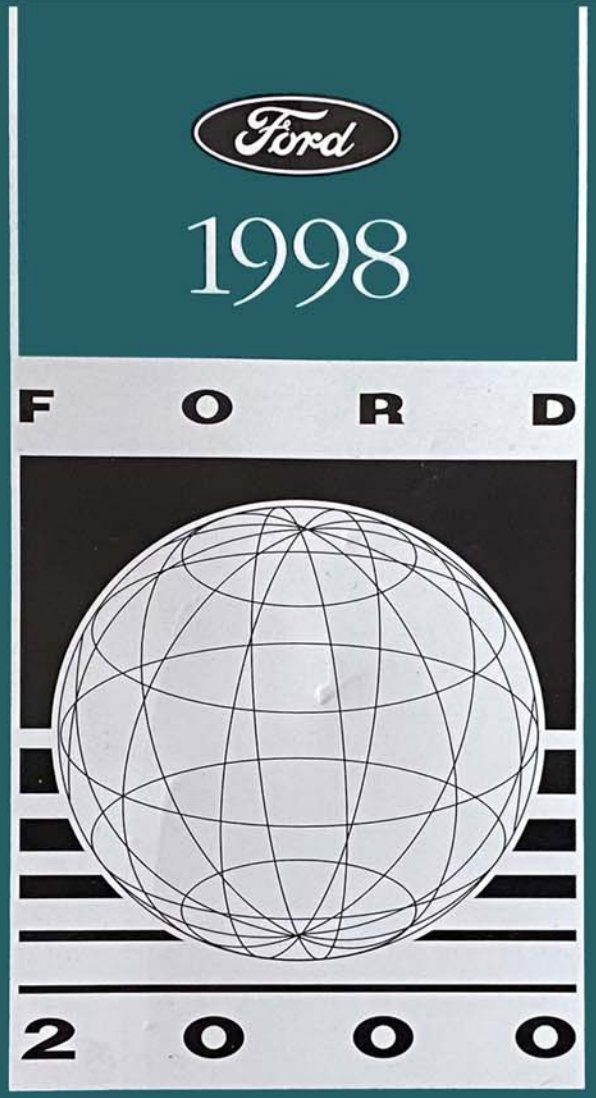
EVTM



F-150, F-250

ELECTRICAL VACUUM AND TROUBLESHOOTING MANUAL (EVTM)

1998 Ford F-150 F-250 Truck Electrical and Vacuum Troubleshooting Manual (EVTM)

EAN: 978-1-60371-476-1
ISBN: 1-60371-476-6

Forel Publishing Company, LLC
Woodbridge, VA 22192

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ELECTRICAL AND VACUUM TROUBLESHOOTING MANUAL
FCS–12263–98

FORD CUSTOMER SERVICE DIVISION

Quality is Job 1

Ford Customer Service Division has developed a new EVTM format for the 1998 F–150/250. Our goal is to provide accurate and timely electrical and vacuum service information.

1998 EVTM FEATURES

- Schematic pages now contain **Component Location** references to full–view illustrations and **Component Descriptions** that describe the system function of a component.
- **"COMPONENT TESTING"** procedures (CELL 149) that tell the user how to perform diagnostic tests on various circuits.
- **Connector End Views** are now located at the end of individual cells and are shown for connectors with five or more cavities; for connectors with ten or more cavities, a circuit function chart is provided.
- **NOTES, CAUTIONS and WARNINGS** contain important safety information.
- Full view **"COMPONENT LOCATION VIEWS"** (CELL 151) to help locate on–vehicle components.
- Circuit voltages have been added to schematic pages to help simplify troubleshooting. Nonessential troubleshooting hints have been deleted.
- **Cellular Pagination:** A specific section (or cell) in all EVTMs is numbered by cell and starts with page 1. For example: **"HOW TO USE THIS MANUAL"** is CELL 2 and begins with page 2–1.
- **"IN–LINE CONNECTOR FACES"** (CELL 150) has been added for in–line connectors with six or more terminals, to aid in servicing electrical wiring.
- "C" numbers have been assigned for all electrical connectors. "C" numbers are listed in the **"LOCATION INDEX"** (CELL 152).
- **"HARNESS CAUSAL PART NUMBERS"** (CELL 153) has been added to aid in identifying warranty concerns.

ORDERING INFORMATION

Information about how to order additional copies of this publication or other Ford publications may be obtained by writing to Helm Incorporated at the address shown below or by calling 1-800-782-4356. Other publications available include:

- Service Manuals
- Service Specification Books
- Car/Truck Wiring Diagrams
- Powertrain Control/Emissions Diagnosis Manuals

Helm Incorporated
P.O. Box 07150
Detroit, Michigan 48207

1–1 TABLE OF CONTENTS/INDEX

Table of Contents

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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 the methods, tools or parts does not compromise personal safety or the vehicle integrity.

2-1 HOW TO USE THIS MANUAL

The purpose of this manual is to show electrical and vacuum circuits in a clear and simple fashion to make troubleshooting easier. **NOTES, CAUTIONS** and **WARNINGS** contain important information.

- **NOTES** describe how switches and other components operate to help complete a particular procedure.
- **CAUTIONS** provide information that could prevent making an error that may damage the vehicle.
- **WARNINGS** provide information to prevent personal injury.

The **WARNINGS** list on page 2-2 contains general warnings to follow when servicing a vehicle.

Components that work together are shown together. All electrical components used in a specific system are shown on one diagram. The circuit breaker or fuse is shown at the top of the page. All wires, connectors, components and splices are shown in the flow of current to ground at the bottom of the page. If a component is used in several different systems, it is shown in several places. For example, the Main Light Switch is electrically a part of many systems and is repeated on many pages.

In some cases, a component may seem (by its name) to belong to a system where it has no electrical connection. For example, Radio Illumination is electrically part of Instrument Illumination, but because it has no electrical connection to the Radio system, it is not shown on the Radio diagram.

Schematic pages contain references to full-view illustrations and description notes for various components. The references are reverse-text blocks located next to each component and connector and refer the user to the appropriate illustration page and zone. The description notes describe the operation of the component.

Schematic pages contain circuit voltages to help simplify troubleshooting hints. 12V is used to imply battery voltage on a component connector terminal, and 0V is used to show that there should be continuity to ground on that particular terminal. Conditional voltages such as "12V with the ignition switch in RUN" will also be provided. Troubleshooting hints that can't be simplified with circuit voltages will be shown at the end of each cell.

Component connector face information specific to a certain cell is found at the end of that cell. A Connector Face Reference List is provided to locate connector faces that are shown in different cells. Component connectors with five or more terminals are illustrated and are accompanied by a pinout chart that lists the function of all circuitry associated with that component.

"GROUNDS" (Cell 10) contains ground circuitry shown in complete detail. This information is useful for checking interconnections of the ground circuits of different systems.

"POWER DISTRIBUTION" (Cell 13) contains power distribution circuitry shown in complete detail. This section displays how the various fuses are powered and, in turn, how each system is powered.

"COMPONENT TESTING" (Cell 149) contains testing procedures for various switches. This information includes schematics, component terminal locations and step-by-step procedures.

"IN-LINE CONNECTOR FACES" (Cell 150) contains illustrations of all the in-line connectors that have 6 or more terminals. The terminals have pin numbers assigned to them.

"COMPONENT LOCATION VIEWS" (Cell 151) contains full-view illustrations which show the location of all components and connectors in the vehicle.

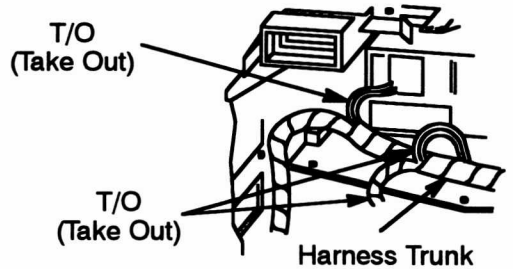
The **"LOCATION INDEX"** (Cell 152) provides the base part numbers, locations, connector face references and illustration references for all components, connectors, splices and grounds.

HELPFUL REMINDERS

Before using the EVTM for troubleshooting, refer to these HELPFUL REMINDERS:

1. The abbreviation T/O, for take out, used in the Location Index (Cell 152), refers to the point at which a group of wires branch off the harness trunk. Refer to the wiring harness illustration.

Wiring harness at back of Instrument Panel, showing typical T/O (Take Out) locations



2. If a connector serves the same purpose in two separate versions (e.g., Automatic/Manual), but is physically different, *two* connector numbers are used. However, if a connector serves the same purpose in two separate versions (e.g., Automatic/Manual) and is physically the same, but the wire colors are different, only *one* connector number is used. If the same physical connector is used more than once, then more than *one* connector number is used.

3. Wiring schematics provide a picture of how and under what conditions the circuit is powered, of the current path to circuit components, and of how a circuit is grounded. Each circuit component is named (underlined titles). Wire and connector colors are listed as follows (standard Ford color abbreviations are used):

COLOR ABBREVIATIONS

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

Note: Whenever a wire is labeled with two colors, the first color listed is the basic color of the wire, and the second color listed is the stripe marking of the wire.

4. When reporting Vehicle Repair Location Codes to Ford Customer Service Division, refer to Cell 160 (beginning on page 160-1). Note: Do *not* use the illustrations in Cell 151 (beginning on page 151-1) for reporting Vehicle Repair Location Codes.

5. **WARNINGS**

- *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 danger of carbon monoxide.*
- *Keep away from moving parts, especially the fan and belts, when the engine is running.*
- *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 when working on a vehicle.*
- *To avoid injury, always remove rings, watches, loose hanging jewelry and avoid wearing loose clothing.*

HOW TO FIND ELECTRICAL CONCERNS

TROUBLESHOOTING STEPS

These six steps present an orderly method of troubleshooting.

Step 1. Verify the concern.

- Operate the complete system to check the accuracy and completeness of the customer's complaint.

Step 2. Narrow the concern.

- Using the EVTM, narrow down the possible causes and locations of the concern to pinpoint the exact cause.
- Read the description notes at the components and study the wiring schematic. You should then know enough about the circuit operation to determine where to check for the trouble. Further information can be found by referring to the Service Manual pages listed in the box at the top of the page.

Step 3. Test the suspected cause.

- Use electrical test procedures to find the specific cause of the symptoms.
- The component location reference bars and the pictures will help you find components. The Location Index (at the end of the manual) gives component location information for connectors, diodes, resistors, splices and grounds.

Step 4. Verify the cause.

- Confirm that you have found the correct cause by connecting jumper wires and/or temporarily installing a known good component and operating the circuit.

Step 5. Make the repair.

- Repair or replace the inoperative component.

Step 6. Verify the repair.

- Operate the system as in Step 1 and check that your repair has removed all symptoms without creating any new symptoms.

Some engine circuits may need special test equipment and special procedures. See the *Service Manual* and other service books for details. You will find the circuits in this manual to be helpful with those special test procedures.

TROUBLESHOOTING TOOLS

JUMPER WIRE

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

WARNING

Never use a jumper wire across 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

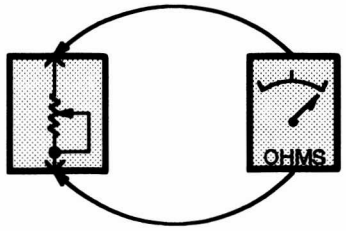


Figure 1 – Resistance Check

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

TEST LAMP

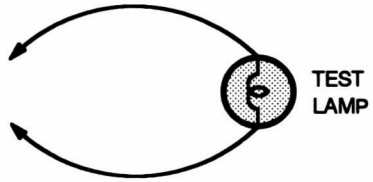


Figure 2 – Test Lamp

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

Uses: Voltage Check, Short Check.

SELF-POWERED TEST LAMP

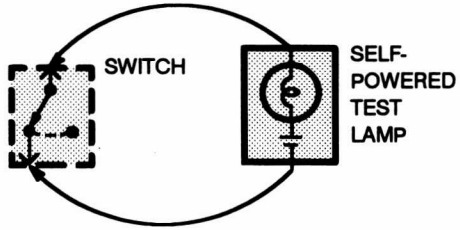


Figure 3 – Continuity Check

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.

CAUTION

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

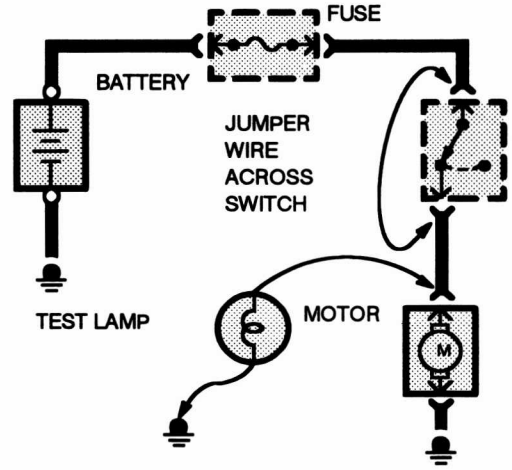


Figure 4 – Switch Circuit Check and Voltage Check

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

CONTINUITY CHECK (Locating open circuits)

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

VOLTAGE CHECK

Connect one lead of test lamp 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).

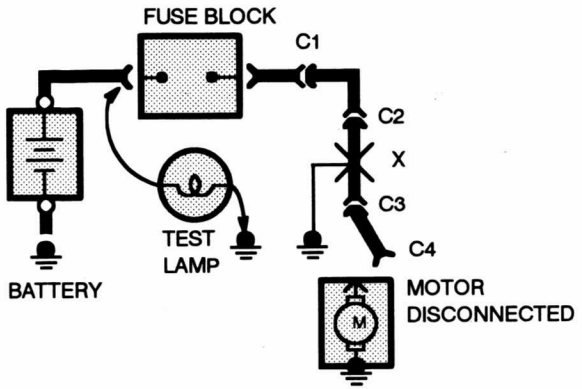


Figure 5 – Short Check

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 (Connector C4 in Figure 5).
   - Lights: 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 that is connected to ground, and reconnect it to the load side of the fuse at the connector of the disconnected component. (In Figure 5, connect the test lamp lead to connector C4.)
   - If the Test Lamp is off, the short is in the disconnected component.
   - 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, in Figure 5 with a ground at X, the bulb goes out when C1 or C2 is disconnected, but not after disconnecting C3. This means the short is between C2 and C3.

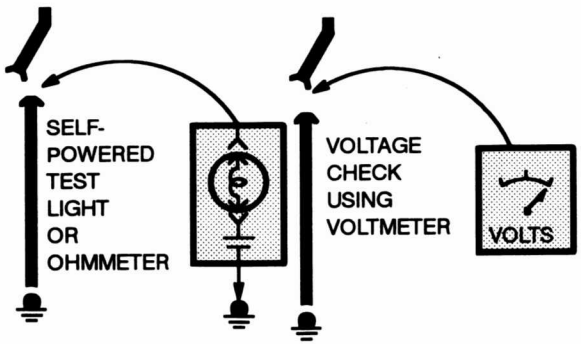


Figure 6 – Ground Check

Turn on power to the circuit. Perform a Voltage Check between the suspected inoperative ground and the frame. Any indicated voltage means that the ground is inoperative (Figure 6).

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

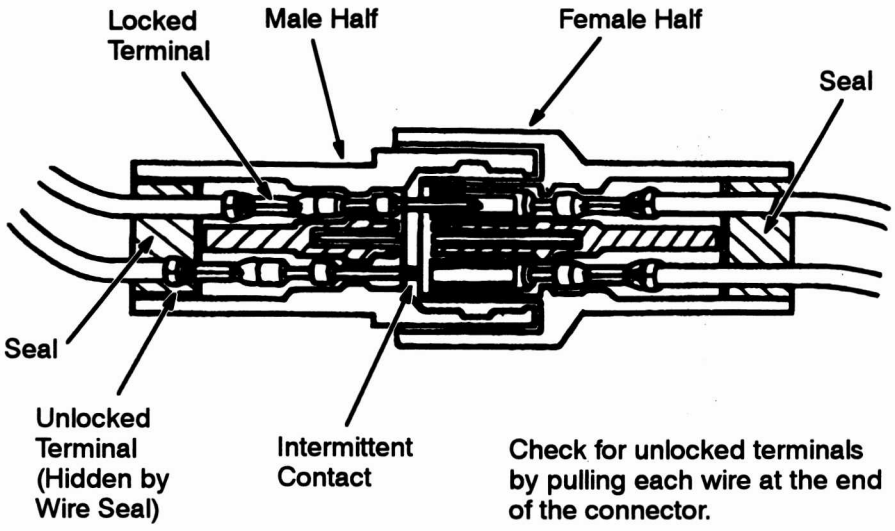
The circuit schematics in this manual make it easy to identify common points in circuits. This knowledge can help narrow the concern to a specific area. For example, if several circuits fail at the same time, check for a common power or ground connection (see *Power Distribution* or *Grounds*). If part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

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

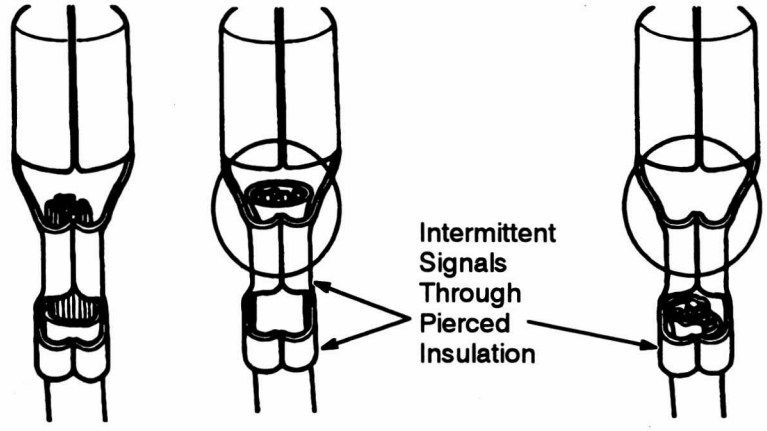
TROUBLESHOOTING WIRING HARNESS AND CONNECTOR HIDDEN CONCERNS

The following illustrations are known examples of wiring harness, splices and connectors that will create intermittent electrical concerns. The concerns are hidden and can only be discovered by a physical evaluation as shown in each illustration.

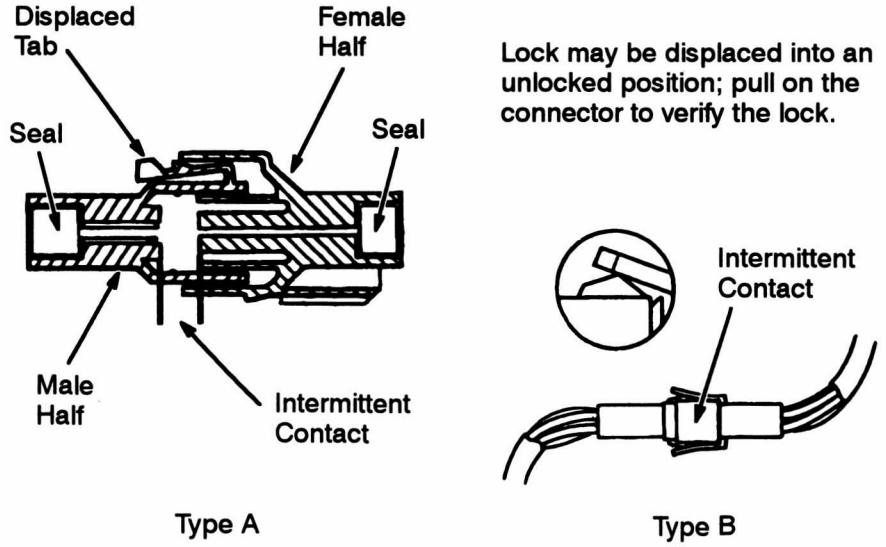
NOTE: Several components, such as the PCM, utilize gold plated terminals in their connections to the wiring harness. If those terminals need to be replaced, they must be replaced with a gold plated terminal.



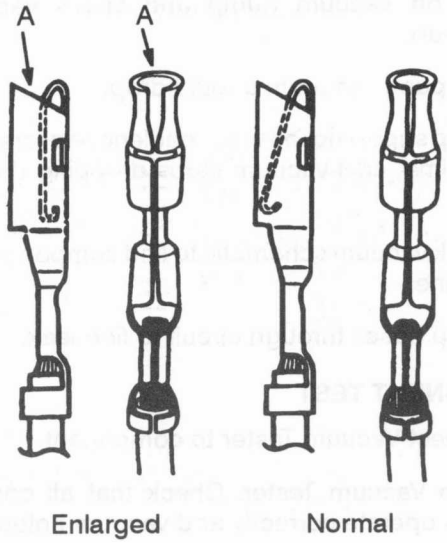
TERMINAL NOT PROPERLY SEATED



DEFECTIVE INSULATION STRIPPING

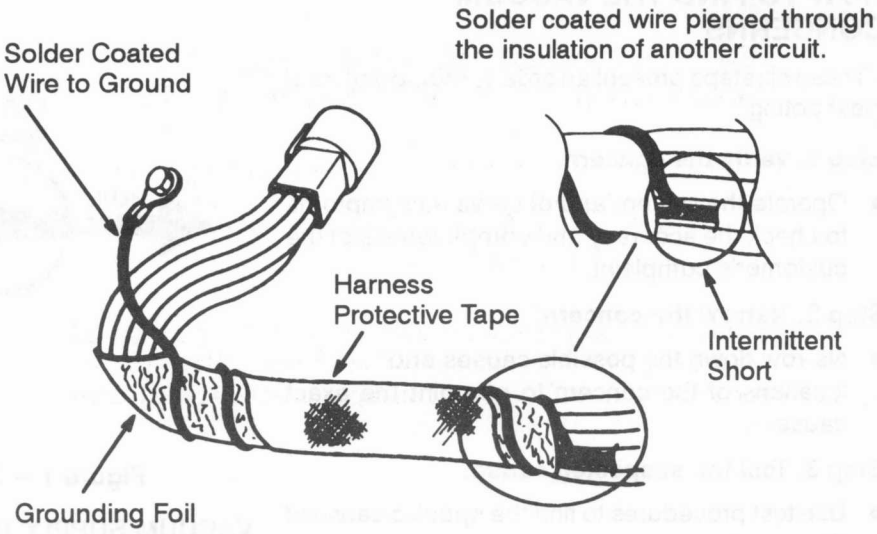


PARTIALLY MATED CONNECTORS

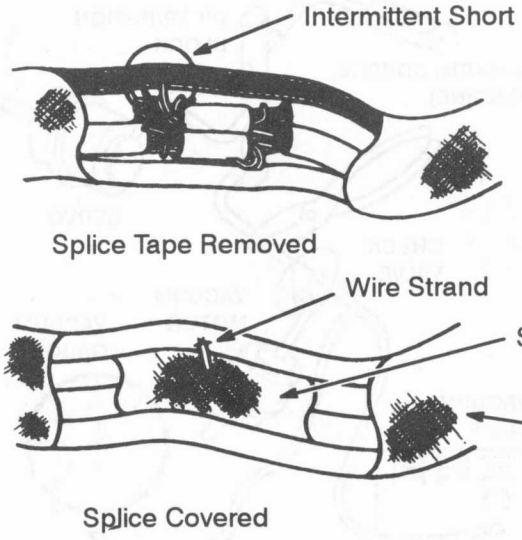


Any probe entering the terminal may enlarge the contact spring opening creating an intermittent signal. Insert the correct mating terminal (Location A) from the service kit and feel for a loose fit.

