Switch operates RH Window normally.	Chart #2	8A-120-3
RH Window inoperative from both switches, LH Window operates normally.	Chart #3	8A-120-4
RH Power Window inoperative from LH Power Window Switch with normal operation from RH Power Window Switch.	Check for poor connection at LH Power Window Switch. If OK, replace LH Power Window Switch.	
Express Down Feature inoperative. Window does operate up and down while switch is held in the desired position. **Important:** • Express Down Feature is for the LH Window only.	Check for poor connections at Express Down Module terminal "A" and terminal "C". Check for open in CKT 164 from S263 to terminal "A" of Express Down Module and in CKT 341 from S208 to terminal "C" of Express Down Module. If OK, replace Express Down Module.	
RH Power Window Switch inoperative, LH Power Window Switch operates normally.	Check for poor connection or open in CKT 341 from RH Power Window Switch terminal "A" to S208.	

CHART #1

BOTH POWER WINDOWS INOPERATIVE FROM BOTH SWITCHES

IMPORTANT:

- IF BOTH WINDOWS ARE INOPERATIVE, CHECK WINDOWS CIRCUIT BREAKER 15 FOR OPEN. IF OPEN, CHECK FOR SHORT TO GROUND THROUGH CKT 341.



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CHART #2
POWER WINDOWS INOPERATIVE FROM THE LH SWITCH, RH SWITCH OPERATES RH WINDOW NORMALLY

- IGNITION SWITCH IN THE "RUN" POSITION.
- WITH A TEST LIGHT, BACKPROBE LH POWER WINDOW SWITCH ASSEMBLY FROM TERM "F" TO GROUND. IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT, BACKPROBE THE LH POWER WINDOW SWITCH ASSEMBLY FROM TERM "D" TO TERM "E".
- PRESS THE LEFT WINDOW "UP" AND WINDOW "DOWN" SWITCH AT THE LH POWER WINDOW SWITCH. IS TEST LIGHT "ON" IN BOTH CASES?

YES

- WITH A TEST LIGHT, BACKPROBE EXPRESS DOWN MODULE CONN FROM TERM "A" TO TERM "E".
- PRESS THE LEFT WINDOW "UP" AND WINDOW "DOWN" SWITCH. IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT, BACKPROBE EXPRESS DOWN MODULE CONN FROM TERM "A" TO TERM "D".
- PRESS THE LEFT WINDOW "UP" AND WINDOW "DOWN" SWITCH AT THE LH POWER WINDOW SWITCH. IS TEST LIGHT "ON"?

YES

- DISCONNECT LH WINDOW MOTOR CONNECTOR.
- CONNECT A TEST LIGHT BETWEEN TERMINALS "A" AND "B" OF THE LH WINDOW MOTOR CONNECTOR.
- PRESS THE LEFT WINDOW "UP" AND WINDOW "DOWN" SWITCH. IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTIONS AT LH WINDOW MOTOR. IF OK, REPLACE LH WINDOW MOTOR.
- REFER TO SECTION 10-6 FOR REPLACEMENT PROCEDURES.

NO

- CHECK FOR OPEN IN CKT 165 BETWEEN EXPRESS DOWN MODULE TERM "D" AND LH WINDOW MOTOR TERM "A." ALSO CHECK FOR OPEN IN CKT 164 FROM EXPRESS DOWN MODULE TERM "A" TO S263 AND FROM S263 TO LH WINDOW MOTOR TERM "B".

NO

- CHECK FOR POWER CONNECTIONS AT EXPRESS DOWN MODULE. IF OK, REPLACE EXPRESS DOWN MODULE.

NO

- CHECK FOR OPEN IN CKT 1136 BETWEEN LH POWER WINDOW SWITCH TERM "E" AND EXPRESS DOWN MODULE TERM "E".
- CHECK FOR OPEN IN CKT 164 FROM LH POWER WINDOW SWITCH TERM "D" TO S263 AND FROM S263 TO EXPRESS DOWN MODULE TERM "A".

NO

- CHECK FOR POOR CONNECTION AT LH POWER WINDOW SWITCH CONN. IF OK, REPLACE SWITCH.

NO

REPAIR OPEN IN CKT 341 BETWEEN S208 AND TERM "F" OF THE LH POWER WINDOW SWITCH ASSEMBLY.

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POWER WINDOWS (A31)

CHART #3
RH WINDOW INOPERATIVE FROM BOTH SWITCHES, LH WINDOW OPERATES NORMALLY

- IGNITION SWITCH IN "RUN."
- WITH A TEST LIGHT, BACKPROBE THE RH POWER WINDOW MOTOR CONN FROM TERM "A" TO TERM "B".
- WHILE OBSERVING THE TEST LIGHT, PRESS THE RH WINDOW "UP" AND WINDOW "DOWN" SWITCH.

IS THE TEST LIGHT "ON" IN BOTH CASES?

NO

- WITH A TEST LIGHT, BACKPROBE THE RH POWER WINDOW SWITCH FROM CONN TERM "D" TO TERM "C".
- WHILE OBSERVING THE TEST LIGHT, PRESS THE RH WINDOW "UP" AND WINDOW "DOWN" SWITCH.

IS TEST LIGHT "ON" IN BOTH CASES?

NO

- WITH A TEST LIGHT, BACKPROBE RH POWER WINDOW SWITCH CONN TERM "B" TO TERM "E".
- WHILE OBSERVING THE TEST LIGHT AND USING THE LH WINDOW SWITCH, PRESS THE RH WINDOW "UP" AND WINDOW "DOWN" SWITCH.

IS THE TEST LIGHT "ON" IN BOTH CASES?

NO

- WITH A TEST LIGHT, BACKPROBE LH POWER WINDOW SWITCH CONN TERM "B" TO TERM "C".
- WHILE OBSERVING THE TEST LIGHT AND USING THE LH WINDOW SWITCH, PRESS THE RH WINDOW "UP" AND WINDOW "DOWN" SWITCH.

IS THE TEST LIGHT "ON" IN BOTH CASES?

YES

- CHECK FOR POOR CONNECTIONS AT LH POWER WINDOW SWITCH.

IF OK, CHECK FOR OPEN IN CKT 166 AND CKT 167 BETWEEN LH POWER WINDOW SWITCH AND RH POWER WINDOW SWITCH.

NO

- CHECK FOR POOR CONNECTIONS AT LH POWER WINDOW SWITCH.

IF OK, REPLACE LH POWER WINDOW SWITCH.

YES

- CHECK FOR POOR CONNECTIONS AT RH POWER WINDOW SWITCH CONN.

IF OK, REPLACE RH POWER WINDOW SWITCH.

YES

CHECK FOR OPEN IN CKT 666 OR CKT 667 BETWEEN RH POWER WINDOW SWITCH AND RH WINDOW MOTOR.

YES

- CHECK POWER WINDOW MOTOR CONNECTOR FOR POOR CONNECTION.

IF OK, REPLACE INOPERATIVE POWER WINDOW MOTOR.

- REFER TO SECTION 10-6 FOR REPLACEMENT PROCEDURES.

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CIRCUIT OPERATION

Important:

- The Power Windows System has voltage applied from the Windows Circuit Breaker 15 which is controlled by the Retained Accessory Power (RAP) Module. Voltage is applied to the PWR ACCY Fuse for up to 10 minutes after Ignition is turned off or for 35 seconds after exiting the vehicle and closing the doors or whenever a door is open. For a complete understanding of Retained Accessory Power (RAP) operation, refer to SECTION 8A-15.

When the Ignition Switch is in the "RUN," "ACCY," or RAP voltage is applied from windows Circuit Breaker 15 to the LH Power Window Switch and the RH Window Switch through CKT 341. The Window Motors and Switches receive ground through the LH Power Window Switch Assembly, which is grounded at G200. The RH Window can be operated from the LH and RH Power Window Switch Assemblies. The LH Front Window is operated directly from the LH Power Window Switch.

The Power Windows are driven by reversible, permanent magnet motors. Each motor is controlled by a set of two switches, which are normally closed to ground. When any Window Switch is moved to the "UP" position, the "UP" switch will provide battery voltage to the Window Motor through the DK BLU wire. The Window Motor will receive ground through the BRN wire, the "DN" switch, and the LH Power Window Switch Assembly and drive the window up. When the switch is released, the switch contacts will return to their normal grounded position.

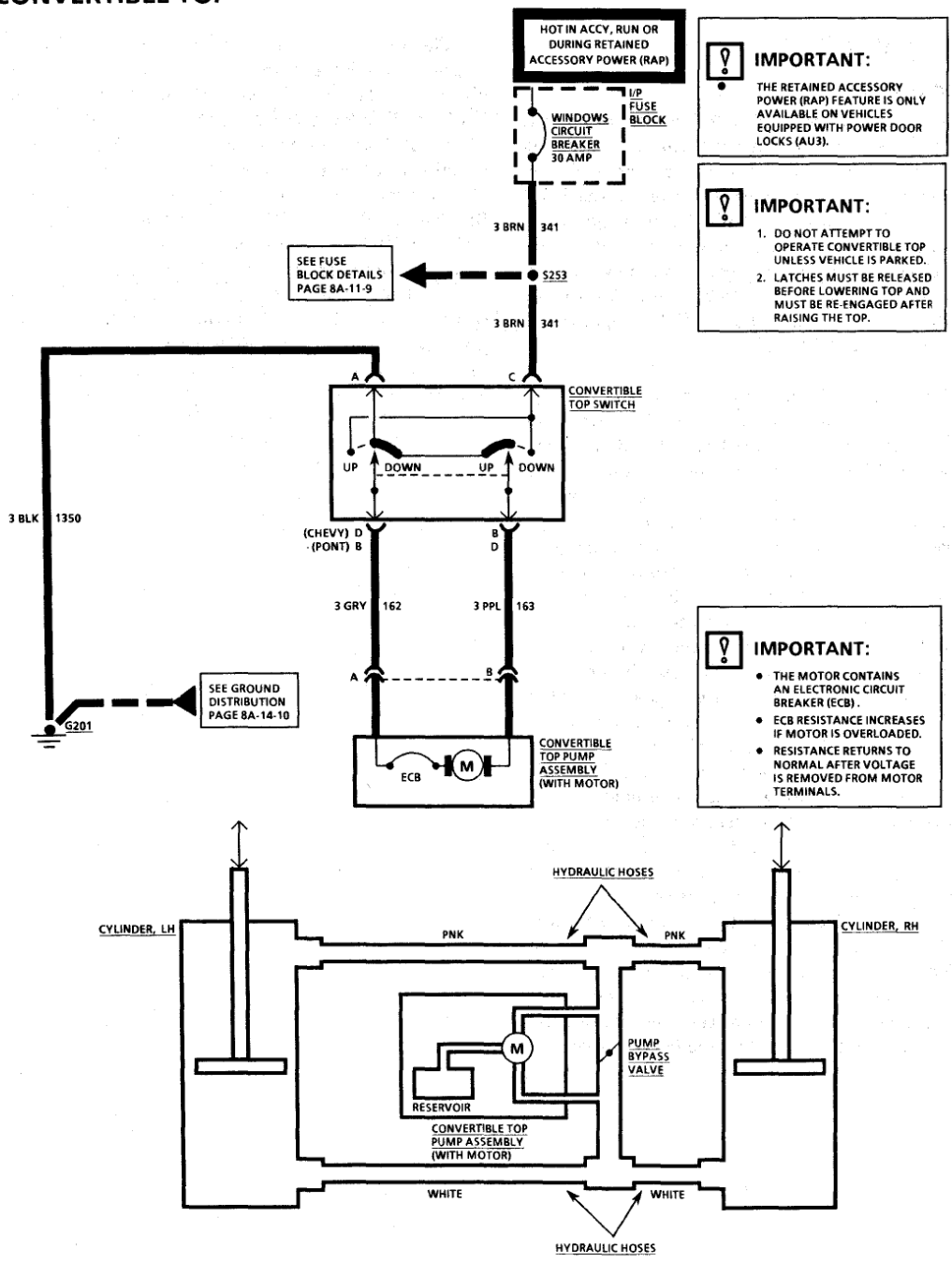
To lower the window, the "DN" switch will connect the BRN wire to battery voltage. Ground will be provided to the DK BLU wire through the "UP" switch and the LH Power Window Switch Assembly. The polarity across the motor will be reversed, causing the motor to rotate in the opposite direction and lower the window.

The Power Windows System also includes an Express Down Feature for the LH Front Window. This allows the LH Front Window to open fully when the LH Front Window Switch is pressed momentarily. All of the solid state circuitry controlling this feature is contained within the Express Down Module.

Each motor is protected by an Electronic Circuit Breaker (ECB). If a Window Switch is held in the "UP" or "DN" position too long with the window obstructed, or after the window is fully up or down, the ECB will increase its resistance. By increasing its resistance, the ECB will prevent the Window Motor from overloading. The ECB will reset to normal resistance when voltage to the Window Motor is interrupted.

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CONVERTIBLE TOP



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COMPONENT	LOCATION	201-PG	FIG.	CONN
Convertible Top Pump Assembly	LH side rear compartment behind carpeting	30	58	
Convertible Top Switch	Left side of upper console (Chevy) or lower console (Pont)	42	78, 80	202-20
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
G201	Near base of RH "A" pillar, bolted to I/P Mounting Stud behind kick panel (1 ring, 1 wire)	9	16	
S253	I/P Harn, approx 35 cm from Convenience Center breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

Important:

- To avoid misdiagnosis, check linkage for mechanical binding which would prevent correct system operation.
- If a hydraulic problem is suspected, refer to SECTION 10-9 for hydraulic diagnosis.

1. Check Windows Circuit breaker 15 for an open. If open, check for a short to ground through CKTs 341, 162 and 163.
2. Check that G201 is clean and tight.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedures.

Important:

- For instructions on how to manually lower and raise the Convertible Top, refer to SECTION 10-9.

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CONVERTIBLE TOP

SYSTEM CHECK

ACTION	NORMAL RESULTS
[1] • Remove all items that could obstruct the Convertible Top. • Lower both sun visors. • Release the two latches (one latch above each sun visor). • Turn the Ignition Switch to "RUN" and lower all side windows. • Move the Convertible Top Switch to the DOWN position.	Convertible Top lowers quietly and smoothly with no binding.
[2] • Move Convertible Top Switch to the UP position.	Convertible Top raises quietly and smoothly with no binding.

IMPORTANT:

- For a better understanding of Retained Accessory Power (RAP) operation, refer to Circuit Operation at the end of this section.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Convertible Top inoperative.	Chart #1	8A-121-3
Convertible Top lowers but does not raise when using Convertible Top Switch.	Replace Convertible Top Switch.	
Convertible Top raises but does not lower when using Convertible Top Switch (can be lowered manually).	Replace Convertible Top Switch.	

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CHART #1
CONVERTIBLE TOP INOPERATIVE

IMPORTANT:

- IF A HYDRAULIC PROBLEM IS SUSPECTED, REFER TO SECTION 10-9 FOR HYDRAULIC DIAGNOSIS. CHECK WINDOWS CIRCUIT BREAKER 15 FOR OPEN. IF OPEN, CHECK FOR SHORT TO GROUND THROUGH CKTS 341, 162 AND 163.

- IGNITION SWITCH TO "RUN."
- WITH A TEST LIGHT TO GROUND, BACKPROBE CONVERTIBLE TOP SWITCH CONN TERM "C". IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT, BACKPROBE CONVERTIBLE TOP SWITCH CONN FROM TERM "C" TO TERM "A". IS TEST LIGHT "ON"?

NO

REPAIR OPEN IN CKT 341 BETWEEN WINDOWS CIRCUIT BREAKER 15 AND CONVERTIBLE TOP SWITCH CONN TERM "C".

YES

- WITH A TEST LIGHT, BACKPROBE CONVERTIBLE TOP SWITCH CONN FROM TERM "B" TO TERM "D".
- WHILE OBSERVING TEST LIGHT, PRESS THE CONVERTIBLE TOP SWITCH TO THE "UP" POSITION AND THEN TO THE "DOWN" POSITION. DOES THE TEST LIGHT ILLUMINATE IN BOTH POSITIONS?

NO

- CHECK FOR POOR CONNECTION AT G201. IF OK, REPAIR OPEN IN CKT 1350 BETWEEN CONVERTIBLE TOP SWITCH CONN TERM "A" AND G201.

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE PUMP ASSEMBLY CONN TERM "B" (I/P HARNESS SIDE OF CONNECTOR).
- WHILE OBSERVING THE TEST LIGHT, PRESS THE CONVERTIBLE TOP SWITCH TO THE "DOWN" POSITION. IS TEST LIGHT "ON"?

NO

- CHECK FOR POOR CONNECTIONS AT CONVERTIBLE TOP SWITCH CONN. IF OK, REPLACE CONVERTIBLE TOP SWITCH.

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE PUMP ASSEMBLY CONN TERM "A" (I/P HARNESS SIDE OF CONNECTOR).
- WHILE OBSERVING TEST LIGHT, PRESS THE CONVERTIBLE TOP SWITCH TO THE "UP" POSITION. IS TEST LIGHT "ON"?

NO

- REPAIR OPEN IN CKT 163 BETWEEN CONVERTIBLE TOP SWITCH AND CONVERTIBLE TOP PUMP ASSEMBLY CONN.

YES

- CHECK FOR POOR CONNECTION AT CONVERTIBLE TOP PUMP ASSEMBLY CONN. IF OK, REPLACE CONVERTIBLE TOP PUMP ASSEMBLY.

NO

REPAIR OPEN IN CKT 162 BETWEEN CONVERTIBLE TOP SWITCH AND CONVERTIBLE TOP PUMP ASSEMBLY CONN.

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CONVERTIBLE TOP

CIRCUIT OPERATION

Important:

- The Convertible Top Pump Assembly has voltage applied from the Windows Circuit Breaker 15 which is controlled by the Retained Accessory Power (RAP) Module. Voltage is applied to the PWR ACCY Fuse for up to 10 minutes after Ignition is turned off or for 35 seconds after exiting the vehicle and closing the doors or whenever a door is open. For a complete understanding of Retained Accessory Power (RAP) operation, refer to SECTION 8A-15.

When the Ignition Switch is in the "RUN," "ACCY," or RAP voltage is applied from windows Circuit Breaker 15 to the Convertible Top Switch through CKT 341. The Convertible Top Pump Assembly receives ground through the Convertible Top Switch Assembly, which is grounded at G201.

The Convertible Top Pump is driven by a reversible permanent magnet motor. The motor is controlled by the Convertible Top Switch, which is normally closed to ground. When the Convertible Top Switch is moved to the "UP" position, battery voltage is provided to the Convertible Top Pump Assembly through the GRY wire. The Convertible Top Pump Assembly will receive ground through the PPL wire, the Convertible Top Switch, and drive the Convertible Top up. When the switch is released, the switch contacts will return to their normal grounded position.

To lower the Convertible Top, the Convertible Top Switch will connect the PPL wire to battery voltage. Ground will be provided to the GRY wire through the Convertible Top Switch. The polarity across the motor will be reversed, causing the motor to rotate in the opposite direction and lower the Convertible Top.

The Convertible Top Pump Assembly has two hydraulic hoses that go to the right hand cylinder and two hydraulic hose that to go the left hand cylinder that evenly control the up and down movement of both cylinder simultaneously.

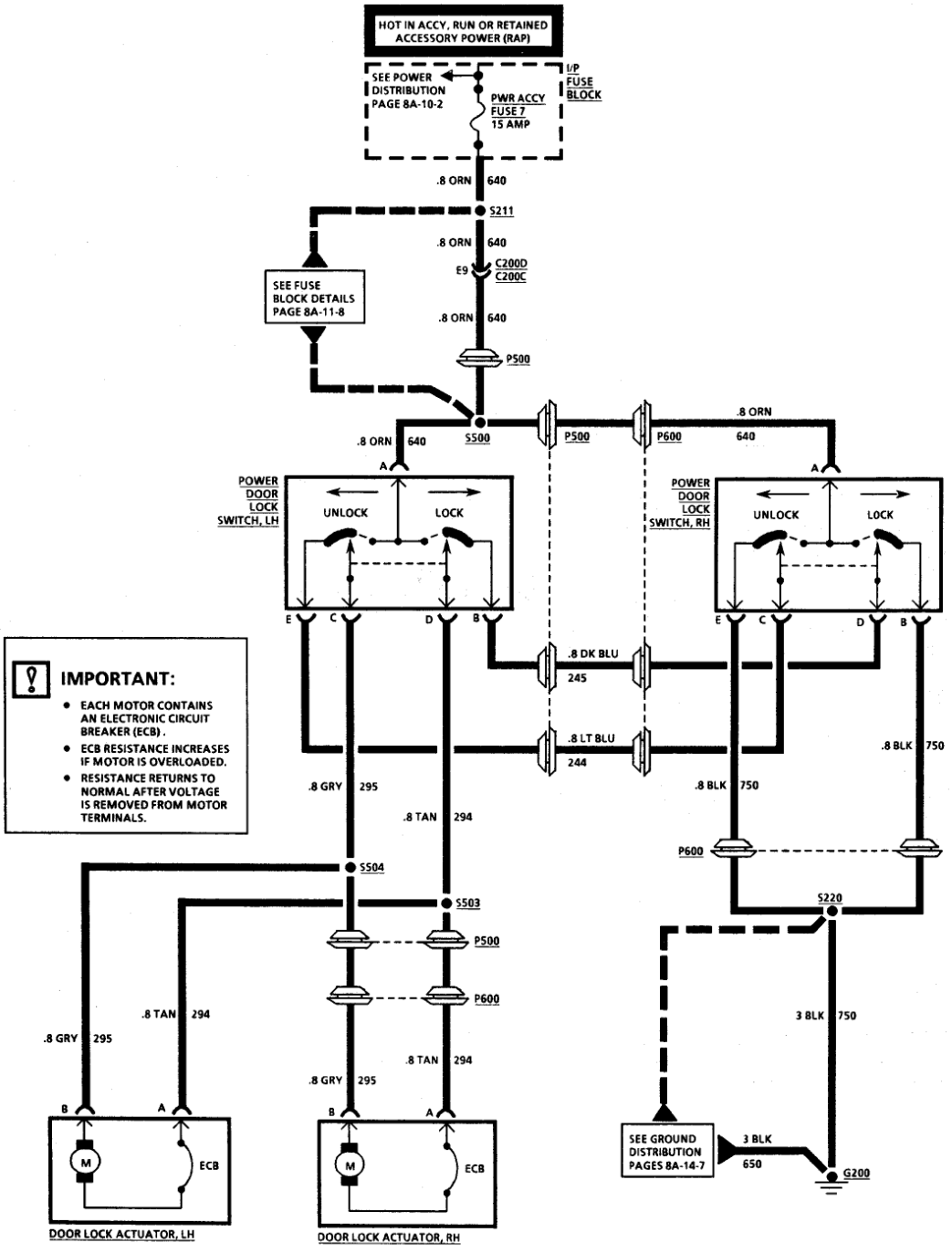
The motor within the Convertible Top Pump Assembly is protected against an overload condition internally by an Electronic Circuit Breaker (ECB). If the motor in the Convertible Top Pump Assembly becomes overloaded, the ECB will increase its resistance. By increasing its resistance, the ECB will prevent the motor from overloading. The ECB will reset to normal resistance when voltage to the motor is interrupted.

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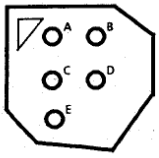
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POWER DOOR LOCKS (AU3)



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12004680

5-WAY F PIN GRIP SERIES
BLK/WHT

POWER DOOR LOCK SWITCH, LH AND RH

COMPONENT	LOCATION	201-PG	FIG.	CONN
Door Lock Actuator, LH	Inside rear of left door	17	31	
Door Lock Actuator, RH	Inside rear of right door	17	31	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Power Door Lock Switch, LH	Mounted in left door armrest	18	33	202-24
Power Door Lock Switch, RH	Mounted in right door armrest	18	33	202-24
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
P500	Between LH door and "A" pillar	17	31	
P600	Between RH door and "A" pillar	45	84	
S211	I/P Harn, approx 4 cm from antenna cable (Chevy) or Convenience Center (Pont) breakouts			
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S500	Cross Car Harn, approx 6 cm from Speaker breakout	17	31	
S503	Cross Car Harn, approx 3 cm from LH Power Door Lock Switch breakout	17	31	
S504	Cross Car Harn, approx 11 cm from Power Mirror breakout	17	31	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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POWER DOOR LOCKS (AU3)

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Check PWR ACCY Fuse 7 in I/P Fuse Block. If open, refer to Diagnostic Chart #4.
2. Check for poor connection at G200.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

Important:

- For a better understanding of Retained Accessory Power (RAP) operation, refer to Circuit Operation at the end of this section.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Power Door Locks will not operate from both Power Door Switches.	Chart #1 Chart #2 Chart #3	8A-130-3 8A-130-4 8A-130-5
RH Door Lock Switch operates normally. LH Door Lock Switch does not "LOCK" or "UNLOCK."	Check for B+ at terminal "A" of LH Door Lock Connector. – If not present, repair open in CKT 640. – If present, replace LH Door Lock Switch.	
LH Door Lock Switch operates normally. RH Door Lock Switch does not.	Chart #1	8A-130-3
One Door Lock Switch "UNLOCKS" but does not "LOCK." Other switch OK.	Check for poor connection at suspect Door Lock Switch. If OK, replace suspect Door Lock Switch.	
One Door Lock Switch "LOCKS" but does not "UNLOCK." Other switch OK.	Check for poor connection at suspect Door Lock Switch. If OK, replace suspect Door Lock Switch.	
Power Door Locks either "LOCK" only or "UNLOCK" only from both Door Lock Switches.	Chart #1 Chart #2	8A-130-3 8A-130-4
One door does not "LOCK" or "UNLOCK."	Chart #3	8A-130-5
PWR ACCY Fuse 7 repeatedly blows whenever Ignition is "ON" or when attempting to use Power Door Locks.	Chart #4	8A-130-5
• Power Door Locks do not operate when one or both doors are opened. • Power Door Locks only operate with Ignition "ON," or for 10 minutes after Ignition is turned "OFF" and exiting the vehicle and closing the door(s).	Refer to "Retained Accessory Power (RAP)," page 8A-15-0.	

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CHART #1
RH DOOR LOCK SWITCH TEST

IMPORTANT:

- IF PWR ACCY FUSE CONTINUALLY BLOWS, REFER TO CHART #4.

- BACKPROBE RH DOOR LOCK SWITCH CONNECTOR WITH A TEST LIGHT BETWEEN TERM "A" AND GROUND. IS TEST LIGHT "ON"?

YES

- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "A" & "C". IS TEST LIGHT "ON"?

YES

- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "A" & "D". IS TEST LIGHT "ON"?

YES

- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "C" & "E".
- MOVE THE RH DOOR LOCK SWITCH TO THE "LOCK" POSITION WHILE OBSERVING THE TEST LIGHT. IS TEST LIGHT "ON"?

YES

- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "D" & "E".
- MOVE THE RH DOOR LOCK SWITCH TO THE "UNLOCK" POSITION WHILE OBSERVING THE TEST LIGHT. IS TEST LIGHT "ON"?

YES

- CHECK CONTINUITY FROM TERM "C" OF RH DOOR LOCK SWITCH CONNECTOR TO TERM "E" OF LH DOOR LOCK SWITCH CONNECTOR. IS THERE CONTINUITY (NEARLY 0 OHMS)?

YES

- CHECK CONTINUITY FROM TERM "D" OF RH DOOR LOCK SWITCH CONNECTOR TO TERM "B" OF LH DOOR LOCK SWITCH CONNECTOR. IS THERE CONTINUITY (NEARLY 0 OHMS)?

YES

- NO TROUBLE FOUND WITH THE RH DOOR LOCK SWITCH.
- IF LH DOOR LOCK SWITCH IS INOPERATIVE, REFER TO CHART #2, "LH DOOR LOCK SWITCH TEST," PAGE 8A-130-4.

NO

- CHECK FOR OPEN IN CKT 640 BETWEEN RH DOOR LOCK SWITCH AND PWR ACCY FUSE. IF OK, REPAIR POWER FEED TO PWR ACCY FUSE.

NO

- CHECK FOR OPEN IN GROUND CKT 750 (G200) TO TERM "E" OF CONNECTOR OR POOR CONNECTION TO SWITCH. IF OK, REPLACE RH DOOR LOCK SWITCH.

NO

- CHECK FOR OPEN IN GROUND CKT 750 (G200) TO RH DOOR LOCK SWITCH CONNECTOR TERM "B" OR POOR CONNECTION TO SWITCH. IF OK, REPLACE RH DOOR LOCK SWITCH.

NO

- CHECK FOR POOR CONNECTION AT SWITCH. IF OK, REPLACE RH DOOR LOCK SWITCH.

NO

- CHECK FOR POOR CONNECTION AT SWITCH. IF OK, REPLACE RH DOOR LOCK SWITCH.

NO

REPAIR OPEN IN CKT 244.

NO

REPAIR OPEN IN CKT 245.

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POWER DOOR LOCKS (AU3)

CHART #2
LH DOOR LOCK SWITCH TEST

IMPORTANT:
- CHART #1, "RH DOOR LOCK SWITCH TEST," PAGE 8A-130-3 MUST BE PERFORMED BEFORE PROCEEDING.

- BACKPROBE LH DOOR LOCK SWITCH CONNECTOR WITH A TEST LIGHT BETWEEN TERM "A" AND GROUND. IS TEST LIGHT "ON"?
  - NO: REPAIR OPEN IN CKT 640 BETWEEN S500 AND LH POWER DOOR LOCK SWITCH AT TERM "A".
  - YES:
- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "A" & "C". IS TEST LIGHT "ON"?
  - NO:
    - CHECK FOR POOR CONNECTION AT LH SWITCH. IF OK, REPLACE LH DOOR LOCK SWITCH.
  - YES:
- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "A" & "D". IS TEST LIGHT "ON"?
  - NO:
    - CHECK FOR OPEN IN CKT 245.
    - CHECK FOR POOR CONNECTION AT LH SWITCH. IF OK, REPLACE LH DOOR LOCK SWITCH.
  - YES:
- BACKPROBE THE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "C" & "E".
- MOVE LH DOOR LOCK SWITCH TO "LOCK" POSITION WHILE OBSERVING TEST LIGHT. IS TEST LIGHT "ON"?
  - NO:
    - CHECK FOR POOR CONNECTION AT LH SWITCH. IF OK, REPLACE LH DOOR LOCK SWITCH.
  - YES:
- BACKPROBE SAME CONNECTOR WITH THE TEST LIGHT BETWEEN TERMINALS "D" & "E".
- MOVE LH DOOR LOCK SWITCH TO THE "UNLOCK" POSITION WHILE OBSERVING TEST LIGHT. IS TEST LIGHT "ON"?
  - NO:
    - CHECK FOR POOR CONNECTION AT LH SWITCH. IF OK, REPLACE LH DOOR LOCK SWITCH.
  - YES:
- NO TROUBLE FOUND WITH LH DOOR LOCK SWITCH.
- REFER TO CHART #3, "DOOR LOCK ACTUATOR TEST," PAGE 8A-130-5.

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CHART #3
DOOR LOCK ACTUATORS TEST

IMPORTANT:

- IF BOTH DOOR LOCK ACTUATORS DO NOT OPERATE, PERFORM CHART #1, "RH DOOR LOCK SWITCH TEST," PAGE 8A-130-3 AND CHART #2, "LH DOOR LOCK SWITCH TEST," PAGE 8A-130-4 BEFORE PROCEEDING.

- DISCONNECT SUSPECT DOOR LOCK ACTUATOR CONNECTOR.
- CONNECT A TEST LIGHT BETWEEN TERM "B" OF CONNECTOR AND B+.
  IS TEST LIGHT "ON"?

YES

- CONNECT THE TEST LIGHT BETWEEN TERM "A" OF SUSPECT DOOR LOCK MOTOR CONNECTOR AND B+.
  IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTION AT DOOR LOCK ACTUATOR.
  IF OK, REPLACE DOOR LOCK ACTUATOR.

NO

REPAIR OPEN IN CKT 294 (TAN WIRE).

NO

REPAIR OPEN IN CKT 295 (GRY WIRE).

CHART #4
PWR ACCY FUSE 7 REPEATEDLY BLOWS WHENEVER IGNITION IS "ON" OR WHEN ATTEMPTING TO OPERATE POWER DOOR LOCKS

- REPLACE BLOWN FUSE.
  DOES FUSE BLOW BEFORE ATTEMPTING TO OPERATE POWER DOOR LOCKS?

NO

- TEST POWER DOOR LOCK SWITCH ONE FUNCTION AT A TIME UNTIL FUSE BLOWS.
- WHEN THE FUSE BLOWS, USE SCHEMATICS TO DETERMINE WHAT CIRCUITS OR COMPONENTS COULD BE FAILING. USE A TEST LIGHT OR DVM TO NARROW IN ON SHORT TO GROUND POTENTIAL.
- DISCONNECTING COMPONENTS IS HELPFUL WHEN TRYING TO CHECK CIRCUITS THAT SHOULD NOT BE AT A GROUND POTENTIAL.

YES

- USE SCHEMATICS AND DVM TO CHECK SUSPECT POWER CIRCUITS FOR A SHORT TO GROUND POTENTIAL, EITHER THROUGH A FAULTY COMPONENT OR IN WIRING.
- CONNECT A DVM SET TO VOLTAGE ACROSS FUSE TERMINALS. START BY DISCONNECTING ONE COMPONENT AT A TIME.
  IF ALL RELATED COMPONENTS ARE DISCONNECTED AND SHORT IS STILL PRESENT, LOCATE AND REPAIR SHORT IN WIRING.

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POWER DOOR LOCKS (AU3)

CIRCUIT OPERATION

Important:

- The Power Door Lock System has voltage applied from the PWR ACCY Fuse which is controlled by the Retained Accessory Power (RAP) Module. Voltage is applied to the PWR ACCY Fuse for up to 10 minutes after Ignition is turned off or for 35 seconds after exiting the vehicle and closing the doors. Voltage is also applied whenever a door is open. For a complete understanding of Retained Accessory Power (RAP) operation, refer to "Retained Accessory Power (RAP): with AU3," page 8A-15-0.

When a Door Lock Switch is activated in the Power Door Lock system, both doors will lock or unlock in unison. Each lock can also be operated manually. The locks are operated by reversible Actuators. The Door Lock Switches operate the Actuators by applying a voltage to one of the terminals and a ground to the other terminal.

Battery voltage is applied to both Door Lock Switches at terminal "A". When the LH Door Lock Switch is moved to "LOCK," battery voltage is applied to both Door Lock Actuators from the GRY (295) wires. Both Actuators are grounded through the TAN (294) wires, the contacts of the LH Door Lock Switch, the DK BLU (245) wire, the contacts of the RH Door Lock Switch and the BLK (750) wires to ground G200.

When the LH Door Lock Switch is moved to "UNLOCK," battery voltage is applied to both Door Lock Actuators in the opposite direction from the TAN (294) wires. Both Actuators are grounded through the GRY (295) wires, the contacts of the LH Door Lock Switch, the LT BLU (244) wire, the contacts of the RH Door Lock Switch and the BLK (750) wires to ground G200.

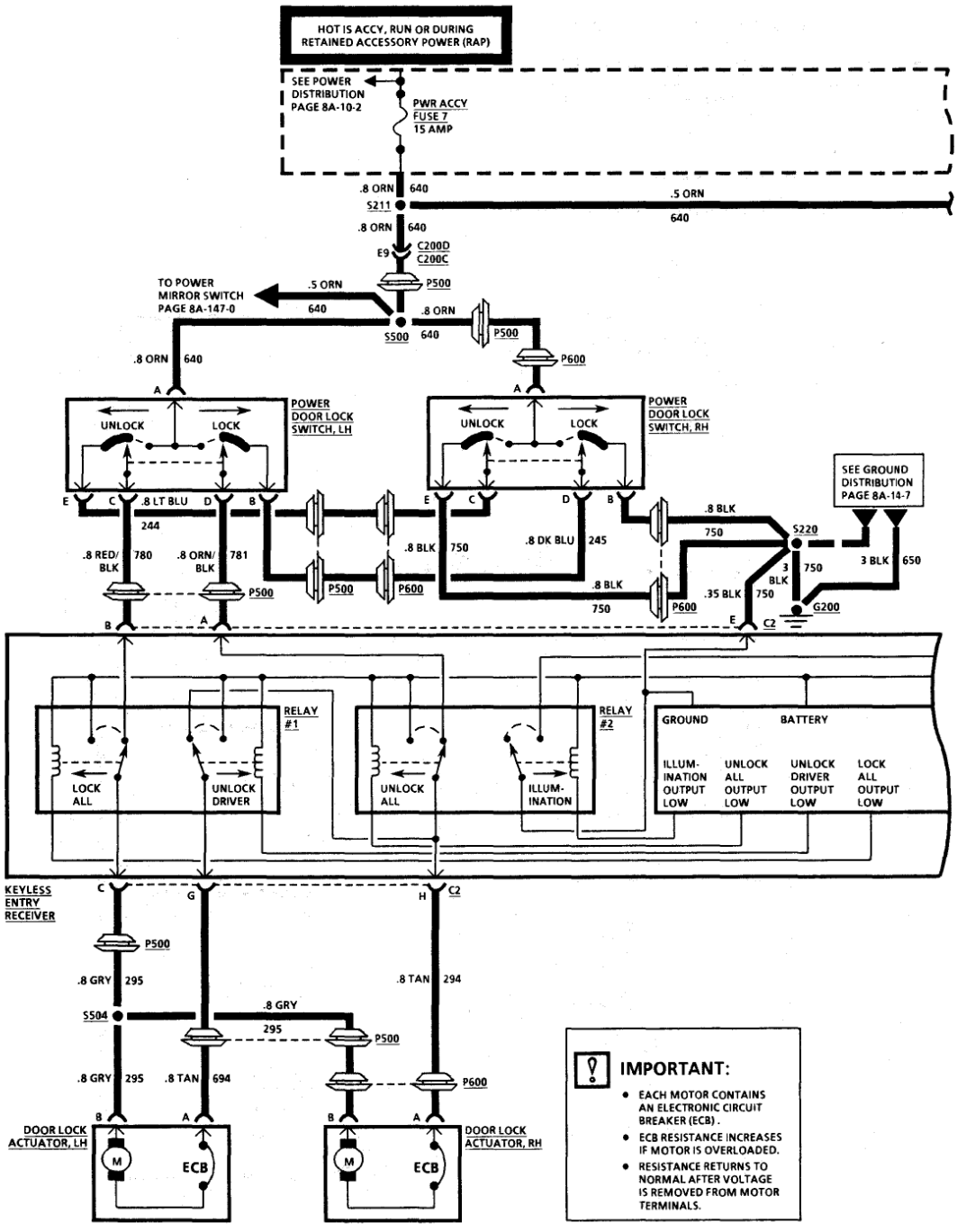
When the RH Door Lock Switch is moved to "LOCK," battery voltage is applied from the LT BLU (244) wires, the contacts of the LH Door Lock Switch and the GRY (295) wires to both Door Lock Actuators. When the RH Door Lock Switch is moved to "UNLOCK," battery voltage is applied from the DK BLU (245) wire, the contacts of the LH Door Lock Switch, and the TAN (294) wires to both Door Lock Actuators in the opposite direction. During RH Door Lock Switch operation, the Door Lock Actuators are grounded similarly to the way they are grounded during LH Door Lock Switch operation.

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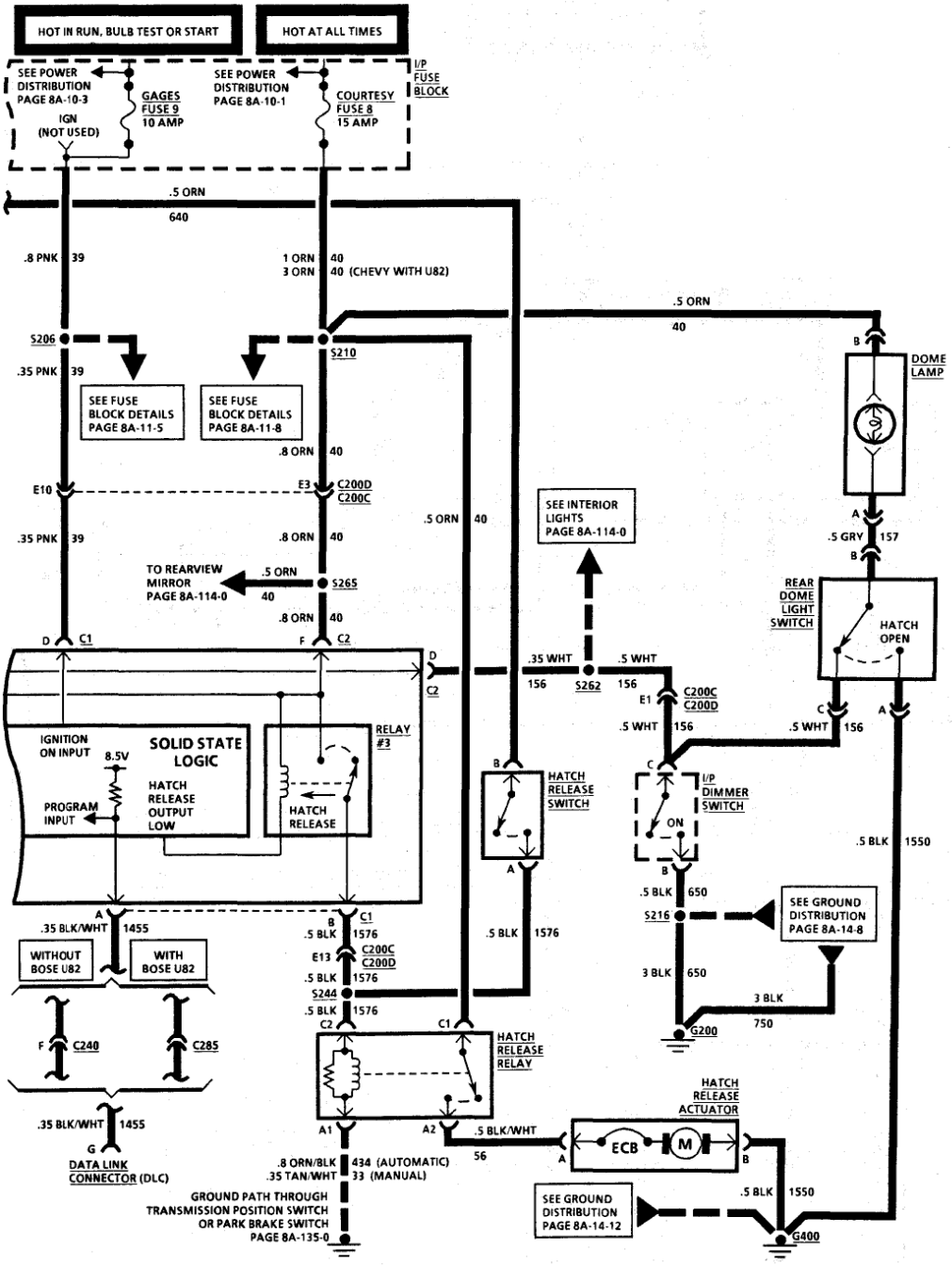
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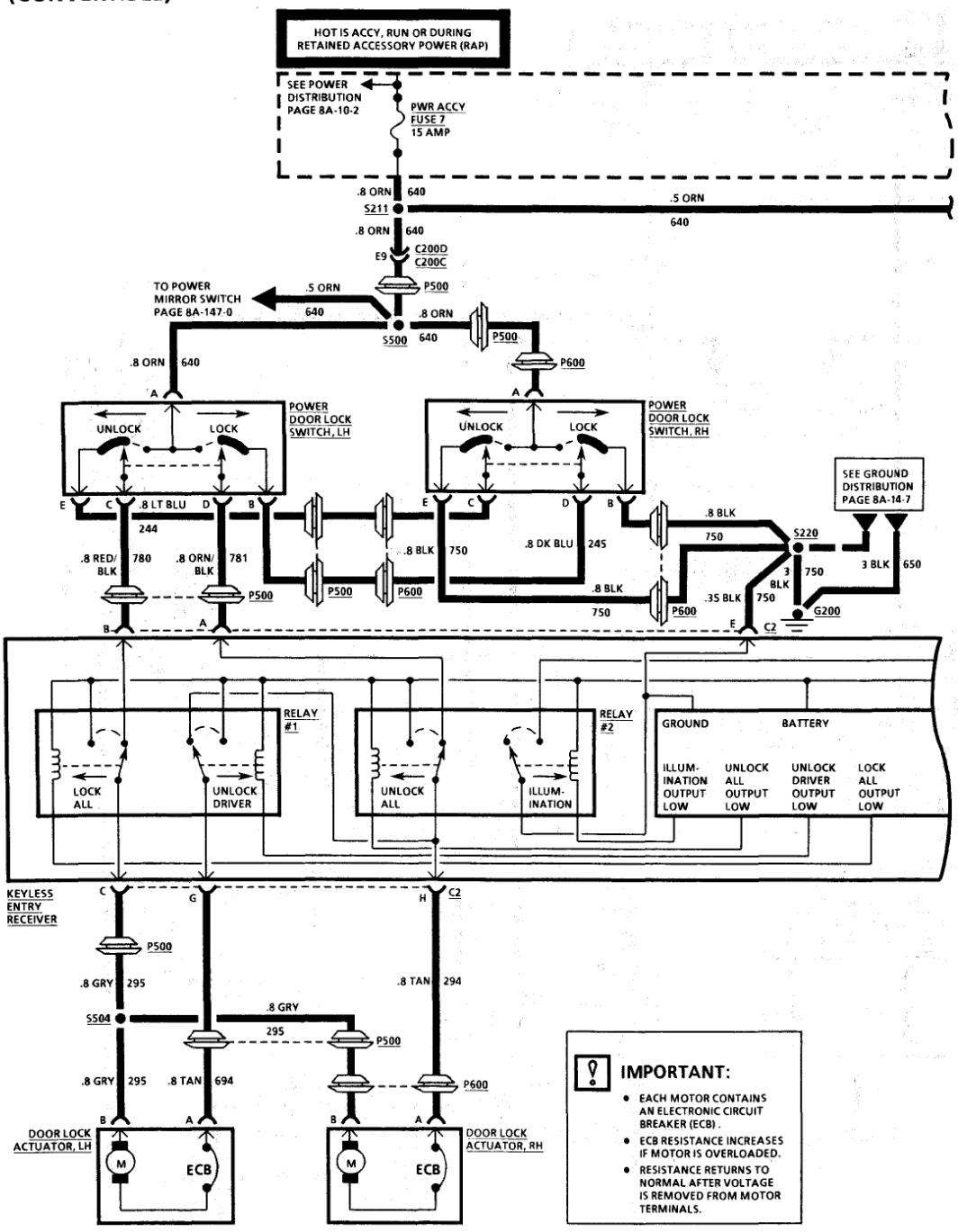


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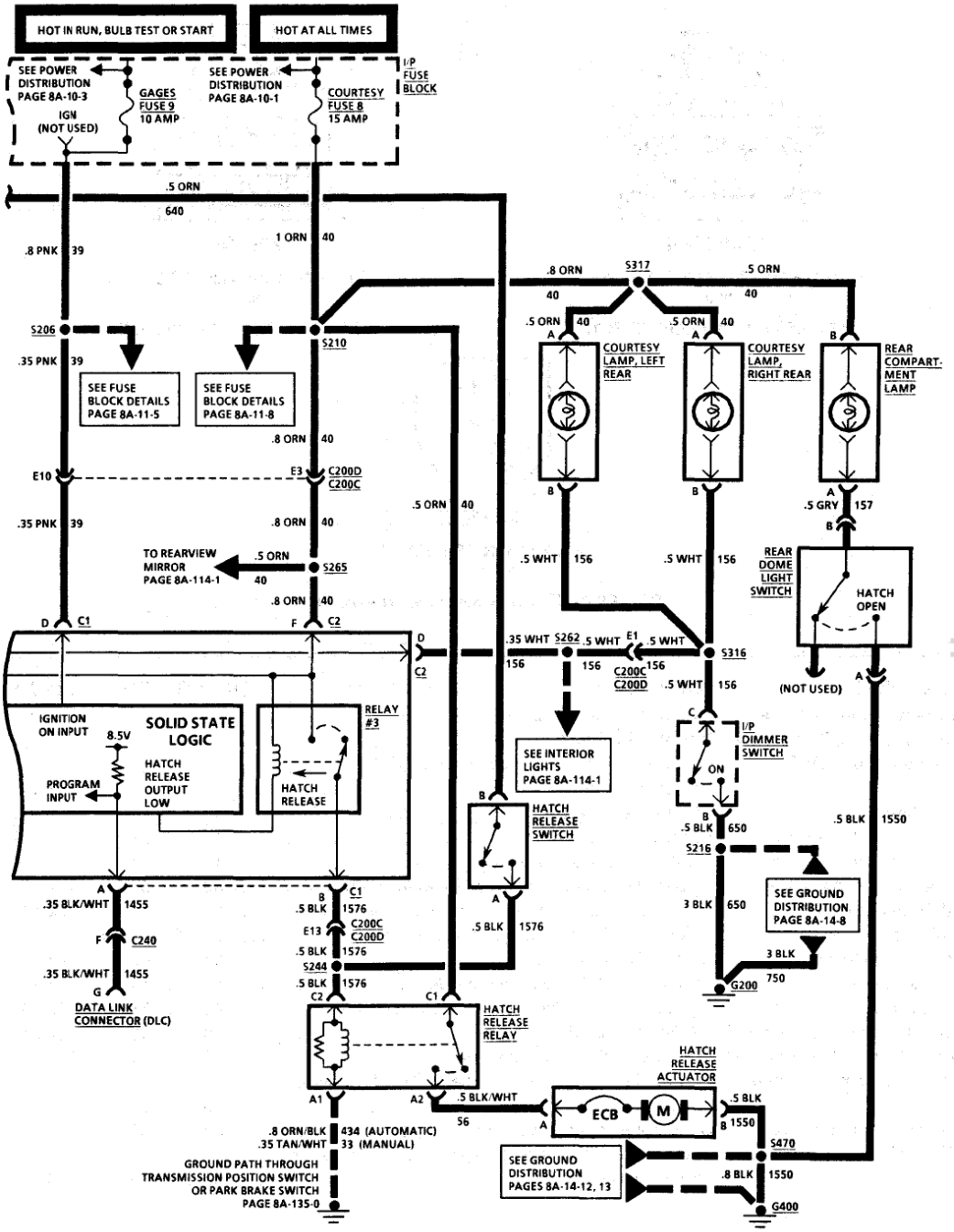


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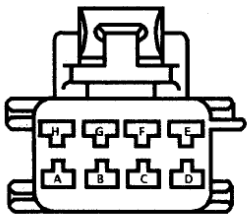


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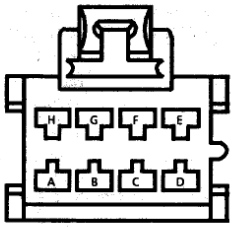
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12064766

8-WAY F METRI-PACK 150 SERIES
BLU

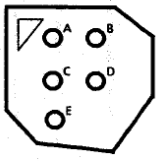
KEYLESS ENTRY RECEIVER (C1)



12064998

8-WAY F METRI-PACK 280 SERIES
BLK

KEYLESS ENTRY RECEIVER (C2)



12004680

5-WAY F PIN GRIP SERIES
BLK/WHT

POWER DOOR LOCK SWITCH, LH AND RH

COMPONENT	LOCATION	201-PG	FIG.	CONN
Courtesy Lamp, Left Rear	Mounted in left sail panel			
Courtesy Lamp, Right Rear	Mounted in right sail panel			
Data Link Conn (DLC)	Mounted to I/P Tie Bar, below and right of Steering Column			202-11
Dome Lamp	On roof, near hatch	4	6	
Door Lock Actuator, LH	Inside rear of left door	17	31	
Door Lock Actuator, RH	Inside rear of right door	17	31	
Hatch Release Actuator	Center of end panel, in Cargo Compartment	30	57	
Hatch Release Relay	Mounted to right side of SIR Bracket, behind I/P	22	41	202-21
Hatch Release Switch	Left of Steering Column, in knee bolster pad	31, 38	60, 67	
I/P Dimmer Switch	Lower LH side of I/P	37, 38	66, 67	202-23
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Keyless Entry Receiver	Behind RH side kick panel, in molded pocket	40	71	202-23
Power Door Lock Switch, LH	Mounted in left door armrest	18	33	202-24
Power Door Lock Switch, RH	Mounted in right door armrest	18	33	202-24
Rear Compartment Lamp	Center of rear compartment below Hatch Release Actuator	30	58	
Rear Dome Light Switch	Center of end panel, in Cargo Compartment	30	57	
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2

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COMPONENT	LOCATION	201-PG	FIG.	CONN
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C240 (6 cavities)	Under RH side of I/P, behind kick panel	20	37	202-19
C285 (1 cavity)	Under RH side of I/P, behind kick panel	20	37	
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G400	Bolted to Hatch Release Bracket in Rear Compartment (2 rings, 3 wires Coupe) or (2 rings, 2 wires Convertible)	30	57	
P500	Between LH door and "A" pillar	17	31	
P600	Between RH door and "A" pillar	45	84	
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S210	I/P Harn, approx 44 cm from Convenience Center (Pont) or 12 cm from RR Defog Switch (Chevy) breakouts			
S211	I/P Harn, approx 4 cm from antenna cable (Chevy) or Convenience Center (Pont) breakouts			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S244	I/P Harn, approx 7 cm from DERM breakout			
S262	Cross Car Harn, approx 9 cm from Rearview Mirror breakout	45	84	
S265	Cross Car Harn, approx 20 cm from Rearview Mirror breakout	45	84	
S316	I/P Harn, approx at rear edge of door below left sail panel			
S317	I/P Harn, approx at rear edge of door below left sail panel			
S470	I/P Harn, approx 24 cm from Hatch Release Actuator			
S500	Cross Car Harn, approx 6 cm from Speaker breakout	17	31	
S504	Cross Car Harn, approx 11 cm from Power Mirror breakout	17	31	

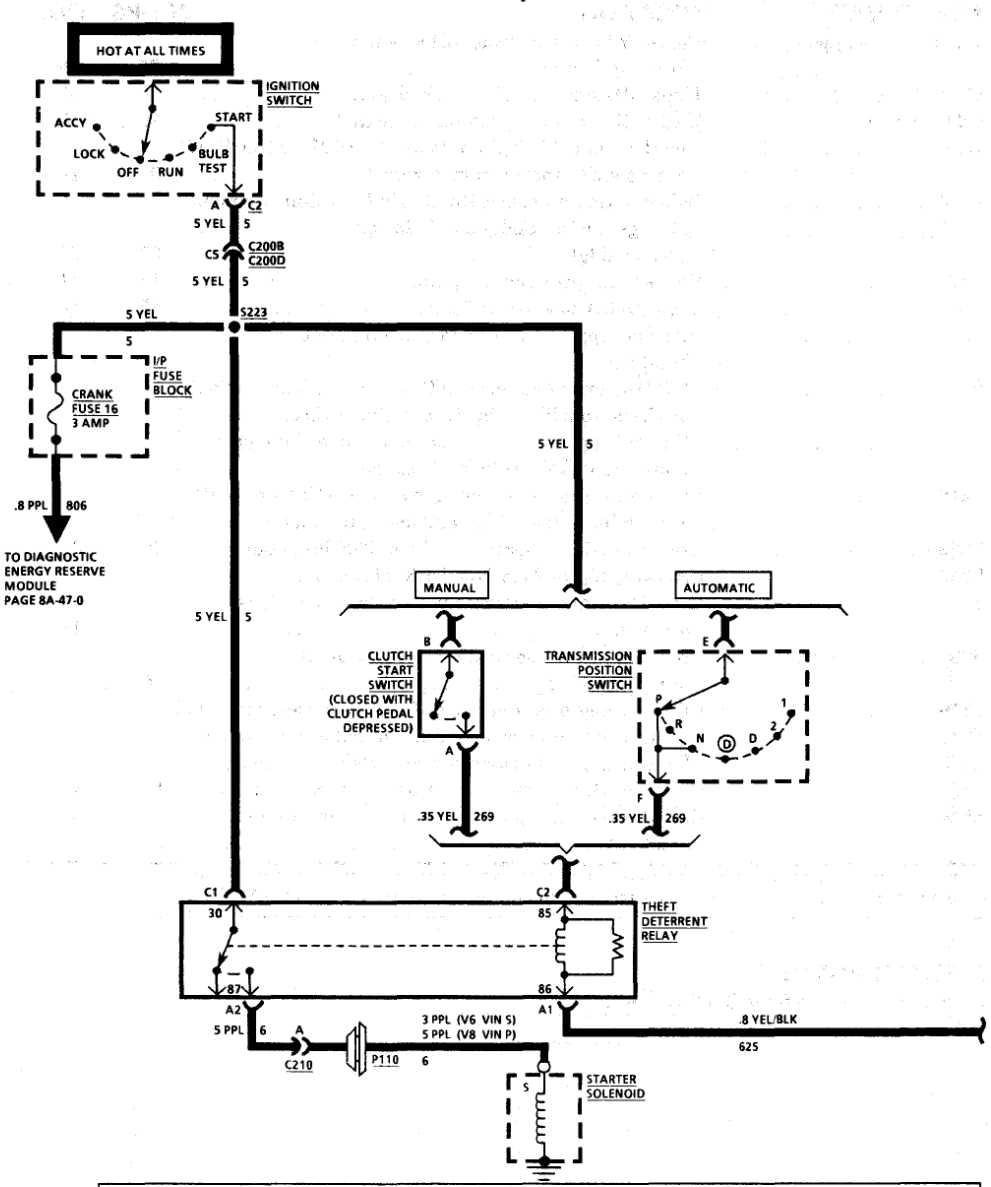
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

- For Diagnosis, refer to SECTION 9K.

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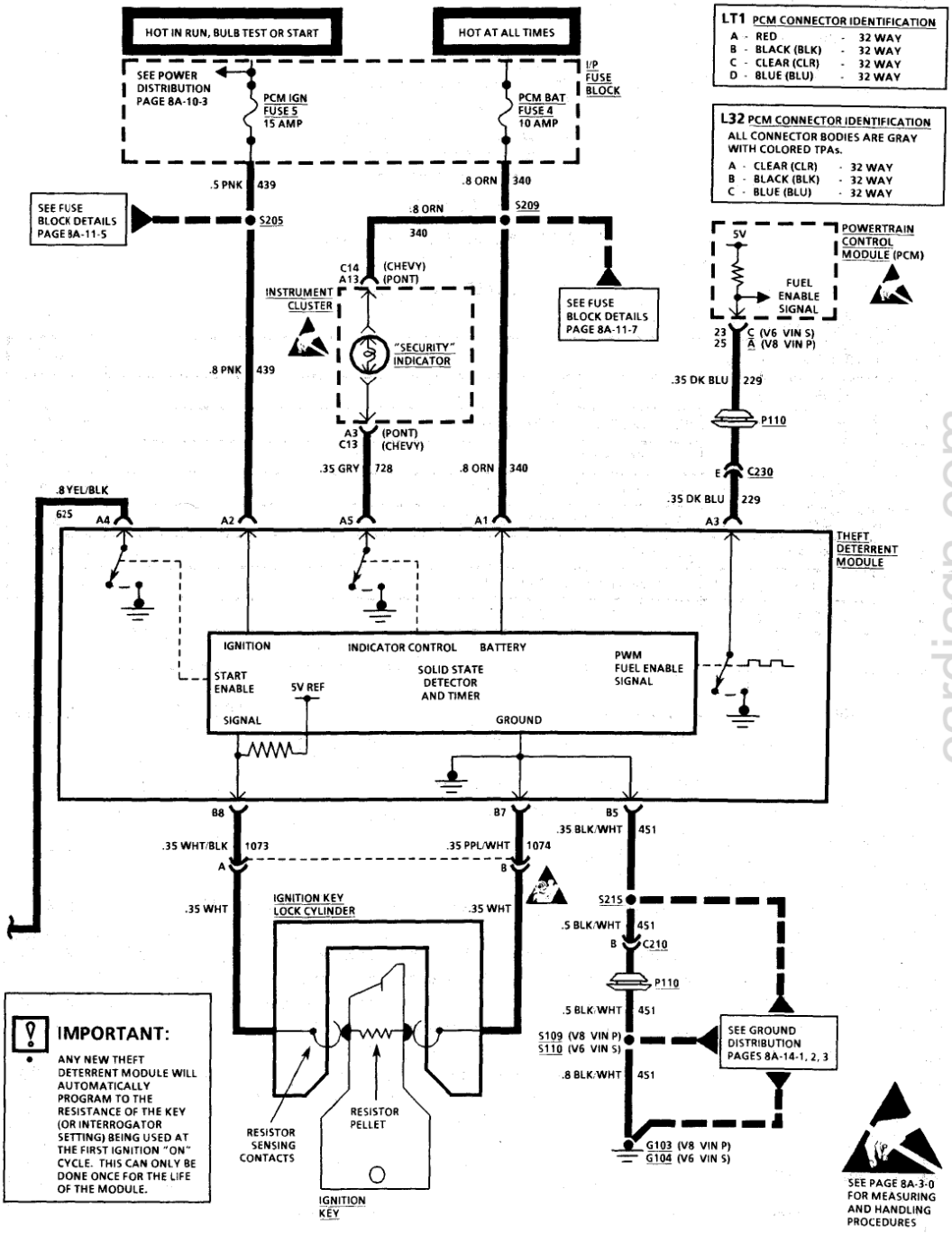
THEFT DETERRENT SYSTEM: PASS-Key®II
(PERSONALIZED AUTOMOTIVE SECURITY SYSTEM)



SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES

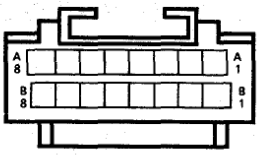
CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

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THEFT DETERRENT SYSTEM: PASS-Key®II
(PERSONALIZED AUTOMOTIVE SECURITY SYSTEM)



12110259

16-WAY F MICRO-PACK 100 SERIES
GRN

THEFT DETERRENT MODULE

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A1	ORN	340	POWER FEED FROM PCM BAT FUSE #4	8A-11-7
A2	PNK	439	POWER FEED FROM PCM IGN FUSE #5	8A-11-5
A3	DK BLU	229	FUEL ENABLE SIGNAL	8A-133-1
A4	YEL/BLK	625	THEFT DETERRENT RELAY CONTROL	8A-133-0, 1
A5	GRY	728	"SECURITY" INDICATOR LAMP CONTROL	8A-133-1
B5	BLK/WHT	451	GROUND	8A-14-1, 2, 3
B7	PPL/WHT	1074	IGNITION KEY RESISTOR RETURN	8A-133-1
B8	WHT/BLK	1073	IGNITION KEY RESISTOR FEED	8A-133-1

COMPONENT	LOCATION	201-PG	FIG.	CONN
Clutch Start Switch	Mounted to clutch pedal bracket, behind Convenience Center	0	1	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Ignition Key Lock Cylinder	Top RH side of Steering Column	3, 34	5, 63	
Ignition Switch	Part of Steering Column	34	63	202-23
Instrument Cluster	LH side of I/P			202-23
Powertrain Control Module (PCM) (V6 VIN S)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-25
Powertrain Control Module (PCM) (V8 VIN P)	In Engine Compartment, rearward of RH Shock Tower	19	35	202-26
Starter Solenoid	Bottom of RH side of Engine, above Starter Motor	28, 40	54, 72	
Theft Deterrent Module	In I/P, just right of Radio, attached to Air Bag Bracket	8	15	202-18
Theft Deterrent Relay	Mounted to right side of SIR Bracket, behind I/P	22	41	202-27
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28

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COMPONENT	LOCATION	201-PG	FIG.	CONN
C200B (18 cavities)	Part of Forward Lamp Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
C230 (10 cavities)	Under RH side of I/P, behind kick panel	20	37	202-7
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S205	I/P Harn, approx 31 cm from Convenience Center breakout			
S209	I/P Harn, approx 24 cm from Convenience Center breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S223	I/P Harn, approx 11 cm before DLC breakout			

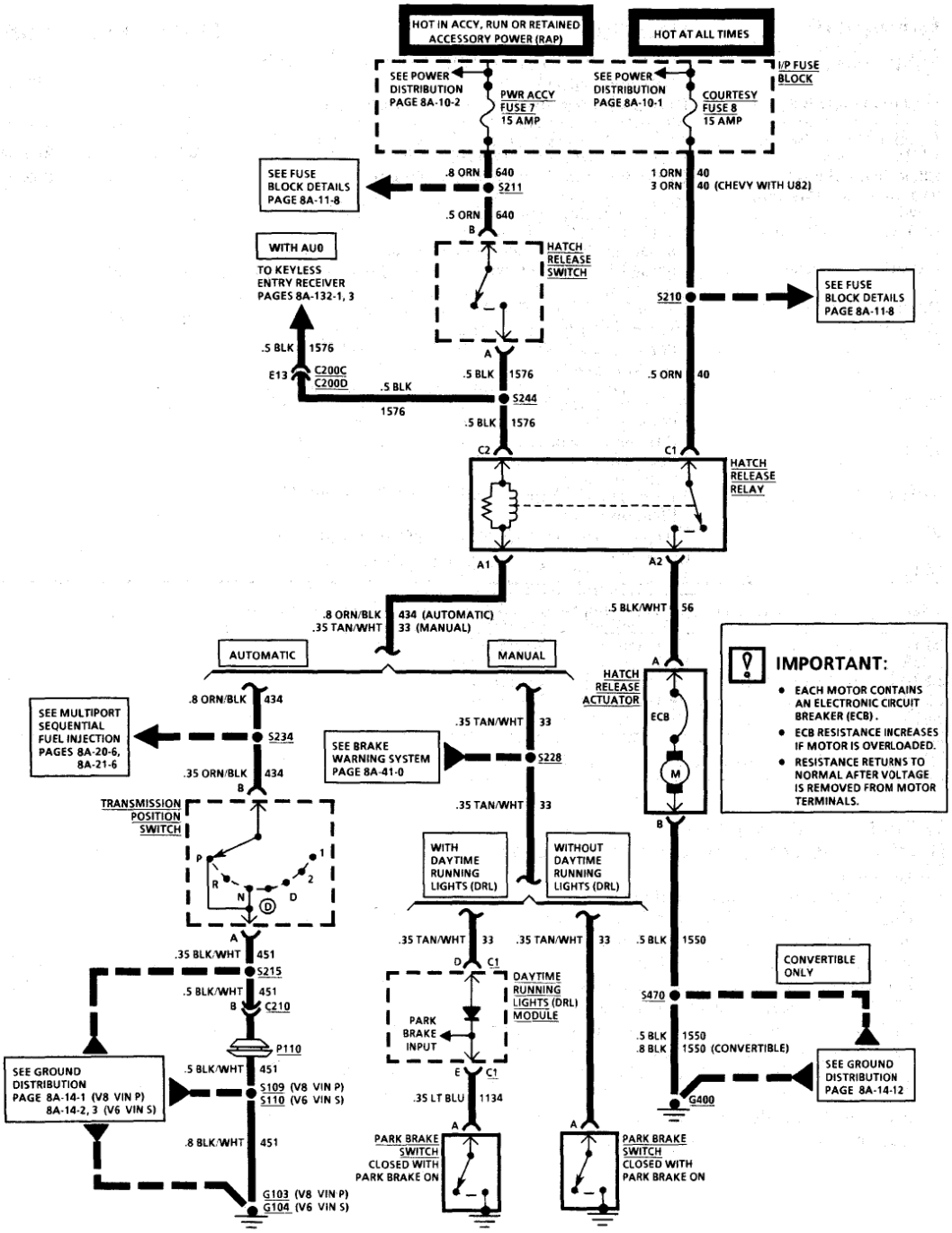
For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

SYSTEM DIAGNOSIS

- For Diagnosis refer to SECTION 9D.

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HATCH RELEASE (A90)



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COMPONENT	LOCATION	201-PG	FIG.	CONN
Daytime Running Lights (DRL) Module	Mounted behind Radio and HVAC Controls, left of I/P Compartment	7	12	202-20
Hatch Release Actuator	Center of end panel, in Cargo Compartment	30	57	
Hatch Release Relay	Mounted to right side of SIR Bracket, behind I/P	22	41	202-21
Hatch Release Switch	Left of Steering Column, in knee bolster pad	31, 38	60, 67	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Park Brake Switch	In console, at base of Park Brake Lever	43	81	
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
G103 (LT1)	RH side of Engine Block, just above Starter (2 rings, 2 wires)	40	72	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
G400	Bolted to Hatch Release Bracket in Rear Compartment (2 rings, 3 wires Coupe) or (2 rings, 2 wires Convertible)	30	57	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S210	I/P Harn, approx 44 cm from Convenience Center (Pont) or 12 cm from RR Defog Switch (Chevy) breakouts			
S211	I/P Harn, approx 4 cm from antenna cable (Chevy) or Convenience Center (Pont) breakouts			
S215	I/P Harn, approx 30 cm before DLC breakout			
S228	I/P Harn, approx 15 cm before DLC breakout			
S234 (Automatic)	I/P Harn, approx 4 cm from G201 breakout			
S244	I/P Harn, approx 7 cm from DERM breakout			
S470	I/P Harn, approx 24 cm from Hatch Release Actuator			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Check that G400 is clean and tight.
2. Check PWR ACCY Fuse and Courtesy Fuse for open. If either fuse is open, check for short to ground through CKTs 640 and/or 40.
3. For vehicles with Manual Transmissions, the "BRAKE" Indicator receives a ground through the Park Brake Switch. Applying the Park Brake and observing the "BRAKE" Indicator can be used as a quick check of the ground CKT below S228.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

HATCH RELEASE (A90)

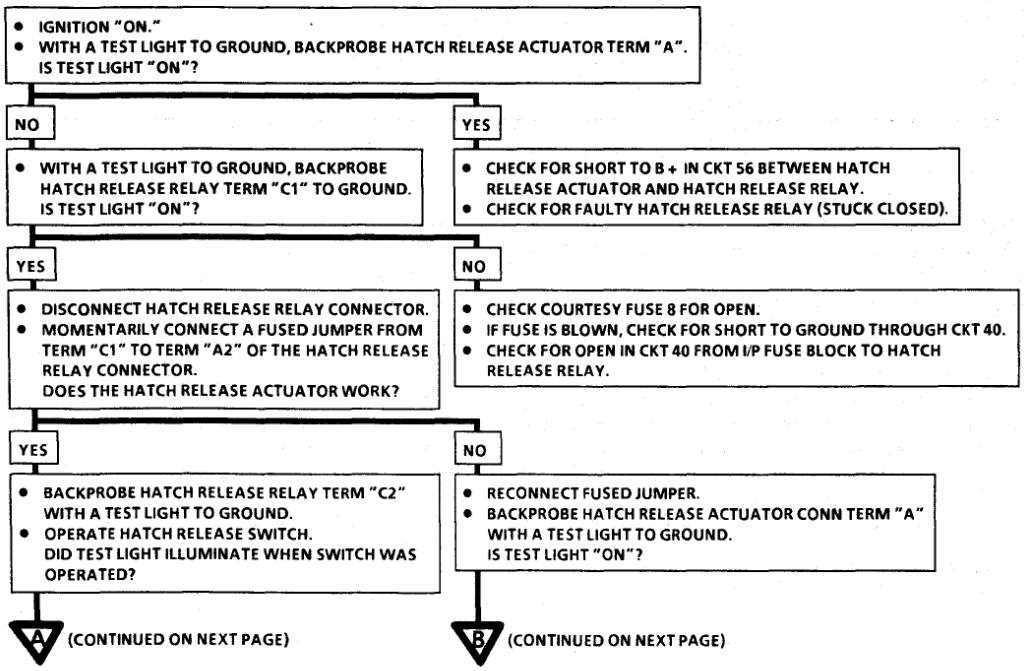
Important:

- For a better understanding of the Retained Accessory Power (RAP) operation, refer to Circuit Operation at the end of this section.

