

1981 MUSTANG / CAPRI

electrical & vacuum trouble- shooting manual

DEMO

This DEMO contains only a few pages of the entire manual/product.

Not all Bookmarks work on the Demo, but they do on the full version.

Features:

- Searchable text
- Printable pages
- Bookmarked for easy navigation
- High Resolution images
- Zoom to see exact details
- Money back Guarantee
- Available on USB and eBook download



BUY IT NOW!

[Click Here To Order](#)



1981 MUSTANG / CAPRI



Copyright © 2023, Forel Publishing Company, LLC, Woodbridge, Virginia

All Rights Reserved. No part of this book may be used or reproduced in any manner whatsoever without written permission of Forel Publishing Company, LLC. For information write to Forel Publishing Company, LLC, Woodbridge, VA 22192

**1981 Mustang / Capri Electrical & Vacuum Trouble-
Shooting Manual (EVTM)
EAN: 978-1-60371-392-4
ISBN: 1-60371-392-1**

Forel Publishing Company, LLC
Woodbridge, VA 22192
Email: sales@ForelPublishing.com
<https://www.ForelPublishing.com>



This publication contains material that is reproduced and distributed under a license from Ford Motor Company. No further reproduction or distribution of the Ford Motor Company material is allowed without the express written permission of Ford Motor Company.

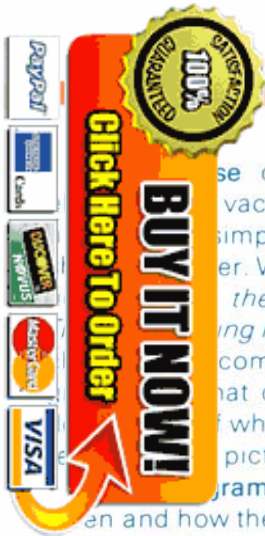
Note from the Publisher

This product was created from the original Ford Motor Company's publication. Every effort has been made to use the original scanned images, however, due to the condition of the material; some pages have been modified to remove imperfections.

Disclaimer

Although every effort was made to ensure the accuracy of this book, no representations or warranties of any kind are made concerning the accuracy, completeness or suitability of the information, either expressed or implied. As a result, the information contained within this book should be used as general information only. The author and Forel Publishing Company, LLC shall have neither liability nor responsibility to any person or entity with respect to any loss or damage caused, or alleged to be caused, directly or indirectly by the information contained in this book. Further, the publisher and author are not engaged in rendering legal or other professional services. If legal, mechanical, electrical, or other expert assistance is required, the professional should be sought.





The purpose of this manual is to show vacuum circuits of this vehicle in simple fashion to make troubleshooting. With each circuit is a description of the *Circuit Works*, and some *Working Hints*. A *Component Location* chart shows components, connectors and their location. The chart includes a diagram where each item is located, and photographs in the manual. *Diagrams* give a schematic picture of a circuit and how the circuit is powered, what the current path is to circuit components, and how the circuit is grounded. Each circuit component is named (underlined titles) and wire colors are listed (standard Ford color abbreviations are used):

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

Where two colors are shown for a wire, the first color is the basic color of the wire. The second color is the dot, hash, or stripe marking. If **D** or **H** is given, the second color is dots or hash marks. If there is no letter after the second color, the wire has a stripe.

For example:

BR/O is a brown wire with an orange stripe.
R/Y D is a red wire with yellow dots.
BK/W H is a black wire with white hash marks.

Connector end views of switches and other components are shown to help with bench testing. The views show the harness wire colors that connect to the mating terminals. Connector colors and locations are shown in the *Component Location* chart. Two-color listings indicate separate colors for each connector half.

Components which work together are shown together. For example, all electrical components used in any circuit are shown on one diagram. The circuit breaker or fuse is shown at the top of the page. All wires, connectors, splices, switches, and motors are shown in the flow of current to ground at the bottom of the page. Notes are included which describe how switches and other components work. If a component is used in several different circuits, it is shown in several places. For example, the **Light Switch** is an electrical part of many circuits, and is repeated on many pages. In some cases, however, a component may seem by its name to belong on a page where it has no electrical connection. For example, **Radio Illumination** is electrically part of **Instrument Illumination**. Since it has no electrical connection at all with the actual **Radio** circuit, it is not shown on the Radio page.

Troubleshooting Hints point the technician in a general direction, but are not intended as a step-by-step procedure. Ignition troubleshooting is an exception to this. It includes a step-by-step procedure of basic quick checks to locate some of the more common **Ignition System** problems. Read the Shop Manual for more detailed repair procedures.

The **Grounds** pages show detailed views of multiple component ground points. This is useful for checking interconnections among the ground circuits of different diagrams.

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.

HOW TO FIND THE ELECTRICAL PROBLEM

100% SATISFACTION GUARANTEED

Click Here To Order

BUY IT NOW!

PayPal
MasterCard
VISA

TROUBLESHOOTING STEPS

These steps present an orderly method of troubleshooting:

Step 1. Verify the problem.

Obtain 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 EVTM, 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 your repair has removed all symptoms, and also has not caused any new symptoms.

Some engine circuits may need special test equipment and special procedures. See the *Shop Manual* and other service books for

details. You will find the circuits in this manual to be helpful with these special tests.

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

WARNING

Never use a jumper wire across high resistance loads (motors, etc.) connected between hot and ground. This direct battery short may cause injury or fire.

VOLTMETER

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

OHMMETER

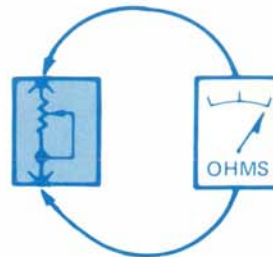


Figure 1 – Resistance Check

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

TEST LIGHT

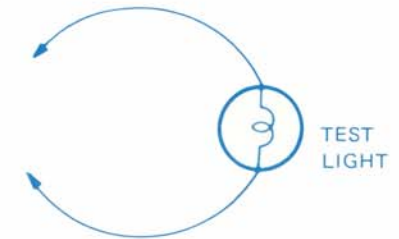


Figure 2 – Test Light

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

Uses: Voltage Check. Short Check

SELF-POWERED TEST LIGHT

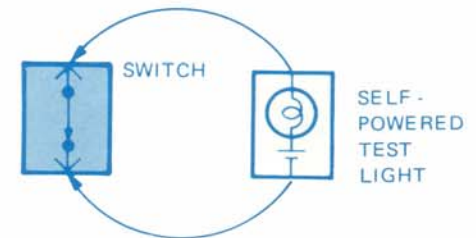


Figure 3 – Continuity Check

The **Self-Powered Test Light** 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

CAUTION

When using a self-powered test light or ohmmeter, be sure power is off in circuit during testing. Hot circuits can cause equipment damage and false readings.

100% GUARANTEED SATISFACTION

Click Here To Order BUY IT NOW!

TRUBLESHOOTING CHECKS

CIRCUIT CHECK

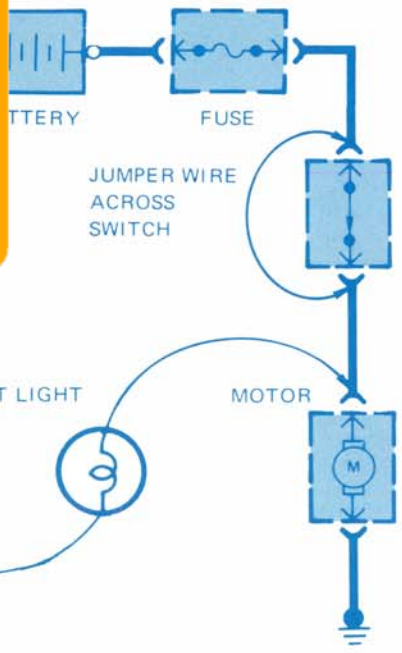


Figure 4—Switch Circuit Check and Voltage Check

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 Light** 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.

VOLTAGE CHECK

Connect one lead of **Test Light** to a known good ground, or the negative (-) battery terminal. Test for voltage by touching the other lead to the test point. Bulb goes on when the test point has voltage (Figure 4).

