



# 1995 F-SERIES



## DEMO

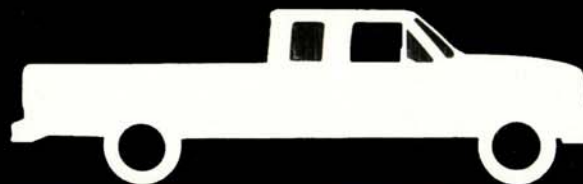
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# ELECTRICAL AND VACUUM TROUBLESHOOTING MANUAL



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**1995 F-Series Electrical & Vacuum  
TroubleShooting Manual (EVTM)  
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# ELECTRICAL AND VACUUM TROUBLESHOOTING MANUAL

## FPS-12128-95

### FORD CUSTOMER SERVICE DIVISION

## Quality is Job 1

Ford Customer Service Division has developed a new format for the 1995 F-SERIES EVTM. Our goal is to provide accurate and timely electrical and vacuum service information.

### 1995 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; 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).
- **"HARNES CAUSAL PART NUMBERS"** (CELL 153) has been added to aid in identifying warranty concerns.
- **In-line connector numbers** contain a suffix to denote connector "gender" type (F-socket, M-prior blade).

### 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
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## IMPORTANT SAFETY NOTICE

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

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

# 2-1 HOW TO USE THIS MANUAL

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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** containing important information appear in boxes on text pages.

- **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 now contain references to full-view illustrations and component descriptions 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 component descriptions summarize the system function of a component.

Schematic pages now 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.

Connector face information specific to a certain cell is now 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. Component connectors with five or more terminals are accompanied by a pin-out chart that lists the function of all circuitry associated with that component.

In-Line connectors shown on schematic pages now contain a suffix to denote connector gender (F- socket, M- prior blade).

**"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 com-

plete 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 CONNECTORS FACES"** (Cell 150) contains in-line connectors with five or more terminals. This section includes both female and male mating in-line connectors arranged in order according to connector number.

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

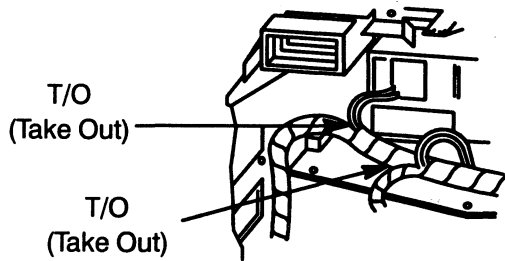
The **"LOCATION INDEX"** (Cell 152) provides the service base part numbers, locations, connector face references and illustration references for all components, connectors, splices and grounds.

## HELPFUL REMINDERS

Before using the EVTm for troubleshooting, refer to the 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



- If a connector serves the same purpose in two separate versions (e.g., EFI/Carb), but is physically different, *two* connector numbers are used. However, if a connector serves the same purpose in two separate versions (e.g., EFI/Carb) 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.
- 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 (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.

- 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 Code.

## 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 loose clothing.

# 2-3 HOW TO USE THIS MANUAL

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## 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 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 in a wire 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

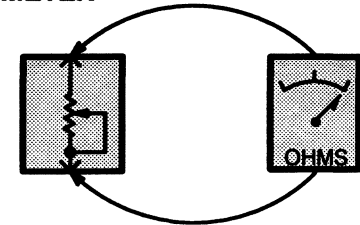


Figure 1 – Resistance Check

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

## TEST LAMP

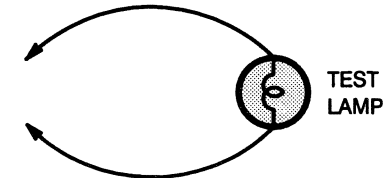


Figure 2 – Test Lamp

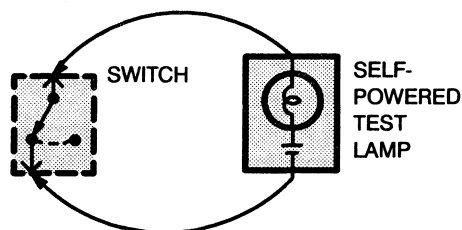
A Test Light is a 12-volt bulb with two test leads (Figure 2).

Uses: Voltage Check, Short Check



## HOW TO FIND ELECTRICAL CONCERNS (CONTINUED)

### SELF-POWERED TEST LAMP



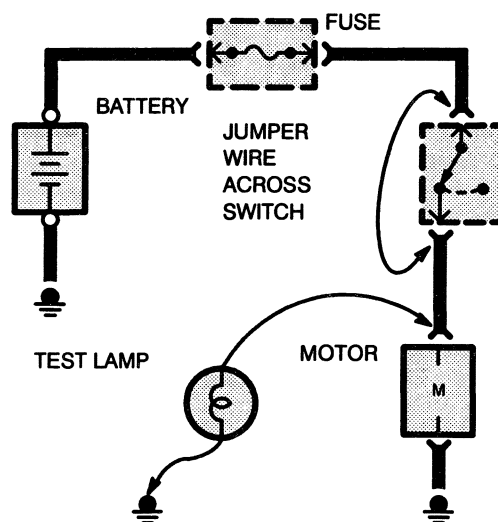
**Figure 3—Continuity Check**

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

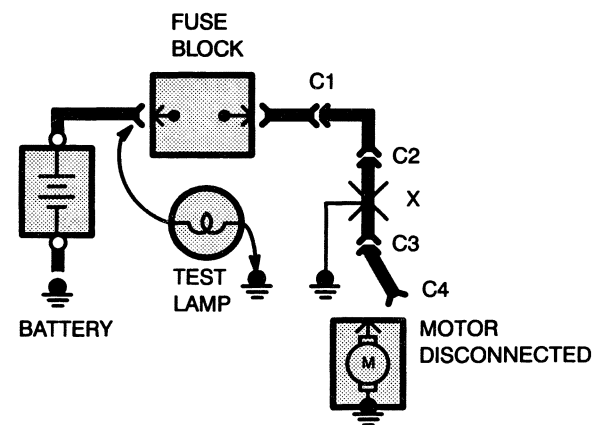
to power the load. If jumpering the terminals powers the circuit, the switch is inoperative (Figure 4).

### CONTINUITY CHECK (Locating open circuits)

Connect one lead of a 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. The bulb goes on when the test point has voltage (Figure 4).



**Figure 5—Short Check**

# 2-5 HOW TO USE THIS MANUAL

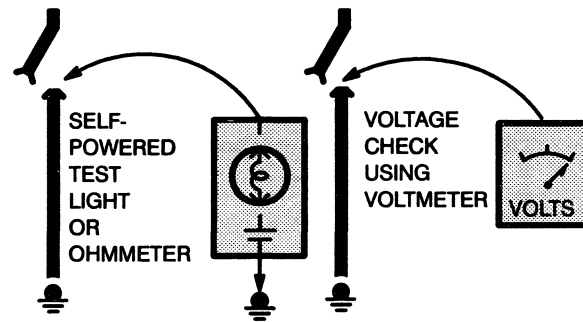
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## HOW TO FIND ELECTRICAL CONCERNS (CONTINUED)

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 the Ignition Switch to RUN (if necessary) to power fuse.
4. Connect one Test Lamp lead to the hot end of the blown fuse. Connect the other lead to ground. The 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).

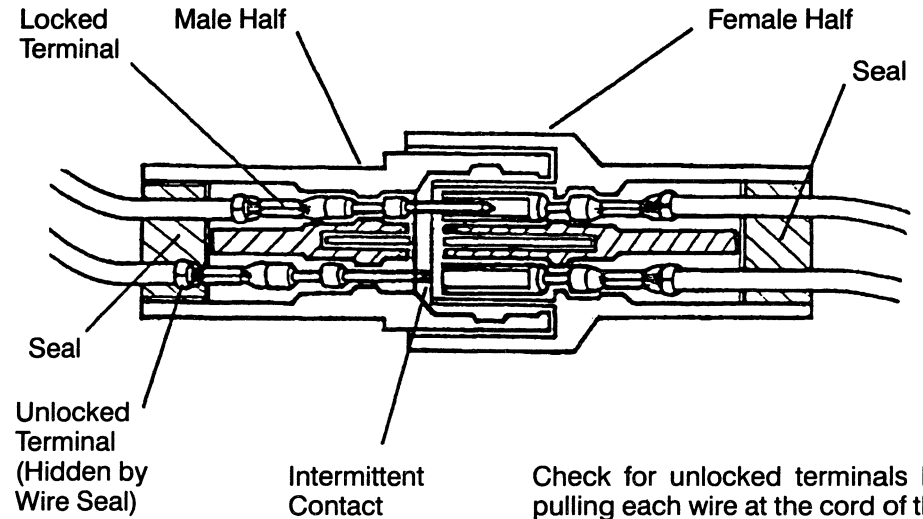
The circuit schematics in this manual make it easy to identify common points in circuits. This knowledge can help narrow the concern to a specific area. For example, if several circuits fail at the same time, check for a common power or ground connection (See *Power Distribution or Grounds*). If part 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 the power and ground paths must be good. Since the dimmer switch is the component that switches this power to the high beam lights and the indicator, it is most likely the cause of failure.

## TROUBLESHOOTING WIRING HARNESS AND CONNECTOR HIDDEN CONCERNS

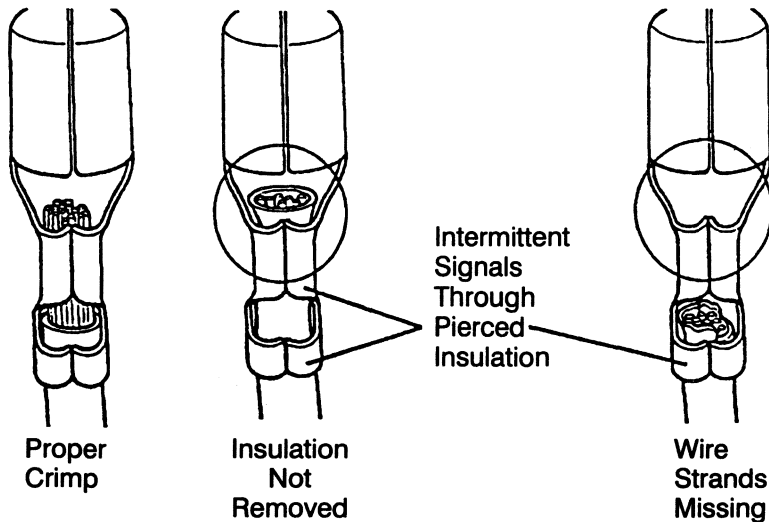
The following illustrations are known examples of wiring harness, splices and connectors that will create intermittent electrical concerns. The concerns are hidden and can only be discovered by a physical evaluation as shown in each illustration.

**NOTE:** When servicing gold plated terminals in a connector, only replace with gold plated terminals designed for that connector.

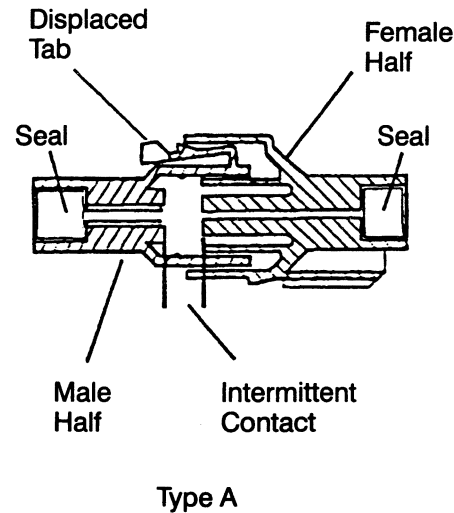


Check for unlocked terminals by pulling each wire at the cord of the connector

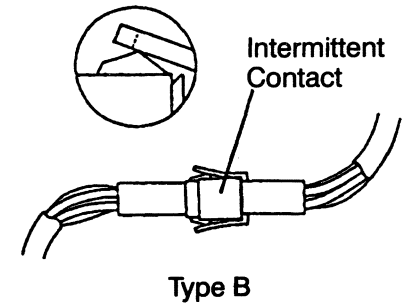
## TERMINAL NOT PROPERLY SEATED



## DEFECTIVE INSULATION STRIPPING



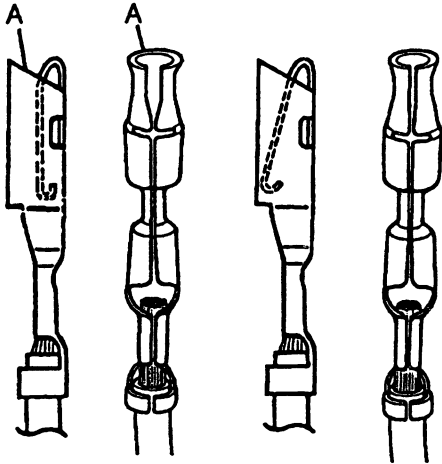
Lock may be displaced into an unlocked position; pull on the connector to verify the lock.



## PARTIALLY MATED CONNECTORS

# 2-7 HOW TO USE THIS MANUAL

1995 F-SERIES

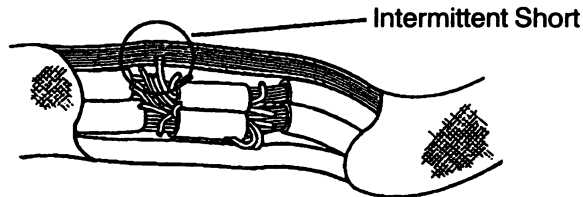


Enlarged

Normal

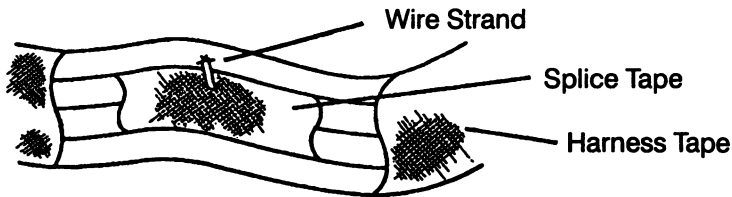
Any probe entering the terminal may enlarge the contact spring opening creating an intermittent signal. Insert the correct mating terminal (Location A) from the service kit and feel for a loose fit.

## DEFORMED (ENLARGED) FEMALE TERMINALS



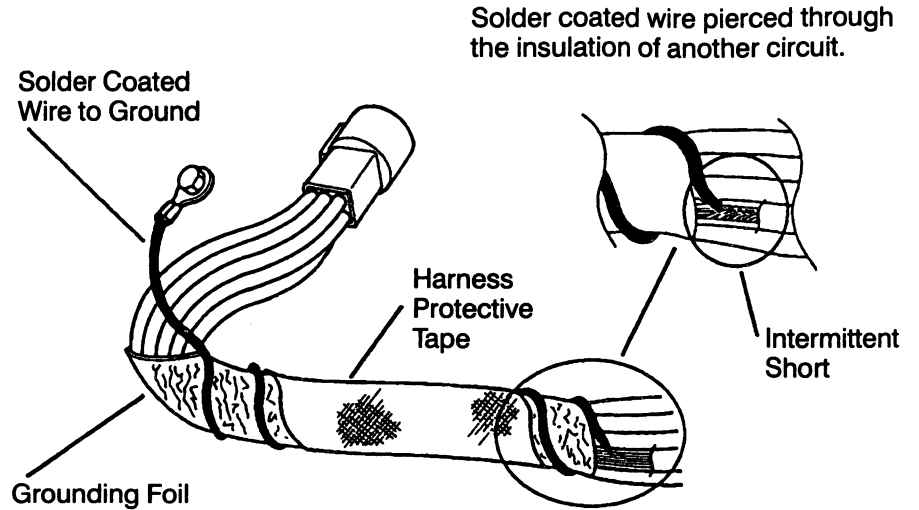
Splice Tape Removed

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

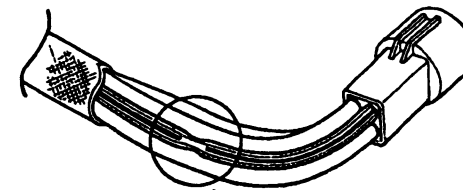


Splice Covered

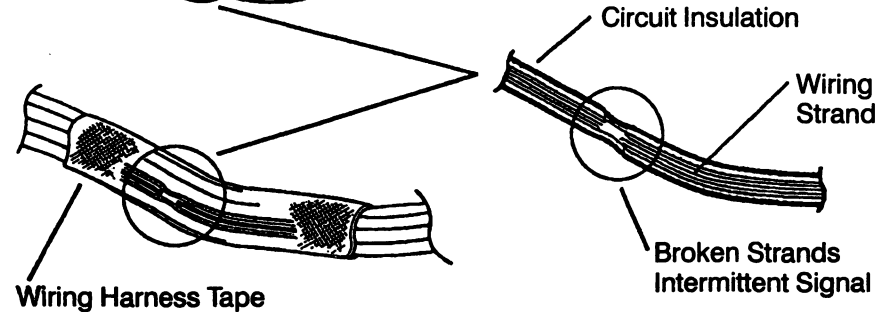
## ELECTRICAL SHORT WITHIN THE HARNESS



## ELECTRICAL SHORT INSIDE THE HARNESS



Remove the tape and flex/feel each circuit for reduction in diameter at break.



## 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 location of the concern to pinpoint the exact cause.

### Step 3. Test the 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.

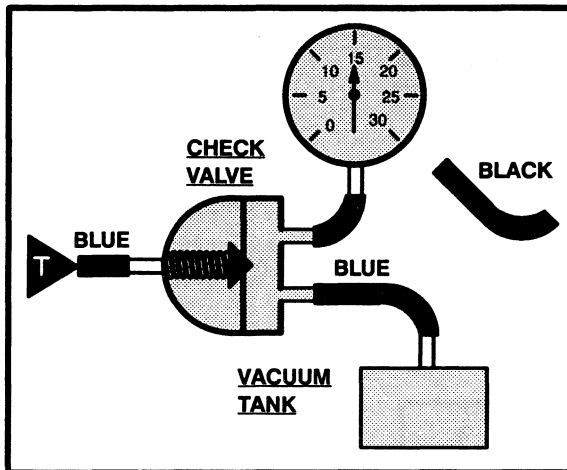


Figure 1 - System Supply Test

### 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:

4. Turn on Vacuum Pump and check vacuum build-up.
5. Stop pump; vacuum should drop.
6. Clamp supply hoses with needlenose pliers, one at a time, until vacuum stops dropping (Figure 2).
7. Check vacuum schematic to find components in that line.
8. 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 components if vacuum does not hold.