DEFORMED (ENLARGED) FEMALE TERMINALS

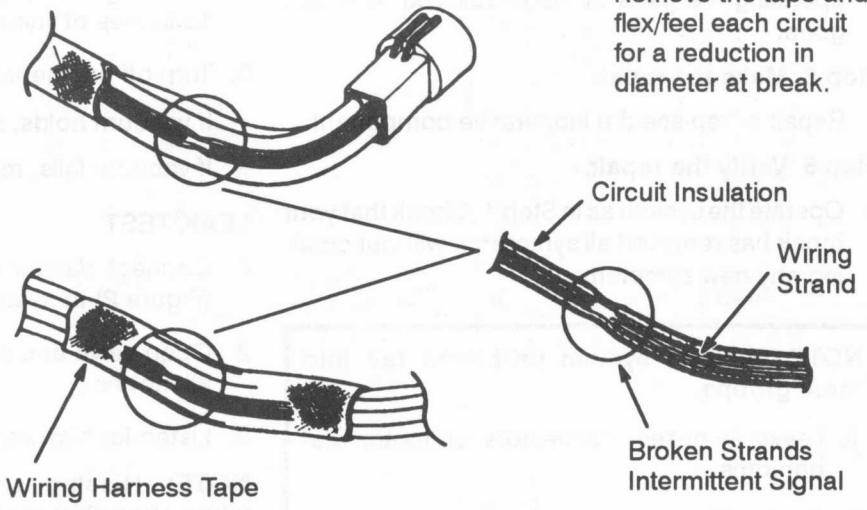


ELECTRICAL SHORT INSIDE THE HARNESS



Operate the system and flex the harness at splice location noted in Section 152.

ELECTRICAL SHORT WITHIN THE HARNESS



BROKEN WIRE STRANDS IN HARNESS

HOW TO FIND THE VACUUM CONCERNS

These six steps present an orderly method of troubleshooting.

Step 1. Verify the concern.

- Operate the system and observe all symptoms to check the accuracy and completeness of the customer's complaint.

Step 2. Narrow the concern.

- Narrow down the possible causes and locations of the concern to pinpoint the exact cause.

Step 3. Test the suspected cause.

- Use test procedures to find the specific cause of the symptoms.

Step 4. Verify the cause.

- Confirm that you have found the right cause by operating the parts of the circuit you think are good.

Step 5. Make the repair.

- Repair or replace the inoperative component.

Step 6. Verify the repair.

- Operate the system as in Step 1. Check that your repair has removed all symptoms without creating any new symptoms.

NOTE: Vacuum system problems fall into three groups.

1. Leaks in hoses, connectors or motor diaphragms.
2. Pinched lines or clogged valves.
3. Inoperative parts driven by vacuum motors.

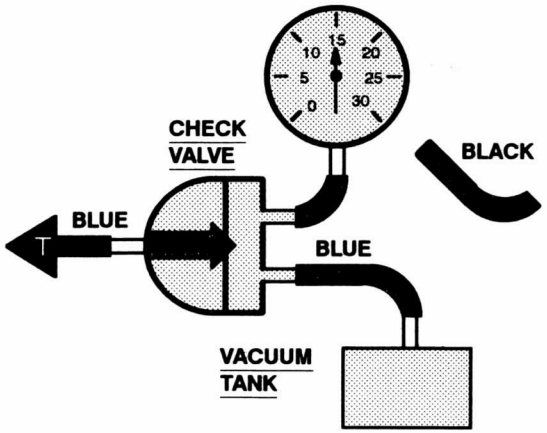


Figure 1 – System Supply Test

VACUUM SUPPLY TEST

1. Connect Vacuum Tester to system side of Check Valve (Figure 1).
2. Start engine. Gauge should show approximately 15 inches of vacuum.
3. Turn off engine, and observe gauge:

– If vacuum holds, supply OK.

– If vacuum fails, replace Check Valve or Tank.

LEAK TEST

1. Connect Vacuum Gauge and Vacuum Pump (Figure 2) to system hose in place of tank.
2. Open valve and start pump. Operate control in all modes.
3. Listen for hiss and observe gauge.

NOTE: Hissing is normal at Function Control when changing modes.

If system hisses or loses vacuum, find system leak as follows:

1. Turn on Vacuum Pump and check vacuum build-up.
2. Stop pump; vacuum should drop.
3. Clamp supply hoses with needlenose pliers, one at a time, until vacuum stops dropping (Figure 2).
4. Check vacuum schematic to find components in that line.
5. Clamp hoses through circuit to find leak.

COMPONENT TEST

1. Connect Vacuum Tester to component.
2. Pump Vacuum Tester. Check that all components operate correctly and vacuum holds.
3. Replace component if vacuum does not hold.

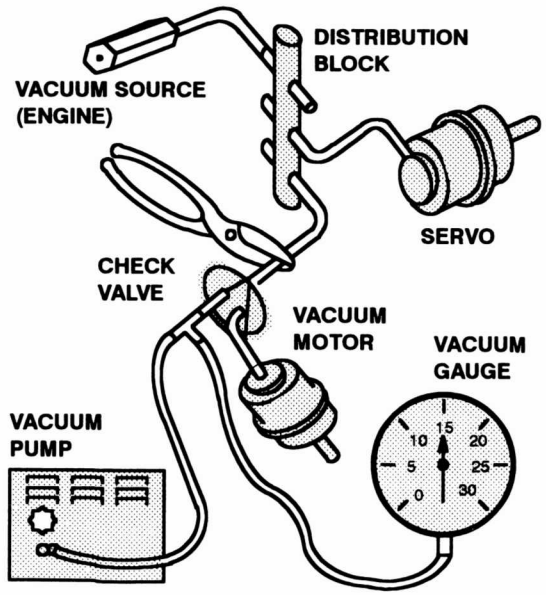
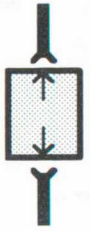


Figure 2 – Testing For Leaks In Typical Vacuum System

ELECTRICAL SYMBOLS

DASHED COMPONENT BOX
ONLY PART OF THE COMPONENT IS SHOWN ON THE PAGE; THE COMPONENT IS SHOWN COMPLETE IN ANOTHER LOCATION



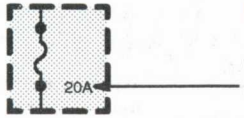
COMPONENT WITH CONNECTORS

BATTERY

SCREW TERMINAL ON COMPONENT

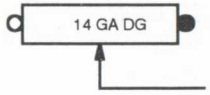
SEALED ELECTRONIC COMPONENT
ANY CIRCUITRY SHOWN INSIDE THE BOX IS A FUNCTIONAL EQUIVALENT ONLY AND IS NOT EXACT

GROUND CONNECTION



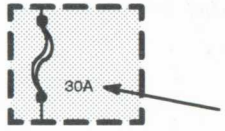
FUSE

CURRENT RATING



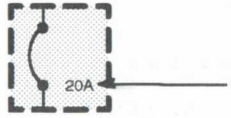
FUSIBLE LINK

WIRE SIZE AND COLOR



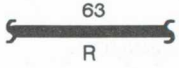
MAXI-FUSE
or
FUSIBLE LINK CARTRIDGE

CURRENT RATING

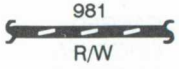


CIRCUIT BREAKER

CURRENT RATING

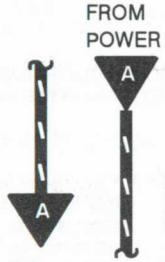


SOLID WIRES



STRIPED WIRES

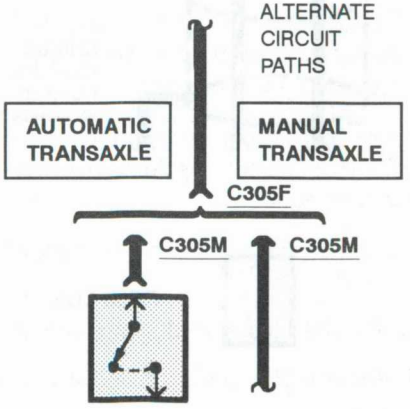
SPLICE OR CRIMP TERMINAL



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

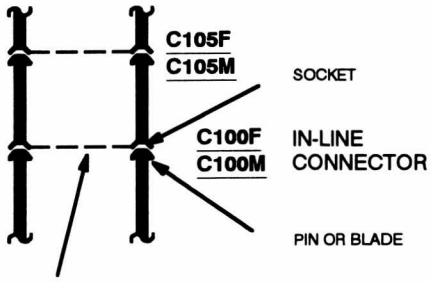
BACKUP LIGHTS

"REFERENCE" WIRES
COMPLETE WIRING SHOWN ON ANOTHER PAGE

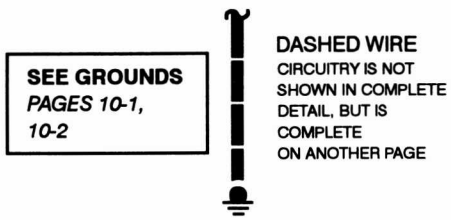


ALTERNATE CIRCUIT PATHS

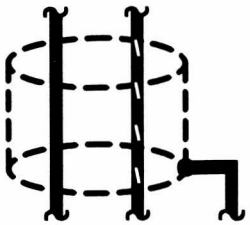
ELECTRICAL SYMBOLS



SINGLE DASHED LINE INDICATES THAT WIRE ON LEFT ALSO PASSES THROUGH THE SAME CONNECTOR



DASHED WIRE
CIRCUITRY IS NOT SHOWN IN COMPLETE DETAIL, BUT IS COMPLETE ON ANOTHER PAGE



SHIELD
WIRES ARE COVERED BY A SHIELD

FIELD COIL

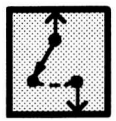
MOTOR

HEATING ELEMENT

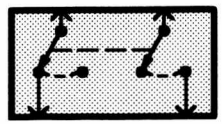
THERMISTOR

RHEOSTAT OR POTENTIOMETER

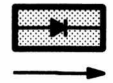
SOLENOID



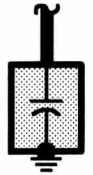
SWITCH



GANGED SWITCHES
CONTACTS MOVE AT THE SAME TIME

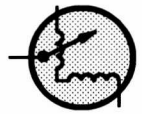


DIODES
CURRENT FLOWS IN DIRECTION OF ARROW ONLY



CAPACITOR

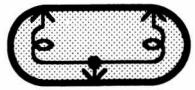
TRANSISTOR



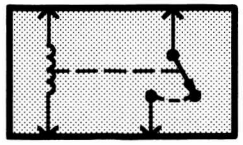
GAUGE

LIGHT EMITTING DIODE (LED)

LIGHT BULB

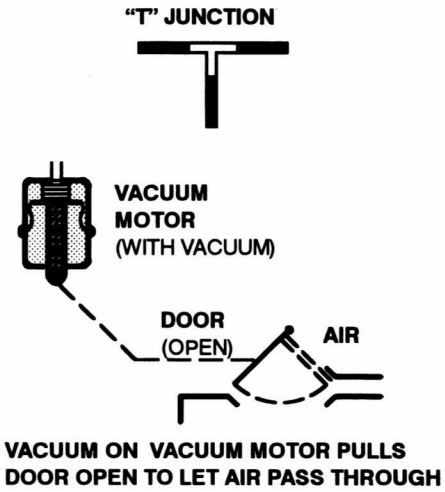


DUAL FILAMENT LIGHT BULB



RELAY
CONTACTS CHANGE POSITION WITH CURRENT THROUGH COIL

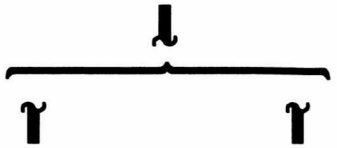
VACUUM SYMBOLS



TO SYSTEM

"CUT" HOSES REFERENCED BETWEEN PAGES
ARROW SHOWS FROM MANIFOLD FITTING TO COMPONENT

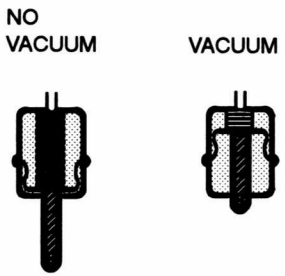
FROM VACUUM DISTRIBUTION



Note: Other vacuum symbols used on vacuum system diagrams are fully explained on the pages where they appear.

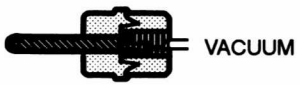
VACUUM MOTOR OPERATION

SINGLE DIAPHRAGM MOTOR



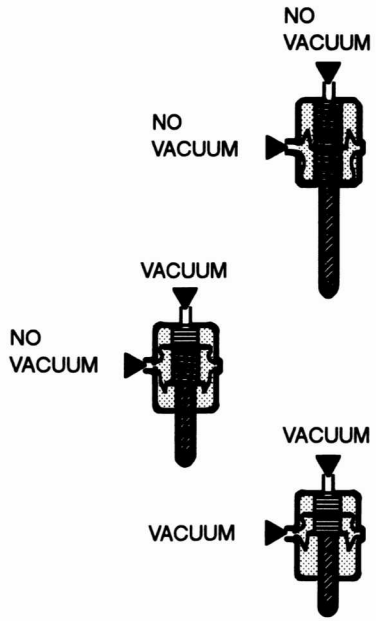
Vacuum motors operate like electrical solenoids, mechanically pushing or pulling a shaft between two fixed positions. When vacuum is not applied, the shaft is pushed all the way out by a spring.

SERVO MOTOR



Some vacuum motors can position the actuating arm at any position between fully extended and fully retracted. The Servo is operated by a control valve that applies varying amounts of vacuum to the motor. The higher the vacuum level, the greater the retraction of the motor arm. Servo Motors work nearly the same way as two-position motors, except for the way the vacuum is applied. Servo Motors are generally larger and provide a calibrated control.

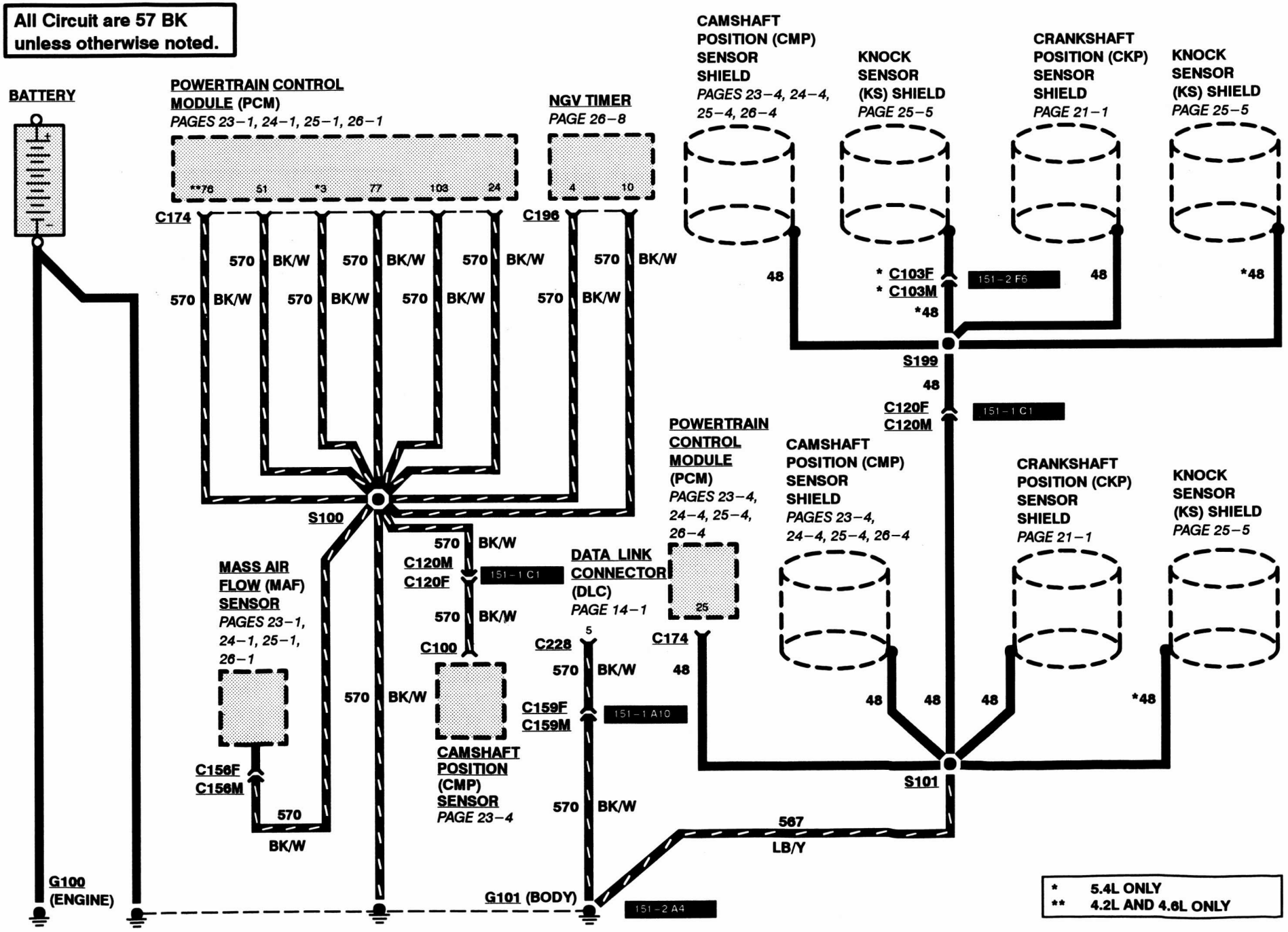
DOUBLE DIAPHRAGM MOTOR



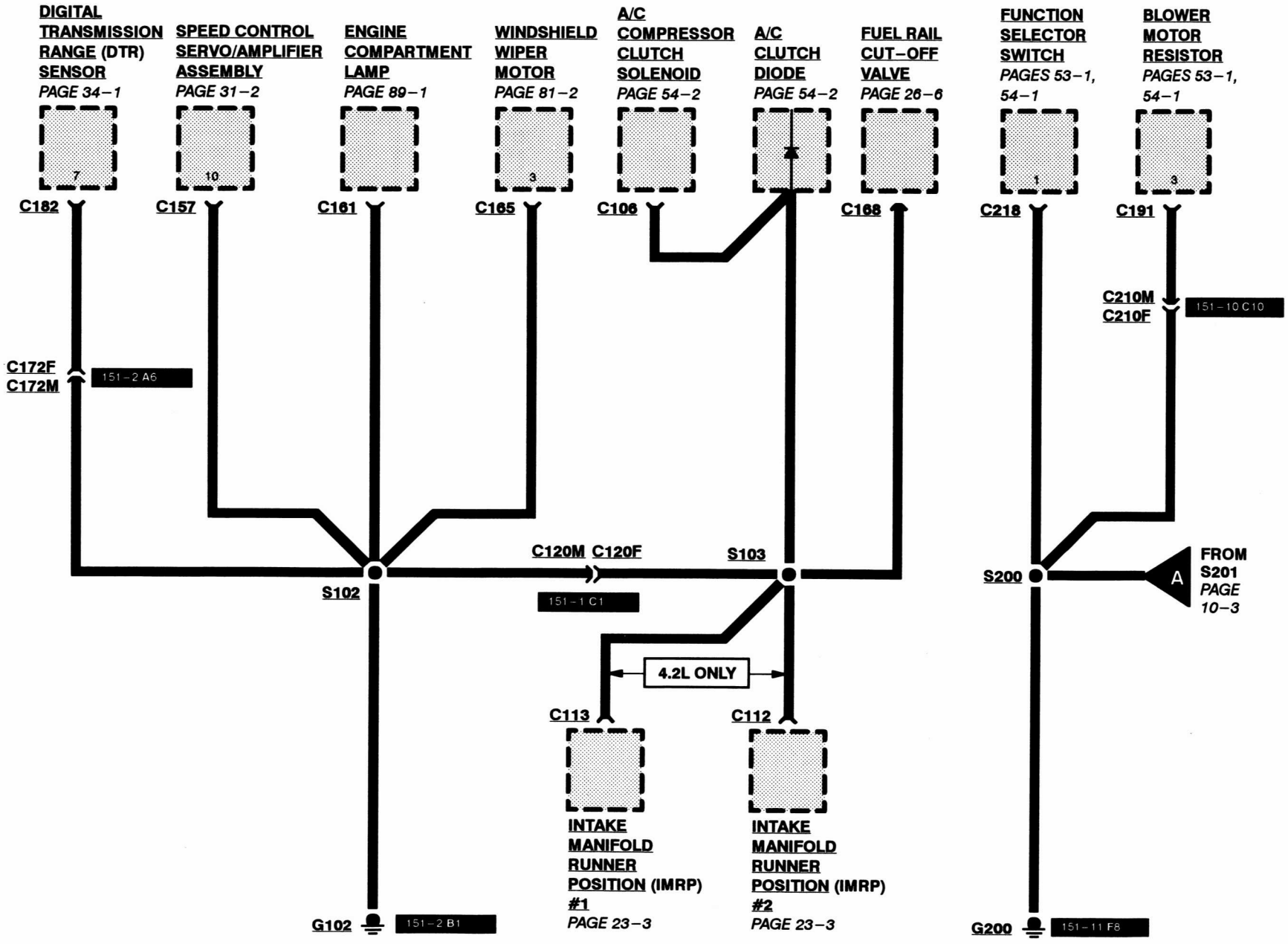
A double diaphragm motor has three positions (it is actually two motors in one housing). When the top port gets vacuum, the shaft pulls halfway in. When both ports get vacuum, the shaft pulls all the way in.