SHORT CHECK (short to ground)

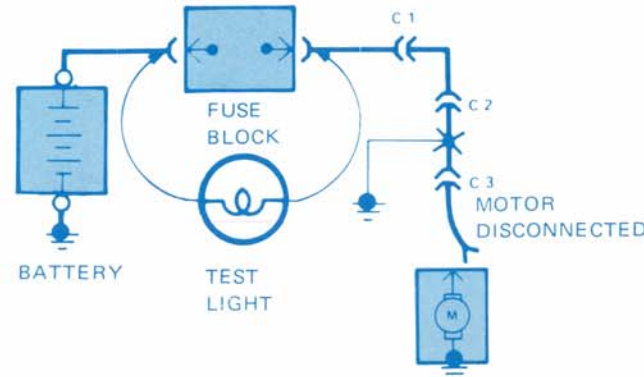


Figure 5— Short Check

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.
 - Lights: remove bulbs.
- 3) Turn **Ignition Switch** to RUN (if necessary) to power fuse.
- 4) Connect one **Test Light** 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 Light** lead from ground and reconnect it to the load side of the fuse.
 - If the **Test Light** is off, the short is in the disconnected equipment.
 - If the **Test Light** 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 Light** 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

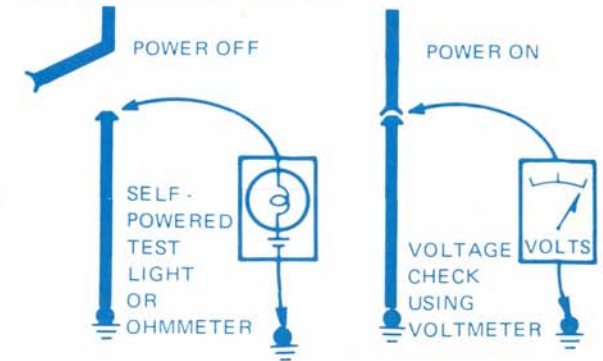


Figure 6 – Grounds Checks

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 Light** or **Ohmmeter** to wire in question, and the other to known ground. If bulb glows, circuit ground is OK (Figure 6).

TRUBLESHOOTING 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 headlights 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 beam lights and indicator, it is most likely the cause of failure.

4 ELECTRICAL SYMBOLS

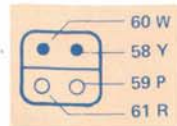
100% SATISFACTION GUARANTEED

BUY IT NOW!

Click Here To Order

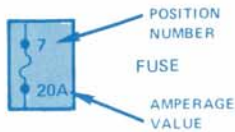
COMPONENT SHOWN IN TWO PLACES OR PART OF A COMPONENT

COMPONENT WITH CONNECTORS

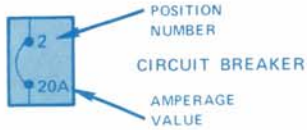


WIRE COLORS ARE LABELED

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



POSITION NUMBER
FUSE
AMPERAGE VALUE



POSITION NUMBER
CIRCUIT BREAKER
AMPERAGE VALUE



SCREW TERMINAL ON COMPONENT

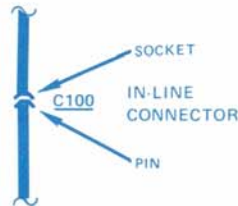


SEALED ELECTRONIC COMPONENT ANY CIRCUITRY SHOWN INSIDE THE BOX IS A FUNCTIONAL EQUIVALENT ONLY, AND IS NOT EXACT.



GAGE

● — PIN TERMINAL TYPES
○ □ SOCKET TYPES



SPLICE OR CRIMP TERMINAL



GROUND CONNECTION



FUSE LINK



SOLID WIRE



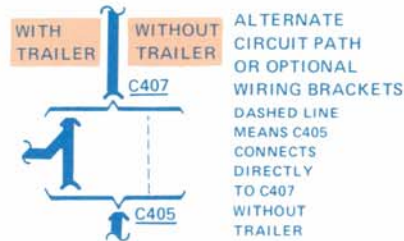
STRIPED WIRE



DOTTED WIRE



HASHED WIRE



ALTERNATE CIRCUIT PATH OR OPTIONAL WIRING BRACKETS DASHED LINE MEANS C405 CONNECTS DIRECTLY TO C407 WITHOUT TRAILER



CANDELABRA CONNECTOR ACCEPTS SINGLE-PIN CONNECTORS



JUNCTION BLOCK



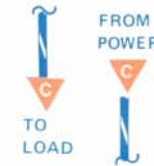
RELAY CONTACTS CLOSE WITH CURRENT THROUGH COIL



DIODES CURRENT FLOWS IN DIRECTION OF ARROW ONLY



OPTIONAL WIRING RUBY BR WIRE IS ON ALL VEHICLES BUT WIRE W IS NOT



"CUT" WIRES REFERENCED BETWEEN PAGES ARROWS SHOW CURRENT FLOW FROM POWER TO GROUND



BACKUP LIGHTS

20

"REFERENCE" WIRES COMPLETE WIRING SHOWN ON ANOTHER PAGE

REFERENCE NUMBER REPEATED AT EACH POINT CIRCUITRY REPEATS OR OVERLAPS

SEE GROUNDS, PAGE 6,7

A DASHED WIRE INDICATES THAT THE CIRCUITRY IS NOT SHOWN IN COMPLETE DETAIL, BUT IS COMPLETE ON ANOTHER PAGE.

100% SATISFACTION GUARANTEED

Click Here To Order

BUY IT NOW!