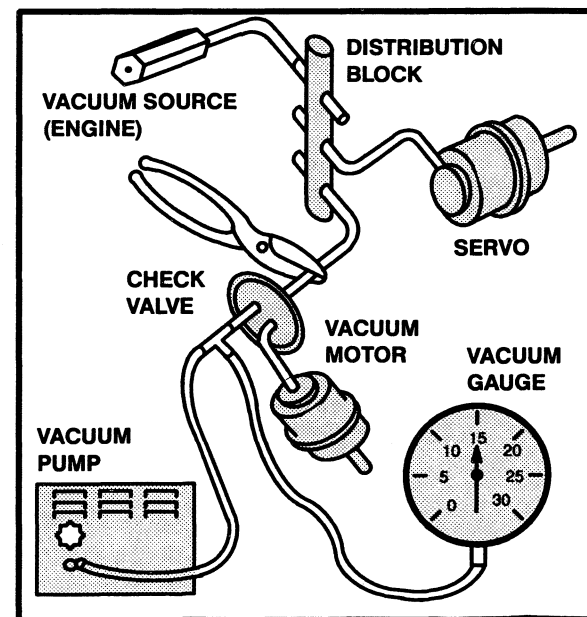


Figure 2 - Testing For Leaks In Typical Vacuum System

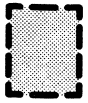
**NOTE: Vacuum system problems fall into three groups:**

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

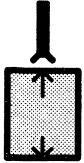
# 2-9 HOW TO USE THIS MANUAL

1995 F-SERIES

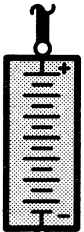
## ELECTRICAL SYMBOLS



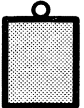
**DASHED COMPONENT BOX**  
ONLY PART OF THE COMPONENT IS SHOWN ON THE PAGE. THE COMPONENT IS SHOWN COMPLETE IN ANOTHER LOCATION



**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**



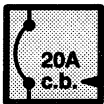
**FUSE**  
CURRENT RATING



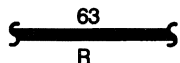
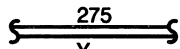
**FUSIBLE LINK**  
WIRE SIZE AND COLOR



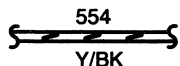
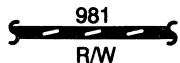
**MAXI-FUSE or FUSIBLE LINK CARTRIDGE**  
CURRENT RATING



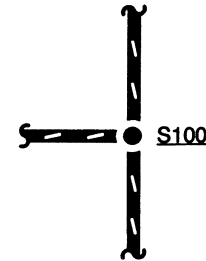
**CIRCUIT BREAKER**  
CURRENT RATING



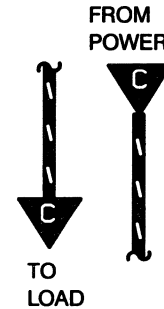
**SOLID WIRE**



**STRIPED WIRE**



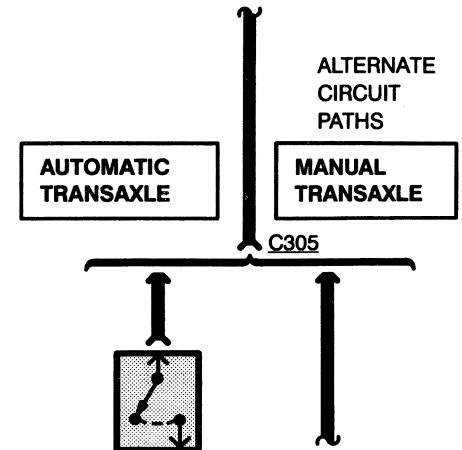
**SPLICE OR CRIMP TERMINAL**



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



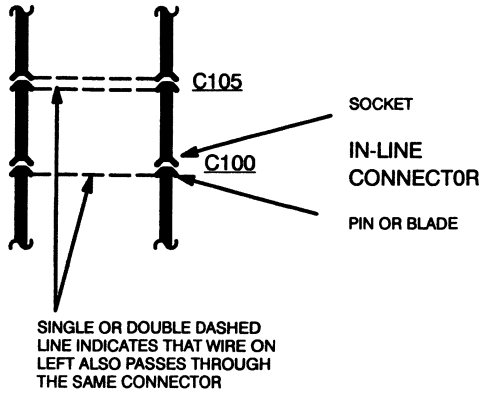
**"REFERENCE" WIRES**  
COMPLETE WIRING SHOWN ON ANOTHER PAGE



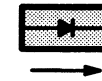
# HOW TO USE THIS MANUAL 2-10

1995 F - SERIES

## ELECTRICAL SYMBOLS



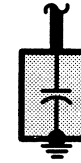
MOTOR



DIODES  
CURRENT FLOWS  
IN DIRECTION OF  
ARROW ONLY



HEATING  
ELEMENT



CAPACITOR



THERMISTOR



TRANSISTOR



RHEOSTAT  
OR  
POTENTIOMETER



GAUGE



SOLENOID



LIGHT  
BULB



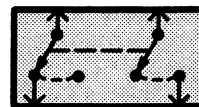
LIGHT  
EMITTING  
DIODE  
(LED)



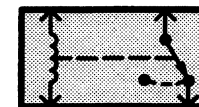
SWITCH



DUAL FILAMENT  
LIGHT BULB



GANGED  
SWITCHES  
CONTACTS MOVE  
AT THE SAME TIME

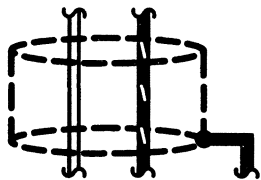


RELAY  
CONTACTS  
CHANGE POSITION  
WITH CURRENT  
THROUGH COIL

SEE GROUNDS  
PAGES 10-1, 10-2



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



SHIELD  
WIRES ARE  
COVERED  
BY A SHIELD

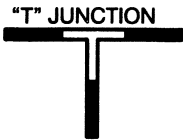


FIELD COIL  
OR  
CHOKE

# 2-11 HOW TO USE THIS MANUAL

1995 F-SERIES

## VACUUM SYMBOLS

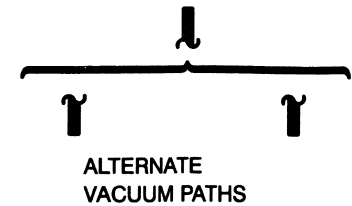


"T" JUNCTION



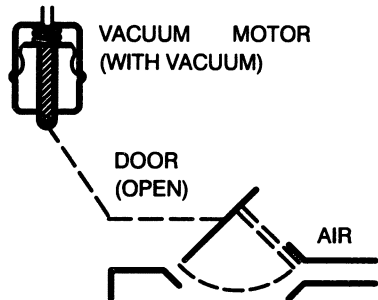
TO SYSTEM

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



ALTERNATE VACUUM PATHS

**NOTE**  
Other vacuum symbols used on vacuum system diagrams are fully explained on those pages.



VACUUM MOTOR (WITH VACUUM)

DOOR (OPEN)

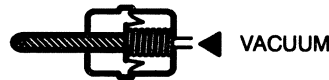
AIR

VACUUM ON VACUUM MOTOR PULLS DOOR OPEN TO LET AIR PASS THROUGH

FROM VACUUM DISTRIBUTION



SERVO MOTOR



## VACUUM MOTOR OPERATIONS

SINGLE DIAPHRAGM MOTOR

NO VACUUM



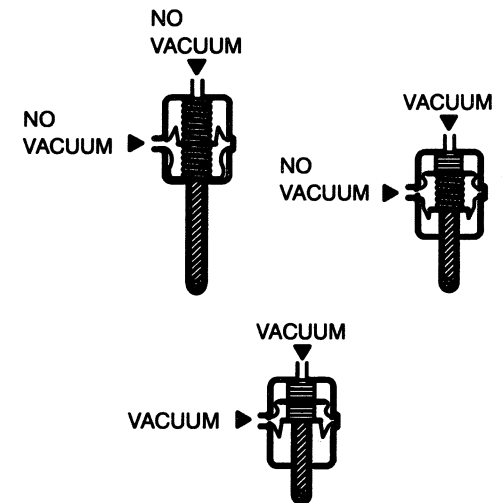
VACUUM



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.

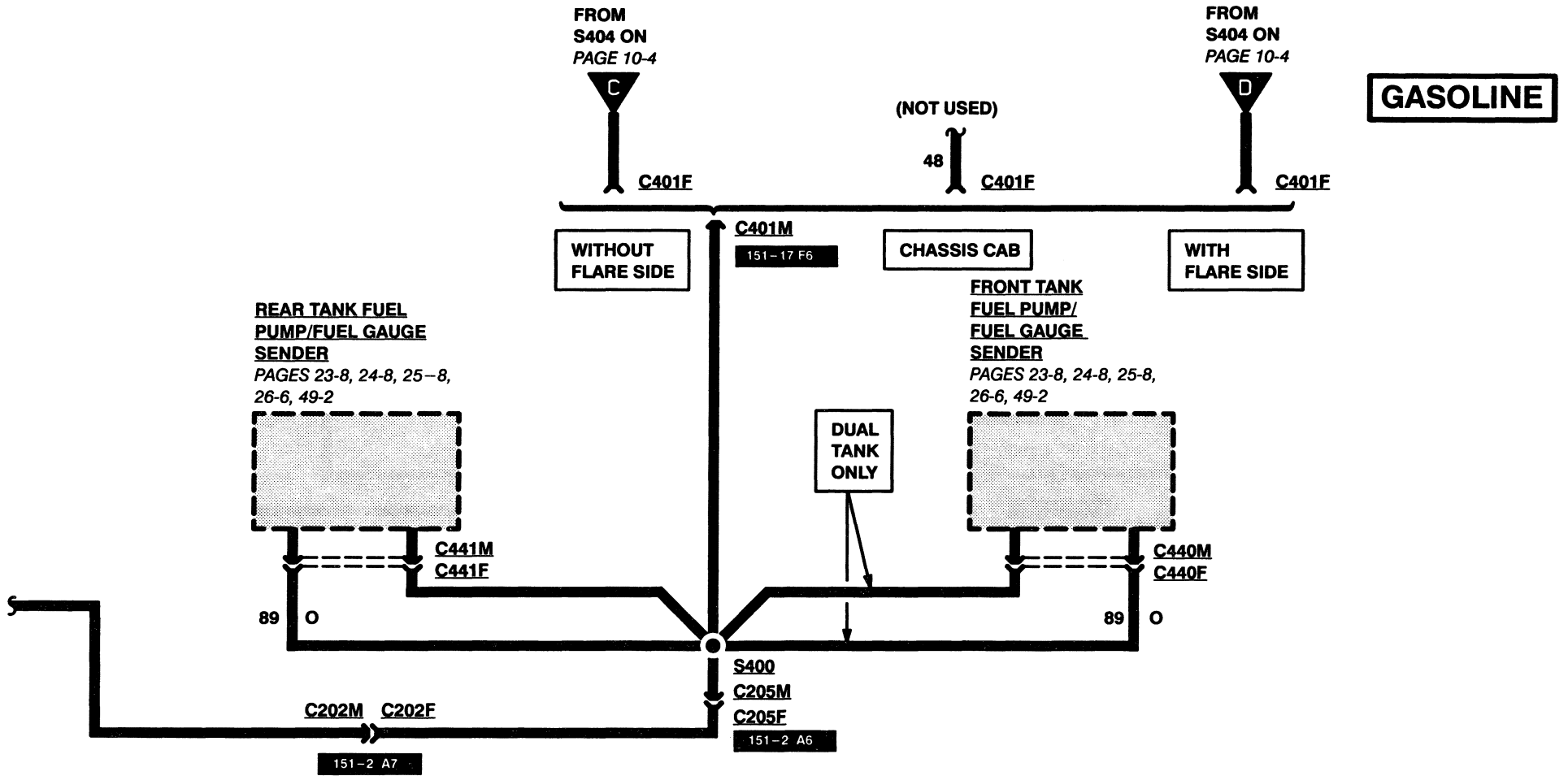
Some vacuum motors, such as the Servo Motor in the Speed Control, can position the actuating arm at any position between fully extended and fully retracted. The Servo is operated by a control valve that applies varying amounts of vacuum to the motor. The higher the vacuum level, the greater the retraction of the motor arm. Servo Motors work 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 half-way in. When both ports get vacuum, the shaft pulls all the way in.

