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Note

All wiring connections between components are shown exactly as they exist in the vehicles. It is important to realize, however, that no attempt has been made on the schematic to represent components and wiring as they physically appear on the vehicle. For example, a 4-foot length of wire is treated no differently in a schematic from one which is only a few inches long. Furthermore, to aid in understanding electrical (electronic) operation, wiring inside complicated components has been simplified.

Complete Circuit Operation

Each circuit is shown completely and independently in one cell. Other components which are connected to the circuit may not be shown unless they influence the circuit operation.

Current Flow (1)

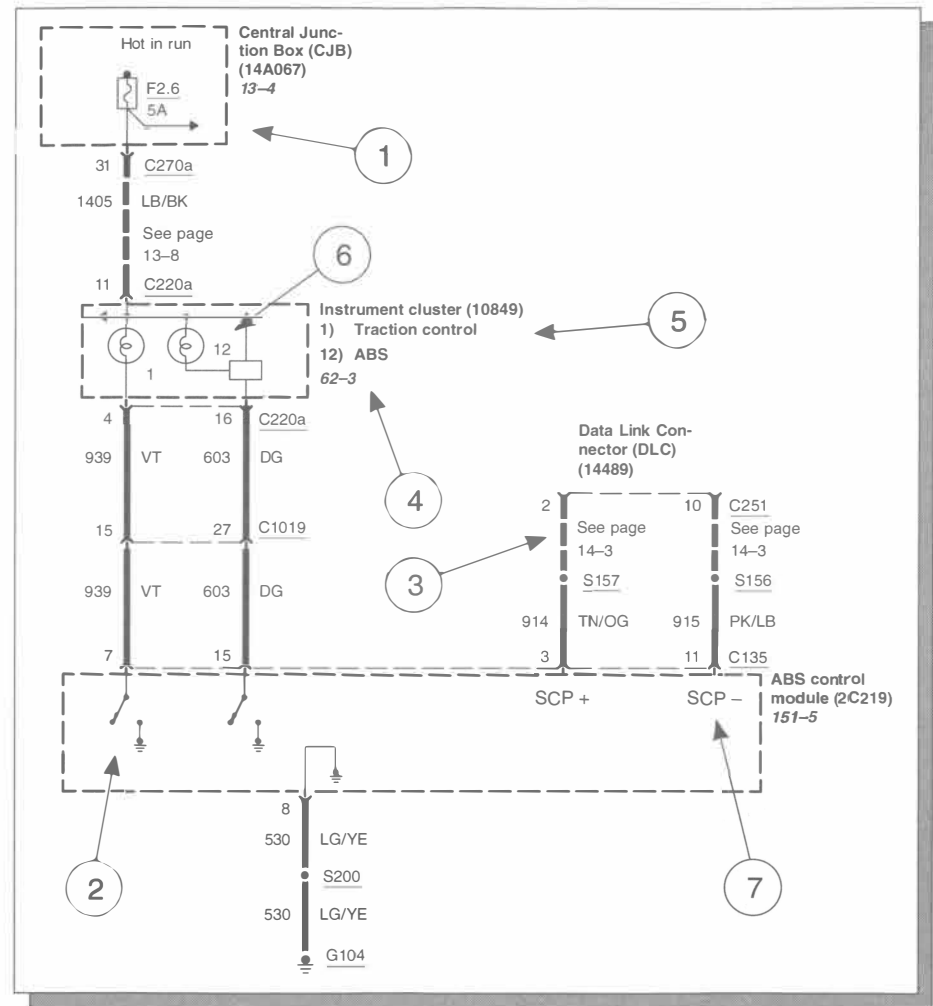
Each cell normally starts with the component that powers the circuit, such as a fuse or the ignition switch. Current flow is shown from the power source at the top of the page to ground at the bottom of the page. In order to concentrate on the essential parts, power supply and ground connections are sometimes simplified by a dashed line in the schematics. A full representation of the power supply of a fuse or the power distribution from a fuse to various components is given in cell 13 "Power Distribution". Full representation of the ground connections are shown in cell 10 "Grounds".

Switch Positions (2)

Within the schematic, all switches, sensors and relays are shown "at rest" (as if the Ignition Switch were OFF).

Splices (3)

A dashed line indicates that the splice is not shown completely. A reference is given to the page where the splice appears in full. It is also listed in the Index.



Component Referencing (4)

Each component on a schematic has a reference to the component location view or the page where it is shown completely. It is located to the right of each component.

Component Names, Notes and Base Part Numbers (5)

Component names are placed on the right hand side of each component. Any notes that describe switch positions or operating conditions follow the name. Descriptions of the internals of the component are also included here. The page where the component appears in full is listed in the Index. The base part number for a component is listed in parentheses next to or under a component. These part numbers will appear any place the component name appears in the publication.

Internal Name and Function Identification Numbers (6)

Some components on each page have internal symbols with an identification number located to the right. You can identify the internal symbol or function by finding the corresponding number under the component name.

Circuit Function Identifiers (7)

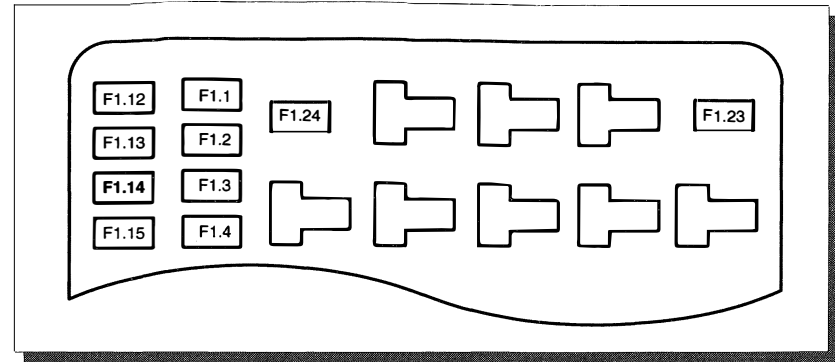
Some components without internal schematics use symbols or text to describe the function of a circuit in a system.

Fuse and Relay Information

Cell 11 “Fuse and Relay Information” contains a view of the fuse-/relay box in which all fuses and relays are identified.

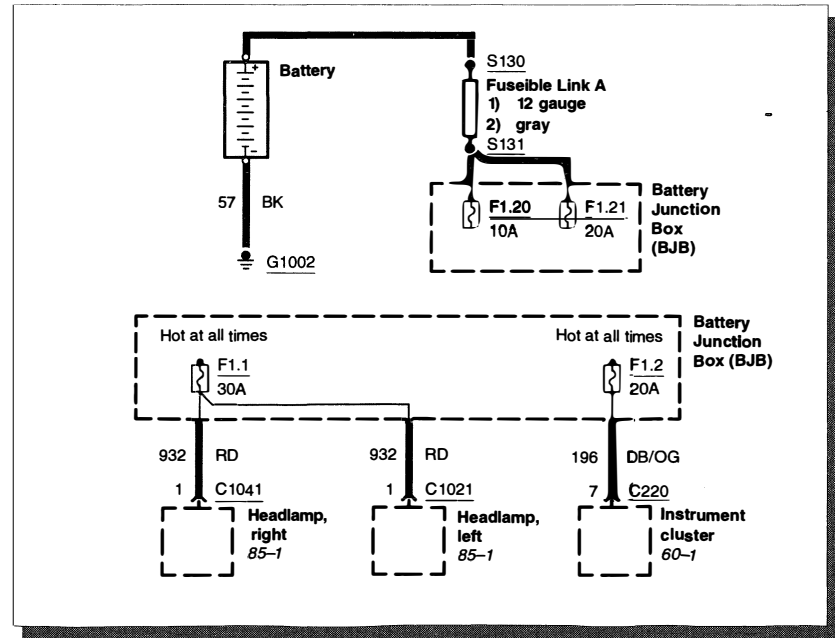
Fuse and Relay Numbering and Naming

Fuse and relay numbering and naming follow the indication of the fuse panel cover. In addition, a prefix precedes the fuse number to facilitate finding the fuse in the Component Location Charts, e.g. “F1.” precedes Battery Junction Box fuses, and “F2.” precedes Central Junction Box fuses.



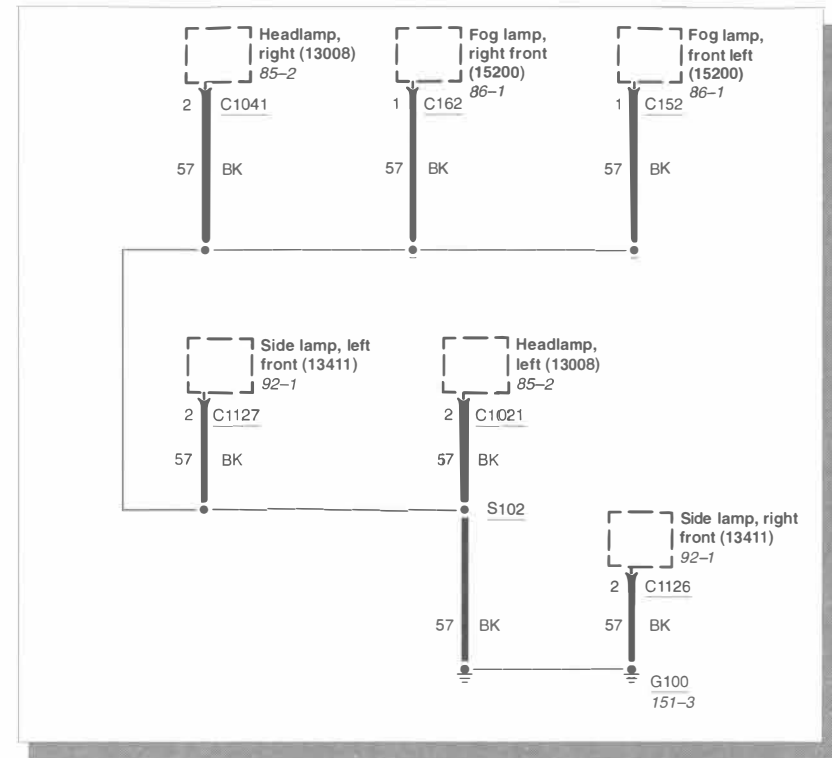
Power Distribution

Cell 13 “Power Distribution” shows the current feed circuit. The current path is shown from the battery to the ignition switch and to all fuses. It also shows the circuits protected by each fuse. The circuit is traced from the fuse to the component. All details (wires, splices, connectors) between the fuse and the first component are shown.



Ground Distribution

Cell 10 "Grounds" contains the schematics that show the complete details for each ground connection or main ground splice. This is useful in diagnosing a problem affecting several components at once (poor ground connection or ground splice). All details (wires, splices, connectors) between the ground point and the components are shown. These ground connection details are shown here in order to keep the individual cell schematics as uncluttered as possible.



Component and Connector Information

Cell 152 “Component Location Charts” helps the user find where the various items depicted on the schematic can physically be found on the vehicle. A brief written description of the location is given, along with a reference to the component location views.

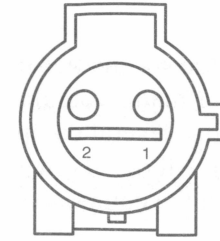
Cell 151 “Component Location Views” show the components and their connecting wires as they can be found on the vehicle.

Cell 150 “Connector Views” show the views of the pins and/or cavities of all connectors. The pin and cavity sides are shown separately as if the connector were disconnected. The color of the connector housing is indicated next to the connector number when available. The harness causal number is located above the component name and below the connector number or above the connector face itself. Wiring harness designations are listed in cell 152 “Component Location Charts”. Circuit function charts are located below each connector.