10–1 GROUNDS

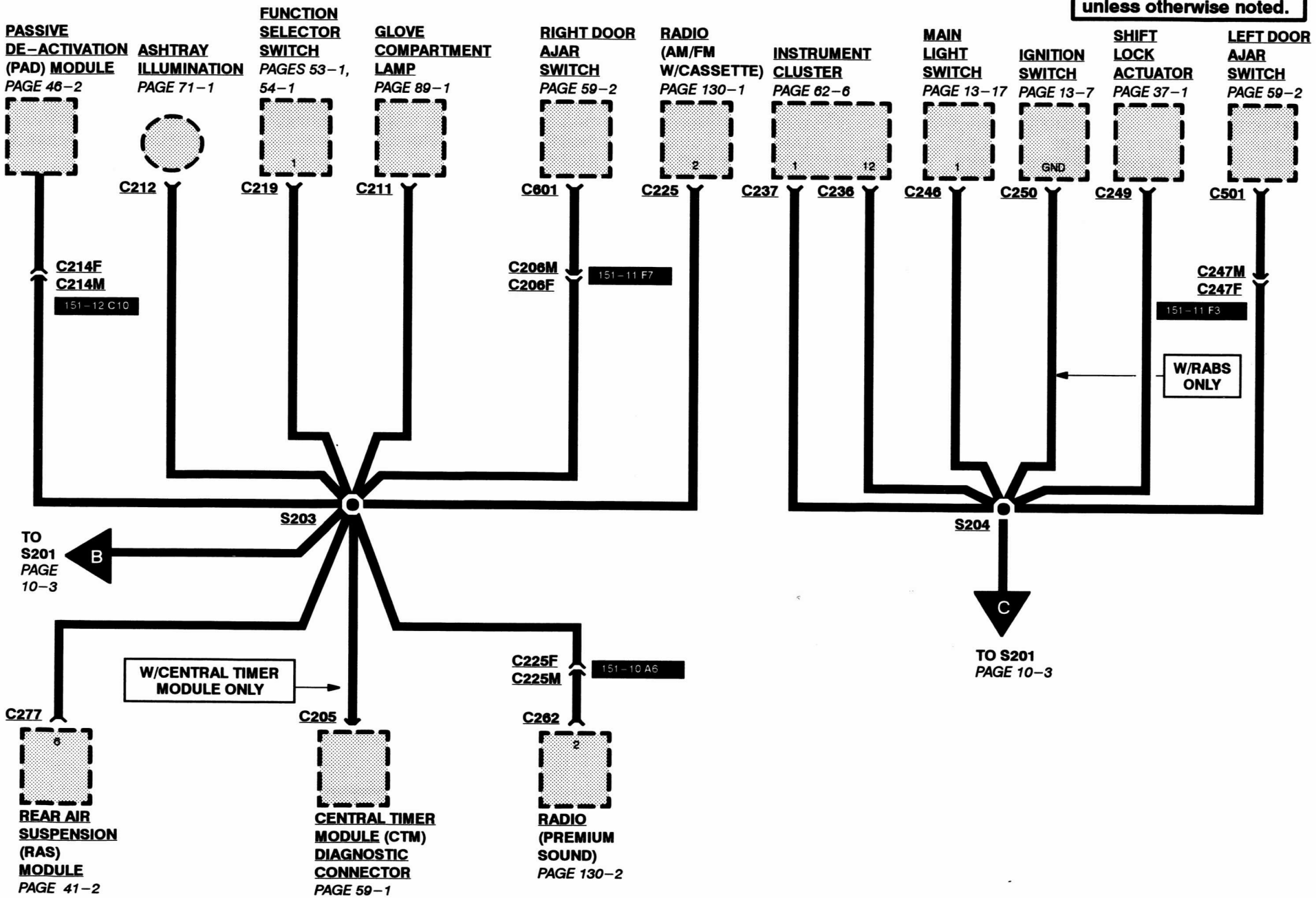
All Circuit are 57 BK unless otherwise noted.

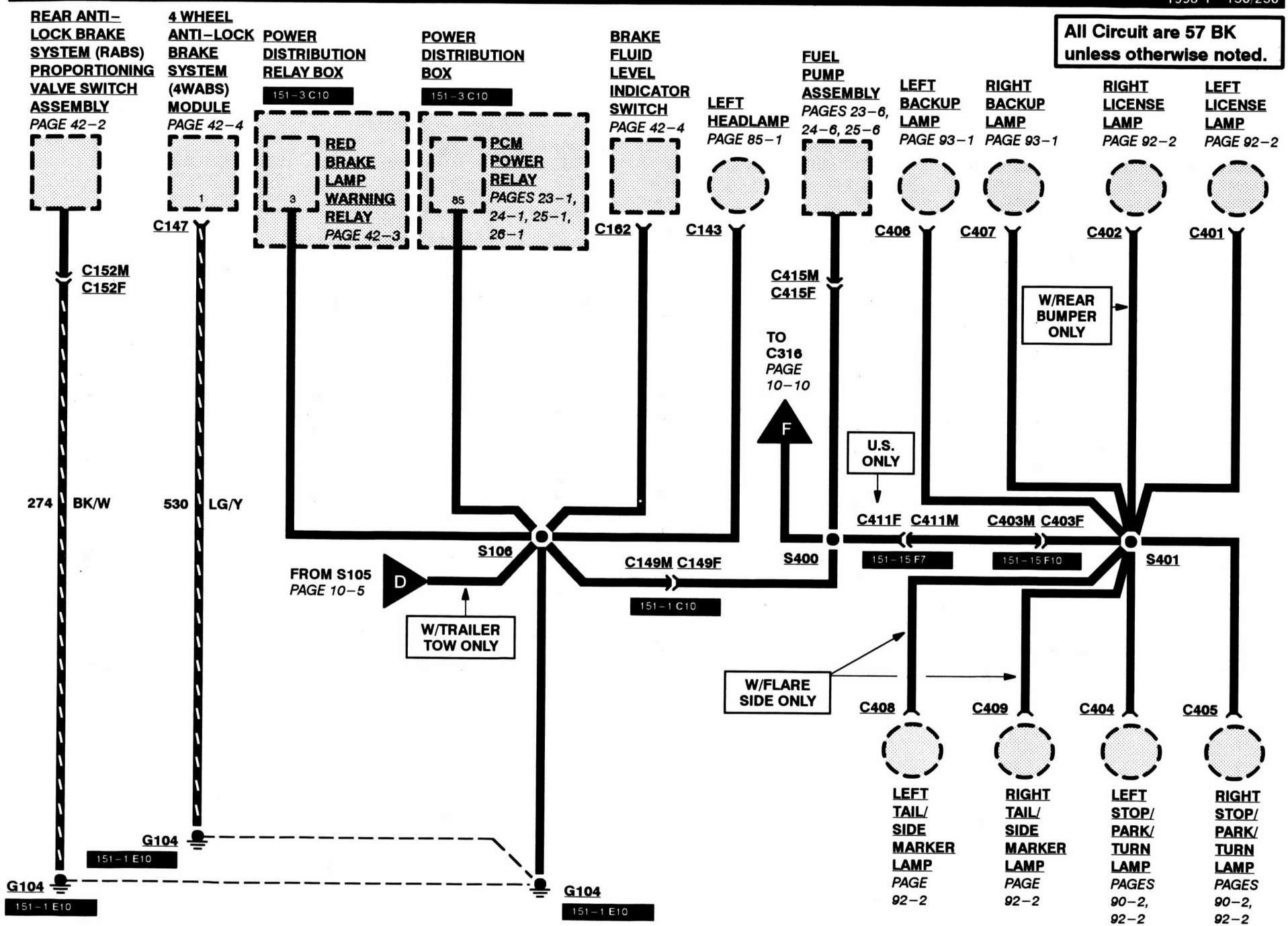


All Circuit are 57 BK unless otherwise noted.



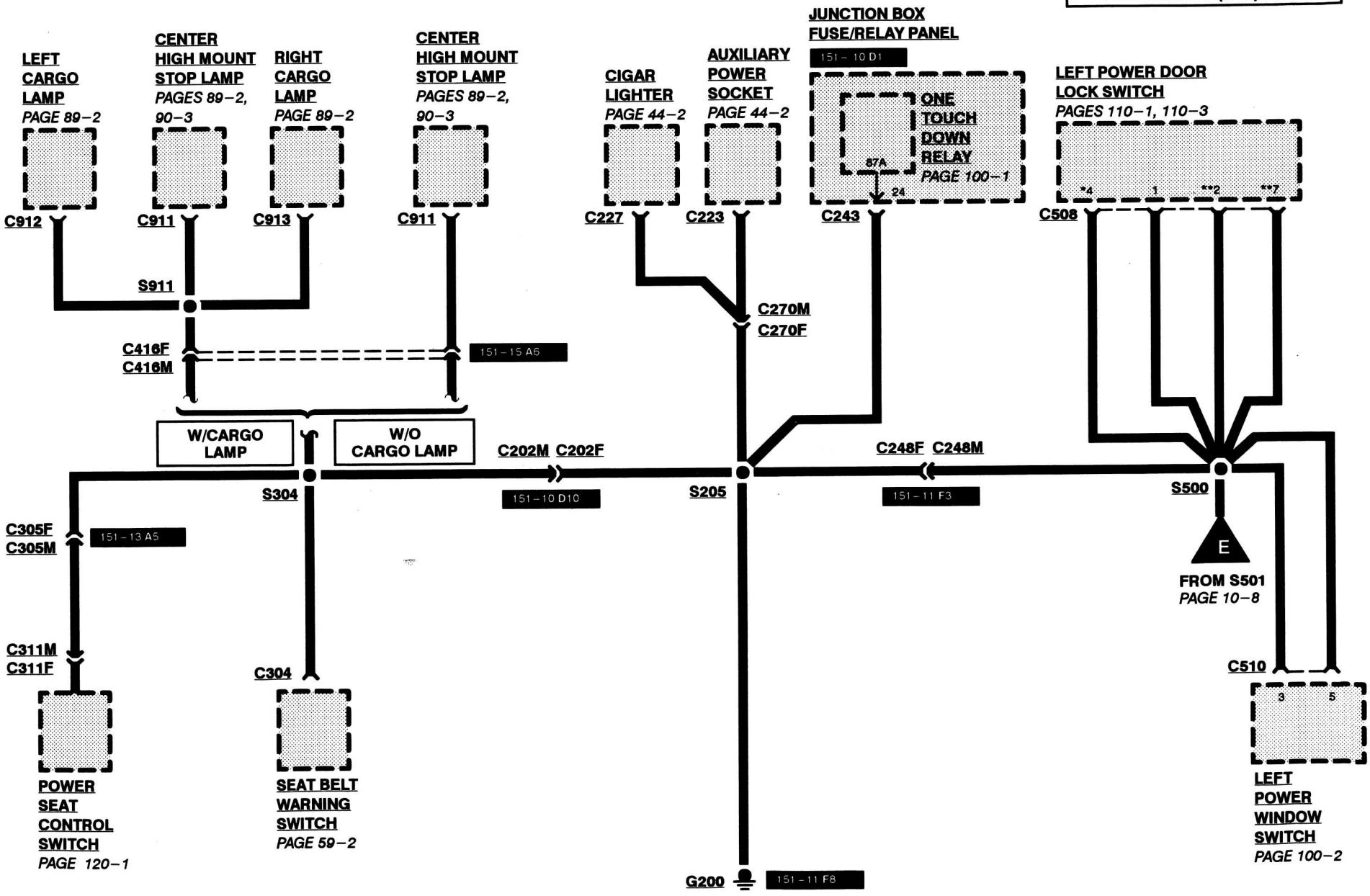
All Circuit are 57 BK unless otherwise noted.



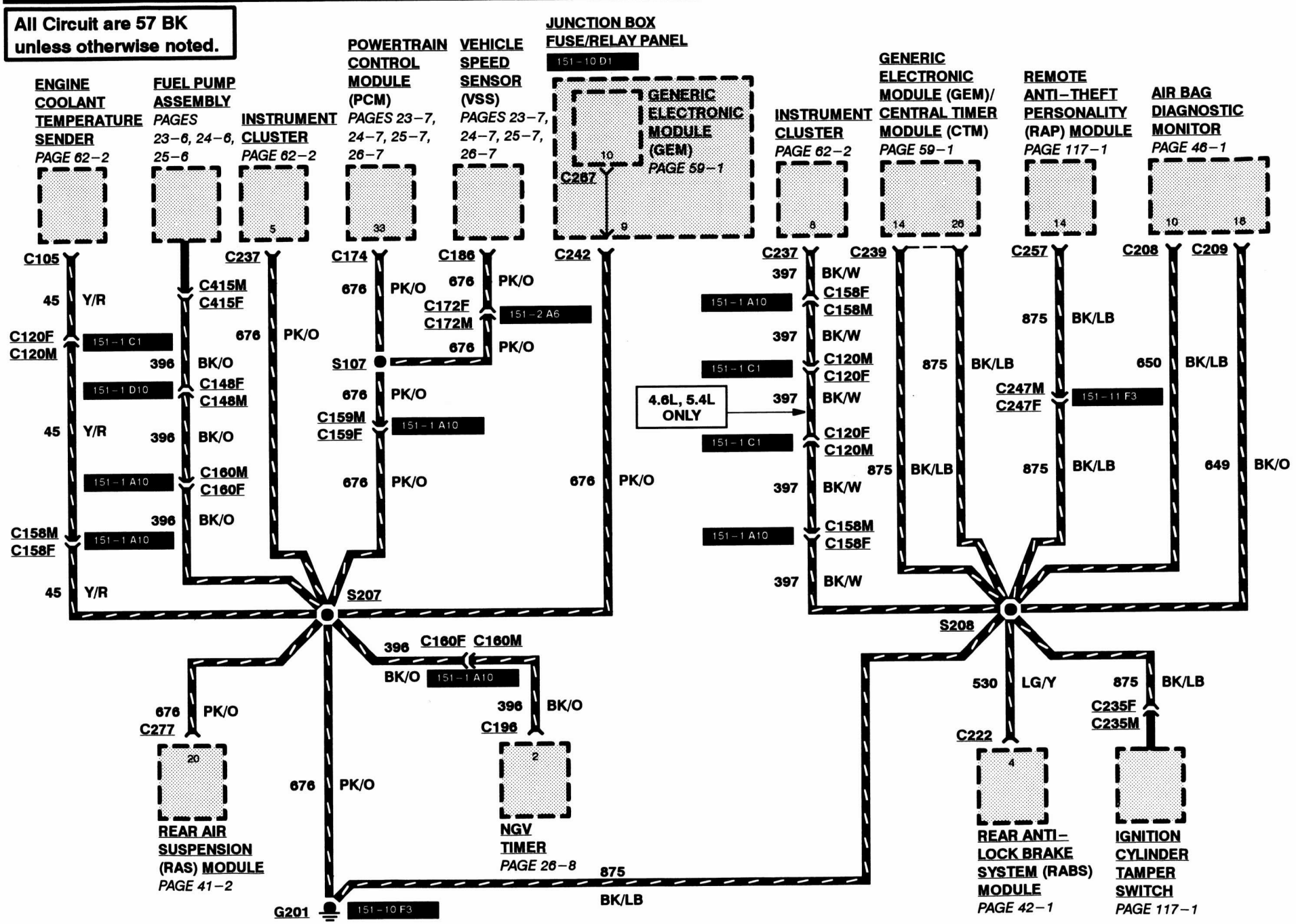

All Circuit are 57 BK unless otherwise noted.
REAR ANTI-LOCK BRAKE SYSTEM (RABS) PROPORTIONING VALVE SWITCH ASSEMBLY
PAGE 42–2
4 WHEEL ANTI-LOCK BRAKE SYSTEM (4WABS) MODULE
PAGE 42–4
POWER DISTRIBUTION RELAY BOX
151–3 C10
POWER DISTRIBUTION BOX
151–3 C10
BRAKE FLUID LEVEL INDICATOR SWITCH
PAGE 42–4
LEFT HEADLAMP
PAGE 85–1
FUEL PUMP ASSEMBLY
PAGES 23–6, 24–6, 25–6
LEFT BACKUP LAMP
PAGE 93–1
RIGHT BACKUP LAMP
PAGE 93–1
RIGHT LICENSE LAMP
PAGE 92–2
LEFT LICENSE LAMP
PAGE 92–2
RED BRAKE LAMP WARNING RELAY
PAGE 42–3
PCM POWER RELAY
PAGES 23–1, 24–1, 25–1, 26–1
C147
C162
C143
C406
C407
C402
C401
C152M
C152F
C415M
C415F
W/REAR BUMPER ONLY
TO C316
PAGE 10–10
274 BK/W
530 LG/Y
U.S. ONLY
C411F C411M
C403M C403F
151–15 F7
151–15 F10
S106
S400
S401
FROM S105
PAGE 10–5
C149M C149F
151–1 C10
W/TRAILER TOW ONLY
W/FLARE SIDE ONLY
C408
C409
C404
C405
LEFT TAIL/ SIDE MARKER LAMP
PAGE 92–2
RIGHT TAIL/ SIDE MARKER LAMP
PAGE 92–2
LEFT STOP/ PARK/ TURN LAMP
PAGES 90–2, 92–2
RIGHT STOP/ PARK/ TURN LAMP
PAGES 90–2, 92–2
G104
151–1 E10
G104
151–1 E10
G104
151–1 E10

All Circuit are 57 BK unless otherwise noted.

* W/REMOTE ANTI–THEFT PERSONALITY (RAP) MODULE
** W/O REMOTE ANTI–THEFT PERSONALITY (RAP) MODULE



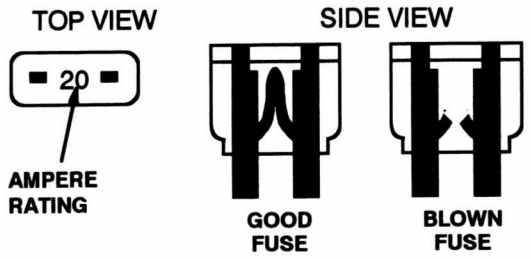
10–9 GROUNDS


All Circuit are 57 BK unless otherwise noted.
ENGINE COOLANT TEMPERATURE SENDER
PAGE 62–2
FUEL PUMP ASSEMBLY
PAGES 23–6, 24–6, 25–6
INSTRUMENT CLUSTER
PAGE 62–2
POWERTRAIN CONTROL MODULE (PCM)
PAGES 23–7, 24–7, 25–7, 26–7
VEHICLE SPEED SENSOR (VSS)
PAGES 23–7, 24–7, 25–7, 26–7
JUNCTION BOX FUSE/RELAY PANEL
151–10 D1
GENERIC ELECTRONIC MODULE (GEM)
PAGE 59–1
INSTRUMENT CLUSTER
PAGE 62–2
GENERIC ELECTRONIC MODULE (GEM)/ CENTRAL TIMER MODULE (CTM)
PAGE 59–1
REMOTE ANTI–THEFT PERSONALITY (RAP) MODULE
PAGE 117–1
AIR BAG DIAGNOSTIC MONITOR
PAGE 46–1
C105
45 Y/R
C120F C120M
151–1 C1
396 BK/O
C148F C148M
151–1 D10
45 Y/R
396 BK/O
151–1 A10
C160M C160F
396 BK/O
C158M C158F
151–1 A10
45 Y/R
C415M C415F
676 PK/O
C237
676 PK/O
C174
676 PK/O
C172F C172M
676 PK/O
C186
676 PK/O
151–2 A6
S107
676 PK/O
C159M C159F
151–1 A10
676 PK/O
C242
676 PK/O
S207
C237
397 BK/W
151–1 A10
397 BK/W
151–1 C1
4.6L, 5.4L ONLY
397 BK/W
151–1 C1
397 BK/W
151–1 A10
397 BK/W
C158F C158M
C120M C120F
C120F C120M
C158M C158F
C239
875 BK/LB
C257
875 BK/LB
C247M C247F
151–11 F3
875 BK/LB
C208
650 BK/LB
C209
649 BK/O
S208
396 C160F C160M
BK/O 151–1 A10
676 PK/O
C277
396 BK/O
C196
676 PK/O
530 LG/Y
C222
875 BK/LB
C235F C235M
875 BK/LB
G201
151–10 F3
REAR AIR SUSPENSION (RAS) MODULE
PAGE 41–2
NGV TIMER
PAGE 26–8
REAR ANTI–LOCK BRAKE SYSTEM (RABS) MODULE
PAGE 42–1
IGNITION CYLINDER TAMPER SWITCH
PAGE 117–1

CIRCUIT PROTECTION DEVICES

Electrical circuits on this vehicle may be protected by fuses, fusible links, maxi-fuses, circuit breakers, or a combination of these devices.