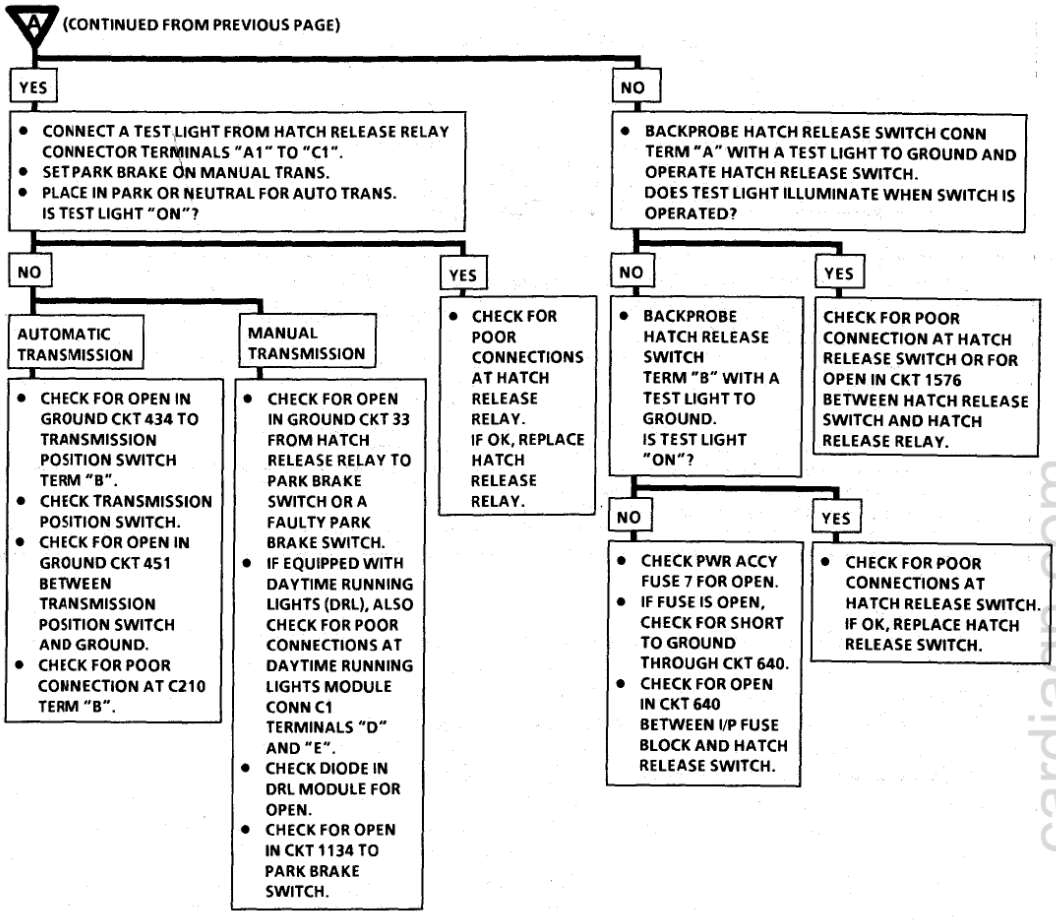
SYMPTOM TABLE

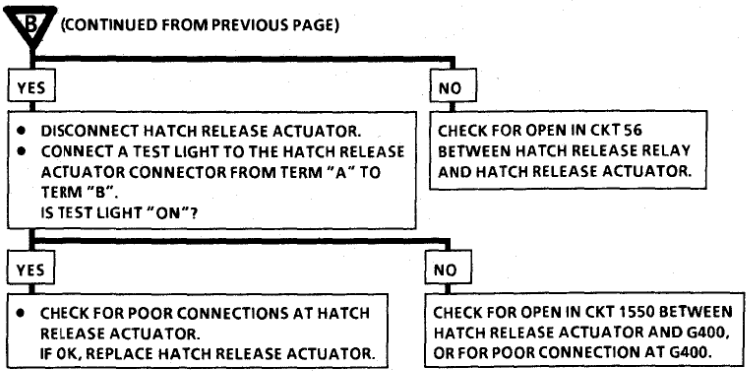
SYMPTOM	PROCEDURE	PAGE NUMBER
Hatch does not release when operating the Hatch Release Switch.	Chart #1	8A-135-2
Hatch releases immediately at Ignition "ON" (in Park or Neutral for Automatic Transmission or with Park Brake "ON" for Manual Transmission).	• Check for short to B + on CKT 1576 between Hatch Release Switch and Hatch Release Relay. • Check for faulty Hatch Release Switch (stuck closed). • If equipped with Keyless Entry, also refer to SECTION 8A-132.	
Hatch Release operates from Keyless Entry and does not operate from Hatch Release Switch.	Chart #2	8A-135-4

CHART #1
HATCH DOES NOT RELEASE WHEN OPERATING THE HATCH RELEASE SWITCH



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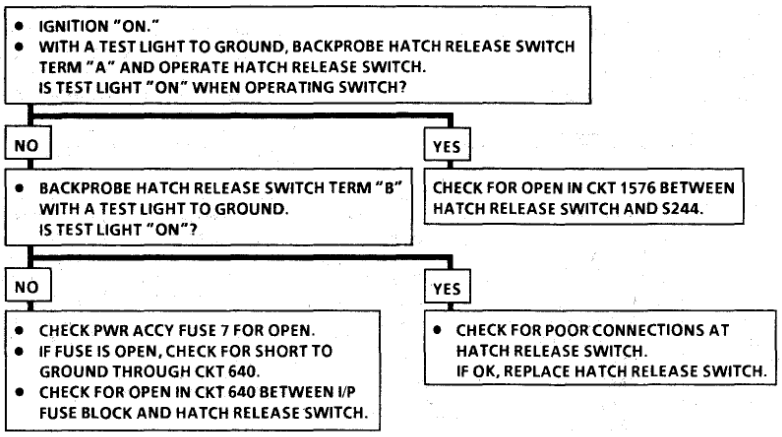




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HATCH RELEASE (A90)

CHART #2
HATCH RELEASE OPERATES FROM KEYLESS ENTRY AND DOES NOT OPERATE FROM HATCH RELEASE SWITCH



CIRCUIT OPERATION

The Hatch Release Relay has voltage applied from the PWR ACCY Fuse which is controlled by the Retained Accessory Power (RAP) Module. Voltage is applied to the PWR ACCY Fuse for up to 10 minutes after the Ignition is turned off, or for 35 seconds after exiting the vehicle and closing the doors or whenever a door is open. For a complete understanding of the Retained Accessory Power (RAP) operation, refer to SECTION 8A-15.

The Hatch Release can be activated from within the vehicle by operating the Hatch Release Switch when the Ignition is in "ACCY", "RUN" or "RETAINED ACCESSORY POWER" with the Park Brake set for Manual Transmission or in "PARK" or "NEUTRAL" position for Automatic Transmission.

Battery voltage is applied at all times to the normally open contacts of the Hatch Release Relay from Courtesy Fuse 8.

When the Hatch Release Switch is operated, the switch closes and battery voltage is applied to the coil of the Hatch Release Relay. On vehicles with Automatic Transmissions, the Hatch Release Relay Coil receives a ground through the Transmission Position Switch to G103 (V8 VIN P) or G104 (V6 VIN S), the Hatch Release Relay can only be energized with the Gear Selector in the "PARK" or "NEUTRAL" position. On vehicles with Manual Transmissions, the Hatch Release Relay Coil receives a ground through the Park Brake Switch when the Park Brake is "ON." For vehicles equipped with Daytime Running Lamps (DRL), ground is provided through the Park Brake Switch and a Circuit Isolation Diode within the DRL Module.

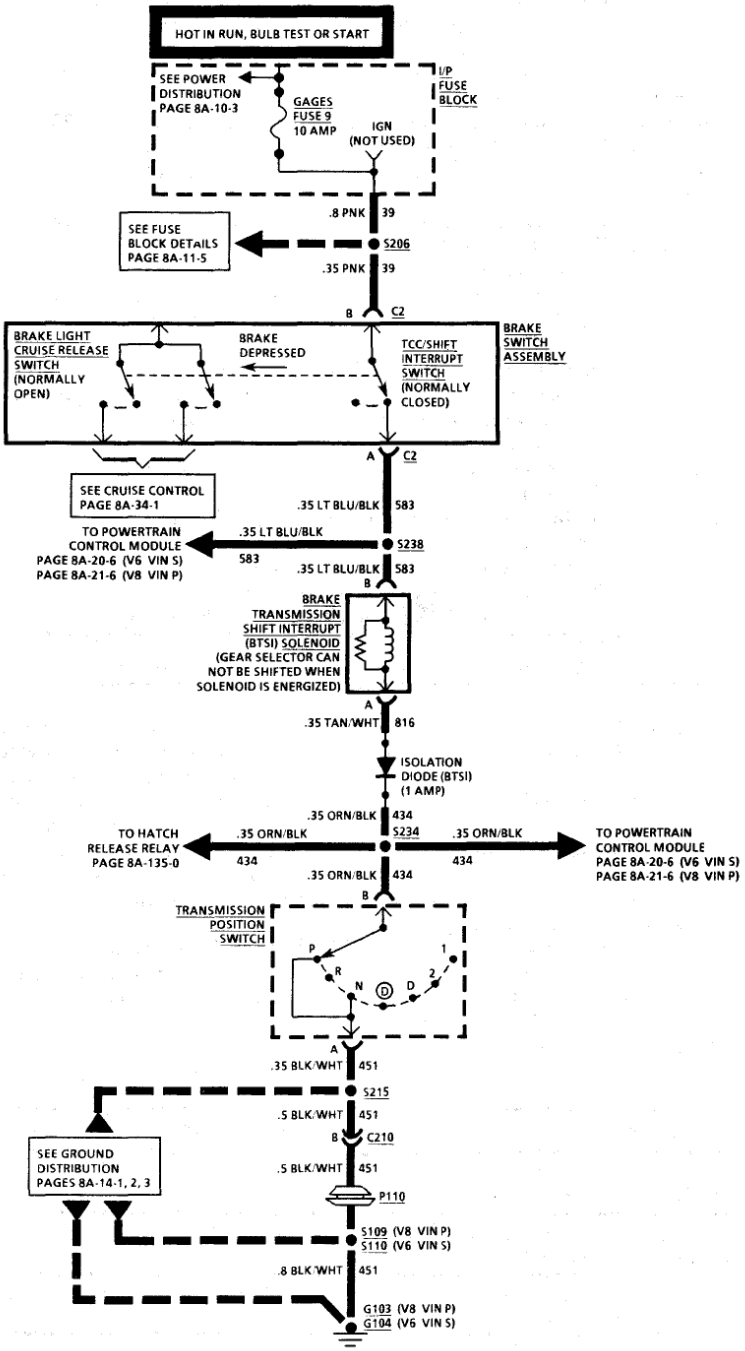
When the Hatch Release Relay is energized and the relay contacts close, battery voltage is applied to the Hatch Release Actuator. The Hatch Release Actuator contains an Electronic Circuit Breaker (ECB). ECB resistance increases if motor is overloaded. Resistance returns to normal after voltage is removed from actuator terminals.

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BRAKE TRANSMISSION SHIFT INTERLOCK
(AUTOMATIC TRANSMISSION)



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COMPONENT	LOCATION	201-PG	FIG.	CONN
Brake Switch Assembly	Mounted in lower hole of brake pedal bracket (2 conn with Automatic), (1 conn with Manual) same switch for both	0	1	
Brake Transmission Shift Interrupt (BTSI) Solenoid	In console, under PRNDL Display	22	42	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Isolation Diode (BTSI)	Sealed in Harn, approx 6 cm from DERM breakout			
Transmission Position Switch	Under console, on base of shift control lever	22	42	202-28
C210 (4 cavities)	Under RH side of I/P, behind RH kick panel	20	37	202-19
G103 (LT1)	RH side of Engine Block, just above Starter (1 ring, 1 wire)	40	72	
G104 (L32)	2 studs, 2 rings on each, interchangeable. Top RH side of Engine, 1 stud in head, 1 stud in Intake Manifold	29	56	
P110	Right side in dash panel, Engine to Passenger Compartment	19	35	
S109 (LT1)	Engine Harn, approx 4 cm from main branch and PCM breakout			
S110 (L32)	Engine Harn, approx 7 cm from RH Oxygen Sensor breakout			
S206	I/P Harn, approx 18 cm from Convenience Center breakout			
S215	I/P Harn, approx 30 cm before DLC breakout			
S234 (Automatic)	I/P Harn, approx 4 cm from G201 breakout			
S238 (Automatic)	I/P Harn, approx 7 cm from Center Console breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. If Gages Fuse #9 is open, refer to Chart #3 in this section.
2. Check Brake Switch Assembly for proper adjustment.
3. If Transmission Shifter does not shift out of "PARK," check linkage and cable for binding.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedures.

SYMPTOM	PROCEDURE	PAGE NUMBER
Transmission does not shift out of "PARK" with brake pedal depressed and Ignition Switch in "RUN."	Chart #1	8A-138-2
Transmission shifts out of "PARK" with Ignition Switch in "RUN" and brake pedal not depressed.	Chart #2	8A-138-2
Gages Fuse #9 repeatedly blows whenever Ignition is "ON" or when attempting to depress the brake pedal.	Chart #3	8A-138-3

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BRAKE TRANSMISSION SHIFT INTERLOCK
(AUTOMATIC TRANSMISSION)

CHART #1
TRANSMISSION DOES NOT SHIFT OUT OF "PARK" WITH BRAKE PEDAL DEPRESSED AND IGNITION SWITCH IN "RUN"

- TURN IGNITION SWITCH TO "RUN."
- DISCONNECT BRAKE SWITCH ASSEMBLY CONN C2.
- WITH A TEST LIGHT TO GROUND, BACKPROBE BRAKE TRANSMISSION SHIFT INTERRUPT SOLENOID TERM "B". IS TEST LIGHT "ON"?

NO

- RECONNECT BRAKE SWITCH ASSEMBLY CONN C2.
- DEPRESS BRAKE PEDAL.
- WITH A TEST LIGHT TO GROUND, BACKPROBE BRAKE TRANSMISSION SHIFT INTERRUPT SOLENOID TERM "B". IS TEST LIGHT "ON"?

YES

REPLACE BRAKE SWITCH ASSEMBLY.

NO

REPLACE SHIFT INTERRUPT SOLENOID.

YES

REPAIR SHORT TO B+ IN CKT 583.

CHART #2
TRANSMISSION SHIFTS OUT OF "PARK" WITH IGNITION SWITCH IN "RUN" AND BRAKE PEDAL NOT DEPRESSED

- TURN IGNITION SWITCH TO "RUN."
- TRANSMISSION IN "PARK" POSITION.
- DISCONNECT BRAKE TRANSMISSION SHIFT INTERRUPT SOLENOID CONN.
- CONNECT A TEST LIGHT FROM BRAKE TRANSMISSION INTERRUPT SOLENOID CONN TERM "B" TO GROUND. IS TEST LIGHT "ON"?

NO

- WITH A TEST LIGHT TO GROUND, BACKPROBE BRAKE SWITCH ASSEMBLY CONN C2 TERM "A". IS TEST LIGHT "ON"?

NO

- WITH A TEST LIGHT TO GROUND, BACKPROBE BRAKE SWITCH ASSEMBLY CONN C2 TERM "B". IS TEST LIGHT "ON"?

NO

- CHECK FOR OPEN IN CKT 39 BETWEEN FUSE BLOCK AND BRAKE SWITCH ASSEMBLY. IF FUSE IS OPEN, GO TO CHART #3.

YES

- CHECK FOR POOR CONNECTIONS AT BRAKE SWITCH ASSEMBLY. IF OK, REPLACE BRAKE SWITCH ASSEMBLY.

YES

REPAIR OPEN IN CKT 583 BETWEEN BRAKE SWITCH ASSEMBLY AND INTERRUPT SOLENOID.

YES

- CONNECT A TEST LIGHT BETWEEN BRAKE TRANSMISSION SHIFT INTERRUPT SOLENOID CONN TERMINALS "A" AND "B". IS TEST LIGHT "ON"?

YES

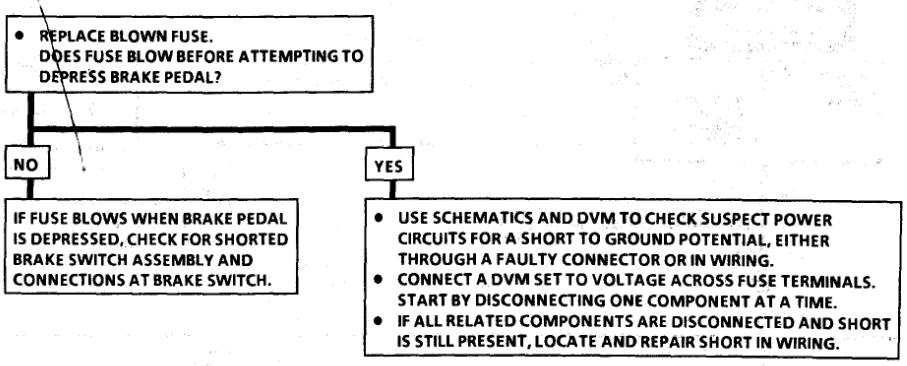
- CHECK FOR POOR CONNECTIONS AT BRAKE TRANSMISSION SHIFT INTERRUPT SOLENOID. IF OK, REPLACE BTSI SOLENOID.

NO

- IF HATCH RELEASE SYSTEM OPERATES PROPERLY, REPAIR OPEN IN CKT 434 BETWEEN INTERRUPT SOLENOID AND S234.
- IF HATCH RELEASE SYSTEM DOES NOT OPERATE, CHECK FOR AN OPEN IN GROUND CKT 451 UP TO AND INCLUDING TRANSMISSION POSITION SWITCH.
- ALSO CHECK FOR AN OPEN IN CKT 434 BETWEEN TRANSMISSION POSITION SWITCH AND S234.

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CHART #3
GAGES FUSE #9 REPEATEDLY BLOWS WHENEVER IGNITION IS "ON" OR WHEN ATTEMPTING TO DEPRESS THE BRAKE PEDAL



CIRCUIT OPERATION

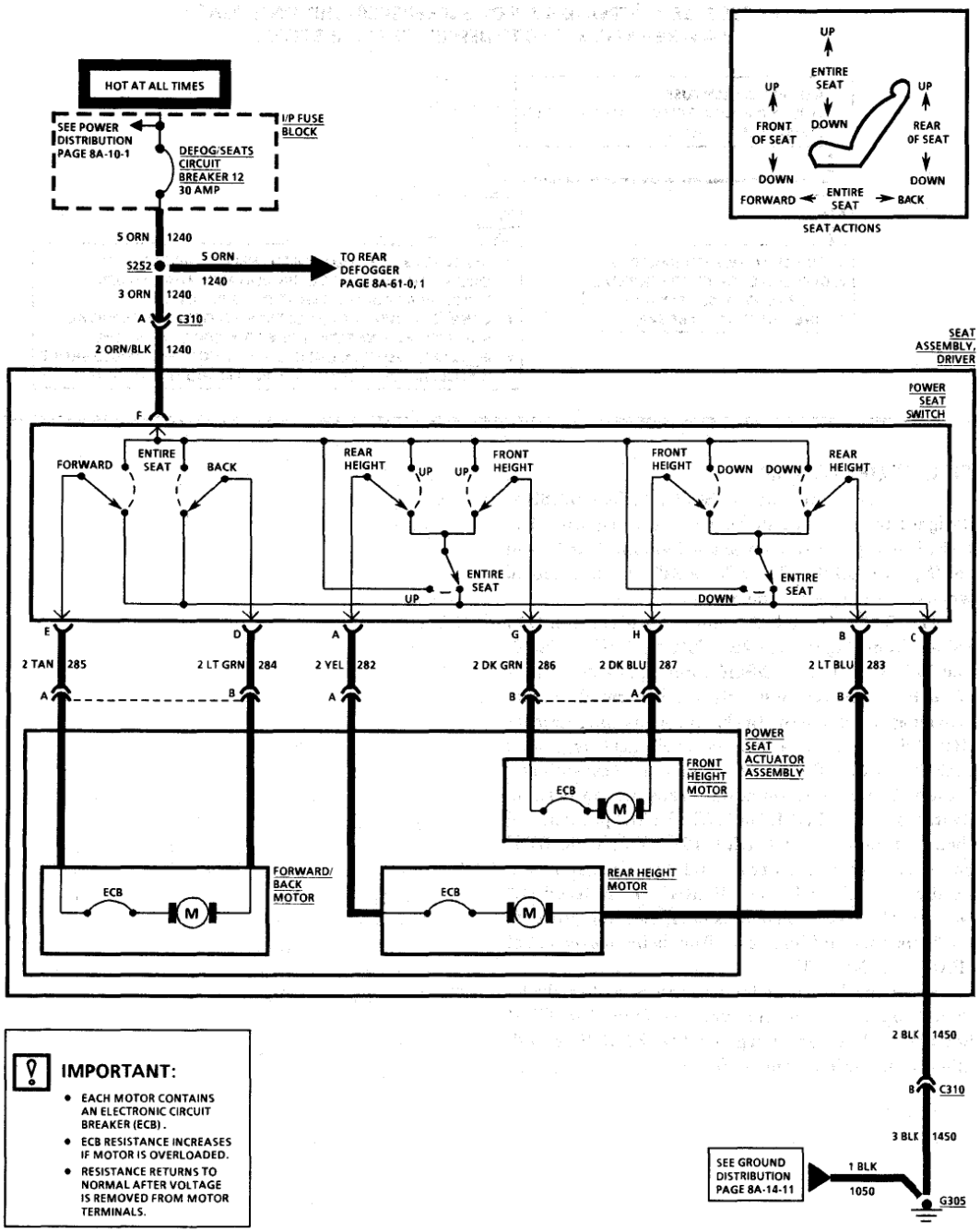
The Brake Transmission Shift Interlock (BTSI) is designed to interrupt shifting when energized. The BTSI is energized whenever the Ignition Switch is in "RUN," "BULB TEST" or "START" and is disabled when the brake pedal is depressed.

The Brake Switch Assembly receives Ignition voltage from Gages Fuse #9 in "RUN," "BULB TEST" and "START." The TCC/Shift Interrupt Switch is part of the Brake Switch Assembly and is normally closed, providing voltage to the Brake Transmission Interrupt (BTSI) Solenoid. The BTSI Solenoid gets its ground path through CKT 434 then through the Transmission Position Switch only when the Transmission Position Switch is in the "PARK" or "NEUTRAL" position and then to ground through CKT 451. When the BTSI Solenoid receives voltage and the Transmission Position Switch is in the "PARK" or "NEUTRAL" position, the BTSI Solenoid is energized and prevents the Transmission Shift Lever from being moved out of "PARK" or "NEUTRAL."

When the brake pedal is depressed, the Brake Switch opens, removing voltage from the BTSI Solenoid. This de-energizes the BTSI Solenoid, allowing operation of the Shift Lever.

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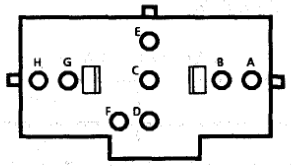
POWER SEAT: DRIVER 6-WAY (AC3)



IMPORTANT:

- EACH MOTOR CONTAINS AN ELECTRONIC CIRCUIT BREAKER (ECB).
- ECB RESISTANCE INCREASES IF MOTOR IS OVERLOADED.
- RESISTANCE RETURNS TO NORMAL AFTER VOLTAGE IS REMOVED FROM MOTOR TERMINALS.

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8-WAY F PIN GRIP SERIES
BLK

POWER SEAT SWITCH (AC3)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Forward/Back Motor	Under Driver's Seat	41	76	
Front Height Motor	Under Driver's Seat	41	76	
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Power Seat Actuator Assembly	Under Driver's Seat	41	76	
Power Seat Switch	On left side of Driver's Seat	41	76	202-24
Rear Height Motor	Under Driver's Seat	41	76	
C310 (2 cavities)	Between rear mounting bolt of Driver Seat near #3 Rail	6	11	
G305	Bolted to Floor Pan Bar #2, under Driver's Seat (2 rings, 2 wires, with AC3/AQ9), (1 ring, 1 wire without AC3/AQ9)	6	11	
S252	I/P Harn, approx 17 cm back from HVAC Controls (Pont) or RR Defogger Switch/Timer (Chevy)			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Check Defog/Seats Circuit Breaker #12 by operating the Rear Defogger.
2. Check that ground G305 is clean and tight.
3. Check for poor connections at Power Seat Switch Connector or Motor Assembly connections.
4. If Defog/Seats Circuit Breaker opens whenever the Power Seat Switch is operated, check for short to ground through CKTs 282, 283, 284, 285, 286 and 287. Disconnecting motors one at a time can be helpful.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

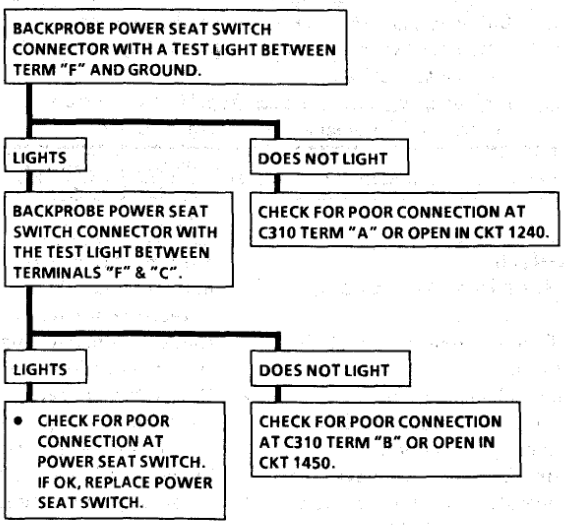
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POWER SEAT: DRIVER 6-WAY (AC3)

SYMPTOM TABLE

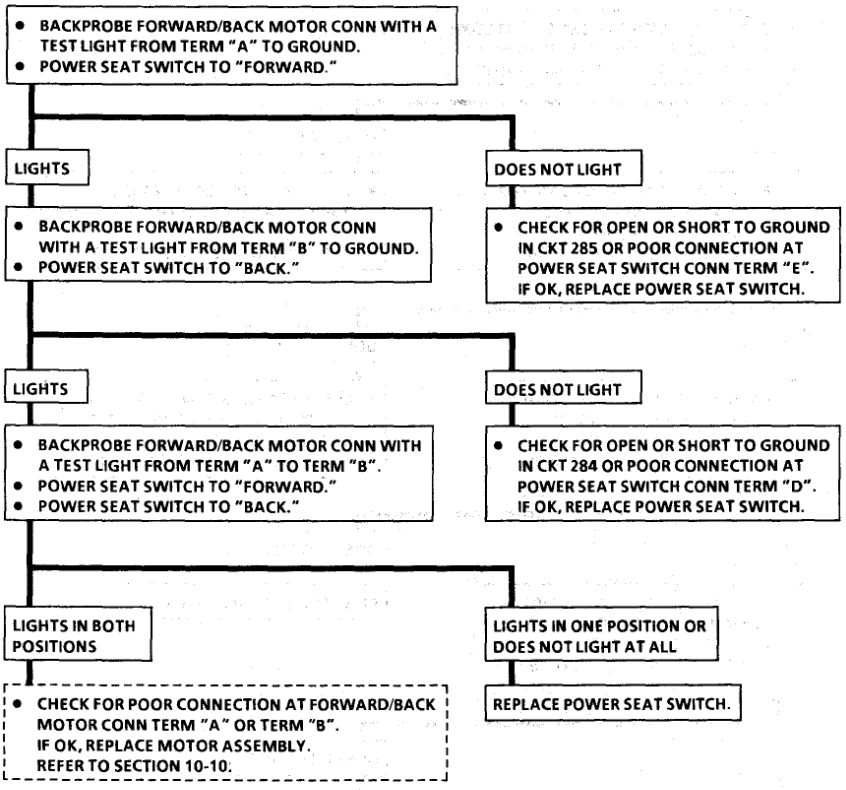
SYMPTOM	PROCEDURE	PAGE NUMBER
All Power Seat functions inoperative.	Chart #1	8A-140-2
Entire seat will not go "FORWARD" or "BACK," "UP" or "DOWN" functions operate normally.	Chart #2	8A-140-3
Front Height will not go "UP" or "DOWN," "FORWARD" or "BACK" functions operate normally.	Chart #3	8A-140-4
Rear Height will not go "UP" or "DOWN," "FORWARD" or "BACK" functions operate normally.	Chart #4	8A-140-5
Entire seat will not go "UP" or "DOWN," "FORWARD" or "BACK" functions operate normally.	Chart #5	8A-140-6

CHART #1
ALL POWER SEAT FUNCTIONS INOPERATIVE



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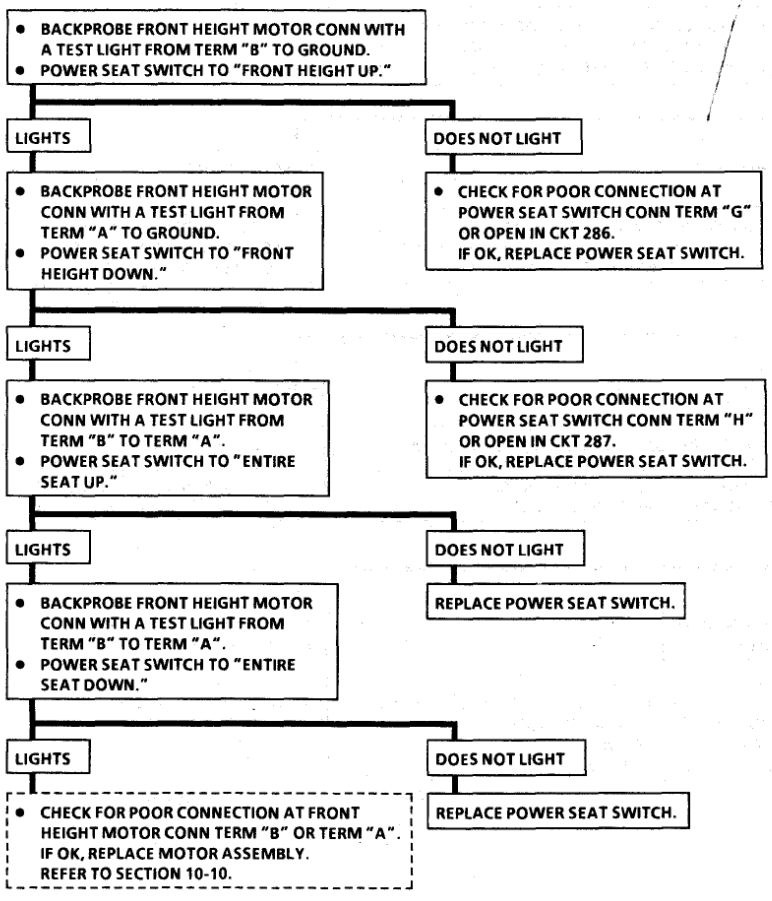
CHART #2
ENTIRE SEAT WILL NOT GO "FORWARD" OR "BACK," "UP" OR "DOWN" FUNCTIONS OPERATE NORMALLY



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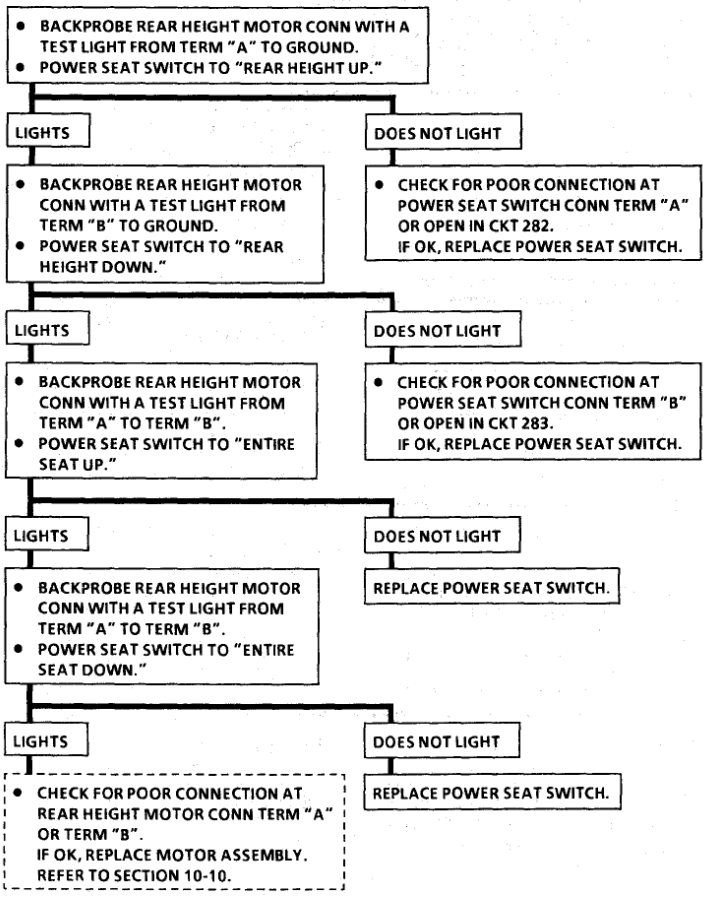
POWER SEAT: DRIVER 6-WAY (AC3)

CHART #3
FRONT HEIGHT WILL NOT GO "UP" OR "DOWN,"
"FORWARD" OR "BACK" FUNCTIONS OPERATE NORMALLY



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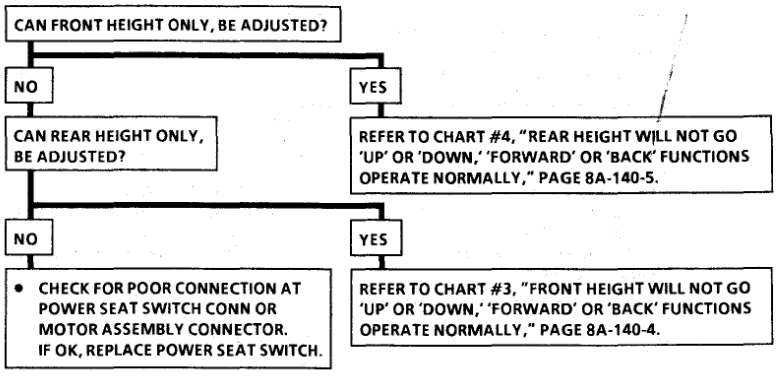
CHART #4
REAR HEIGHT WILL NOT GO "UP" OR "DOWN," "FORWARD" OR "BACK" FUNCTIONS OPERATE NORMALLY



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POWER SEAT: DRIVER 6-WAY (AC3)

CHART #5
ENTIRE SEAT WILL NOT GO "UP" OR "DOWN," "FORWARD" OR "BACK" FUNCTIONS OPERATE NORMALLY



CIRCUIT OPERATION

There are three reversible motors that operate the Power Seats. The front and back height of the seat are operated by different motors. They can be raised or lowered independently of each other. When the Entire Seat Switch is pushed to the "UP" or "DOWN" position, both motors run to move the front and back of the seat at the same time.

The Forward/Back Motor is operated by the Entire Seat Switch. When it is held in the "FORWARD" position, battery voltage is applied through the switch contacts and CKT 285 to the Forward/Back Motor. The motor is grounded through CKT 284 and the contact of the Entire Seat Switch to ground G305. The motor runs to drive the seat forward until the switch is released.

In the "BACK" position, CKT 284 receives battery voltage and CKT 285 is grounded. This reversed polarity causes the motor to run in the opposite direction and drive the seat backward.

The Front and Rear Motors work in a similar way when the Front or Rear Height Switch is operated.

To raise the entire seat, the Entire Seat Switch is held in the "UP" position. This applies battery voltage through CKT 282 and CKT 286 to the Rear Seat and Front Seat Motors. The motors are grounded through CKT 283 and CKT 287 and the Power Seat Switch to G305. Both motors run to drive the entire seat up. A similar action occurs to move the entire seat down.

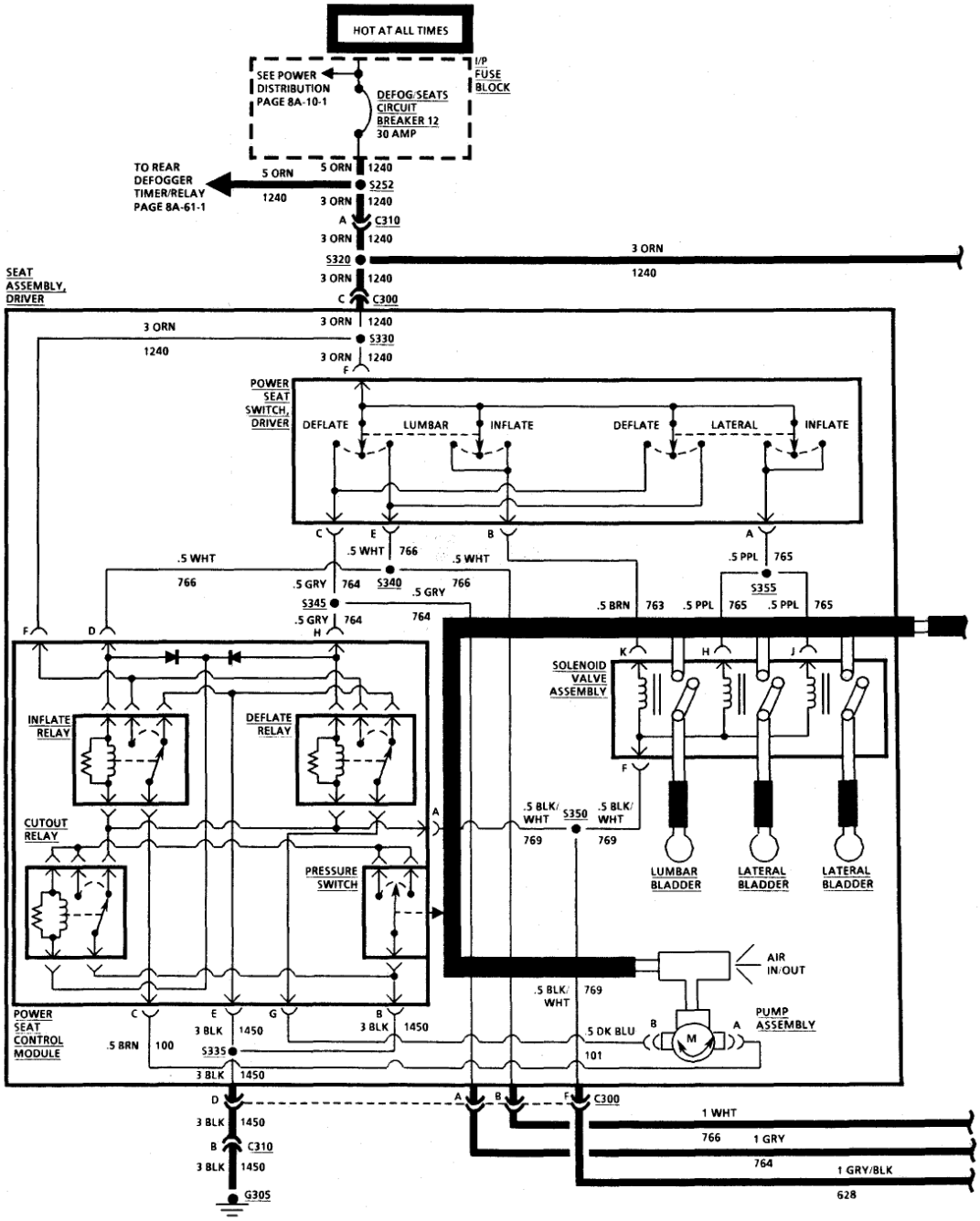
Each Motor contains an Electronic Circuit Breaker (ECB). ECB resistance increases if motor is overloaded. Resistance returns to normal after voltage is removed from motor terminals.

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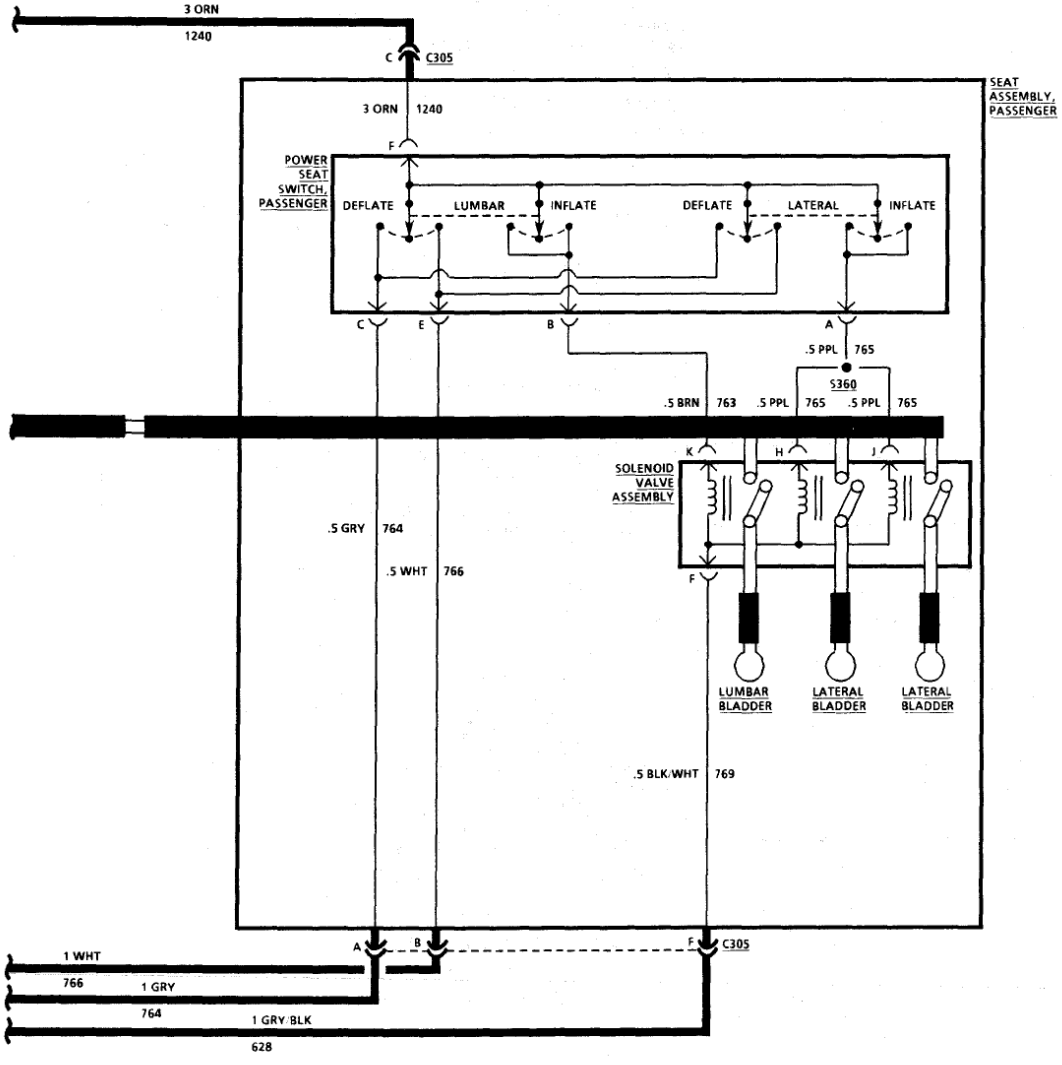
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POWER SEATS: ULTIMA (AQ9)

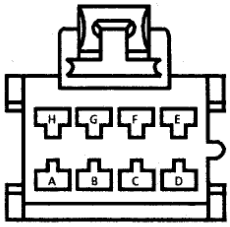


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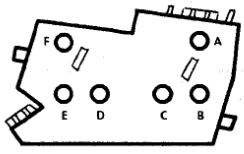
POWER SEATS: ULTIMA (AQ9)



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8-WAY F METRI-PACK 280 SERIES
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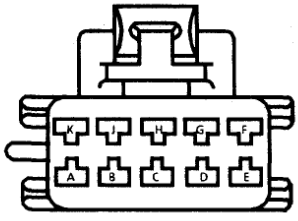
POWER SEAT CONTROL MODULE



12033944

6-WAY F PIN GRIP SERIES
BLK

POWER SEAT SWITCH, DRIVER
POWER SEAT SWITCH, PASSENGER



12064769

10-WAY F METRI-PACK 150 SERIES
NAT

SOLENOID VALVE ASSEMBLY

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COMPONENT	LOCATION	201-PG	FIG.	CONN
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Power Seat Control Module	Under Driver's Seat	47	86	202-24
Power Seat Switch, Driver	On left side of Driver's Seat	47	86	202-24
Power Seat Switch, Passenger	On right side of Passenger Seat	47	86	202-24
Pump Assembly	Under Driver's Seat	47	86	
Solenoid Valve Assembly	Under Driver's Seat	46, 47	85, 86	202-27
C300 (6 cavities)	Under Driver Seat Assembly	47	86	202-19
C305 (6 cavities)	Under Passenger Seat Assembly	46	85	202-19
C310 (2 cavities)	Between rear mounting bolt of Driver Seat near #3 Rail	6	11	
G305	Bolted to Floor Pan Bar #2, under Driver's Seat (2 rings, 2 wires, with AC3/AQ9), (1 ring, 1 wire without AC3/AQ9)	6	11	
S252	I/P Harn, approx 17 cm back from HVAC Controls (Pont) or RR Defogger Switch/Timer (Chevy)			
S320	Seat Jumper Harn, near rosebud under Driver Seat			
S330	Driver Seat Harn, approx 22 cm from Power Seat Switch Conn			
S335	Driver Seat Harn, approx 12 cm from Power Seat Control Module Conn			
S340	Driver Seat Harn, approx 19 cm from Power Seat Control Module Conn			
S345	Driver Seat Harn, approx 18 cm from C300			
S350	Driver Seat Harn, approx 11 cm from C300			
S355	Driver Seat Harn, approx 20 cm from Solenoid Valve Assembly Conn			
S360	Passenger Seat Harn, approx 22 cm from Power Seat Switch Conn			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. If both Passenger and Driver Seat Functions (Lumbar and Lateral) are inoperative, check DEFOG/SEATS Circuit Breaker 12 for open.
   - Check that G305 is clean and tight.
   - Check for poor connections at C300.
   - Check for poor connections at C310 terminals "A" and "B".
2. If Passenger Seat is inoperative and Driver's Seat operates normally, check for poor connections at C300 and C305, and for open in Seat Jumper Harness.

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

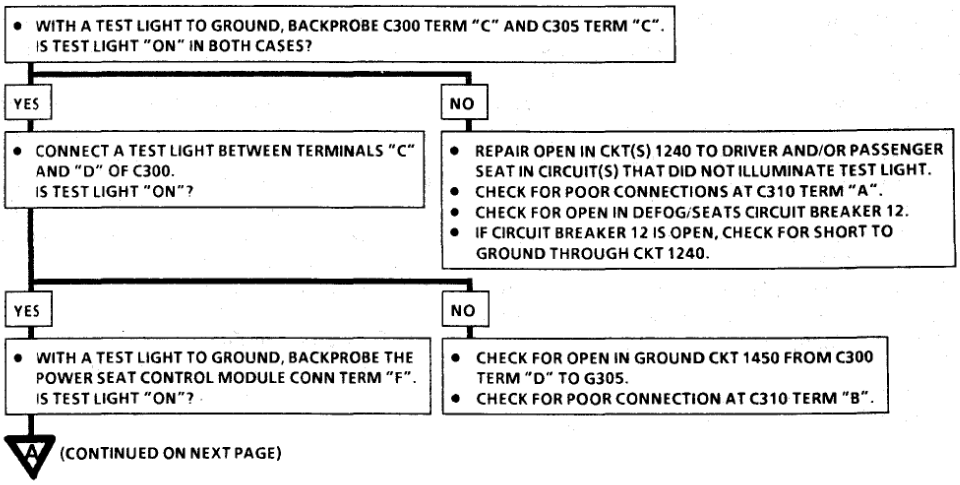
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POWER SEATS: ULTIMA (AQ9)

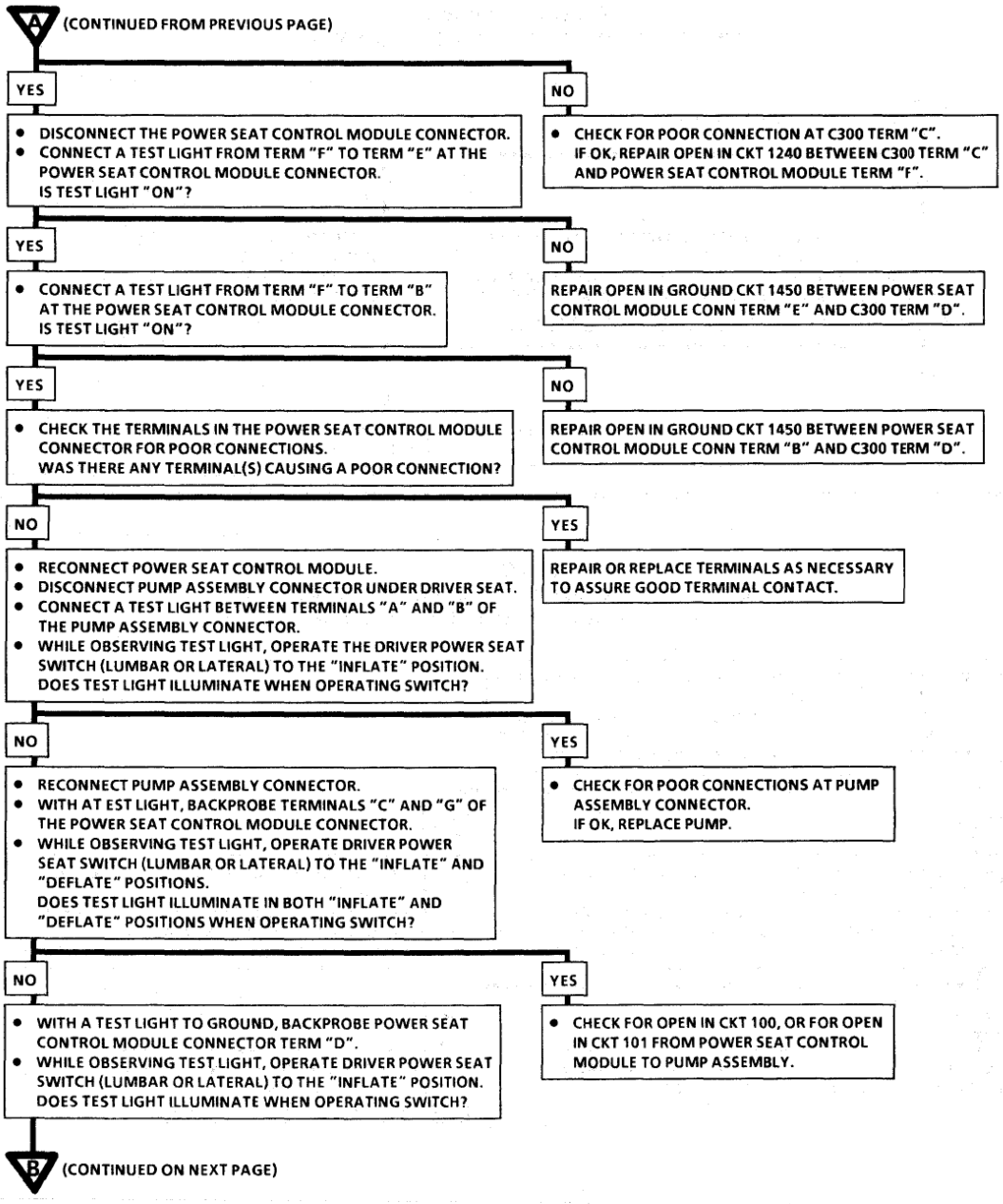
SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Important: • Charts #1 through #5 to be used for diagnosis of both Driver and/or Passenger Seat(s).		
Both seats inoperative and pump does not run.	Chart #1	8A-141-4
Lumbar bladder inoperative, but lateral bladders operate normally within the same seat.	Chart #2	8A-141-6
Lateral bladders inoperative, but lumbar bladder operates normally within the same seat.	Chart #3	8A-141-7
Bladder(s) inflate but do not deflate.	Chart #4	8A-141-7
Pump Assembly operates, but bladder(s) do not inflate.	Chart #5	8A-141-8
Passenger Power Seat inoperative, Driver Power Seat operates normally.	Chart #6	8A-141-9
Driver Power Seat inoperative, Passenger Power Seat operates normally.	Chart #7	8A-141-10
One lateral bladder inoperative, and one lateral bladder operates normally within the same seat.	Check for: – Pinched or punctured bladder tubing. – Punctured bladder. – Stuck Solenoid Valve within Solenoid Valve Assembly. – Open in CKT 765 from S355 or S360 to Solenoid Valve Assembly terminal "H" or terminal "J".	

CHART #1
BOTH SEATS INOPERATIVE AND PUMP DOES NOT RUN



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POWER SEATS: ULTIMA (AQ9)

CHART #1 (continued)
BOTH SEATS INOPERATIVE AND PUMP DOES NOT RUN

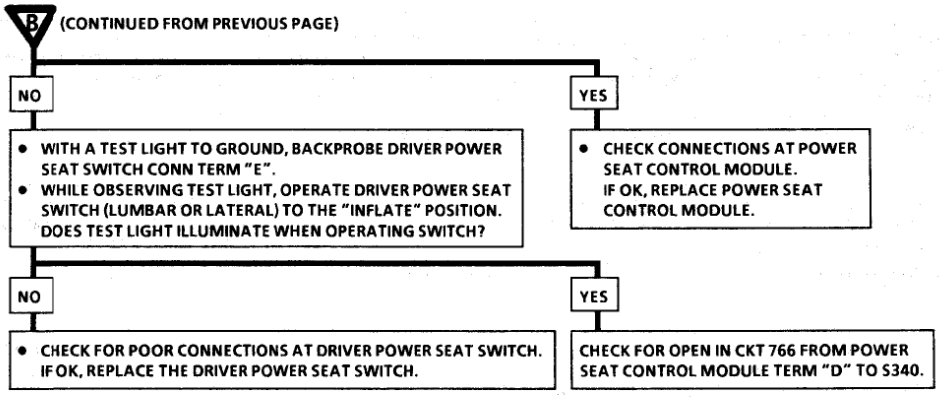
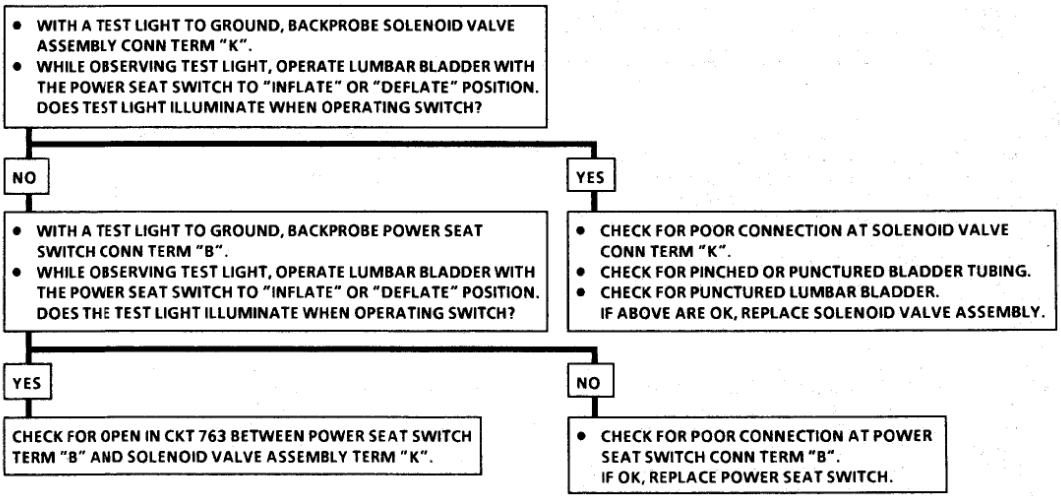


CHART #2
LUMBAR BLADDER INOPERATIVE, BUT LATERAL BLADDERS OPERATE NORMALLY WITHIN THE SAME SEAT



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CHART #3
LATERAL BLADDERS INOPERATIVE, BUT LUMBAR BLADDER OPERATES NORMALLY WITHIN THE SAME SEAT

- WITH A TEST LIGHT TO GROUND, BACKPROBE POWER SEAT SWITCH CONN TERM "A".
- WHILE OBSERVING TEST LIGHT, OPERATE LATERAL BLADDER USING THE POWER SEAT SWITCH TO THE "INFLATE" OR "DEFLATE" POSITION.
  DOES THE TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE SOLENOID VALVE CONN TERM "H".
- WHILE OBSERVING TEST LIGHT, OPERATE LATERAL BLADDER USING THE POWER SEAT SWITCH TO THE "INFLATE" OR "DEFLATE" POSITION.
  DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

YES

- CHECK FOR POOR CONNECTION AT SOLENOID VALVE CONN TERMINALS "H" AND "J".
- CHECK FOR PINCHED OR PUNCTURED BLADDER TUBING.
  IF ABOVE ARE OK, REPLACE SOLENOID VALVE.

NO

- CHECK FOR OPEN IN CKT 765 BETWEEN POWER SEAT SWITCH CONN TERM "A" AND SOLENOID VALVE CONN TERMINALS "H" AND "J".

NO

- CHECK FOR POOR CONNECTION AT POWER SEAT SWITCH CONN TERM "A".
  IF OK, REPLACE POWER SEAT SWITCH.

CHART #4
BLADDER(S) INFLATE BUT DO NOT DEFLATE

- WITH A TEST LIGHT TO GROUND, BACKPROBE POWER SEAT SWITCH CONN TERM "C".
- WHILE OBSERVING TEST LIGHT, OPERATE POWER SEAT SWITCH TO THE "DEFLATE" POSITION.
  DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE POWER SEAT CONTROL MODULE CONN TERM "H".
- WHILE OBSERVING TEST LIGHT, OPERATE POWER SEAT SWITCH TO THE "DEFLATE" POSITION.
  DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

YES

- CHECK FOR POOR CONNECTION AT POWER SEAT CONTROL MODULE TERM "H".
  IF OK, REPLACE POWER SEAT CONTROL MODULE.

NO

(DRIVER SEAT):
- REPAIR OPEN IN CKT 764 BETWEEN DRIVER POWER SEAT SWITCH TERM "C" AND POWER SEAT CONTROL MODULE TERM "H".

(PASSENGER SEAT):
- CHECK FOR OPEN IN CKT 764 FROM PASSENGER POWER SEAT SWITCH TO C305 TERM "A".
- CHECK FOR OPEN IN CKT 764 IN SEAT JUMPER HARNESS FROM C305 TERM "A" TO C300 TERM "A".
- CHECK FOR OPEN IN CKT 764 FROM C300 TERM "A" TO S345 TO POWER SEAT CONTROL MODULE TERM "H".

NO

- CHECK FOR POOR CONNECTION AT POWER SEAT SWITCH TERM "C".
  IF OK, REPLACE POWER SEAT SWITCH.

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POWER SEATS: ULTIMA (AQ9)

CHART #5
PUMP ASSEMBLY OPERATES, BUT BLADDER(S) DO NOT INFLATE

- (LATERAL BLADDERS): WITH A TEST LIGHT TO GROUND, BACKPROBE POWER SEAT SWITCH CONN TERM "A".
  (LUMBAR BLADDER): WITH A TEST LIGHT TO GROUND, BACKPROBE POWER SEAT SWITCH CONN TERM "B".
- PRESS POWER SEAT SWITCH TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT.
  DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

NO
- CHECK FOR POOR CONNECTIONS AT POWER SEAT SWITCH. IF OK, REPLACE POWER SEAT SWITCH.

YES
- (LATERAL BLADDERS): WITH A TEST LIGHT TO GROUND, BACKPROBE SOLENOID VALVE CONN TERM "H" AND TERM "J".
  (LUMBAR BLADDER): WITH A TEST LIGHT TO GROUND, BACKPROBE SOLENOID VALVE CONN TERM "K".
- PRESS POWER SEAT SWITCH TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT.
  DOES TEST LIGHT ILLUMINATE ON ALL CIRCUITS WHEN OPERATING SWITCH?

NO
- CHECK FOR OPEN BETWEEN POWER SEAT SWITCH AND SOLENOID VALVE ASSEMBLY IN CKTS 763 AND/OR 765.

YES
- (LATERAL BLADDERS): WITH A TEST LIGHT TO GROUND, BACKPROBE SOLENOID VALVE CONN TERM "F".
  (LUMBAR BLADDER): WITH A TEST LIGHT TO GROUND, BACKPROBE SOLENOID VALVE CONN TERM "F".
- PRESS POWER SEAT SWITCH TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT.
  DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

NO
- CHECK FOR POOR CONNECTIONS AT SOLENOID VALVE ASSEMBLY.
  IF OK, REPLACE SOLENOID VALVE ASSEMBLY.

YES
- DISCONNECT POWER SEAT CONTROL MODULE.
- USING A TEST LIGHT, PROBE POWER SEAT CONTROL MODULE CONN TERM "A" TO GROUND.
- PRESS POWER SEAT SWITCH TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT.
  DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

NO
- (DRIVER SEAT): REPAIR OPEN IN CKT 769 BETWEEN SOLENOID VALVE AND POWER SEAT CONTROL MODULE.
  (PASSENGER SEAT): CHECK FOR OPEN IN CKT 769 FROM SOLENOID VALVE TO C305 TERM "F".
- CHECK FOR OPEN IN CKT 628 FROM C305 TERM "F" TO C300 TERM "F".
- CHECK FOR OPEN IN CKT 769 BETWEEN C300 TERM "F" AND POWER SEAT CONTROL MODULE TERM "A", INCLUDING S350.

YES
- RECONNECT POWER SEAT CONTROL MODULE.
- DISCONNECT SOLENOID VALVE ASSEMBLY CONNECTOR.
- CONNECT A TEST LIGHT BETWEEN SOLENOID VALVE CONNECTOR TERMINALS "K" AND "F".
- USING LUMBAR CONTROL, PRESS POWER SEAT SWITCH TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT.
  DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

NO
- CHECK FOR POOR CONNECTIONS AT POWER SEAT CONTROL MODULE CONN TERM "A".
  IF OK, REPLACE POWER SEAT CONTROL MODULE.

YES
- CHECK FOR POOR CONNECTIONS AT SOLENOID VALVE.
- CHECK FOR PINCHED OR PUNCTURED BLADDER TUBING WITHIN INDIVIDUAL SEATS; ALSO CHECK BLADDER TUBING IN SEAT JUMPER HARNESS.
- CHECK FOR PUNCTURED BLADDER.
- IF ABOVE CHECKS ARE OK, THE SOLENOID VALVE ASSEMBLY MAY BE STUCK OR FAULTY. REPLACE SOLENOID VALVE ASSEMBLY.

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CHART #6

PASSENGER POWER SEAT INOPERATIVE, DRIVER POWER SEAT OPERATES NORMALLY

- WITH A TEST LIGHT TO GROUND, BACKPROBE C305 TERM "C". IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE PASSENGER POWER SEAT SWITCH CONN TERM "F". IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE C300 TERM "B".
- PRESS PASSENGER POWER SEAT SWITCH (LUMBAR OR LATERAL) TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT. DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

NO

- WITH A TEST LIGHT TO GROUND, BACKPROBE C305 TERM "B".
- PRESS PASSENGER POWER SEAT SWITCH (LUMBAR OR LATERAL) TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT. DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

NO

- WITH A TEST LIGHT TO GROUND, BACKPROBE PASSENGER POWER SEAT SWITCH CONN TERM "E".
- PRESS THE PASSENGER POWER SEAT SWITCH (LUMBAR OR LATERAL) TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT. DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

NO

- CHECK FOR POOR CONNECTIONS AT PASSENGER POWER SEAT SWITCH CONN TERM "E". IF OK, REPLACE PASSENGER POWER SEAT SWITCH.

YES

- CHECK FOR POOR CONNECTION AT C305 TERM "B". IF OK, REPAIR OPEN IN CKT 766 BETWEEN C305 AND PASSENGER POWER SEAT SWITCH.

YES

CHECK FOR OPEN IN SEAT JUMPER HARNESS CKT 766 BETWEEN C305 AND C300.

YES

- CHECK FOR POOR CONNECTION AT C300 TERM "B". IF OK, REPAIR OPEN IN CKT 766 BETWEEN C300 AND S340.

NO

- CHECK FOR POOR CONNECTION AT C305 TERM "C". IF OK, REPAIR OPEN IN CKT 1240 BETWEEN C305 AND PASSENGER POWER SEAT SWITCH.

NO

REPAIR OPEN IN CKT 1240 IN SEAT JUMPER HARNESS FROM C305 TERM "C" TO S320.

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POWER SEATS: ULTIMA (AQ9)

CHART #7
DRIVER POWER SEAT INOPERATIVE, PASSENGER POWER SEAT OPERATES NORMALLY

- WITH A TEST LIGHT TO GROUND, BACKPROBE DRIVER POWER SEAT SWITCH CONN TERM "F". IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT TO GROUND, BACKPROBE DRIVER POWER SEAT SWITCH CONN TERM "E".
- PRESS DRIVER POWER SEAT SWITCH (LUMBAR OR LATERAL) TO "INFLATE" POSITION WHILE OBSERVING TEST LIGHT. DOES TEST LIGHT ILLUMINATE WHEN OPERATING SWITCH?

YES

REPAIR OPEN IN CKT 766 BETWEEN DRIVER POWER SEAT SWITCH TERM "E" AND S340.

NO

- CHECK FOR POOR CONNECTIONS AT DRIVER POWER SEAT SWITCH CONN TERMINALS "F" AND "E". IF OK, REPLACE DRIVER POWER SEAT SWITCH.

NO

CHECK FOR OPEN IN CKT 1240 BETWEEN DRIVER POWER SEAT SWITCH TERM "F" AND S330.

CIRCUIT OPERATION

Each seat incorporates a power inflate/power deflate pneumatic system used for altering the contour of the seat. This is accomplished by inflating and deflating air bladders within each seat.

Both Power Seats utilize the same Power Seat Control Module and Pump Assembly for operation. The Power Seat Control Module and Pump Assembly are mounted under the Driver Seat. A Seat Jumper Harness from the Driver Seat connects the circuitry and bladder tubing to the Passenger Seat.

Voltage is supplied at all times to both Power Seat Switches through CKT 1240 from the DEFOG/SEATS Circuit Breaker 12. When lateral/lumbar support is requested, the Power Seat Switch applies voltage to the selected solenoid at the Solenoid Valve Assembly.

The Solenoid Valve Assembly is grounded through the Power Seat Control Module. At the same time, the Power Seat Switch applies battery voltage to the selected inflate or deflate relay within the Power Seat Control Module. The Power Seat Control Module applies power to the Pump Assembly in either the forward direction (inflate) or the reverse direction (deflate).

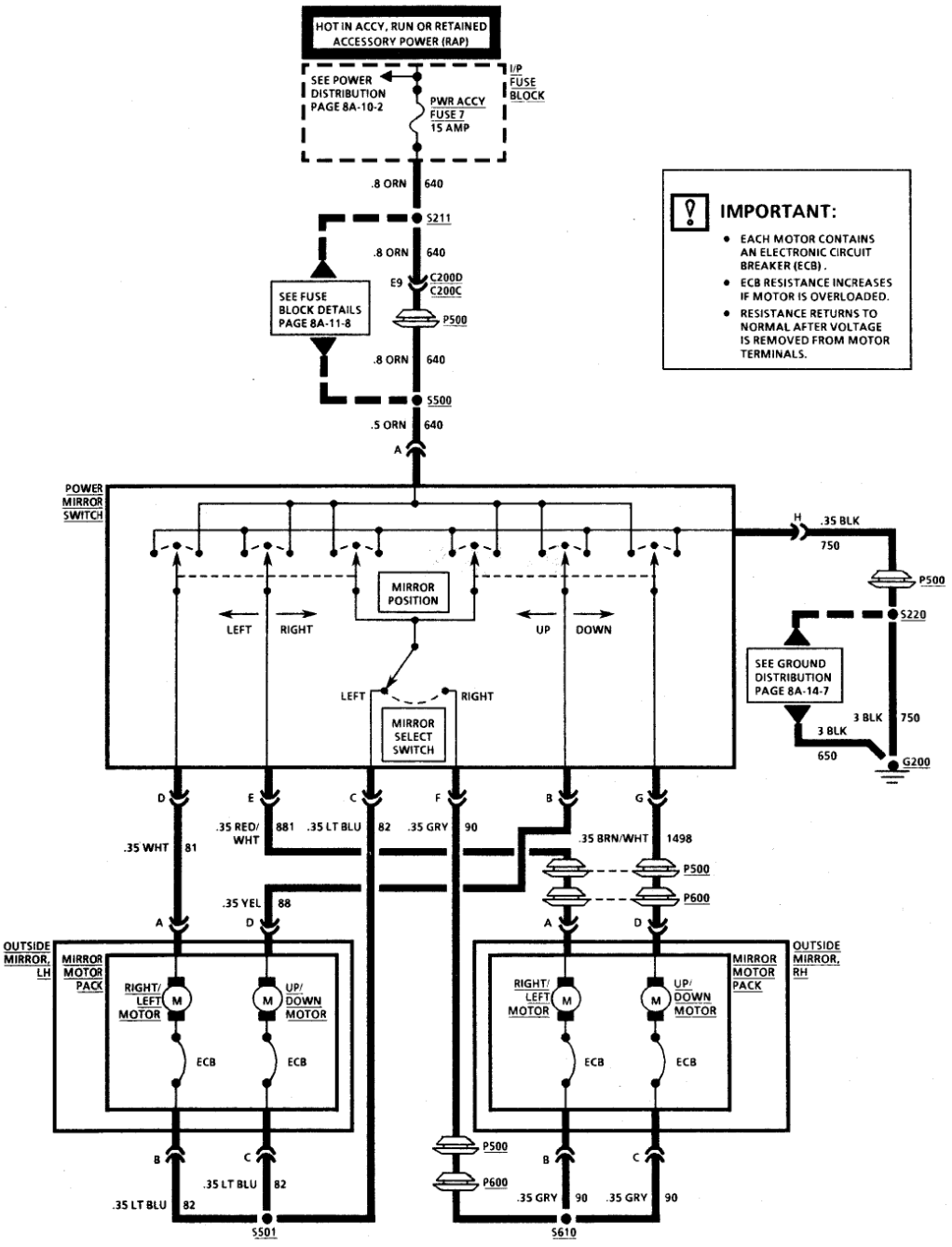
The ground to the Solenoid Valve is electrically opened when a pressure switch inside the Power Seat Control Module senses a bladder full/empty condition. In response to these conditions the Power Seat Control Module shuts off the pump by opening the ground to the Inflate or Deflate Relay until the Power Seat Switch is released.

