1997 F-150

FIX IT RIGHT THE FIRST TIME ON TIME

EVTM

ELECTRICAL AND VACUUM TROUBLESHOOTING MANUAL

1997 Ford F-150 Truck Electrical and Vacuum Troubleshooting Manual (EVTM)

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ELECTRICAL AND VACUUM TROUBLESHOOTING MANUAL
FCS-12263-97

FORD CUSTOMER SERVICE DIVISION

Quality is Job 1

Ford Customer Service Division has developed a new EVTM format for the 1997 F–150. Our goal is to provide accurate and timely electrical and vacuum service information.

1997 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
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Detroit, Michigan 48207

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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 saefty 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** 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 pinout 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 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 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.

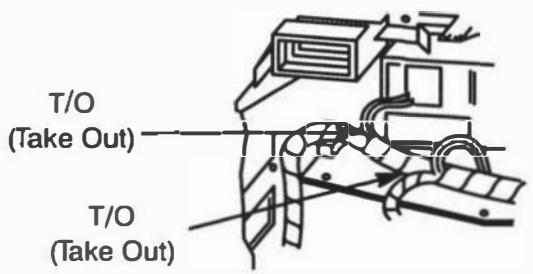
The **"LOCATION INDEX"** (Cell 152) provides the service base part numbers, locations, connector face references and illustration references for all components, connectors, splices and grounds.

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



2. 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.
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 (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 bums, 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.*

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

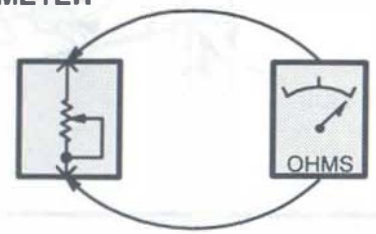


Figure 1–Resistance Check

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

TEST LAMP

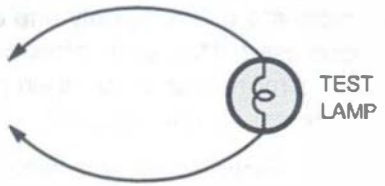


Figure 2–Test Lamp

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

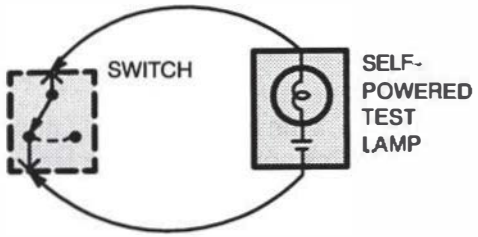


Figure 3–Continuity Check

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.

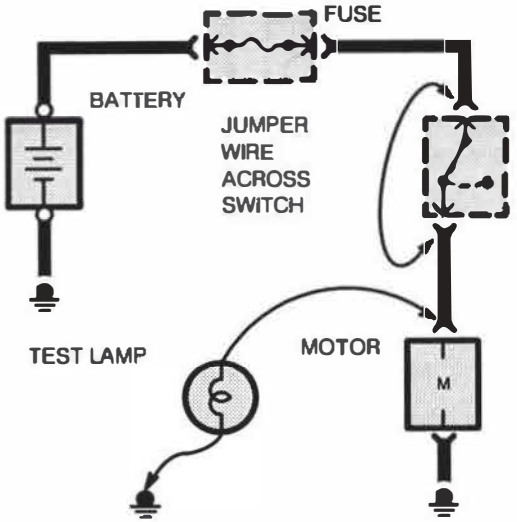


Figure 4—Switch Circuit Check and Voltage Check

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).

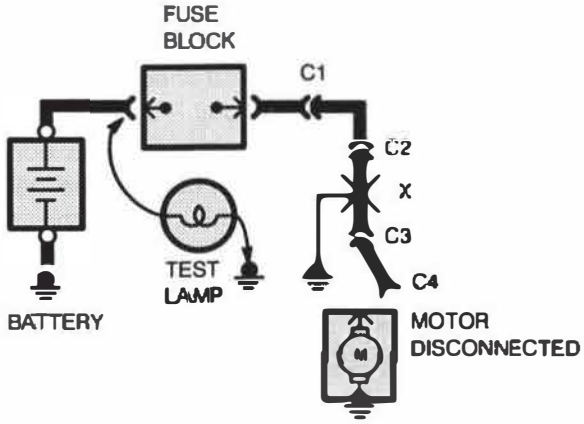


Figure 5—Short Check

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.

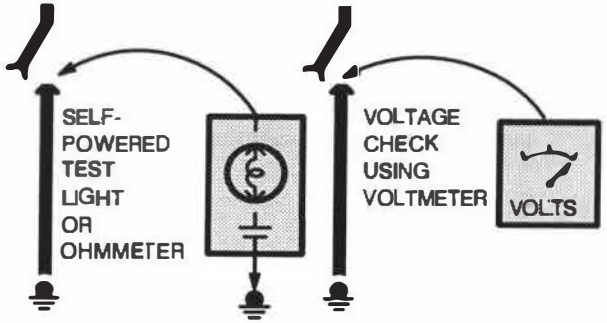


Figure 6—Ground Check

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).

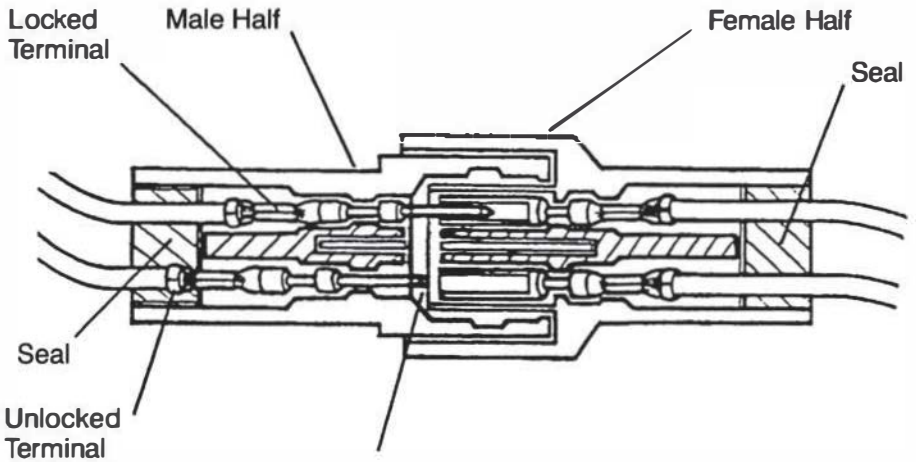
The circuit schematics in this manual make it easy to identify common points in circuits. This knowledge can help narrow the concern to a specific area. For example, if several circuits fail at the same time, check for a common power or ground connection (See *Power Distribution* or *Grounds*). If part 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

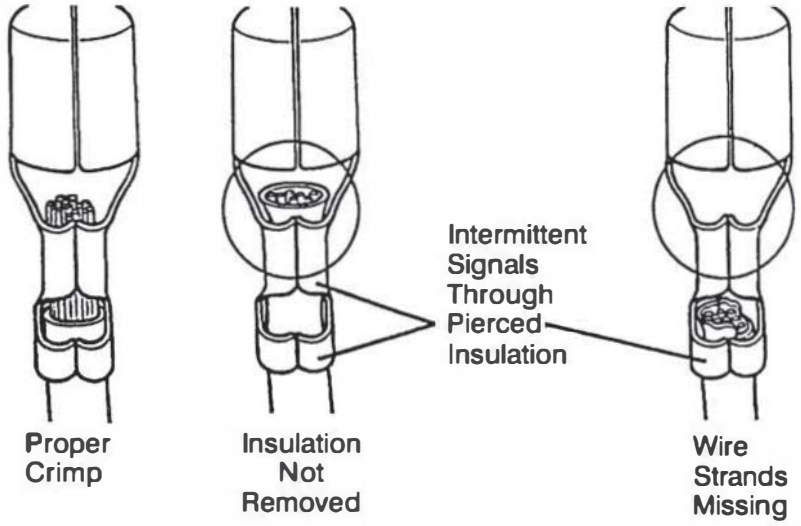
The following illustrations are known examples of wiring harness, splices and connectors that will create intermittent electrical concerns. The concerns are hidden and can only be discovered by a physical evaluation as shown in each illustration.