BLADE TYPE FUSE

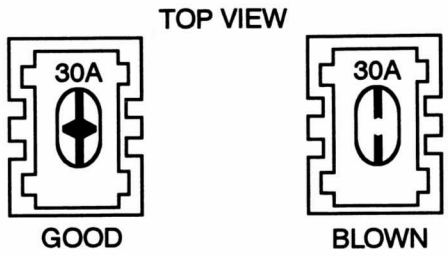


Blade type fuses have a transparent plastic housing. To check a fuse, pull it from the fuse panel and look at the fuse element through the housing. Always replace a blown fuse with a new fuse that has the same ampere rating.

The ampere rating of a blade type fuse can also be determined by following the color code shown here:

BLADE FUSE COLOR CODING	
AMPERE RATING	HOUSING COLOR
4	Pink
5	Tan
10	Red
15	Light Blue
20	Yellow
25	Natural
30	Light Green

MAXI-FUSE



Cartridge maxi-fuses have transparent plastic tops. To check a cartridge maxi-fuse, look at the fuse element through the top of the housing.

To replace a cartridge maxi-fuse, pull it from the fuse box or panel. Always replace a blown cartridge maxi-fuse with a new one having the same ampere rating.

The ampere rating of a cartridge maxi-fuse can also be determined by following the color code shown here:

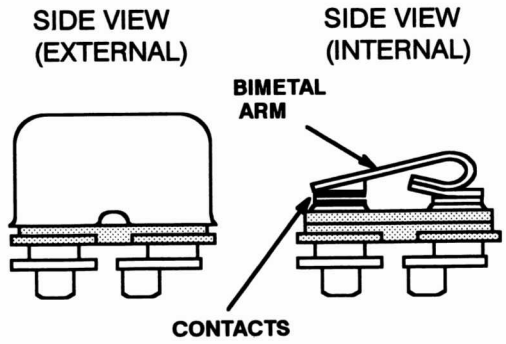
CARTRIDGE TYPE FUSIBLE LINKS	
High Current Fuse Value Amps	Color Code
20A Cartridge	Blue
30A Cartridge	Pink
40A Cartridge	Green
60A Cartridge	Yellow

CIRCUIT BREAKER

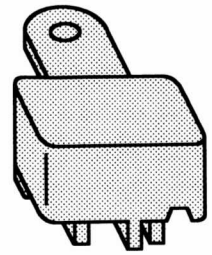
Some circuits are protected by circuit breakers (abbreviated "c. b." in fuse chart). They can be Fuse Panel mounted or in-line. Like fuses, they are rated in amperes.

Each circuit breaker conducts current through an arm made of two types of metal bonded 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. A circuit breaker can be the cycling or non-cycling type.

FUSE PANEL MOUNTED CYCLING TYPE

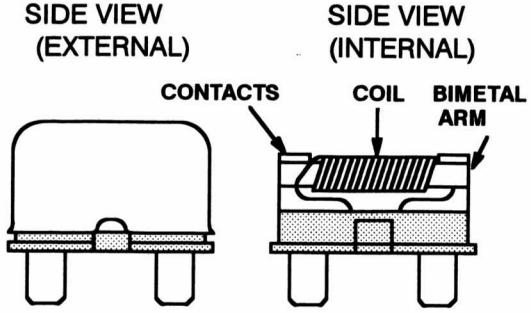


IN-LINE MOUNTED CYCLING TYPE

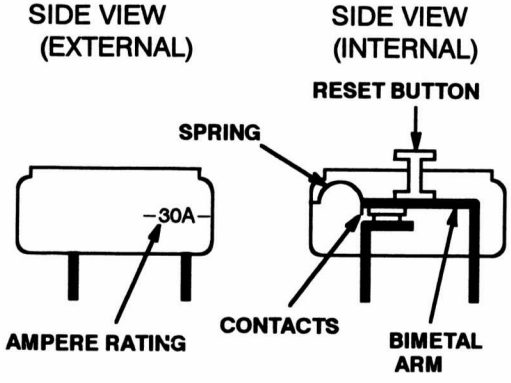


In the cycling type, the bimetal arm cools and straightens out. This cycle repeats as long as the overcurrent exists and power is applied.

FUSE PANEL MOUNTED NON-CYCLING TYPE



FUSE PANEL MOUNTED MANUAL RESET TYPE



Two types of non-cycling circuit breakers are used; one is reset by removing power from the circuit, and the other is reset by depressing a reset button.

In the first type, there is 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 enough to operate a load, but it does heat up both the coil and the bimetal arm. This keeps the arm in the open position until power is removed.

In the second type, a spring pushes the bimetal arm down and holds the contacts together. When an overcurrent condition exists and the bimetal arm heats up, the bimetal arm bends enough to overcome the spring and the contacts snap open. The contacts stay open until the reset button is pushed and the contacts snap together again.

DIODE

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

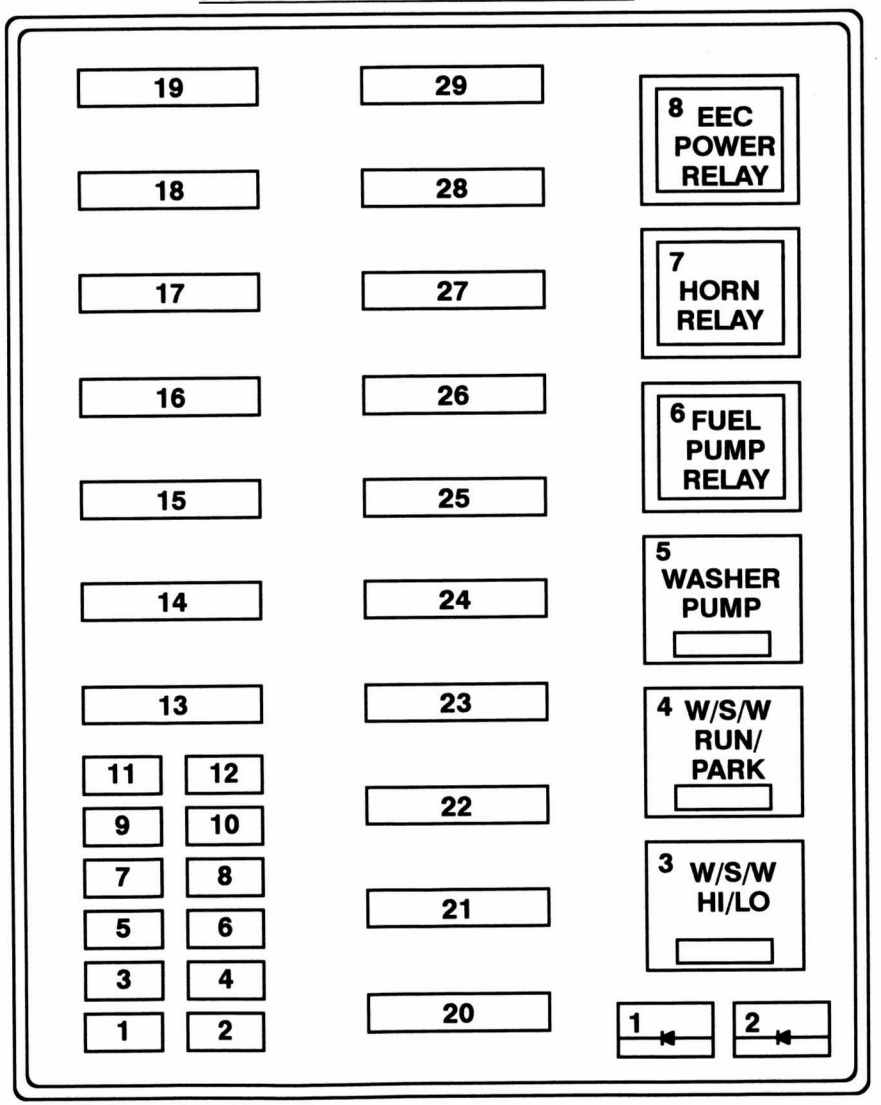
MEGA FUSE

TOP VIEW

Mega fuse protects the charging circuit. In the event that the mega fuse is blown due to the charging circuit failure, the generator field circuit is disabled.

11–3 FUSE PANEL/CIRCUIT PROTECTION

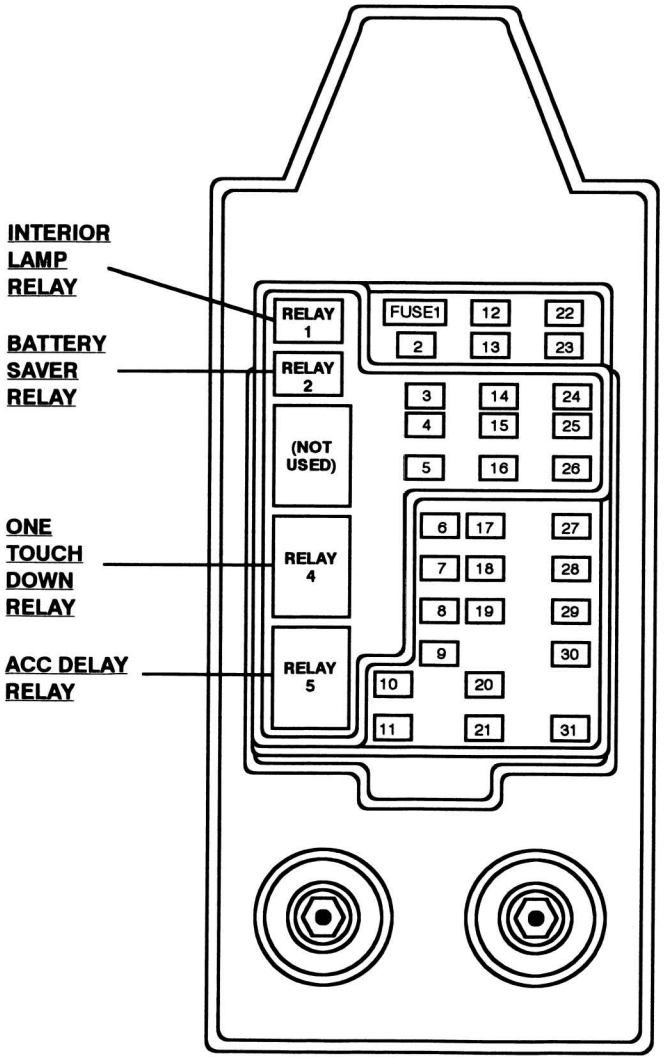
POWER DISTRIBUTION BOX



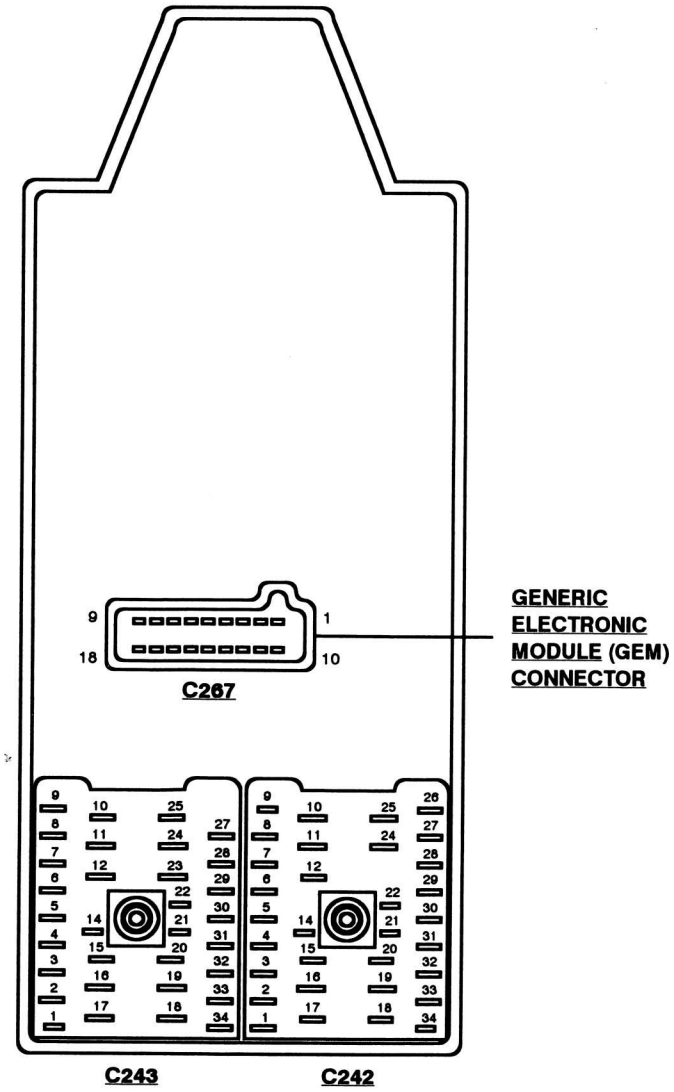
HIGH CURRENT FUSE VALUE AMPS	COLOR CODE
20A PLUG–IN	YELLOW
30A PLUG–IN	GREEN
40A PLUG–IN	ORANGE
50A PLUG–IN	RED
60A PLUG–IN	BLUE

Fuse Position	Amps	Circuits Protected
1	20 (MINI)	Trailer Tow Running Lamp Relay, Trailer Tow Backup Lamp Relay
2	10 (MINI)	Airbag Diagnostic Monitor
3	15 (MINI)	All Unlock Relay, All Lock Relay, Driver Unlock Relay, LH Power Door Lock Switch, RH Power Door Lock Switch
4	15 (MINI)	Rear Air Suspension (RAS)
5	20 (MINI)	Horn Relay
6	15 (MINI)	Radio, Premium Sound Amplifier, CD Changer
7	15 (MINI)	Main Light Switch, Park Lamp Relay
8	30 (MINI)	Main Light Switch, Headlamp Relay, Multi–function Switch
9	15 (MINI)	Daytime Running Lamps (DRL) Module, Fog Lamp Relay
10	25 (MINI)	Auxiliary Power Socket
11	–	NOT USED
12	–	NOT USED
13	–	NOT USED
14	60 (MAXI)	4 Wheel Anti–Lock Brake System (4WABS) Module
14	20 (MAXI)	Ignition Switch (B2) (W/RABS Only)
15	50 (MAXI)	Rear Air Suspension Compressor
16	40 (MAXI)	Trailer Tow Battery Charge Relay, Engine Fuse Module (Fuse 2)
17	30 (MAXI)	Shift on the Fly Relay, Transfer Case Shift Relay
18	30 (MAXI)	Power Seat Control Switch
19	20 (MAXI)	Fuel Pump Relay
20	50 (MAXI)	Ignition Switch (B4 & B5)
21	50 (MAXI)	Ignition Switch (B1 & B3)
22	50 (MAXI)	Junction Box Fuse/Relay Panel Battery Feed
23	40 (MAXI)	Blower Relay
24	30 (MAXI)	PCM Power Relay, Engine Fuse Module (Fuse 1)
25	30 (MAXI)	Junction Box Fuse/Relay Panel, Acc Delay Relay
26	–	NOT USED
27	–	NOT USED
28	30 (MAXI)	Trailer Electronic Brake Controller
29	–	NOT USED

JUNCTION BOX
FUSE/RELAY PANEL



TOP VIEW

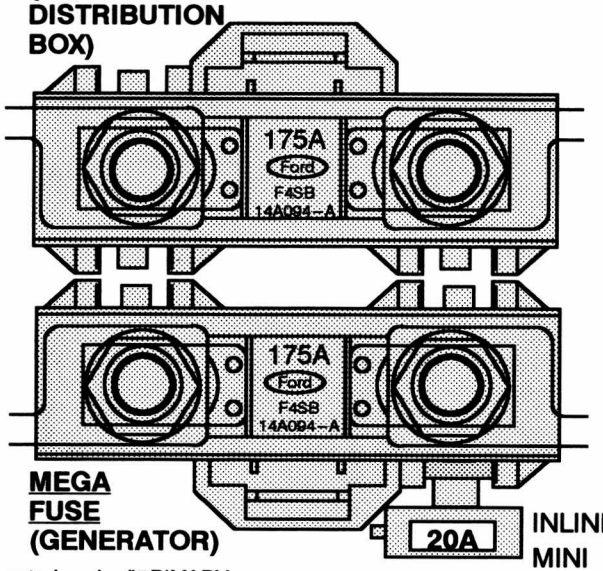


BOTTOM VIEW

11–5 FUSE PANEL/CIRCUIT PROTECTION

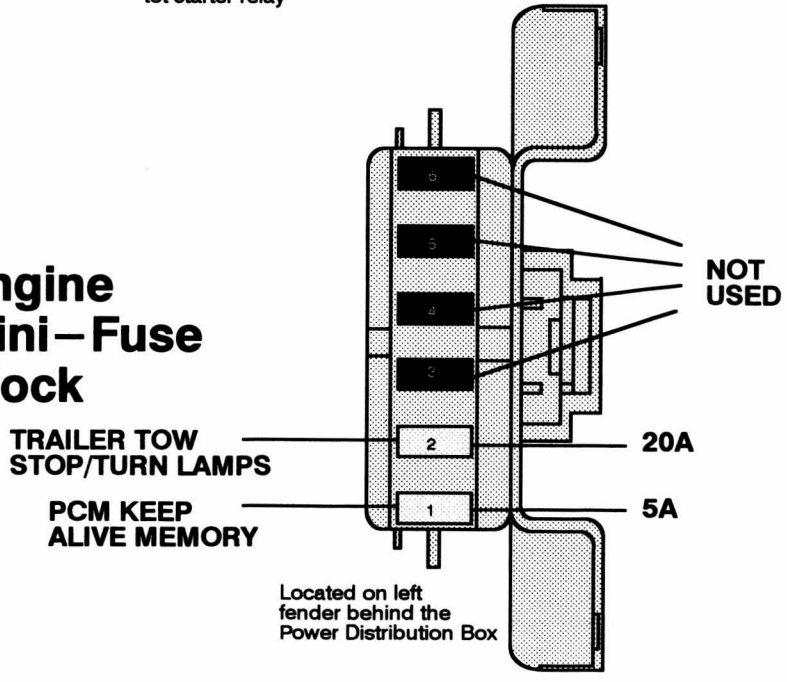
Fuse Position	Amps	Circuits Protected
1	15	Flasher Relay
2	5	Instrument Cluster
3	25	Cigar Lighter
4	5	Park Lamp Relay, Headlamp Relay, Autolamp Module, Remote Anti-Theft Personality (RAP) Module, Power Mirror Switch
5	15	Digital Transmission Range (DTR) Sensor, Daytime Running Lamps (DRL) Module, Speed Control Servo/Amplifier Assembly, Blend Door Actuator
6	5	Shift Lock Actuator, Generic Electronic Module (GEM), Rear Air Suspension (RAS) Module
7	–	NOT USED
8	5	Radio, Main Light Switch, Remote Anti-Theft Personality (RAP) Module
9	–	NOT USED
10	–	NOT USED
11	30	Washer Pump Relay, Wiper Run/Park Relay, Wiper Hi/LO Relay, Windshield Wiper Motor
12	5	Data Link Connector (DLC)
13	15	Rear Anti-Lock Brake System (RABS) Module, Brake Pedal Position (BPP) Switch, Brake Pressure Switch
14	15	Battery Saver Relay, Interior Lamp Relay
15	5	Generic Electronic Module (GEM)/Central Timer Module (CTM)
16	20	Instrument Cluster (W/O DRL), Daytime Running Lamps (DRL) Module, Hi–Beam Headlamps (Power supplied through Multi-Function Switch)
17	–	NOT USED
18	5	Park Lamp Relay, Trailer Electronic Brake Controller, Main Light Switch, Trailer Tow Run Relay, Front Park/Turn Lamps, License Lamps, Stop/Park/Turn Lamps, Tail/Side Marker Lamps (Power supplied through Main Light Switch)
19	10	Instrument Cluster, Air Bag Diagnostic Monitor
20	5	Powertrain Control Module (PCM), Generic Electronic Module (GEM)/Central Timer Module (CTM)
21	15	Clutch Pedal Position (CPP) Switch (W/O RAP), Starter Interrupt Relay (W/RAP)
22	10	Air Bag Diagnostic Monitor, Passive De-Activation (PAD) Module
23	10	Trailer Tow Battery Charge Relay, Blower/Flasher Relay Block, RPO Relay Block, 4x4 Center Axle Disconnect Solenoid Jumper
24	10	Function Selector Switch
25	5	4 Wheel Anti-Lock Brake System (4WABS) Module, 4WABS Relay
26	10	Daytime Running Lamps (DRL) Module, Right Headlamp
27	5	Main Light Switch, Fog Lamp Relay
28	10	Left Headlamp
29	5	Autolamp Module, Instrument Cluster, Transmission Control Switch (TCS), Brake Warning Resistor/Diode Assembly (W/RABS)
30	30	Radio Noise Capacitor, Ignition Coil, PCM Power Diode
31	–	NOT USED