C150 ^(BK)

12A581

Wheel speed sensor, left front (2C205)

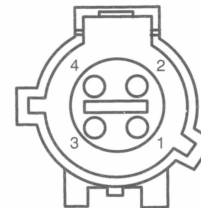


FEMALE

Pin	Circuit	Circuit Function
1	522 (TN/BK)	Wheel speed sensor, left front (2C205) -
2	521 (TN/OG)	Wheel speed sensor, left front (2C205) +

C1033 ^(BK)

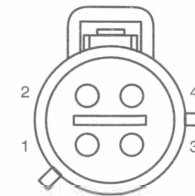
12B637



FEMALE

- (1) -
(2) 1102 (YE/LG)

14B102



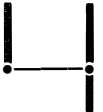










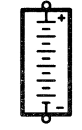

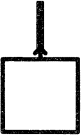


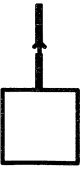




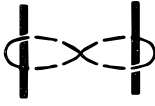

MALE


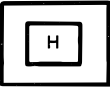












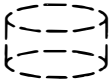

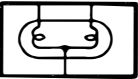




- (3) 359 (GY/RD)
(4) -

WARNINGS

- *Always wear safety glasses for eye protection.*
- *Use safety stands whenever a procedure requires being under a vehicle.*
- *Be sure that the **Ignition Switch** is always in the OFF position, unless otherwise required by the procedure.*
- *Set the parking brake when working on any vehicle. An automatic transmission should be in PARK. A manual transmission should be in NEUTRAL.*
- *Operate the engine only in a well-ventilated area to avoid danger of carbon monoxide.*
- *Keep away from moving parts, especially the fan and belts, when the engine is running.*
- *To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe, catalytic converter and muffler.*
- *Do not allow flame or sparks near the battery. Gases are always present in and around the battery cell. An explosion could occur.*
- *Do not smoke when working on a vehicle.*
- *To avoid injury, always remove rings, watches, loose hanging jewelry and avoid wearing loose clothing.*

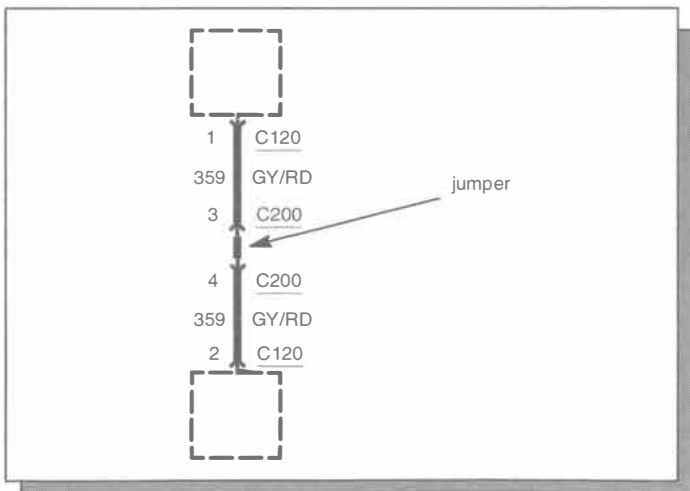
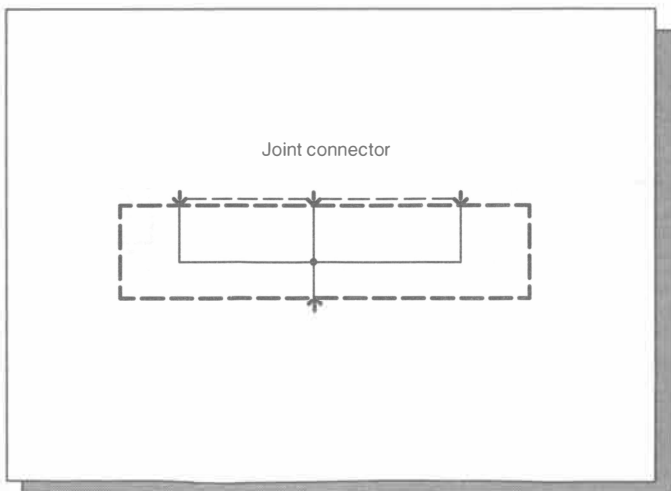
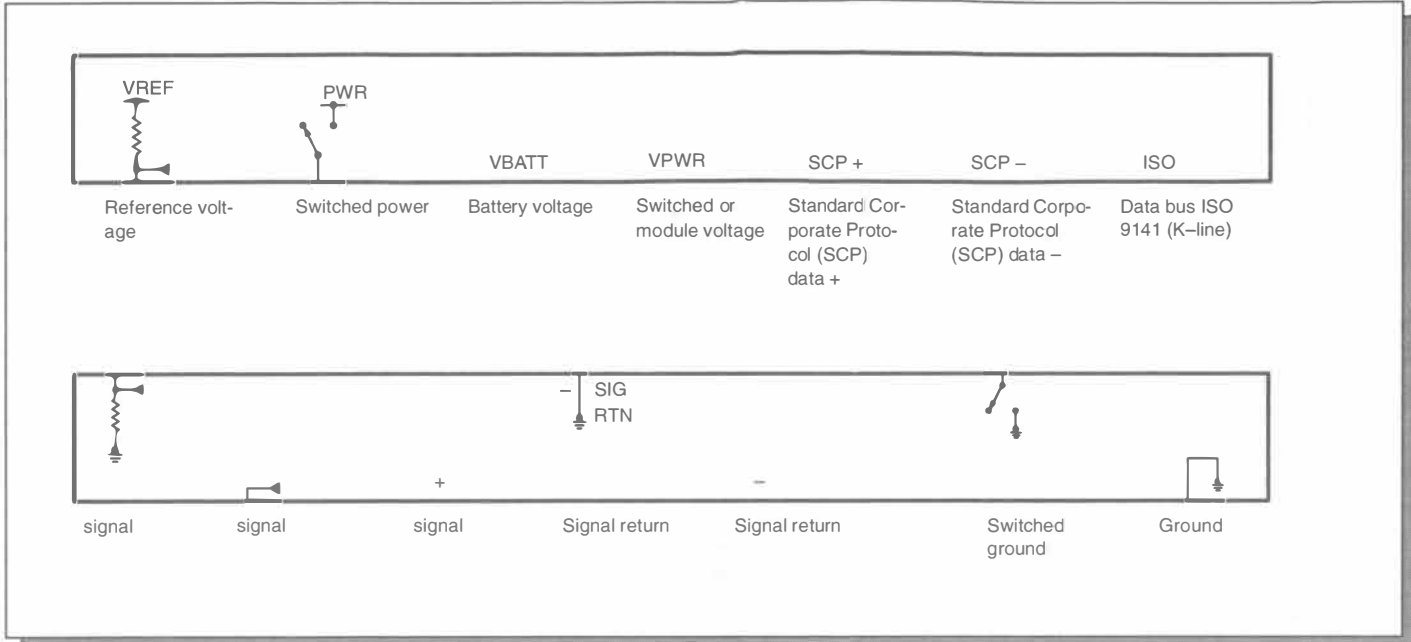
4-1 Symbols

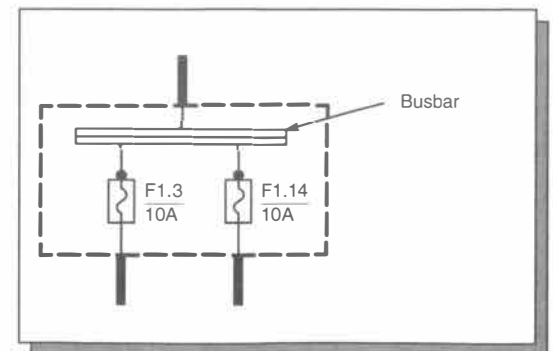
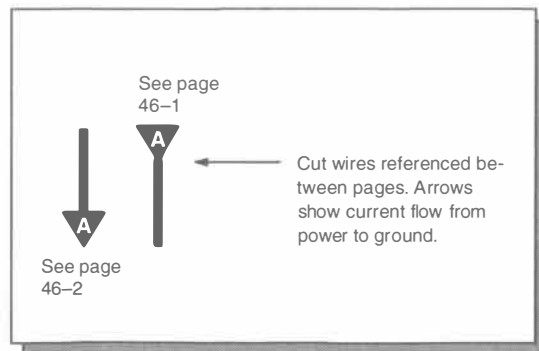
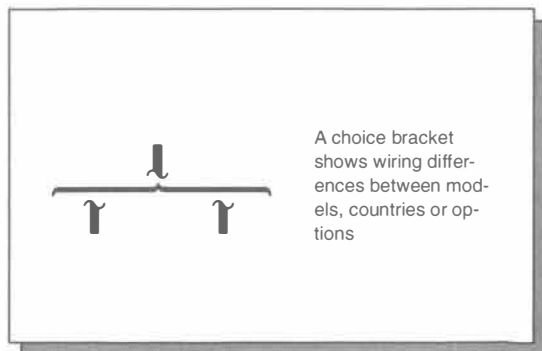
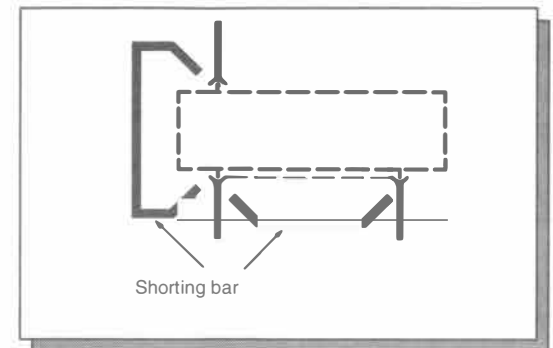
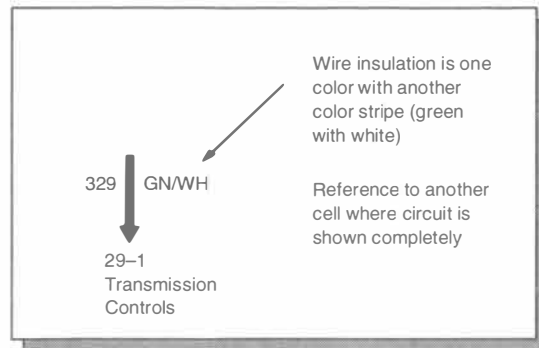
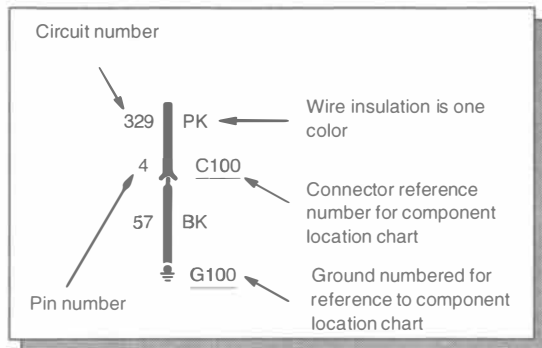
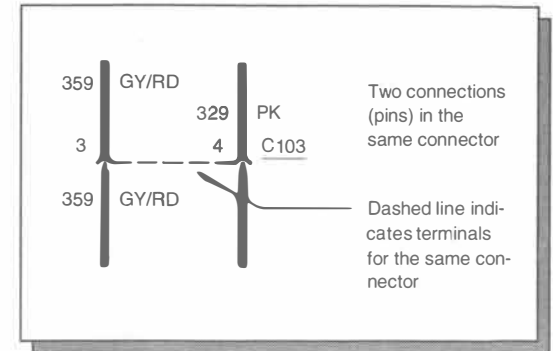
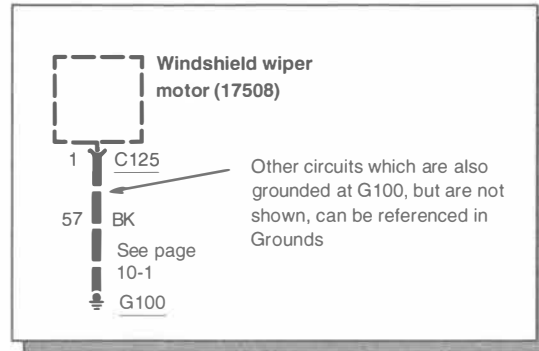
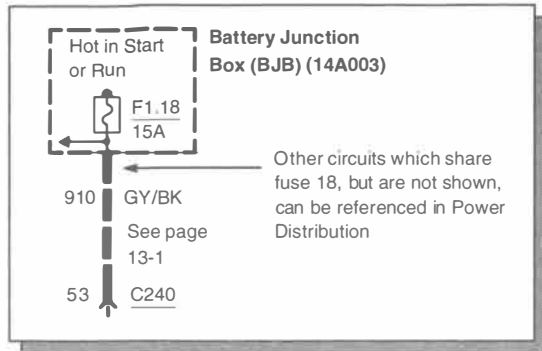
	Distributed splice		Entire component		Resistor
	Crossed wiring without connection		Part of a component		Potentiometer (pressure or temperature)
	Splice		Component case directly attached to metal part of vehicle (ground)		Potentiometer (outside influence)
	Removable connection		Component with screw terminals		Battery
	Ground		Connector attached to component		Fuse
	Connector		Connector attached to component lead (pigtail)		Circuit breaker
	Female connector		Male connector		Heating element, Conductor loop
	Twisted pair		Positive Temperature Coefficient (PTC)		

	Ignition coil assembly		Hall sensor		Antenna
	Solenoid controlled valve or clutch solenoid		Air bag sliding contact (14A664)		Permanent magnet, one-speed-motor
	Light emitting diode (LED)		Diode, current flows in direction of arrow		Permanent magnet, two-speed-motor
	Capacitor		Transistor		Rotational sensor
	Variable capacitor		Lamp		Shield
	Piezoelectric sensor		Bifilament lamp		Horn or speaker
	Coil		Gauges		Fusible link

