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ELECTRICAL AND VACUUM TROUBLESHOOTING MANUAL



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**1994 Bronco/F-Series Electrical & Vacuum Trouble-
Shooting Manual (EVTM)
EAN: 978-1-60371-452-5
ISBN: 1-60371-452-9**

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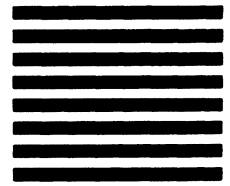
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FORD CUSTOMER SERVICE DIVISION

Quality is Job 1

Ford Customer Service Division has developed a new EVTm format for the 1994 BRONCO/F—SERIES. Our goal is to provide accurate and timely electrical and vacuum service information.

1994 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).
- "**HARNES 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
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- Powertrain Control/Emissions Diagnosis 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

1994 BRONCO/F-SERIES

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. These 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 10 or more terminals are accompanied by a pinout chart that lists the function of all circuitry associated with that component.

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

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

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

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

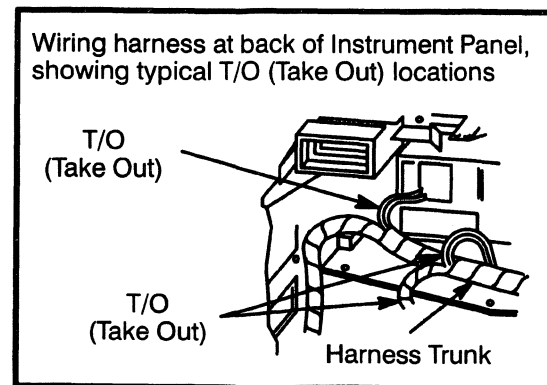
"COMPONENT LOCATION VIEWS" (Cell 151) contains full-view illustrations which show the location of all components and connectors in the vehicle.

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

HELPFUL REMINDERS

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

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



HELPFUL REMINDERS (CONTINUED)

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 park 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.*
- *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.

2-3 HOW TO USE THIS MANUAL

1994 BRONCO/F-SERIES

HOW TO FIND ELECTRICAL CONCERNS

Step 5. Make the repair.

- Repair or replace the inoperative component.

Step 6. Verify the repair.

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

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

TROUBLESHOOTING TOOLS

JUMPER WIRE

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

WARNING

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

VOLTMETER

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

OHMMETER

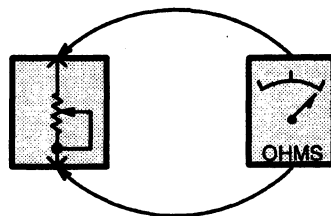


Figure 1—Resistance Check

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

TEST LAMP

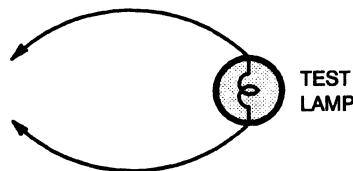


Figure 2—Test Lamp

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

Uses: Voltage Check, Short Check.

SELF-POWERED TEST LAMP

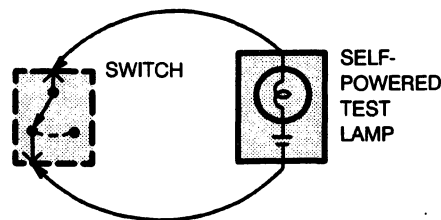


Figure 3—Continuity Check

The Self-Powered Test Lamp is a bulb, battery and set of test leads wired in series (Figure 3). When connected to two points of a continuous circuit, the bulb glows.

Uses: Continuity Check, Ground Check.

CAUTION

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

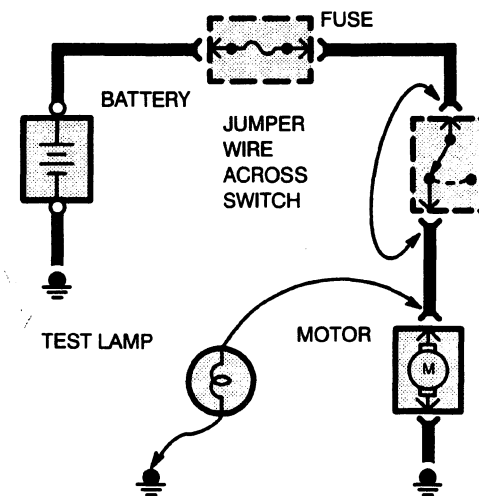


Figure 4—Switch-Circuit Check and Voltage Check

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

HOW TO FIND ELECTRICAL CONCERNS (CONTINUED)

CONTINUITY CHECK (Locating open circuits)

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

VOLTAGE CHECK

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

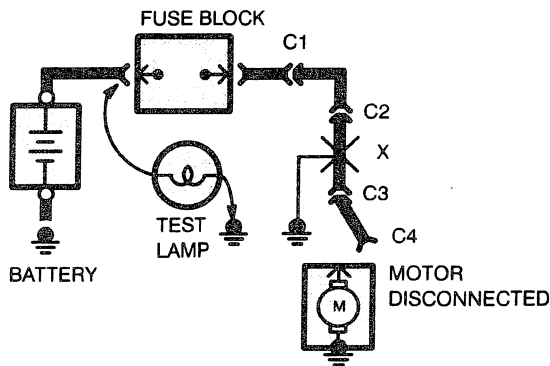


Figure 5—Short Check

A fuse that repeatedly blows is usually caused by a short to ground. It's important to be able to locate such a short quickly (Figure 5).

1. Turn off everything powered through the fuse.
2. Disconnect other loads powered through the fuse:

- Motors: disconnect motor connector (Connector C4 in Figure 5).
 - Lights: remove bulbs.
3. Turn Ignition Switch to RUN (if necessary) to power fuse.
 4. Connect one Test Lamp lead to hot end of blown fuse. Connect other lead to ground. Bulb should glow, showing power to fuse. *(This step is just a check to be sure you have power to the circuit.)*
 5. Disconnect the test lamp lead that is connected to ground, and reconnect it to the load side of the fuse at the connector of the disconnected component. (In Figure 5, connect the test lamp lead to connector C4.)
 - If the Test Lamp is off, the short is in the disconnected component.
 - If the Test Lamp goes on, the short is in the wiring. You must find the short by disconnecting the circuit connectors, one at a time, until the Test Lamp goes out. For example, in Figure 5 with a ground at X, the bulb goes out when C1 or C2 is disconnected, but not after disconnecting C3. This means the short is between C2 and C3.

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

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

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

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

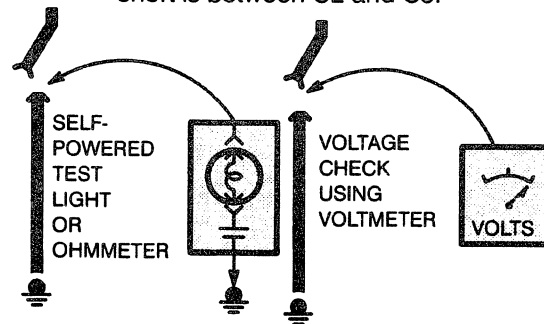


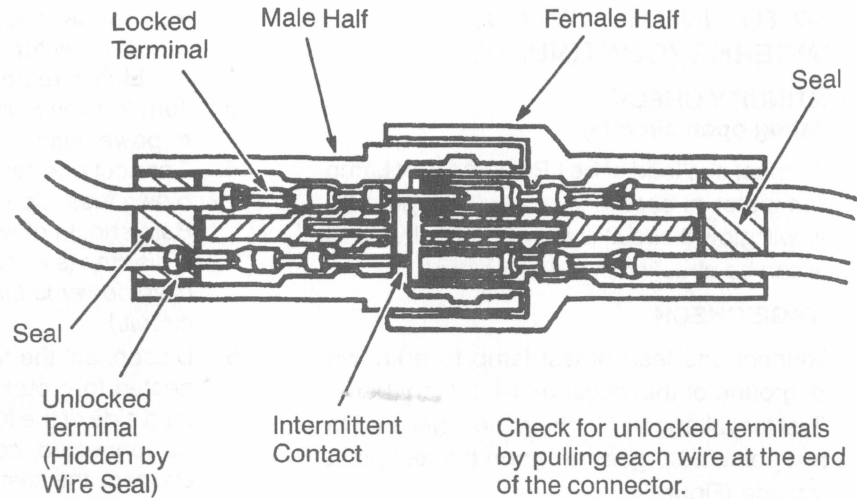
Figure 6—Ground Check

2-5 HOW TO USE THIS MANUAL

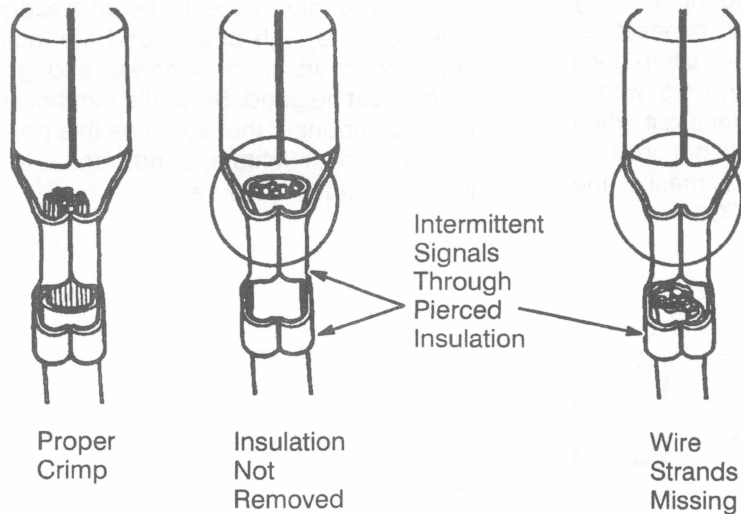
1994 BRONCO/F-SERIES

TROUBLESHOOTING WIRING HARNESS AND CONNECTOR HIDDEN CONCERNS

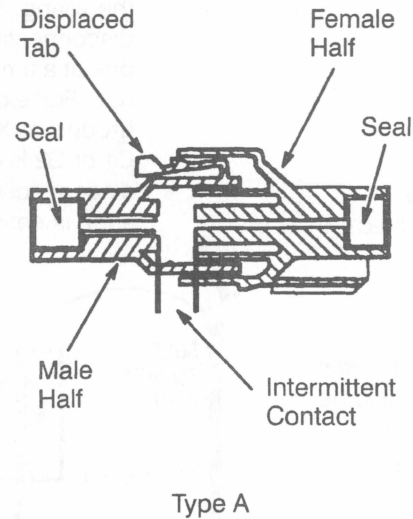
The following illustrations are known examples of wiring harness, splices and connectors that will create intermittent electrical concerns. The concerns are hidden and can only be discovered by a physical evaluation as shown in each illustration.