PayPal
MasterCard
Discover
American Express
VISA

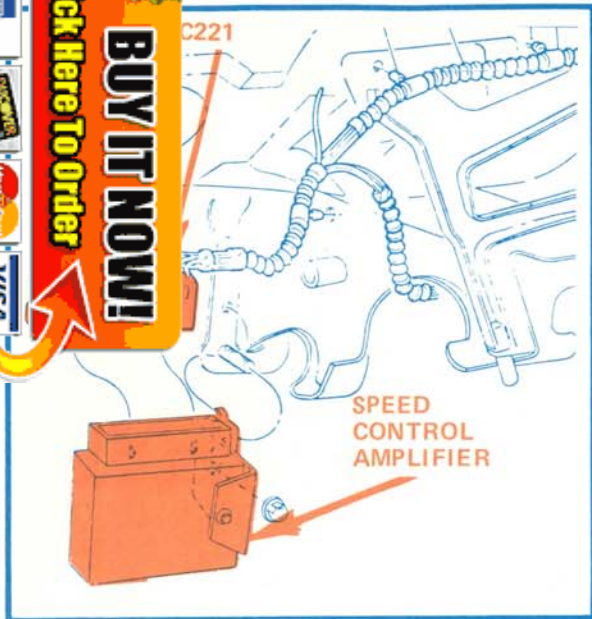


Figure 1 - LH Cowl Area

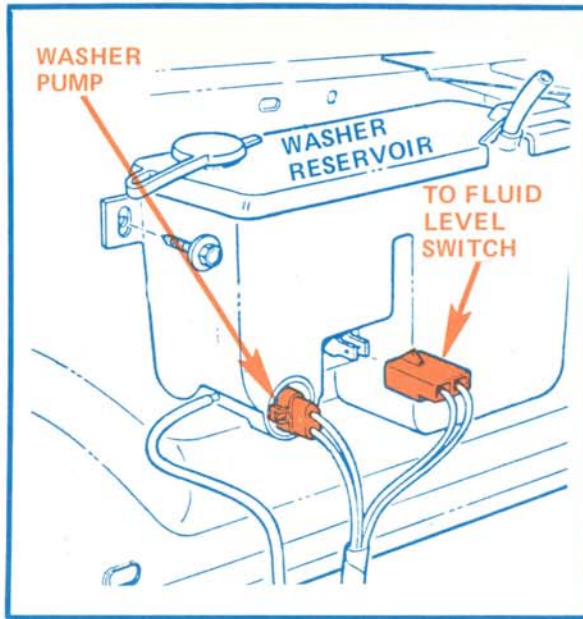


Figure 2 - LH Engine Cowl

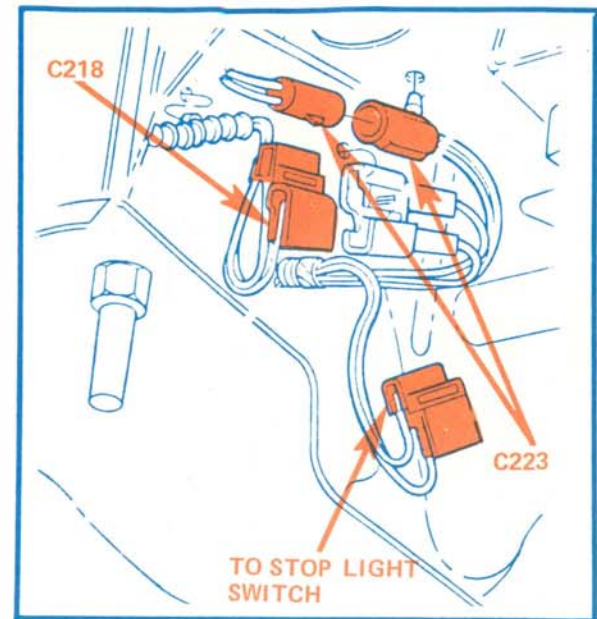


Figure 3 - Brake Pedal Support

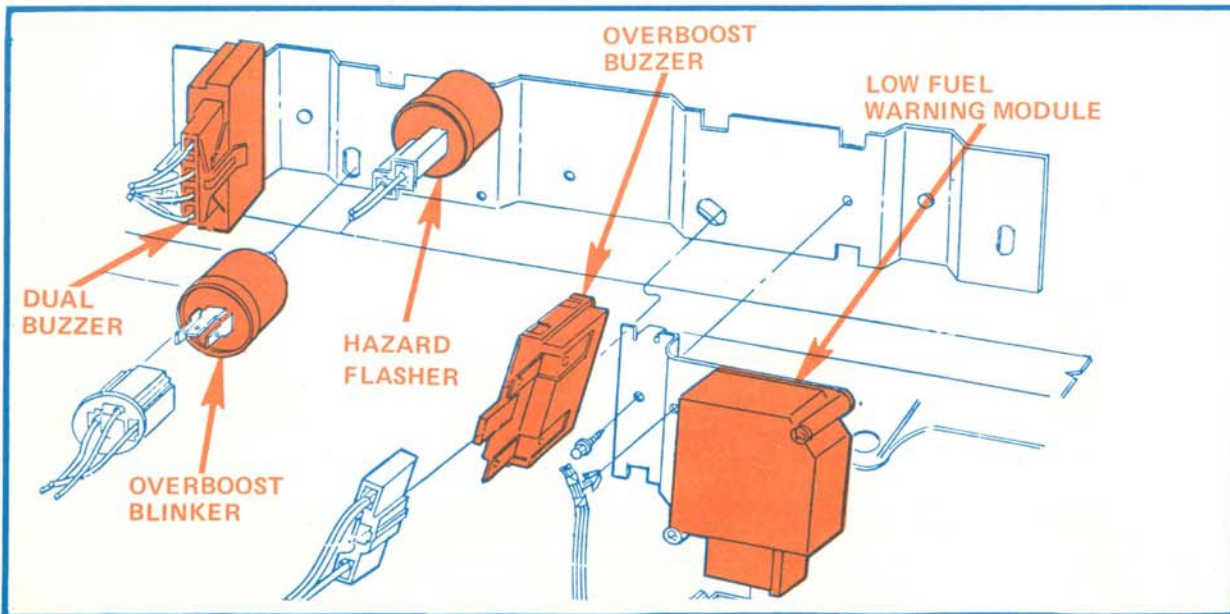


Figure 4 - Behind RH Side of I/P

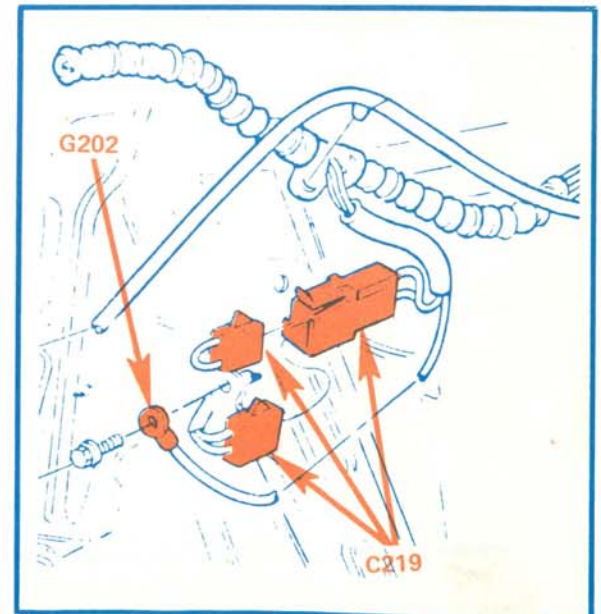
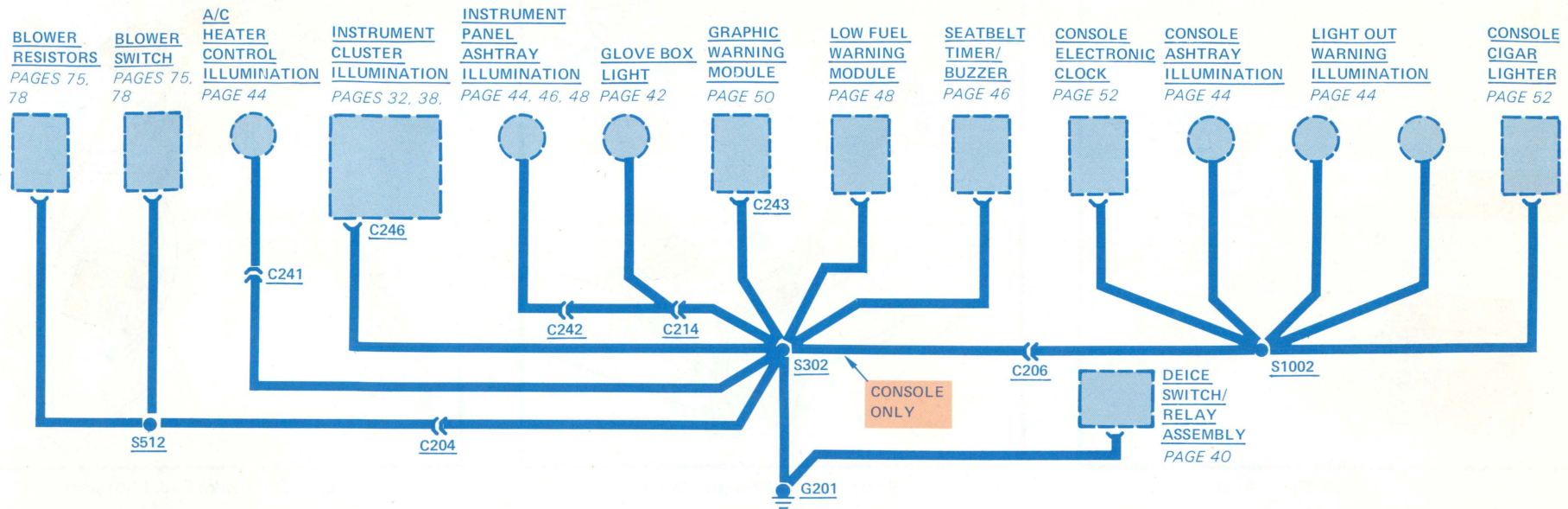
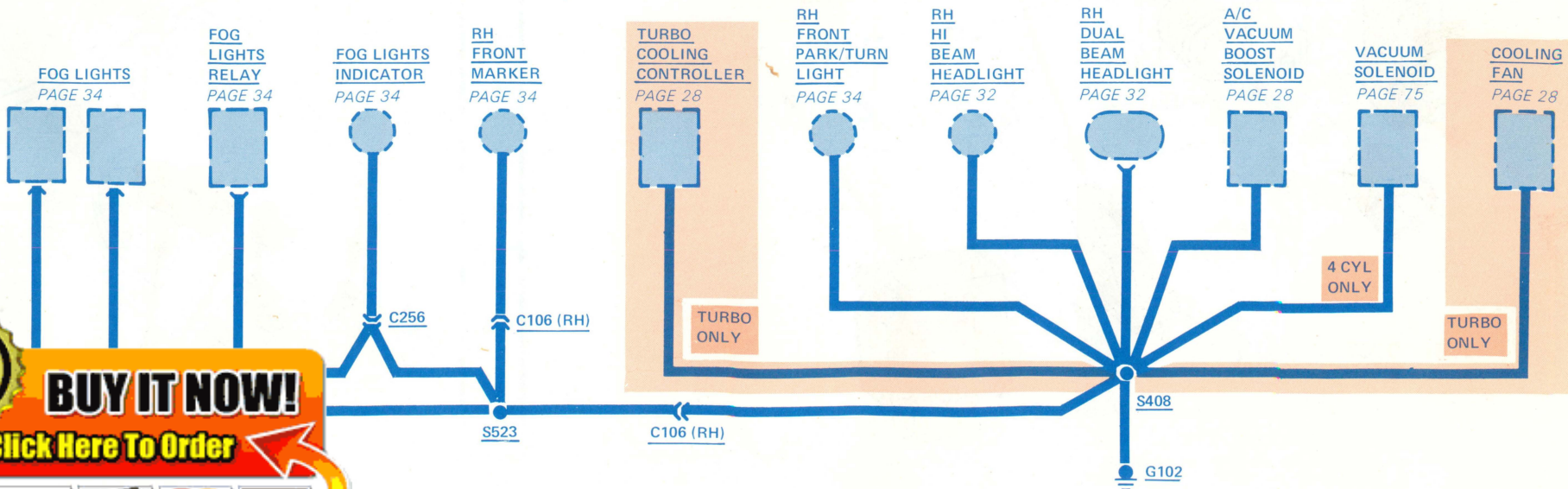