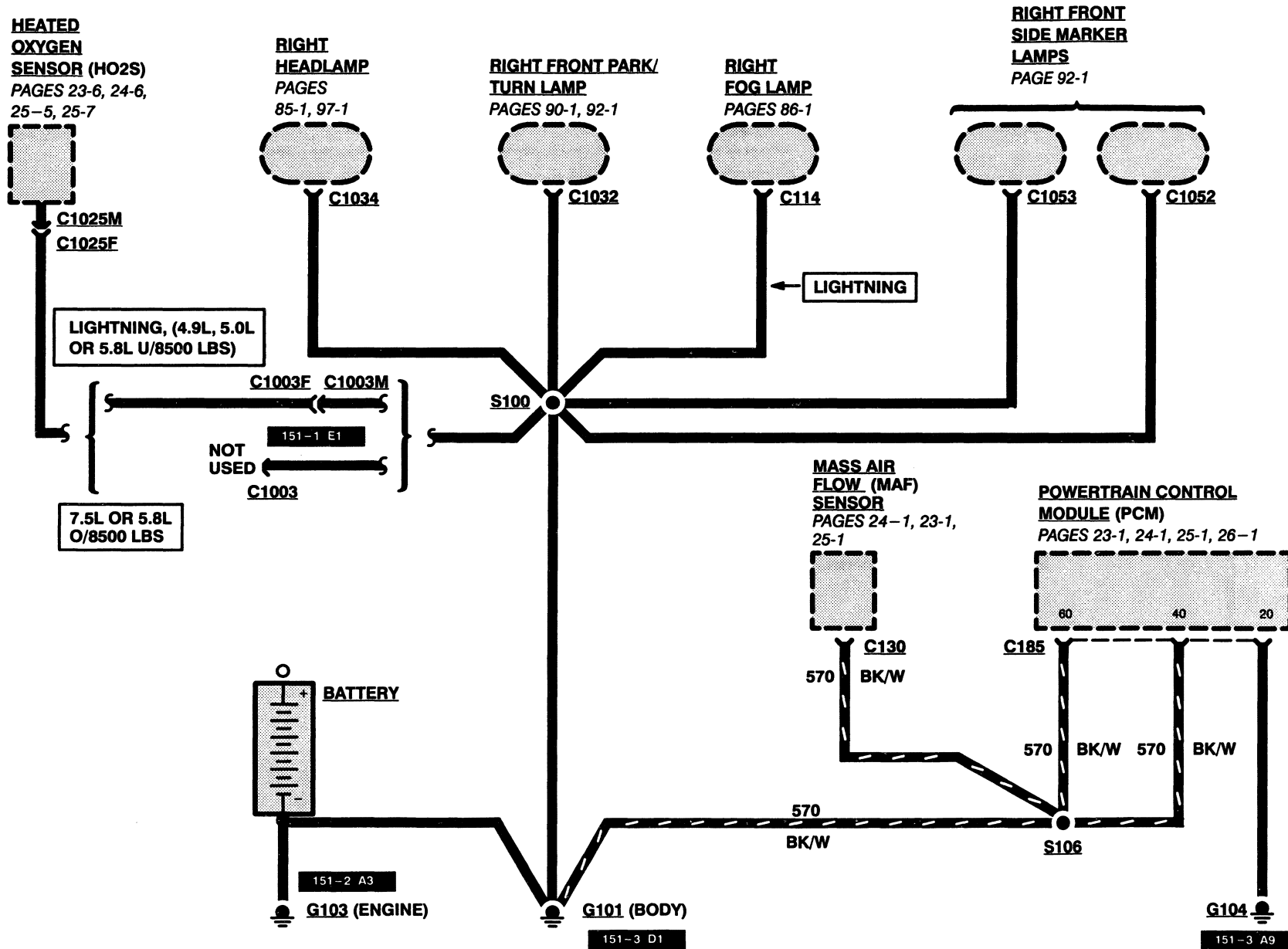




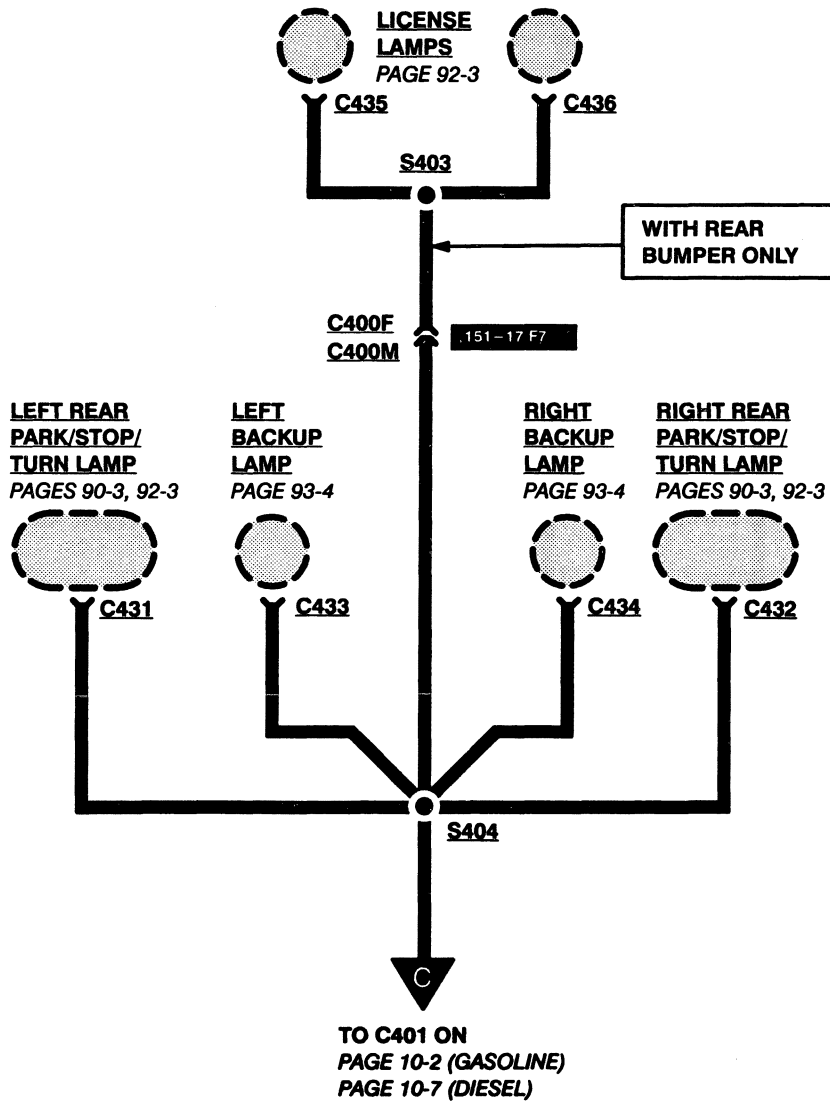
# 10-3 GROUNDS

1995 F-SERIES

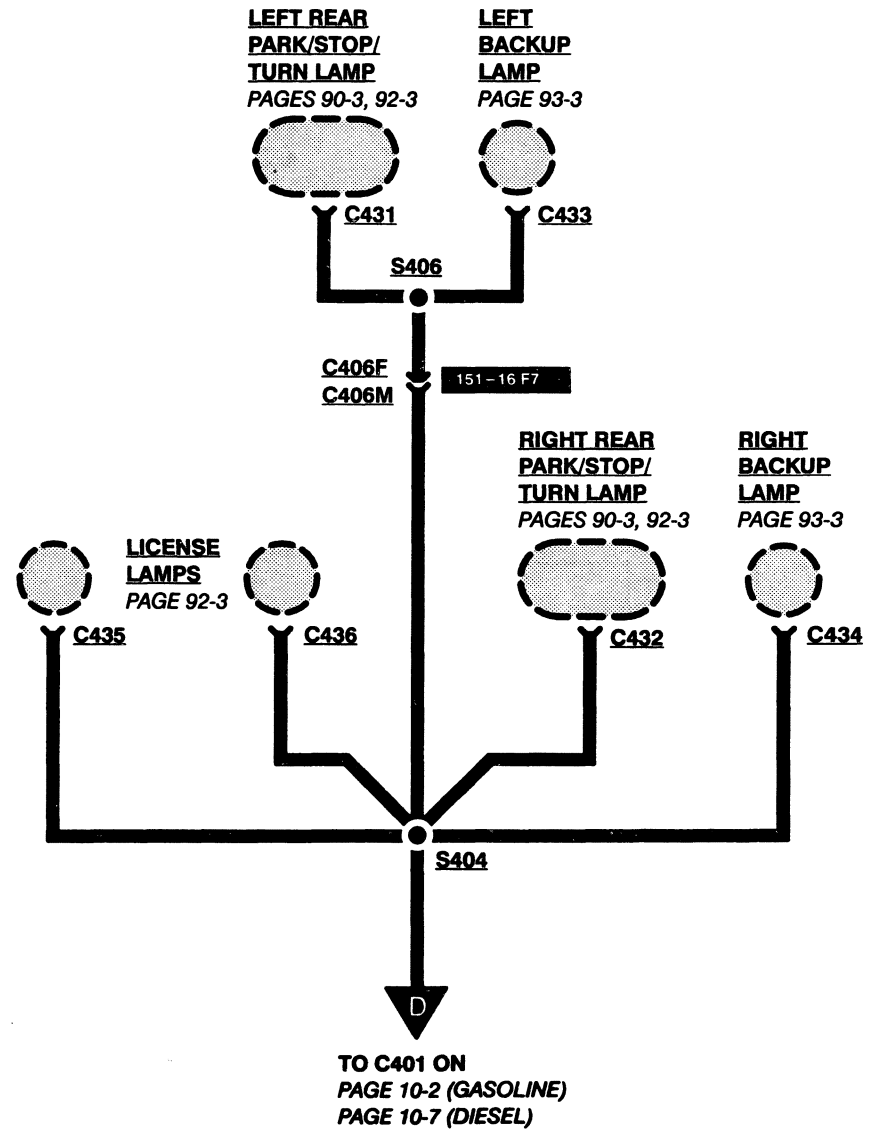
## GASOLINE



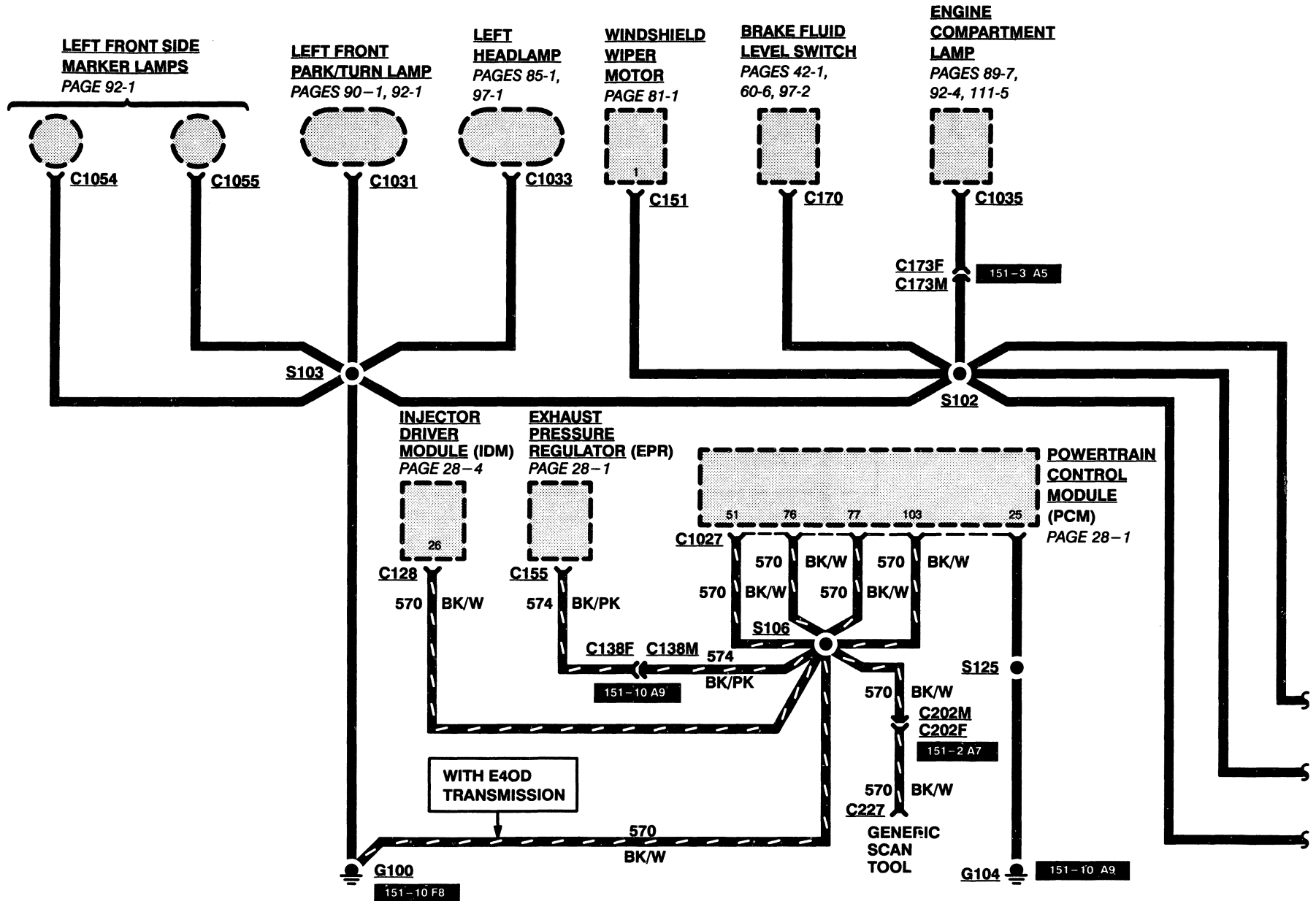
## WITHOUT FLARE SIDE



## WITH FLARE SIDE



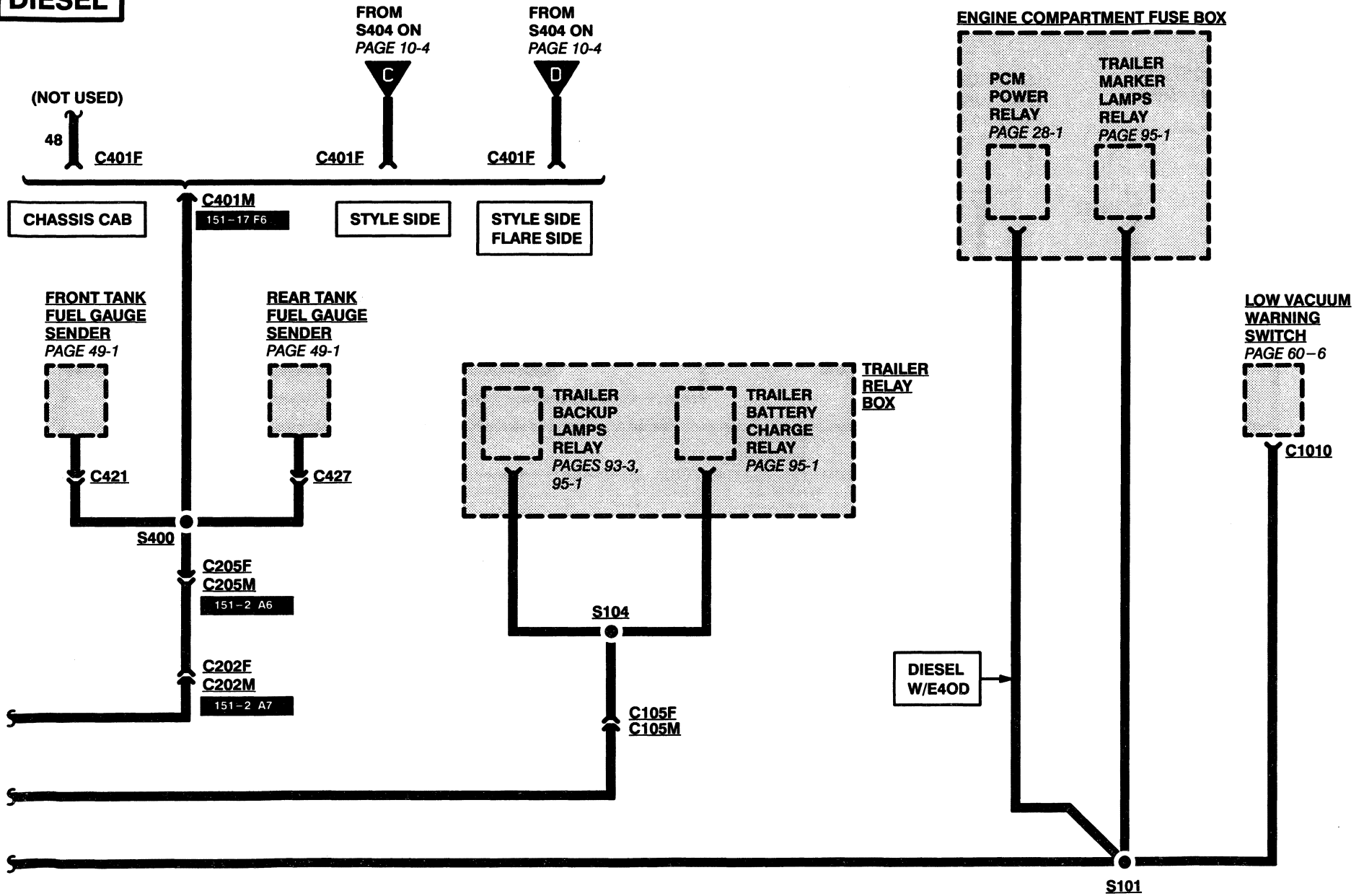
**DIESEL**



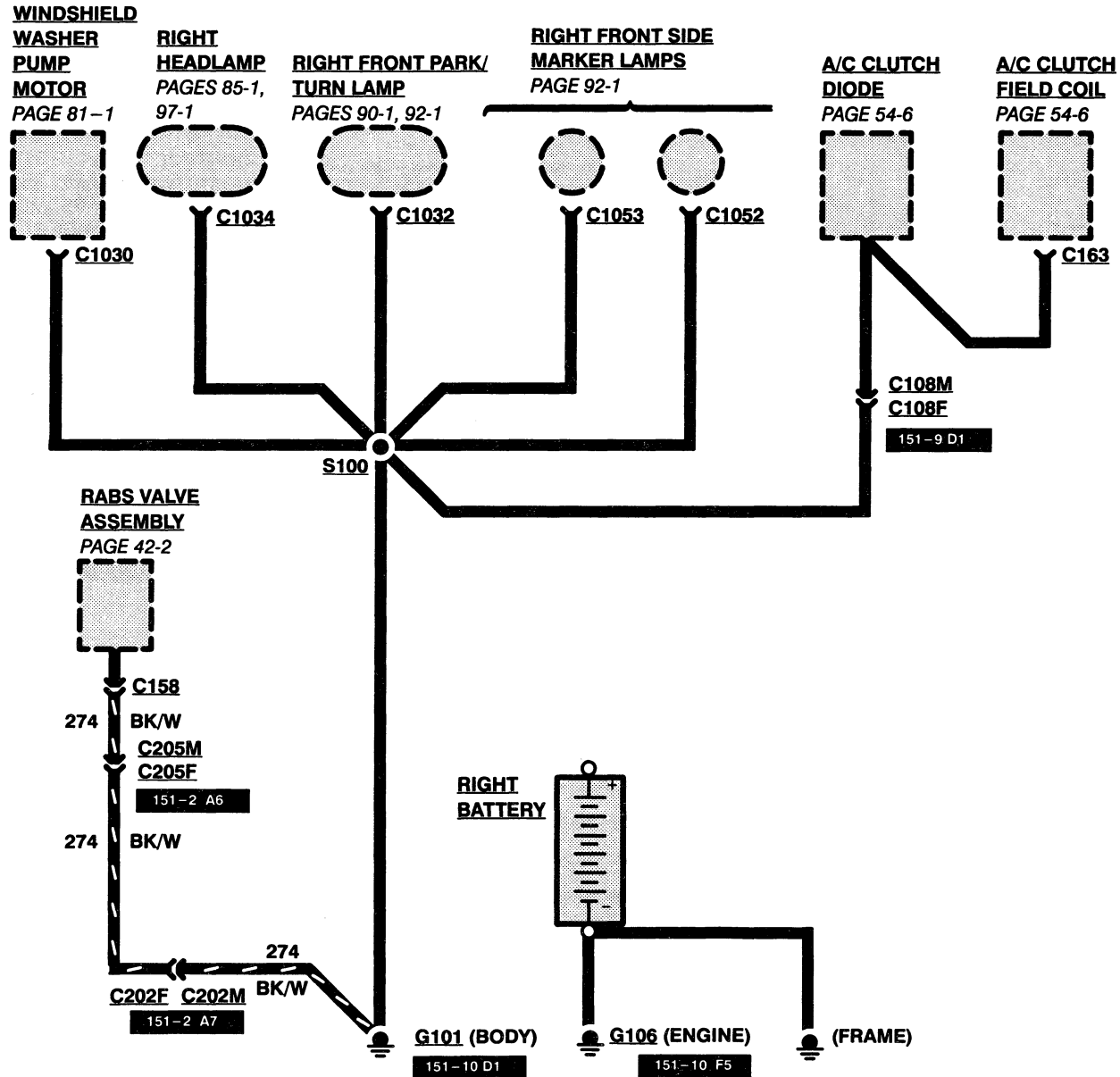
# 10-7 GROUNDS

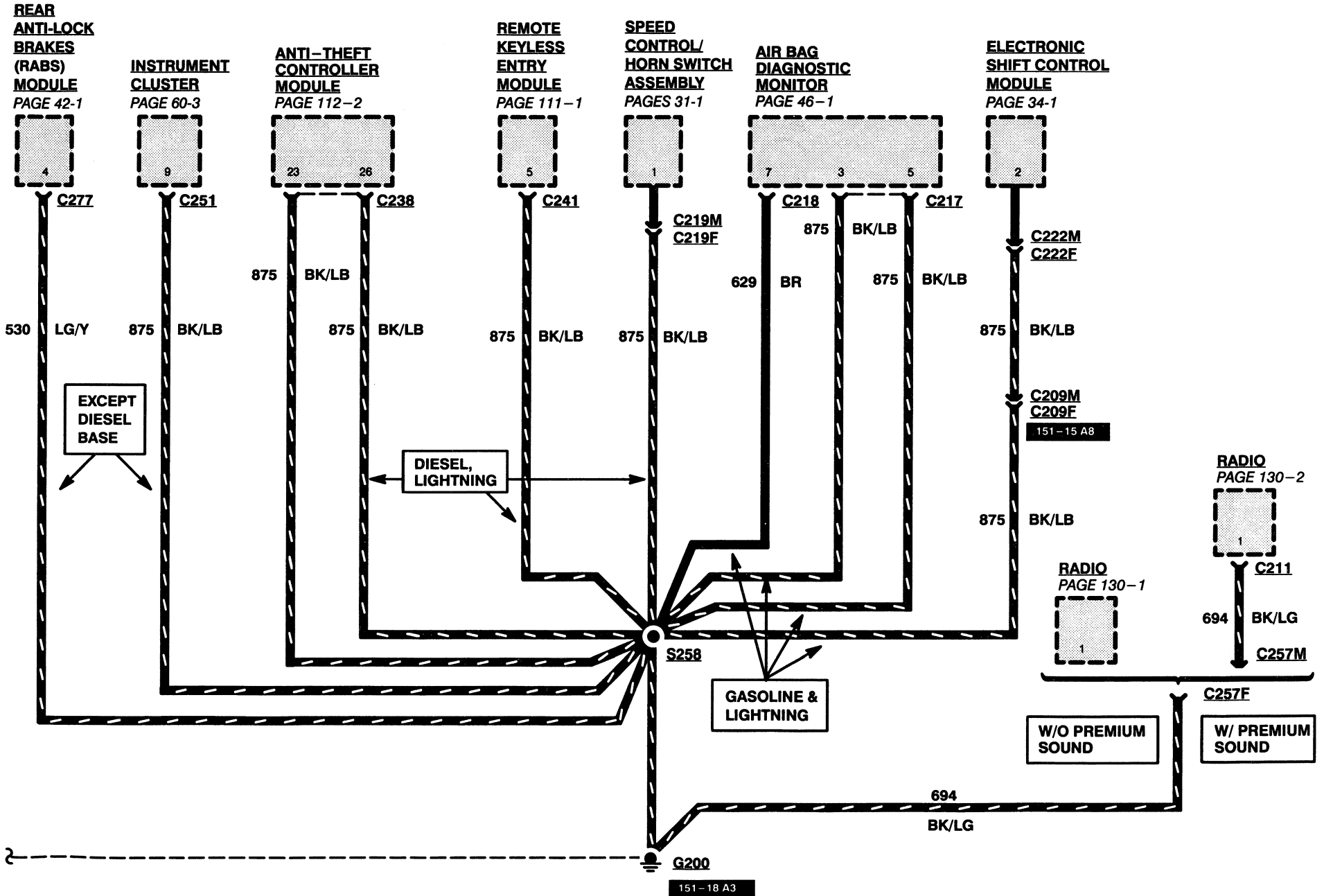
1995 F-SERIES

**DIESEL**



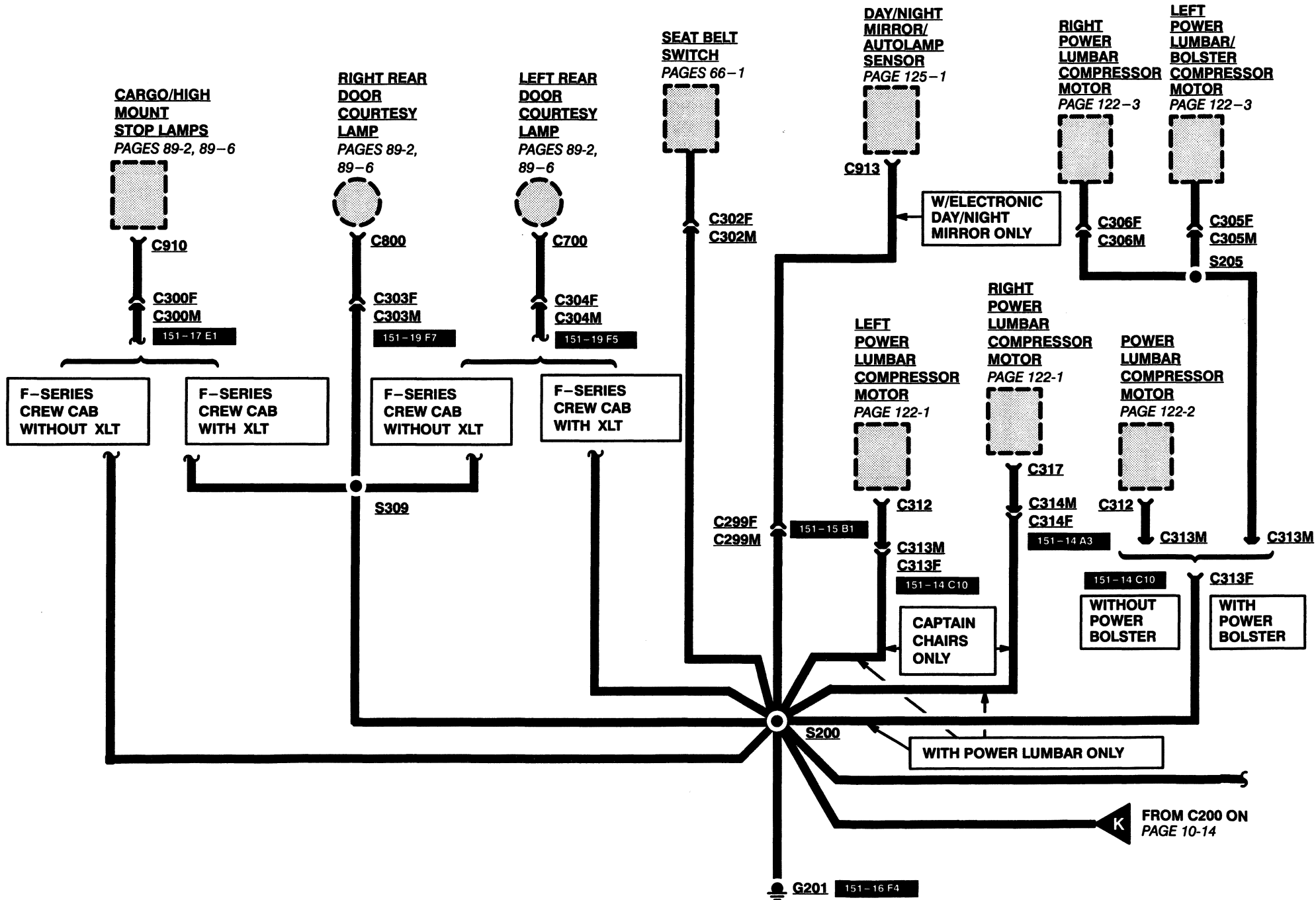