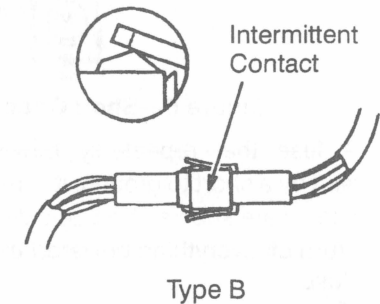
TERMINAL NOT PROPERLY SEATED



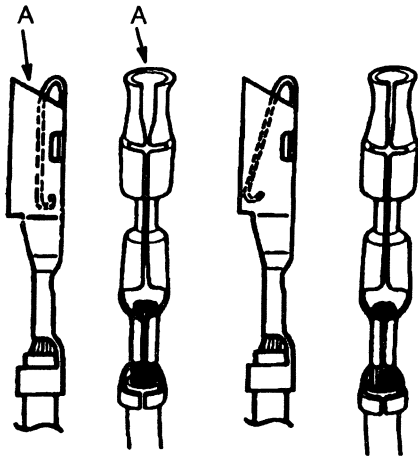
DEFECTIVE INSULATION STRIPPING



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



PARTIALLY MATED CONNECTORS

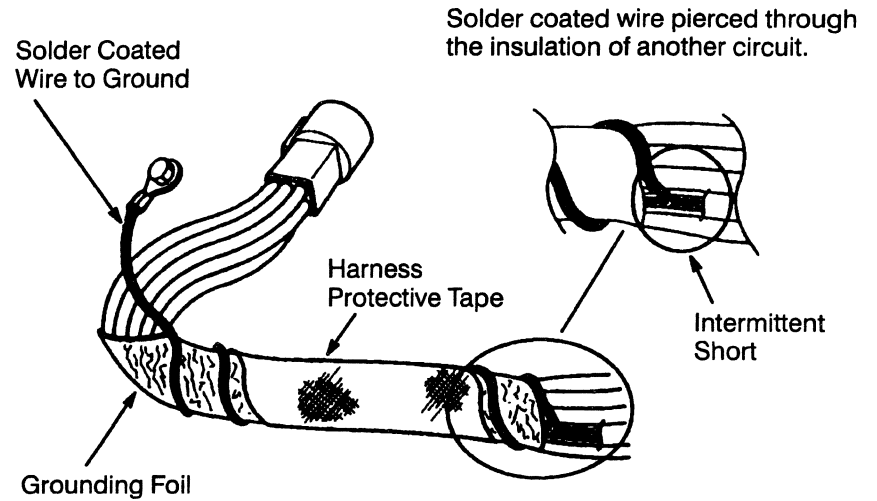


Enlarged

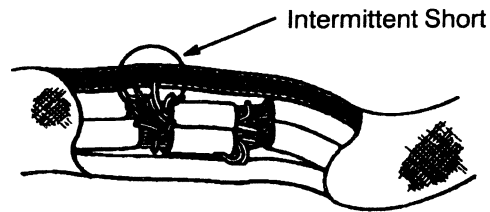
Normal

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.

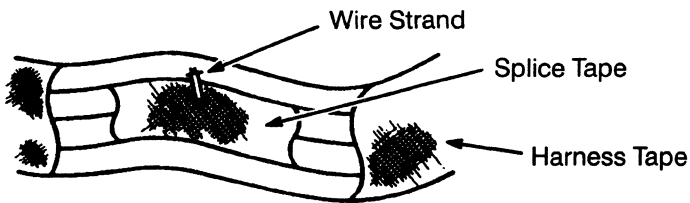
DEFORMED (ENLARGED) FEMALE TERMINALS



ELECTRICAL SHORT INSIDE THE HARNESS



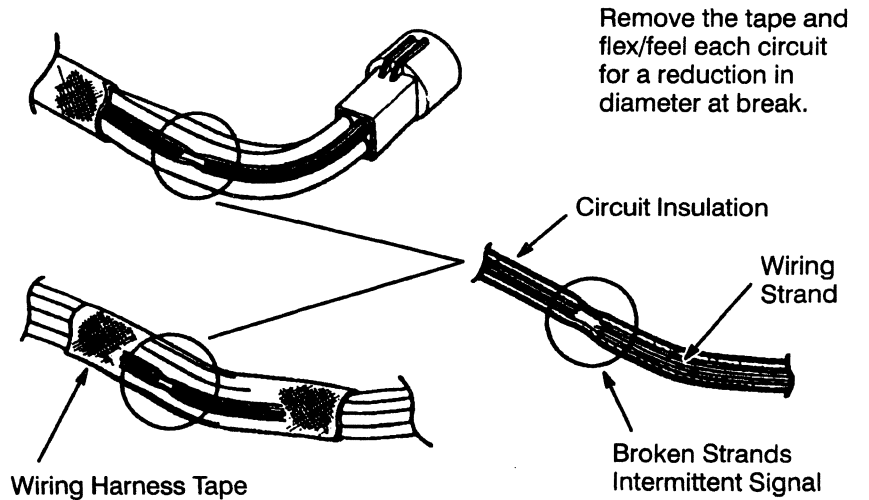
Splice Tape Removed



Splice Covered

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

ELECTRICAL SHORT WITHIN THE HARNESS



BROKEN WIRE STRANDS IN HARNESS

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

2-7 HOW TO USE THIS MANUAL

1994 BRONCO/F-SERIES

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.

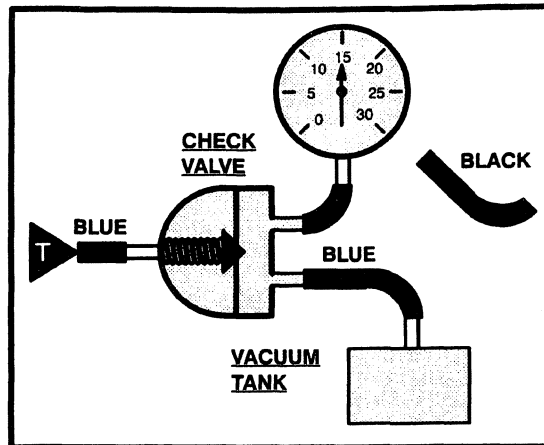


Figure 1 - System Supply Test

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:

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

Component Test

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

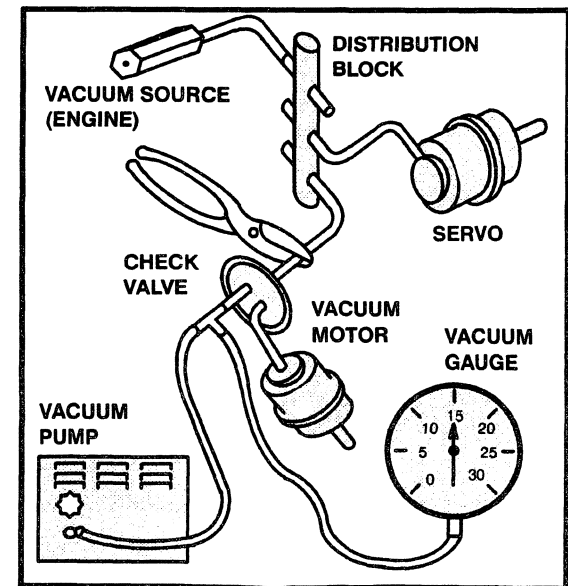
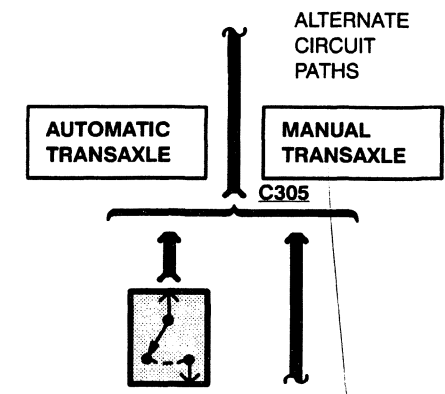
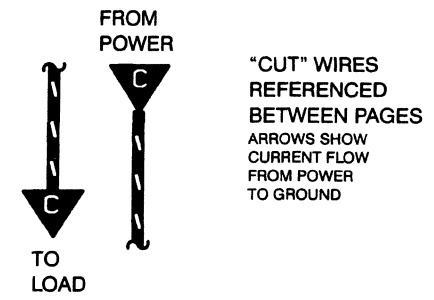
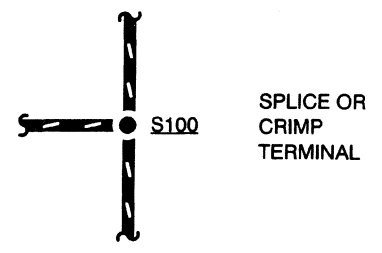
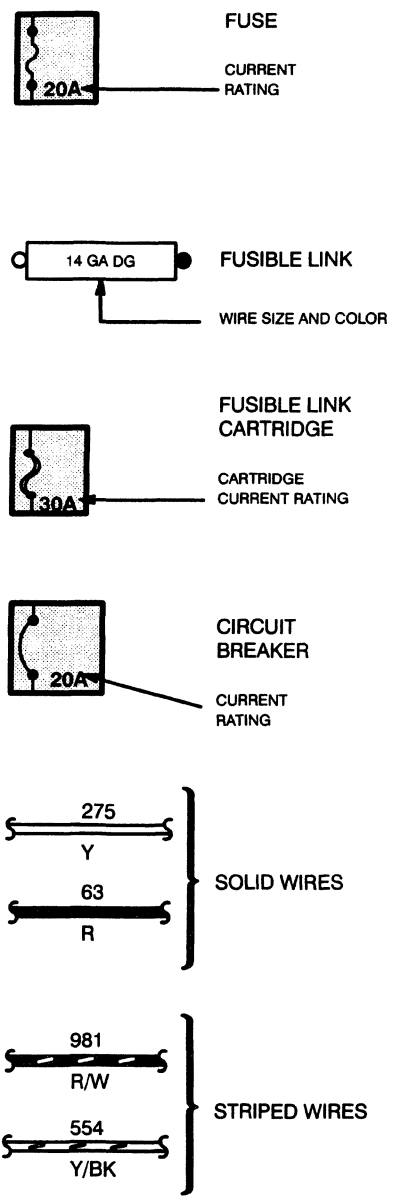
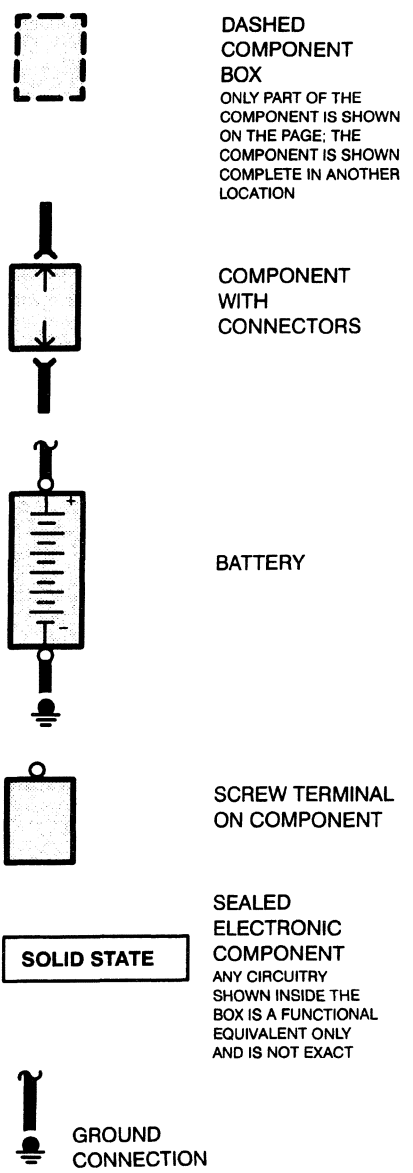


