1980 MUSTANG / CAPRI

ELECTRICAL & VACUUM TROUBLE-SHOOTING MANUAL

1980

MUSTANG CAPRI

Ford Official Licensed Product

License #84356800

1980 Mustang / Capri Electrical & Vacuum Trouble-Shooting Manual (EVTM)

EAN: 978-1-60371-415-0
ISBN: 1-60371-415-4

Forel Publishing Company, LLC
Woodbridge, VA 22192

License #84356800

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 services of a competent professional should be sought.

INDEX

The **Purpose** of this manual is to show electrical and vacuum circuits of this vehicle in a clear and simple fashion to make troubleshooting easier. With each circuit is a description of *How the Circuit Works,* and some *Troubleshooting Hints.* A *Component Location* chart lists components, connectors, and grounds in that circuit. The chart includes a description of where each item is located, and references to pictures in the manual.

Wiring Diagrams give a schematic picture of when 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).

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 **Ignition 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.

COLOR SYMBOLS

Symbol	Color
BK	Black
BL	Blue
BR	Brown
GY	Gray
GR	Green
O	Orange
PK	Pink
P	Purple
R	Red
W	White
Y	Yellow

Where two colors are shown for a wire, the first color is the basic color of the wire. The second color is the dash, 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:

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

Important information and car and mechanic safety notes appear in boxes on text pages. There are three kinds:

NOTE
Additional information.

CAUTION
Possible damage to vehicle or equipment.

WARNING
Possible injury to mechanic.

TROUBLESHOOTING STEPS

Troubleshooting is not hard, but it requires:

1. Knowing how the circuit should work;
2. Observing closely what doesn't work;
3. Checking parts you think are bad;
4. Making the repair;
5. Checking total operation after repair.

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. *Troubleshooting Hints* will give some helpful ideas. The *Component Location* charts and the pictures will help you find components, grounds, and connectors.

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

TEST LIGHT

A test light is a 12-volt bulb with two test leads (Figure 1).

Uses: Voltage Check, Short Check

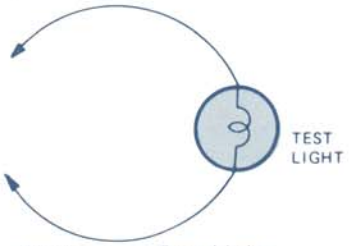


Figure 1 — Test Light

SELF-POWERED TEST LIGHT

The self-powered test light is a light, battery, and set of test leads wired in series (Figure 2). When connected to two points of a continuous circuit, the light glows.

CAUTION

When using self-powered test light, be sure power is off in circuit during testing.

Uses: Continuity Check, Ground Check

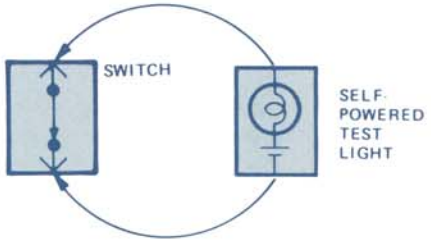


Figure 2 — Continuity Check

JUMPER WIRE

This is a circuit breaker with a set of test leads, 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

An ohmmeter shows the resistance between two connected points. IT SHOULD ONLY BE USED ON DE-ENERGIZED CIRCUITS. Hot circuits can cause meter damage and false readings.

BASIC TROUBLESHOOTING CHECKS

SWITCH CIRCUIT 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 3)

This test also finds an open in part of a circuit.

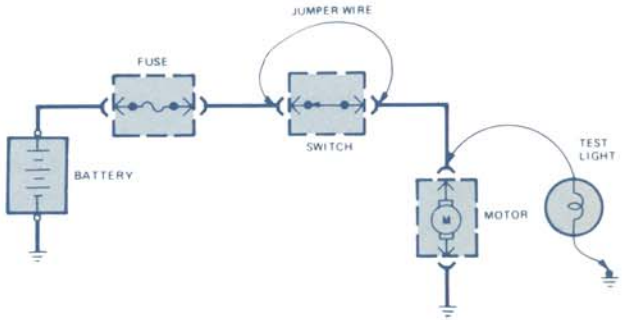


Figure 3 — Switch Circuit Check and Voltage Check

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.

SHORT CHECK (short to ground)

A blown **Fuse** is usually caused by a short to ground in that circuit. Check as follows:

1) Turn off everything powered through the **Fuse**.
2) Disconnect all 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. Light should glow showing power to **Fuse**.

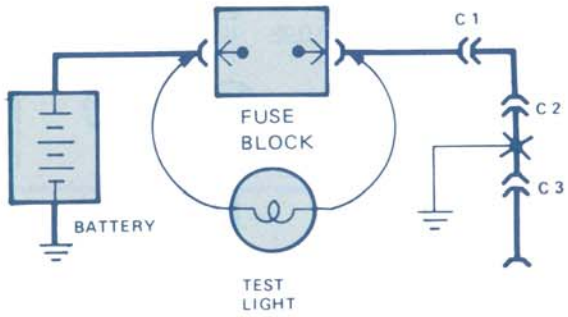


Figure 4 — Short Check

5) Disconnect ground lead and connect to load side of **Fuse**.
   a) Test light OFF: the short is in the disconnected equipment.
   b) Test light ON: short is in wiring. Find short by disconnecting circuit connectors one at a time. In the example (Figure 4) with a ground at X, the light goes out when C1 or C2 is disconnected, but stays on after disconnecting C3. This means the ground is between C2 and C3.

CONTINUITY CHECK

CAUTION
When using self-powered test light, be sure power is off in circuit during testing.

