

RANGE ROVER



Electrical troubleshooting manual

Elektrische diagnoseprocedure—handboek

Manuel de dépannage électrique

Handbuch zur Fehlersuche bei elektrischen Bauteilen

Manuale per l'individuazione dei guasti elettrici

Manual de localización de averías eléctricas

Manual de diagnóstico de averías eléctricas



Electrical troubleshooting manual

RANGE ROVER

1995 model

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1995 RANGE ROVER

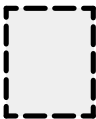
KEY INFORMATION

CIRCUIT DIAGRAMS

- Circuit diagrams are arranged so that current flow is from the top of the diagram (current source) to the bottom of the diagram (earth).
- Only those components that work together in the circuit are shown. If only part of a component is used in the circuit, then only that part of the component is shown.
- Remember:



Entire component



Part of a component

TERMINAL NUMBER

DESIGNATION

50

Battery voltage: Ignition Switch in position III

30

Battery voltage: supplied constantly

15

Battery voltage: Ignition Switch in position II or III

R

Battery voltage: Ignition Switch in positions I, II

31

Earth

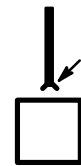
See Introduction (i) for additional circuit diagram symbols

DIAGNOSIS

- If the diagram is accompanied by text:
 - Read the Circuit Operation before proceeding with the electrical diagnosis.
 - Read the Troubleshooting Hints before performing the System Diagnosis.
 - Tests follow the System Diagnosis
 - When performing the System Diagnosis, be certain that all components disconnected in previous steps are reconnected unless otherwise directed.



Component is disconnected.
Backprobe harness connector



Component is connected.
Backprobe harness connector



Component is disconnected.
Probe component



Component is disconnected.
Probe harness connector



Probe in-line connector

INTRODUCTION

This manual is intended for use by trained Land Rover technicians as an aid to diagnosing electrical concerns.

This manual is organized into sections, with most sections containing circuit diagrams. Each section has a unique alpha–numeric code that will normally remain the same from year to year. For example, the Headlights circuit is in Section H1, with the first page of the section numbered H1–1. The following pages of this section will be numbered H1–2, H1–3, H1–4, etc. The manual does not contain any information concerning removal, refit or overhaul of electrical components or harnesses. These details are contained in the Workshop Manual. The following information forms the basis of the troubleshooting routines:

- Circuit Diagrams
- System Diagnosis Flow Charts
- Component Location Table
- Component Locations Views

Additional information, such as Circuit Operation, is also contained in the manual to aid in your understanding of how the different circuits operate.

DESCRIPTION OF MANUAL

Circuit Operation And Diagram

The Circuit Operation information at the beginning of the section will give you an overview of how the circuit works.

The Circuit Diagrams should always be your starting point in using this Electrical Troubleshooting Manual. The diagram shows the electrical current paths when a circuit is operating properly. It is essential to understand how a circuit should work before trying to figure out why it doesn't. Diagrams are shown with the Ignition Switch in the OFF position and other switches in the OFF or 'at rest' position.

Notes are provided after certain switches to clarify switch positions. Abbreviations found in the notes are explained in the Abbreviation Table found in the SYMBOLS section of this chapter.

Circuit Diagrams (schematics) break the entire electrical system into individual circuits. Electrical

components that work together are shown together.

Each diagram is arranged so current flows from positive, at the top of the page, to ground, at the bottom of the page. The 'power' labels at the top of a fuse show when the Battery, Main Light Switch, or Ignition Switch supplies power to that fuse.

Wires that connect to another circuit are shown with an arrowhead pointing in the direction of current flow. The name of the circuit that shares the wiring is provided for reference.

Wire Colour charts are no longer provided on each circuit page. One chart is provided in the SYMBOLS section of this chapter.

'See Fuse Details' means there are more connections to other circuits that are not shown. All such shared circuits are shown on the Fuse Details diagrams. 'See Ground Distribution' means there are more shared ground circuits which are shown on the Ground Distribution diagrams.

No attempt is made on the diagrams to represent components and wiring as they physically appear on the car. For example, a long length of wire is treated no differently in a diagram from one which is only a few centimeters long. The number of cavities for each connector is listed in the Component Location Table rather than illustrated. Similarly, switches and other components are shown as simply as possible, with regard to function only.

Power Distribution

The Power Distribution diagrams are found in Section Y1. These diagrams show how voltage is supplied from the positive Battery terminal to the various circuits in the vehicle.

The individual Circuit Diagrams begin with a fuse or the Ignition Switch. Power Distribution shows the wiring from the Battery to the Fuse Boxes, the Ignition Switch, the Main Lighting Switch, and any circuit fuses not located in a Fuse Box.

Fuse Details

The Fuse Details diagrams are found in Section Y2. These diagrams show all the wiring between each fuses in the Fuse Boxes and the components connected to the output of the fuse. The Fuse Details diagrams are extremely helpful in locating a short circuit that causes a fuse to blow. These diagrams also aid in troubleshooting an inoperative circuit by showing a second circuit using the same fuse. If the second circuit works, then the fuse and certain wires of the inoperative circuit are good.

Ground Distribution

The Ground Distribution diagrams are found in Section Y5. These diagrams show which components share each ground point. This information can often be a time-saver when troubleshooting a poor ground.

For example, if the Fuel Pump does not run, you may suspect an open in its circuit to ground. However, if the Number Plate Lamps work, and they share the same ground point as the Fuel Pump, you know that the ground and the wire up to the common splice are good. You have learned this just by inspecting the diagram and knowing the vehicle's symptoms.

Connector Views

Connector Views are provided in section Z6. All connectors with 2 terminals or more will be shown. Pin-out tables with the appropriate wire colours will also be shown.

Component Location Table

A Component Location Table can be found in Section Z4. Except for the location of obvious components like the Left Headlight, the table lists the location of every component, connector and ground point depicted in the Circuit Diagrams. The table also gives references to Component Location Views located in Section Z5 and cross references to Workshop Manual remove and refit procedure sections. The number of cavities in each connector and the connector colour is also listed. Wires may not be used in all connector cavities.

TROUBLESHOOTING TECHNIQUE

The following five-step troubleshooting procedure is recommended.

(1) Verify the Problem

Check the operation of the circuit to be sure you understand the problem. Do not begin disassembly or testing until you have narrowed down the possible causes.

(2) Analyze the Circuit Diagram (schematic)

Analyze the diagram. Check circuits that share the wiring with the problem circuit. The names of shared circuits are often given on each Circuit Diagram to aid troubleshooting. Shared power and ground circuits can be found in the Power and Ground Distribution sections. Try to operate the shared circuits. If these circuits work, then the shared wiring is OK. The cause must be within the wiring used only by the problem circuit. If several circuits fail at the same time, chances are the power (fuse) or ground circuit is faulty.

(3) Find the Cause

- Narrow down the possible causes.
- Before you replace a component, check power, signal, and ground wires at the component harness connector.

(4) Repair the Problem

Once the specific problem is identified, make the repair. Be sure to use the correct tools and safe procedures.

(5) Check the Repair

Check the operation of the repaired circuit in all modes to make sure you fixed the entire problem. If the problem was a blown fuse, be sure to test all of the circuits on that fuse. Make sure no new problems are present.

TEST EQUIPMENT

Where applicable, Land Rover recommended testers should be used.

Voltmeter and Test Light

Use a voltmeter or test light to check for voltage. While a test light shows whether or not voltage is present, a voltmeter indicates how much voltage there is.

CAUTION: A number of circuits include solid-state devices. Voltages in these circuits should be tested only with a 10-megohm or higher impedance digital multimeter. Never use a test light on circuits that contain solid-state devices. Damage to the device may result.

On circuits without solid-state devices, a test light may be used to check for voltage. A test light is made up of a 12-volt bulb with a pair of leads attached. After grounding one lead, touch the other lead to various points along the circuit where voltage should be present. The bulb will come on if the voltage at the point being tested is greater than 5 volts.

Self-powered Test Light and Ohmmeter

Use a self-powered test light or ohmmeter to check for continuity. The ohmmeter shows how much resistance there is between two points along a circuit. Low resistance means good continuity.

CAUTION: Never use a self-powered test light on circuits that contain solid-state devices. Damage to these devices may result.

Diodes and solid-state devices in a circuit can make an ohmmeter give a false reading. To find out if a component is affecting a measurement, take one reading, reverse the leads, and take a second reading. If the readings differ, the component is affecting the measurement.

Circuits that contain solid-state devices should only be tested with a 10-megohm or higher impedance digital multimeter.

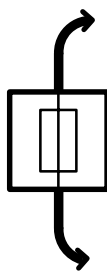
A self-powered test light consists of a light bulb, Battery and two leads. If the leads are touched together, the bulb will go on.

A self-powered test light is only used on an unpowered circuit. First, disconnect the battery or remove the fuse that feeds the circuit you are working on. Select two points along the circuit through which there should be continuity. Connect one lead of the self-powered test light to each point. If there is continuity, the test light's circuit will be completed and the bulb will go on.

Fused Jumper Wire

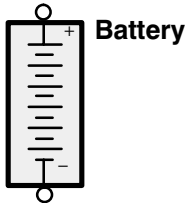
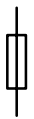
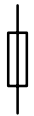
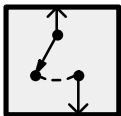
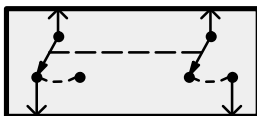
Use a fused jumper wire to bypass an open circuit. A fuse jumper wire is made up of an in-line fuse holder connected to a set of test leads. Never use a jumper wire across any load. This direct battery short will blow the fuse.

The following symbol represents a fused jumper:

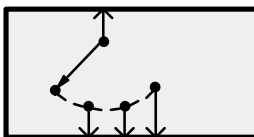
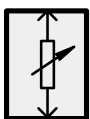
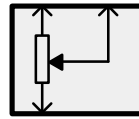
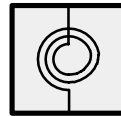
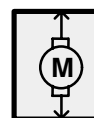
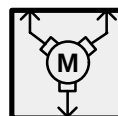


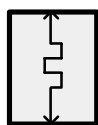
SYMBOLS

The abbreviations and symbols explained here are used throughout the manual; it is necessary to know what they mean in order to use the diagrams effectively.

**Battery****F1 Fuse****MF2 Maxi-Fuse[®]****One-pole on/off switch****Two-pole switch**

Dashed line indicates
mechanical connection
between switches

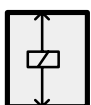
**Multiple Position Switch****Variable resistor. Wiper
moves by external force****Potentiometer. Wiper moves
by external force****Steering Column Rotary
Coupler****Diode. Current flows in direc-
tion of arrow only****LED****Bulb****Electronic or Solid State device****Permanent magnet
motor (one speed)****Permanent magnet motor
(two speed)**



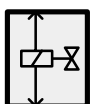
Heating Element



Loudspeaker or horn



Coil

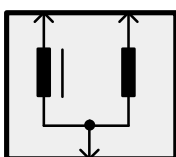


Solenoid

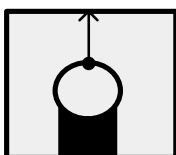


Relay

Switch is drawn into the closed position when current flows through coil



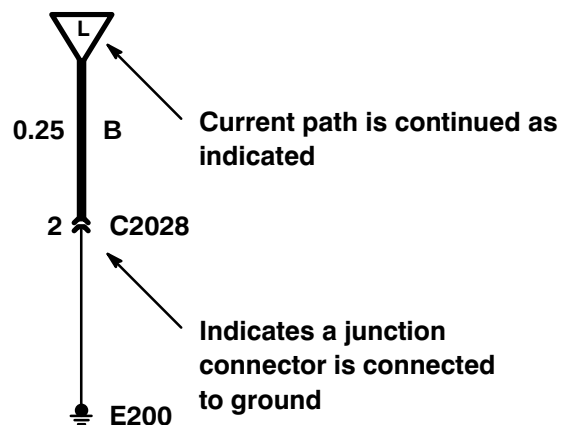
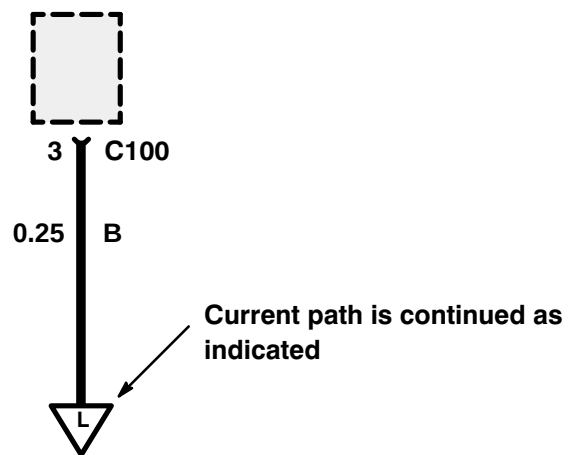
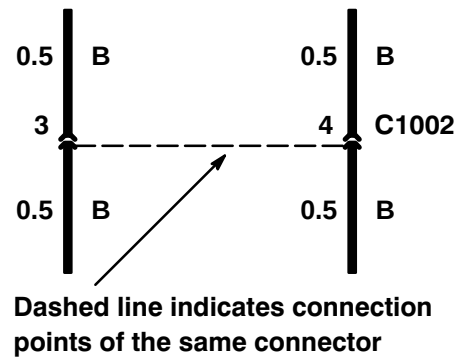
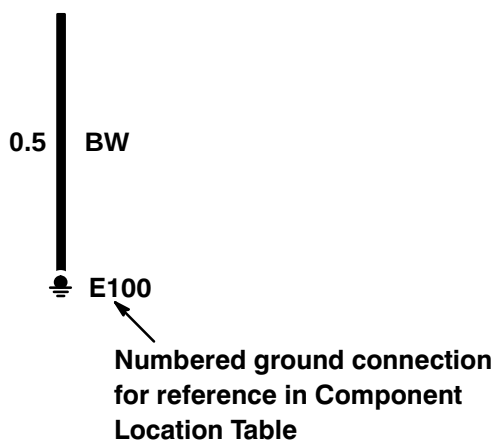
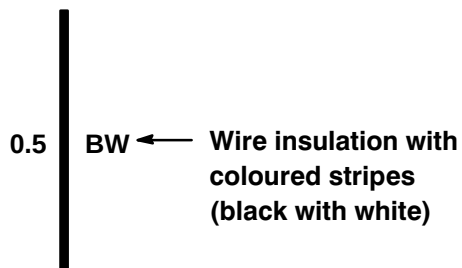
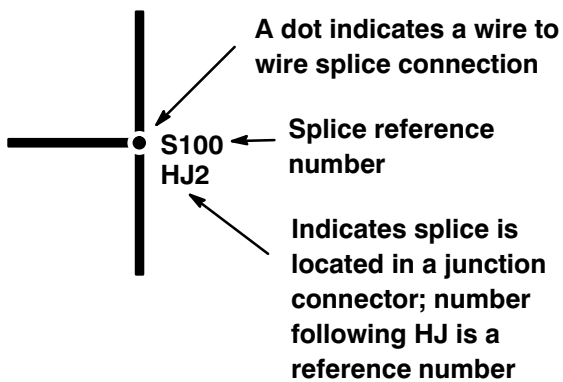
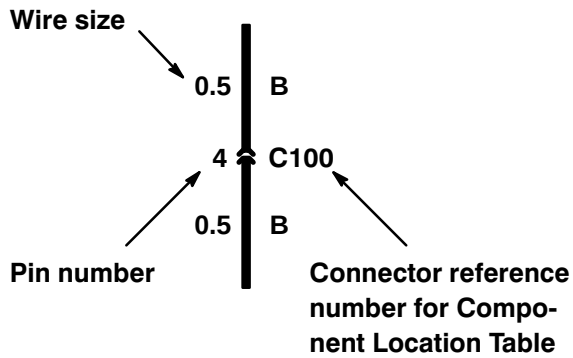
Ignition Coil

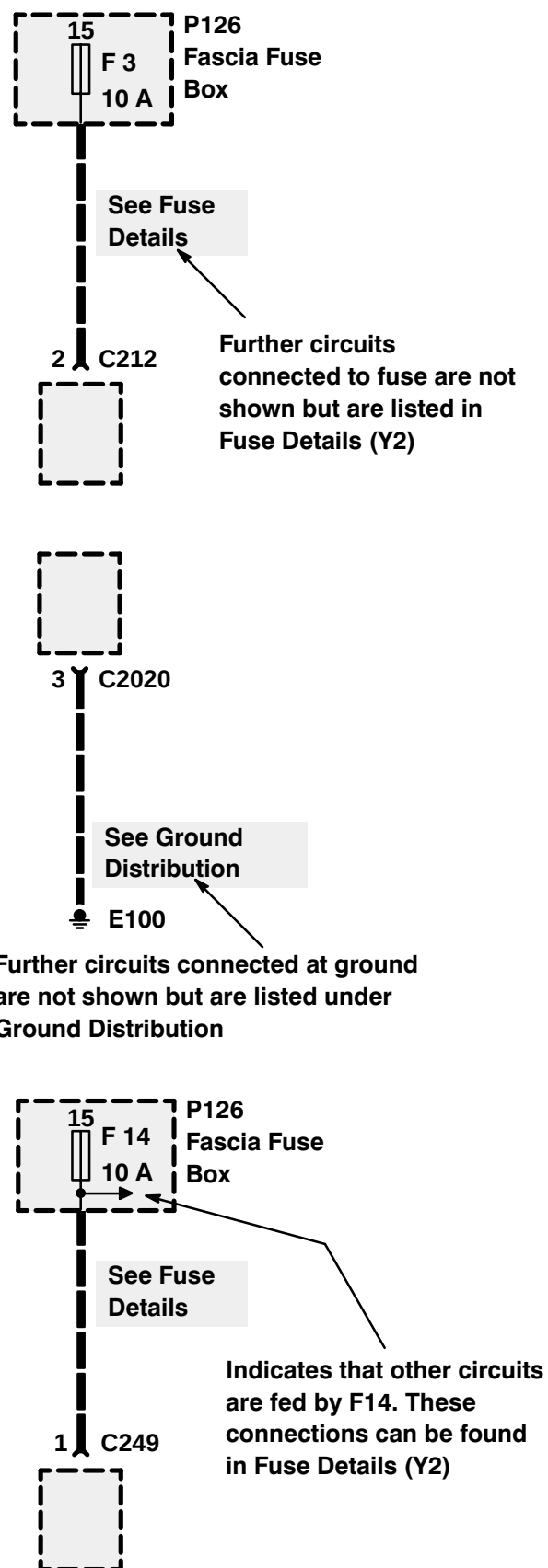
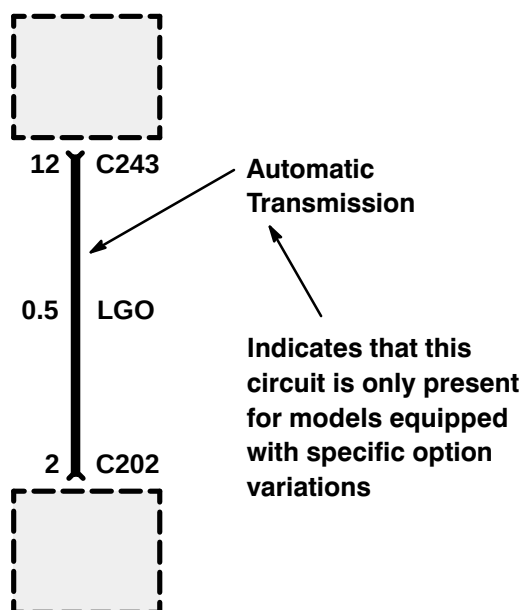
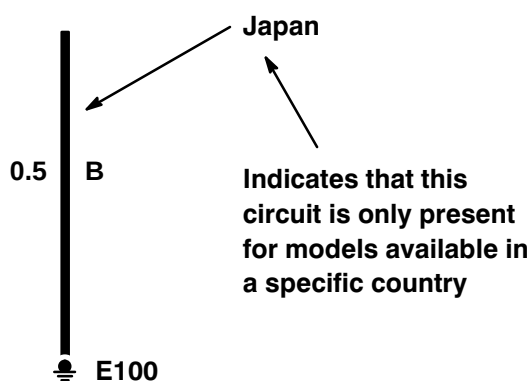
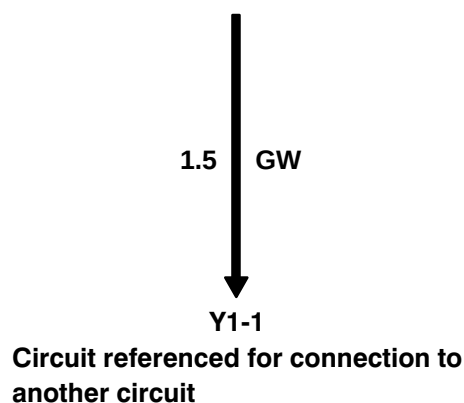


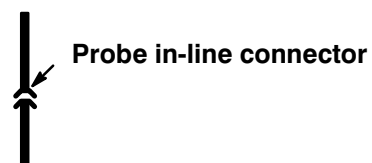
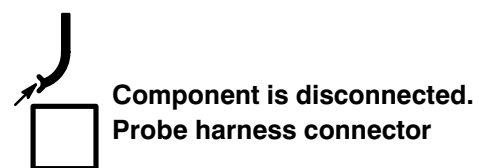
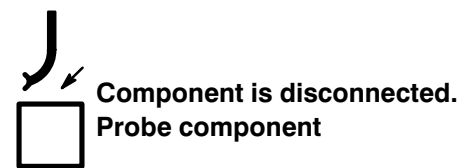
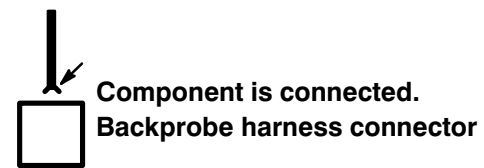
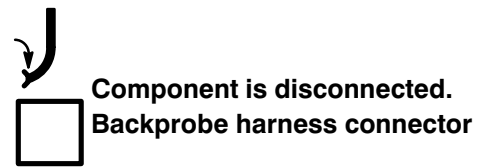
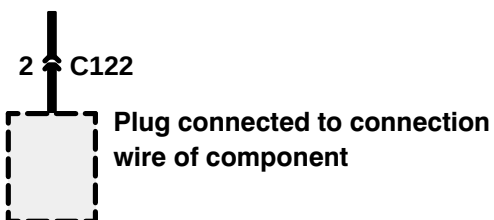
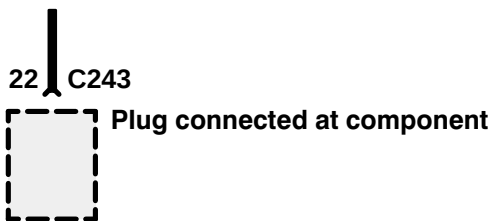
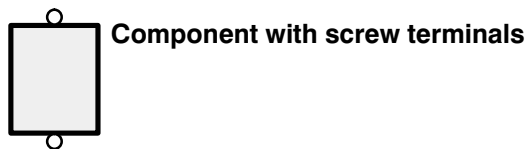
Steering Column
Horn Brush/
Slip Ring

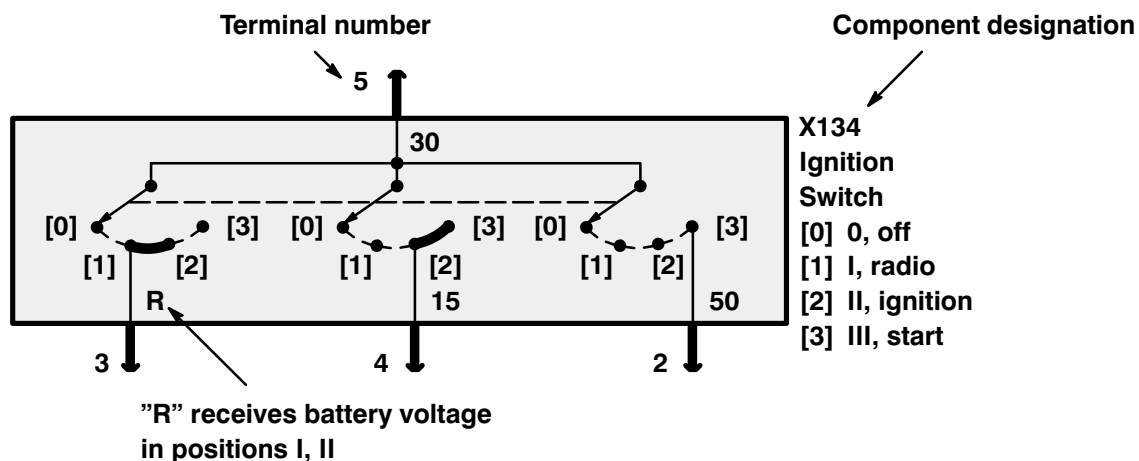


Antenna









Terminal number	Designation	Terminal number	Designation
50	Battery voltage: Ignition Switch in position III	X	Switched battery voltage through the ignition load relay; ignition switch is in position II or III.
30	Battery voltage: supplied constantly	49	Flasher unit input
15	Battery voltage: Ignition Switch in position II or III	49a	Flasher unit output
R	Battery voltage: Ignition Switch in positions I, II	56a	High beam
31	Ground	56b	Low beam
		85	End of relay coil
		86	Start of relay coil
		87	Relay contact
		87a	Relay contact

Definition of Vehicle Component Codes

All components are identified by a letter followed by an arbitrary number assigned to the component. The letter assigned to the component indicates the type of component.

B	Bulbs, Heated Screens, Mirror Demisters, Cigar Lighters, and Heated Washer Jets
K	Relays, Solenoids, Speakers, and Resistors
M	Motors
P	Fuse Boxes and Fusible Links
X	Switches and Sensors
Z	Electronic Control Units, Modules, Shields, Diodes, and Capacitors

Wire Colours

All wires are identified by letters which indicate a certain colour. Wire colour and size will only be shown once if it does not change throughout the circuit. The following chart explains the wire colour abbreviations.

Wire Colour Chart

B - Black	P - Purple
G - Green	R - Red
K - Pink	S - Grey
L - Light	U - Blue
N - Brown	W - White
O - Orange	Y - Yellow

Circuit Qualifiers

Certain abbreviations are used throughout the Electrical Troubleshooting Manual as circuit qualifiers. The following list explains all abbreviations used as qualifiers in the Circuit Diagrams.

ABS	Anti-Lock Braking System
CPU	Central Processing Unit
LHD	Lefthand Drive
RHD	Righthand Drive
LWB	Long Wheel Base
SWB	Short Wheel Base
NAS	North American Countries
MFI–V8	Multiport Fuel Injection (MFI–V8)
MFI–T16	Multiport Fuel Injection (MFI–T16)
300 Tdi	Tdi Diesel
300 Tdi with EGR	Tdi Diesel with Exhaust Gas Recirculation (EGR)
300 Tdi without EGR	Tdi Diesel without Exhaust Gas Recirculation (EGR)
300 Tdi with EDC	Tdi Diesel with Electronic Diesel Control (EDC)
300 Tdi without EDC	Tdi Diesel without Elec- tronic Diesel Control (EDC)

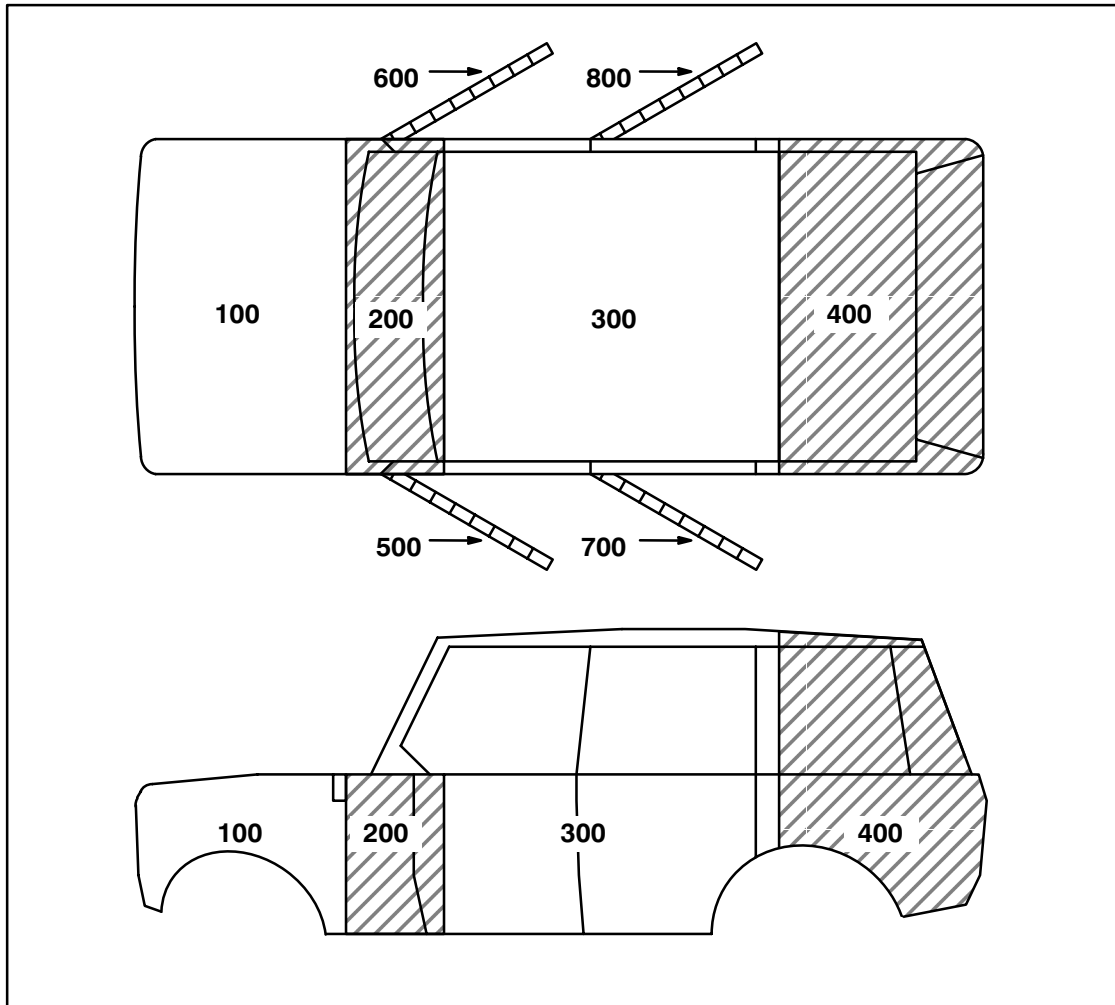
Switch Positions

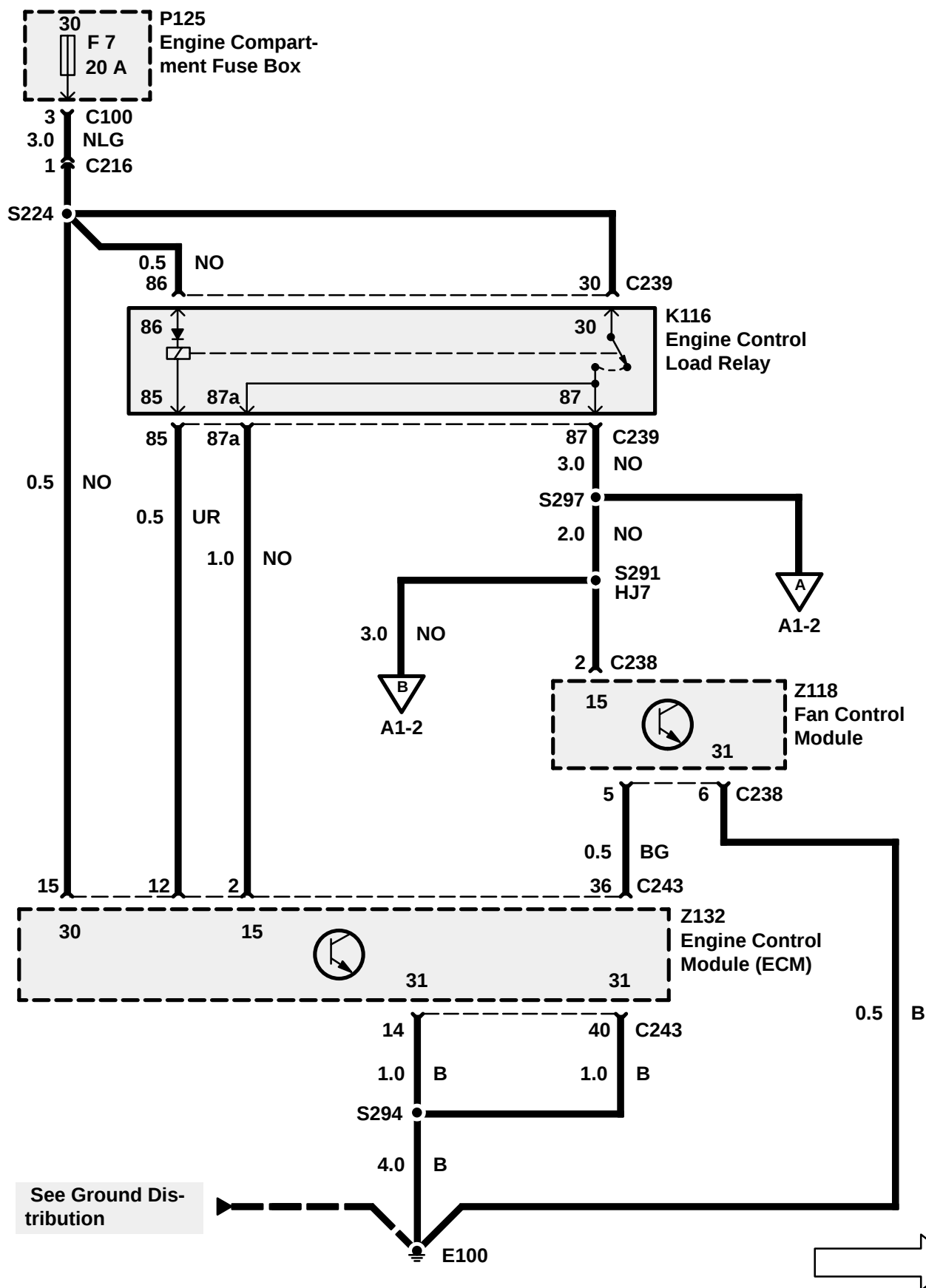
Certain abbreviations are used throughout the Electrical Troubleshooting Manual as Switch Position notes. The following list explains all abbreviations used as Switch Position notes in the Circuit Diagrams.

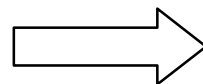
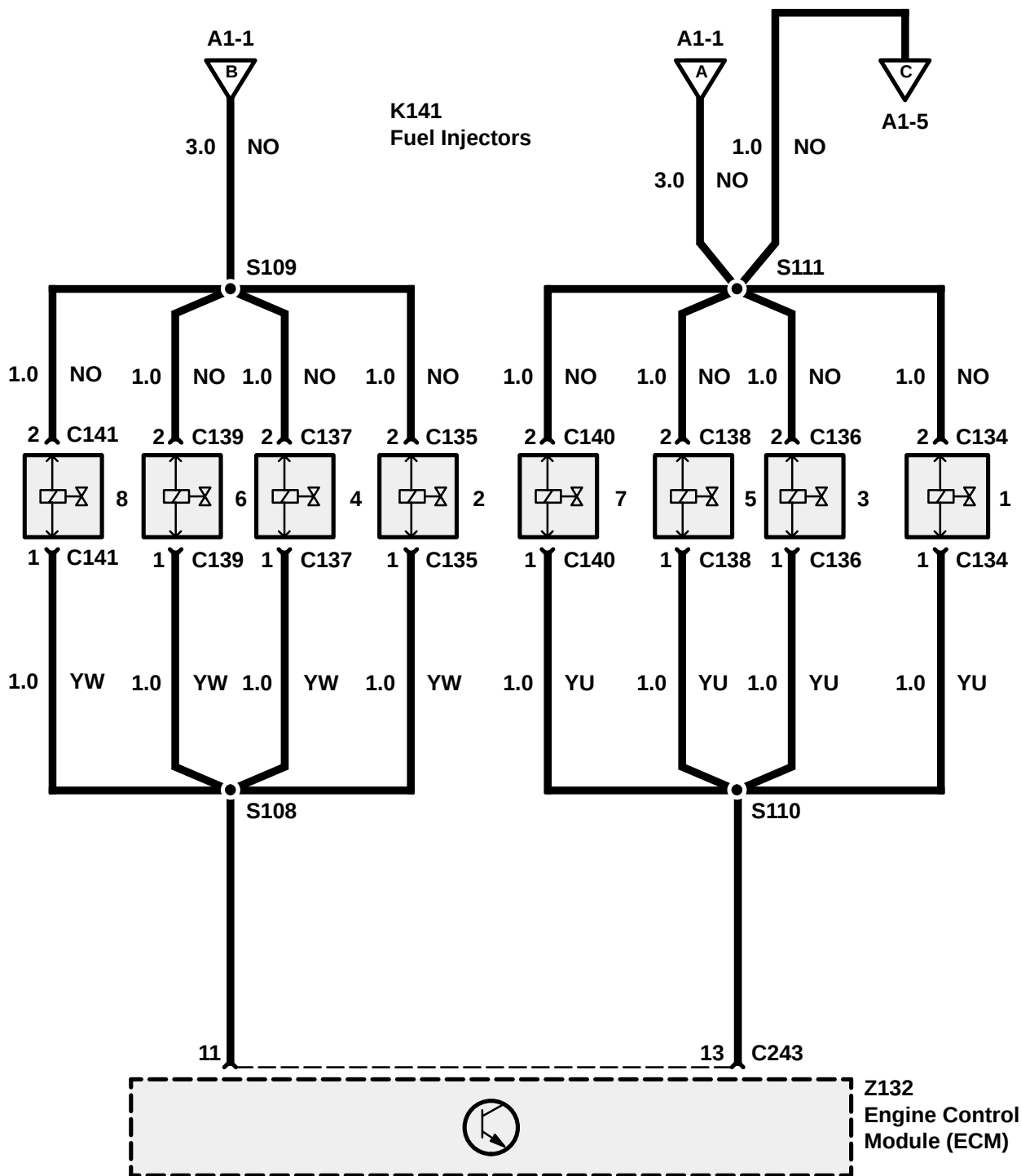
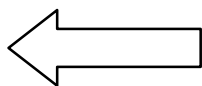
< 100°	Less than 100°
> 100°	More than 100°

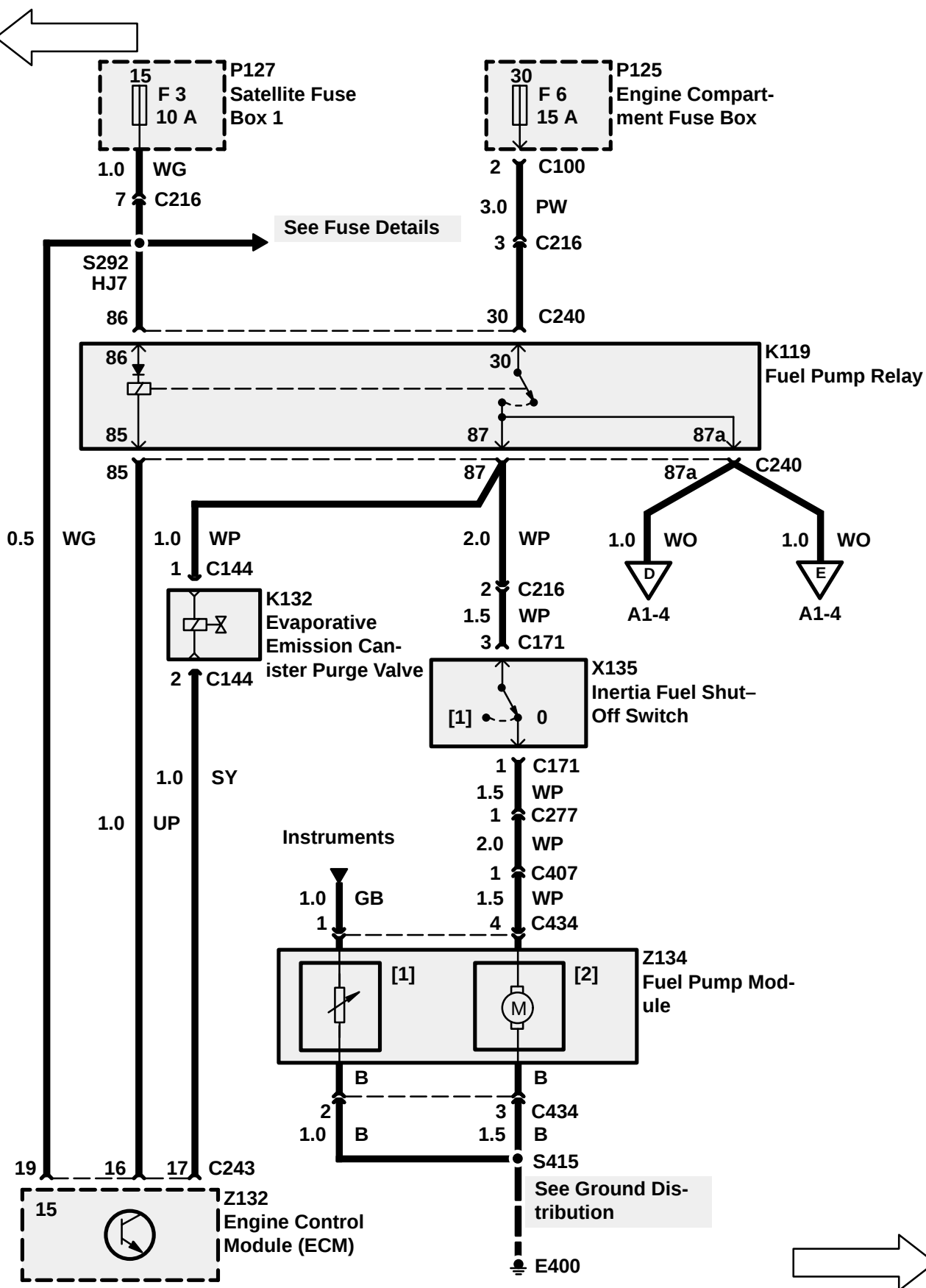
Connectors, Grounds, and Splices are identified by a letter followed by a number. Connectors are identified by C, grounds by E, and splices by S. Some splices are contained in junction connectors. These splices are identified by the prefix "HJ" below the splice's reference number. The number assigned to the connector, ground, or splice corresponds to its location in the vehicle.

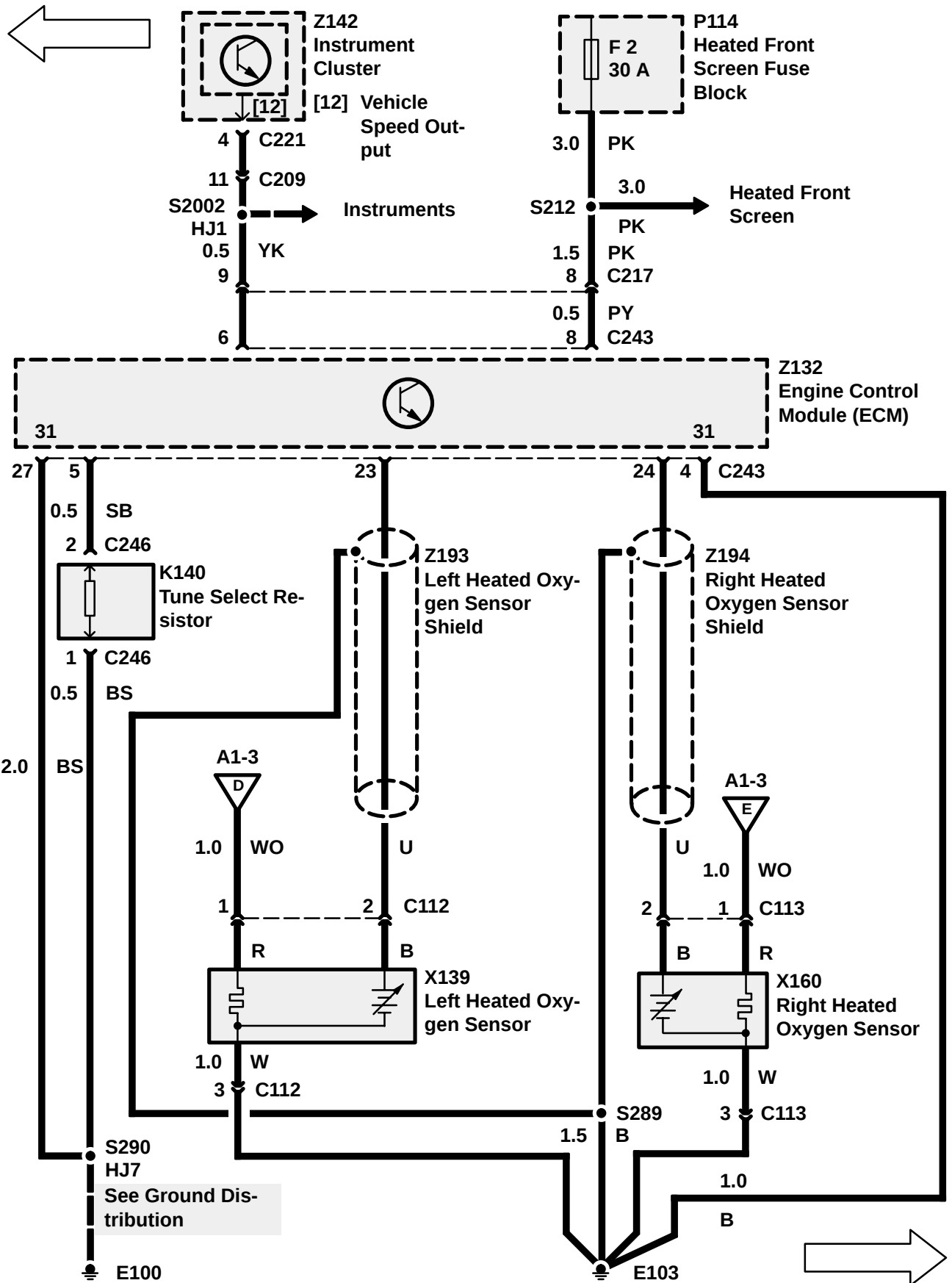
Connector, Ground, and Splice Identification by Location

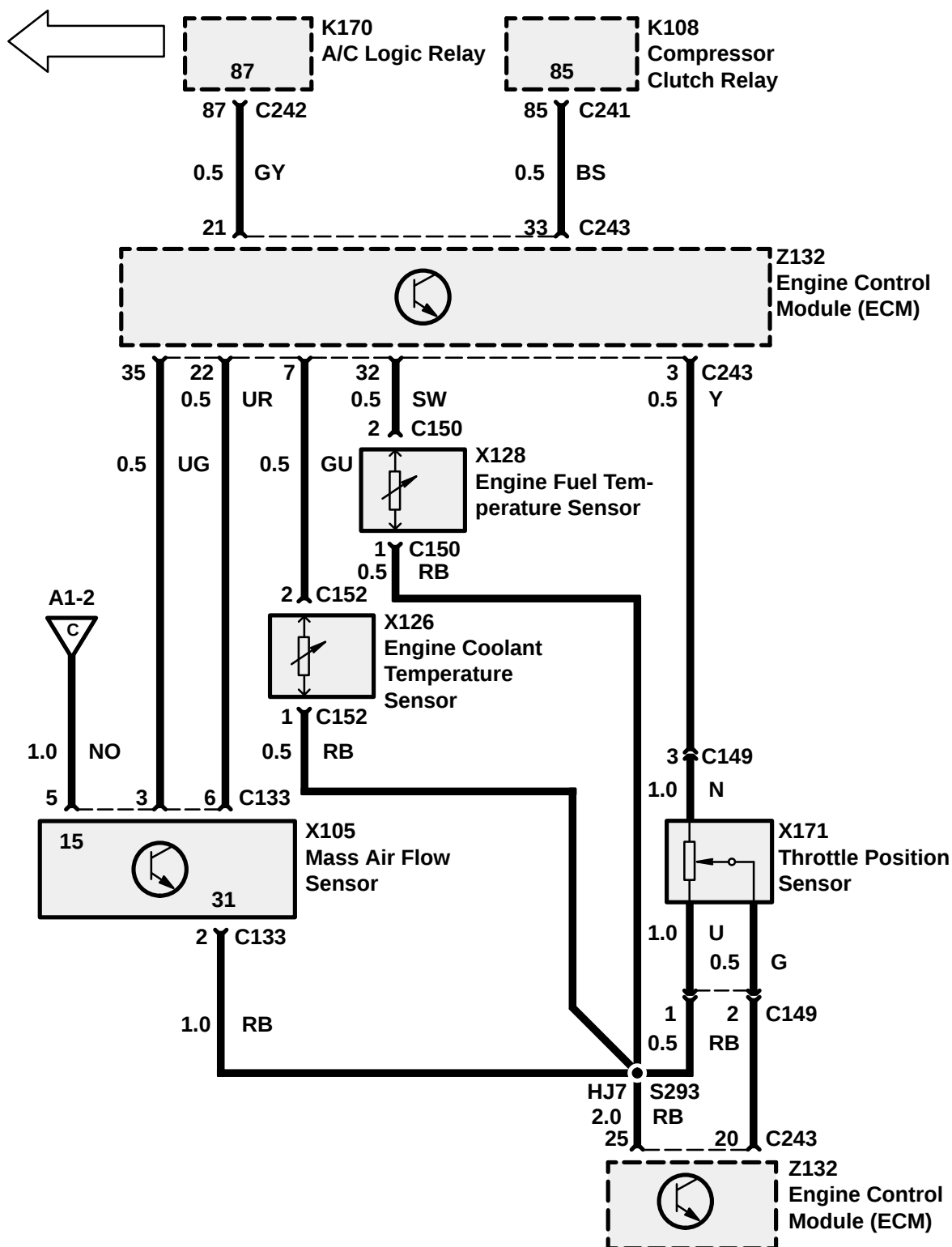






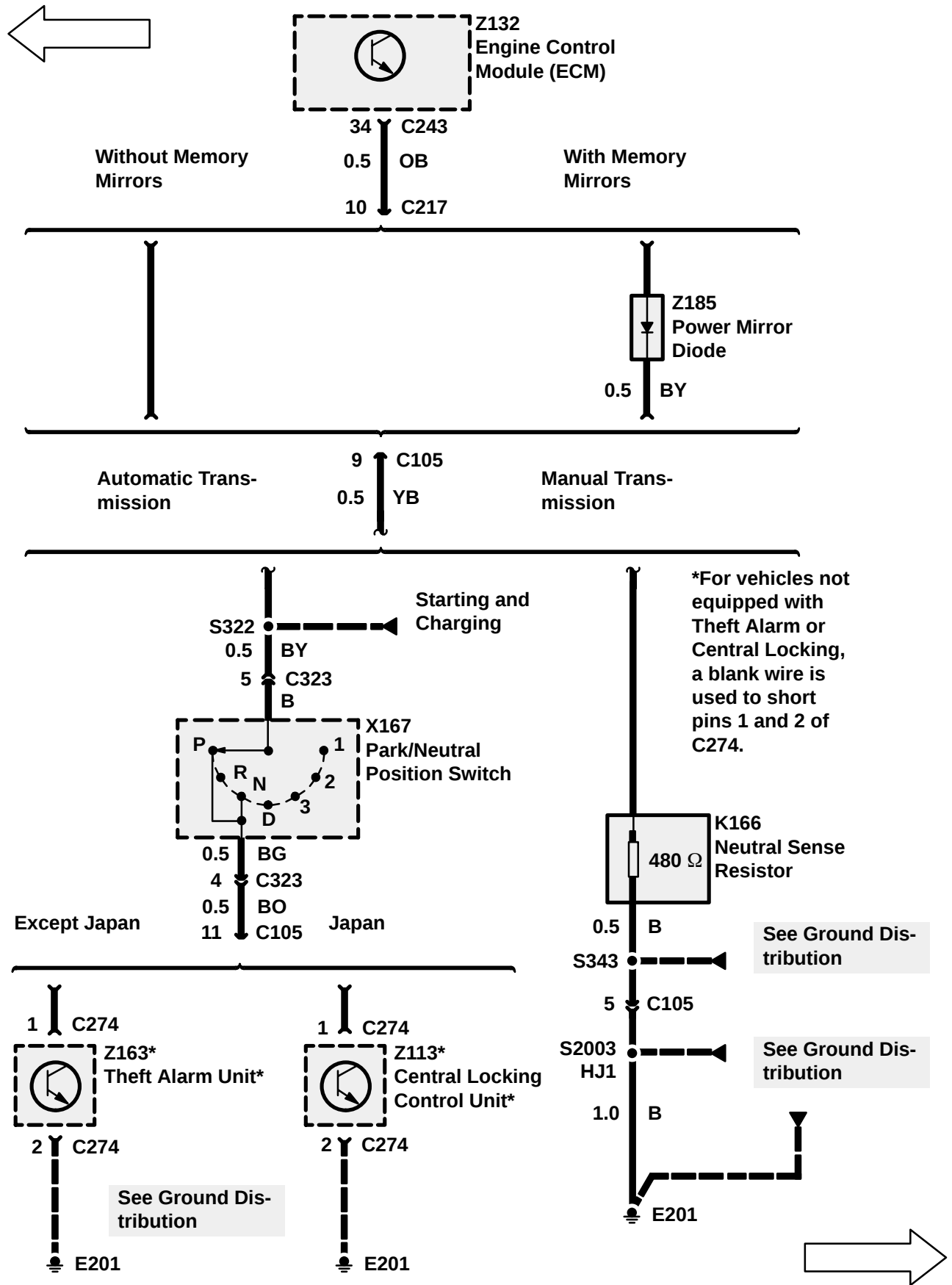


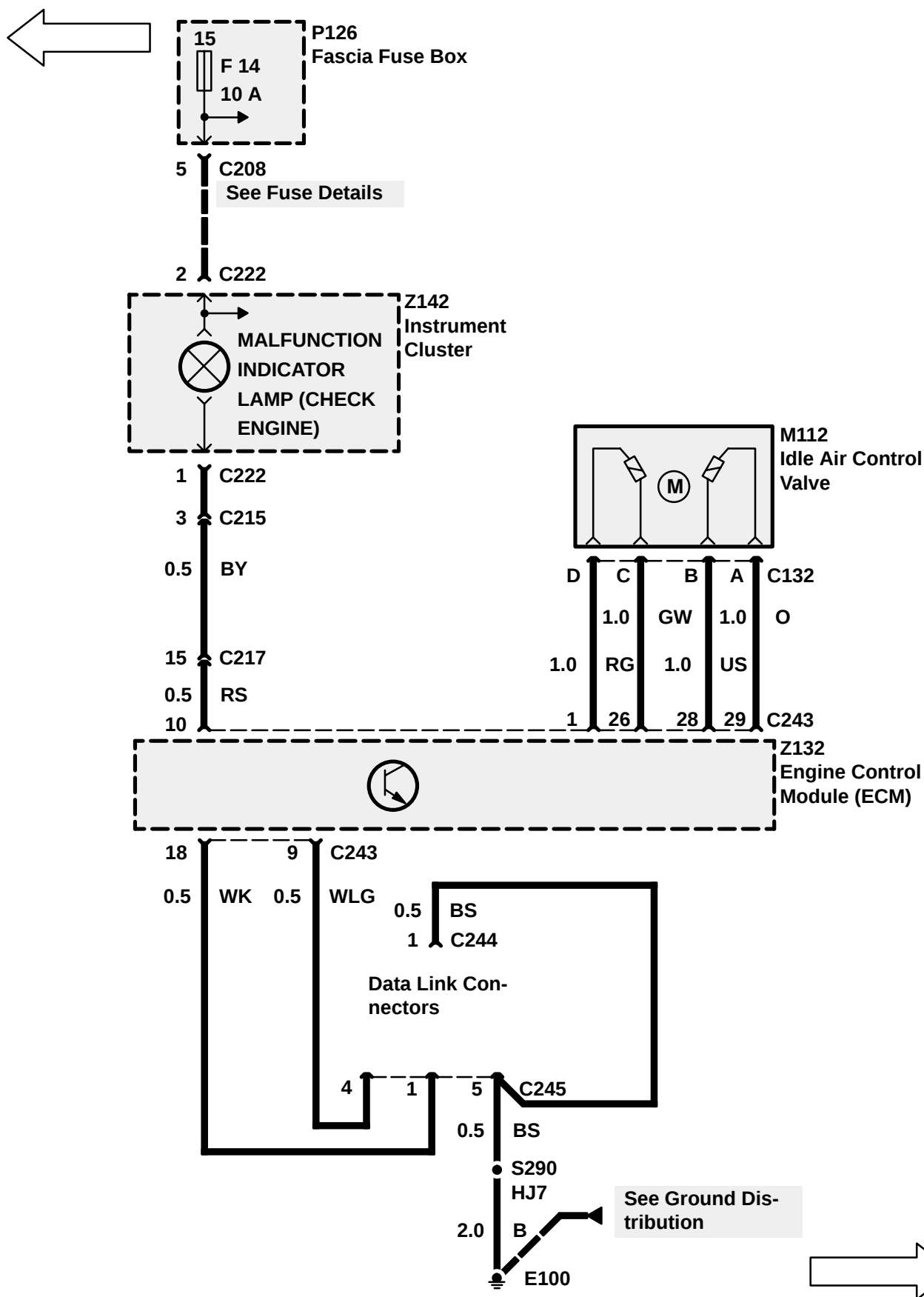


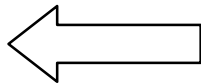


A1 ETM

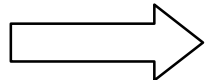
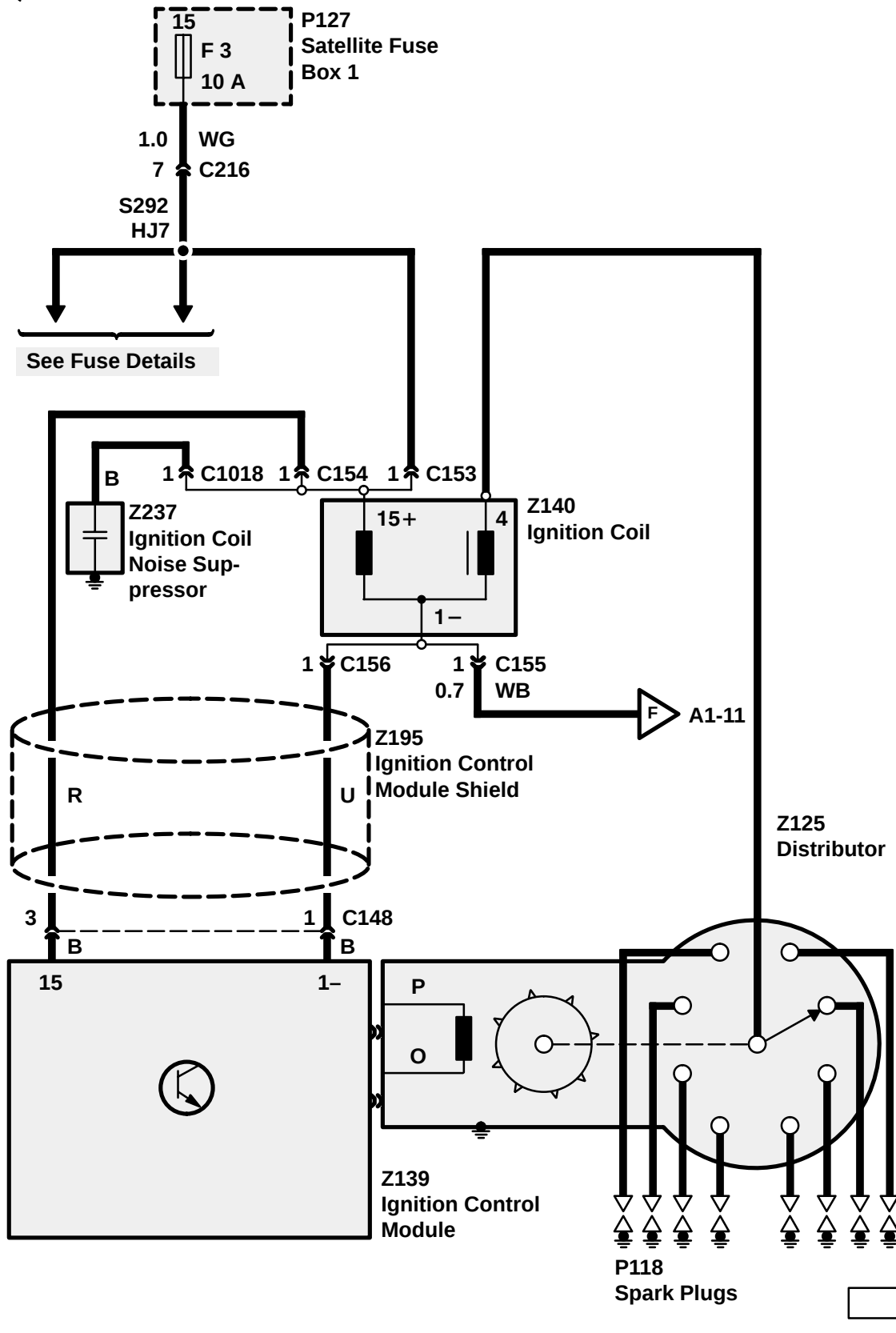
1995 RANGE ROVER

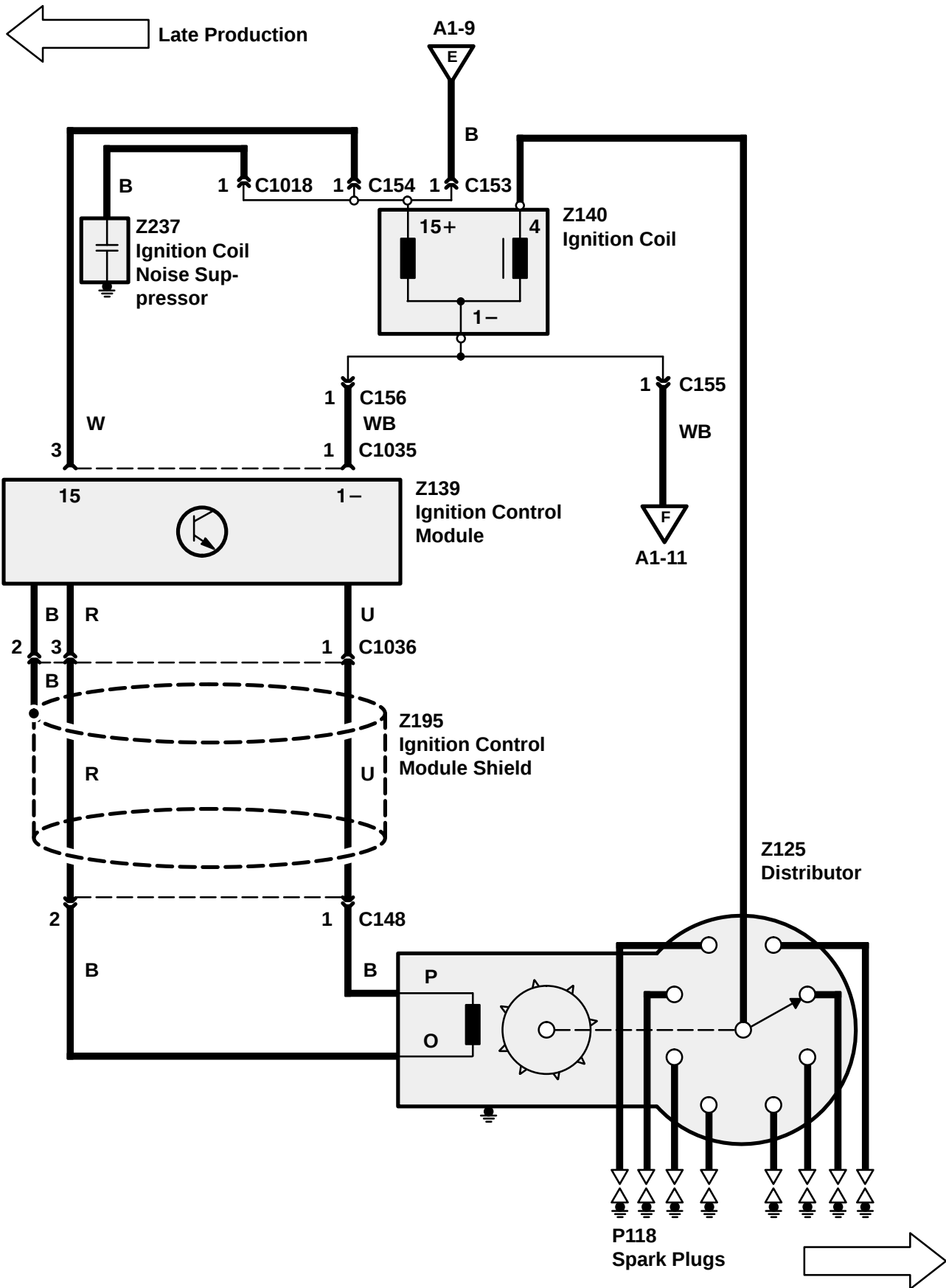


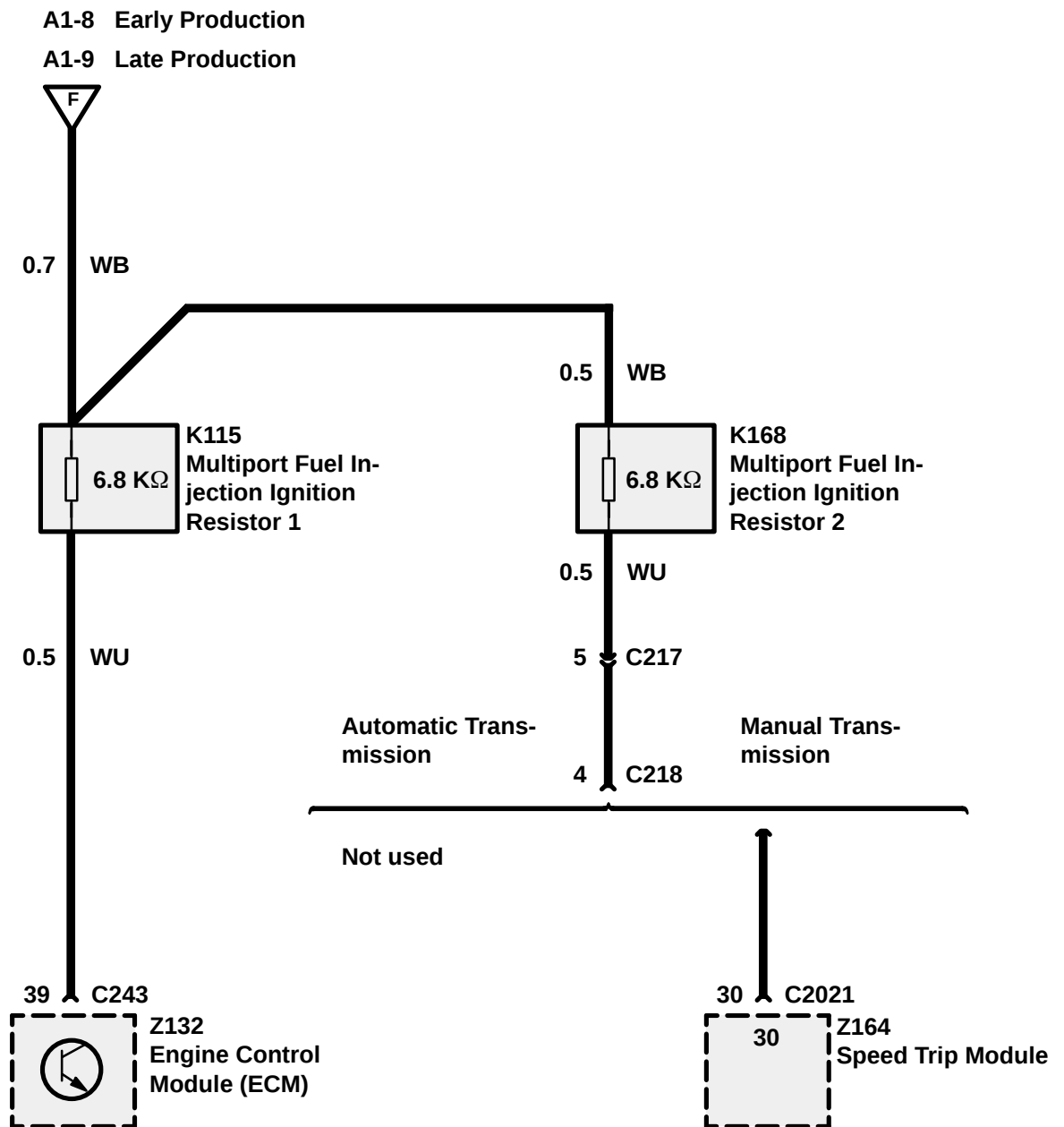
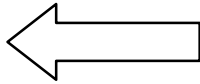


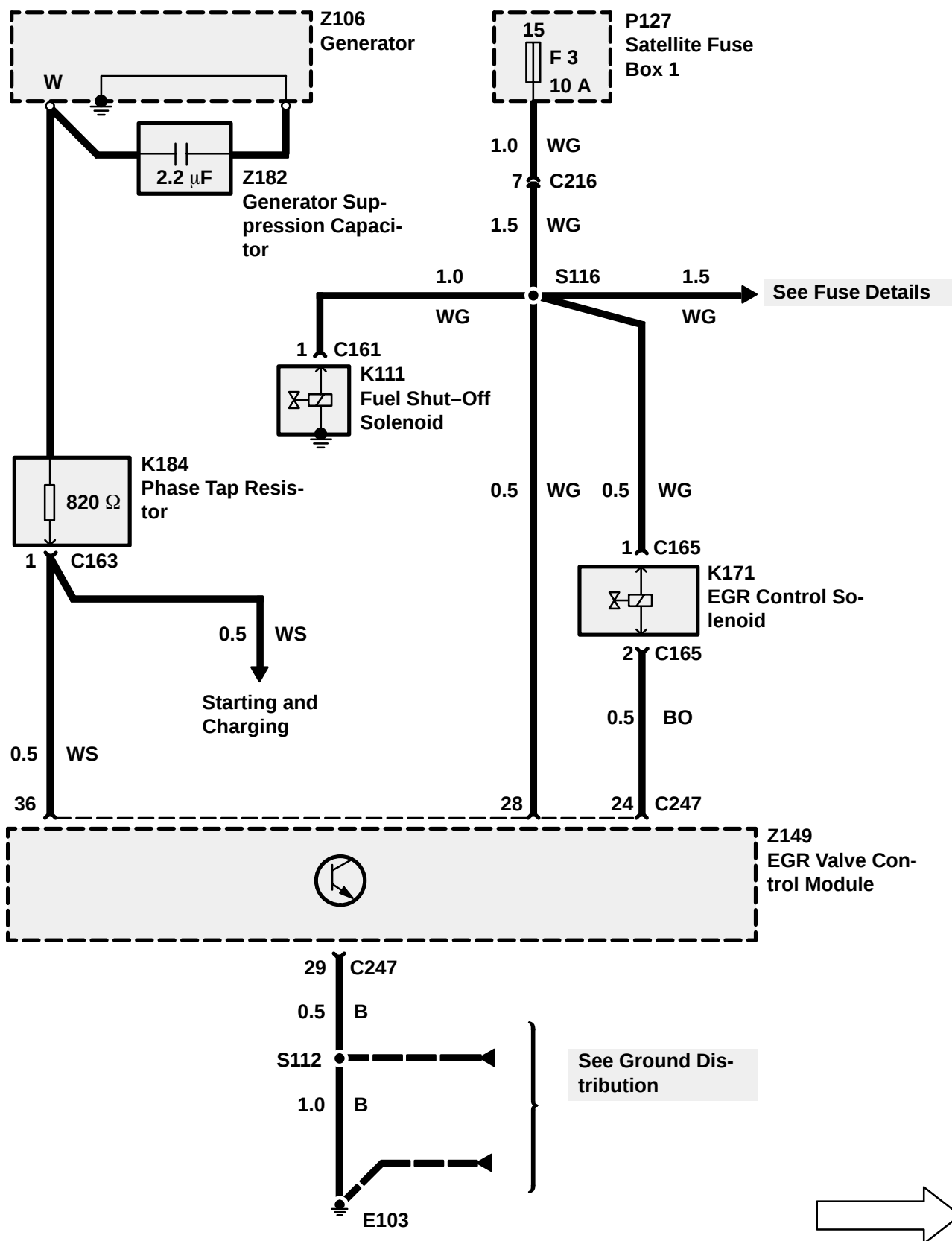


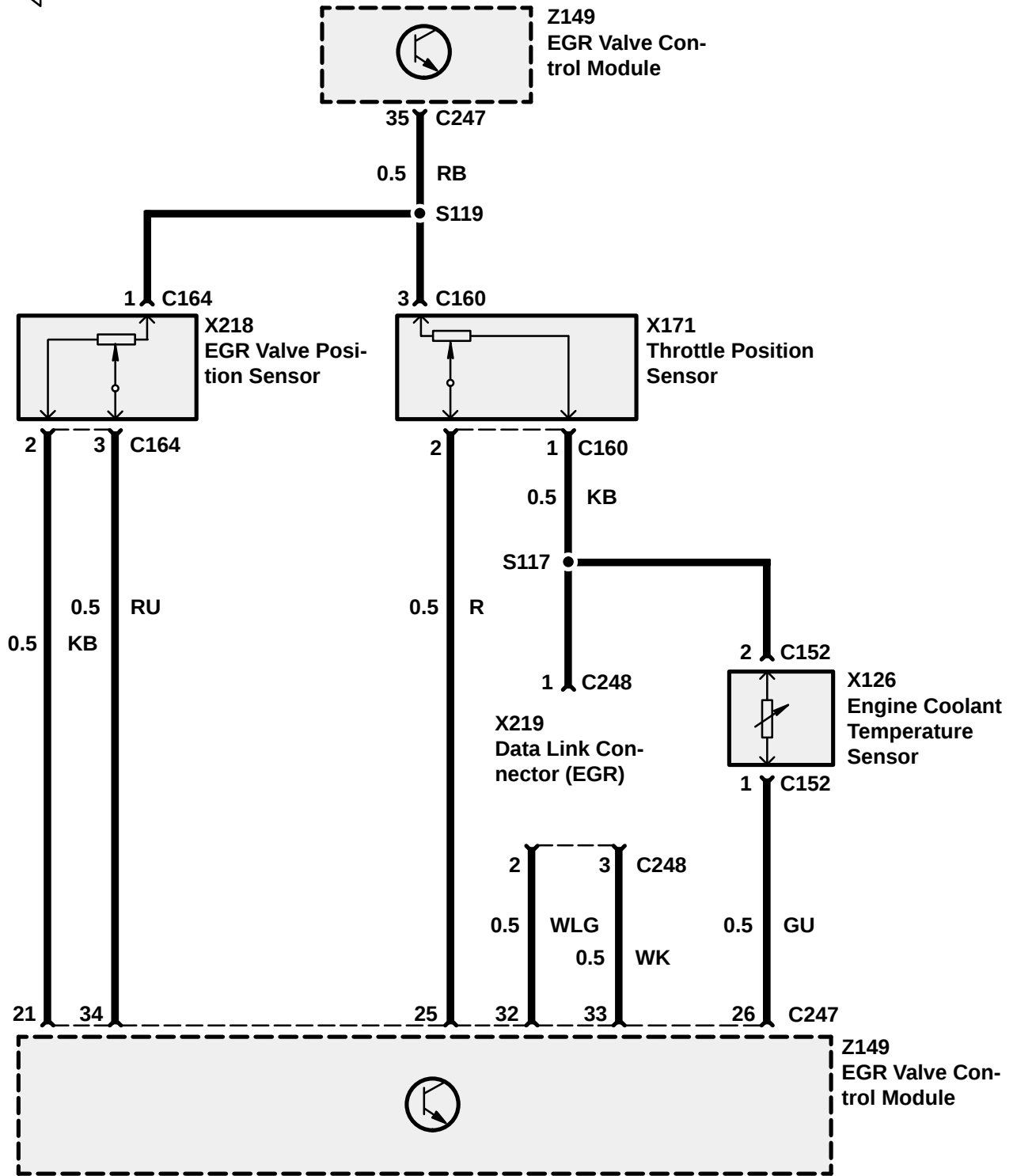
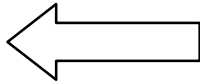
Early Production

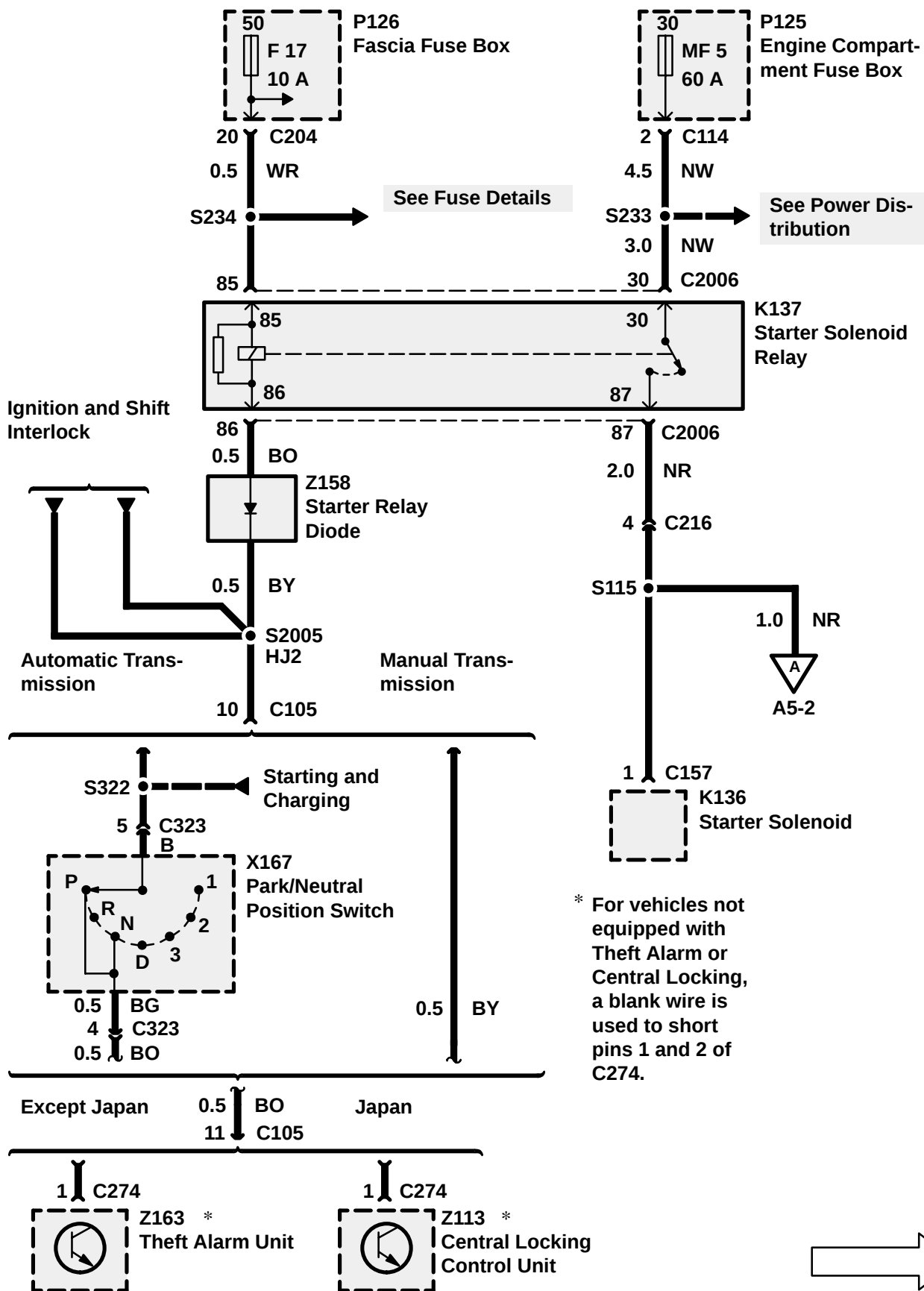


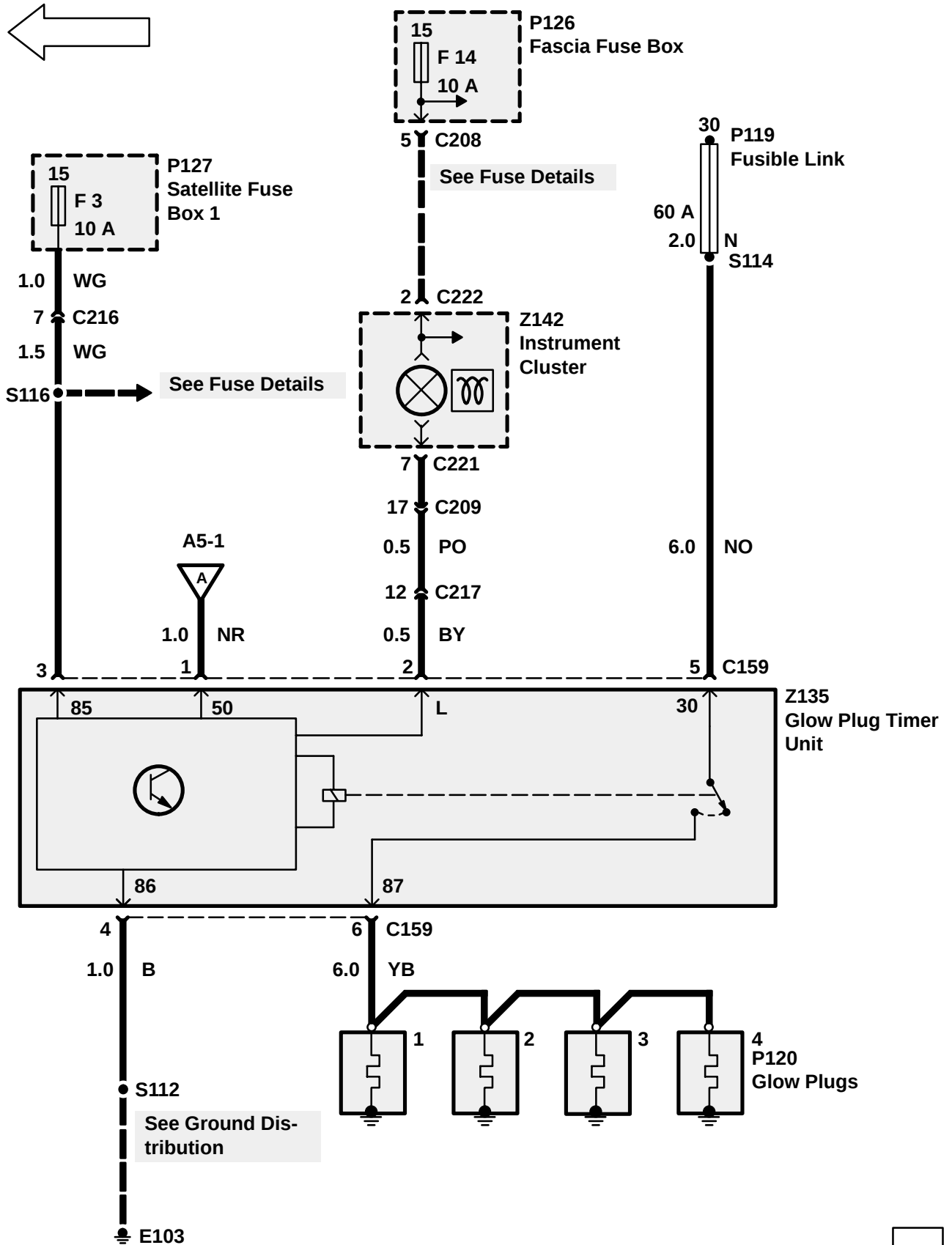












CIRCUIT OPERATION**Starting System**

Putting the Ignition Switch (X134) in position III applies battery voltage to the Starter Solenoid Relay (K137). The Starter Solenoid Relay (K137) energizes and applies battery voltage to the Starter Solenoid (K136) and Starter (M134).

On manual transmission vehicles equipped with a theft alarm, the Theft Alarm Unit (Z163) provides a ground circuit to the Starter Solenoid Relay's (K137) 86 terminal.

On manual transmission Japan vehicles, the Central Locking Unit (Z113) provides a ground circuit to the Starter Solenoid Relay's (K137) 86 terminal.

On automatic transmission vehicles equipped with a theft alarm, the Theft Alarm Unit (Z163) provides a ground circuit to the Starter Solenoid Relay's (K137) 86 terminal via the Park/Neutral Position Switch (X167).

On automatic transmission Japan vehicles, the Central Locking Unit (Z113) provides this ground circuit to the Starter Solenoid Relay's (K137) 86 terminal via the Park/Neutral Position Switch (X167).

If the theft alarm is activated, the Theft Alarm Unit (Z163) will interrupt the Starter Solenoid Relay's (K137) ground path and prevent starting the engine.

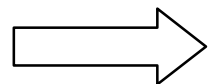
For vehicles not equipped with Theft Alarm or Central Locking a black wire is used to short pins 1 and 2 of C274.

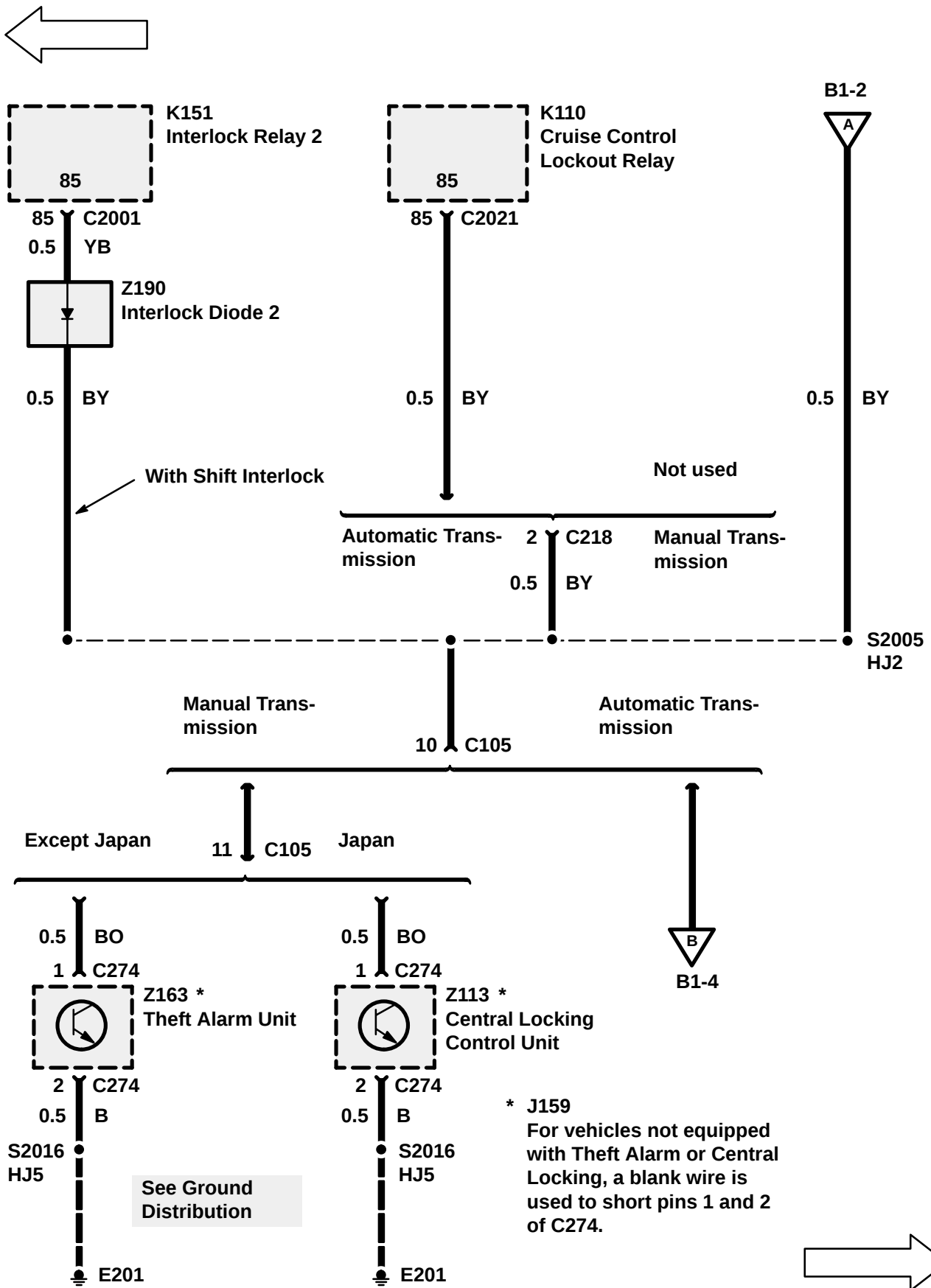
Charging System

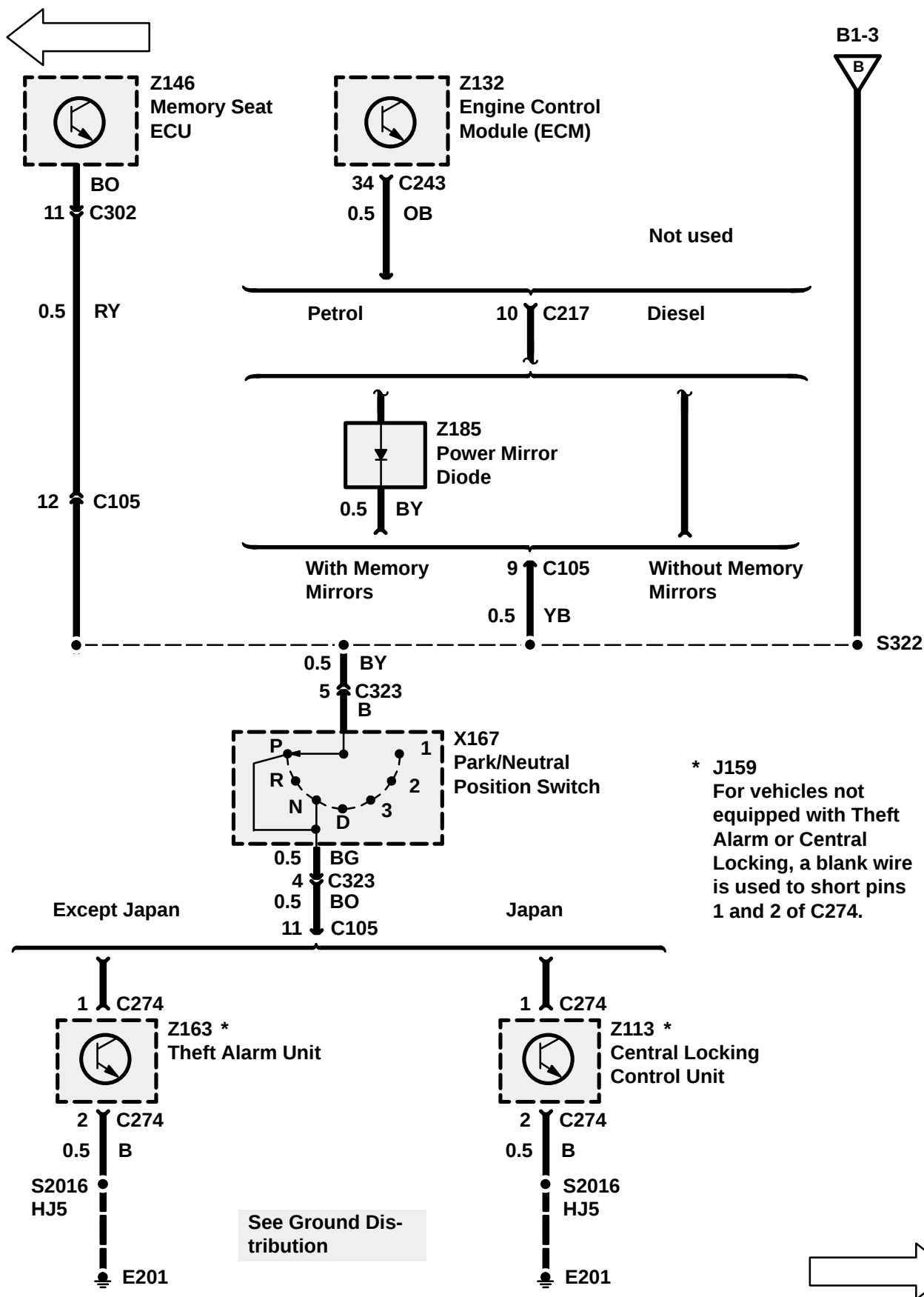
When the Ignition Switch (X134) is in position II, battery voltage is applied to the charging system fault light. When the Generator (Z106) is being turned by the engine, its stator windings are excited by voltage applied to the Generator (Z106) via the charging system fault light. The Generator (Z106) begins to produce electricity in order to charge the vehicle Battery (P104). If the Generator (Z106) fails to produce power, the Generator (Z106) grounds the fault light control wire, causing the charging system fault light to glow.

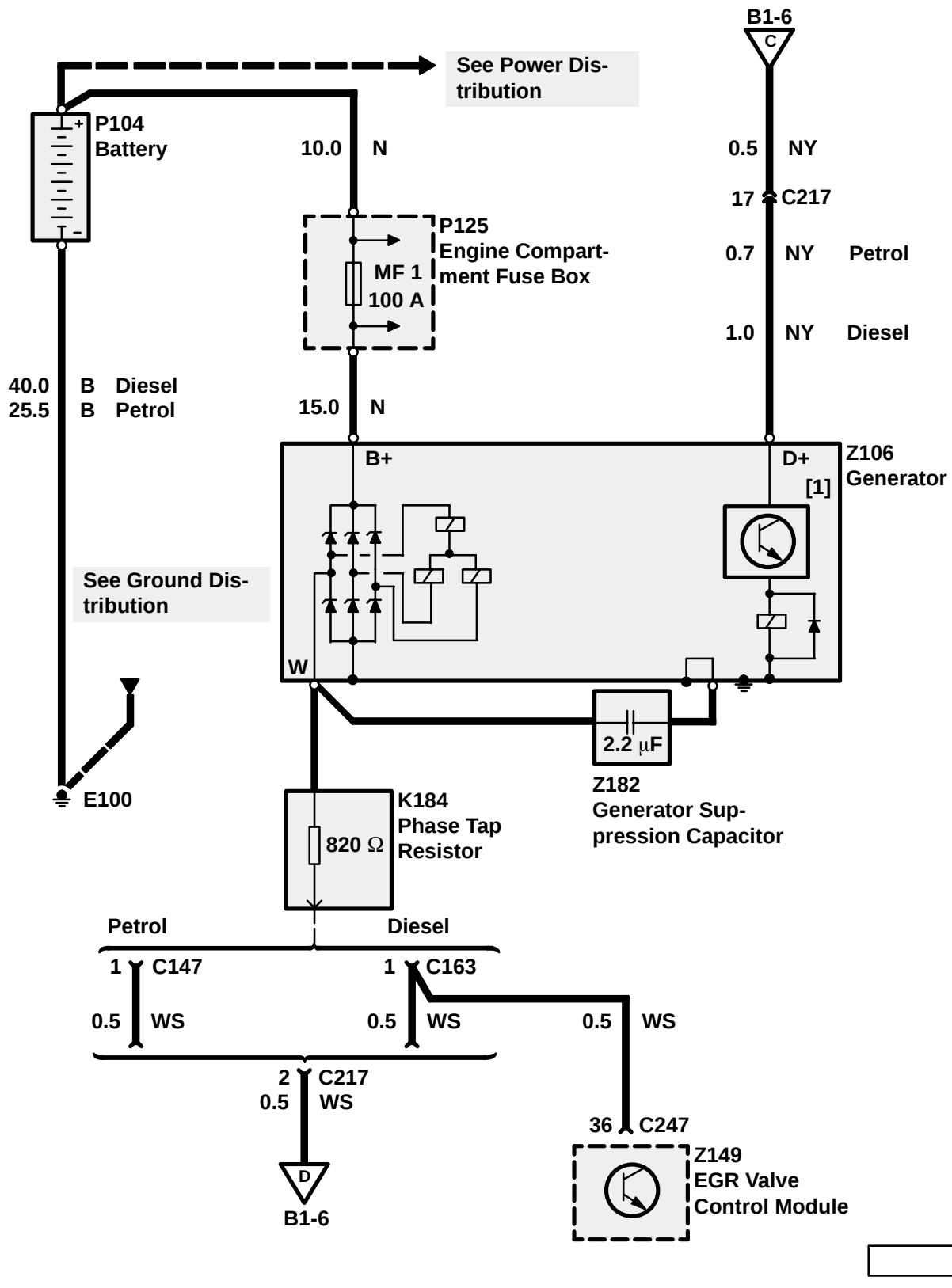
The tachometer displays engine speed in rpm. Voltage pulses are taken from the Generator

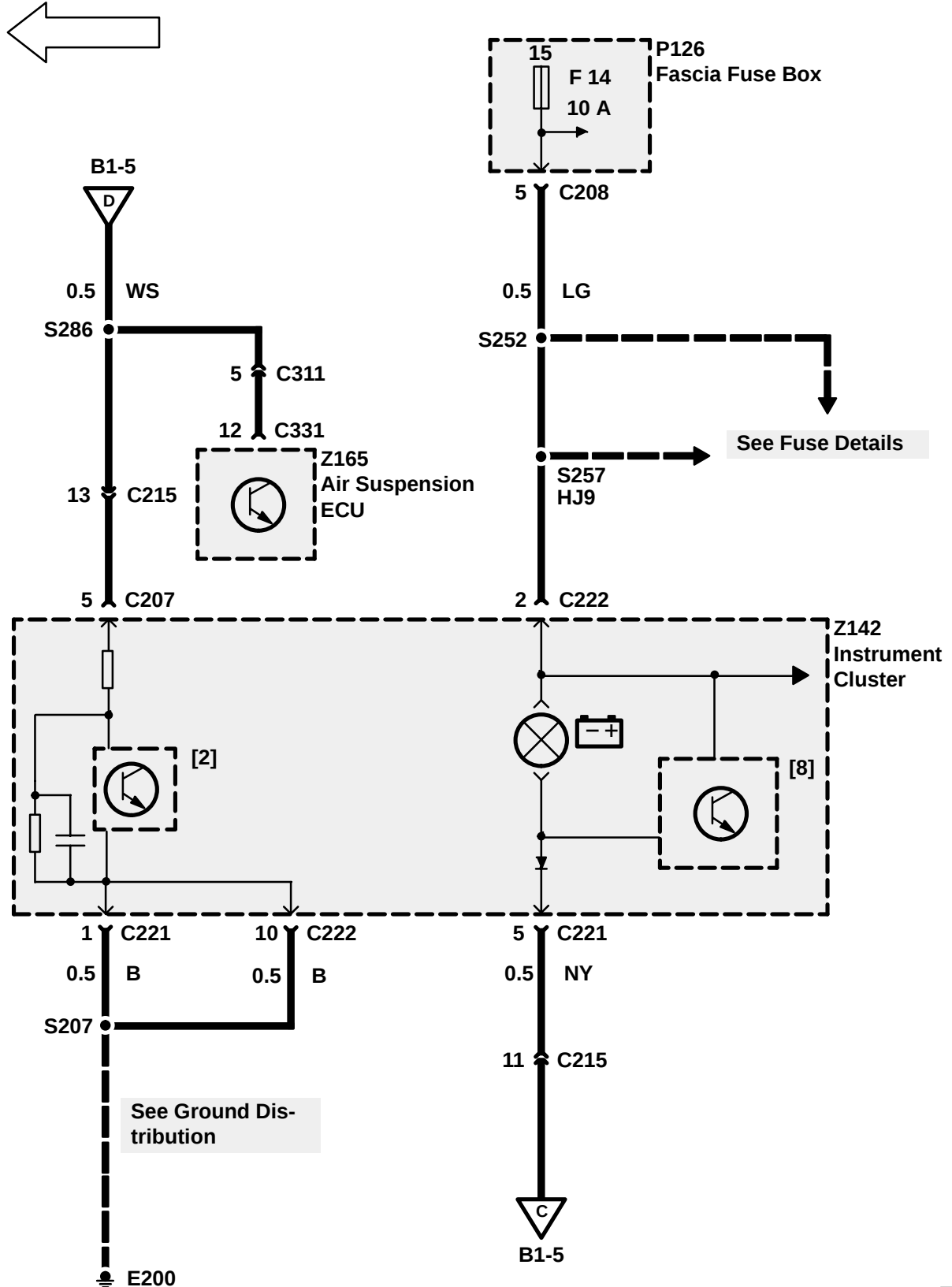
(Z106) and are generated when the engine drive belt turns the Generator pulley. The tachometer responds to the frequency of the voltage pulses, which increases proportionally to that of the engine speed.





B1 ETM**1995 RANGE ROVER**



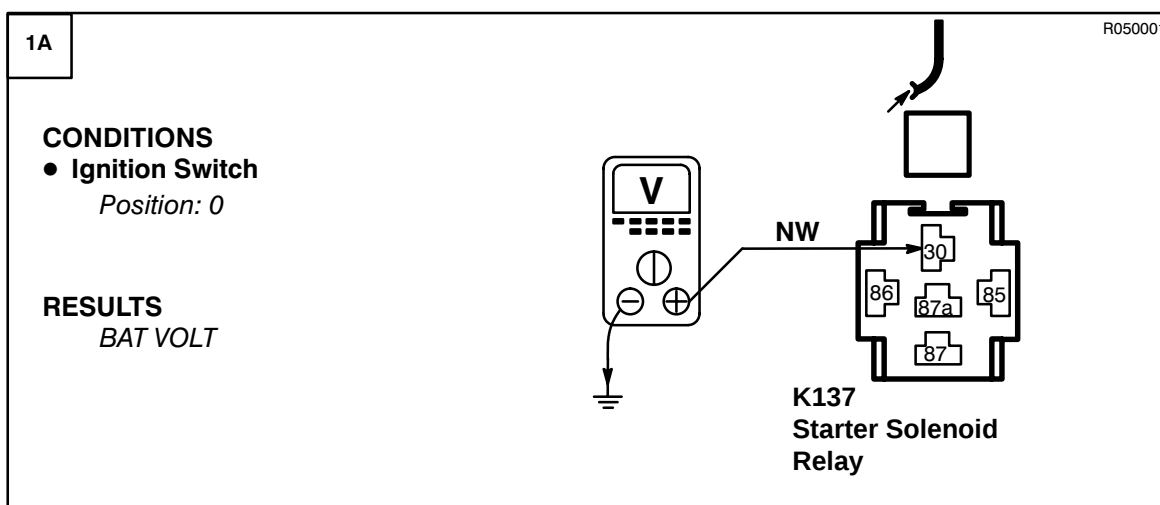
B1 ETM**1995 RANGE ROVER**

TROUBLESHOOTING HINTS

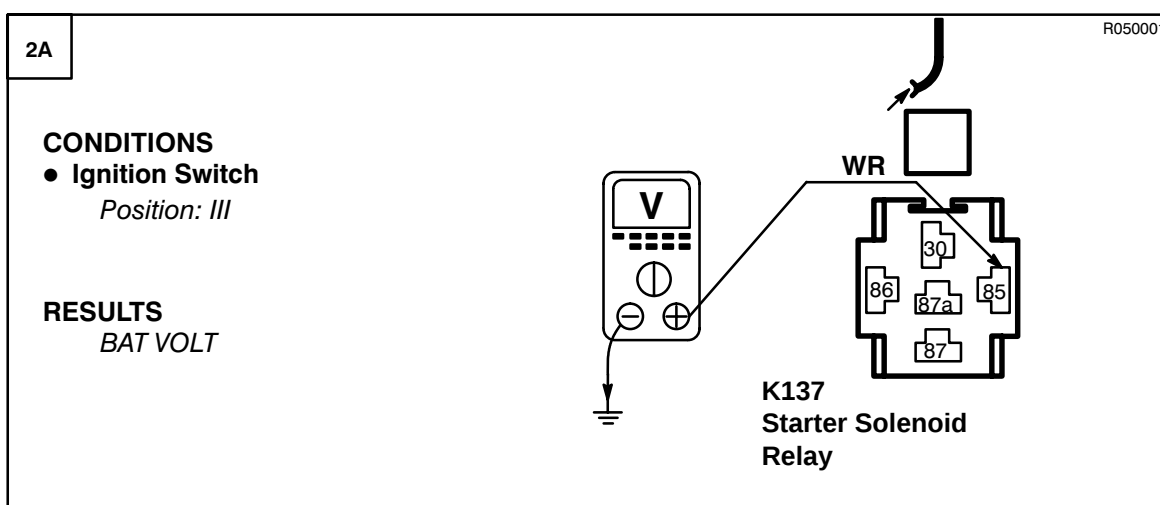
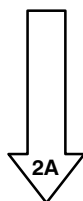
1. If the Starter Solenoid (K136) does not click and the vehicle is equipped with a memory seat, check seat operation. If the seat does not operate, check the Park/Neutral Position Switch (X167) and the Theft Alarm Unit (Z163).

SYSTEM DIAGNOSIS

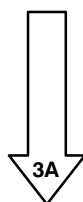
1. If the Starter Solenoid (K136) does not click and the engine does not crank, do Test A.
2. If the Starter Solenoid (K136) clicks but the engine does not crank or cranks slowly, do Test B.
3. If the charge warning light does not light with the engine off and the Ignition Switch (X134) in position II, do Test C.
4. If the charge warning light stays lit with the engine running, do Test D.

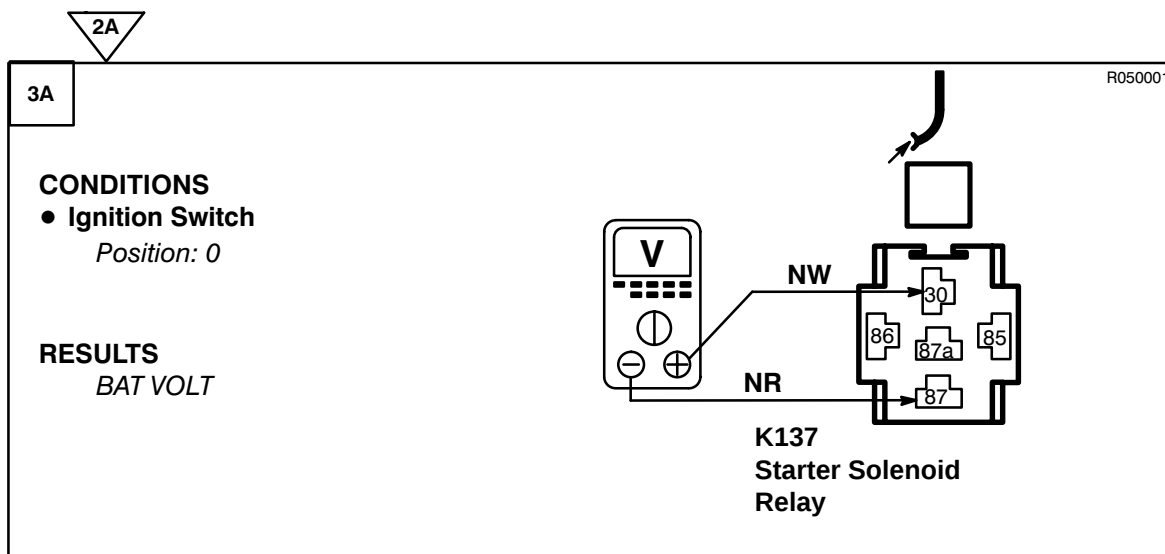
Test A

PROBLEM CAUSE
- NW Wire

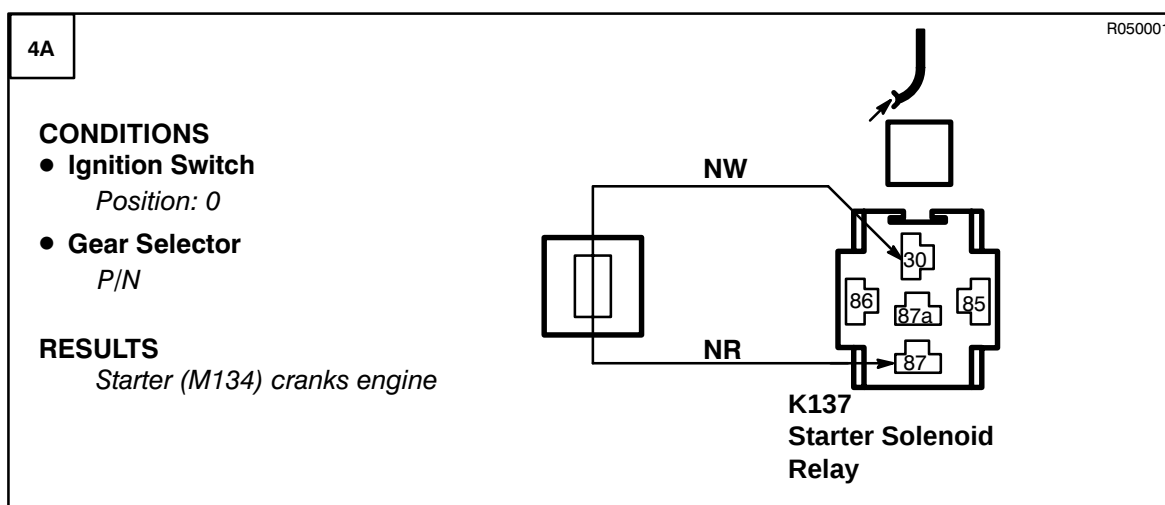
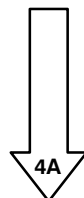


PROBLEM CAUSE
- F17 Fuse
- WR Wire
- Ignition Switch

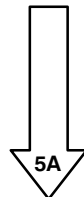


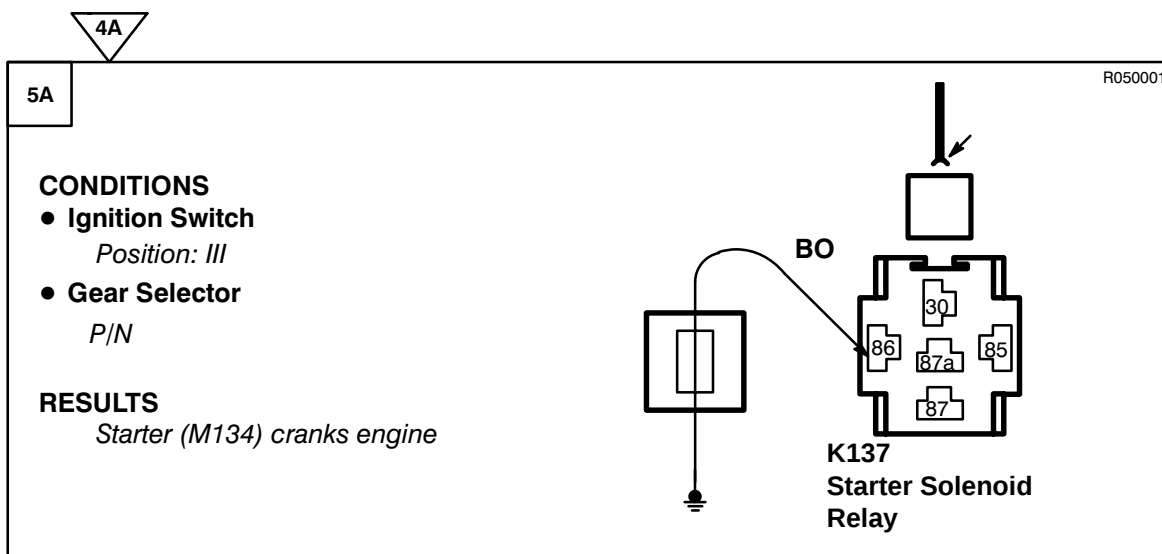
**PROBLEM CAUSE**

- NR Wire
- Starter Solenoid

**PROBLEM CAUSE**

- NR Wire
- Starter Solenoid
- Starter

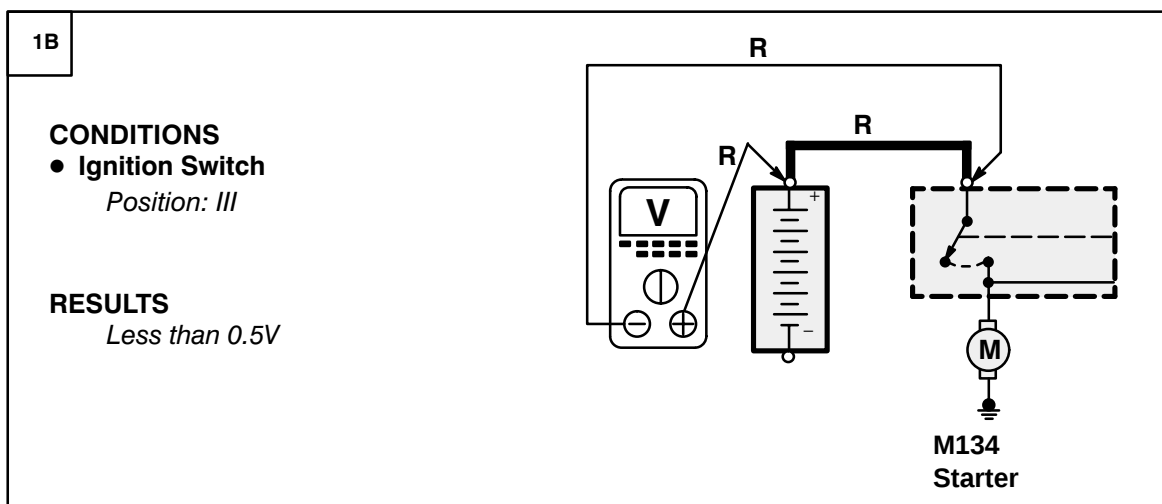


**PROBLEM CAUSE**

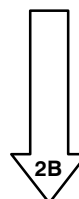
- BY Wire
- BO Wire
- Starter Relay Diode
- Park/Neutral Position Switch
- Theft Alarm Unit
- Central Locking Control Unit

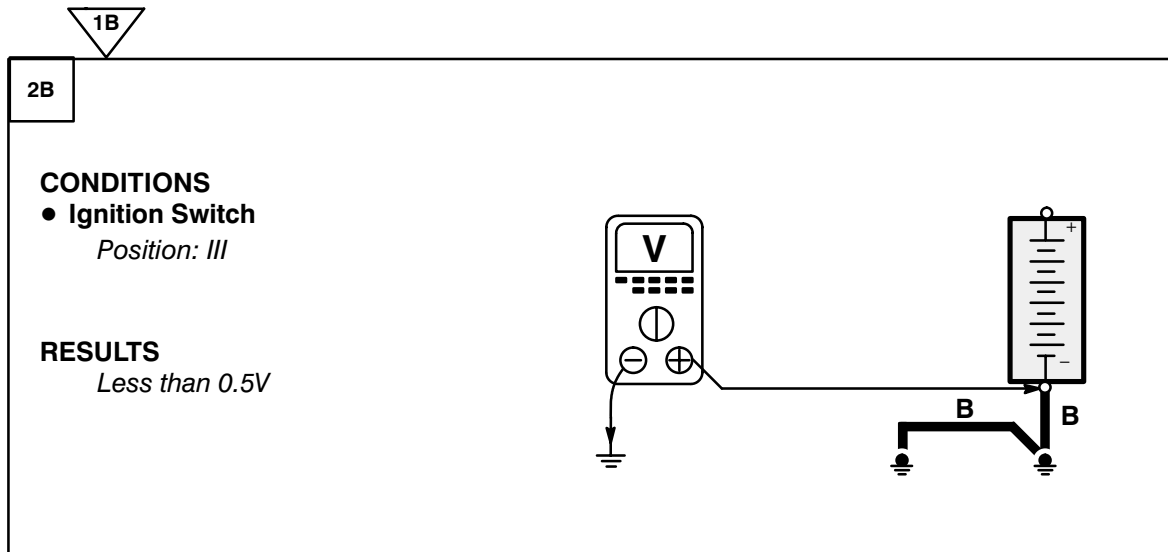
**PROBLEM CAUSE**

- Starter Solenoid Relay

Test B**PROBLEM CAUSE**

- R Wire
- Battery Terminal Connection
- Starter Solenoid (K136) terminal connection

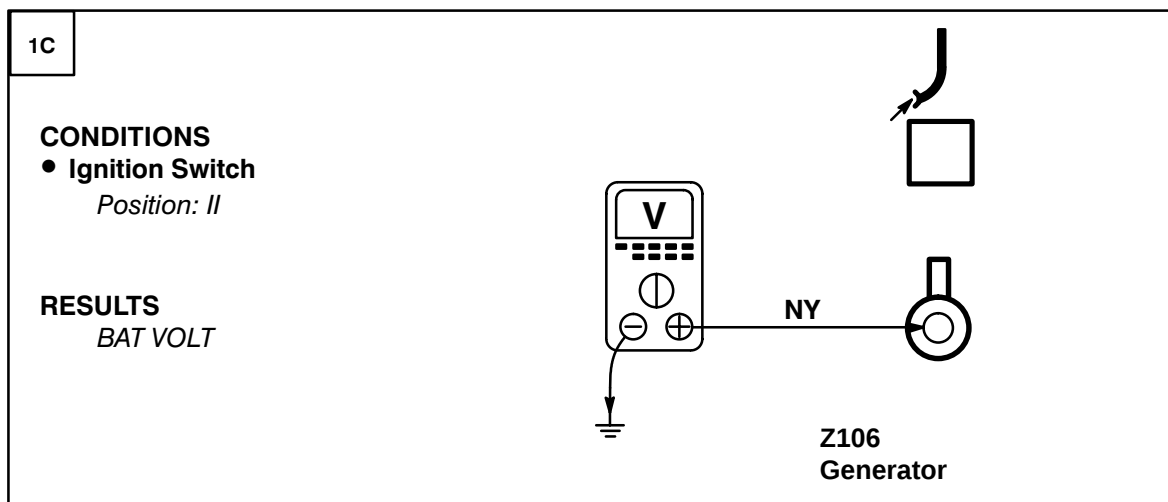


**PROBLEM CAUSE**

- B Wire
- Battery Terminal Connection
- Ground Connections

**PROBLEM CAUSE**

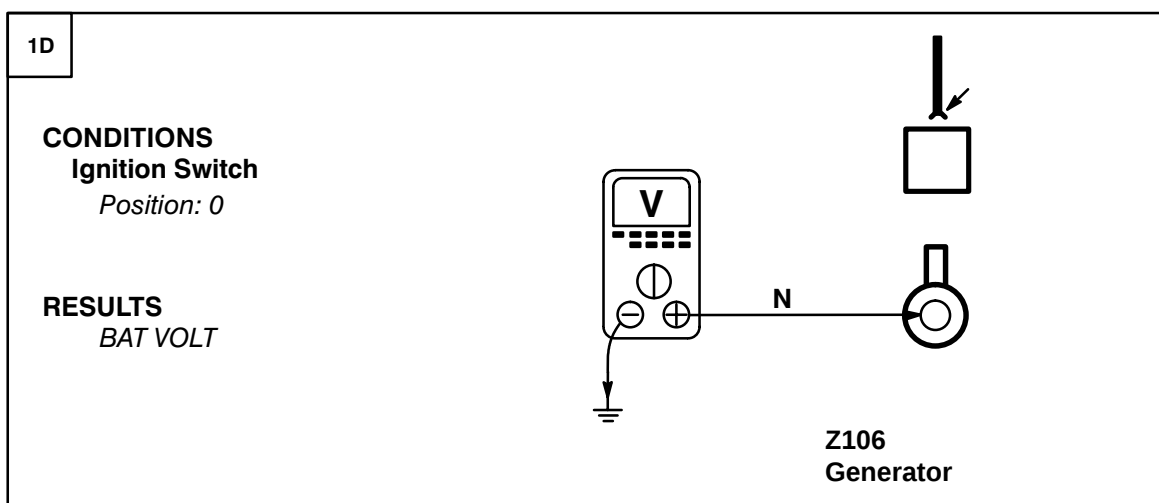
- Starter Solenoid
- Starter

Test C**PROBLEM CAUSE**

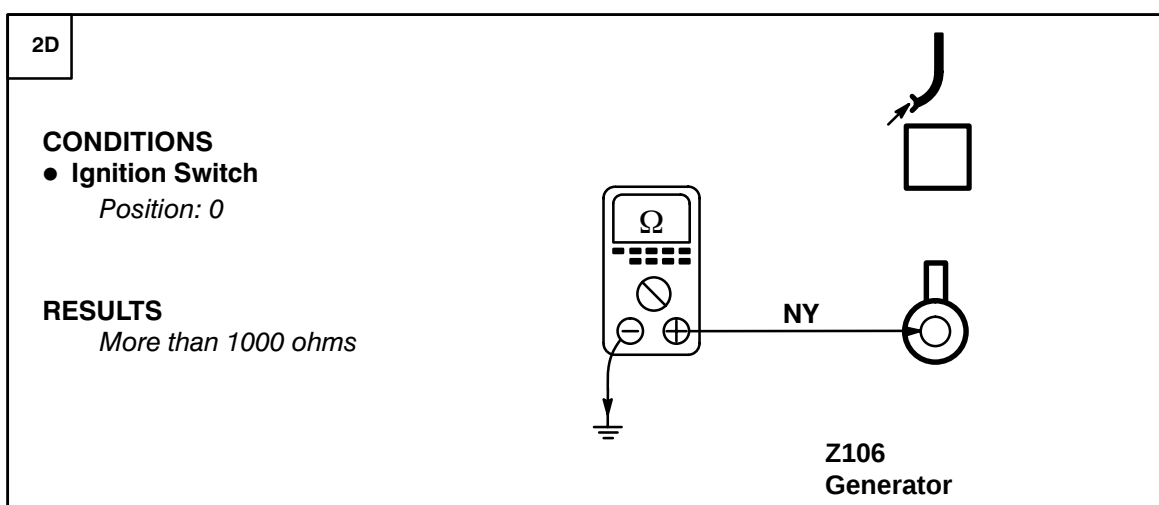
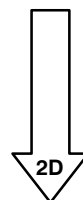
- NY Wire
- Bulb
- Instrument Cluster

**PROBLEM CAUSE**

- Generator

Test D

PROBLEM CAUSE
- N Wire



PROBLEM CAUSE
- NY Wire
- Instrument Cluster



PROBLEM CAUSE
- Generator

CIRCUIT OPERATION

With the Cruise Control Switch (X115) in position 1 on, voltage from Fuse F18 is applied to the Cruise Control ECU (Z121), Cruise Control Vacuum Pump (M103), Steering Wheel Cruise Switches (X266) through the WY wire, Rotary Coupler (Z104) and PB wire. The Cruise Control ECU (Z121) is grounded at terminal 8 through the B wire to E201.

Cruise Control Vacuum Pump (M103)

With the Cruise Control Switch (X115) on, voltage is applied to the Cruise Control Vacuum Pump (M103) through the WU wire. When a cruise speed is set, the Cruise Control ECU (Z121) applies ground through the BR wire to operate the pump motor and applies ground through the BY wire to close the normally open solenoid valve in the pump. The pump applies vacuum to the actuator.

SET/ACCEL

To set a cruise speed, the Cruise Control Switch (X115) must be on and vehicle speed must exceed 28 mph (45 km/h). When the SET/ACCEL Switch is depressed under these conditions, voltage from Fuse F18 is applied to terminal 3 of the Cruise Control ECU (Z121) through the closed Cruise Control Switch (X115) and Steering Wheel Cruise Switches (X266), causing the vacuum pump to operate. When the SET/ACCEL Switch is released, voltage is removed from terminal 3, signalling the ECU to set the speed.

RES/DECEL

When the RES/DECEL Switch is depressed, voltage is applied to terminal 4 of the Cruise Control ECU (Z121). This voltage signals the ECU to disengage the system and the vehicle slows down. When the switch is depressed a second time, voltage is again applied to the ECU and the vehicle returns to the previously set speed.

Speed Input

Terminal 11 of the Cruise Control ECU (Z121) monitors the Vehicle Speed output signal from the Instrument Cluster (Z142) through the YK wire. This signal is a pulsing voltage and its frequency changes with vehicle speed.

System Disable

The Cruise Control System can be disabled in one of four ways:

1. The Cruise Control Switch (X115) is put in the 0 position, removing power from the Cruise Control ECU (Z121) and vacuum pump, and erasing the set speed memory.
2. The RES/DECEL Switch is depressed, signalling the Cruise Control ECU (Z121) to disengage the system.
3. The brake pedal is depressed and a vacuum valve in the Brake Switch Vent Valve opens (X112). This vents vacuum to the actuator valve and releases the throttle.

4. The Voltage applied to Cruise Control ECU (Z121) terminal 9 is interrupted, causing the Cruise Control ECU (Z121) to turn off the vacuum pump and de-energize the vacuum solenoid valve. This voltage path is interrupted when the brake pedal is depressed, the Clutch Pedal is depressed, or the vehicle is in Park or Neutral. With the brake pedal depressed, the Brake Switch Vent Valve (X112) moves to 1 and the circuits is interrupted. With the vehicle in Park or Neutral the Park/Neutral Position Switch (X167) energizes the Cruise Control Lockout Relay (K110) by grounding the relay's coil. The relay then opens its contacts, interrupting the circuit. With the clutch pedal depressed, the Clutch Switch (X200) moves to 1 and the circuit is interrupted.

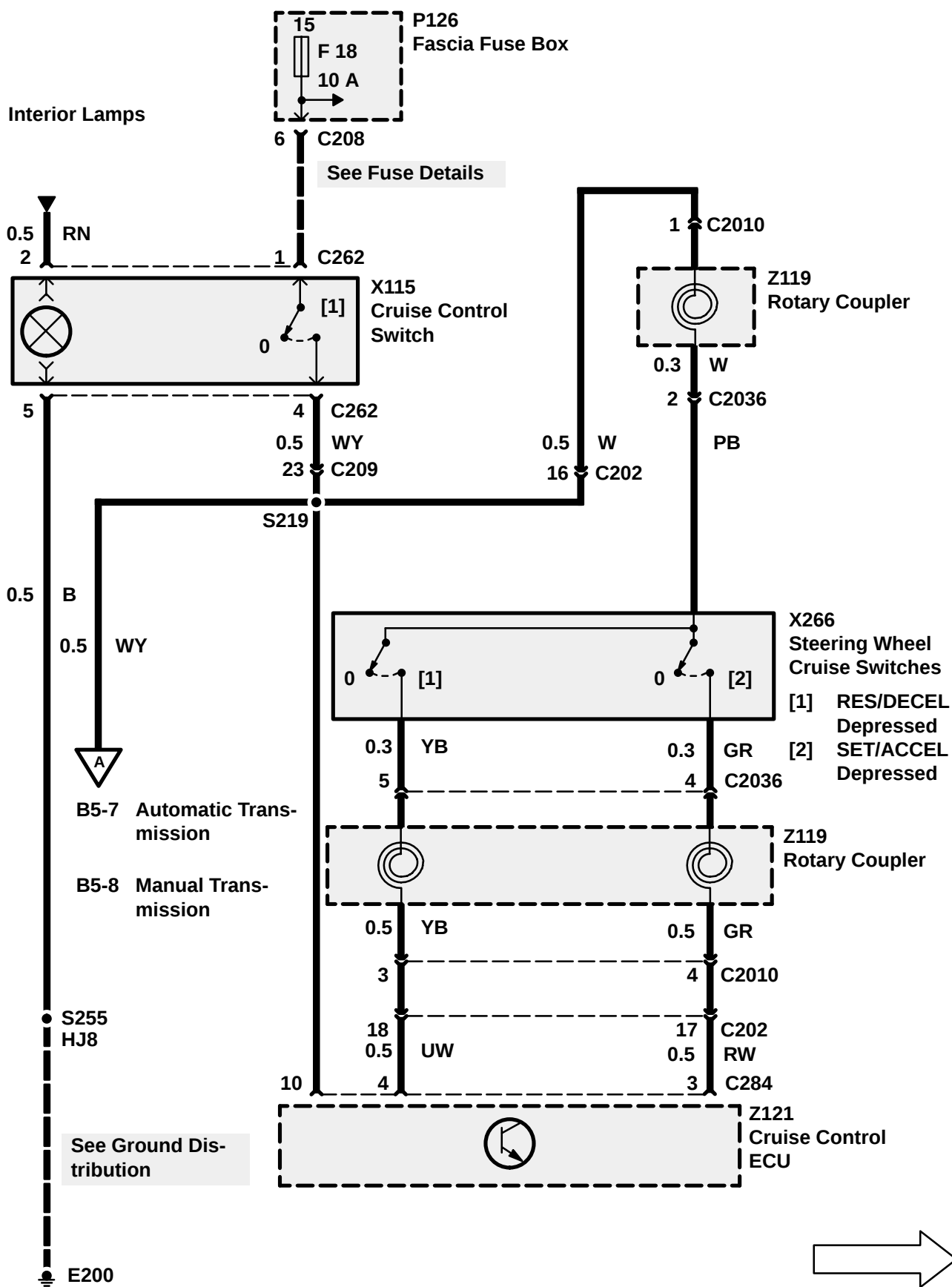
Road Test

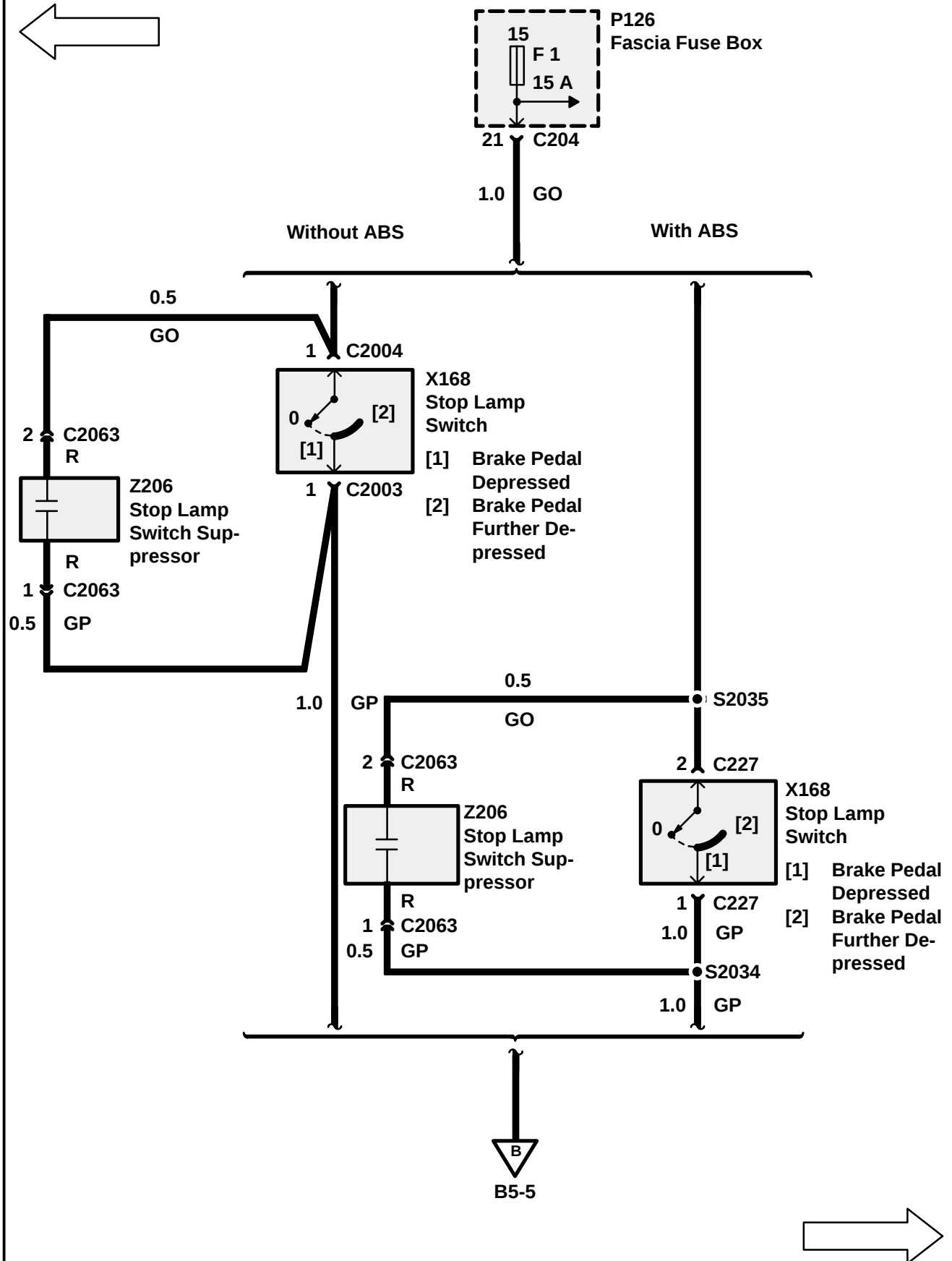
CAUTION: DO NOT ENGAGE CRUISE CONTROL WHEN VEHICLE IS BEING USED IN LOW TRANSFER GEARS

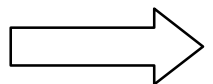
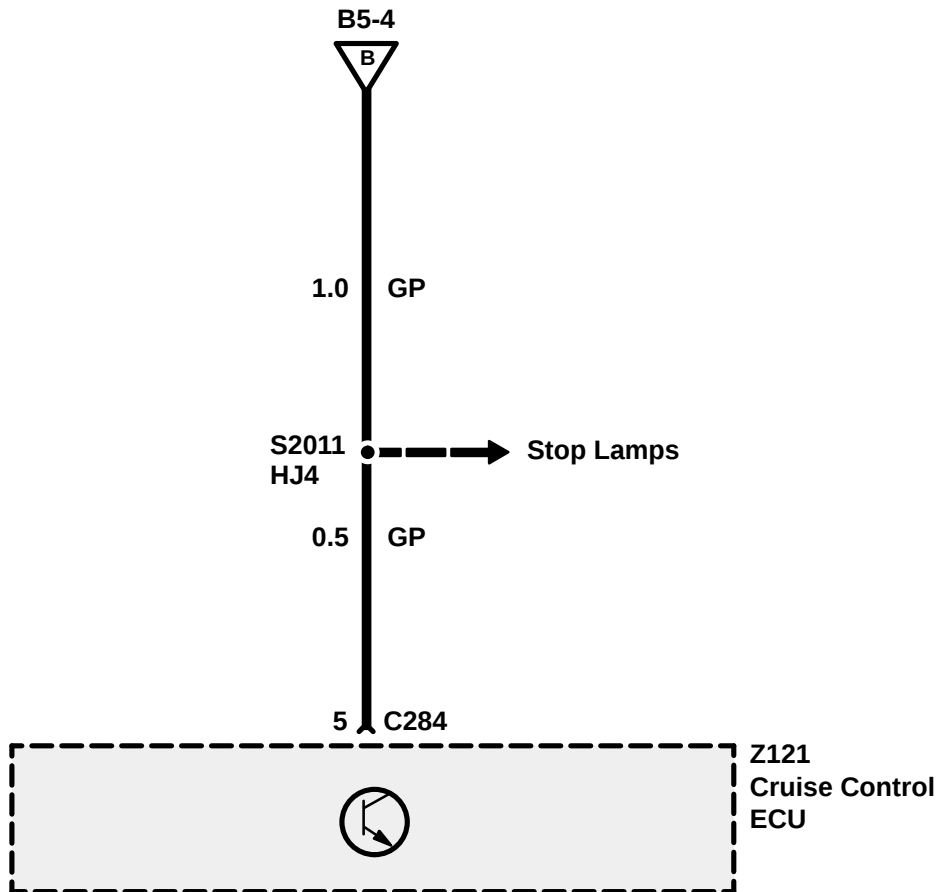
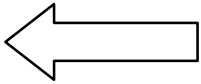
WARNING: The use of cruise control is not recommended on winding, snow covered or slippery roads, or in heavy traffic conditions where a constant speed cannot be maintained.

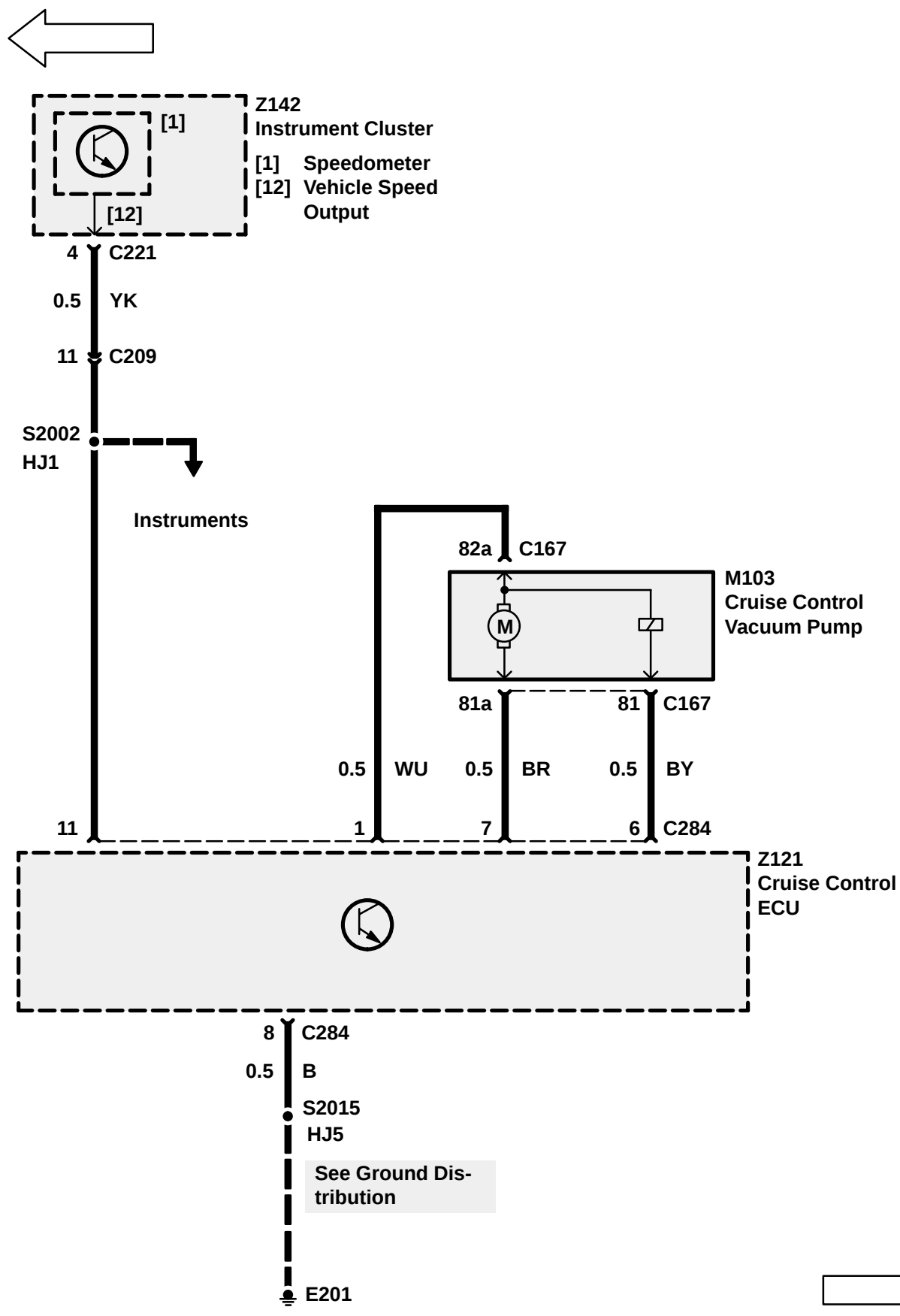
1. Start the engine and depress the Cruise Control Switch (X115) to activate the Cruise Control System. Accelerate to approximately 30 mph (50 km/h) and press the SET/ACCEL Switch. Immediately release the switch and remove foot from the accelerator pedal. The vehicle should maintain the speed at which the SET/ACCEL Switch was pressed.
2. Press the SET/ACCEL Switch and hold at that position. The vehicle should accelerate smoothly until the switch is released. The vehicle should now maintain the new speed at which the SET/ACCEL Switch was released.
3. Press the RES/DECEL Switch while the vehicle is in the cruise control mode. The cruise control should disengage. Slow to approximately 35 mph (55 km/h) and press the RES/DECEL Switch. Immediately release the switch and remove foot from the accelerator. The vehicle should smoothly accelerate to the previously set speed. Increase speed using the accelerator pedal. Releasing the pedal should return the vehicle to the previously set speed.

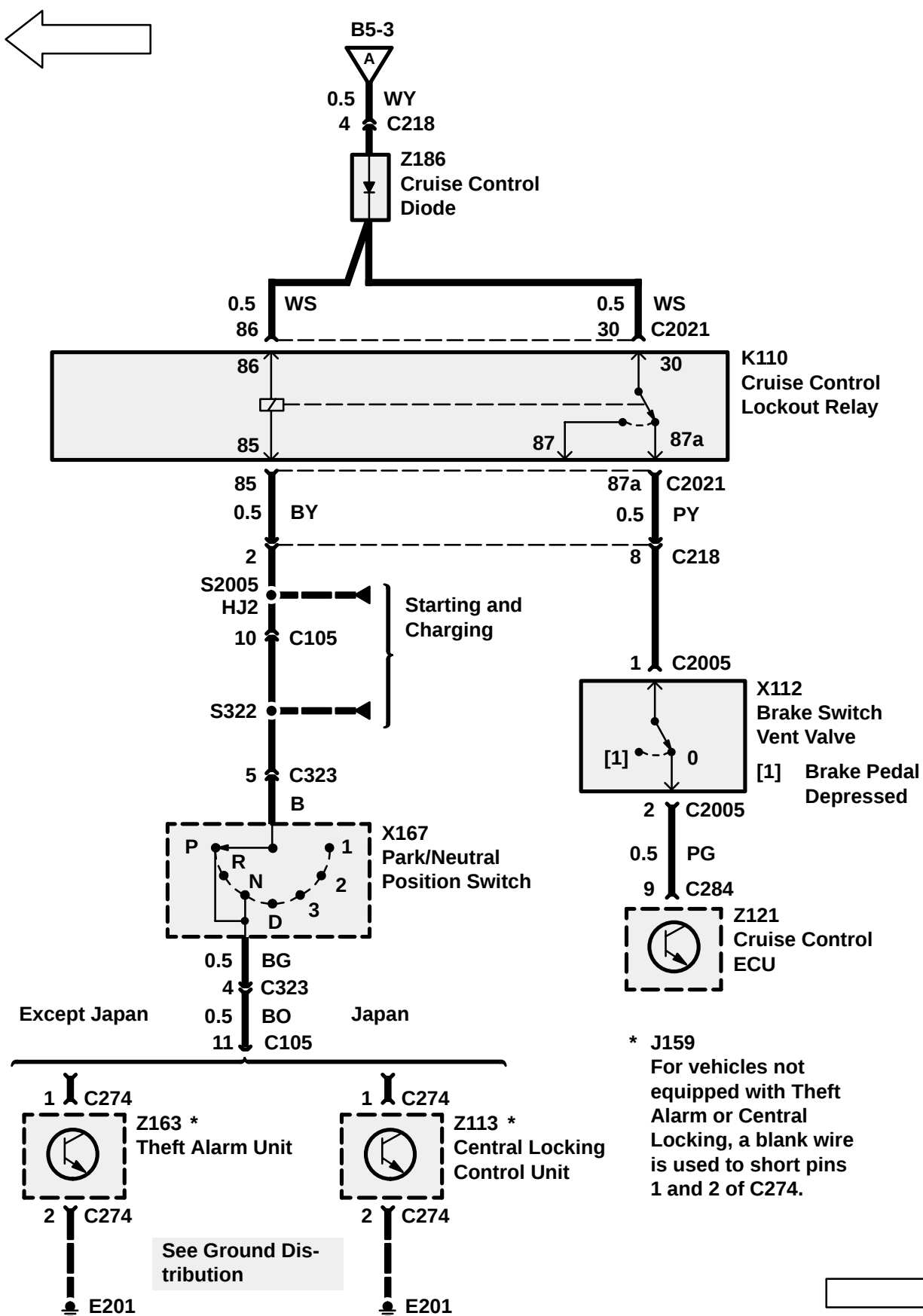
4. Depressing the brake pedal should immediately disengage the Cruise Control System and return the vehicle to driver's control at accelerator pedal. Press the RES/DECEL Switch and the vehicle should accelerate to the previously set speed without operation of the accelerator pedal.
5. Press the RES/DECEL Switch and allow the vehicle to decelerate to below 26 mph (42 km/h). Press the RES/DECEL Switch and the Cruise Control System should remain disengaged.
6. Press the SET/ACCEL Switch below 28 mph (45 km/h) and the Cruise Control System should remain disengaged. Accelerate the vehicle above 28 mph (45 km/h), press the RES/DECEL Switch and remove foot from the accelerator pedal. The vehicle should smoothly adjust to the previously memorized speed.
7. Pressing the Cruise Control Switch (X115) should immediately disengage the Cruise Control System and erase the previously set speed from ECU memory.

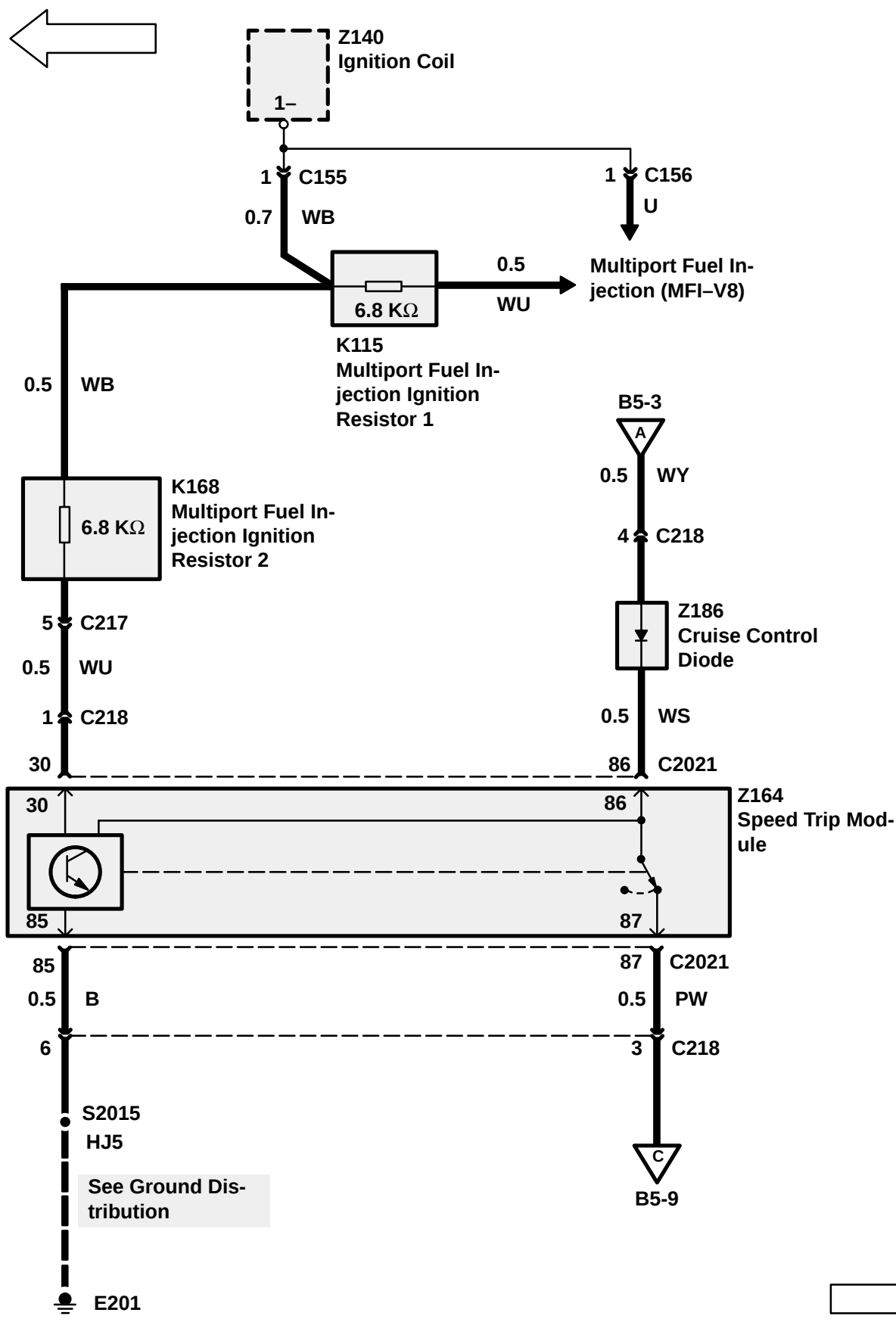


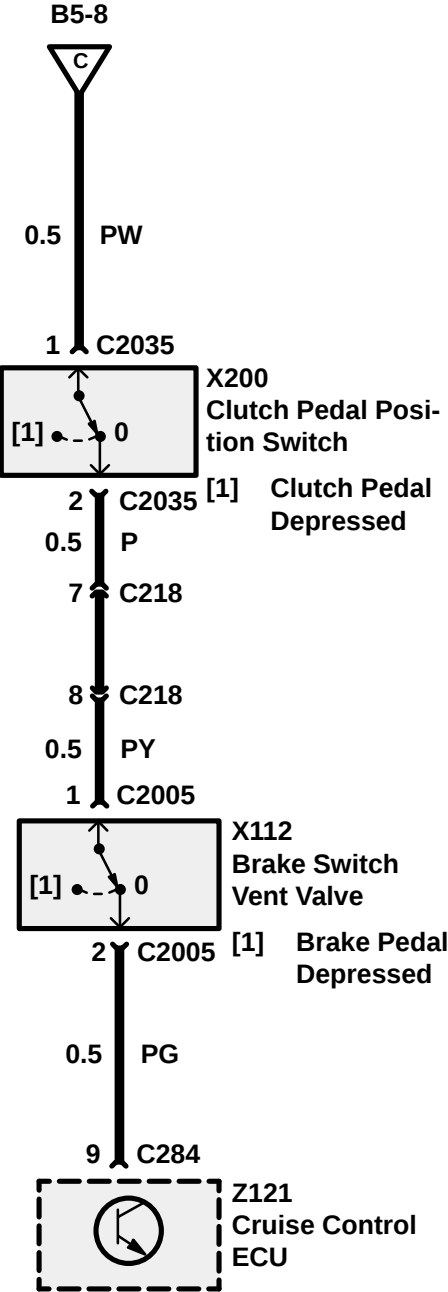
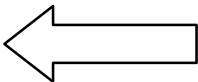












TROUBLESHOOTING HINTS

1. If the cruise control system operates but the cruise control switch light does not illuminate, check the bulb, B wire and RN wire.
2. Inspect vacuum hoses for kinks and restrictions.
3. Inspect actuator linkage for restrictions and adjustment.

SYSTEM DIAGNOSIS

1. If the cruise control system does not operate correctly and the vehicle is equipped with a manual transmission, do Test A.
2. If the cruise control system does not operate correctly and the vehicle is equipped with an automatic transmission, do Test B.

Test A

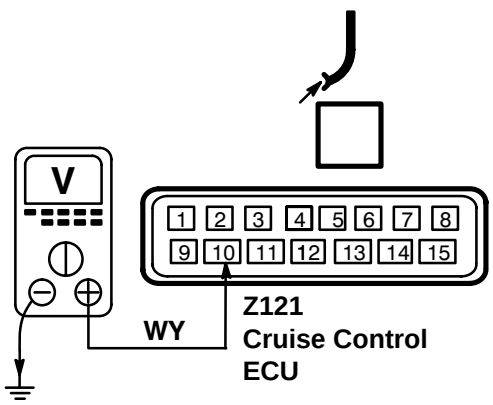
1A

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- Cruise Control Switch
On = BAT VOLT
Off = 0V

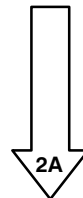


R150001



PROBLEM CAUSE

- F 18 Fuse
- WY Wire
- GLG Wire
- Cruise Control Switch



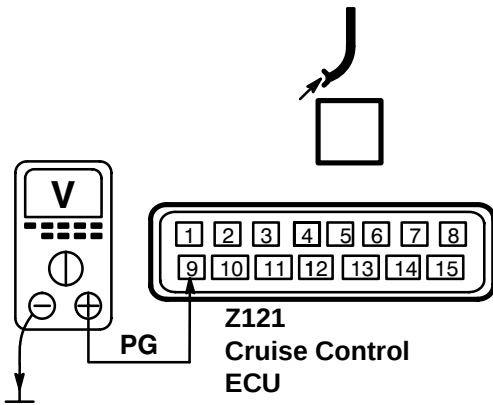
2A

CONDITIONS

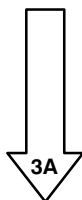
- Ignition Switch
Position: II
- Cruise Control Switch
On
- Engine running

RESULTS

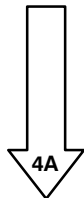
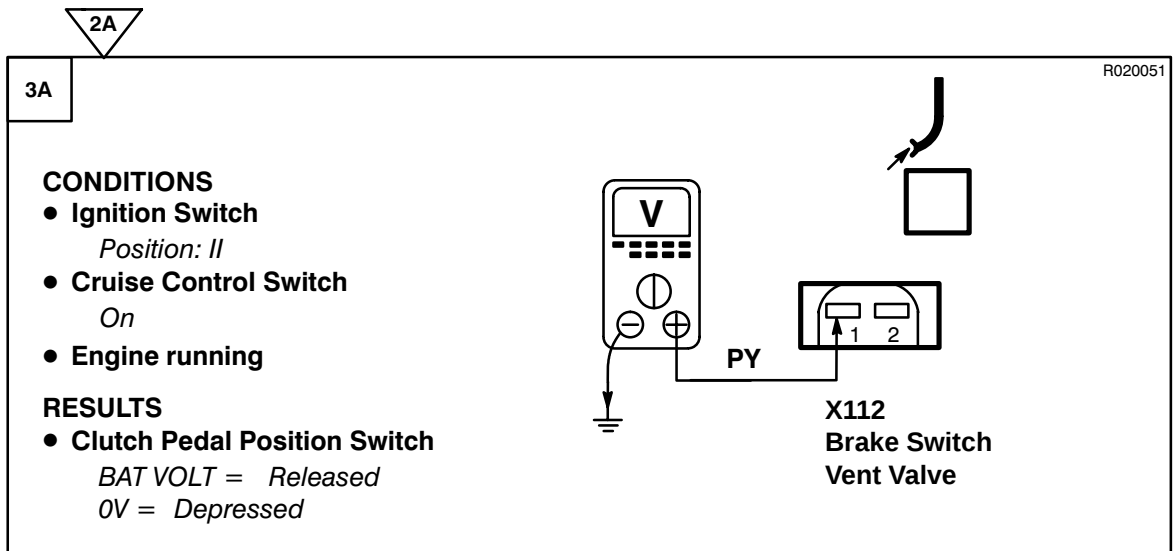
- Brake Switch Vent Valve
- Clutch Pedal Position Switch
BAT VOLT = Released
0V = Depressed



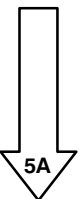
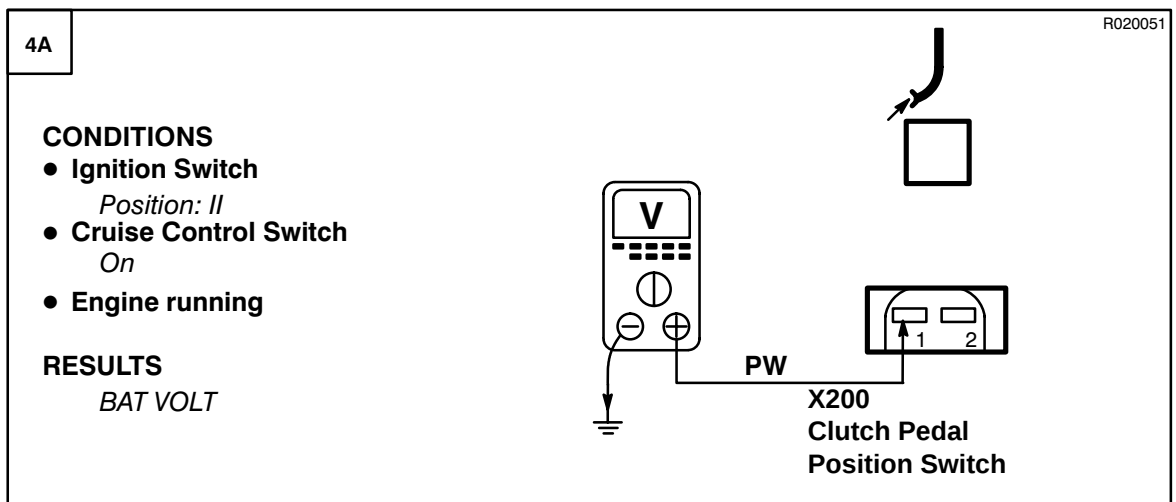
R150001



GO TO TEST C

**PROBLEM CAUSE**

- PG Wire
- Brake Switch Vent Valve

**PROBLEM CAUSE**

- P Wire
- PY Wire
- Clutch Pedal Position Switch

R050001

4A

5A

CONDITIONS

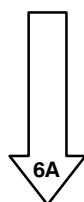
- Ignition Switch
Position: II
- Cruise Control Switch
On
- Engine running

RESULTS
BAT VOLT

**Z164
Speed Trip Module**

**PROBLEM CAUSE**

- WU, WB Wire
- Multiport Fuel Injection Ignition Resistor 2
- WS, WY Wire
- Cruise Control Diode



R050001

6A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

**Z164
Speed Trip Module**

**PROBLEM CAUSE**

- Speed Trip Module

**PROBLEM CAUSE**

- PW Wire
- B Wire

Test B

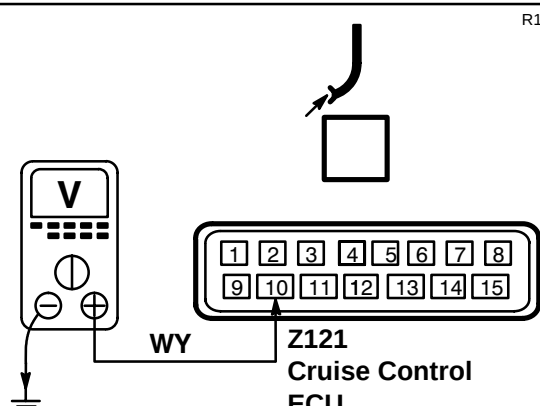
1B R150001

CONDITIONS

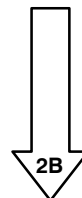
- Ignition Switch
Position: II

RESULTS

- Cruise Control Switch
BAT VOLT = On
0V = Off


**PROBLEM CAUSE**

- F 18 Fuse
- WY Wire
- GLG Wire
- Cruise Control Switch



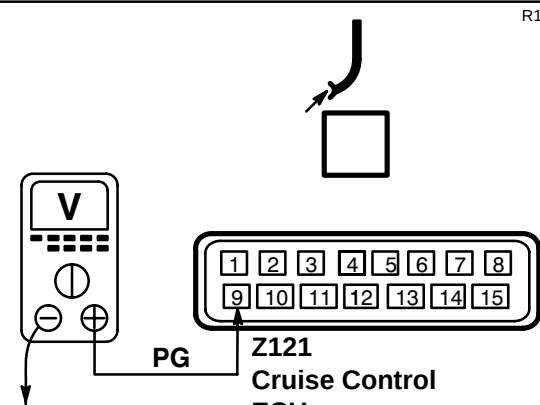
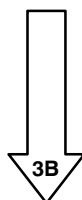
2B R150001

CONDITIONS

- Ignition Switch
Position: II
- Cruise Control Switch
On
- Gear Selector
D

RESULTS

- Brake Switch Vent Valve
BAT VOLT = Released
0V = Depressed


**GO TO TEST C**

R020051

2B

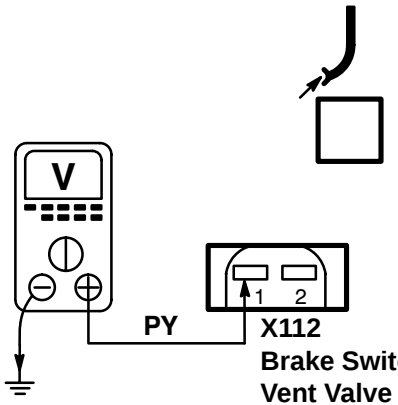
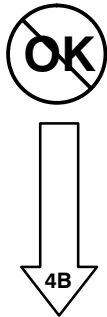
3B

CONDITIONS

- Ignition Switch
Position: II
- Gear Selector
D

RESULTS

- Cruise Control Switch
On = BAT VOLT
Off = 0V

OK **PROBLEM CAUSE**

- PG Wire
- Brake Switch Vent Valve

R050001

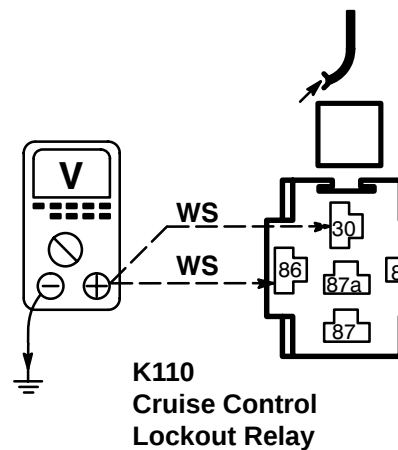
4B

CONDITIONS

- Ignition Switch
Position: II

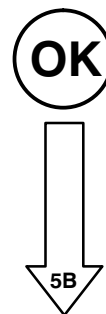
RESULTS

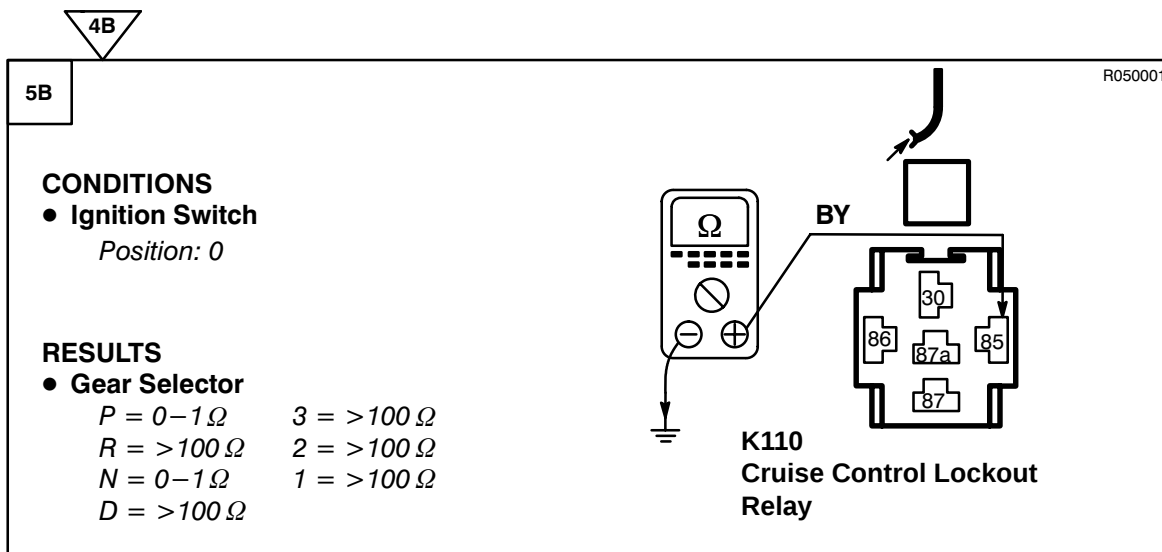
- Cruise Control Switch
On = BAT VOLT
Off = 0V



OK **PROBLEM CAUSE**

- WS Wire
- WY Wire
- Cruise Control Diode

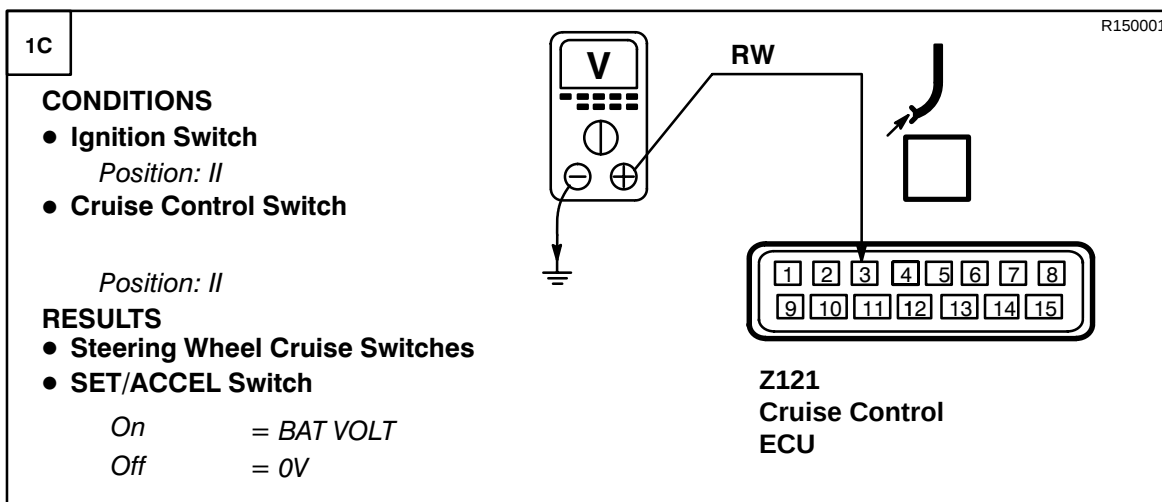


**PROBLEM CAUSE**

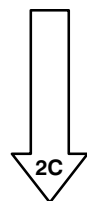
- BY Wire
- BO Wire
- Park/Neutral Position Switch

**PROBLEM CAUSE**

- PY Wire
- Cruise Control Lockout Relay

Test C**PROBLEM CAUSE**

- RW, W, WY Wire
- PB, GR Wire
- Rotary Coupler
- Steering Wheel Cruise Switches



1C

2C

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- Brake Pedal
BAT VOLT = Depressed
0V = Released

GP

Z121
Cruise Control
ECU

R150001

**PROBLEM CAUSE**

- GP Wire
- F1 Fuse
- GO Wire
- Stop Lamp Switch



3C

3C

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

0-1 Ω

B

Z121
Cruise Control
ECU

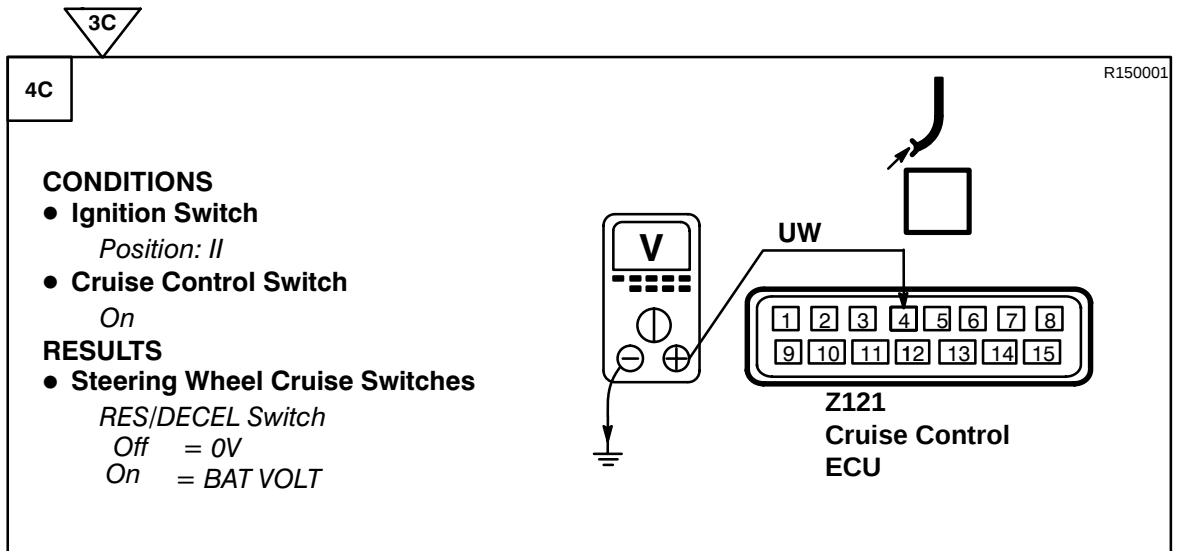
R150001

**PROBLEM CAUSE**

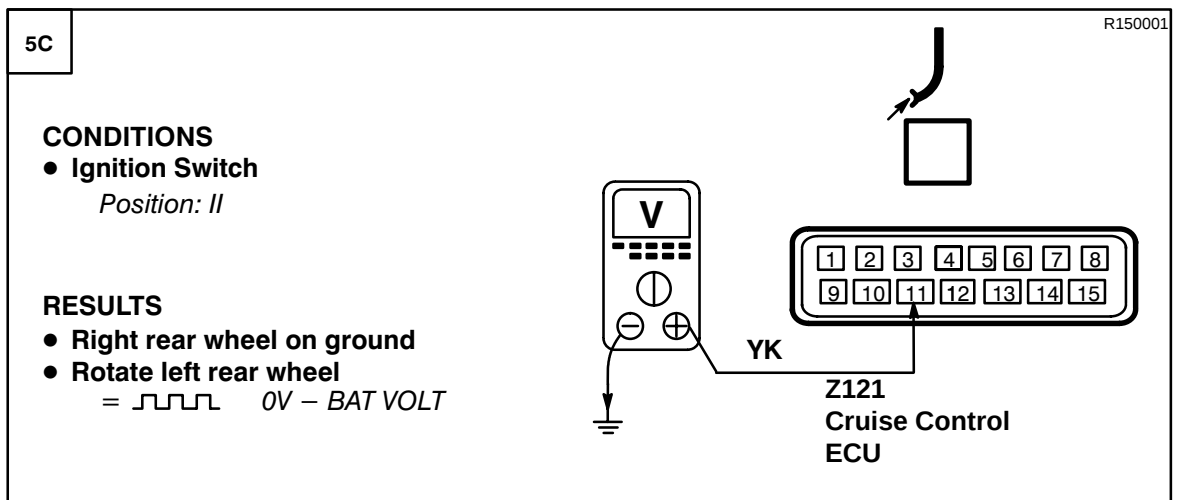
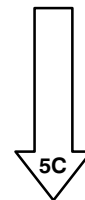
- B Wire



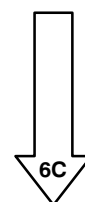
4C

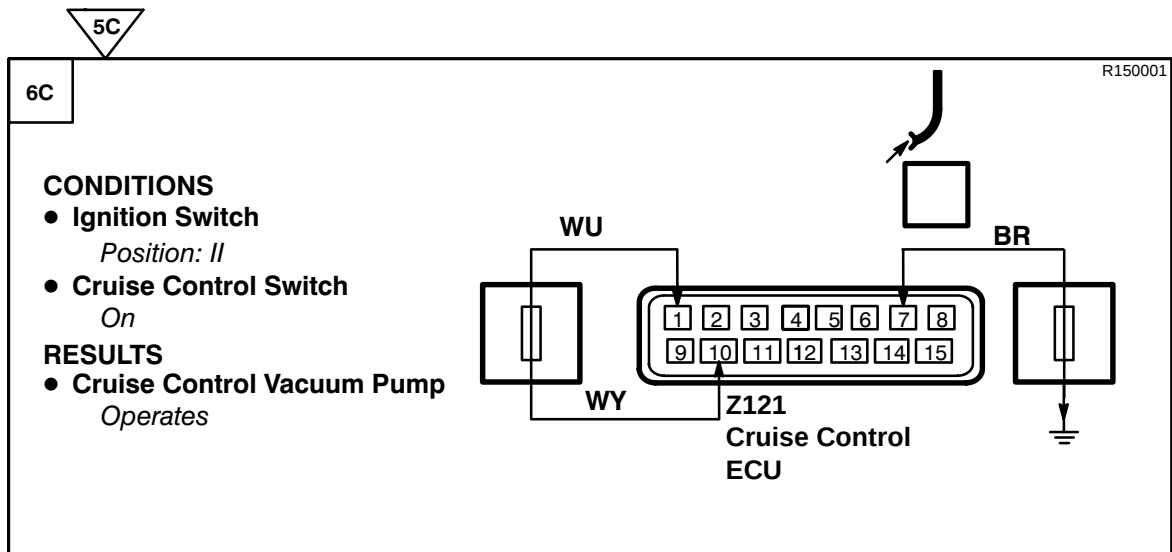
**PROBLEM CAUSE**

- UW, YB Wire
- WY, W Wire
- Rotary Coupler
- Steering Wheel Cruise Switches

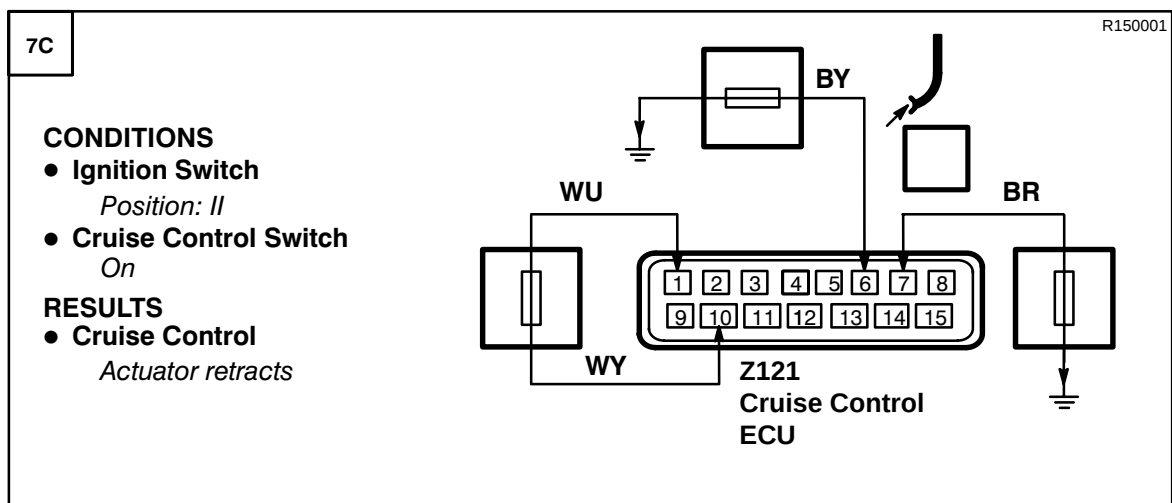
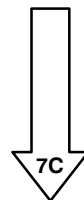
**PROBLEM CAUSE**

- YK Wire





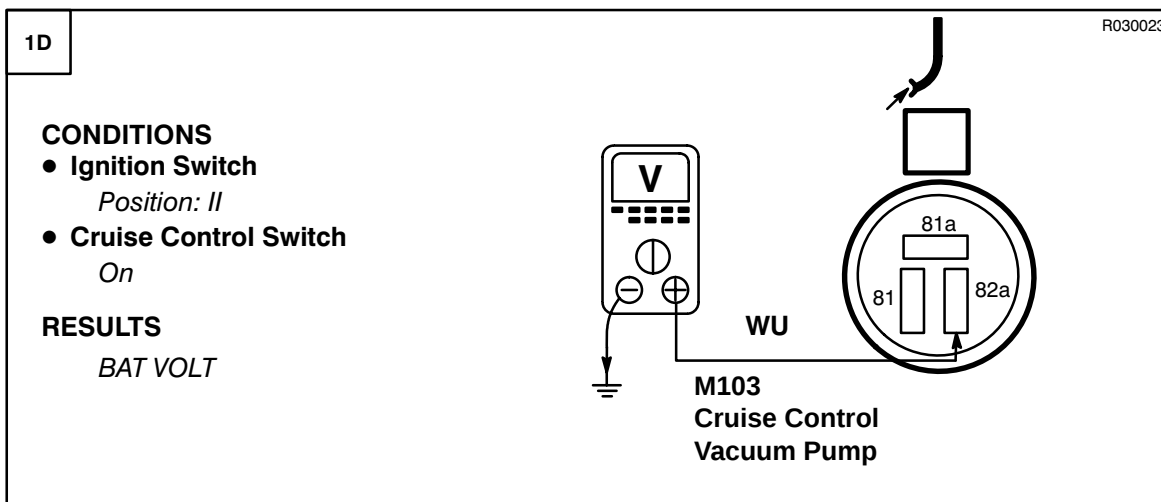
GO TO TEST D



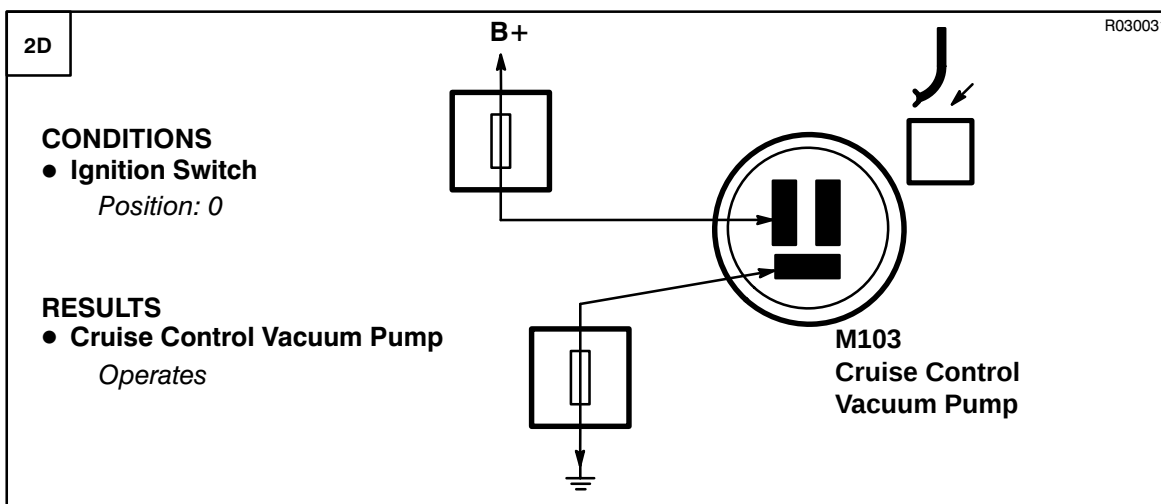
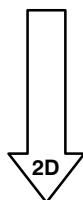
GO TO TEST D



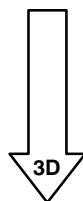
PROBLEM CAUSE
- Cruise Control
ECU

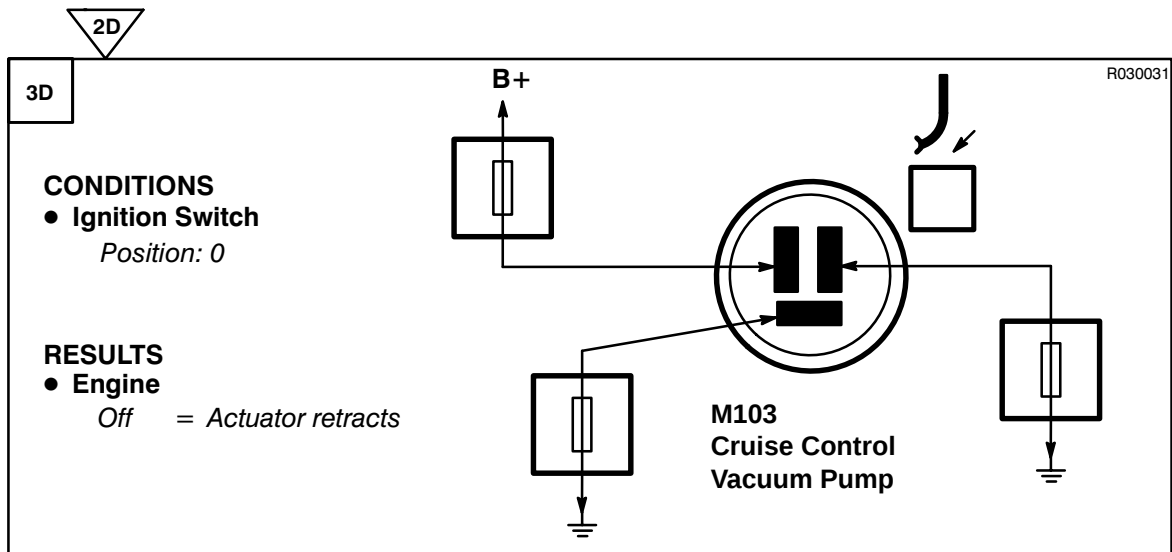
Test D

PROBLEM CAUSE
- WU Wire



PROBLEM CAUSE
- BR Wire
- Cruise Control
Vacuum Pump



**PROBLEM CAUSE**

- Vacuum leak or restriction
- Brake Switch Vent Valve
- Cruise Control Vacuum Pump

**PROBLEM CAUSE**

- BY Wire

CIRCUIT OPERATION**Selector Interlock**

When the gear selector is in the park position, the solenoid inside the Transmission Range Selector Switch (Z110) is de-energized and prevents the selector from being moved into another gear. To free the selector, the Ignition Switch (X134) must be in position II and the brake pedal must be depressed. When this occurs, voltage from Fuse F1 is applied to the Transmission Range Selector through the closed Stop Lamp Switch (X168). The solenoid inside the Transmission Range Selector Switch is grounded at E201 through the selector switch, the KS wire and the B wire. The solenoid now energizes, freeing the selector.

Ignition Key Interlock

On vehicles equipped with the interlock safety feature the vehicle must be in park and the transfer case in high or low gear before the key can be removed from the ignition. If the gear selector or transfer gear were out of gear, the key must be cycled before removal.

If the vehicle is not in park, voltage from Fuse F12 is applied to the Key Barrel Switch (X230) through the closed contacts of the Transmission Range Selector Switch (Z110). When the ignition switch is placed in the 0 position, the Key Barrel Switch (X230) closes to energize the solenoid and prevent key removal.

If the key is in the ignition and the transfer box is in the neutral position, Interlock Relay 1 (K153) is de-energized since the relay coil is not grounded by the Transfer Box Position Switch (X175). When the relay is de-energized, voltage is applied to the Key Barrel Switch (X230) through the relay's switch contacts and the Key-In Switch (X229) causing the solenoid to energize and prevent key removal.

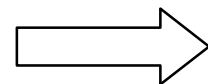
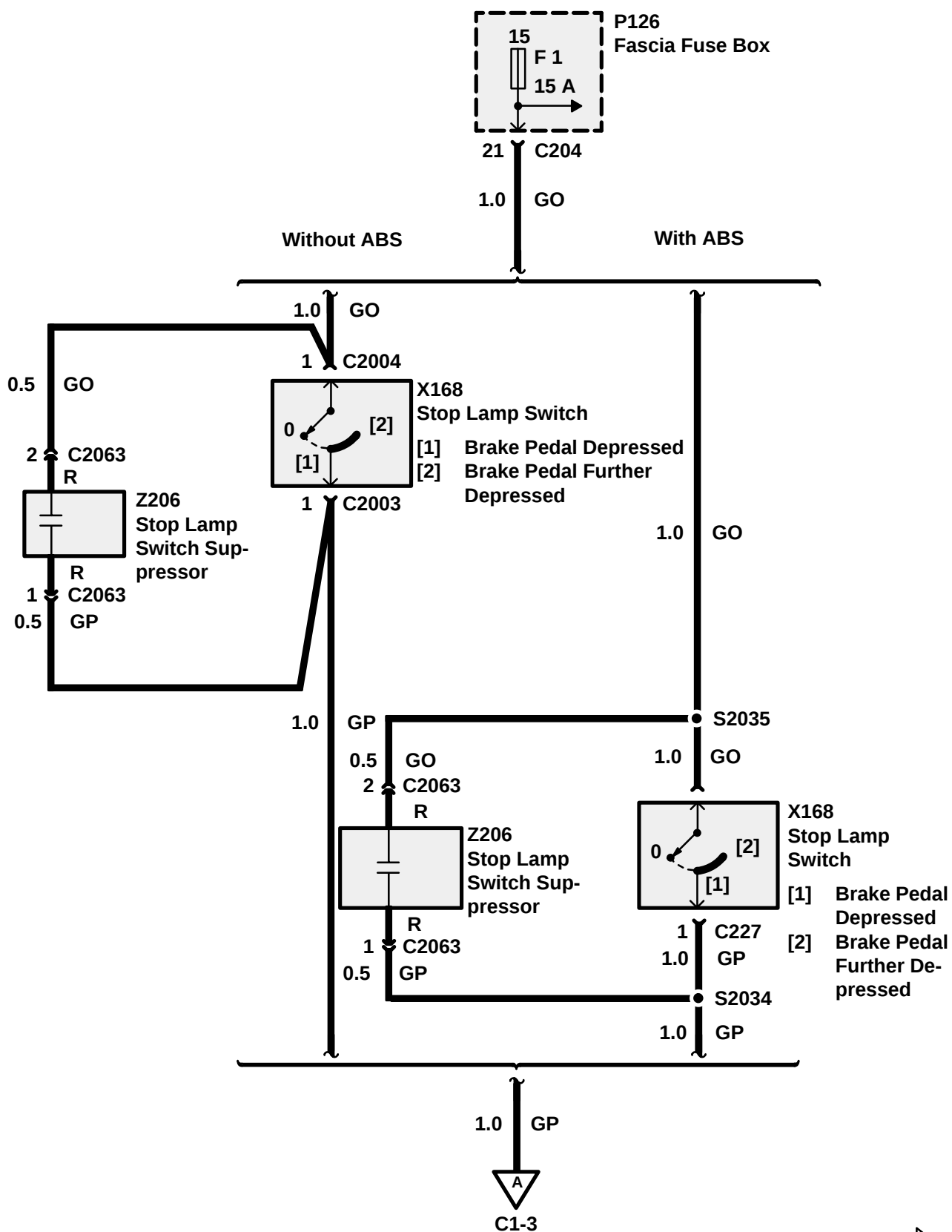
If the Transfer Box is in the "H" or "L" position, the Interlock Relay 1 (K153) is energized, since the relay coil is grounded by the Transfer Box Position Switch (X175). When the relay is energized, voltage to the Key Barrel Switch (X230) is interrupted. The Ignition Key Lock Solenoid (K191) is then disabled, allowing removal of the key.

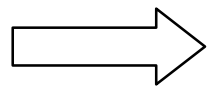
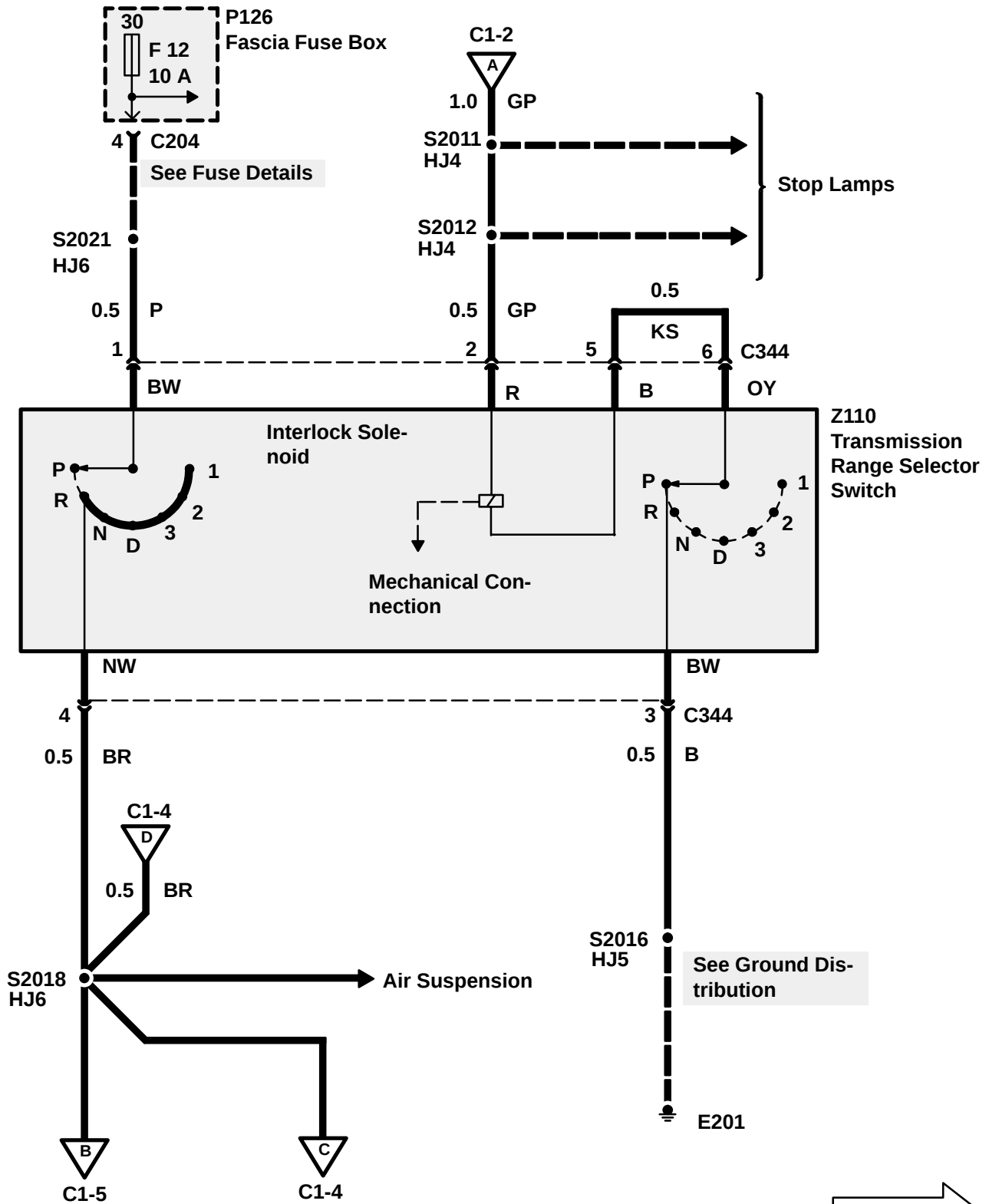
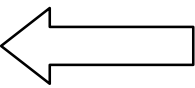
Transfer Box Interlock

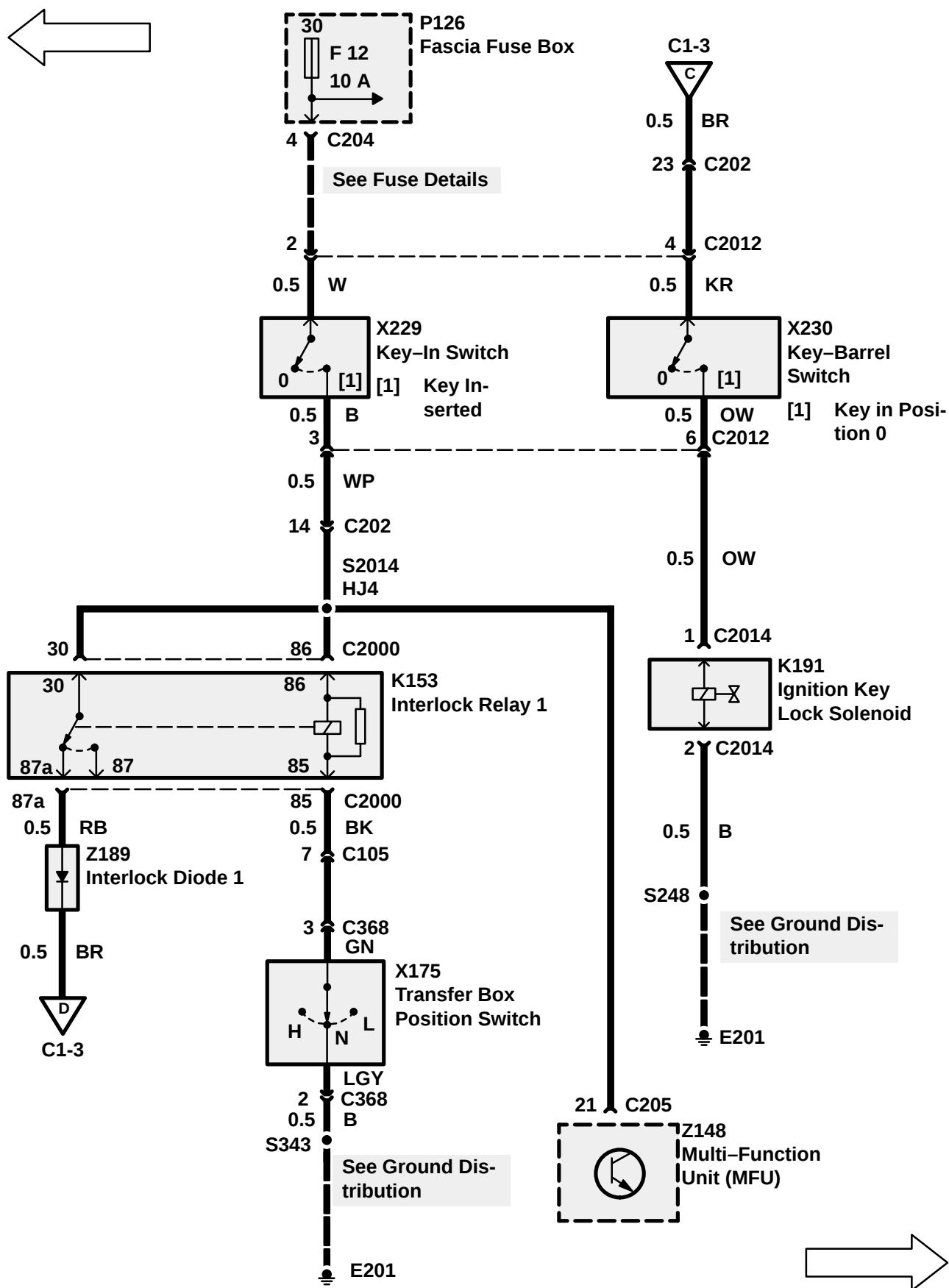
The Transfer Box Interlock Safety feature is designed to prevent the transfer case shifter from being shifted out of "H" or "L" unless the vehicle's gear selector is in the neutral position.

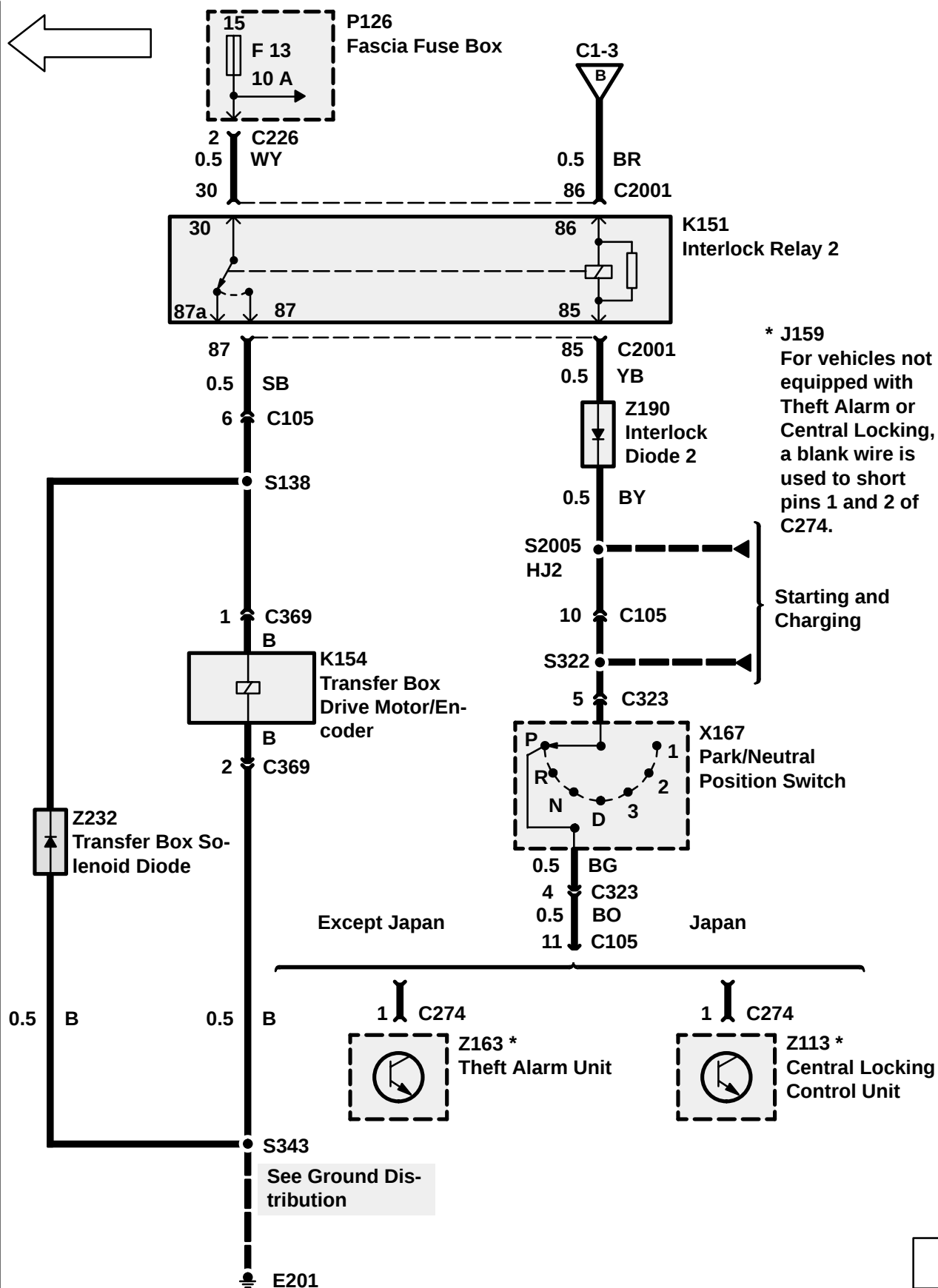
When the gear selector is placed in the neutral position, voltage is applied to the Interlock Relay 2's coil through the Transmission Range Selector Switch (Z110). The relay's coil is grounded through the Park/Neutral Position Switch (X167).

Interlock Relay 2 now energizes and applies voltage from Fuse F13 to the Transfer Box Solenoid (K154). When the Transfer Box Solenoid is (K154) is energized the transfer box shifter can be operated.









SYSTEM DIAGNOSIS

5. If the transmission range selector cannot be shifted out of park, do Test A.
6. If the ignition key cannot be removed with the transmission range selector in park and the transfer box is in "H" or "L", do Test B.
7. If the transfer box can be shifted out of "H" or "L" while in any gear except neutral, do Test C.
8. If the ignition key can be removed with the transmission range selector in any gear except park or with the transfer box in the neutral position, do Test D.
9. If the transfer box cannot be shifted into "N", "H", or "L", with the ignition key inserted and gear selector in "N", do Test F.

Test A

1A

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- Brake Pedal
BAT VOLT = Depressed
- Brake Pedal
0V = Released

GP

C344

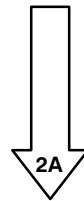
Z110
Transmission
Range Selector
Switch

R060016



PROBLEM CAUSE

- GP Wire
- GO Wire
- F1 Fuse
- Stop Lamp Switch



2A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm

B

C344

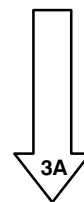
Z110
Transmission
Range Selector
Switch

R060016



PROBLEM CAUSE

- B Wire



2A

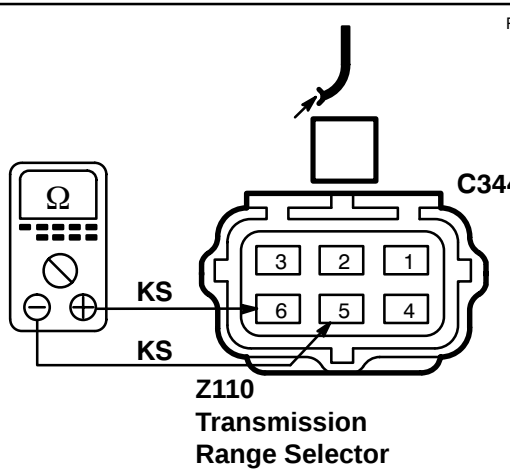
3A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm

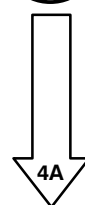


Z110
Transmission
Range Selector
Switch

R060016



PROBLEM CAUSE
- KS Wire



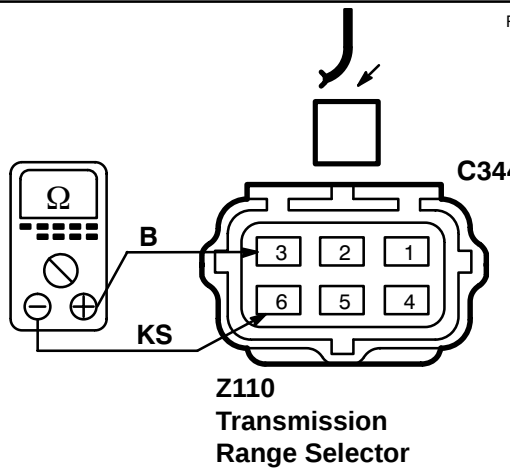
4A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- Gear Selector
P = Less than 1 ohm
D = More than 1000 ohms



Z110
Transmission
Range Selector
Switch

R060016



PROBLEM CAUSE
- Microswitch
(Gear Selector)



PROBLEM CAUSE
- Interlock Solenoid

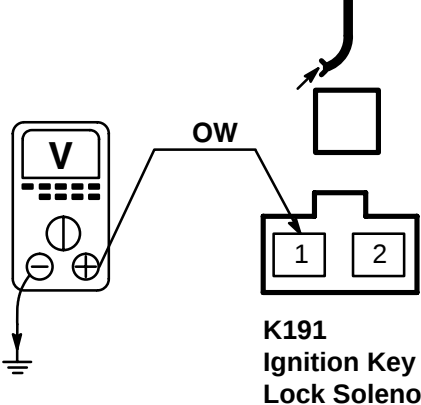
Test B

1B R020022

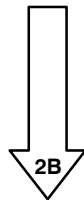
CONDITIONS

- Ignition Switch
Position: 0
- Gear Selector
P
- Transfer Box Position Switch
H or L

RESULTS
0V



K191
Ignition Key
Lock Solenoid

**PROBLEM CAUSE**

- Ignition Key
Lock Solenoid

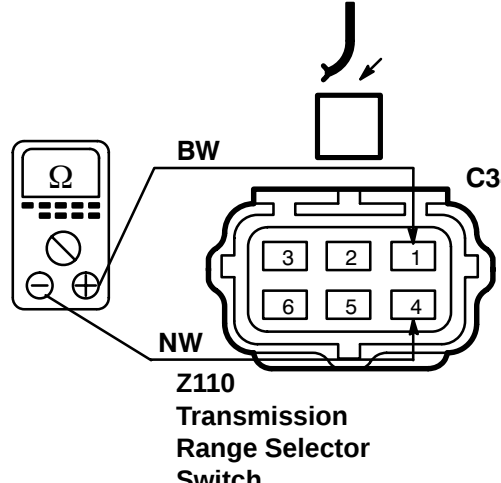
2B R060016

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

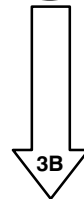
- Gear Selector
P = More than 10K ohms



Z110
Transmission
Range Selector
Switch

**PROBLEM CAUSE**

- Transmission
Range Selector
Switch



C1 ETM

1995 RANGE ROVER

2B

3B

CONDITIONS

- Ignition Switch
Position: II
- Transfer Box Position Switch
H or L

RESULTS
BAT VOLT

R050001

K153
Interlock Relay 1



PROBLEM CAUSE

- BK, WP, B Wire
- Transfer Box
- Position Switch
- Key-In Switch



PROBLEM CAUSE

- Interlock Relay 1

Test C

1C

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
More than 10K ohms

R050001

K151
Interlock Relay 2



PROBLEM CAUSE

- Interlock Relay 2



PROBLEM CAUSE

- BY, YB Wire
- Transfer Box
- Drive Motor/Encoder
- Park/Neutral Position Switch

Test D

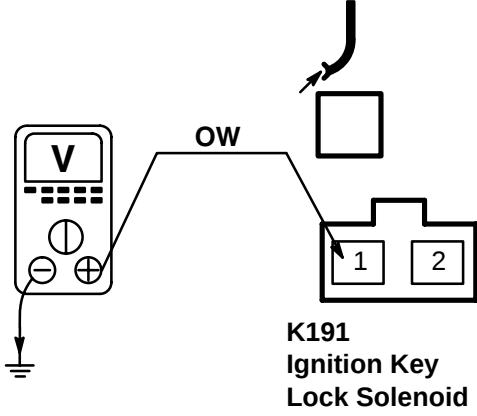
1D R020022

CONDITIONS

- Ignition Switch
Position: II
- Gear Selector
P

RESULTS

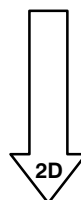
- Transfer Box Position Switch
N = BAT VOLT



K191
Ignition Key
Lock Solenoid



GO TO TEST E



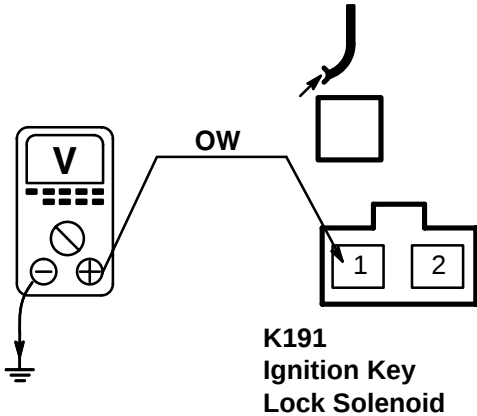
2D R020022

CONDITIONS

- Ignition Switch
Position: II
- Transfer Box Position Switch
H or L

RESULTS

- Gear Selector
P = 0 VOLTS
R, N, D, 3, 2, 1 = BAT VOLTS



K191
Ignition Key
Lock Solenoid



PROBLEM CAUSE

- BR, OW Wire
- Transmission
- Range Selector Switch
- Key-Barrel Switch



PROBLEM CAUSE

- Ignition Key Lock Solenoid

Test E

R050001

1E

CONDITIONS

- Ignition Switch
Position: II

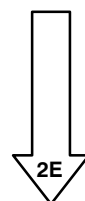
RESULTS
BAT VOLT

K153
Interlock Relay 1



PROBLEM CAUSE

- WP Wire
- Key-In Switch



R050001

2E

CONDITIONS

- Ignition Switch
Position: II
- Transfer Box Position Switch
N

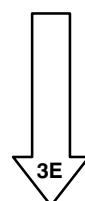
RESULTS
More than 10K ohms

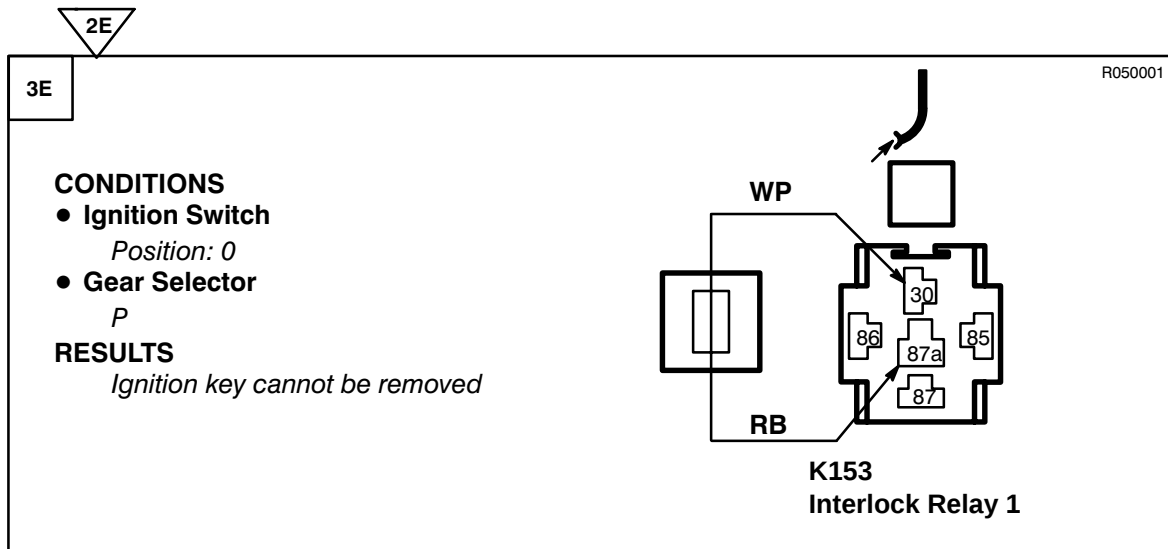
K153
Interlock Relay 1



PROBLEM CAUSE

- BK Wire
- Transfer Box Position Switch

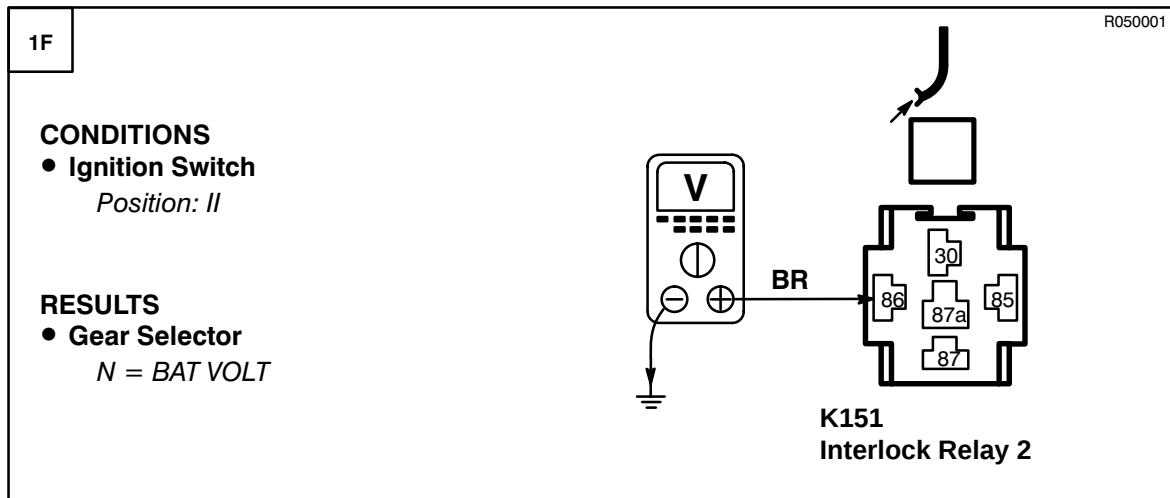


**PROBLEM CAUSE**

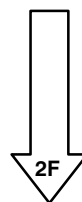
- RB Wire
- BR Wire
- Interlock Diode 1

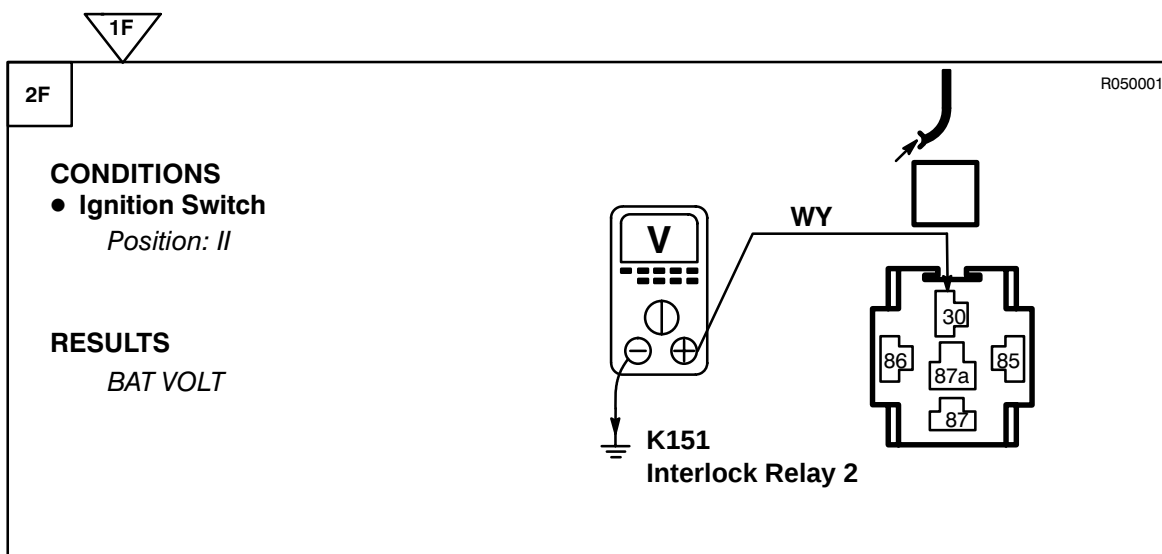
**PROBLEM CAUSE**

- Interlock Relay 1

Test F**PROBLEM CAUSE**

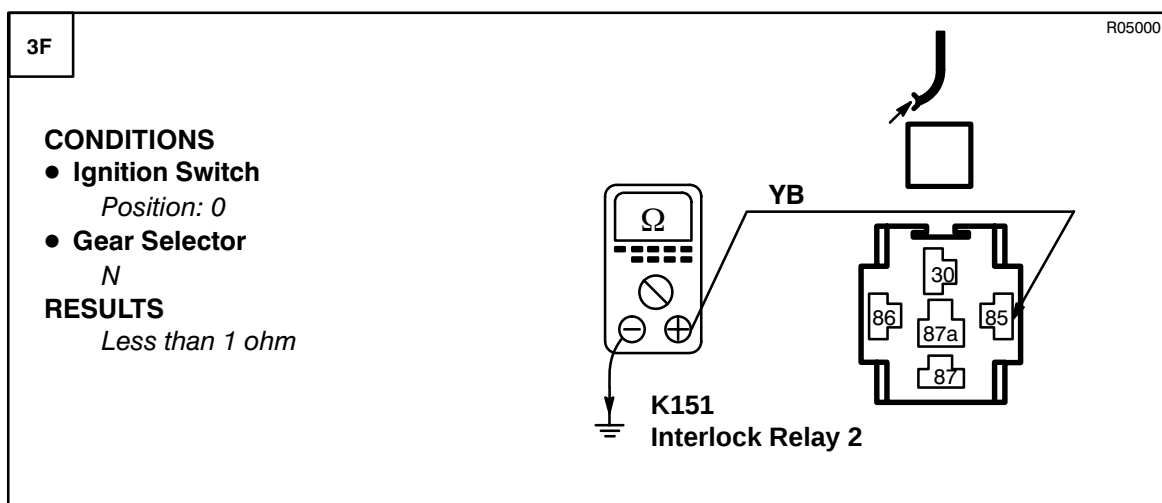
- BR Wire
- Transmission
Range Selector
Switch





PROBLEM CAUSE

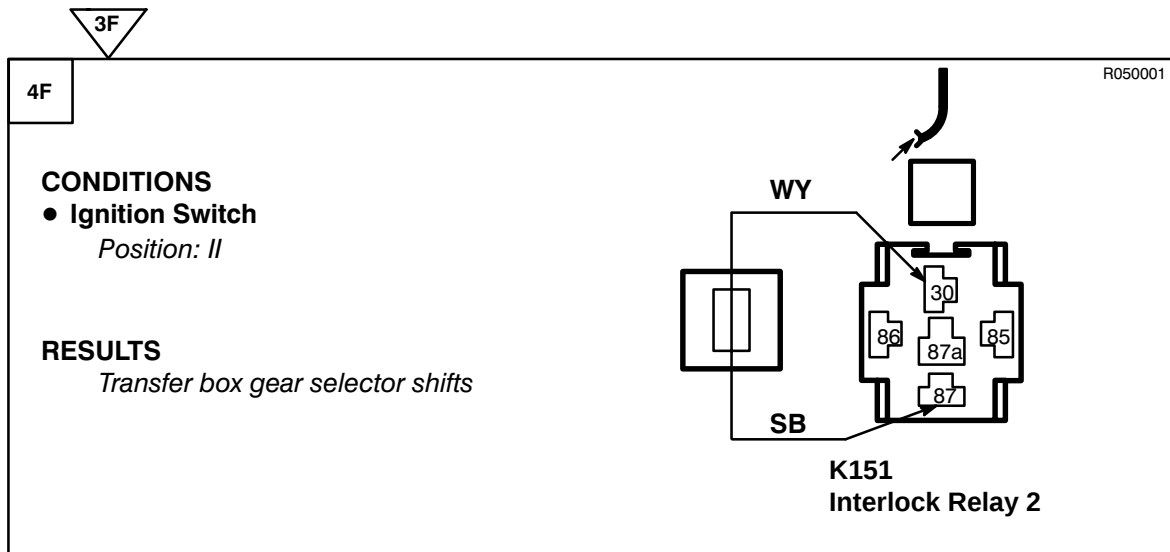
- F13 Fuse
- WY Wire



PROBLEM CAUSE

- YB Wire
- BY Wire
- Interlock Diode 2
- BO Wire
- Park/Neutral Position Switch

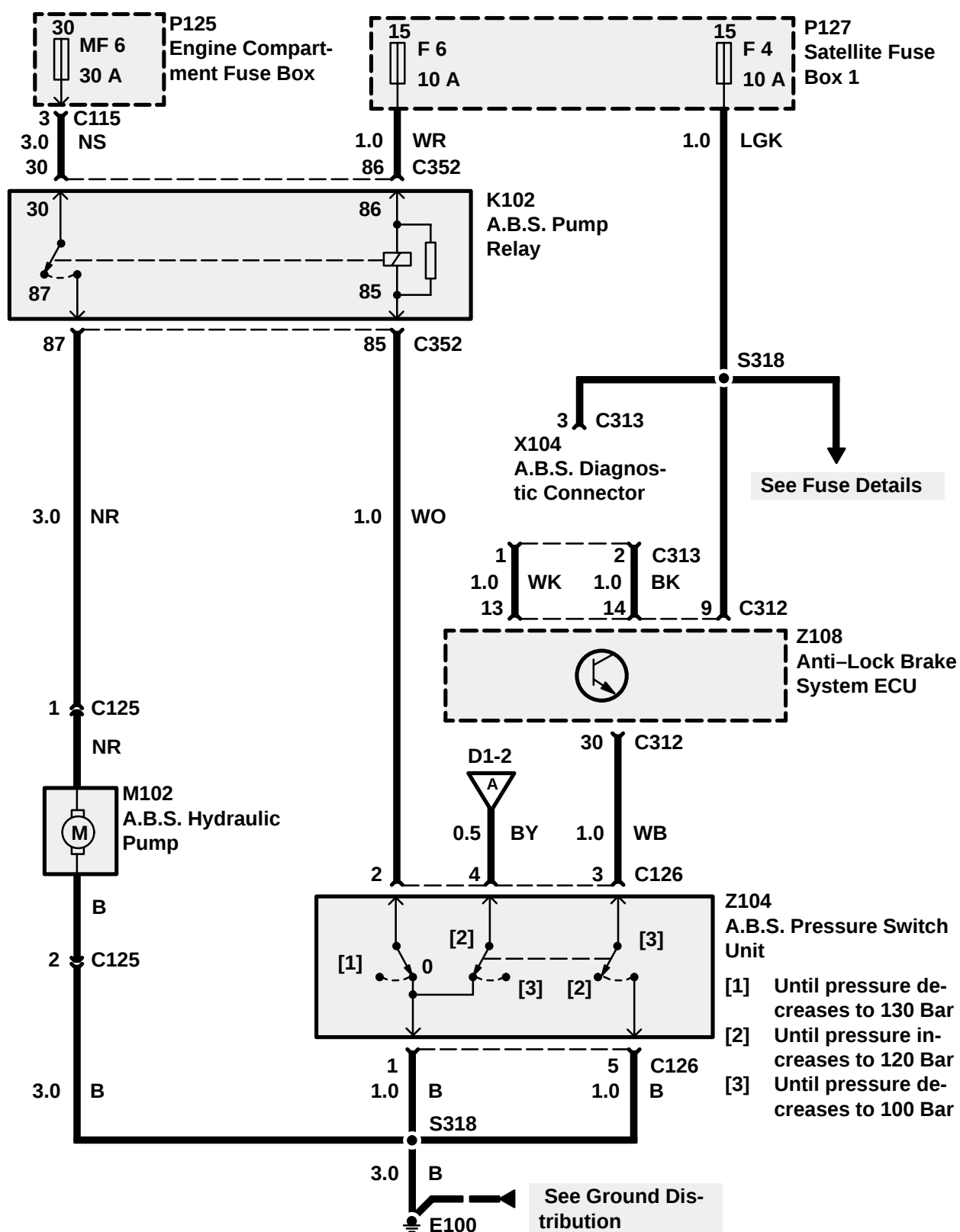


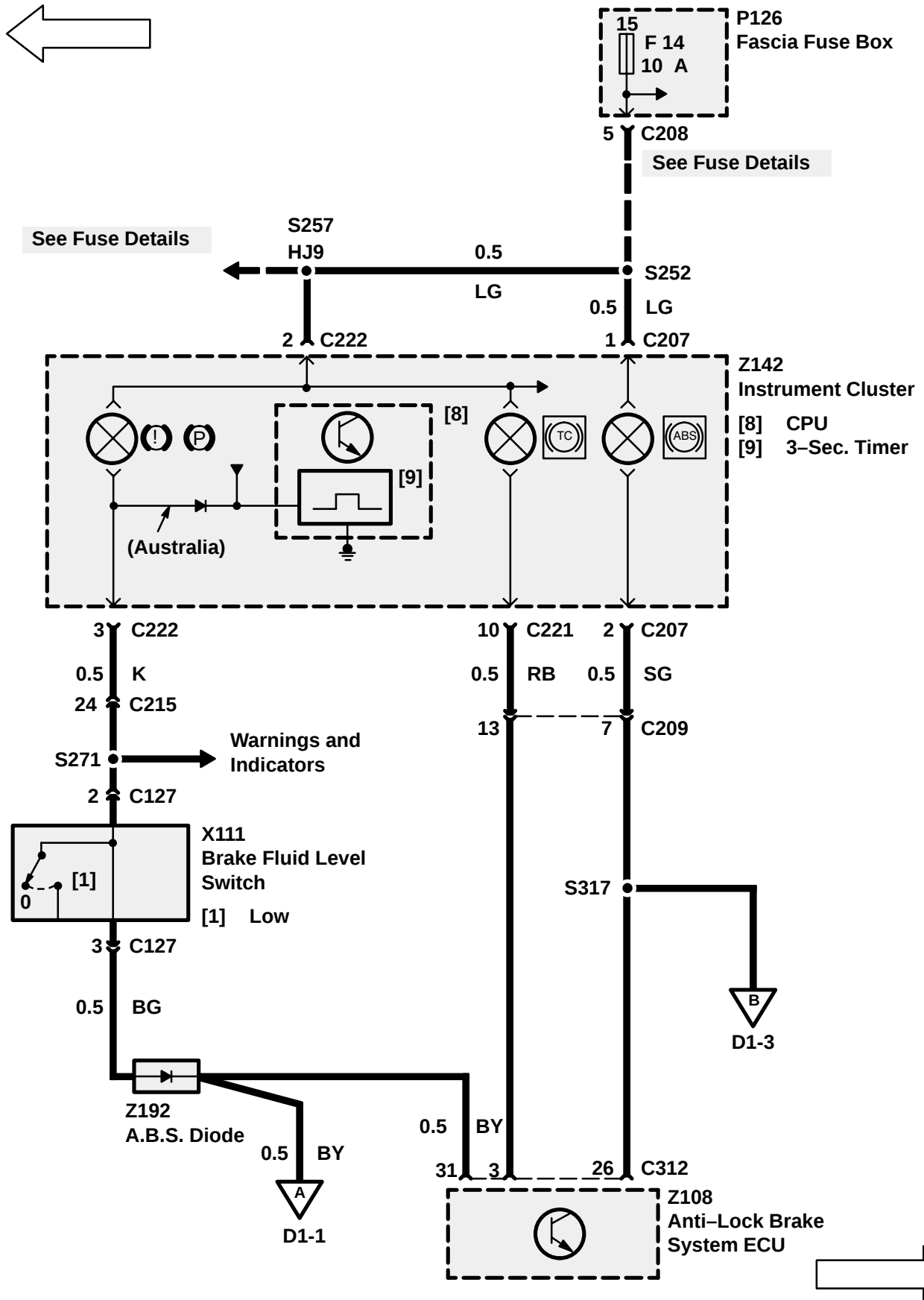
**PROBLEM CAUSE**

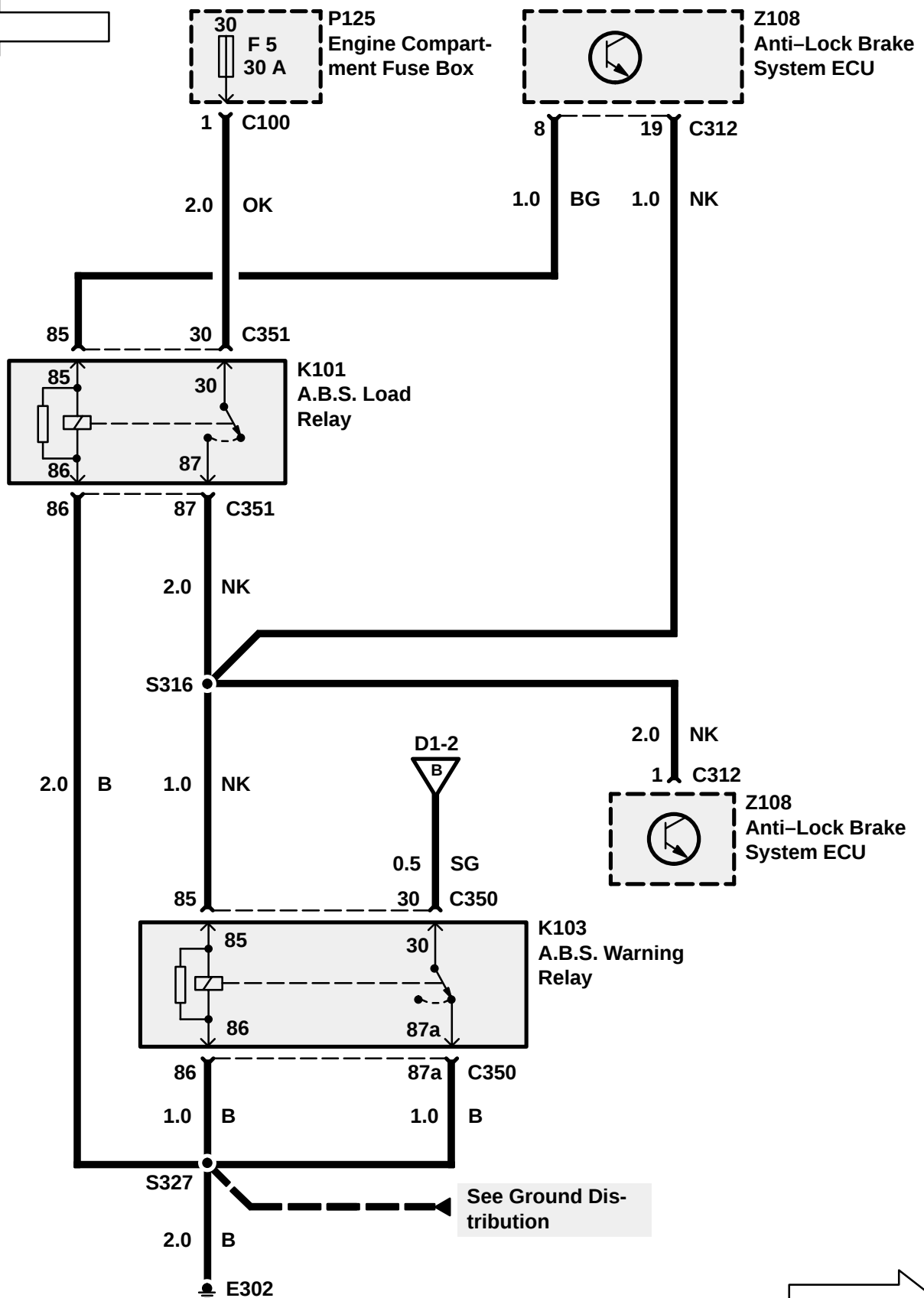
- SB Wire
- B Wire
- Transfer Box Drive Motor/Encoder

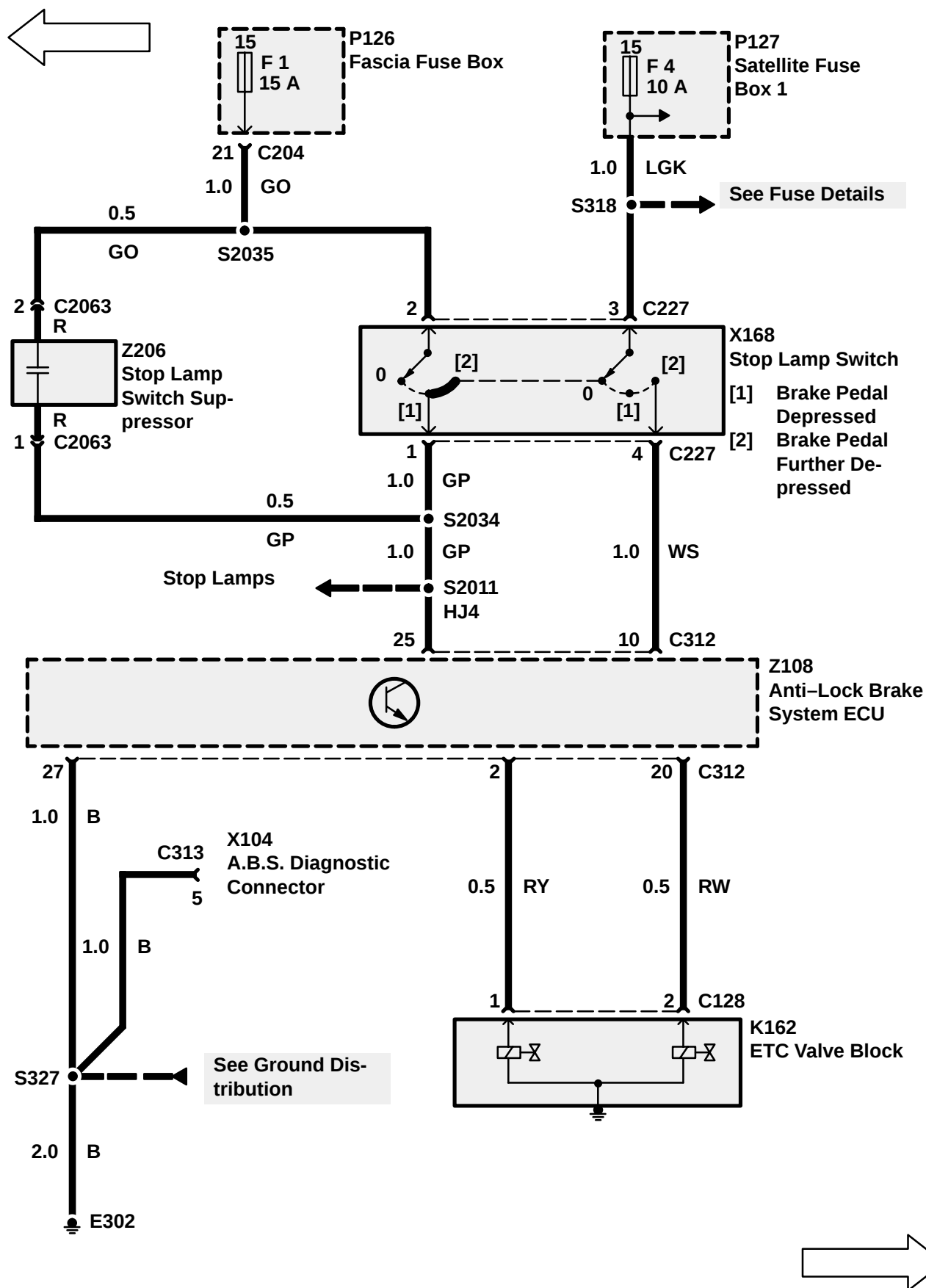
**PROBLEM CAUSE**

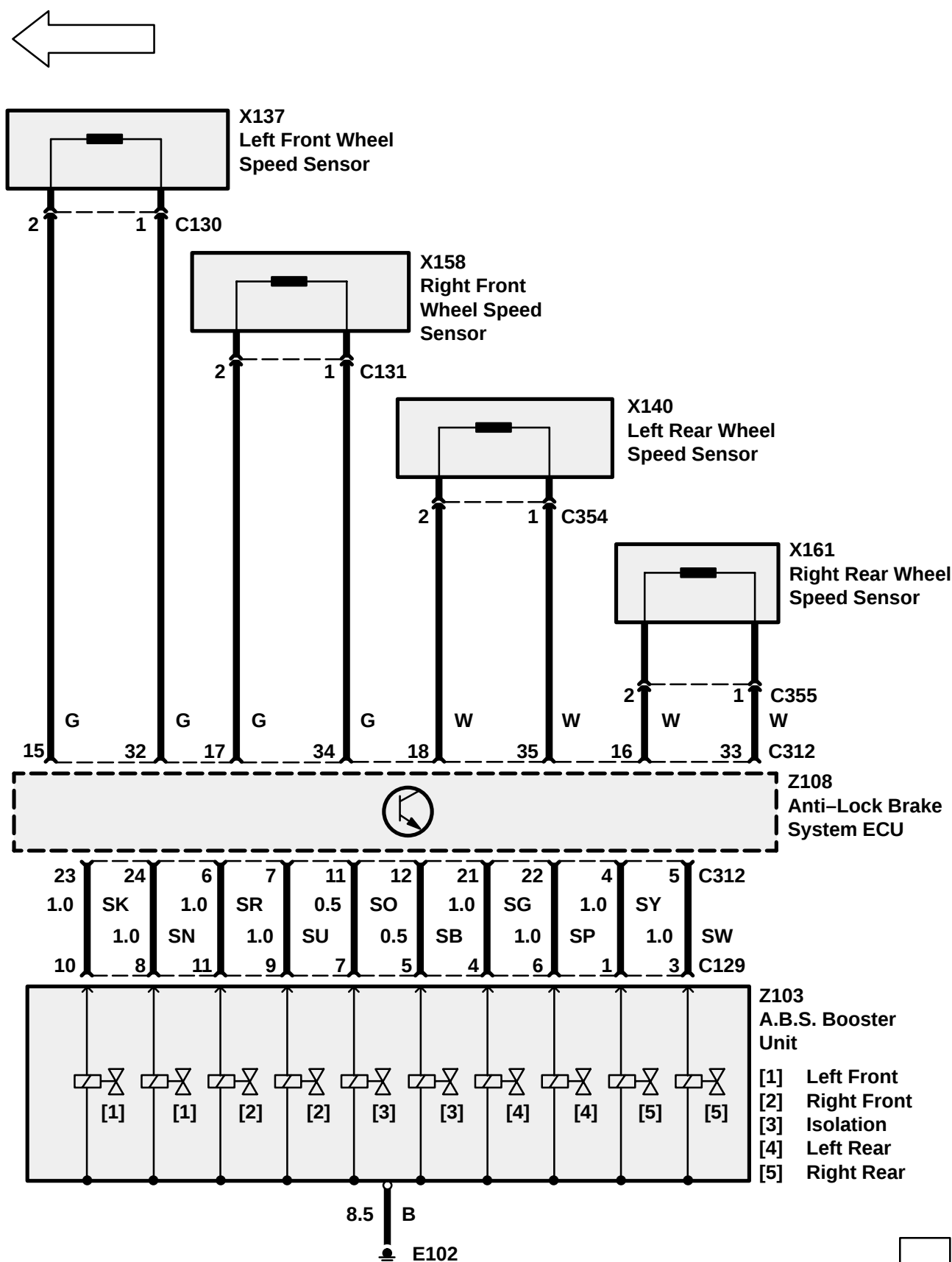
- Interlock Relay 2











CIRCUIT OPERATION**Engine Coolant Temperature Gauge**

The Engine Coolant Temperature Gauge Sensor (X114) has approximately 200 ohms resistance when the coolant temperature is low. As coolant temperature increases, the resistance of the sensor decreases. This varying resistance causes the current through the sensor to change and the gauge to register the temperature. When the coolant is hot, the resistance of the sensor is approximately 10 ohms.

Fuel Gauge

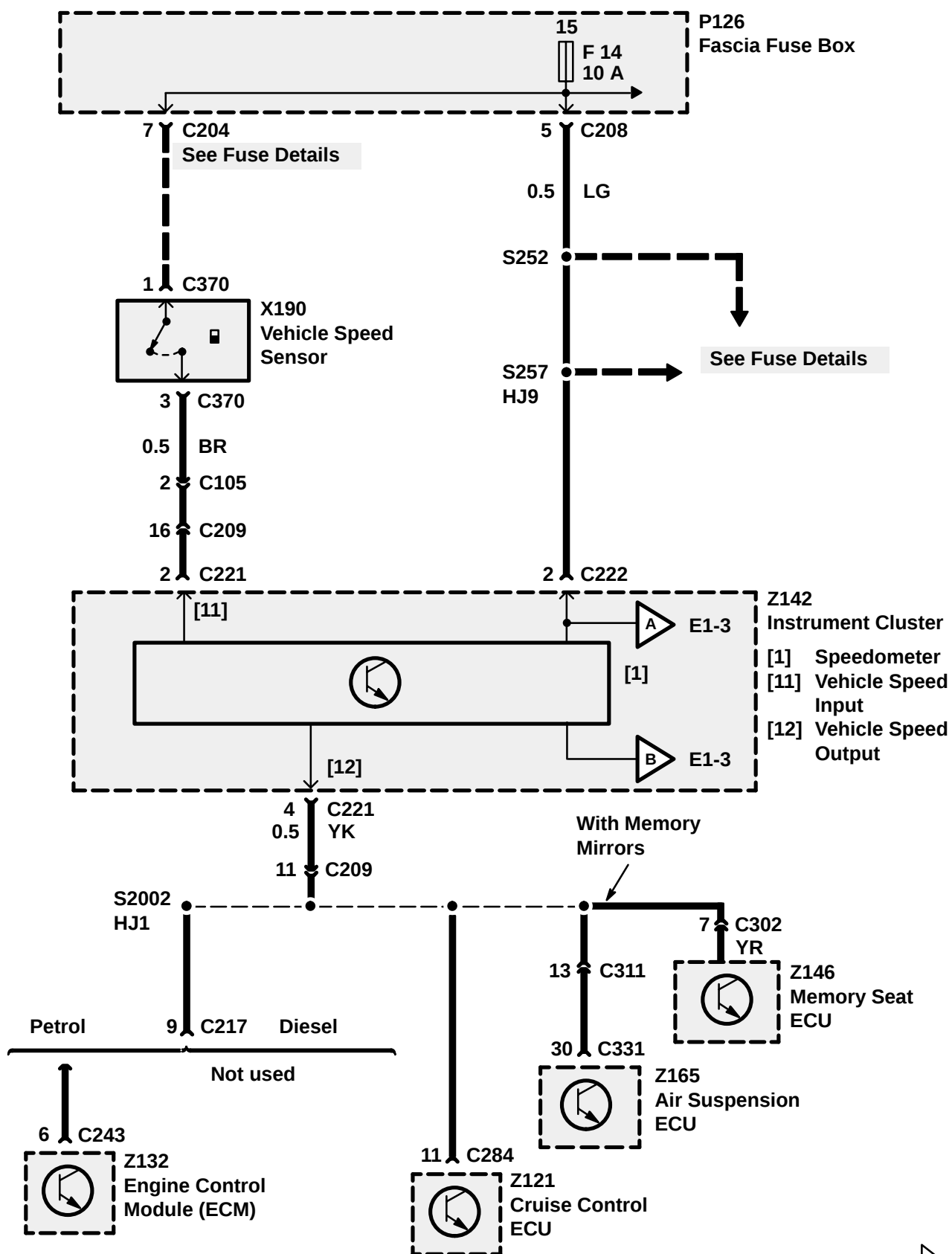
When the fuel tank level is low, the resistance of the fuel gauge sender is approximately 220 ohms. As the fuel level increases, the resistance of the sender decreases, causing the gauge to register the change. When the fuel tank is full, the resistance of the sender is approximately 10 ohms. When the fuel gauge sender's resistance falls below approximately 25 ohms (6 liters/1.5 US gallons), the fuel warning light will illuminate to warn the driver.