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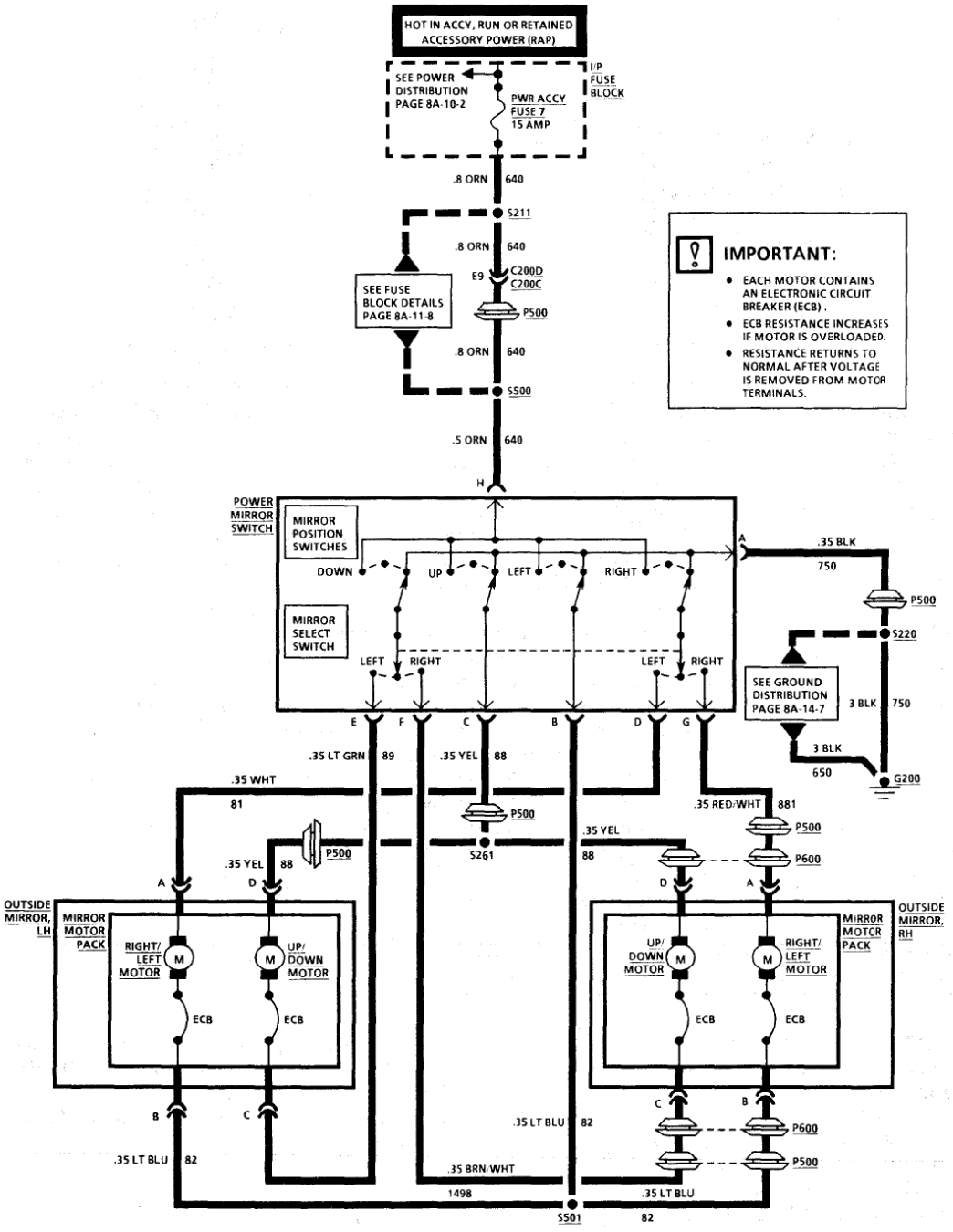
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POWER MIRRORS (DG7) (CHEVY)



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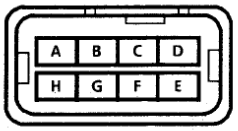
POWER MIRRORS (DG7) (PONTIAC)



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POWER MIRRORS (DG7)

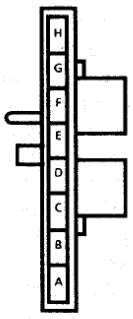
(CHEVY)



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8-WAY M METRI-PACK 150 SERIES
BLK

(PONT)



12064862

8-WAY F METRI-PACK 150 SERIES
BLK

COMPONENT	LOCATION	201-PG	FIG.	CONN
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Outside Mirror, LH	LH front door	17	31	202-24
Outside Mirror, RH	RH front door	17	31	202-24
Power Mirror Switch	Mounted in left door armrest	18	33	202-24
C200C (13 cavities)	Part of Cross Car Harn, between LH kick panel and Steering Column	25	49	202-2
C200D (48 cavities)	Part of I/P Harn, between LH kick panel and Steering Column	25	49	202-2
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
P500	Between LH door and "A" pillar	17	31	
P600	Between RH door and "A" pillar	45	84	
S211	I/P Harn, approx 4 cm from antenna cable (Chevy) or Convenience Center (Pont) breakouts			
S220	Cross Car Harn, approx 9 cm from C200 breakout	45	84	
S261	Cross Car Harn, approx 14 cm inboard of P600	45	84	
S500	Cross Car Harn, approx 6 cm from Speaker breakout	17	31	
S501	Cross Car Harn, approx 4 cm from Power Mirror breakout	17	31	
S610	Cross Car Harn, approx 7 cm from Outside Mirror breakout			

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

1. Check PWR ACCY Fuse 7 in I/P Fuse Block. If open, refer to Diagnostic Chart #5.
2. If both mirrors are inoperative, check for poor connections at the Power Mirror Switch.
3. Check that G200 is clean and tight.
4. If only one mirror operates properly, check for poor connections at LH Outside Mirror or RH Outside Mirror.

- Refer to SECTION 10-6 for Outside Mirror replacement.

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- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedures.

Important:

- For a better understanding of Retained Accessory Power (RAP) operation, refer to Circuit Operation at the end of this section.

SYSTEM CHECK

ACTION	NORMAL RESULTS
[1] • Move Mirror Select Switch to "LEFT" position. Operate Mirror Position Switch in "UP" and "DOWN" positions.	LH Outside Mirror moves smoothly upward and downward.
[2] • Operate Mirror Position Switch in the "LEFT" and "RIGHT" positions.	LH Outside Mirror moves smoothly to the left and right.
[3] • Move Mirror Select Position to "RIGHT" position. Operate Mirror Position Switch in "UP" and "DOWN" positions.	RH Outside Mirror moves smoothly upward and downward.
[4] • Operate Mirror Position Switch in the "LEFT" and "RIGHT" positions.	RH Outside Mirror moves smoothly to the left and right.

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Both mirrors do not operate in either ("UP/DOWN" or "LEFT/RIGHT") mode.	Chart #1	8A-147-4
One mirror does not operate in the "UP/DOWN" mode ("LEFT/RIGHT" mode operates normally).	Chart #2	8A-147-4
One mirror will not operate in the "LEFT/RIGHT" mode ("UP/DOWN" mode operates normally).	Chart #3	8A-147-5
One mirror will not operate in either ("UP/DOWN" or "LEFT/RIGHT") mode.	Chart #4	8A-147-6
PWR ACCY Fuse 7 repeatedly blows whenever Ignition is "ON" or when attempting to operate Power Mirrors.	Chart #5	8A-147-7

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POWER MIRRORS (DG7)

CHART #1
BOTH MIRRORS DO NOT OPERATE IN EITHER ("UP/DOWN" OR "LEFT/RIGHT") MODE

- WITH A TEST LIGHT BACKPROBE FROM POWER MIRROR SWITCH CONN TERM "A" (CHEVY) OR TERM "H" (PONT) TO GROUND. IS TEST LIGHT "ON"?

YES

- WITH A TEST LIGHT, BACKPROBE BETWEEN POWER MIRROR SWITCH CONN TERM "A" AND TERM "H". IS THE TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTION AT POWER MIRROR SWITCH CONN. IF OK, REPLACE SWITCH.

NO

- CHECK FOR POOR CONNECTION AT G200.
- CHECK FOR POOR CONNECTION AT POWER MIRROR CONN TERM "H" (CHEVY) OR TERM "A" (PONT). IF OK, REPAIR OPEN IN CKT 750 FROM G200 TO POWER MIRROR SWITCH CONN TERM "H" (CHEVY) OR TERM "A" (PONT).

NO

- CHECK FOR POOR CONNECTION AT C200 TERM "E9" OR AT POWER MIRROR SWITCH CONN. IF OK, REPAIR OPEN IN CKT 640 FROM FUSE BLOCK TO POWER MIRROR SWITCH CONN.

CHART #2
ONE MIRROR DOES NOT OPERATE IN THE "UP/DOWN" MODE ("LEFT/RIGHT" MODE OPERATES NORMALLY)

- (LH): WITH A TEST LIGHT BACKPROBE FROM POWER MIRROR SWITCH CONN TERM "B" TO TERM "C" (CHEVY) OR TERM "C" TO TERM "E" (PONT).
  (RH): WITH A TEST LIGHT BACKPROBE FROM POWER MIRROR SWITCH CONN TERM "G" TO TERM "F" (CHEVY) OR TERM "C" TO TERM "F" (PONT).
- PRESS MIRROR POSITION SWITCH TO "UP" WHILE OBSERVING THE TEST LIGHT. IS THE TEST LIGHT "ON"?

YES

- (LH): WITH A TEST LIGHT BACKPROBE FROM OUTSIDE MIRROR CONN TERM "D" TO TERM "C".
  (RH): WITH A TEST LIGHT BACKPROBE FROM OUTSIDE MIRROR CONN TERM "D" TO TERM "C".
- PRESS MIRROR POSITION SWITCH TO "UP" WHILE OBSERVING THE TEST LIGHT. IS THE TEST LIGHT "ON"?

YES

CHEVY

- (LH): CHECK FOR OPEN IN CKT 88 BETWEEN POWER MIRROR SWITCH TERM "B" AND OUTSIDE MIRROR CONN TERM "D". IF OK, CHECK FOR OPEN IN CKT 82 BETWEEN S501 AND OUTSIDE MIRROR CONN TERM "C".
- (RH): CHECK FOR OPEN IN CKT 1498 BETWEEN POWER MIRROR SWITCH TERM "G" AND OUTSIDE MIRROR CONN TERM "D". IF OK, CHECK FOR OPEN IN CKT 90 BETWEEN S610 AND OUTSIDE MIRROR CONN TERM "C".

PONT

- (LH): CHECK FOR OPEN IN CKT 88 BETWEEN OUTSIDE MIRROR CONN TERM "D" AND S261. IF OK, CHECK FOR OPEN IN CKT 89 BETWEEN OUTSIDE MIRROR CONN TERM "C" AND POWER MIRROR SWITCH TERM "E".
- (RH): CHECK FOR OPEN IN CKT 88 BETWEEN OUTSIDE MIRROR CONN TERM "D" AND S261. IF OK, CHECK FOR OPEN IN CKT 1498 BETWEEN OUTSIDE MIRROR CONN TERM "C" AND POWER MIRROR SWITCH CONN TERM "F".

NO

- (LH): CHECK FOR POOR CONNECTION AT OUTSIDE MIRROR CONNECTOR. IF OK, REPLACE THE MIRROR MOTOR PACK WITHIN THE POWER MIRROR.
- (RH): CHECK FOR POOR CONNECTION AT OUTSIDE MIRROR CONNECTOR. IF OK, REPLACE THE MIRROR MOTOR PACK WITHIN THE POWER MIRROR.

NO

- CHECK FOR POOR CONNECTION AT POWER MIRROR SWITCH CONN. IF OK, REPLACE POWER MIRROR SWITCH.

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CHART #3
ONE MIRROR WILL NOT OPERATE IN THE "LEFT/RIGHT" MODE ("UP/DOWN" MODE OPERATES NORMALLY)

- (LH): WITH A TEST LIGHT BACKPROBE FROM POWER MIRROR SWITCH CONN TERM "D" TO TERM "C" (CHEVY) OR TERM "D" TO TERM "B" (PONT).
  (RH): WITH A TEST LIGHT BACKPROBE FROM POWER MIRROR SWITCH CONN TERM "E" TO TERM "F" (CHEVY) OR TERM "G" TO TERM "B" (PONT).
- PRESS MIRROR POSITION SWITCH TO "LEFT" WHILE OBSERVING THE TEST LIGHT. IS THE TEST LIGHT "ON"?

YES

- (LH): WITH THE TEST LIGHT BACKPROBE FROM OUTSIDE MIRROR CONN TERM "B" TO TERM "A".
  (RH): WITH THE TEST LIGHT BACKPROBE FROM OUTSIDE MIRROR CONN TERM "B" TO TERM "A".
- PRESS MIRROR POSITION SWITCH TO "LEFT" WHILE OBSERVING THE TEST LIGHT. IS THE TEST LIGHT "ON"?

NO

- CHECK FOR POOR CONNECTION AT POWER MIRROR SWITCH CONN. IF OK, REPLACE POWER MIRROR SWITCH.

NO

CHEVY

- (LH): CHECK FOR OPEN IN CKT 81 BETWEEN POWER MIRROR SWITCH CONN TERM "D" AND OUTSIDE MIRROR CONN TERM "A". IF OK, CHECK FOR OPEN IN CKT 82 BETWEEN S501 AND OUTSIDE MIRROR CONN TERM "B".
- (RH): CHECK FOR OPEN IN CKT 881 BETWEEN POWER MIRROR SWITCH CONN TERM "E" AND OUTSIDE MIRROR CONN TERM "A". IF OK, CHECK FOR OPEN IN CKT 90 BETWEEN S610 AND OUTSIDE MIRROR CONN TERM "B".

PONT

- (LH): CHECK FOR OPEN IN CKT 81 BETWEEN POWER MIRROR SWITCH CONN TERM "D" AND OUTSIDE MIRROR CONN TERM "A". IF OK, CHECK FOR OPEN IN CKT 82 BETWEEN S501 AND OUTSIDE MIRROR CONN TERM "B".
- (RH): CHECK FOR OPEN IN CKT 881 BETWEEN POWER MIRROR SWITCH CONN TERM "G" AND OUTSIDE MIRROR CONN TERM "A". IF OK, CHECK FOR OPEN IN CKT 82 BETWEEN OUTSIDE MIRROR CONN TERM "B" AND S501.

YES

- (LH): CHECK FOR POOR CONNECTION AT OUTSIDE MIRROR CONNECTOR. IF OK, REPLACE THE MIRROR MOTOR PACK WITHIN THE POWER MIRROR.
- (RH): CHECK FOR POOR CONNECTION AT OUTSIDE MIRROR CONNECTOR. IF OK, REPLACE THE MIRROR MOTOR PACK WITHIN THE POWER MIRROR.

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POWER MIRRORS (DG7)

CHART #4
ONE MIRROR WILL NOT OPERATE IN EITHER ("UP/DOWN" OR "LEFT/RIGHT") MODE

- (LH): WITH A TEST LIGHT BACKPROBE FROM POWER MIRROR SWITCH CONN TERM "B" TO TERM "C" (CHEVY) OR TERM "C" TO TERM "E" (PONT).
  (RH): WITH A TEST LIGHT BACKPROBE FROM POWER MIRROR SWITCH CONN TERM "G" TO TERM "F" (CHEVY) OR TERM "C" TO TERM "F" (PONT).
- PRESS MIRROR POSITION SWITCH TO "UP" WHILE OBSERVING THE TEST LIGHT. IS THE TEST LIGHT "ON"?

NO

- CHECK FOR POOR CONNECTION AT POWER MIRROR SWITCH. IF OK, REPLACE POWER MIRROR SWITCH.

YES

- (LH): WITH THE TEST LIGHT BACKPROBE FROM OUTSIDE MIRROR CONN TERM "D" TO TERM "C".
  (RH): WITH THE TEST LIGHT BACKPROBE FROM OUTSIDE MIRROR CONN TERM "D" TO TERM "C".
- PRESS THE MIRROR POSITION SWITCH TO "UP" WHILE OBSERVING THE TEST LIGHT. IS THE TEST LIGHT "ON"?

YES

- (LH): CHECK FOR POOR CONNECTION AT OUTSIDE MIRROR CONN. IF OK, REPLACE THE MIRROR MOTOR PACK WITHIN THE POWER MIRROR.
- (RH): CHECK FOR POOR CONNECTION AT OUTSIDE MIRROR CONN. IF OK, REPLACE THE MIRROR MOTOR PACK WITHIN THE POWER MIRROR.

NO

CHEVY

(LH): REPAIR OPEN IN CKT 82 BETWEEN POWER MIRROR SWITCH CONN TERM "C" AND S501.
(RH): REPAIR OPEN IN CKT 90 BETWEEN POWER MIRROR SWITCH CONN TERM "F" AND S610.

PONT

- CHECK FOR OPEN IN CKT 88 BETWEEN OUTSIDE MIRROR SWITCH CONN TERM "C" AND S261.
- (LH): CHECK FOR OPEN IN CKT 89 BETWEEN OUTSIDE MIRROR SWITCH CONN TERM "E" AND OUTSIDE MIRROR CONN TERM "C".
- (RH): CHECK FOR OPEN IN CKT 1498 BETWEEN POWER MIRROR SWITCH TERM "F" AND OUTSIDE MIRROR CONN TERM "C".

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CHART #5
PWR ACCY FUSE 7 REPEATEDLY BLOWS WHENEVER IGNITION IS "ON" OR WHEN ATTEMPTING TO OPERATE POWER MIRRORS

- REPLACE BLOWN FUSE.
  DOES FUSE BLOW BEFORE ATTEMPTING TO OPERATE POWER MIRRORS?

NO

- TEST POWER MIRROR SWITCH ONE FUNCTION AT A TIME UNTIL FUSE BLOWS.
- WHEN THE FUSE BLOWS, USE SCHEMATICS TO DETERMINE WHAT CIRCUITS OR COMPONENTS COULD BE FAILING. USE A TEST LIGHT OR DVM TO NARROW IN ON SHORT TO GROUND POTENTIAL.
- DISCONNECTING COMPONENTS IS HELPFUL WHEN TRYING TO CHECK CIRCUITS THAT SHOULD NOT BE AT A GROUND POTENTIAL.

YES

- USE SCHEMATICS AND DVM TO CHECK SUSPECT POWER CIRCUITS FOR A SHORT TO GROUND POTENTIAL, EITHER THROUGH A FAULTY COMPONENT OR IN WIRING.
- CONNECT A DVM SET TO VOLTAGE ACROSS FUSE TERMINALS. START BY DISCONNECTING ONE COMPONENT AT A TIME.
  IF ALL RELATED COMPONENTS ARE DISCONNECTED AND SHORT IS STILL PRESENT, LOCATE AND REPAIR SHORT IN WIRING.

CIRCUIT OPERATION

The Power Mirror System has voltage applied from the PWR ACCY Fuse which is controlled by the Retained Accessory Power (RAP) Module. Voltage is applied to the PWR ACCY Fuse for up to 10 minutes after Ignition is turned "OFF" or for 35 seconds after exiting the vehicle and closing the doors. Voltage is also applied whenever a door is open. For a complete understanding of Retained Accessory Power (RAP) operation, refer to "Retained Accessory Power (RAP): with AU3," page 8A-15-0.

Each Outside Mirror has two reversible motors. One adjusts the mirror up and down, and the other adjusts the mirror right and left. These motors are controlled by the Power Mirror Switch. The Power Mirror Switch contains a Mirror Position Switch. The Mirror Position Switch controls the polarity of the voltage to the motors. The Power Mirror Switch also contains a Mirror Select Switch, which directs the voltage to either the RH or LH Outside Mirror. The Power Mirror Switch receives battery voltage from the PWR ACCY Fuse through CKT 640 and is permanently grounded at G200.

When the LH Outside Mirror is selected, the Mirror Position Switch will control the motors of the LH Outside Mirror. When the Mirror Position Switch UP position is selected, voltage is applied to the Up/Down Motor of the LH Outside Mirror through CKT 88. Ground will be provided to the Up/Down Motor by the Outside Mirror Switch through CKT 82 (Chevy) or CKT 89 (Pont). The Up/Down Motor in the LH Outside Mirror will run and turn the LH Outside Mirror up.

When the Mirror Position Switch DOWN position is selected, voltage is applied to the Up/Down Motor of the LH Outside Mirror through CKT 82 (Chevy) or CKT 89 (Pont), and ground is provided through CKT 88. This will cause the Up/Down Motor to rotate in the opposite direction and turn the LH Outside Mirror down.

The Left/Right Motor of the LH Outside Mirror operates in a similar manner. When the Mirror Position Switch LEFT position is selected, voltage is applied to the Left/Right Motor of the LH Outside Mirror through the CKT 81. Ground will be provided to the Left/Right Motor by the Outside Mirror Switch through CKT 82. The Left/Right Motor will run and turn the LH Outside Mirror to the left.

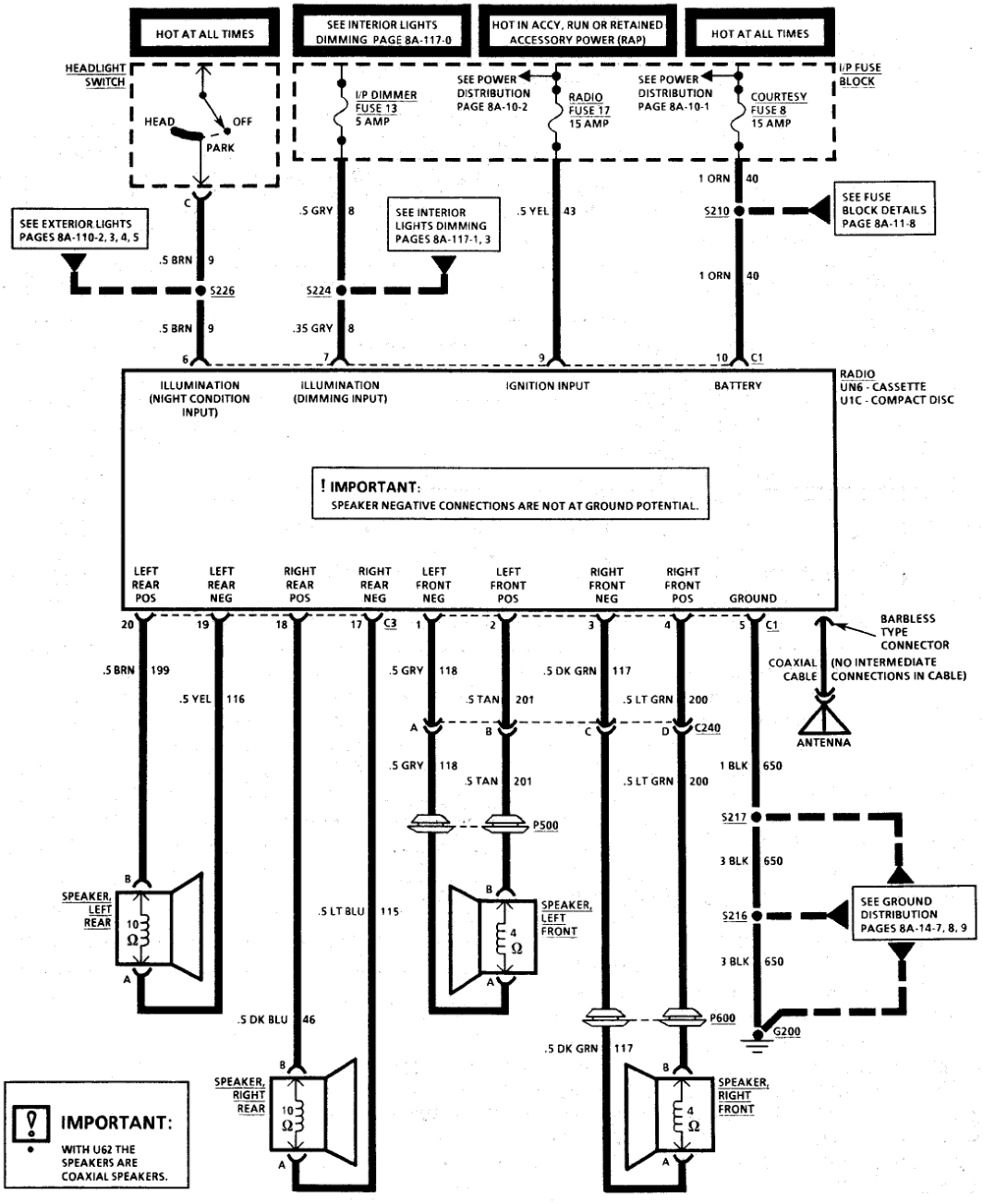
When the Mirror Position Switch RIGHT position is selected, voltage is applied to the Left/Right Motor of the LH Outside Mirror through the CKT 82 and ground is provided through CKT 81. This will cause the Left/Right Motor to rotate in the opposite direction and turn the LH Outside Mirror to the right.

The RH Outside Mirror is adjusted in the same way when the Mirror Select Switch is moved to the RH position, and the appropriate position switch is operated.

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RADIO

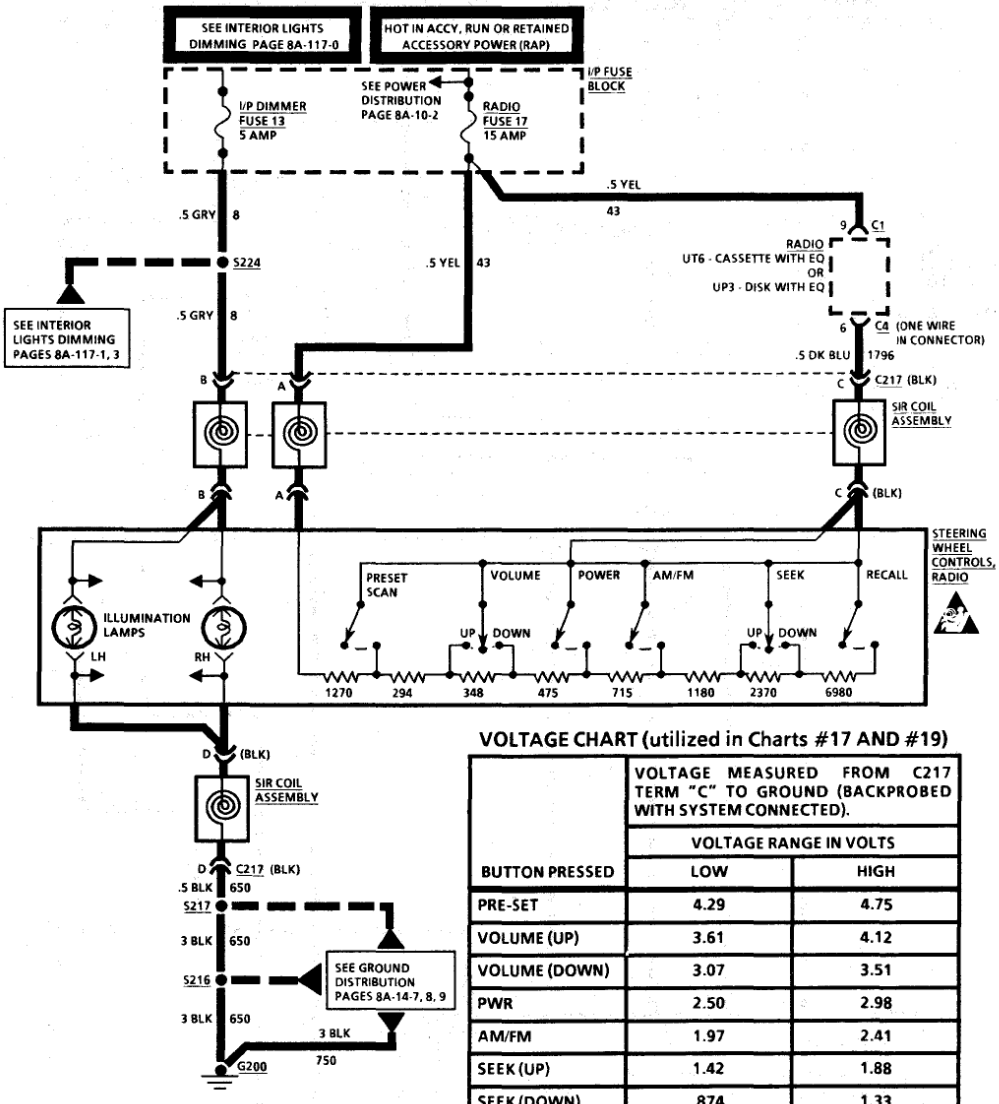
UN6 OR U1C RADIO WITH UQ0 (COUPE) OR U62 (CONVERTIBLE)



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RADIO

STEERING WHEEL RADIO CONTROLS: UK3 (INCLUDED WITH UT6 OR UP3 RADIO ONLY)



VOLTAGE CHART (utilized in Charts #17 AND #19)

BUTTON PRESSED	VOLTAGE MEASURED FROM C217 TERM "C" TO GROUND (BACKPROBED WITH SYSTEM CONNECTED). VOLTAGE RANGE IN VOLTS	
	LOW	HIGH
PRE-SET	4.29	4.75
VOLUME (UP)	3.61	4.12
VOLUME (DOWN)	3.07	3.51
PWR	2.50	2.98
AM/FM	1.97	2.41
SEEK (UP)	1.42	1.88
SEEK (DOWN)	.874	1.33
RCL	.285	.779

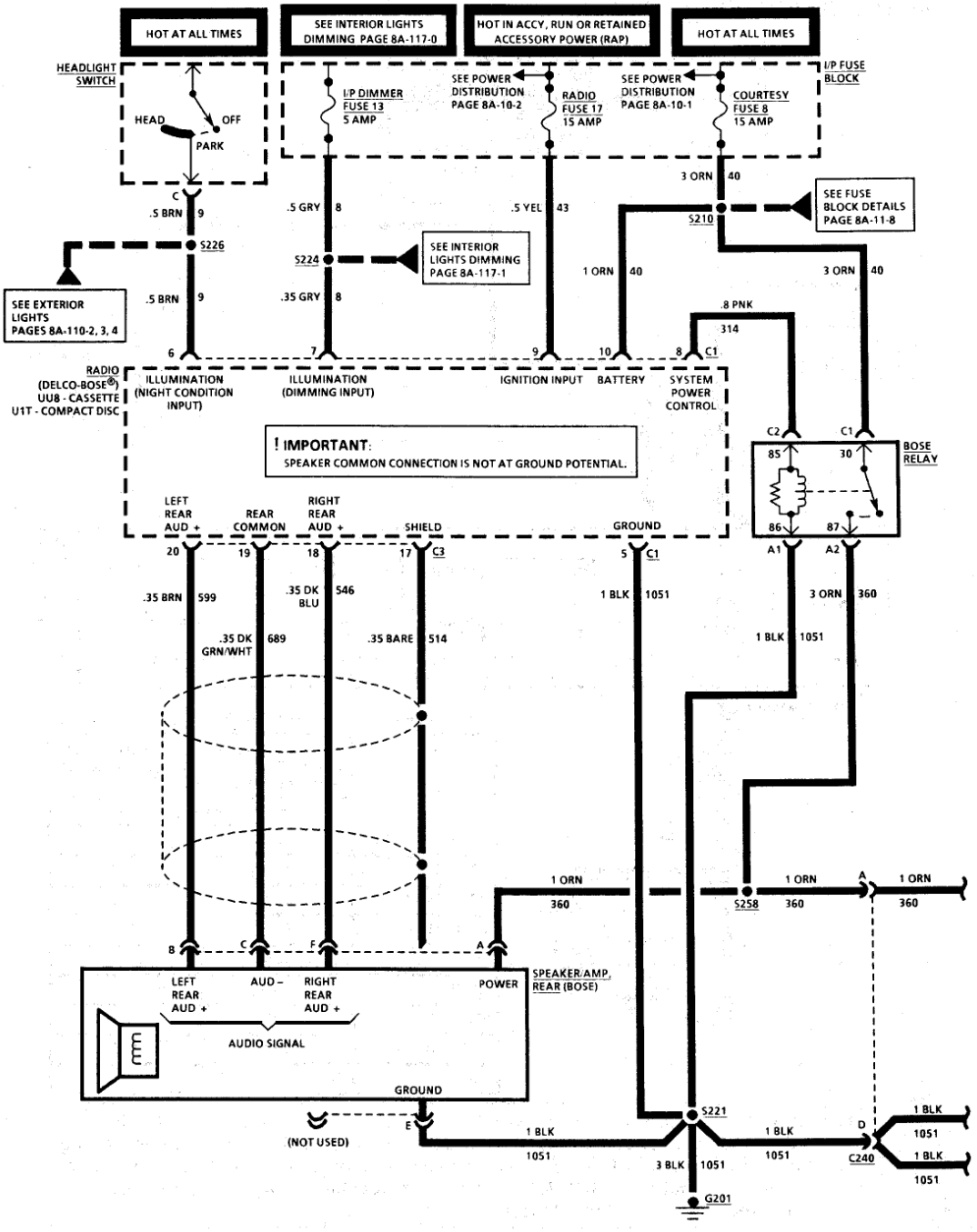
SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

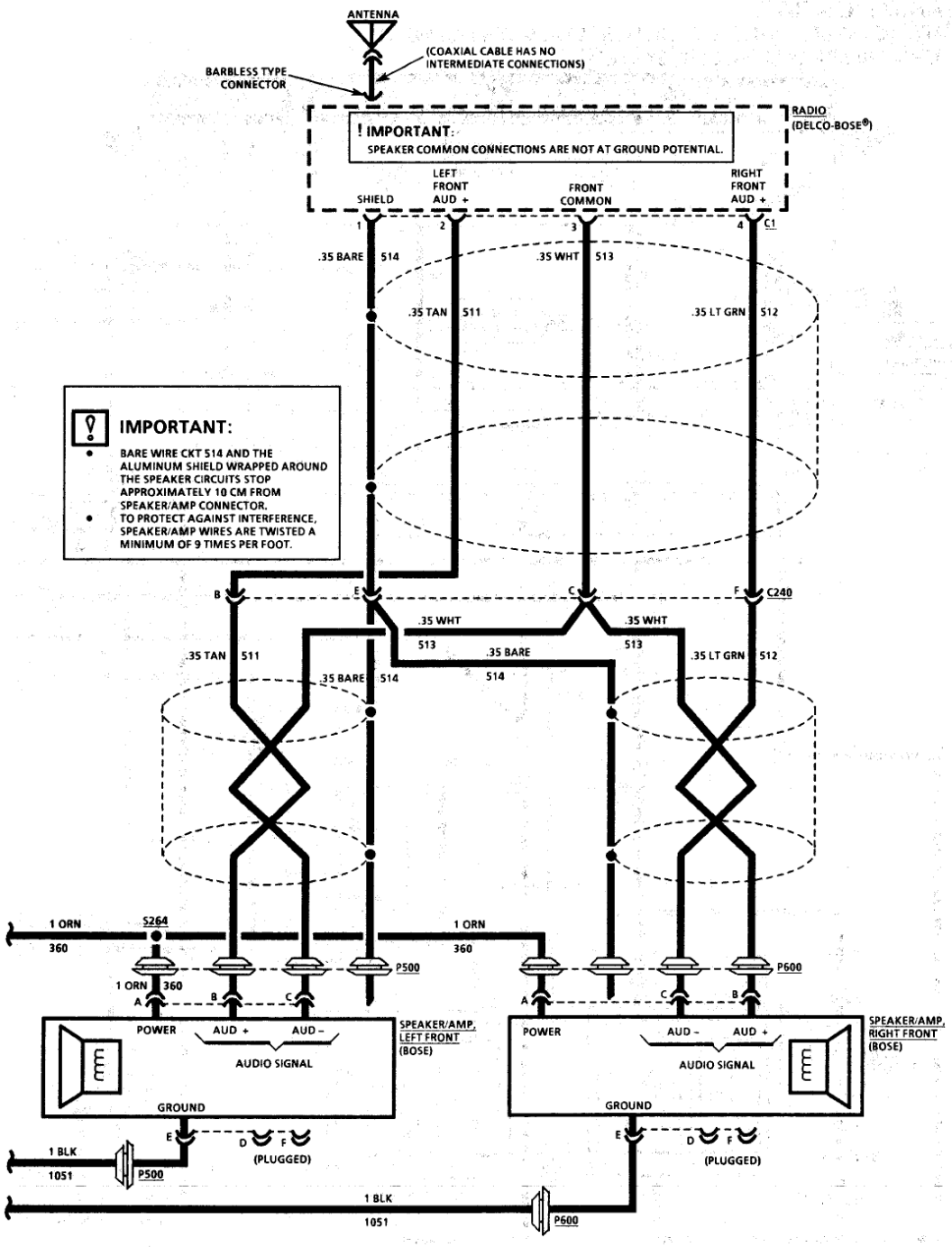
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RADIO (CHEVY)

DELCO-BOSE®: (UU8 CASSETTE RADIO OR U1T DISC RADIO) WITH U82 SPEAKERS



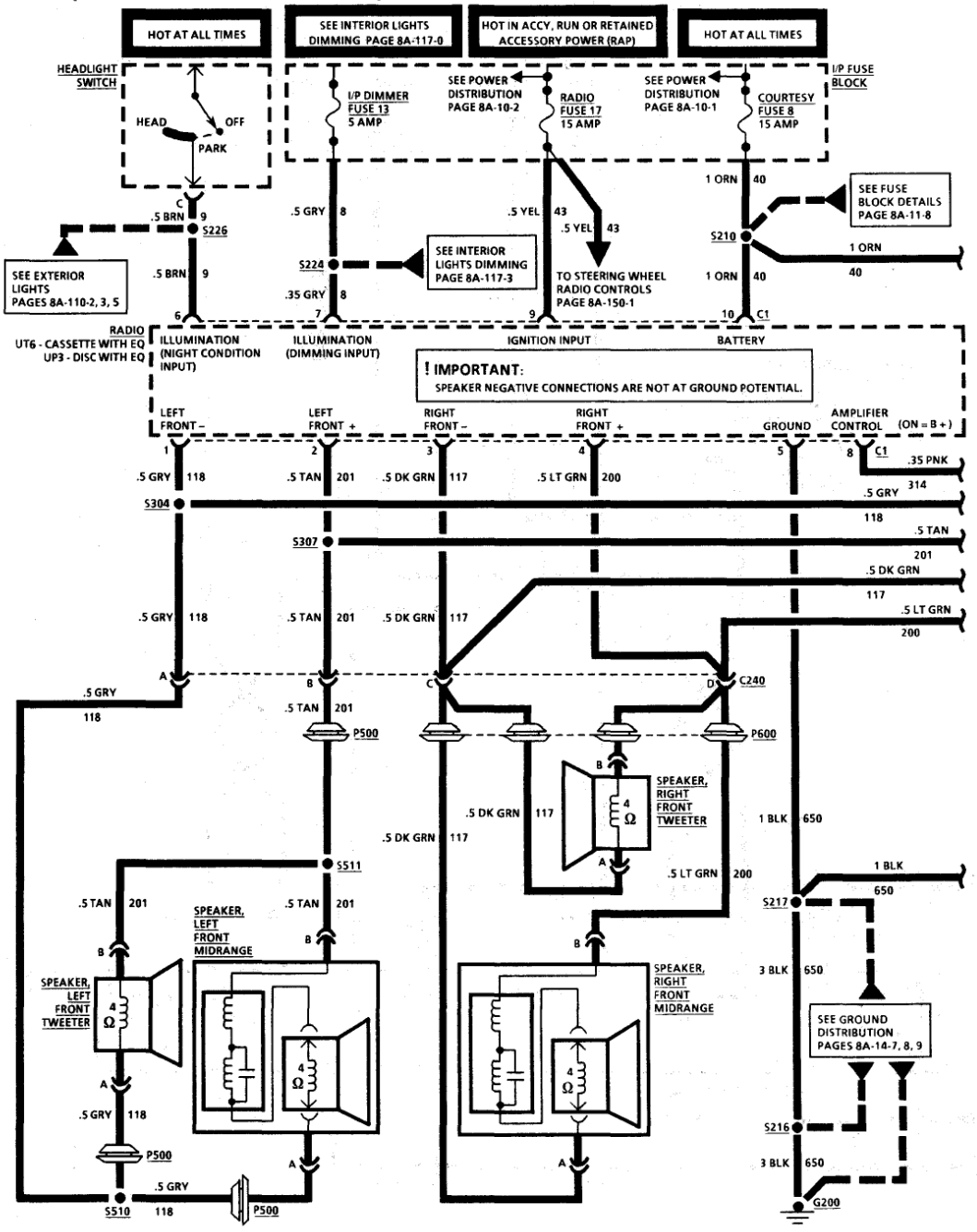
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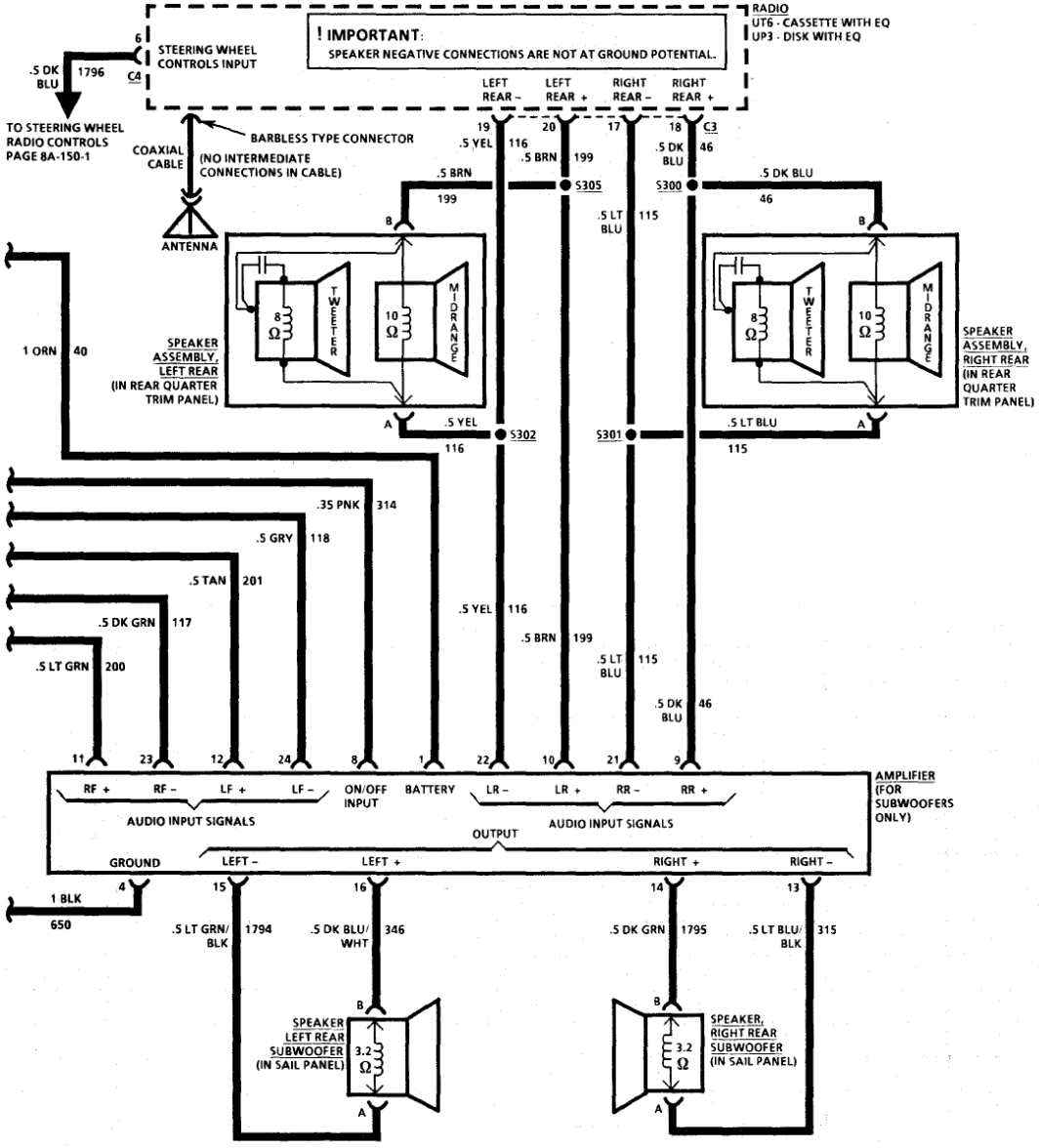
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RADIO (PONTIAC)

UT6 (CASSETTE WITH EQ) OR UP3 (DISC WITH EQ) WITH UW2 (10 SPEAKER SOUND SYSTEM)

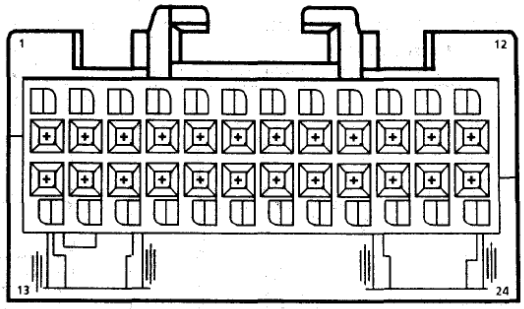


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RADIO



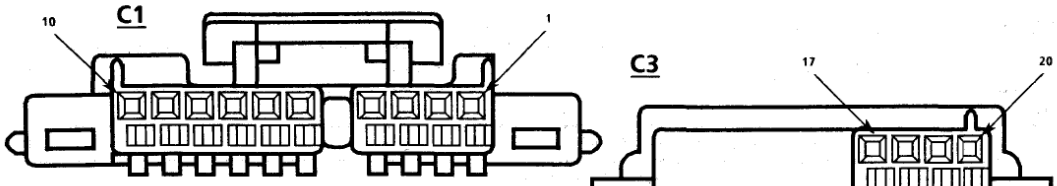
12110088

24-WAY F MICRO-PACK 100 SERIES
LT GRY

AMPLIFIER

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
1	ORN	40	POWER FEED FROM COURTESY FUSE 8	8A-11-8
4	BLK	650	GROUND	8A-14-9
8	PNK	314	RADIO SIGNAL - ON	8A-150-5
9	DK BLU	46	RIGHT REAR SPEAKER FEED (POS)	8A-150-5
10	BRN	199	LEFT REAR SPEAKER FEED (POS)	8A-150-5
11	LT GRN	200	RIGHT FRONT SPEAKER FEED (POS)	8A-150-4, 5
12	TAN	201	LEFT FRONT SPEAKER FEED (POS)	8A-150-4, 5
13	LT BLU/BLK	315	RIGHT SUBWOOFER SPEAKER RETURN (NEG)	8A-150-5
14	DK GRN	1795	RIGHT SUBWOOFER SPEAKER FEED (POS)	8A-150-5
15	LT GRN/BLK	1794	LEFT SUBWOOFER SPEAKER RETURN (NEG)	8A-150-5
16	DK BLU/WHT	346	LEFT SUBWOOFER SPEAKER FEED (POS)	8A-150-5
21	LT BLU	115	RIGHT REAR SPEAKER RETURN (NEG)	8A-150-5
22	YEL	116	LEFT REAR SPEAKER RETURN (NEG)	8A-150-5
23	DK GRN	117	RIGHT FRONT SPEAKER RETURN (NEG)	8A-150-4, 5
24	GRY	118	LEFT FRONT SPEAKER RETURN (NEG)	8A-150-4, 5

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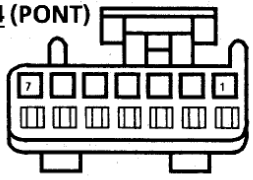


12047531

10-WAY F MICRO-PACK
BLK

12047530

4-WAY F MICRO-PACK
BLU



12065873

7-WAY F MICRO-PACK 100 SERIES
BLK

RADIO

(PONTIAC)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C1				
1	GRY	118	LEFT FRONT SPEAKER RETURN (NEG)	8A-150-0, 4
2	TAN	201	LEFT FRONT SPEAKER FEED (POS)	8A-150-0, 4
3	DK GRN	117	RIGHT FRONT SPEAKER RETURN (NEG)	8A-150-0, 4
4	LT GRN	200	RIGHT FRONT SPEAKER FEED (POS)	8A-150-0, 4
5	BLK	650	GROUND	8A-14-7, 8, 9
6	BRN	9	PARK LAMP FEED	8A-150-0, 4
7	GRY	8	POWER FEED FROM I/P DIMMER FUSE #13	8A-150-0, 4
8	PNK	314	(WITH UW2) RADIO SIGNAL - ON	8A-150-4, 5
9	YEL	43	POWER FEED FROM RADIO FUSE #17	8A-150-0, 1, 4
10	ORN	40	POWER FEED FROM COURTESY FUSE #8	8A-11-8
C3				
17	LT BLU	115	RIGHT REAR SPEAKER RETURN	8A-150-0, 5
18	DK BLU	46	RIGHT REAR SPEAKER FEED	8A-150-0, 5
19	YEL	116	LEFT REAR SPEAKER RETURN	8A-150-0, 5
20	BRN	199	LEFT REAR SPEAKER FEED	8A-150-0, 5
C4 (WITH UK3)				
6	DK BLU	1796	STEERING WHEEL RADIO CONTROL SIGNAL	8A-150-1, 5

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RADIO

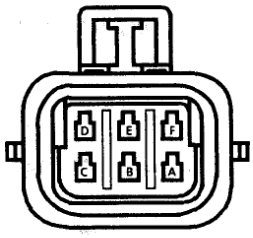
**CAVITIES NOT LISTED ARE NOT USED

(CHEVY)

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C1 (BASE)				
1	GRY	118	LEFT FRONT SPEAKER RETURN (NEG)	8A-150-0
2	TAN	201	LEFT FRONT SPEAKER FEED (POS)	8A-150-0
3	DK GRN	117	RIGHT FRONT SPEAKER RETURN (NEG)	8A-150-0
4	LT GRN	200	RIGHT FRONT SPEAKER FEED (POS)	8A-150-0
5	BLK	650	GROUND	8A-14-7, 8, 9
C1 (DELCO-BOSE®)				
1	BARE	514	DRAIN WIRE	8A-150-3
2	TAN	511	SPEAKER SIGNAL LEFT FRONT	8A-150-3
3	WHT	513	SPEAKER RETURN LEFT AND RIGHT	8A-150-3
4	LT GRN	512	SPEAKER SIGNAL RIGHT FRONT	8A-150-3
5	BLK	1051	GROUND	8A-14-10
C1 (ALL RADIOS)				
6	BRN	9	PARK LAMP FEED	8A-150-0, 2
7	GRY	8	POWER FEED FROM I/P DIMMER FUSE #13	8A-150-0, 2
8	PNK	314	(WITH U82 ONLY) RADIO SIGNAL - ON	8A-150-2
9	YEL	43	POWER FEED FROM RADIO FUSE #17	8A-150-0, 2
10	ORN	40	POWER FEED FROM COURTESY FUSE #8	8A-11-8
C3 (BASE)				
17	LT BLU	115	RIGHT REAR SPEAKER RETURN	8A-150-0
18	DK BLU	46	RIGHT REAR SPEAKER FEED	8A-150-0
19	YEL	116	LEFT REAR SPEAKER RETURN	8A-150-0
20	BRN	199	LEFT REAR SPEAKER FEED	8A-150-0
C3 (DELCO-BOSE®)				
17	BARE	514	DRAIN WIRE	8A-150-2
18	DK BLU	546	REAR PRE AMP FEED (RIGHT SIGNAL)	8A-150-2
19	DK GRN/WHT	689	REAR PRE AMP RETURN	8A-150-2
20	BRN	599	REAR PRE AMP FEED (LEFT SIGNAL)	8A-150-2

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SPEAKER AMP/ASSEMBLIES

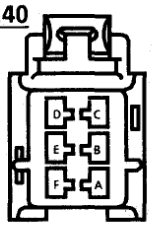


12052848

6-WAY F METRI-PACK 280 SERIES
BLK

SPEAKER/AMP,
LEFT AND RIGHT FRONT (BOSE)

C240



12064752

6-WAY F METRI-PACK 280 SERIES
BLK

CROSS CAR HARNESS TO I/P HARNESS
BLOWER RESISTOR
SPEAKER/AMP, REAR (BOSE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Amplifier (part of UW2 Speaker Option)	Mounted behind Right Rear Armrest, on Rail	44	83	202-9
Antenna	Right rear quarter panel	22, 25	41, 48	
Bose Relay	Below center A/C Duct, mounted to SIR Bracket	22	41	202-21
Headlight Switch	LH side of I/P	37, 38	66, 67	202-15
I/P Fuse Block	LH side of I/P Carrier, on the side	8	15	202-23
Radio	Center of I/P Carrier	36	65	202-16
SIR Coil Assembly	Top of Steering Column	3, 34	5, 51	
Speaker/Amp, Left Front (Bose)	Mounted in left door	17	31	202-27
Speaker/Amp, Rear (Bose)	Mounted in left rear Cargo Compartment trim	5	8	202-27
Speaker/Amp, Right Front (Bose)	Mounted in right door	17	31	202-27
Speaker Assembly, Left Rear (with UW2 Speakers)	Mounted in left Cargo Compartment trim	5	8	
Speaker Assembly, Right Rear (with UW2 Speakers)	Mounted in right Cargo Compartment trim	44	83	
Speaker, Left Front (Base - UQ0)	Mounted in left door	17	31	
Speaker, Left Front Midrange (with UW2 Speakers)	Mounted in left door	17	31	
Speaker, Left Front Tweeter (with UW2 Speakers)	Mounted in left door	17	31	
Speaker, Left Rear (Base - UQ0)	Mounted in left sail panel	5	8	
Speaker, Left Rear Subwoofer (with UW2 Speakers)	Mounted in left sail panel	5	8	
Speaker, Right Front (Base - UQ0)	Mounted in right door	17	31	
Speaker, Right Front Midrange (with UW2 Speakers)	Mounted in right door	17	31	

(CONTINUED ON NEXT PAGE)

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RADIO

(CONTINUED FROM PREVIOUS PAGE)

COMPONENT	LOCATION	201-PG	FIG.	CONN
Speaker, Right Front Tweeter (with UW2 Speakers)	Mounted in right door	17	31	
Speaker, Right Rear (Base - UQ0)	Mounted in right sail panel	44	83	
Speaker, Right Rear Subwoofer (with UW2 Speakers)	Mounted in right sail panel	44	83	
Steering Wheel Controls, Radio (UK3)	On Steering Wheel	2	3	202-27
C217 (4 cavities)	Near base of Steering Column	34	63	202-19
C240 (6 cavities)	Under RH side of I/P, behind kick panel	20	37	202-19
G200	Near base of LH "A" pillar, bolted to I/P Mounting Stud behind kick panel (2 rings, 2 wires)	9	16	
G201	Near base of RH "A" pillar, bolted to I/P Mounting Stud behind kick panel (1 ring, 1 wire)	9	16	
P500	Between LH door and "A" pillar	17	31	
P600	Between RH door and "A" pillar	45	84	
S210	I/P Harn, approx 44 cm from Convenience Center (Pont) or 12 cm from RR Defog Switch (Chevy) breakouts			
S216	I/P Harn, approx 5 cm from Convenience Center (Pont) or from Instrument Cluster (Chevy) breakouts			
S217	I/P Harn, approx 23 cm before DLC breakout			
S221	I/P Harn, approx 7 cm from DERM breakout			
S224	I/P Harn, approx 4 cm from Instrument Cluster (Pont) or from RR Defog Switch (Chevy) breakouts			
S226	I/P Harn, approx 10 cm from Instrument Cluster breakout			
S258	I/P Harn, approx 4 cm from antenna cable breakout			
S264	Cross Car Harn, approx 20 cm from P600	45	84	
S300	I/P Harn, approx 15 cm from last rosebud on RH rocker panel	6	10	
S301	I/P Harn, approx 21 cm from last rosebud on RH rocker panel	6	10	
S302	I/P Harn, approx 8 cm from last rosebud on RH rocker panel	6	10	
S304	I/P Harn, approx 34 cm from last rosebud on RH rocker panel	6	10	
S305	I/P Harn, approx 2 cm from last rosebud on RH rocker panel	6	10	
S307	I/P Harn, approx 28 cm from last rosebud on RH rocker panel	6	10	
S510	Cross Car Harn, approx 7 cm from Rearview Mirror breakout	45	84	
S511	Cross Car Harn, approx 7 cm from Power Mirror breakout	17	31	

For a Service Part Cross Reference List and Information, refer to SECTION 8A-200.

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TROUBLESHOOTING HINTS (Perform before beginning System Diagnosis)

Radio Inoperative:

1. For checking a speaker, use a "C" or "D" cell Battery and momentarily connect and disconnect it across the circuits to that speaker while listening for a slight popping sound or watching for the cone of the speaker to move in and out. If either happens, the speaker and circuitry are usually OK.
2. Check Fuse 8. If open, check for a short to ground through CKT 40.
3. Check Fuse 17. If open, check for a short to ground through CKT 43.
4. Make sure ground G200 is clean and tight.

Radio Noise:

A noise "sniffer" may be used to aid in troubleshooting Radio noise, see details on page 8A-150-30. (For definitions of the different types of Radio noise, refer to "Noise Entry," page 8A-150-33.)

1. Test the Radio outside with the hood down.
2. Ignition noise on FM indicates a possible defective High Energy Ignition (HEI) System. Refer to SECTION 6D4.
3. Check antenna coax connectors for corrosion or bad connections.
4. If a test antenna is used, ground the base of the antenna to the vehicle body.
5. When shielding components, use aluminum foil tape (nickel tape works best for magnetic interference) and ground both ends of the shield.
6. Most noise can be found on weak AM Stations near low end of Radio band.
7. Coated screws or bolts can act as poor grounds.
8. Most hoses are conductive unless they have a white stripe.
9. Before removing a speaker, check all accessible wiring and connectors to that speaker.

General:

- Check for a broken (or partially broken) wire inside of the insulation which could cause system malfunction but prove "GOOD" in a continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load).
- Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (see "Troubleshooting Procedures," page 8A-4-0).
- Refer to System Diagnosis.

SYSTEM DIAGNOSIS

- Determine type of audio complaint.
- Try to duplicate condition (listen to AM or FM, start vehicle, put in a good CD or cassette, test switches, etc.).
- Refer to the Symptom Table for the appropriate diagnostic procedure(s).

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RADIO

The purpose of the System Performance Check is to distinguish between noise or poor reception. Some noises induced into the system may not be audible but can cause poor reception.

SYSTEM PERFORMANCE CHECK

ACTION	NORMAL RESULTS
[1] • Ignition in "ACCESSORY" mode, Radio "ON."	
[2] • Seek up (88-108 FM) (550-1600 AM). • Count number of valid Radio Stations tuner stops at. • Listen for various noise problems.	– A certain number of Radio stations will be received. – Sometimes Radio will stop at dead spots on the display where there is no audible information. These dead spots should not be counted as valid stations.
[3] • Ignition "ON," Engine off. Repeat step 2.	– Same number of stations are received as above.
[4] • Ignition "ON," Engine running. Repeat step 2.	– Same number of stations are received as above.

NOTICE TO TECHNICIANS: Electromagnetic interference (EMI) can cause a fewer number of stations to be received in one of the three modes. The EMI can be caused by various vehicle components. This may be the cause of the differences in reception. Check for components powered up in the three various key positions. This may eliminate Engine running components, Ignition on components, etc. For example, if the same number of stations are received with the Engine running as when the Engine was off, the components active with the Engine running are not causing the interference.

DEVELOPMENT QUESTIONS

* If an equal number of stations are counted in all key positions vehicle related, interference is not indicated. Some vehicle systems may interfere in all key positions.

* If noise is determined not to be causing interference, refer to "Poor Reception."

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Important:

- For a better understanding of Retained Accessory Power (RAP) operation, refer to "Retained Accessory Power (RAP): AU3", page 8A-15-0.

SYMPTOM TABLE

PERFORMANCE COMPLAINTS
(Noise or Reception Symptoms)

To distinguish between noise or poor reception, perform the System Performance Check on the previous page.

CHEVY AND PONTIAC

SYMPTOM	PROCEDURE	PAGE NUMBER
Radio noise.	Chart #10	8A-150-20
Poor reception.	Chart #4	8A-150-17
Switch pop or Accessory Noise.	Chart #16	8A-150-26

CHEVY

Noise in one or more Bose Speaker/Amps, caused by the use of power options.	Suppress noise using Capacitor (P/N 1227894) across suspect component: motor, switch or solenoid.
Noise from Delco-Bose® Speaker/Amps with Radio "OFF."	Check for a stuck Bose Relay or for short to B+ in CKT 360 or CKT 314.

PONTIAC

Noise caused by the use of power options in Subwoofer Speakers only (UW2).	Suppress noise using Capacitor (P/N 1227894) across suspect component: motor, switch or solenoid.

HARDWARE RELATED FAILURES
(No Audio, Display Problems, Inoperative Functions, etc.)

CHEVY AND PONTIAC

SYMPTOM	PROCEDURE	PAGE NUMBER
No sound from any speaker, blank digital display.	Chart #1	8A-150-15
No sound from any speaker, digital display operates normally, seek/scan and presets appear to operate normally (UQ0 or U62).	Check for disconnected connector C3 with major wiring damage to front speakers or with balance to rear only. If OK, service Radio.	
Display does not dim when Park Lamps or Headlamps are turned "ON."	Check for open in CKT 9 to the Radio or poor connection at Radio Connector C1 terminal "6". If OK, service Radio.	
Display dimming does not vary when using the I/P Dimmer Switch (assumes I/P Dimmer Switch Circuit is operating normally elsewhere).	Check for open in CKT 8 to Radio or poor connection at connector C1 terminal "7", refer to "Interior Lights Dimming," page 8A-117-0. If OK, service Radio. Refer to SECTION 9A.	
Cassette Tape Player inoperative.	Chart #5	8A-150-17

(CONTINUED ON NEXT PAGE)

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RADIO

(CONTINUED FROM PREVIOUS PAGE)

SYMPTOM TABLE

SYMPTOM	PROCEDURE	PAGE NUMBER
Cassette Tape Player weak.	Inspect and clean moving parts. Use a known good cassette tape to retest. If Cassette Tape Player is still weak, service Radio. Refer to SECTION 9A.	
Compact Disk Player inoperative or skips.	Skipping over hard bumps may occur. Make sure disk being used is not smudged or scratched. Smudges or a scratch that is in a circular direction can cause the laser to track improperly, causing skipping. If excessive skipping occurs, service Radio. Refer to SECTION 9A.	
No sound from one speaker (UQ0 or U62).	Chart #6	8A-150-18
Some Radio functions are operational, others are not operational.	Service Radio, refer to SECTION 9A.	
Loss of memory.	Check CKT 40 and connector C1 terminal "10" for an open or poor connection. If OK, service Radio.	
CHEVY		
SYMPTOM	**PROCEDURE**	**PAGE NUMBER**
No sound from any speaker, digital display operates normally, seek/scan and presets appear to operate normally (Delco-Bose®).	Chart #2	8A-150-15
No sound from one speaker (Delco-Bose®).	Chart #7	8A-150-18
PONTIAC		
Digital Display illuminated, with all Radio functions inoperative.	Check for a short to B + in CKT 1796 (UT6 or UP3 only). If OK, service Radio. Refer to SECTION 9A. **Important:** • An open in CKT 1796 between DVM measuring point and Radio will cause a reading of B + with any button pressed, though there will not be a short to B + in the circuit.	
All lights in Steering Wheel Control Buttons inoperative (some lights are operational).	Chart #3	8A-150-16
One or more lights in Steering Wheel Control Buttons inoperative (some lights are operational).	Replace Steering Wheel Radio Controls.	
Compact Disk Radio displays "ERR" for 5 seconds and stays in Radio mode when a disk is inserted.	The Optical Sensor is impaired by moisture or the disk is in upside down.	
No sound from one speaker (UW2).	Chart #8	8A-150-19
Both Subwoofer Speakers inoperative (UW2).	Chart #9	8A-150-19
All Steering Wheel Radio Controls inoperative (or operate erratically).	Chart #17	8A-150-27
One or more Steering Wheel Radio Controls inoperative (some controls are operational).	Chart #19	8A-150-31

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CHART #1
NO SOUND FROM ANY SPEAKER, BLANK DIGITAL DISPLAY

- REMOVE RADIO.
- DISCONNECT RADIO CONN C1.
- IGNITION "ON."
- WITH A TEST LIGHT TO GROUND, PROBE RADIO CONN C1 TERM "9". IS TEST LIGHT "ON"?

YES

- CONNECT TEST LIGHT FROM RADIO CONN C1 TERM "10" TO GROUND. IS TEST LIGHT "ON"?

YES

- CONNECT A TEST LIGHT BETWEEN RADIO CONN C1 TERM "5" AND TERM "9". IS TEST LIGHT "ON"?

YES

- CHECK FOR POOR CONNECTIONS AT RADIO.
- IF OK, SERVICE RADIO. REFER TO SECTION 9A.

NO

REPAIR OPEN IN CKT 650 TO GROUND.

NO

CHECK FOR OPEN IN CKT 40, OR FOR SHORT TO GROUND THROUGH CKT 40 CAUSING FUSE 8 TO BLOW.

NO

- CHECK FOR OPEN IN CKT 43, OR FOR SHORT TO GROUND THROUGH CKT 43 CAUSING FUSE 17 TO BLOW.

CHART #2 (CHEVY)
NO SOUND FROM ANY SPEAKER, DIGITAL DISPLAY OPERATES NORMALLY, SEEK/SCAN AND PRESETS APPEAR TO OPERATE NORMALLY (DELCO-BOSE®)

- DISCONNECT BOSE RELAY.
- CONNECT TEST LIGHT FROM RELAY CONN TERM "C1" TO GROUND. IS TEST LIGHT "ON"?

YES

- CONNECT THE TEST LIGHT FROM RELAY CONN TERM "C1" TO TERM "A1". IS TEST LIGHT "ON"?

YES

- CONNECT THE TEST LIGHT FROM RELAY CONN TERM "C2" TO TERM "A1".
- IGNITION SWITCH TO "ACCY". IS TEST LIGHT "ON"?

YES

- IGNITION STILL "ON."
- RADIO ON WITH VOLUME AT A NORMAL LEVEL.
- CONNECT A FUSED JUMPER, WITH A 15 AMP FUSE, FROM BOSE RELAY CONN TERM "C1" TO TERM "A2". IS RADIO NOW WORKING WITH SOUND EMITTING FROM SPEAKERS?

YES

- CHECK FOR FOR POOR CONNECTIONS AT BOSE RELAY. IF OK, REPLACE RELAY.

NO

- CHECK FOR OPEN IN CKT 360 BETWEEN S308 AND RELAY.
- IF OK, CHECK FOR POOR GROUND SPLICE AT S221. IF ALL ARE OK, SERVICE RADIO.

NO

REPAIR OPEN IN CKT 314 OR POOR CONNECTION TO RADIO AT CONN C1 TERM "8".

NO

REPAIR OPEN IN CKT 1051 BETWEEN S221 AND RELAY.

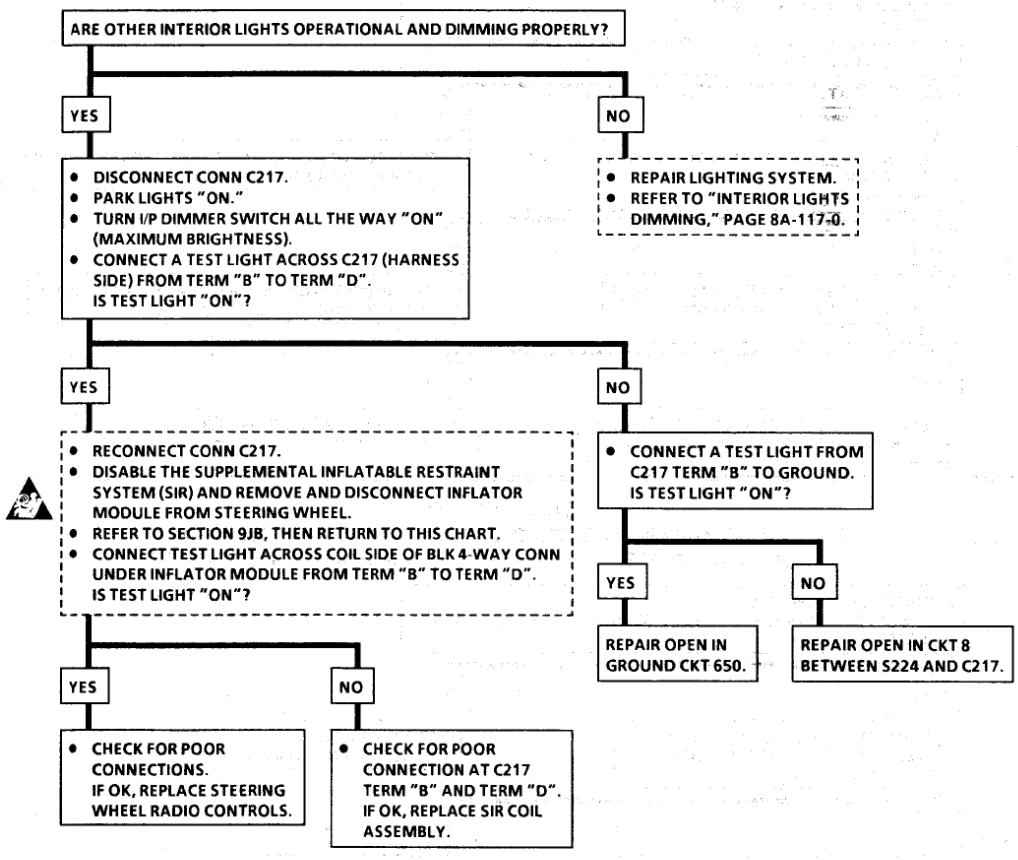
NO

REPAIR OPEN IN CKT 40 BETWEEN S210 AND RELAY.

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RADIO

CHART #3 (PONTIAC)
ALL LIGHTS IN STEERING WHEEL CONTROL BUTTONS INOPERATIVE



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SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.

CHART #4
POOR RECEPTION

IMPORTANT:
- THE SYSTEM PERFORMANCE CHECK SHOULD BE PERFORMED BEFORE CONTINUING WITH THIS CHART.
- IF SUBSTITUTING AN ANTENNA OR CABLE, BE SURE TO USE A BARBLESS TYPE CONNECTOR. INCORRECT CONNECTORS MAY CAUSE POOR RECEPTION OR DAMAGE TO CONNECTORS.

IS THERE A NOISE THAT ACCOMPANIES THE POOR RECEPTION COMPLAINT?

NO
- FM ONLY WEAK? AM AND FM OR AM ONLY WEAK?

YES
- REFER TO "RADIO NOISE," CHART #10 BEFORE CONTINUING WITH THIS CHART.

AM AND FM OR AM ONLY WEAK
- SUBSTITUTE A KNOWN GOOD ANTENNA.
- KEY IN "ACCESSORY" POSITION.
- GROUND THE BASE OF THE ANTENNA TO THE VEHICLE BODY OR CHASSIS. RECEPTION STILL WEAK?

YES
- SUSPECT A VEHICLE COMPONENT IS CAUSING THE POOR RECEPTION.
- TRY AND ISOLATE A GROUP OF CIRCUITS, REMOVE FUSES, CIRCUIT BREAKERS OR FUSIBLE LINKS UNTIL THE RECEPTION IMPROVES. DID THE RECEPTION IMPROVE?