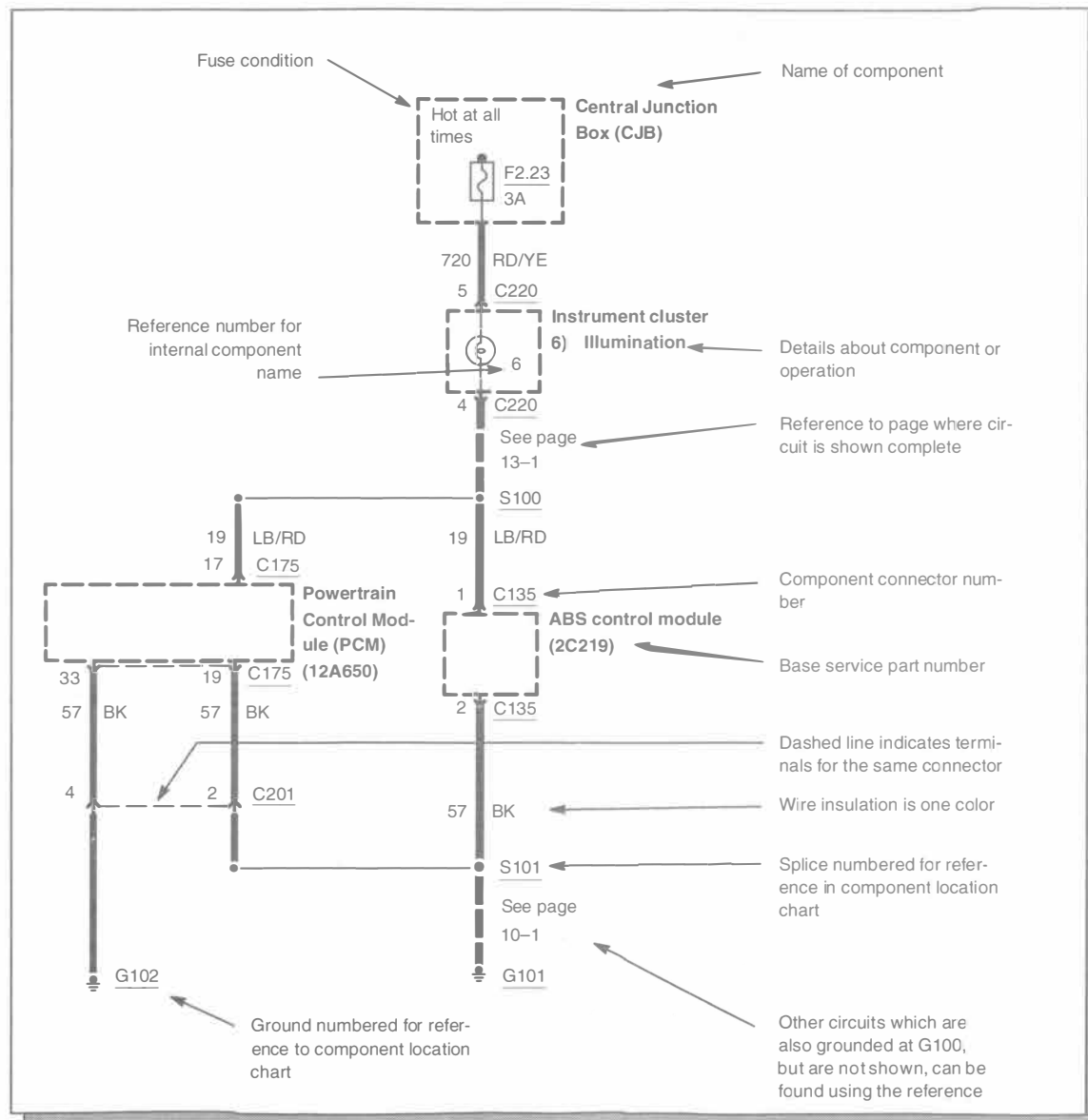
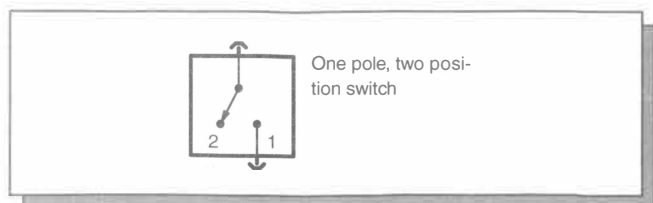
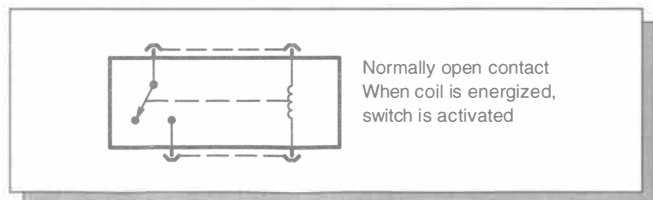
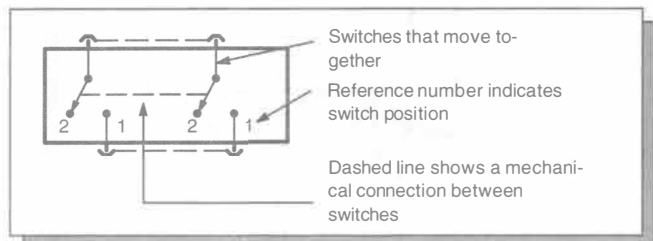
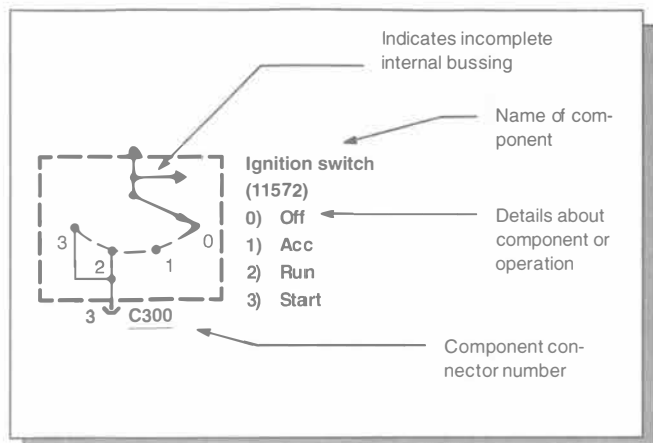
4-3 Symbols

Wire colors	
BK	Black
BN	Brown
BU	Blue
DB	Dark blue
DG	Dark green
GN	Green
GY	Gray
LB	Light blue
LG	Light green
NA	Natural
OG	Orange
PK	Pink
RD	Red
SR	Silver
TN	Tan
VT	Violet
WH	White
YE	Yellow



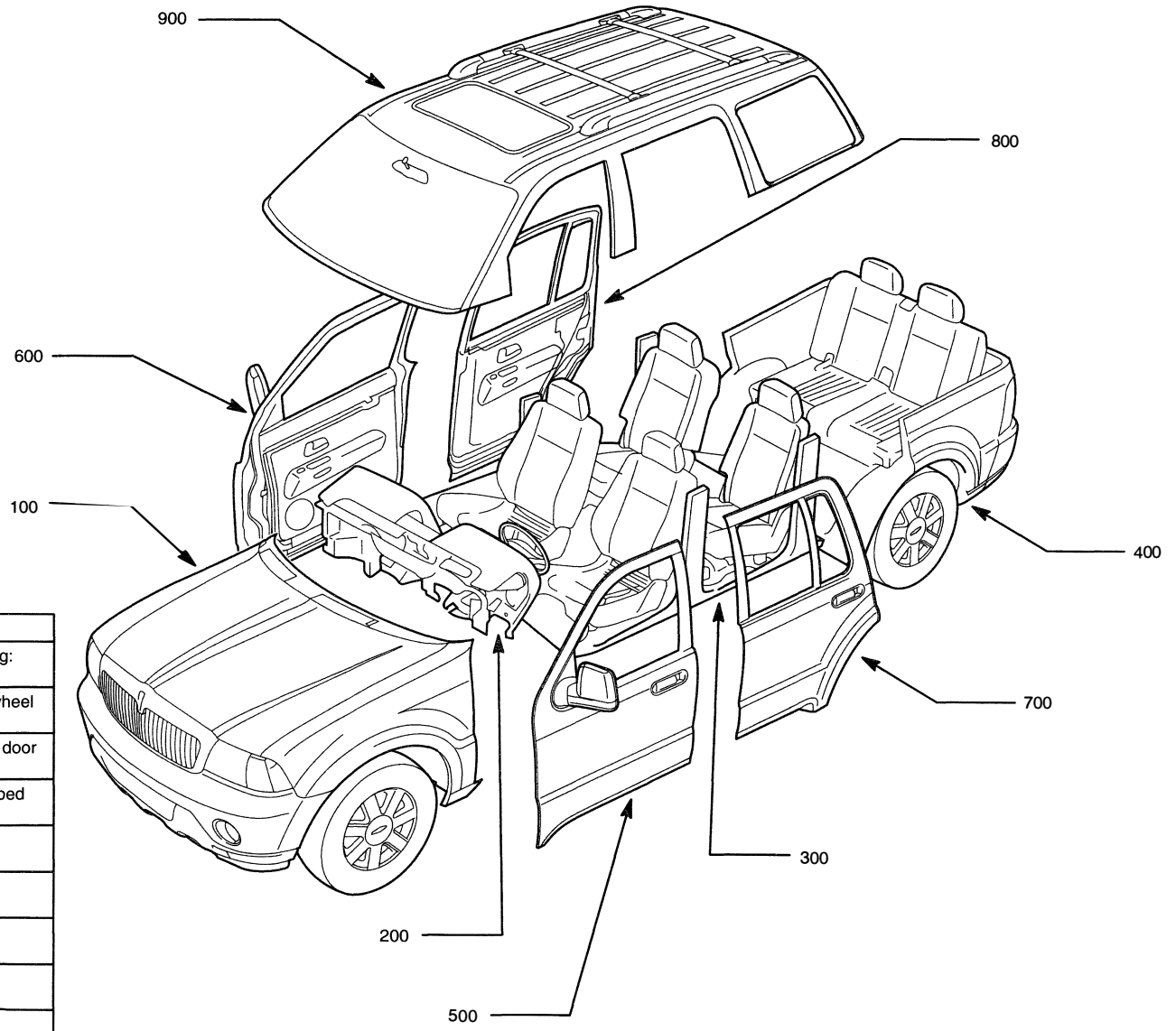


4-5 Symbols



The first digit of every connector, ground, and splice number used in this publication references its location within the vehicle.

The chart below describes the different sections of the vehicle, and lists the number associated with each.



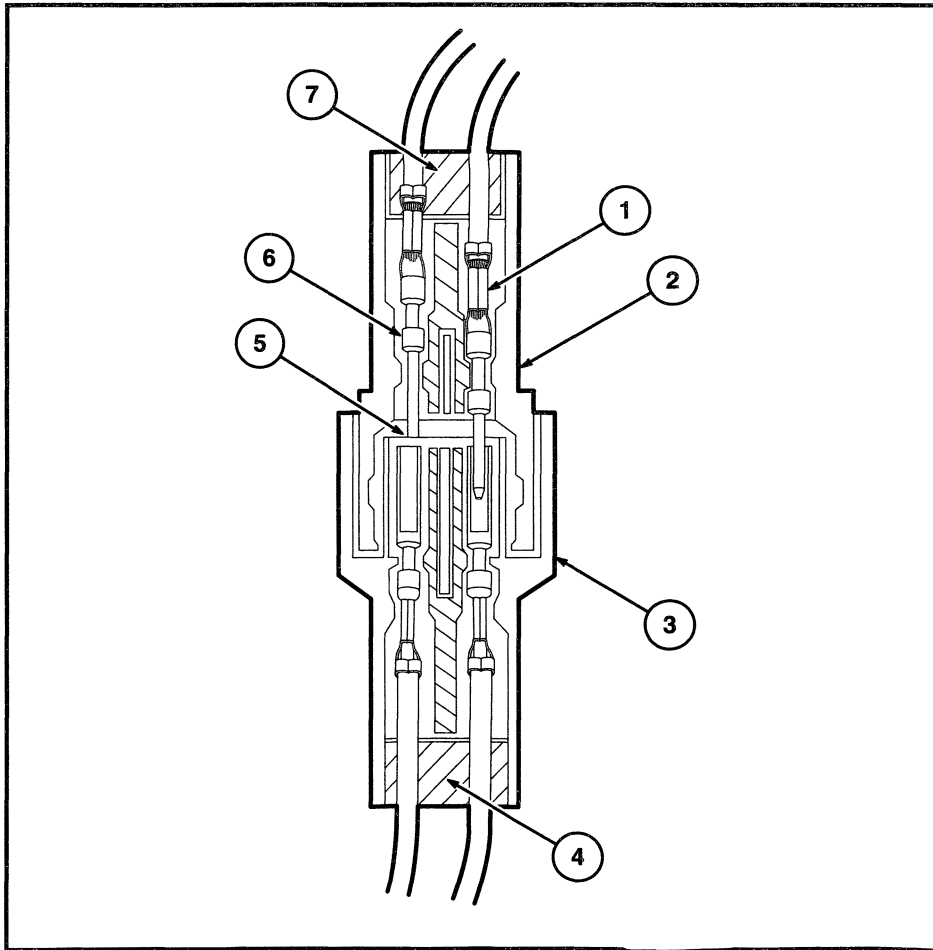
Number	Location
100	Engine compartment, Powertrain (including: axle/differential/transmission)
200	Instrument Panel and Console, Steering wheel assembly
300	From instrument panel to rear seat, below door trim panel
400	behind rear seats, to rear bumper; Truck bed
500	driver door
600	passenger door, front
700	passenger door, left rear
800	passenger door, right rear
900	Above door trim panel and headliner