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

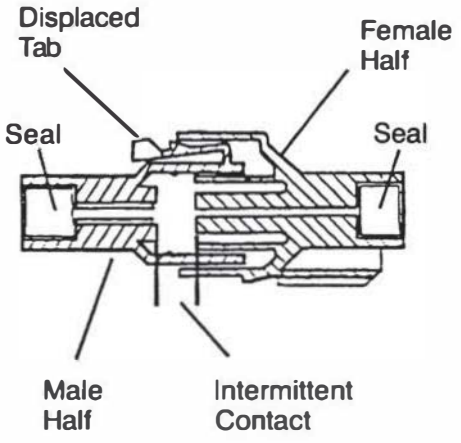


Check for unlocked terminals by pulling each wire at the cord of the connector

TERMINAL NOT PROPERLY SEATED

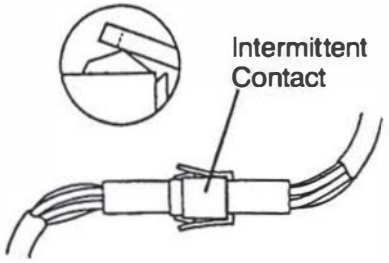


DEFECTIVE INSULATION STRIPPING



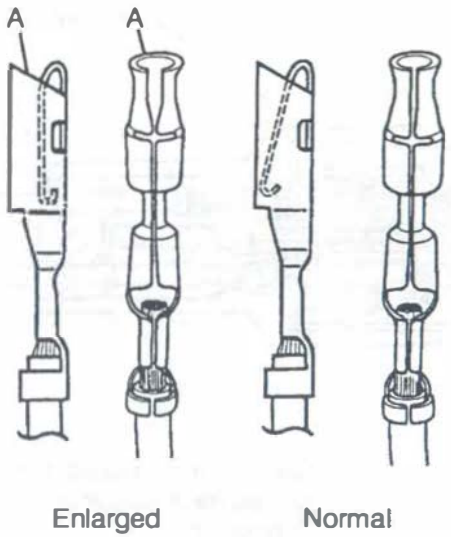
Type A

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



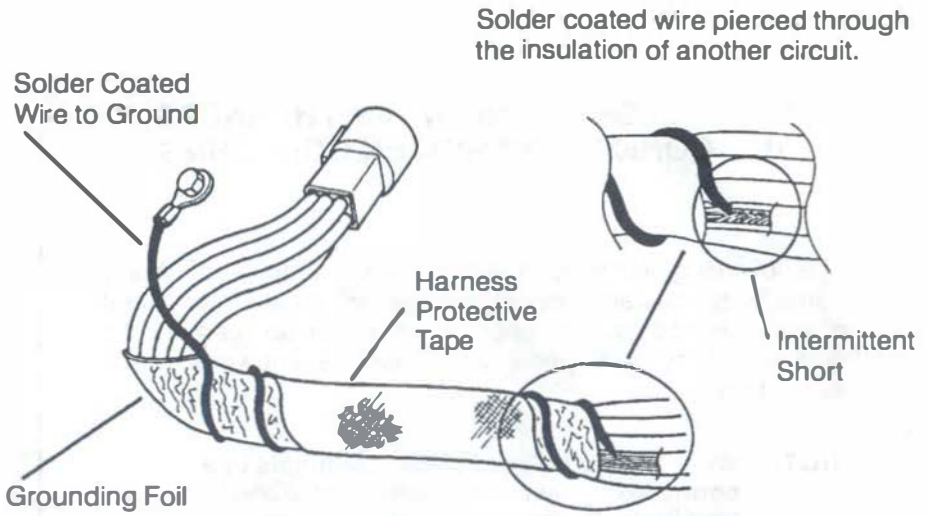
Type B

PARTIALLY MATED CONNECTORS

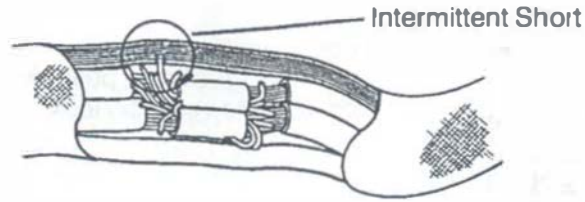


Any probe entering the terminal may enlarge the contact spring opening creating an intermittent signal. Insert the correct mating terminal (Location A) from the service kit and feel for a loose fit.

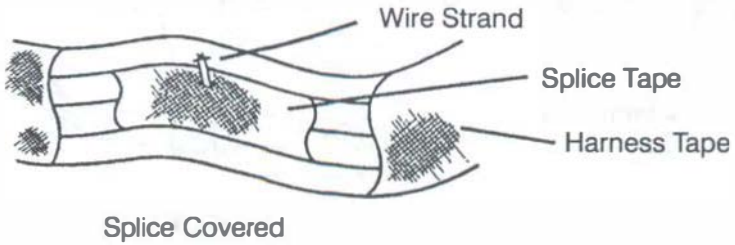
DEFORMED (ENLARGED) FEMALE TERMINALS



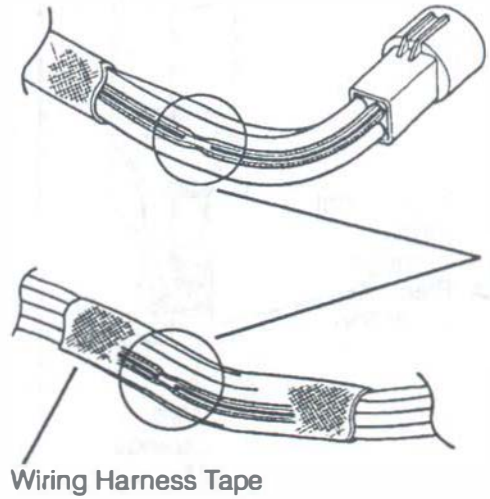
ELECTRICAL SHORT INSIDE THE HARNESS



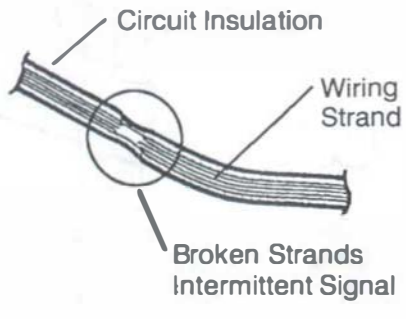
Operate the system and flex the harness at splice location noted in Section 152.



ELECTRICAL SHORT WITHIN THE HARNESS



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.

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.

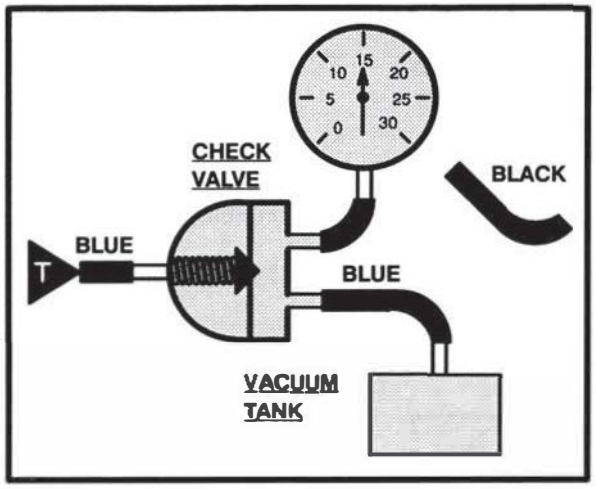


Figure 1 - System Supply Test

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:

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.

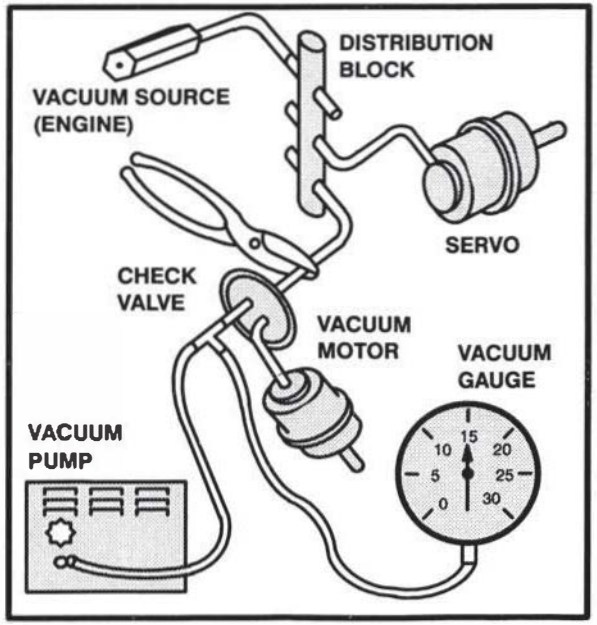


Figure 2 - Testing For Leaks In Typical Vacuum System

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

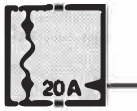
BATTERY

SCREW TERMINAL ON COMPONENT

SOLID STATE

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

GROUND CONNECTION



FUSE

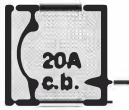
CURRENT RATING

FUSIBLE LINK

WIRE SIZE AND COLOR

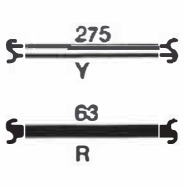
MAXI-FUSE
or
FUSIBLE LINK CARTRIDGE

CURRENT RATING

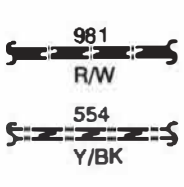


CIRCUIT BREAKER

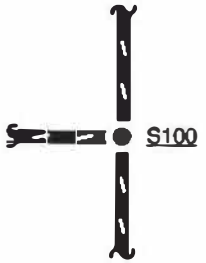
CURRENT RATING



SOLIDWIRE



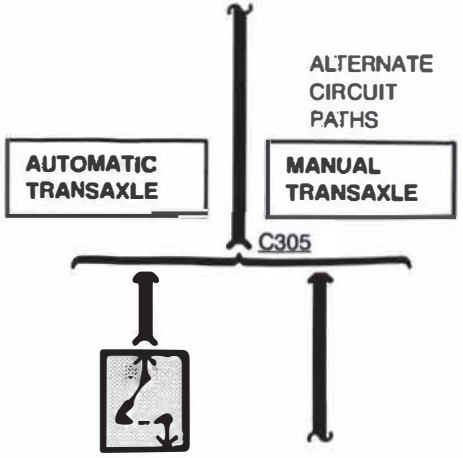
STRIPED WIRE



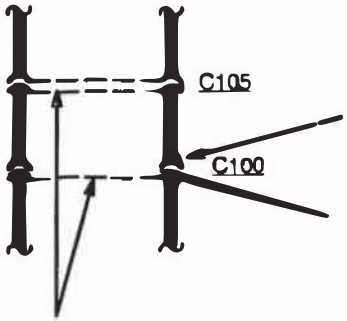
SPLICE OR CRIMP TERMINAL

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

"REFERENCE" WIRES
COMPLETE WIRING SHOWN ON ANOTHER PAGE



ELECTRICAL SYMBOLS



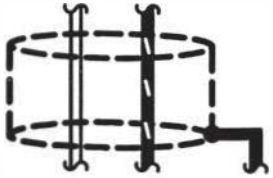
SOCKET

IN-LINE CONNECTOR

PIN OR BLADE

SINGLE OR DOUBLE 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 OR CHOKE

MOTOR

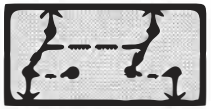
HEATING ELEMENT

THERMISTOR

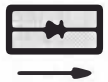
RHEOSTAT OR POTENTIOMETER

SOLENOID

SWITCH



GANGED SWITCHES
CONTACTS MOVE AT THE SAME TIME



DIODES
CURRENT FLOWS IN DIRECTION OF ARROWONLY

CAPACITOR

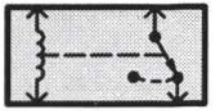
TRANSISTOR

GAUGE

LIGHT BULB

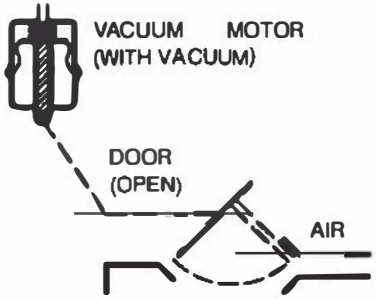
LIGHT EMITTING DIODE (LED)