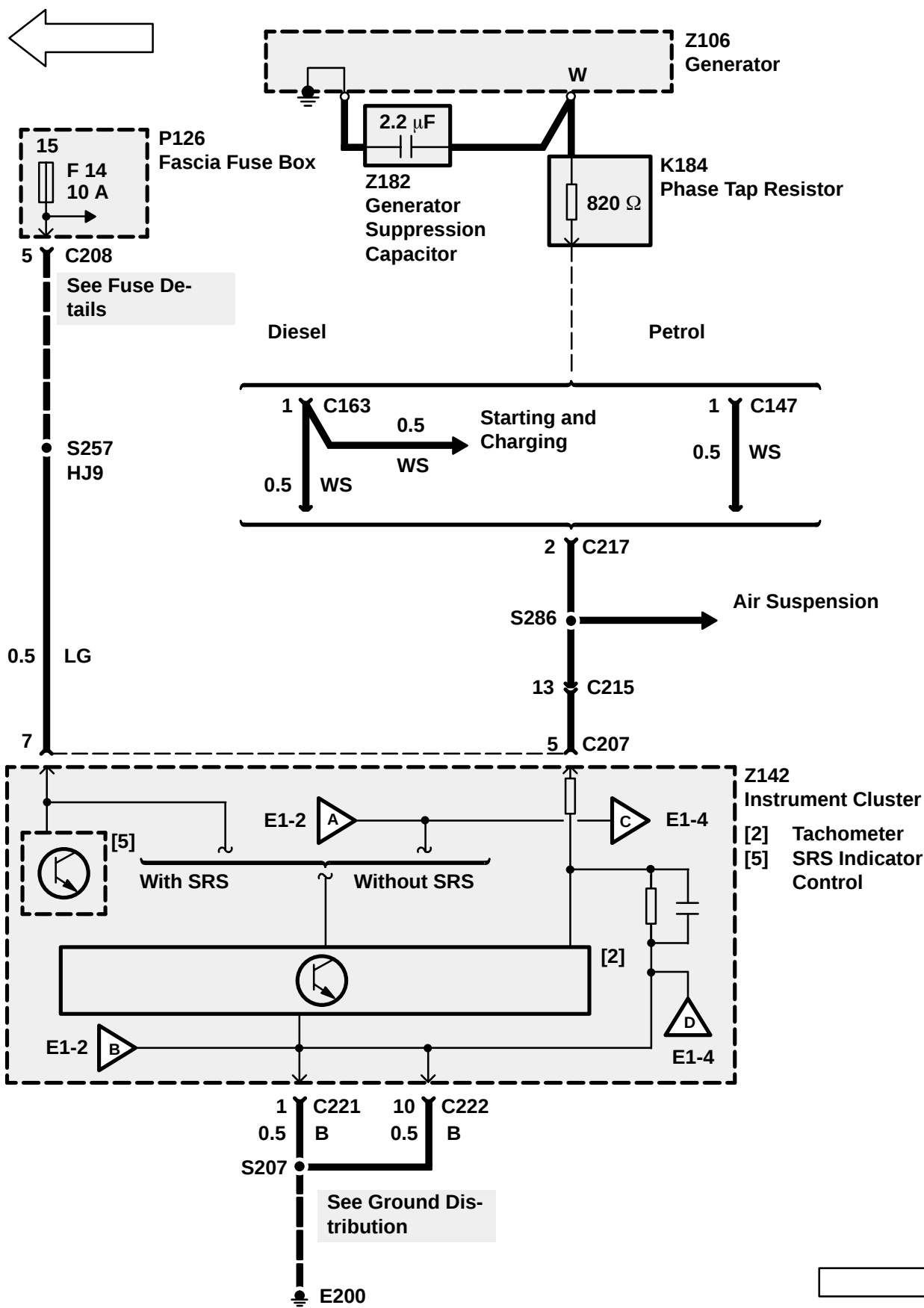
Speedometer

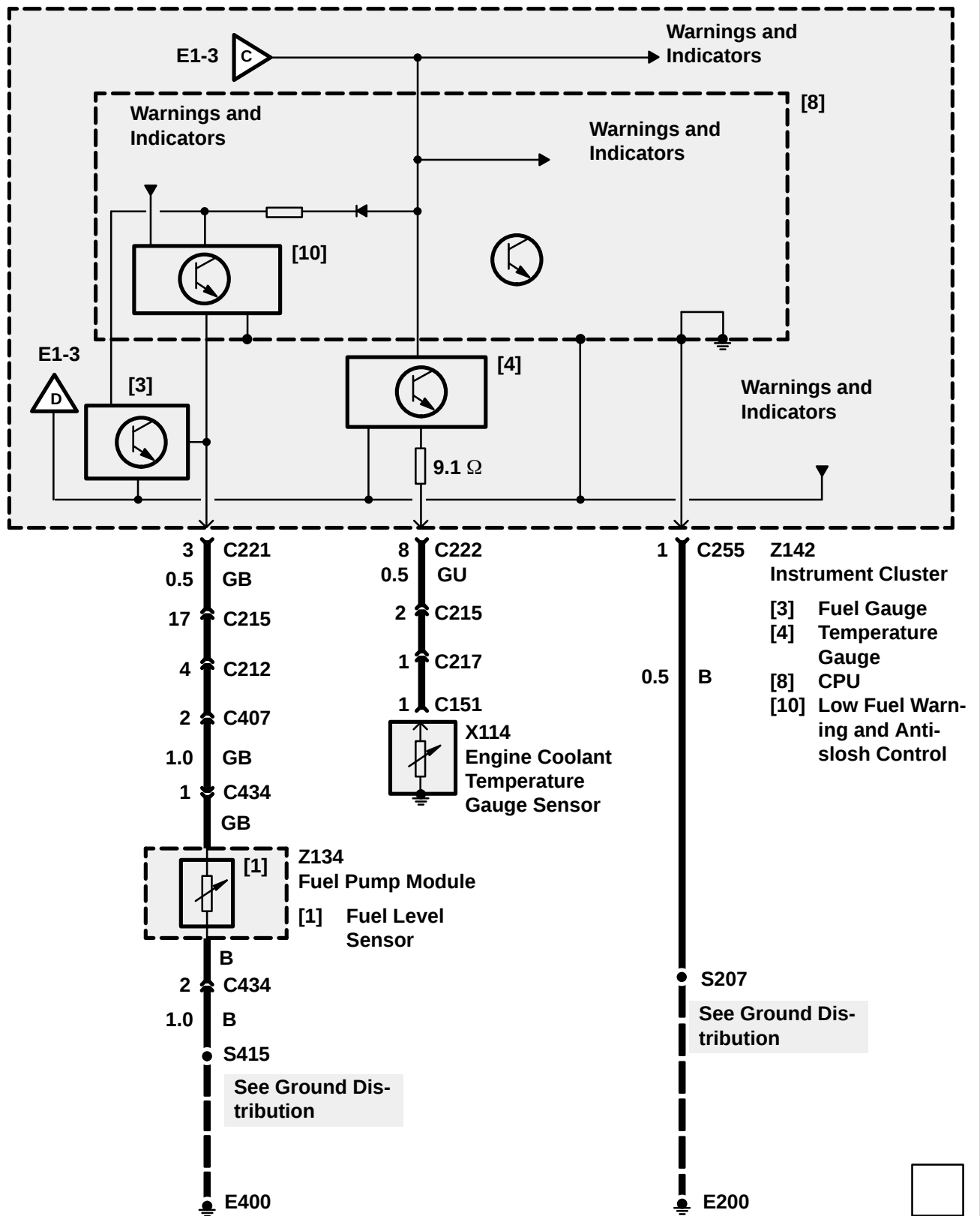
The Vehicle Speed Sensor (X190) sends a signal to the speedometer in the form of voltage pulses. The pulses are filtered by a Vehicle Speed Sensor Buffer inside the speedometer. The voltage alternates between battery voltage and 0 volts 6 times per wheel revolution. The speed sensor signal is also sent to the Cruise Control ECU (Z121), Engine Control Module (Z132), Memory Seat ECU (Z146) and the Air Suspension ECU (Z165).

Tachometer

The tachometer displays engine speed in rpm. Voltage pulses are taken from the Generator (Z106) and are generated when the engine drive belt turns the Generator pulley. The tachometer responds to the frequency of the voltage pulses, which increases proportionally to that of the engine speed.

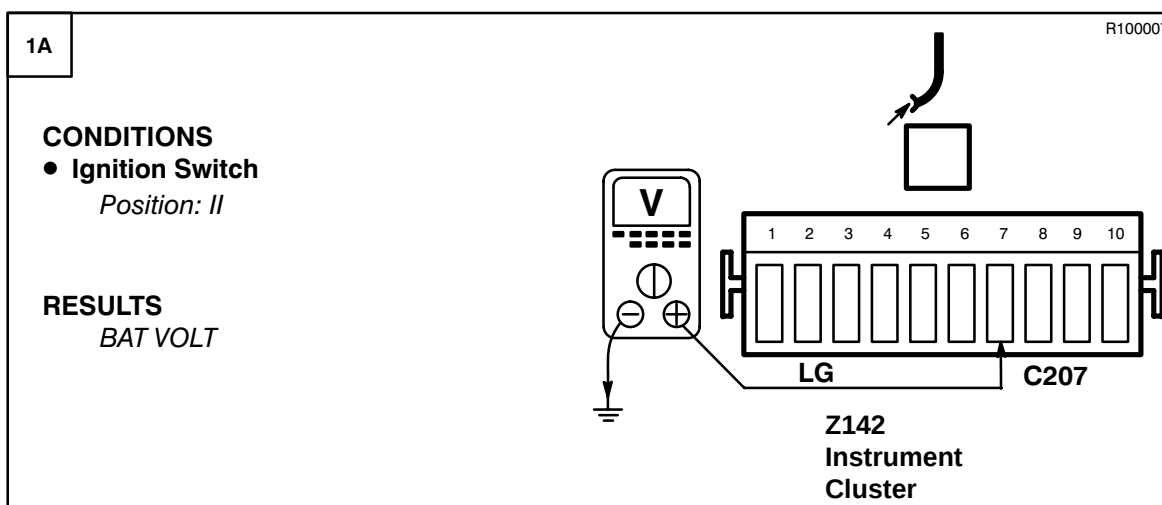




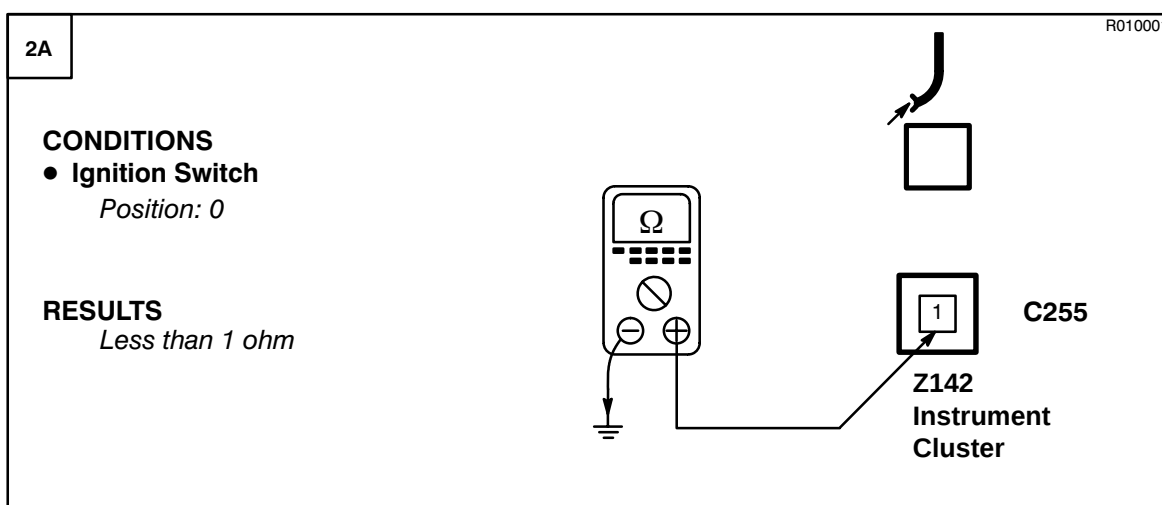
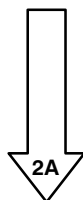


SYSTEM DIAGNOSIS

1. If no instruments operate, do Test A.
2. If the coolant temperature gauge reads hot with coolant cool, do Test B.
3. If the coolant temperature gauge reads cool with coolant hot, do Test B.
4. If the fuel gauge reads empty with fuel in the tank, do Test C.
5. If the fuel gauge reads full when the tank is empty, do Test C.
6. If the speedometer does not operate, do Test D.
7. If the tachometer does not operate, do Test E.

Test A**PROBLEM CAUSE**

- LG Wire
- F 14 Fuse

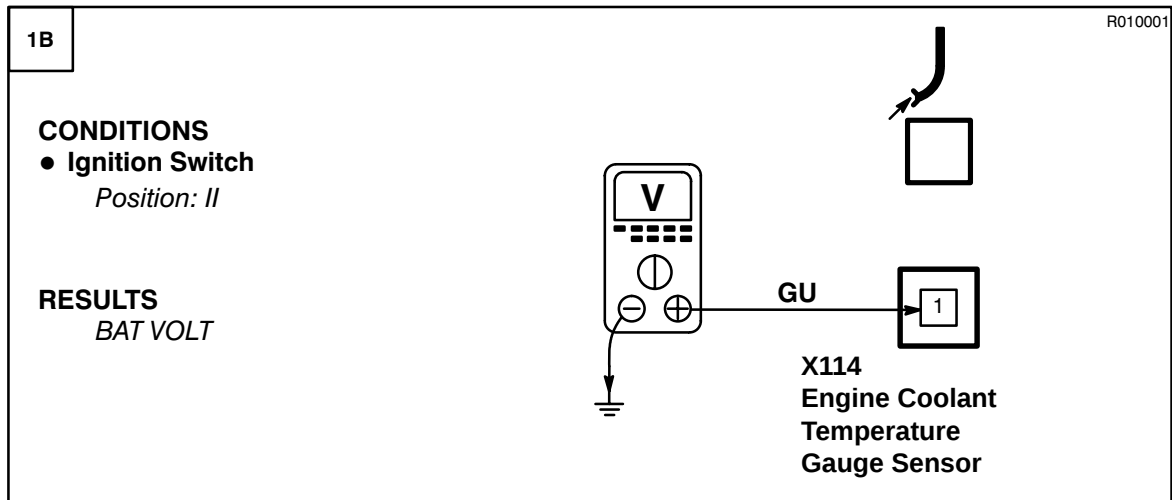
**PROBLEM CAUSE**

- B Wire



- PROBLEM CAUSE**
- Instrument Cluster

Test B



PROBLEM CAUSE

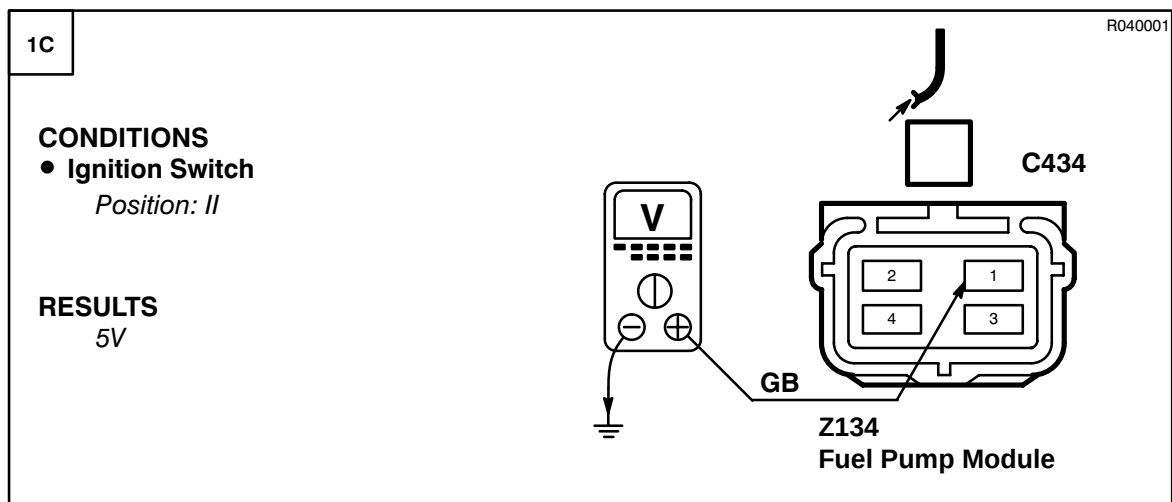
- GU Wire
- Instrument Cluster
- Coolant Temperature Gauge



PROBLEM CAUSE

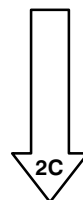
- Engine Coolant
Temperature
Gauge Sensor

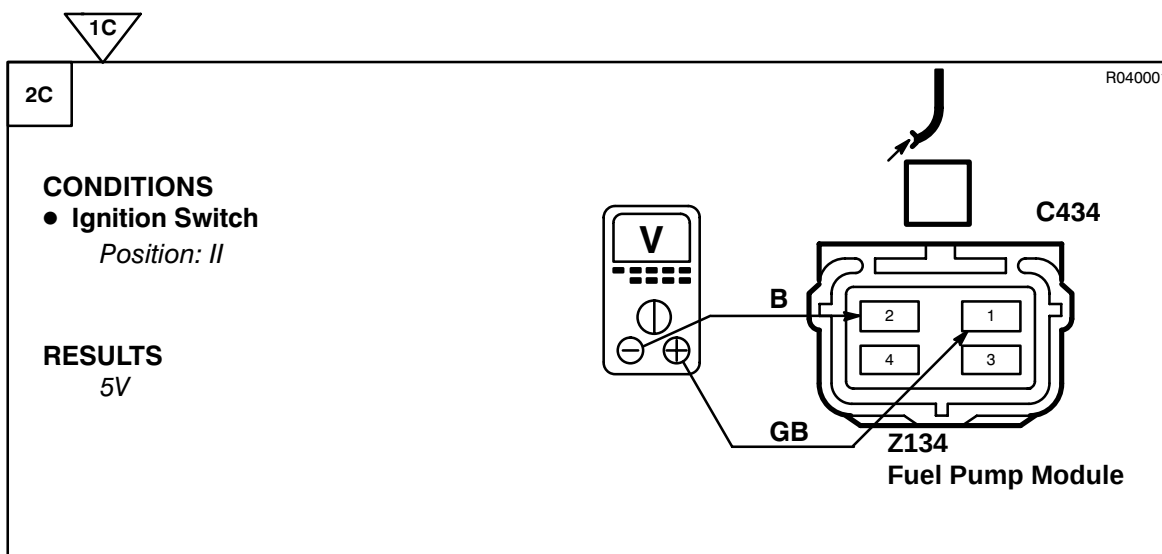
Test C



PROBLEM CAUSE

- GB Wire
- Instrument Cluster
- Fuel Gauge

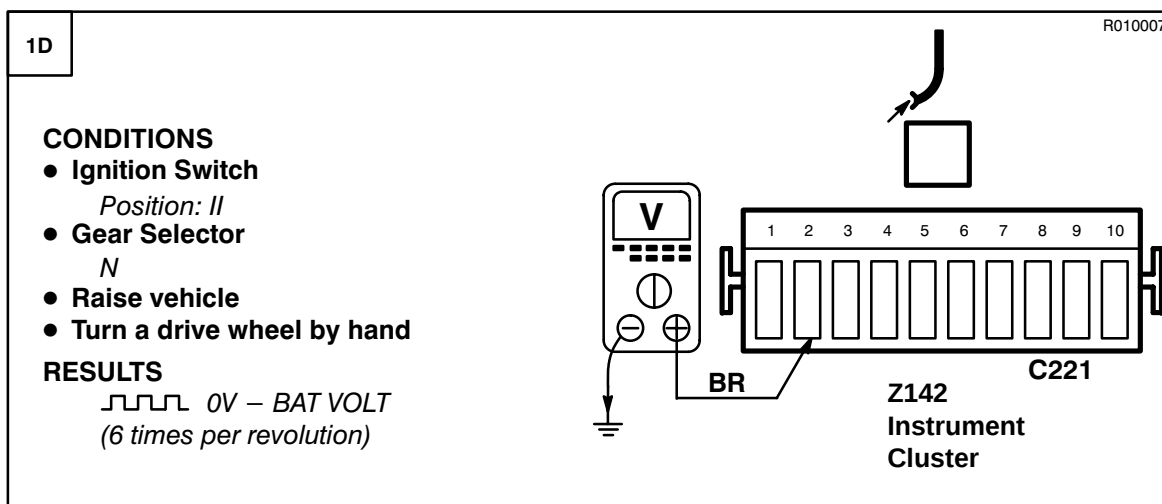




PROBLEM CAUSE
- B Wire



PROBLEM CAUSE
- Fuel Pump Module

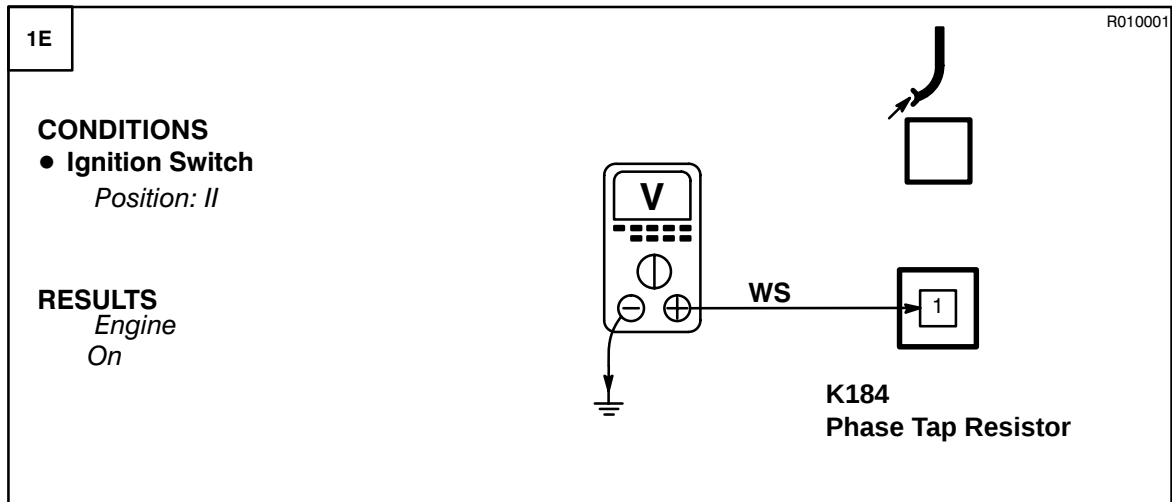
Test D

PROBLEM CAUSE
- GY Wire
- BR Wire
- Vehicle Speed Sensor



PROBLEM CAUSE
- Instrument Cluster
- Speedometer

Test E



PROBLEM CAUSE

- Generator
- Phase Tap Resistor



PROBLEM CAUSE

- WS Wire
- Tachometer
- Instrument Cluster

CIRCUIT OPERATION**Charge Warning Light**

The charge warning light receives battery voltage with the Ignition Switch (X134) in position II. This warning light is grounded by the Generator (Z106) if the Generator is not producing normal power output or the Generator stops turning.

ABS Warning Light

The ABS warning light receives battery voltage with the Ignition Switch (X134) in position II. It is grounded by the Anti-Lock Brake System ECU (Z108) or the ABS Warning Relay (K103) in the event of an ABS problem.

Brake Warning Light

The brake warning light receives battery voltage with the Ignition Switch (X134) in position II. It is grounded by the Brake Fluid Level Switch (X111) when the brake fluid level is low. It may also be grounded through the Right Front and Right Rear Inboard Brake Pads (B129, B155), and the Handbrake Diode (Z197) when the Handbrake Switch (X191) is closed. The warning light is also grounded by the Anti-Lock Brake System ECU (Z108) or by the ABS Pressure Switch Unit (Z104) in the event of an ABS system problem. On Australian vehicles the brake warning light is grounded by a 3 second timer as a bulb check. When the Right Front or Right Rear Inboard Brake Pad (B129, B135) is in need of replacement, the brake warning light is grounded through the Right Front or Right Rear Inboard Brake Pad (B129, B135).

Oil Pressure Warning Light

The oil pressure warning light receives battery voltage with the Ignition Switch (X134) in position II. If the engine oil pressure is very low, the Oil Pressure Switch (X149) will apply ground to the warning light.

Transmission/Transfer Box Oil Temperature Warning Light

The transmission/transfer box oil temperature warning light is grounded by the Automatic

Transmission Oil Temperature Switch (X108) when the temperature of the transmission fluid exceeds 130°C (266°F). The warning light is also grounded by the Transfer Box Oil Temperature Switch (X174) when the temperature of the transfer box fluid exceeds 145°C (266°F). The Bulb Check Relay (K173) will illuminate the warning light when the vehicle is first started to test the bulb. On Australian vehicles the warning light is grounded by a 3 second timer as a bulb check.

Petrol**Malfunction Indicator Lamp (Check Engine)**

The Malfunction Indicator Lamp (Check Engine) is grounded by the Engine Control Module (ECM) (Z132) when a diagnostic trouble code is set.

Diesel**Glow Plug Indicator**

The Glow Plug Indicator is grounded by the Glow Plug Timer Unit (Z135) to indicate that the Glow Plugs have been activated.

Hazard Indicator

If the Hazard Switch (X220) is depressed, a pulsing voltage is applied to the Hazard Indicator which is permanently grounded by ground E200.

Direction Indicator

If the Direction Indicator Switch (X116) is turned on, a pulsing voltage is applied from the Flasher Unit (Z128) to the Direction Indicator which is permanently grounded by ground E200.

Trailer Indicator

With the Direction Indicator Switch (X116) turned on, the Flasher Unit (Z128) also applies a pulsing voltage to the Trailer Indicator which is permanently grounded by ground E200.

SRS Indicators

The SRS Indicators are controlled by the Air Bag Diagnostic Control Module (Z151) and the SRS Indicator Control Circuit of the Instrument Cluster (Z142) to indicate SRS System faults.

Low Fuel Warning Indicator

When the fuel gauge sender's resistance falls below approximately 25 Ohms (6 liters/1.5 US gallons), the Low Fuel Warning Indicator will illuminate to warn the driver.

Main Beam Indicator

With the Headlamps turned on the Main Lighting Switch (X145), battery voltage is applied to the Main Beam Indicator which is also permanently grounded by ground E200.

TC Warning Light

The TC warning light will be on for up to 60 seconds while the system is active. After 60 seconds of TC operation, the TC warning light will begin to flash to inform the driver that the system has been shut down to allow the brakes to cool. If the TC warning light stays on continuously for more than 60 seconds, a fault in the system is indicated. The TC warning light receives battery voltage with the Ignition Switch (X134) in position II. A ground

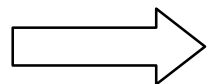
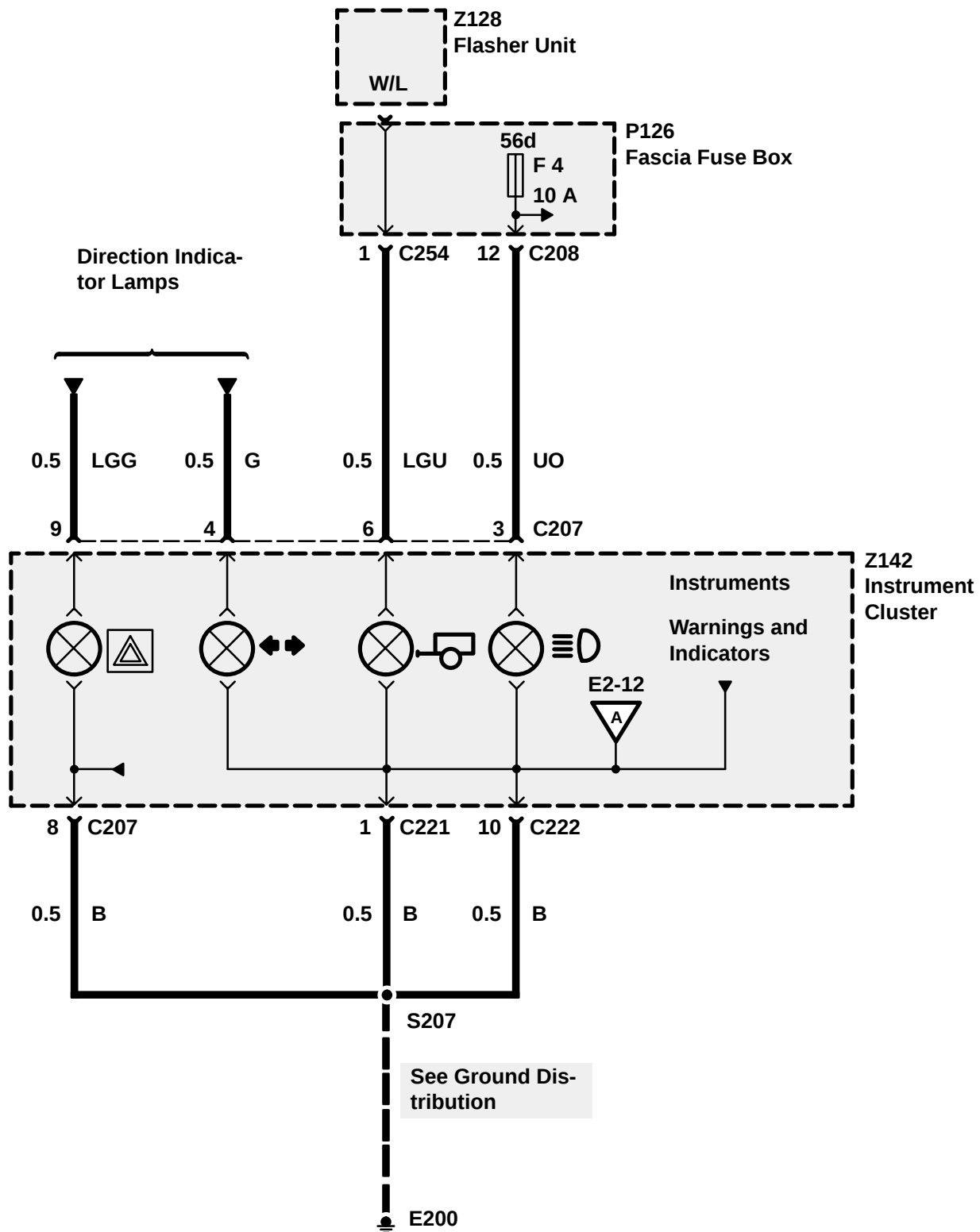
supply is provided by the A.B.S. ECU (Z108) when the TC system is active.

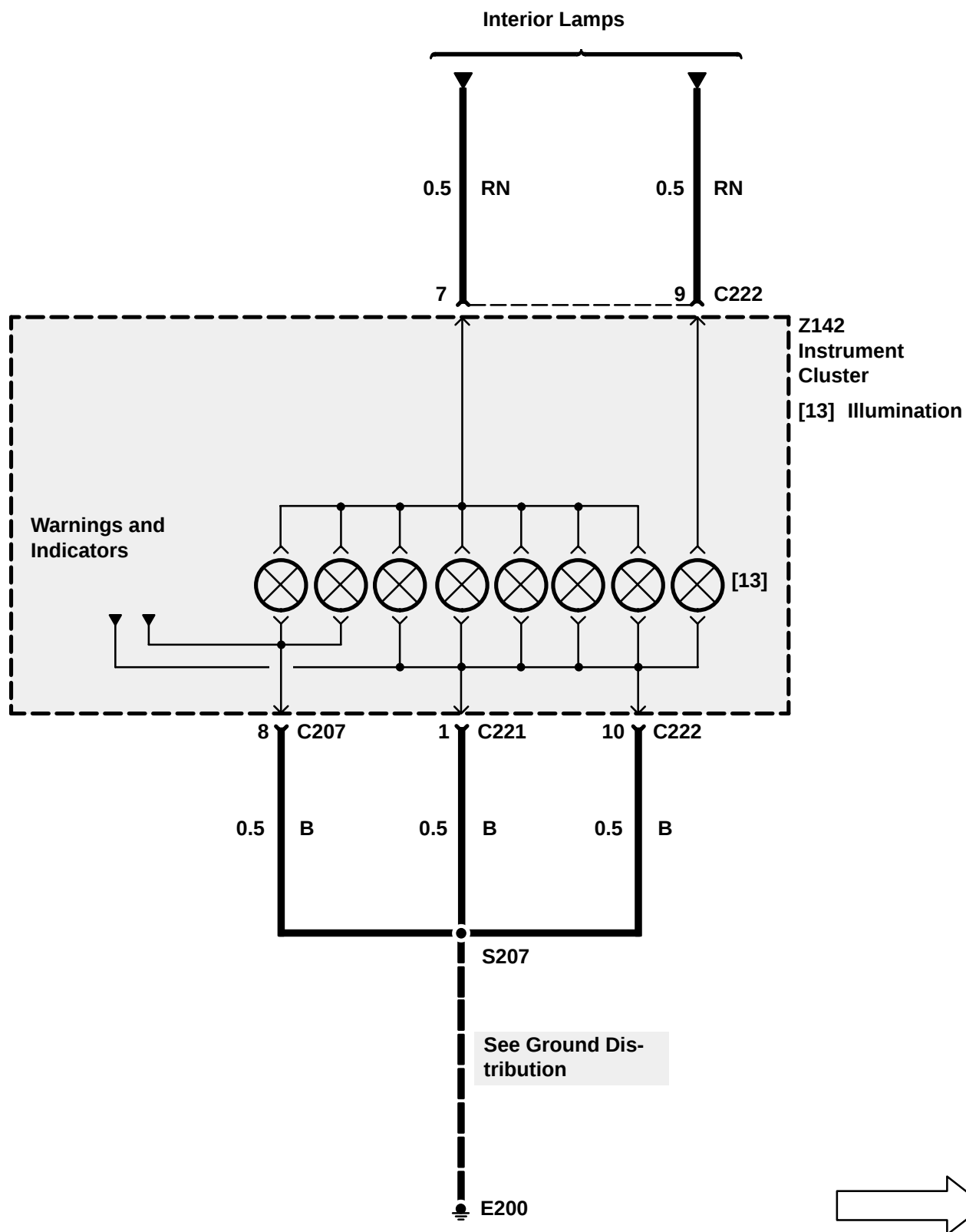
Air Suspension Indicator

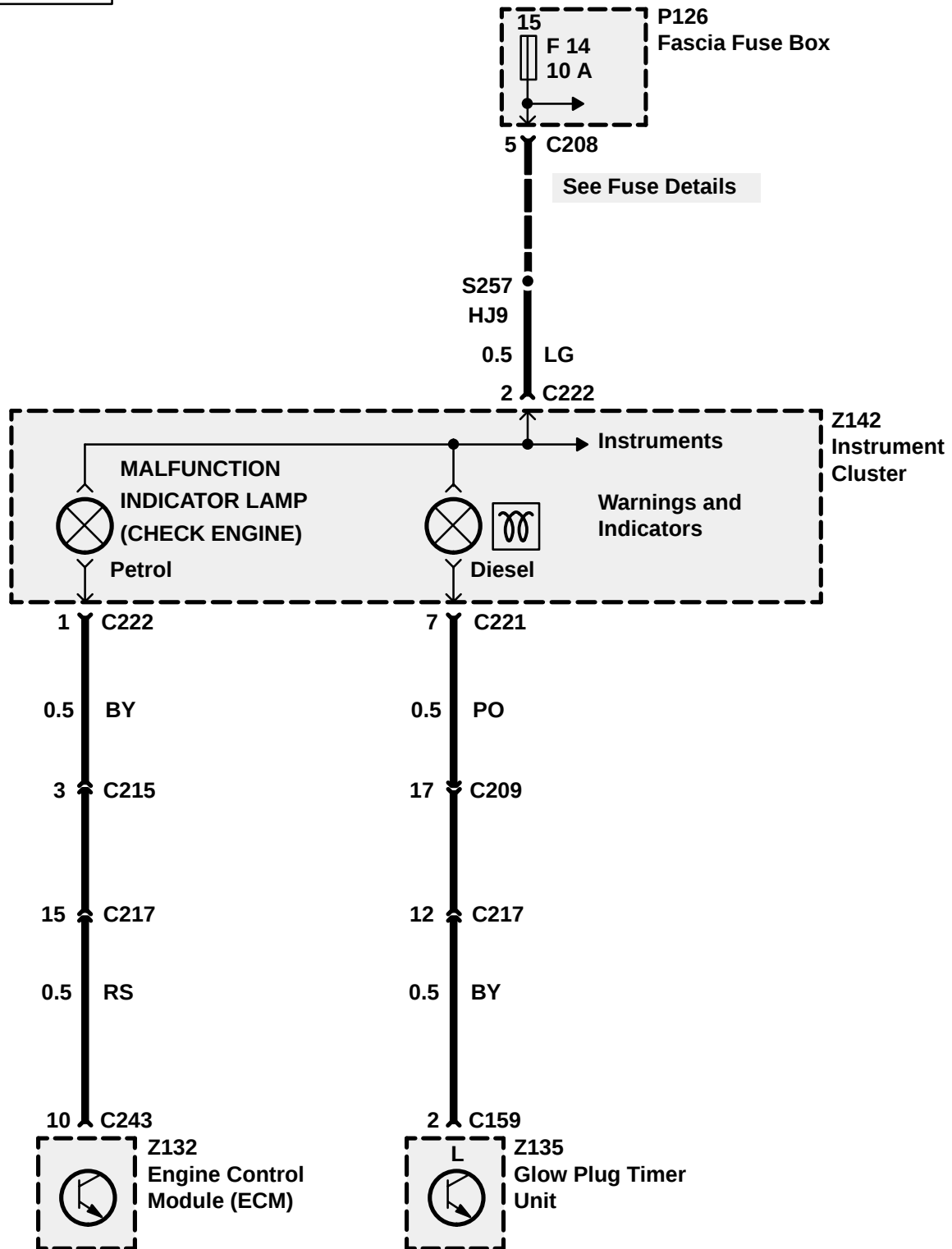
If the Air Suspension ECU (Z165) detects a fault in the system, the ECU will inform the driver by intermittently grounding the Warning Lamp Relay (K155) for 30 seconds. This causes the Air Suspension Indicator to flash for 30 seconds. After 30 seconds the indicator will remain on until the repair is made.

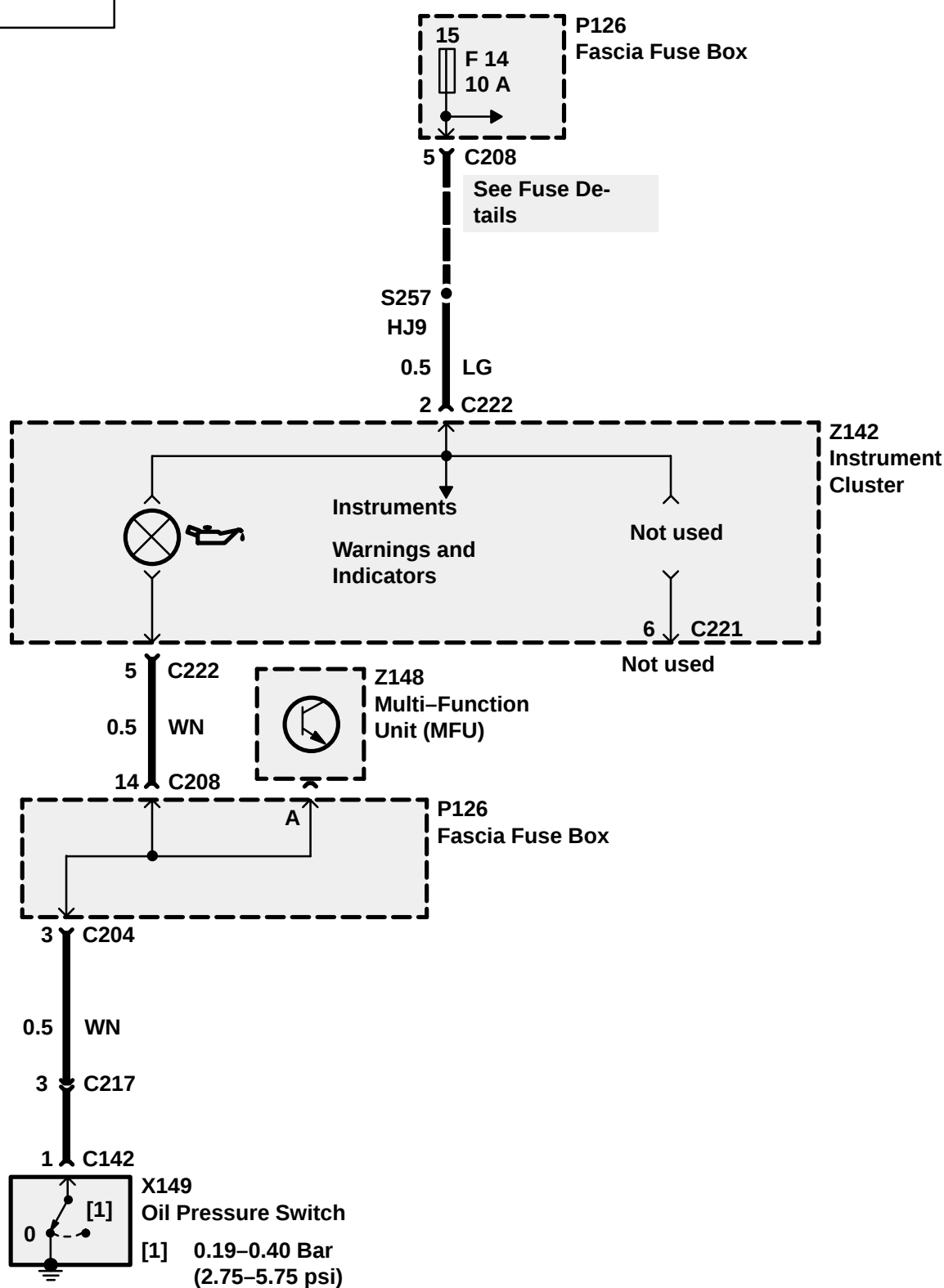
Catalyst Warning Indicator

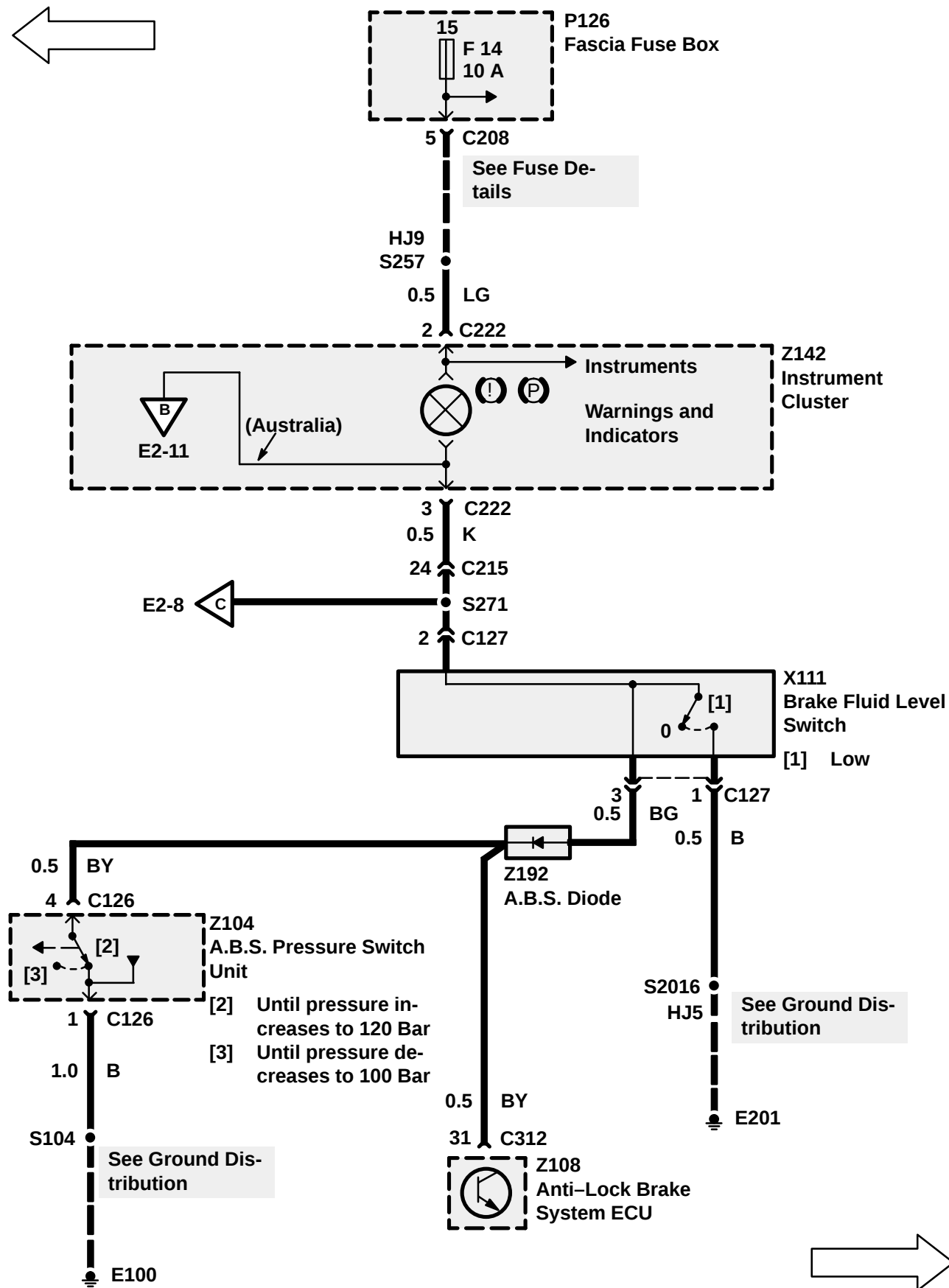
In case of a catalyst overheat the catalyst thermocouples are sending a signal to the Catalyst Warning ECU's which are then providing battery voltage to the Catalyst Warning Relay (K172). The relay then is energized and provides ground to the Catalyst Warning Indicator. The Catalyst Warning Indicator is also grounded by a 3 second timer as a bulb check.

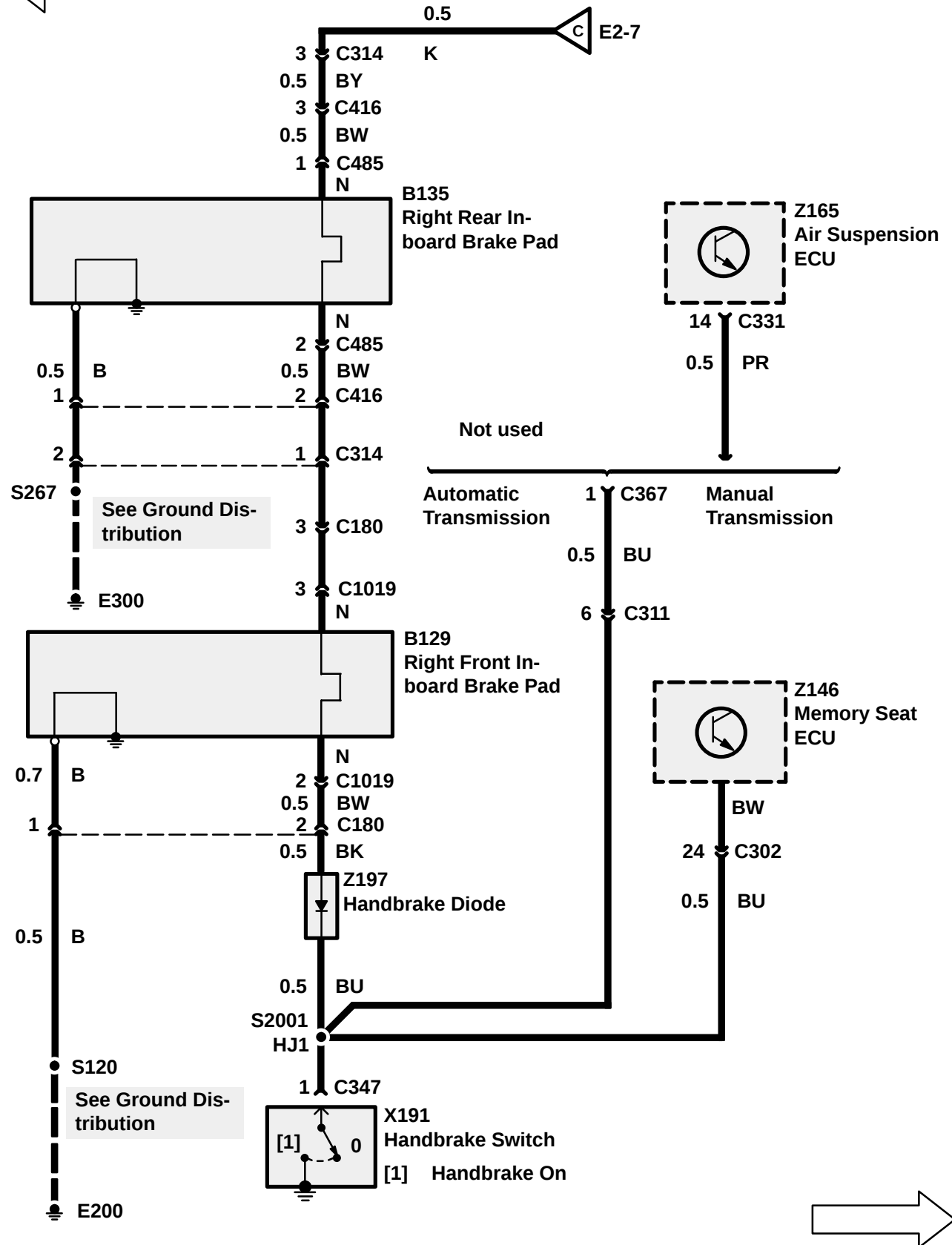


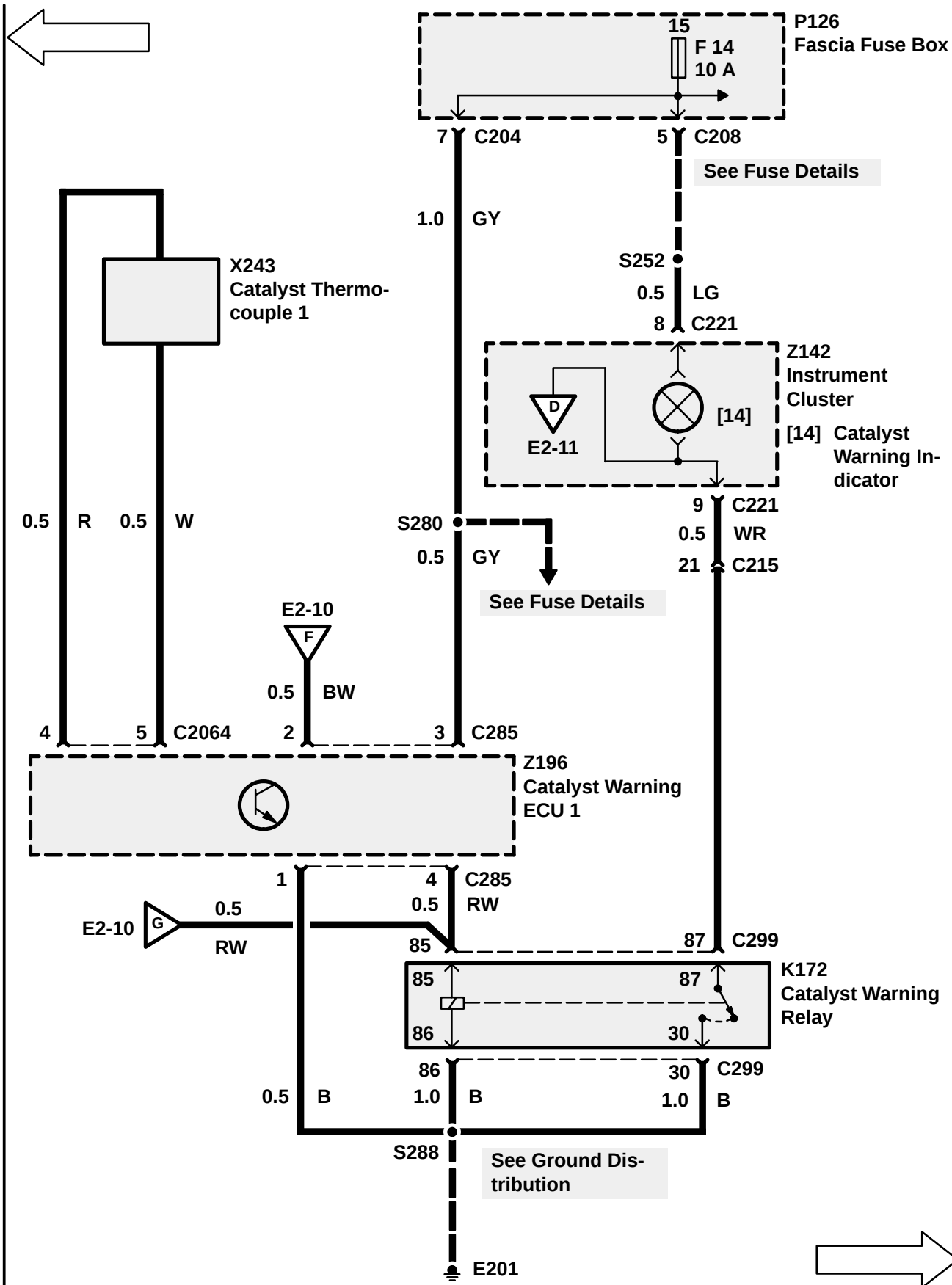


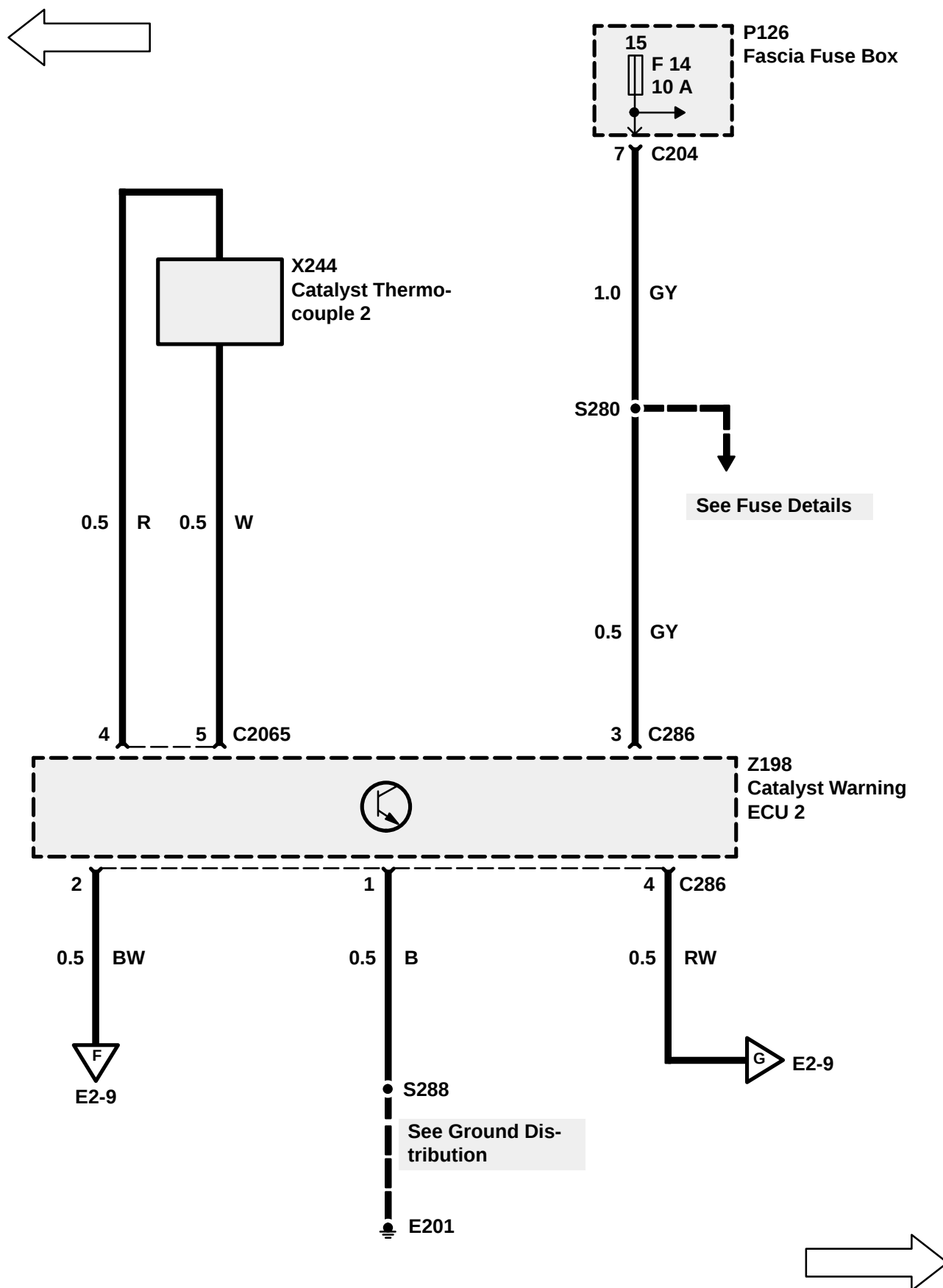


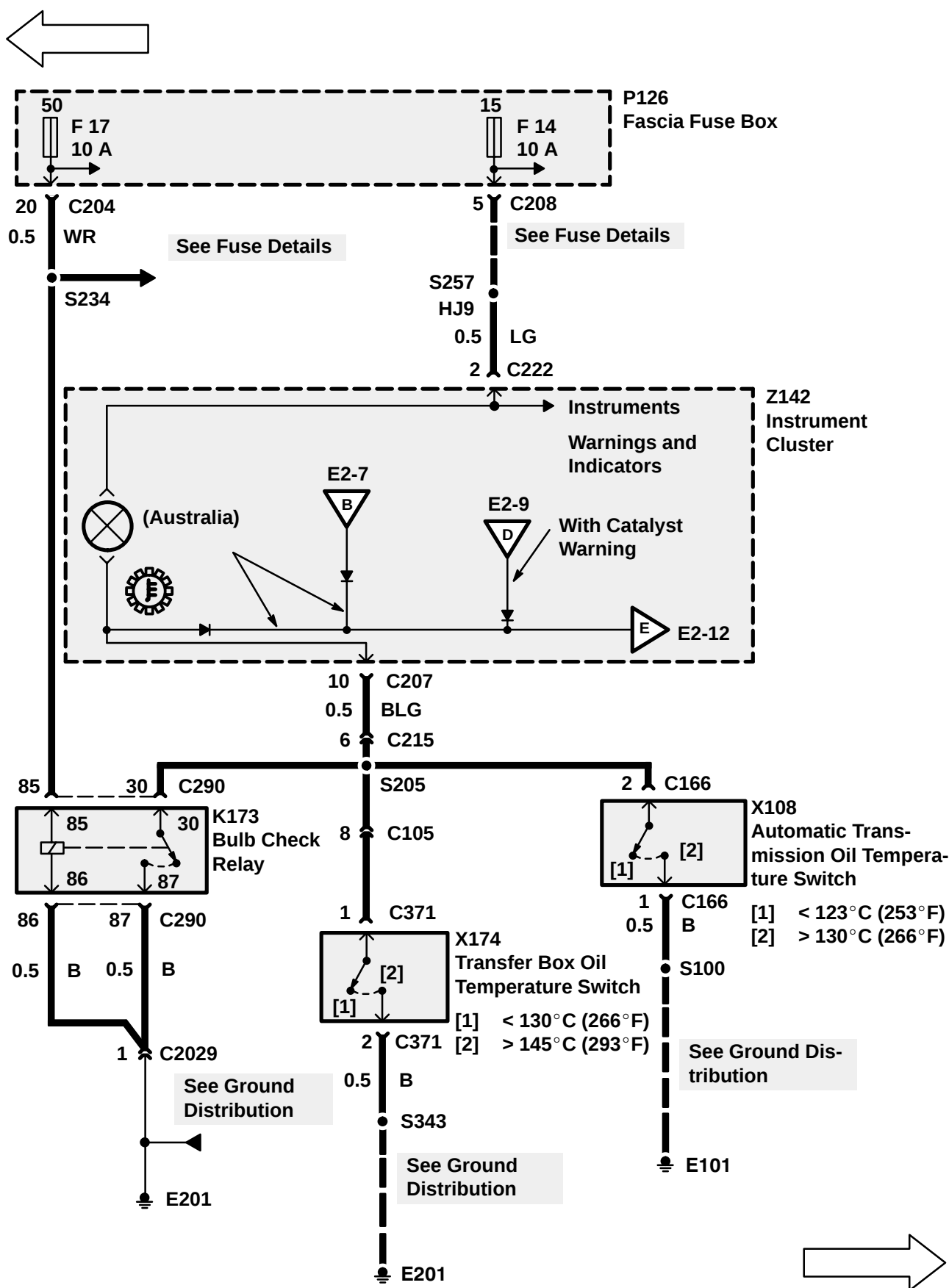


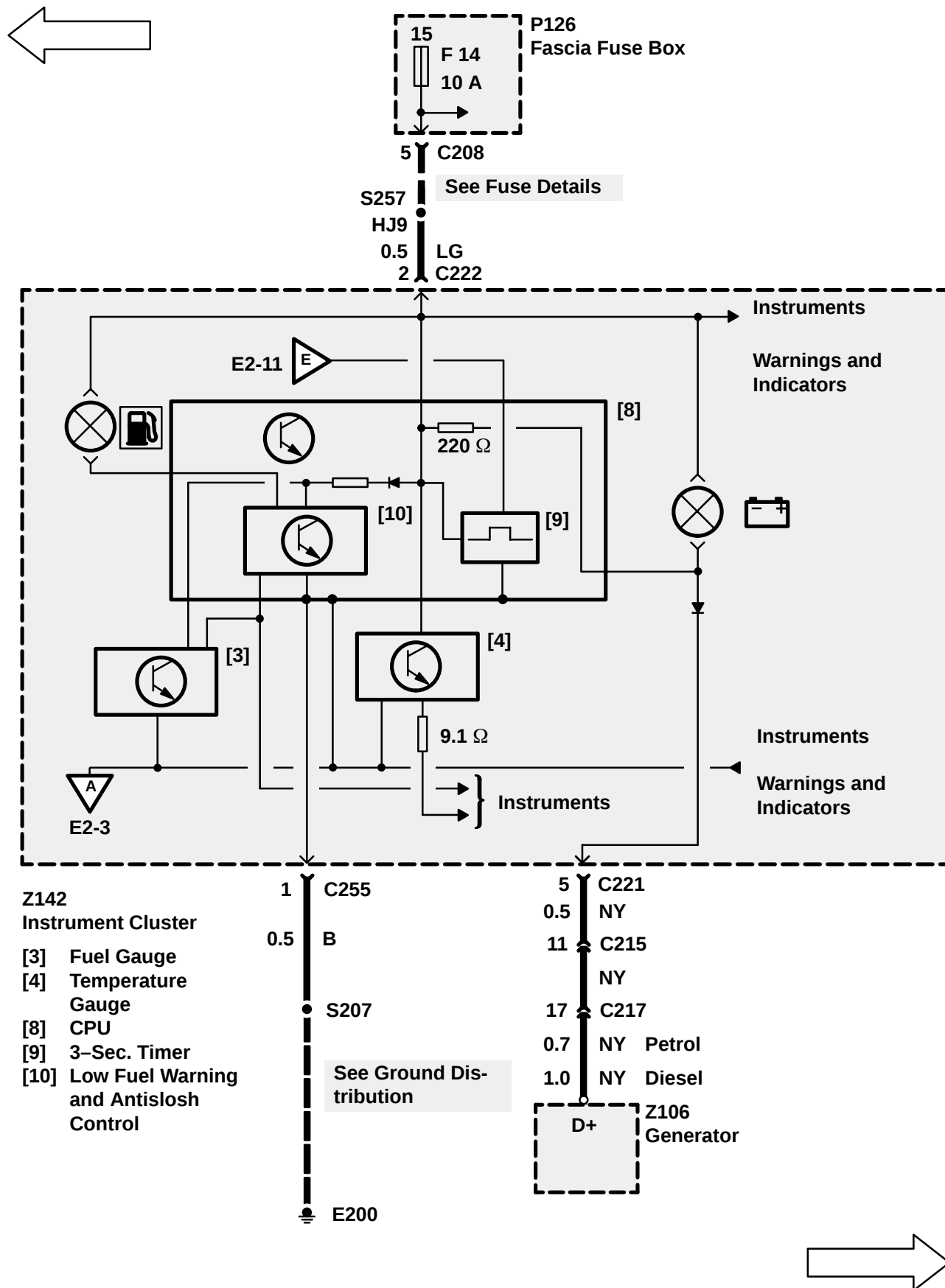


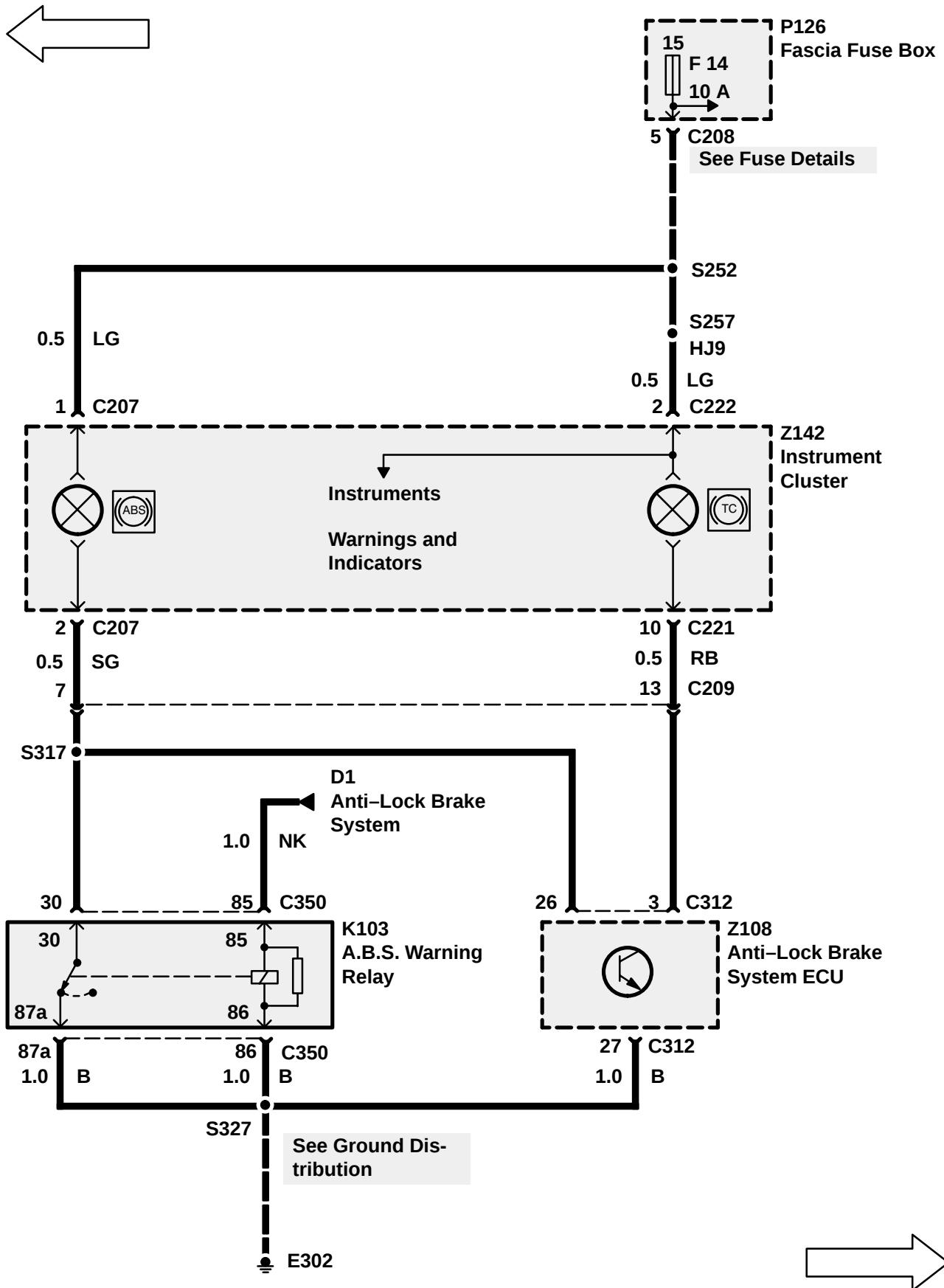


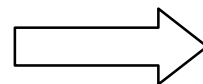
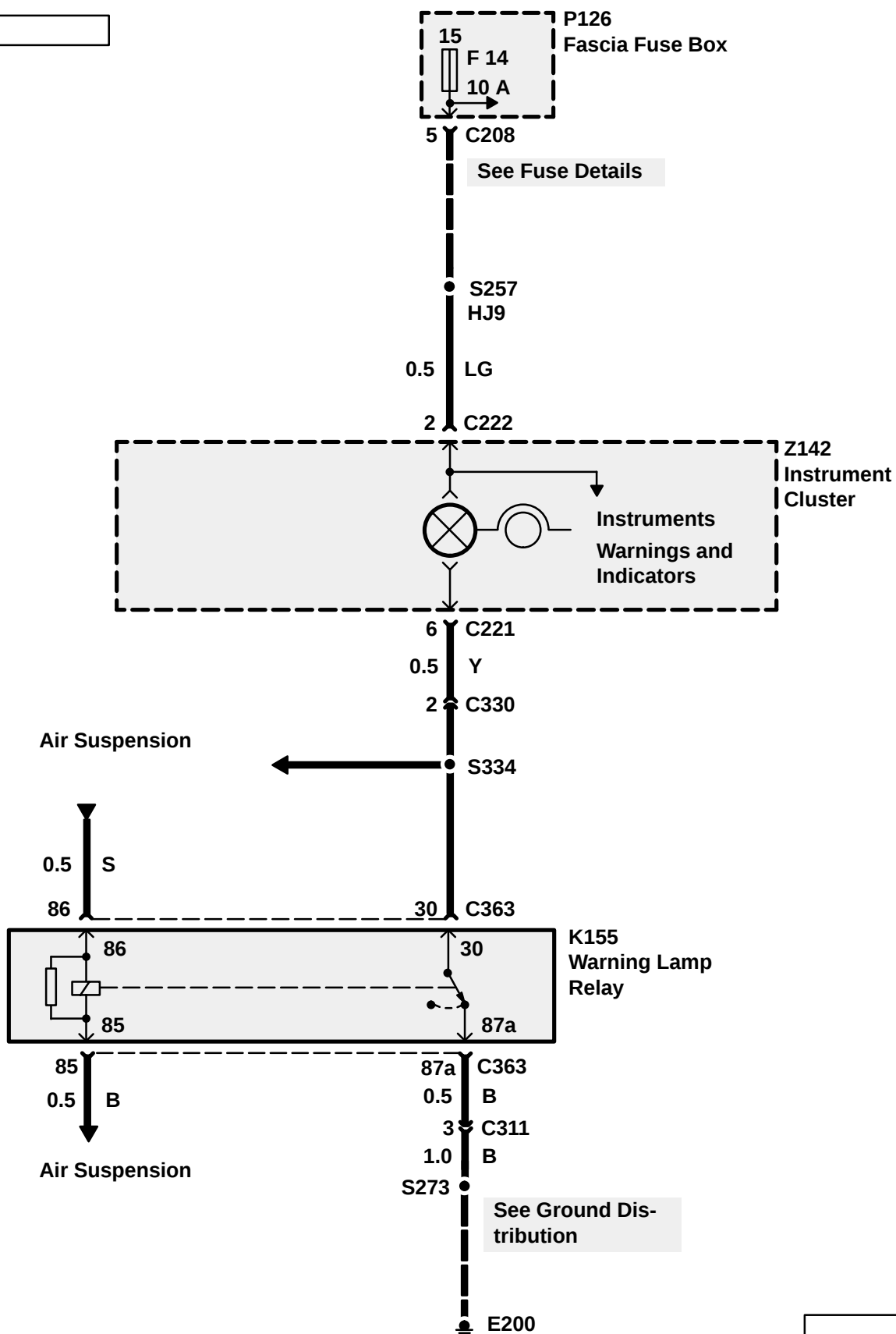
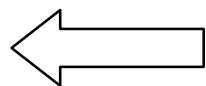


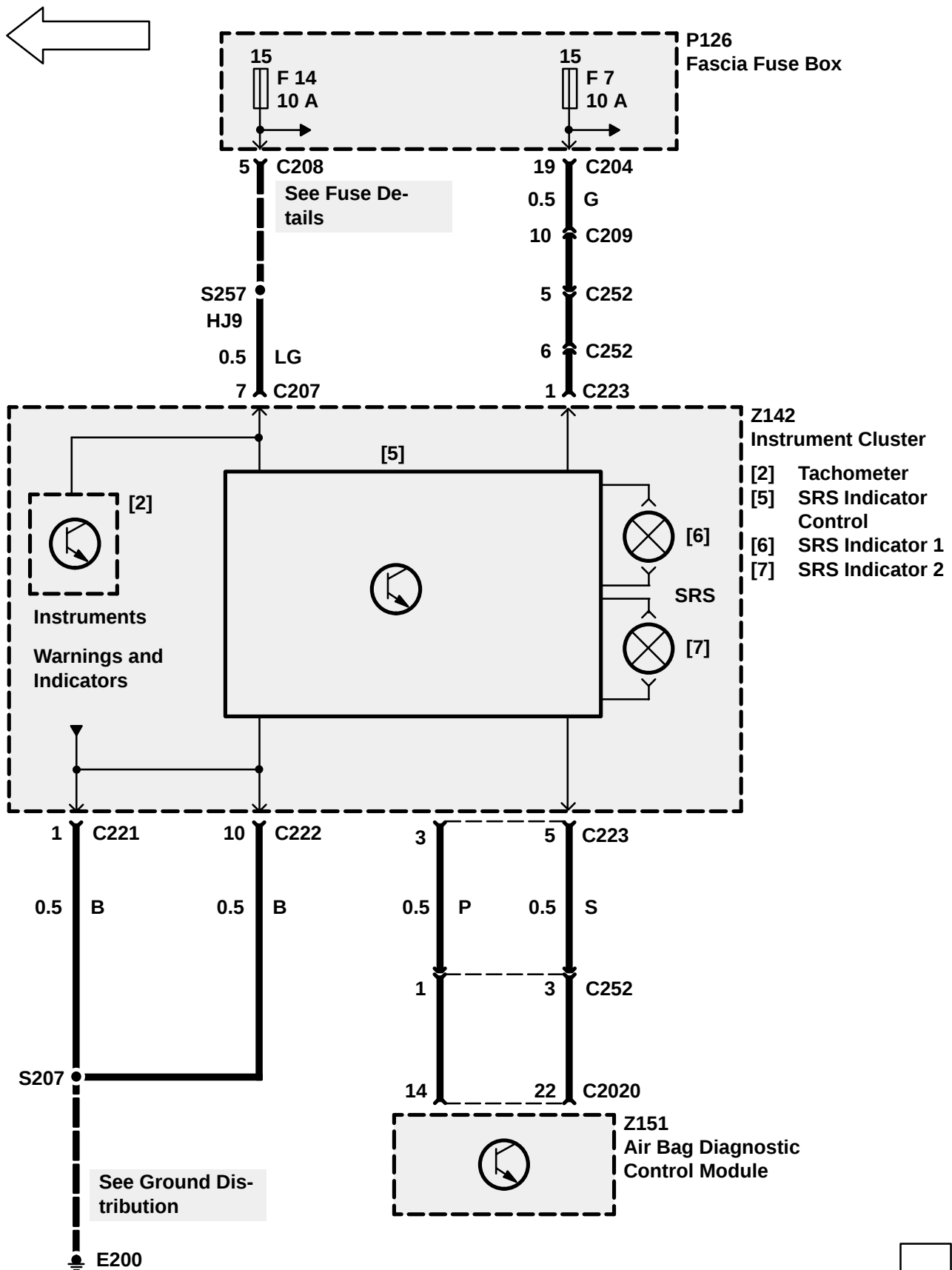












TROUBLESHOOTING HINTS

If more than one warning light is out, check power and ground wires common to all affected warning lights. If they are OK, replace Instrument Cluster (Z142).

If the Brake Warning Light does not operate at all, check Instrument Cluster (Z142) and K Wire.

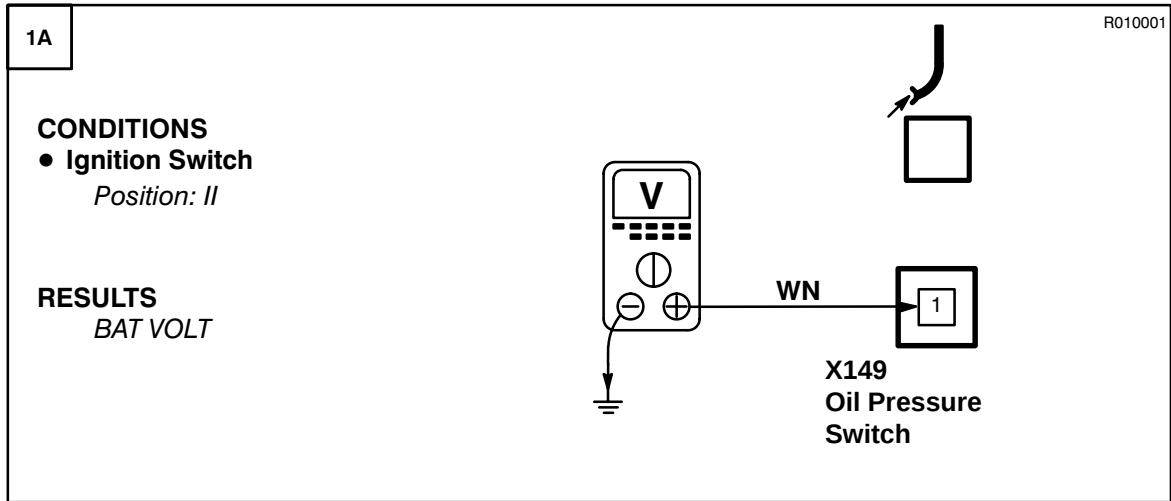
For Australian Vehicles:

If the Brake Warning Light, the Catalyst Warning Indicator, and the Transmission Box Oil Temperature Warning Light don't illuminate, as a bulb test, with ignition on, replace Instrument Cluster (Z142). If all three indicators don't turn off with the engine running, replace Instrument Cluster (Z142).

SYSTEM DIAGNOSIS

10. If the Charge Warning Light does not operate, go to Section B1.
11. If the Oil Pressure Warning Light remains illuminated with the oil pressure OK, do Test A.
12. If the Malfunction Indicator Lamp (Check Engine) does not operate, do Test B.
13. If the Glow Plug Indicator does not operate, do Test C.
14. If the Brake Warning Light does not operate with the Brake Fluid Level low, do Test D.
15. If the Brake Warning Light does not operate with an ABS problem, do Test E.
16. If the Brake Warning Light does not operate with the handbrake applied, do Test F.
17. The Transmission/Transfer Box Oil Temperature Warning Light is illuminated as a bulb test with the Ignition Switch (X134) in position III. If the light does not illuminate, do Test G.
18. If the Transmission/Transfer Box Oil Temperature Warning Light is illuminated with both the Transfer Box Oil Temperature and the Automatic Oil Temperature OK, do Test H.
19. If a warning light exhibits any symptom not mentioned above, check the associated bulb, wires, switches and components.

Test A

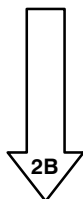
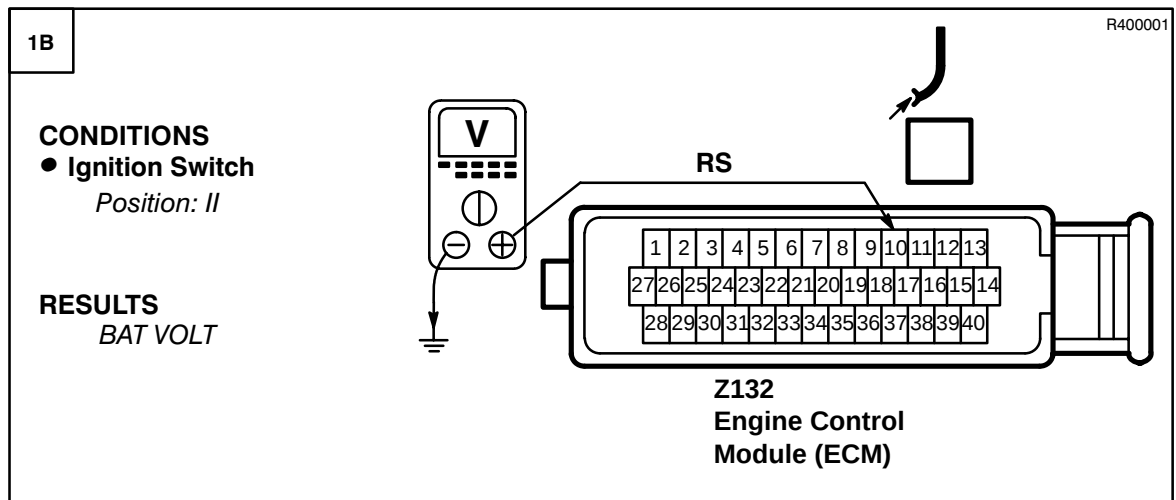


PROBLEM CAUSE
- WN Wire

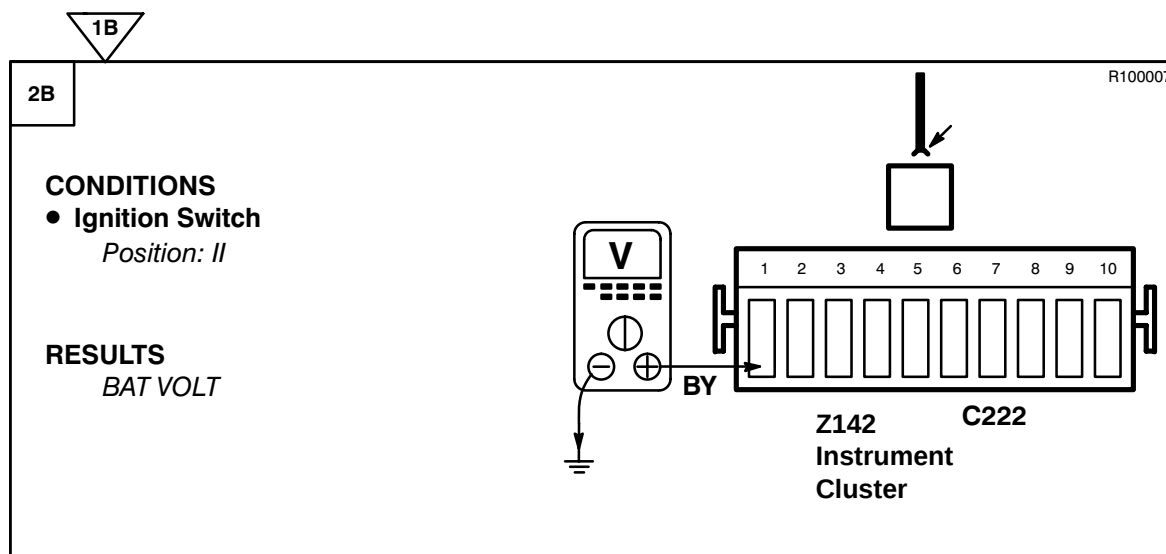


PROBLEM CAUSE
- Oil Pressure
Switch

Test B



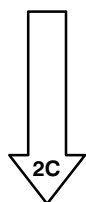
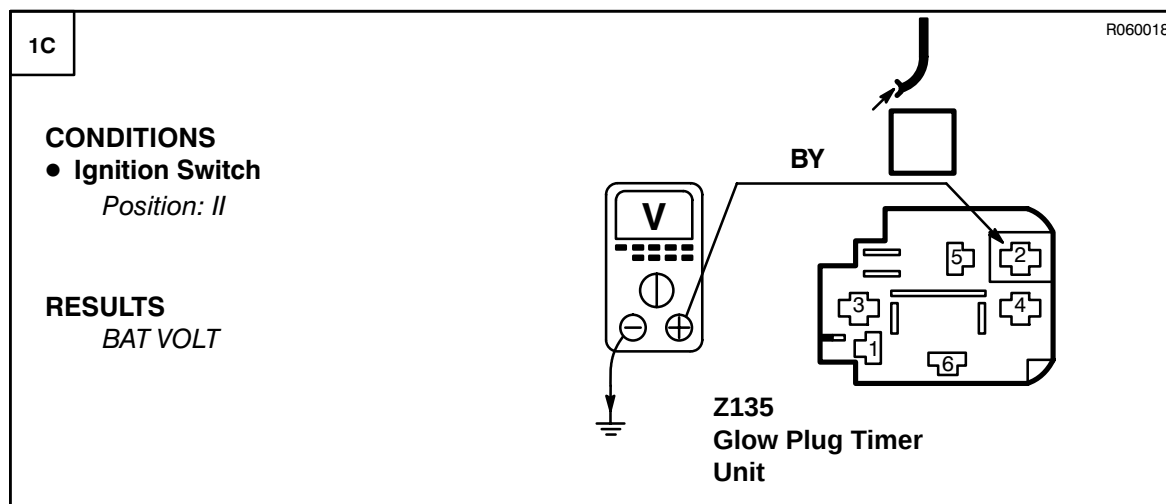
PROBLEM CAUSE
- Engine Control
Module (ECM)

**PROBLEM CAUSE**

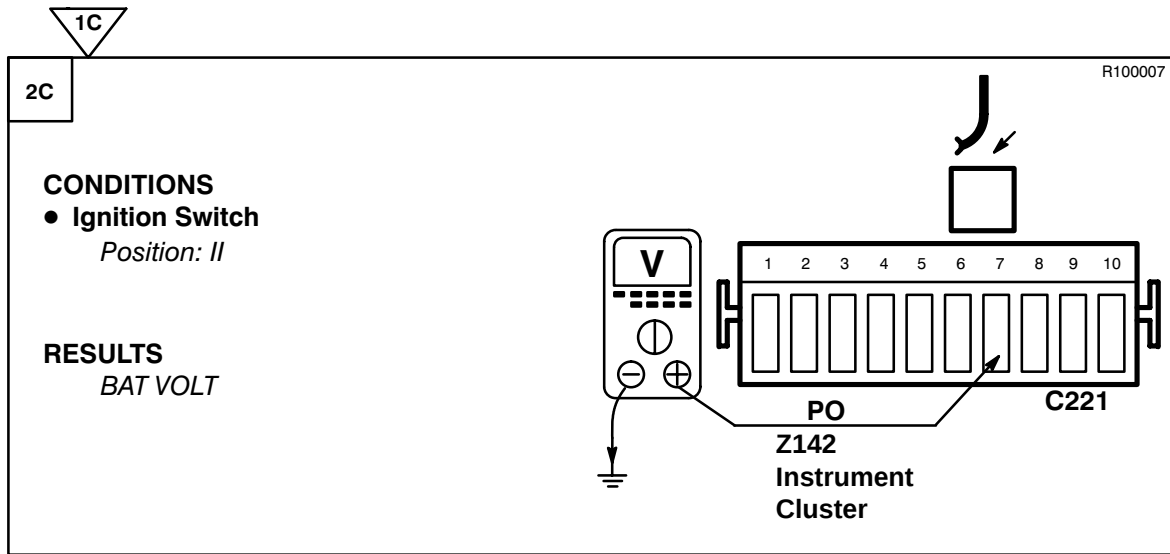
- Bulb
- Instrument Cluster

**PROBLEM CAUSE**

- BY Wire
- RS Wire

Test C**PROBLEM CAUSE**

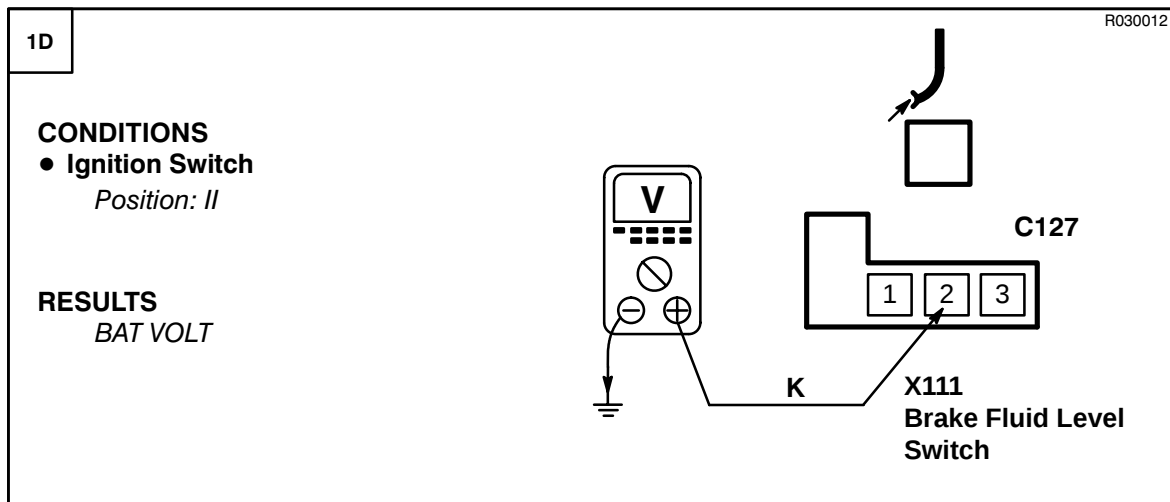
- Glow Plug Timer Unit

**PROBLEM CAUSE**

- Bulb
- Instrument Cluster

**PROBLEM CAUSE**

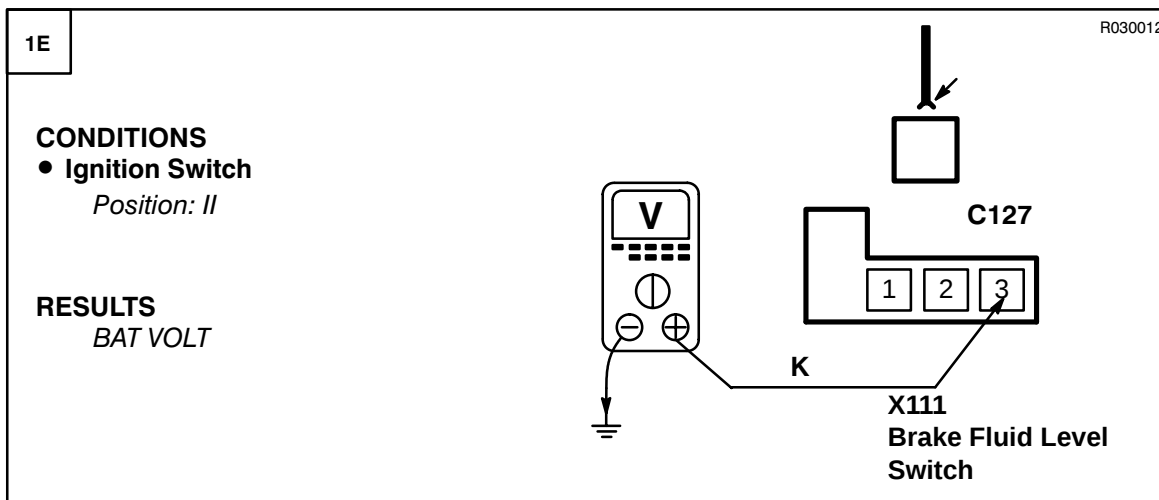
- PO Wire
- BY Wire

Test D**PROBLEM CAUSE**

- K Wire
- Bulb
- Instrument Cluster

**PROBLEM CAUSE**

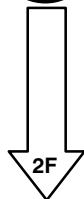
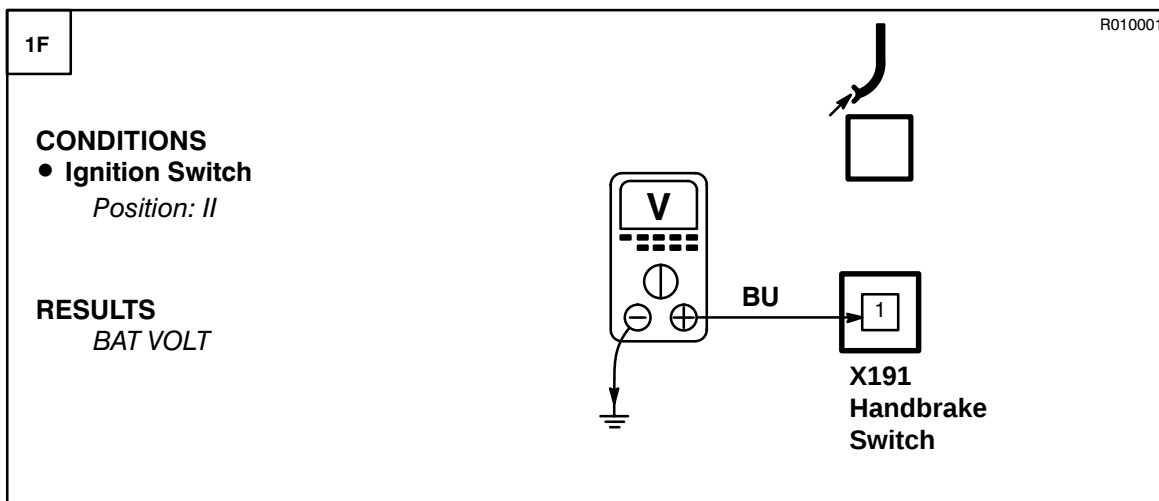
- B Wire
- Brake Fluid Level Switch

Test E**PROBLEM CAUSE**

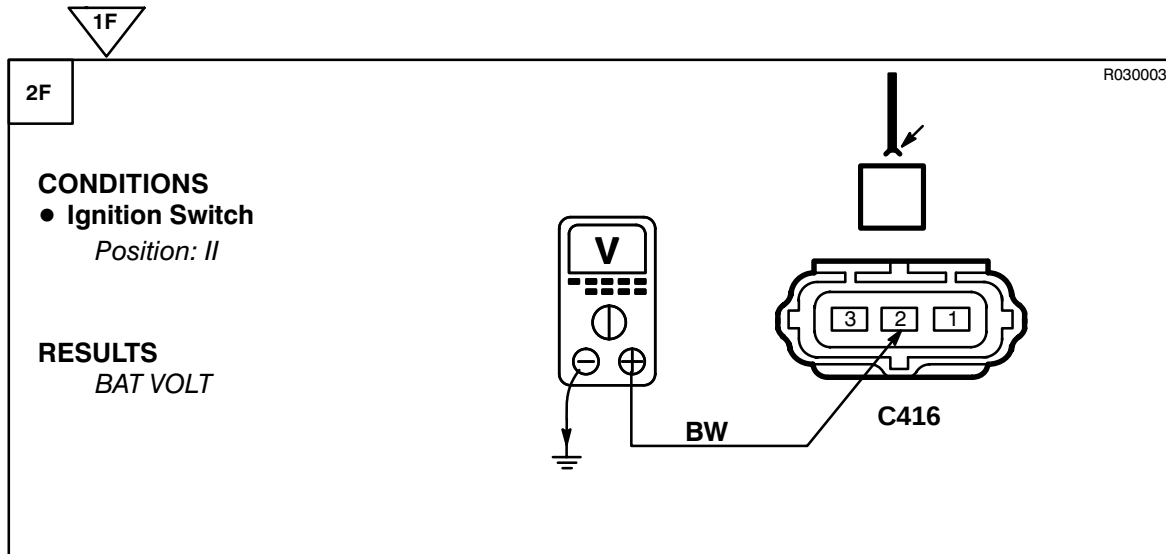
- K Wire
- Bulb
- Instrument
- Cluster
- Brake Fluid Level Switch

**PROBLEM CAUSE**

- BG, BY Wire
- A.B.S. Diode
- Anti-Lock Brake System ECU
- A.B.S. Pressure Switch Unit

Test F**PROBLEM CAUSE**

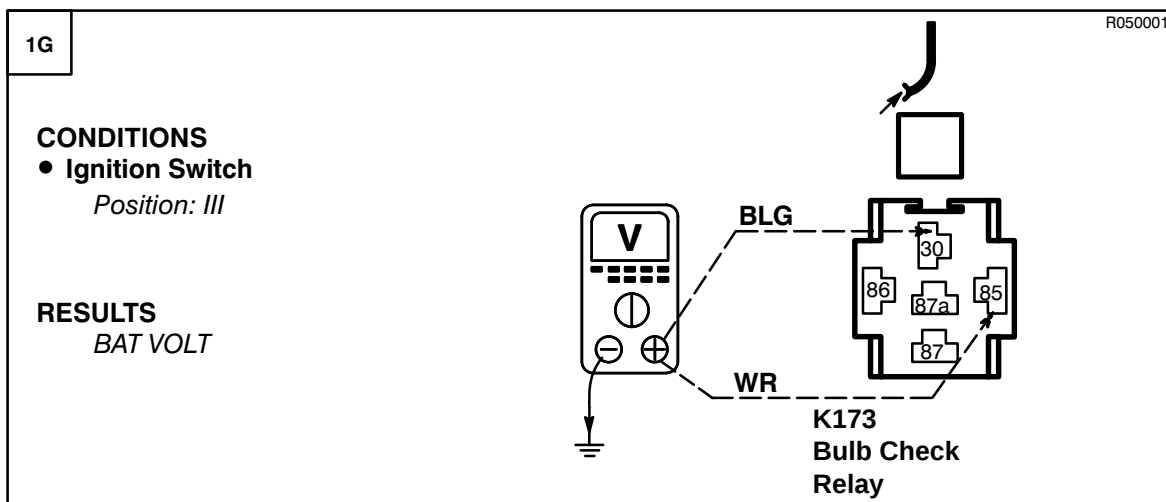
- Handbrake Switch

**PROBLEM CAUSE**

- BY Wire
- K, BW Wire
- Right Rear In-board Brake Pad

**PROBLEM CAUSE**

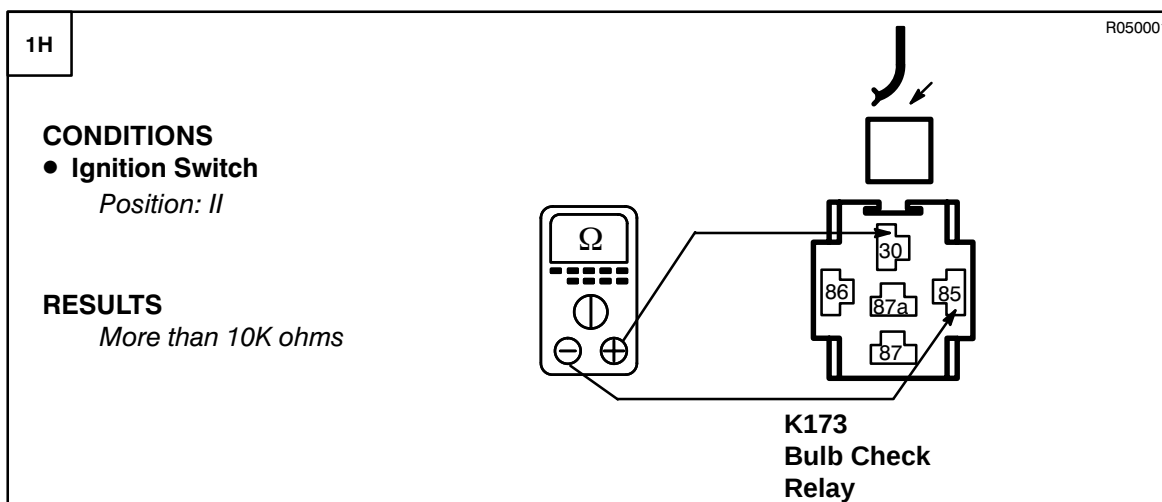
- BW Wire
- BK, BU Wire
- Handbrake Diode
- Right Front In-board Brake Pad

Test G**PROBLEM CAUSE**

- BLG Wire
- WR Wire
- Instrument Cluster

**PROBLEM CAUSE**

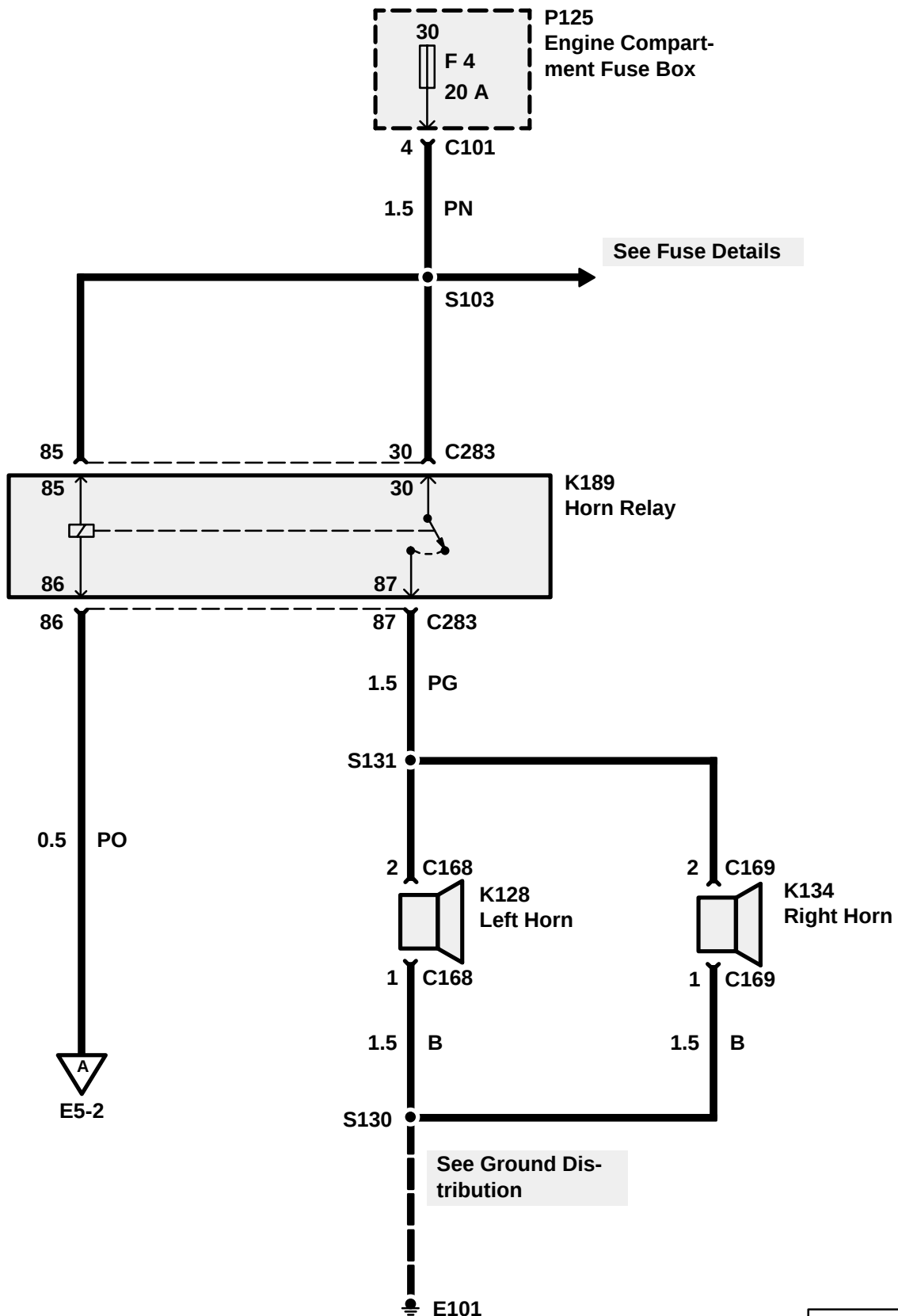
- B Wire
- Bulb Check Relay

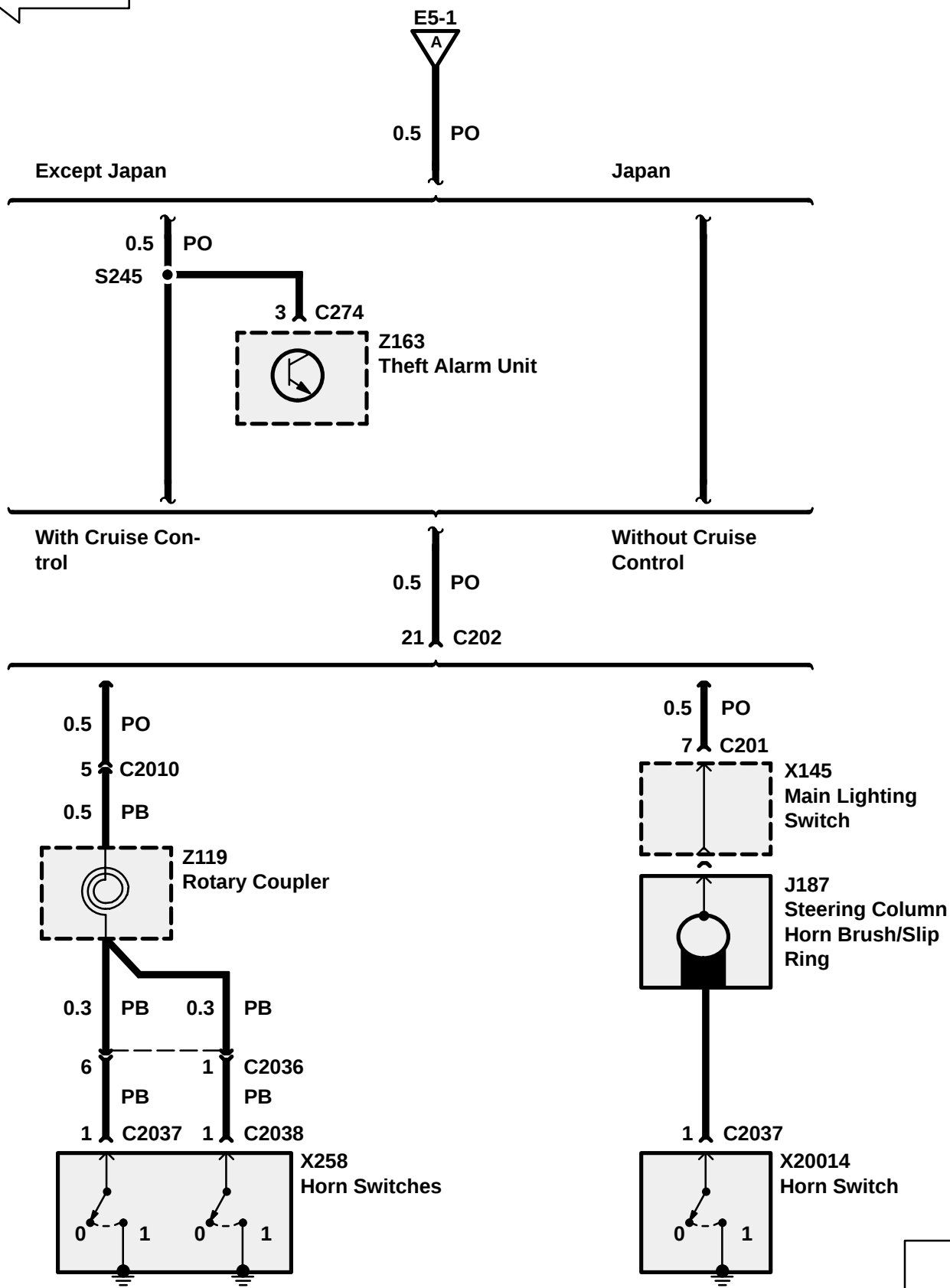
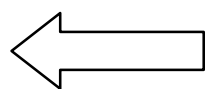
Test H**PROBLEM CAUSE**

- Bulb Check Relay

**PROBLEM CAUSE**

- BLG Wire
- Transfer Box Oil
- Temperature Switch
- Automatic Transmission Oil Temperature Switch





CIRCUIT OPERATION

Battery voltage is provided to the radio at all times through the PN wire. In addition to the anti-theft feature, this input voltage keeps the preset station memory alive. Whenever battery power to the unit is lost, the anti-theft code must be entered and the preset stations must be reprogrammed.

When the Radio (Z111) and the ignition are turned on, the voltage signal through the LGO wire to the control head 'wakes up' the unit. The Radio (Z111) plays, the VF display comes on and the control unit buttons illuminate. When the park lamps or headlamps are turned on, a voltage signal is sent through the RN wire to dim the VF display and control buttons for night driving.

Radio (Z111) signals are received via a coaxial cable from the side screen and Antenna Amplifier. The amplifier filters and boosts the signal from the side screen.

The CD Changer (Z114) is operated from the Radio (Z111) when "CD" is selected. The Radio communicates with the changer via a DIN cable.

Power is supplied to the Radio (Z111) and Subwoofer Amplifiers (Z176) when the ignition is on. The amplifiers are enabled when the Radio is turned on and applies voltage to the amplifier through the PY wires.

For 1995 model year three levels of factory fitted in car entertainment are available.

New features are as follows:

Side screen antenna, new head units, subwoofer assembly, new speakers and new CD auto-changer.

The mid/low line radio has the following features: Radio data system (RDS), electronic tuning, one touch memory, automatic programme control (APC), Dolby, subwoofer line output, CATS coded, manual tape deck.

High line radio is as above with the following exceptions:

Logic tape deck, blank skip/repeat, 5 channel line output, CD ready (this unit is fitted when the CD option is called for).

Subwoofer

The subwoofer unit is located in the right hand side of the luggage compartment. It amplifies

frequencies between 20 and 150 Hz to give an enhanced bass sound.

Subwoofer Amplifier

The amplifier is fitted on top of the subwoofer unit.

Speaker Amplifier

A remote 4 x 20 amp speaker amplifier is part of high line ICE specification. This is also fitted on top of the subwoofer.

Side Screen Antenna

The antenna is now printed into the rear side screen on four door models. For America and Japan the element is fitted in both rear side screens, known as diversity antenna system. Other markets have a single element in the right hand side screen only. Diversity reception means that if vehicle movement results in a loss of signal due to reflections from buildings (known as multipath distortion), the radio will switch to the antenna receiving the strongest signal. This results in less interference and better stereo performance.

Antenna Amplifier

New antenna amplifiers are located behind the headlining above the side screen antenna(s). Right hand side fitment is an FM + AM amplifier, left hand side, diversity, is an FM only amplifier.

Speakers

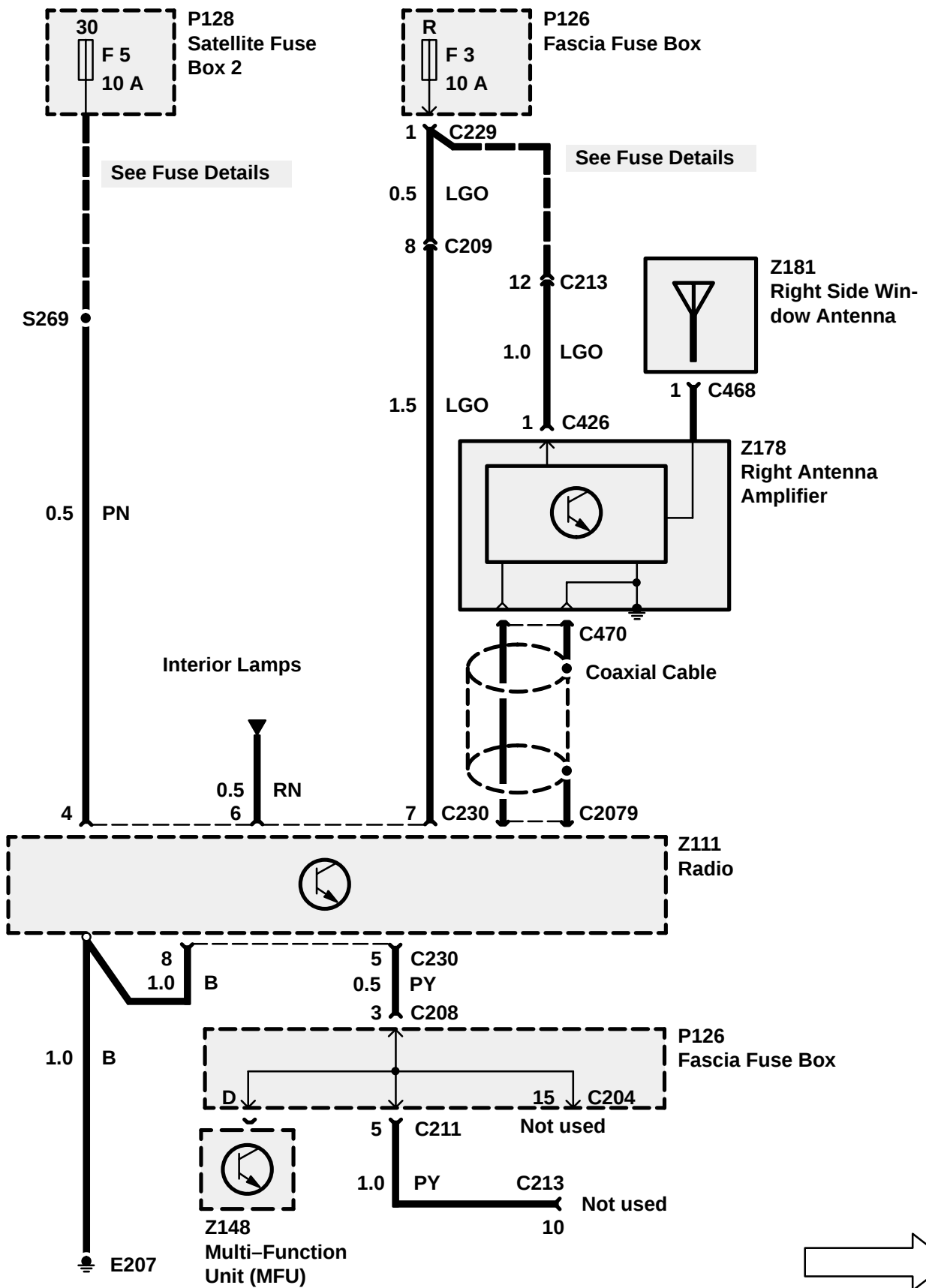
Trim level 1 – Two door vehicles have two front twin cone speakers. Four door vehicles have two coaxial front speakers and two twin cone rear speakers.

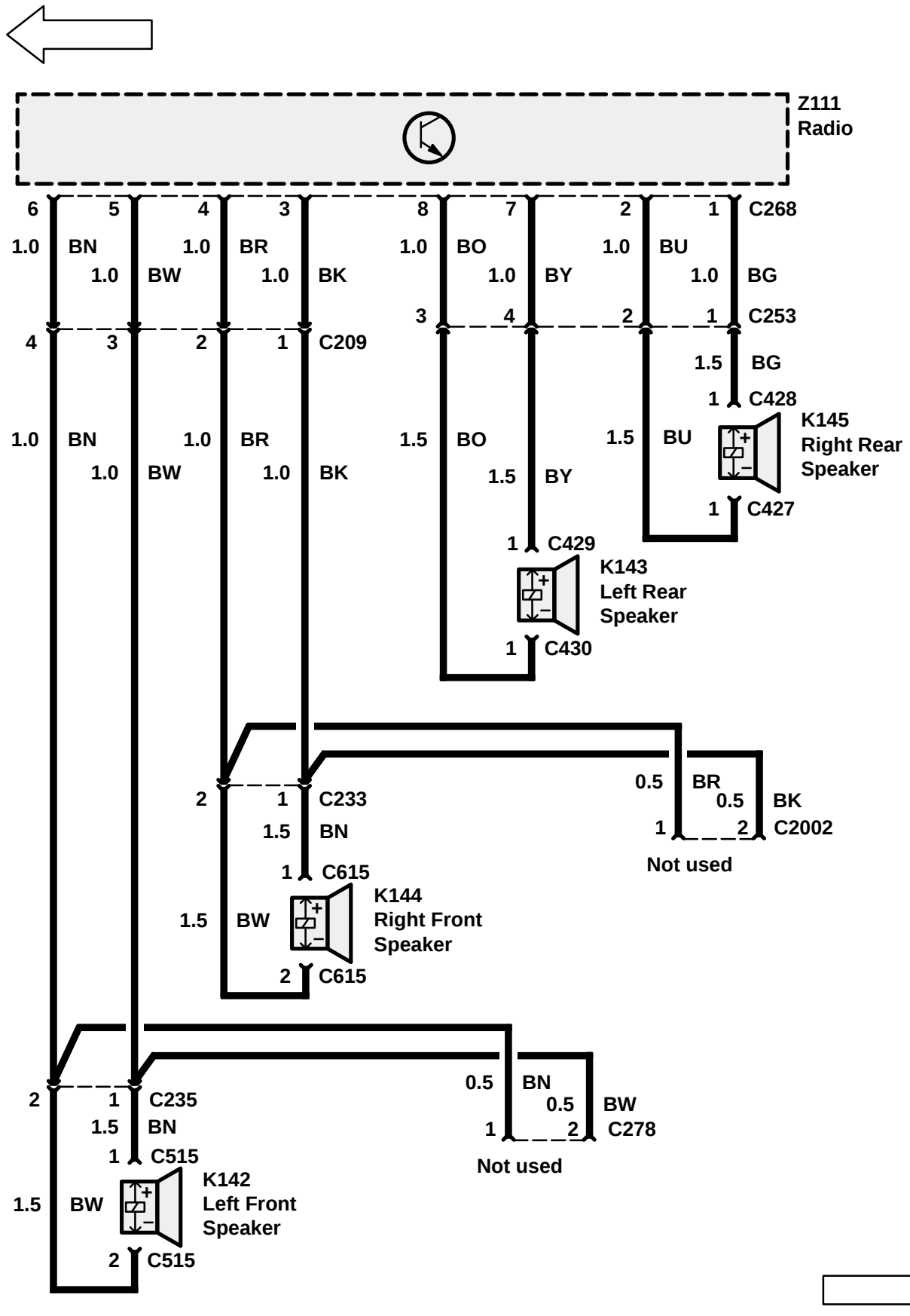
Trim level 2 – Four coaxial speakers, two front, two rear and a subwoofer.

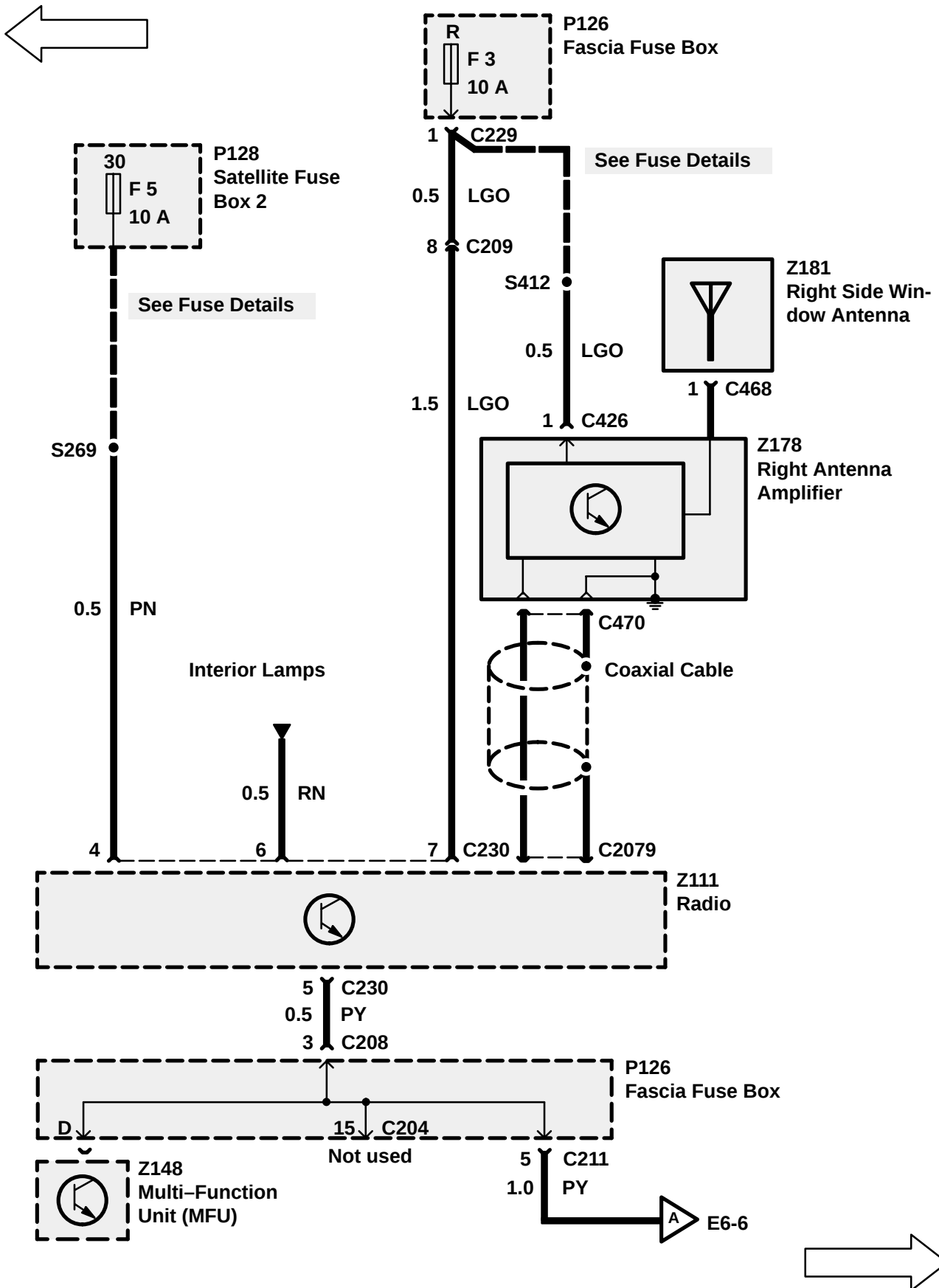
Trim level 3 – Four coaxial speakers, two front, two rear, two bass speakers and front crossover unit, a subwoofer and amplifier. Twin cone speakers have a mid range and tweeter cone driven by the same coil. Coaxial speakers have two cones and two coils. Where front doors have bass speakers a crossover unit is fitted which effectively splits the frequency between bass and coaxial.

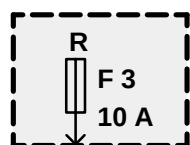
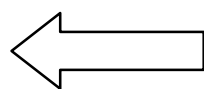
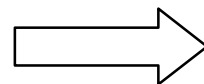
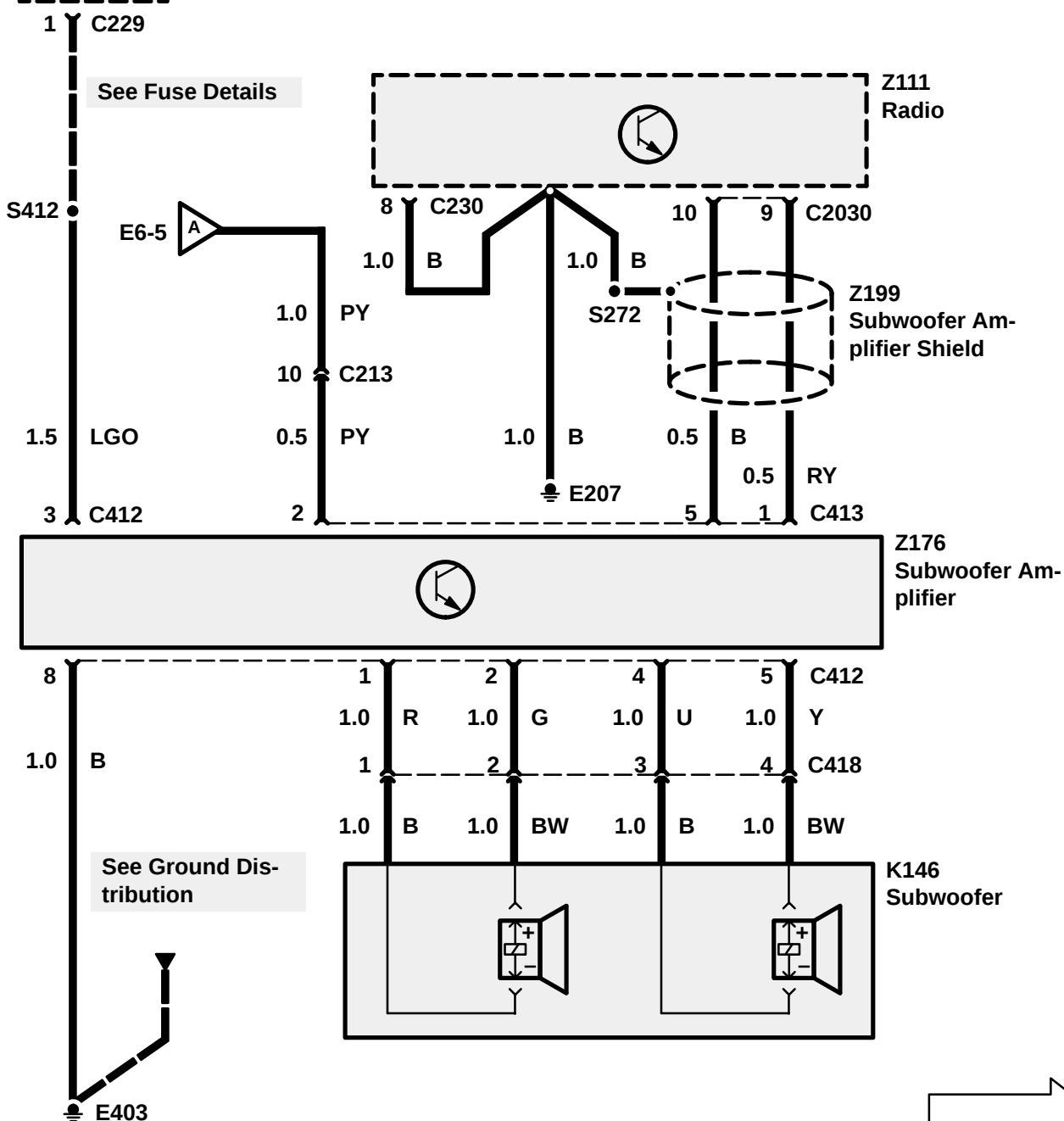
CD autochanger

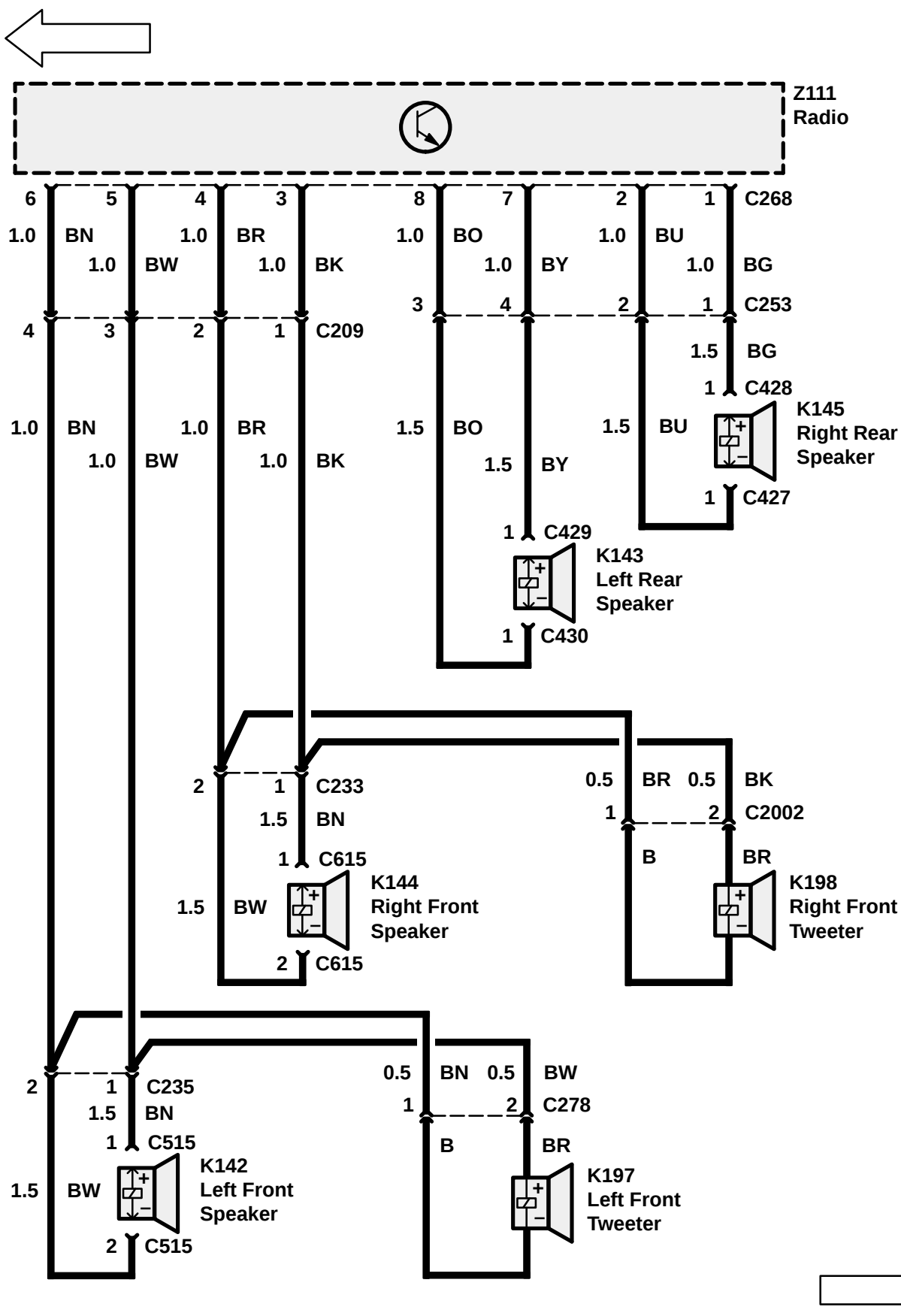
The CD autochanger is fitted underneath the subwoofer unit.

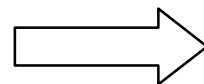
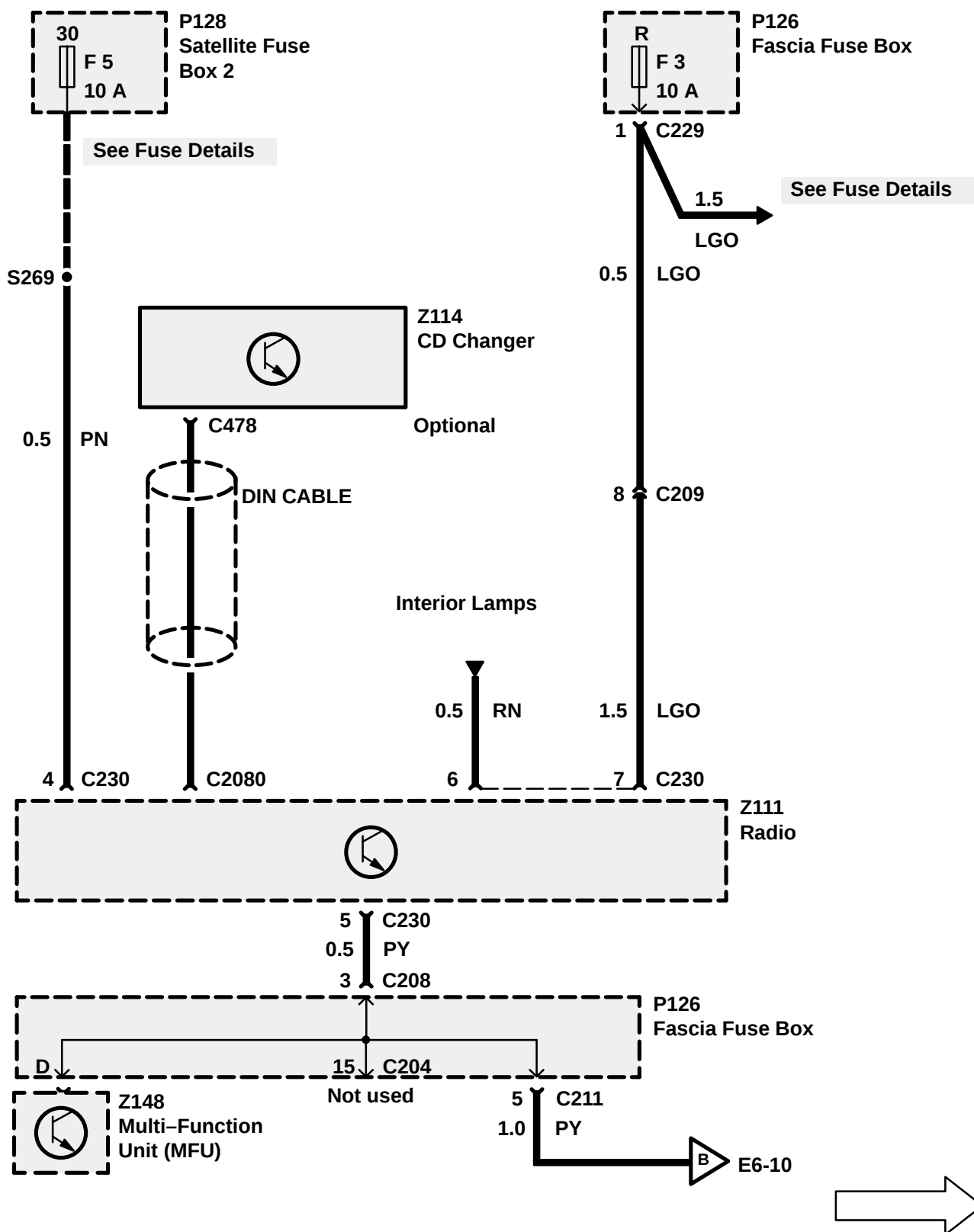
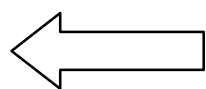


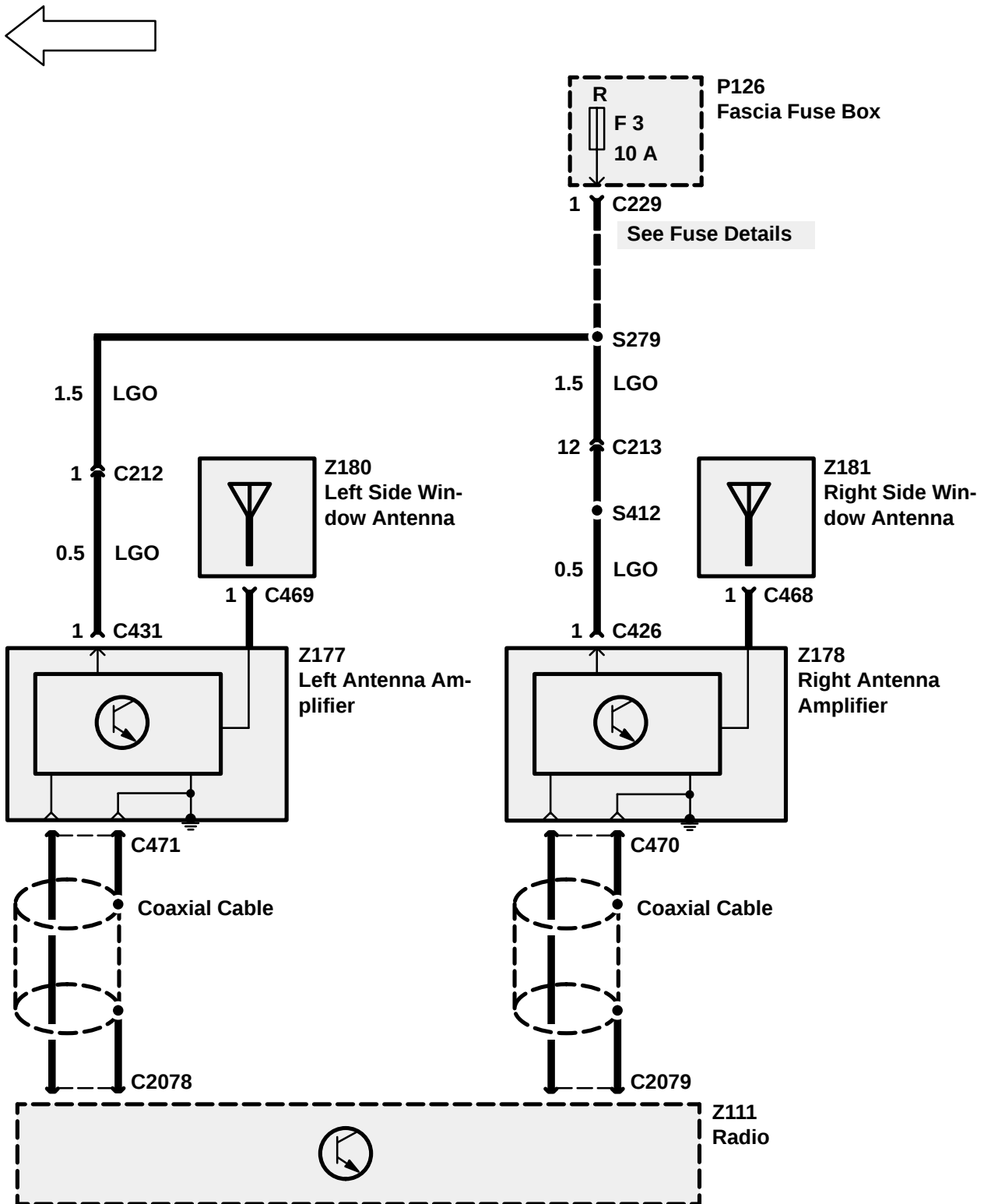


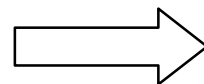
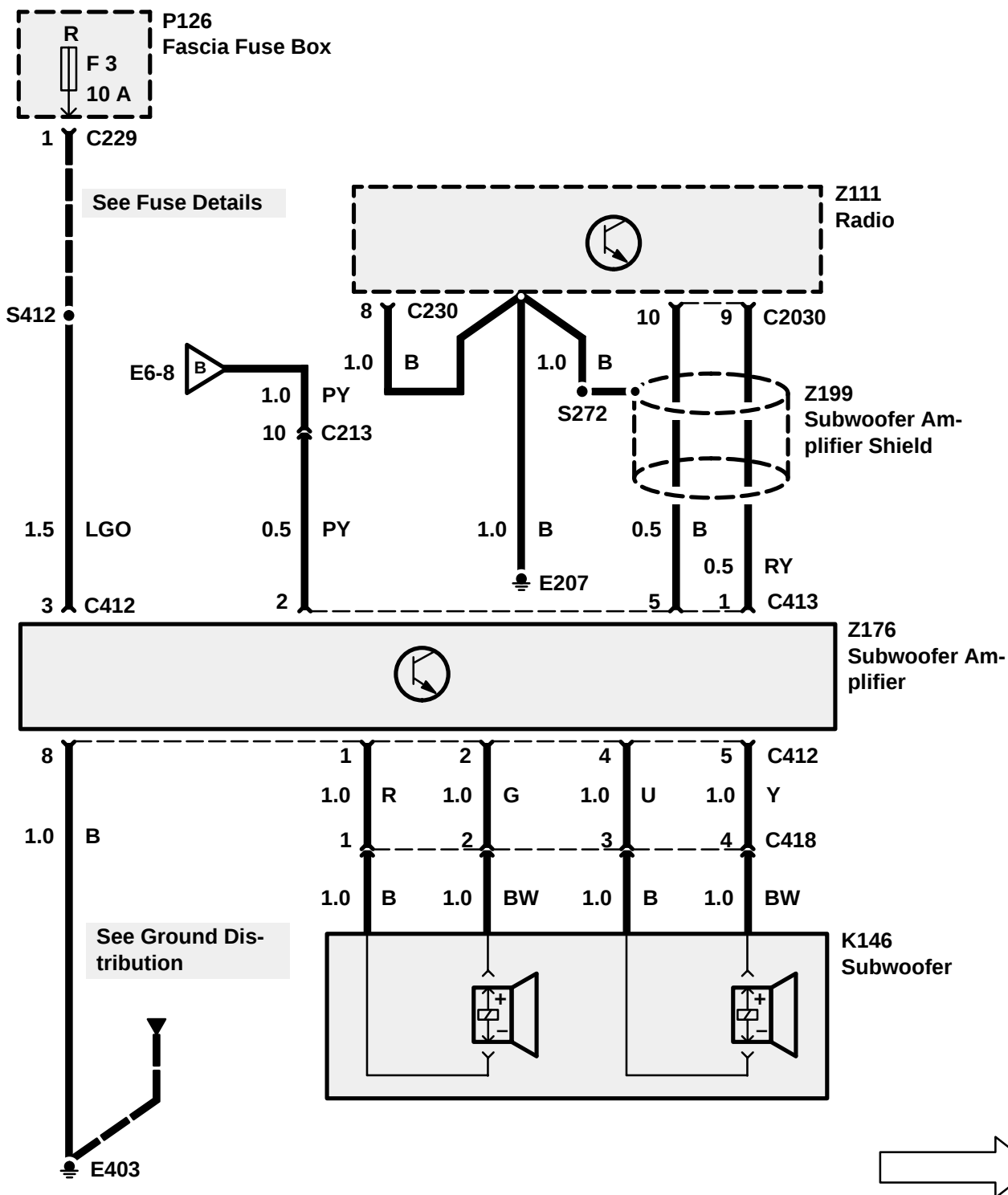
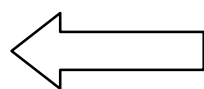


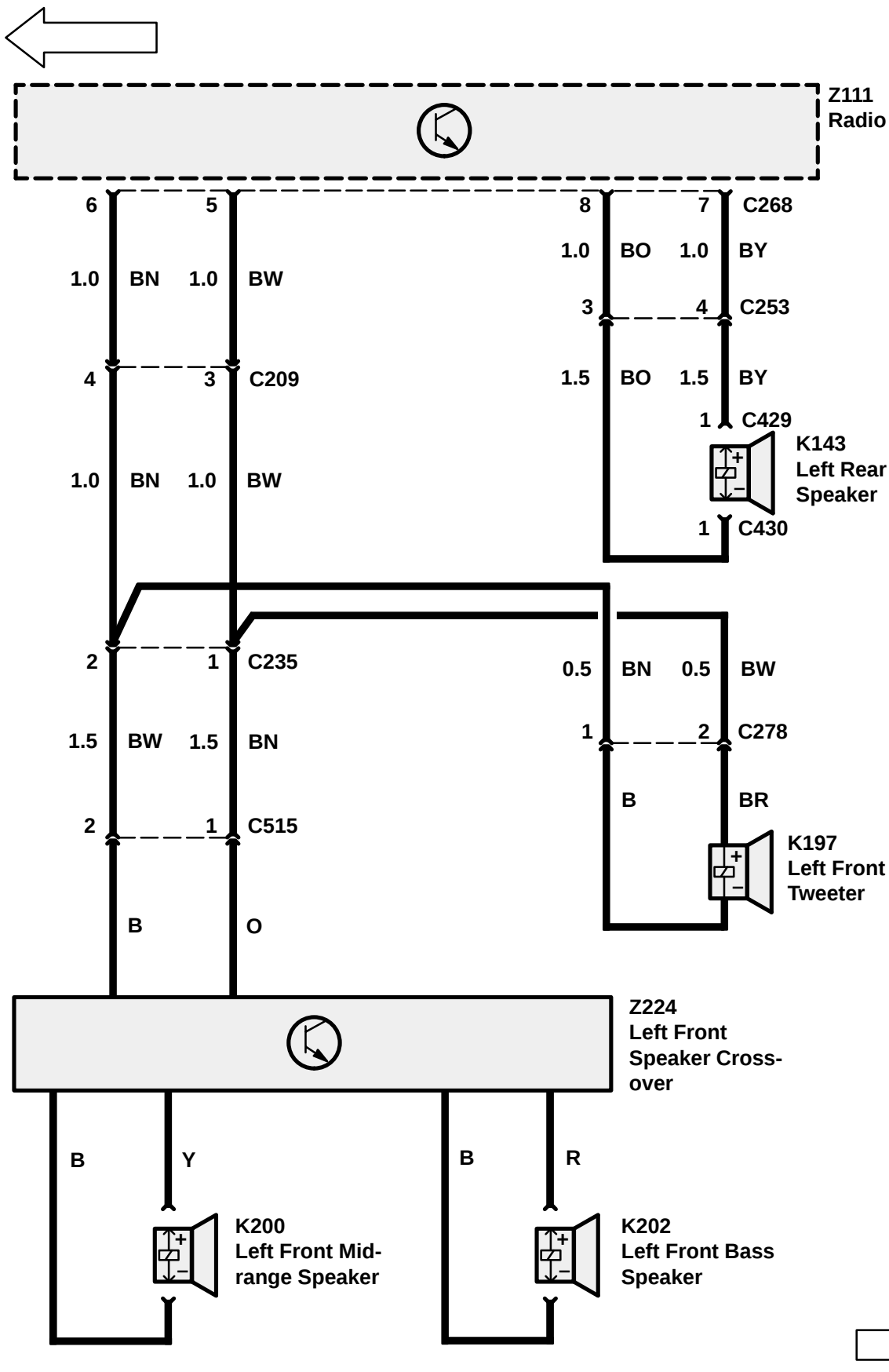
P126
Fascia Fuse Box

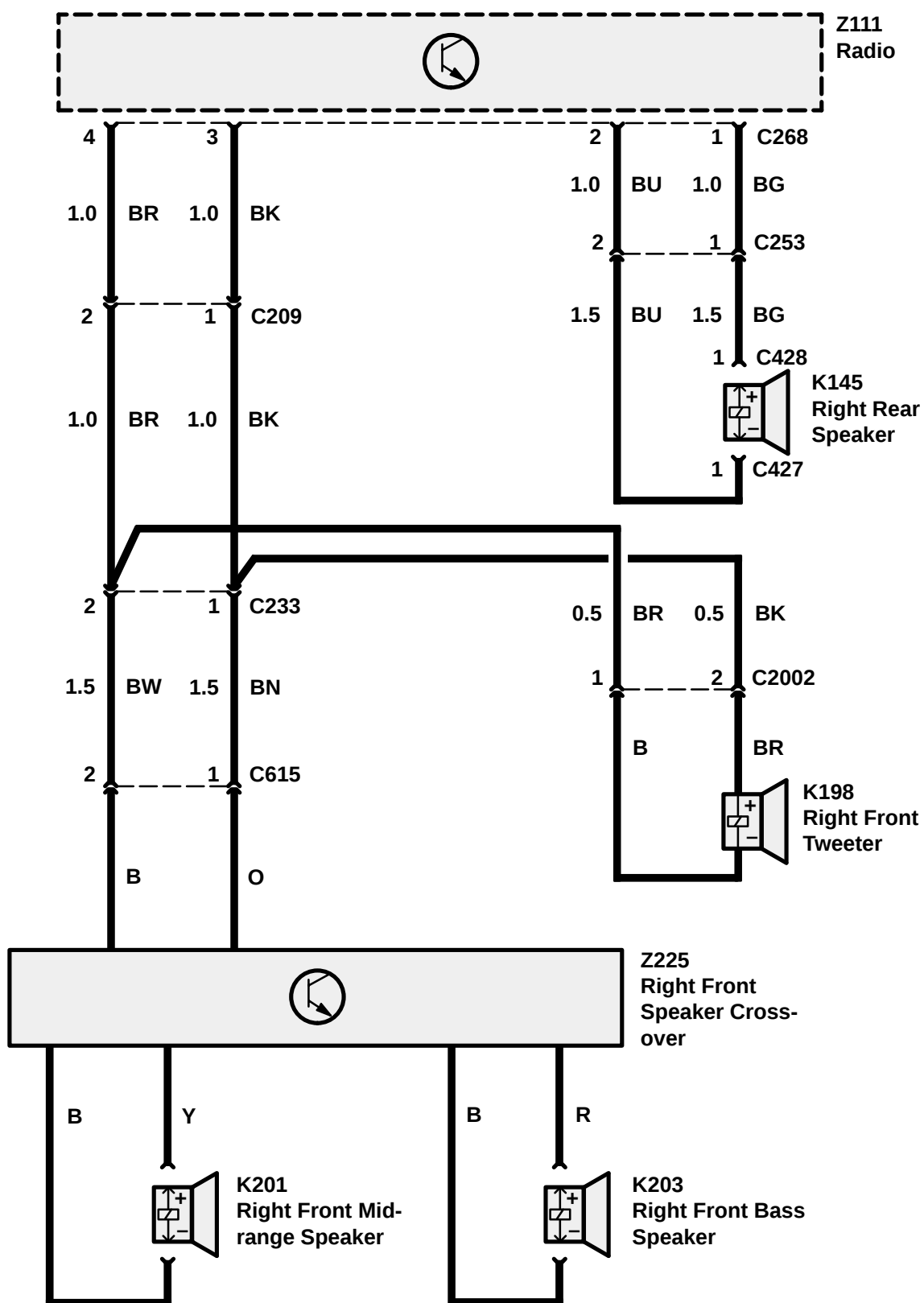
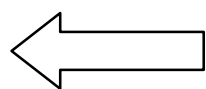












TROUBLESHOOTING HINTS

1. Check fuse F5 of Satellite Fusebox 2 (P128) and fuse F3 of Fascia Fusebox (P126).
2. Check that Radio (Z111) connectors and coaxial cable are tight and properly connected.
3. For proper Radio (Z111) noise diagnosis, take the vehicle outside where signals are strong. Close the hood and keep away from metal buildings or other sources of Radio interference.
4. If Radio (Z111) noise is excessive when an accessory is on, install a Radio noise suppression capacitor to the power lead of that accessory.
5. If Radio (Z111) noise is excessive at all times, check antenna wiring. If OK, check spark plugs, spark plug wiring and wiring close to the ignition system which could transmit noise to the Radio (Z111) wiring.
6. If only the CD Changer (Z114) does not operate, check power, ground, and DIN cable. If OK, check Radio and CD Changer.
7. If the Radio (Z111) is inoperative and 'code' is being shown on the display, follow the instructions below.

Security Code Instructions

1. Obtain 5-digit security code from vehicle owner or manufacturer.
2. Enter the code number using the Radio (Z111) push-button selectors.

NOTE: If the correct code is not entered in 3 successive attempts, the Radio (Z111) will not accept another entry until the Radio has been left on for 1 hour with the ignition on.

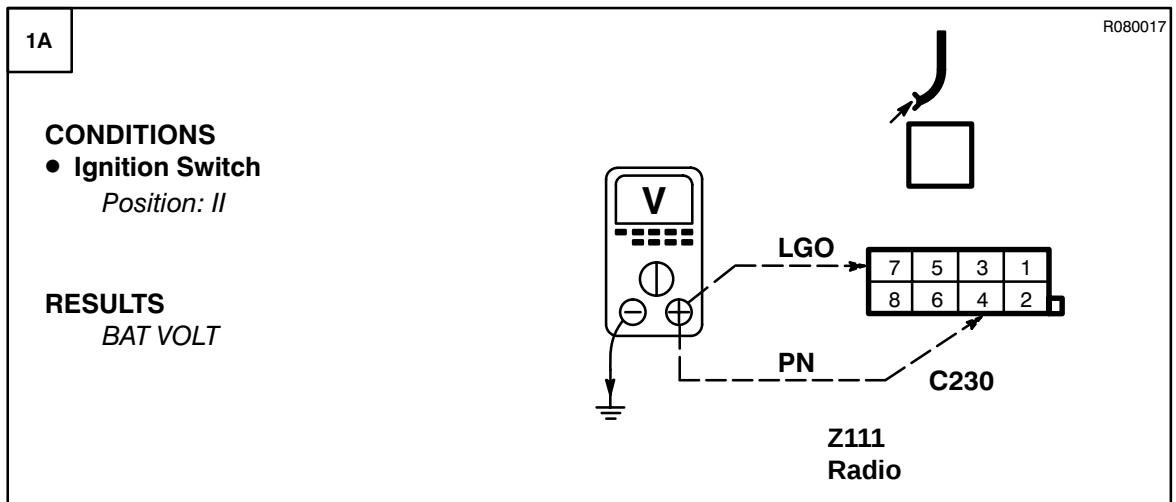
NOTE: When entering the code, be sure to complete the sequence numbering of that 5-digit code even if you made a mistake. For example, if the correct code number sequence is 43215 and you mistakenly enter 42 instead of 43, continue the code number sequence of 215 to complete that entry. A 'beep' will sound, 'code' will still be displayed and the Radio will not operate. Re-enter the correct code 43215 and the Radio will operate.

NOTE: If an audible 'beep' is heard while entering the code, STOP immediately. Begin entering the code again, starting with the first number of the 5-digit code.

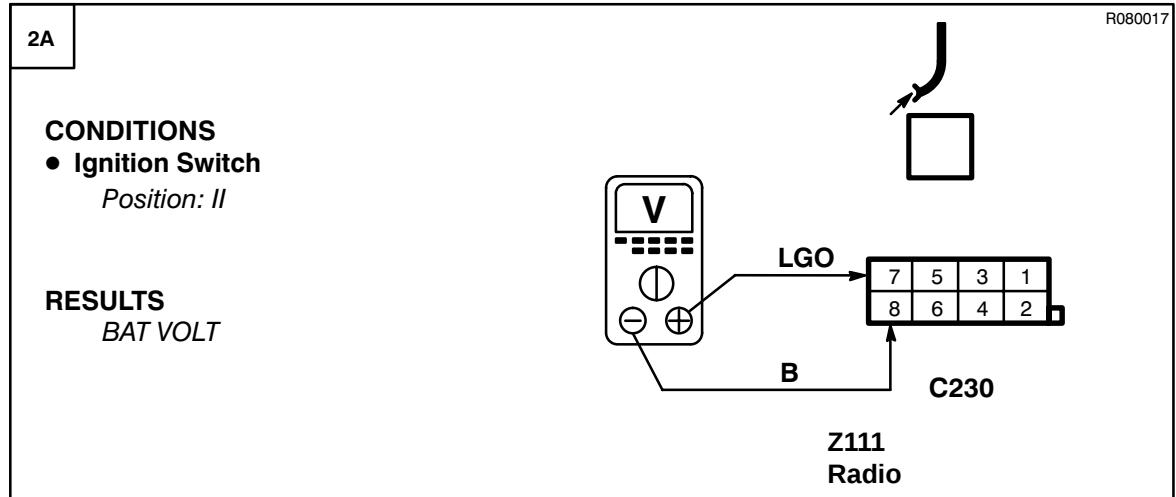
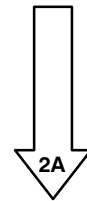
NOTE: If a push-button is touched accidentally when the ignition is off, a warning tone will sound. Turn the ignition on and the tone will stop.

SYSTEM DIAGNOSIS

1. If Radio (Z111) does not operate at all, do Test A.
2. If Radio scans past all frequencies when in seek mode and hiss is present over most stations, do Test B.
3. If VF display does not dim when headlamps or park lamps are turned on, do Test C.
4. If one or more speakers do not operate, do Test D.
5. If the Subwoofer (K146) does not operate, do Test E.
6. If midrange and bass speakers do not operate on a vehicle equipped with speaker crossovers, check these speakers with Test D. If OK, replace speaker crossover.

Test A**PROBLEM CAUSE**

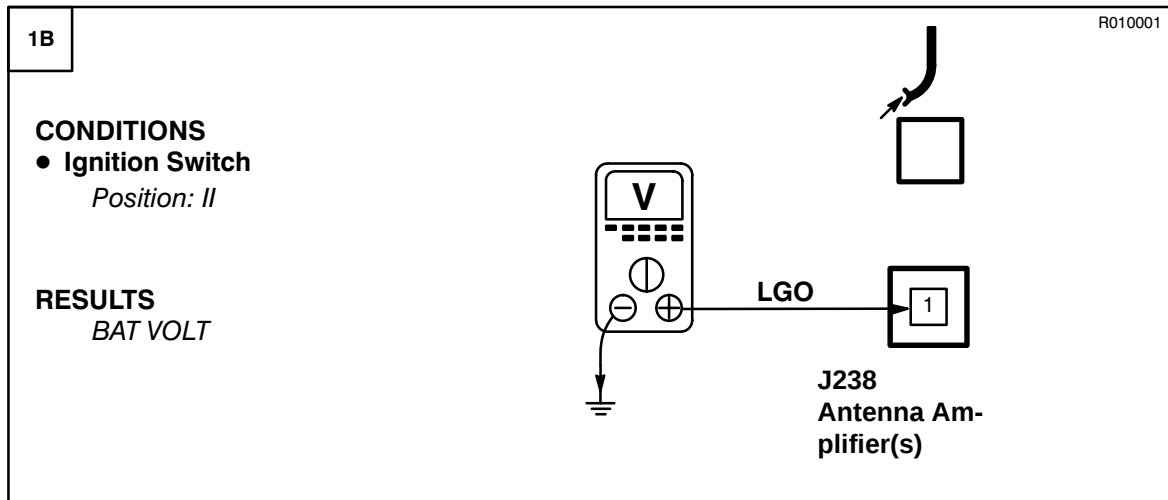
- PN Wire
- LGO Wire
- F5 Fuse
- F3 Fuse

**PROBLEM CAUSE**

- B Wire

**PROBLEM CAUSE**

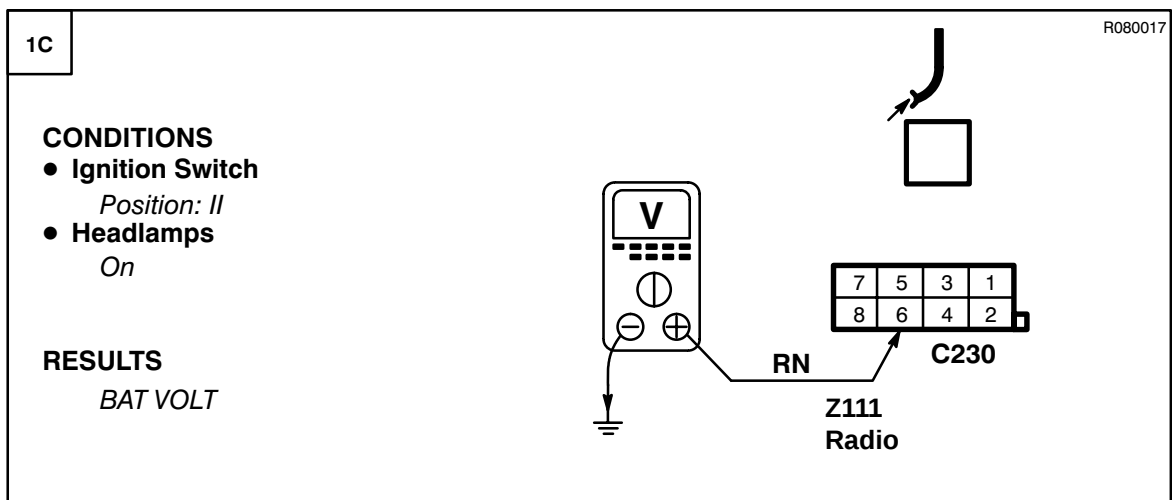
- Radio

Test B

PROBLEM CAUSE
- LGO Wire



PROBLEM CAUSE
- Coaxial Cable
- Radio
- Antenna Am-
plifier(s)

Test C

PROBLEM CAUSE
- RN Wire



PROBLEM CAUSE
- Radio

Test D

1D

CONDITIONS

- Connect for less than 1 second
- Connect at suspect connector

RESULTS
Speaker 'pops'

J2120 Speaker

R010001



PROBLEM CAUSE
- Speaker



PROBLEM CAUSE
- Speaker Wiring
- Radio

Test E

1E

CONDITIONS

- Ignition Switch
Position: I

RESULTS
BAT VOLT

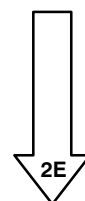
LGO

C412
Z176 Subwoofer Amplifier

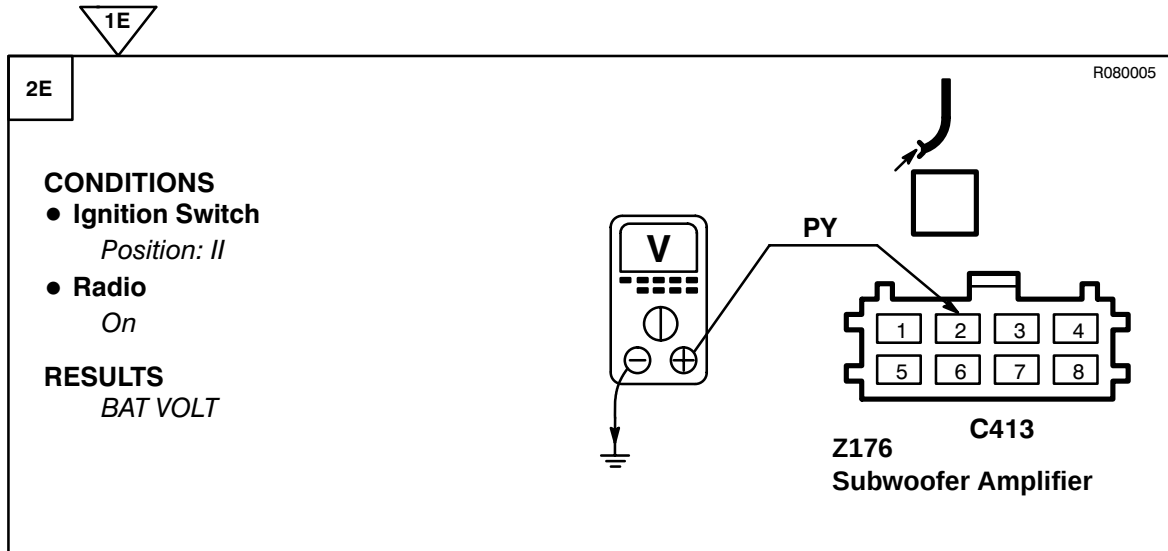
R080004



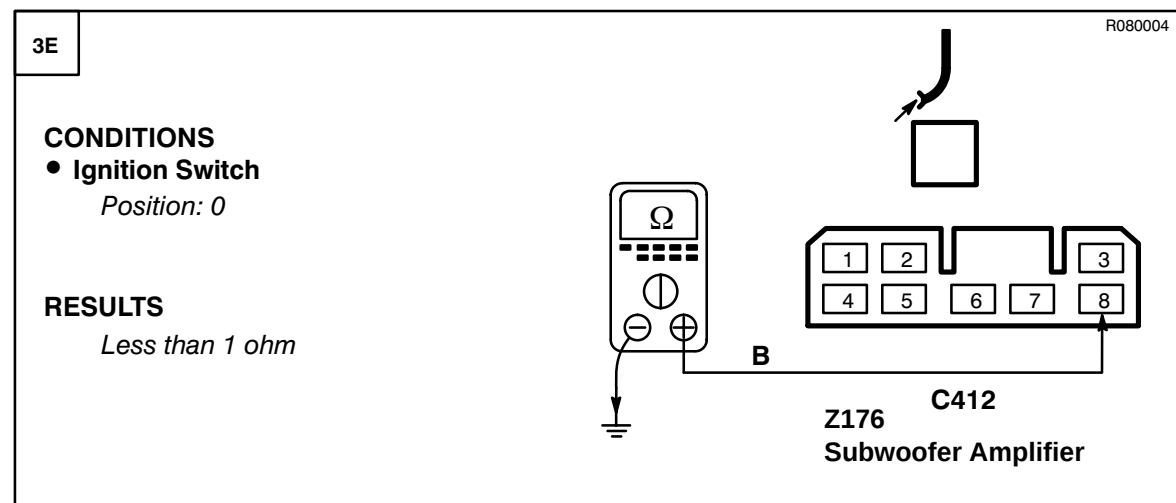
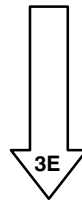
PROBLEM CAUSE
- LGO Wire



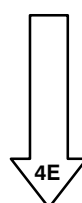
2E

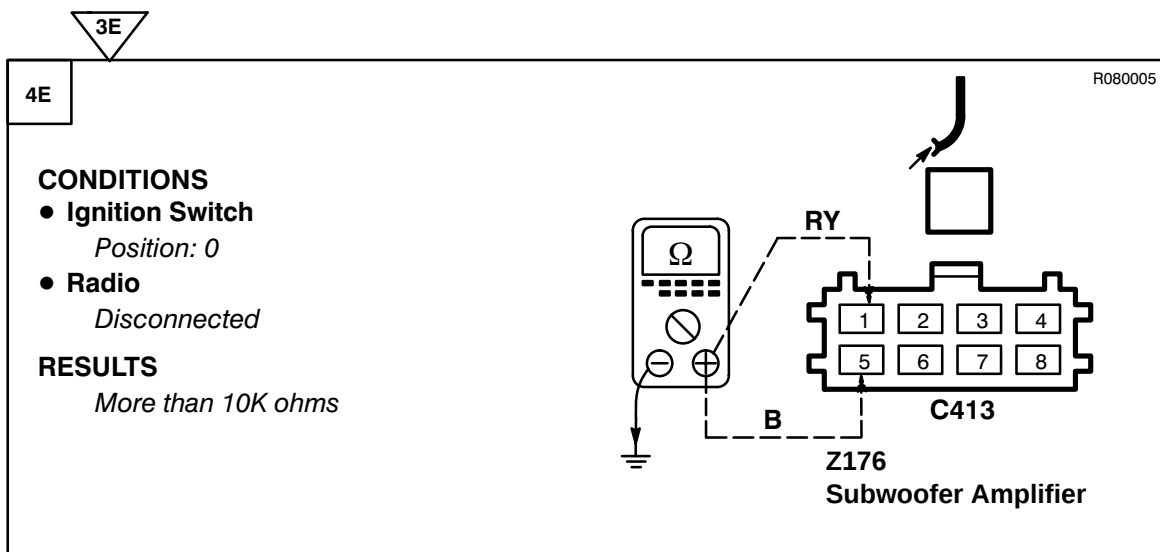
**PROBLEM CAUSE**

- PY Wire
- Radio
- Fascia Fuse Box

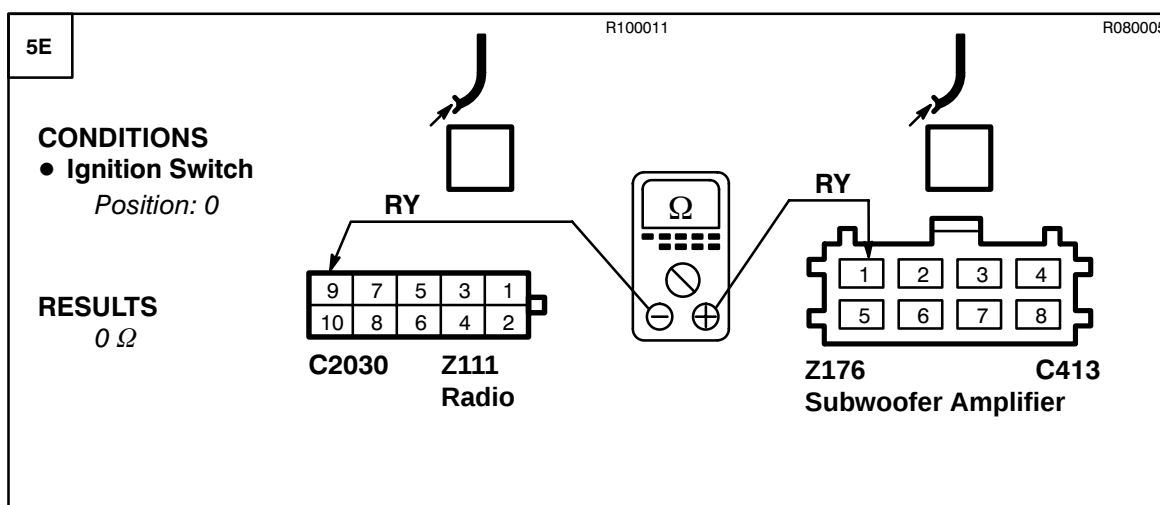
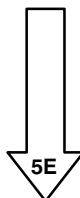
**PROBLEM CAUSE**

- B Wire

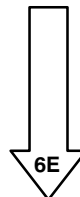


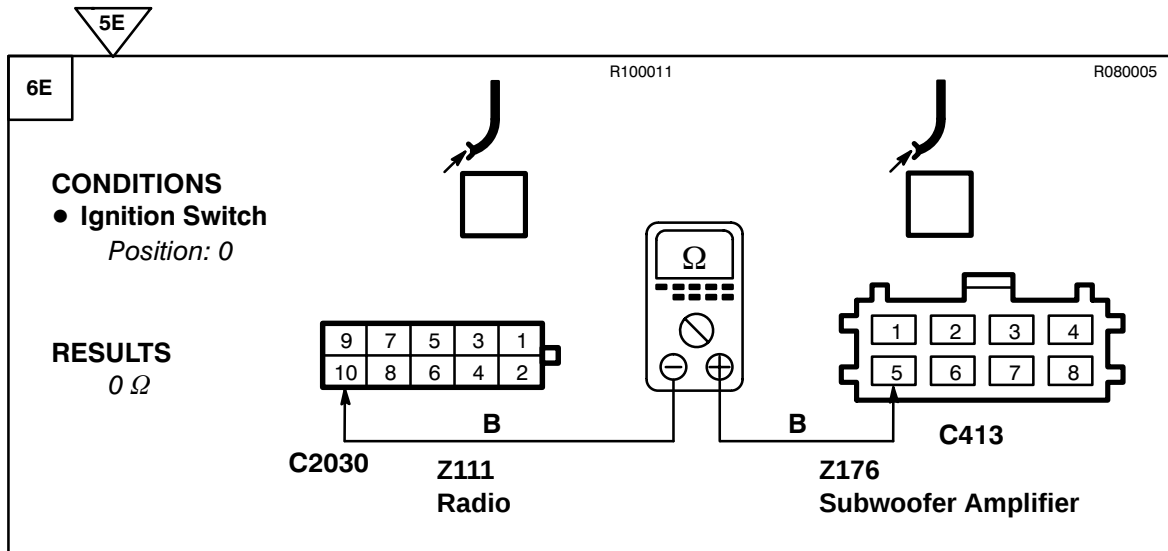
**PROBLEM CAUSE**

- RY Wire
- B Wire

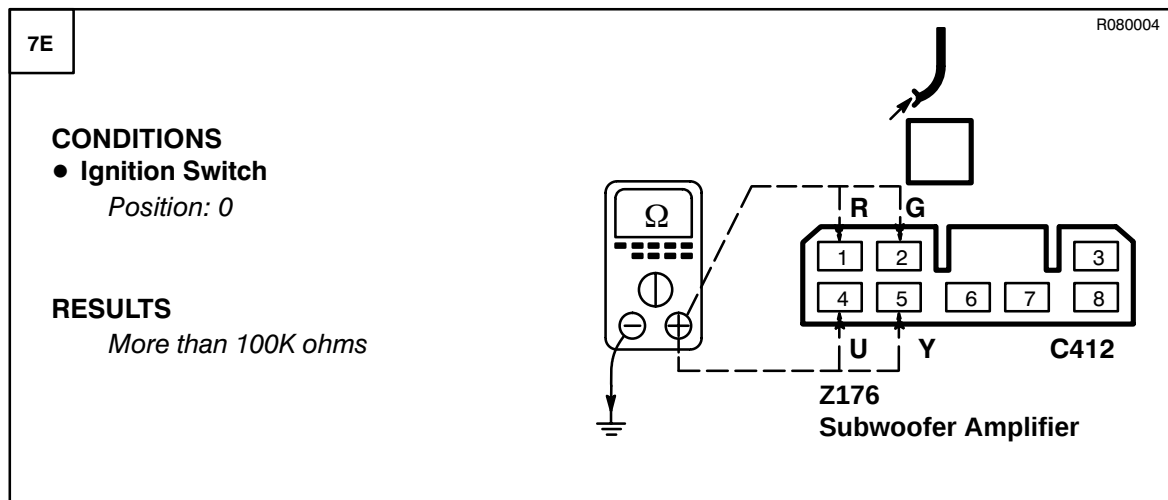
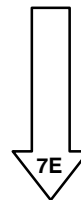
**PROBLEM CAUSE**

- RY Wire

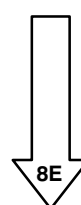


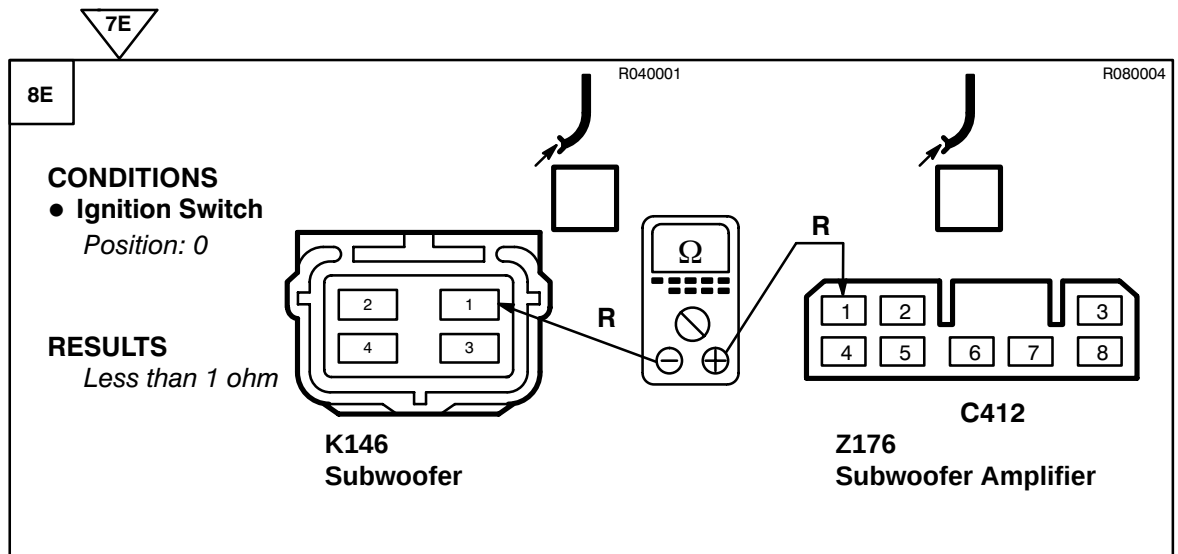


PROBLEM CAUSE
- B Wire

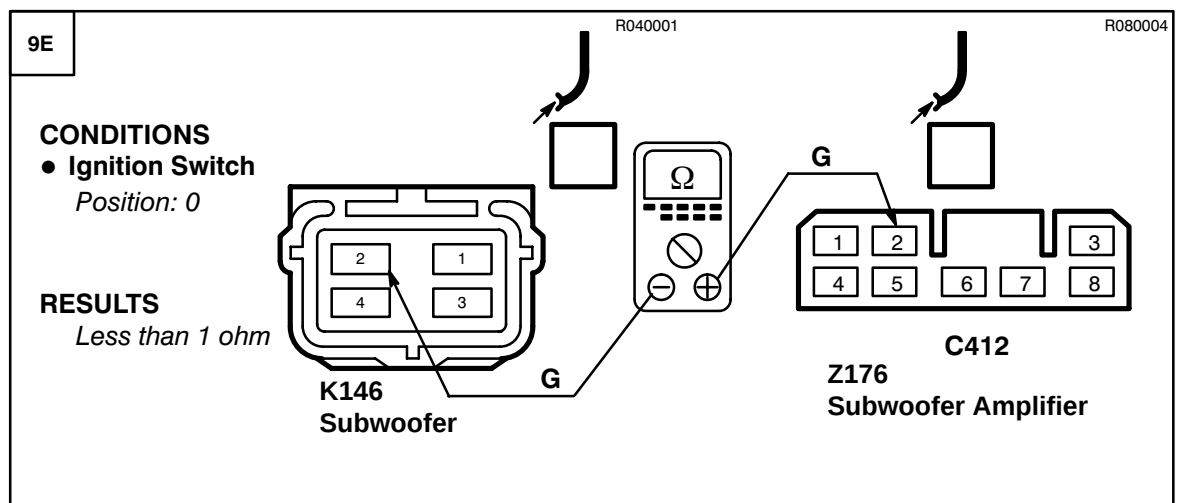
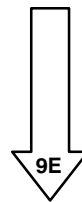


PROBLEM CAUSE
- Wire (short)
- Subwoofer

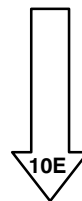


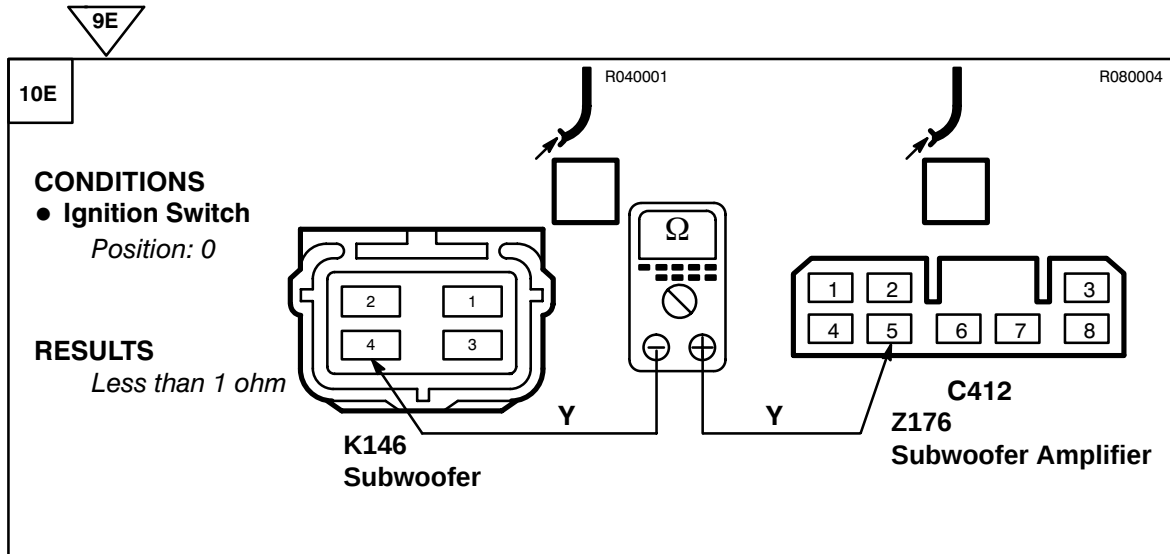


PROBLEM CAUSE
- R Wire

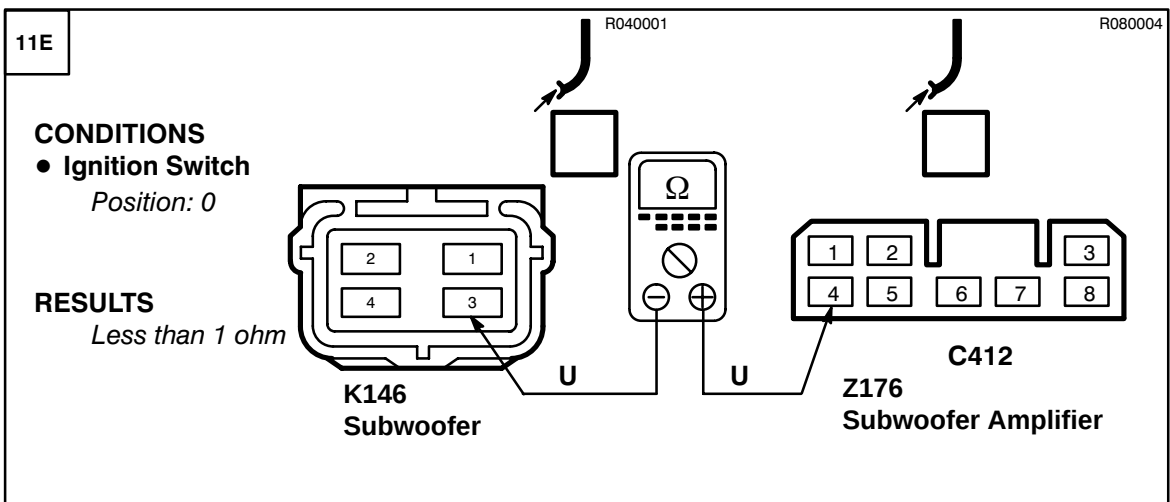
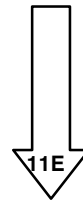


PROBLEM CAUSE
- G Wire

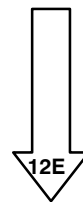




PROBLEM CAUSE
- Y Wire



PROBLEM CAUSE
- U Wire





12E

CONDITIONS

- Ignition Switch
Position: II
- Install a known good Subwoofer
- Radio
On

RESULTS

- Subwoofer Speakers
Operate

**PROBLEM CAUSE**

- Radio
- Subwoofer Amplifier

**PROBLEM CAUSE**

- Subwoofer

CIRCUIT OPERATION

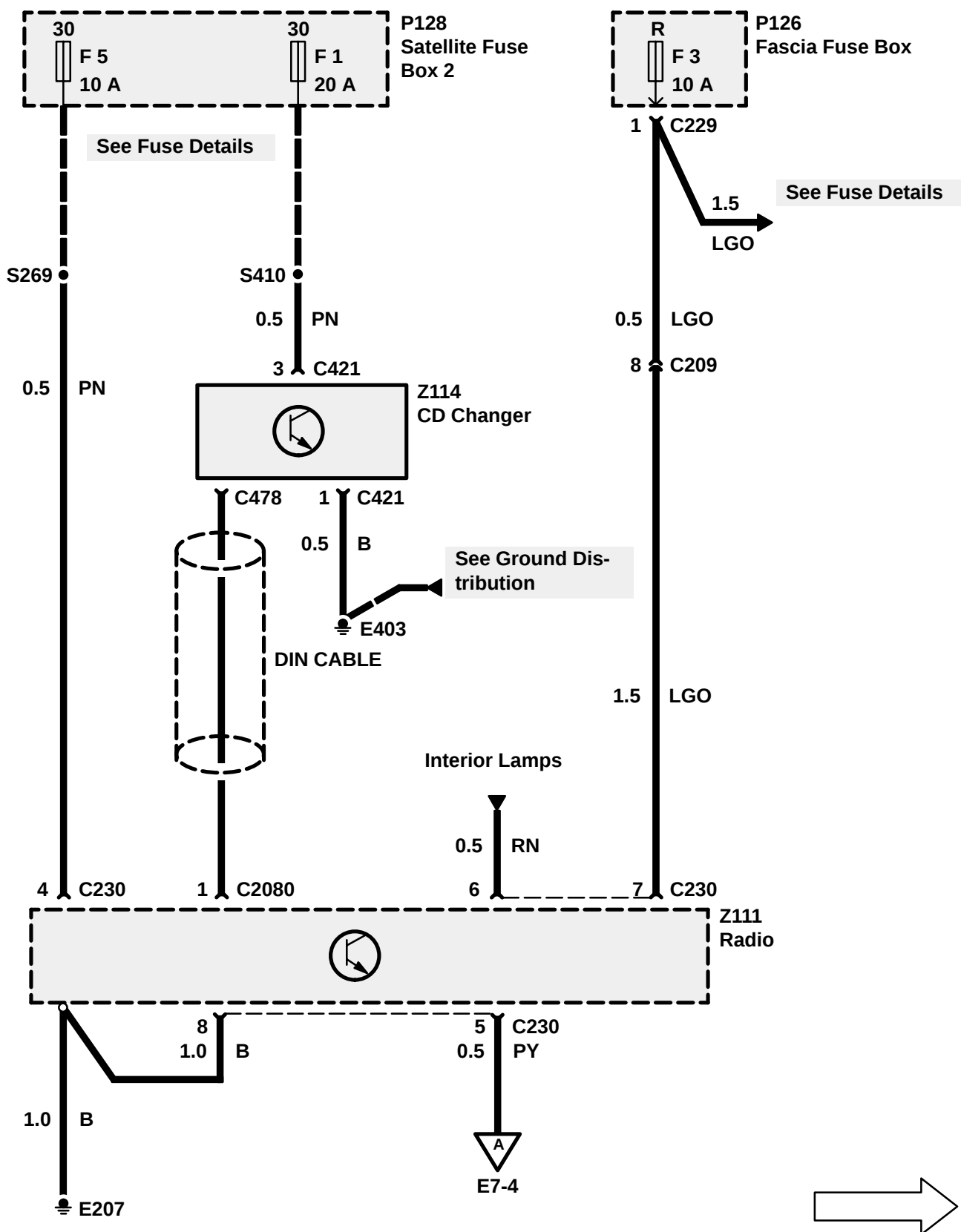
The NAS/JAPAN audio system consists of a new head unit, two Antenna Amplifiers, an Amplifier (Z175), a CD Changer (Z114) and a subwoofer. The control head is equipped with an anti-theft feature which makes the unit inoperative once battery power is removed. A security code must be entered to restore power to the unit. The system is equipped with two rear speakers, two bass front and two midrange front speakers and two front tweeters.

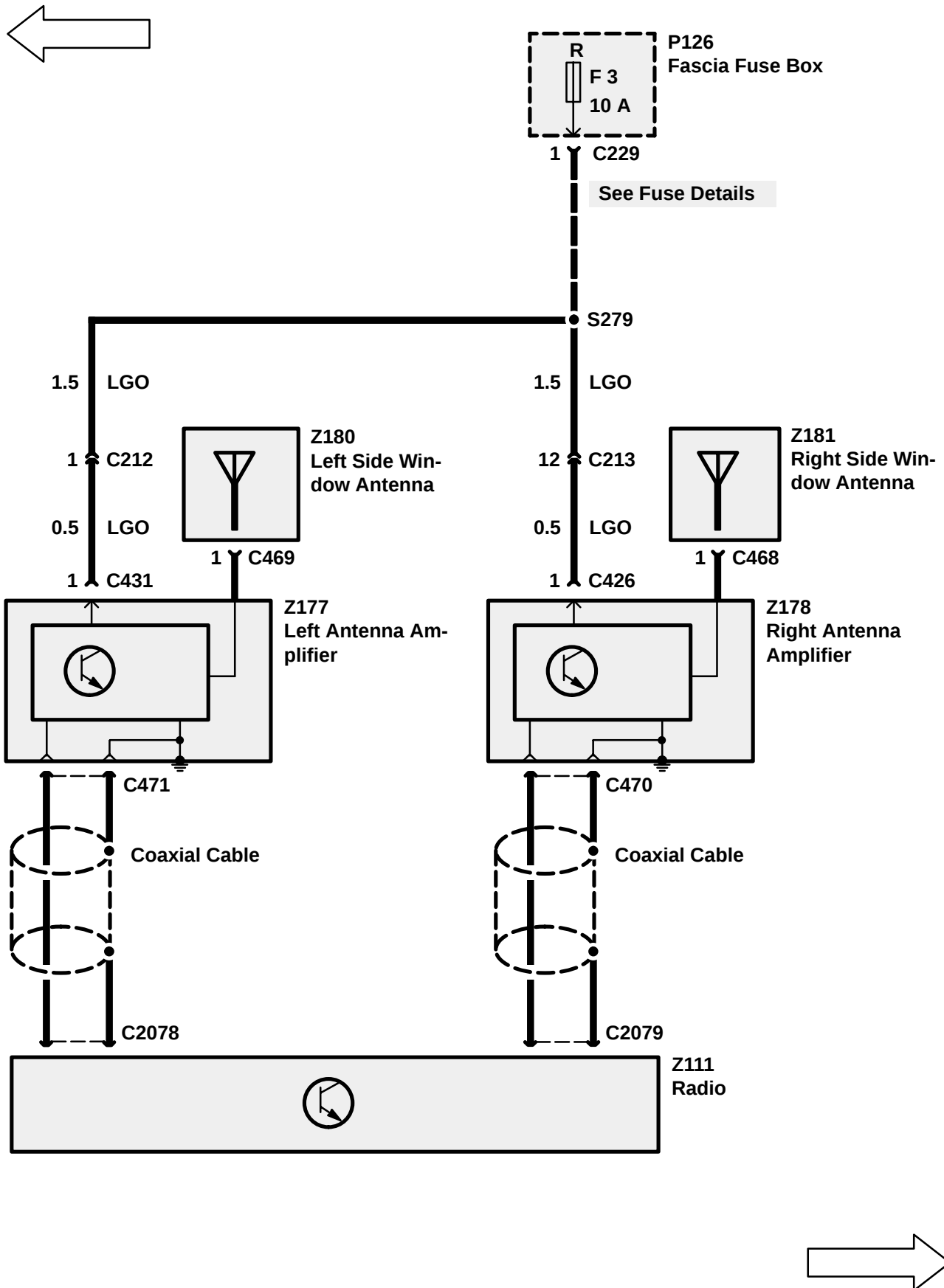
Battery voltage is provided to the control head at all times through the PN wire. In addition to monitoring the anti-theft feature, this input keeps the preset station memory alive. Whenever battery power to the unit is lost, the anti-theft code must be entered and the preset stations must be reprogrammed.

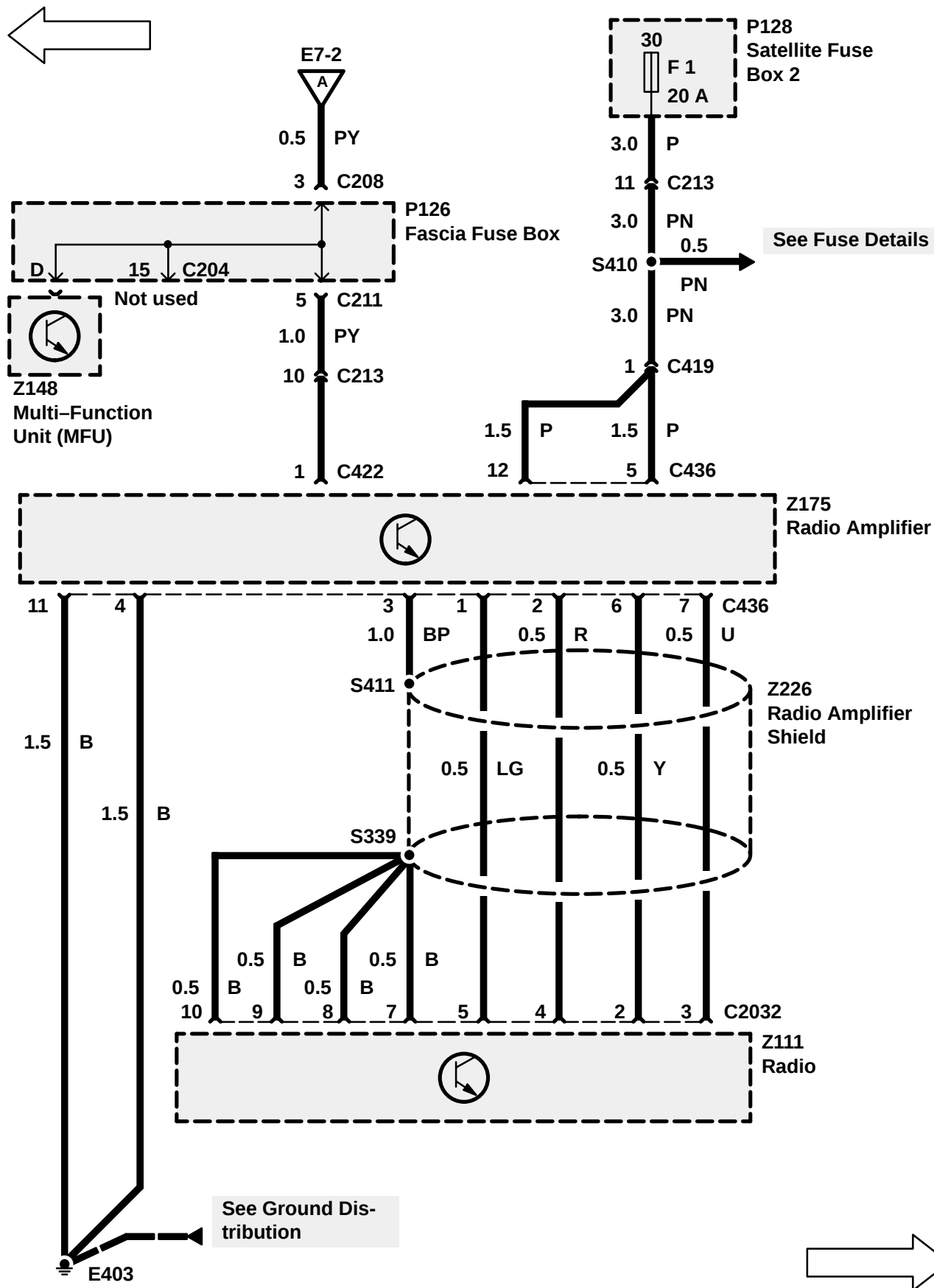
When the Radio (Z111) and the ignition are turned on, the voltage signal through the LGO wire and the control head 'wakes up' the unit. The Radio (Z111) plays, the VF display comes on and the control unit buttons illuminate. The VF display is dimmed when the headlights or park lights are turned on. When the lights are on, voltage from fuse F8 of the Fascia Fusebox (P126) is applied to the Radio (Z111) terminal 6, Connector 230 signalling the Radio (Z111) to dim the display. Radio (Z111) signals are received via a coaxial cable from the side screens and Antenna Amplifiers. The amplifier filters and boosts the signal from the rear side screens.

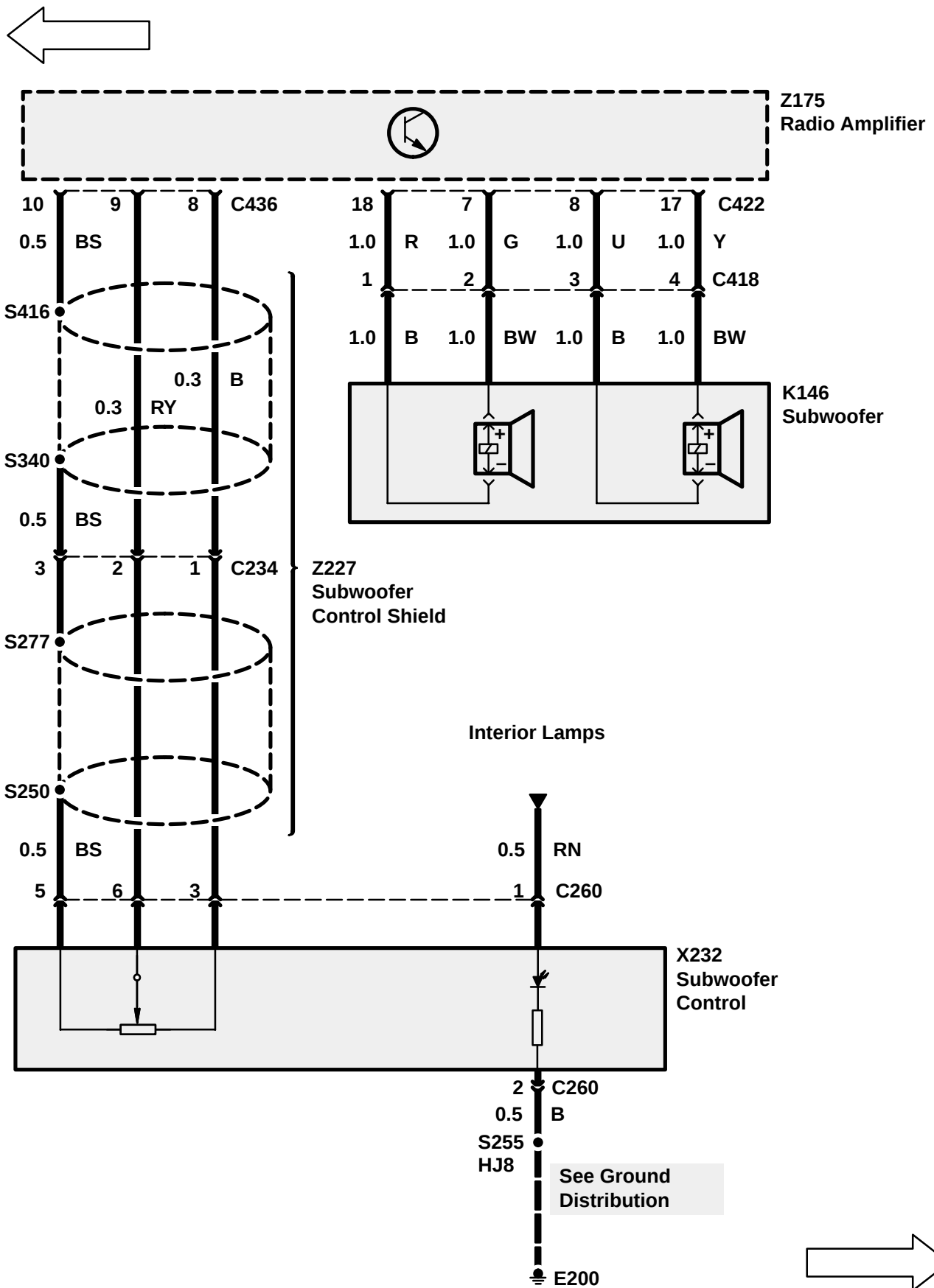
Power is available to the CD Changer (Z114) at all times. It is operated from the control head when 'CD' is selected. The control head communicates with the Changer (Z114) via a DIN cable.

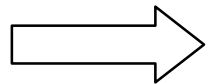
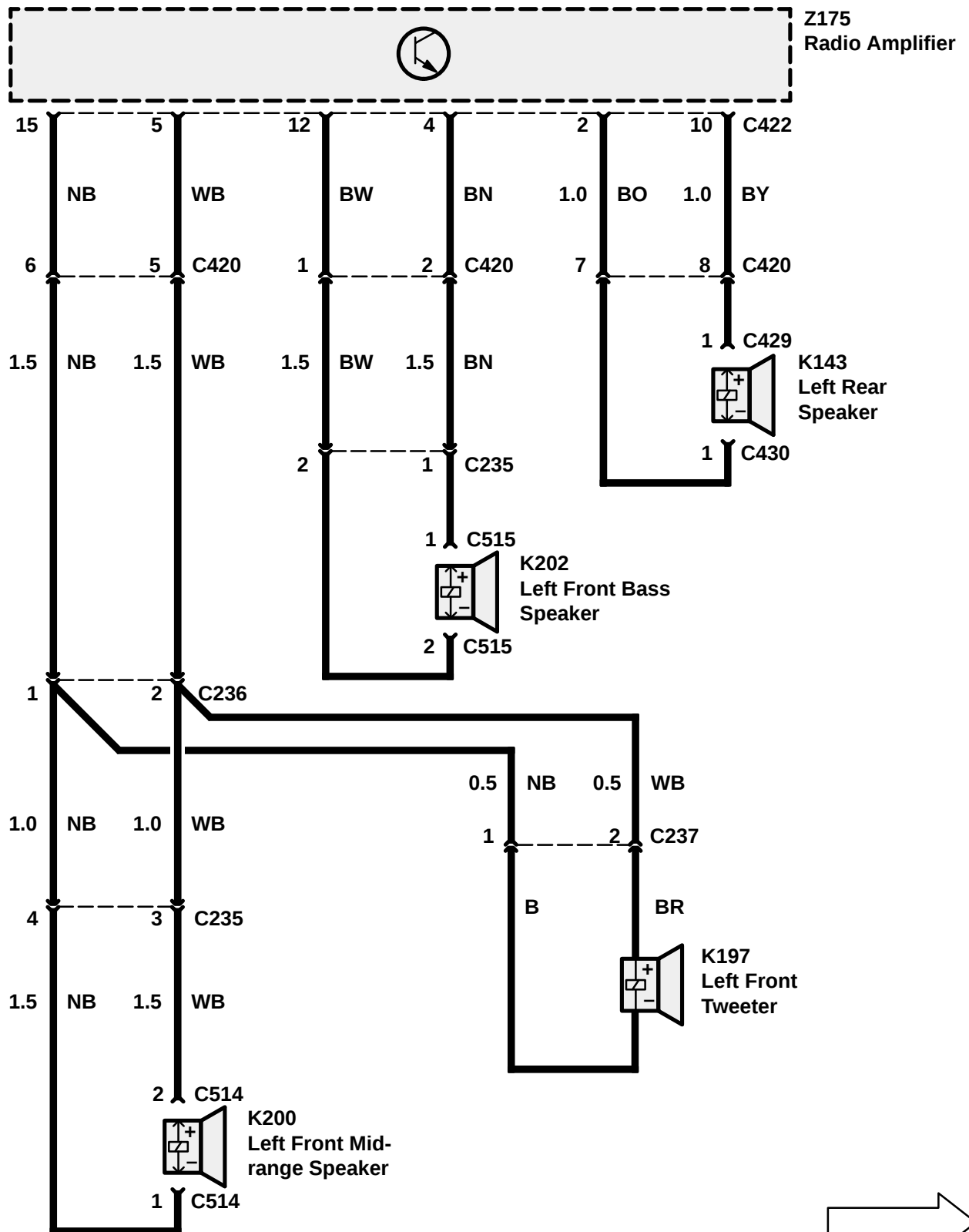
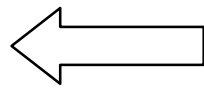
The amplifier receives power with the ignition on. It is enabled when the Radio (Z111) is turned on, sending a voltage signal through the PY wire.

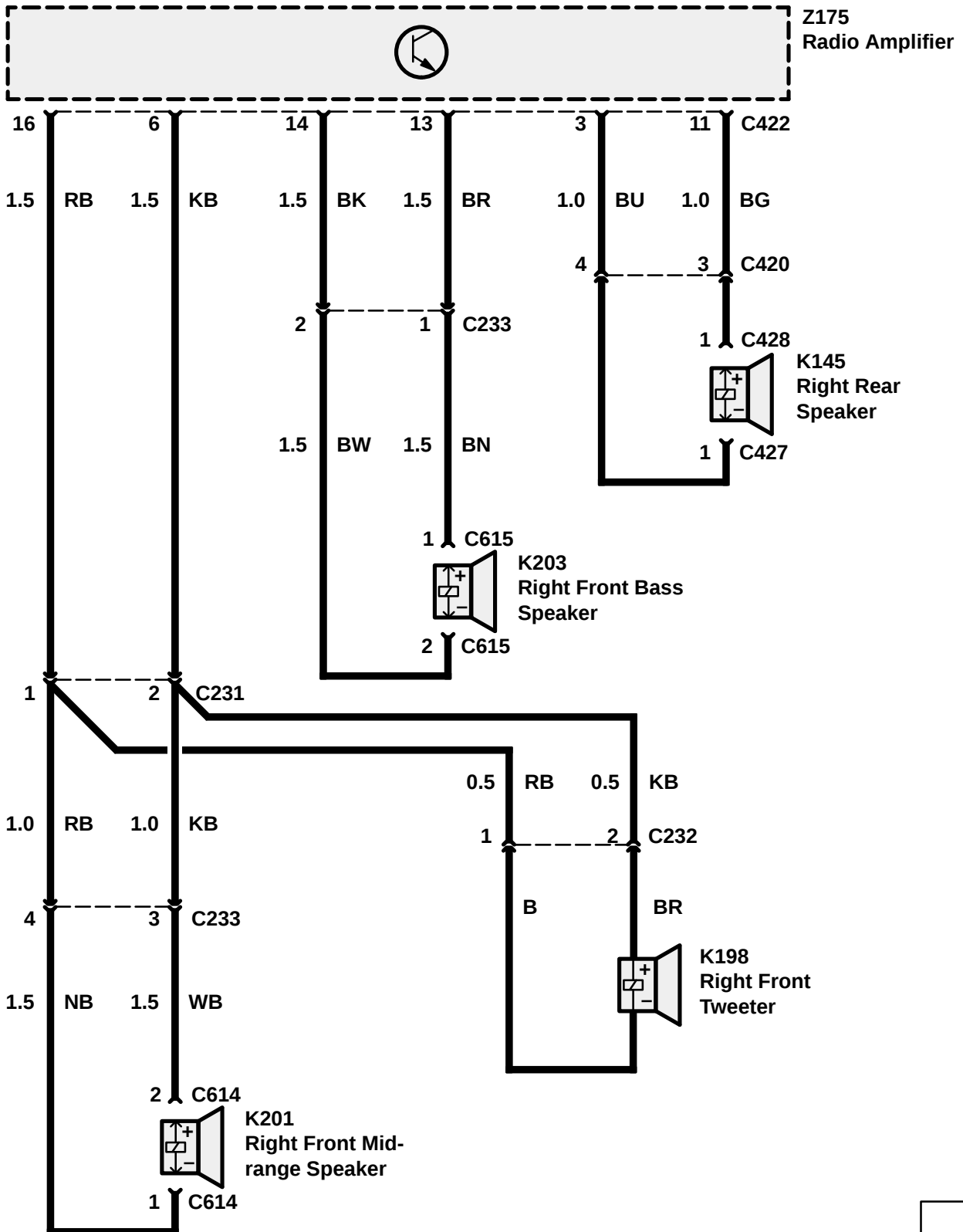












TROUBLESHOOTING HINTS

20. Check fuses F5 and F1 of Satellite Fusebox 2, and fuse F3 of Fascia Fusebox.
21. Check that Radio (Z111) connectors and coaxial cable are tight and properly connected.
22. For proper Radio (Z111) noise diagnosis, take the vehicle outside where signals are strong. Close the hood and keep away from metal buildings or other sources of Radio interference.
23. If Radio (Z111) noise is excessive when an accessory is on, install a Radio noise suppression capacitor to the power lead of that accessory.
24. If Radio (Z111) noise is excessive at all times, check antenna wiring. If OK, check spark plugs (P118), spark plug wiring and wiring close to the ignition system which could transmit noise to the Radio wiring.
25. If the Radio (Z111) is inoperative and 'code' is being shown on the display, follow the instructions below.

Security Code Instructions

1. Obtain 5-digit security code from vehicle owner or manufacturer.
2. Enter the code number using the Radio (Z111) push-button selectors.

NOTE: If the correct code is not entered in 3 successive attempts, the Radio (Z111) will not accept another entry until the Radio has been left on for 1 hour with the ignition on.

NOTE: When entering the code, be sure to complete the sequence numbering of that 5-digit code even if you made a mistake. For example, if the correct code number sequence is 43215 and you mistakenly enter 42 instead of 43, continue the code number sequence of 215 to complete that entry. A 'beep' will sound, 'code' will still be displayed and the Radio will not operate. Re-enter the correct code 43215 and the Radio will operate.

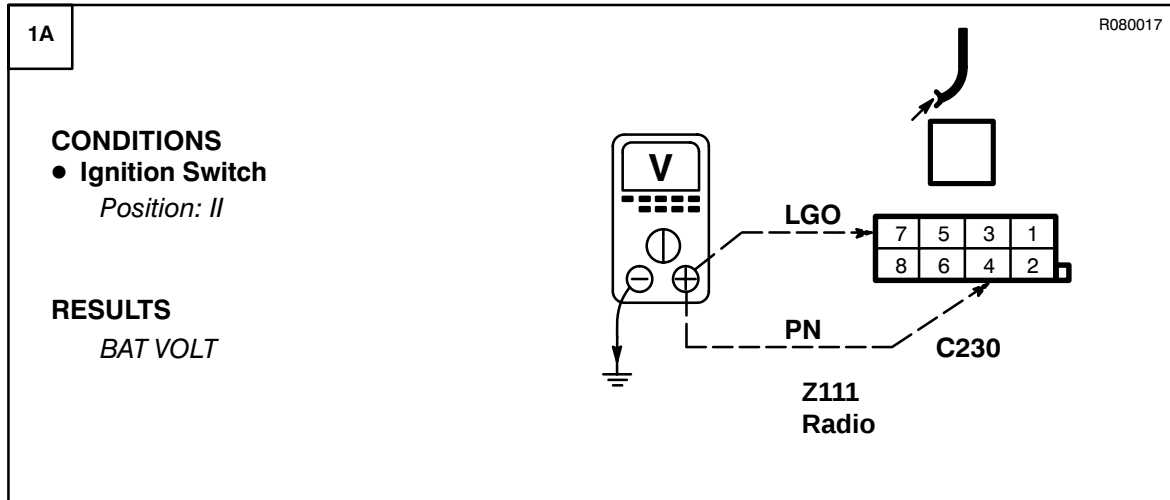
NOTE: If an audible 'beep' is heard while entering the code, STOP immediately. Begin entering the code again, starting with the first number of the 5-digit code.

NOTE: If a push-button is touched accidentally when the ignition is off, a warning tone will sound. Turn the ignition on and the tone will stop.

SYSTEM DIAGNOSIS

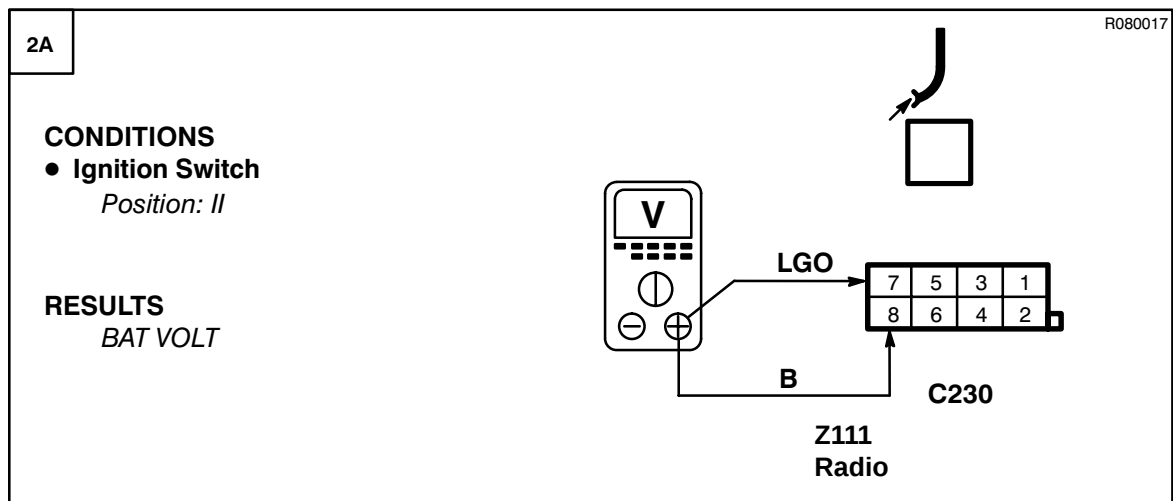
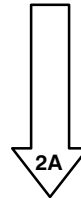
1. If Radio (Z111) and cassette do not operate at all, do Test A.
2. If Radio (Z111) scans past all frequencies when in seek mode and hiss is present over most stations, do Test B.
3. If VF display intensity does not dim when the headlights are on, do Test C.
4. If one or more (but not all) speakers do not operate, do Test D.
5. If only the CD Changer (Z114) does not operate, do Test E.
6. If the Subwoofer (K146) does not operate, do Test F.
7. If the subwoofer control does not dim when the headlights are on, do test G.