YES
- TRY THE FOLLOWING FIXES:
- REINSTALL ALL FUSES, CIRCUIT BREAKERS OR FUSIBLE LINKS. DISCONNECT COMPONENTS ON THE SUSPECT CIRCUIT UNTIL THE RECEPTION IMPROVES.
- CHECK THE INTEGRITY OF THE COMPONENT WIRING, INCLUDING ANY COMPONENT GROUND WIRES. REROUTE ANY COMPONENT WIRING THAT IS ROUTED WITH THE AUDIO WIRING OR THE ANTENNA COAX.
- CHECK FOR SERVICE BULLETINS.
- SERVICE RADIO, REFER TO SECTION 9A.

NO
- REFER TO "CHECKING RADIO MAST ANTENNAS," PAGE 8A-150-29.
- REPAIR ANTENNA SYSTEM AS NECESSARY.

NO
- SERVICE RADIO.
- REFER TO SECTION 9A.

FM ONLY WEAK
- COMPARE FM RECEPTION TO ANOTHER VEHICLE WITH SIMILAR EQUIPMENT.
- TUNE TO A WEAK STATION. BOTH RADIOS RECEPTION SIMILAR?

YES
- WEAK FM RECEPTION MAY HAVE BEEN DUE TO SIGNAL STRENGTH, TERRAIN OF THE AREA, ELECTRICAL INTERFERENCE OR ATMOSPHERIC CONDITIONS.
- EXPLAIN TO THE CUSTOMER THAT THE RADIO RECEPTION IS NORMAL. REFER TO CUSTOMER TIPS TO HELP EXPLAIN NORMAL RECEPTION OR HOW TO ACHIEVE BETTER RECEPTION. IF POOR RECEPTION IS STILL PERCEIVED, CONTACT TECHNICAL ASSISTANCE.

NO
- CHECK FOR SERVICE BULLETINS.
- SERVICE RADIO.
- REFER TO SECTION 9A.

CHART #5
CASSETTE TAPE PLAYER INOPERATIVE

CHECK PLAYER FOR OBSTRUCTIONS.

NO OBSTRUCTION FOUND
- SUBSTITUTE A KNOWN GOOD CASSETTE TAPE. DOES CASSETTE PLAYER WORK?

YES
- FAULT WAS WITH CASSETTE TAPE.

NO
- SERVICE RADIO.
- REFER TO SECTION 9A.

OBSTRUCTION FOUND
- REMOVE OBSTRUCTION.
- REFER TO SECTION 9A.

NOTICE: IMPROPER REMOVAL MAY DAMAGE CASSETTE TAPE PLAYER.

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CHART #6
NO SOUND FROM ONE SPEAKER (UQ0 OR U62)

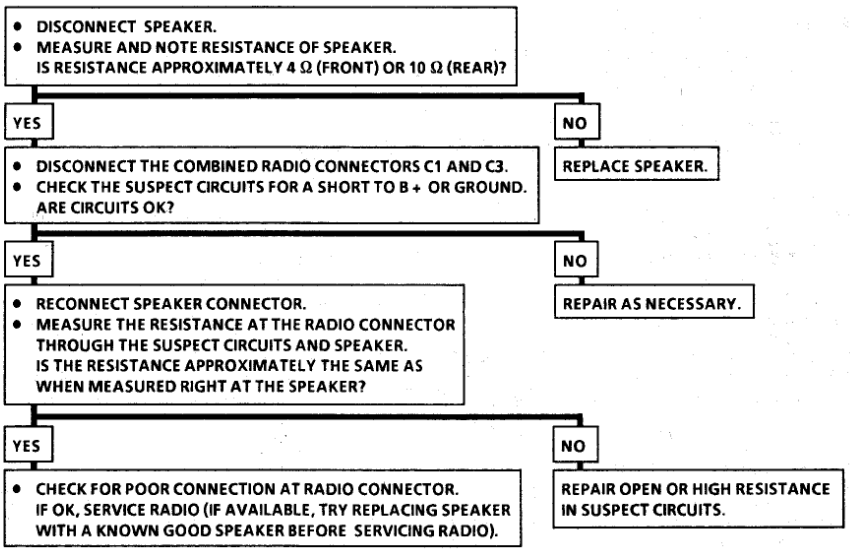
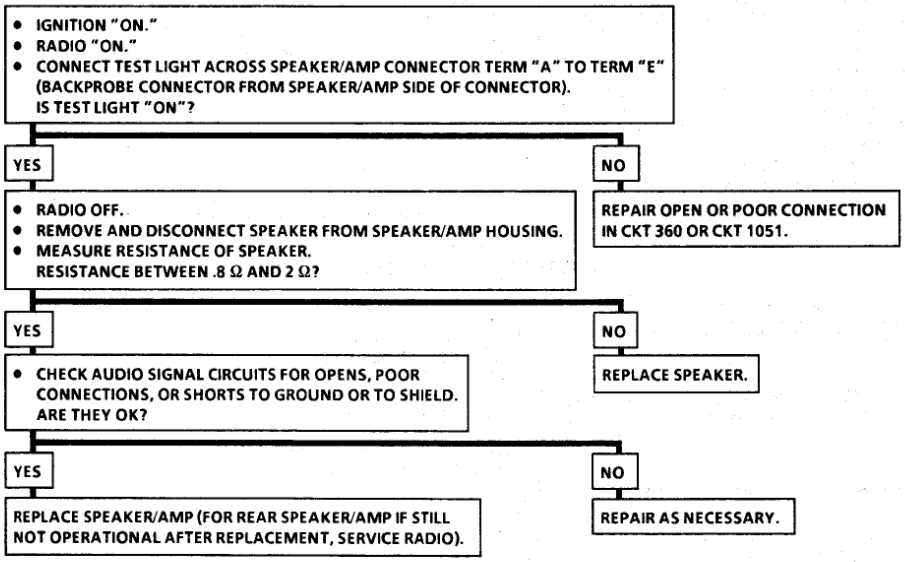


CHART #7 (CHEVY)
NO SOUND FROM ONE SPEAKER (DELCO-BOSE®)



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CHART #8 (PONTIAC)
NO SOUND FROM ONE SPEAKER (UW2)

- DISCONNECT SPEAKER.
- MEASURE AND NOTE RESISTANCE OF SPEAKER.
  IS RESISTANCE APPROXIMATELY EQUAL TO RESISTANCE SHOWN ON THE SCHEMATIC (3-10 Ω) FOR THAT SPEAKER? (FOR THE REAR QUARTER TWEETER AND MIDRANGE SPEAKERS WIRED TOGETHER AS PART OF THE UW2 SPEAKER PACKAGE, MEASURE ACROSS EACH SPEAKER COIL SEPARATELY.)

YES

- DISCONNECT THE COMBINED RADIO CONNECTORS C1 AND C3, OR THE AMPLIFIER CONNECTOR FOR THE SUBWOOFERS.
- CHECK THE SUSPECT CIRCUITS FOR A SHORT TO B + OR GROUND.
  ARE CIRCUITS OK?

YES

- RECONNECT SPEAKER CONNECTOR.
- MEASURE THE RESISTANCE AT THE RADIO CONNECTOR OR AMPLIFIER CONNECTOR THROUGH THE SUSPECT CIRCUITS AND SPEAKER.
  IS THE RESISTANCE APPROXIMATELY THE SAME AS WHEN MEASURED RIGHT AT THE SPEAKER?

YES

- CHECK FOR POOR CONNECTION AT RADIO OR AMPLIFIER CONNECTOR.
  IF OK, SERVICE RADIO OR AMPLIFIER (IF AVAILABLE, TRY REPLACING SPEAKER WITH A KNOWN GOOD SPEAKER BEFORE REPLACING RADIO OR AMPLIFIER).

NO

- CHECK FOR POOR CONNECTION AT SPEAKER.
  IF OK, REPAIR OPEN OR HIGH RESISTANCE IN SUSPECT CIRCUITS.

NO

REPLACE SPEAKER.

NO

REPAIR AS NECESSARY.

CHART #9 (PONTIAC)
BOTH SUBWOOFER SPEAKERS INOPERATIVE (UW2)

- DISCONNECT AMPLIFIER CONN.
- CONNECT A TEST LIGHT FROM CONN TERM "1" TO TERM "4".
  IS TEST LIGHT "ON"?

YES

- IGNITION "ON."
- RADIO "ON."
- USE A DVM TO CHECK VOLTAGE AT AMPLIFIER CONN TERM "8".
  IS VOLTAGE APPROX B + ?

YES

- IGNITION "OFF."
- RADIO "OFF."
- DISCONNECT RADIO CONNECTORS C1 AND C3.
- CHECK AUDIO SIGNAL CIRCUITS FOR OPENS BETWEEN AMPLIFIER AND RADIO OR FOR MAJOR WIRING DAMAGE.
- CHECK FOR POOR CONNECTION TO AMPLIFIER.
  IF OK, SERVICE AMPLIFIER.

NO

- REMOVE RADIO WHILE LEAVING CONNECTED.
- RADIO STILL "ON."
- DVM STILL SET ON VOLTAGE, BACKPROBE RADIO CONN C1 TERM "8".
  IS VOLTAGE APPROX B + ?

YES

REPAIR OPEN IN CKT 314.

NO

- CHECK FOR POOR CONNECTION AT C1 TERM "8" OR FOR SHORT TO GROUND IN CKT 314.
  IF OK, SERVICE RADIO.

NO

- CONNECT A TEST LIGHT FROM TERM "1" TO GROUND.
  IS TEST LIGHT "ON"?

YES

REPAIR OPEN IN GROUND CKT 650.

NO

REPAIR OPEN IN B + CKT 40.

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RADIO

CHART #10
RADIO NOISE

IMPORTANT:

- IF THERE ARE AFTERMARKET COMPONENTS INSTALLED OR IN USE IN VEHICLE THAT MAY BE CAUSING COMPLAINT, REFER TO CHART #11 THEN RETURN TO THIS CHART.
- IF NOISE IS IN CONJUNCTION WITH POOR RECEPTION, GO TO CHART #4, "POOR RECEPTION."
- TO DISTINGUISH BETWEEN NOISE OR POOR RECEPTION, PERFORM THE SYSTEM PERFORMANCE CHECK ON PAGE 8A-150-12
- IF NOISE IS ONLY PRESENT WHEN A SWITCH IS ACTIVATED, REFER TO CHART #16, "SWITCH POP OR ACCESSORY NOISE," BEFORE PROCEEDING.
- CHECK FOR ANY TECHNICAL SERVICE BULLETINS ON RADIO NOISE.

- PUT RADIO AND VEHICLE IN SIMILAR MODE WHERE NOISE OCCURS (AM OR FM, STATION FREQUENCY, ETC.).
- IF A VEHICLE SYSTEM IS SUSPECTED, IT SHOULD BE TURNED "ON."

IS NOISE IN ALL SPEAKERS?

- NO → REFER TO CHART #20, "HARNESS RELATED NOISE," PAGE 8A-150-32.
- YES →
  - PUT IGNITION IN "ACCESSORY." DOES NOISE OCCUR IN THE "ACCESSORY" MODE?
    - NO → WITH THE IGNITION "ON" AND ENGINE "OFF," DOES THE NOISE APPEAR?
      - YES → REFER TO CHART #12, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE NOT RUNNING," PAGE 8A-150-22.
      - NO → WITH THE ENGINE "ON" AND THE ENGINE "RUNNING," DOES THE NOISE APPEAR?
        - YES → REFER TO CHART #13, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE RUNNING ONLY," PAGE 8A-150-23.
        - NO → REFER TO CHART #4, "POOR RECEPTION" PAGE 8A-150-17.
    - YES → DISCONNECT ANTENNA COAX FROM RADIO. IS NOISE STILL PRESENT?
      - NO → REFER TO CHART #18, "RADIO NOISE ENTERING THROUGH ANTENNA SYSTEM (FRONTWAY NOISE)," PAGE 8A-150-28.
      - YES →
        - RECONNECT ANTENNA COAX TO RADIO.
        - UNFASTEN RADIO AND LEAVE CONNECTORS CONNECTED.
        - WHILE LISTENING TO THE NOISE: MOVE THE RADIO IN AND OUT OF ITS ORIGINAL LOCATION. MOVE HARNESSES AWAY FROM RADIO IF NECESSARY.

        DOES THE NOISE DISAPPEAR OR DECREASE WHEN THE RADIO IS MOVED FROM ITS ORIGINAL LOCATION?
        - YES → REFER TO CHART #11, "RADIO NOISE ENTERING THROUGH RADIO (SIDEWAY NOISE)," PAGE 8A-150-21.
        - NO → REFER TO CHART #12, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE NOT RUNNING)," PAGE 8A-150-22.

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CHART #11
RADIO NOISE ENTERING THROUGH RADIO (SIDEWAY NOISE)

IMPORTANT:

- ONLY PERFORM THIS CHART IF SENT HERE FROM CHART #10, " RADIO NOISE."
- CHECK FOR TECHNICAL SERVICE BULLETINS RELATING TO RADIO NOISE BEFORE PROCEEDING.

ARE THERE ANY AFTERMARKET ADD-ON COMPONENTS INSTALLED IN VEHICLE? (PHONE, RADAR DETECTOR, ETC.)

NO

- CHECK FOR A TIGHT GROUND G201 OR G200.
- CHECK ROUTING OF HARNESSING NEAR AUDIO COMPONENTS. MOVE AWAY OR REROUTE IF POSSIBLE.
- ATTACH A SEPARATE BRAIDED GROUND STRAP FROM THE CASE OF THE RADIO TO A CLEAN SOLID GROUND. REMOVE THE ORIGINAL GROUND.
- IF NOISE STILL PERSISTS, TRY WRAPPING HARNESS NEAR RADIO WITH ALUMINUM TAPE (NICKEL TAPE WORKS BEST). BE SURE NOT TO LEAVE GAPS BETWEEN THE WRAPS OF TAPE. ADD A BRAIDED GROUND STRAP IN THE TAPE AT THE BEGINNING AND END OF THE WRAPPING. ATTACH THE ENDS TO A SOLID GROUND (ALSO TRY GROUNDING ONLY ONE SIDE OF THE STRAP).
- IF NOISE PERSISTS, REFER TO CHART #12, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE NOT RUNNING," OR CHART #13, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE RUNNING ONLY."

YES

- DISCONNECT COMPONENT. IS NOISE STILL PRESENT?

YES

- CHECK FOR A TIGHT GROUND G201 OR G200.
- CHECK ROUTING OF HARNESSING NEAR AUDIO COMPONENTS. MOVE AWAY OR REROUTE IF POSSIBLE.
- ATTACH A SEPARATE BRAIDED GROUND STRAP FROM THE CASE OF THE RADIO TO A CLEAN SOLID GROUND. REMOVE THE ORIGINAL GROUND.
- IF NOISE STILL PERSISTS, TRY WRAPPING HARNESS NEAR RADIO WITH ALUMINUM TAPE (NICKEL TAPE WORKS BEST). BE SURE NOT TO LEAVE GAPS BETWEEN THE WRAPS OF TAPE. ADD A BRAIDED GROUND STRAP IN THE TAPE AT THE BEGINNING AND END OF THE WRAPPING. ATTACH THE ENDS TO A SOLID GROUND (ALSO TRY GROUNDING ONLY ONE SIDE OF THE STRAP).
- IF NOISE PERSISTS, REFER TO CHART #12, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE NOT RUNNING," OR CHART #13, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE RUNNING ONLY."

NO

- CHECK FOR ANY HARNESS RUNNING NEAR AFTERMARKET COMPONENT. MOVE AWAY AS NECESSARY.
- CHECK FOR SOLID GROUND TO COMPONENT.
- TRY INSTALLING A FILTER (P/N 1224205) BETWEEN COMPONENT POWER FEED(S) AND GROUND.
- IF NOISE PERSISTS WHEN COMPONENT IS PLUGGED IN, CONSULT MANUFACTURER OF COMPONENT OR LEAVE REMOVED FROM VEHICLE.
- REFERENCE SOUND SERVICE GUIDE FOR CORRECT INSTALLATION OF AFTERMARKET COMPONENTS.

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CHART #12

RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE NOT RUNNING

IMPORTANT:

- BEFORE PROCEEDING:
  - CHECK FOR ANY TECHNICAL SERVICE BULLETINS ON RADIO NOISE.

- IGNITION IN POSITION WHERE COMPLAINT OCCURS.
- RADIO SET TO SIMILAR MODE WHERE COMPLAINT OCCURS.

IS NOISE STILL PRESENT?

NO

NOISE MAY HAVE BEEN DUE TO A POOR RECEPTION AREA.

YES

- REMOVE ONE FUSE AT A TIME FROM THE FUSE BLOCKS (DO NOT REMOVE THE "COURTESY" OR "RADIO" FUSES).

IS NOISE ELIMINATED WHEN A PARTICULAR FUSE IS REMOVED?

NO

- INSTALL A FILTER (P/N 1224205) BETWEEN RADIO CONN C1 TERM "10" AND GROUND.
- IF NOISE IS STILL PRESENT, THEN ATTACH A BRAIDED GROUND STRAP FROM THE RADIO CHASSIS TO NEAREST GROUND POINT. REMOVE ORIGINAL RADIO GROUND FROM RADIO CONN C1 TERM "5".

IS NOISE ELIMINATED?

YES

- REINSTALL ALL FUSES, CIRCUIT BREAKERS, OR FUSIBLE LINKS.
- ONCE THE "NOISY" CIRCUIT HAS BEEN ISOLATED, IDENTIFY THE "NOISY" COMPONENT BY DISCONNECTING EACH COMPONENT ON THAT CIRCUIT UNTIL THE NOISE STOPS.

CAN NOISE BE STOPPED?

NO

- IF DELCO-BOSE® SYSTEM, REMOVE THE BOSE RELAY AND JUMPER BETWEEN TERMINALS "C1" AND "A2" OF RELAY CONNECTOR.
- IF NOISE IS ELIMINATED, REPLACE RELAY.
- IF NOISE IS NOT ELIMINATED, SUSPECT THE RADIO.

YES

NO FURTHER DIAGNOSIS IS NECESSARY.

NO

TRY THE FOLLOWING FIXES:

- REMOVE THE RADIO GROUND WIRE AND ATTACH A BRAIDED GROUND STRAP TO THE RADIO CASE. CONNECT THE OTHER END TO A GOOD CHASSIS GROUND.
- REROUTE RADIO SYSTEM HARNESSES AWAY FROM OTHER VEHICLE WIRING AND ELECTRICAL COMPONENTS. REMOVE RADIO SYSTEM WIRING FROM HARNESSES WHEN BUNDLED WITH OTHER VEHICLE WIRING.
- ESTABLISH A NEW COMPONENT GROUND IF CURRENTLY SHARED WITH THE AUDIO SYSTEM. IF ROUTED TOGETHER WITH AUDIO SYSTEM WIRING, SEPARATE AND SHIELD THE COMPONENT WIRING. THE WIRING CAN BE SHIELDED BY WRAPPING IT WITH NICKEL TAPE. BE SURE NOT TO LEAVE GAPS BETWEEN THE WRAPS OF THE TAPE. GROUND EACH END OF THE SHIELD BY TAPING A BRAIDED GROUND STRAP TO IT AND ATTACHING THE STRAPS TO A GOOD CHASSIS GROUND.
- INSTALL A FILTER PACKAGE, 1224205, ONLY ON THE POWER FEEDS TO THE "NOISY" COMPONENT. INSTALL THE FILTER WITH THE BLACK LEAD AWAY FROM THE COMPONENT. ALSO TEST FOR BEST RESULTS WITH THE BLACK LEAD GROUNDED AND UNGROUNDED.
- FOR CDM RADIO'S, USE .47 CAPACITOR ON IGNITION LINE.
- REMOVE ANY RADIO INPUT LINE, SUCH AS: DATA LINE, DIM LINE, POWER ANTENNA LINE, STEERING WHEEL CONTROL LINE, AND CHECK IF NOISE DISAPPEARS. IF NOISE STILL PRESENT, CONTACT TECHNICAL ASSISTANCE.

YES

IS COMPONENT OPERATING NORMALLY?

YES

- IF COMPONENT CAN BE NOISE FILTERED, REFER TO NOISE SUPPRESSION COMPONENTS LIST AND SUPPRESS AS NECESSARY.

IS NOISE ELIMINATED?

NO

- CHECK WIRING AND GROUND TO THE COMPONENT. IF OK, REPLACE COMPONENT.

NO

YES

NO FURTHER ACTION REQUIRED.

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CHART #13
RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE RUNNING ONLY

IMPORTANT:

- BEFORE PROCEEDING:
  - SERVICE ANY KNOWN DRIVEABILITY PROBLEMS.
  - CHECK FOR ANY TECHNICAL SERVICE BULLETINS ON THIS TYPE OF RADIO NOISE.

- SET RADIO TO MODES WHERE NOISE OCCURS.
- DISCONNECT GENERATOR 4-WAY CONNECTOR.
- START ENGINE.

IS NOISE STILL PRESENT?

YES

- STOP ENGINE AND REINSTALL GENERATOR CONNECTOR.
- PERFORM CHART #14, "IGNITION NOISE."

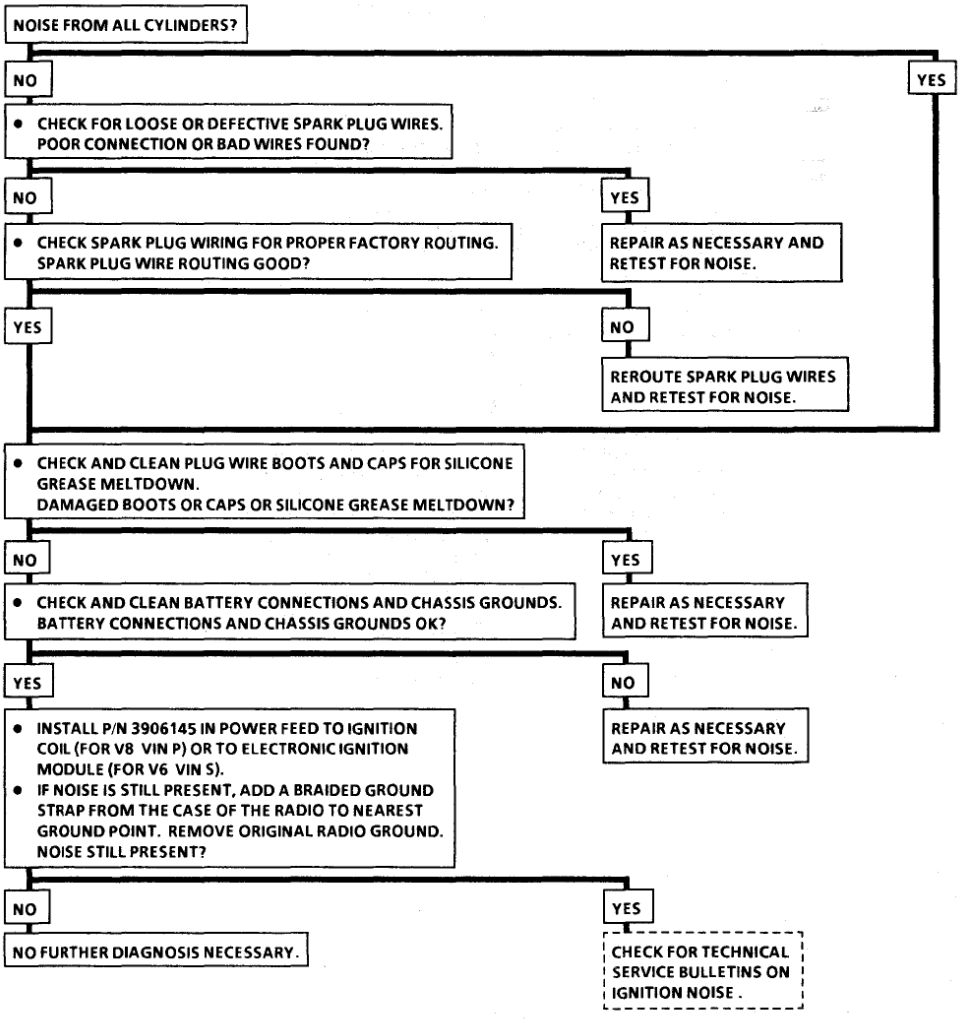
NO

- STOP ENGINE.
- INSTALL A GENERATOR CAPACITOR (P/N 1227895) TO GENERATOR. CAPACITOR SHOULD BE INSTALLED IN PARALLEL BETWEEN THE WIRE ATTACHED ON OUTPUT STUD IN BACK OF THE GENERATOR AND NEAREST GOOD GROUND.
- REINSTALL 4-WAY CONNECTOR AND RESTART ENGINE. IF NOISE PERSISTS, PERFORM CHART #15, "GENERATOR WHINE (VARIES WITH ENGINE SPEED)."

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RADIO

CHART #14
IGNITION NOISE



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CHART #15
GENERATOR WHINE
(VARIES WITH ENGINE SPEED)

- IGNITION "OFF."
- DISCONNECT GENERATOR COMPLETELY.
- START ENGINE.
  NOISE STILL PRESENT?

NO

- RECONNECT GENERATOR.
- START ENGINE.
  NOISE PRESENT?

YES

- ALL ACCESSORIES TO "OFF."
- IGNITION SWITCH TO "OFF."
- USING DIGITAL MULTIMETER J 39200, MEASURE VOLTAGE FROM NEGATIVE BATTERY TERMINAL TO GENERATOR CASE.

GREATER THAN 0.1V DC

- CHECK GROUND TERM ON BATTERY.
- CHECK FOR COATED MOUNTING BOLTS ON GENERATOR BRACKET.
- RUN A TEMPORARY SEPARATE BRAIDED GROUND STRAP FROM GENERATOR BODY TO A SOLID GROUND POINT.
  NOISE STILL PRESENT?

YES

- INSTALL BRAIDED GROUND STRAP FROM RADIO RECEIVER CASE TO NEAREST GROUND POINT, REMOVE ORIGINAL RADIO GROUND.
  NOISE STILL PRESENT?

YES

- TRY THE FOLLOWING FIXES:
- INSTALL A FILTER (P/N 1224205) IN THE BATTERY FEED TO THE RADIO AT CONN C1 TERM "10".
- TRY INSTALLING THE FILTER WITH THE FOLLOWING VARIATIONS IF NOISE IS NOT ELIMINATED.
  - INSTALL THE FILTER WITH THE SINGLE WIRE SIDE TOWARD THE RADIO AND THE GROUND WIRE ATTACHED TO A GOOD GROUND.
  - REMOVE GROUND TO THE FILTER.
  - REVERSE FILTER TO HAVE TWO WIRE SIDE TOWARD RADIO WITH GROUND WIRE ATTACHED.
  - REMOVE GROUND TO THE FILTER.
- IF NOISE IS STILL PRESENT, INSTALL ANOTHER FILTER (P/N 1224205) IN THE IGNITION FEED TO THE RADIO AT CONN C1 TERM "9". INSTALL USING THE SAME VARIATIONS AS THE FIRST FILTER. IF THE INSTALLATION OF THIS FILTER CAUSES TURN "ON" OR TURN "OFF" DELAYS OR OTHER NOTICEABLE PERFORMANCE PROBLEMS, REMOVE IT AND INSTALL A .47 µf CAP TO GROUND IN ITS PLACE.
- IF NOISE IS STILL PRESENT, CHECK THE CHARGING SYSTEM. REFER TO SECTION 6D3.
- IF THE CHARGING SYSTEM IS FUNCTIONING NORMALLY, CHECK FOR TECHNICAL SERVICE BULLETINS ON GENERATOR WHINE.
- CALL TECHNICAL ASSISTANCE.
- REMOVE ANY UNNEEDED FILTERS AFTER REPAIR, BEFORE REASSEMBLING VEHICLE.

NO

- IF ANY OTHER ELECTRICAL ACCESSORIES CAUSE RADIO NOISE, REMOVE THE BRAIDED GROUND STRAP AND ATTACH THE ORIGINAL RADIO GROUND TO THE STEERING COLUMN OR NEAREST GROUND POINT.
- RETEST FOR NOISE.

YES

- REFER TO CHART #10, "RADIO NOISE," PAGE 8A-150-20.

NO

- CHECK FOR FAULTY MOUNTING OF GENERATOR TO ENGINE.
- MAKE SURE ALL GROUND STRAPS BETWEEN ENGINE AND FRAME ARE CLEAN AND TIGHT.

LESS THAN 0.1V DC

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RADIO

CHART #16
SWITCH POP OR ACCESSORY NOISE

(FOR NOISE RELATED TO THE ACTIVATION OR OPERATION OF A SWITCH OR ACCESSORY. FOR EXAMPLE, A POP WHEN THE BRAKES ARE APPLIED OR A HUM WHEN THE A/C IS USED.)

DOES NOISE OCCUR ONLY WHEN TURNING A SWITCH ON OR OFF?

NO

- DETERMINE WHICH ACCESSORY IS CAUSING THE NOISE. IS A MOTOR NOISE SUSPECTED?

NO

TRY THESE REPAIRS:
- CHECK THE GROUND CIRCUIT FOR THE SUSPECT MODULE OR COMPONENT.
- REROUTE ANY AUDIO HARNESSES OR THE ANTENNA COAX AWAY FROM THE MODULE OR COMPONENT.
- INSTALL A FILTER PACKAGE 1224205 ONLY IN THE POWER FEED TO THE MODULE OR COMPONENT. INSTALL THE FILTER WITH THE BLACK LEAD AWAY FROM THE MODULE OR COMPONENT. ALSO, TEST FOR THE BEST RESULTS WITH THE BLACK LEAD GROUNDED AND UNGROUNDED.
- INSTALL A .47 µf CAPACITOR IN THE B + AND IGNITION FEEDS TO THE RADIO.
- IF NOISE IS STILL PRESENT TRY A KNOWN GOOD MODULE OR COMPONENT.
- IF NOISE STILL PERSISTS, REFER TO "BACKWAY/ELECTRICAL NOISE" CHARTS, THEN IF NECESSARY CALL TECHNICAL ASSISTANCE.

YES

TRY THESE REPAIRS:
- CHECK FOR A GOOD GROUND TO THE MOTOR.
- INSTALL A CAPACITOR (P/N 3906145) AT THE POWER FEED TO THE MOTOR TO A KNOWN GOOD GROUND.

IMPORTANT:
FOR A BLOWER MOTOR NOISE INSTALL A "FEED THROUGH" CAPACITOR (P/N 3906187) IN THE POWER FEED TO THE BLOWER MOTOR.

- TRY INSTALLING A .47 µf CAPACITOR (IN PARALLEL TO GROUND) AT THE B + AND IGNITION FEEDS TO THE RADIO.
- IF NOISE IS STILL PRESENT, TRY A KNOWN GOOD MOTOR.
- IF NOISE STILL PERSISTS, REFER TO "BACKWAY/ELECTRICAL NOISE" CHARTS, THEN IF NECESSARY CALL TECHNICAL ASSISTANCE.

YES

- DETERMINE WHICH SWITCH IS CAUSING A POP WHEN ACTIVATED.
- DETERMINE SWITCH CONFIGURATION, SEE FIGURE 1 OR FIGURE 2.
- INSTALL CAPACITOR (P/N 1227894) AT LOCATION ①. POP STILL PRESENT?

YES

- INSTALL CAPACITOR (P/N 1227894) AT LOCATION ②. POP STILL PRESENT?

YES

- INSTALL CAPACITOR (P/N 1227894) AT LOCATION ③. POP STILL PRESENT?

YES

CHECK FOR TECHNICAL SERVICE BULLETINS ON SWITCH POP.

NO

RETEST FOR NOISE.

NO

RETEST FOR NOISE.

NO

RETEST FOR NOISE.

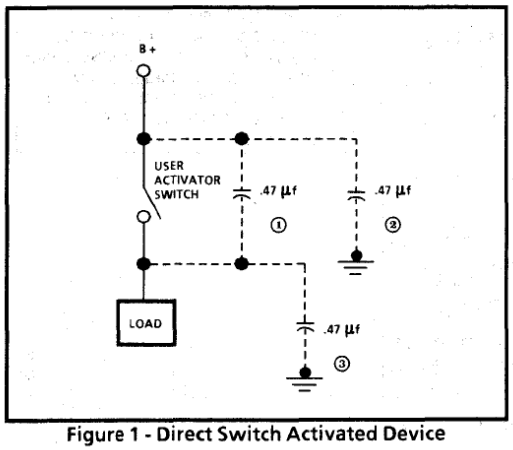


Figure 1 - Direct Switch Activated Device

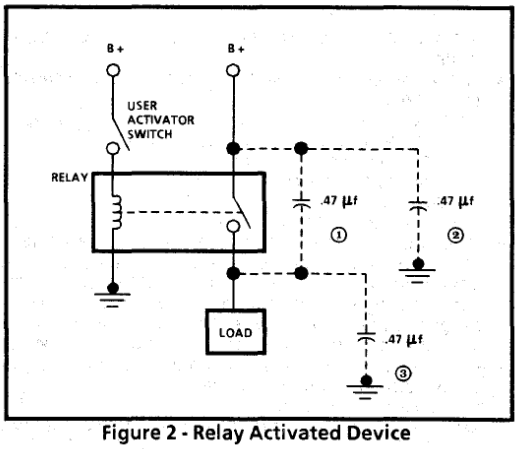


Figure 2 - Relay Activated Device

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CHART #17
ALL STEERING WHEEL RADIO CONTROLS INOPERATIVE (OR OPERATE ERRATICALLY)

IMPORTANT:

- AN ADDITIONAL RADIO INPUT TEST CAN BE FOUND ON PAGE 8A-150-31.

ARE ALL RADIO FUNCTIONS OPERATING NORMALLY AT RADIO?

YES

- IGNITION "ON."
- RADIO "ON."
- BACKPROBE FROM CONN C217 TERM "C" TO GROUND USING J 39200 DVM SET TO VOLTAGE.
- MEASURE AND NOTE THE VOLTAGE WHILE PRESSING EACH OF THE STEERING WHEEL RADIO CONTROL BUTTONS.
- COMPARE THE VOLTAGES TO THE CHART ON PAGE 8A-150-1.
  DO THE VOLTAGES CHECK OUT OK?

NO

WAS VOLTAGE B + WHEN ANY BUTTON WAS PRESSED?

NO

- DISCONNECT RADIO CONN C4.
- DISCONNECT CONN C217.
- CHECK CKT 1796 FOR SHORT TO GROUND.
  IS CIRCUIT OK?

YES

- CONNECT TEST LIGHT FROM C217 TERM "A" (HARNESS SIDE) TO GROUND.
  IS TEST LIGHT "ON"?

YES

- DISABLE THE SUPPLEMENTAL INFLATABLE RESTRAINT (SIR) SYSTEM AND REMOVE AND DISCONNECT INFLATOR MODULE FROM STEERING WHEEL (REFER TO SECTION 9JB, THEN RETURN TO THIS CHART).
- CHECK CKTS 43 AND 1796 OF THE SIR COIL ASSEMBLY FOR OPENS OR SHORTS TO GROUND.
  IF OK, REPLACE STEERING WHEEL CONTROLS.
- IF STILL INOPERATIVE, SERVICE RADIO.
- REFER TO SECTION 9A.

NO

- CHECK FOR OPEN IN CKT 43 TO C217 TERM "A", OR FOR OPEN FUSE 17.
- IF FUSE 17 IS OPEN, CHECK FOR SHORT TO GROUND THROUGH CKT 43.

NO

REPAIR AS NECESSARY.

YES

- SERVICE RADIO.
- REFER TO SECTION 9A.

YES

- CHECK FOR OPEN IN CKT 1796 BETWEEN C217 AND RADIO, OR FOR POOR CONNECTION AT RADIO.
  IF OK, SERVICE RADIO.

NO

- CHECK FOR DIRECT SHORT TO B + IN CKT 1796 OR IN STEERING WHEEL RADIO CONTROLS.
- REPAIR AS NECESSARY.

YES

- SERVICE RADIO.
- REFER TO SECTION 9A.

NO

- DISCONNECT RADIO CONN C4 ONLY.
- RADIO "ON."
  ARE ALL RADIO FUNCTIONS OPERATIONAL AT RADIO?

YES

- IGNITION "ON."
- RADIO "ON."
- BACKPROBE FROM CONN C217 TERM "C" TO GROUND USING J 39200 DVM SET TO VOLTAGE.
- MEASURE AND NOTE THE VOLTAGE WHILE PRESSING EACH OF THE STEERING WHEEL RADIO CONTROL BUTTONS.
- COMPARE THE VOLTAGES TO THE CHART ON PAGE 8A-150-1.
  DO THE VOLTAGES CHECK OUT OK?

NO

WAS VOLTAGE B + WHEN ANY BUTTON WAS PRESSED?

NO

- DISCONNECT RADIO CONN C4.
- DISCONNECT CONN C217.
- CHECK CKT 1796 FOR SHORT TO GROUND.
  IS CIRCUIT OK?

YES

- CONNECT TEST LIGHT FROM C217 TERM "A" (HARNESS SIDE) TO GROUND.
  IS TEST LIGHT "ON"?

YES

- DISABLE THE SUPPLEMENTAL INFLATABLE RESTRAINT (SIR) SYSTEM AND REMOVE AND DISCONNECT INFLATOR MODULE FROM STEERING WHEEL (REFER TO SECTION 9JB, THEN RETURN TO THIS CHART).
- CHECK CKTS 43 AND 1796 OF THE SIR COIL ASSEMBLY FOR OPENS OR SHORTS TO GROUND.
  IF OK, REPLACE STEERING WHEEL CONTROLS.
- IF STILL INOPERATIVE, SERVICE RADIO.
- REFER TO SECTION 9A.

NO

- CHECK FOR OPEN IN CKT 43 TO C217 TERM "A", OR FOR OPEN FUSE 17.
- IF FUSE 17 IS OPEN, CHECK FOR SHORT TO GROUND THROUGH CKT 43.

CAUTION: This vehicle is equipped with Supplemental Inflatable Restraint (SIR). Refer to CAUTIONS in Section 9J under "ON-VEHICLE SERVICE" and the SIR Component and Wiring Location view in Section 9J before performing service on or around SIR components or wiring. Failure to follow CAUTIONS could result in possible air bag deployment, personal injury, or otherwise unneeded SIR system repairs.



SEE PAGE 8A-3-0 FOR PROPER HANDLING PROCEDURES

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RADIO

CHART #18
RADIO NOISE ENTERING THROUGH ANTENNA SYSTEM (FRONTWAY NOISE)

IMPORTANT:
- IF SUBSTITUTING AN ANTENNA OR CABLE, BE SURE TO USE A BARBLESS TYPE CONNECTOR. INCORRECT CONNECTORS MAY CAUSE POOR RECEPTION OR DAMAGE TO CONNECTORS.

- SUBSTITUTE A KNOWN GOOD ANTENNA WHILE USING ORIGINAL CABLE.
- GROUND BASE OF ANTENNA TO VEHICLE BODY OR CHASSIS.
IS NOISE STILL PRESENT?

YES

- SUBSTITUTE A KNOWN GOOD CABLE.
IS NOISE STILL PRESENT?

IMPORTANT:
- LEAD-IN CABLE MUST HAVE A BARBLESS TYPE CONNECTION AT RADIO.

NO

- CHECK ALL COAX CONNECTORS FOR CORROSION AND TIGHTNESS.
- ORIGINAL ANTENNA CABLE WAS DEFECTIVE OR MAY HAVE BEEN ROUTED THROUGH AN AREA THAT WAS PICKING UP NOISE. TRY MOVING THE COAX AWAY FROM OTHER ELECTRICAL COMPONENTS AND THEIR WIRING.
- IF NOISE COMES BACK WHEN NEW CABLE IS INSTALLED, NARROW IN ON NOISY AREA AND SHIELD CABLE WITH ALUMINUM TAPE. A NOISE SNIFFER SHOWN ON PAGE 8A-150-30 IS HELPFUL (SEE "CHECKING LEAD-IN CABLES" BEFORE REPLACING CABLE).
- ALSO TRY: REMOVING THE RECEIVER HARNESS GROUND WIRE AND ATTACHING A BRAIDED GROUND STRAP TO THE RADIO CASE. CONNECT THE OTHER END OF THE STRAP TO A GOOD CHASSIS GROUND.
- IF NOISE PERSISTS, REFER TO CHART #12, "RADIO NOISE ENTERING THROUGH HARNESS (BACKWAY NOISE) WHILE ENGINE NOT RUNNING."

YES

- RETEST FOR A DIFFERENT CAUSE OF NOISE, SEE CHART #10, "RADIO NOISE," PAGE 8A-150-20. IF NO OTHER NOISE IS FOUND, SERVICE RADIO.

NO

- MAKE SURE ANTENNA WAS PROPERLY MOUNTED AND GROUNDED AND ALL MOUNTING SCREWS ARE CLEAN AND TIGHT. IF OK, REPLACE ANTENNA.

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CHECKING RADIO MAST ANTENNAS

Unplug antenna lead-in at back of Radio and plug a test antenna into Radio. Make sure test antenna base is grounded to the vehicle chassis. Do not touch the mast. Check Radio reception in an area away from tall buildings, metal structures, power lines, fluorescent lighting and power tools. Tune to high and low ends of the dial on both AM and FM, checking weak and strong station reception. See "System Performance Check," page 8A-150-12. If reception is OK, the problem exists with antenna and/or its lead-in cable. If reception is still poor with test antenna, check for aftermarket equipment that may be causing complaint. If OK, service Radio.

CHECKING LEAD-IN CABLES

In case of continued reception or noise complaints, always check the lead-in with a digital multimeter, see Figure 3 and Table 1. If long jumper leads are not available, check center conductor continuity by jumping the antenna mast to ground and checking for continuity from the center conductor at Radio to ground.

When checking resistance, cautiously wiggle the lead-in tip and cable. Consistent readings from Table 1 should always be obtained. If not, some portion of the lead-in is intermittent and lead-in should be replaced. Also try:

1. Running a braided ground strap to the antenna lead-in.
2. Changing the antenna lead-in.
3. Disconnecting the lead-in to check resistance.

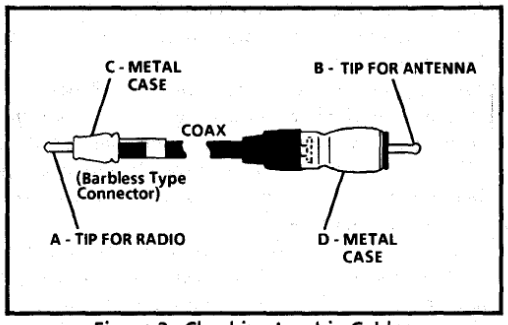


Figure 3 - Checking Lead-in Cables

Table 1 - Lead-in Cable Resistance Values

Digital Multimeter probes at points:	Resistance measured in ohms
A and B	less than 3.5
C and D	less than 0.2
A and D	infinite
C and B	infinite
A and C	infinite
B and D	infinite

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RADIO

USE AND CONSTRUCTION OF A NOISE "SNIFFER"

The antenna sniffer can be used along with the vehicle's Radio to locate "hot spots" which are generating Radio noise interference. These "hot spots" can be found in the harnesses, in the upper part of the dash or even between the hood and windshield.

The sniffer can be made from an old piece of antenna lead-in from a mast or power antenna. The longer the lead-in the better.

Make the antenna sniffer as shown in Figure 4. The 2" section with the black coating and braided shield stripped back becomes the antenna when the sniffer is plugged into the Radio's antenna socket. It can then be used to probe and search out "hot spots."

To use the noise sniffer:

1. While listening to the complaint noise, disconnect the antenna and plug the sniffer into the antenna socket.
2. Turn the Radio volume up.
3. Search for the noise source, keeping fingers off the 2" probe.

When checking for noise on a wire, the best results will be achieved when the sniffer is placed parallel to the wire, see Figure 5.

USE AND CONSTRUCTION OF A HAND HELD NOISE "SNIFFER"

A noise sniffer can be built from a personal AM/FM stereo cassette player.

EQUIPMENT

- Personal AM/FM stereo cassette tape player with headphones
- Four feet of 75 ohm antenna coax
- One-half inch heat shrink tube the same diameter as the coax
- A drill and bit the same diameter as the coax
- Book of matches or hair dryer
- Soldering iron and solder

INSTRUCTION FOR THE PERSONAL TYPE RADIO

1. Strip 1/4" off both ends of the coax.
2. Place the heat shrink over one end of the bare wire. Fasten the heat shrink to the wire by heating it (a match or a hair dryer).
3. Disassemble the Radio and locate the antenna.
4. Disconnect the antenna and fasten the bare end of the coax to the antenna mount. A soldering iron may be needed.
5. Feed the coax to the exterior of the Radio. Drill a feed hole if necessary.
6. Reassemble the Radio.

To use the Radio sniffer, turn the Radio on AM and select an appropriate station.

INSTRUCTION FOR THE PERSONAL TYPE CASSETTE

1. Strip 1/4" off each end of coax.
2. Disassemble the cassette deck and locate the tape head.
3. Remove the head and mount one end of the coax to this point. A soldering iron may be needed.
4. Feed the coax to the exterior of the cassette deck. Drill a feed hole if necessary.
5. Reassemble the cassette deck.
6. Feed the heat shrink tube through the other end of the coax. DO NOT FASTEN THE HEAT SHRINK.
7. Fasten the head to the open end of the coax. Use a soldering iron.
8. Cover the exposed wires between the head and the wire by positioning the heat shrink tube and heating it.

To use the cassette sniffer, push "play." It will work on the same idea as a metal detector.

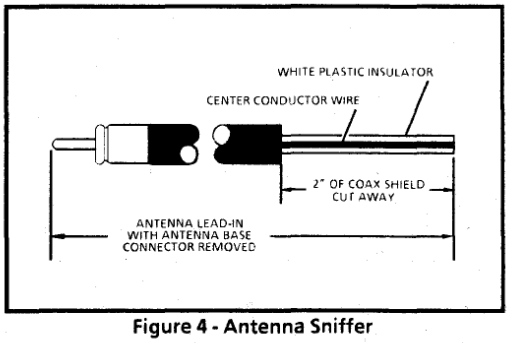


Figure 4 - Antenna Sniffer

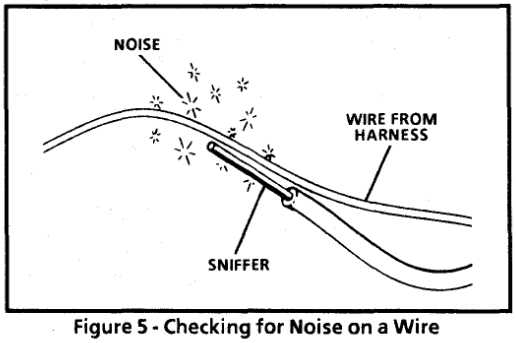


Figure 5 - Checking for Noise on a Wire

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CHART #19
ONE OR MORE STEERING WHEEL RADIO CONTROLS INOPERATIVE (SOME CONTROLS ARE OPERATIONAL)

IMPORTANT:

- ASSUME ALL FUNCTIONS OPERATE NORMALLY AT RADIO. IF THEY DO NOT OPERATE NORMALLY, SERVICE RADIO. REFER TO SECTION 9A.

- IGNITION "ON."
- RADIO "ON."
- BACKPROBE FROM CONN C217 TERM "C" TO GROUND USING J 39200 DVM SET TO VOLTAGE.
- MEASURE AND NOTE THE VOLTAGE WHILE PRESSING EACH OF THE STEERING WHEEL RADIO CONTROL BUTTONS.
- COMPARE THE VOLTAGES TO THE CHART ON PAGE 8A-150-1. DO THE VOLTAGES CHECK OUT OK?

YES

- SERVICE RADIO.
- REFER TO SECTION 9A.

NO

REPLACE STEERING WHEEL CONTROLS.

RADIO INPUT TEST

1. DISCONNECT CONN C217.
2. IGNITION "ON."
3. RADIO "ON."
4. USING SIGNAL GENERATOR I/P TESTER J 33431-B, SIMULATE THE RESISTANCES EQUAL TO THE VALUES IN THE STEERING WHEEL RADIO CONTROLS THAT DO NOT OPERATE (SEE RESISTANCE CHART).
5. MOMENTARILY CONNECT THE SIMULATED RESISTANCES FROM B + TO C217 TERM "C" (RADIO SIDE).

RESISTANCE CHART

SIMULATED BUTTON	RESISTANCE FROM TERM "A" TO TERM "C" IN OHMS.
PRE-SET	1270
VOLUME (UP)	1564
VOLUME (DOWN)	1912
PWR	2387
AM/FM	3102
SEEK (UP)	4282
SEEK (DOWN)	6652
RCL	13632

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RADIO

CHART #20
HARNESS RELATED NOISE

- WITH THE RADIO OFF, INTERCHANGE THE AUDIO LEADS OF A NON-COMPLAINT SPEAKER WITH THE AUDIO LEADS OF A COMPLAINT SPEAKER AT THE RECEIVER. TURN THE RADIO ON. DOES THE ORIGINAL COMPLAINT SPEAKER NOW PERFORM NORMALLY?

NO

- INSTALL TEMPORARY AUDIO LEADS BETWEEN THE RECEIVER AND THE COMPLAINT SPEAKER(S). DOES THIS ELIMINATE THE NOISE?

NO

- INSURE THAT THE AUDIO LEADS ARE MAKING GOOD CONTACT WITH THE SPEAKER.
- ALSO, VERIFY THAT THE NOISE IS NOT A SPEAKER NOISE BY INTERCHANGING A COMPLAINT SPEAKER WITH A NON-COMPLAINT SPEAKER.
- IF THE SPEAKER IS GOOD, CALL TECHNICAL ASSISTANCE.

YES

- INSTALL NEW AUDIO LEADS.
- TRY TO ROUTE THE NEW LEADS BY THEMSELVES SO THAT NO INTERFERENCE CAN BE COUPLED ON TO THEM.

YES

- VERIFY THAT THE AUDIO LEADS WERE MAKING GOOD CONTACT WITH THE RECEIVER, REPAIR IF NECESSARY.
- IF NOISE IS RELATED TO THE ACTIVATION OR OPERATION OF A SWITCH OR ACCESSORY, REFER TO CHART #16, "SWITCH POP OR ACCESSORY NOISE," PAGE 8A-150-26.
  IF NOT, SERVICE RADIO.

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NOISE ENTRY

FRONTWAY NOISE

Any noise which is brought into the Radio system through the antenna. (Noise can be eliminated by unplugging the antenna from the back of the Radio.)

Some Causes:

- Poor grounding or missing grounds of: the antenna base; the receiver; some electrical components; body parts.
- Defective or marginal components: relays, solenoid, switches and electric motors.
- Something near the antenna coax or corrosion at antenna coax connections.

Solutions:

- Always verify grounding first. If more than one component interferes, a poor ground probably exists.
- Pinpoint the source: suppress, shield or replace.
- Reroute noisy wires if necessary.

SIDEWAY NOISE

Any noise that enters the audio component by a radiated field through the component case. (Noise is reduced or eliminated when slowly removing the audio component from its fastened location.)

Some Causes:

Noisy wires or hoses behind or on top of the Radio or antenna coax lead-in.

Solutions:

- Suppress or shield the noisy wire or hose or reroute it.
- Shield the Radio case.
- Use aluminum or nickel tape and ground the tape whenever shielding. (Nickel tape will also stop magnetic interference, aluminum will not.)

BACKWAY NOISE

Noise that enters the audio component through its wiring harness, most commonly detected in the power and ground circuits. (Noise that can be heard at minimum volume and not frontway or sideway noise.)

Some Causes:

- Poor grounding of the Radio or of unsuppressed electrical components.
- Poorly routed wires or
- Defective suppression of electrical components.

Solutions:

- Suppression (capacitors, etc.) preferably can be installed at the noise source, then at the Radio or both.
- Switch pops are backway noise and best suppressed using capacitors.
- Squeals and buzzes are best suppressed using filter or generator whine packages.

HARNESS RELATED NOISE

Noise induced into speaker wires or any low level audio signal wire used as an interconnect between the various audio components.

Some Causes:

- Broken, pinched or shorted audio wires.
- Screw through wire harness.
- Faulty shield wires.

Solutions:

- Localize problem to left, right side, front or back speaker location. Preferably done by using the fade and balance controls; if not, try reversing the speaker leads at the Radio connector.
- Check wiring for defects, breaks, pinches or shorts.
- Check wiring near known noisy components.

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RADIO

CUSTOMER'S TIPS

HOW TO ENJOY FM STEREO

A. Select Stations Within Range – The best FM fidelity will be obtained from stations within a 10-40 mile range. Beyond that "noise" or "flutter" may begin to appear due to the "line of sight" range limitations of FM signals.

SOLUTION: Reduce treble response by moving the treble control down (or to the left) in fringe areas. On EQ Radios, slowly slide the 10K control down.

B. Realize Tall Structures Can Interfere – Tall buildings or hills may cause "shadows" or cancellation of FM signals (this is similar to the "ghost" or "flutter" effect seen on television sometimes when airplanes are flying in the vicinity). It will sound like a "pop" or momentary "hiss."

SOLUTION: Reduce the treble or 10K setting to a lower volume.

C. Interference From Another Station – Although the circuits in Delco receivers are the most advanced available, there are rare instances where a station being listened to will be interfered with by another station. This only happens when the stations are on almost the same frequency and certain geographical criteria are present.

SOLUTION: Select another station or switch to tape.

HOW TO ENJOY AM

Reception Characteristics

AM stereo does not have the flutter characteristics of FM (caused by tall buildings, hills, etc.). However, it is subject to interference from power lines, neon signs, atmospheric conditions, and unwanted stations. The stereo light will only come on when tuned to a clear, noise-free station broadcasting C-QUAM AM Stereo.

Finding Stereo Stations

1. Depress AM Stereo-Mono button to inward position.
2. Consult directory, or use Seek or Scan.
3. Watch for stereo light to come on, indicating you are tuned to stereo.

Important:

- After tuning to a stereo station, there is a one or two second delay before the stereo light comes on.

WAYS TO REDUCE NOISE

1. Press AM Stereo button to switch to mono.
2. Move treble control down.
3. Tune to a stronger station.

AM STEREO

The AM Stereo-Mono button has no effect on FM reception.

Most AM Stereo stations broadcast in C-Quam, but some do not. Check with your local station to determine compatibility in your area. **C-Quam** is a registered trademark of Motorola Inc.

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CIRCUIT OPERATION

Important:

- For Delco-Loc II Anti-theft Feature (available only on Chevy U1T Disk Radio option) or for Radio Features and Controls Operation, refer to SECTION 9A.
- For Theft-Loc Anti-theft Feature (available on all Pontiac Radio Options UT6, UP3 and UN6) or Radio Features and Controls Operation, refer to SECTION 9A.

The Radio receives battery voltage at all times on CKT 40 from Fuse 8 to keep clock and preset station memory alive when the Ignition is "OFF." With the Ignition Switch in "ACCY", "RUN" or "RETAINED ACCESSORY POWER (RAP)," voltage is applied to CKT 43 from Fuse 17 to enable Radio operation.

When the Park Lights or Headlights are turned "ON," voltage is applied to the Radio on CKT 9 from the Headlight Switch. When voltage is applied to CKT 9 at the Radio, the Radio will illuminate the display. With the Headlights or Park Lights "ON," the Radio display may be dimmed manually using the I/P Dimmer Switch. The I/P Dimmer Switch varies the voltage on CKT 8 to the Radio to control display dimming.

SPEAKERS: BASE (UQ0 OR U62)

With the Base Speaker System, the audio signals are amplified within the Radio, and the outputs go directly to the speakers.

SPEAKERS: DELCO-BOSE®

The Delco-Bose® Music System uses a relay to control Battery voltage to three speaker/amps within the Passenger Compartment. A shielded cable carries the audio signals from the Radio to the speaker/amps where the signals are then amplified to drive speakers.

SPEAKERS: UW2 (10 SPEAKER SOUND SYSTEM)

For eight of the systems ten speakers, the audio signals are amplified within the Radio and the outputs go directly to the speakers.

The Amplifier is used to drive two subwoofers. The Amplifier receives all the amplified signals coming from the Radio. These signals are used to determine the Amplifier's output to the subwoofers. The Amplifier has separate power and ground inputs and is turned "ON" and "OFF" from the control output of the Radio on CKT 314.

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SERVICE PARTS INFORMATION

Component Name Used In Section 8A	Service Parts Catalog	
	Reference Name	Group
A/C Clutch Diode	GMSPO #12112421	2.510
A/C Compressor Clutch	Not serviceable separately - Compressor, A/C	9.17
A/C Compressor Relay	Relay, FWD LMP WRG HARN	2.485
A/C Evaporator Temperature Sensor	Switch, A/C MDL THERM CYCL	9.275
A/C Refrigerant Pressure Sensor	Sensor, A/C REFRIG PRESS	9.275
ABS Brake Pressure Valve Solenoid, LF	Valve Kit, BRK M/CYL SOL	4.73
ABS Brake Pressure Valve Solenoid, RF	Valve Kit, BRK M/CYL SOL	4.73
ABS Motor Pack	Motor Kit, BRK M/CYL	4.647
ABS Relay	Relay, ELEK BRK CONT	4.72
Adjuster Assembly	Adjuster ASM, ACCEL CONT + CR CONT SERVO CABLE	3.454
Air Pump Relay	Relay, FWD LMP WRG HARN	2.485
Ambient Light Sensor	Sensor, Daytime Running LP AMB LGT	2.485
Amplifier (Part of UW2 Speaker Option)	Amplifier, Low FREQ Audio	9.65
Antenna	Antenna, RDO	9.647
Arming Sensor, Dual Pole	Sensor, INFL RST Arming	14.865
Ashtray Lamp (Auto Trans)	Light Pipe from PRNDL Lamp (part of trim plate)	
Ashtray Lamp (Manual Trans)	Standard Part	
ASR/TCS Relay	Relay, ELEK BRK CONT	4.72
Audio Alarm Module	Alarm, ST Belt, IGN Key and LPS	9.765
Backup Lamp, LH	Standard Part	
Backup Lamp, RH	Standard Part	
Backup Light Switch (V6 VIN S Manual)	Switch, B/U LP	2.698
Backup Light Switch (V8 VIN P Manual)	Switch, B/U LP	2.698
Battery	Battery, STOR	2.33
Battery Junction Block	Block, Main WRG JUNC and Fuse	2.483
Blower Motor	Motor, Blower Fan	1.015
Blower Resistor	Connector, BLO RES	9.275
Blower Switch (C41)	Switch, HTR CONT BLO	8.852
Blower Switch (C60)	Switch, HTR and A/C CONT BLO	9.275
Bose Relay	Relay, RDO RR SPKR WRG	9.656
Brake Combo Valve (ABS)	Valve, BRK COMB	4.69
Brake Switch Assembly (All vehicles, use 1 conn on Manual)	Switch, S/LP and TRANS CONV CLU	4.115
Brake Transmission Shift Interrupt (BTSI) Solenoid	Solenoid, A/TRNS SHFT LK CONT	4.054
Camshaft Position Sensor (V6 VIN S)	Sensor, CM/SHF Position	2.383
Center High Mounted Stop Light (CHMSL)	Lamp, High MT Stop	2.679
Cigar Lighter	Lighter, CIG	9.709
Clutch Anticipate/Cruise Release Switch (All V6 Manual)	Switch, Clutch PED POSN	4.054
Clutch Start Switch	Switch, M/TRNS CLU Start	4.054
Console Compartment Lamp	Socket, FRT Console LP	10.275
Convenience Center	Not serviceable - Packard Part	
Convertible Top Pump Assembly	Pump ASM, F/TOP	14.481
Convertible Top Switch	Switch, F/TOP	14.483
Coolant Fan, Left	Motor Kit, ENG COOL Fan (ELEC)	1.055
Coolant Fan, Primary	Motor Kit, ENG COOL Fan (ELEC)	1.055
Coolant Fan Relay #1	Relay, FWD LP WRG HARN	2.485

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Component Name Used In Section 8A	Service Parts Catalog	
	Reference Name	Group
Coolant Fan Relay #2	Relay, FWD LP WRG HARN	2.485
Coolant Fan Relay #3	Relay, FWD LP WRG HARN	2.485
Coolant Fan Relay, Primary	Relay, FWD LP WRG HARN	1.055
Coolant Fan Relay, Secondary	Relay, FWD LP WRG HARN	1.055
Coolant Fan, Right	Motor Kit, ENG COOL Fan (ELEC)	1.055
Coolant Fan, Secondary	Motor Kit, ENG COOL Fan (ELEC)	1.055
Coolant Level Latching Module	Module, ENG COOL LVL IND	1.203
Courtesy Lamp, LR	Standard Part	
Courtesy Lamp, RR	Standard Part	
Crankshaft Position Sensor, HI Resolution (V6 VIN S)	Sensor, CR/SHF POSN	2.383
Crankshaft Position Sensor, LOW Resolution (V6 VIN S)	Sensor, CR/SHF POSN	2.383
Cruise Control Module	Module, CRCONT	3.887
Cruise Release Brake Switch (All with K34)	Switch, CRCONT REL	3.887
Cruise Release Clutch Switch (V8 Manual with K34, 2 pin)	Switch, CRCONT REL CLU SW	3.887
Data Link Connector (DLC)	Connector, ECM Data Link	2.53
Daytime Running Lights (DRL) Module	Module, HDLP Auto CONT	2.485
Diagnostic Energy Reserve Module (DERM)	Module, INFL RST RESV ENGY	14.865
Discriminating Sensor, Forward	Sensor, INFL RST F/END SH MET	14.856
Discriminating Sensor, Passenger Compartment	Sensor, INFL RST PASS COMPT	14.865
Distributor	Distributor	2.361
Dome Lamp	Bulb, LP DM	8.991
Door Illumination Lamp, LH	Standard Part	
Door Illumination Lamp, RH	Standard Part	
Door Jamb Switch, LH	Switch, DR Jamb (Double Pole)	11.95
Door Jamb Switch, RH	Switch, DR Jamb (Single Pole)	11.95
Door Lock Actuator, LH	Actuator, FRT S/D LK	10.485
Door Lock Actuator, RH	Actuator, FRT S/D LK	10.485
Electronic Brake Control Module (EBCM)	Module, Electronic BRK CONT	4.72
Electronic Brake/Traction Control Module (EBTCM)	Module, ELEK BRAKE CONT	4.720
Engine Coolant Heater	Engine Coolant Heater	1.152
Engine Coolant Heater Cord	Engine Coolant Heater Cord	1.152
Engine Coolant Level Sensor (V8 VIN P)	Module, ENG COOL LVL IND	1.203
Engine Coolant Temperature (ECT) Sensor	Sensor, Coolant TEMP (ENG Unit)	1.15
Engine Coolant Temperature Gage Sensor	Sensor, ENG COOL TEMP	3.682
Evaporative Emission (EVAP) Canister Purge Solenoid Valve	Valve, EVAP EMIS CNSTR Purge SOL VLV	3.13
Exhaust Gas Recirculation (EGR) Vacuum Control Signal Solenoid Valve	Valve, EGR	3.67
Express Down Module	Module, P/W CONT	10.783
Fog Lamp, Left Front	Bulb, w/Socket, Fog LP	8.991
Fog Lamp, Right Front	Bulb, w/Socket, Fog LP	8.991
Fog Light Relay	Relay, FWD LP WRG HARN	2.485
Fog Light Switch	Switch, Fog LP	2.485

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SERVICE PARTS INFORMATION

(CONTINUED FROM PREVIOUS PAGE)

Component Name Used In Section 8A	Service Parts Catalog	
	Reference Name	Group
Forward/Back Motor (AC3 Power Seat)	Motor, D/Seat ADJR (w/GROM and INS)	11.556
Front Height Motor (AC3 Power Seat)	Motor, D/Seat ADJR (w/GROM and INS)	11.556
Fuel Gage Sender	Sender, Fuel	3.107
Fuel Injectors	Injector, Fuel Injection	3.3
Fuel Pump	Pump, Fuel	3.9
Fuel Pump Prime Connector	Connector, Fuel Pump	3.9
Fuel Pump Relay	Relay, F/PMP	3.9
Fuel Tank Unit	See: Fuel Pump or Fuel Sender	
Fusible Links	Fusible Link Wire	8.965
Generator	Generator	2.275
Hatch Release Actuator	Actuator, Deck Lid REL	12.942
Hatch Release Relay	Relay, R/CMPT Lid REL	12.243
Hatch Release Switch	Switch, R/CMPT Lid REL	12.243
Hazard Flasher	Flasher, Hazard LP	2.575
Headlamp Door Motor, LH	Actuator, HDLP	2.76
Headlamp Door Motor, RH	Actuator, HDLP	2.76
Headlamp, Left	Sealbeam, HDLP	2.727
Headlamp, Right	Sealbeam, HDLP	2.727
Headlight Dimmer Switch	Switch, DIMR	2.459
Headlight Doors Module	Module, HDLP OPG DR ACTR CONT	2.755
Headlight Switch	Switch, Headlamp/Fog Lamp	2.485
Heated Oxygen Sensor, Bank #1	Sensor, HTR OXY	3.682
Heated Oxygen Sensor, Bank #2	Sensor, HTR OXY	3.682
Heater/Vent/Air Conditioning (HVAC) Control Assembly	Control, Heater and A/C	9.273
High Beam Headlamp, Left	Sealbeam, HDLP (High Beam)	2.727
High Beam Headlamp, Right	Sealbeam, HDLP (High Beam)	2.727
High Blower Relay	Relay, BLOWER	
Horn Relay	Relay, Horn	2.815
Horn Switch	Switch, STRG WHL Horn	2.819
Horn #1 (A note)	Horn, High Note	2.81
Horn #2 (F note)	Horn, Low Note	2.81
Hydraulic Modulator Assembly	Valve ASM, BRK PRESS MOD (Components Serviceable)	4.73
I/P Compartment Lamp	Bulb, Glove Box LP	8.991
I/P Dimmer Switch	Switch, I/P LP DIMR	2.49
I/P Fuse Block	Block, Main WRG JUNC and Fuse	2.483
Idle Air Control (IAC) Valve	Valve Kit, TBI Idle Air CONT	3.82
Ignition Coil Module (V8 VIN P)	Module, Ignition Coil	2.383
Ignition Coil (V8 VIN P)	Coil, Ignition	2.17
Ignition Control Module (ICM) (V6 VIN S)	Module, IGN Coil	2.17
Ignition Key Lock Cylinder	Cylinder, STRG COL LK and IGN SW	2.188
Ignition Key Warning Switch	Switch, IGN Key Alarm	2.195
Ignition Switch	Switch, IGN	2.188
Inflator Module, Driver	Module, INFL RST STRG WHL (Inflator)	14.865
Inflator Module, Passenger	Module, INFL RST I/P (Inflator)	14.865
Instrument Cluster	Cluster, INST	9.735
Intake Air Temperature (IAT) Sensor	Sensor, A/CL Air TEMP	3.682
Isolation Diode (BTSI)	GMSPO #12112421	2.510

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Component Name Used In Section 8A	Service Parts Catalog	
	Reference Name	Group
Isolation Diode (RAP)	GMSPO #12112422	2.510
Isolation Diode (Wipers)	GMSPO #12112422	2.510
Keyless Entry Receiver	Receiver, R/CON DR LK	10.485
Knock Sensor	Sensor, Knock	2.383
License Lamp	Standard Part	
Low Beam Headlamp, Left	Sealbeam, HDLP (Low Beam)	2.727
Low Beam Headlamp, Right	Sealbeam, HDLP (Low Beam)	2.727
Manifold Absolute Pressure (MAP) Sensor	Sensor, MAP	3.682
Marker Lamp, Left Front	Standard Part	
Marker Lamp, Left Rear	Standard Part	
Marker Lamp, Right Front	Standard Part	
Marker Lamp, Right Rear	Standard Part	
Mass Air Flow (MAF) Sensor	Sensor, Mass Air Flow	3.682
Mirror Motor Pack	Motor, O/S RR View MIR	10.185
Multi-Function Lever	Lever, T/SIG, HDLP D/SW, CRCONT ACTR, WSW and WSWA	2.897
Oil Level Sensor	Sensor, ENG Oil LVL	1.516
Oil Pressure Sensor	Sensor, Oil Pressure	1.8
Outside Mirror, LH	Mirror, O/S RR View	10.185
Outside Mirror, RH	Mirror, O/S RR View	10.185
Oxygen Sensor, LH	Sensor, OXY	3.682
Oxygen Sensor, RH	Sensor, OXY	3.682
Park Brake Switch	Switch, Parking BRK Alarm	4.589
Park/Turn Lamp, Left Front	Standard Part	
Park/Turn Lamp, Right Front	Standard Part	
Performance Switch	Switch, A/TRANS SHFT PRGM	4.056
Performance/Traction Control Switch	Switch, ELEK TRACT CONT	4.710
Power Door Lock Switch, LH	Switch, DR LK	10.485
Power Door Lock Switch, RH	Switch, DR LK	10.485
Power Mirror Switch	Switch, O/S R/CON RR View MIR SEL	10.186
Power Seat Actuator Assembly (AC3)	Actuator, D/Seat ADJR (w/MOT and SUPT)	11.556
Power Seat Control Module (AQ9 Power Seat)	Module, P/Seat PNEU CONT	11.378
Power Seat Motor (AC3)	Motor, D/Seat ADJR	11.556
Power Seat Switch (AC3)	Switch, D/Seat ADJR	11.558
Power Seat Switch, Driver (AQ9)	Switch, D/Seat PNEU Pump and VLV	11.378
Power Seat Switch, Passenger (AQ9)	Switch, P/Seat PNEU Pump and VLV	11.378
Powertrain Control Module (PCM)	Controller, PCM	3.67
Power Window Switch, LH	Switch, SI WDO	10.777
Power Window Switch, RH	Switch, SI WDO	10.777
PRNDL Illumination Lamp (Auto Trans)	Lamp, Instrument PNL	2.515
Pump Assembly (AQ9 Power Seat)	Pump, ST INFL D/Seat PNEU	11.378
Radio	Radio, Radio	9.65
Rear Compartment Lamp	Standard Part	
Rear Defogger Grid	Part of Rear Glass	
Rear Defogger Switch	Switch, R/WDO DEFG	9.778
Rear Defogger Switch/Timer	Switch, R/WDO DEFG	9.778
Rear Defogger Timer/Relay	Timer, R/WDO DEFG	9.744

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SERVICE PARTS INFORMATION

(CONTINUED FROM PREVIOUS PAGE)