DUAL FILAMENT LIGHT BULB



RELAY
CONTACTS CHANGE POSITION WITH CURRENT THROUGH COIL

VACUUM SYMBOLS



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

TO SYSTEM

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

FROM VACUUM DISTRIBUTION

SERVO MOTOR

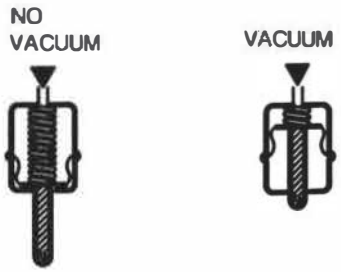
ALTERNATE VACUUM PATHS

NOTE

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

VACUUM MOTOR OPERATIONS

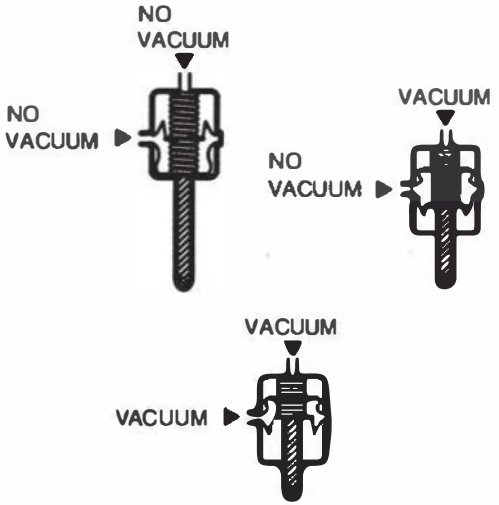
SINGLE DIAPHRAGM MOTOR



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

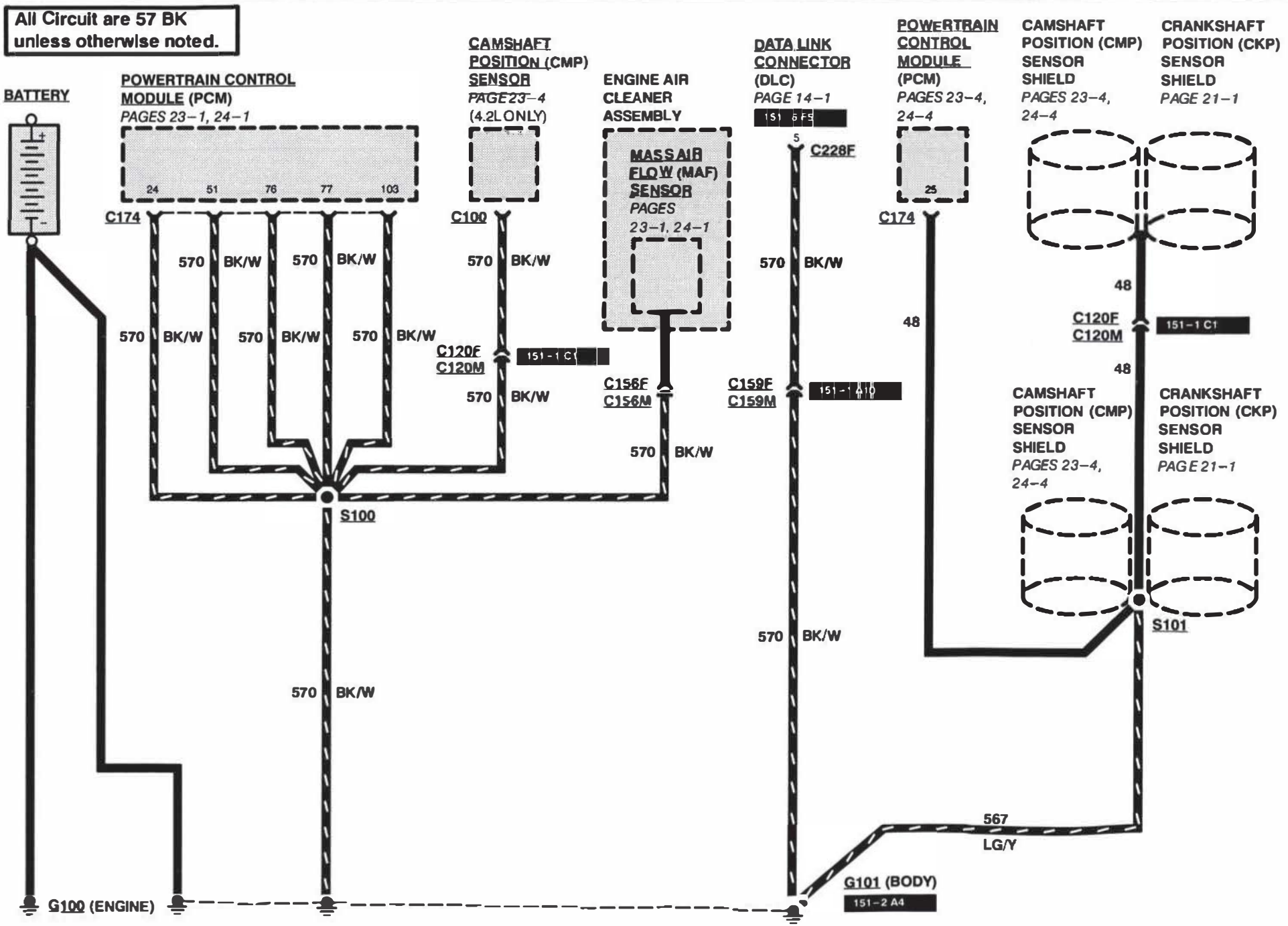
Some vacuum motors, such as the Servo Motor in the Speed Control, can position the actuating arm at any position between fully extended and fully retracted. The Servo is operated by a control valve that applies varying amounts of vacuum to the motor. The higher the vacuum level, the greater the retraction 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.

