

1989 MUSTANG



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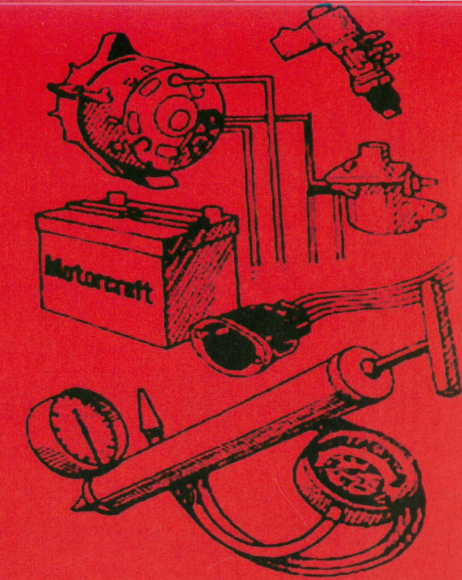
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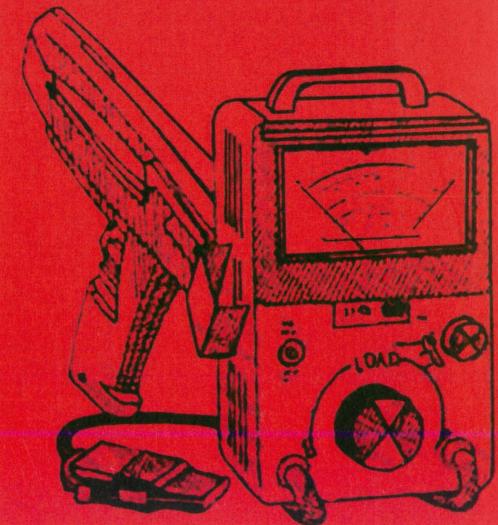


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Electrical & Vacuum Trouble- Shooting Manual



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ELECTRICAL AND VACUUM TROUBLESHOOTING MANUAL

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IMPORTANT SAFETY NOTICE

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all motor vehicles, as well as the personal safety of the individual doing the work. This Manual provides general directions for accomplishing service and repair work with tested, effective techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools and parts for servicing vehicles, as well as in the skill of the individual doing the work. This Manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in this Manual must first establish that he compromises neither his personal safety nor the vehicle integrity by his choice of methods, tools or parts.

This manual contains the following diagnostic information:

- Electrical and Vacuum Schematics
- Component Location Indexes and Views
- Troubleshooting Hints
- Descriptions of Circuit Operation
- Component Testing

The vehicle's entire electrical system is broken down into individual systems. There are also sections for the vehicle's ground and power distribution circuitry. Each system section begins with a wiring schematic. The **Schematics** should always be your starting point in using this manual. These schematics show the paths of electrical current during proper circuit operation. The source of voltage (circuit breaker or fuse) is shown at the top of the page. All wire, connectors, splices, switches, and motors are shown in the flow of current to ground at the bottom of the page. Connector end views of switches and other components are shown to help with bench testing. Each circuit component is named (underlined titles). Wire and connector colors are listed (standard Ford color abbreviations are used). These abbreviations are:

COLOR ABBREVIATIONS

BL	Blue	N	Natural
BK	Black	O	Orange
BR	Brown	PK	Pink
DB	Dark Blue	R	Red
DG	Dark Green	P	Purple
GN	Green	T	Tan
GY	Gray	W	White
	Light Blue	Y	Yellow
	Light Green		

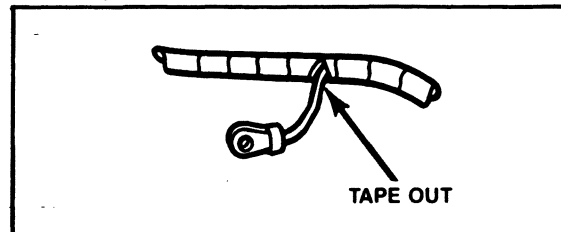
The **Component Location** section of each system helps you locate the circuit's components in the vehicle. A brief statement of the location is given as well as a reference to an illustrative figure in the manual. There is also a full listing of connector, ground, diode and splice locations in the **Location Index** in the back of the manual.

Resistors and diodes are currently covered with pvc molds and are taped to the harness outside of the tubing. Many of the 1989 model year assemblies will be covered with heat shrinkable tubing making the assembly small enough to be placed within the harness bundle. The wiring diagrams show the number of times the resistor and diodes are used as well as the distance from connector/length of wire in exact centimeters. Resistors and diodes are identified on the wiring diagrams by the following base part numbers:

Resistor/diode assembly	14A601
Diode only	14A604

OTHER ABBREVIATIONS

T/O (Tape Out) The point at which a harness branches to feed a component.



The **Troubleshooting Hints** offer shortcuts or tests in a three-column format that help you determine the cause of an electrical problem. They are not intended to be a rigid procedure for solving an electrical situation. Rather, Troubleshooting Hints represent a common-sense approach that is based on an understanding of the circuit.

A **Component Testing** section provides procedures to determine whether a component is good or bad.

Notes, Cautions, and Warnings appear in boxes on text pages and contain important car and mechanic safety information.

Notes give added information to help complete a particular procedure. **Cautions** are included to prevent making an error that could damage the vehicle. **Warnings** highlight areas where carelessness can cause personal injury. The following list contains some general **Warnings** that should be followed when working on a vehicle.

- Always wear safety glasses for eye protection.
- Use safety stands whenever a procedure requires being under a vehicle.
- Be sure that the **Ignition Switch** is always in the OFF position, unless otherwise required by the procedure.
- Set the parking brake when working on any vehicle. An automatic transmission should be in PARK. A manual transmission should be in NEUTRAL.
- Operate the engine only in a well-ventilated area to avoid the danger of carbon monoxide.
- Keep away from moving parts when the engine is running, especially the fan and belts.
- To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe, catalytic converter, and muffler.
- Do not allow flame or sparks near the battery. Gases are always present in and around the battery cell. An explosion could occur.
- Do not smoke.
- To avoid injury, always remove rings, watches, loose hanging jewelry, and loose clothing.

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2 HOW TO FIND THE ELECTRICAL PROBLEM

TROUBLESHOOTING STEPS

These six steps present an orderly method of troubleshooting:

Step 1. Verify the problem.

- Operate the complete system and see all symptoms for yourself in order to:
 - check the accuracy and completeness of the customer's complaint.
 - learn more that might give a clue to the nature and location of the problem.

Step 2. Narrow the problem.

- Using the EVT, narrow down the possible causes and locations of the problem in order to more quickly find the exact cause.
- Read the description of *How the Circuit Works* and study the wiring diagram. You should then know enough about the circuit operation to figure out where to check for this trouble.

Step 3. Test the cause.

- Use electrical test procedures to find the specific cause of the symptoms.
- *Troubleshooting Hints* will give some helpful ideas.
- The *Component Location* charts and the pictures will help you find components, grounds, and connectors.

Step 4. Verify the cause.

- Confirm the fact that you have found the correct cause through operating the parts of the circuit you think are good.

Step 5. Make the repair.

- Repair or replace the faulty component.

Step 6. Verify the repair.

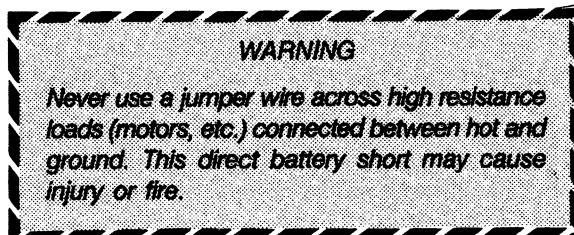
- Operate the system as in Step 1 and check that symptoms, and also symptoms.
- See the *Shop* details. You will be helpful with these

TROUBLESHOOTING TOOLS

JUMPER WIRE

This is a test lead used to connect two points of a circuit. A **Jumper Wire** can complete a circuit by bypassing an open.

Uses: Bypassing Switches or Open Circuits



VOLTMETER

A DC **Voltmeter** measures circuit voltage. Connect negative (- or black) lead to ground, and positive (+ or red) lead to voltage measuring point.

OHMMETER

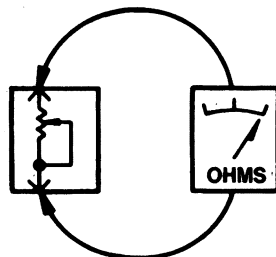


Figure 1 — Resistance Check

An Ohmmeter shows the resistance between two connected points (Figure 1).

TEST LAMP

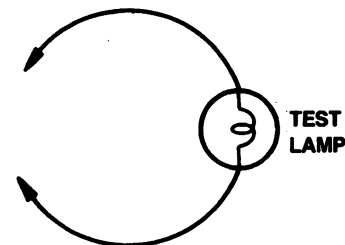


Figure 2 — Test Lamp

A **Test Lamp** is a 12-volt bulb with two test leads (Figure 2).

Uses: Voltage Check. Short Check

SELF-POWERED TEST LAMP

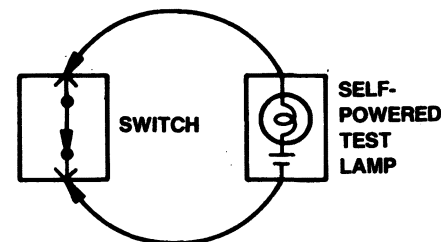
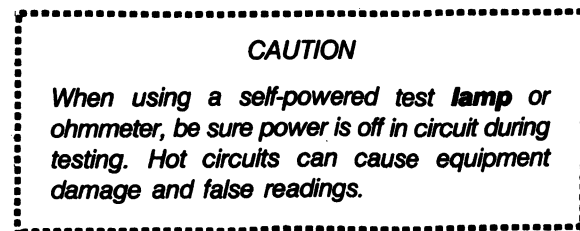


Figure 3 — Continuity Check

The **Self-Powered Test Lamp** is a bulb, battery and set of test leads wired in series (Figure 3). When connected to two points of a continuous circuit, the bulb glows.

Uses: Continuity Check. Ground Check.



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TROUBLESHOOTING CHECKS

SWITCH CIRCUIT CHECK

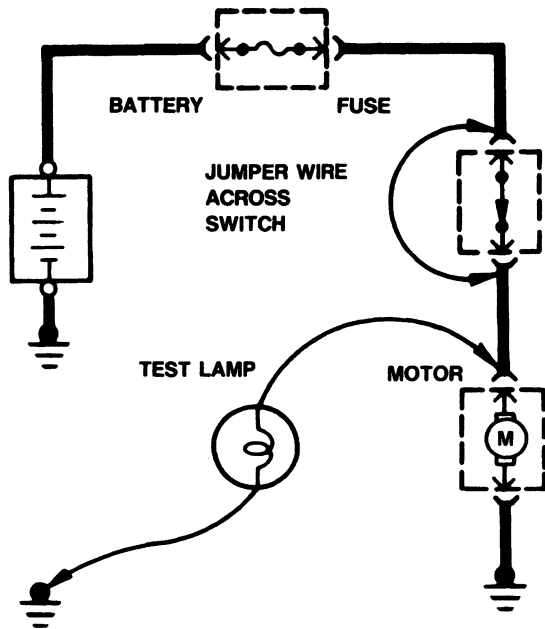


Figure 4 — Switch Circuit Check and Voltage Check

In a bad circuit with a switch in series with the load, jumper the terminals of the switch to power the load. If jumping the terminals powers the circuit, the switch is bad (Figure 4).

CONTINUITY CHECK (Locating open circuits)

Connect one lead of **Self-Powered Test Lamp** or **Ohmmeter** to each end of circuit (Figure 3). Light will glow if circuit is closed. Switches and fuses can be checked in the same way.

SHORT CHECK (short to ground)

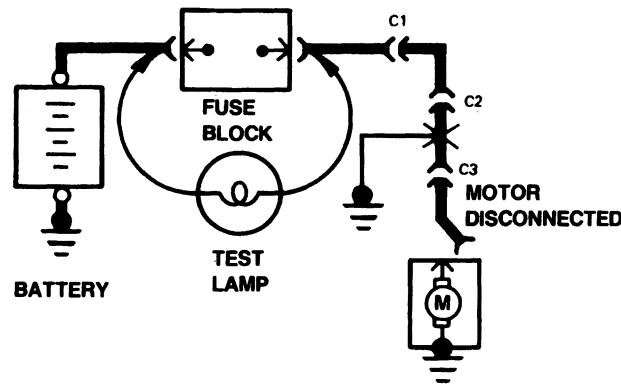


Figure 5 — Short Check

A fuse that repeatedly blows is usually caused by a short to ground. It's important to be able to locate such a short quickly (Figure 5).