5-1 Connector Repair Procedures

Troubleshooting wiring harness and connector hidden concerns

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

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



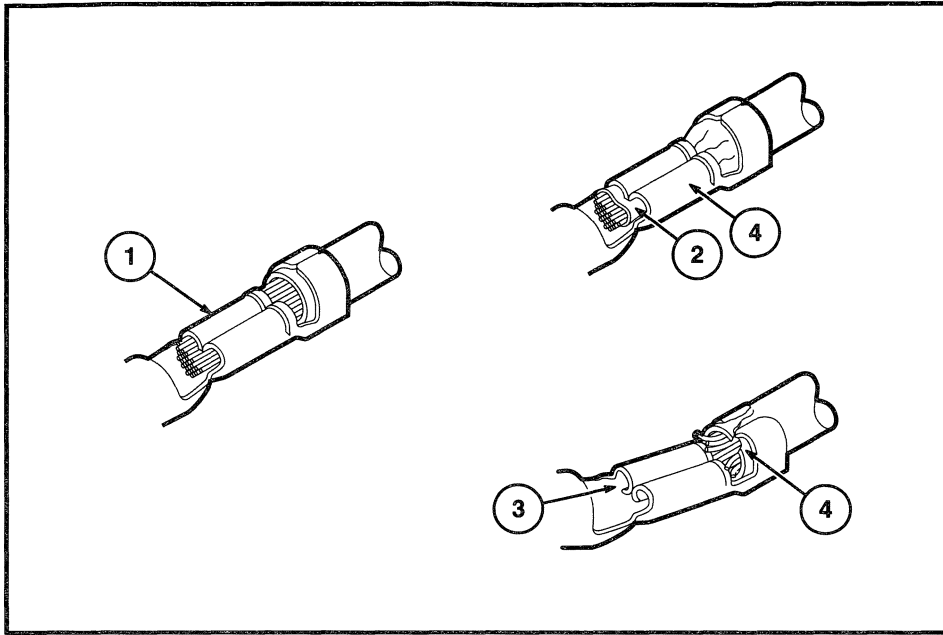
Terminal not properly seated

- 1 = Locked terminal
- 2 = Male half
- 3 = Female half
- 4 = Seal
- 5 = Intermittent contact
- 6 = Unlocked terminal (Hidden by wire seal)
- 7 = Seal

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

Defective insulation stripping

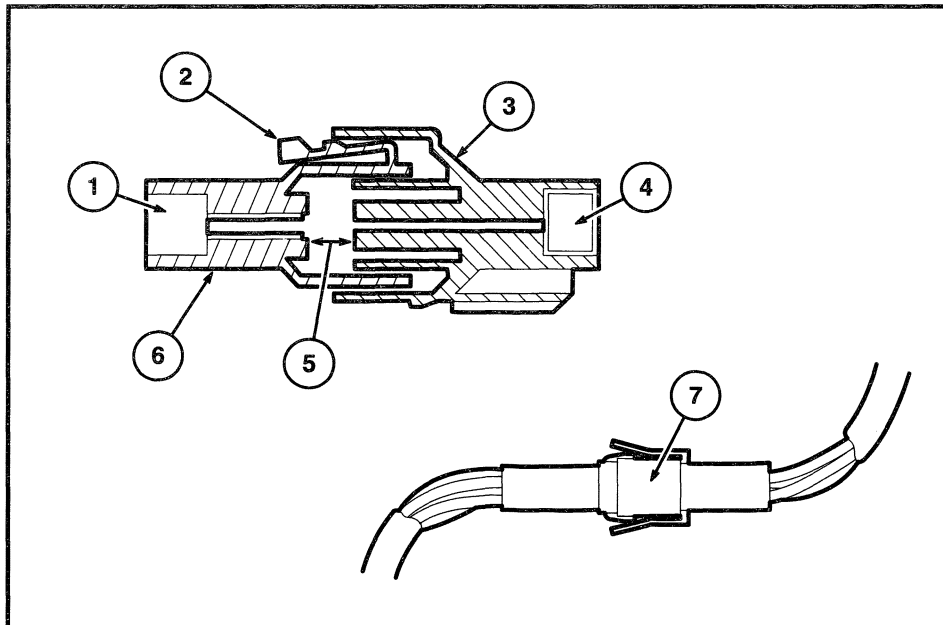
- 1 = Proper crimp
- 2 = Insulation not removed
- 3 = Wire strands missing
- 4 = Intermittent signals through pierced insulation

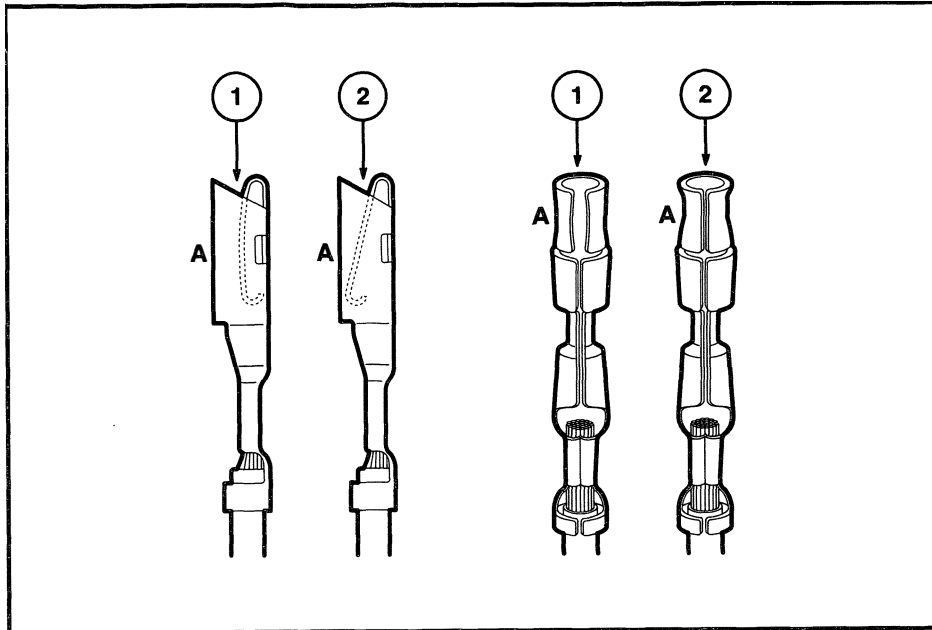


Partially mated connectors

- 1 = Seal
- 2 = Displaced tab
- 3 = Female half
- 4 = Seal
- 5 = Intermittent contact
- 6 = Male half
- 7 = Intermittent contact

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

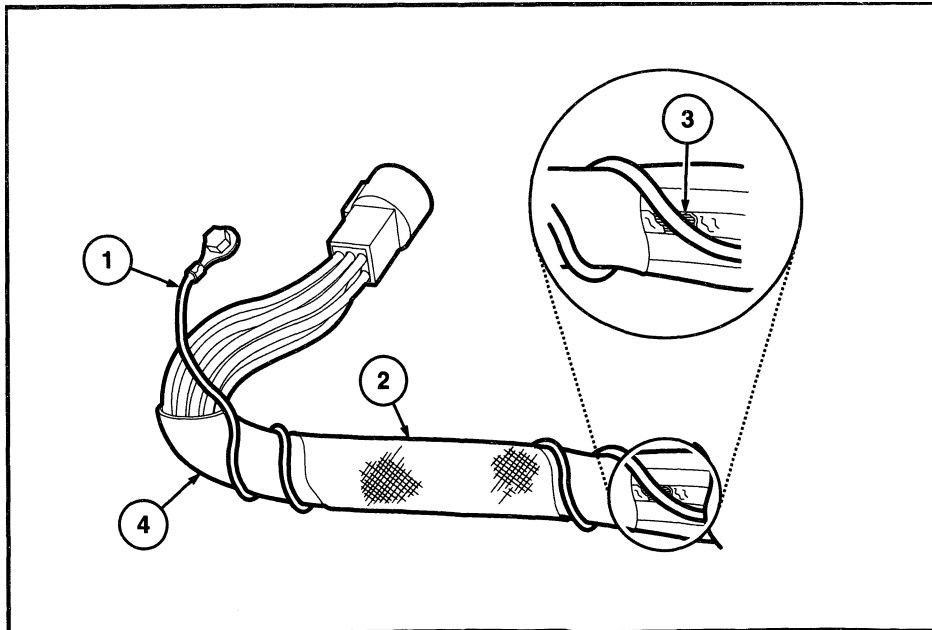




Deformed (enlarged) female terminals

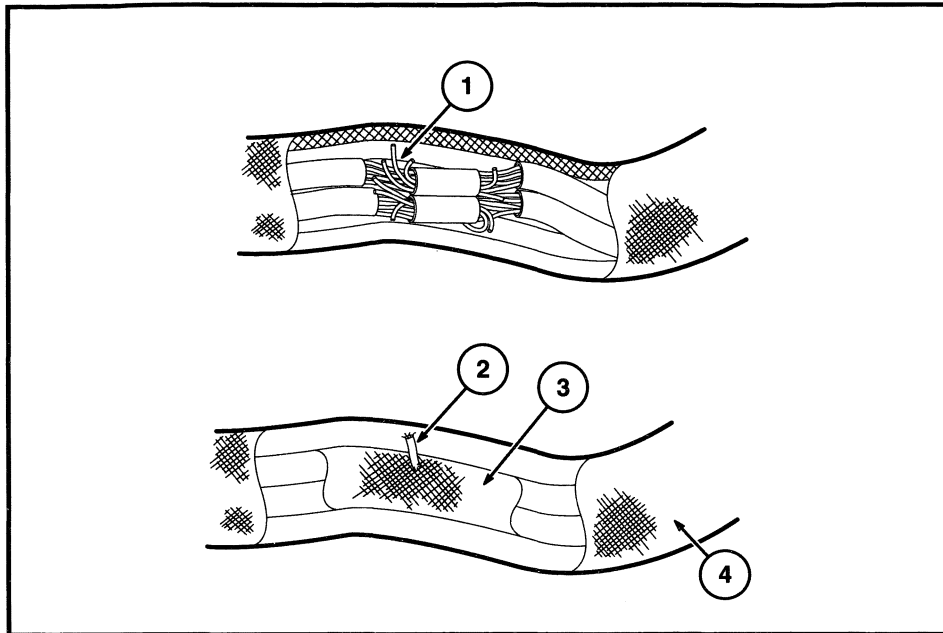
- 1 = Enlarged
- 2 = Normal

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.



Electrical short inside the harness

- 1 = Solder coated wire to ground
- 2 = Harness protective tape
- 3 = Intermittent short
Solder coated wire pierced through the insulation of another circuit
- 4 = Grounding foil