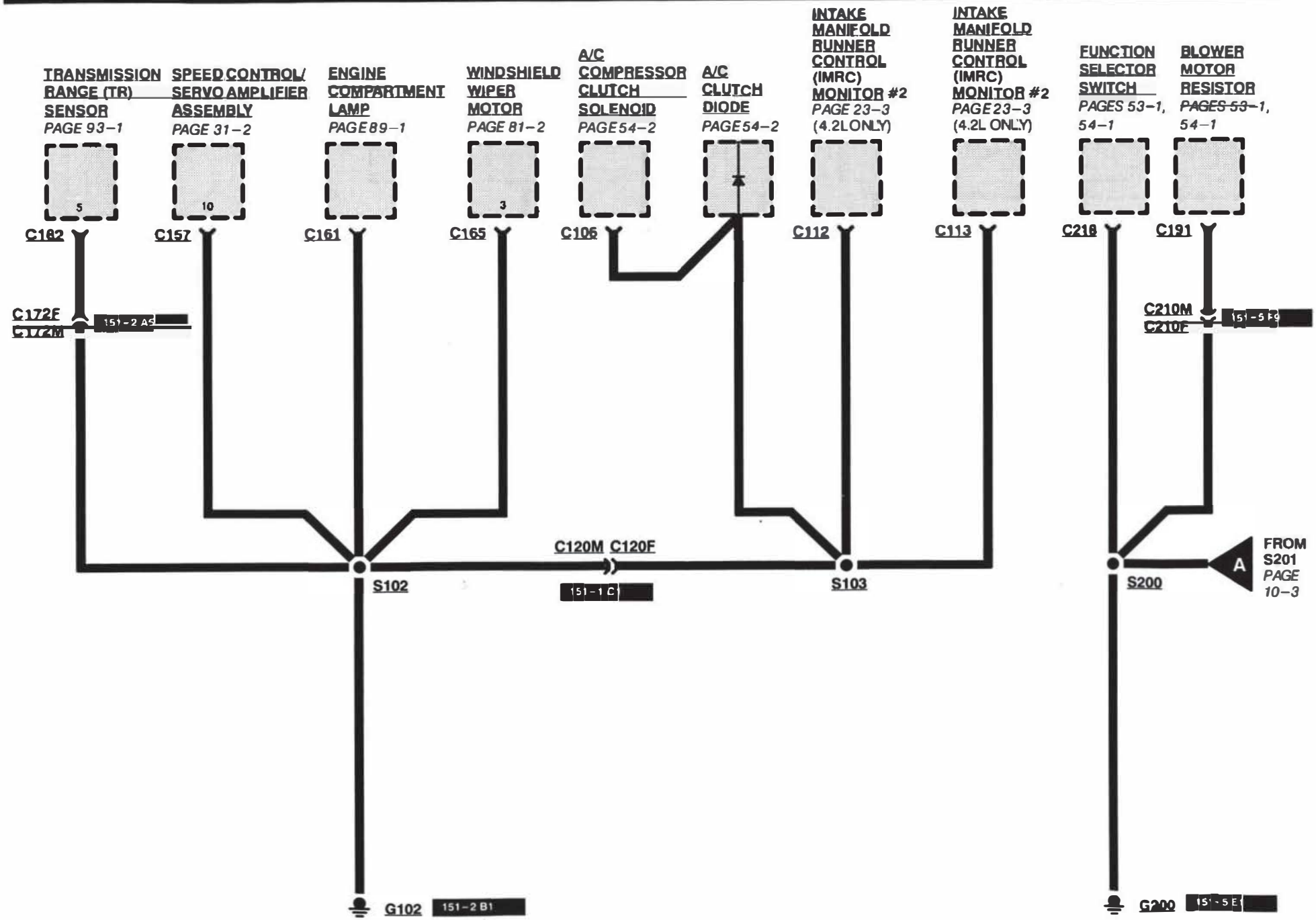
DOUBLE DIAPHRAGM MOTOR

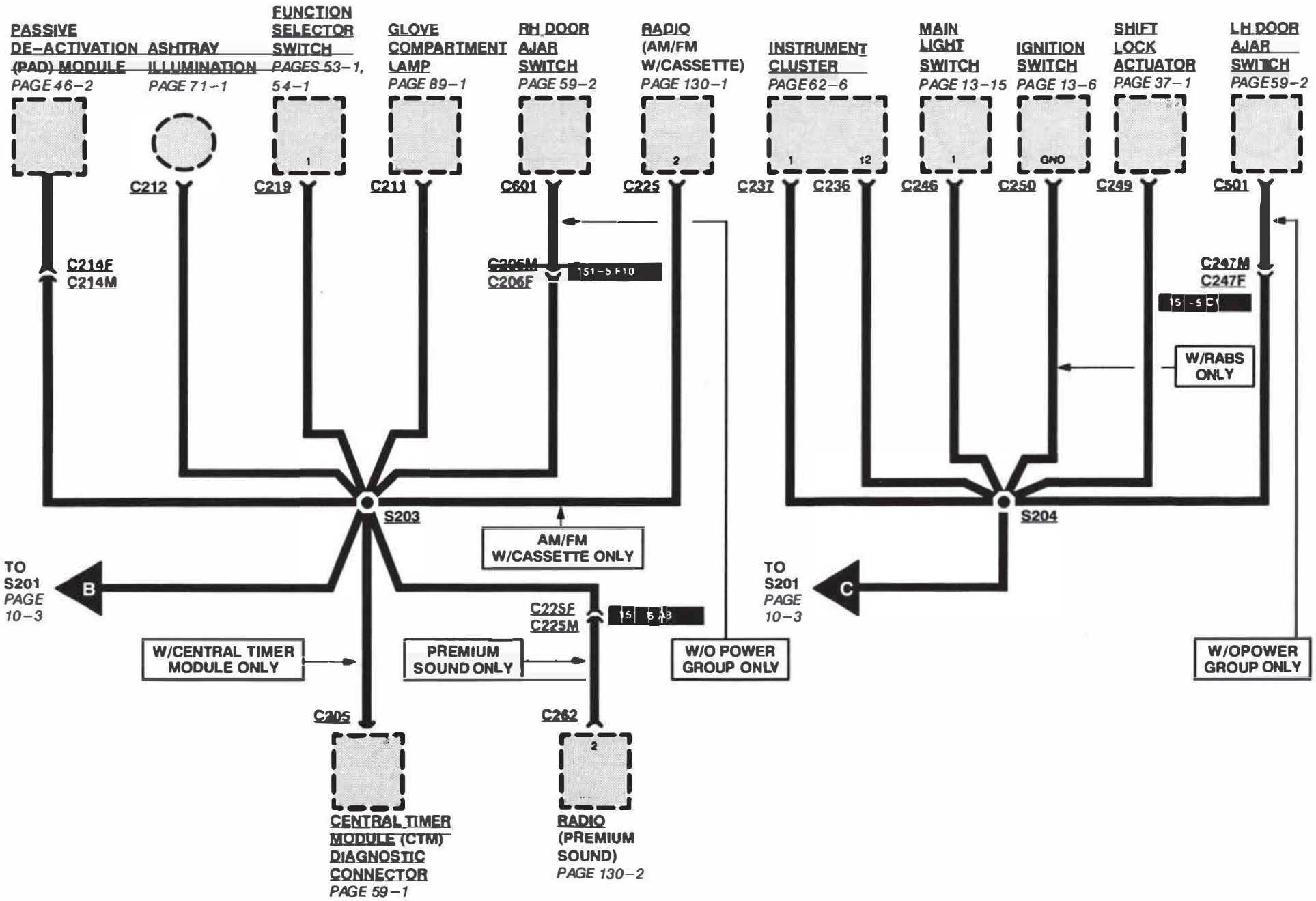


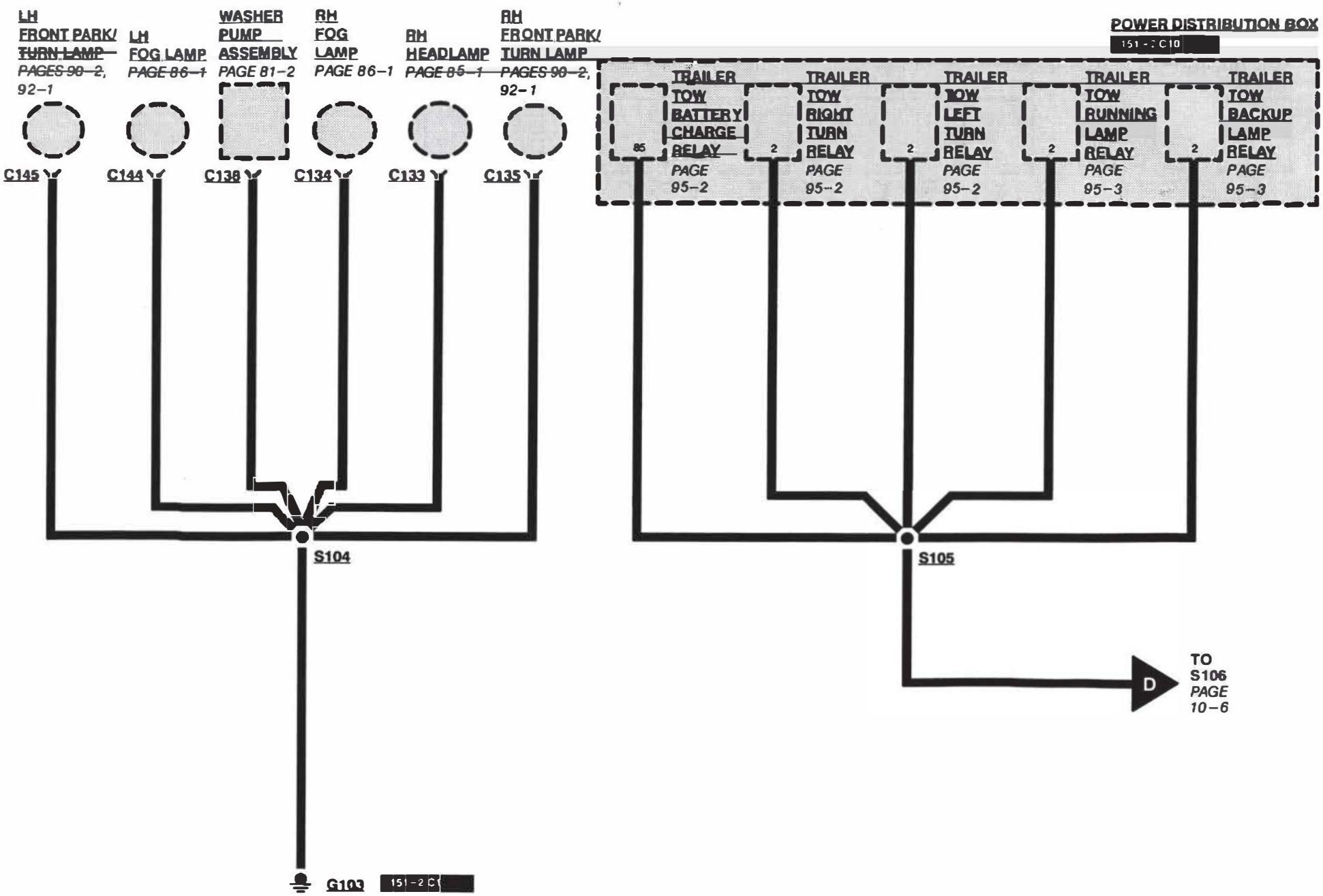
A double diaphragm motor has three positions (it is actually two motors in one housing). When the top port gets vacuum, the shaft pulls halfway in. When both ports get vacuum, the shaft pulls all the way in.

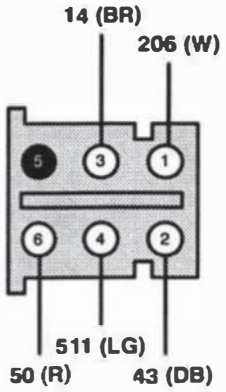
10–1 GROUNDS


All Circuit are 57 BK unless otherwise noted.
BATTERY
POWERTRAIN CONTROL MODULE (PCM)
PAGES 23–1, 24–1
24
51
76
77
103
C174
570 BK/W
570 BK/W
570 BK/W
570 BK/W
570 BK/W
570 BK/W
CAMSHAFT POSITION (CMP) SENSOR
PAGE23–4
(4.2L ONLY)
C100
570 BK/W
C120F
C120M
570 BK/W
ENGINE AIR CLEANER ASSEMBLY
MASS AIR FLOW (MAF) SENSOR
PAGES 23–1, 24–1
C156F
C156M
570 BK/W
S100
570 BK/W
G100 (ENGINE)
DATA LINK CONNECTOR (DLC)
PAGE 14–1
5
C228F
570 BK/W
C159F
C159M
570 BK/W
G101 (BODY)
151–2 A4
POWERTRAIN CONTROL MODULE (PCM)
PAGES 23–4, 24–4
25
C174
48
48
567 LG/Y
CAMSHAFT POSITION (CMP) SENSOR SHIELD
PAGES 23–4, 24–4
CRANKSHAFT POSITION (CKP) SENSOR SHIELD
PAGE 21–1
48
C120F
C120M
151–1 C1
48
CAMSHAFT POSITION (CMP) SENSOR SHIELD
PAGES 23–4, 24–4
CRANKSHAFT POSITION (CKP) SENSOR SHIELD
PAGE 21–1
S101

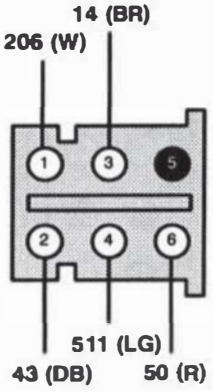

TRANSMISSION RANGE (TR) SENSOR
PAGE 93–1
SPEED CONTROL/ SERVO AMPLIFIER ASSEMBLY
PAGE 31–2
ENGINE COMPARTMENT LAMP
PAGE 89–1
WINDSHIELD WIPER MOTOR
PAGE 81–2
A/C COMPRESSOR CLUTCH SOLENOID
PAGE 54–2
A/C CLUTCH DIODE
PAGE 54–2
INTAKE MANIFOLD RUNNER CONTROL (IMRC) MONITOR #2
PAGE 23–3
(4.2L ONLY)
INTAKE MANIFOLD RUNNER CONTROL (IMRC) MONITOR #2
PAGE 23–3
(4.2L ONLY)
FUNCTION SELECTOR SWITCH
PAGES 53–1, 54–1
BLOWER MOTOR RESISTOR
PAGES 53–1, 54–1
5
10
3
C182
C157
C161
C165
C106
C112
C113
C218
C191
C172F
C172M
151-2 A5
C210M
C210F
151-5 F9
C120M C120F
151-1 C1
S102
S103
S200
A
FROM S201 PAGE 10–3
G102
151-2 B1
G200
151-5 E1


PASSIVE DE-ACTIVATION (PAD) MODULE
PAGE 46–2
ASHTRAY ILLUMINATION
PAGE 71–1
FUNCTION SELECTOR SWITCH
PAGES 53–1, 54–1
GLOVE COMPARTMENT LAMP
PAGE 89–1
RH DOOR AJAR SWITCH
PAGE 59–2
RADIO (AM/FM W/CASSETTE)
PAGE 130–1
INSTRUMENT CLUSTER
PAGE 62–6
MAIN LIGHT SWITCH
PAGE 13–15
IGNITION SWITCH
PAGE 13–6
SHIFT LOCK ACTUATOR
PAGE 37–1
LH DOOR AJAR SWITCH
PAGE 59–2
C212
C219
C211
C601
C225
C237
C236
C246
C250
C249
C501
C214F
C214M
C206M
C206F
151-5 F10
C247M
C247F
151-5 C
W/RABS ONLY
S203
S204
AM/FM W/CASSETTE ONLY
TO S201 PAGE 10–3
B
TO S201 PAGE 10–3
C
C225F
C225M
151 5 AB
W/CENTRAL TIMER MODULE ONLY
PREMIUM SOUND ONLY
W/O POWER GROUP ONLY
W/OPOWER GROUP ONLY
C205
C262
CENTRAL TIMER MODULE (CTM)
DIAGNOSTIC CONNECTOR
PAGE 59–1
RADIO (PREMIUM SOUND)
PAGE 130–2