(Locating open circuits) Connect one lead of self-powered test light or ohmmeter to each end of circuit (Figure 2). Light will glow if circuit is closed. Switches and fuses can be checked in the same way.

"GOOD GROUND" CHECK

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 light glows, circuit ground is OK.

GENERAL TROUBLESHOOTING HINTS

If several unrelated circuits fail at the same time, chances are the power (fuse) or ground circuit is bad.

Use the **Power Distribution** to find what circuits are powered through each fuse.

Use the **Ground** pages to find which circuits have a common ground. If a group of electrical circuits doesn't work, the most likely cause is an open ground. Use these **Ground** pages to help find the open ground. **Ground** pages show only complex screw terminal grounds. Circuits with single or component grounds are shown only on circuit diagram page.

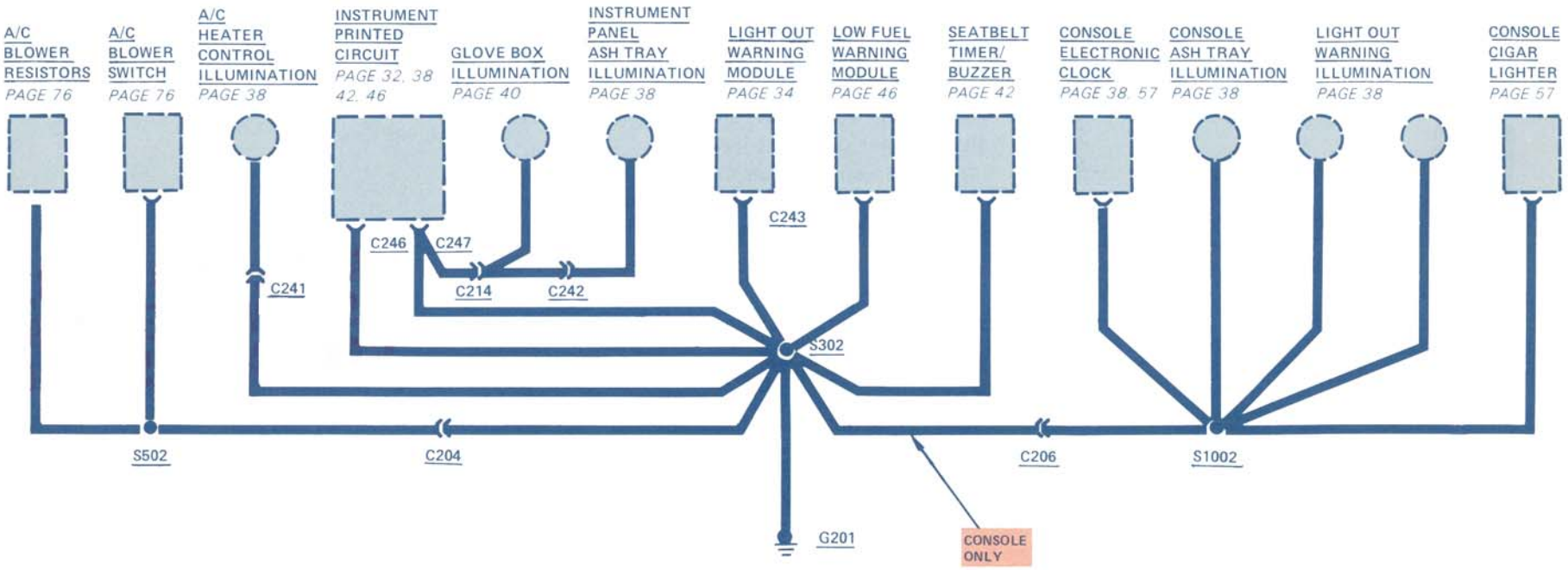
Wiring Harness Information

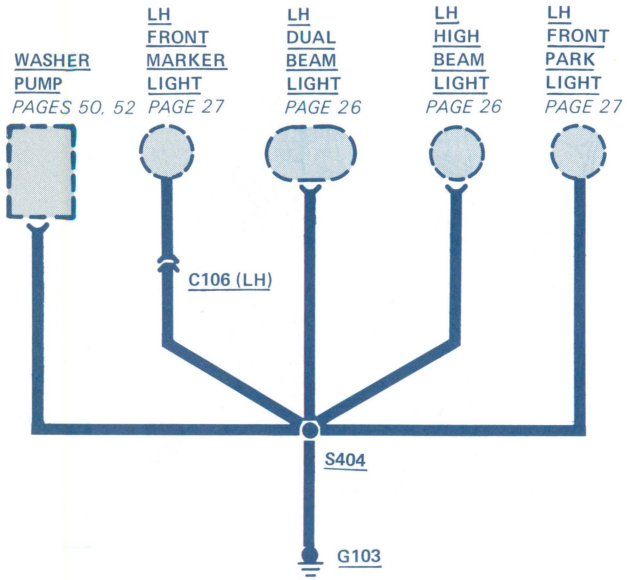
All wiring between components is routed through wiring harnesses. Each harness is tagged with a coding which tells: year of development, car line, harness number, and design level. For example, a harness tagged "EOLB-14401-AE" means "Developed 1980 for the Mark VI-14401 harness (main wiring assembly behind the instrument panel) —Model 'A', revision 'E'."