Component Name Used In Section 8A	Service Parts Catalog	
	Reference Name	Group
Rear Dome Light Switch	Switch, R/CMPT Lid Lock	12.243
Rear Height Motor (AC3 Power Seat)	Motor, D/Seat ADJR (w/GROM and INS)	11.556
Rearview Mirror	Mirror, I/S RR View	10.185
Retained Accessory Power (RAP) Module	Module, Retained Accessory Power	10.485
Reverse Lockout Solenoid (V8 VIN P Manual)	Part of Transmission Exchange Program	
Seat Belt Switch	Part of Driver's Seat Belt Buckle	14.875
Secondary Air Injection Pump Assembly	Pump, SECD Air INJN	3.66
Selector Switch (C41)	Switch, HTR CONT SEL	8.850
Selector Switch (C60)	Switch, HTR & A/C CONT SEL	9.275
SIR Coil Assembly	Coil Kit, INFL RST STRG WHL MDL	14.865
Solenoid Valve Assembly (AQ9 Power Seat)	Valve, D/Seat Pneumatic 3 SOL	11.378
Speaker/Amp, Left Front (BOSE)	Amplifier, RDO FRT SPKR	9.65
Speaker/Amp, Rear (BOSE)	Amplifier, RDO RR SPKR	9.65
Speaker/Amp, Right Front (BOSE)	Amplifier RDO FRT SPKR	9.65
Speaker Assembly, Left Rear (With UW2 Speakers)	Speaker, RDO R/Q TR PNL	9.665
Speaker Assembly, Right Rear (With UW2 Speakers)	Speaker, RDO R/Q TR PNL	9.665
Speaker, Left Front Midrange (With UW2 Speakers)	Speaker, RDO FRT S/D	9.665
Speaker, Left Front Tweeter (With UW2 Speakers)	Speaker, RDO FRT S/D (Tweeter)	9.665
Speaker, Left Front (Base - UQ0)	Speaker, RDO FRT S/D	9.65
Speaker, Left Rear Subwoofer (With UW2 Speakers)	Speaker, RDO QTR	9.665
Speaker, Left Rear (Base - UQ0)	Speaker, RDO RR	9.665
Speaker, Right Front Midrange (With UW2 Speakers)	Speaker, RDO FRT S/D	9.665
Speaker, Right Front Tweeter (With UW2 Speakers)	Speaker, RDO FRT S/D (Tweeter)	9.665
Speaker, Right Front (Base - UQ0)	Speaker, RDO FRT S/D	9.65
Speaker, Right Rear Subwoofer (With UW2 Speakers)	Speaker, RDO QTR	9.65
Speaker, Right Rear (Base - UQ0)	Speaker, RDO RR	9.665
Starter Motor	Motor, STRTR	2.041
Starter Solenoid	Switch, STRTR SOL	2.1
Steering Wheel Controls, Radio (UK3)	Switch, RDO CONT	9.649
Taillamp, LH	Standard Part	
Taillamp, RH	Standard Part	
Taillamp, LH Inboard	Standard Part	
Taillamp, LH Outboard	Standard Part	
Taillamp, RH Inboard	Standard Part	
Taillamp, RH Outboard	Standard Part	
Tail/Stop/Turn Lamp, LH	Standard Part	
Tail/Stop/Turn Lamp, RH	Standard Part	
Tail/Stop/Turn Lamp, LH Inboard	Standard Part	
Tail/Stop/Turn Lamp, LH Outboard	Standard Part	
Tail/Stop/Turn Lamp, RH Inboard	Standard Part	

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Component Name Used In Section 8A	Service Parts Catalog	
	Reference Name	Group
Tail/Stop/Turn Lamp, RH Outboard	Standard Part	
Theft Deterrent Module	Module, Theft DTRNT	2.195
Theft Deterrent Relay	Relay, Theft DTRNT	2.195
Throttle Position (TP) Sensor	Sensor, Throttle Position (EFI)	3.764
Traction Control Motor Pack	Motor Kit, ELEK TRACT CONT	4.730
Traction Control Switch	Switch, ELEK TRACT CONT	4.710
Transmission Position Switch	Switch, Park/NEU POSN	4.054
Turn Flasher	Flasher, T/SIG LP	2.892
Turn/Hazard Switch Assembly	Switch, T/SIG	2.895
Underhood Electrical Center	Part of Harness, U/Hood LP WRG	8.89
Vehicle Speed Sensor	Sensor, VEH SPD	3.682
Washer Pump Motor	Pump, WSWA	10.153
Wheel Speed Sensor, Left Front	Sensor, WHL SPD	4.71
Wheel Speed Sensor, Left Rear	Sensor, WHL SPD	4.710
Wheel Speed Sensor, Rear	Wheel, RR WHL SPD SEN Reluctor	
Wheel Speed Sensor, Right Rear	Sensor, WHL SPD	4.710
Wheel Speed Sensor, Right Front	Sensor, WHL SPD	4.71
Window Motor, LH	Motor, FRT S/D WDO REG	10.783
Window Motor, RH	Motor, FRT S/D WDO REG	10.783
Wiper Motor Assembly	Motor, WSW	10.150
Wiper/Washer Switch Assembly	Switch, WSW and WSWA	10.163

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COMPONENT LOCATION VIEWS

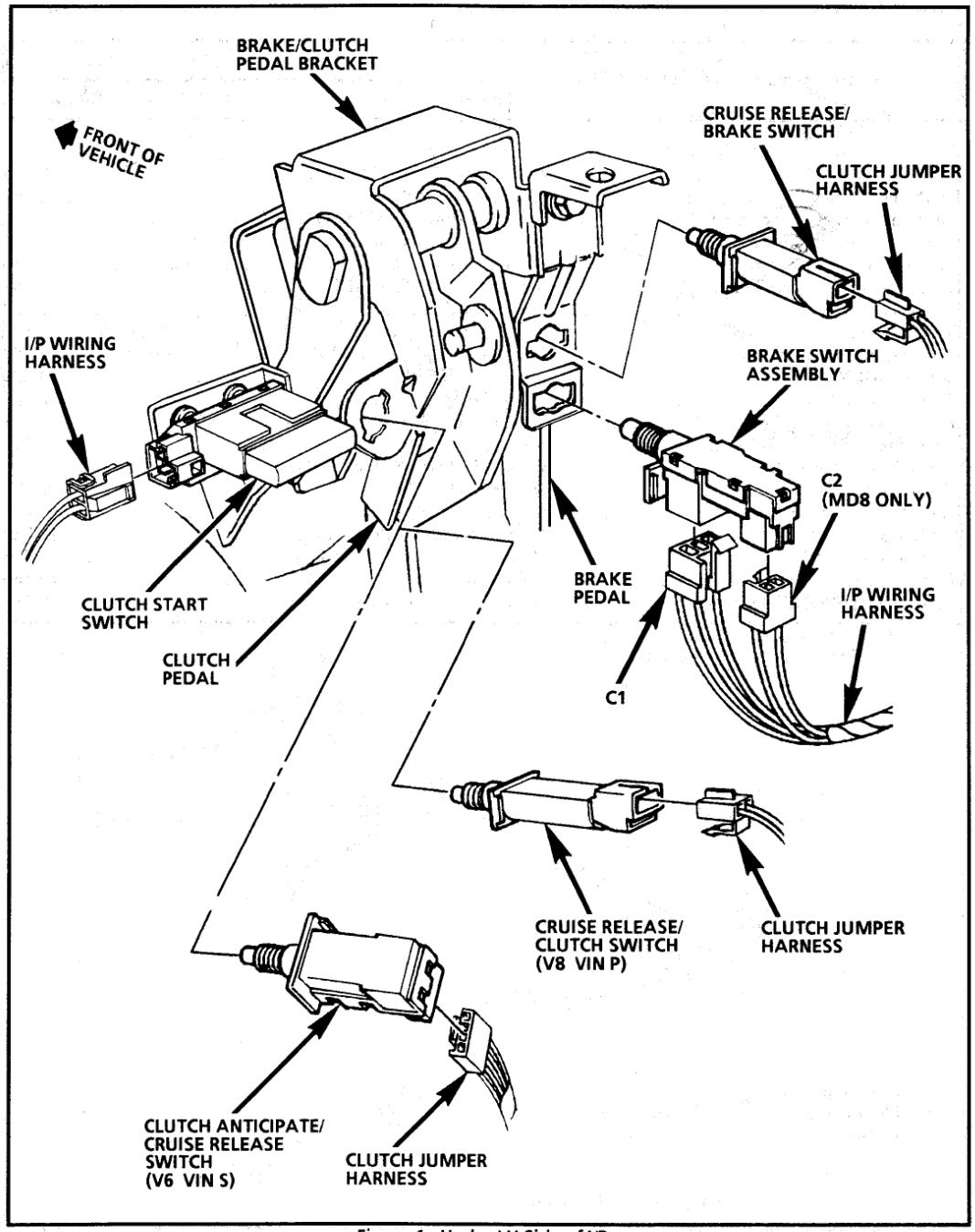


Figure 1 - Under LH Side of I/P

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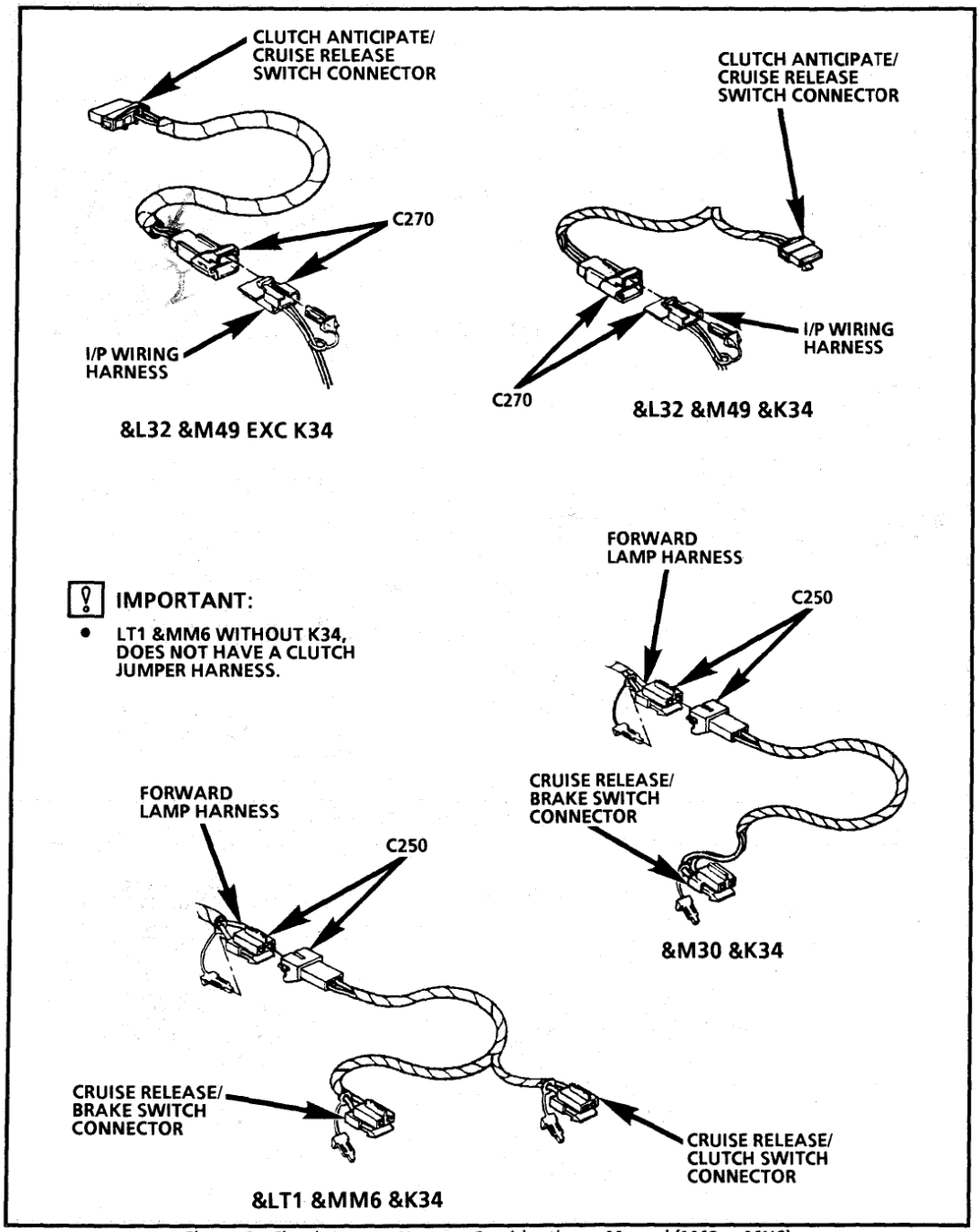


Figure 2 - Clutch Jumper Harness Combinations - Manual (M49 or MN6)

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COMPONENT LOCATION VIEWS

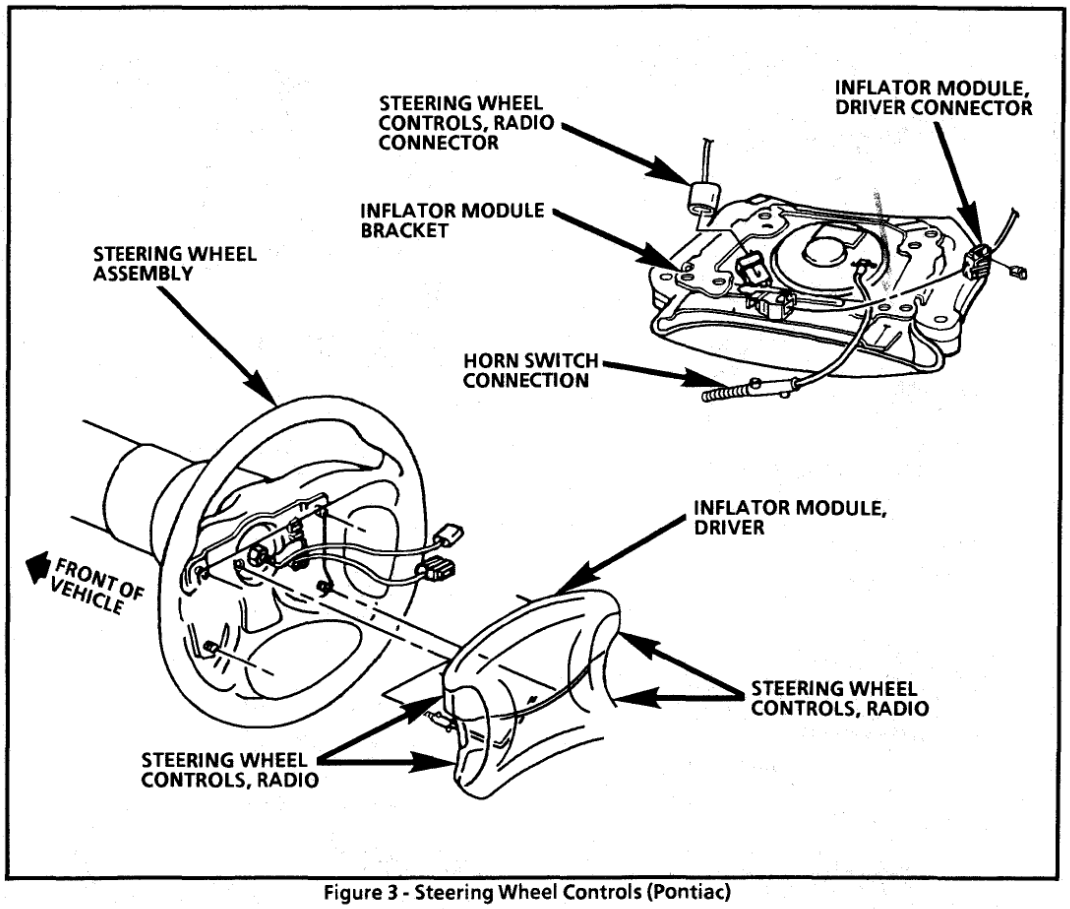


Figure 3 - Steering Wheel Controls (Pontiac)

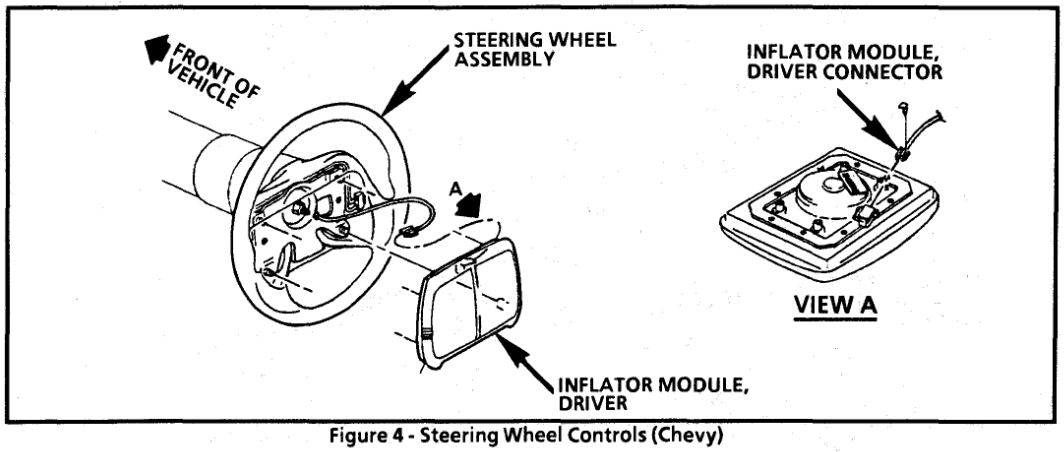


Figure 4 - Steering Wheel Controls (Chevy)

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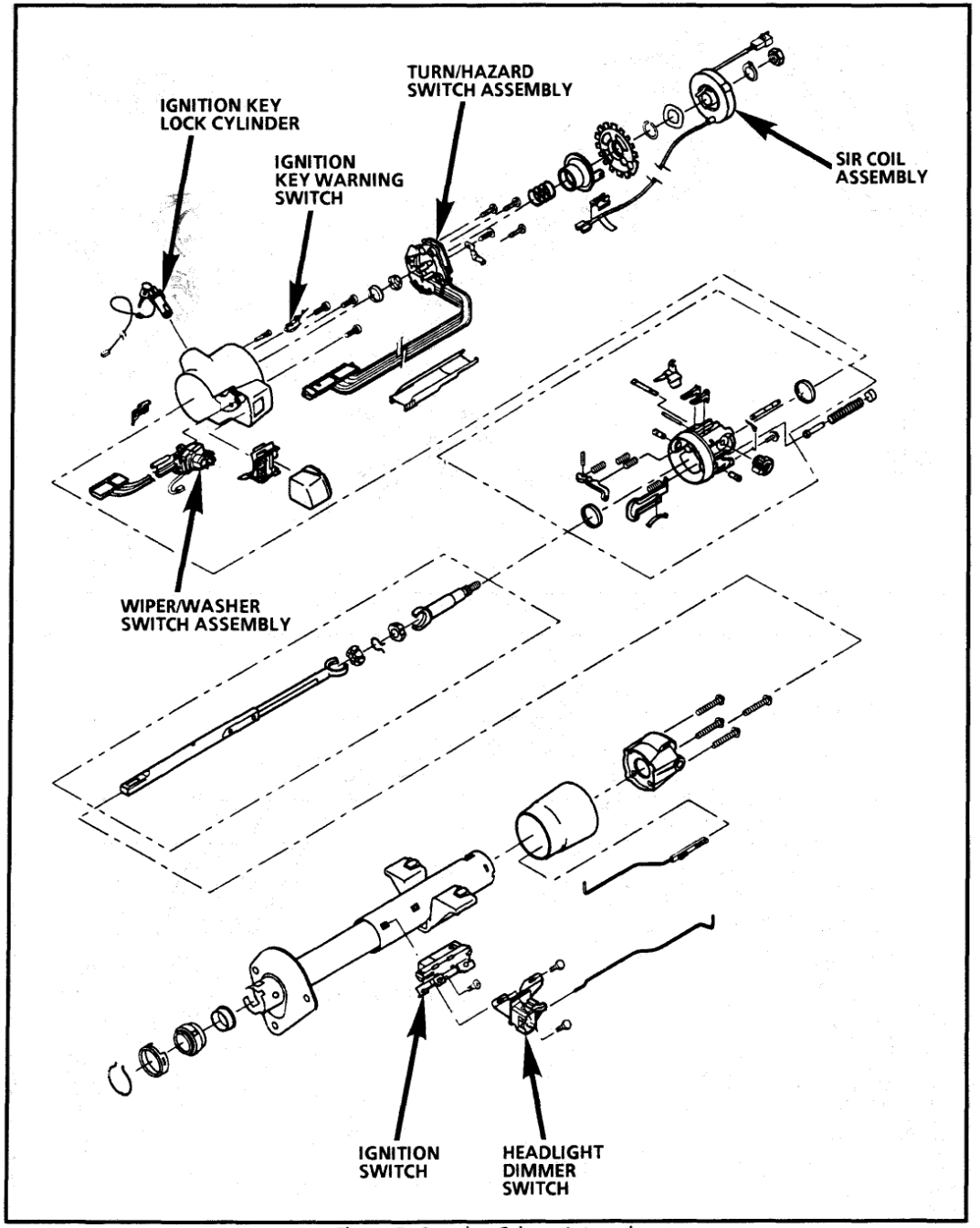


Figure 5 - Steering Column Internals

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COMPONENT LOCATION VIEWS

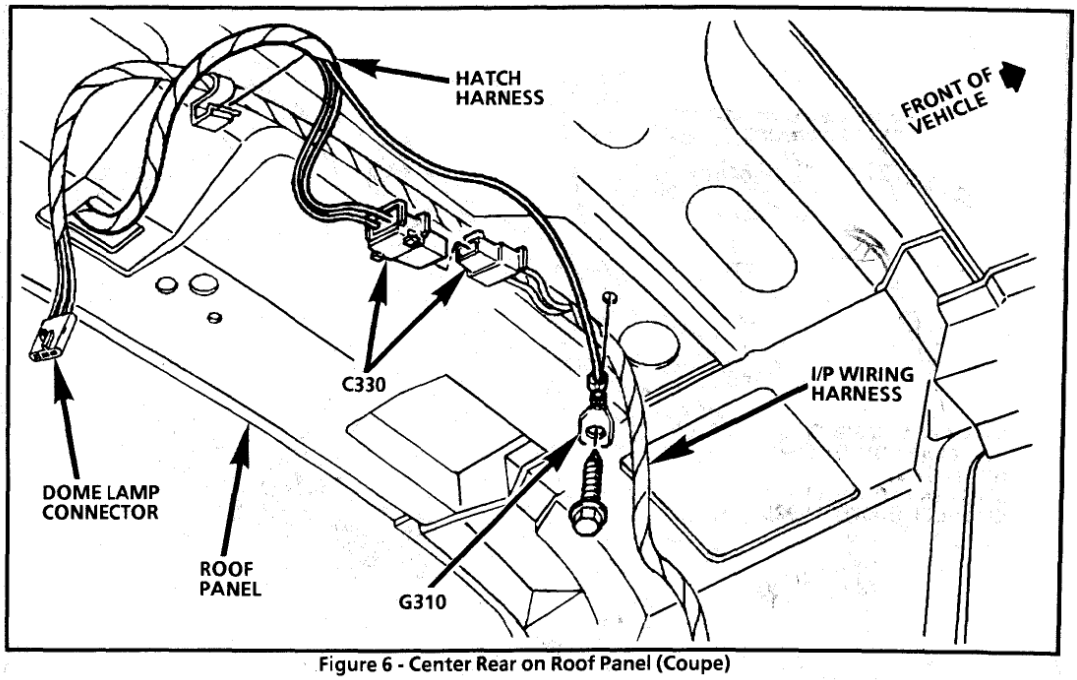


Figure 6 - Center Rear on Roof Panel (Coupe)

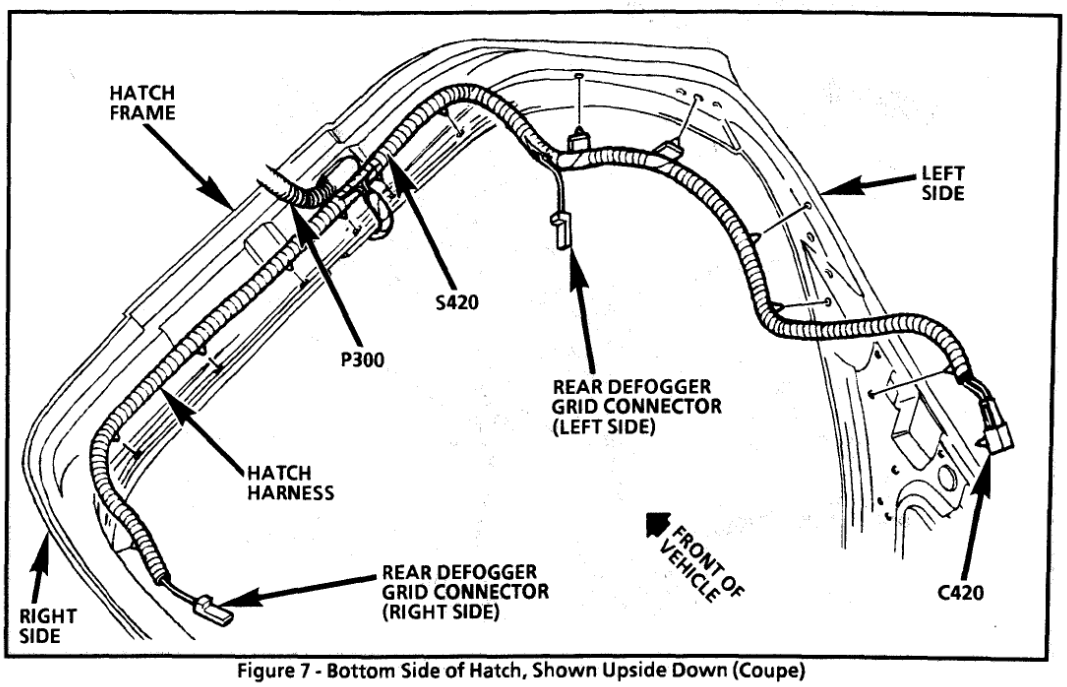


Figure 7 - Bottom Side of Hatch, Shown Upside Down (Coupe)

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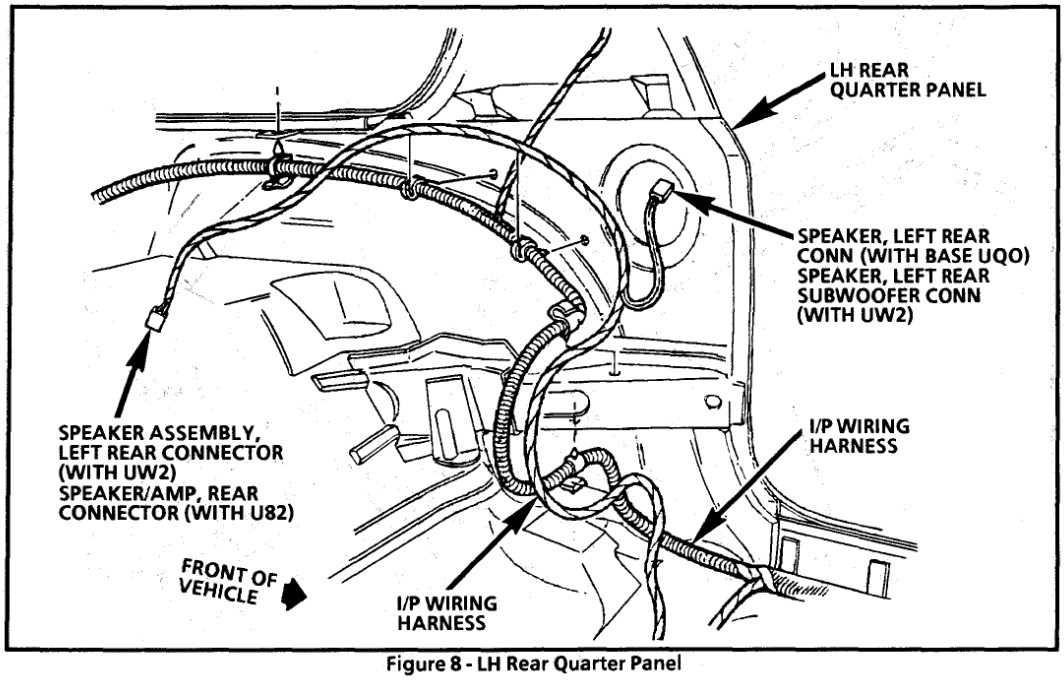


Figure 8 - LH Rear Quarter Panel

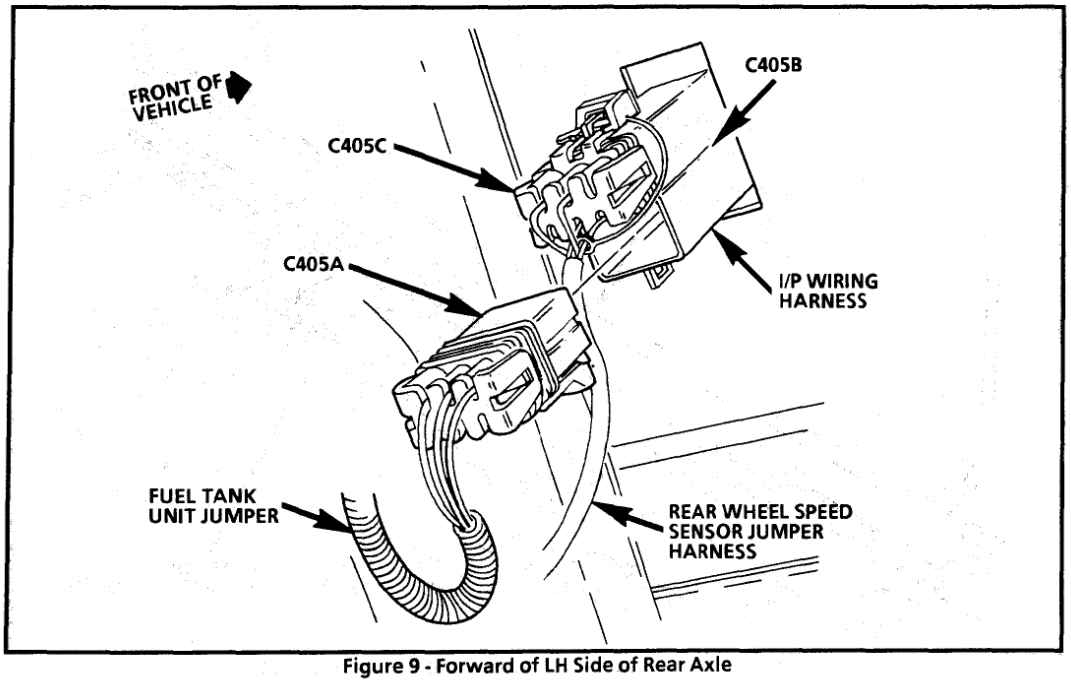


Figure 9 - Forward of LH Side of Rear Axle

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COMPONENT LOCATION VIEWS

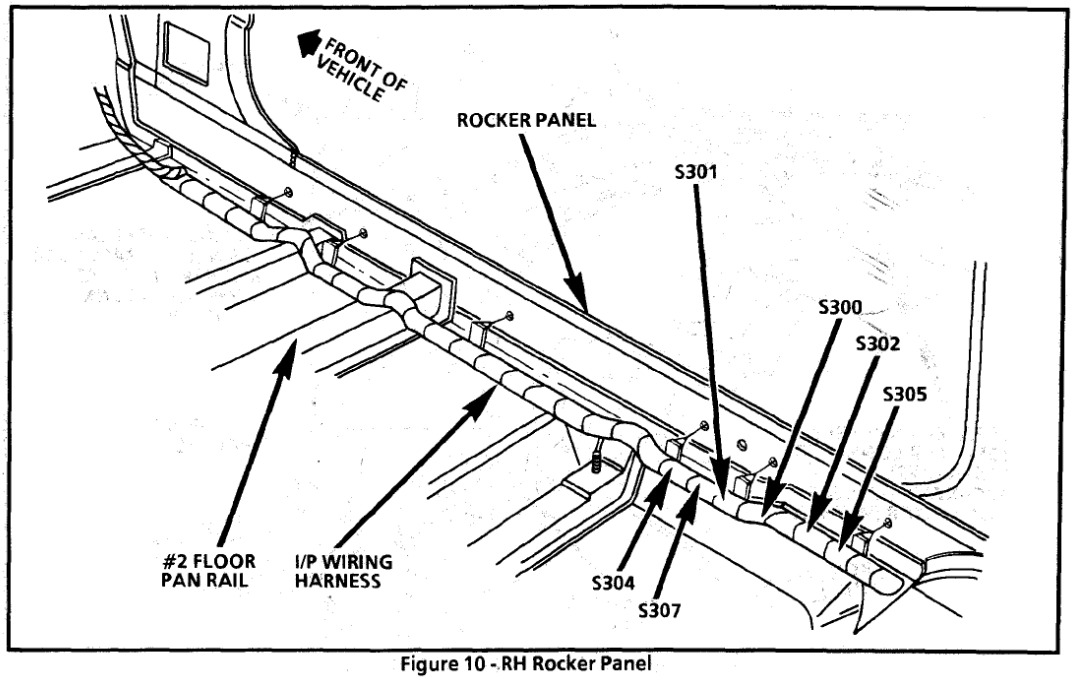


Figure 10 - RH Rocker Panel

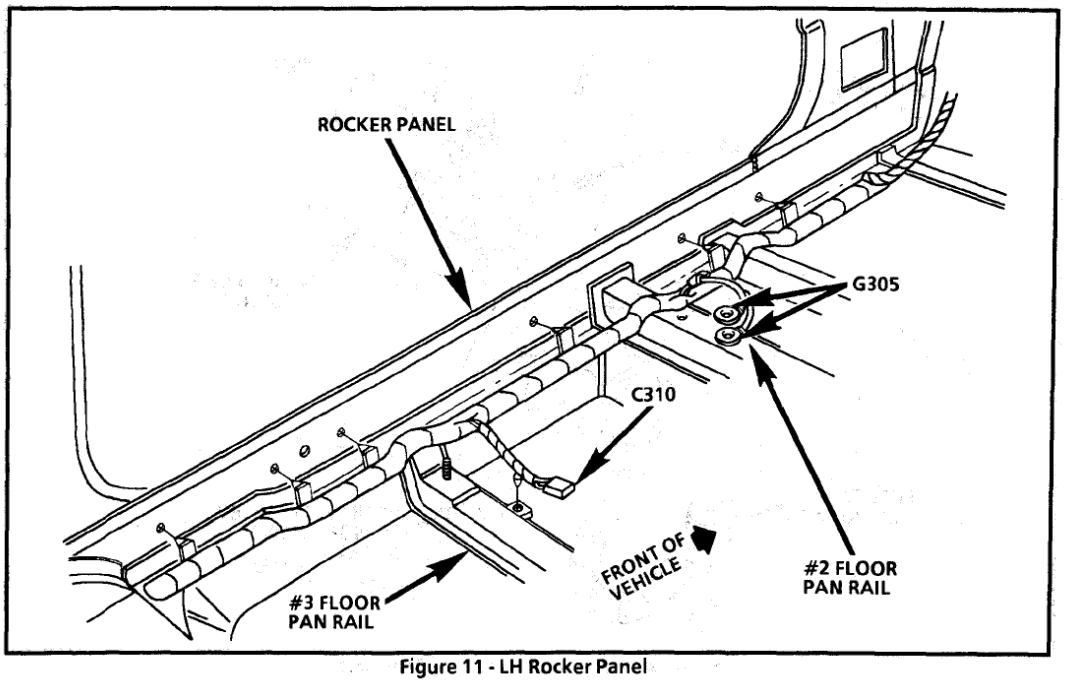


Figure 11 - LH Rocker Panel

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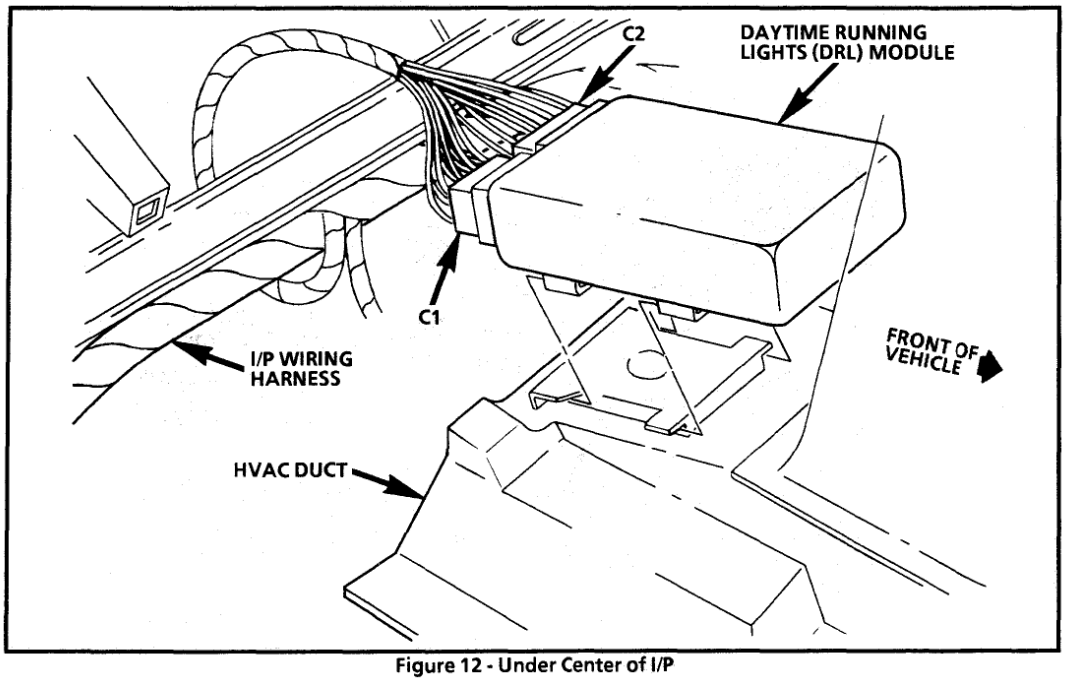


Figure 12 - Under Center of I/P

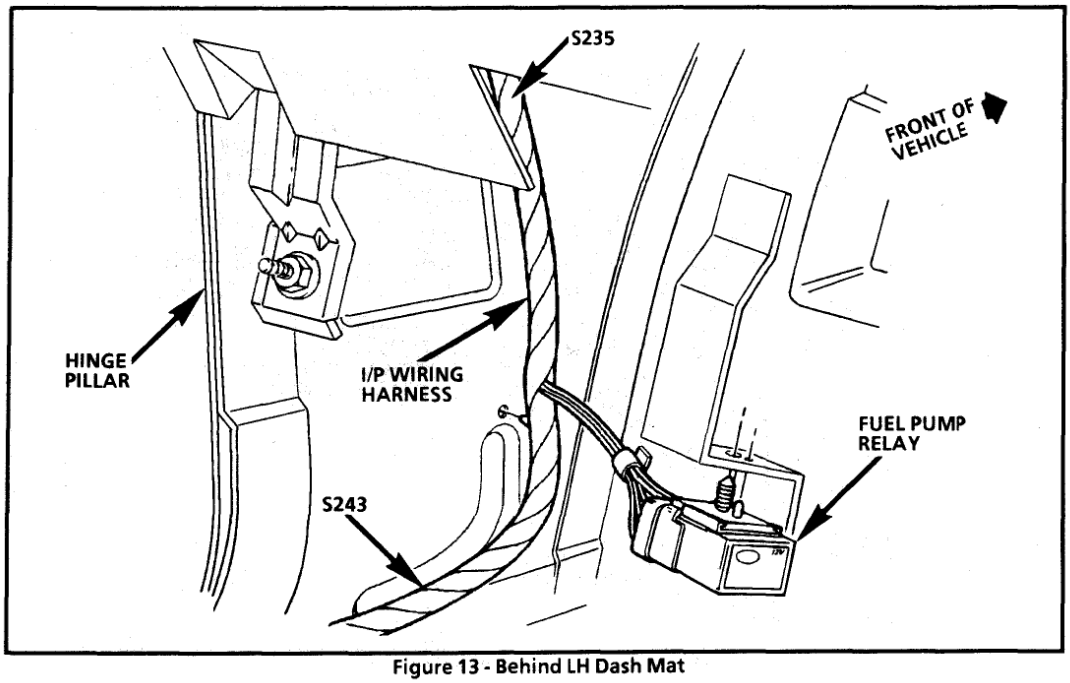


Figure 13 - Behind LH Dash Mat

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COMPONENT LOCATION VIEWS

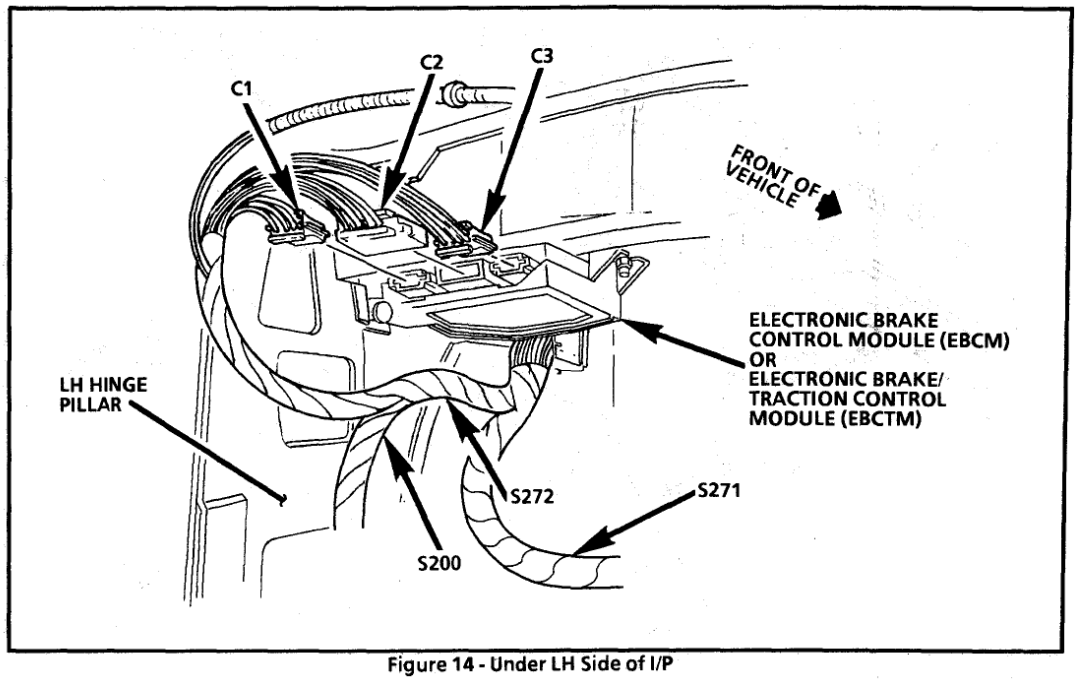


Figure 14 - Under LH Side of I/P

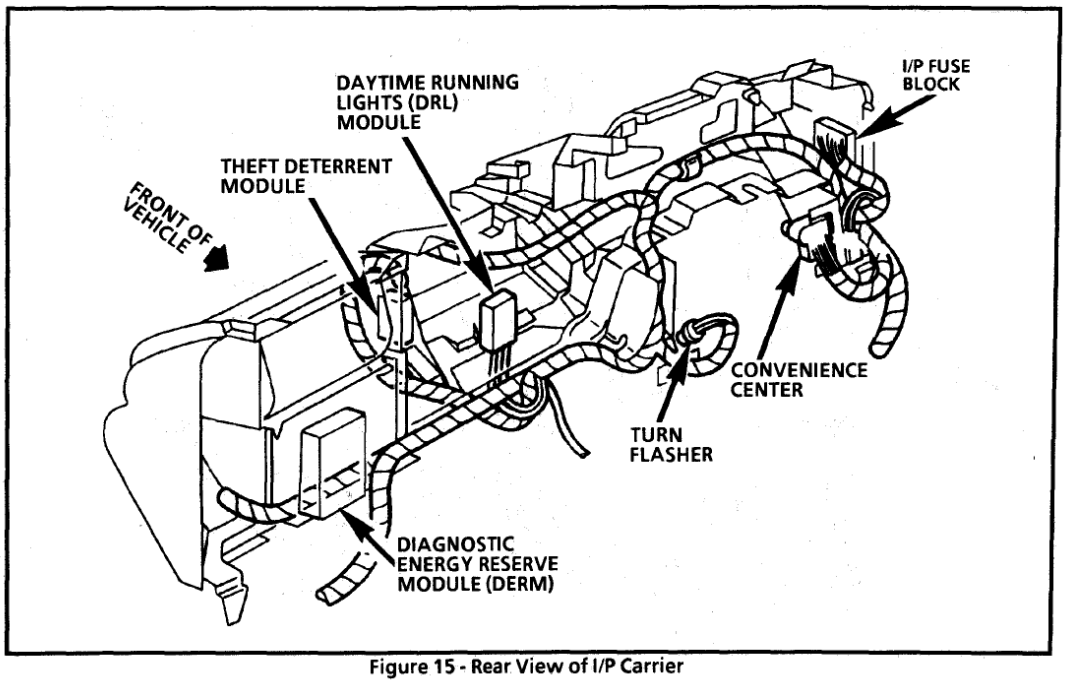


Figure 15 - Rear View of I/P Carrier

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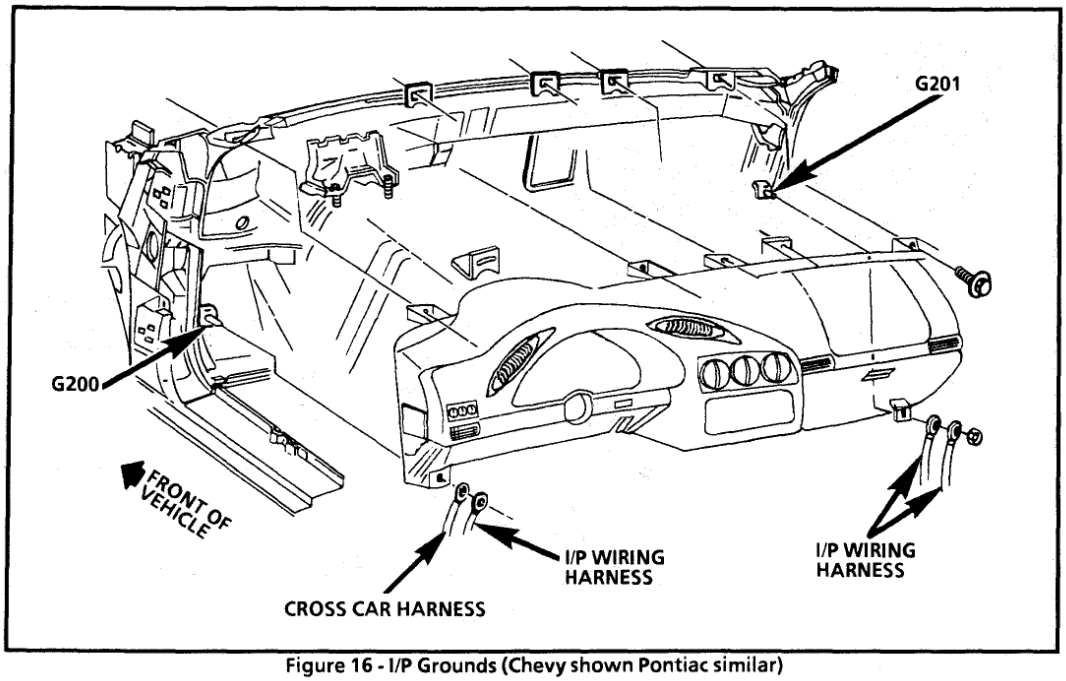


Figure 16 - I/P Grounds (Chevy shown Pontiac similar)

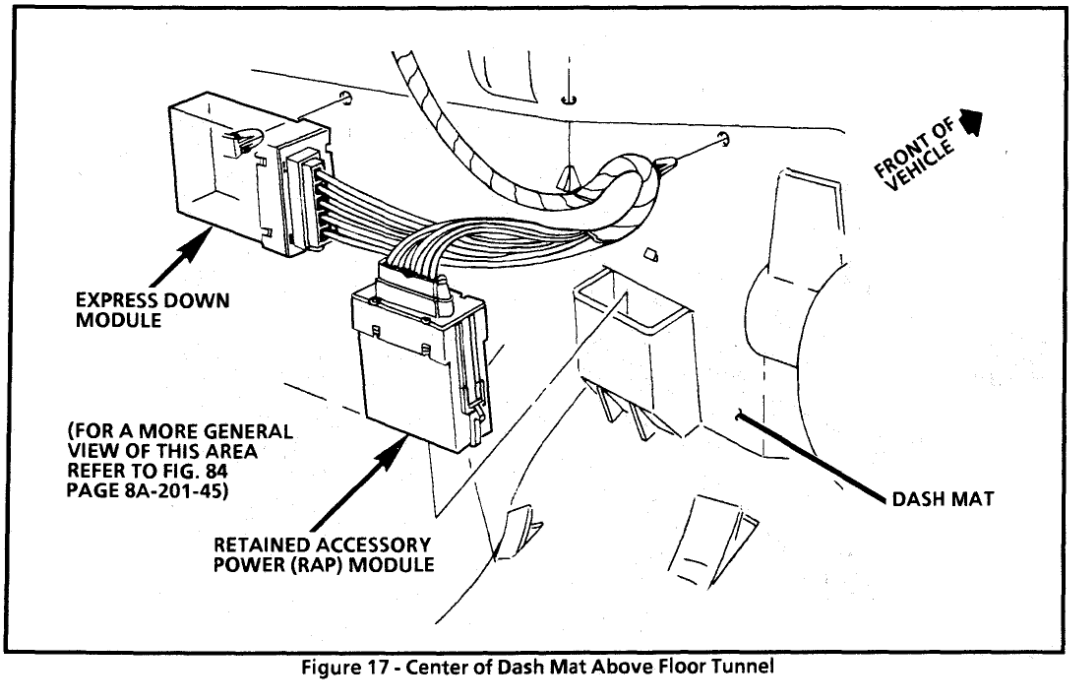


Figure 17 - Center of Dash Mat Above Floor Tunnel

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COMPONENT LOCATION VIEWS

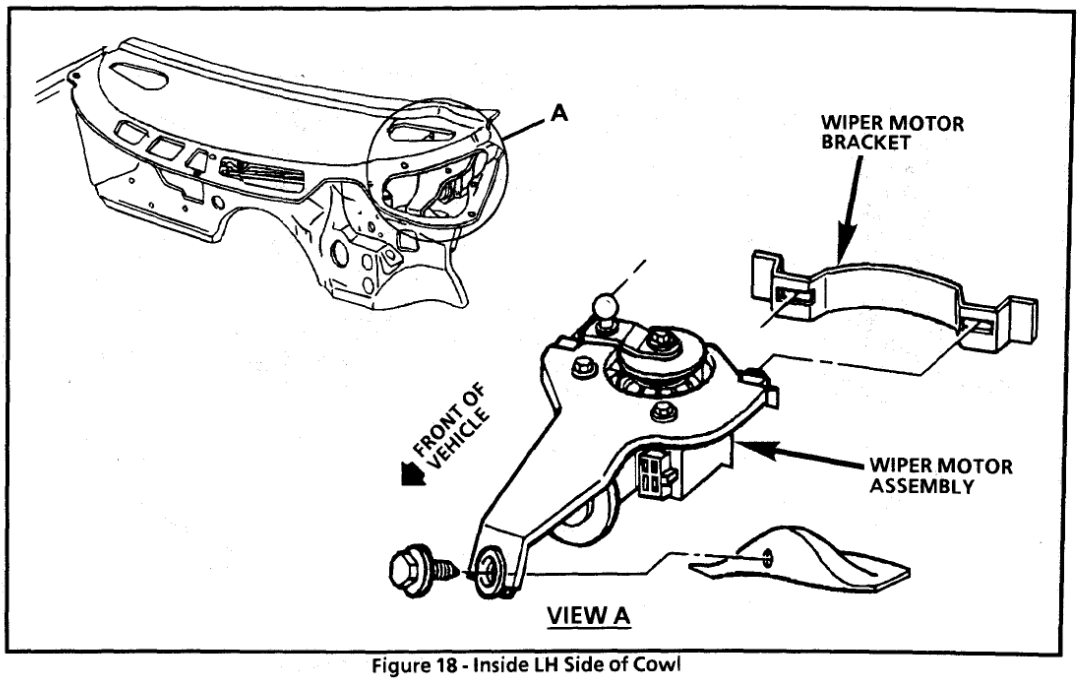


Figure 18 - Inside LH Side of Cowl

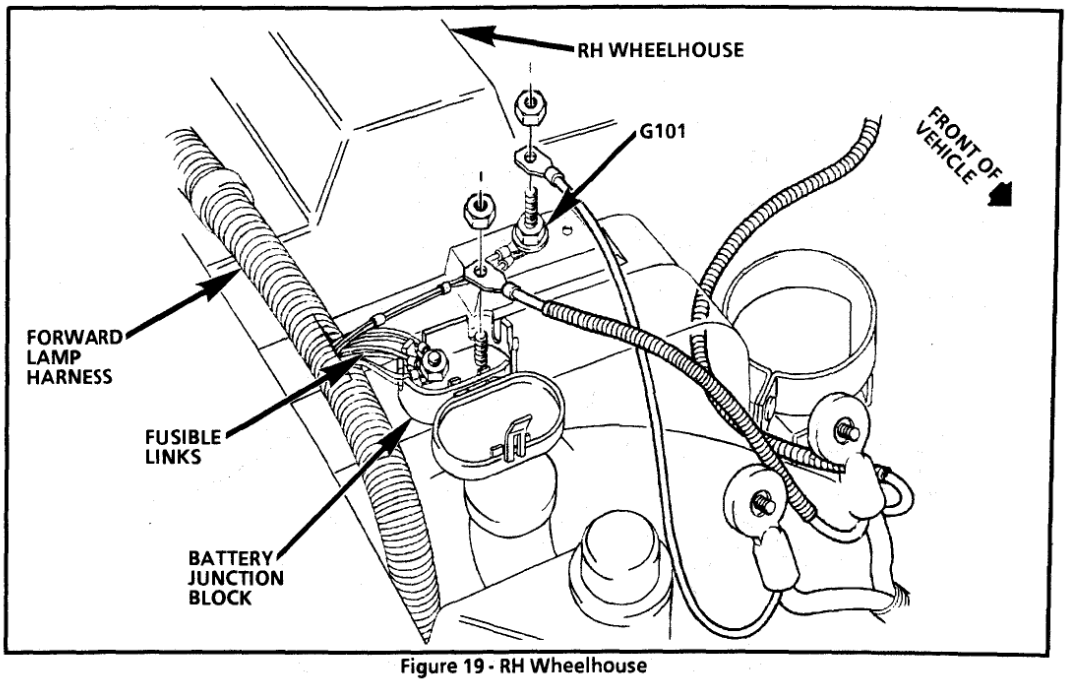


Figure 19 - RH Wheelhouse

cardiagn.com

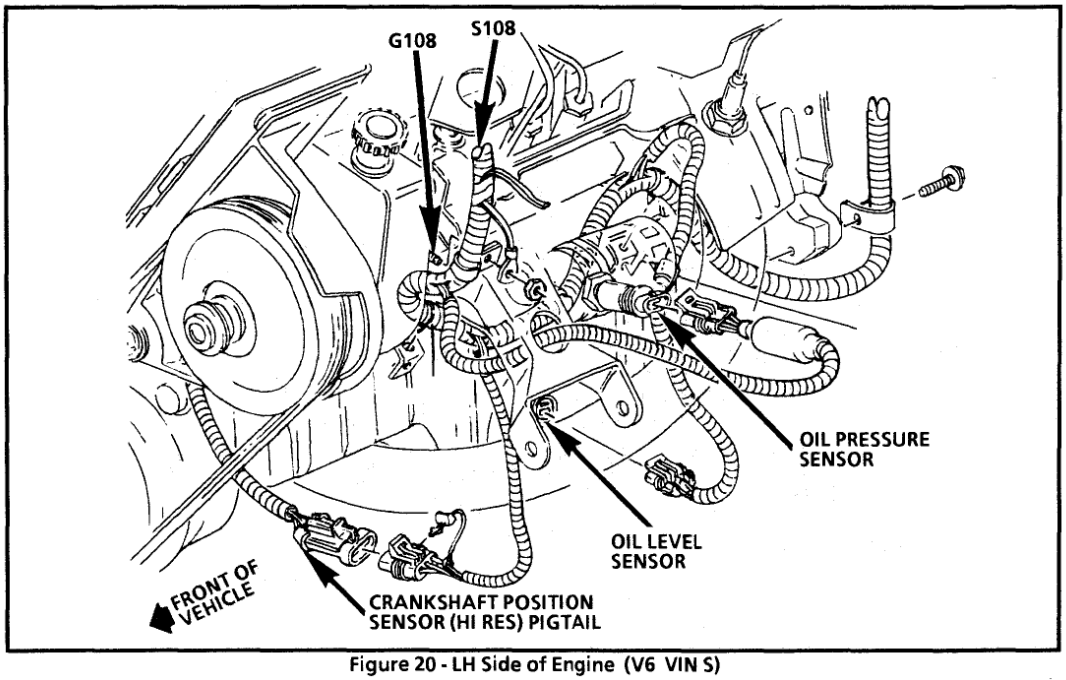


Figure 20 - LH Side of Engine (V6 VIN S)

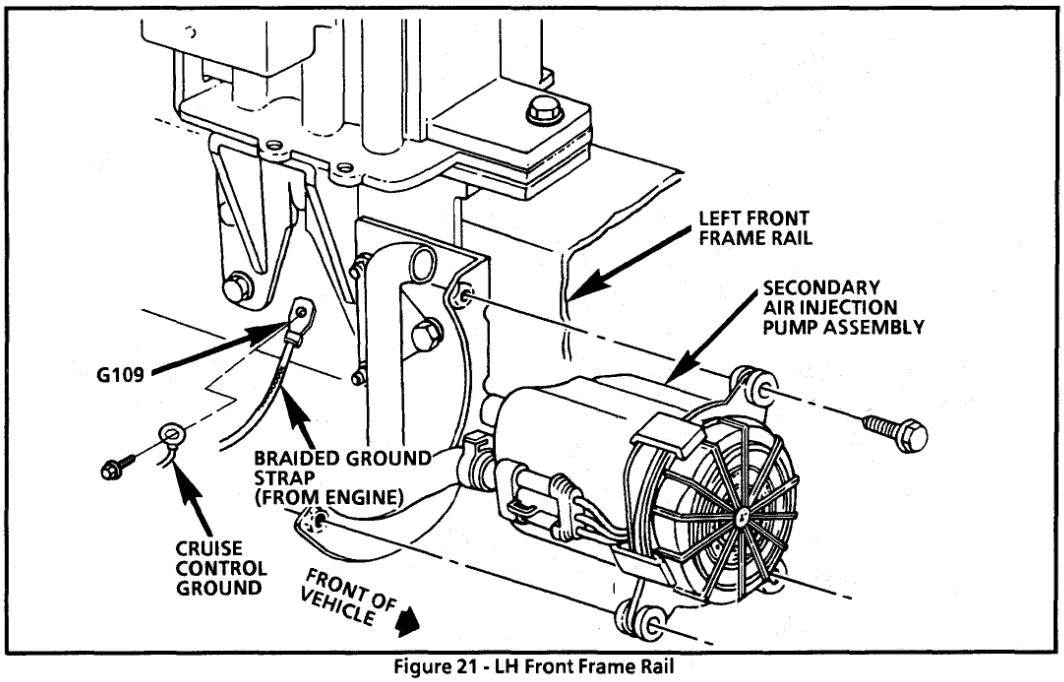


Figure 21 - LH Front Frame Rail

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COMPONENT LOCATION VIEWS

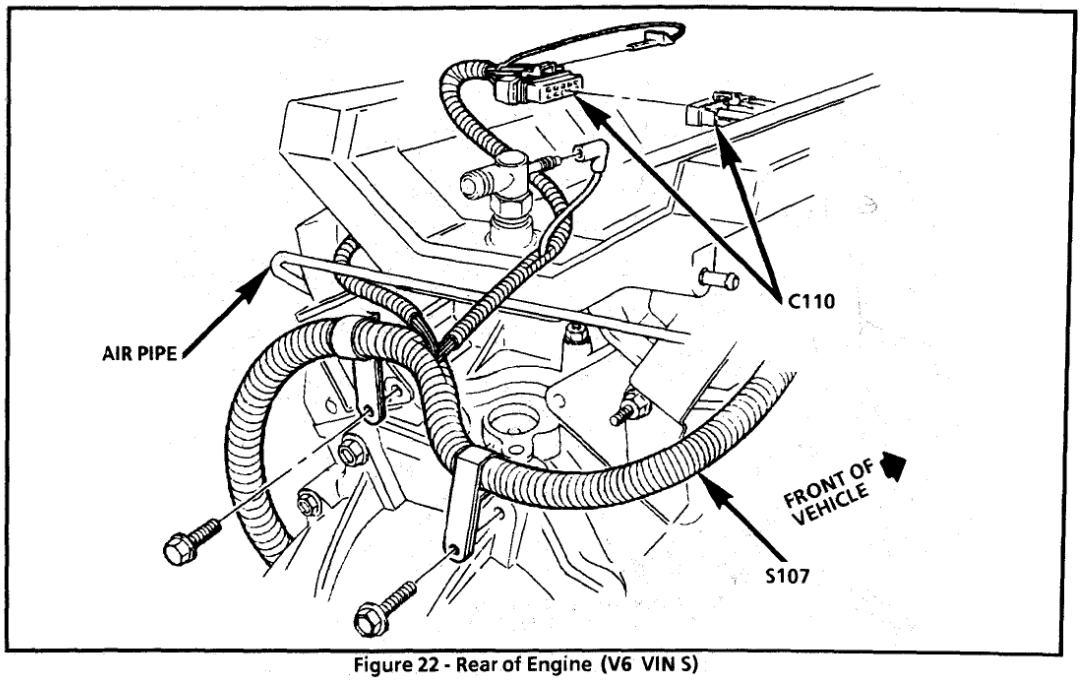


Figure 22 - Rear of Engine (V6 VIN S)

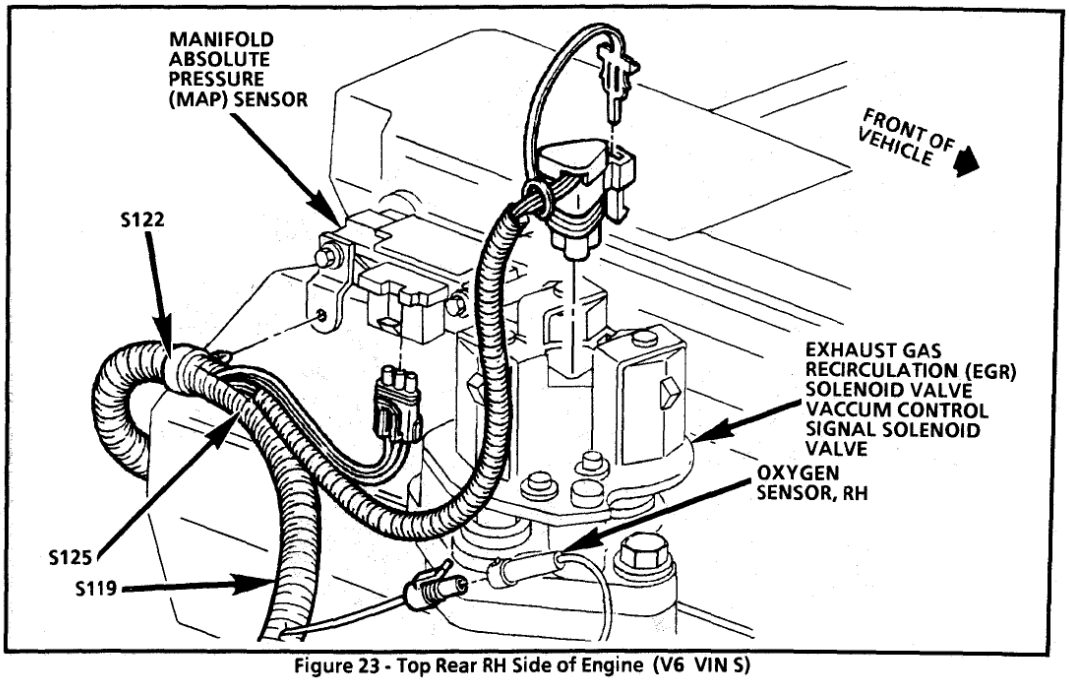


Figure 23 - Top Rear RH Side of Engine (V6 VIN S)

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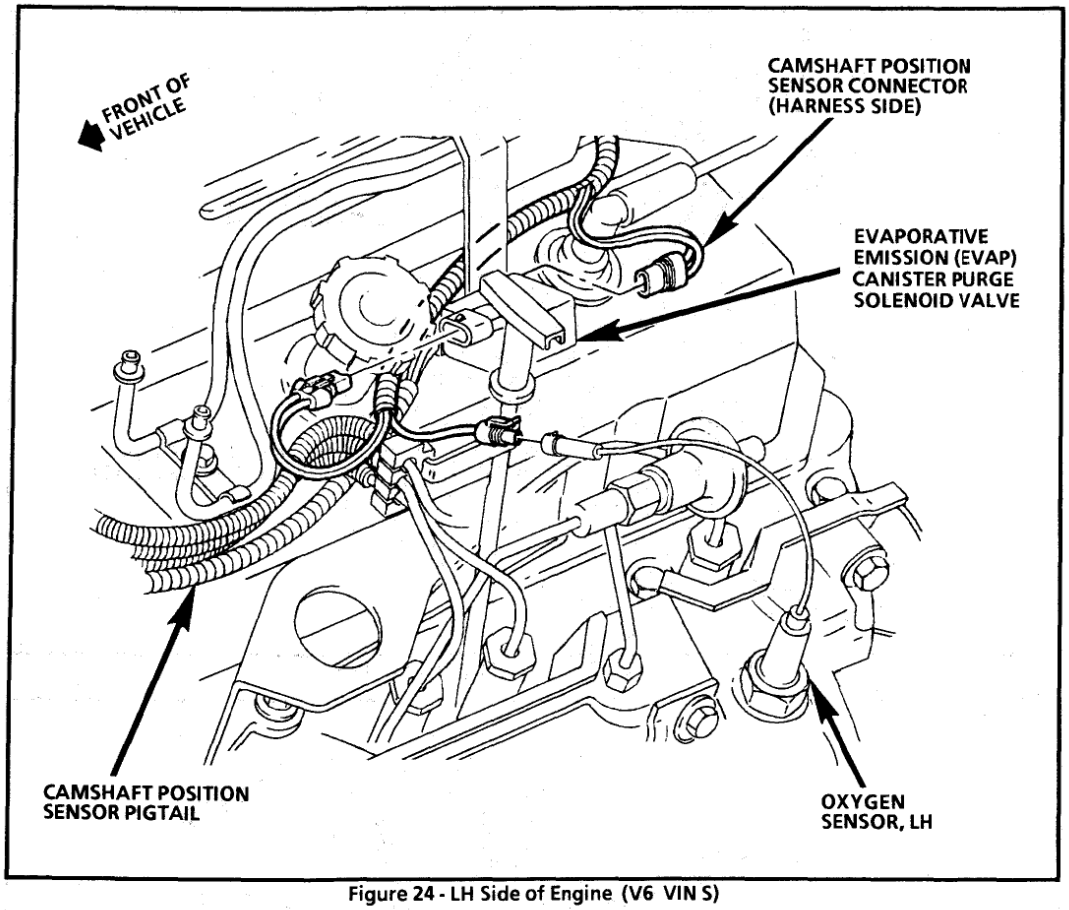


Figure 24 - LH Side of Engine (V6 VIN S)

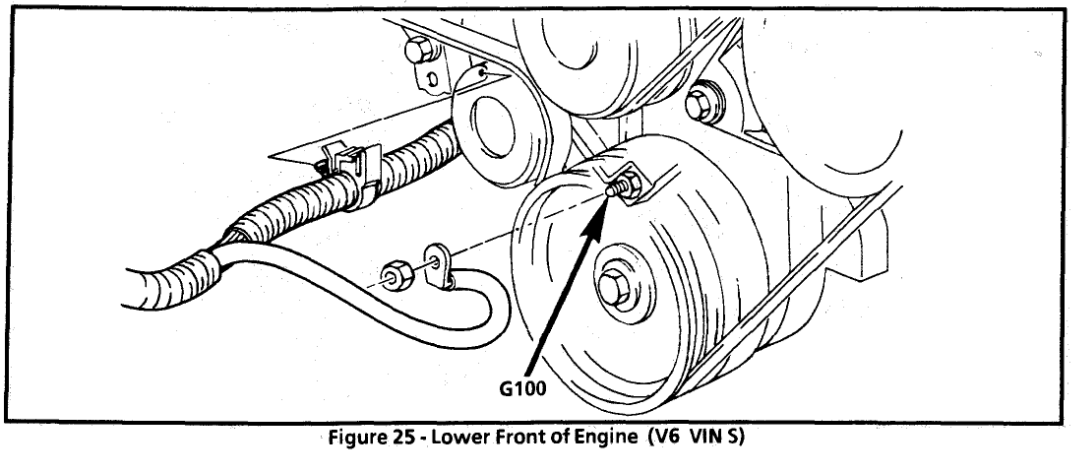


Figure 25 - Lower Front of Engine (V6 VIN S)

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COMPONENT LOCATION VIEWS

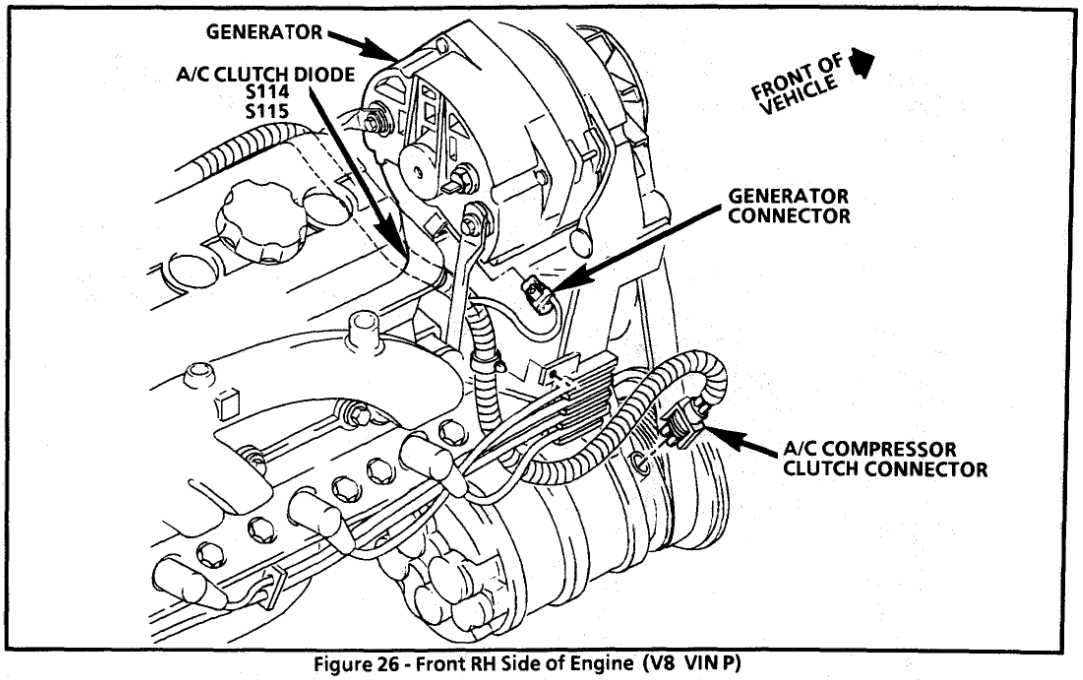


Figure 26 - Front RH Side of Engine (V8 VIN P)