Figure 2 - Testing For Leaks In Typical Vacuum System

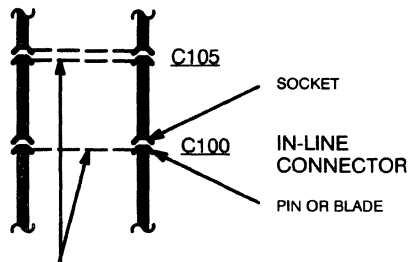
ELECTRICAL SYMBOLS



2-9 HOW TO USE THIS MANUAL

1994 BRONCO/F-SERIES

ELECTRICAL SYMBOLS

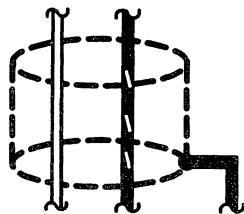


SINGLE OR DOUBLE DASHED LINE INDICATES THAT WIRE ON LEFT ALSO PASSES THROUGH THE SAME CONNECTOR

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



MOTOR



HEATING ELEMENT



THERMISTOR



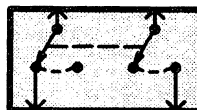
RHEOSTAT OR POTENTIOMETER



SOLENOID



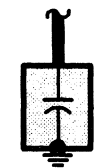
SWITCH



GANGED SWITCHES CONTACTS MOVE AT THE SAME TIME



DIODES CURRENT FLOWS IN DIRECTION OF ARROW ONLY



CAPACITOR



TRANSISTOR



GAUGE



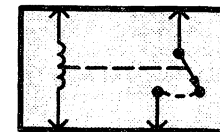
LIGHT EMITTING DIODE (LED)



LIGHT BULB

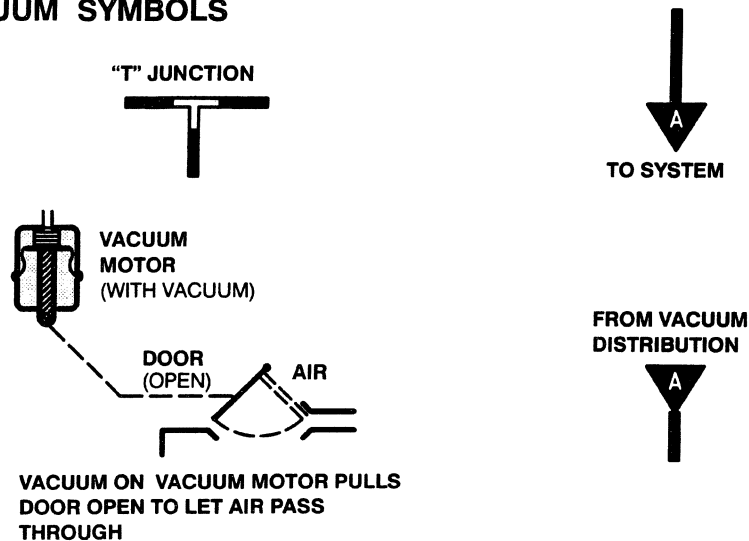


DUAL FILAMENT LIGHT BULB

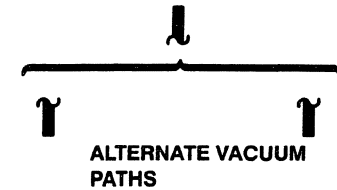


RELAY CONTACTS CHANGE POSITION WITH CURRENT THROUGH COIL

VACUUM SYMBOLS



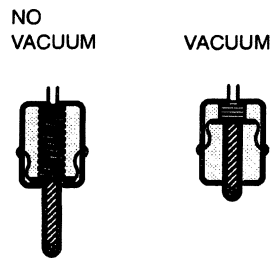
"CUT" HOSES REFERENCED BETWEEN PAGES
ARROW SHOWS FROM MANIFOLD FITTING TO COMPONENT



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

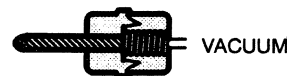
VACUUM MOTOR OPERATION

SINGLE DIAPHRAGM MOTOR



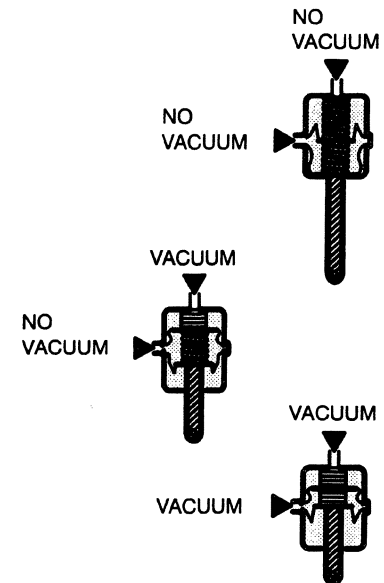
Vacuum motors operate like electrical solenoids, mechanically pushing or pulling a shaft between two fixed positions. When no vacuum is applied, the shaft is pushed all the way out by a spring.

SERVO MOTOR



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



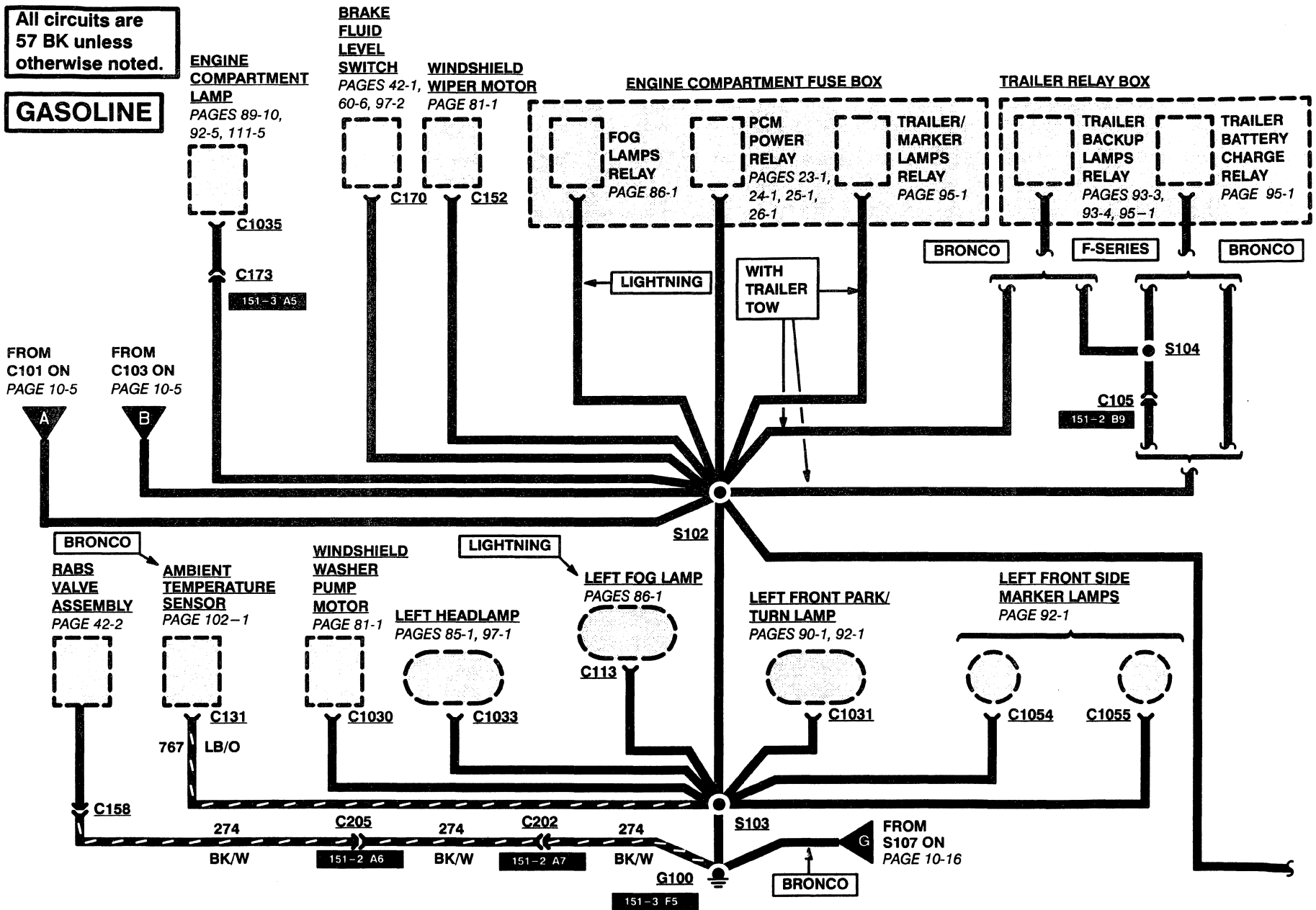
A double diaphragm motor has three positions (it is actually two motors in one housing). When the top port gets vacuum, the shaft pulls halfway in. When both ports get vacuum, the shaft pulls all the way in.