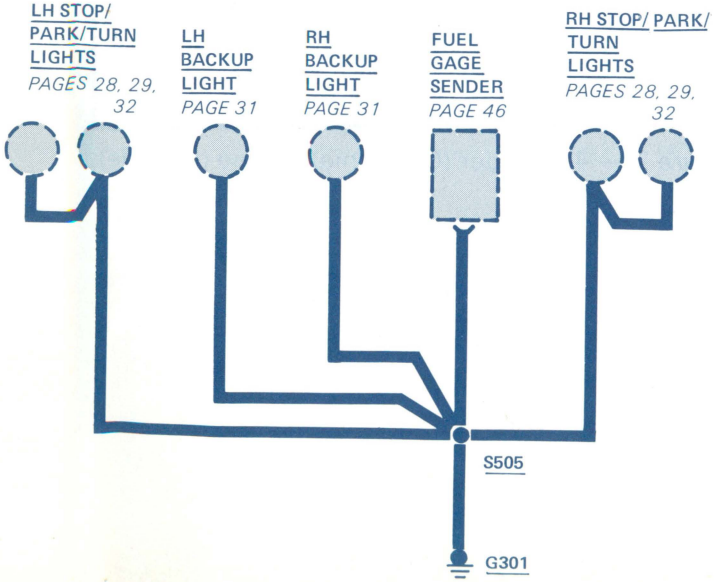
Each "RPO Option" adds more harnesses to the car.

Because the harnesses are bound with a heavy tape, pinpointing a short or open in a single wire of a long harness is almost impossible. If a short or open is traced to a major harness, either the harness must be replaced or the circuit can be jumpered with an added wire.

4 GROUNDS

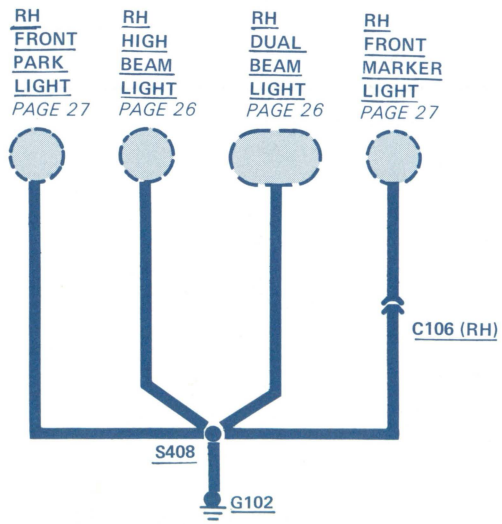

A/C BLOWER RESISTORS
PAGE 76
A/C BLOWER SWITCH
PAGE 76
A/C HEATER CONTROL ILLUMINATION
PAGE 38
INSTRUMENT PRINTED CIRCUIT
PAGE 32, 38 42, 46
GLOVE BOX ILLUMINATION
PAGE 40
INSTRUMENT PANEL ASH TRAY ILLUMINATION
PAGE 38
LIGHT OUT WARNING MODULE
PAGE 34
LOW FUEL WARNING MODULE
PAGE 46
SEATBELT TIMER/ BUZZER
PAGE 42
CONSOLE ELECTRONIC CLOCK
PAGE 38, 57
CONSOLE ASH TRAY ILLUMINATION
PAGE 38
LIGHT OUT WARNING ILLUMINATION
PAGE 38
CONSOLE CIGAR LIGHTER
PAGE 57
C243
C246
C247
C241
C214
C242
S302
S502
C204
C206
S1002
G201
CONSOLE ONLY





COMPONENT LOCATION

		Page-Figure
Ground G101	Lower RH side of engine in front of starter motor	
Ground G102	Above RH Headlight	25-1
Ground G103	Above LH headlight	25-1
Ground G108	Above lower RH access hole	
Ground G110	Top LH rear of engine	9-1
Ground G111	Attached to throttle-boost bracket	
Ground G201	Behind LH side of glove box	
Ground G202	Behind upper LH side of instrument panel, near LH cowl area	
Ground G205	Behind RH side of instrument panel	66-2
Ground G206	RH side of instrument panel, near LH cowl area	
Ground G301	LH side of lid striker plate	37-1
Ground G302	Attached to center of trunk lid, near striker assembly	
Ground G303	Attached to center of liftgate, near striker assembly	30-1
Ground G304	Attached to LH fender apron, behind wheel well	
Ground G305	Attached to center of liftgate	48-1
Ground G306	LH rear fender, in front of washer bottle	48-2
Ground G307	Corner of LH rear fender	49-2
Ground G308	Inside LH front door	59-1
Ground G309	Behind dome light assembly	
Ground G311	Under driver's seat	
Ground G312	Below RH side of package tray	
Ground G650	At vacuum solenoid bracket	



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. 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.