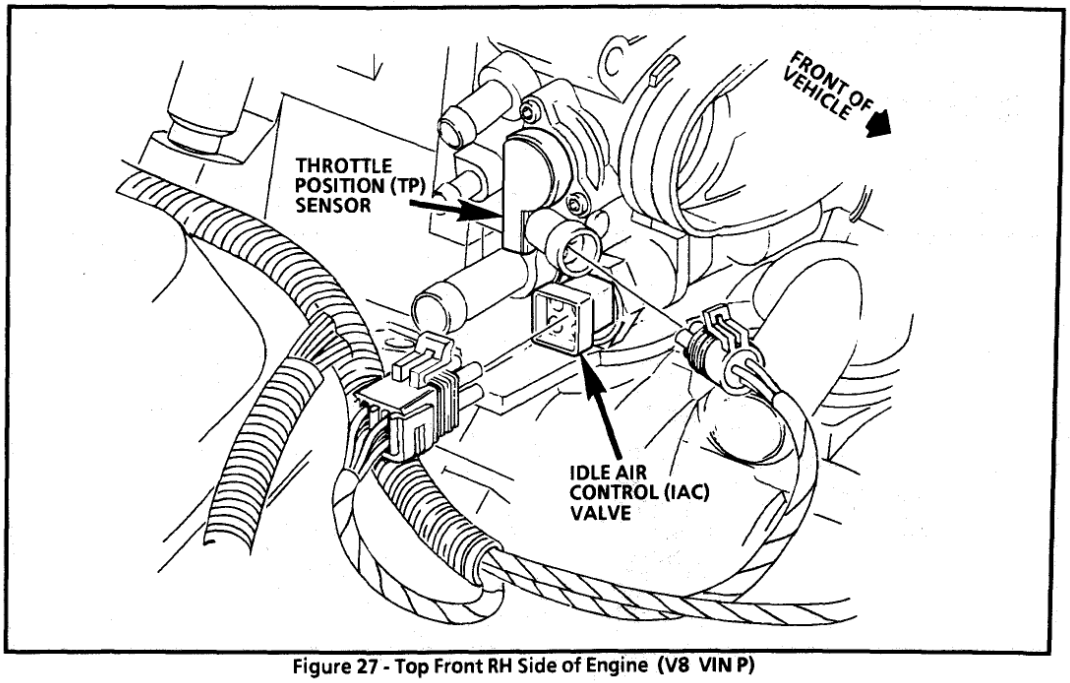


Figure 27 - Top Front RH Side of Engine (V8 VIN P)

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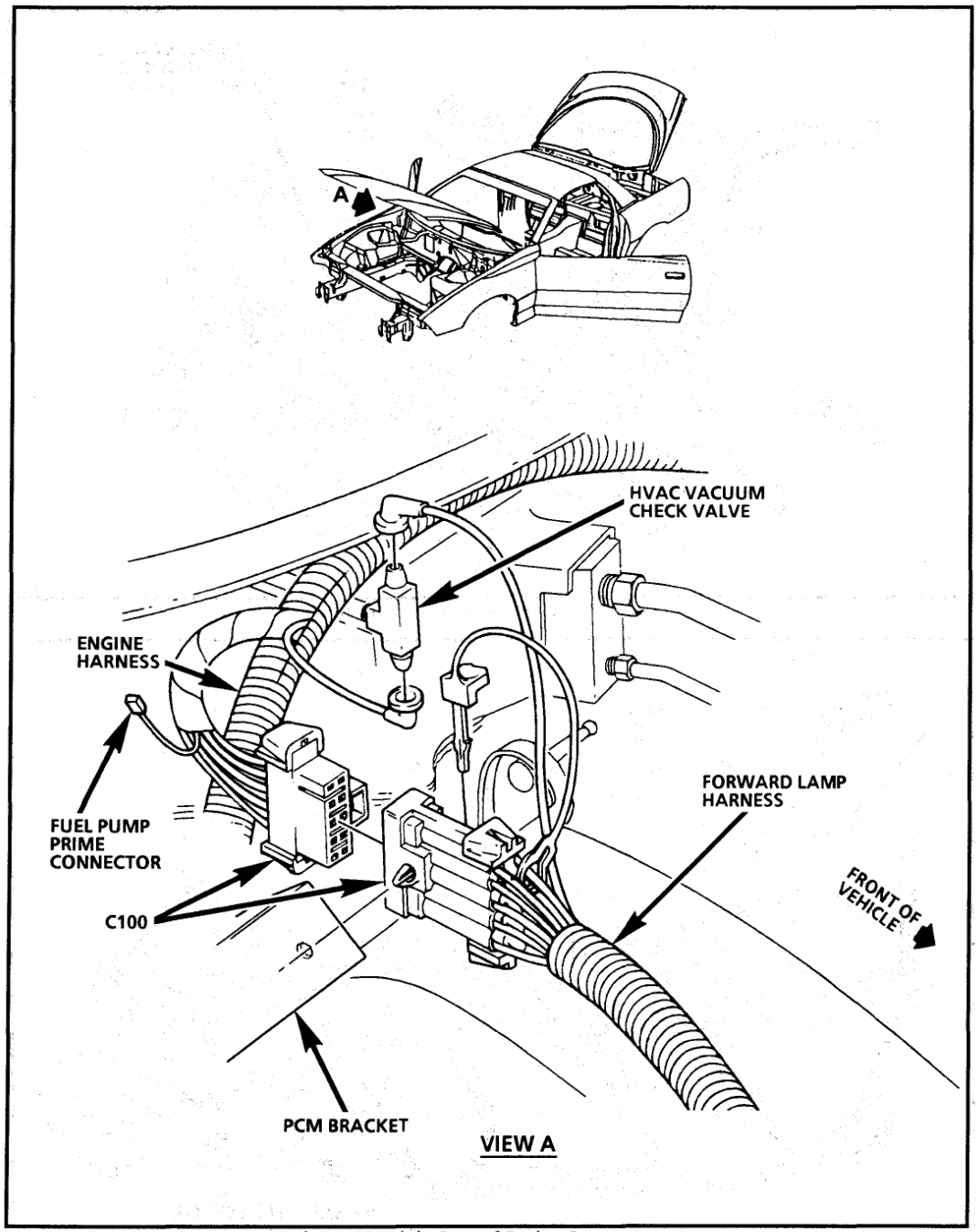


Figure 28 - Right Rear of Engine Compartment

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COMPONENT LOCATION VIEWS

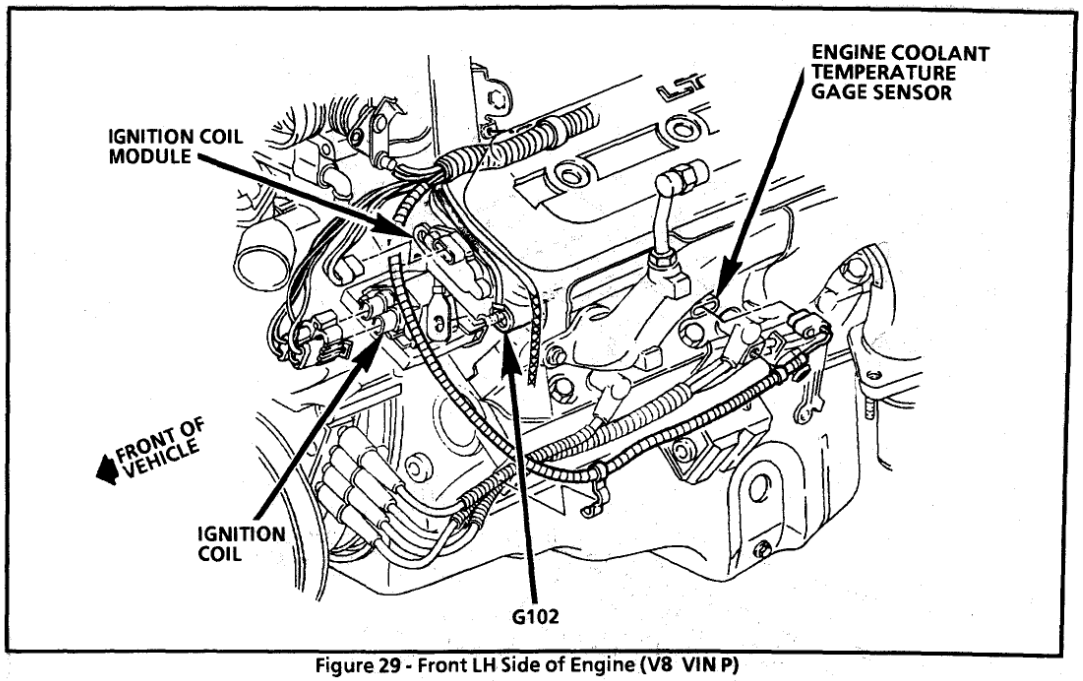


Figure 29 - Front LH Side of Engine (V8 VIN P)

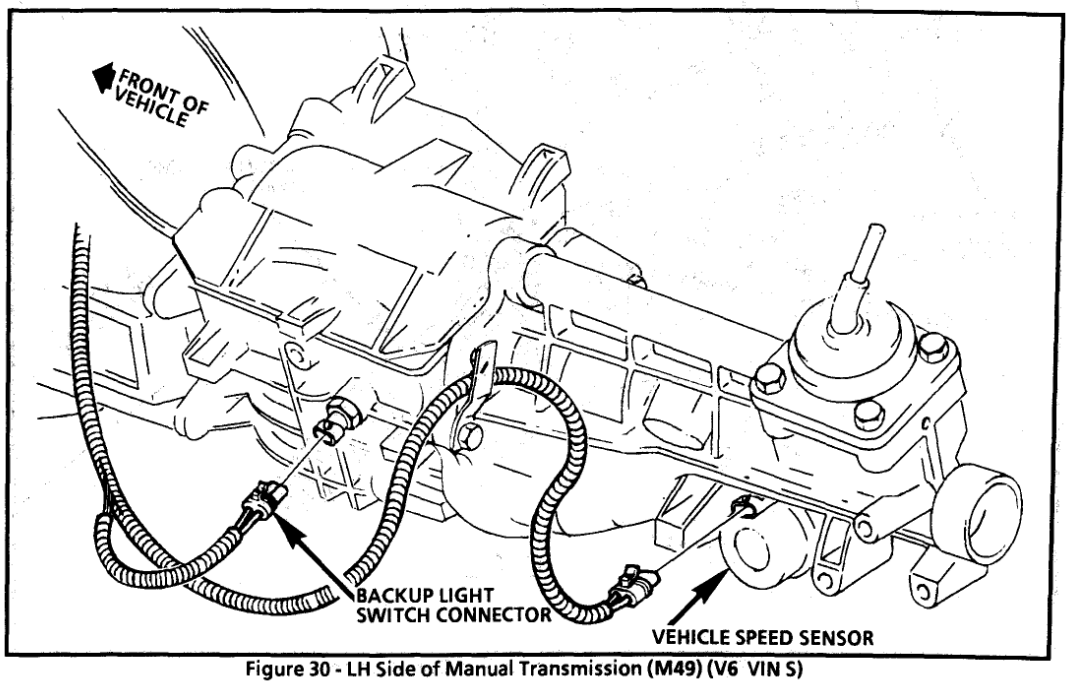


Figure 30 - LH Side of Manual Transmission (M49) (V6 VIN S)

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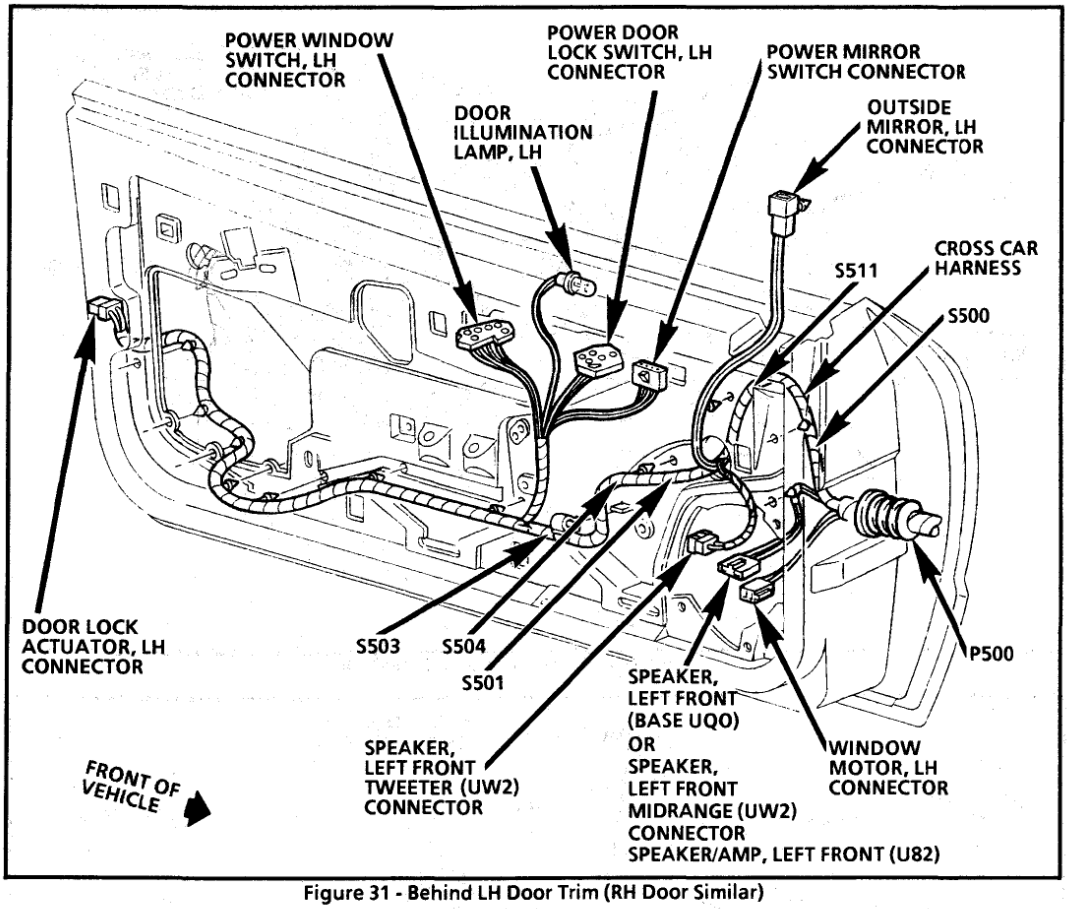


Figure 31 - Behind LH Door Trim (RH Door Similar)

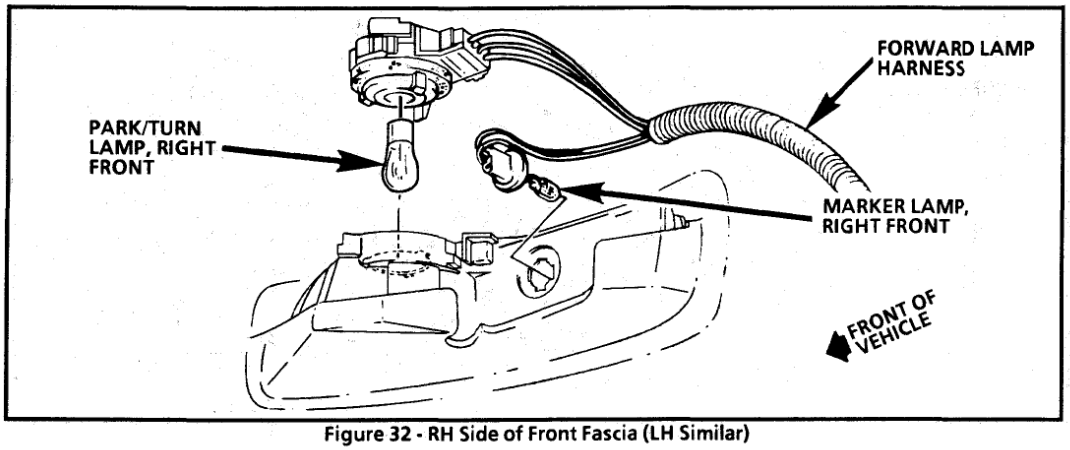


Figure 32 - RH Side of Front Fascia (LH Similar)

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COMPONENT LOCATION VIEWS

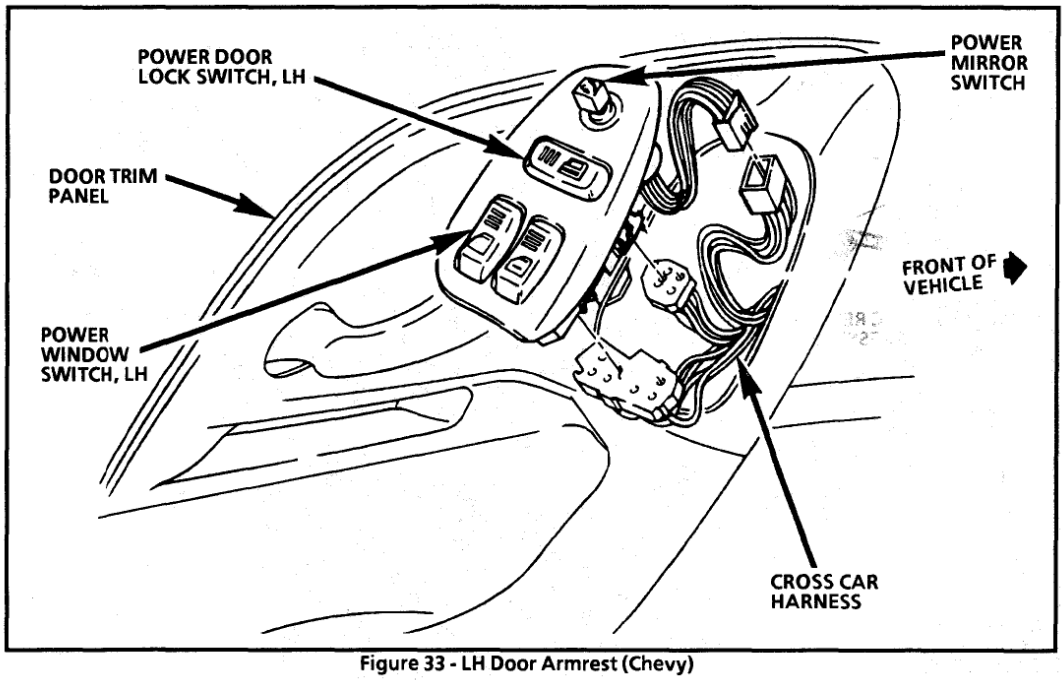


Figure 33 - LH Door Armrest (Chevy)

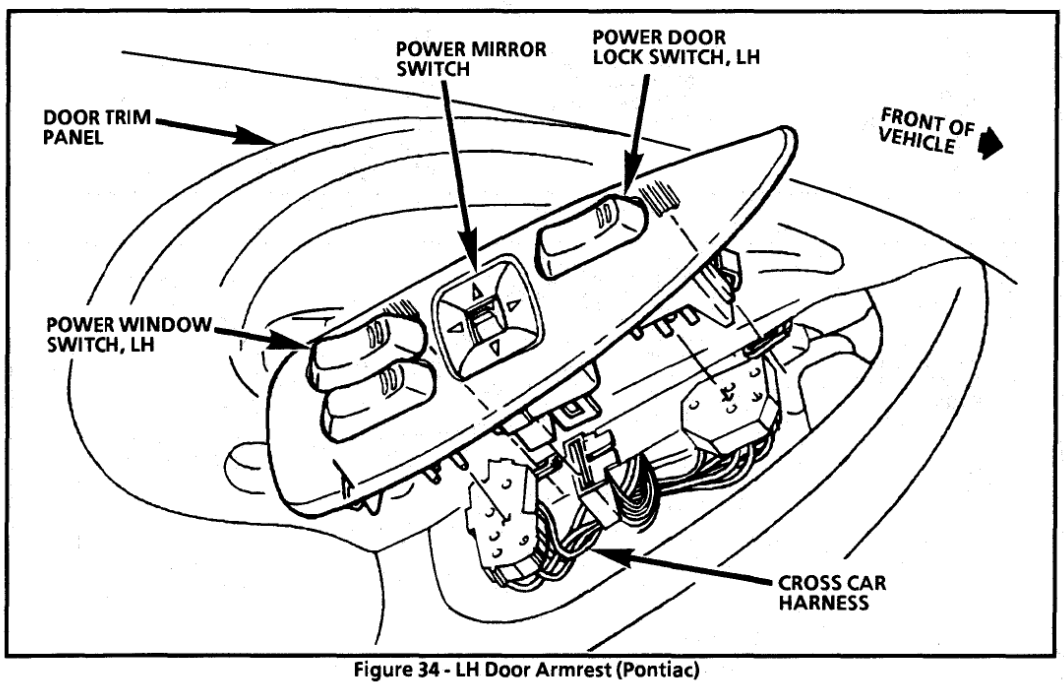


Figure 34 - LH Door Armrest (Pontiac)

cardiagn.com

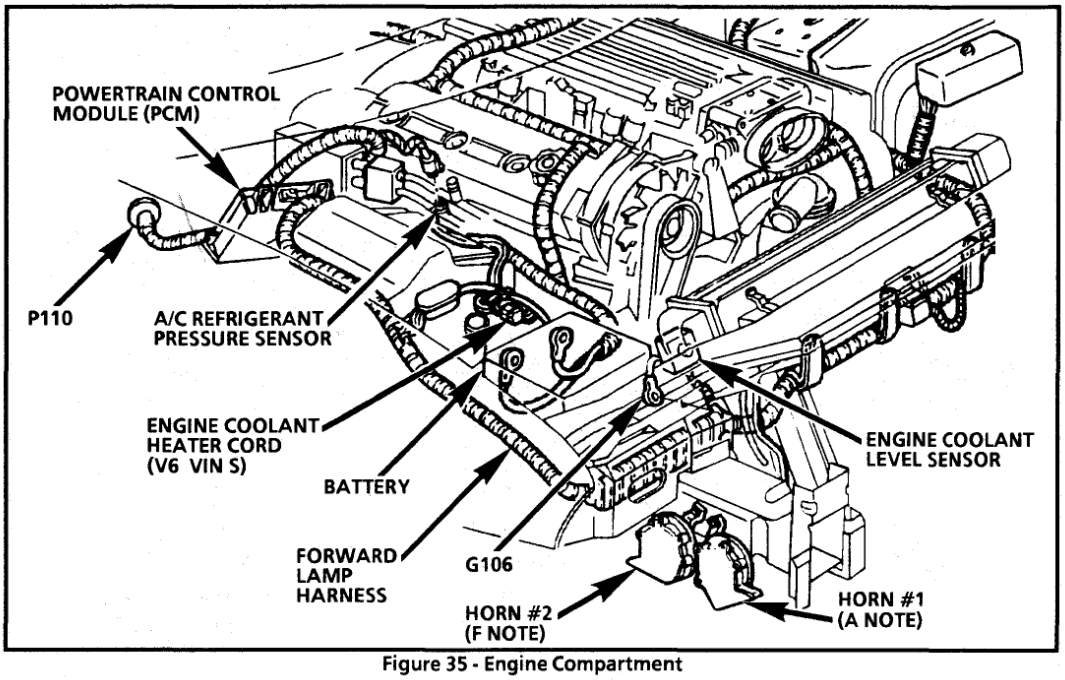


Figure 35 - Engine Compartment

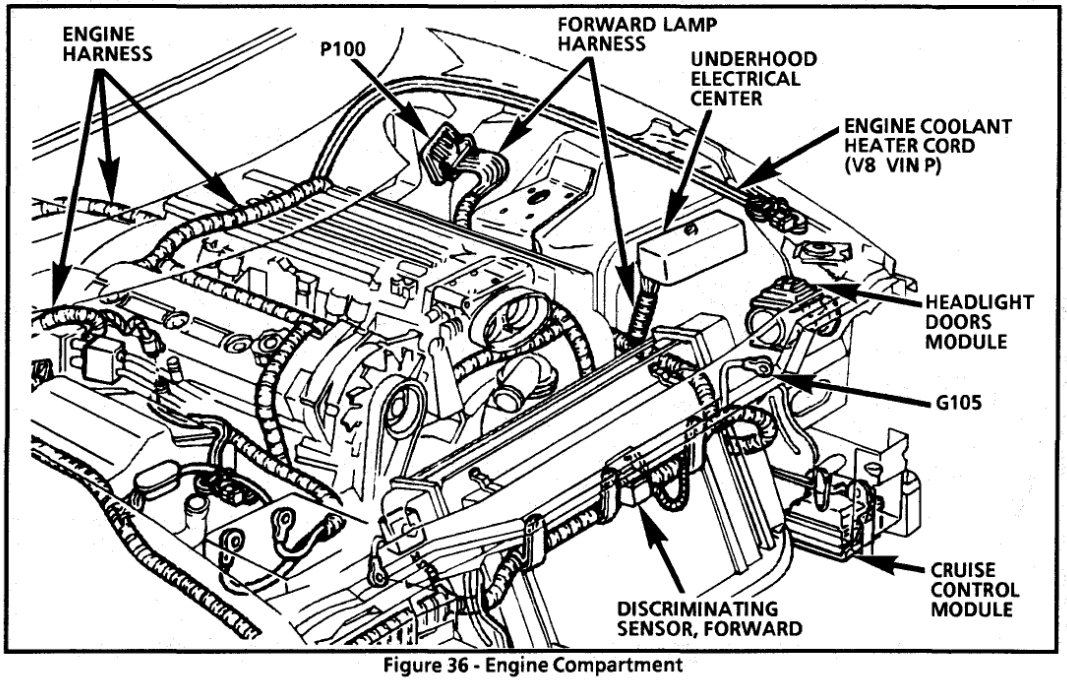


Figure 36 - Engine Compartment

cardiagn.com

COMPONENT LOCATION VIEWS

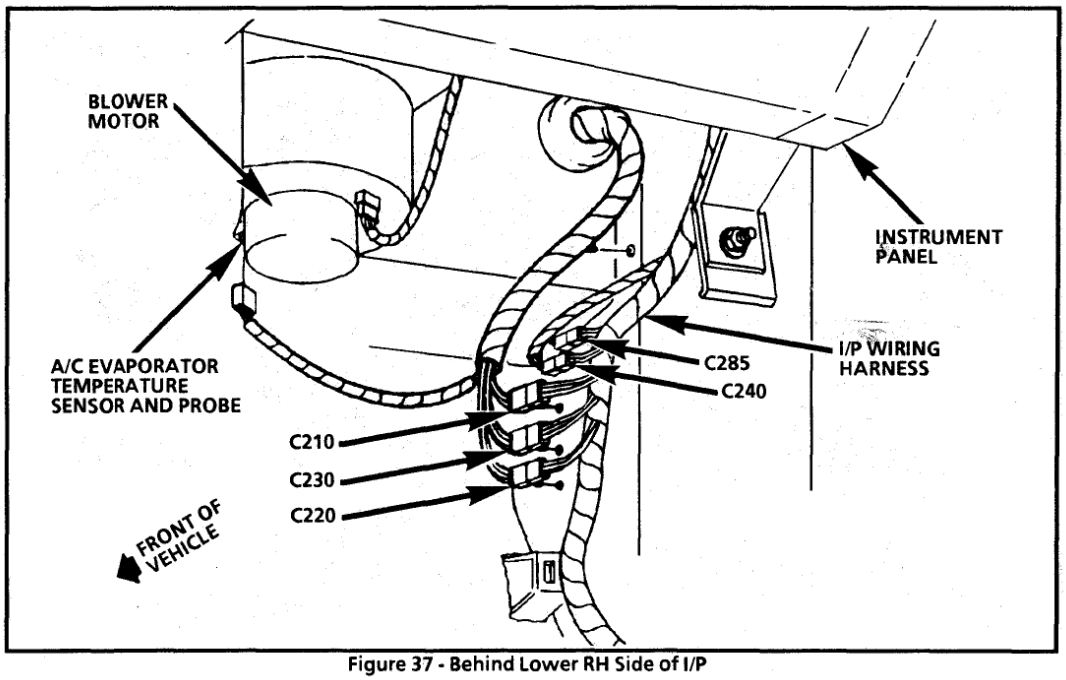


Figure 37 - Behind Lower RH Side of I/P

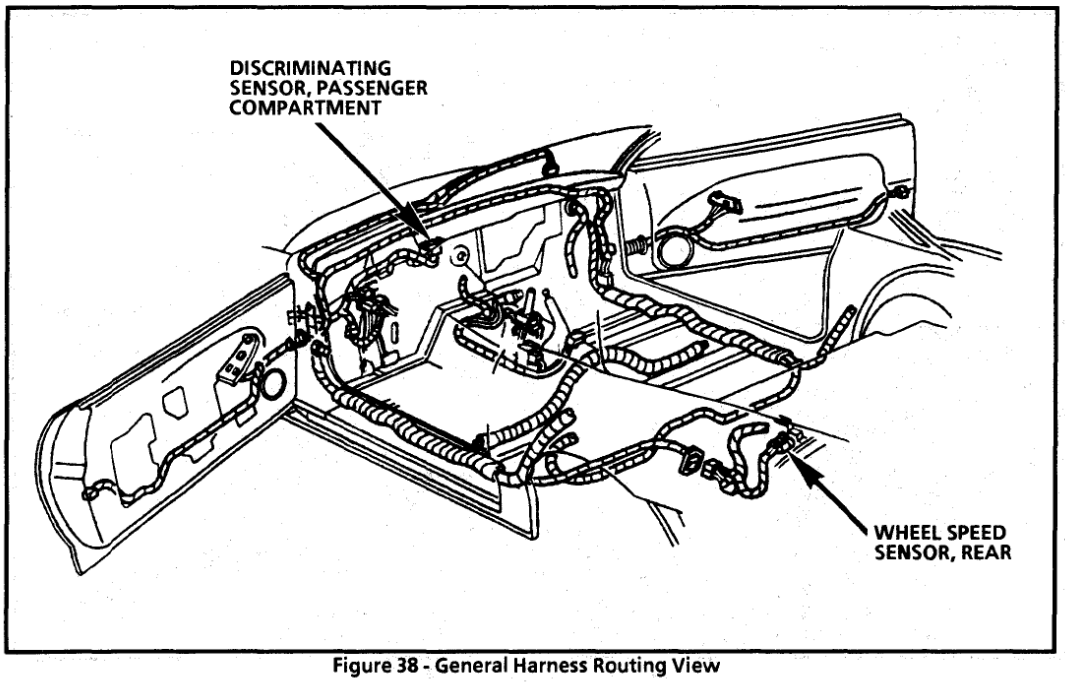


Figure 38 - General Harness Routing View

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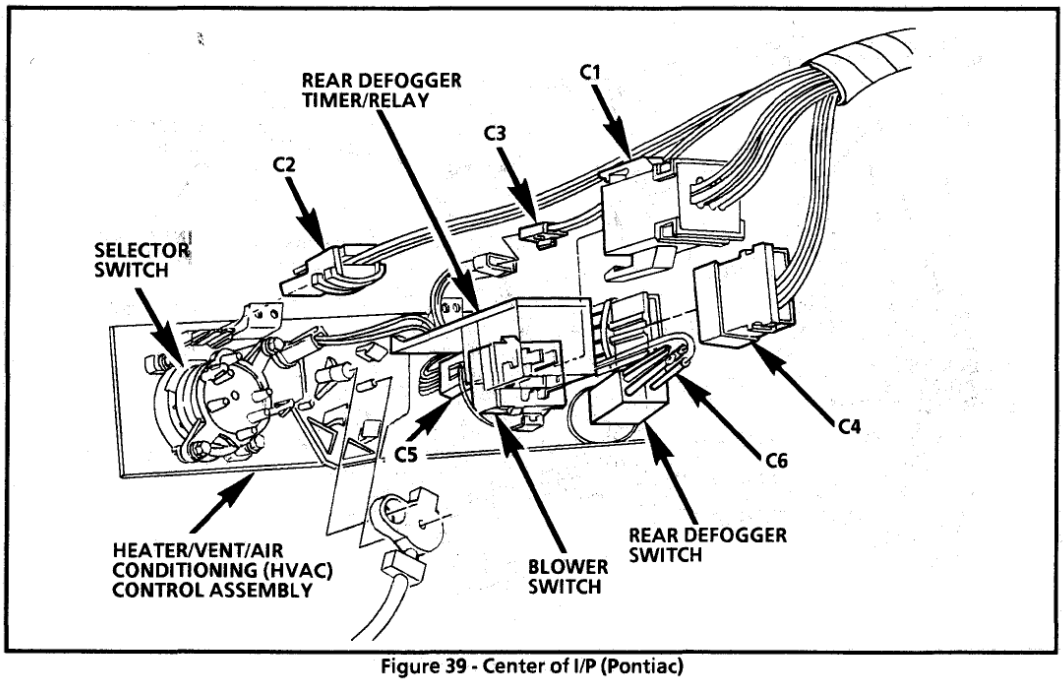


Figure 39 - Center of I/P (Pontiac)

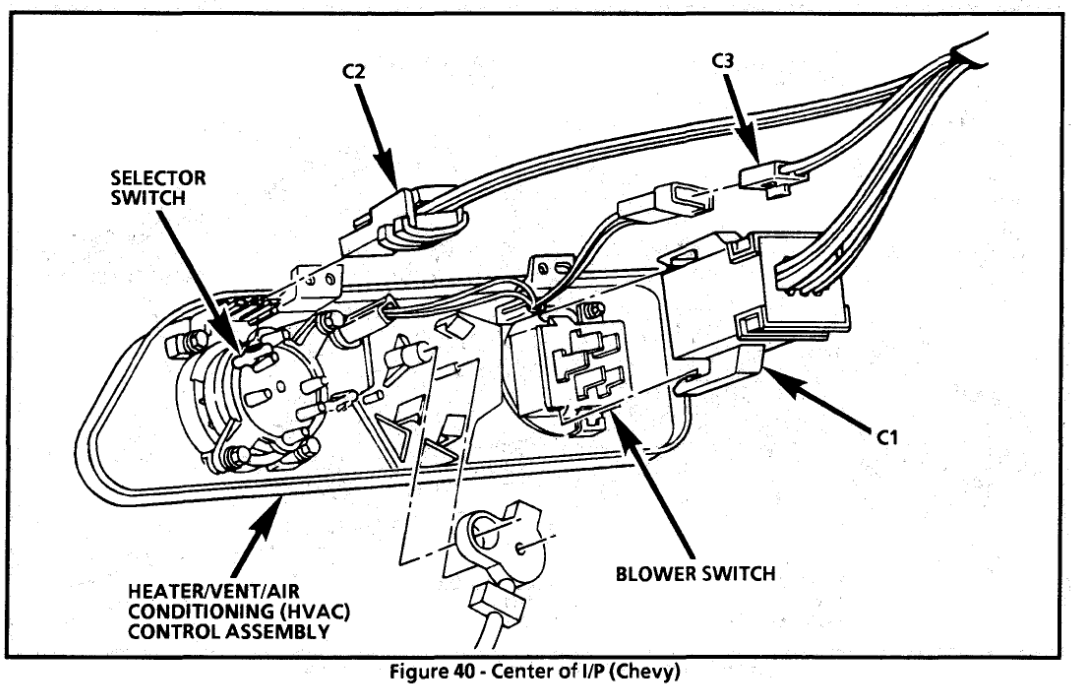


Figure 40 - Center of I/P (Chevy)

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COMPONENT LOCATION VIEWS

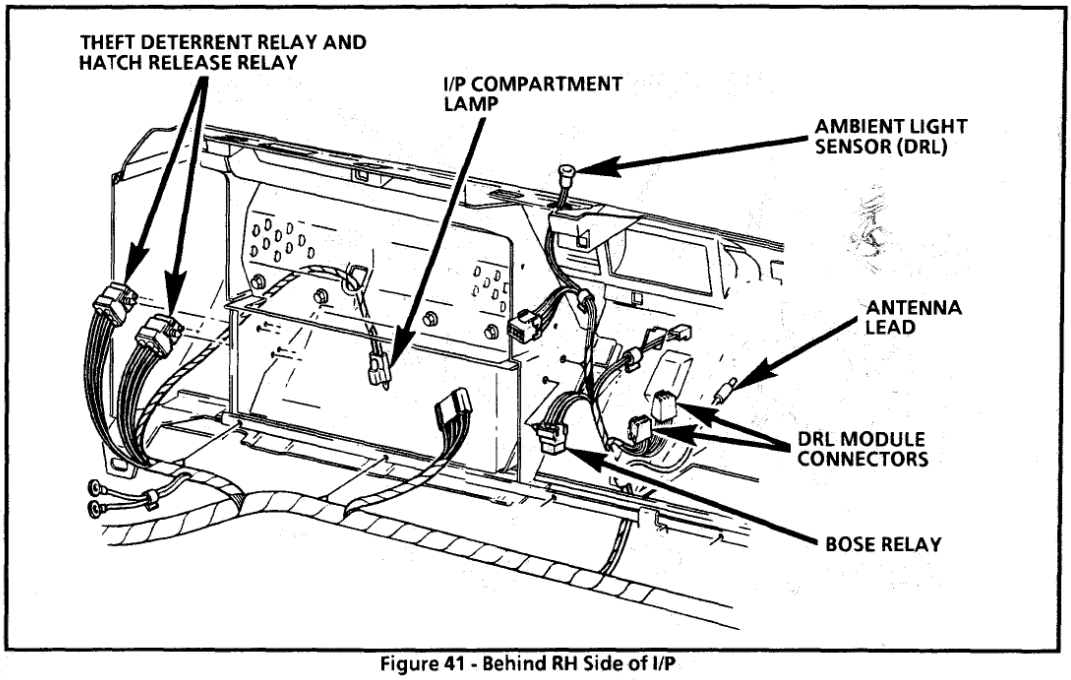


Figure 41 - Behind RH Side of I/P

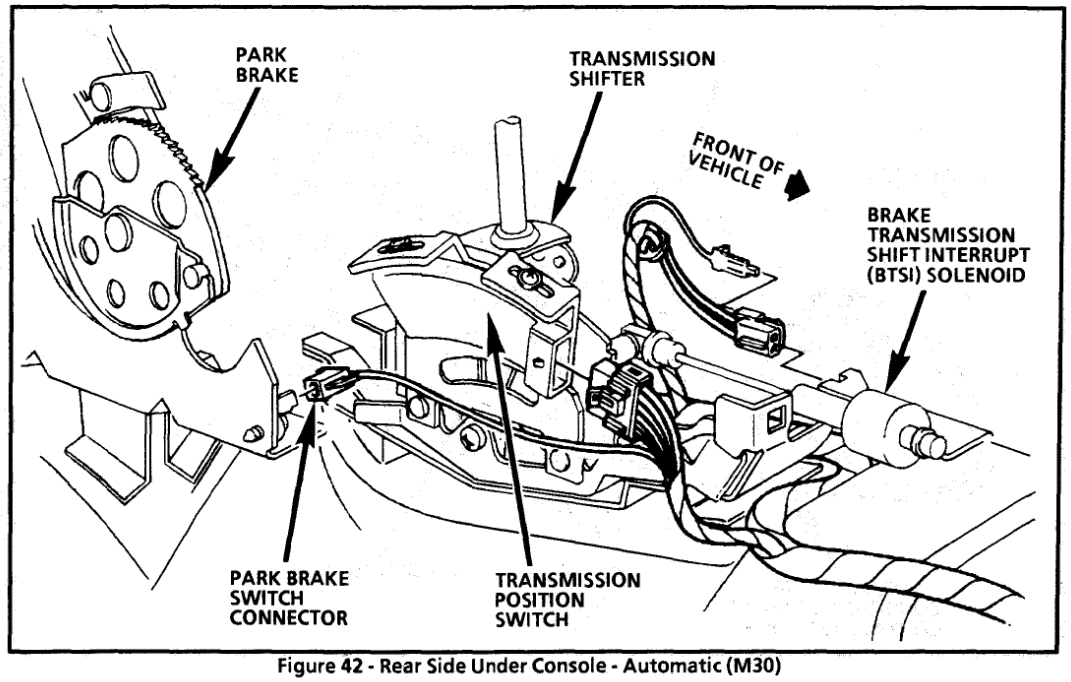


Figure 42 - Rear Side Under Console - Automatic (M30)

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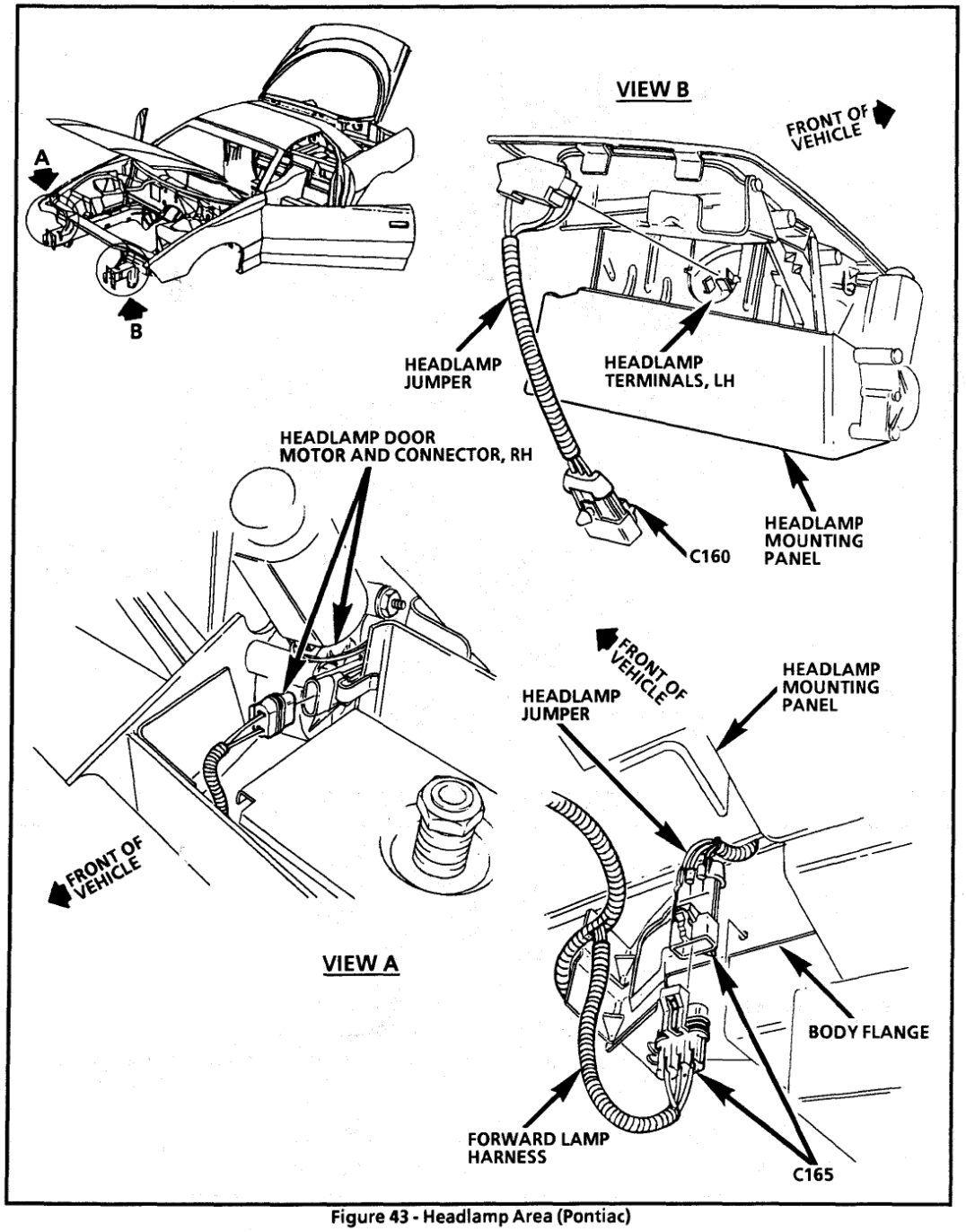


Figure 43 - Headlamp Area (Pontiac)

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COMPONENT LOCATION VIEWS

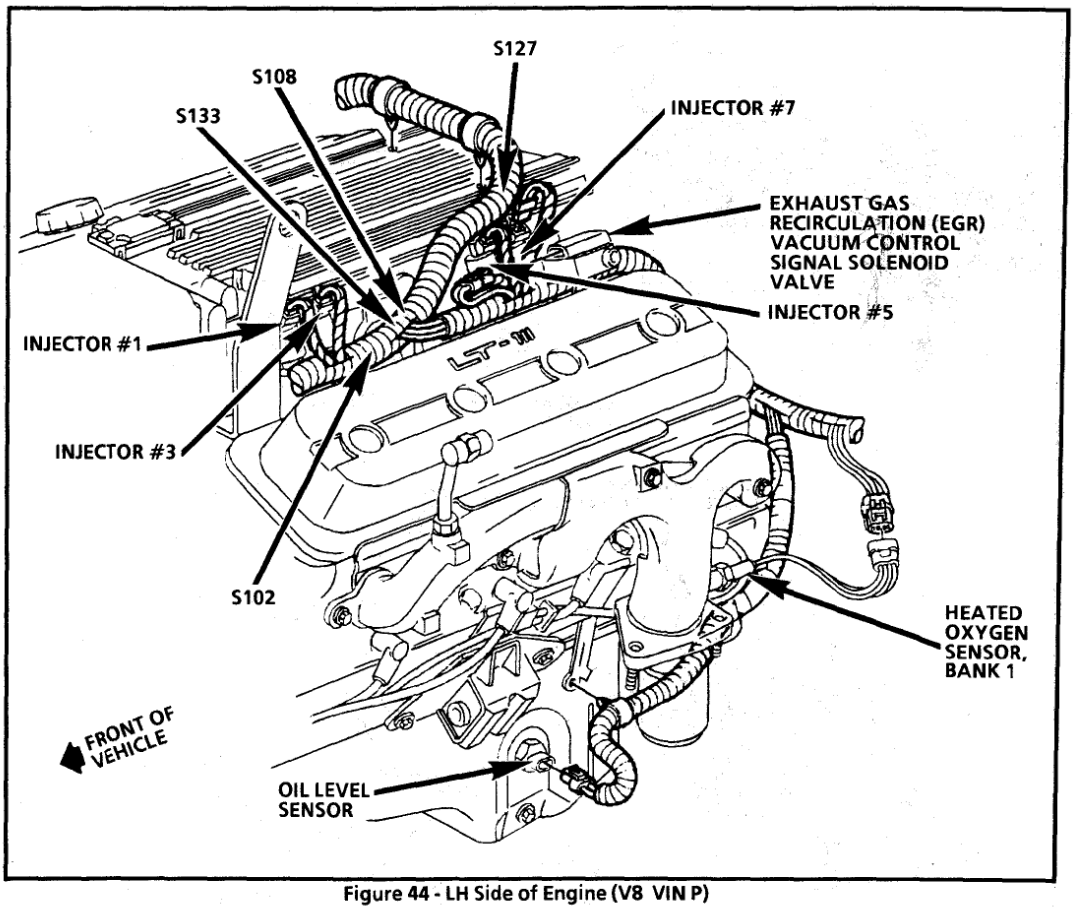


Figure 44 - LH Side of Engine (V8 VIN P)

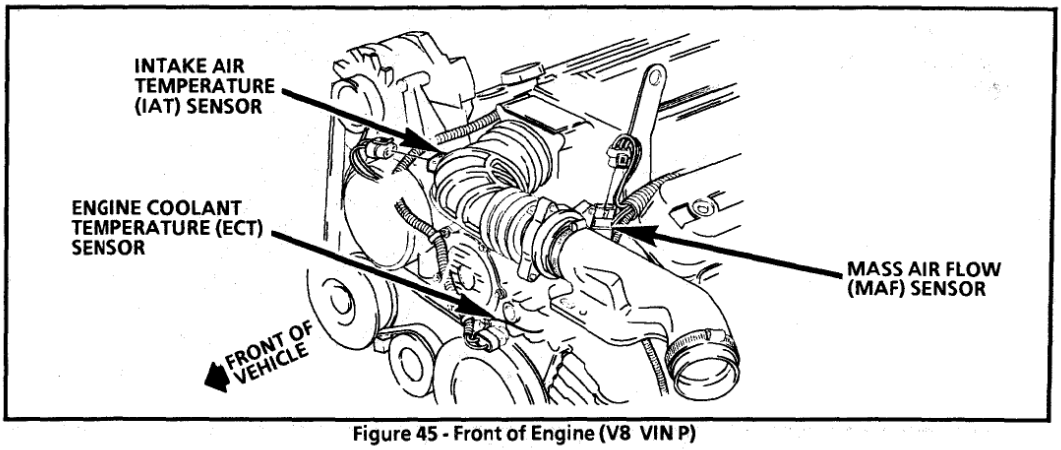


Figure 45 - Front of Engine (V8 VIN P)

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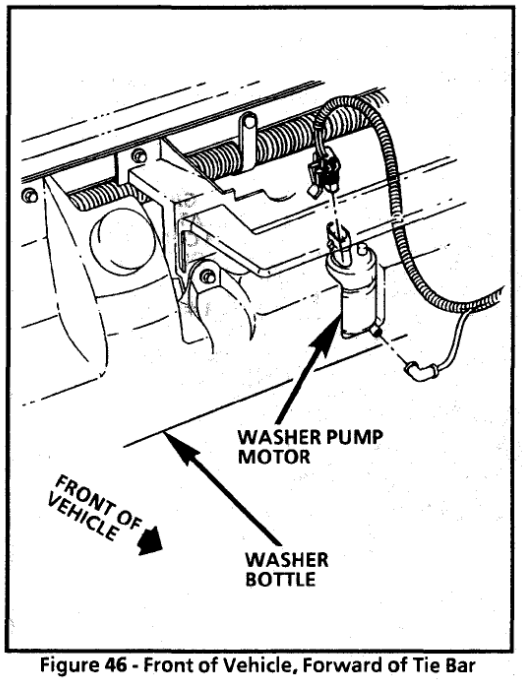


Figure 46 - Front of Vehicle, Forward of Tie Bar

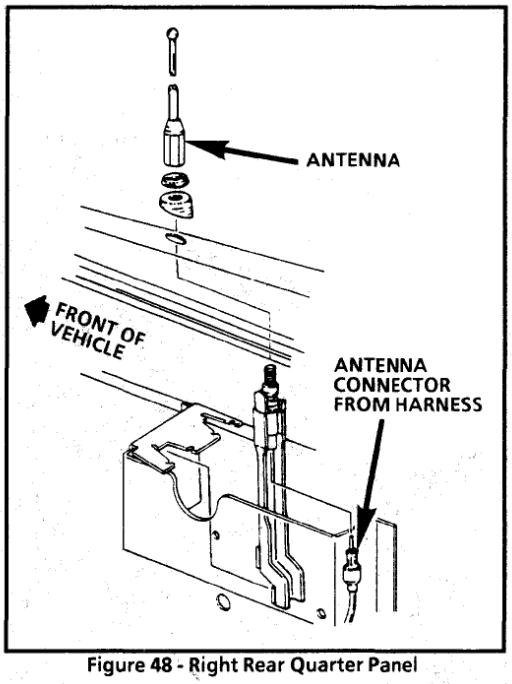


Figure 48 - Right Rear Quarter Panel

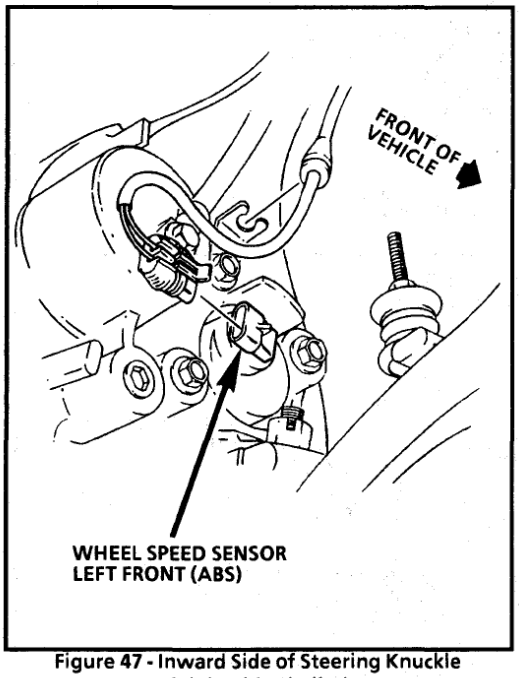


Figure 47 - Inward Side of Steering Knuckle (Right Side Similar)

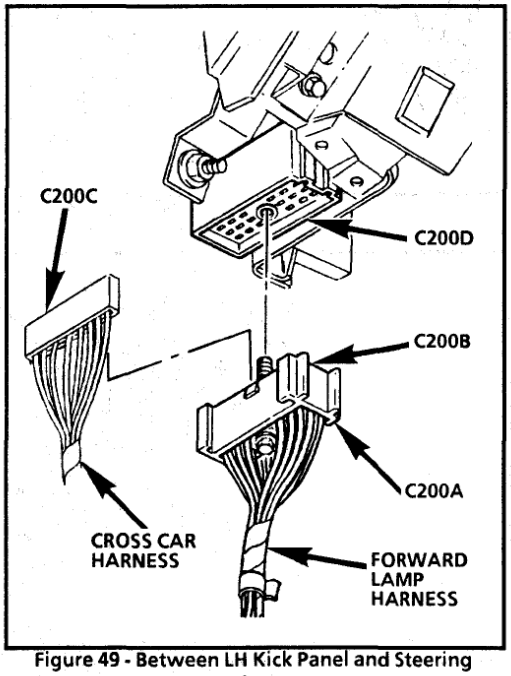


Figure 49 - Between LH Kick Panel and Steering Column

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COMPONENT LOCATION VIEWS

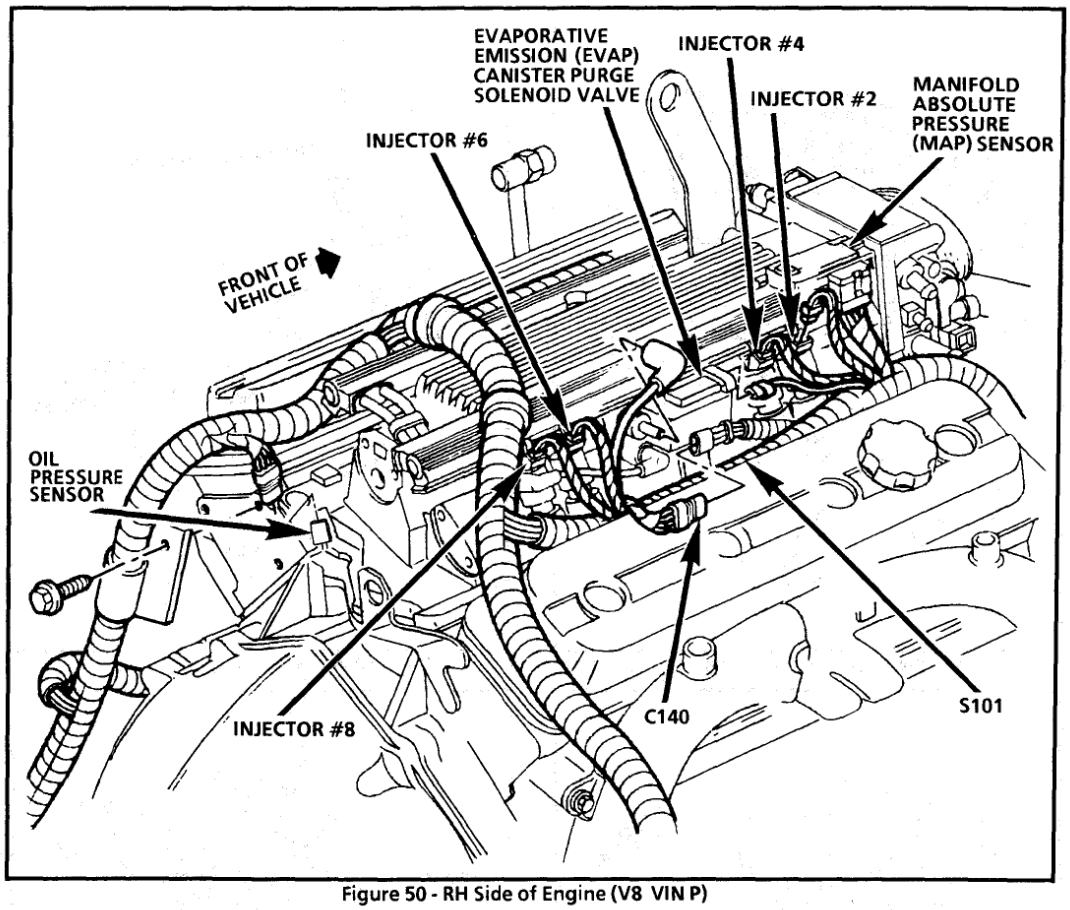


Figure 50 - RH Side of Engine (V8 VIN P)

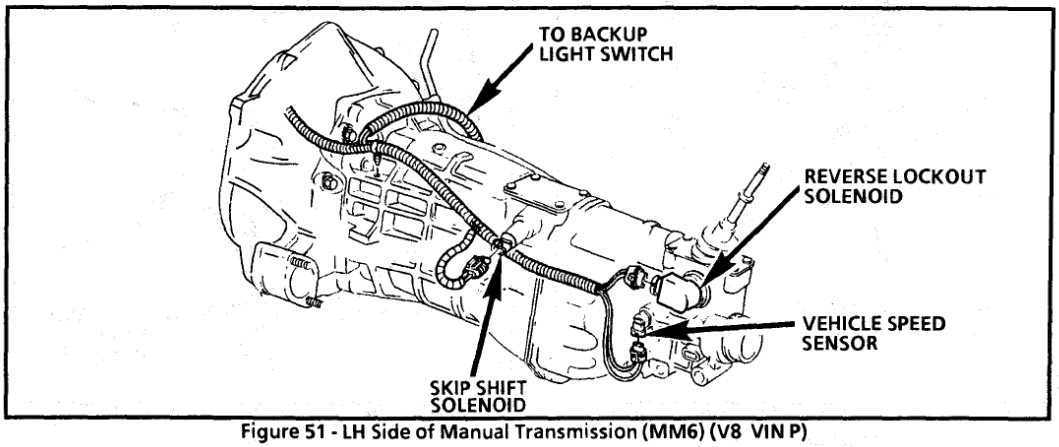


Figure 51 - LH Side of Manual Transmission (MM6) (V8 VIN P)

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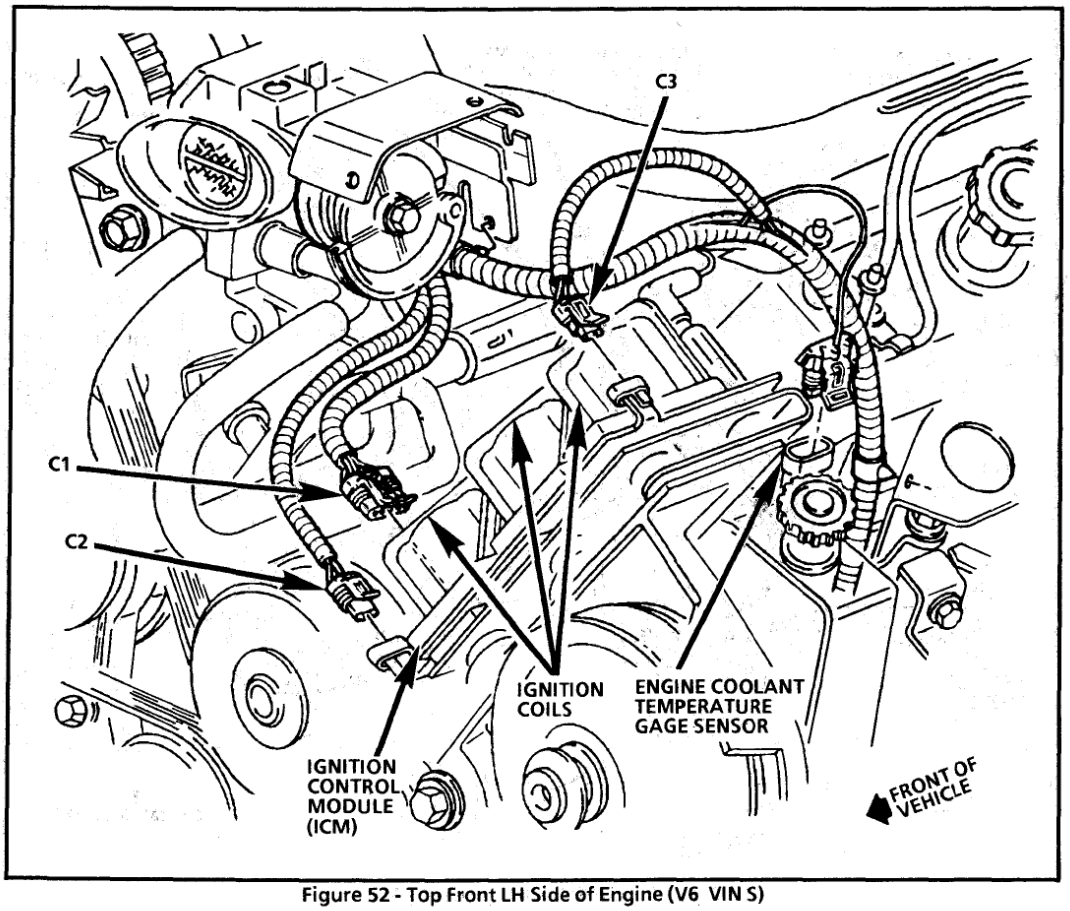


Figure 52 - Top Front LH Side of Engine (V6 VIN S)

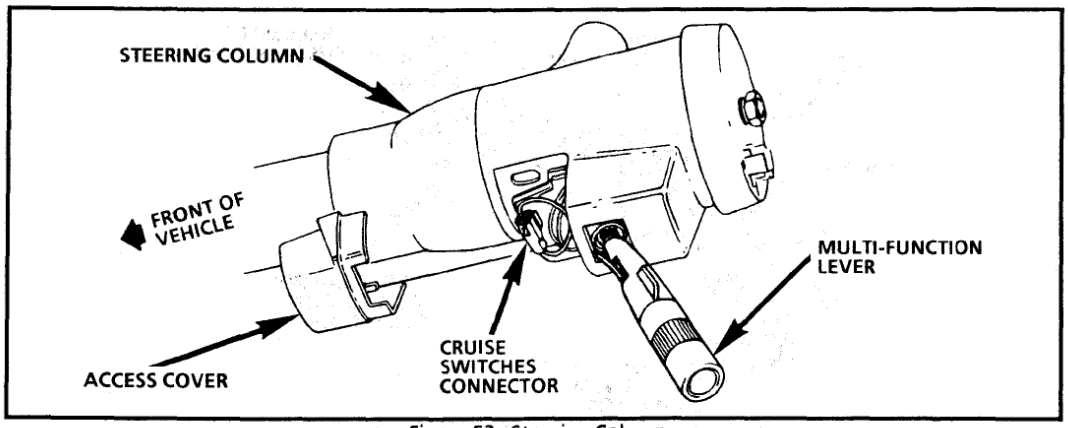


Figure 53 - Steering Column

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COMPONENT LOCATION VIEWS

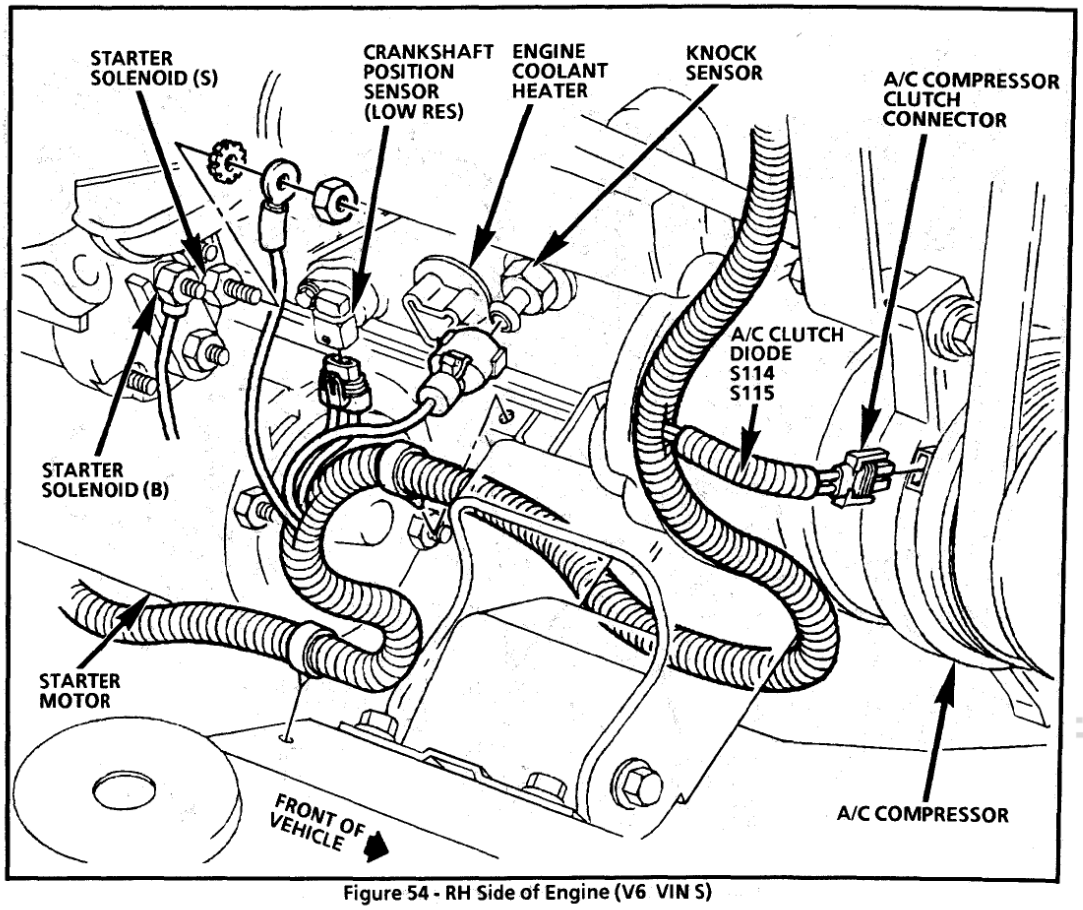


Figure 54 - RH Side of Engine (V6 VIN S)

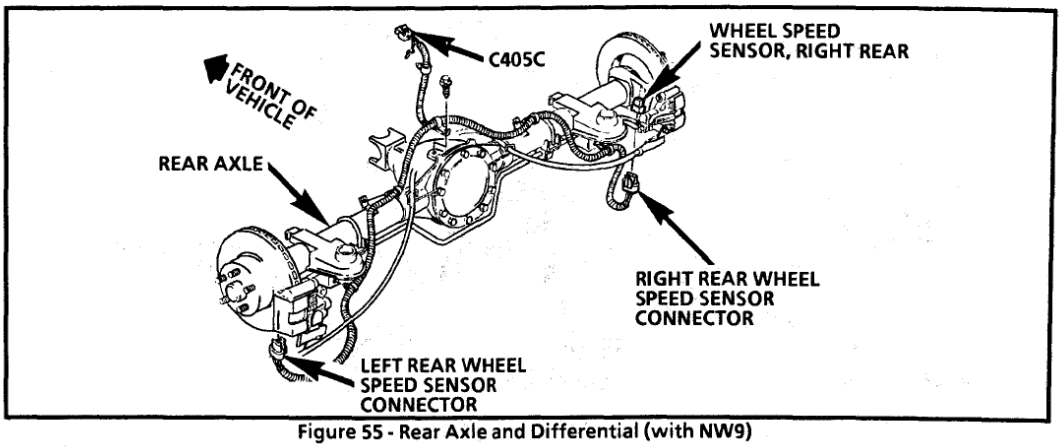


Figure 55 - Rear Axle and Differential (with NW9)

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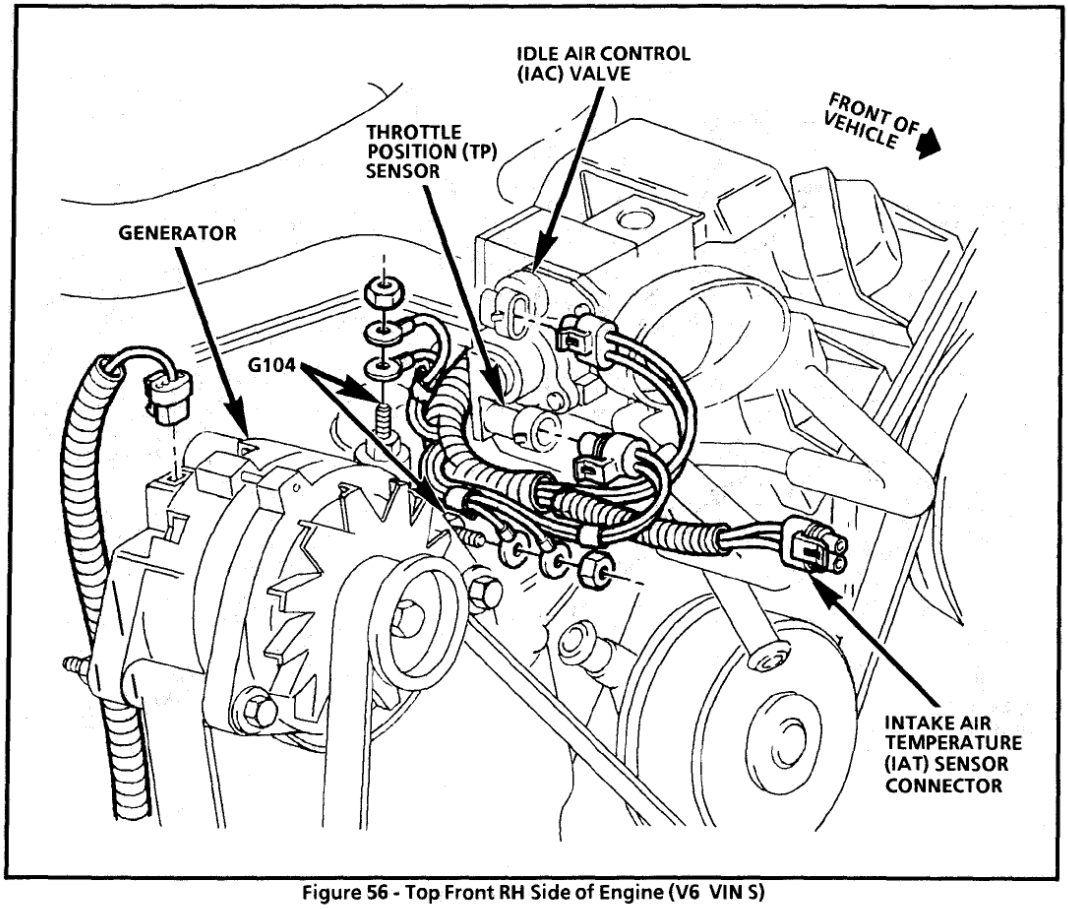


Figure 56 - Top Front RH Side of Engine (V6 VIN S)