- 1) Turn off everything powered through the fuse.
- 2) Disconnect other loads powered through the fuse:
 - Motors: disconnect motor connector.
 - Lamps: remove bulbs.
- 3) Turn **Ignition Switch** to RUN (if necessary) to power fuse.
- 4) Connect one **Test Lamp** lead to hot end of blown fuse. Connect other lead to ground. Bulb should glow showing power to fuse. *(This step is just a check to be sure you have power to the circuit.)*
- 5) Disconnect the **Test Lamp** lead from ground and reconnect it to the load side of the fuse.
 - If the **Test Lamp** is off, the short is in the disconnected equipment.
 - If the **Test Lamp** goes on, the short is in the wiring. You must find the short by disconnecting the circuit connectors one at a time until the **Test Lamp** goes out. For example: with a ground at X, the bulb goes out when C1 or C2 is disconnected, but stays on after disconnecting C3. This means the ground is between C2 and C3.

"GOOD GROUND" CHECK

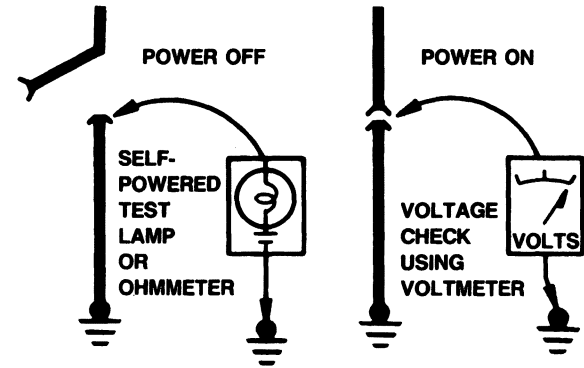


Figure 6 — Grounds Checks

Turn on power to circuit. Perform **Voltage Check** between suspected bad ground and frame. Any voltage means ground is bad.

Turn off power to circuit. Connect one lead of **Self-Powered Test Lamp** or **Ohmmeter** to wire in question, and the other to known ground. If bulb glows, circuit ground is OK (Figure 6).

TROUBLESHOOTING HINTS

The circuit schematics in this manual are designed to make it easy to identify common points in circuits. This knowledge can help narrow the problem to a specific area. For example, if several circuits fail at the same time, check for a common power or ground connection. (See *Power Distribution* or *Grounds*). If part of a circuit fails, check the connections between the part that works and the part that doesn't work.

For example, if low beam **headlamps** work, but high beams and the indicator light don't work, then power and ground paths must be good. Since the dimmer switch is the component which switches this power to the high beams **lamps** and indicator, it is most likely the cause of failure.

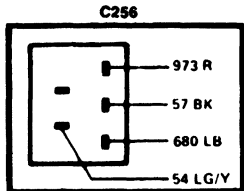
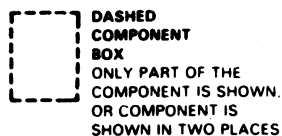
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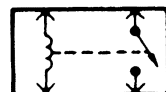
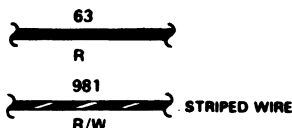
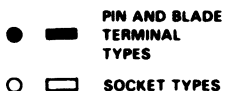
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4 ELECTRICAL SYMBOLS



COMPONENT CONNECTOR END VIEW
SHOWS PINS OR SOCKETS ON A COMPONENT TO AID IN BENCH TESTING

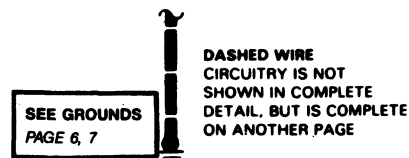
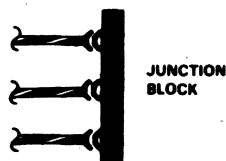
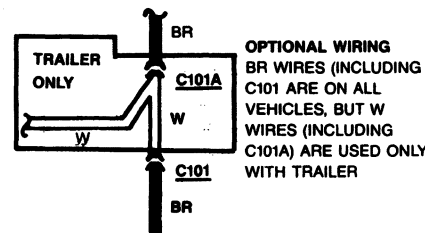
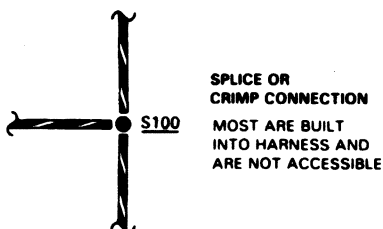
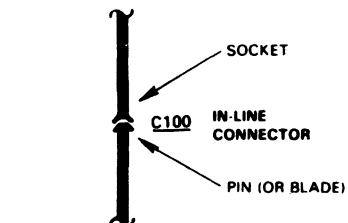
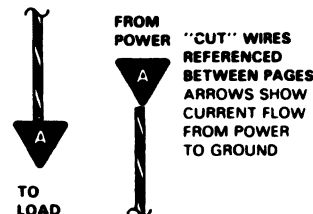
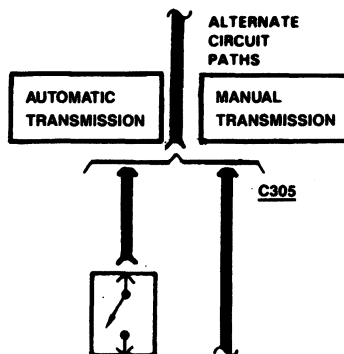
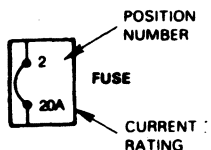
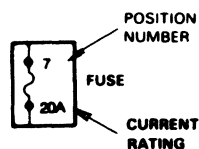
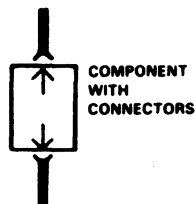
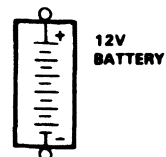
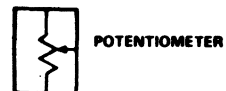
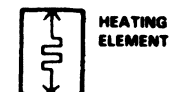
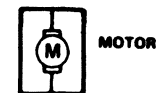
WIRE COLORS ARE LABELED FOR MATING HARNESS CONNECTOR



DASHED LINE SHOWS MECHANICAL CONNECTIONS



DIODES CURRENT FLOWS IN DIRECTION OF ARROW ONLY



SOLID STATE
SEALED ELECTRONIC COMPONENT ANY CIRCUITRY SHOWN INSIDE THE BOX IS A FUNCTIONAL

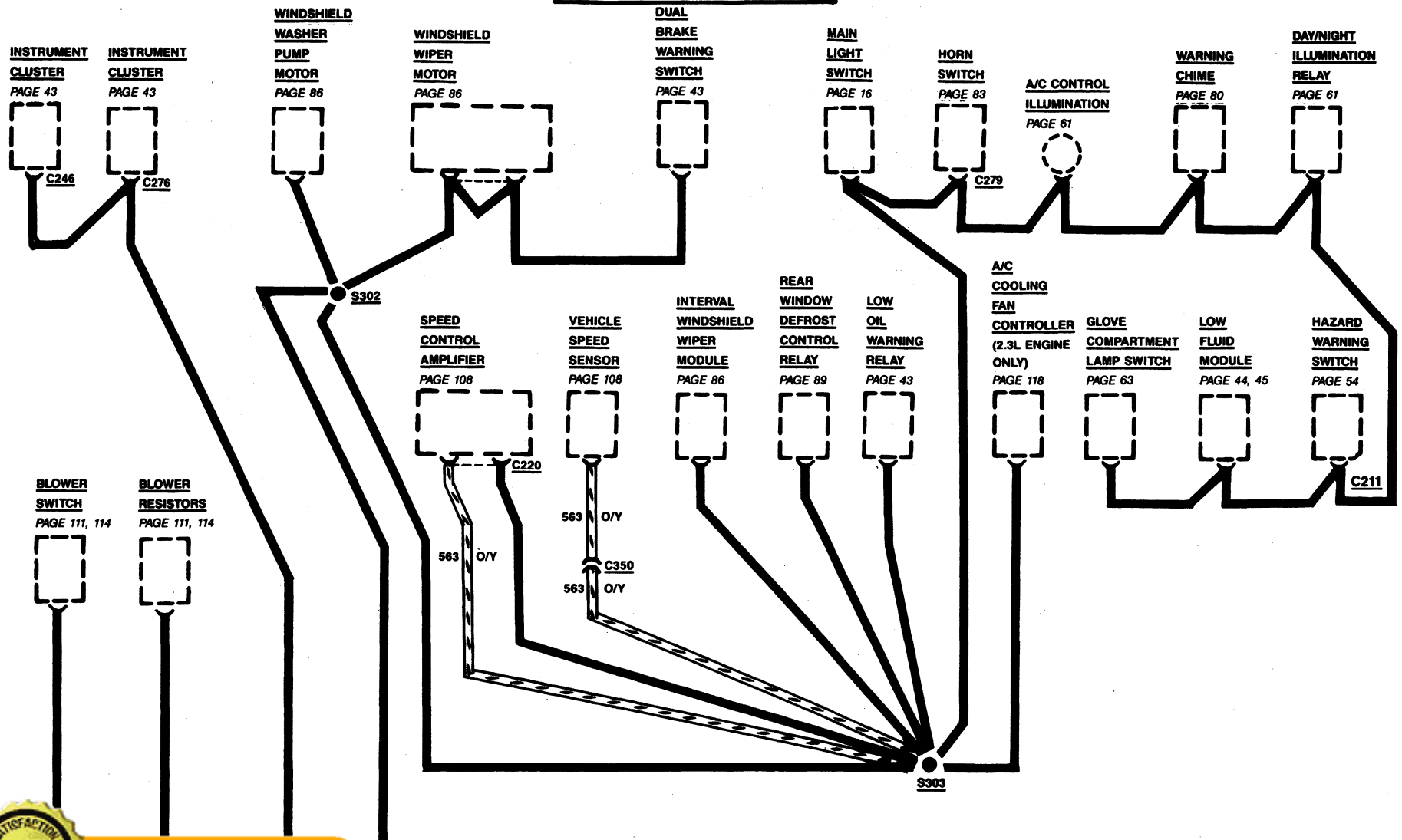
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HEADLAMP GROUNDS

ELECTRICAL
COOLING
FAN
(2.3L ONLY)
PAGE 118



LH DUAL
BEAM
HEADLAMP
PAGE 49



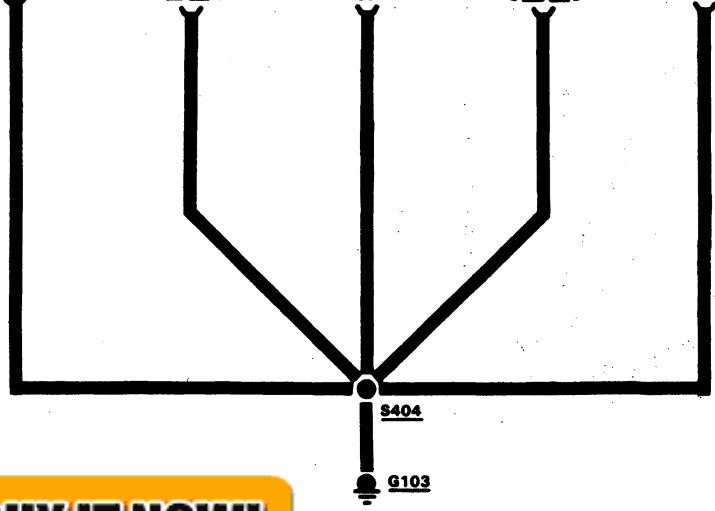
LH FRONT
SIDE MARKER
LAMP
PAGE 52



LH FRONT
PARK AND
TURN SIGNAL
LAMP
PAGE 52,54



LH
FOG
LAMP
PAGE 49



RH
FOG
LAMP
PAGE 49



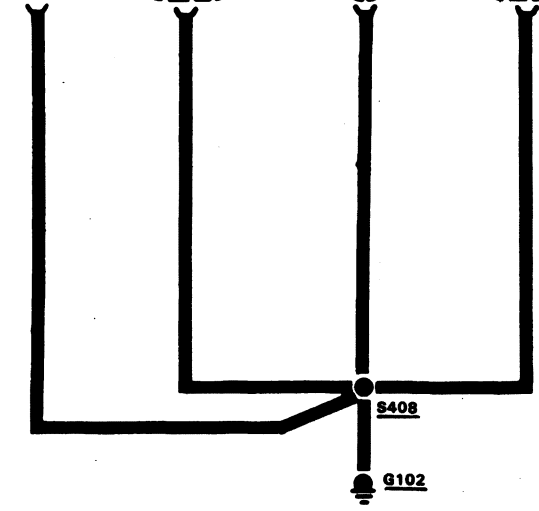
RH FRONT
PARK AND
TURN SIGNAL
LAMP
PAGE 52,54