Primary Battery Fuses



Located under "PRIMARY BATTERY FUSE" cover, next tot starter relay

Engine Mini–Fuse Block



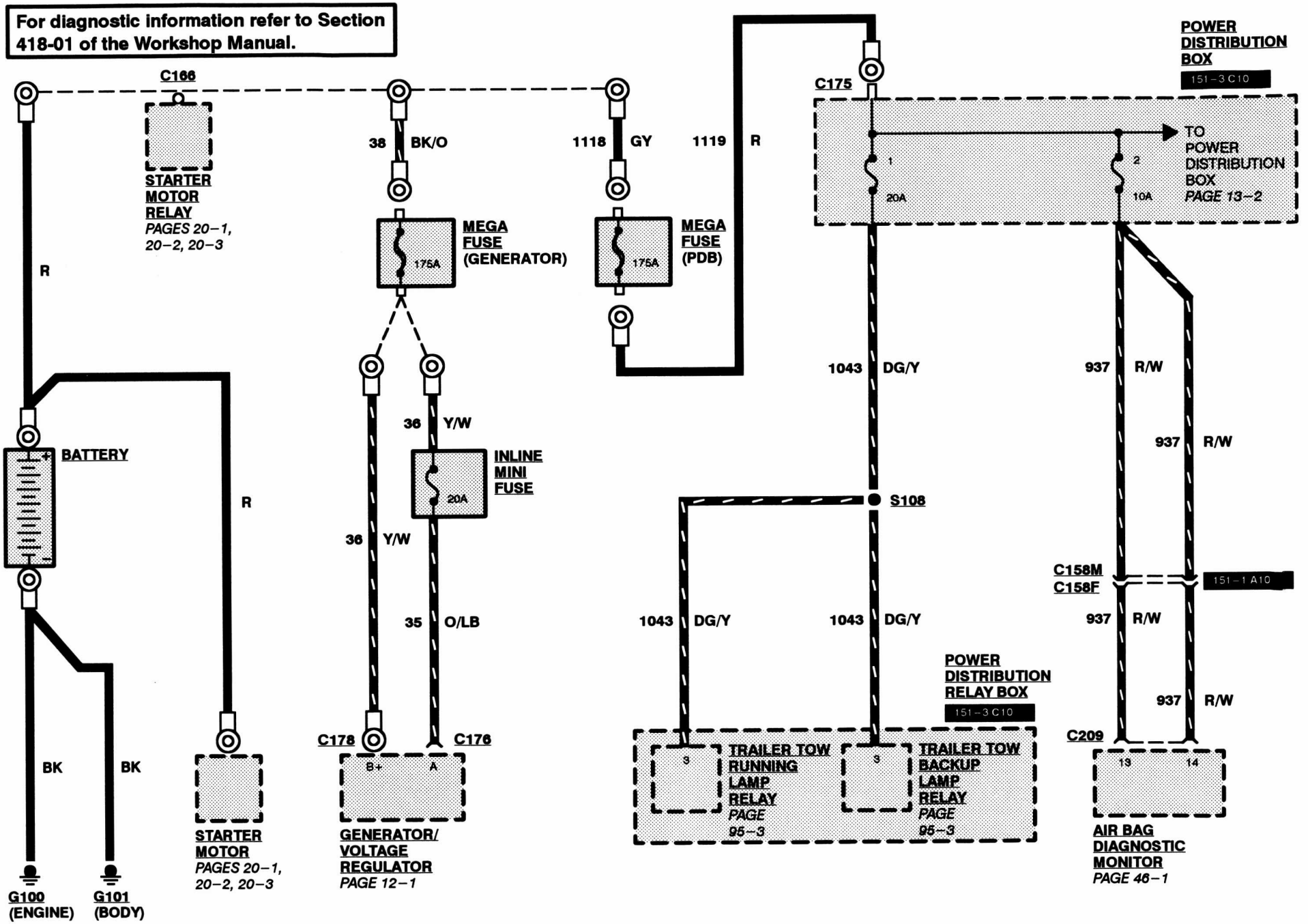
Located on left fender behind the Power Distribution Box

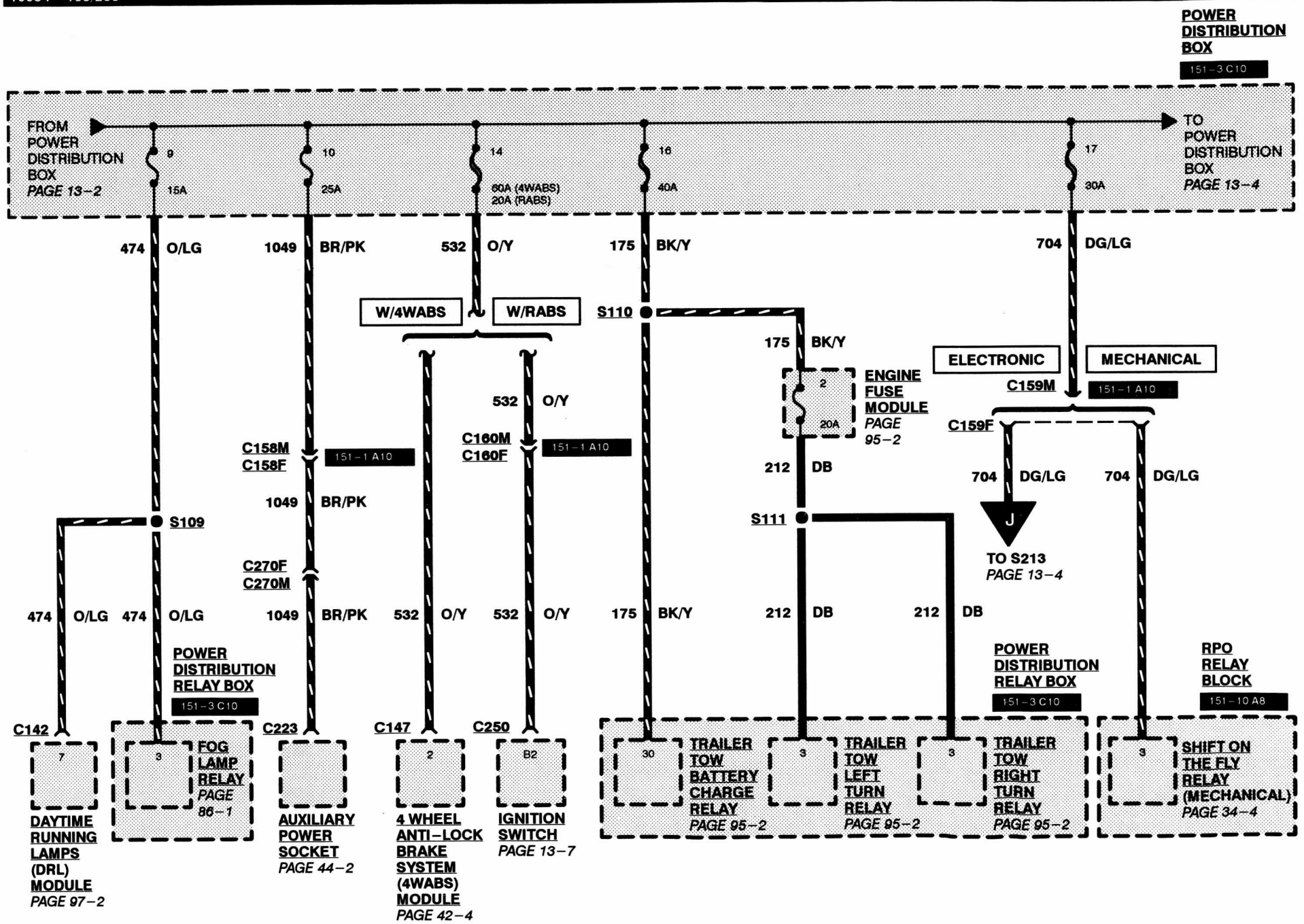
CELL 12 CONNECTOR REFERENCE LIST

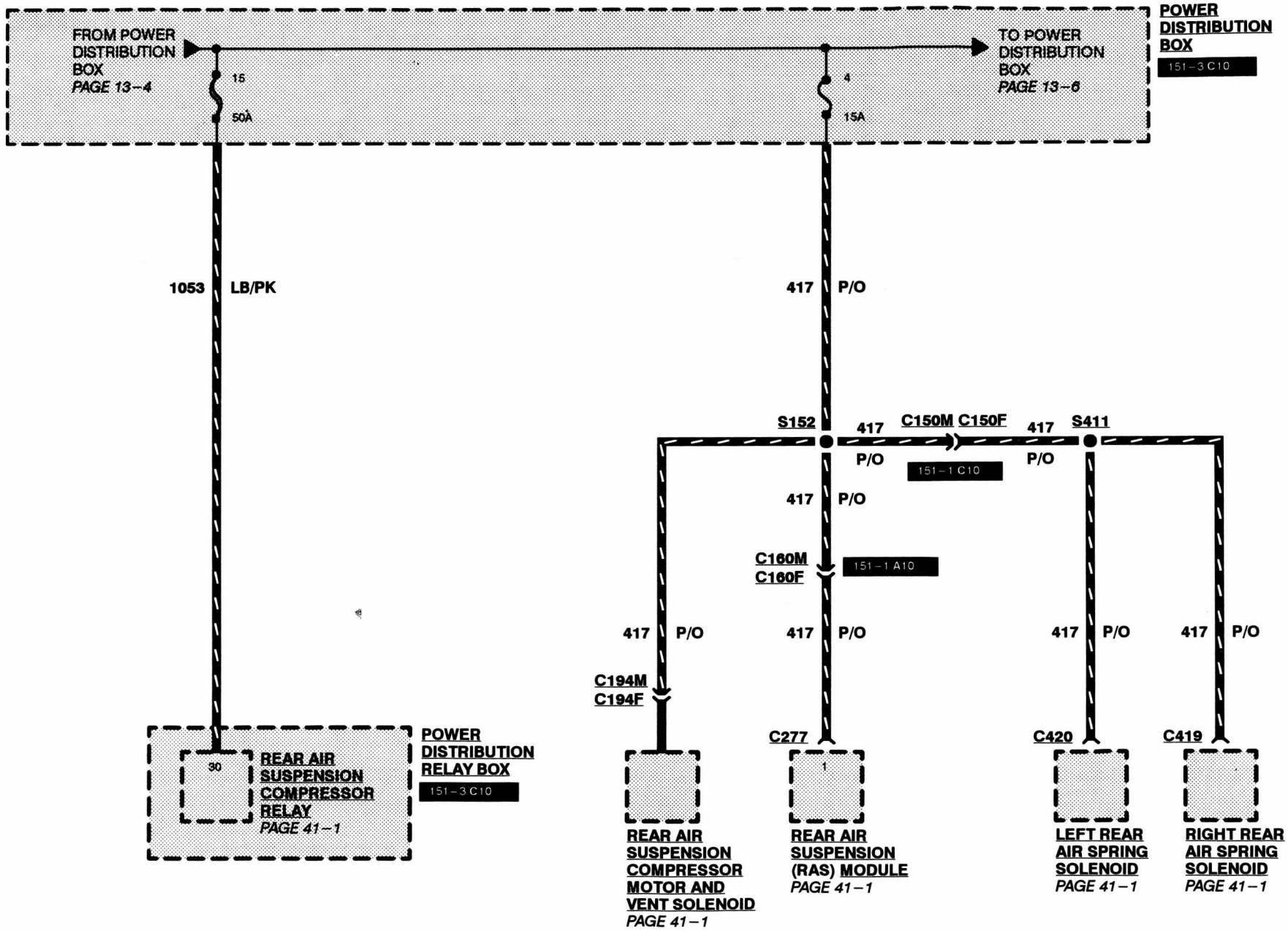
CONNECTOR	SECTION-PAGE
C238	62–9
C250	13–18

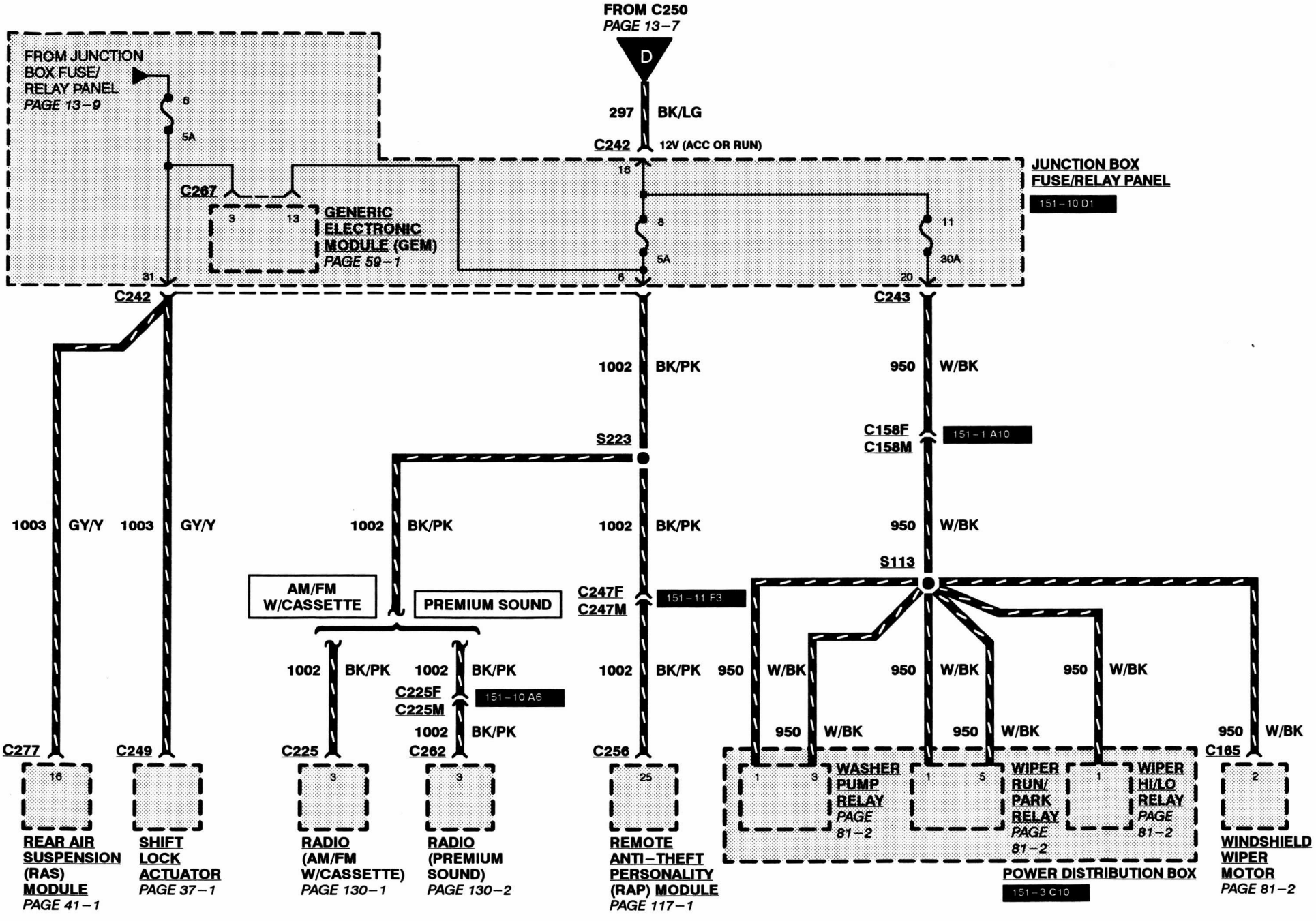
13–1 POWER DISTRIBUTION

For diagnostic information refer to Section 418-01 of the Workshop Manual.

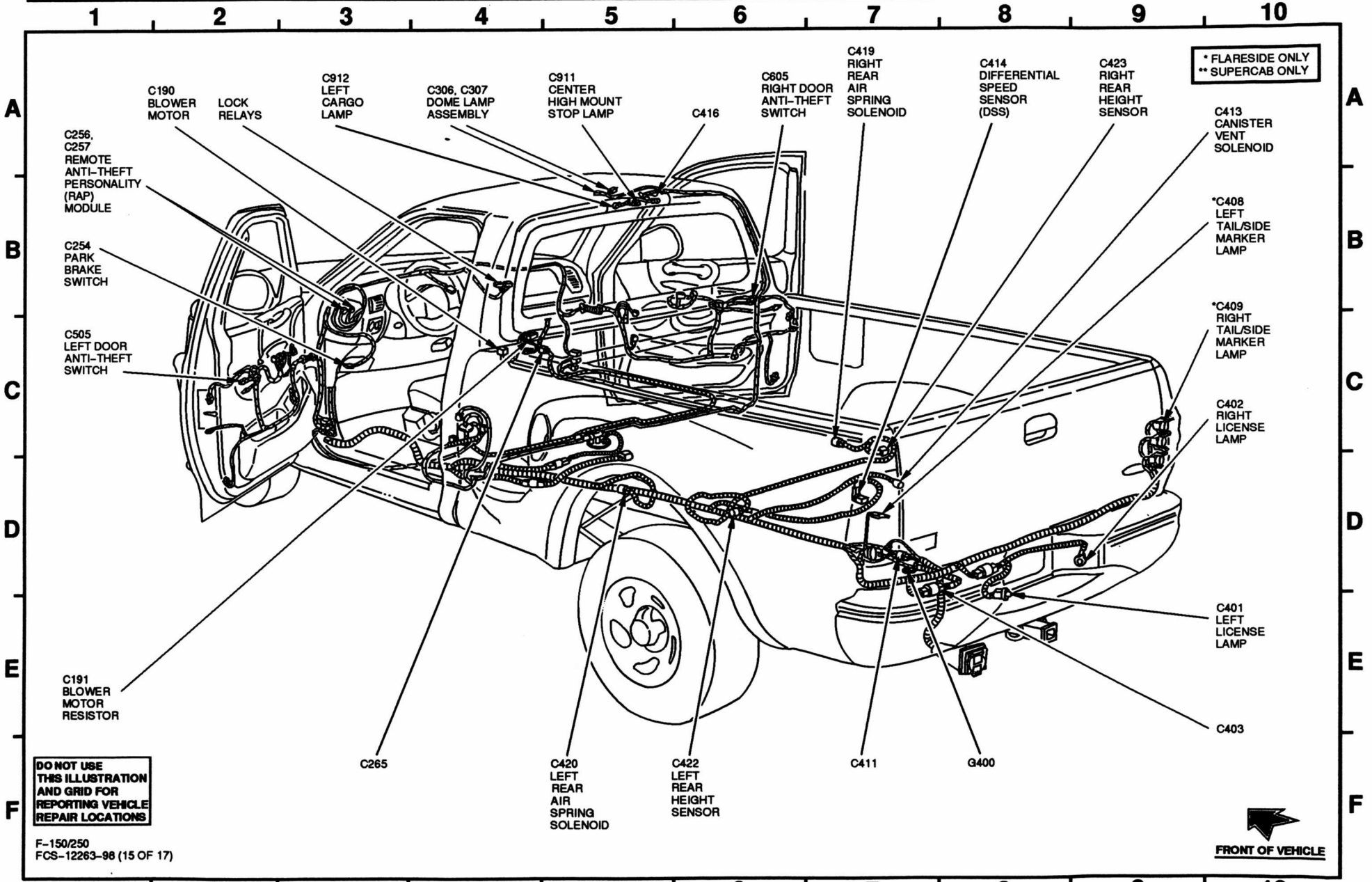



POWER DISTRIBUTION BOX
151–3 C10
FROM POWER DISTRIBUTION BOX
PAGE 13–2
9
15A
10
25A
14
60A (4WABS)
20A (RABS)
16
40A
17
30A
TO POWER DISTRIBUTION BOX
PAGE 13–4
474 O/LG
1049 BR/PK
532 O/Y
175 BK/Y
704 DG/LG
W/4WABS
W/RABS
S110
175 BK/Y
2
20A
ENGINE FUSE MODULE
PAGE 95–2
ELECTRONIC
MECHANICAL
C159M
151–1 A10
C159F
532 O/Y
C158M
C158F
151–1 A10
C160M
C160F
151–1 A10
212 DB
704 DG/LG
704 DG/LG
1049 BR/PK
S109
S111
J
TO S213
PAGE 13–4
C270F
C270M
474 O/LG
474 O/LG
1049 BR/PK
532 O/Y
532 O/Y
175 BK/Y
212 DB
212 DB
POWER DISTRIBUTION RELAY BOX
151–3 C10
POWER DISTRIBUTION RELAY BOX
151–3 C10
RPO RELAY BLOCK
151–10 A8
C142
C223
C147
C250
7
3
FOG LAMP RELAY
PAGE 86–1
2
B2
30
3
3
3
TRAILER TOW BATTERY CHARGE RELAY
PAGE 95–2
TRAILER TOW LEFT TURN RELAY
PAGE 95–2
TRAILER TOW RIGHT TURN RELAY
PAGE 95–2
SHIFT ON THE FLY RELAY (MECHANICAL)
PAGE 34–4
DAYTIME RUNNING LAMPS (DRL) MODULE
PAGE 97–2
AUXILIARY POWER SOCKET
PAGE 44–2
4 WHEEL ANTI–LOCK BRAKE SYSTEM (4WABS) MODULE
PAGE 42–4
IGNITION SWITCH
PAGE 13–7