Figure 5 - Upper LH Side of I/P

INSTRUMENT PANEL



RH FRONT



100% SATISFACTION GUARANTEED
BUY IT NOW!
[Click Here To Order](#)

PayPal, American Express, Discover, MasterCard, VISA

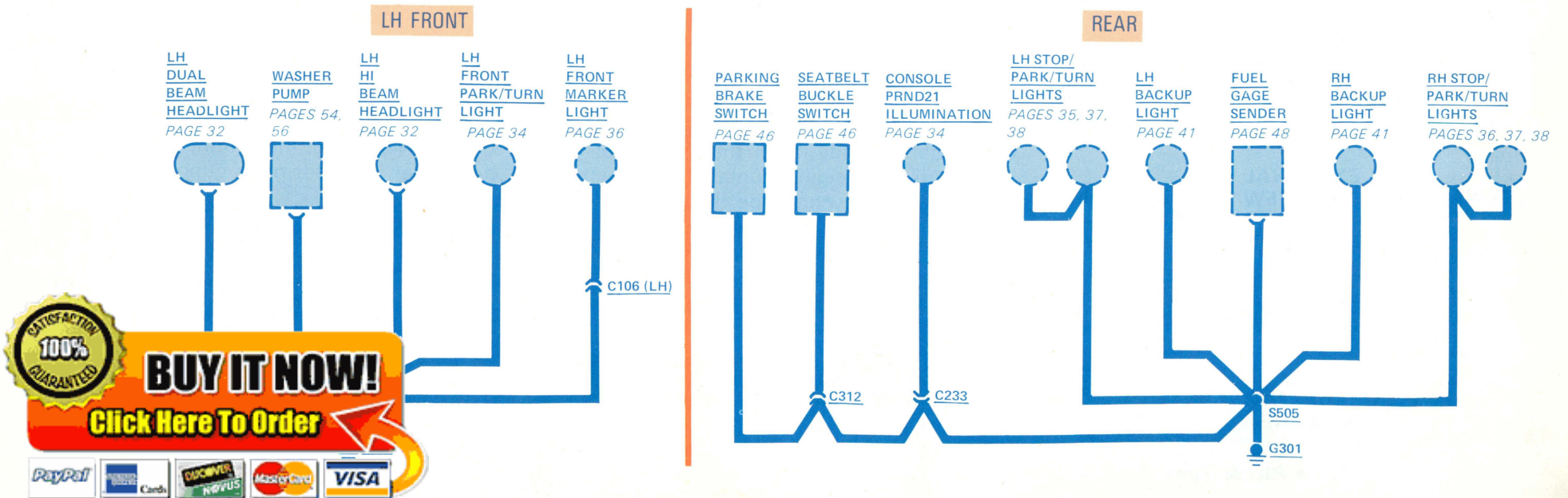
The ground circuits shown here are complete, and connect several components together to screw terminal ground points. On other pages only parts of these circuits may be shown. Partial ground circuits are shown dashed on those pages.

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	Color	Terminals
Connector C101	Near ignition coil	25-3		
Connector C119	Under RH front bumper below headlight	35-1	BR	2
Connector C204	Behind RH side of I/P above glove box	78-1	GY	4
Connector C206	Attached behind graphic warning module	51-1	GY	4
Connector C214	Clipped to LH I/P support brace	45-3	GY	4
Connector C233	Near transmission selector switch	47-1	GY	2
Connector C241	Behind center of I/P above radio	78-1	BR	2
Connector C242	Under center of I/P near ash tray assembly			2
Connector C243	Attached to graphic warning module	51-1	GY	8
Connector C246	Behind LH side of I/P on instrument cluster	89-1	GY	14
Connector C312	LH side of transmission hump	47-1	GY	2
Connector C1980	Near ignition coil	25-3		
Ground G102	Top RH side of radiator support above headlight	33-1		
Ground G103	Top LH side of radiator support above headlight	33-1		
Ground G115	Near RH shock tower			
Ground G201	Behind LH side glove box	45-1		
Ground G301	LH side of trunk lid striker	35-2		



100% SATISFACTION GUARANTEED

BUY IT NOW!

 Click Here To Order

FUSE BLOCK/CIRCUIT PROTECTION

ARRANGEMENT OF FUSES/BREAKERS



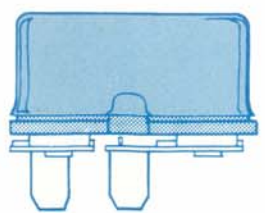
GOOD FUSE



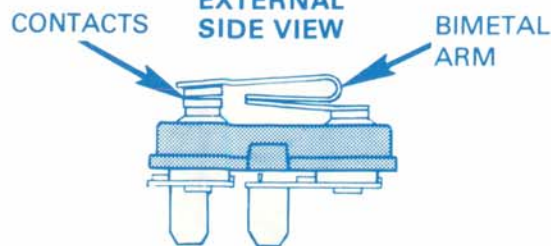
BLOWN FUSE

Fuses are mounted either in the **Fuse Block** 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

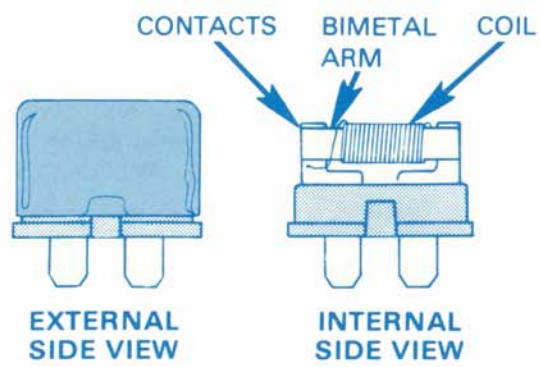


EXTERNAL SIDE VIEW



INTERNAL SIDE VIEW

Cycling Fuse Block Type



EXTERNAL SIDE VIEW

INTERNAL SIDE VIEW

Non-Cycling Fuse Block Type



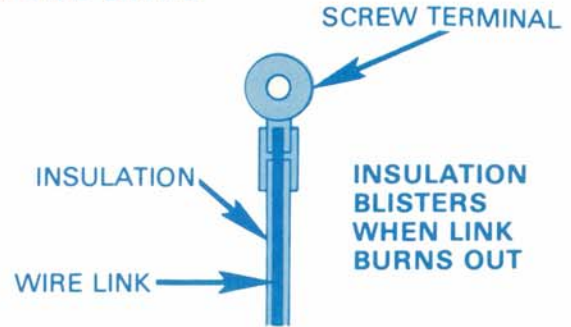
Cycling In-Line Type

Some circuits are protected by circuit breakers. (Abbreviated "c.b." in fuse chart.) They can be **Fuse Block** 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 gage 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
RED	18 GA
ORANGE	16 GA
GREEN	14 GA

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

DIODES



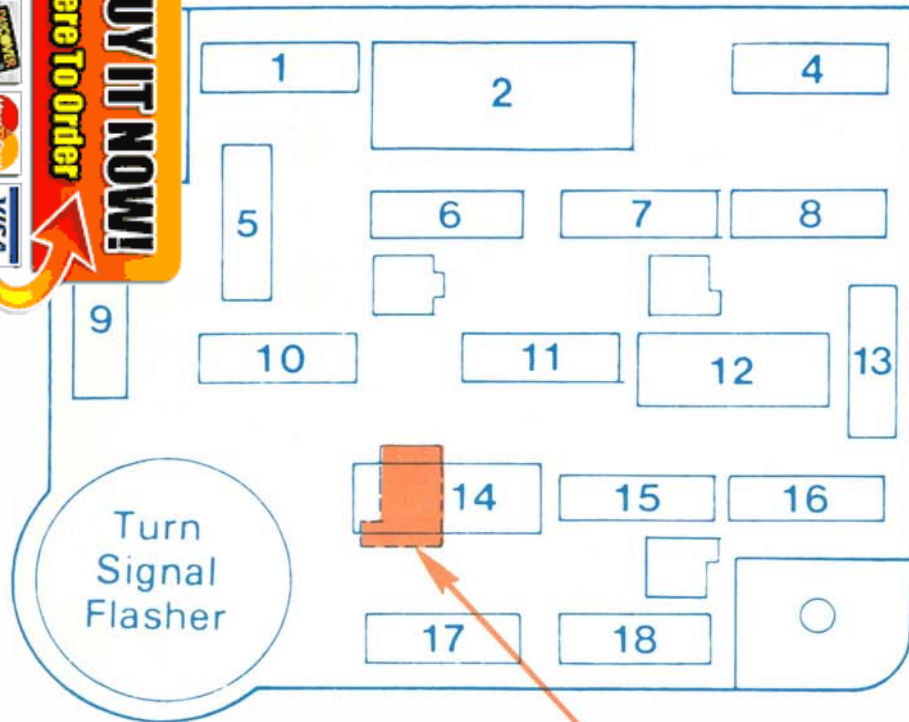
Diodes are electrical devices that permit current to flow in one direction only. The current flows in the direction indicated by the arrow.