**DIESEL**





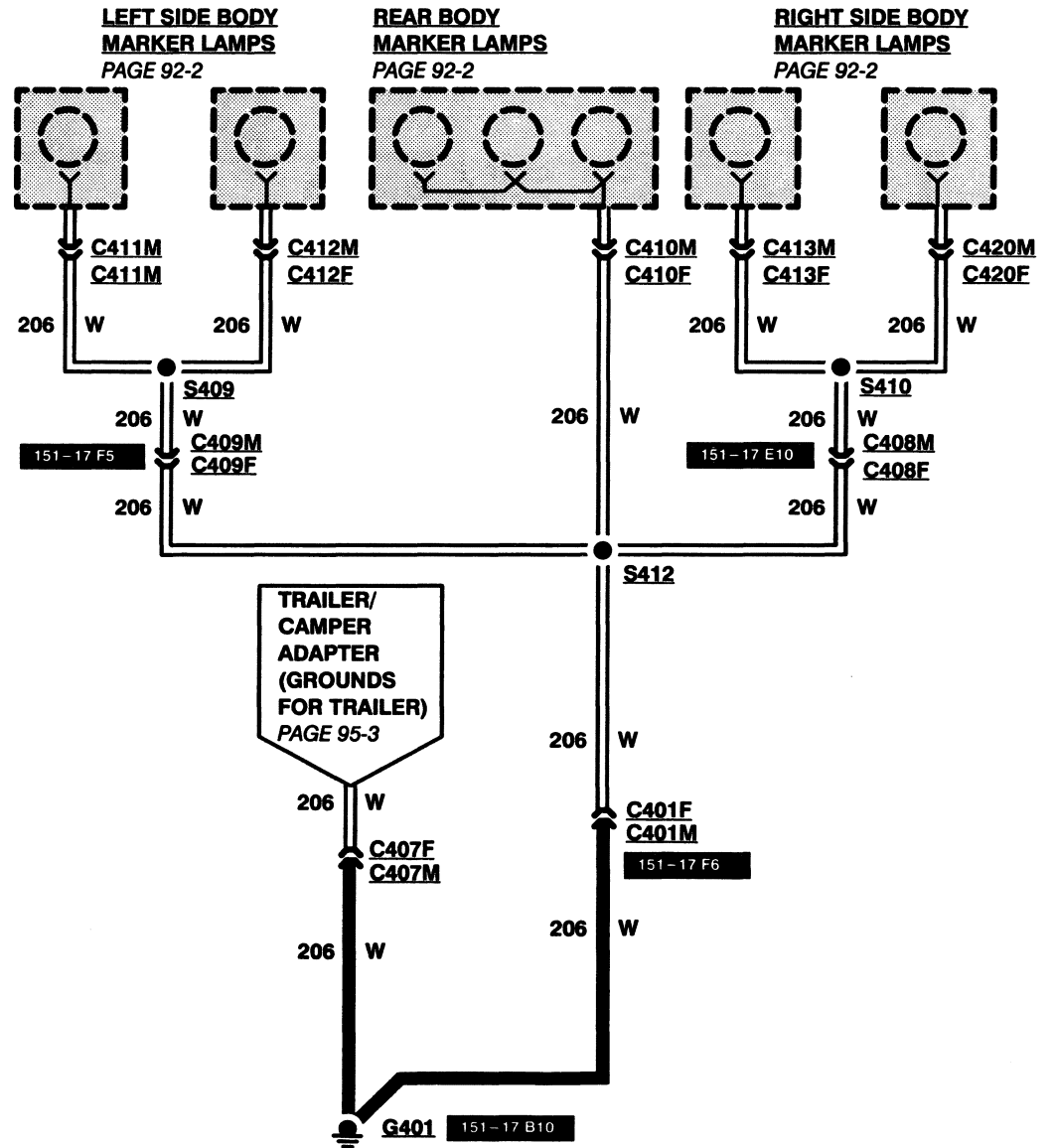
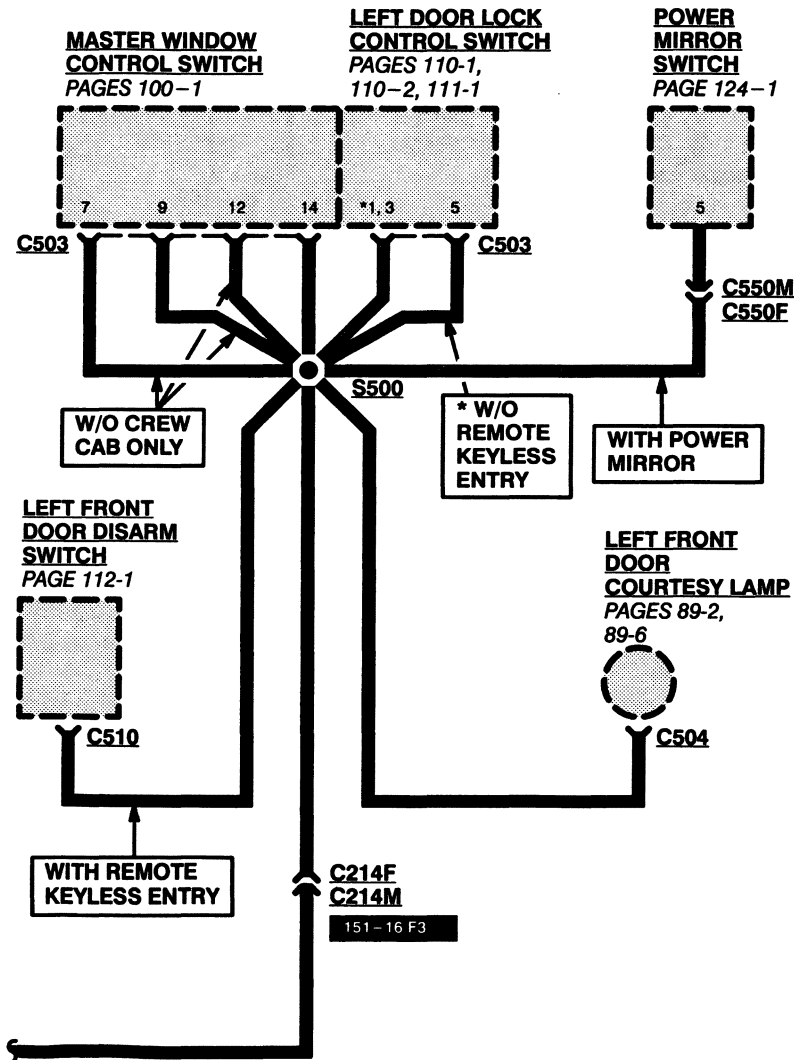
# 10-11 GROUNDS

1995 F-SERIES



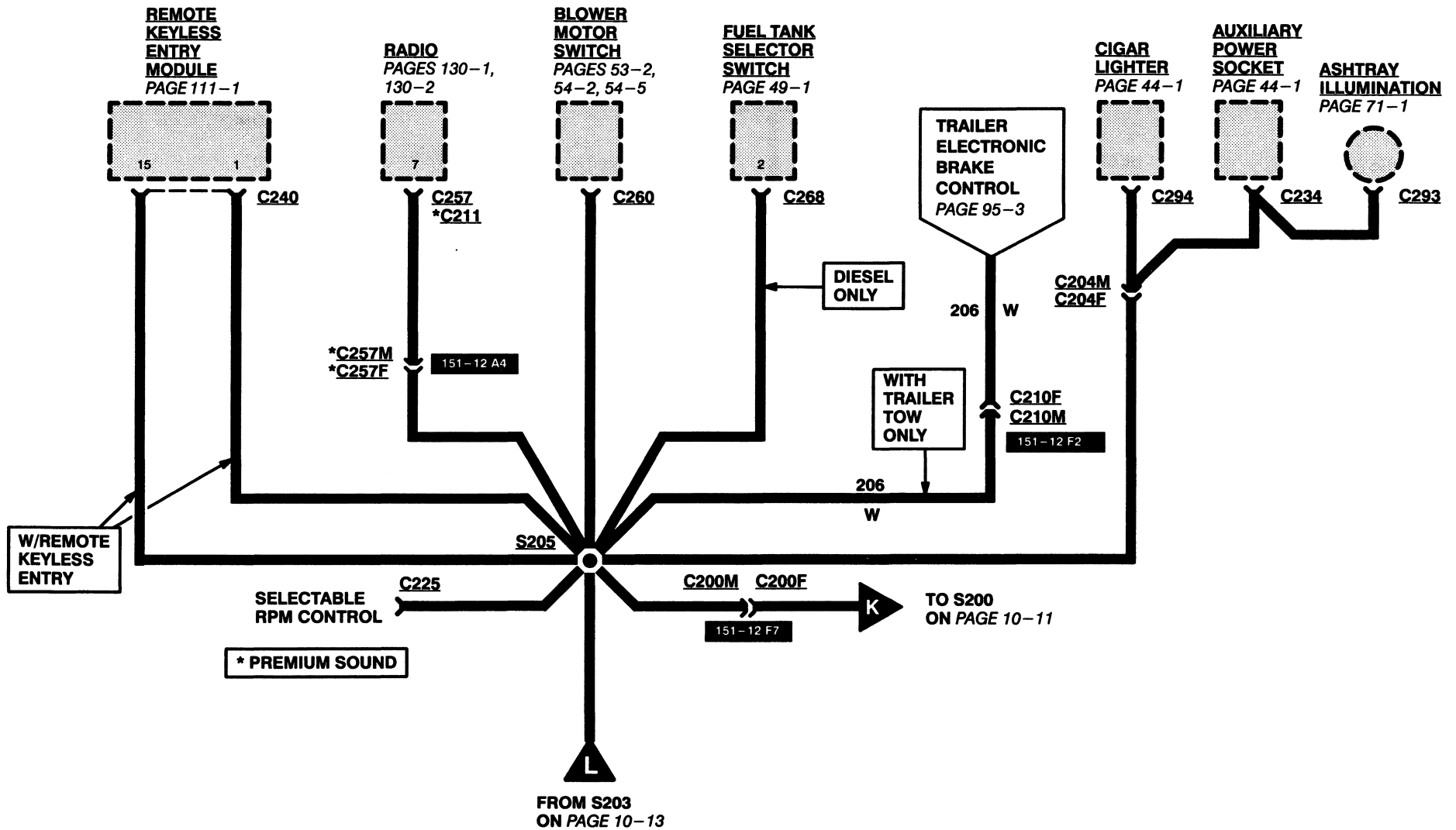


## F350 DUAL REAR WHEEL



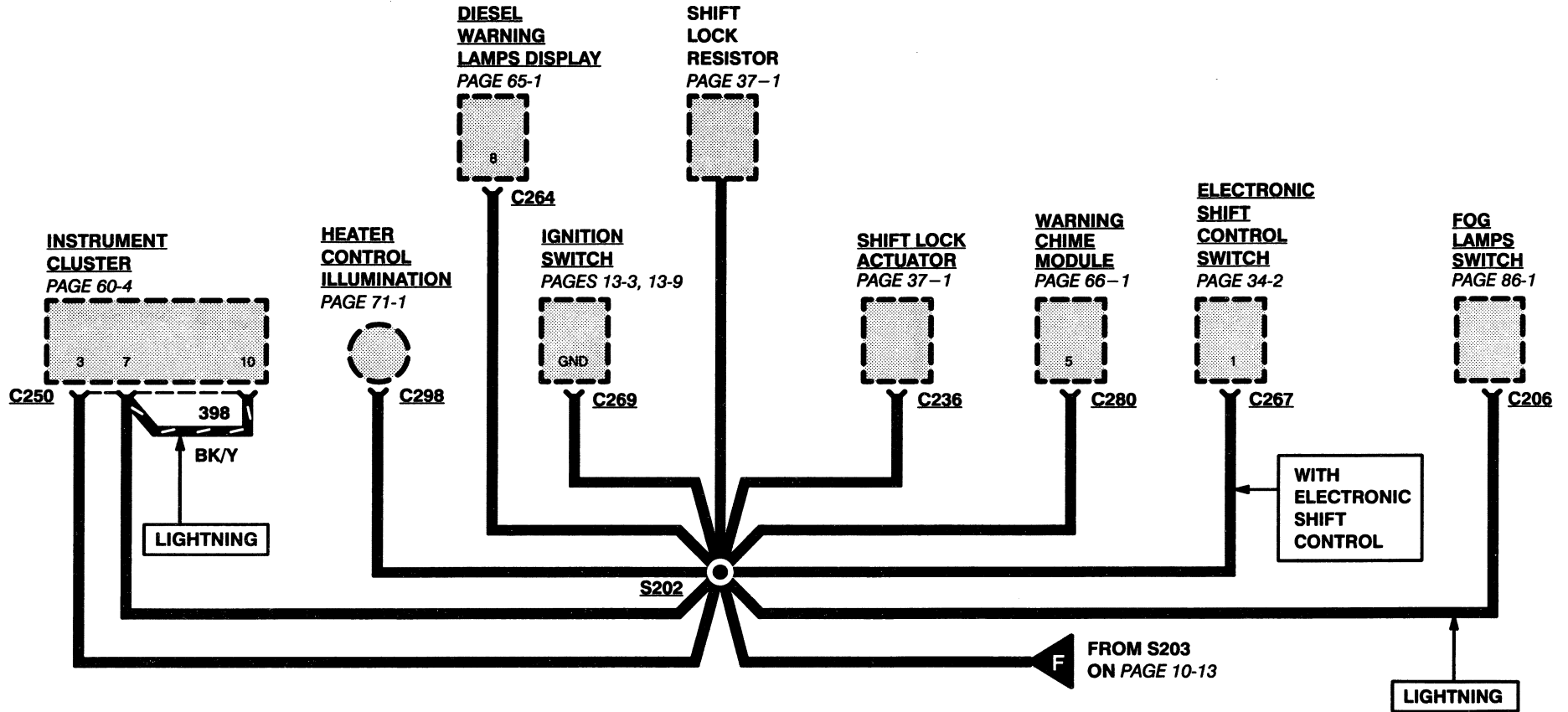
# GROUNDS 10-14

1995 F-SERIES



# 10-15 GROUNDS

1995 F-SERIES



Refer to Location Index, Cell 152, for Component, Connector, Splice, Ground and Base Part Number descriptions and locations.