Test A



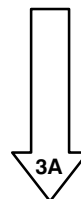
PROBLEM CAUSE

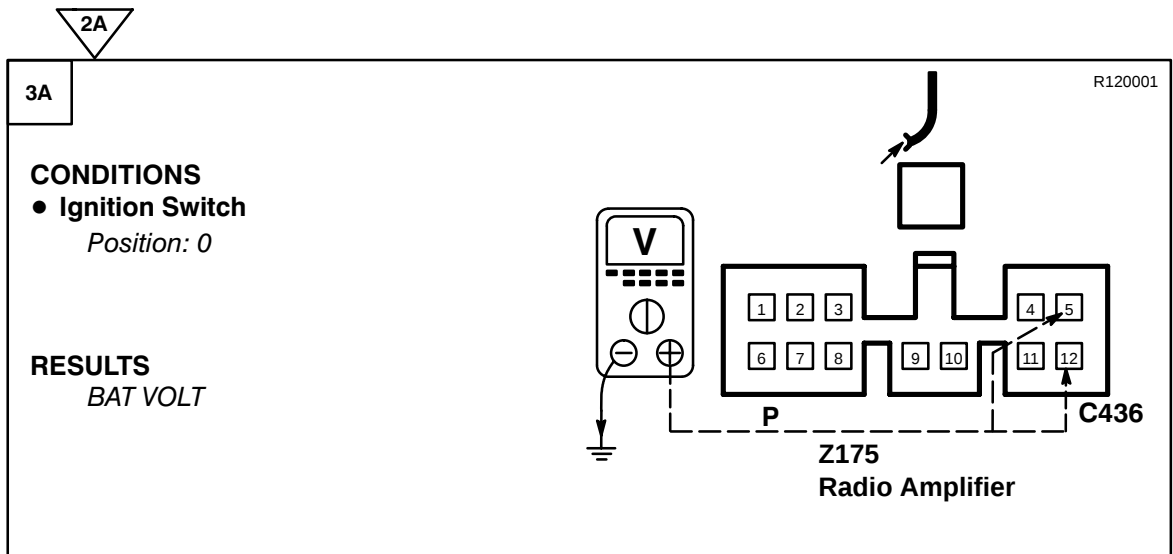
- PN Wire
- LGO Wire
- F5 Fuse
- F3 Fuse



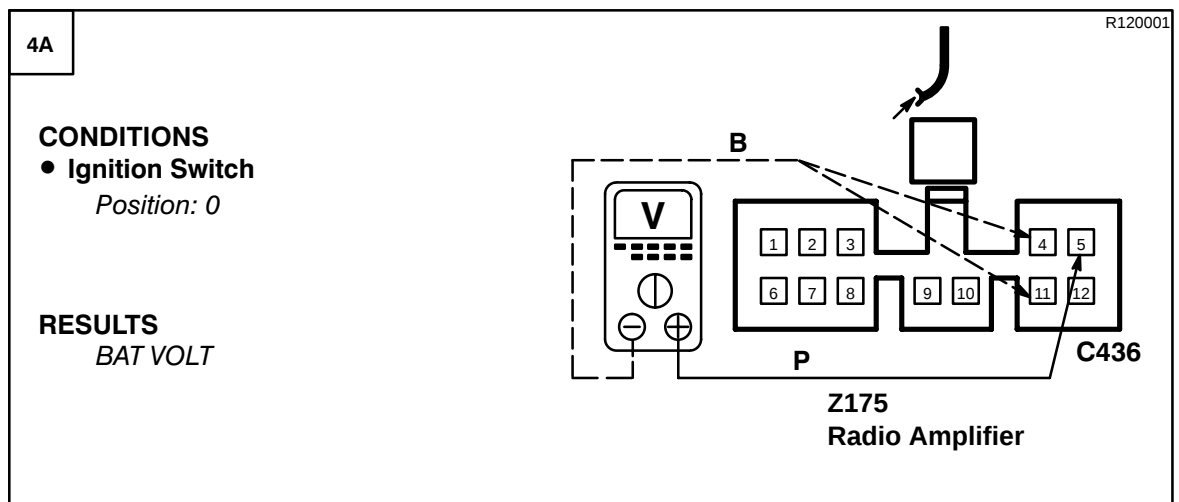
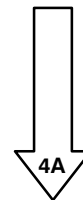
PROBLEM CAUSE

- B Wire

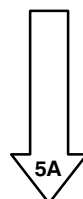


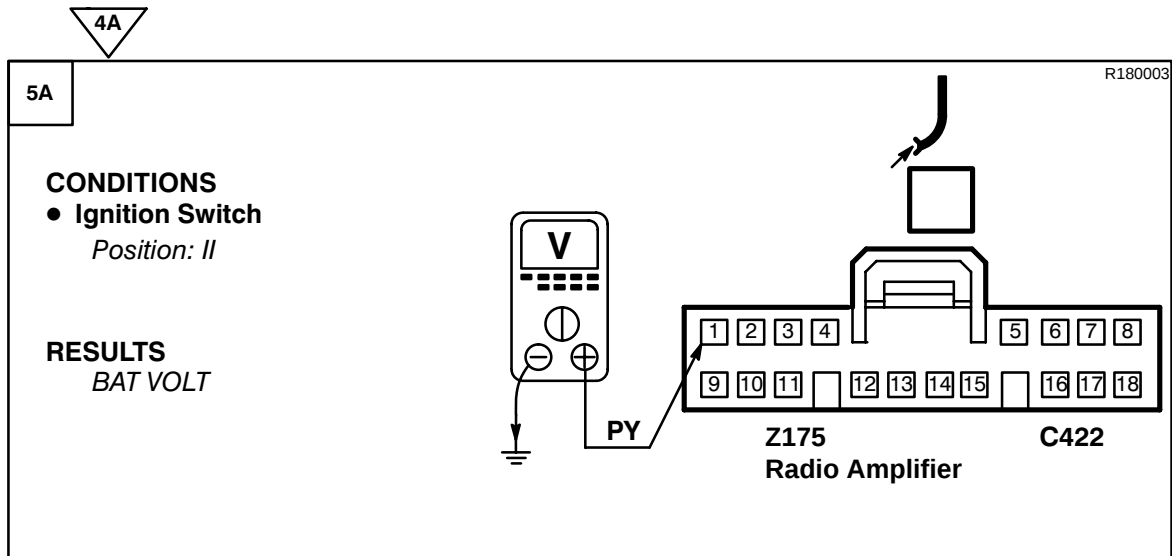
**PROBLEM CAUSE**

- PN Wire
- F1 Fuse
- P Wire

**PROBLEM CAUSE**

- B Wire





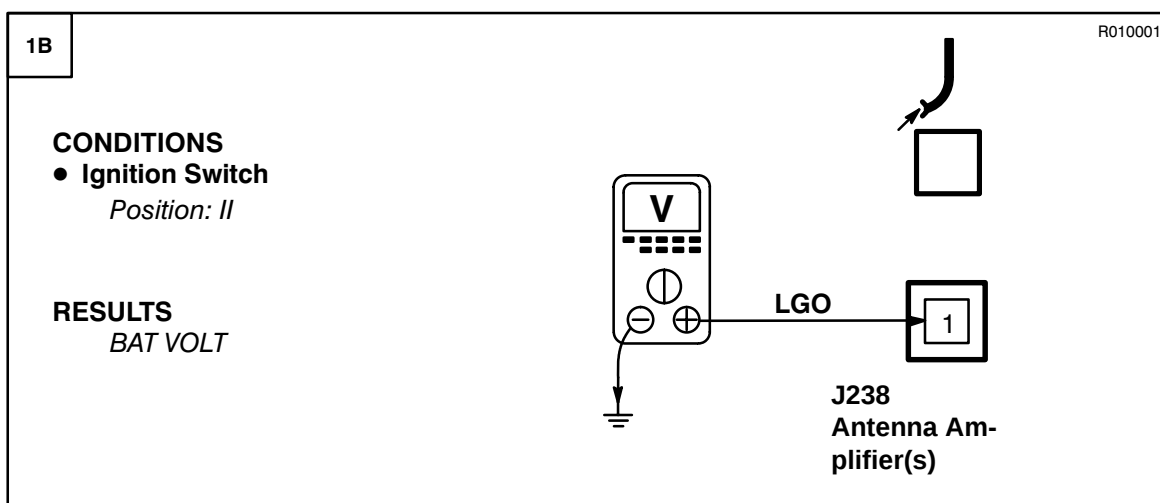
PROBLEM CAUSE

- PY Wire
- Radio
- Fascia Fuse Box



PROBLEM CAUSE

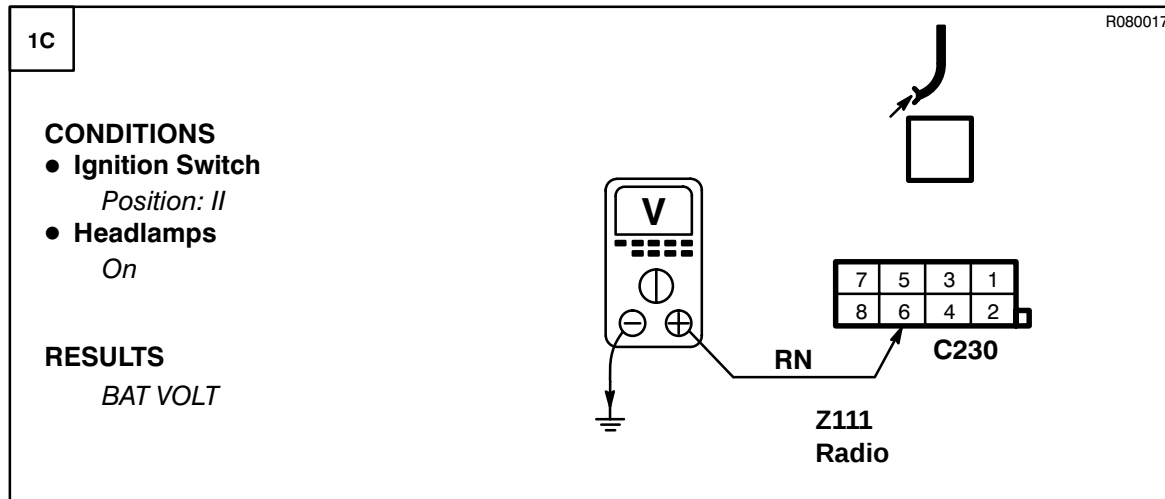
- Radio Amplifier

Test B

PROBLEM CAUSE
- LGO Wire



PROBLEM CAUSE
- Coaxial Cable
- Radio
- Antenna Am-
plifier(s)

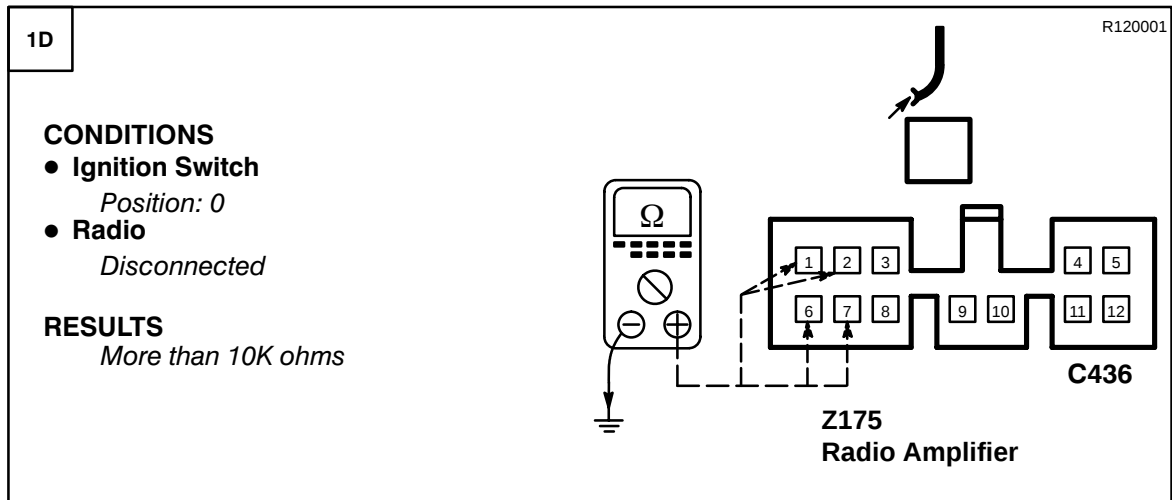
Test C

PROBLEM CAUSE
- RN Wire

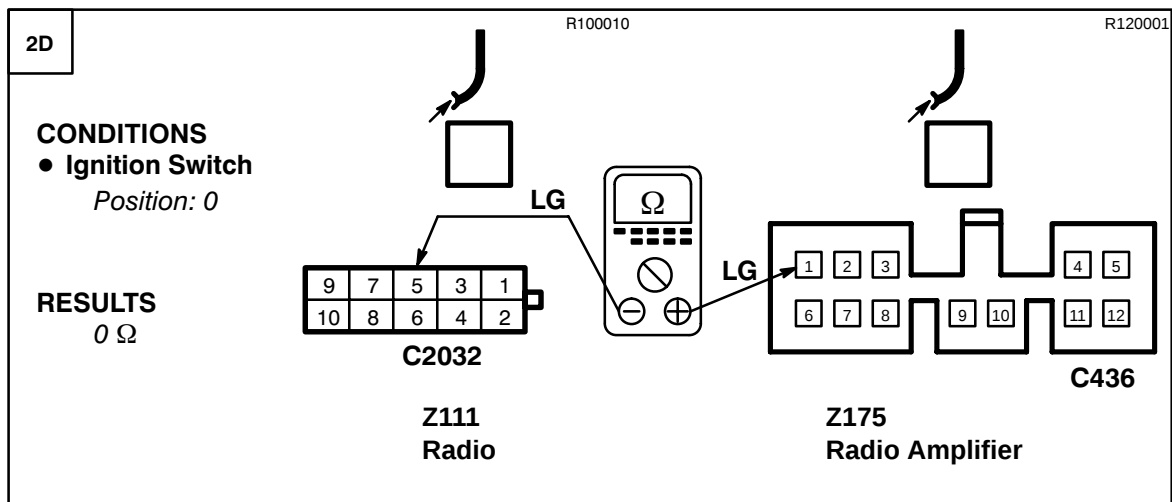
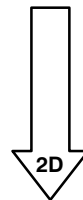


PROBLEM CAUSE
- Radio

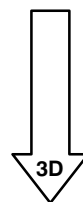
Test D

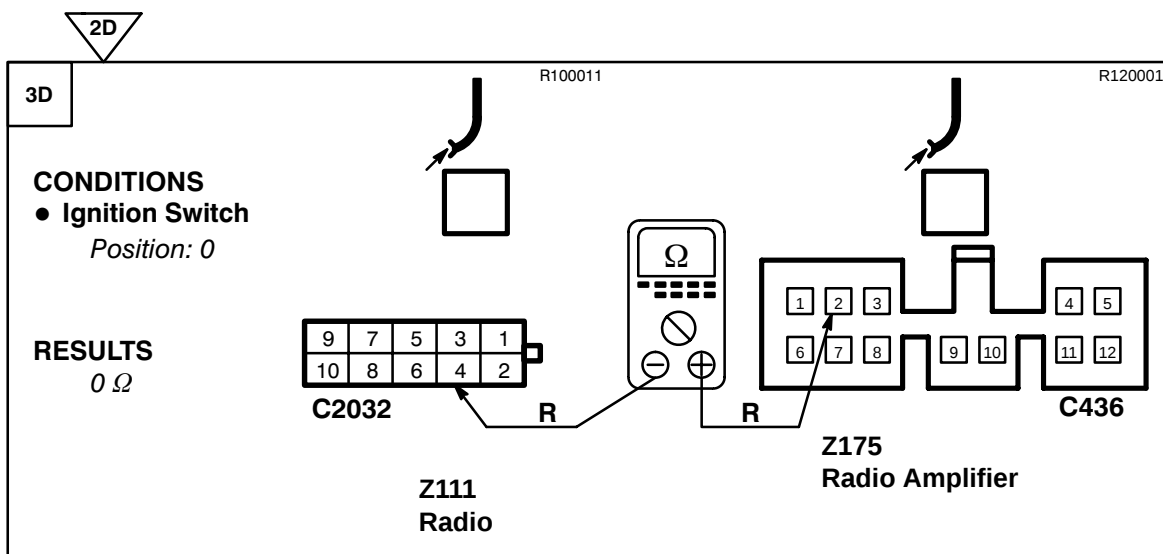


PROBLEM CAUSE
- Wire Wire (short)

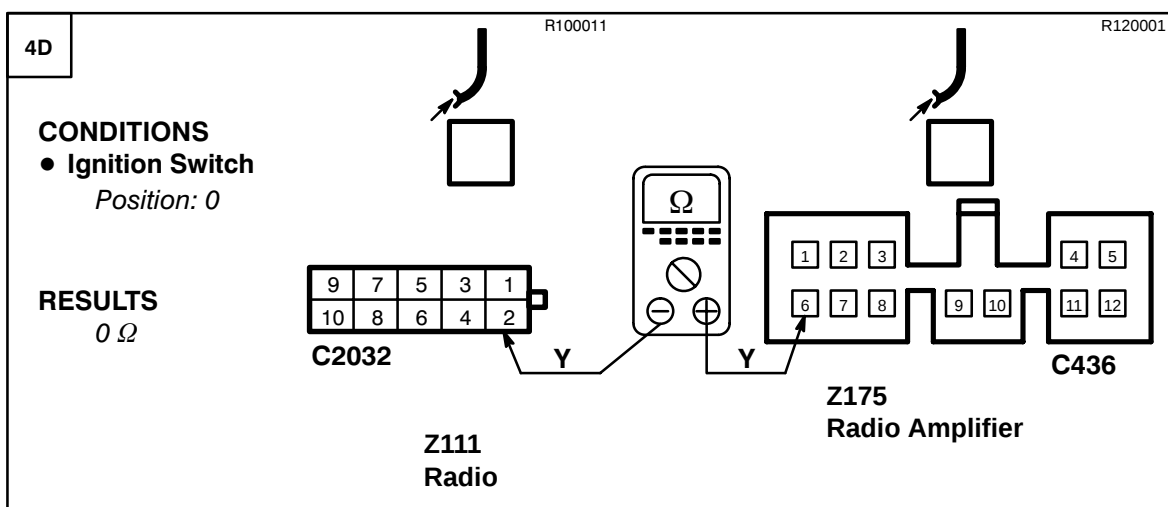
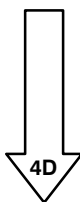


PROBLEM CAUSE
- LG Wire

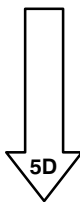


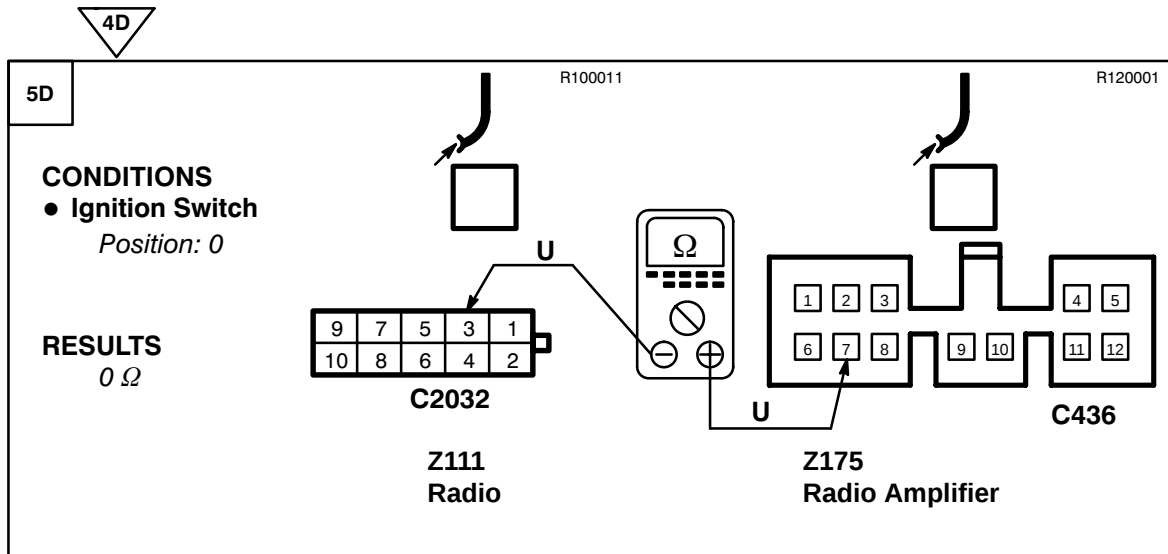


PROBLEM CAUSE
- R Wire

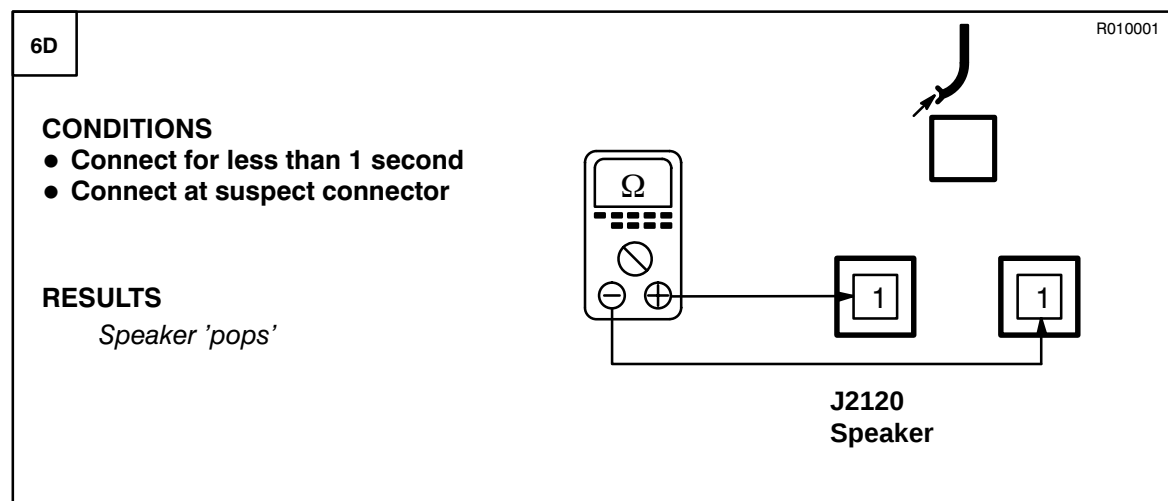
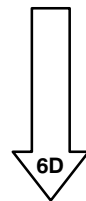


PROBLEM CAUSE
- Y Wire





PROBLEM CAUSE
- U Wire



PROBLEM CAUSE
- Speaker



PROBLEM CAUSE
- Speaker Wiring
- Radio Amplifier

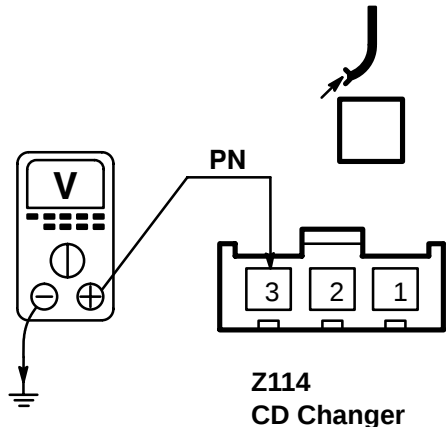
Test E

1E

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT



PN

**Z114
CD Changer**

R030029

**PROBLEM CAUSE**

- PN Wire

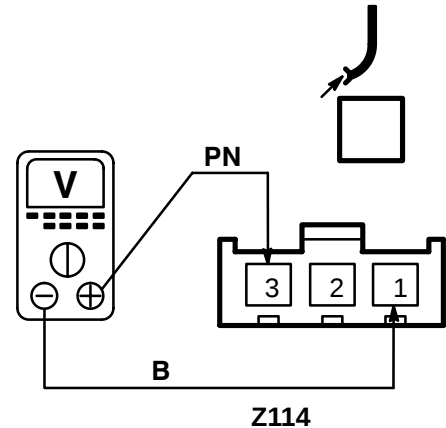
**2E**

2E

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT



PN

**Z114
CD Changer**

B

R030029

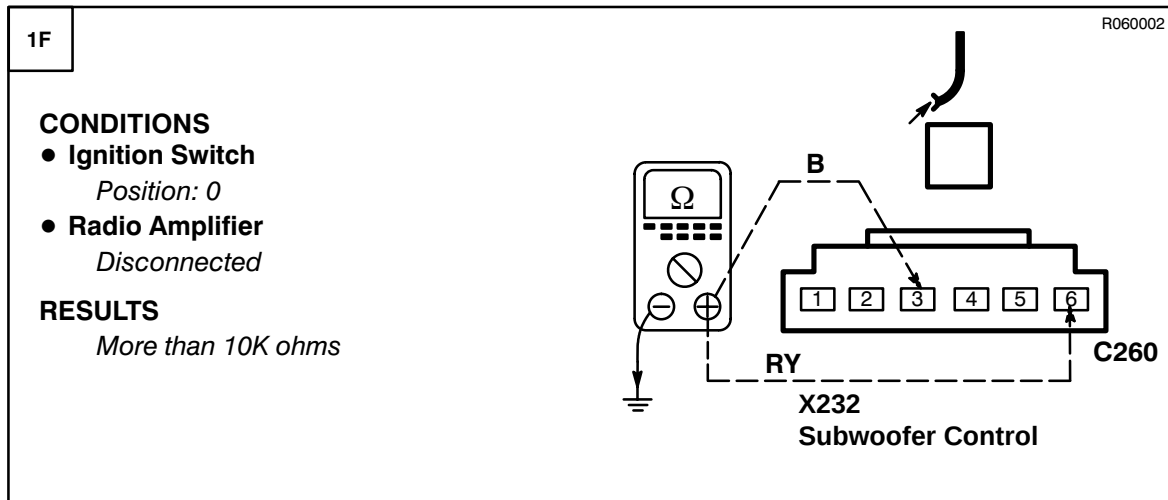
**PROBLEM CAUSE**

- B Wire

**PROBLEM CAUSE**

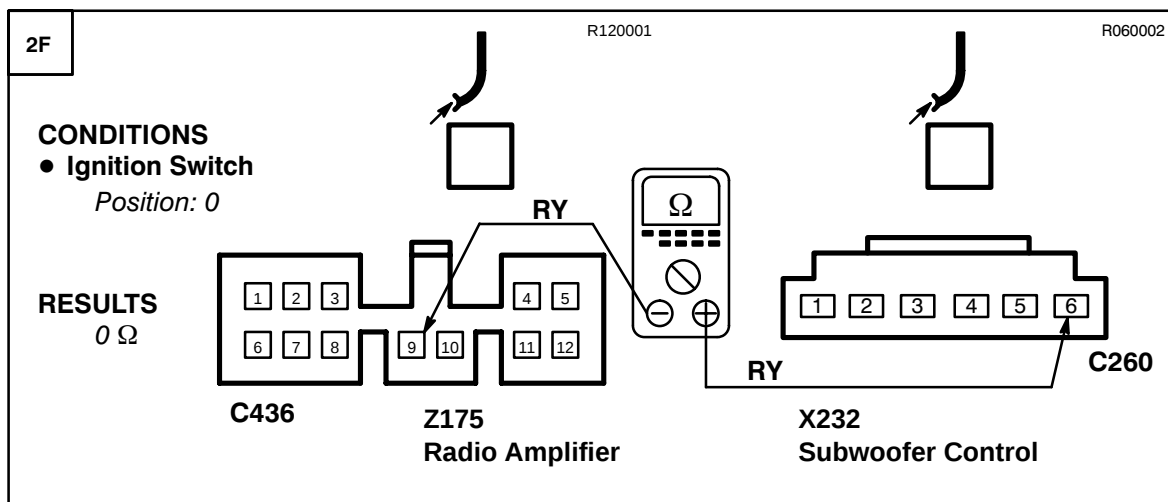
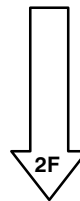
- DIN DIN CABLE
- CD Changer
- Radio

Test F



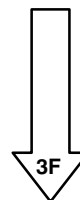
PROBLEM CAUSE

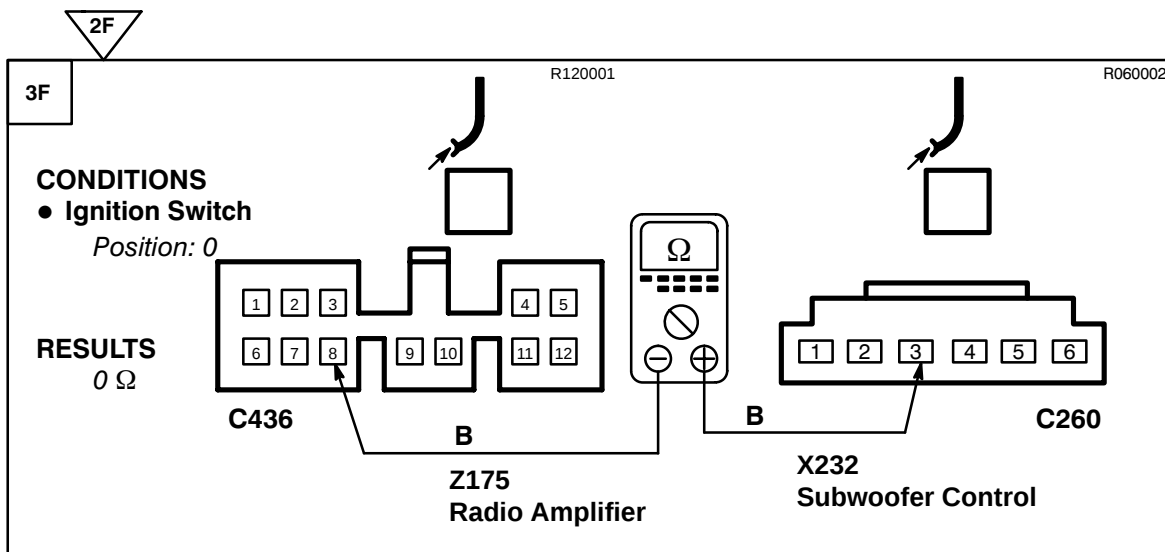
- RY Wire
- B Wire



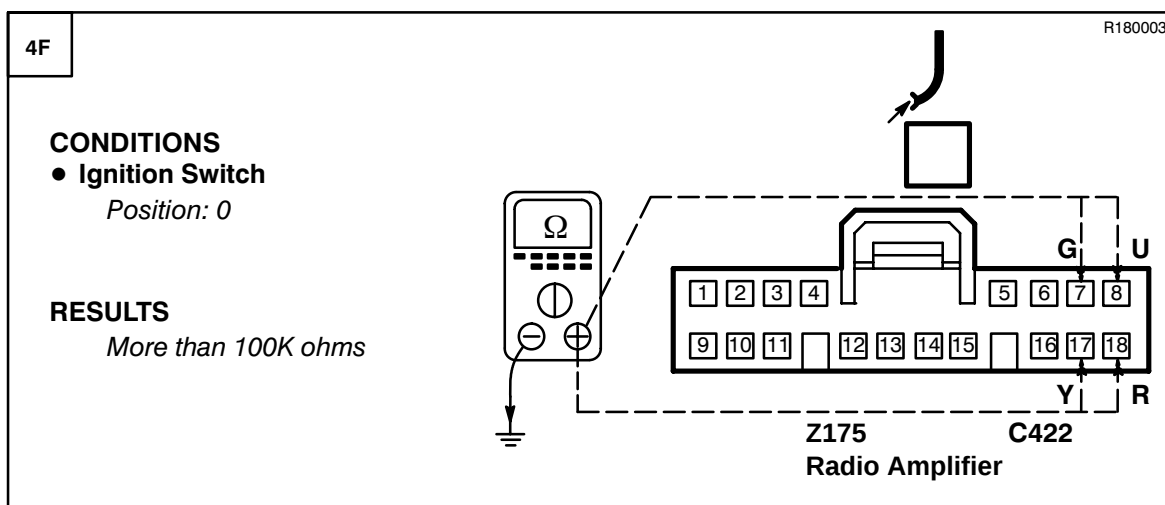
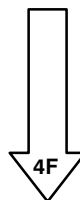
PROBLEM CAUSE

- RY Wire

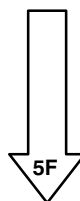


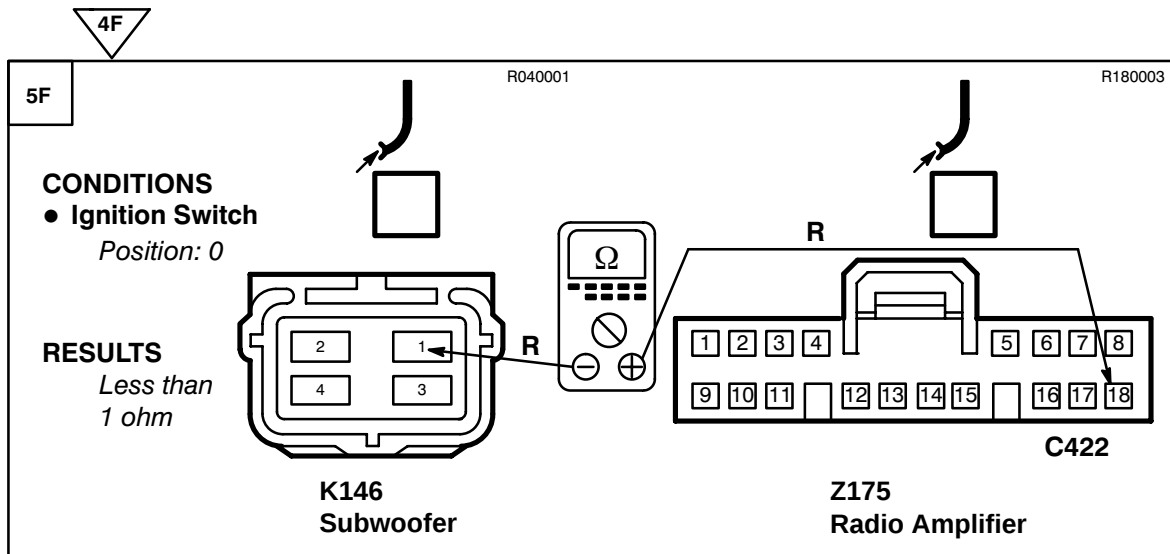


PROBLEM CAUSE
- B Wire

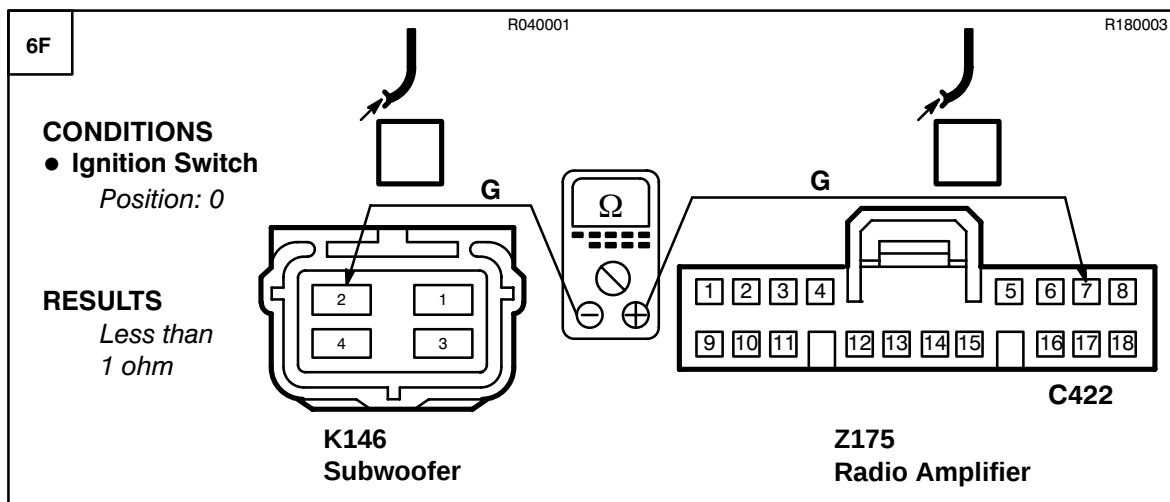
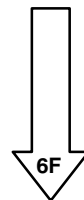


PROBLEM CAUSE
- Wire (short)
- Subwoofer

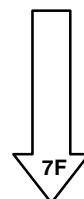


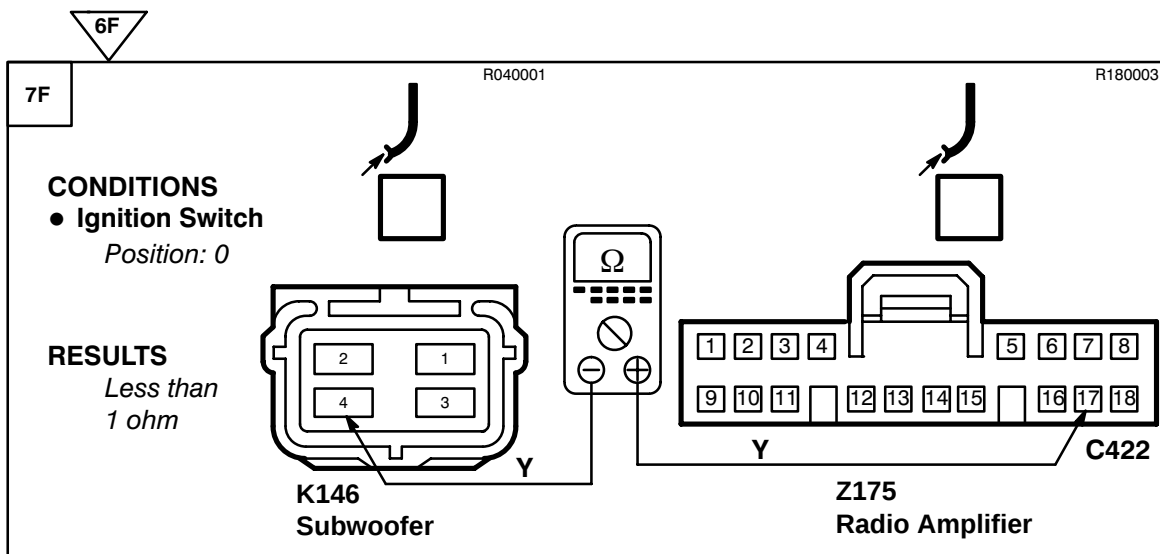


PROBLEM CAUSE
- R Wire

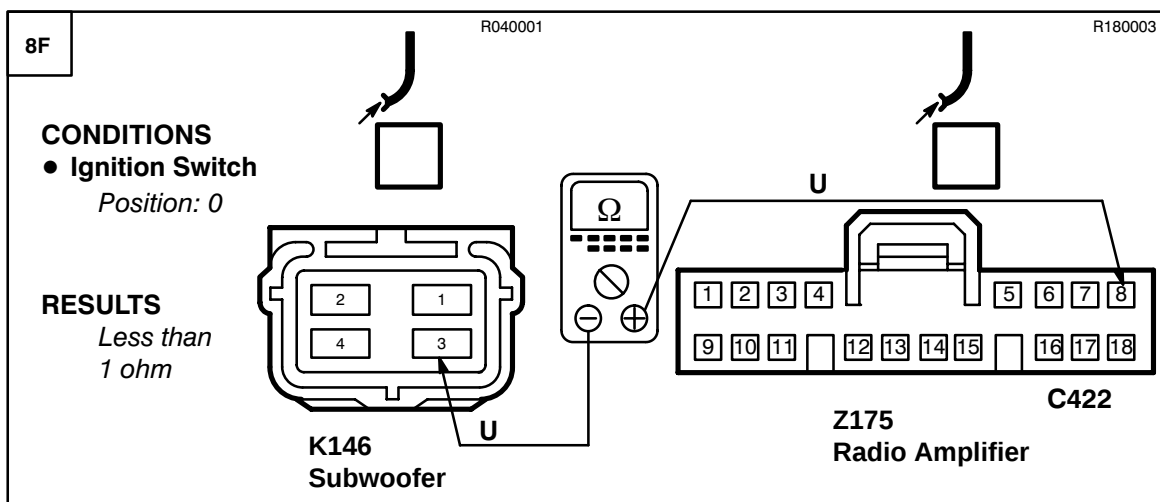
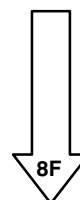


PROBLEM CAUSE
- G Wire

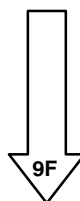


**PROBLEM CAUSE**

- Y Wire

**PROBLEM CAUSE**

- U Wire



R060002

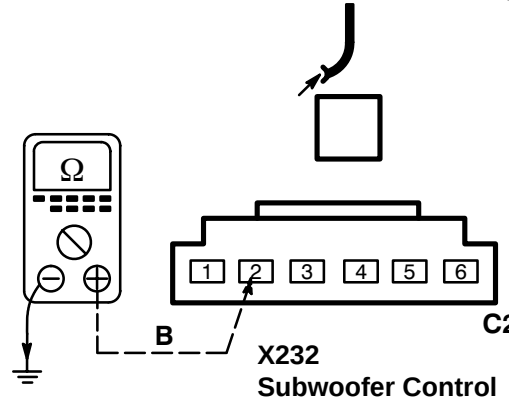
9F

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm



**X232
Subwoofer Control**

C260



PROBLEM CAUSE
- B Wire



10F

CONDITIONS

- Ignition Switch
Position: II
- Install a known good Subwoofer
- Radio
On

RESULTS

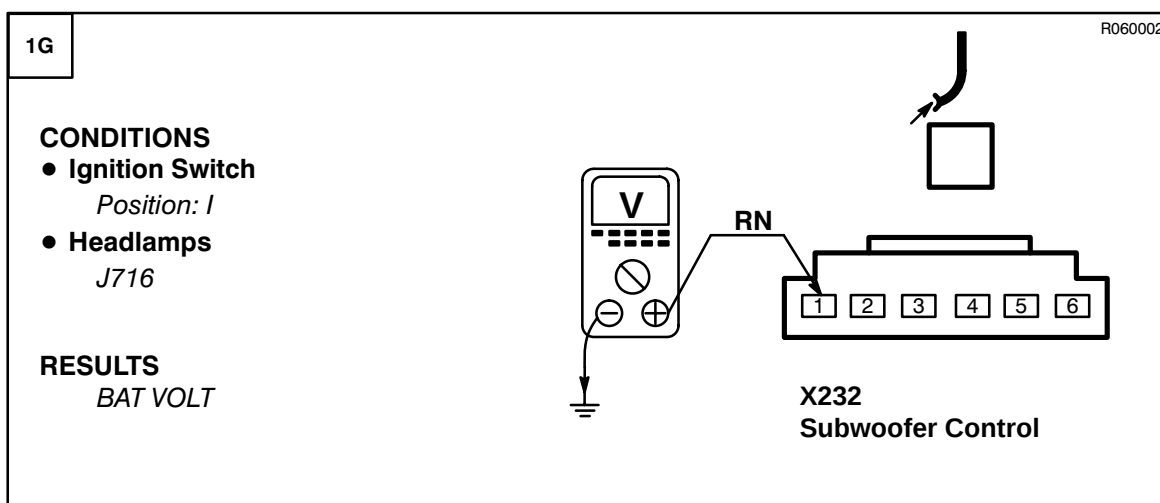
- Subwoofer Speakers
Operate



PROBLEM CAUSE
- Radio Amplifier
- Subwoofer Control



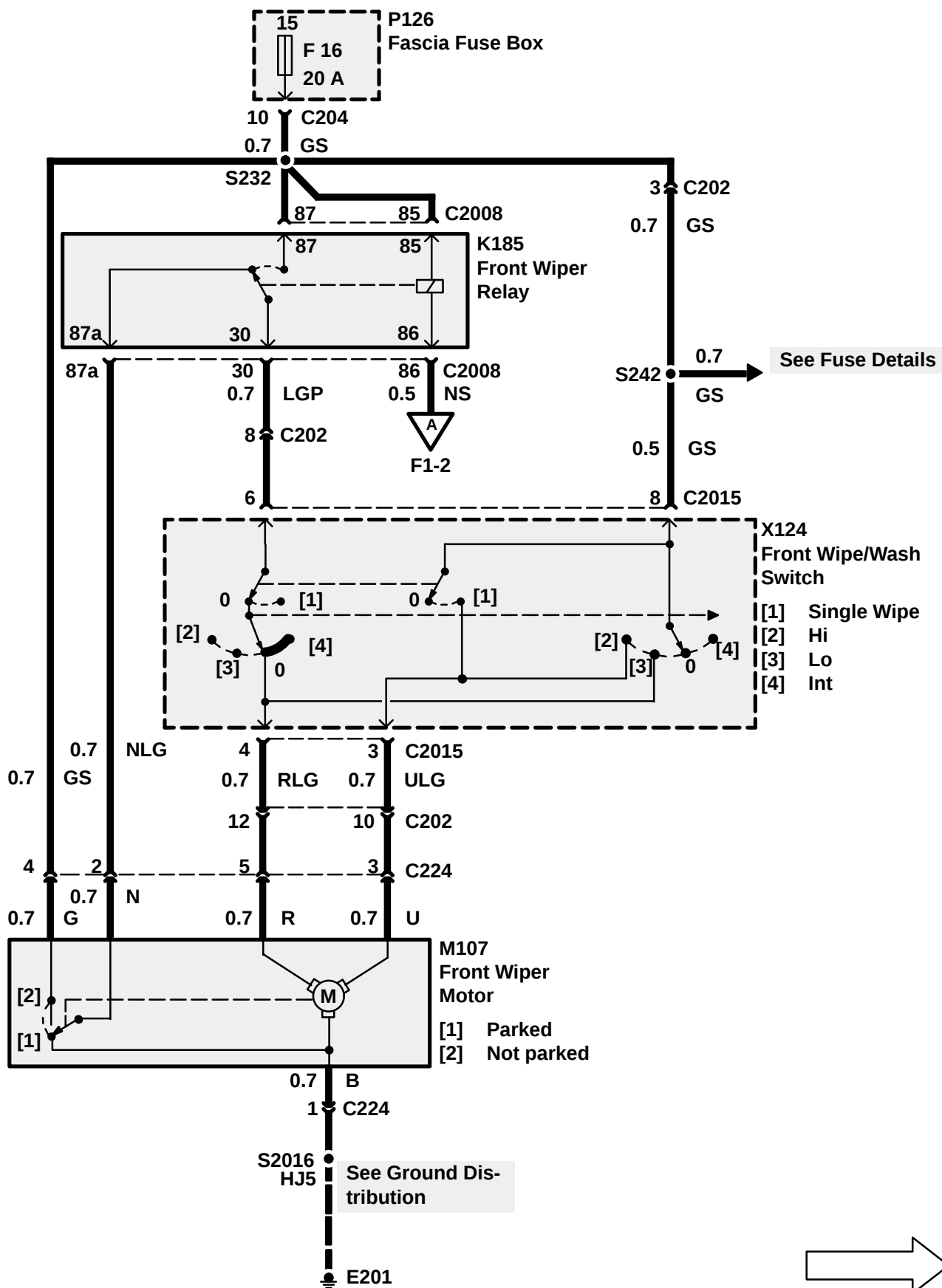
PROBLEM CAUSE
- Subwoofer

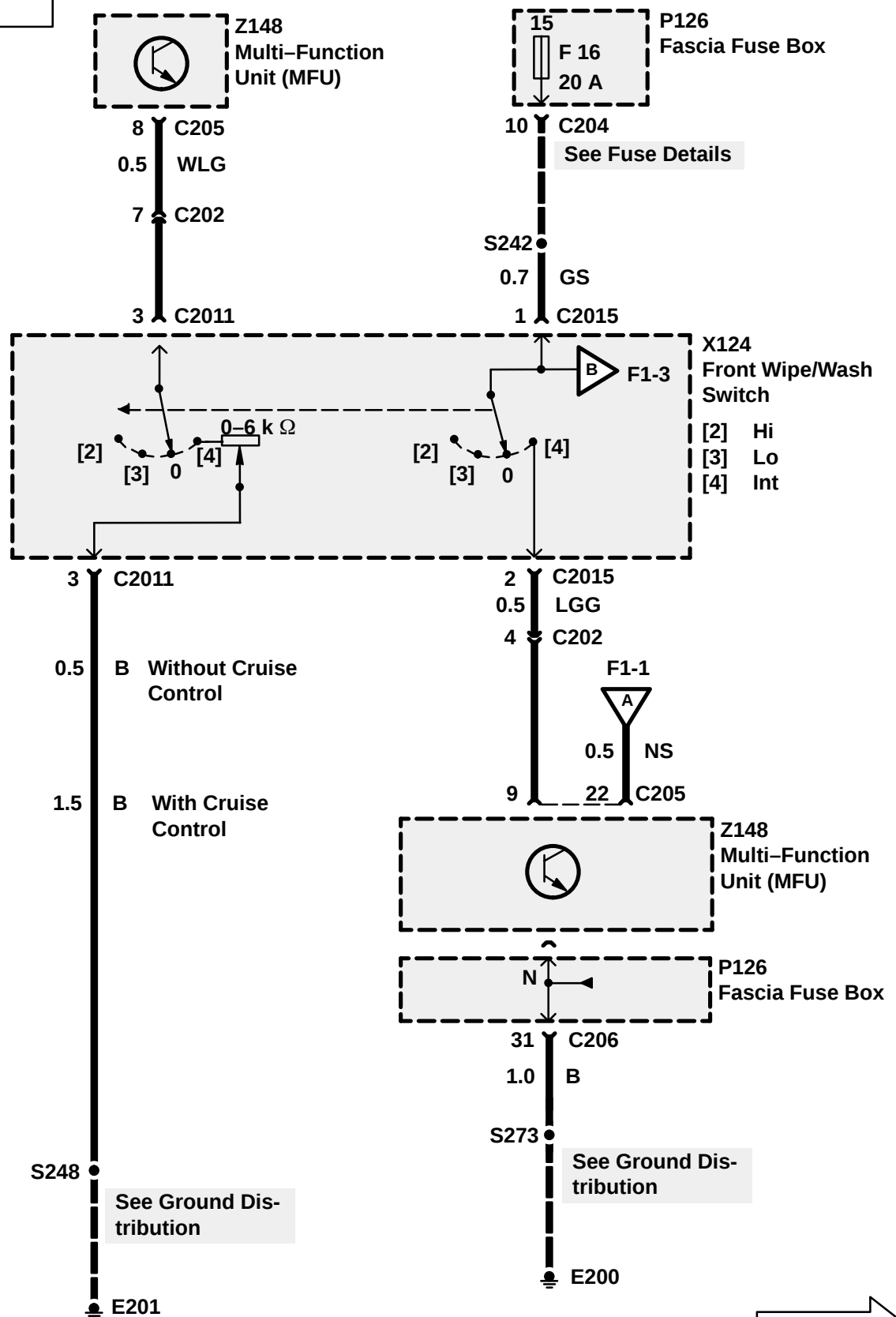
Test G

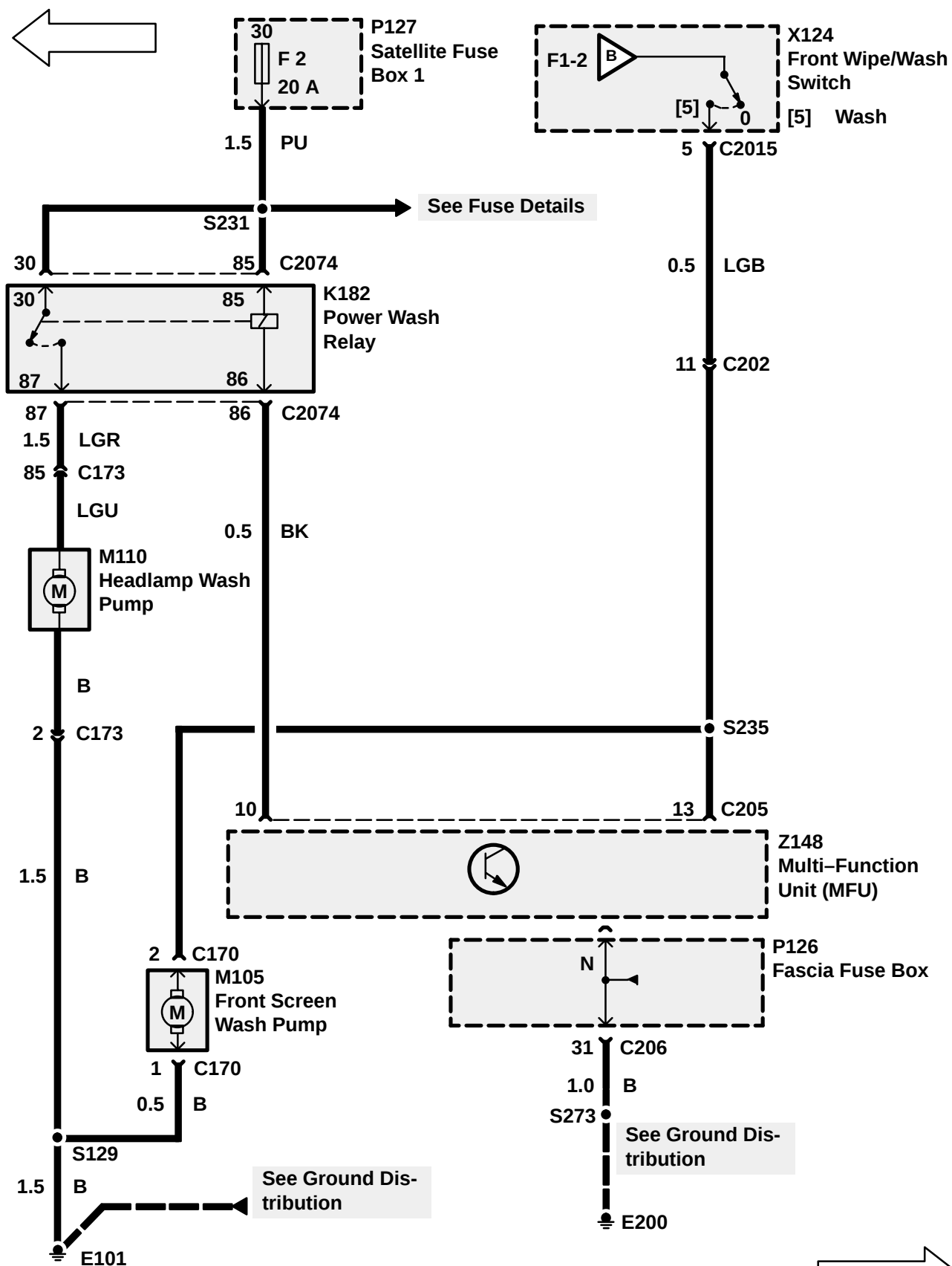
PROBLEM CAUSE
- RN Wire

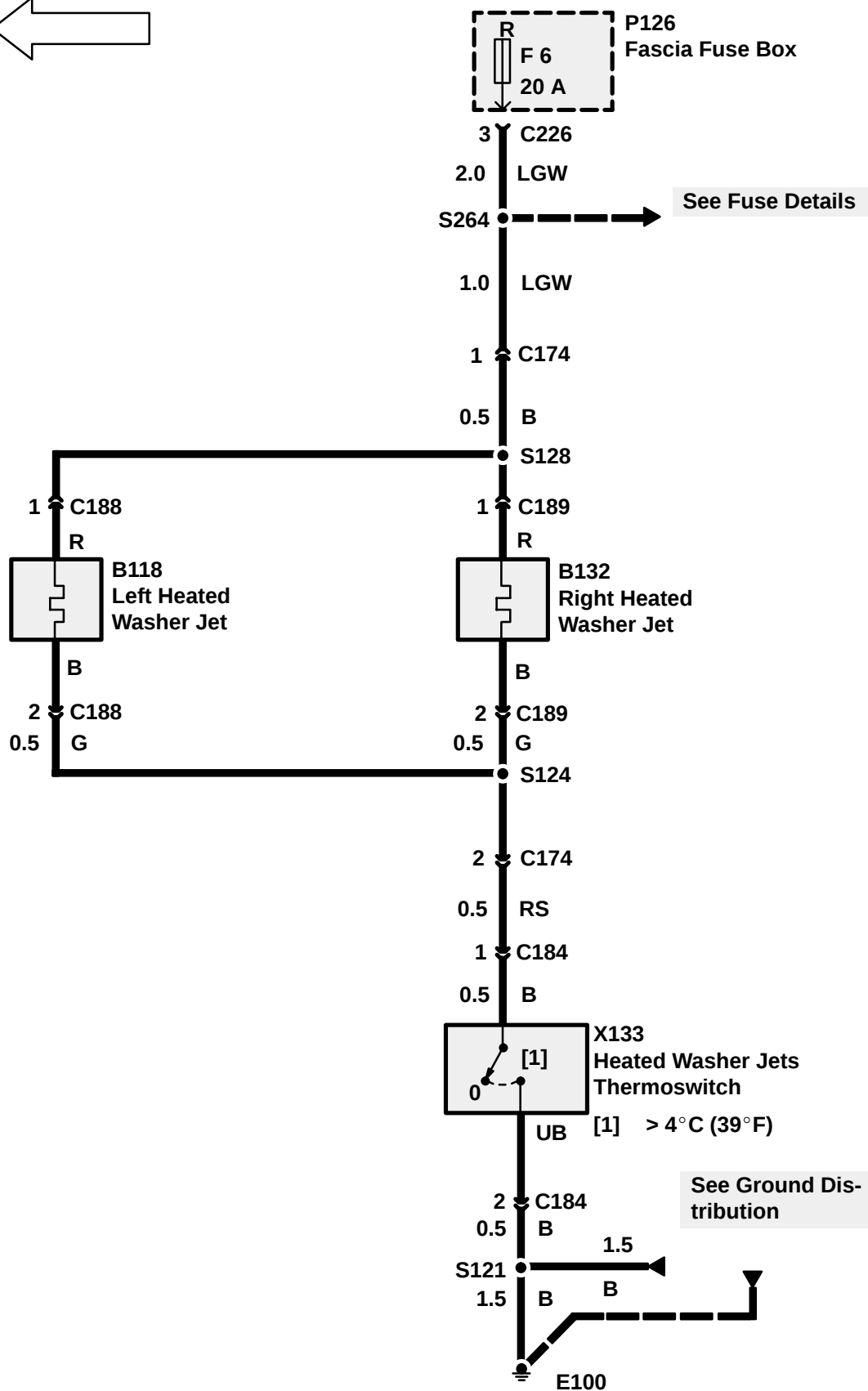
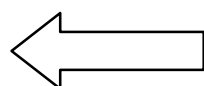


PROBLEM CAUSE
- Subwoofer Control









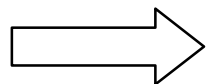
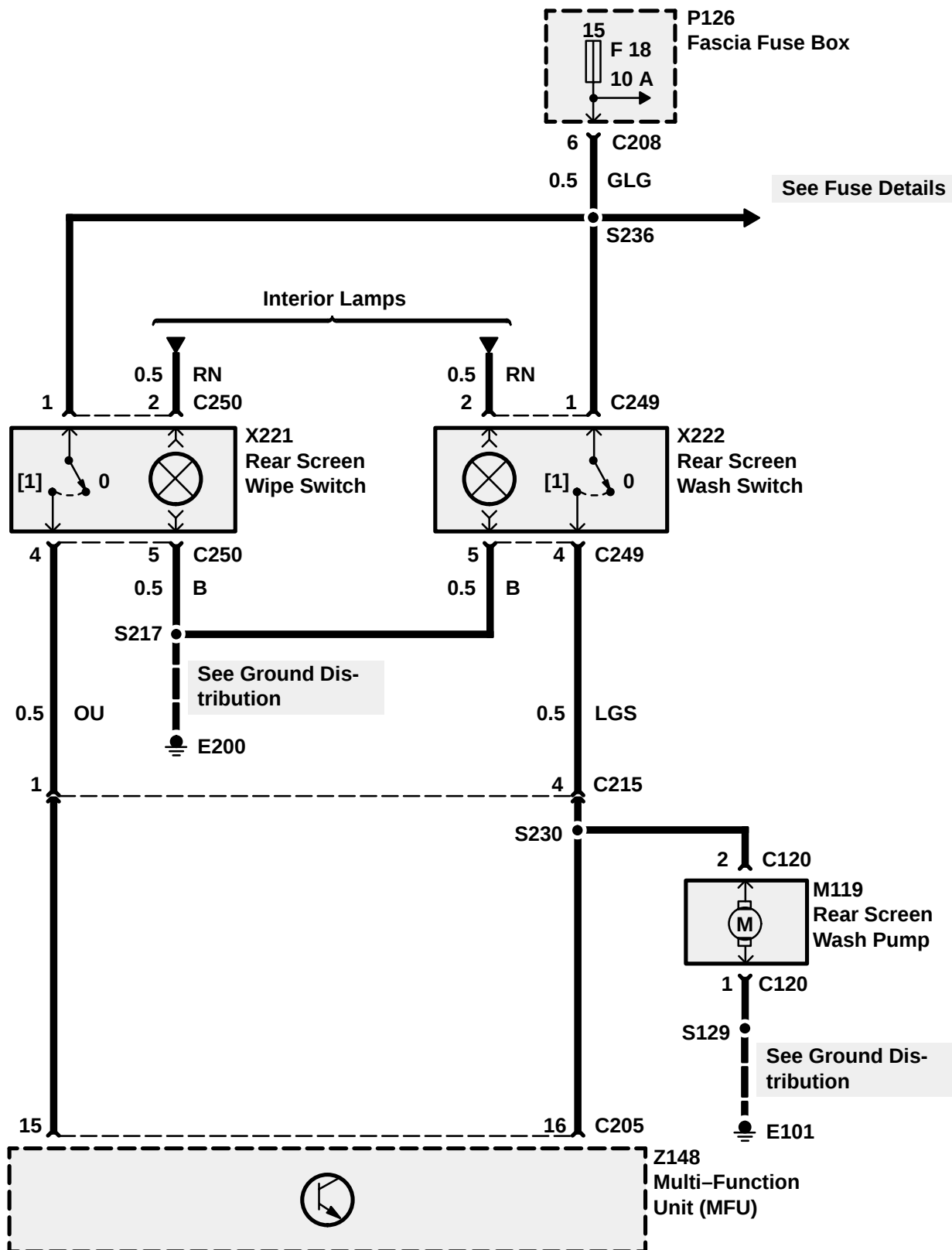
CIRCUIT OPERATION**Washer**

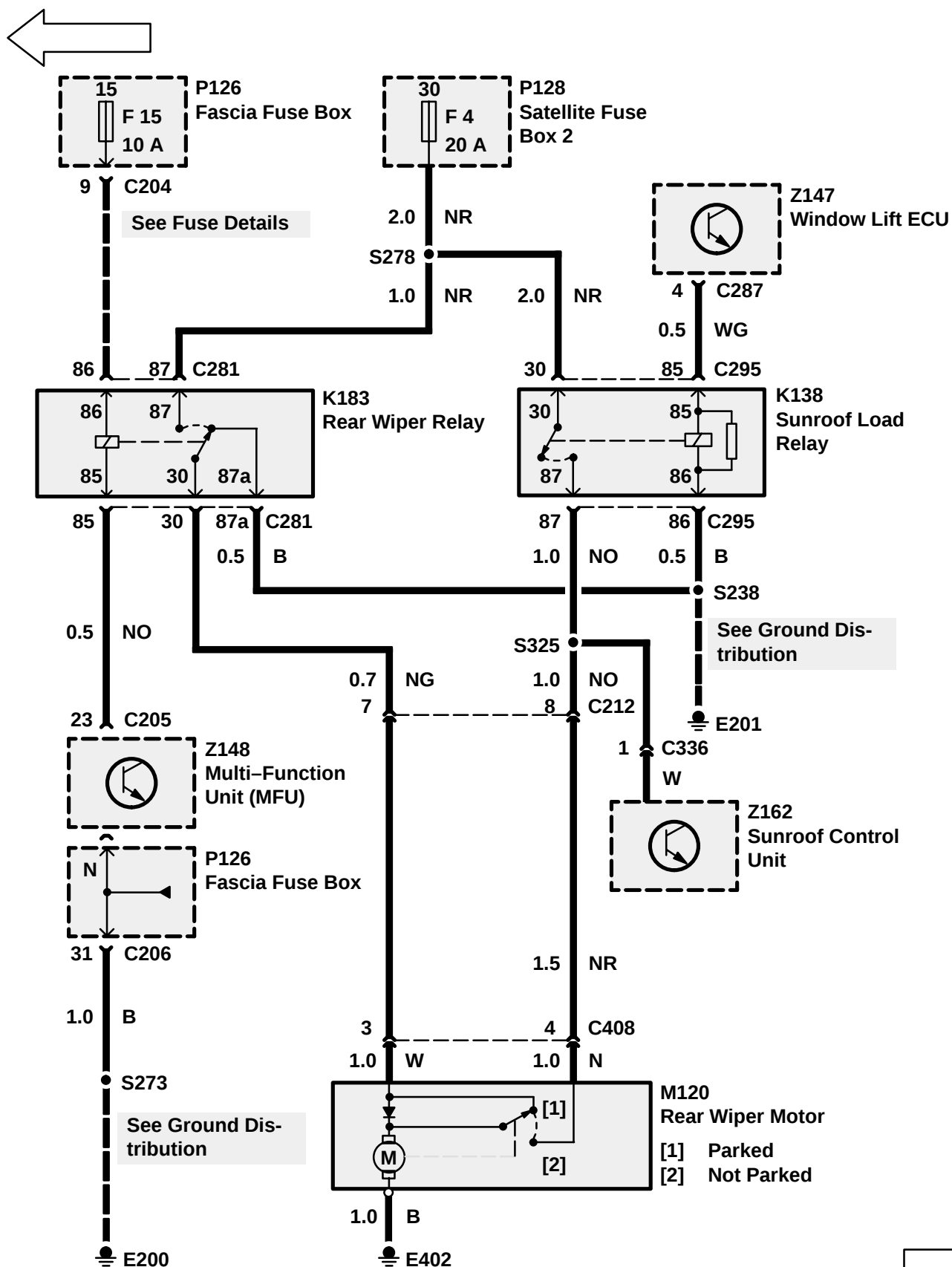
The Rear Screen Wash Pump (M119) motor is grounded at all times. The motor runs when battery voltage is applied to the motor through the Rear Wash Switch (X222) when the switch is switched to the WASH position.

Wiper

When the Rear Wipe Switch (X221) is pulled to the WIPE position, the Multifunction Unit (MFU) (Z148) applies ground to the Rear Wipe Relay (K183). Battery voltage is then applied to the Rear Wiper Motor (M120) from Fuse F4.

If the wiper is turned off, battery voltage is no longer supplied from Fuse F4. To allow the wiper to return to its parked position, the Windowlift ECU (Z147) supplies terminal 87a of the Rear Wiper Relay (K183) with battery voltage for 30 seconds after the ignition has been turned off.



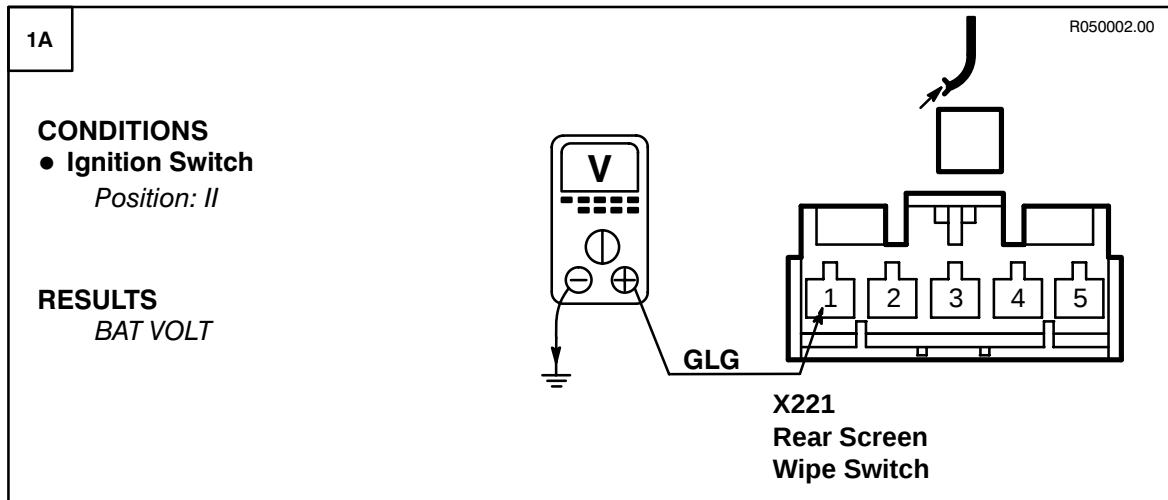


TROUBLESHOOTING HINTS

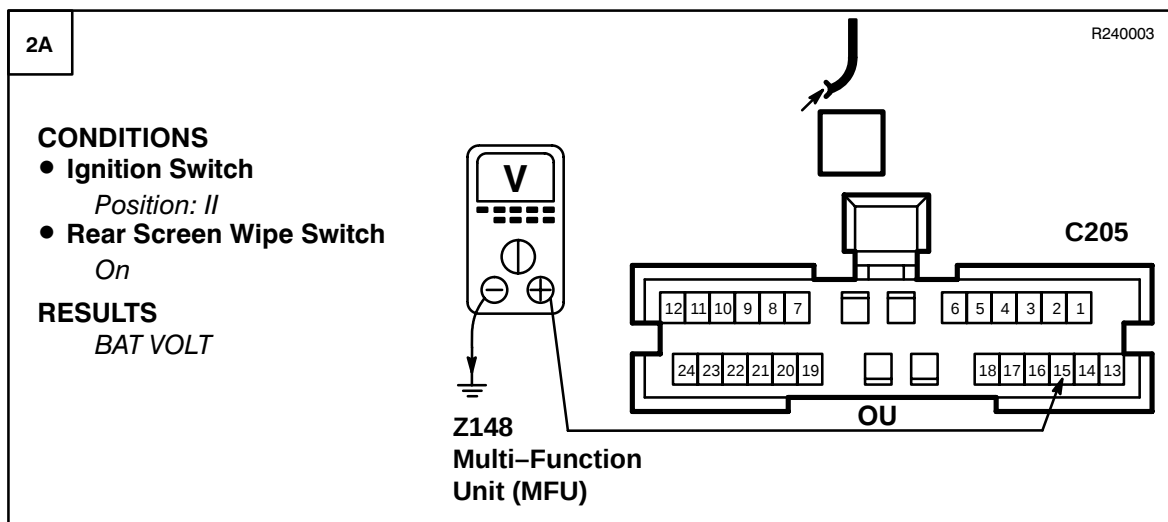
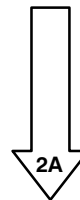
8. If the washer does not operate, check the washer fluid hoses for kinks or blockage.
9. If the wiper does not operate only when washer is requested, check LGS wire and Multifunction Unit (MFU) (Z148).
10. If the wiper operates with tailgate open, check Tailgate Switch (X170) and PB wires.
11. If the sunroof operates, see section L4, Sunroof.
12. If the washer runs continuously, replace the Rear Wash Switch (X222).
13. If wiper and washer do not operate, check GLG wire and fuse F18.
14. If the wiper will not return to it's parked position when the ignition switch is turned off, check sunroof operation within 45 seconds after turning the ignition off. If the sunroof does not operate check Sunroof Load Relay (K138) and Window Lift ECU (Z147), otherwise check Rear Wiper Motor (M120).

SYSTEM DIAGNOSIS

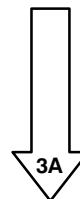
1. If the wiper does not operate, do Test A.
2. If the washer does not operate, do Test B.
3. If the wiper runs with Rear Wipe Switch (X221) off, do Test C.

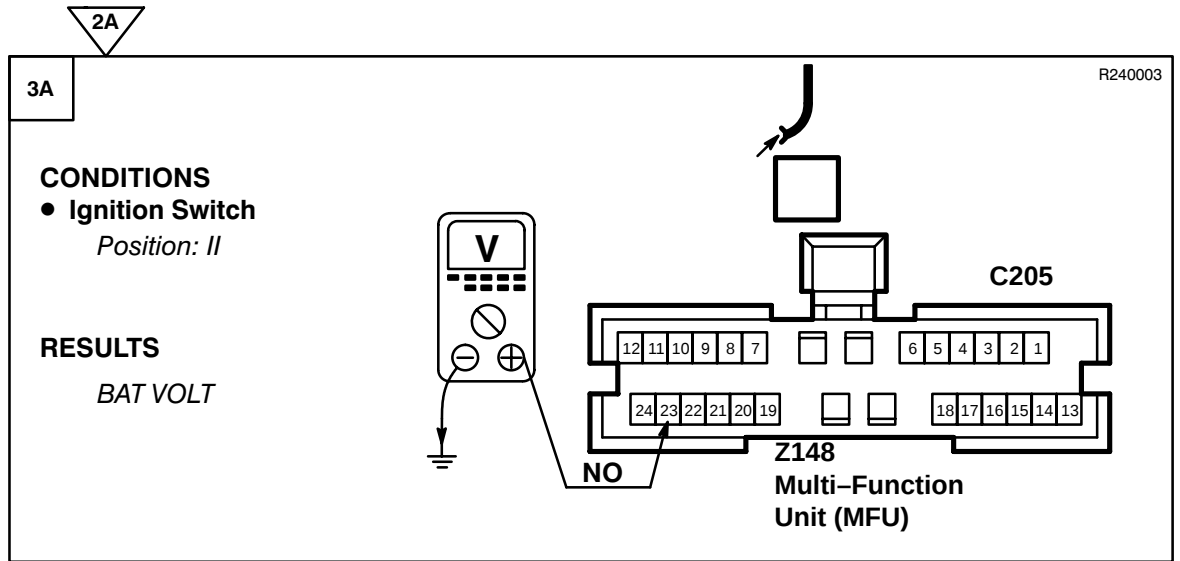
Test A

PROBLEM CAUSE
- GLG Wire

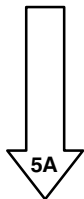
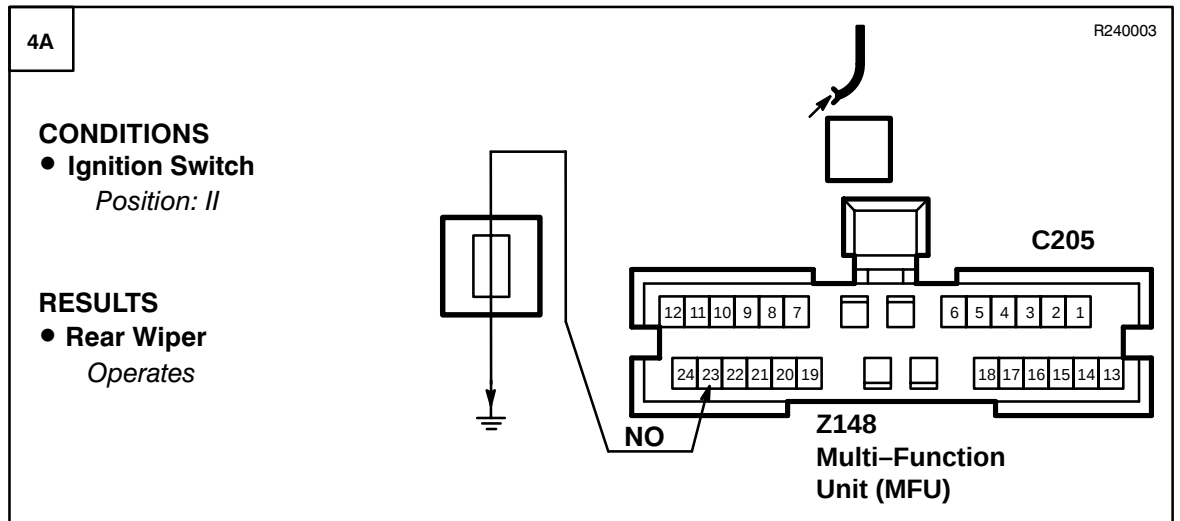
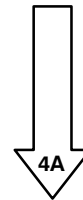


PROBLEM CAUSE
- OU Wire
- Rear Screen
Wipe Switch

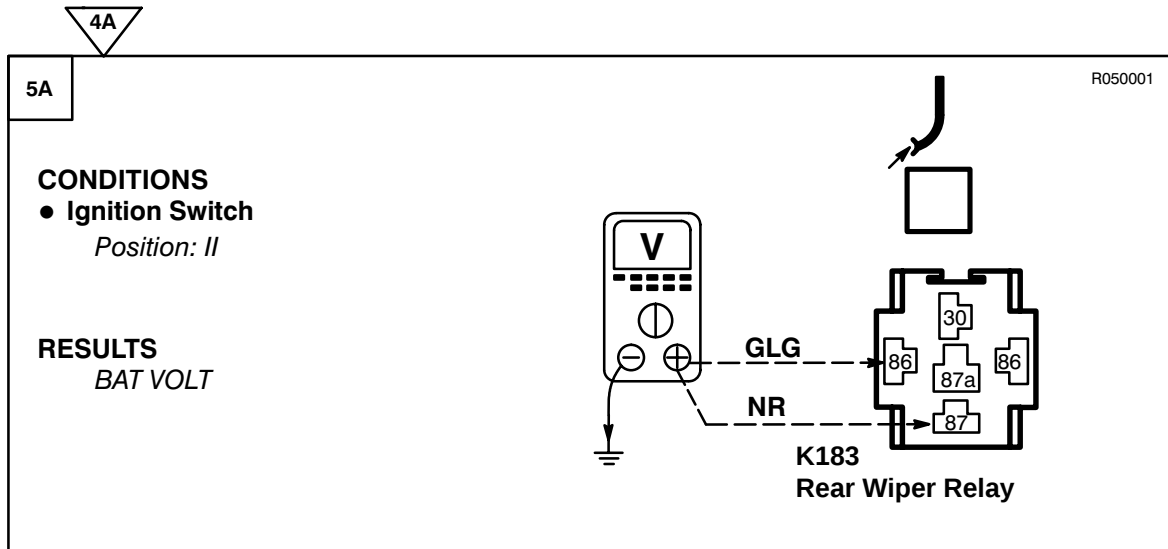


**PROBLEM CAUSE**

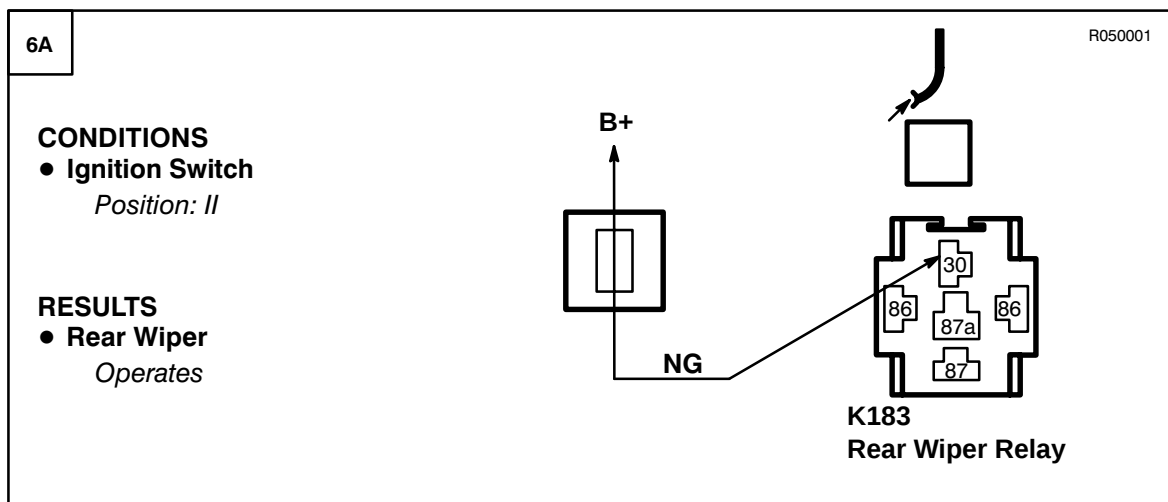
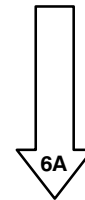
- GLG Wire
- NO Wire
- Rear Wiper Relay

**PROBLEM CAUSE**

- B Wire
- Multi-Function Unit (MFU)
- Fascia Fuse Box

**PROBLEM CAUSE**

- NR Wire
- GLG Wire
- F15 Fuse
- F4 Fuse

**PROBLEM CAUSE**

- NG Wire
- B Wire
- Rear Wiper Motor

**PROBLEM CAUSE**

- Rear Wiper Relay

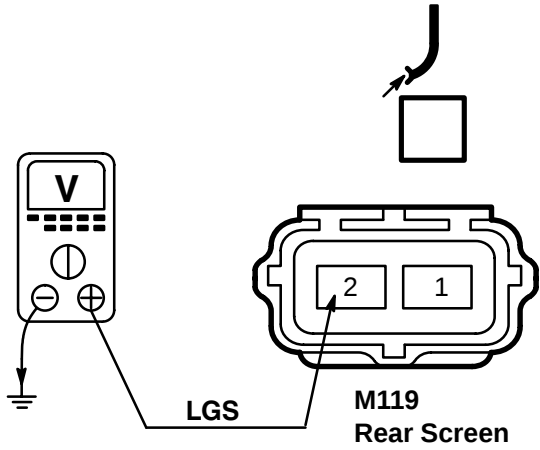
Test B

1B R020037

CONDITIONS

- Ignition Switch
Position: II
- Rear Screen Wash Switch
WASH

RESULTS
BAT VOLT



M119
Rear Screen Wash Pump

**PROBLEM CAUSE**

- GLG Wire
- LGS Wire
- Rear Screen Wash Switch



2B

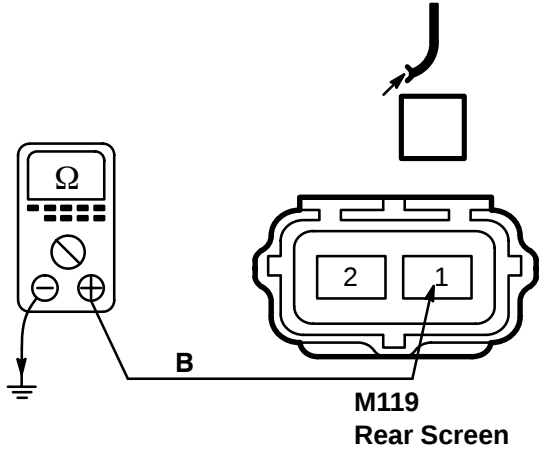
2B R020037

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- Rear Wiper
Less than 2 ohms



M119
Rear Screen Wash Pump

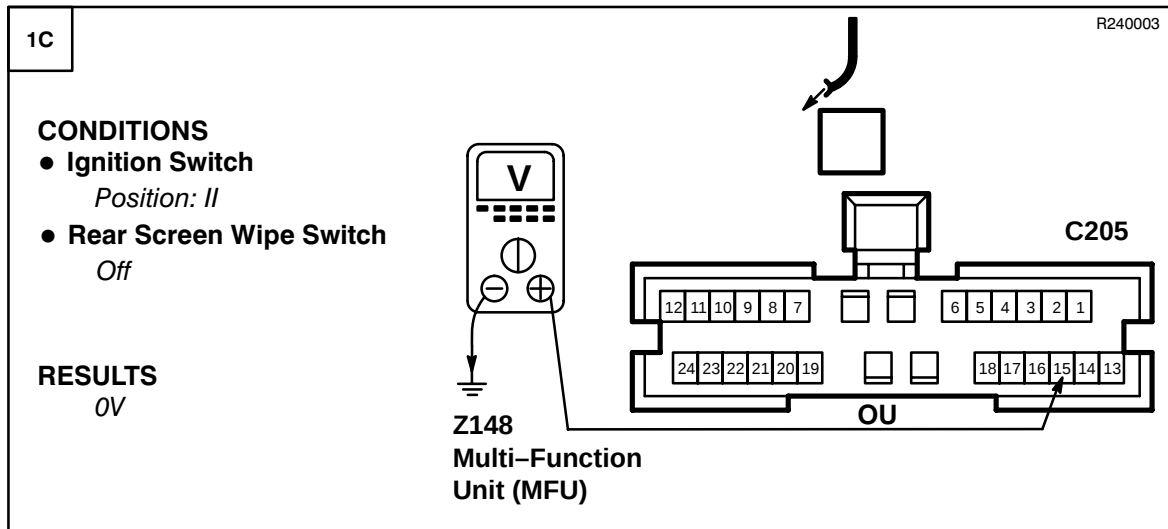
**PROBLEM CAUSE**

- B Wire

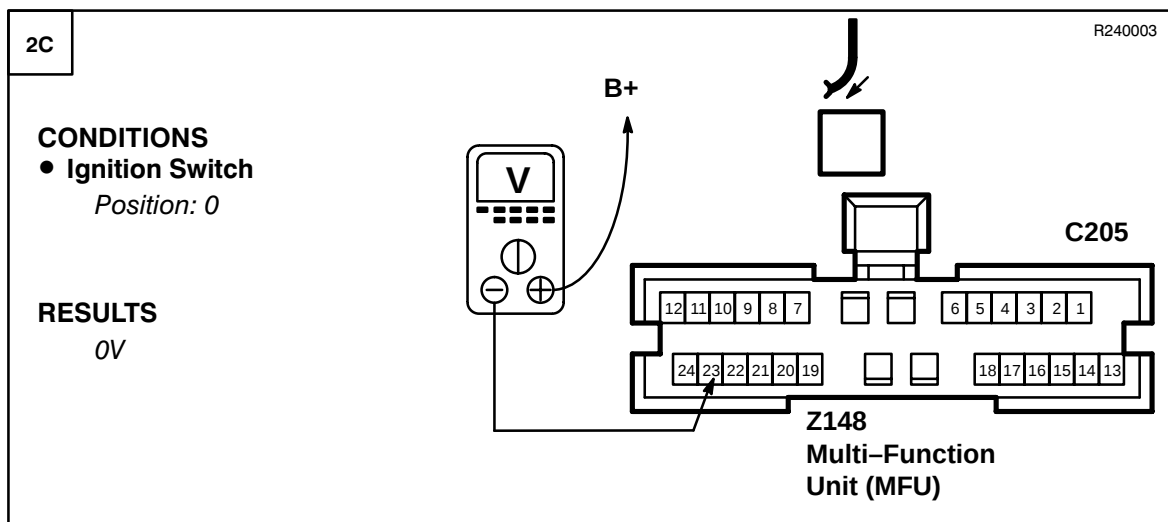
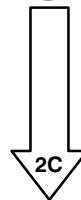
**PROBLEM CAUSE**

- Rear Screen Wash Pump

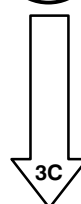
Test C

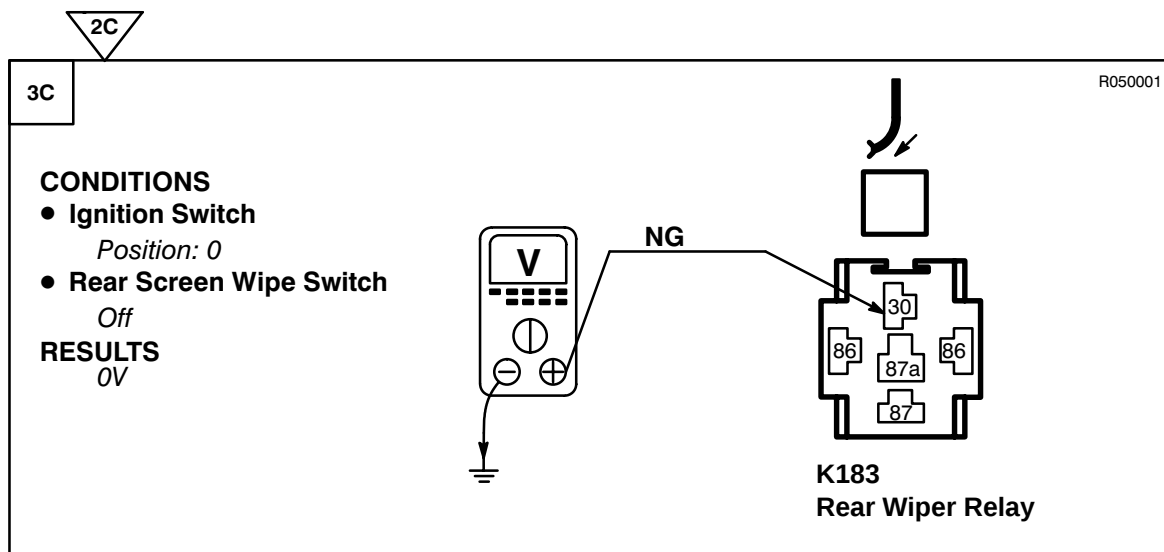


PROBLEM CAUSE
- Rear Screen
Wipe Switch



PROBLEM CAUSE
- Multi-Function
Unit (MFU)

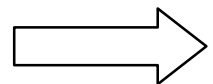
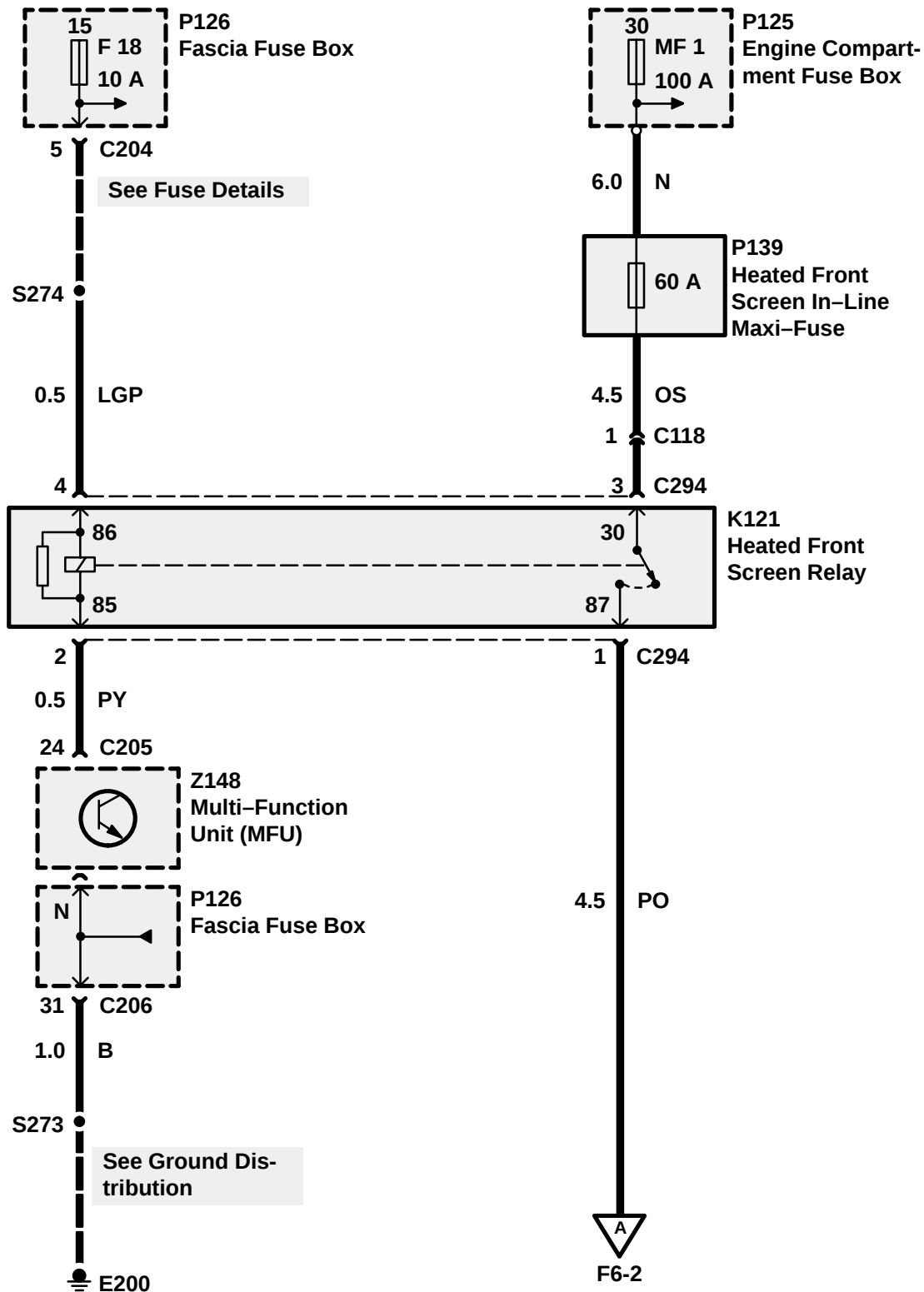


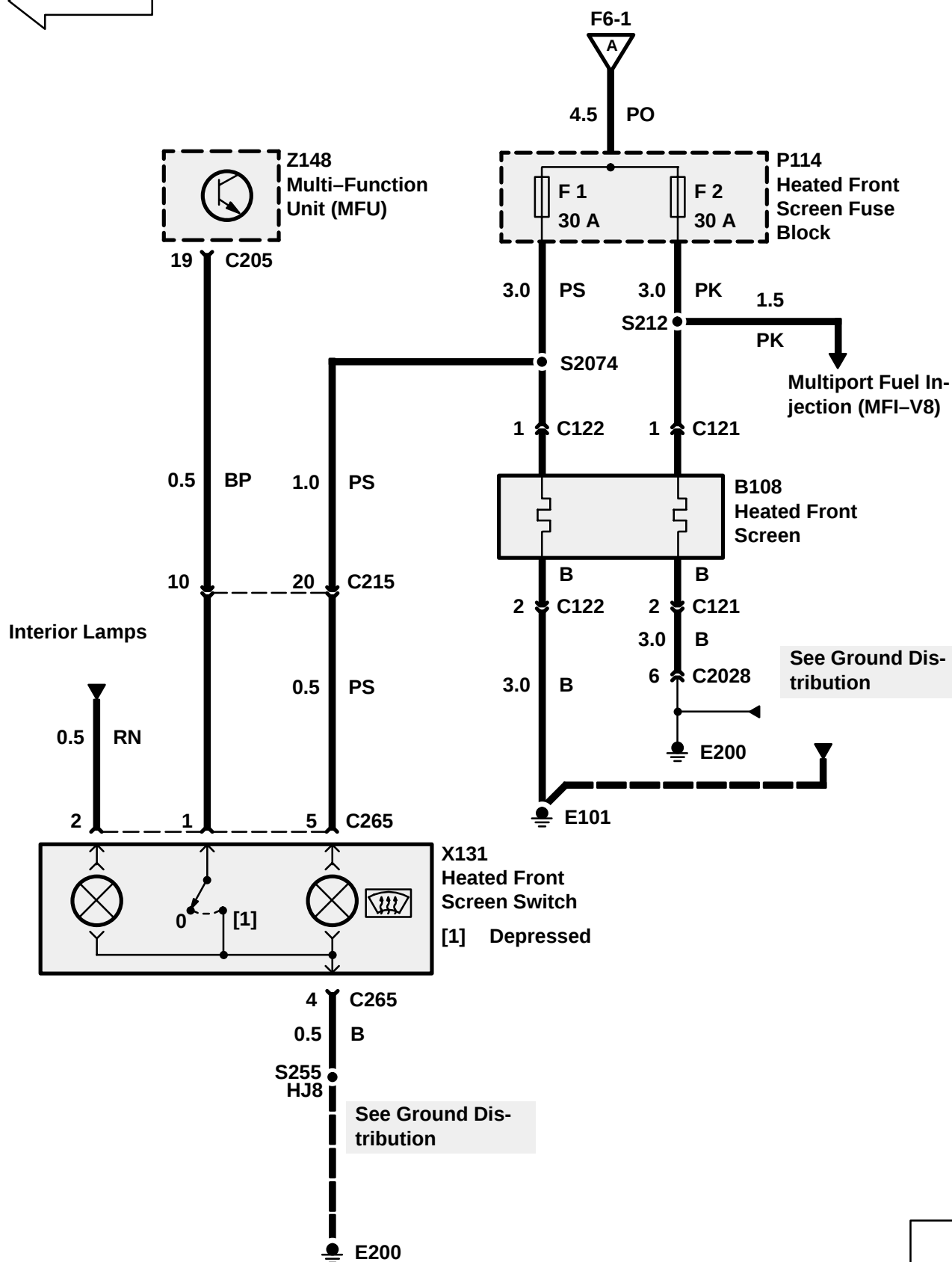
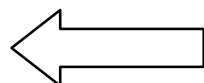


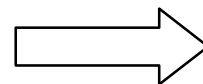
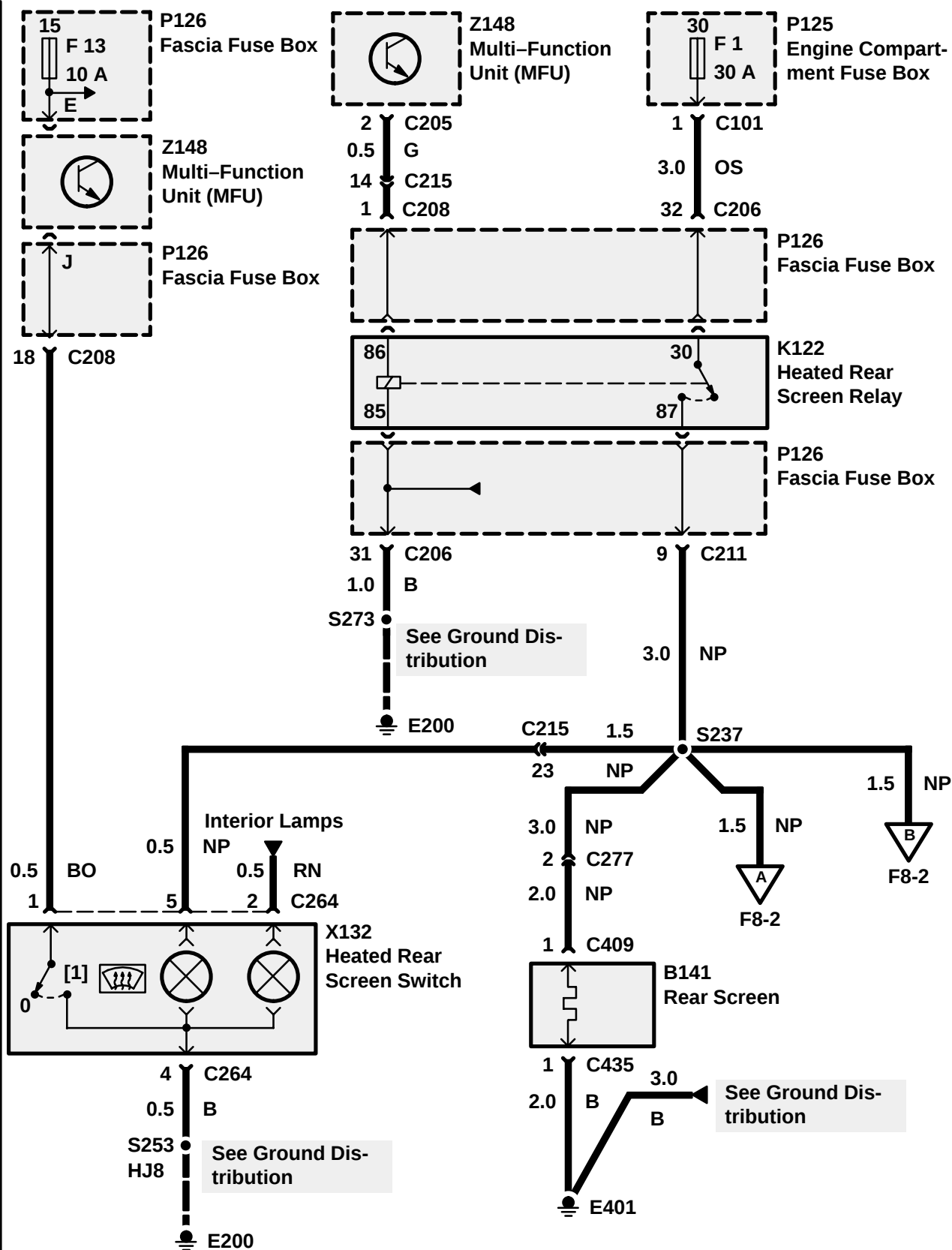
PROBLEM CAUSE
- Rear Wiper Relay

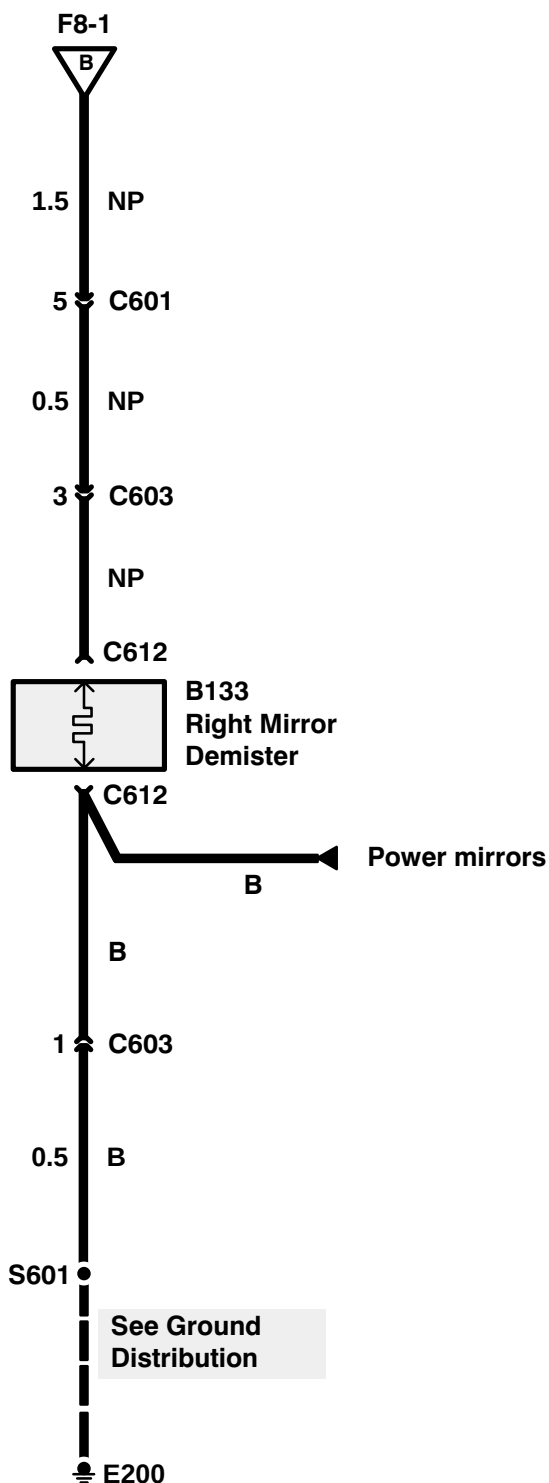
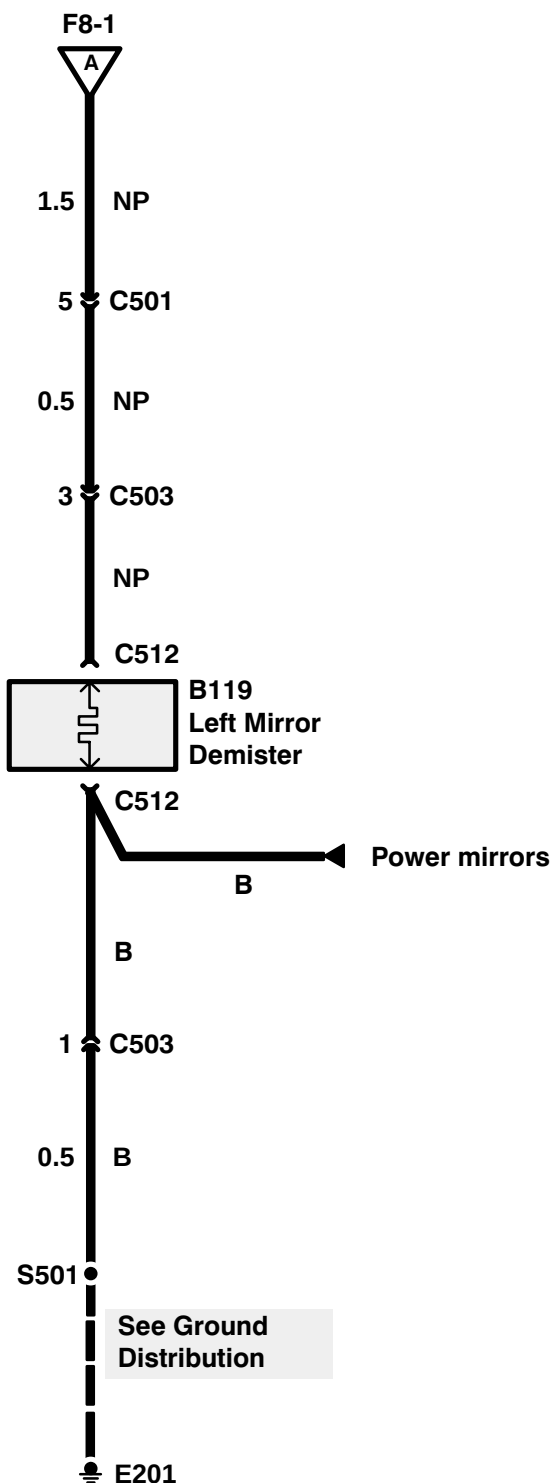
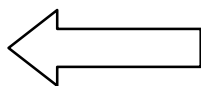


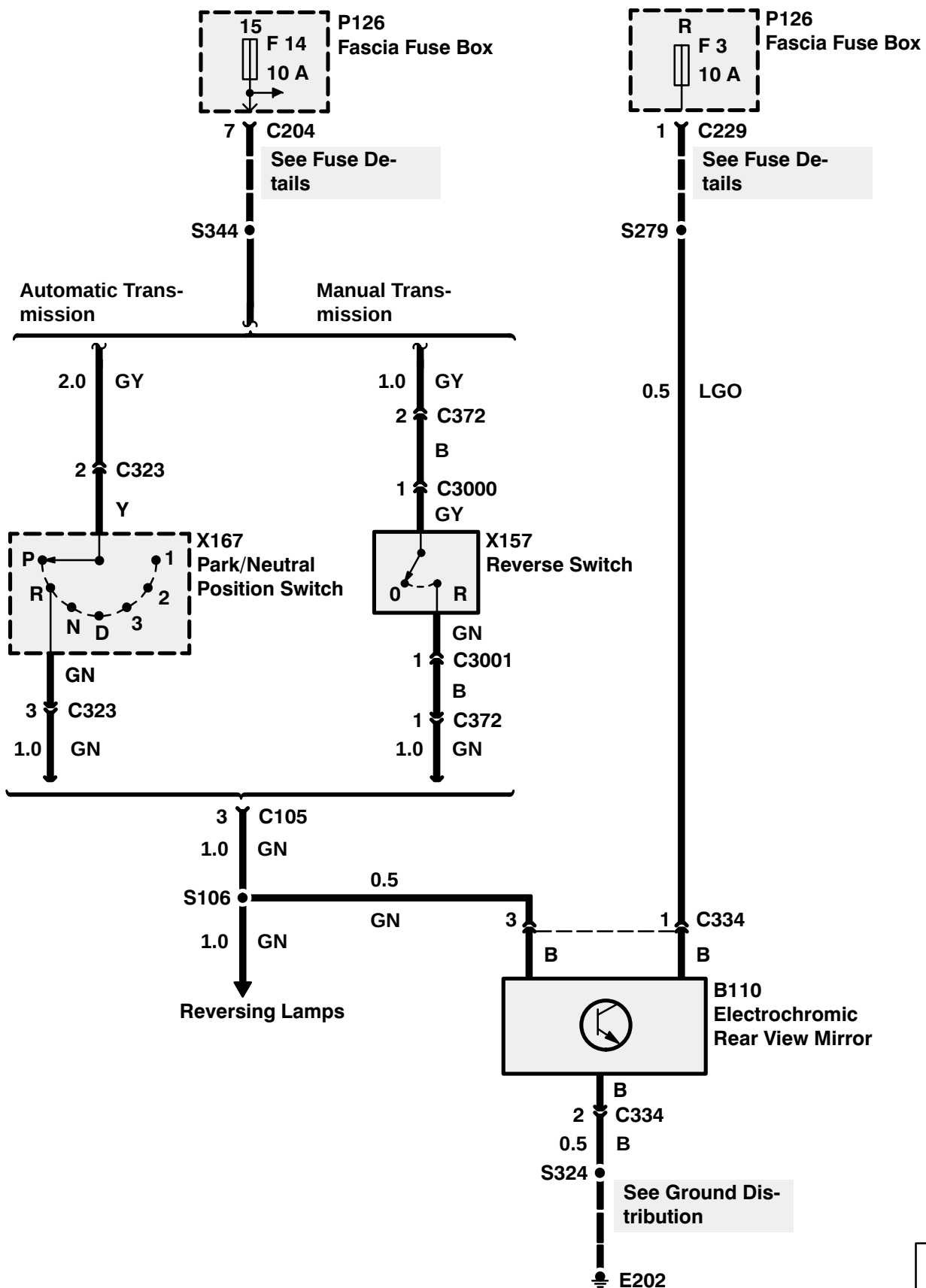
PROBLEM CAUSE
- Window Lift ECU

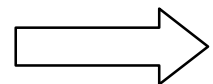
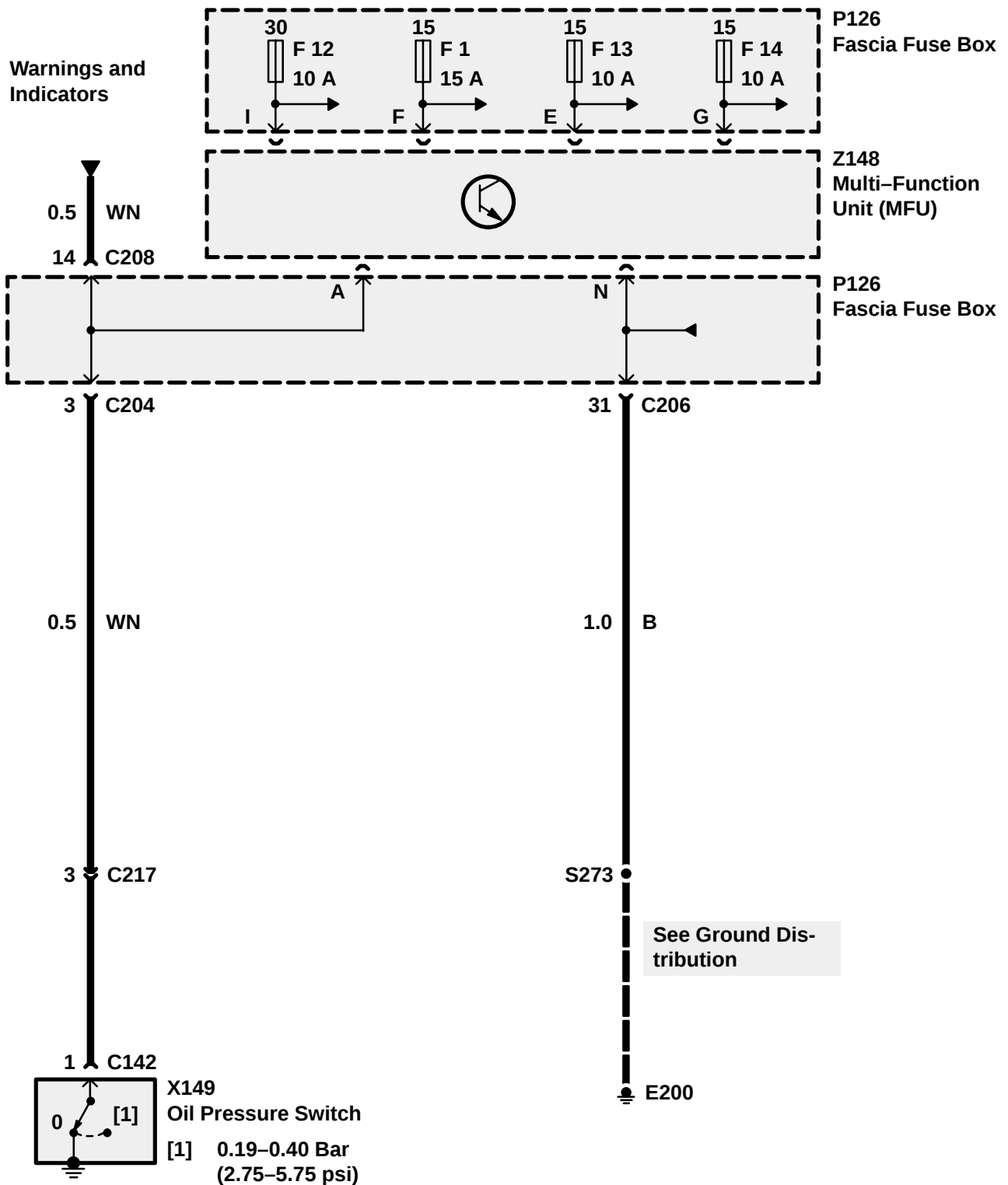


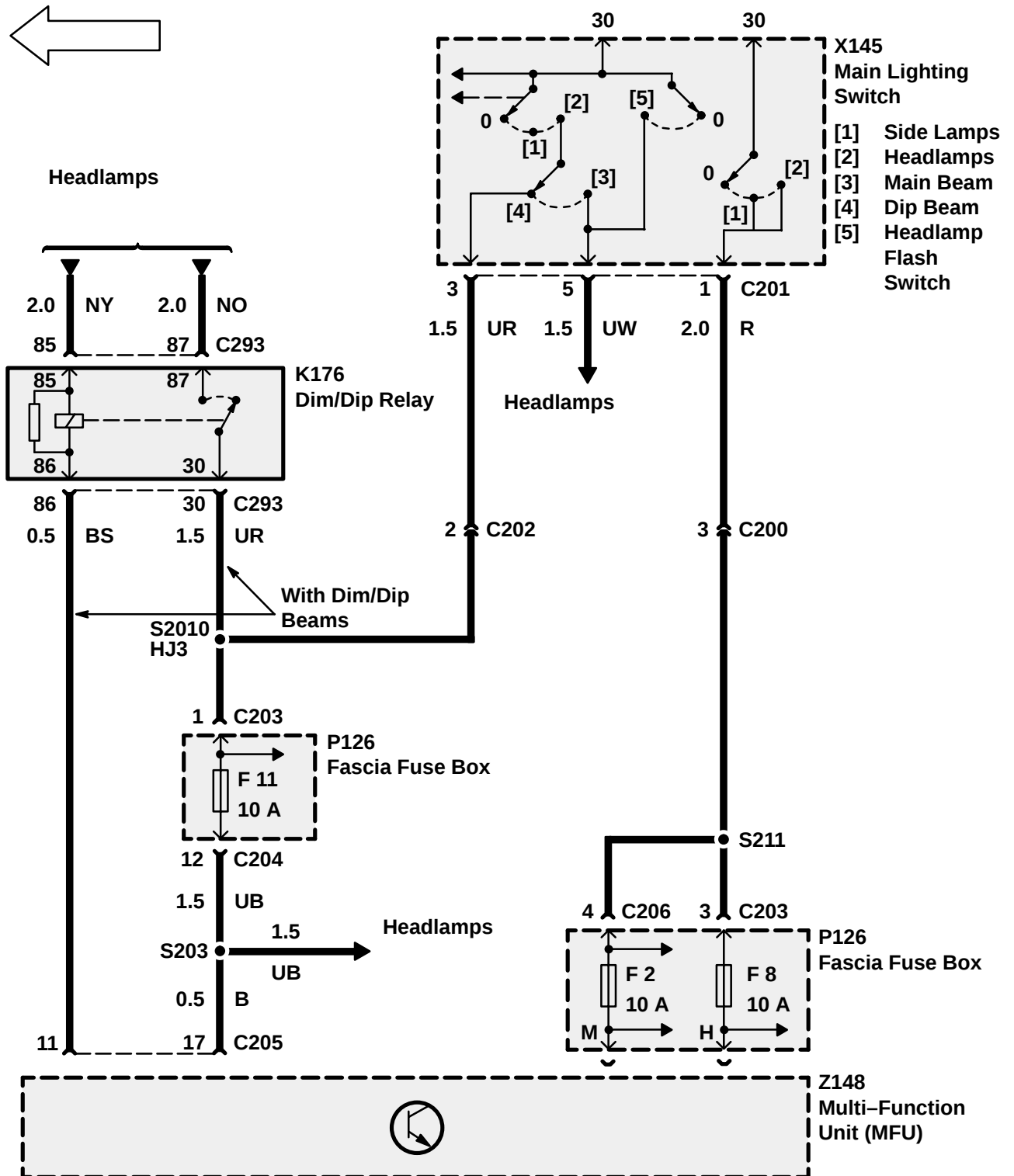


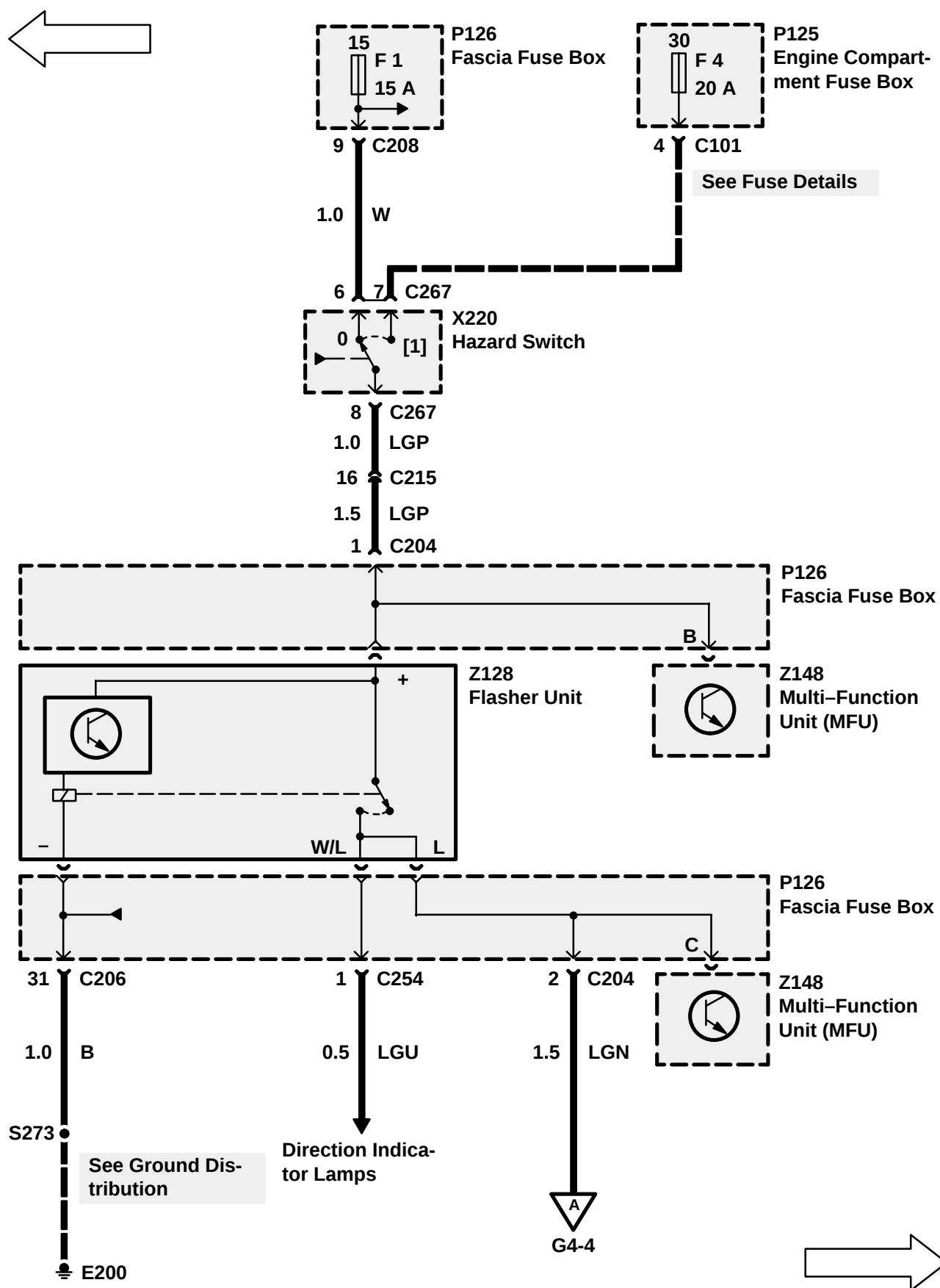


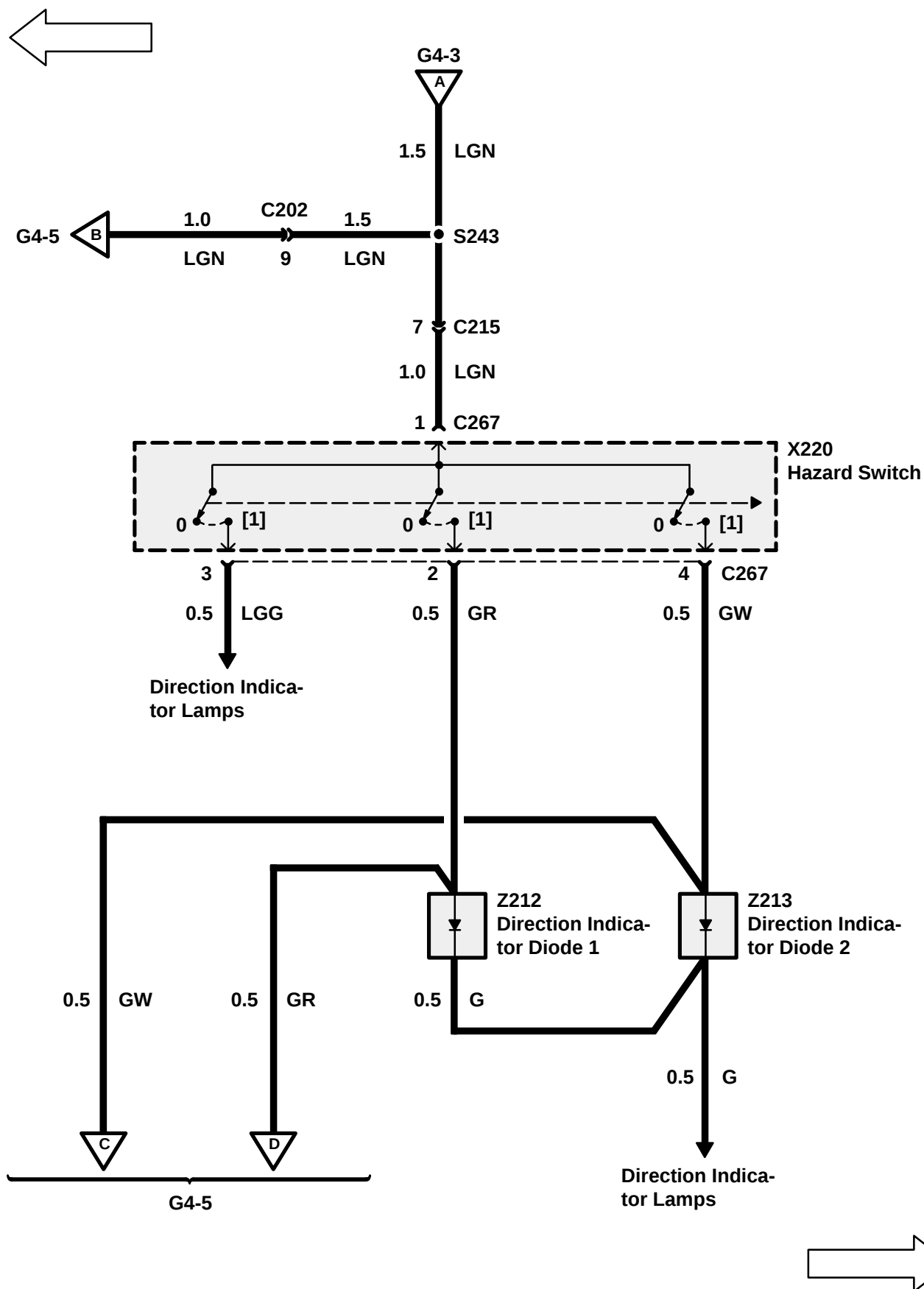


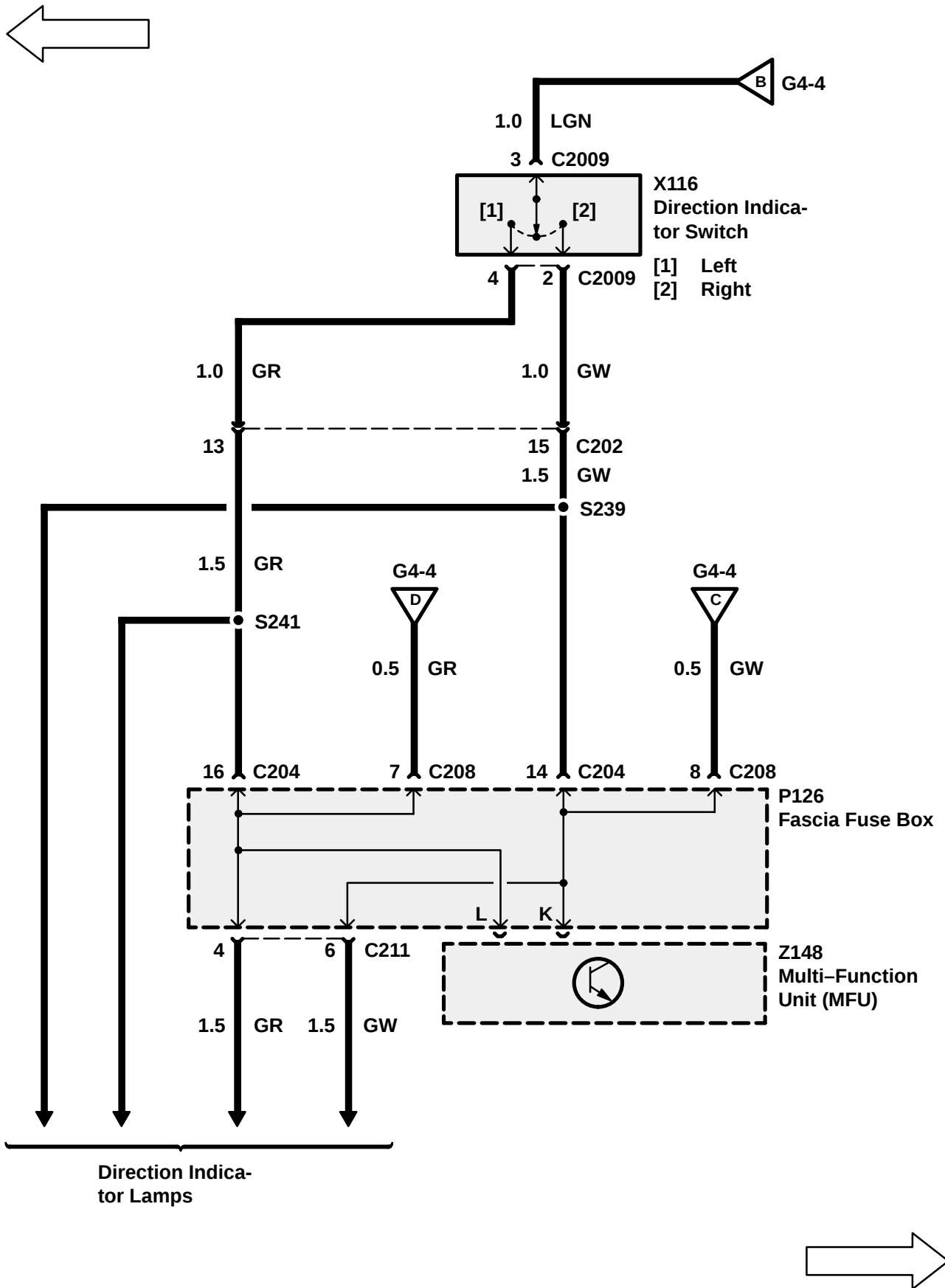


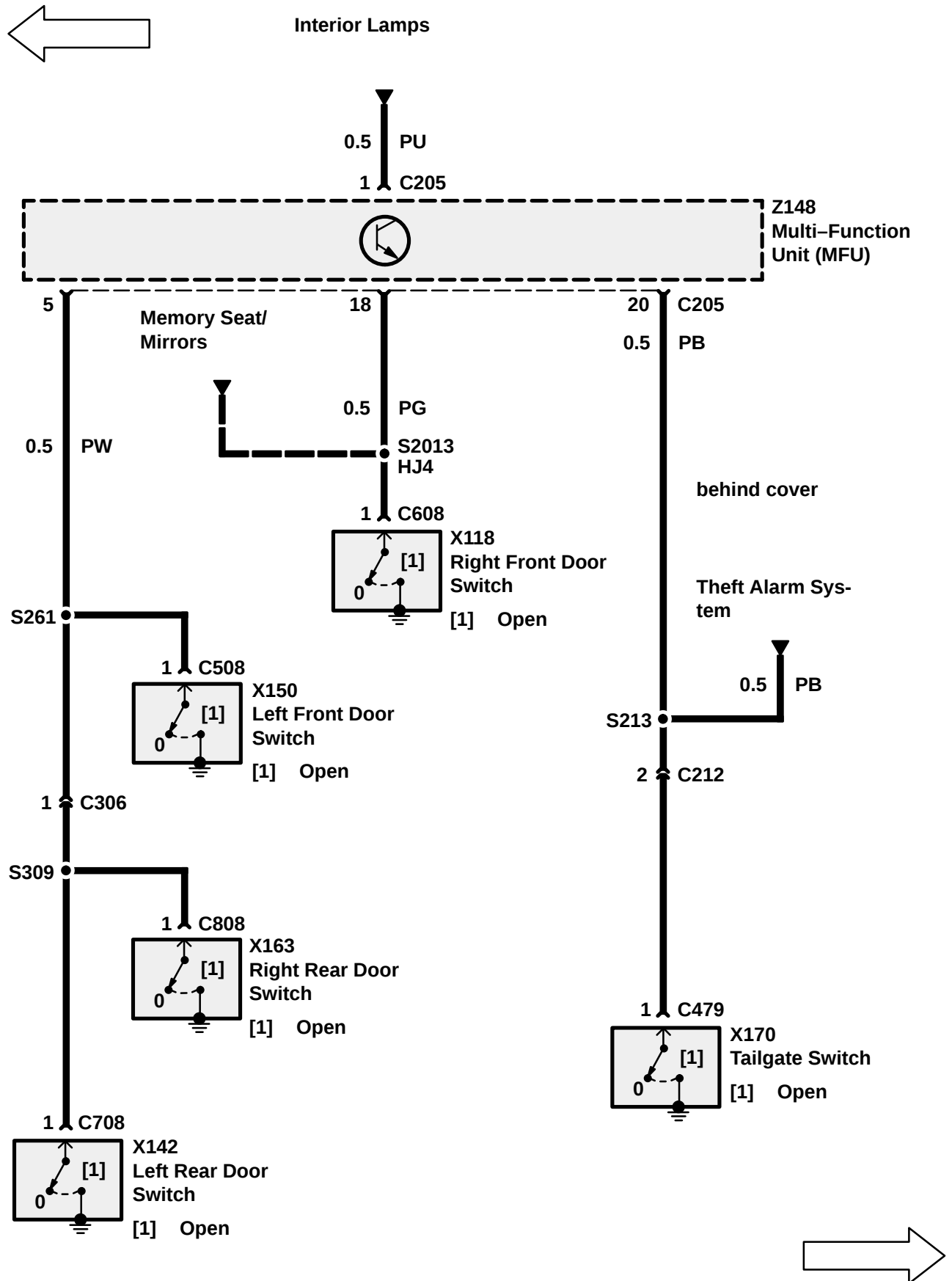


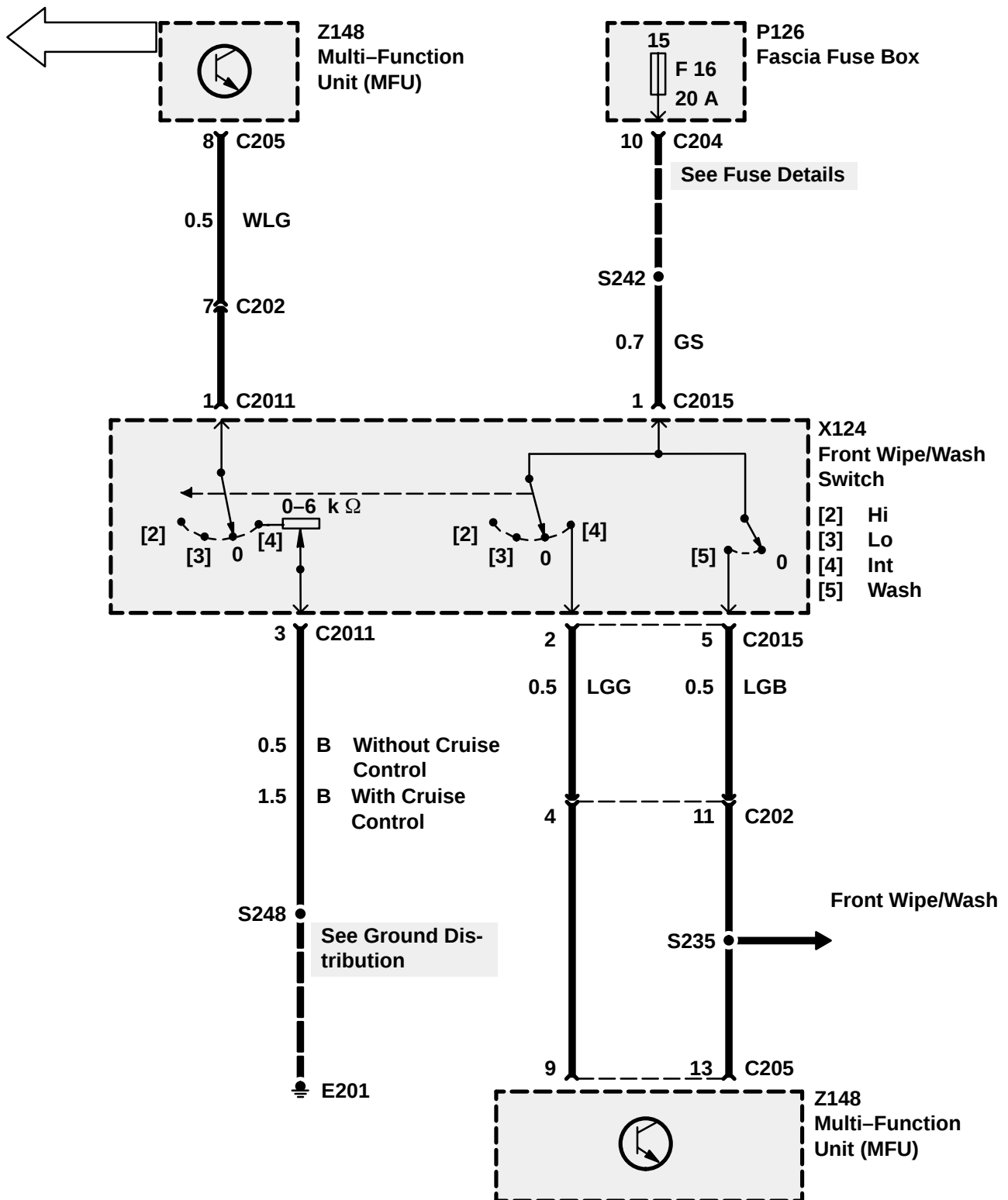


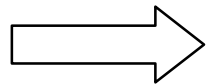
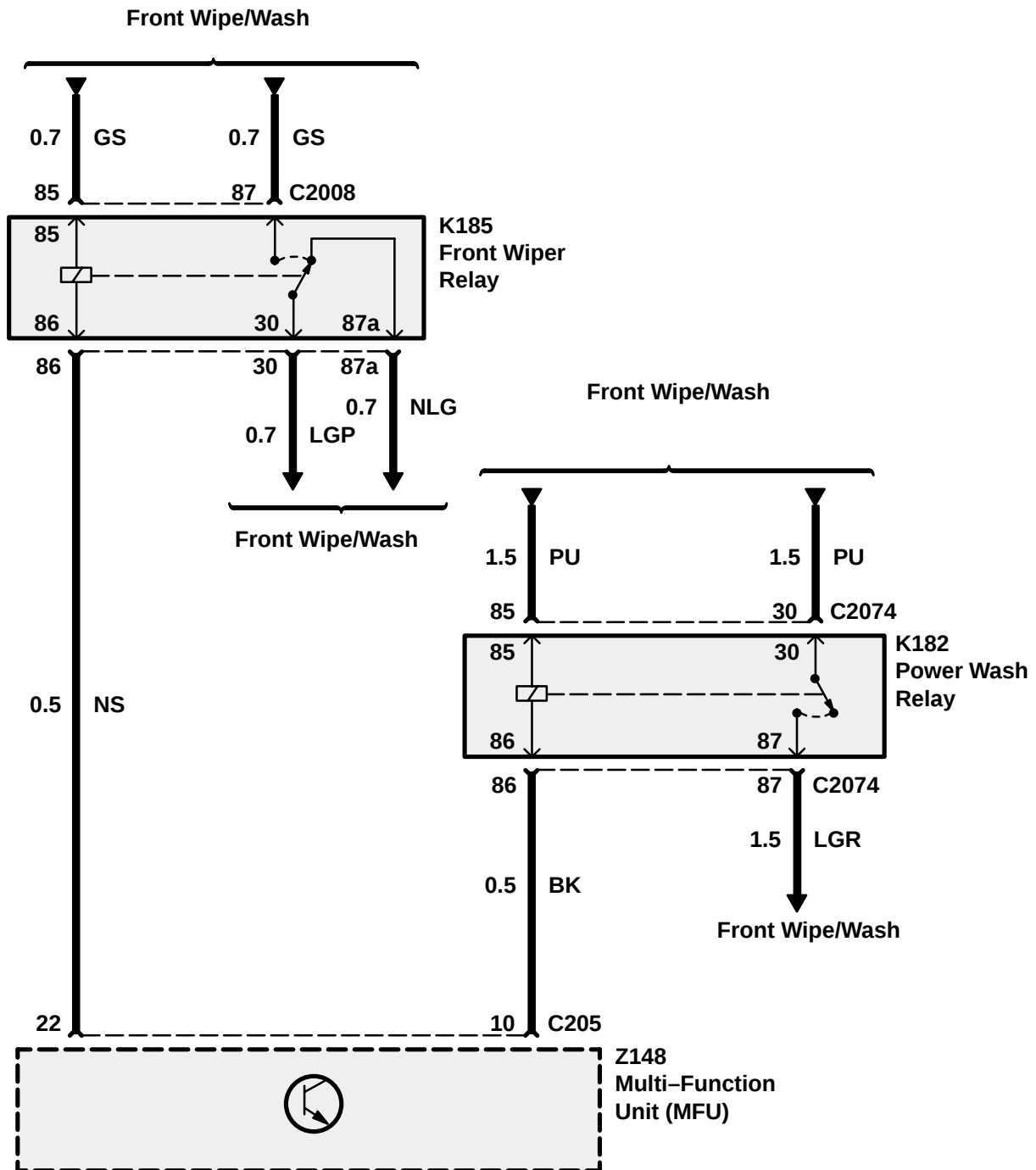
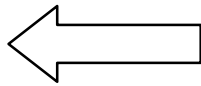


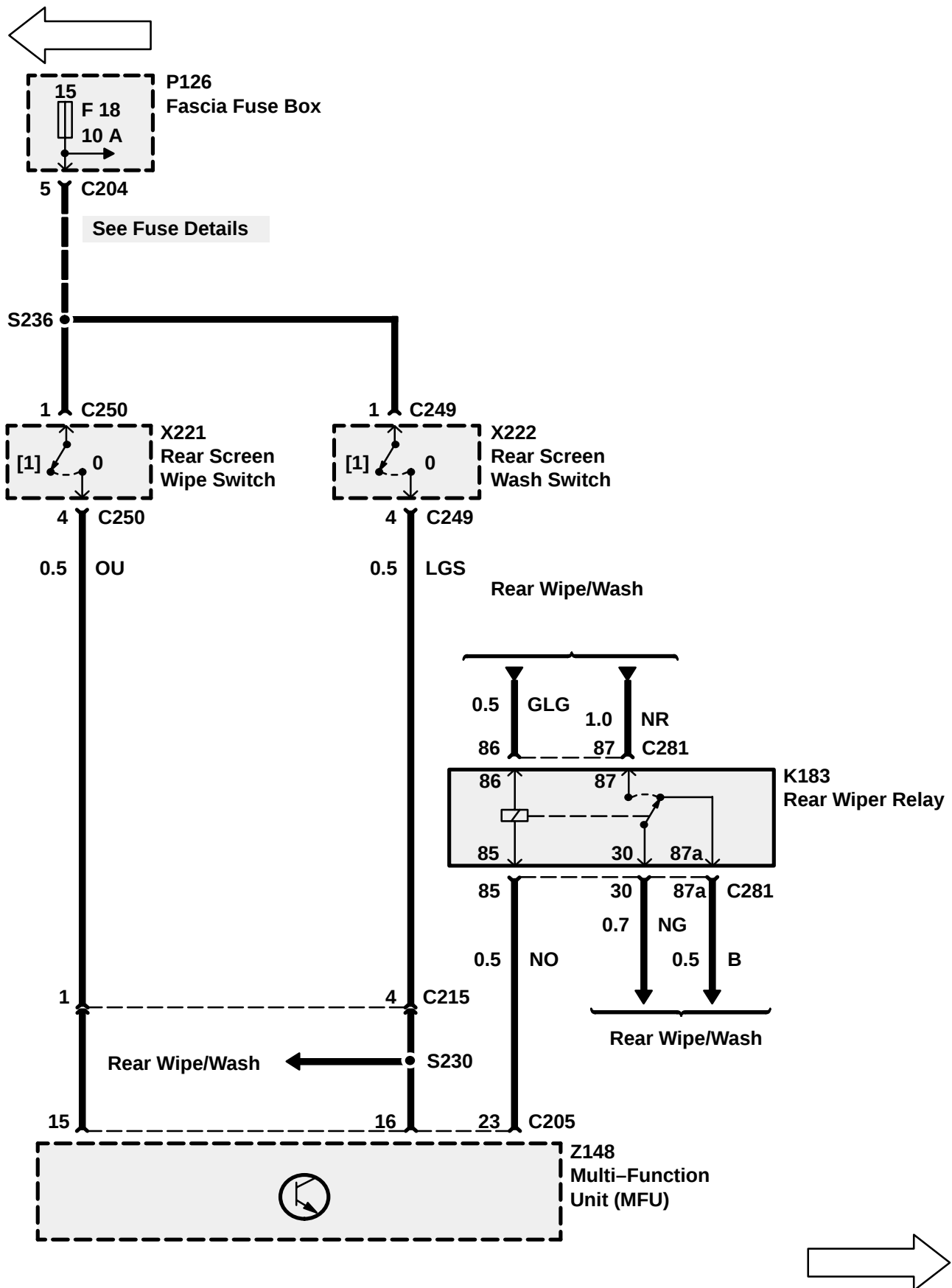


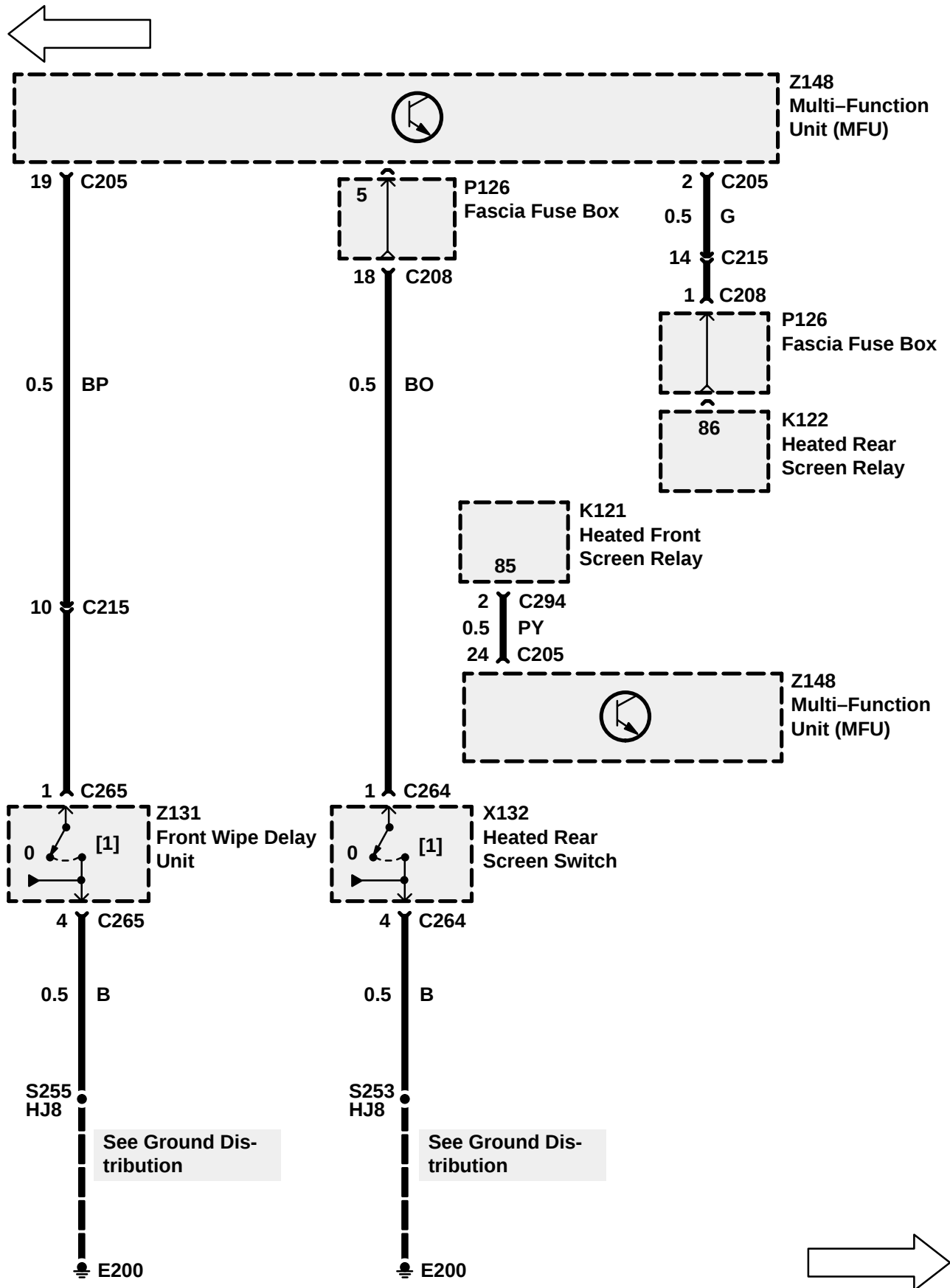


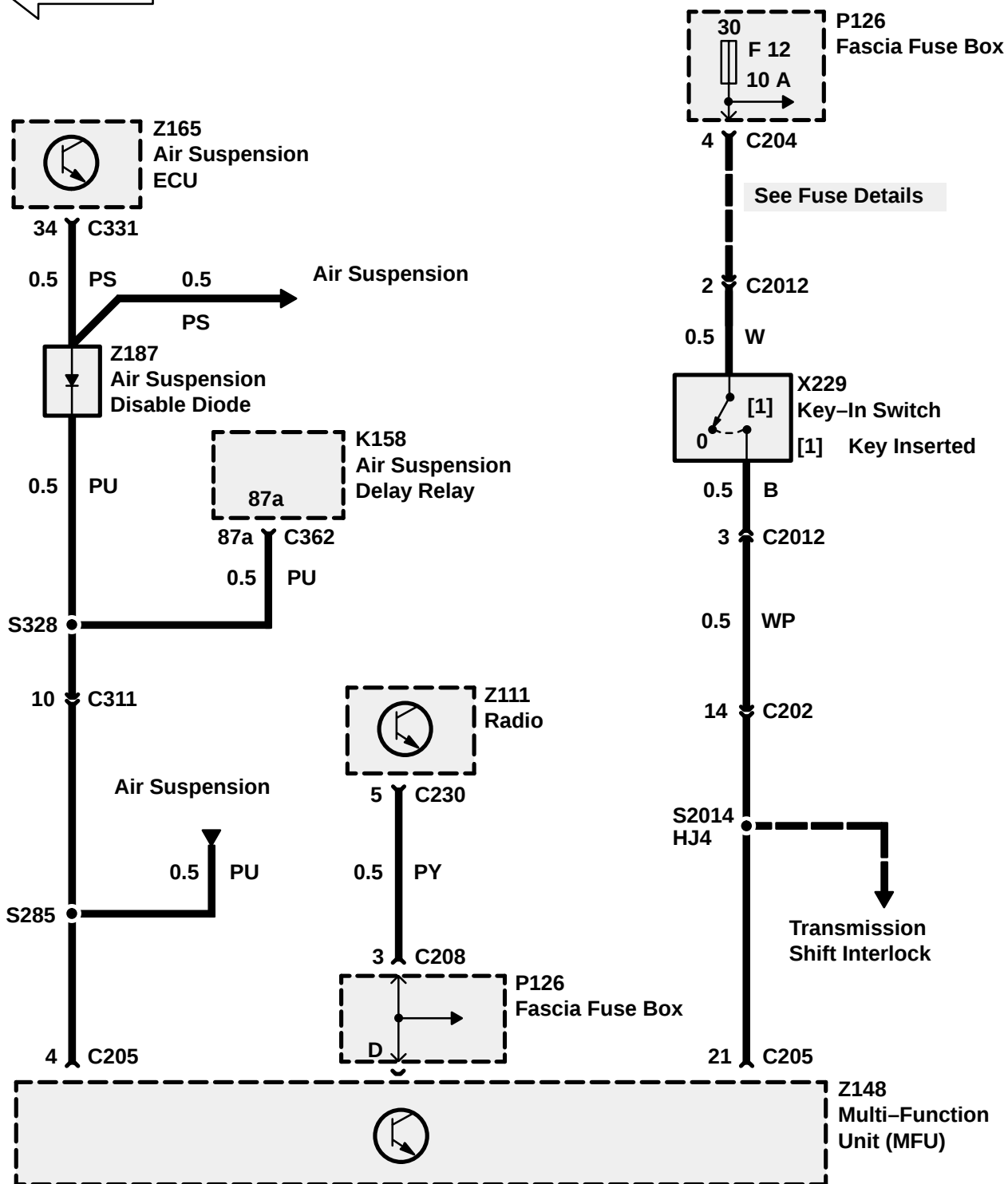
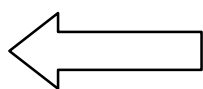


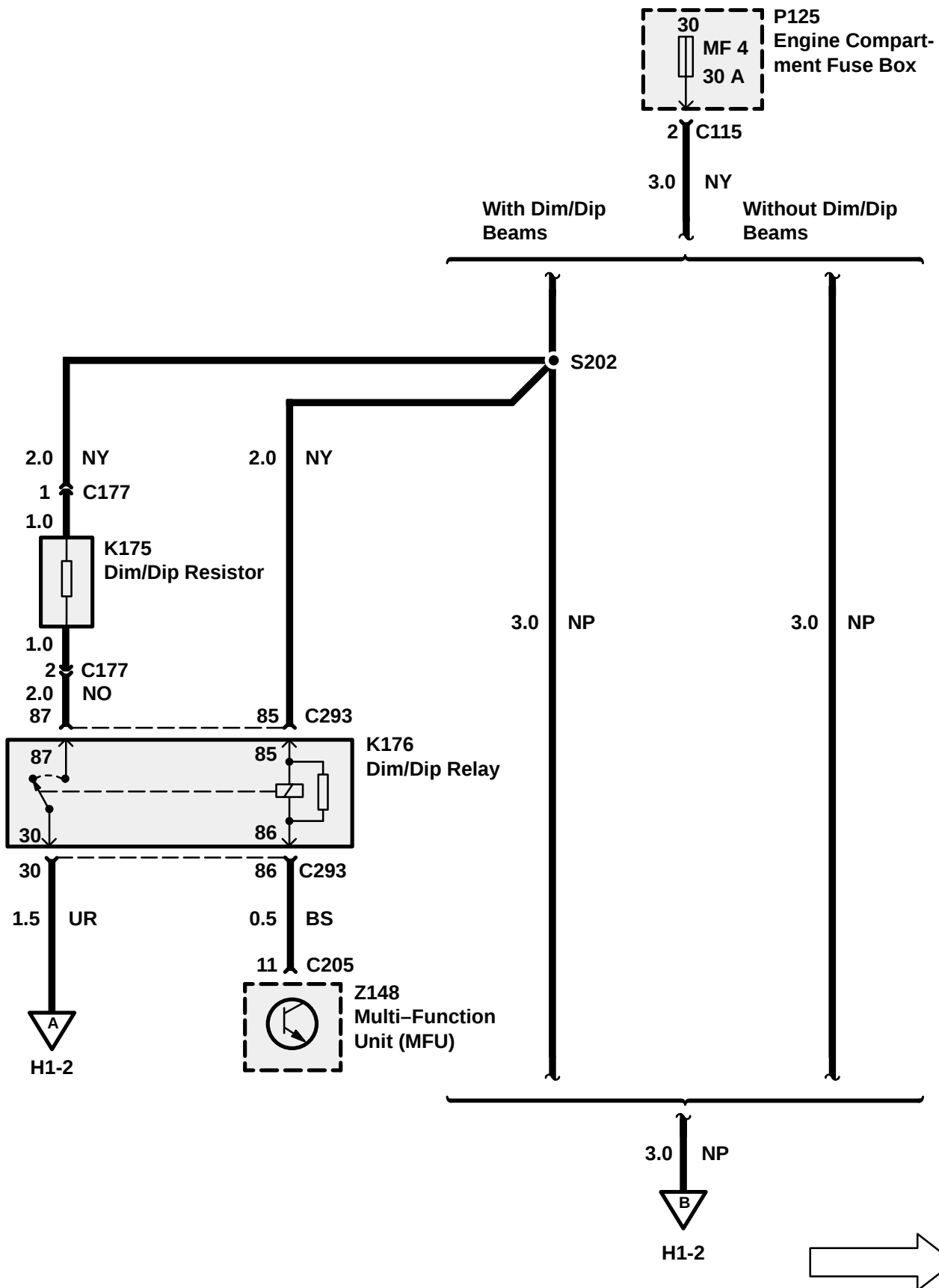


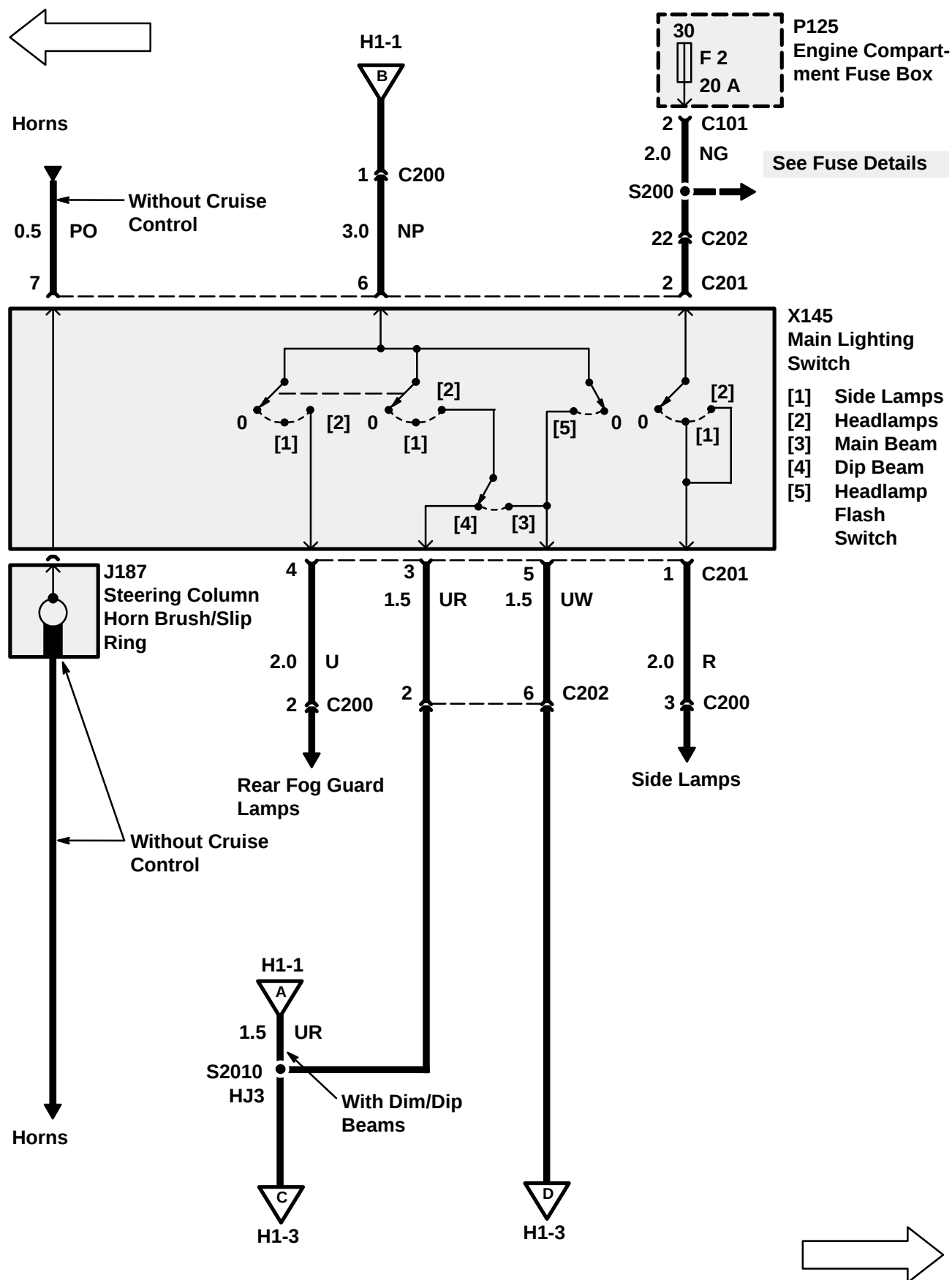


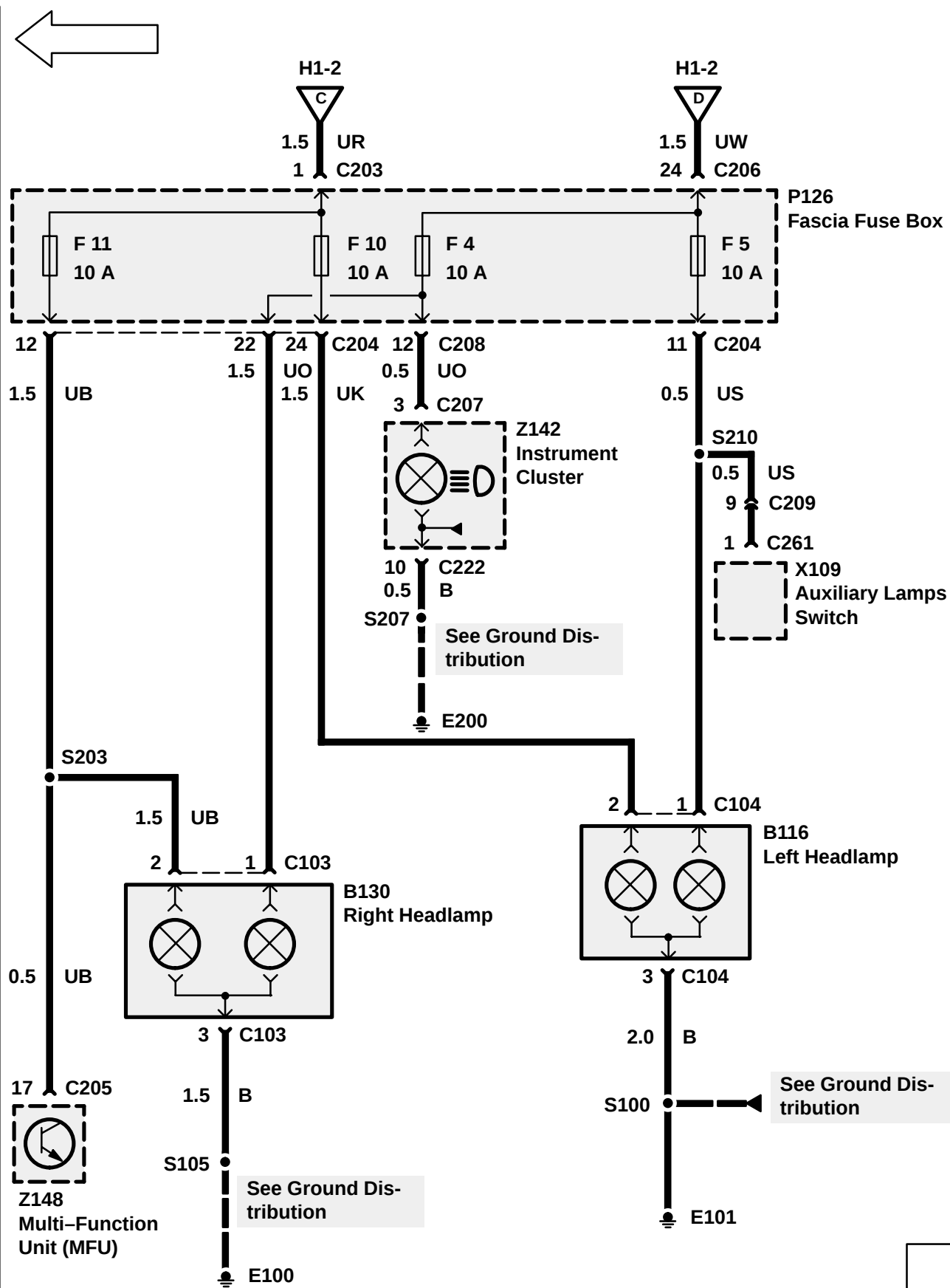


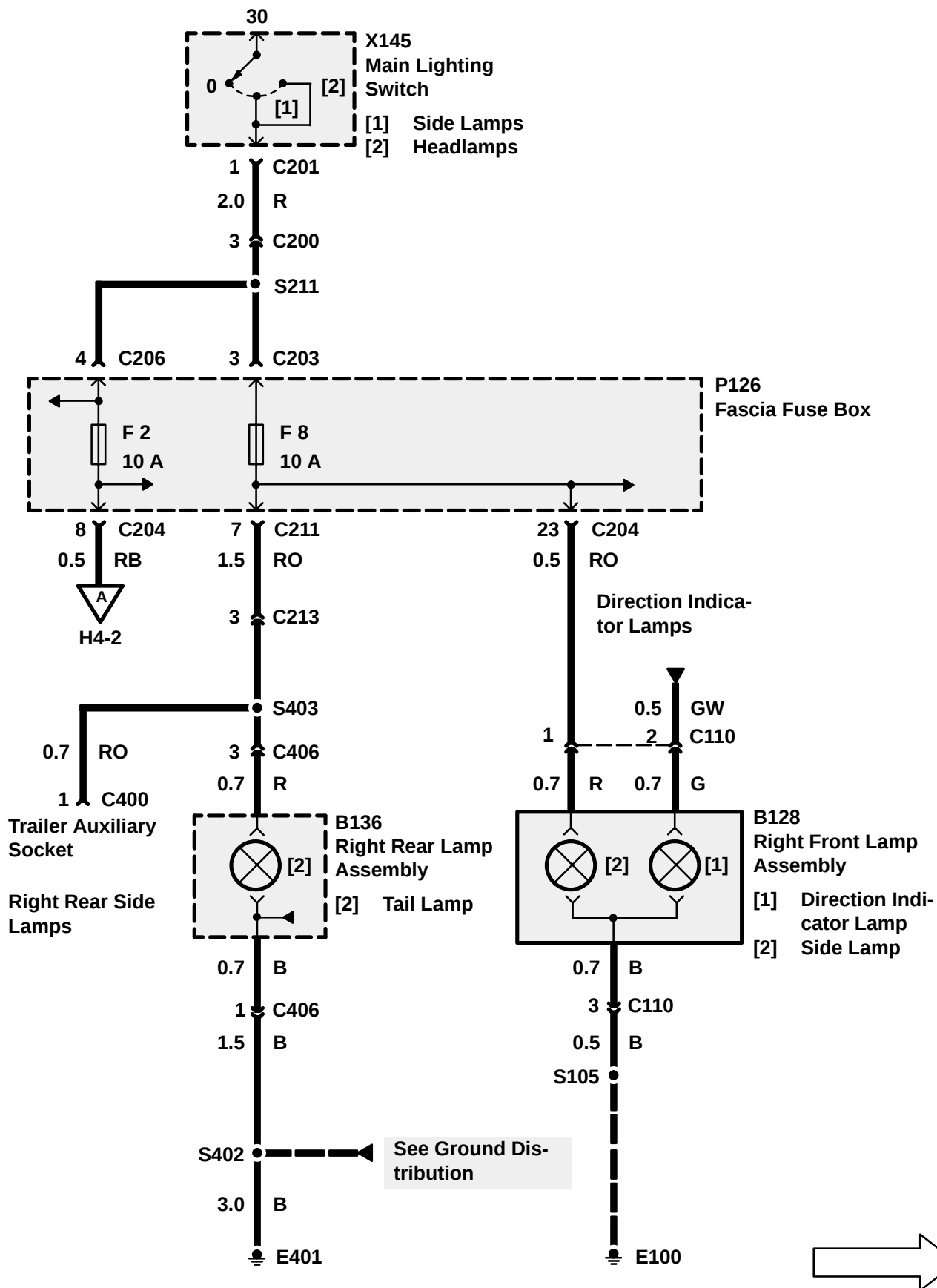


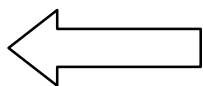




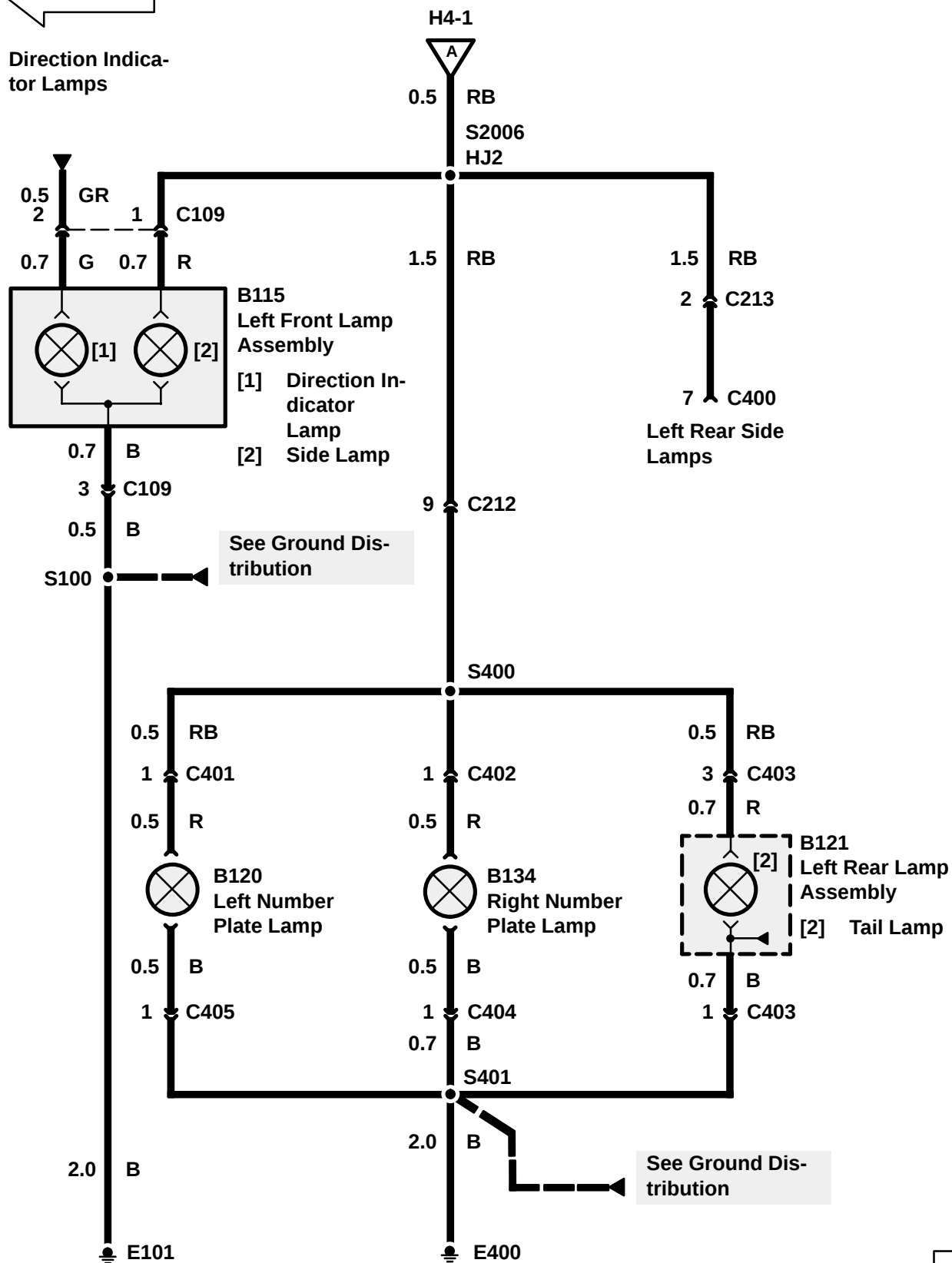


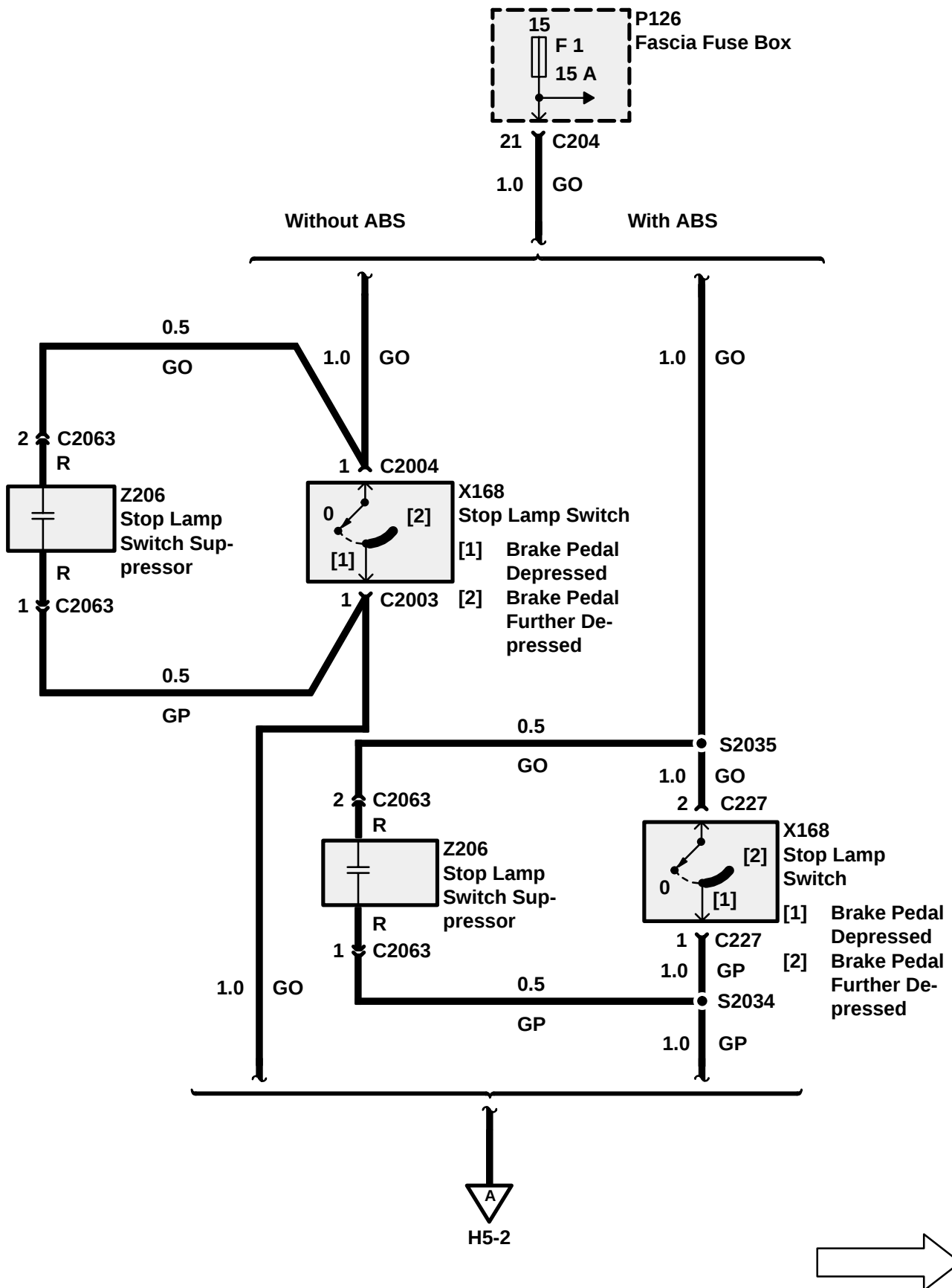


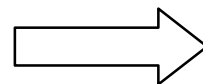
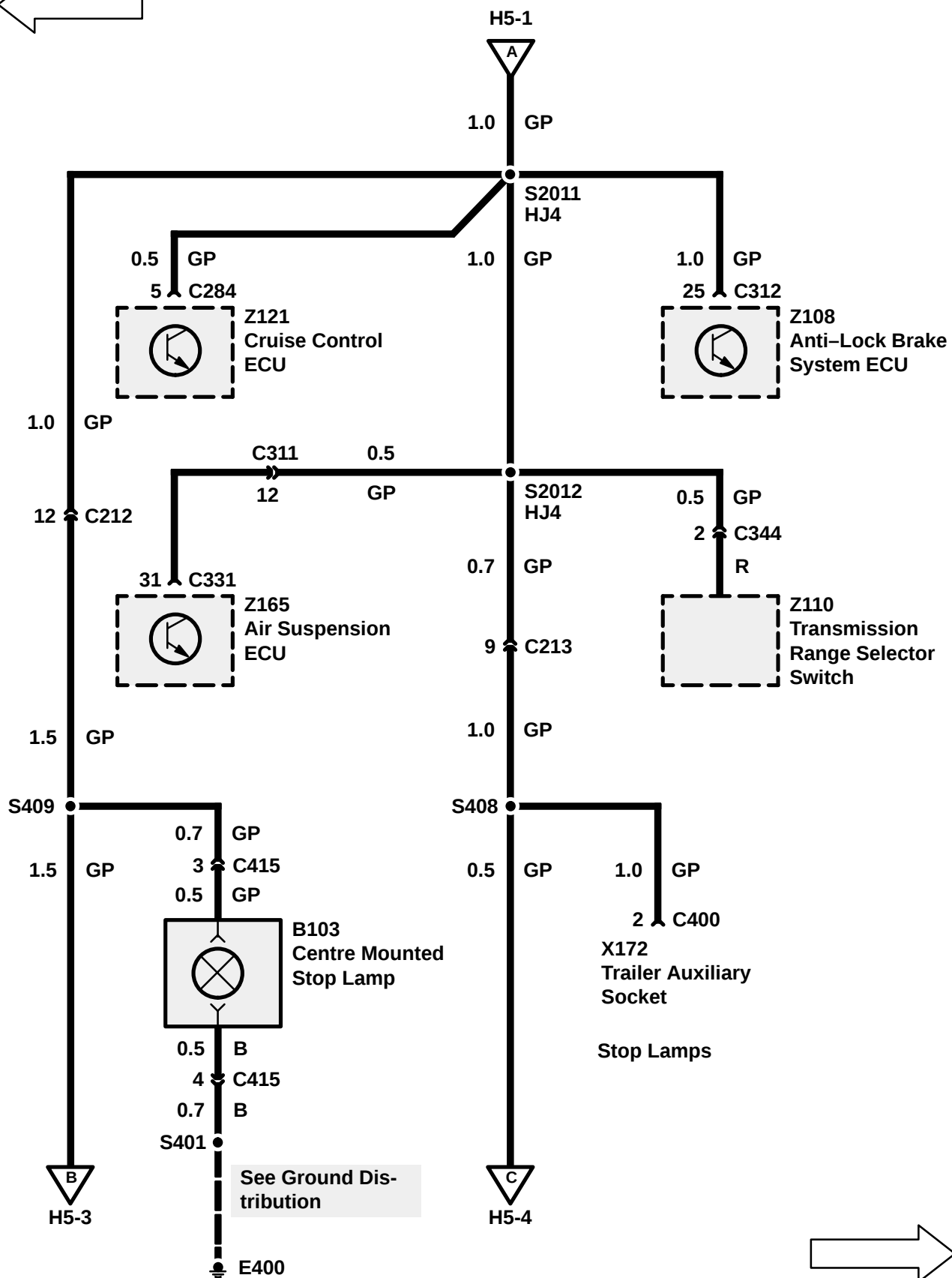
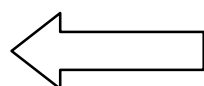




Direction Indica-
tor Lamps







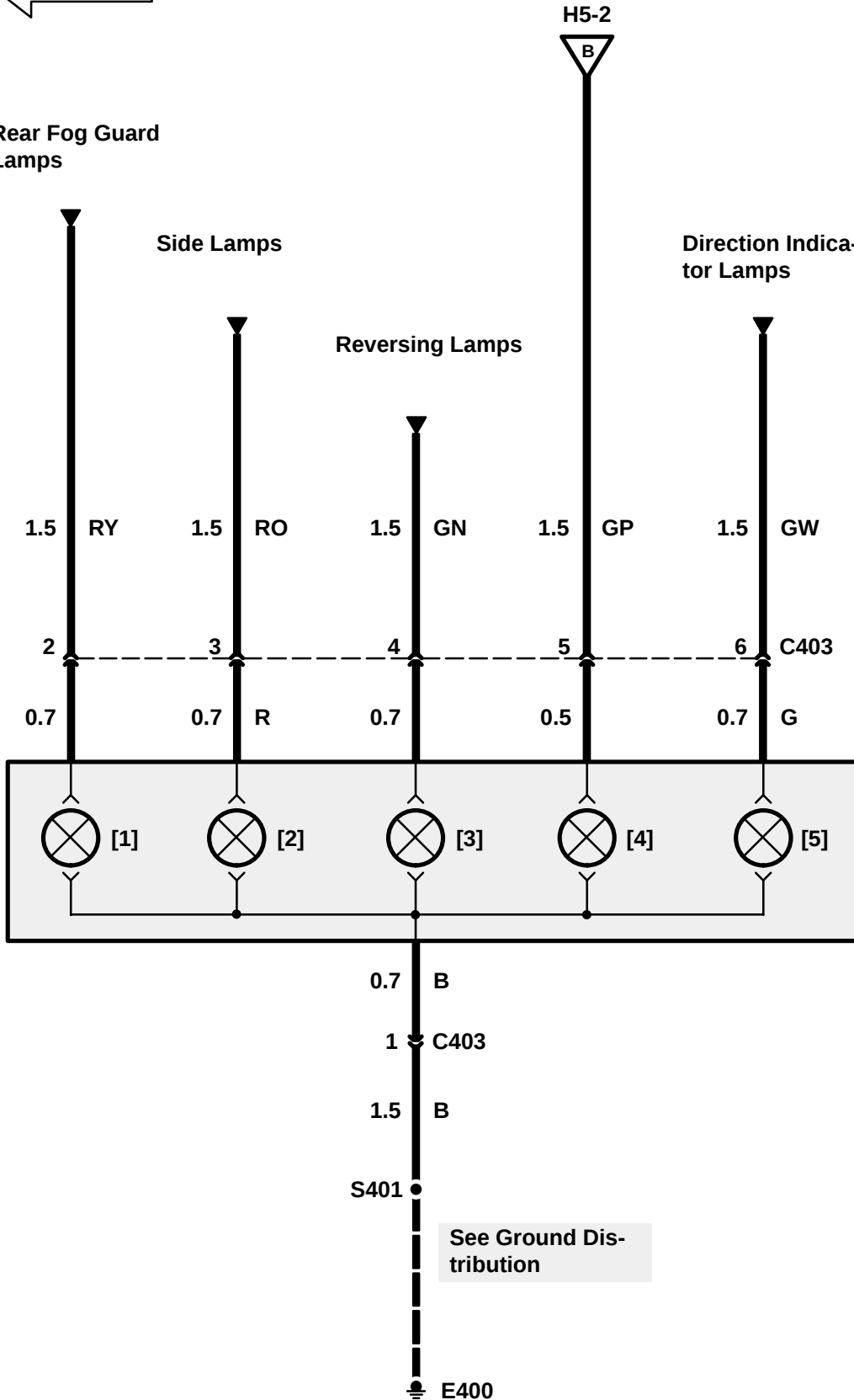


Rear Fog Guard Lamps

Side Lamps

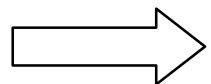
Reversing Lamps

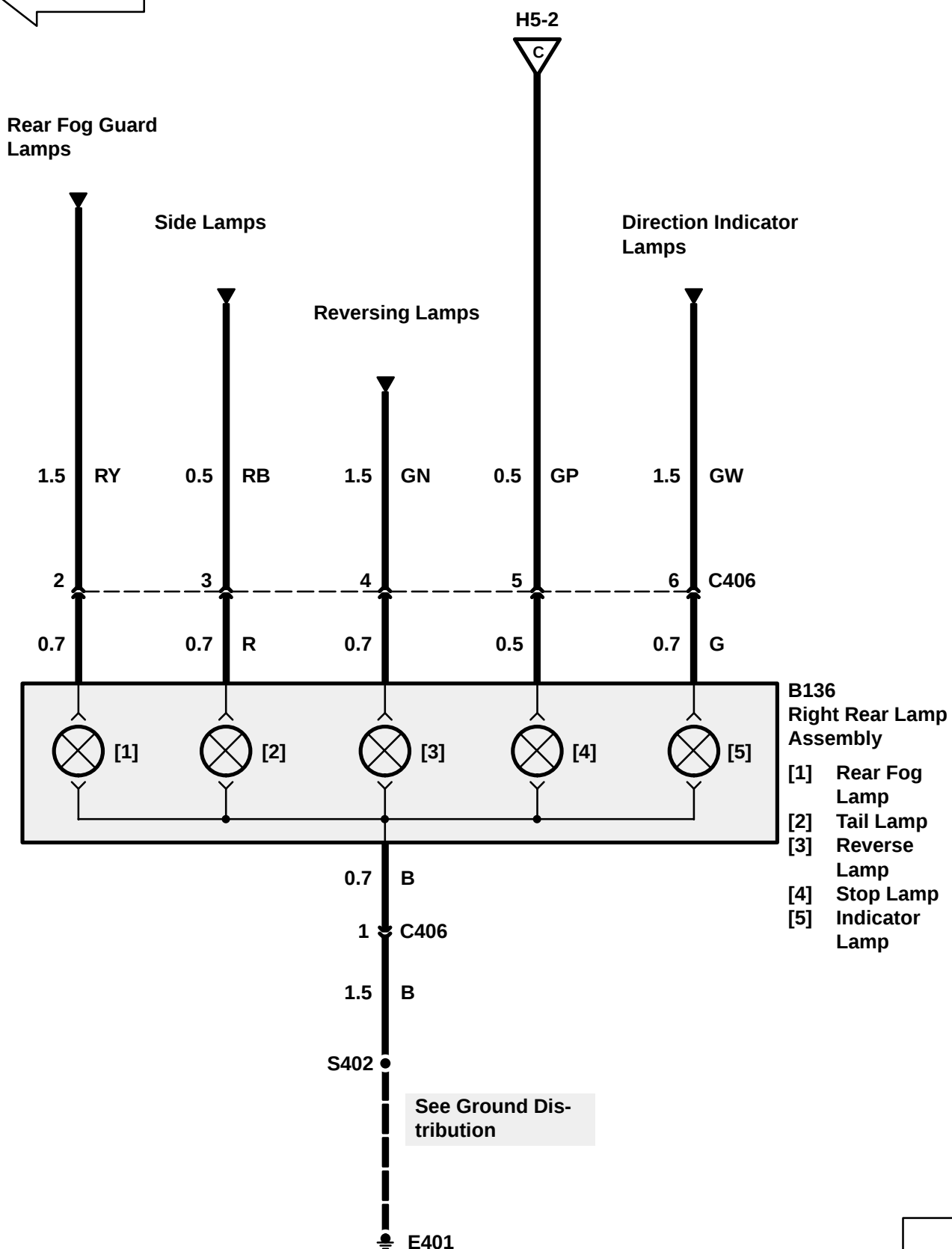
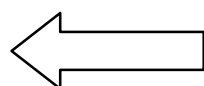
Direction Indicator Lamps

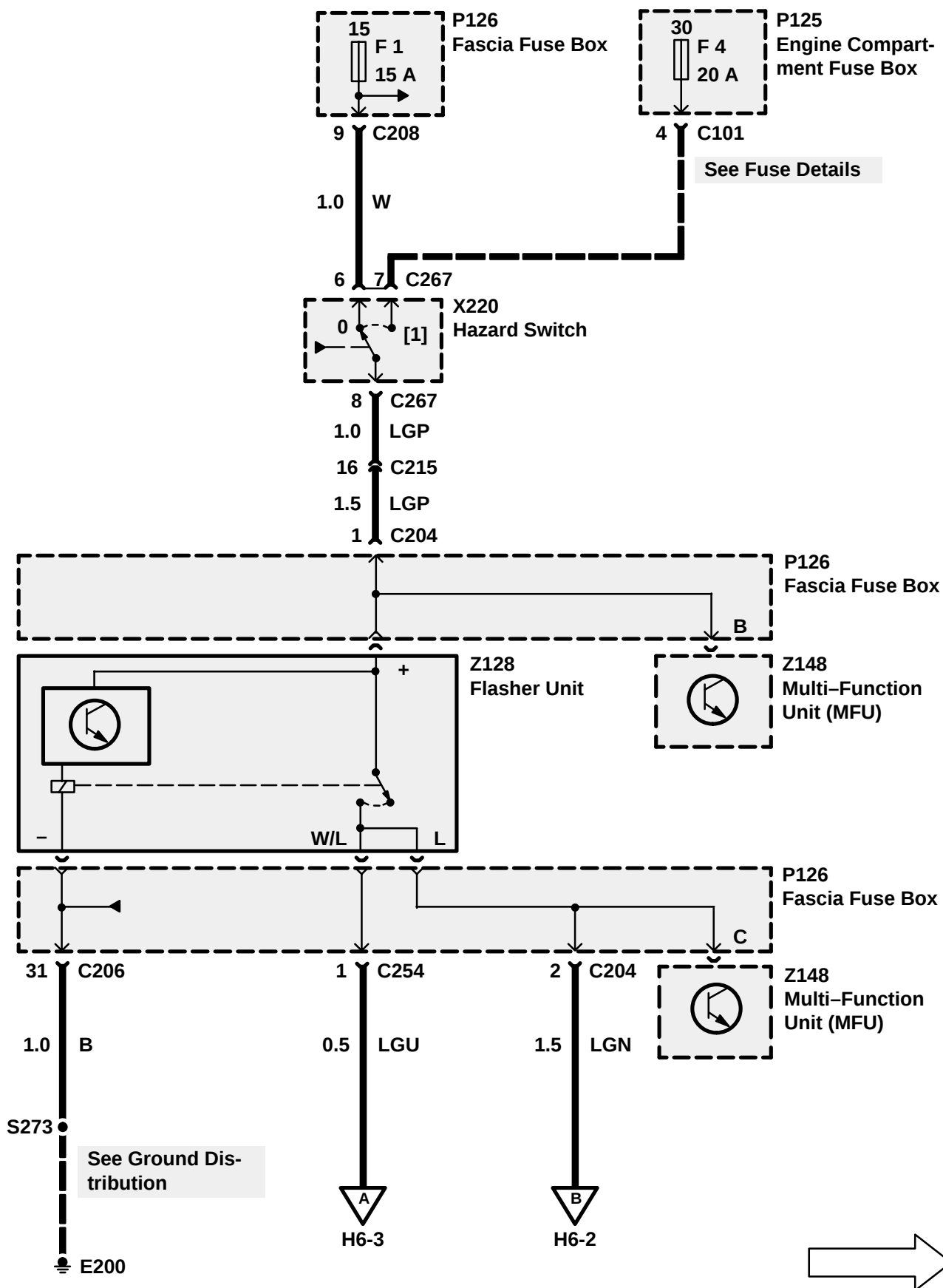


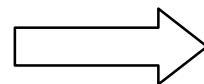
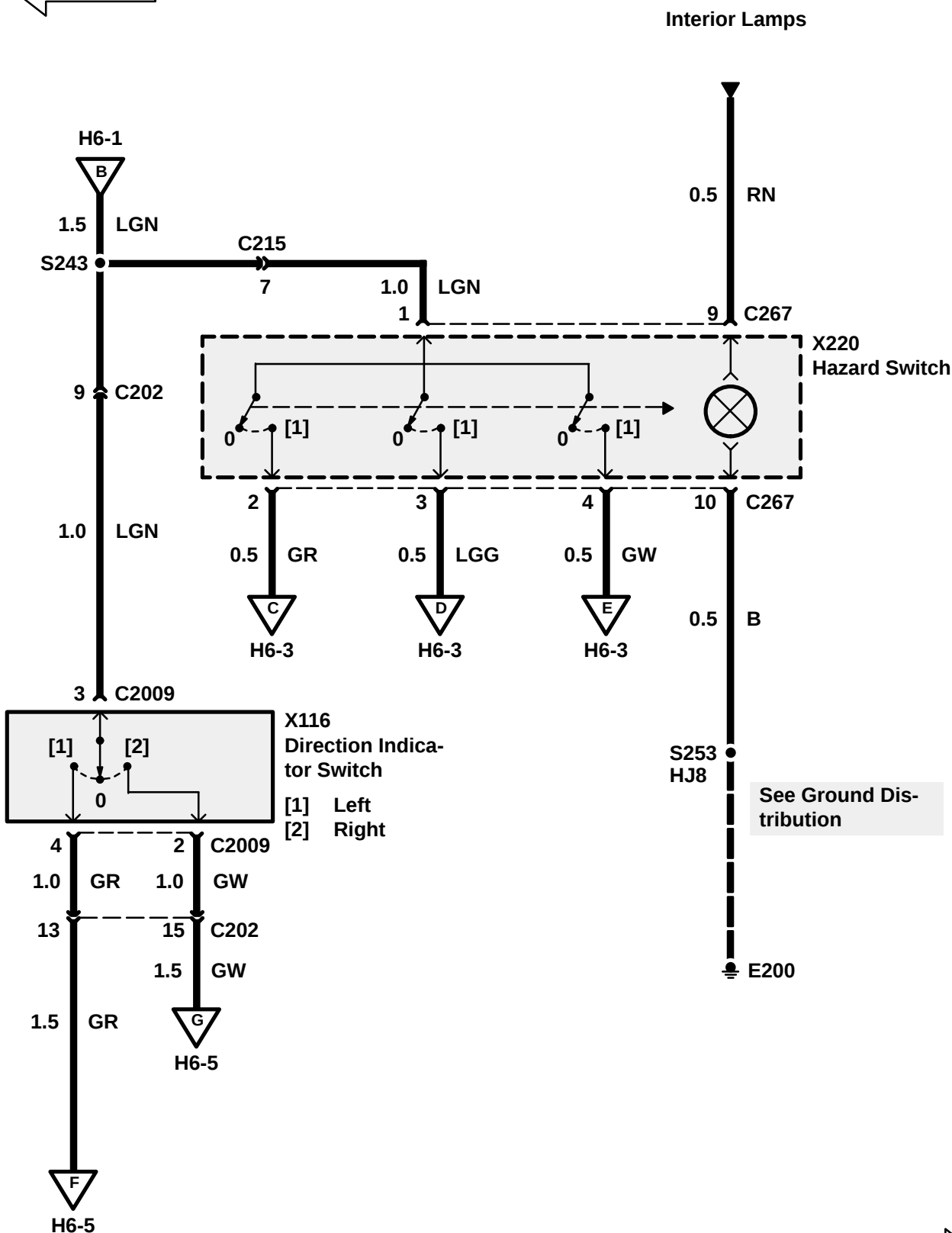
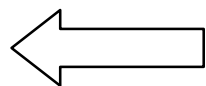
B121
Left Rear Lamp
Assembly

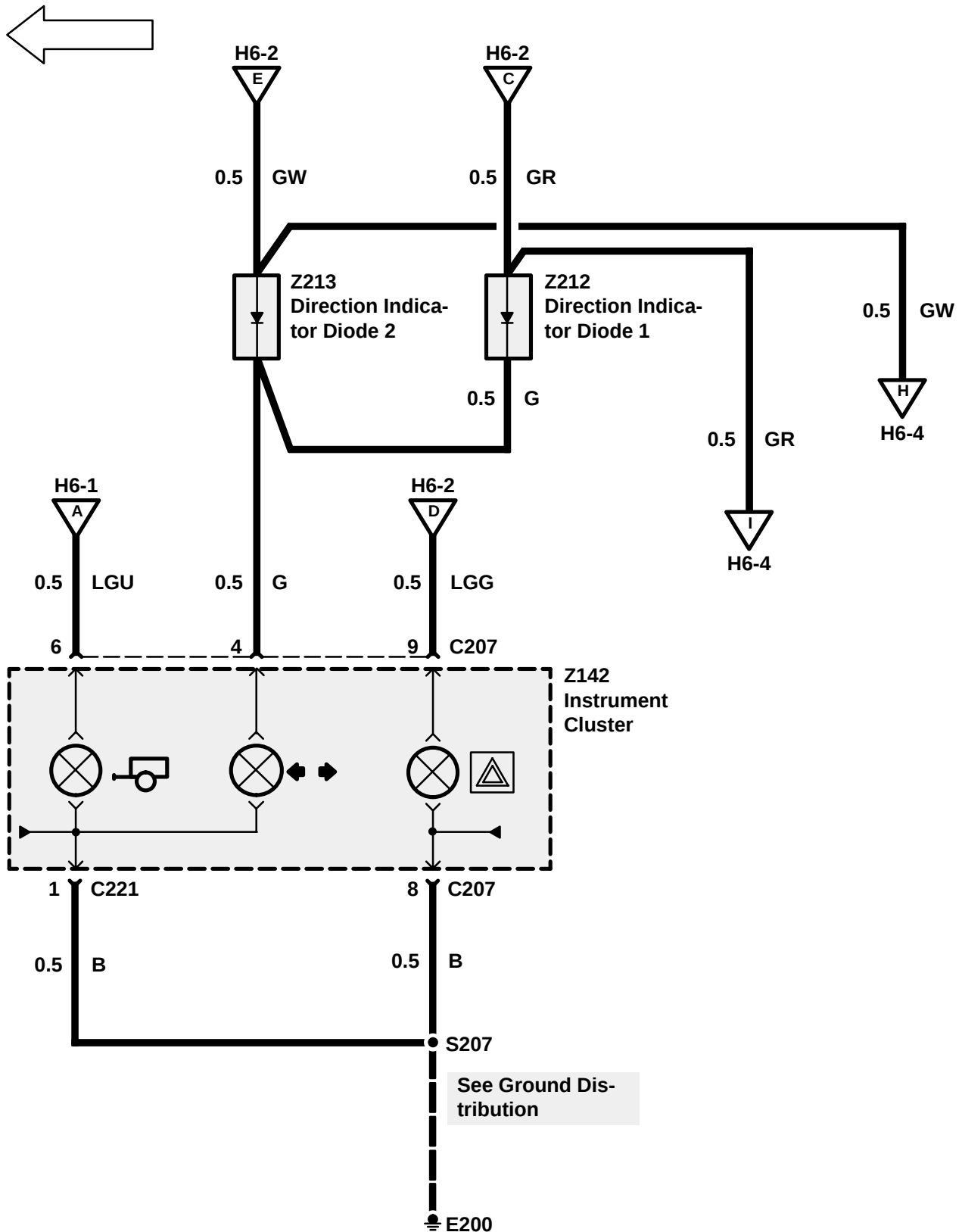
- [1] Rear Fog Lamp
- [2] Tail Lamp
- [3] Reverse Lamp
- [4] Stop Lamp
- [5] Indicator Lamp

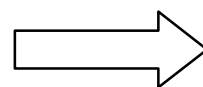
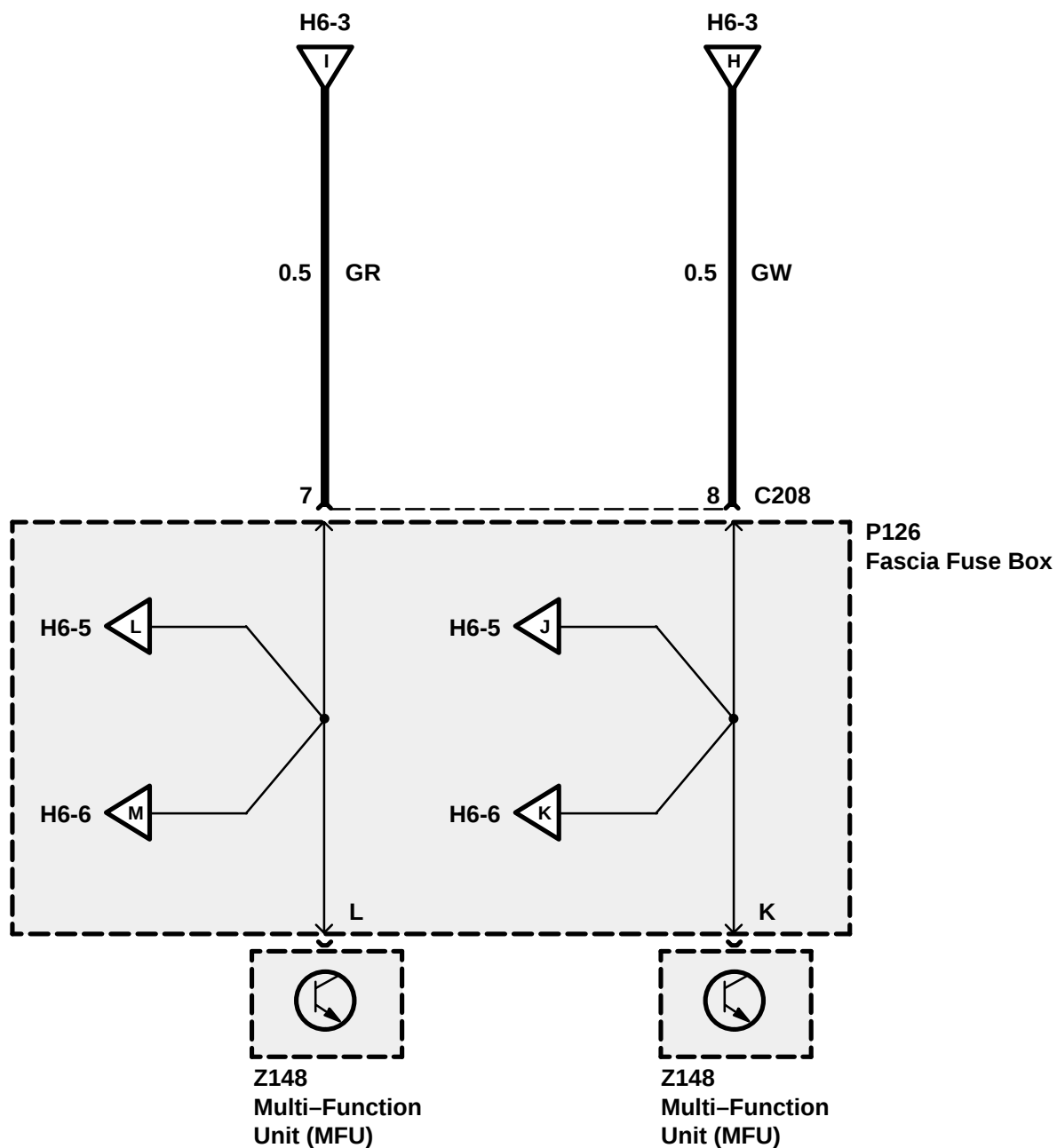
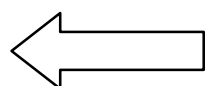


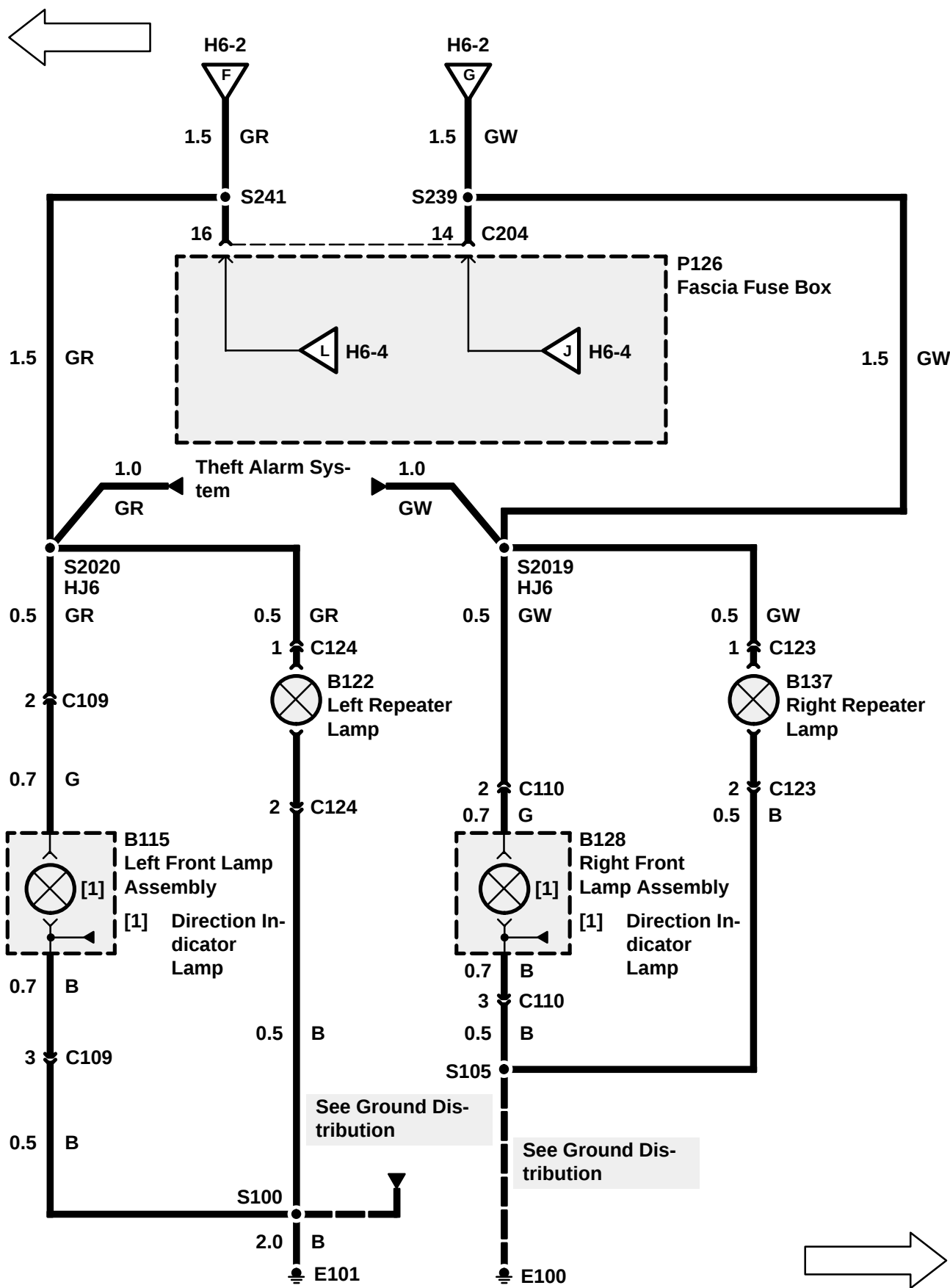


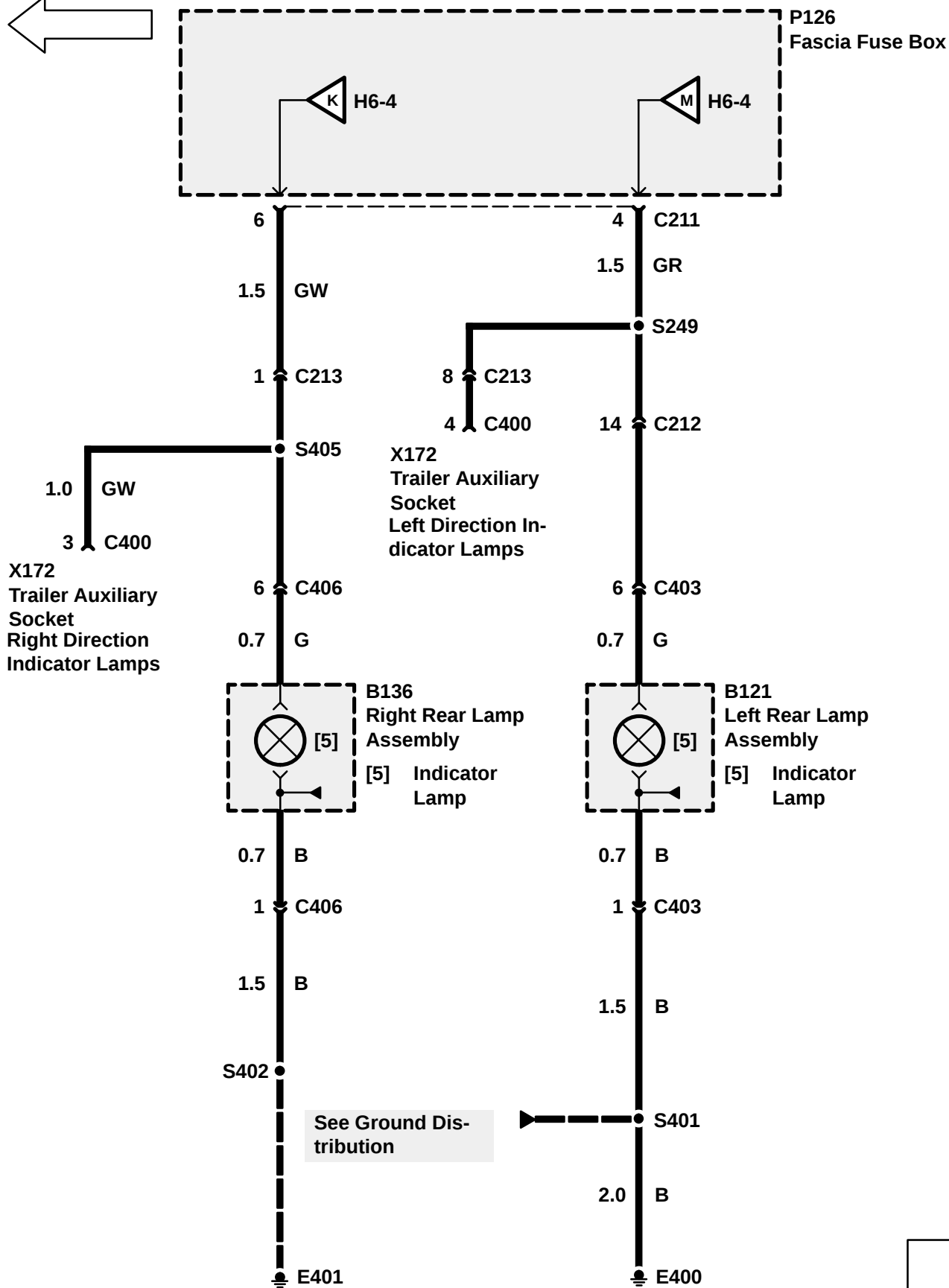


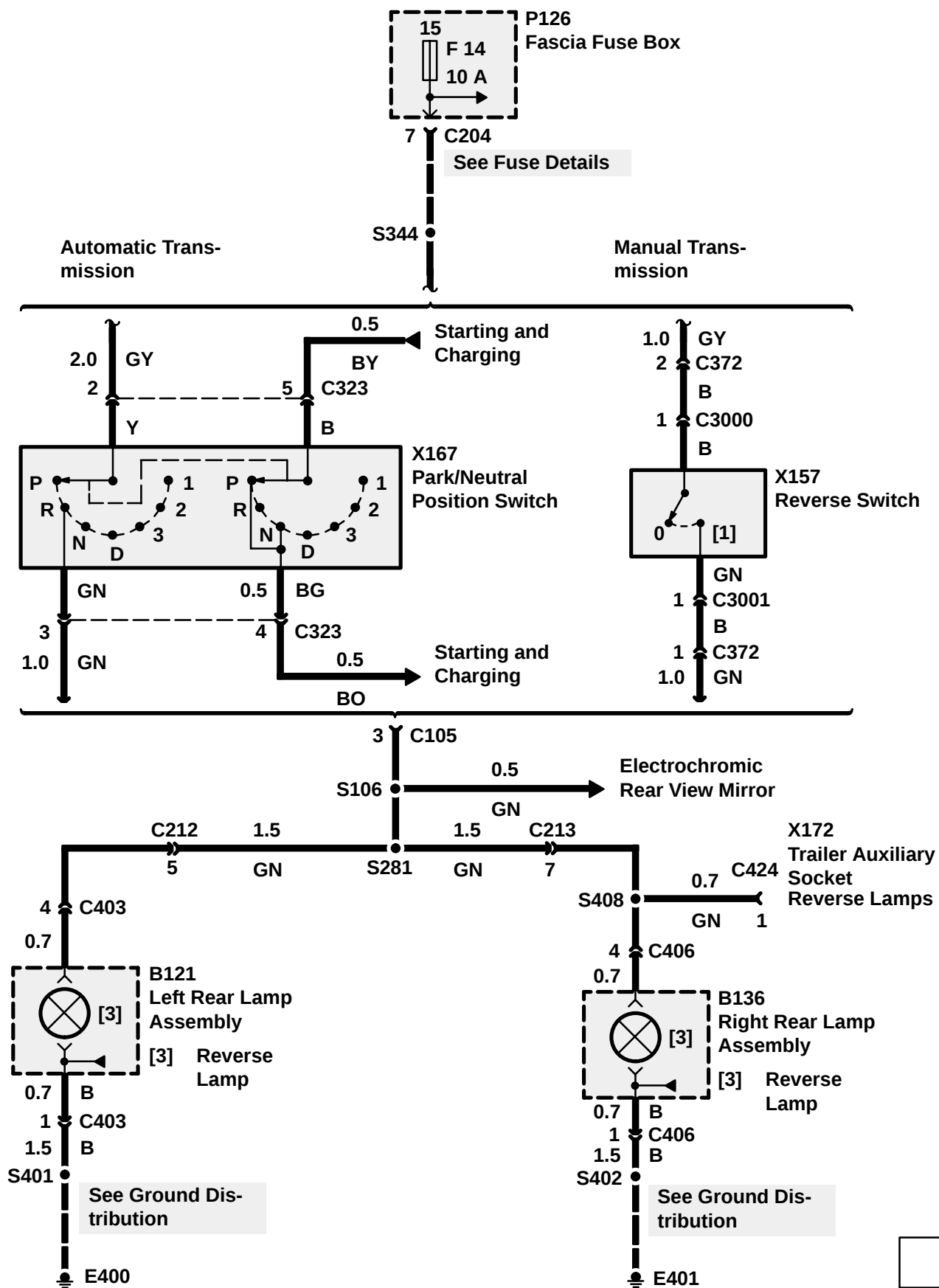


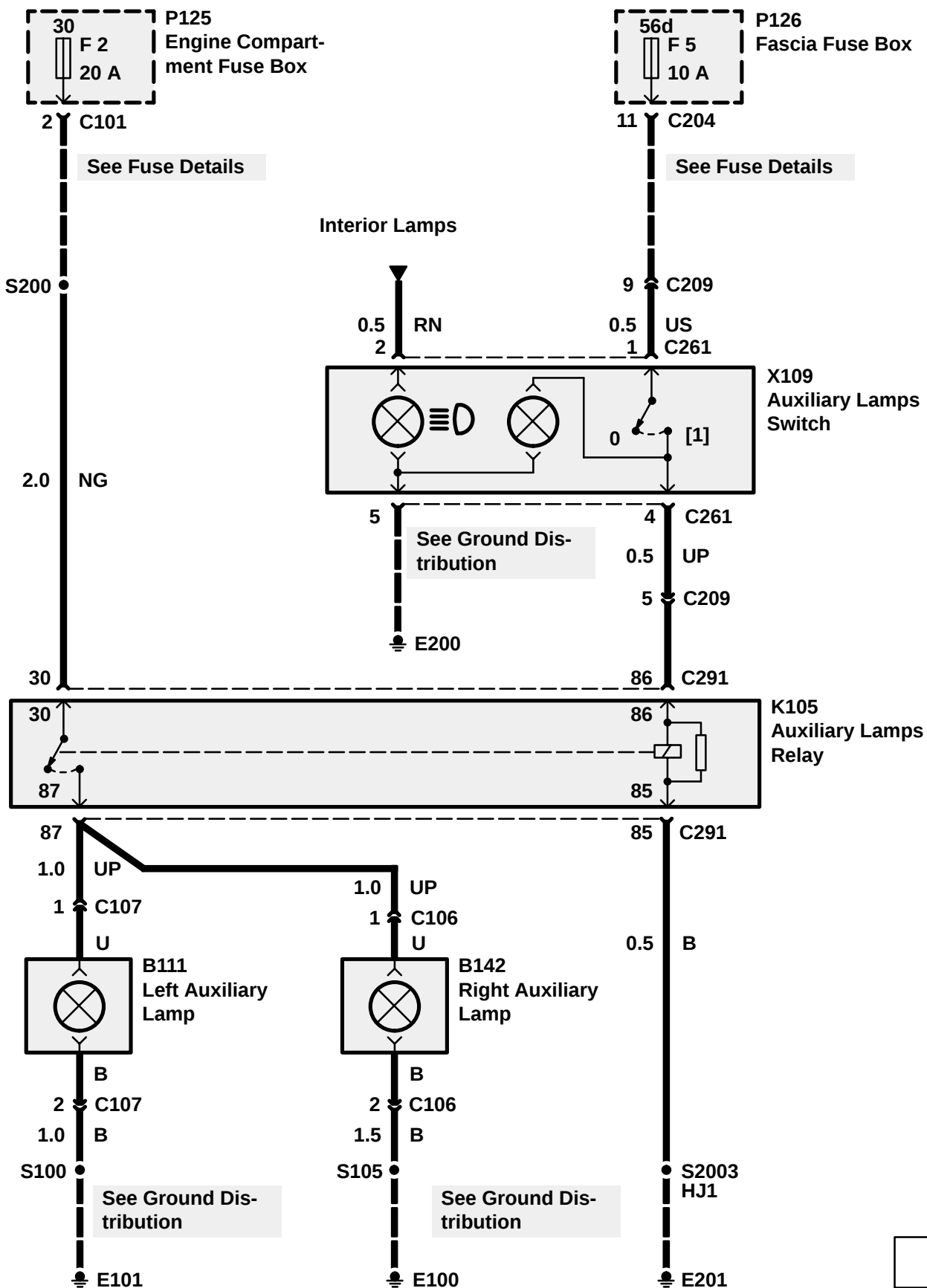


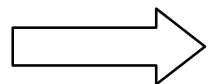
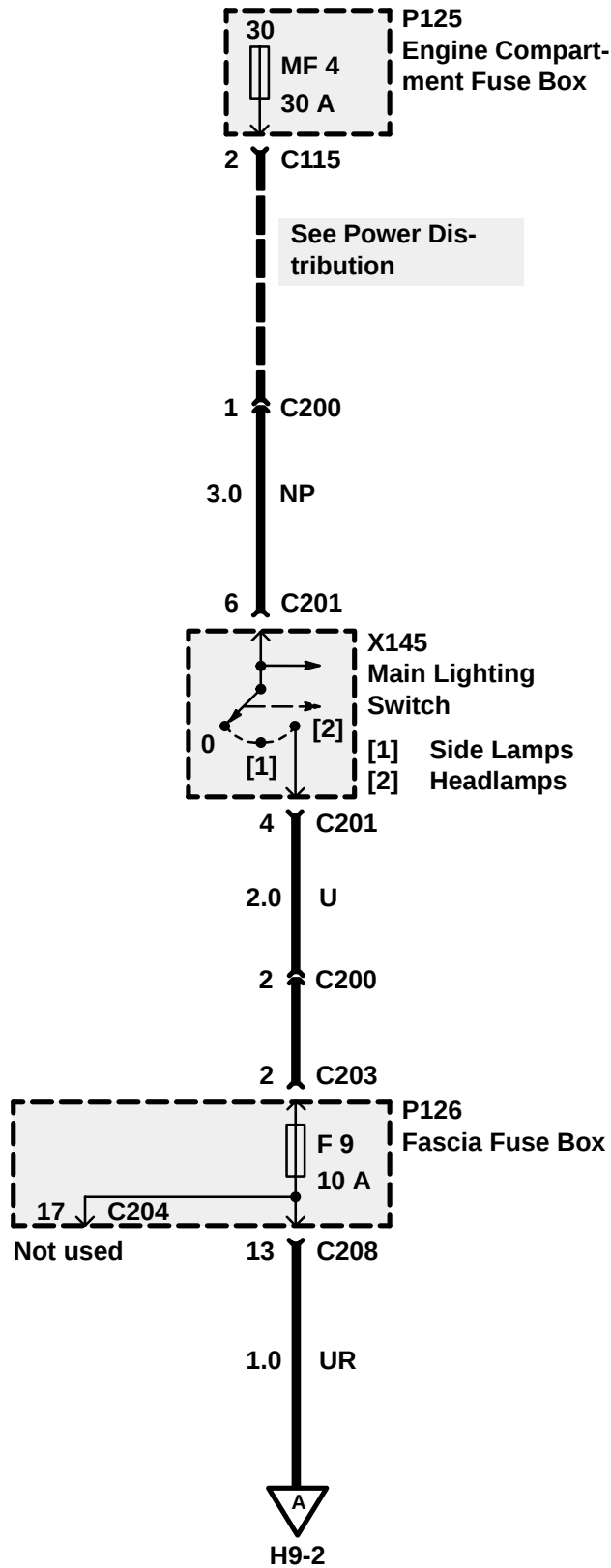


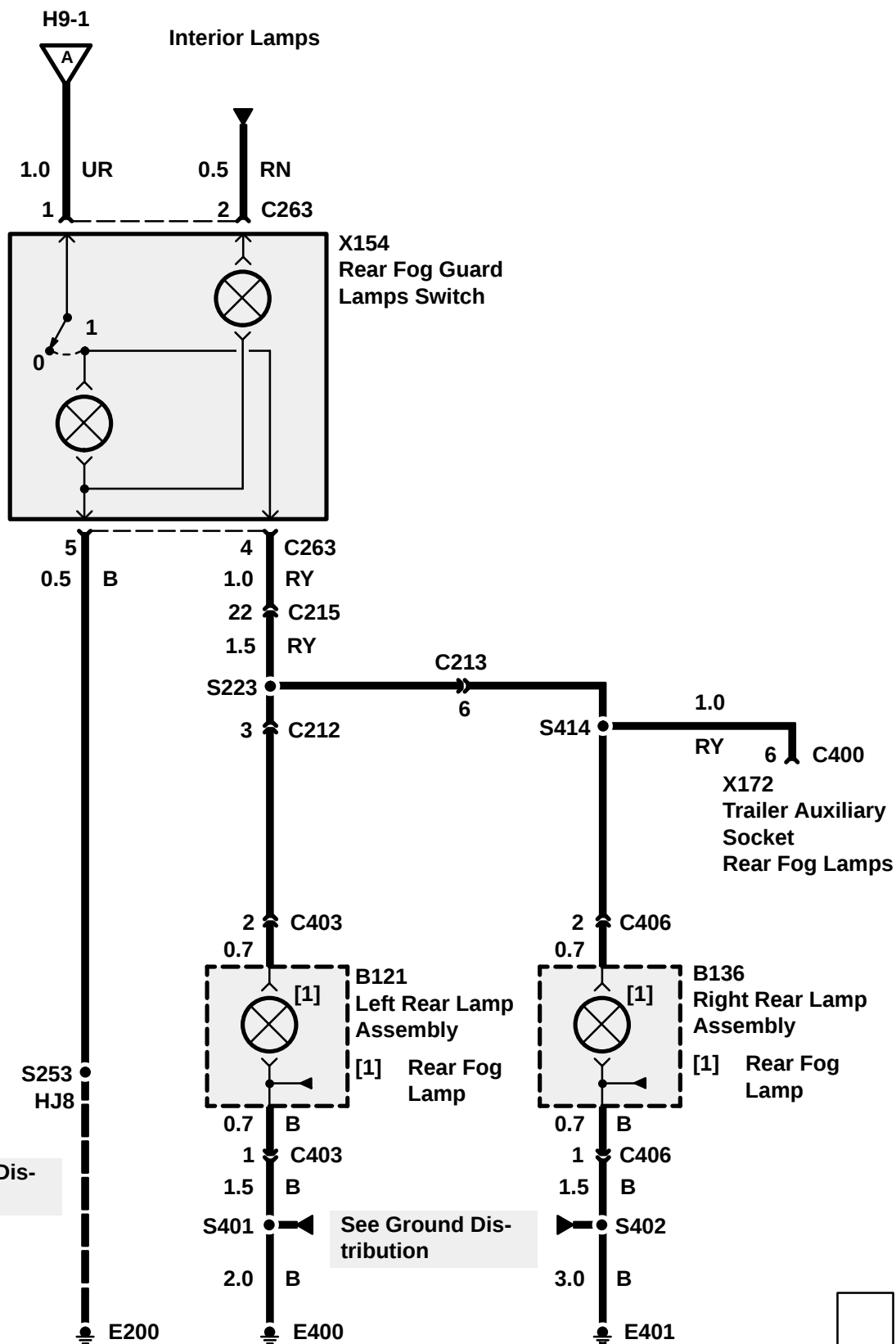
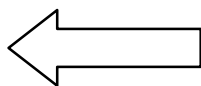




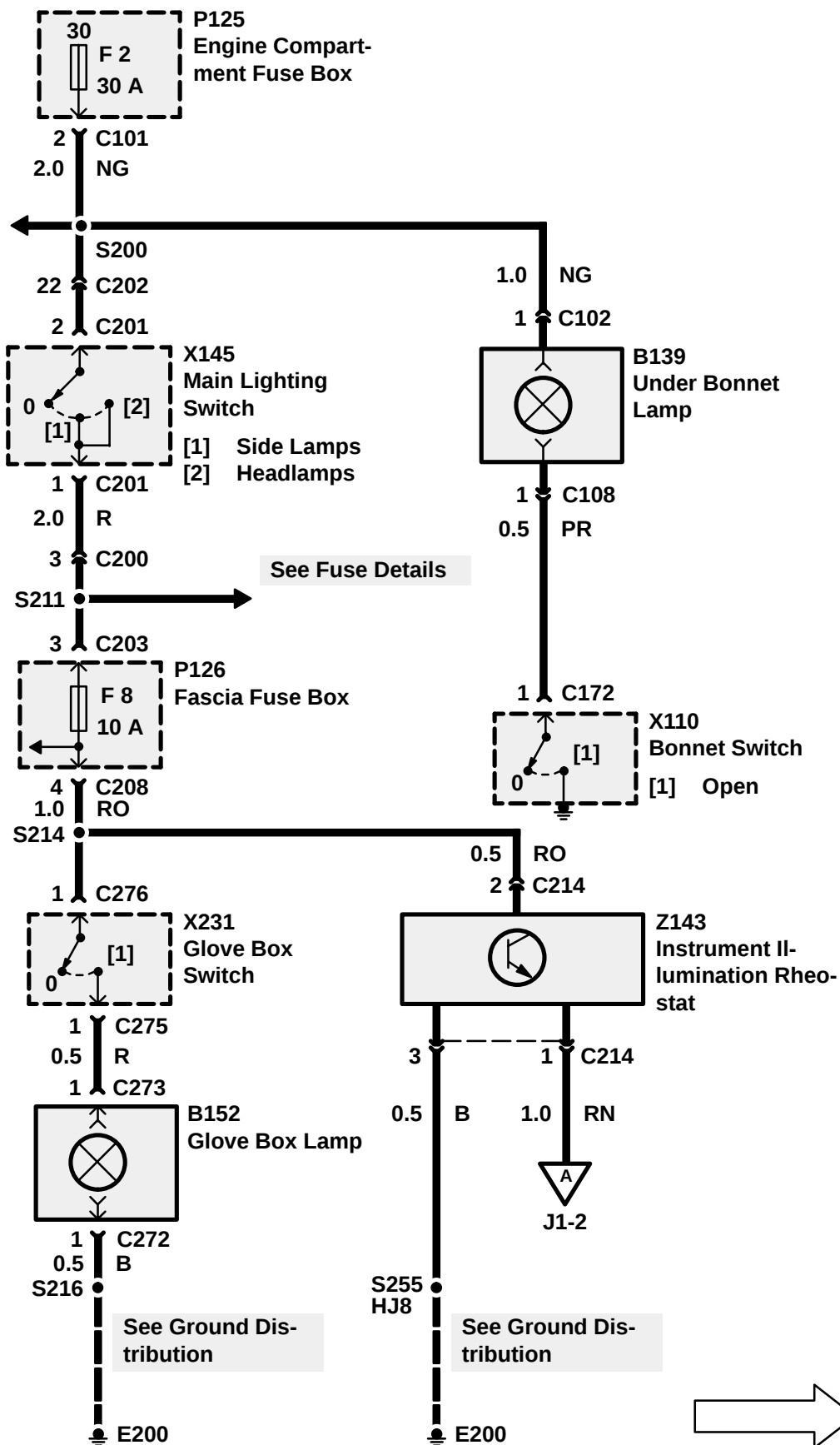


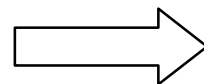
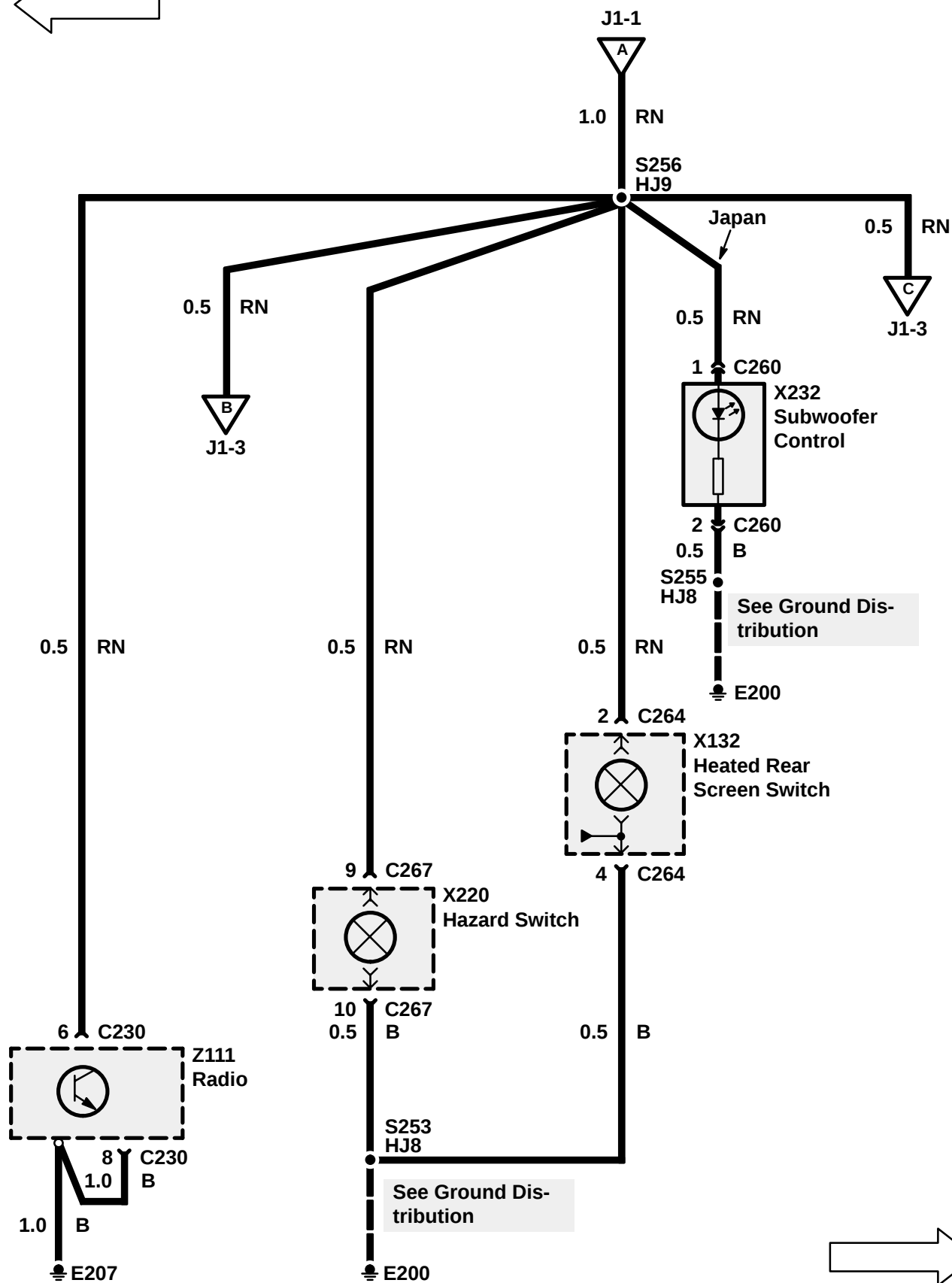
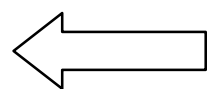


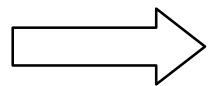
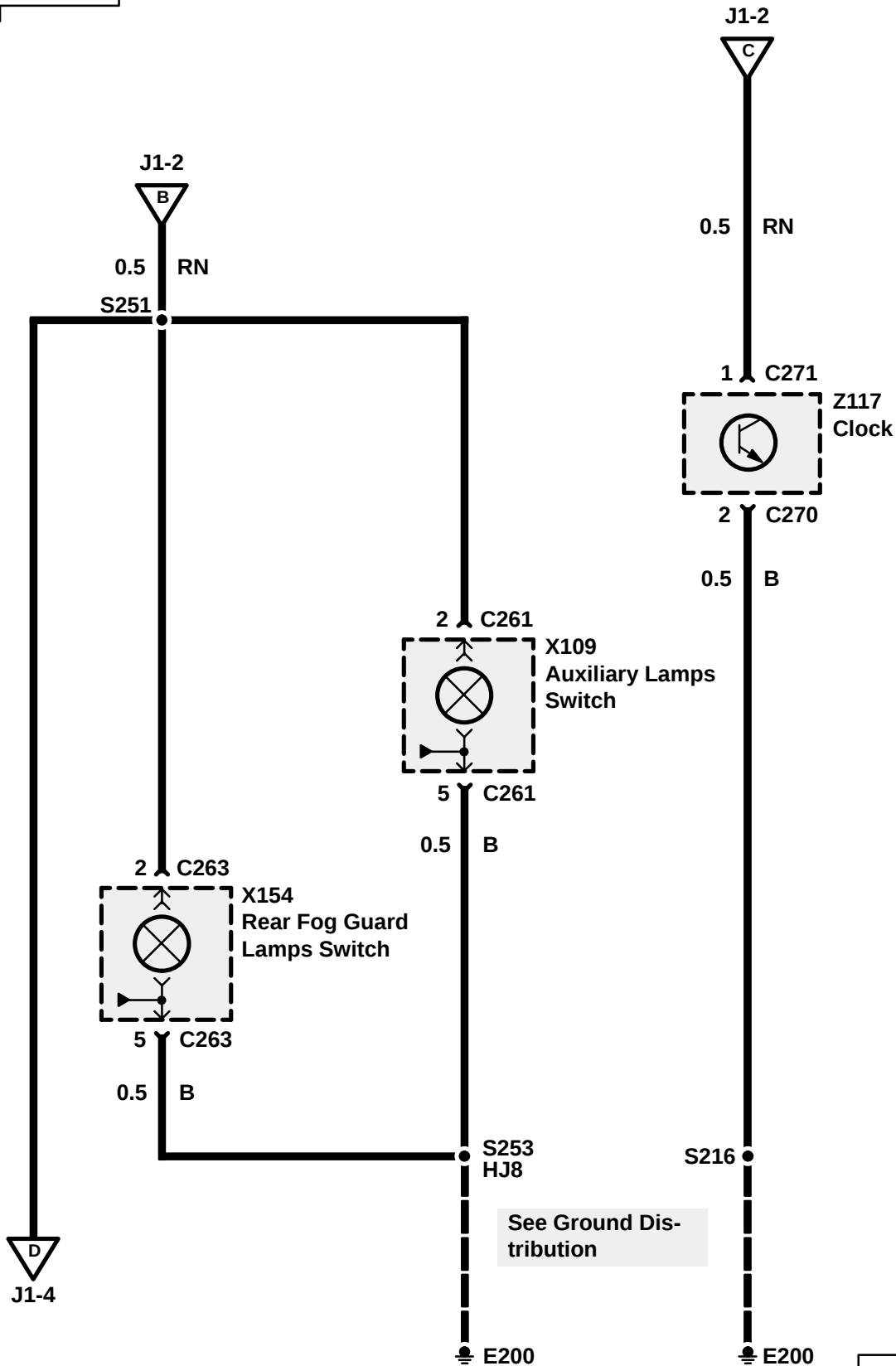


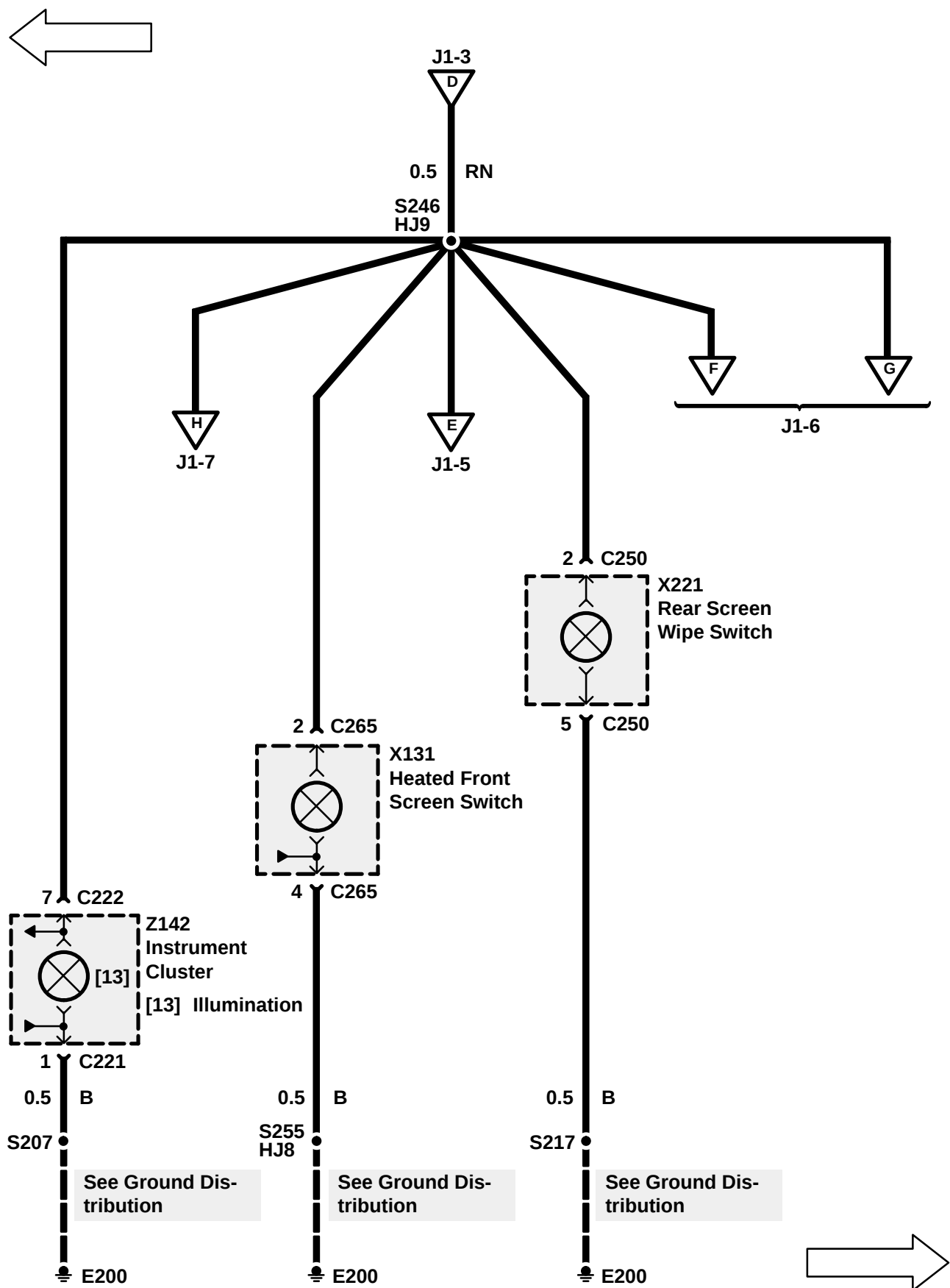


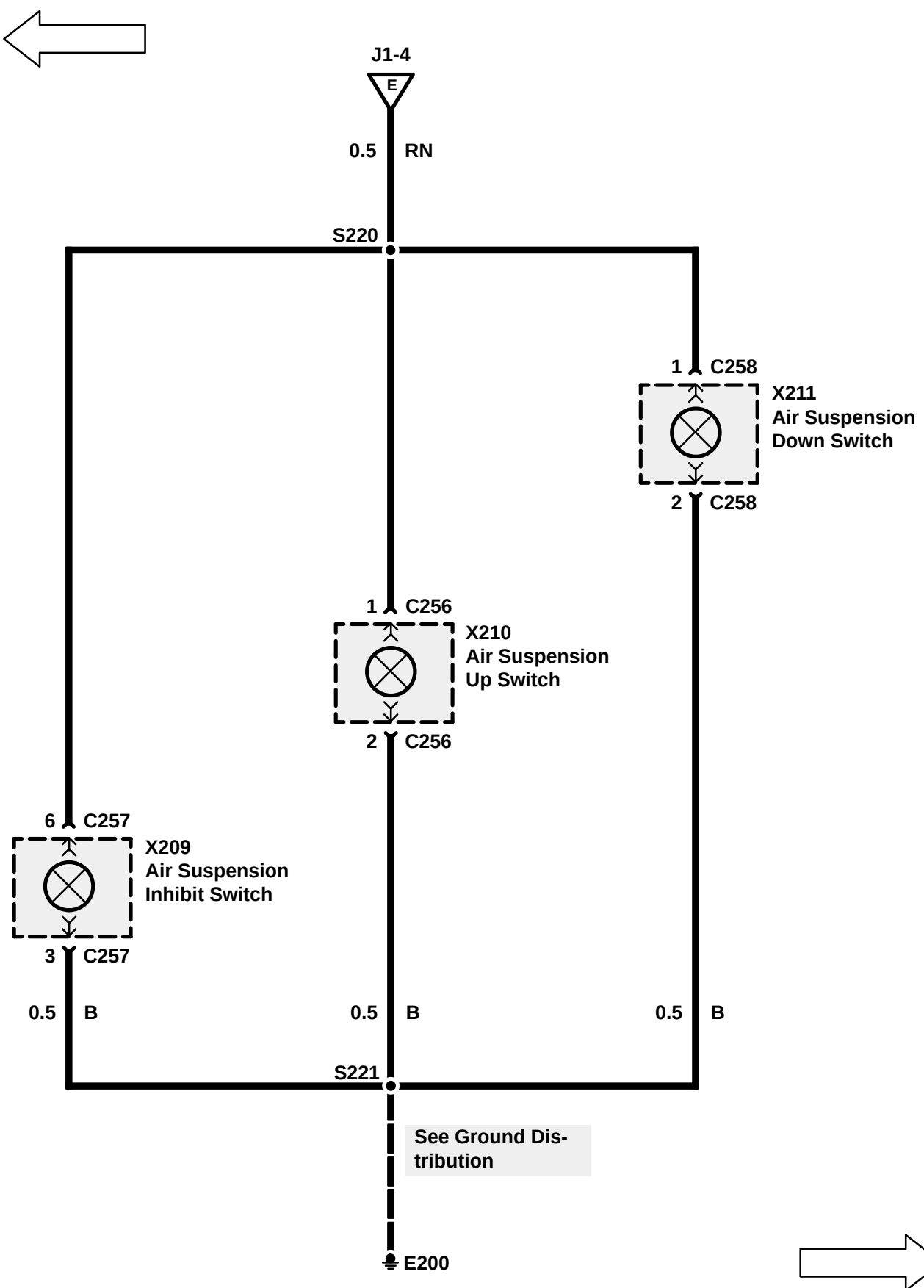
See Fuse Details

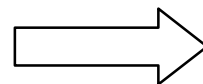
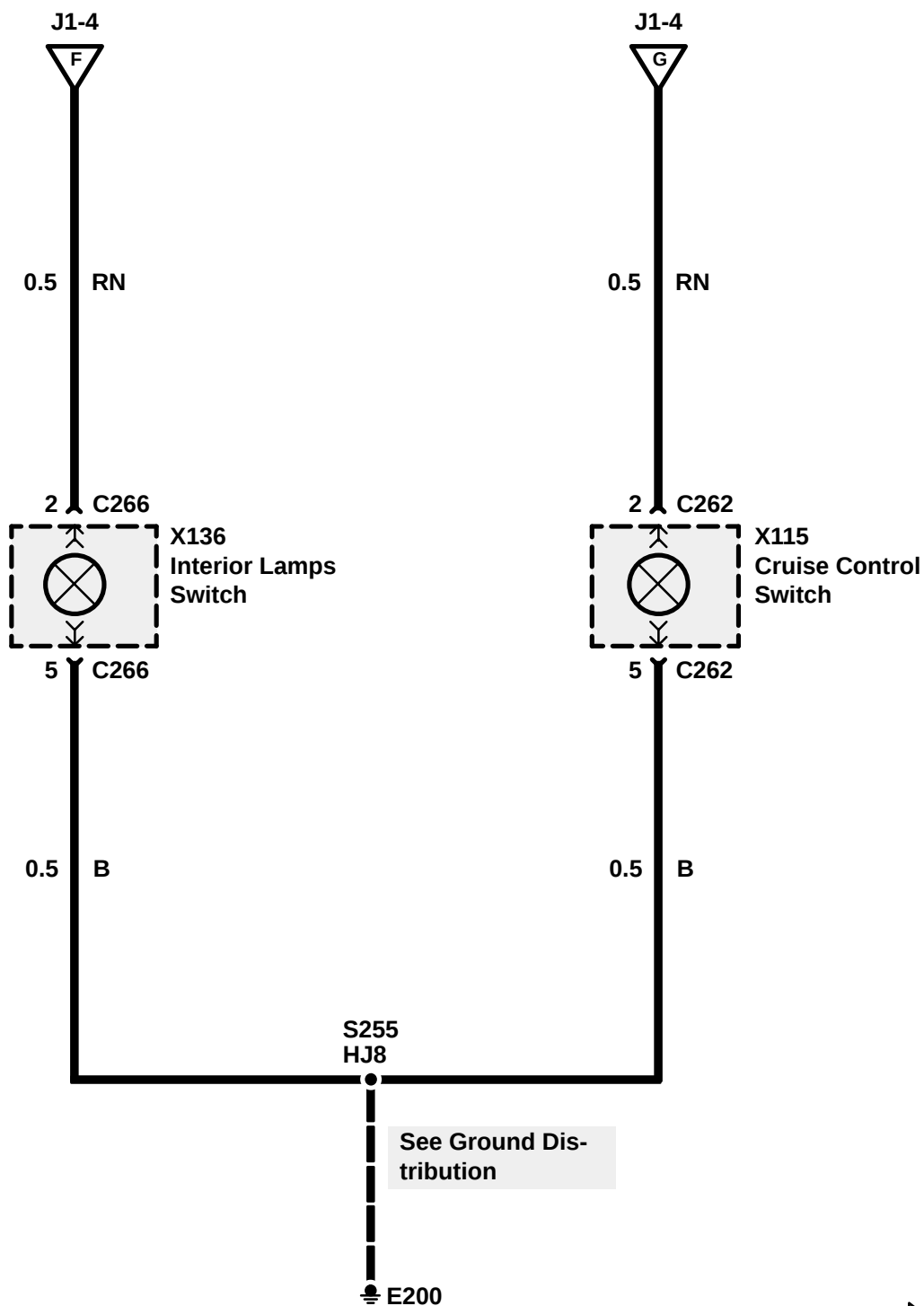
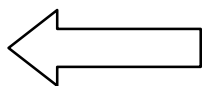


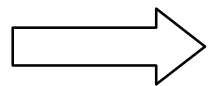
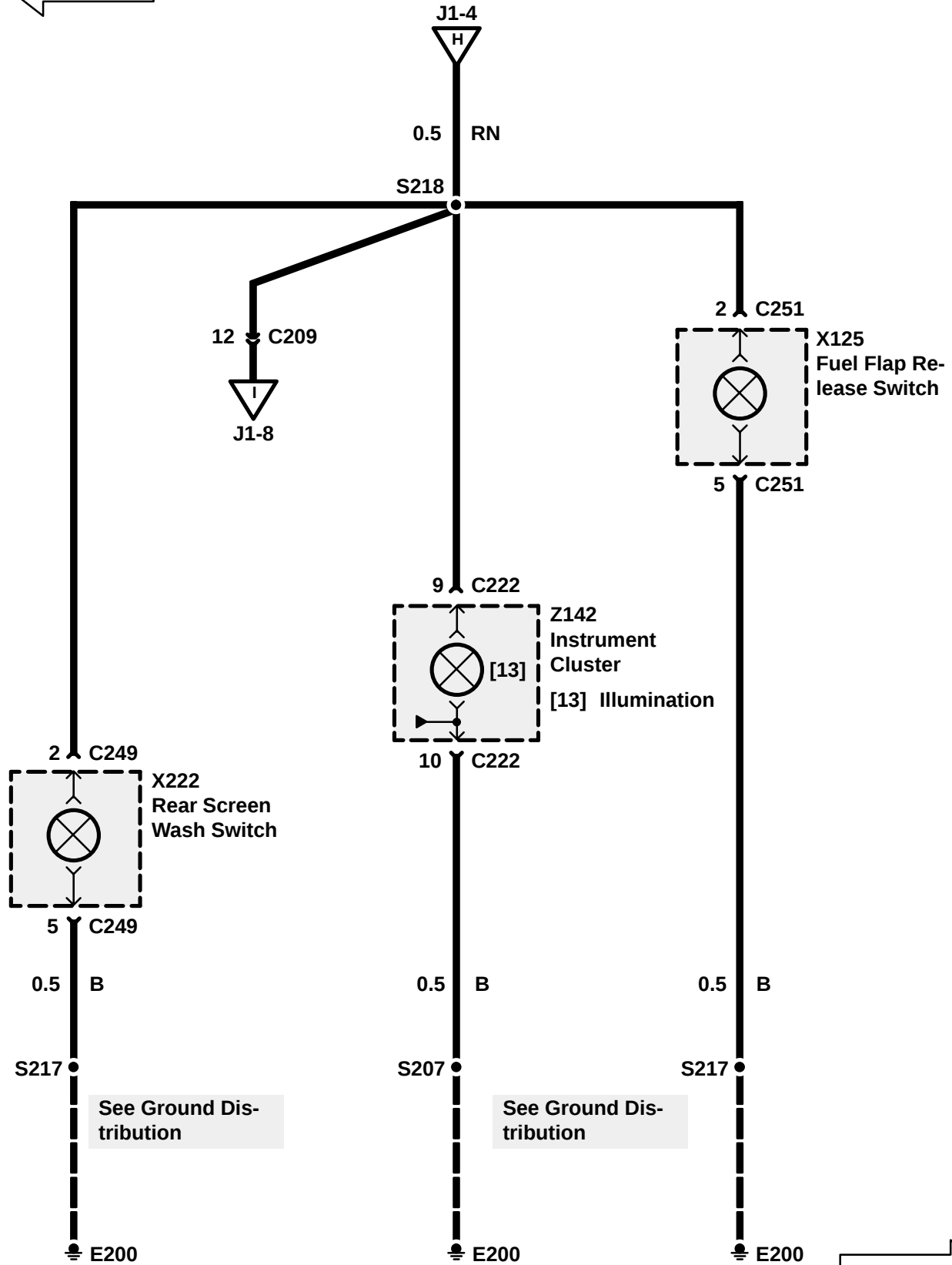


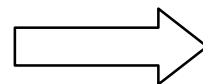
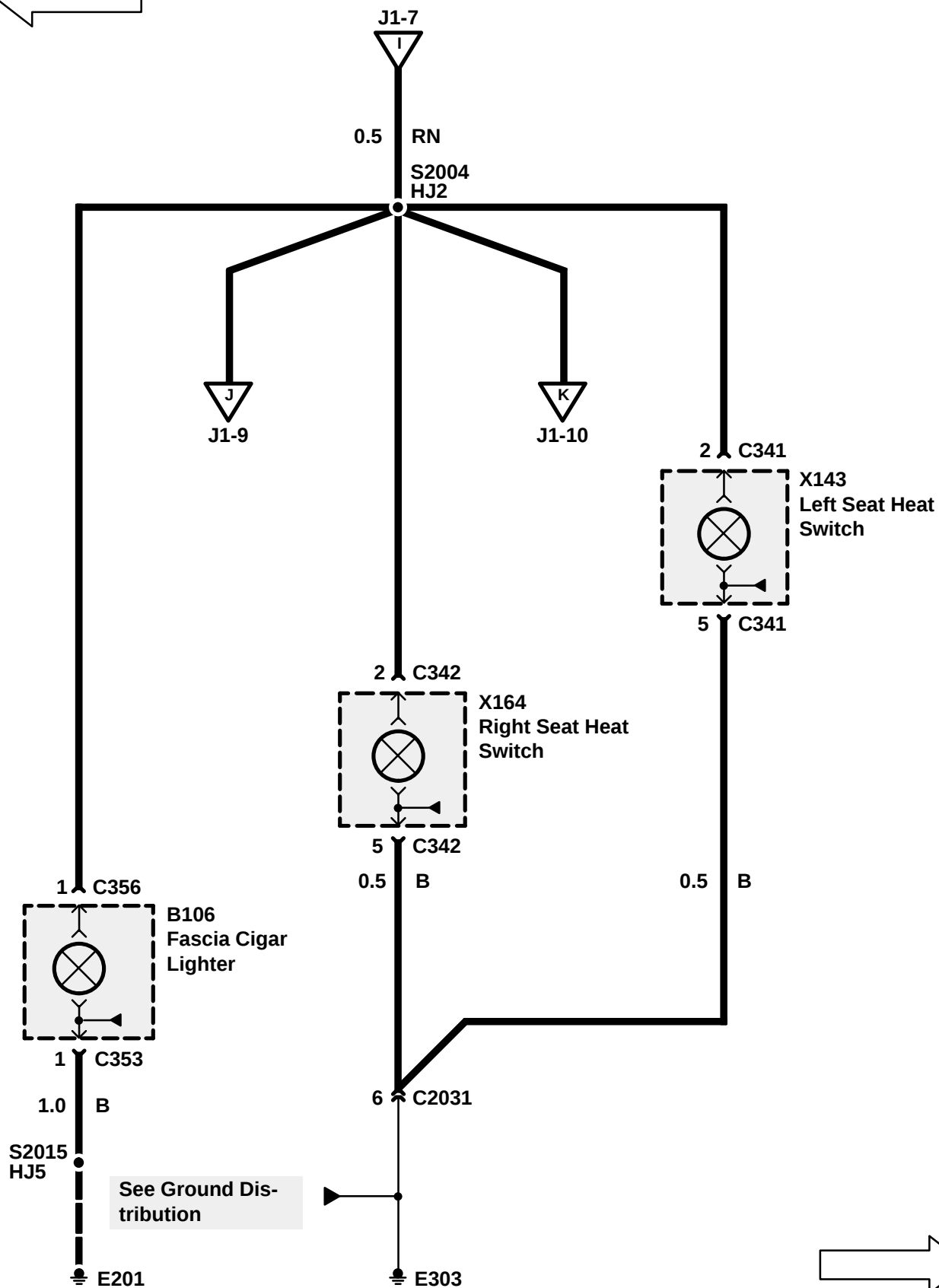
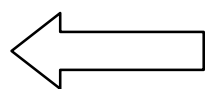


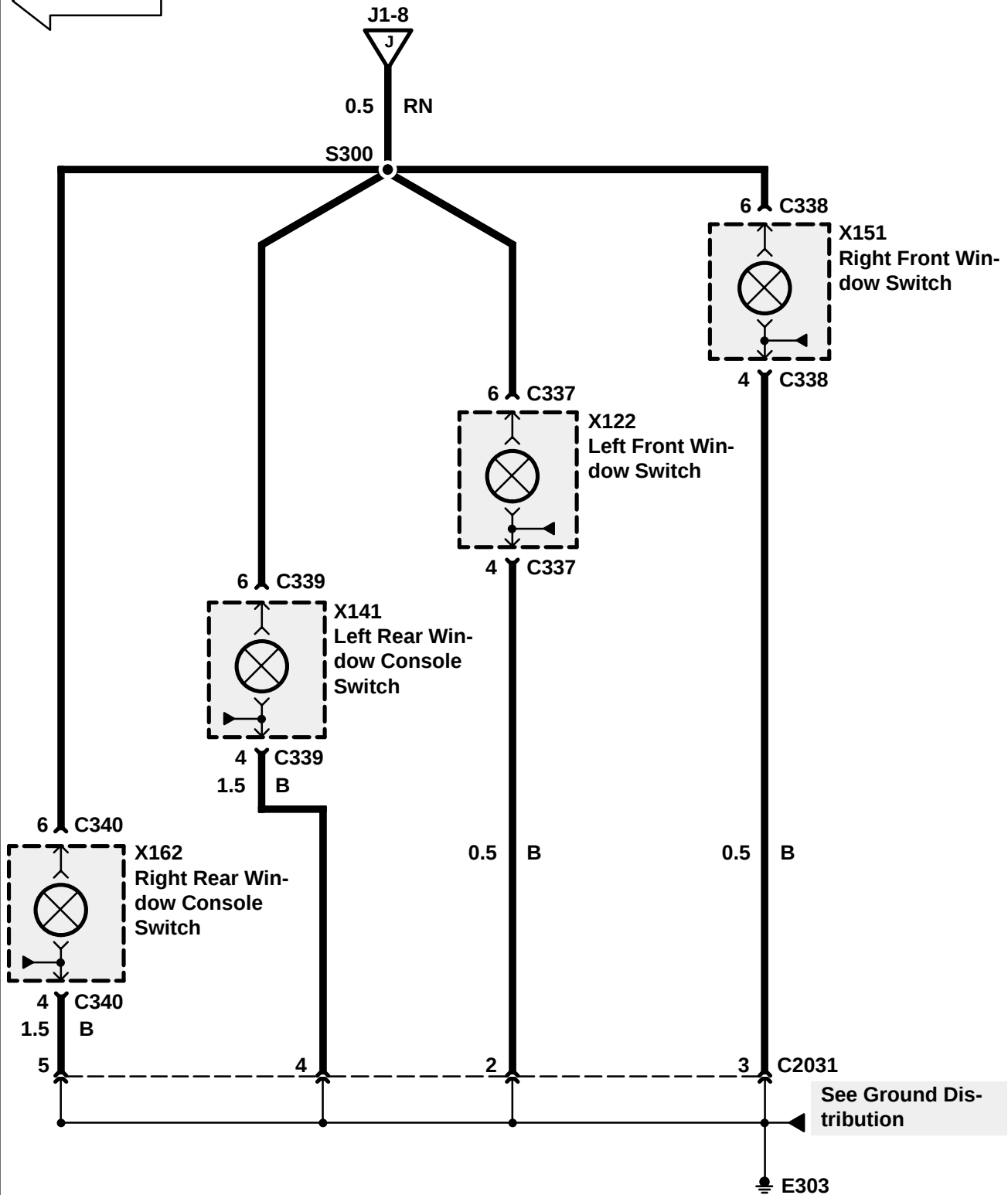


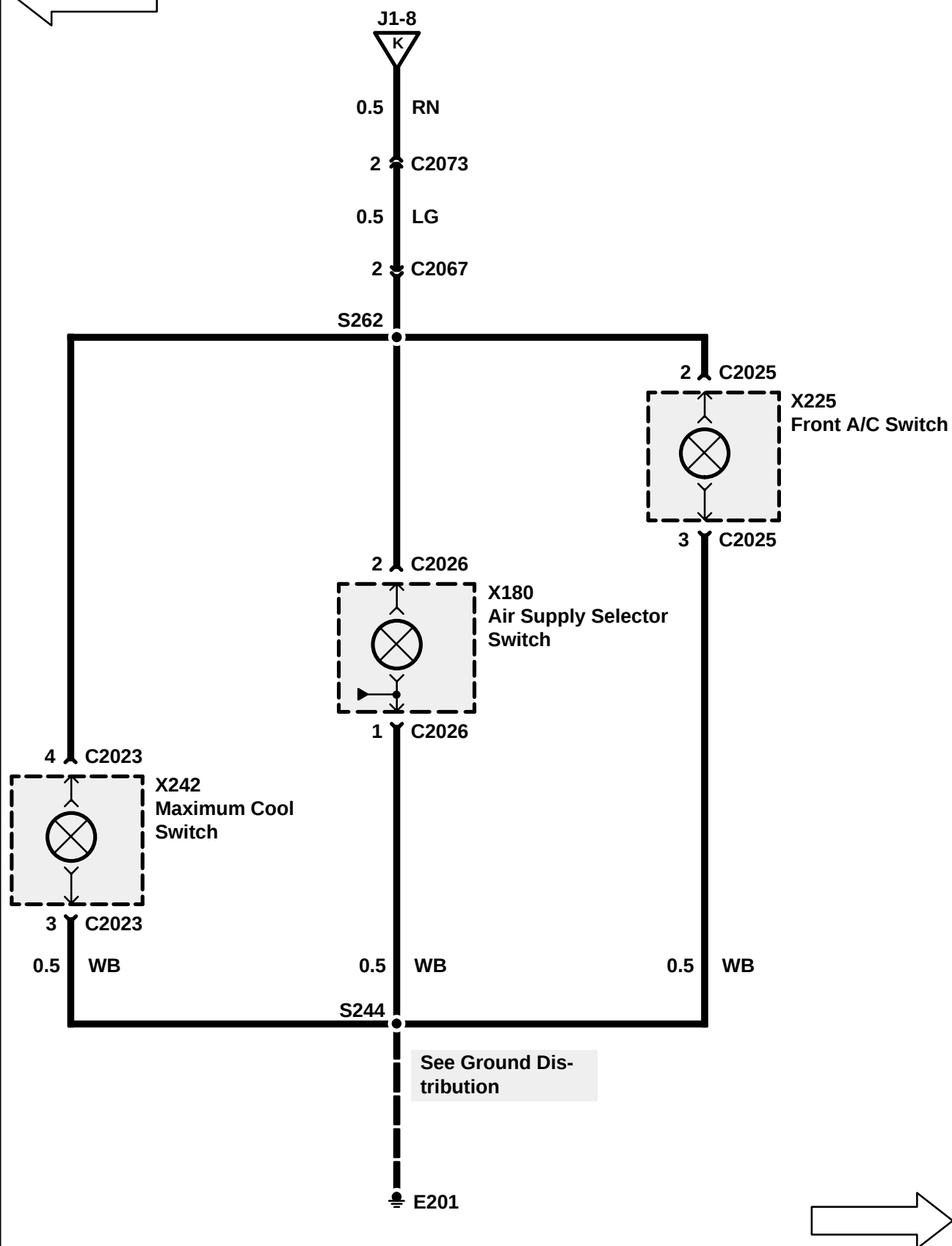


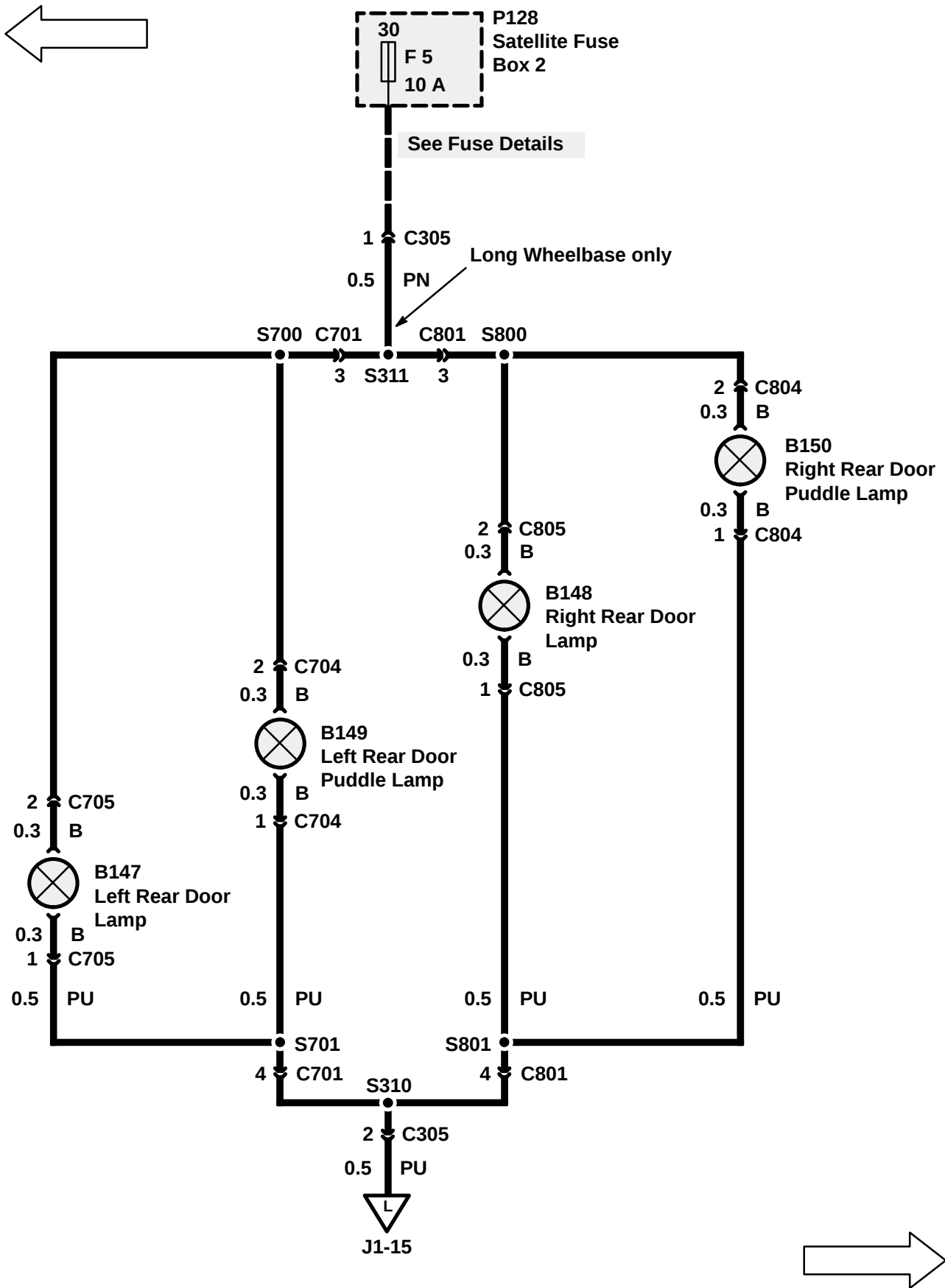


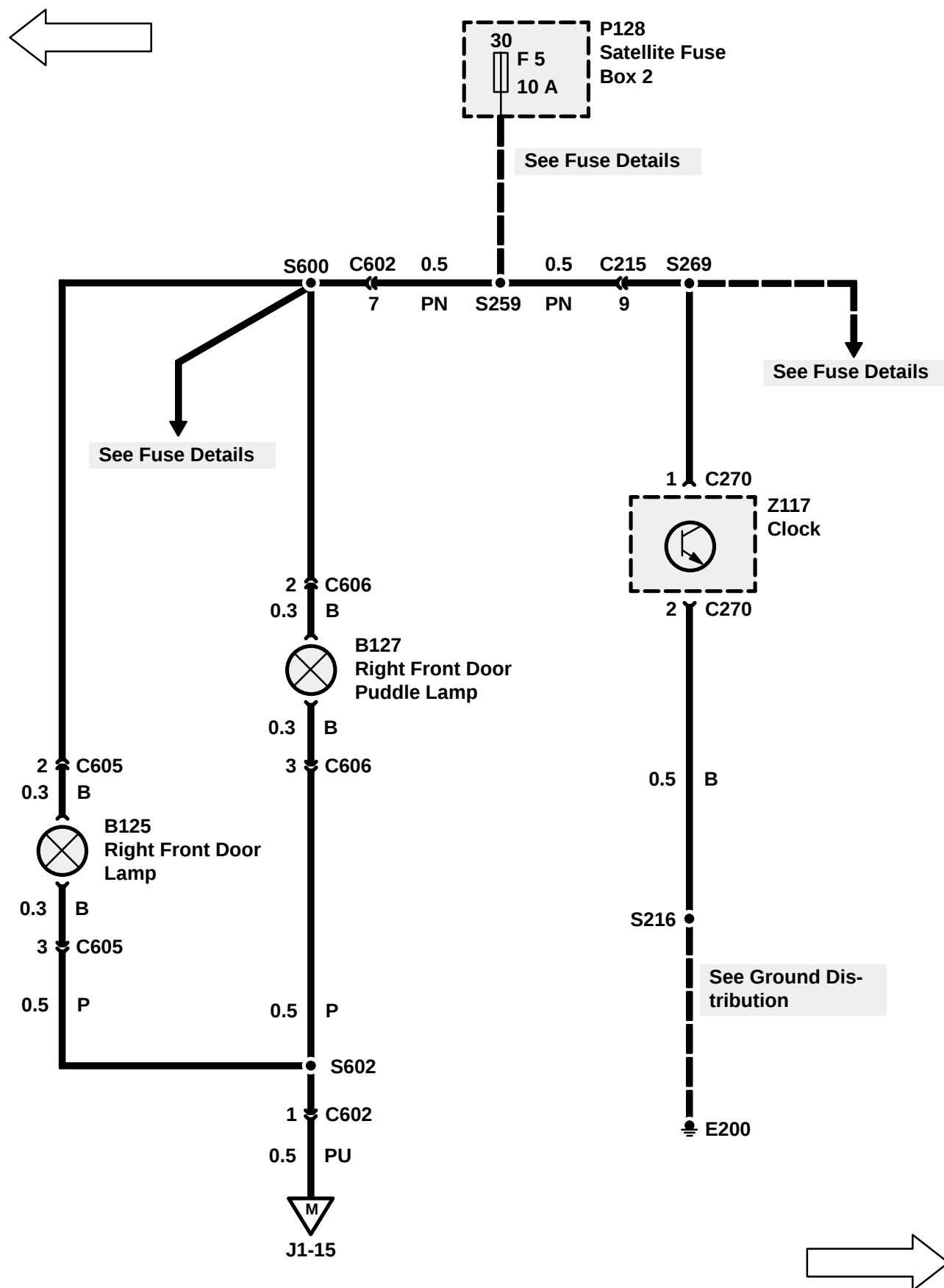


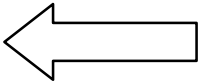






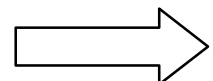
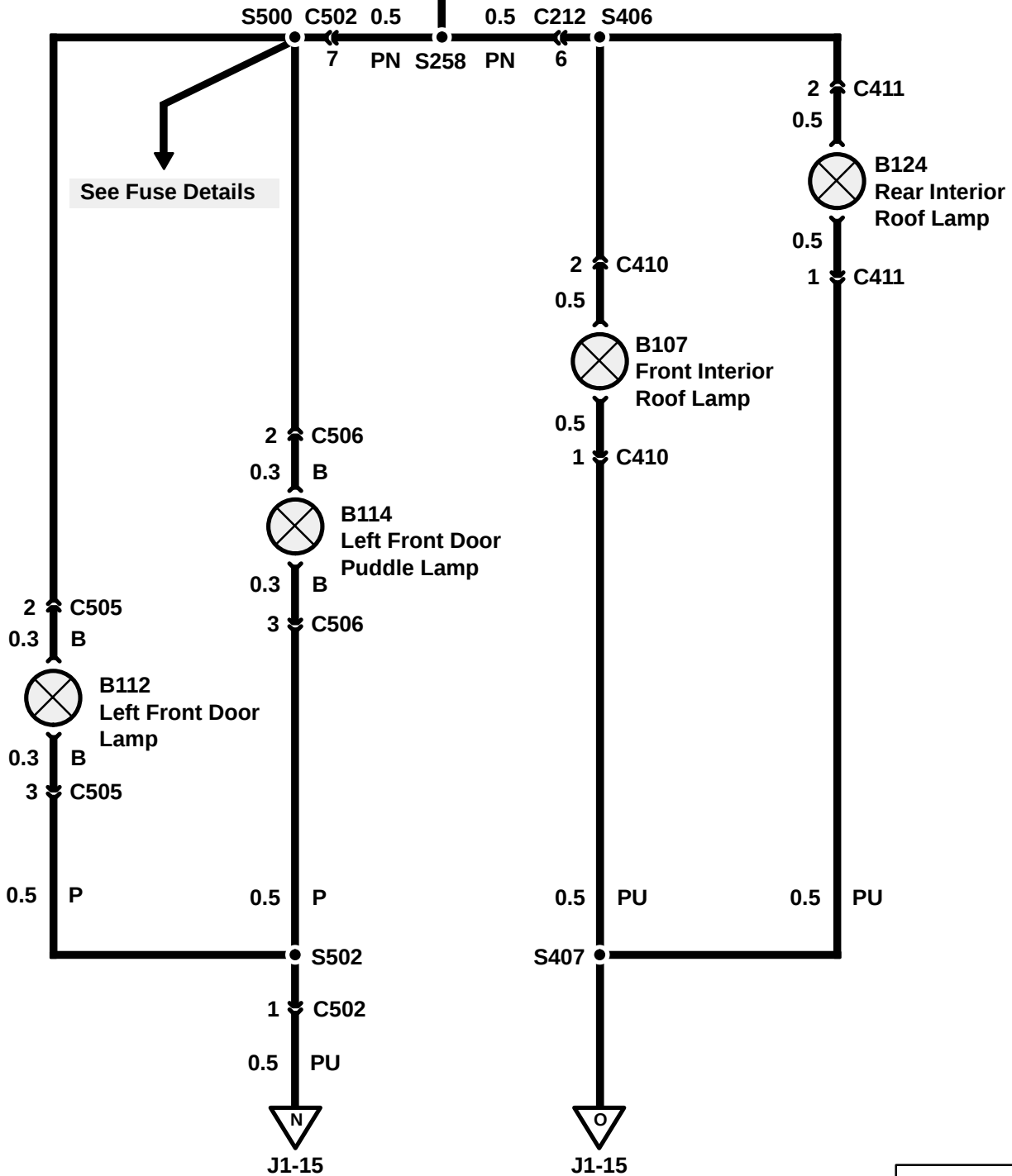


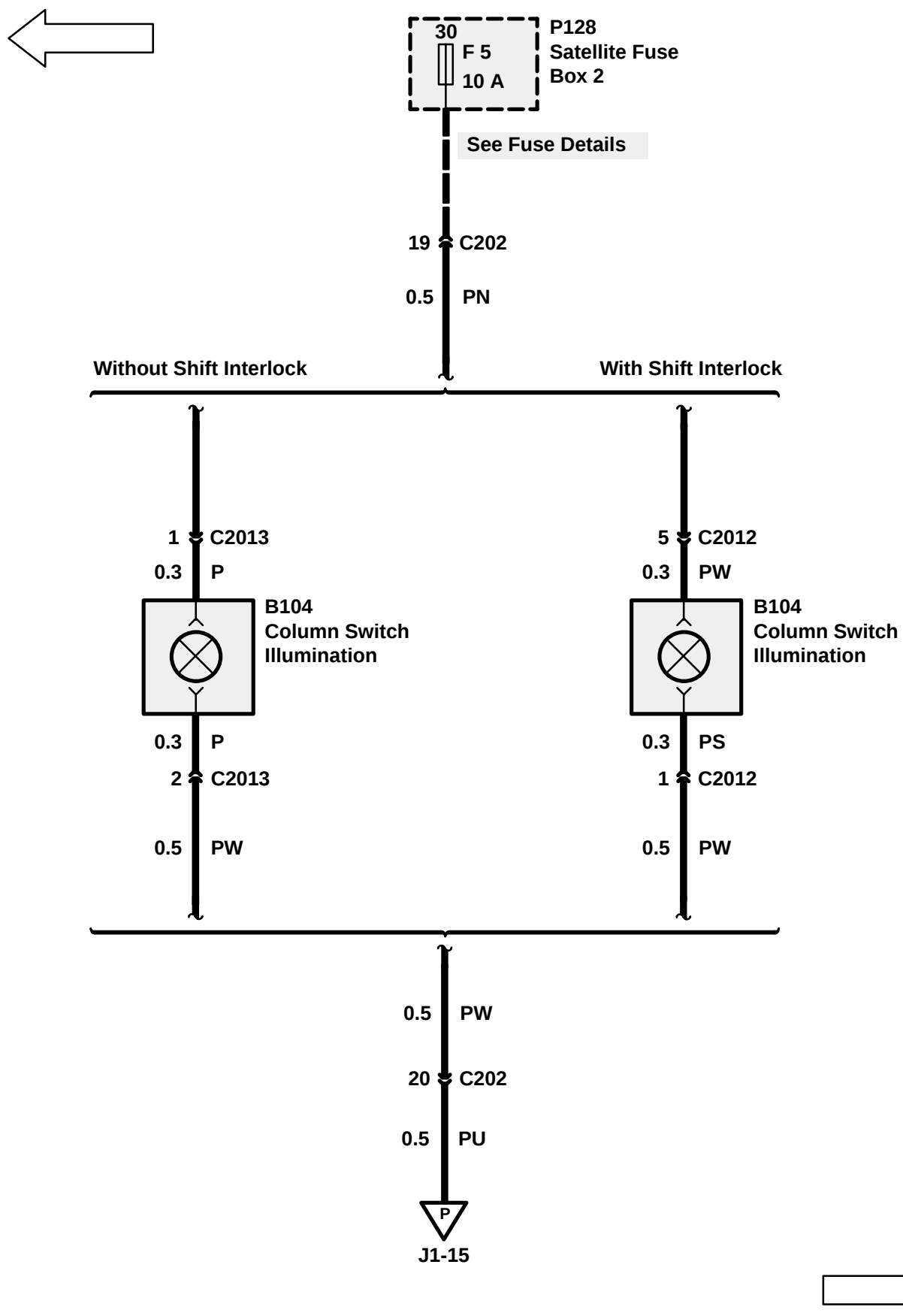


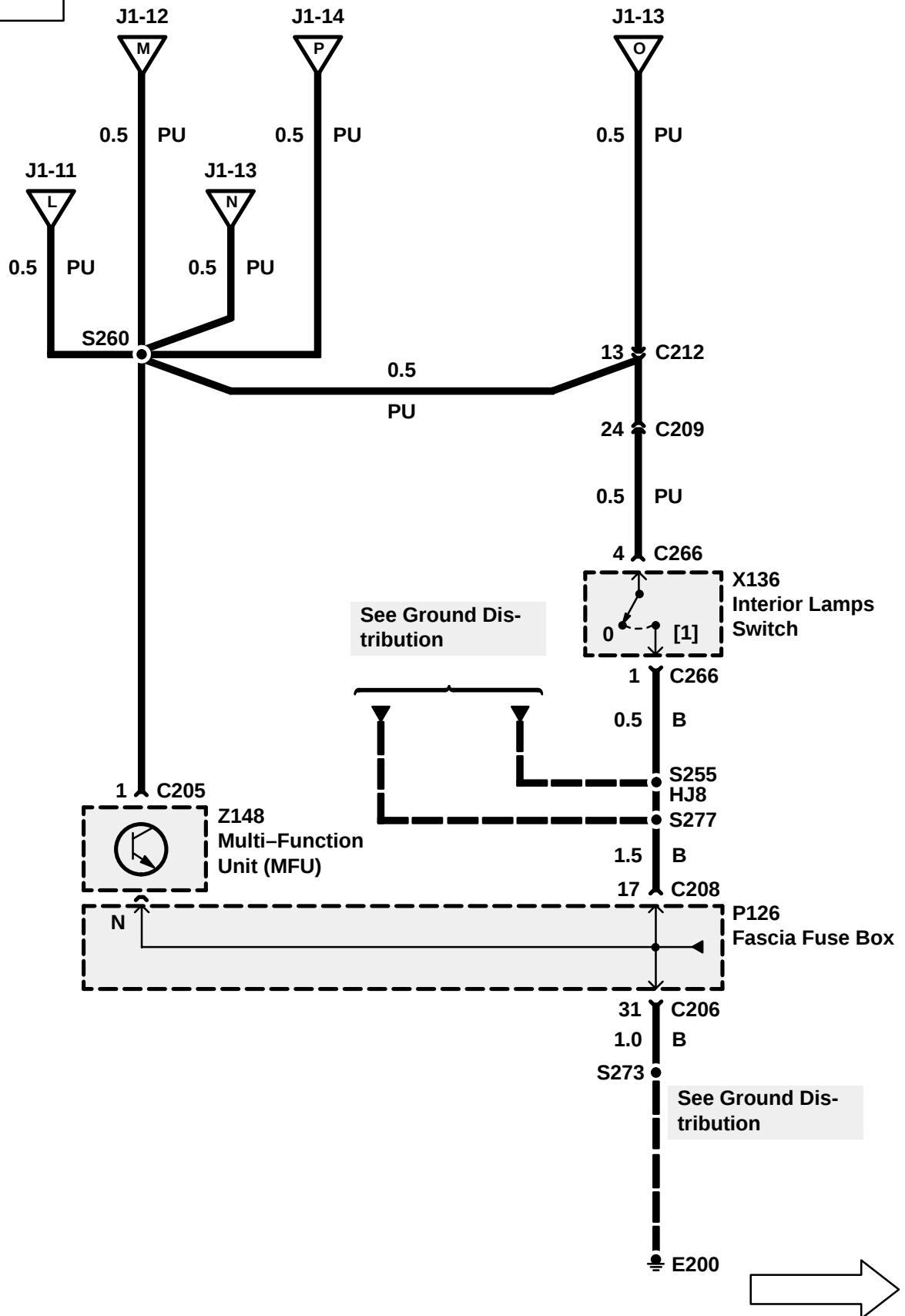


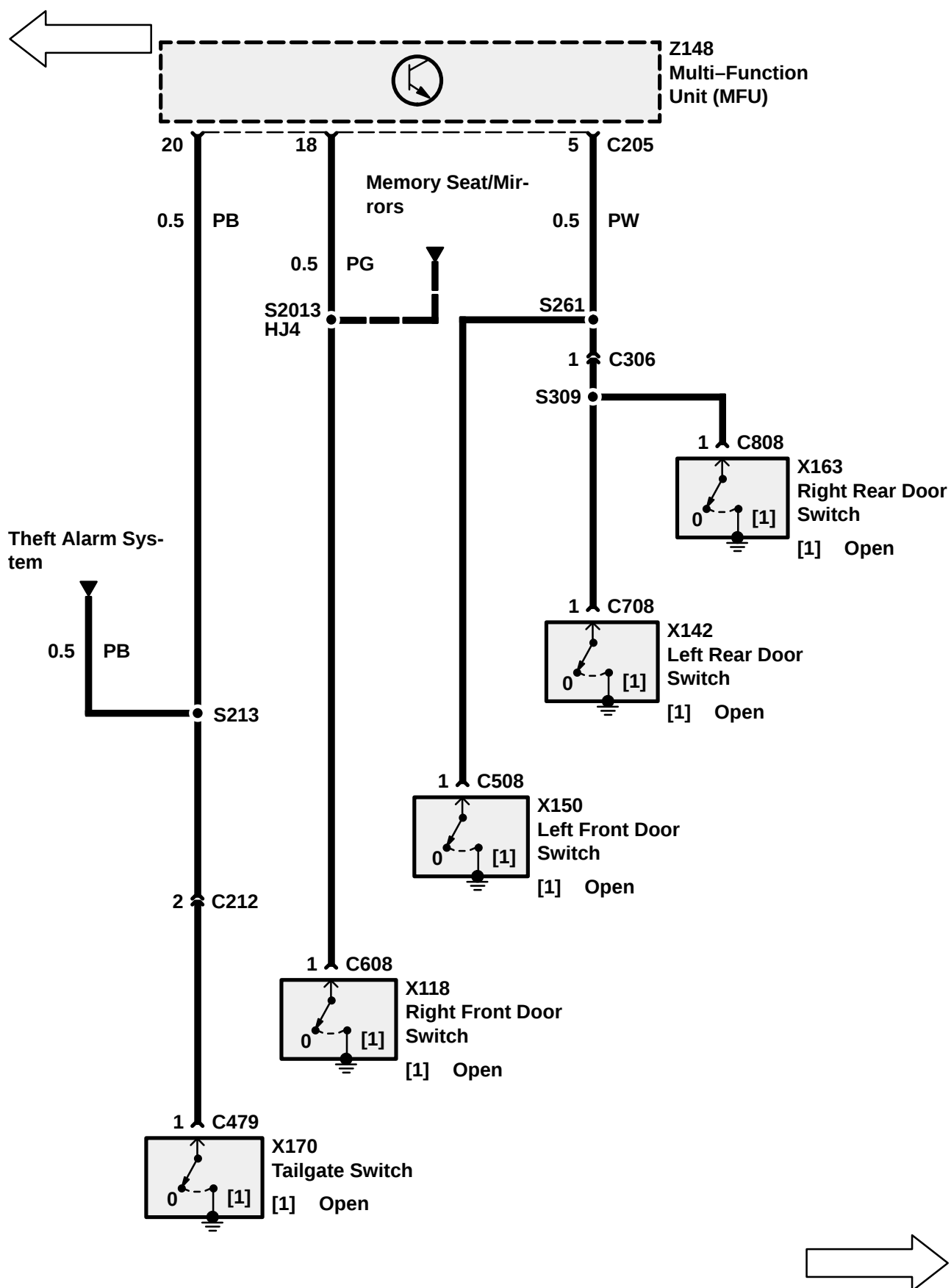
See Fuse Details

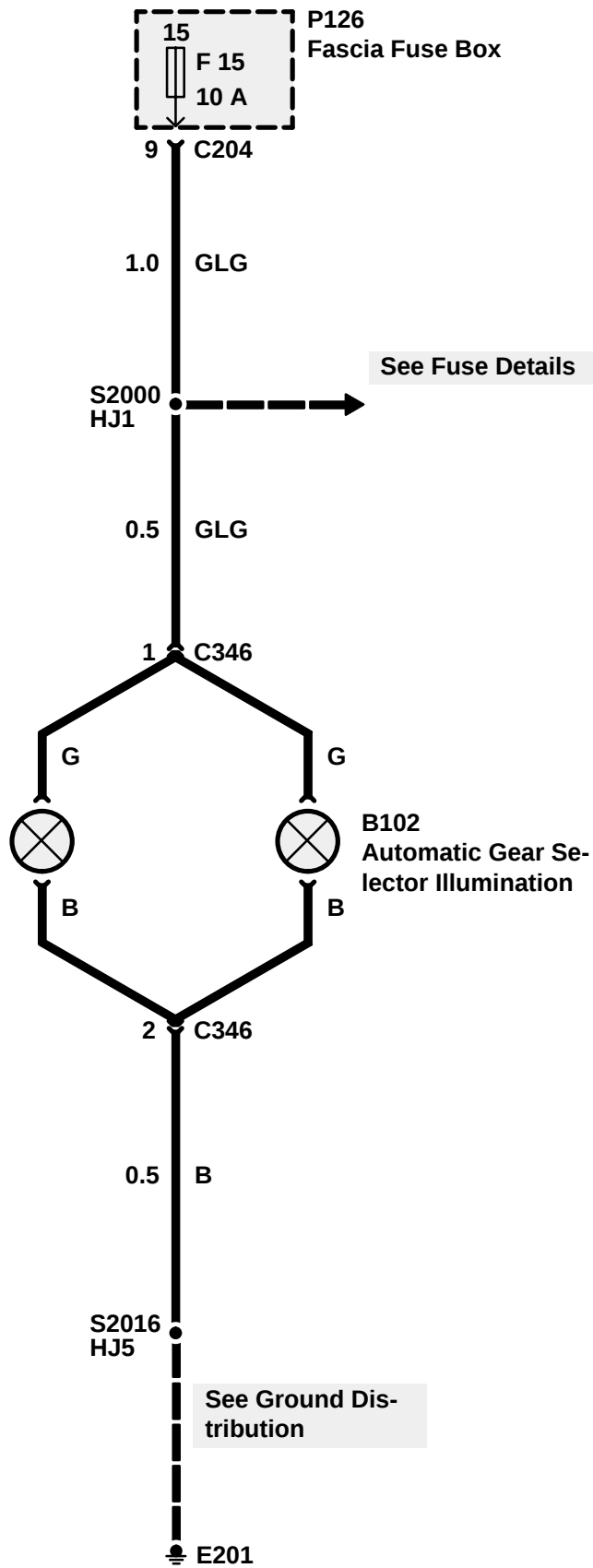
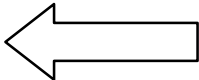
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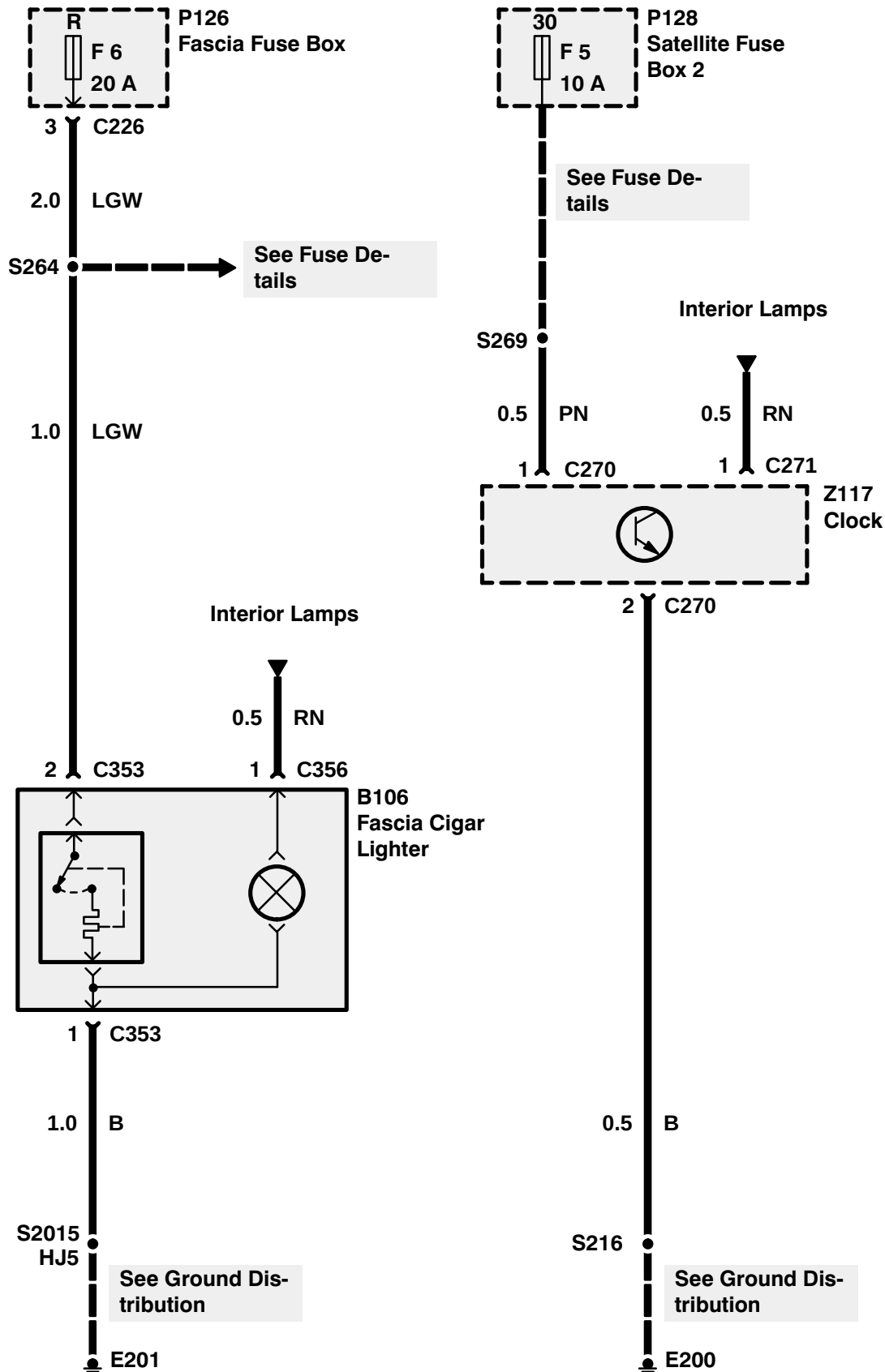












CIRCUIT OPERATION**Front Blower**

With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Blower Motor Relay (K188).