100% SATISFACTION GUARANTEED
BUY IT NOW!
Click Here To Order



Fuse Value Amps	Color Code
4	Pink
5	Tan
10	Red
15	Light Blue
20	Yellow
25	Natural
30	Light Green

Fuse Position	Amps	Circuits Protected
1	15	Stop/Hazard Lights; Speed Control
2	6 c.b.	Windshield Wiper/Washer; Interval Wiper
4	15*	Exterior Lights; Instrument Illumination
5	15	Turn Lights; Backup Lights
6	20	A/C Clutch; Liftgate Wiper/Washer; Speed Control; Rear Window Deice; Trunk Release; Digital Clock; Light Out Warning; Liftgate Wiper/Washer
7	—	(Not used)
8	15	Courtesy Lights; Clock; Key Warning
9	15 or 30	Heater Blower (15 amps); A/C Blower (30 amps)
10	—	(Not used)
11	15	Radio; Premium Sound
12	—	(Not used)
13	—	(Not used)
14	20c.b.	Power Windows
15	—	(Not used)
16	20	Horn; Cigar Lighter; Digital Clock
17	5	Instrument Illumination
18	10	Seatbelt Buzzer; Warning Indicators; Carburetor Solenoids; Tachometer; Low Fuel Warning

*10 Amps with Light Out Warning

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 **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 **Light Switch**.



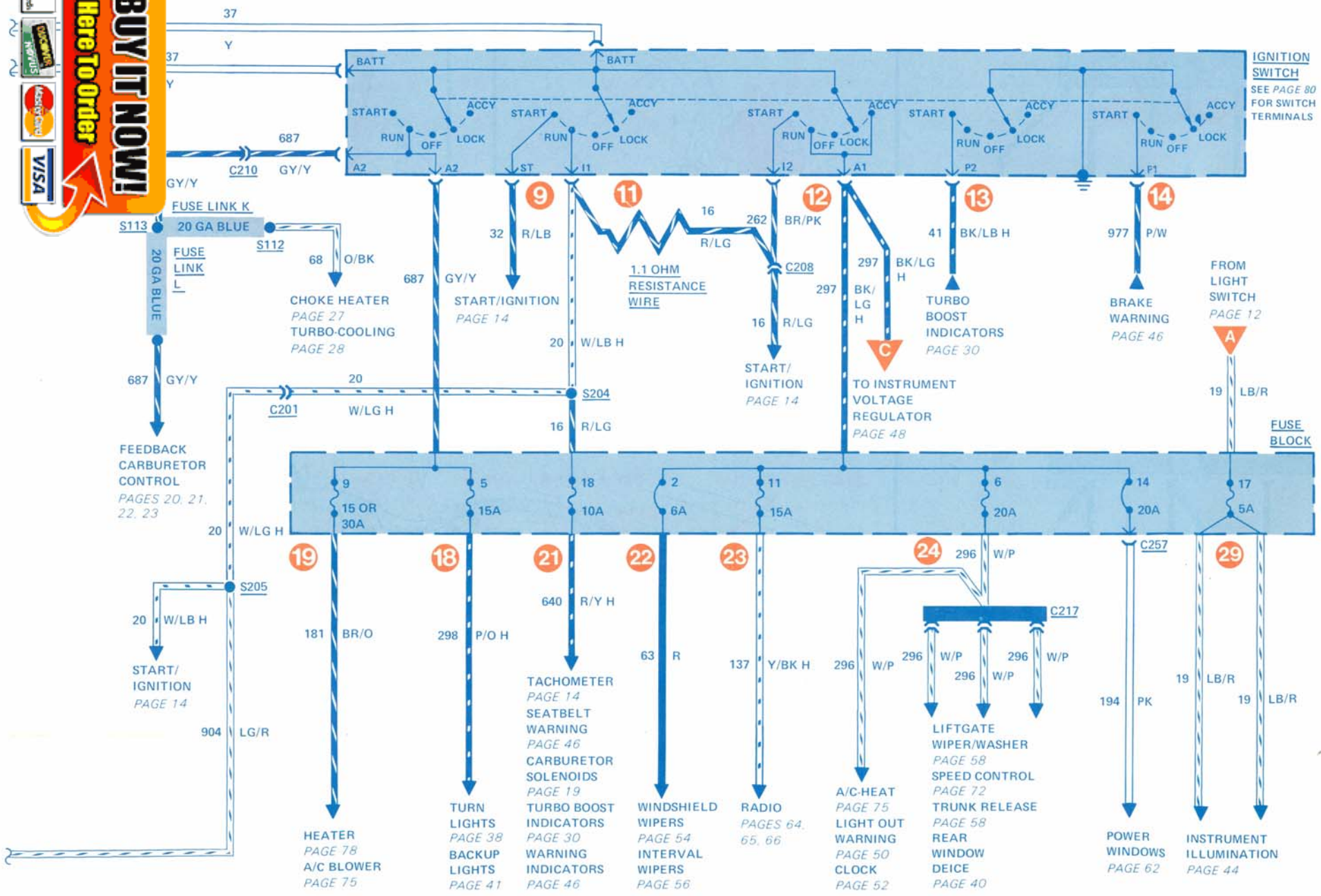




Click Here To Order

BUY IT NOW!

100% GUARANTEED SATISFACTION



12 LARGE/POWER DISTRIBUTION (LIGHT SWITCH)

100% SATISFACTION GUARANTEED

BUY IT NOW!

[Click Here To Order](#)

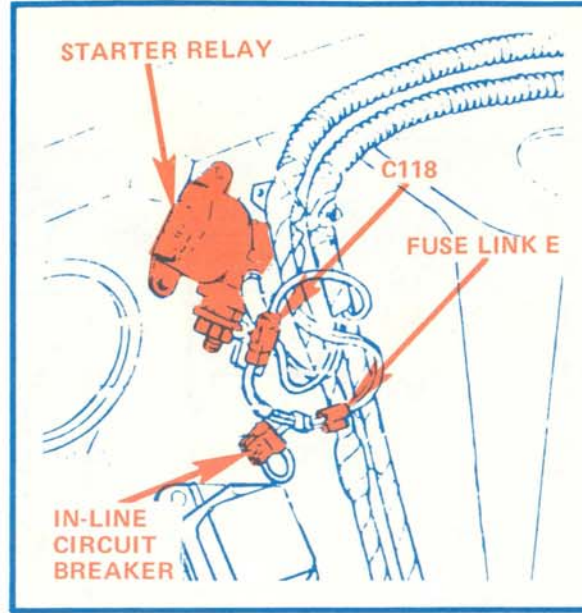
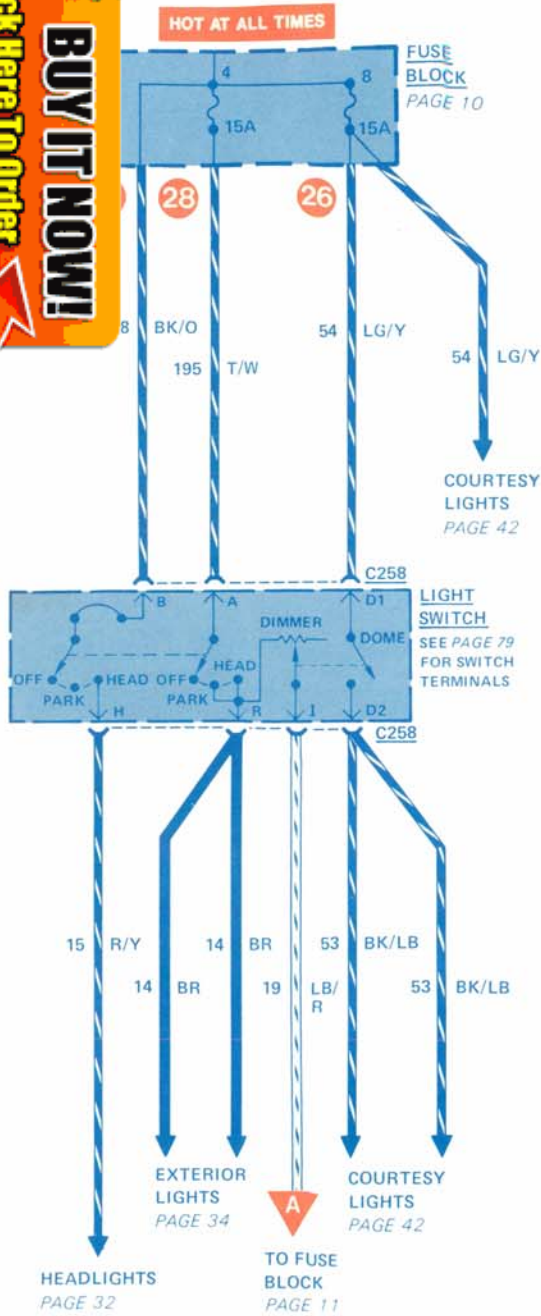