RH FRONT
SIDE MARKER
LAMP
PAGE 52



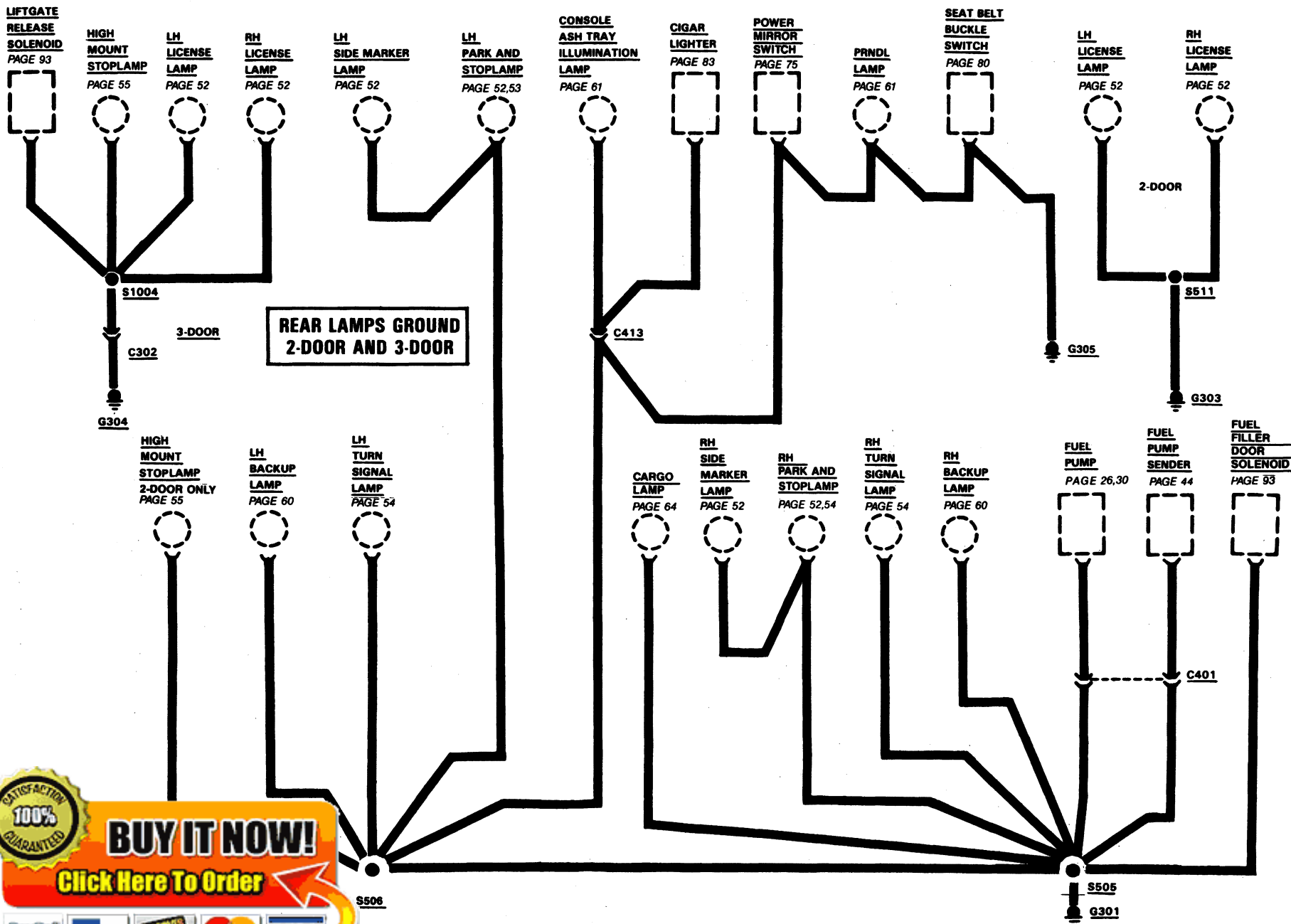
RH
DUAL BEAM
HEADLAMP
PAGE 49



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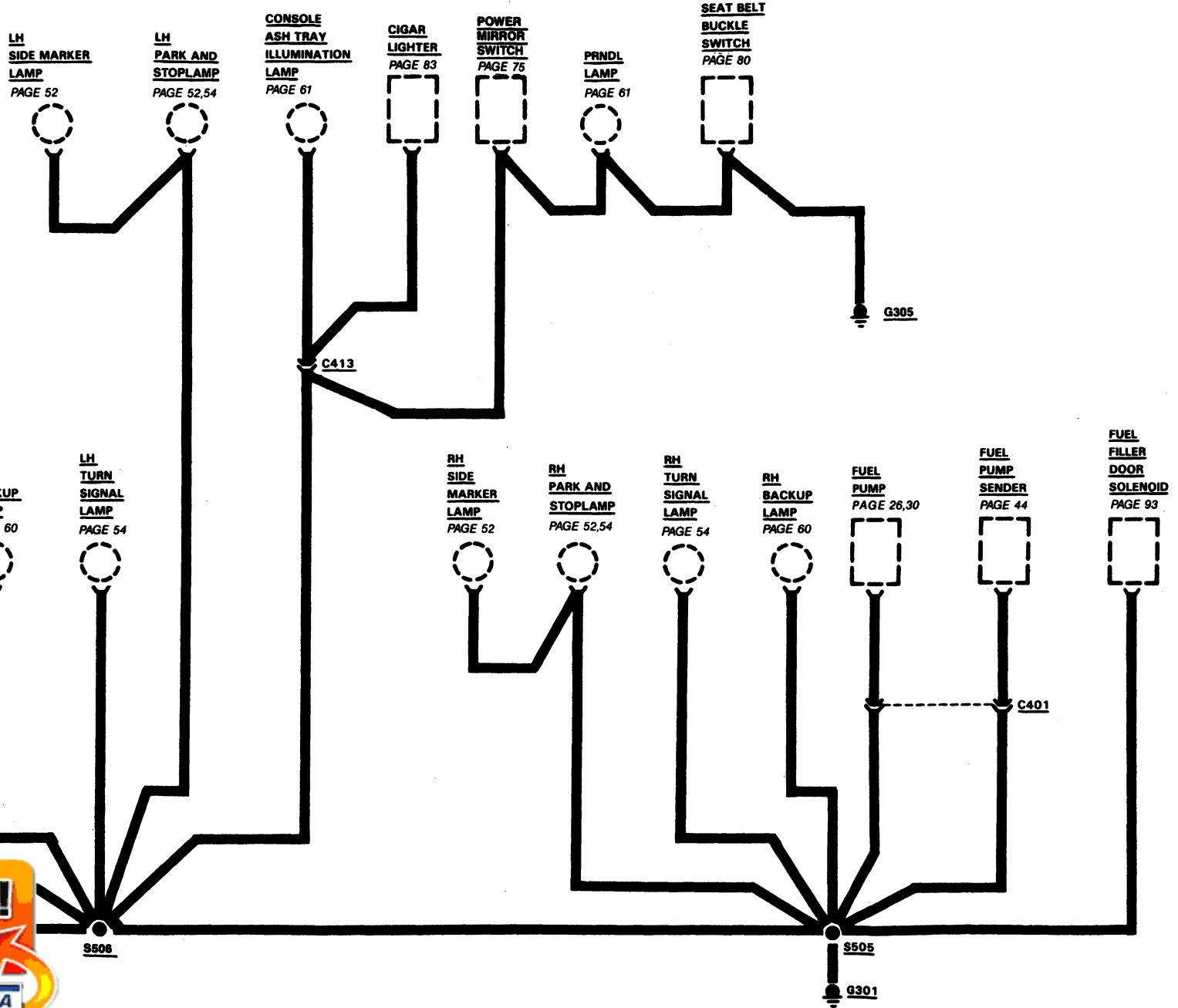
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8 GROUNDS (G301, G305)

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HOW THE CIRCUIT WORKS

The ground circuits shown here are complete, and connect several components together to screw terminal ground points. On other pages only parts of these circuits may be shown. Partial ground circuits are shown dashed on those pages.

All simple or component ground circuits are shown on the individual circuit pages, and are complete on those pages.

All wires are 57 BK unless otherwise noted.

COMPONENT LOCATION

Page-
Figure

A/C Cooling Fan Controller	Attached to I/P support	—
Blower Resistors	Under RH side of I/P	—
Blower Switch	Part of heater function control	111-1
Dual Brake Warning Switch	LH fender apron	—
Warning Chime	Behind center of I/P	82-1
Fuel Filler Door Solenoid ..	Under RH tail lamp assembly	—
Fuel Pump	Part of fuel sender assembly	—
Fuel Pump Sender	At fuel pump	—
Interval Windshield Wiper Motor	Under LH side of I/P attached to shake brace	—
Liftgate Release Solenoid	Part of liftgate latch assembly	—
Low Oil Warning Relay ..	On LH I/P shake brace	—
Main Light Switch	On LH side of I/P left of steering column	51-2
Rear Window Defrost Control Relay	LH side of I/P near fuse panel	—
Speed Control Amplifier ..	LH cowl area	110-1
Top Up And Top Down Relays	In luggage compartment, behind rear seat	98-1
Windshield Wiper Motor ..	LH side of engine cowl	—

Refer to the **Location Index** in the back of the manual for connector, ground, diode and splice descriptions and locations.

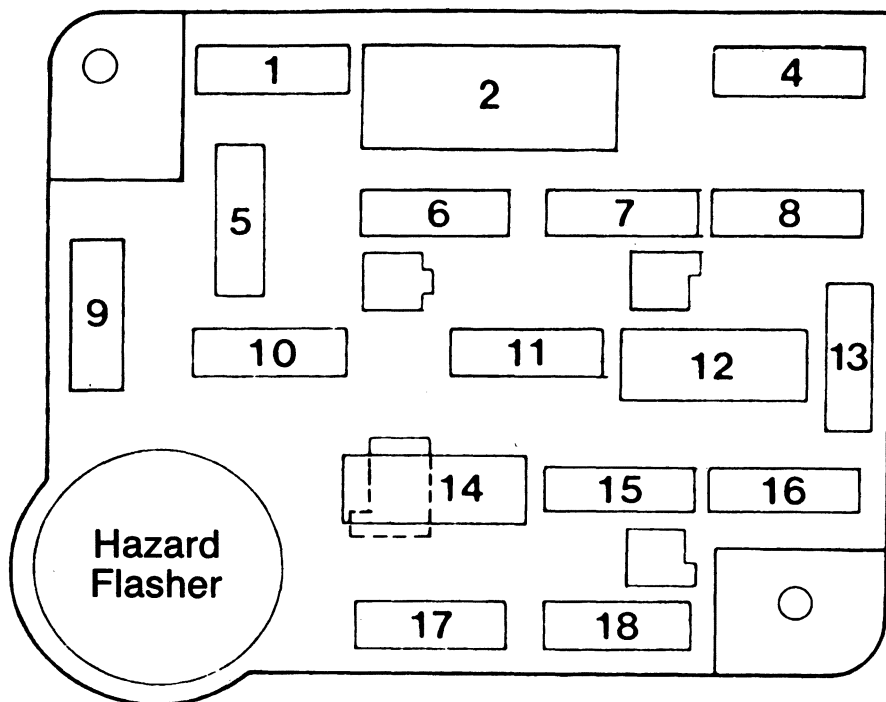
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10 FUSE PANEL/CIRCUIT PROTECTION



Fuse Position	Amps	Circuits Protected
1	15	Stop/Hazard Lamps; Speed Control
2	8.25 c.b.	Interval Wiper
4	15	Exterior Lamps; Instrument Illumination
5	15	Turn Lamps; Backup Lamps, Low Fluids Module & Display Module
6	20	Speed Control, Day/Night Illumination Relay; A/C; Decklid Release; Rear Window Defrost
7	—	(Not Used)
8	15	Courtesy Lamps; Dimmer Switch; Power Mirrors; Radio; Fuel Filler Door Release
9	30	Heater Blower ; A/C Blower
10	20	Headlamps; Low Oil Level Warning
11	15	Radio; Premium Sound; Graphic Equalizer
12	—	(Not Used)
13	5	Instrument Illumination
14	20 c.b.	Power Windows
15	15	Fog Lamps
16	20	Horn; Cigar Lighter
17	—	(Not Used)
18	15	Seatbelt Buzzer; Warning Indicators; Low Coolant Switch; Low Fluid Monitor; Instrument Cluster

Fuse Value Amps	Color Code
4	Pink
5	Tan

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Power Distribution

The **Alternator** and **Battery** are connected together at the **Starter Relay** hot terminal. Other circuits originate at the **Starter Relay** hot terminal and are protected by fuse links. Low power circuits are also protected by fuses.

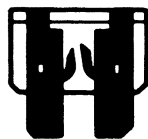
The **Ignition Switch** and **Main Light Switch** are powered at all times, as are **Fuses 1, 4, 8, 10 and 16**. The other fuses are powered through the **Ignition Switch** or the **Main Light Switch**.