When the Fan Speed Switch (X179) is turned to position I, ground is applied to terminal 85 of the Blower Motor Relay (K188). The relay is energized, applying battery voltage to terminal 2 of the Front Blower Motor (M101). Ground is applied to the Front Blower Motor (M101) through all three resistors of the Blower Resistor Unit (Z112). The Front Blower Motor (M101) then runs at low speed. When the Fan Speed Switch (X179) is turned to position II, the Blower Motor Relay (K188) remains energized. Battery voltage is still applied to terminal 2 of the Front Blower Motor (M101). Ground is now applied to the Front Blower Motor (M101) through two resistors of the Blower Resistor Unit (Z112) and the Fan Speed Switch (X179). The motor then runs at the low-medium speed. When the Fan Speed Switch (X179) is turned to position III, the Blower Motor Relay (K188) remains energized. Ground is now applied to the Front Blower Motor (M101) through one resistor of the Blower Resistor Unit (Z112) and the Fan Speed Switch (X179). The motor then runs at the medium-high speed. When the Fan Speed Switch (X179) is turned to position IV, the Blower Motor Relay (K188) remains energized. Ground is now applied directly to the Front Blower Motor (M101) through the Fan Speed Switch (X179). The motor then runs at high speed.

Fresh Air Mode

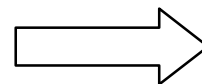
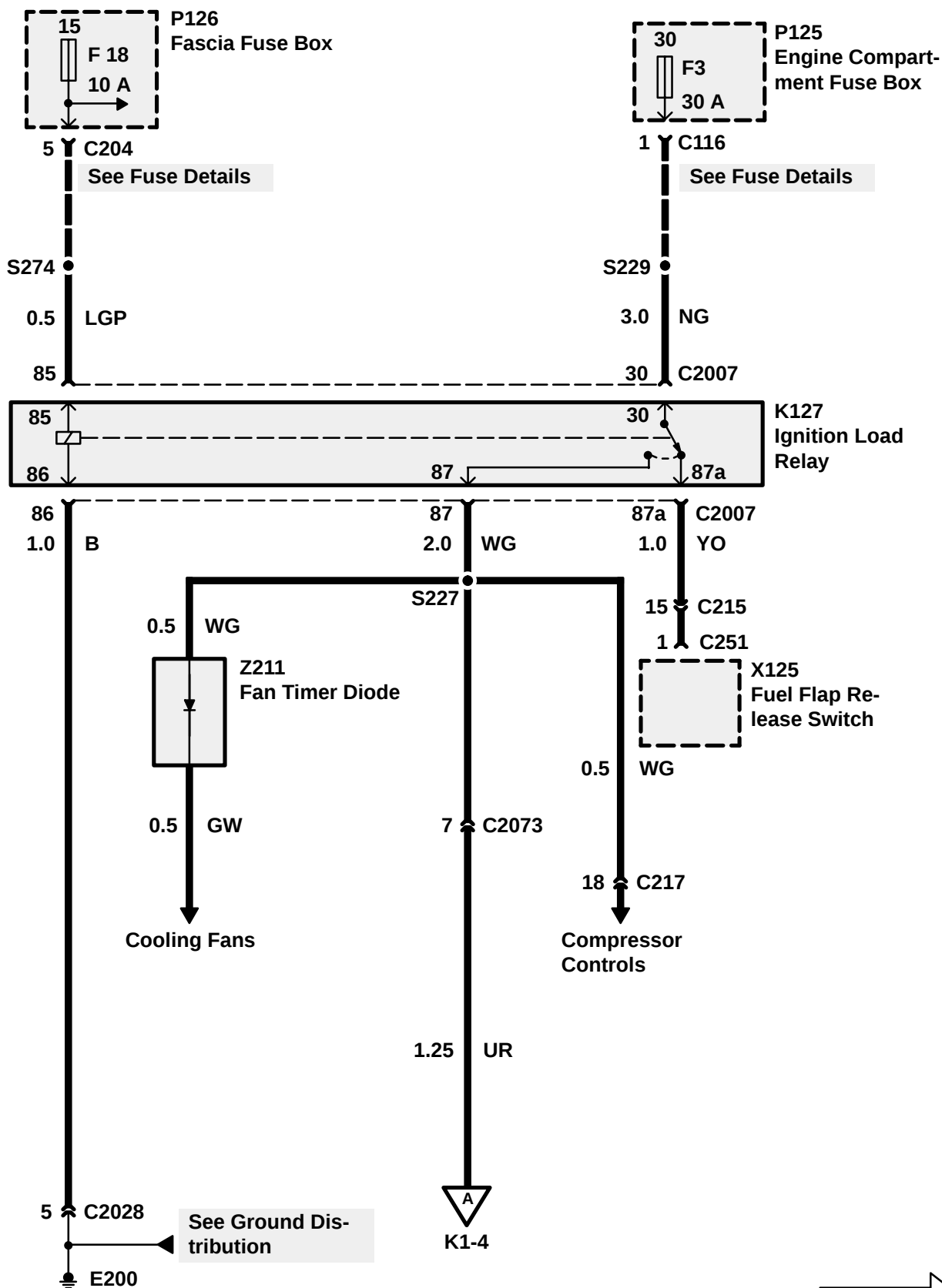
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Air Recirculation Solenoid In-Line Fuse (P138) and Air Recirculation Solenoid (K123). The solenoid now opens the fresh air intake flap allowing fresh air to enter the vehicle cabin. When the fresh air intake flap has been fully opened, the microswitch inside the Air Recirculation Solenoid (K123) moves to the Fresh Air position interrupting the ground supply. The solenoid now stops and remains in the Fresh Air position.

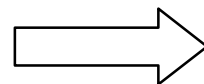
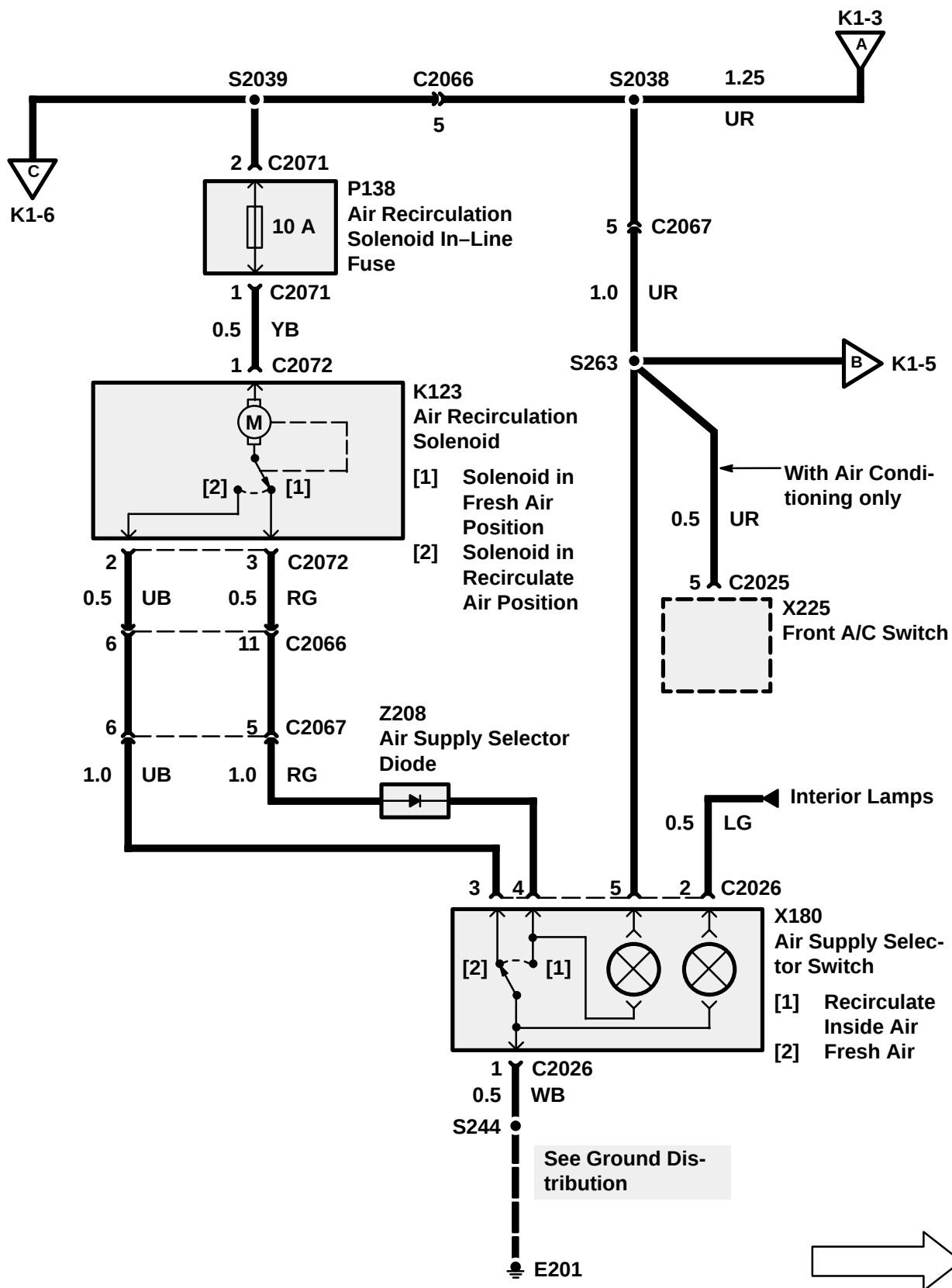
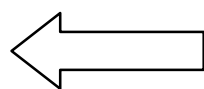
Recirculated Air Mode

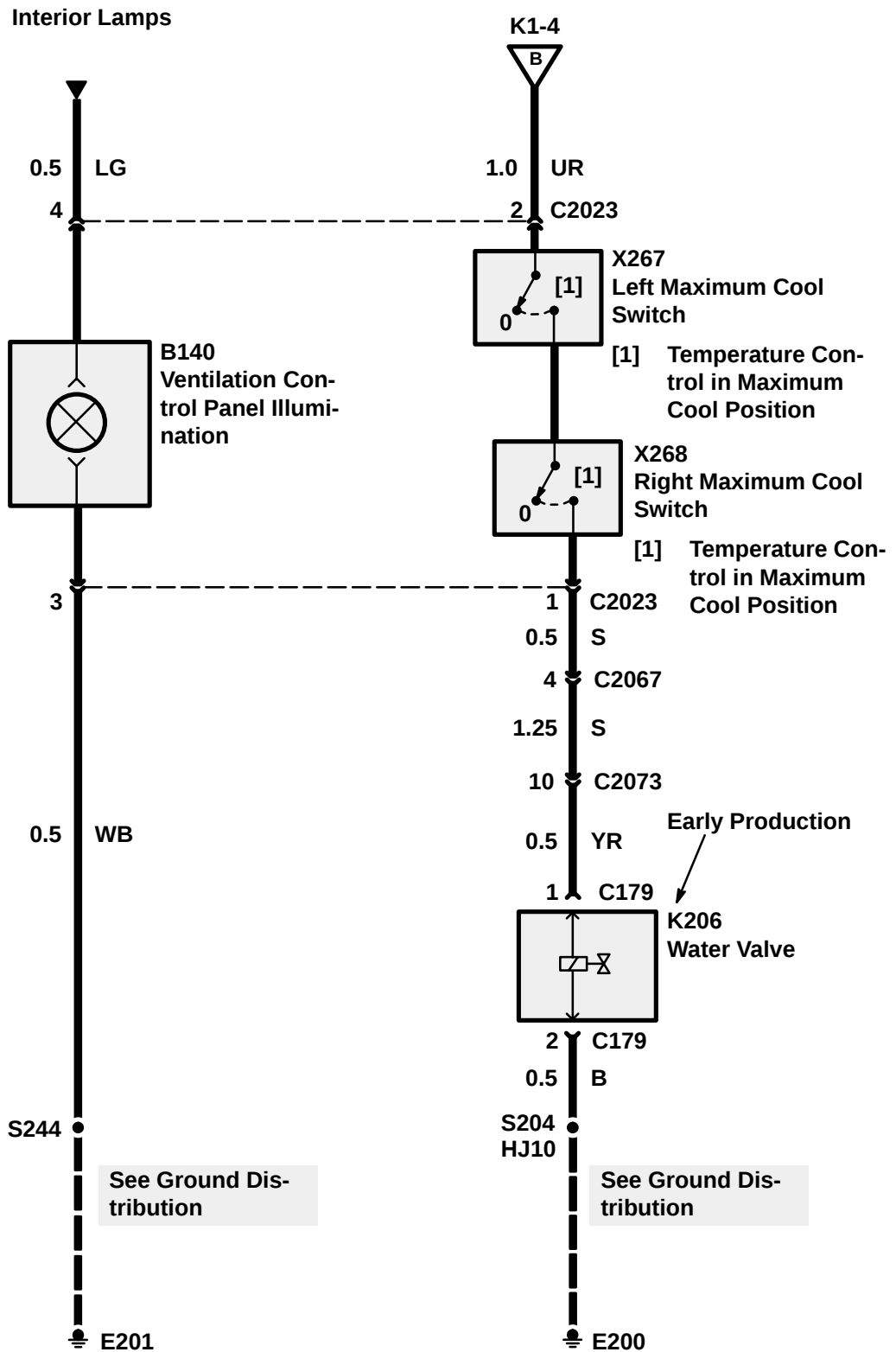
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Air Recirculation Solenoid In-Line Fuse (P138) and Air Recirculation Solenoid (K123). When the Air Supply Selector Switch is moved to Recirculate Air position, ground is applied to the Air Recirculation Solenoid (K123). The solenoid now closes the fresh air intake flap allowing only the air inside the vehicle cabin to circulate. When the fresh air intake flap has been fully closed, the microswitch inside the Air Recirculation Solenoid (K123) moves to the Recirculate Air position interrupting the ground supply. The solenoid now stops and remains in the Recirculate Air position.

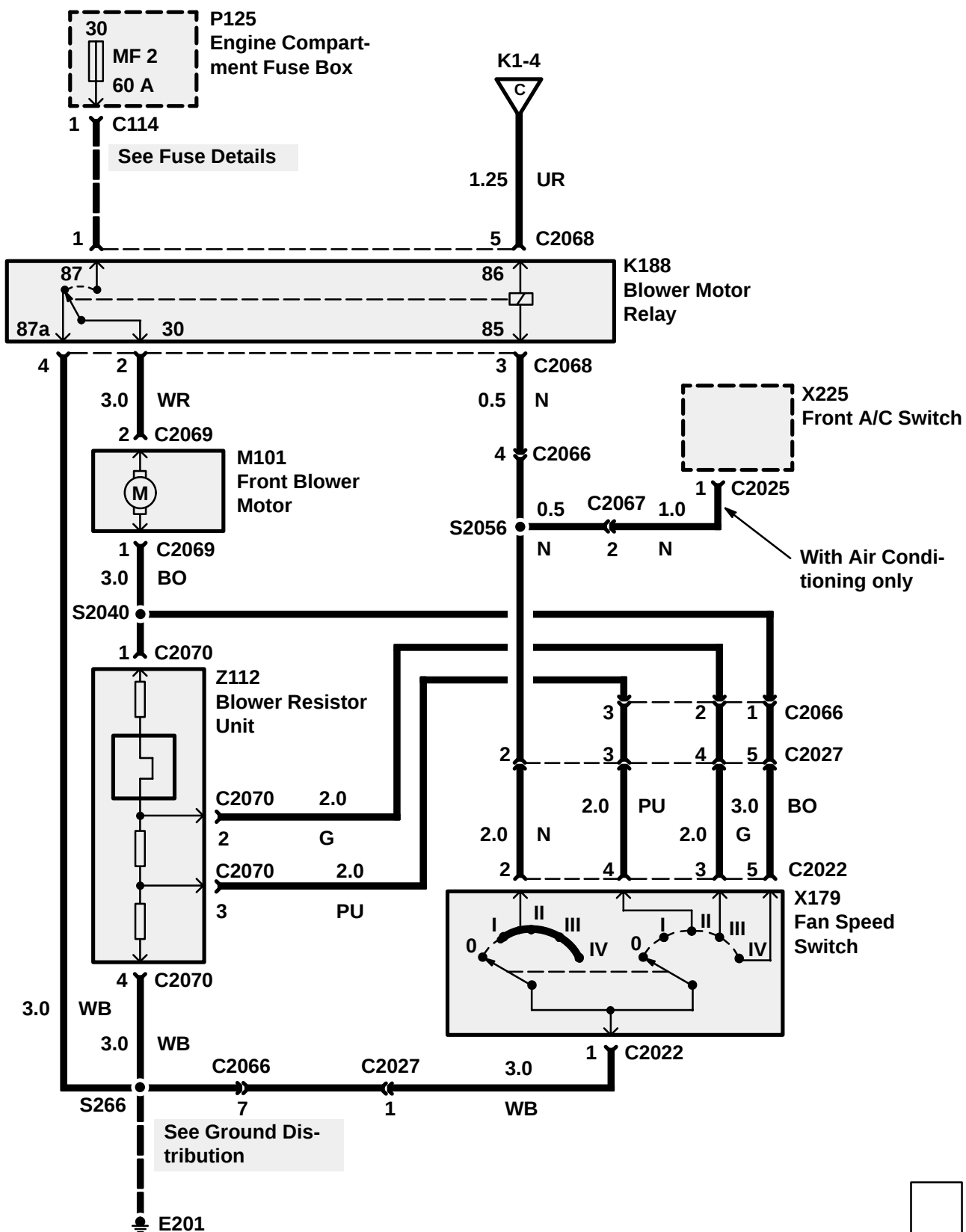
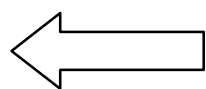
Heated Air

With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Left Maximum Cool Switch (X267). When the Left and Right Temperature Controls are turned to the maximum cool position, the Left Maximum Cool Switch (X267) and Right Maximum Cool Switch (X268) close. Battery voltage is now applied to the Water Valve (K206). The Water Valve (K206) closes and prevents heated engine coolant from entering the heater matrix. When one or both of the Temperature Controls are not in the maximum cool position, battery voltage is not applied to the Water Valve (K206). The valve then opens and allows heated engine coolant to enter the heater matrix.







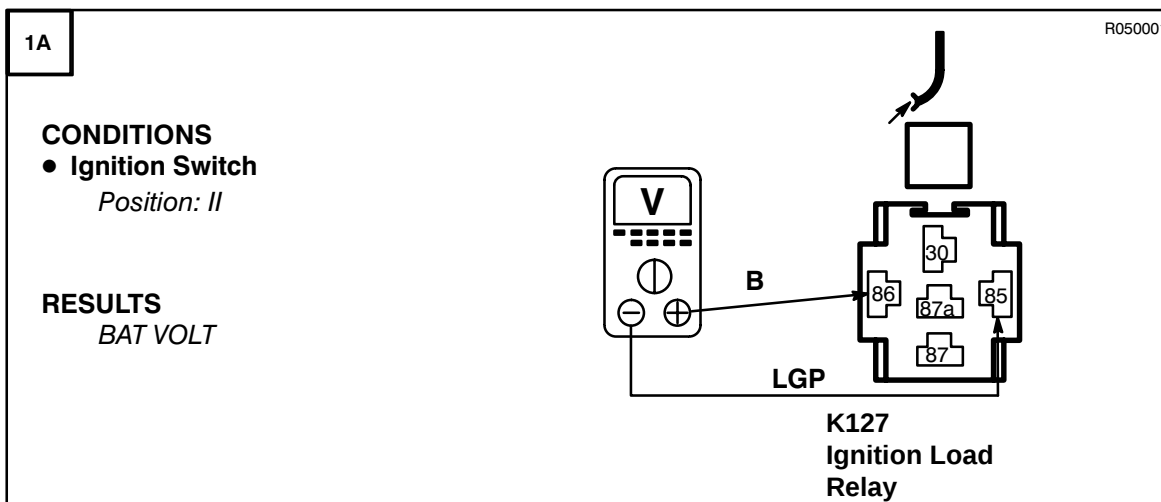


TROUBLESHOOTING HINTS

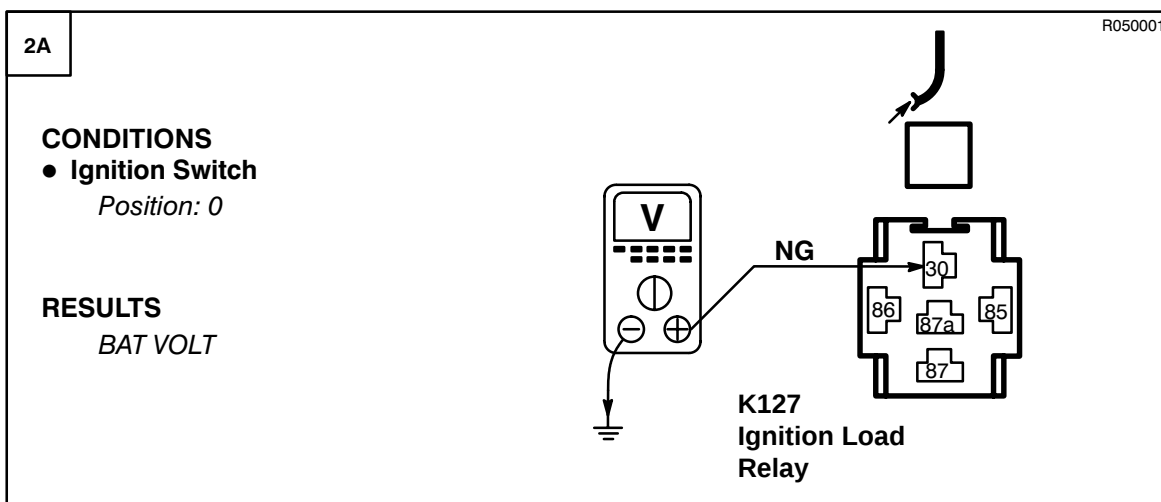
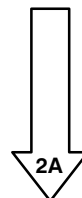
4. Check Maxi-Fuse[®] MF2 and Fuse F3 of the Engine Compartment Fuse Box (P125).
5. Check Fuse F18 of the Fascia Fuse Box (P126).
6. If the Front Blower Motor (M101) does not stop running with the Fan Speed Switch (X179) in Position 0, replace the Fan Speed Switch (X179).
7. If fresh air does not enter the vehicle cabin with the Air Supply Selector Switch (X180) in the Outside Air position, check the Air Recirculation Solenoid (K123) and linkage for sticking or binding.
8. If the blower motor(s) operate with the ignition key removed, replace the Ignition Load Relay (K127).
9. If the blower motor(s) run but not at the speed indicated by the Fan Speed Switch (X179), replace the Fan Speed Switch.

SYSTEM DIAGNOSIS

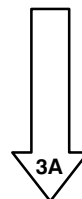
1. If the Front Blower Motor (M101) does not run at any speed, do Test A.
2. If the Front Blower Motor (M101) runs in some but not all Fan Speed Switch (X179) positions, do Test B.
3. If the Air Supply Selector Switch (X180) does not allow the driver to change between recirculation and fresh air modes, do Test C.
4. With the engine running and the Fan Speed Switch (X179) in position III, put the Air Supply Selector Switch (X180) to Recirculation mode. Place a piece of paper in front of the fresh air intake vents on the vehicle hood. If the paper is drawn toward the vents, do Test C.
5. With the engine running and the Fan Speed Switch (X179) in position III, put the Air Supply Selector Switch (X180) to A/C mode. Place a piece of paper in front of the exterior fresh air intake vents. If the paper is drawn toward the intake, do Test C.

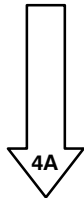
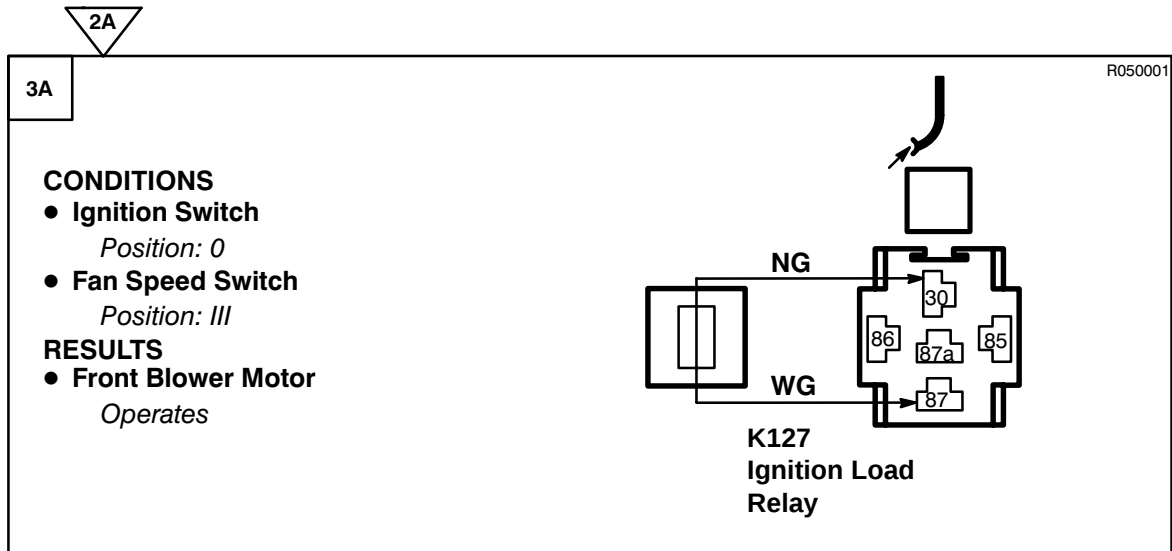
Test A**PROBLEM CAUSE**

- F18 Fuse
- LGP Wire
- B Wire

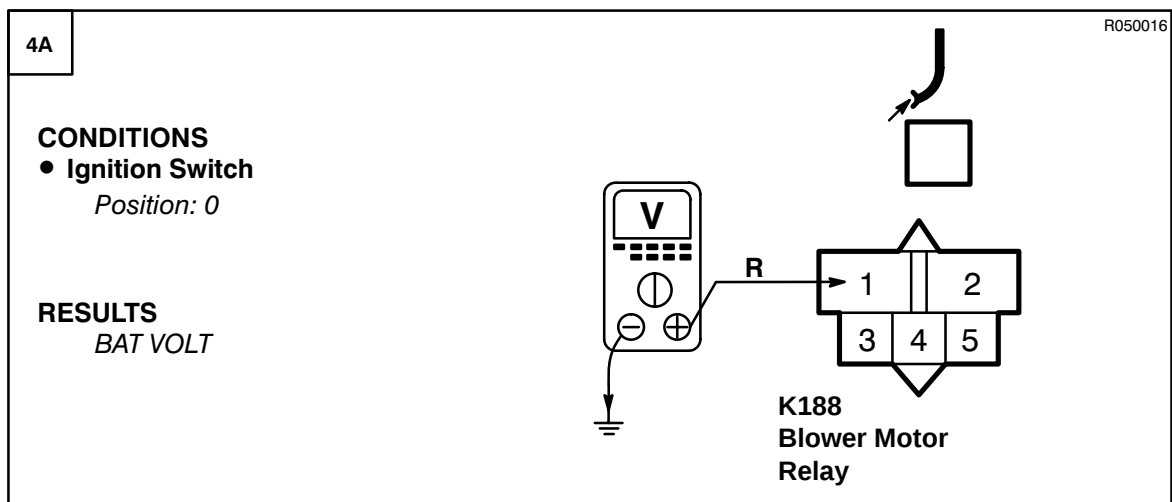
**PROBLEM CAUSE**

- F3 Fuse
- NG Wire

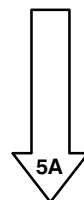


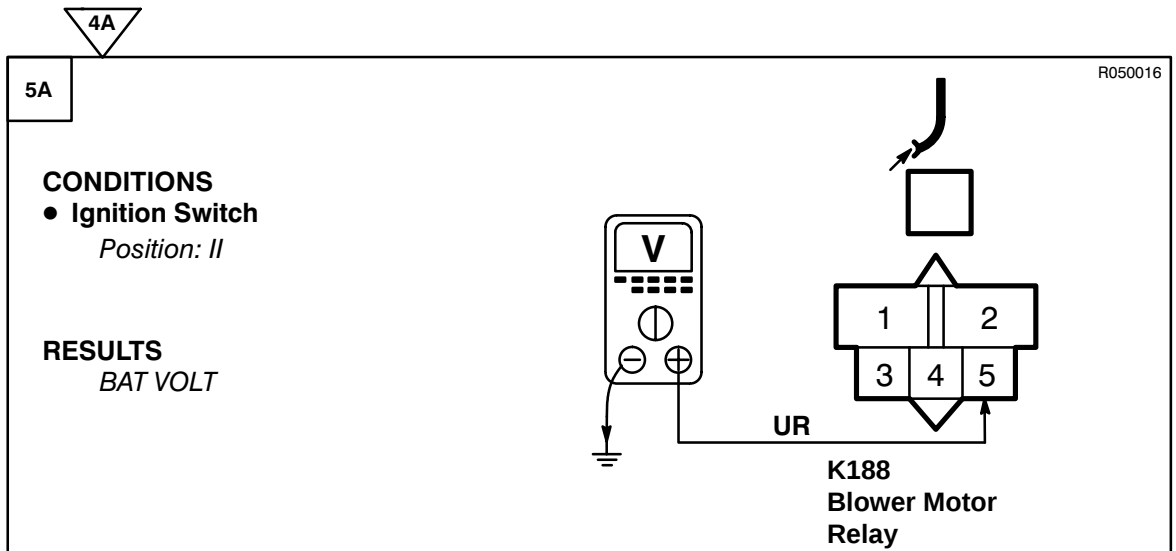


PROBLEM CAUSE
- Ignition Load Relay

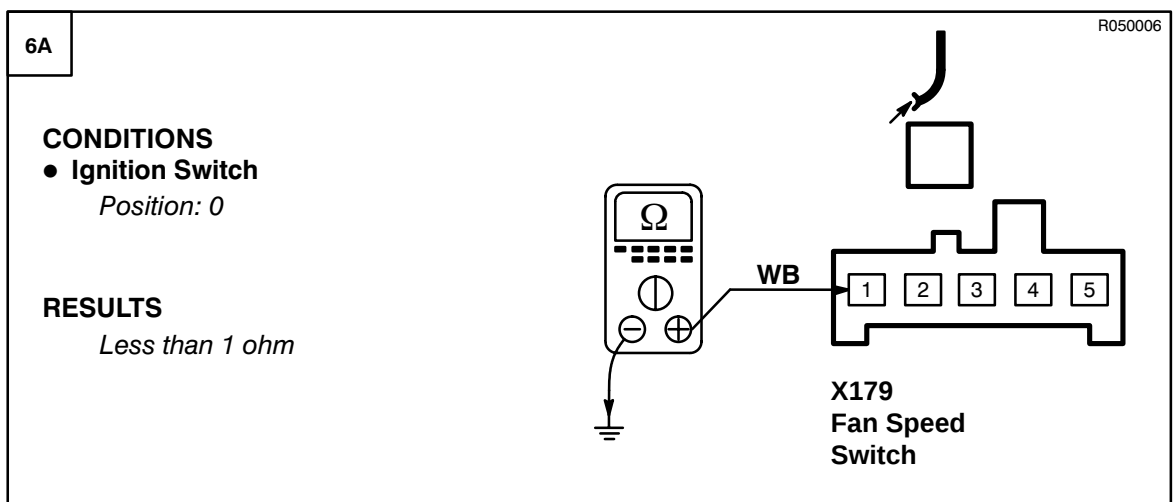
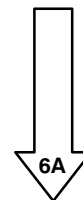


PROBLEM CAUSE
- MF2 Maxi-Fuse
- NK Wire
- R Wire

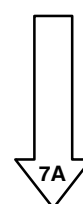


**PROBLEM CAUSE**

- WG Wire
- UR Wire

**PROBLEM CAUSE**

- WB Wire
- B Wire



6A

7A

R050016

CONDITIONS

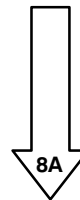
- Ignition Switch
Position: 0
- Fan Speed Switch
Position: I
Position: II
Position: III
Position: IV

RESULTS
Less than 1 ohm

K188
Blower Motor
Relay

**PROBLEM CAUSE**

- N Wire
- WB Wire
- Fan Speed Switch



8A

R020049

CONDITIONS

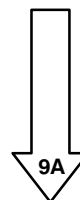
- Ignition Switch
Position: II
- Fan Speed Switch
Position: I

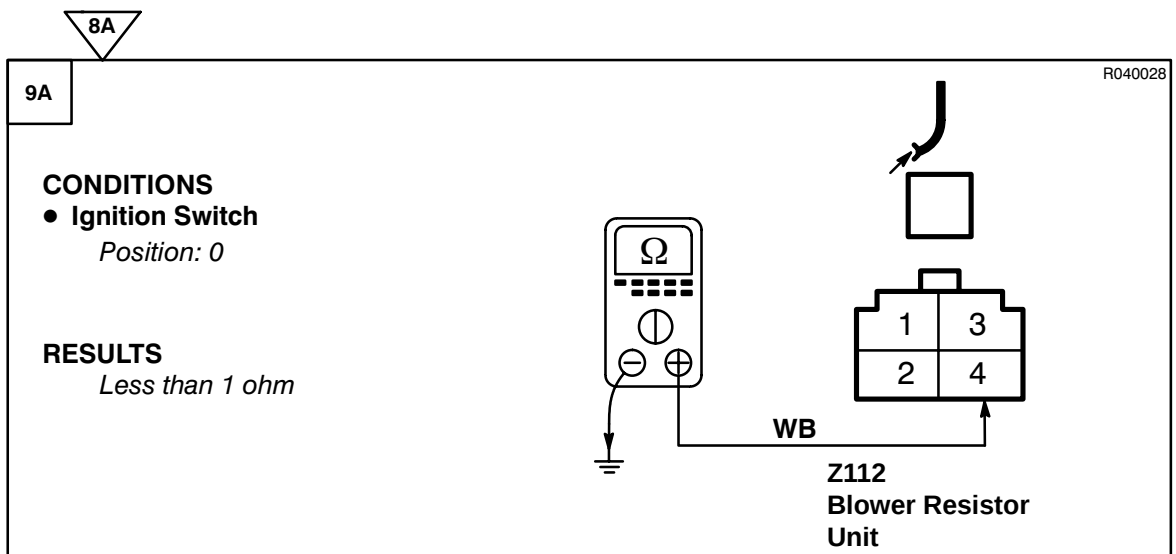
RESULTS
BAT VOLT

M101
Front Blower
Motor

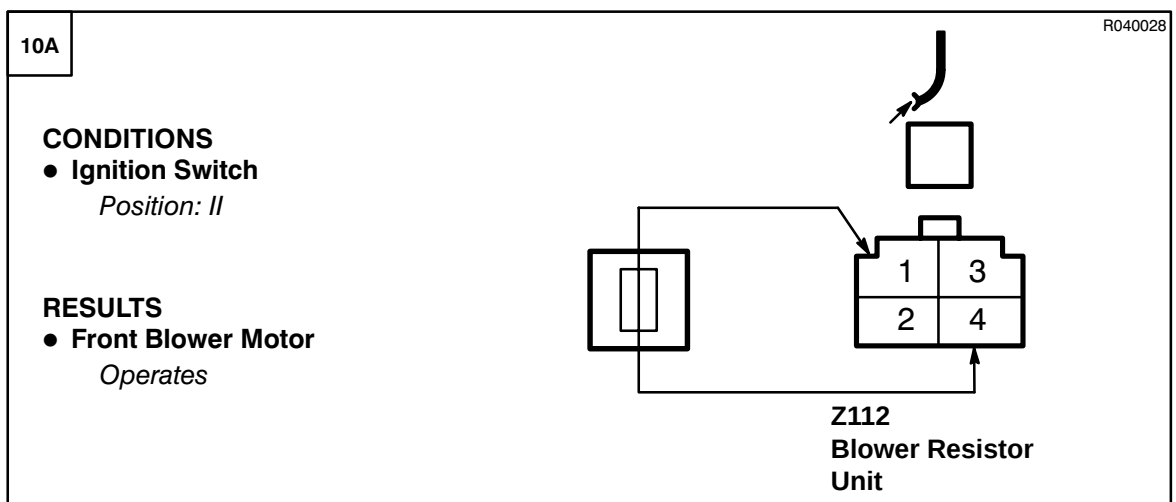
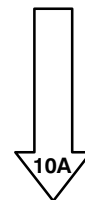
**PROBLEM CAUSE**

- WR Wire
- Blower Motor Relay





PROBLEM CAUSE
- WB Wire



PROBLEM CAUSE
- BO Wire
- Front Blower
Motor



PROBLEM CAUSE
- Blower Resistor Unit

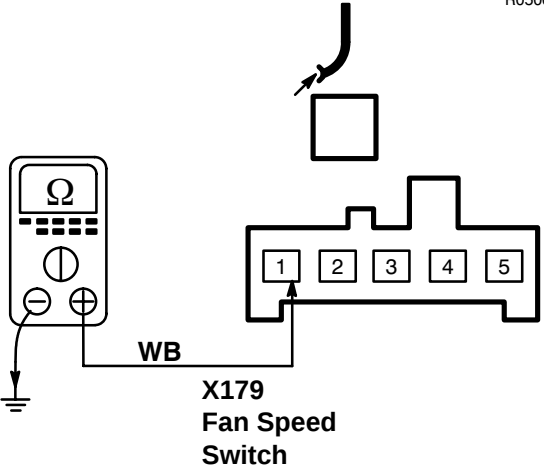
Test B

1B R050006

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

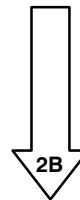


X179
Fan Speed
Switch



PROBLEM CAUSE

- WB Wire
- B Wire

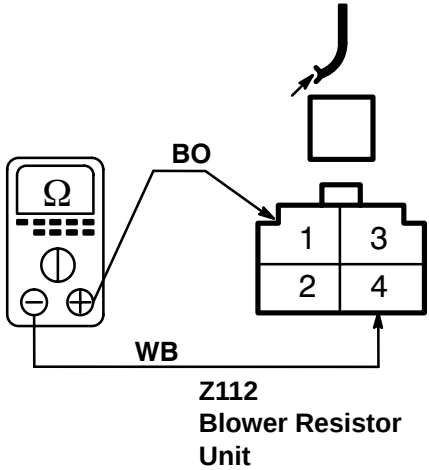


2B R040028

CONDITIONS

- Ignition Switch
Position: 0
- Fan Speed Switch
Position: IV

RESULTS
Less than 1 ohm

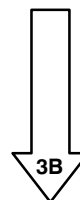


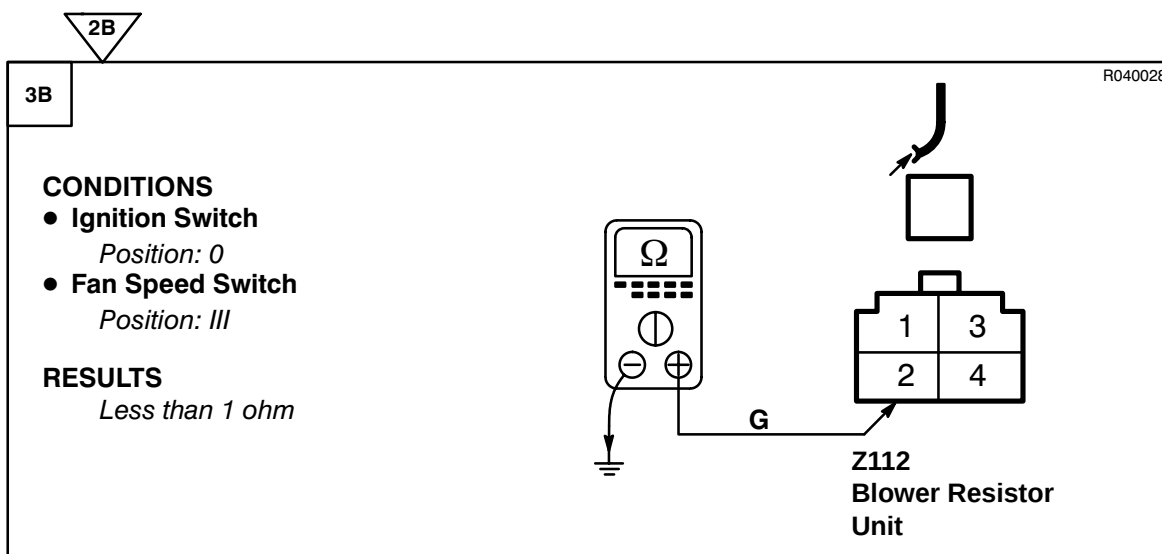
Z112
Blower Resistor
Unit



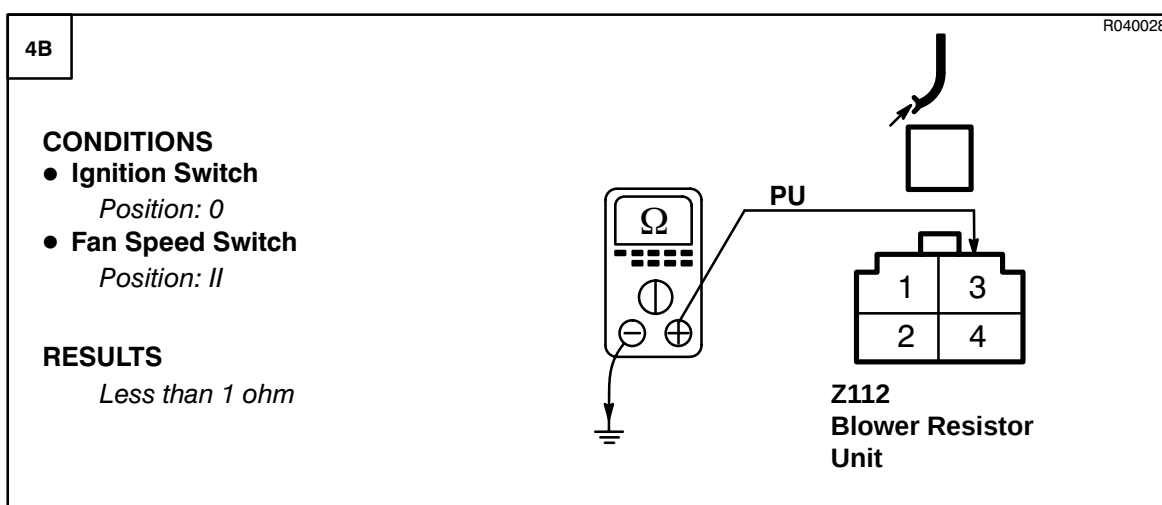
PROBLEM CAUSE

- BO Wire
- WB Wire
- Fan Speed Switch



**PROBLEM CAUSE**

- G Wire
- Fan Speed Switch

**PROBLEM CAUSE**

- PU Wire
- Fan Speed Switch

**PROBLEM CAUSE**

- Blower Resistor Unit

Test C

1C R040029

CONDITIONS

- Ignition Switch
Position: II

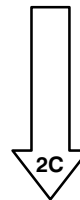
RESULTS
BAT VOLT

K123
Air Recirculation Solenoid



PROBLEM CAUSE

- UR Wire
- YB Wire
- Air Recirculation Solenoid In-Line Fuse



2C R050002.00

CONDITIONS

- Ignition Switch
Position: 0

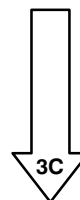
RESULTS
Less than 1 ohm

X180
Air Supply Selector Switch



PROBLEM CAUSE

- WB Wire
- B Wire



R040029

2C
3C

CONDITIONS

- Ignition Switch
Position: 0
- Air Supply Selector Switch
Fresh Air Mode

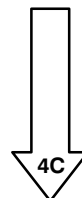
RESULTS
Less than 1 ohm

UB

K123
Air Recirculation Solenoid

**PROBLEM CAUSE**

- UB Wire
- Air Supply Selector Switch



R040029

4C

CONDITIONS

- Ignition Switch
Position: 0
- Air Supply Selector Switch
Recirculation Mode

RESULTS
Less than 1 ohm

RG

K123
Air Recirculation Solenoid

**PROBLEM CAUSE**

- RG Wire
- Air Supply Selector Switch
- Air Supply Selector Diode

**PROBLEM CAUSE**

- Air Recirculation Solenoid

CIRCUIT OPERATION**Compressor Control (Petrol)**

With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Compressor Clutch Relay (K108) and the A/C Logic Relay (K170). When the Fan Speed Switch (X179) is turned to positions I, II, III, or IV and the Front A/C Switch (X225) is turned On, ground is provided to terminal 86 of the A/C Logic Relay (K170) through the closed contacts of the A/C Dual Pressure Switch (X102) and the Front A/C Evaporator Temperature Switch (X101).

The relay is energized, applying battery voltage to terminal 21 of the Engine Control Module (ECM) (Z132), signalling the ECM that compressor operation has been requested. The ECM then provides ground to the coil of the Compressor Clutch Relay (K108). The relay is energized, applying battery voltage to the Compressor Clutch (K107). Compressor Clutch operation is now controlled by the status of the A/C Dual Pressure Switch (X102) and the Front A/C Evaporator Temperature Switch (X101).

The Front A/C Evaporator Temperature Switch (X101) is fitted in the airflow out of the front evaporator to sense the temperature of the exterior fins. Should ice begin to form, due to low temperature, the switch will open. The A/C Dual Pressure Switch (X102) monitors refrigerant pressure in the high pressure line, should pressure become too high or too low the switch will open. When one or both of these switches open the ground supply to terminal 86 of the A/C Logic Relay (K170) will be interrupted. The relay de-energizes, removing battery voltage from the Engine Control Module (ECM) (Z132), signalling the ECM that compressor operation should be turned off. The ECM removes the ground supply to the coil of the Compressor Clutch Relay (K108). The relay then de-energizes, removing battery voltage from the Compressor Clutch (K107), disengaging the Compressor.

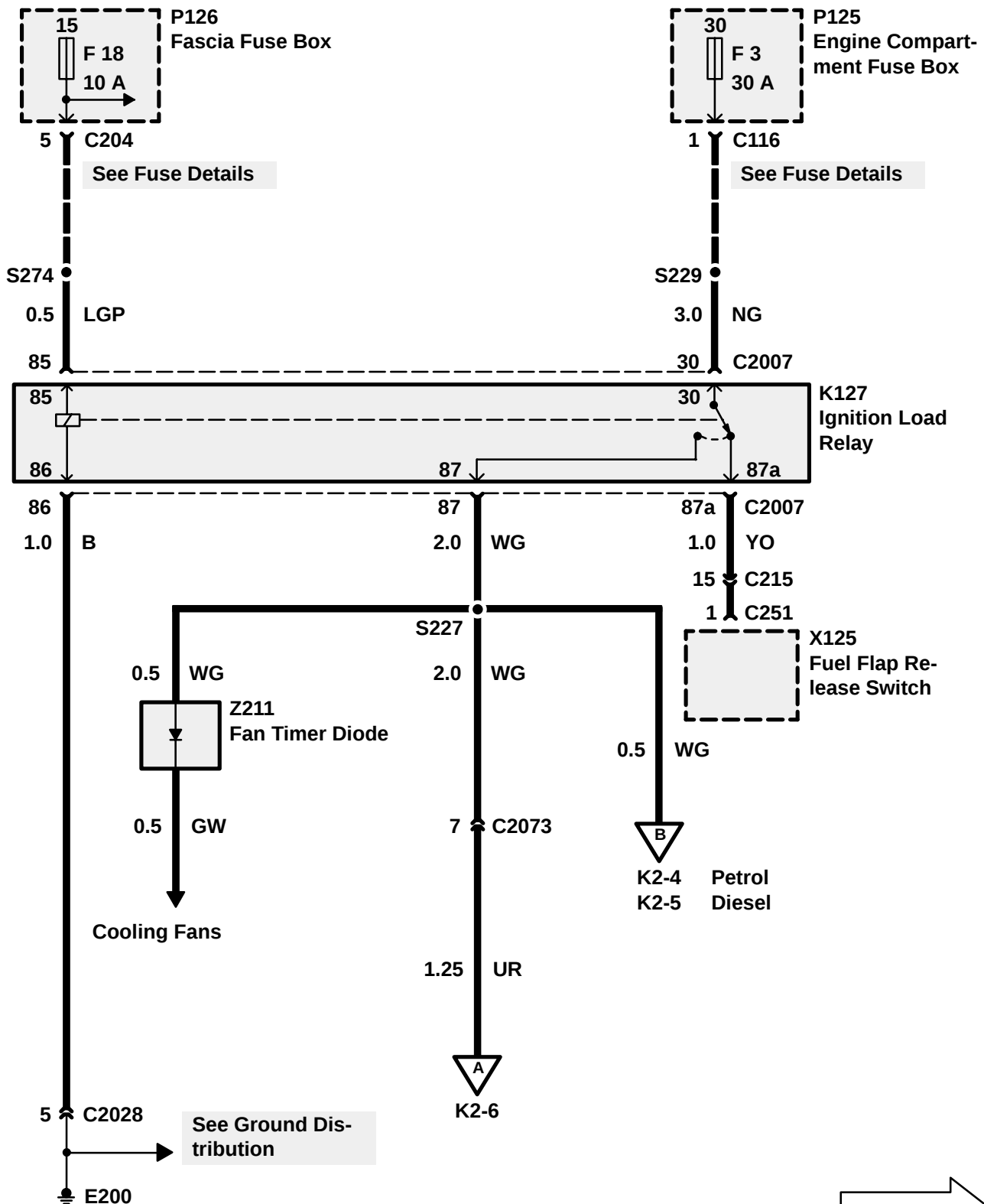
Compressor Control (Diesel)

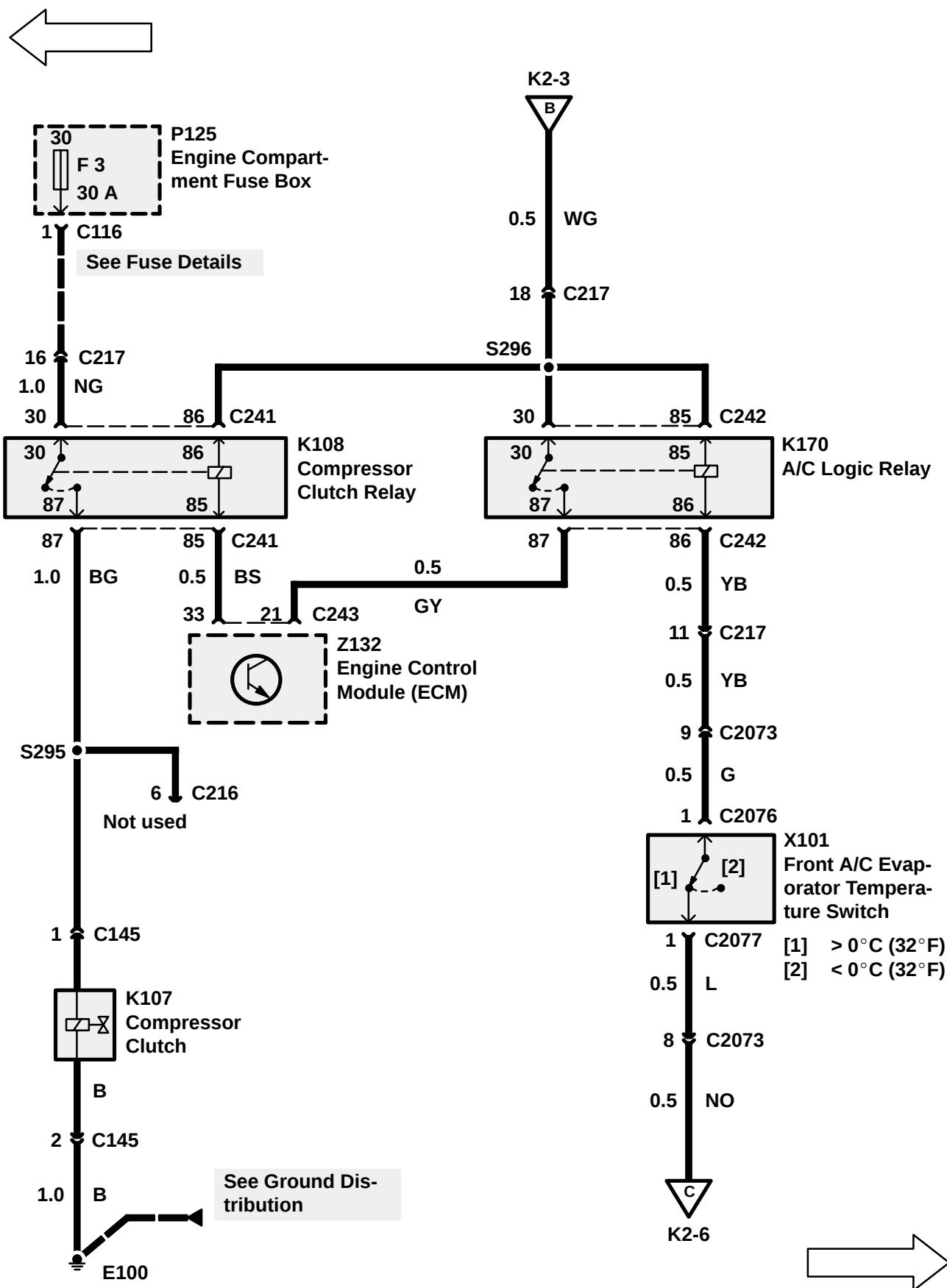
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Compressor Clutch Relay (K108).

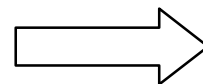
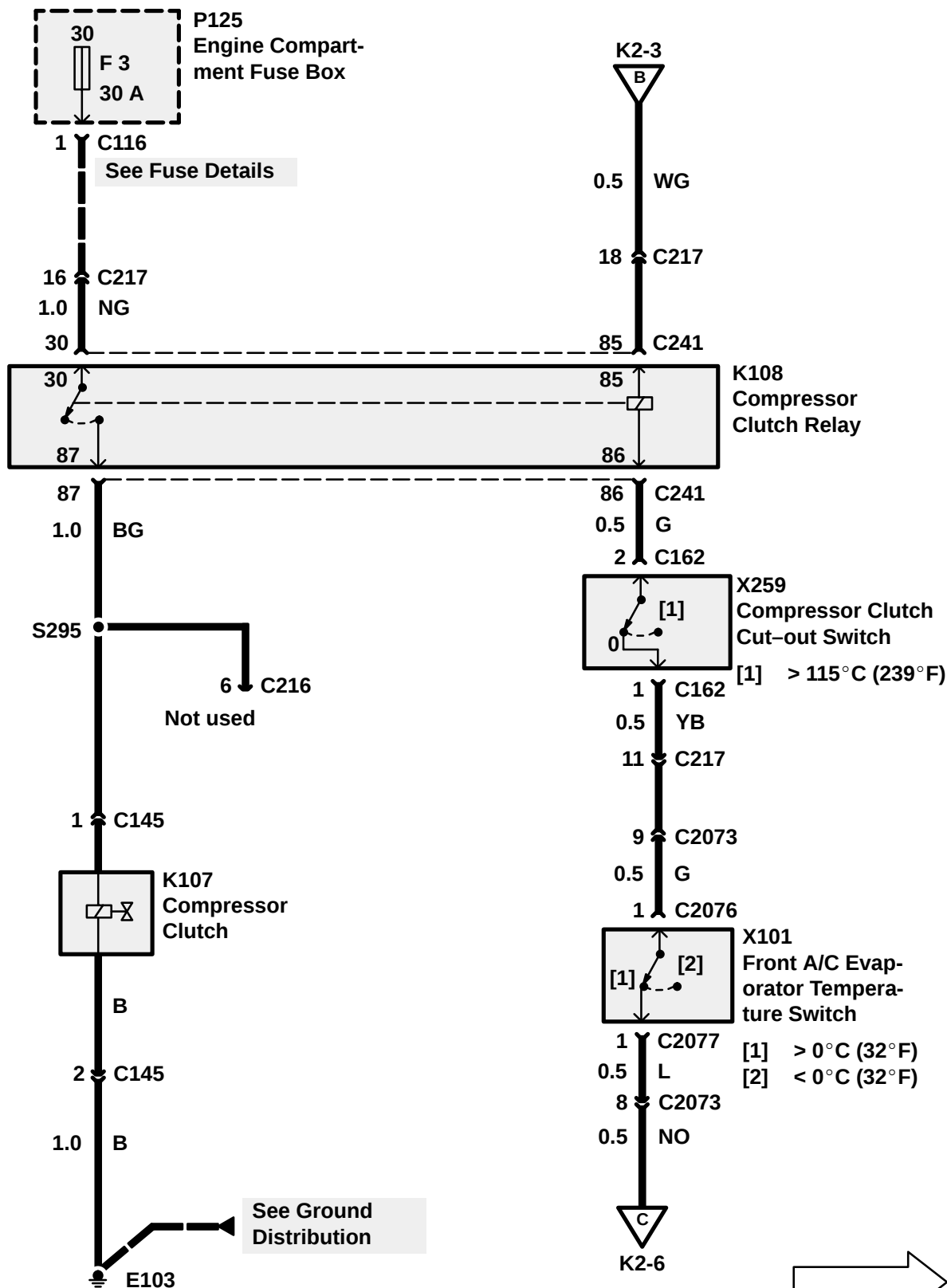
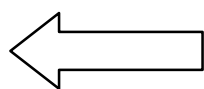
When the Fan Speed Switch (X179) is turned to positions I, II, III, or IV and the Front A/C Switch (X225) is turned On, ground is provided to terminal 86 of the Compressor Clutch Relay (K108) through the closed contacts of the A/C Dual Pressure Switch (X102), The Front A/C Evaporator Temperature Switch (X101), and the Compressor Clutch Cut-out Switch (X259).

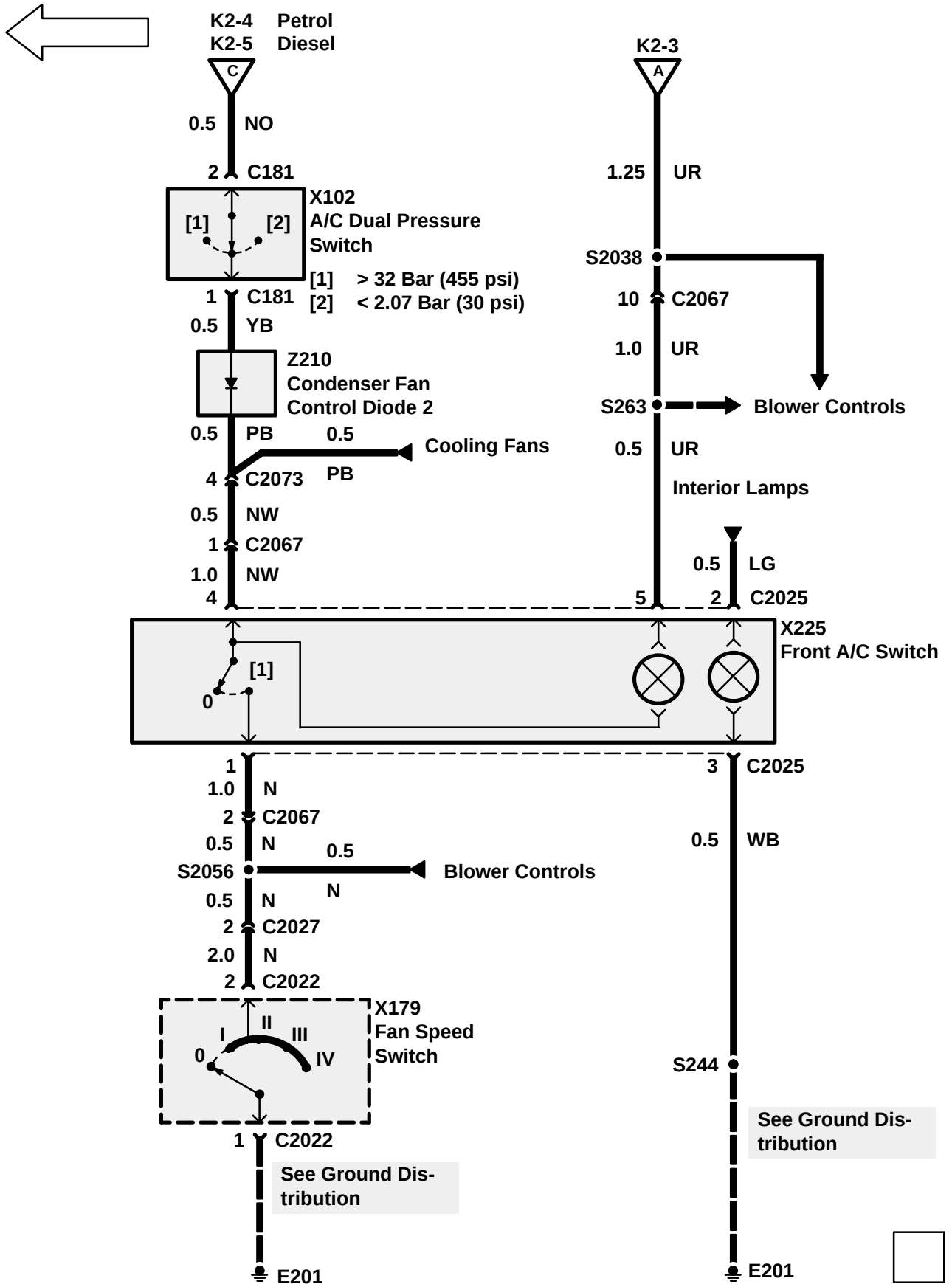
The relay is energized, applying battery voltage to the Compressor Clutch (K107). Compressor Clutch operation is now controlled by the status of the A/C Dual Pressure Switch (X102), the Front A/C Evaporator Temperature Switch (X101) and the Compressor Clutch Cut-out Switch (X259).

The Front A/C Evaporator Temperature Switch (X101) is fitted in the airflow out of the front evaporator to sense the temperature of the exterior fins. Should ice begin to form, due to low temperature, the switch will open. The A/C Dual Pressure Switch (X102) monitors refrigerant pressure in the high pressure line, should pressure become too high or too low the switch will open. When one or more of these switches open, the ground supply to terminal 86 of the Compressor Clutch Relay (K108) will be interrupted. The relay de-energizes, removing battery voltage from the Compressor Clutch (K107), disengaging the Compressor.









TROUBLESHOOTING HINTS

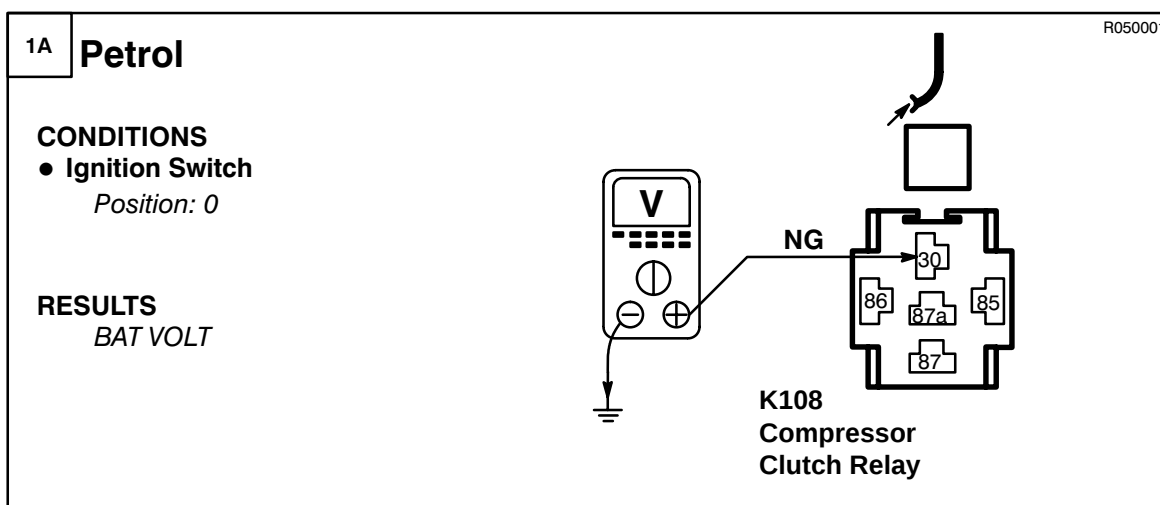
6. If the Front Blower Motor (M101) does not operate normally, refer to Blower Controls, Section K1.
7. Check Fuse F3 of the Engine Compartment Fuse Box (P125) and Fuse F18 of the Fascia Fuse Box (P126).
8. Verify that refrigerant pressure is OK before preceeding with the following diagnostic text.

SYSTEM DIAGNOSIS (PETROL)

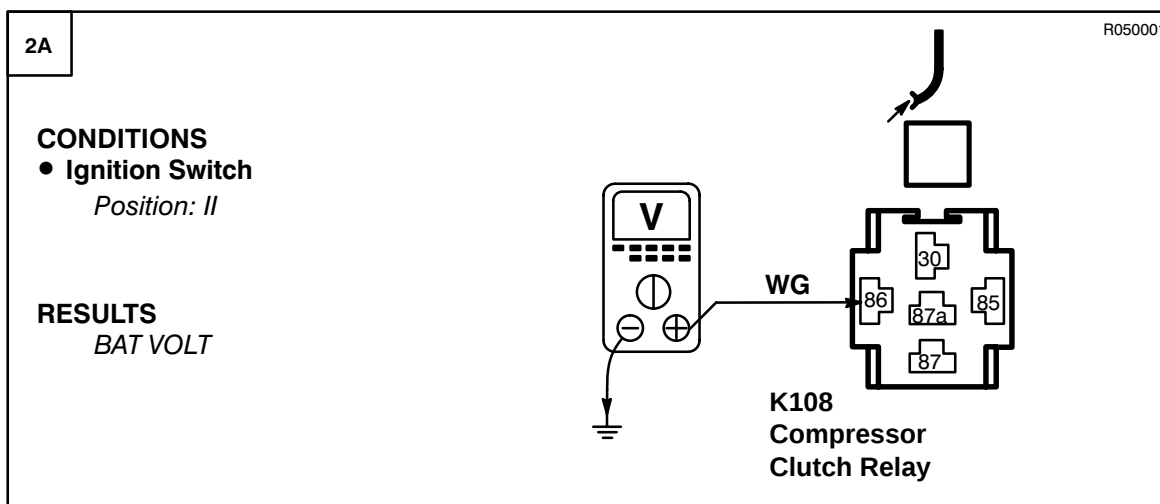
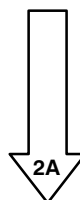
1. If the A/C Compressor Clutch (K107) does not engage in any mode, do Test A.
2. If the Compressor Clutch (K107) remains engaged with the A/C off, do Test D.

SYSTEM DIAGNOSIS (DIESEL)

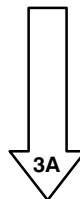
1. If the A/C Compressor Clutch (K107) does not engage in any mode, do Test B.
2. If the Compressor Clutch (K107) remains engaged with the A/C off, do Test E.

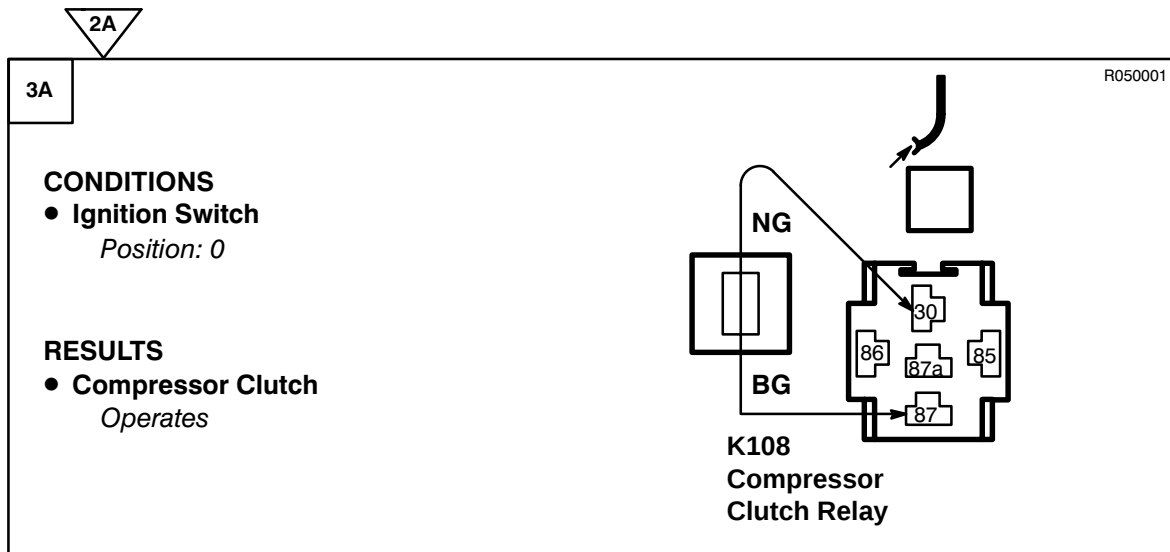
Test A**PROBLEM CAUSE**

- F3 Fuse
- NG Wire

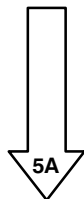
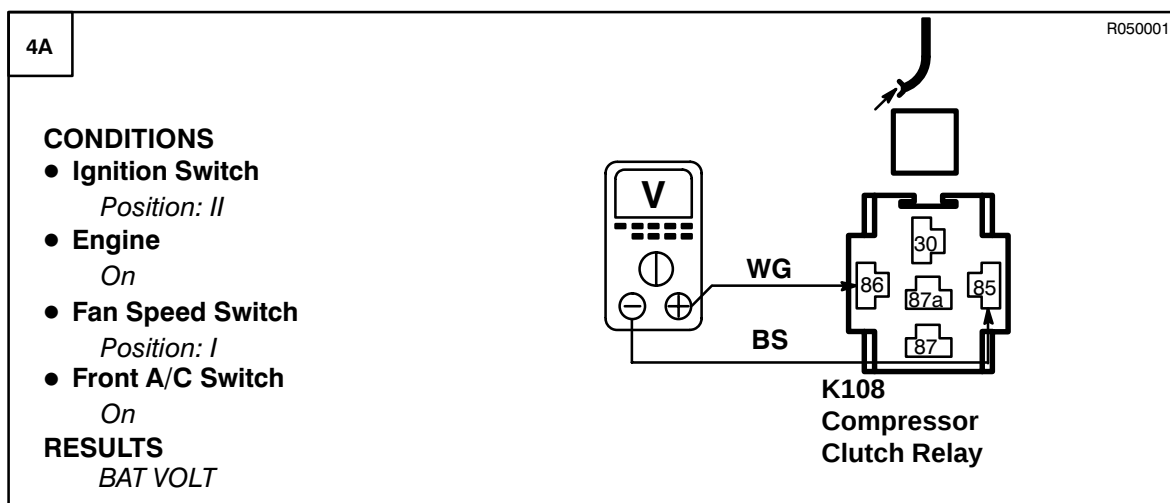
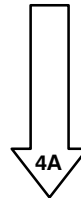
**PROBLEM CAUSE**

- WG Wire

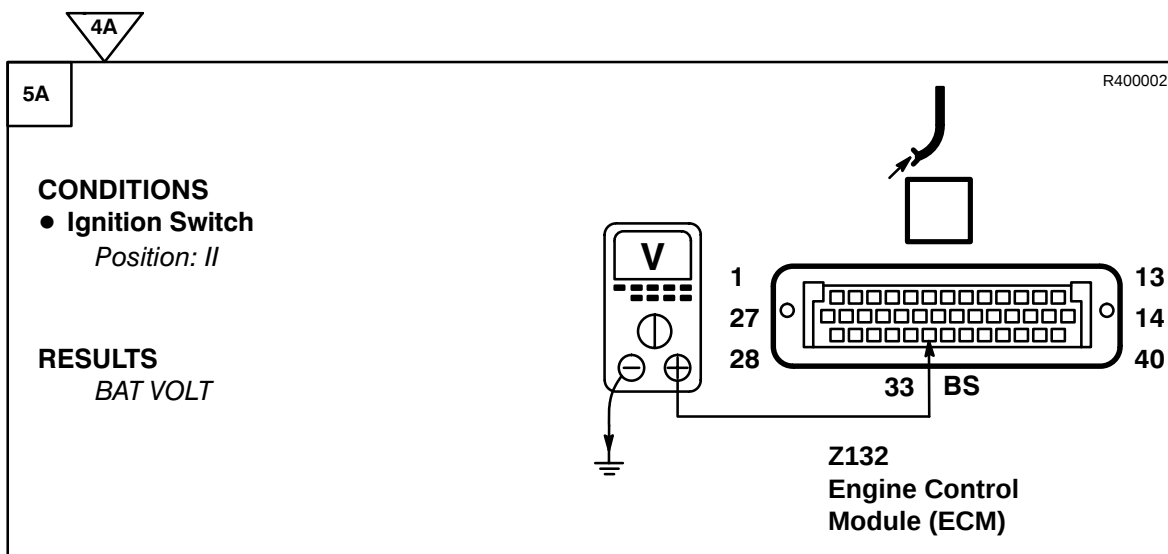


**PROBLEM CAUSE**

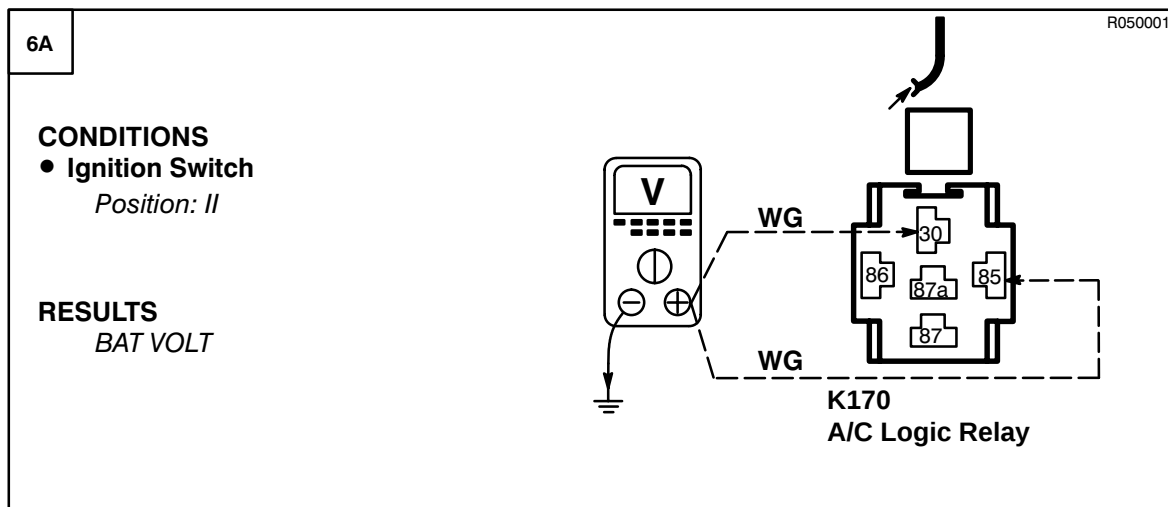
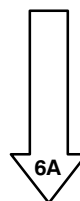
- BG Wire
- B Wire
- Compressor Clutch

**PROBLEM CAUSE**

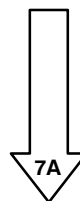
- Compressor Clutch Relay

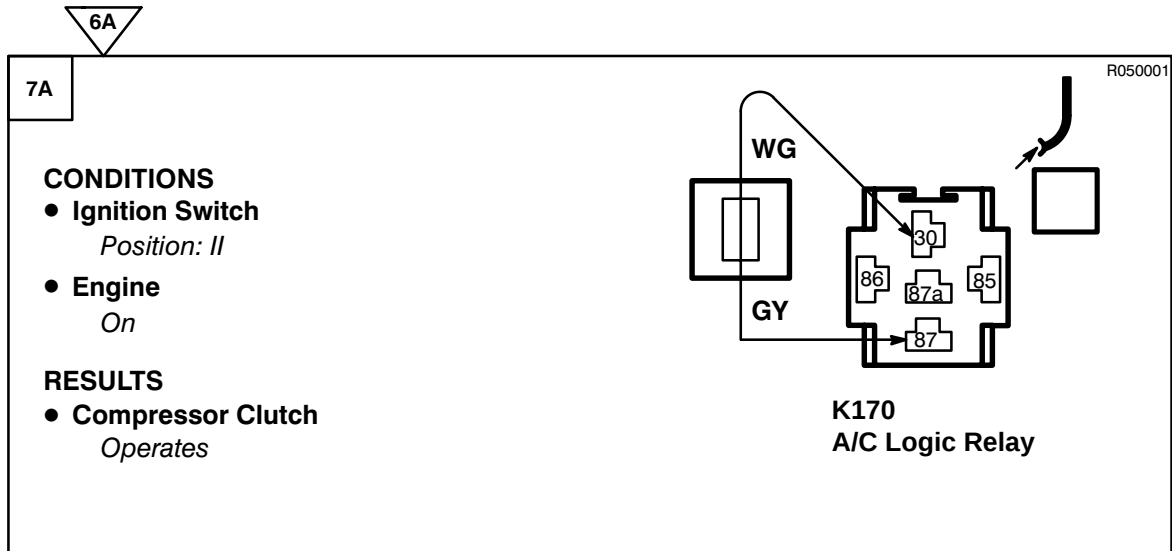


PROBLEM CAUSE
- BS Wire

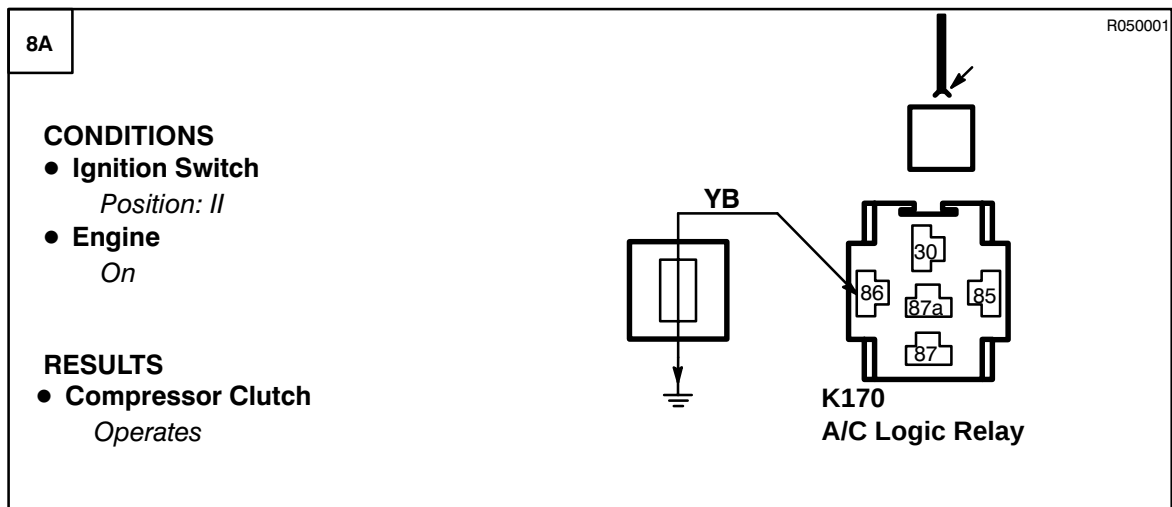
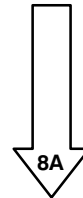


PROBLEM CAUSE
- WG Wire

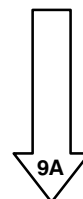


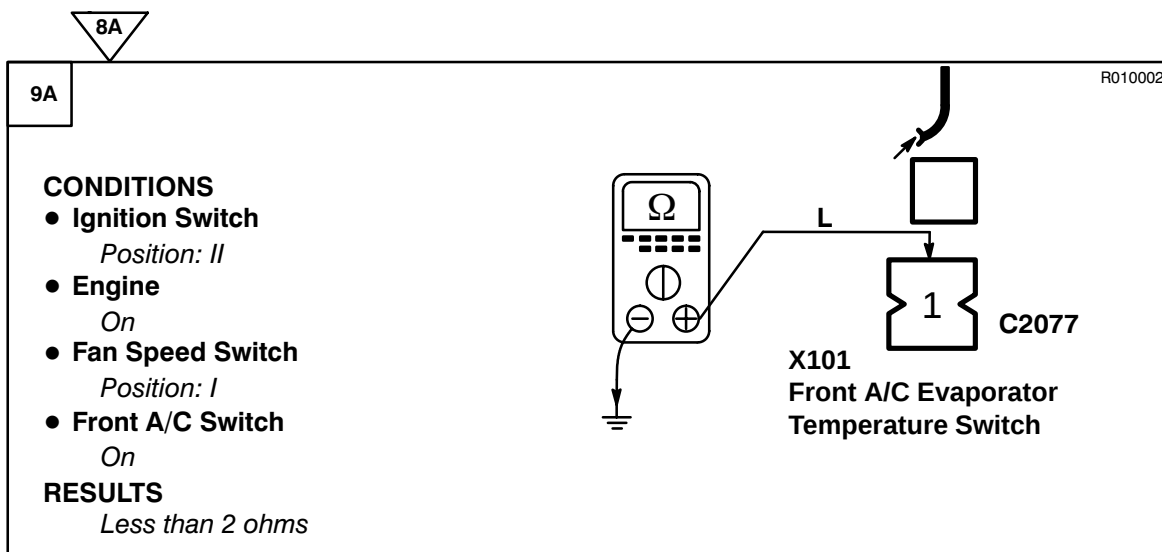
**PROBLEM CAUSE**

- GY Wire
- Engine Control Module (ECM)

**PROBLEM CAUSE**

- A/C Logic Relay



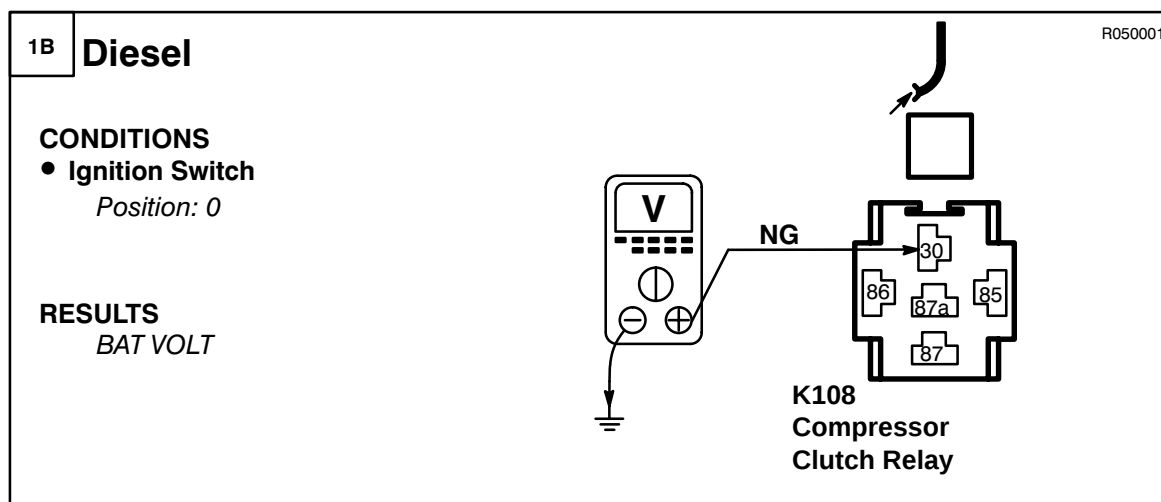


GO TO TEST C



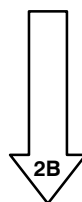
PROBLEM CAUSE

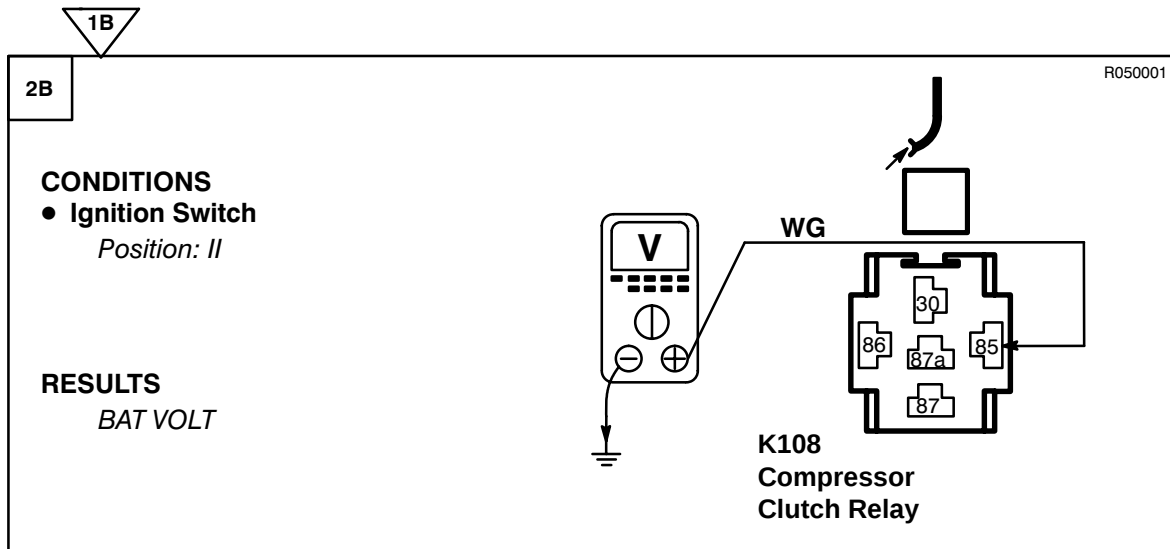
- G Wire
- YB Wire
- Front A/C Evaporator
Temperature Switch

Test B

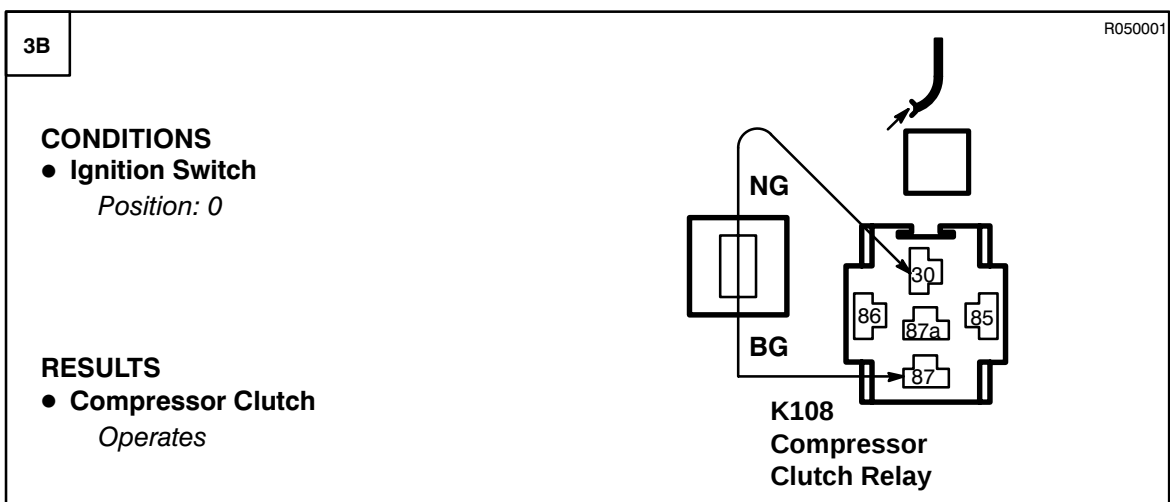
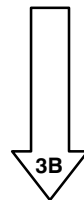
PROBLEM CAUSE

- F3 Fuse
- NG Wire

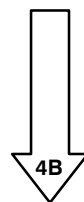


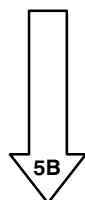
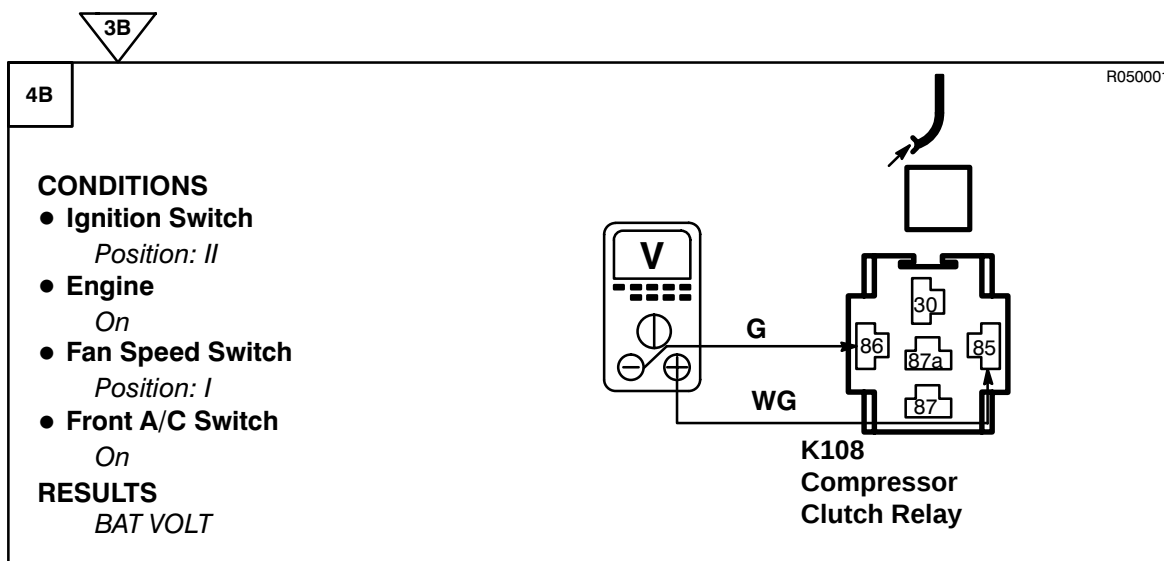


PROBLEM CAUSE
- WG Wire

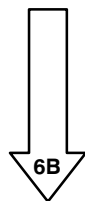
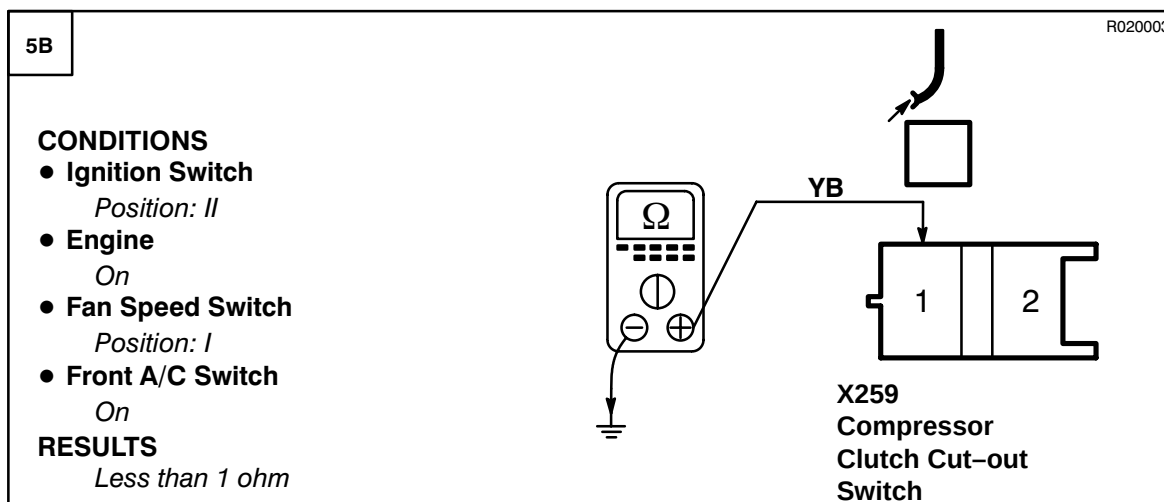


PROBLEM CAUSE
- BG Wire
- B Wire
- Compressor
Clutch





PROBLEM CAUSE
- Compressor
Clutch Relay



PROBLEM CAUSE
- G Wire
- Compressor
Clutch Cut-out
Switch

5B

6B

R010002

CONDITIONS

- Ignition Switch
Position: II
- Engine
On
- Fan Speed Switch
Position: I
- Front A/C Switch
On

RESULTS
Less than 2 ohms

L

X101
Front A/C Evaporator
Temperature Switch

C2077



GO TO TEST C



PROBLEM CAUSE

- YB Wire
- G Wire
- Front A/C Evaporator Temperature Switch

Test C

1C

R020027

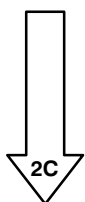
CONDITIONS

- Ignition Switch
Position: II
- Engine
On
- Fan Speed Switch
Position: I
- Front A/C Switch
On

RESULTS
Less than 2 ohms

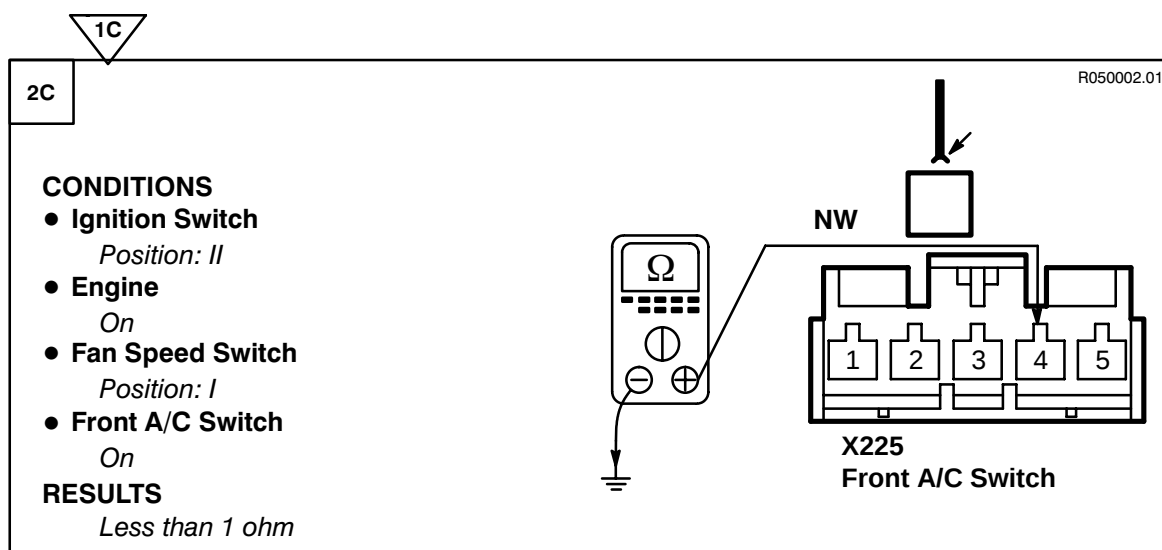
YB

X102
A/C Dual Pressure
Switch



PROBLEM CAUSE

- NO Wire
- L Wire
- A/C Dual Pressure Switch



PROBLEM CAUSE

- N Wire
- Front A/C Switch



PROBLEM CAUSE

- YB Wire
- PB Wire
- NW Wire
- Condenser Fan Control Diode 2

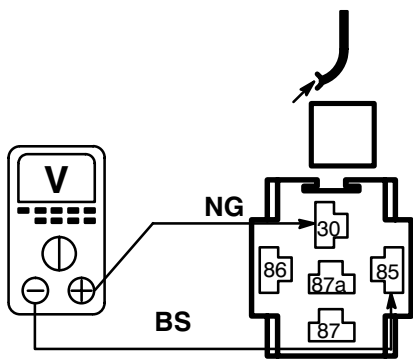
Test D

1D Petrol R050001

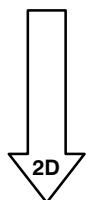
CONDITIONS

- Ignition Switch
Position: II
- Fan Speed Switch
Position: 0

RESULTS
0V



K108
Compressor
Clutch Relay



PROBLEM CAUSE

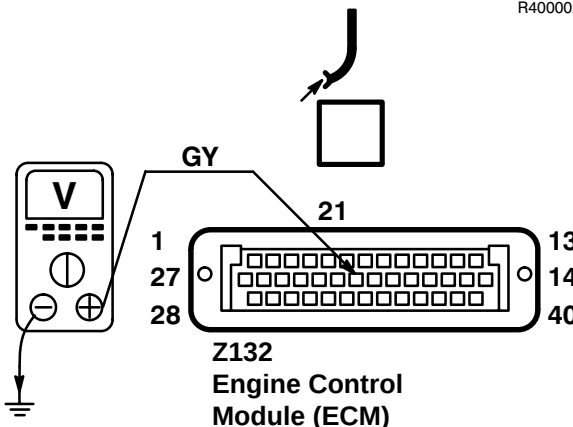
- Compressor Clutch Relay

2D R400002

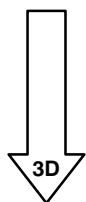
CONDITIONS

- Ignition Switch
Position: II
- Fan Speed Switch
Position: 0

RESULTS
0V

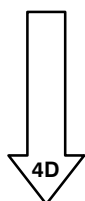
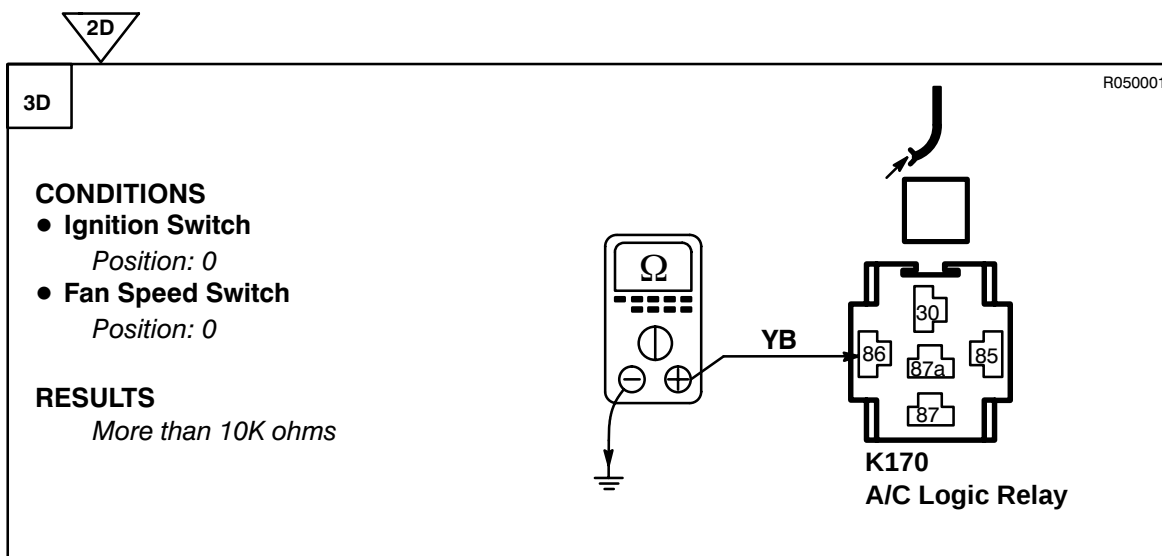


Z132
Engine Control
Module (ECM)

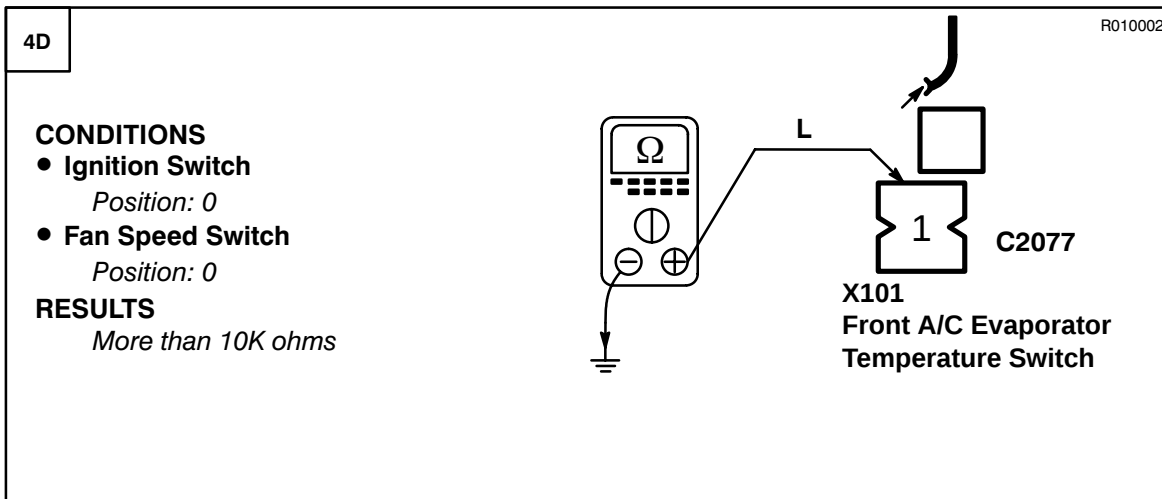


PROBLEM CAUSE

- GY Wire
- Engine Control Module (ECM)



PROBLEM CAUSE
- A/C Logic Relay



GO TO TEST F



PROBLEM CAUSE
- YB Wire
- G Wire
- Front A/C Evaporator
Temperature Switch

Test E

1E

Diesel

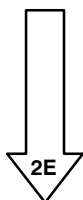
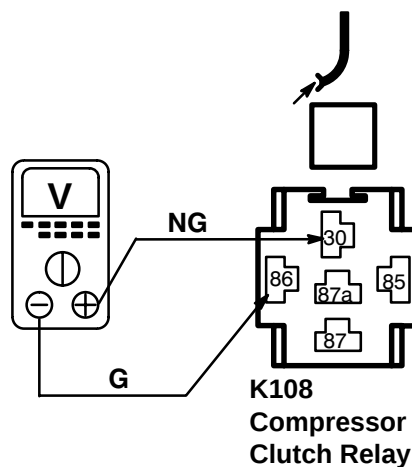
R050001

CONDITIONS

- Ignition Switch
Position: II
- Fan Speed Switch
Position: 0

RESULTS

0V



PROBLEM CAUSE

- Compressor Clutch Relay

2E

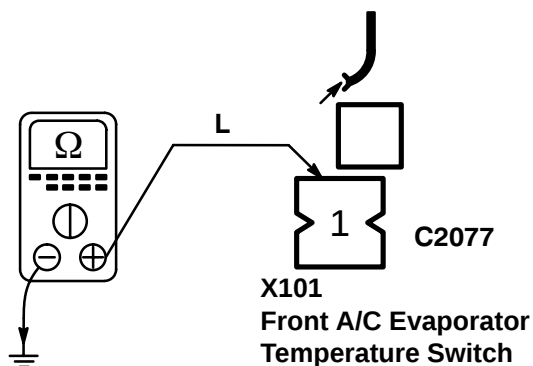
R010002

CONDITIONS

- Ignition Switch
Position: 0
- Fan Speed Switch
Position: 0

RESULTS

More than 10K ohms



GO TO TEST F



PROBLEM CAUSE

- G Wire
- YB Wire
- Compressor Clutch
- Cut-out Switch
- Front A/C Evaporator Temperature Switch

Test F

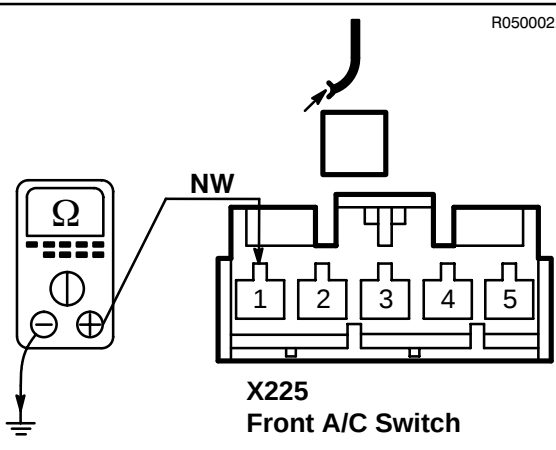
R050002.02

1F

CONDITIONS

- Ignition Switch
Position: 0
- Fan Speed Switch
Position: 0

RESULTS
More than 10K ohms



X225
Front A/C Switch

**PROBLEM CAUSE**

- N Wire
- Fan Speed Switch

**PROBLEM CAUSE**

- L Wire
- NO Wire
- YB Wire
- PB Wire
- NW Wire
- A/C Dual Pressure Switch
- Condenser Fan Control Diode 2
- Front A/C Switch

CIRCUIT OPERATION**Condenser Fan Operation (Petrol)**

The Condenser Fans Motors (M113, M121) on vehicles equipped with Petrol engines operate when any of the following conditions occur:

3. Coolant temperature exceeds 100°C (212°F).
4. The air conditioning system is operating.
5. The Engine Control Module (ECM) (Z132) determines that fuel temperature exceeds 70°C and coolant temperature exceeds 110°C after engine shutdown. When this occurs, the fans are turned on for approximately 10 minutes after the engine is shut off.

Operation with High Coolant Temperature (Petrol)

When the Ignition Switch (X134) is in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Condenser Fan Relay (K109) and the Fan Control Module (Z118). If the coolant temperature exceeds 100°C (212°F), the Condenser Fan Coolant Temperature Switch (X113) closes and energizes the Condenser fan Relay (K109) by applying ground to the relay's coil. When the relay is energized, voltage from fuse F3 is applied to the Condenser Fan Motors (M113, M121) through the relay's contacts.

Fan Operation with A/C (Petrol)

With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load relay (K127). The relay is energized, applying battery voltage to the Condenser Fan Relay (K109). When the Front A/C Switch (X225) is turned on and the Fan Speed Switch (X179) is turned to positions I, II, III, or IV, ground is applied to terminal 86 of the Condenser Fan Relay. The relay energizes, applying battery voltage from fuse F3 to the Condenser Fan Motors (M113, M121).

Operation with The Engine Off (Petrol)

The Engine Control Module (Z132) monitors fuel temperature and coolant temperature through sensors. When the ECM determines that fuel temperature is above 70°C and coolant

temperature exceeds 110°C after engine shutdown, the ECM will command fan operation for approximately 10 minutes. The ECM turns on the fans by momentarily grounding the Fan Control Module (Z118) through the BG wire. When the timer unit is grounded, it starts a solid state timer and begins to apply ground from its terminal 9 to the Condenser Fan Relay (K109) through the BP wire. With the Condenser Fan Relay energized, voltage from fuse F3 is applied to Condenser Fan Motors (M113, M121) through the relay contacts.

Condenser Fan Operation (Diesel)

The Condenser Fan Motors (M113, M121) on vehicles equipped with diesel engines operate when any one of the following conditions occur:

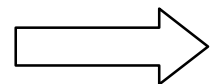
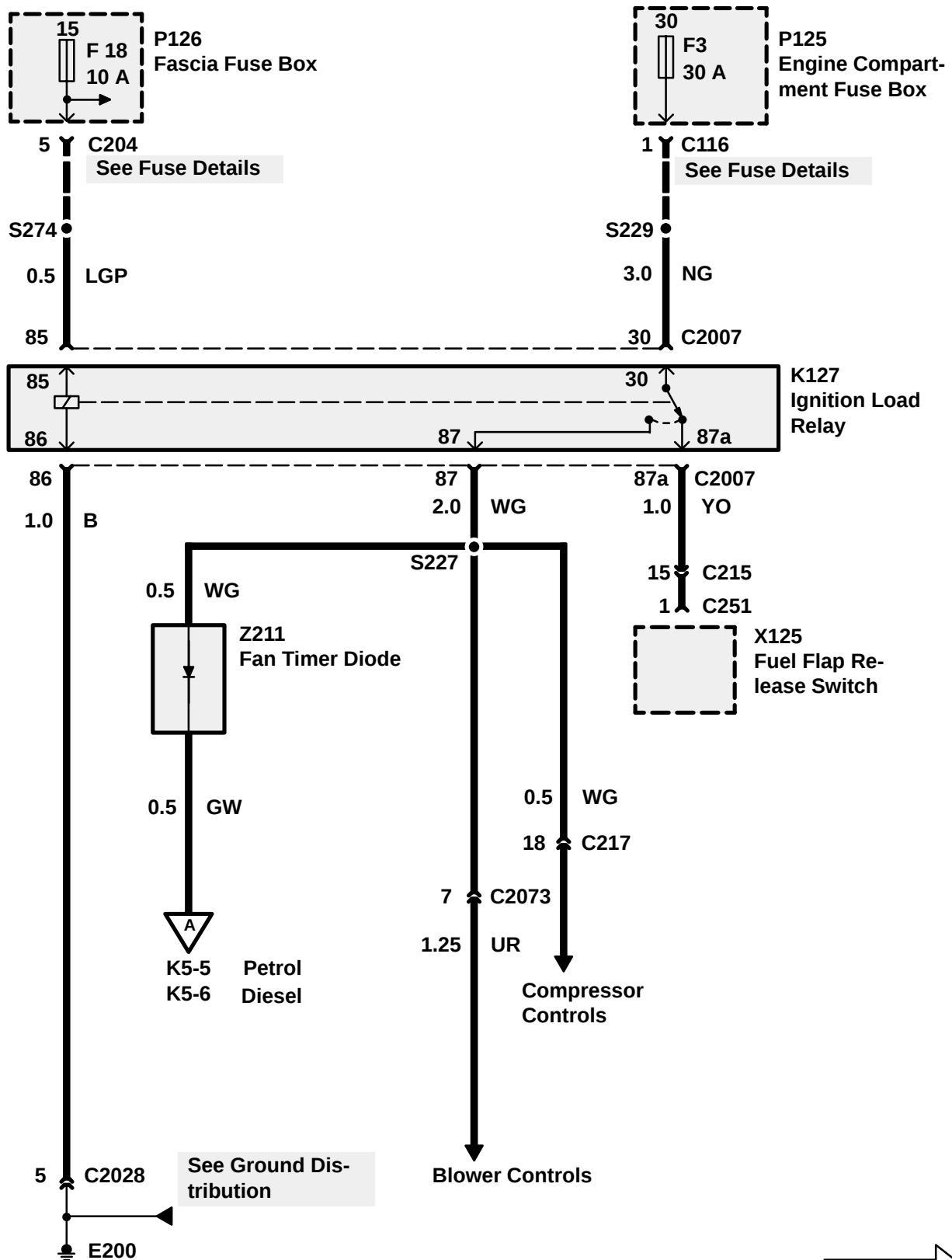
1. Coolant temperature exceeds 100°C (212°F).
2. The A/C is operating.

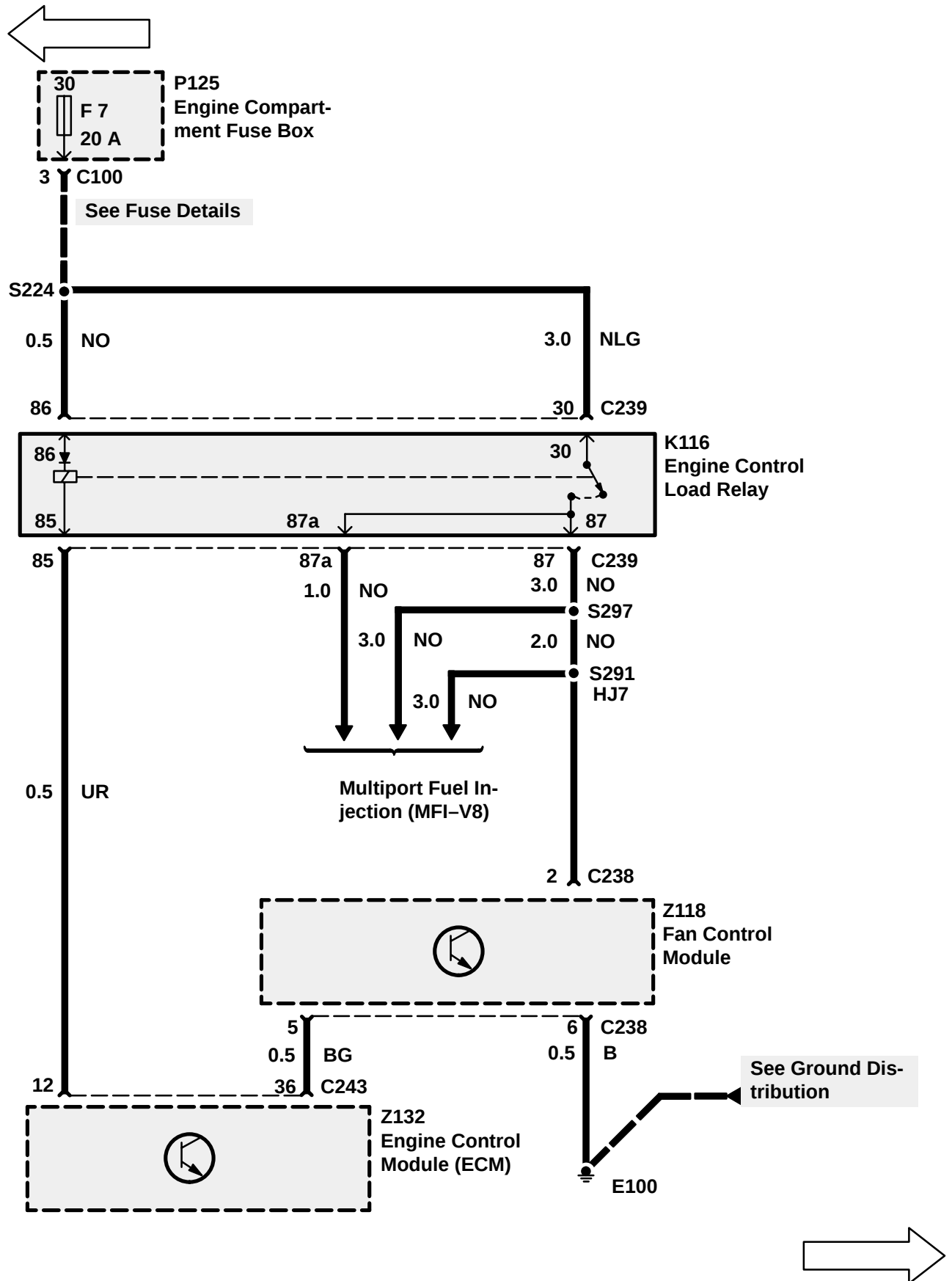
Condenser Fan with High Coolant Temperature Operation (Diesel)

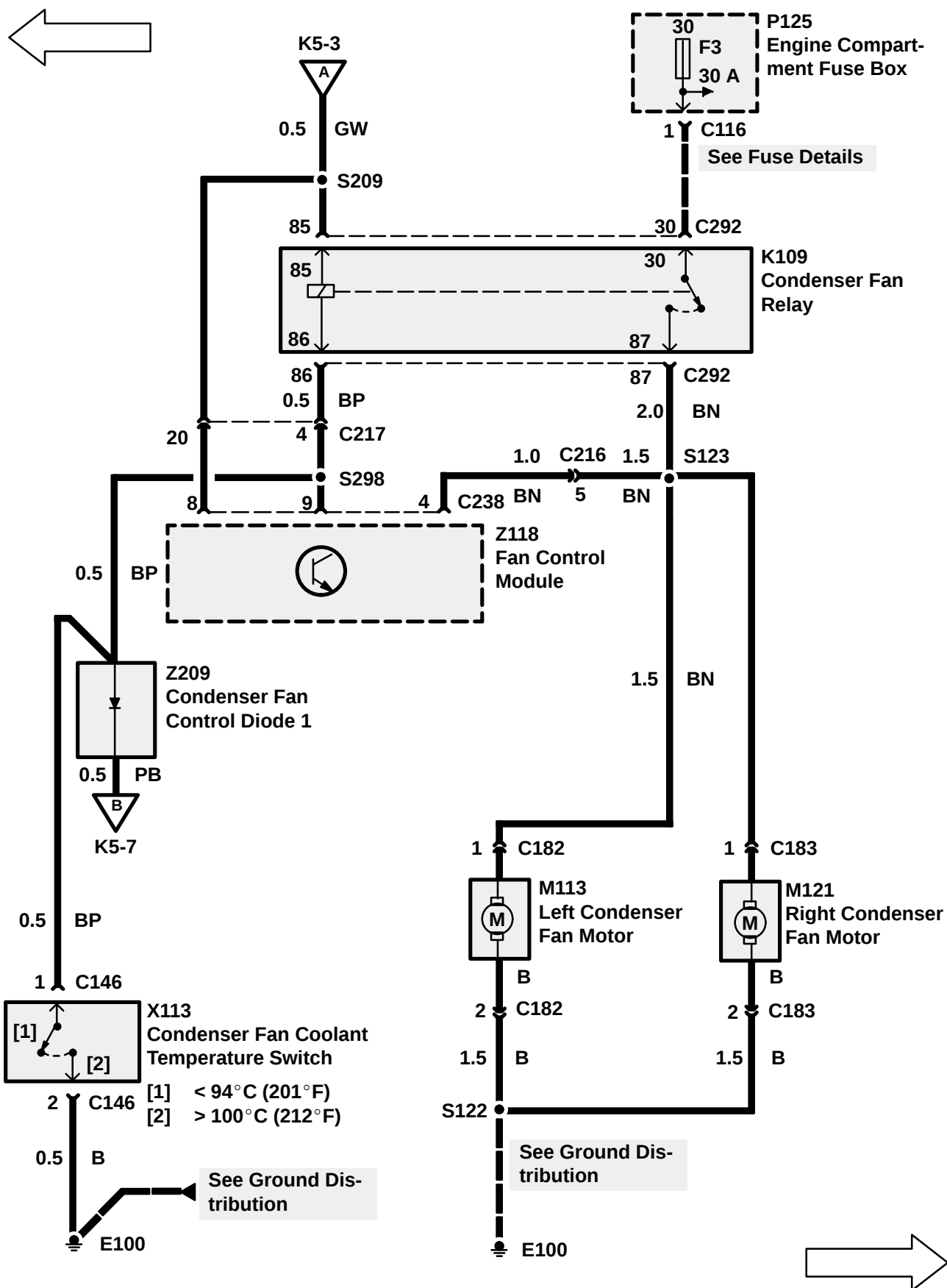
When the Ignition Switch (X134) is in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Condenser Fan Relay (K109). If the coolant temperature exceeds 100°C (212°F), the Condenser Fan Coolant Temperature Switch (X113) closes and energizes the Condenser Fan Relay (K109) by applying ground to the relay's coil. When the relay is energized, voltage from fuse F3 is applied to the Condenser Fan Motors (M113, M121) through the relay's contacts.

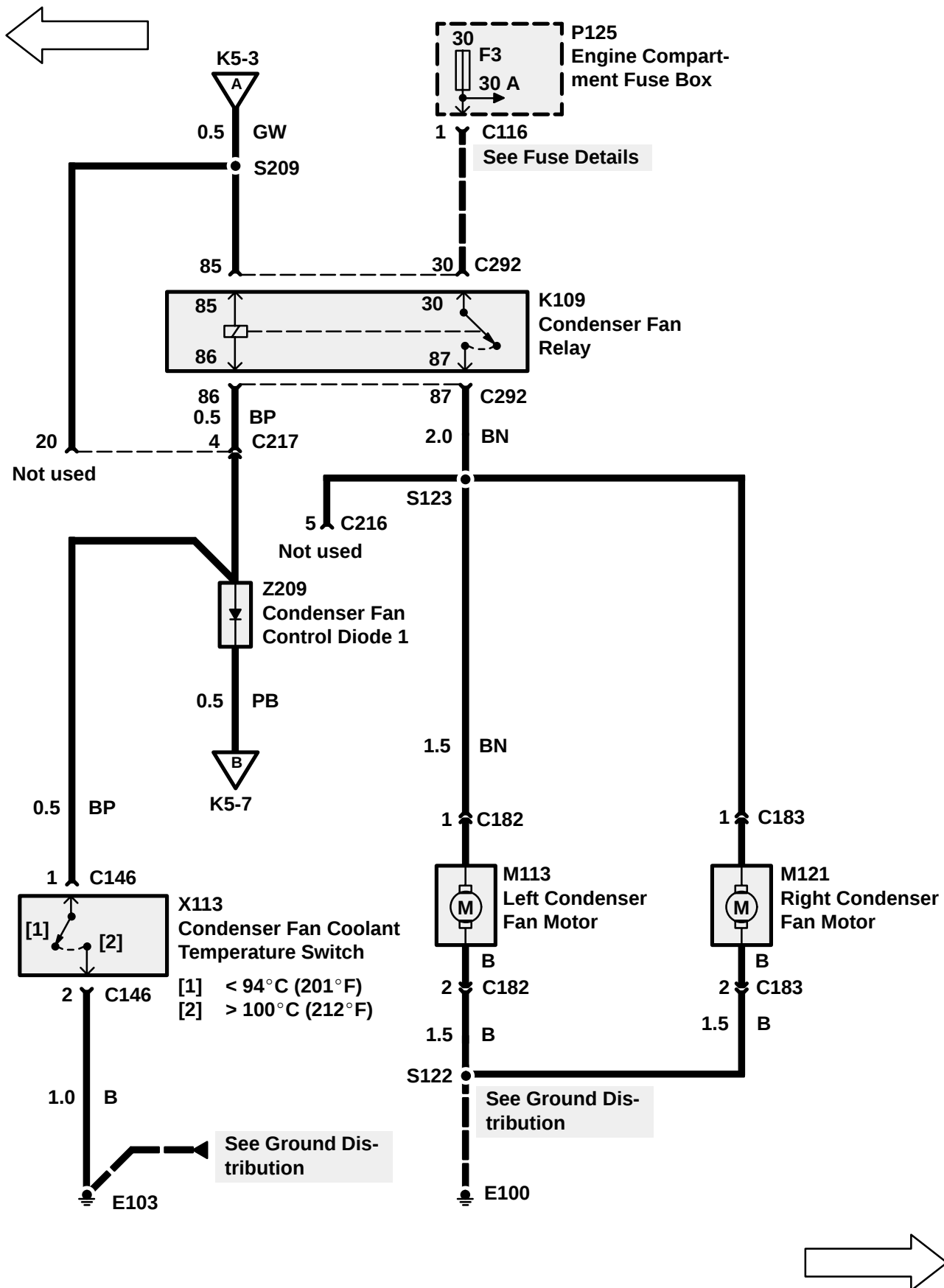
Fan Operation with A/C (Diesel)

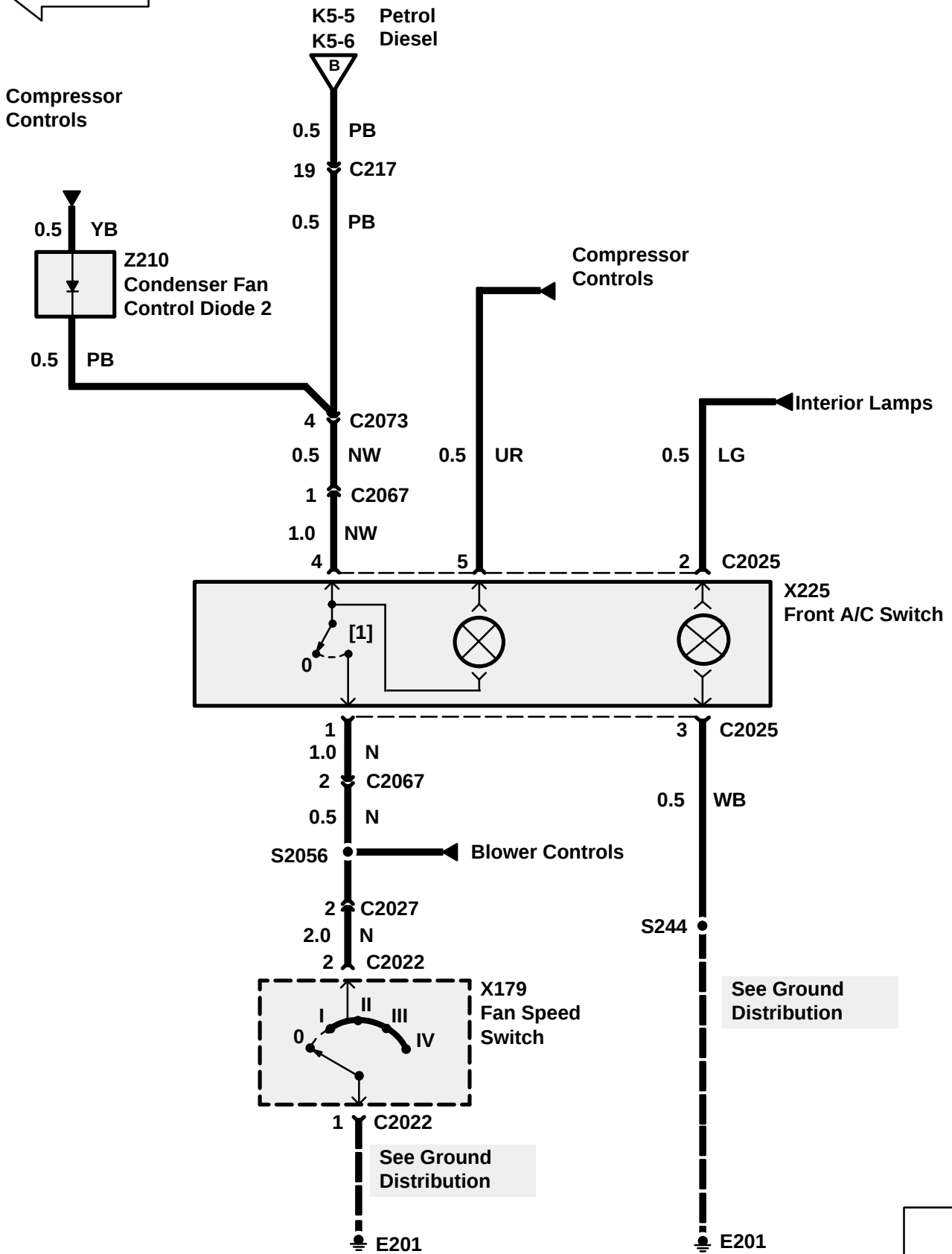
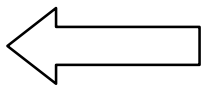
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Condenser Fan Relay (K109) when the Front A/C Switch (X225) is turned on and the Fan Speed Switch (X179) is turned to positions I, II, III, or IV, ground is applied to terminal 86 of the Condenser Fan Relay (K109). The relay energizes, applying battery voltage from fuse F3 to the Condenser Fan Motors (M113, M121).











TROUBLESHOOTING HINTS

3. Check Fuses F3, and F7 in the Engine Compartment Fuse Box (P125).
4. Check Fuse F18 in the Fascia Fuse Box.
5. If the Front Blower Motor (M101) does not operate normally, refer to Blower Controls, Section K1.

SYSTEM DIAGNOSIS

1. If the Condenser Fans do not turn on when the A/C is turned on, do Test A for Petrol Engines or Test B, the Condenser Fan Relay (K109) test, for Diesel Engines.
2. If only one of the Condenser Fans operates, do Test E, the Condenser Fan Motor (M113, M121) test.
3. If the Condenser Fans do not turn on when coolant temperature exceeds 100°C (212°F), do Test F, the Temperature Switch (X113) test.
4. On Petrol Engines, if the Condenser Fans do not stay on after the ignition has been turned off, fuel temperature exceeds 70°C and coolant temperature exceeds 110°C, do Test G, the Fan Control Module (Z118) test.

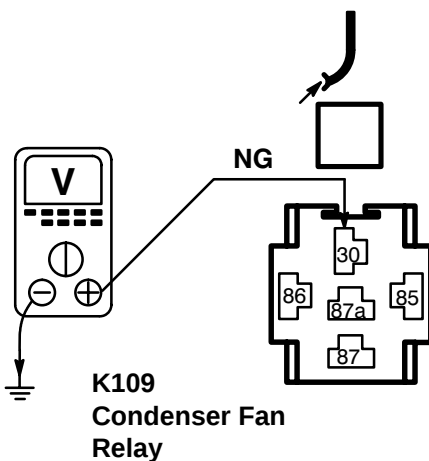
Test A

1A **Condenser Fan Relay Test**
Petrol

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT

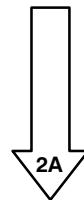


K109
Condenser Fan
Relay

R050001

**PROBLEM CAUSE**

- F3 Fuse
- NG Wire

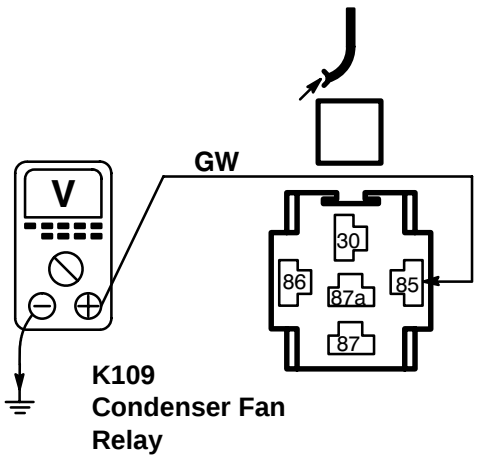


2A

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

RESULTS
BAT VOLT

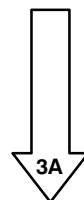


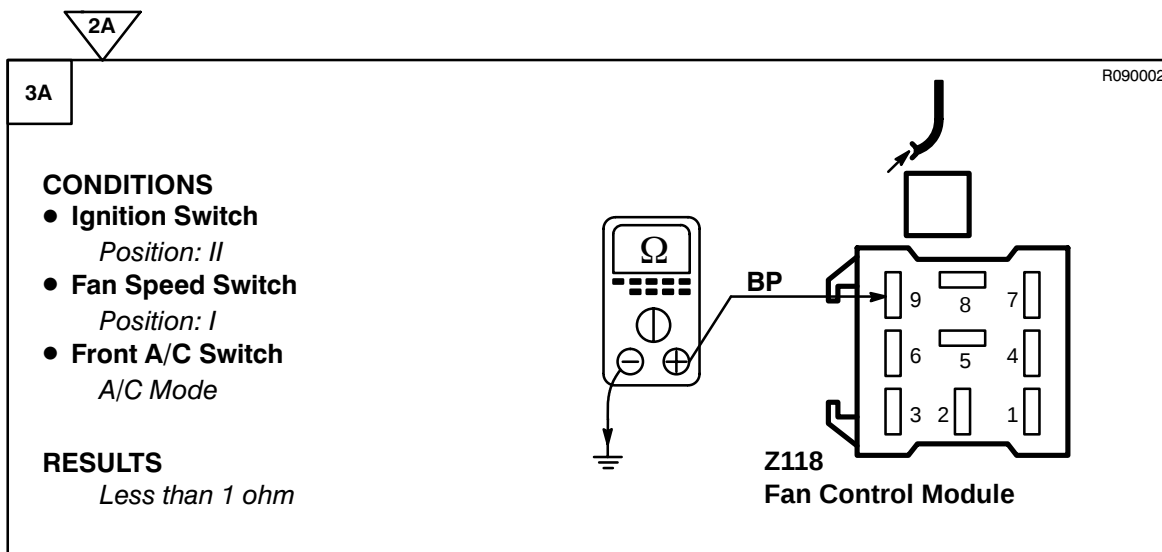
K109
Condenser Fan
Relay

R050001

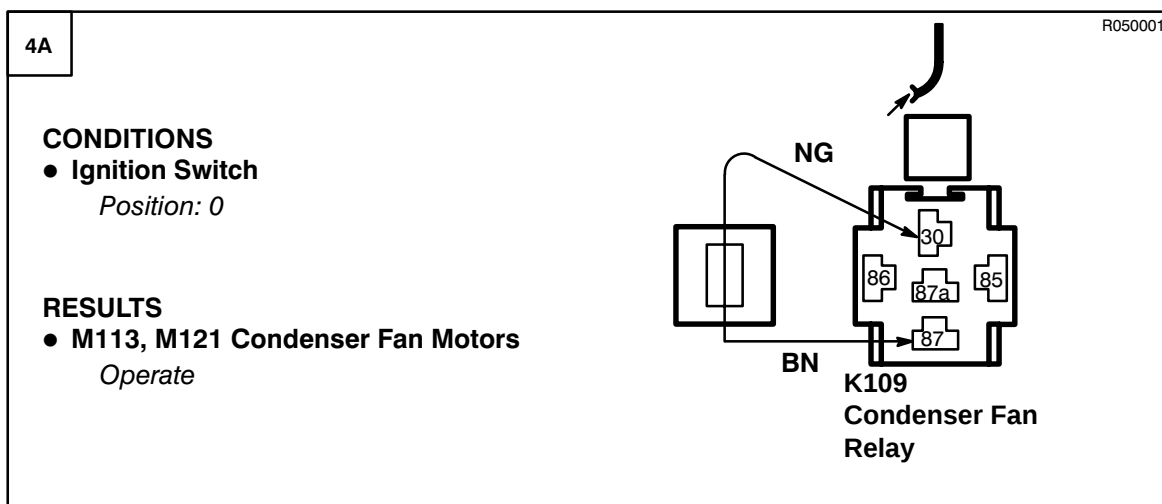
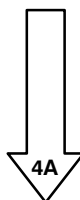
**PROBLEM CAUSE**

- GW Wire





GO TO TEST C



PROBLEM CAUSE
- BN Wire



PROBLEM CAUSE
- Condenser Fan Relay

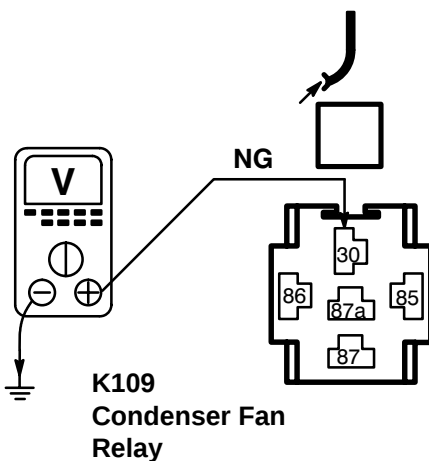
Test B

1B **Condenser Fan Relay Test Diesel** R050001

CONDITIONS

- Ignition Switch
Position: 0

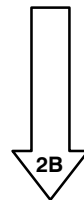
RESULTS
BAT VOLT



K109
Condenser Fan
Relay

**PROBLEM CAUSE**

- F3 Fuse
- NG Wire

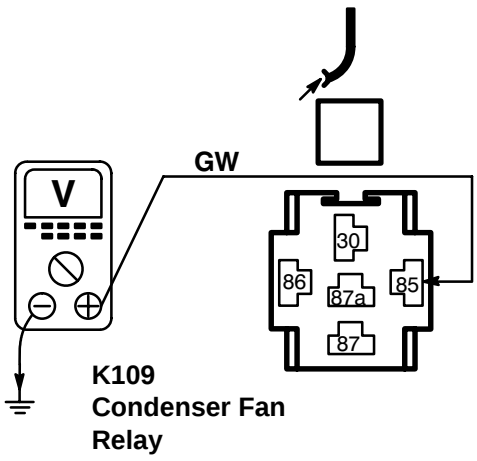


2B R050001

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

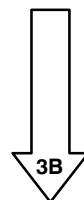
RESULTS
BAT VOLT

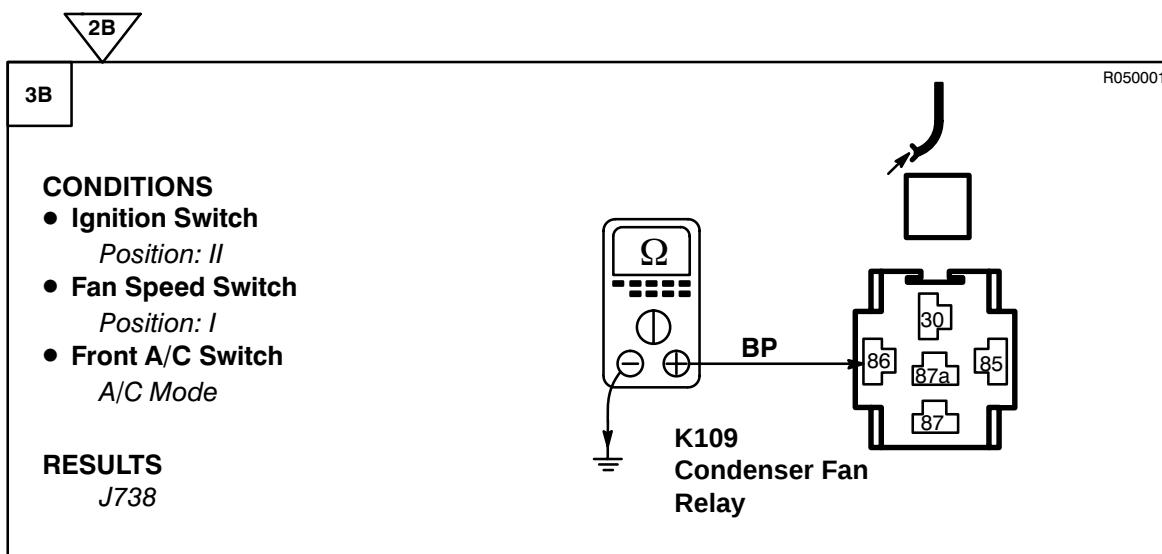


K109
Condenser Fan
Relay

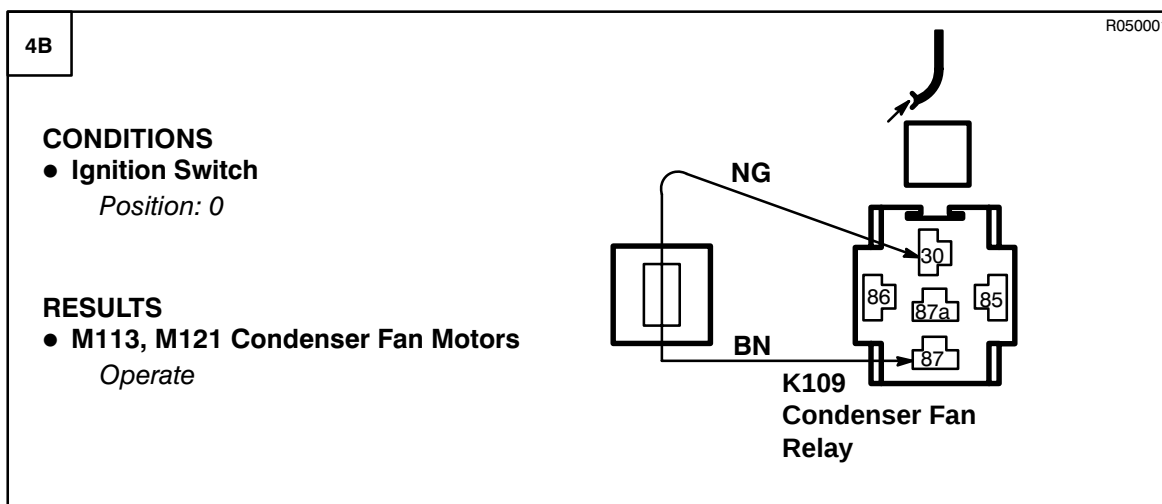
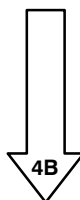
**PROBLEM CAUSE**

- GW Wire





GO TO TEST D


PROBLEM CAUSE
- BN Wire

PROBLEM CAUSE
- Condenser Fan
Relay

Test C

1C

A/C Mode**CONDITIONS**

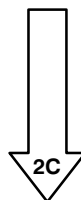
- Ignition Switch
Position: II
- Fan Speed Switch
Position: I
- Front A/C Switch
A/C Mode

RESULTS

- Compressor Clutch
On
- Front Blower Motor
On



GO TO SECTION K1



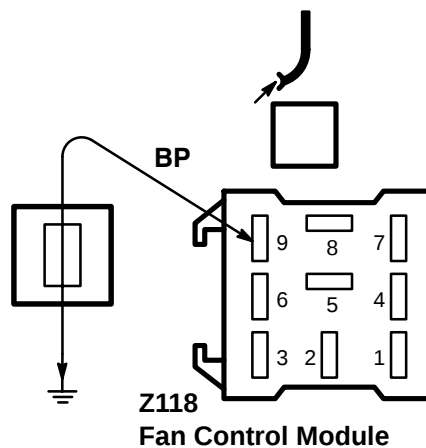
2C

CONDITIONS

- Ignition Switch
Position: II
- Fan Speed Switch
Position: I
- Front A/C Switch
A/C Mode

RESULTS

- M113, M121 Condenser Fan Motors
Operate



R090002


PROBLEM CAUSE
 - BP Wire

PROBLEM CAUSE
 - PB Wire
 - Condenser Fan
 Control Diode 1

Test D**1D A/C Mode****CONDITIONS**

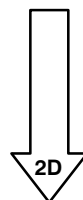
- Ignition Switch
Position: II
- Fan Speed Switch
Position: I
- Front A/C Switch
A/C Mode

RESULTS

- Compressor Clutch
On
- Front Blower Motor
On



GO TO SECTION K1

**2D**

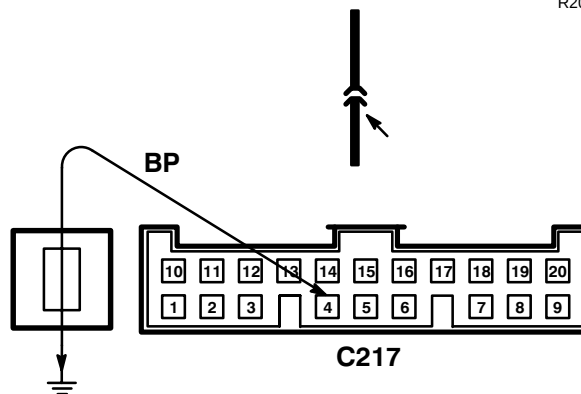
R200003

CONDITIONS

- Ignition Switch
Position: II
- Fan Speed Switch
Position: I
- Front A/C Switch
A/C Mode

RESULTS

- M113, M121 Condenser Fan Motors
Operate


PROBLEM CAUSE
 - BP Wire

PROBLEM CAUSE
 - PB Wire
 - Condenser Fan Control Diode 1

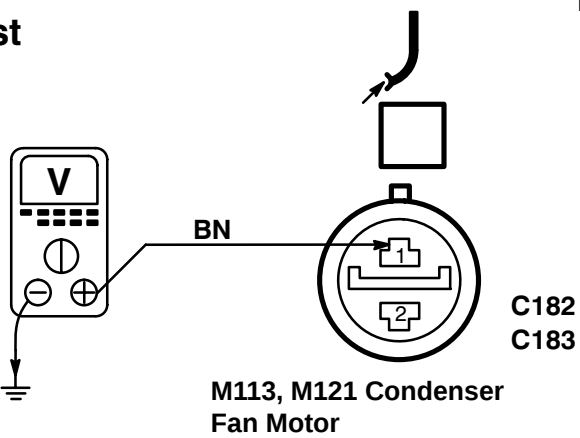
Test E

1E **Condenser Fan Motor Test** R020011

CONDITIONS

- Ignition Switch
Position: II
- Fan Speed Switch
Position: I
- Front A/C Switch
A/C Mode

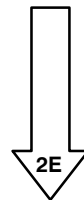
RESULTS
BAT VOLT



M113, M121 Condenser Fan Motor



PROBLEM CAUSE
- BN Wire

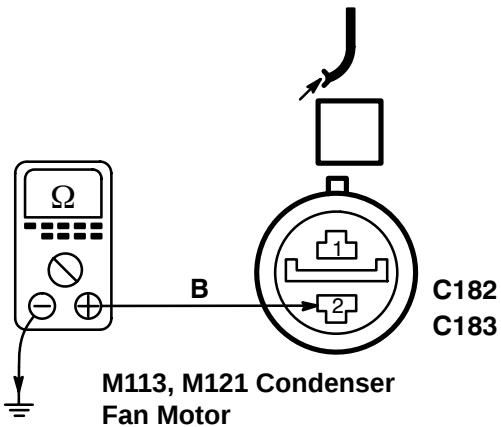


2E R020011

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm



M113, M121 Condenser Fan Motor



PROBLEM CAUSE
- B Wire
- E100



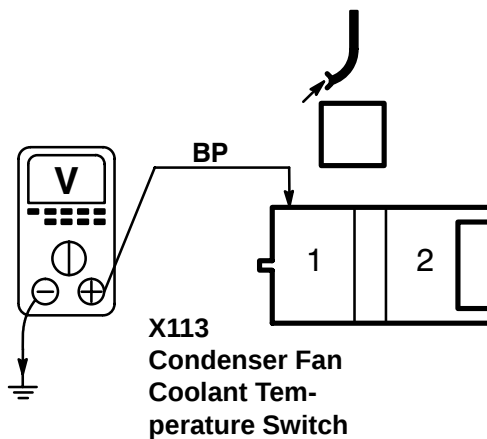
PROBLEM CAUSE
- M113, M121 Condenser Fan Motor

Test F**1F****Temperature Switch Test**

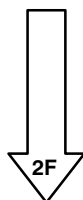
R020003

CONDITIONS

- Ignition Switch
Position: II

RESULTS*BAT VOLT***PROBLEM CAUSE**

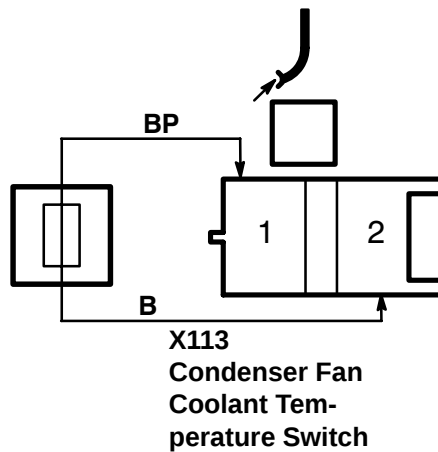
- BP Wire

**2F****CONDITIONS**

- Ignition Switch
Position: II

RESULTS

- M113, M121 Condenser Fan Motors
Operate

**PROBLEM CAUSE**

- B Wire
- E100, E103

**PROBLEM CAUSE**

- Condenser Fan
Coolant Tem-
perature Switch

Test G

1G Fan Timer Test R090002

CONDITIONS

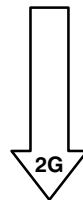
- Ignition Switch
Position: II
- Engine
On

RESULTS
BAT VOLT

Z118
Fan Control Module



PROBLEM CAUSE
- NO Wire



2G R090002

CONDITIONS

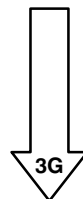
- Ignition Switch
Position: 0

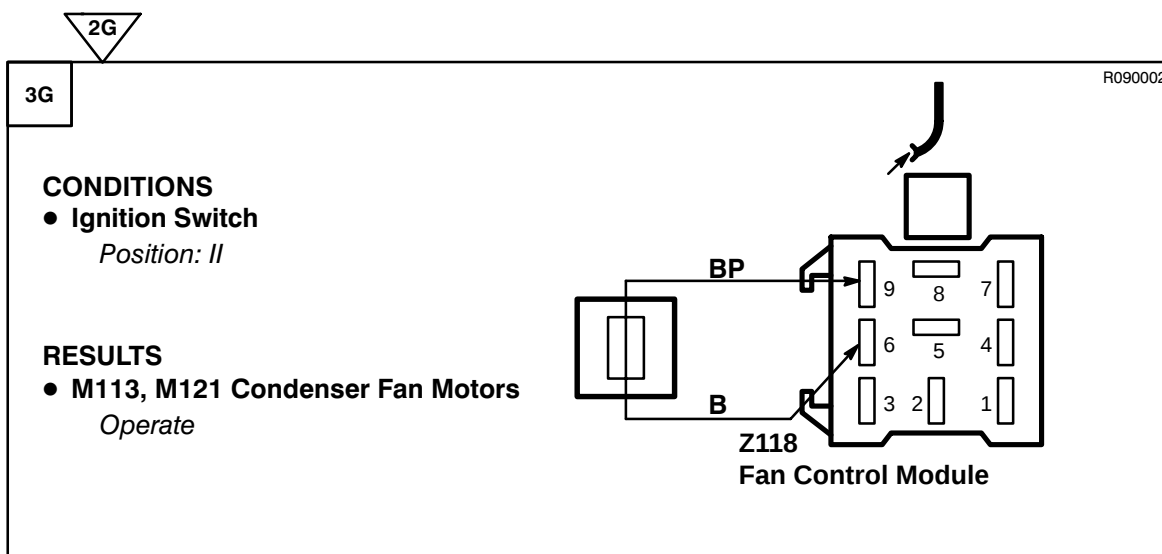
RESULTS
Less than 1 ohm

Z118
Fan Control Module

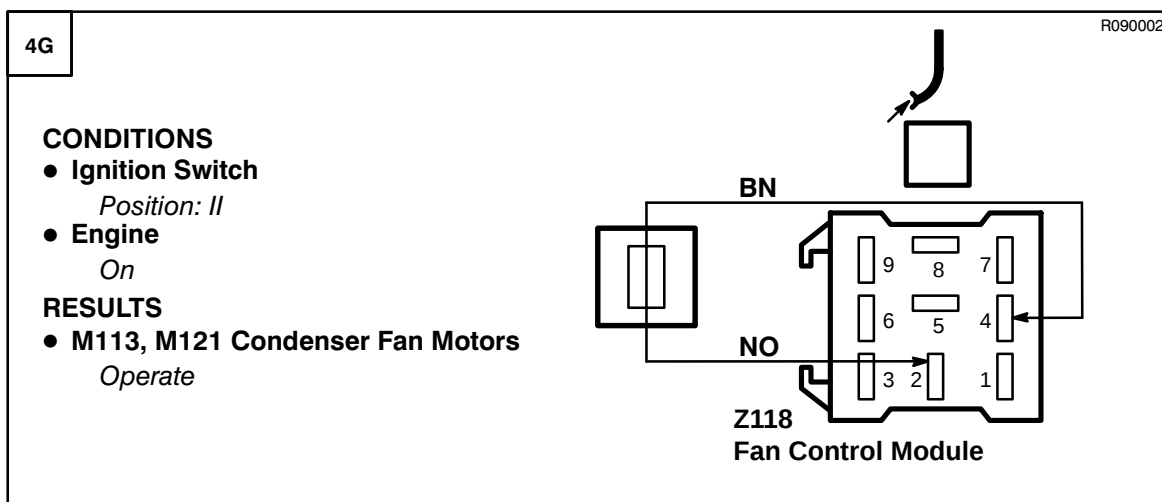
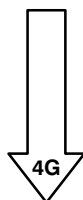


PROBLEM CAUSE
- B Wire
- E100

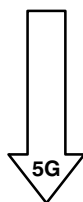


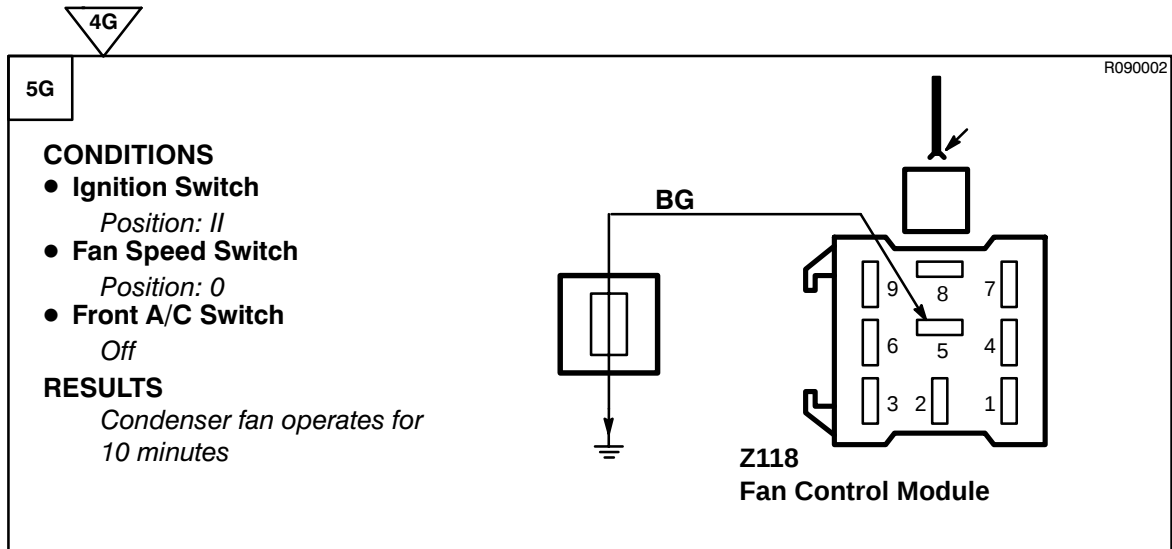
**PROBLEM CAUSE**

- BP Wire
- B Wire

**PROBLEM CAUSE**

- BN Wire





PROBLEM CAUSE
- Fan Control Module



PROBLEM CAUSE
- BG Wire
- Engine Control Module (ECM)

CIRCUIT OPERATION

Voltage for window lift and sunroof operation is provided to the Window Lift ECU (Z147) from fuses F2 and F3. The Window Lift ECU is grounded through the B wire at ground E201.

Timeout Feature

Fuse F18 applies voltage to the Window Lift ECU terminal 3 when the ignition switch is on. When the ignition switch is turned off, the absence of voltage at terminal 3 signals the Window Lift ECU to start the timeout feature. When the timeout feature is activated, the Window Lift ECU will allow window and sunroof operation for an additional 45 seconds.

The timeout feature will be cancelled if the driver's door is opened and then closed. The Window Lift ECU monitors the door's position at terminal 7.

Front Window Operation

When a Front Window Switch is operated, the switch grounds one of four Window Lift ECU input terminals. This signals the Window Lift ECU to apply voltage and ground to the respective window motor. If the front window switch is held in the down position for more than 1/2 second, the express down feature is activated. The Window Lift ECU will operate the window motor until it is completely lowered.

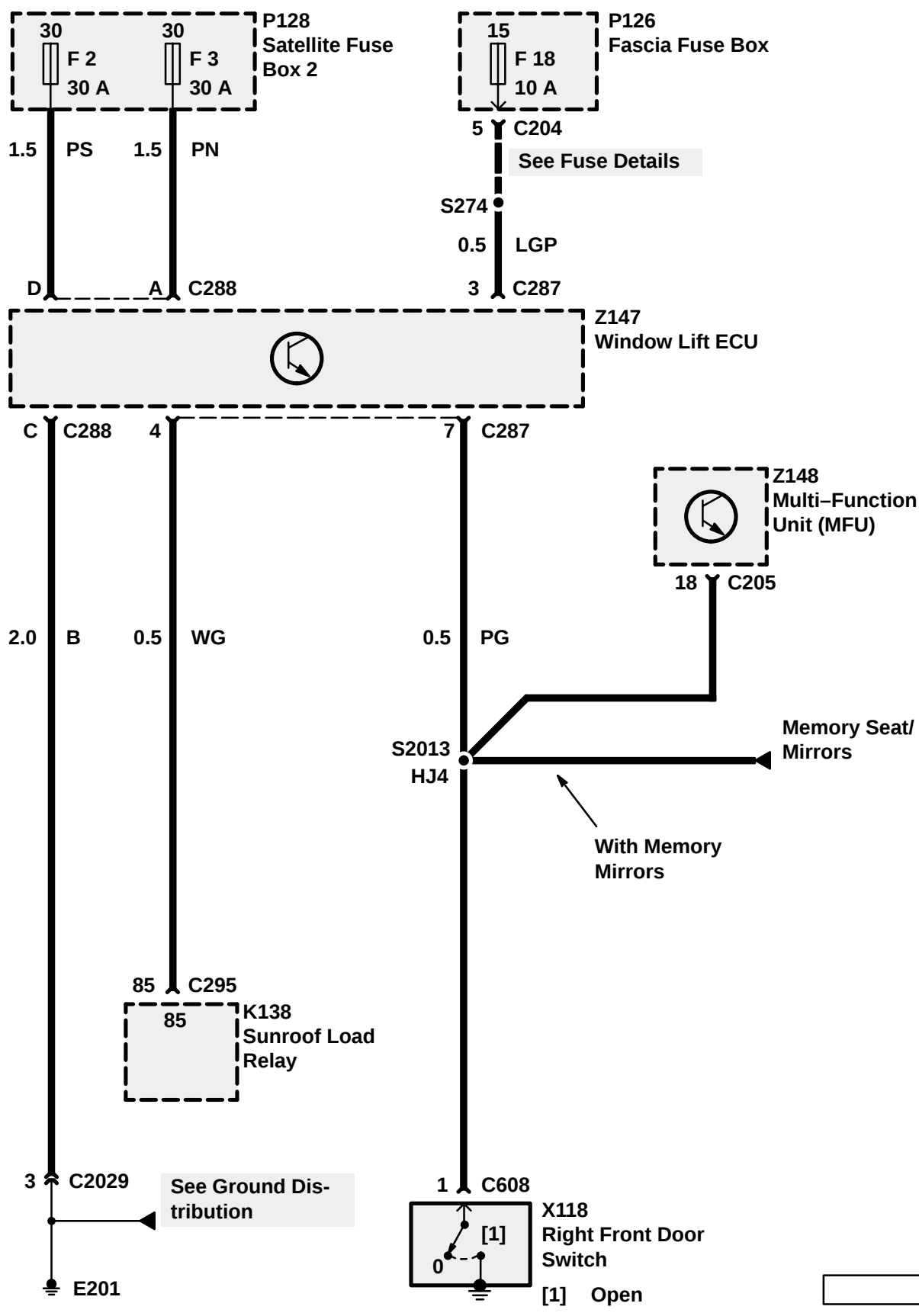
Rear Window

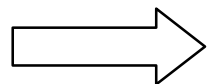
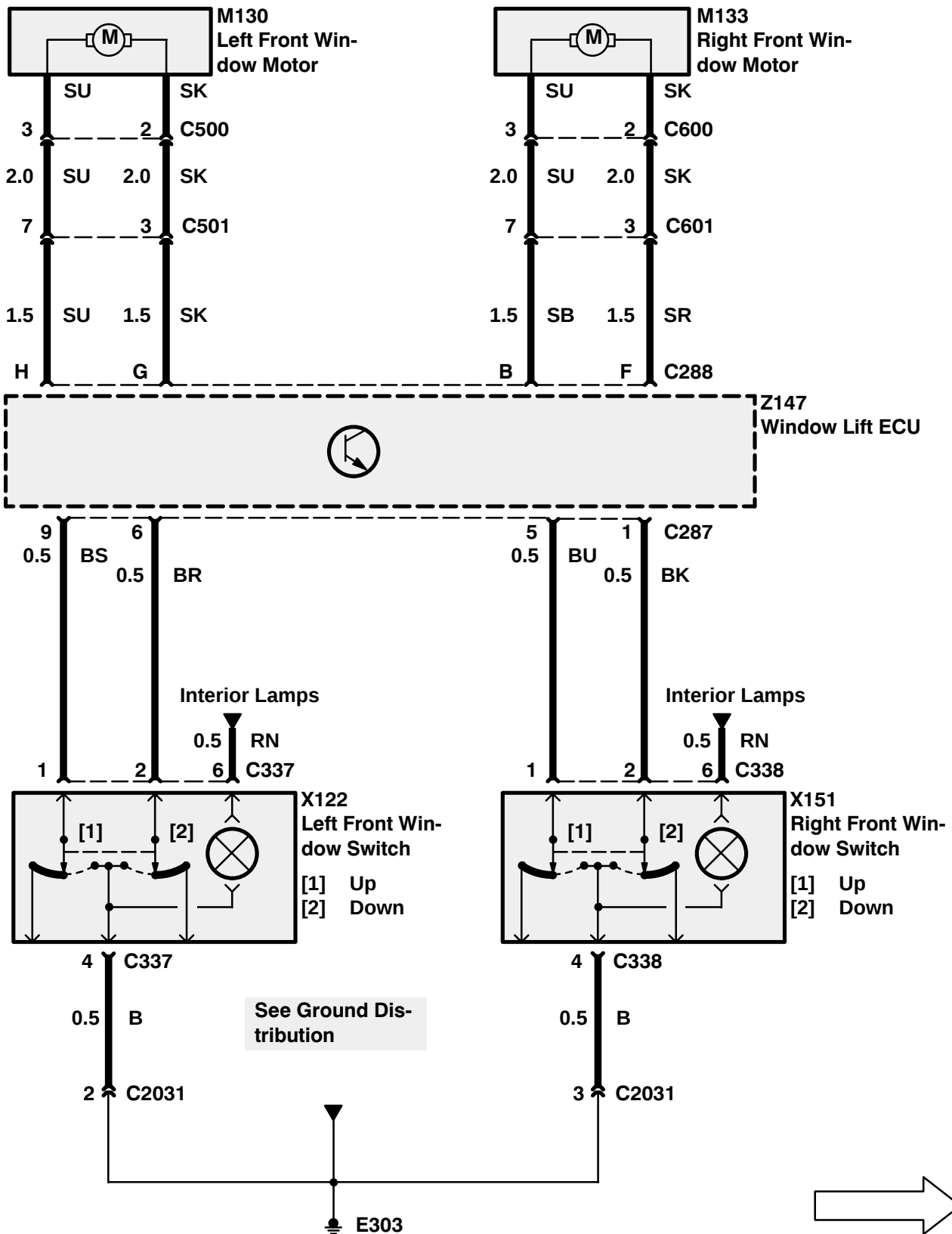
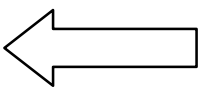
The Window Lift ECU terminal E supplies voltage to the Rear Window Console and door switches for rear window operation.

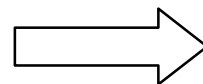
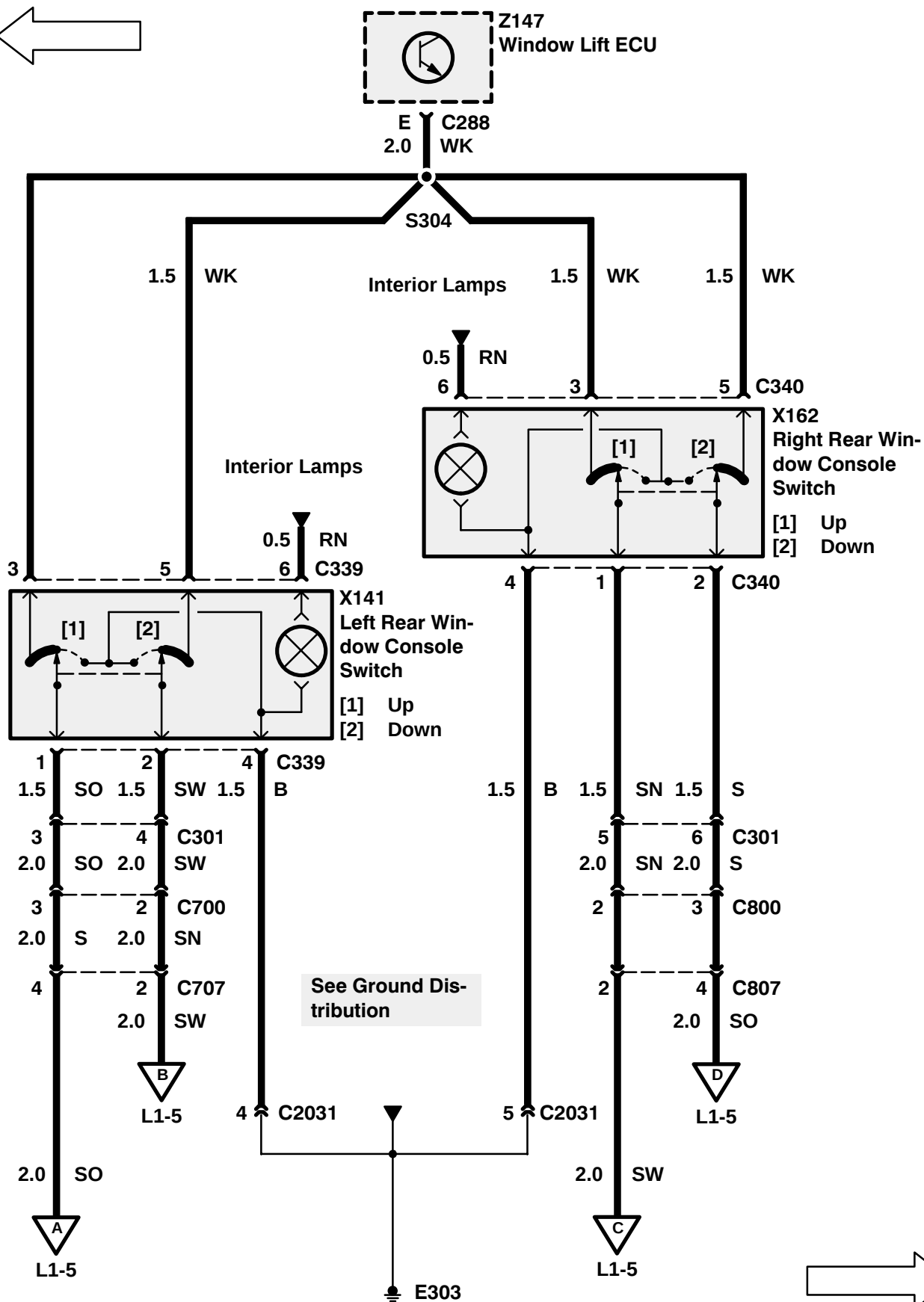
When a window console switch is in the 'DOWN' position, voltage is applied to the window motor through the 'up' switch contacts. The window motors operate because they are grounded through the 'down' contacts of the window console switch. When a switch is in the UP position, the polarity applied to the window motor is reversed, causing the motor to run in the opposite direction and the window to close.

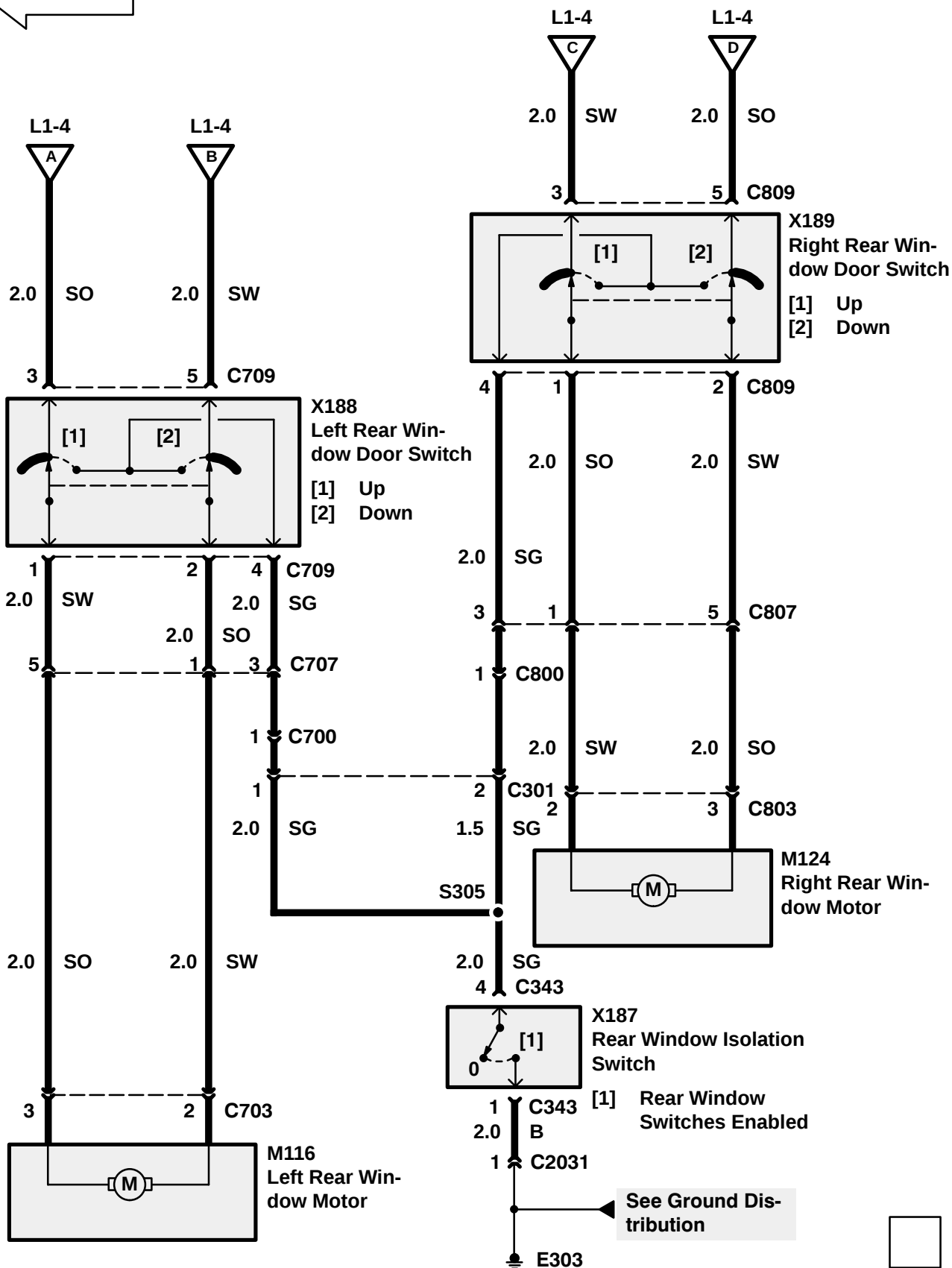
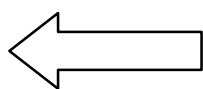
Rear Window Isolation Switch (X187)

The Rear Window Isolation Switch (X187) is placed in series with the ground supply to the Rear Window Door Switches (X188, X189). If the isolation switch is opened, the ground supply is interrupted, preventing rear window operation using the rear door switches.









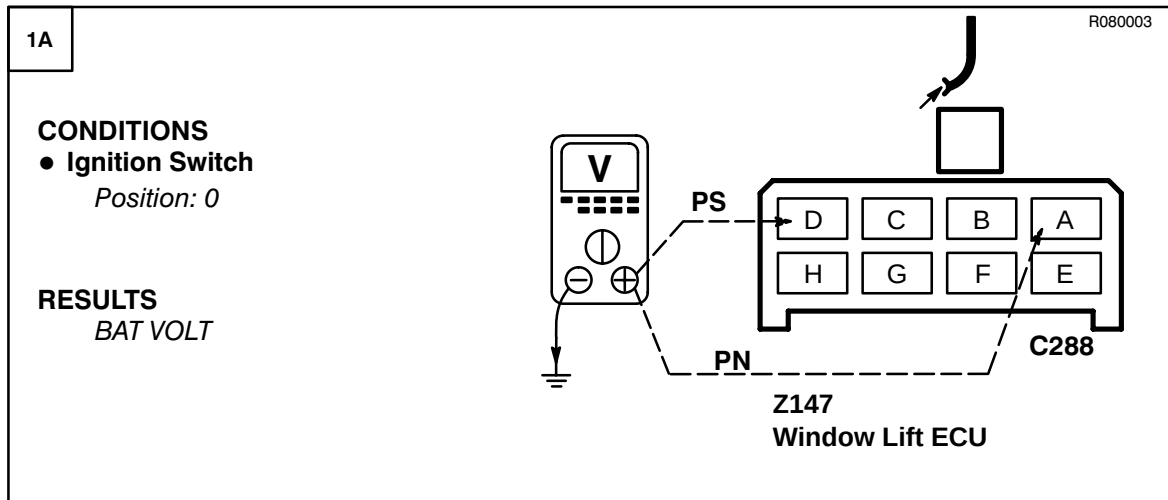
TROUBLESHOOTING HINTS

5. If the one touch window feature does not operate but the window operates, replace the Window Lift ECU (Z147).

SYSTEM DIAGNOSIS

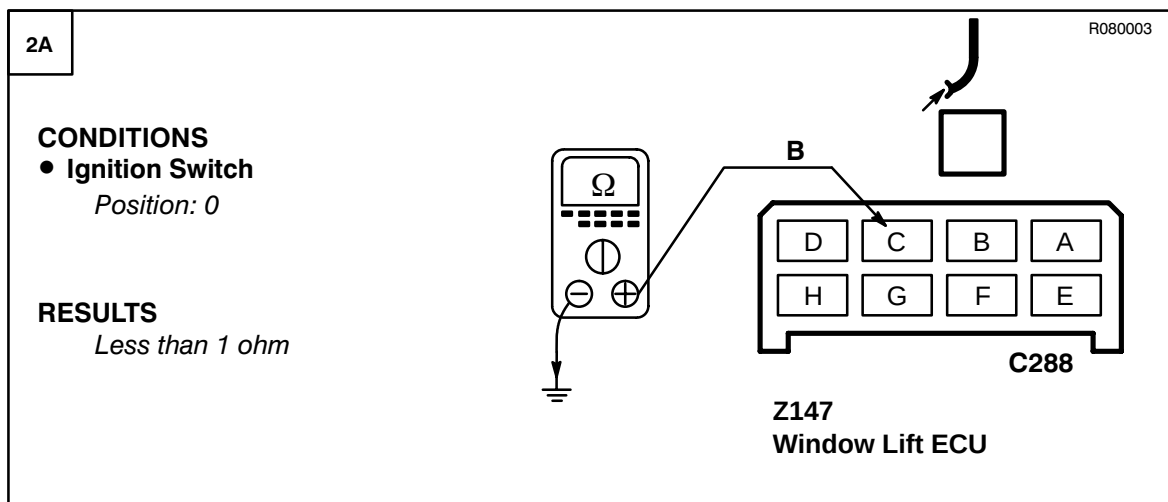
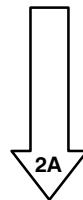
1. If none of the windows operate, do Test A.
2. If both rear windows do not operate from the rear door switches but do operate when the centre console switches are used, do test B.
3. If the rear windows do not operate from the centre console switches and the rear door switches, do Test C.
4. If one rear window does not operate from the centre console and door switch, do Test D.
5. If a rear window does not operate using the door switch but does operate from the centre console switch, do Test F.
6. If a rear window does not operate from the centre console switch but does work when the door switch is used, do Test E.
7. If a front window does not operate, do Test G.
8. If the window timeout feature does not operate, do test H.

Test A



PROBLEM CAUSE

- F2 Fuse
- PS Wire
- F3 Fuse
- PN Wire

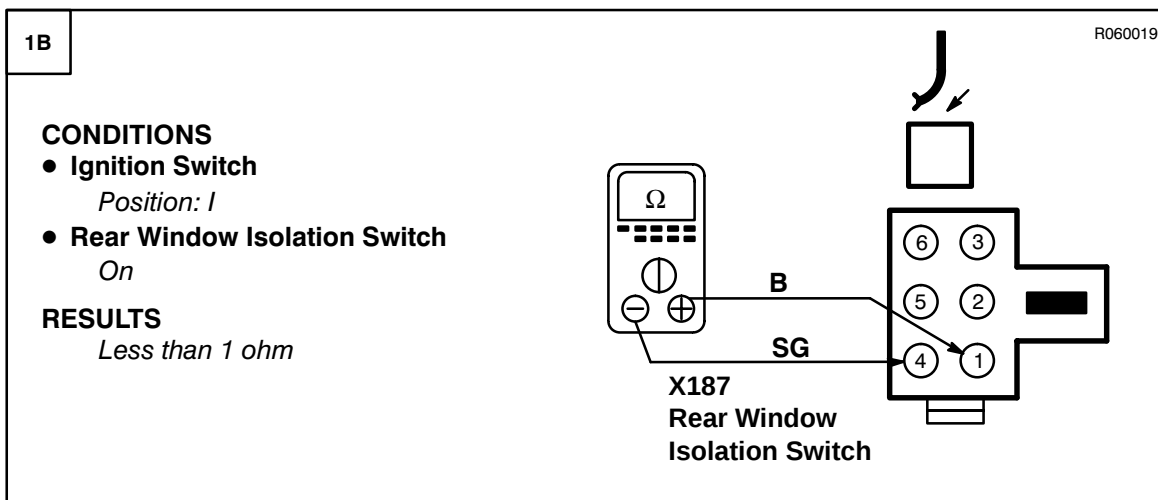


PROBLEM CAUSE

- B Wire



- PROBLEM CAUSE
- Window Lift ECU

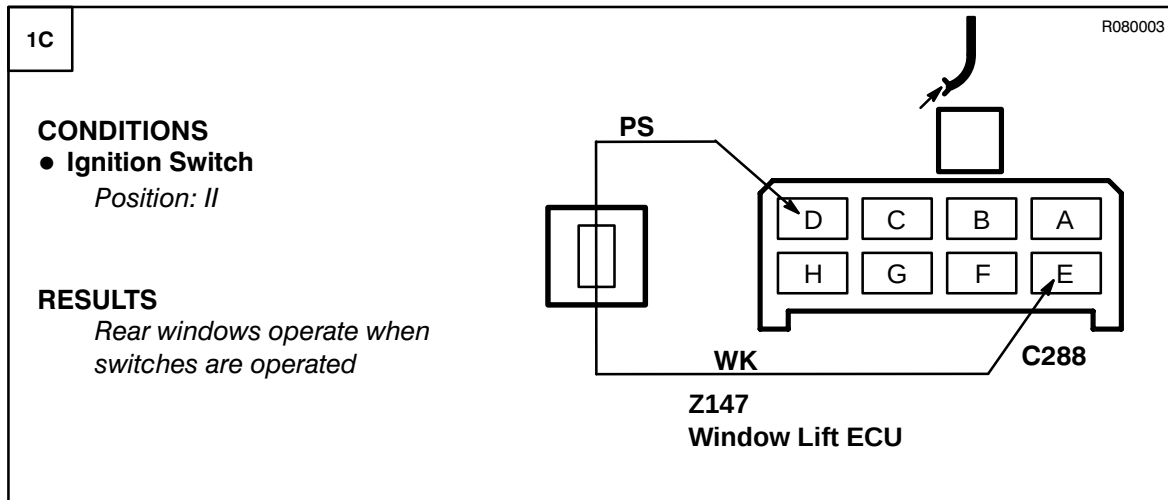
Test B**PROBLEM CAUSE**

- Rear Window Isolation Switch

**PROBLEM CAUSE**

- B Wire
- SG Wire

Test C

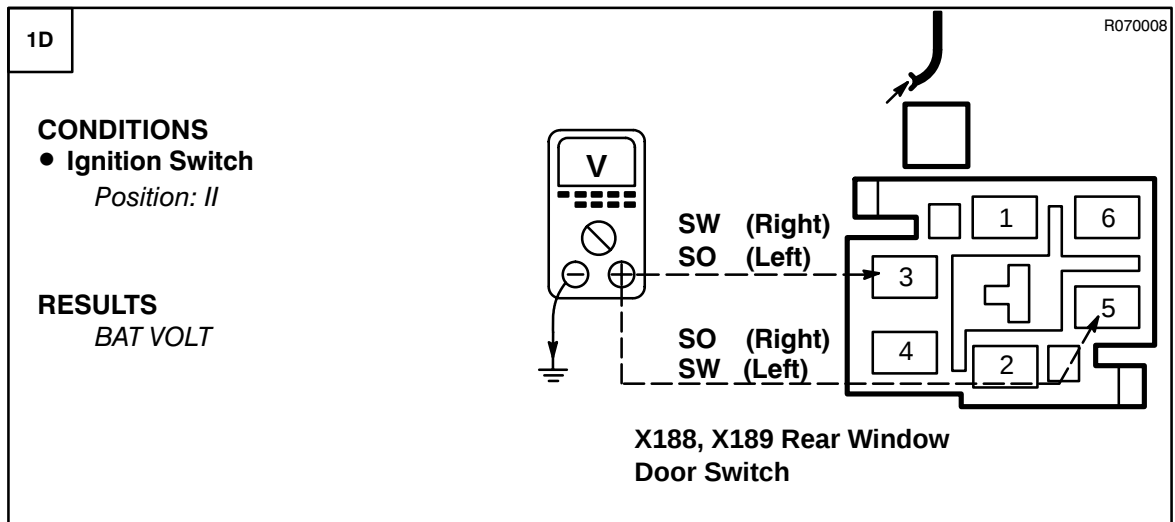


PROBLEM CAUSE
- WK Wire

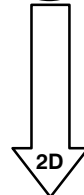


PROBLEM CAUSE
- Window Lift ECU

Test D



GO TO TEST E



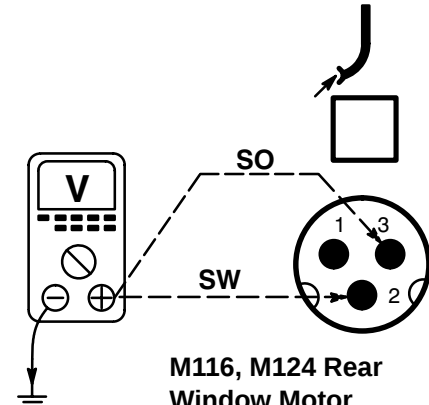
1D

2D

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT



M116, M124 Rear Window Motor

R030030

**PROBLEM CAUSE**

- SW Wire
- SO Wire
- X188, X189 Rear Window Door Switch



3D

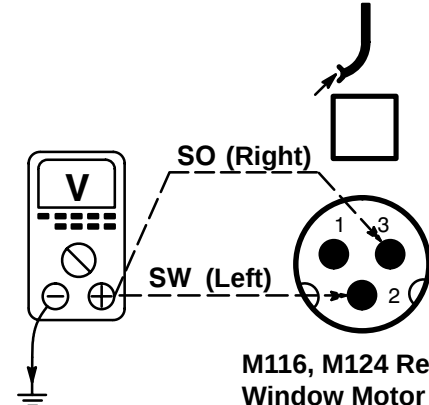
CONDITIONS

- Ignition Switch
Position: II

RESULTS

- X188, X189 Rear Window Door Switch

⬆ = 0 VOLT
 Off = BAT VOLT

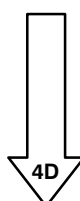


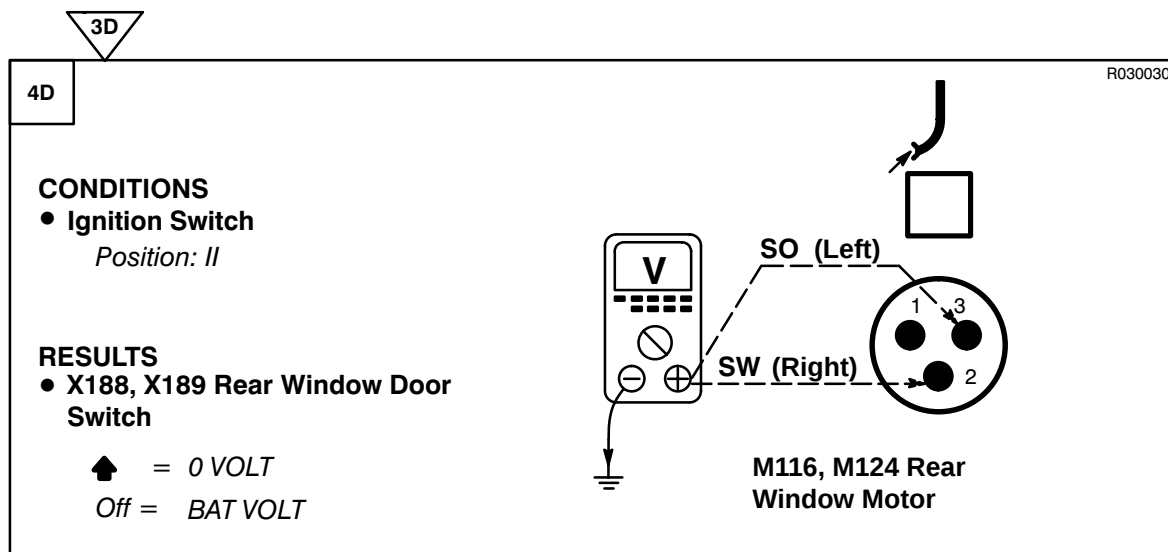
M116, M124 Rear Window Motor

R030030

**PROBLEM CAUSE**

- SW Wire
- SO Wire
- X188, X189 Rear Window Door Switch

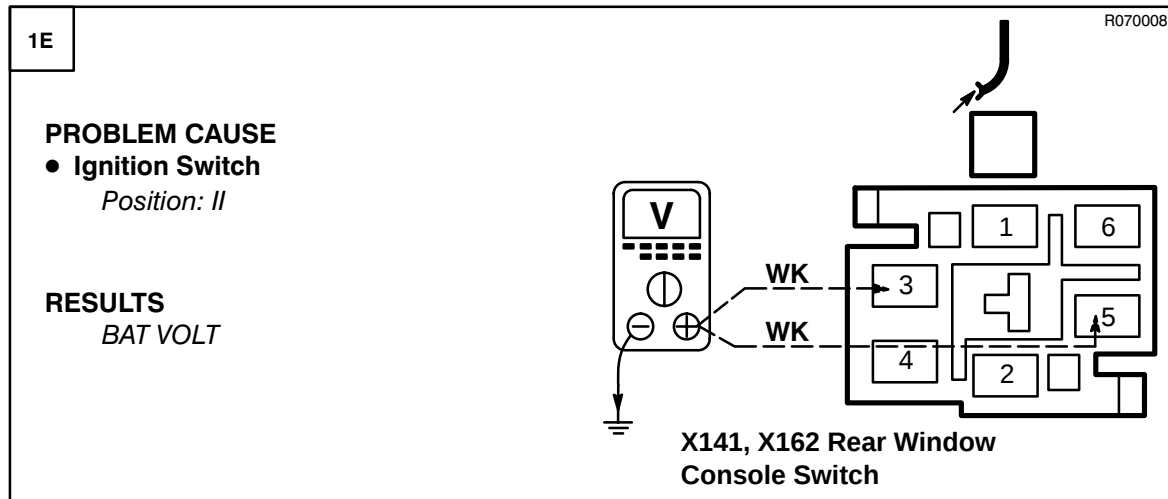


**PROBLEM CAUSE**

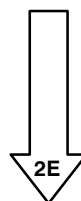
- SO Wire
- SW Wire
- X188, X189 Rear Window Door Switch

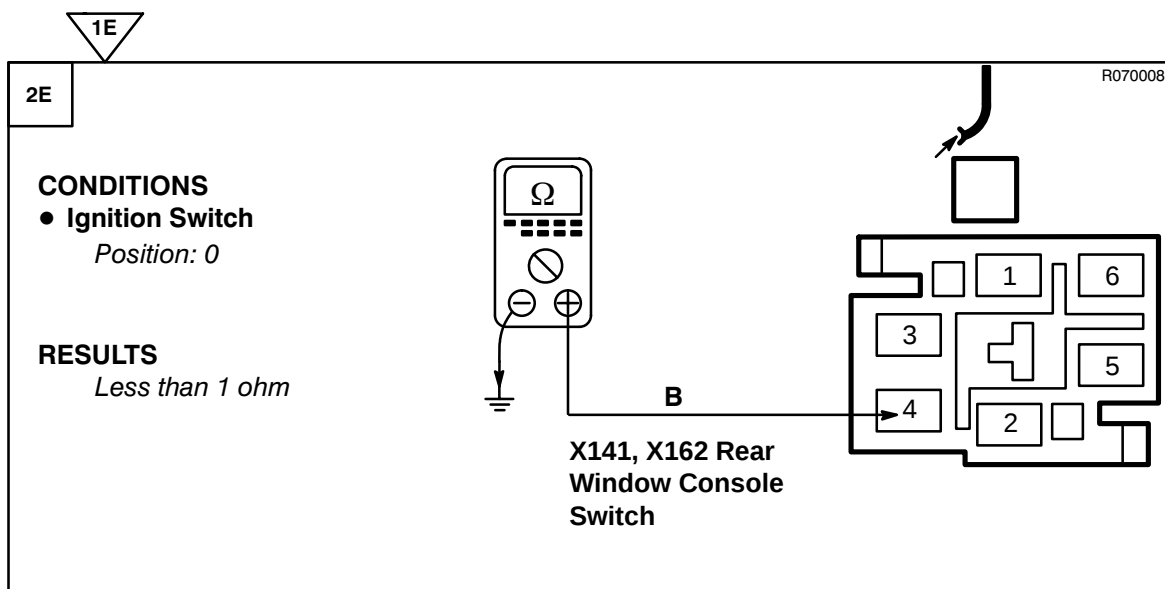
**PROBLEM CAUSE**

- M116, M124 Rear Window Motor

Test E**PROBLEM CAUSE**

- WK Wire

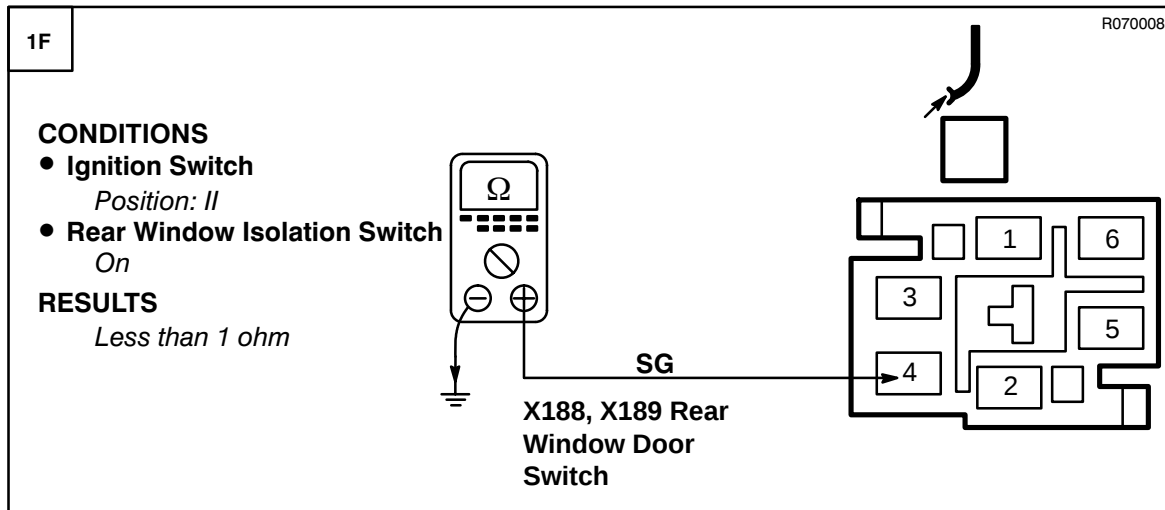




PROBLEM CAUSE
- B Wire



PROBLEM CAUSE
- S, SO Wire
- SN, SW Wire
- X141, X162 Rear Window Console Switch

Test F

PROBLEM CAUSE
- SG Wire



PROBLEM CAUSE
- X188, X189 Rear Window Door Switch

Test G

1G R100005

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

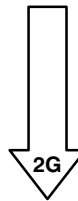
- X122, X151 Front Window Switch
 - ⬆ = Less than 1 ohm
 - ⬇ = More than 10K ohms

C287

Z147
Window Lift ECU



GO TO TEST H



2G R100005

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

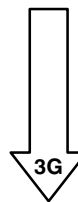
- X122, X151 Front Window Switch
 - ⬆ = Less than 1 ohm
 - ⬇ = More than 10K ohms

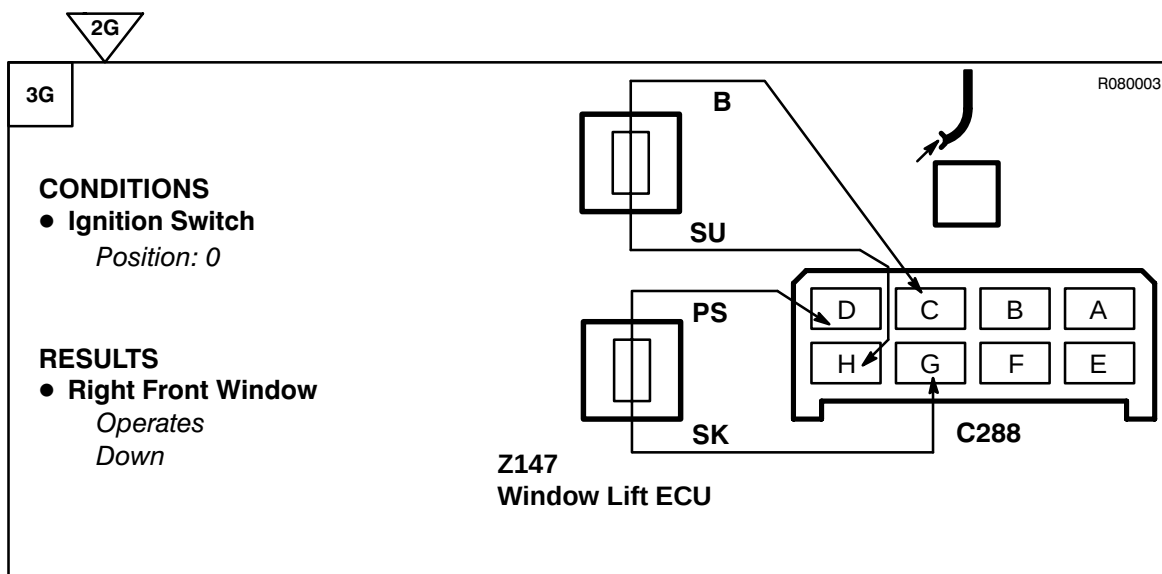
C287

Z147
Window Lift ECU

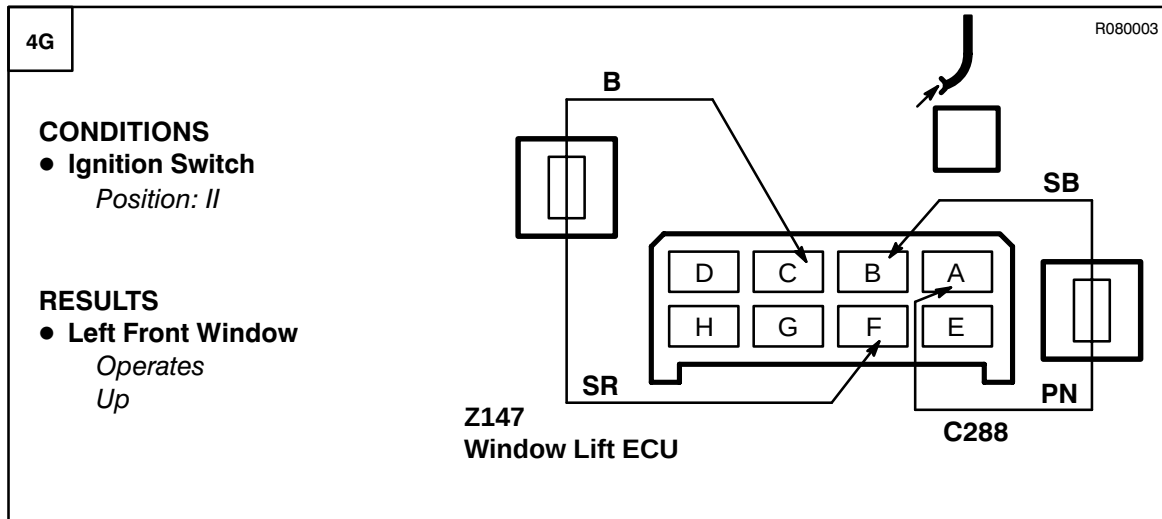
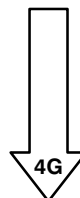


GO TO TEST H



**PROBLEM CAUSE**

- SU Wire
- SK Wire
- Right Front Window Motor

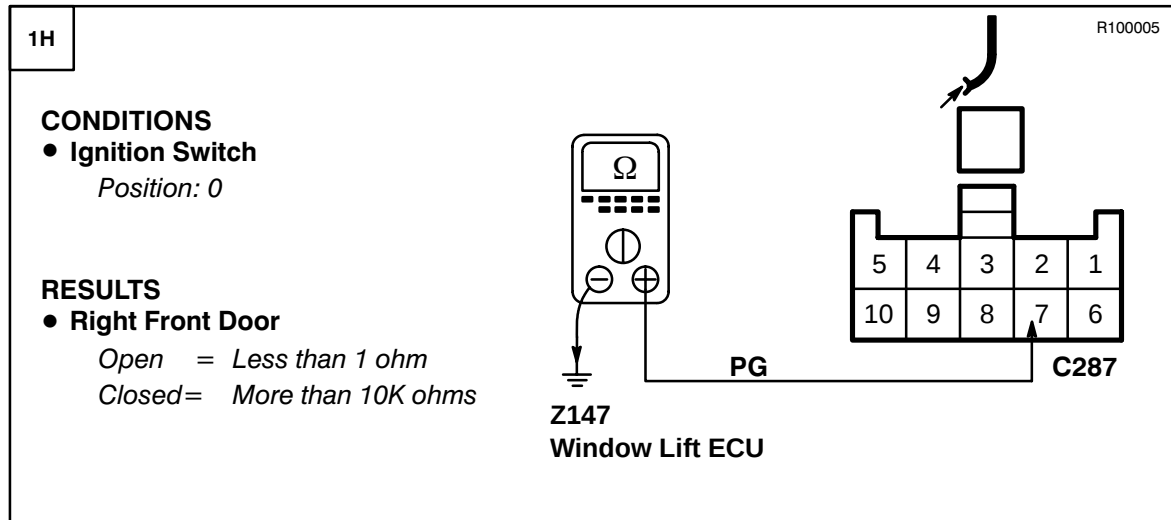
**PROBLEM CAUSE**

- SB Wire
- SR Wire
- Left Front Window Motor

**PROBLEM CAUSE**

- Window Lift ECU

Test H



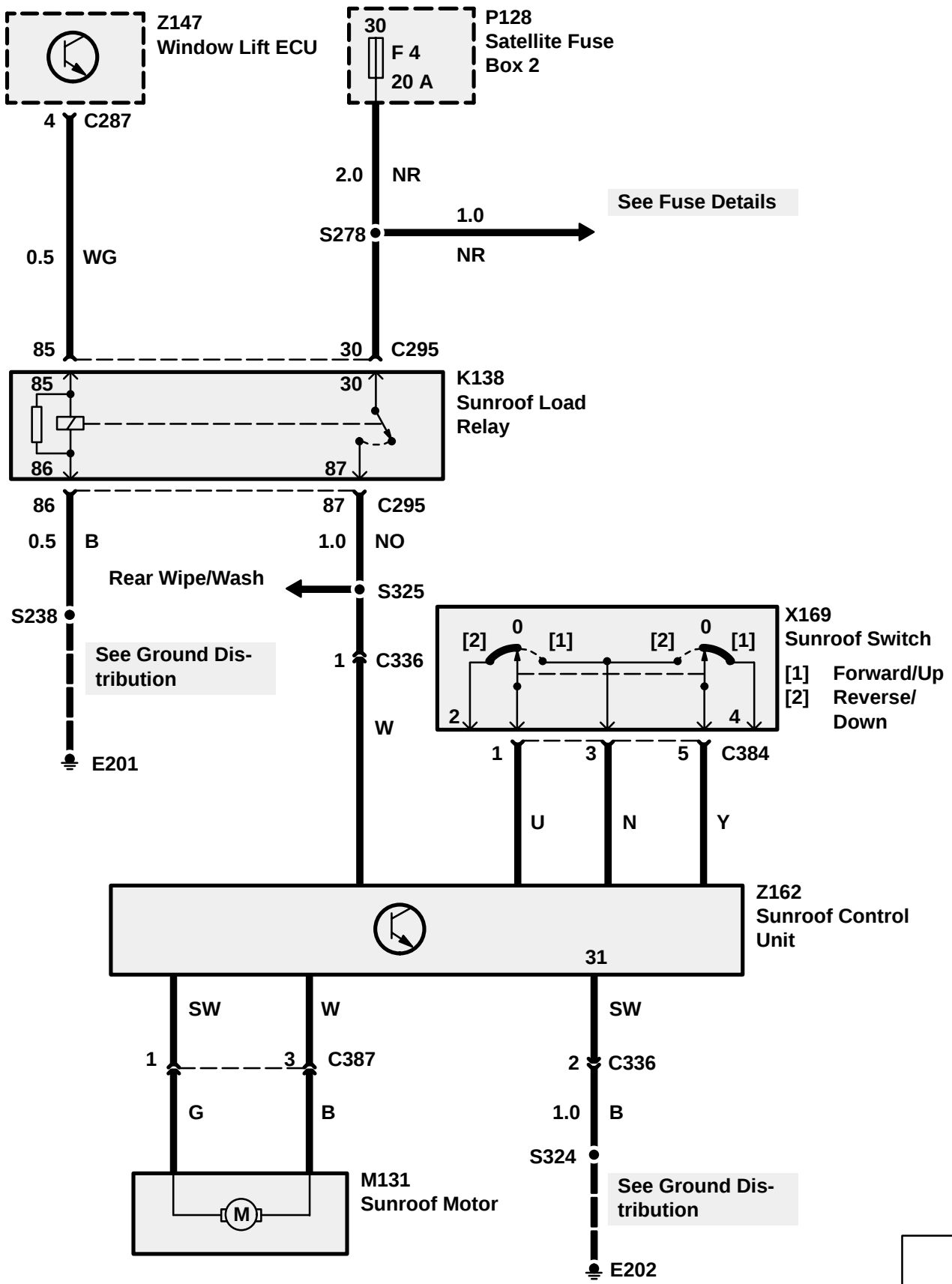
PROBLEM CAUSE

- PG Wire
- Right Front Door Switch



PROBLEM CAUSE

- Window Lift ECU



CIRCUIT OPERATION

Fuses F1 and F5 supply voltage to the Central Locking Control Unit (Z113). The control unit is grounded at terminal 11 to ground E201.

Inputs

The Central Locking Control Unit (Z113) monitors the position of the front door locks through input switches that are part of the Front Door Lock Actuators (M114, M122). When the control unit sees an input switch change position, the control unit responds by locking or unlocking the doors and the tailgate.

Lock

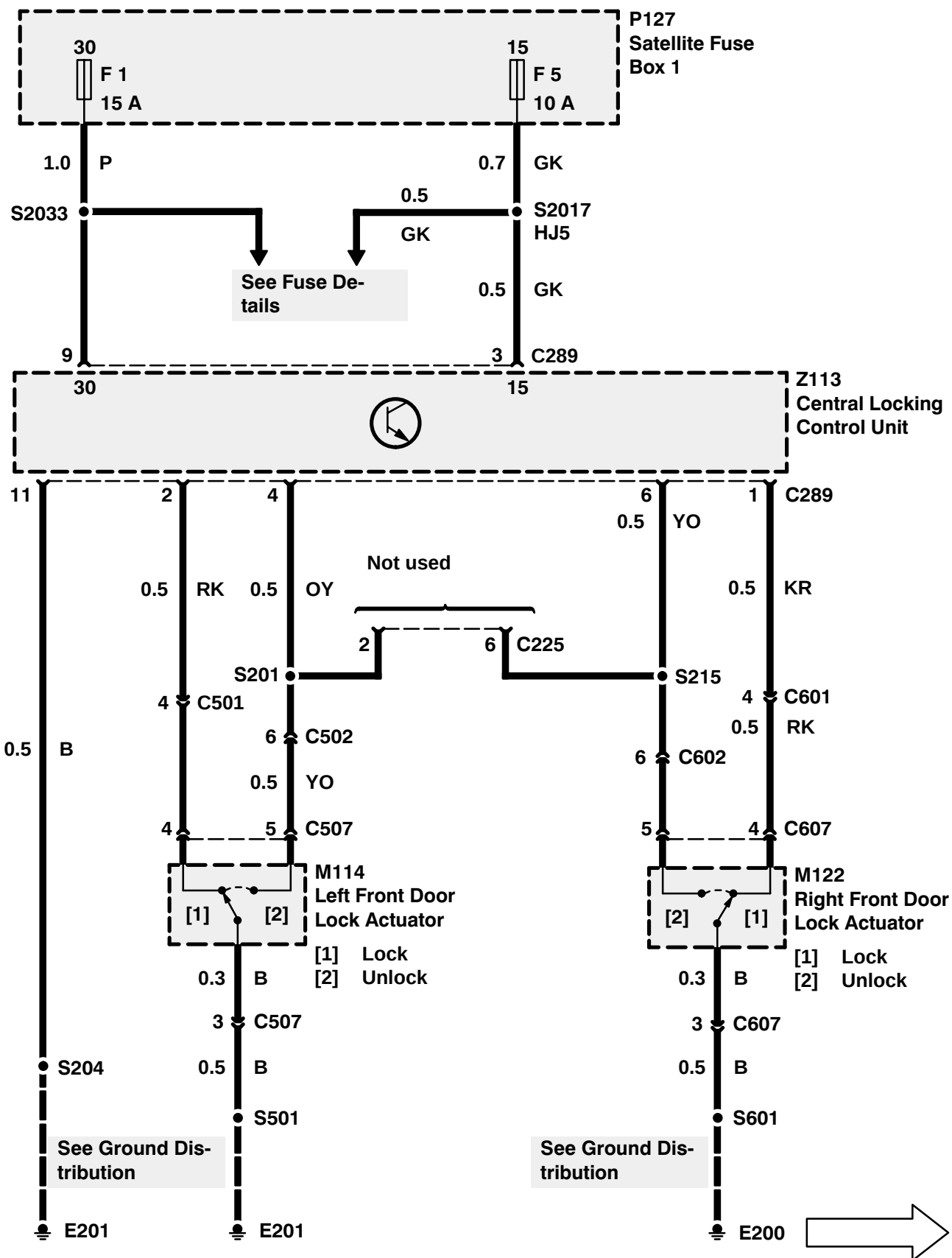
The Central Locking Control Unit (Z113) locks the doors and the tailgate by momentarily applying battery voltage to the actuators through the K wire. The lock actuators are grounded by the Central Locking Control Unit through the O wire. The actuators now move to the locked position.

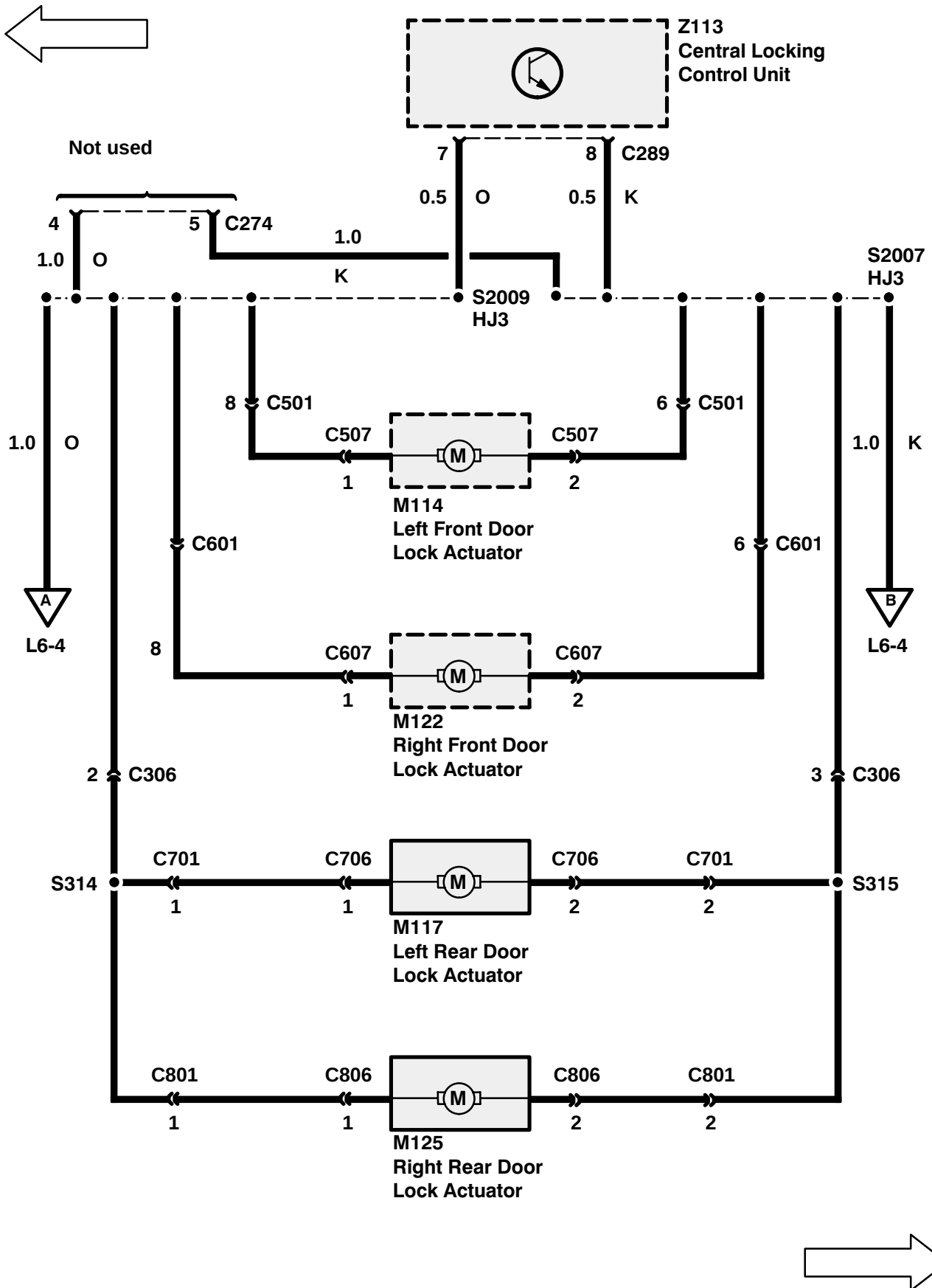
Unlock

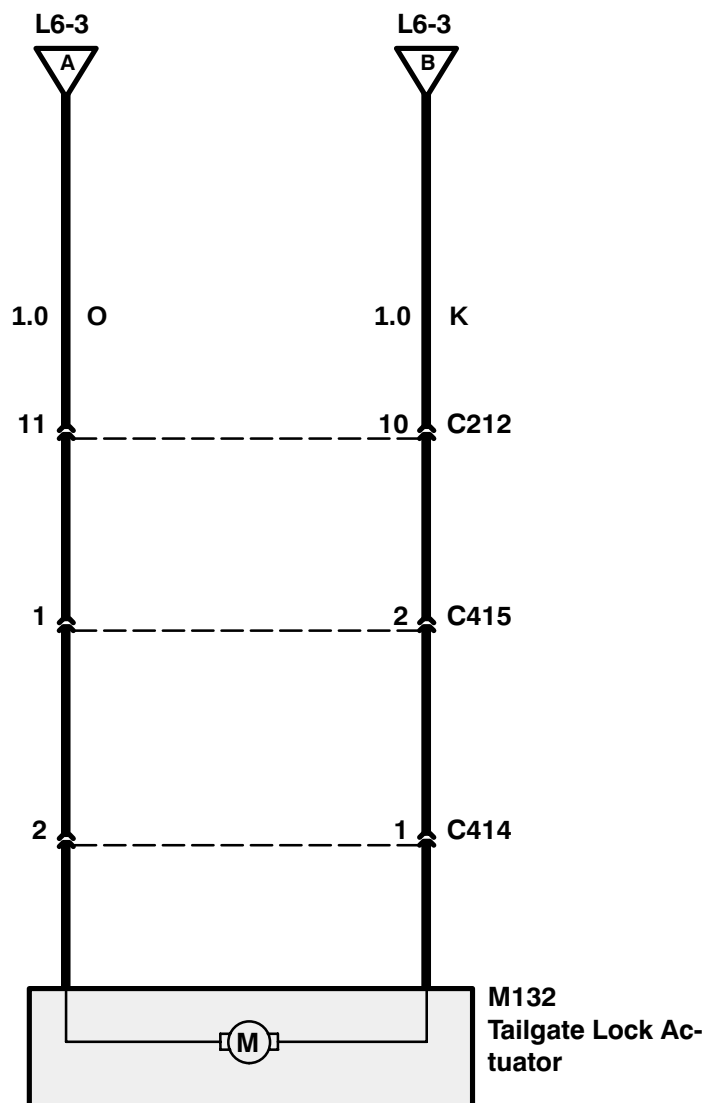
To unlock the doors and the tailgate the Central Locking Control Unit (Z113) momentarily applies battery voltage to the actuators through the O wire. The actuators are grounded by the Central Locking Control Unit through the K wire. The lock actuators now unlock.

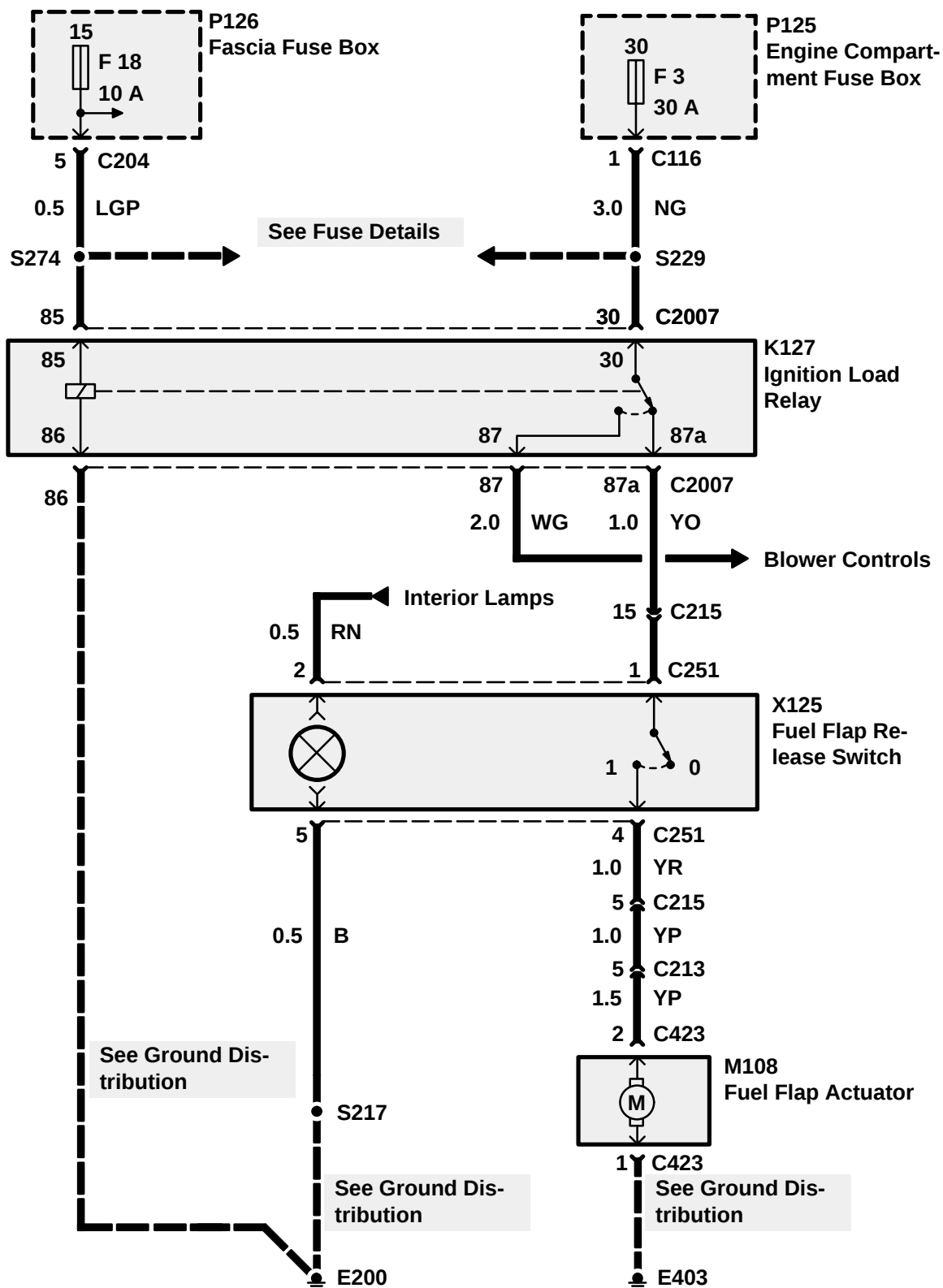
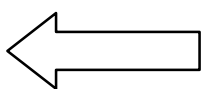
Fuel Flap

When the Fuel Flap Release Switch (X125) is operated, voltage from the Ignition Load Relay (K127) is applied to the Fuel Flap Actuator (M108) through the switch, the YR wire and the YP wire. Voltage is only applied when the Ignition Switch is not in Position II, to keep the fuel flap from being opened while driving. The actuator is grounded to ground E403.









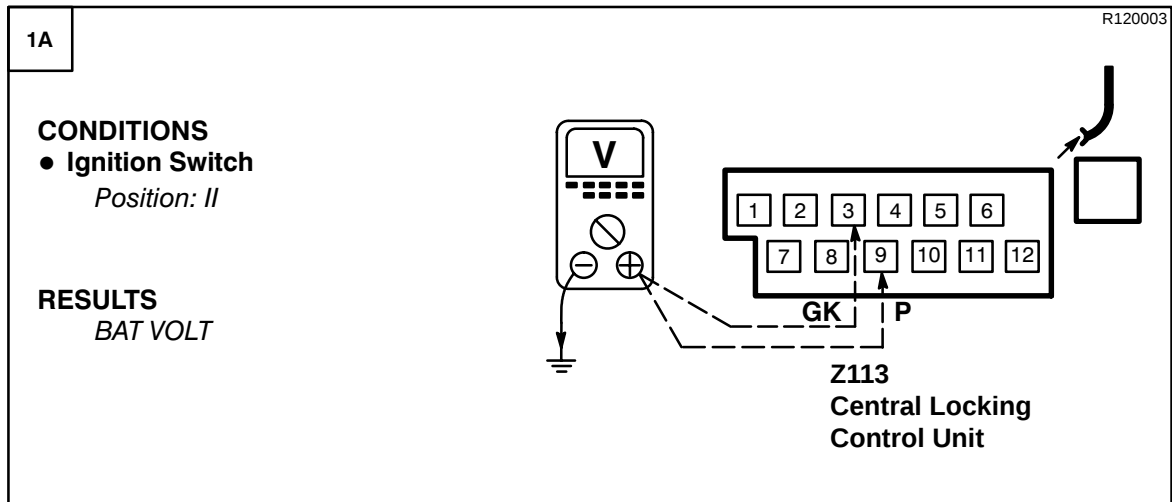
TROUBLESHOOTING HINTS

9. Check fuses F1, F5 in Satellite Fuse Box 1.
10. Check Fuse F18 in Fascia Fuse Box and F3 in Engine Compartment Fuse Box for Fuel Flap problems.
11. If the interior lights do not come on when door is open, check suspect door switch and associated wiring.

SYSTEM DIAGNOSIS

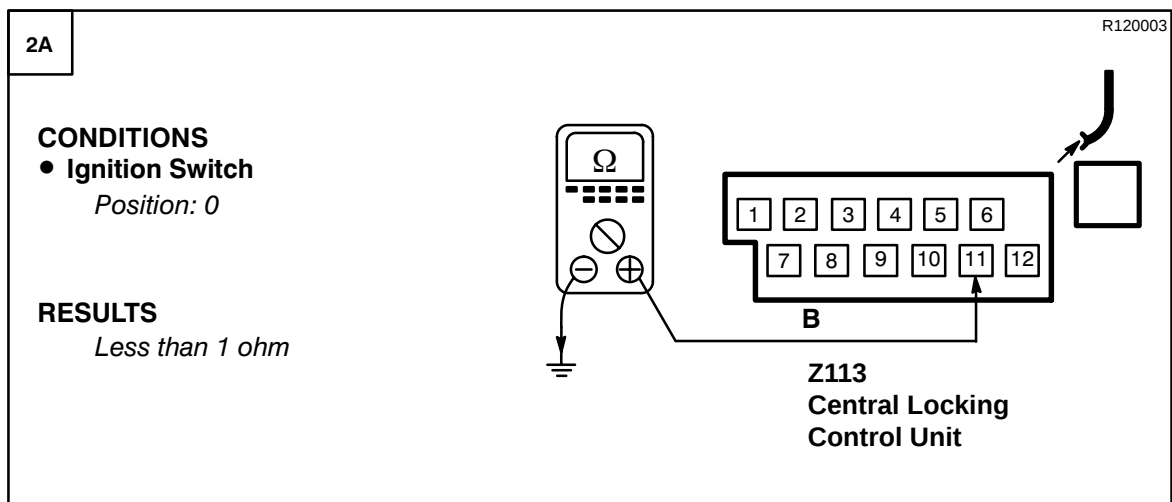
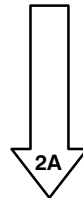
1. If the central locking function does not operate at all, do Test A.
2. If a Front Door Lock Actuator (M114, M122) does not operate, do Test B.
3. If the doors relock or unlock themselves after operating the door locks, do Test C.
4. If the central locking function does not operate from one of the front doors, do Test D.
5. If the Tailgate Lock Actuator (M132) does not operate, do Test E.
6. If both Rear Door Lock Actuators (M117, M125) do not operate, do Test F.
7. If the Fuel Flap does not release when operated, do Test G.