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COMPONENT LOCATION VIEWS

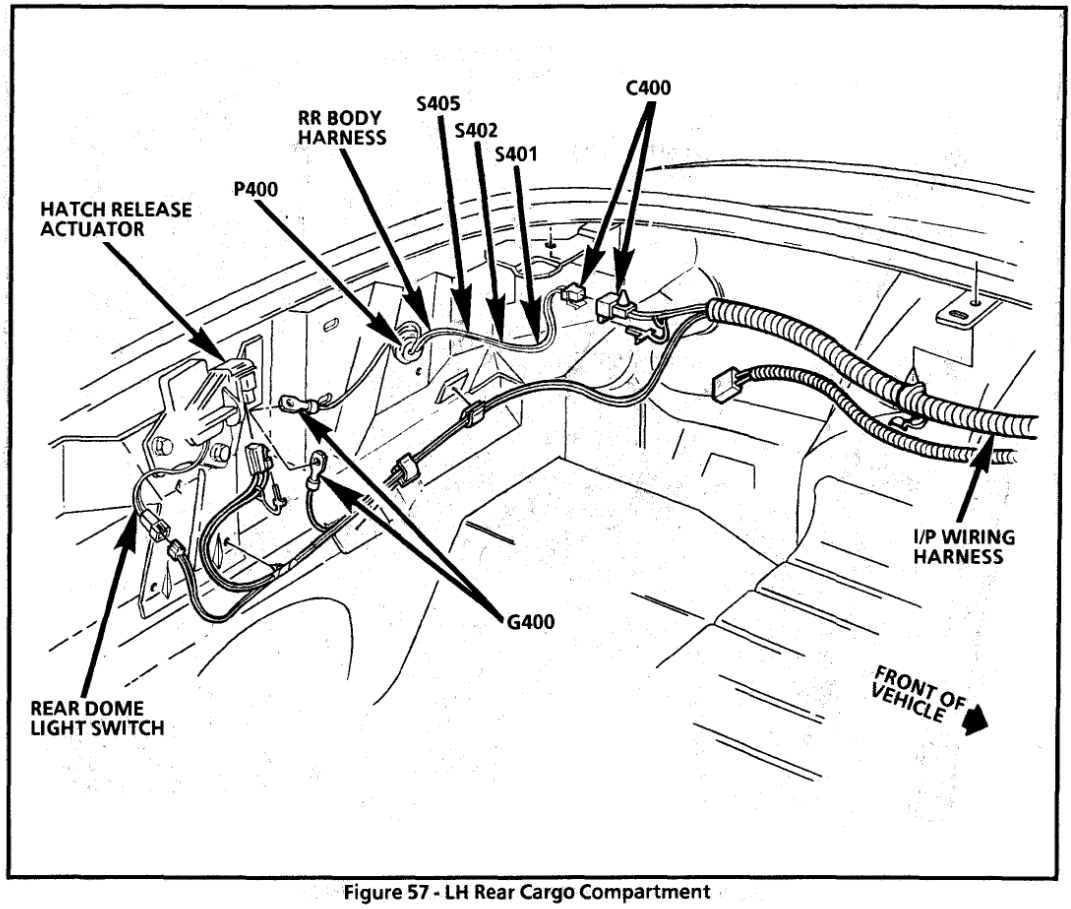


Figure 57 - LH Rear Cargo Compartment

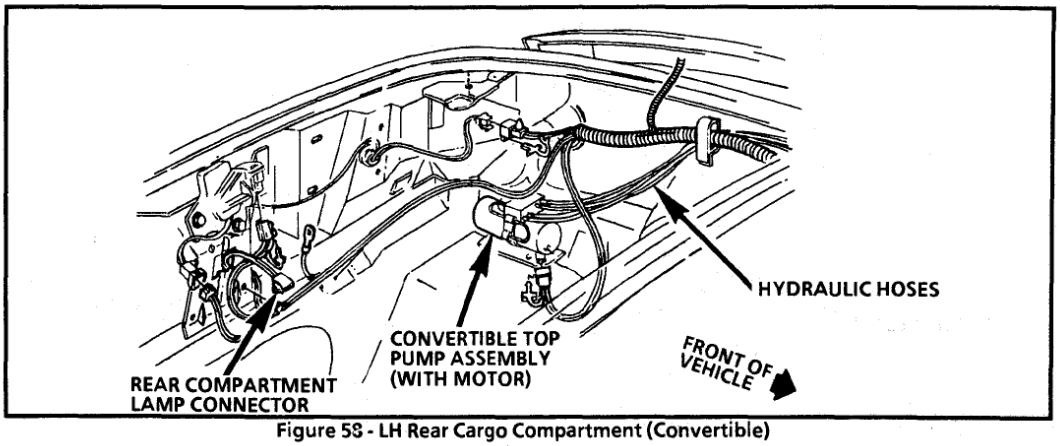


Figure 58 - LH Rear Cargo Compartment (Convertible)

cardiagn.com

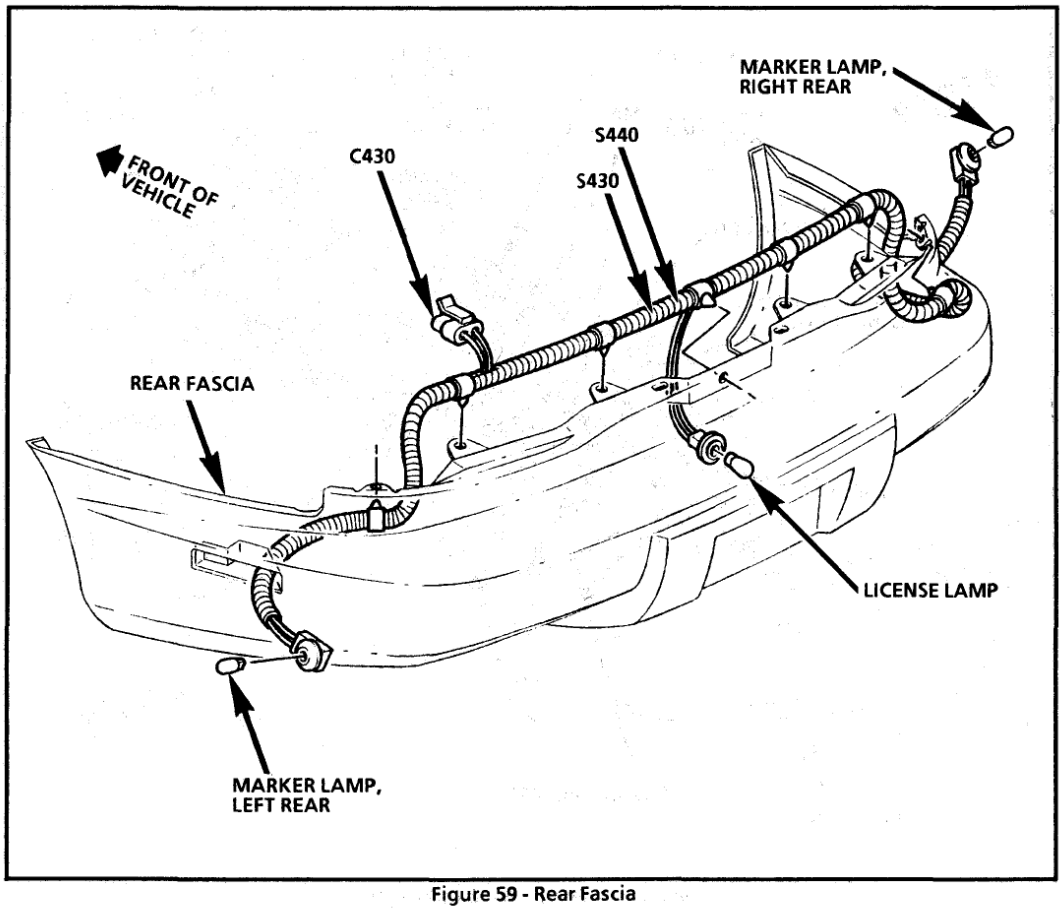


Figure 59 - Rear Fascia

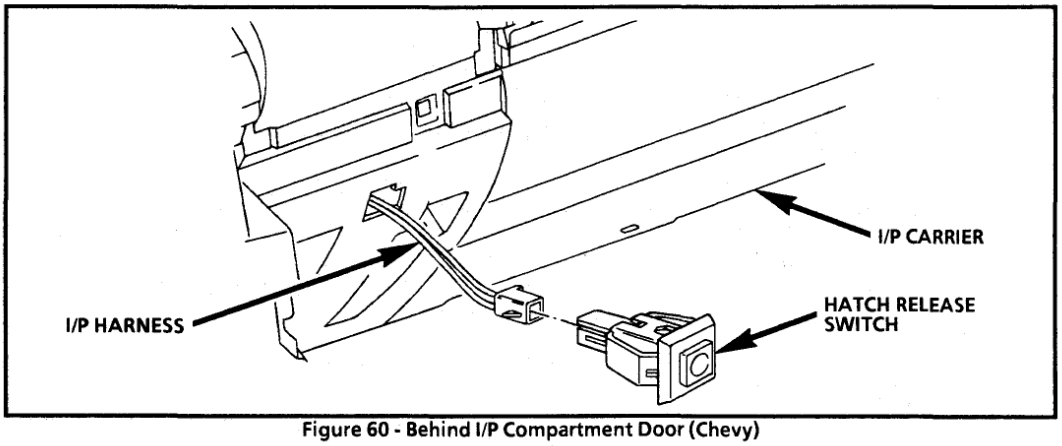


Figure 60 - Behind I/P Compartment Door (Chevy)

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COMPONENT LOCATION VIEWS

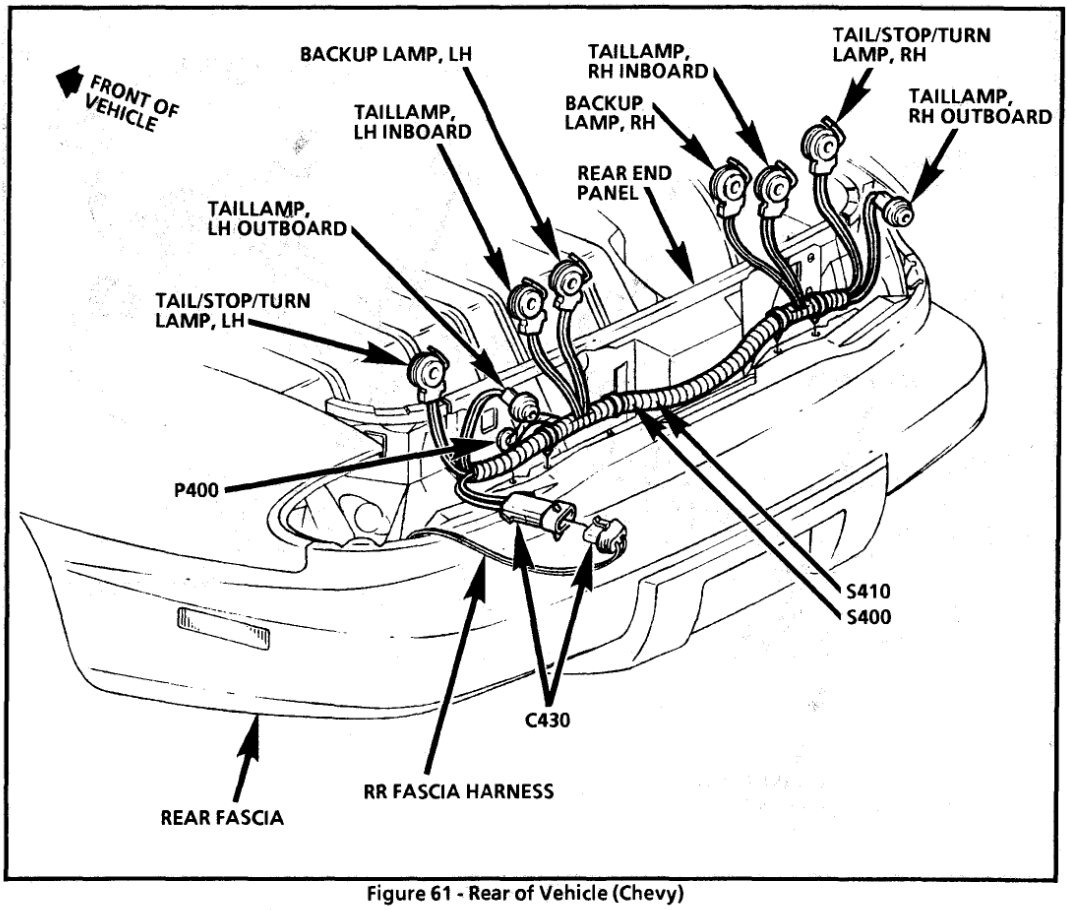


Figure 61 - Rear of Vehicle (Chevy)

cardiagn.com

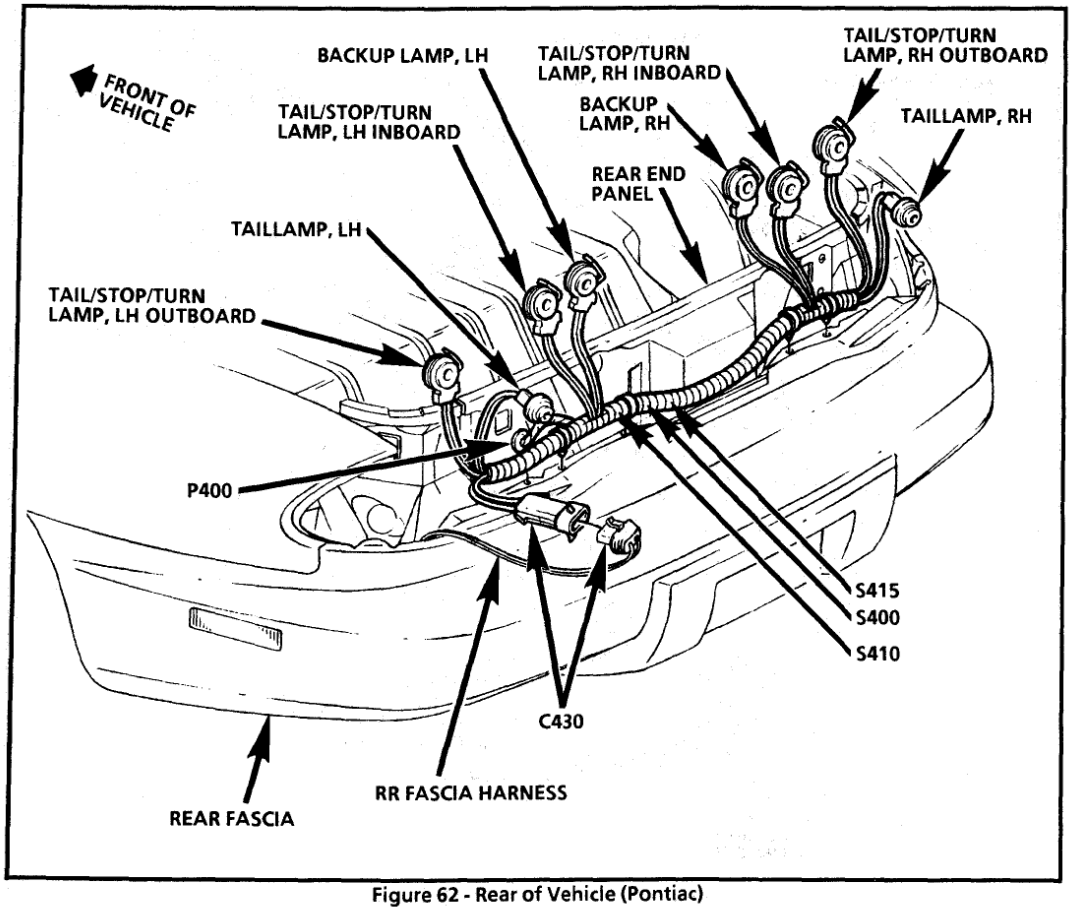


Figure 62 - Rear of Vehicle (Pontiac)

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COMPONENT LOCATION VIEWS

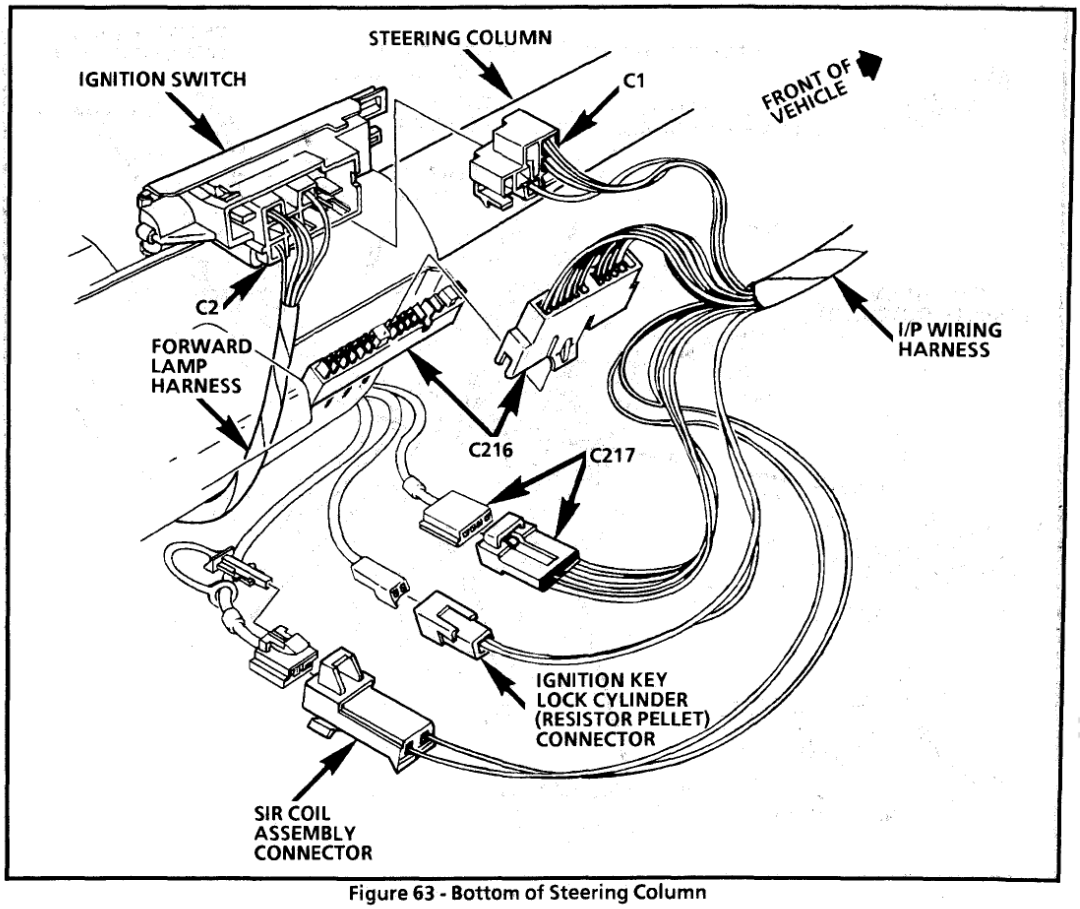


Figure 63 - Bottom of Steering Column

cardiagn.com

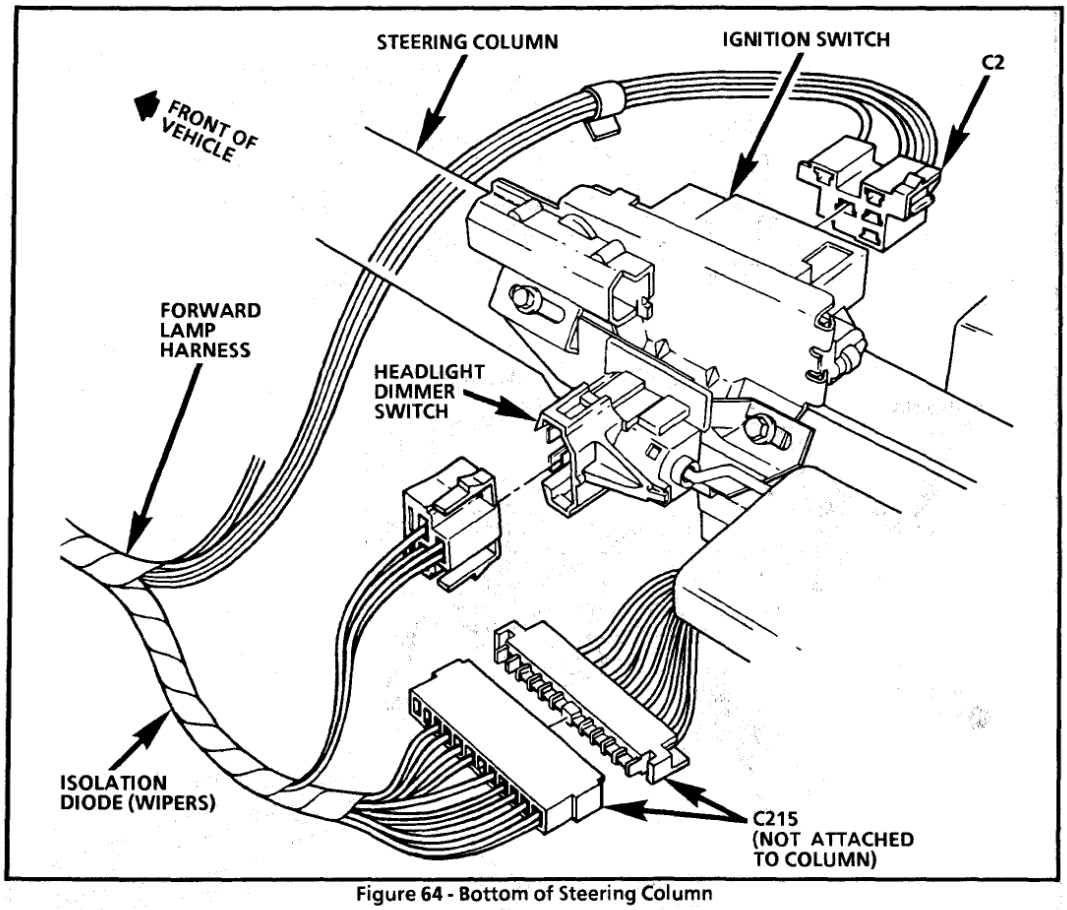


Figure 64 - Bottom of Steering Column

cardiagn.com

COMPONENT LOCATION VIEWS

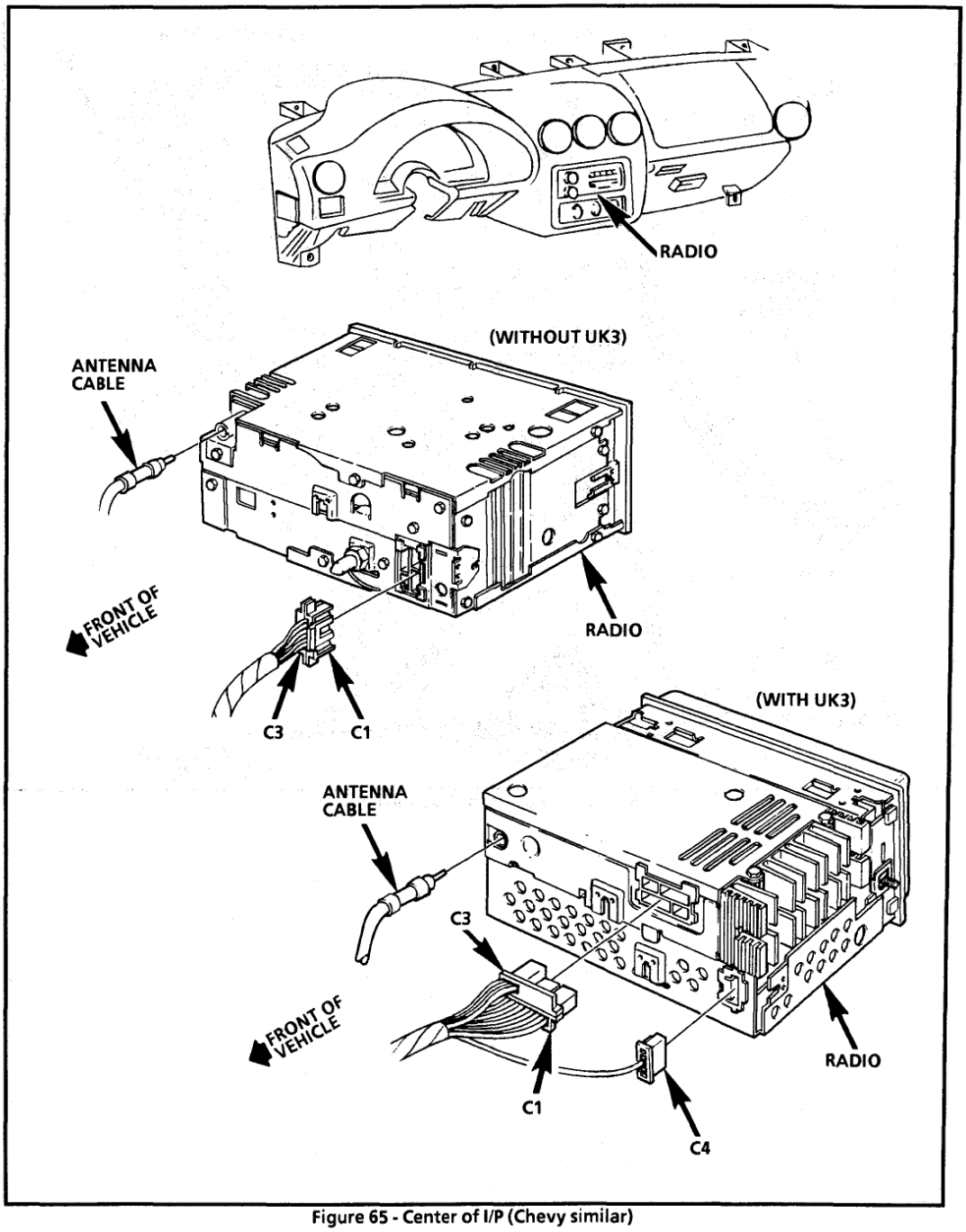


Figure 65 - Center of I/P (Chevy similar)

cardiagn.com

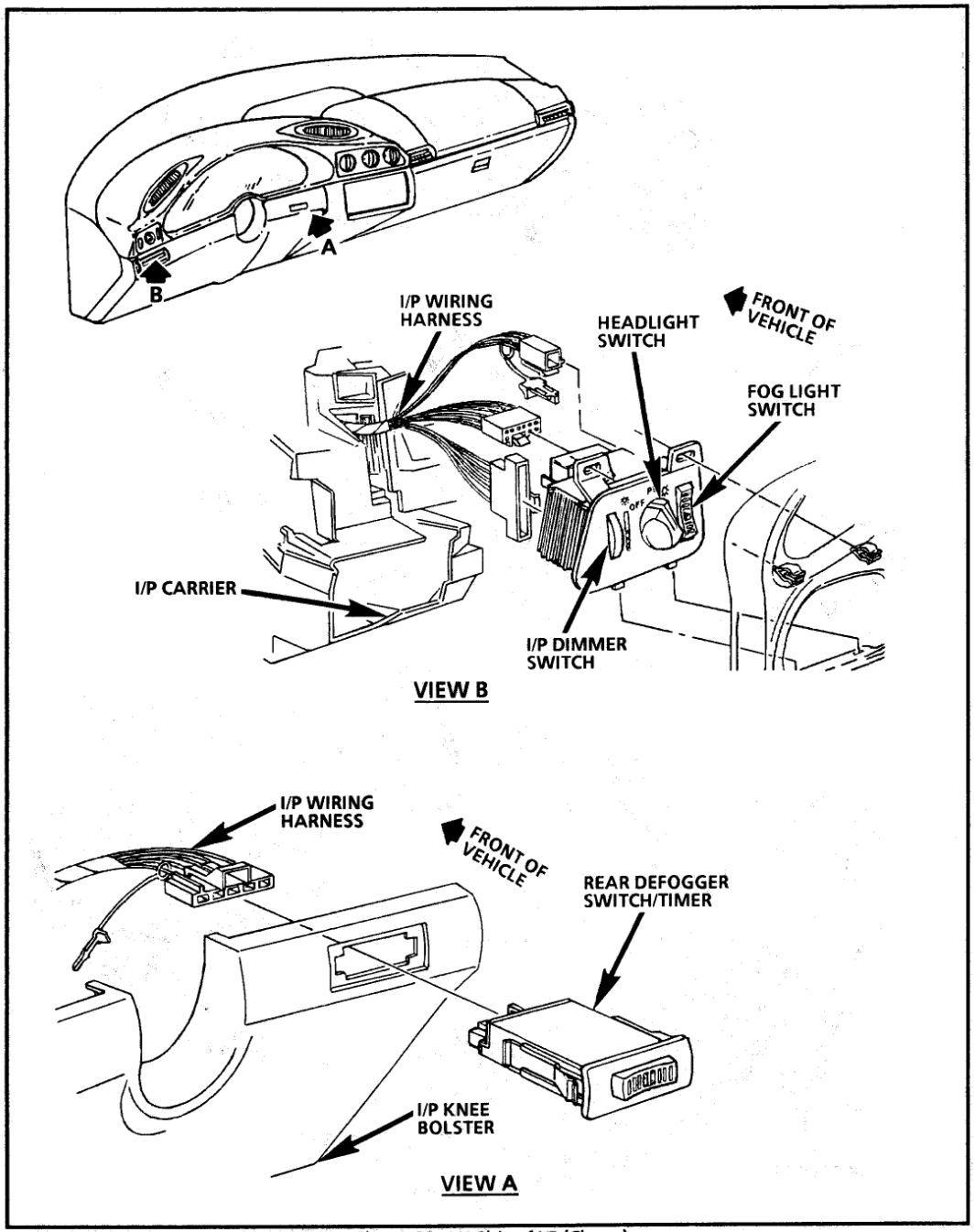


Figure 66 - LH Side of I/P (Chevy)

cardiagn.com

COMPONENT LOCATION VIEWS

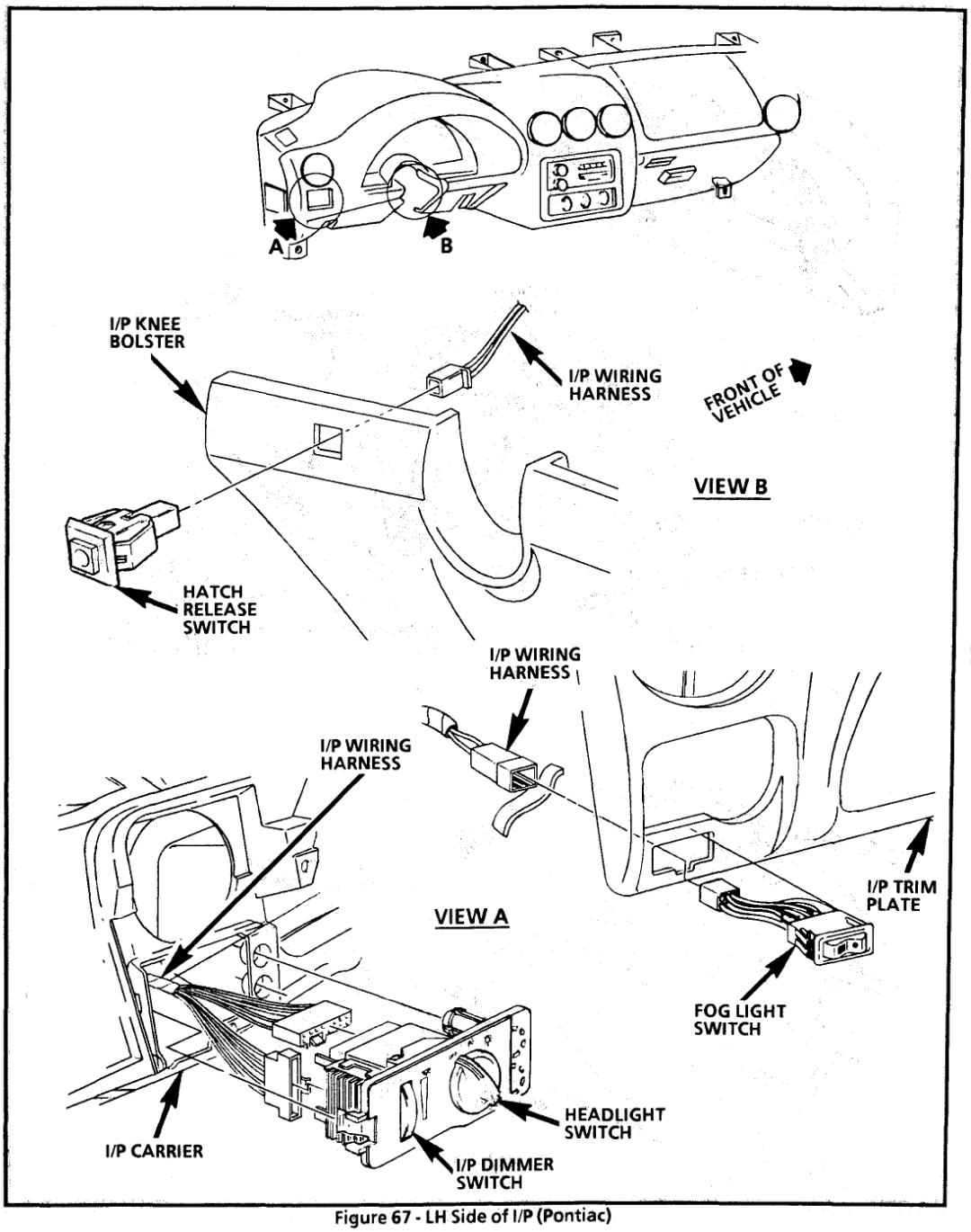


Figure 67 - LH Side of I/P (Pontiac)

cardiagn.com

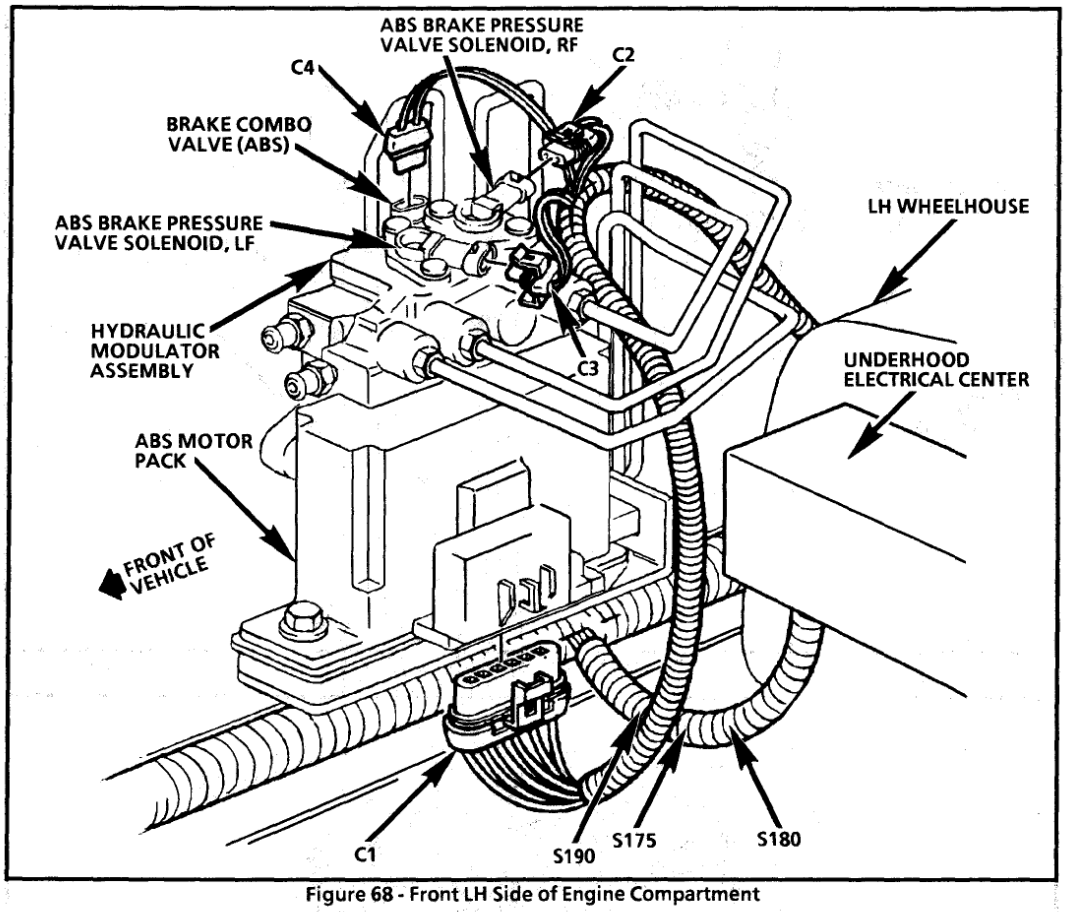


Figure 68 - Front LH Side of Engine Compartment

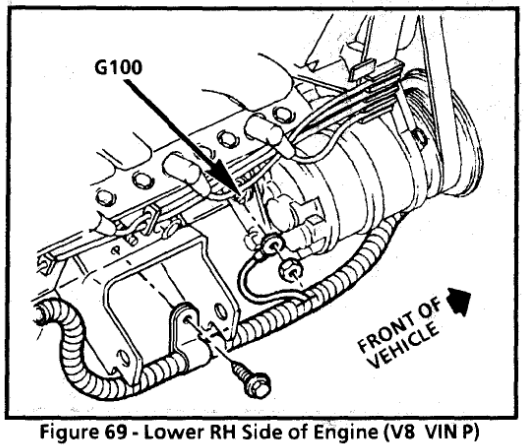


Figure 69 - Lower RH Side of Engine (V8 VIN P)

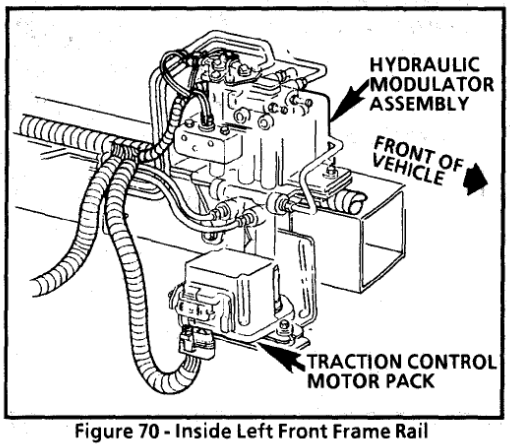


Figure 70 - Inside Left Front Frame Rail

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COMPONENT LOCATION VIEWS

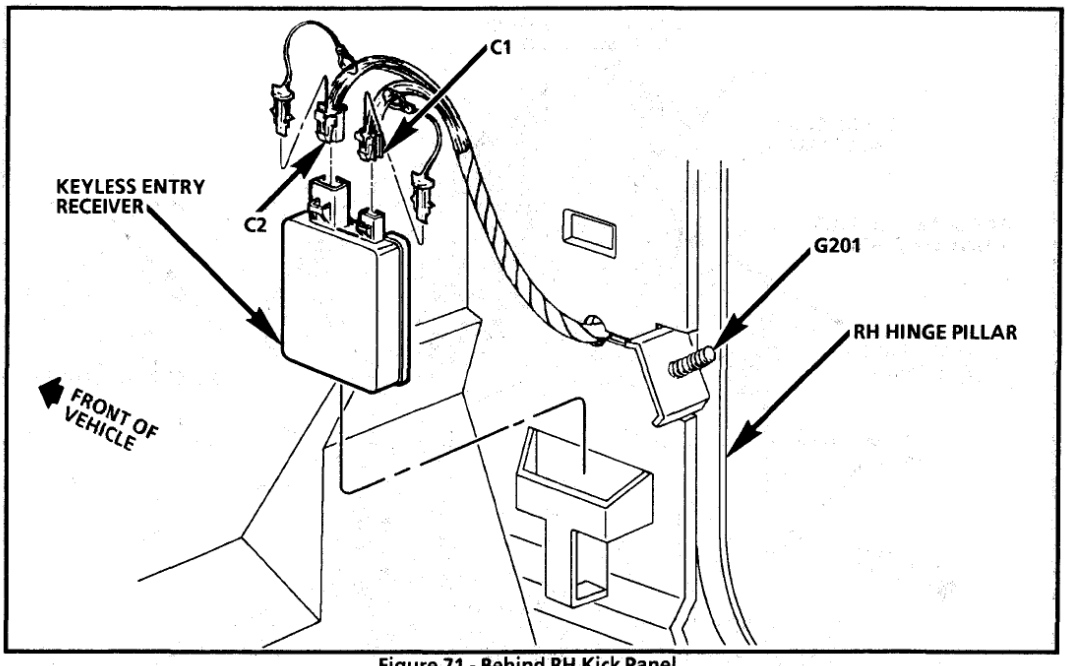


Figure 71 - Behind RH Kick Panel

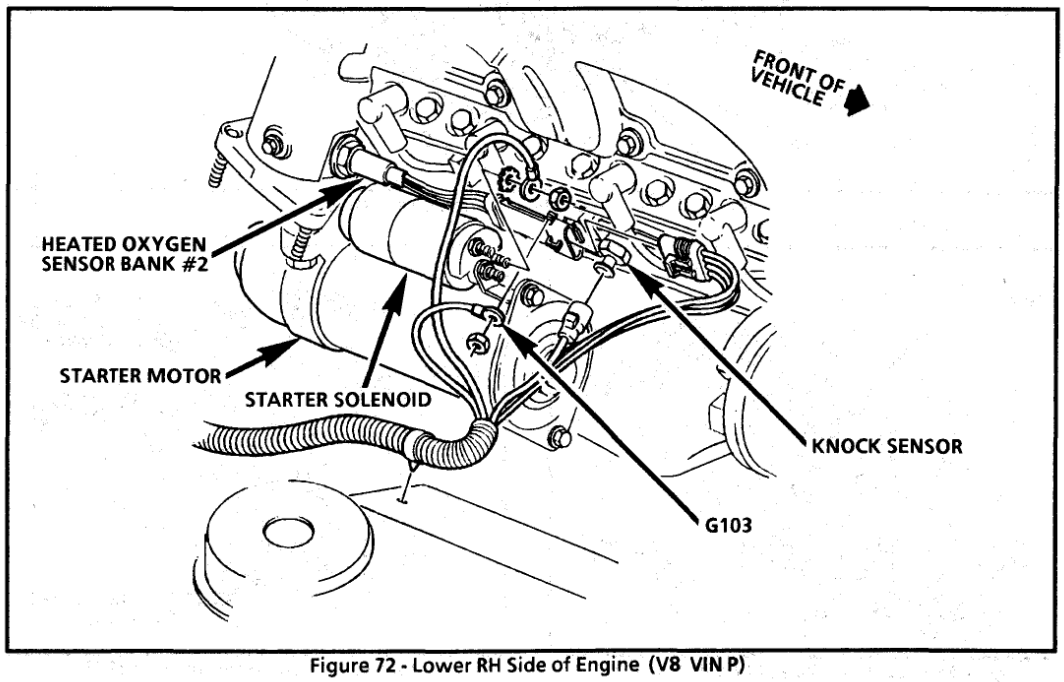


Figure 72 - Lower RH Side of Engine (V8 VIN P)

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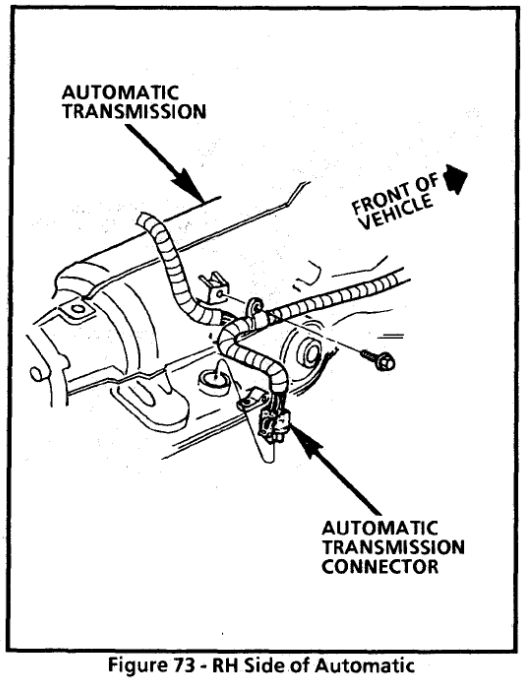


Figure 73 - RH Side of Automatic Transmission (M30)

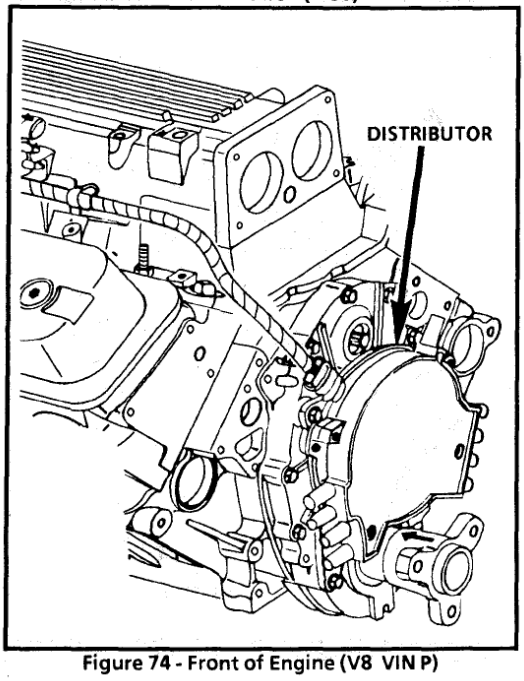


Figure 74 - Front of Engine (V8 VIN P)

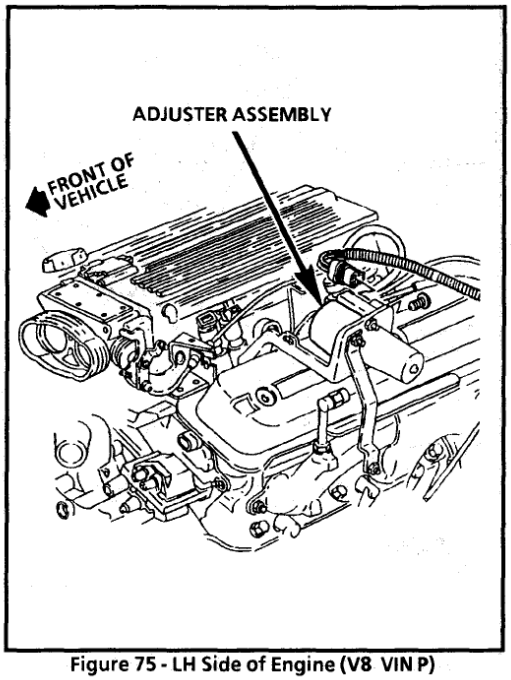


Figure 75 - LH Side of Engine (V8 VIN P)

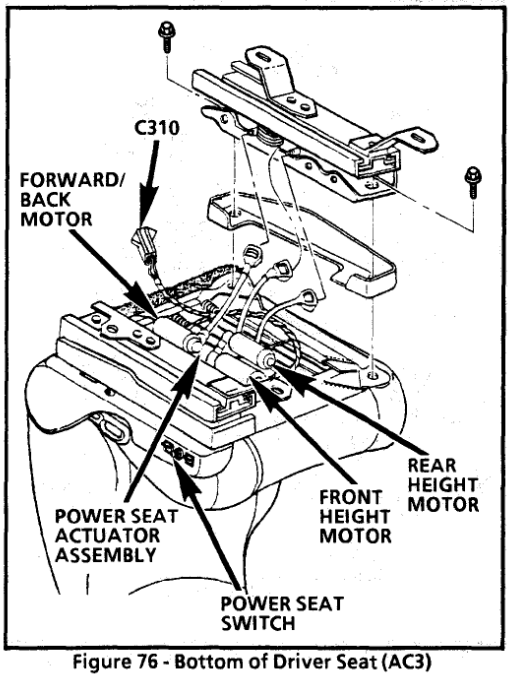


Figure 76 - Bottom of Driver Seat (AC3)

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COMPONENT LOCATION VIEWS

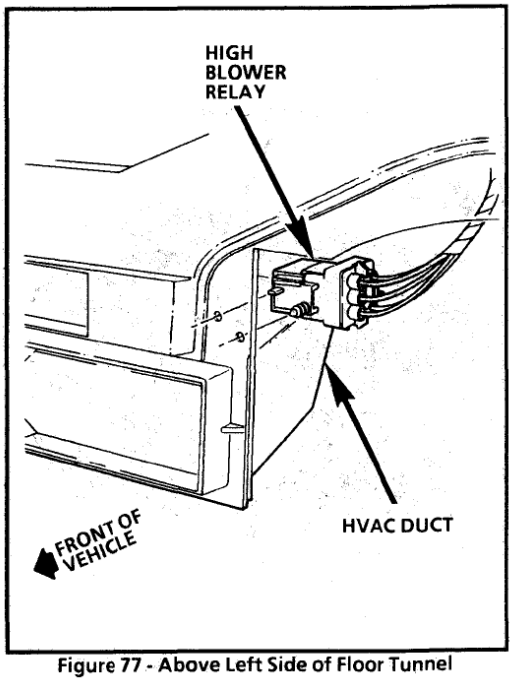


Figure 77 - Above Left Side of Floor Tunnel

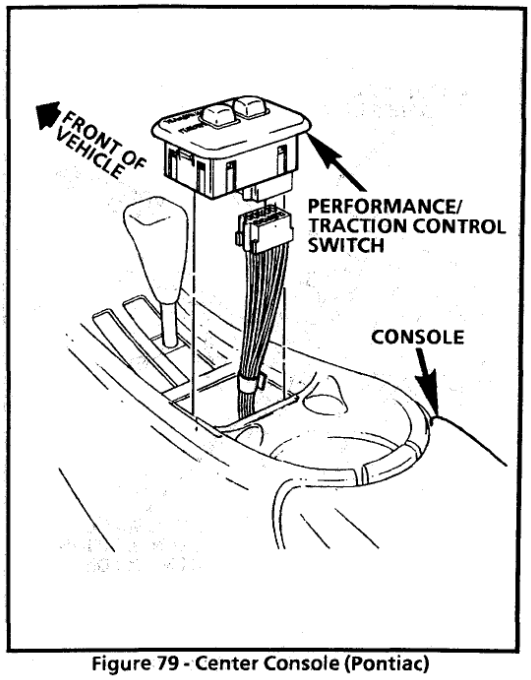


Figure 79 - Center Console (Pontiac)

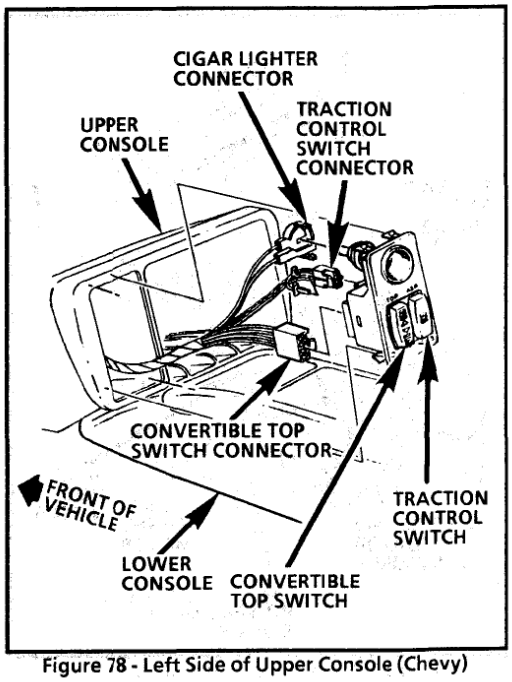


Figure 78 - Left Side of Upper Console (Chevy)

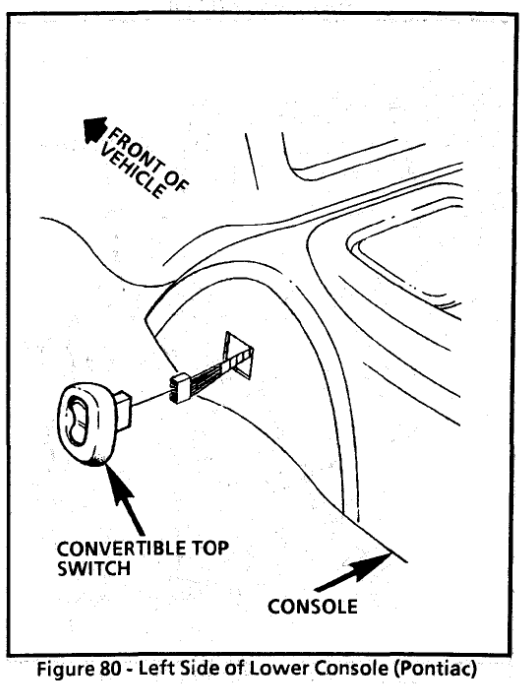


Figure 80 - Left Side of Lower Console (Pontiac)

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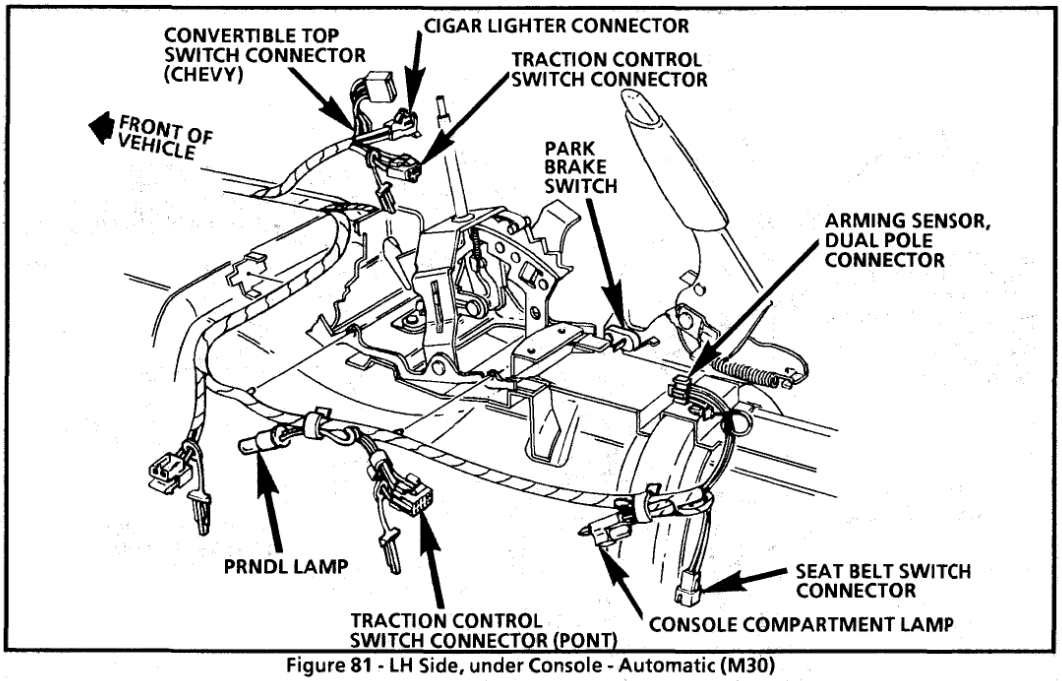


Figure 81 - LH Side, under Console - Automatic (M30)

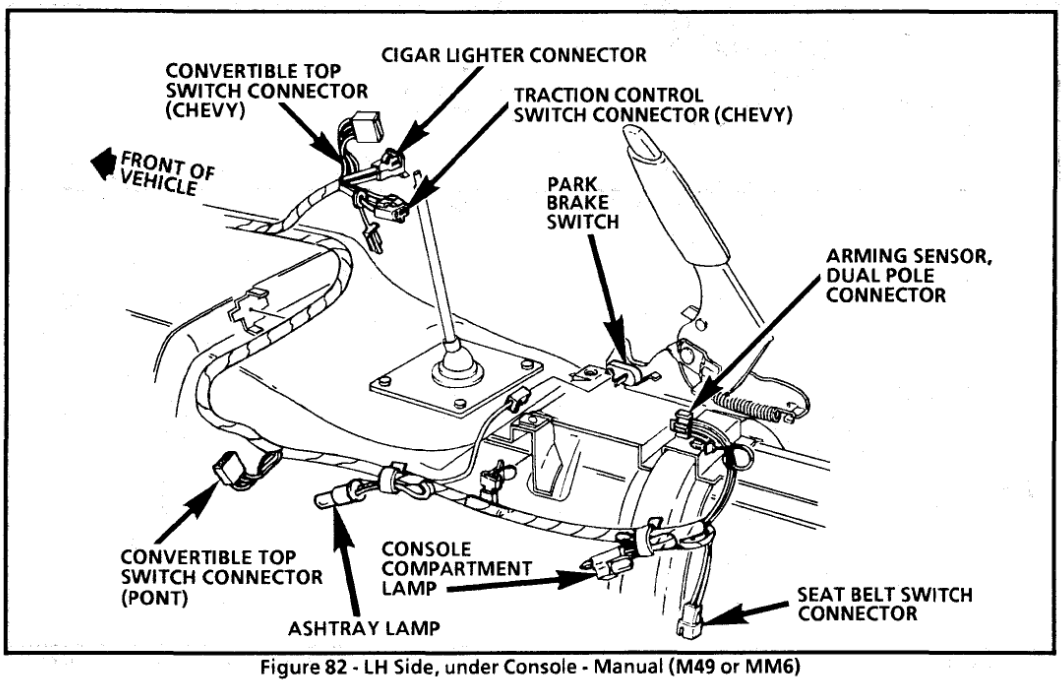


Figure 82 - LH Side, under Console - Manual (M49 or MM6)

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COMPONENT LOCATION VIEWS

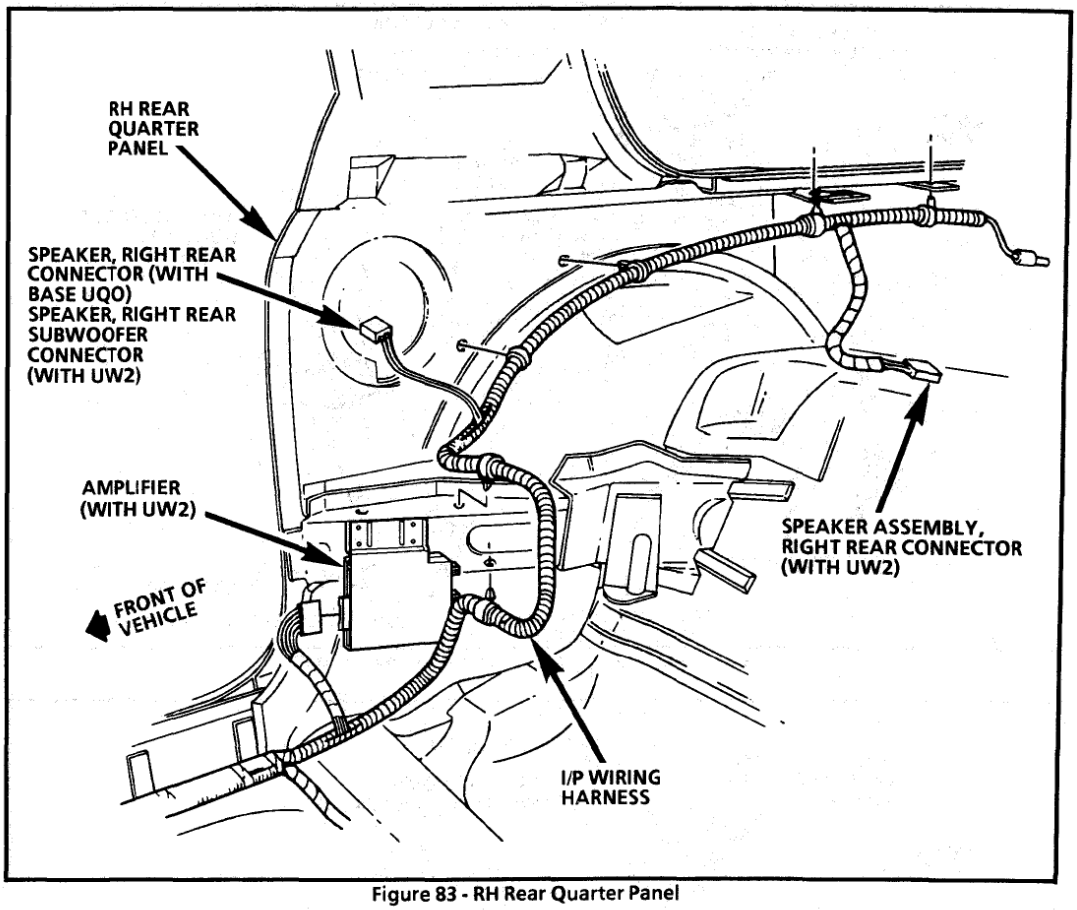


Figure 83 - RH Rear Quarter Panel

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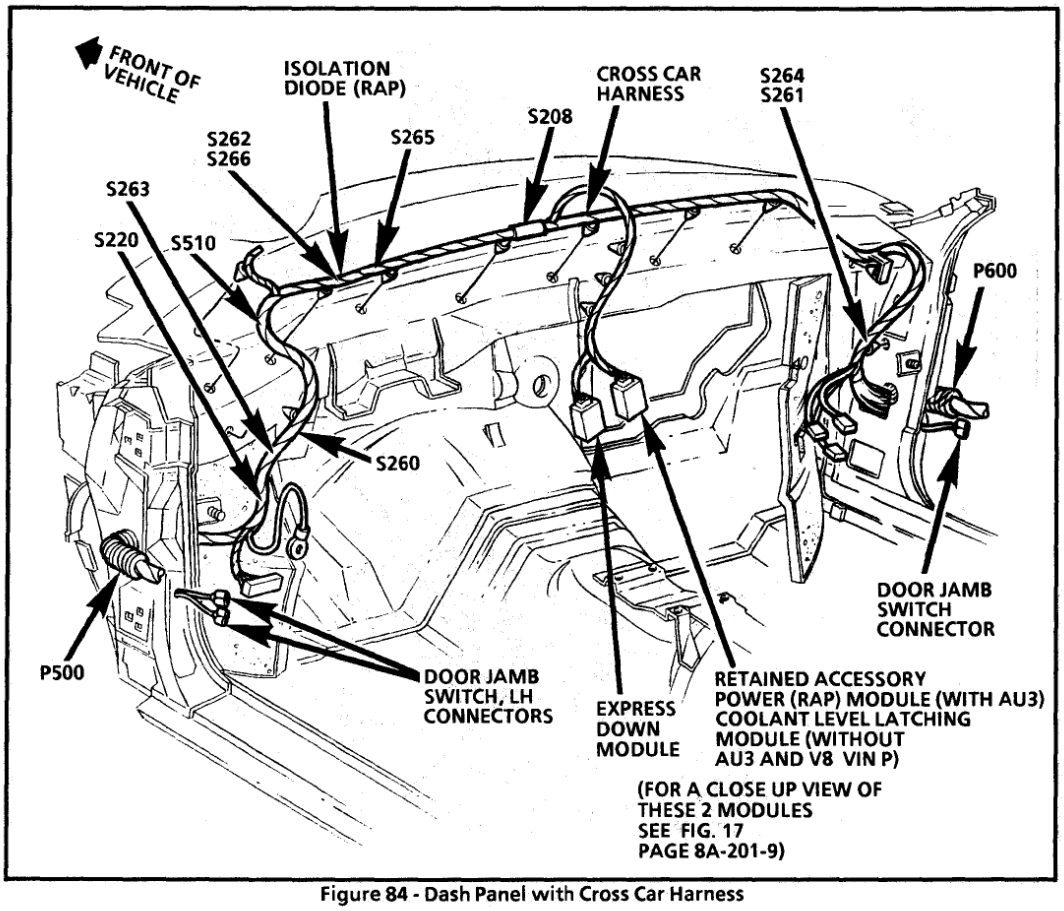


Figure 84 - Dash Panel with Cross Car Harness

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COMPONENT LOCATION VIEWS

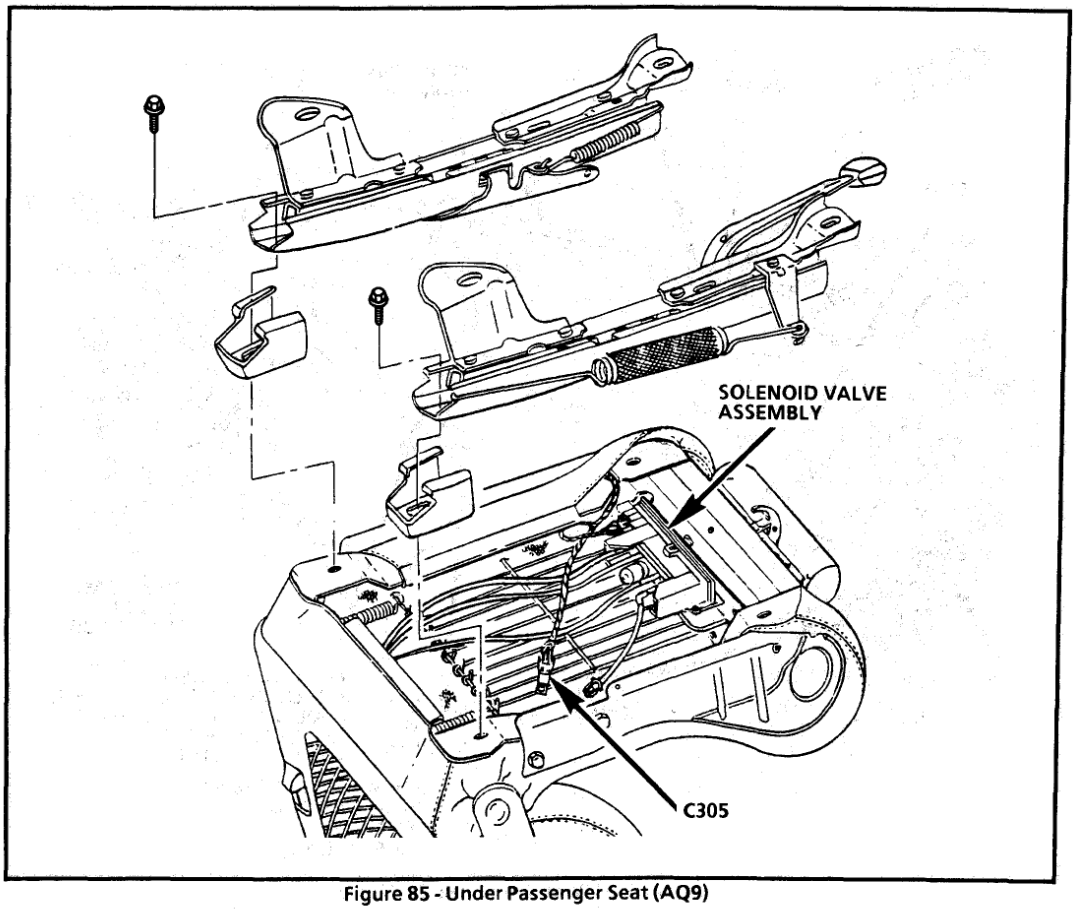


Figure 85 - Under Passenger Seat (AQ9)

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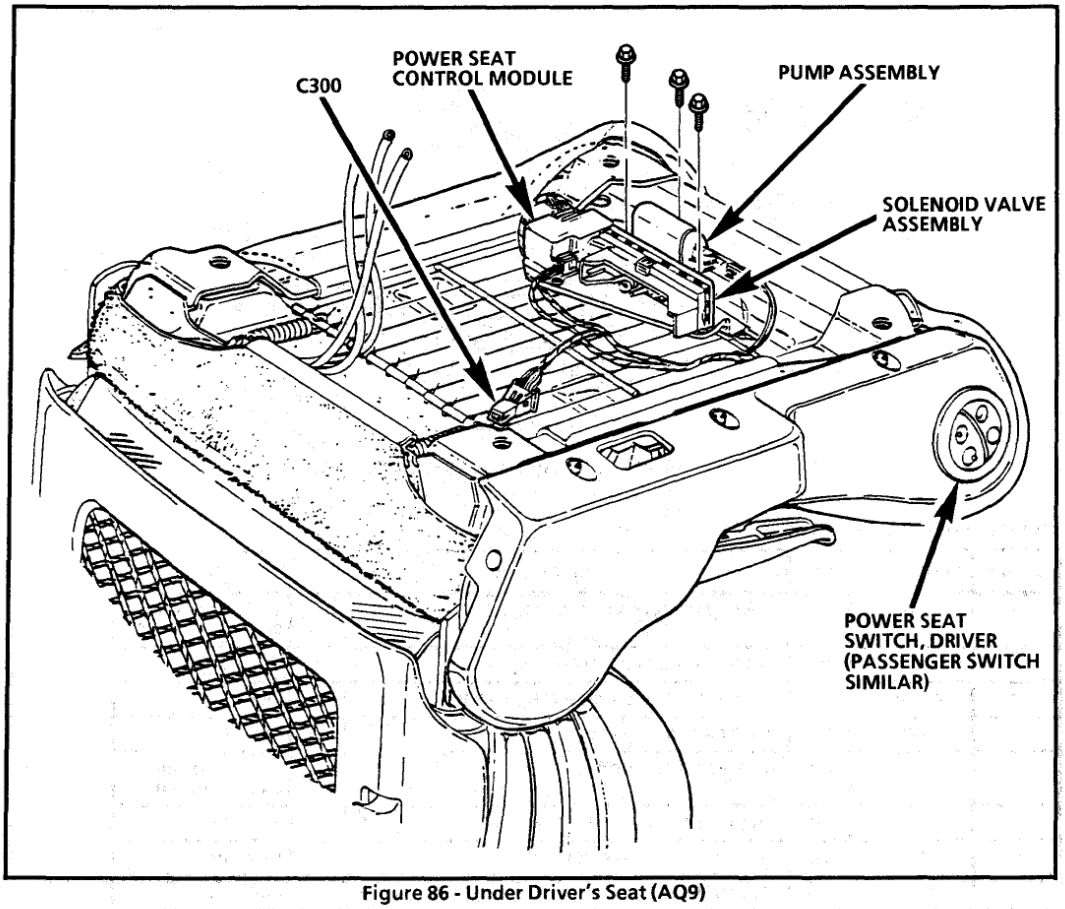
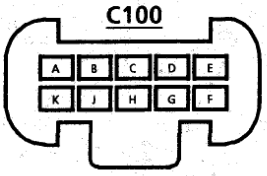


Figure 86 - Under Driver's Seat (AQ9)

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HARNESS CONNECTOR FACES



ENGINE HARNESS TO FORWARD LAMP HARNESS

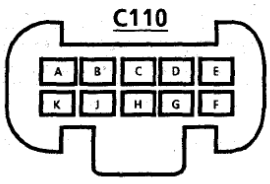
12065425

10-WAY F METRI-PACK 150 SERIES
BLK

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	PNK	639	POWER FEED FROM INJECTOR FUSE 9	8A-20-3 (V6 VIN S), 8A-21-3 (V8 VIN P)
B	DK GRN/WHT	459	A/C COMPRESSOR RELAY CONTROL	8A-64-0, 1
C	DK GRN	59	A/C COMPRESSOR CLUTCH SOLENOID FEED	8A-64-0, 1
D	LT BLU	832	TRACTION CONTROL ACTIVE	8A-44-3
E	BRN	436	AIR PUMP RELAY CONTROL	8A-20-5 (V6 VIN S), 8A-21-3 (V8 VIN P)
F	BRN	541	POWER FEED FROM FANS/ACTR FUSE 6	8A-11-12
G	PNK	239	POWER FEED FROM IGNITION FUSE 11	8A-11-15
H	DK BLU	473	COOLANT FAN RELAY CONTROL	8A-31-1, 2
J	DK GRN	335	COOLANT FAN RELAY CONTROL	8A-31-0, 1, 2
K	PNK	839	POWER FEED FROM INJECTOR FUSE 10	8A-20-3 (V6 VIN S), 8A-21-3 (V8 VIN P)