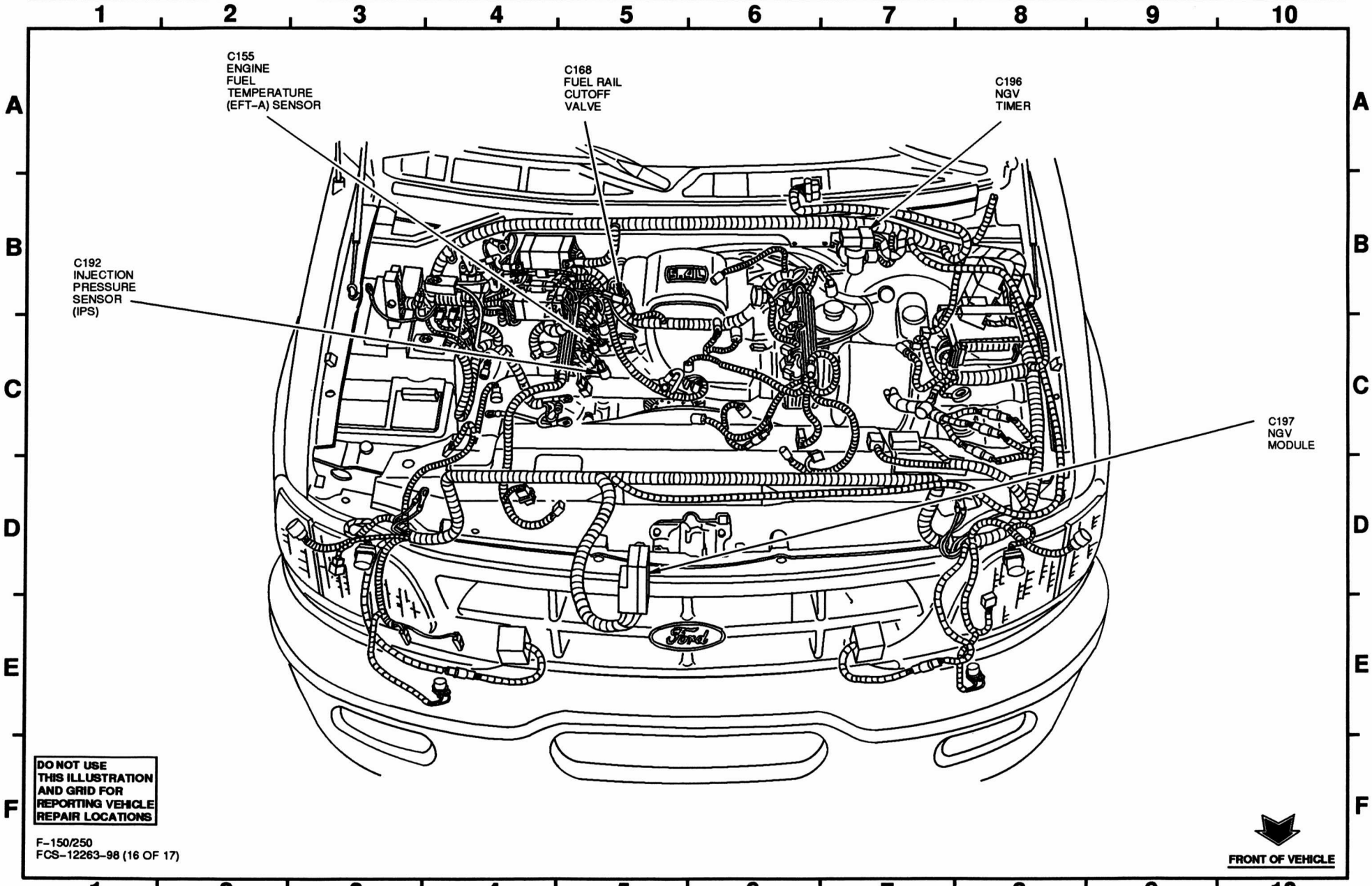

FROM POWER DISTRIBUTION BOX
PAGE 13–4
15
50A
4
15A
TO POWER DISTRIBUTION BOX
PAGE 13–6
POWER DISTRIBUTION BOX
151–3 C10
1053 LB/PK
417 P/O
S152
417 P/O
C150M C150F
151–1 C10
417 P/O
S411
417 P/O
417 P/O
C160M C160F
151–1 A10
417 P/O
417 P/O
417 P/O
417 P/O
C194M C194F
C277
C420
C419
30
REAR AIR SUSPENSION COMPRESSOR RELAY
PAGE 41–1
POWER DISTRIBUTION RELAY BOX
151–3 C10
REAR AIR SUSPENSION COMPRESSOR MOTOR AND VENT SOLENOID
PAGE 41–1
REAR AIR SUSPENSION (RAS) MODULE
PAGE 41–1
LEFT REAR AIR SPRING SOLENOID
PAGE 41–1
RIGHT REAR AIR SPRING SOLENOID
PAGE 41–1


FROM C250
PAGE 13–7
D
297 BK/LG
C242 12V (ACC OR RUN)
FROM JUNCTION BOX FUSE/ RELAY PANEL
PAGE 13–9
6
5A
C207
3
13
GENERIC ELECTRONIC MODULE (GEM)
PAGE 59–1
16
8
5A
11
30A
31
8
20
JUNCTION BOX FUSE/RELAY PANEL
151–10 D1
C242
C243
1002 BK/PK
950 W/BK
C158F
C158M
151–1 A10
S223
1003 GY/Y
1003 GY/Y
1002 BK/PK
1002 BK/PK
950 W/BK
S113
AM/FM W/CASSETTE
PREMIUM SOUND
C247F
C247M
151–11 F3
1002 BK/PK
1002 BK/PK
1002 BK/PK
950 W/BK
950 W/BK
950 W/BK
950 W/BK
C225F
C225M
151–10 A6
1002 BK/PK
950 W/BK
950 W/BK
950 W/BK
C277
C249
C225
C262
C256
C165
16
3
3
25
1
3
1
5
1
2
REAR AIR SUSPENSION (RAS) MODULE
PAGE 41–1
SHIFT LOCK ACTUATOR
PAGE 37–1
RADIO (AM/FM W/CASSETTE)
PAGE 130–1
RADIO (PREMIUM SOUND)
PAGE 130–2
REMOTE ANTI–THEFT PERSONALITY (RAP) MODULE
PAGE 117–1
WASHER PUMP RELAY
PAGE 81–2
WIPER RUN/ PARK RELAY
PAGE 81–2
WIPER HI/LO RELAY
PAGE 81–2
POWER DISTRIBUTION BOX
151–3 C10
WINDSHIELD WIPER MOTOR
PAGE 81–2

151–15 COMPONENT LOCATION VIEWS



BODY (2 OF 2)



5.4L ENGINE (NGV ONLY)

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
4X2 Center Axle Disconnect Solenoid	★	Right side of engine compartment	C181	151-3 A2	
4X4 Low Indicator Switch	★	Left side of transmission	C189	151-9 F5	
4X4 Center Axle Disconnect Solenoid	★	Right side of engine compartment	C180	151-3 A1	
4R70W Transmission	7000	Mounted under center of vehicle	C183	151-8 C4	29-4
4 Wheel Anti-Lock Brake System (4WABS) Module	2C018	Left side of engine compartment	C146, C147	151-1 F9	42-6
4 Wheel Drive Mode Switch	★	Center of I/P	C230	151-12 F7	34-6
ACC Delay Relay	★	In junction box fuse/relay panel	★	★	11-4
A/C Clutch Diode	14A604	Taped in harness, near A/C compressor clutch	★	★	
A/C Clutch Cycling Pressure Switch	19D784	Right rear corner of engine compartment	C139	151-2 A5	
A/C Compressor Clutch Solenoid	19E561	Left side of engine compartment	C106	151-1 F8	
A/C Pressure Cutoff Switch	190594	Right side of engine compartment	C170	151-3 D1	
Air Bag Delete	★	Base of steering column	C269	★	
Air Bag Diagnostic Monitor	043B13	Behind right side of I/P	C208, C209	151-12 C10	46-3
All Lock Relay	★	In RPO relay block	★	★	13-20
All Unlock Relay	★	In RPO relay block	★	★	13-20
Ashtray Illumination	15052	Top side of ashtray bracket	C212	151-11 B10	
Autolamp Module	14A597	Behind center of I/P	C216	151-11 A7	87-4
Auxiliary Power Socket	★	Behind center of I/P	C223	151-11 A8	
Backup Lamp Switch	15520	Left side of transmission	C188	151-8 F4	
Battery	★	Right side of engine compartment	★	★	
Battery Saver Relay	★	In junction box fuse/relay panel	★	★	11-4
Blend Door Actuator	19E616	Behind center of I/P	C229	151-10 F8	
Blower/Flasher Relay Block	★	Behind center of I/P	★	151-10 A5	13-20
Blower Motor	14N089	Right side of engine compartment	C190	151-15 A1	
Blower Motor Resistor	19A706	Near blower motor	C191	151-15 E1	
Blower Relay	★	In blower/flasher relay	★	★	13-20
Brake Fluid Level Indicator Switch	2L140	Mounted on master cylinder	C162	151-3 A7	
Brake Pedal Position (BPP) Switch	13480	Behind left side of I/P	C252	151-10 F4	
Brake Pressure Switch	★	Left rear corner of engine compartment	C151	151-3 A6	
Brake Warning Diode	★	In power distribution box	★	★	
Brake Warning Resistor Assembly	★	In power distribution box	★	★	
Brake Warning Resistor/Diode Assembly	★	In power distribution box	★	★	

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
Camshaft Position (CMP) Sensor	6B288	Front of engine	C100	151–2 F7	
Canister Vent Solenoid	★	Rear of body, near fuel tank	C413	151–15 A10	
CD Changer	186830	Left rear of cab	C266	151–14 F3	130–8
Center High Mount Stop Lamp	★	Rear top center of cab	C911	151–15 A5	
Central Timer Module (CTM)	18578	Behind center of I/P	C239, C267	151–11A3	59–5, 6
Central Timer Module (CTM) Diagnostic Connector	★	Behind center of I/P	C205	★	
Cigar Lighter	15055	Behind center of I/P	C226, C227	151–11 C10	
Clockspring Assembly	★	Base of steering column	C233, C234	151–10 A3	31–3
Clutch Pedal Position (CPP) Switch	11A152	On clutch pedal arm	C231	151–12 F6	20–4
Clutch Pedal Position (CPP) Switch Jumper	14B155	Behind left side of I/P	C231	151–12 F6	20–4
Crankshaft Position (CKP) Sensor	9A825	Lower front of engine	C102	151–3F6	
Cylinder Head Temperature (CHT) Sensor	★	Top front of engine	C179	151–5 F8	
Data Link Connector (DLC)	★	Behind center of I/P	C228	151–11 F5	14–2
Daytime Running Lamps (DRL) Module	15A272	Left front of engine compartment	C142	151–2 D10	97–3
Differential Pressure Feedback EGR (DPFE) Sensor	★	Right side of engine	C122	151–1 F2	
Differential Speed Sensor (DSS)	6C315	On rear axle	C414	151–15 A8	
Differential Speed Sensor (DSS) Data Link Connector (DLC)	14A624	Left side of I/P panel	C163	151–12 F3	
Digital Transmission Range (DTR) Sensor	7A247	Left side of automatic transmission	C182	151–8 C6	29–4
Dome Lamp Assembly	13776	Center of cab, in roof panel	C306, C307	151–15 A4	
Driver's Air Bag	★	Center of steering wheel hub	C272	★	
Driver's Unlock Relay	★	In lock relays	★	151–15 A2	13–20
E4OD Transmission	★	Center of vehicle, behind engine	C193	151–8 D9	
EGR Vacuum Regulator (EVR) Solenoid	9F483	Left side of engine	C121	151–1 E1	
Engine Compartment Lamp	15702	Attached to underside of hood	C161	151–3 A9	
Engine Coolant Temperature Sender	10884	Left front corner of engine	C105	151–1 F7	
Engine Coolant Temperature (ECT) Sensor	12A648	Front of engine	C104	151–1 F6	
Engine Fuel Temperature (EFT–A) Sensor	★	On top of engine	C155	151–16 A2	

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
Engine Fuse Module	★	Near power distribution box	★	151–3 A10	
Engine Oil Pressure Switch	6600	Left front of engine	C101	151–2 F8	
Flasher Relay	13350	In blower/flasher relay block	★	★	13–20
Fog Lamp Relay	★	In power distribution box	C175	151–3 C10	13–21
Forward In–Bed Fuel Tank Valve	★	At fuel tank	C425	151–17 C1	
Fuel Injector #1	9F593	Top of cylinder #1	C125	151–3 F2	
Fuel Injector #2	9F593	Top of cylinder #2	C126	151–3 F2	
Fuel Injector #3	9F593	Top of cylinder #3	C127	151–3 F2	
Fuel Injector #4	9F593	Top of cylinder #4	C128	151–1 A6	
Fuel Injector #5	9F593	Top of cylinder #5	C129	151–1 A6	
Fuel Injector #6	9F593	Top of cylinder #6	C130	151–1 A6	
Fuel Injector #7	9F593	Top of cylinder #7	C131	151–4 A5	
Fuel Injector #8	9F593	Top of cylinder #8	C132	151–4 A5	
Fuel Pump Assembly	★	Center of vehicle, at fuel tank	C415	151–14 F5	
Fuel Pump Relay	14N089	In power distribution box	C175	151–3 C10	
Fuel Rail Cutoff Valve	★	Top of engine, on fuel rail	C168	151–16 A5	
Fuel Tank Pressure (FTP) Sensor	★	Part of fuel pump assembly	C301	151–14 F6	
Function Selector Switch (Blend Door Potentiometer)	18578	Center of I/P, near radio	C220	151–10 F9	54–4
Function Selector Switch (Blower Motor Switch)	18578	Center of I/P, near radio	C218	151–10 F9	54–4
Function Selector Switch (Illumination)	★	Center of I/P, near radio	C219	151–10 F9	54–4
Function Selector Switch (Mode Selector Switch)	18578	Center of I/P near radio	C217	151–10 F9	54–4
Generator/Voltage Regulator	10300	Right front of engine compartment	C176, C177, C178	151–3 A4	
Generic Electronic Module (GEM)	★	Behind center of I/P	C239, C240, C241, C267	151–11 A3	59–5, 6, 7
Glove Compartment Lamp	15A563	Right side of I/P, behind glove box	C211	151–10 B10	
Headlamp Relay	★	In RPO relay block	★	151–10 A7	13–20
Heated Oxygen Sensor (HO2S) #11	9J433	On exhaust pipe of engine	C109	151–1 D1	
Heated Oxygen Sensor (HO2S) #12	9J433	On exhaust pipe of engine	C184	151–8 A5	
Heated Oxygen Sensor (HO2S) #21	9J433	On exhaust pipe of engine	C108	151–1 A7	
Heated Oxygen Sensor (HO2S) #22	9J433	On exhaust pipe of engine	C185	151–8 B5	

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
High Pitch Horn	13A803	On right radiator support	C136	151–2 F3	
Horn Relay	14N089	In power distribution box	C175	151–3 C10	
Idle Air Control (IAC) Valve	19A089	Left side of intake manifold	C110	151–3 F9	
Ignition Coil	12029	Top of engine	C111	151–1 F5	
Ignition Coil on Plug #1	★	Near its fuel injector	C1011	151–6 A5	
Ignition Coil on Plug #2	★	Near its fuel injector	C1012	151–6 A5	
Ignition Coil on Plug #3	★	Near its fuel injector	C1013	151–6 A5	
Ignition Coil on Plug #4	★	Near its fuel injector	C1014	151–6 A5	
Ignition Coil on Plug #5	★	Near its fuel injector	C1015	151–6 A5	
Ignition Coil on Plug #6	★	Near its fuel injector	C1016	151–6 A5	
Ignition Coil on Plug #7	★	Near its fuel injector	C1017	151–6 A5	
Ignition Coil on Plug #8	★	Near its fuel injector	C1018	151–6 A5	
Ignition Coils 1 and 2	★	Top right side of engine	C116	151–4 F5	
Ignition Coils 3 and 4	★	Top left side of engine	C117	151–4 F7	
Ignition Cylinder Tamper Switch	19A438	Inside steering column	C235	151–10 F7	
Ignition Switch	11572	Mounted in steering column	C250	151–10 F6	13–16
Inertia Fuel Shut–off	9341	Behind right side of I/P	C204	151–12 D10	
Injection Pressure Sensor (IPS)	★	On top of engine	C195	151–16 B1	
Inline Mini Fuse (20A)	★	Near generator/voltage regulator	★	★	
Instrument Cluster	★	Left side of I/P	C236, C237, C238	151–11 A4	62–8, 9
Intake Air Temperature (IAT) Sensor	9C674	On intake manifold	C107	151–3 D10	
Intake Manifold Communicator Control (IMCC)	★	Right side of engine	C118	151–6 A8	
Intake Manifold Runner Control (IMRC)	★	Left side of engine	C198	151–1 A5	
Intake Manifold Runner Position (IMRP) #1	9H465	Left side of engine	C113	151–1 A5	
Intake Manifold Runner Position (IMRP) #2	9H465	Rear of engine	C112	151–1 A5	
Interior Lamp Relay	★	In junction box fuse/relay panel	★	151–10 D1	11–4
Junction Box Fuse/Relay Panel	★	Under left side of I/P	C242, C243	151–10 D1	11–4
Knock Sensor (KS)	12A699	Right side of engine	C103	151–2 F6	
Left Backup Lamp	13416	Left rear corner of vehicle	C406	151–14 F7	
Left Cargo Lamp	★	Rear of vehicle	C912	151–15 A3	
Left Door Ajar Switch	★	Rear of left door	C501	151–14 E1	
Left Door Anti–Theft Switch	★	In left door	C505	151–15 C1	

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
Left Door Courtesy Lamp	13776	In left door interior door panel	C502	151–14 C1	
Left Door Lock Motor	14017	Bottom rear of left door	C504	151–14 E1	
Left Door Speaker	18808	Front of left door	C500	151–14 B1	
Left Fog Lamp	15A254	Left front of vehicle	C144	151–2 D10	
Left Front Park/Turn Lamp	13035	Left front of vehicle	C145	151–2 C10	
Left Front Wheel 4WABS Sensor	2C204	Left side of engine compartment	C153	151–1 B10	
Left Headlamp	13006	Left front corner of vehicle	C143	151–3 E10	
Left License Lamp	13550	Rear of vehicle	C401	151–15 E10	
Left Power Door Lock Switch	★	In armrest of left interior door panel	C508	151–14 A1	110–4, 5
Left Power/Signal Mirror	17683	Left side of vehicle, on door	C507	151–14 A4	
Left Power Window Motor	14631	In left door	C506	151–14 B1	
Left Power Window Switch	★	In armrest of left interior door panel	C509, C510	151–14 A2	100–3
Left Primary Crash Sensor	14B004	Left front of engine compartment	C141	151–3 F7	
Left Rear Air Spring Solenoid	★	Left rear of vehicle above axle	C420	151–15 F6	
Left Rear Height Sensor	★	Left rear of vehicle	C422	151–15 F5	
Left Rear Speaker	18947	Left rear of cab	C303	151–14 F2	
Left Stop/Park/Turn Lamp	★	Left rear corner of vehicle	C404	151–14 F8	
Left Tail/Side Marker Lamp	★	Left rear corner of vehicle	C408	151–15 B10	
Lock Relays	★	Behind right side of I/P	★	151–15 A2	13–20
Low Pitch Horn	13A803	On right radiator support	C137	151–2 F5	
M5R2 Transmission	★	Under center of vehicle	★	151–8 D5	
Main Light Switch	★	Lower left side of I/P	C244, C245, C246	151–12 C1	13–18, 19
Mass Air Flow (MAF) Sensor	128579	In air cleaner assembly	C156	151–2 A9	
Mega Fuse (Alternator)	★	Right rear of engine compartment, upper right cowl panel	★	★	
Mega Fuse (PDB)	★	Right rear of engine compartment, upper right cowl panel	★	★	
Midship Fuel Tank Valve	★	At mid fuel tank	C426	151–17 A5	
Multi–Function Switch	13K359	Left side of steering column	C258, C259	151–10 F5	85–2, 90–4
NGV Fuel Tank Pressure (FTP) Sensor	★	At fuel tank	C418	151–17 F6	
NGV Module	★	Front of engine	C197	151–16 C10	26–12
NGV Fuel Tank Temperature Sensor	★	At fuel tank	C417	151–17 D10	
NGV Timer	★	Left rear of engine compartment	C196	151–16 A8	26–11
Octane Adjust (Shorting Bar)	14A464	Right rear corner of engine	C173	151–1 A2	
One Touch Down Relay	★	In junction box fuse/relay panel	★	151–10 D1	11–4
Output Shaft Speed (OSS) Sensor	7H103	Left side of transmission	C187	151–8 A3	

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
Park Brake Switch	15852	Right side of parking brake lever	C254	151–15 B1	
Park Lamp Relay	★	In RPO relay block	★	★	13–20
Passenger Air Bag	044A74	Behind right side of I/P	C215	151–11 A9	
Passenger Air Bag Delete Connector	★	In 14401, near T/O to ashtray illumination	C255	★	
Passive De–Activation (PAD) Module	★	Behind right side of I/P	C213, C214	151–12 C10	
PCM Power Diode	★	In power distribution box	C175	151–3 C10	
PCM Power Relay	12A646	In power distribution box	C175	151–3 C10	
Power Distribution Box	★	Left side of engine compartment	C175	151–3 C10	
Power Distribution Relay Box	★	Left side of engine compartment	★	151–3 B10	13–21
Power Mirror Switch	★	In armrest of left interior door panel	C511	151–14 A3	124–2
Power Seat Control Switch	★	Left side of driver's seat	C311	151–13 F8	120–2
Power Seat Motor Assembly	★	Under driver's seat	C308	151–13 F3	
Powertrain Control Module (PCM)	12A650	Right side of engine compartment	C174	151– 1 B1	23–8, 24–8, 25–8, 26–9
Premium Sound Amplifier	18B849	Behind center of I/P	C263, C264	151–11 F6	130–7
RABS Data Link Connector	14A624	Behind right side of I/P	C207	151–10 D10	
Radio (AM/FM W/CASSETTE)	19B131	Behind center of I/P	C224, C225	151–10 A6	130–5
Radio Noise Capacitor #1	14A601	Top of engine	C115	151–3 A5	
Radio Noise Capacitor #2	14A601	Right front of engine	C114	151–5 F9	
Radio (Premium Sound)	19B132	Behind center of I/P	C261, C262	151–12 A7	130–6
Rear Air Suspension Compressor Motor and Vent Solenoid	★	Right front of engine compartment	C194	151–3 E1	
Rear Air Suspension Compressor Relay	12A581	Left side of engine compartment	C175	151–3 C10	
Rear Air Suspension Data Link Connector	14401	Behind right side of I/P	C285	151–12 F8	41–4
Rear Air Suspension (RAS) Module	★	Behind center of I/P	C276, C277	151–12 A6	41–3
Rear Air Suspension Service Switch	★	Behind right side of I/P	C284	151–12 F9	
Rear Anti–Lock Brake System (RABS) Module	2C018	Behind right side of I/P	C222	151–11 A6	42–5
Rear Anti–Lock Brake System (RABS) Proportioning Valve Switch Assembly	2B373	Left side of engine compartment	C152	151–2 B10	