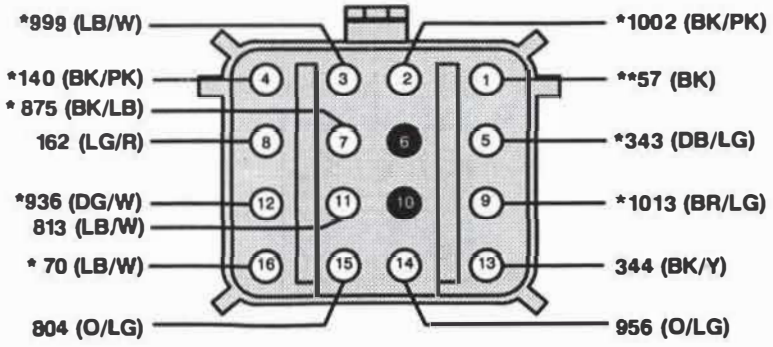

LH FRONT PARK/ TURN LAMP PAGES 90–2, 92–1
LH FOG LAMP PAGE 86–1
WASHER PUMP ASSEMBLY PAGE 81–2
RH FOG LAMP PAGE 86–1
RH HEADLAMP PAGE 85–1
RH FRONT PARK/ TURN LAMP PAGES 90–2, 92–1
C145
C144
C138
C134
C133
C135
S104
G103
151-2 C
POWER DISTRIBUTION BOX
151-3 C10
85
TRAILER TOW BATTERY CHARGE RELAY PAGE 95–2
2
TRAILER TOW RIGHT TURN RELAY PAGE 95–2
2
TRAILER TOW LEFT TURN RELAY PAGE 95–2
2
TRAILER TOW RUNNING LAMP RELAY PAGE 95–3
2
TRAILER TOW BACKUP LAMP RELAY PAGE 95–3
S105
D
TO S106 PAGE 10–6