Position 3 is not used, and is covered by **Circuit Breaker 2**.

REPLACEMENT OF FUSES/ CIRCUIT BREAKERS



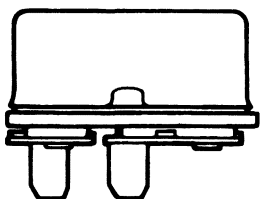
GOOD FUSE



BLOWN FUSE

Fuses are mounted either in the Fuse Panel or in-line. They are identified by the numbered value in amperes, and by a color code. Some positions may have either a fuse with adapter or a circuit breaker. Be sure to replace a fuse or circuit breaker with the same kind of unit and with the same ampere rating. Remove fuses in order to check them.

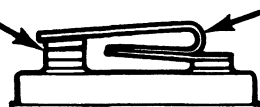
CIRCUIT BREAKER OPERATION



EXTERNAL
SIDE VIEW

CONTACTS

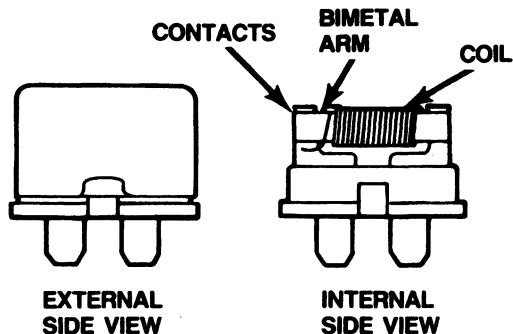
BIMETAL
ARM



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Non-Cycling Fuse Panel Type



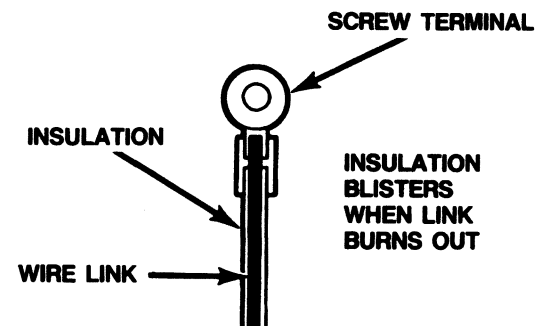
Cycling In-Line Type

Some circuits are protected by circuit breakers. (Abbreviated "c.b." in fuse chart.) They can be Fuse Panel mounted or in-line. Like fuses, they are rated in amperes.

Each circuit breaker conducts current through an arm made of two types of metal fastened together (bimetal arm). If the arm starts to carry too much current, it heats up. As one metal expands faster than the other the arm bends, opening the contacts. Current flow is broken. In the cycling type, the arm cools and straightens out. This closes the circuit again. This cycle repeats as long as the overcurrent exists, with power applied.

In the non-cycling type, there is also a coil wrapped around the bimetal arm. When an overcurrent exists and the contacts open, a small current passes through the coil. This current through the coil is not large enough to operate a load, but it does heat up both the coil and bimetal arm. This keeps the arm in the open position until power is removed.

FUSE LINKS



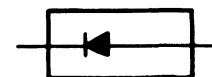
The fuse link is a short length of wire smaller in gauge than the wire in the protected circuit. The wire is covered with a thick non-flammable insulation. An overload causes the link to heat and the insulation to blister. If the overload remains, the link will melt, causing an open circuit. The links are color coded for wire size as follows:

COLOR CODE

BLUE	20 GA
BROWN	18 GA
BLACK	16 GA
GREEN	14 GA

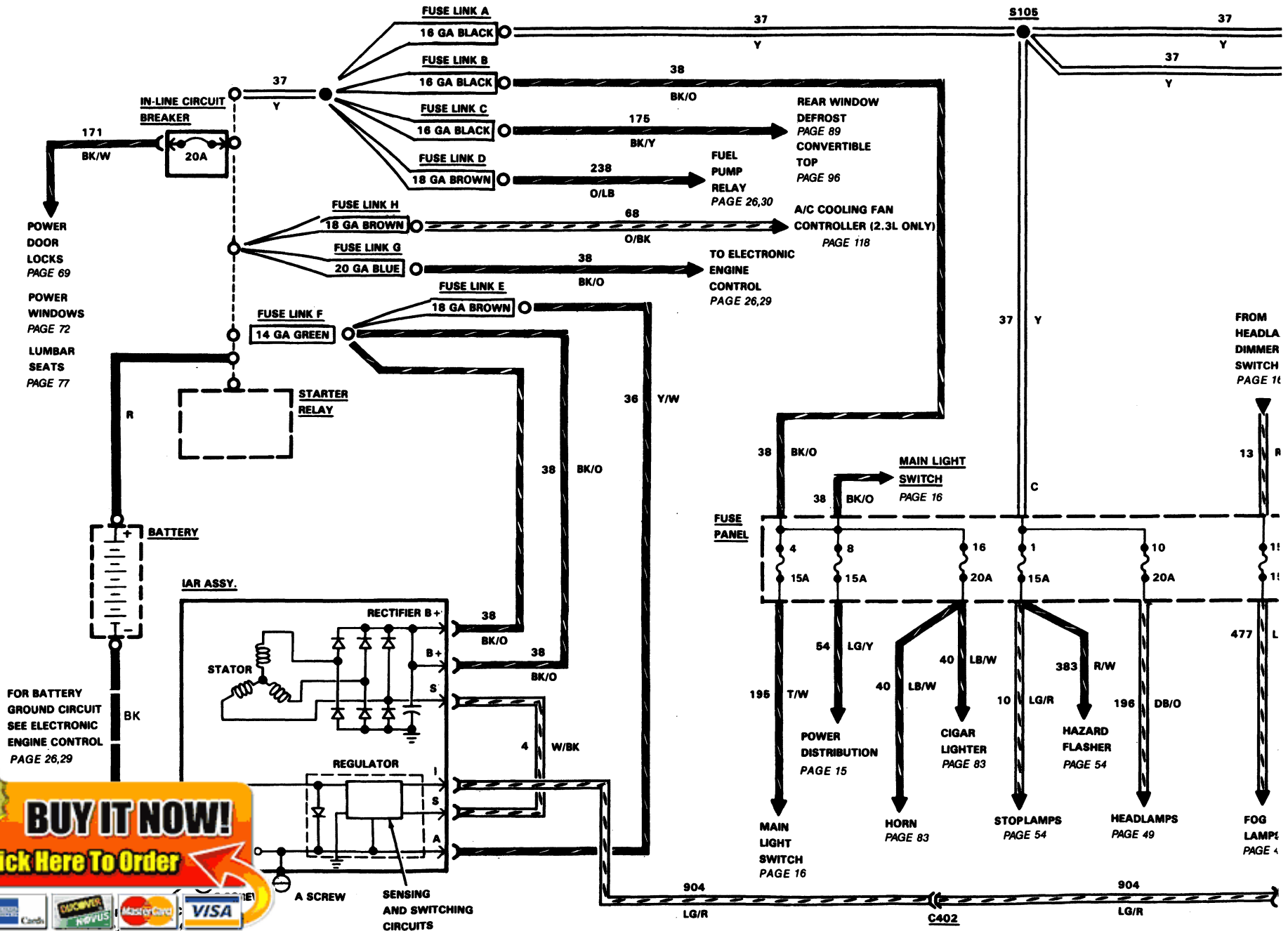
When replacing, make tight crimp joints or hot solder joints for good connections.

DIODES



Diodes are electrical devices that permit current to flow in one direction only. The current flows in the direction indicated by the arrow.