# 11-1 FUSE PANEL/CIRCUIT PROTECTION

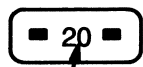
1995 F-SERIES

## CIRCUIT PROTECTION DEVICES

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

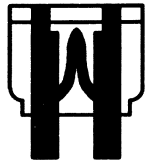
### BLADE TYPE FUSE

TOP VIEW

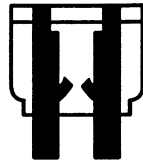


AMPERE RATING

SIDE VIEW



GOOD FUSE



BLOWN FUSE

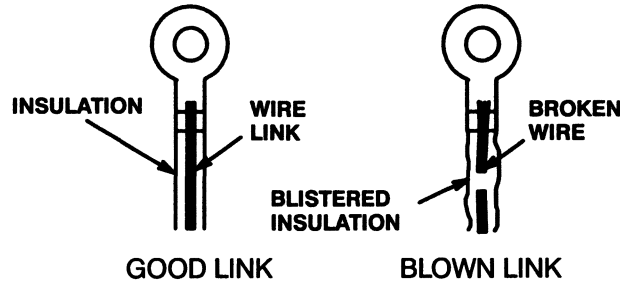
Blade type fuses have a transparent plastic housing. To check a fuse, pull it from the fuse panel and look at the fuse element through the housing. Always replace a blown fuse with a new fuse that has the same ampere rating.

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 |
| 3                       | Violet        |
| 4                       | Pink          |
| 5                       | Tan           |
| 10                      | Red           |
| 15                      | Light Blue    |
| 20                      | Yellow        |
| 25                      | Natural       |
| 30                      | Light Green   |

### FUSIBLE LINK

CUT-AWAY VIEW



Fusible links are short lengths of wire that are smaller in diameter than the wires they are protecting. Fusible link wire is covered with a special thick, non-flammable insulation. An overload condition causes the insulation to blister. If the overload condition continues, the wire link will melt. To check a fusible link, look for blistered insulation. If the insulation is okay, pull lightly on the wire. If the fusible link stretches, the wire has melted.

When replacing fusible links, first cut the protected wire where it is connected to the fusible link. Then, tightly crimp or solder the new link to the protected wire.

Fusible links are often identified by color coding of the insulation, as shown here:

| FUSIBLE LINK COLOR CODING |                  |
|---------------------------|------------------|
| WIRE LINK SIZE            | INSULATION COLOR |
| 20 GA                     | Blue             |
| 18 GA                     | Brown or Red     |
| 16 GA                     | Black or Orange  |
| 14 GA                     | Green            |
| 12 GA                     | Gray             |

### FUSIBLE LINK CARTRIDGE

SIDE VIEW



GOOD



BLOWN

TOP VIEW



AMPERE RATING

Fusible link cartridges have a transparent colored plastic housing. To check a fusible link cartridge, look at the fuse element through the side of the housing.

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

The ampere rating of a fusible link cartridge can also be determined by following the color code shown here:

| FUSIBLE LINK CARTRIDGE COLOR CODING |               |
|-------------------------------------|---------------|
| AMPERE RATING                       | HOUSING COLOR |
| 30                                  | Light Green   |
| 40                                  | Amber         |
| 50                                  | Red           |
| 60                                  | Blue          |

## 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.

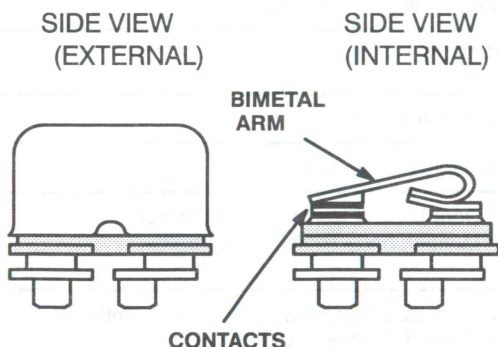
Each circuit breaker conducts current through an arm made of two types of metal bonded together (bimetal arm). If the arm starts to carry too much current, it heats up. As one metal expands faster than the other, the arm bends, the contacts open and current flow is broken. A circuit breaker can be the cycling or non-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.

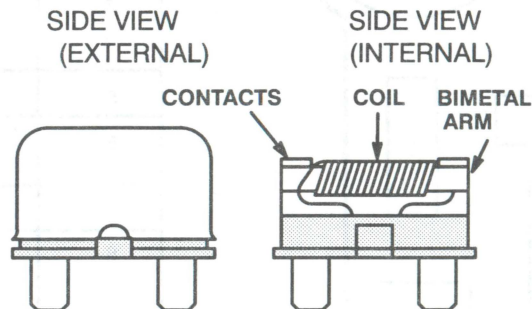
In the first type, there is a coil wrapped around the bimetal arm. When an overcurrent exists and the contacts open, a small current passes through the coil. This current through the coil is not enough to operate a load, but it does heat up both the coil and the bi-metal arm. This keeps the arm in the 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.

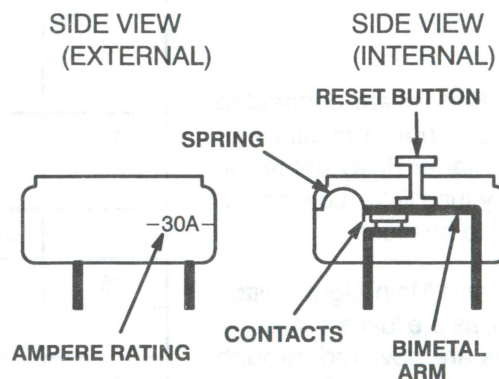
### FUSE PANEL MOUNTED CYCLING TYPE



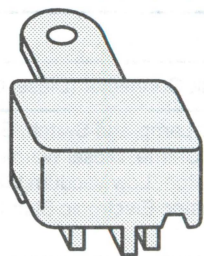
### FUSE PANEL MOUNTED NON-CYCLING TYPE



### FUSE PANEL MOUNTED MANUAL RESET TYPE



### IN-LINE MOUNTED CYCLING 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.

## DIODE

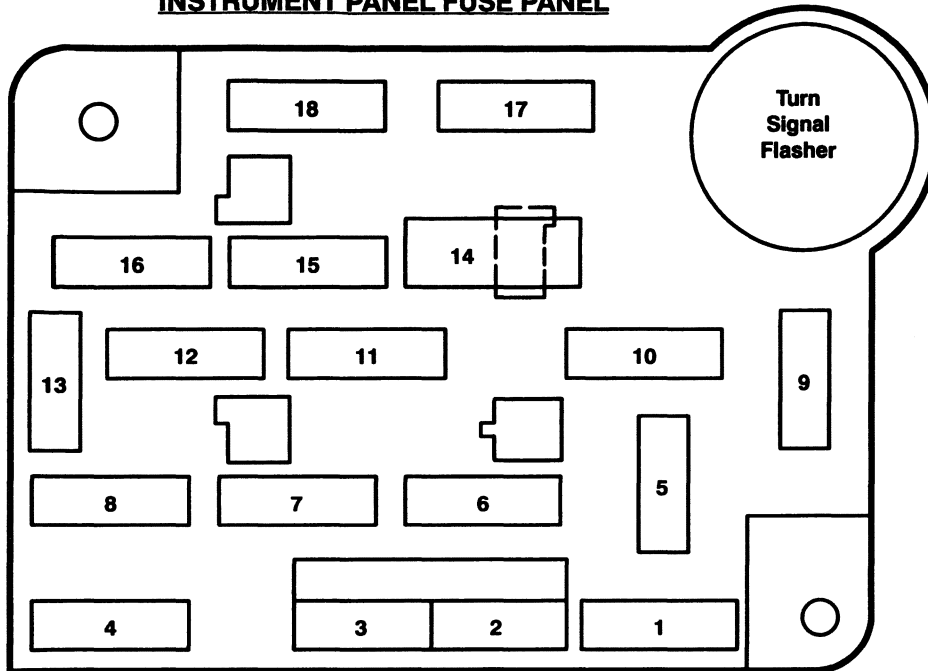


Diodes are electrical devices that permit current to flow in one direction only. The current flows in the direction indicated by the arrow.

# 11-3 FUSE PANEL/CIRCUIT PROTECTION

1995 F-SERIES

**INSTRUMENT PANEL FUSE PANEL**



| Fuse Value Amps | Color Code  |
|-----------------|-------------|
| 3               | Violet      |
| 4               | Pink        |
| 5               | Tan         |
| 10              | Red         |
| 15              | Light Blue  |
| 20              | Yellow      |
| 25              | Natural     |
| 30              | Light Green |

**Power Distribution**

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

The Ignition Switch and Main Light Switch are powered at all times, as are fuses 1, 4, 8, 12 and 16. The other fuses are powered through the Ignition Switch or the Main Light Switch.

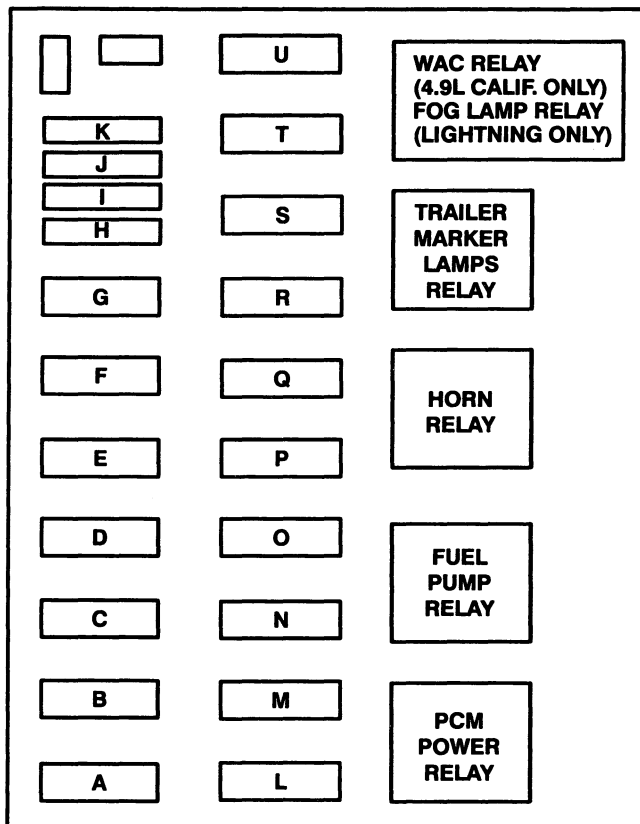
| Fuse Position | Amps    | Circuits Protected  |
|---------------|---------|---|
| 1             | 30      | Air Conditioner/Heater  |
| 2             | 30      | Interval Wiper/Washer   |
| 3             | 3       | Idle Position Switch (Diesel Only)  |
| 4             | 15      | Exterior Lamps, Trailer Marker Lamps Relay, Warning Chime, Instrument Illumination, Keyless Entry, Anti-Theft, Trailer Brake Control Unit   |
| 5             | 10      | Air Bag Diagnostic Monitor  |
| 6             | 15      | Fuel Tank Selector (Diesel Only), Anti-Theft, Keyless Entry, Air Conditioner/Compressor Clutch  |
| 7             | 15      | Turn Lamps  |
| 8             | 15      | Courtesy Lamps, Engine Compartment Lamp, Power Mirrors, Vanity Mirrors, Speedometer Memory, Warning Chime, Keyless Entry  |
| 9             | 25      | Power Point   |
| 10            | 4       | Instrument Illumination   |
| 11            | 15      | Radio, Radio Display Dim  |
| 12            | 20 c.b. | Power Door Lock, Electronic Shift Control, Power Lumbar, Anti-Theft, Keyless Entry  |
| 13            | 15      | Stop and Hazard Lamps, Stop Sense For: Anti-lock Brakes, Speed Control, PCM, Shift Lock   |
| 14            | 20 c.b. | Power Windows   |
| 15            | 20      | Anti-lock Brakes  |
| 16            | 15      | Cigar Lighter, Data Link Connector (Diesel Only)  |
| 17            | 10      | Trans Control Indicator Lamp and Switch, Brake Fluid Level Switch, Warning Chime, Diesel Warning Lamps Display, Fuel Water Switch, Low Vacuum Warning Switch, Instrument Cluster, Electronic Shift Control Switch Lamps |
| 18            | 10      | Speedometer, Electronic Shift Control, Air Bag Diagnostic Monitor, Day/Night Mirror, Selectable RPM Control (Diesel Only), Speed Control (Diesel Only), Shift Lock  |

# FUSE PANEL/CIRCUIT PROTECTION 11-4

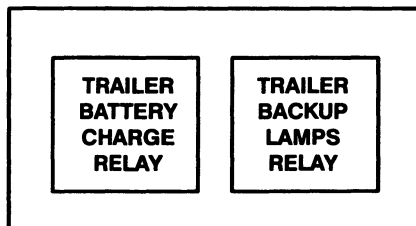
1995 F-SERIES

**GASOLINE**

## ENGINE COMPARTMENT FUSE BOX



## TRAILER RELAY BOX



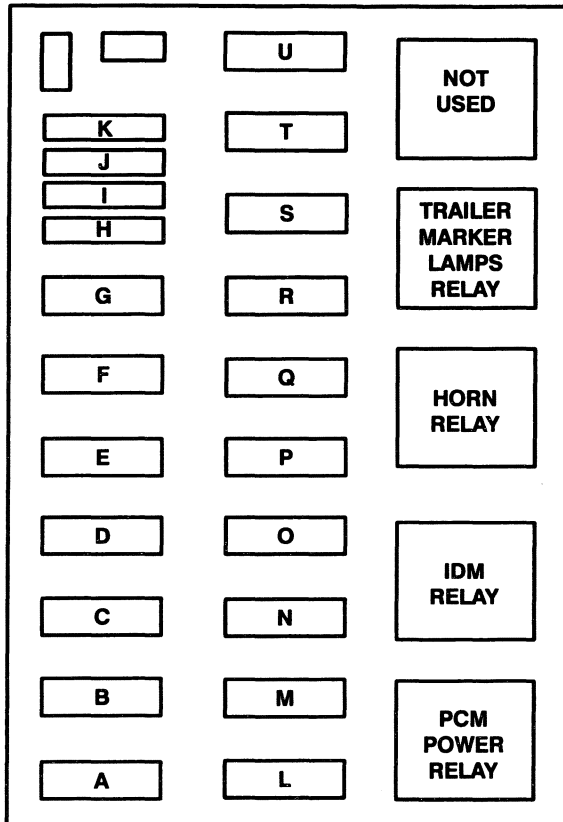
| Fuse Position      | Amps | Circuits Protected   |
|--------------------|------|--|
| A                  | 20   | Radio  |
| B                  | 15   | Fog Lamp Relay (Lightning Only)  |
| C                  | 30   | Horn Relay, Daytime Running Lamps, Headlamp Flash-to-Pass  |
| D                  | 25   | Trailer Marker Lamps Relay, Trailer Backup Lamps Relay   |
| E                  | 15   | Heated Oxygen Sensor (HO2s), Backup Lamps, Trailer Battery Charge Relay, Daytime Running Lamps, Speed Control        |
| F                  | 10   | Trailer Right Stop/Turn Lamps  |
| G                  | 10   | Trailer Left Stop/Turn Lamps   |
| Maxi-Fuse Position | Amps | Circuits Protected   |
| H                  | —    | (Not Used)   |
| I                  | 20   | PCM Power Relay, Powertrain Control Module (PCM)   |
| J                  | 20   | See Fuses 15 and 18, Starter Relay   |
| K                  | —    | (Not Used)   |
| L                  | 50   | See Fuses 5, 9, and 13   |
| M                  | —    | (Not Used)   |
| N                  | 50   | See Fuses 1 and 7 and Fuse E   |
| O                  | 20   | Fuel Pump Relay  |
| P                  | 50   | Generator charge indicator, Instrument Cluster. See Fuses 2, 6, 11, 17 and Maxi-fuse U. Also see Circuit Breaker 14. |
| Q                  | 30   | Trailer Battery Charge Relay   |
| R                  | 40   | Main Light Switch, Headlamps {Fog Lamp Indicator Lamp, Fog Lamp Relay Coil (Lighting Only)}                          |
| S                  | 50   | See Fuses 4, 8 and 16. Also see Circuit Breaker 12.  |
| T                  | 30   | Trailer Electronic Brake Control Unit  |
| U                  | 20   | Ignition system, PCM Power Relay Coil  |

# 11-5 FUSE PANEL/CIRCUIT PROTECTION

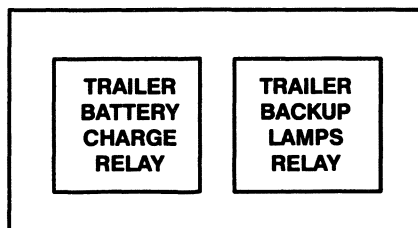
1995 F-SERIES

**DIESEL**

## ENGINE COMPARTMENT FUSE BOX



## TRAILER RELAY BOX



| Fuse Position      | Amps | Circuits Protected   |
|--------------------|------|--|
| A                  | 20   | Radio  |
| B                  | 15   | Ambulance (Diesel 200 amp Generator/Voltage Regulator Only)  |
| C                  | 30   | Horn Relay, Daytime Running Lamps, Headlamp Flash-to-Pass  |
| D                  | 25   | Trailer Marker Lamps Relay, Trailer Backup Lamps Relay   |
| E                  | 15   | Backup Lamps, Daytime Running Lamps, Trailer Battery Charge Relay  |
| F                  | 10   | Trailer Right Stop/Turn Lamps  |
| G                  | 10   | Trailer Left Stop/Turn Lamps   |
| Maxi-Fuse Position | Amps | Circuits Protected   |
| H                  | 30   | Injector Driver Module (IDM) Relay   |
| I                  | 20   | Powertrain Control Module (PCM), PCM Power Relay, Electronic Transmission Control, Injector Pressure Regulator, Injector Driver Module |
| J                  | 20   | See Fuses 15 and 18, Starter Relay   |
| K                  | —    | (Not Used)   |
| L                  | 50   | See Fuses 5, 9 and 13  |
| M                  | —    | (Not Used)   |
| N                  | 50   | See Fuses 1 and 7 and Fuse E   |
| O                  | —    | (Not Used)   |
| P                  | 50   | Generator charge indicator, Instrument Cluster. See Fuses 2, 3, 6, 11, 17 and Maxi-fuse U. Also see Circuit Breaker 14.                |
| Q                  | 30   | Trailer Battery Charge Relay   |
| R                  | 40   | Main Light Switch, Headlamps   |
| S                  | 50   | See Fuses 4, 8 and 16. Also see Circuit Breaker 12.  |
| T                  | 30   | Trailer Electronic Brake Control Unit  |
| U                  | 30   | Fuel Line Heater, 200 amp Generator/Voltage Regulator, , PCM Power Relay Coil, Glow Plug Controller                                    |