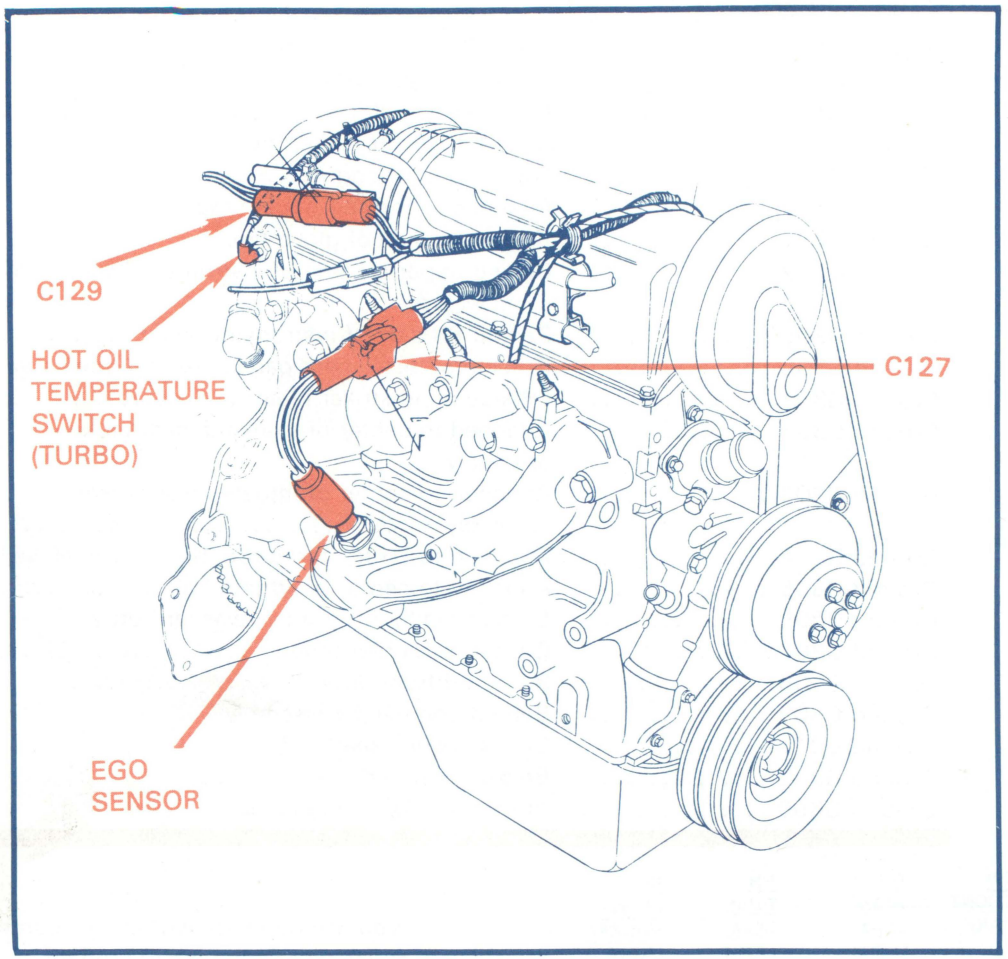


Figure 1 — 4 Cylinder (California) Engine (RH Side)

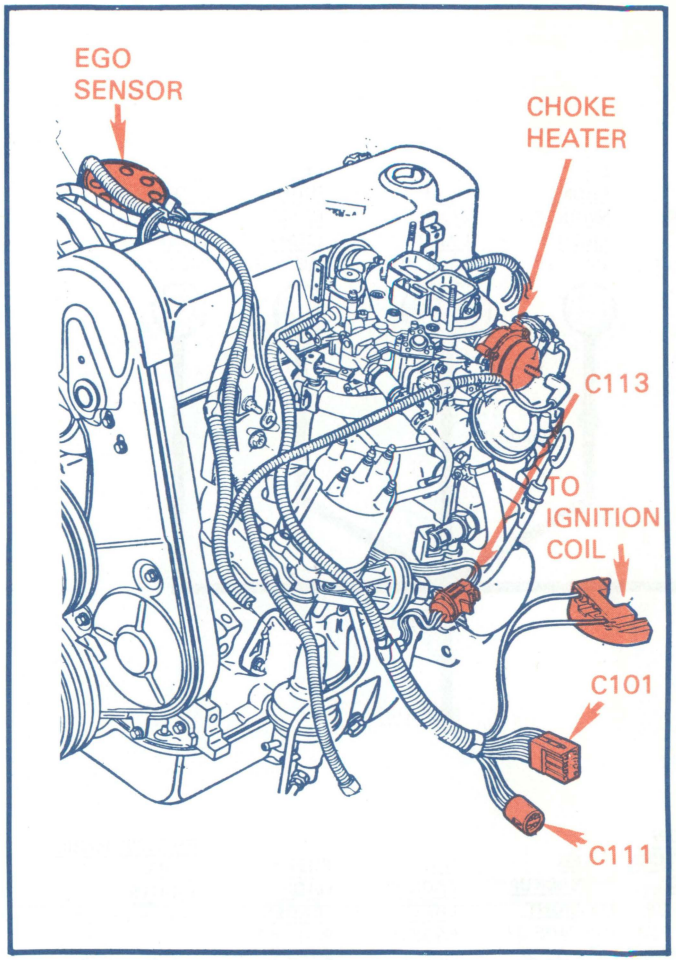


Figure 2 — 4 Cylinder (California) Engine (LH Side)