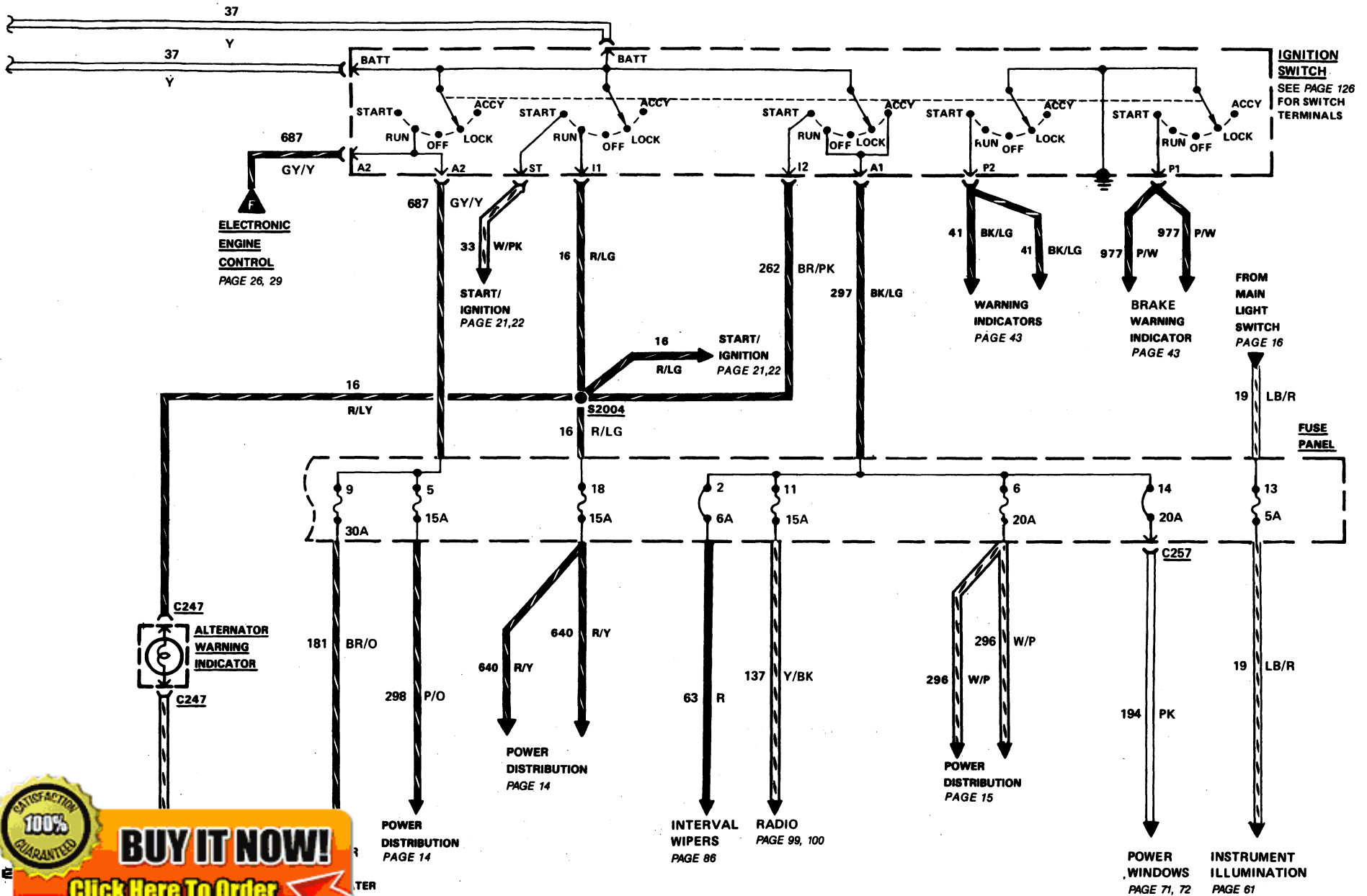
12 CHARGE/POWER DISTRIBUTION



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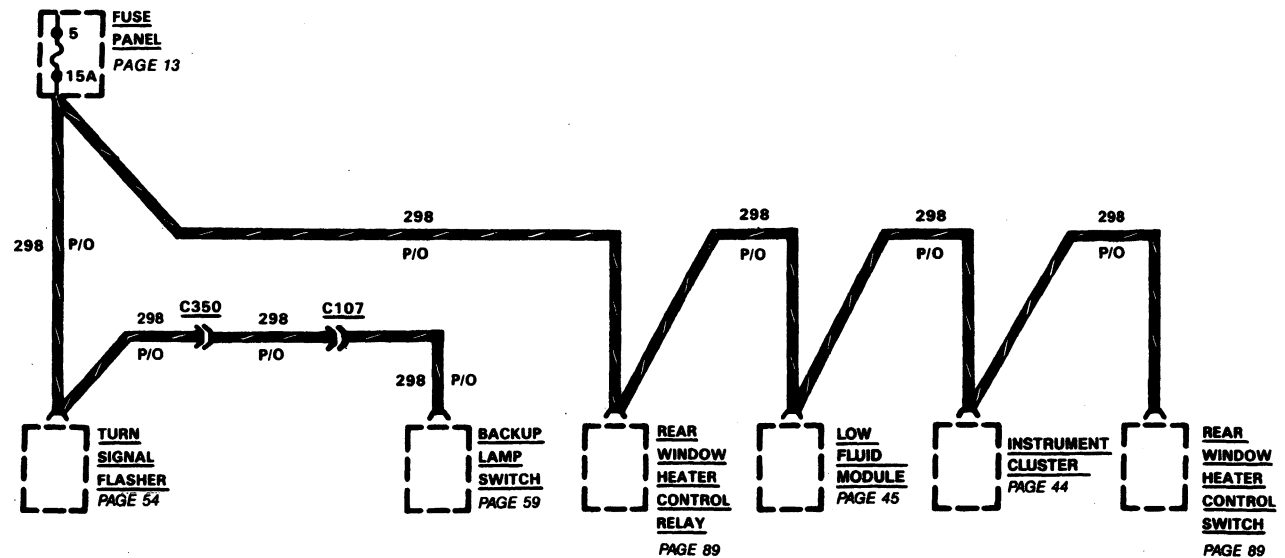
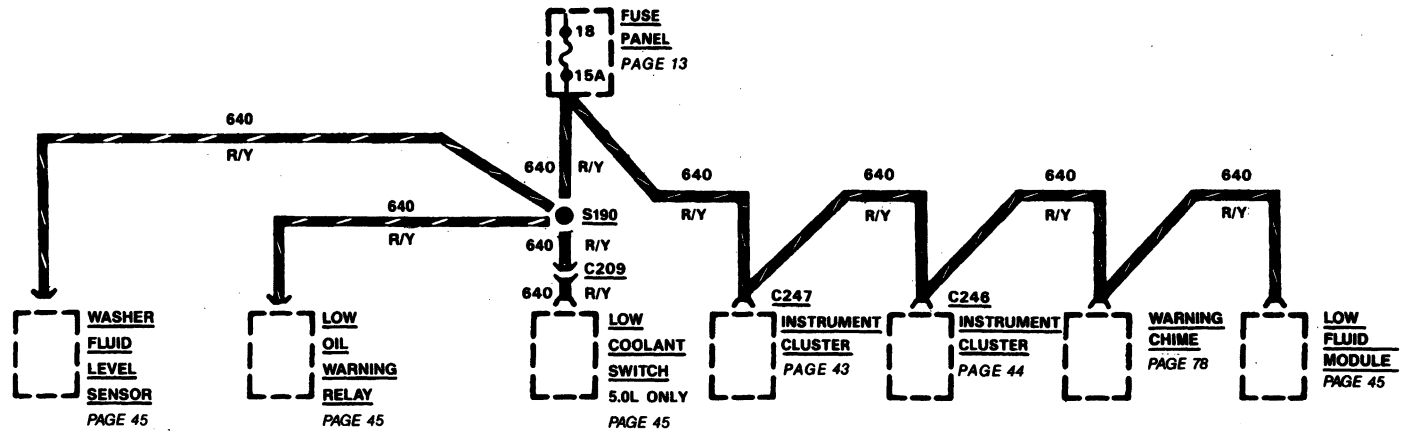


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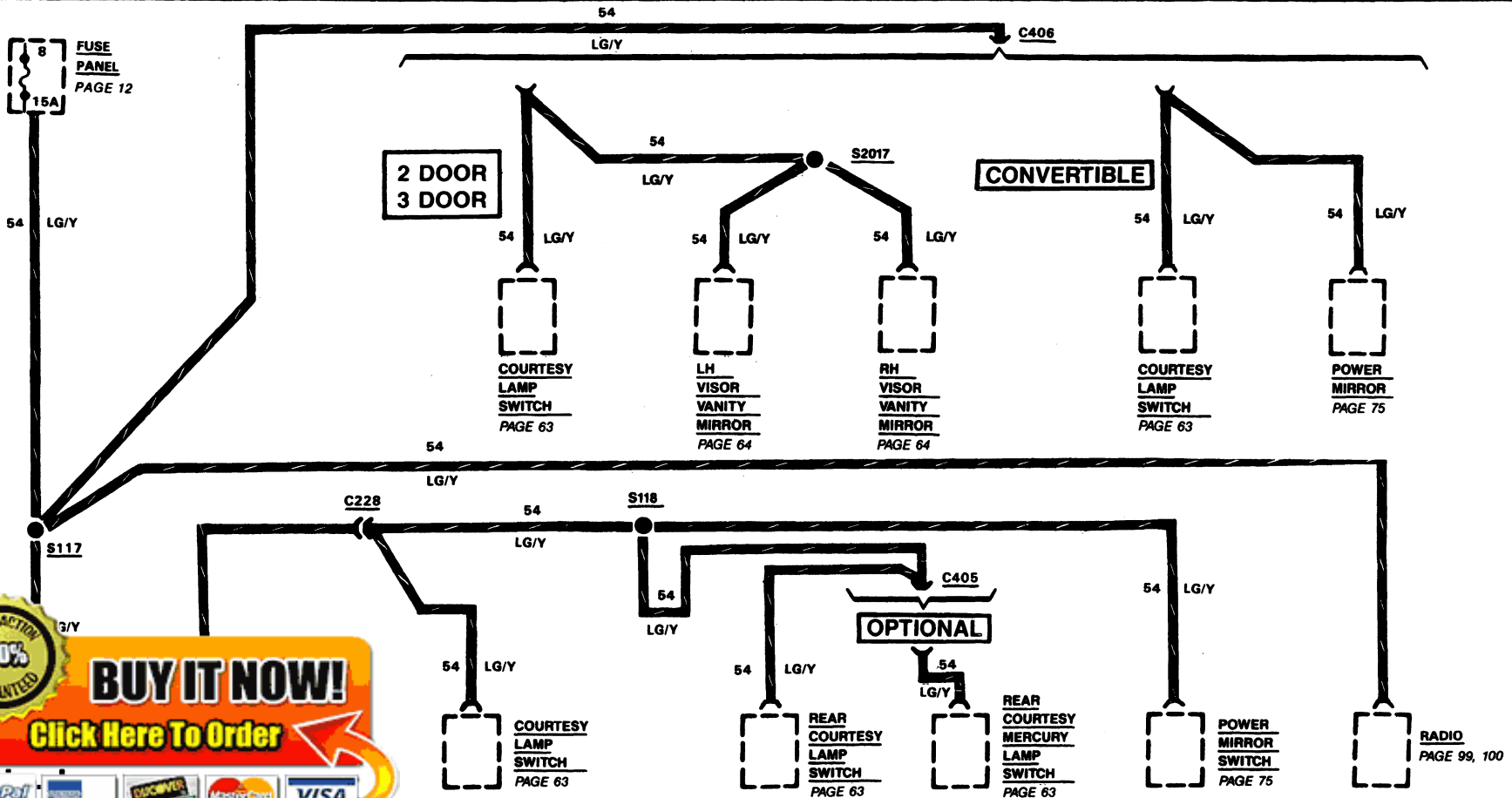
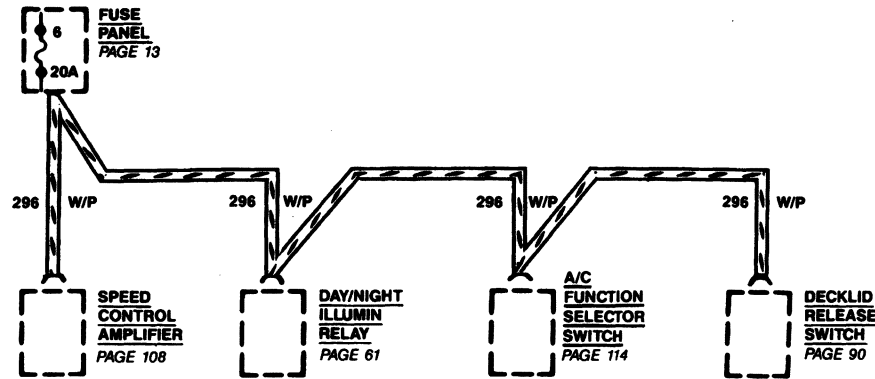
14 CHARGE/POWER DISTRIBUTION (FUSE 18, FUSE 5)



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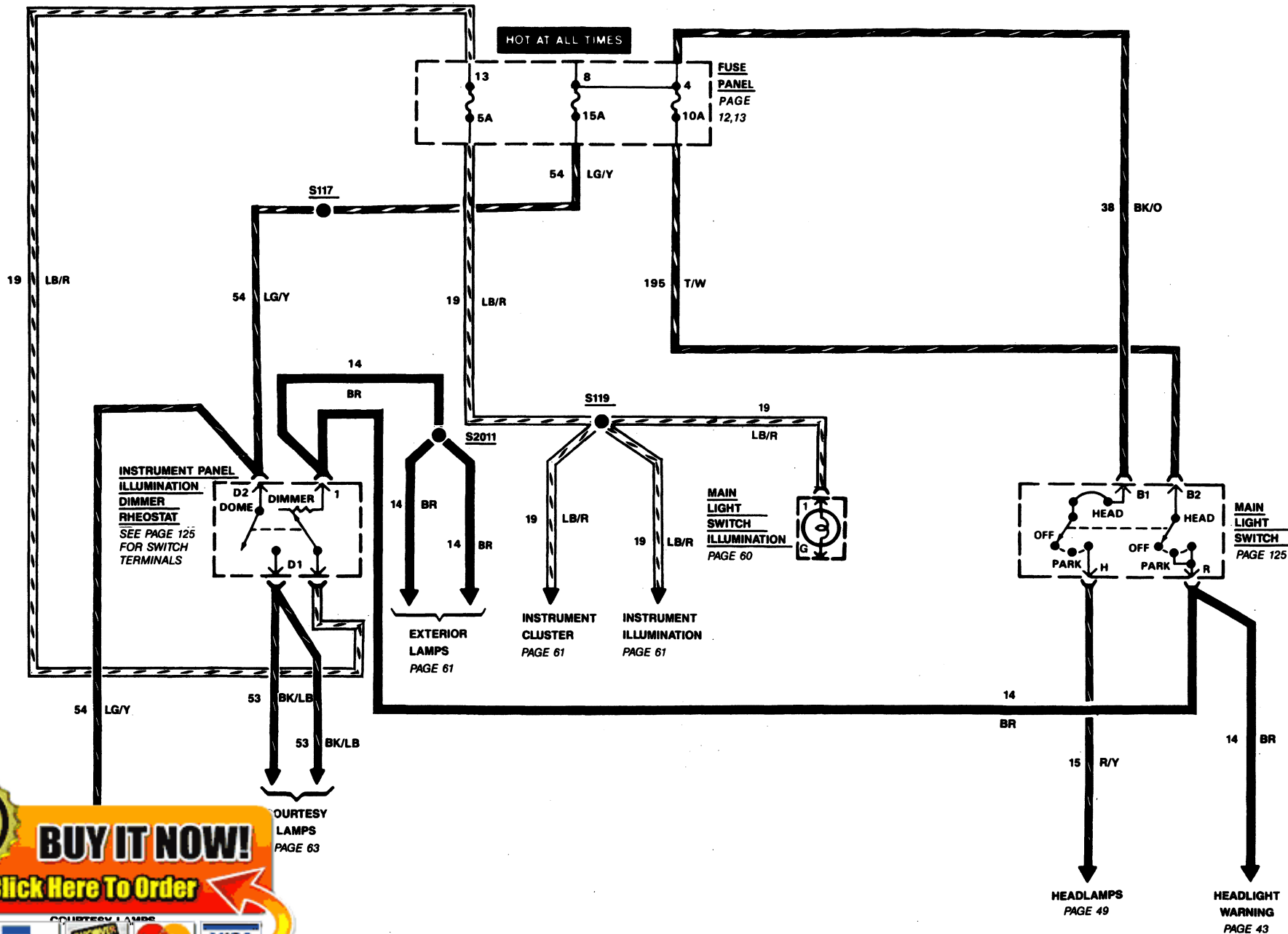


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16 CHARGE/POWER DISTRIBUTION (MAIN LIGHT SWITCH)



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COURTESY LAMPS

HOW THE CIRCUIT WORKS

The **Battery, Alternator and Voltage Regulator** make up the **Charging System**.

With Alternator Warning Indicator

With the **Ignition Switch** in **RUN**, **Battery** current flows into the **Voltage Regulator** at terminal **I** and to ground through the solid-state regulator circuits. If the electronic control measures a low voltage at regulator terminal **A** it closes the field switch. This applies **Battery** voltage to the field.

With current in the field and the rotor turning, the **Alternator** stator produces an **AC** voltage. This is converted to **DC** by the rectifier assembly and is fed to terminal **B** (to **Battery**) and terminal **S** (stator). (Voltage at **S** is one-half voltage at **B**).

A pre-set voltage at terminal **S** operates the electronic control to open the indicator switch which removes ground from the **Alternator Warning Indicator** (through the heated wind-shield control modules, on models so equipped).