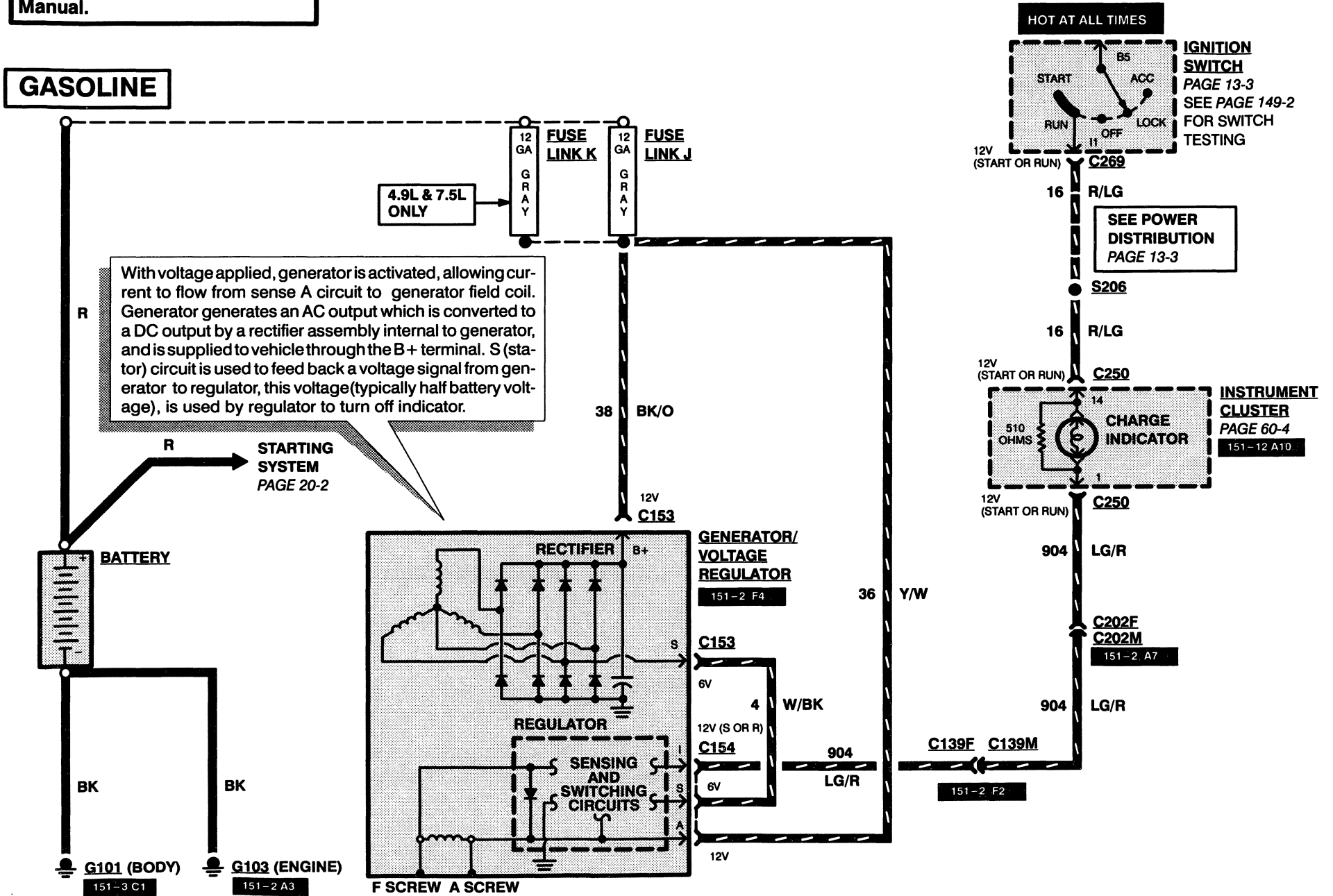


# 12-1 CHARGING SYSTEM

1995 F-SERIES

For diagnostic information, refer to section 14-00 of the Service Manual.

**GASOLINE**



With voltage applied, generator is activated, allowing current to flow from sense A circuit to generator field coil. Generator generates an AC output which is converted to a DC output by a rectifier assembly internal to generator, and is supplied to vehicle through the B+ terminal. S (stator) circuit is used to feed back a voltage signal from generator to regulator, this voltage (typically half battery voltage), is used by regulator to turn off indicator.

**HOT AT ALL TIMES**

**IGNITION SWITCH**  
PAGE 13-3  
SEE PAGE 149-2  
FOR SWITCH TESTING

**SEE POWER DISTRIBUTION**  
PAGE 13-3

**INSTRUMENT CLUSTER**  
PAGE 60-4  
151-12 A10

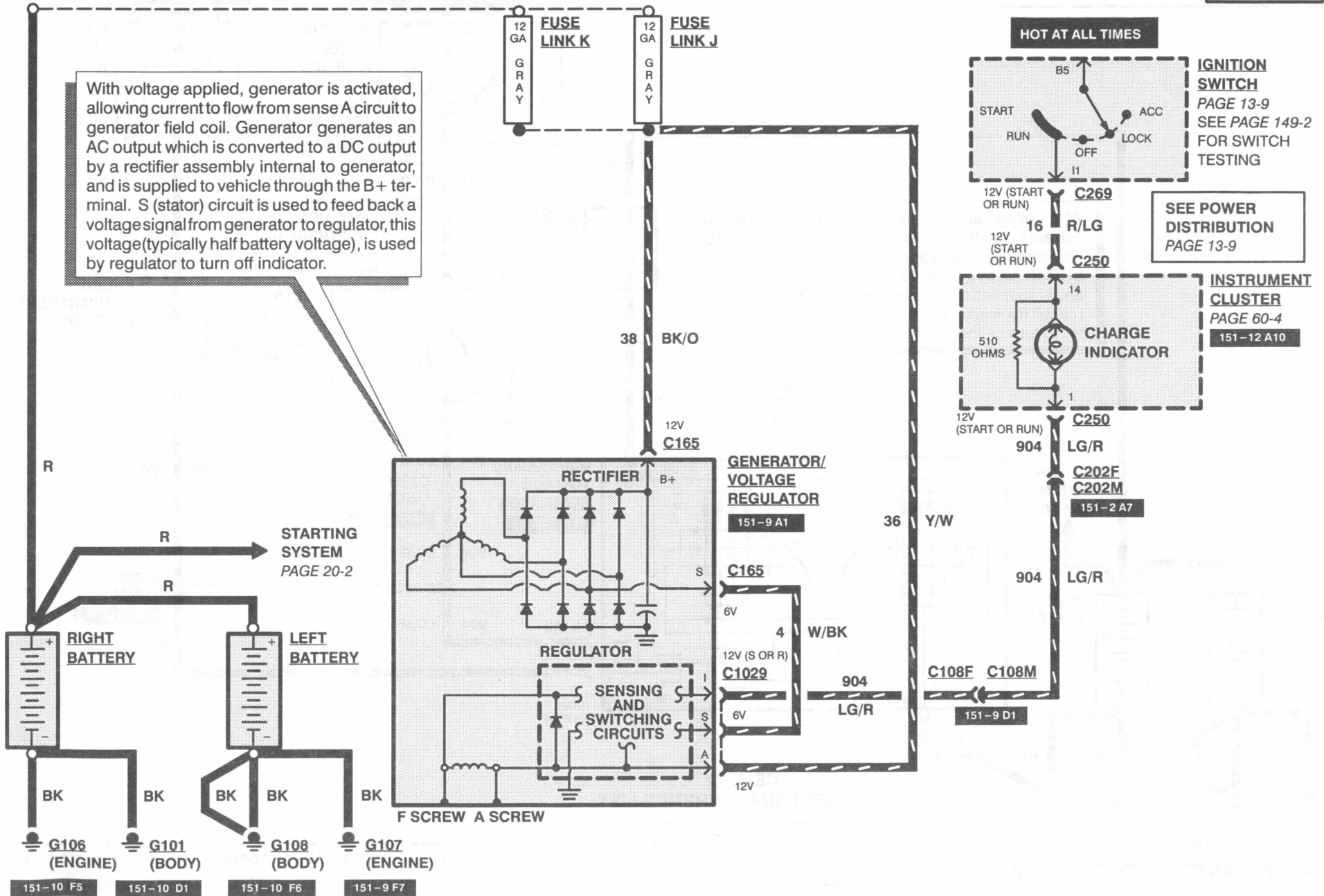
151-2 F2

# CHARGING SYSTEM 12-2

1995 F-SERIES

**DIESEL**

With voltage applied, generator is activated, allowing current to flow from sense A circuit to generator field coil. Generator generates an AC output which is converted to a DC output by a rectifier assembly internal to generator, and is supplied to vehicle through the B+ terminal. S (stator) circuit is used to feed back a voltage signal from generator to regulator, this voltage (typically half battery voltage), is used by regulator to turn off indicator.

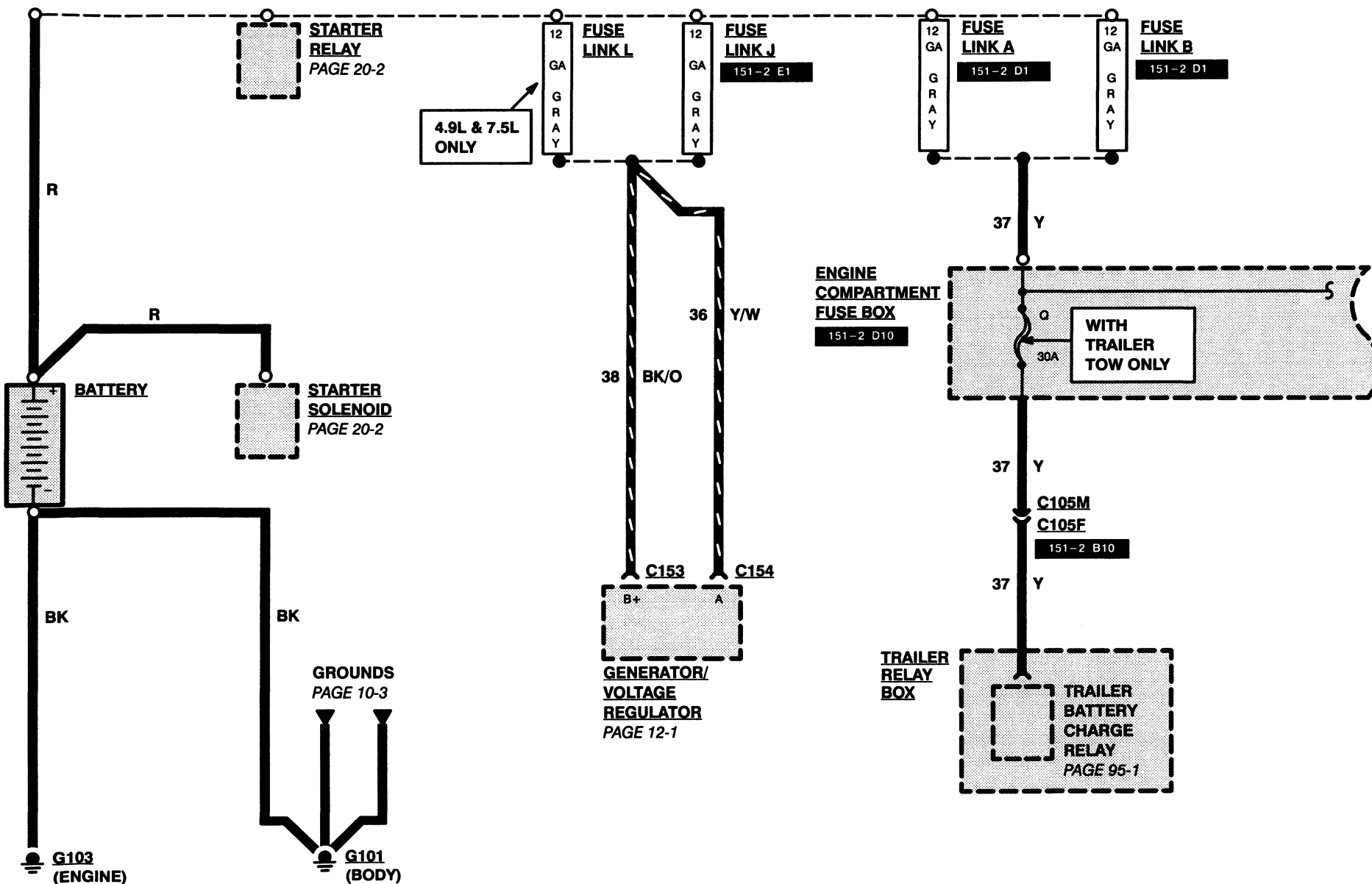


# 13-1 POWER DISTRIBUTION

1995 F-SERIES

For diagnostic information, refer to section 18-01 of the Service Manual.