Figure 1 - RH Fender

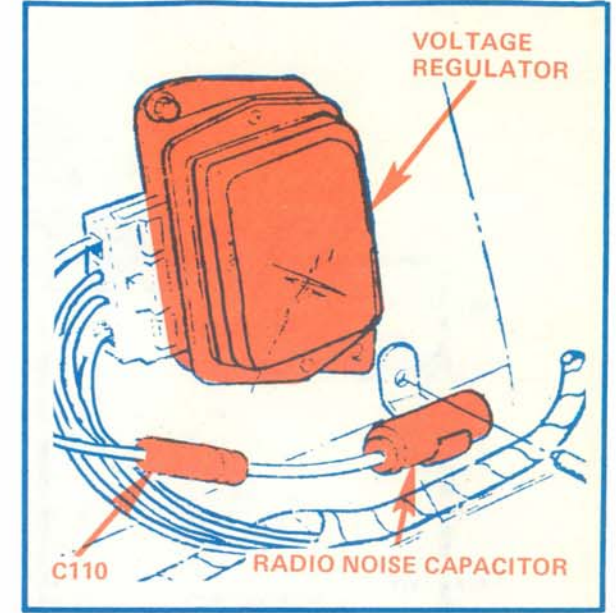


Figure 3 - Forward Of RH Shock Tower

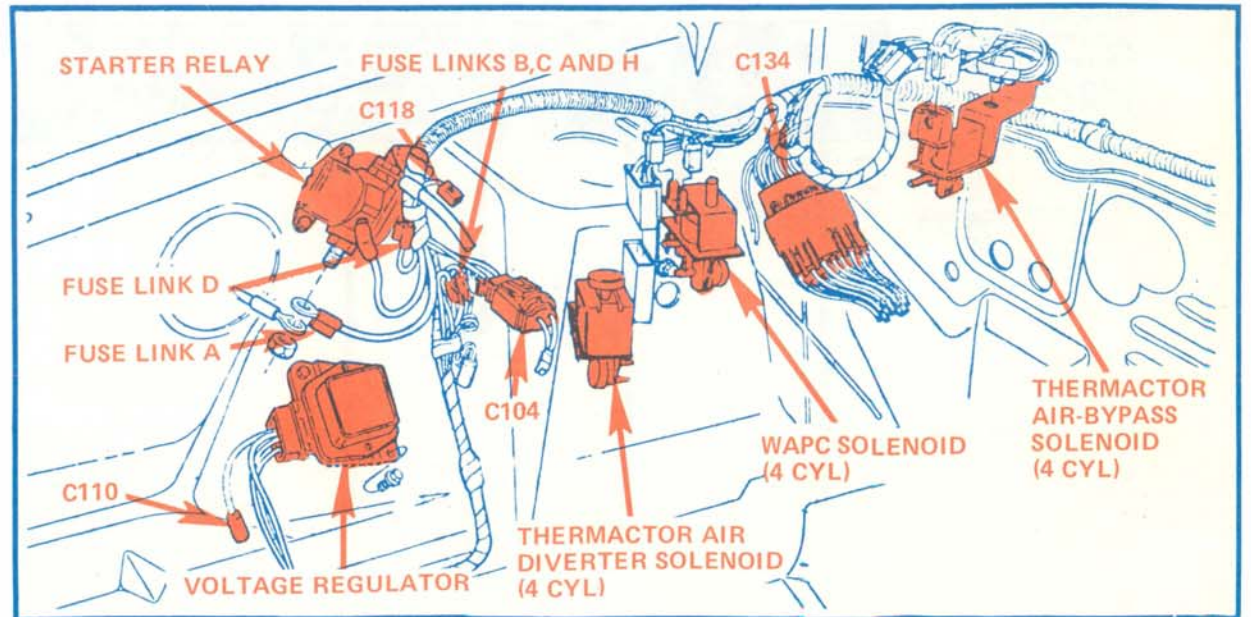


Figure 2 - RH Front Fender

100% SATISFACTION GUARANTEED

BUY IT NOW!

Click Here To Order

CIRCUIT WORKS

Battery, Alternator, and Voltage Regulator make up the Charging System. The Ignition Switch in RUN, Battery through the solid-state Electronic Voltage Regulator. The Electronic Voltage Regulator regulates the solid-state field switch to Battery voltage to the Alternator through terminal F.

With current in the field and the rotor turning, the Alternator stator produces a DC voltage at terminal B (to Battery). This voltage balances the Battery voltage. If the voltages are different, the resulting current flow is indicated on the Ammeter. The Choke Heater operates only when the Alternator is generating current (through terminal S). Above 60°F, the heater causes a thermostatic spring to pull the choke plates open within 1 to 1.5 minutes. Below 60°F, the heater does not operate and normal choke action occurs.

NOTE

The Voltage Regulator with BLUE printing on the cover is used with Ammeter; RED printing with either Ammeter or Alternator Warning Indicator.

COMPONENT LOCATION

		Page-Figure	Color	Terminals
Alternator (4 cyl)	LH front of engine assembly			
(6 and 8 cyl) ...	RH front of engine assembly			
Ammeter	Part of instrument cluster			
Choke Heater	Attached to carburetor	19-1		
Fuse Links A, B, C, D, & H.	Near starter relay assembly	12-2		
Fuse Link E	At starter motor	12-1		
Fuse Link J	At starter relay	61-1		
Fuse Links K & L	Near LH shock tower	25-2		
In-Line Circuit Breaker	Attached to starter relay	12-1		
Radio Noise Capacitor	RH fender apron below starter relay	12-3		
Starter Relay	RH fender apron in front of wheel well	12-2		
Voltage Regulator	RH fender apron attached below starter relay	12-2		
Connector C104	Near starter relay	12-2	BR	2
Connector C110	RH fender apron below voltage regulator	12-2	BK	1
Connector C118	LH fender apron below starter relay	12-2	GY	1
Connector C201	Under LH side of I/P on shake brace	52-2	GY	8
Connector C208	Under LH side of I/P on shake brace	52-2	GY	4
Connector C210	Under LH side of I/P on shake brace	52-2	BR	6
Connector C217	Behind LH side of I/P above fuse block	52-1	Y	3
Connector C247	Behind LH side of I/P on instrument cluster	89-1	GY	14
Connector C258	Behind LH side of I/P attached to light switch	45-2	GY	7
Ground G101	Lower LH front of engine assembly	13-1		

TROUBLESHOOTING HINTS

IMPROPER CHARGING

The most common charge system complaints are dead Battery, and Ammeter discharging at normal speed.

- Check **Fuse Link A** at **Starter Relay**.
- Check **Alternator** belt tension.
- Check **Battery** terminals and cable clamps.
- Check for clean and tight connections on **Alternator, Regulator, and Starter Relay**.

Read "Charging System Diagnosis" in Section 31-01 of Shop Manual for detailed **Charging System** tests.