The **Alternator** output is controlled by the current in the field. The average voltage on the field depends on the percentage of time the field

COMPONENT LOCATION

Page-
Figure

Fuse Link A	At starter relay	18-1,19-2
Fuse Link B	At starter relay	18-1,19-2
Fuse Link C	At starter relay	18-1,19-2
Fuse Link D	At starter relay	18-1,19-2
Fuse Link E	At starter relay	18-1,19-2
Fuse Link F	At starter relay	18-1,19-2
Fuse Link G	At starter relay	18-1
Fuse Link H	At starter relay	18-1

Refer to the **Location Index** in the back of the manual for connector, ground, diode and splice descriptions and locations.

switch is closed. The electronic control closes the field switch when the voltage at **A** is low, and opens the switch when the voltage at **A** is high.

The **Voltage Regulator** holds the system voltage at about 14 volts. The average **Alternator** output is then any required value between zero

and full current depending on conditions sensed by the **Voltage Regulator**.

Refer to section 31-01 of the shop manual.

TROUBLESHOOTING HINTS

CONDITION	POSSIBLE CAUSE	ACTION
<ul style="list-style-type: none"> Improper Charging 	<ul style="list-style-type: none"> Loose/worn alternator belt Defective/worn battery Fuse Link G open at starter relay Poor connection between battery terminals and cable clamps/damaged cables 	<ul style="list-style-type: none"> Tighten/replace belt Replace battery Visually check for open in link, replace Clean, tighten and/or replace
<ul style="list-style-type: none"> Alternator Warning Indicator 	<ul style="list-style-type: none"> Poor connection on Alternator Regulator, Starter Relay, and/or Alternator Output Control Relay 	<ul style="list-style-type: none"> Make sure connections are tight and free of debris.

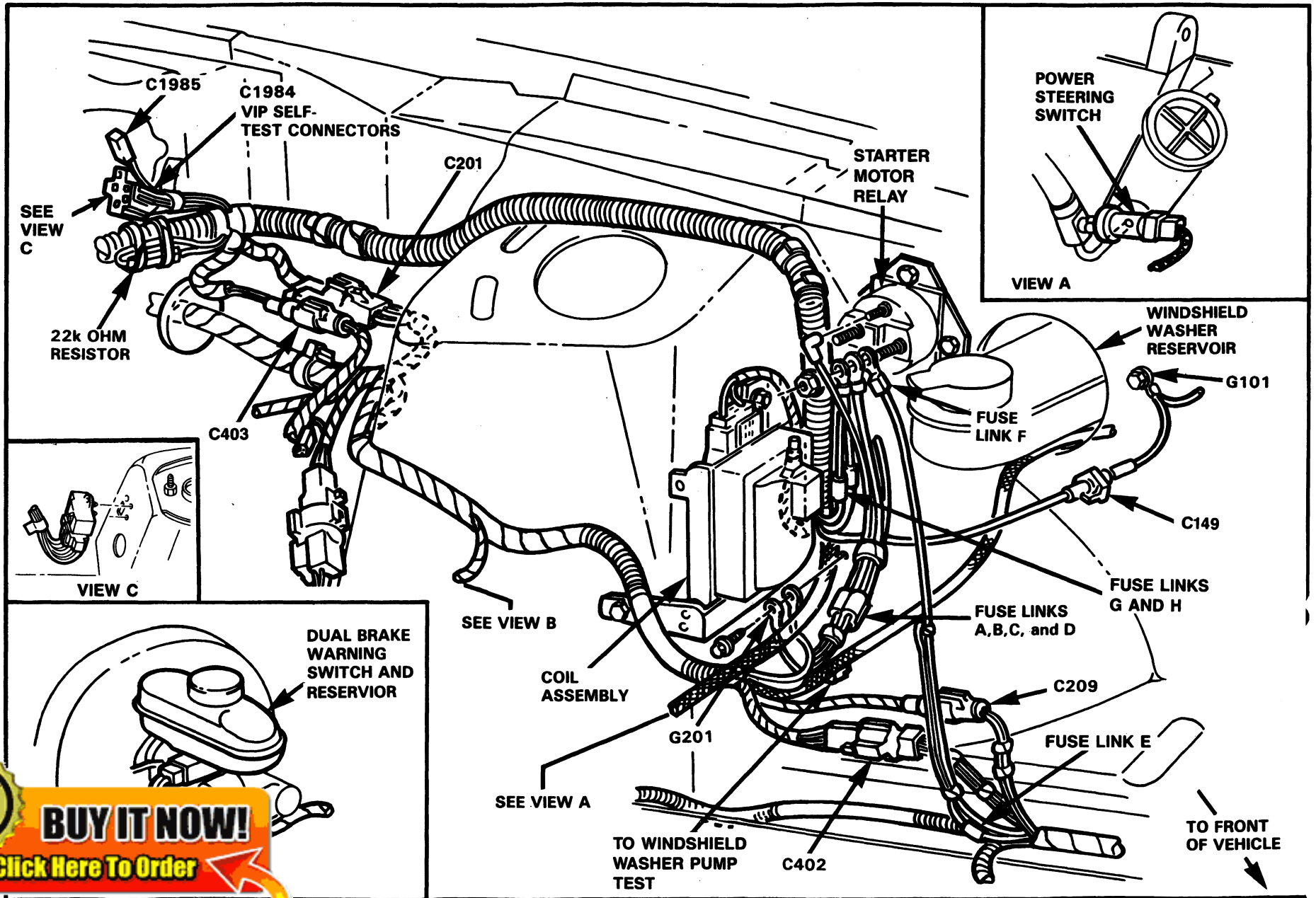


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18 CHARGE/POWER DISTRIBUTION



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Figure 1- LH Fender Apron (2.3L)

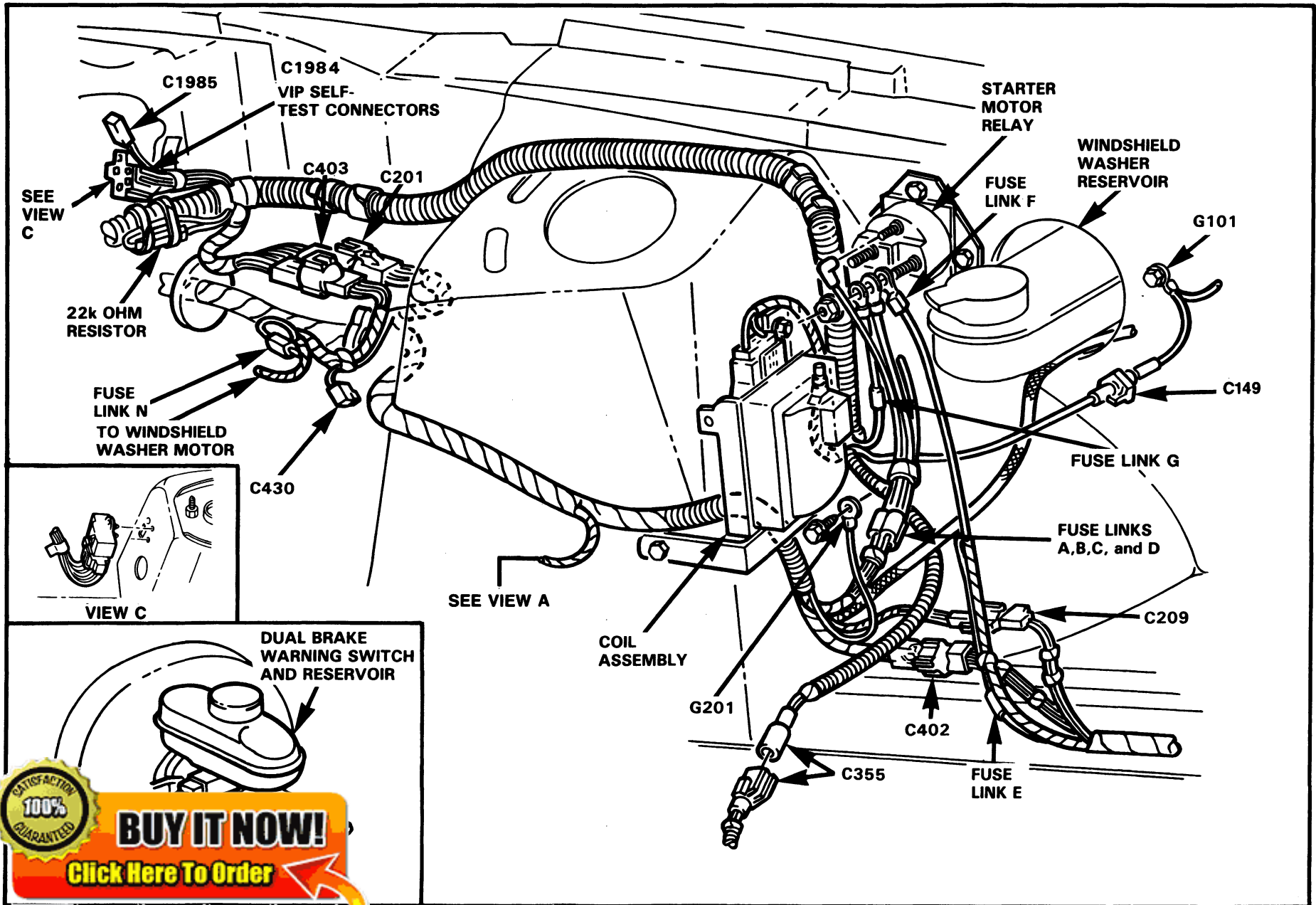


Figure 2- LH Fender Apron (5.0L)

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20 CHARGE/POWER DISTRIBUTION