10-1 GROUNDS

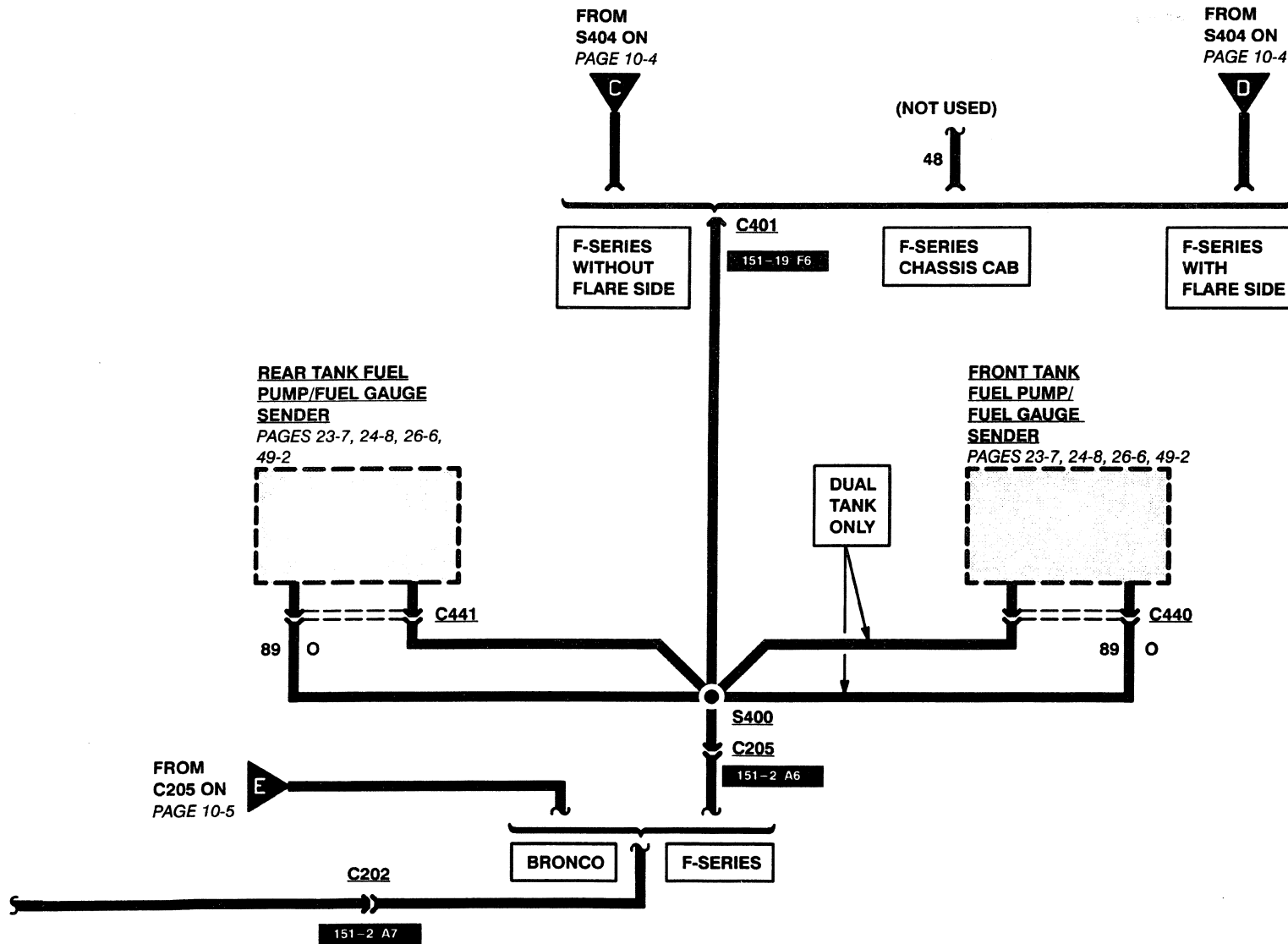
1994 BRONCO/F-SERIES

All circuits are
57 BK unless
otherwise noted.

GASOLINE



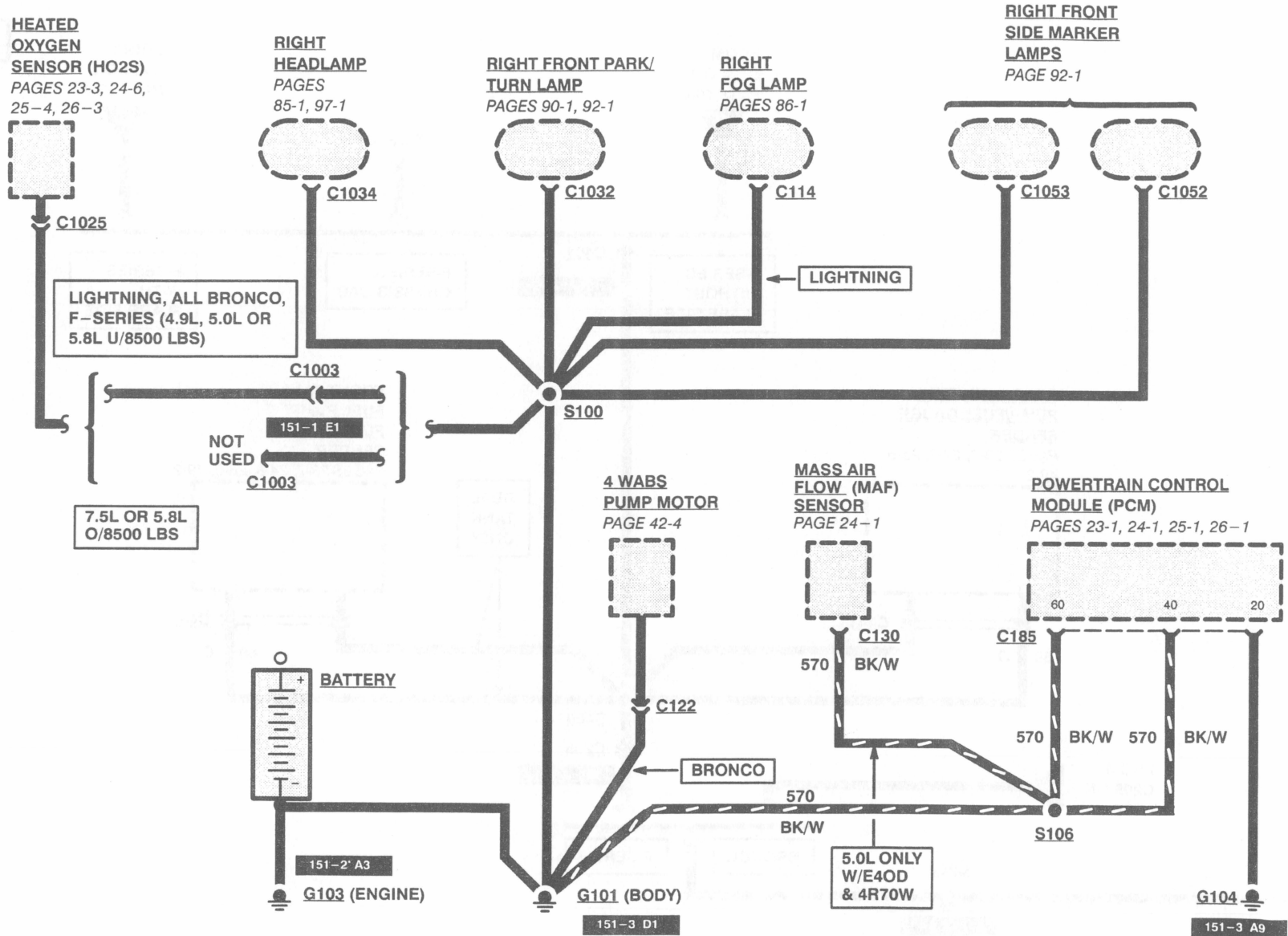
GASOLINE



10-3 GROUNDS

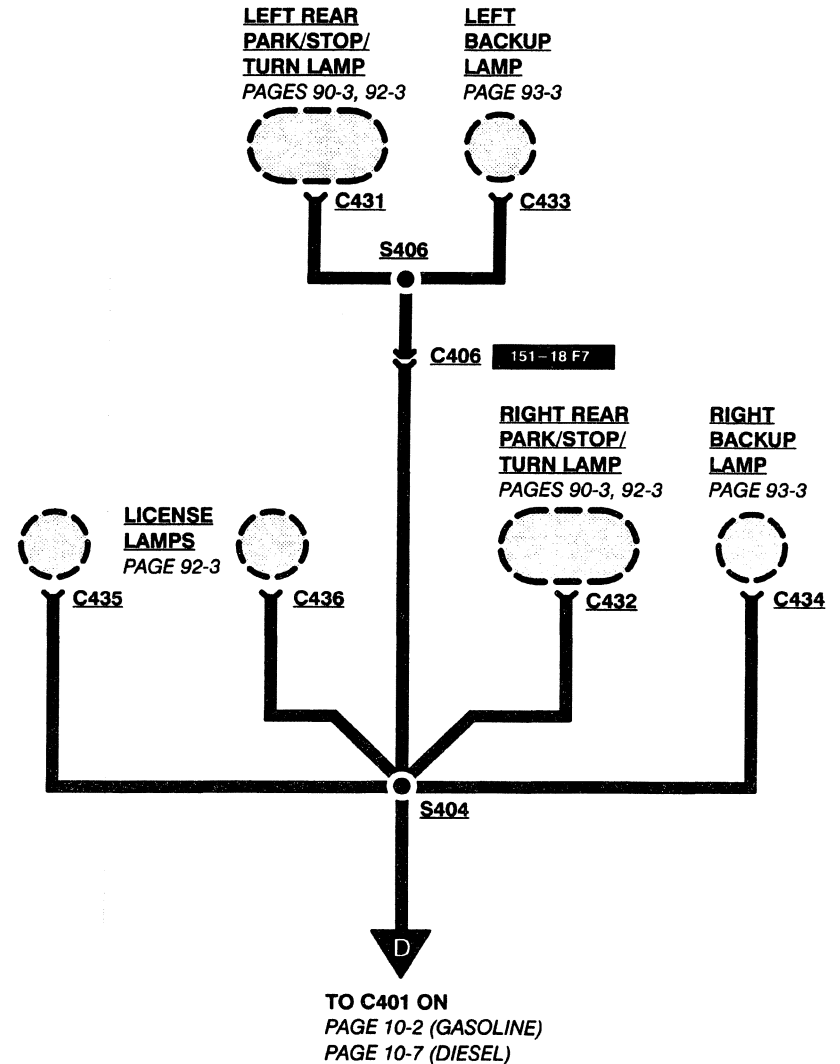
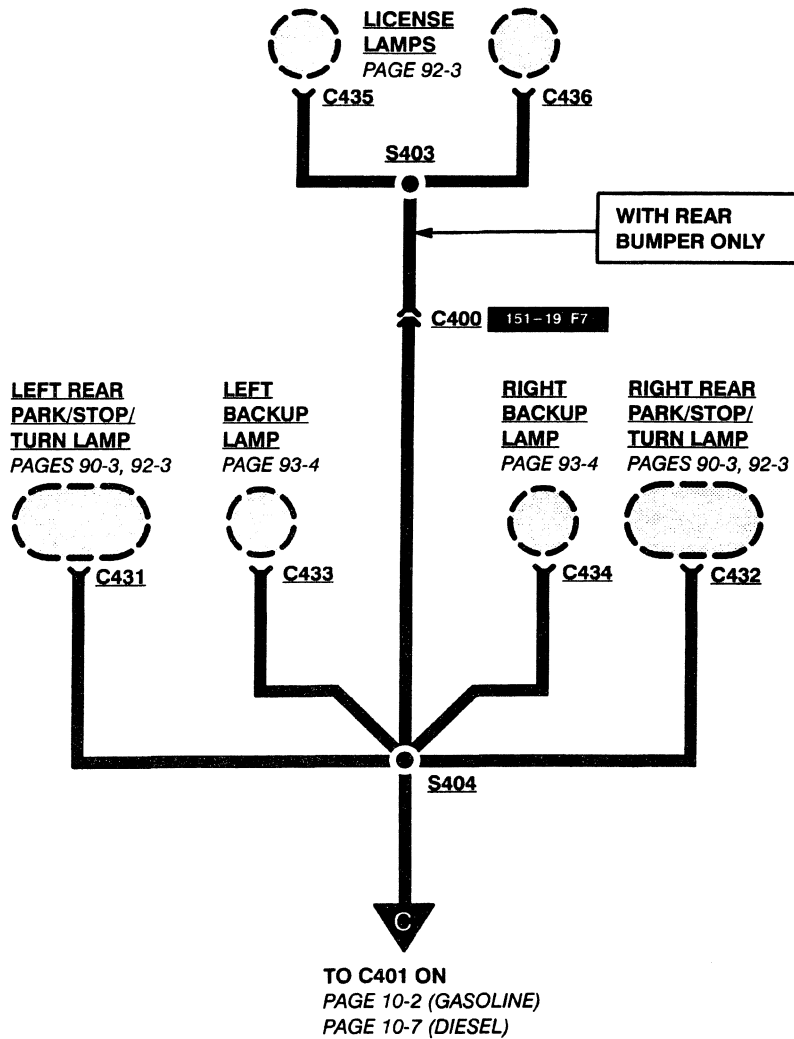
1994 BRONCO/F-SERIES