**Electrical short within the harness**

Splice tape removed

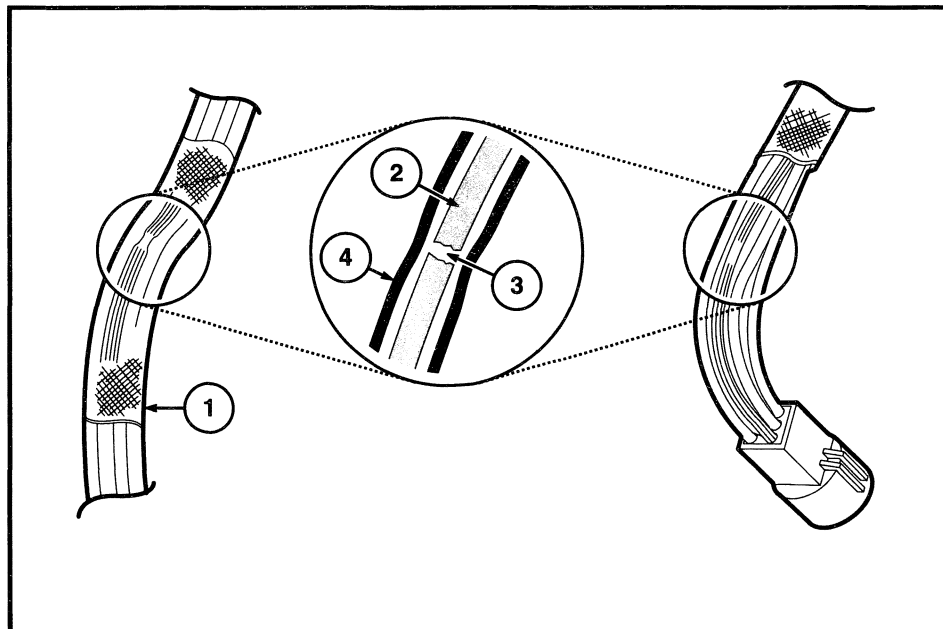
1 = Intermittent short

Splice covered

2 = Wire strand

3 = Splice tape

4 = Harness tape

**Broken wire strands in harness**

1 = Wiring harness tape

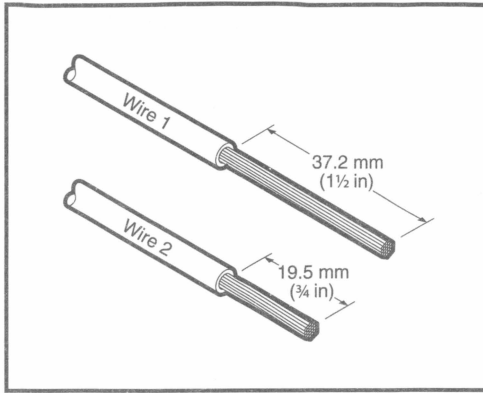
2 = Wiring strand

3 = Broken strands intermittent signal

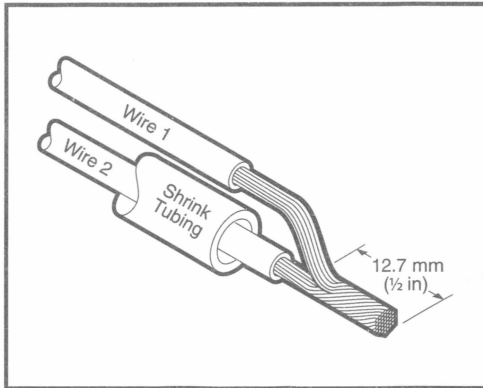
4 = Circuit insulation

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

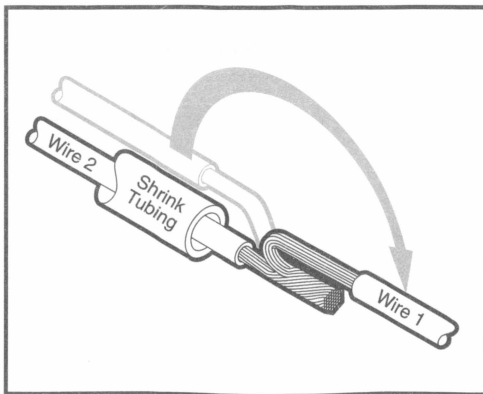
Recommended splicing method



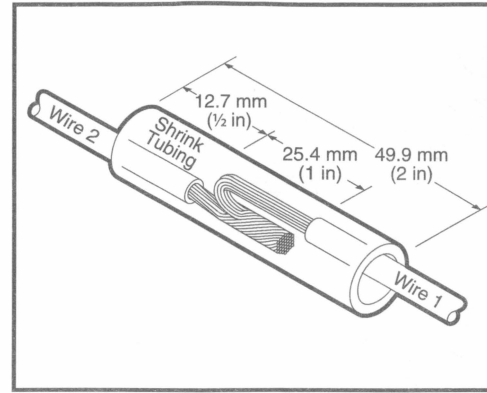
1. Disconnect battery ground cable.
2. Strip wires to appropriate length.



3. Install heat shrink tubing.
 4. Twist wires together.
 5. Solder wires together.
- NOTE:** Use rosin core mildly-activated (RMA) solder. Do not use acid core solder.

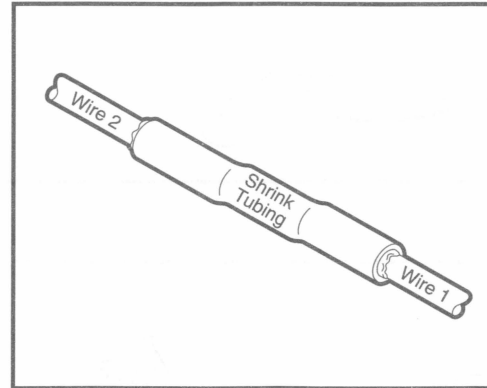


6. Bend Wire 1 back in a straight line.
- NOTE:** Wait for solder to cool before moving wires.



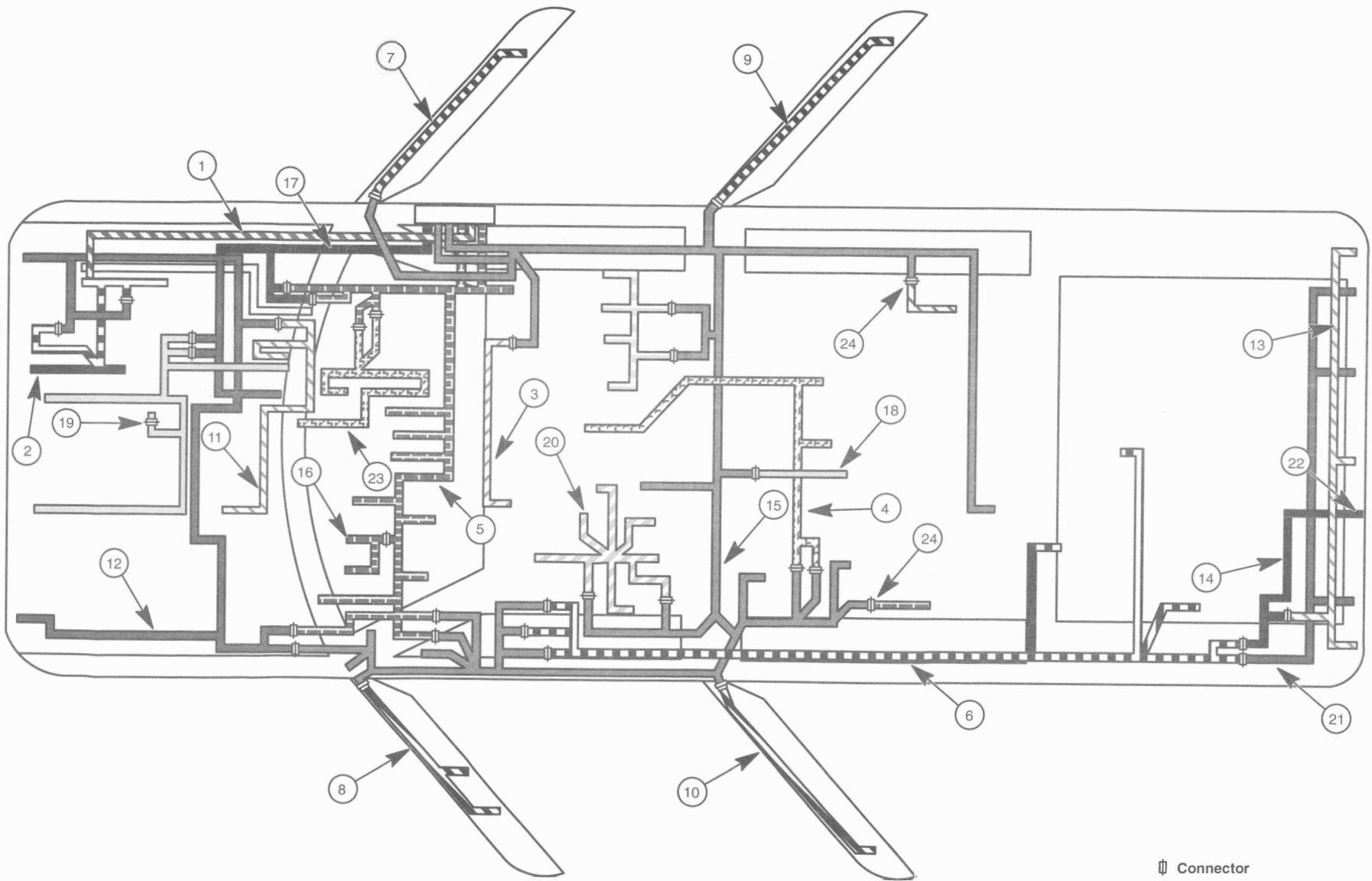
7. Evenly position heat shrink tubing over wire repair.

NOTE: Overlap tubing on both wires.



8. Use heat gun to heat the repaired area until adhesive flows out of both ends of heat shrink tubing.
9. Reconnect battery ground cable.

9-1 Wiring Harness Overview

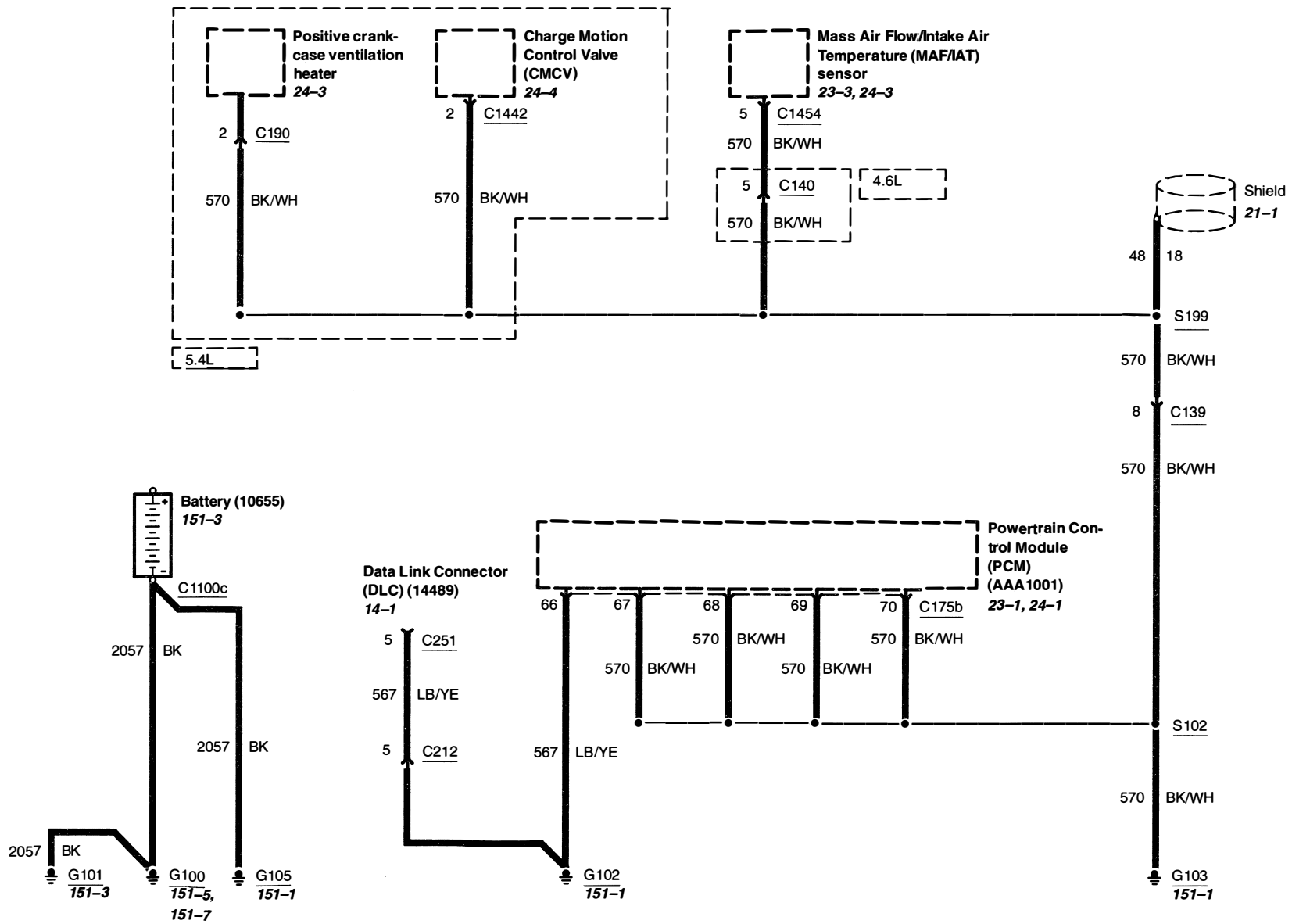


- ⊞ Connector
- ⊞ Grommet

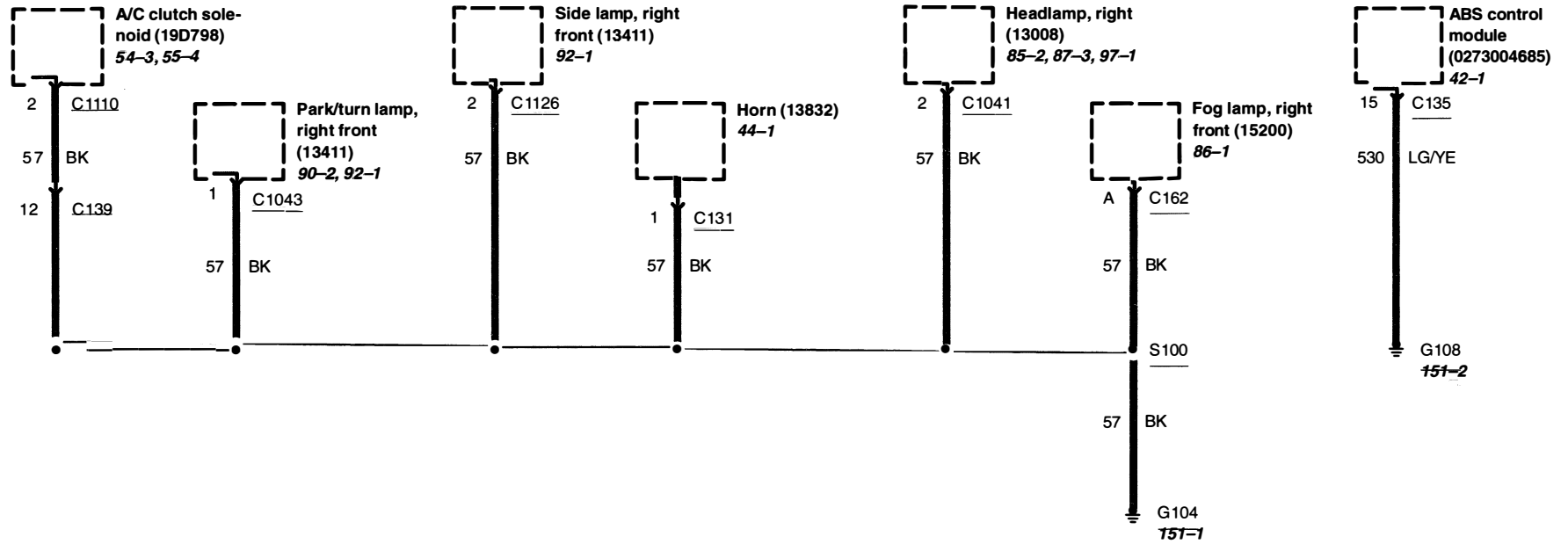
Item	Part Number	Description
1	14300	Wiring harness – Battery output
2	14305	Wiring harness – Alternator rectifier system
3	14334	Wiring harness – Interior lamps
4	14358	Wiring harness – Dome lamp connector
5	14401	Wiring harness – Main
6	14405	Wiring harness – Tail lamps
7	14630	Wiring harness – Window regulator, right front door
8	14631	Wiring harness – Window regulator, left front door
9	14632	Wiring harness – Window regulator, right rear door
10	14633	Wiring harness – Window regulator, left rear door
11	15525	Wiring harness – Back up lamp switch to rear lamp feed
12	12A581	Wiring harness – Engine control sensor
13	13A409	Wiring harness – Rear lamp connector
14	13A576	Wiring harness – Trailer lamp feed
15	14A005	Wiring harness – Body main
16	13A576	Wiring harness – Headlamp dimmer switch, jumper
17	14A005	Wiring harness – Starter motor relay and battery ground
18	14A320	Wiring harness – Console panel
19	14B060	Wiring harness – Temperature sensor
20	14B079	Wiring harness – Seat control feed jumper
21	14B102	Wiring harness – Backup alarm jumper
22	14C719	Kit – Trailer lamp plug and wiring
23	14N139	Wiring harness – Heater blower motor
24	15A416	Wiring harness – Rear window heater