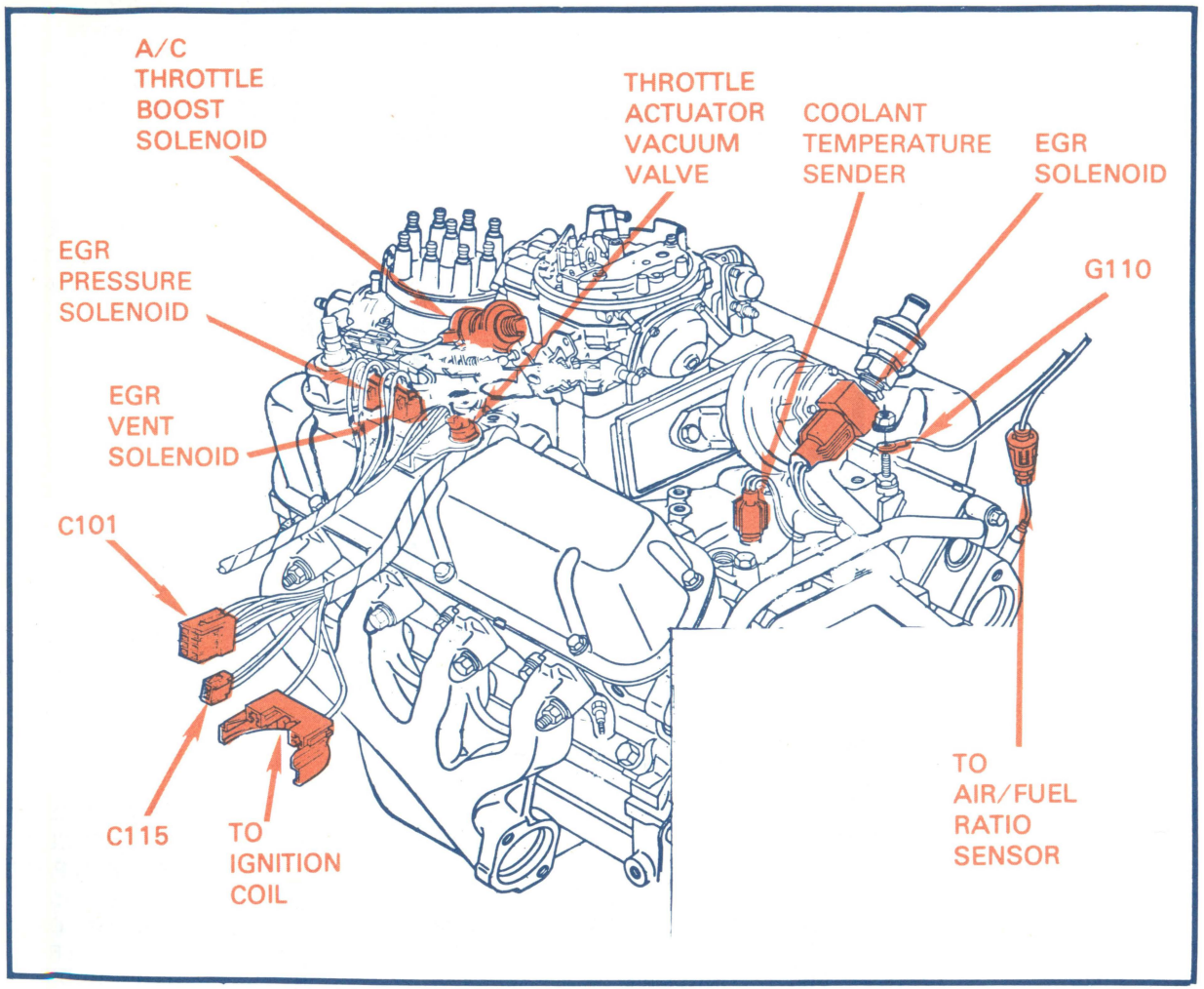


Figure 1 — 8 Cylinder (LH side) (EEC)

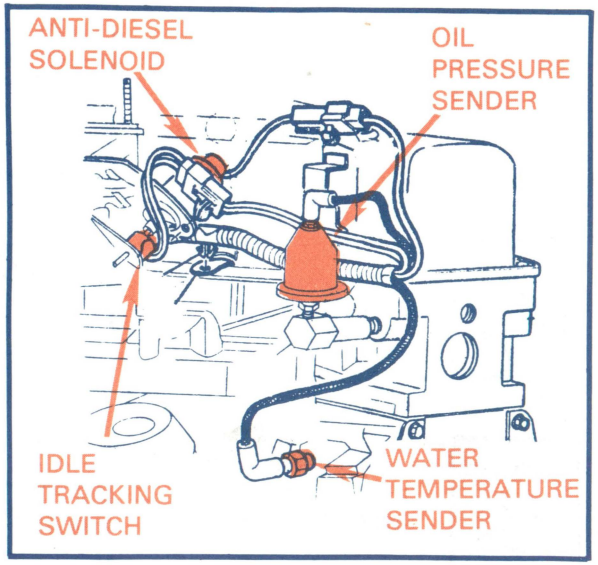
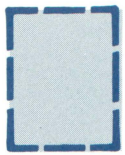
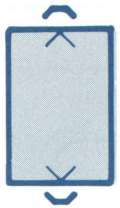


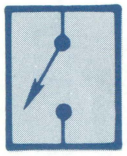
Figure 2 — 4 Cylinder (California) Engine



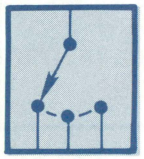
COMPONENT SHOWN IN TWO PLACES OR PART OF A COMPONENT



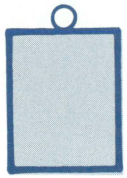
COMPONENT WITH CONNECTORS



SWITCH

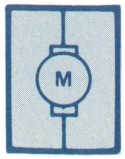


SELECTOR SWITCH

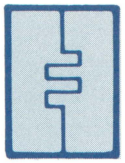


SCREW TERMINAL ON COMPONENT

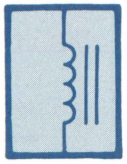
LIGHT



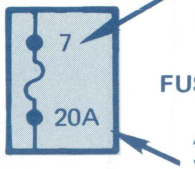
MOTOR

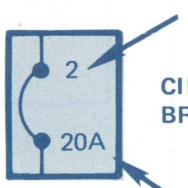


HEATER



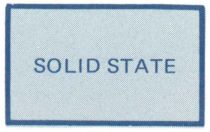
SOLENOID, SOLENOID VALVE, CHOKE, OR COIL