GASOLINE



ALL
F-SERIES
WITHOUT
FLARE SIDE

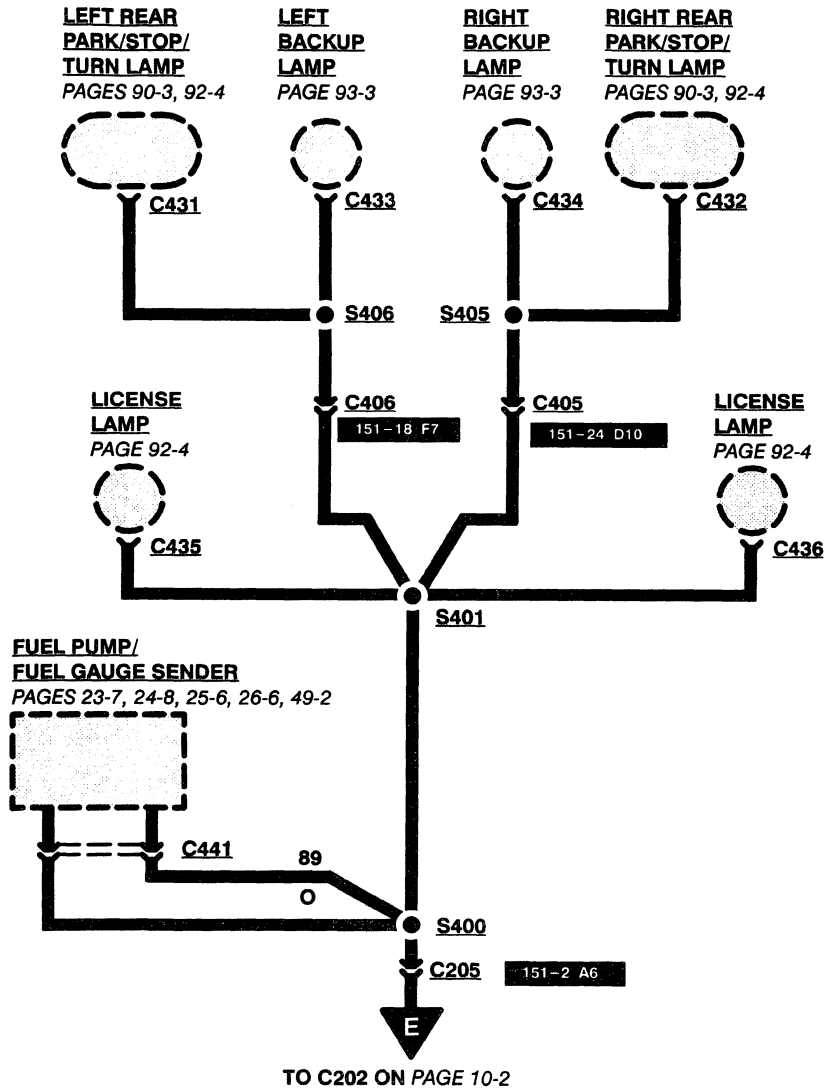
F-SERIES
WITH FLARE
SIDE



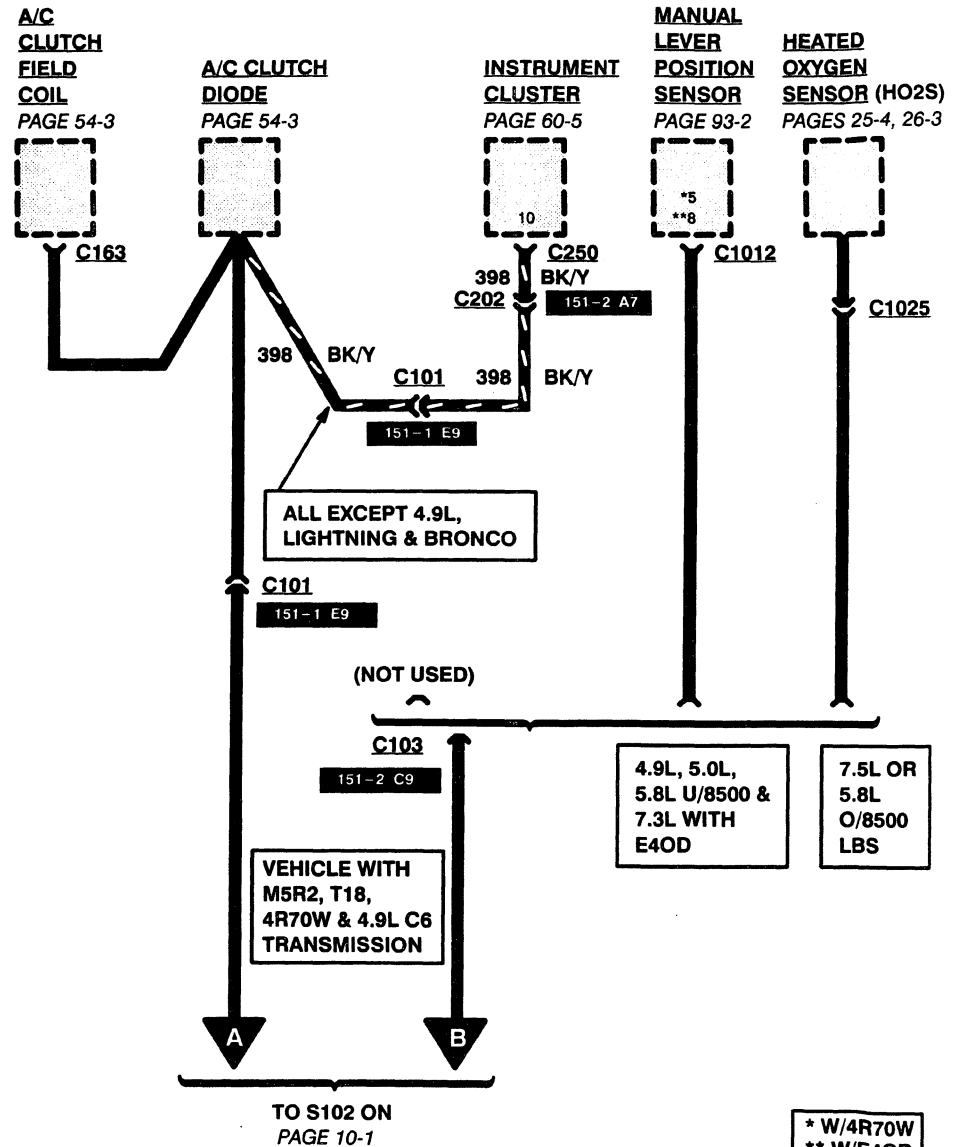
10-5 GROUNDS

1994 BRONCO/F-SERIES

BRONCO

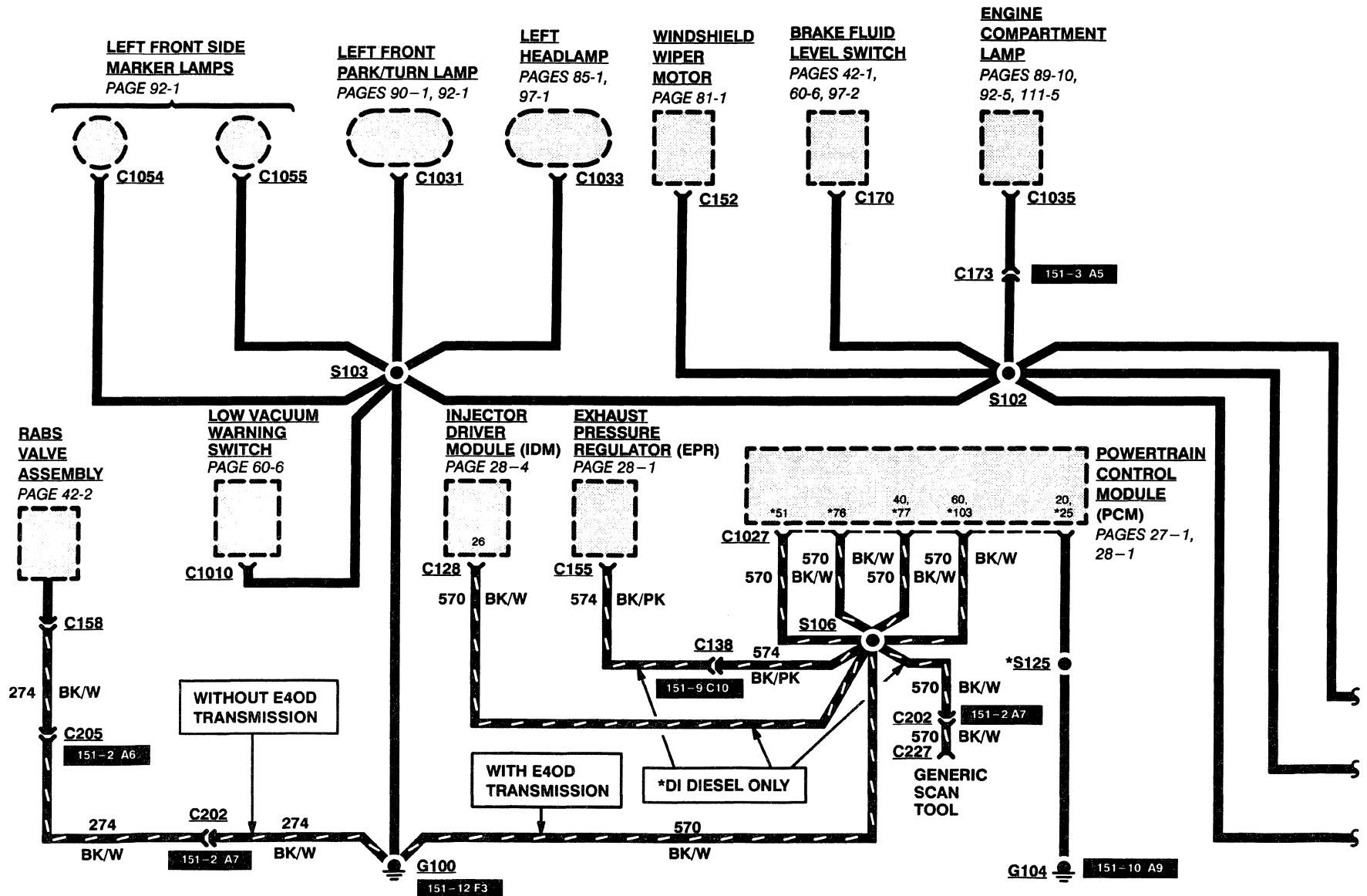


GASOLINE ALL



* W/4R70W
** W/E4OD

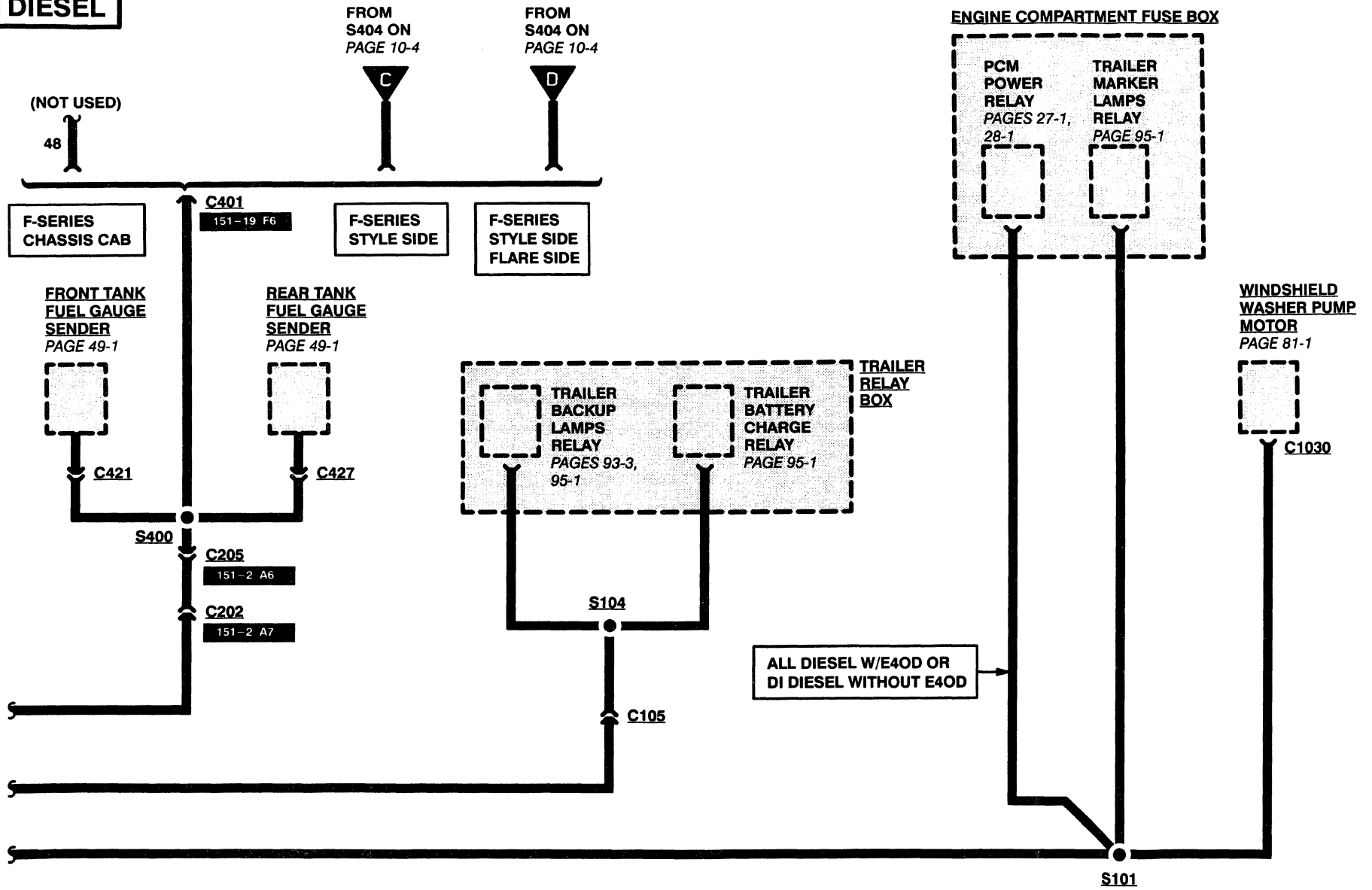
DIESEL



10-7 GROUNDING

1994 BRONCO/F-SERIES

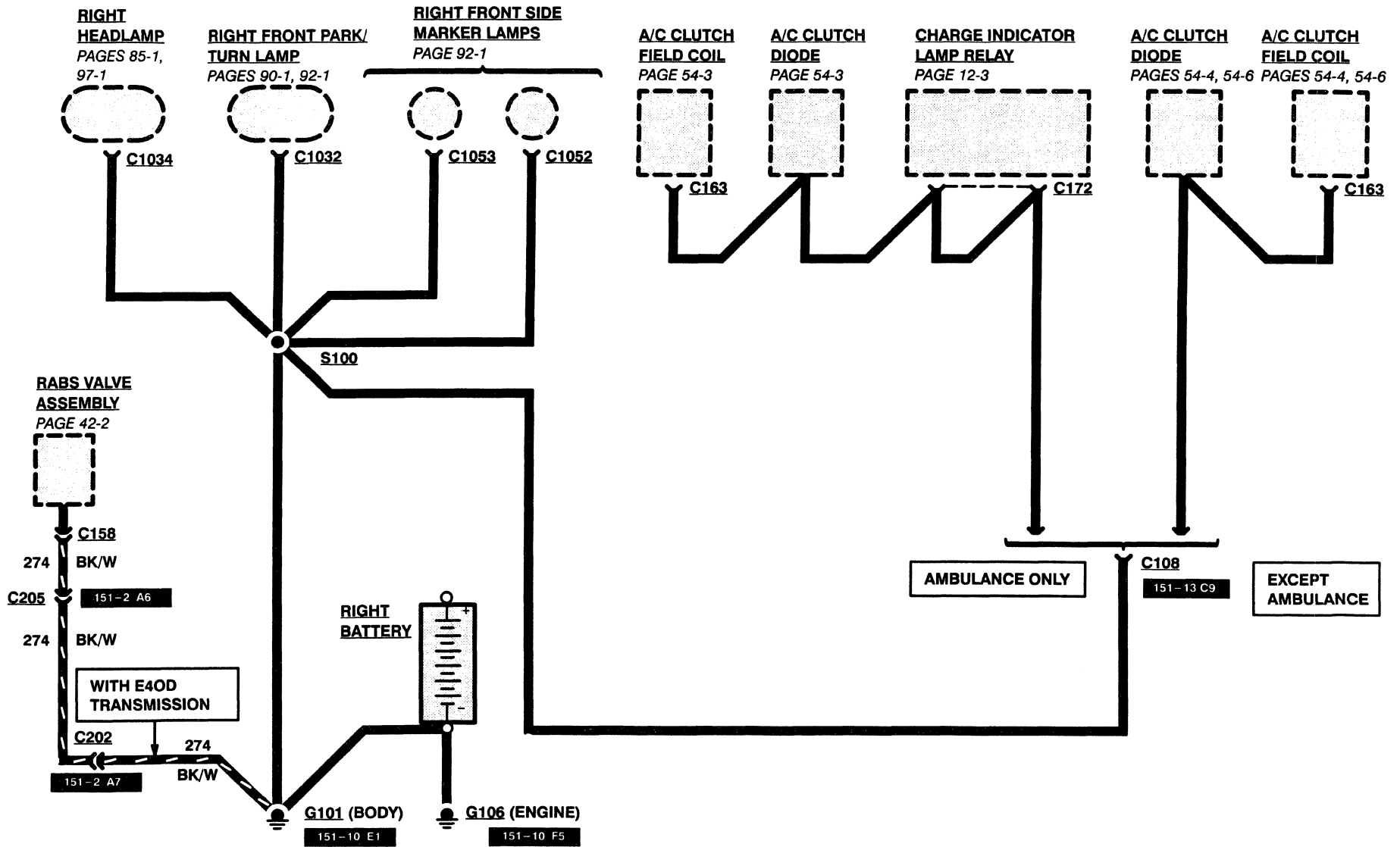
DIESEL



GROUNDS 10-8

1994 BRONCO/F-SERIES

DIESEL

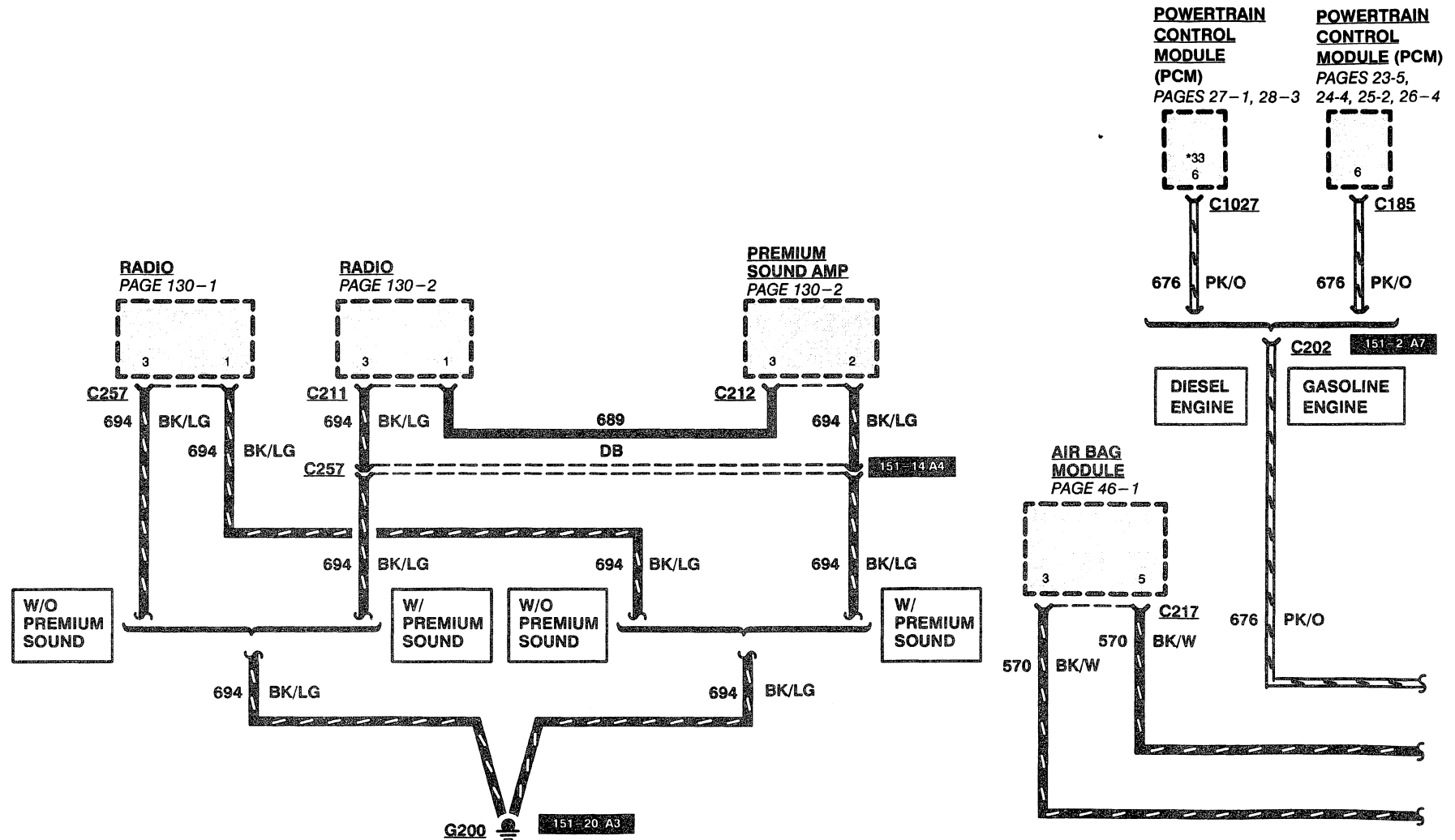


10-9 GROUNDS

1994 BRONCO/F-SERIES

ALL

* DI DIESEL ONLY



LOCATION INDEX 152-28

1994 BRONCO/F-SERIES

<u>Connector</u>	<u>Location</u>	<u>Page Zone</u>	<u>Connector Page</u>	<u>Color</u>	<u>Terminal</u>
C1033	LH front of vehicle, on left headlamp	151- 3- F7		BK	3
C1034	RH front of vehicle, on right headlamp	151- 3- F2		BK	3
C1035	LH underside of engine compartment hood, on engine compartment lamp	151- 3- A7		GY	2
C1040	Top of engine, on glow plug #1	*		*	1
C1041	Top of engine, on glow plug #2	*		*	1
C1042	Top of engine, on glow plug #3	*		*	1
C1043	Top of engine, on glow plug #4	*		*	1
C1044	Top of engine, on glow plug #5	*		*	1
C1045	Top of engine, on glow plug #6	*		*	1
C1046	Top of engine, on glow plug #7	*		*	1
C1047	Top of engine, on glow plug #8	*		*	1
C1048	Below center of vehicle, RH side of transmission, on E4OD transmission	151- 17- A3	30-5	GY	12
C1049	Below center of vehicle, RH side of 4R70W transmission	151- 17- B10	29-5	*	10
C1052	RH front of vehicle, on right front side marker lamp	151- 3- E1		BK	2
C1053	RH front of vehicle, on right front side marker lamp	151- 3- E1		BK	2
C1054	LH front of vehicle, on left front side marker lamp	151- 3- E10		BK	2
C1055	LH front of vehicle, on left front side marker lamp	151- 3- E9		BK	2
C1056	Mounted under fuel filter	151- 12- F8		*	4
C1057	In LH valve cover, front	151- 12- A6		BK	3
C1058	In LH valve cover, rear	151- 12- A6		BK	3
C1059	In RH valve cover, front	151- 11- D1		BK	3
C1060	In RH valve cover, rear	151- 12- A3		BK	3
C2000	Top RH side of safety wall, on barometric pressure sensor	151- 14- F5		*	4
C2001	Under LH side of dash, on pedal position sensor	151- 14- F5		BK	3

<u>Ground</u>	<u>Location</u>	<u>Zone</u>
G100 (4.9L)	LH front of engine compartment, top of upper radiator support	151- 3- F5
G100 (5.0L) (5.8L)	LH front of engine compartment, on upper radiator support	151- 5- F7
G100 (7.3L)	LH front of engine compartment, on upper radiator support	151- 12- F8
G100 (7.5L)	LH front of engine compartment, on upper radiator support	151- 8- F6
G101 (4.9L)	RH front of engine compartment, on front of fender apron	151- 3- D1
G101 (5.0L) (5.8L)	RH front of engine compartment, front of fender apron	151- 5- D1
G101 (7.3L)	RH front of engine compartment, on front of fender apron	151- 10- E1