10-1 Grounds

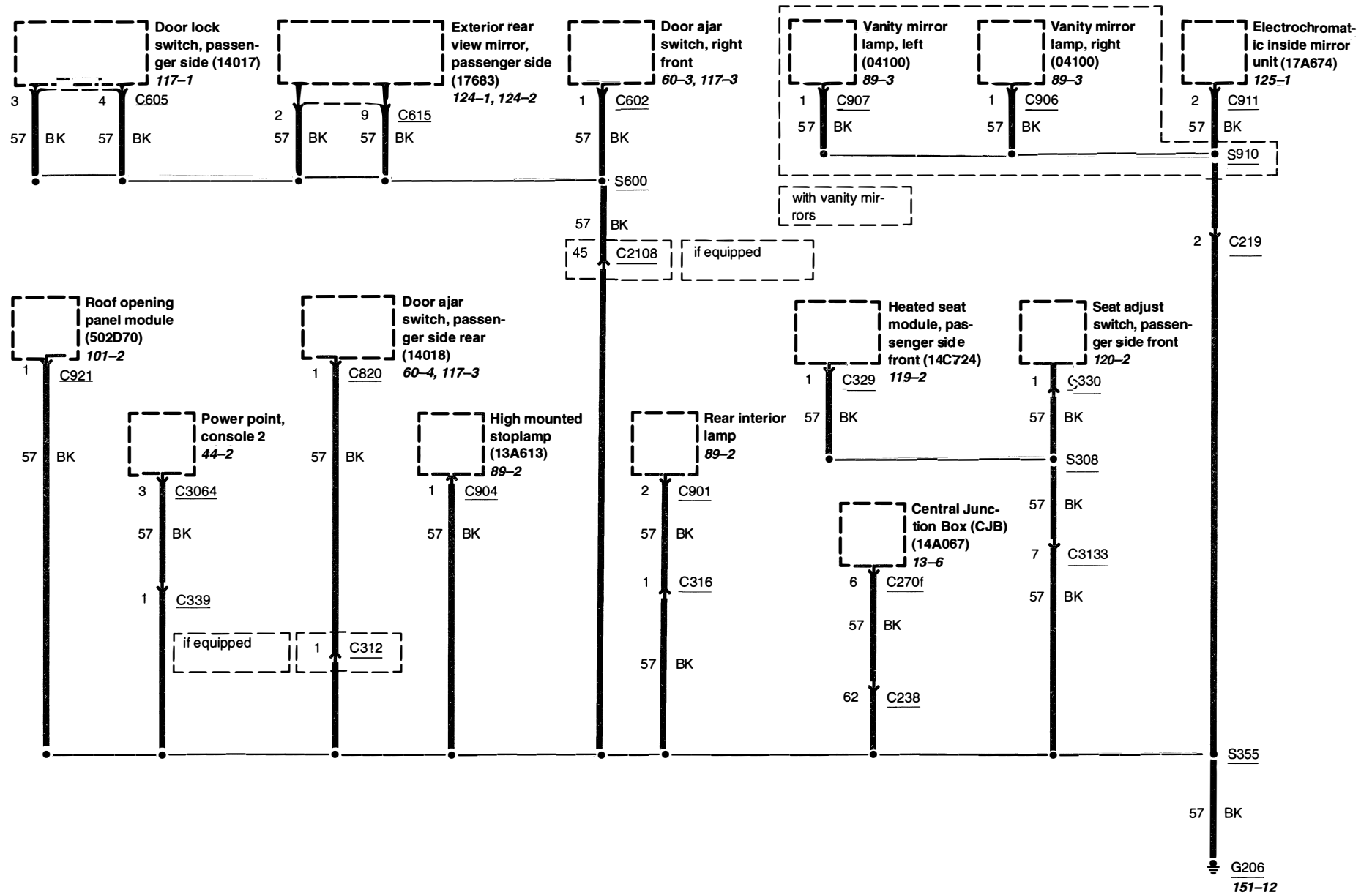
G100, G101, G102, G103, G105



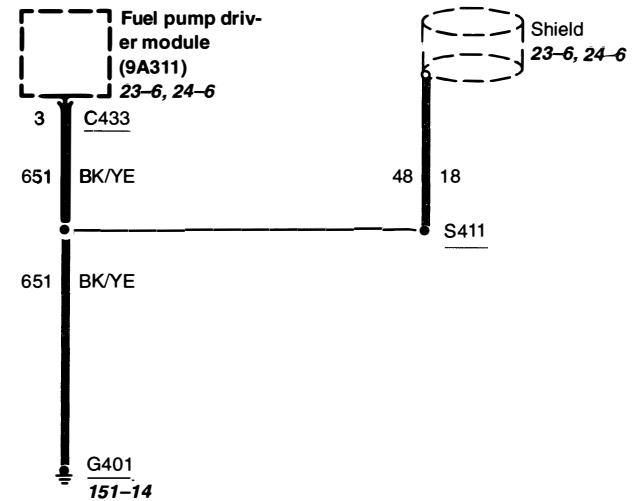
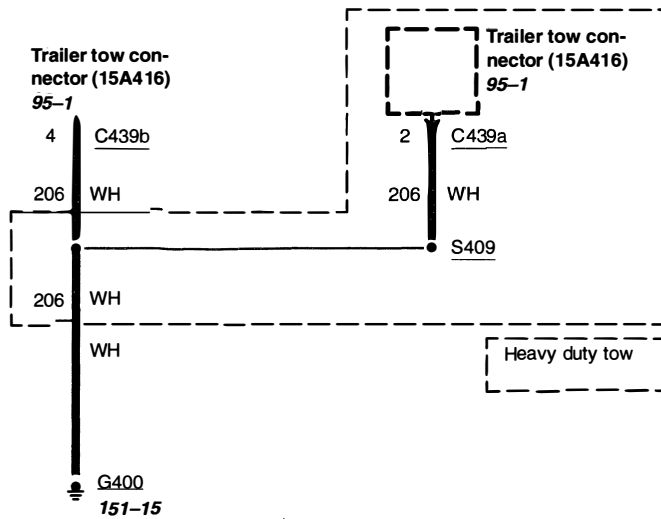
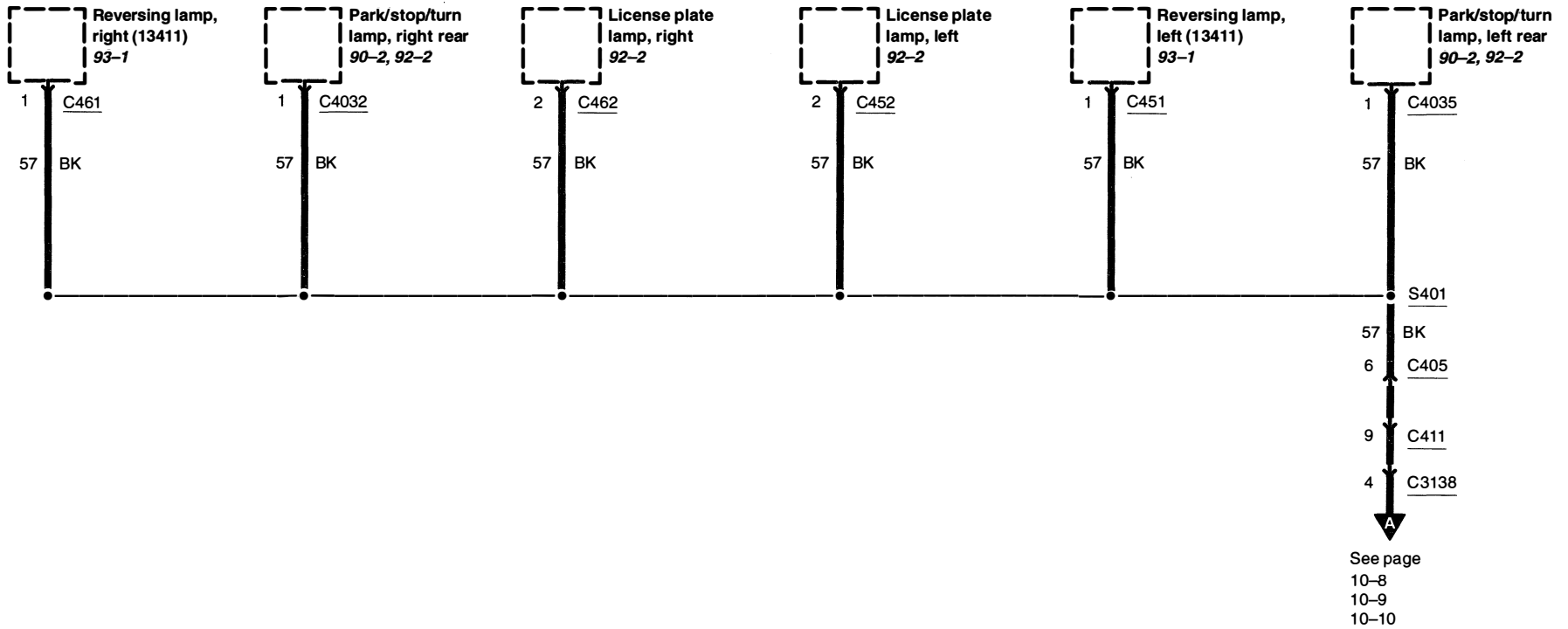
G104, G108



G206

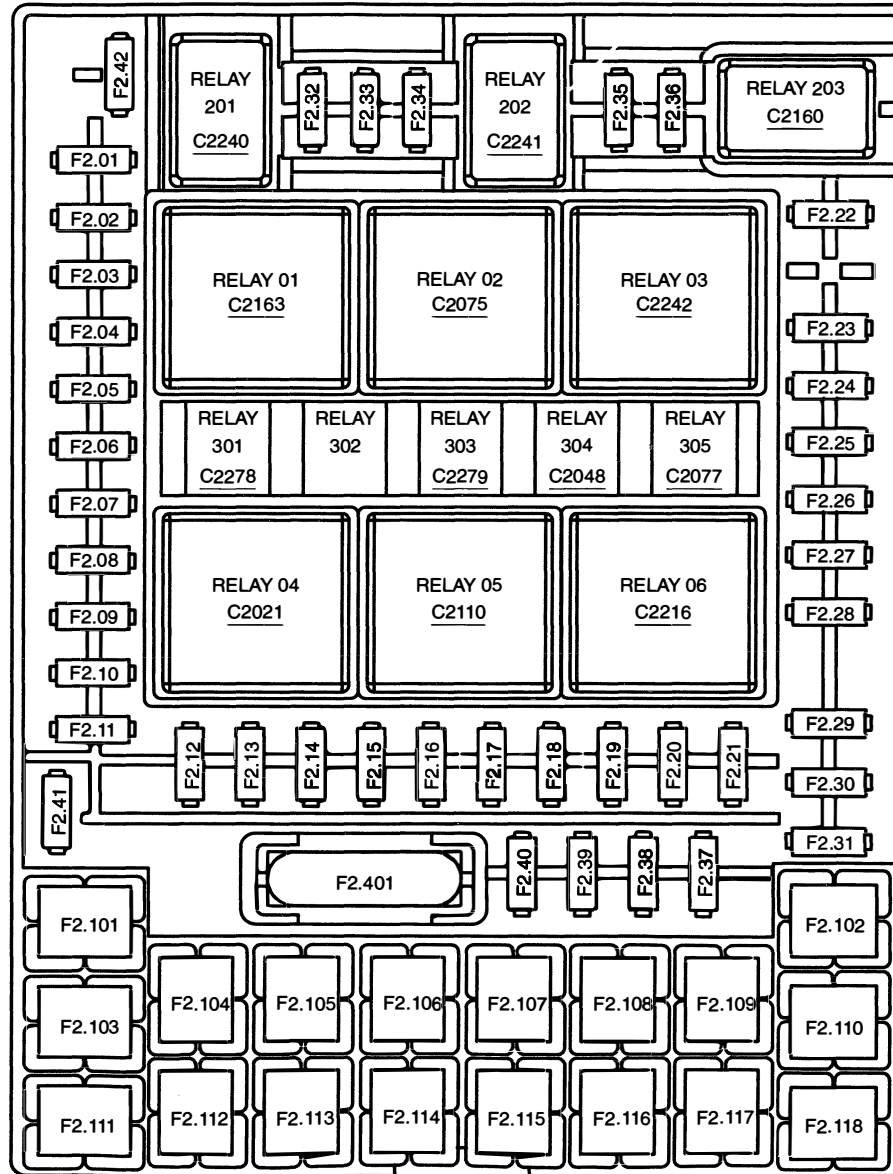


G400, G401



11-1 Fuse and Relay Information

Central Junction Box (CJB) (14A067)