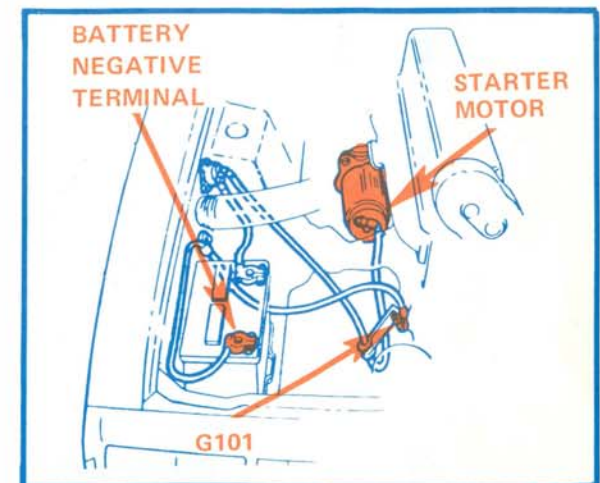


Figure 1 - Starter Motor







100% SATISFACTION GUARANTEE
BUY IT NOW!
[Click Here To Order](#)

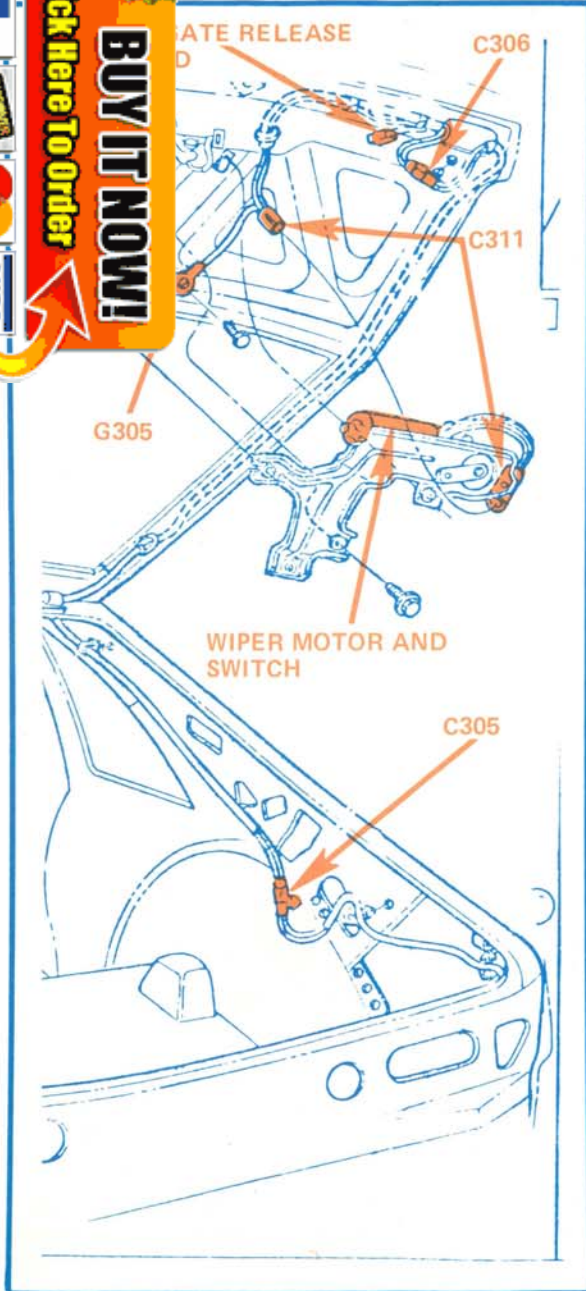


Figure 1 - Liftgate Area

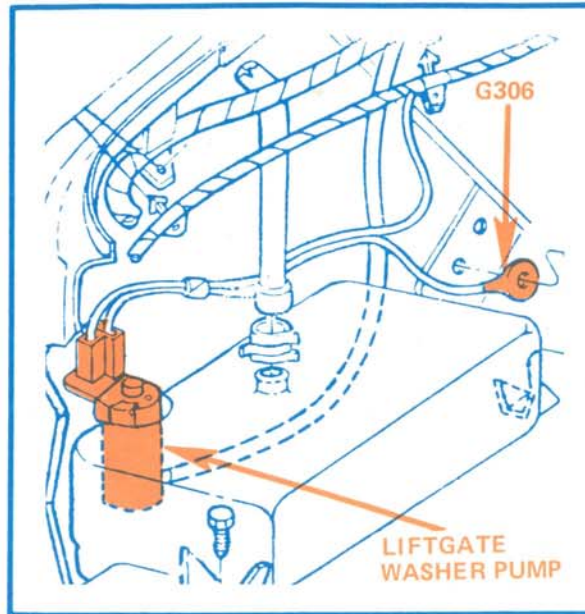


Figure 2 - Rear LH Corner Of Trunk (3 DR)

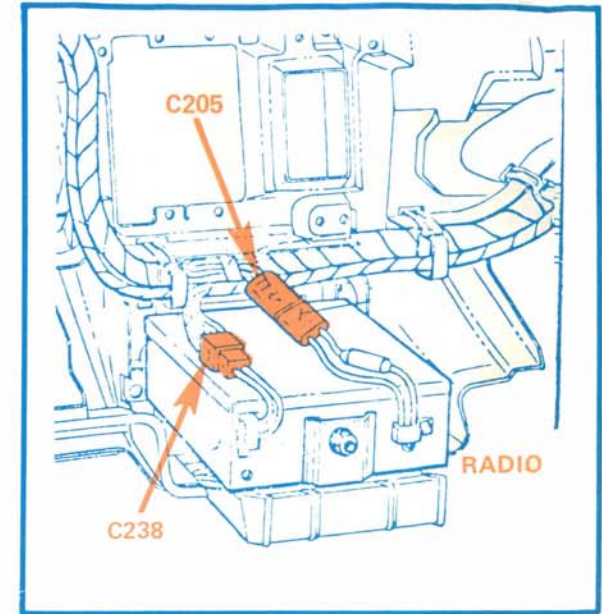


Figure 4 - Behind Center Of I/P

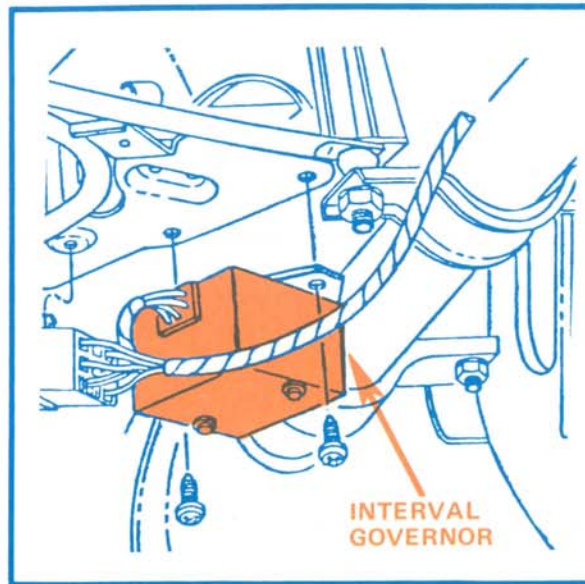


Figure 3 - LH Side Of Steering Column

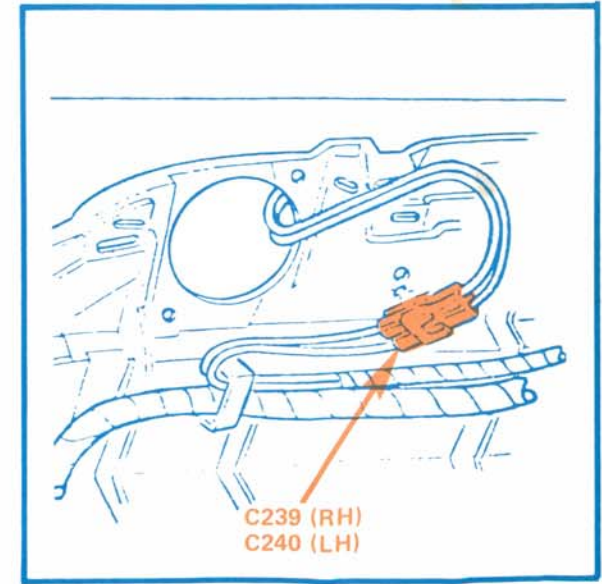


Figure 5 - RH Side Of I/P







100% SATISFACTION GUARANTEED
BUY IT NOW!
[Click Here To Order](#)



Figure 1 - Speed Control Servo

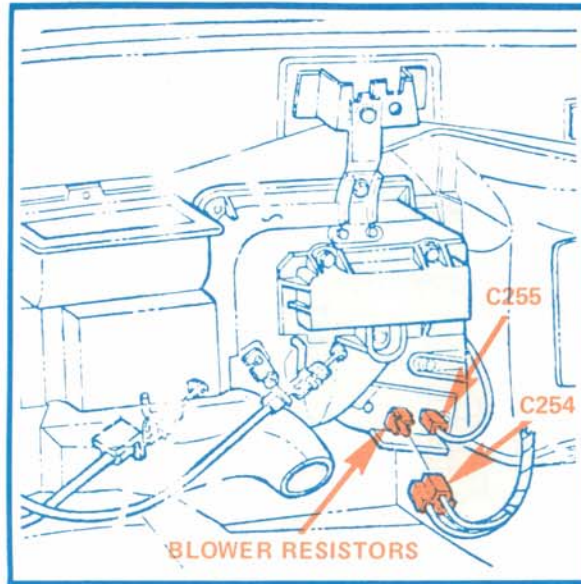


Figure 3 - Under LH Side Of I/P

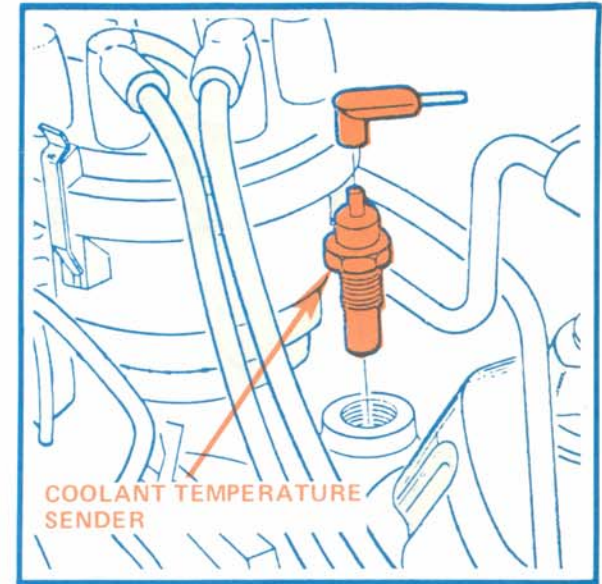


Figure 5 - LH Side Of Distributor (8 Cyl)