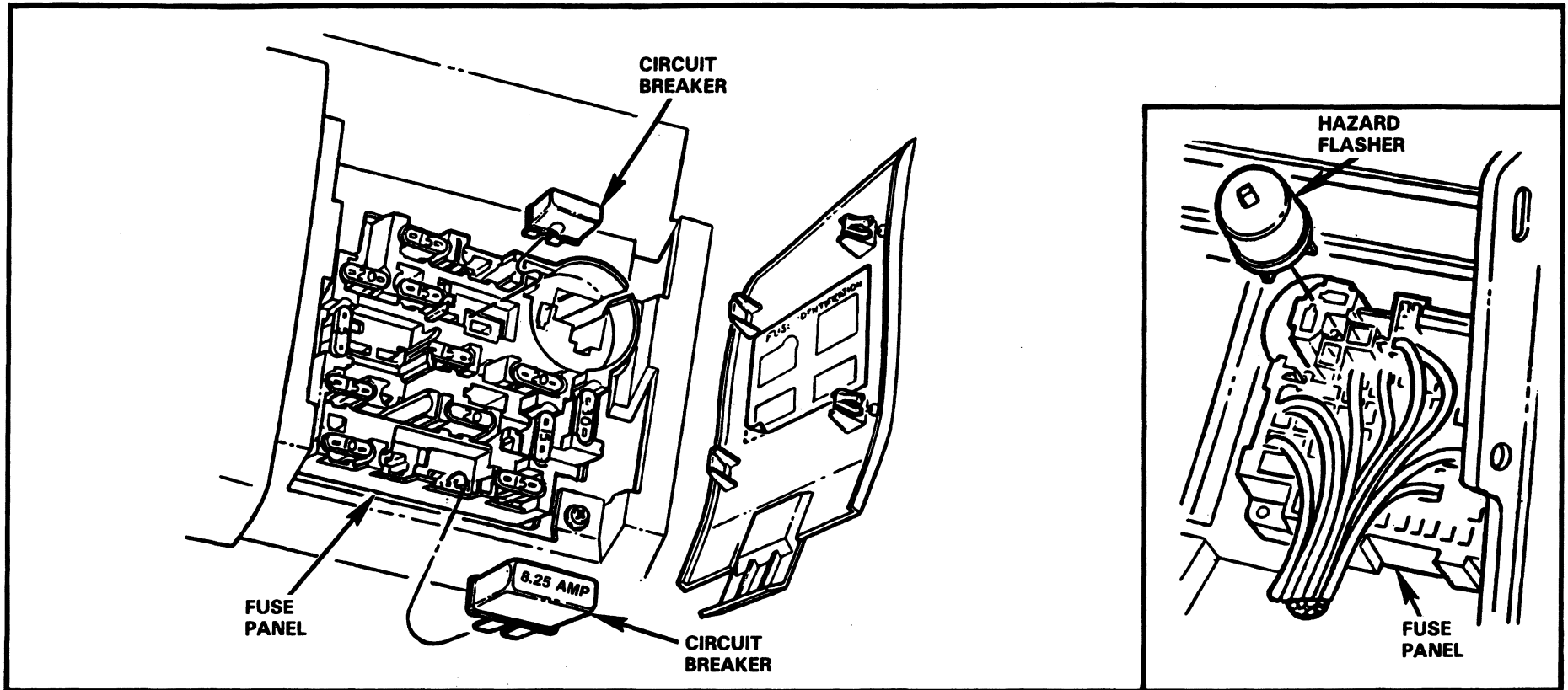


Figure 3 - Circuit Breaker and Hazard Warning Flasher

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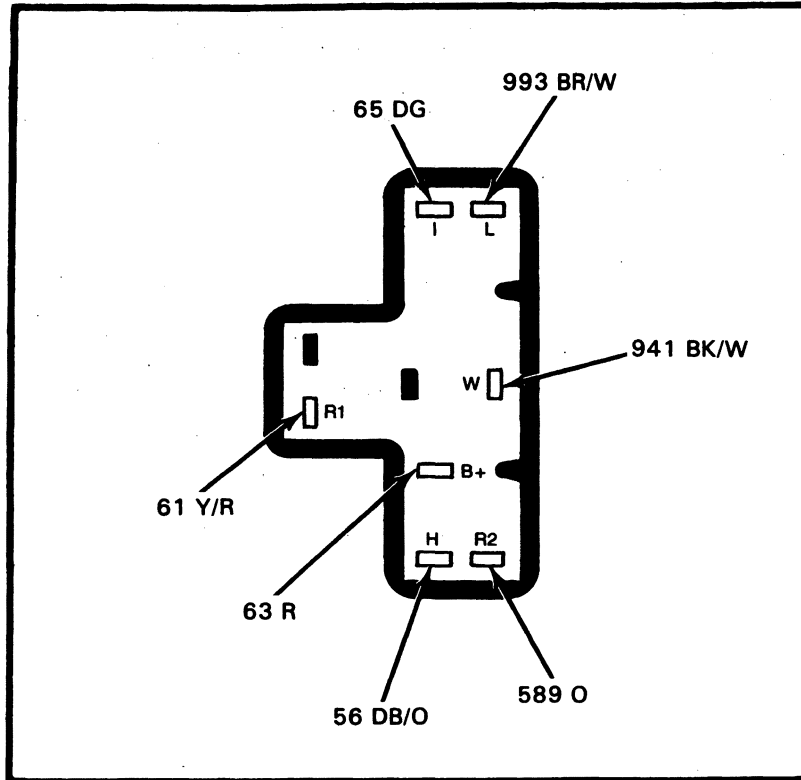
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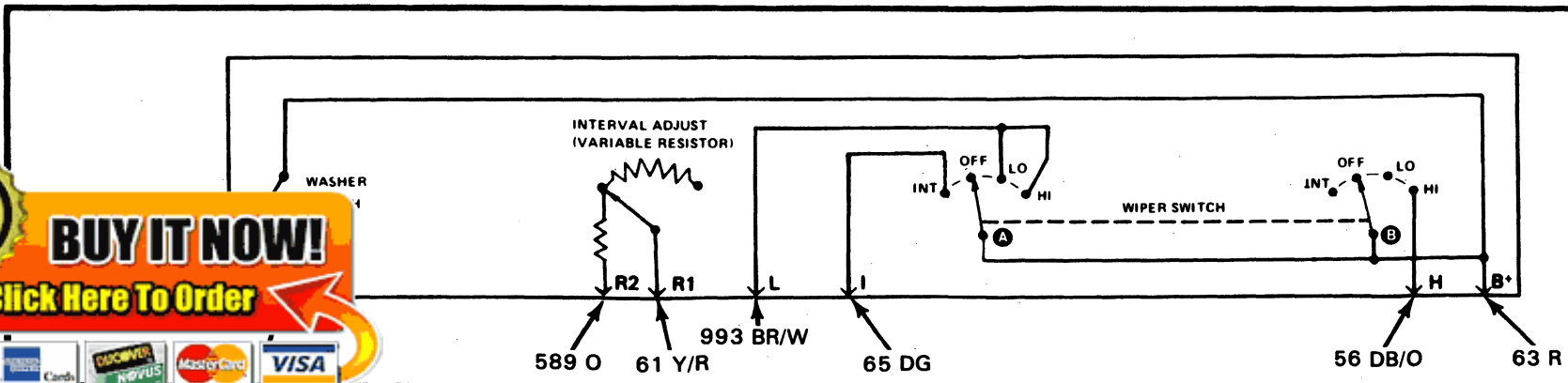
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128 COMPONENT TESTING: MULTI-FUNCTION SWITCH

TERMINAL LOCATIONS



SCHEMATIC



INTERVAL WIPER/WASHER SWITCH COMPONENT TESTING PROCEDURE

TO TEST	Connect Self Powered Test Lamp or Ohmmeter to Terminals	Move Switch to These Positions	A Good Switch Will Indicate
Washer Switch Circuit	941 BK/W (W) and 63 R (B+)	Pull Washer Knob	Closed Circuit
		Release Washer Lever	Open Circuit
Wiper Switch Circuit	63 R (B+) and 65 DG (I)	Wiper Switch to INT position ..	Closed Circuit
		All other positions	Open Circuit
		63 R (B+) and 993 BR/W (L)	Wiper Switch to Lo position ..
Wiper Switch to Hi position ..	Closed Circuit		
Interval Adjust	63 R (B+) and 56 DB/O (H)	All other positions	Open Circuit
		61 Y/R (R1) and 589 O (R2)	Rotate Control Clockwise

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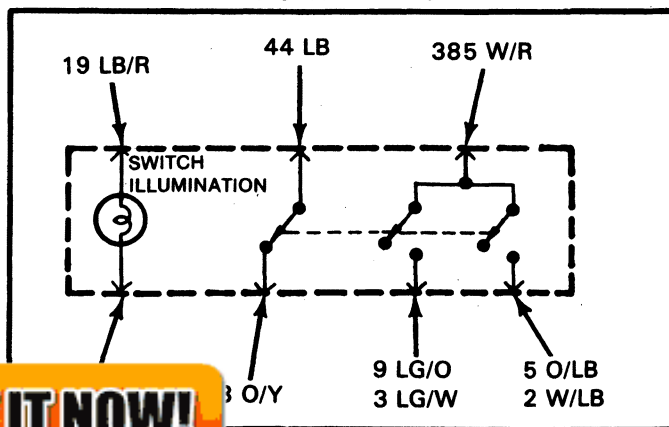
COMPONENT TESTING PROCEDURE

TO TEST	Connect Self Powered Test Lamp or Ohmmeter to Terminals	Move Control to These Positions	A Good Switch Will Indicate
Turn Switch Circuit	8 O/Y and 9 LG/O	Turn Switch to Turn Left	Closed Circuit
	8 O/Y and 3 LG/W	Turn Switch to Turn Left	Closed Circuit
	8 O/Y and 5 O/LB	Turn Switch to Turn Right	Closed Circuit
	8 O/Y and 2 W/LB	Turn Switch to Turn Right	Closed Circuit

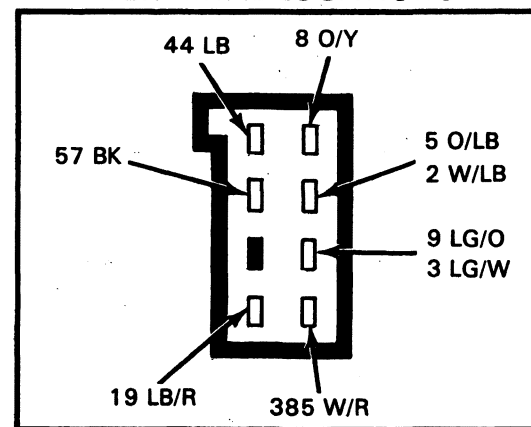
COMPONENT TESTING PROCEDURE

TO TEST	Connect Self Powered Test Lamp or Ohmmeter to Terminals	Move Control to These Positions	A Good Switch Will Indicate
Hazard Switch Circuit	44 LB and 8 O/Y	OFF	Closed Circuit
		Hazard	Open Circuit
	385 W/R, 5 O/LB and 2 W/LB	Hazard	Closed Circuit
		Hazard	Closed Circuit
19 LB/R and 57 BK	OFF or Hazard	Closed Circuit	

SCHEMATIC



TERMINAL LOCATIONS



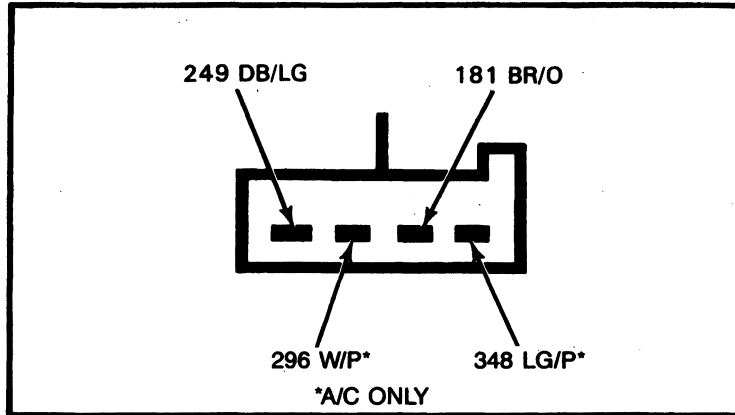
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130 COMPONENT TESTING: A/C HEATER FUNCTION CONTROL

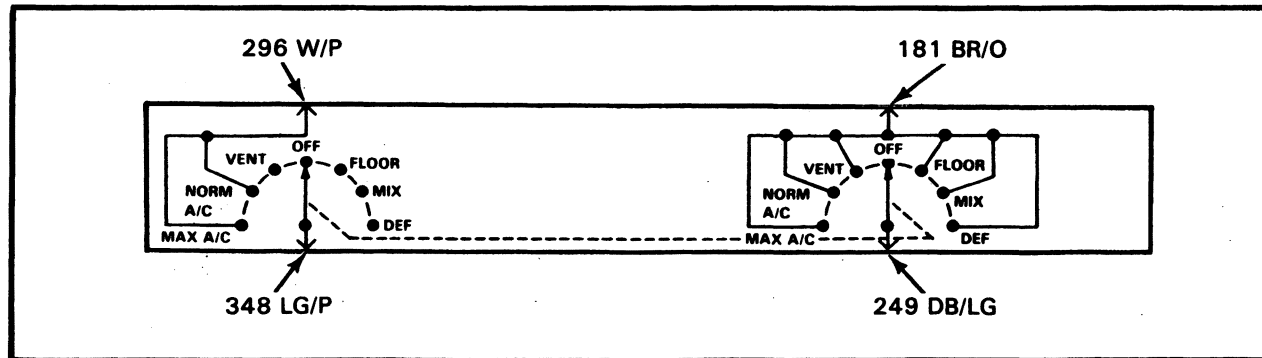
TERMINAL LOCATIONS



COMPONENT TESTING PROCEDURE

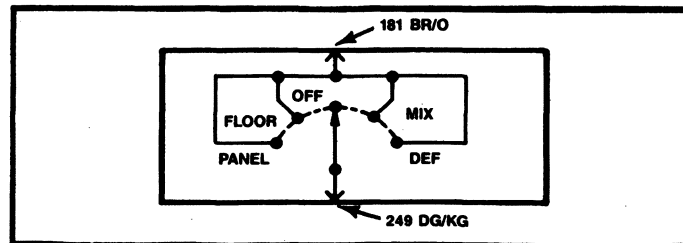
TO TEST	Connect Self Powered Test Lamp or Ohmmeter to Terminals	Move Switch to These Positions	A Good Switch Will Indicate
A/C Clutch Switch Circuit	296 W/P and 348 LG/P	OFF..... A/C Max..... A/C Normal..... Vent..... Hi/Lo..... Heat..... Defrost.....	Open Circuit Closed Circuit Closed Circuit Open Circuit Open Circuit Open Circuit Open Circuit
Blower Motor Control Switch Circuit	181 BR/O and 249 DB/LG	OFF..... All other positions.....	Open Circuit Closed Circuit

SCHEMATIC A/C HEATER



NOTE: HEATER ONLY SYSTEM WILL EMPLOY ONLY BLOWER MOTOR CONTROL SWITCH CIRCUIT

SCHEMATIC HEATER ONLY

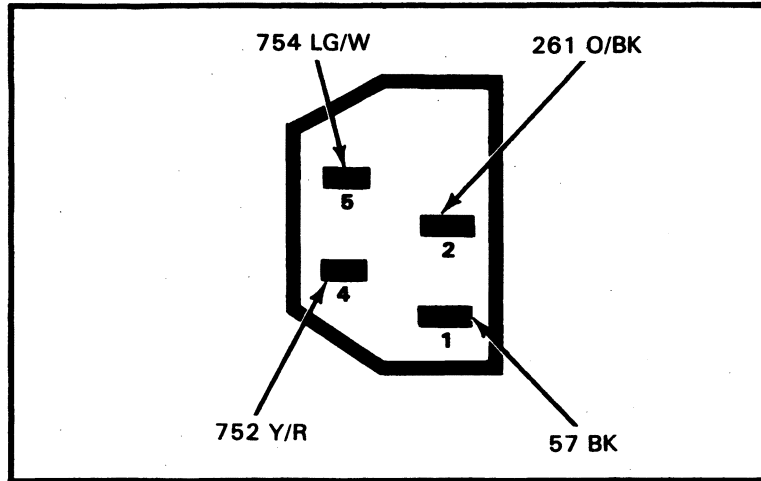


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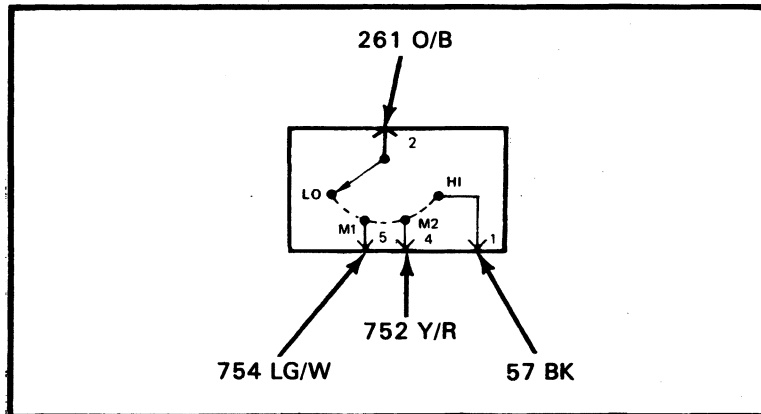
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TERMINAL LOCATIONS