Test A



PROBLEM CAUSE

- F1 Fuse
- F5 Fuse
- GK Wire
- P Wire



PROBLEM CAUSE

- B Wire



PROBLEM CAUSE

- Central Locking
Control Unit
- O, K Wire

Test B

R060009

1B

CONDITIONS

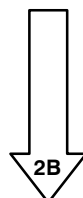
- Ignition Switch
Position: II
- All doors
Locked
- Unlock a front door

RESULTS
BAT VOLT (Momentary)

M114, M122 Front Door Lock Actuator



PROBLEM CAUSE
- O Wire



R060009

2B

CONDITIONS

- Ignition Switch
Position: II
- All doors
Unlocked
- Lock a front door

RESULTS
BAT VOLT (Momentary)

M114, M122 Front Door Lock Actuator



PROBLEM CAUSE
- K Wire



PROBLEM CAUSE
- M114, M122 Front Door Lock Actuator

Test C

1C

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked

RESULTS
More than 1000 ohms

R120003

RK

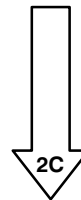
KR

Z113
Central Locking
Control Unit



PROBLEM CAUSE

- RK Wire
- KR Wire
- M114, M122 Front Door Lock Actuator



2C

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked

RESULTS
More than 1000 ohms

R120003

YO

OY

Z113
Central Locking
Control Unit



PROBLEM CAUSE

- YO Wire
- OY Wire
- M114, M122 Front Door Lock Actuator



PROBLEM CAUSE

- Central Locking Control Unit

Test D

R120003

1D

CONDITIONS

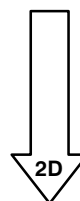
- Ignition Switch
Position: 0
- All doors
Locked

RESULTS
Less than 1 ohm

Z113
Central Locking Control Unit



GO TO TEST 3D



R120003

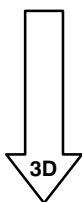
2D

CONDITIONS

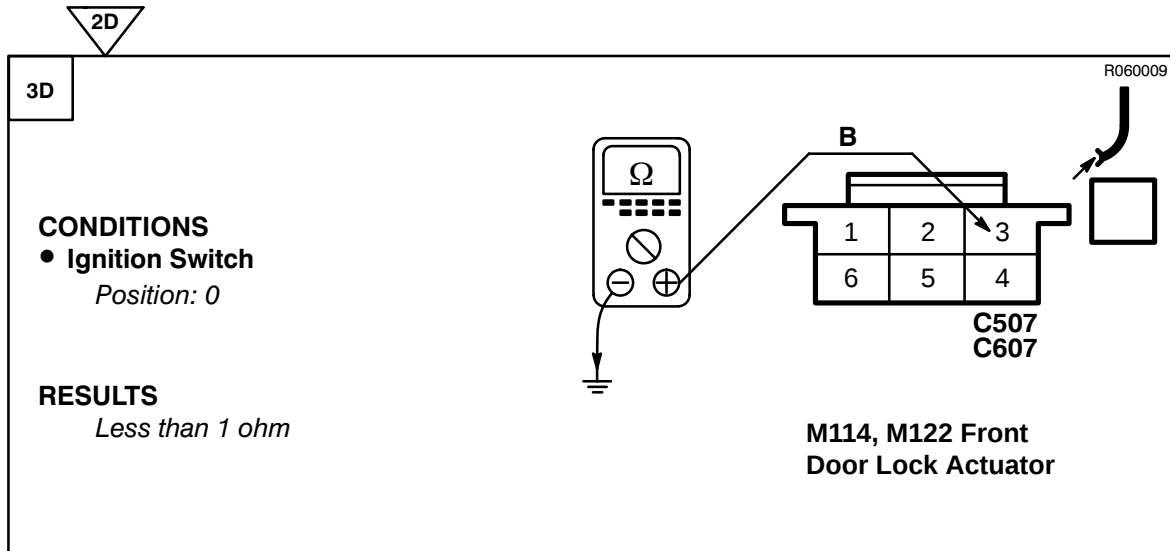
- Ignition Switch
Position: 0
- All doors
Unlocked

RESULTS
Less than 1 ohm

Z113
Central Locking Control Unit

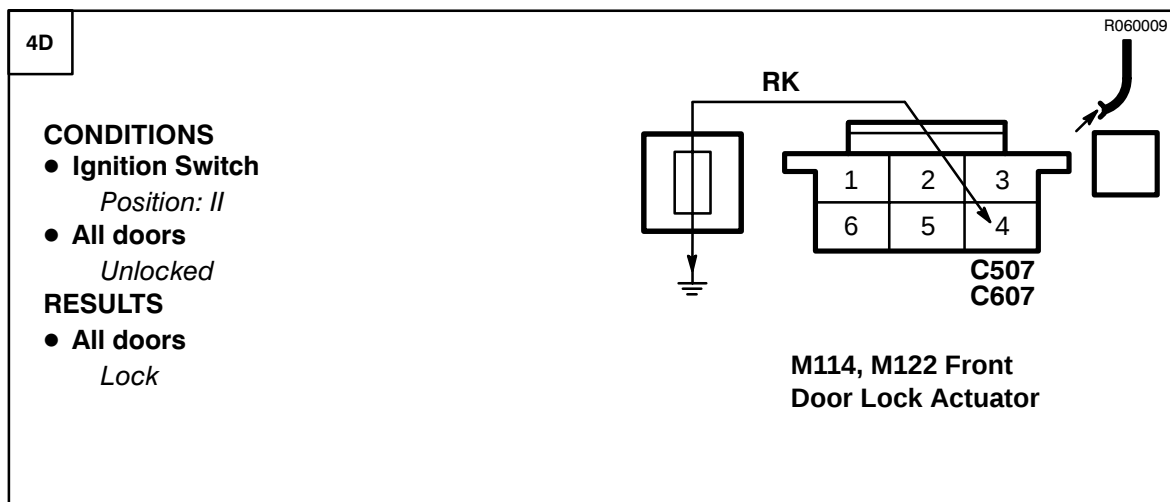
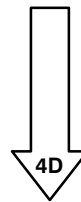


PROBLEM CAUSE
- Central Locking Control Unit



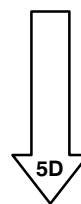
PROBLEM CAUSE

- B Wire



PROBLEM CAUSE

- RK, KR Wire
- Central Locking Control Unit



4D

5D

R060009

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked

RESULTS

- All doors
Unlock

**C507
C607**

**M114, M122 Front Door
Lock Actuator**

PROBLEM CAUSE

- YO, OY Wire
- Central Locking Control Unit

PROBLEM CAUSE

- M114, M122 Front Door Lock Actuator

Test E

1E

R020029

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

RESULTS

BAT VOLT (Momentary)

**M132
Tailgate Lock Ac-
tuator**

PROBLEM CAUSE

- K Wire

12

ELECTRICAL TROUBLESHOOTING MANUAL

1E

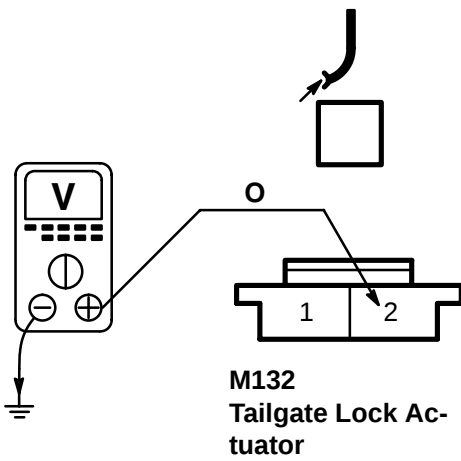
2E

R020029

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock a front door

RESULTS
BAT VOLT (Momentary)



M132
Tailgate Lock Ac-
tuator



PROBLEM CAUSE
- O Wire



PROBLEM CAUSE
- Tailgate Lock Ac-
tuator

Test F

R020029

1F

CONDITIONS

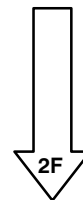
- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

RESULTS
BAT VOLT (Momentary)

M117, M125 Rear Door Lock Actuator



PROBLEM CAUSE
- K Wire



R020029

2F

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock a front door

RESULTS
BAT VOLT (Momentary)

M117, M125 Rear Door Lock Actuator

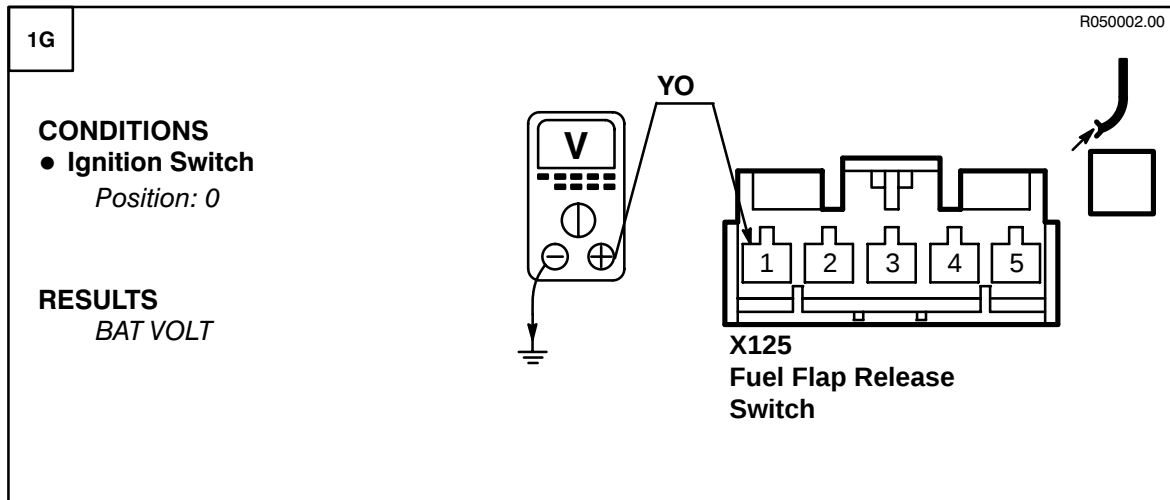


PROBLEM CAUSE
- O Wire



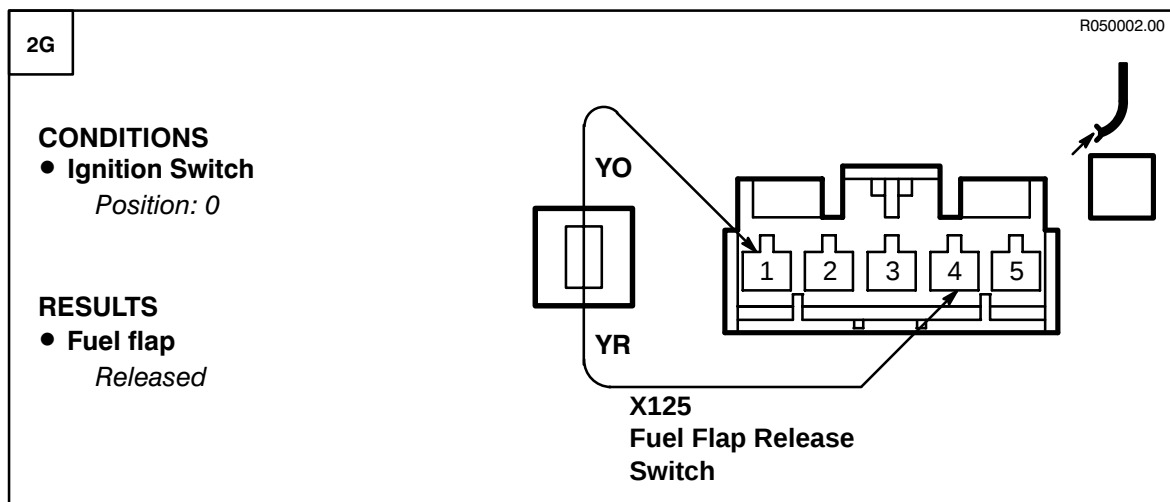
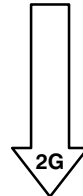
PROBLEM CAUSE
- M117, M125 Rear Door Lock Actuator

Test G



PROBLEM CAUSE

- F 3 Fuse
- YO Wire
- NG Wire
- Ignition Load Relay



PROBLEM CAUSE

- YR Wire
- YP Wire
- B Wire
- Fuel Flap Actuator



PROBLEM CAUSE

- Fuel Flap Release Switch

CIRCUIT OPERATION

Fuses F1 and F5 supply voltage to the Central Locking Control Unit (Z113). The control unit is grounded at terminal 2 to ground E201.

Inputs

The Central Locking Control Unit (Z113) monitors the position of the front door locks through input switches that are part of the Front Door Lock Actuators (M114, M122). When the control unit sees an input switch change position, the control unit responds by locking or unlocking the doors and the tailgate.

Lock

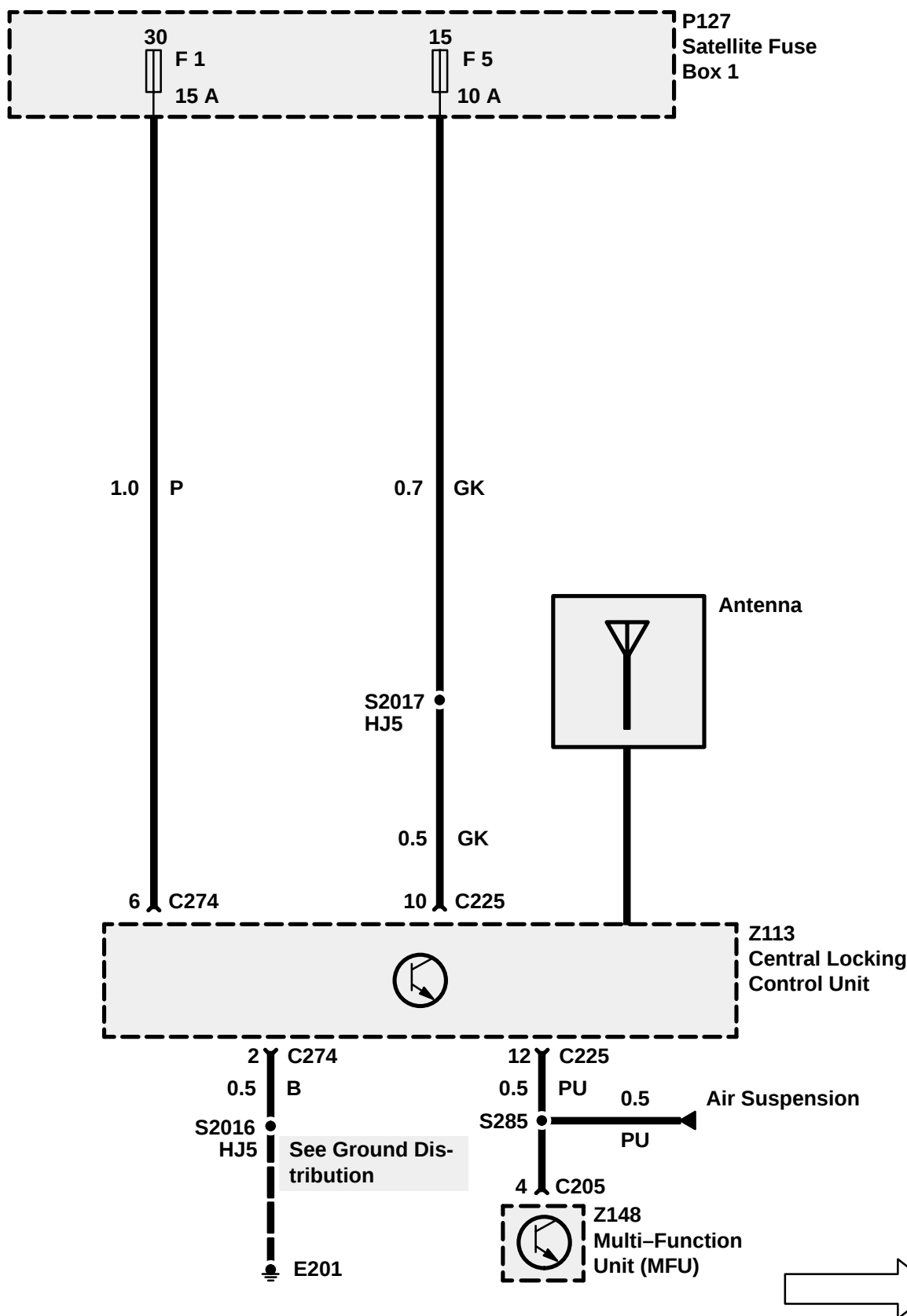
The Central Locking Control Unit (Z113) locks the doors and the tailgate by momentarily applying battery voltage to the actuators through the K wire. The lock actuators are grounded by the Central Locking Control Unit through the O wire. The actuators now move to the locked position.

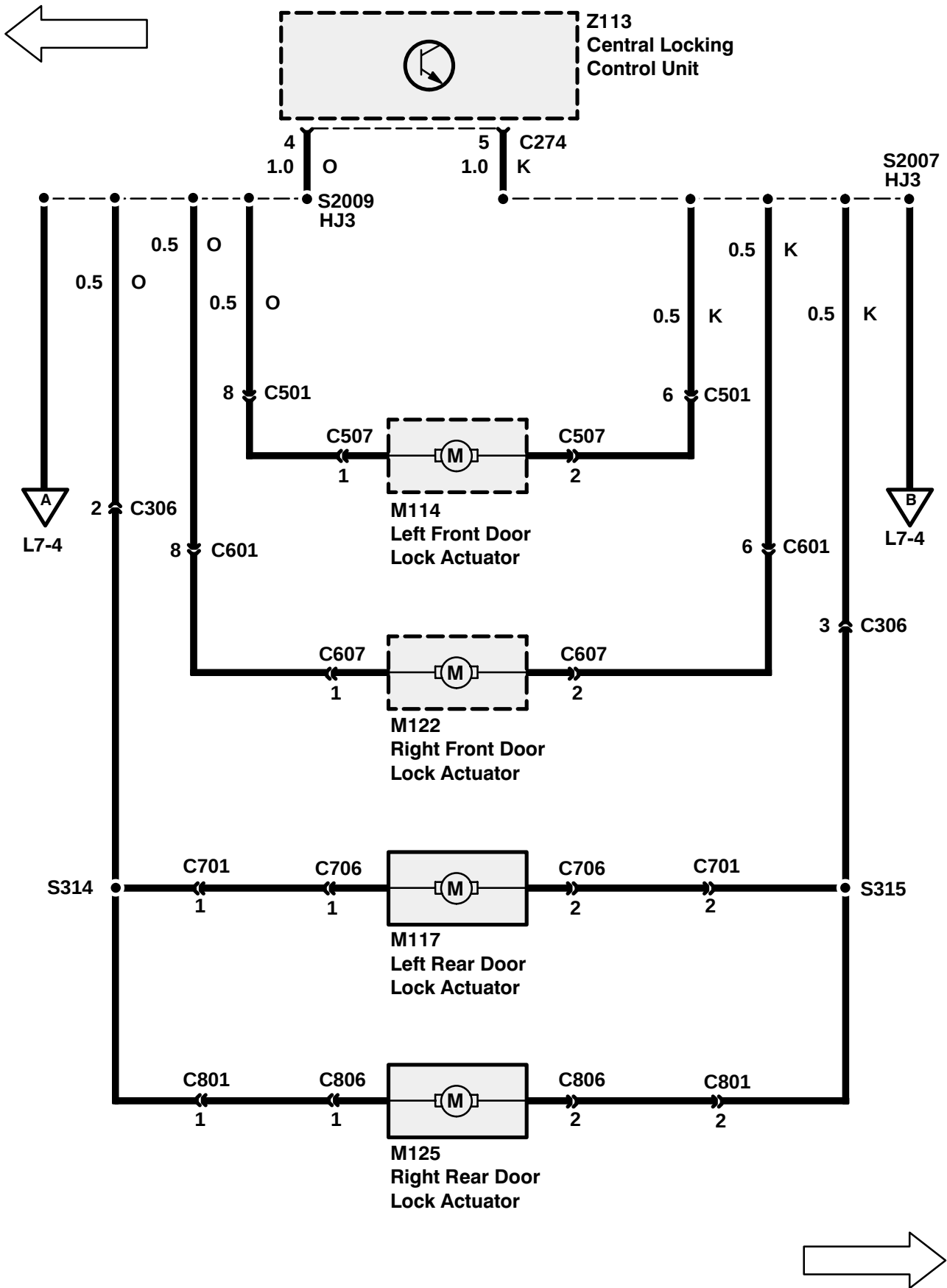
Unlock

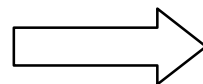
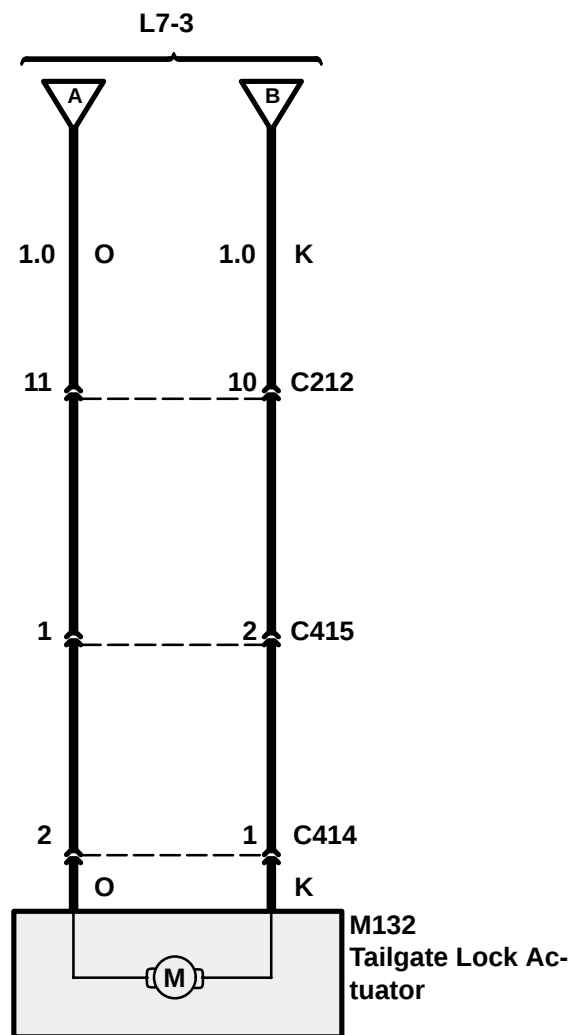
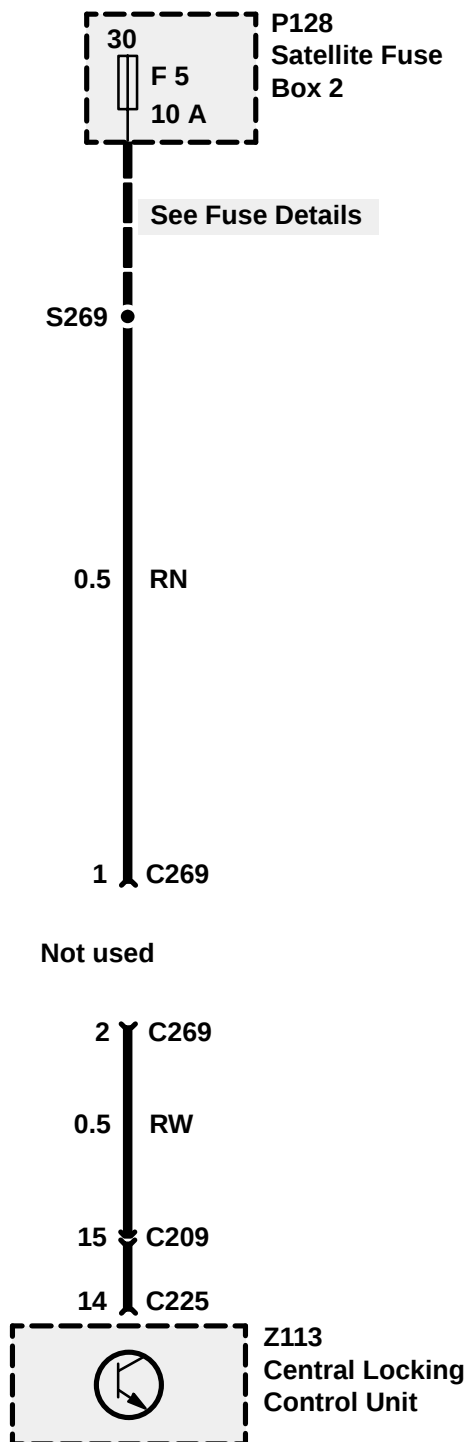
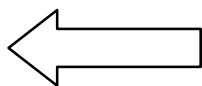
To unlock the doors and the tailgate the Central Locking Control Unit (Z113) momentarily applies battery voltage to the actuators through the O wire. The actuators are grounded by the Central Locking Control Unit through the K wire. The lock actuators now unlock.

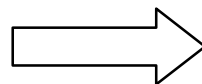
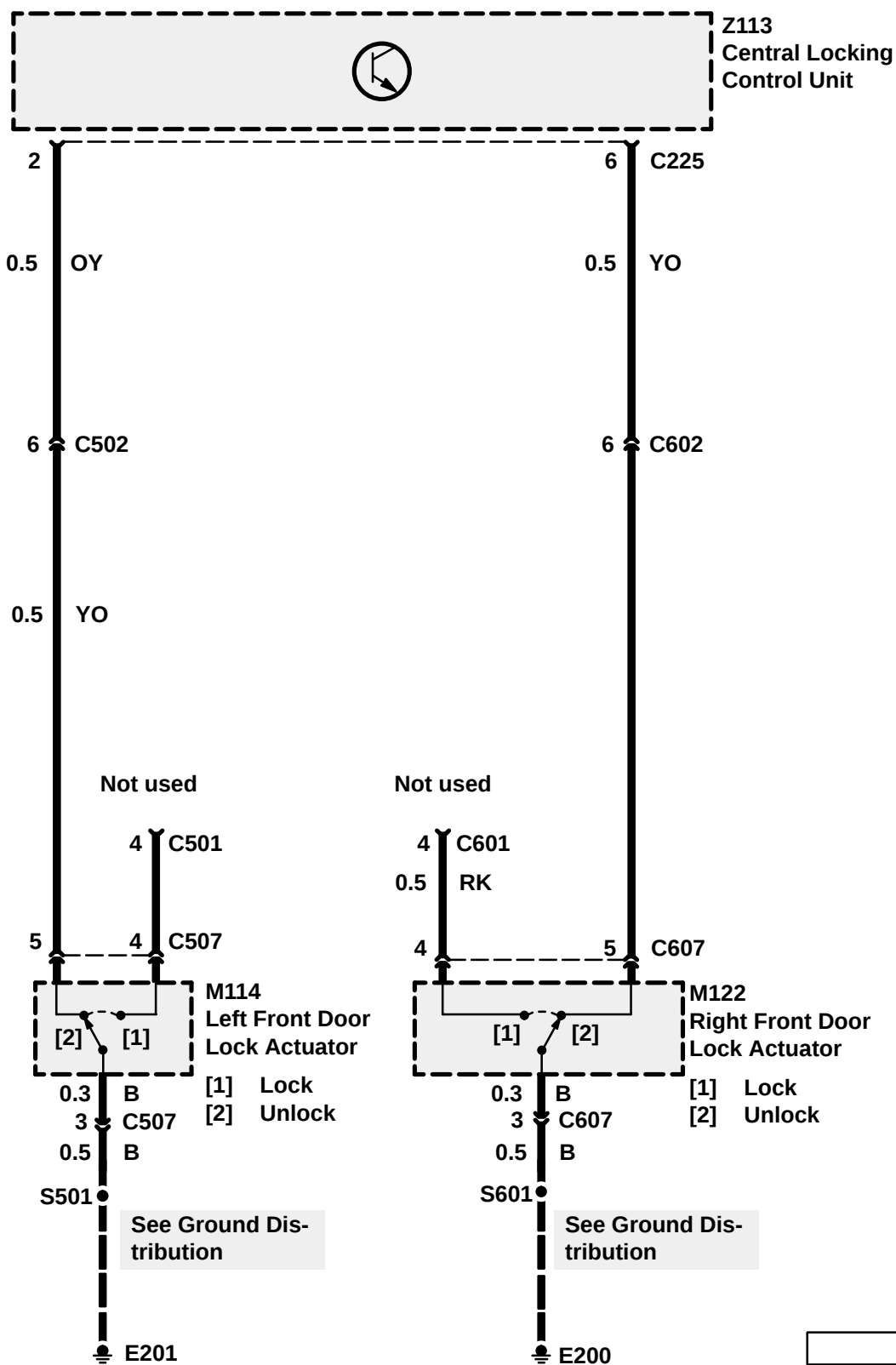
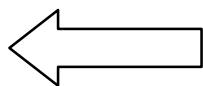
Fuel Flap

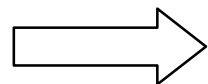
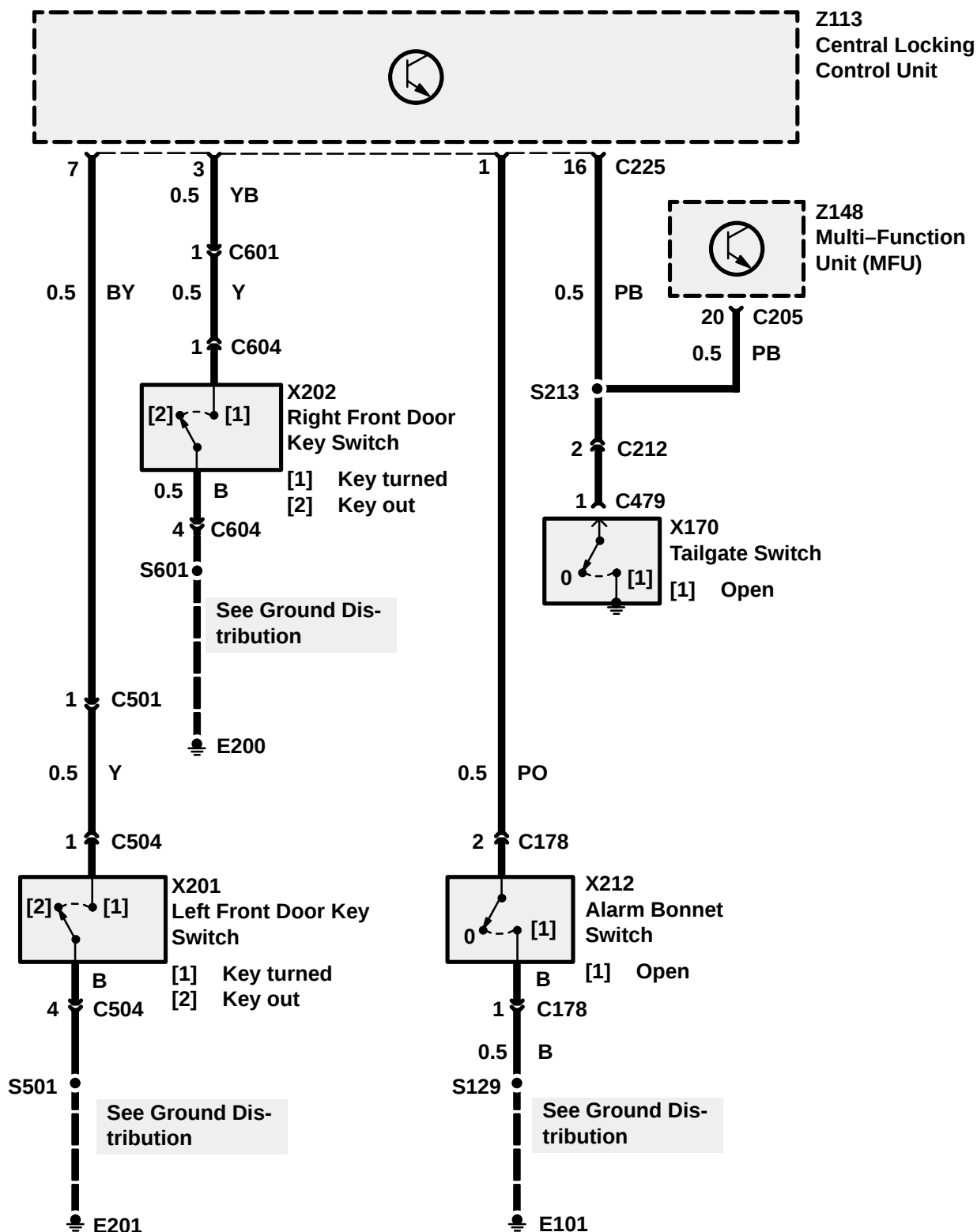
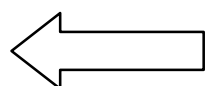
When the Fuel Flap Release Switch (X125) is operated, voltage from the Ignition Load Relay (K127) is applied to the Fuel Flap Actuator (M108) through the switch, the YR wire and the YP wire. Voltage is only applied when the Ignition Switch is not in Position II, to keep the fuel flap from being opened while driving. The actuator is grounded to ground E403.

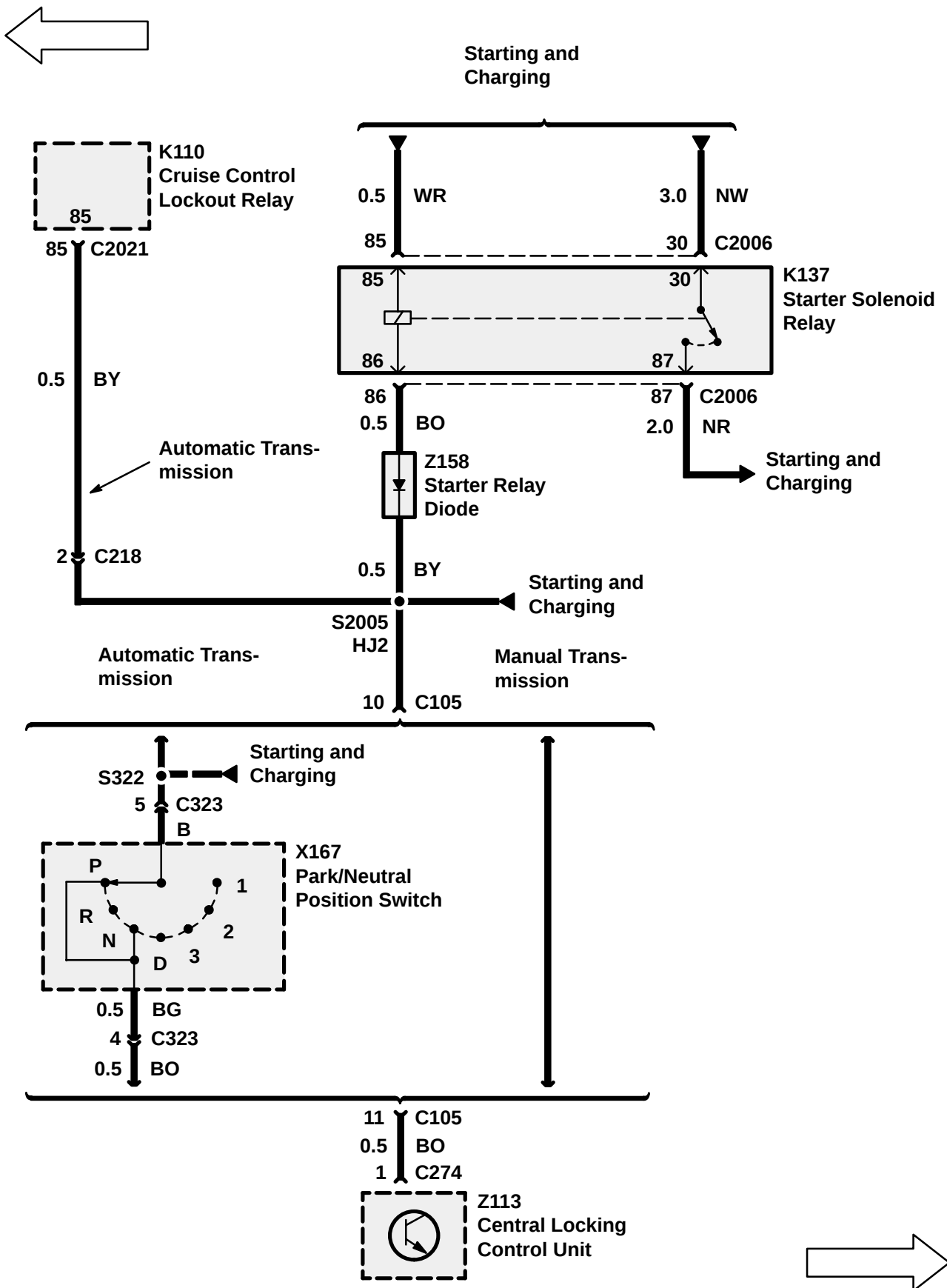














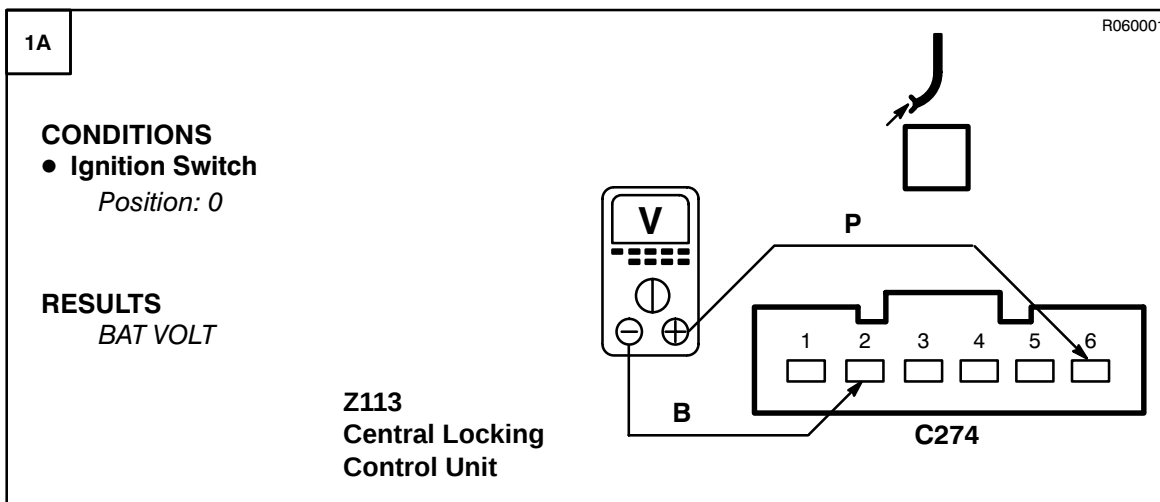
TROUBLESHOOTING HINTS

8. Check Fuses F1, F5 in Satellite Fuse Box 1.
9. Check Fuse F18 in Fascia Fuse Box and Fuse F3 in Engine Compartment Fuse Box for Fuel Flap problems.
10. If the interior lights do not come on when door is open, check suspect door switch and associated wiring.

SYSTEM DIAGNOSIS

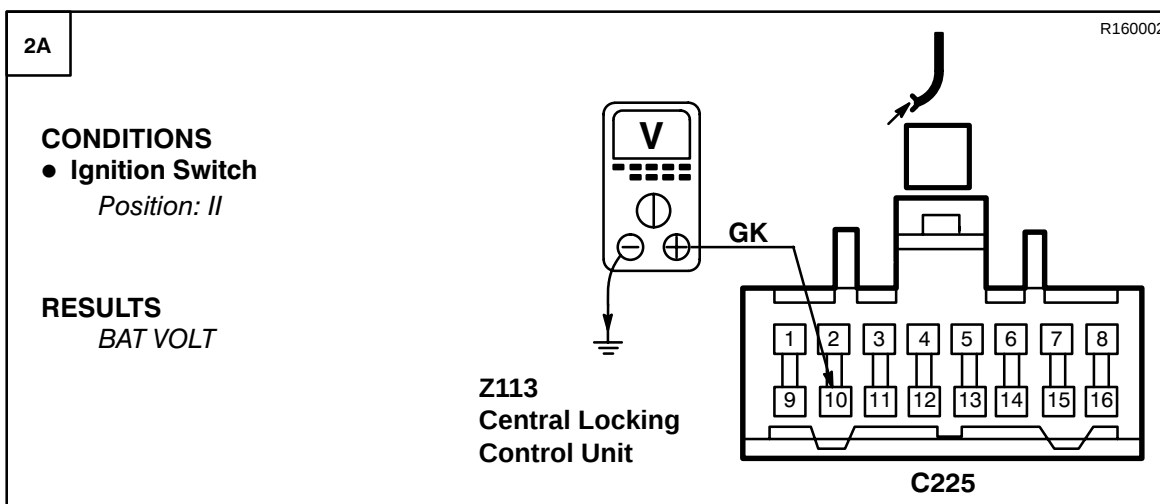
1. If the central locking function does not operate at all, do Test A.
2. If a Front Door Lock Actuator (M114, M122) does not operate, do Test B.
3. If the doors unlock themselves after operating the door locks, do Test C.
4. If the central locking function does not operate from one of the front doors, do Test D.
5. If the Tailgate Lock Actuator (M132) does not operate, do Test E.
6. If both Rear Door Lock Actuators (M117, M125) do not operate, do Test F.
7. If the Fuel Flap does not release when operated, do Test G.

Test A



PROBLEM CAUSE

- B Wire
- P Wire



PROBLEM CAUSE

- GK Wire



PROBLEM CAUSE

- Central Locking
Control Unit
- O, K Wire

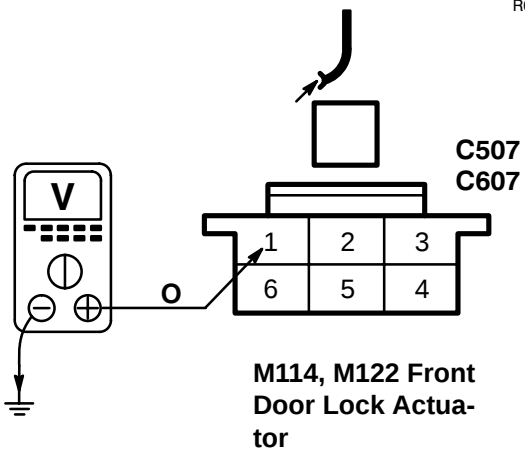
Test B

1B R060009

CONDITIONS

- Ignition Switch
Position: II
- All doors
Locked
- Unlock a front door

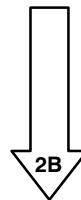
RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator



PROBLEM CAUSE
- O Wire

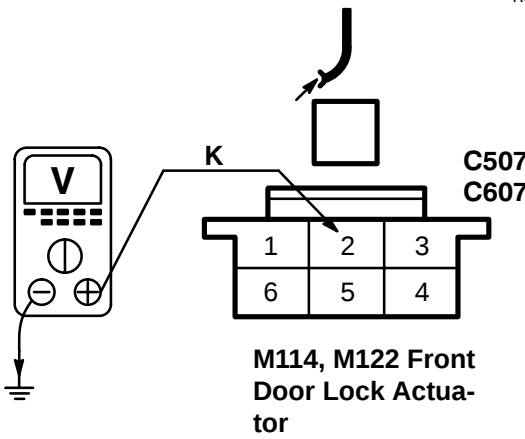


2B R060009

CONDITIONS

- Ignition Switch
Position: II
- All doors
Unlocked
- Lock a front door

RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator



PROBLEM CAUSE
- K Wire



PROBLEM CAUSE
- M114, M122 Front Door Lock Actuator

Test C

R160002

1C

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked

RESULTS

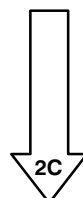
More than 1000 ohms

Z113
Central Locking
Control Unit



PROBLEM CAUSE

- OY Wire
- YO Wire
- M114, M122 Front Door Lock Actuator



R160002

2C

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked

RESULTS

More than 1000 ohms

Z113
Central Locking
Control Unit



PROBLEM CAUSE

- YO Wire
- M114, M122 Front Door Lock Actuator



PROBLEM CAUSE

- Central Locking Control Unit

Test D

1D

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked

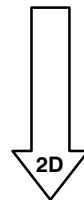
RESULTS
Less than 1 ohm

Z113
Central Locking
Control Unit

R160002



GO TO TEST 3D



2D

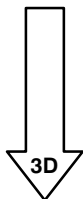
CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked

RESULTS
Less than 1 ohm

Z113
Central Locking
Control Unit

R160002



PROBLEM CAUSE
- Central Locking
Control Unit

2D

3D

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

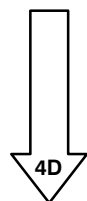
Less than 1 ohm

M114, M122 Front Door Lock Actuator

R060009



PROBLEM CAUSE
- B Wire



4D

CONDITIONS

- Ignition Switch
Position: II
- All doors
Locked

RESULTS

- All doors
Unlock

M114, M122 Front Door Lock Actuator

R060009



PROBLEM CAUSE
- YO Wire
- OY Wire (Left)
- Central Locking Control Unit



PROBLEM CAUSE
- M114, M122 Front Door Lock Actuator

Test E

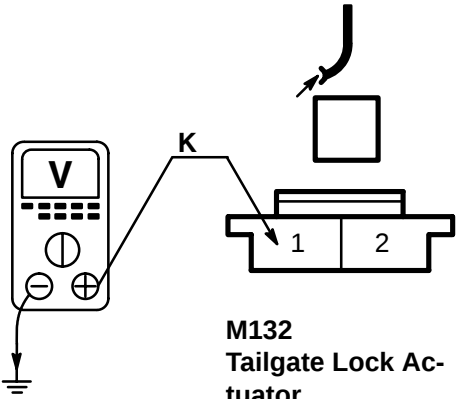
1E

R020029

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

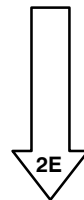
RESULTS
BAT VOLT (Momentary)



M132
Tailgate Lock Ac-
tuator



PROBLEM CAUSE
- K Wire



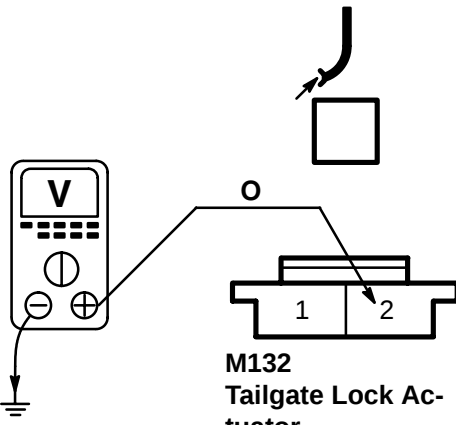
2E

R020029

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock a front door

RESULTS
BAT VOLT (Momentary)



M132
Tailgate Lock Ac-
tuator



PROBLEM CAUSE
- O Wire

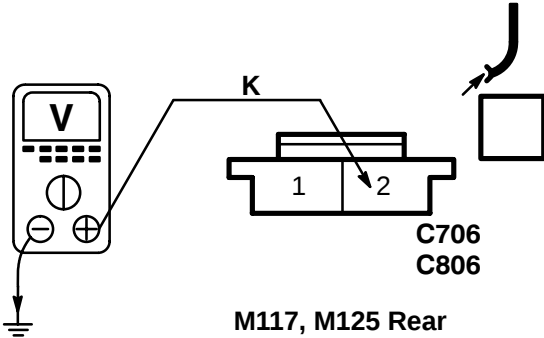


PROBLEM CAUSE
- Tailgate Lock Ac-
tuator

Test F

R020029

1F



CONDITIONS

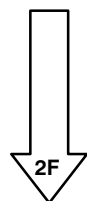
- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

RESULTS
BAT VOLT (Momentary)

M117, M125 Rear Door Lock Actuator

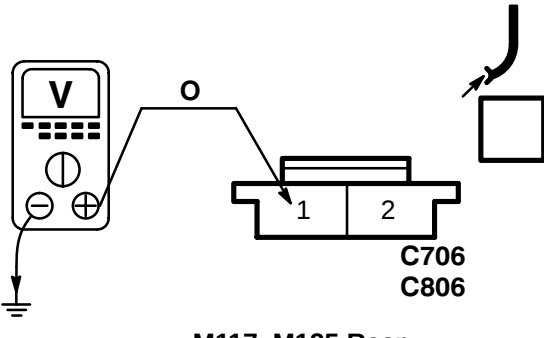


PROBLEM CAUSE
- K Wire



R020029

2F



CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock a front door

RESULTS
BAT VOLT (Momentary)

M117, M125 Rear Door Lock Actuator

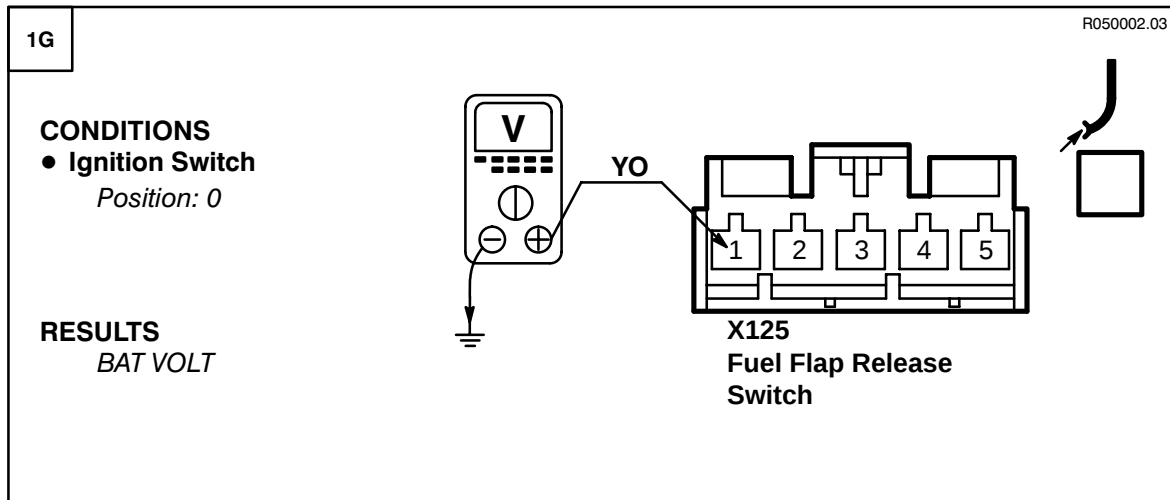


PROBLEM CAUSE
- O Wire



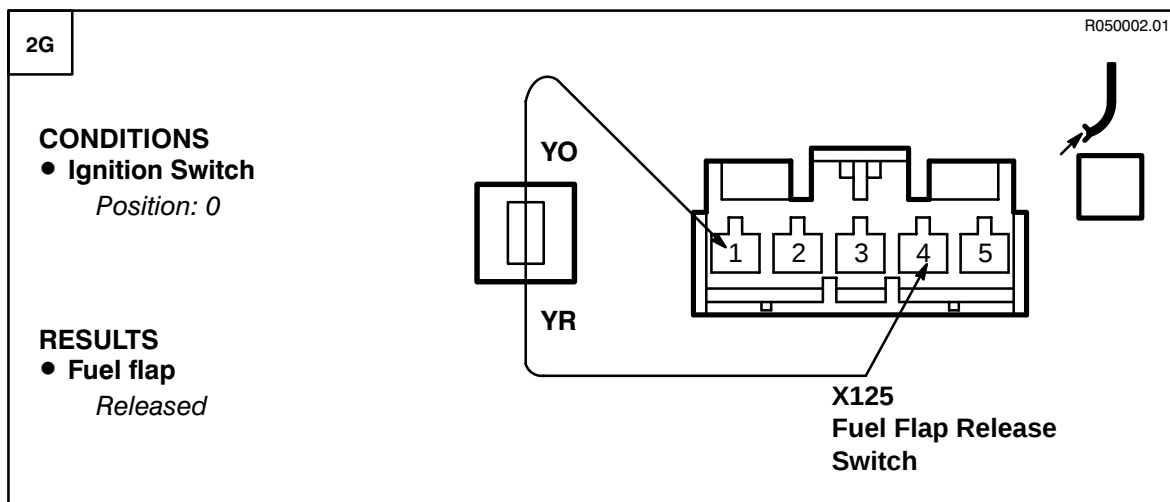
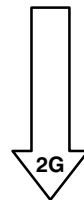
PROBLEM CAUSE
- M117, M125 Rear Door Lock Actuator

Test G



PROBLEM CAUSE

- F3 Fuse
- YO Wire
- NG Wire
- Ignition Load Relay



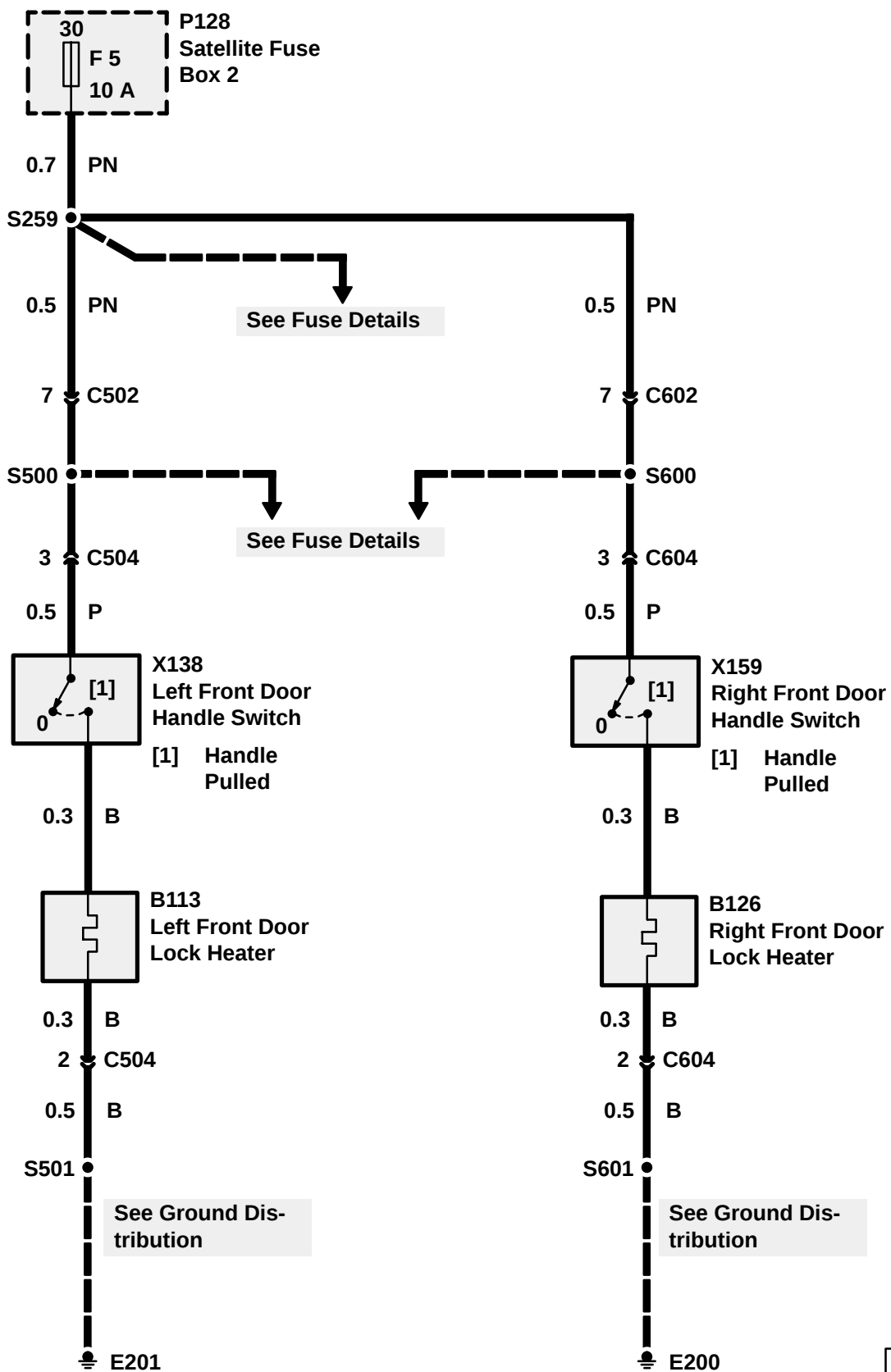
PROBLEM CAUSE

- YR Wire
- YP Wire
- B Wire
- Fuel Flap Actuator



PROBLEM CAUSE

- Fuel Flap Release Switch

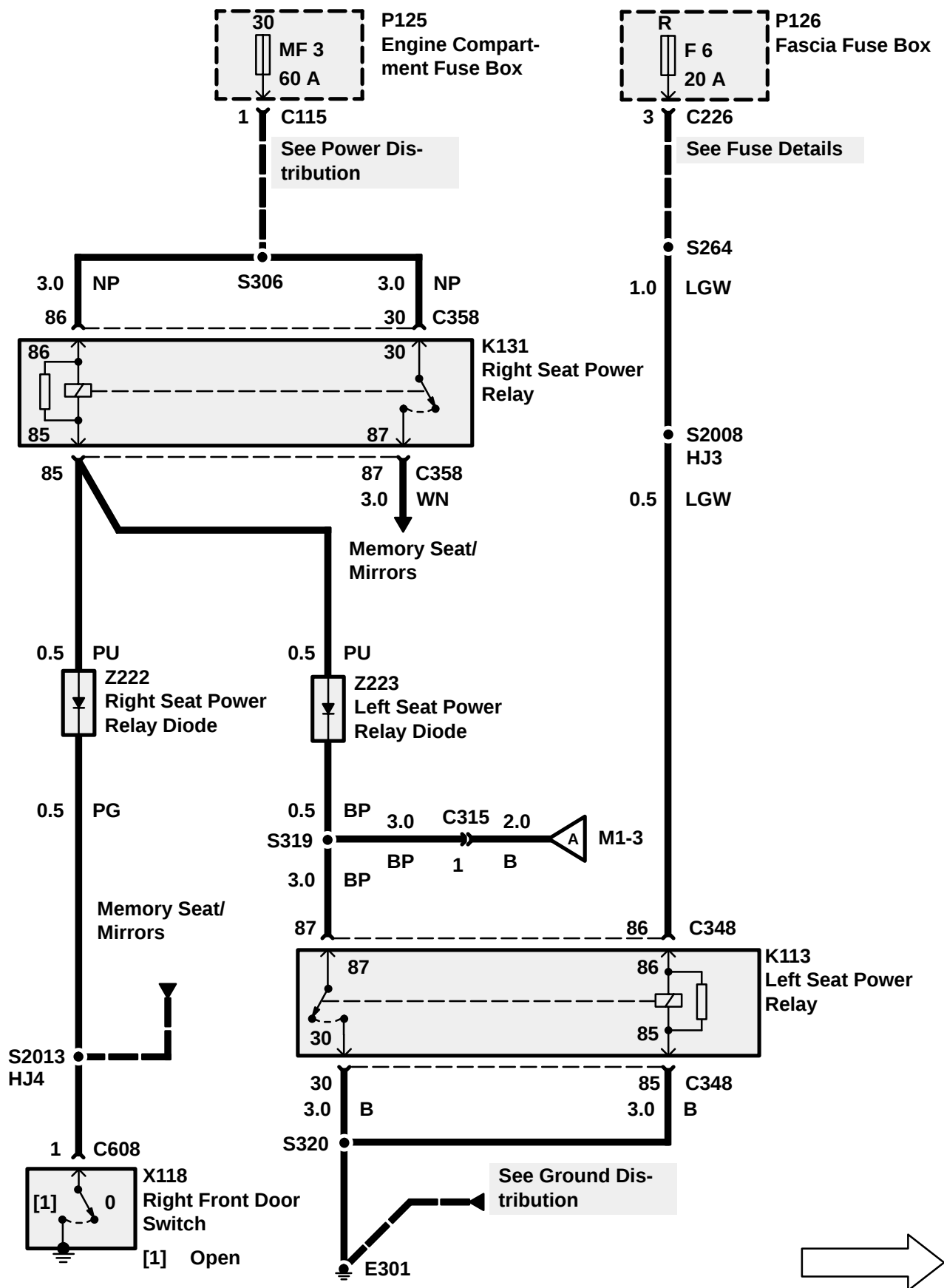


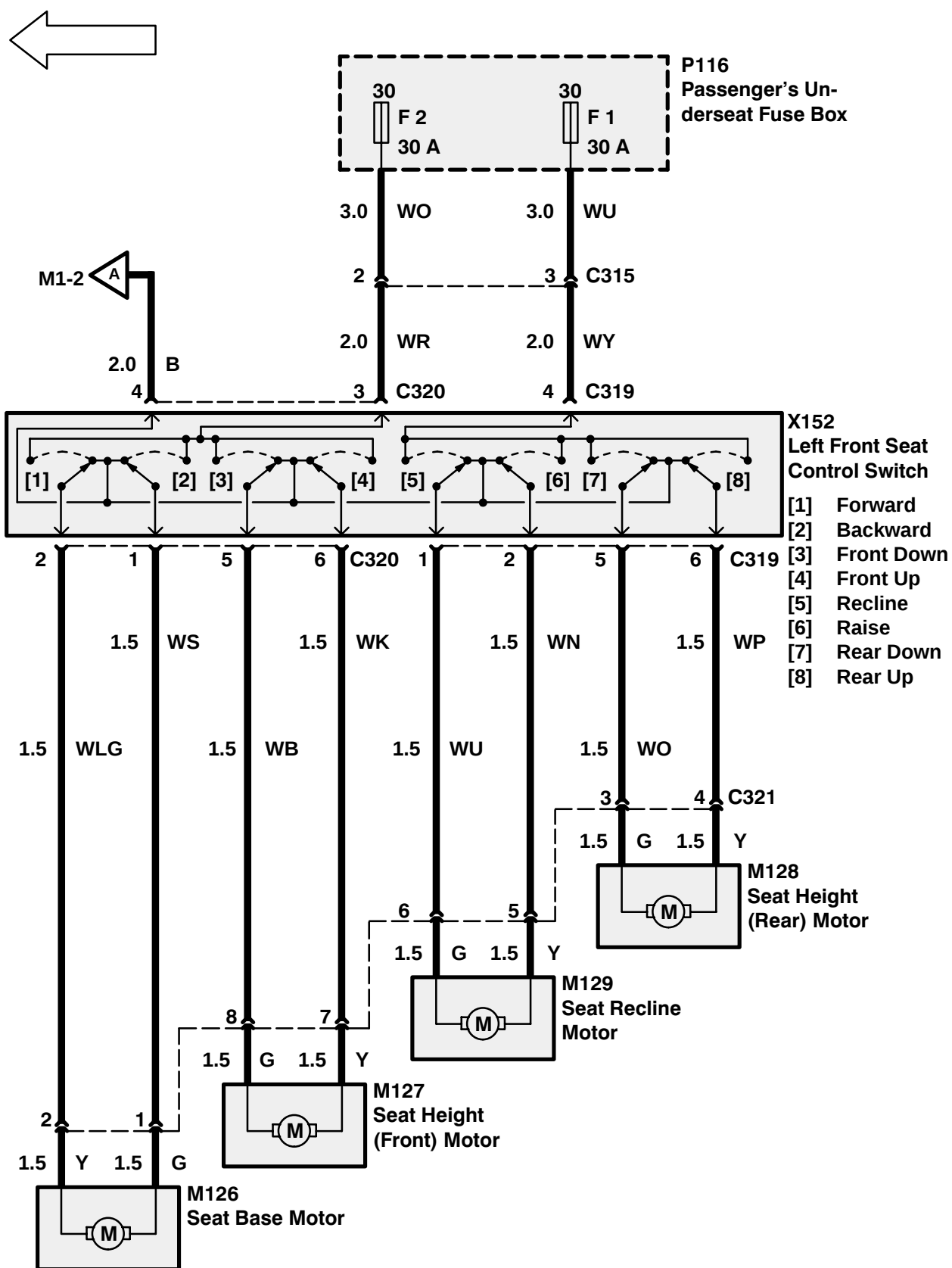
CIRCUIT OPERATION**Driver Seat**

See M5, Memory Seat/Mirrors for Driver Seat operation.

Passenger Seat

Battery voltage is applied to the Left Front Seat Control Switch (X152) at all times. When the Ignition Switch (X134) is in Position I or II, the Left Seat Power Relay (K113) is energized, applying ground to the Left Front Seat Control Switch (X152). The Left Front Seat Control Switch (X152) controls 4 seat control motors via 8 switches. When each switch is moved to operate its corresponding motor, one seat switch applies ground while the other applies battery voltage to the respective seat motor. The motor turns to adjust the seat in the requested direction.



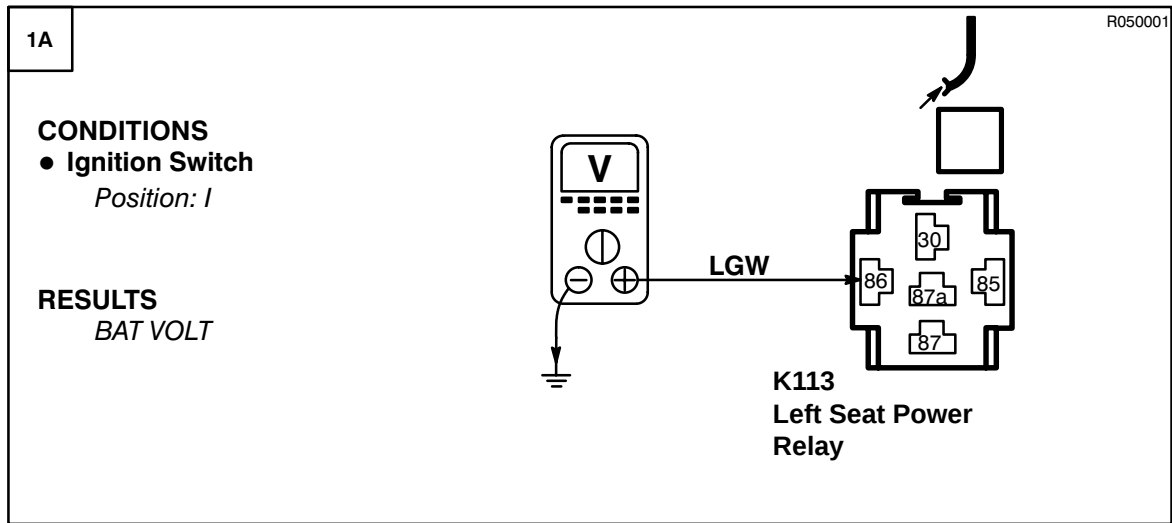


TROUBLESHOOTING HINTS

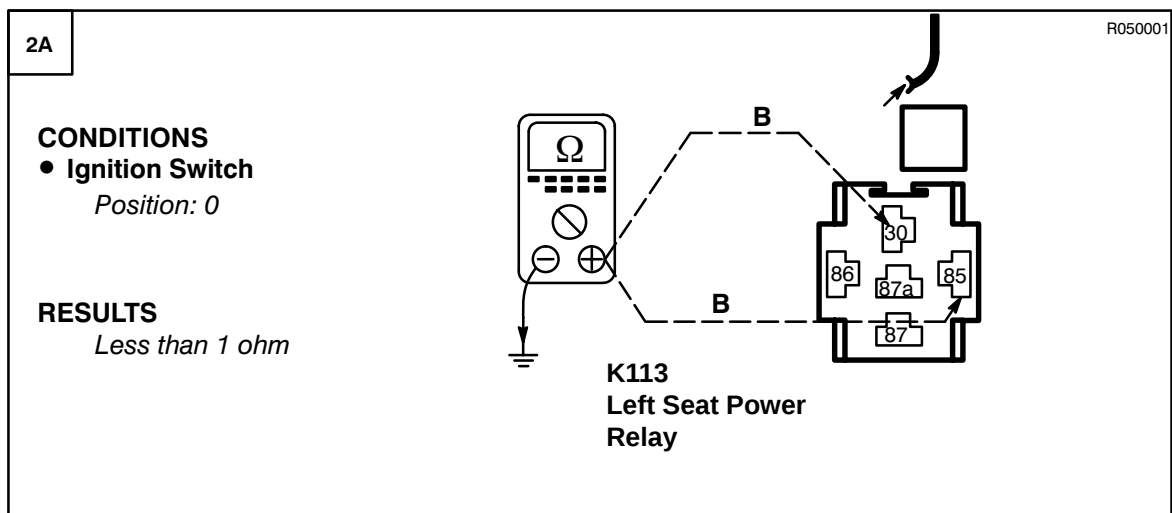
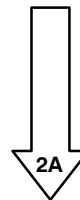
8. If the Right Front Seat does not operate, see M5 Memory Seat/Mirrors.
9. If the Left Front seat does not operate, check Fuse F6 of the Fascia Fuse Box (P126) and Fuses F1, F2 of the Passenger's Underseat Fuse Box (P116).

SYSTEM DIAGNOSIS

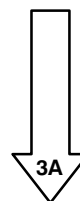
1. If the Left Front Power Seat does not move in any direction, do Test A.
2. If some, but not all, of the Left Front Power Seat functions operate, do Test B.
3. If the seat is not moving forward or backward, do Test C.
4. If the rear of the seat does not move up or down, do Test D.
5. If the seatback does not move forward or recline, do Test E.
6. If the front of the seat does not move up or down, do Test F.

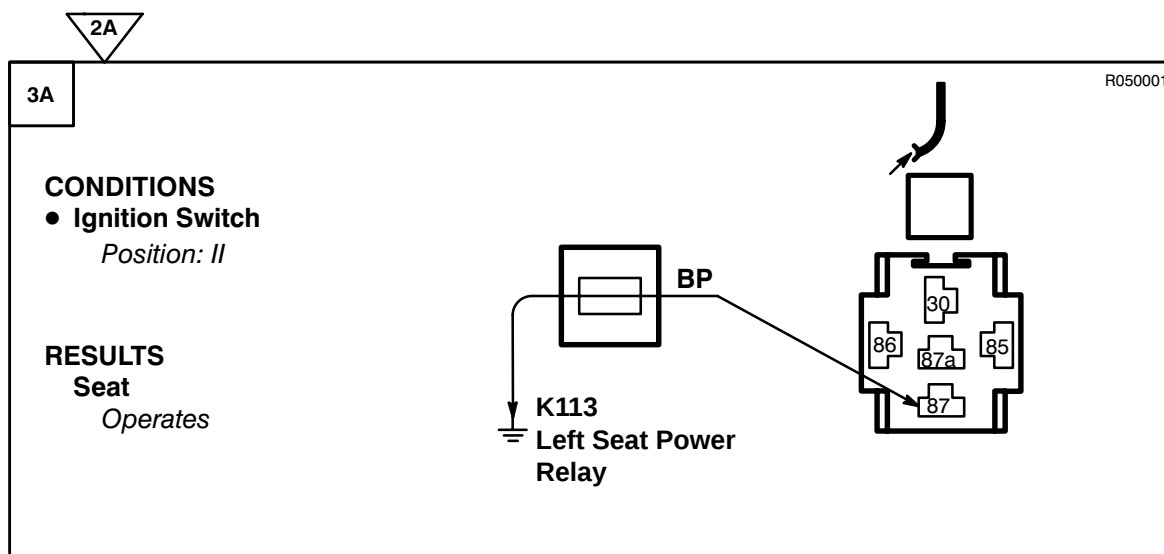
Test A**PROBLEM CAUSE**

- LGW Wire
- F6 Fuse

**PROBLEM CAUSE**

- B Wire
- Ground Connections

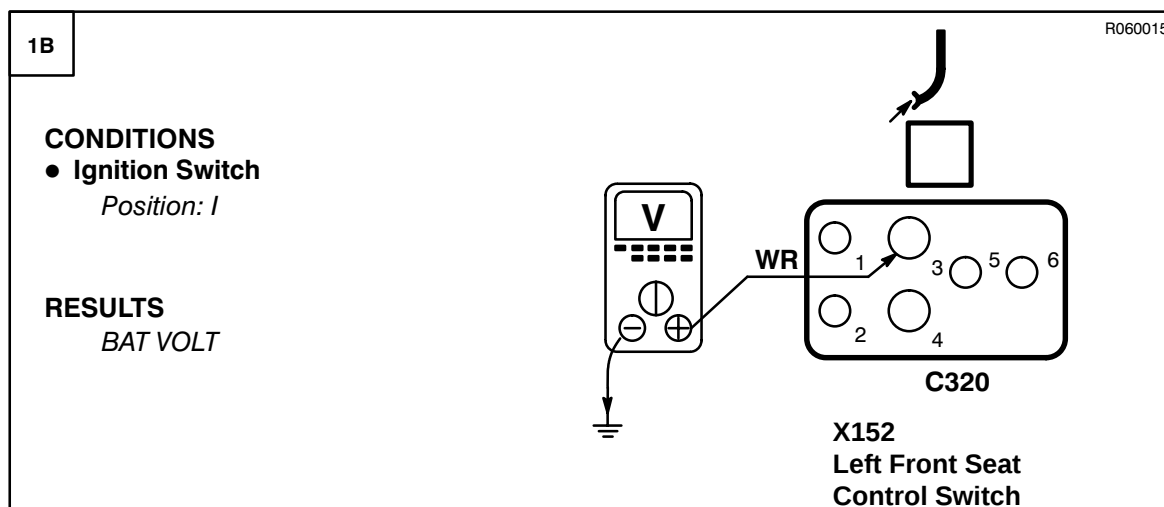


**PROBLEM CAUSE**

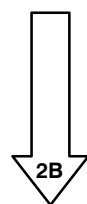
- BP Wire
- B Wire

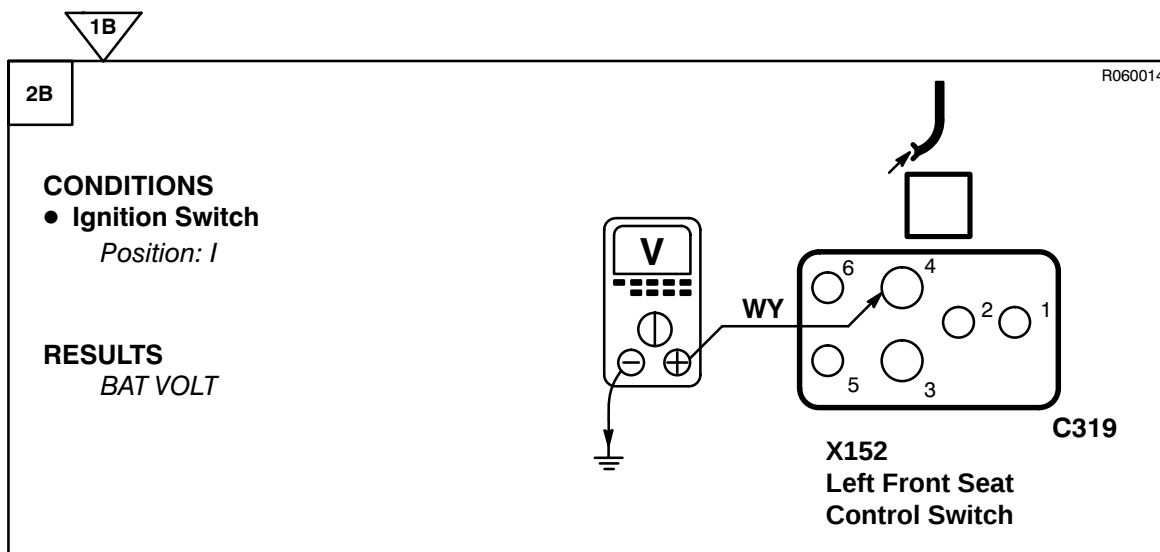
**PROBLEM CAUSE**

- Left Seat Power
Relay

Test B**PROBLEM CAUSE**

- F2 Fuse
- WO Wire
- WR Wire

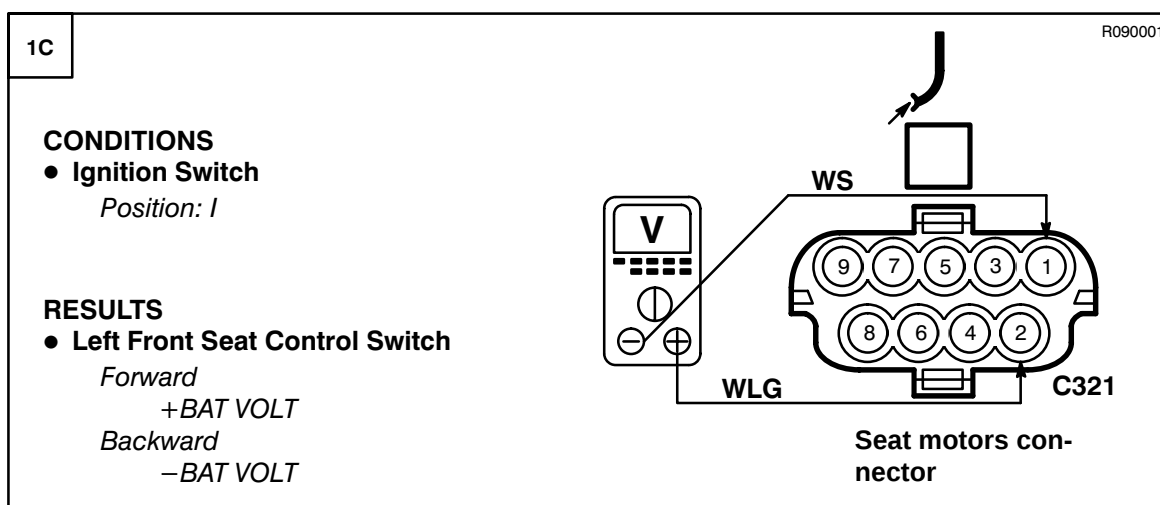


**PROBLEM CAUSE**

- F1 Fuse
- WU Wire
- WY Wire

**PROBLEM CAUSE**

- Left Front Seat
Control Switch

Test C**PROBLEM CAUSE**

- WLG Wire
- WS Wire
- Left Front Seat
Control Switch

**PROBLEM CAUSE**

- Seat Base Motor

Test D

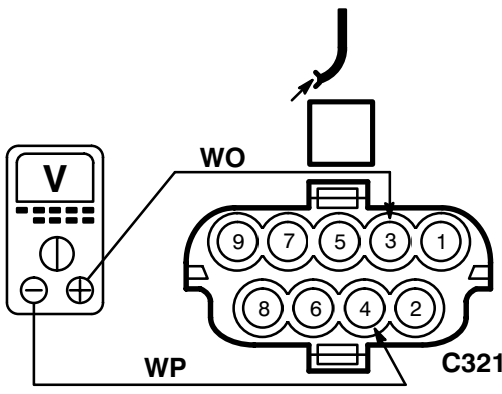
1D

CONDITIONS

- Ignition Switch
Position: I

RESULTS

- Left Front Seat Control Switch
Rear up
-BAT VOLT
Rear down
+BAT VOLT



WO

WP

C321

Seat motors connector

R090001

**PROBLEM CAUSE**

- WP Wire
- WO Wire
- Left Front Seat Control Switch

**PROBLEM CAUSE**

- Seat Height (Rear) Motor

Test E

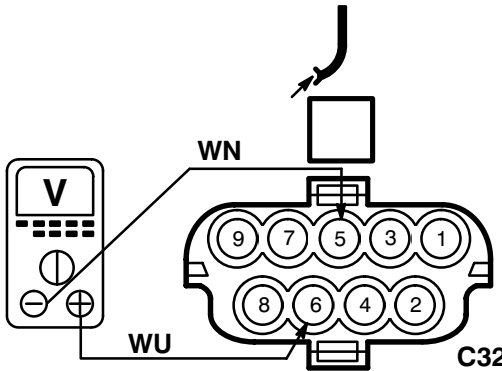
1E

CONDITIONS

- Ignition Switch
Position: I

RESULTS

- Left Front Seat Control Switch
Recline
+BAT VOLT
Raise
-BAT VOLT



WN

WU

C321

Seat motors connector

R090001

**PROBLEM CAUSE**

- WU Wire
- WN Wire
- Left Front Seat Control Switch

**PROBLEM CAUSE**

- Seat Recline Motor

Test F

R090001

1F

CONDITIONS

- Ignition Switch
Position: I

RESULTS

- Left Front Seat Control Switch
 - Front down*
+BAT VOLT
 - Front up*
-BAT VOLT

Seat motors connector



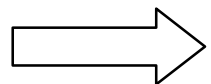
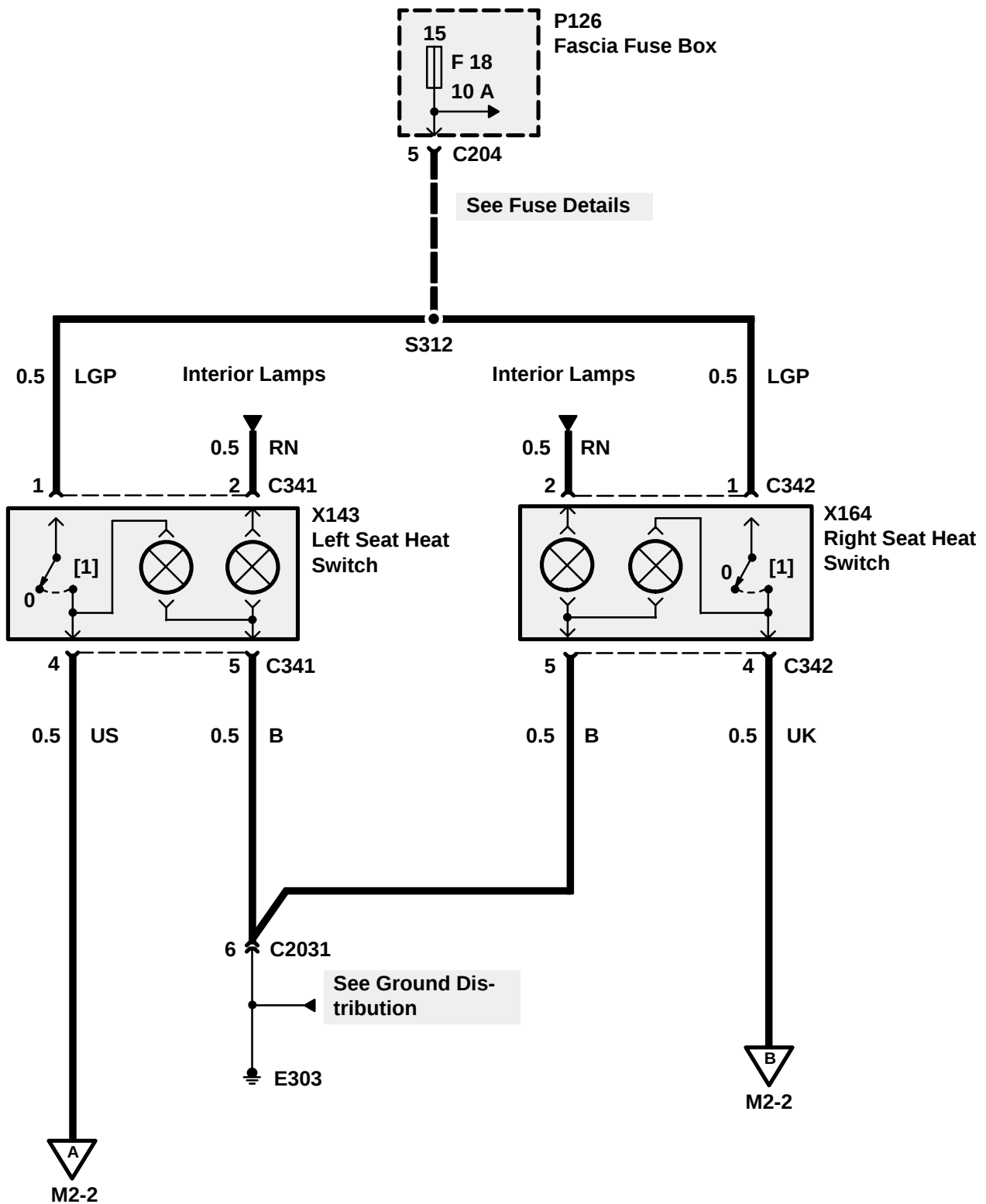
PROBLEM CAUSE

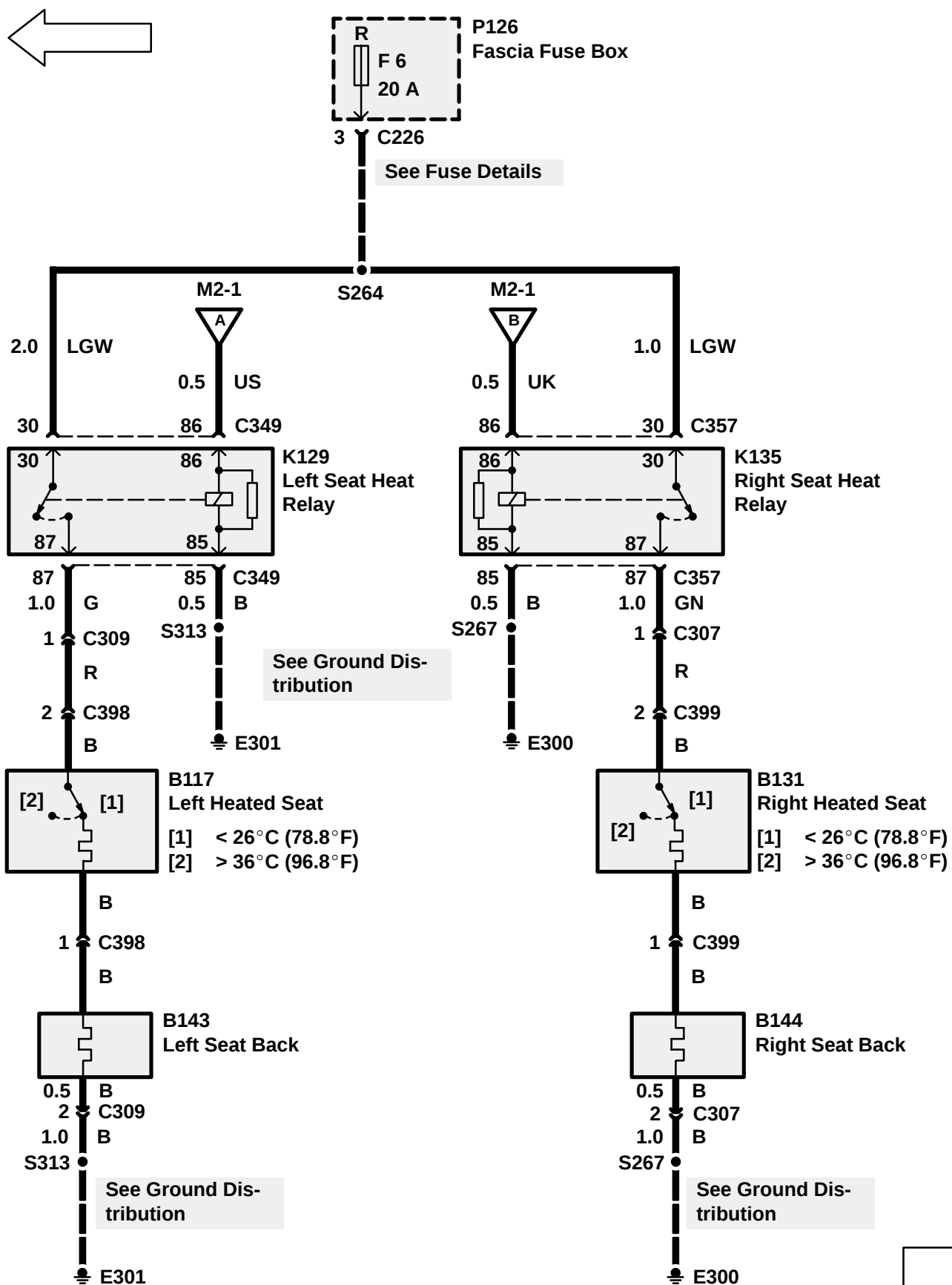
- WB Wire
- WK Wire
- Left Front Seat Control Switch



PROBLEM CAUSE

- Seat Height (Front) Motor





CIRCUIT OPERATION

When the Ignition Switch (X134) is in Position II, voltage is supplied to the power mirrors circuit by fuse F15.

Left/Right Movement

When a selected mirror is moved to the left by the Mirror Adjustment Switch (X146) the internal contacts move to the "Left/Right Select" and "Move Left or Up" position. The internal solenoid of the selected mirror actuators (M115, M123) is grounded at E201 through the PW, WP, BK and BN wires, the switch contacts, and the B wire. The solenoid is de-energized because the other side of the coil is also grounded at E200 or E201 through the B wire. The de-energized solenoid engages the motor in the actuator with the Left/Right Gearbox. Voltage is applied to the selected mirror actuator's motor at terminal 4 through the SW and PR wires. The selected mirror actuator's motor is grounded at E201 through the PU, BU and BP wires, the switch contacts, and the B wire. The mirror now moves left.

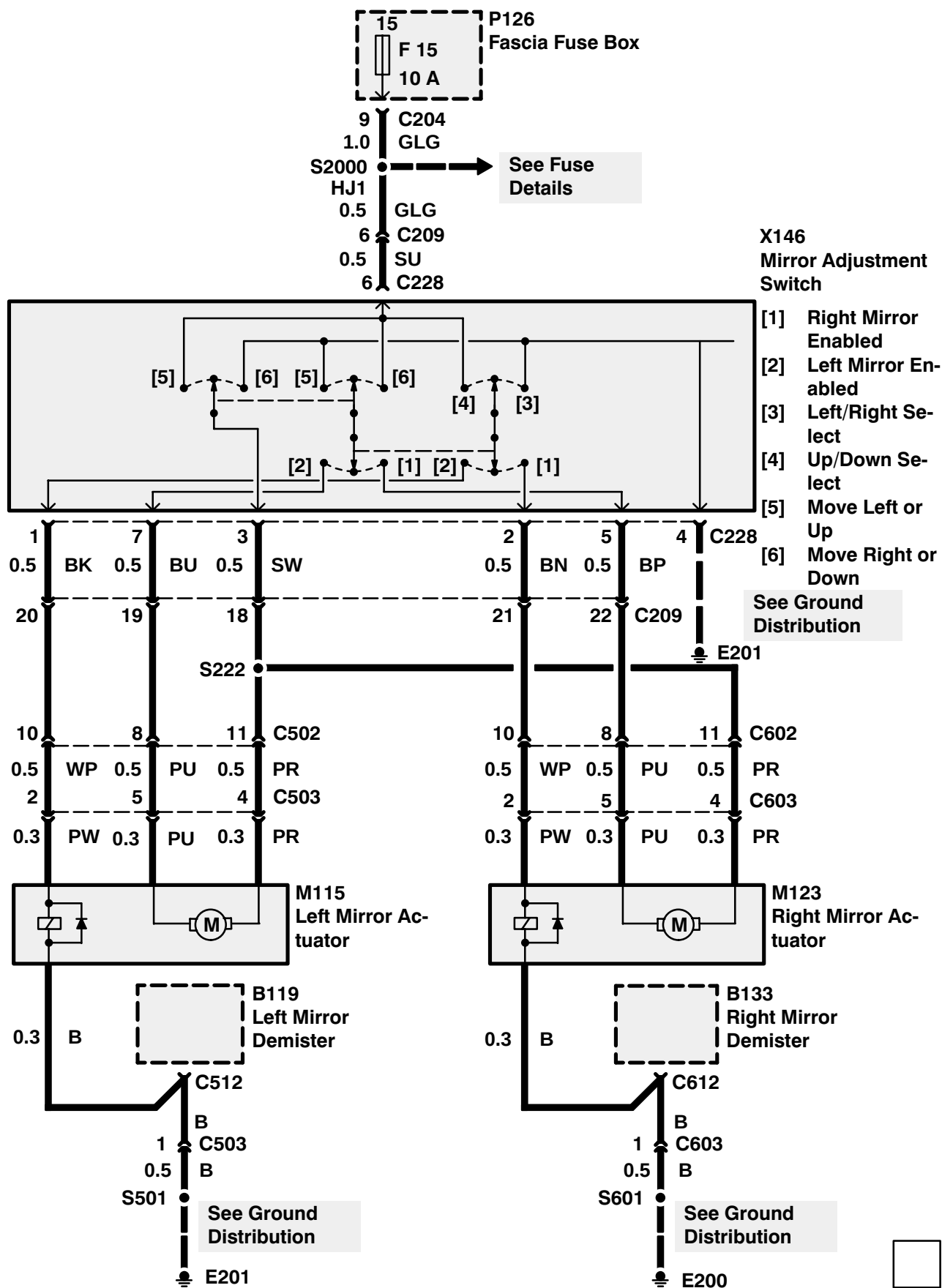
When a selected mirror is moved to the right by the Mirror Adjustment Switch (X146) the internal contacts remain in the "Left/Right Select" position but move to the "Move Right or Down" position. The internal solenoid of the selected mirror actuators (M112, M113) remains de-energized. Voltage is now applied to the selected mirror actuator's motor at terminal 5 through the PU, BU and BP wires. The selected mirror actuator's motor is now grounded at E201 through the PR and SW wires, the switch contacts, and the B wire. Since the polarity of the voltage to the motor has been reversed, the mirror now moves right.

Up/Down Movement

When a selected mirror is moved up by the Mirror Adjustment Switch (X146) the internal contacts move to the "Up/Down Select" and "Move Left or UP" position. Voltage is applied to the internal solenoid of the selected mirror actuator through the BN, BK, WP, and PW wires. The solenoid energizes because the other side of the coil is grounded at E200 or E201 through the B wire. The energized solenoid engages the motor in the actuator with the Up/Down Gearbox. Voltage is

applied to the selected mirror actuator's motor at terminal 4 through the sward PR wires. The selected mirror actuator's motor is grounded at E201 through the BU, PU and BP wires, the switch contacts, and the B wire. The mirror now moves up.

When a selected mirror is moved down by the Mirror Adjustment Switch (X146) the internal contacts remain in the "Up/Down Select" position but move to the "Move Right or Down" position. The internal solenoid remains energized. Voltage is now applied to the selected mirror actuator's motor at terminal 5 through the BU, PU and BP wires. The selected mirror actuator's motor is now grounded at E201 through the PP and SW wires, the switch contacts, and the B wire. Since the polarity of the voltage to the motor has been reversed, the mirror now moves down.



SYSTEM DIAGNOSIS

1. If the mirrors do not operate at all, do Test A.
2. If only one mirror does not operate, do test B, the Mirror Actuator (M115, M123) Test.
3. If one or both mirrors operate in some, but not all switch positions, do Test A.

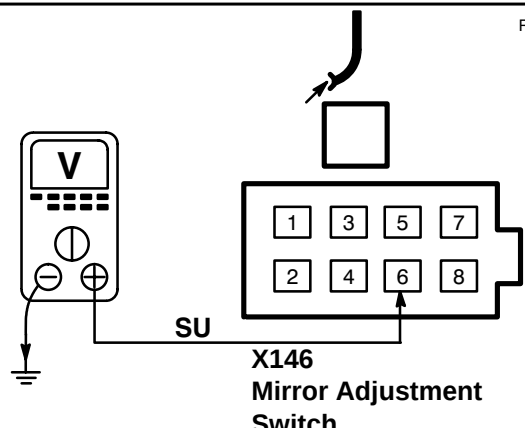
Test A

1A R080015

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

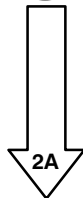


SU

**X146
Mirror Adjustment
Switch**

**PROBLEM CAUSE**

- F15 Fuse
- GLG Wire
- SU Wire

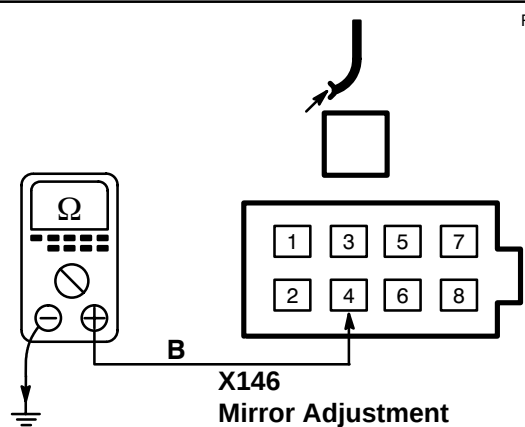


2A R080015

CONDITIONS

- Ignition Switch
Position: II

RESULTS
Less than 1 ohm

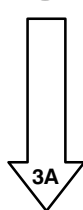


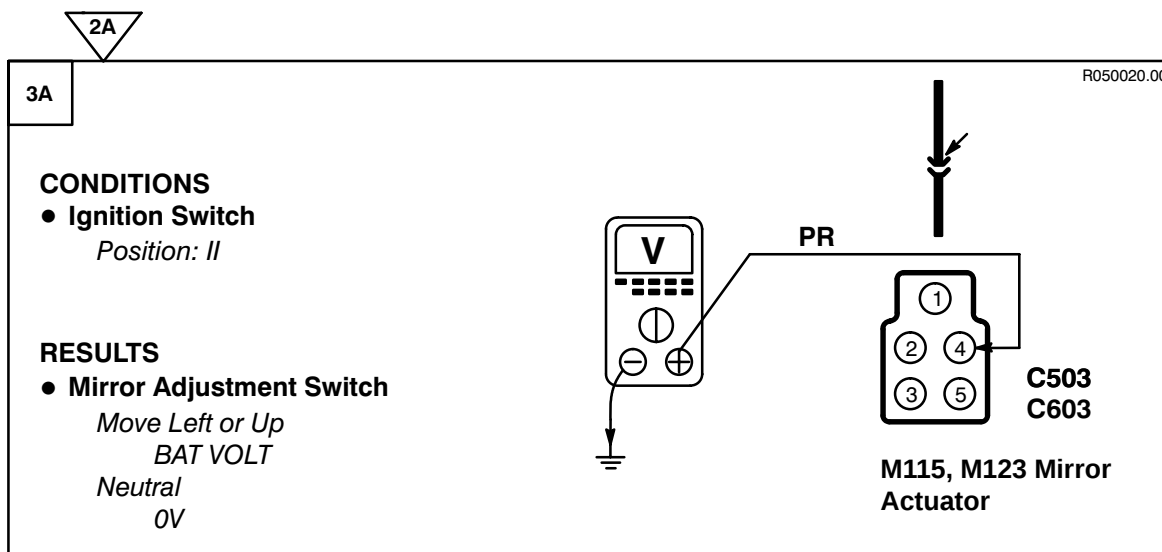
B

**X146
Mirror Adjustment
Switch**

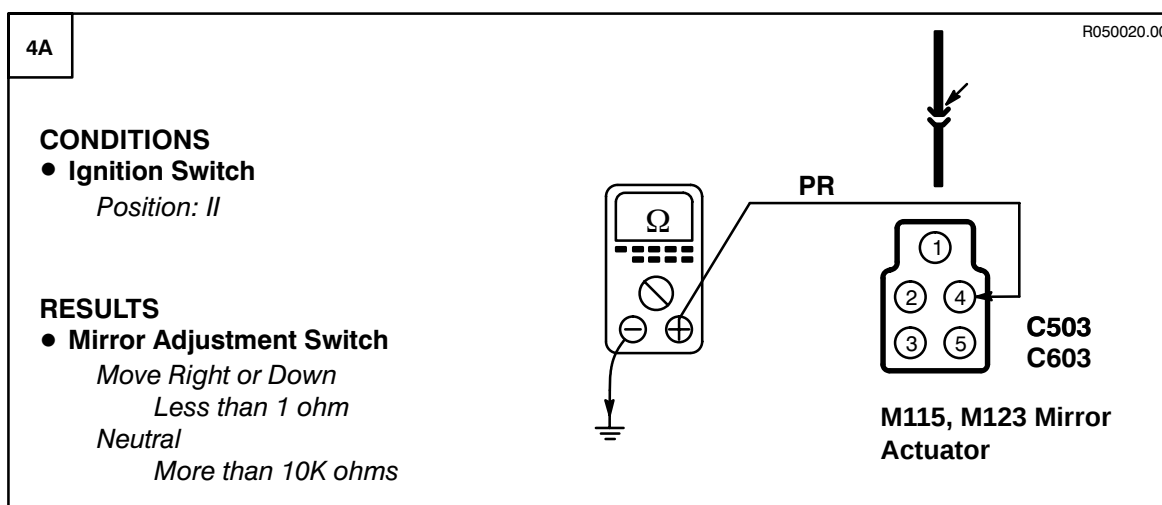
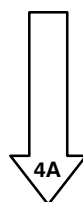
**PROBLEM CAUSE**

- B Wire
- Ground Connections

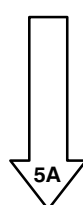


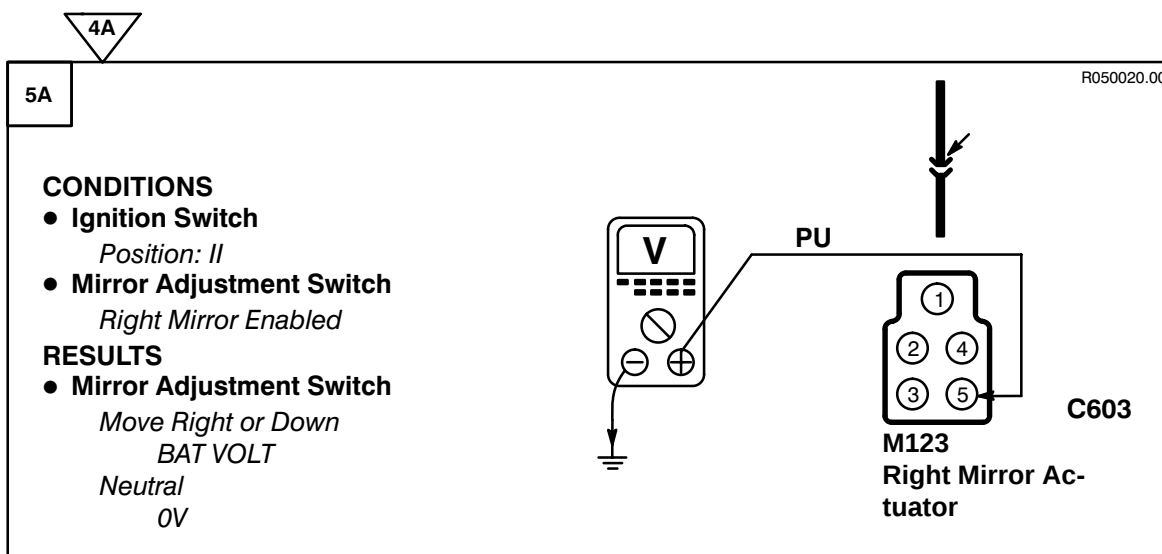
**PROBLEM CAUSE**

- SW Wire
- PR Wire
- Mirror Adjustment Switch

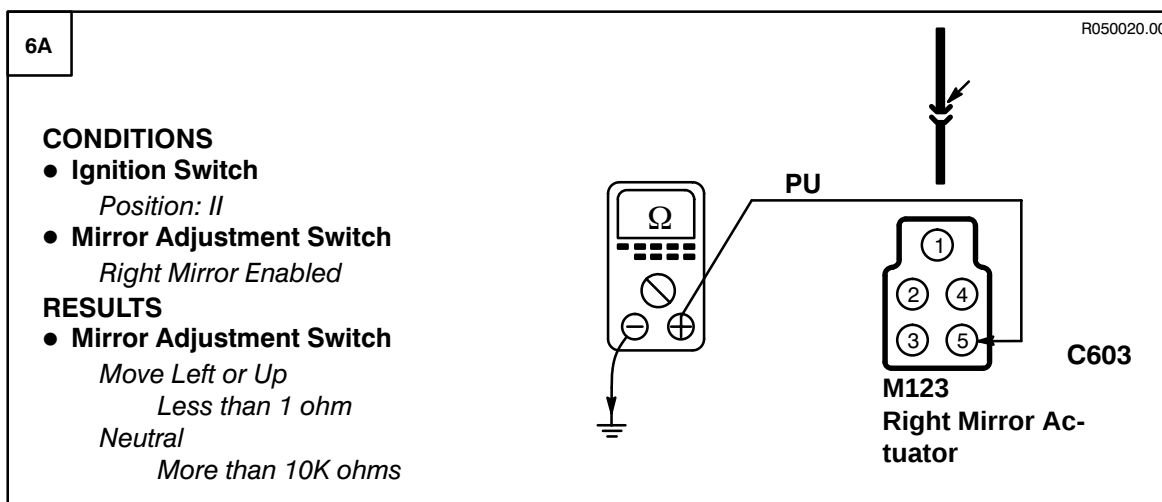
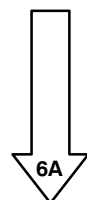
**PROBLEM CAUSE**

- Mirror Adjustment Switch

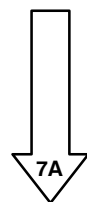


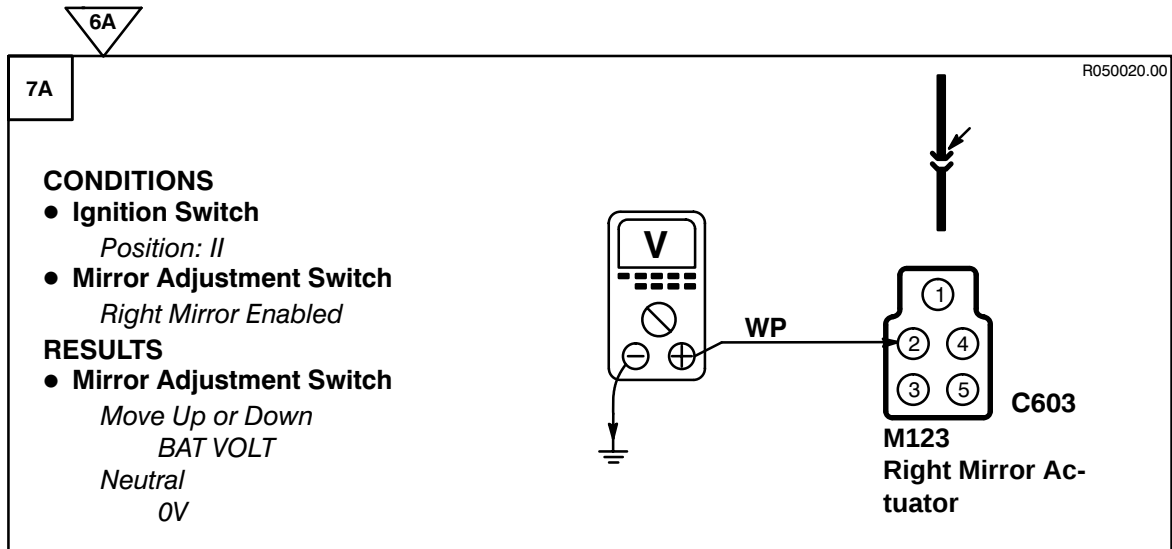
**PROBLEM CAUSE**

- P Wire
- PU, BP Wire
- Mirror Adjustment Switch

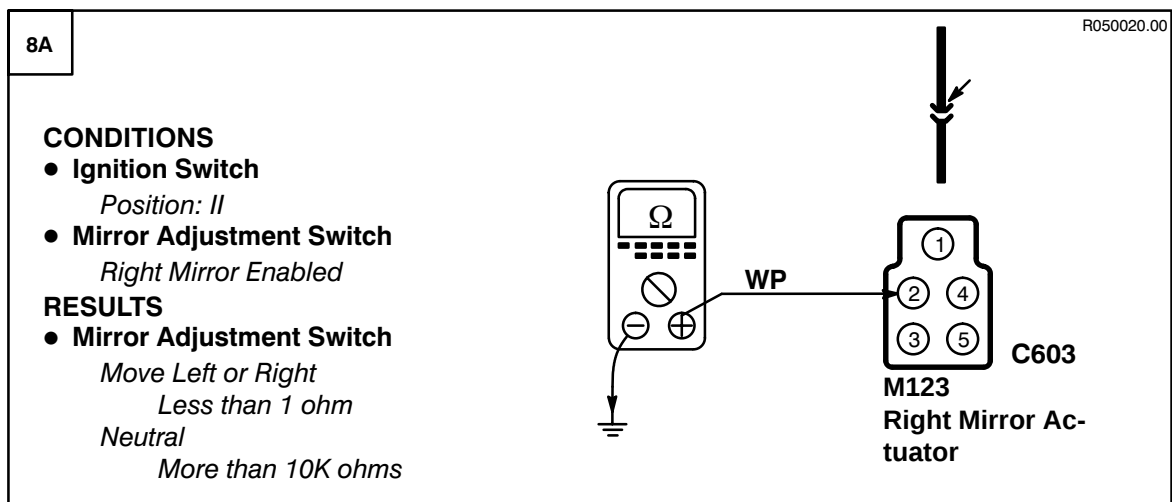
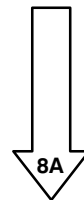
**PROBLEM CAUSE**

- Mirror Adjustment Switch

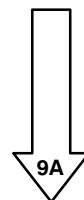


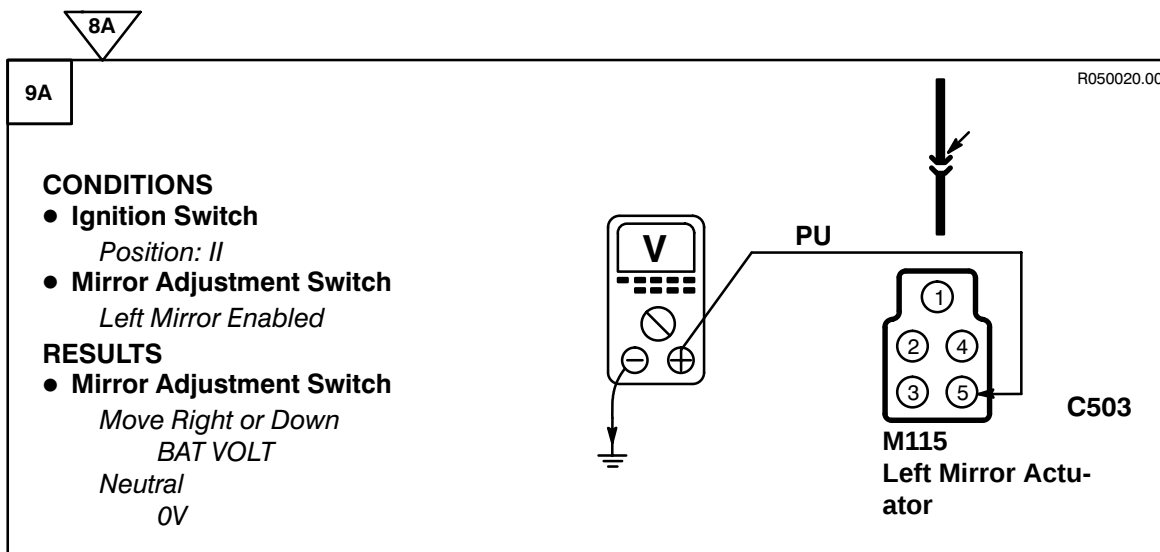
**PROBLEM CAUSE**

- WP, BN Wire
- Mirror Adjustment Switch

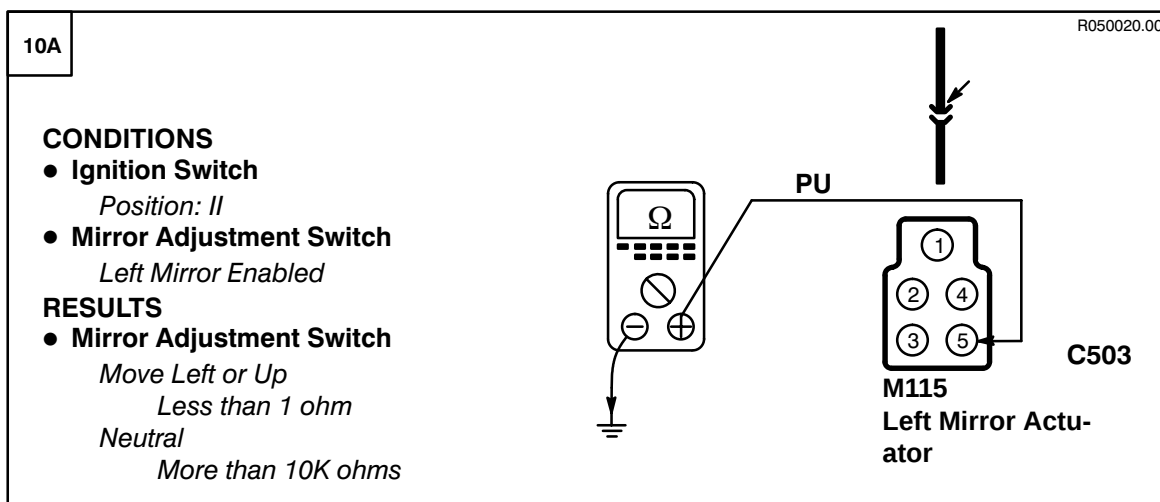
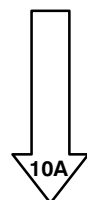
**PROBLEM CAUSE**

- Mirror Adjustment Switch

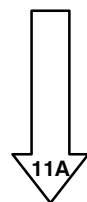


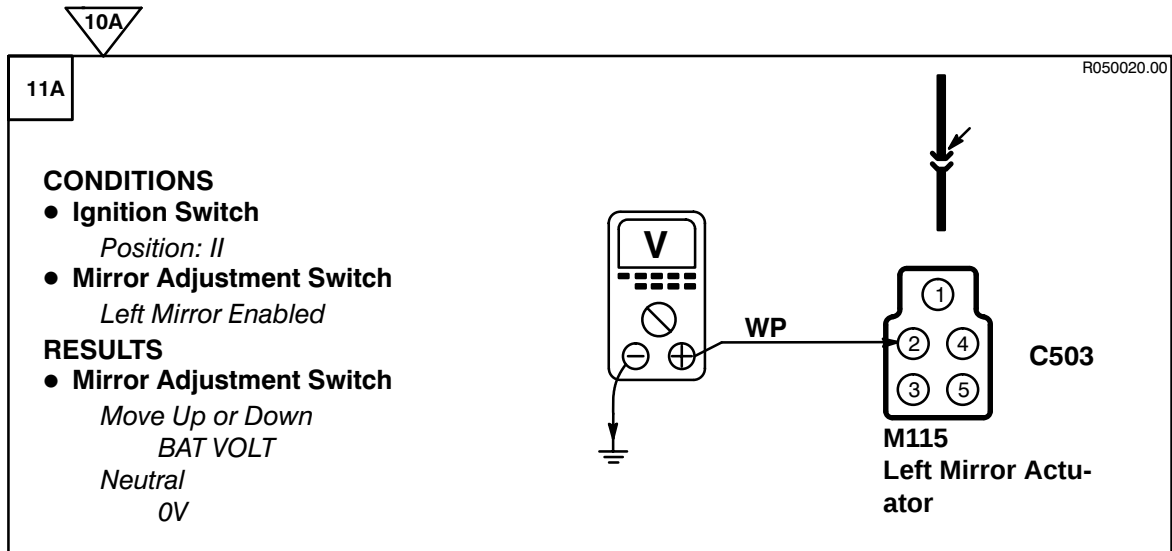
**PROBLEM CAUSE**

- BU Wire
- PU Wire
- Mirror Adjustment Switch

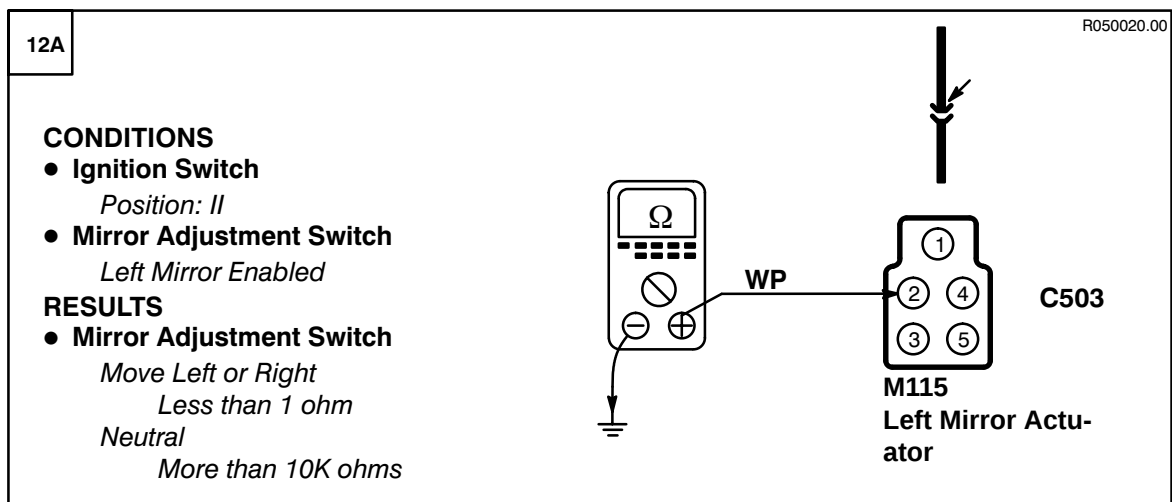
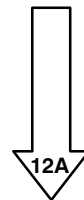
**PROBLEM CAUSE**

- Mirror Adjustment Switch



**PROBLEM CAUSE**

- BK Wire
- WP Wire
- Mirror Adjustment Switch

**PROBLEM CAUSE**

- Mirror Adjustment Switch

**PROBLEM CAUSE**

- M115, M123
Mirror Actuator

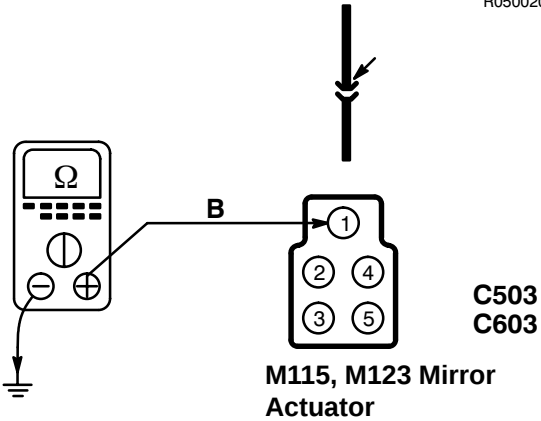
Test B

1B

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm



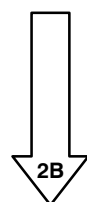
M115, M123 Mirror Actuator

**C503
C603**

R050020.00

**PROBLEM CAUSE**

- B Wire
- Ground Connections



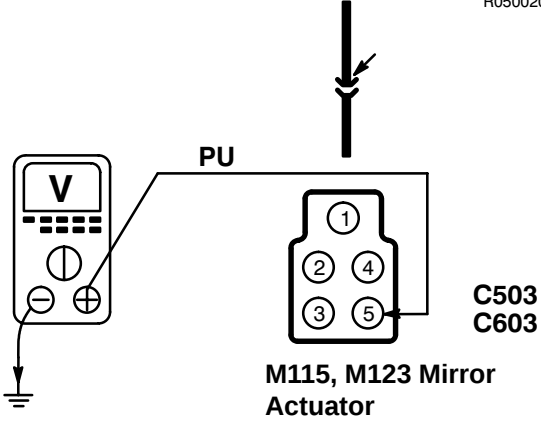
2B

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Select suspect mirror

RESULTS

- Mirror Adjustment Switch
*Move Right or Down
BAT VOLT
Move Left or Up
0V*



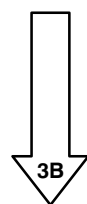
M115, M123 Mirror Actuator

**C503
C603**

R050020.00

**PROBLEM CAUSE**

- BU Wire
- PU Wire
- Mirror Adjustment Switch



2B

3B

R050020.00

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Select suspect mirror

RESULTS

- Mirror Adjustment Switch
Move Left or Up
BAT VOLT
Move Right or Down
0V

PR

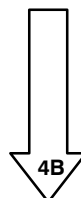
C503
C603

M115, M123 Mirror Actuator



PROBLEM CAUSE

- SW Wire
- PR Wire
- Mirror Adjustment Switch



4B

R050020.00

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Select suspect mirror

RESULTS

- Mirror Adjustment Switch
Move Up or Down
BAT VOLT
Move Left or Right
0V

WP

M115, M123 Mirror Actuator



PROBLEM CAUSE

- BK Wire
- WP, BN Wire
- Mirror Adjustment Switch



PROBLEM CAUSE

- M115, M123 Mirror Actuator

CIRCUIT OPERATION**Power and Ground**

Fuse F4 applies battery voltage to retain the memory circuit of the Memory Seat ECU (Z146) at all times. Voltage to operate the seat motors (M126, M127, M128, M129) and the mirror actuators (M115, M123) is supplied to the Memory Seat ECU from fuses F2 and F3. The Maxi Fuse MF3 supplies voltage to fuses F2 and F3 whenever the Right Seat Power Relay (K131) is energized. The relay is energized when the driver's door is open, causing the Right Front Door Switch (X118) to ground the relay's coil, or when the ignition is in position II, causing the Left Seat Power Relay (K113) to ground the Right Seat Power Relay. The Memory Seat ECU is grounded at ground E300 through the B wires.

Inhibit Inputs

The Memory Seat ECU (Z146) will not permit movement to the memorized position when the ignition is in position II unless the handbrake is applied and vehicle speed is below 6 kmh. Vehicles equipped with an automatic transmission must also be in PARK or NEUTRAL for operation to occur.

The ECU monitors the Handbrake Switch (X191) position at terminal C302/24. When the handbrake is in position 1, the brake is applied and ground is applied to the ECU terminal C302/24.

Vehicle speed is monitored by the ECU at terminal C302/7 through the vehicle speed output signal supplied by the Instrument Cluster (Z142).

The ECU monitors gear position through the Park/Neutral Position Switch (X167). The switch grounds the ECU at terminal C302/11 when the transmission is in PARK or NEUTRAL.

Seat Motors

4 reversible motors control seat position, with each motor controlling 1 plane of movement. The Memory Seat ECU (Z146) applies both voltage and ground to the motors based on the position of the Driver Seat Control Switch (X121) or the execution of a memory position.

Memory Mirror Actuators (M115, M123)

Each Memory Mirror Actuator contains 2 motors which controls 1 plane of movement. The Memory Seat ECU (Z146) applies both voltage and ground to the motors based on the position of the Mirror Adjustment Switch (X146) or the execution of a memory position.

Setting Memory

When the round, green memory set button is depressed, terminal C324/1 of the Memory Seat ECU (Z146) is grounded through the switch contacts. This signals the ECU to record the seat position as reported through the seat position sensors (X194, X195, X196, X197) and the mirror positions through the potentiometers of the Memory Mirror Actuators (M115, M123).

When memory seat position switch 1 or 2 is depressed, ECU terminals C324/3 or C324/2 are grounded through the switch. This signals the ECU to record the current position as position '1' or '2'. Subsequent depressions of memory seat position switch 1 or 2 will cause the ECU to move the seat and mirrors to the position retained in memory. The memory can be cleared by setting a new position or by removing Fuse F4 of the Driver's Underseat Fuse Box (P108).

SELF TEST MODE

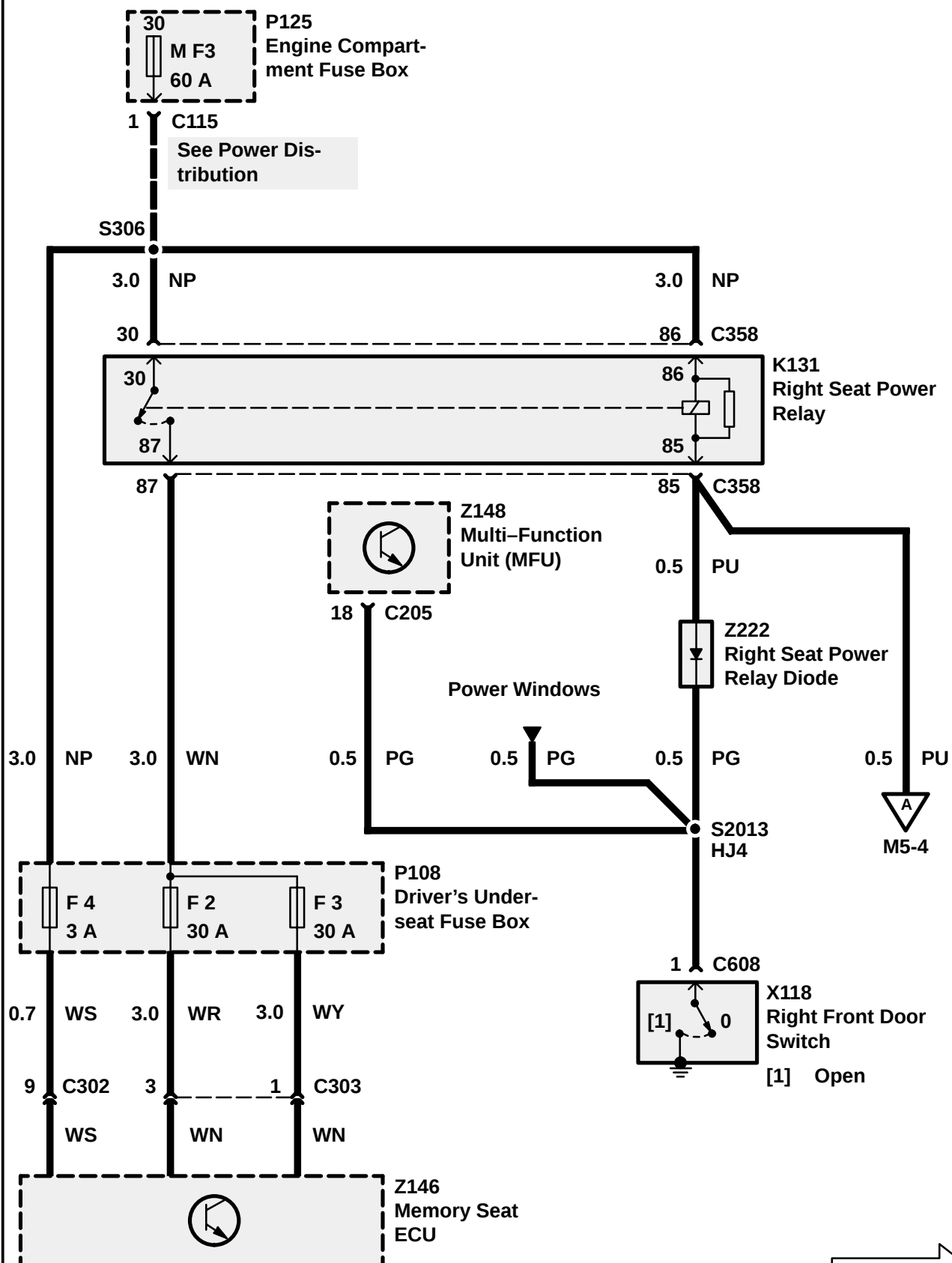
The Self Test Mode is a test routine the Memory Seat ECU (Z146) performs when initialized. When the ECU is commanded into the Self Test Mode, it operates the seats and the mirrors in all planes of travel. Perform the self test before attempting any diagnosis of the memory seat and mirror system. The cause of a system fault can be narrowed down through observation of the seats and mirrors during the Self Test Mode. Before starting the Self Test Mode, be sure to clear away everything from the pathway of the seats.

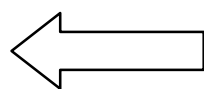
To initialize the Self Test Mode, do the following:

1. Park vehicle and open driver's door.
2. Press round, green memory button 5 times.
3. Press seat position buttons 1 and 2 in the following sequence:
2-1-1-2

Seat and mirrors will now move. The test is completed when the seat and mirrors stop in the mid-travel position.

If a motor did not operate at all during the test sequence, that motor or its wiring is faulty. If a motor moves in a plane and then suddenly stops, a loss of the feedback position is indicated. Proceed to the System Diagnosis for further testing.





X152
Left Front Seat
Control Switch

4 C320

2.0 B

1 C315

3.0 BP

M5-3



0.5 PU

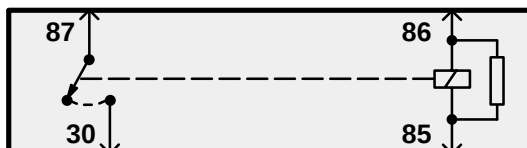
Z223
Left Seat Power
Relay Diode

0.5 BP

S319

3.0 BP

87

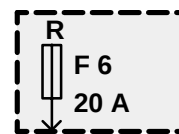


30

3.0 B

S320

E301



P126
Fascia Fuse Box

3 C226

See Fuse Details

S264

1.0 LGW

S2008
HJ3

0.5 LGW

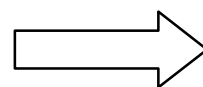
86 C348

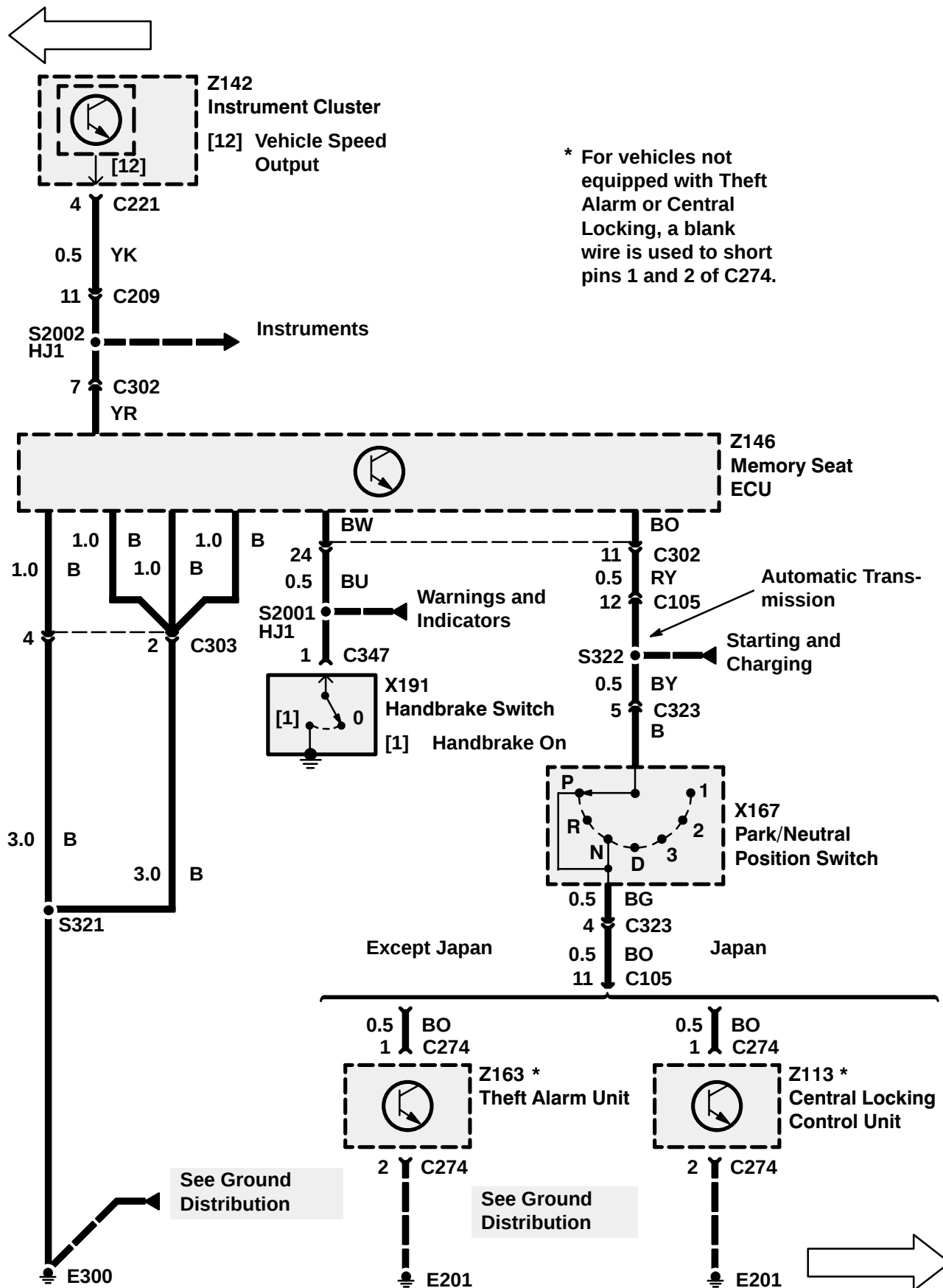
K113
Left Seat Power
Relay

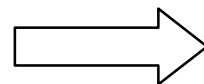
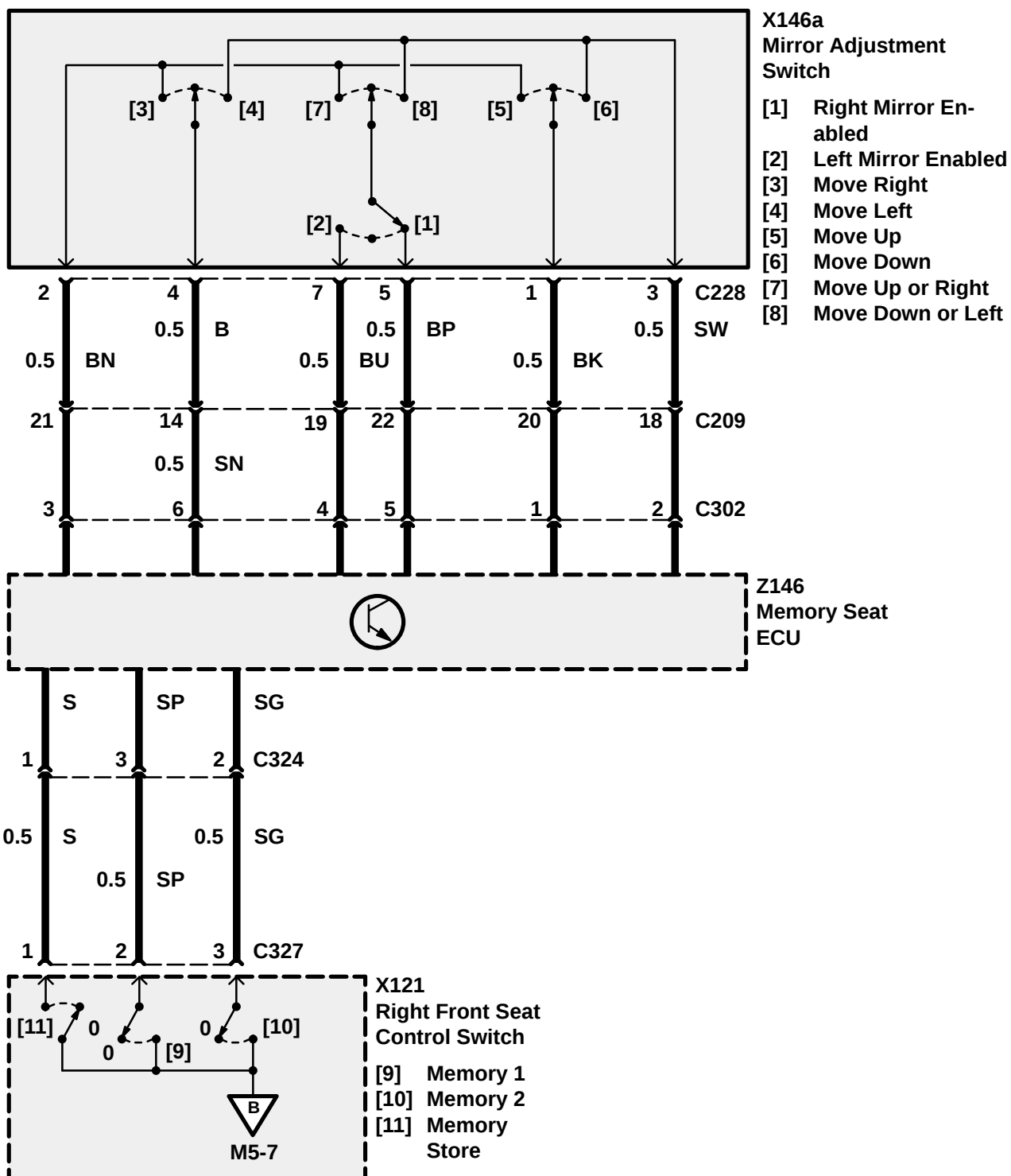
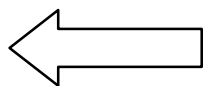
85 C348

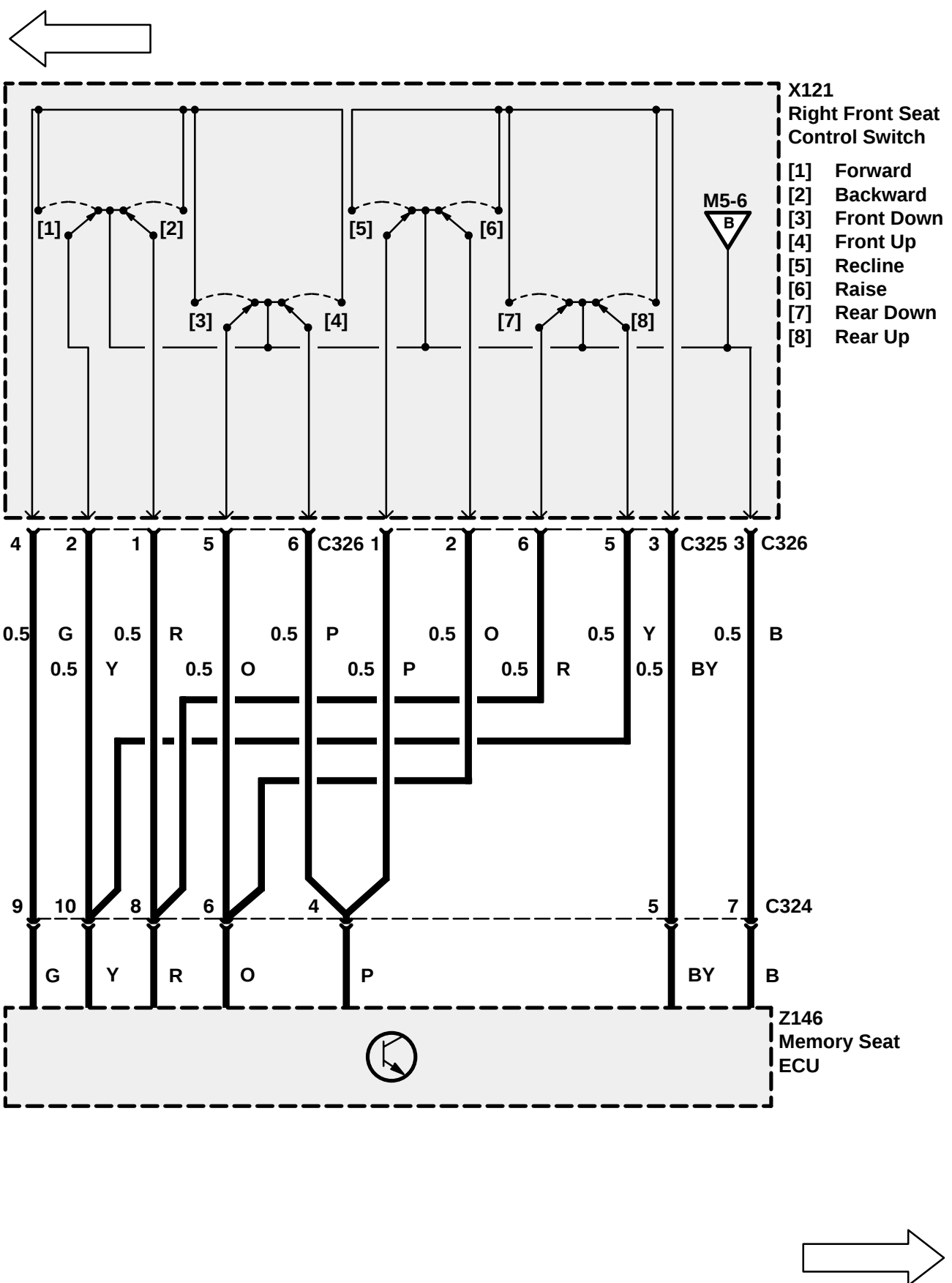
3.0 B

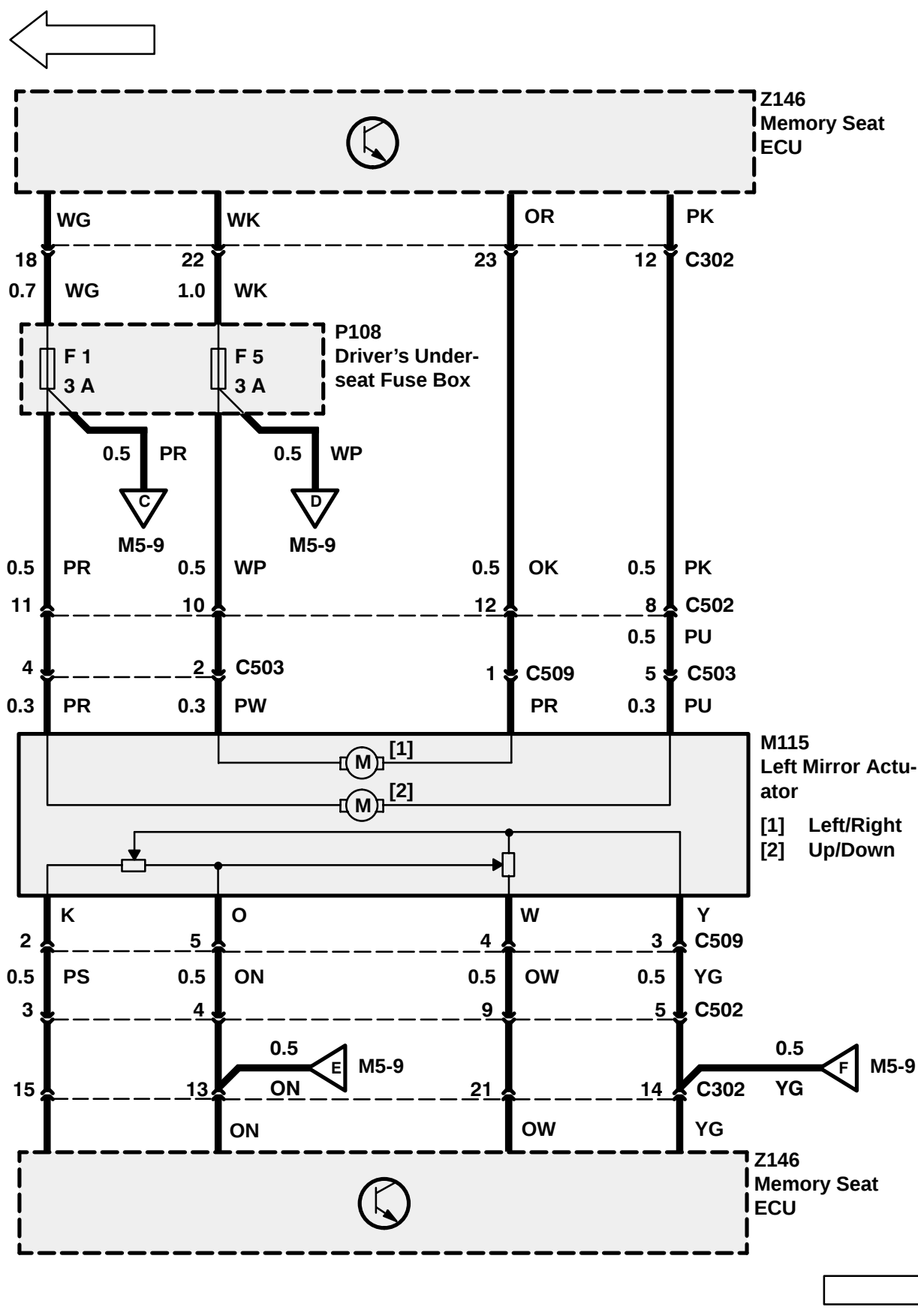
See Ground Dis-
tribution

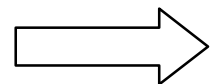
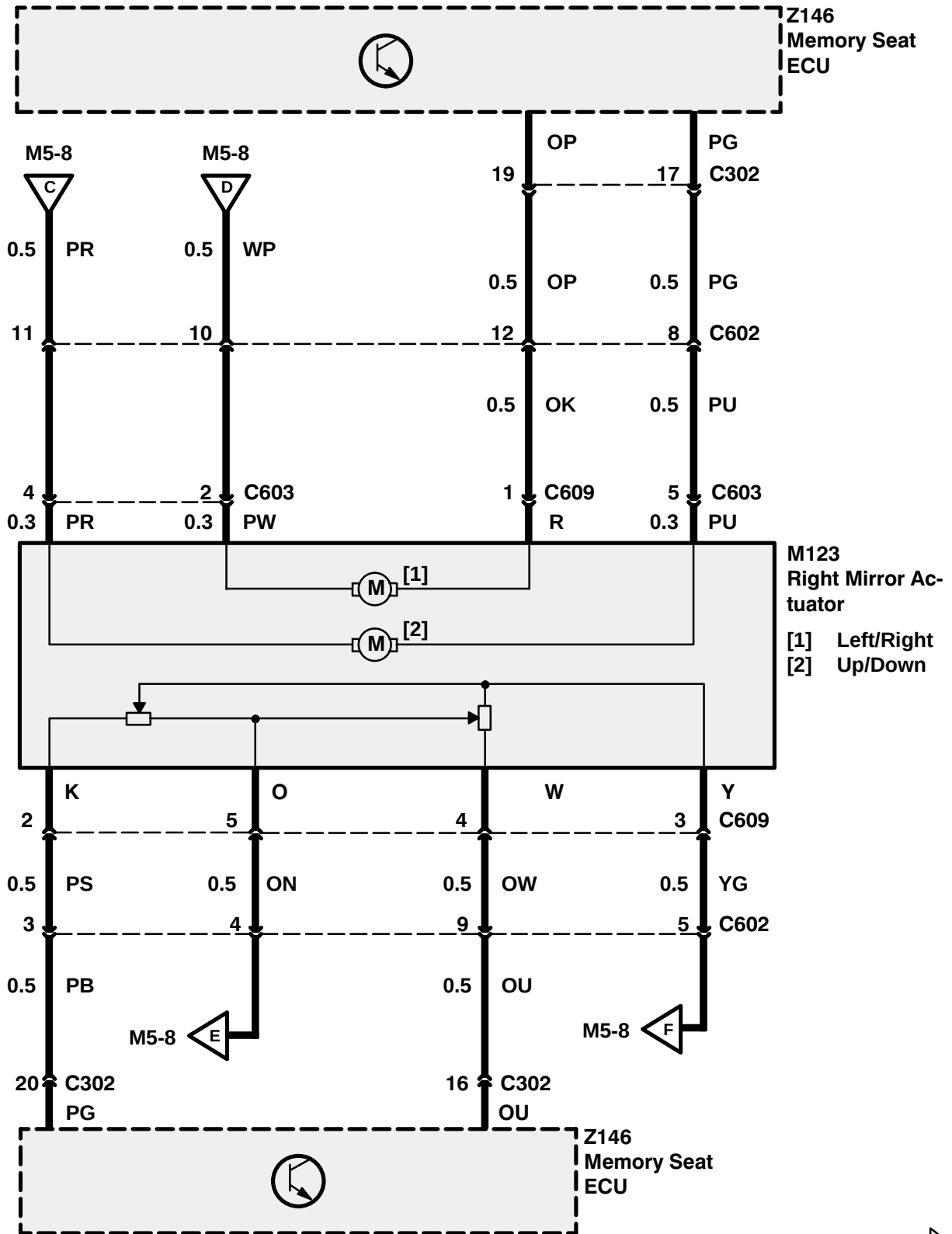
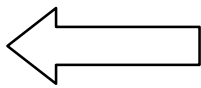


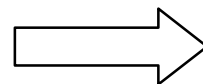
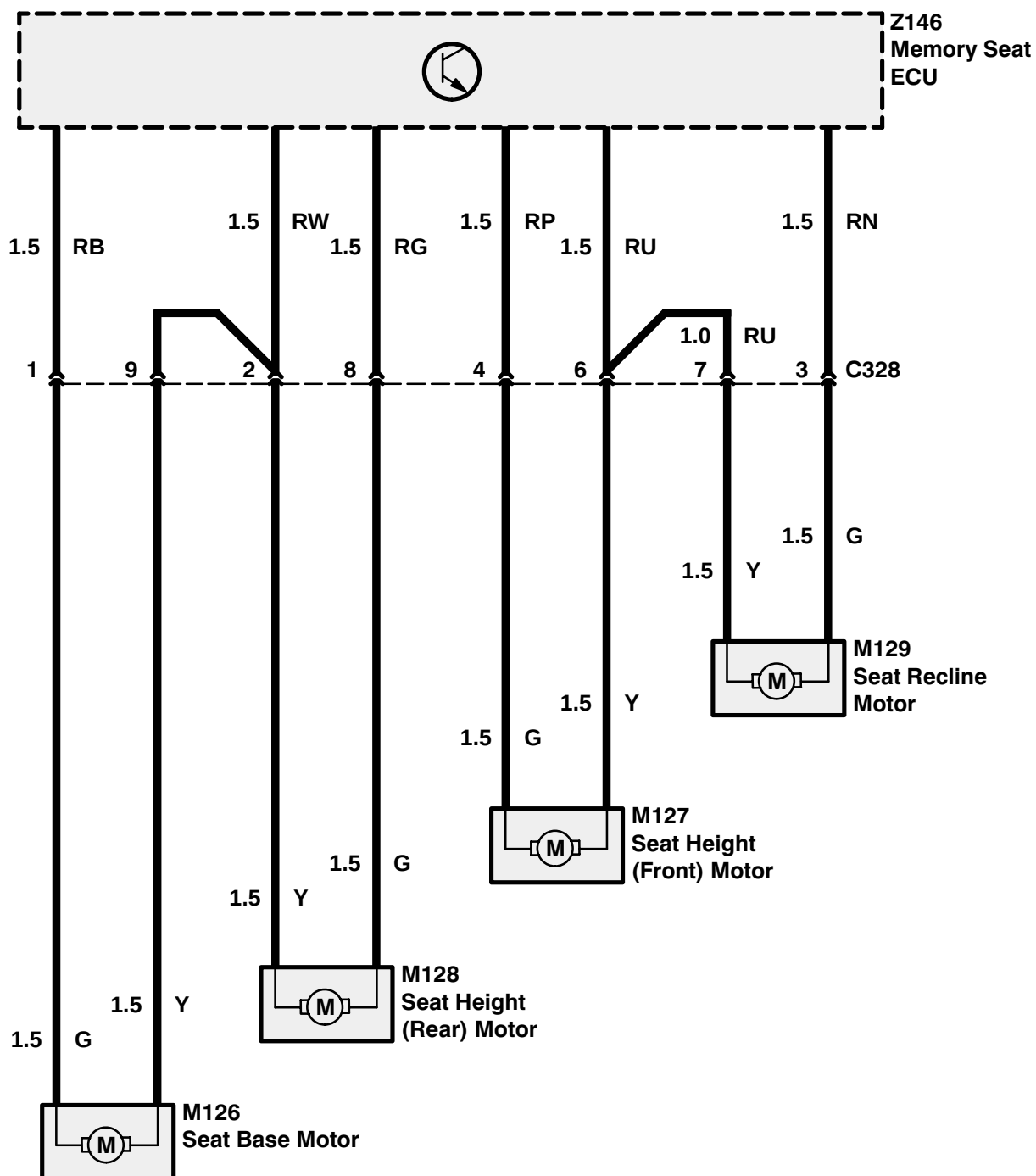
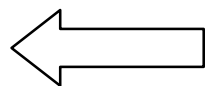


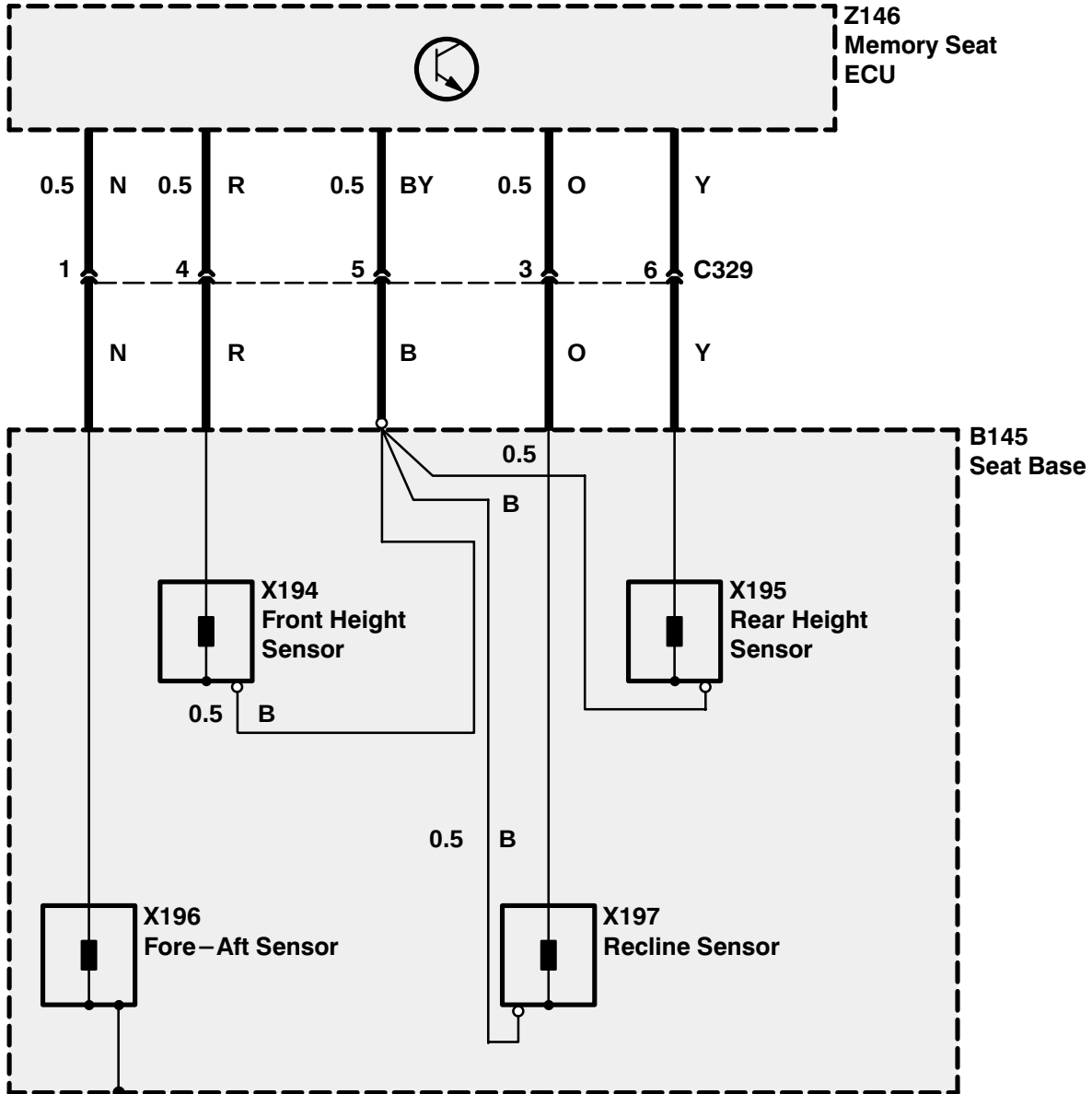
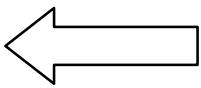










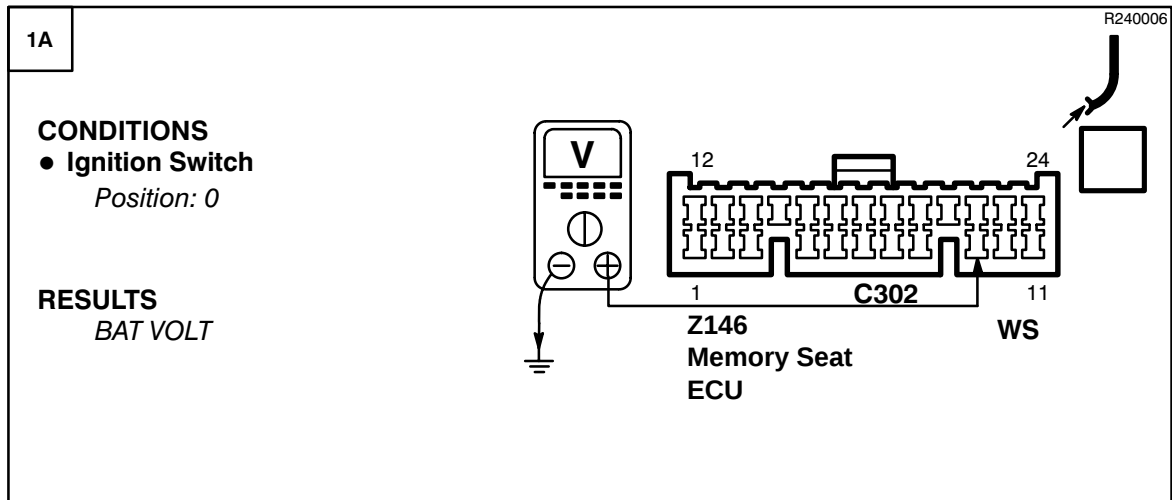


SYSTEM DIAGNOSIS

NOTE: Perform the Self Test before performing any diagnosis on the memory seats and mirrors.

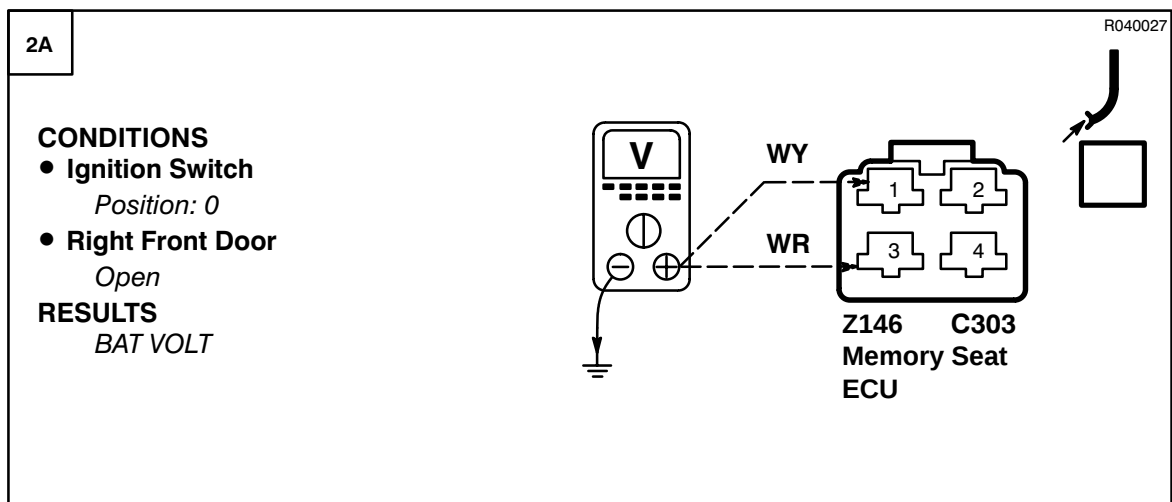
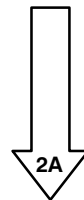
1. If the system will not perform the Self Test, do Test E, Right Front Seat Control Switch (X121) test.
2. If manual and memory seat functions are totally inoperative, check Maxi-Fuse® MF3 of the Engine Compartment Fuse Box (P125), and Fuses F2 and F3 of the Driver's Underseat Fuse Box (P108). Do Test A if the fuses are OK.
3. If the system does not retain memory seat or mirror positions, do Test A, Memory Seat ECU (Z146) power test.
4. If the memory seat system does not operate when the ignition is in position II and the handbrake is applied, do Test B (manual transmission) or Test C (automatic transmission).
5. If memory seat and mirror functions do not operate but the seat does operate in some modes manually, do Test E, Right Front Seat Control Switch (X121) test.
6. If all seat motors operate during the Self Test but do not operate when the Right Front Seat Control Switch (X121) is used, do Test F.
7. If all mirror motors operate during the Self Test but do not operate when the Mirror Adjustment Switch (X146) is used, do Test G.
8. If a seat motor moves during the Self Test and then stops, replace the defective seat sensor (X194, X195, X196, X197).
9. If a seat motor (M126, M127, M128, M129) does not move at all during the Self Test, do Test J.
10. If a mirror motor does not move at all during the Self Test, check fuses F1 and F5 (in Driver's Underseat Fuse Box (P108)), then do Test K (Left Memory Mirror Actuator, M115) or Test L (Right Memory Mirror Actuator, M123).
11. If a mirror motor moves during the Self Test and then stops, do Test H (Left Memory Mirror Actuator, M115) or Test I (Right Memory Mirror Actuator, M123).

Test A

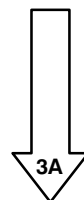


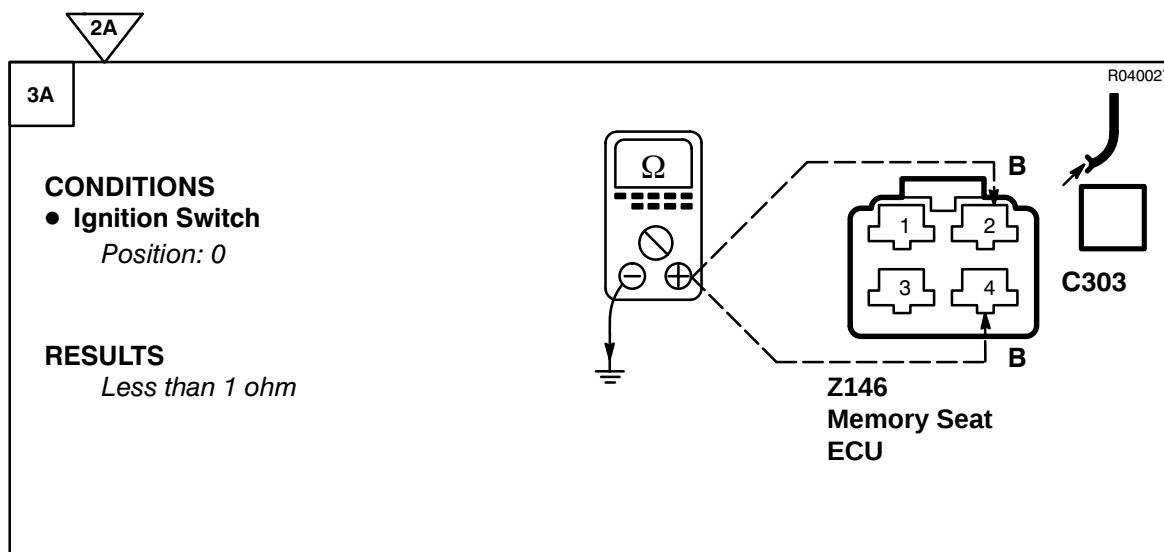
PROBLEM CAUSE

- WS Wire
- F4 Fuse
- MF3 Maxi-Fuse



GO TO TEST D



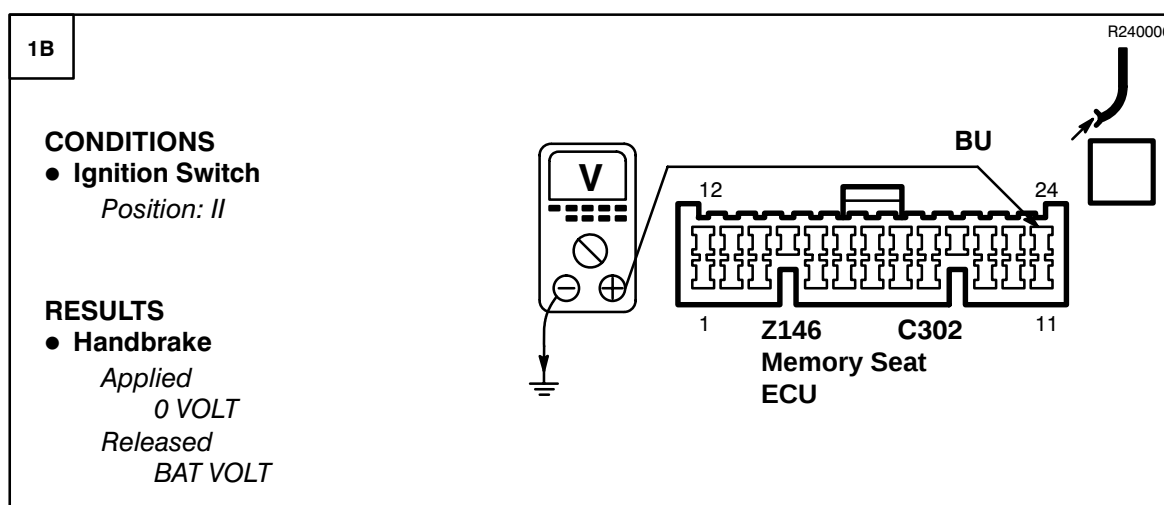


PROBLEM CAUSE
- B Wire



PROBLEM CAUSE
- Memory Seat
ECU

Test B



PROBLEM CAUSE

- BU Wire
- Handbrake Switch



PROBLEM CAUSE
- Memory Seat
ECU

Test C

1C

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- Handbrake
Applied
0 VOLT
Released
BAT VOLT

12 BU 24

1 11

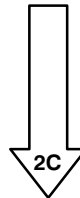
Z146 C302
Memory Seat
ECU

R240006



PROBLEM CAUSE

- BU Wire
- Handbrake Switch



2C

CONDITIONS

- Ignition Switch
Position: 0
- Gear Selector
P/N

RESULTS

- Less than 1 ohm*

12 RY 24

1 11

Z146 C302
Memory Seat
ECU

R240006



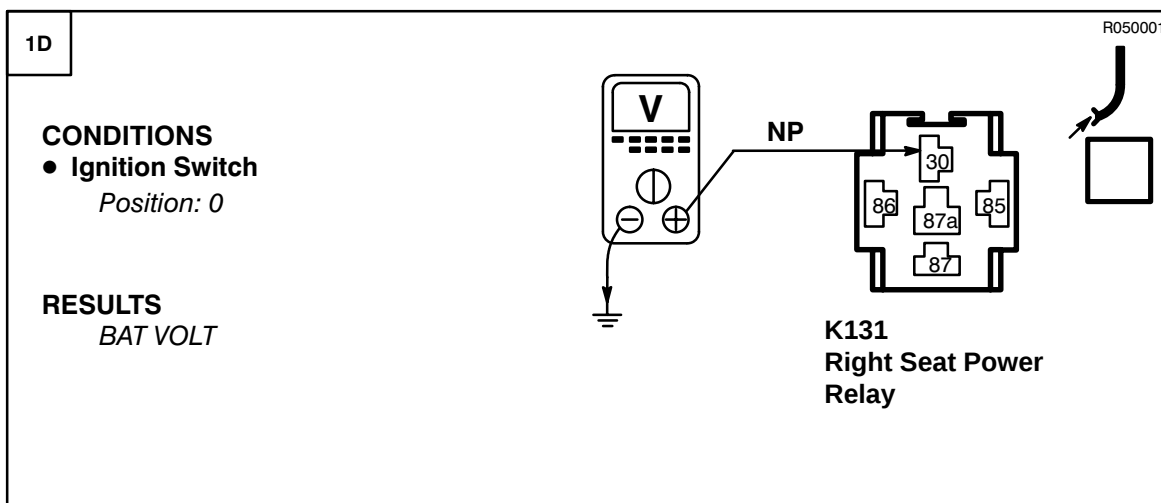
PROBLEM CAUSE

- RY, BY, BO Wire
- Park/Neutral
Position Switch
- Except Japan
- Japan

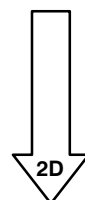


PROBLEM CAUSE

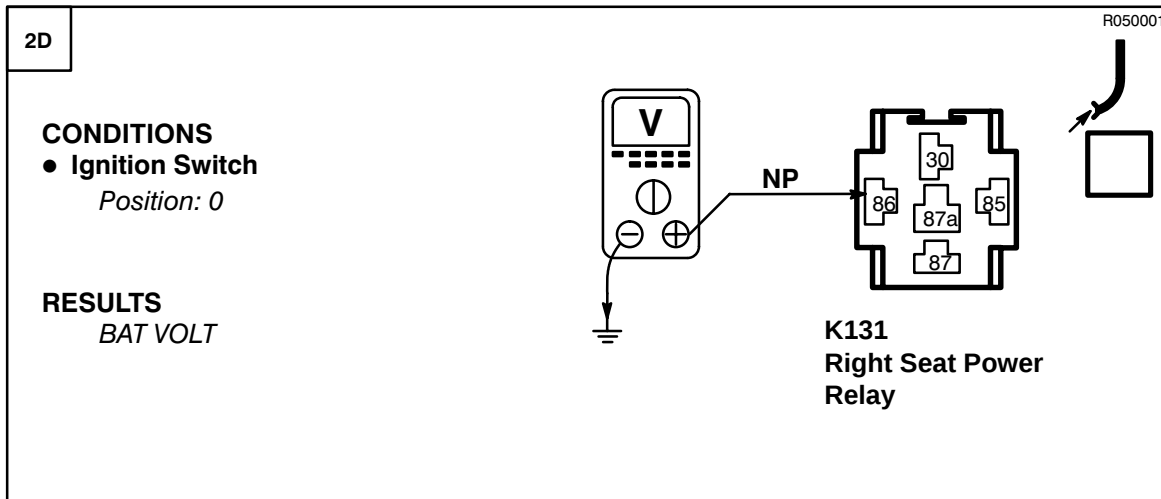
- Memory Seat
ECU

Test D

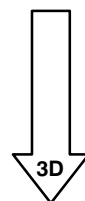
PROBLEM CAUSE
- NP Wire



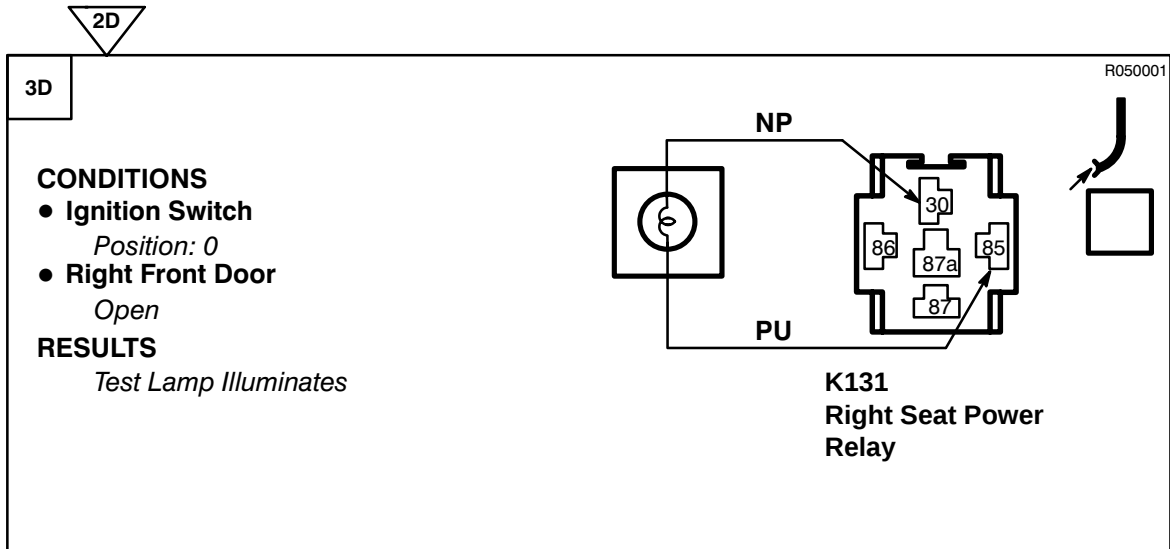
2D



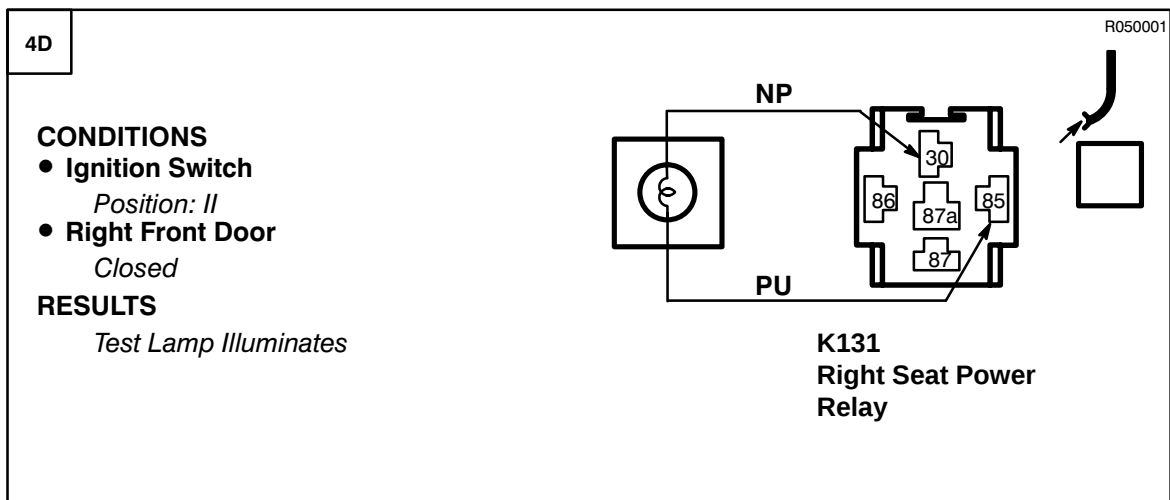
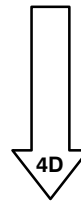
PROBLEM CAUSE
- NP Wire



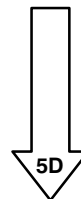
3D

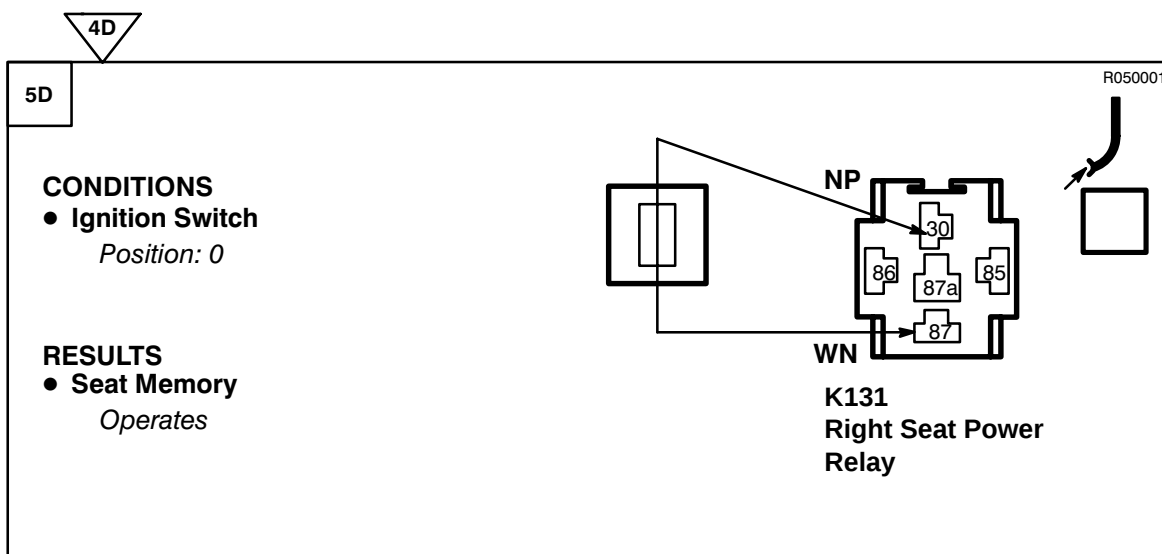
**PROBLEM CAUSE**

- PU Wire
- PG Wire
- Right Seat Power Relay Diode
- Right Front Door Switch

**PROBLEM CAUSE**

- PU Wire
- Left Seat Power Relay Diode
- BP Wire
- F6 Fuse
- Left Seat Power Relay

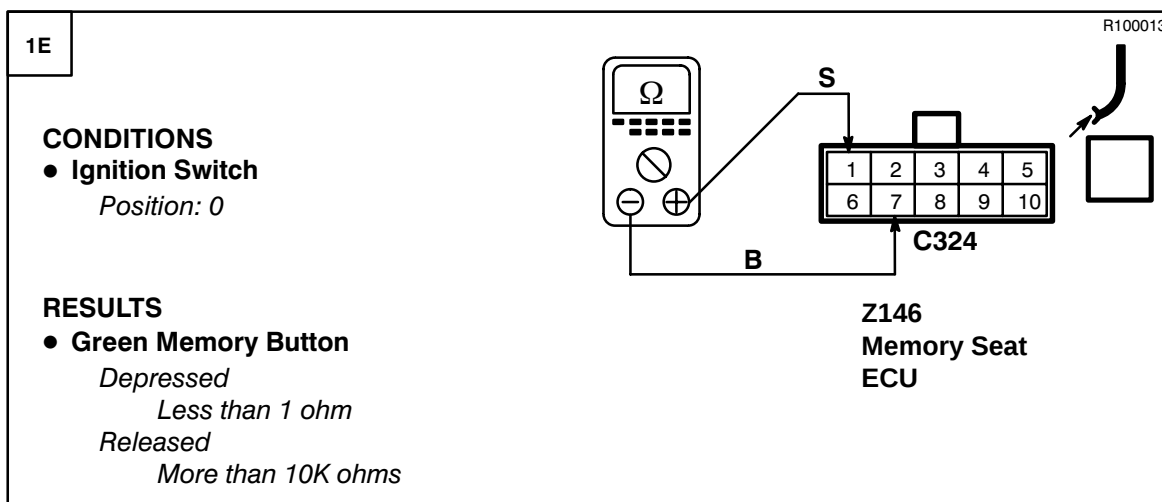


**PROBLEM CAUSE**

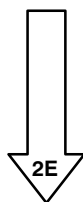
- F2 Fuse
- F3 Fuse
- WN Wire

**PROBLEM CAUSE**

- Right Seat Power Relay

Test E**PROBLEM CAUSE**

- S Wire
- B Wire
- Right Front Seat Control Switch



1E

2E

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- Position 1 button
Depressed
Less than 1 ohm
Released
More than 10K ohms

R100013

SP

B

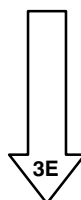
C324

Z146
Memory Seat
ECU



PROBLEM CAUSE

- SP Wire
- Right Front Seat Control Switch



3E

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- Position 2 button
Depressed
Less than 1 ohm
Released
More than 10K ohms

R100013

SG

B

C324

Z146
Memory Seat
ECU



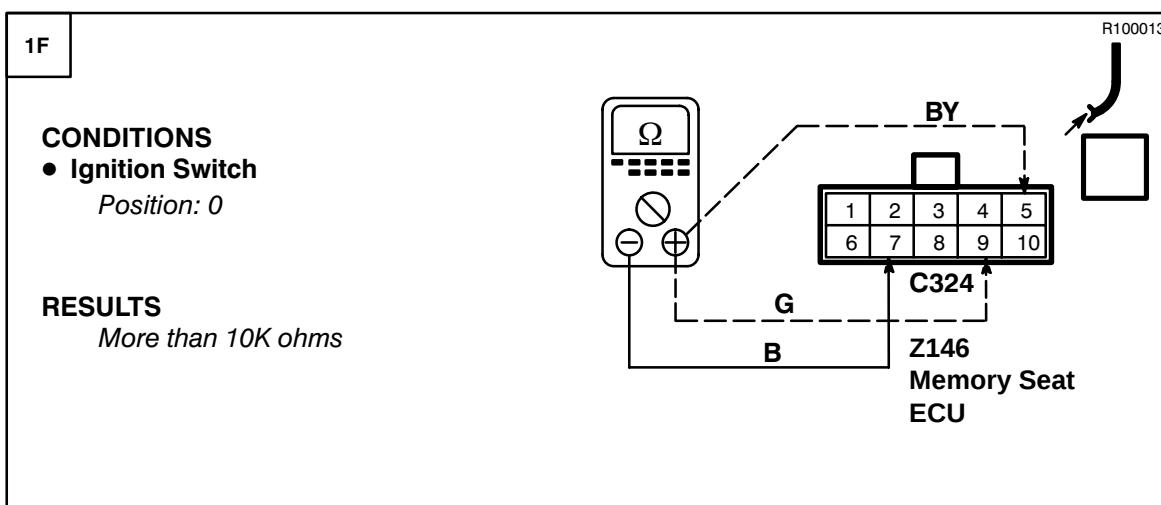
PROBLEM CAUSE

- SG Wire
- Right Front Seat Control Switch

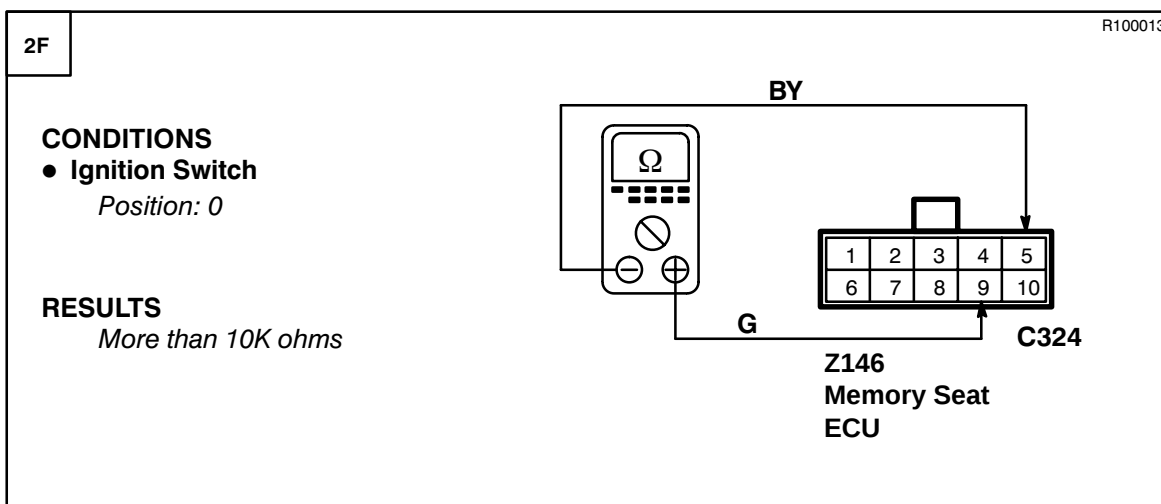
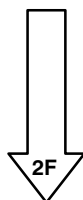


PROBLEM CAUSE

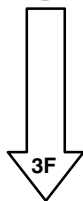
- Memory Seat ECU

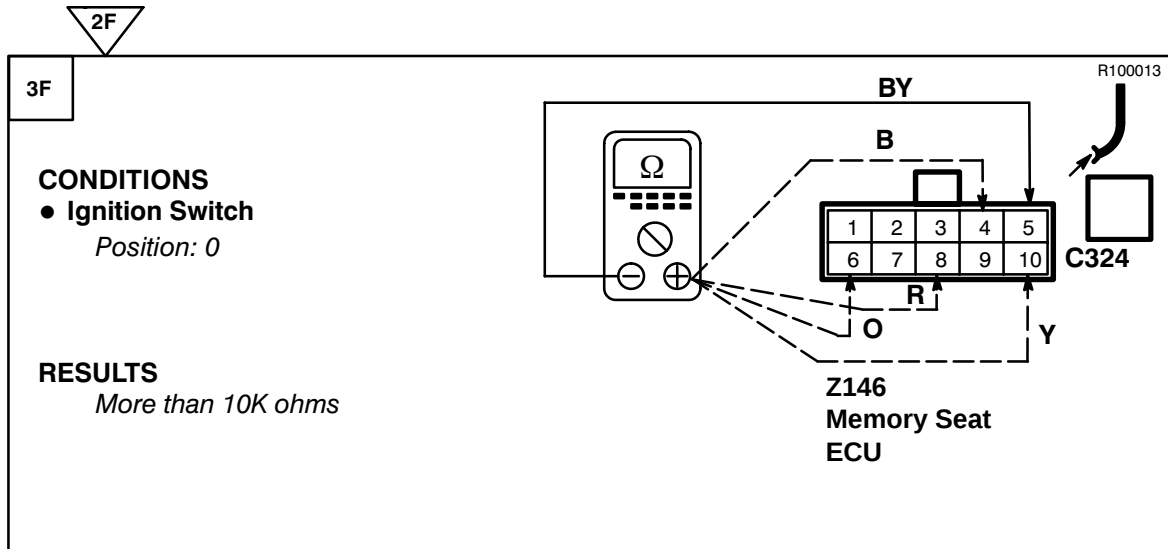
Test F**PROBLEM CAUSE**

- BY Wire
- G Wire
- Right Front Seat Control Switch

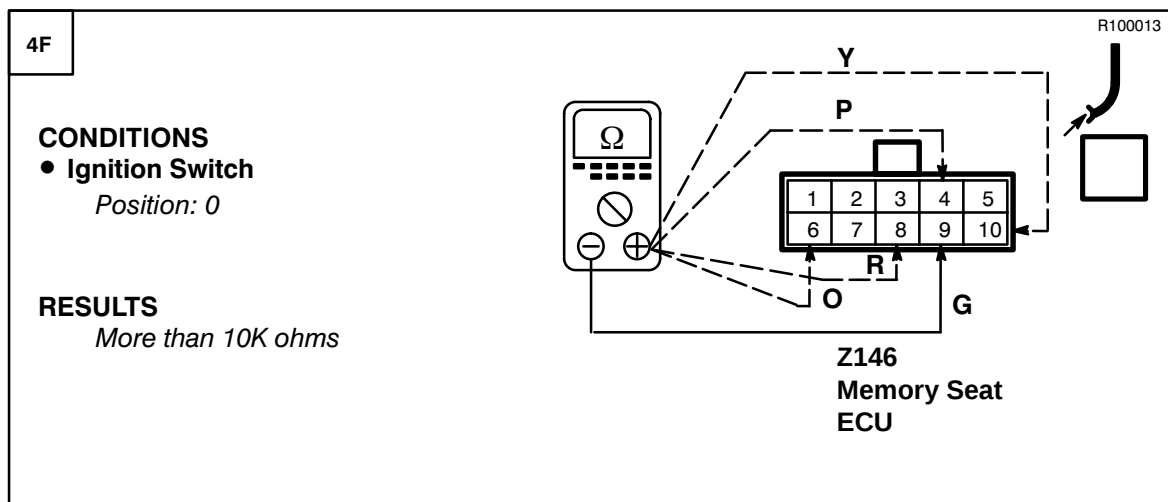
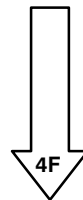
**PROBLEM CAUSE**

- Right Front Seat Control Switch

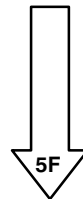


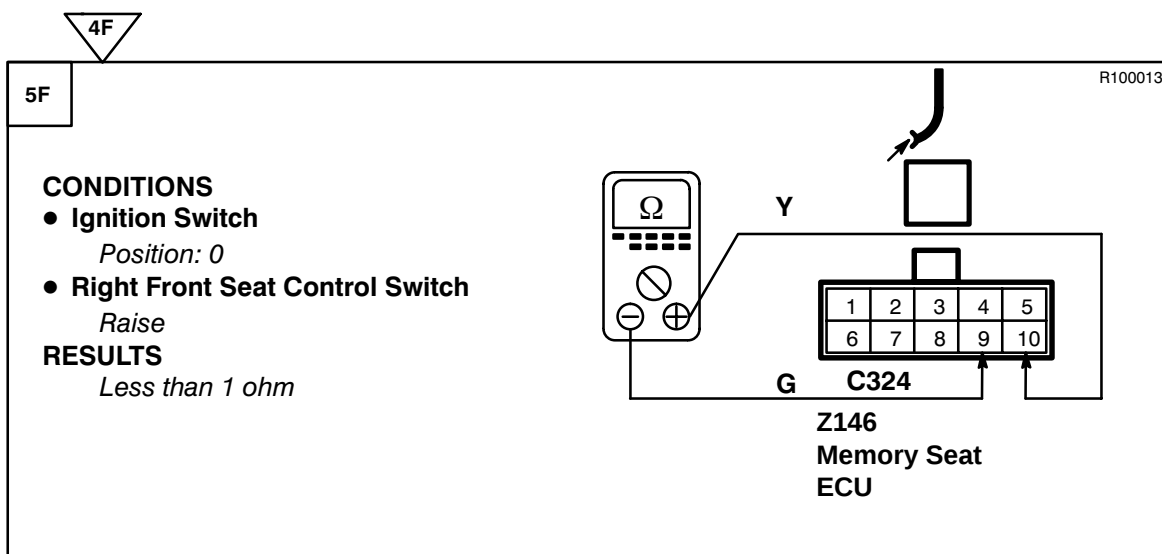
**PROBLEM CAUSE**

- R Wire
- P Wire
- Y Wire
- O Wire
- Right Front Seat Control Switch

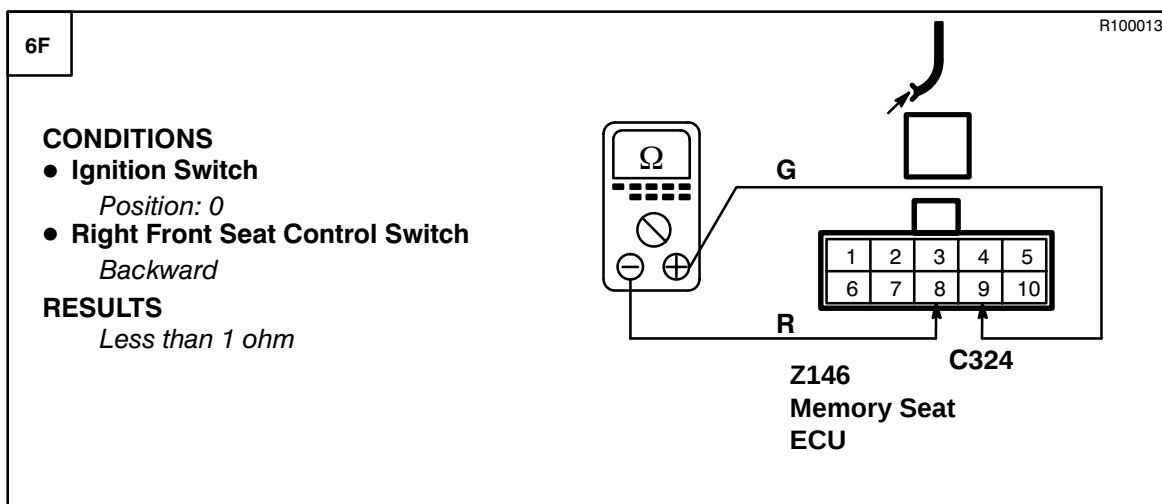
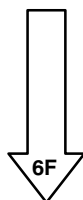
**PROBLEM CAUSE**

- Y Wire
- R Wire
- O Wire
- P Wire
- Right Front Seat Control Switch

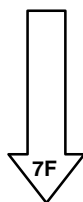


**PROBLEM CAUSE**

- G Wire
- Y Wire
- Right Front Seat Control Switch

**PROBLEM CAUSE**

- R Wire
- Right Front Seat Control Switch



6F

7F

CONDITIONS

- Ignition Switch
Position: 0
- Right Front Seat Control Switch
Front down

RESULTS
Less than 1 ohm

R100013

G

O

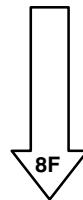
C324

Z146
Memory Seat
ECU



PROBLEM CAUSE

- O Wire
- Right Front Seat Control Switch



8F

CONDITIONS

- Ignition Switch
Position: 0
- Right Front Seat Control Switch
Front up

RESULTS
Less than 1 ohm

R100013

P

G

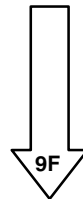
C324

Z146
Memory Seat
ECU



PROBLEM CAUSE

- P Wire
- Right Front Seat Control Switch



8F

9F

CONDITIONS

- Ignition Switch
Position: 0
- Right Front Seat Control Switch
Recline

RESULTS
Less than 1 ohm

R100013

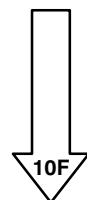
P

BY C324

Z146
Memory Seat
ECU

**PROBLEM CAUSE**

- BY Wire
- P Wire
- Right Front Seat Control Switch



10F

CONDITIONS

- Ignition Switch
Position: 0
- Right Front Seat Control Switch
Raise

RESULTS
Less than 1 ohm

R100013

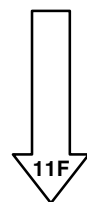
BY

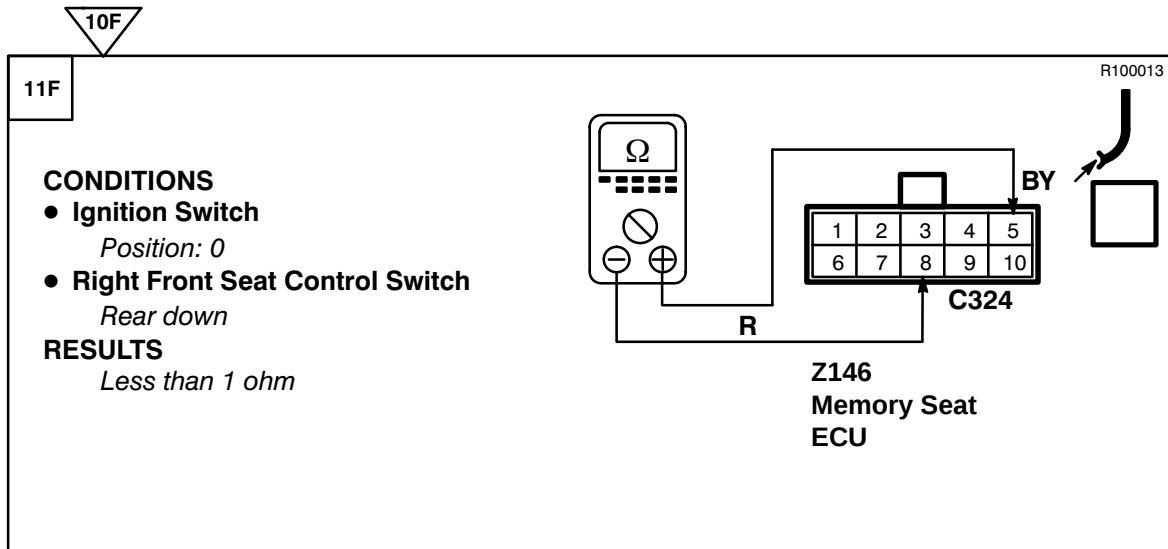
O C324

Z146
Memory Seat
ECU

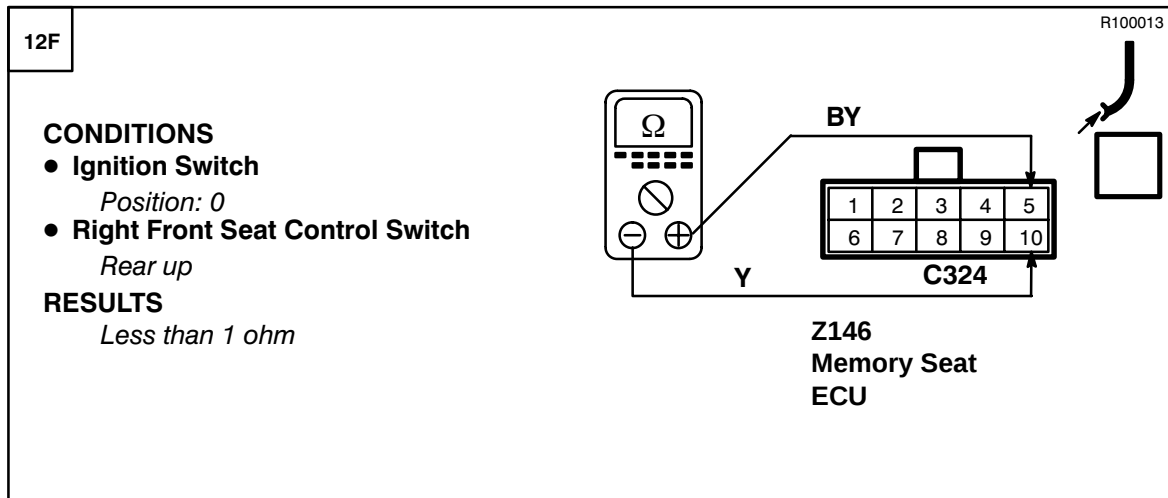
**PROBLEM CAUSE**

- O Wire
- Right Front Seat Control Switch



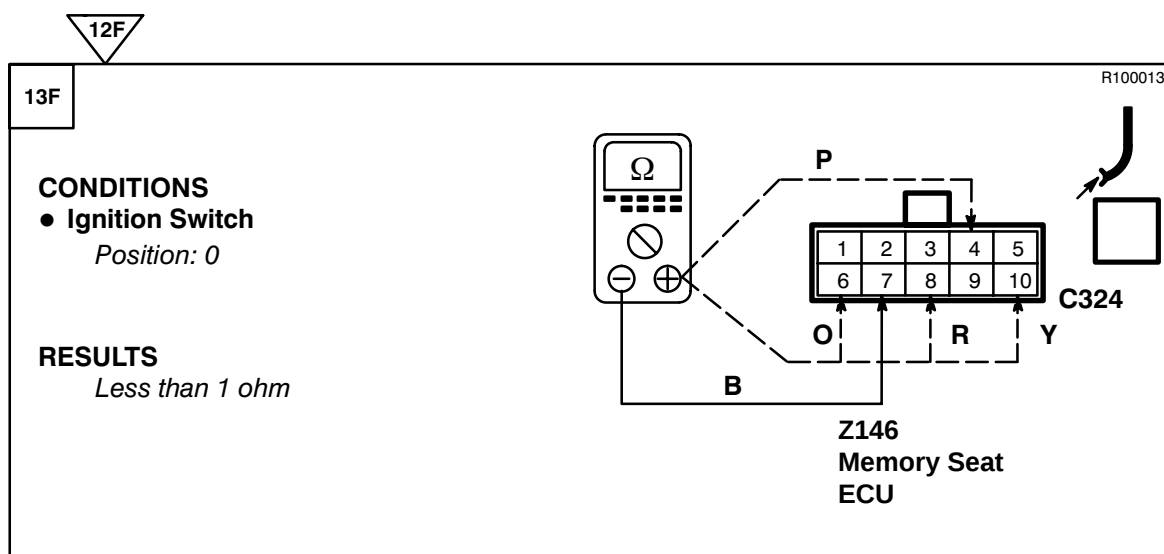
**PROBLEM CAUSE**

- R Wire
- Right Front Seat Control Switch

**PROBLEM CAUSE**

- Y Wire
- Right Front Seat Control Switch





PROBLEM CAUSE
- Right Front Seat
Control Switch



PROBLEM CAUSE
- Memory Seat
ECU

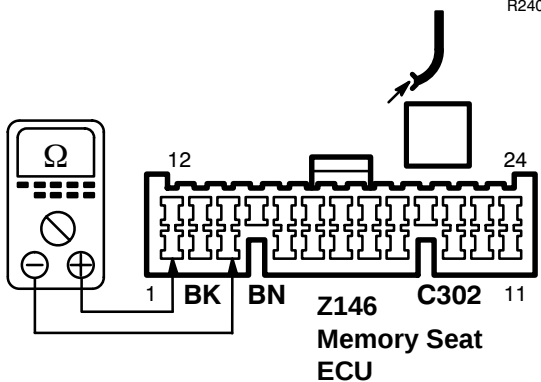
Test G

1G

CONDITIONS

- Ignition Switch
Position: 0
- Mirror Adjustment Switch
Up

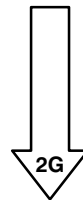
RESULTS
Less than 1 ohm



R240006

**PROBLEM CAUSE**

- BK Wire
- BN Wire
- Mirror Adjustment Switch

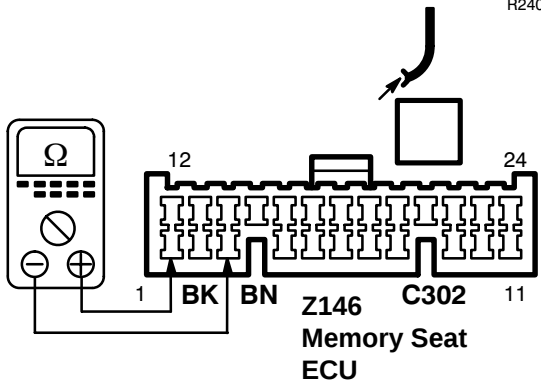


2G

CONDITIONS

- Ignition Switch
Position: 0
- Mirror Adjustment Switch
Down

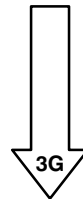
RESULTS
More than 10K ohms

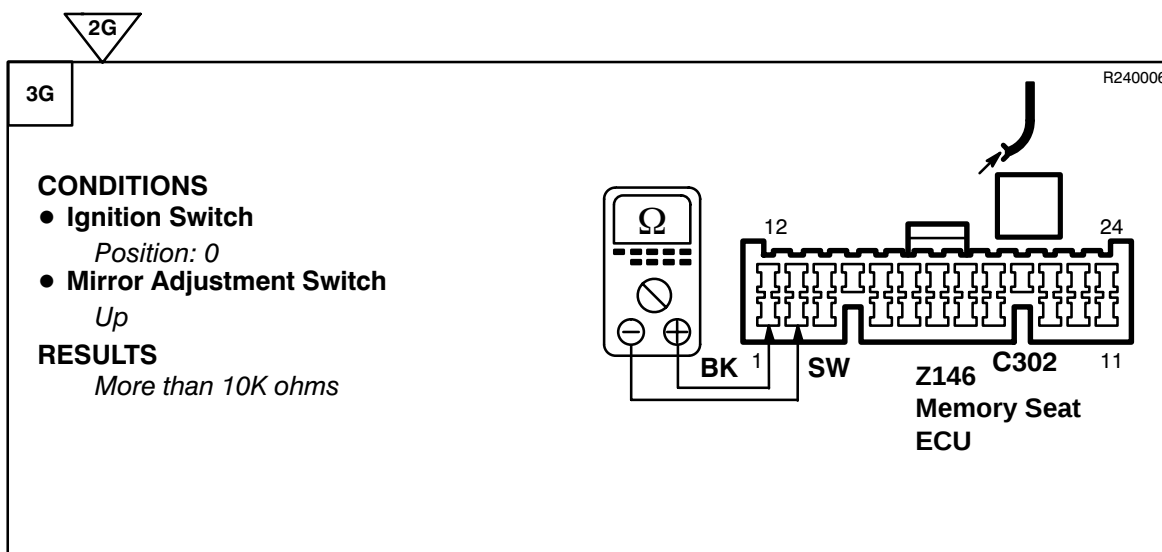


R240006

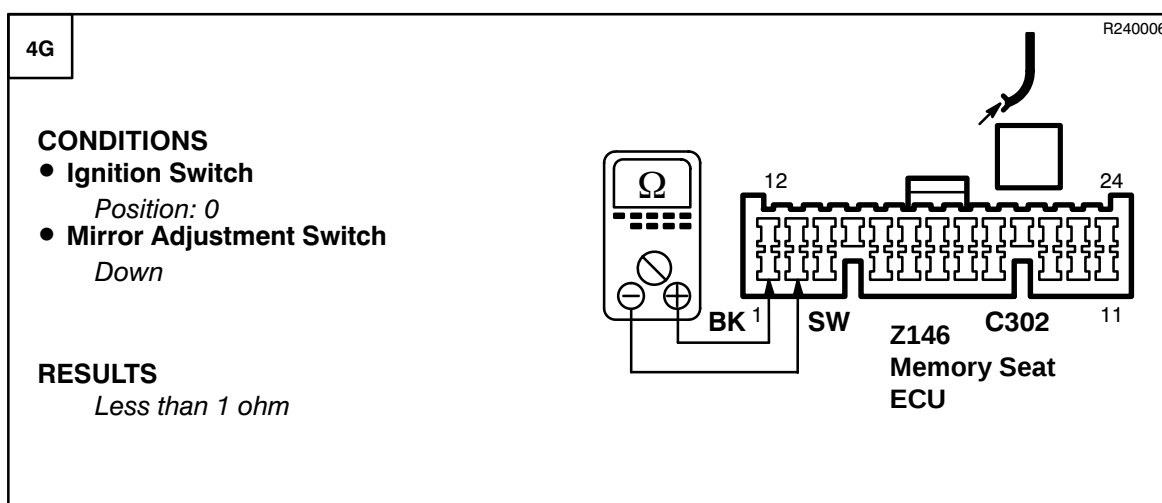
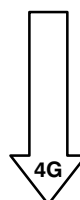
**PROBLEM CAUSE**

- Mirror Adjustment Switch

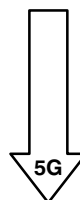


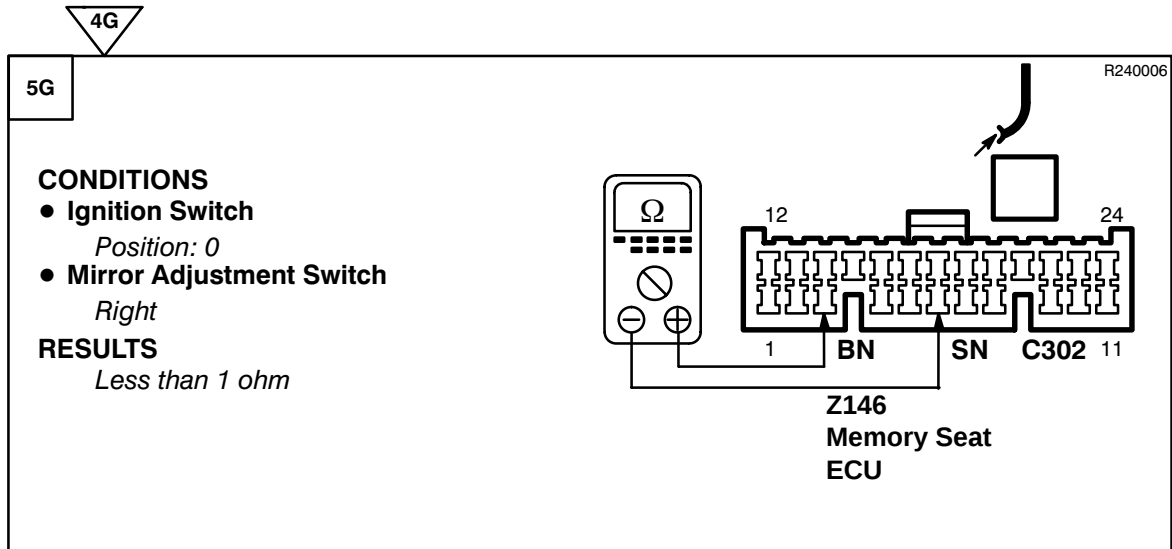
**PROBLEM CAUSE**

- SW Wire
- Mirror Adjustment Switch

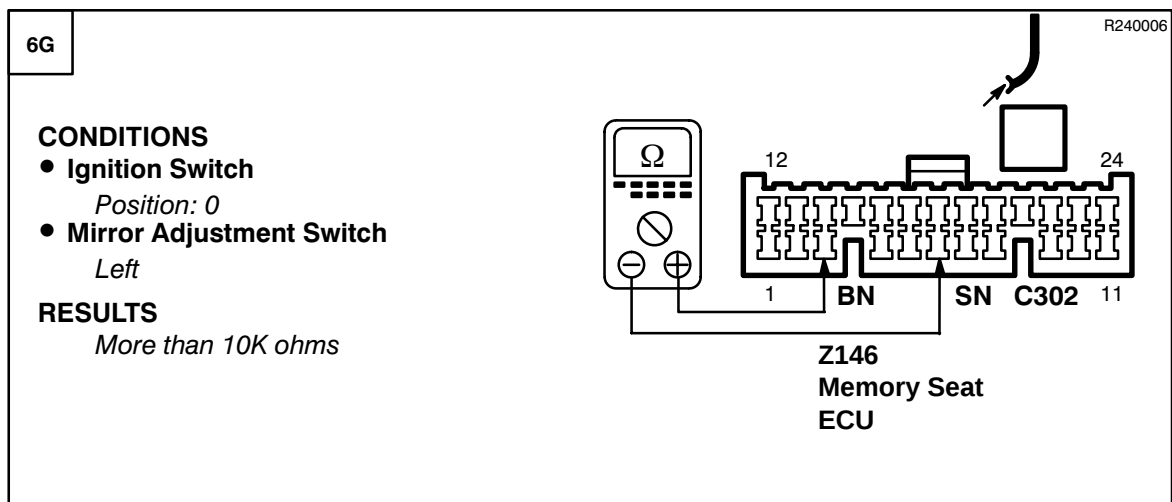
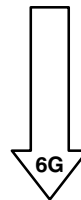
**PROBLEM CAUSE**

- Mirror Adjustment Switch

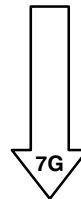


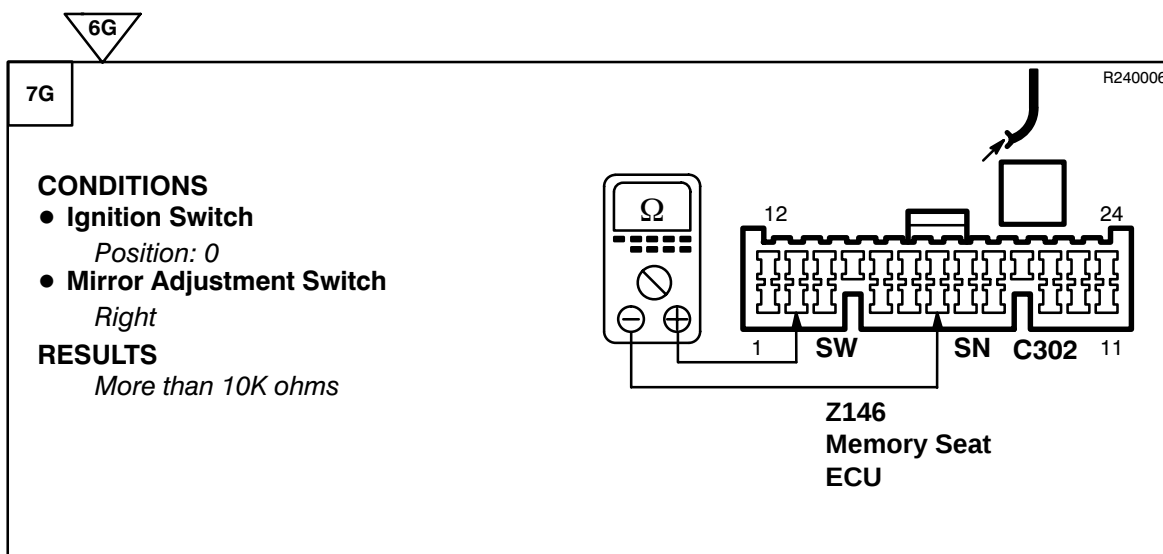
**PROBLEM CAUSE**

- SN, B Wire
- Mirror Adjustment Switch

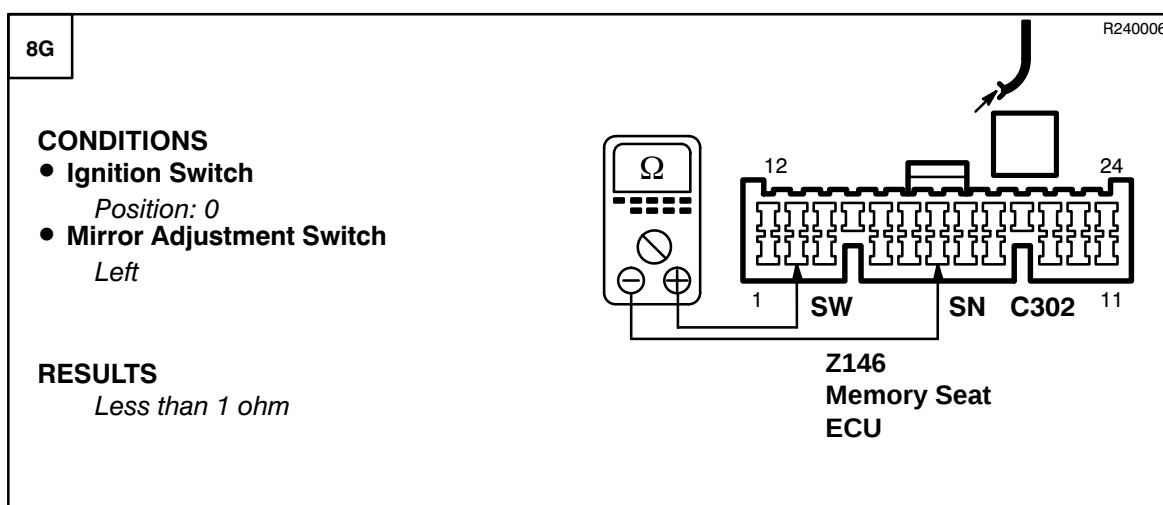
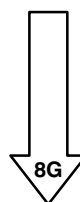
**PROBLEM CAUSE**

- Mirror Adjustment Switch

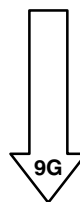


**PROBLEM CAUSE**

- Mirror Adjustment Switch

**PROBLEM CAUSE**

- Mirror Adjustment Switch



8G

9G

CONDITIONS

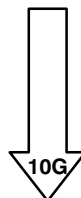
- Ignition Switch
Position: 0
- Mirror Adjustment Switch
*Right Mirror Enabled
Move Right or Down*

RESULTS
Less than 1 ohm

R240006

**PROBLEM CAUSE**

- BP Wire
- Mirror Adjust-ment Switch



10G

CONDITIONS

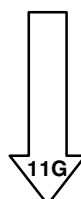
- Ignition Switch
Position: 0
- Mirror Adjustment Switch
*Right Mirror Enabled
Move Left or Up*

RESULTS
More than 10K ohms

R240006

**PROBLEM CAUSE**

- Mirror Adjust-ment Switch



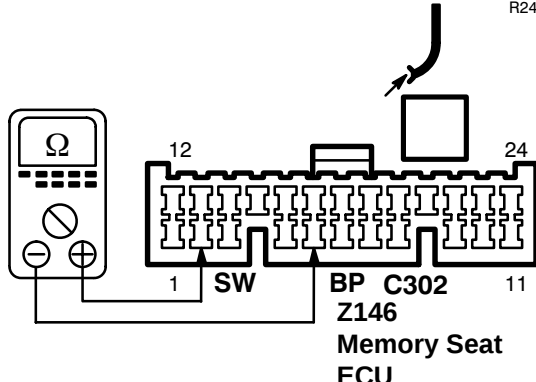
10G

11G

CONDITIONS

- **Ignition Switch**
Position: 0
- **Mirror Adjustment Switch**
*Right Mirror Enabled
Move Right or Down*

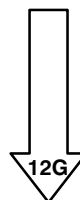
RESULTS
More than 10K ohms



R240006

**PROBLEM CAUSE**

- Mirror Adjust-ment Switch

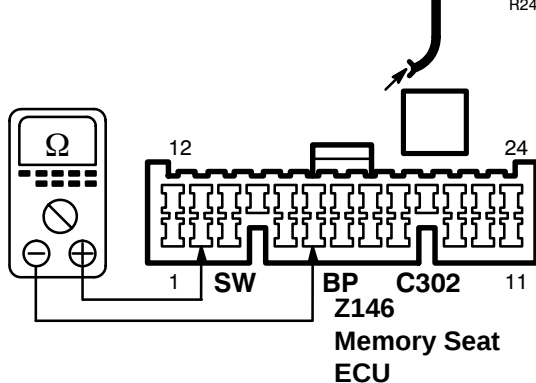


12G

CONDITIONS

- **Ignition Switch**
Position: 0
- **Mirror Adjustment Switch**
*Right Mirror Enabled
Move Left or Up*

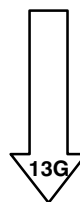
RESULTS
Less than 1 ohm



R240006

**PROBLEM CAUSE**

- Mirror Adjust-ment Switch



12G

13G

CONDITIONS

- Ignition Switch
Position: 0
- Mirror Adjustment Switch
*Left Mirror Enabled
Move Right or Down*

RESULTS
Less than 1 ohm

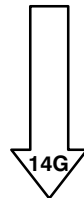
R240006

12 24 11 BN BU C302

Z146
Memory Seat
ECU

**PROBLEM CAUSE**

- BU Wire
- Mirror Adjust-
ment Switch



14G

CONDITIONS

- Ignition Switch
Position: 0
- Mirror Adjustment Switch
*Right Mirror Enabled
Move Left or Up*

RESULTS
More than 10K ohms

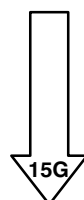
R240006

12 24 11 BN BU C302

Z146
Memory Seat
ECU

**PROBLEM CAUSE**

- Mirror Adjust-
ment Switch



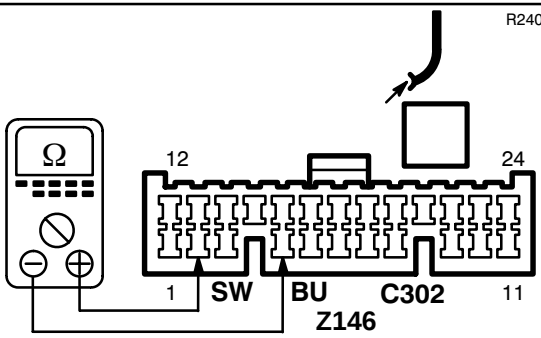
14G

15G

CONDITIONS

- **Ignition Switch**
Position: 0
- **Mirror Adjustment Switch**
*Left Mirror Enabled
Move Right or Down*

RESULTS
More than 10K ohms



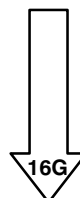
12 24 1 11 SW BU C302

Z146
Memory Seat
ECU

R240006

**PROBLEM CAUSE**

- Mirror Adjust-
ment Switch

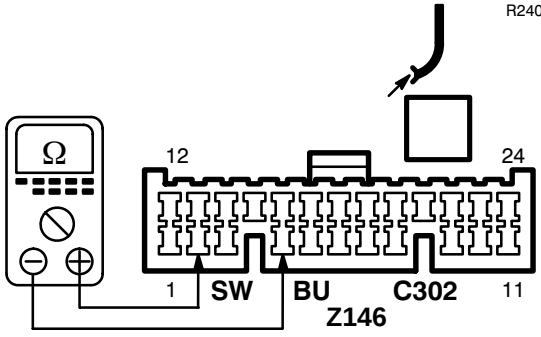


16G

CONDITIONS

- **Ignition Switch**
Position: 0
- **Mirror Adjustment Switch**
*Left Mirror Enabled
Move Left or Up*

RESULTS
Less than 1 ohm



12 24 1 11 SW BU C302

Z146
Memory Seat
ECU

R240006

**PROBLEM CAUSE**

- Mirror Adjust-
ment Switch



- Memory Seat ECU

Test H

1H

CONDITIONS

- Ignition Switch
Position: 0

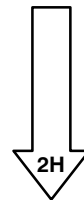
RESULTS
More than 1000 ohms

PS
YG
ON
12
1
C302
11
24
Z146
Memory Seat
ECU



PROBLEM CAUSE

- YG, OW Wire
- PS, ON Wire
- Left Mirror Actuator



2H

CONDITIONS

- Ignition Switch
Position: 0

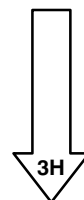
RESULTS
Less than 50K ohms

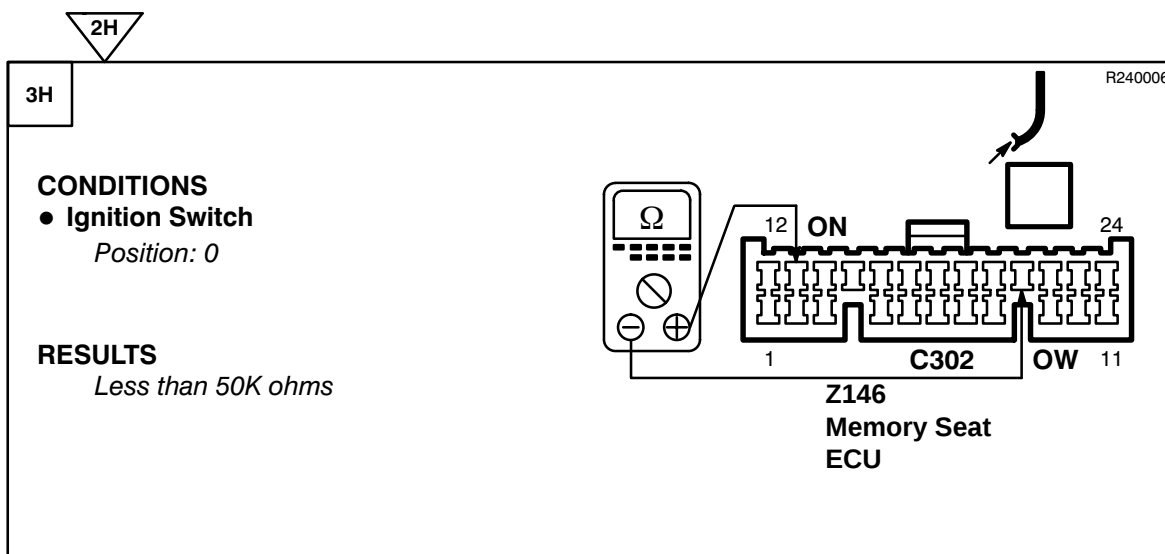
12
YG
1
PS
11
24
Z146
Memory Seat
ECU



PROBLEM CAUSE

- PS Wire
- YG Wire
- Left Mirror Actuator

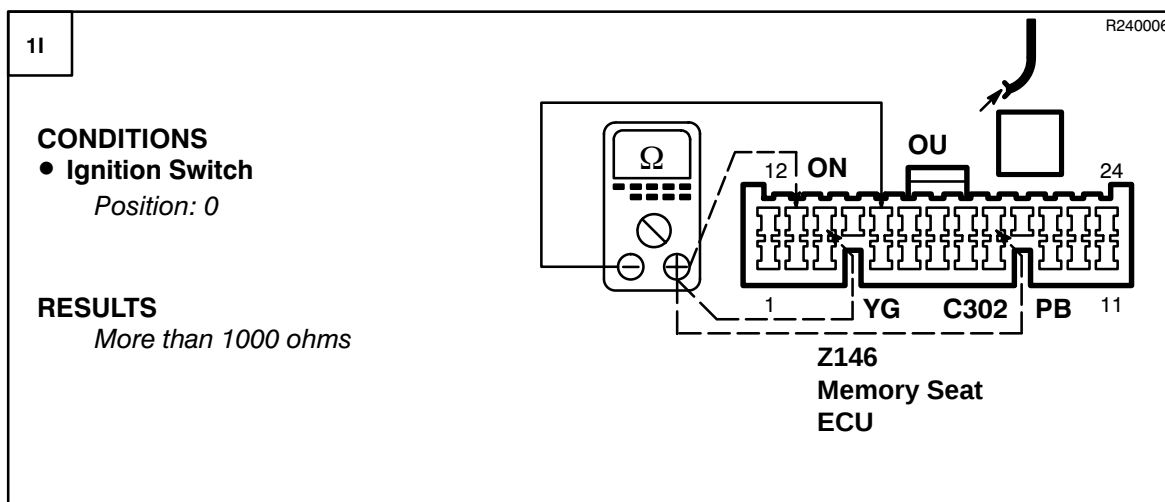


**PROBLEM CAUSE**

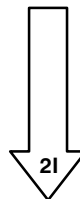
- ON Wire
- OW Wire
- Left Mirror Actuator

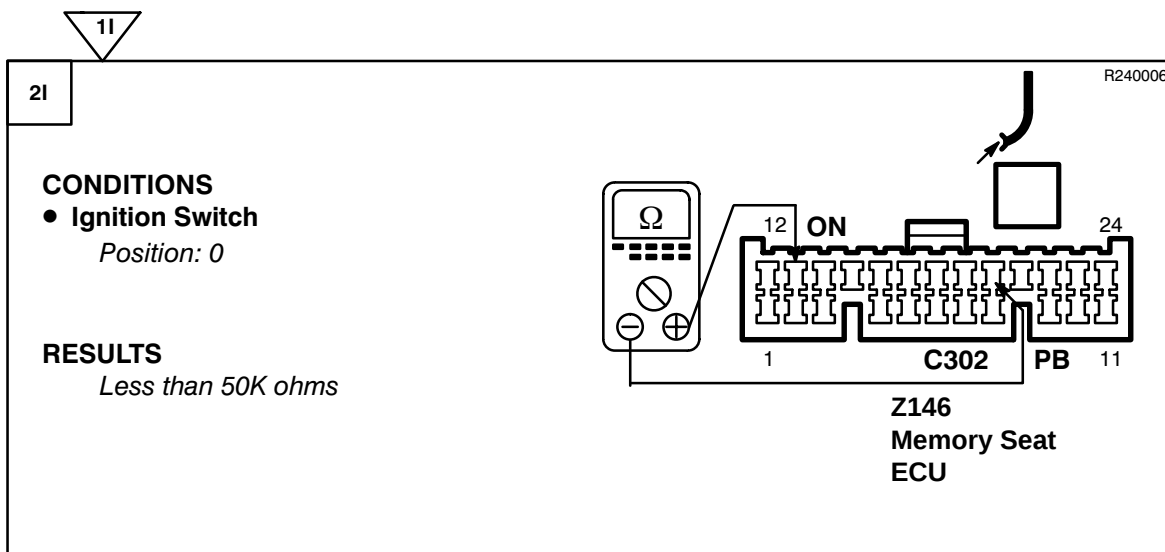
**PROBLEM CAUSE**

- Memory Seat ECU

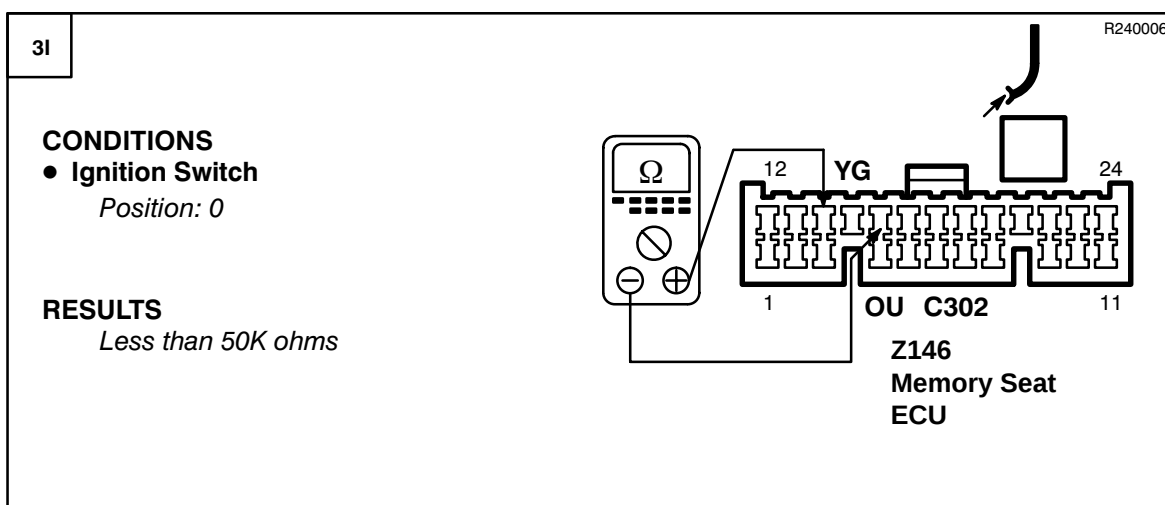
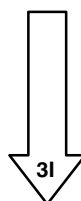
Test I**PROBLEM CAUSE**

- OU, OW, ON Wire
- YG, PS, PB Wire
- Right Mirror Actuator



**PROBLEM CAUSE**

- ON Wire
- PB Wire
- Right Mirror Actuator

**PROBLEM CAUSE**

- Right Mirror Actuator

**PROBLEM CAUSE**

- Memory Seat ECU

Test J

1J

CONDITIONS

- Ignition Switch
Position: I
- Right Front Door
Open

RESULTS

- Right Front Seat Control Switch
Forward
+BAT VOLT
Backward
-BAT VOLT

RB

RW

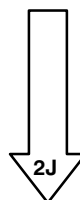
C328

Z146
Memory Seat
ECU

R090003



PROBLEM CAUSE
- Memory Seat
ECU



2J

CONDITIONS

- Ignition Switch
Position: I
- Right Front Door
Open

RESULTS

- Right Front Seat Control Switch
Rear up
-BAT VOLT
Rear down
+BAT VOLT

RW

RG

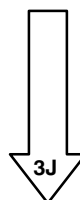
C328

Z146
Memory Seat
ECU

R090003



PROBLEM CAUSE
- Memory Seat
ECU



2J

3J

CONDITIONS

- Ignition Switch
Position: I
- Right Front Door
Open

RESULTS

- Right Front Seat Control Switch
Recline
+BAT VOLT
Raise
-BAT VOLT

RN

RU

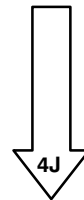
C328

Z146
Memory Seat
ECU

R090003



PROBLEM CAUSE
- Memory Seat
ECU



4J

CONDITIONS

- Ignition Switch
Position: I
- Right Front Door
Open

RESULTS

- Right Front Seat Control Switch
Front up
+BAT VOLT
Front down
-BAT VOLT

RP

RU

C328

Z146
Memory Seat
ECU

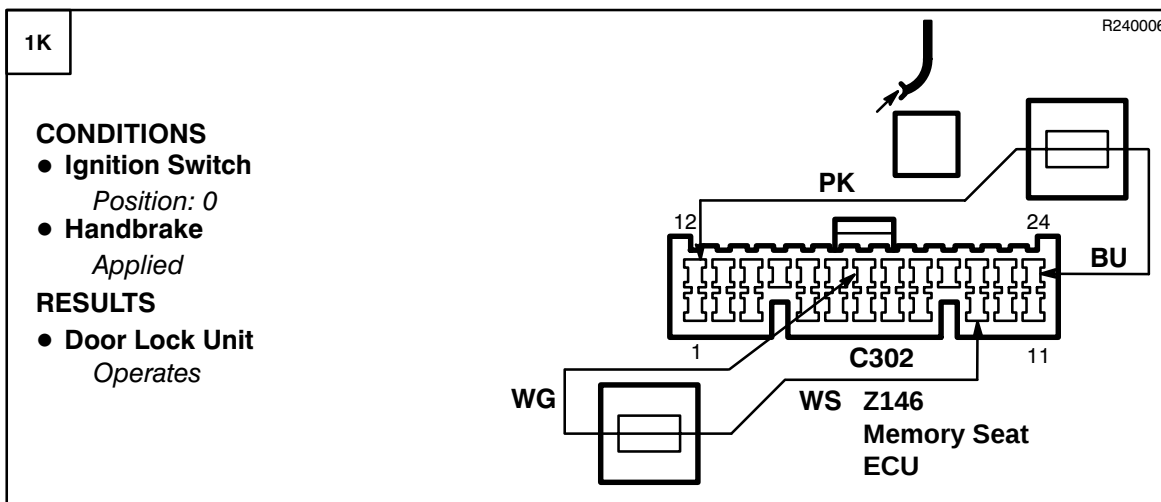
R090003



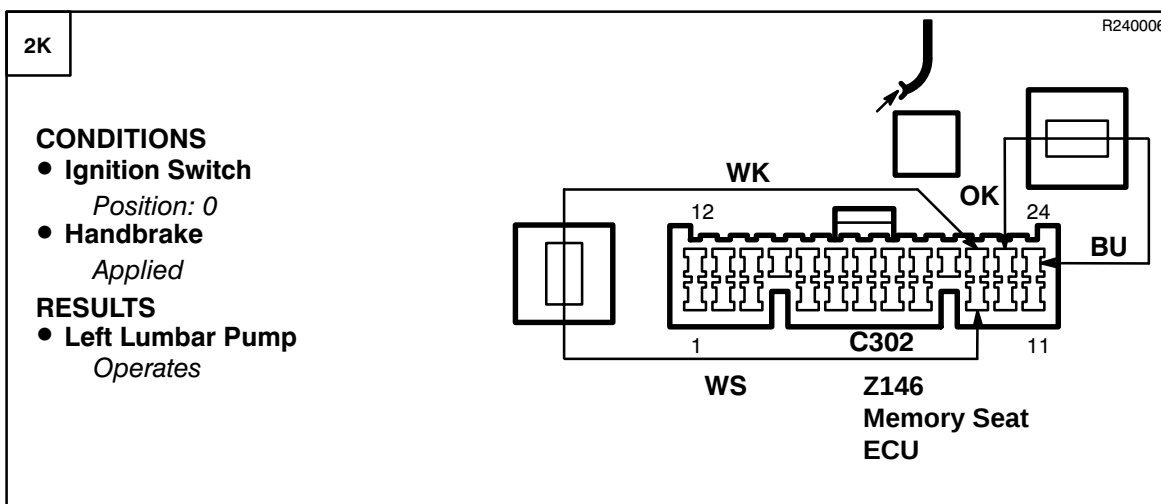
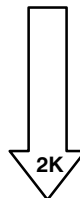
PROBLEM CAUSE
- Memory Seat
ECU



PROBLEM CAUSE
- Seat Motors

Test K**PROBLEM CAUSE**

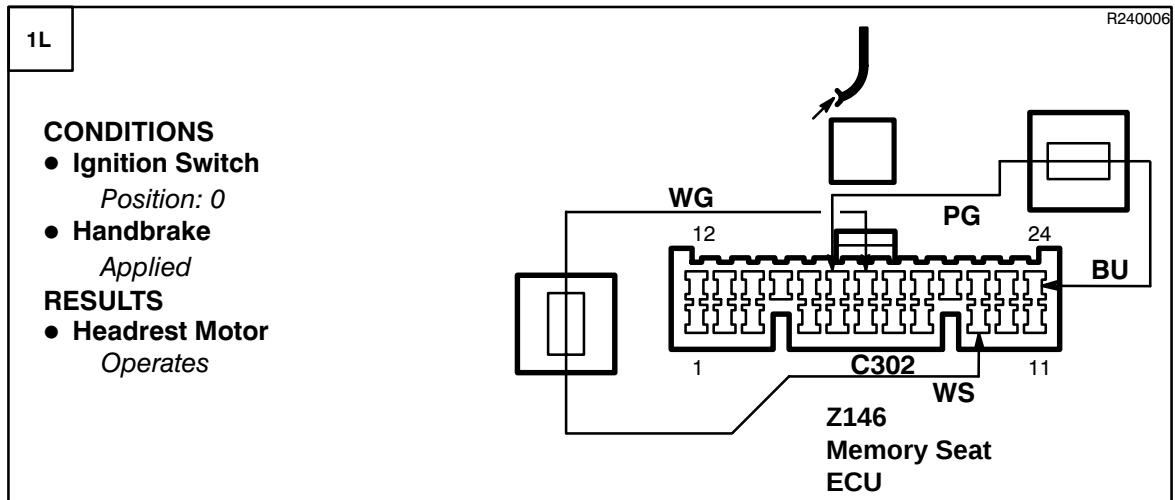
- WG, PR Wire
- PK, PU Wire
- Left Mirror Actuator

**PROBLEM CAUSE**

- WK, WP Wire
- OK Wire
- Left Mirror Actuator

**PROBLEM CAUSE**

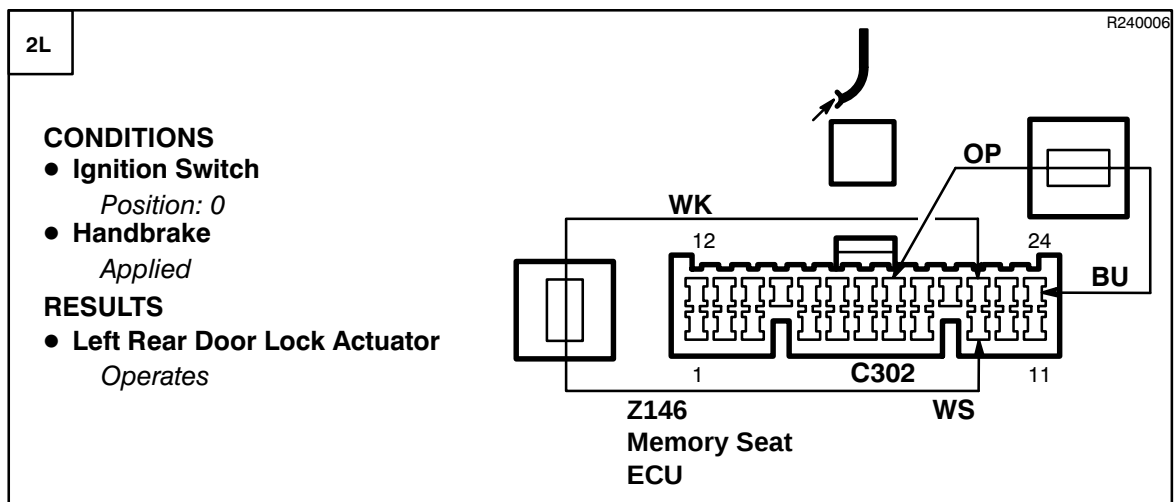
- Memory Seat ECU

Test L**PROBLEM CAUSE**

- WG, PR Wire
- PG, PU Wire
- Right Mirror Actuator



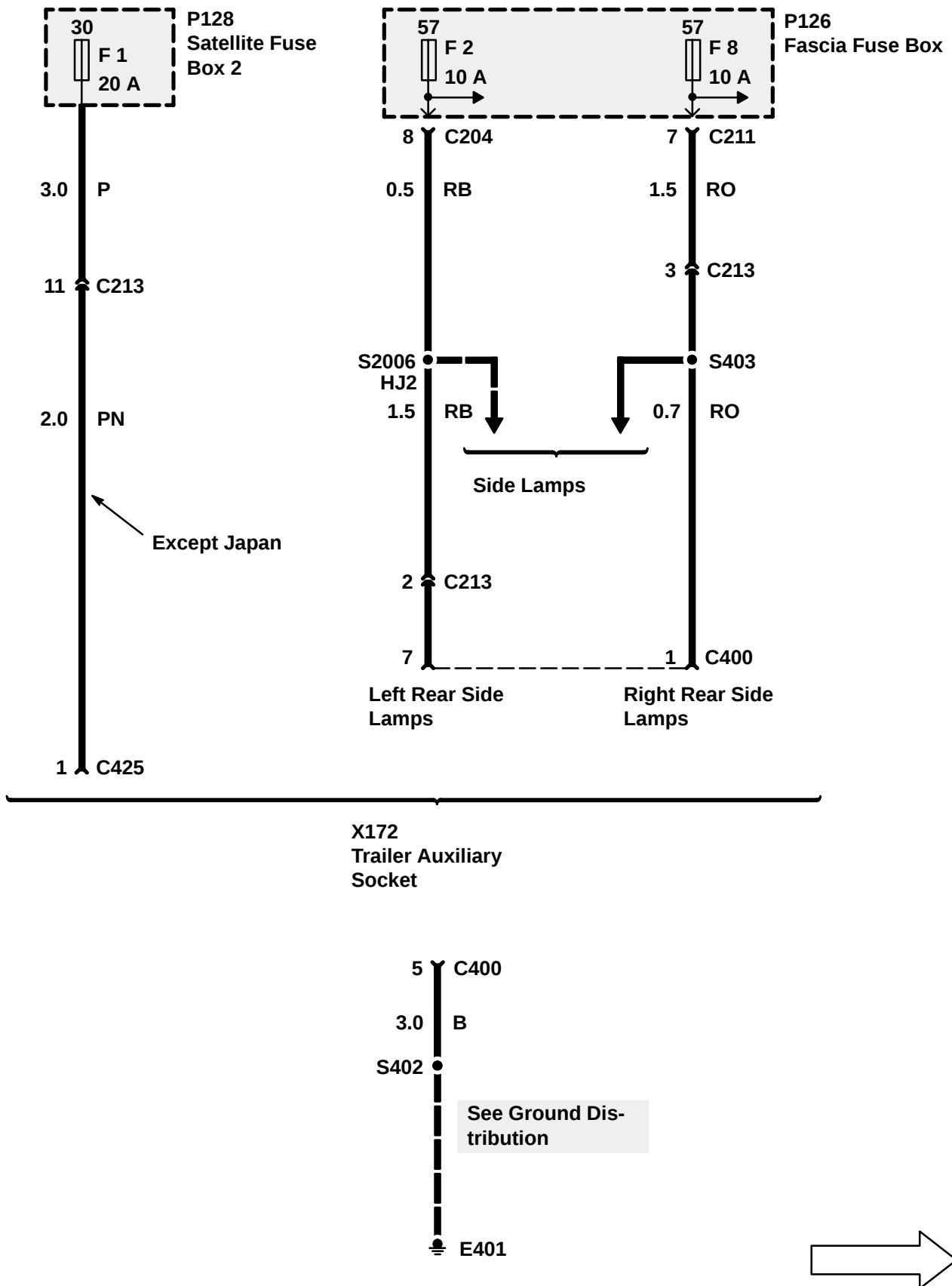
2L

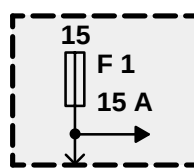
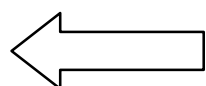
**PROBLEM CAUSE**