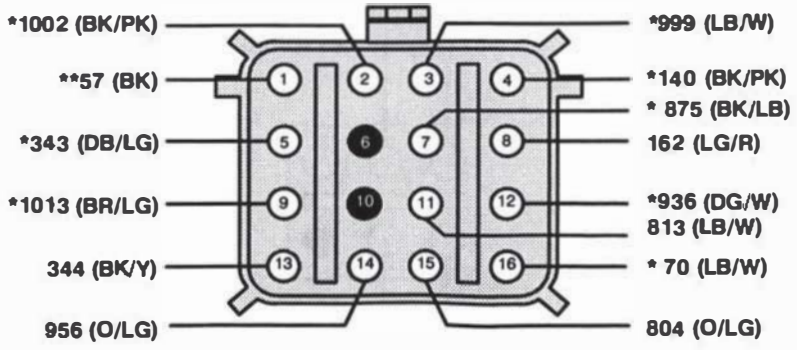
C232F



C232M

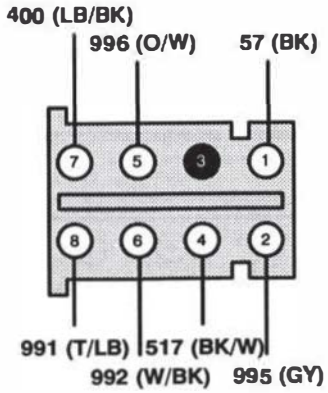


C247F

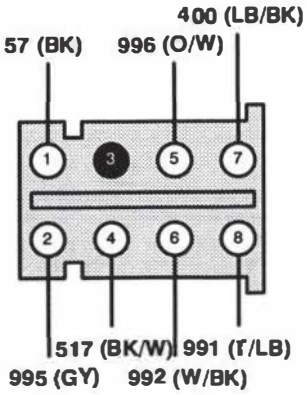


C247M

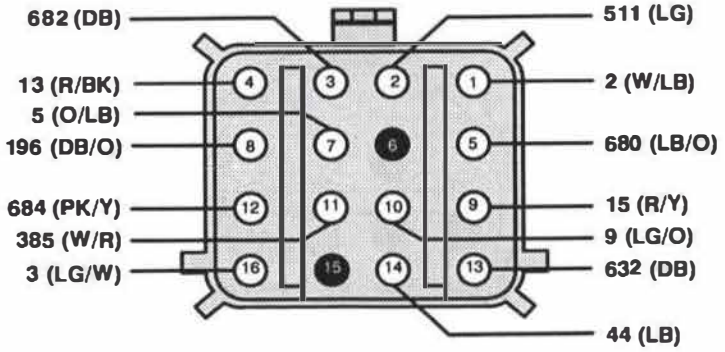
* W/RAP
** W/O RAP



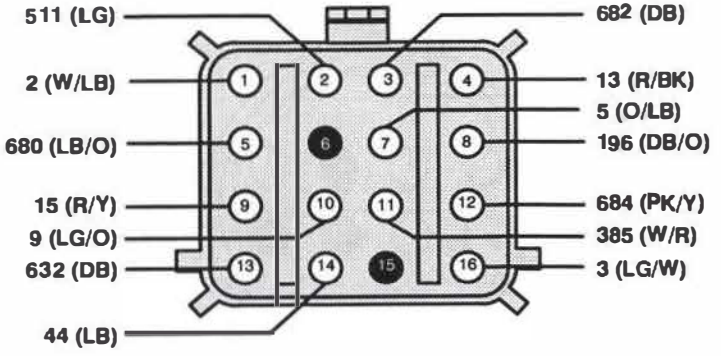
C248F



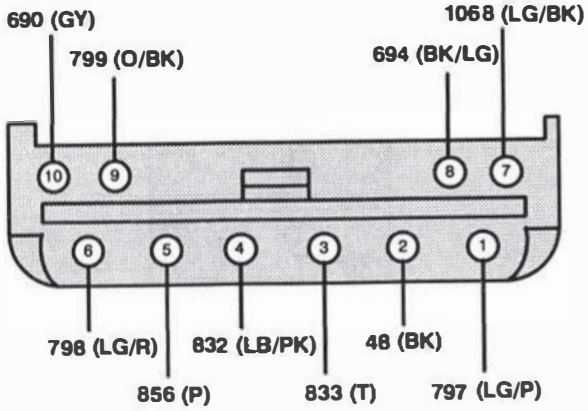
C248M



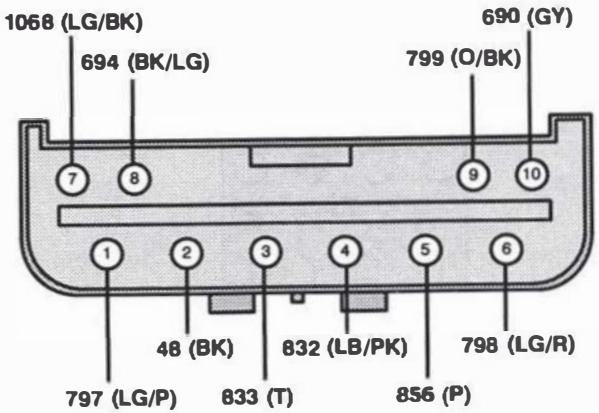
C253F



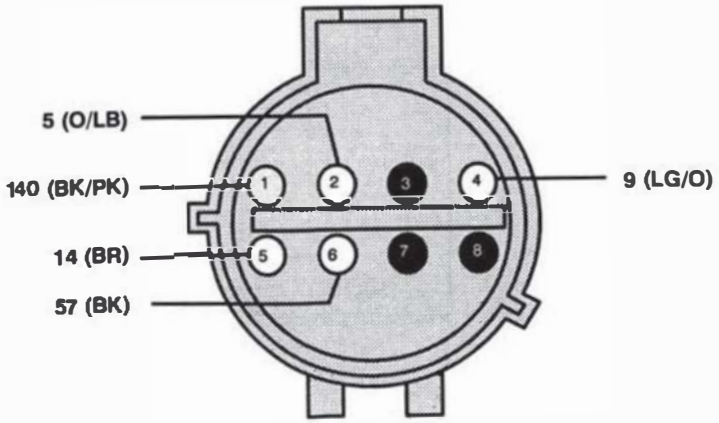
C253M



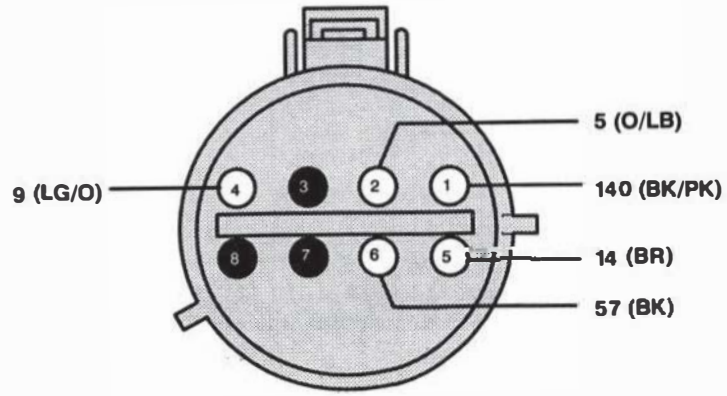
C265F



C265M



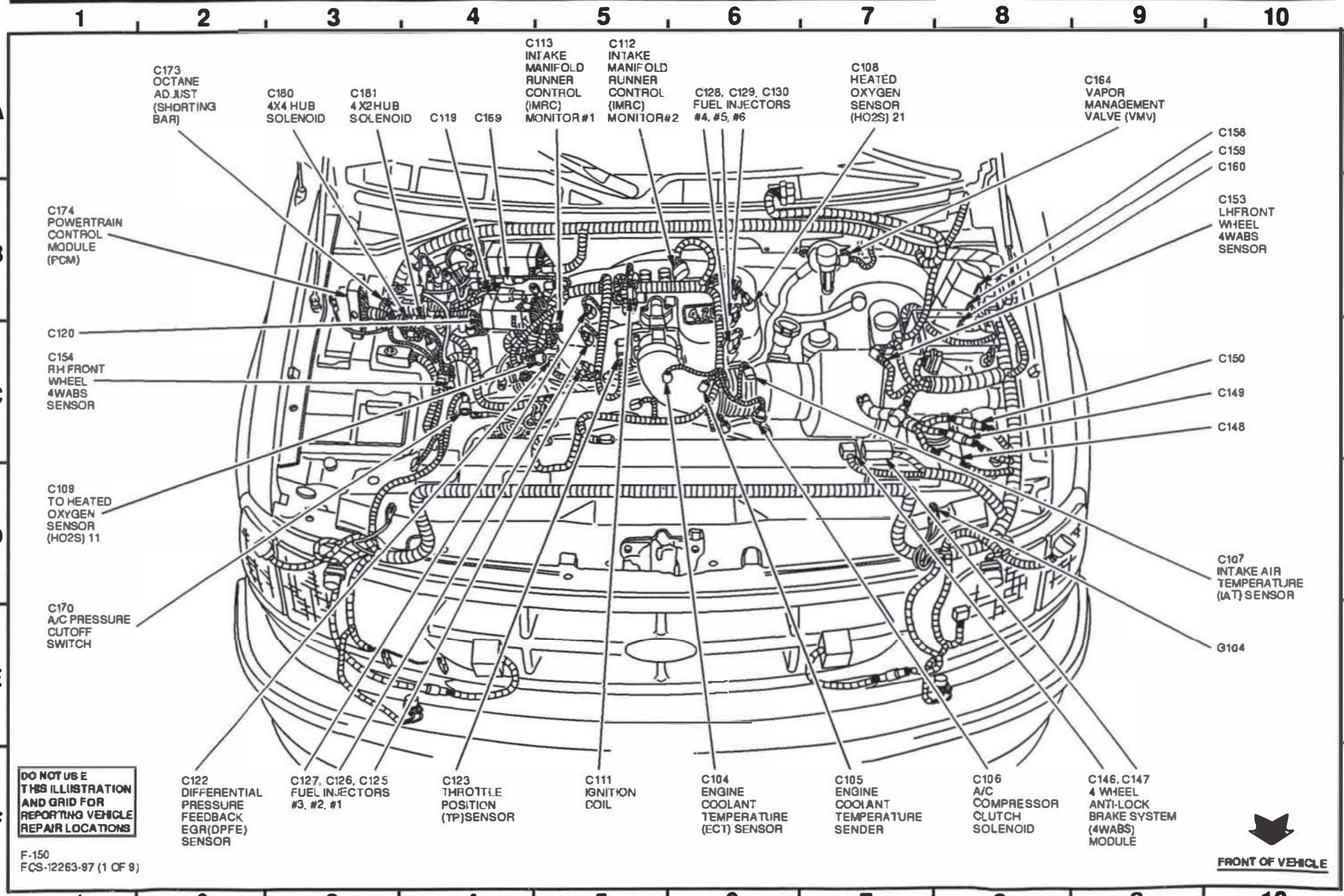
C403F



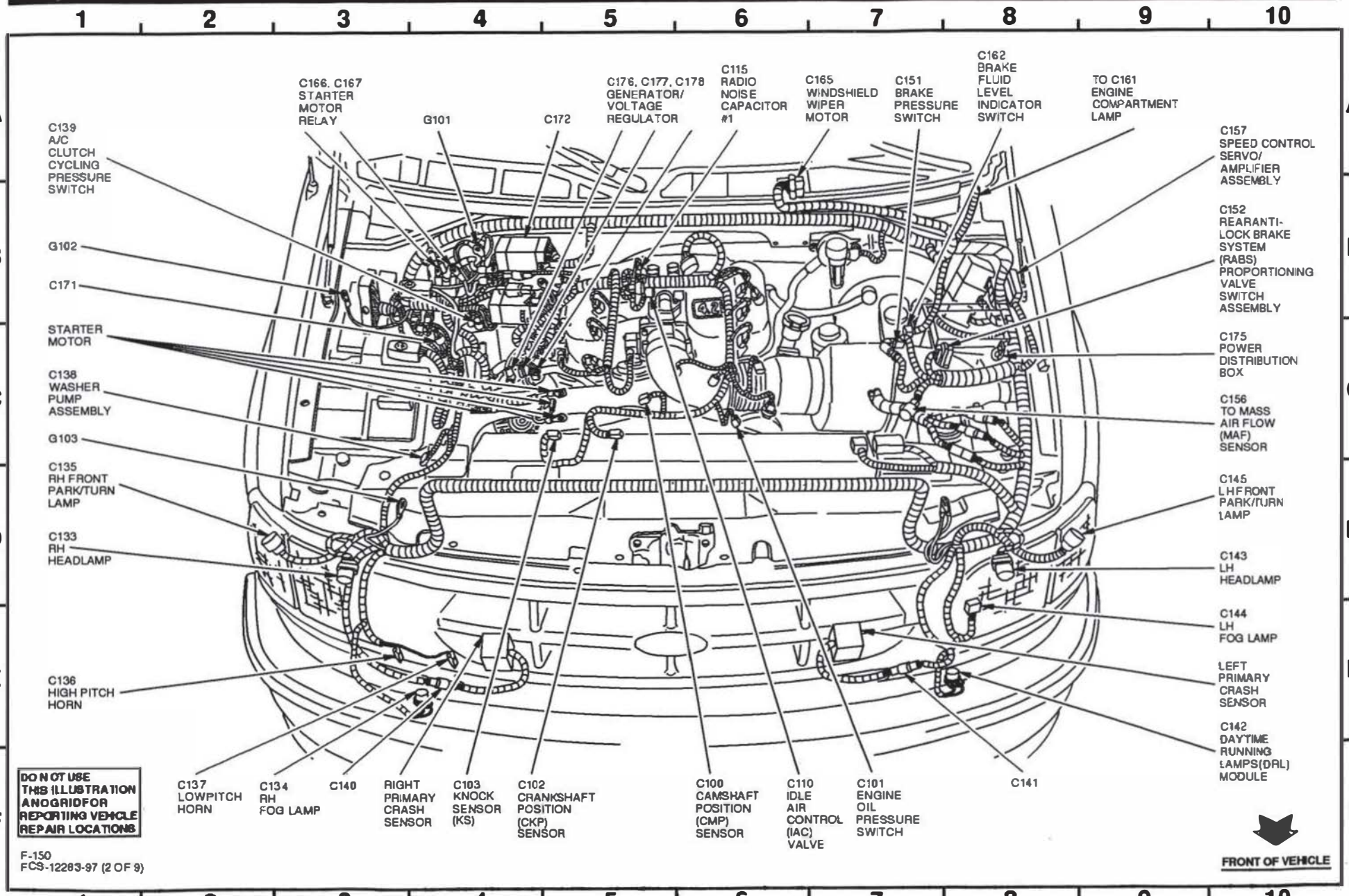
C403M

151-1 COMPONENT LOCATION VIEWS

1997 F-150

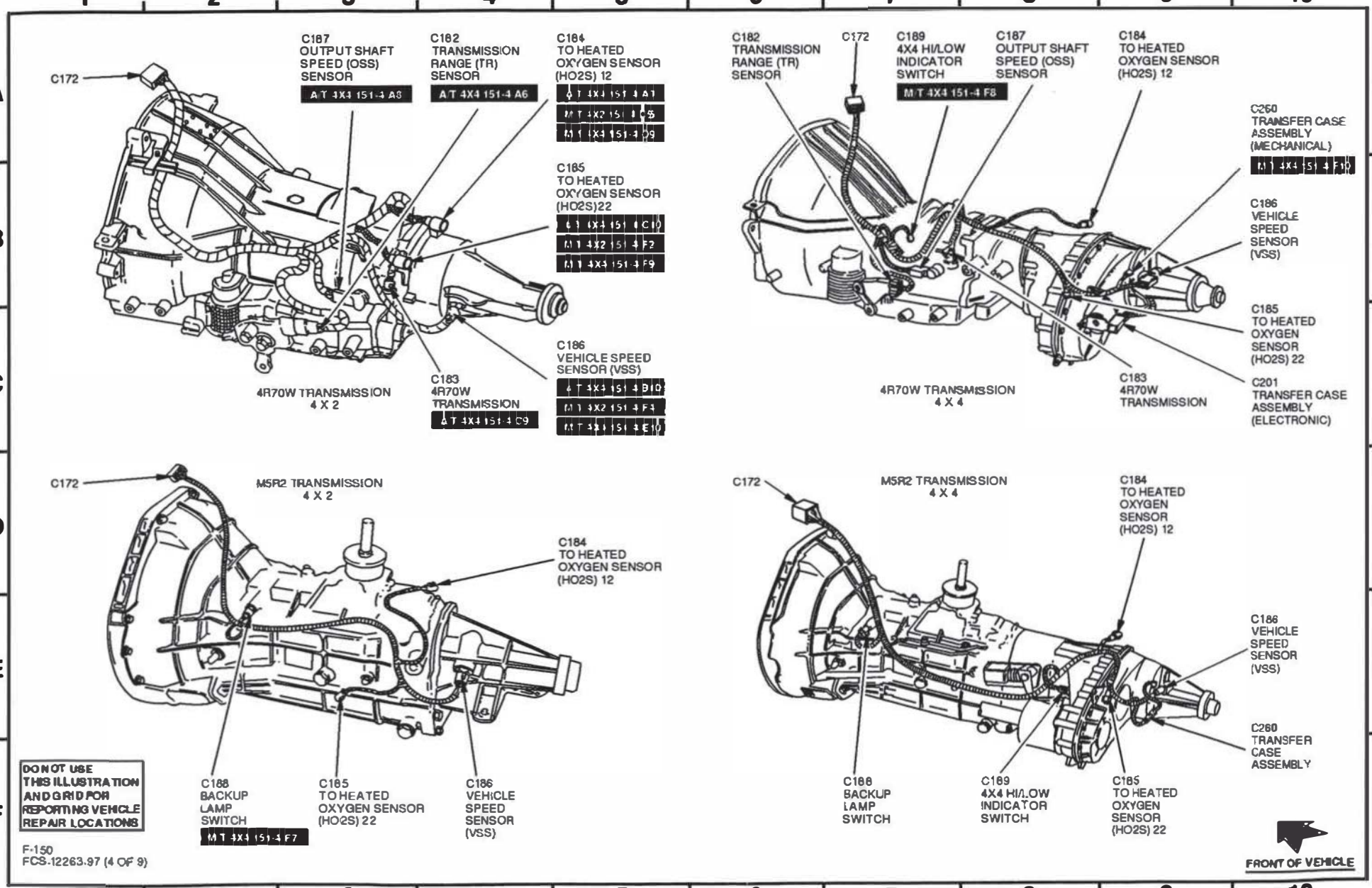


4.2L ENGINE (1 OF 2)
(4.6L ENGINE SIMILAR)



4.2L ENGINE (2 OF 2)
(4.6L ENGINE SIMILAR)