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
Rear In–Bed Fuel Tank Valve	★	At fuel tank	C424	151–17 A7	
Red Brake Lamp Warning Relay	14N089	In power distribution box	C175	151–3 C10	13–21
Remote Anti–Theft Personality (RAP) Module	15K602	Behind left side of I/P	C256, C257	151–15 A1	117–4
Right Air Spring Solenoid		Right rear of vehicle	C419	151–15 A7	
Right Backup Lamp	13416	Right rear corner of vehicle	C407	151–14 D10	
Right Cargo Lamp	★	Rear top center of cab	C913	151–14 A6	
Right Door Ajar Switch	★	Rear of right door	C601	151–14 A10	
Right Door Anti–Theft Switch	★	In right door	C605	151–15 A6	
Right Door Courtesy Lamp	13776	In right door interior door panel	C602	151–14 A9	
Right Door Lock Motor	14017	Bottom rear of right door	C604	151–14 B10	
Right Door Speaker	18808	Front of right door	C600	151–14 A6	
Right Fog Lamp	15A254	Right front of vehicle	C134	151–3 F3	
Right Front Park/Turn Lamp	13035	Right front of vehicle	C135	151–2 D1	
Right Front Wheel 4WABS Sensor	2C204	At right front wheel	C154	151–3 B1	
Right Headlamp	13006	Right front corner of vehicle	C133	151–2 E1	
Right License Lamp	13550	Rear of vehicle	C402	151–15 C10	
Right Power Door Lock Switch	★	In armrest of right interior door panel	C608	151–14 A8	110–4, 5
Right Power/Signal Mirror	17683	Right side of vehicle, on door	C607	151–14 A5	
Right Power Window Motor	14631	In right door	C606	151–14 F4	
Right Power Window Switch	★	In armrest of right interior door panel	C609	151–14 A7	100–4
Right Primary Crash Sensor	14B004	Right front of engine compartment	C140	151–2 F4	
Right Rear Door Speaker	18947	In right rear door	C800	★	
Right Rear Height Sensor	★	Right rear of vehicle	C423	151–15 A9	
Right Rear Air Spring Solenoid	★	Right rear of vehicle	C419	151–15A7	
Right Rear Speaker	18947	Right rear of cab	C302	151–14 B10	
Right Stop/Park/Turn Lamp	★	Right rear corner of vehicle	C405	151–14 C10	
Right Tail/Side Marker Lamp	★	Right rear corner of vehicle	C409	151–15 C10	
RPO Relay Block	★	Behind right side of I/P	★	151–10 A8	13–20
Seat Belt Warning Switch	14B177	In driver's seat belt buckle	C304	151–13 A2	
Shift Lock Actuator	3E723	In steering column	C249	151–12 F4	
Shift On The Fly Relay	★	In RPO relay block	★	151–10 A7	13–20
Speed Control Servo/Amplifier Assembly	9A825	Left side of engine compartment	C157	151–3 B10	31–3
Starter Interrupt Relay	★	In RPO relay block	★	151–10 A7	13–2
Starter Motor	★	Lower right side of engine	★	151–2 B1	
Starter Motor Relay	11450	Right rear of engine compartment	C166, C167	151–2 A3	
Throttle Position (TP) Sensor	9E731	Attached to throttle body	C123	151–1 F4	
Trailer Electronic Brake Control	★	Behind left side of I/P	C232	151–12 F5	
Trailer Tow Backup Lamp Relay	★	In power distribution box	★	151–3 C10	13–21

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
Trailer Tow Battery Charge Relay	★	In power distribution box	C175	151–3 C10	13–21
Trailer Tow Connector	★	In rear of vehicle	C410	151–14 E10	
Trailer Tow Left Turn Relay	★	In power distribution box	C175	151–3 C10	13–21
Trailer Tow Right Turn Relay	★	In power distribution box	C175	151–3 C10	13–21
Trailer Tow Running Lamp Relay	★	In power distribution box	C175	151–3 C10	13–21
Transfer Case Assembly (Electronic)	7E440	Mounted on rear of transmission	C201	151–9 C5	34–5
Transfer Case Assembly (Mechanical)	★	Mounted on rear of transmission	C260	151–9 A5	
Transfer Case Electric Clutch Relay	★	In RPO relay block	★	151–10 A7	13–20
Transfer Case Shift Relay Module	★	Behind center of I/P	C221	151–12 A5	34–5
Transmission Control Switch (TCS)	7G550	End of transmission selector level	C251	151–12 A4	★
Vapor Management Valve (VMV)	★	Left rear corner of engine compartment	C164	151–1 A8	★
Vehicle Speed Sensor (VSS)	9E731	Left rear of transmission	C186	151–8 C5	★
Washer Pump Assembly	17664	In washer reservoir	C138	151–2 C1	★
Washer Pump Relay	★	In power distribution box	C175	151–3 C10	
Windshield Wiper Motor	17504	Behind center of cowl panel	C165	151–2 A8	81–3
Wiper Hi/Lo Relay	★	In power distribution box	C175	151–3 C10	★
Wiper Run/Park Relay	★	In power distribution box	C175	151–3 C10	★

★ Not Available

Connector Number	Location	Page Zone	Connector Page	Color	Terminal
C100	Front of engine	151–2 F7	★	BK	2
C101	Left front of engine	151–2 F8	★	BK	1
C102	Lower front of engine	151–3 F6	★	BK	2
C103	Right side of engine	151–2 F6	★	★	4
C104	Front of engine	151–1 F6	★	GY	2
C105	Left front corner of engine	151–1 F7	★	BK	2
C106	Left side of engine compartment	151–1 F8	★	BK	2
C107	On intake manifold	151–3 D10	★	BK	2
C108	On exhaust pipe of engine	151–1 A7	★	BL	4
C109	On exhaust pipe of engine	151–1 D1	★	BL	4
C110	Left side of intake manifold	151–3 F9	★	BK	2

★ Not Available

Connector Number	Location	Page Zone	Connector Page	Color	Terminal
C111	Top of engine	151–1 F5	★	BK	4
C112	Rear of engine	151–1 A5	★	BK	3
C113	Left side of engine	151–1 A5	★	BK	3
C114	Left front of engine compartment	151–5 F9	★	GY	1
C115	Top of engine	151–3 A5	★	GY	1
C116	Right front of engine compartment	151–4 F5	★	BK	3
C117	Left front of engine compartment	151–4 F7	★	BK	3
C118	Right side of engine	151–6 A8	★	BK	2
C119	Right rear of engine compartment	151–2 A7	150–2	BK	8
C120	Right rear of engine compartment	151–1 C1	150–1	BK	42
C121	Left side of engine	151–1 E1	★	BK	2
C122	Right side of engine	151–1 F2	★	GY	3
C123	Attached to throttle body	151–1 F4	★	BK	3
C124	Top front of engine	151–C10	★	BK	4
C125	Top of cylinder #1	151–3 F2	★	GY	2
C126	Top of cylinder #2	151–3 F2	★	GY	2
C127	Top of cylinder #3	151–3 F2	★	GY	2
C128	Top of cylinder #4	151–1 A6	★	GY	2
C129	Top of cylinder #5	151–1 A6	★	GY	2
C130	Top of cylinder #6	151–1 A6	★	GY	2
C131	Top of cylinder #7	151–4 A5	★	GY	2
C132	Top of cylinder #8	151–4 A5	★	GY	2
C133	Right front corner of vehicle	151–2 E1	★	BK	3
C134	Right front corner of vehicle	151–3 F3	★	BL	2
C135	Right front corner of vehicle	151–2 D1	★	BK	3
C136	Left front of radiator support	151–2 F3	★	BK	1
C137	Left front of radiator support	151–2 F5	★	BK	1
C138	In washer reservoir	151–2 C1	★	BK	2
C139	Right rear corner of engine compartment	151–2 A5	★	★	4
C140	Right front corner of engine compartment	151–2 F4	★	W	4
C141	Left front corner of engine compartment	151–2 F9	★	W	4
C142	Left front corner of engine compartment	151–2 E10	97–3	BK	8
C143	Left front corner of vehicle	151–3 E10	★	BK	3
C144	Left front corner of vehicle	151–2 D10	★	BL	2
C145	Left front corner of vehicle	151–2 C10	★	BK	3
C146	Left front corner of engine compartment	151–1 F9	42–6	BK	24
C147	Left front corner of engine compartment	151–1 F9	42–6	BK	2
C148	Left side of engine compartment	151–1 D10	150–2	BK	16
C149	Left side of engine compartment	151–1 C10	★	BK	4
C150	Left side of engine compartment	151–1 C10	★	GY	16

★ Not Available

Connector Number	Location	Page Zone	Connector Page	Color	Terminal
C151	Left rear corner of engine compartment	151-3 A6	★	BK	2
C152	Left side of engine compartment	151-2 B10	★	BK	4
C153	Left side of engine compartment	151-1 B10	★	BK	2
C154	At right front wheel	151-3 B1	★	BK	2
C155	On top of engine	151-16 A2	★	★	★
C156	In air cleaner assembly	151-2 A9	★	BK	4
C157	Left side of engine compartment	151-3 B10	31-3	BK	10
C158	Left rear of engine compartment	151-1 A10	150-3	BK	40
C159	Left rear of engine compartment	151-1 A10	150-4	BR	40
C160	Left rear of engine compartment	151-1 A10	150-5	GY	40
C161	Attached to underside of hood	151-3 A9	★	GY	2
C162	Mounted on master cylinder	151-3 A7	★	BK	3
C163	Behind left side of I/P	151-12 F3	42-2	BK	3
C164	Left rear corner of engine compartment	151-1 A8	★	BK	2
C165	Behind center of cowl panel	151-2 A8	81-3	★	5
C166	Right rear of engine compartment	151-2 A3	★	★	1
C167	Right rear of engine compartment	151-2 A3	★	★	1
C168	Top of engine, on fuel rail	151-16 A5	★	★	★
C169	Right rear of engine compartment	151-1 A3	★	GY	4
C170	Right side of engine compartment	151-3 D1	★	BK	4
C171	Right side of engine compartment	151-2 A2	★	BK	4
C172	Right rear of engine compartment	151-2 A6	150-6	GY	38
C173	Right side of engine compartment	151-1 A2	★	BK	2
C174	Right side of engine compartment	151-1 B1	★	GY	104
C175	Left side of engine compartment	151-3 C10	★	★	1
C176	Right front of engine compartment	151-3 A4	★	BK	3
C177	Right front of engine compartment	151-3 A4	★	GY	1
C178	Right front of engine compartment	151-3 A4	★	BK	1
C179	Top front of engine	151-5 F8	★	★	2
C180	Right side of engine compartment	151-3 A1	★	BK	2
C181	Right side of engine compartment	151-3 A2	★	BK	2
C182	Left side of transmission	151-8 C6	29-4	BK	8
C183	Left side of transmission	151-8 C4	29-4	BK	10
C184	On exhaust pipe of engine	151-8 A5	★	BL	4
C185	On exhaust pipe of engine	151-8 A8	★	BL	4
C186	Left side of transmission	151-8 C5	★	BK	2
C187	Left side of transmission	151-8 A3	★	BK	2
C188	Left side of transmission	151-8 F4	★	★	2
C189	Left side of transmission	151-9 F5	★	BK	2
C190	Right side of engine compartment	151-15 A1	53-4	BK	2
C191	Near blower motor	151-15 E1	53-4	BK	4

★ Not Available

Connector Number	Location	Page Zone	Connector Page	Color	Terminal
C193	Right side of transmission	151–8 D9	★	★	★
C194	Right side of engine compartment	151–3 E1	★	★	★
C195	On top of engine	151–16 B1	★	★	★
C196	Center front of engine compartment	151–16 A8	26–11	★	12
C197	Front of engine	151–16 C10	26–12	★	60
C198	Top front of engine	151–1 A4	★	BK	2
C200	Behind left side of I/P	151–11 F4	150–7	BK	16
C201	On transfer case assembly	151–9 C5	34–5	BK	16
C202	Behind right side of I/P	151–10 D10	★	GY	2
C203	Behind right side of I/P	151–11 F7	150–7	BK	16
C204	Behind right side of I/P	151–12 D10	★	GY	3
C205	Behind center of I/P	★	★	★	2
C206	Behind right side of I/P	151–11 F7	150–8	GY	16
C207	Behind right side of I/P	151–10 D10	★	BK	1
C208	Behind right side of I/P	151–12 C10	46–3	BK	12
C209	Behind right side of I/P	151–12 C10	46–3	GY	12
C210	Behind right side of I/P	151–10 C10	150–8	GY	6
C211	Behind glove box	151–10 B10	★	BK	2
C212	Behind ashtray	151–11 B10	★	GY	2
C213	Behind right side of I/P	151–12 C10	★	GY	3
C214	Behind right side of I/P	151–12 C10	★	BR	3
C215	Behind right side of I/P	151–11 A9	★	BK	3
C216	Behind center of I/P	151–11 A7	87–4	BK	5
C217	Behind center of I/P	151–10 F9	53–3	R	4
C218	Behind center of I/P	151–10 F9	53–3	BK	4
C219	Behind center of I/P	151–10 F9	53–3	BK	2
C220	Behind center of I/P	151–10 F9	53–3	W	3
C221	Behind center of I/P	151–12 A5	34–5	BK	10
C222	Behind center of I/P	151–11 A6	42–5	BK	14
C223	Behind center of I/P	151–11 A8	★	BK	2
C224	Behind center of I/P	151–10 A6	130–5	BK	8
C225	Behind center of I/P	151–10 A6	130–5	BK	8
C226	Behind cigar lighter	151–11 C10	★	BK	1
C227	Behind cigar lighter	151–11 C10	★	★	1
C228	Behind center of I/P	151–11 F5	14–2	BK	16
C229	Behind center of I/P	151–10 F8	53–4	W	8
C230	Behind center of I/P	151–12 F7	34–6	GY	4
C231	On clutch pedal arm	151–12 F6	20–4	BK	6
C232	Behind left side of I/P	151–12 F5	150–9	GY	6
C233	Base of steering column	151–10 A3	★	BK	3
C234	Base of steering column	151–10 A3	31–3	BR	6

★ Not Available

Connector Number	Location	Page Zone	Connector Page	Color	Terminal
C235	Inside steering column	151–10 F7	★	GY	2
C236	Behind left side of I/P	151–11 A4	62–8	BK	12
C237	Behind left side of I/P	151–11 A4	62–8	W	16
C238	Behind left side of I/P	151–11 A4	62–9	W	12
C239	Behind left side of I/P	151–11 A3	59–5	GY	26
C240	Behind left side of I/P	151–11 A3	59–6	GY	16
C241	Behind left side of I/P	151–11 A3	59–7	GY	22
C242	Under left side of I/P	151–10 D1	13–22	GY	34
C243	Under left side of I/P	151–10 D1	13–21	BK	34
C244	Behind left side of I/P	151–12 C1	13–16	GY	4
C245	Behind left side of I/P	151–12 C1	13–17	GY	6
C246	Behind left side of I/P	151–12 C1	13–17	BK	6
C247	Behind left side of I/P	151–11 F3	150–9	GY	16
C248	Behind left side of I/P	151–11 F3	150–10	BK	8
C249	In steering column	151–12 F4	★	BK	3
C250	In steering column	151–10 F6	13–16	BK	15
C251	End of transmission selector lever	151–12 A4	★	BK	3
C252	Behind left side of I/P	151–10 F4	★	BK	2
C253	Behind left side of I/P	151–10 F5	150–10	BK	16
C254	Right side of parking brake lever	151–15 B1	★	BK	1
C255	In 14401, near T/O to ashtray illumination	★	★	★	★
C256	Behind left side of I/P	151–15 A1	117–4	BK	26
C257	Behind left side of I/P	151–15 A1	117–4	BK	22
C258	Left side of steering column	★	90–4	GY	10
C259	Left side of steering column	★	81–3	GY	7
C260	Left side of transfer case	151–9 A5	★	BK	4
C261	Behind center of I/P	151–12 A7	★	BK	16
C262	Behind center of I/P	151–12 A7	130–6	BK	8
C263	Behind center of I/P	151–11 F6	130–7	BK	8
C264	Behind center of I/P	151–11 F6	130–7	BK	14
C265	Behind right side of I/P	151–10 D10	150–11	BK	10
C266	Left rear of cab	151–14 F3	130–8	BK	12
C267	In junction box fuse/relay panel	151–11 A3	59–6	★	18
C269	Base of steering column	★	★	★	★
C270	In 14401, near radio	★	★	★	★
C271	Behind center of I/P	★	★	★	★
C272	Center of steering wheel hub	★	★	★	2
C274	Behind center of I/P	151–10 A5	★	★	10
C276	Behind center of I/P	151–12 A6	★	★	13
C277	Behind center of I/P	151–12 A6	★	★	13

★ Not Available

Connector Number	Location	Page Zone	Connector Page	Color	Terminal
C278	Right side of I/P	151–12 D10	★	★	★
C284	Behind right side of I/P	151–12 F8	★	★	★
C285	Behind right side of I/P	151–12 F8	★	★	★
C300	Left side rail, center of vehicle	151–14 F4	★	GY	4
C301	On fuel tank pressure (FTP) sensor	151–14 F6	★	BK	3
C302	Right rear of cab	151–14 B10	★	GY	2
C303	Left rear of cab	151–14 F2	★	GY	2
C304	Under driver's seat	151–13 A7	★	GY	2
C305	Under driver's seat	151–13 A5	★	GY	2
C306	Center of cab, in roof panel	151–15 A5	★	GY	1
C307	Center of cab, in roof panel	151–15 A5	★	GY	1
C308	Under driver's seat	151–13 F3	★	GY	6
C311	Left side of driver's seat	151–13 F8	120–2	BK	8
C312	Right lower rear of cab	151–14 C10	★	GY	2
C316	Center of vehicle, near fuel tank	★	★	★	8
C401	Rear center of vehicle	151–15 E10	★	W	2
C402	Rear center of vehicle	151–15 C10	★	W	2
C403	Left rear of vehicle	151–15 F10	150–11	BK	8
C404	Left rear corner of vehicle	151–14 F8	★	T	3
C405	Right rear corner of vehicle	151–14 C10	★	T	3
C406	Left rear corner of vehicle	151–14 F7	★	GN	3
C407	Right rear corner of vehicle	151–14 D10	★	GN	3
C408 (Flareside)	Left rear corner of vehicle	151–15 B10	★	★	3
C409 (Flareside)	Right rear corner of vehicle	151–15 C10	★	★	3
C410	Rear of vehicle, under bumper	151–14 E10	★	BK	7, 4
C411	Left rear of vehicle	151–15 F7	★	GY	4
C412	Left rear of vehicle	151–15 F6	★	BK	12
C413	Rear of body, near fuel tank	151–15 A10	★	BK	2
C414	On rear axle	151–15 A8	★	BK	2
C415	Center of vehicle, near fuel tank	151–14 F5	★	BK	4
C416	In 13A625, near C913 right cargo lamp	151–15 A6	★	★	2
C417	At fuel tank	151–17 D10	★	★	2
C418	At fuel tank	151–14 F6	★	★	4
C419	Rear right side of axle	151–15 A7	★	★	★
C420	Rear left side of axle	151–15 F5	★	★	★
C422	Rear left side of axle	151–15 F6	★	★	★

★ Not Available

Connector Number	Location	Page Zone	Connector Page	Color	Terminal
C423	Rear right side of axle	151–15 A9	★	★	★
C424	At fuel tank	151–17 A7	★	★	2
C425	At fuel tank	151–17 C1	★	★	2
C426	At fuel tank	151–17 A5	★	★	2
C500	Front of left door	151–14 B1	★	GY	2
C501	Rear of left door	151–14 E1	★	BK	2
C502	In left door interior door panel	151–14 C1	★	N	2
C504	Bottom rear of left door	151–14 E1	★	★	2
C505	top rear of left door	151–15C1	★	GY	4
C506	In left door	151–14 B1	★	★	2
C507	In left door	151–14 A4	★	GY	3
C508	Behind left interior door panel	151–14 A1	110–4,5	BK	7
C509	Behind left interior door panel	151–14 A2	100–3	BK	4
C510	Behind left interior door panel	151–14 A2	100–3	BK	5
C511	Behind left interior door panel	151–14 A3	124–2	N	8
C600	Front of right door	151–14 A6	★	GY	2
C601	Rear of right door	151–14 A10	★	BK	2
C602	In right door interior door panel	151–14 A9	★	N	2
C604	Bottom rear of right door	151–14 B10	★	★	2
C605	Top rear of right door	151–15 A6	★	GY	4
C606	In right door	151–14 F4	★	★	2
C607	In right door	151–14 A5	★	GY	3
C608	Behind right interior door panel	151–14 A8	110–4,5	BK	7
C609	Behind right interior door panel	151–14 A7	100–4	BK	7
C800	On right rear door speaker	★	★	GY	2
C911	Center of cab, in roof panel	151–15 A5	★	★	★
C912	Center of cab, in roof panel	151–15 A3	★	★	★
C913	Center of cab, in roof panel	151–14 A6	★	★	★
C1011	Top of cylinder #1	151–6 A5	★	BK	2
C1012	Top of cylinder #2	151–6 A5	★	BK	2
C1013	Top of cylinder #3	151–6 A5	★	BK	2
C1014	Top of cylinder #4	151–6 A5	★	BK	2
C1015	Top of cylinder #5	151–6 A5	★	BK	2
C1016	Top of cylinder #6	151–6 A5	★	BK	2
C1017	Top of cylinder #7	151–6 A5	★	BK	2
C1018	Top of cylinder #8	151–6 A5	★	BK	2

★ Not Available

Ground	Location	Page Zone
G100	Lower right rear of engine, on starter motor mounting bolt	★
G101	Rear of engine compartment, right side of cowl panel	151–2 A4
G102	Rear of right fender apron	151–2 B1
G103	Right front radiator support	151–2 D1
G104	Left front radiator support	151–1 E10
G200	Lower right cowl panel inner	151–11 F8
G201	Lower left cowl panel inner	151–10 F3
G202	Upper left cowl panel inner	151–11 F2
G400	Left rear of frame	151–15 F8