- WK, WP Wire
- OK, OP Wire
- Right Mirror Actuator

**PROBLEM CAUSE**

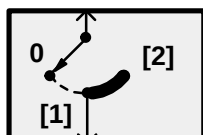
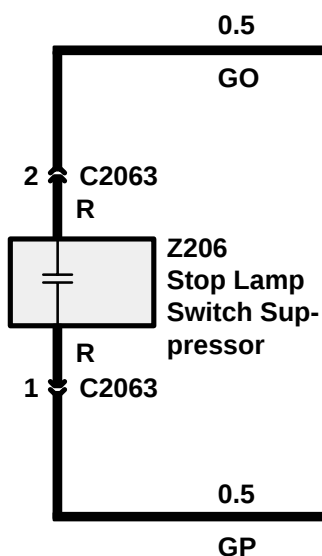
- Memory Seat ECU



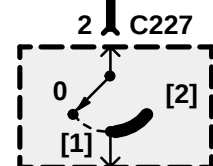
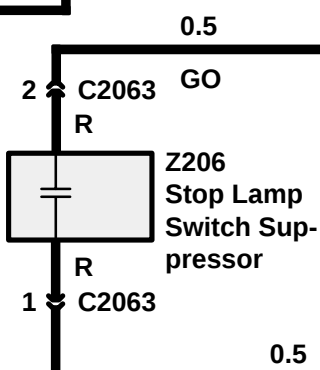
**P126**
Fascia Fuse Box21 C200
1.0 GO

Without ABS

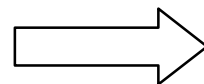
With ABS

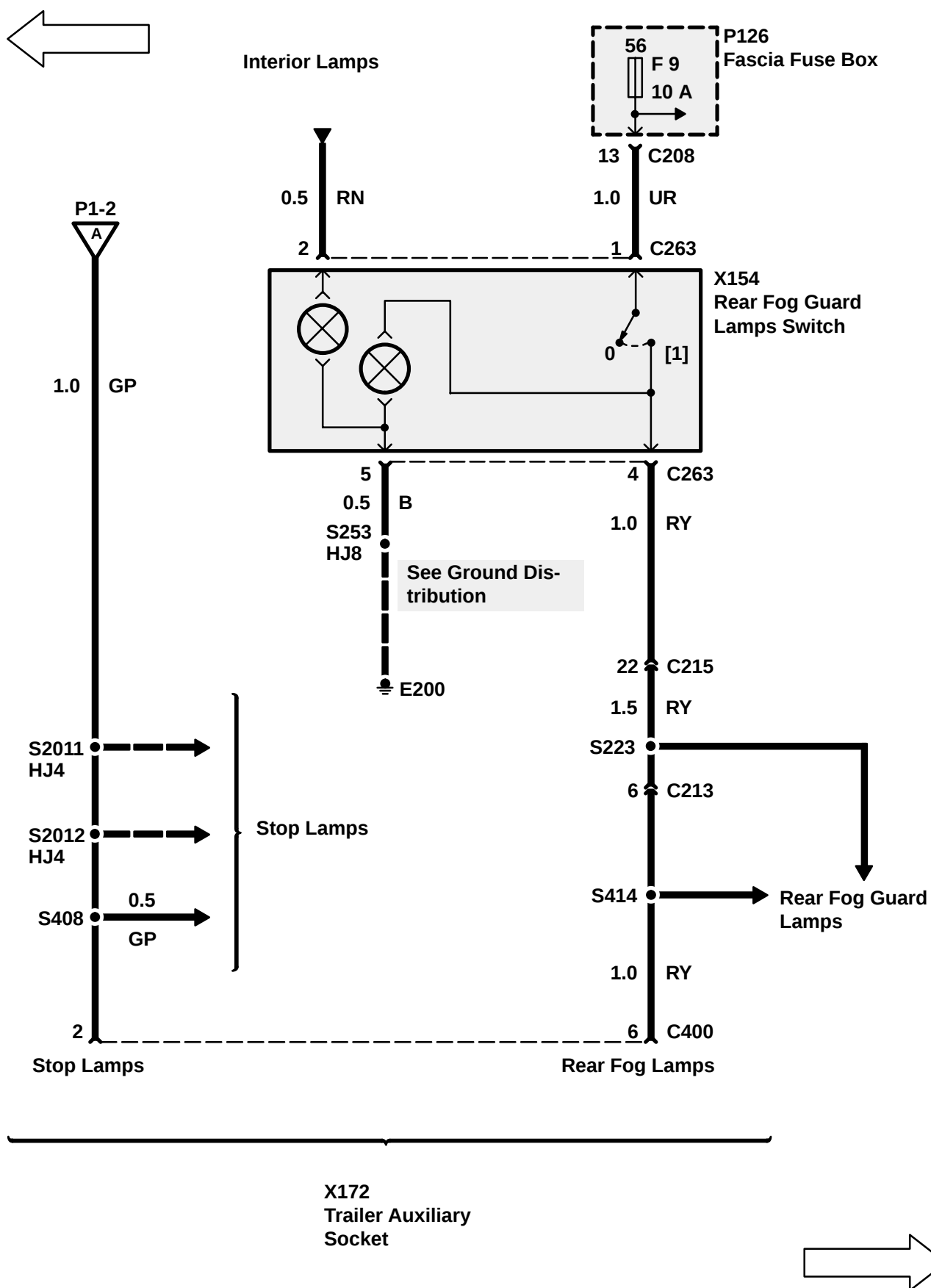
X168
Stop Lamp
Switch
[1] Brake Pedal
Depressed
[2] Brake Pedal
Further De-
pressed

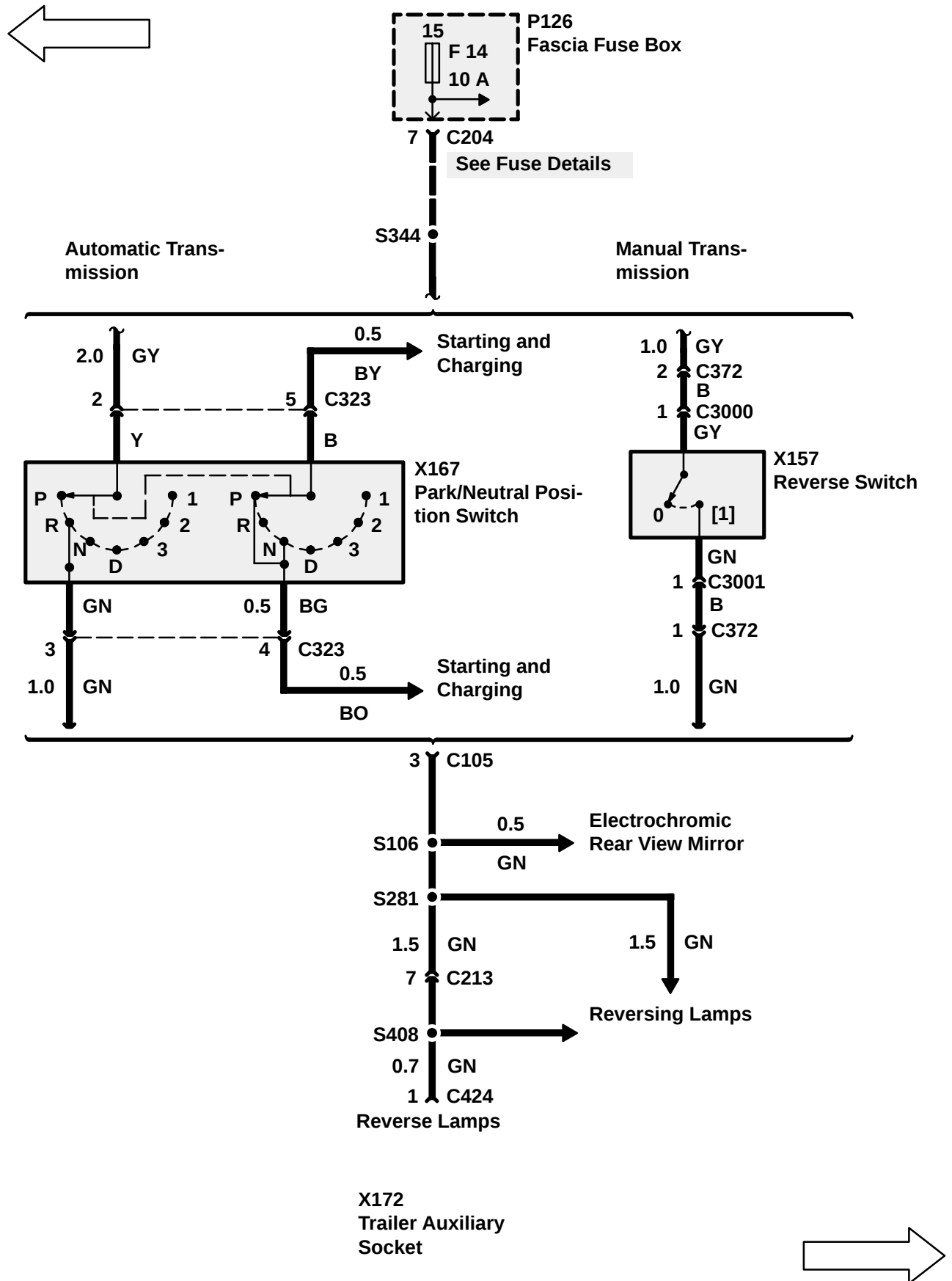
1.0 GP

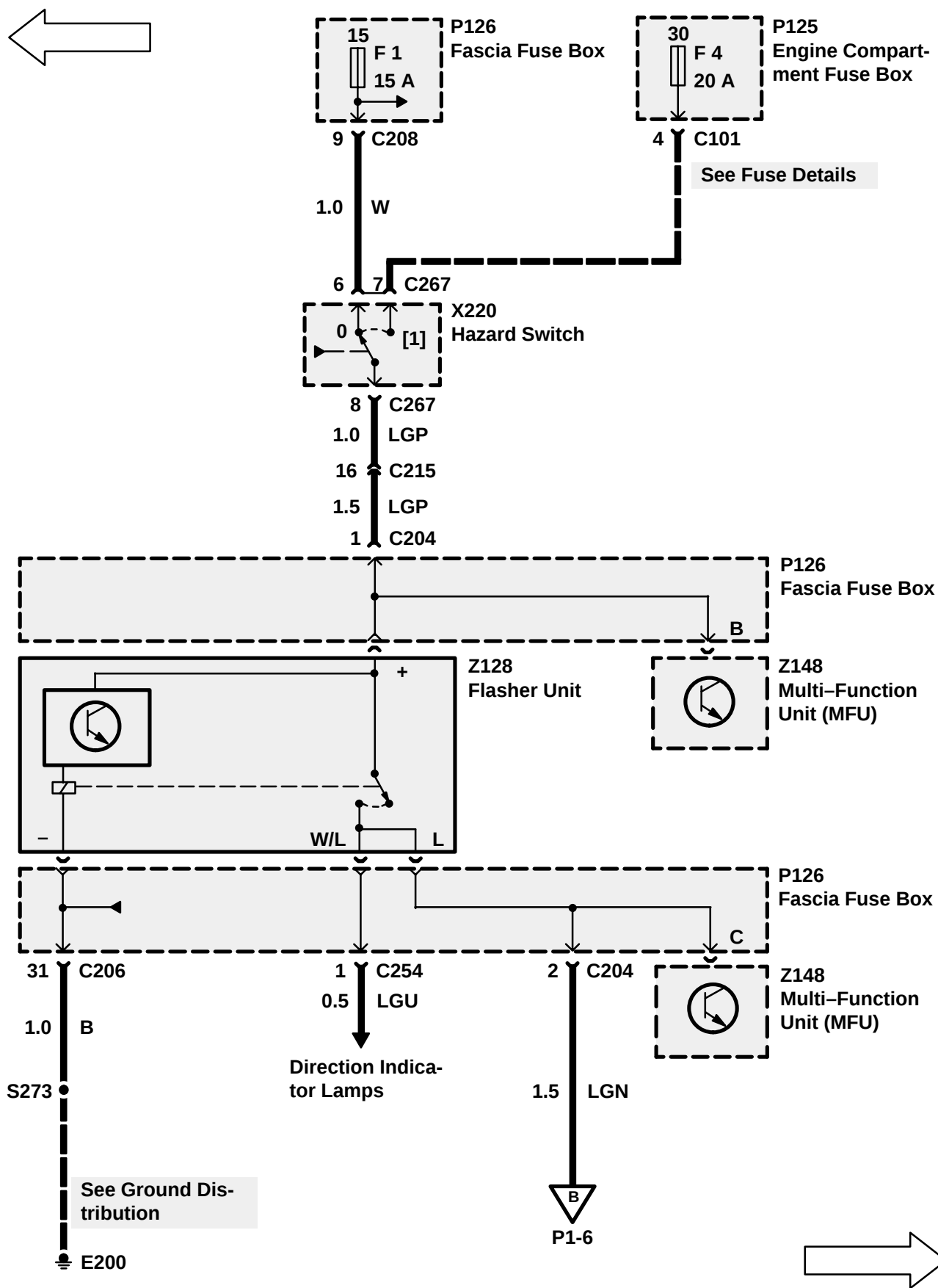
X168
Stop Lamp
Switch
[1] Brake Pedal
Depressed
[2] Brake Pedal
Further De-
pressed1.0 GP
1.0 GP

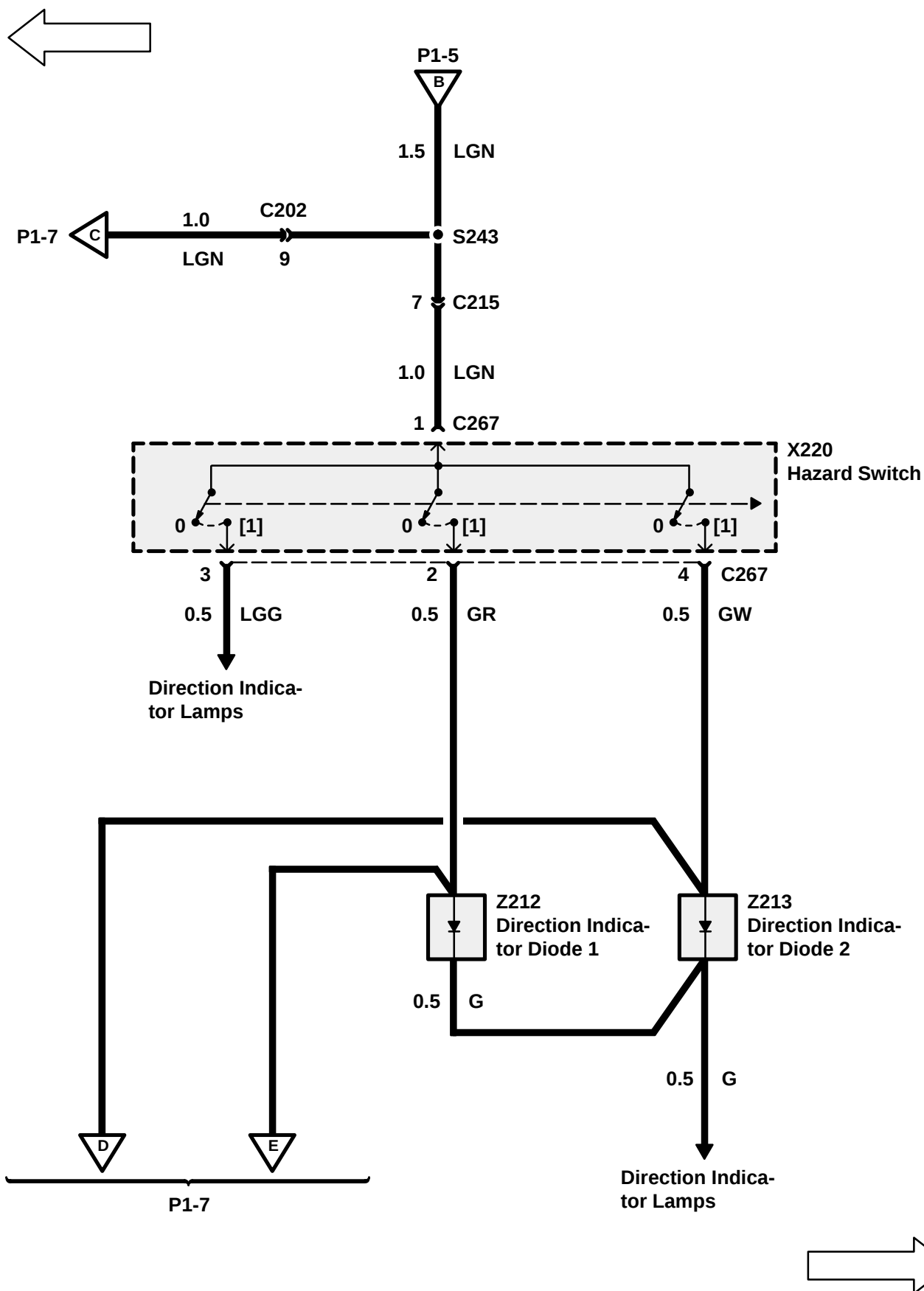
P1-3

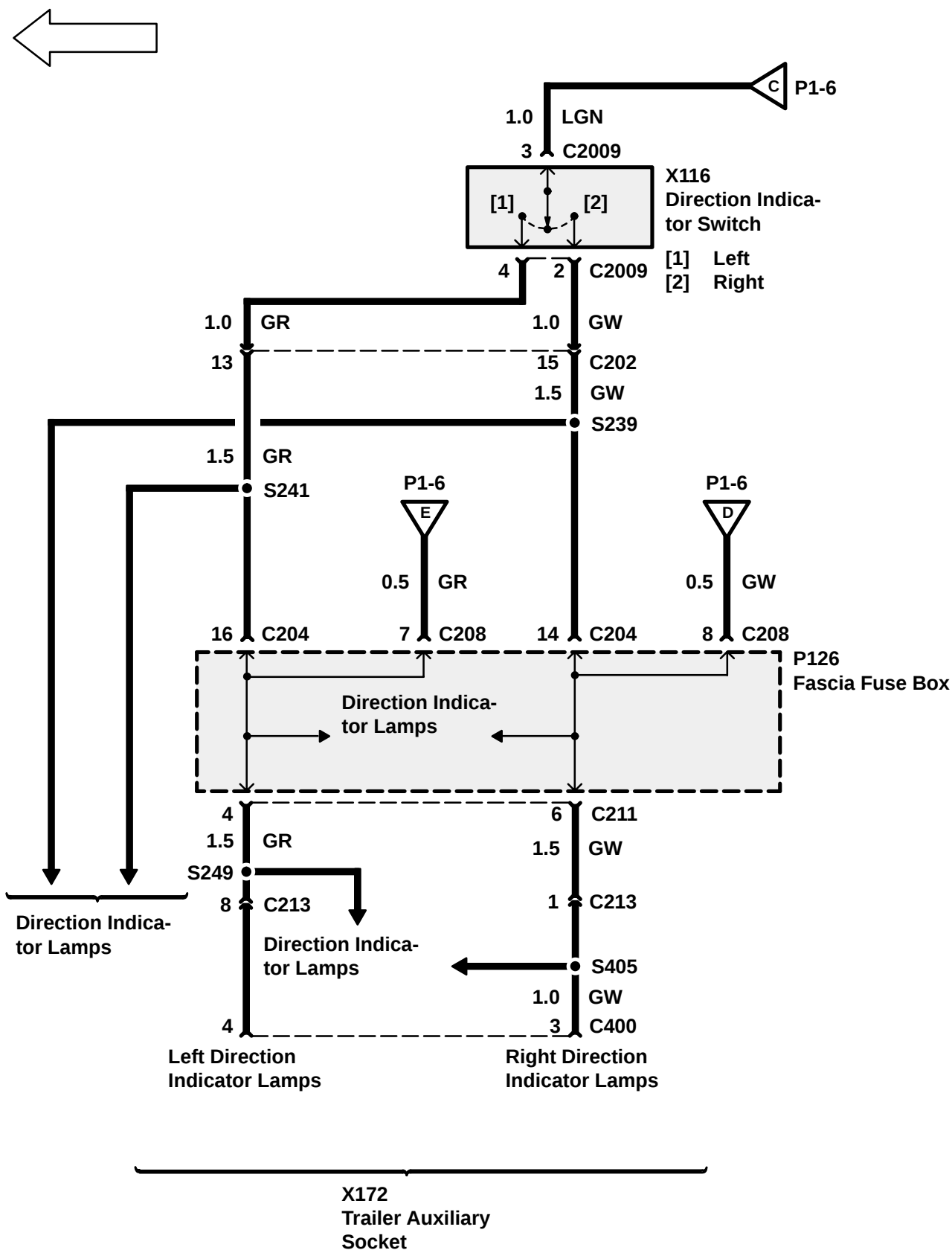


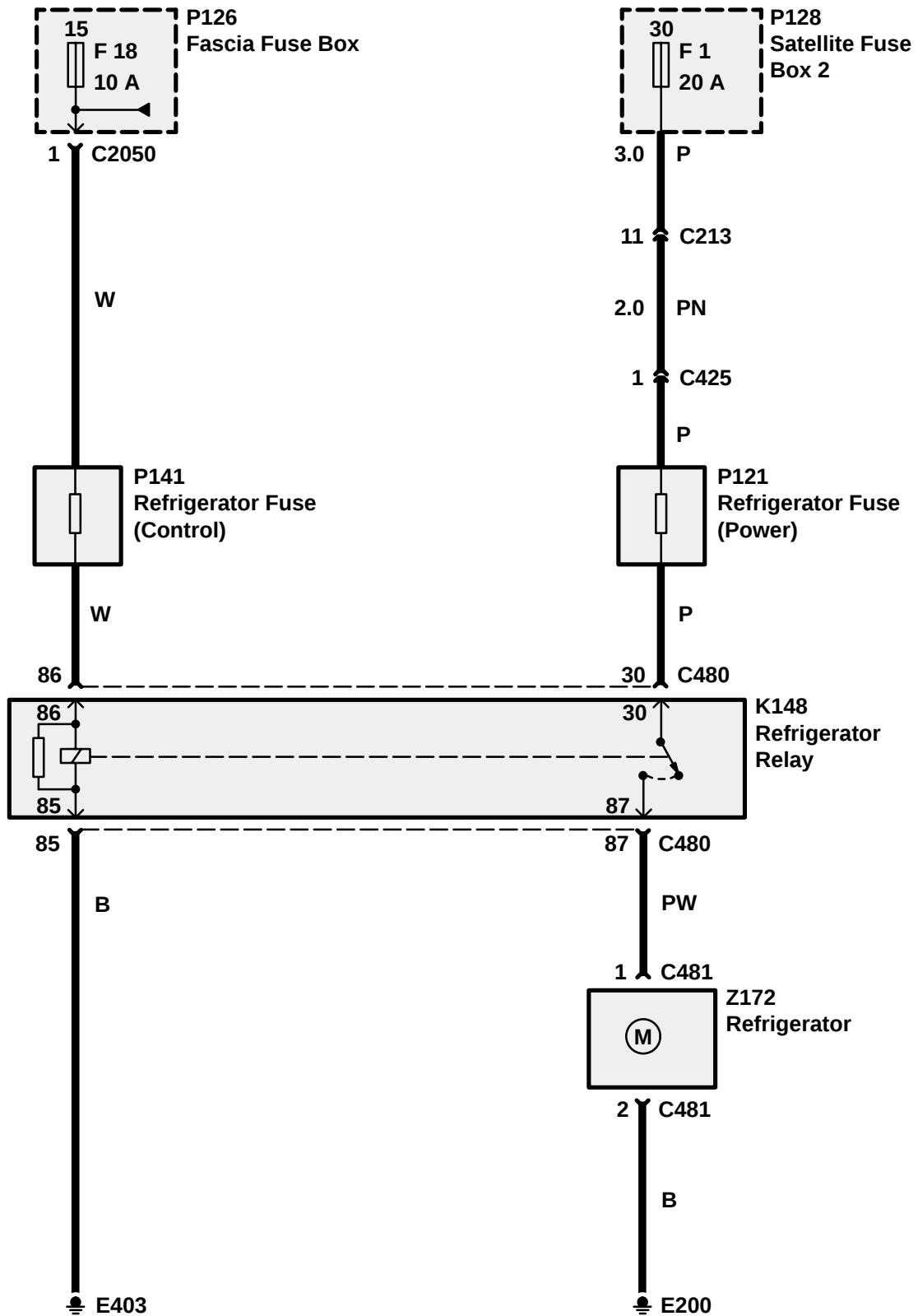


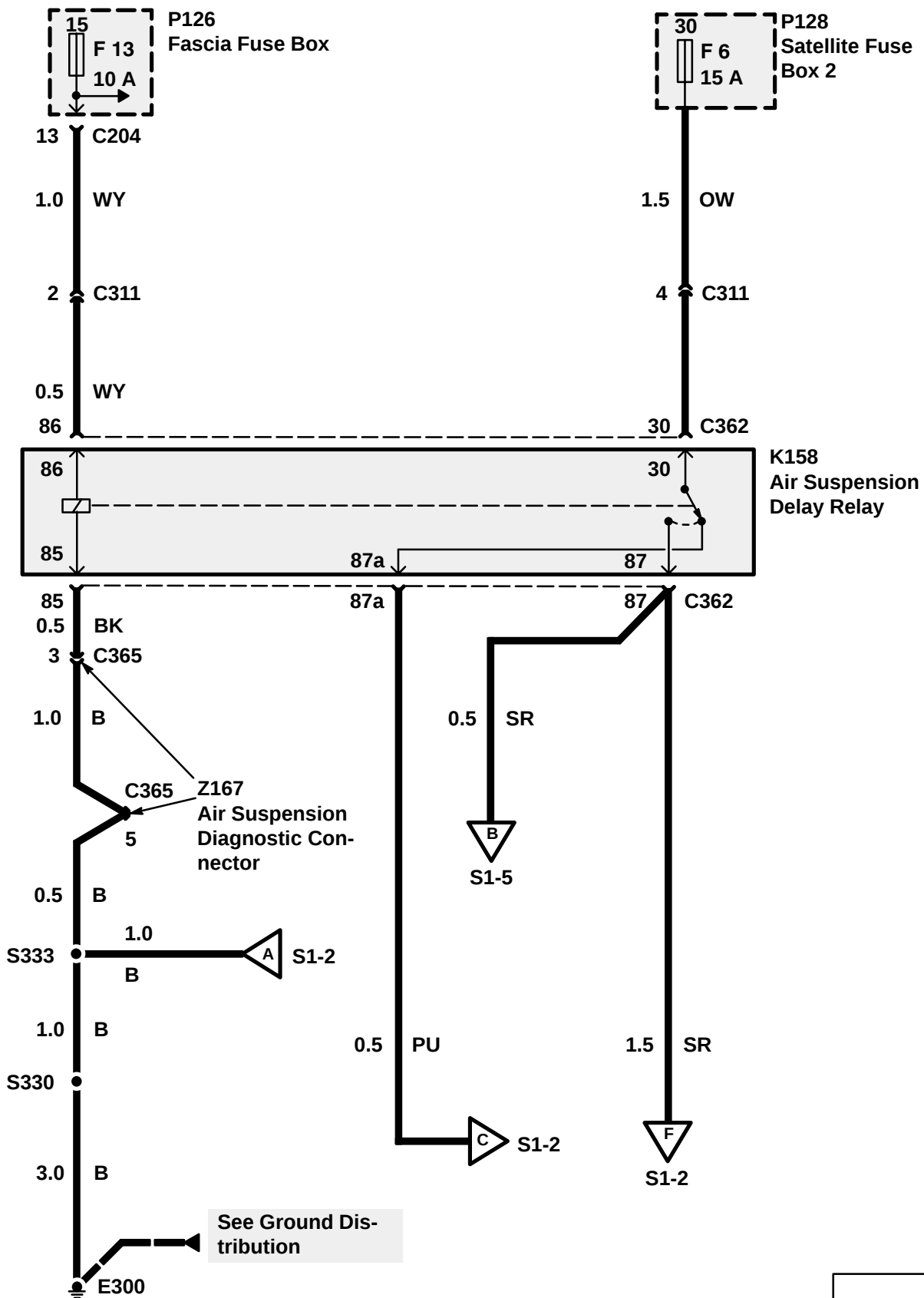


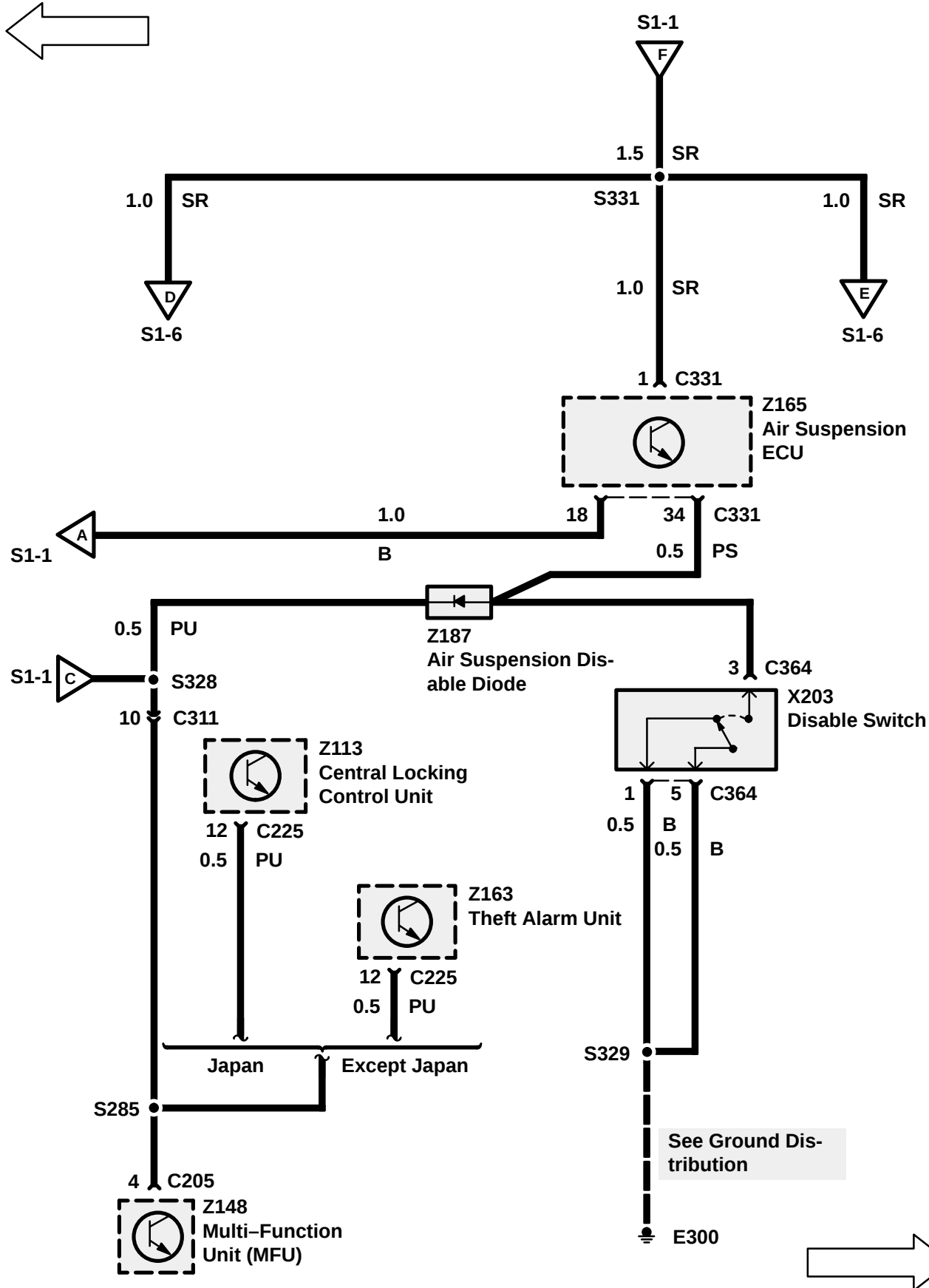


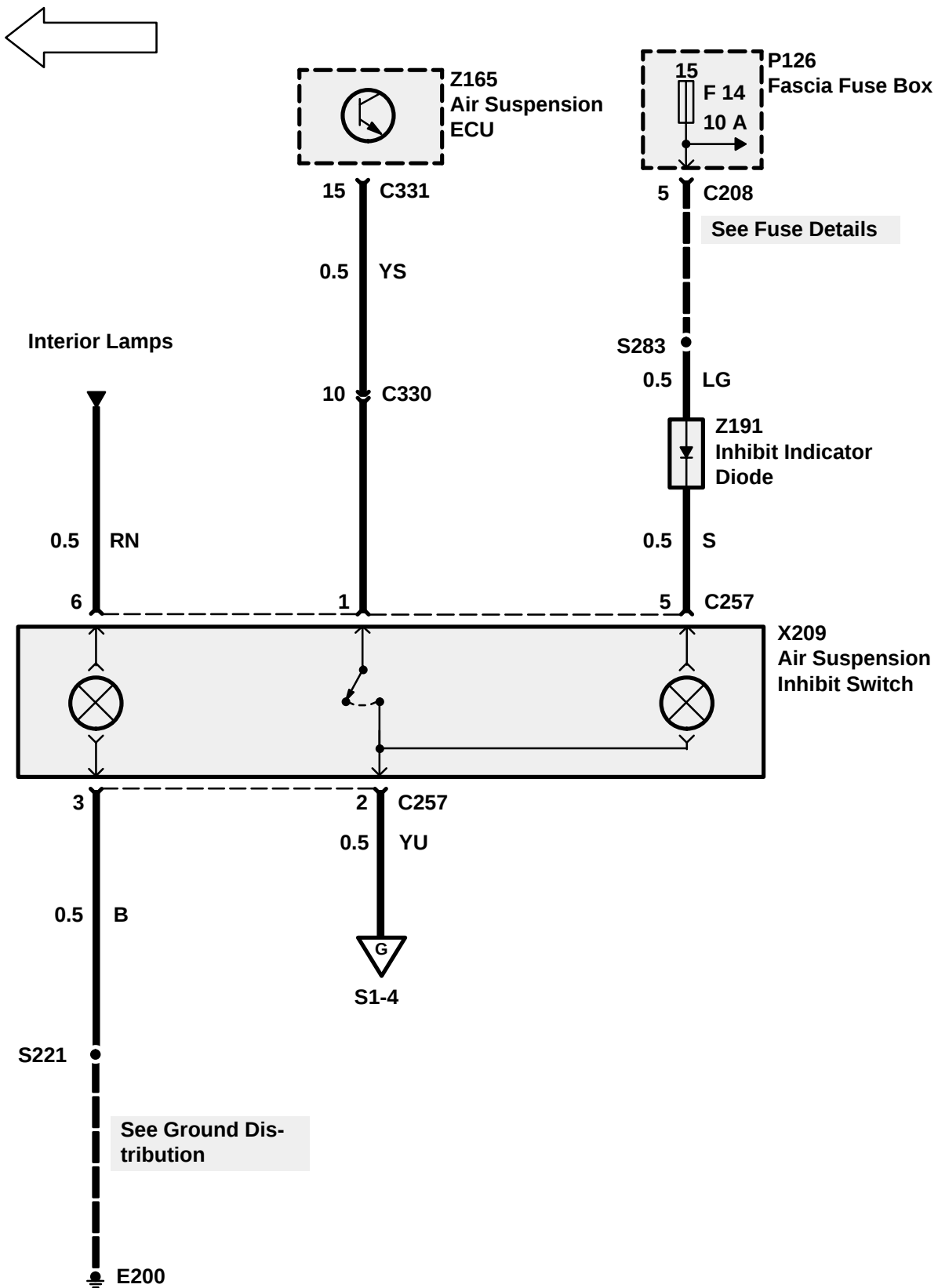


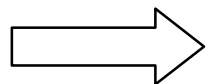
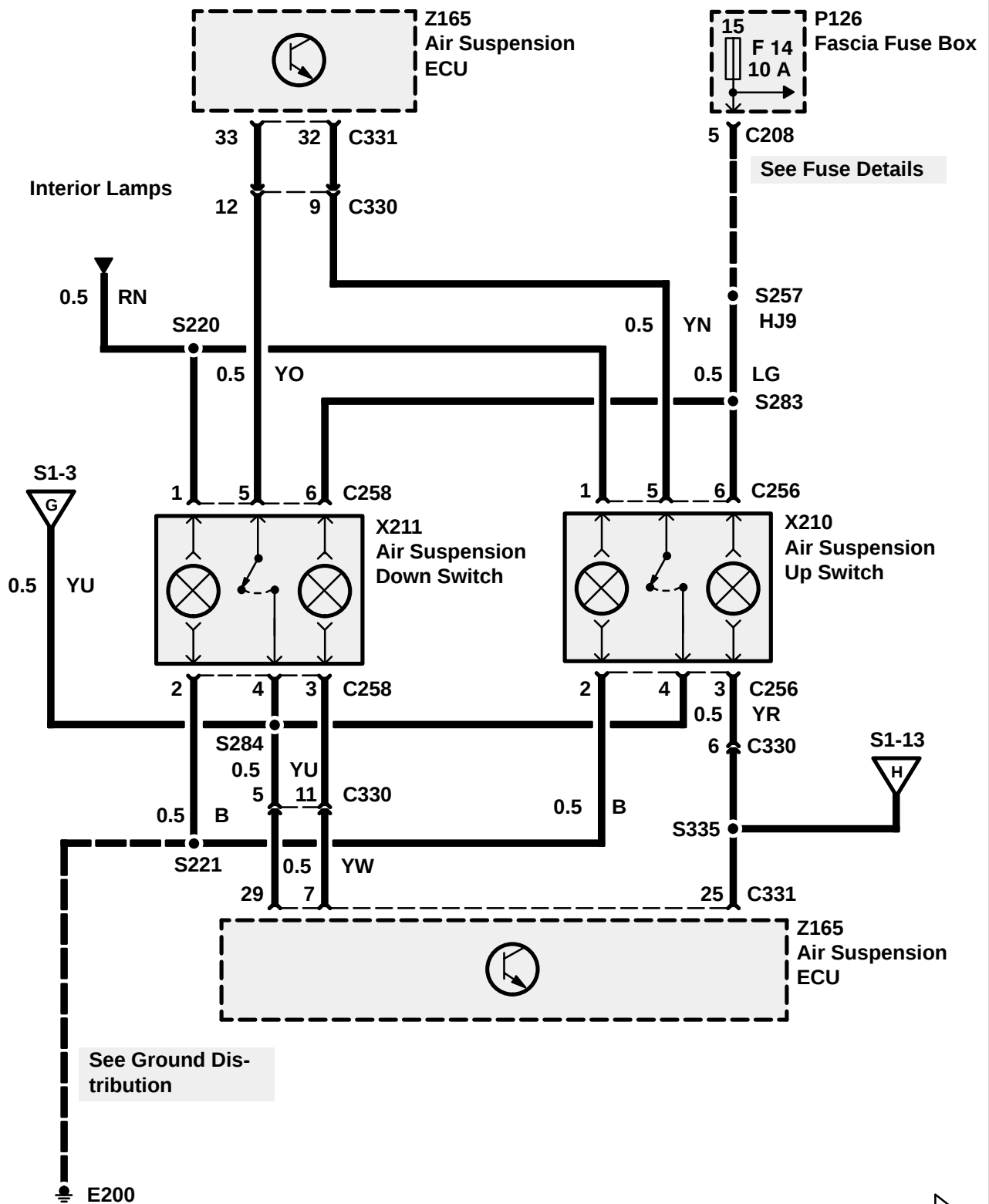
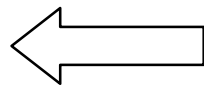


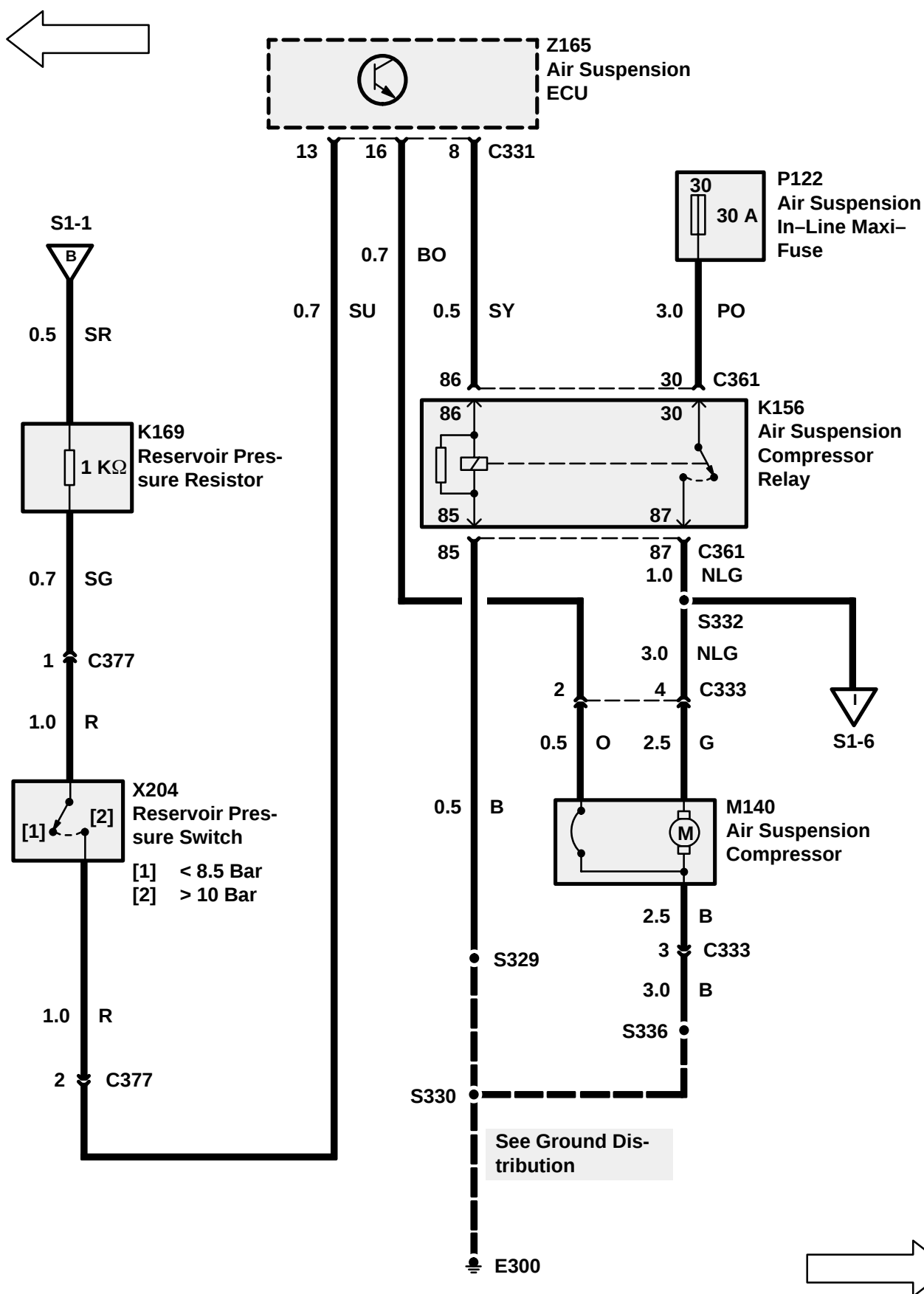


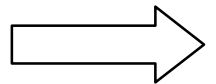
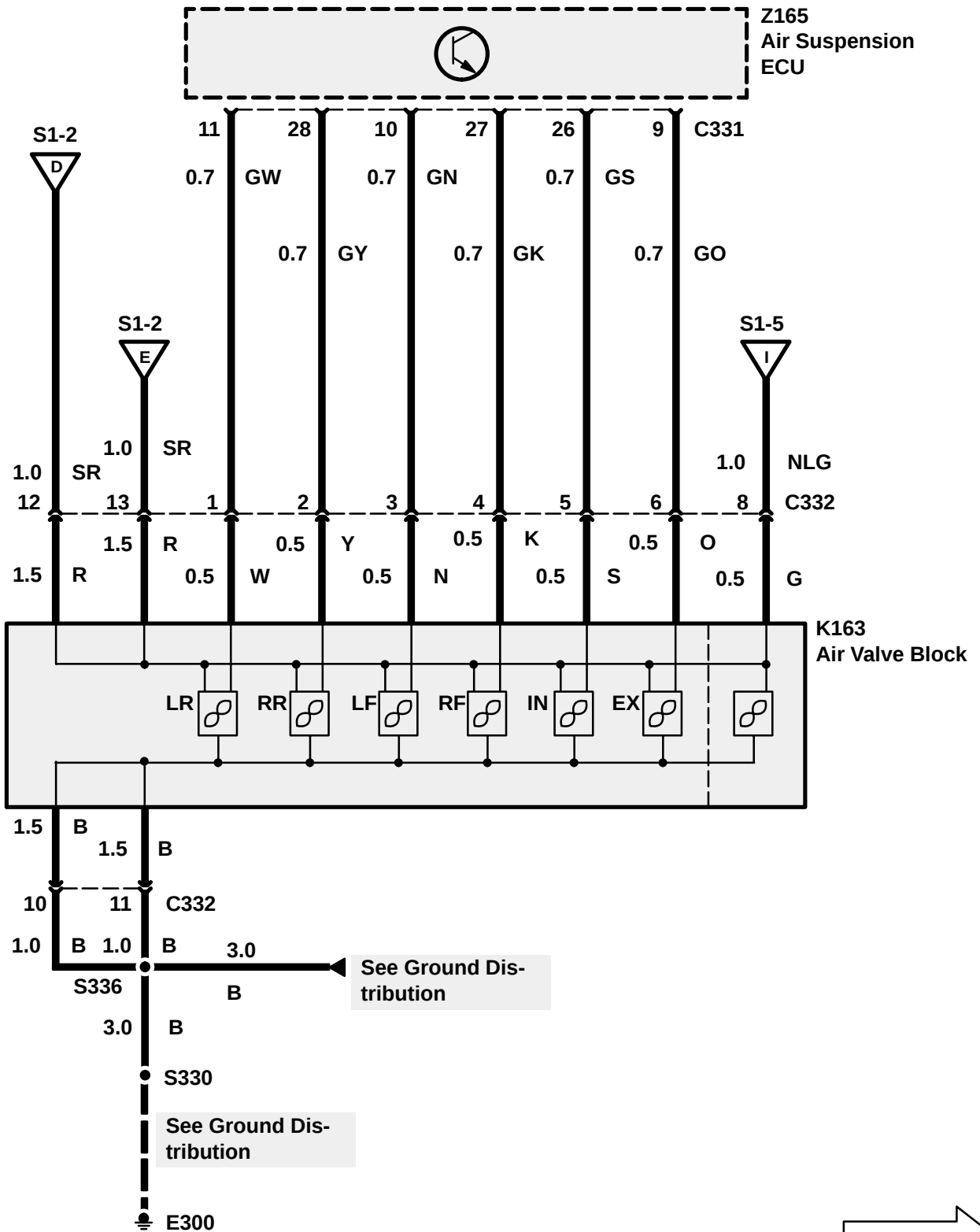
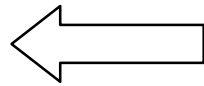


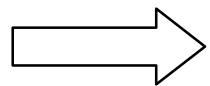
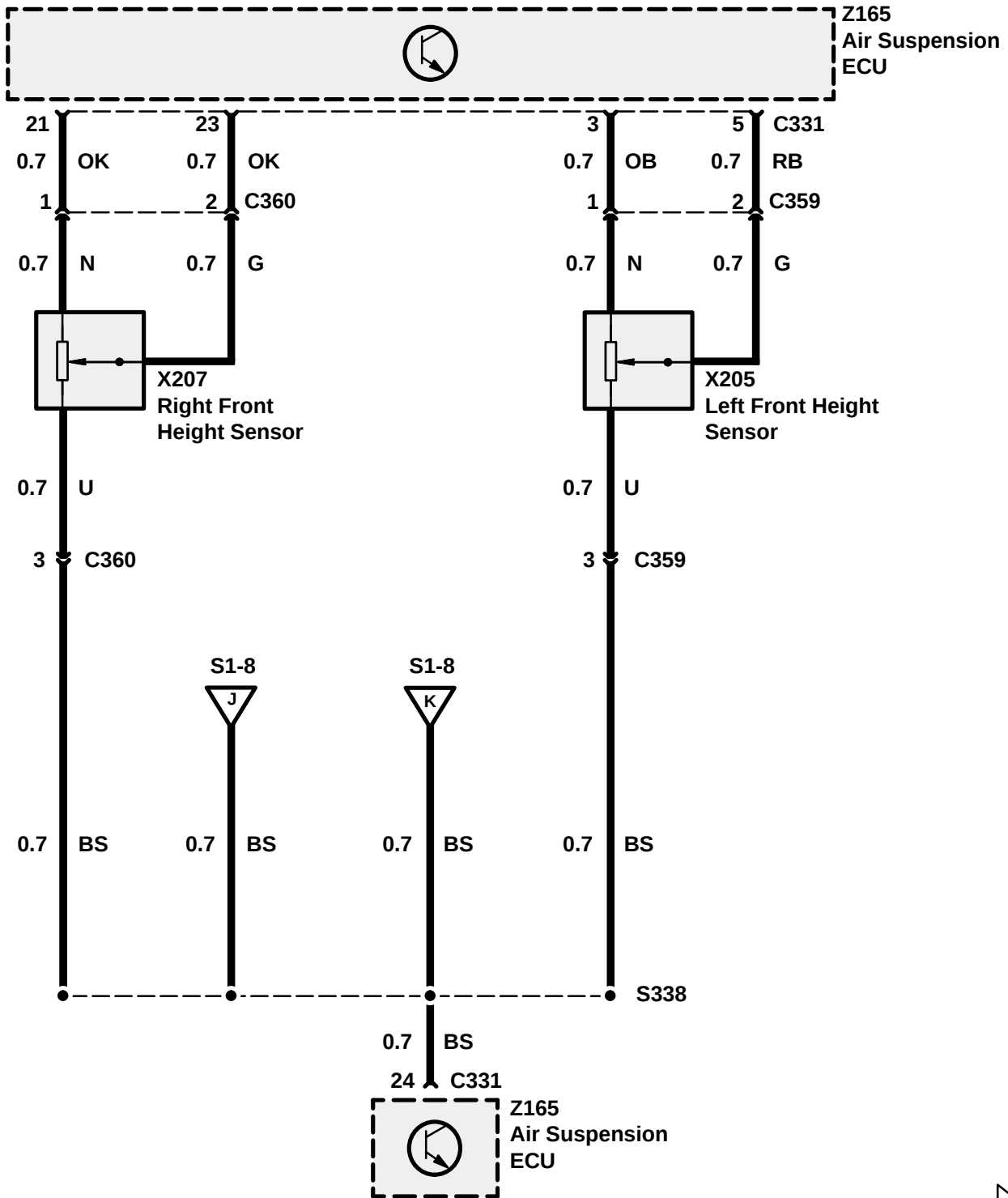
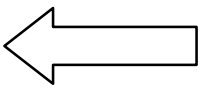


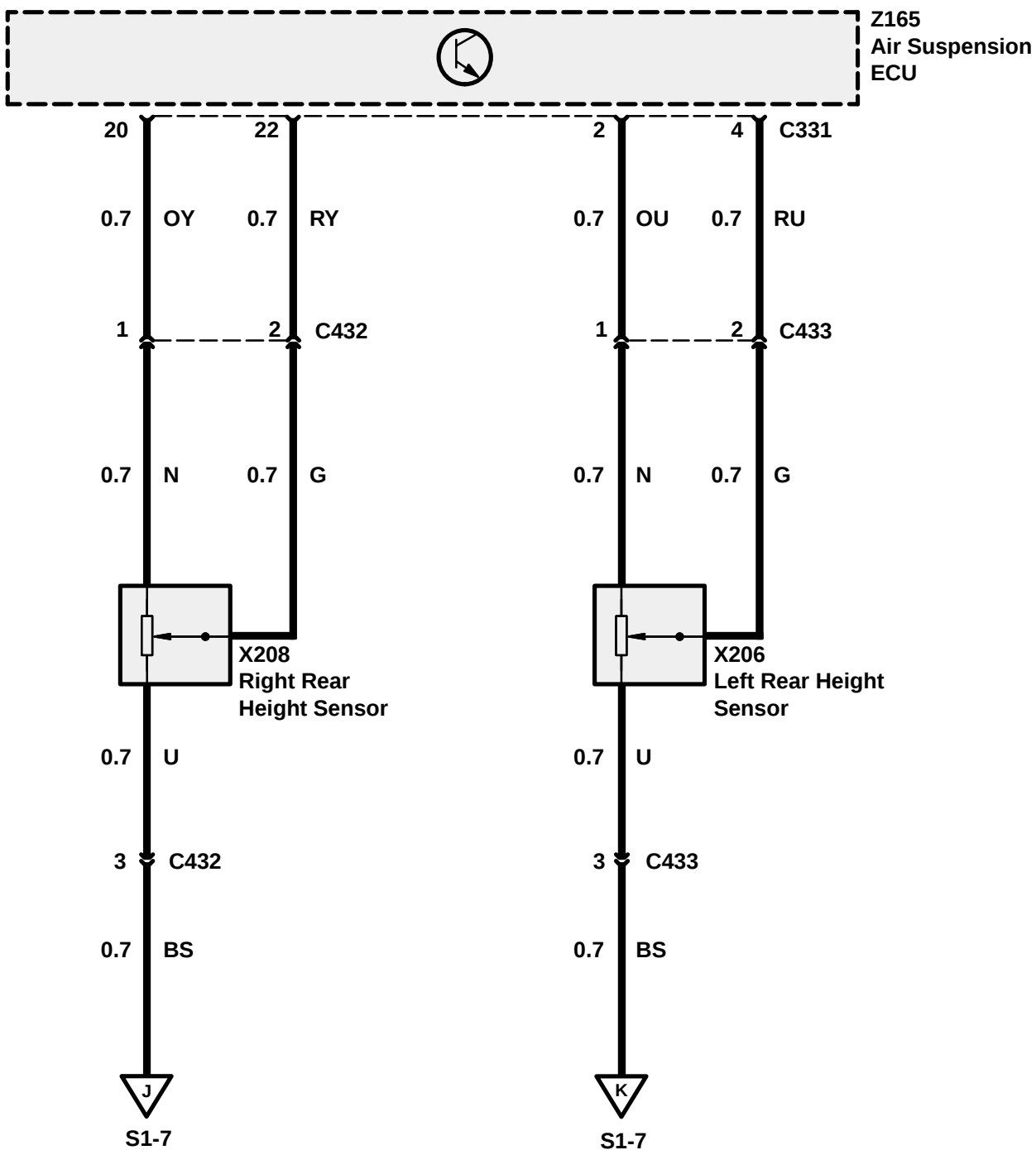


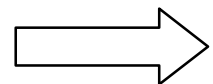
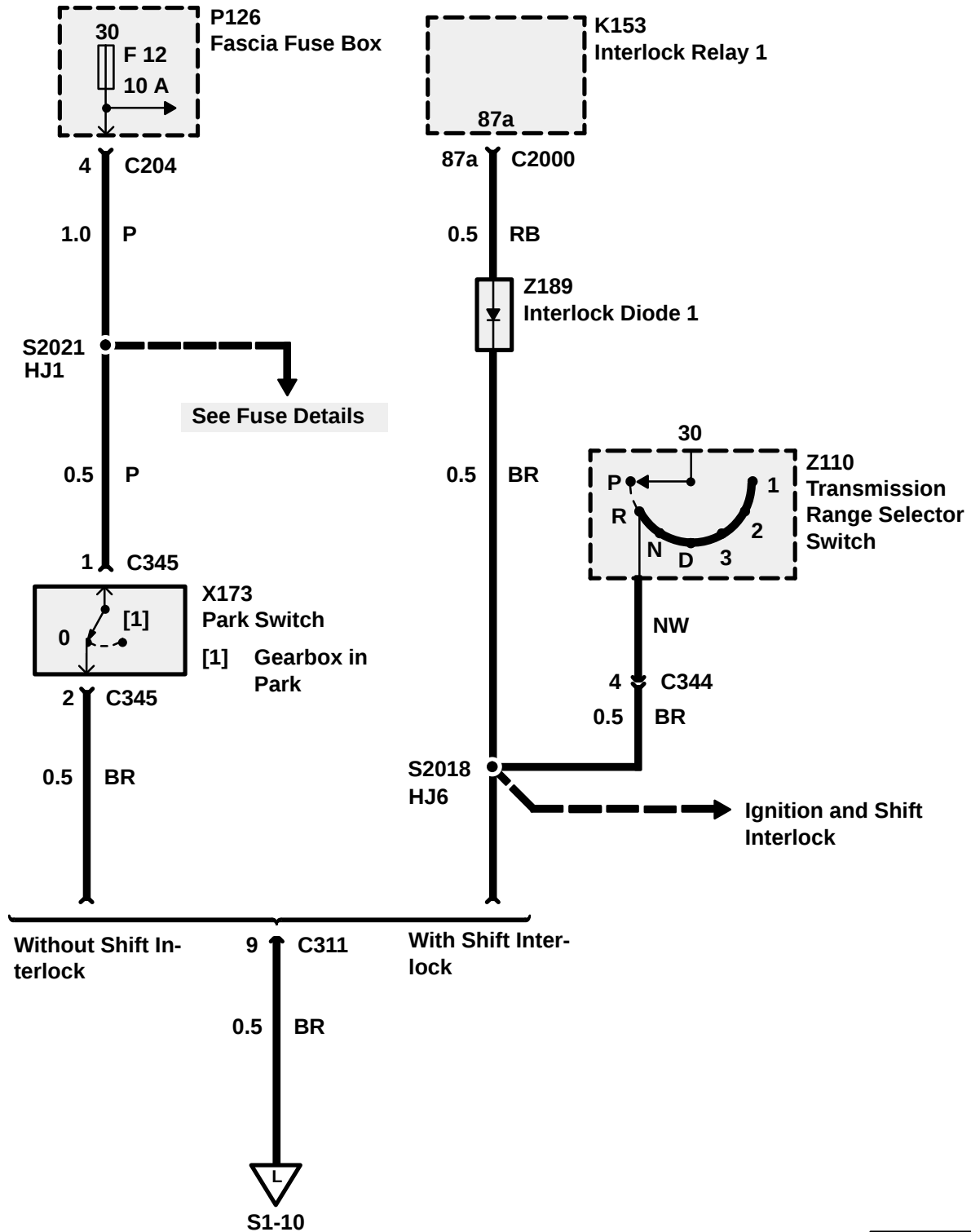
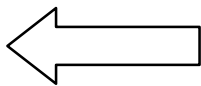


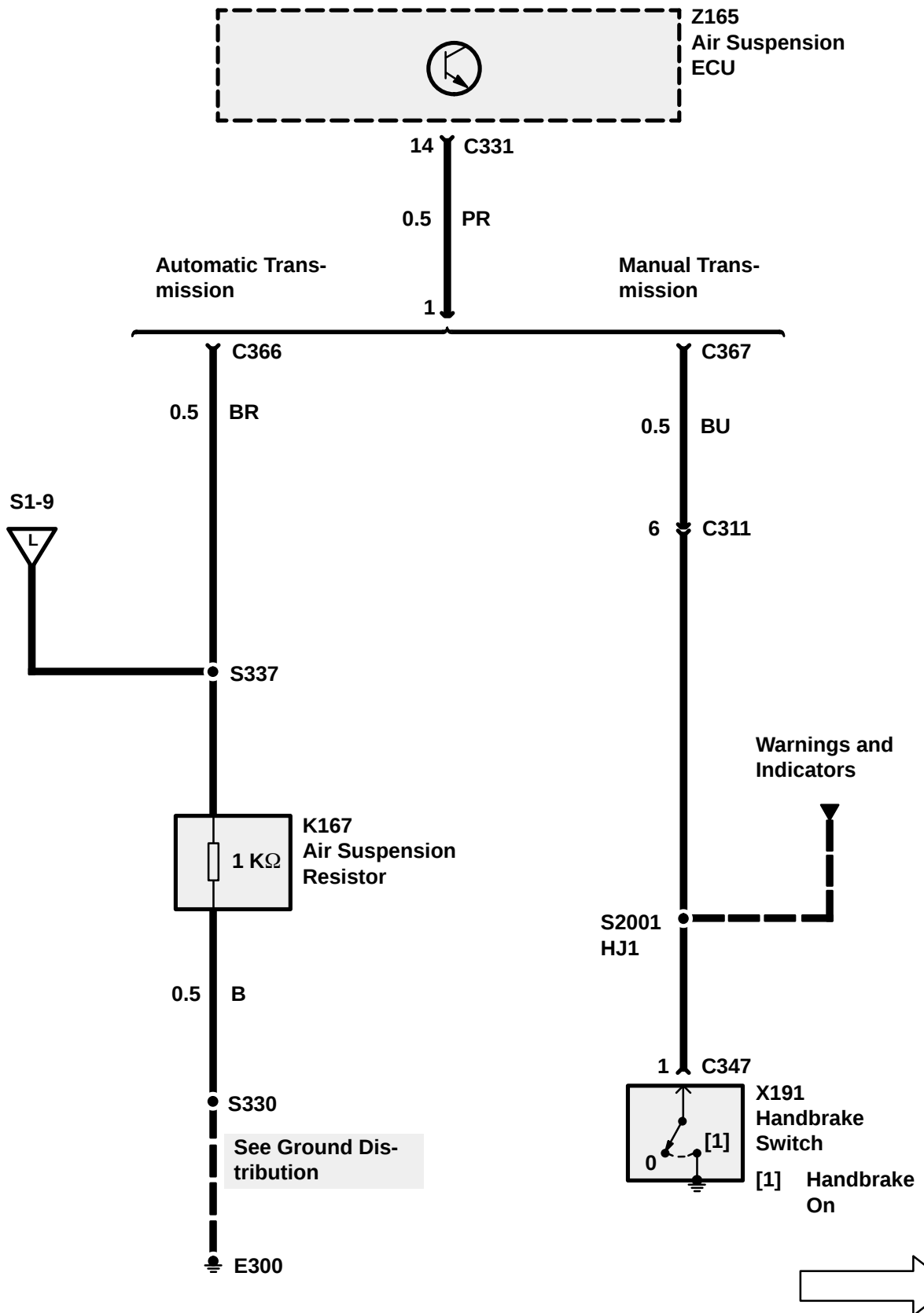
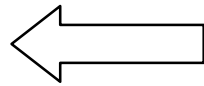


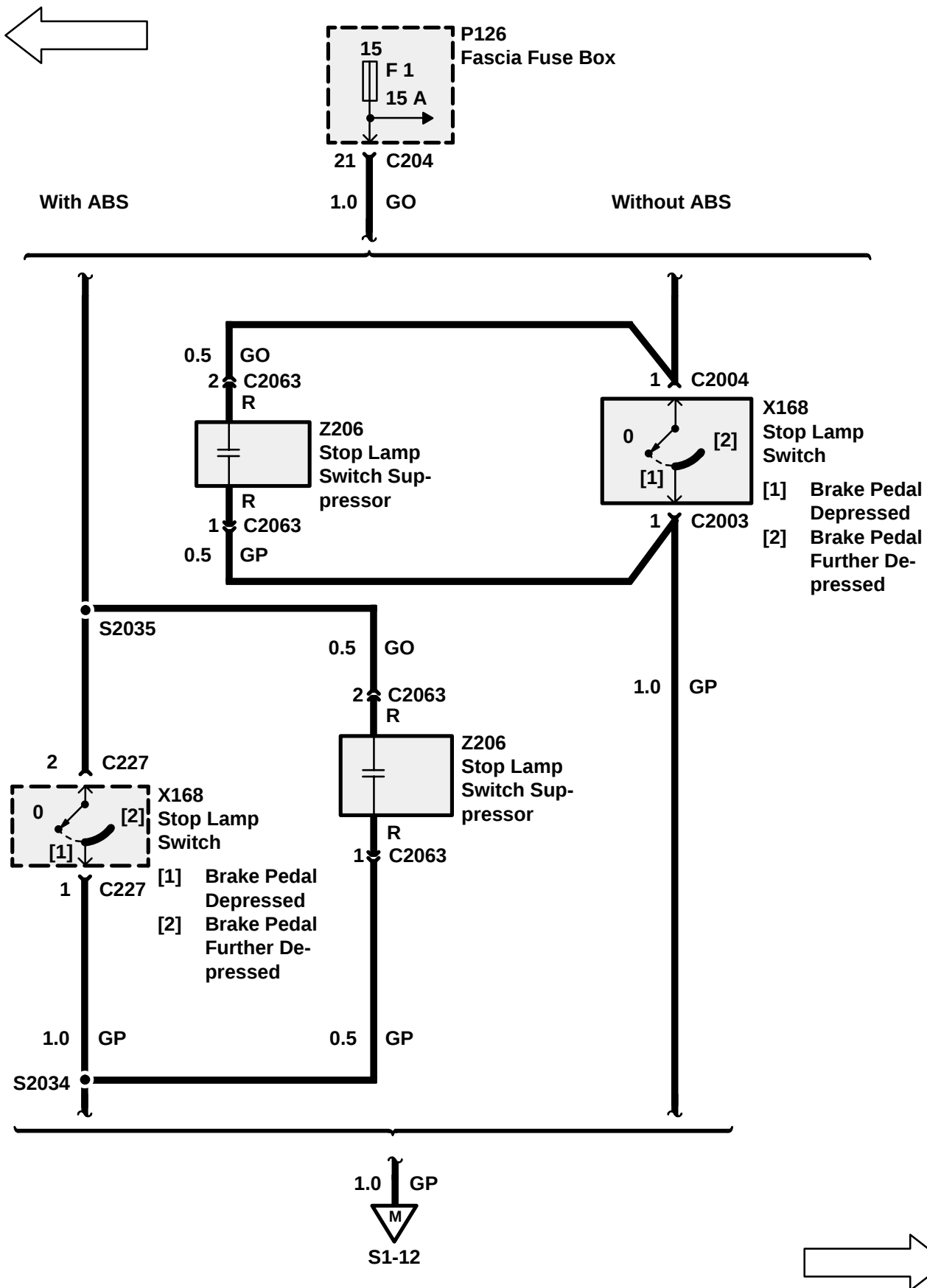


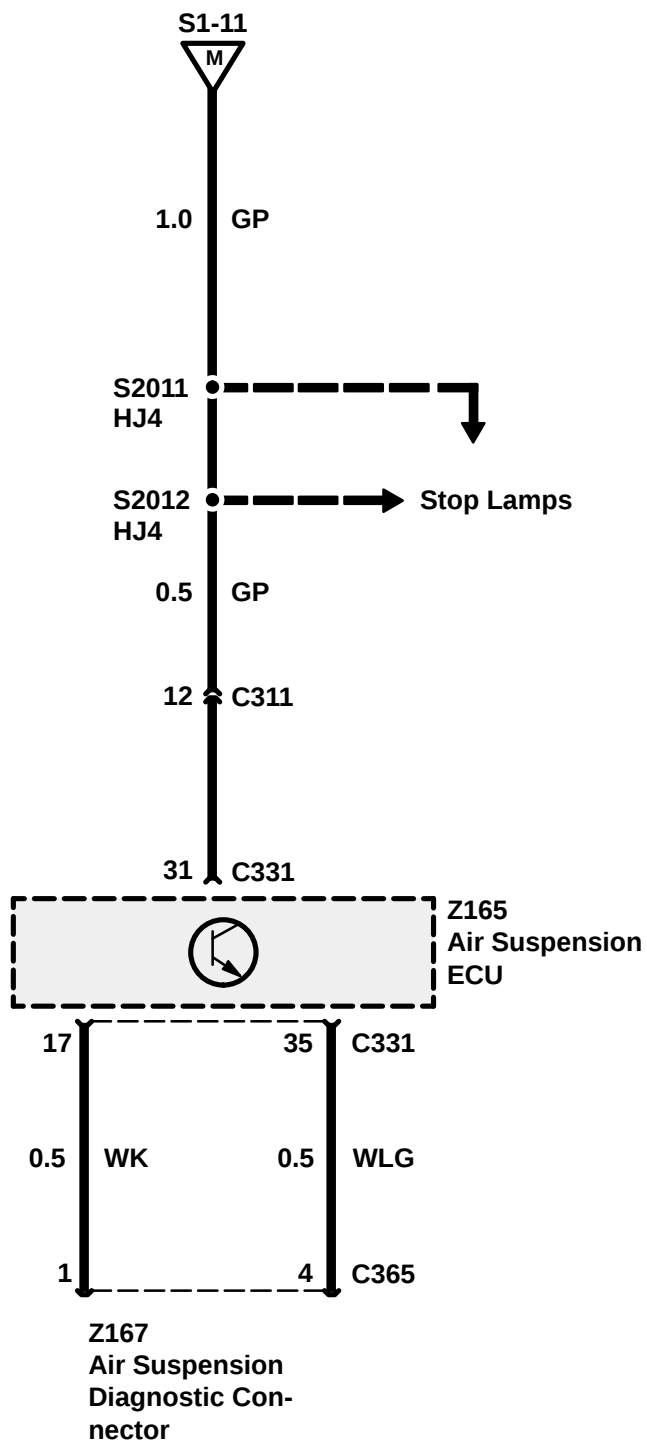


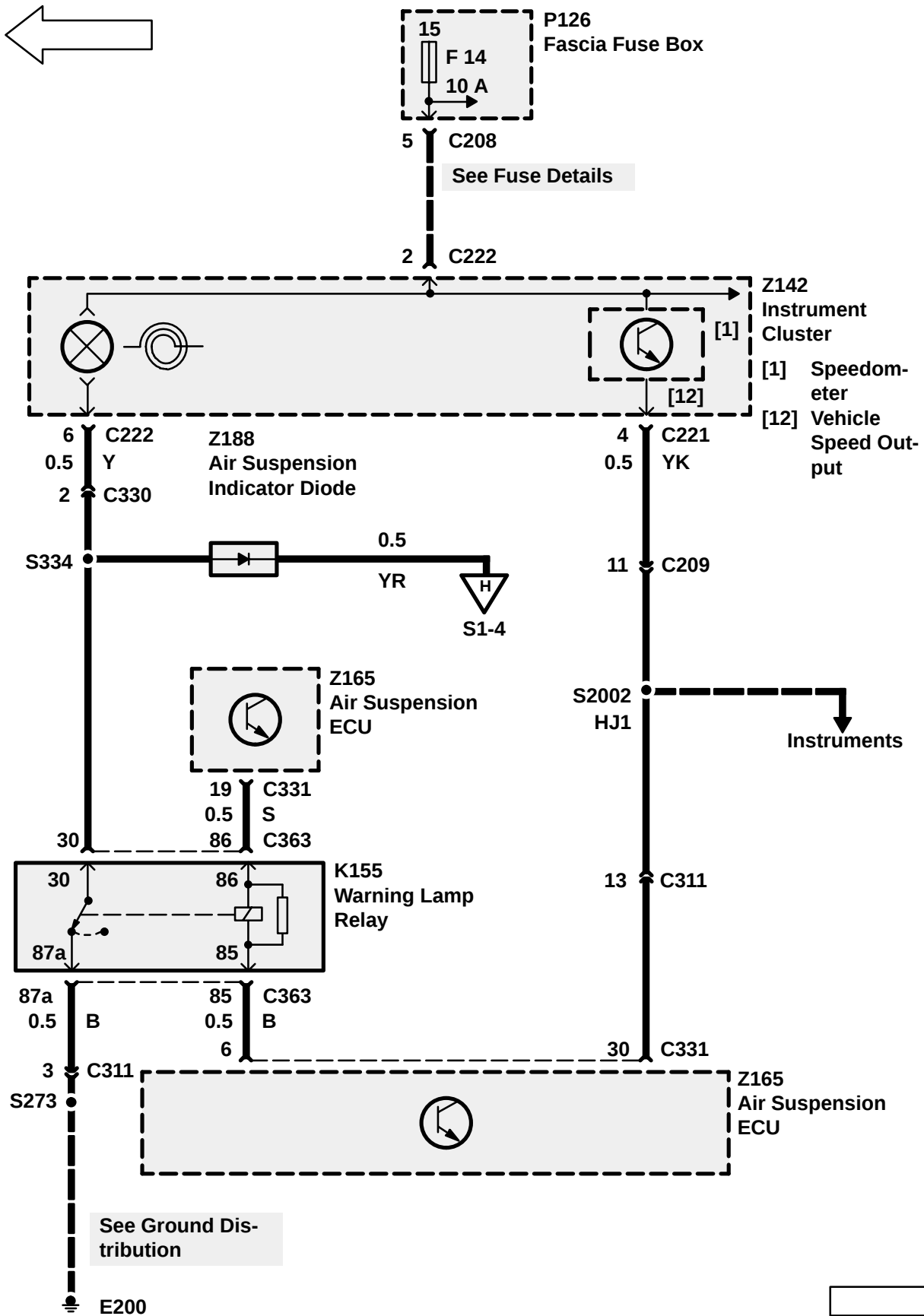


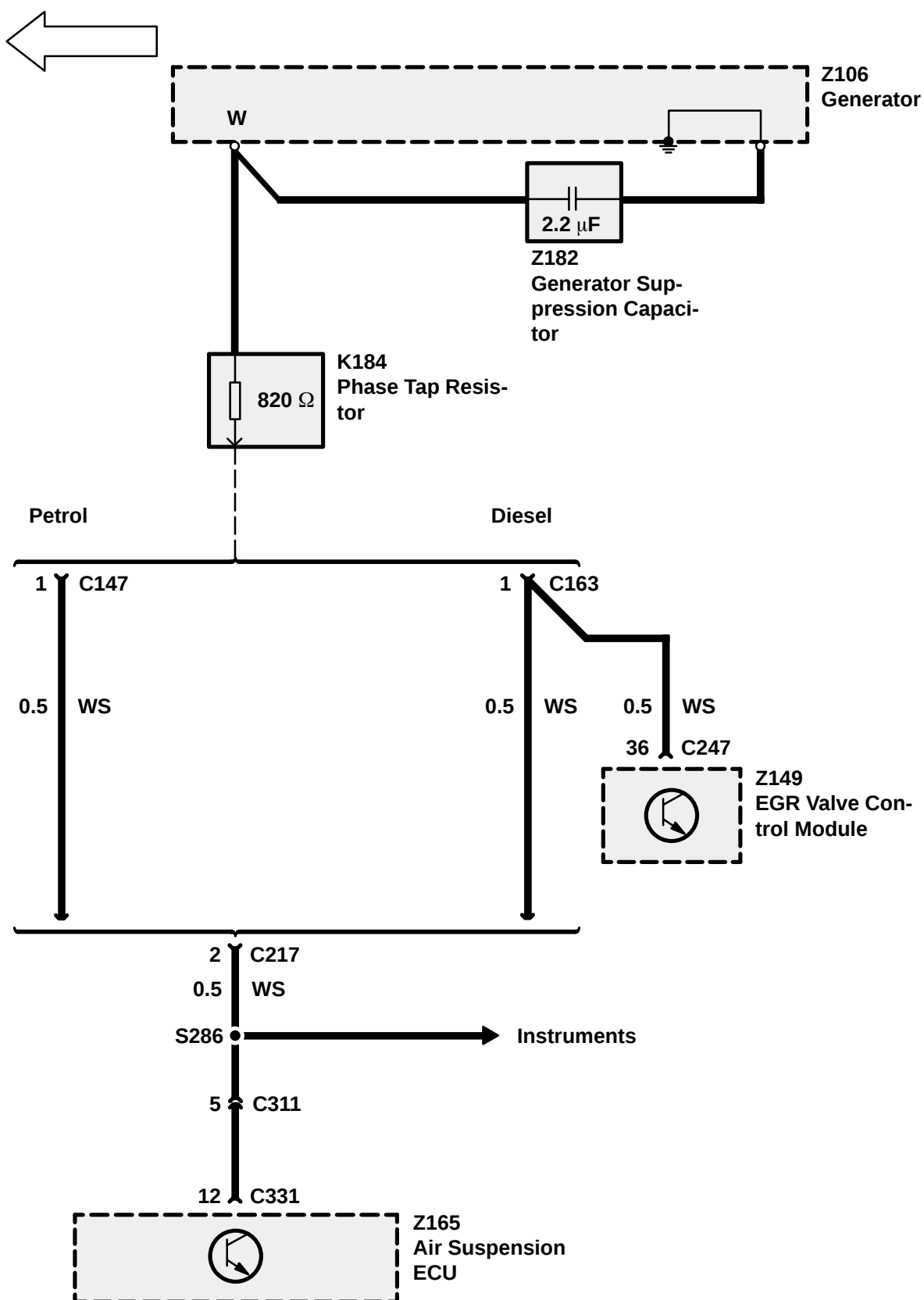












CIRCUIT OPERATION

For 1995 models a vehicle alarm system is available as original equipment. The main function of the system is to offer easy-to-use remote locking and unlocking of the vehicle without having to actively select the alarm function.

ALARM COMPONENTS

4. Theft Alarm Unit (Z163) and Theft Alarm Relay (K159)
5. Alarm Bonnet Switch (X212)
6. Tailgate Switch (X170)
7. Horns (K128, K134) and Horn Relay (K189)
8. Theft Alarm LED (B151)
9. Alarm Sensor (X213) (Not on all vehicles!)
10. Front Door Key Switches (X201, X202)
11. Lock Actuators (M114, M122, M117, M125, M132)
12. Handset Transmitter (two supplied)

ANTI-THEFT SYSTEM FUNCTION**Perimetric Protection**

Using the key in the correct sequence will turn on and off perimetric protection only. When fully perimetrically armed, all doors, tailgate, and bonnet are protected against unauthorized access. If the door key is used in the normal manner the driver will be unaware of the door key sequence. The time taken to lock or unlock with the key must be less than 5 seconds. To prevent unauthorized tampering, the alarm will sound if the key is held in the unlocked position for longer than 5 seconds when armed. Cranking is disabled when perimetric protection is armed.

NOTE: When key is turned left or right, the keyswitch input will be activated, in conjunction with the sill button switch when links are operated.

Volumetric Protection

Using the handset transmitter will turn On and Off volumetric protection. In volumetric mode the vehicle interior is protected using the Alarm Sensor (X213). Using the handset also arms and disarms the vehicle perimetrically. Cranking is disabled

when volumetric and perimetric protection is armed.

NOTE: If armed volumetrically, the vehicle CANNOT be disarmed using the key.

Horns

When an intrusion is detected the horn will sound intermittently (Switzerland and Denmark continuous horn sound) and the hazard lights flash (where territorial regulations allow) for 30 seconds. The alarm must be retriggered before the horn will sound again.

Vehicle Status Indication

Vehicle status is indicated by up to three devices: (a) horn, (b) hazard lights, (c) Theft Alarm LED (B151). When the vehicle arms in either mode, the hazard lights will flash three times and the LED will flash rapidly for 10 seconds. LED will then flash at a slower rate while vehicle is armed. When the vehicle disarms, hazard lights will flash once and LED will extinguish. If LED remains lit, it indicates that the alarm has been triggered. Turning on ignition or arming the alarm will extinguish LED. The LED will give a long pulse flash to indicate the Alarm Sensor (X213) being activated.

Central Locking

Central Locking is controlled by the Theft Alarm Unit (Z163) and may be operated by the key, sill button(s) or handset. The system works on both front doors on four door vehicles or driver's door on two door vehicles.

NOTE: The central door locking system will shut down for a period after more than 15 consecutive operations.

Inertia Switch

An inertia switch is incorporated in the Theft Alarm Unit (Z163). If ignition is on and the vehicle receives an impact sufficient to activate the inertia switch, the unit will signal to unlock central locking actuators and flash hazard lights. Central locking will remain disabled for 30 seconds. To reset, turn ignition off and then on after the 30 second period has elapsed.

Alarm Sensor (X213)

The sensor operates by emitting an air pressure carrier wave and receiving the wave back. Any disturbance within the vehicle which disturbs the wave will be detected, triggering the alarm. When the volumetric sensor is activated it monitors movement within the vehicle for 15 seconds before detecting and responding to intrusions. If the sensor detects movement within the vehicle it delays arming until a 15 seconds quiet period has elapsed. If continuous movement is detected, the alarm will not arm volumetrically.

Radio Frequency System

The RF system uses four frequencies according to market. If the coaxial aerial is not fitted system performance will be impaired. Both ECU and handset have a colour-coded label.

Frequency Colour Territory ECU/Handset:

418.0 MHz, Pink/pink: UK, Ireland

224.5 MHz, Yellow/yellow: France

433.92 MHz, Blue/blue: Europe (not France, Switzerland, Italy, Denmark)

433.92 MHz, White/blue: Switzerland, Denmark

315.0 MHz, Green/green: Rest of World, Italy, Australia

315.0 MHz, Orange/green: Gulf, Japan

Partially armed mode

If a door, tailgate or bonnet is left open when the system is armed, the LED will not light for 10 seconds indicating a mislock condition. Hazard lights will not flash. If an open door or tailgate is causing the mislock, the starter motor is disabled. The alarm will sound if ignition is turned to start position. If an open bonnet is causing the mislock the starter motor is disabled. The alarm will arm the volumetric part of the system. If the door tailgate or bonnet is subsequently closed, after a 5 second delay, the doors will unlock and immediately lock, and the system will fully arm.

Handset Transmitter

The handset LED will give one flash when button is pressed momentarily. If button is held down the LED will light again after 2 seconds for 2 seconds, and extinguish until button is released and repressed. The handset contains unique information distinguishing it from other transmitters. It also contains a set of 'random' rolling codes programmed into the ECU before leaving the factory. Each time the handset is pressed a different code is transmitted to the ECU.

If the handset is operated more than four times outside the vehicle range (6 metres) or power supply is removed, it will be necessary to re-synchronise handset and the ECU by pressing the handset three times within range and within 5 seconds.

NOTE: If both handsets are lost or damaged when system is armed, it will be necessary to fit a new ECU with two matching handsets.

Handset Batteries

If handset LED flashes continuously when button is pressed, the batteries need replacing. The hazard lights will flash one 3 second pulse, instead of three times upon arming vehicle.

Power Up Mode

The alarm system always remembers the state it was left in when power was removed. If the alarm powers up in an armed state and is subsequently triggered, it will give a warning that it will fully trigger unless disarmed. This warning consists of

short horn pulses every two seconds for 15 seconds.

New Born Mode

When the ECU is first produced, it will be in its 'new born' mode. In this mode it will respond to any remote of the right frequency. This mode will be cancelled when the ECU has received ten valid handset signals without power interruption.

Engine Cranking

It is only possible to crank the engine when ignition is ON and alarm disabled.

BUILT IN TEST PROCEDURE

The built in test procedure is accessed as follows:

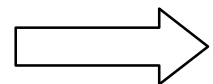
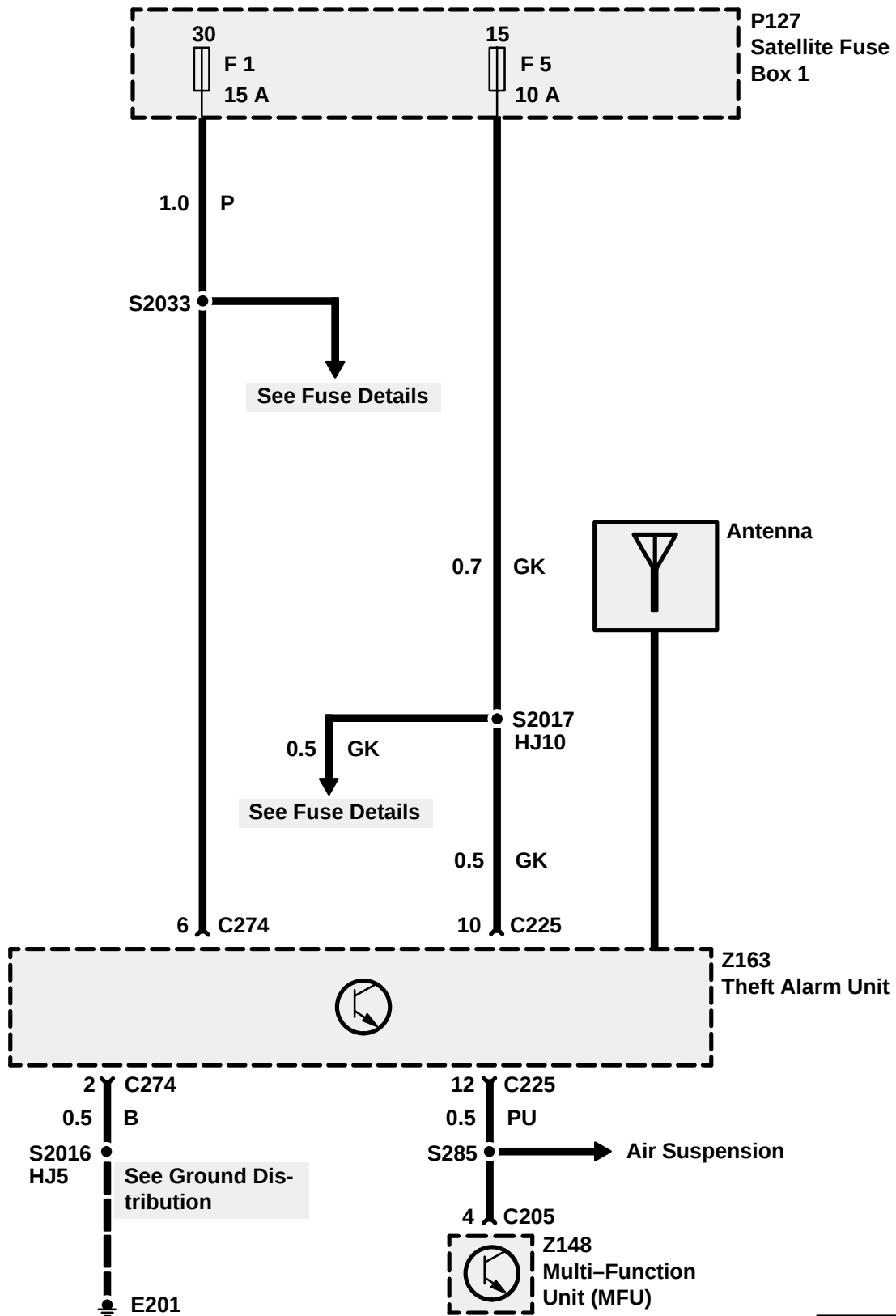
1. Starting conditions: ignition off, doors unlocked, bonnet switch depressed.
2. Carry out instructions 3 to 7 within 8 seconds.
3. Release bonnet switch.
4. Switch ignition ON.
5. Lock doors.
6. Switch ignition OFF.
7. Switch ignition ON.

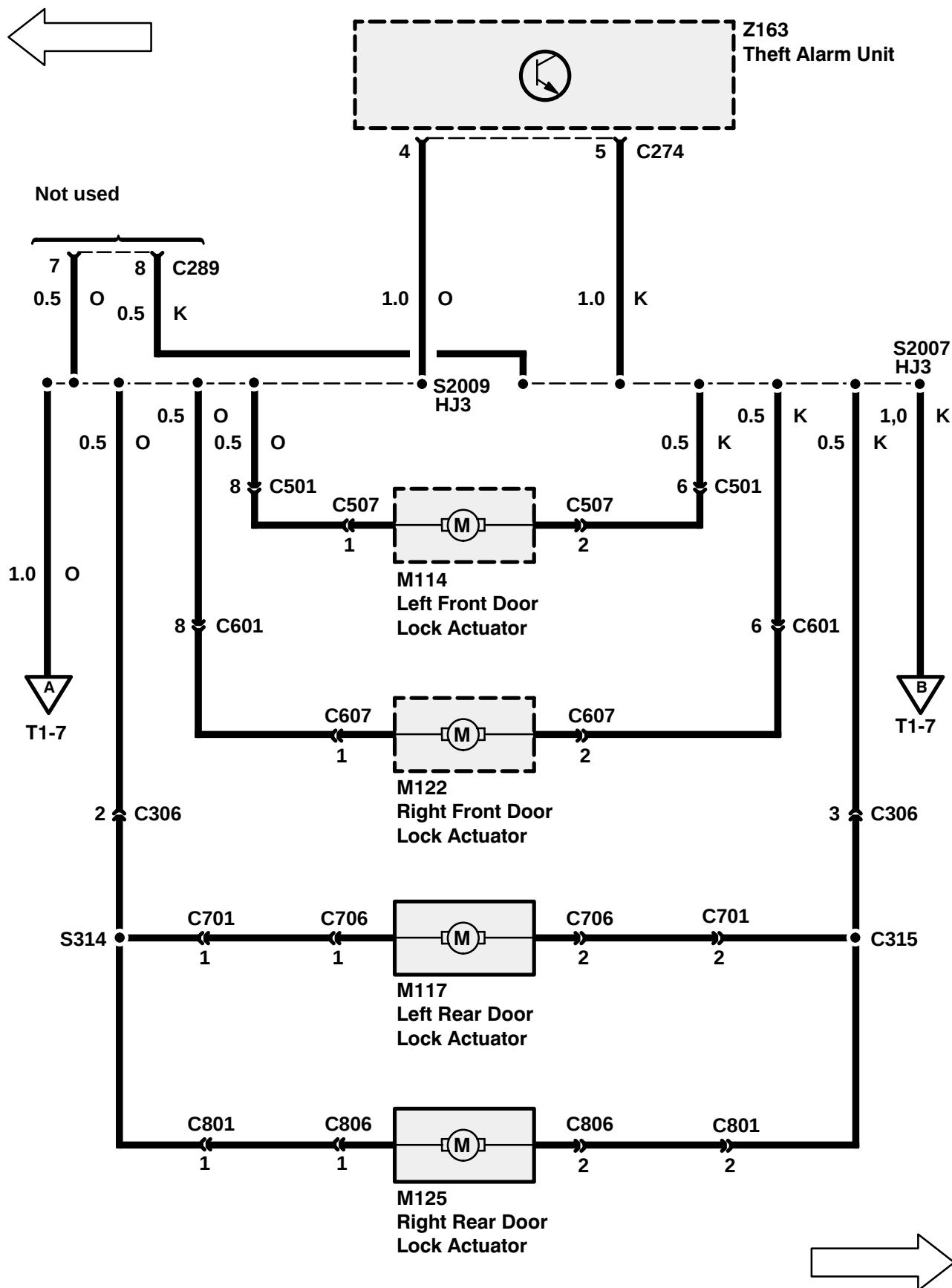
If alarm is correctly accessed, horn will sound and LED will flash. The following checks can be made:

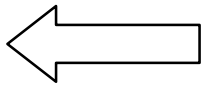
8. Open and close any door or tailgate – LED will light.
9. Depress bonnet switch – hazards will flash.
10. Check engine cranking is disabled. Do not turn off ignition.
11. Check ultrasonic by operating handset, LED will emit one 5 second flash, and will flash if interior is disturbed.

NOTE: If ECU is in new born mode, any handset of the right frequency will work. If not, initialised handset is required. See Handset Initialisation.

12. Turn OFF ignition or press handset to end test procedure. Horn will sound as before to indicate end of test mode.







8 15 C225

0.5 WB

0.5 BN

3 1 C335



2 C335

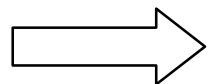
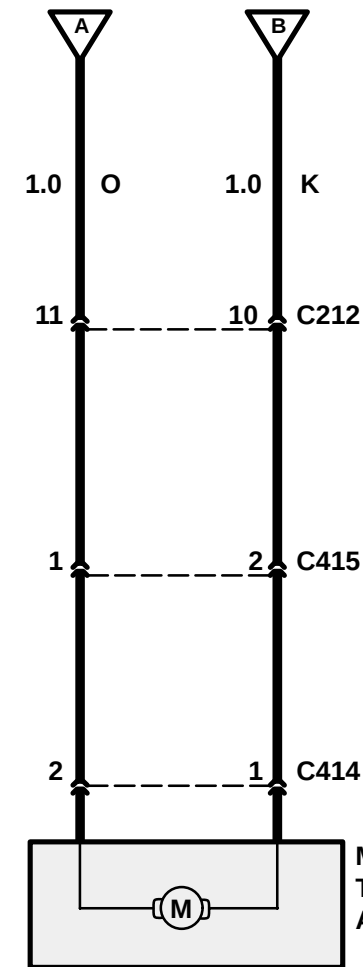
0.5 B

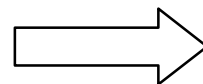
S204

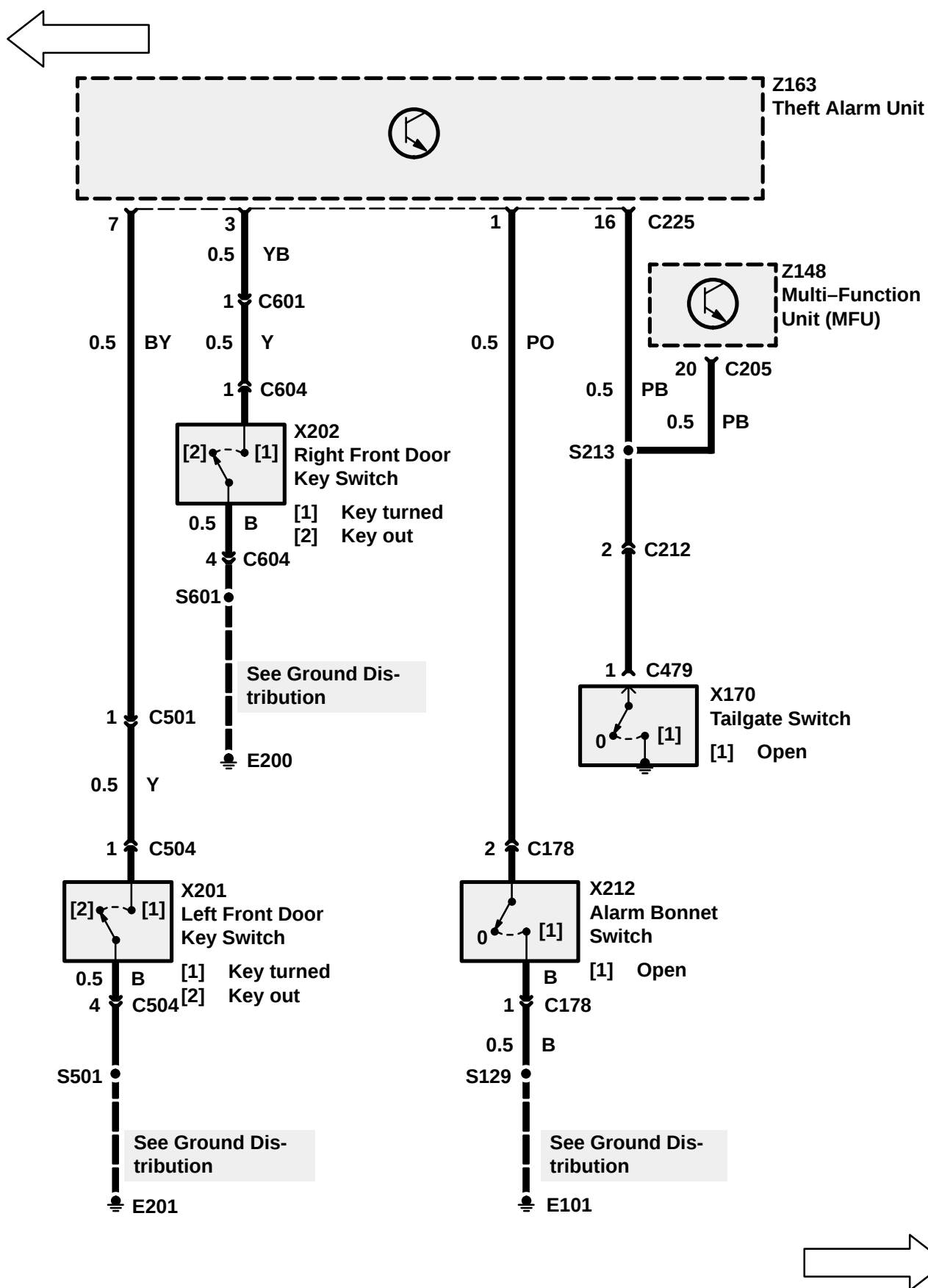
See Ground Dis-
tribution

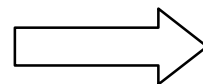
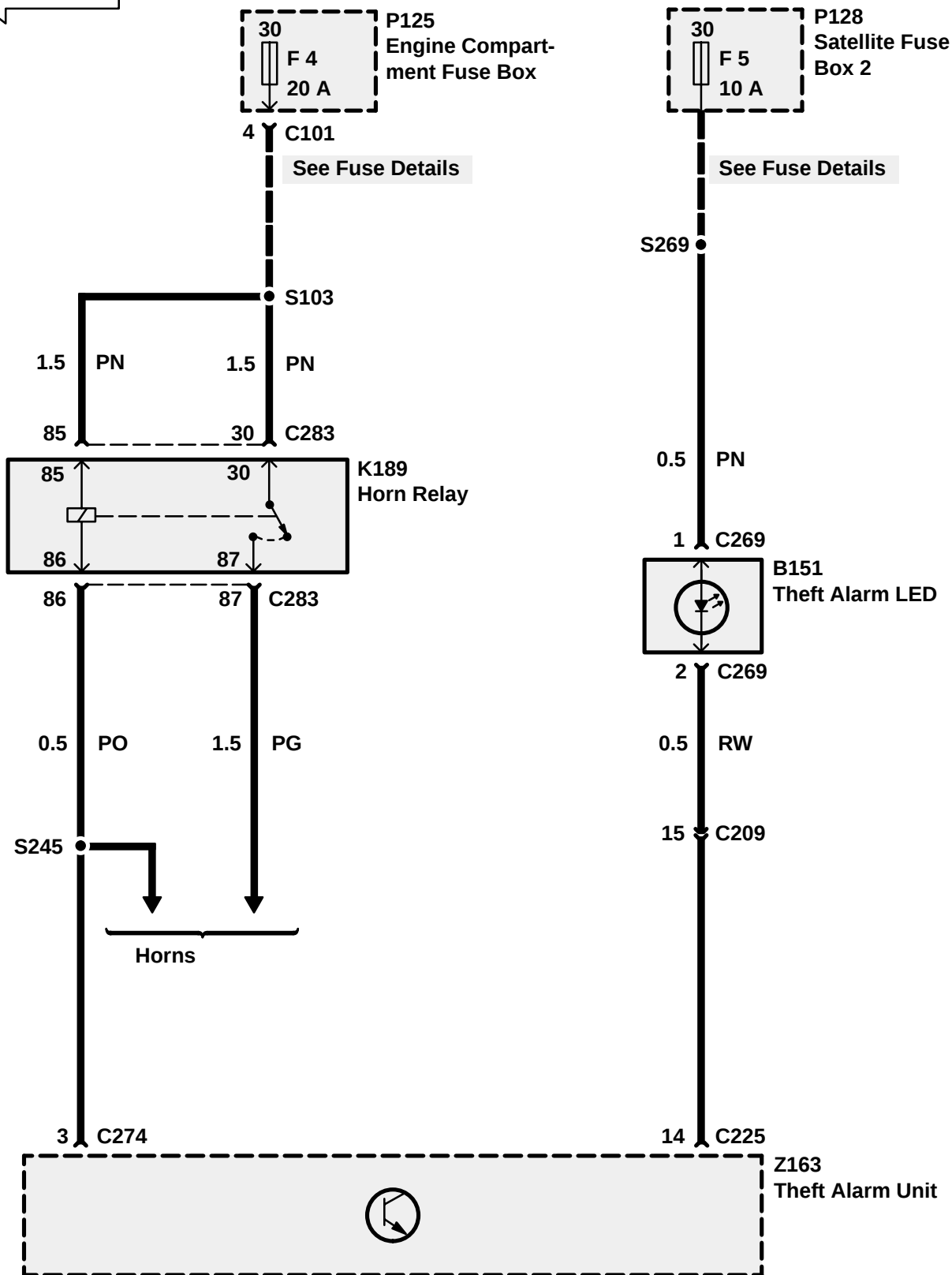
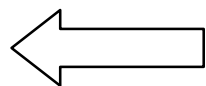
E201

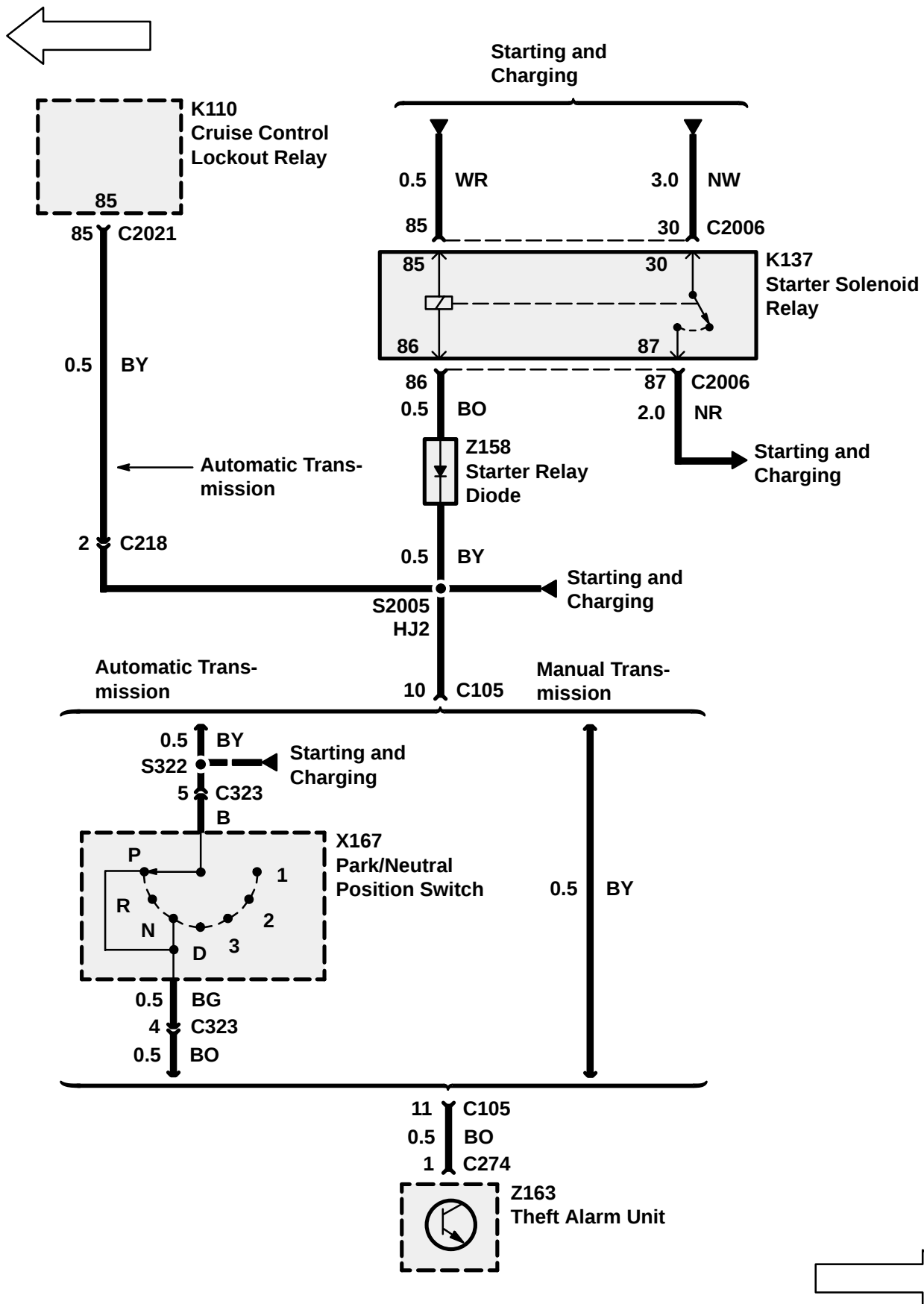
T1-6

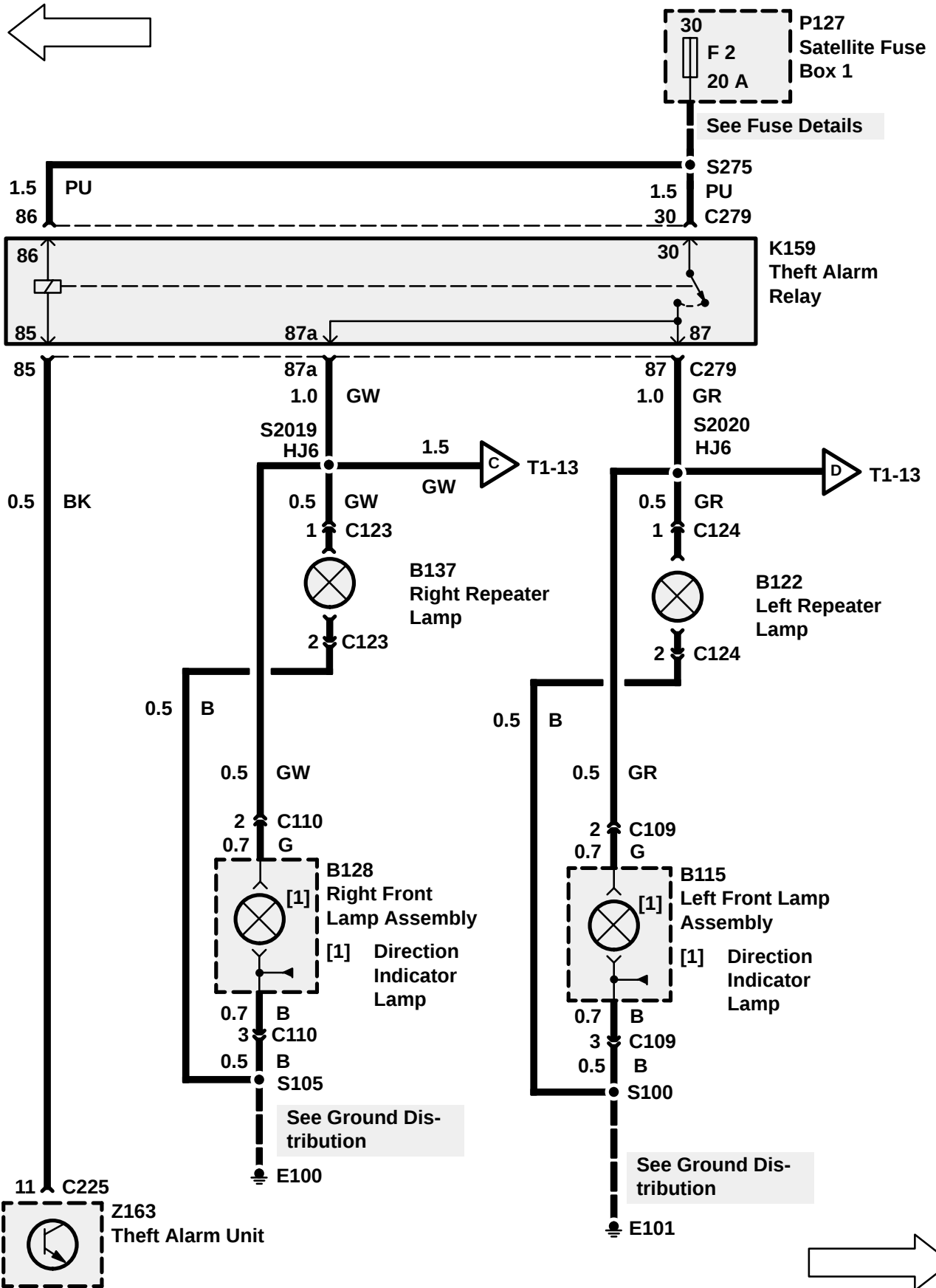


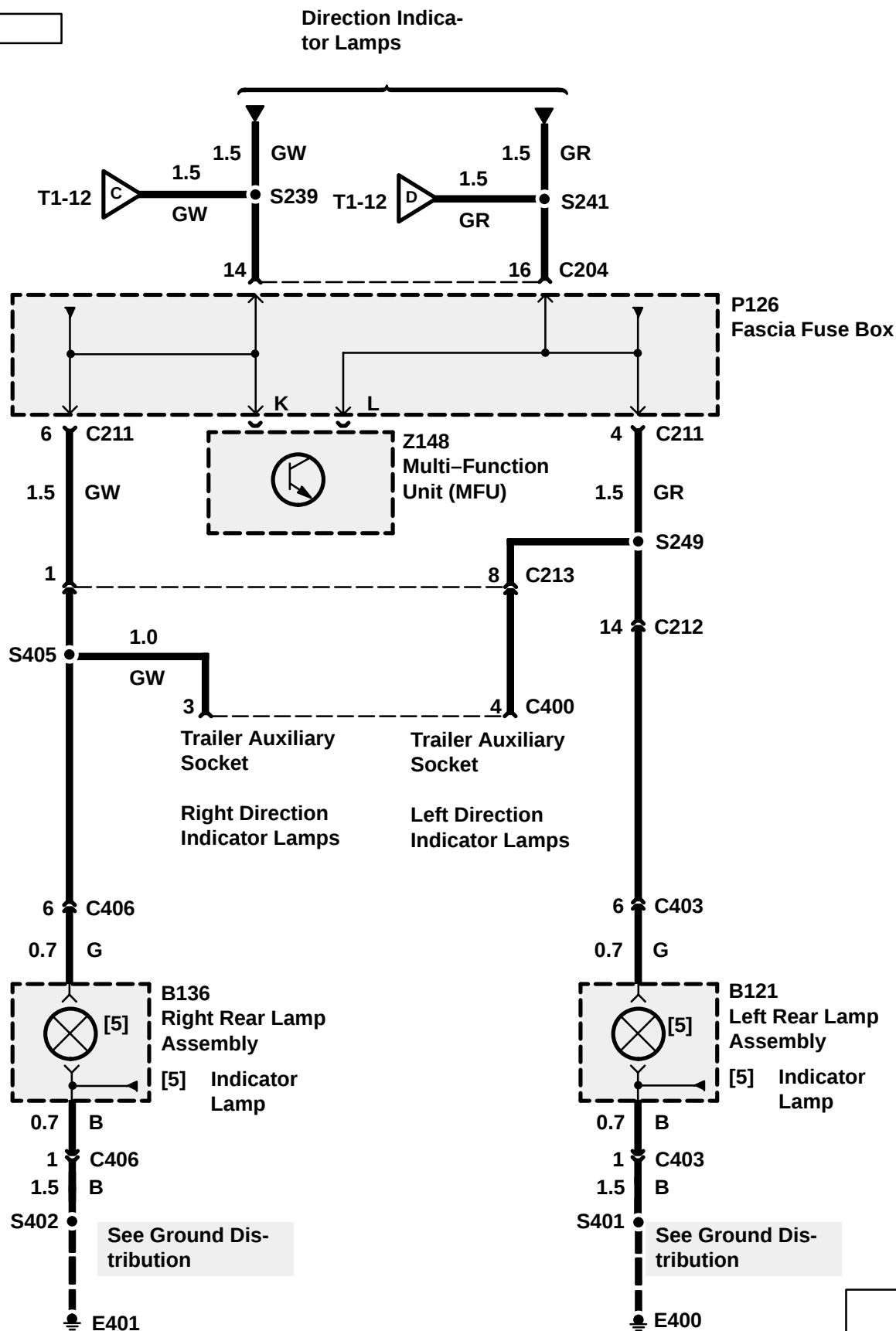
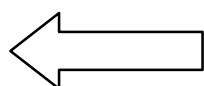












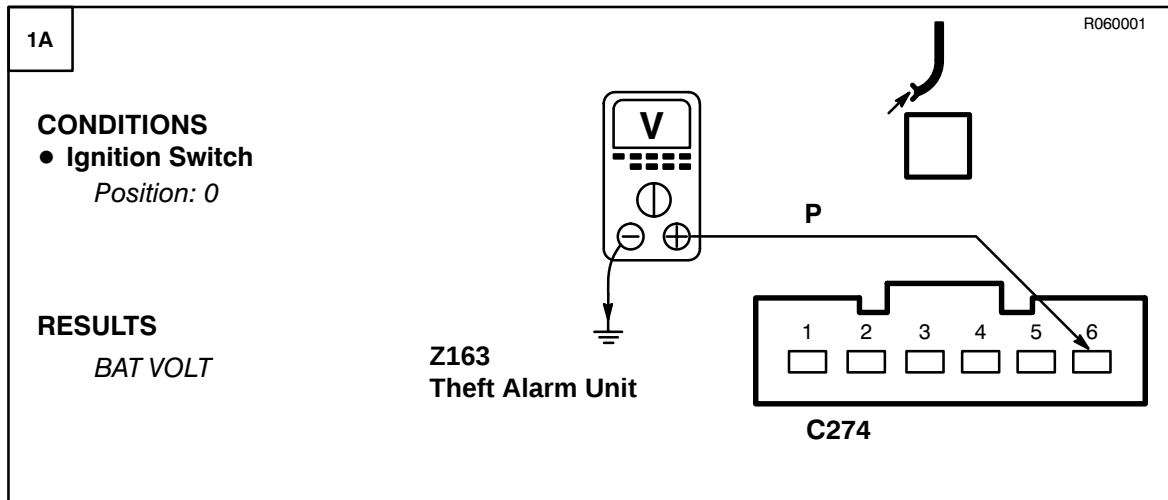
TROUBLESHOOTING HINTS

13. Check Fuses F1, F2 and F5 in Satellite Fuse Box 1.
14. Check Fuse F5 in Satellite Fuse Box 2.
15. Check Fuse F4 in Engine Compartment Fuse Box.
16. If the interior lights do not come on when a door is open, check suspect door switch and associated wiring.
17. If all of the lock actuators do not operate, check O and K wire. If OK, replace Theft Alarm Unit (Z163).

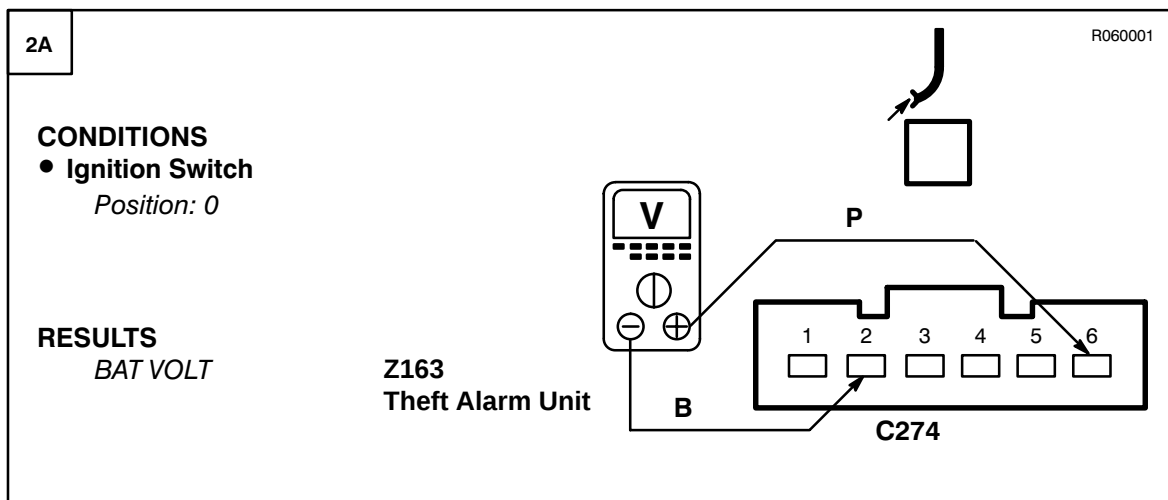
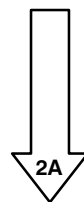
SYSTEM DIAGNOSIS

1. If the system will not arm, do Test A.
2. If the system arms, but will not trigger at all, do Test B.
3. If the Horns (K128, K134) do not sound when triggered, do Test B.
4. If the hazard lights do not flash when triggered, do Test E.
5. If the system will not trigger when the bonnet is open, do Test F.
6. If the system will not trigger when the tailgate is open, do Test H.
7. If the alarm is set using the remote and the system does not trigger the alarm when there is motion inside the vehicle, do Test G.
8. If the Theft Alarm LED (B151) does not operate, do Test C.
9. If the Horns (K128, K134) sound continuously, do Test D.
10. If the system will not disarm, do Test A.
11. If a Front Door Lock Actuator (M114, M122) does not operate, do Test I.
12. If the doors unlock themselves after operating the door locks, do Test J.
13. If the central locking function does not operate from one of the front doors, do Test K.
14. If the Tailgate Lock Actuator (M132) does not operate, do Test L.
15. If both Rear Door Lock Actuators (M117, M125) do not operate, do Test M.

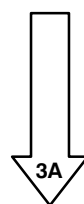
Test A

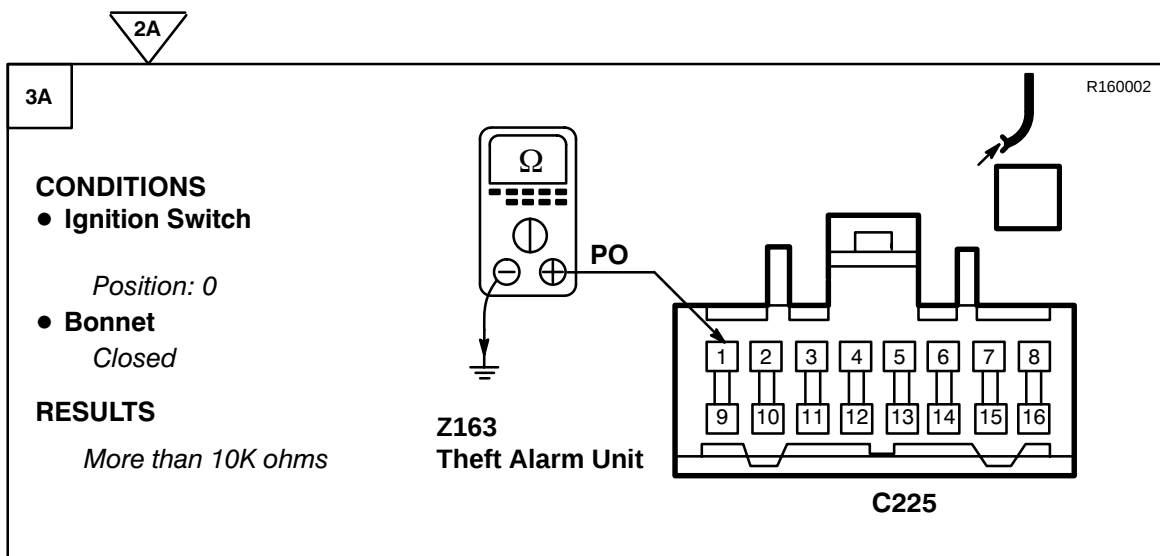


PROBLEM CAUSE
- P Wire

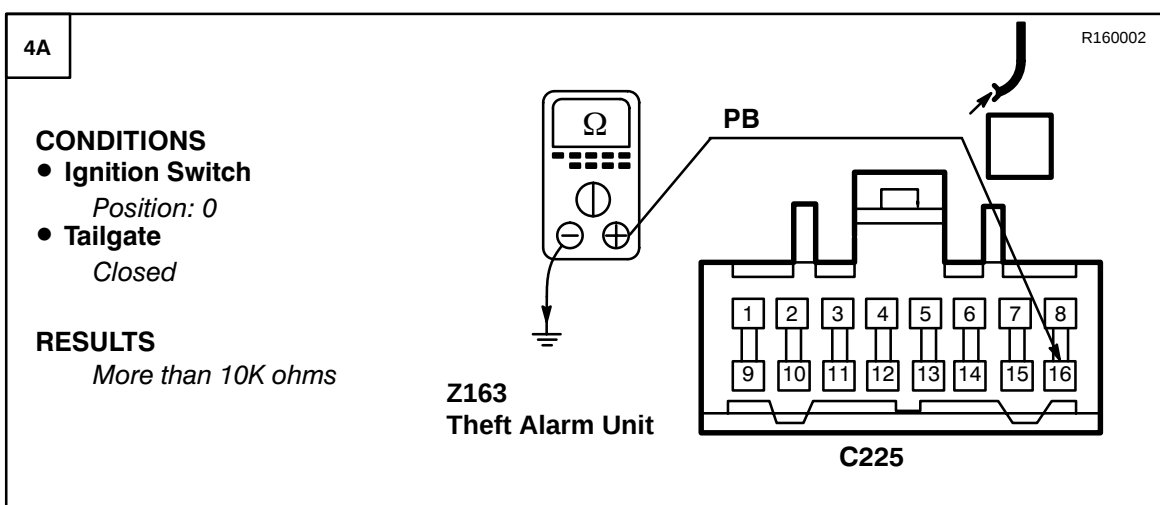
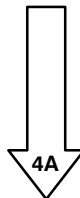


PROBLEM CAUSE
- B Wire

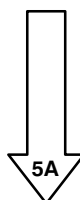


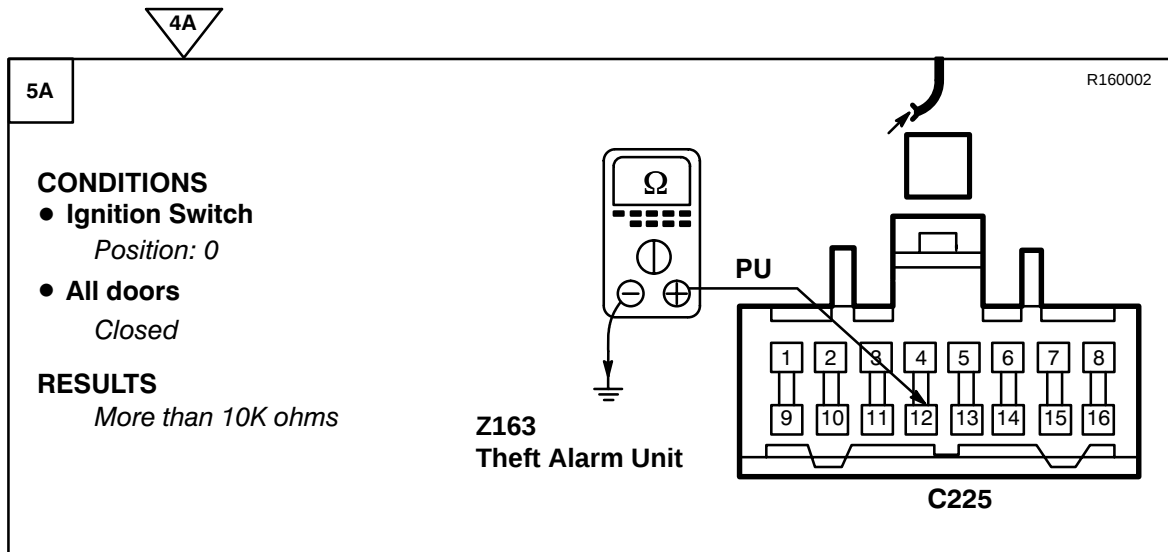
**PROBLEM CAUSE**

- PO Wire
- Alarm Bonnet Switch

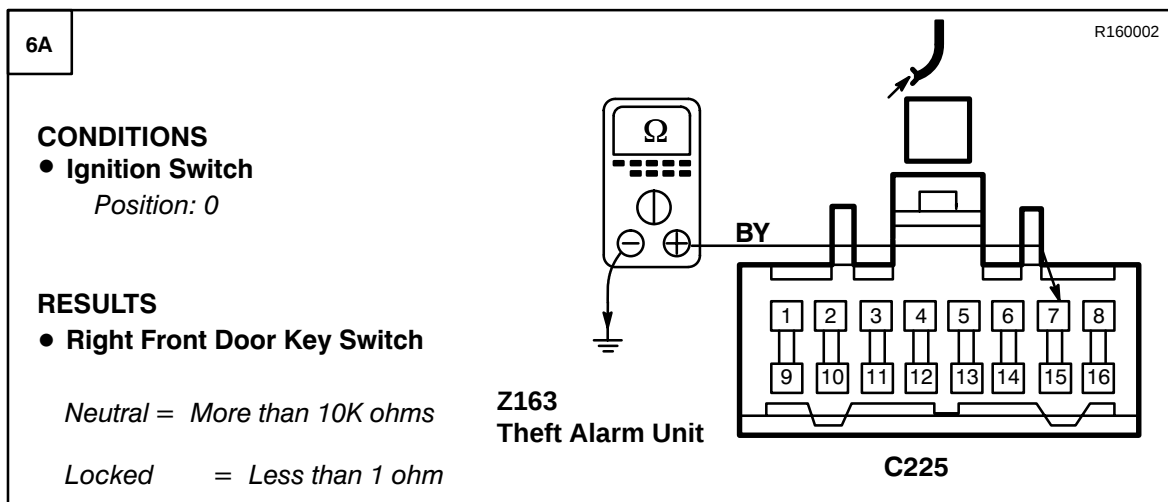
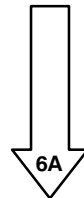
**PROBLEM CAUSE**

- PB Wire
- Tailgate Switch

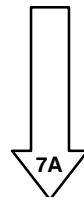




PROBLEM CAUSE
- PU Wire



PROBLEM CAUSE
- BY Wire
- Y Wire
- B Wire
- Left Front Door Key Switch



R160002

7A

6A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

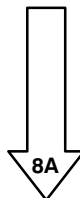
- All doors
 - Locked = More than 10K ohms
 - Unlocked = Less than 1 ohm

Z163
Theft Alarm Unit

C225

**PROBLEM CAUSE**

- OY Wire
- YO Wire
- B Wire



R160002

8A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

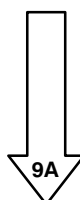
- Left Front Door Key Switch
 - Neutral = More than 10K ohms
 - Locked = Less than 1 ohm

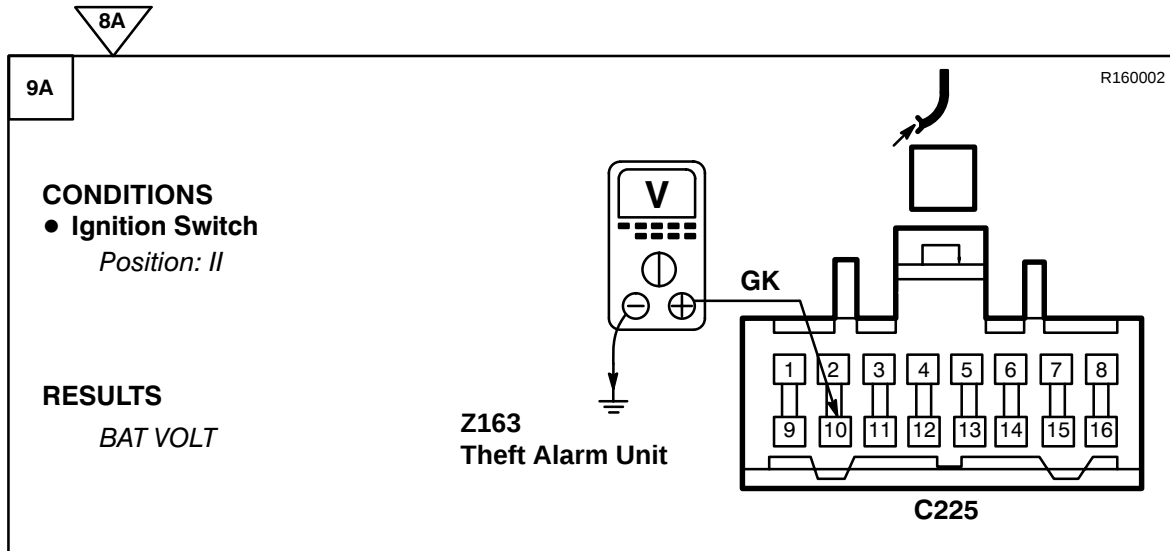
Z163
Theft Alarm Unit

C225

**PROBLEM CAUSE**

- YB Wire
- Y Wire
- B Wire
- Right Front Door Key Switch



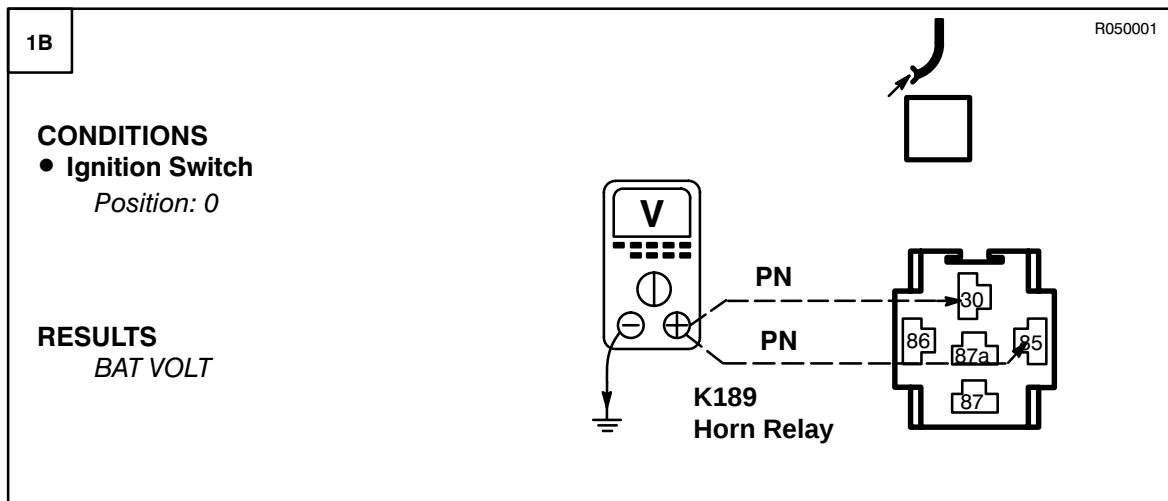


PROBLEM CAUSE
- GK Wire

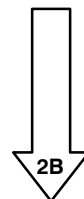


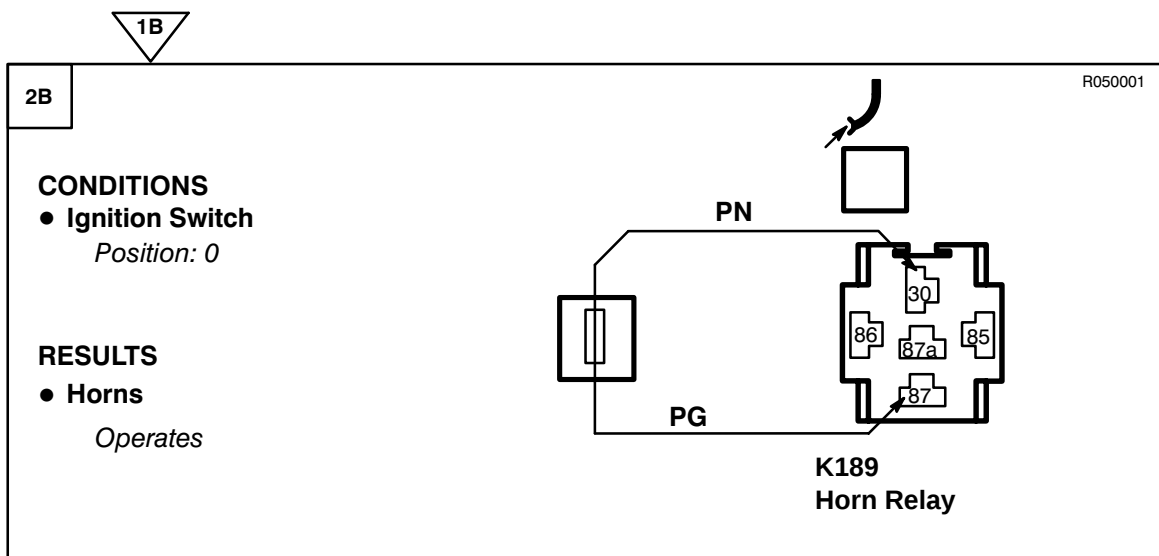
PROBLEM CAUSE
- Theft Alarm Unit

Test B

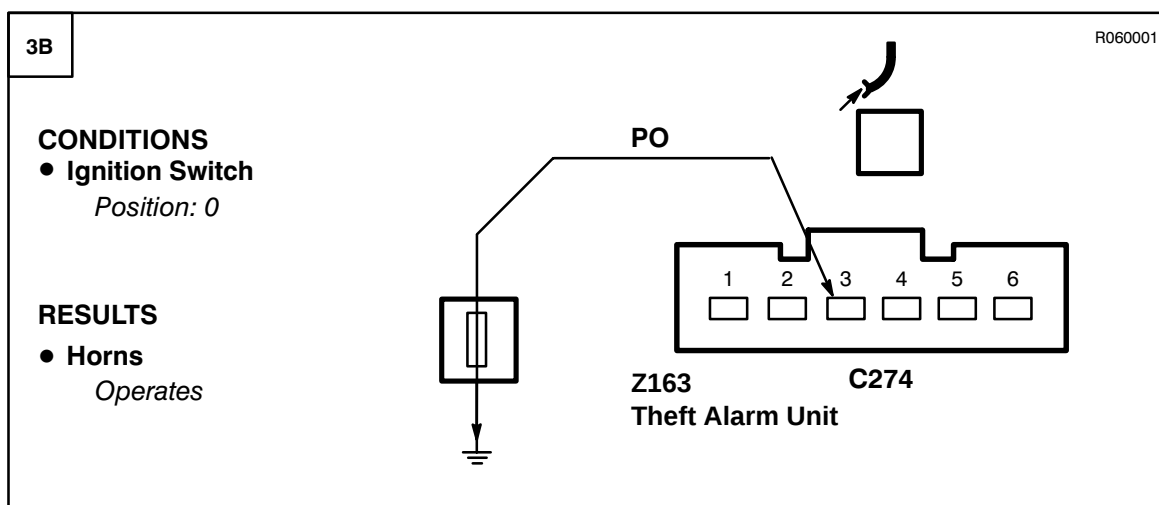


PROBLEM CAUSE
- PN Wire



**PROBLEM CAUSE**

- PG Wire
- Horns

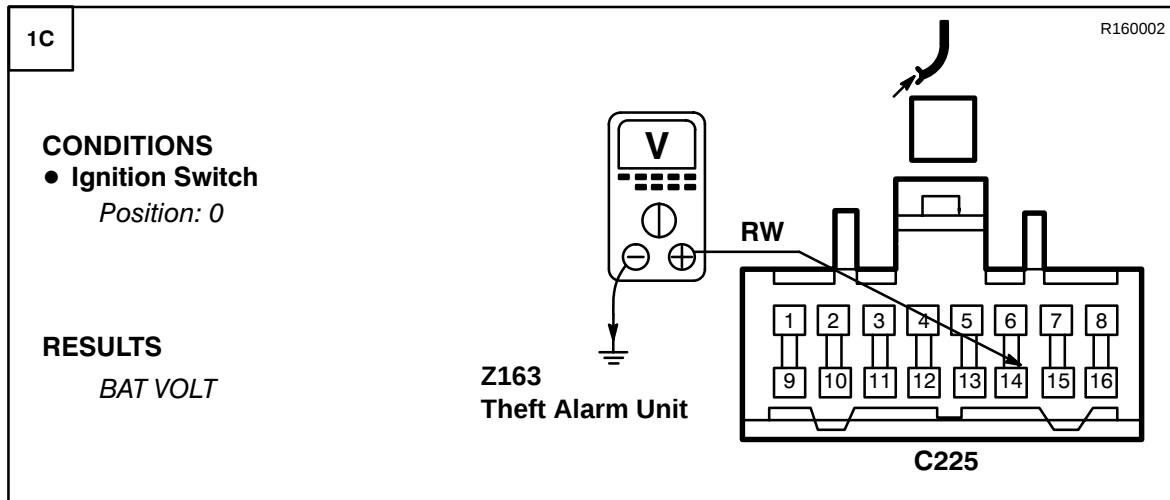
**3B****PROBLEM CAUSE**

- PO Wire
- Horn Relay



- Theft Alarm Unit

Test C



PROBLEM CAUSE

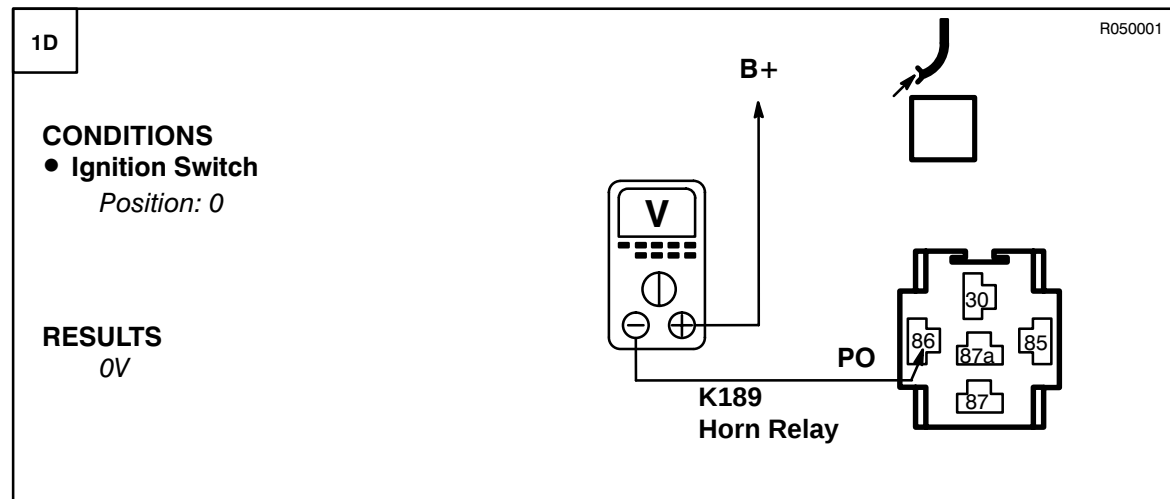
- RW Wire
- PN Wire
- Theft Alarm LED



PROBLEM CAUSE

- Theft Alarm Unit

Test D



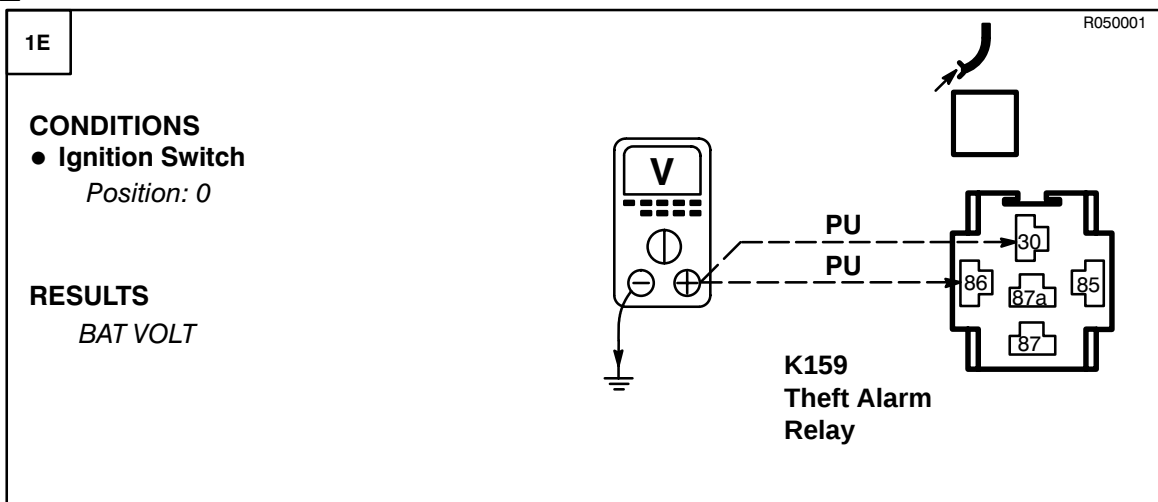
PROBLEM CAUSE

- PO Wire
- Theft Alarm Unit

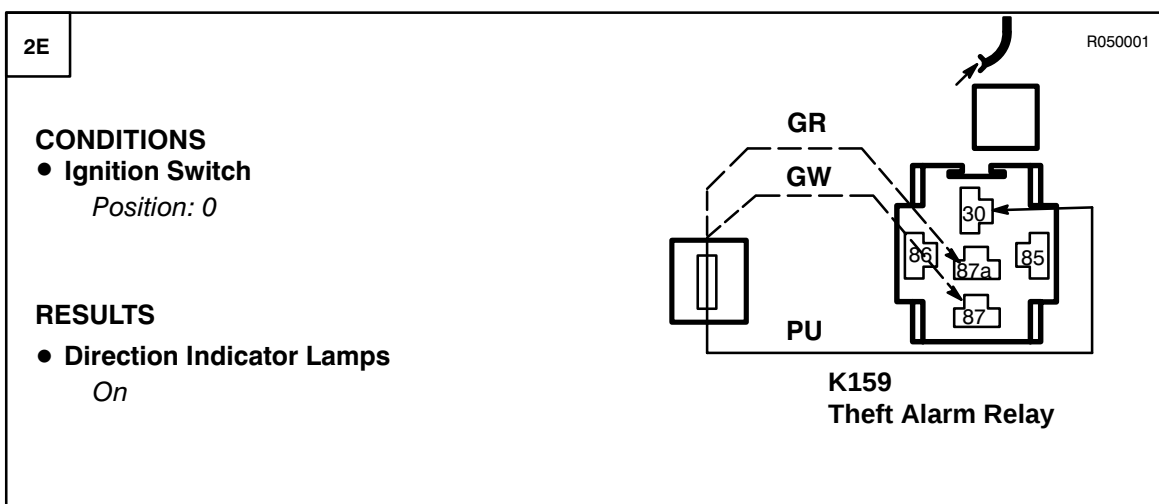
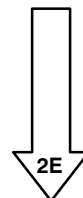


PROBLEM CAUSE

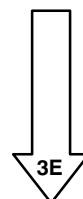
- Horn Relay

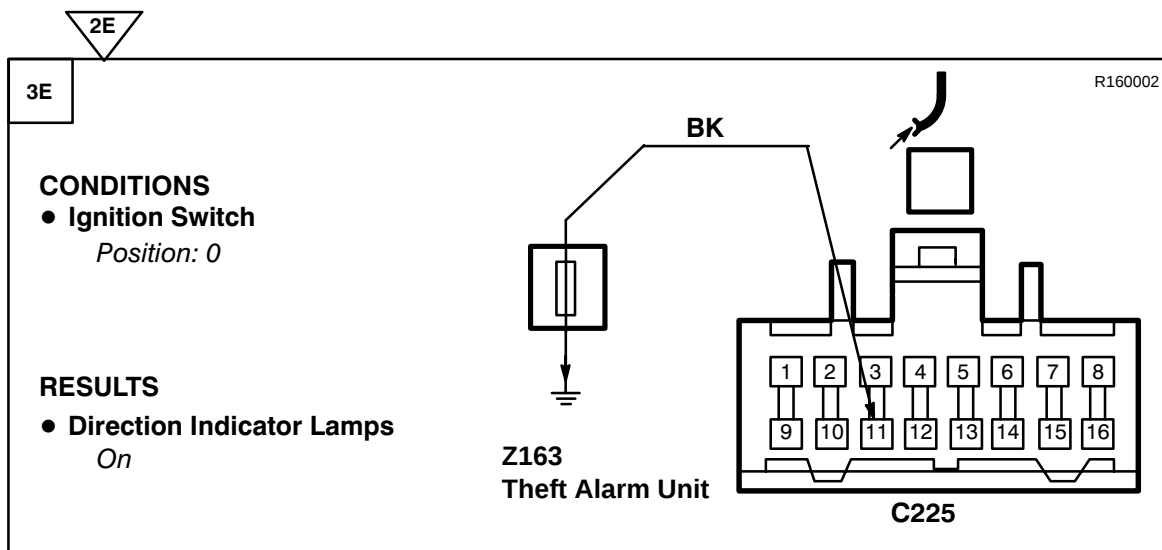
Test E

PROBLEM CAUSE
- PU Wire



PROBLEM CAUSE
- GR Wire
- GW Wire





PROBLEM CAUSE

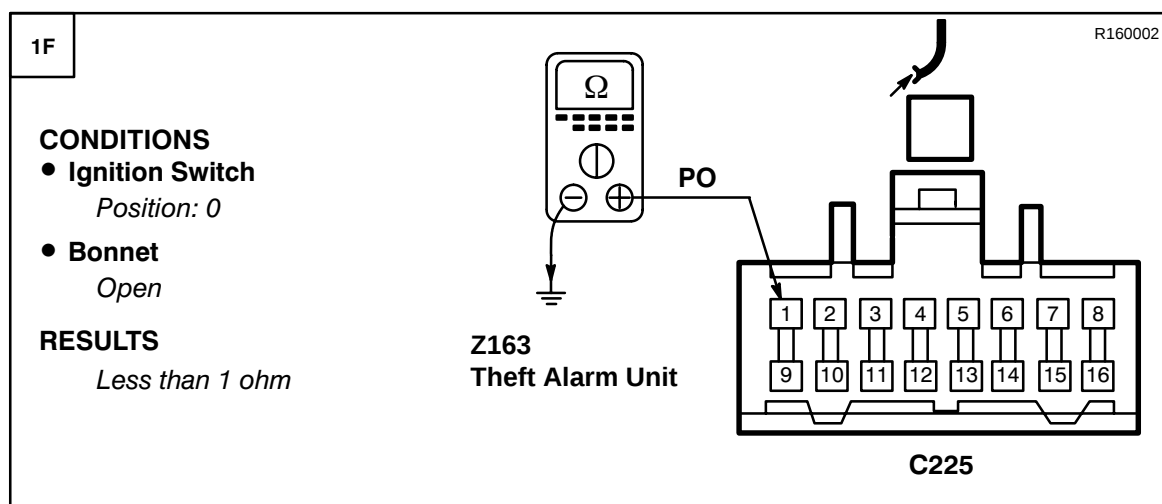
- BK Wire
- Theft Alarm Relay



PROBLEM CAUSE

- Theft Alarm Unit

Test F



PROBLEM CAUSE

- PO Wire
- B Wire
- Alarm Bonnet Switch



PROBLEM CAUSE

- Theft Alarm Unit

Test G

1G

CONDITIONS

- Ignition Switch
Position: 0

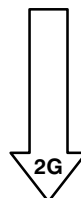
RESULTS
BAT VOLT

WB

**X213
Alarm Sensor**

**PROBLEM CAUSE**

- WB Wire
- Theft Alarm Unit



2G

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

B

**X213
Alarm Sensor**

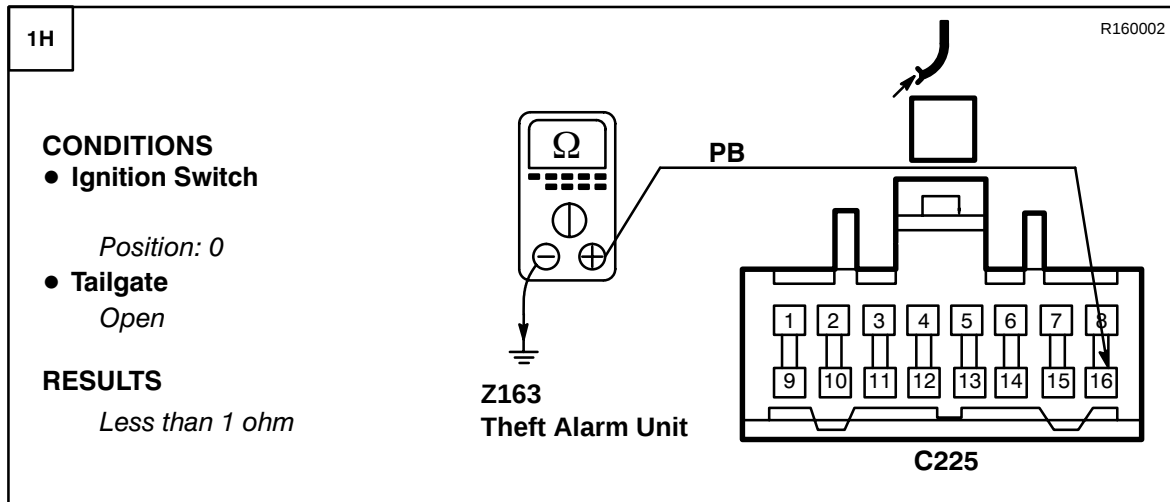
**PROBLEM CAUSE**

- B Wire

**PROBLEM CAUSE**

- BN Wire
- Alarm Sensor
- Theft Alarm Unit

Test H

**PROBLEM CAUSE**

- PB Wire
- Tailgate Switch

**PROBLEM CAUSE**

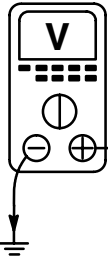
- Theft Alarm Unit

Test I

R060009

C507
C607

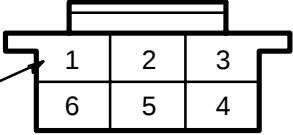
1I



CONDITIONS

- Ignition Switch
Position: II
- All doors
Locked
- Unlock a front door

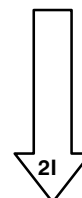
RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator



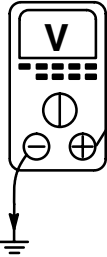
PROBLEM CAUSE
- O Wire



R060009

C507
C607

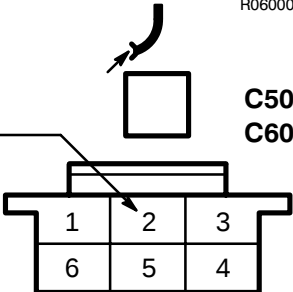
2I



CONDITIONS

- Ignition Switch
Position: II
- All doors
Unlocked
- Lock a front door

RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator



PROBLEM CAUSE
- K Wire



PROBLEM CAUSE
- M114, M122 Front Door Lock Actuator

Test J

1J R160002

CONDITIONS

- Ignition Switch

Position: 0

- All doors
Locked

RESULTS

More than 1000 ohms

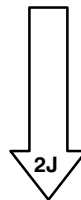
Z163
Theft Alarm Unit

C225



PROBLEM CAUSE

- OY Wire
- YO Wire
- M114, M122 Front Door Lock Actuator



2J R050001

CONDITIONS

- Ignition Switch

Position: 0

- All doors
Locked

RESULTS

More than 1000 ohms

Z163
Theft Alarm Unit

C225



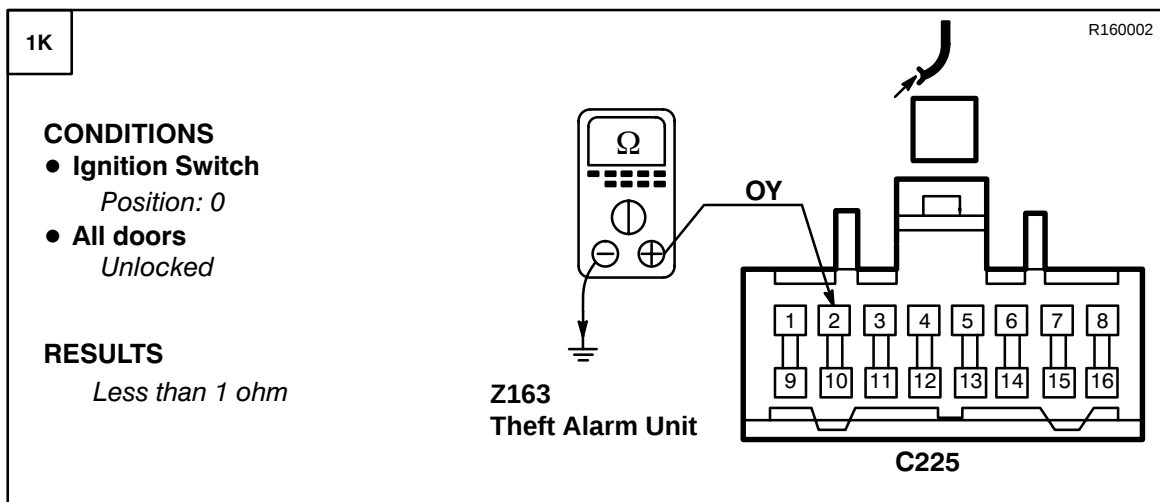
PROBLEM CAUSE

- YO Wire
- M114, M122 Front Door Lock Actuator

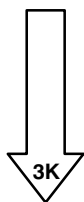
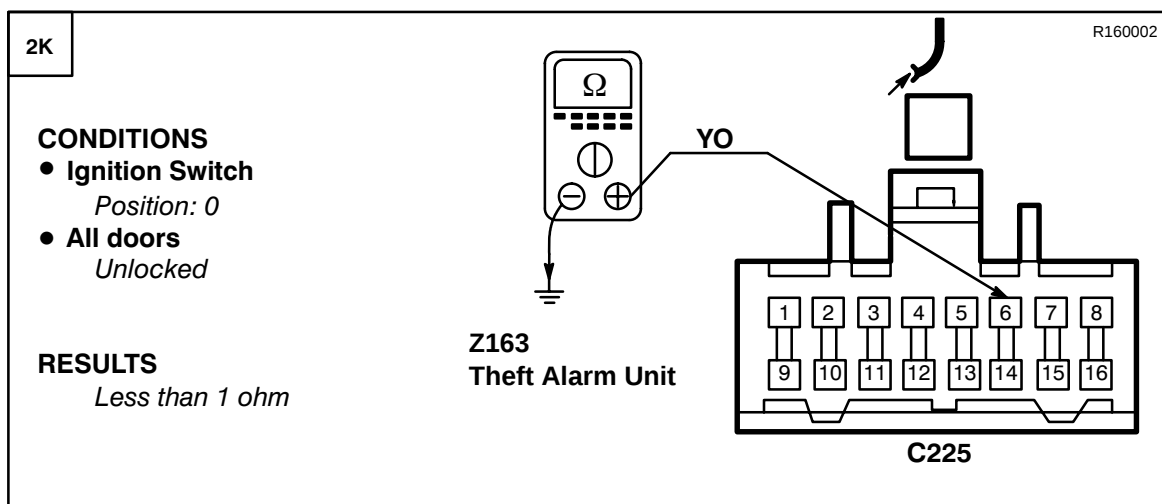
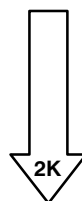


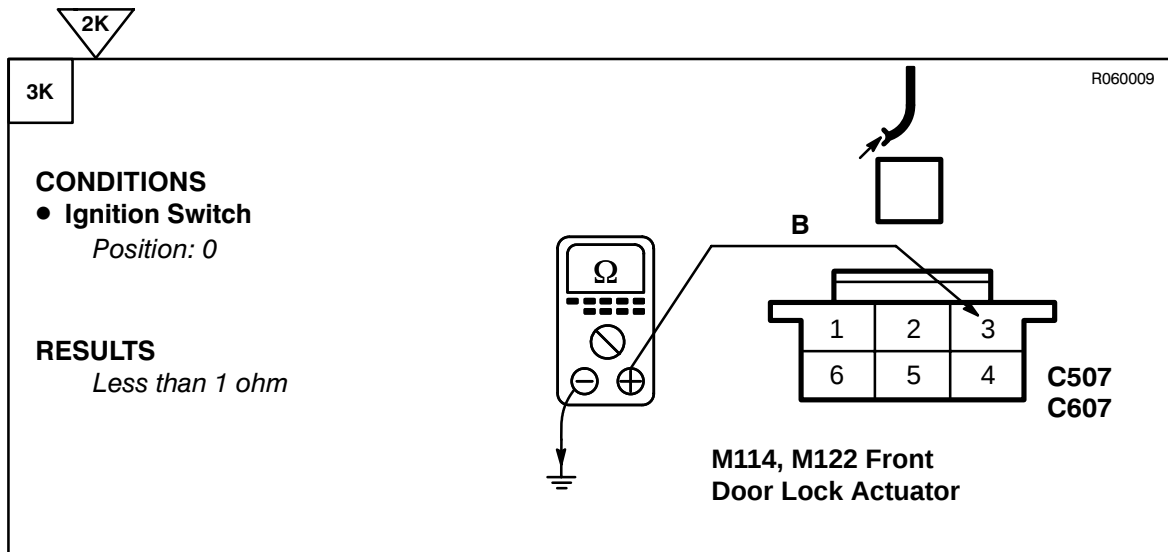
PROBLEM CAUSE

- Theft Alarm Unit

Test K

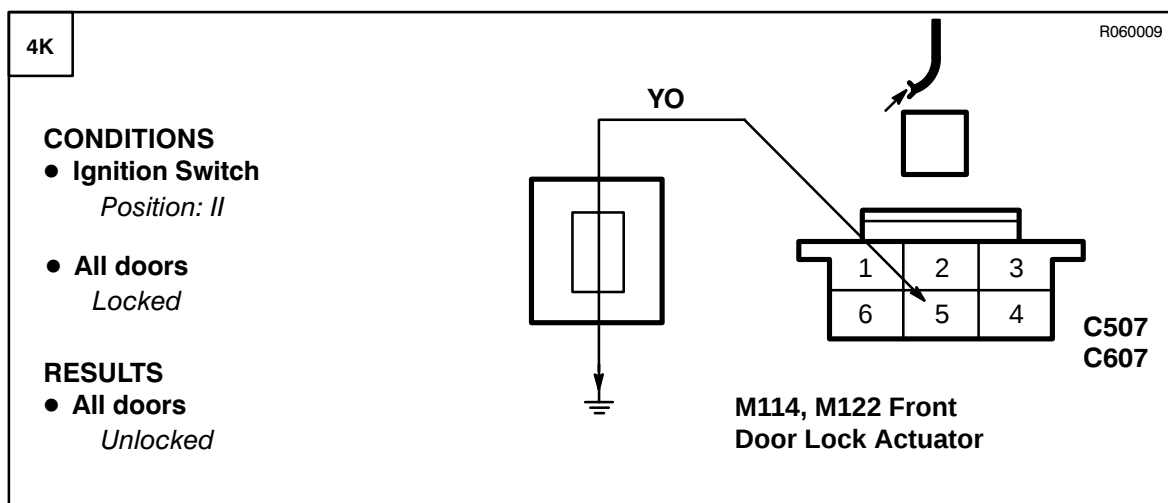
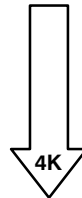
GO TO TEST 3K


PROBLEM CAUSE
 - Theft Alarm Unit



PROBLEM CAUSE

- B Wire



PROBLEM CAUSE

- YO Wire
- OY Wire
- Theft Alarm Unit



PROBLEM CAUSE

- M114, M122 Front
Door Lock Actuator

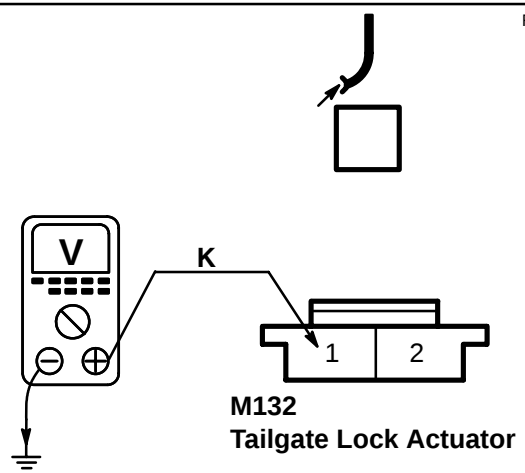
Test L

1L R020029

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

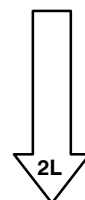
RESULTS
BAT VOLT (Momentary)



M132 Tailgate Lock Actuator



PROBLEM CAUSE
- K Wire

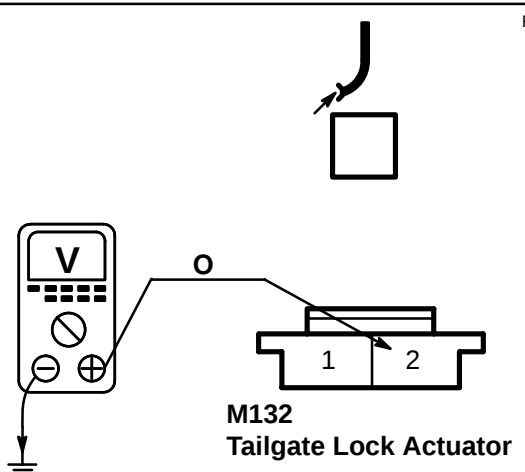


2L R020029

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock a front door

RESULTS
BAT VOLT (Momentary)



M132 Tailgate Lock Actuator



PROBLEM CAUSE
- O Wire



PROBLEM CAUSE
- Tailgate Lock Actuator

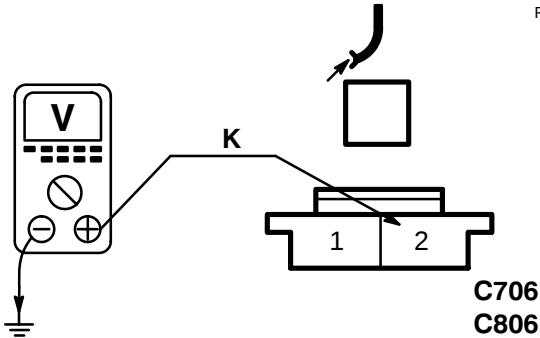
Test M

1M R160002

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

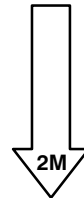
RESULTS
BAT VOLT (Momentary)



M117, M125 Rear Door Lock Actuator



PROBLEM CAUSE
- K Wire

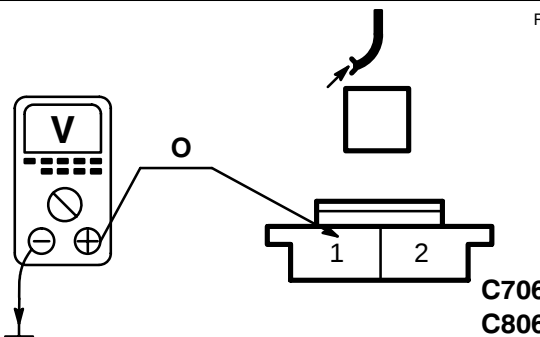


2M R050001

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

RESULTS
BAT VOLT (Momentary)



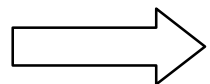
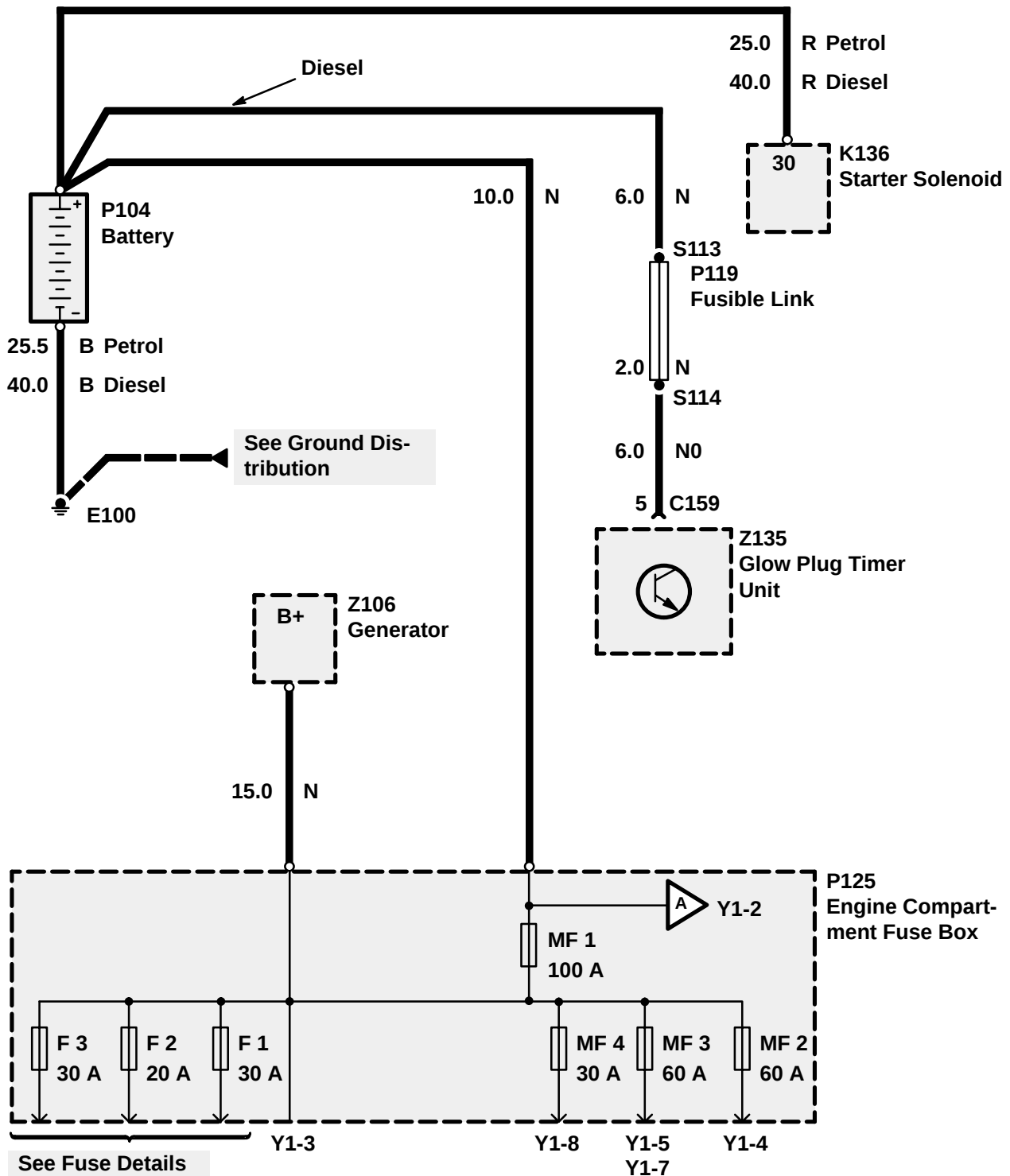
M117, M125 Rear Door Lock Actuator

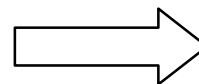
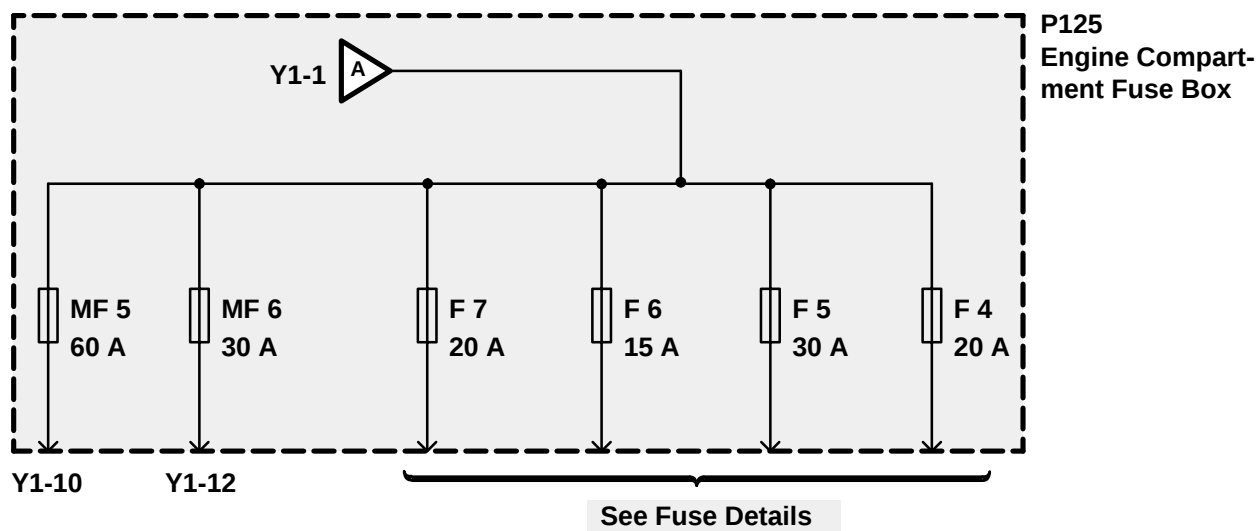
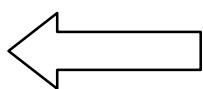


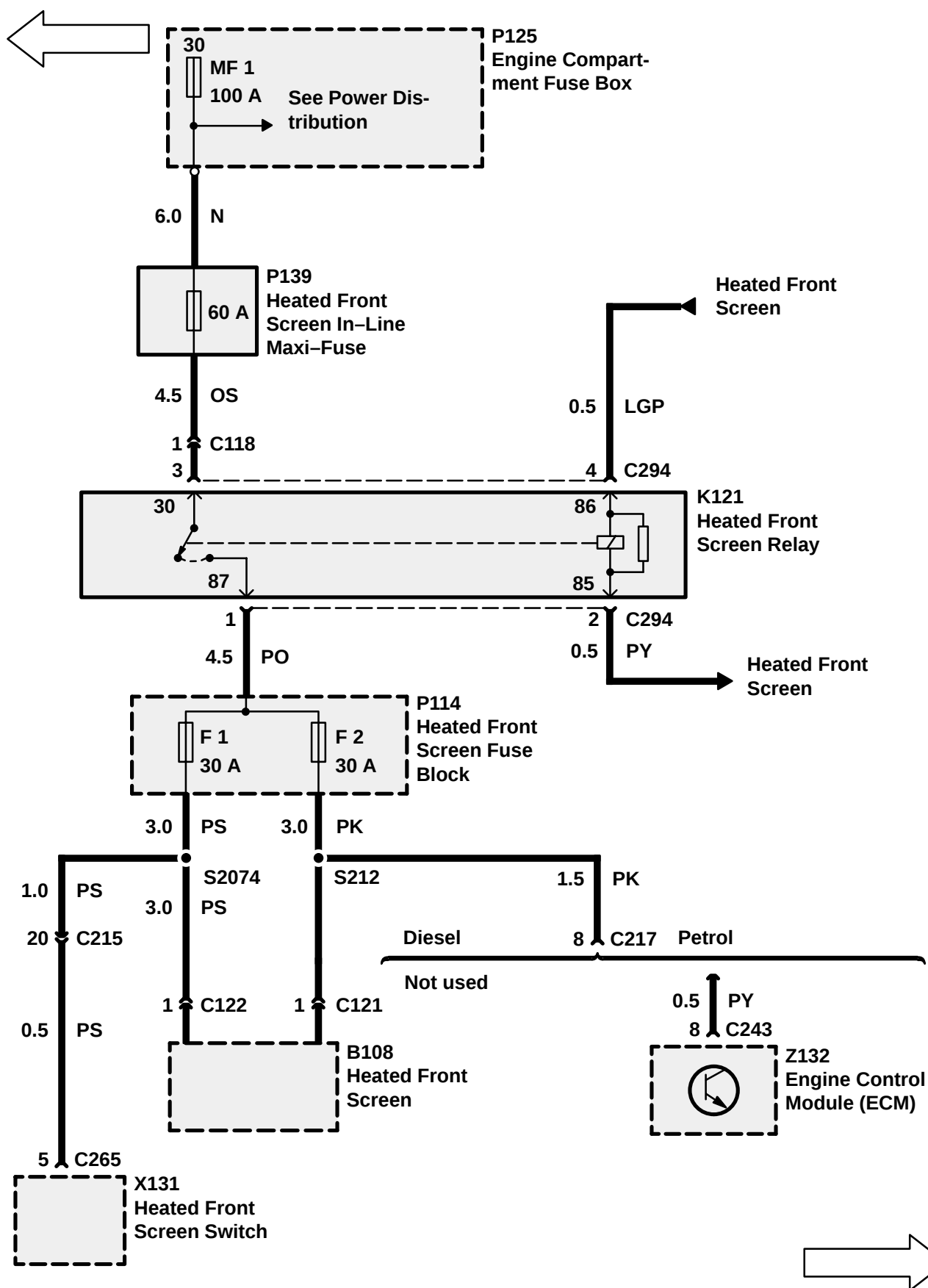
PROBLEM CAUSE
- O Wire

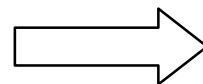
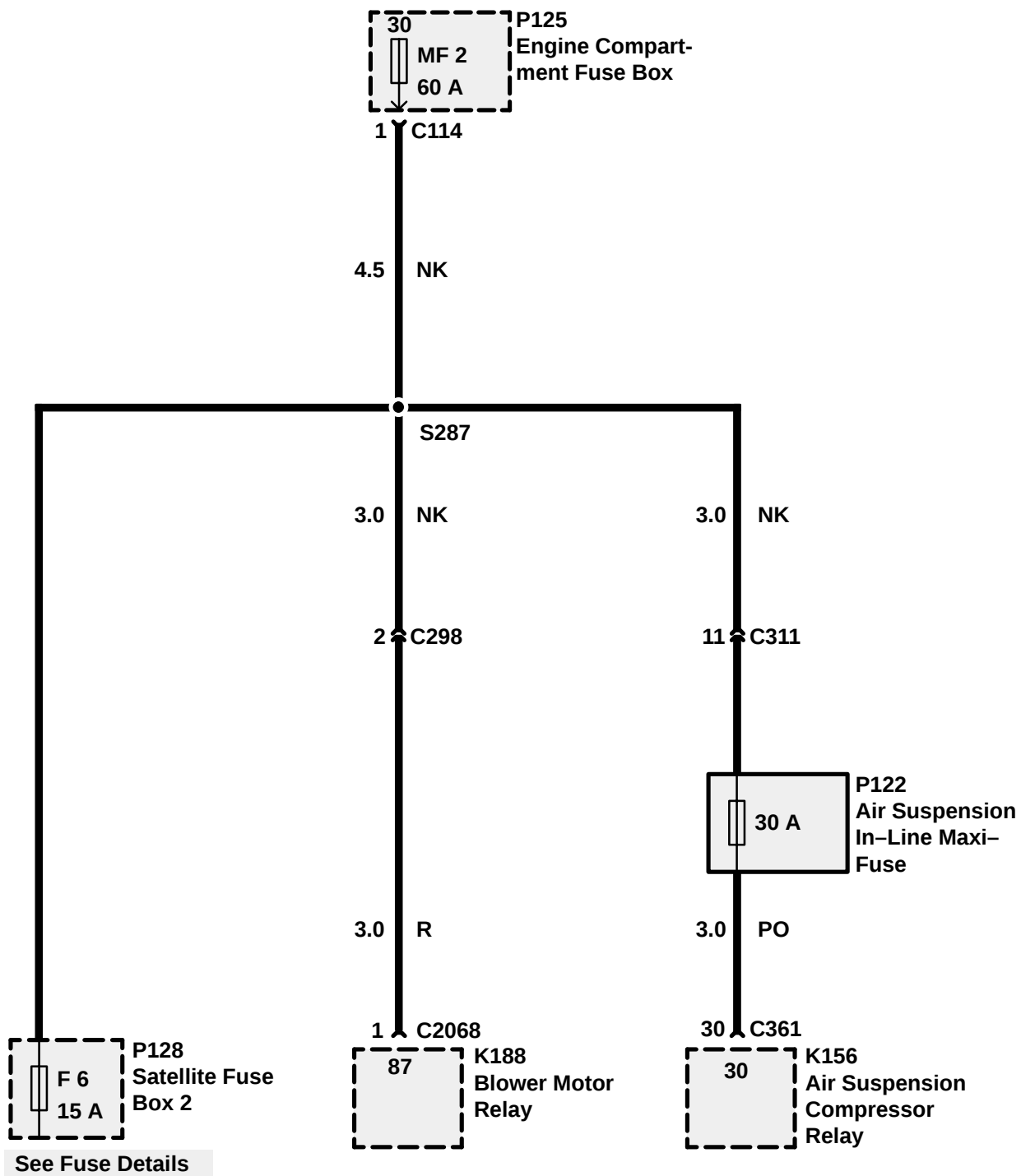
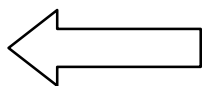


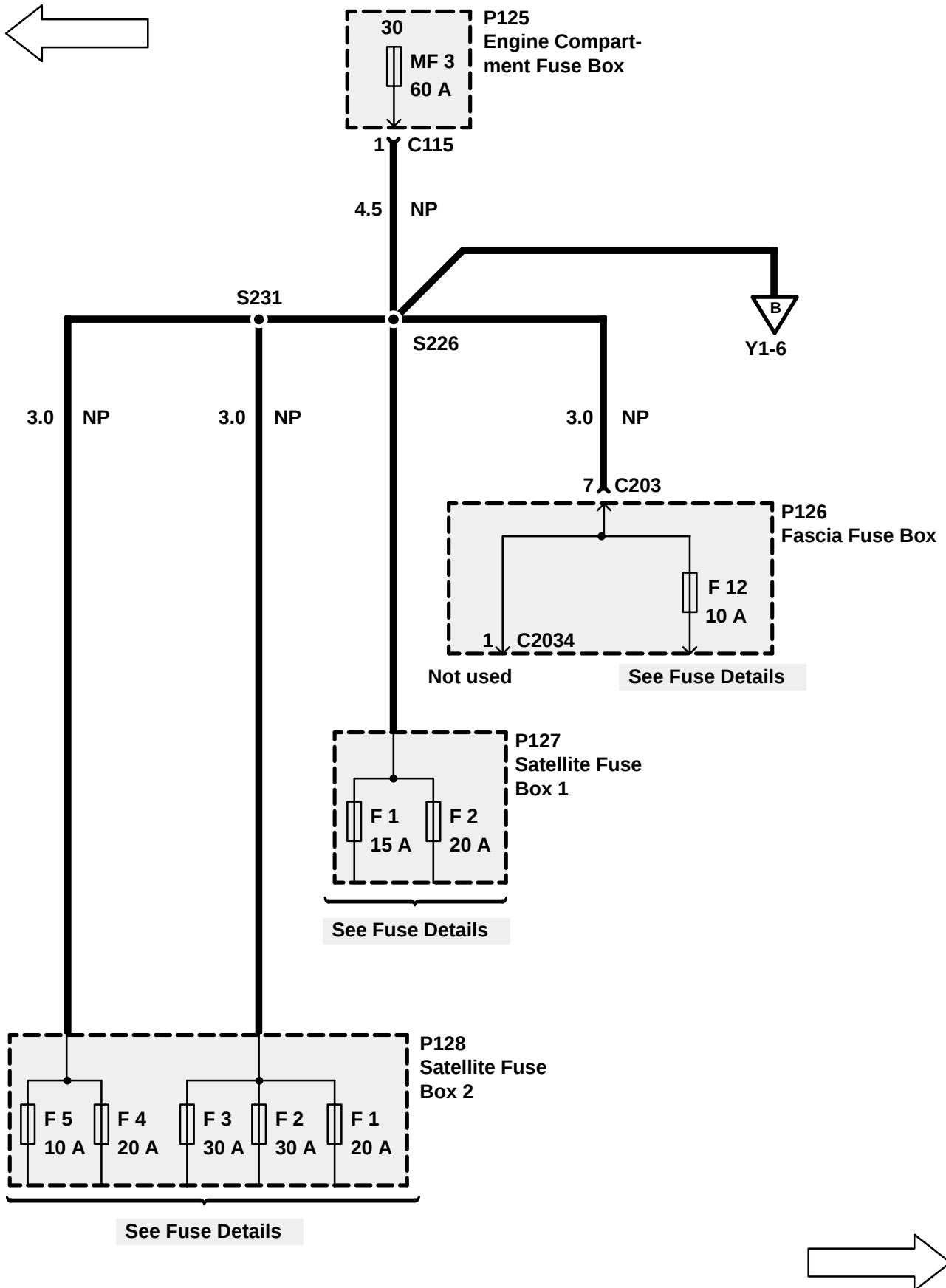
PROBLEM CAUSE
- M117, M125 Rear Door Lock Actuator

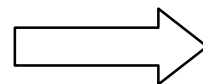
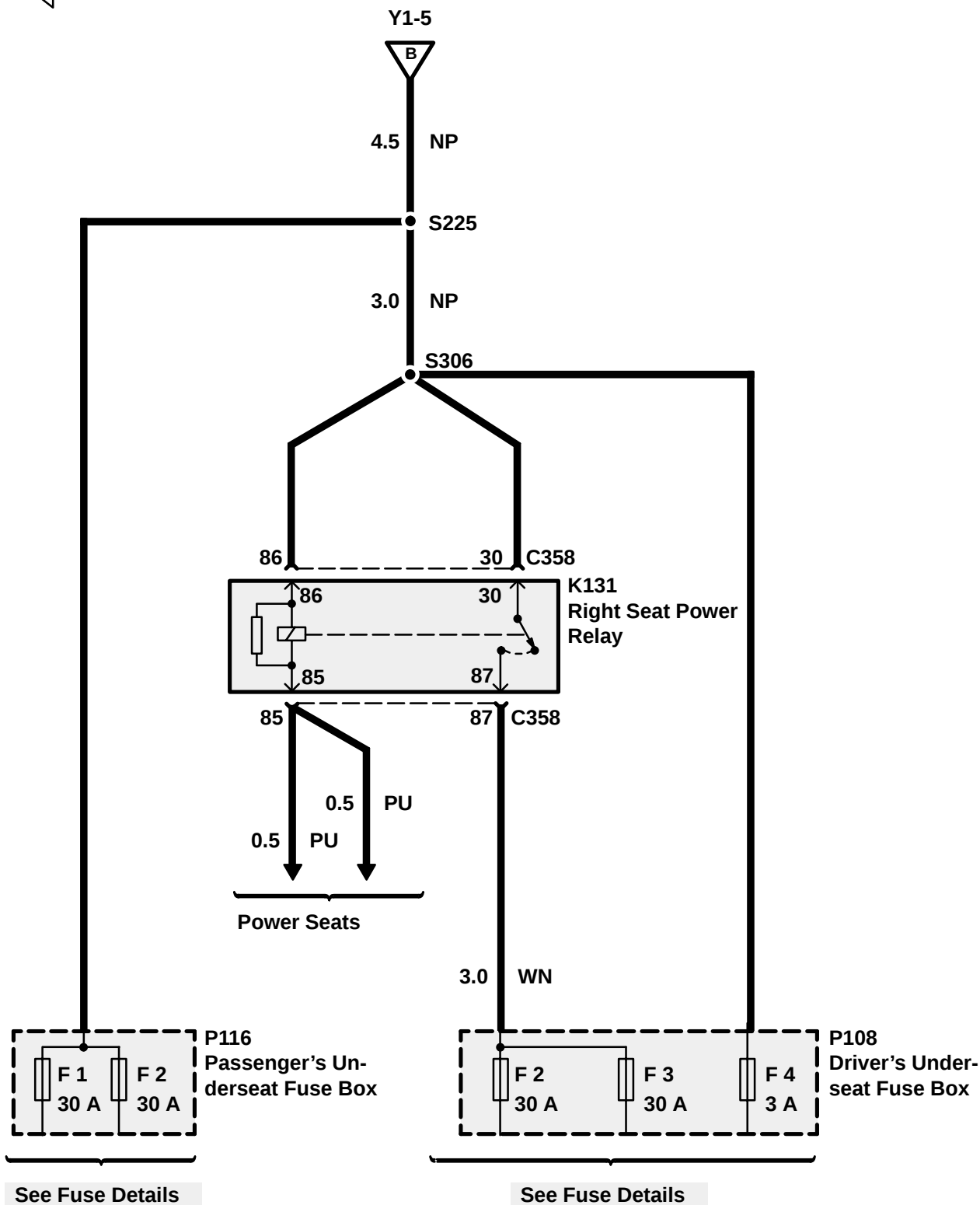
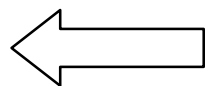


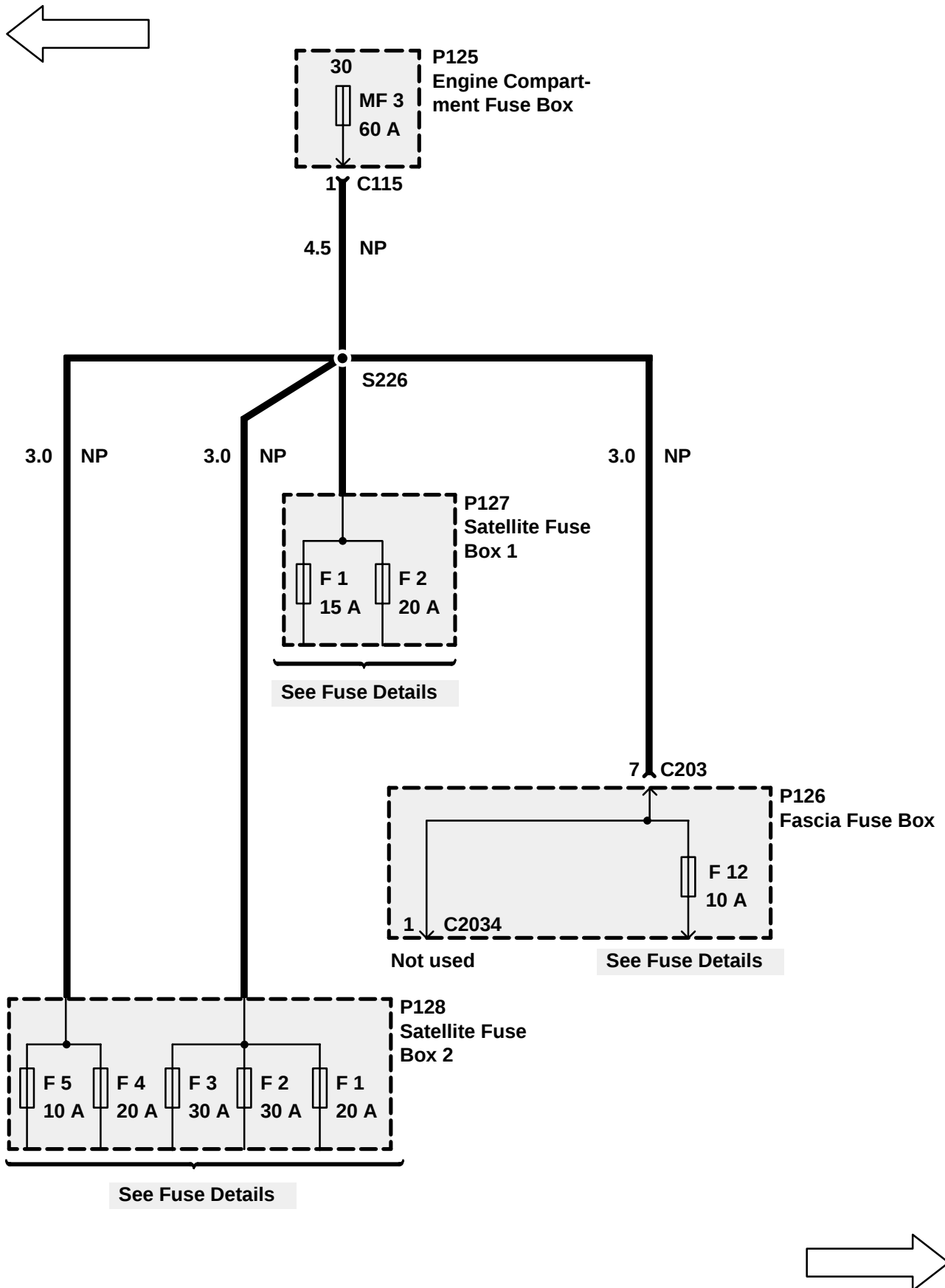


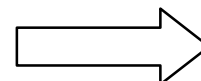


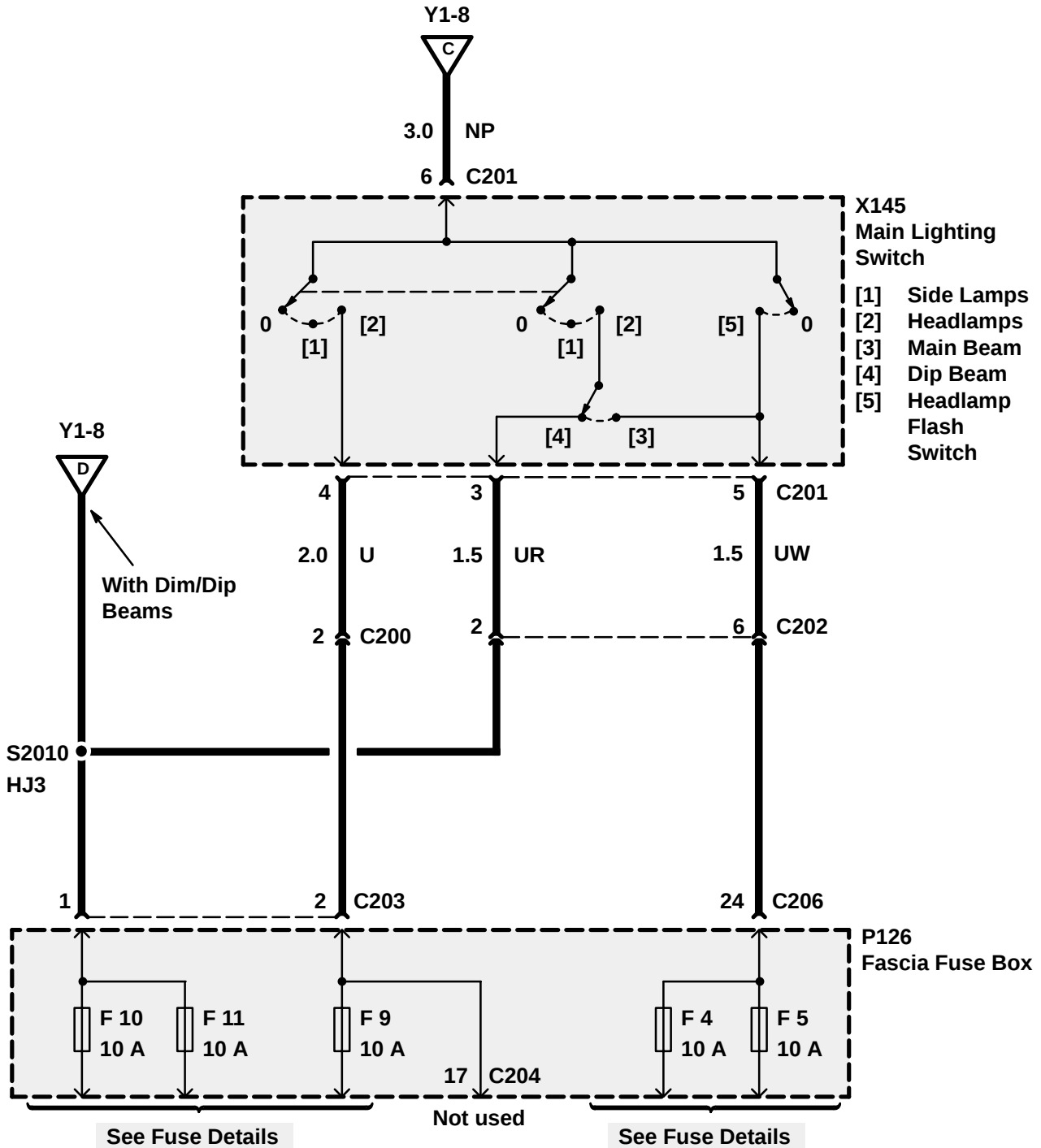


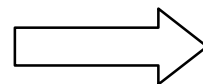
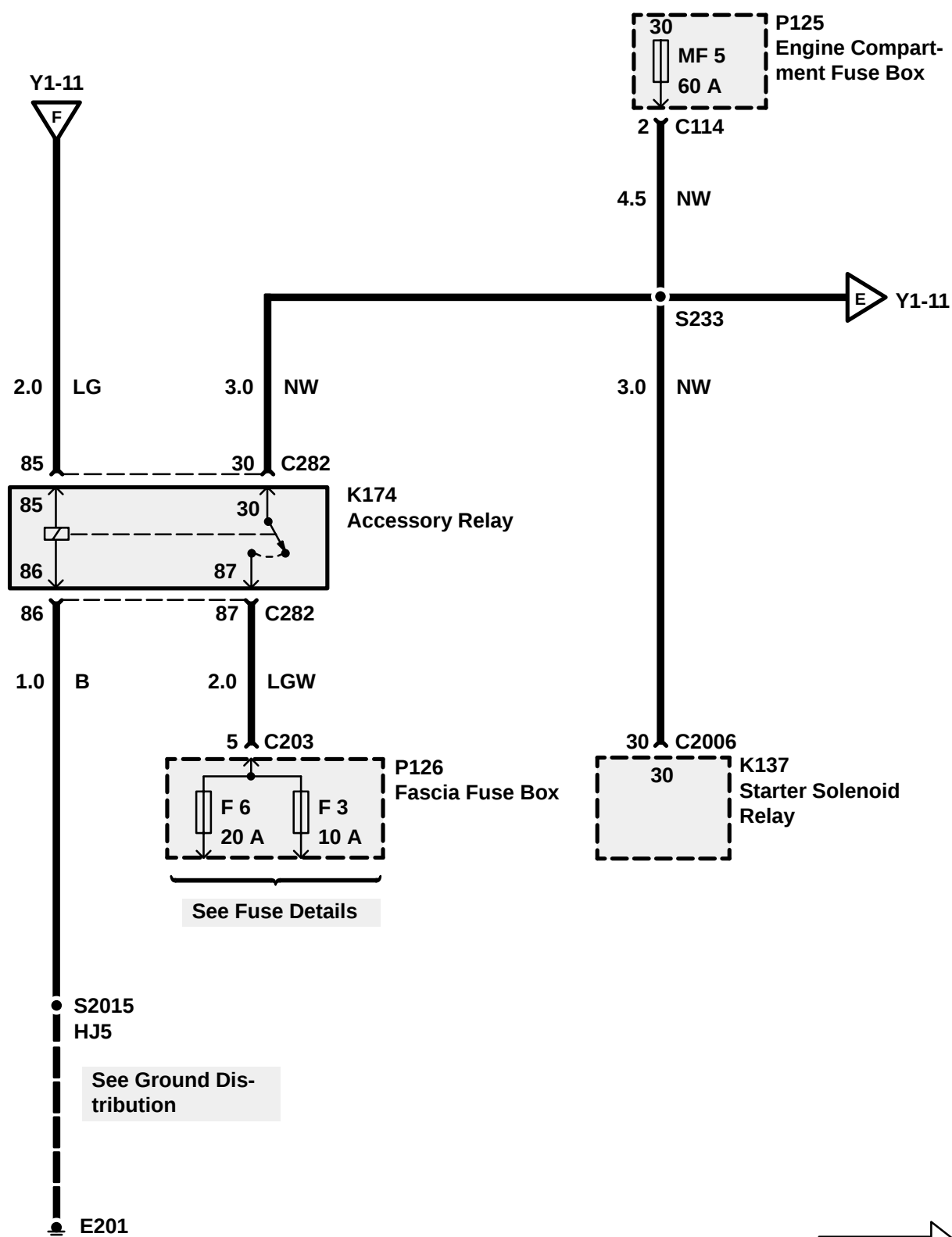
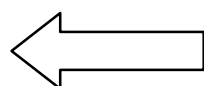


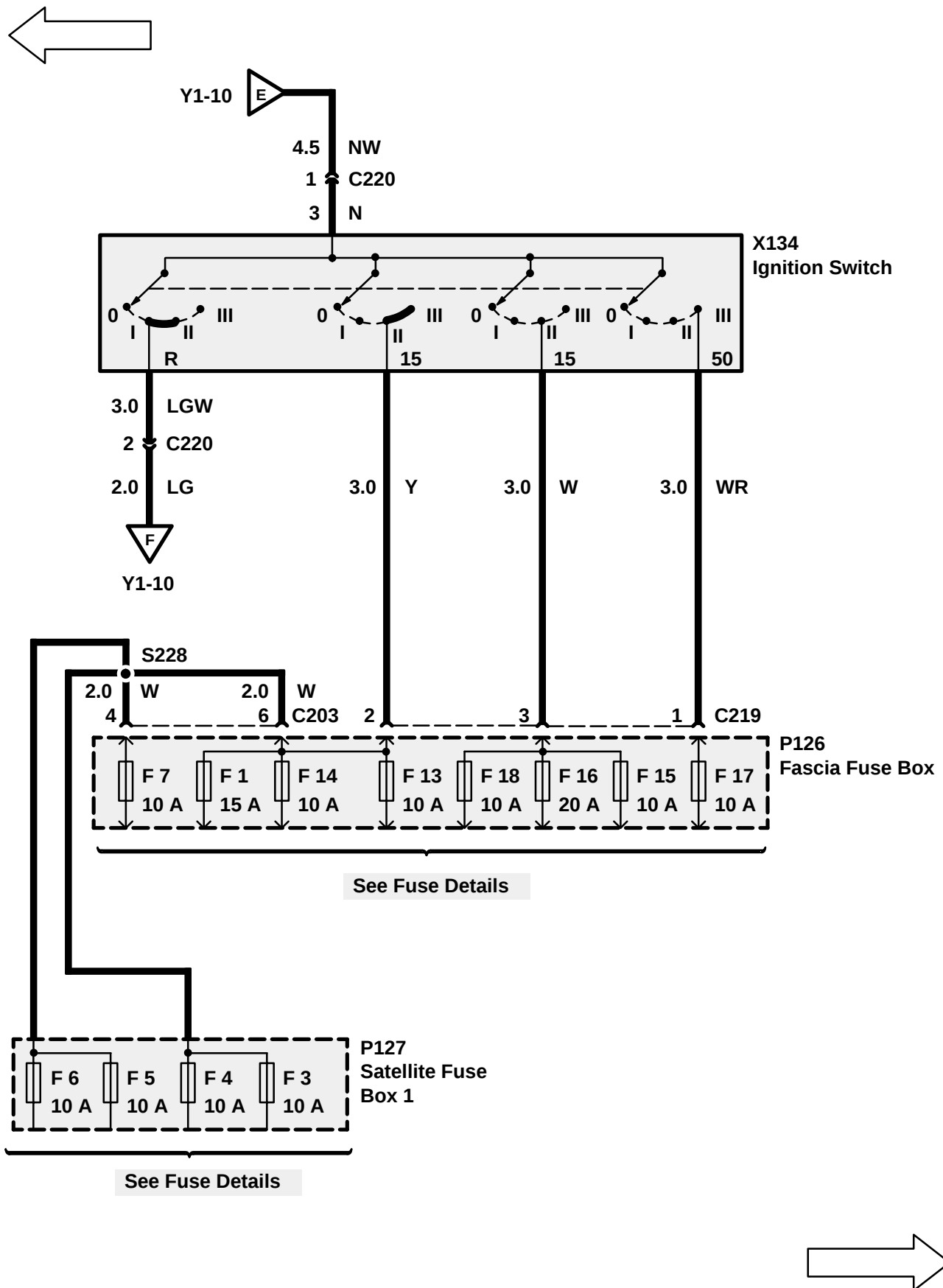


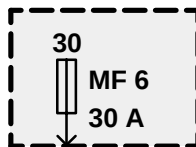
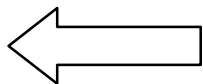












P125
Engine Compartment Fuse Box

3 C115

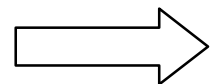
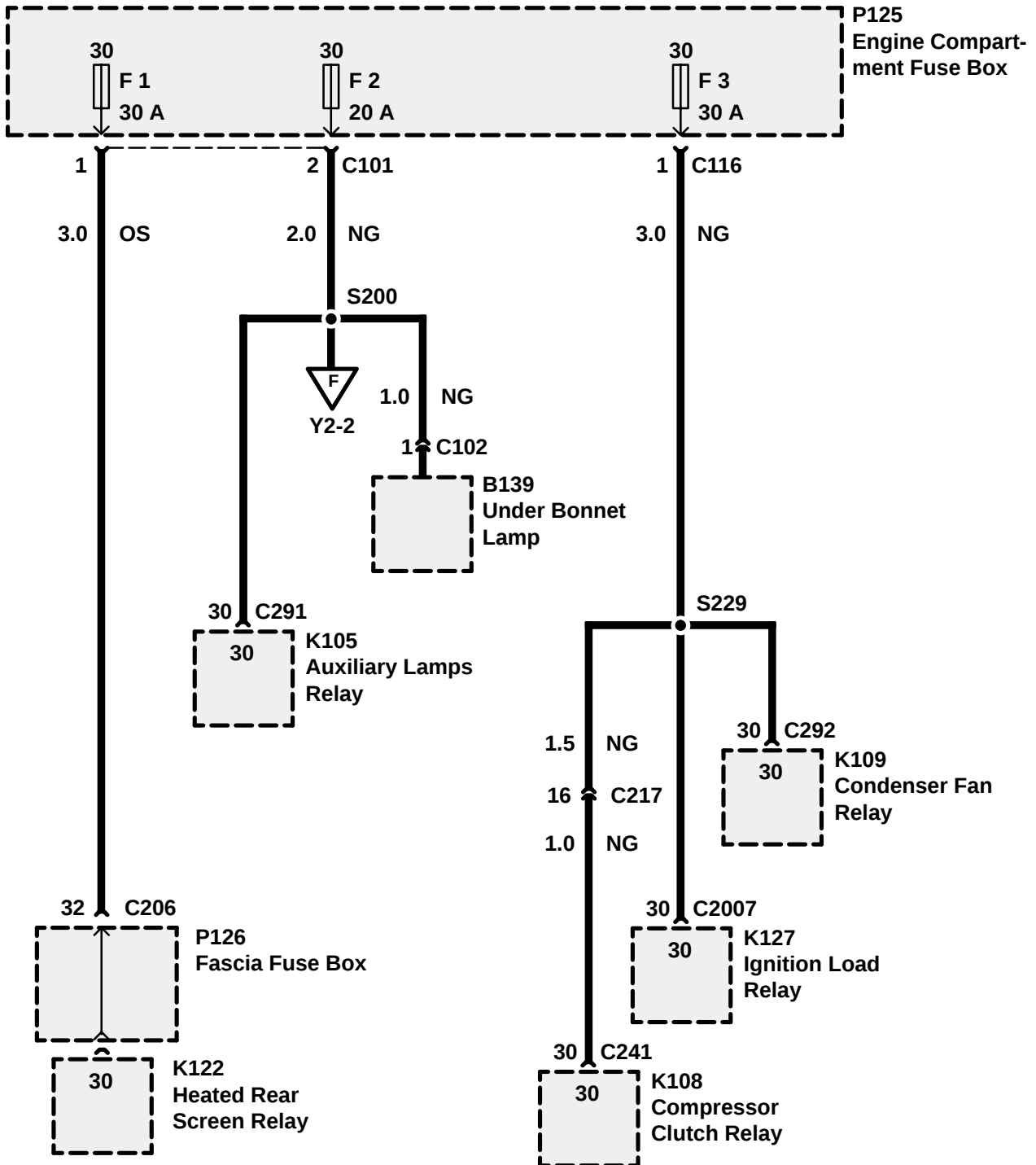
3.0 NS

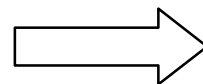
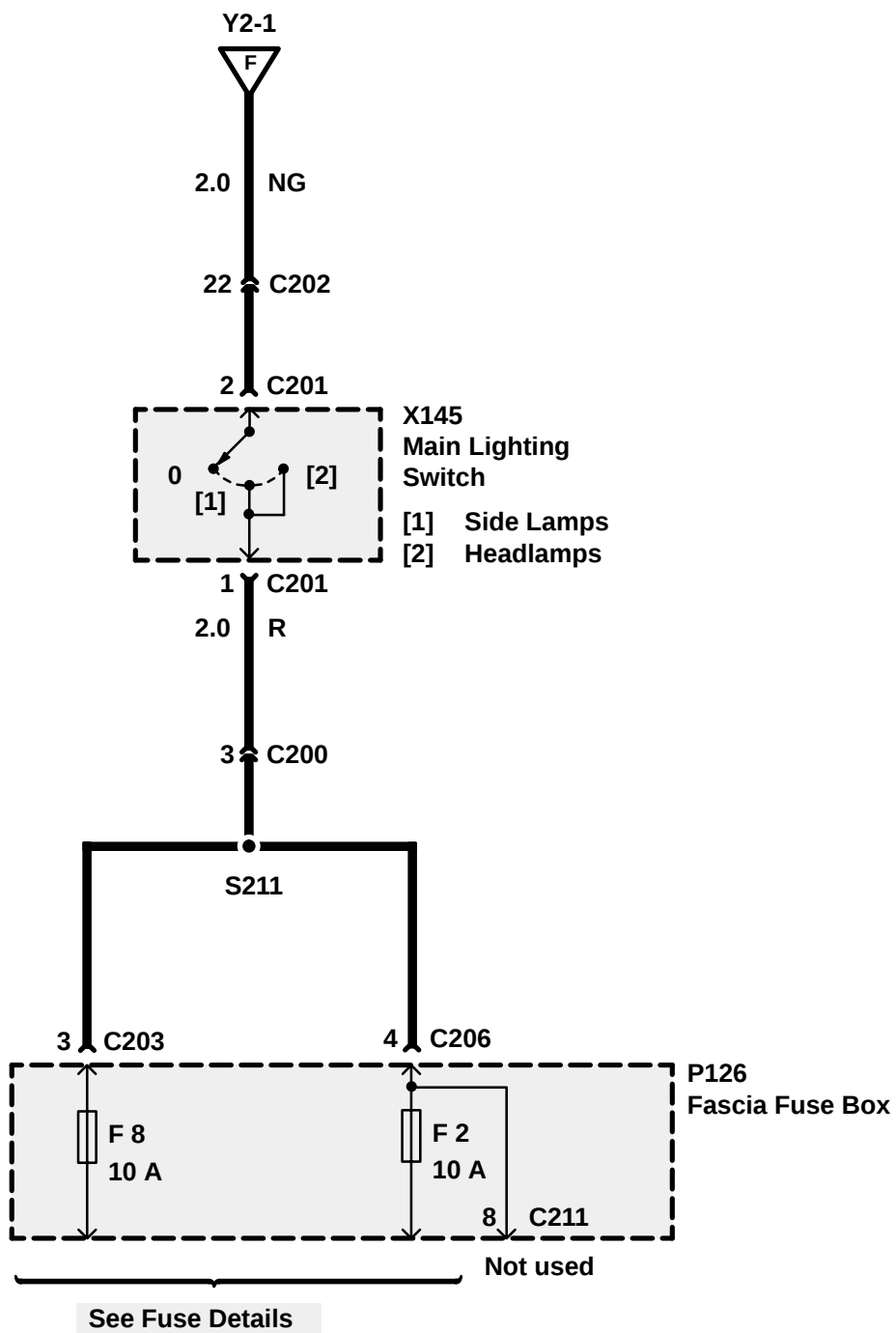
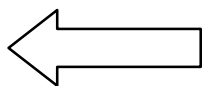
30 C352

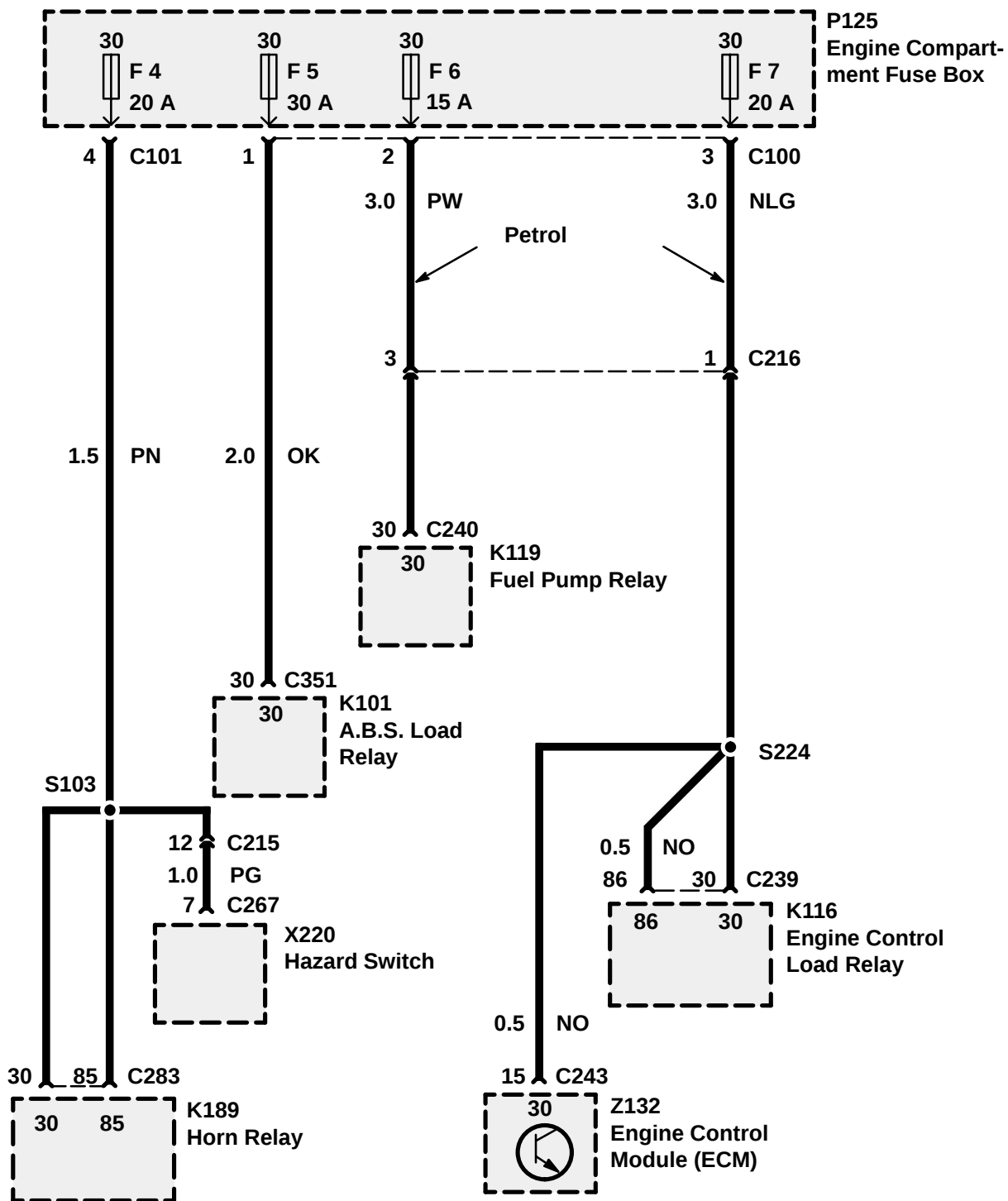


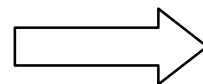
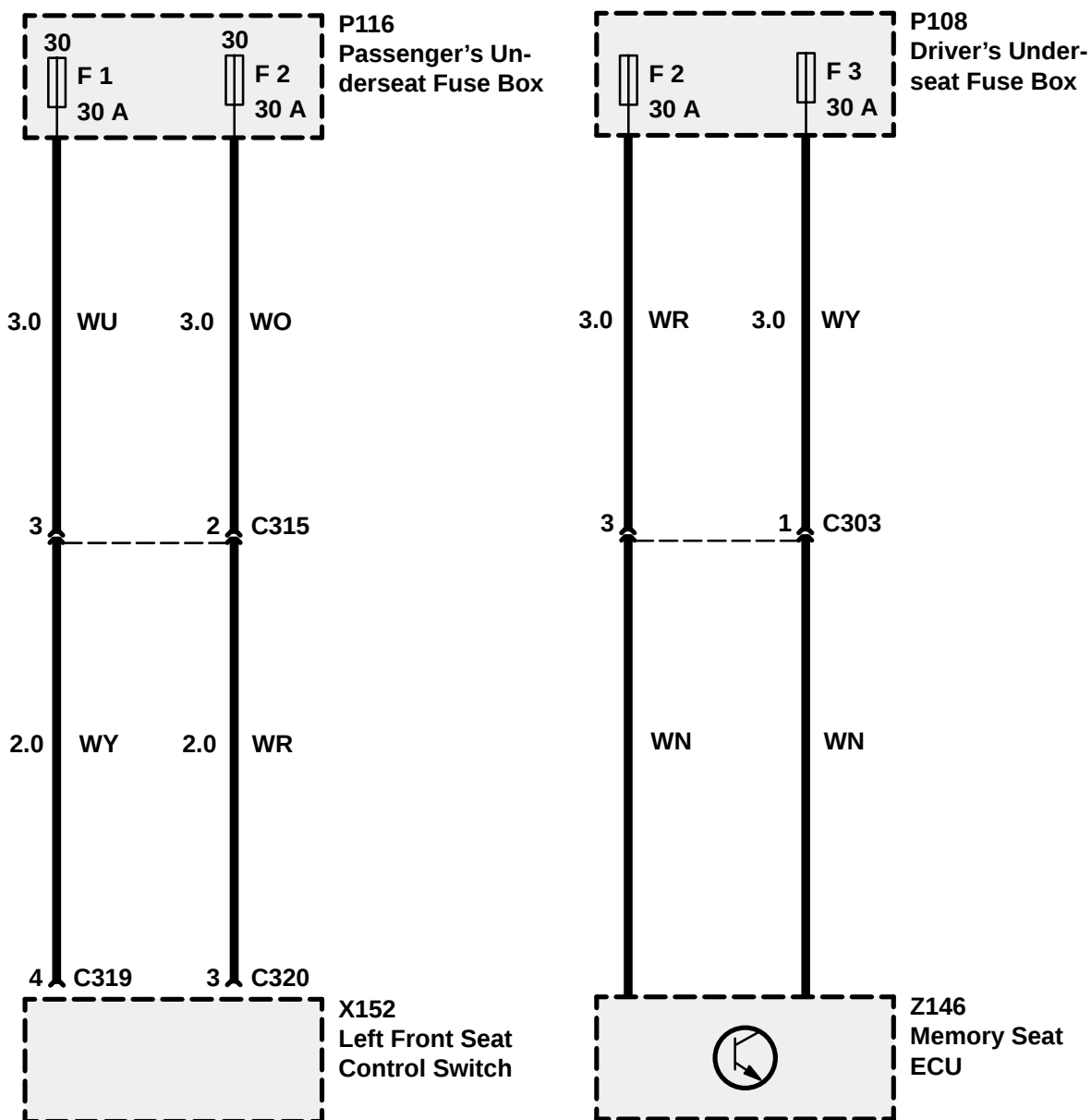
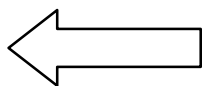
K102
A.B.S. Pump Relay

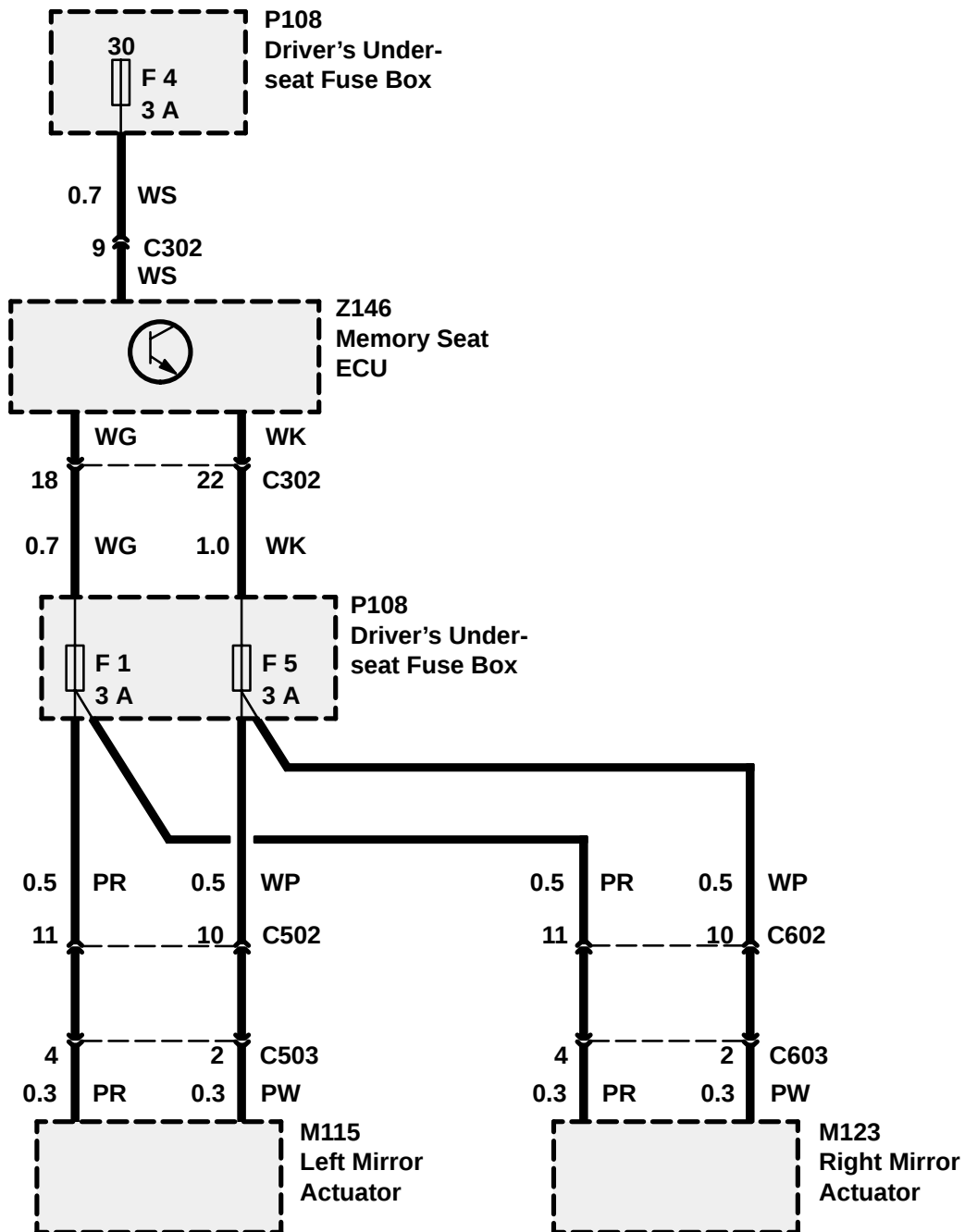


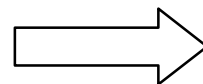
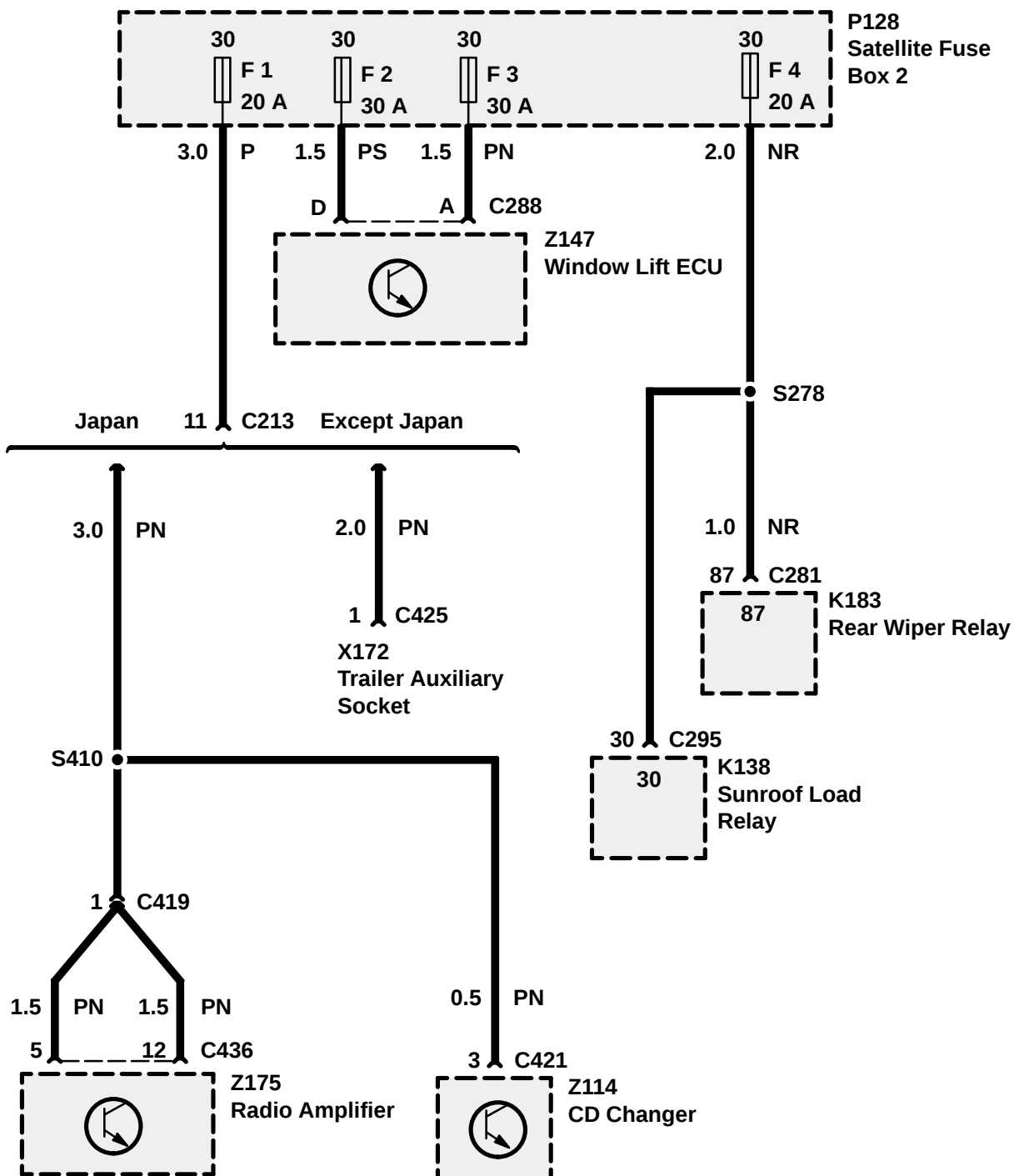
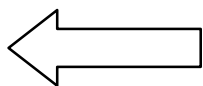


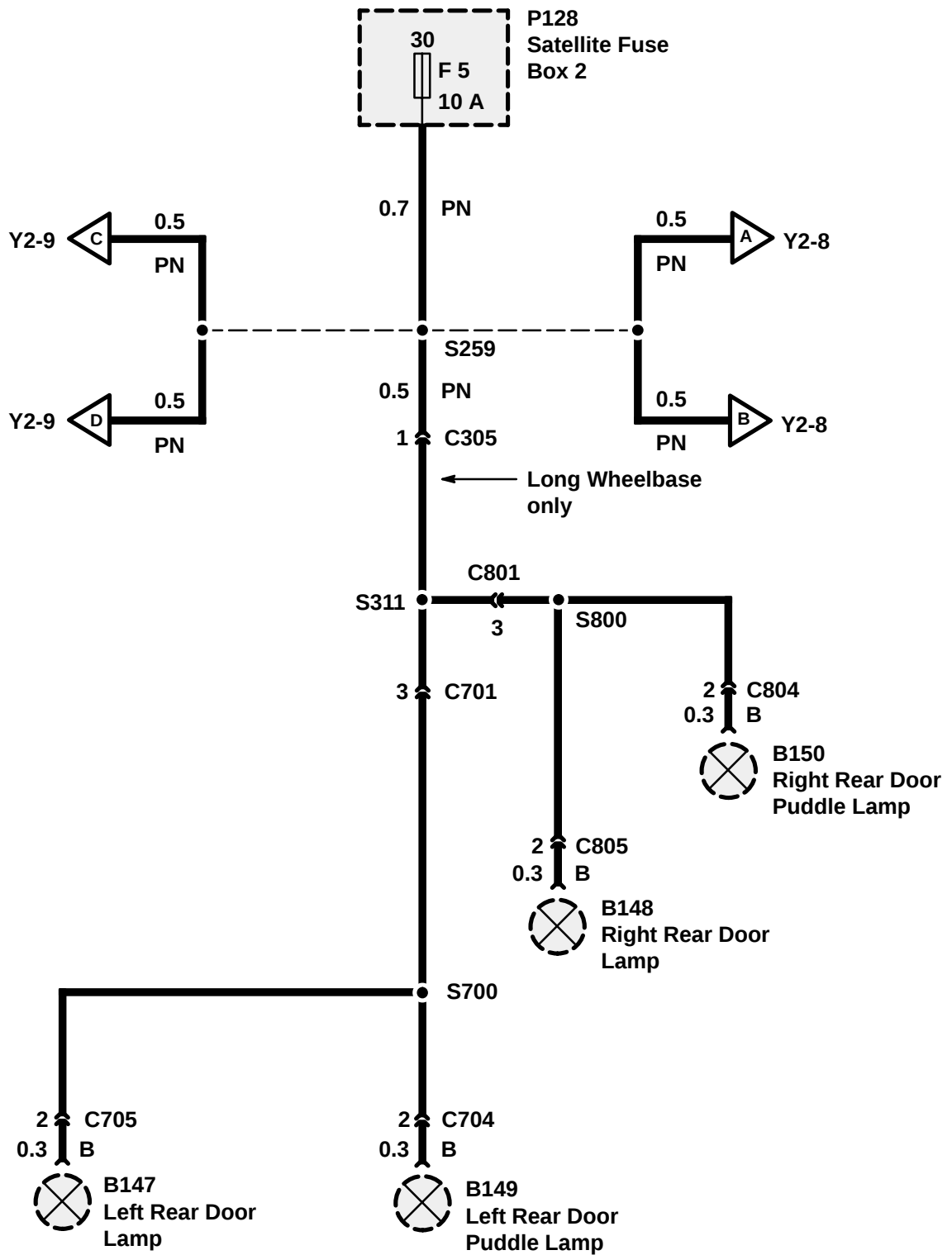


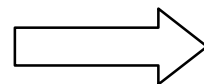
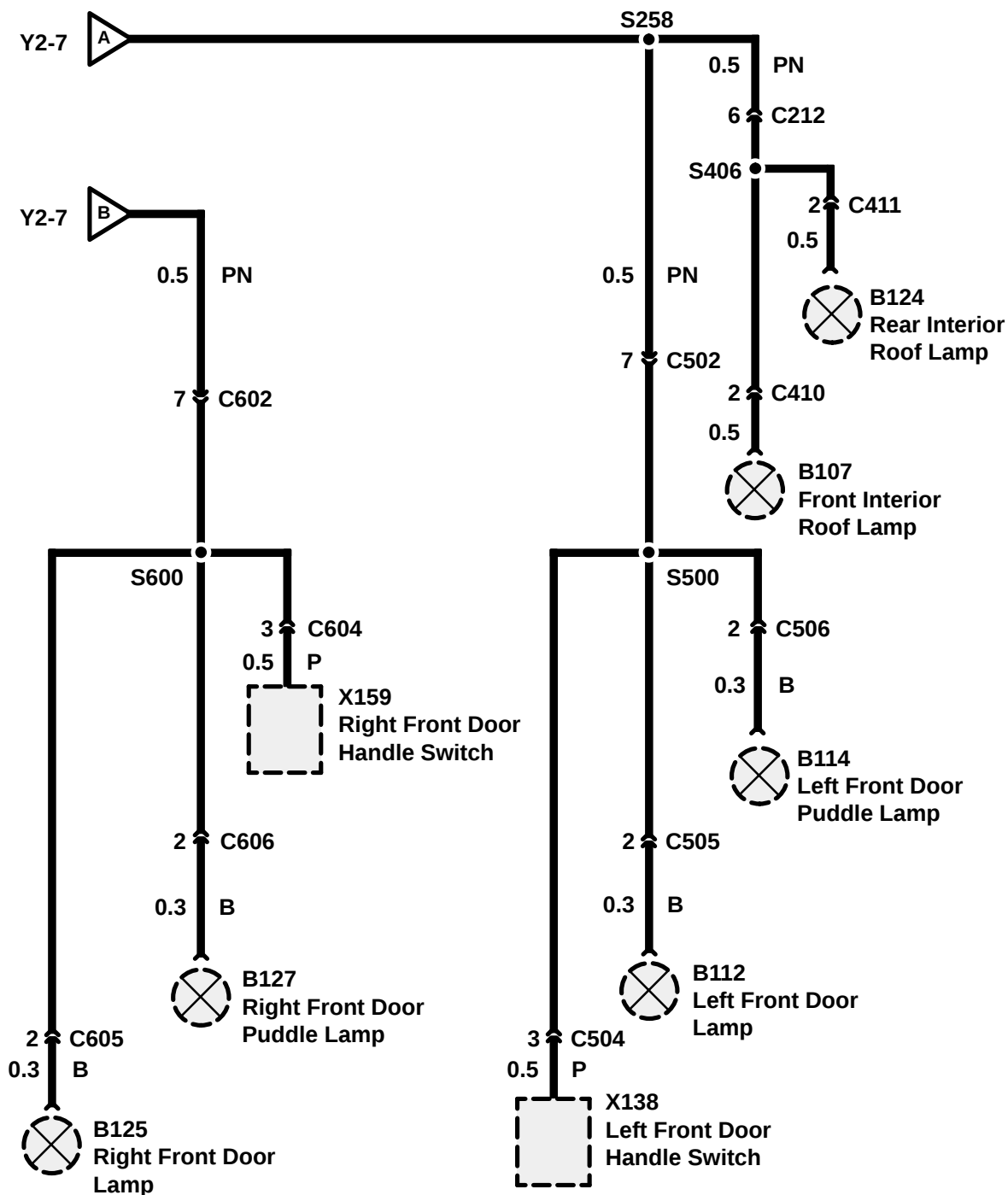
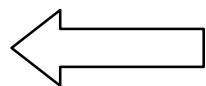


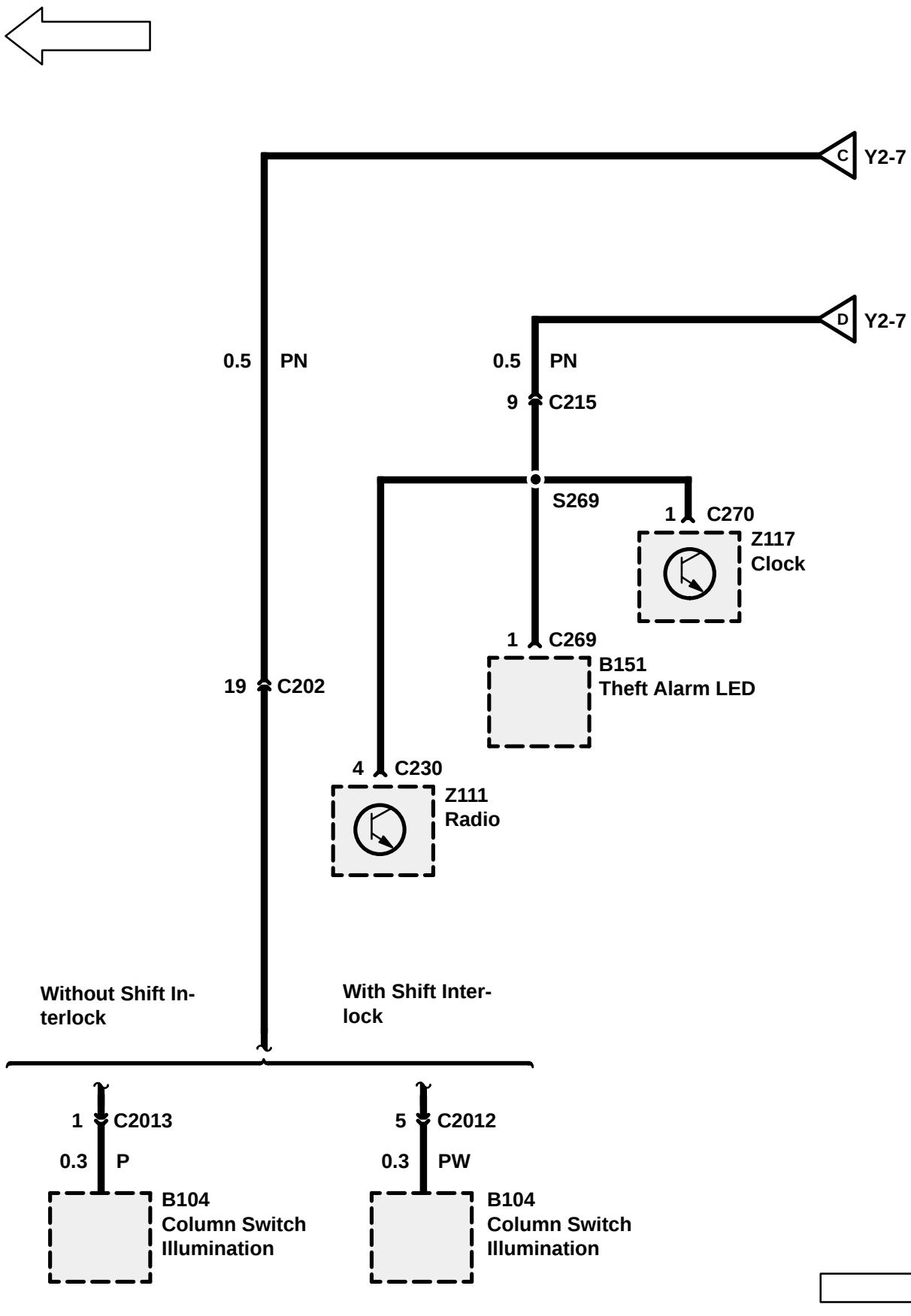


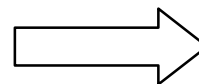
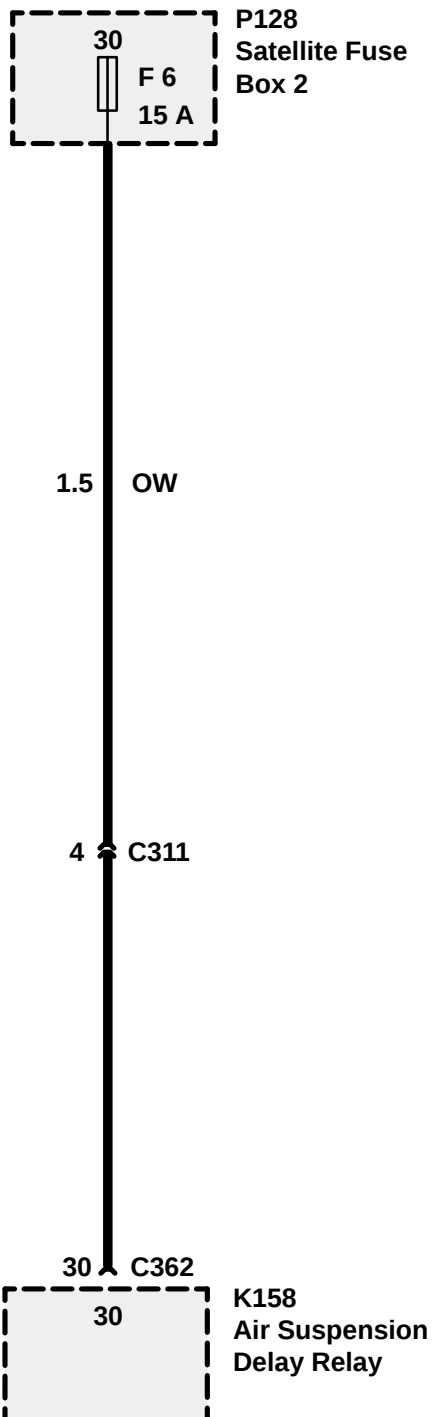
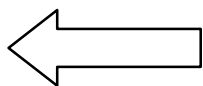


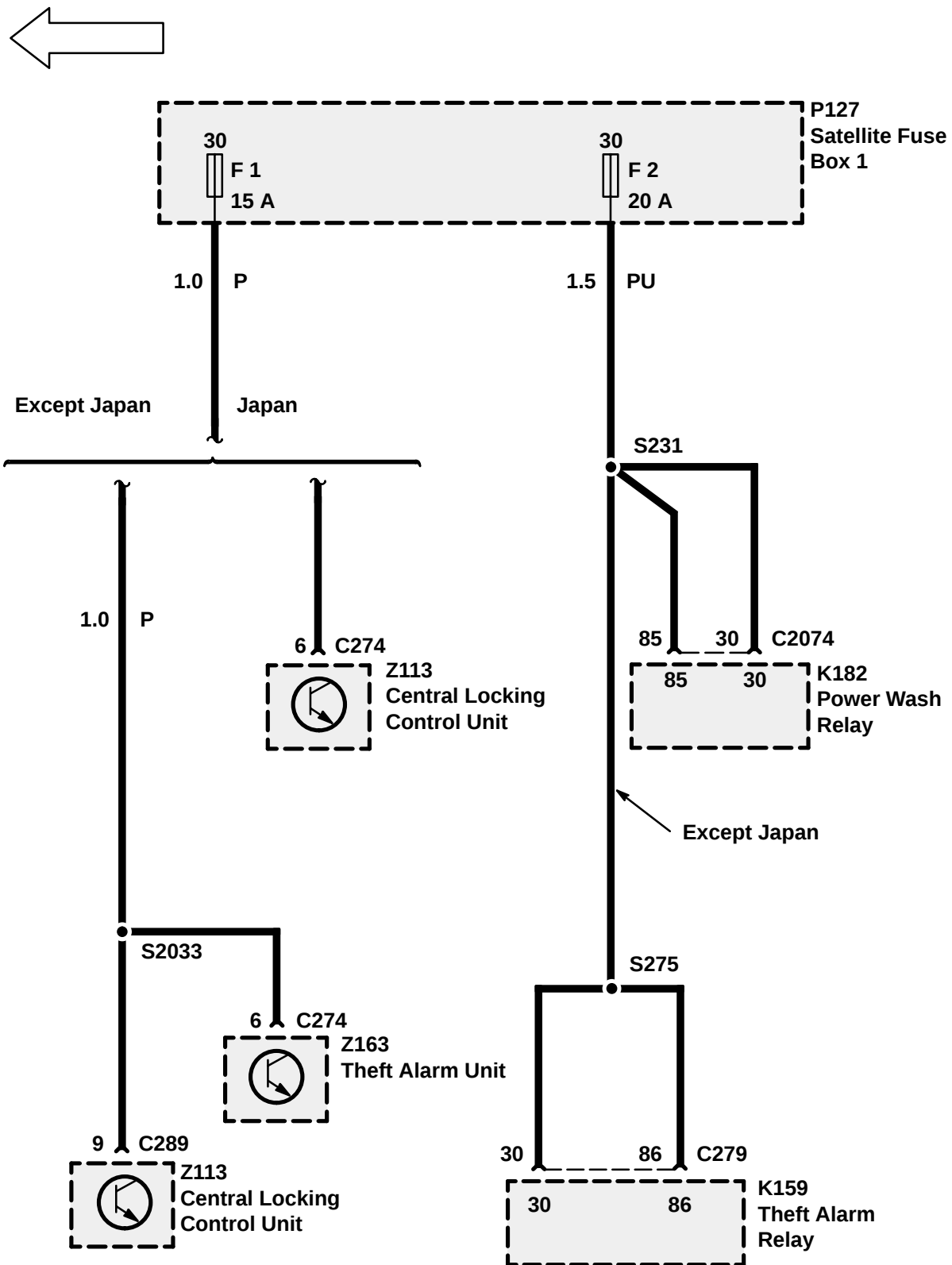


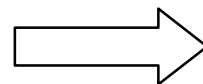
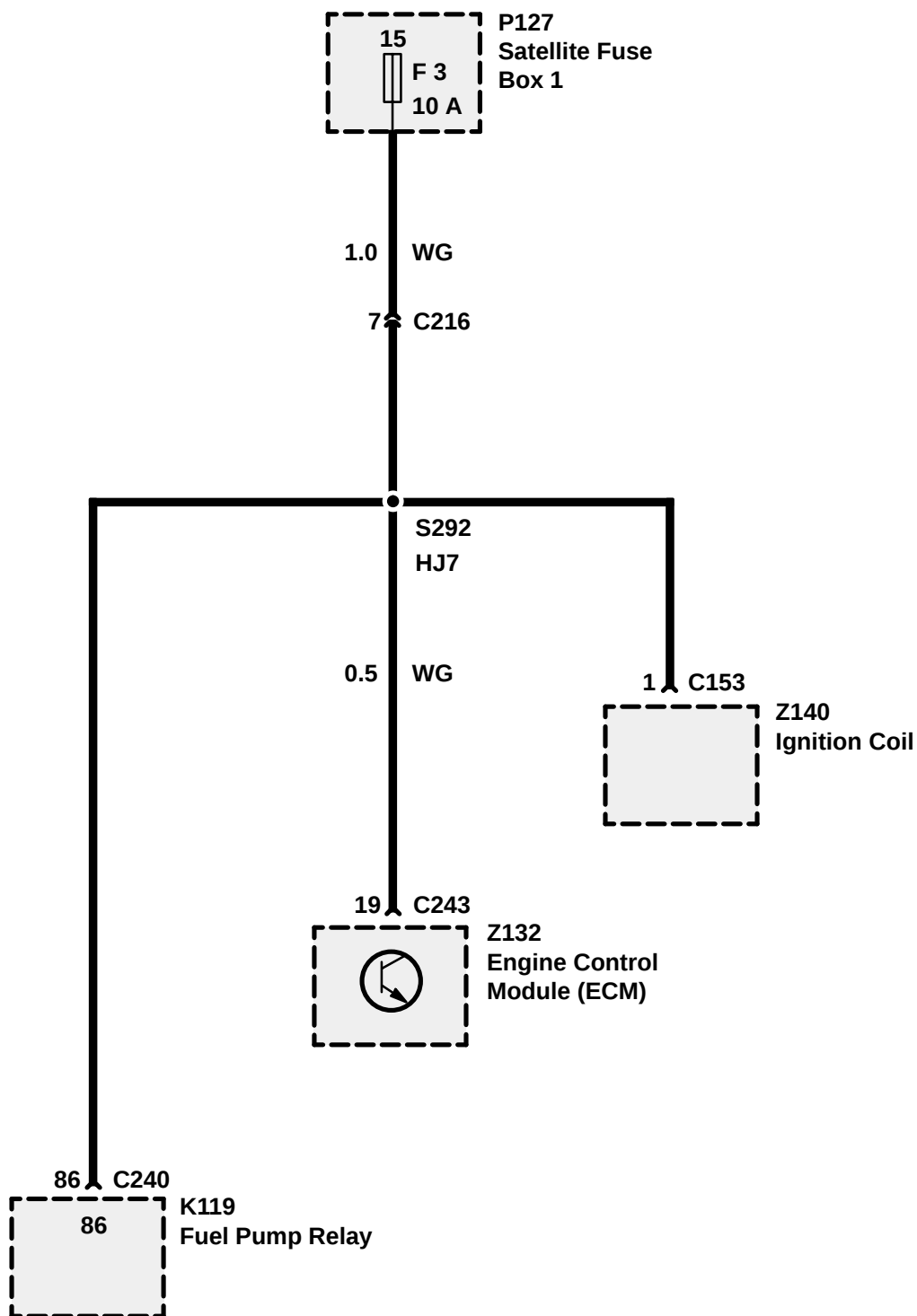
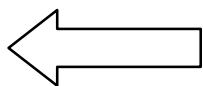