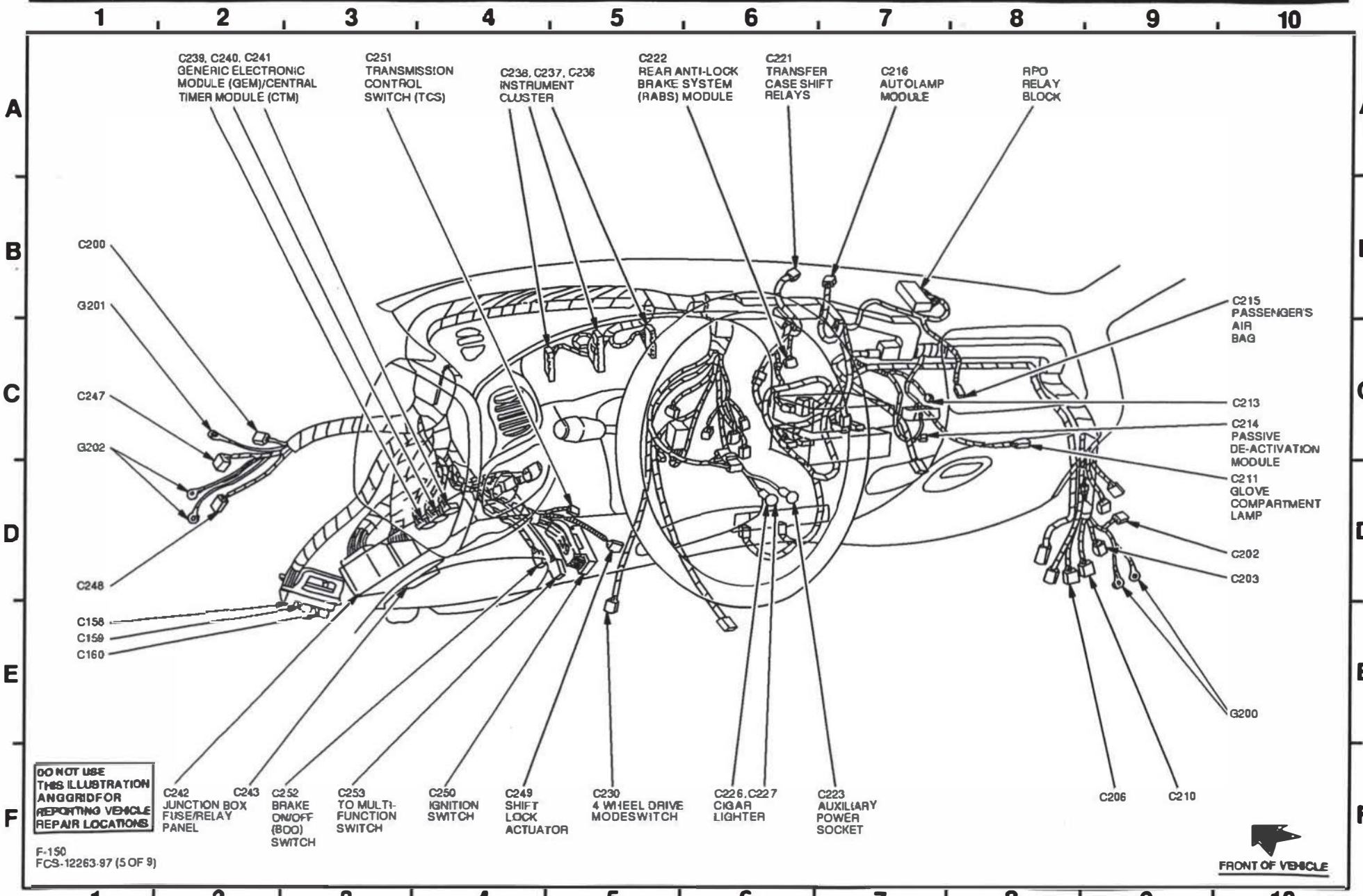
COMPONENT LOCATION VIEWS 151-4



TRANSMISSIONS

151-5 COMPONENT LOCATION VIEWS

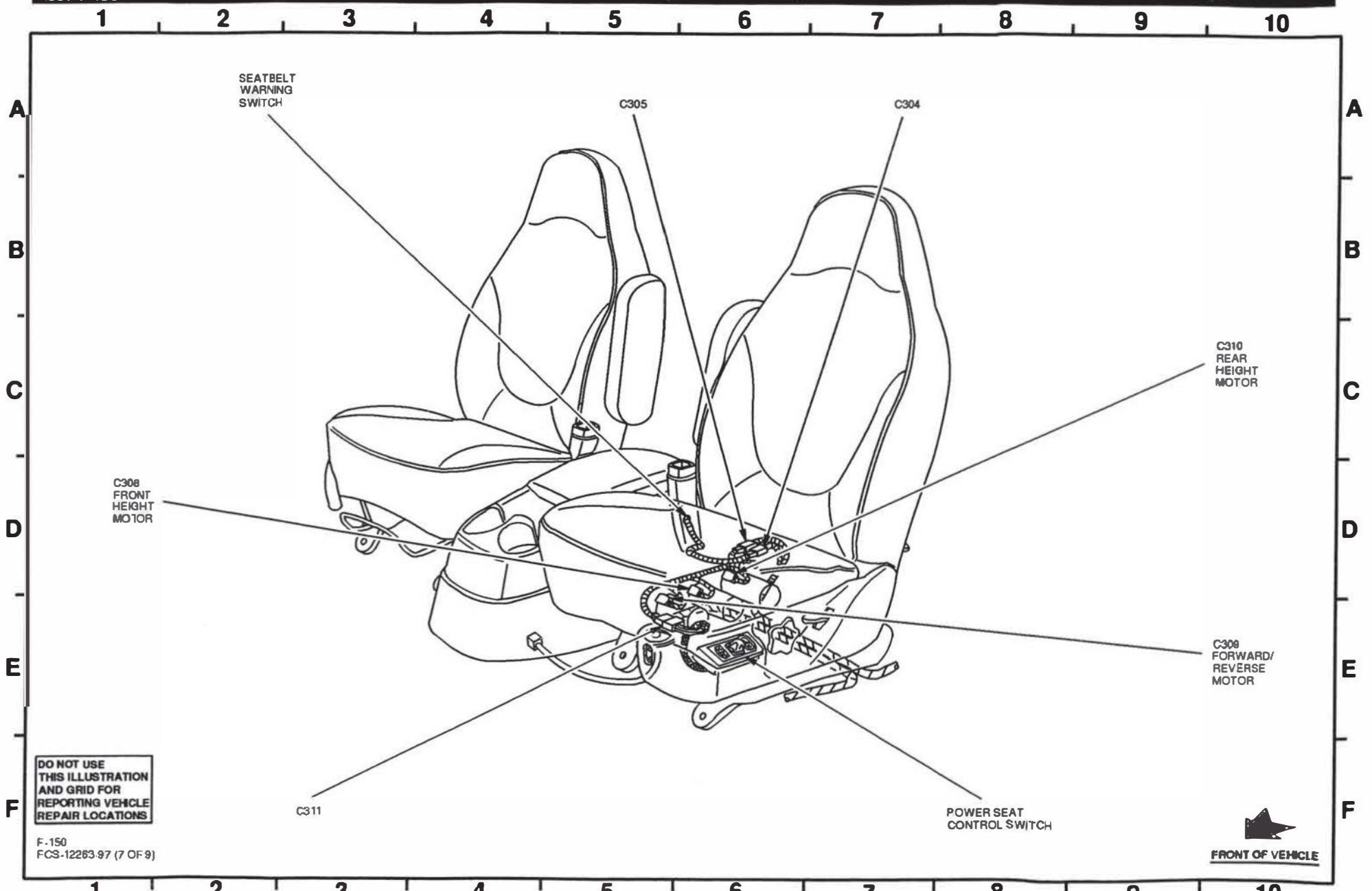
1997 F-150



INSTRUMENT PANEL (1 OF 2)

151-7 COMPONENT LOCATION VIEWS

1997 F-150

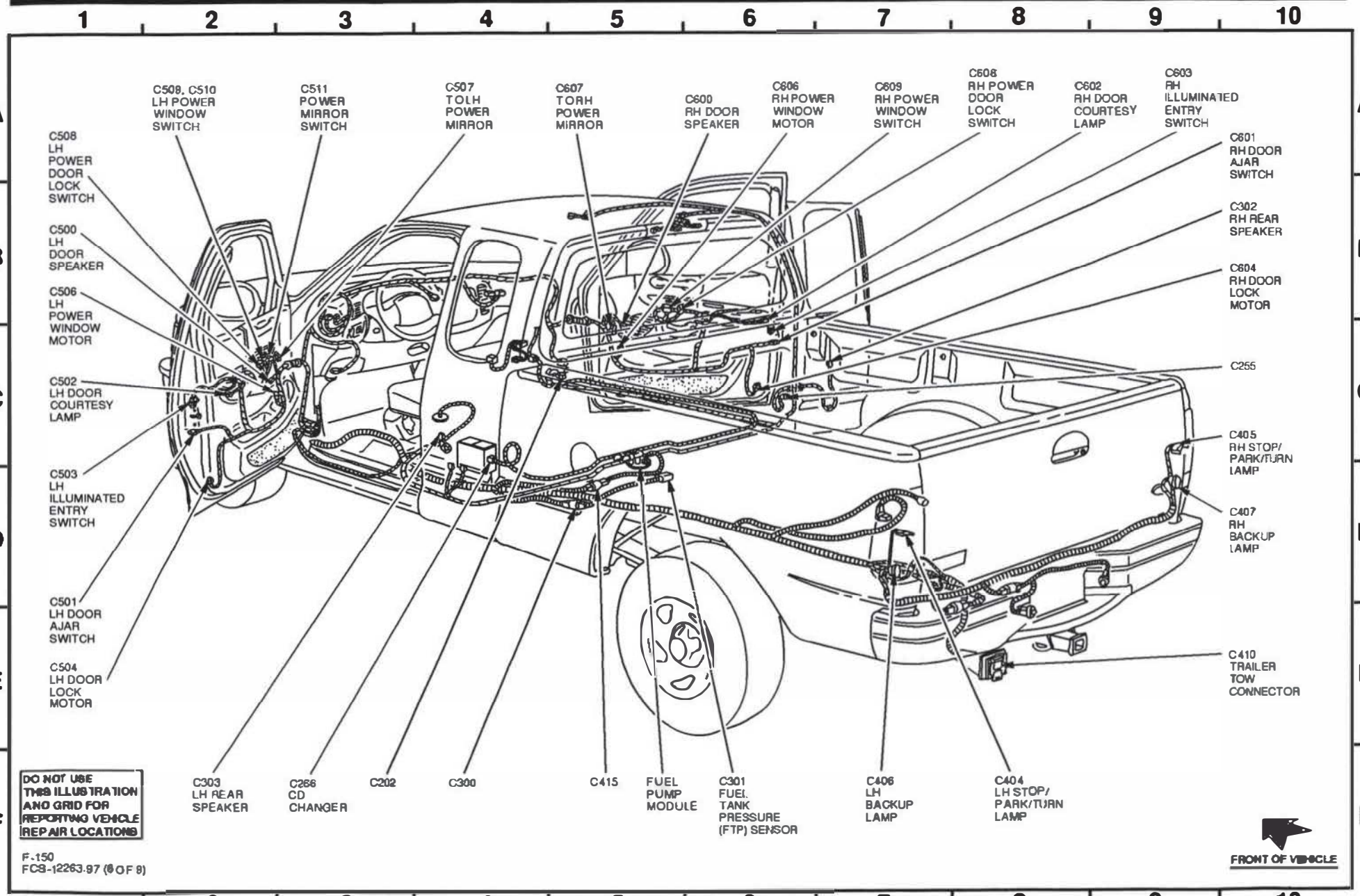


DO NOT USE THIS ILLUSTRATION AND GRID FOR REPORTING VEHICLE REPAIR LOCATIONS

F-150
FCS-12263-97 (7 OF 9)