G101 (7.5L)	RH front of engine compartment, on front of fender apron	151- 8- D1
G103 (4.9L)	Lower RH rear of engine, on starter motor mounting bolt	151- 2- A3

* Not Available

152-29 LOCATION INDEX

1994 BRONCO/F-SERIES

<u>Ground</u>	<u>Location</u>	<u>Zone</u>
G103 (5.0L) (5.8L)	Lower RH front of engine	151- 5- C1
G103 (7.5L)	Lower RH front of engine	151- 8- C1
G104 (4.9L)	Rear of LH fender apron	151- 3- A9
G104 (5.0L) (5.8L)	Rear of LH fender apron	151- 5- A9
G104 (7.3L)	Rear of LH fender apron	151- 10- A9
G104 (7.5L)	Rear of LH fender apron	151- 8- A9
G106	Lower RH front of engine	151- 10- F5
G107	Lower LH front of engine	151- 10- E9
G108	RH front of engine compartment, on upper radiator support	151- 10- F6
G200	Behind bottom of RH cowl panel	151- 20- A3
G201	Behind bottom of LH cowl panel	151- 18- F4
G202	Behind bottom of LH cowl panel	*
G400	LH rear corner of cargo area, near rear lamp assembly	151- 24- F8
G401	Under center rear of vehicle, on rear crossmember	151- 19- B9

<u>Splice</u>	<u>Location</u>
S100	Engine control sensor harness, near T/O to right front park/turn lamp
S101	Engine control sensor harness, near T/O to engine compartment fuse box
S102	Engine control sensor harness, near T/O to brake warning resistor/diode assembly
S103	Engine control sensor harness, near T/O to left front park/turn lamp
S104	Trailer battery feed harness, near T/O to trailer relay box
S105	Engine control sensor harness, near T/O to engine compartment fuse box (Cavity #70)
S106 (Diesel Engine)	Engine control sensor harness, near T/O to G100
S106 (Gasoline Engines)	Engine control sensor harness, near T/O to G101
S107 (Bronco)	Engine control sensor harness, near T/O to DRL module
S108	Engine control sensor harness, near T/O to brake warning resistor/diode assembly
S109 (Diesel Engine)	Engine control sensor harness, in T/O to C111
S109 (Gasoline Engines)	Engine control sensor harness, in T/O to C105
S110	Engine control sensor harness, near T/O to right front park/turn lamp
S111	In 7.3L diesel engine PIA harness
S112	In 7.3L diesel engine PIA harness
S113	In 7.3L diesel engine PIA harness
S114	Engine control sensor harness, near T/O to brake warning resistor/diode assembly
S115	Engine control sensor harness, near T/O to left headlamp
S116	Engine control sensor harness, near T/O to C103
S117	Engine control sensor harness, near T/O to left headlamp
S118 (Bronco)	Engine control sensor harness, near T/O to 4WABS
S119 (Bronco)	Engine control sensor harness, near trailer relay box
S120 (Bronco)	Engine control sensor harness, near T/O to G104

* Not Available

<u>Splice</u>	<u>Location</u>
S121	Engine control sensor harness, near T/O to LH headlamp
S122	Engine control sensor harness, near T/O to powertrain control module