SCHEMATIC



COMPONENT TESTING PROCEDURE

TO TEST	Connect Self Powered Test Lamp or Ohmmeter to Terminals	Move Control to These Positions	A Good Switch Will Indicate
Medium-Low Speed	261 O/BK (2) <i>and</i> 754 LG/W (5)	Lo Medium-1 Medium-2 Hi	Open Circuit Closed Circuit Open Circuit Open Circuit
Medium-High Speed	261 O/BK (2) <i>and</i> 752 Y/R (4)	Lo Medium-1 Medium-2 Hi	Open Circuit Open Circuit Closed Circuit Open Circuit
High Speed	261 O/BK (2) <i>and</i> 57 BK (1)	Lo Medium-1 Medium-2 Hi	Open Circuit Open Circuit Open Circuit Closed Circuit

NOTE

Blower Switch is designed to make contacts with two terminals at one time, except when in LO.

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132 LOCATION INDEX

CONNECTOR LOCATION

		Page- Figure	Color	Terminals
C106	Near LH headlamp	—	BK	2
C107	LH side of transmission	25-1,2	GY	4
C117	Behind RH side of I/P	123-1	BK	2
C135	RH cowl panel	42-8	BK	8
C149	Near battery	24-1	BK	1
C150	Rear of engine	—	BR	4
C166	Rear side of RH valve cover	—	BK	4
C190	At rear of engine	38-3	BK	10
C191	Rear of engine	38-3	GY	10
C197	At rear of engine	39-4	GY	8
C201	LH fender apron	18-1,19-2	GY	8
C205	At back of radio	123-1	BK	8
C205A	At back of radio	—	GY	8
C209	LH fender apron	18-1,19-2	BK	8
C211	Attached to hazard switch	—	GY	6
C212	Attached to multi-function switch	123-1	GY	4
C216	LH cowl panel	40-5	GY	8
C218	At stoplamp switch	123-1	BK	2
C219	Near T/O to G100	123-1	GY	2
C220	At speed control amplifier	110-1	GY	6
C221	Attached to speed control amplifier	—	GY	6
C228	Lower LH cowl panel	40-5	BK	12
C239	At RH front I/P speaker	104-3	GY	2
C240	At LH front I/P speaker	104-3	GY	2
C243	Behind I/P above LH side of glove box	123-1	BK	8
C246	RH rear of instrument panel	123-1	GY	14
C247	LH rear of instrument cluster	123-1	GY	14
C248	At wiper motor and switch	—	GY	3
C249	At wiper motor and switch	—	GY	3
C250	At premium sound amplifier	103-2	GY	8
C257	Connected to fuse panel	—	NAT	1
C258	Behind LH side of I/P attached to light switch	51-2	GY	6
C259	LH cowl panel	40-5	GY	3
C261	At premium sound amplifier	103-2	BK	8
C262	Attached to dimmer rheostat	123-1	BK	4
C265	At back of radio	103-2	BK	8
C265A	At amplifier	—	GY	8
C275	LH side of engine	38-3	BK	2
C276	On steering column near ignition	123-1	GY	4
C277	At top motor	98-1	BK	2
C278	At fuel pump and sender	—	GY	3
C279	At fuel pump and sender	—	GY	3
C280	At fuel pump and sender	—	GY	3
C281	At fuel pump and sender	—	GY	3
C282	At fuel pump and sender	—	GY	3
C283	At fuel pump and sender	—	GY	3
C284	At fuel pump and sender	—	GY	3
C285	At fuel pump and sender	—	GY	3
C286	At fuel pump and sender	—	GY	3
C287	At fuel pump and sender	—	GY	3
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C411	At fuel pump and sender	—	GY	3
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C416	At fuel pump and sender	—	GY	3
C417	At fuel pump and sender	—	GY	3
C418	At fuel pump and sender	—	GY	3
C419	At fuel pump and sender	—	GY	3
C420	At fuel pump and sender	—	GY	3
C421	At fuel pump and sender	—	GY	3
C422	At fuel pump and sender	—	GY	3
C423	At fuel pump and sender	—	GY	3
C424	At fuel pump and sender	—	GY	3
C425	At fuel pump and sender	—	GY	3
C426	At fuel pump and sender	—	GY	3
C427	At fuel pump and sender	—	GY	3
C428	At fuel pump and sender	—	GY	3
C429	At fuel pump and sender	—	GY	3
C430	At fuel pump and sender	—	GY	3
C431	At fuel pump and sender	—	GY	3
C432	At fuel pump and sender	—	GY	3
C433	At fuel pump and sender	—	GY	3
C434	At fuel pump and sender	—	GY	3
C435	At fuel pump and sender	—	GY	3
C436	At fuel pump and sender	—	GY	3
C437	At fuel pump and sender	—	GY	3
C438	At fuel pump and sender	—	GY	3
C439	At fuel pump and sender	—	GY	3
C440	At fuel pump and sender	—	GY	3
C441	At fuel pump and sender	—	GY	3
C442	At fuel pump and sender	—	GY	3
C443	At fuel pump and sender	—	GY	3
C444	At fuel pump and sender	—	GY	3

CONNECTOR LOCATION

		Page- Figure	Color	Terminals
C304	LH front corner of luggage compartment	68-7	GY	3
C308	Attached to RH rear speaker	104-4	R	2
C309	Attached to LH rear speaker	104-4	R	2
C314	RH cowl panel	42-8	BK	8
C315	LH cowl panel	40-5	BK	8
C350	LH cowl panel	40-5	BK	8
C355	LH fender apron	18-1,19-2	BK	2
C400	Near RH headlamp	—	GY	2
C401	Near fuel pump and sender	42-7	BK	4
C402	Near starter motor relay	18-1,19-2	BK	4
C403	LH fender apron	18-1,19-2	GY	8
C404	Rear of engine	39-4	BK	8
C405	Above LH rear wheel well	—	BK	8
C406	RH cowl side	42-8	BK	2
C407	In RH door	—	BR	6
C408	In RH door	104-5	GY	2
C409	In LH door	104-5	BR	2
C411	At liftgate release solenoid	—	NAT	2
C412	At decklid release solenoid	—	GY	1
C413	Near RH headlamp	—	GY	3
C415	LH door	—	GY	8
C416	RH door	—	BR	6
C417	LH cowl panel	40-5	BK	6
C418	LH cowl panel	40-5	BK	4
C419	LH door	—	GY	8
C420	LH door	—	GY	8
C422	LH door	—	GR	2
C423	RH door, at window motor	—	GR	2
C424	LH cowl panel, at window motor	—	GY	8
C425	LH rear quarter panel, at window motor	—	GR	2
C426	RH rear quarter panel, at window motor	—	GR	2
C427	In LH door	—	GY	4
C431	At RH power mirror	—	GY	3
C432	At LH power mirror	—	GY	3
C433	At fuel pump and sender	—	GY	4
C434	At fuel pump and sender	—	GY	4
C436	Under RH side of I/P	91-2	BR	1
C437	LH cowl at lower access hole	—	BR	1
C439	LH cowl panel	40-5	GY	1
C441	At graphic equalizer	—	GY	12
C442	Under right front seat	—	—	2
C443	Under front seat	—	BR	2
C444	Under front seat	—	GY	2

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CONNECTOR LOCATION

		Page- Figure	Color	Terminals
C445	Under front seat	—	GY	2
C446	Under front seat	—	BK	2
C447	Under front seat	—	BK	2
C448	Under front seat	—	BR	2
C450	RH rear of engine (2.3L)	39-4	BK	4
C451	LH rear of engine (5.0L)	41-6	BK	4
C452	RH rear of engine (5.0L)	41-6	BK	4
C453	LH quarter panel	92-3	BK	2
C1984	LH fender apron	—	GY	6
C1985	LH fender apron	—	GY	1

SPLICE LOCATION

S306	Near T/O to G313	—
S335	Near IAR assembly	—
S401	Near T/O to G103	—
S404	Near T/O to LH headlamp	—
S408	Near T/O to RH headlamp	—
S505	Near T/O to G301	—
S506	LH corner of liftgate near LH park and stop lamp	—
S511	Near T/O to G303	—
S512	Near T/O to A/C heater blower switch	—
S550	Near LH front window control switch T/O	—
S600	Near T/O to C259	—
S601	Near T/O to G313	—
S602	In LH door near grommet	—
S603	Near T/O to RH rear power window switch	—
S605	Near T/O to rear window defrost relay	—
S802	Near T/O to G103	—
S806	Near T/O to G103	—
S1004	Near T/O to G303	—
S2000	Near A/C clutch field coil	—
S2002	Near idle speed actuator	—
S2003	Near pin 21 — ECA	—
S2004	Near to T/O to connector C247	—
S2205	Near ignition switch	—
S2007	Near 22K resistor, off EEC module	—
S2008	Near T/O to steering column	—
S2009	Near T/O to wiper motor	—
S2010	Near T/O to convertible top relays	—
S2011	Near T/O to interval wiper governor	—
S2013	Near T/O to LH license lamp	—
S2014	Near fuse panel	—
S2015	Near rear of radio	—
S2017	Near visor vanity mirrors	—
S2050	Near T/O to RH headlamp	—

SPLICE LOCATION

S100	Near T/O to speed control amplifier	—
S105	Near T/O to headlamp switch	—
S117	Near to rear window defrost relay	—
S118	Near LH cowl side	—
S119	Near T/O to instrument cluster	—
S127	On lower RH cowl	—
S130	Near T/O to EGR solenoid	—
S131	Near connector to battery ground terminal	—
S132	Near T/O to EEC power relay	—
S135	Near T/O to No. 1 and 4 injectors	—
S136	Near T/O to No. 2 and 3 injectors	—
S137	Near injectors (2.3L)	—
S140	Near ECA T/O	—
S141	Near C150 T/O	—
S142	Near C150 T/O	—
S144	Near T/O to TFI module	—
S147	Near connector to battery (2.3L)	—
S148	In engine compartment, near battery	—
S151	Near engine coolant temperature sensor	—
S152	On lower RH cowl	—
S153	Near injectors (5.0L)	—
S160	Rear side of RH valve cover	—
S161	Near T/O to HEGO sensors	—
S190	Near fuse panel T/O	—
S277	Near graphic equalizer T/O	—
S278	Near T/O to C259	—

DIODE LOCATION

		Page- Figure
D100	185 mm from engine coolant temperature sensor	39-4
D101	505 mm from A/C clutch field coil	117-2
D200	620 mm from instrument cluster	123-1
D201	575 mm from instrument cluster	123-1

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GROUND LOCATION

Page-
Figure

G100	A/C ground	—
G101	Engine ground	24-1
G102	Top RH side of radiator support above headlamp	—
G103	Top LH side of radiator support above headlamp	—
G116	Body ground	—
G118	At electronic control assembly	—
G119	Near T/O to RH headlamp	—
G122	Engine ground, RH fender apron, near battery	—
G150	On lower RH cowl	38-3
G201	LH fender apron	—
G202	LH fender apron	—
G301	Near LH backup lamp	67-6
G303	LH corner of liftgate	91-2
G304	LH corner of liftgate	92-3
G305	In console near parking brake lever	—
G307	(2 Dr) attached to RH package tray support	—
G307	(3 Dr) RH side of liftgate below window	91-2
G309	Near T/O to dome lamp	66-4
G313	On LH door	74-1
G315	Near convertible top motor	98-1
G320	On LH I/P shake brace	—
G321	On LH door	74-1
G326	Near T/O to dome lamp	66-5
G330	On instrument panel shake brace	123-1
G331	On instrument panel shake brace	—
G340	Under front seat	—
G500	Near park brake signal lamp switch	—
G601	Right rear of engine	—



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