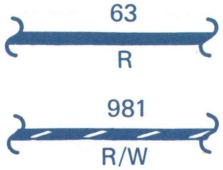
GROUND CONNECTION

FUSE LINK



SEALED ELECTRONIC COMPONENT

GAGE



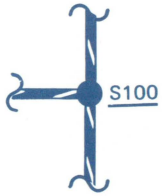
SOLID WIRE

STRIPE WIRE

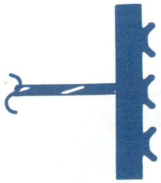
DOT WIRE

HASH WIRE

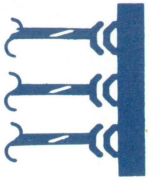
IN-LINE CONNECTOR



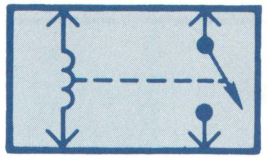
SPLICE OR CRIMP TERMINAL



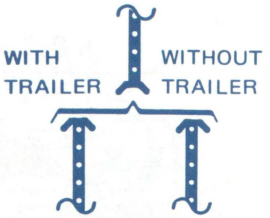
CANDELABRA CONNECTOR
ACCEPTS SINGLE-PIN CONNECTORS



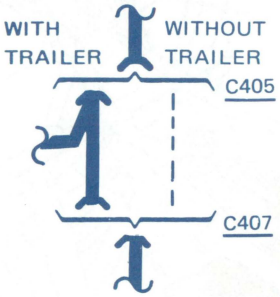
JUNCTION BLOCK



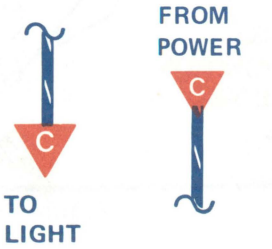
RELAY
CONTACTS CLOSE WITH CURRENT THROUGH COIL



ALTERNATE CIRCUIT PATHS OR OPTIONAL WIRING



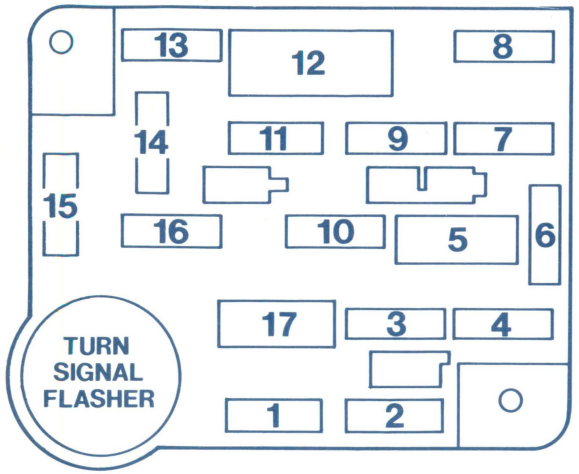
OPTIONAL WIRING
DASH LINE MEANS C405 CONNECTS TO C407 WITHOUT TRAILER



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

COMPLETE WIRING SHOWN ON ANOTHER PAGE

REFERENCE NUMBER



HOW THE CIRCUIT WORKS

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 4, 7, 8,** and **13**. The other fuses are powered through the **Ignition Switch** and the **Light Switch.**

Fuse Link

The **Fuse Link** is a short length of wire smaller 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 smoke or blister. If the overload remains, the link will melt, causing an open circuit. The links are color coded for wire size as follows: **Blue - 20 gage, Red - 18 gage, Yellow - 17 gage, Orange - 16 gage, Green - 14 gage.**

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

Self-Resetting Circuit Breakers

Some circuits are protected by circuit breakers. Each circuit breaker has a set of contacts operated by a bi-metallic arm which carries the breaker current. If the current becomes too high, the heating of the arm causes it to bend and open the contacts.

When the arm cools, it bends straight and re-closes the contacts. This cycle repeats as long as the overcurrent exists, with power applied.