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ENGINE HARNESS (V6 VIN S) TO INJECTOR JUMPER HARNESS

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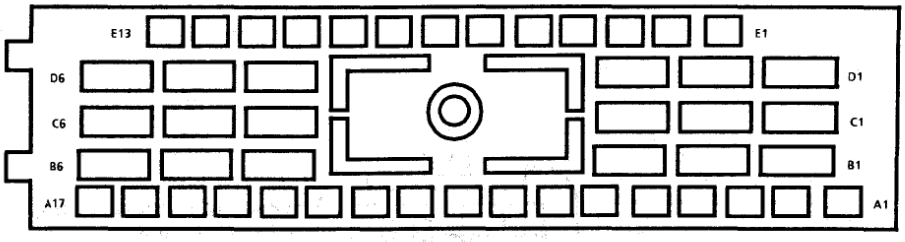
CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	BLK	1744	FUEL INJECTOR #1 OUTPUT	8A-20-3
B	LT GRN/BLK	1745	FUEL INJECTOR #2 OUTPUT	8A-20-3
C	PNK/BLK	1746	FUEL INJECTOR #3 OUTPUT	8A-20-3
D	LT BLU/BLK	844	FUEL INJECTOR #4 OUTPUT	8A-20-3
E	BLK/WHT	845	FUEL INJECTOR #5 OUTPUT	8A-20-3
F	YEL/BLK	846	FUEL INJECTOR #6 OUTPUT	8A-20-3
G	PNK	639	POWER FEED FROM INJECTOR FUSE 9	8A-20-3
H	PNK	839	POWER FEED FROM INJECTOR FUSE 10	8A-20-3
J	BLK	470	SENSOR REFERENCE GROUND	8A-20-4
K	YEL	410	COOLANT TEMPERATURE SENSOR SIGNAL	8A-20-4

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HARNESS CONNECTOR FACES

C200D

I/P HARNESS TO FORWARD LAMP/CROSS CAR HARNESS



12077822

M - CONNECTOR
F - TERMINAL

48-WAY M METRI-PACK MIXED SERIES
BLK

C200A

FORWARD LAMP HARNESS TO I/P HARNESS

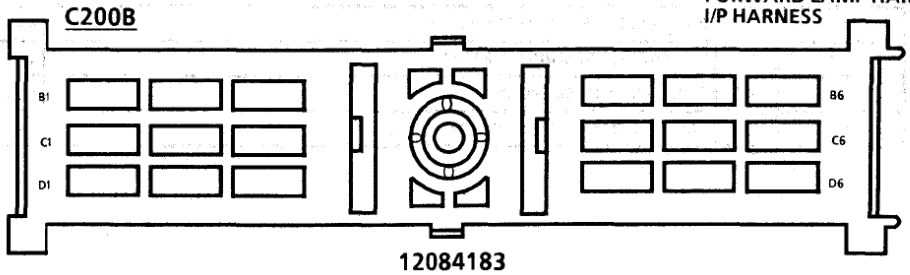


12047842

17-WAY F METRI-PACK 150 SERIES
BLK

C200B

FORWARD LAMP HARNESS TO I/P HARNESS

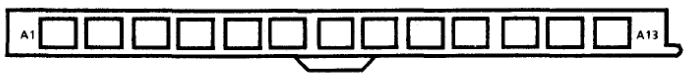


12084183

18-WAY F METRI-PACK MIXED SERIES
BLK

C200C

CROSS CAR HARNESS TO I/P HARNESS



12047840

13-WAY F METRI-PACK 280 SERIES
GRY

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**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A1	DK GRN/WHT	817	VEHICLE SPEED SIGNAL TO CRUISE CONTROL MODULE	8A-33-0
A2	ORN/BLK	463	TRACTION CONTROL SYSTEM SPARK RETARD	8A-44-3
A3	LT GRN	867	ABS FAILURE FEED TO I/P SOLID STATE	8A-81-1
A4	YEL	820	CENTER HIGH MOUNTED STOPLAMP FEED	8A-34-1
A5	TAN/WHT	33	BRAKE INDICATOR WARNING SIGNAL	8A-44-0
A7	DK GRN	29	HORN FEED	8A-40-0
A8	TAN/BLK	464	TRACTION CONTROL SYSTEM THROTTLE POSITION	8A-44-3
A9	DK BLU	1537	"LOW TRAC" INDICATOR CONTROL	8A-81-3
A10	BLK	884	LEFT REAR, WHEEL SPEED SENSOR SIGNAL	8A-44-4
A11	RED	885	LEFT REAR, WHEEL SPEED SENSOR RETURN	8A-44-4
A12	TAN	800	SERIAL DATA SIGNAL	8A-50-0
A13	BRN/WHT	1571	TRACTION CONTROL SYSTEM SWITCH SIGNAL	8A-44-4
A14	WHT	883	REAR WHEEL SPEED SENSOR RETURN (WITH NW9) RIGHT REAR WHEEL SPEED SENSOR RETURN	8A-44-1 8A-44-4
A15	BRN	882	REAR WHEEL SPEED SENSOR SIGNAL (WITH NW9) RIGHT REAR WHEEL SPEED SENSOR SIGNAL	8A-44-1 8A-44-4
A16	YEL	317	FOG LIGHTS ON RELAY FEED	8A-100-1, 3
A17	YEL/BLK	68	LOW COOLANT INDICATOR - LATCHED GROUND	8A-81-3
B1	PNK	3	IGNITION SWITCH OUTPUT - HOT IN RUN AND CRANK	8A-10-3
B2	ORN	300	IGNITION SWITCH OUTPUT - HOT IN RUN	8A-10-3
B3	PPL	34	FOG LIGHTS ON INDICATOR FEED (PONT)	8A-100-3
B4	RED	202	BATTERY FEED FROM FUSIBLE LINK A	8A-63-0
B5	YEL	10	HEADLIGHTS ON OUTPUT	8A-100-0, 2
B6	RED	702	BATTERY FEED FROM FUSIBLE LINK Z	8A-10-1
C1	RED	102	BATTERY FEED FROM FUSIBLE LINK E (DOUBLE WIRE)	8A-10-2
C2	RED	1002	BATTERY FEED FROM FUSIBLE LINK F (DOUBLE WIRE)	8A-10-1
C3	LT GRN	11	HI BEAM HEADLAMP POWER FEED	8A-100-0, 2
C4	PPL/WHT	1572	"ASR" (CHEVY) OR "TCS OFF" (PONT) INDICATOR CONTROL (DOUBLE WIRE ON PONT)	8A-44-2
C5	YEL	5	IGNITION SWITCH OUTPUT - CRANK	8A-10-3
C6	BRN	4	IGNITION SWITCH OUTPUT - ACCESSORY (DOUBLE WIRE)	8A-10-2
D1	BLK/WHT	1751	SUPPLEMENTAL INFLATABLE RESTRAINTS GROUND (DOUBLE WIRE)	8A-47-1
D2	DK GRN	348	SUPPLEMENTAL INFLATABLE RESTRAINTS INFLATOR OUTPUT (DOUBLE WIRE)	8A-47-1
D3	YEL	143	WIPER/WASH FUSE 14 OUTPUT	8A-11-9
D4	BRN	9	PARK LAMPS FEED	8A-110-2, 3
D5	LT BLU	14	LEFT FRONT TURN SIGNAL LAMP FEED	8A-110-2, 3
D6	DK BLU	15	RIGHT FRONT TURN SIGNAL LAMP FEED	8A-110-2, 3
E1	WHT	156	COURTESY LAMP OUTPUT (SWITCHED GROUND)	8A-114-0, 1

(CONTINUED ON NEXT PAGE)

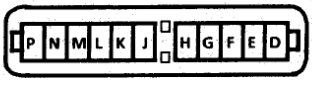
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HARNESS CONNECTOR FACES

(CONTINUED FROM PREVIOUS PAGE)

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
E2	BRN	4	IGNITION SWITCH OUTPUT - ACCESSORY AND RUN	8A-10-2
E3	ORN	40	COURTESY FUSE 8 OUTPUT	8A-11-8
E4	RED	102	BATTERY FEED FROM FUSIBLE LINK E	8A-10-2
E5	TAN	159	KEY-IN-IGNITION SWITCH OUTPUT	8A-76-0
E6	DK BLU	75	RETAINED ACCESSORY POWER RELAY OUTPUT COMMON CONTACT ACCESSORY	8A-15-0
E7	GRY	8	I/P DIMMER FUSE 13 OUTPUT TO LH AND RH DOOR ILLUMINATION LAMPS	8A-117-1
E8	YEL/BLK	68	LOW COOLANT INDICATOR CONTROL (DOUBLE WIRE)	8A-81-3
E9	ORN	640	POWER ACCESSORY FUSE 7 OUTPUT	8A-11-8
E10	PNK	39	GAGES FUSE 9 OUTPUT FOR KEYLESS ENTRY MODULE	8A-11-5
E11	BRN	341	WINDOWS CIRCUIT BREAKER OUTPUT	8A-120-0
E12	PNK	70	RETAINED ACCESSORY POWER COMMON CONTACT IGN 3	8A-15-0
E13	BLK	1576	HATCH RELEASE FEED TO KEYLESS ENTRY MODULE	8A-132-1, 3

C215



FORWARD LAMP HARNESS TO STEERING COLUMN HARNESS

06294509

11-WAY F PACK-CON I

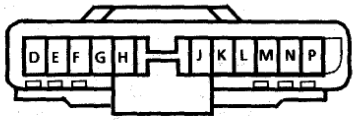
BLK

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
D	YEL	143 A/B	POWER FROM WIPER/WASH FUSE 14/POWER TO WINDSHIELD WIPER MOTOR MODULE (DOUBLE WIRE)	8A-91-0
E	DK GRN	113	WINDSHIELD WIPER SWITCH SIGNAL - ON	8A-91-0
F	GRY	112	WINDSHIELD WIPER SWITCH SIGNAL - LOW/PULSE/MIST	8A-91-0
G	PPL	92	WINDSHIELD WIPER SWITCH SIGNAL - HIGH	8A-91-0
H	PNK	94	WINDSHIELD WASHER SWITCH SIGNAL	8A-91-0
J	GRY/BLK	87	CRUISE CONTROL SWITCH SIGNAL - RESUME/ACCEL	8A-34-0
K	DK BLU	84	CRUISE CONTROL SWITCH SIGNAL - SET/COAST	8A-34-0
L	GRY	397	CRUISE CONTROL SWITCH SIGNAL - ON	8A-34-0
M	PNK	139 E/F	POWER FROM A/C COMPRESSOR RELAY/POWER TO CRUISE RELEASE SWITCHES (DOUBLE WIRE), (SINGLE WIRE WITH NW9 AND K34)	8A-34-0

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C216



I/P HARNESS TO STEERING COLUMN HARNESS

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11-WAY F PACK-CON I

BLK

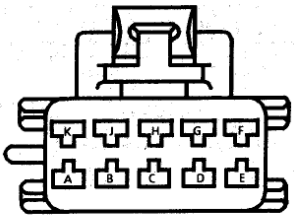
**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
E	TAN	159	KEY-IN-IGNITION SWITCH OUTPUT	8A-76-0
F	LT GRN	80	KEY-IN-IGNITION SWITCH TO AUDIO ALARM MODULE	8A-76-0
G	BLK	28	HORN RELAY FEED (SWITCHED GROUND)	8A-40-0
H H	LT BLU LT BLU/WHT	14 1414	LEFT FRONT TURN SIGNAL TO I/P INDICATOR AND TURN LAMP (DOUBLE WIRE) (WITH T61) LEFT FRONT TURN SIGNAL TO I/P INDICATOR AND TURN LAMP (DOUBLE WIRE)	8A-110-0 8A-110-0
J J	DK BLU DK BLU/WHT	15 1415	RIGHT FRONT TURN SIGNAL TO I/P INDICATOR AND TURN LAMP (DOUBLE WIRE) (WITH T61) RIGHT FRONT TURN SIGNAL TO I/P INDICATOR AND TURN LAMP (DOUBLE WIRE)	8A-110-0 8A-110-0
K	BRN	27	HAZARD FLASHER OUTPUT	8A-110-0
L	PPL	16	TURN SIGNAL FLASHER OUTPUT	8A-110-0
M	YEL	18	LEFT REAR TURN SIGNAL	8A-110-1
N	DK GRN	19	RIGHT REAR TURN SIGNAL	8A-110-1
P	LT BLU	20	STOPLAMP FEED	8A-110-0

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HARNESS CONNECTOR FACES

C220



ENGINE HARNESS
TO I/P HARNESS

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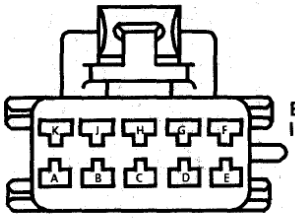
10-WAY F METRI-PACK 150 SERIES
WHT

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	RED	225	GENERATOR FEED TO INSTRUMENT CLUSTER	8A-30-1
B	TAN	31	OIL PRESSURE FEED TO INSTRUMENT CLUSTER	8A-81-0
C	BRN	1174	OIL LEVEL FEED TO INSTRUMENT CLUSTER	8A-81-1
D	ORN/BLK	463	SPARK RETARD REQUEST	8A-44-4
E	TAN/BLK	464	THROTTLE POSITION SENSOR SIGNAL (EBTCM)	8A-44-4
F	TAN	800	SERIAL DATA SIGNAL	8A-50-0
G	DK GRN/WHT	817	VEHICLE SPEED SIGNAL	8A-33-0
H	DK BLU/WHT	1493 375	(AUTOMATIC) PERFORMANCE SWITCH SIGNAL (MANUAL) SKIP SHIFT INDICATOR CONTROL (V8 VIN P ONLY)	8A-39-0 8A-81-3
J	DK GRN/WHT	465	FUEL PUMP RELAY CONTROL	8A-20-2 (V6 VIN S), 8A-21-2 (V8 VIN P)
K	DK GRN	135	COOLANT TEMPERATURE FEED TO INSTRUMENT CLUSTER	8A-81-1

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C230



ENGINE HARNESS TO I/P HARNESS

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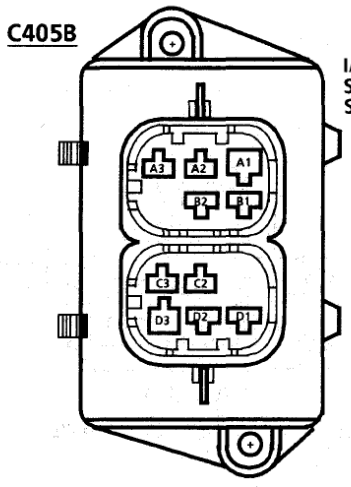
10-WAY F METRI-PACK 150 SERIES
BLU

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	LT BLU	553 48	(AUTOMATIC) PERFORMANCE SWITCH INDICATOR CONTROL (MANUAL) CLUTCH ANTICIPATE SIGNAL (V6 VIN S ONLY)	8A-20-7, 8A-39-0
B	BRN/WHT	419	SERVICE ENGINE SOON INDICATOR FEED	8A-81-3
C	WHT/BLK	448	DIAGNOSTIC REQUEST SIGNAL	8A-50-0
D	WHT	121	TACHOMETER SIGNAL TO INSTRUMENT CLUSTER	8A-81-0
E	DK BLU	229	THEFT DETERRENT - FUEL ENABLE FEED	8A-133-1
F	DK GRN/WHT	762	A/C REQUEST SIGNAL	8A-64-0, 1
G	PNK	439	POWER FEED FROM PCM IGN FUSE #5	8A-11-5
H	LT BLU/BLK	583	(AUTOMATIC) TCC SWITCHED POWER FEED	8A-20-6 (V6 VIN S), 8A-21-6 (V8 VIN P)
H	BRN	141	(MANUAL) POWER FROM TURN B/U FUSE #2 TO BACKUP SWITCH	8A-112-0
J	ORN/BLK	434	(AUTOMATIC) PARK/NEUTRAL FEED FROM TRANSMISSION POSITION SWITCH (V8 VIN P ONLY)	8A-20-6 (V6 VIN S), 8A-21-6 (V8 VIN P)
J	LT GRN	24	(MANUAL) BACKUP LAMP FEED	8A-112-0
K	TAN/BLK	422	(AUTOMATIC) TORQUE CONVERTER CLUTCH CONTROL	8A-20-6 (V6 VIN S), 8A-21-6 (V8 VIN P)

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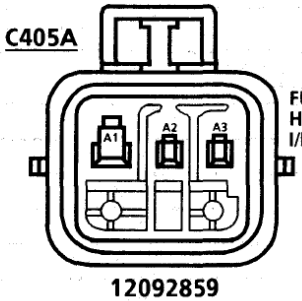
HARNESS CONNECTOR FACES



I/P HARNESS TO FUEL SENDER/REAR WHEEL SPEED SENSOR HARNESS

12092789

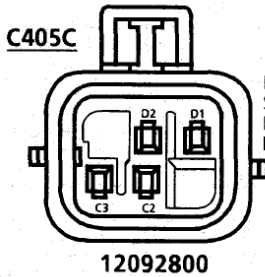
10-WAY M METRI-PACK 150, 280 SERIES
BLK



FUEL TANK UNIT HARNESS TO I/P HARNESS

12092859

4-WAY F METRI-PACK MIXED SERIES
WHT



REAR WHEEL SPEED SENSOR HARNESS TO I/P HARNESS

12092800

4-WAY F METRI-PACK MIXED SERIES
BLK

**CAVITIES NOT LISTED ARE NOT USED

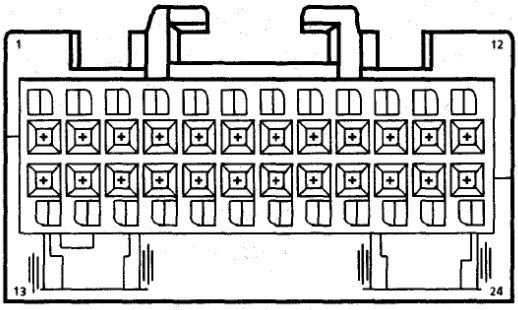
CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A1	GRY	120	FUEL PUMP MOTOR FEED	8A-20-2 (V6 VIN S), 8A-21-2 (V8 VIN P)
A2	PPL	30	FUEL GAGE SENSOR SIGNAL	8A-20-2 (V6 VIN S), 8A-21-2 (V8 VIN P)
A3	BLK	1050	GROUND	8A-20-2 (V6 VIN S), 8A-21-2 (V8 VIN P)

(CONTINUED ON NEXT PAGE)

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(CONTINUED FROM PREVIOUS PAGE)

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C2	WHT	883	WHEEL SPEED SENSOR RETURN (WITH NW9) RIGHT REAR WHEEL SPEED SENSOR RETURN	8A-44-1 8A-44-4
C3	BRN	882	WHEEL SPEED SENSOR SIGNAL (WITH NW9) RIGHT REAR WHEEL SPEED SENSOR SIGNAL	8A-44-1 8A-44-4
D1	RED	885	(WITH NW9) LEFT REAR WHEEL SPEED SENSOR RETURN	8A-44-4
D2	BLK	884	(WITH NW9) LEFT REAR WHEEL SPEED SENSOR SIGNAL	8A-44-4



12110088

24-WAY F MICRO-PACK 100 SERIES
LT GRY

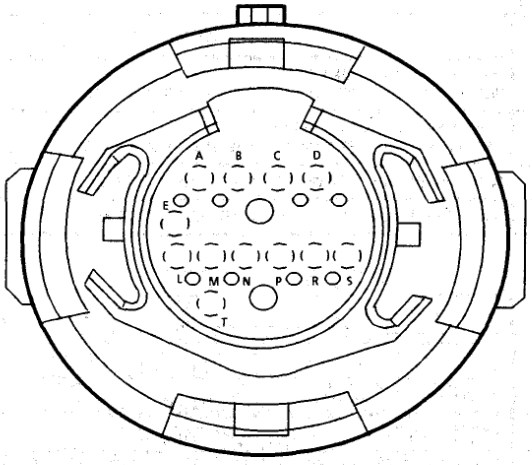
AMPLIFIER (PONT)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
1	ORN	40	POWER FEED FROM COURTESY FUSE 8	8A-11-8
4	BLK	650	GROUND	8A-14-9
8	PNK	314	RADIO SIGNAL - ON	8A-150-5
9	DK BLU	46	RIGHT REAR SPEAKER FEED (POS)	8A-150-5
10	BRN	199	LEFT REAR SPEAKER FEED (POS)	8A-150-5
11	LT GRN	200	RIGHT FRONT SPEAKER FEED (POS)	8A-150-5
12	TAN	201	LEFT FRONT SPEAKER FEED (POS)	8A-150-5
13	LT BLU/BLK	315	RIGHT SUBWOOFER SPEAKER RETURN (NEG)	8A-150-5
14	DK GRN	1795	RIGHT SUBWOOFER SPEAKER FEED (POS)	8A-150-5
15	LT GRN/BLK	1794	LEFT SUBWOOFER SPEAKER RETURN (NEG)	8A-150-5
16	DK BLU/WHT	346	LEFT SUBWOOFER SPEAKER FEED (POS)	8A-150-5
21	LT BLU	115	RIGHT REAR SPEAKER RETURN (NEG)	8A-150-5
22	YEL	116	LEFT REAR SPEAKER RETURN (NEG)	8A-150-5
23	DK GRN	117	RIGHT FRONT SPEAKER RETURN (NEG)	8A-150-5
24	GRY	118	LEFT FRONT SPEAKER RETURN (NEG)	8A-150-5

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HARNESS CONNECTOR FACES



12129829

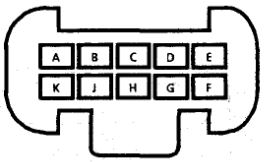
12-WAY F MICRO-PACK 100 W
GRY

AUTOMATIC TRANSMISSION

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	LT GRN	1222	1-2 SHIFT SOLENOID CONTROL	8A-39-0
B	YEL/BLK	1223	2-3 SHIFT SOLENOID CONTROL	8A-39-0
C	RED/BLK	1228	PRESSURE CONTROL SOLENOID FEED	8A-39-0
D	LT BLU/WHT	1229	PRESSURE CONTROL SOLENOID RETURN	8A-39-0
E	PNK	239	POWER FEED FROM IGNITION FUSE 11	8A-11-15
L	YEL/BLK	1227	TRANSMISSION TEMPERATURE SENSOR SIGNAL	8A-39-0
M	BLK	470	SENSOR RETURN - PCM	8A-39-0
N	PNK	1224	TRANSMISSION PRESSURE SWITCH SIGNAL - RANGE A	8A-39-0
P	RED	1226	TRANSMISSION PRESSURE SWITCH SIGNAL - RANGE C	8A-39-0
R	DK BLU	1225	TRANSMISSION PRESSURE SWITCH SIGNAL - RANGE B	8A-39-0
S	WHT	687	3-2 SHIFT SOLENOID CONTROL	8A-39-0
T	TAN/BLK	422	TORQUE CONVERTER CLUTCH SOLENOID CONTROL	8A-39-0

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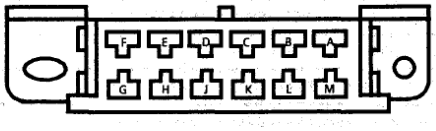
12065425

10-WAY F METRI-PACK 150 SERIES
BLK

CRUISE CONTROL MODULE

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	GRY	397	CRUISE CONTROL SWITCH - ON	8A-34-0
B	DK BLU	84	CRUISE CONTROL SWITCH - SET/COAST	8A-34-0
C	GRY/BLK	87	CRUISE CONTROL SWITCH - RESUME/ACCEL	8A-34-0
D	BRN	86	CRUISE RELEASE/BRAKE SWITCH OUTPUT	8A-34-0
E	BLK	1650	GROUND	8A-14-0, 2
F	PNK	139	POWER FEED FROM A/C-CRUISE FUSE #12	8A-34-0
G	YEL	820	BRAKE DEPRESSED INPUT	8A-34-1
K	DK GRN/WHT	817	VEHICLE SPEED SIGNAL	8A-34-1



12020043

12-WAY F METRI-PACK 280 SERIES
BLK

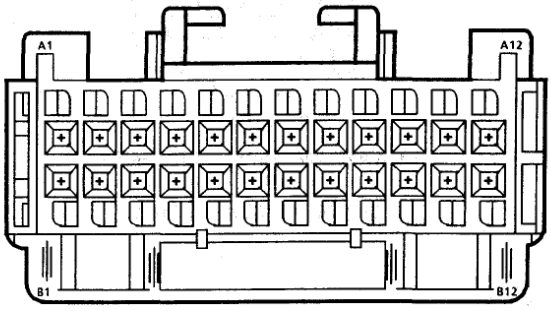
DATA LINK CONNECTOR (DLC)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A	BLK/WHT	451	GROUND	8A-14-1, 2, 3
B	WHT/BLK	448	DIAGNOSTIC REQUEST, PCM	8A-20-0, 8A-21-0
G	BLK/WHT	1455	PROGRAM INPUT, KEYLESS ENTRY MODULE	8A-132-1
M	TAN	800	SERIAL DATA LINE, DIAGNOSTIC ENERGY RESERVE MODULE (DERM), ELECTRONIC BRAKE CONTROL MODULE (EBCM) AND PCM	8A-50-0

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HARNESS CONNECTOR FACES



12092689

24-WAY F MICRO-PACK 100 SERIES
YEL

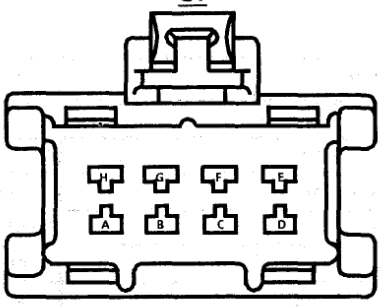
DIAGNOSTIC ENERGY RESERVE MODULE (DERM)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A1	BLK/WHT	1751	GROUND	8A-14-4
A2	BLK	650	GROUND	8A-14-8, 9
A3	PNK	1401	DUAL ARMING SENSOR FEED - PASSENGER - 36 VOLT	8A-47-1
A4	YEL/BLK	236	DUAL ARMING SENSOR FEED - DRIVER - 36 VOLT	8A-47-1
A5	LT GRN	1400	DUAL ARMING SENSOR SIGNAL - DRIVER	8A-47-1
A6	LT GRN/WHT	1837	DUAL ARMING SENSOR SIGNAL - PASSENGER	8A-47-1
A7	WHT/BLK	1403	INFLATOR FEED - PASSENGER	8A-47-1
A9	YEL	1139	POWER FEED FROM AIR BAG FUSE #1	8A-47-0, 1
A10	YEL	1139	POWER FEED FROM AIR BAG FUSE #1	8A-47-0, 1
A12	BLK/WHT	1751	GROUND	8A-14-4
B1	BRN	358	AIR BAG INDICATOR LAMP FEED	8A-47-0
B2	PNK	39	POWER FEED FROM GAGES FUSE #9	8A-11-5
B5	BLK/WHT	238	SEAT BELT SWITCH SIGNAL	8A-47-0
B7	DK GRN	348	SIR INFLATOR OUTPUT	8A-47-1
B8	DK GRN	348	SIR INFLATOR OUTPUT	8A-47-1
B9	WHT	347	INFLATOR FEED - DRIVER	8A-47-1
B10	PPL	806	POWER FEED FROM CRANK FUSE #16	8A-11-9
B11	TAN	800	SERIAL DATA SIGNAL	8A-50-0

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C1

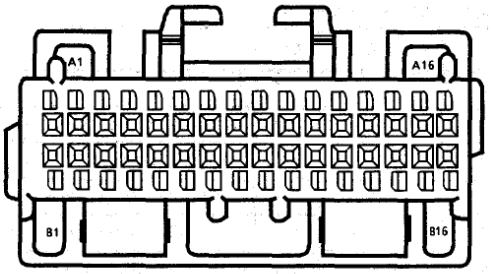


12110626

8-WAY F METRI-PACK 280 FLX LK
LT GRY

ELECTRONIC BRAKE CONTROL MODULE (EBCM)
OR
ELECTRONIC BRAKE/TRACTION
CONTROL MODULE (EBTCM)

C2

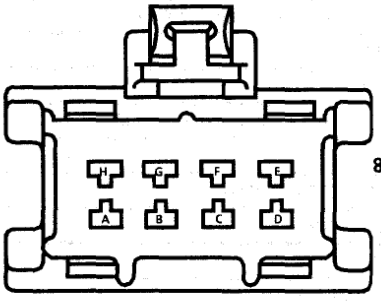


12110113

32-WAY F MICRO-PACK 100 SERIES
DK RED

ELECTRONIC BRAKE CONTROL MODULE (EBCM)
OR
ELECTRONIC BRAKE/TRACTION
CONTROL MODULE (EBTCM)

C3 (WITH NW9)



12129088

8-WAY F METRI-PACK 280 SERIES FLX LK
BLK

ELECTRONIC BRAKE/TRACTION
CONTROL MODULE (EBTCM)

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**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C1				
A	BLK	1280	LEFT FRONT ABS MOTOR FEED	8A-44-1, 2
B	PNK	1281	LEFT FRONT ABS MOTOR RETURN	8A-44-1, 2
C	DK GRN	1284	REAR ABS MOTOR FEED	8A-44-1, 2
D	RED	1633	ABS RELAY OUTPUT - SWITCHED TO BATTERY	8A-44-1, 3
E	BLK/WHT	651	GROUND	8A-44-0, 2
F	ORN	1285	REAR ABS MOTOR RETURN	8A-44-1, 2
G	PPL	1282	RIGHT FRONT ABS MOTOR FEED	8A-44-1, 2
H	BLK	1283	RIGHT FRONT ABS MOTOR RETURN	8A-44-1, 2

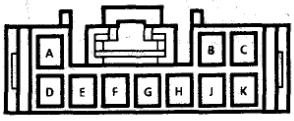
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HARNESS CONNECTOR FACES

(CONTINUED FROM PREVIOUS PAGE)

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C2				
A1	BLK	884	LEFT REAR WHEEL SPEED SENSOR SIGNAL (WITH NW9)	8A-44-4
A2	RED	885	LEFT REAR WHEEL SPEED SENSOR RETURN (WITH NW9)	8A-44-4
A3	TAN	833	RIGHT FRONT WHEEL SPEED SENSOR RETURN	8A-44-1, 4
A4	DK GRN	872	RIGHT FRONT WHEEL SPEED SENSOR SIGNAL	8A-44-1, 4
A5 A5	WHT WHT	883 883	REAR WHEEL SPEED SENSOR RETURN RIGHT REAR WHEEL SPEED SENSOR RETURN (WITH NW9)	8A-44-1 8A-44-4
A6 A6	BRN BRN	882 882	REAR WHEEL SPEED SENSOR SIGNAL RIGHT REAR WHEEL SPEED SENSOR SIGNAL (WITH NW9)	8A-44-1 8A-44-4
A7	YEL	873	LEFT FRONT WHEEL SPEED SENSOR RETURN	8A-44-1, 4
A8	LT BLU	830	LEFT FRONT WHEEL SPEED SENSOR SIGNAL	8A-44-1,4
A9	LT BLU	1289	RIGHT FRONT SOLENOID FEED	8A-44-0, 2
A11	TAN	800	SERIAL DATA SIGNAL	8A-50-0
A14	TAN/BLK	464	THROTTLE POSITION SENSOR SIGNAL (WITH NW9)	8A-44-3
A15	BRN/WHT	1571	TRACTION CONTROL SYSTEM SWITCH SIGNAL (WITH NW9)	8A-44-4
A16	LT BLU	832	TRACTION CONTROL ACTIVE (WITH NW9)	8A-44-3
B1	DK GRN	1288	LEFT FRONT SOLENOID FEED	8A-44-0, 2
B2	LT GRN	867	ABS FAILURE INPUT TO INSTRUMENT CLUSTER (SOLID STATE)	8A-44-0, 2
B3	PNK	1632	ABS ENABLE FEED TO RELAY	8A-44-1, 3
B4	TAN/WHT	33	"BRAKE" INDICATOR LAMP (SWITCHED GROUND)	8A-44-0, 2
B5	DK BLU	1537	"LOW TRAC" INDICATOR LAMP CONTROL	8A-44-0, 2
B10	ORN	440	POWER FEED FROM ABS BAT FUSE #1	8A-44-1, 3
B11	BRN	641	POWER FEED FROM ABS IGN FUSE #5	8A-44-1, 3
B12	YEL	820	BRAKE DEPRESSED INPUT	8A-44-0, 2
B14	ORN/BLK	463	SPARK RETARD REQUEST (WITH NW9)	8A-44-3
B15	PPL/WHT	1572	"ASR" (CHEVY) OR "TCS OFF" (PONT) INDICATOR CONTROL (WITH NW9)	8A-44-2, 4
C3 (WITH NW9)				
A	LT GRN	566	RIGHT REAR TCS MOTOR FEED	8A-44-3
B	PPL	562	TCS ENABLE FEED TO RELAY	8A-44-3
C	RED/BLK	563	TCS RELAY OUTPUT - SWITCHED TO BATTERY	8A-44-3
D	GRY	561	THROTTLE RELAXER MOTOR RETURN	8A-44-3
E	WHT	560	THROTTLE RELAXER MOTOR FEED	8A-44-3
F	LT BLU	564	LEFT REAR TCS MOTOR FEED	8A-44-3
G	DK BLU	565	LEFT REAR TCS MOTOR RETURN	8A-44-3
H	DK GRN	567	RIGHT REAR TCS MOTOR RETURN	8A-44-3

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12129077

10-WAY F METRI-PACK 280 SERIES
BLK

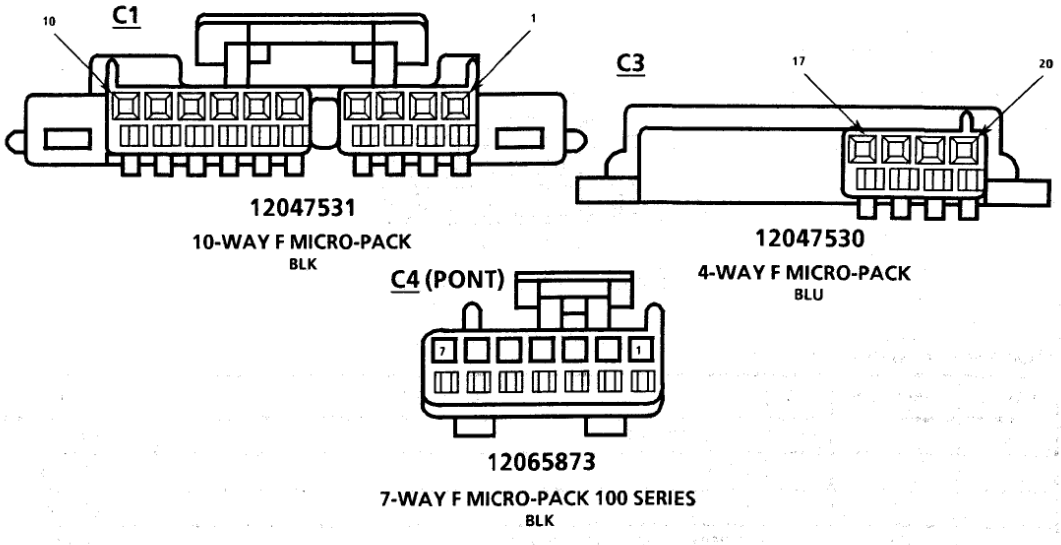
HEADLIGHT SWITCH

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C	BRN	9	PARK LAMP FEED	8A-100-0
D	BLK	650	GROUND	8A-14-8
E	YEL	10	HEADLIGHTS ON	8A-100-0
F	GRY	8	POWER FEED FROM I/P DIMMER FUSE #13	8A-100-0
H	ORN	240	POWER FEED FROM TAIL LTS FUSE #10	8A-100-0
J	RED	702	POWER FEED FROM FUSIBLE LINK Z	8A-100-0

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HARNESS CONNECTOR FACES



12047531
10-WAY F MICRO-PACK
BLK

12047530
4-WAY F MICRO-PACK
BLU

12065873
7-WAY F MICRO-PACK 100 SERIES
BLK

RADIO

(PONTIAC)

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C1				
1	GRY	118	LEFT FRONT SPEAKER RETURN (NEG)	8A-150-0, 4
2	TAN	201	LEFT FRONT SPEAKER FEED (POS)	8A-150-0, 4
3	DK GRN	117	RIGHT FRONT SPEAKER RETURN (NEG)	8A-150-0, 4
4	LT GRN	200	RIGHT FRONT SPEAKER FEED (POS)	8A-150-0, 4
5	BLK	650	GROUND	8A-14-7, 8, 9
6	BRN	9	PARK LAMP FEED	8A-150-0, 4
7	GRY	8	POWER FEED FROM I/P DIMMER FUSE #13	8A-150-0, 4
8	PNK	314	(WITH UW2) RADIO SIGNAL - ON	8A-150-4
9	YEL	43	POWER FEED FROM RADIO FUSE #17	8A-150-0, 4
10	ORN	40	POWER FEED FROM COURTESY FUSE #8	8A-11-8
C3				
17	LT BLU	115	RIGHT REAR SPEAKER RETURN	8A-150-0, 5
18	DK BLU	46	RIGHT REAR SPEAKER FEED	8A-150-0, 5
19	YEL	116	LEFT REAR SPEAKER RETURN	8A-150-0, 5
20	BRN	199	LEFT REAR SPEAKER FEED	8A-150-0, 5
C4 (WITH UK3)				
6	DK BLU	1796	STEERING WHEEL RADIO CONTROL SIGNAL	8A-150-1, 5

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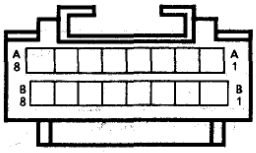
**CAVITIES NOT LISTED ARE NOT USED

(CHEVY)

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
C1 (BASE)				
1	GRY	118	LEFT FRONT SPEAKER RETURN (NEG)	8A-150-0
2	TAN	201	LEFT FRONT SPEAKER FEED (POS)	8A-150-0
3	DK GRN	117	RIGHT FRONT SPEAKER RETURN (NEG)	8A-150-0
4	LT GRN	200	RIGHT FRONT SPEAKER FEED (POS)	8A-150-0
5	BLK	650	GROUND	8A-14-7, 8, 9
C1 (DELCO-BOSE®)				
1	BARE	514	DRAIN WIRE	8A-150-3
2	TAN	511	SPEAKER SIGNAL LEFT FRONT	8A-150-3
3	WHT	513	SPEAKER RETURN LEFT AND RIGHT	8A-150-3
4	LT GRN	512	SPEAKER SIGNAL RIGHT FRONT	8A-150-3
5	BLK	1051	GROUND	8A-14-10
C1 (ALL RADIOS)				
6	BRN	9	PARK LAMP FEED	8A-150-0, 2
7	GRY	8	POWER FEED FROM I/P DIMMER FUSE #13	8A-150-0, 2
8	PNK	314	(WITH U82 ONLY) RADIO SIGNAL - ON	8A-150-2
9	YEL	43	POWER FEED FROM RADIO FUSE #17	8A-150-0, 2
10	ORN	40	POWER FEED FROM COURTESY FUSE #8	8A-11-8
C3 (BASE)				
17	LT BLU	115	RIGHT REAR SPEAKER RETURN	8A-150-0
18	DK BLU	46	RIGHT REAR SPEAKER FEED	8A-150-0
19	YEL	116	LEFT REAR SPEAKER RETURN	8A-150-0
20	BRN	199	LEFT REAR SPEAKER FEED	8A-150-0
C3 (DELCO-BOSE®)				
17	BARE	514	DRAIN WIRE	8A-150-2
18	DK BLU	546	REAR PRE AMP FEED (RIGHT SIGNAL)	8A-150-2
19	DK GRN/WHT	689	REAR PRE AMP RETURN	8A-150-2
20	BRN	599	REAR PRE AMP FEED (LEFT SIGNAL)	8A-150-2

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HARNESS CONNECTOR FACES



12110259

16-WAY F MICRO-PACK 100 SERIES
GRN

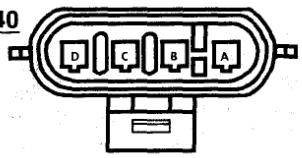
THEFT DETERRENT MODULE

**CAVITIES NOT LISTED ARE NOT USED

CAVITY	WIRE COLOR	CKT	DESCRIPTION	PAGE
A1	ORN	340	POWER FEED FROM PCM BAT FUSE #4	8A-11-7
A2	PNK	439	POWER FEED FROM PCM IGN FUSE #5	8A-11-5
A3	DK BLU	229	FUEL ENABLE SIGNAL	8A-133-1
A4	YEL/BLK	625	THEFT DETERRENT RELAY CONTROL	8A-133-0, 1
A5	GRY	728	"SECURITY" INDICATOR LAMP CONTROL	8A-133-1
B5	BLK/WHT	451	GROUND	8A-14-1, 2, 3
B7	PPL/WHT	1074	IGNITION KEY RESISTOR RETURN	8A-133-1
B8	WHT/BLK	1073	IGNITION KEY RESISTOR FEED	8A-133-1

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C140

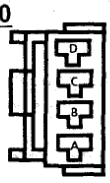


12047950

4-WAY F METRI-PACK 150 SERIES
BLK

ENGINE HARNESS TO
DISTRIBUTOR JUMPER (V8 VIN P)

C210

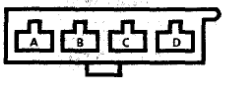


12015664

4-WAY F METRI-PACK 630 SERIES
BLK

ENGINE HARNESS TO I/P HARNESS

C217

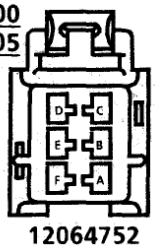


12092162

4-WAY F METRI-PACK 150 SERIES
BLK

SIR COIL ASSEMBLY HARNESS TO I/P HARNESS
STEERING WHEEL CONTROLS, RADIO

C240
C300
C305

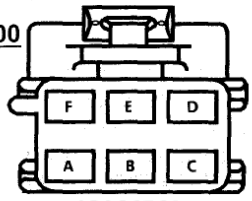


12064752

6-WAY F METRI-PACK 280 SERIES
BLK

CROSS CAR HARNESS TO I/P HARNESS
SEAT JUMPER HARNESS TO DRIVER SEAT HARNESS
SEAT JUMPER HARNESS TO PASSENGER SEAT HARNESS
BLOWER RESISTOR
SPEAKER/AMP, REAR (CHEVY BOSE)

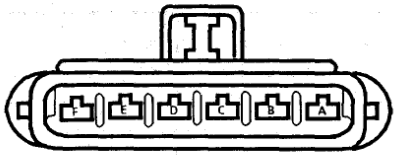
C400



12064762

6-WAY F METRI-PACK 150 SERIES
GRY

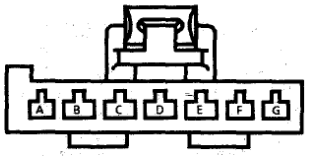
REAR BODY HARNESS TO I/P HARNESS



12110295

6-WAY F METRI-PACK 280 SERIES
GRY

ABS MOTOR PACK



12092761

7-WAY F METRI-PACK 280 SERIES
YEL

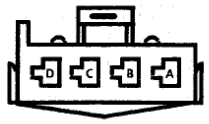
ARMING SENSOR, DUAL POLE

cardiagn.com

HARNESS CONNECTOR FACES

BLOWER RESISTOR
SEE C240

BOSE RELAY (CHEVY)
SEE FUEL PUMP RELAY

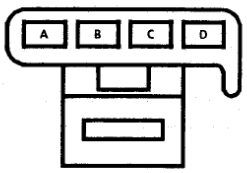


12033704

4-WAY F METRI-PACK 280 SERIES
BLK

CLUTCH ANTICIPATE/CRUISE RELEASE SWITCH
(V6 WITH MANUAL)

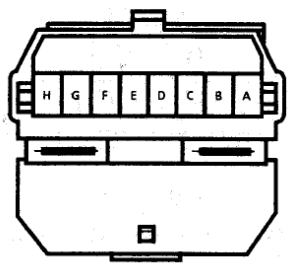
CONVENIENCE CENTER
REFER TO PAGE 8A-76-1



12052856

4-WAY F METRI-PACK 280 SERIES
BLK

CONVERTIBLE TOP SWITCH (CHEVY OR PONT)

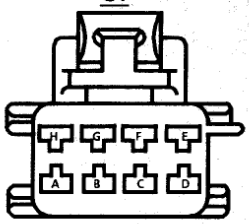


12015308

8-WAY PC EDGEBOARD - STD
BLK

COOLANT LEVEL LATCHING MODULE

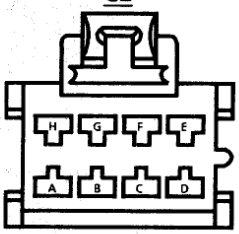
C1



12064766

8-WAY F METRI-PACK
150 SERIES
BLU

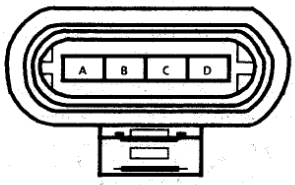
C2



12064998

8-WAY F METRI-PACK
280 SERIES
BLK

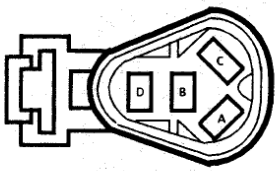
DAYTIME RUNNING LIGHTS (DRL) MODULE



12059401

4-WAY F METRI-PACK 150.1 SERIES
PULL-TO-SEAT
GRY

DISTRIBUTOR (V8 VIN P)

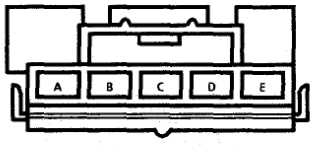


12065292

4-WAY F METRI-PACK 150 PULL-TO-SEAT
BLK

EXHAUST GAS RECIRCULATION (EGR) VACUUM
CONTROL SIGNAL SOLENOID VALVE (V6 VIN S)

cardiagn.com

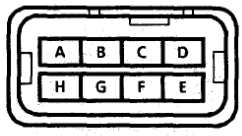


12015356

5-WAY F METRI-PACK 150 480 SERIES
BLK

EXPRESS DOWN MODULE

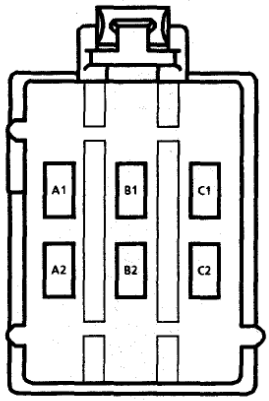
FOG LIGHT SWITCH (CHEVY)
SEE C400



12045688

8-WAY M METRI-PACK 150 SERIES
BLK

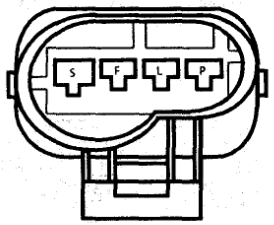
FOG LIGHT SWITCH (PONT)



12110541

6-WAY F METRI-PACK 280 FLX LK
BLK

FUEL PUMP RELAY
HATCH RELAY
THEFT DETERRENT RELAY
HIGH BLOWER RELAY
BOSE RELAY (CHEVY)



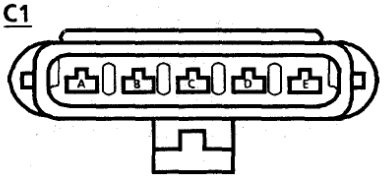
12129068

4-WAY F METRI-PACK MIXED SERIES
BLK

GENERATOR

HATCH RELEASE RELAY
SEE FUEL PUMP RELAY

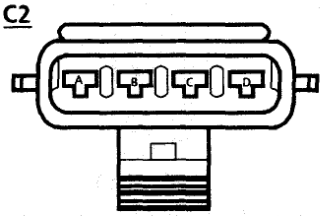
C1



15300030

5-WAY F METRI-PACK 280 SERIES
BLK

C2



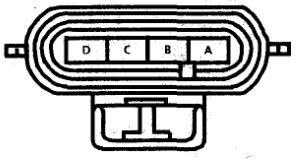
15300029

4-WAY F METRI-PACK 280 SERIES
BLK

HEADLIGHT DOORS MODULE (PONT ONLY)

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HARNESS CONNECTOR FACES

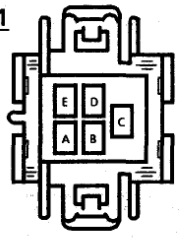


12059870

4-WAY F METRI-PACK 150 SERIES
BLK

HEATED OXYGEN SENSOR - BANK #1 AND BANK #2

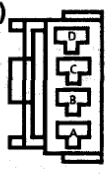
C1



12020813

5-WAY F METRI-PACK 630 SERIES
BLK

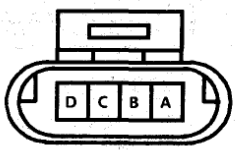
C4 (PONT)



12015664

4-WAY F METRI-PACK 630 SERIES
BLK

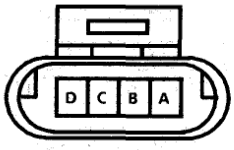
HEATER/VENT/AIR CONDITIONING (HVAC) CONTROL ASSEMBLY



12110188

4-WAY F METRI-PACK 150 SERIES
PULL-TO-SEAT
BLK

IDLE AIR CONTROL (IAC) VALVE (V8 VIN P AND V6 VIN S)

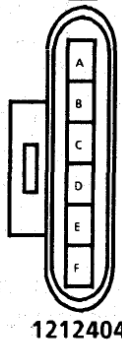


12040754

4-WAY F METRI-PACK 150 SERIES
PULL-TO-SEAT
BLK

IGNITION COIL MODULE (V8 VIN P)

C1

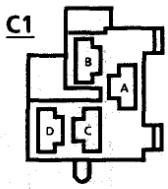


12124045

6-WAY F METRI-PACK 150 SERIES
BLK

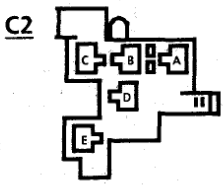
IGNITION CONTROL MODULE (V6 VIN S)

cardiagn.com



06294641

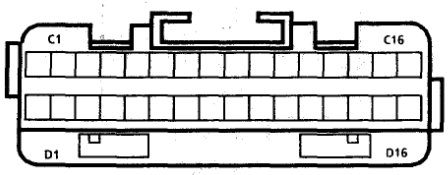
4-WAY F MIXED SERIES
BLK



12010966

5-WAY F 56 SERIES
BLU

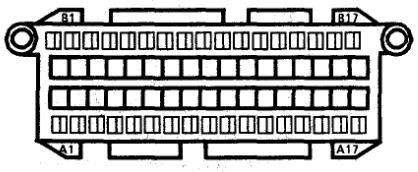
IGNITION SWITCH



12045575

32-WAY F MICRO-PACK 100 SERIES
BLK

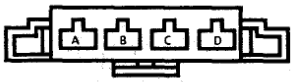
INSTRUMENT CLUSTER (CHEVY)



12065803

34-WAY F MICRO-PACK 100 SERIES
BLK

INSTRUMENT CLUSTER (PONT)

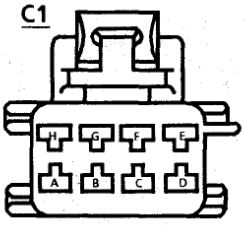


12034060

4-WAY F METRI-PACK 480 SERIES
NAT (WHT)

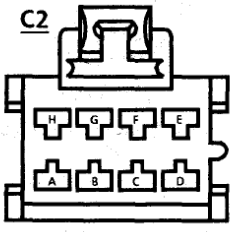
I/P DIMMER SWITCH

I/P FUSE BLOCK
REFER TO PAGE 8A-11-0 (CHEVY)
8A-11-1 (PONT)



12064766

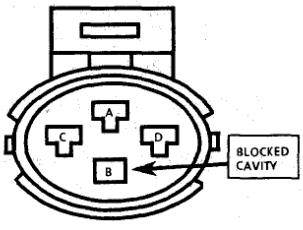
8-WAY F METRI-PACK 150 SERIES
BLU



12064998

8-WAY F METRI-PACK 280 SERIES
BLK

KEYLESS ENTRY RECEIVER
POWER SEAT CONTROL MODULE (AQ9)



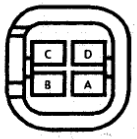
12065401

3-WAY F METRI-PACK 150 SERIES
GRY

OIL PRESSURE SENSOR

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HARNESS CONNECTOR FACES

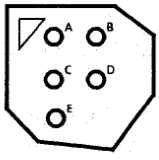


12066498

4-WAY M METRI-PACK 150 SERIES
BLK

OUTSIDE MIRROR
LH AND RH

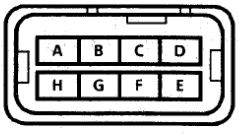
PERFORMANC SWITCH
PERFORMANCE/TRACTION CONTROL SWITCH
SEE SOLENOID VAVLE ASSEMBLY (AQ9)



12004680

5-WAY F PIN GRIP SERIES
NAT

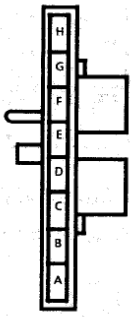
POWER DOOR LOCK SWITCH
LH AND RH



12045688

8-WAY M METRI-PACK 150 SERIES
BLK

POWER MIRROR SWITCH (CHEVY)

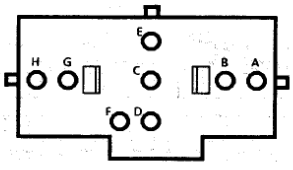


12064862

8-WAY F METRI-PACK 150 SERIES
BLK

POWER MIRROR SWITCH (PONT)

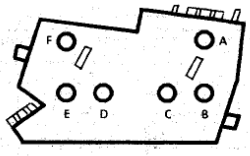
POWER SEAT CONTROL MODULE
(AQ9 POWER SEAT)
SEE KEYLESS ENTRY RECEIVER (C2)



12085013

8-WAY F PIN GRIP SERIES
BLK

POWER SEAT SWITCH (AC3)



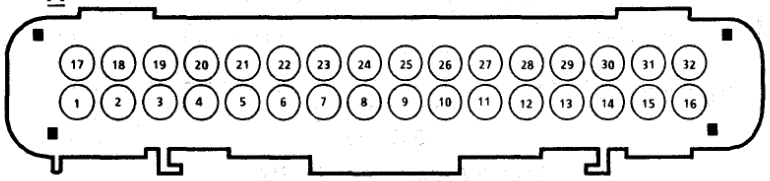
12033944

6-WAY F PIN GRIP SERIES
BLK

POWER SEAT SWITCH (AQ9)
DRIVER AND PASSENGER

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A

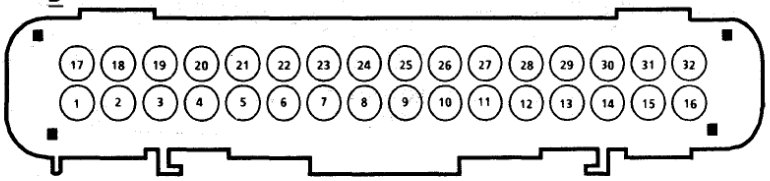


12129025

32-WAY F MICRO-PACK 100 SERIES
NAT

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129022 (CLR)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

B

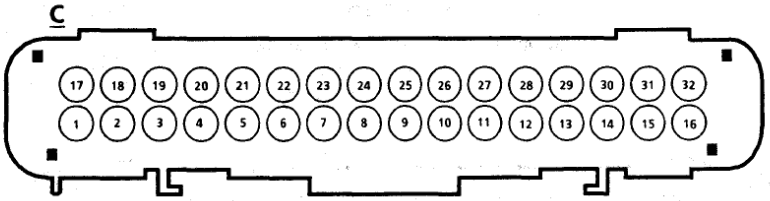


12129025

32-WAY F MICRO-PACK 100 SERIES
NAT

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129021 (BLK)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

C



12129025

32-WAY F MICRO-PACK 100 SERIES
NAT

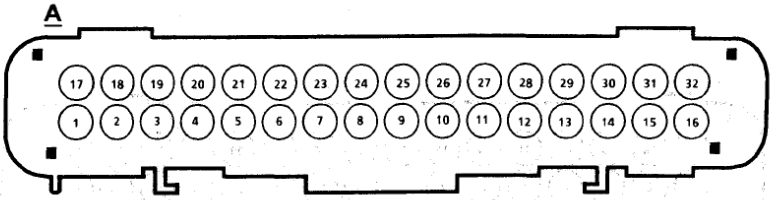
CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129023 (BLU)
SEAL	- 12146093
STRAIN RELIEF	- 12129028
CONNECTOR	- 12129025

POWERTRAIN CONTROL MODULE (PCM) (V6 VIN S)

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HARNESS CONNECTOR FACES

A



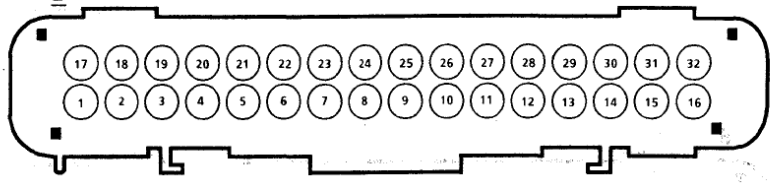
12129025

32-WAY F MICRO-PACK 100 SERIES

NAT

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129024 (RED)
SEAL	- 12146093
STRAIN RELIEF	- 12129028
CONNECTOR	- 12129025

B



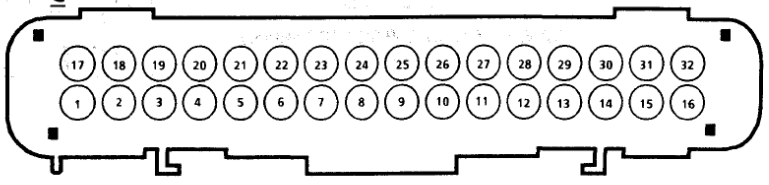
12129025

32-WAY F MICRO-PACK 100 SERIES

NAT

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129021 (BLK)
SEAL	- 12146093
STRAIN RELIEF	- 12129028
CONNECTOR	- 12129025

C



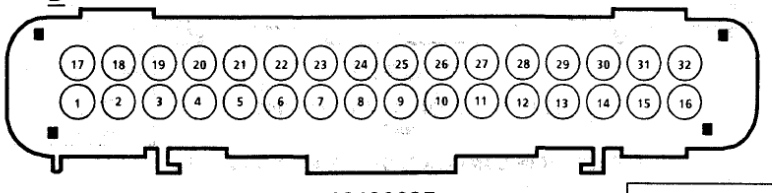
12129025

32-WAY F MICRO-PACK 100 SERIES

NAT

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129022 (CLR)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

D



12129025

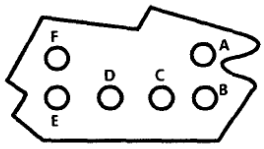
32-WAY F MICRO-PACK 100 SERIES

NAT

CONNECTOR ASSEMBLY BREAKDOWN	
TPA	- 12129023 (BLU)
SEAL	- 12146093
STRAIN RELIEF	- 12129030
CONNECTOR	- 12129025

POWERTRAIN CONTROL MODULE (PCM) (V8 VIN P)

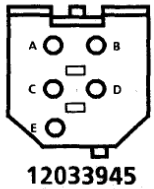
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12048027

6-WAY F PIN GRIP SERIES
GRY

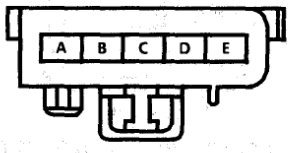
POWER WINDOW SWITCH, LH



12033945

5-WAY F PIN GRIP SERIES
BLK

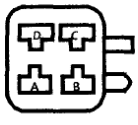
POWER WINDOW SWITCH, RH



12059296

5-WAY F METRI-PACK 480 SERIES
RED

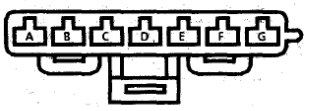
REAR DEFOGGER SWITCH/TIMER (CHEVY)



12047785

4-WAY F METRI-PACK 150 SERIES
BLK

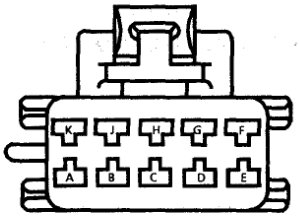
REARVIEW MIRROR



12052854

7-WAY F METRI-PACK 280 SERIES
BLK

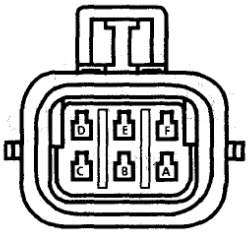
RETAINED ACCESSORY POWER (RAP) MODULE



12064769

10-WAY F METRI-PACK 150 SERIES
NAT

SOLENOID VALVE ASSEMBLY (AQ9)
PERFORMANCE SWITCH
PERFORMANCE/TRACTION CONTROL SWITCH



12052848

6-WAY F METRI-PACK 150 SERIES
BLK

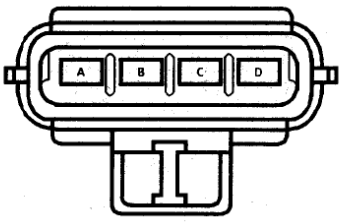
SPEAKER/AMP, LEFT AND
RIGHT FRONT (CHEVY BOSE)
SPEAKER/AMP, REAR (CHEVY BOSE)
SEE C240

STEERING WHEEL CONTROLS, RADIO
SEE C217

THEFT DETERRENT RELAY
SEE FUEL PUMP RELAY

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HARNESS CONNECTOR FACES

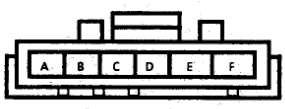


12129565

4-WAY F METRI-PACK 280 SERIES
GRY

TRACTION CONTROL MOTOR PACK

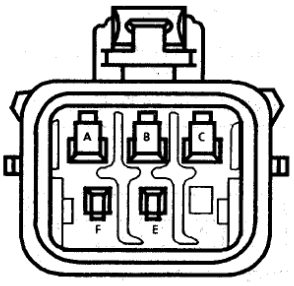
UNDERHOOD ELECTRICAL CENTER
REFER TO PAGE 8A-11-3



12015307

6-WAY F METRI-PACK MIXED SERIES
BLK

TRANSMISSION POSITION SWITCH



12129126

5-WAY F METRI-PACK MIXED SERIES
BLK

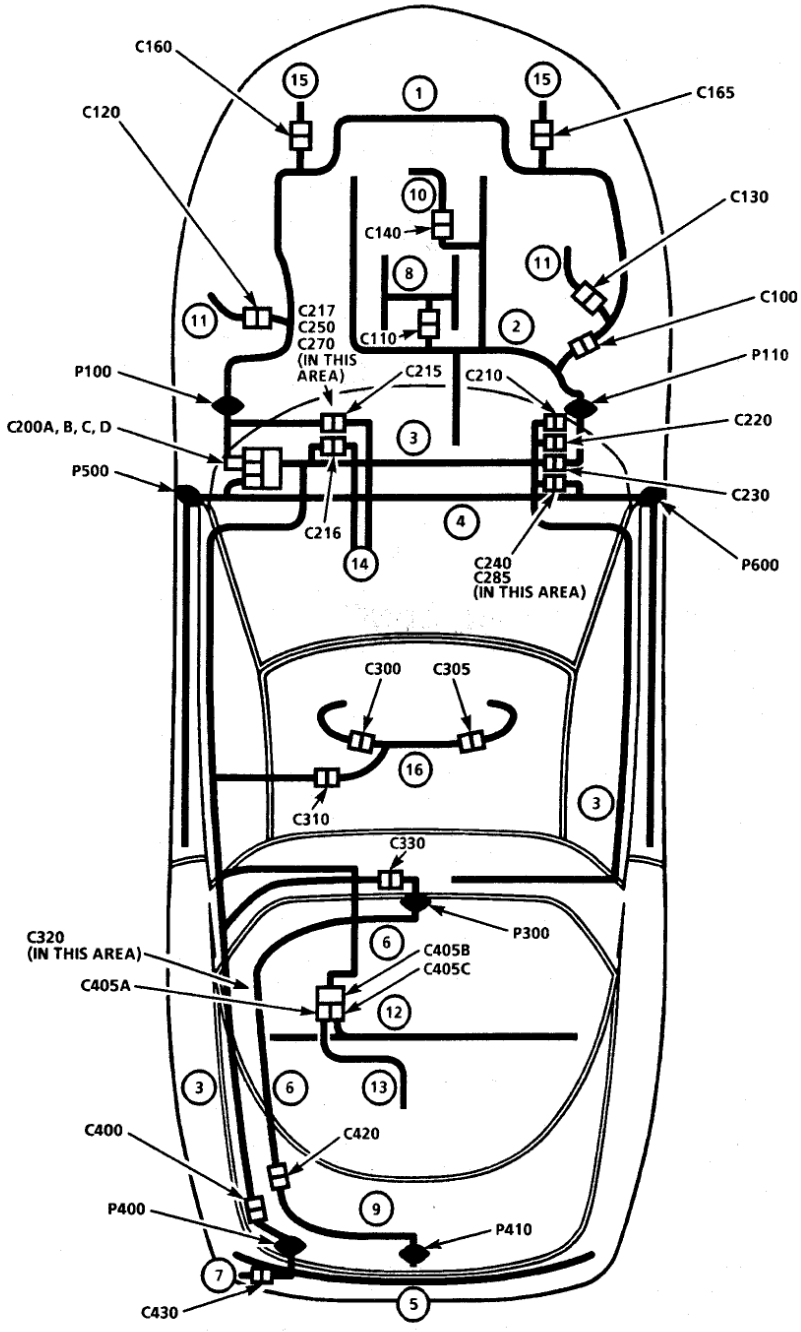
WIPER MOTOR ASSEMBLY

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BLANK

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HARNESS ROUTING VIEWS



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HARNESS LEGEND			
1	Forward Lamp Harness	9	CHMSL Jumper Harness
2	Engine Harness	10	Distributor Jumper Harness (V8 VIN P)
3	I/P Harness	11	Wheel Speed Sensor Jumper Harness
4	Cross Car Harness	12	RR Wheel Speed Sensor Jumper Harness
5	Rear Body Harness	13	Fuel Tank Unit Pigtail
6	Hatch Harness	14	Steering Column Harness
7	RR Fascia Harness	15	Headlamp Jumper Harness (Pontiac only)
8	Injector Harness (V6 VIN S)	16	Seat Jumper Harness (with AQ9) or Driver Seat Harness (with AC3)

CONNECTOR LEGEND		PAGE	FIGURE	CONNECTOR
C100 (10 cavities)	Engine Harn to Forward Lamp Harn, behind LH wheelhouse attached to PCM Bracket	201-15	28	202-0
C110 (10 cavities) (V6 VIN S)	Engine Harn to Injector Harn, top center of Intake Manifold	201-12	22	202-1
C120 (2 cavities)	Forward Lamp Harn to Wheel Speed Sensor Jumper Harn, mounted to LH Frame Rail			
C130 (2 cavities)	Forward Lamp Harn to Wheel Speed Sensor Jumper Harn, mounted to RH Frame Rail			
C140 (4 cavities) (V8 VIN P)	Engine Harn to Distributor Jumper Harn, right side of Intake Plenum, attached to EVAP Solenoid Valve	201-26	50	202-19
C160 (3 cavities) (Pontiac)	Forward Lamp Harn to Headlamp Jumper Harn, behind LH Headlamp Door Bracket	201-23	43	
C165 (3 cavities) (Pontiac)	Forward Lamp Harn to Headlamp Jumper Harn, behind RH Headlamp Door Bracket	201-23	43	
C200A (17 cavities)	Forward Lamp Harn to I/P Harn, between LH kick panel and Steering Column	201-25	49	202-2
C200B (18 cavities)	Forward Lamp Harn to I/P Harn, between LH kick panel and Steering Column	201-25	49	202-2
C200C (13 cavities)	Cross Car Harn to I/P Harn, between LH kick panel and Steering Column	201-25	49	202-2
C200D (48 cavities)	I/P Harn side, between LH kick panel and Steering Column	201-25	49	202-2
C210 (4 cavities)	I/P Harn to Engine Harn, under RH side of I/P behind RH kick panel	201-20	37	202-19
C215 (11 cavities)	Forward Lamp Harn to Steering Column Harn, near base of Steering Column	201-35	64	202-4

(CONTINUED ON NEXT PAGE)

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HARNESS ROUTING VIEWS

(CONTINUED FROM PREVIOUS PAGE)

CONNECTOR LEGEND		PAGE	FIGURE	CONNECTOR
C216 (11 cavities)	I/P Harn to Steering Column Harn, attached to base of Steering Column	201-34	63	202-5
C217 (4 cavities) (Pontiac)	I/P Harn to SIR Coil Assembly Harn, near base of Steering Column	201-34	63	202-19
C220 (10 cavities)	I/P Harn to Engine Harn, under RH side of I/P behind kick panel	201-20	37	202-6
C230 (10 cavities)	I/P Harn to Engine Harn, under RH side of I/P behind kick panel	201-20	37	202-7
C240 (6 cavities)	Cross Car Harn to I/P Harn, under RH side of I/P behind kick panel	201-20	37	202-19
C250 (2 cavities)	Forward Lamp Harn to Clutch Jumper Harn, near Brake/Clutch Pedal Bracket	201-1	2	
C270 (2 cavities)	I/P Harn to Clutch Jumper Harn, near Brake/Clutch Pedal Bracket	201-1	2	
C285 (1 cavity) (Chevy AU0 and U82)	Cross Car Harn to I/P Harn, under RH side of I/P behind kick panel	201-20	37	
C300 (6 cavities) (Pontiac AQ9)	Seat Jumper Harn to Driver Seat Harn, under Driver Seat Assembly	201-47	86	202-19
C305 (6 cavities) (Pontiac AQ9)	Seat Jumper Harn to Passenger Seat Harn, under Passenger Seat Assembly	201-46	85	202-19
C310 (2 cavities) (with AC3 or AQ9)	I/P Harn to Driver Seat Harn (with AC3) or Seat Jumper Harn (with AQ9), between rear mounting bolts of driver seat	201-6	11	
C320 (1 cavity) (Convertible)	I/P Harness to Convertible Rear Defogger Jumper, under left Interior Garnish Molding above left rear wheelhouse			
C330 (3 cavities)	I/P Harn to Hatch Harn, center of roof near Dome Lamp (Coupe only)	201-4	6	
C400 (6 cavities)	I/P Harn to Rear Body Harn, LH rear Cargo Compartment	201-30	57	202-19
C405A (4 cavities)	Fuel Tank Unit Pigtail to I/P Harn, part of Pass Thru Connector forward of rear axle	201-5	9	202-8
C405B (10 cavities)	I/P Harn side, part of Pass Thru Connector forward of rear axle	201-5	9	202-8
C405C (4 cavities)	Rear Wheel Speed Sensor Jumper Harn to I/P Harn, part of Pass Thru Connector forward of rear axle	201-5	9	202-8
C420 (2 cavities)	Hatch Harn to CHMSL Jumper Harn, LH side of hatch between hatch frame and plastic panel (Coupe) or I/P Harn to CHMSL Jumper Harn, located on LH underside of Deck Lid (Convertible).	201-4	7	
C430 (2 cavities)	Rear Body Harn to Rear Fascia Harn, between rear fascia and rear end panel on LH side	201-32, 201-33	61, 62	

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