S123	Engine control sensor harness, in T/O to engine compartment fuse panel box
S124	Backup lamp switch to rear lamp feed harness, in T/O to 4R70W transmission
S125	Engine control sensor harness, near T/O to G104
S126	Engine control sensor harness, near T/O to engine compartment fuse box
S127	Engine control sensor harness, near T/O to C108
S128	PIA harness, in T/O to fuel line heater
S129	PIA harness, in T/O to ECT sensor
S130	PIA harness, in T/O to ECT sensor
S131	PIA harness, in T/O to EBP sensor
S132	PIA harness, in T/O to EBP sensor
S133	PIA harness, in T/O to EBP sensor
S134 (C6 Transmission)	Backup lamp switch to rear lamp feed harness, near T/O to C117
S134 (E40D Transmission)	Backup lamp switch to rear lamp feed harness, near T/O to manual lever position sensor
S134 (S5-42 ZF Transmission)	Backup lamp switch to rear lamp feed harness, near T/O to backup lamp switch
S135 (4.9L)	Dash engine gauge feed harness, near T/O to throttle position sensor (TPS)
S135 (5.0L)(5.8L)	Fuel charge harness, near T/O to canister purge solenoid
S136	Engine control sensor harness, near T/O to brake warning resistor/diode assembly
S137	Engine control sensor harness, near T/O to brake warning resistor/diode assembly
S138	Fuel charge harness, near T/O to intake air temperature (IAT) sensor
S139	Engine control sensor harness, near T/O to powertrain control module (PCM)
S140	Engine control sensor harness, near T/O to left DRL module
S141	PIA harness, near T/O to fuel charge pump motor
S142	PIA harness, near T/O to fuel charge pump motor
S143	Backup lamp switch to rear lamp feed harness, in T/O to E40D transmission
S144	Dash engine gauge feed harness, near T/O to EGR control solenoid
S145	Engine control sensor harness, near T/O to powertrain control module (PCM)
S146	Backup lamp switch to rear lamp feed harness, in T/O to manual lever position sensor
S147	Engine control sensor harness, near T/O to C103
S148	Engine control sensor harness, near T/O to brake warning resistor/diode assembly
S149	Fuel charge harness, near T/O to air charge temperature (ACT) solenoid
S150	Engine control sensor harness, near T/O to 4WABS hydraulic unit
S151	Fuel charge harness, near T/O to fuel injector #3
S152	Heater switch to blower motor harness, near T/O to blower motor
S153	Heater switch to blower motor harness, near T/O to blower motor
S154	Engine control sensor harness, near T/O to left headlamp
S155	Engine control sensor harness, near T/O to G100
S156	Engine control sensor harness, near T/O to left front park/turn lamp
S157	Engine control sensor harness, near T/O to powertrain control module (PCM)
S158	Fuel charge harness, near T/O to fuel injector #4
S159 (4.9L)	Fuel charge harness, near T/O to fuel injector #6
S159 (5.0L)(5.8L)(7.5L)	Fuel charge harness, near T/O to fuel injector #8