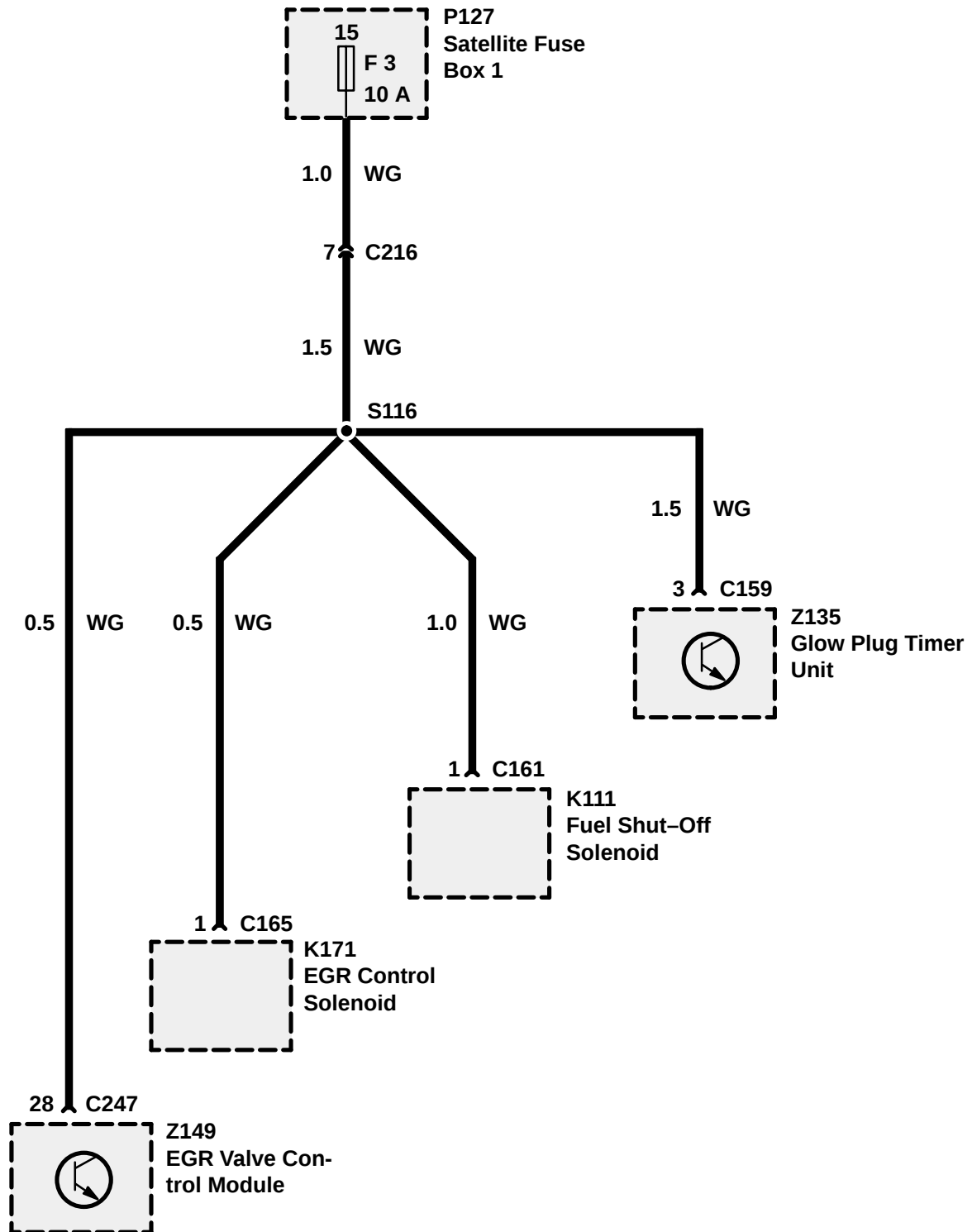


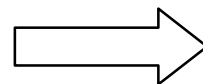
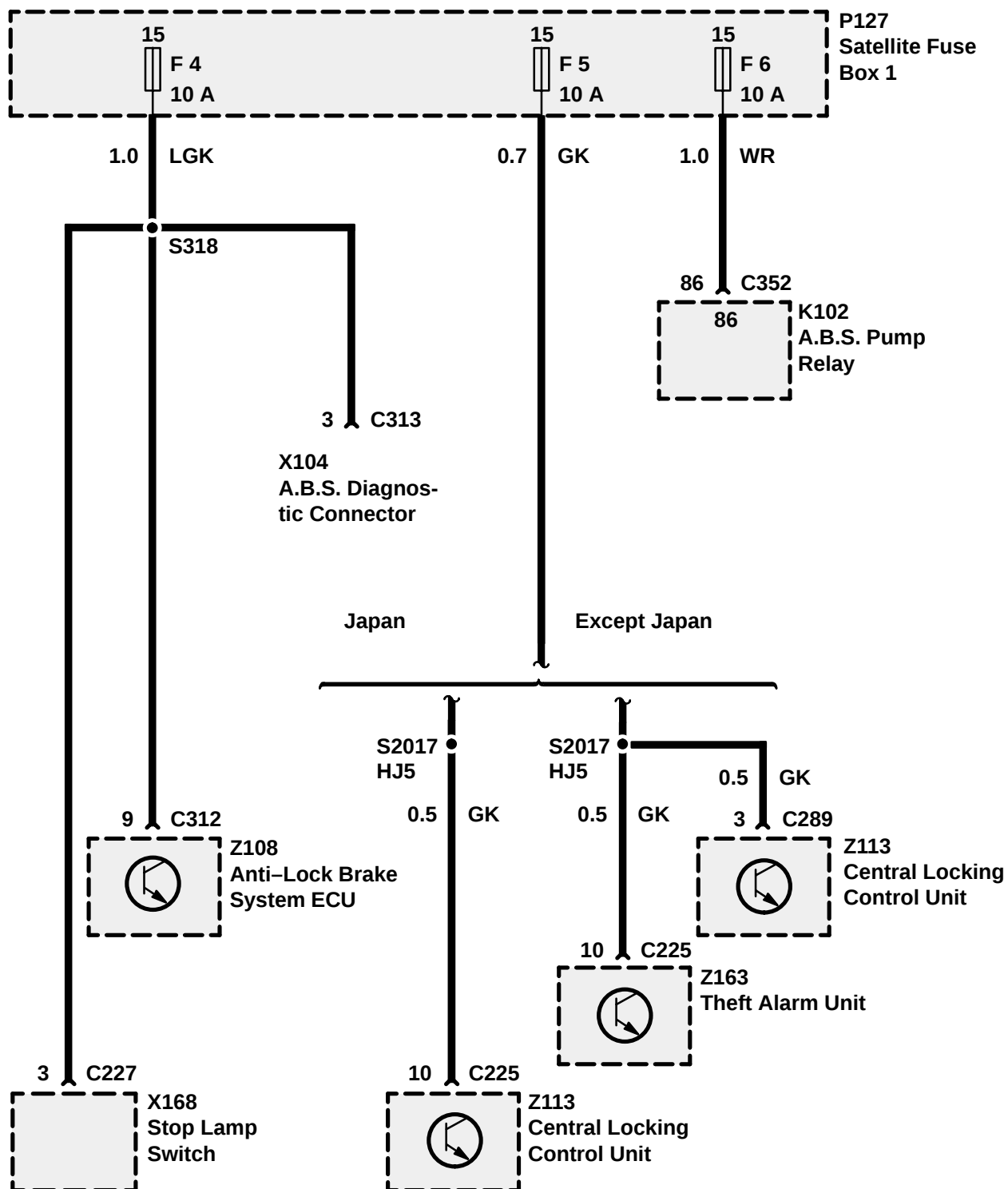
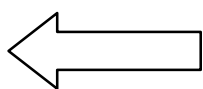


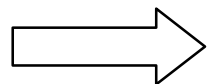
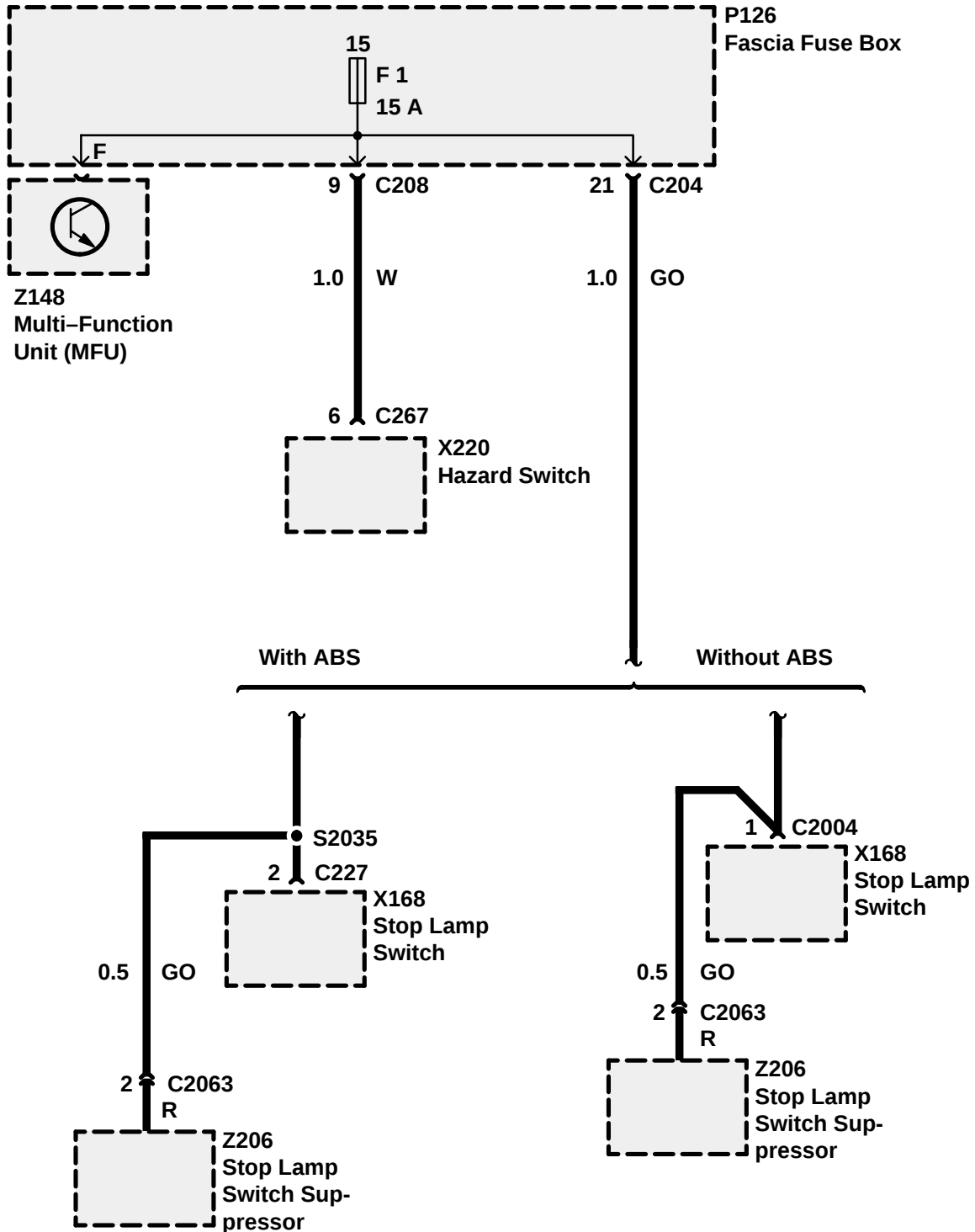
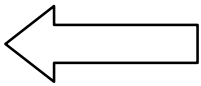


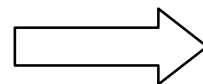
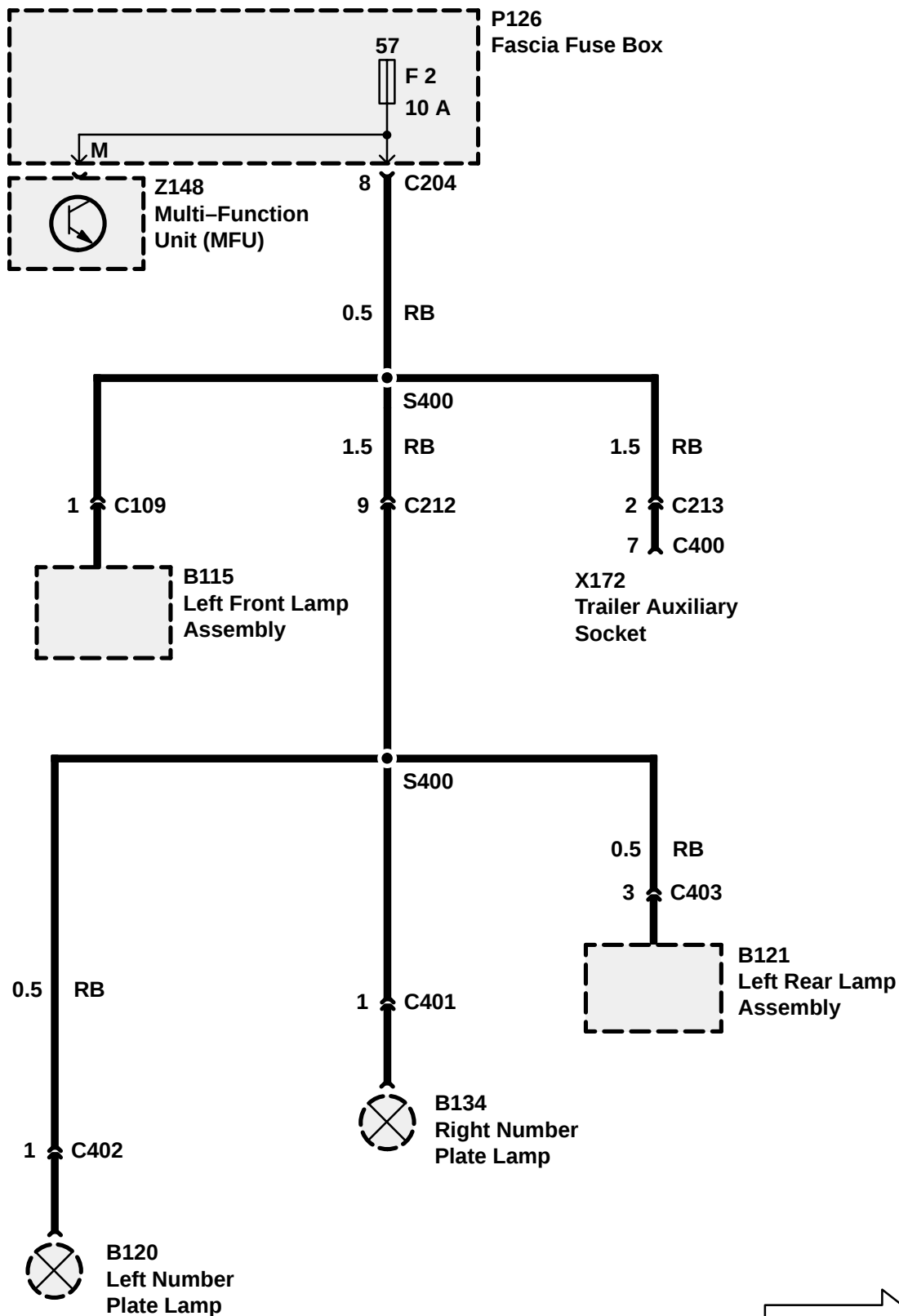
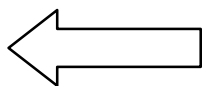


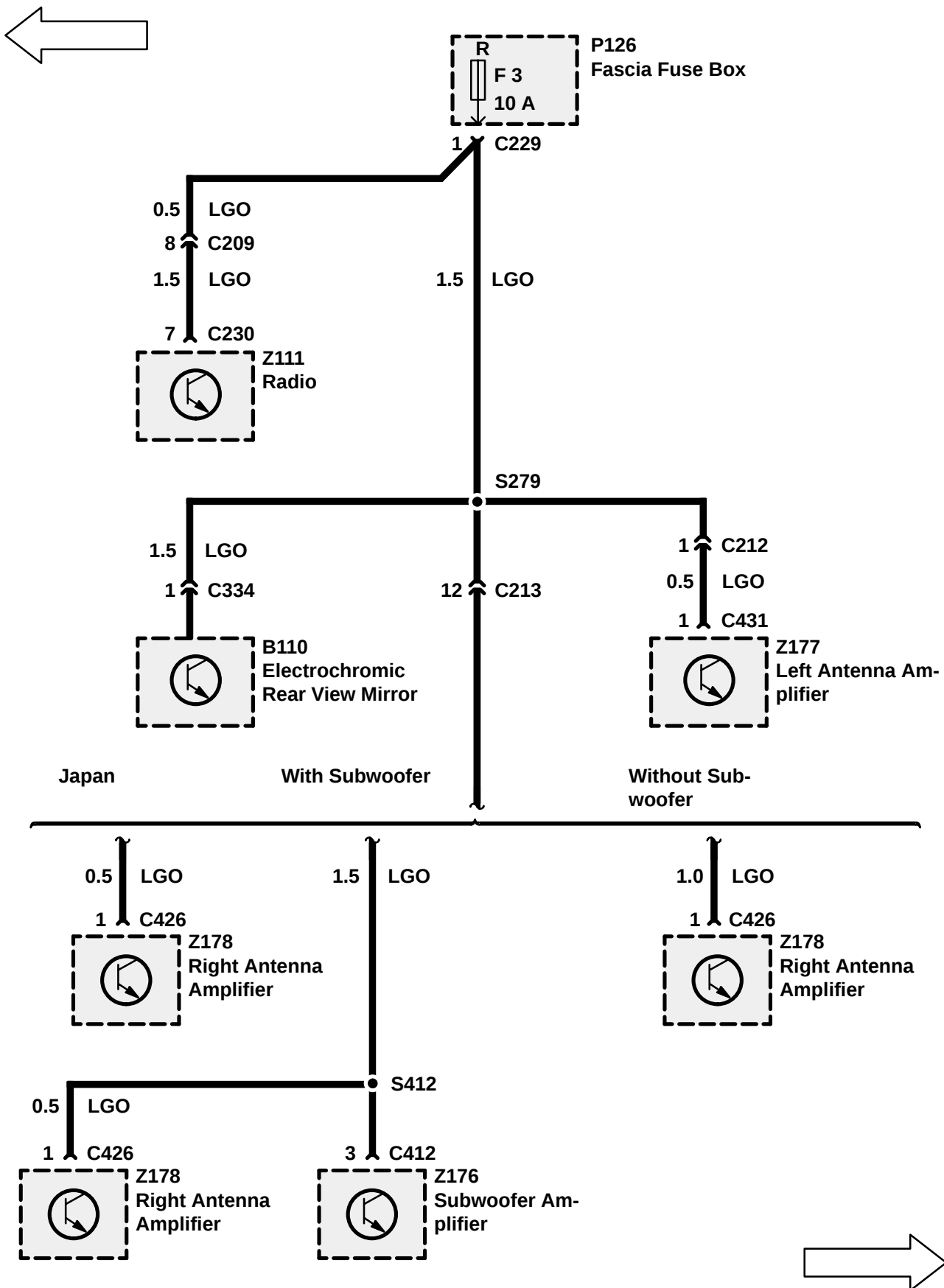


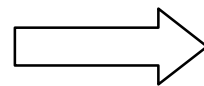
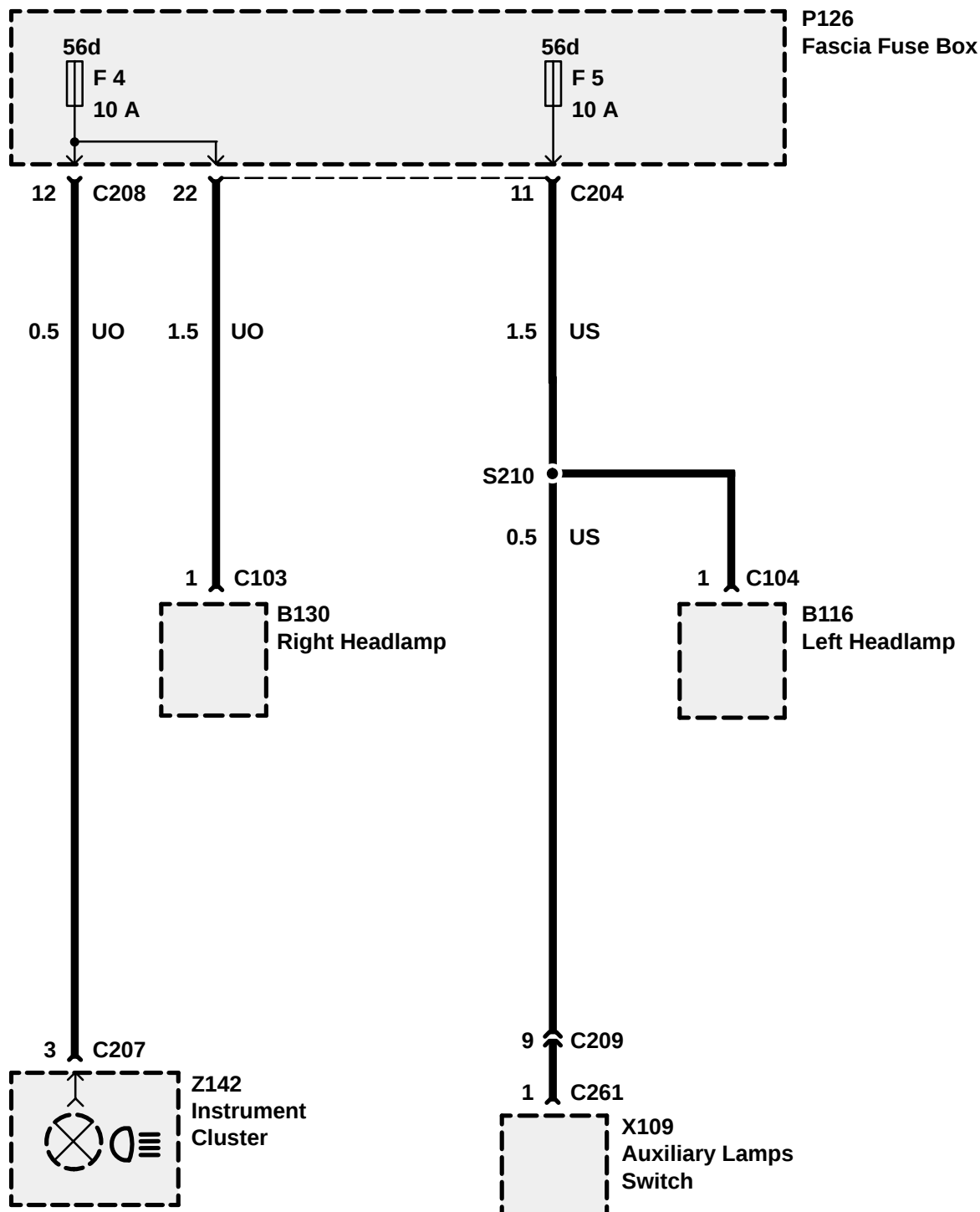
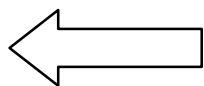


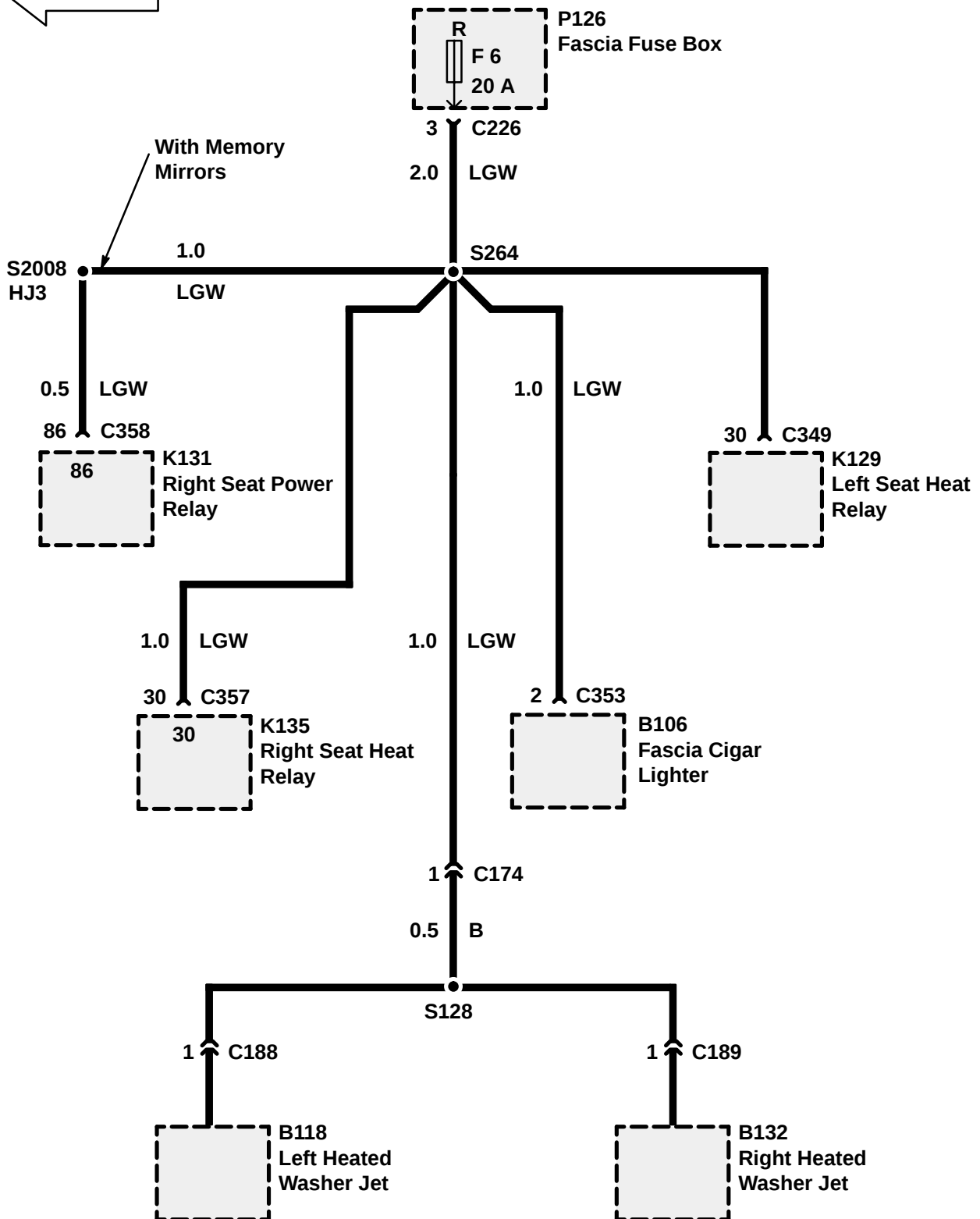


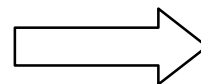
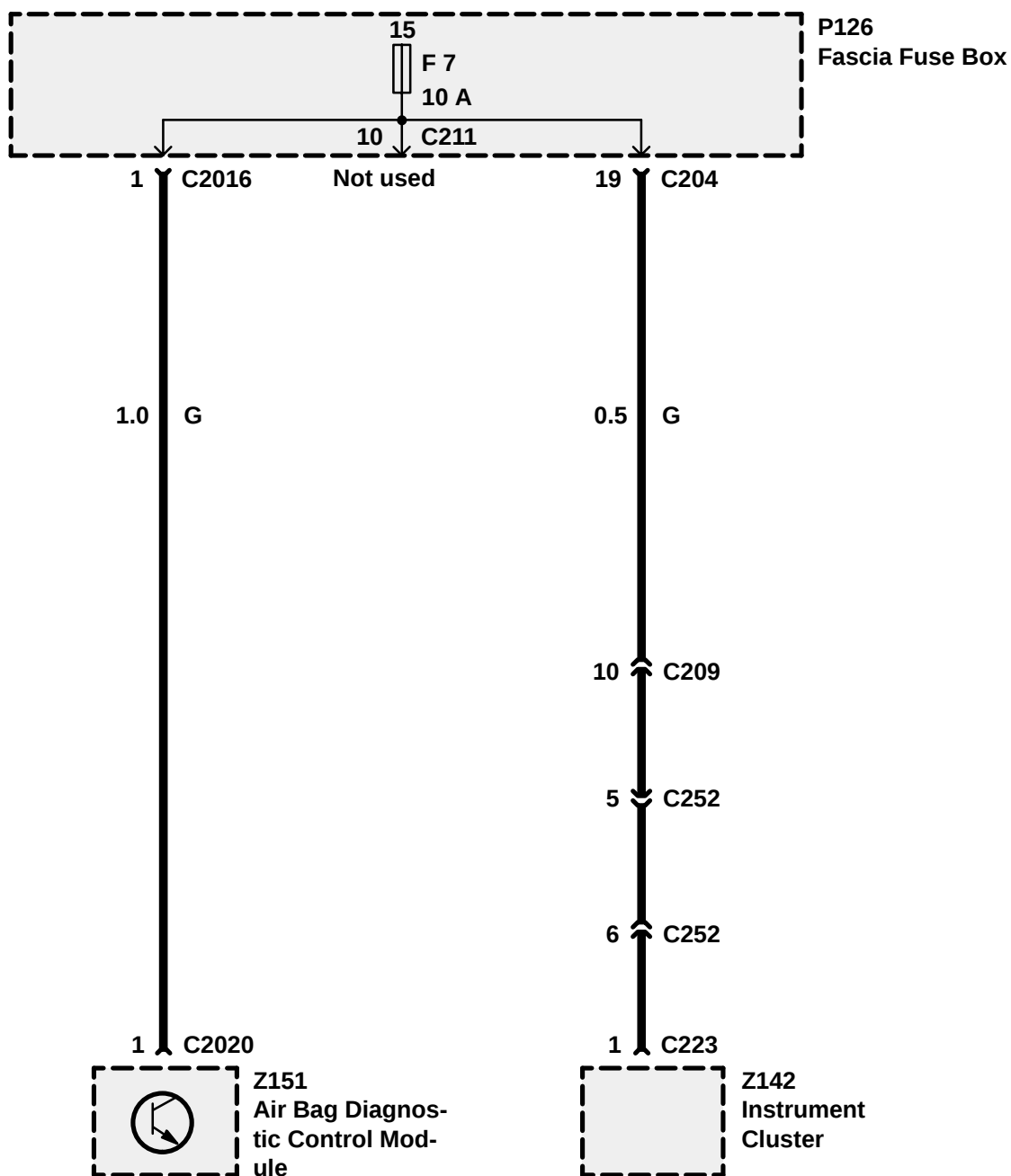
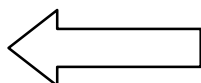


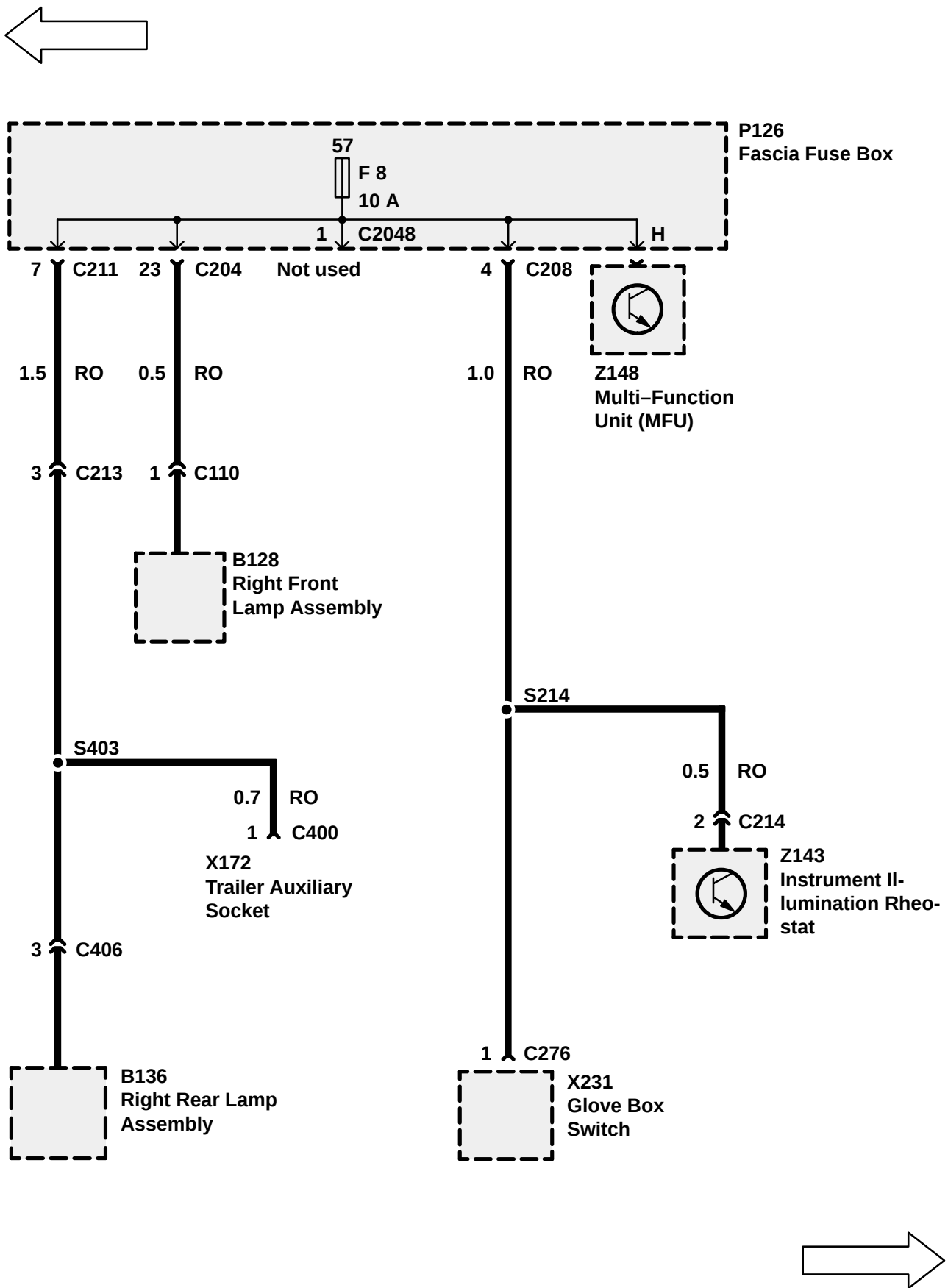


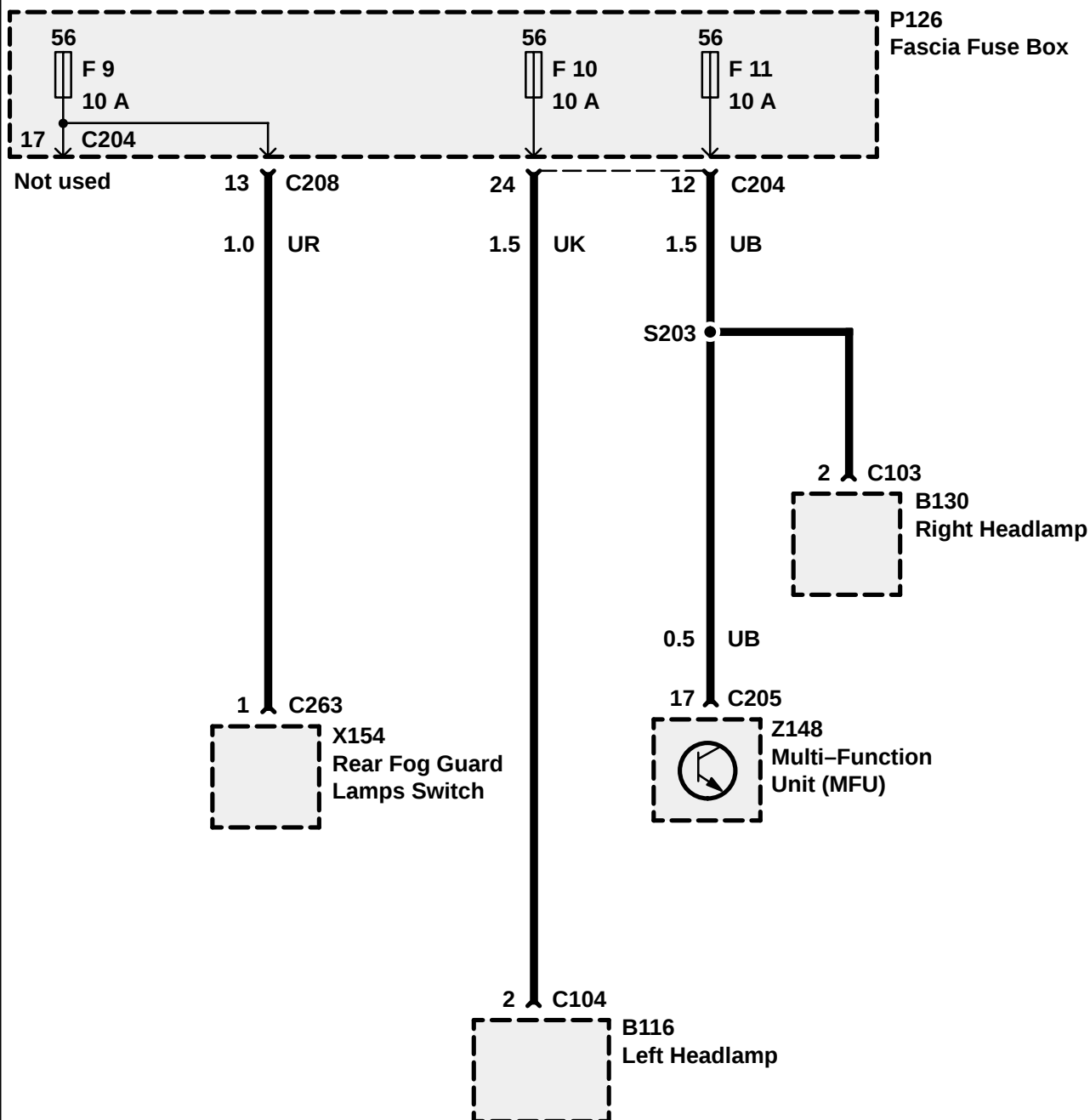


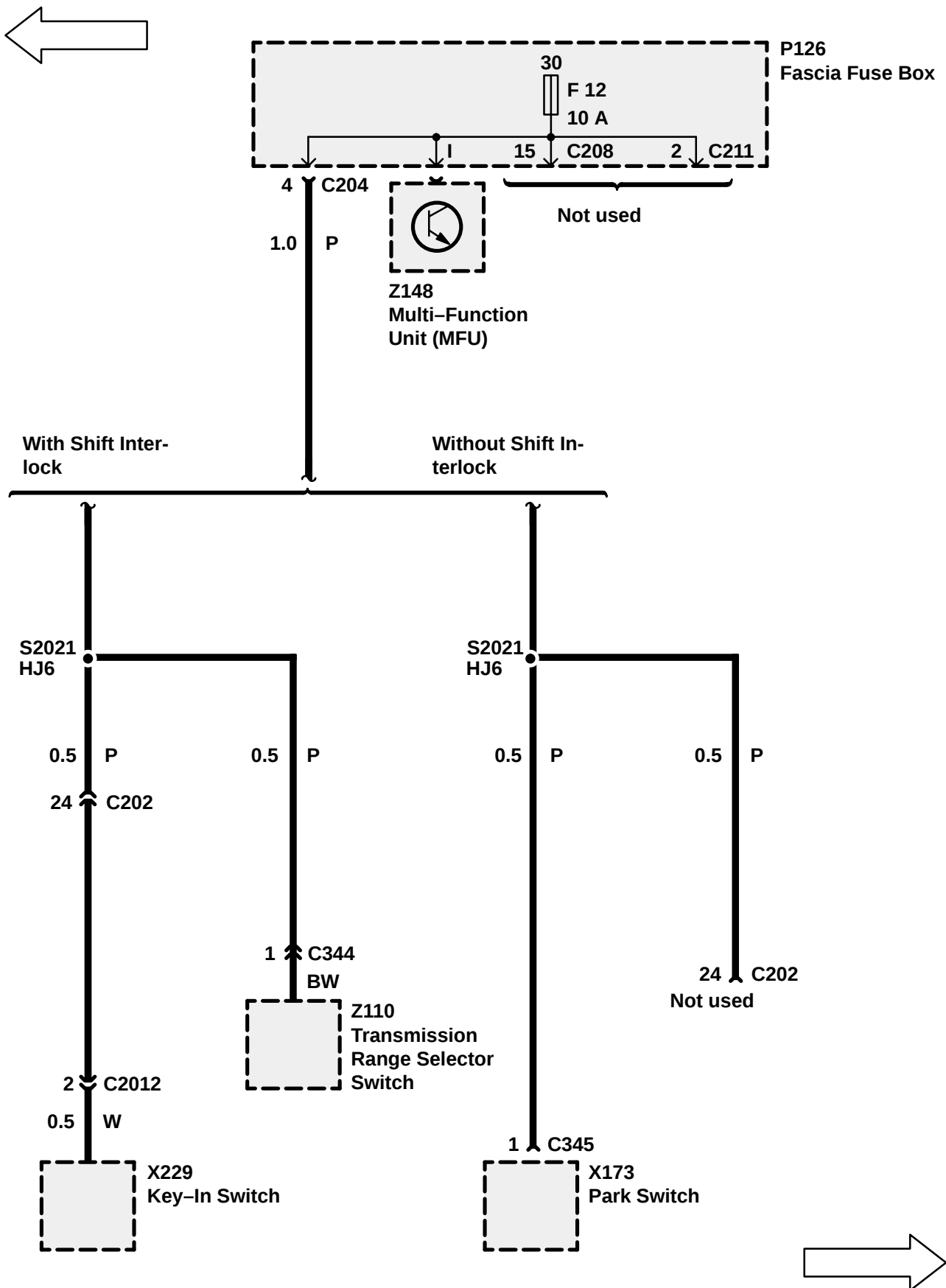


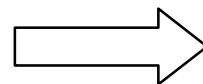
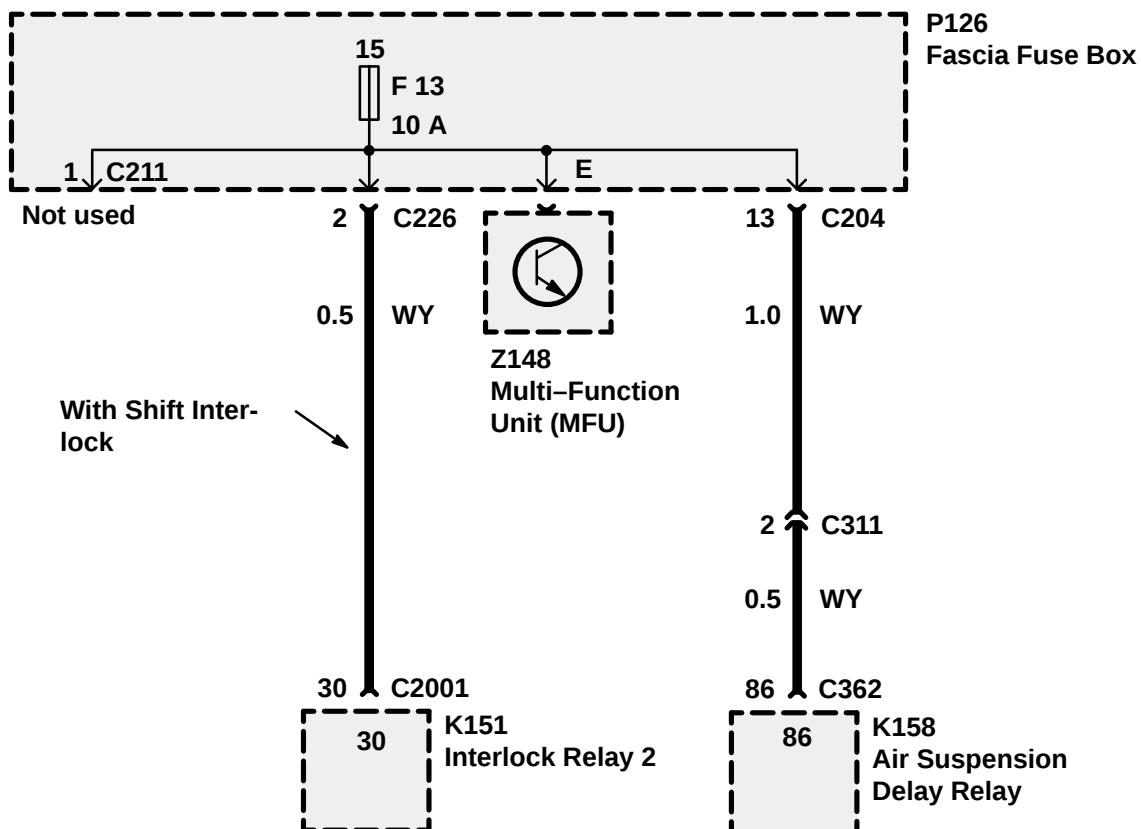
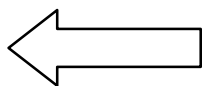


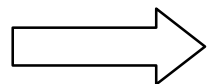
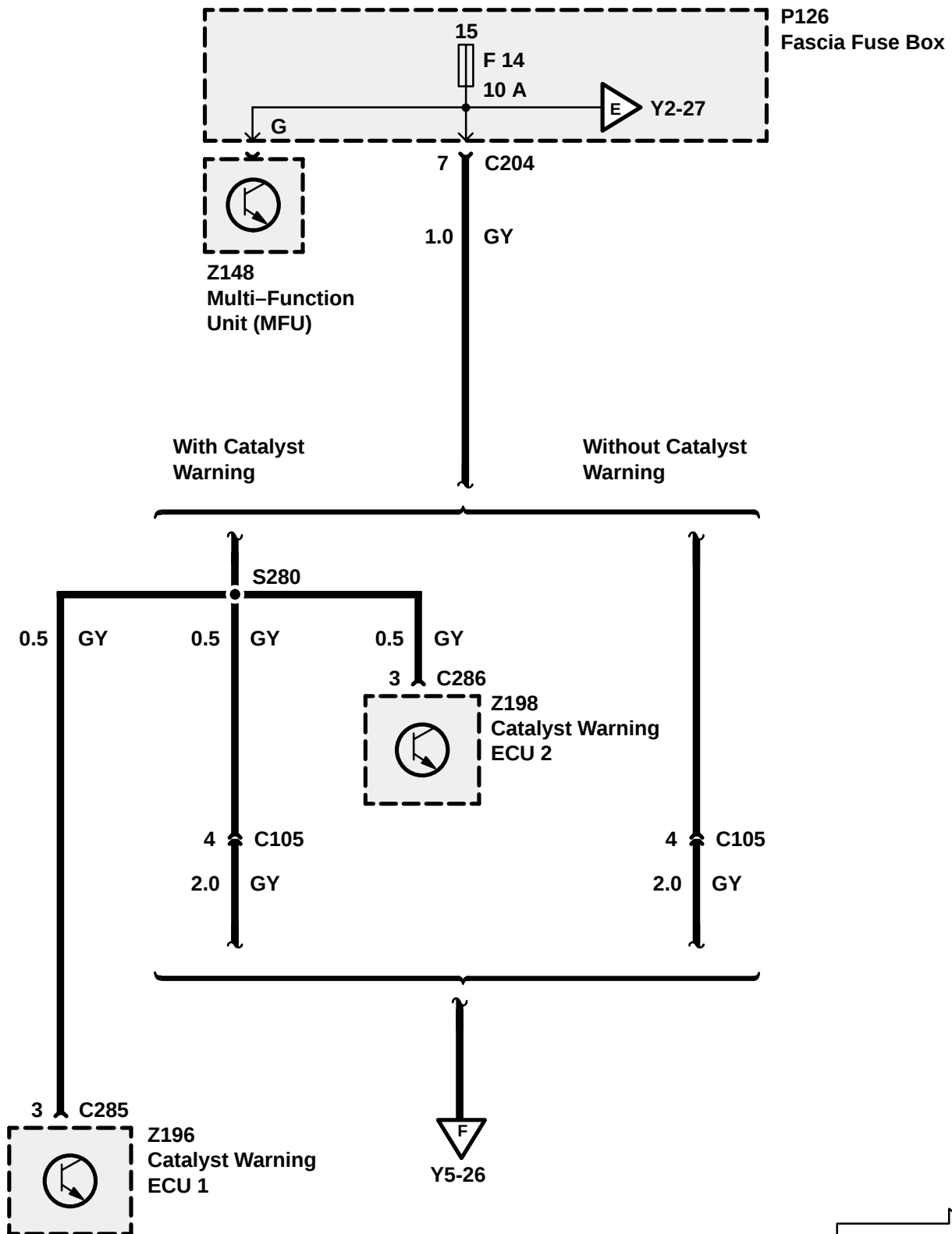
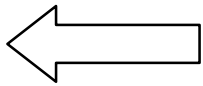


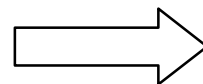
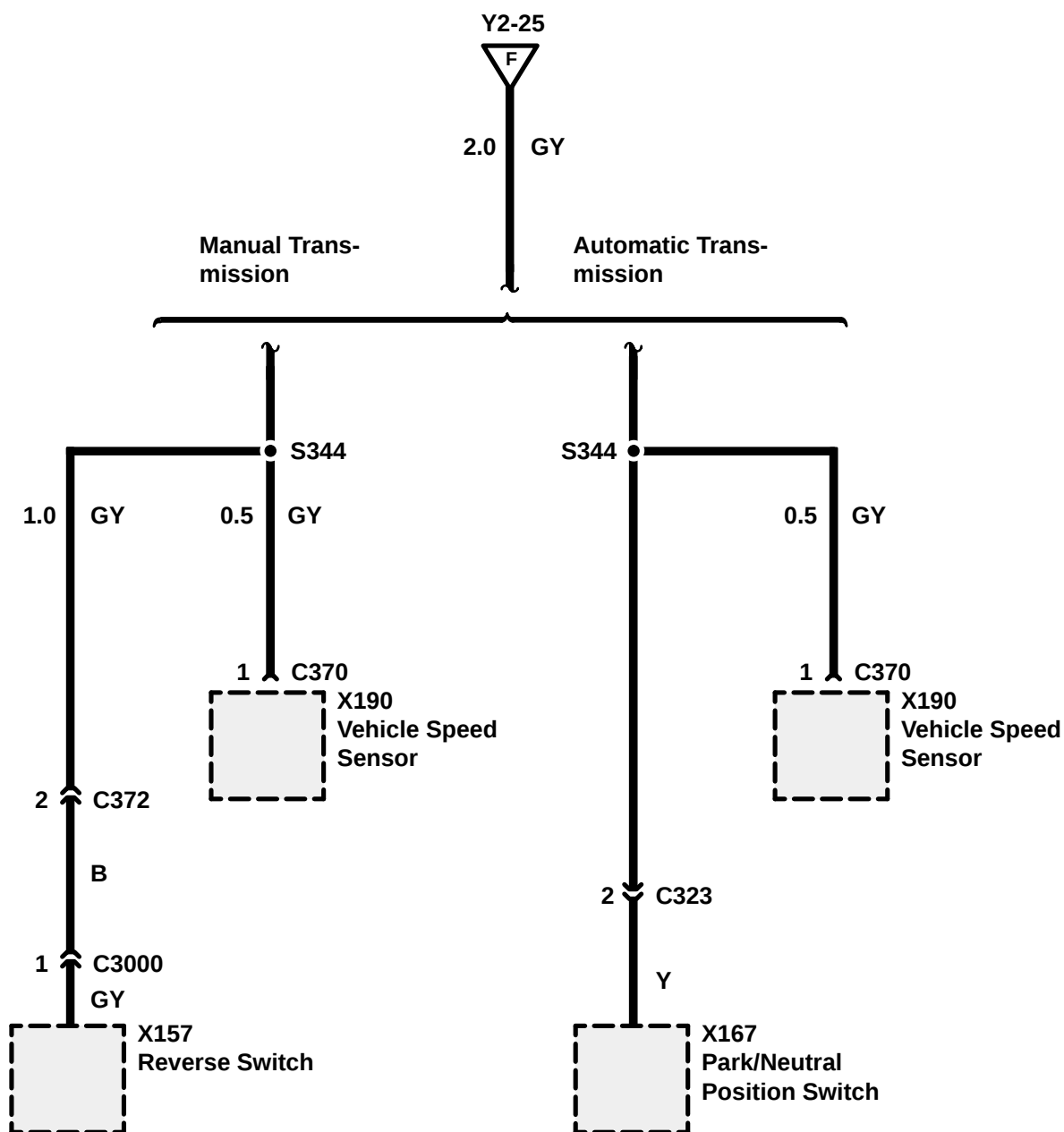
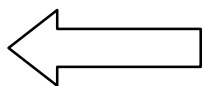


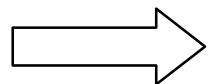
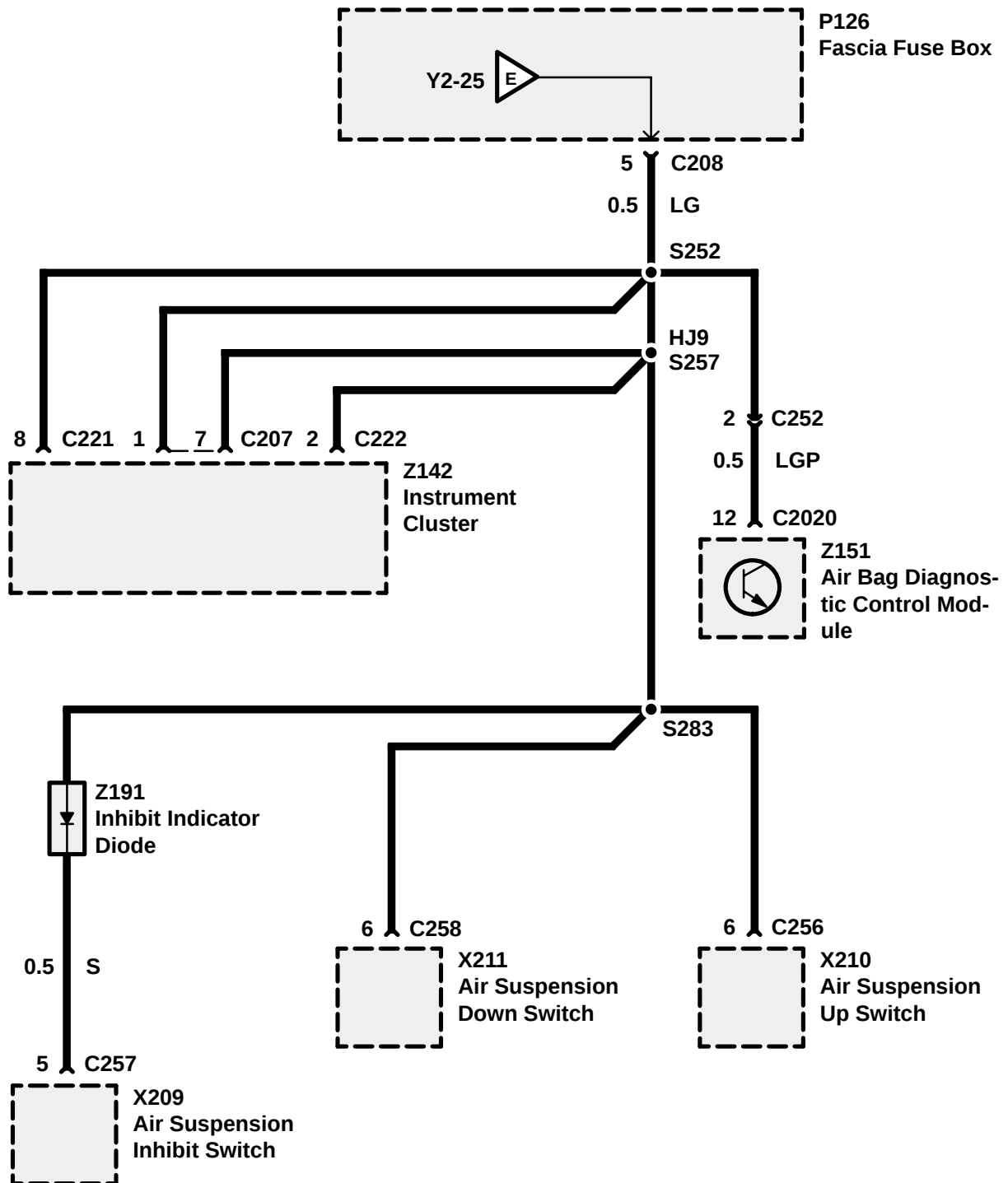
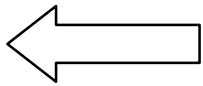


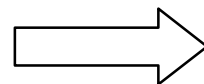
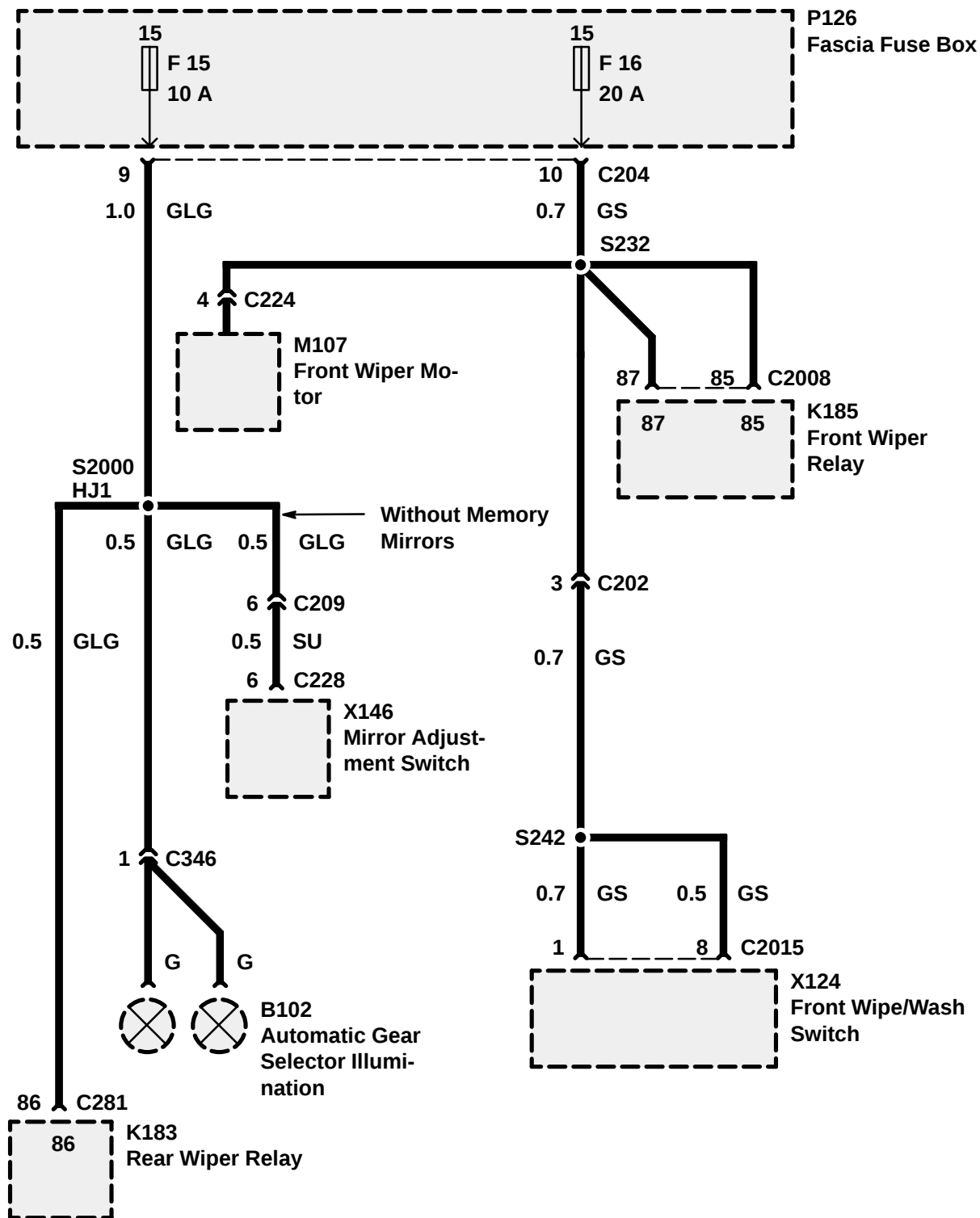
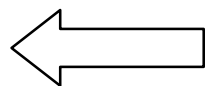


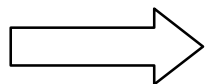
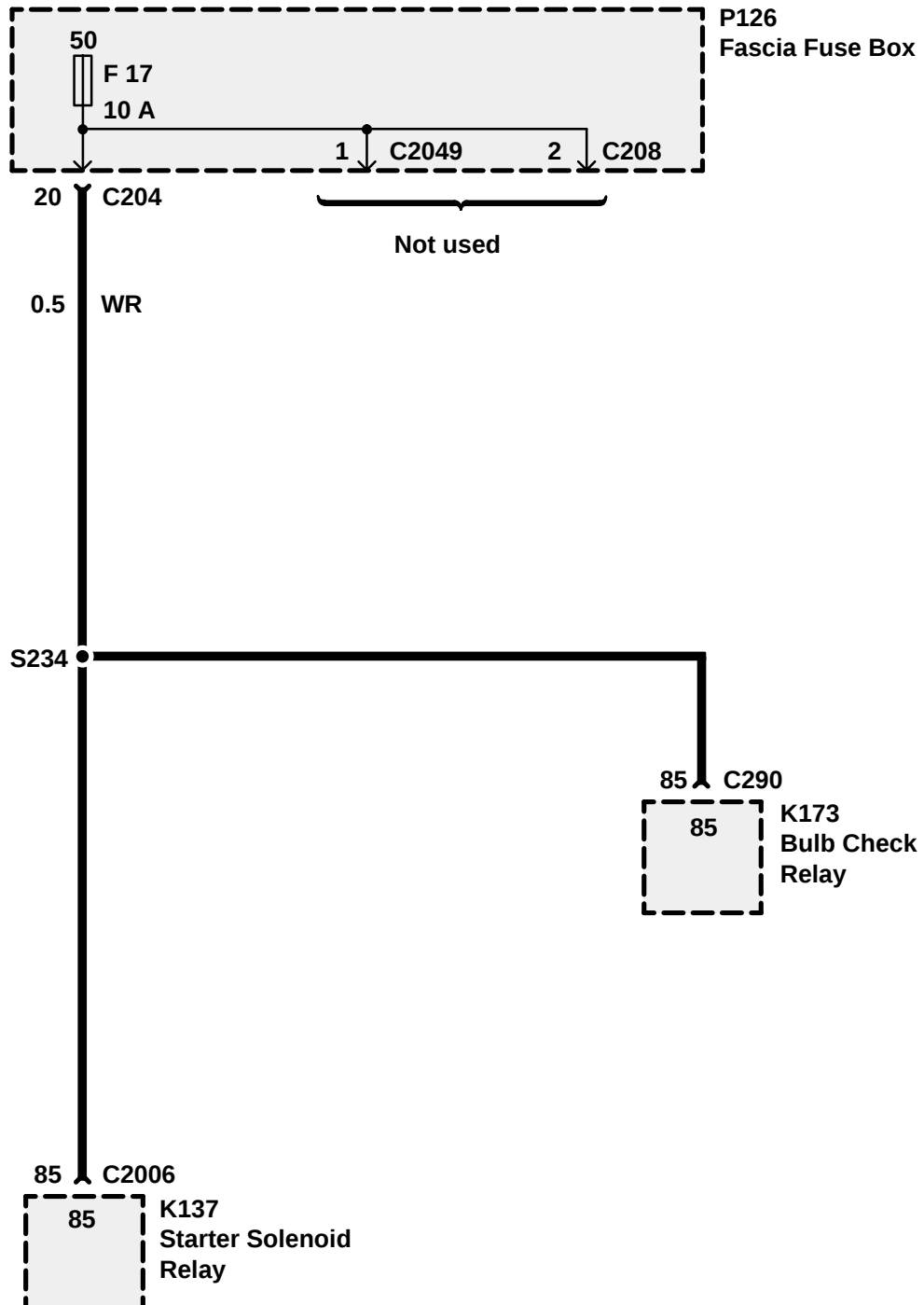
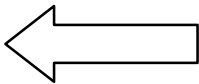


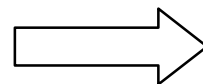
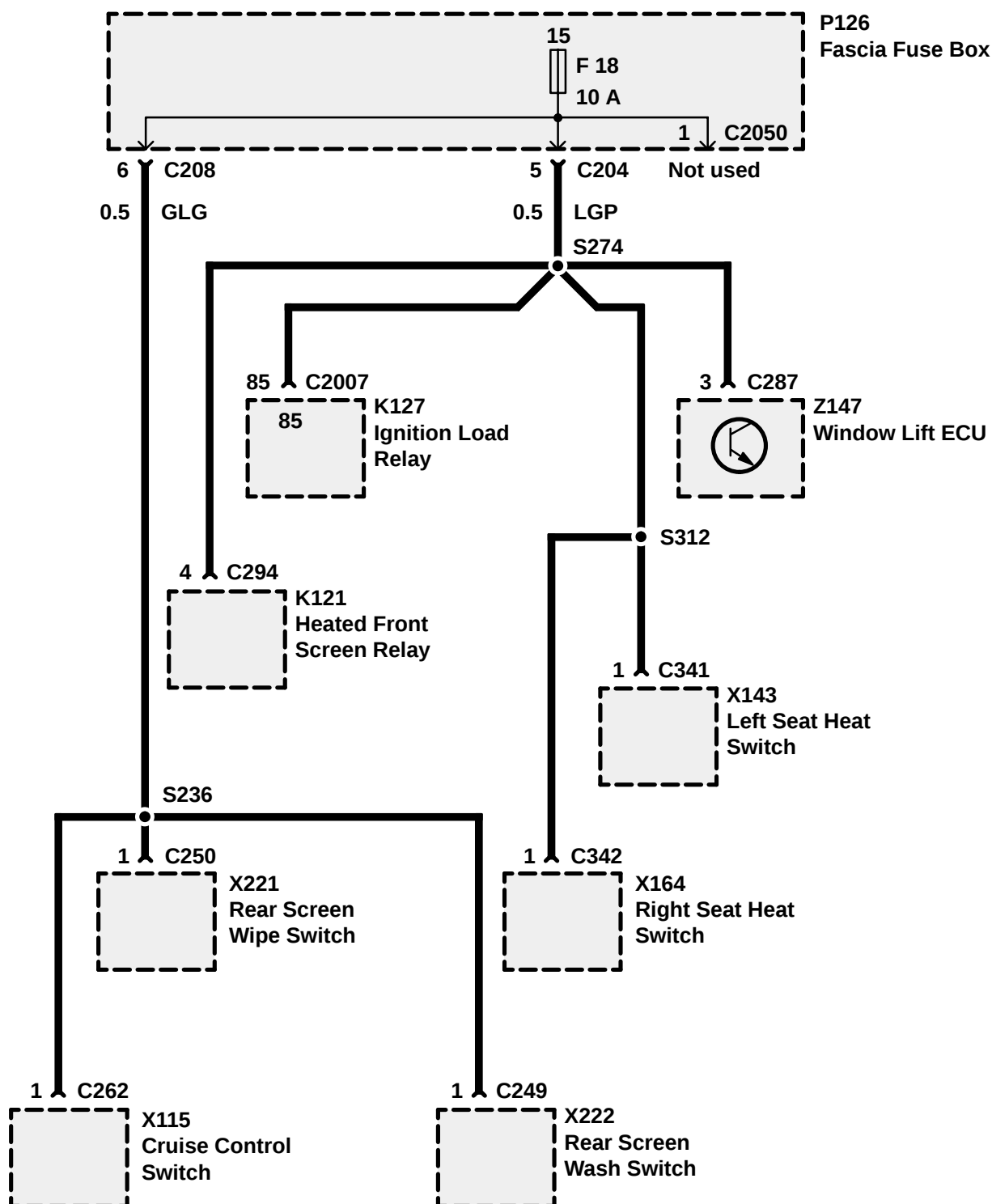
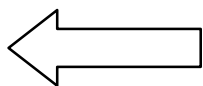






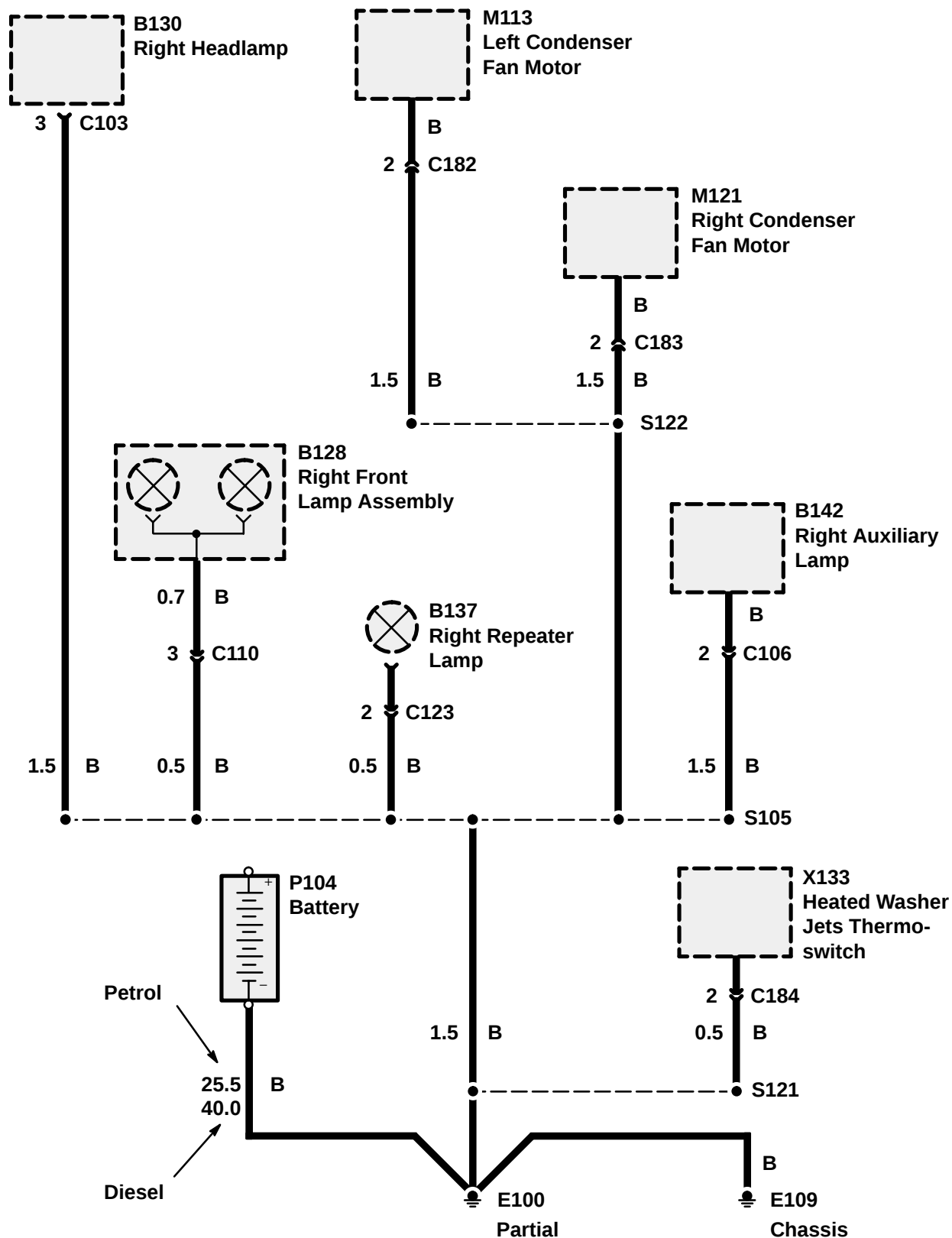


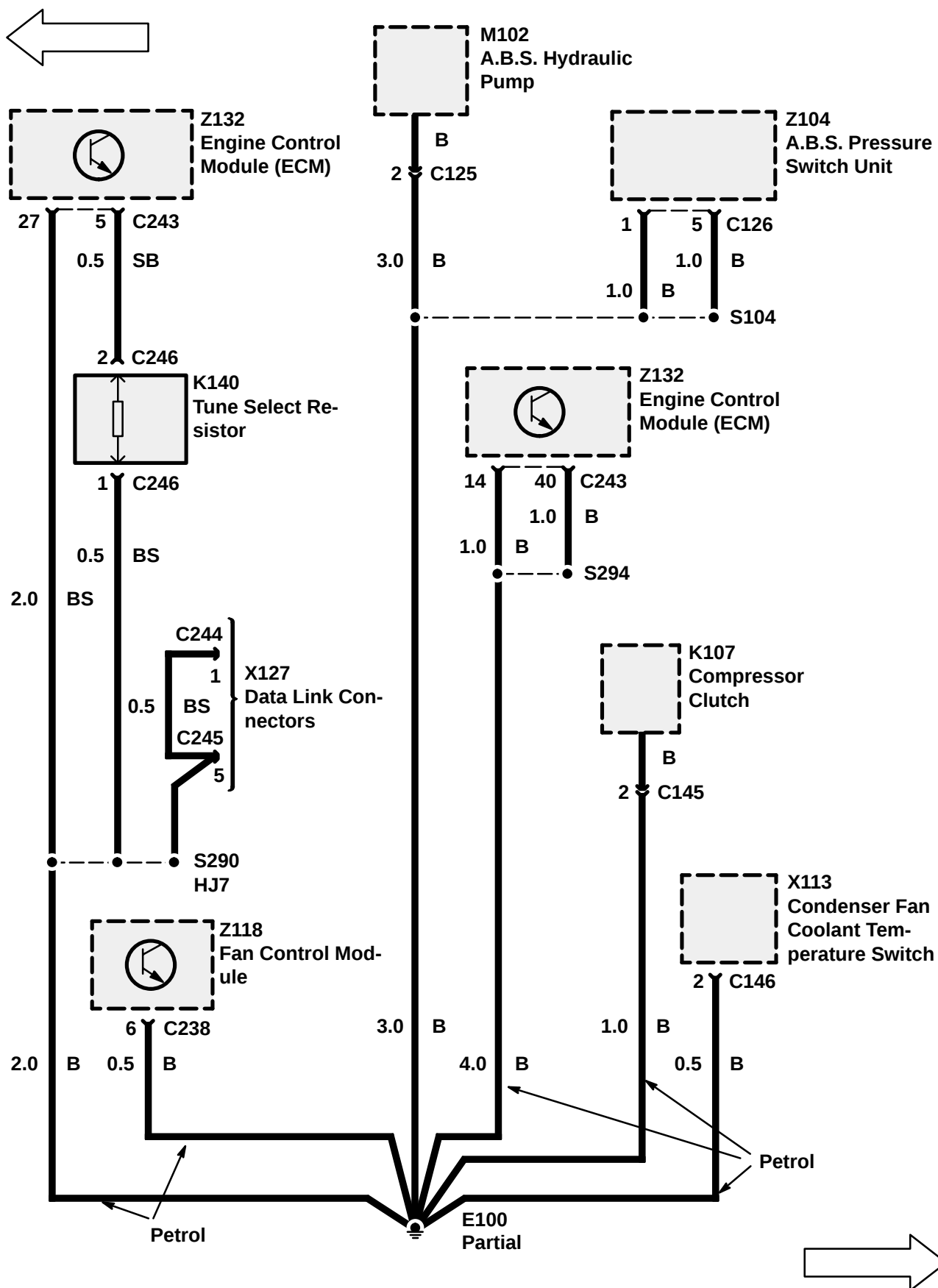


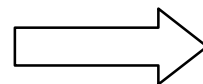
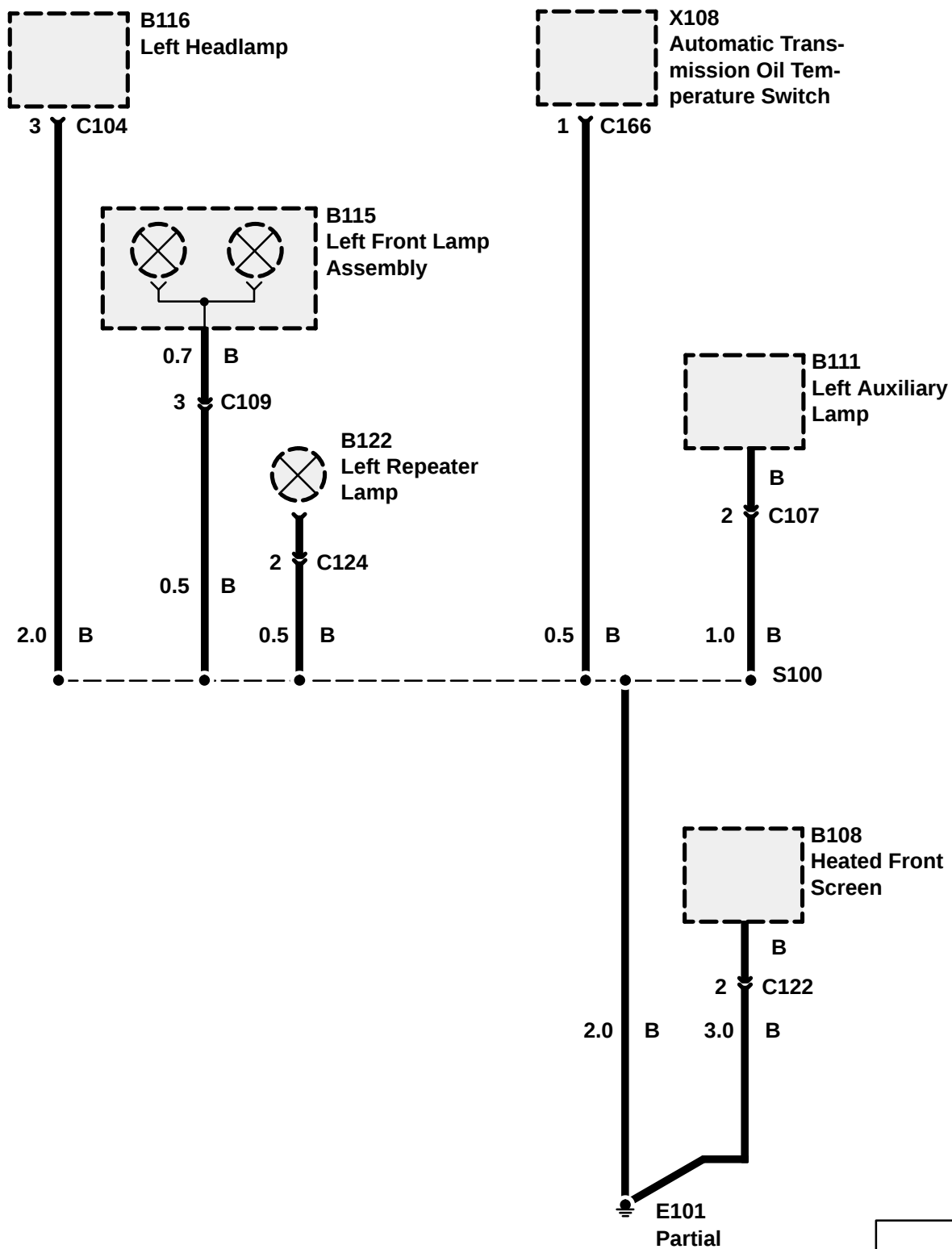
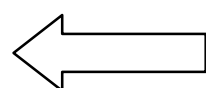


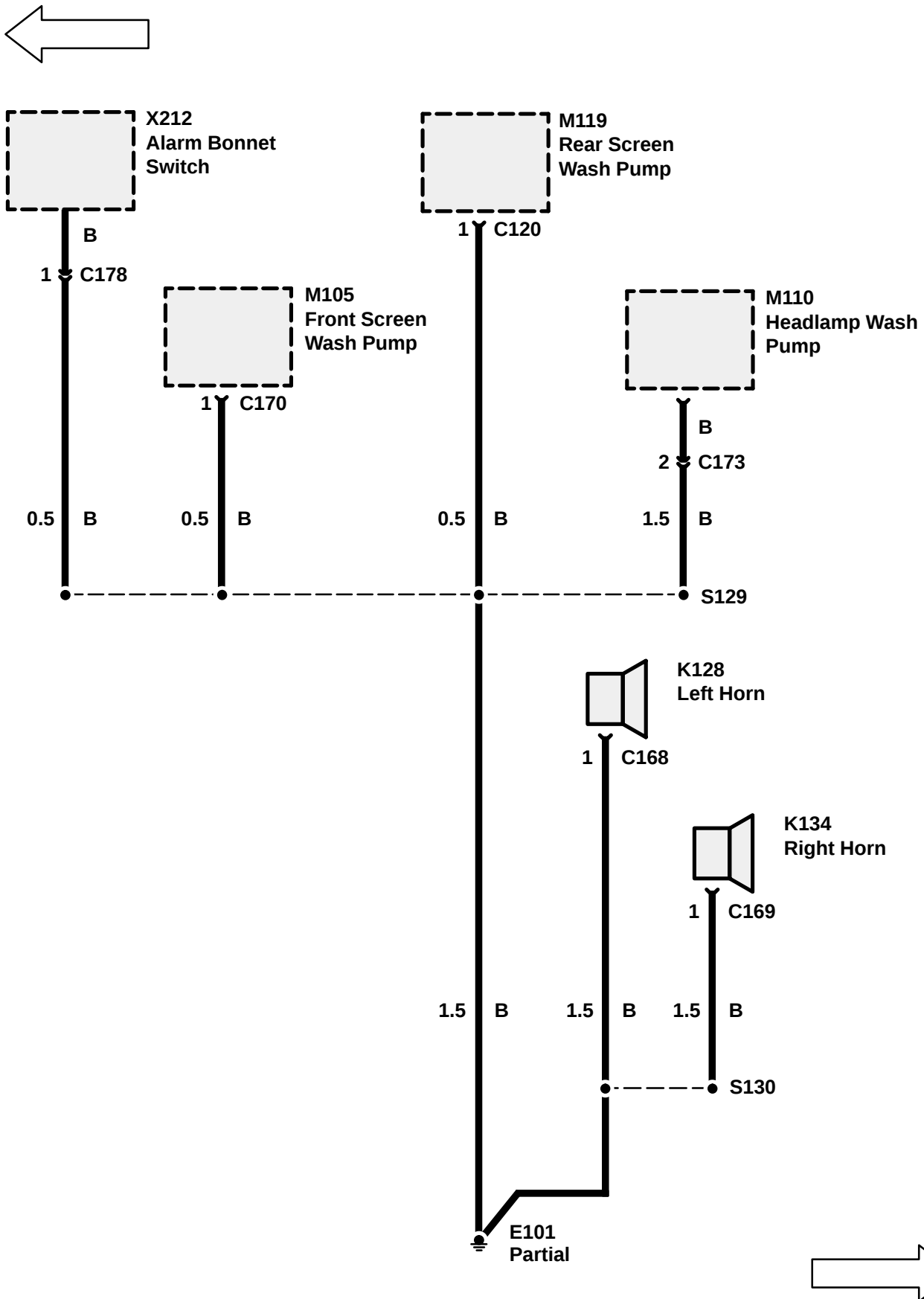
GROUND AND SPLICE INDEX

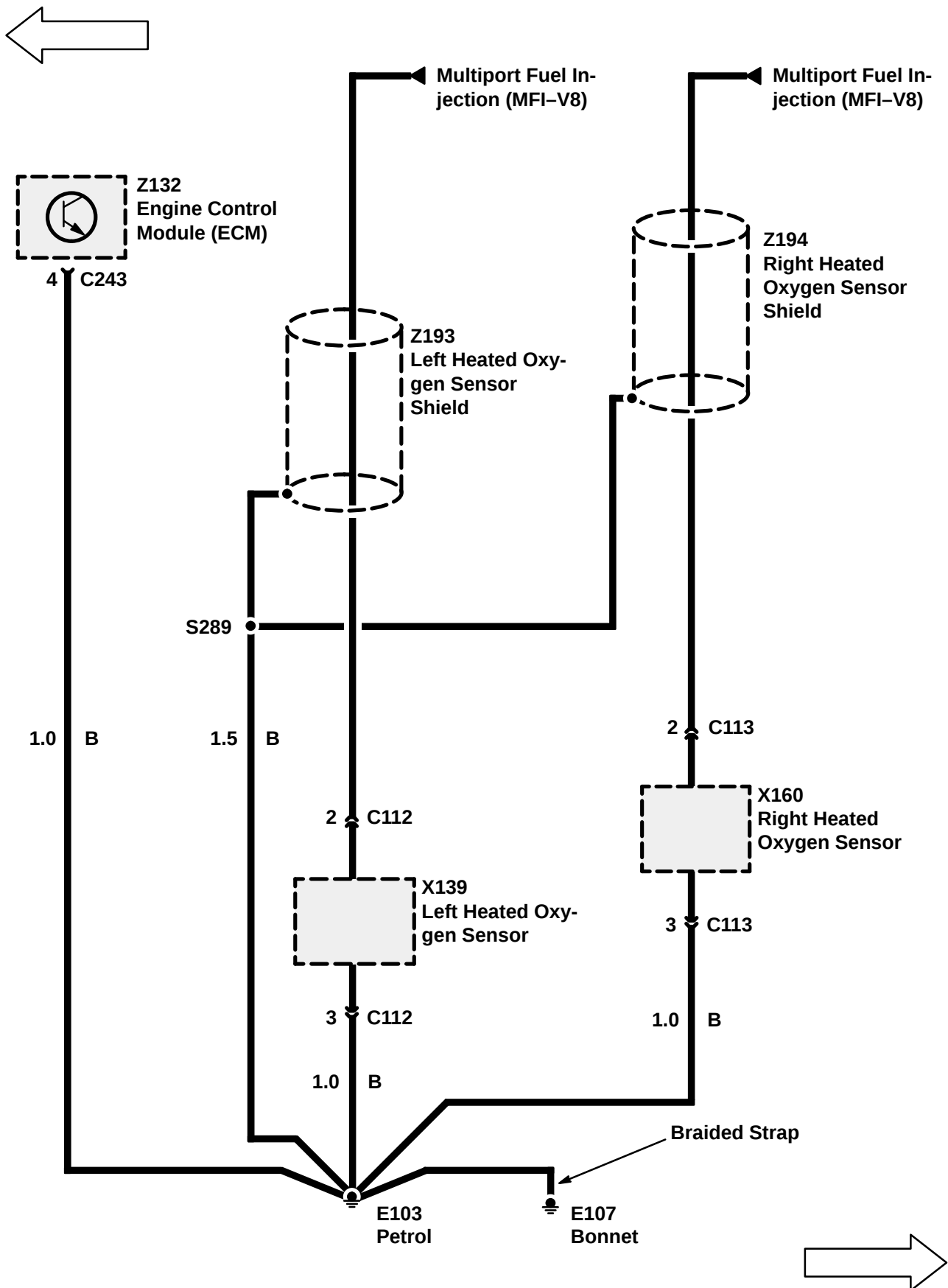
Ground	Page	Splice	Page
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E102	Y5-8	S105	Y5-2
E103 MFI-V8	Y5-6	S112	Y5-7
E103 300 Tdi	Y5-7	S120	Y5-13
E104	Y5-8	S121	Y5-2
E105	Y5-8	S122	Y5-2
E106	Y5-8	S129	Y5-5
E107	Y5-6	S130	Y5-5
E108	Y5-8	S204	Y5-16
E109	Y5-2	S207	Y5-11
E110	Y5-8	S216	Y5-10
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E207	Y5-23	S244	Y5-22
E300	Y5-24, 25, 26, 27, 28	S248	Y5-18
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E401	Y5-34	S272	Y5-23
E403	Y5-35	S273	Y5-12
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		S2018/HJ6	Y5-24
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		S321	Y5-28
		S324	Y5-23
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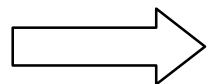
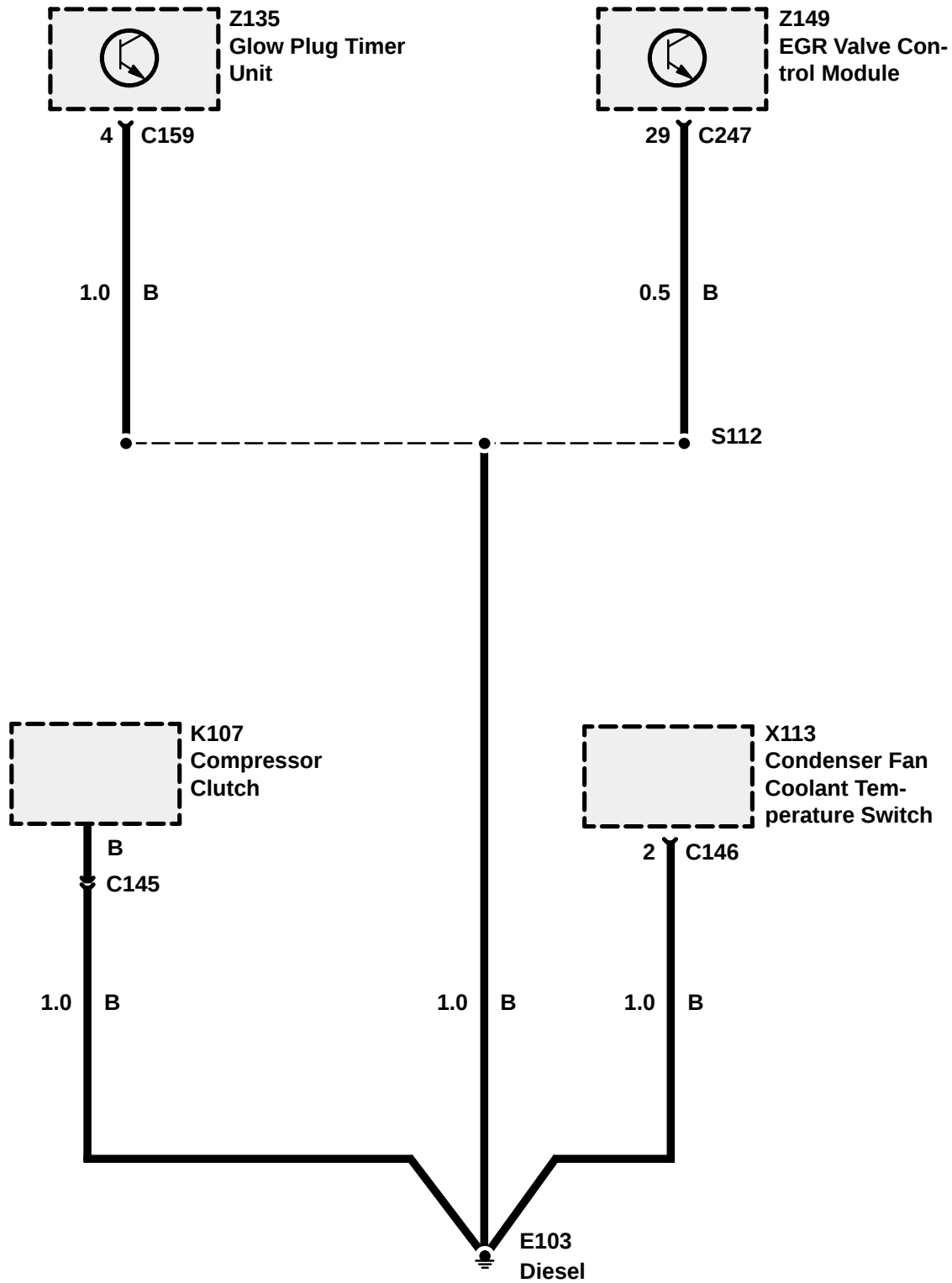


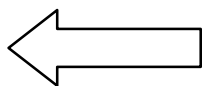












Z103
A.B.S. Booster
Unit



M107
Front Wiper Mo-
tor

Braided Strap

8.5 B

Braided Strap



E105
Ignition Coil

E106
Engine

Braided Strap

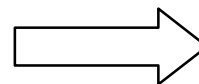


E104
Chassis

E108
Starter

E102

E110





X209
Air Suspension
Inhibit Switch

3 C257

0.5 B



X210
Air Suspension
Up Switch

2 C256

0.5 B



X211
Air Suspension
Down Switch

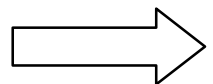
2 C258

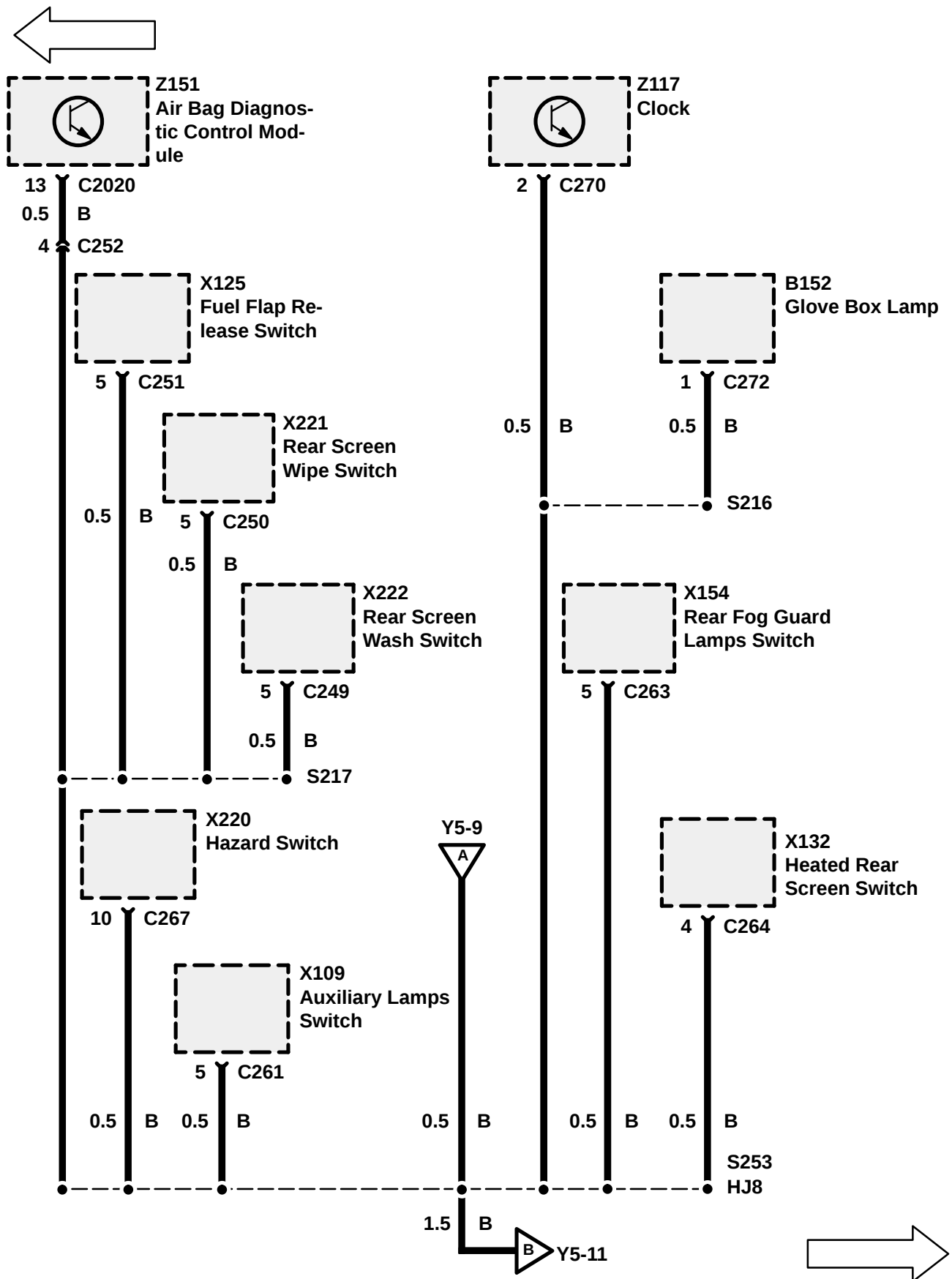
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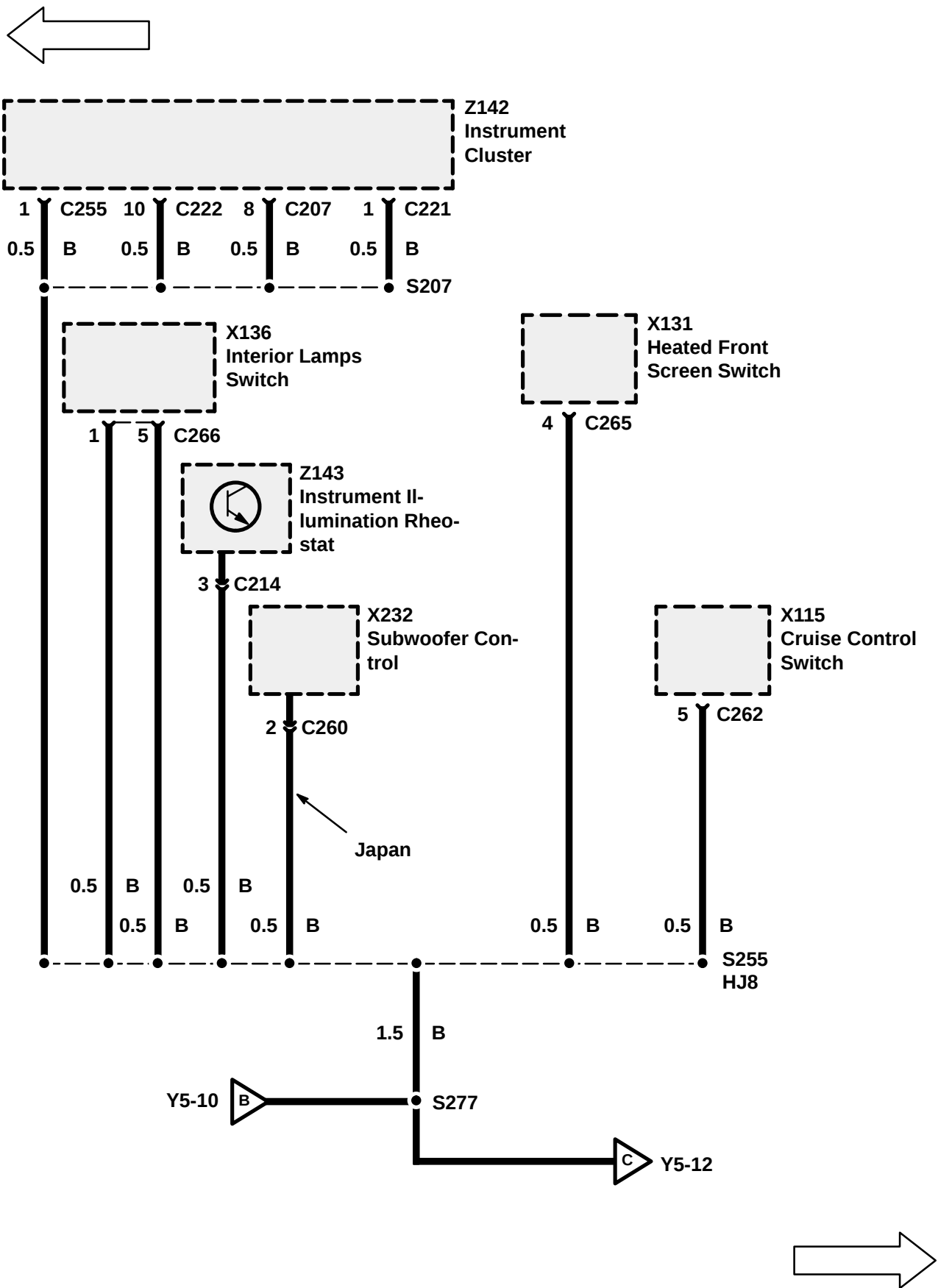
S221

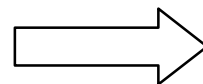
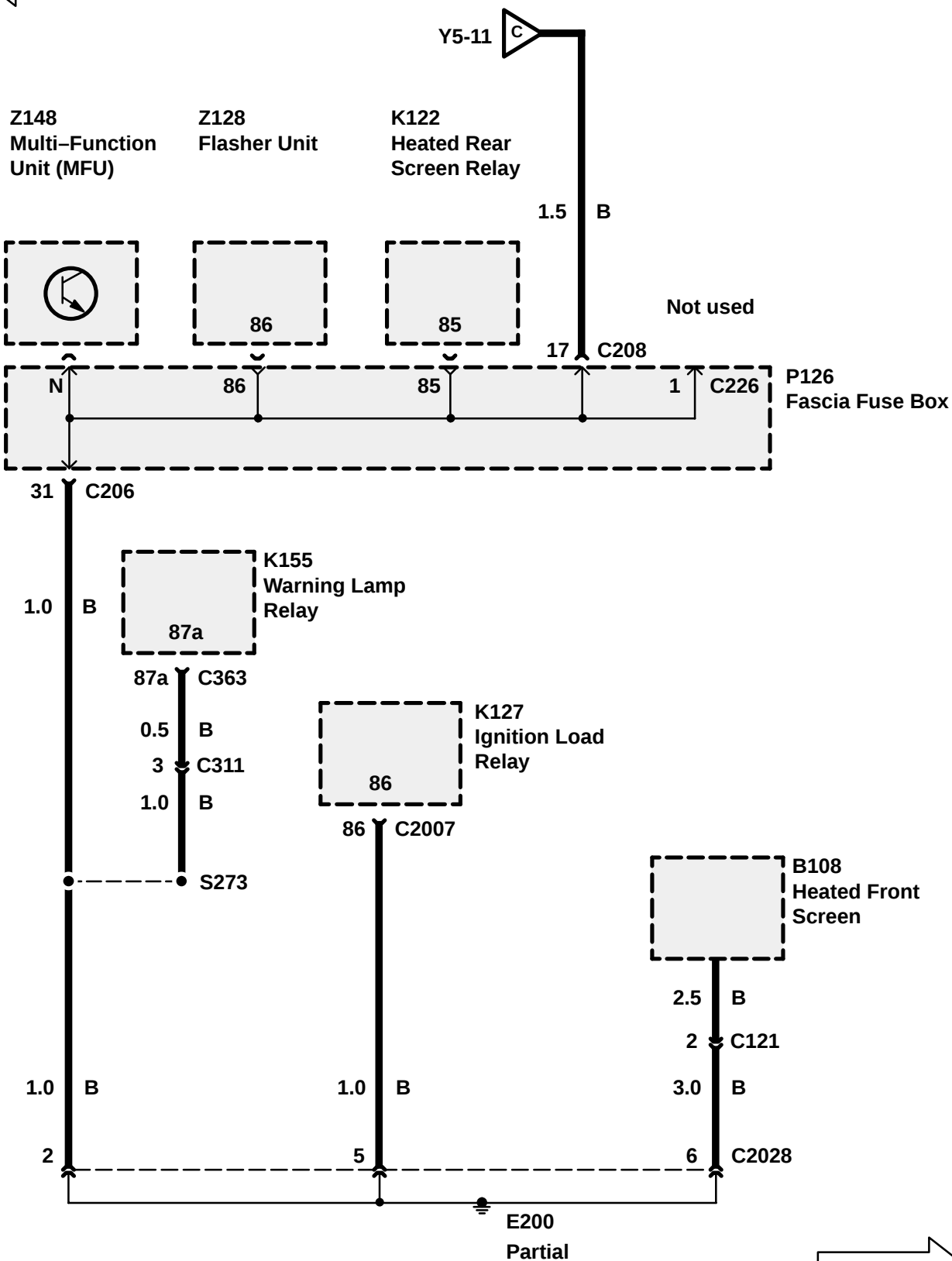
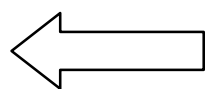


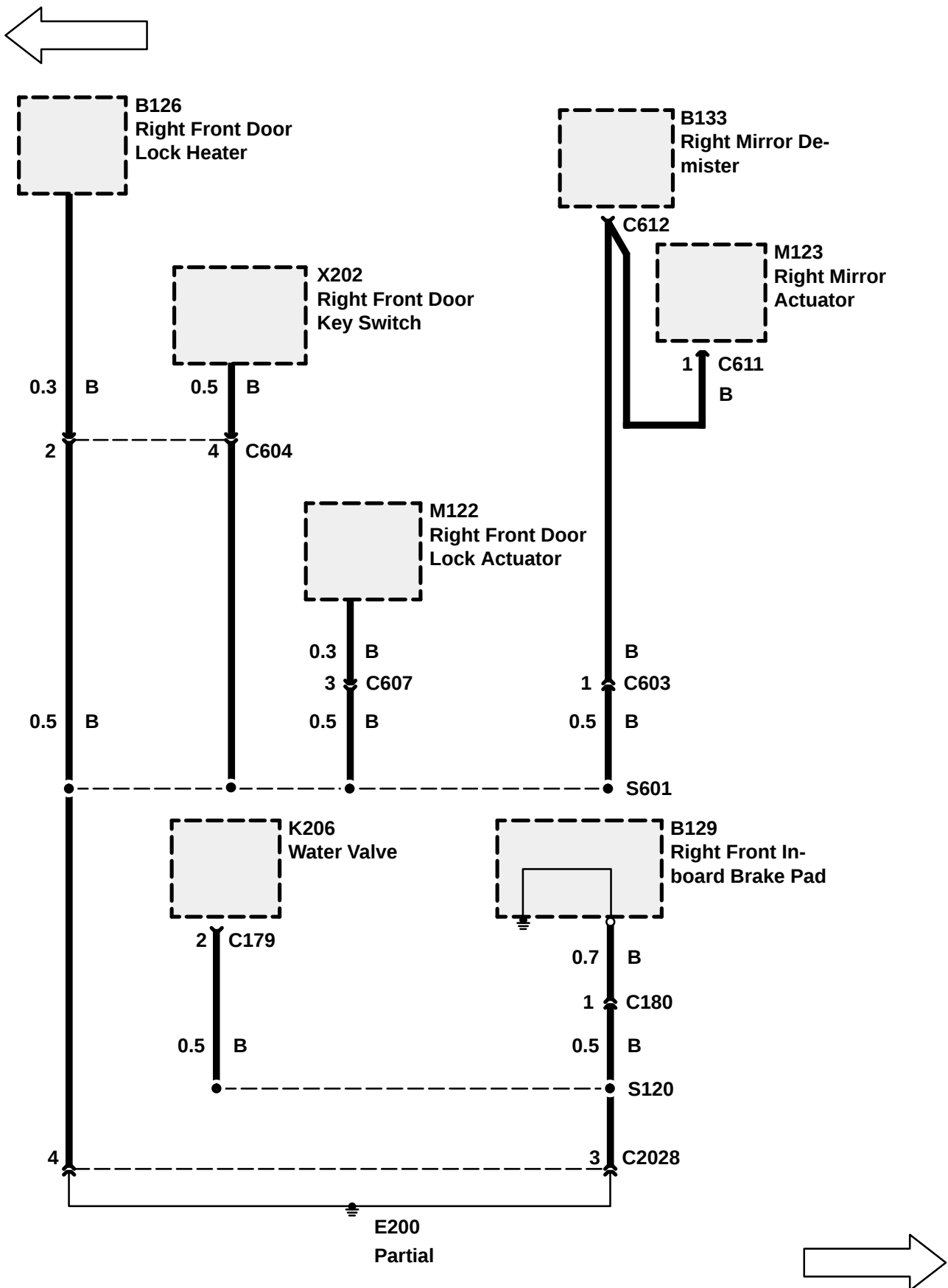
Y5-10

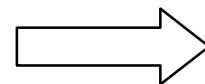
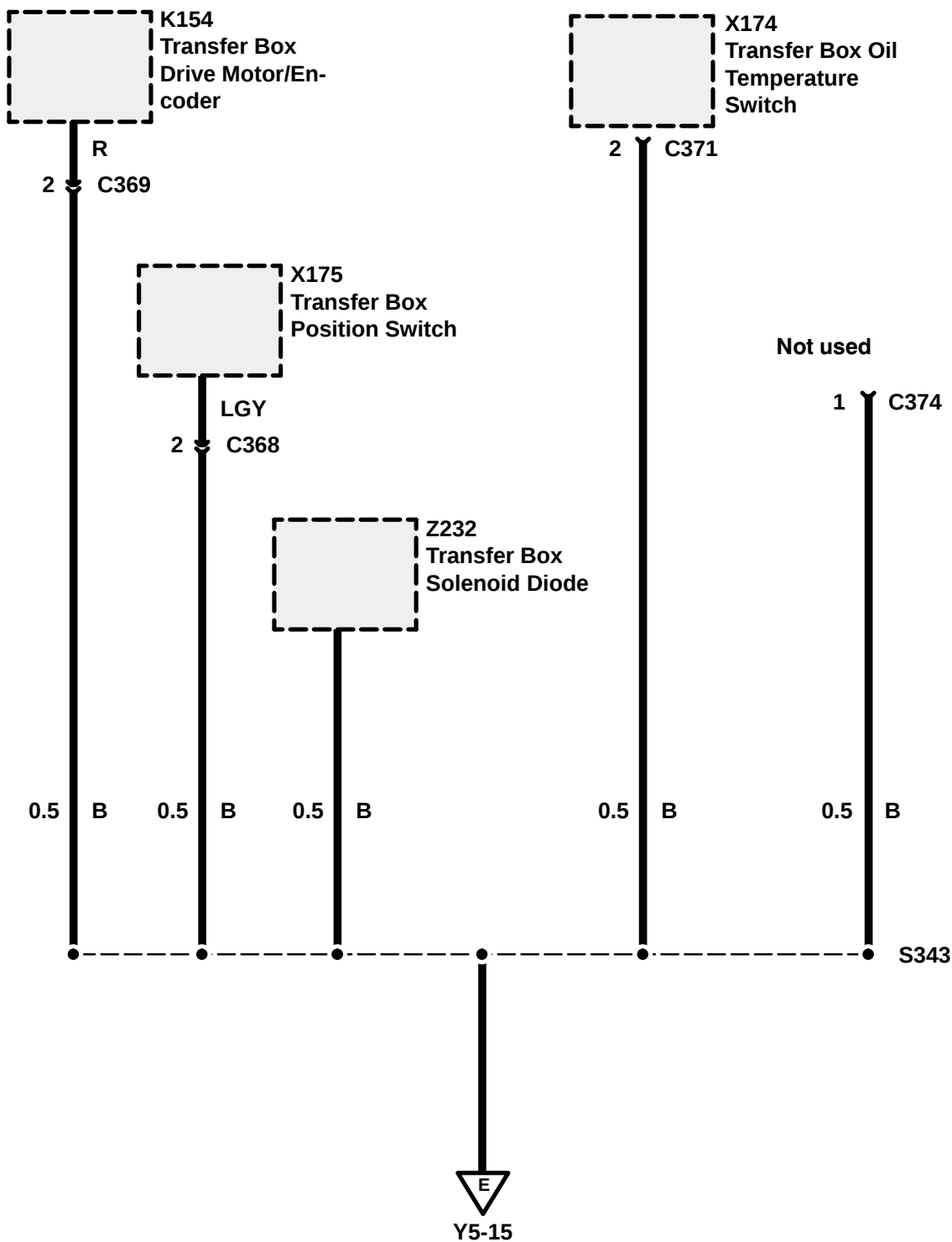
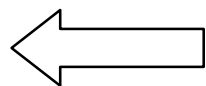


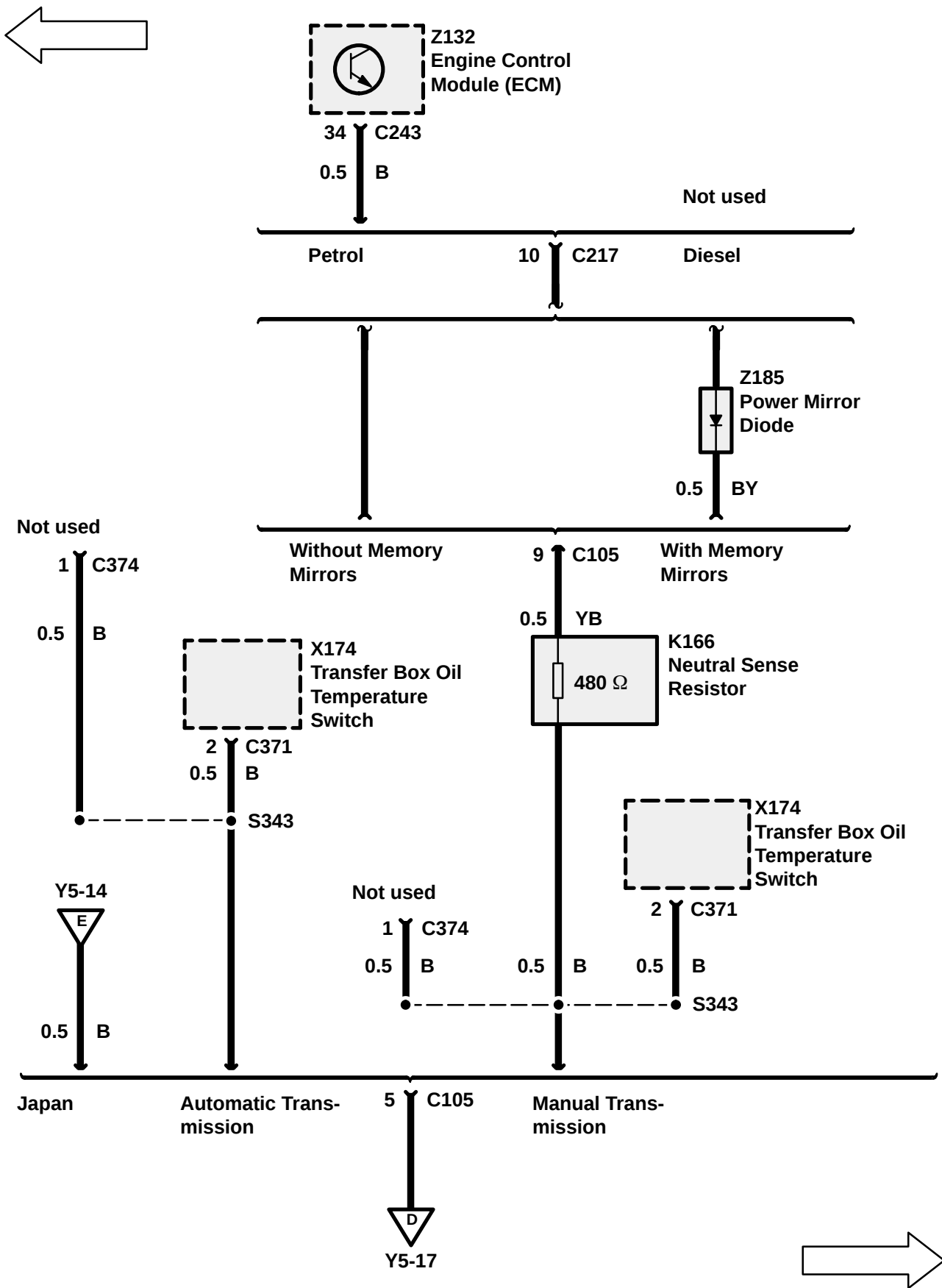


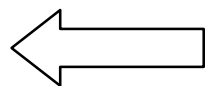










**Z196**
Catalyst Warning
ECU 1

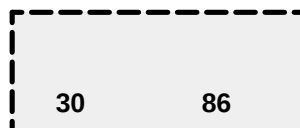
1 C285

0.5 B

**Z198**
Catalyst Warning
ECU 2

1 C286

0.5 B

**K172**
Catalyst Warning
Relay

30

86

30

86

C299

1.0 B

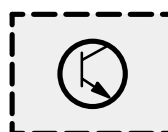
1.0 B

S288

**Z113**
Central Locking
Control Unit

11 C289

0.5 B

**X213**
Alarm Sensor

2 C335

0.5 B

S204

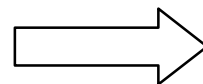
1.0 B

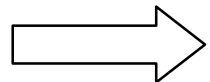
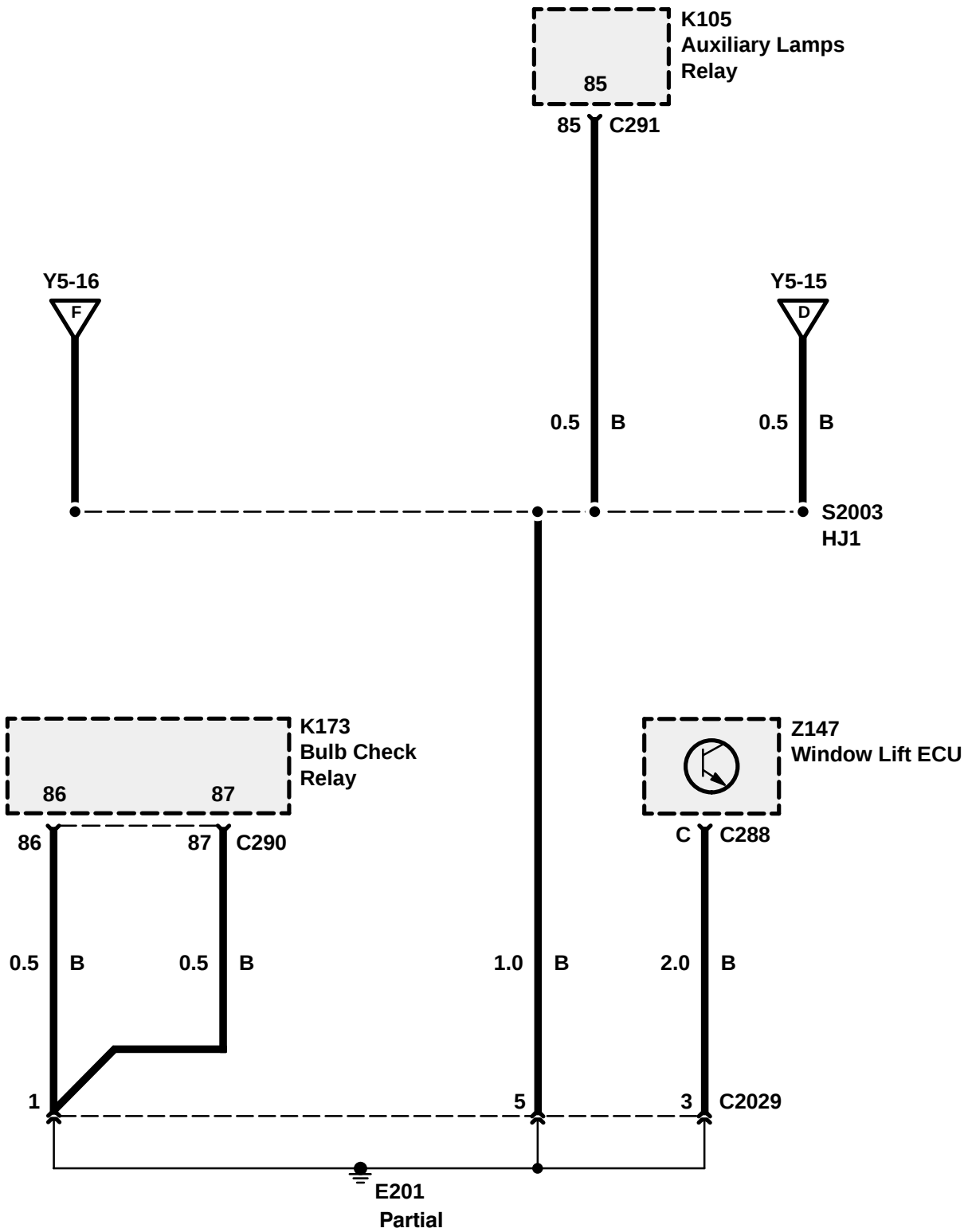
Except Japan

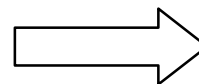
Japan

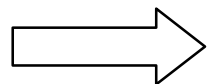
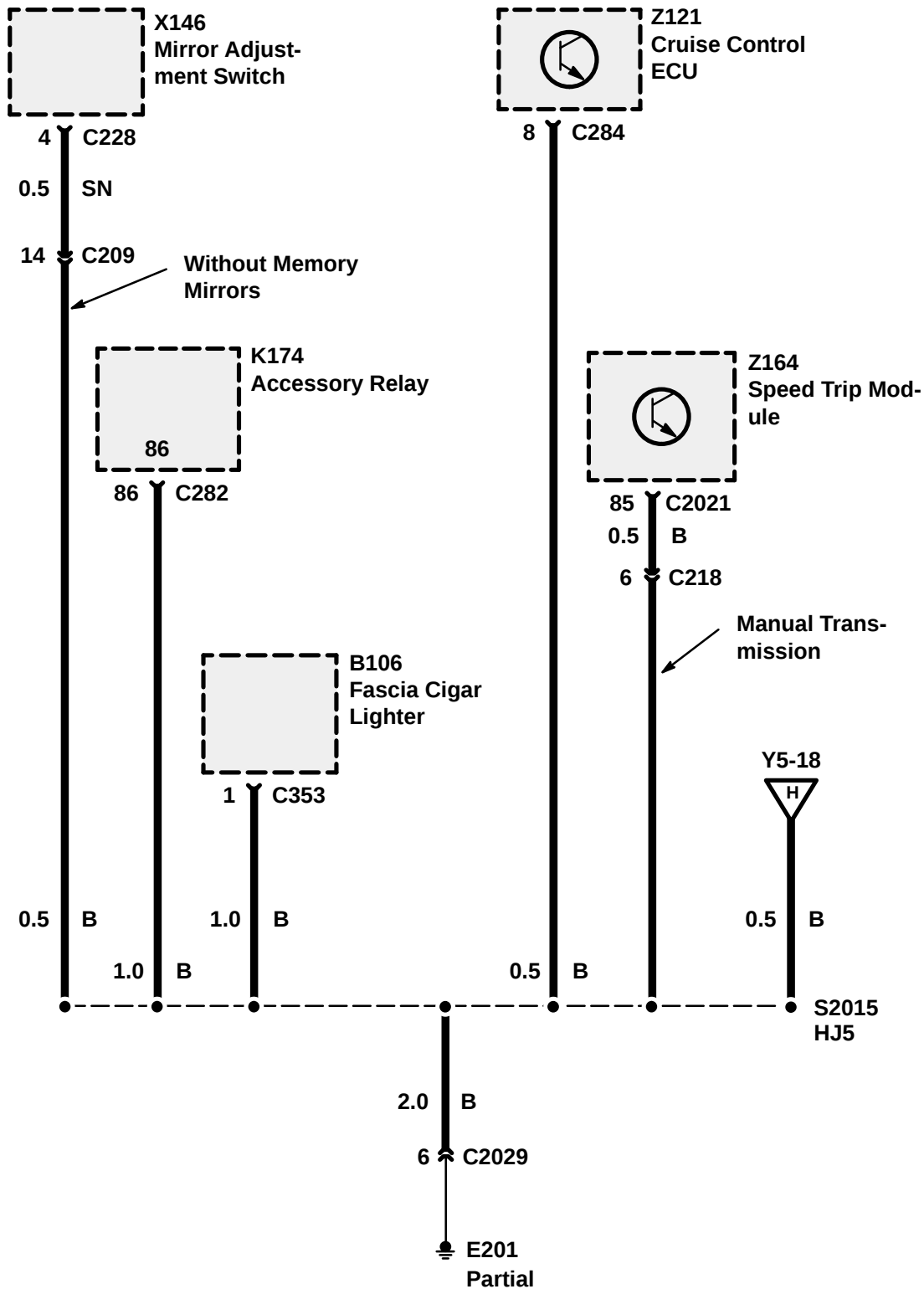


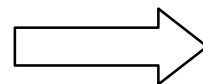
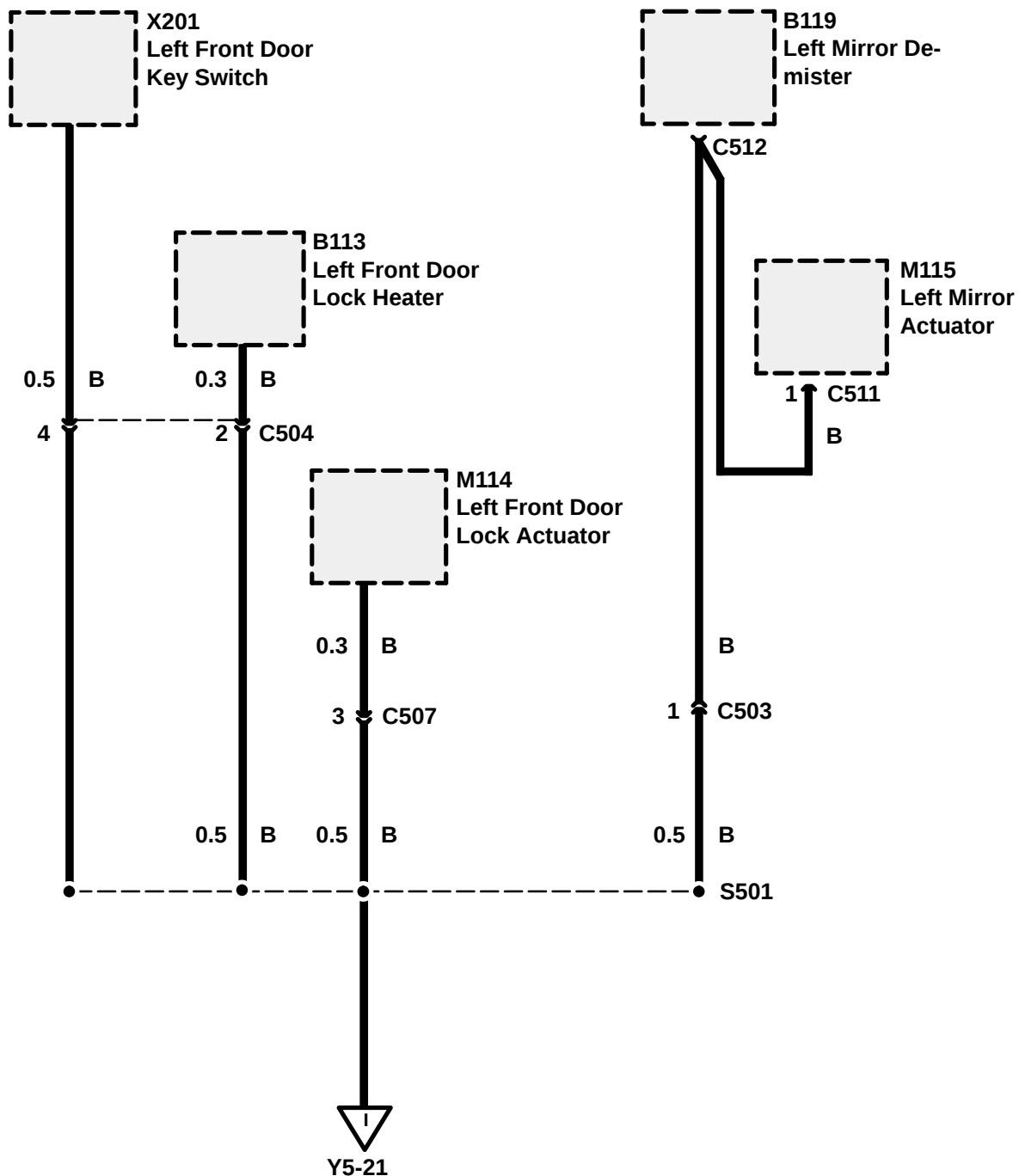
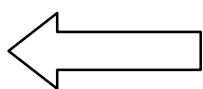
Y5-17

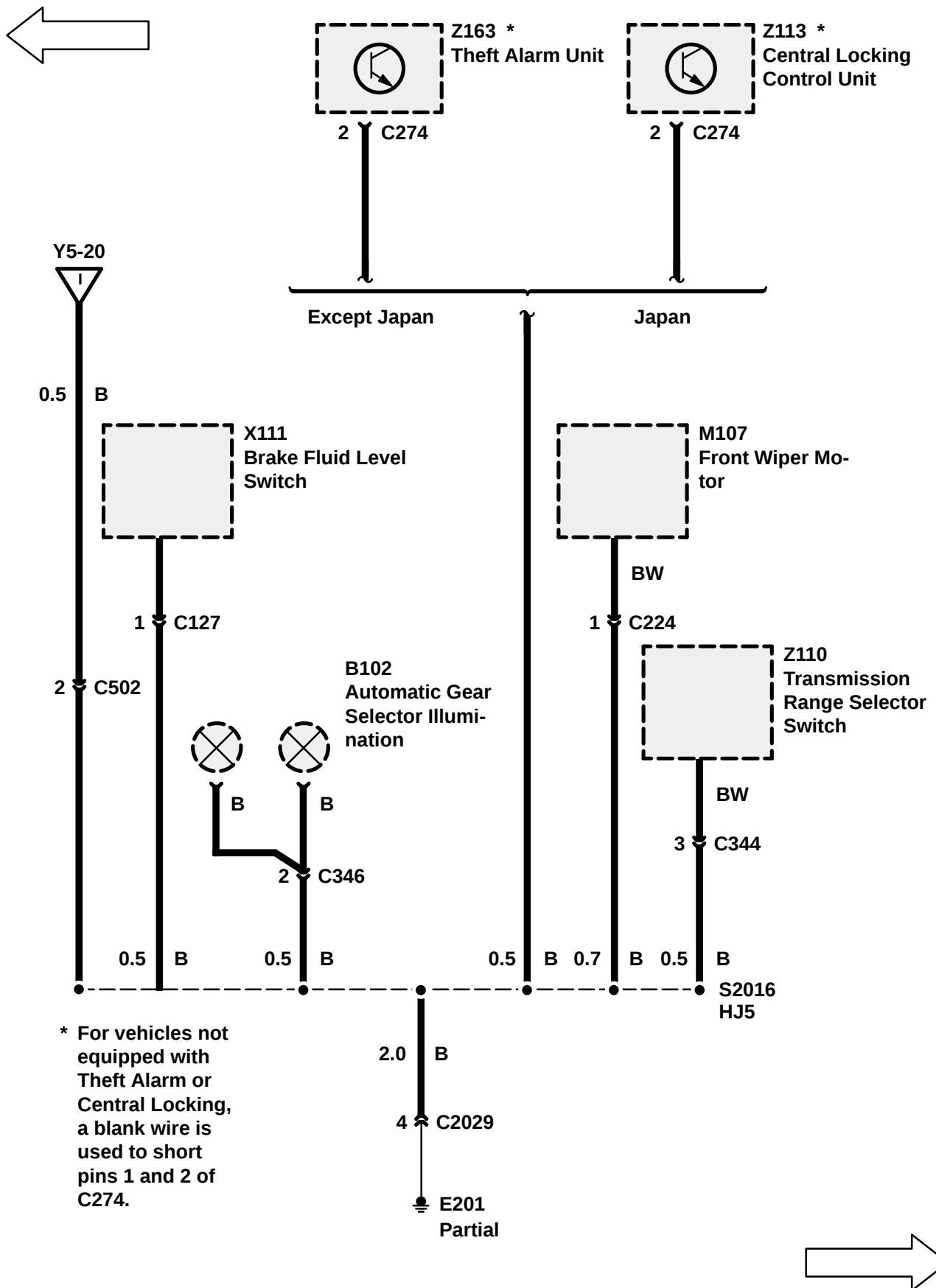


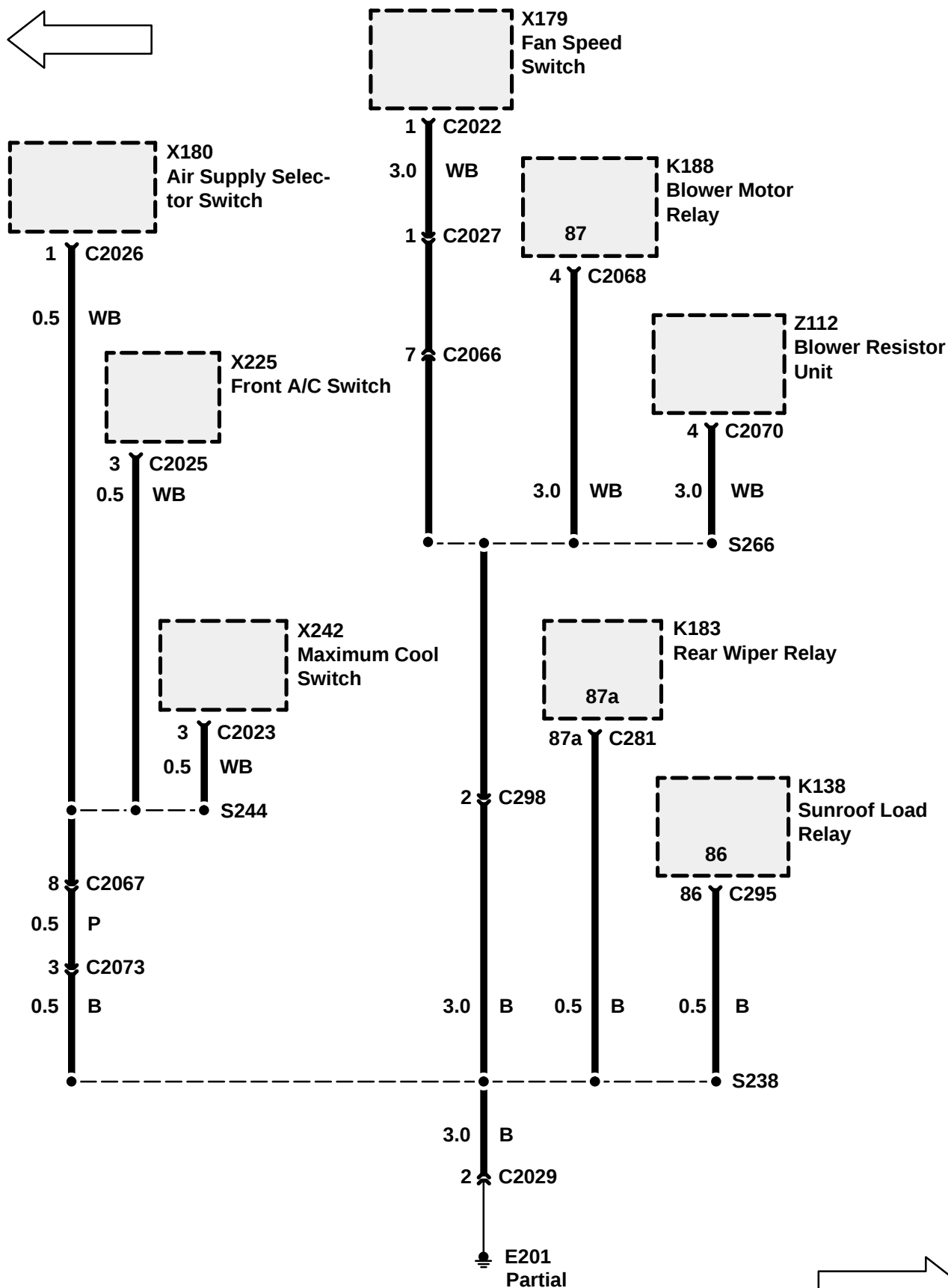


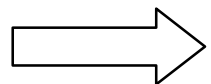
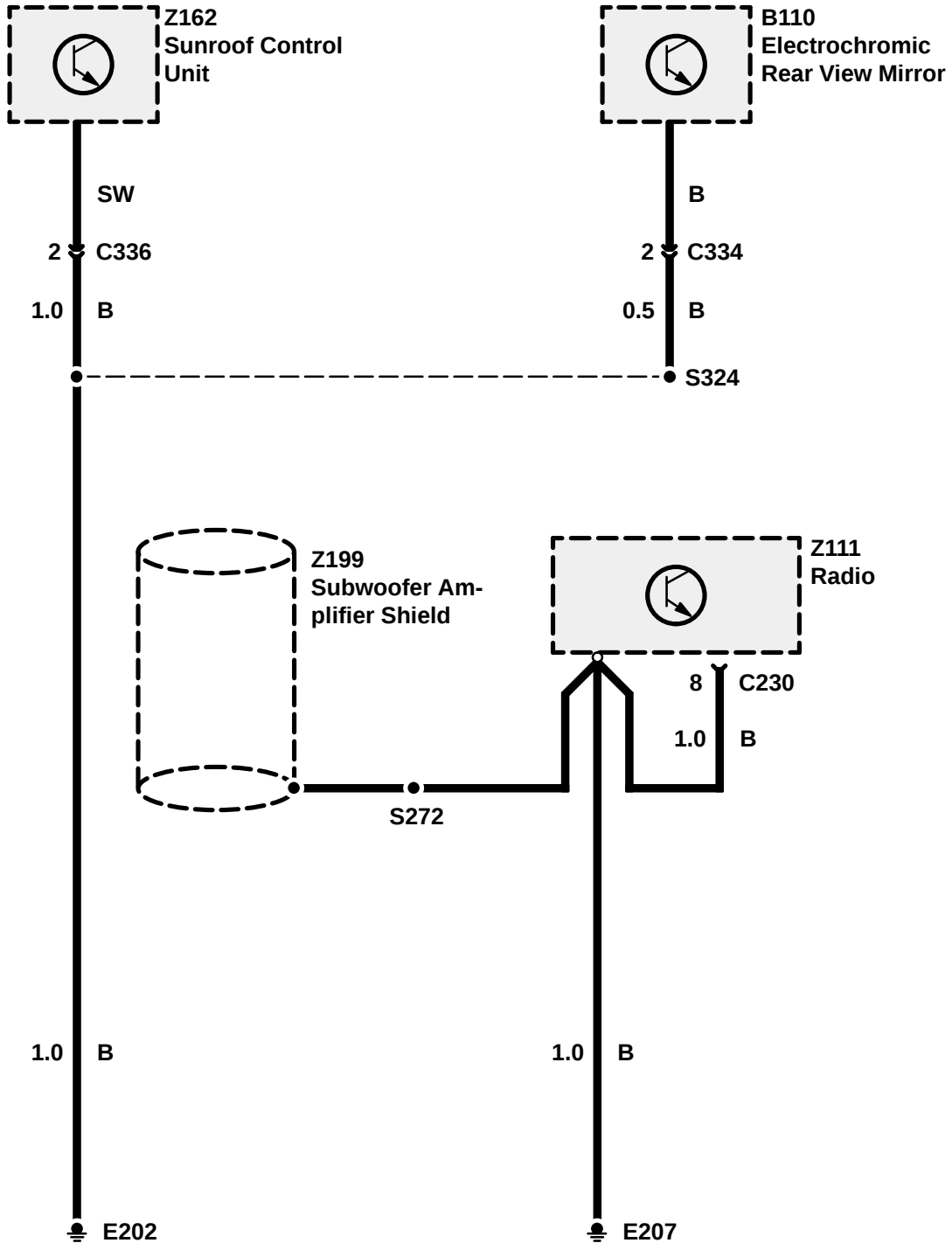
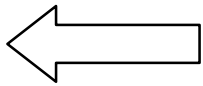


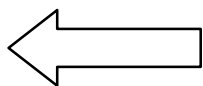












K153
Interlock Relay 1

87a C2000

0.5 RB



Z189
Interlock Diode 1

0.5 BR



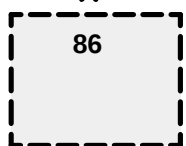
Y5-25



Z110
Transmission
Range Selector
Switch

4 C344

0.5 BR



K151
Interlock Relay 2

86 C2001



X230
Key-Barrel
Switch

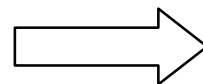
0.5 KR

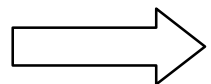
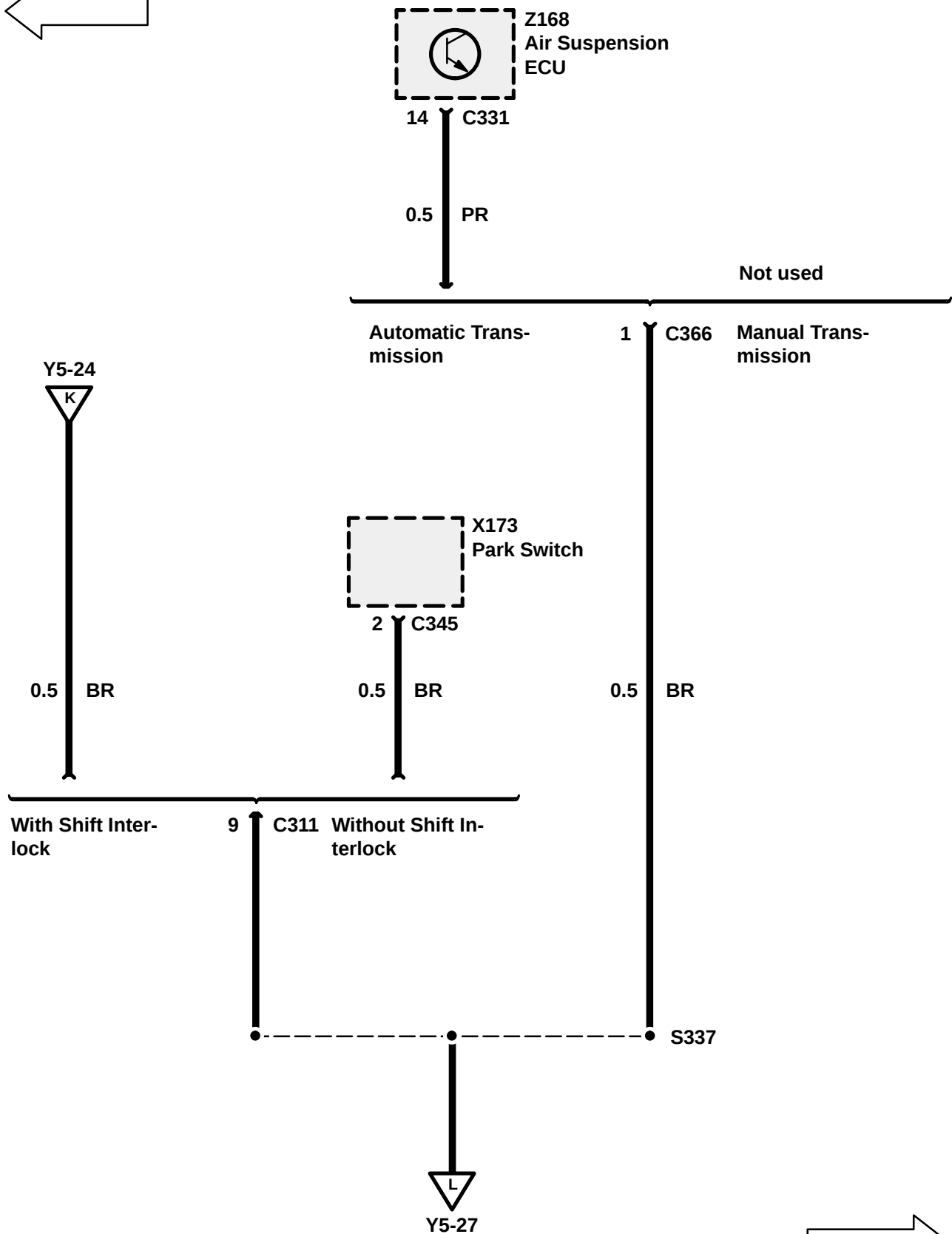
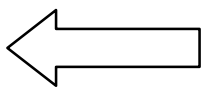
4 C2012

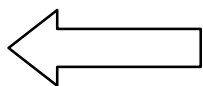
0.5 BR

4 C202

S2018
HJ6

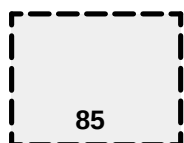






Z168
Air Suspension
ECU

18 C331



K158
Air Suspension
Delay Relay

85 C362

0.5 BK

3 1.0 B

X176
Air Suspension
Diagnostic Con-
nector

5 C365

0.5 B

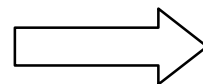
S333

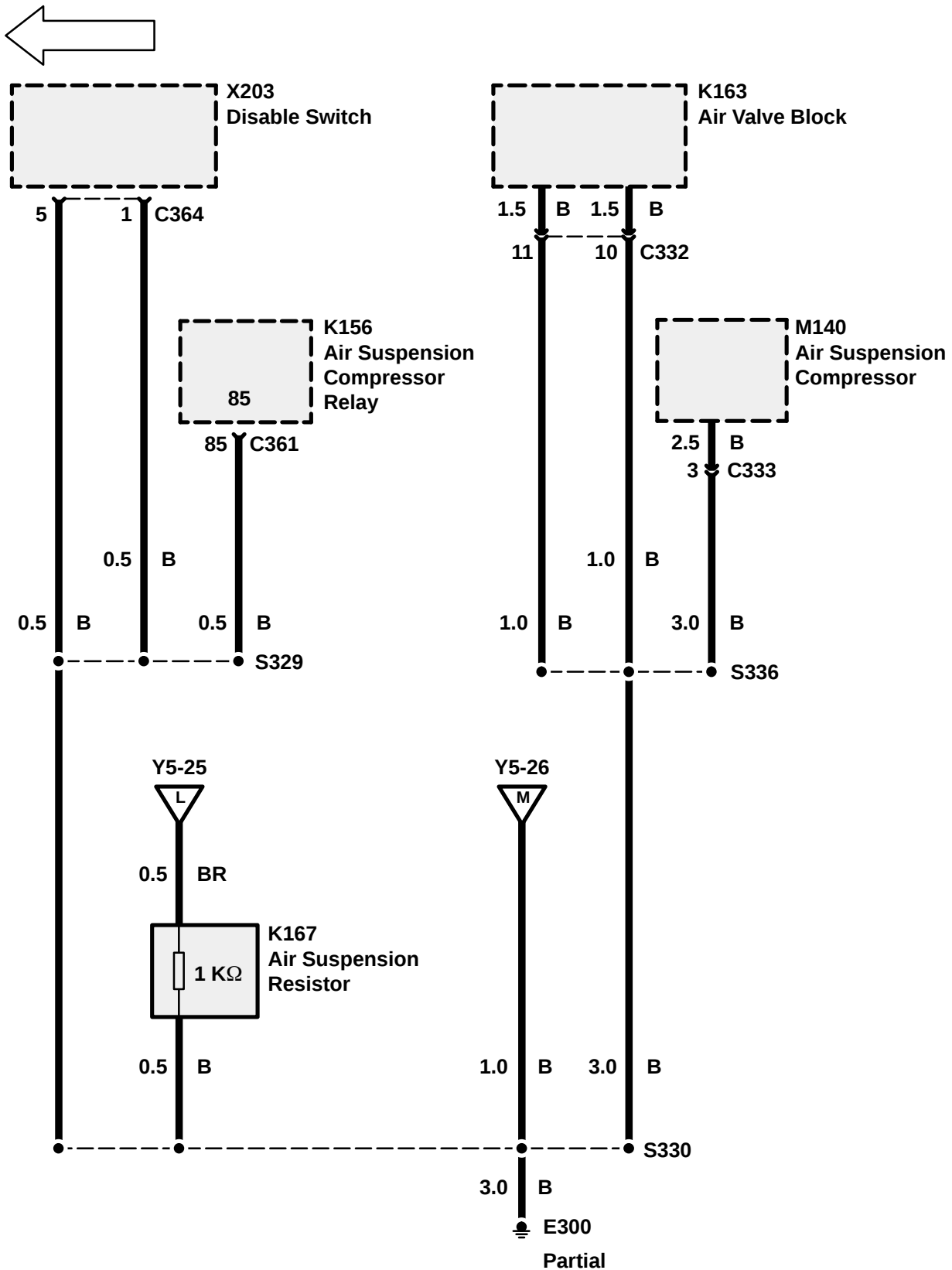
1.0 B

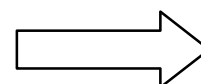
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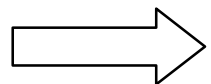
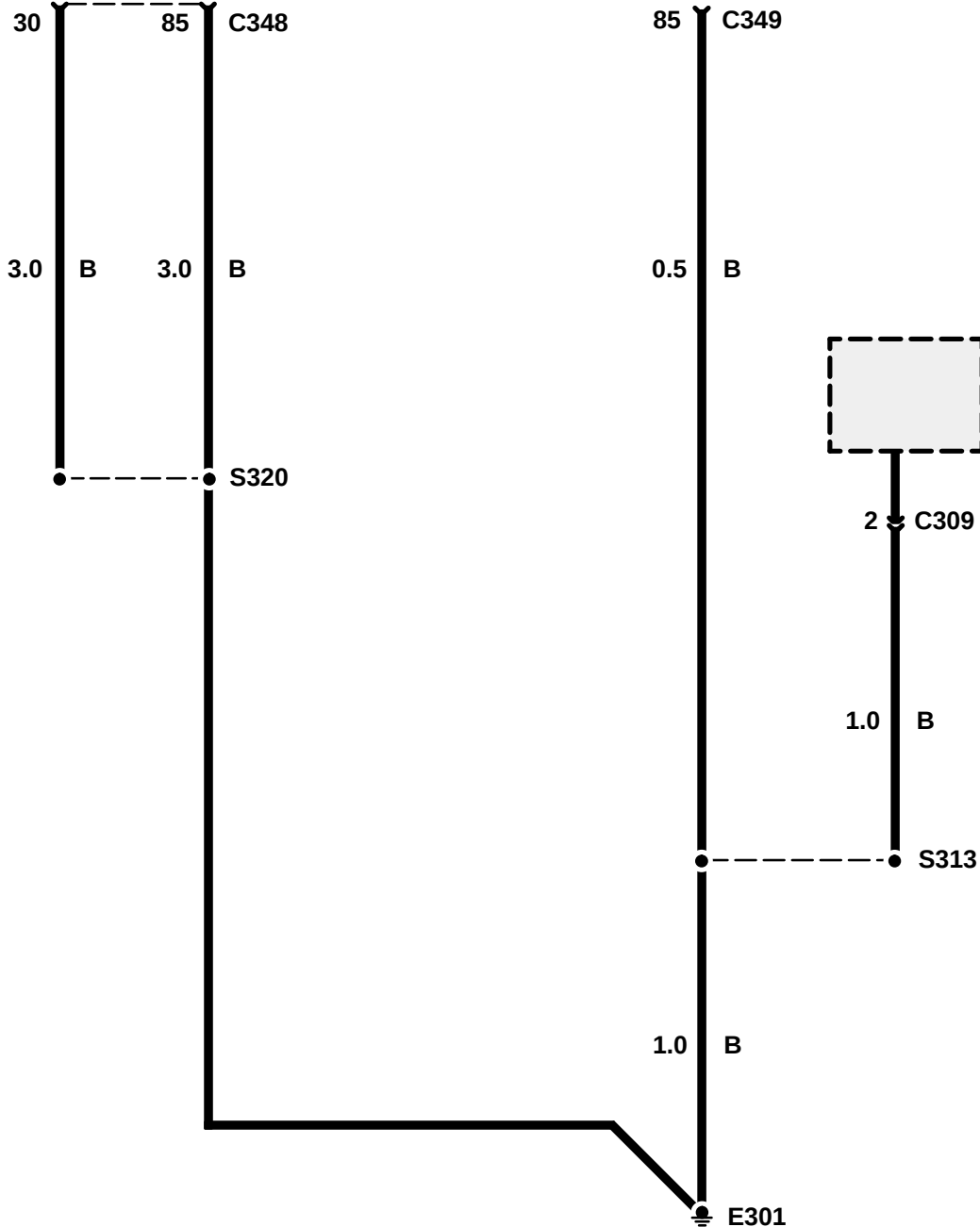


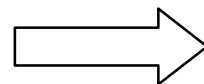
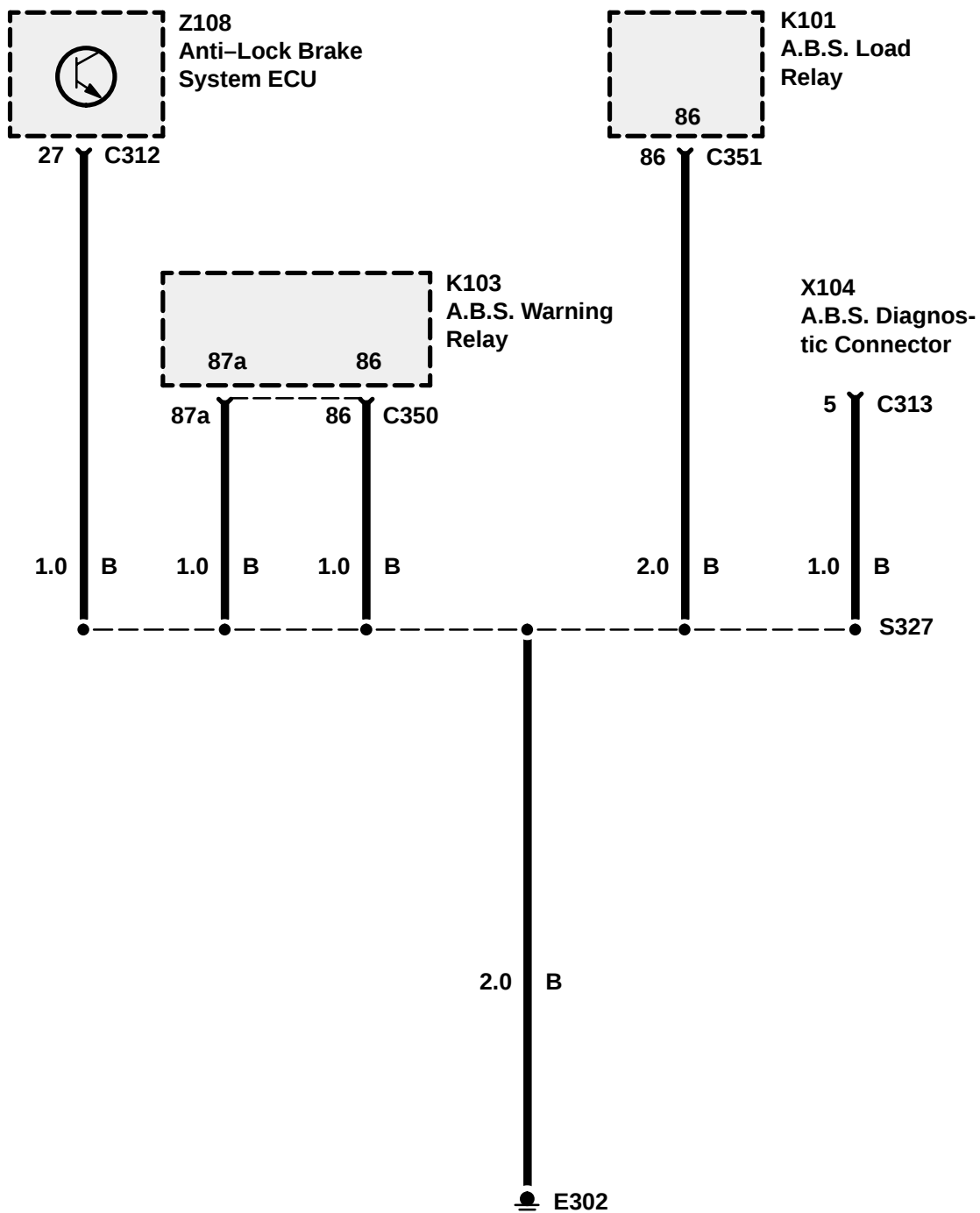
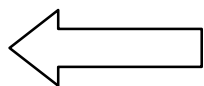
Y5-27

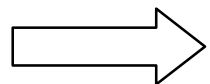
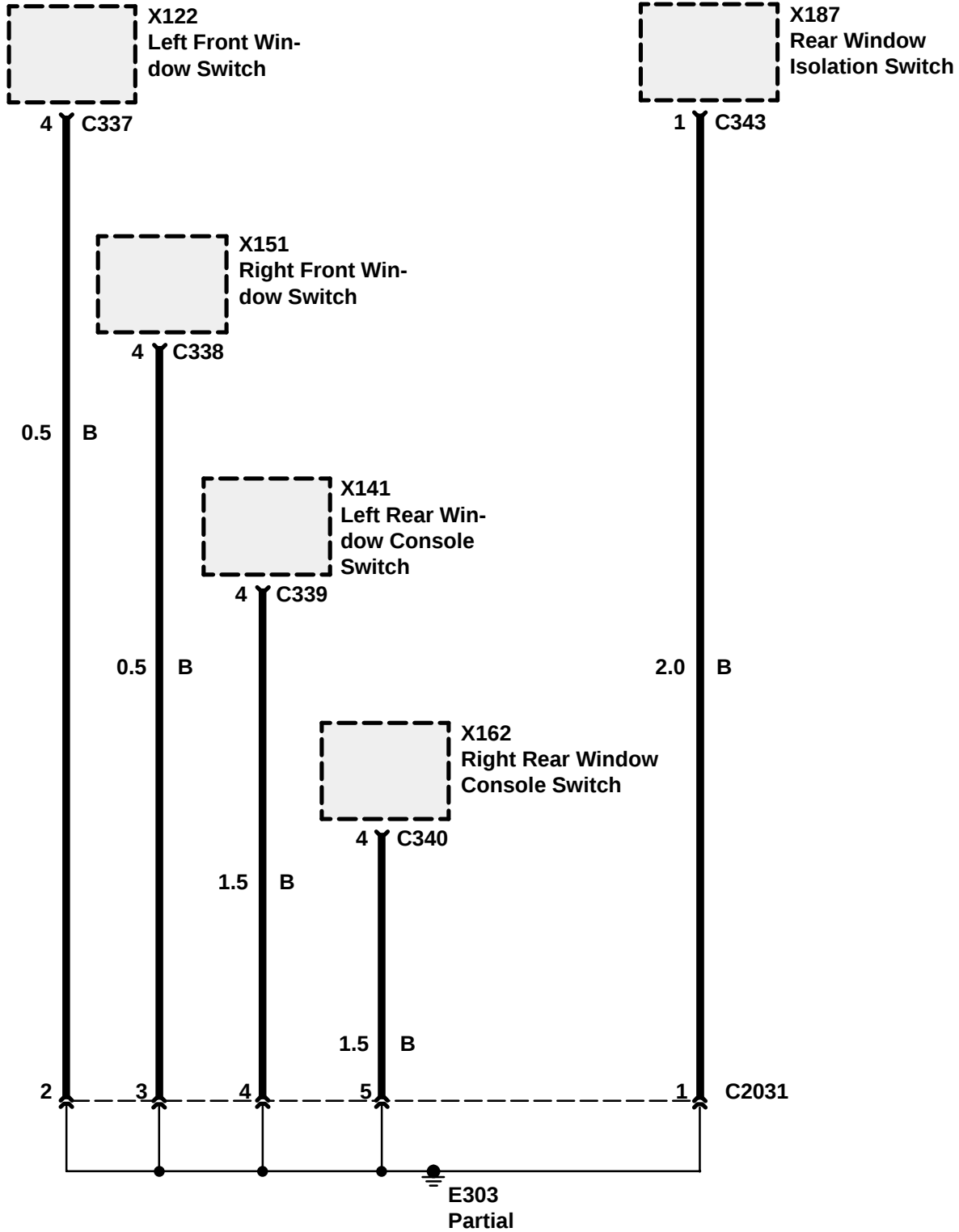
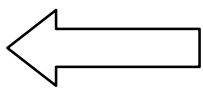


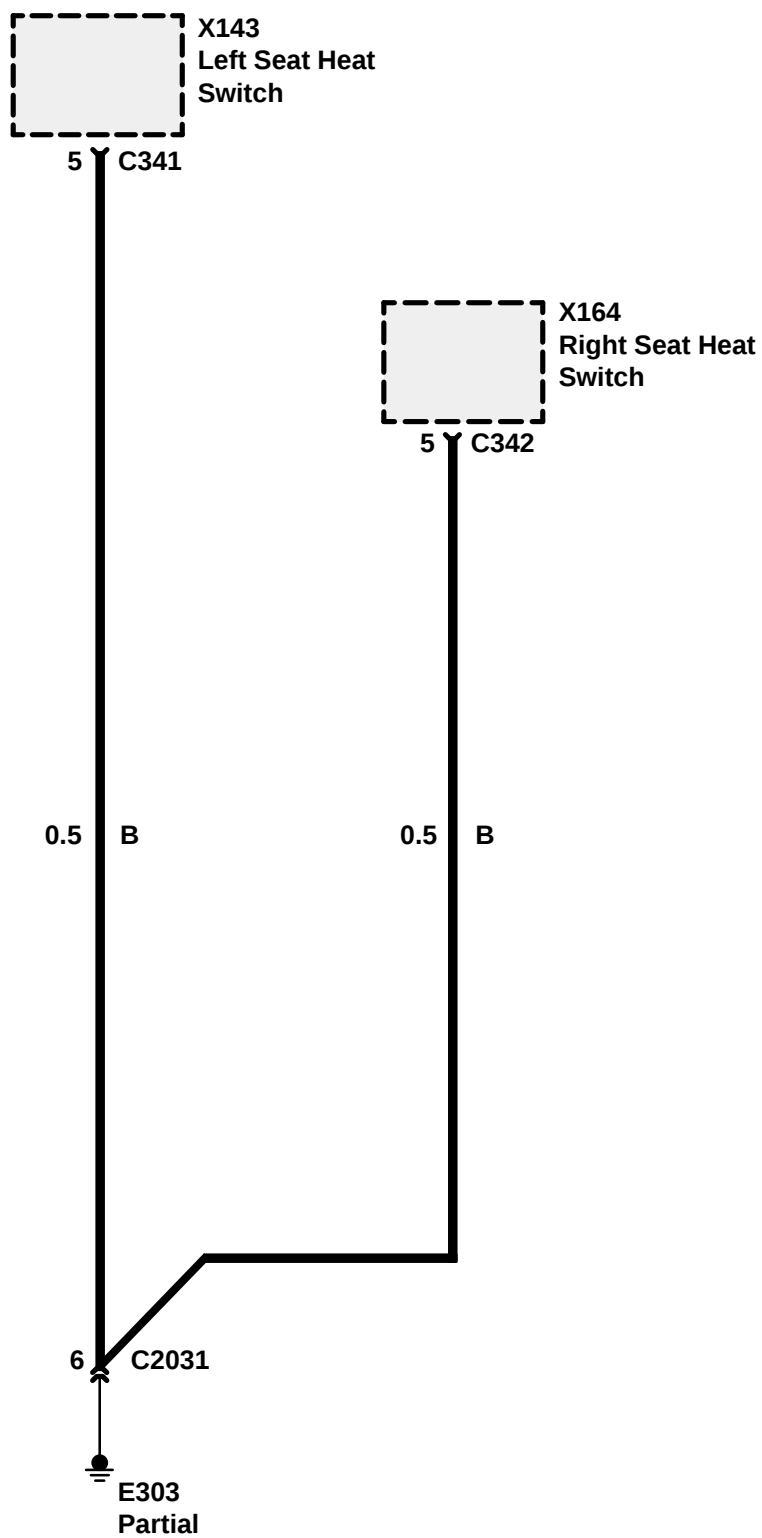


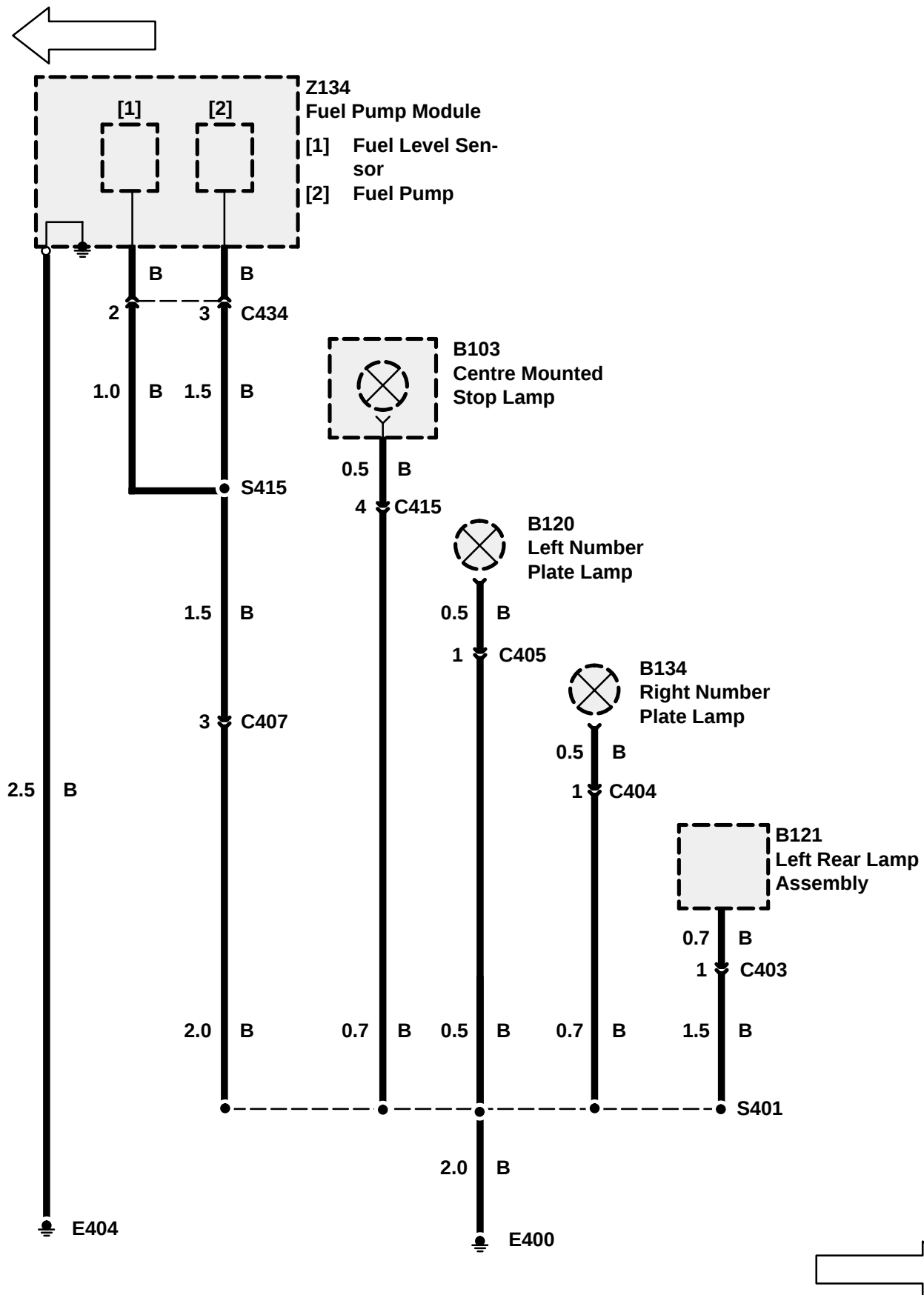


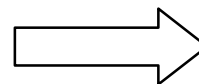
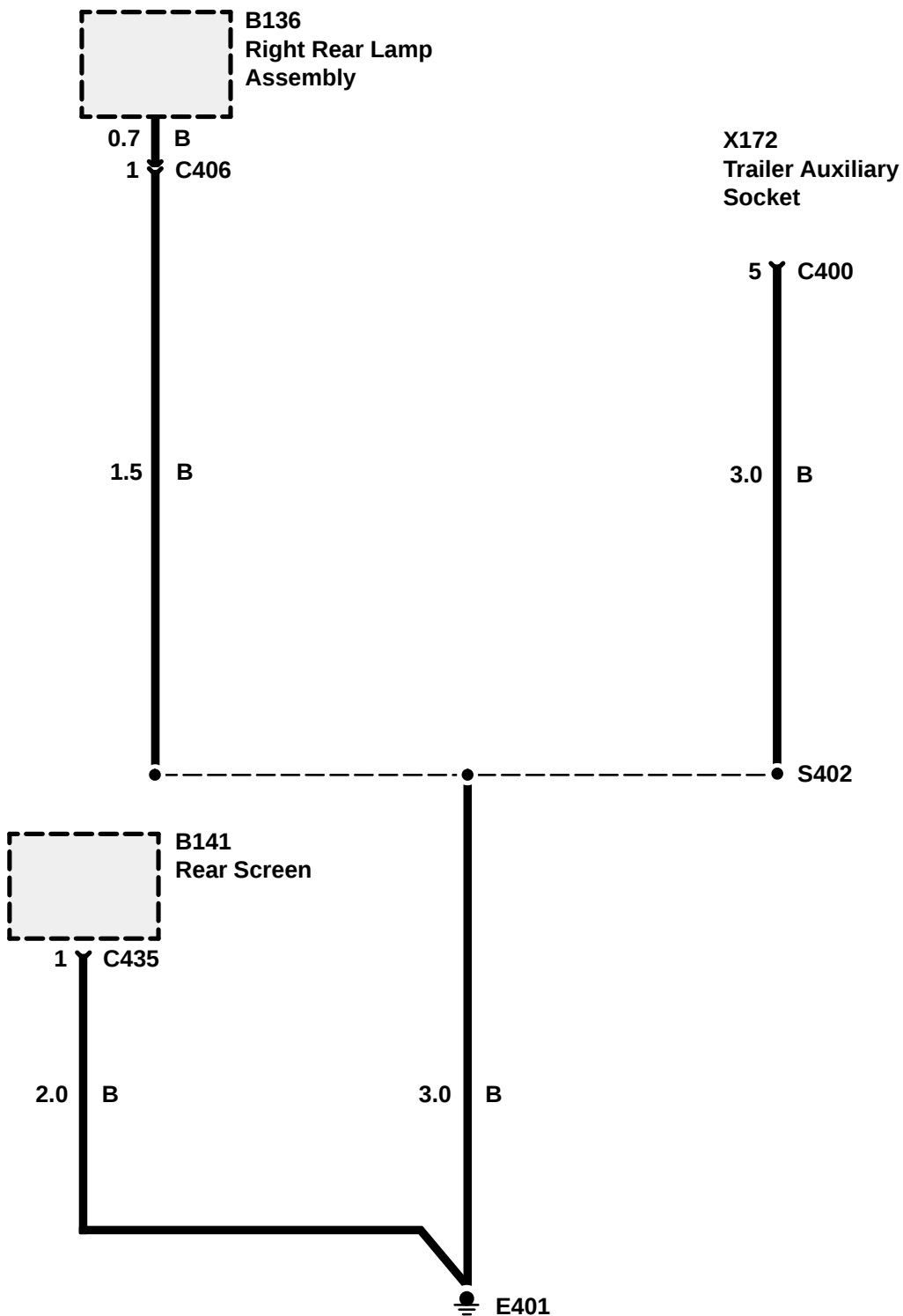
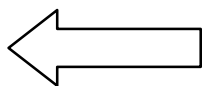


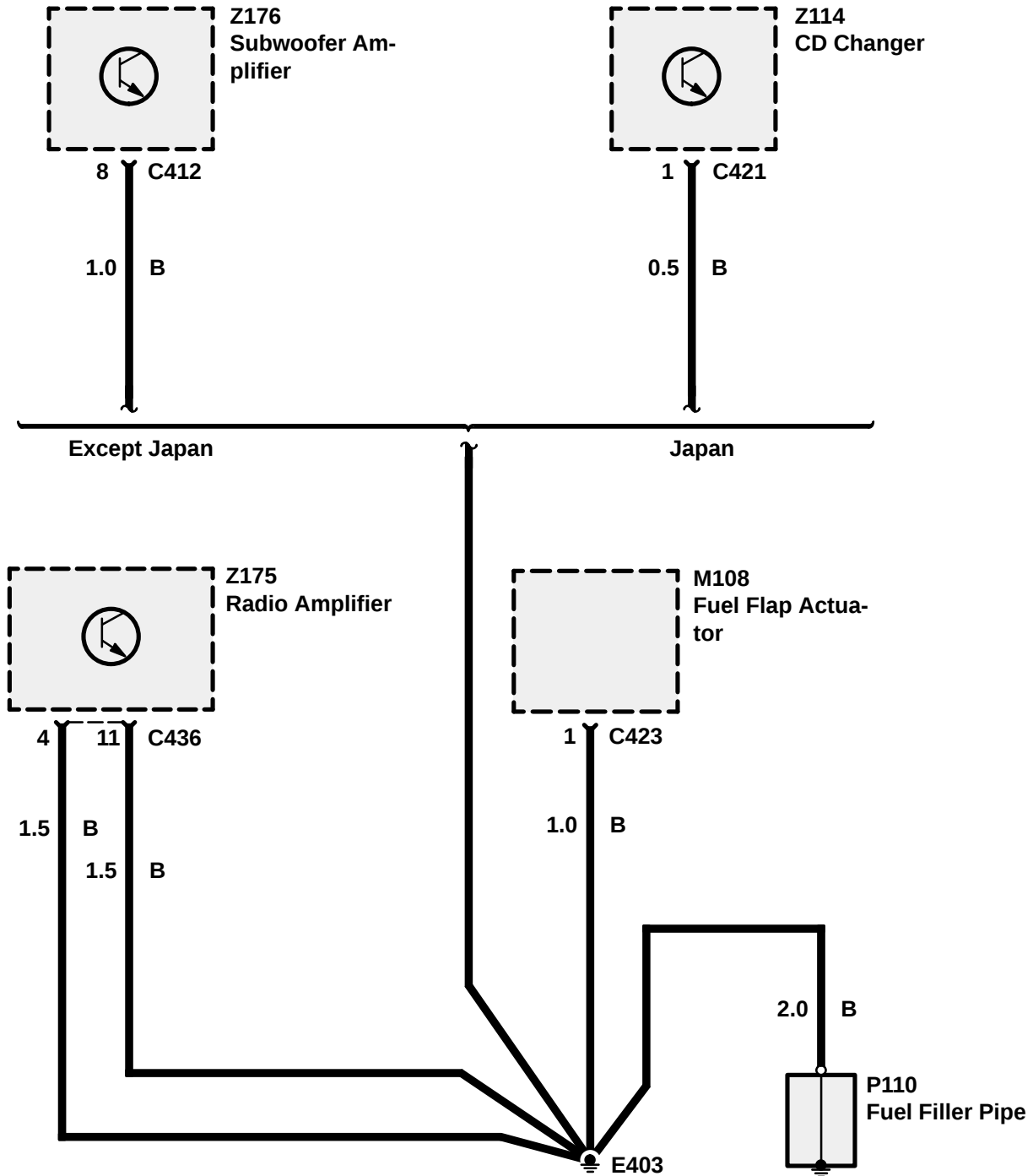












Component	Location	Manual	View
A.B.S. Booster Unit (Z103) ..	RH rear corner of engine compartment	70	55
A.B.S. Diagnostic Connector (X104)	beneath LH front seat	70	168
A.B.S. Diode (Z192)	beneath LH front seat	70	166
A.B.S. Hydraulic Pump (M102)	RH rear corner of engine compartment	70	54
A.B.S. Load Relay (K101) ...	beneath LH front seat	70	167
A.B.S. Pressure Switch Unit (Z104)	RH rear corner of engine compartment	70	54
A.B.S. Pump Relay (K102) ..	beneath LH front seat	70	167
A.B.S. Warning Relay (K103)	beneath LH front seat	70	168
A/C Dual Pressure Switch (X102)	RH rear corner of engine compartment	82	52
A/C Logic Relay (K170)	behind RH footwell trim panel	82	145
Accessory Relay (K174)	behind LH footwell trim panel	86	72
Air Bag Diagnostic Control Module (Z151)	beneath centre console	76	109
Air Recirculation Solenoid (K123)	behind LH side of fascia LH side of heater evaporator unit	82	79
Air Recirculation Solenoid In-Line Fuse (P138)	behind LH side of fascia	82	86
Air Supply Selector Diode (Z208)	Heater Switch Wire Harness near C2067	82	89
Air Supply Selector Switch (X180)	centre of fascia	82	100
Air Suspension Compressor (M140)	beneath RH side of vehicle	68	196
Air Suspension Compressor Relay (K156)	beneath RH front seat	68	176
Air Suspension Delay Relay (K158)	beneath RH front seat	68	175
Air Suspension Diagnostic Connector (Z167)	beneath RH front seat	68	174
Air Suspension Disable Diode (Z187)	beneath RH front seat	68	178
Air Suspension Down Switch (X211)	centre of fascia	86	97
Air Suspension ECU (Z165) ..	beneath RH front seat	68	178
Air Suspension In-Line Maxi-Fuse (P122)	beneath RH front seat	68	175
Air Suspension Indicator Diode (Z188)	beneath RH front seat	68	174
Air Suspension Inhibit Switch (X209)	centre of fascia	86	98

Component	Location	Manual	View
Air Suspension Resistor (K167)	beneath RH front seat	68	178
Air Suspension Up Switch (X210)	centre of fascia	86	97
Air Valve Block (K163)	beneath RH side of vehicle	68	196
Alarm Bonnet Switch (X212) .	LH rear corner of engine compartment	86	4
Alarm Sensor (X213)	front centre of roof	86	110
Anti-Lock Brake System ECU (Z108)	beneath LH front seat	70	166
Automatic Transmission Oil Temperature Switch (X108)	lower LH front of engine compartment	86	35
Auxiliary Lamps Relay (K105)	behind LH side of fascia on bracket	86	81
Auxiliary Lamps Switch (X109)	centre of fascia	86	93
Blower Motor Relay (K188) ..	behind LH side of fascia LH side of heater evaporator unit	82	79
Blower Resistor Unit (Z112) ..	behind LH side of fascia LH side of heater evaporator unit	80	89
Bonnet Switch (X110)	LH rear corner of engine compartment	86	2
Brake Fluid Level Switch (X111)	RH rear corner of engine compartment	70	53
Brake Switch Vent Valve (X112)	behind RH side of fascia on brake pedal support ...	19	130
Bulb Check Relay (K173)	behind LH side of fascia on bracket	86	83
CD Changer (Z114)	RH rear of luggage compartment	86	
Catalyst Thermocouple 1 (X243)	beneath centre of vehicle	86	61
Catalyst Thermocouple 2 (X244)	beneath centre of vehicle	86	61
Catalyst Warning ECU 1 (Z196)	behind LH side of fascia	86	76
Catalyst Warning ECU 2 (Z198)	behind LH side of fascia	86	75
Catalyst Warning Relay (K172)	behind LH side of fascia	86	
Central Locking Control Unit (Z113) Except Japan	behind LH side of fascia on bracket	86	
Central Locking Control Unit (Z113) Japan	behind LH side of fascia on bracket	86	80
Clock (Z117)	centre of fascia	86	92
Clutch Pedal Position Switch (X200)	behind RH side of fascia near steering column	86	
Column Switch Illumination (B104)	top of steering column	86	120

Component	Location	Manual	View
Compressor Clutch (K107) Diesel	RH side of engine on front of A/C compressor	82	40
Compressor Clutch (K107) Petrol	RH side of engine on front of A/C compressor	82	48
Compressor Clutch Cut-out Switch (X259)	RH front of engine	82	41
Compressor Clutch Relay (K108)	behind RH footwell trim panel	82	144
Condenser Fan Control Diode 1 (Z209)	behind RH side of fascia	82	115
Condenser Fan Control Diode 2 (Z210)	behind RH side of fascia	82	114
Condenser Fan Coolant Temperature Switch (X113) Diesel	RH front of engine	82	42
Condenser Fan Coolant Temperature Switch (X113) Petrol	top centre front of engine	82	25
Condenser Fan Relay (K109)	behind LH side of fascia on bracket	86	84
Cruise Control Diode (Z186) .	Cruise Control Wire Harness near C218	19	
Cruise Control ECU (Z121) ..	behind LH side of fascia on bracket	19	77
Cruise Control Lockout Relay (K110)	behind LH side of fascia on bracket	19	
Cruise Control Switch (X115)	centre of fascia	19	94
Cruise Control Vacuum Pump (M103)	LH front corner of engine compartment	19	22
Data Link Connector (EGR) (X219) Diesel	behind RH side of fascia	19	140
Data Link Connectors (X127) Petrol	behind RH side of fascia	19	139
Dim/Dip Relay (K176)	behind LH side of fascia on bracket	86	81
Dim/Dip Resistor (K175)	LH rear of engine compartment	86	
Direction Indicator Diode 1 (Z212)	behind instrument cluster	86	125
Direction Indicator Diode 2 (Z213)	behind instrument cluster	86	125
Direction Indicator Switch (X116)	top of steering column	86	121
Disable Switch (X203)	beneath RH front seat	68	177
Distributor (Z125)	top centre front of engine	86	25
Driver's Underseat Fuse Box (P108)	beneath RH front seat	86	180
EGR Control Solenoid (K171)	LH front corner of engine compartment	19	20
EGR Valve Control Module (Z149)	behind RH side of fascia	19	140

Component	Location	Manual	View
EGR Valve Position Sensor (X218)	LH side of engine	19	14
ETC Valve Block (K162)	RH rear corner of engine compartment	70	55
Engine Compartment Fuse Box (P125)	RH front of engine compartment	86	36
Engine Control Load Relay (K116)	behind RH footwell trim panel	19	147
Engine Control Module (ECM) (Z132)	behind RH side of fascia	19	139
Engine Coolant Temperature Gauge Sensor (X114) Diesel	RH front of engine	86	41
Engine Coolant Temperature Gauge Sensor (X114) Petrol	top centre front of engine on intake manifold	86	16
Engine Coolant Temperature Sensor (X126)	top centre front of engine	19	26
Engine Coolant Temperature Sensor (X126) Petrol	top centre front of engine on intake manifold	19	16
Engine Fuel Temperature Sensor (X128)	top centre front of engine	19	15
Evaporative Emission Canister Purge Valve (K132)	RH side of engine compartment	17	
Fan Control Module (Z118) ..	behind RH footwell trim panel	82	146
Fan Speed Switch (X179) ...	centre of fascia	82	99
Fan Timer Diode (Z211)	behind LH side of fascia	82	87
Fascia Cigar Lighter (B106) ..	in front of centre console	86	92
Fascia Fuse Box (P126)	behind RH side of fascia right of steering column ...	86	131
Flasher Unit (Z128)	behind RH side of fascia on Fascia Fuse Box	86	132
Fore-Aft Sensor (X196)	underside of RH front seat	86	188
Front A/C Evaporator Temperature Switch (X101)	LH side of heater evaporator unit	82	91
Front A/C Switch (X225)	centre of fascia	82	99
Front Blower Motor (M101) ..	behind LH side of fascia	82	86
Front Height Sensor (X194) ..	underside of RH front seat	86	187
Front Interior Roof Lamp (B107)	front centre of roof	86	
Front Screen Wash Pump (M105)	LH rear corner of engine compartment	84	6
Front Wipe/Wash Switch (X124)	top of steering column	84	119
Front Wiper Motor (M107) ...	RH side of bulkhead	84	
Front Wiper Relay (K185) ...	behind RH footwell trim panel	84	143
Fuel Flap Actuator (M108) ...	RH rear of luggage compartment	86	210

Component	Location	Manual	View
Fuel Flap Release Switch (X125)	top RH side of fascia right of steering column	86	137
Fuel Injectors (K141)	top centre front of engine	19	17
Fuel Pump Module (Z134) ...	top of fuel tank	86	201
Fuel Pump Relay (K119)	behind RH footwell trim panel	86	147
Fuel Shut-Off Solenoid (K111)	RH side of engine on injector pump	19	44
Fusible Link (P119)	RH front of engine compartment behind battery	86	38
Generator (Z106) Diesel	lower LH side of engine	86	18
Generator (Z106) Petrol	top centre front of engine	86	49
Generator Suppression Capacitor (Z182) Diesel ...	lower LH side of engine on Generator	86	18
Generator Suppression Capacitor (Z182) Petrol ...	top centre front of engine on Generator	86	49
Glow Plug Timer Unit (Z135) .	RH front of engine compartment behind battery	19	38
Glow Plugs (P120)	RH side of engine	19	43
Handbrake Diode (Z197)	beneath centre console near Handbrake Switch	86	
Handbrake Switch (X191) ...	beneath centre console on handbrake lever	86	108
Hazard Switch (X220)	centre of fascia	86	93
Headlamp Wash Pump (M110)	LH rear corner of engine compartment	86	7
Heated Front Screen Fuse Block (P114)	behind LH side of fascia	86	85
Heated Front Screen In-Line Maxi-Fuse (P139)	RH front of engine compartment behind battery	86	36
Heated Front Screen Relay (K121)	behind LH side of fascia on bracket	86	83
Heated Front Screen Switch (X131)	centre of fascia	86	95
Heated Rear Screen Relay (K122)	behind RH side of fascia on Fascia Fuse Box	86	132
Heated Rear Screen Switch (X132)	centre of fascia	86	95
Heated Washer Jets Thermoswitch (X133)	behind RH side of front grille	86	30
Horn Relay (K189)	behind LH footwell trim panel	86	73
Horn Switches (X258)	in steering wheel	86	117
Idle Air Control Valve (M112) MFI – V8	top rear of engine	19	46
Ignition Coil (Z140) MFI – V8	LH front of engine compartment	86	23
Ignition Coil Noise Suppressor (Z237)	LH front of engine compartment on Ignition Coil	86	23
Ignition Control Module (Z139)	top centre front of engine attached to distributor	86	25

Component	Location	Manual	View
Ignition Key Lock Solenoid (K191)	top of steering column	86	123
Ignition Load Relay (K127) ..	behind RH footwell trim panel	86	143
Ignition Switch (X134)	top of steering column	86	122
Inertia Fuel Shut-Off Switch (X135)	LH rear corner of engine compartment	19	3
Inhibit Indicator Diode (Z191)	Fascia Wire Harness near Air Suspension Inhibit Switch	68	
Instrument Cluster (Z142) ...	top RH side of fascia	86	126
Instrument Illumination Rheostat (Z143)	top RH side of fascia	86	118
Interior Lamps Switch (X136)	centre of fascia	86	96
Interlock Diode 1 (Z189)	Main Wire Harness near Cruise Control ECU	86	
Interlock Diode 2 (Z190)	Main Wire Harness near Cruise Control ECU	86	
Interlock Relay 1 (K153)	behind LH side of fascia	86	
Interlock Relay 2 (K151)	behind LH side of fascia	86	
Key-Barrel Switch (X230) ...	top of steering column on Ignition Switch	86	124
Key-In Switch (X229)	top of steering column on Ignition Switch	86	122
Left Antenna Amplifier (Z177)	LH rear of roof	86	215
Left Condenser Fan Motor (M113)	behind front grille	86	28
Left Front Door Handle Switch (X138)	in top rear of LH front door at door handle	86	
Left Front Door Key Switch (X201)	in top rear of LH front door at door handle	86	156
Left Front Door Lock Actuator (M114)	in rear of LH front door	76	155
Left Front Door Switch (X150)	front of LH front door jamb	86	
Left Front Height Sensor (X205)	behind LH front wheel	68	197
Left Front Seat Control Switch (X152)	RH side of LH front seat	86	171
Left Front Speaker Crossover (Z224)	in front of LH front door	86	
Left Front Wheel Speed Sensor (X137)	behind LH front wheel	70	58
Left Front Window Motor (M130)	in front of LH front door	86	151
Left Front Window Switch (X122)	in rear of centre console	86	102
Left Headlamp (B116)	LH front corner of engine compartment	86	31
Left Heated Oxygen Sensor (X139)	lower LH side of engine compartment	19	57

Component	Location	Manual	View
Left Heated Washer Jet (B118)	mounted on bonnet (hood)	80	8
Left Horn (K128)	LH front corner of engine compartment	86	21
Left Maximum Cool Switch (X267)	behind heater and A/C control panel	82	101
Left Mirror Actuator (M115) ..	top front of LH front door	86	
Left Rear Door Lock Actuator (M117)	inside front of LH rear door	76	162
Left Rear Door Switch (X142) ..	in lower part of LH B-post	86	159
Left Rear Height Sensor (X206)	behind LH rear wheel	68	192
Left Rear Wheel Speed Sensor (X140)	behind LH rear wheel	68	59
Left Rear Window Console Switch (X141)	in rear of centre console	86	103
Left Rear Window Door Switch (X188)	in top of LH rear door	86	160
Left Rear Window Motor (M116)	inside front of LH rear door	86	161
Left Repeater Lamp (B122) ..	LH front of vehicle	86	33
Left Seat Heat Relay (K129) ..	beneath LH front seat	86	170
Left Seat Heat Switch (X143) ..	in rear of centre console	86	105
Left Seat Power Relay (K113) ..	beneath LH front seat	86	170
Left Seat Power Relay Diode (Z223)	beneath RH front seat	86	180
Main Lighting Switch (X145) ..	top of steering column	86	121
Mass Air Flow Sensor (X105) ..	LH side of engine	19	13
Memory Seat ECU (Z146) ...	underside of RH front seat	86	185
Mirror Adjustment Switch (X146)	top RH side of fascia right of steering column	86	137
Multi-Function Unit (MFU) (Z148)	behind RH side of fascia on Fascia Fuse Box	86	134
Multiport Fuel Injection Ignition Resistor 1 (K115) ..	LH front of engine compartment near Ignition Coil ..	86	23
Multiport Fuel Injection Ignition Resistor 2 (K168) ..	LH front of engine compartment near Ignition Coil ..	86	23
Neutral Sense Resistor (K166)	Gearbox Wire Harness near C105	86	
Oil Pressure Switch (X149) Diesel	RH side of engine	86	44
Oil Pressure Switch (X149) Petrol	lower RH side of engine near oil filter	86	34
Park Switch (X173)	beneath centre console	86	
Park/Neutral Position Switch (X167)	LH side of transmission	86	64

Component	Location	Manual	View
Passenger's Underseat Fuse Box (P116)	beneath LH front seat	86	169
Phase Tap Resistor (K184) Petrol	top centre front of engine on Generator	86	49
Phase Tap Resistor (K184) Diesel	lower LH side of engine on Generator	86	18
Power Mirror Diode (Z185) ..	behind LH side of fascia	86	87
Power Wash Relay (K182) ..	behind LH side of fascia on bracket	84	82
Radio (Z111)	centre of fascia	86	96
Radio Amplifier (Z175)	RH side of luggage compartment on Subwoofer	86	213
Rear Fog Guard Lamps Switch (X154)	centre of fascia	86	94
Rear Height Sensor (X195) ..	underside of RH front seat	86	189
Rear Interior Roof Lamp (B124)	centre of roof	86	
Rear Screen Wash Pump (M119)	LH rear corner of engine compartment	86	6
Rear Screen Wash Switch (X222)	top RH side of fascia right of steering column	86	138
Rear Screen Wipe Switch (X221)	top RH side of fascia right of steering column	86	138
Rear Window Isolation Switch (X187)	in rear of centre console	86	104
Rear Wiper Motor (M120) ...	centre rear of roof	84	206
Rear Wiper Relay (K183)	behind LH footwell trim panel	84	72
Recline Sensor (X197)	underside of RH front seat	86	188
Refrigerator (Z172)	rear of luggage compartment	86	
Refrigerator Fuse (Control) (P141)	RH side of luggage compartment	86	
Refrigerator Fuse (Power) (P121)	RH side of luggage compartment	86	
Refrigerator Relay (K148) ...	RH side of luggage compartment	86	
Reservoir Pressure Resistor (K169)	beneath RH front seat	68	174
Reservoir Pressure Switch (X204)	beneath LH side of vehicle	68	191
Reverse Switch (X157)	LH side of transmission	86	63
Right Antenna Amplifier (Z178)	RH rear of roof	86	215
Right Condenser Fan Motor (M121)	behind front grille	86	29
Right Front Seat Control Switch (X121)	LH side of RH front seat	82	183
Right Front Door Handle Switch (X159)	in top rear of RH front door at door handle	86	

Component	Location	Manual	View
Right Front Door Key Switch (X202)	in top rear of RH front door at door handle	86	156
Right Front Door Lock Actuator (M122)	in rear of RH front door	76	155
Right Front Door Switch (X118)	front of RH front door jamb	86	
Right Front Height Sensor (X207)	behind RH front wheel	68	197
Right Front Inboard Brake Pad (B129)	in RH front brake caliper	70	60
Right Front Speaker Crossover (Z225)	in front of RH front door	86	
Right Front Wheel Speed Sensor (X158)	behind RH front wheel	70	58
Right Front Window Motor (M133)	in front of RH front door	86	151
Right Front Window Switch (X151)	in rear of centre console	86	102
Right Headlamp (B130)	RH front of engine compartment	86	31
Right Heated Oxygen Sensor (X160)	lower RH side of engine	19	51
Right Heated Washer Jet (B132)	mounted on bonnet (hood)	80	9
Right Horn (K134)	LH front corner of engine compartment	86	21
Right Maximum Cool Switch (X268)	behind heater and A/C control panel	82	101
Right Mirror Actuator (M123)	top front of RH front door	86	
Right Rear Door Lock Actuator (M125)	inside front of RH rear door	76	162
Right Rear Door Switch (X163)	in lower part of RH B-post	86	159
Right Rear Height Sensor (X208)	behind RH rear wheel	68	192
Right Rear Inboard Brake Pad (B135)	in RH rear brake caliper	70	60
Right Rear Wheel Speed Sensor (X161)	behind RH rear wheel	70	59
Right Rear Window Console Switch (X162)	in rear of centre console	86	103
Right Rear Window Door Switch (X189)	in top of RH rear door	86	160
Right Rear Window Motor (M124)	inside front of RH rear door	86	161
Right Repeater Lamp (B137)	RH front of vehicle	86	33
Right Seat Heat Relay (K135)	beneath RH front seat	86	181

Component	Location	Manual	View
Right Seat Heat Switch (X164)	in rear of centre console	86	105
Right Seat Power Relay (K131)	beneath RH front seat	86	181
Right Seat Power Relay Diode (Z222)	beneath RH front seat	86	180
Rotary Coupler (Z119)	top of steering column	76	122
Satellite Fuse Box 1 (P127) ..	behind RH side of fascia on Fascia Fuse Box	86	131
Satellite Fuse Box 2 (P128) ..	behind RH side of fascia on Fascia Fuse Box	86	131
Seat Base Motor (M126)	underside of respective front seat	86	184
Seat Height (Front) Motor (M127)	underside of respective front seat	86	184
Seat Height (Rear) Motor (M128)	underside of respective front seat	86	184
Seat Recline Motor (M129) ..	underside of respective front seat	86	184
Speed Trip Module (Z164) ...	behind LH side of fascia on bracket	19	
Starter (M134) Diesel	lower LH side of engine	86	14
Starter (M134) Petrol	lower RH side of engine	86	50
Starter Relay Diode (Z158) ..	behind RH footwell trim panel	86	142
Starter Solenoid (K136) Diesel	lower LH side of engine	86	14
Starter Solenoid (K136) Petrol	lower RH side of engine	86	50
Starter Solenoid Relay (K137)	behind RH footwell trim panel	86	142
Steering Wheel Cruise Switches (X266)	in steering wheel	19	117
Stop Lamp Switch (X168) ...	behind RH side of fascia on brake pedal support ...	86	129
Stop Lamp Switch Suppressor (Z206)	behind RH side of fascia near steering column	86	129
Subwoofer (K146)Except Japan	RH rear of luggage compartment	86	212
Subwoofer (K146)Japan	RH rear of luggage compartment	86	214
Subwoofer Amplifier (Z176) ..	RH rear of luggage compartment on Subwoofer	86	211
Subwoofer Control (X232) ...	centre of fascia	86	
Sunroof Control Unit (Z162) ..	front centre of roof	76	111
Sunroof Load Relay (K138) ..	behind LH side of fascia on bracket	76	82
Sunroof Motor (M131)	front centre of roof	76	111
Sunroof Switch (X169)	front centre of roof	76	110
Tailgate Lock Actuator (M132)	lower centre of rear screen	76	208
Tailgate Switch (X170)	top LH side of rear screen opening	86	205
Theft Alarm LED (B151)	centre of fascia	86	96
Theft Alarm Relay (K159) ...	behind LH footwell trim panel	86	71

Component	Location	Manual	View
Theft Alarm Unit (Z163)	behind LH side of fascia on bracket	86	80
Throttle Position Sensor (X171) Diesel	RH side of engine on injector pump	19	44
Throttle Position Sensor (X171) Petrol	top centre front of engine	19	15
Trailer Auxiliary Socket (X172)	behind RH side of rear bumper	86	202
Transfer Box Oil Temperature Switch (X174)	top RH side of transfer box	86	66
Transfer Box Position Switch (X175)	top RH side of transfer box	86	67
Transfer Box Solenoid (K154)	top RH side of transfer box	86	
Transfer Box Solenoid Diode (Z232)	Gearbox Wire Harness near C105	86	
Transmission Range Selector Switch (Z110)	beneath centre console near transmission range selector	86	106
Tune Select Resistor (K140) .	behind RH side of fascia	19	116
Vehicle Speed Sensor (X190)	LH side of transfer box	86	65
Warning Lamp Relay (K155) .	beneath RH front seat	86	176
Water Valve (K206)	RH rear corner of engine compartment	82	
Window Lift ECU (Z147)	behind LH side of fascia on bracket	86	78

Connector	Location	View
C100 (3-W)	RH front of engine compartment on Engine Compartment Fuse Box . . .	39
C101 (4-W)	RH front of engine compartment on Engine Compartment Fuse Box . . .	39
C102 (1-B)	LH rear corner of engine compartment	5
C103 (3-B)	RH front of engine compartment on Right Headlamp	31
C104 (3-B)	LH front corner of engine compartment on Left Headlamp	31
C105 (13-B)	LH rear corner of engine compartment	4
C106 (2-B)	behind RH side of front bumper to Right Auxiliary Lamp	27
C107 (2-B)	behind LH side of front bumper to Left Auxiliary Lamp	27
C108 (1-B)	LH rear corner of engine compartment	5
C109 (4-B)	LH front of vehicle to Left Front Lamp Assembly	32
C110 (4-B)	RH front of vehicle to Right Front Lamp Assembly	32
C112 (3-W)	LH rear corner of engine to Left Heated Oxygen Sensor	57
C113 (3-W)	RH rear of engine to Right Heated Oxygen Sensor	46
C114 (2-W)	RH front of engine compartment on Engine Compartment Fuse Box . . .	39
C115 (3-W)	RH front of engine compartment on Engine Compartment Fuse Box . . .	39
C116 (1-W)	RH front of engine compartment on Engine Compartment Fuse Box . . .	39
C118 (1-W)	RH front of engine compartment behind battery	36
C120 (2-B)	LH rear corner of engine compartment on Rear Screen Wash Pump	6

Connector	Location	View
C121 (2-B)	lower RH side of windscreen to Heated Front Screen	1
C122 (2-B)	lower LH side of windscreen to Heated Front Screen	1
C123 (2-B)	RH front of vehicle on Right Repeater Lamp	33
C124 (2-B)	LH front of vehicle on Left Repeater Lamp	33
C125 (2-B)	RH rear corner of engine compartment to A.B.S. Hydraulic Pump	54
C126 (5-B)	RH rear corner of engine compartment on A.B.S. Pressure Switch Unit ..	54
C127 (3-B)	RH rear corner of engine compartment on Brake Fluid Level Switch ...	53
C128 (2-B)	RH rear corner of engine compartment on ETC Valve Block	55
C129 (12-B)	RH rear corner of engine compartment on A.B.S. Booster Unit	55
C130 (2-W)	LH rear of engine compartment to Left Front Wheel Speed Sensor	12
C131 (2-W)	RH side of engine compartment to Right Front Wheel Speed Sensor ...	56
C132 (4-B)	top rear of engine on Idle Air Control Valve	46
C133 (6-B)	LH side of engine on Mass Air Flow Sensor	13
C134 (2-B)	LH side of engine on Fuel Injectors	17
C135 (2-B)	RH side of engine on Fuel Injectors	47
C136 (2-B)	LH side of engine on Fuel Injectors	17
C137 (2-B)	RH side of engine on Fuel Injectors	47
C138 (2-B)	LH side of engine on Fuel Injectors	17
C139 (2-B)	RH side of engine on Fuel Injectors	47
C140 (2-B)	LH rear of engine on Fuel Injectors	11
C141 (2-B)	RH side of engine on Fuel Injectors	47
C144 (2-RU)	RH side of engine compartment on Evaporative Emission Canister Purge Valve	
C145 (2-W) Diesel	RH side of engine to Compressor Clutch	40
C145 (2-W) Petrol	RH side of engine to Compressor Clutch	48
C146 (2-B) Diesel	RH front of engine on Condenser Fan Coolant Temperature Switch	42
C146 (2-B) Petrol	top centre front of engine on Condenser Fan Coolant Temperature Switch	25
C148 (3-B)	top centre front of engine to Distributor	23
C149 (3-B) Petrol	top centre front of engine to Throttle Position Sensor	15
C150 (2-S)	top centre front of engine on Engine Fuel Temperature Sensor	15
C152 (2-N) Diesel	top centre front of engine on Engine Coolant Temperature Sensor	26
C152 (2-N) Petrol	top centre front of engine on Engine Coolant Temperature Sensor	16
C153 (1-B)	LH front of engine compartment on Ignition Coil	24
C154 (1-B)	LH front of engine compartment on Ignition Coil	24
C155 (1-B)	LH front of engine compartment on Ignition Coil	24
C156 (1-W)	LH front of engine compartment on Ignition Coil	24
C159 (6-B)	RH front of engine compartment on Glow Plug Timer Unit	38
C160 (3-B) Diesel	RH side of engine to Throttle Position Sensor	45

Connector	Location	View
C162 (2-B)	RH front of engine on Compressor Clutch Cut-out Switch	41
C164 (3-B)	LH side of engine on EGR Valve Position Sensor	14
C165 (2-S)	LH front corner of engine compartment on EGR Control Solenoid	20
C166 (2-B)	lower LH front of engine compartment on Automatic Transmission Oil Temperature Switch	35
C167 (3-B)	LH front corner of engine compartment on Cruise Control Vacuum Pump	22
C168 (2-B)	LH front of engine compartment on Left Horn	21
C169 (2-B)	LH front of engine compartment on Right Horn	21
C170 (2-R)	LH rear corner of engine compartment on Front Screen Wash Pump	6
C171 (3-B)	LH rear corner of engine compartment on Inertia Fuel Shut-Off Switch ..	3
C173 (2-WR)	LH rear corner of engine compartment to Headlamp Wash Pump	7
C174 (2-W)	LH rear corner of engine compartment	5
C177 (2-B)	LH rear of engine compartment to Dim/Dip Resistor	
C178 (2-B)	LH rear corner of engine compartment to Alarm Bonnet Switch	4
C179 (2-U)	RH rear corner of engine compartment on Water Valve	
C180 (3-B)	RH rear corner of engine compartment	52
C181 (2-S)	RH rear corner of engine compartment on A/C Dual Pressure Switch ..	52
C182 (2-B)	behind front grille to Left Condenser Fan Motor	28
C183 (2-B)	behind front grille to Right Condenser Fan Motor	29
C184 (2-B)	RH front of vehicle to Heated Washer Jets Thermoswitch	30
C188 (2-W)	mounted on bonnet (hood) to Left Heated Washer Jet	8
C189 (2-W)	mounted on bonnet (hood) to Right Heated Washer Jet	9
C200 (4-W)	behind RH side of fascia near steering column	128
C201 (7-W)	top of steering column on Main Lighting Switch	121
C202 (24-W)	behind RH side of fascia near steering column	128
C203 (7-W)	behind RH side of fascia on Fascia Fuse Box	134
C204 (24-W)	behind RH side of fascia on Fascia Fuse Box	135
C205 (24-B)	behind RH side of fascia on Multi-Function Unit (MFU)	134
C206 (4-W)	behind RH side of fascia on Fascia Fuse Box	136
C207 (10-B)	on Instrument Cluster	127
C208 (18-W)	behind RH side of fascia on Fascia Fuse Box	132
C209 (24-G)	behind RH side of fascia left of steering column	113
C211 (10-W)	behind RH side of fascia on Fascia Fuse Box	135
C212 (14-W)	top of LH A-post	68
C213 (14-W)	top of RH A-post	148
C214 (3-B)	top RH side of fascia to Instrument Illumination Rheostat	118
C215 (24-Y)	behind RH side of fascia left of steering column	113
C216 (7-N)	behind RH side of fascia right of heater evaporator unit	115

Connector	Location	View
C217 (20-W)	behind RH side of fascia right of heater evaporator unit	115
C218 (8-W)	behind LH side of fascia on bracket	85
C219 (4-W)	behind RH side of fascia on Fascia Fuse Box	133
C220 (3-N)	behind RH side of fascia to Ignition Switch	128
C221 (10-W)	on Instrument Cluster	126
C222 (10-W)	on Instrument Cluster	126
C223 (5-U)	on Instrument Cluster	127
C224 (6-W)	behind RH side of fascia to Front Wiper Motor	115
C225 (16-B) Except Japan ..	behind LH side of fascia on Theft Alarm Unit	80
C225 (16-B) Japan	behind LH side of fascia on Central Locking Control Unit	80
C226 (3-W)	behind RH side of fascia on Fascia Fuse Box	136
C227 (4-B)	behind RH side of fascia on Stop Lamp Switch	129
C228 (8-W)	behind RH side of fascia on Mirror Adjustment Switch	137
C229 (1-W)	behind RH side of fascia on Fascia Fuse Box	134
C230 (8-S)	centre of fascia on Radio	
C231 (2-W)	behind RH footwell trim panel	
C232 (2-)	behind RH side of fascia near Right Front Tweeter	
C233 (4-W)	behind RH footwell trim panel	141
C234 (3-)	centre of fascia	
C235 (4-W)	behind LH footwell trim panel	70
C236 (2-W)	behind LH footwell trim panel	
C237 (2-)	behind LH side of fascia near Left Front Tweeter	
C238 (9-B)	behind RH footwell trim panel on Fan Control Module	146
C239 (5-B)	behind RH footwell trim panel on Engine Control Load Relay	147
C240 (5-U)	behind RH footwell trim panel on Fuel Pump Relay	147
C241 (5-Y)	behind RH footwell trim panel on Compressor Clutch Relay	144
C242 (5-Y)	behind RH footwell trim panel on A/C Logic Relay	145
C243 (40-B)	behind RH side of fascia on Engine Control Module (ECM)	139
C244 (5-W)	behind RH side of fascia Data Link Connectors	139
C245 (5-W)	behind RH side of fascia Data Link Connectors	139
C246 (2-U)	behind RH side of fascia on Tune Select Resistor	116
C247 (16-B)	behind RH side of fascia on EGR Valve Control Module	140
C248 (3-W)	behind RH side of fascia Data Link Connector (EGR)	140
C249 (5-G)	behind RH side of fascia on Rear Screen Wash Switch	138
C250 (5-W)	behind RH side of fascia on Rear Screen Wipe Switch	138
C251 (5-U)	behind RH side of fascia on Fuel Flap Release Switch	137
C252 (6-R)	behind RH side of fascia near steering column	113
C253 (4-W)	behind LH side of fascia	74
C254 (1-W)	behind RH side of fascia on Fascia Fuse Box	133

Connector	Location	View
C255 (1-B)	on Instrument Cluster	127
C256 (6-R)	centre of fascia on Air Suspension Up Switch	97
C257 (6-W)	centre of fascia on Air Suspension Inhibit Switch	98
C258 (6-G)	centre of fascia on Air Suspension Down Switch	97
C260 (6-)	centre of fascia to Subwoofer Control	
C261 (5-W)	centre of fascia on Auxiliary Lamps Switch	93
C262 (5-U)	centre of fascia on Cruise Control Switch	94
C263 (5-U)	centre of fascia on Rear Fog Guard Lamps Switch	94
C264 (5-U)	centre of fascia on Heated Rear Screen Switch	95
C265 (5-G)	centre of fascia on Heated Front Screen Switch	95
C266 (5-W)	centre of fascia on Interior Lamps Switch	96
C267 (10-W)	centre of fascia on Hazard Switch	93
C268 (8-N)	centre of fascia on Radio	
C269 (2-)	centre of fascia on Theft Alarm LED	96
C270 (2-W)	centre of fascia on Clock	92
C274 (6-W) Except Japan ...	behind LH side of fascia on Theft Alarm Unit	80
C274 (6-W) Japan	behind LH side of fascia on Central Locking Control Unit	80
C277 (2-W)	top of LH A-post	68
C278 (2-S)	LH A-post	69
C279 (5-N)	behind LH footwell trim panel on Theft Alarm Relay	71
C281 (5-G)	behind LH footwell trim panel on Rear Wiper Relay	72
C282 (5-Y)	behind LH footwell trim panel on Accessory Relay	72
C283 (5-Y)	behind LH footwell trim panel on Horn Relay	73
C284 (15-B)	behind LH side of fascia on Cruise Control ECU	77
C285 (4-W)	behind LH side of fascia on Catalyst Warning ECU 1	76
C286 (4-W)	behind LH side of fascia on Catalyst Warning ECU 2	75
C287 (10-W)	behind LH side of fascia on Window Lift ECU	78
C288 (8-W)	behind LH side of fascia on Window Lift ECU	78
C289 (12-B)	behind LH side of fascia on Central Locking Control Unit	
C290 (5-Y)	behind LH side of fascia on Bulb Check Relay	83
C291 (5-Y)	behind heater and A/C control panel on Auxiliary Lamps Relay	81
C292 (5-Y)	behind LH side of fascia on Condenser Fan Relay	84
C293 (5-W)	behind LH side of fascia on Dim/Dip Relay	81
C294 (5-B)	behind LH side of fascia on Heated Front Screen Relay	83
C295 (5-Y)	behind LH side of fascia on Sunroof Load Relay	82
C298 (3-W)	behind LH side of fascia	85
C299 (5-)	behind LH side of fascia on Catalyst Warning Relay	
C301 (6-W)	beneath centre console	107
C302 (24-W)	beneath RH front seat to Memory Seat ECU	185

Connector	Location	View
C303 (4-W)	beneath RH front seat to Memory Seat ECU	185
C305 (2-W)	beneath centre console	107
C306 (3-W)	beneath centre console	107
C307 (2-W)	beneath RH front seat	182
C309 (2-W)	beneath LH front seat	169
C311 (14-W)	beneath RH front seat	179
C312 (35-B)	beneath LH front seat on Anti-Lock Brake System ECU	166
C313 (5-U)	beneath LH front seat A.B.S. Diagnostic Connector	168
C314 (3-B)	beneath RH front seat	177
C315 (3-W)	beneath LH front seat	169
C319 (6-B)	RH side of LH front seat on Left Front Seat Control Switch	171
C320 (6-B)	RH side of LH front seat on Left Front Seat Control Switch	171
C321 (9-U)	underside of LH front seat	173
C323 (5-B)	LH side of transmission to Park/Neutral Position Switch	64
C324 (10-W)	underside of RH front seat to Memory Seat ECU	186
C325 (6-B)	LH side of RH front seat on Right Front Seat Control Switch	183
C326 (6-B)	LH side of RH front seat on Right Front Seat Control Switch	183
C327 (3-B)	LH side of RH front seat on Right Front Seat Control Switch	183
C328 (9-UB)	underside of RH front seat	186
C329 (6-W)	underside of RH front seat	187
C330 (13-W)	beneath RH front seat	178
C331 (35-B)	beneath RH front seat on Air Suspension ECU	178
C332 (13-B)	beneath RH side of vehicle to Air Valve Block	196
C333 (4-B)	beneath RH side of vehicle to Air Suspension Compressor	196
C334 (3-B)	front centre of roof to Electrochromic Rear View Mirror	112
C335 (4-B)	front centre of roof on Alarm Sensor	110
C336 (2-W)	front centre of roof to Sunroof Control Unit	
C337 (7-G)	in rear of centre console on Left Front Window Switch	102
C338 (7-W)	in rear of centre console on Right Front Window Switch	102
C339 (7-Y)	in rear of centre console on Left Rear Window Console Switch	103
C340 (7-R)	in rear of centre console on Right Rear Window Console Switch	103
C341 (5-W)	in rear of centre console on Left Seat Heat Switch	105
C342 (5-G)	in rear of centre console on Right Seat Heat Switch	105
C343 (7-N)	in rear of centre console on Rear Window Isolation Switch	104
C344 (6-B)	beneath centre console to Transmission Range Selector Switch	106
C345 (2-B)	beneath centre console on Park Switch	108
C346 (2-U)	beneath centre console to Automatic Gear Selector Illumination	106
C348 (5-Y)	beneath LH front seat on Left Seat Power Relay	170
C349 (5-W)	beneath LH front seat on Left Seat Heat Relay	170

Connector	Location	View
C350 (5-U)	beneath LH front seat on A.B.S. Warning Relay	168
C351 (5-B)	beneath LH front seat on A.B.S. Load Relay	167
C352 (5-B)	beneath LH front seat on A.B.S. Pump Relay	167
C353 (2-W)	centre of fascia on Fascia Cigar Lighter	92
C354 (2-W)	beneath centre rear of vehicle to Left Rear Wheel Speed Sensor	199
C355 (2-W)	beneath centre rear of vehicle to Right Rear Wheel Speed Sensor	199
C357 (5-W)	beneath RH front seat on Right Seat Heat Relay	181
C358 (5-Y)	beneath RH front seat on Right Seat Power Relay	181
C359 (3-B)	behind LH front wheel to Left Front Height Sensor	193
C360 (3-B)	behind RH front wheel to Right Front Height Sensor	195
C361 (5-Y)	beneath RH front seat on Air Suspension Compressor Relay	176
C362 (5-W)	beneath RH front seat on Air Suspension Delay Relay	175
C363 (5-G)	beneath RH front seat on Warning Lamp Relay	176
C364 (5-B)	beneath RH front seat on Disable Switch	177
C365 (5-B)	beneath RH front seat on Air Suspension Diagnostic Connector	174
C366 (1-W) Automatic Transmission	beneath RH front seat	179
C366 (1-W) Manual Transmission	beneath RH front seat	179
C367 (1-W) Automatic Transmission	beneath RH front seat	179
C367 (1-W) Manual Transmission	beneath RH front seat	179
C368 (3-B)	top RH side of transfer box to Transfer Box Position Switch	67
C369 (2-B)	top RH side of transfer box to Transfer Box Solenoid	
C370 (3-B)	LH side of transfer box on Vehicle Speed Sensor	65
C371 (2-B)	top RH side of transfer box on Transfer Box Oil Temperature Switch ...	66
C372 (2-W)	LH side of transmission to Reverse Switch	62
C377 (2-B)	forward of LH rear wheel to Reservoir Pressure Switch	194
C384 (5-W)	front centre of roof on Sunroof Switch	110
C387 (3-B)	front centre of roof to Sunroof Motor	112
C398 (2-W)	underside of LH front seat to Left Heated Seat	190
C399 (2-W)	underside of RH front seat to Right Heated Seat	190
C400 (7-B)	behind RH side of rear bumper Trailer Auxiliary Socket	202
C401 (1-B)	centre of tailgate	216
C402 (1-B)	centre of tailgate	216
C403 (6-B)	LH side of rear bumper	217
C404 (1-B)	centre of tailgate	216
C405 (1-B)	centre of tailgate	216
C406 (6-B)	RH side of rear bumper	217

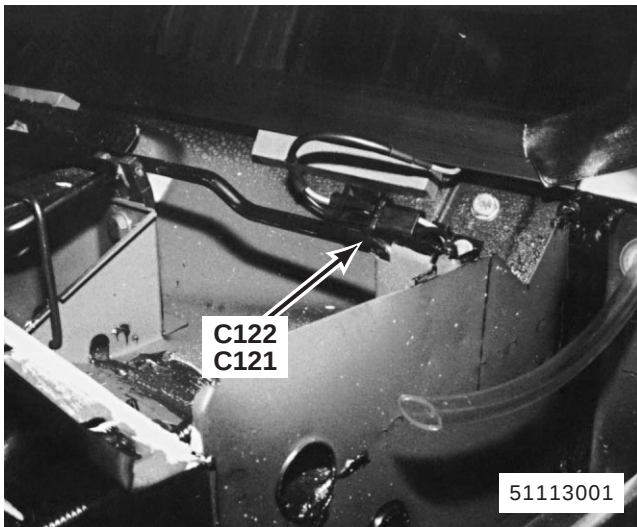
Connector	Location	View
C407 (3-B)	beneath LH rear of vehicle near fuel tank	200
C408 (4-W)	LH rear corner of roof	204
C410 (2-W)	front centre of roof to Front Interior Roof Lamp	112
C411 (2-W)	centre of roof to Rear Interior Roof Lamp	203
C412 (8-W)	RH rear of luggage compartment on Subwoofer Amplifier	211
C413 (8-B)	RH rear of luggage compartment on Subwoofer Amplifier	211
C414 (2-W)	lower centre of rear screen to Tailgate Lock Actuator	208
C415 (4-B)	RH rear of roof	207
C416 (3-B)	beneath centre rear of vehicle	199
C418 (4-B) Except Japan ...	RH rear of luggage compartment to Subwoofer	212
C418 (4-B) Japan	RH rear of luggage compartment to Subwoofer	214
C419 (1-B)	RH rear of luggage compartment	213
C420 (8-W)	RH rear corner of roof	209
C421 (3-W)	RH rear of luggage compartment on CD Changer	213
C422 (18-W)	RH rear of luggage compartment on Radio Amplifier	213
C423 (2-N)	RH rear of luggage compartment on Fuel Flap Actuator	210
C424 (1-B)	behind RH side of rear bumper Trailer Auxiliary Socket	202
C425 (1-B)	behind RH side of rear bumper Trailer Auxiliary Socket	202
C432 (3-W)	forward of RH rear wheel to Right Rear Height Sensor	198
C433 (3-W)	forward of LH rear wheel to Left Rear Height Sensor	194
C434 (4-B)	top of fuel tank to Fuel Pump Module	201
C436 (12-)	RH rear of luggage compartment on Radio Amplifier	
C485 (2-B)	behind RH rear wheel to Right Rear Inboard Brake Pad	60
C500 (3-B)	in front of LH front door to Left Front Window Motor	151
C501 (8-W)	behind LH footwell trim panel	70
C502 (13-W)	behind LH footwell trim panel	70
C503 (5-W)	top front of LH front door to Left Mirror Actuator	150
C504 (4-W)	in top rear of LH front door to Left Front Door Key Switch	154
C505 (5-B)	in lower portion of LH front door	157
C506 (5-B)	in lower portion of LH front door	153
C507 (6-W)	in rear of LH front door to Left Front Door Lock Actuator	155
C509 (5-U)	top front of LH front door to Left Mirror Actuator	150
C514 (2-B)	in front of LH front door on Left Front Midrange Speaker	152
C515 (2-W) High Line Radio	in front of LH front door	152
C515 (2-W) Japan	in front of LH front door on Left Front Bass Speaker	152
C515 (2-W) Low Line Radio Mid Line Radio	in front of LH front door on Left Front Speaker	152
C600 (3-B)	in front of RH front door to Right Front Window Motor	151
C601 (8-W)	behind RH footwell trim panel	141

Connector	Location	View
C602 (13-W)	behind RH footwell trim panel	141
C603 (5-W)	top front of RH front door to Right Mirror Actuator	150
C604 (4-W)	in top rear of RH front door to Right Front Door Key Switch	154
C605 (5-B)	in lower portion of RH front door	157
C606 (5-B)	in lower portion of RH front door	153
C607 (6-W)	in rear of RH front door to Right Front Door Lock Actuator	155
C609 (5-U)	top front of RH front door to Right Mirror Actuator	150
C614 (2-B)	in front of RH front door on Right Front Midrange Speaker	152
C615 (2-W) High Line Radio	in front of RH front door	152
C615 (2-W) Japan	in front of RH front door on Right Front Bass Speaker	152
C615 (2-W) Low Line Radio		
Mid Line Radio	in front of RH front door on Right Front Speaker	152
C700 (3-W)	in lower part of LH B-post	158
C701 (2-W) SWB	in lower part of LH B-post	158
C701 (4-W) LWB	in lower part of LH B-post	158
C703 (3-W)	in lower portion of LH rear door to Left Rear Window Motor	163
C704 (5-B)	in lower portion of LH rear door	164
C705 (5-B)	in lower portion of LH rear door	163
C706 (2-W)	in lower portion of LH rear door to Left Rear Door Lock Actuator	161
C707(5-B)	inside front of LH rear door	165
C709 (5-W)	in top of LH rear door on Left Rear Window Door Switch	160
C800 (3-W)	in lower part of RH B-post	158
C801 (2-W) SWB	in lower part of RH B-post	158
C801 (4-W) LWB	in lower part of RH B-post	158
C803 (3-W)	in lower portion of LH rear door to Right Rear Window Motor	163
C804 (5-B)	in lower portion of RH rear door	164
C805 (5-B)	in lower portion of RH rear door	163
C806 (2-W)	in lower portion of LH rear door to Right Rear Door Lock Actuator	161
C807 (5-B)	inside front of RH rear door	165
C809 (5-W)	in top of RH rear door on Right Rear Window Door Switch	160
C1018 (1-W)	LH front of engine compartment on Ignition Coil	24
C1019 (2-B)	behind RH front wheel to Right Front Inboard Brake Pad	60
C1035 (3-B)	LH front of engine compartment on Ignition Control Module	218
C1036 (3-B)	LH front of engine compartment on Ignition Control Module	218
C2000 (5-Y)	behind LH side of fascia on Interlock Relay 1	
C2001 (5-Y)	behind LH side of fascia on Interlock Relay 2	
C2002 (2-S)	RH A-post	149
C2005 (2-W)	behind RH side of fascia on Brake Switch Vent Valve	130
C2006 (5-Y)	behind RH footwell trim panel on Starter Solenoid Relay	142

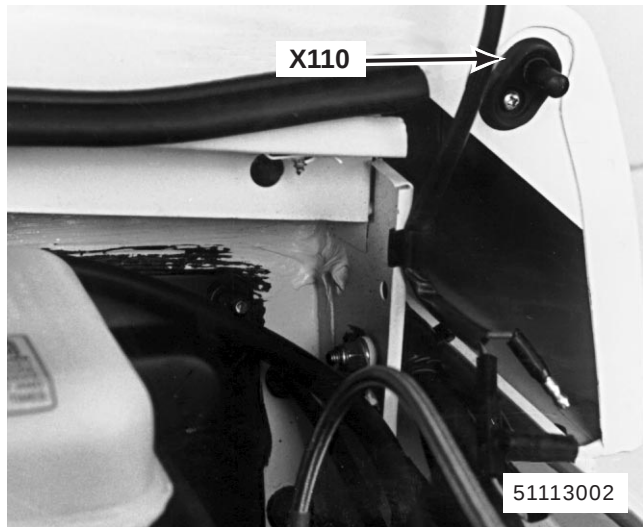
Connector	Location	View
C2007 (5-G)	behind RH footwell trim panel on Ignition Load Relay	143
C2008 (5-G)	behind RH footwell trim panel on Front Wiper Relay	143
C2009 (4-W)	top of steering column on Direction Indicator Switch	121
C2010 (6-W)	top of steering column to Rotary Coupler	122
C2011 (6-W)	top of steering column on Front Wipe/Wash Switch	119
C2012 (8-W)	top of steering column	124
C2013 (4-B)	top of steering column	120
C2014 (2-B)	top of steering column on Ignition Key Lock Solenoid	123
C2015 (8-W)	top of steering column on Front Wipe/Wash Switch	119
C2016 (1-W)	behind RH side of fascia on Fascia Fuse Box	133
C2020 (29-R)	beneath centre console on Air Bag Diagnostic Control Module	109
C2021 (5-) Automatic Transmission	behind LH side of fascia on Cruise Control Lockout Relay	
C2021 (5-) Manual Transmission	behind LH side of fascia on Speed Trip Module	
C2022 (5-W)	behind heater and A/C control panel on Fan Speed Switch	99
C2023 (4-W)	behind heater and A/C control panel	101
C2025 (5-W)	behind heater and A/C control panel on Front A/C Switch	99
C2026 (5-B)	behind heater and A/C control panel on Air Supply Selector Switch ...	100
C2027 (5-W)	behind LH side of fascia LH side of heater evaporator unit	90
C2028 (6-W)	behind RH footwell trim panel on E200	141
C2029 (6-W)	behind LH footwell trim panel on E201	71
C2030 (10-K)	centre of fascia on Radio	
C2031 (6-W)	beneath centre console on E303	107
C2032 (10-)	centre of fascia on Radio	
C2035 (2-B)	behind RH side of fascia on Clutch Pedal Position Switch	
C2036 (7-B)	in steering wheel to Rotary Coupler	117
C2063 (2-B)	behind RH side of fascia to Stop Lamp Switch Suppressor	129
C2064 (2-W)	behind LH side of fascia on Catalyst Warning ECU 1	76
C2065 (2-W)	behind LH side of fascia on Catalyst Warning ECU 2	75
C2066 (8-W)	behind LH side of fascia LH side of heater evaporator unit	90
C2067 (10-W)	behind LH side of fascia LH side of heater evaporator unit	90
C2068 (5-B)	behind LH side of fascia on Blower Motor Relay	79
C2069 (2-B)	behind LH side of fascia on Front Blower Motor	86
C2070 (4-B)	behind LH side of fascia on Blower Resistor Unit	89
C2071 (2-B)	behind LH side of fascia on Air Recirculation Solenoid In-Line Fuse ...	86
C2072 (4-Y)	behind LH side of fascia on Air Recirculation Solenoid	79
C2073 (10-W)	behind RH side of fascia right of heater evaporator unit	114
C2074 (5-Y)	behind LH side of fascia on Power Wash Relay	82

Connector	Location	View
C2078 (2-W)	centre of fascia on Radio	
C2079 (2-W)	centre of fascia on Radio	
C3000 (1-B)	LH side of transmission to Reverse Switch	62
C3001 (1-B)	LH side of transmission to Reverse Switch	62
Ground	Location	View
E100 Diesel	RH front of engine compartment behind battery	37
E100 Petrol	RH front of engine compartment behind battery	37
E101 Diesel	LH front of engine compartment on fender well	20
E101 Petrol	LH front of engine compartment on fender well	19
E102	RH rear corner of engine compartment	56
E103 Diesel	RH front of engine compartment behind battery	37
E103 Petrol	LH rear corner of engine below valve cover	10
E104	lower RH rear of engine compartment on frame rail	
E105	lower LH front of engine compartment	
E106	lower LH rear of engine	
E107	mounted on bonnet (hood)	
E108	near Starter	
E109	LH rear corner of engine	
E110	RH side of bulkhead	
E200	behind RH footwell trim panel	141
E201	behind LH footwell trim panel	71
E202	front centre of roof	111
E207	centre of fascia	
E300	beneath RH front seat	180
E301	beneath LH front seat	169
E302	beneath LH front seat	166
E303	beneath centre console	107
E400	LH rear corner of roof	204
E401	RH rear corner of roof	209
E402	centre rear of roof	206
E403 Except Japan	RH rear of luggage compartment	212
E403 Japan	RH rear of luggage compartment	214
Splice	Location	View
HJ1 (20-S)	behind LH side of fascia	87
HJ2 (20-S)	behind LH side of fascia	87
HJ3 (20-U)	behind LH side of fascia	88
HJ4 (20-U)	behind LH side of fascia	88

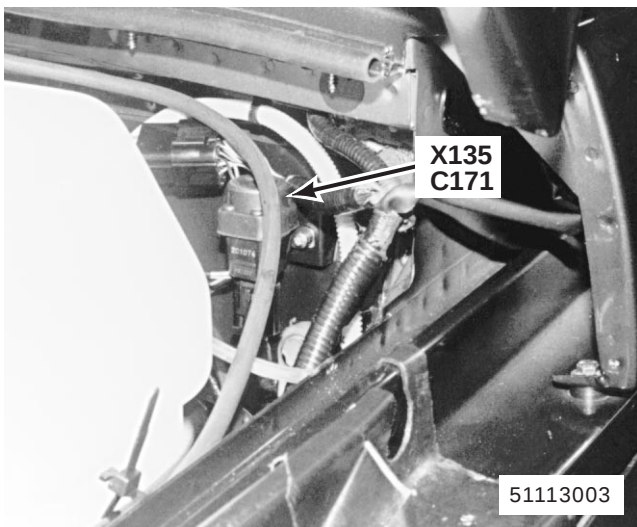
Splice	Location	View
HJ5 (20–S)	behind LH side of fascia	88
HJ6 (20–S)	behind LH side of fascia	88
HJ7 (20–U)	behind RH side of fascia	116
HJ8 (20–S)	behind instrument cluster	125
HJ9 (20–S)	behind instrument cluster	125



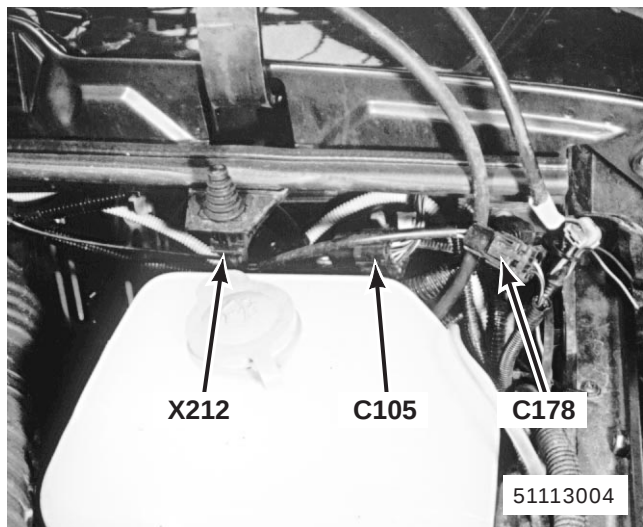
1. lower LH side of windscreen (RH similar)
C121 (2-B) (Right)
C122 (2-B) (Left)



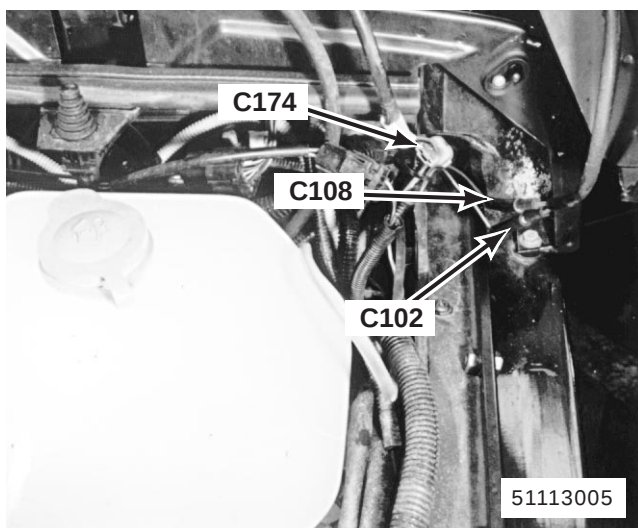
2. LH rear corner of engine compartment
X110 Bonnet Switch



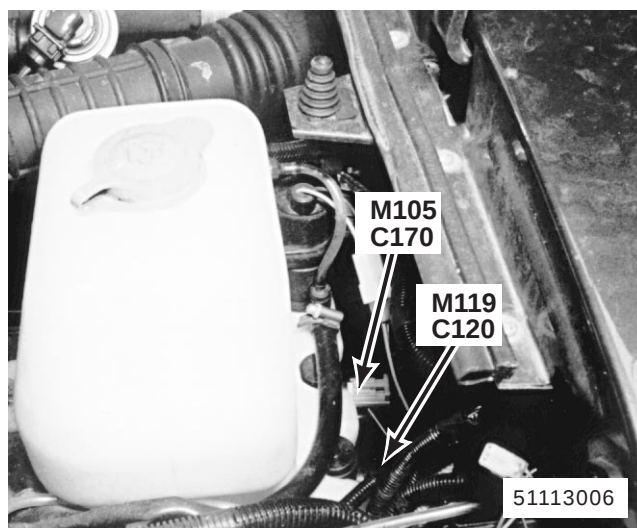
3. LH rear corner of engine compartment
X135 Inertia Fuel Shut-Off Switch
C171 (3-B)



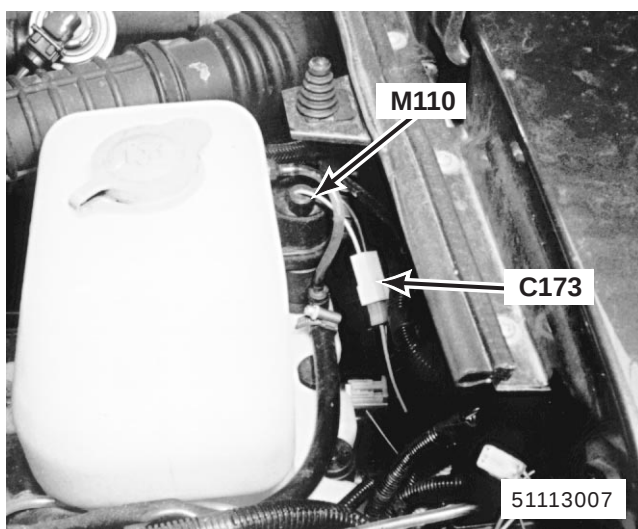
4. LH rear corner of engine compartment
X212 Alarm Bonnet Switch
C105 (13-B)
C178 (2-B)



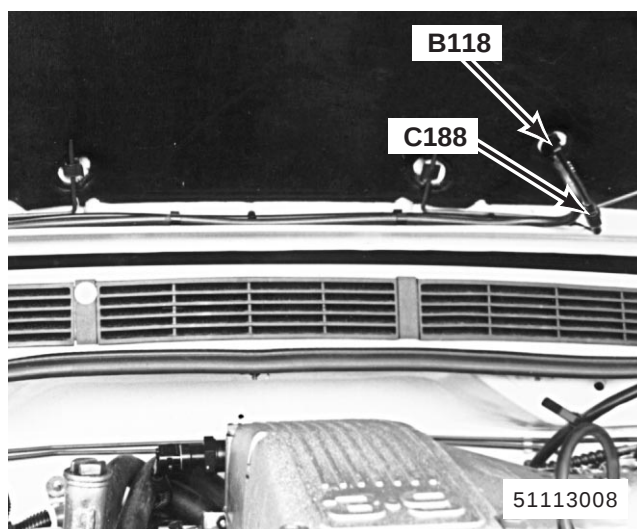
5. LH rear corner of engine compartment
C102 (1-B)
C108 (1-B)
C174 (2-W)



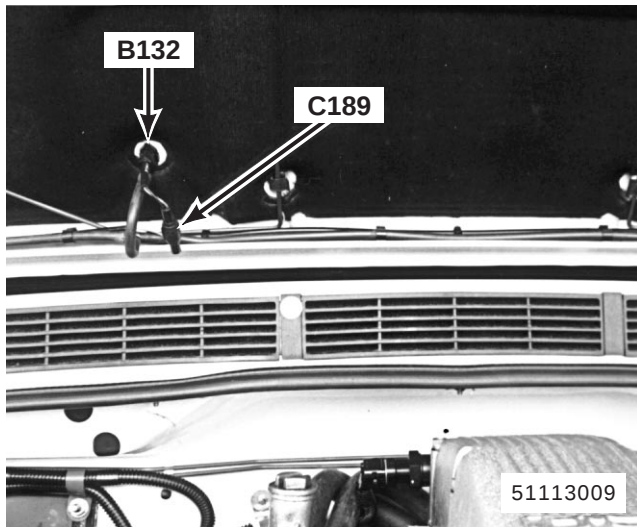
6. LH rear corner of engine compartment
M105 Front Screen Wash Pump
M119 Rear Screen Wash Pump
C120 (2-B)
C170 (2-R)



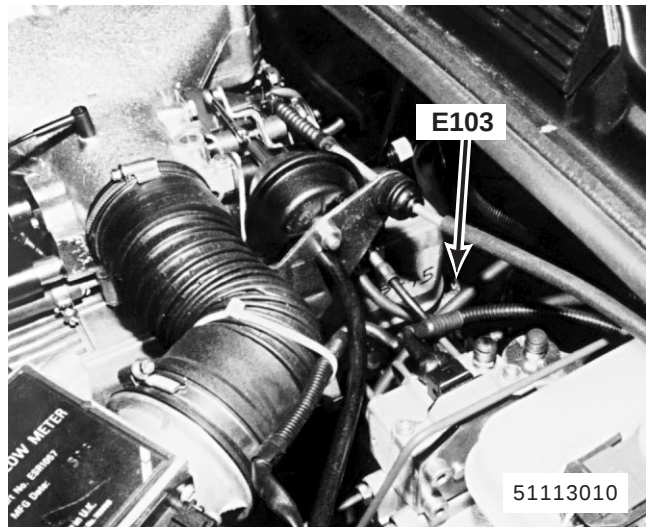
7. LH rear corner of engine compartment
M110 Headlamp Wash Pump
C173 (2-WR)



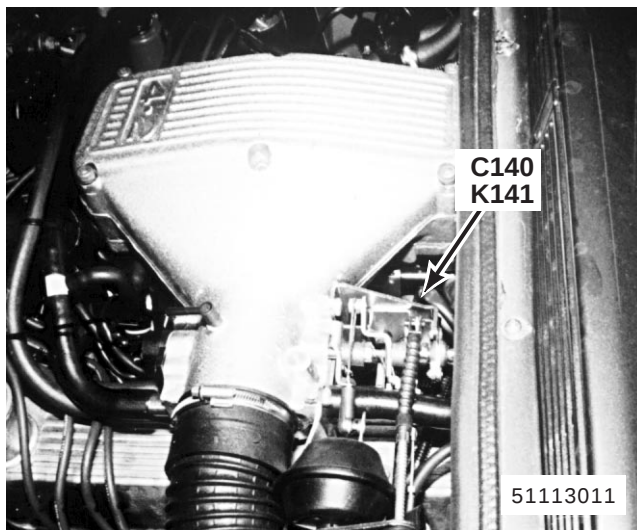
8. rear of engine compartment
B118 Left Heated Washer Jet
C188 (2-W)



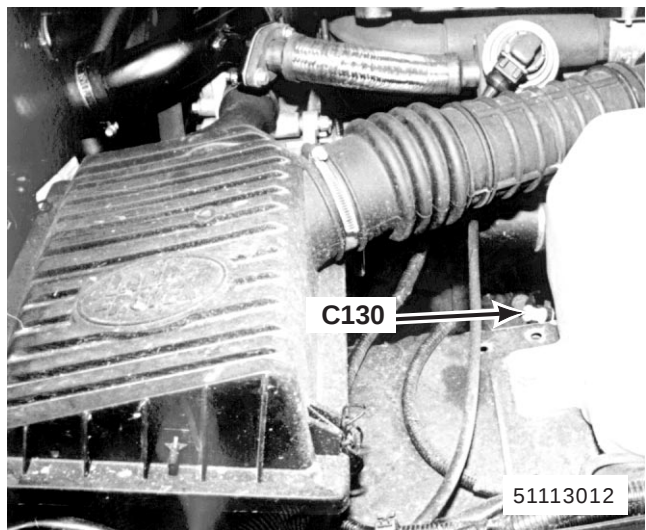
9. rear of engine compartment
B132 Right Heated Washer Jet
C189 (2-W)