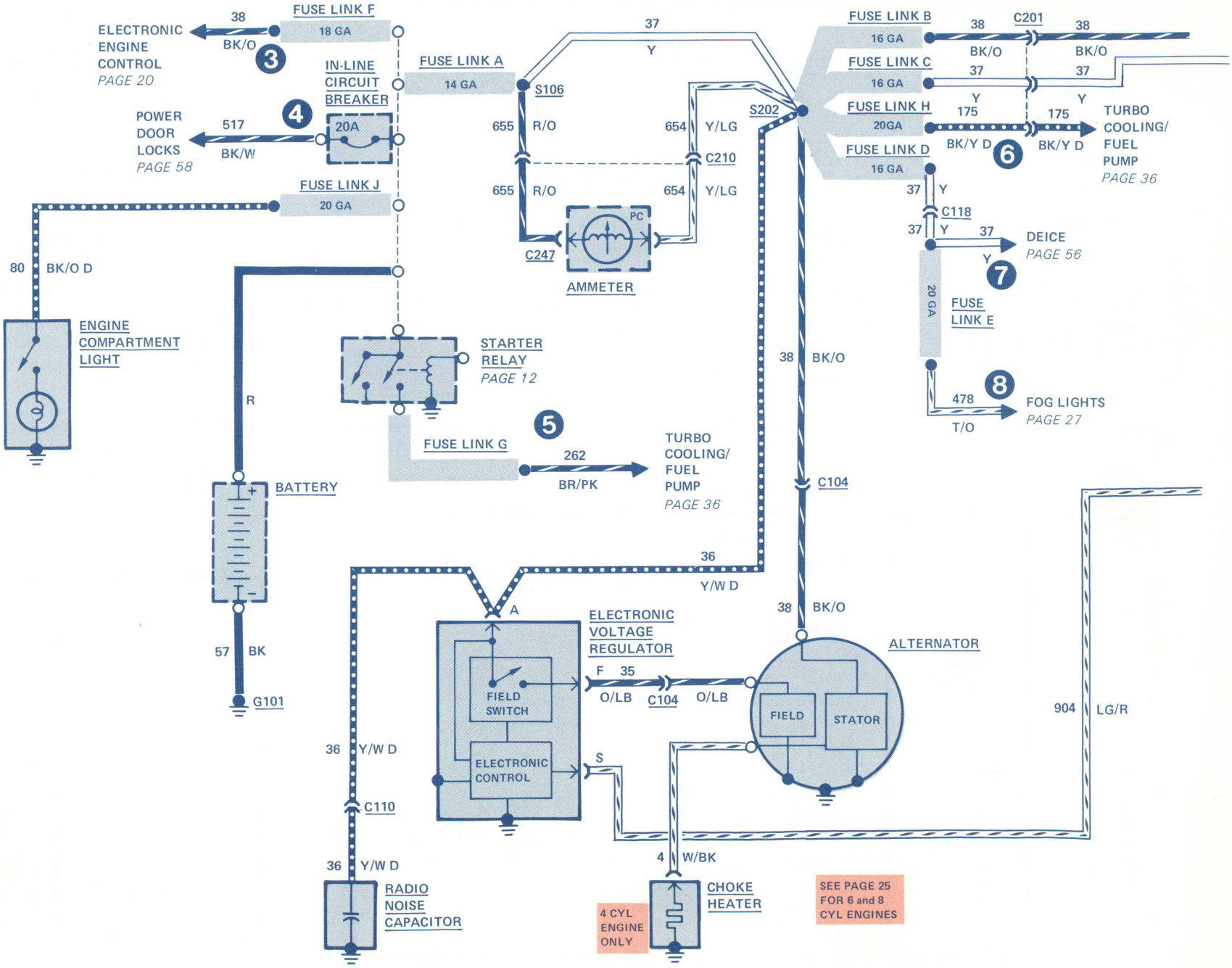
Fuse Block

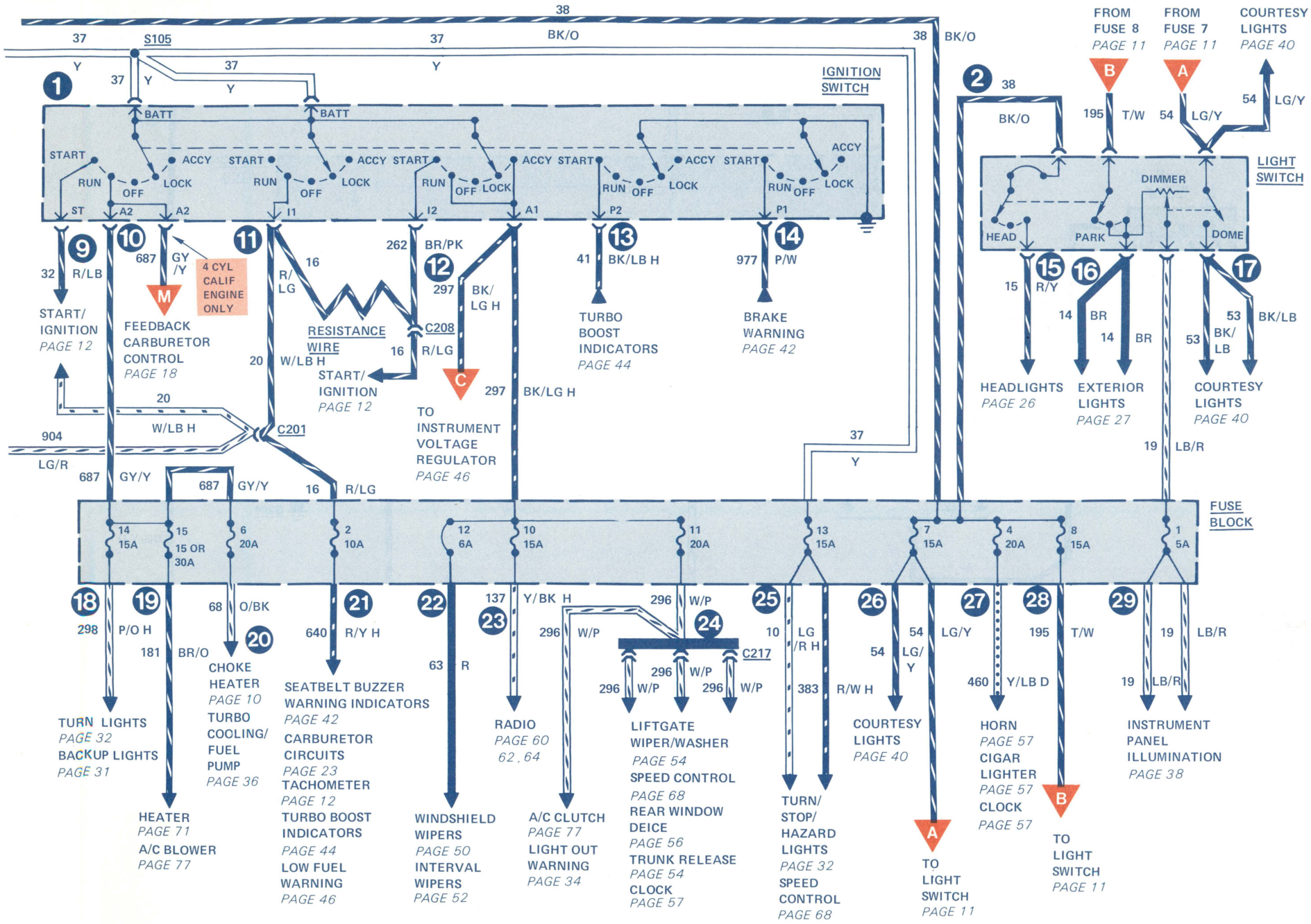
Fuses are identified by the numbered value in amps, and by a color code. Some positions (5 and 17) may have either a fuse with adapter or a circuit breaker. Be sure to replace a fuse or circuit breaker with the same kind of unit.