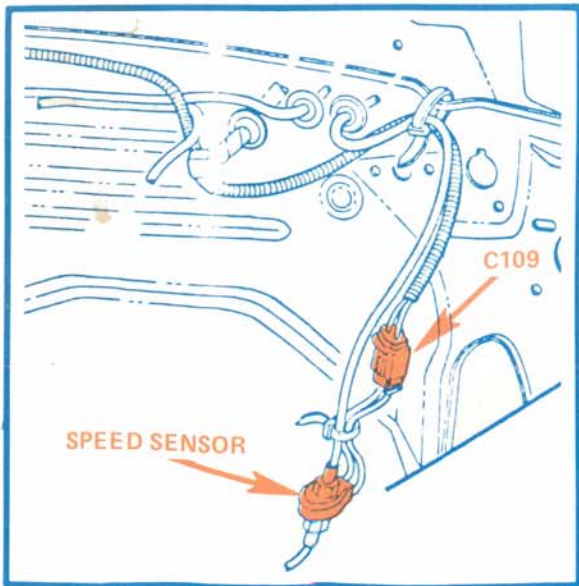


Figure 2 - LH Side Of Engine At Dash Panel

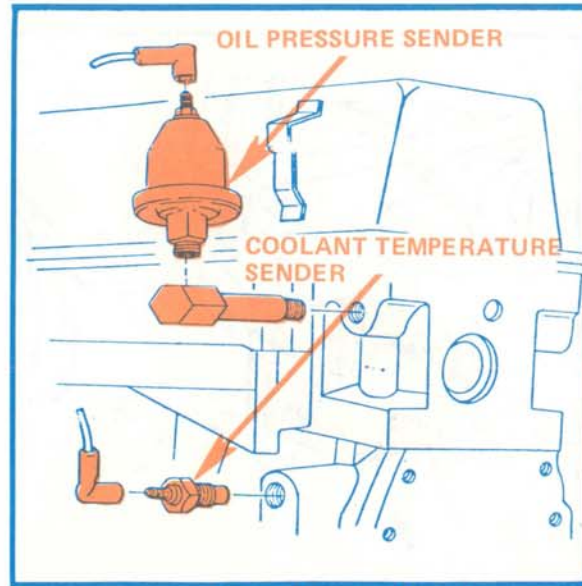


Figure 4 - Rear Of Engine (4 Cyl)

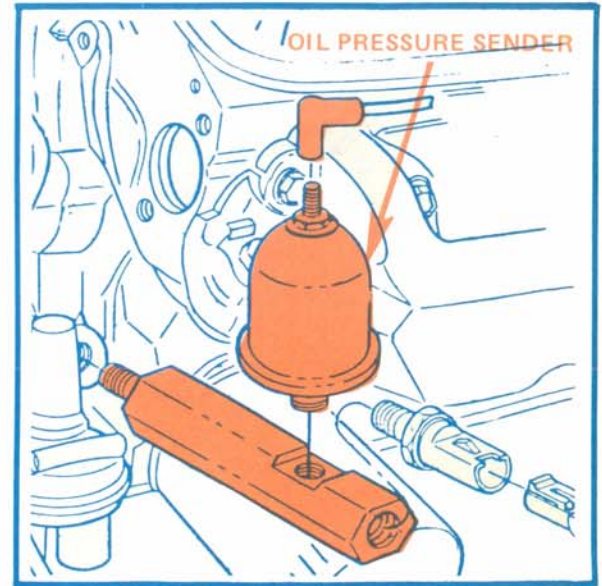


Figure 6 - LH Side Of Engine (8 Cyl)

BACK OF THE INSTRUMENT PANEL

100% SATISFACTION GUARANTEED

Click Here To Order

BUY IT NOW!

PayPal
MasterCard
Discover
American Express
VISA

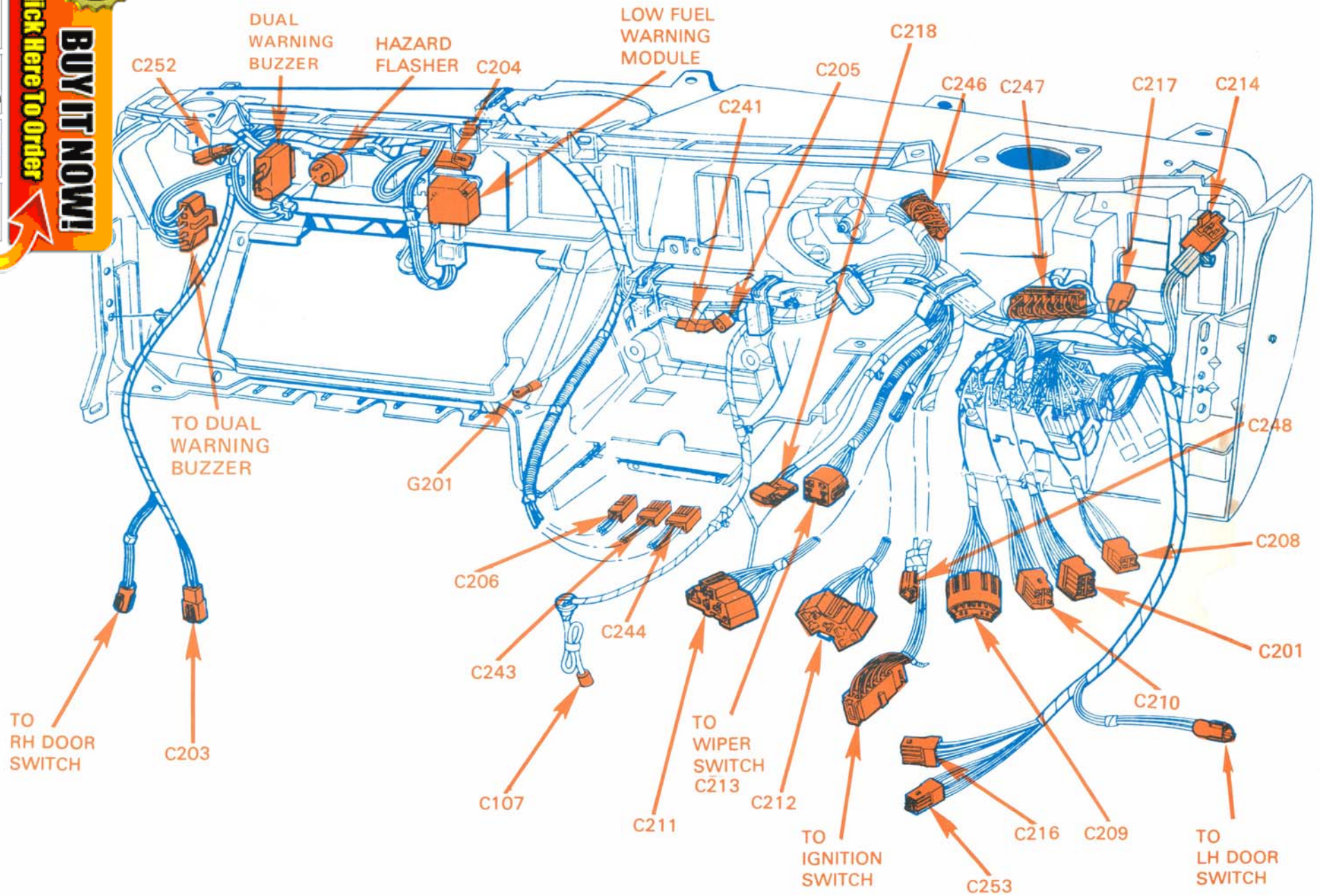


Figure 1



**WE SUPPORT VOLUNTARY
MECHANIC CERTIFICATION**



100% SATISFACTION GUARANTEED

BUY IT NOW!

Click Here To Order 



**Ford Parts and Service Division
Training and Publications Department**

I.S.A.

0331-521