Central Junction Box (CJB) (14A067)

Fuse	Amps	Circuits protected
F2.01	10	Windshield wiper motor (17526), Instrument cluster (10849), Audio unit (18C869)
F2.02	20	Indicator flasher relay (13350), Brake pedal position switch (13480), Deactivator switch (9C872)
F2.03	5	Exterior rear view mirror switch (17B676), Seat adjust switch, driver side front (14A701), Driver seat module (14C708)
F2.04	10	DVD player (10E947)
F2.05	7.5	Powertrain Control Module (PCM) (AAA1001), Autolamp/sunload sensor (14A597), Electronic Manual Temperature Control (EMTC) module (19980), Electronic Automatic Temperature Control (EATC) module (19980)
F2.06	15	Main light switch (11654), Body control module (15K602)
F2.07	5	Audio unit (18C869), Digital Transmission Range (DTR) sensor (7F293)
F2.08	10	Electronic Manual Temperature Control (EMTC) module (19980), Electronic Automatic Temperature Control (EATC) module (19980), Exterior rear view mirror, driver side (17682), Exterior rear view mirror, passenger side (17683)
F2.10	20	Trailer tow relay, parking lamp, Trailer tow relay, reversing lamp
F2.11	10	A/C clutch relay, 4x4 center axle disconnect solenoid
F2.13	10	Electronic Manual Temperature Control (EMTC) module (19980), Electronic Automatic Temperature Control (EATC) module (19980)
F2.14	10	Digital Transmission Range (DTR) sensor (7F293), Daytime Running Lamps (DRL) enable relay, Brake pedal position switch (13480), A/C high pressure switch (19D594), Positive crankcase ventilation heater
F2.15	5	Floor shifter, Overdrive cancel switch (7G550), Instrument cluster (10849)
F2.16	10	ABS control module (0273004685), Deactivator switch (9C872)
F2.17	15	Fog lamp relay
F2.18	10	Indicator flasher relay (13350), Parking Aid Module (PAM) (15K850), Electronic compass (19A548), Electrochromatic inside mirror unit (17A674), Heated seat module, driver side front (14C724), Heated seat module, passenger side front (14C724), Body control module (15K602)
F2.19	10	Passenger Air bag Deactivation (PAD) switch (14B268), Seat weight sensor module (603B02), Restraints control module (14B321)
F2.20	15	Powertrain Control Module (PCM) (AAA1001)
F2.21	15	Instrument cluster (10849)
F2.22	10	Audio unit (18C869), Roof opening panel switch (14529), Door lock switch, passenger side (14017), Door lock switch, driver side (14028)
F2.23	10	Headlamp, right (13008)

Fuse	Amps	Circuits protected
F2.24	15	Battery saver relay
F2.25	10	Headlamp, left (13008)
F2.26	20	Horn relay
F2.27	5	Passenger Air bag Deactivation (PAD) indicator (14B418), Instrument cluster (10849)
F2.28	5	PCM power diode, Passive anti-theft transceiver module (15607)
F2.29	15	Powertrain Control Module (PCM) (AAA1001)
F2.31	20	Audio unit (18C869)
F2.32	15	Evaporative emission (EVAP) canister vent valve (9F945), A/C clutch relay, Charge Motion Control Valve (CMCV), Valve cover assembly, right, Valve cover assembly, left, Heated Oxygen Sensor (HO2S) #11 (9F472), Heated Oxygen Sensor (HO2S) #21 (9F472), Manifold Absolute Pressure/Intake Air Temperature (MAP/IAT) sensor, Positive crankcase ventilation heater, Intake Manifold Runner Control (IMRC) module, EGR system module
F2.33	15	4R70E/4R75E Transmission, Heated Oxygen Sensor (HO2S) #12 (9G444), Heated Oxygen Sensor (HO2S) #22 (9G444)
F2.34	20	Fuel pump relay, Powertrain Control Module (PCM) (AAA1001), Fuel injector 1 (9F593), Fuel injector 2 (9F593), Fuel injector 3 (9F593), Fuel injector 4 (9F593), Fuel injector 5 (9F593), Fuel injector 6 (9F593), Fuel injector 7 (9F593), Fuel injector 8 (9F593)
F2.35	20	Fog lamp relay, Daytime Running Lamps (DRL) relay, Headlamp, right (13008), Headlamp, left (13008), Instrument cluster (10849), Fog lamp, left front (15200), Fog lamp, right front (15200), Main light switch (11654)
F2.36	10	Trailer tow connector (15A416), Park/stop/turn lamp, right rear
F2.37	20	Power point, console 1, Power point, console 2
F2.38	25	Subwoofer (18C808)
F2.39	20	Power point, instrument panel (19N236)
F2.40	20	Daytime Running Lamps (DRL) enable relay, Body control module (15K602), Main light switch (11654), Multifunction switch (13K359)
F2.41	20	Data Link Connector (DLC) (14489), Cigar lighter, front (15055)
F2.42	10	Trailer tow connector (15A416), Park/stop/turn lamp, left rear
F2.101	30	Starter relay (11450)
F2.102	20	Ignition switch (11572)
F2.103	20	ABS control module (0273004685)
F2.105	30	Trailer electronic brake control module
F2.106	30	Trailer tow relay, battery charge

Central Junction Box (CJB) (14A067)

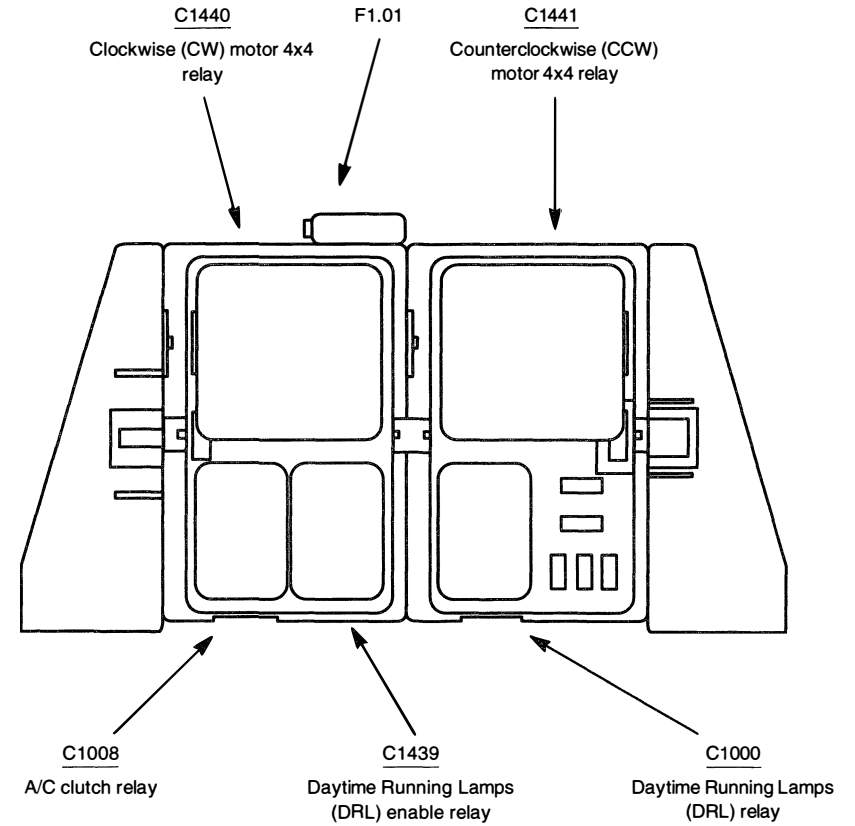
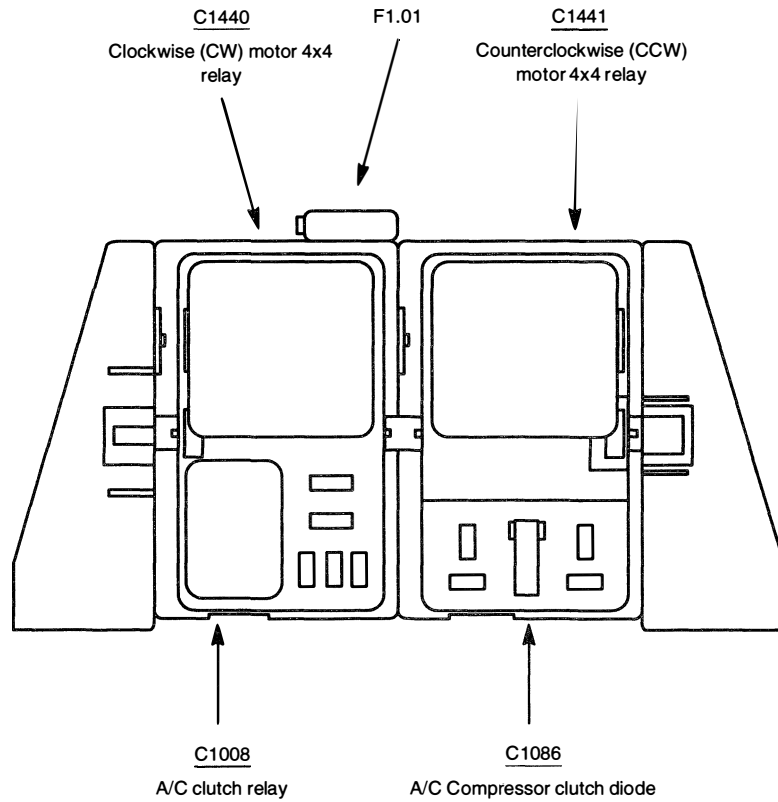
Fuse	Amps	Circuits protected
F2.107	30	Body control module (15K602)
F2.108	30	Seat adjust switch, passenger side front
F2.109	30	Adjustable pedal switch, Seat adjust switch, driver side front (14A701), Driver seat module (14C708)
F2.111	30	Clockwise (CW) motor 4x4 relay, Counterclockwise (CCW) motor 4x4 relay
F2.112	40	ABS control module (0273004685)
F2.113	30	Windshield wiper motor (17526)
F2.114	40	Rear window defrost relay
F2.116	30	Front blower motor relay
F2.118	30	Heated seat module, driver side front (14C724), Heated seat module, passenger side front (14C724)
F2.401	30 CB	Power sliding window switch, rear, Roof opening panel module (502D70), Master window adjust switch, Window adjust switch, passenger side (14529A)

Relay #	Connector #	Name
01	C2163	Starter relay (11450)
02	C2075	Accessory delay relay
03	C2242	High beam relay
04	C2021	Rear window defrost relay
05	C2110	Trailer tow relay, battery charge
06	C2216	Front blower motor relay
201	C2240	Trailer tow relay, parking lamp
202	C2241	Fog lamp relay
203	C2160	PCM power relay
301	C2278	Trailer tow relay, reversing lamp
302	-	not used
303	C2279	Fuel pump relay
304	C2048	Battery saver relay
305	C2077	Horn relay