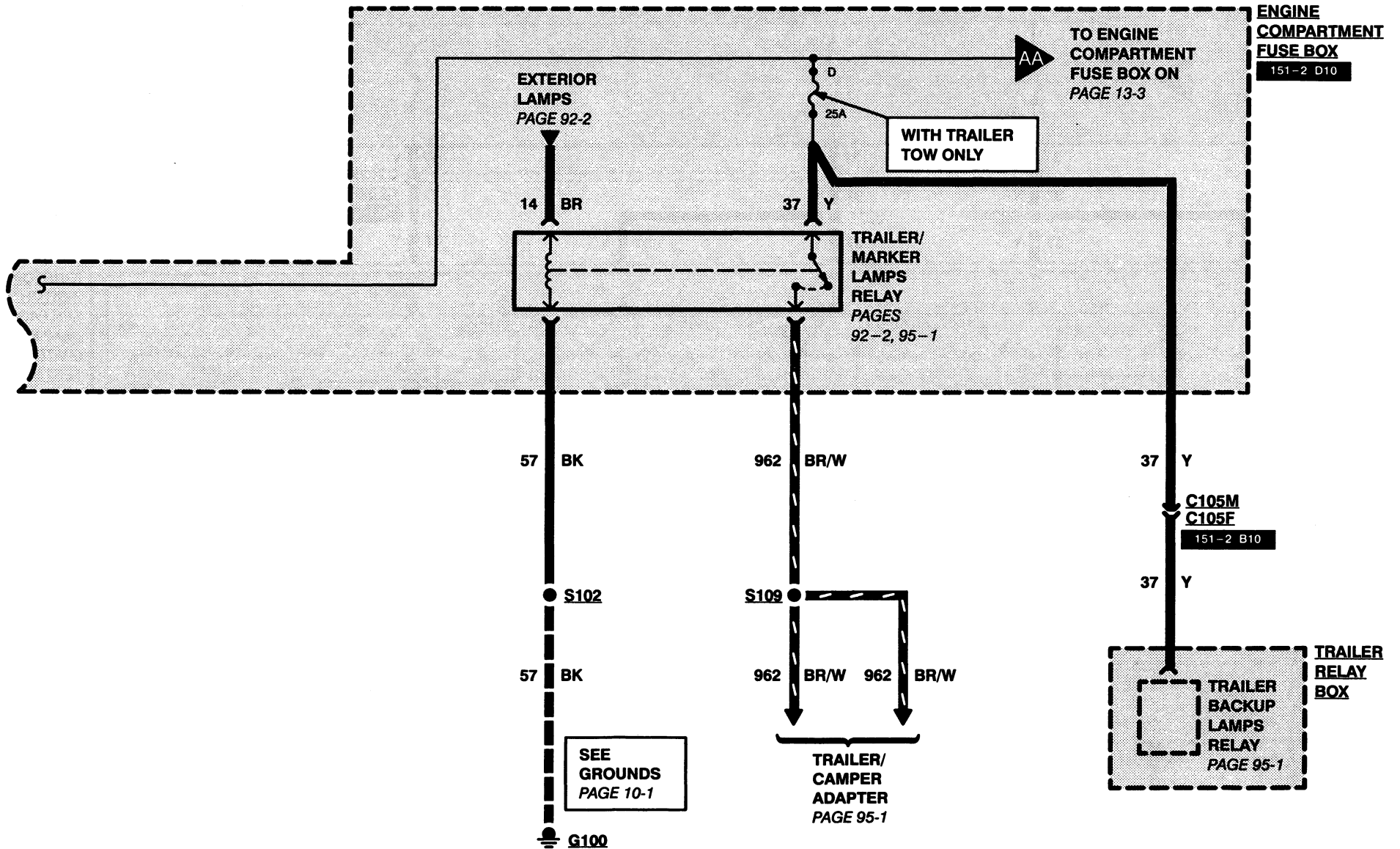
**GASOLINE**



# POWER DISTRIBUTION 13-2

1995 F-SERIES

**GASOLINE**



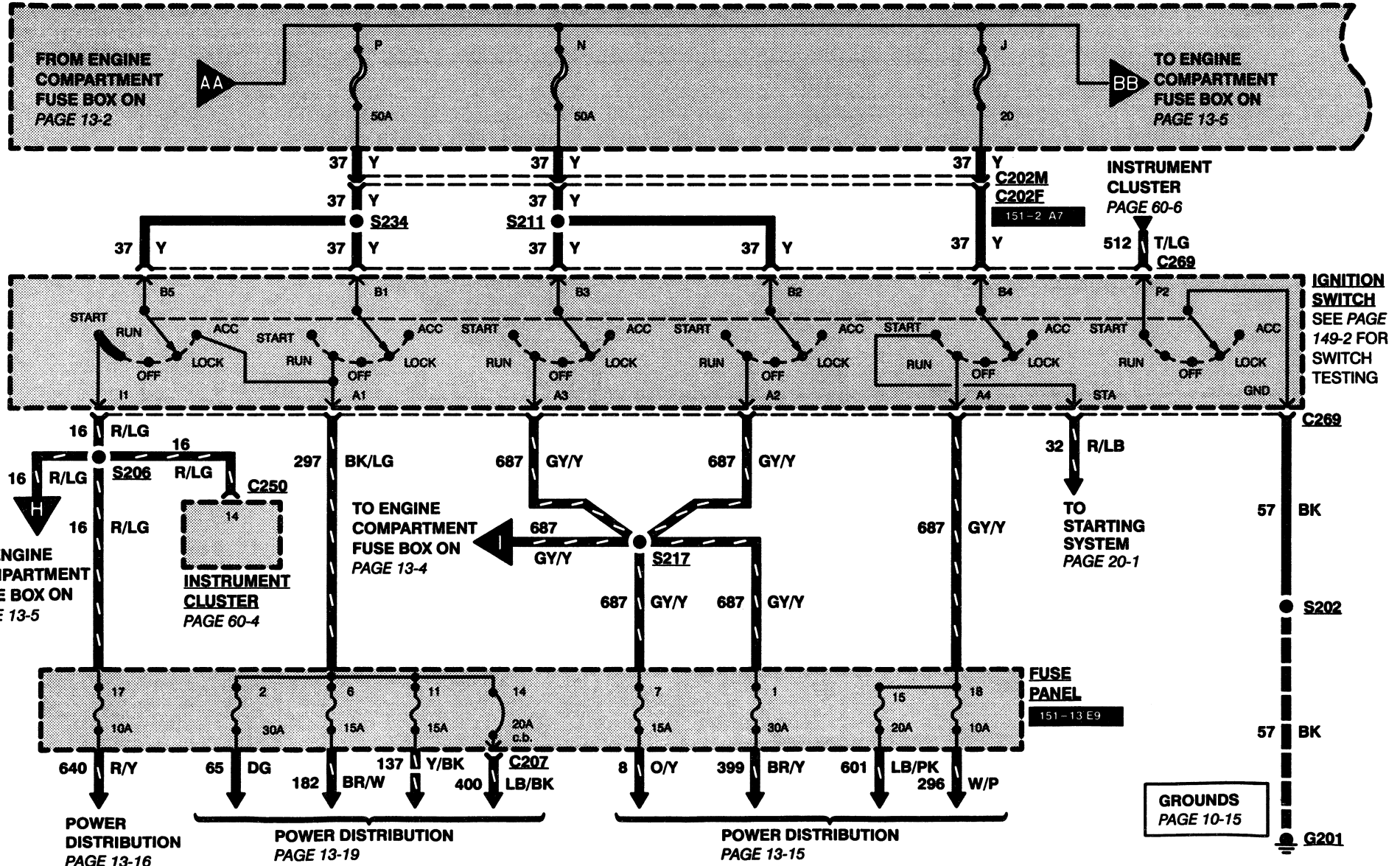
# 13-3 POWER DISTRIBUTION

1995 F-SERIES

## GASOLINE

## ENGINE COMPARTMENT FUSE BOX

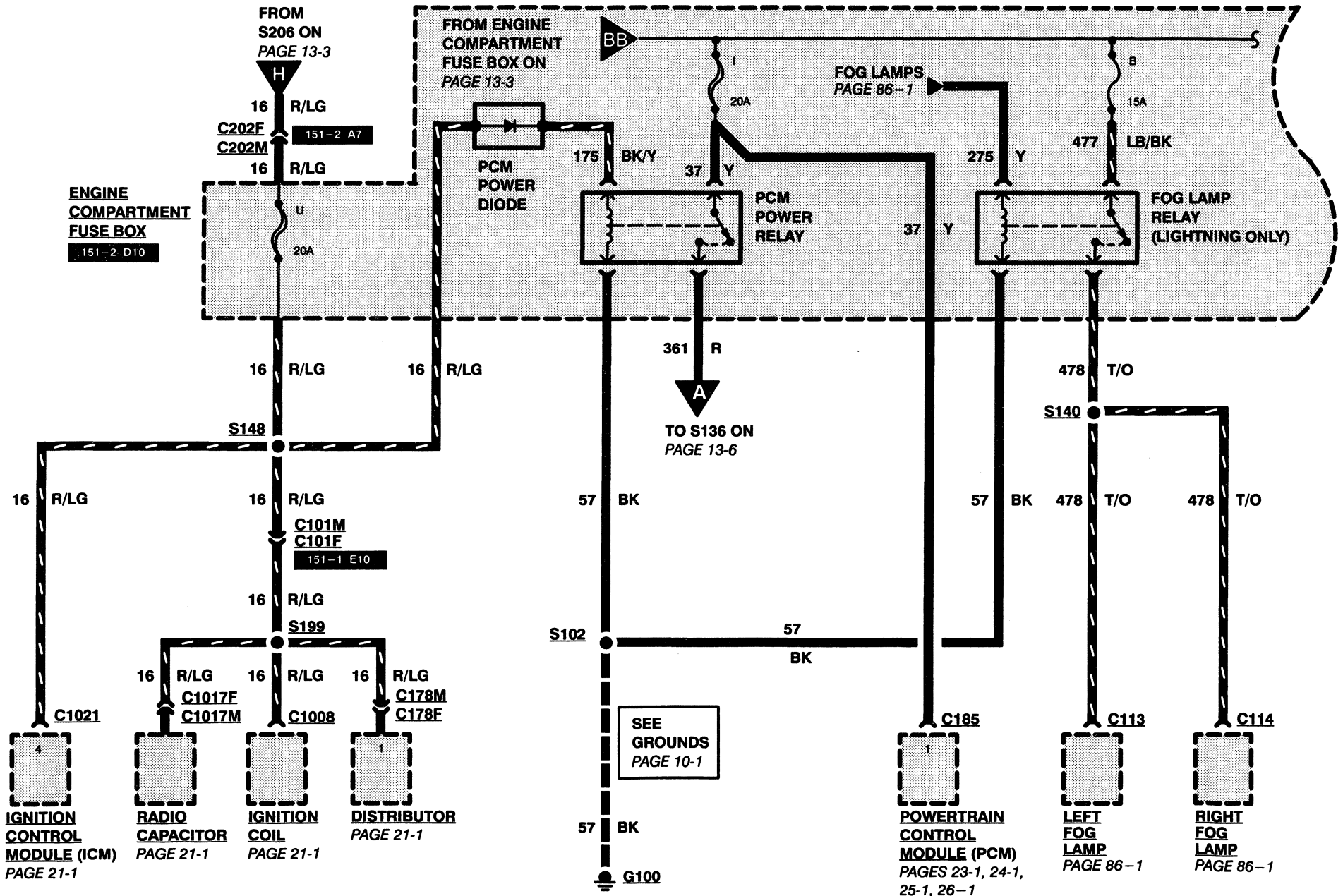
151-2 D10



# 13-5 POWER DISTRIBUTION

1995 F-SERIES

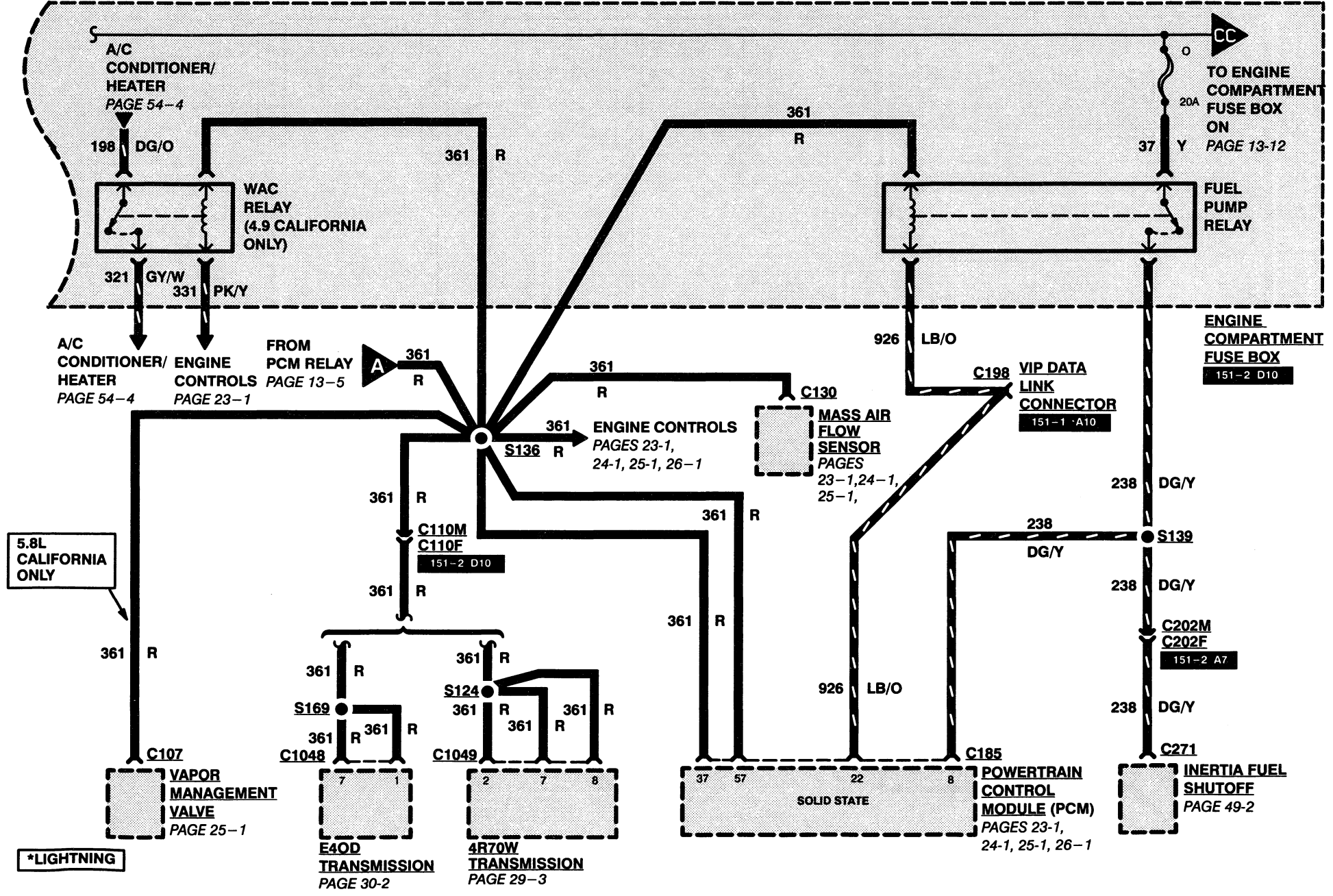
## GASOLINE



# POWER DISTRIBUTION 13-6

1995 F-SERIES

## GASOLINE



5.8L CALIFORNIA ONLY

\*LIGHTNING

TO ENGINE COMPARTMENT FUSE BOX ON PAGE 13-12

ENGINE COMPARTMENT FUSE BOX 151-2 D10

VIP DATA LINK CONNECTOR 151-1 A10

MASS AIR FLOW SENSOR PAGES 23-1, 24-1, 25-1, 26-1

ENGINE CONTROLS PAGES 23-1, 24-1, 25-1, 26-1

C202M C202F 151-2 A7

INERTIA FUEL SHUTOFF PAGE 49-2

POWERTRAIN CONTROL MODULE (PCM) PAGES 23-1, 24-1, 25-1, 26-1

4R70W TRANSMISSION PAGE 29-3

E4OD TRANSMISSION PAGE 30-2

VAPOR MANAGEMENT VALVE PAGE 25-1

A/C CONDITIONER/HEATER PAGE 54-4

WAC RELAY (4.9 CALIFORNIA ONLY)