POWER SEATS

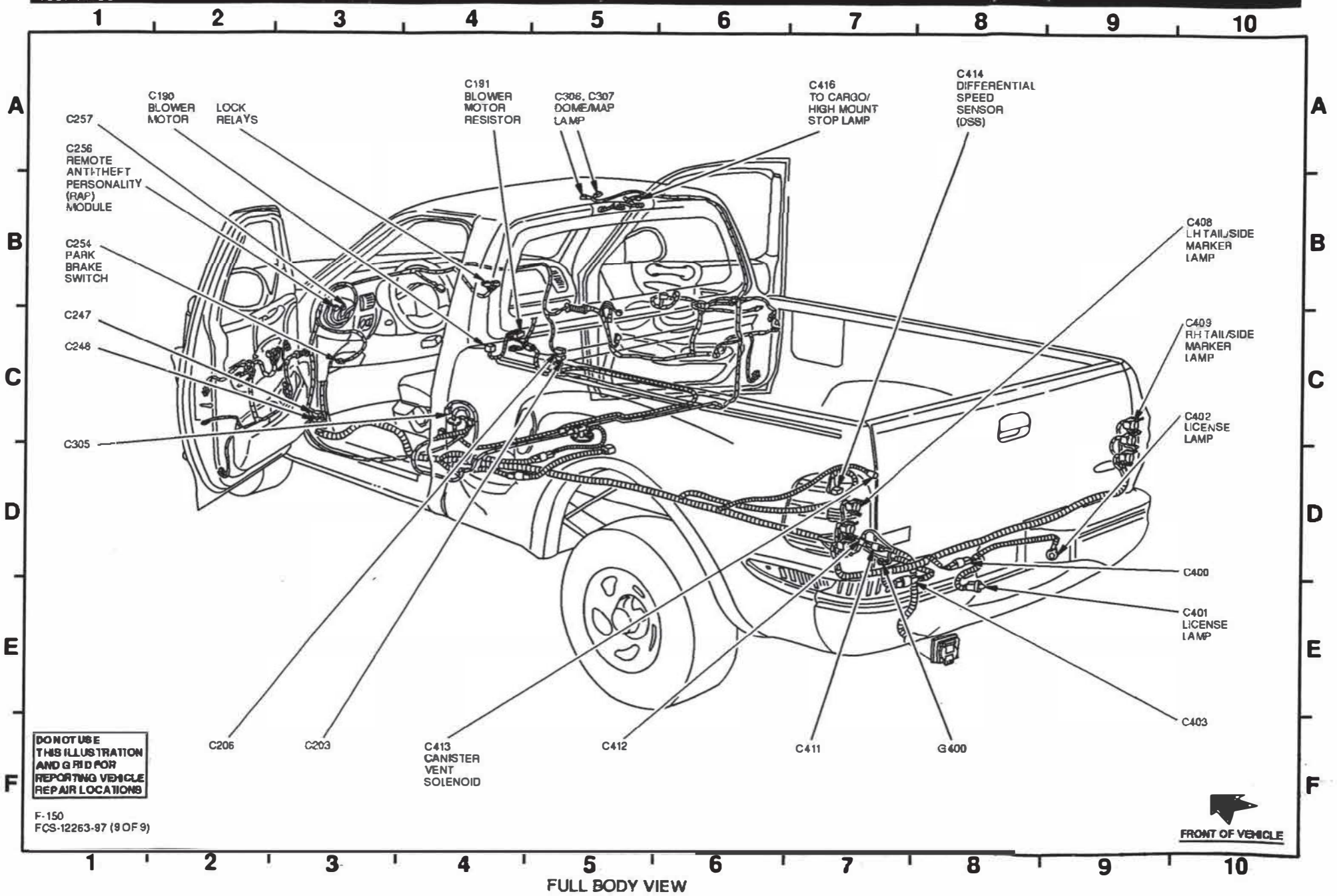
COMPONENT LOCATION VIEWS 151-8



FULL BODY VIEW

151-9 COMPONENT LOCATION VIEWS

1997 F-150



FULL BODY VIEW

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
4X2 Hub Solenoid	★	RH rear corner of engine compartment	C181	151–1 A3	
4X4 Hi/Low Indicator Switch	★	LH side of transmission	C189	151–4 A7	
4X4 Hub Solenoid	★	RH rear corner of engine compartment	C180	151–1 A3	
4R70W Transmission	7000	Mounted under center of vehicle	C183	151–4 C4	29–4
4WABS Relay	14N089	In power distribution box	★	★	13–18
4 Wheel Anti–Lock Brake System (4WABS) Module	2C018	LH side of engine compartment	C146, C147	151–1 F9	42–6
4 Wheel Drive Mode Switch	★	Center of I/P	C230	151–5 F5	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	RH rear corner of engine compartment	C139	151–2 A1	
A/C Compressor Clutch Solenoid (4.2L)	19E561	LH side of engine compartment	C106	151–1 F8	
A/C Compressor Clutch Solenoid (4.6L)	19E561	LH side of engine compartment	C106	151–3 F2	
A/C Pressure Cutoff Switch	19D594	RH side of engine compartment	C170	151–1 E1	
Airbag Diagnostic Monitor	043B13	Behind RH side of I/P	C208, C209	151–6 D10	46–3
All Lock Relay	★	In lock relays	★	★	13–18
All Un-lock Relay	★	In lock relays	★	★	13–18
Ashtray Illumination	15052	Top side of ashtray bracket	C212	151–6 D10	
Autolamp Module	14A597	Behind center of I/P	C216	151–5 A7	87–4
Auxiliary Power Socket	★	Behind center of I/P	C223	151–5 F7	
Backup Lamp Switch	15520	LH side of transmission	C188	151–4 F2	
Battery	★	RH 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	151–6 A4	
Blower/Flasher Relay Block	★	Behind center of I/P	★	151–6 B1	13–18
Blower Motor	14N089	RH side of engine compartment	C190	151–9 A1	
Blower Motor Resistor	19A706	Near blower motor	C191	151–9 A4	
Blower Relay	★	In blower/flasher relay	★	★	13–18
Brake Fluid Level Indicator Switch	2L140	Mounted on master cylinder	C162	151–2 A8	
Brake On/Off (BOO) Switch	13480	Behind LH side of I/P	C252	151–5 F3	
Brake Pressure Switch	★	LH rear corner of engine compartment	C151	151–2 A7	
Brake Warning Resistor/Diode Assembly	★	Near brake fluid level indicator switch	★	★	
Camshaft Position (CMP) Sensor (4.2L)	6B288	Front of engine	C100	151–2 F6	
Camshaft Position (CMP) Sensor (4.6L)	6B288	Front of engine	C100	151–3 F8	

★ Not Available

Component	Base Part No.	Location	Component Connector	Page Zone	Connector Page
Cannister Vent Solenoid	★	Rear of body, near fuel tank	C413	151–9 F4	
Cargo/High Mount Stop Lamp	13776	Rear top center of cab	C416	151–9 A7	
CD Changer	186830	LH rear of cab	C266	151–8 F3	130–8
Central Timer Module (CTM)					
Diagnostic Connector	★	Behind center of I/P	C205	★	
Cigar Lighter	15055	Behind center of I/P	C226, C227	151–5 F6	
Clockspring Assembly (Air Bag)	★	Base of steering column	C233	151–6 A6	
Clockspring Assembly (Speed Control)	★	Base of steering column	C234	151–6 A2	31–3
Clutch Pedal Position (CPP) Switch	11A152	On clutch pedal arm	C231	151–6 F3	20–4
Clutch Pedal Position (CPP) Switch Jumper	14B155	Behind LH side of I/P	C231	151–6 F3	20–4
Crankshaft Position (CKP) Sensor (4.2L)	9A825	Lower front of engine	C102	151–2 F5	
Crankshaft Position (CKP) Sensor (4.6L)	9A825	Lower front of engine	C102	151–3 F3	
Cylinder Head Temperature (CHT) Sensor	★	Top front of engine	C179	151–3 F7	
Data Link Connector (DLC)	★	Behind center of I/P	C228	151–6 F5	14–2
Daytime Running Lamps (DRL) Module	15A272	LH front of engine compartment	C142	151–2 E10	97–3
Daytime Running Lamps (DRL) Module Jumper	14A464	LH front of engine compartment	C142	★	
Differential Pressure Feedback EGR (DPFE) Sensor (4.2L)	★	RH side of engine	C122	151–1 F2	
Differential Pressure Feedback EGR (DPFE) Sensor (4.6L)	★	RH side of engine	C122	151–3 A6	
Differential Speed Sensor (DSS)	6C315	On rear axle	C414	151–9 A8	
Differential Speed Sensor (DSS) Data Link Connector (DLC)	14A624	LH rear of engine compartment	C163	★	
Dome Lamp	13776	Center of cab, in roof panel	C306, C307	★	
Dome/Map Lamp	13776	Center of cab, in roof panel	C306, C307	151–9 A5	
Driver's Unlock Relay	★	In lock relays	★		
EGR Vacuum Regulator (EVR) Solenoid	9F483	LH side of engine	C121		
Engine Compartment Lamp	15702	Attached to underside of hood	C161		
Engine Coolant Temperature Sender (4.2L)	10884	LH front corner of engine	C105		

★ Not Available