Auxiliary relay box 1

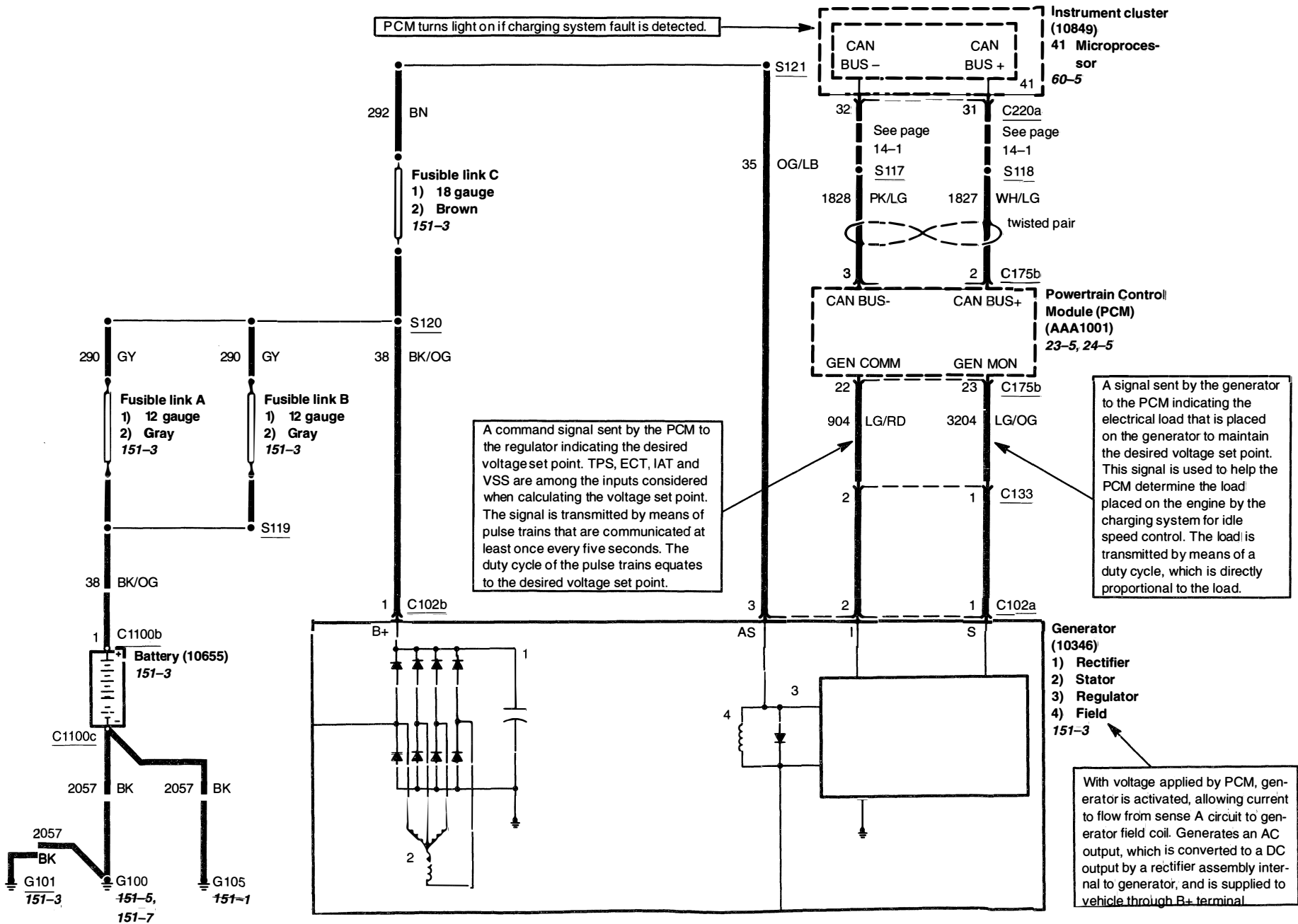
without daytime running lamps

with daytime running lamps



Fuse	Amps	Circuits protected
F1.01	5	Air bag sliding contact (14A664)

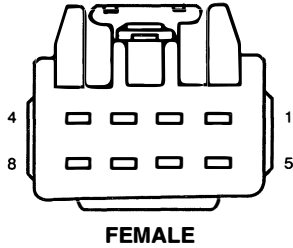
12-1 Charging System



C980

14358

Power sliding window switch, rear

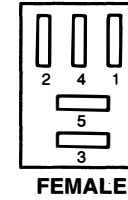


Pin	Circuit	Circuit function
1	–	not used
2	1941 (YE/LB)	Power sliding window motor, rear closed switch sense
3	57 (BK)	Ground
4	400 (LB/BK)	Accessory delay relay switched power
5	57 (BK)	Ground
6	1942 (RD/YE)	Power sliding window motor, rear Open switch sense
7	–	not used
8	–	not used

C1008

12A581

A/C clutch relay

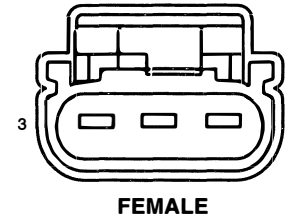


Pin	Circuit	Circuit function
1	391 (RD/YE)	PCM power relay switched power
2	331 (PK/YE)	A/C clutch relay control
3	883 (PK/LB)	Voltage supplied at all times (overload protected)
4	–	not used
5	321 (GY/WH)	A/C clutch relay switched power

C1021 (GN)

12A581

Headlamp, left (13008)

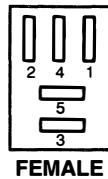


Pin	Circuit	Circuit function
1	160 (DB/WH)	Headlamps Low beam switched power
2	57 (BK)	Ground
3	12 (LG/BK)	High beam relay switched power

C1000

12A581

Daytime Running Lamps (DRL) relay

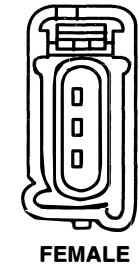


Pin	Circuit	Circuit function
1	57 (BK)	Ground
2	12 (LG/BK)	High beam relay switched power
3	1731 (RD/BK)	Daytime Running Lamps (DRL) enable relay switched power
4	471 (OG/LG)	Daytime Running Lamps (DRL) relay switched power
5	–	not used

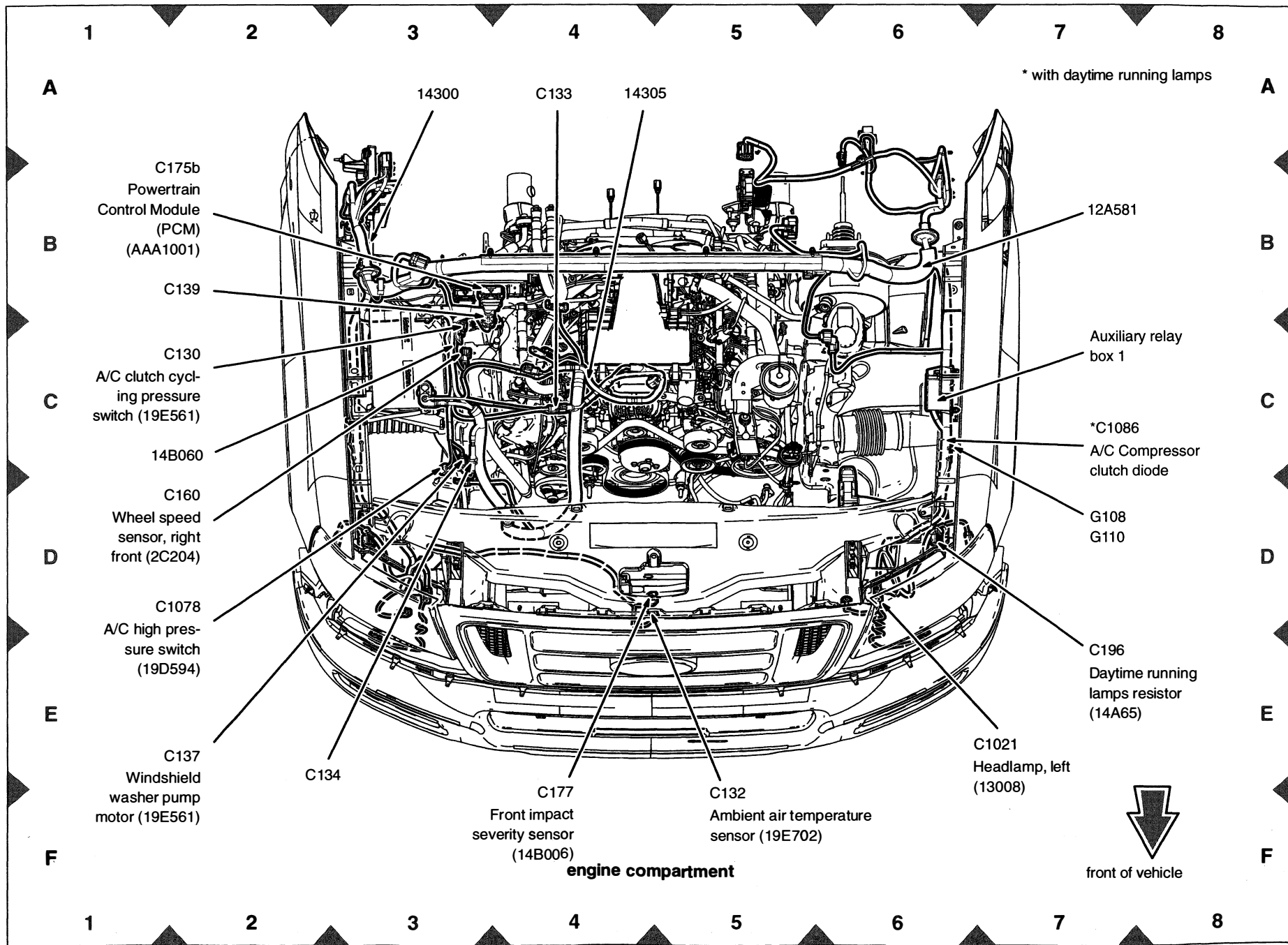
C1023 (BN)

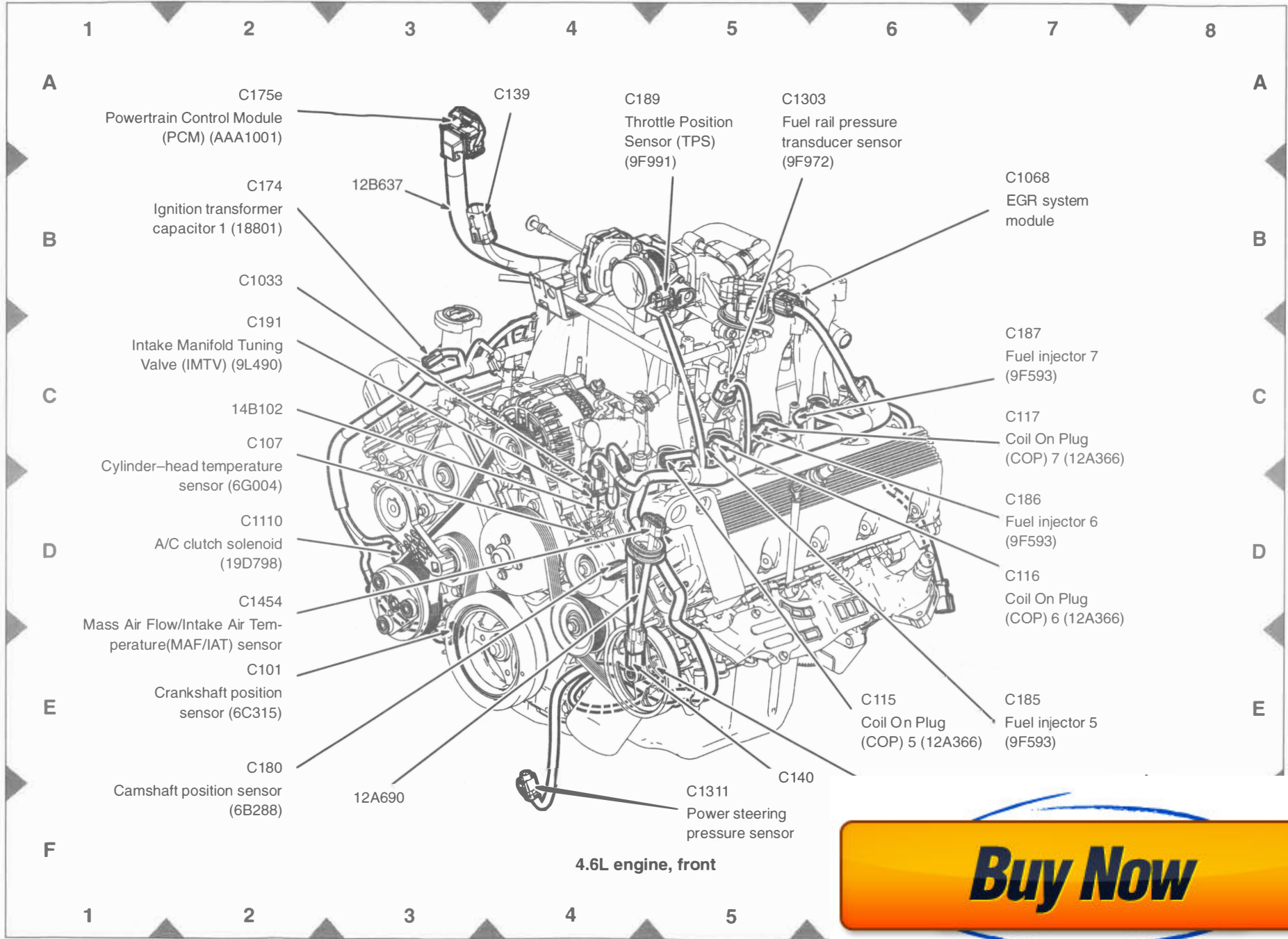
12A581

Park/turn lamp, left front (13411)



Pin	Circuit	Circuit function
1	57 (BK)	Ground
2	14 (BN)	Hot in Park or Head
3	3 (LG/WH)	left front Turn lamps signal feed





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