★ Not Available

Splice	Location
S100	Engine control sensor harness, in T/O to powertrain control module
S101	Engine control sensor harness, in T/O to powertrain control module
S102	Engine control sensor harness, near T/O to starter motor relay
S103	Fuel charge harness, near T/O to C120
S104	Engine control sensor harness, 195mm from T/O to right headlamp
S105	Engine control sensor harness, in T/O to power distribution relay box
S106	Engine control sensor harness, near T/O to G104
S107	Engine control sensor harness, near T/O to starter motor relay
S108	Engine control sensor harness, in T/O to power distribution relay box
S109	Engine control sensor harness, near T/O to C150M
S110	Engine control sensor harness, in T/O to engine fuse module
S111	Engine control sensor harness, in T/O to engine fuse module
S112	Engine control sensor harness, near T/O to power distribution box
S113	Engine control sensor harness, near T/O to C159
S114	Engine control sensor harness, near T/O to left headlamp
S115	Engine control sensor harness, near T/O to C148
S116	Engine control sensor harness, near T/O to C160
S117 (4.2L)	Fuel charge harness, near T/O to idle air control valve
S117 (4.6L)	Fuel charge harness, near T/O to C120
S117 (5.4L)	Fuel charge harness, near T/O to C120
S118 (4.6L)	Fuel charge harness, near T/O to radio noise capacitor C115
S119 (4.6L)	Fuel charge harness, near T/O to radio noise capacitor C114
S120	Engine control sensor harness, in T/O to C160
S121	Engine control sensor harness, near T/O to 4 wheel anti–lock brake system (4WABS) module
S122	Engine control sensor harness, near T/O to right headlamp

Splice	Location
S123	Engine control sensor harness, near T/O to starter motor relay
S124	Engine control sensor harness, near T/O to 4 wheel anti–lock brake system (4WABS) module
S125	Heater blower motor feed harness, in T/O to blower motor resistor
S126	Engine control sensor harness, near T/O to mega fuse (PDB)
S127	Engine control sensor harness, near T/O to vapor management valve
S128	Engine control sensor harness, near T/O to powertrain control module (PCM)
S129 (4.2L)	Fuel charge harness, between takeout for C126 and C123
S129 (4.6L)	Fuel charge harness, near T/O to fuel Injector #3
S129 (5.4L)	Fuel charge harness, near T/O to coil on plug #3
S130	Engine control sensor harness, in T/O to C120
S131 (4.2L)	Fuel charge harness, near T/O to intake manifold runner control monitor #1
S131 (4.6L)	Fuel charge harness, near T/O to fuel injector #8
S131 (5.4L)	Fuel charge harness, near T/O to coil on plug #7
S132	Fuel charge harness, in T/O to intake manifold runner control (IMRC) monitor #2
S133	Fuel charge harness, in T/O to intake manifold runner control (IMRC) monitor #1
S134	Engine control sensor harness, near T/O to G101
S135 (4.2L)	Fuel charge harness, near T/O to fuel injector #4
S135 (4.6L)	Fuel charge harness, near T/O to knock sensor
S135 (5.4L)	Fuel charge harness, near T/O to radio noise capacitor
S136 (4.2L)	Fuel charge harness, near T/O to fuel injector #2
S136 (4.6L)	Fuel charge harness, near T/O to C131 fuel injector #7
S136 (5.4L)	Fuel charge harness, near T/O to knock sensor
S137	Engine control sensor harness, near T/O to starter motor relay
S138	Engine control sensor harness, in T/O to C139
S139	Engine control sensor harness, in T/O to C158
S140	Backup lamp switch to rear lamp feed harness, in T/O to C172
S141	Backup lamp switch to rear lamp feed harness, in T/O to C172
S142	Engine control sensor harness, near T/O to mega fuse (PDB)
S143	Engine control sensor harness, near T/O to vapor management valve
S144	Engine control sensor harness, near T/O to power distribution box
S145	Engine control sensor harness, in T/O to horns
S146	Engine control sensor harness, near T/O to C159
S147	Engine control sensor harness, in T/O to left fog lamp
S148	Engine control sensor harness, near T/O to C149M
S149	Engine control sensor harness, in T/O to C149M
S150	Engine control sensor harness, in T/O to C160
S151	Engine control sensor harness, in T/O to wiper motor
S152	Engine control sensor harness, near T/O to C151

Splice	Location
S153	Fuel charge harness, near T/O to C120
S156	Engine control sensor harness, near T/O to vapor management valve
S157	Engine control sensor harness, near T/O to vapor management valve
S158	Engine control sensor harness, near T/O to C150
S159	Engine control sensor harness, in T/O to C165 windshield wiper motor
S161	Fuel charge harness, near T/O to fuel injector #3
S162	Fuel charge harness, near T/O to fuel injector #7
S199	Fuel charge harness, near T/O to C120
S200	Main harness, near T/O to C210
S201	Main harness, near T/O to transfer case shift relay
S202	Main harness, in T/O to blower/flasher relay block
S203	Main harness, near T/O to passenger's air bag
S204	Main harness, near T/O to instrument cluster
S205	Main harness, near T/O to radio
S206	Radio speaker jumper harness, on T/O to C261
S207	Main harness, near T/O to junction box fuse/relay panel
S208	Main harness, near T/O to G202
S209	Radio speaker jumper harness, in T/O to premium sound amplifier
S210	Radio speaker jumper harness, near T/O to radio
S211	Main harness, in T/O to main light switch
S212	Main harness, near T/O to brake pedal position (BPP) switch
S213	Main harness, in T/O to transfer case shift relays
S214	Main harness, near T/O to brake pedal position (BPP) switch
S215	Main harness, in T/O to ignition switch
S216	Body main harness, near T/O to C254 park brake switch
S217	Main harness, in T/O to rear anti–lock brake system (RABS) module
S219	Main harness, near T/O to transfer case shift relay module
S220	Body main harness, near T/O to park brake switch
S221	Main harness, near T/O to C210
S222	Main harness, near T/O to instrument cluster
S223	Main harness, near T/O to instrument cluster
S224	Main harness, in T/O to main light switch
S225	Main harness, near T/O to instrument cluster
S226	Main harness, in T/O to passenger's air bag
S227	Main harness, in T/O to clutch pedal position (CPP) switch
S228	Main harness, in T/O to junction box fuse/relay panel
S229	Main harness, near T/O to radio
S230	Main harness, in T/O to clockspring assembly
S231	Main harness, near T/O to instrument cluster
S232	Main harness, near T/O to instrument cluster
S234	Body main harness, near T/O to remote anti–theft personality (RAP) module

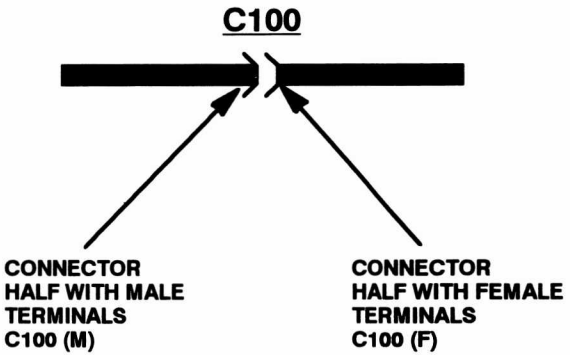
Splice	Location
S235	Body main harness, near T/O to remote anti–theft personality (RAP) module
S238	Main harness, in T/O to C239 generic electronic module (GEM)
S239	Body main harness, near T/O to C206
S240	Main harness, near T/O to ashtray illumination
S242	Main harness, near T/O to clutch pedal position (CPP) switch
S243	Body main harness, 400 mm from left door grommet
S244	Main harness, near T/O to main light switch
S245	Main harness, in T/O to passenger's air bag
S246	Main harness, near T/O to C253
S247	Main harness, near T/O to C253
S248	Body main harness, near T/O to park brake switch
S249	Body main harness, near T/O to remote anti–theft personality (RAP) module
S252	Radio speaker jumper harness, near T/O to C265
S253	Radio amplifier harness, near T/O to C265
S256	Body main harness, near T/O to lock relays
S265	Main harness, near T/O to C242
S268	Main harness, in T/O to C240 generic electronic module (GEM)
S278	Main harness, near T/O to C247
S286	Main Harness, near T/O to C246
S287	Main harness, near Connector C163
S288	Main harness, near Connector C163
S290	Main harness, near T/O to C236
S291	Main harness, near T/O to rear anti–lock brake system (RABS) module
S293	Main harness, near T/O to passenger's air bag
S294	Main harness, near T/O to air bag diagnostic monitor
S295	Main harness, near T/O to air suspension connector
S296	Main harness, near T/O to air suspension connector
S300	Seat belt retractor switch right harness, in T/O to dome lamp
S301	Fuel tank sender harness, near T/O to fuel tank solenoid valve #2
S302	Fuel tank sender harness, near T/O to fuel tank solenoid valve #2
S303	Fuel tank sender harness, near C316
S304	Seat belt retractor switch harness, near T/O to right rear speaker
S400	Rear lamp harness, near T/O to fuel pump assembly
S401	Rear lamp connector harness, near T/O to C400M
S402	Socket assembly–rear license assembly, in T/O to license lamps
S403	Rear lamp connector harness, near T/O to C403
S404	Socket assembly–rear license assembly, in T/O to license lamp
S405	In rear lamp harness, near T/O to C404 left stop/park/turn lamp
S406	Rear lamp harness, near T/O to differential speed sensor (DSS)

Splice	Location
S407	Rear lamp harness, near T/O to differential speed sensor (DSS)
S409	Rear lamp harness, near T/O to fuel pump module
S410	Rear lamp harness, near T/O to fuel pump module
S411	Rear lamp harness, in T/O to C911 center cargo/high mount stop lamp
S500	Body main harness, near T/O to left power door lock switch
S501	Body main harness, near T/O to left door lock motor
S502	Body main harness, near T/O to left power window motor
S503	Body main harness, near T/O to left power window motor
S504	Body main harness, near T/O to lock relays
S600	Body main harness, near T/O to right power window switch
S601	Body main harness, near T/O to right power window switch
S602	Body main harness, near T/O to right power window switch
S604	Body main harness, 550 mm from left door grommet
S911	High mount stop lamp harness, near T/O to C416

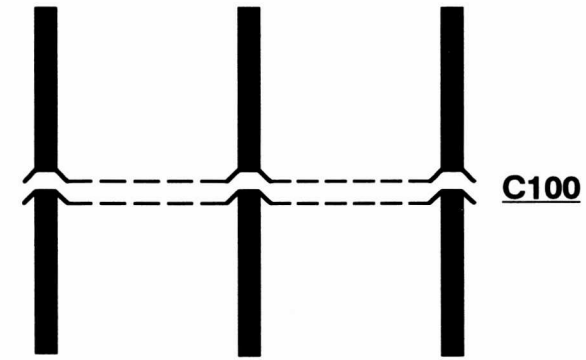
HOW TO IDENTIFY A BASIC HARNESS NUMBER BY USING A "C" NUMBER

Understand these symbols before using the following listing:

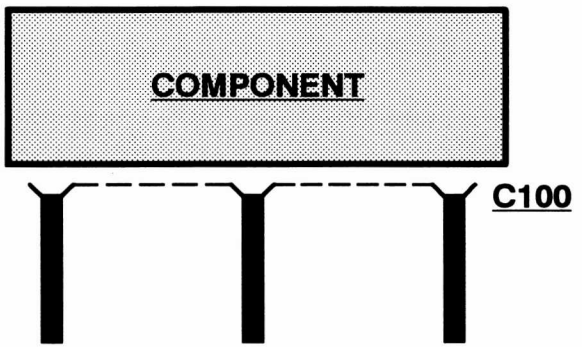
HARNESS TO HARNESS CONNECTION



DASHED LINES INDICATE TERMINALS OF SAME CONNECTOR



COMPONENT CONNECTION



Identify the basic harness part number by:

1) If the problem is in a connector, find the connector "C" number in the EVTM schematics. Then locate the "C" number in the following listing and read the harness base part number.

2) If the problem is not in a connector (such as a short or a broken wire), then choose a connector located on the same harness that has the problem. Identify the "C" number in the following listing and read the base part number of the harness that has the problem.

Connector Number	Wire Assembly
C100 (4.2L)	9D930
C100 (4.6L) (5.4L)	12B637
C101 (4.2L)	9D930
C101 (4.6L) (5.4L)	12B637
C102 (4.2L)	9D930
C102 (4.6L) (5.4L)	12B637
C103 (4.2L)	9D930
C103 (4.6L) (5.4L)	12B637
C104 (4.2L)	9D930
C104 (4.6L) (5.4L)	12B637
C105 (4.2L)	9D930
C105 (4.6L) (5.4L)	12B637
C106 (4.2L)	9D930
C106 (4.6L)	12B637
C107 (4.2L)	9D930
C107 (4.6L) (5.4L)	12B637
C108 (4.2L)	9D930
C108 (4.6L) (5.4L)	12B637
C109 (4.2L)	9D930
C109 (4.6L) (5.4L)	12B637
C110 (4.2L)	9D930
C110 (4.6L) (5.4L)	12B637
C111 (4.2L)	9D930
C112 (4.2L)	9D930
C113 (4.2L)	9D930
C114 (4.6L) (5.4L)	12B637
C115 (4.2L)	9D930
C115 (4.6L) (5.4L)	12B637
C116 (4.6L)	12B637
C117 (4.6L)	12B637
C118 (4.6L) (5.4L)	12B637
C119 (F) (4.2L)	9D930
C119 (F) (4.6L) (5.4L)	12B637
C119 (M) (4.2L) (4.6L)	12A581
C119 (M) (4.6L) (5.4L)	12A581
C120 (F) (4.2L)	9D930
C120 (F) (4.6L) (5.4L)	12B637
C120 (M) (4.2L) (4.6L)	12A581
C120 (M) (4.6L) (5.4L)	12A581
C121 (4.2L)	9D930
C121 (4.6L) (5.4L)	12B637
C122 (4.2L)	9D930
C122 (4.6L) (5.4L)	12B637
C123 (4.2L)	9D930
C123 (4.6L) (5.4L)	12B637
C124 (F) (4.6L) (5.4L)	12B637
C124 (M) (4.6L) (5.4L)	14B102
C125 (4.2L)	9D930
C125 (4.6L) (5.4L)	12B637
C126 (4.2L)	9D930
C126 (4.6L) (5.4L)	12B637
C127 (4.2L)	9D930
C127 (4.6L) (5.4L)	12B637
C128 (4.2L)	9D930
C128 (4.6L) (5.4L)	12B637
C129 (4.2L)	9D930
C129 (4.6L) (5.4L)	12B637
C130 (4.2L)	9D930
C130 (4.6L) (5.4L)	12B637
C131 (4.6L) (5.4L)	12B637
C132 (4.6L) (5.4L)	12B637
C133	12A581
C134	12A581
C135	12A581
C136	12A581
C137	12A581
C138	12A581
C139	12A581
C140	12A581
C141	12A581
C142	12A581
C143	12A581
C144	12A581
C145	12A581
C146	12A581
C147	12A581
C148 (F)	14405
C148 (M)	12A581
C149 (F)	14405
C149 (M)	12A581
C150 (F)	14405
C150 (M)	12A581
C151	12A581
C152	12A581
C153	12A581
C154	12A581
C156	12A581
C157	12A581
C158 (F)	14401
C158 (M)	12A581
C159 (F)	14401
C159 (M)	12A581
C160 (F)	14401
C160 (M)	12A581
C161	12A581
C162	12A581
C163	14401
C164	12A581
C165	12A581
C166	14305
C166	12A581
C167	12A581
C169 (F)	12A581
C169 (M)	14305
C170	12A581
C171 (F)	14B110
C171 (M)	12A581
C172 (F)	15525
C172 (M)	12A581
C173	12A581
C174	12A581
C175	12A581
C176	14305
C177	14305
C178	14305
C179	14B102
C180	14B110
C181	14B110
C182	15525
C183	15525
C184	15525
C185	15525
C186	15525
C187	15525
C188	15525
C189	15525
C190	18B574
C191	18B574
C192	15525
C193	15525
C194	12A581
C196	12A581
C197	12A581
C198 (4.2L)	9D930

153–3 HARNESS CAUSAL PART NUMBER

Connector Number	Wire Assembly
C200 (F)	14401
C200 (M)	7A786
C201	7A786
C202 (F)	14401
C202 (M)	14A504
C203 (F)	14401
C203 (M)	14A504
C204	14401
C205	14401
C206 (F)	14401
C206 (M)	14A005
C206 (M)	14630
C207 (F)	14401
C207 (M)	14401
C208	14401
C209	14401
C210 (F)	14401
C210 (M)	18B574
C211	14401
C212	14401
C213	14401
C214	14401
C215	14401
C216	14401
C217	14401
C218	14401
C219	14401
C220	14401
C221	14401
C222	14401
C223	15080
C224 (F)	14401
C224 (M)	19A170
C225 (F)	14401
C225 (M)	19A170
C226	14401
C227	14401
C228	14401
C229	14401
C230	14401
C231	14401
C232 (F)	14A348
C232 (M)	14401
C233	14401
C234	14401
C235	14401
C236	14401
C237	14401
C238	14401
C239	14401
C240	14401
C241	14401
C242	14401
C243	14401
C244	14401
C245	14401
C246	14401
C247 (F)	14401
C247 (M)	14A005
C247 (M)	14631
C248 (F)	14401
C248 (M)	14A005
C249	14401
C250	14401
C251	14401
C252	14401
C253 (F)	14401
C253 (M)	14A320
C254	14A005
C254	14631
C255	14401
C256	14A005
C257	14A005
C258	14A320
C259	14A320
C260	15525
C261	19A170
C262	19A170
C263	19A170
C264	19A170
C265 (F)	19A170
C265 (M)	19B113
C266	19B113
C267	Junction Box Fuse/Relay Panel
C270 (F)	14401
C270 (M)	15080
C271	14A005
C272 (F)	PIA
C272 (M)	PIA
C274	14401
C276	14401
C277	15080
C278 (F)	12B566
C278 (M)	14401
C284	14401
C285	14401
C298	14401
C300 (F)	9F759
C300 (M)	14405
C301	9F759
C302 (Regular Cab)	14A504
C302 (Super Cab)	14632
C303	14A504
C304	14A504
C305 (F)	14A504
C305 (M)	14B084
C306	14A504
C307	14A504
C308	14B084
C310	14B084
C311	14B084
C312 (F) (Super Cab)	14632
C312 (M)	14A504
C316	14406
C400 (F)	13412
C400 (M)	13A409
C401	13412
C402	13412
C403 (F)	13A409
C403 (M)	14405
C404	13A409
C405	13A409
C406	13A409
C407	13A409
C408 (Flareside)	13A409
C409 (Flareside)	13A409
C410	13A576
C411 (F)	13A576
C411 (M)	14405
C412 (F)	13A576
C412 (M)	14405

Connector Number	Wire Assembly	Connector Number	Wire Assembly	Connector Number	Wire Assembly	Connector Number	Wire Assembly
C413	14405	C500	14A005	C511	14A005	C800	14632
C414	14406	C500	14631	C600	14A005	C911	13A625
C415	14405	C501	14A005	C600	14630	C912	13A625
C416 (F)	13A625	C501	14631	C601	14A005	C913	13A625
C416 (M)	14A504	C502	14A005	C601	14630	C1011	12B637
C418	14406	C504	14A005	C602	14A005	C1012	12B637
C419	14405	C505	14A005	C604	14A005	C1013	12B637
C420	14405	C506	14A005	C605	14A005	C1014	12B637
C422	14405	C507	14A005	C606	14A005	C1015	12B637
C423	14405	C508	14A005	C607	14A005	C1016	12B637
C424	14406	C509	14A005	C608	14A005	C1017	12B637
C426	14401	C510	14A005	C609	14A005	C1018	12B637

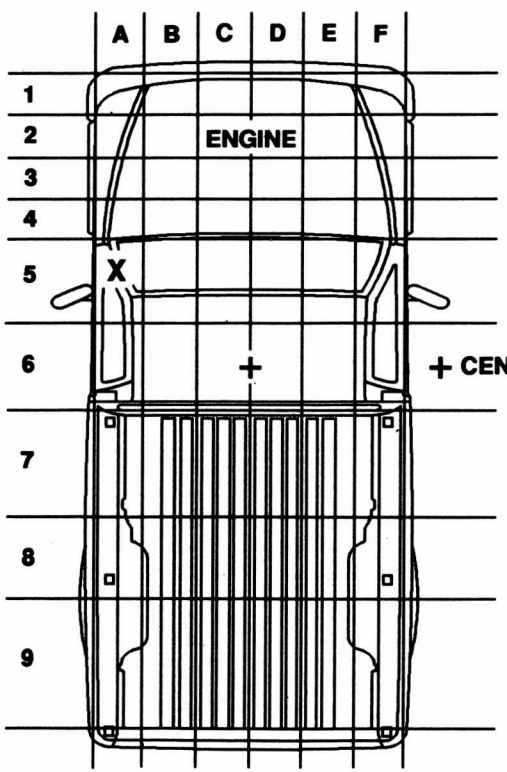
VEHICLE REPAIR LOCATION CODES

TO PINPOINT THE ACTUAL VEHICLE LOCATION OF A REPAIR THE VEHICLE REPAIR LOCATION CODE IS REQUIRED.

FOR EXAMPLE, AN "X" HAS BEEN PLACED IN THE QUANDRANT OF THE VEHICLE DIAGRAMS INDICATING THE LOCATION OF THE REPAIR. SEE DIAGRAMS.

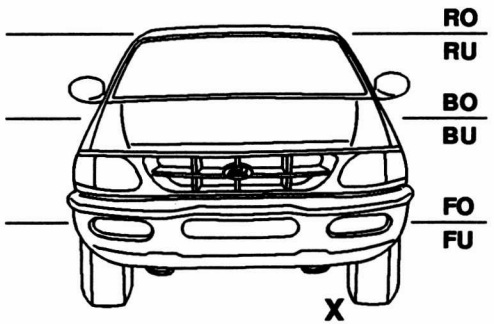
LOCATION CODE, FOR THE EXAMPLE IS: A5/FU –
(UNDER THE FLOOR OF THE DRIVER'S LEFT FOOT.)

FRONT/REAR DIRECTION
FRONT



REAR

OVER/UNDER DIRECTION



R = ROOF LINE
RO = ROOF OVER
RU = ROOF UNDER

B = BELT LINE
BO = BELT OVER
BU = BELT UNDER

F = FLOOR PAN
FO = FLOOR OVER
FU = FLOOR UNDER

SIDE