152-31 LOCATION INDEX

1994 BRONCO/F-SERIES

<u>Splice</u>	<u>Location</u>
S160 (4.9L)(5.0L)(5.8L)(7.5L)	Fuel charge harness, near T/O to fuel injector #5
S161 (4.9L)	Dash engine feed harness, near T/O to EGR control solenoid
S161 (5.0L)(5.8L)	Fuel charge harness, near T/O to fuel injector #4
S162	Engine control sensor harness, near T/O to C108
S163 (Diesel Engine)	Engine control sensor harness, near T/O to C108
S163 (Gasoline Engines)	Engine control sensor harness, near T/O to powertrain control module (PCM)
S164	Engine control sensor harness, near T/O to left headlamp
S165	Engine control sensor harness, near T/O to left headlamp
S166	Engine control sensor harness, near T/O to powertrain control module (PCM)
S167	Engine control sensor harness, near T/O to powertrain control module (PCM)
S171	Fuel charge harness, near T/O to distributor
S174	Engine control sensor harness, near T/O to brake warning resistor/diode assembly
S175	PIA harness, near fuel injectors #2 and #4
S176	PIA harness, near fuel injectors #6 and #8
S177	PIA harness, near fuel injectors #1 and #3
S178	PIA harness, near fuel injectors 5&7
S199 (4.9L)	Dash engine gauge feed harness, near T/O to ignition coil
S199 (5.0L)(5.8L)	Fuel charge harness, near T/O to ignition coil
S200	Seat belt retractor switch RH harness, near T/O to G201
S201	Seat belt retractor switch RH harness, near T/O to C302
S202	Main harness, near T/O to C261
S203	Main harness, near T/O to enable PSOM programming connector C232
S204	Main harness, near T/O to multi-function switch
S206	Main harness, near T/O to fuse panel
S207	Main harness, near T/O to clutch pedal position switch or jumper
S208	Main harness, near T/O to remote keyless entry module
S209	Main harness, near T/O to fuse panel
S210	Main harness, near T/O to C210
S211	Main harness, near T/O to fuse panel
S212	Main harness, in T/O to remote keyless entry module
S213	Main harness, near T/O to warning chime module
S214	Main harness, near T/O to warning chime module
S215	Main harness, near T/O to C251
S216	Main harness, near T/O to G200
S217	Main harness, near T/O to fuse panel
S218	Main harness, near T/O to radio
S219	Rear lamps harness, near T/O to C205
S220	Main harness, near T/O to enable PSOM programming connector C232
S221	Seat belt retractor switch RH harness, near T/O to G201
S222 (Bronco)(Super Cab)	Seat belt retractor switch RH harness, near T/O to C300
S222 (Regular Cab)	Seat belt retractor switch RH harness, near T/O to C229
S223	Seat belt retractor switch harness, near T/O to C200
S224	Main harness, in T/O to clutch pedal position switch or jumper
S225	Rear lamps harness, near T/O to C205

<u>Splice</u>	<u>Location</u>
S226	Window regulator left front door harness, near T/O C214
S227	Main harness, in T/O to air bag module
S228	Main harness, in T/O to rear RABS module
S229	Main harness, near T/O to blower motor switch
S230	Main harness, near T/O to main light switch
S231	Main harness, near T/O to C202
S232	Main harness, near T/O to C202
S233	Radio amp harness, near premium sound amplifier
S234	Main harness, near T/O to C202
S235	Main harness, in T/O to throttle position sensor
S236	Main harness, near T/O to fuse panel
S237	Main harness, near T/O to brake on/off switch
S238	Main harness, near T/O to wiper control module
S239	Main harness, in T/O to throttle position sensor
S240	Main harness, near T/O to clutch pedal position switch or jumper
S242	Main harness, near T/O to fuse panel
S244	Main harness, near T/O to C210
S245	Main harness, near T/O to clutch pedal position switch or jumper
S246	Main harness, near T/O to speed control amplifier
S247	Main harness, near T/O to C202
S248	Main harness, near T/O to C202
S249	Main harness, near T/O to fuel tank selector switch
S250	Main harness, near T/O to main light switch
S251	Seat belt retractor switch harness, near T/O to C300
S252	Main harness, near T/O to clutch pedal position switch or jumper
S253	Main harness, near T/O to clutch pedal position switch or jumper
S254	Rear lamps harness, near T/O to RABS valve assembly
S255	Window regulator left front door harness, near T/O to C214
S256	Window regulator left front door harness, near T/O to C214
S257	Main harness, near T/O to C210
S299	Main harness, near T/O to right front courtesy lamp switch
S301	Window regulator harness, near T/O to door speaker
S302	Window regulator harness, near T/O to door speaker
S303	Main harness, near T/O to enable PSOM programming connector C232
S304	Window regulator right front door harness, near T/O to C603
S305	Seat belt retractor switch RH harness, near T/O to C300
S306	Main harness, near T/O to Trailer brake controller
S307	Front seat back pad adjust harness, near T/O to power lumbar compressor motor
S308	Rear high mount lamp harness, near T/O to outside cargo/high mount stop lamp
S309	Seat belt retractor switch RH harness, near T/O to C300
S310	Front seat back pad adjust harness, near T/O to power lumbar compressor motor
S311	Seat belt retractor switch RH harness, near T/O to C302
S312	Seat belt retractor switch RH harness, near T/O to C302

152-33 LOCATION INDEX

1994 BRONCO/F-SERIES

<u>Splice</u>	<u>Location</u>
S313	Main harness, near T/O to warning chime module
S314 (Crew Cab)	Seat belt retractor switch RH harness, near T/O to C302
S314 (Except Crew Cab)	Seat belt retractor switch RH harness, near T/O to C300
S315	Main harness, near T/O to keyless entry module
S316	Seat belt retractor switch harness, near T/O to seat belt retractor switch
S317	Interior lamp feed harness, near T/O to cargo lamp
S318	Window regulator left front door harness, near T/O to C215
S319	Seat belt retractor switch harness, near T/O to seat belt retractor switch
S320	Seat belt retractor switch harness, near T/O to seat belt retractor switch
S400 (Bronco)	Rear lamps harness, near T/O to fuel pump/fuel gauge sender
S400 (F-Series)(Diesel Engine)	Rear lamps harness, near T/O to front tank fuel gauge sender
S400 (F-Series)(Gasoline Engines)	Rear lamps harness, near T/O to front tank fuel pump/fuel gauge sender
S401	Rear lamps harness, near T/O to license lamps
S403	Rear license lamp harness, in T/O to C400
S404 (With Flare Side)	Rear lamp connector harness, near T/O to C401
S404 (Without Flare Side)	Rear lamp connector harness, near T/O to C400
S405	Left lamp connector harness, near T/O to left backup lamp
S406	Right rear lamp connector harness, near T/O to right backup lamp
S409	Left marker lamp harness, near T/O to C412
S410	Right marker lamp harness, near T/O to C420
S412	Rear lamp connector harness, near T/O to C410
S417 (Bronco)	Rear lamps harness, near T/O to license lamps
S417 (With Chassis Cab)	Rear lamp connector harness, near T/O to C448
S417 (With Flare Side)	Rear lamp connector harness, near T/O to C401
S417 (Without Flare Side)	Rear lamp connector harness, near T/O to C400
S418	Rear license lamp harness, near T/O to C400
S419	Rear lamps harness, near T/O to C401
S420	Rear lamp connector harness, near T/O to C410
S421	Left marker harness, in T/O to C412
S422	Right marker lamp harness, in T/O to C420
S423	Rear window regulator control harness, near T/O to tailgate window switch
S424	Rear lamps harness, near T/O to license lamps
S426	Rear lamp connector harness, near T/O to C401
S428	Rear lamps harness, near T/O to differential speed sensor (DSS)
S429	Rear lamps harness, near T/O to differential speed sensor (DSS)
S500	Window regulator left front door harness, near T/O to master window control switch
S501	Window regulator left front door harness, near T/O to C214
S502	Window regulator left front door harness, near T/O to C500
S600	Window regulator right front door harness, near T/O to right window control switch
S601	Window regulator right front door harness, near T/O to C600
S602	Window regulator right front door harness, near T/O to right window control switch
S900	Rear view inside mirror harness, in windshield header
S901	Rear view inside mirror harness, in windshield header
S902	Rear view inside mirror harness, in windshield header

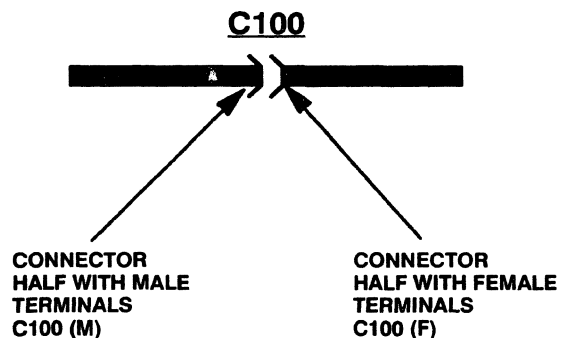
153-1 HARNESS CAUSAL PART NUMBER

1994 BRONCO/F-SERIES

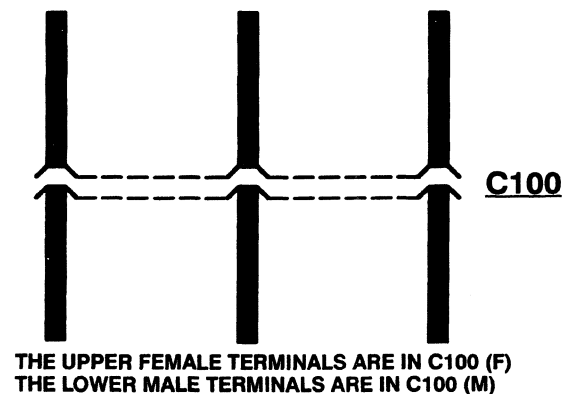
HOW TO IDENTIFY A BASIC HARNESS NUMBER BY USING A "C" NUMBER

Understand these symbols before using the following listing:

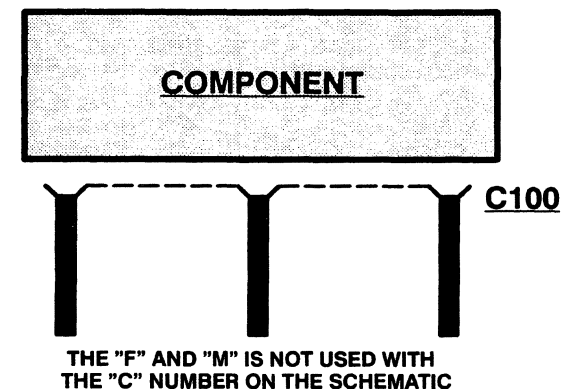
HARNESS TO HARNESS CONNECTION



DASHED LINES INDICATE TERMINALS OF SAME CONNECTOR



COMPONENT CONNECTION



Identify the basic harness part number by:

- 1) If the problem is in a connector, find the connector "C" number in the EVTM schematics. Then locate the harness base part number.
- 2) If the problem is not in a connector (such as a short or a broken wire), then choose a connector to identify the "C" number in the following listing and read the base part number of the harness that has

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