A/C CONDITIONER/HEATER PAGE 54-4

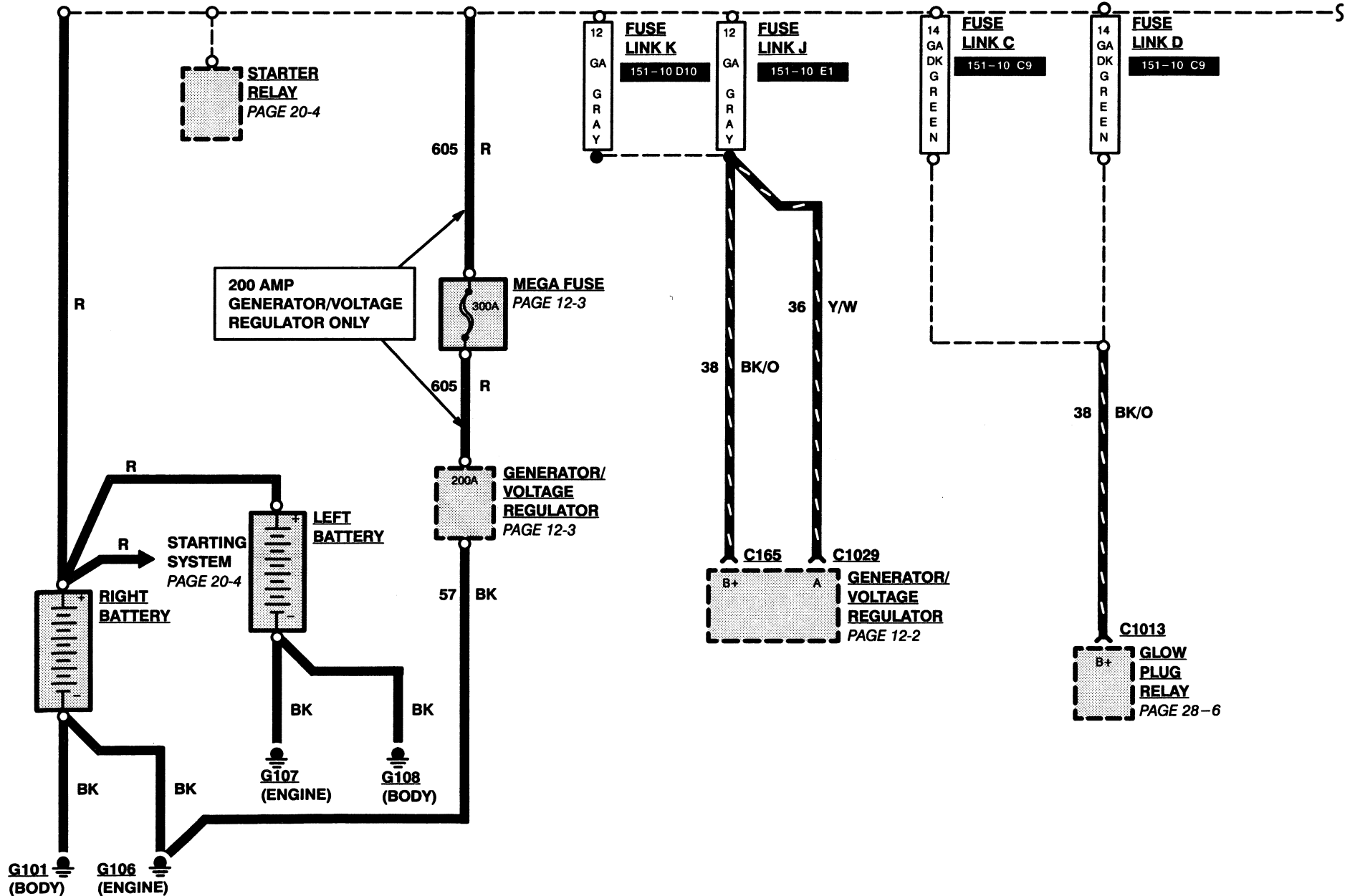
FROM PCM RELAY PAGE 13-5

ENGINE CONTROLS PAGE 23-1

# 13-7 POWER DISTRIBUTION

1995 F-SERIES

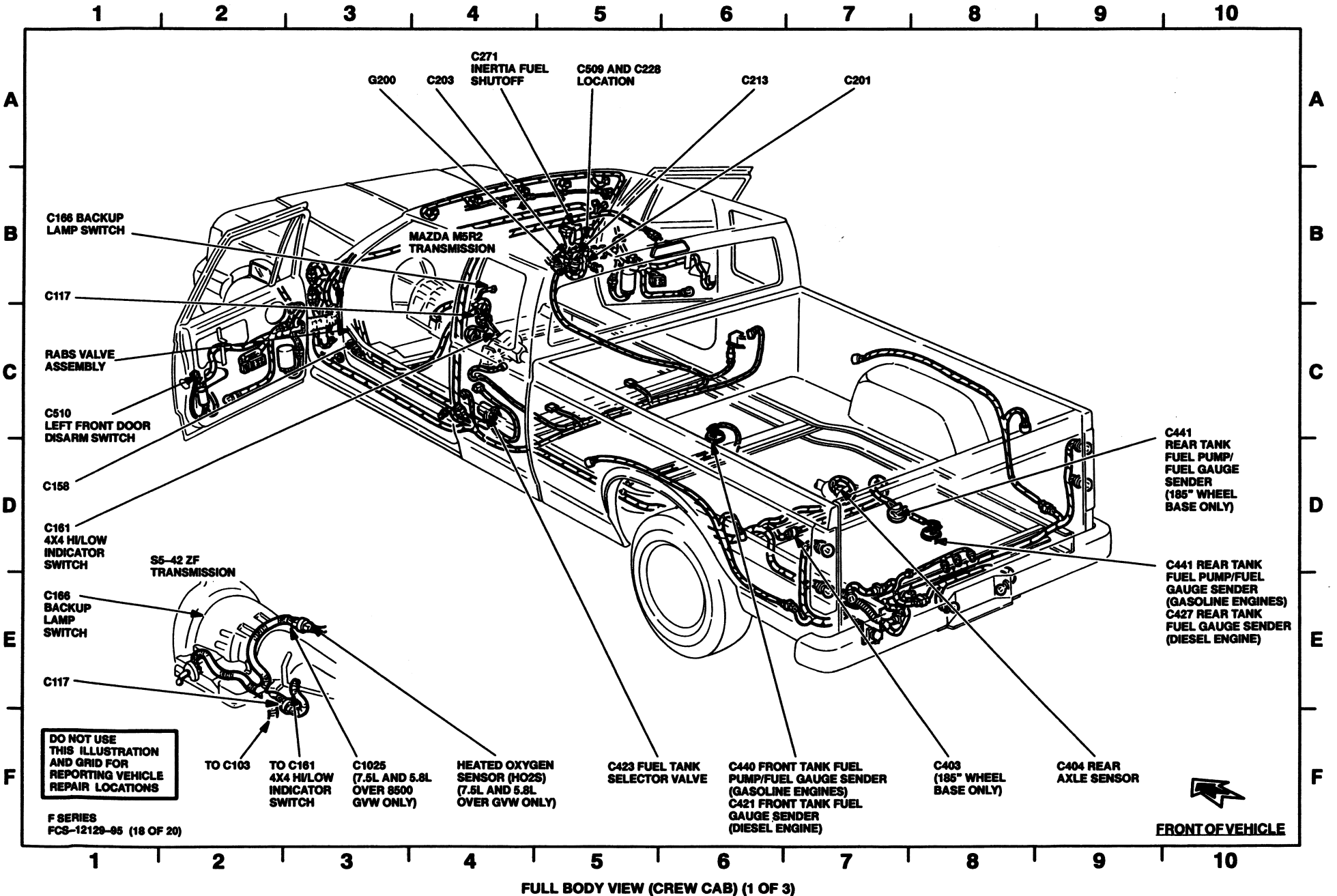
**DIESEL**





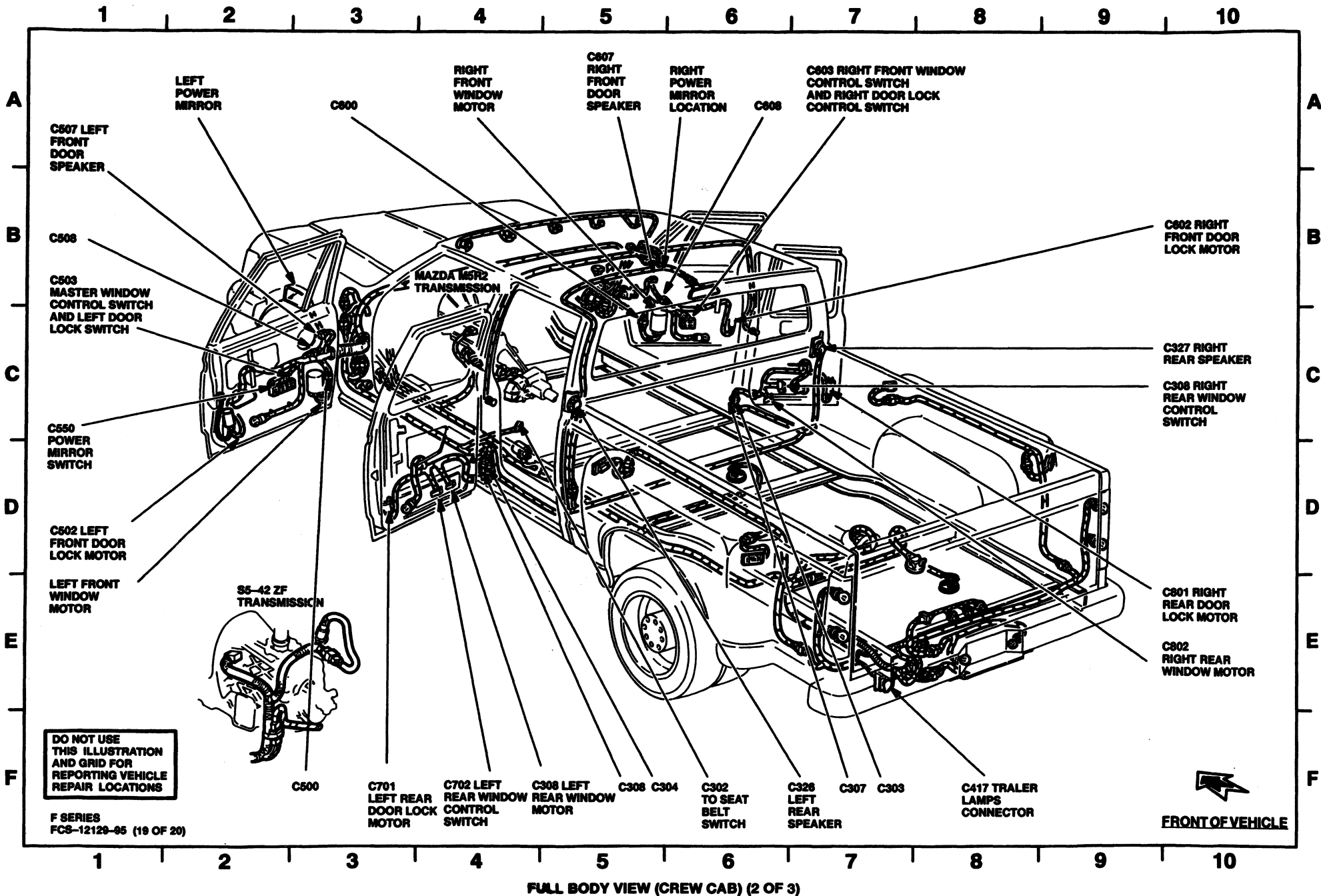
# COMPONENT LOCATION VIEWS 151-18

1995 F-SERIES



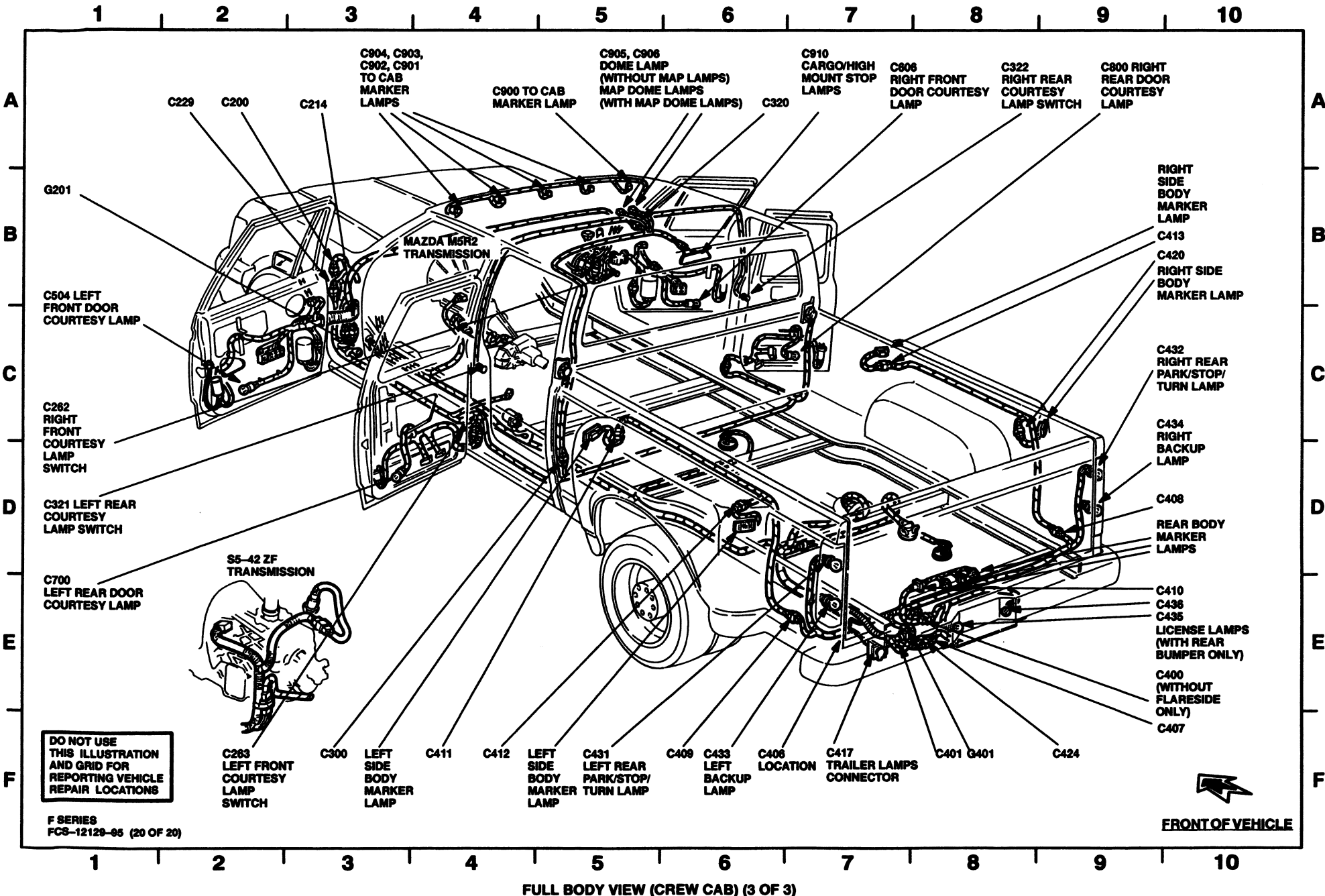
# 151-19 COMPONENT LOCATION VIEWS

1995 F-SERIES



# COMPONENT LOCATION VIEWS 151-20

1995 F-SERIES



# 152-1 LOCATION INDEX

1995 F-SERIES

| <u>Component</u>   | <u>Base Part No.</u> | <u>Location</u>  | <u>Connector</u> | <u>Page Zone</u> | <u>Connector Page</u> |
|--|----------------------|--|------------------|------------------|-----------------------|
| 4R70W Transmission                                       | 7000                 | Below center of vehicle  | C1049            | 151- 15-B10      | 29-5                  |
| 4x4 Hi/Low Indicator Switch<br>(C6 Transmission)         | 7E440                | Below vehicle, on front of transfer case   | C161             | 151- 15- F2      |                       |
| 4x4 Hi/Low Indicator Switch<br>(E4OD Transmission)       | 7E440                | Below vehicle, on front of transfer case   | C161             | 151- 15- D1      |                       |
| 4x4 Hi/Low Indicator Switch (Mazda<br>M5OD Transmission) | 7E440                | Below vehicle, on front of transfer case   | C161             | 151- 18- D1      |                       |
| 4x4 Hi/Low Indicator Switch (S5-42 ZF<br>Transmission)   | 7E440                | Below vehicle, on front of transfer case   | C161             | 151- 20- F3      |                       |
| Acceleration Sensor                                      | 14N089               | Top RH side of engine  | C402             | 151- 5- A4       |                       |
| A/C Clutch Cycling Pressure Switch<br>(4.9L)             | 19E561               | RH rear of engine compartment, on<br>accumulator                                   | C162             | 151- 3- A3       |                       |
| A/C Clutch Cycling Pressure Switch<br>(5.0L)(5.8L)       | 19E561               | RH rear of engine compartment, on<br>accumulator                                   | C162             | 151- 5- A2       |                       |
| A/C Clutch Cycling Pressure Switch<br>(7.3L)             | 19E561               | RH rear of engine compartment, on<br>accumulator                                   | C162             | 151- 10- B1      |                       |
| A/C Clutch Cycling Pressure Switch<br>(7.5L)             | 19E561               | RH rear of engine compartment, on<br>accumulator                                   | C162             | 151- 8- A3       |                       |
| A/C Clutch Field Coil (4.9L)                             | 19703                | LH front of engine   | C163             | 151- 3- F4       |                       |
| A/C Clutch Field Coil (5.0L)(5.8L)                       | 19703                | LH front of engine   | C163             | 151- 5- F5       |                       |
| A/C Clutch Field Coil (7.3L Diesel)                      | 19703                | LH front of engine   | C163             | 151- 10- F7      |                       |
| A/C Clutch Field Coil (7.5L)                             | 19703                | LH front of engine   | C163             | 151- 8- F5       |                       |
| A/C Clutch Resistor Diode (4.9L)                         | 1N4003               | 27 ohms @ 5W . LH side of engine compartment, taped<br>to harness, near C101       |                  | 151- 3-C10       |                       |
| A/C Clutch Resistor Diode (5.0L)(5.8L)                   | 1N4003               | 27 ohms @ 5W . LH side of engine compartment, taped<br>to harness, near C101       |                  | 151- 5-C10       |                       |
| A/C Clutch Resistor Diode (7.3L)                         | 1N4003               | 27 ohms @ 5W . LH front of engine, taped to harness,<br>near A/C clutch field coil |                  | *                |                       |
| A/C Clutch Resistor Diode (7.5L)                         | 1N4003               | 27 ohms @ 5W . LH side of engine compartment, taped<br>to harness, near C101       |                  | 151- 8-C10       |                       |

\* Not Available

# LOCATION INDEX

# 152-2

1995 F-SERIES

| <u>Component</u>                                   | <u>Base Part No.</u> | <u>Location</u>                                      | <u>Connector</u> | <u>Page Zone</u> | <u>Connector Page</u> |
|--|----------------------|--|------------------|------------------|-----------------------|
| A/C-Heater Control Assembly                        | 19980                | Center of I/P  | C296             | 151- 15- A2      |                       |
| A/C High Pressure Cut Out Switch (4.9L)            | 19D594               | LH side of engine compartment                        | C126             | 151- 1- F9       |                       |
| A/C High Pressure Cut Out Switch (5.0L) (5.8L)     | 19D594               | LH side of engine compartment                        | C126             | 151- 5- A4       |                       |
| A/C High Pressure Cut Out Switch (Lightning)       | 19D594               | LH side of engine compartment                        | C126             | 151- 6- F7       |                       |
| A/C High Pressure Cut Out Switch (7.3L Diesel)     | 19D594               | LH side of engine compartment                        | C126             | 151- 11- A7      |                       |
| A/C High Pressure Cut Out Switch (7.5L)            | 19D594               | LH side of engine compartment                        | C126             | 151- 7- F6       |                       |
| Air Bag Diagnostic Monitor                         | 043B13               | Behind LH side of I/P                                | C217,C218        | 151- 12- F3      | 46-3                  |
| Ambient Air Temperature (AAT) Sensor (7.3L Diesel) | 12A697               | Top center of engine                                 | C164             | 151-11 C10       |                       |
| Ambient Temperature Sensor                         | 19E702               | RH front of engine compartment                       | C131             | *                |                       |
| Anti-Theft Controller Module                       | 19A366               | Behind center of I/P                                 | C237,C238        | 151- 12- A4      | 112-4                 |
| Ashtray Illumination                               | 15052                | Lower center of I/P, in ashtray assembly             | C293             | 151- 13- F5      |                       |
| Auxiliary Power Socket                             | 15055                | Lower center of I/P                                  | C234             | 151- 13- F7      |                       |
| Backup Lamp Switch (Mazda M5OD Transmission)       | 15520                | Below center of vehicle, top LH side of transmission | C166             | 151- 18- B1      |                       |
| Backup Lamp Switch (S5-42 ZF Transmission)         | 15520                | Below center of vehicle, top LH side of transmission | C166             | 151- 18- E1      |                       |
| Backup Lamps (All Except Chassis Cab)              | 13405/13404          | Rear of vehicle, on respective sides                 | C433,C434        | 151- 19-F4, D9   |                       |
| Backup Lamps (Chassis Cab)                         | 13405/13404          | Rear of vehicle, on respective sides                 | C447,C448        | 151- 19-F4, D9   |                       |
| Barometric Pressure (BARO) Sensor (7.3L Diesel)    | 9F479                | Below I/P at base of steering column                 | C2000            | 151- 12- F5      |                       |
| Blower Motor (4.9L)                                | 18527                | RH side of safety wall                               | C168             | 151- 3- C1       |                       |
| Blower Motor (5.0L)(5.8L)                          | 18527                | RH side of safety wall                               | C168             | 151- 5- B1       |                       |
| Blower Motor (7.3L)                                | 18527                | RH side of safety wall                               | C168             | 151- 10- C1      |                       |
| Blower Motor (7.5L)                                | 18527                | RH side of safety wall                               | C168             | 151- 8- B1       |                       |
| Blower Motor Resistor (4.9L)                       | 19A706               | RH side of safety wall, on plenum                    | C169             | 151- 3- B1       |                       |
| Blower Motor Resistor (5.0L)(5.8L)                 | 19A706               | RH side of safety wall, on plenum                    | C169             | 151- 5- A2       |                       |
| Blower Motor Resistor (7.3L)                       | 19A706               | RH side of safety wall, on plenum                    | C169             | 151- 10- A1      |                       |
| Blower Motor Resistor (7.5L)                       | 19A706               | RH side of safety wall, on plenum                    | C169             | 151- 8- A1       |                       |
| Blower Motor Switch                                | 18578                | Center of I/P  | C260             | 151- 13- A4      |                       |

\* Not Available

# 152-3 LOCATION INDEX

1995 F-SERIES

| <u>Component</u>                      | <u>Base Part No.</u> | <u>Location</u>  | <u>Connector</u>               | <u>Page Zone</u> | <u>Connector Page</u> |
|---------------------------------------|----------------------|--|--------------------------------|------------------|-----------------------|
| Brake Fluid Level Switch (4.9L)       | 2L454                | LH rear of engine compartment, on brake fluid reservoir            | C170                           | 151- 3- A8       |                       |
| Brake Fluid Level Switch (5.0L)(5.8L) | 2L454                | LH rear of engine compartment, on brake fluid reservoir            | C170                           | 151- 5- A8       |                       |
| Brake Fluid Level Switch (7.3L)       | 2L454                | LH rear of engine compartment, on brake fluid reservoir            | C170                           | 151- 9- A8       |                       |
| Brake Fluid Level Switch (7.5L)       | 2L454                | LH rear of engine compartment, on brake fluid reservoir            | C170                           | 151- 8- A9       |                       |
| Brake ON/OFF (BOO) Switch             | 13480                | Behind LH side of I/P, top LH side of brake/clutch pedal support   | C279                           | 151- 12- F7      |                       |
| Brake Pressure Switch (5.0L) (5.8L)   | *                    | Near LH front rail   | C102                           | 151- 5- A9       |                       |
| Brake Pressure Switch (7.3L Diesel)   | *                    | Near LH front rail   | C102                           | 151- 10- A7      |                       |
| Brake Warning Resistor/Diode Assembly | 14A601               | LH rear of engine compartment, taped in harness near C202          |                                | 151- 3-B10       |                       |
| Brush Assembly                        | 3600                 | Top of steering column, below steering wheel                       | C219                           | 151- 12-F10      |                       |
| Cab Marker Lamps                      | 15442                | Top front of cab roof  | C900,C901<br>C902,C903<br>C904 | 151- 17- A3      |                       |
| Camshaft Position (CMP) Sensor        | *                    | Front center of engine   | C144                           | 151- 9- F4       |                       |
| Cargo/High Mount Stop Lamps           | 15550                | On top rear of cab   | C910                           | 151- 17- A5      |                       |
| Charge Indicator Lamp Relay           | 10B999               | RH side of engine compartment, on wheelwell, below starter relay   | C172                           | 151- 11- F7      |                       |
| Cigar Lighter                         | 15055                | Lower center of I/P, in ashtray assembly                           | C294,C295                      | 151- 13- F4      |                       |
| Clutch Pedal Position Switch          | 11A152               | Behind LH side of I/P, top RH side of brake/clutch pedal support   | C261                           | 151- 12- F4      | 20-5                  |
| Clutch Pedal Position Switch Jumper   | 14B155               | Behind LH side of I/P, taped to main harness, near steering column | C261                           | *                |                       |
| Cold Idle Solenoid                    | *                    | Top center front of engine   | C174                           | 151- 9- F5       |                       |
| Cold Timing Advance Solenoid          | *                    | Top center front of engine   | C175                           | 151- 9- F7       |                       |
| Courtesy Lamp Diode                   | *                    | In harness 14A504  |                                |                  |                       |
| Day/Night Mirror/Autolamp Sensor      | 13A018               | In center of windshield header                                     |                                |                  |                       |
| Daytime Running Lamps (DRL) Jumper    | 14A464               | Front LH side of lower radiator support                            |                                |                  |                       |
| Daytime Running Lamps (DRL) Module    | 15A272               | Front LH side of lower radiator support                            |                                |                  |                       |
| Delta Exhaust Pressure Transducer     | *                    |  |                                |                  |                       |
| Diesel Warning Lamps Display          | 10B987               | Top LH side of I/P, right of instrument clust                      |                                |                  |                       |
| Distributor (4.9L)                    | 12127                | Top LH front of engine   |                                |                  |                       |
| Distributor (5.0L)(5.8L)              | 12127                | Top center front of engine   |                                |                  |                       |

\* Not Available