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

*10 Amps with Light Out Warning

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


FUSE LINK F
18 GA
38
BK/O
ELECTRONIC ENGINE CONTROL
PAGE 20
3
IN-LINE CIRCUIT BREAKER
20A
4
POWER DOOR LOCKS
PAGE 58
517
BK/W
FUSE LINK J
20 GA
80
BK/O D
ENGINE COMPARTMENT LIGHT
FUSE LINK A
14 GA
37
Y
S106
655
R/O
655
R/O
C247
PC
AMMETER
654
Y/LG
C210
654
Y/LG
S202
FUSE LINK B
16 GA
38
C201
38
BK/O
BK/O
FUSE LINK C
16 GA
37
37
Y
Y
FUSE LINK H
20GA
175
175
BK/Y D
BK/Y D
6
TURBO COOLING/ FUEL PUMP
PAGE 36
FUSE LINK D
16 GA
37
Y
C118
37
Y
37
Y
DEICE
PAGE 56
7
20 GA
FUSE LINK E
8
478
T/O
FOG LIGHTS
PAGE 27
STARTER RELAY
PAGE 12
R
BATTERY
57
BK
G101
5
FUSE LINK G
262
BR/PK
TURBO COOLING/ FUEL PUMP
PAGE 36
38
BK/O
C104
36
Y/W D
A
ELECTRONIC VOLTAGE REGULATOR
FIELD SWITCH
ELECTRONIC CONTROL
F
35
O/LB
C104
O/LB
S
38
BK/O
ALTERNATOR
FIELD
STATOR
904
LG/R
36
Y/W D
C110
36
Y/W D
RADIO NOISE CAPACITOR
4
W/BK
4 CYL ENGINE ONLY
CHOKE HEATER
SEE PAGE 25 FOR 6 and 8 CYL ENGINES


38
37
S105
37
BK/O
38
BK/O
Y
37
Y
37
Y
37
Y
IGNITION SWITCH
1
BATT
BATT
START
ACCY
RUN
OFF
LOCK
ST
A2
A2
I1
I2
A1
P2
P1
2
38
BK/O
FROM FUSE 8 PAGE 11
FROM FUSE 7 PAGE 11
COURTESY LIGHTS PAGE 40
B
A
195 T/W
54 LG/Y
54 LG/Y
LIGHT SWITCH
DIMMER
HEAD
PARK
DOME
9
10
11
12
13
14
15
16
17
32 R/LB
START/ IGNITION PAGE 12
687 GY/Y
M
4 CYL CALIF ENGINE ONLY
FEEDBACK CARBURETOR CONTROL PAGE 18
16 R/LG
RESISTANCE WIRE
262 BR/PK
297 BK/LG H
C208
16 R/LG
START/ IGNITION PAGE 12
C
TO INSTRUMENT VOLTAGE REGULATOR PAGE 46
41 BK/LB H
TURBO BOOST INDICATORS PAGE 44
977 P/W
BRAKE WARNING PAGE 42
15 R/Y
14 BR
14 BR
53 BK/ LB
53 BK/LB
HEADLIGHTS PAGE 26
EXTERIOR LIGHTS PAGE 27
COURTESY LIGHTS PAGE 40
19 LB/R
20 W/LB H
20 W/LB H
C201
904 LG/R
687 GY/Y
687 GY/Y
16 R/LG
297 BK/LG H
FUSE BLOCK
14 15A
15 15 OR 30A
6 20A
2 10A
12 6A
10 15A
11 20A
13 15A
7 15A
4 20A
8 15A
1 5A
18
19
20
21
22
23
24
25
26
27
28
29
298 P/O H
181 BR/O
68 O/BK
640 R/Y H
63 R
137 Y/BK H
296 W/P
296 W/P
296 W/P
296 W/P
296 W/P
C217
10 LG /R H
383 R/W H
54 LG/ Y
54 LG/Y
460 Y/LB D
195 T/W
19 LB/R
19 LB/R
TURN LIGHTS PAGE 32
BACKUP LIGHTS PAGE 31
HEATER PAGE 71
A/C BLOWER PAGE 77
CHOKE HEATER PAGE 10
TURBO COOLING/ FUEL PUMP PAGE 36
SEATBELT BUZZER WARNING INDICATORS PAGE 42
CARBURETOR CIRCUITS PAGE 23
TACHOMETER PAGE 12
TURBO BOOST INDICATORS PAGE 44
LOW FUEL WARNING PAGE 46
WINDSHIELD WIPERS PAGE 50
INTERVAL WIPERS PAGE 52
RADIO PAGE 60 62, 64
A/C CLUTCH PAGE 77
LIGHT OUT WARNING PAGE 34
LIFTGATE WIPER/WASHER PAGE 54
SPEED CONTROL PAGE 68
REAR WINDOW DEICE PAGE 56
TRUNK RELEASE PAGE 54
CLOCK PAGE 57
TURN/ STOP/ HAZARD LIGHTS PAGE 32
SPEED CONTROL PAGE 68
COURTESY LIGHTS PAGE 40
A
TO LIGHT SWITCH PAGE 11
HORN PAGE 57
CIGAR LIGHTER PAGE 57
CLOCK PAGE 57
B
TO LIGHT SWITCH PAGE 11
INSTRUMENT PANEL ILLUMINATION PAGE 38