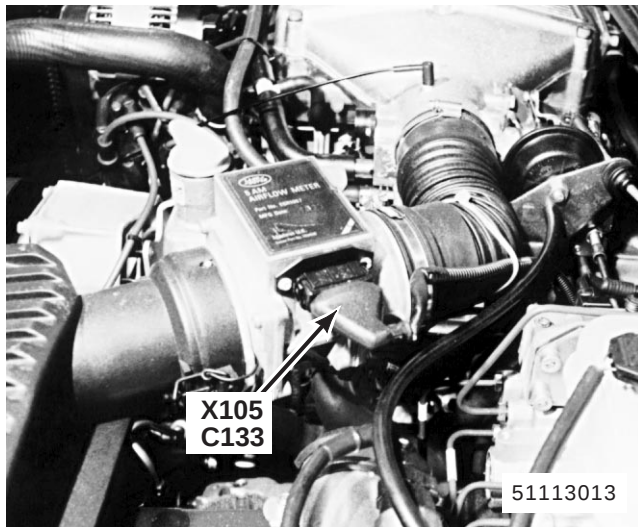
10. LH rear corner of engine Petrol
E103



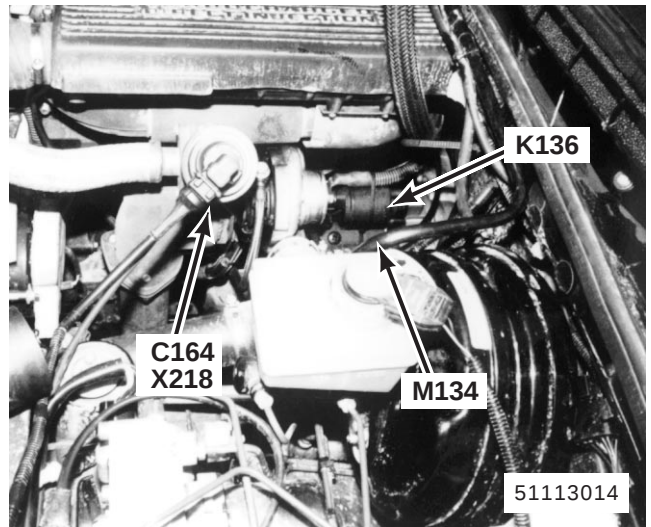
11. LH rear of engine Petrol
K141 Fuel Injectors
C140 (2-B)



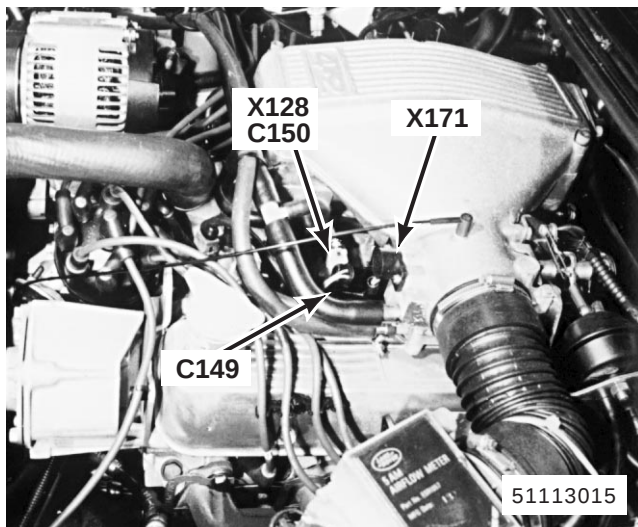
12. LH rear of engine compartment
C130 (2-W)



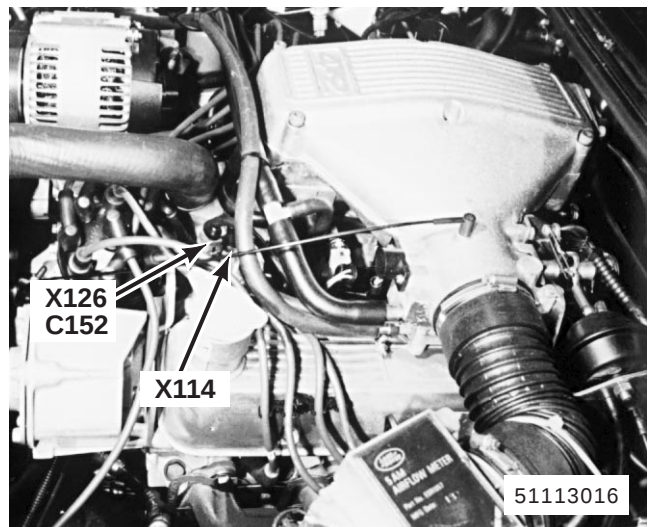
13. LH side of engine Petrol
X105 Mass Air Flow Sensor
C133 (6-B)



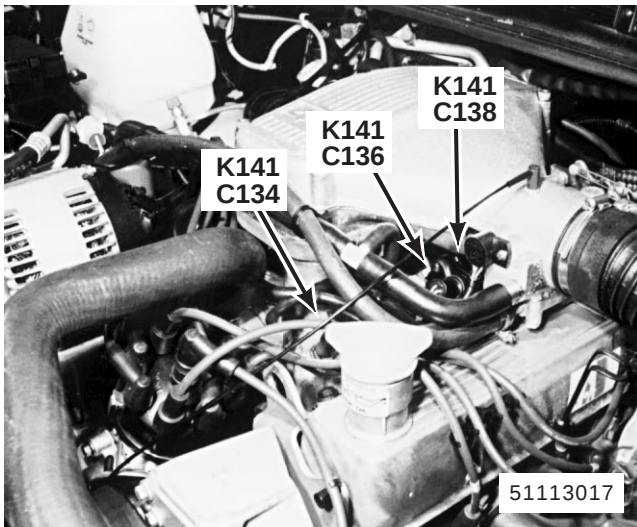
14. lower LH side of engine Diesel
K136 Starter Solenoid
M134 Starter
X218 EGR Valve Position Sensor
C164 (3-B)



15. LH side of engine Petrol
X128 Engine Fuel Temperature Sensor
X171 Throttle Position Sensor
C149 (3-B)
C150 (2-S)



16. LH side of engine Petrol
X114 Engine Coolant Temperature Gauge Sensor
X126 Engine Coolant Temperature Sensor
C152 (2-N)



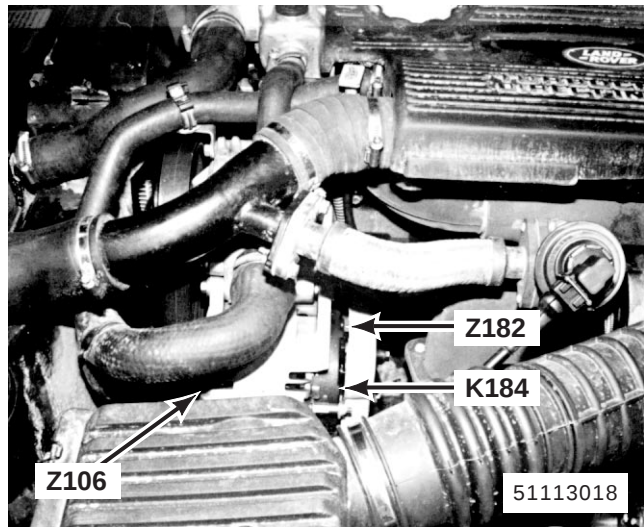
17. LH side of engine Petrol

K141 Fuel Injectors

C134 (2-B)

C136 (2-B)

C138 (2-B)

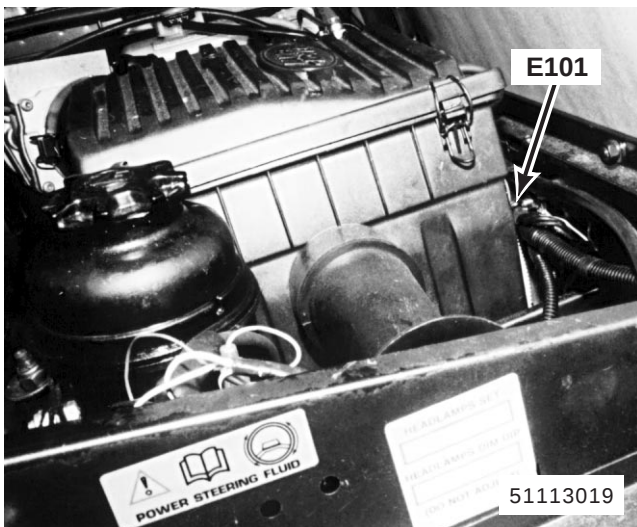


18. lower LH side of engine Diesel

K184 Phase Tap Resistor

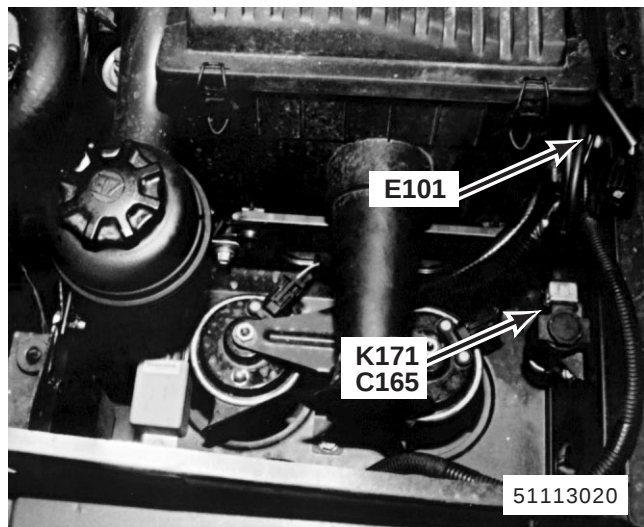
Z106 Generator

Z182 Generator Suppression Capacitor



19. LH front corner of engine compartment Petrol

E101

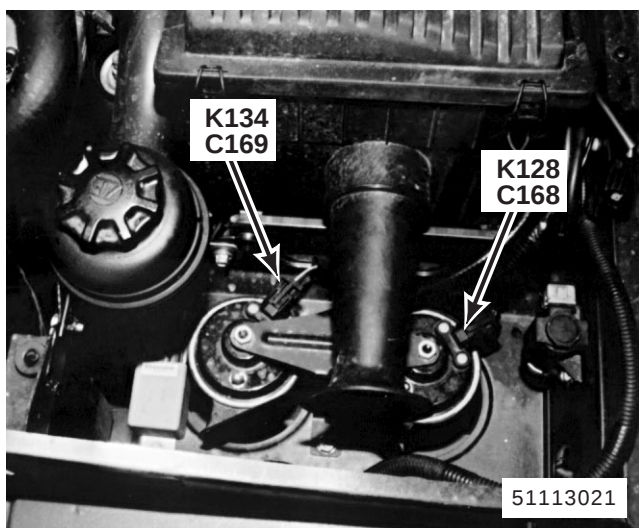


20. LH front corner of engine compartment Diesel

K171 EGR Control Solenoid

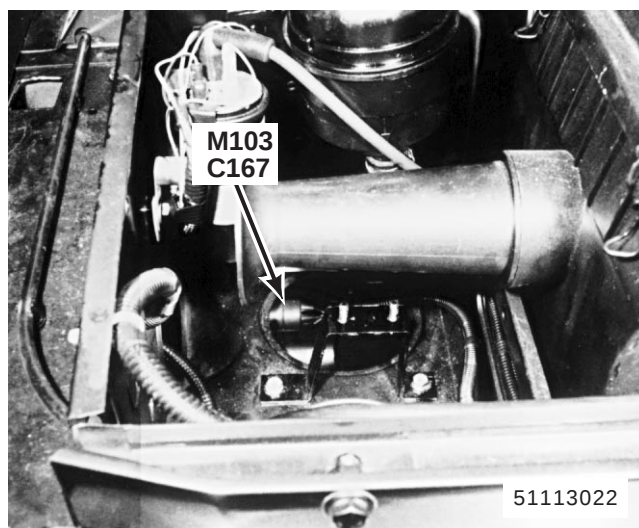
C165 (2-S)

E101



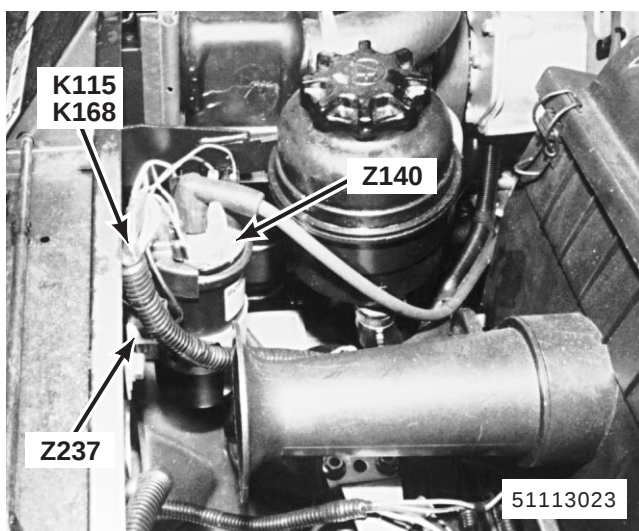
21. LH front corner of engine compartment (Petrol shown; others similar)

K128 Left Horn
K134 Right Horn
C168 (2-B)
C169 (2-B)

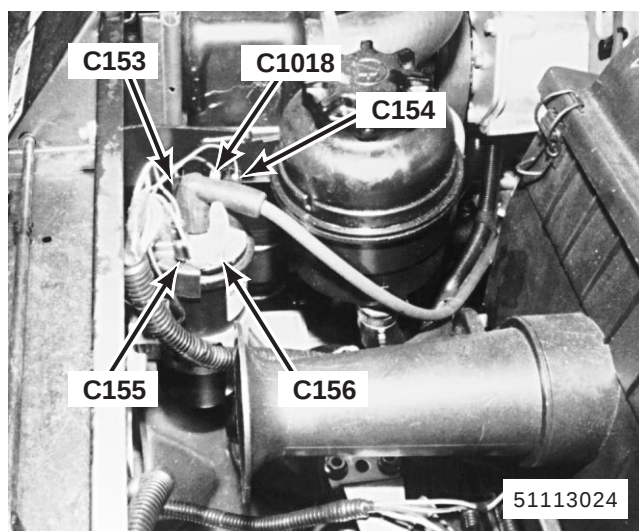


22. LH front corner of engine compartment (Petrol shown; others similar)

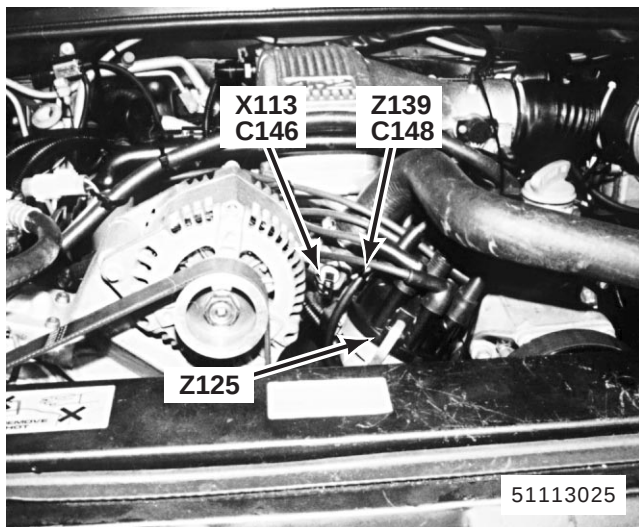
M103 Cruise Control Vacuum Pump
C167 (3-B)



23. LH front of engine compartment Petrol
K115 Multiport Fuel Injection Ignition Resistor 1
K168 Multiport Fuel Injection Ignition Resistor 2
Z140 Ignition Coil
Z237 Ignition Coil Noise Suppressor



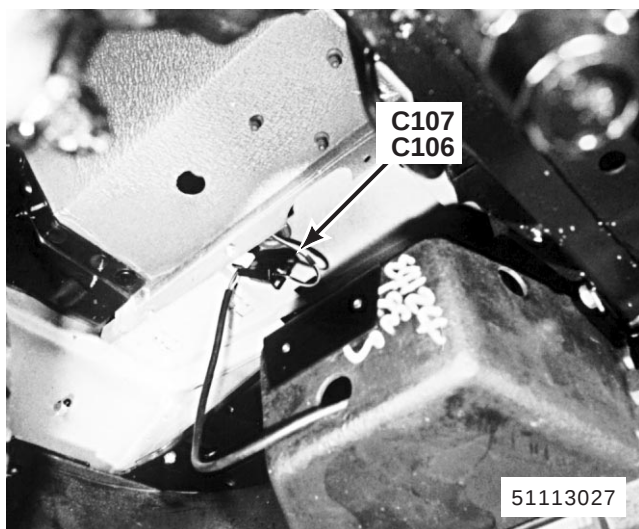
24. LH front of engine compartment Petrol
C153 (1-B)
C154 (1-B)
C155 (1-B)
C156 (1-W)
C1018 (1-W)



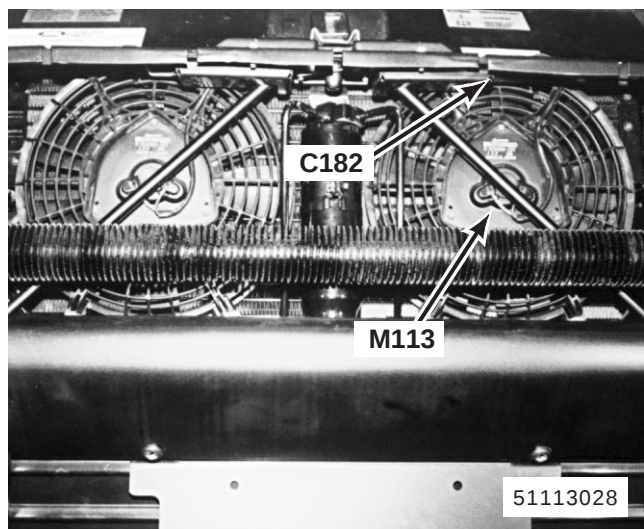
25. top centre front of engine Petrol
 X113 Condenser Fan Coolant Temperature Switch
 Z125 Distributor
 Z139 Ignition Control Module
 C146 (2-B)
 C148 (2-B)



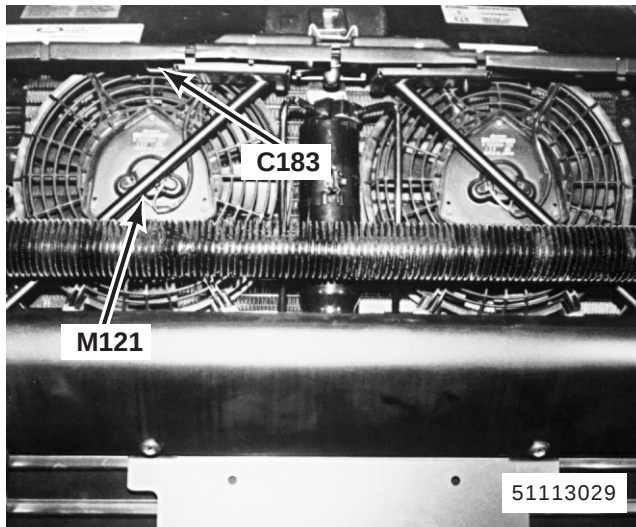
26. top centre front of engine Diesel
 X126 Engine Coolant Temperature Sensor
 C152 (2-N)



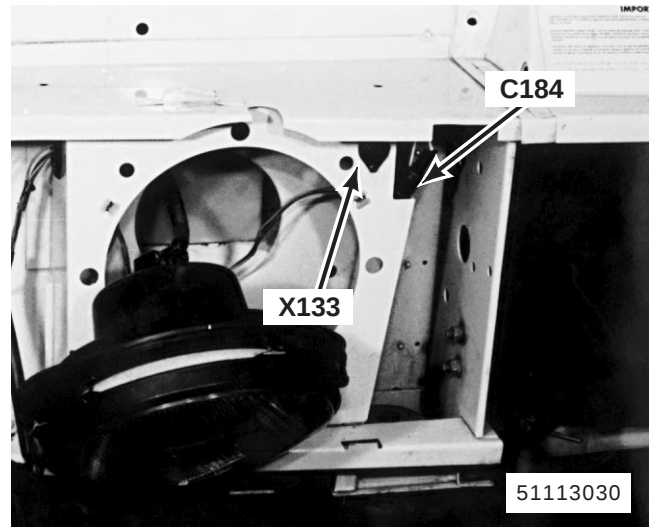
27. behind LH side of front bumper (RH similar)
 C106 (2-B) (Right)
 C107 (2-B) (Left)



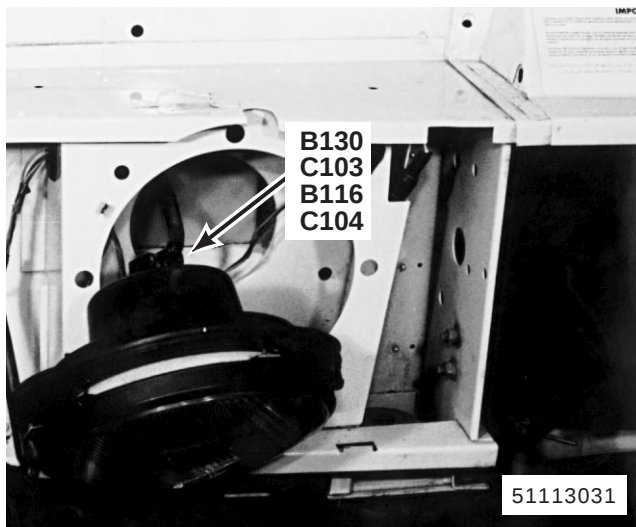
28. behind front grille
 M113 Left Condenser Fan Motor
 C182 (2-B)



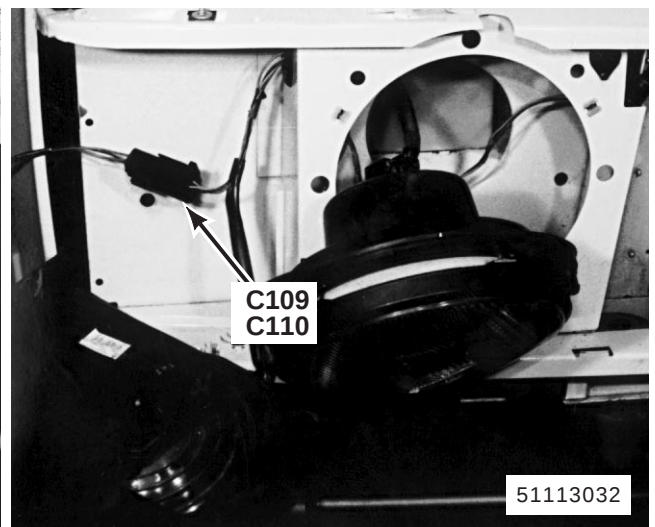
29. behind front grille
M121 Right Condenser Fan Motor
C183 (2-B)



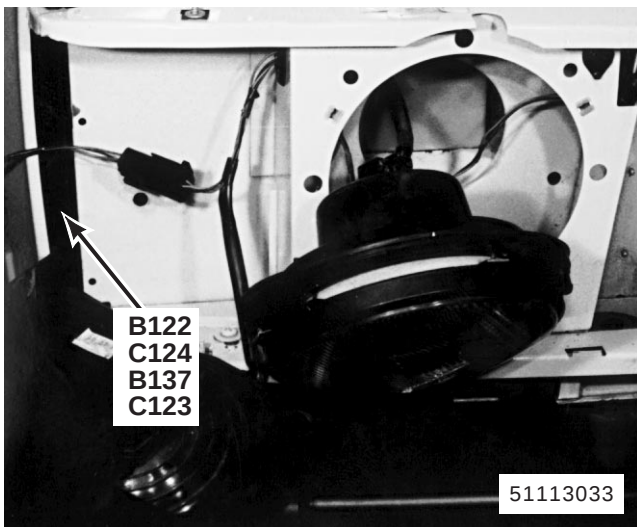
30. RH front of vehicle
X133 Heated Washer Jets Thermoswitch
C184 (2-B)



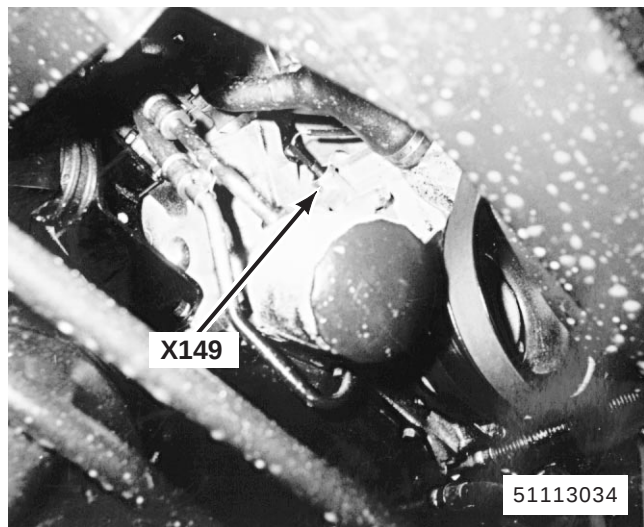
31. RH front of vehicle (LH similar)
B116 Left Headlamp
B130 Right Headlamp
C103 (3-B) (Right)
C104 (3-B) (Left)



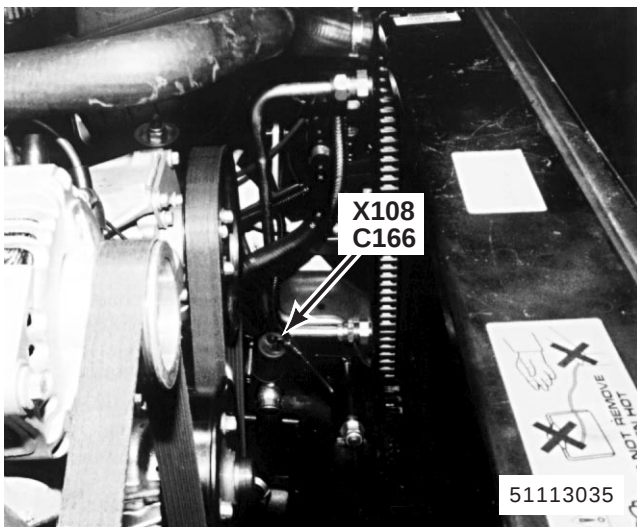
32. RH front of vehicle (LH similar)
C109 (4-B) (Left)
C110 (4-B) (Right)



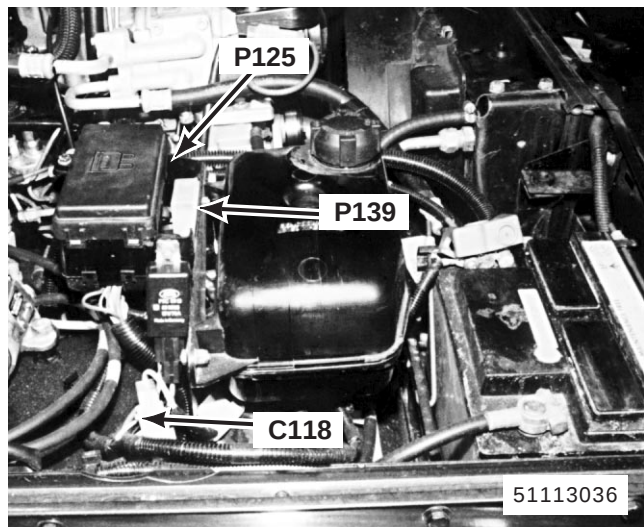
33. RH front of vehicle (LH similar)
 B122 Left Repeater Lamp
 B137 Right Repeater Lamp
 C123 (2-B) (Right)
 C124 (2-B) (Left)



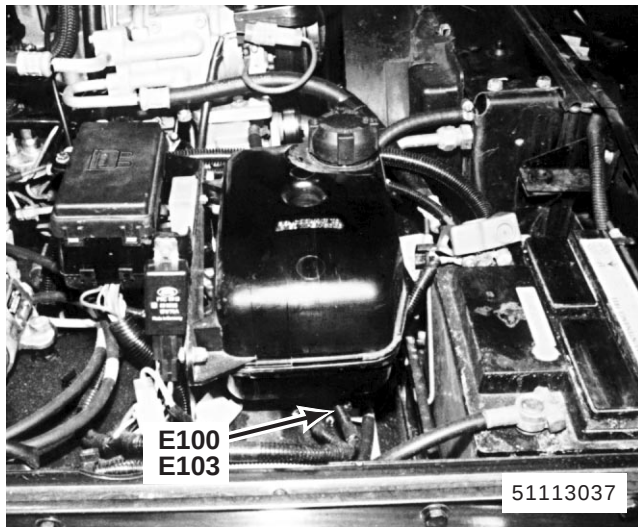
34. lower RH side of engine Petrol
 X149 Oil Pressure Switch



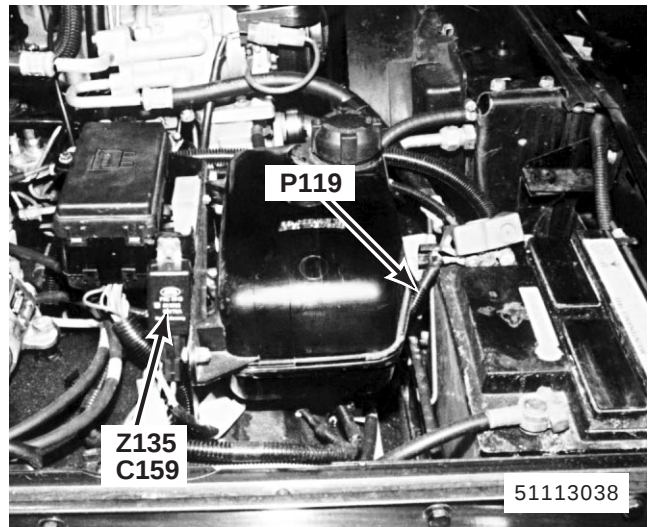
35. lower LH front of engine compartment (Petrol shown; others similar)
 X108 Automatic Transmission Oil Temperature Switch
 C166 (2-B)



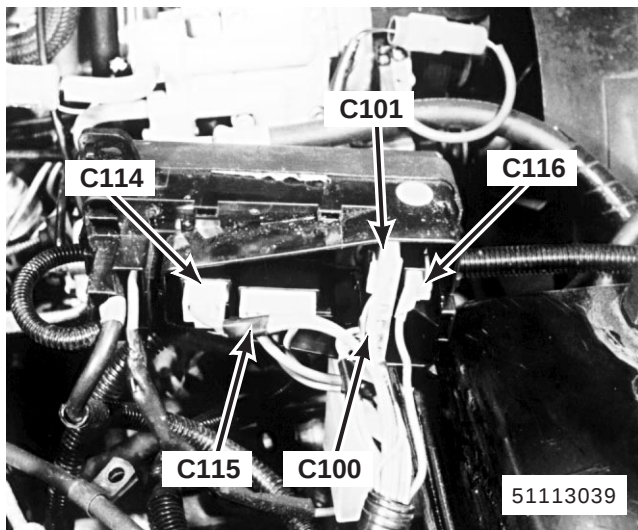
36. RH front of engine compartment
 P125 Engine Compartment Fuse Box
 P139 Heated Front Screen In-Line Maxi-Fuse
 C118 (1-W)



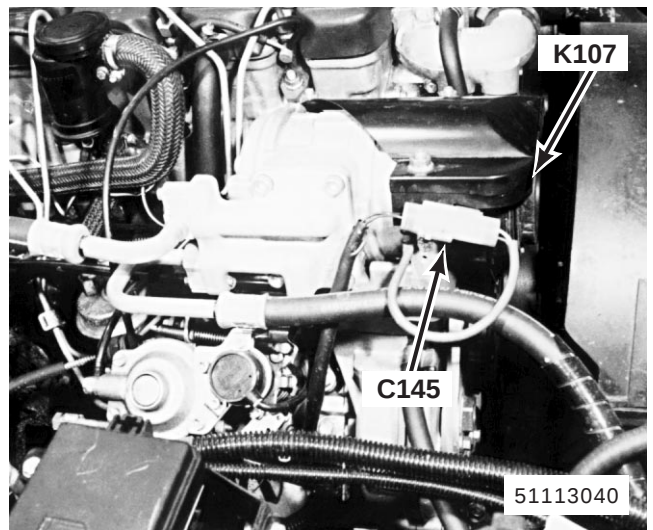
37. RH front of engine compartment
E100
E103 Diesel



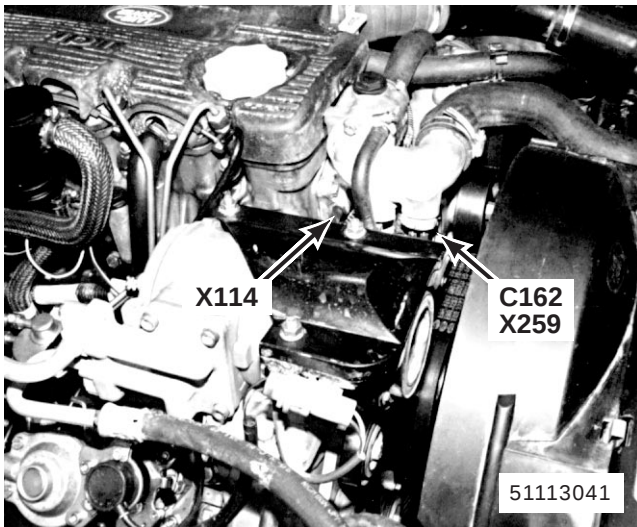
38. RH front of engine compartment
P119 Fusible Link
Z135 Glow Plug Timer Unit
C159 (6-B)



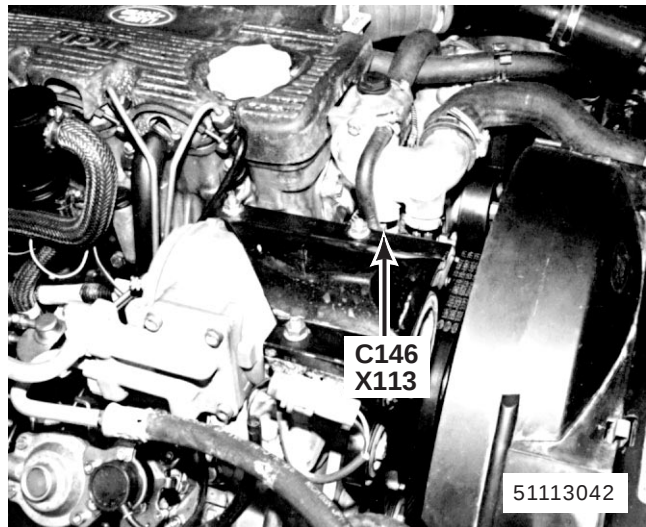
39. RH front of engine compartment
C100 (3-W)
C101 (4-W)
C114 (2-W)
C115 (3-W)
C116 (1-W)



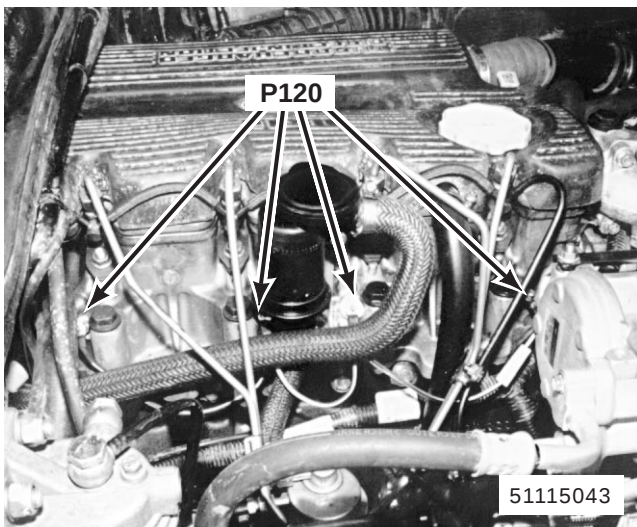
40. RH side of engine Diesel
K107 Compressor Clutch
C145 (2-W)



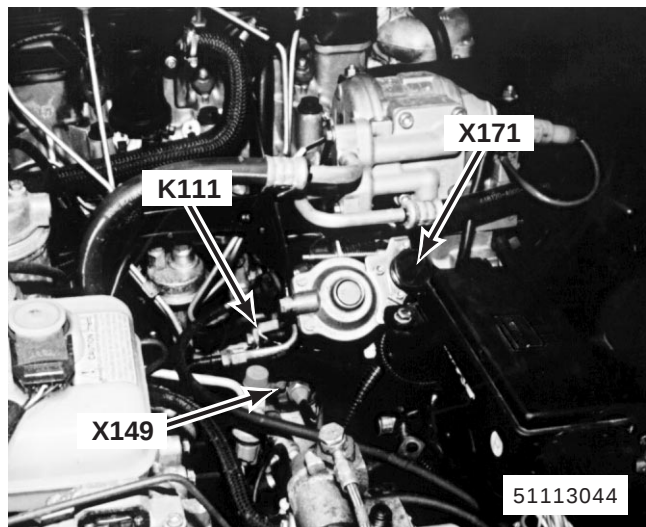
41. RH front of engine Diesel
 X114 Engine Coolant Temperature Gauge Sensor
 X259 Compressor Clutch Cut-out Switch
 C162 (2-B)



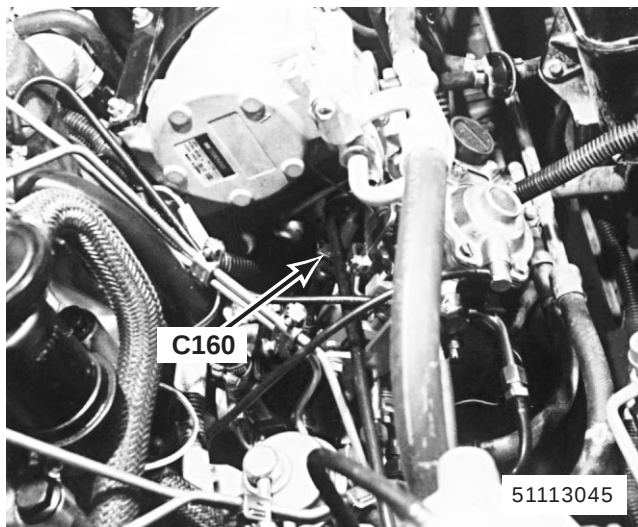
42. RH front of engine Diesel
 X113 Condenser Fan Coolant Temperature Switch
 C146 (2-B)



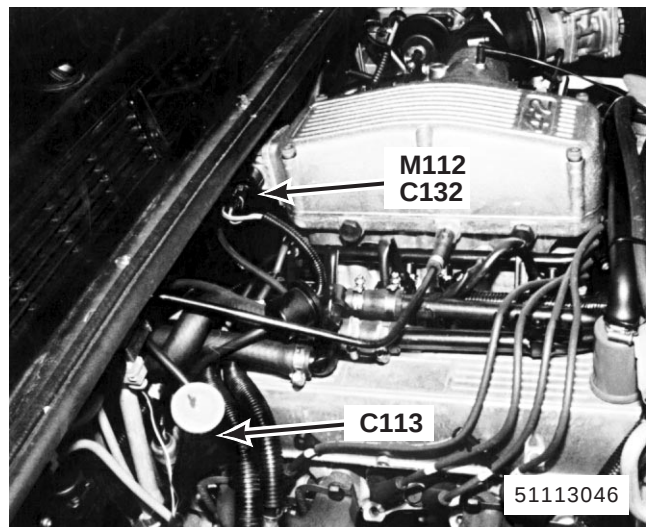
43. RH side of engine Diesel
 P120 Glow Plugs



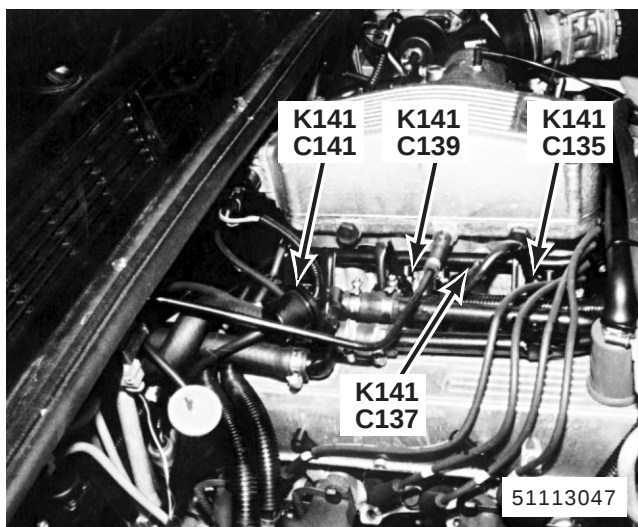
44. RH side of engine Diesel
 K111 Fuel Shut-Off Solenoid
 X149 Oil Pressure Switch
 X171 Throttle Position Sensor



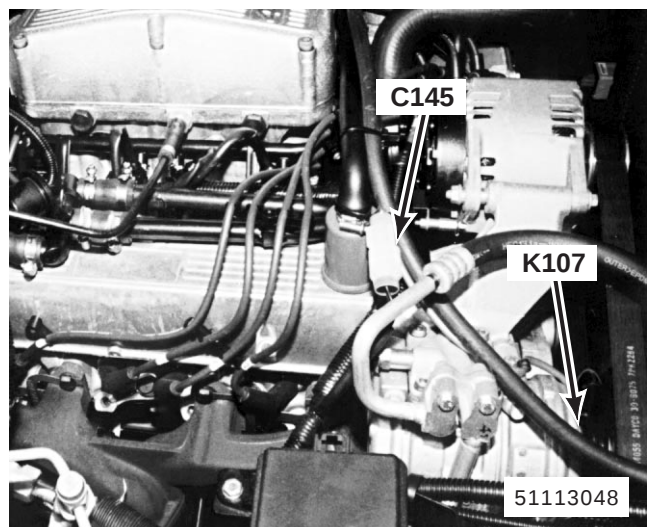
45. RH side of engine Diesel
C160 (3-B)



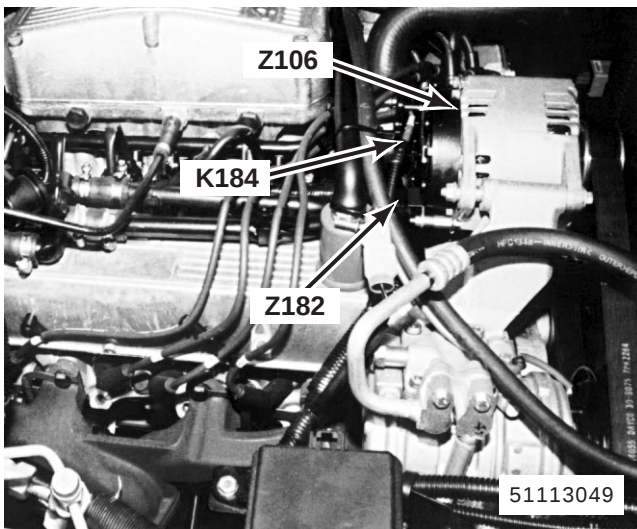
46. RH side of engine Petrol
M112 Idle Air Control Valve
C113 (3-W)
C132 (4-B)



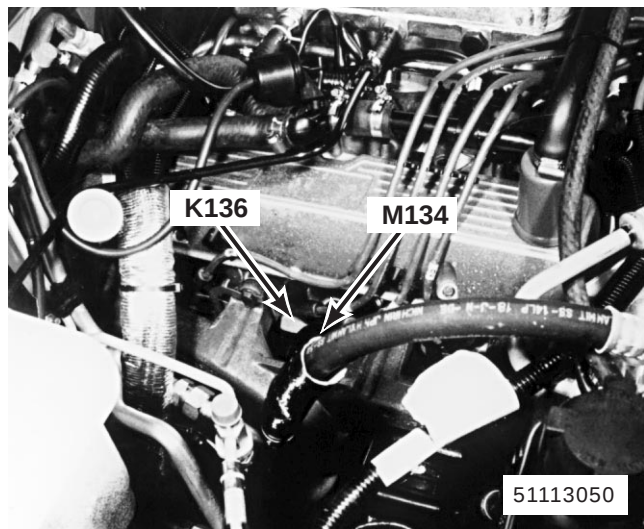
47. RH side of engine Petrol
K141 Fuel Injectors
C135 (2-B)
C137 (2-B)
C139 (2-B)
C141 (2-B)



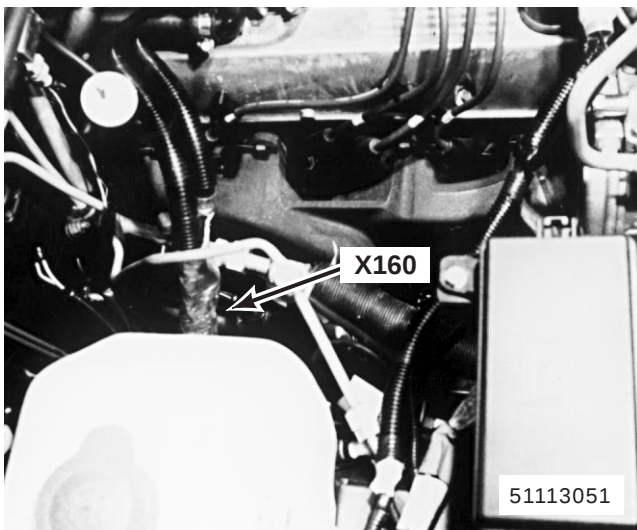
48. RH side of engine Petrol
K107 Compressor Clutch
C145 (2-W)



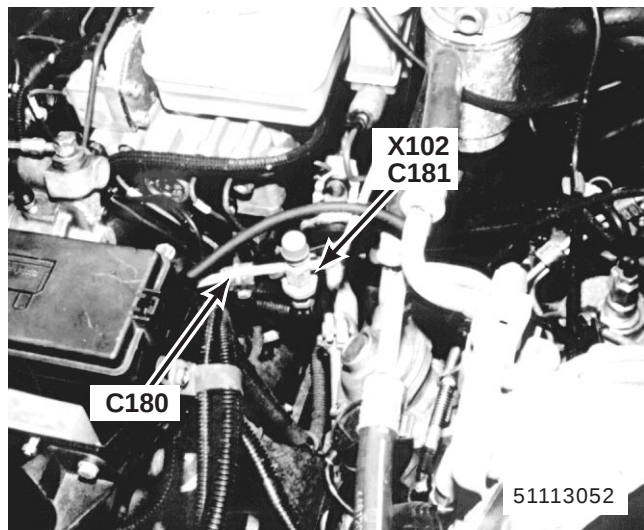
49. RH side of engine Petrol
 K184 Phase Tap Resistor
 Z106 Generator
 Z182 Generator Suppression Capacitor



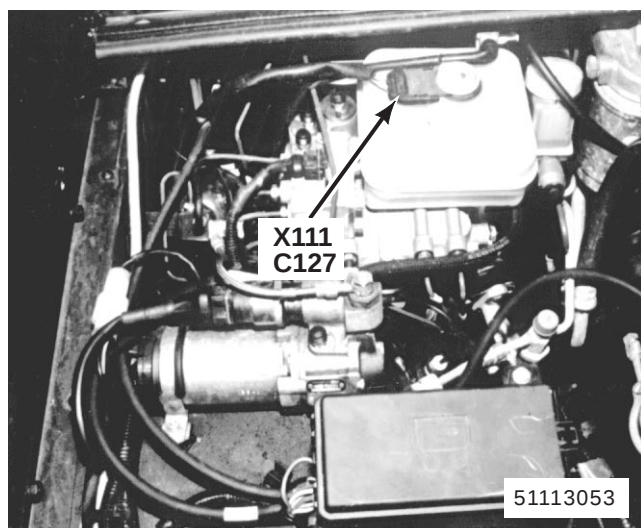
50. lower RH side of engine MFI-V8
 K136 Starter Solenoid
 M134 Starter



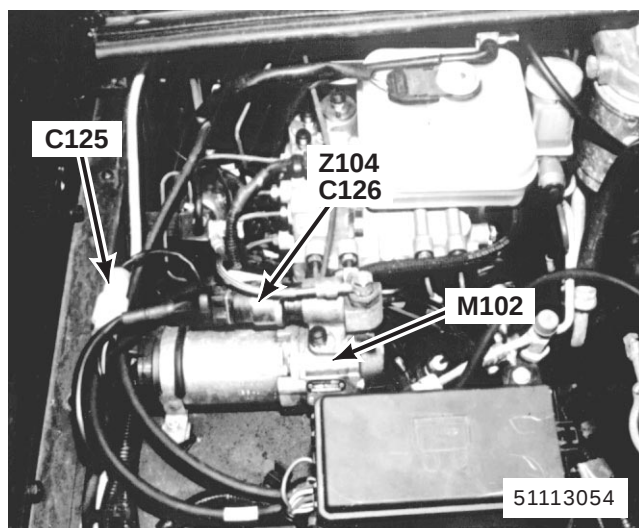
51. lower RH side of engine Petrol
 X160 Right Heated Oxygen Sensor



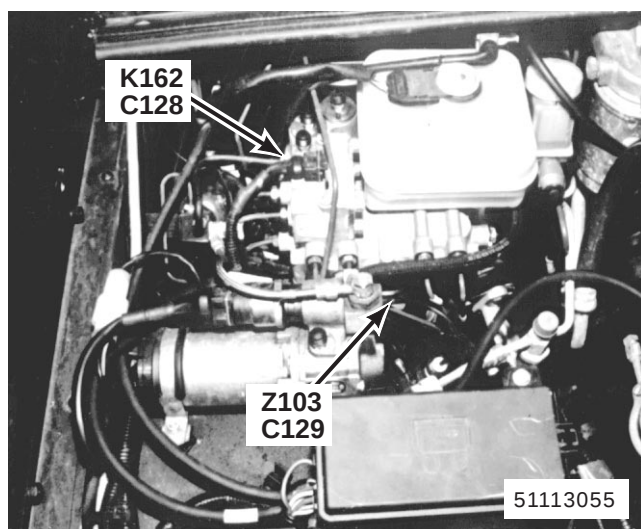
52. RH rear corner of engine compartment
 X102 A/C Dual Pressure Switch
 C180 (3-B)
 C181 (2-S)



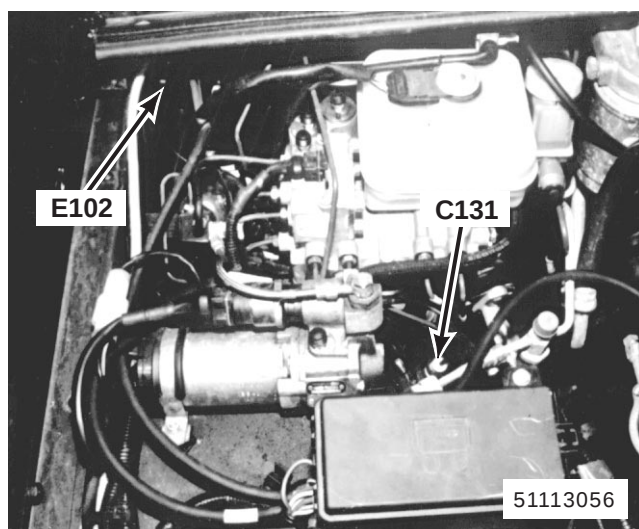
53. RH rear corner of engine compartment
X111 Brake Fluid Level Switch
C127 (3-B)



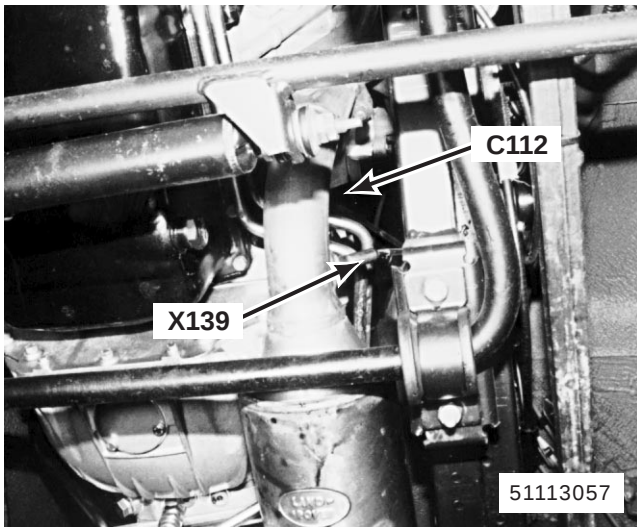
54. RH rear corner of engine compartment
M102 Headlamp Wash Pump
Z104 A.B.S. Pressure Switch Unit
C125 (2-B)
C126 (5-B)



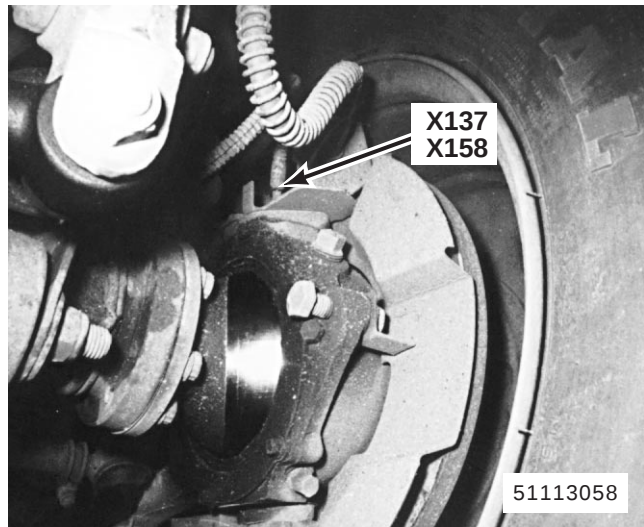
55. RH rear corner of engine compartment
K162 ETC Valve Block
Z103 A.B.S. Booster Unit
C128 (2-B)
C129 (12-B)



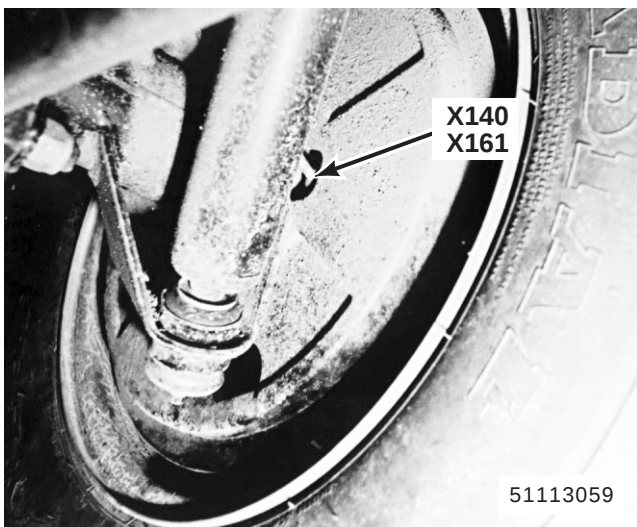
56. RH rear corner of engine compartment
C131 (2-W)
E102



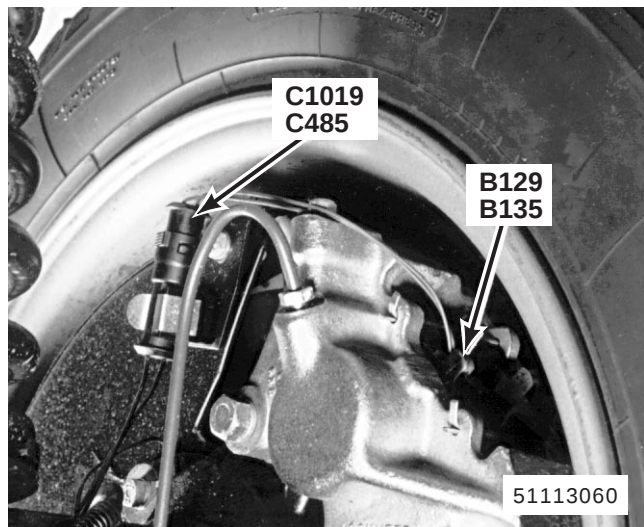
57. lower LH side of engine compartment Petrol
X139 Left Heated Oxygen Sensor
C112 (3-W)



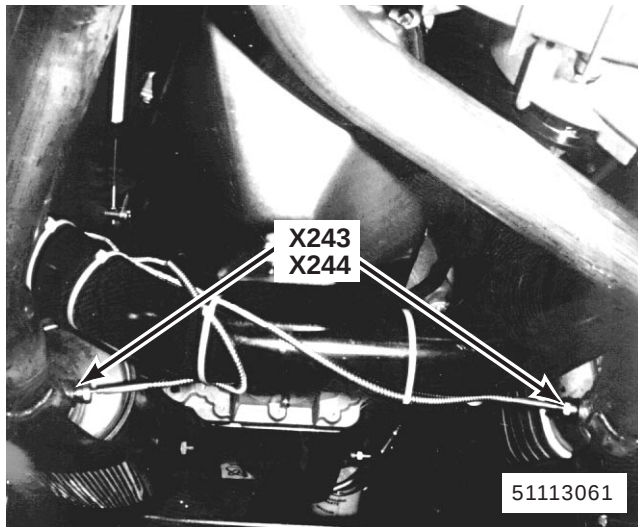
58. behind LH front wheel (RH front wheel similar)
X137 Left Front Wheel Speed Sensor
X158 Right Front Wheel Speed Sensor



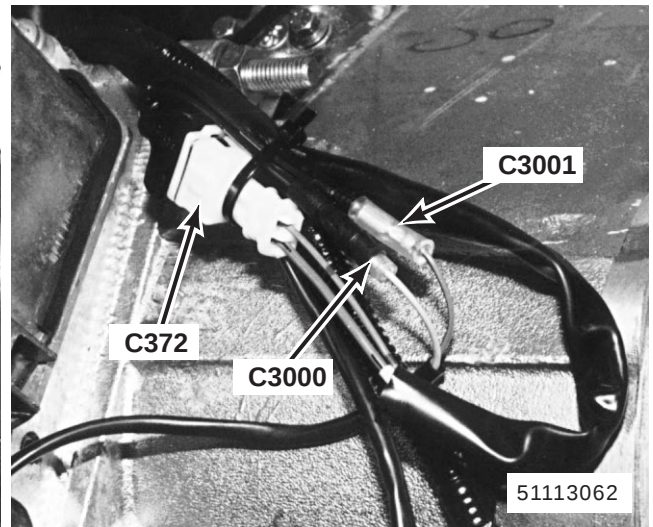
59. behind LH rear wheel (RH rear wheel similar)
X140 Left Rear Wheel Speed Sensor
X161 Right Rear Wheel Speed Sensor



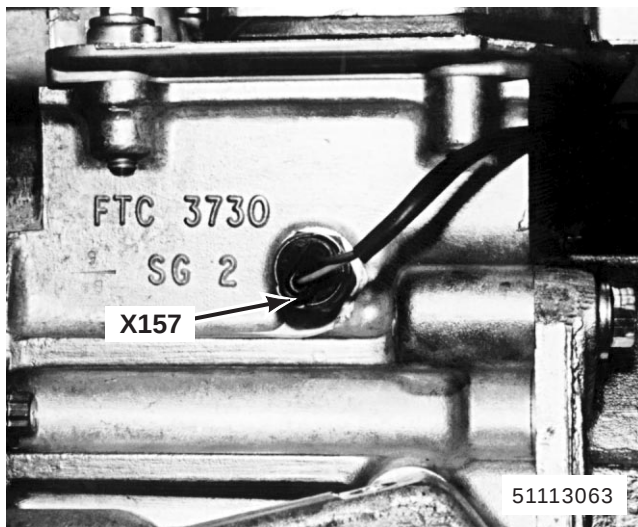
60. beneath vehicle behind RH rear wheel (RH front wheel similar)
B129 Right Front Inboard Brake Pad
B135 Right Rear Inboard Brake Pad
C1019 (2-B) Front
C485 (2-B) Rear



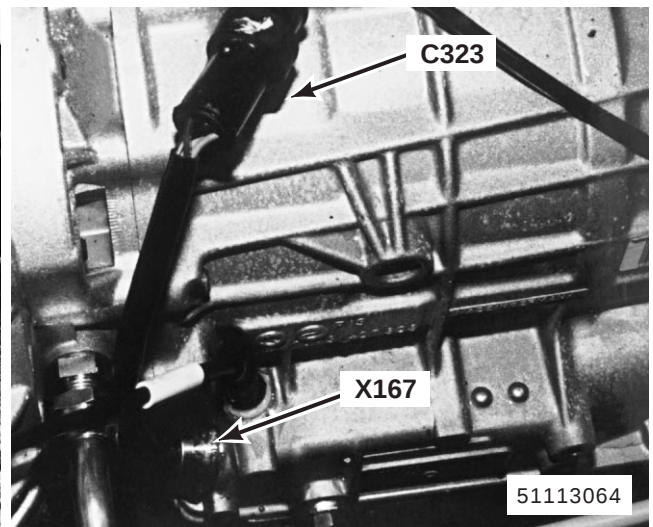
61. beneath centre of vehicle
X243 Catalyst Thermocouple 1
X244 Catalyst Thermocouple 2



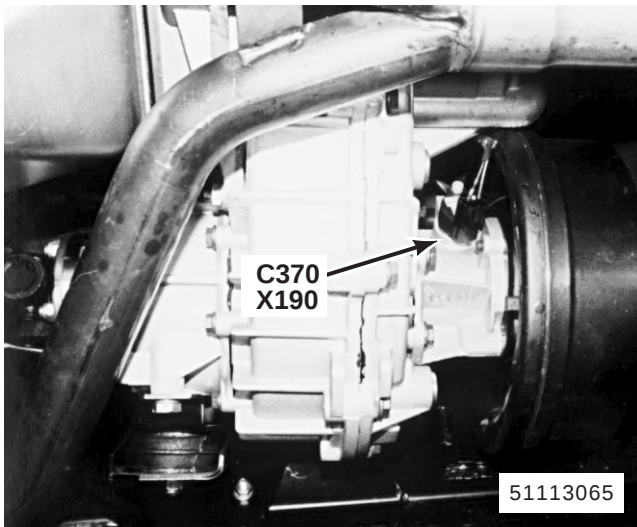
62. LH side of transmission
C372 (2-W)
C3000 (1-B)
C3001 (1-B)



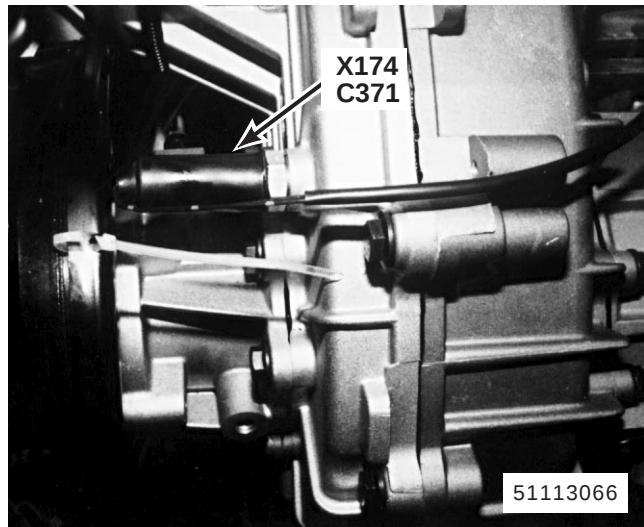
63. LH side of transmission
X157 Reverse Switch



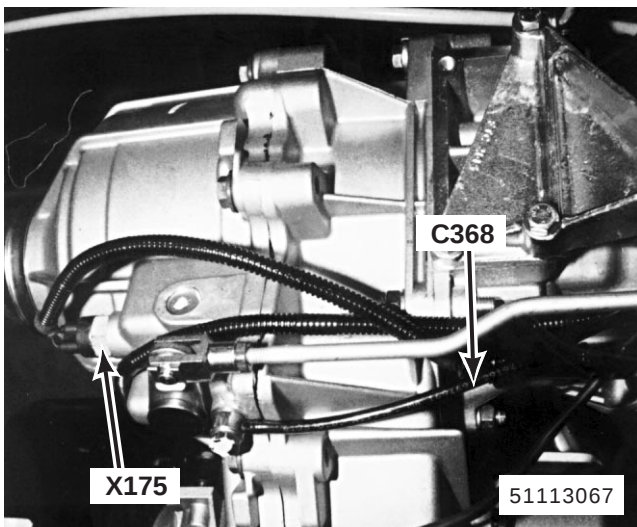
64. LH side of transmission
X167 Park/Neutral Position Switch
C323 (5-B)



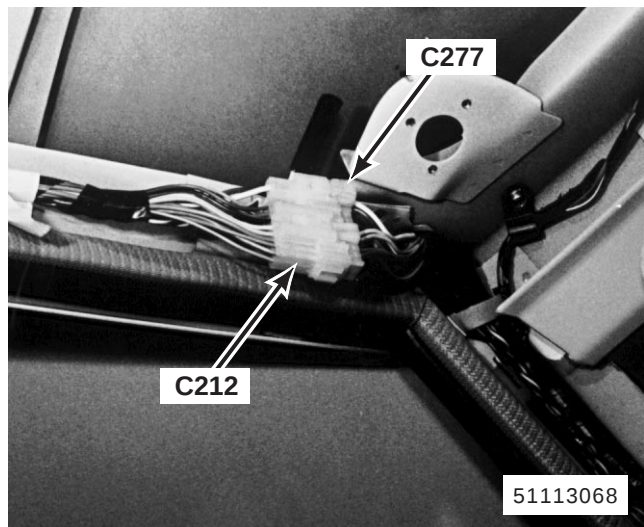
65. beneath centre of vehicle
X190 Vehicle Speed Sensor
C370 (3-B)



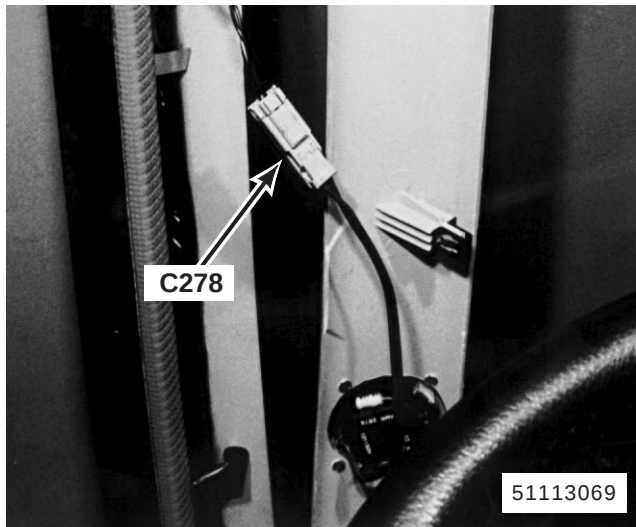
66. top RH side of transfer box
X174 Transfer Box Oil Temperature Switch
C371 (2-B)



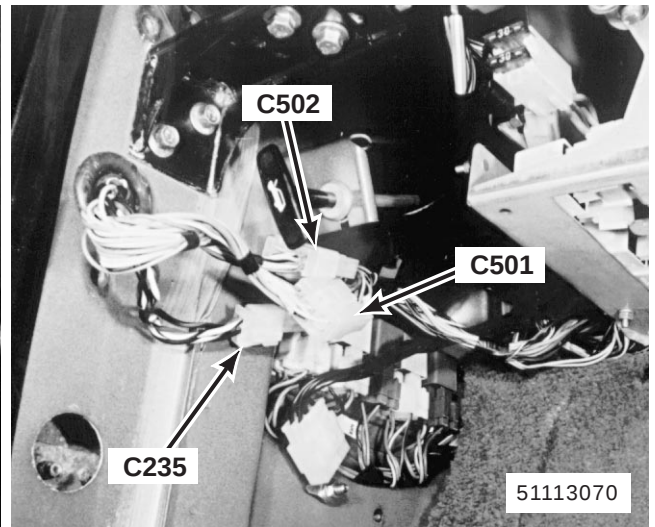
67. top RH side of transfer box
X175 Transfer Box Position Switch
C368 (3-B)



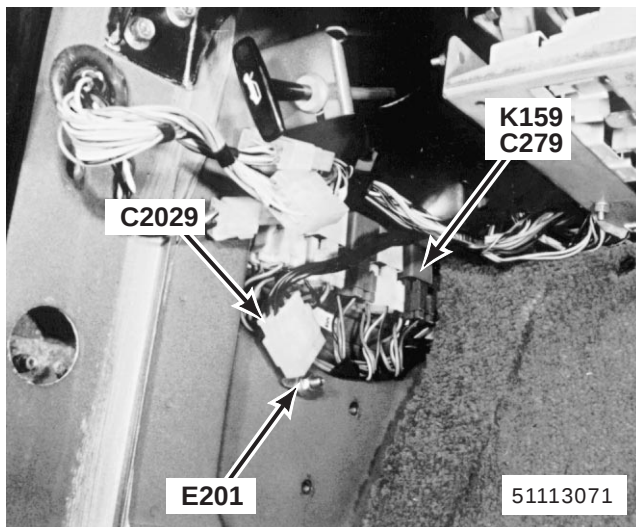
68. LH A-post
C212 (14-W)
C277 (2-W)



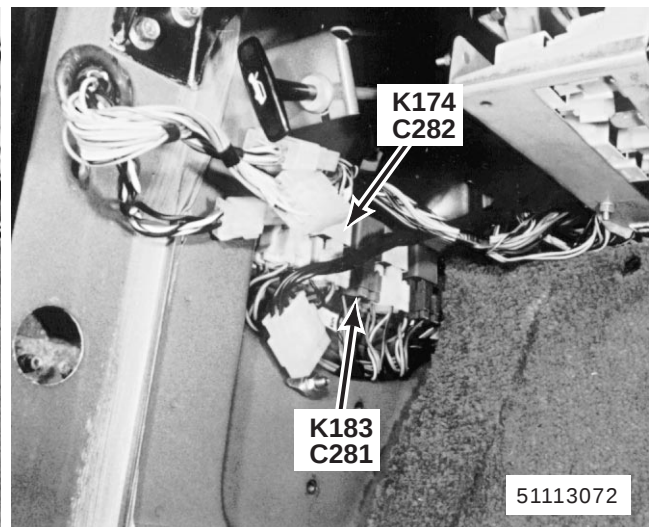
69. LH A-post
C278 (2-S)



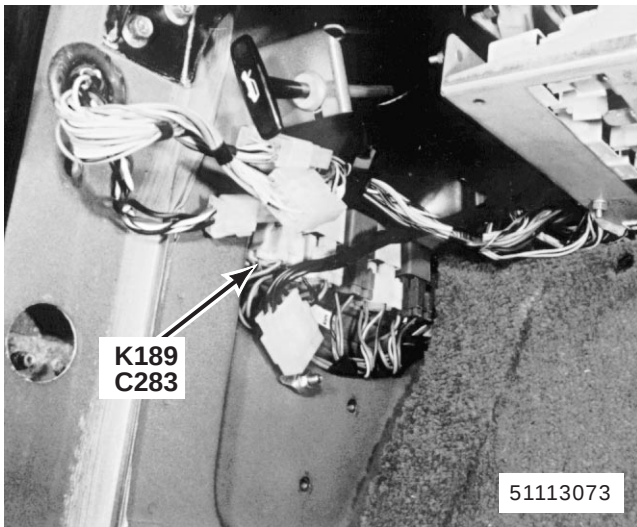
70. behind LH footwell trim panel
C235 (4-W)
C501 (8-W)
C502 (13-W)



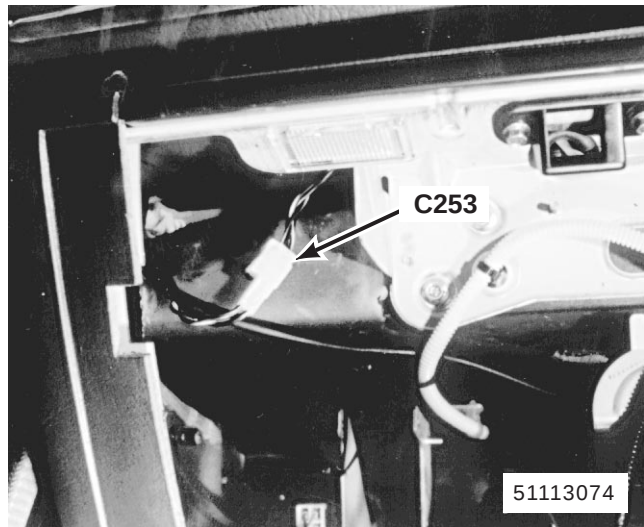
71. behind LH footwell trim panel
K159 Theft Alarm Relay
C279 (5-N)
C2029 (6-W)
E201



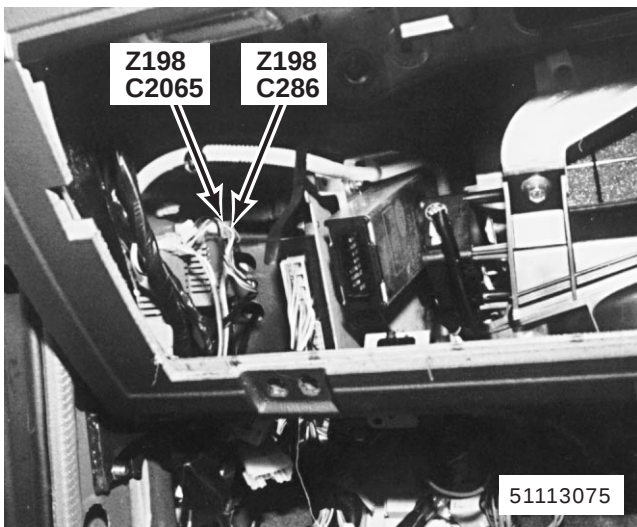
72. behind LH footwell trim panel
K174 Accessory Relay
K183 Rear Wiper Relay
C281 (5-G)
C282 (5-Y)



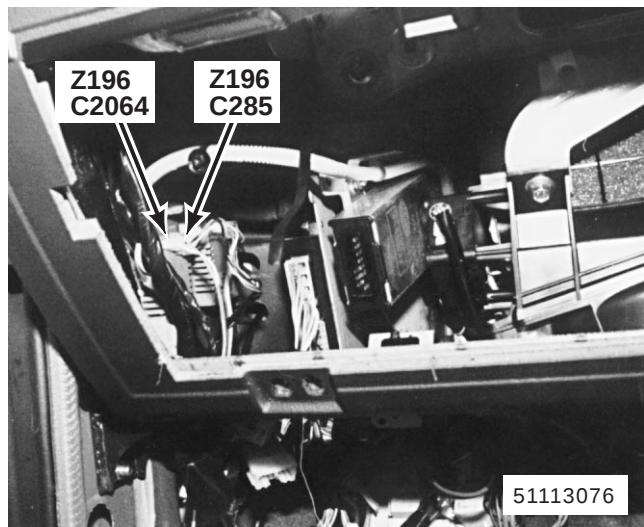
73. behind LH footwell trim panel
K189 Horn Relay
C283 (5-Y)



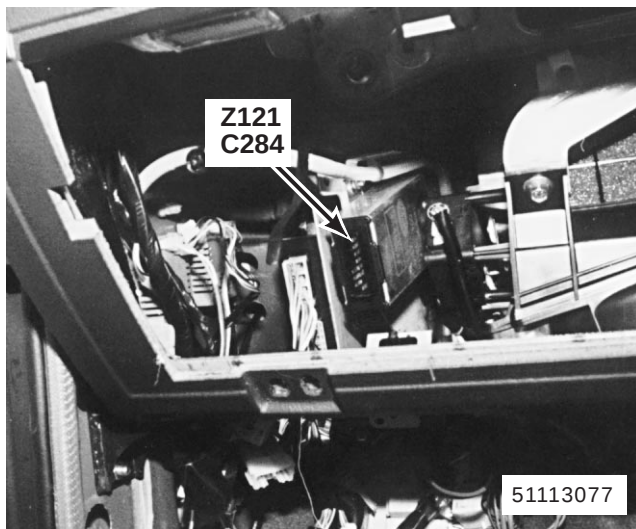
74. behind LH side of fascia
C253 (4-W)



75. behind LH side of fascia
Z198 Catalyst Warning ECU 2
C286 (4-W)
C2065 (2-W)



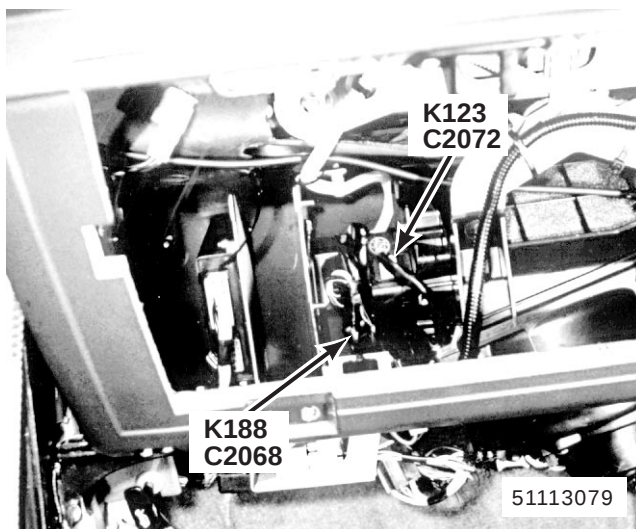
76. behind LH side of fascia
Z196 Catalyst Warning ECU 2
C285 (4-W)
C2064 (2-W)



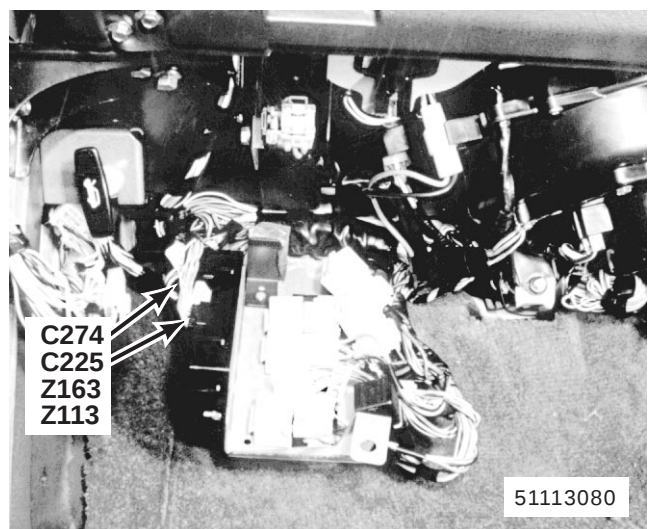
77. behind LH side of fascia
Z121 Cruise Control ECU
C284 (15-B)



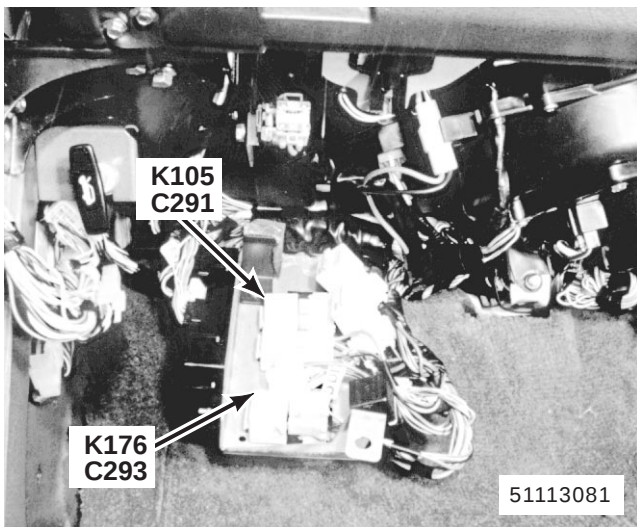
78. behind LH side of fascia
Z147 Window Lift ECU
C287 (10-W)
C288 (8-W)



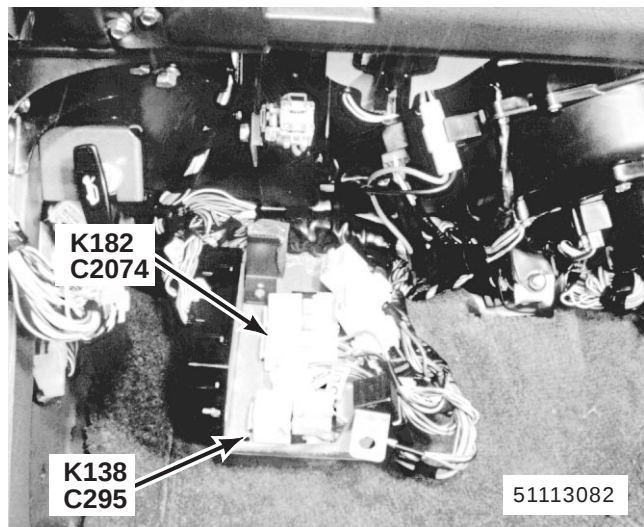
79. behind LH side of fascia
K123 Air Recirculation Solenoid
K188 Blower Motor Relay
C2068 (5-B)
C2072 (4-Y)



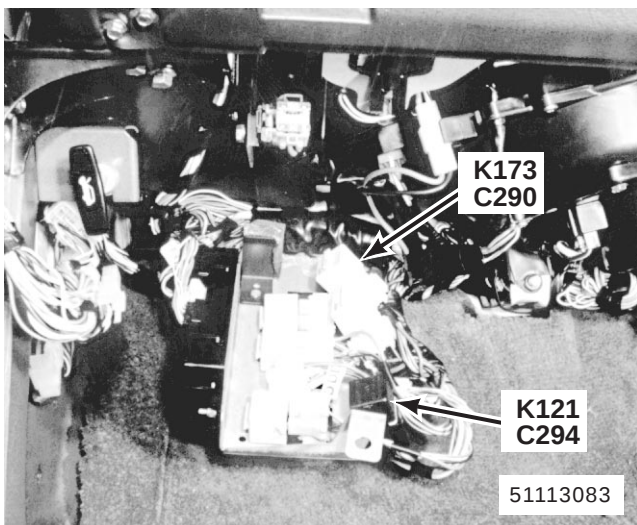
80. behind LH side of fascia
Z113 Central Locking Control Unit Japan
Z163 Theft Alarm Unit Except Japan
C225 (16-B)
C274 (6-W)



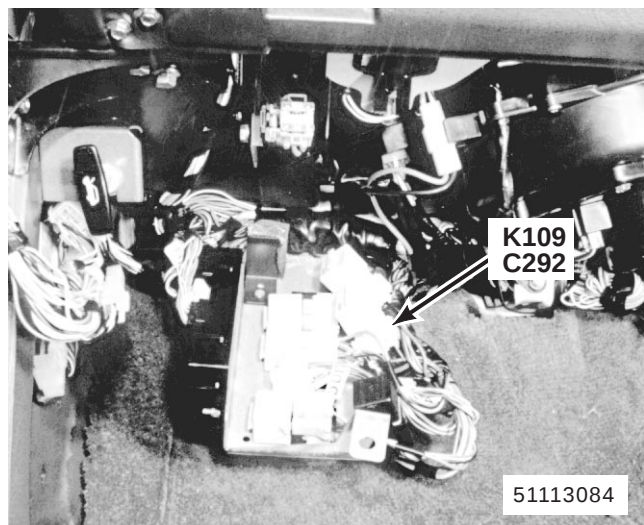
81. behind LH side of fascia
 K105 Auxiliary Lamps Relay
 K176 Dim/Dip Relay
 C291 (5-Y)
 C293 (5-W)



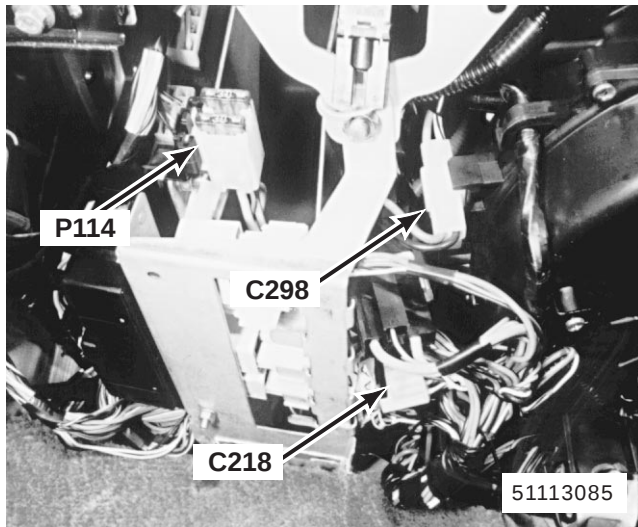
82. behind LH side of fascia
 K138 Sunroof Load Relay
 K182 Power Wash Relay
 C295 (5-Y)
 C2074 (5-Y)



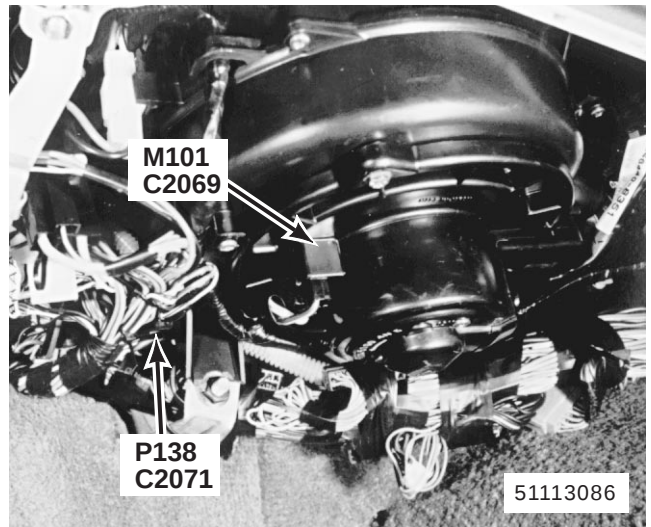
83. behind LH side of fascia
 K121 Heated Front Screen Relay
 K173 Bulb Check Relay
 C290 (5-Y)
 C294 (5-B)



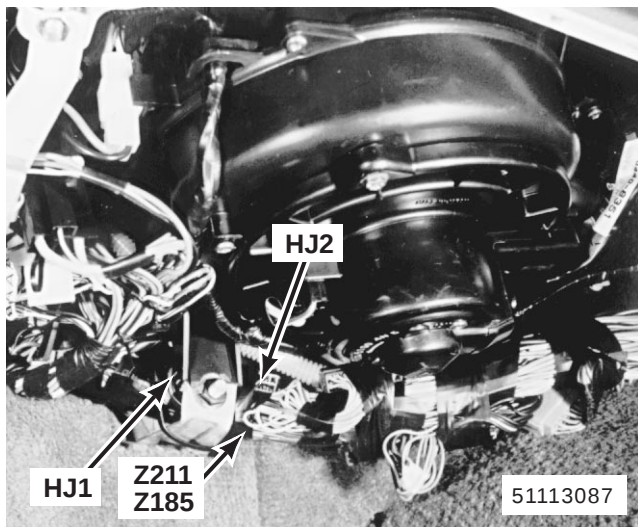
84. behind LH side of fascia
 K109 Condenser Fan Relay
 C292 (5-Y)



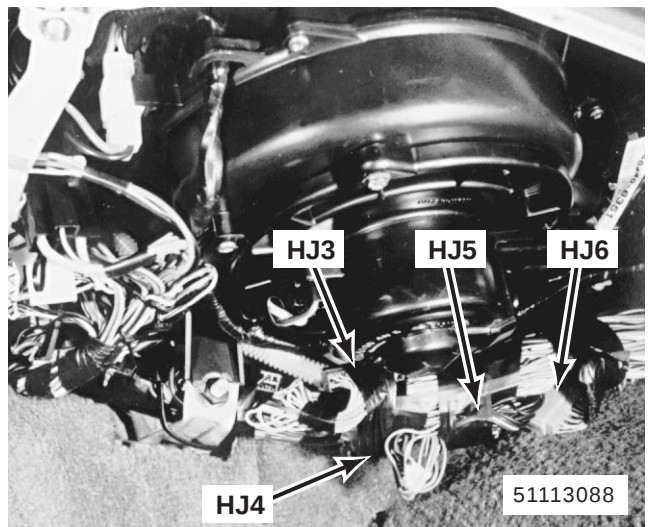
85. behind LH side of fascia
 P114 Heated Front Screen Fuse Block
 C218 (8-W)
 C298 (3-W)



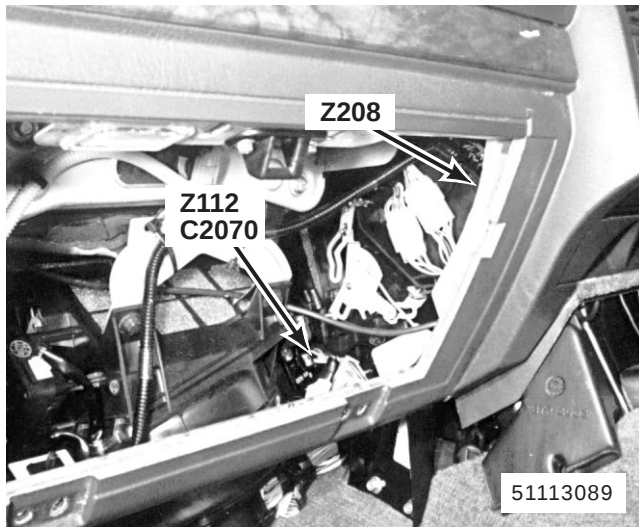
86. behind LH side of fascia
 M101 Front Blower Motor
 P138 Air Recirculation Solenoid In-Line Fuse
 C2069 (2-B)
 C2071 (2-B)



87. behind LH side of fascia
 Z185 Power Mirror Diode
 Z211 Fan Timer Diode
 HJ1 (20-S)
 HJ2 (20-S)



88. behind LH side of fascia
 HJ3 (20-U)
 HJ4 (20-U)
 HJ5 (20-S)
 HJ6 (20-G)

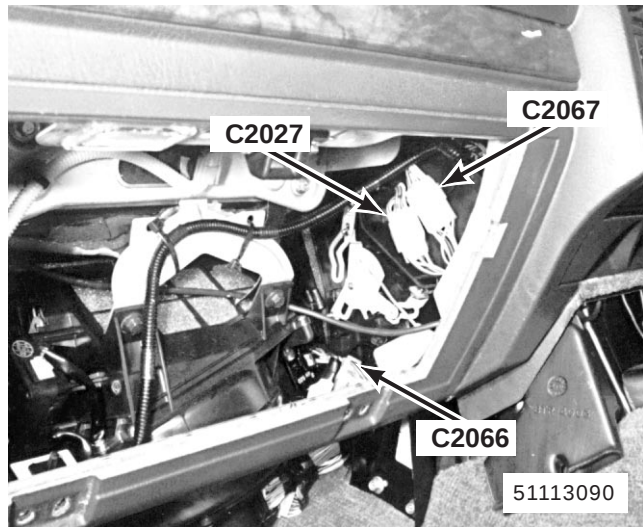


89. behind LH side of fascia LH side of heater evaporator unit

Z112 Blower Resistor Unit

Z208 Air Supply Selector Diode

C2070 (4-B)

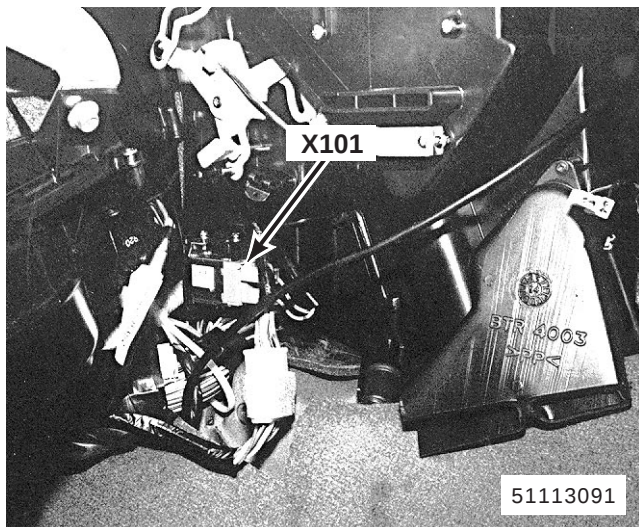


90. behind LH side of fascia LH side of heater evaporator unit

C2027 (5-W)

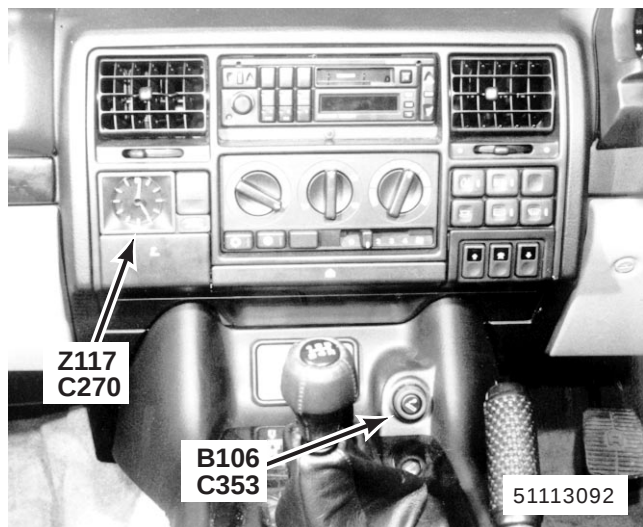
C2066 (8-W)

C2067 (10-W)



91. LH side of heater evaporator unit

X101 Front A/C Evaporator Temperature Switch



92. centre of fascia

B106 Fascia Cigar Lighter

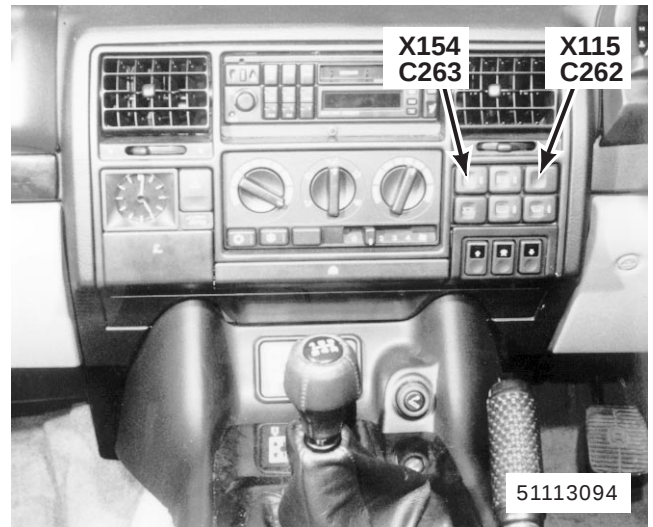
Z117 Clock

C270 (2-W)

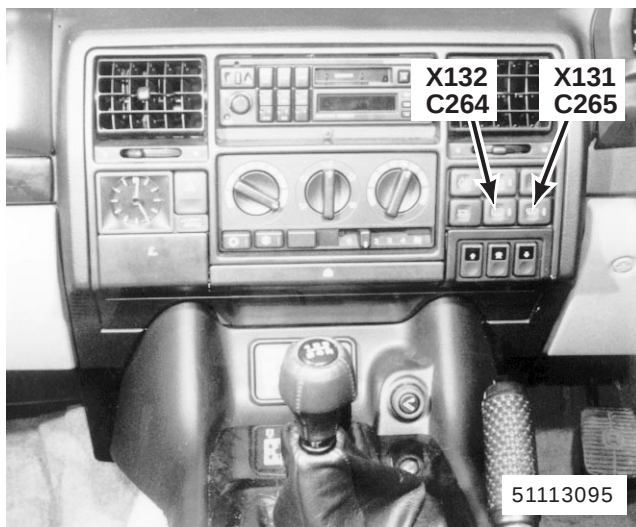
C353 (2-W)



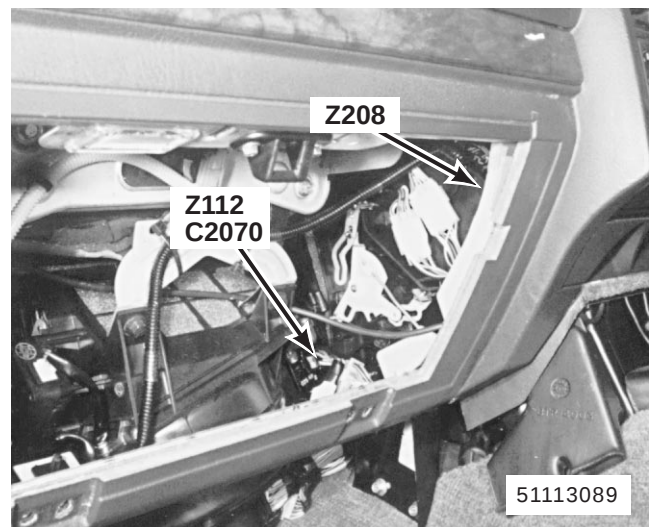
93. centre of fascia
X109 Auxiliary Lamps Switch
X220 Hazard Switch
C261 (5-W)
C267 (10-W)



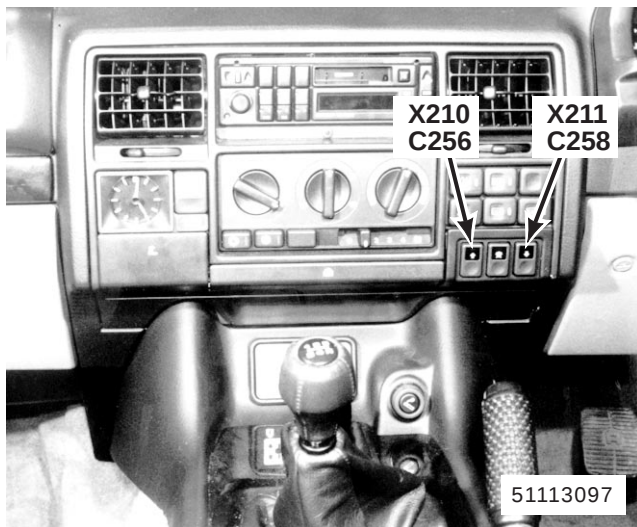
94. centre of fascia
X115 Cruise Control Switch
X154 Rear Fog Guard Lamps Switch
C262 (5-U)
C263 (5-U)



95. centre of fascia
X131 Heated Front Screen Switch
X132 Heated Rear Screen Switch
C264 (5-U)
C265 (5-G)



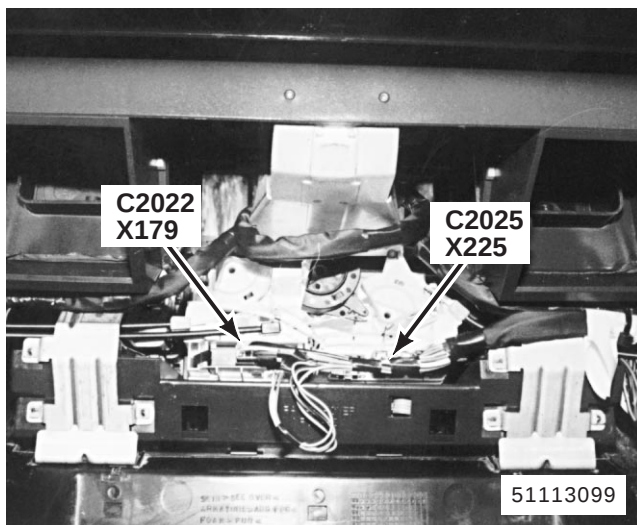
96. centre of fascia
B151 Theft Alarm LED
X136 Interior Lamps Switch
Z111 Radio
C266 (5-W)
C269 (2-)



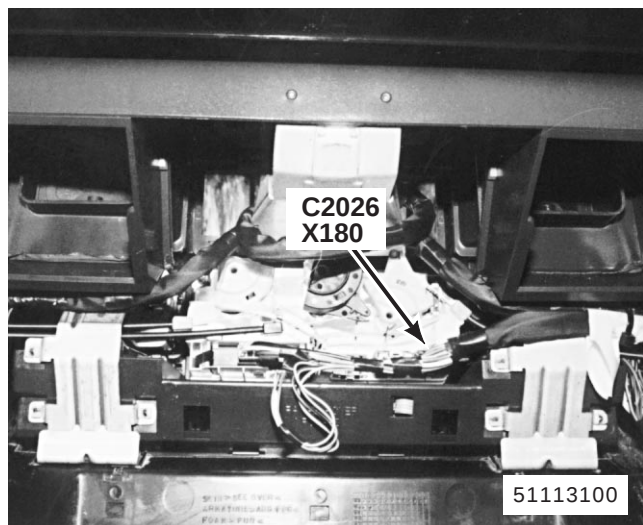
97. centre of fascia
 X210 Air Suspension Up Switch
 X211 Air Suspension Down Switch
 C256 (6-R)
 C258 (6-G)



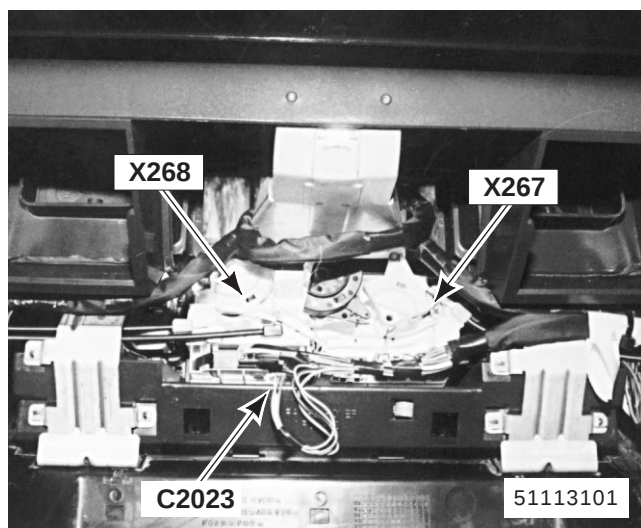
98. centre of fascia
 X209 Air Suspension Inhibit Switch
 C257 (6-W)



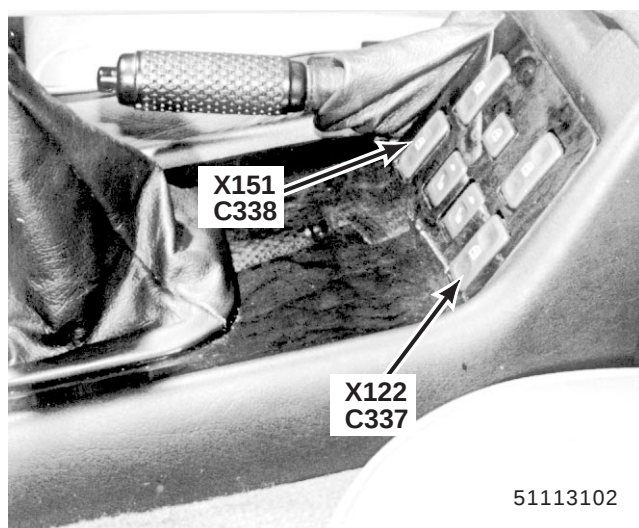
99. behind heater and A/C control panel
 X179 Fan Speed Switch
 X225 Front A/C Switch
 C2022 (5-W)
 C2025 (5-W)



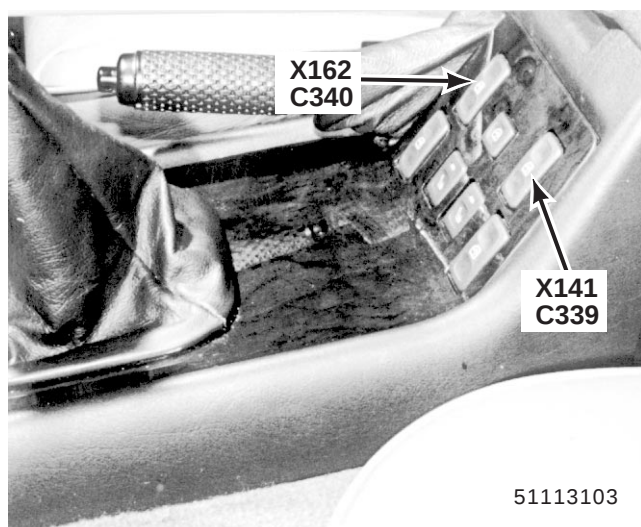
100. behind heater and A/C control panel
 X180 Air Supply Selector Switch
 C2026 (5-B)



101. behind heater and A/C control panel
 X267 Left Maximum Cool Switch
 X268 Right Maximum Cool Switch
 C2023 (4-W)



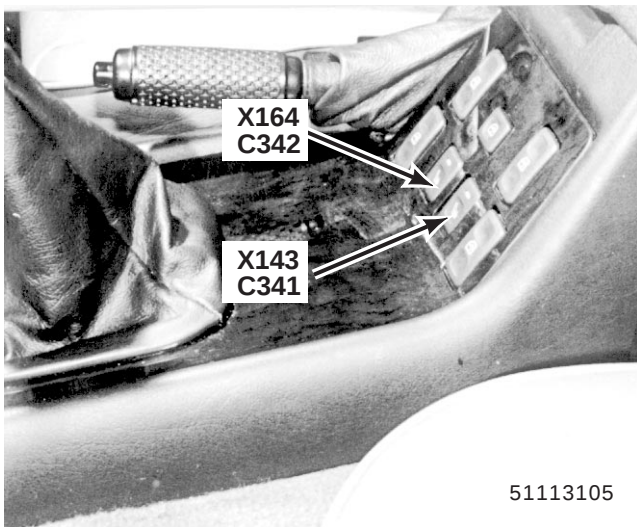
102. in rear of centre console
 X122 Left Front Window Switch
 X151 Right Front Window Switch
 C337 (7-G)
 C338 (7-W)



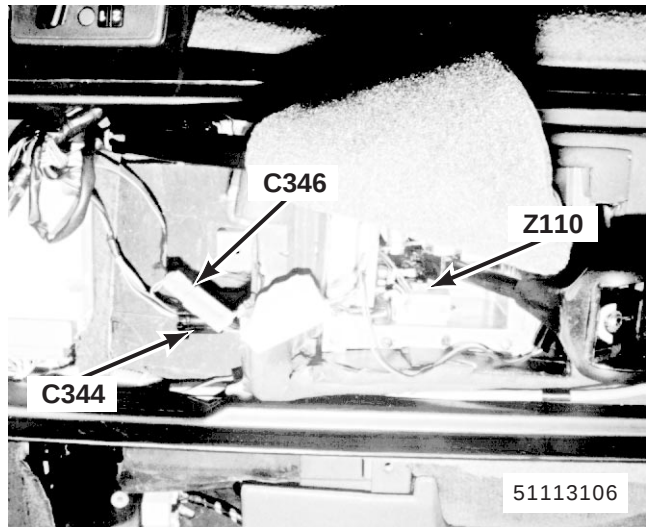
103. in rear of centre console
 X141 Left Rear Window Console Switch
 X162 Right Rear Window Console Switch
 C339 (7-Y)
 C340 (7-R)



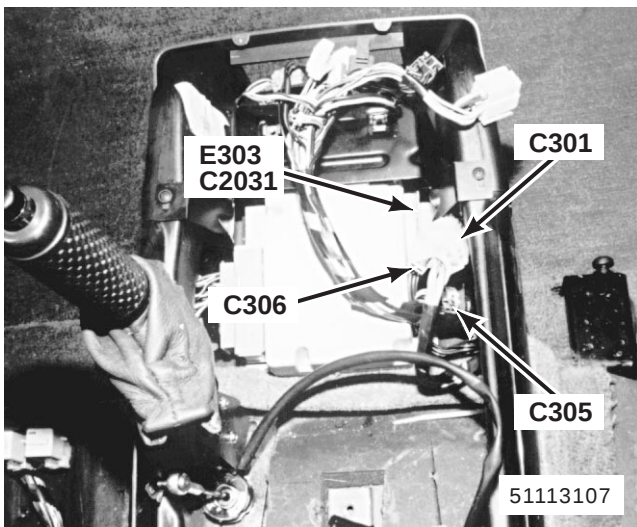
104. in rear of centre console
 X187 Rear Window Isolation Switch
 C343 (7-N)



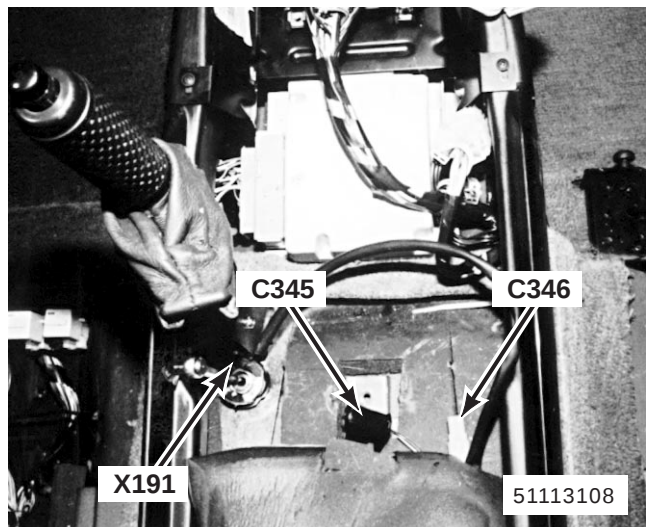
105. in rear of centre console
X143 Left Seat Heat Switch
X164 Right Seat Heat Switch
C341 (5-W)
C342 (5-G)



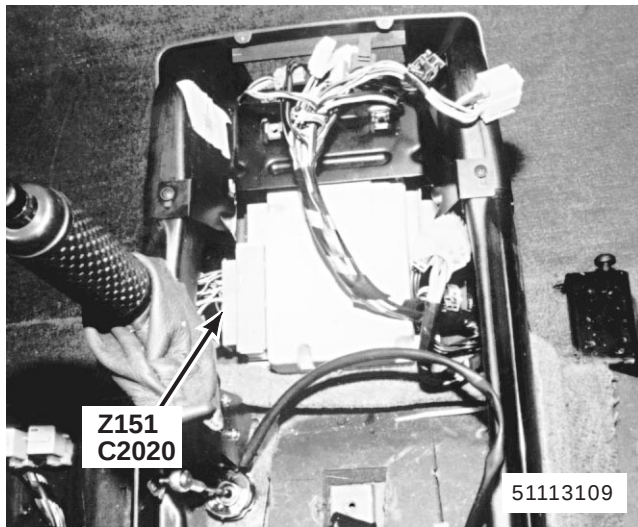
106. beneath centre console
Z110 Transmission Range Selector Switch
C344 (2-U)
C346 (6-B)



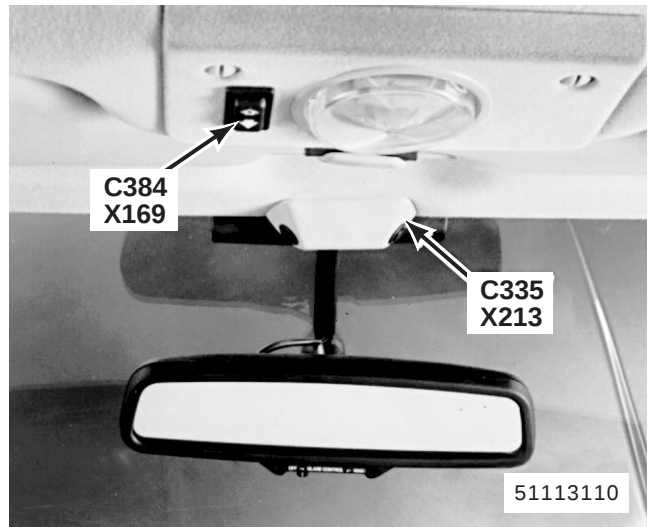
107. beneath centre console
C2031 (6-W)
C301 (6-W)
C305 (2-W)
C306 (3-W)
E303



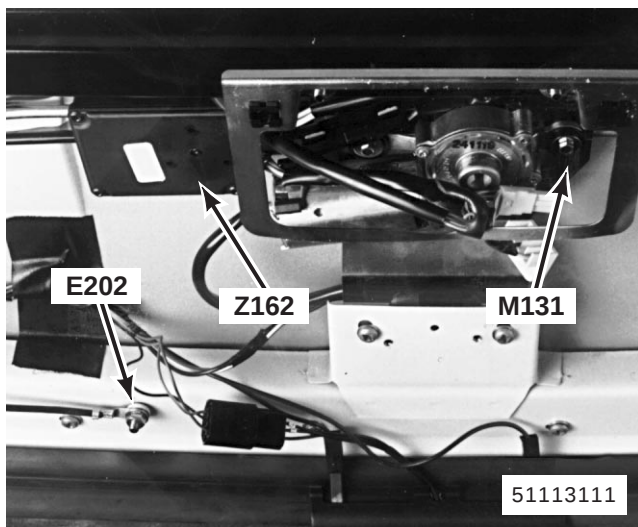
108. beneath centre console
X191 Handbrake Switch
C345 (2-B)
C346 (2-U)



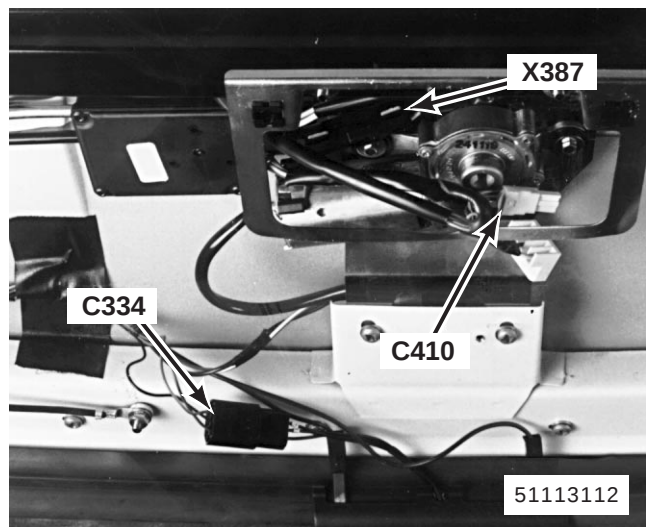
109. beneath centre console
Z151 Air Bag Diagnostic Control Module
C2020 (29-R)



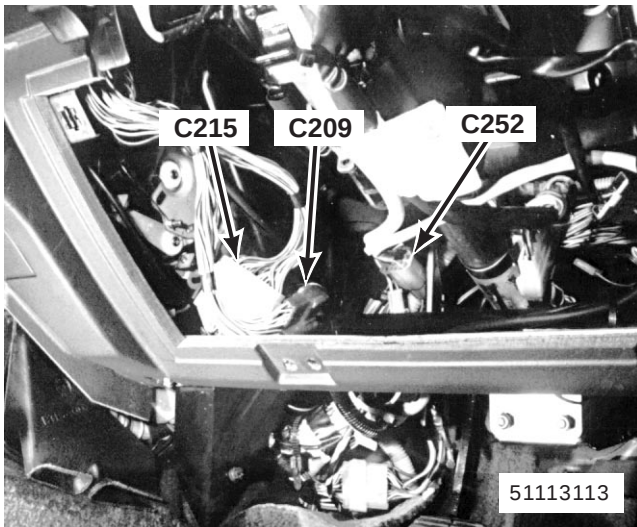
110. front centre of roof
X169 Sunroof Switch
X213 Alarm Sensor
C335 (4-B)
C384 (5-W)



111. front centre of roof
M131 Sunroof Motor
Z162 Sunroof Control Unit
E202

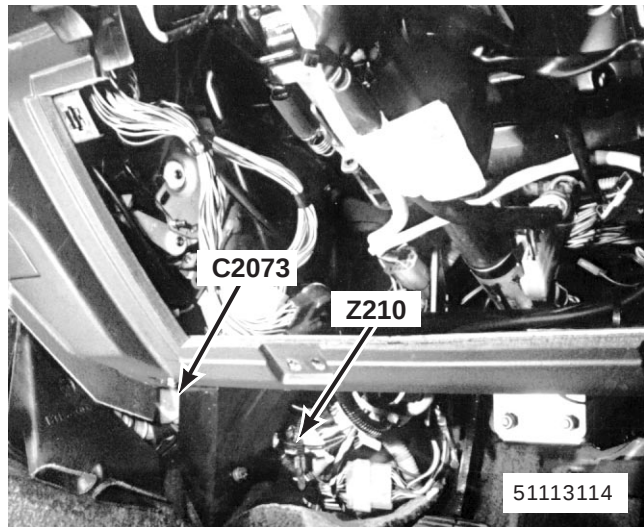


112. front centre of roof
C334 (3-B)
C387 (3-B)
C410 (2-W)



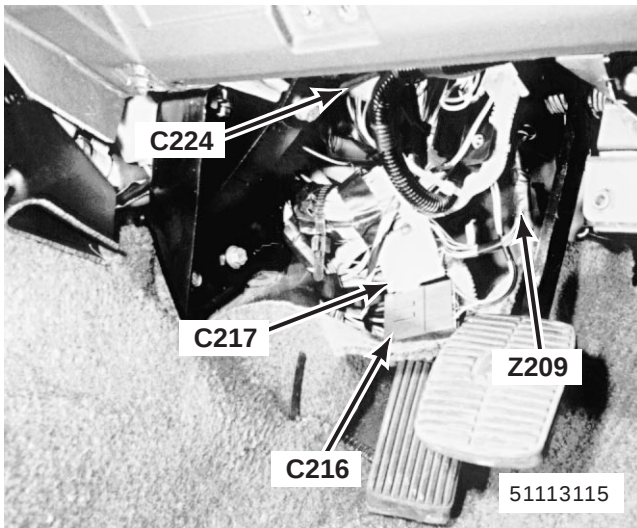
113. behind RH side of fascia right of heater evaporator unit

C209 (24-G)
C215 (24-Y)
C252 (6-R)



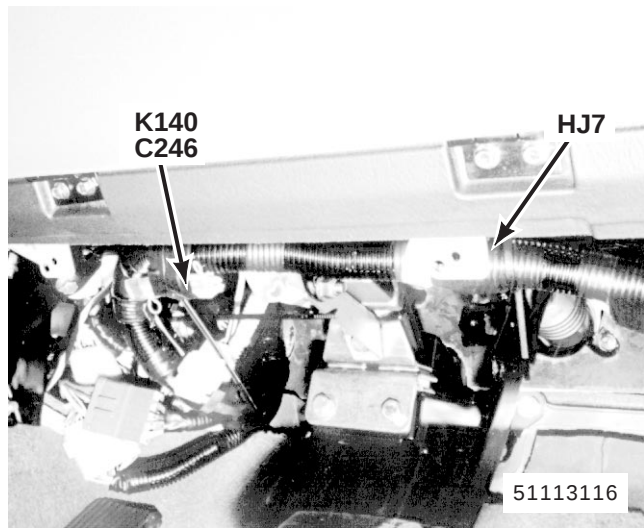
114. behind RH side of fascia right of heater evaporator unit

Z210 Condenser Fan Control Diode 2
C2073 (10-W)



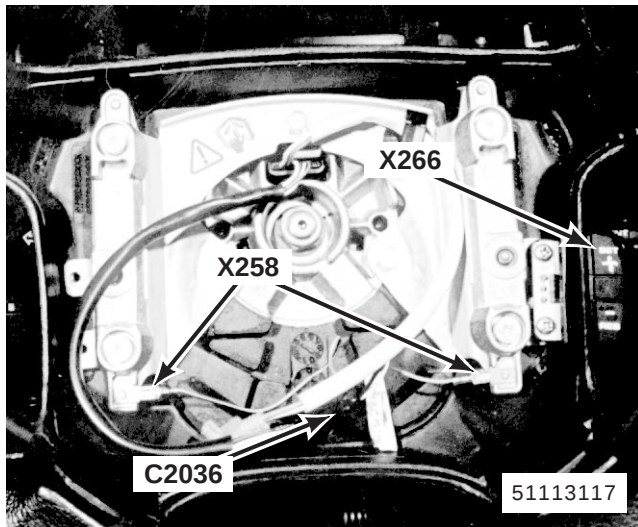
115. behind RH side of fascia right of heater evaporator unit

Z209 Condenser Fan Control Diode 1
C216 (7-N)
C217 (20-W)
C224 (6-W)

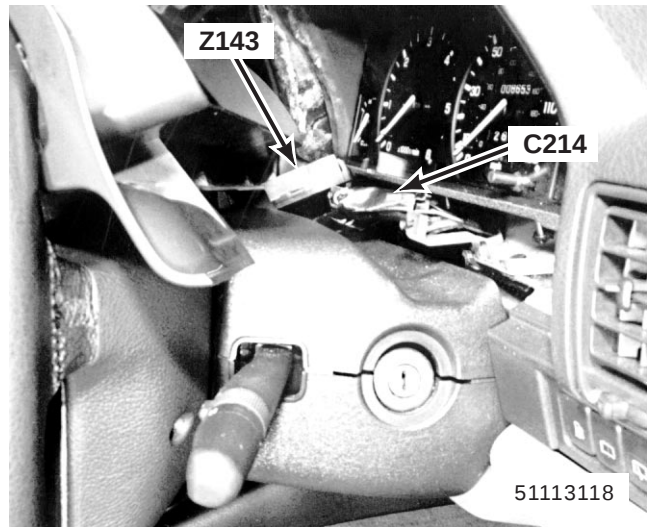


116. behind RH side of fascia

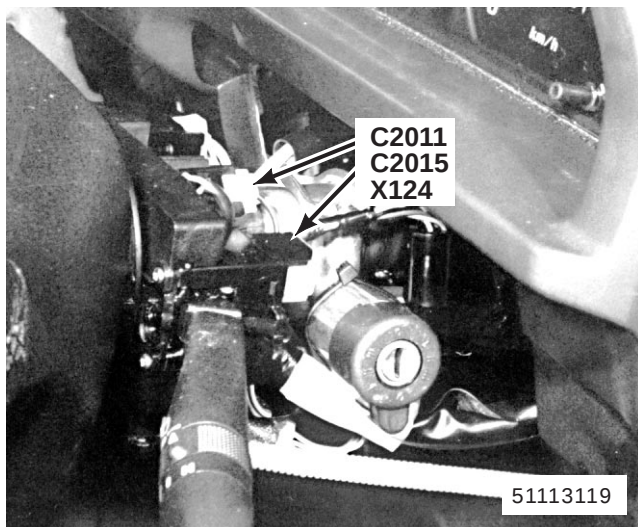
K140 Tune Select Resistor
C246 (2-U)
HJ7 (20-U)



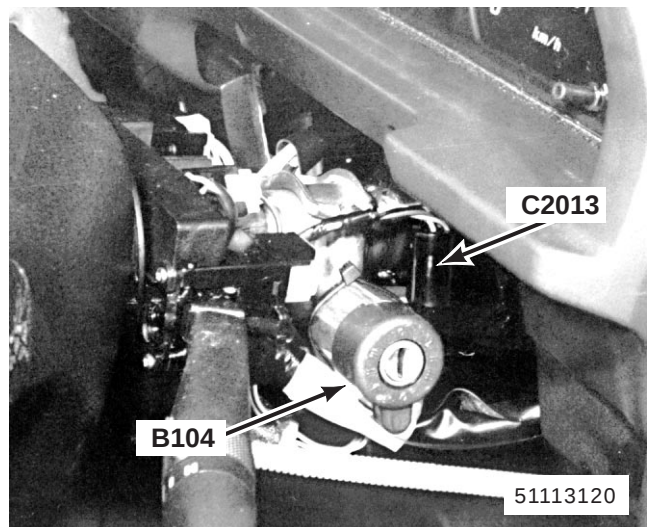
117. in steering wheel
 X258 Horn Switches
 X266 Steering Wheel Cruise Switches
 C2036 (7-B)



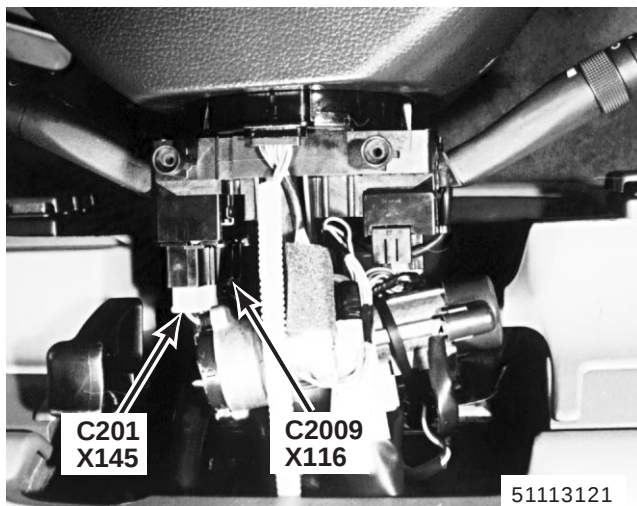
118. top RH side of fascia
 Z143 Instrument Illumination Rheostat
 C214 (3-B)



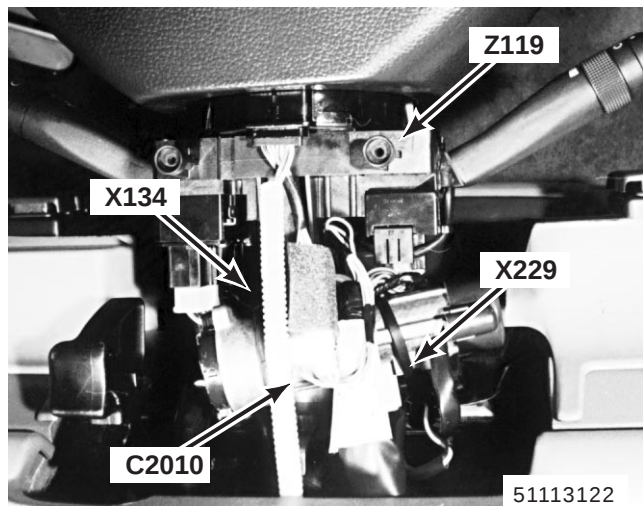
119. top of steering column
 X124 Front Wipe/Wash Switch
 C2011 (6-W)
 C2015 (8-W)



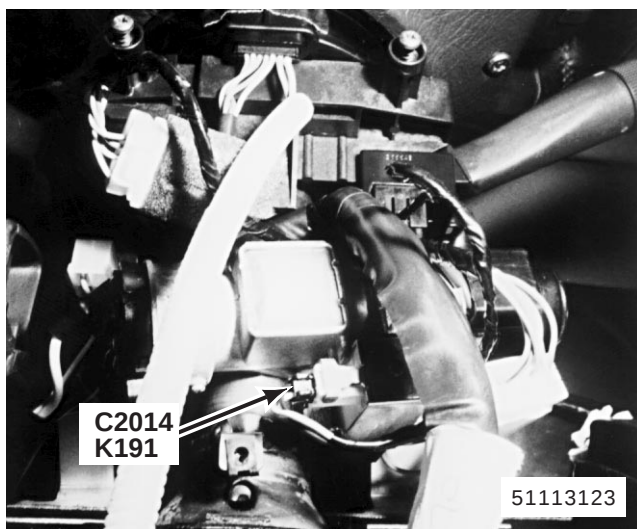
120. top of steering column
 B104 Column Switch Illumination
 C2013 (4-W)



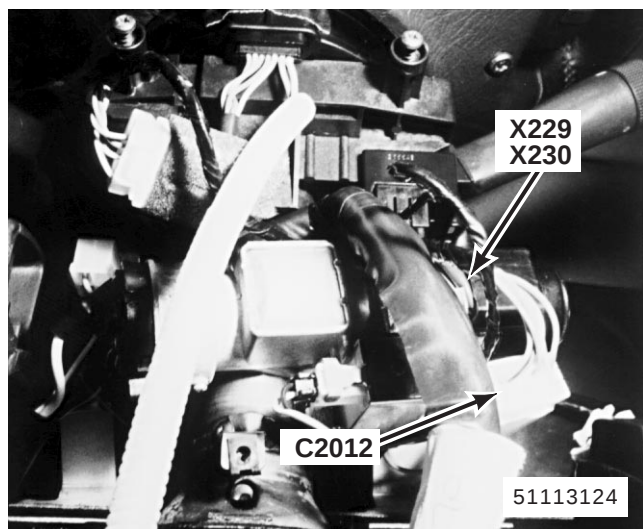
121. underside of steering column
 X116 Direction Indicator Switch
 X145 Main Lighting Switch
 C201 (7-W)
 C2009 (4-W)



122. underside of steering column
 X229 Key-In Switch
 X134 Ignition Switch
 Z119 Rotary Coupler
 C2010 (6-W)



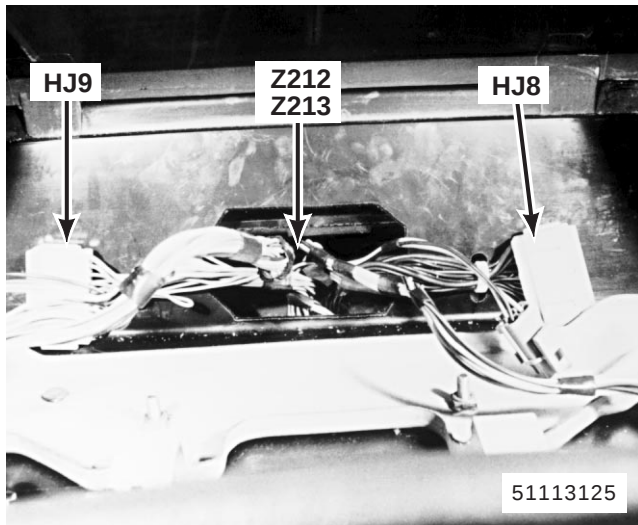
123. underside of steering column
 K191 Ignition Key Lock Solenoid
 C2014 (2-B)



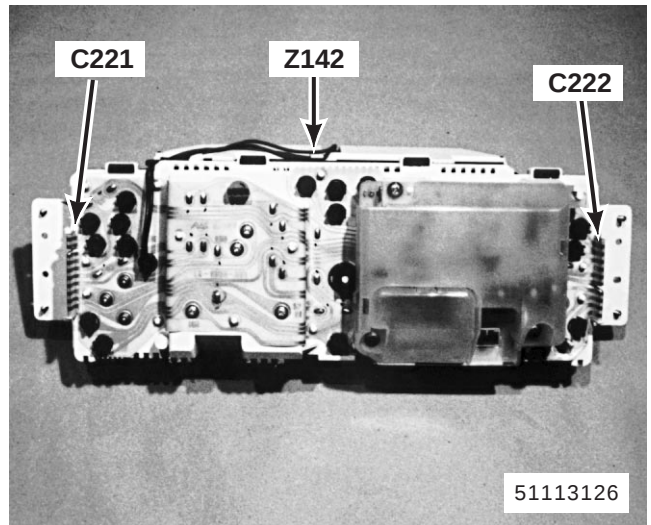
124. underside of steering column
 X229 Key-In Switch
 X230 Key-Barrel Switch
 C2012 (8-W)

Z5 ETM

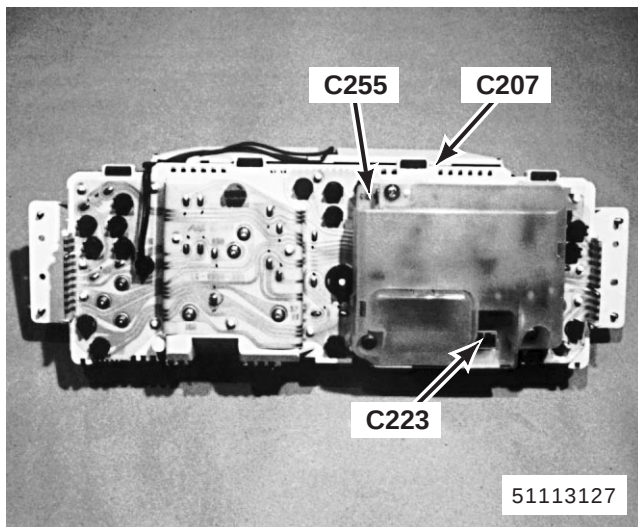
1995 RANGE ROVER



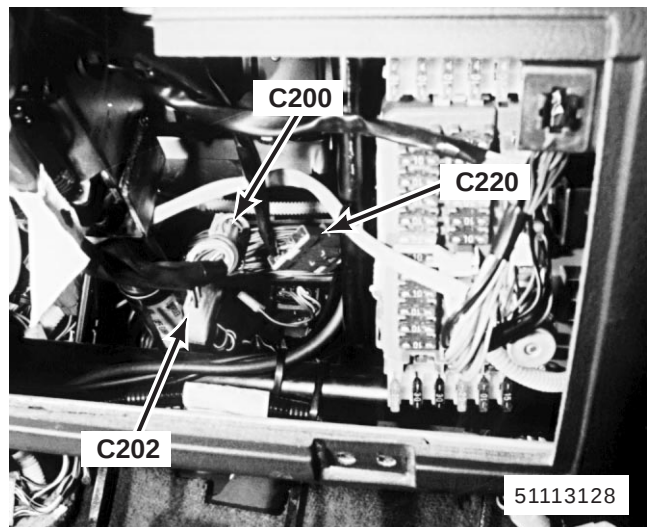
125. behind instrument cluster
 Z212 Direction Indicator Diode 1
 Z213 Direction Indicator Diode 2
 HJ8 (20-S)
 HJ9 (20-S)



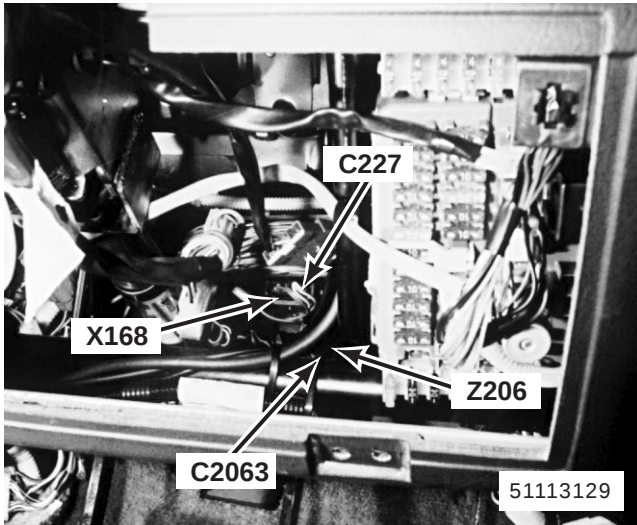
126. rear of Instrument Cluster
 Z142 Instrument Cluster
 C221 (10-W)
 C222 (10-W)



127. rear of Instrument Cluster
 C207 (10-B)
 C223 (5-U)
 C255 (1-B)



128. behind RH side of fascia right of steering column
 C200 (4-W)
 C202 (24-W)
 C220 (3-N)



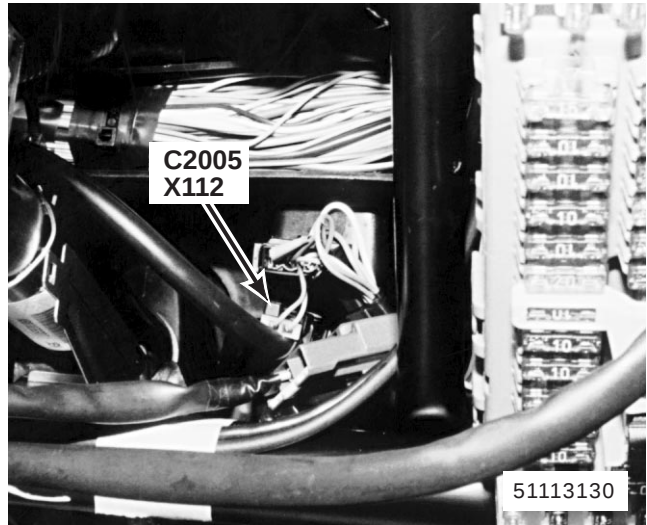
129. behind RH side of fascia right of steering column

X168 Stop Lamp Switch

Z206 Stop Lamp Switch Suppressor

C227 (4-B)

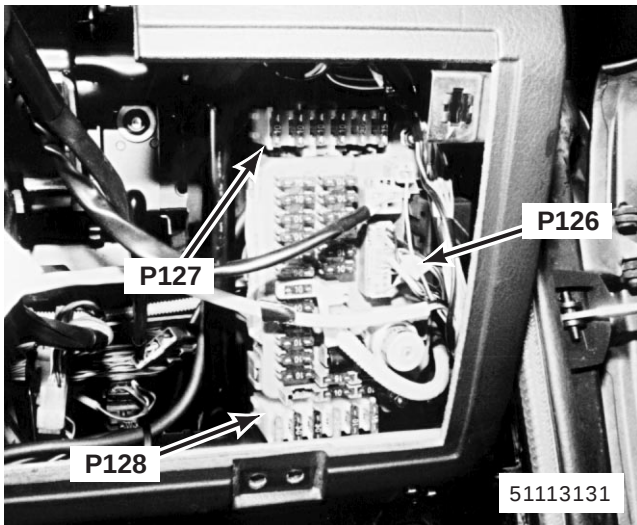
C2063 (2-B)



130. behind RH side of fascia right of steering column

X112 Brake Switch Vent Valve

C2005 (2-W)

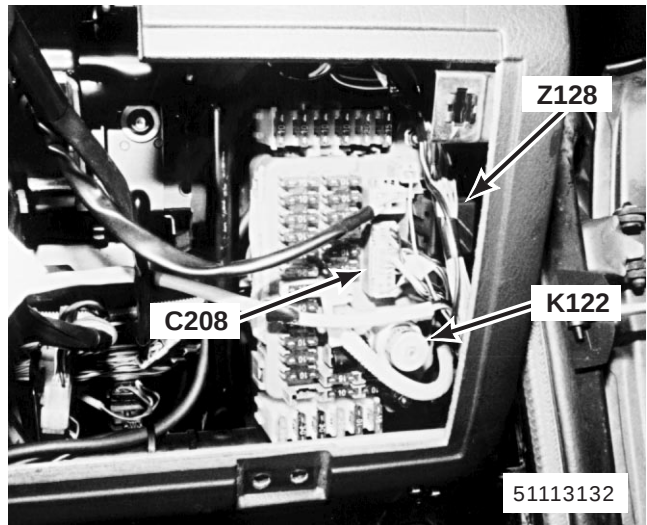


131. behind RH side of fascia right of steering column

P126 Fascia Fuse Box

P127 Satellite Fuse Box 1

P128 Satellite Fuse Box 2

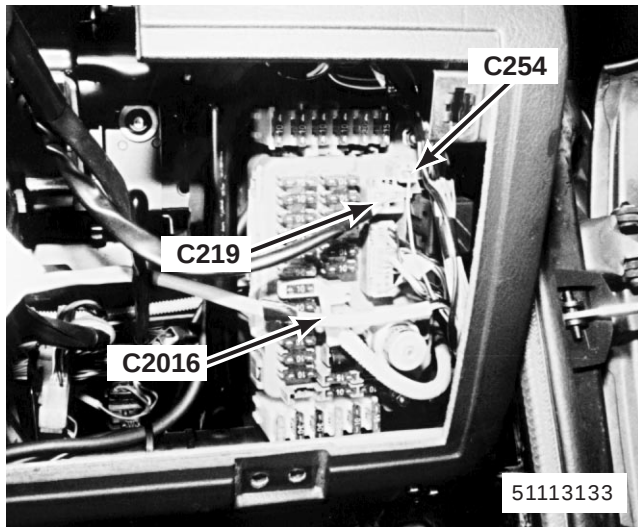


132. behind RH side of fascia right of steering column

K122 Heated Rear Screen Relay

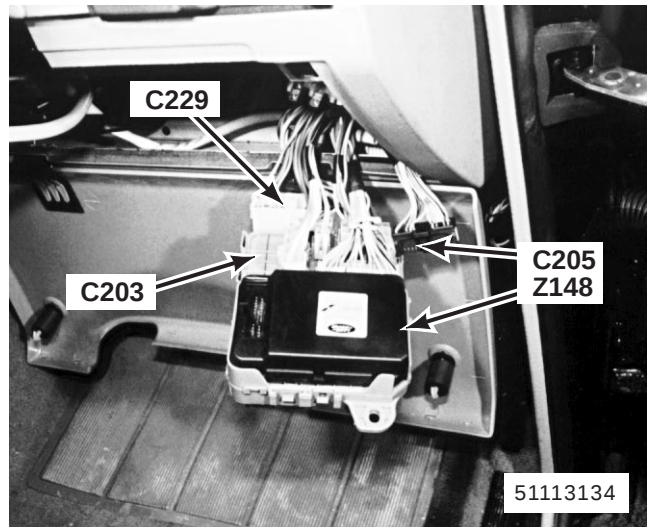
Z128 Flasher Unit

C208 (18-W)



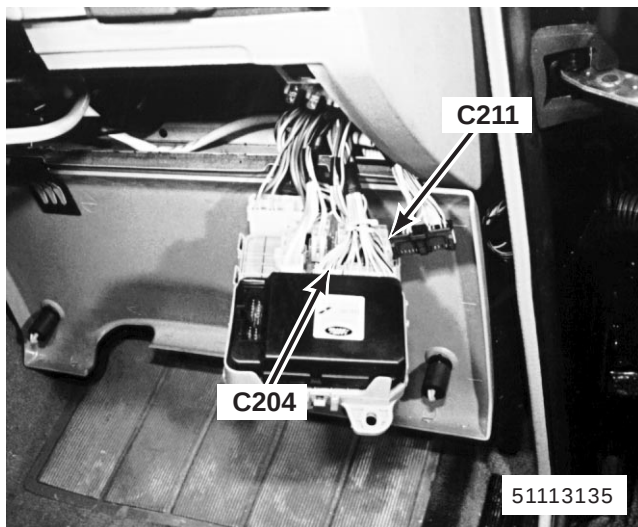
133. behind RH side of fascia right of steering column

C219 (4-W)
C254 (1-W)
C2016 (1-W)



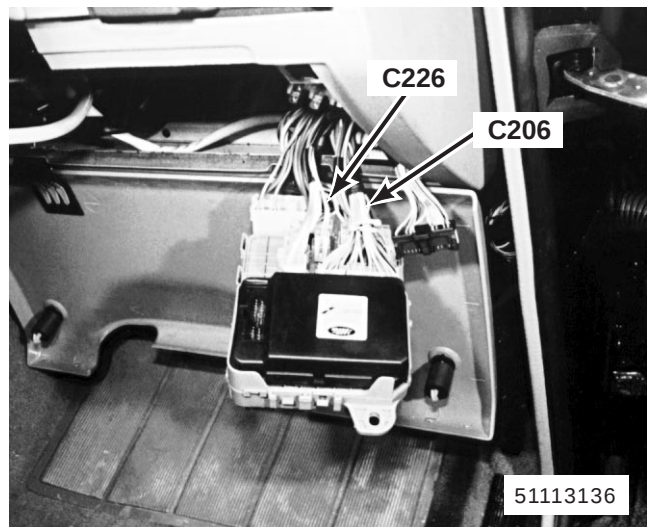
134. behind RH side of fascia rear of Fascia Fuse Box

Z148 Multi-Function Unit (MFU)
C203 (7-W)
C205 (24-B)
C229 (1-W)



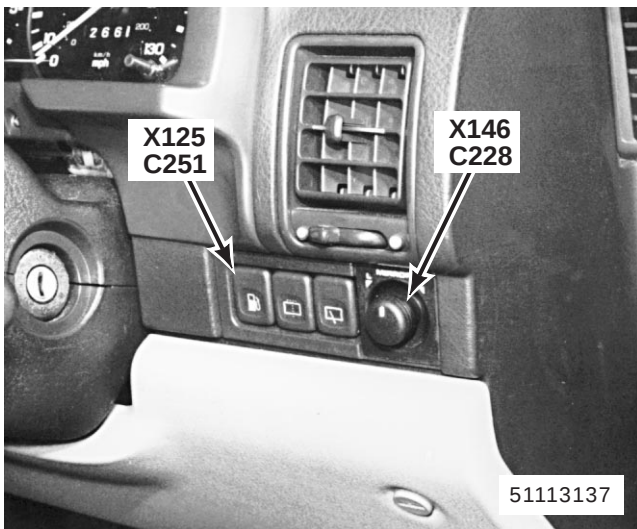
135. behind RH side of fascia rear of Fascia Fuse Box

C204 (24-W)
C211 (10-W)

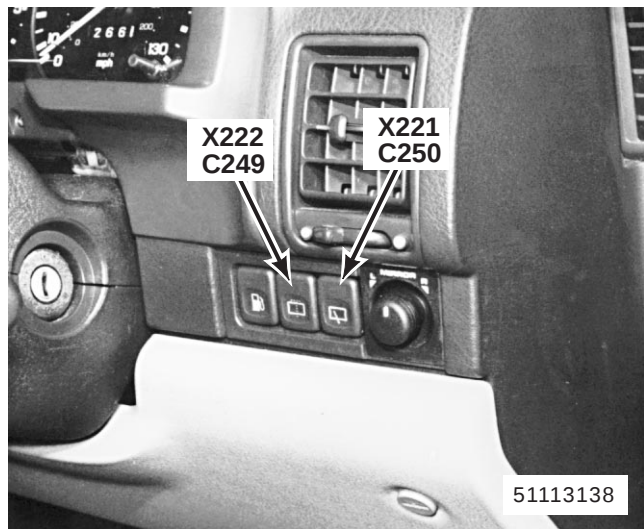


136. behind RH side of fascia rear of Fascia Fuse Box

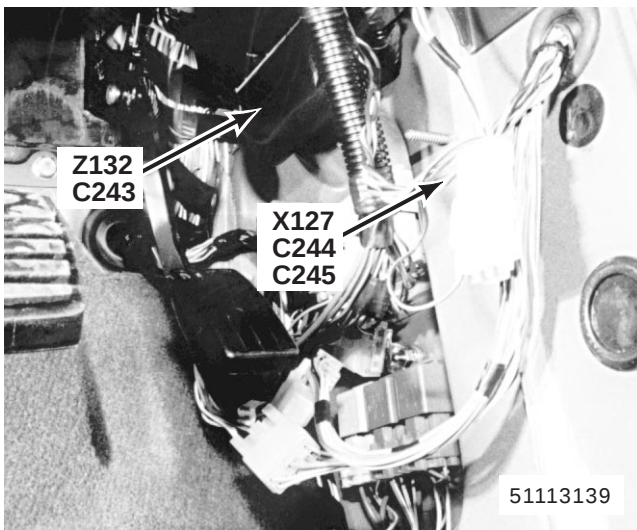
C206 (4-W)
C226 (3-W)



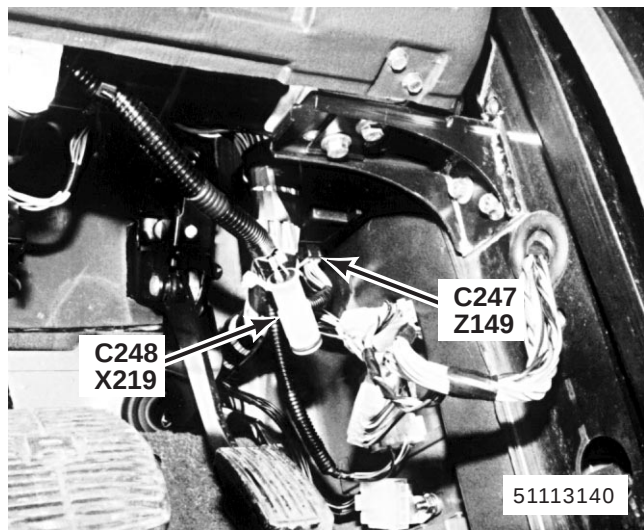
137. top RH side of fascia right of steering column
X125 Fuel Flap Release Switch
X146 Mirror Adjustment Switch
C228 (8-W)
C251 (5-U)



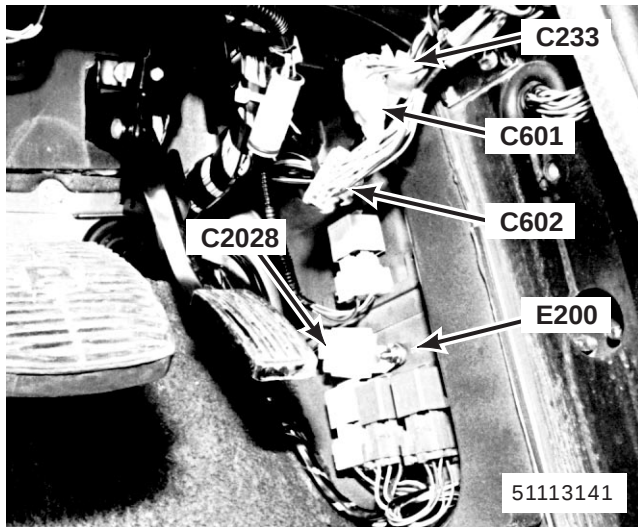
138. top RH side of fascia right of steering column
X221 Rear Screen Wipe Switch
X222 Rear Screen Wash Switch
C249 (5-G)
C250 (5-W)



139. behind RH footwell trim panel
X127 Data Link Connectors
Z132 Engine Control Module (ECM)
C243 (40-B)
C244 (5-W)
C245 (5-W)



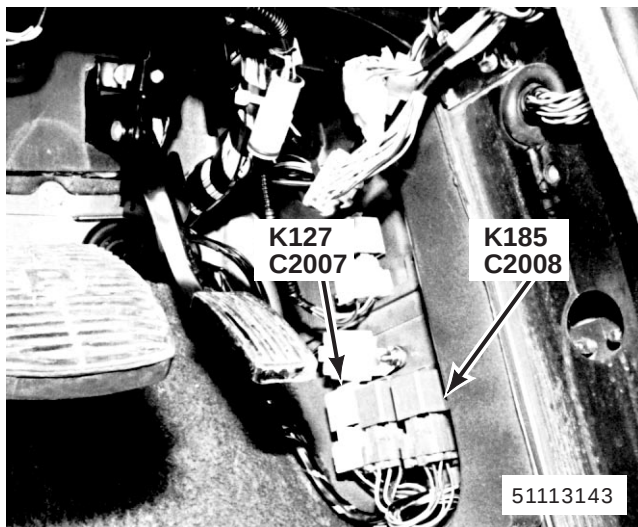
140. behind RH footwell trim panel
X219 Data Link Connector (EGR)
Z149 EGR Valve Control Module
C248 (3-W)
C247 (16-B)



141. behind RH footwell trim panel
 C233 (4-W)
 C2028 (6-W)
 C601 (8-W)
 C602 (13-W)
 E200



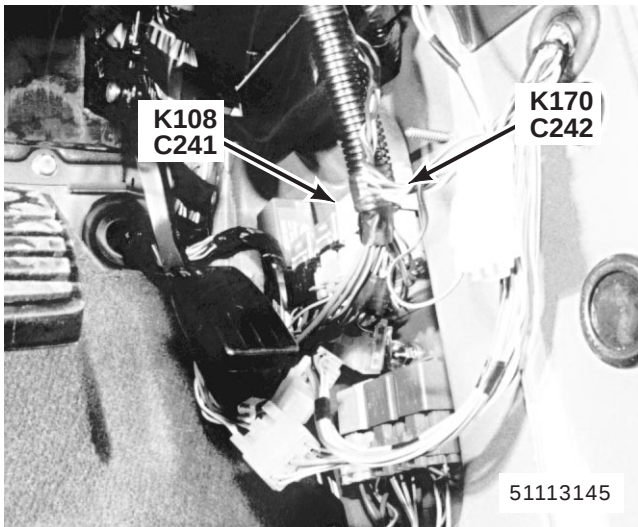
142. behind RH footwell trim panel
 K137 Starter Solenoid Relay
 Z158 Starter Relay Diode
 C2006 (5-Y)



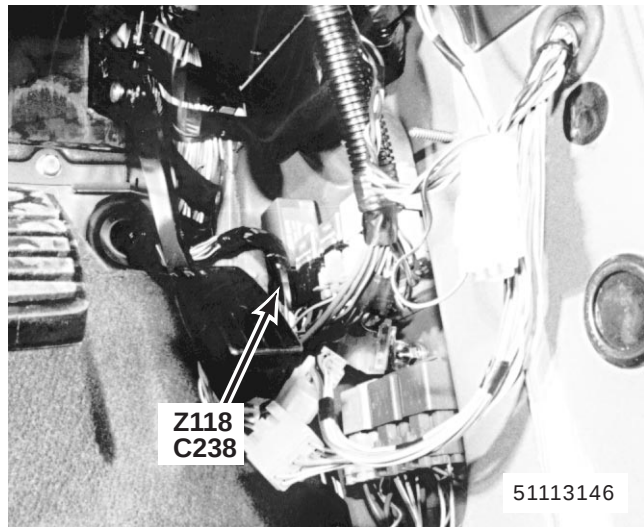
143. behind RH footwell trim panel
 K127 Ignition Load Relay
 K185 Front Wiper Relay
 C2007 (5-G)
 C2008 (5-G)



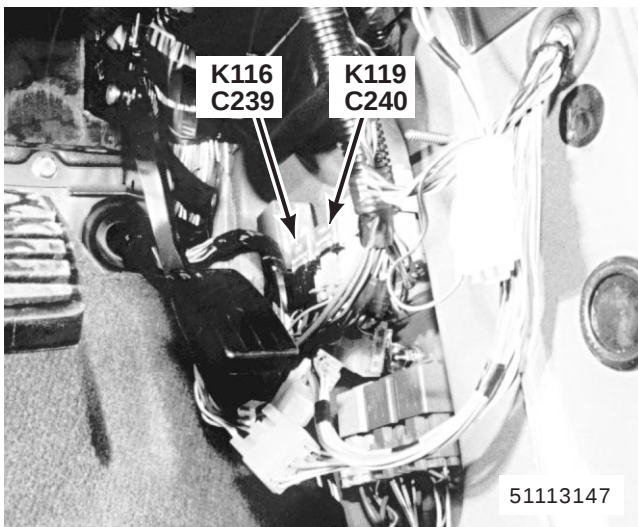
144. behind RH footwell trim panel
 K108 Compressor Clutch Relay
 C241 (5-Y)



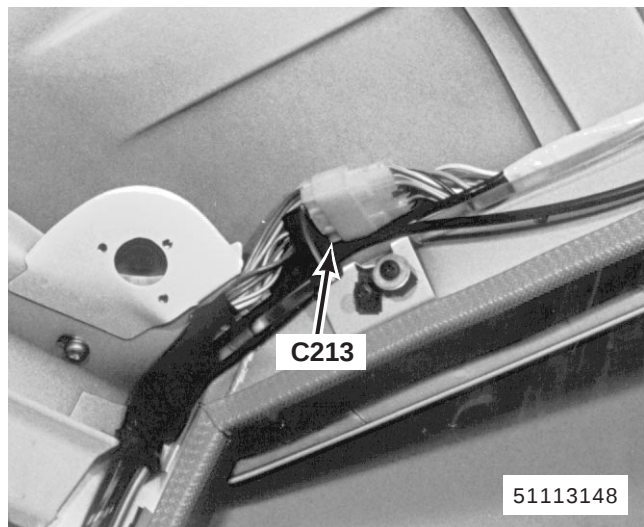
145. behind RH footwell trim panel
K108 Compressor Clutch Relay
K170 A/C Logic Relay
C241 (5-Y)
C242 (5-Y)



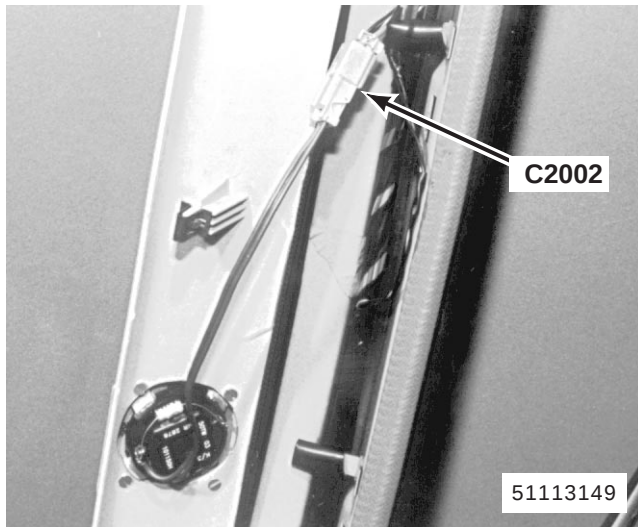
146. behind RH footwell trim panel
Z118 Fan Control Module
C238 (9-B)



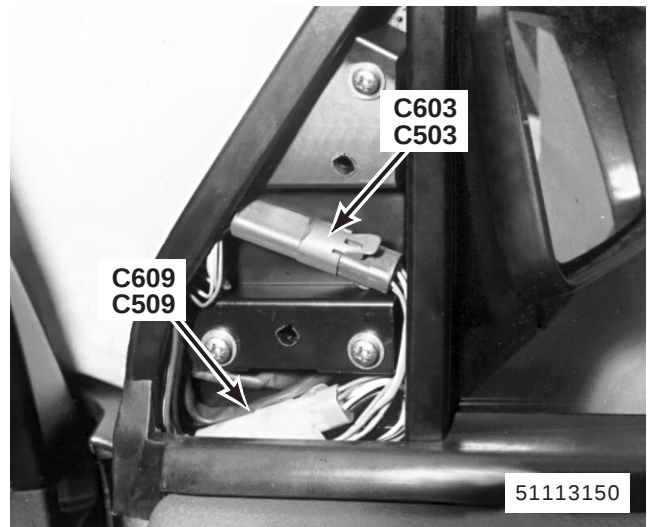
147. behind RH footwell trim panel
K116 Engine Control Load Relay
K119 Fuel Pump Relay
C239 (5-B)
C240 (5-U)



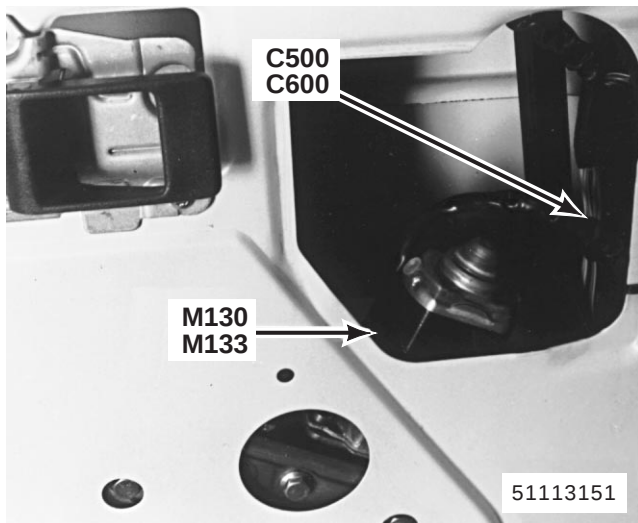
148. RH A-post
C213 (14-W)



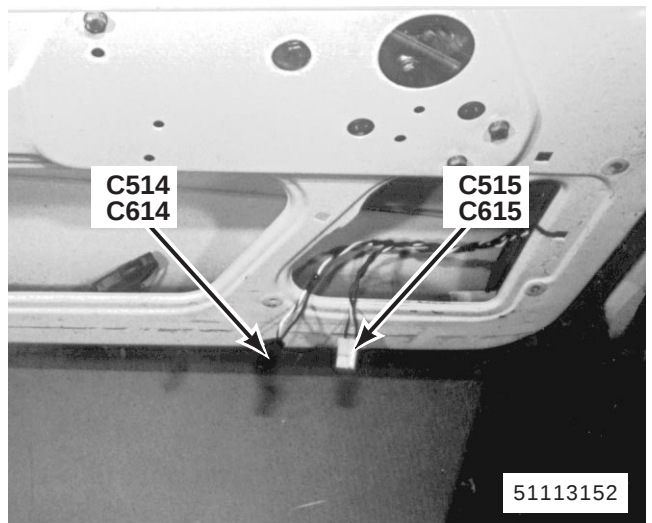
149. RH A-post
C2002 (2-S)



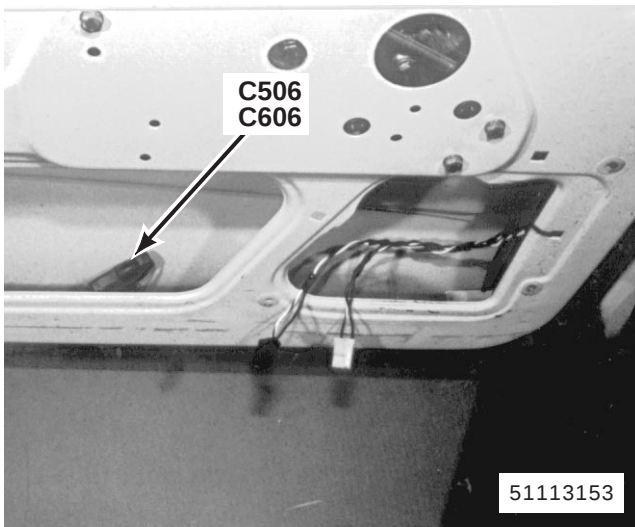
150. top front of RH front door (LH similar)
C503 (5-W) (Left)
C509 (5-U) (Left)
C603 (5-W) (Right)
C609 (5-U) (Right)



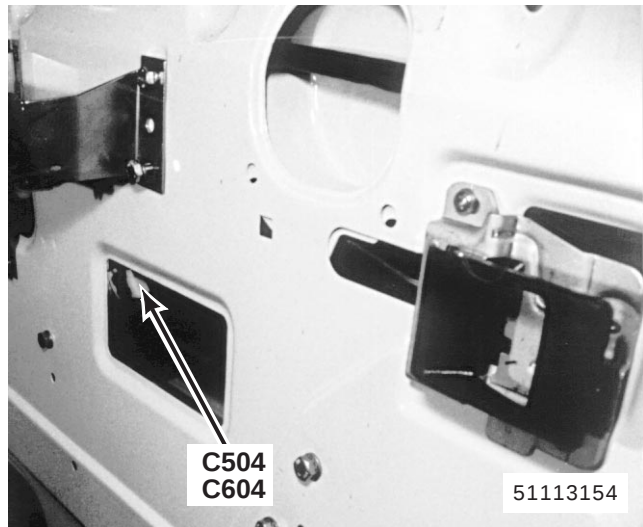
151. in front of LH front door (RH similar)
M130 Left Front Window Motor
M133 Right Front Window Motor
C500 (3-B) (Left)
C600 (3-B) (Right)



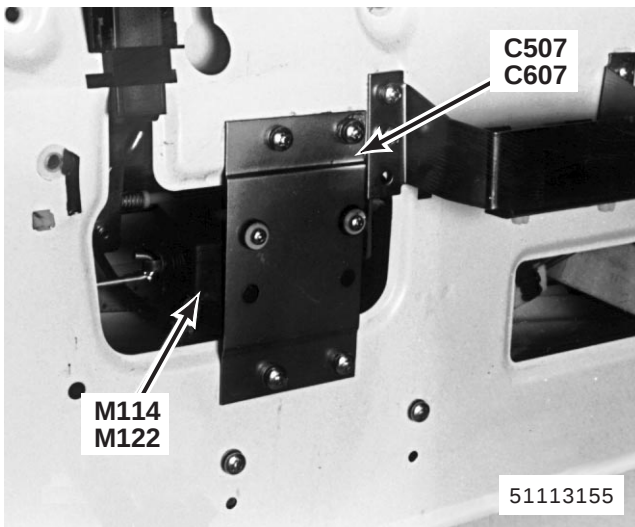
152. in front of LH front door (RH similar)
C514 (2-B) (Left)
C515 (2-W) (Left)
C614 (2-B) (Right)
C615 (2-W) (Right)



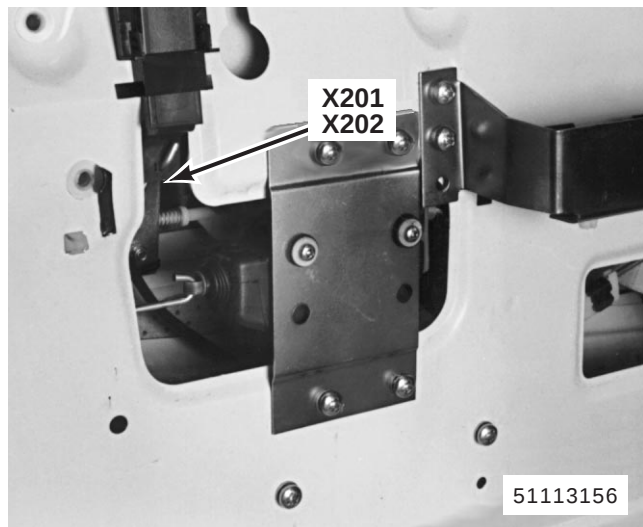
153. in front of LH front door (RH similar)
C506 (5-B) (Left)
C606 (5-B) (Right)



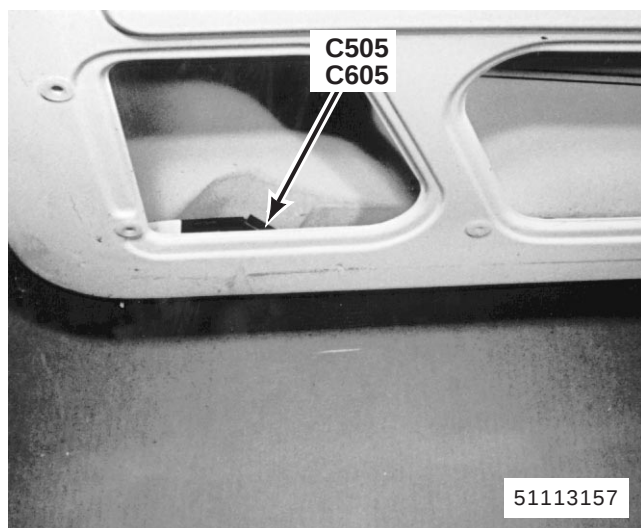
154. in top rear of LH front door (RH similar)
C504 (4-W) (Left)
C604 (4-W) (Right)



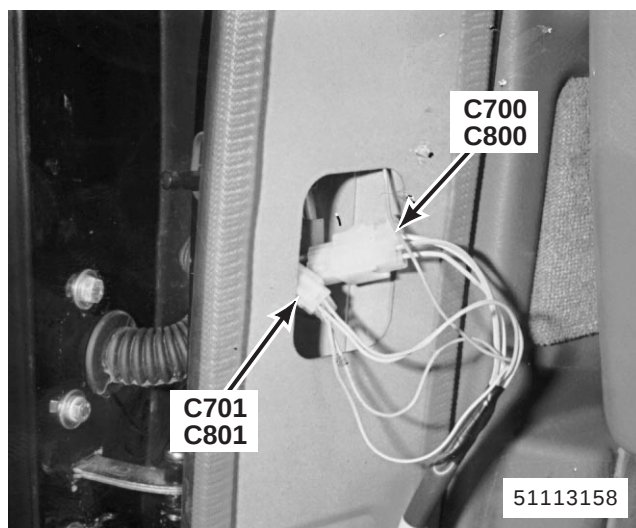
155. in top rear of LH front door (RH similar)
M114 Left Front Door Lock Actuator
M122 Right Front Door Lock Actuator
C507 (6-W) (Left) Behind
C607 (6-W) (Right) Behind



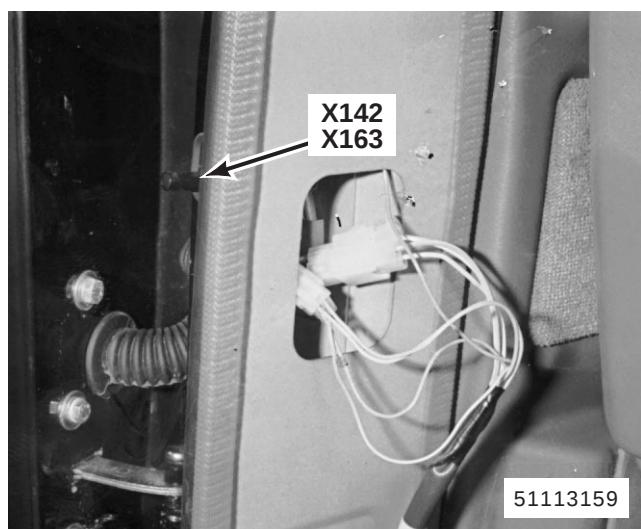
156. in top rear of LH front door (RH similar)
X201 Left Front Door Key Switch
X202 Right Front Door Key Switch



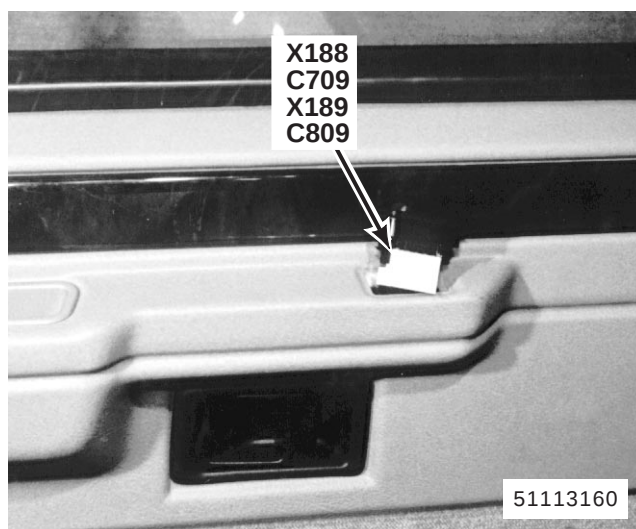
157. in rear of LH front door (RH similar)
C505 (5-B) (Left)
C605 (5-B) (Right)



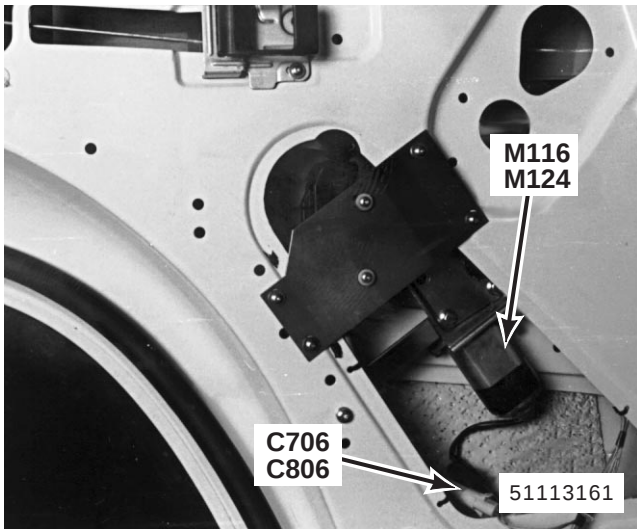
158. in lower part of LH B-post (RH similar)
C700 (3-W) (Left)
C701 (2-W) (Left) SWB
C701 (4-W) (Left) LWB
C800 (3-W) (Right)
C801 (2-W) (Right) SWB
C801 (4-W) (Right) LWB



159. in lower part of LH B-post (RH similar)
X142 Left Rear Door Switch
X163 Right Rear Door Switch

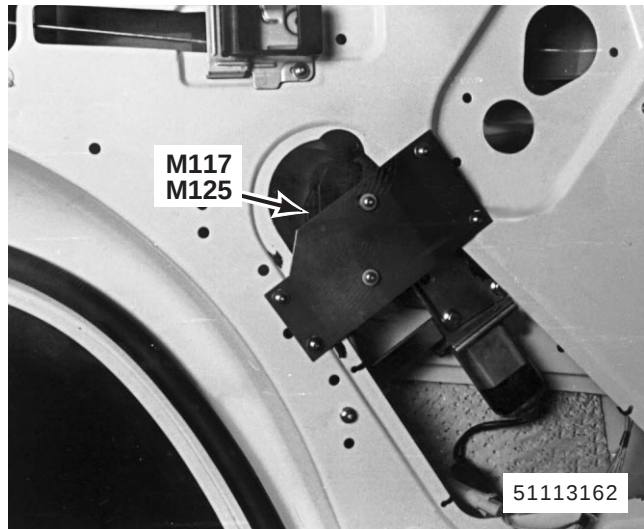


160. in top of LH rear door (RH similar)
X188 Left Rear Window Door Switch
X189 Right Rear Window Door Switch
C709 (5-W) (Left)
C809 (5-W) (Right)



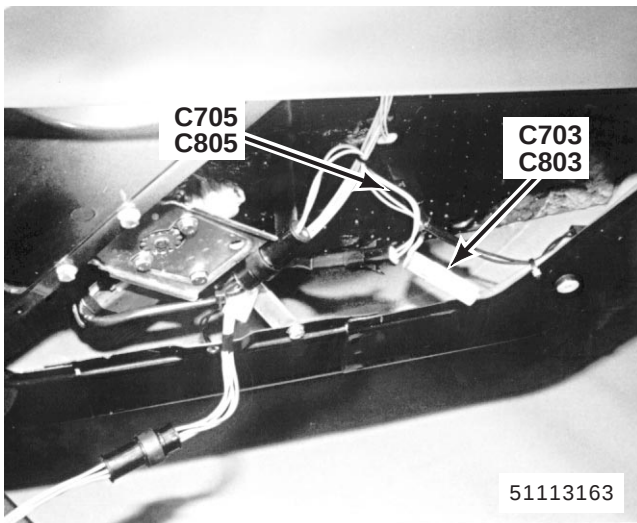
161. inside front of LH rear door (RH similar)

M116 Left Rear Window Motor
 M124 Right Rear Window Motor
 C706 (2-W) (Left)
 C806 (2-W) (Right)



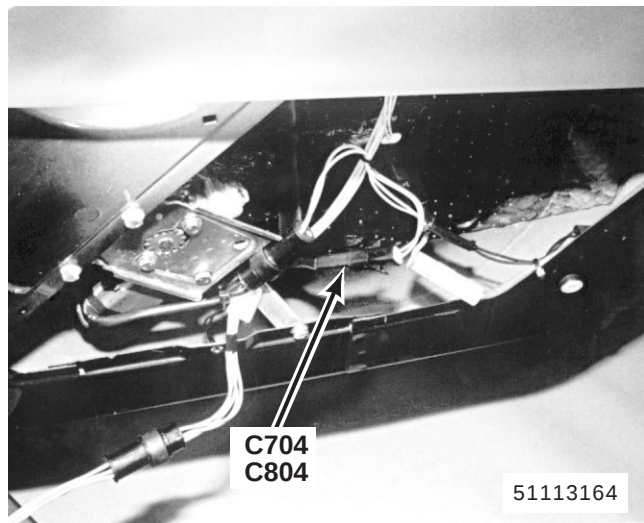
162. inside front of LH rear door (RH similar)

M117 Left Rear Door Lock Actuator
 M125 Right Rear Door Lock Actuator



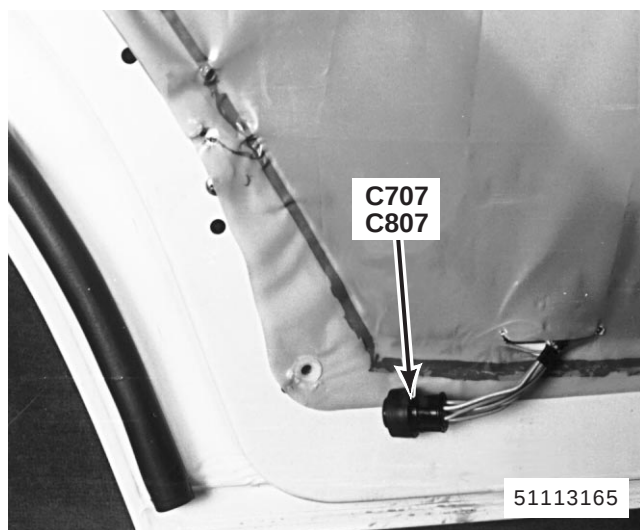
163. in lower portion of LH rear door (RH similar)

C703 (3-W) (Left)
 C705 (5-B) (Left)
 C803 (3-W) (Right)
 C805 (5-B) (Right)

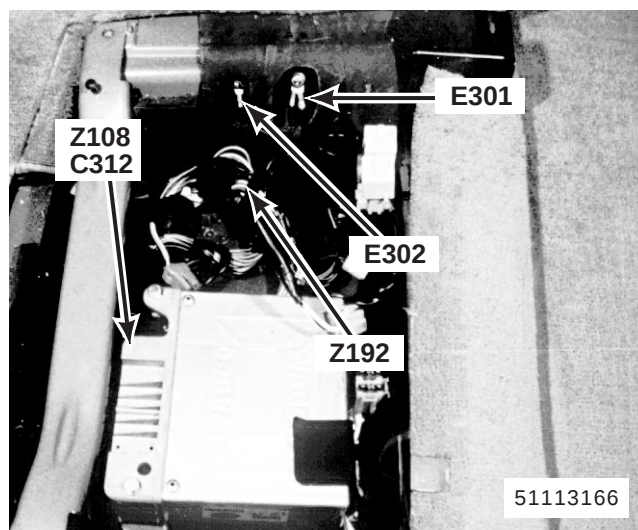


164. in lower portion of LH rear door (RH similar)

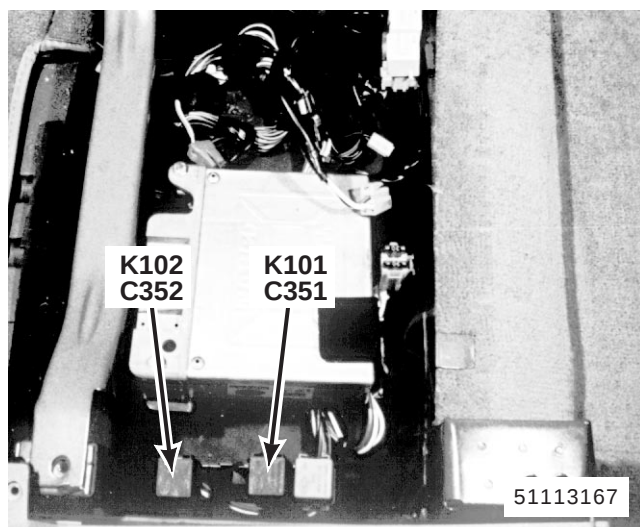
C704 (5-B) (Left)
 C804 (5-B) (Right)



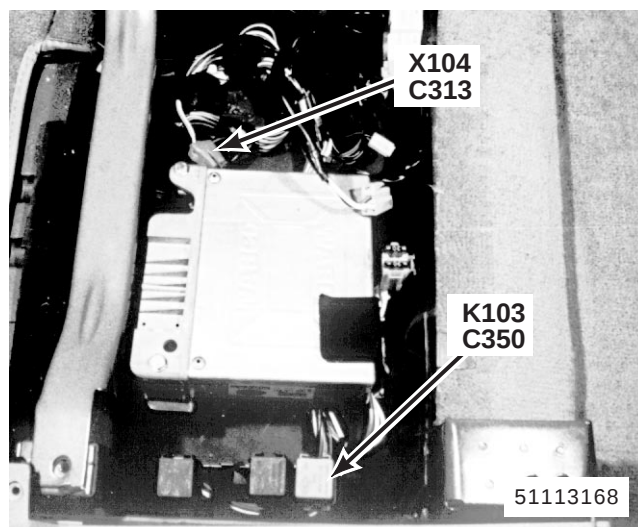
165. inside front of LH rear door (RH similar)
C707 (5-B) (Left)
C807 (5-B) (Right)



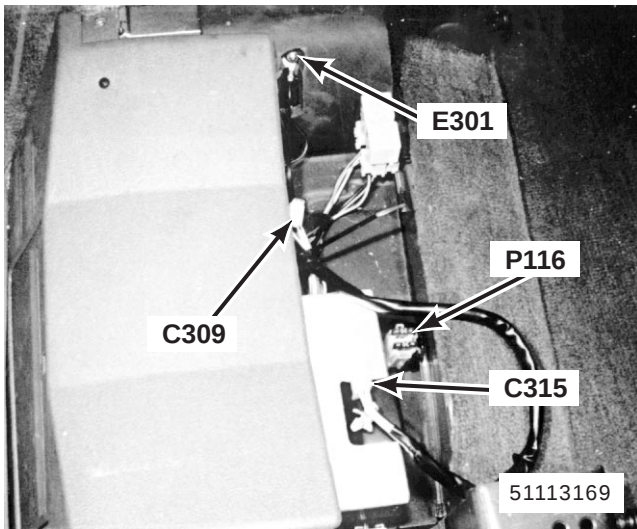
166. beneath LH front seat
Z108 Anti-Lock Brake System ECU
Z192 A.B.S. Diode
C312 (35-B)
E301
E302



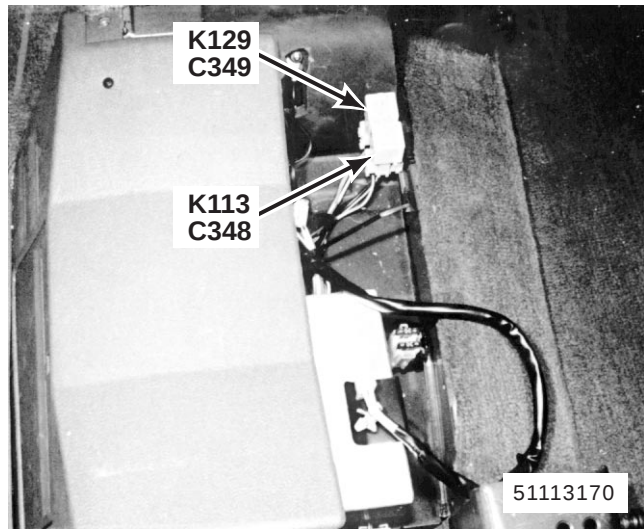
167. beneath LH front seat
K101 A.B.S. Load Relay
K102 A.B.S. Pump Relay
C351 (5-B)
C352 (5-B)



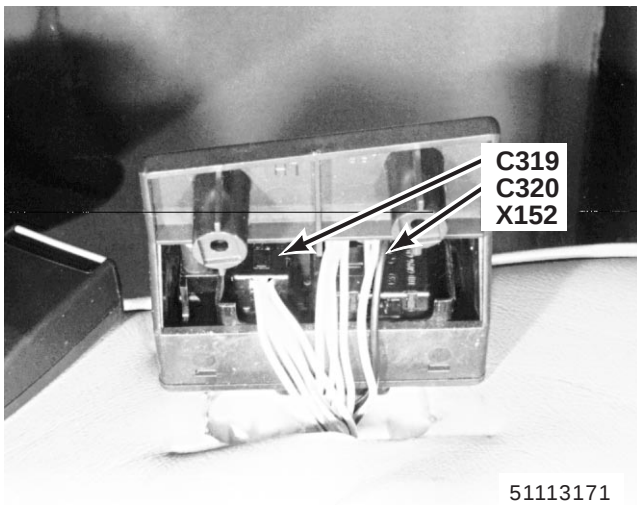
168. beneath LH front seat
K103 A.B.S. Warning Relay
X104 A.B.S. Diagnostic Connector
C313 (5-U)
C350 (5-U)



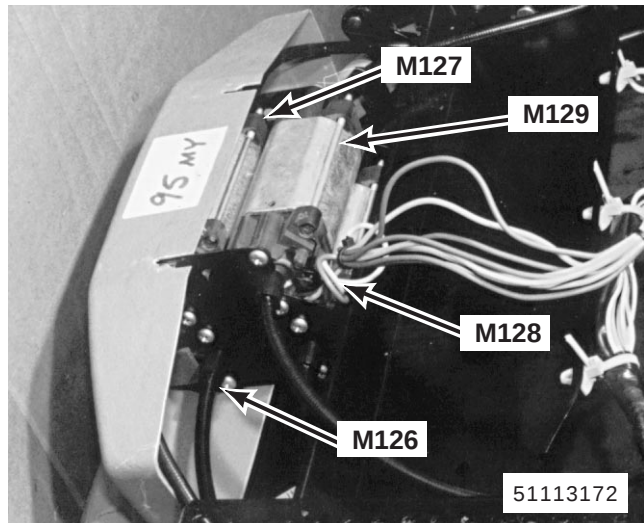
169. beneath LH front seat
P116 Passenger's Underseat Fuse Box
C309 (2-W)
C315 (3-W)
E301



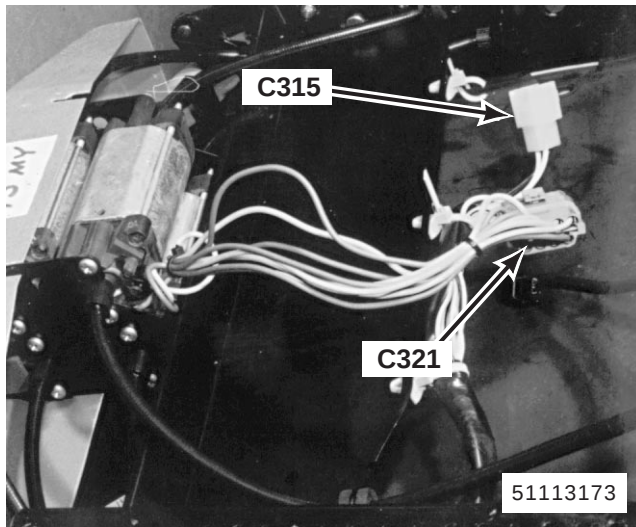
170. beneath LH front seat
K113 Left Seat Power Relay
K129 Left Seat Heat Relay
C348 (5-Y)
C349 (5-W)



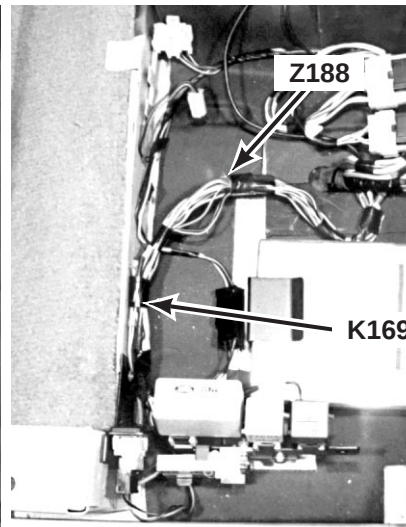
171. RH side of LH front seat
X152 Left Front Seat Control Switch
C319 (6-B)
C320 (6-B)



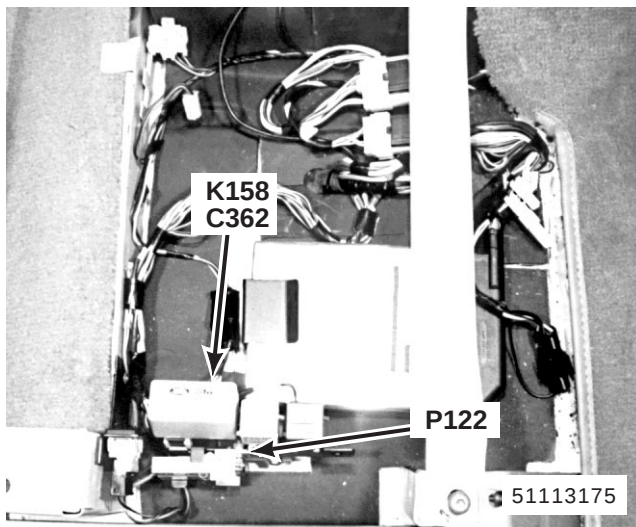
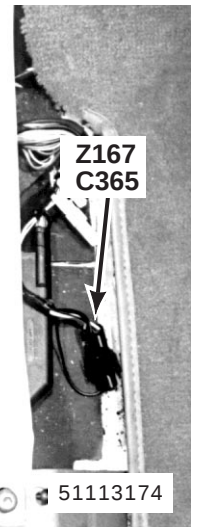
172. underside of LH front seat
M126 Seat Base Motor
M127 Seat Height (Front) Motor
M128 Seat Height (Rear) Motor
M129 Seat Recline Motor



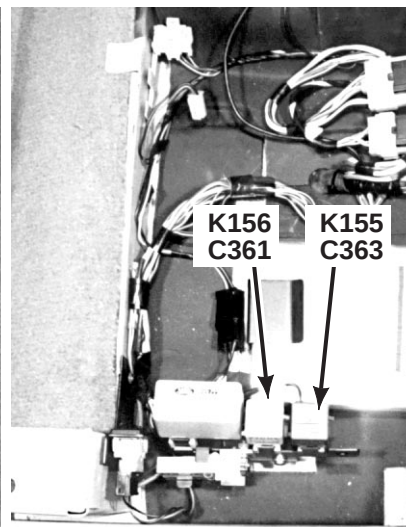
173. underside of LH front seat
C315 (3-W)
C321 (9-U)



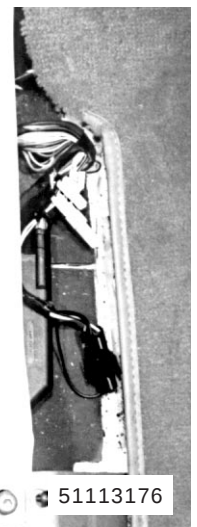
174. beneath RH front seat
K169 Reservoir Pressure Resistor
Z167 Air Suspension Diagnostic Connector
Z188 Air Suspension Indicator Diode
C365 (5-B)

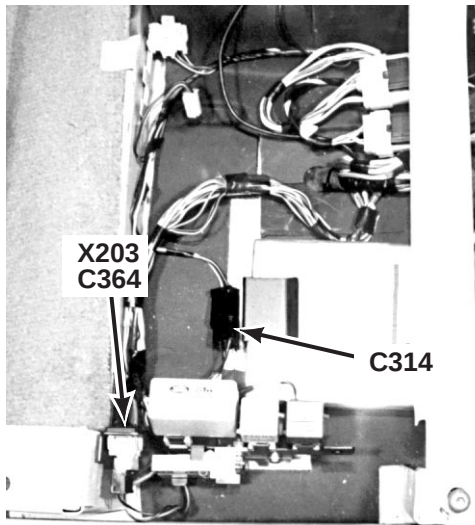


175. beneath RH front seat
K158 Air Suspension Delay Relay
P122 Air Suspension In-Line Maxi-Fuse
C362 (5-W)



176. beneath RH front seat
K155 Warning Lamp Relay
K156 Air Suspension Compressor Relay
C361 (5-Y)
C363 (5-G)

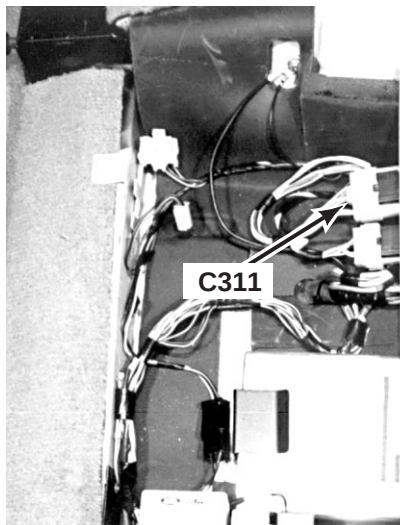




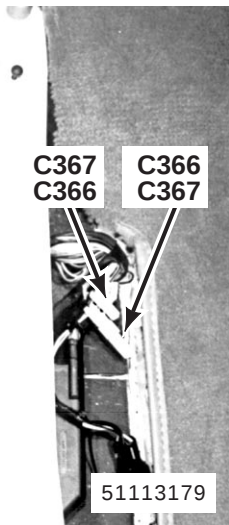
177. beneath RH front seat
 X203 Disable Switch
 C314 (3-B)
 C364 (5-B)



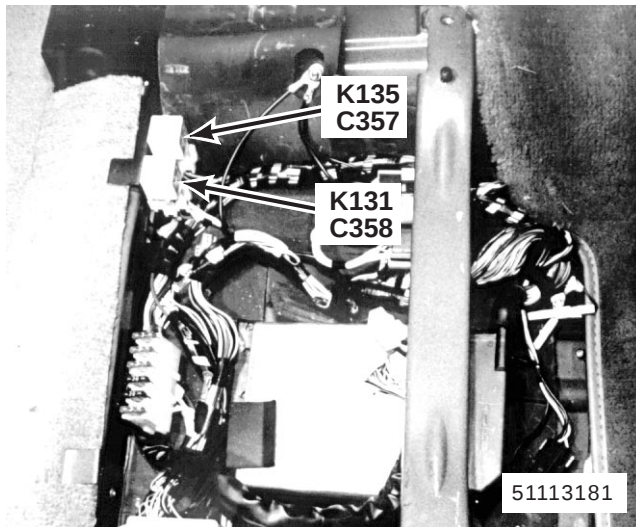
178. beneath RH front seat
 K167 Air Suspension Resistor
 Z165 Air Suspension ECU
 Z187 Air Suspension Disable Diode
 C330 (13-W)
 C331 (35-B)



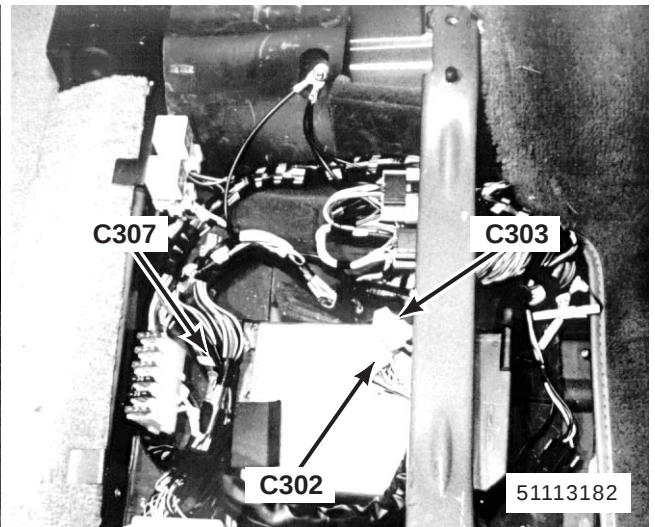
179. beneath RH front seat
 C311 (14-W)
 C366 (1-W)
 C367 (1-W)



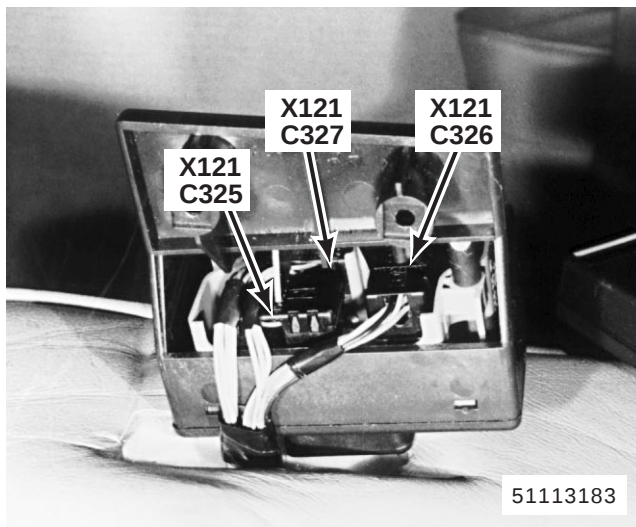
180. beneath RH front seat
 P108 Driver's Underseat Fuse Box
 Z222 Right Seat Power Relay Diode
 Z223 Left Seat Power Relay Diode
 E300



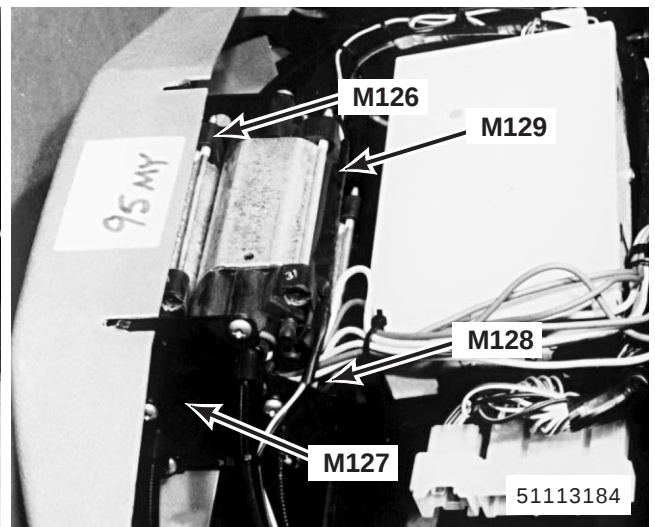
181. beneath RH front seat
K131 Right Seat Power Relay
K135 Right Seat Heat Relay
C357 (5-W)
C358 (5-Y)



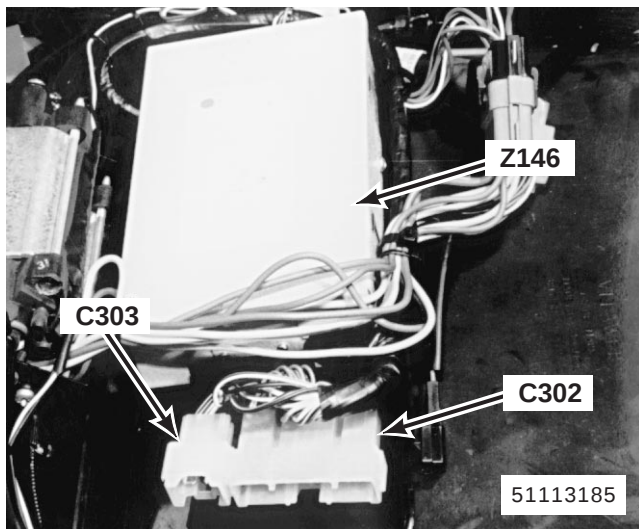
182. beneath RH front seat
C302 (24-W)
C303 (4-W)
C307 (2-W)



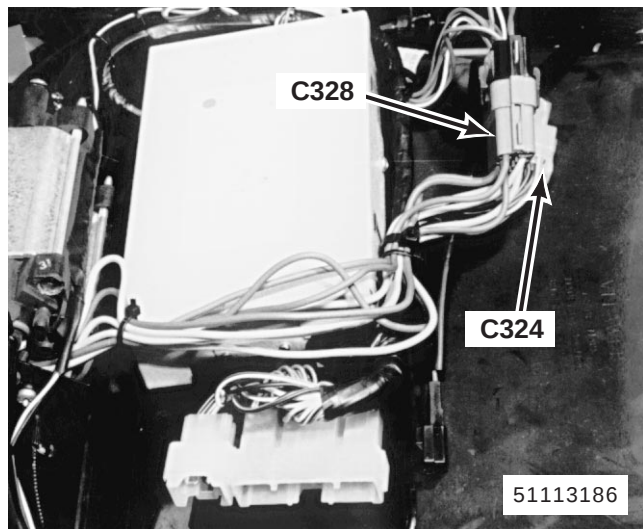
183. LH side of RH front seat
X121 Right Front Seat Control Switch
C325 (6-B)
C326 (6-B)
C327 (3-B)



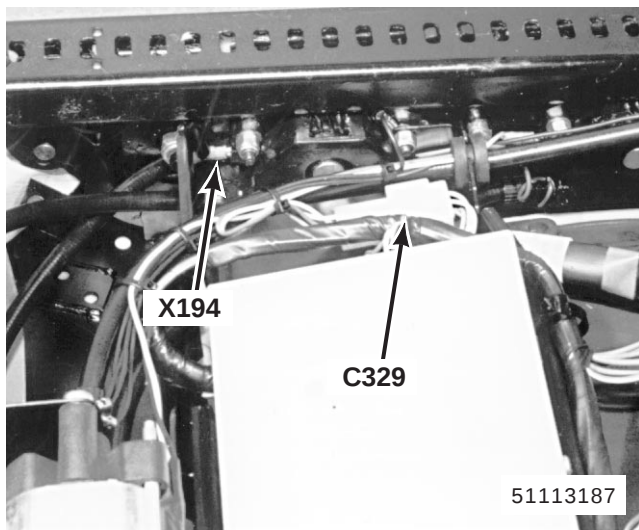
184. underside of RH front seat
M126 Seat Base Motor
M127 Seat Height (Front) Motor
M128 Seat Height (Rear) Motor
M129 Seat Recline Motor



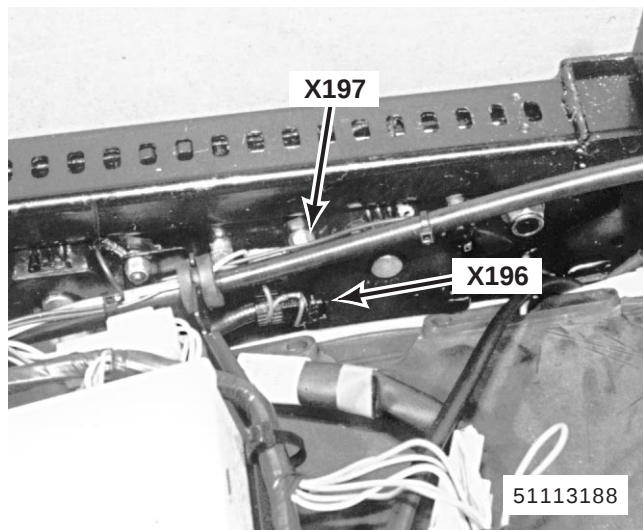
185. underside of RH front seat
 Z146 Memory Seat ECU
 C302 (24-W)
 C303 (4-W)



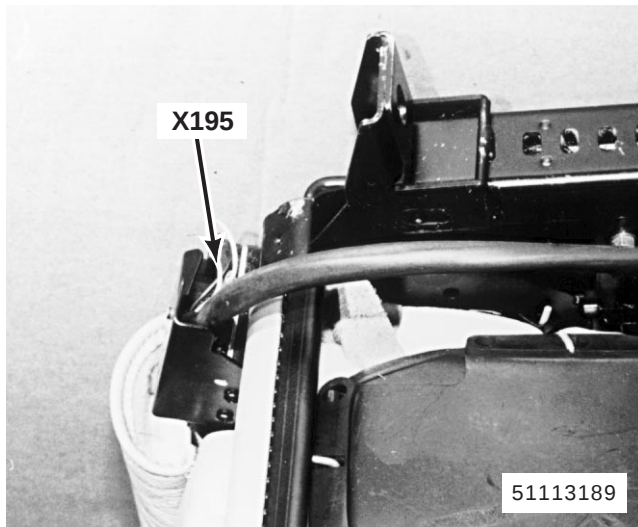
186. underside of RH front seat
 C324 (10-W)
 C328 (9-UB)



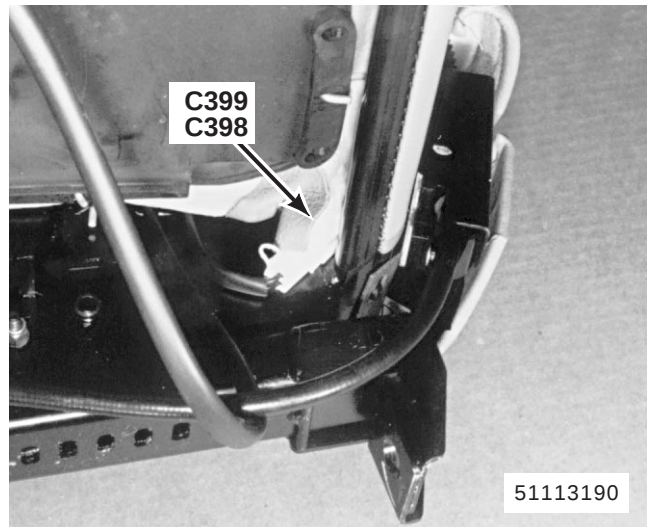
187. underside of RH front seat
 X194 Front Height Sensor
 C329 (6-W)



188. underside of RH front seat
 X196 Fore-Aft Sensor
 X197 Recline Sensor



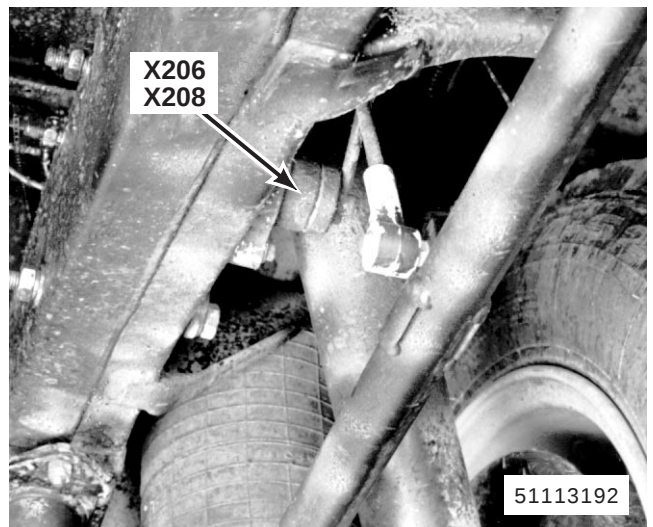
189. underside of RH front seat
X195 Rear Height Sensor



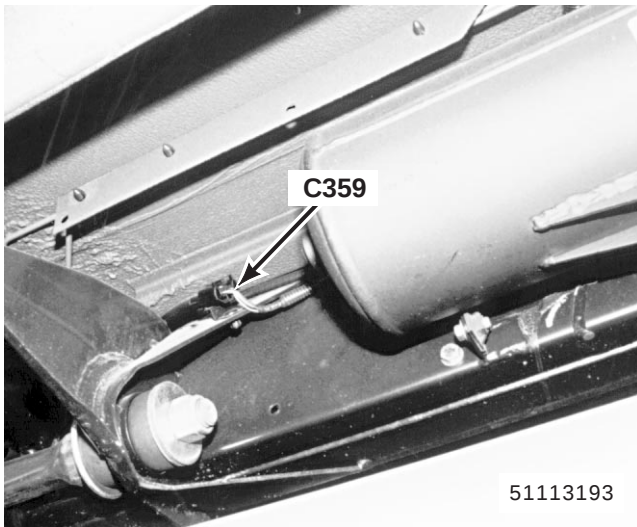
190. underside of LH front seat (RH similar)
C398 (2-W) (Left)
C399 (2-W) (Right)



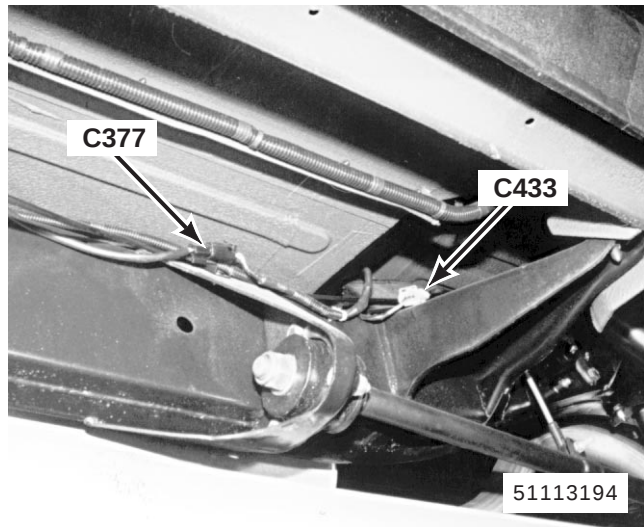
191. beneath LH side of vehicle
X204 Reservoir Pressure Switch



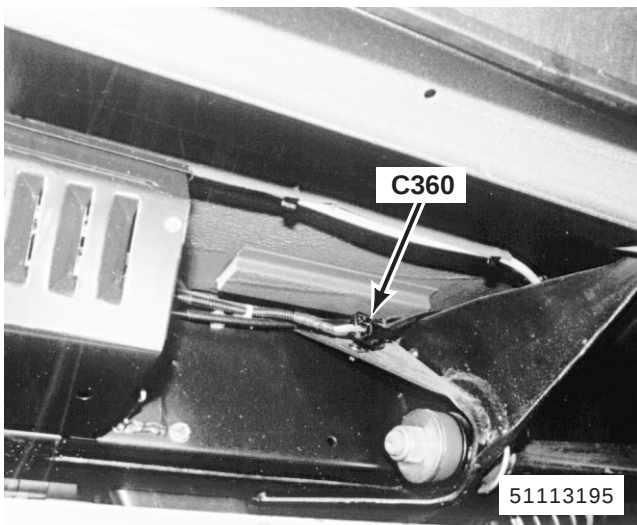
192. behind LH rear wheel (RH similar)
X206 Left Rear Height Sensor
X208 Right Rear Height Sensor



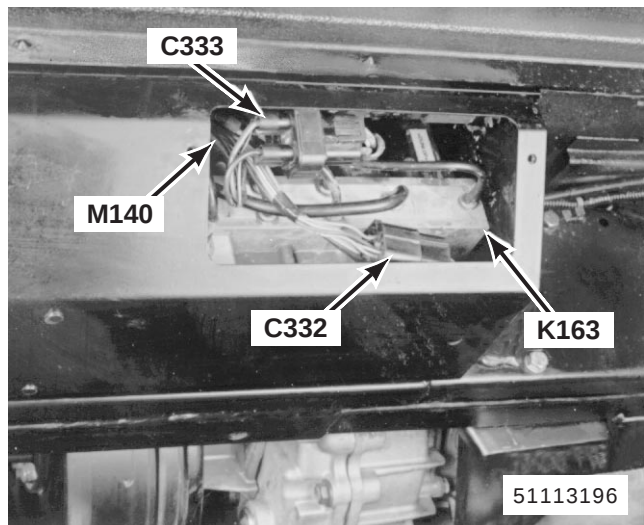
193. beneath LH side of vehicle behind LH front wheel
C359 (3-B)



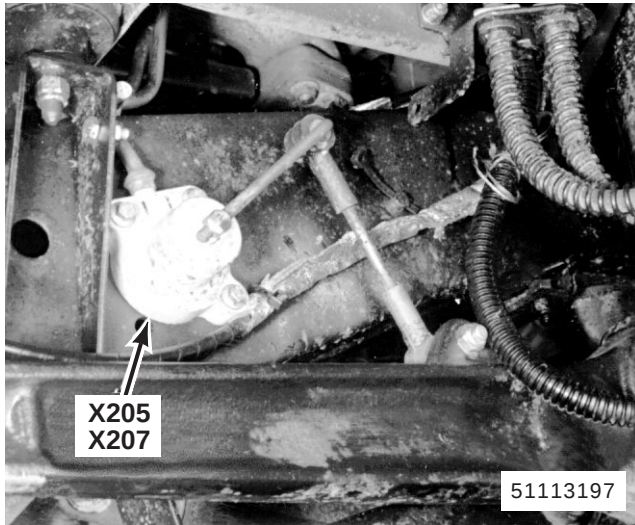
194. beneath LH side of vehicle forward of LH rear wheel
C377 (2-B)
C433 (3-W)



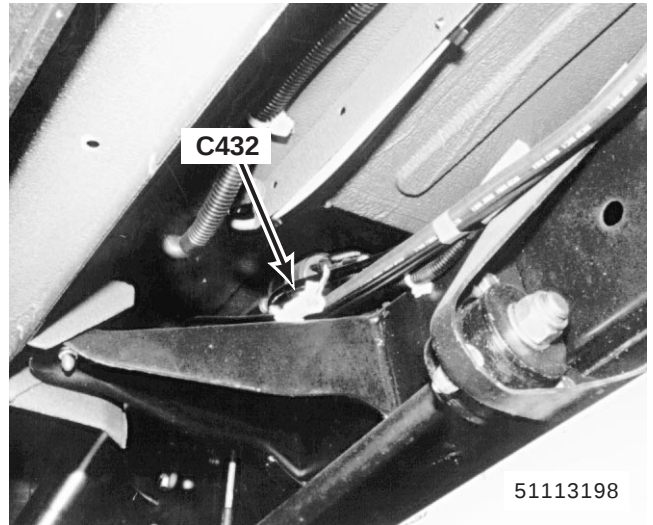
195. beneath RH side of vehicle behind RH front wheel
C360 (3-B)



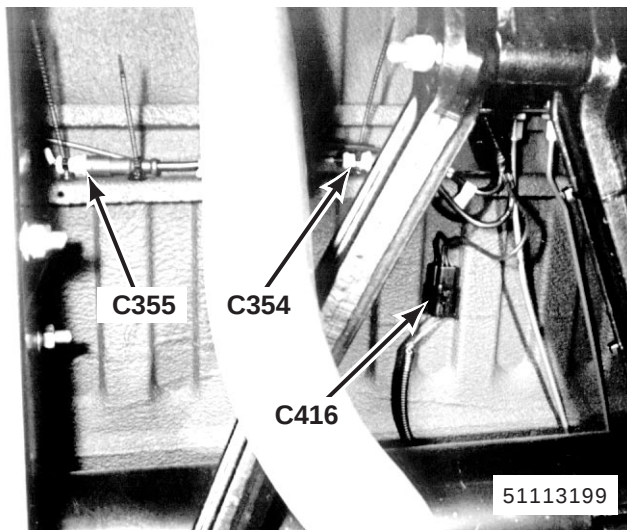
196. beneath RH side of vehicle
K163 Air Valve Block
M140 Air Suspension Compressor
C332 (13-B)
C333 (4-B)



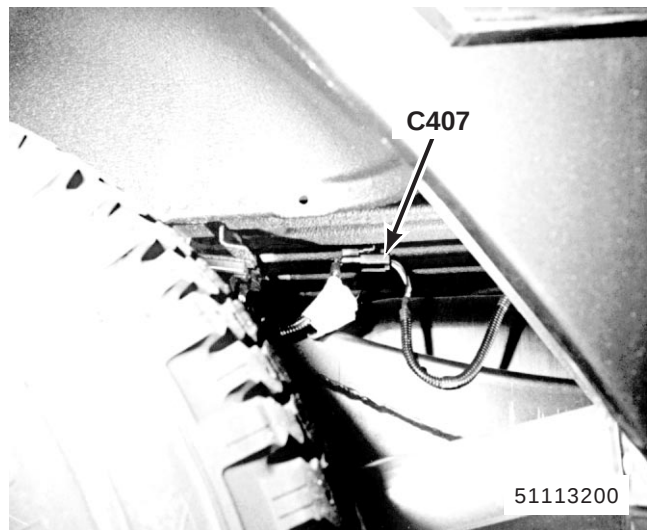
197. behind RH front wheel (LH similar)
X205 Left Front Height Sensor
X207 Right Front Height Sensor



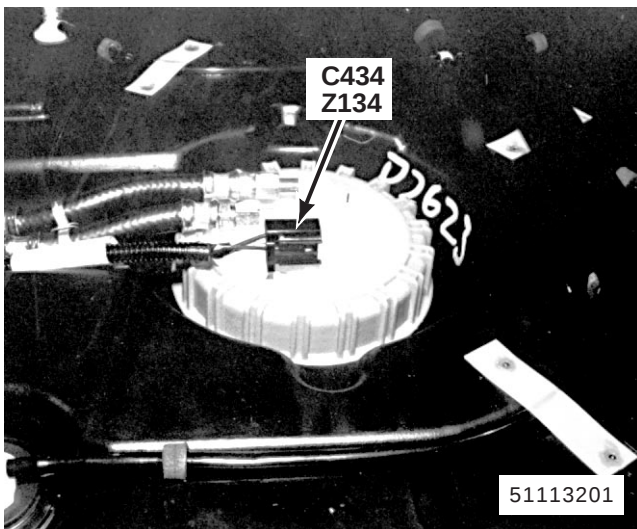
198. beneath RH side of vehicle forward of RH rear wheel
C432 (3-W)



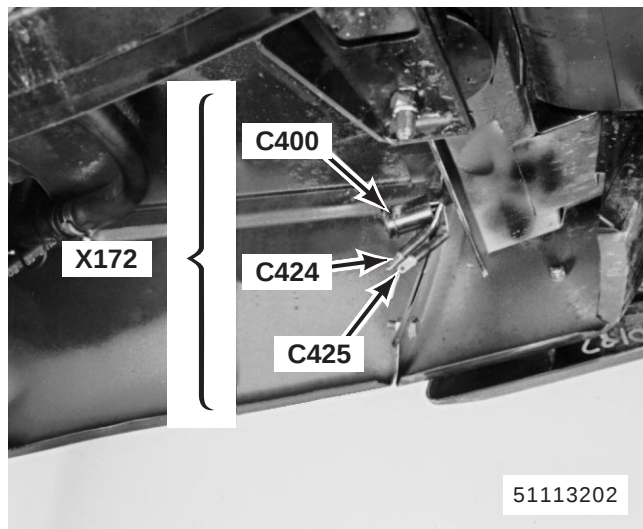
199. beneath centre rear of vehicle
C354 (2-W)
C355 (2-W)
C416 (3-B)



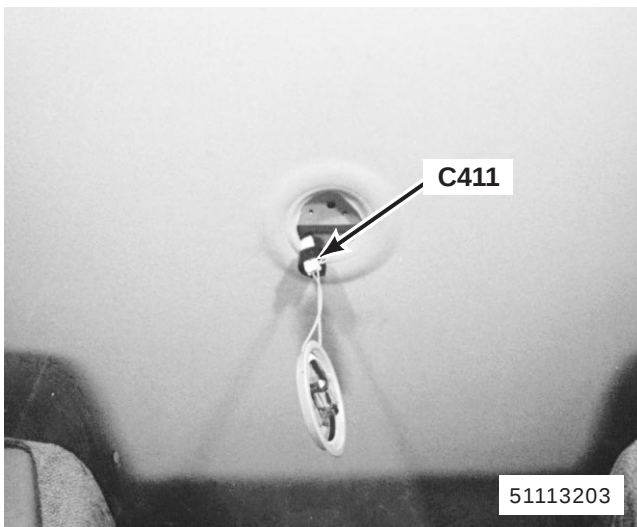
200. beneath LH rear of vehicle near fuel tank
C407 (3-B)



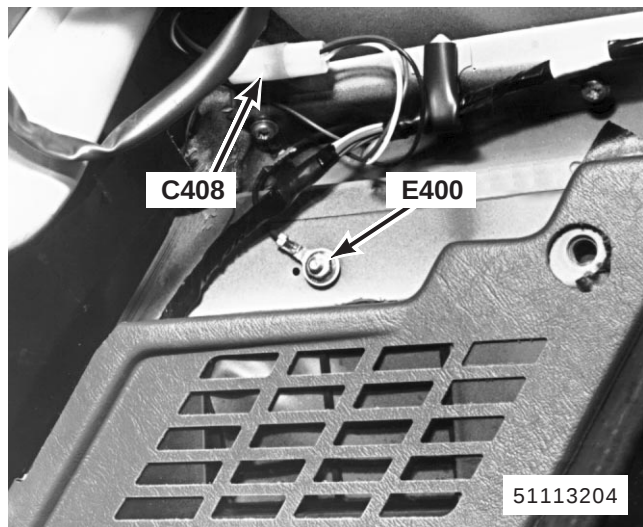
201. top of fuel tank
Z134 Fuel Pump Module
C434 (4-B)



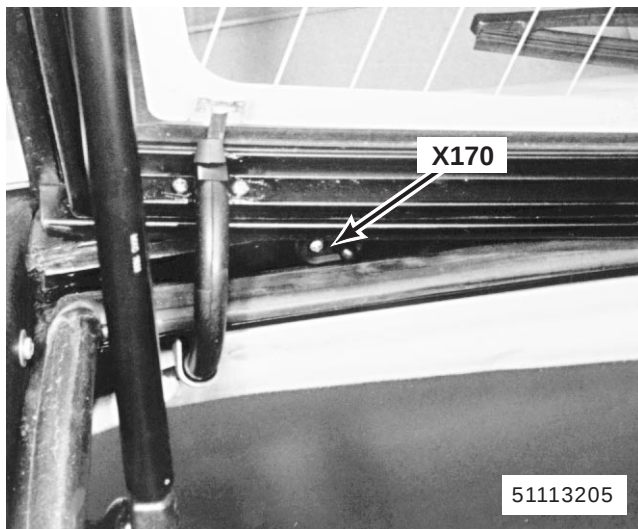
202. behind RH side of rear bumper
X172 Trailer Auxiliary Socket
C400 (7-B)
C424 (1-B)
C425 (1-B)



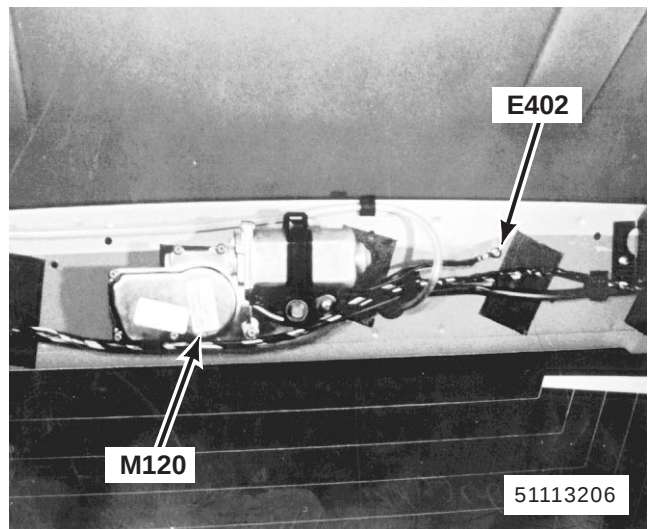
203. centre of roof
C411 (2-W)



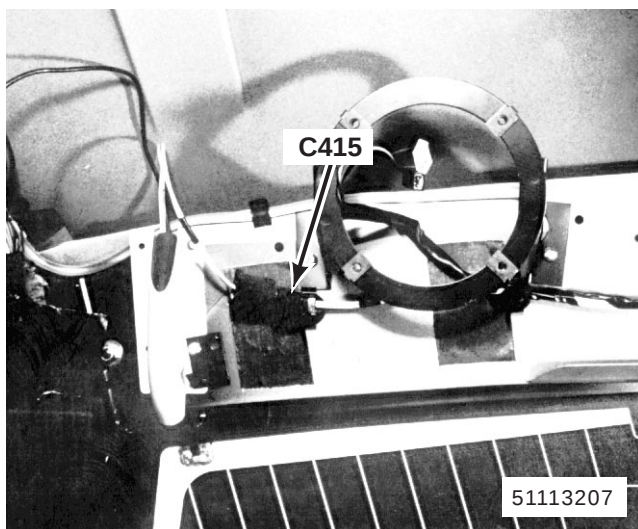
204. LH rear corner of roof
C408 (4-W)
E400



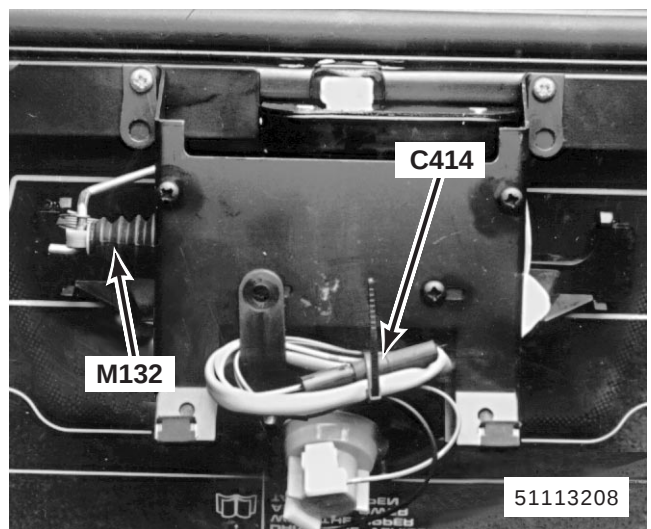
205. top LH side of rear screen opening
X170 Tailgate Switch



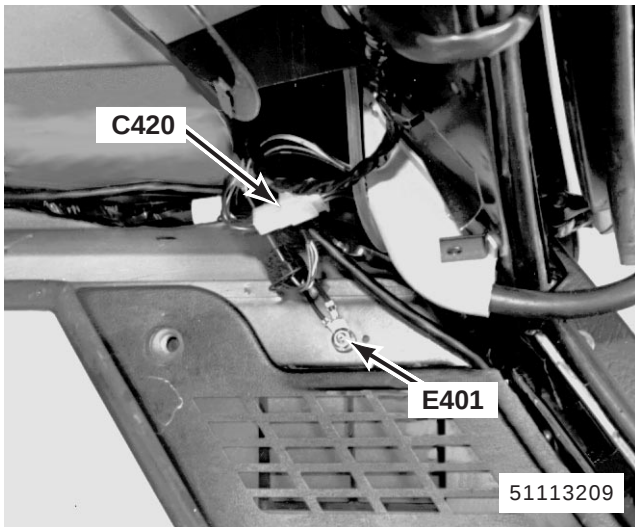
206. centre rear of roof
M120 Rear Wiper Motor
E402



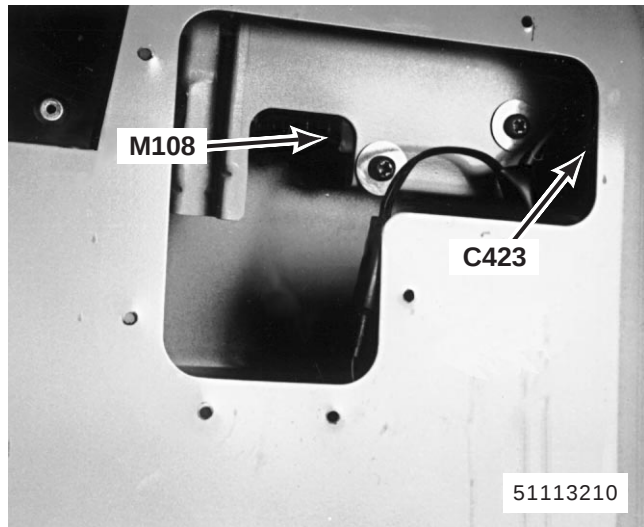
207. RH rear of roof
C415 (4-B)



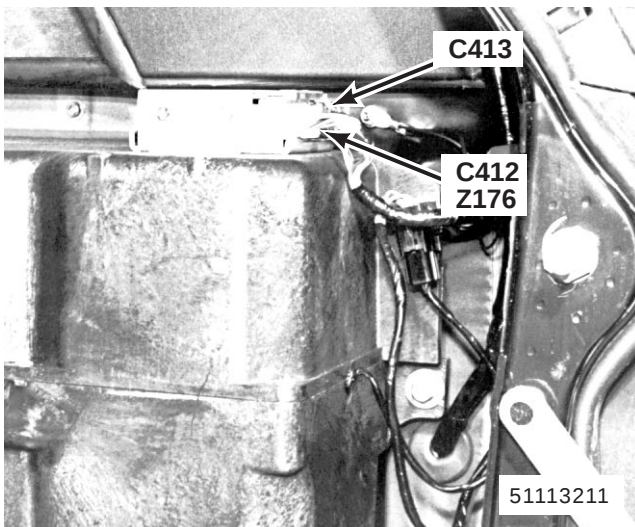
208. lower centre of rear screen (cover removed)
M132 Tailgate Lock Actuator
C414 (2-W)



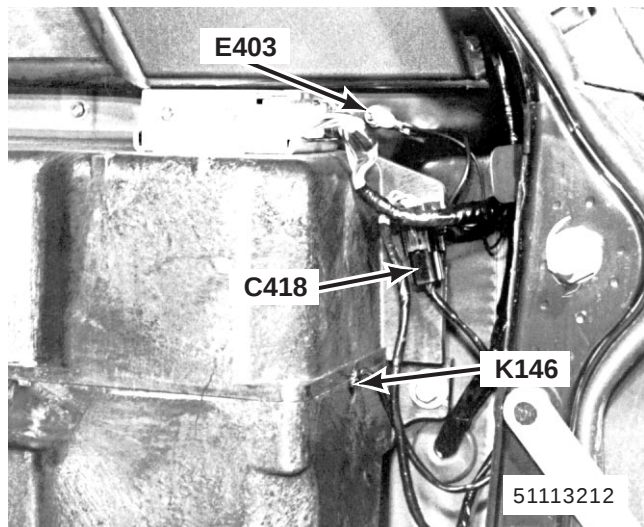
209. RH rear corner of roof
C420 (8-W)
E401



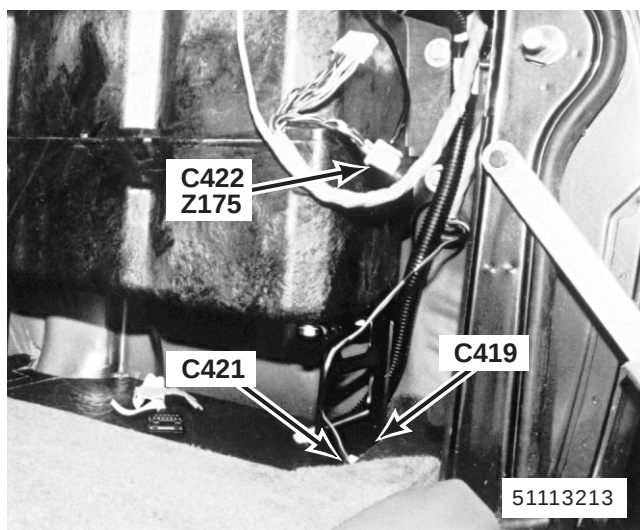
210. RH rear of luggage compartment
M108 Fuel Flap Actuator
C423 (2-N)



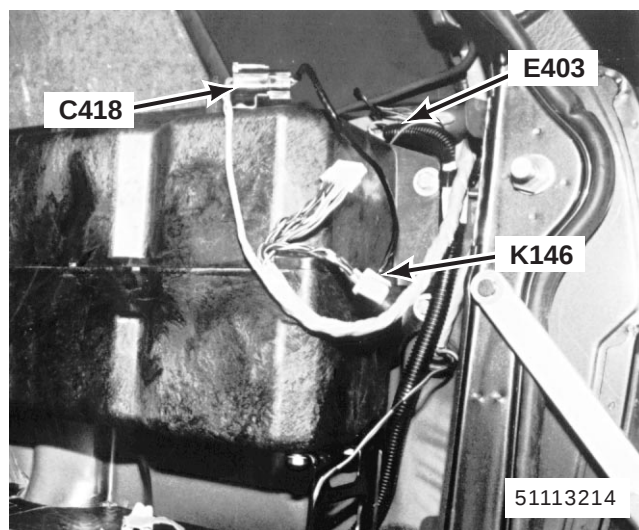
211. RH rear of luggage compartment Except Japan
Z176 Subwoofer Amplifier
C412 (8-W)
C413 (8-B)



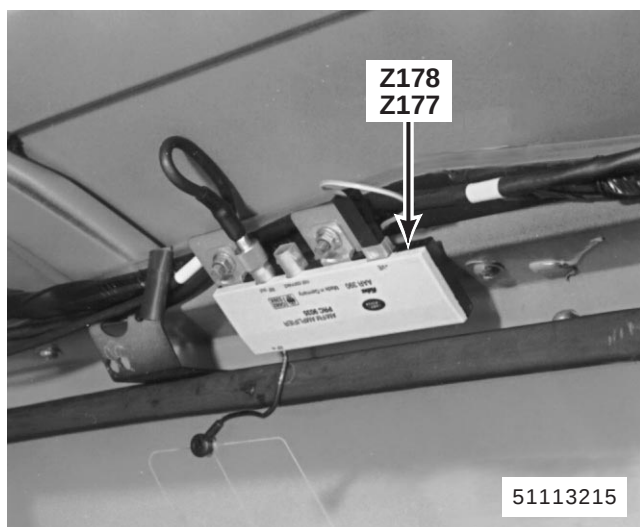
212. RH rear of luggage compartment Except Japan
K146 Subwoofer
C418 (4-B)
E403



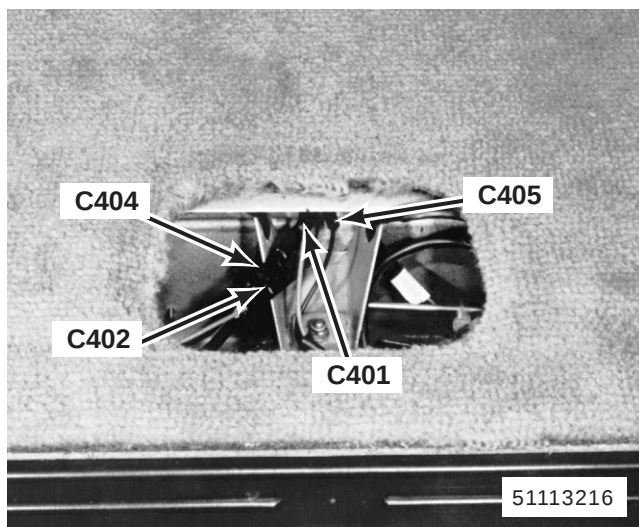
213. RH rear of luggage compartment Japan
Z175 Radio Amplifier
C419 (1-B)
C421 (3-W)
C422 (18-W)



214. RH rear of luggage compartment Japan
K146 Subwoofer
C418 (4-B)
E403



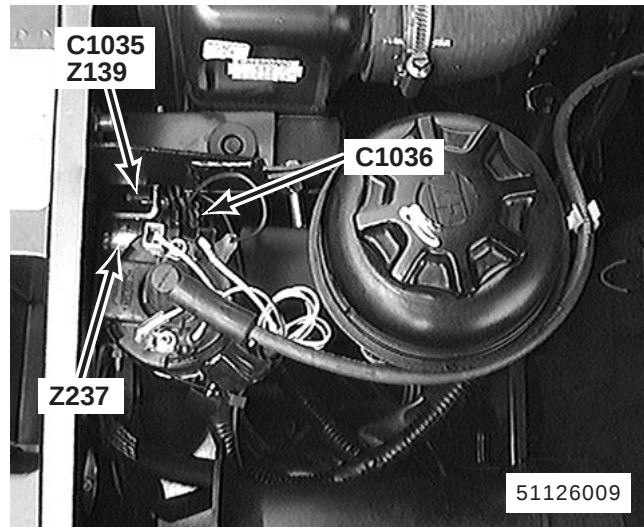
215. RH rear of roof (LH similar)
Z177 Left Antenna Amplifier
Z178 Right Antenna Amplifier



216. centre of tailgate
C401 (1-B)
C402 (1-B)
C404 (1-B)
C405 (1-B)



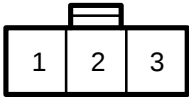
217. LH side of rear bumper (RH similar)
C403 (6-B) (Left)
C406 (6-B) (Right)



218. LH front of engine compartment (MFI-V8)
Z139 Ignition Control Module
Z237 Ignition Coil Noise Suppressor
C1035 (3-B)
C1036 (3-B)

R030016

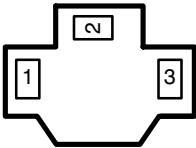
C100



1	OK
2	PW
3	NLG

R030005

C103

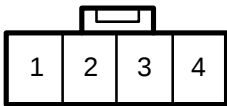


1	UO
2	UB
3	B

LC00100A

R040005

C101

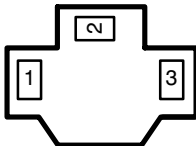


1	OS	3	-
2	NG	4	PN

LC00103A

R030005

C104

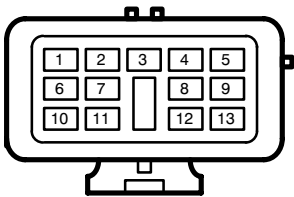


1	US
2	UK
3	B

LC00101A

R130001

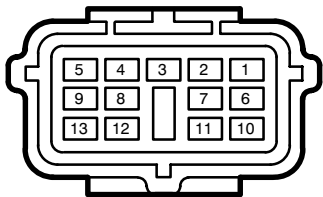
C105



1	BU	6	SB	11	BY/BO
2	BR	7	BK	12	RY
3	GN	8	BLG	13	-
4	GY	9	YB		
5	B	10	BY		

LC00104A

R130002



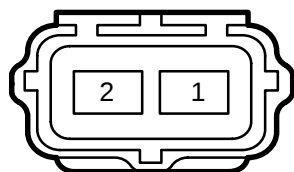
1	-	6	SB	11	BO
2	BR	7	BK	12	RY
3	GN	8	BLG	13	-
4	GY	9	OB/BY		
5	B	10	BY		

LC00105B

LC00105B

C106

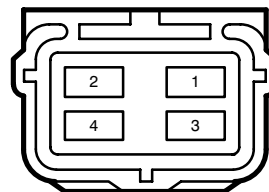
R020037



1	UP
2	B

C110

R040001

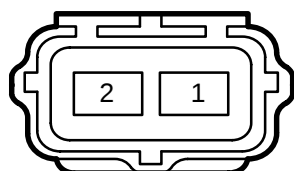


1	RO	3	B
2	GW	4	—

C107

LC00106B

R020037

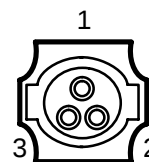


1	UP
2	B

C112

LC00110B

R030025

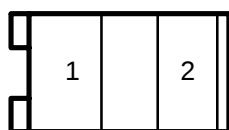


1	WO
2	CORE
3	B

C109

LC00107B

R020002

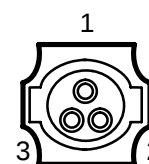


1	RB
2	B

C113

LC00112B

R030025



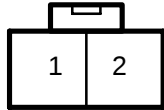
1	WO
2	CORE
3	B

LC00109B

LC00113A

R020023

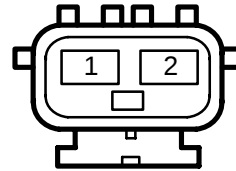
C114



1	NK
2	NW

R020044

C121

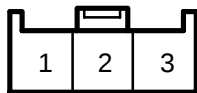


1	PK
2	B

LC00114A

R030019

C115

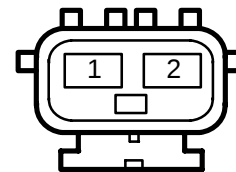


1	NP
2	NY
3	NS

LC00121B

R020044

C122

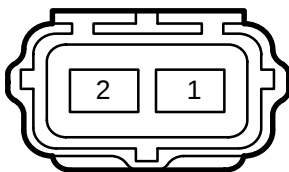


1	PS
2	B

LC00115B

R020037

C120



1	B
2	LGS

LC00122B

R020011

C125



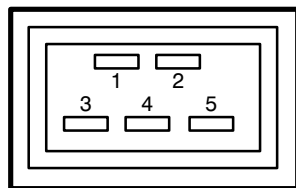
1	NR
2	B

LC00120A

LC00125B

C126

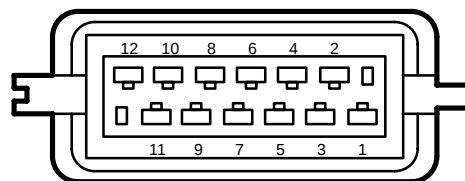
R050004



1	-	4	BY
2	WO	5	B
3	WB		

C129

R120002

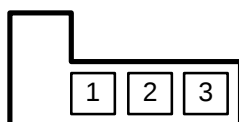


1	SY	5	SB	9	SU
2	-	6	SP	10	SK
3	SW	7	SO	11	SR
4	SG	8	SN	12	-

C127

LC00126B

R030012

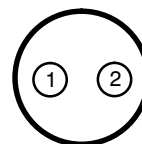


1	B
2	K
3	BG

C130

LC00129B

R020007

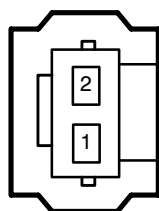


1	G
2	G

C128

LC00127B

R020038

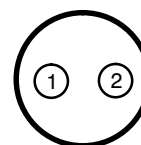


1	RY
2	RW

C131

LC00130A

R020007



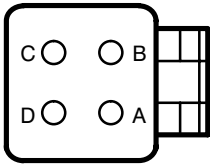
1	G
2	G

LC00128B

LC00131A

R040019

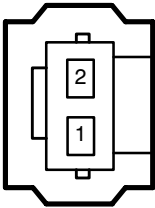
C132



A	O	C	GW
B	US	D	RG

R020038

C135

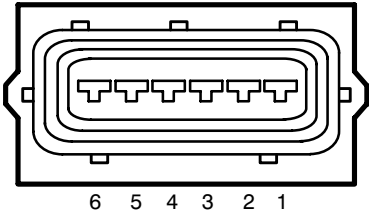


1	NO
2	YW

LC00132B

R060004

C133

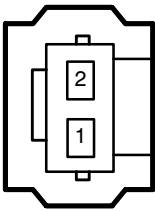


1	-	4	-
2	RB	5	NO
3	UG	6	UR

LC00135B

R020038

C136

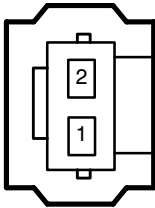


1	NO
2	YU

LC00133B

R020038

C134

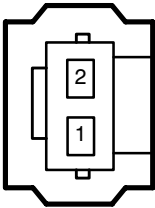


1	NO
2	YU

LC00136B

R020038

C137



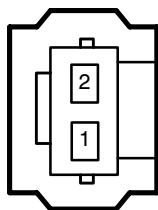
1	YW
2	NO

LC00134B

LC00137B

C138

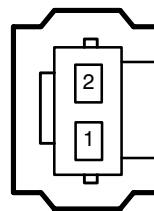
R020038



1	YU
2	NO

C141

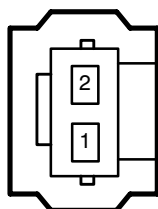
R020038



1	YW
2	NO

C139

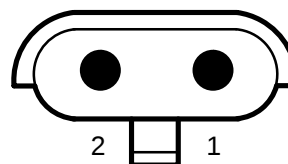
LC00138B
R020038



1	YW
2	NO

C144

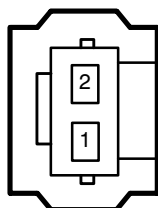
LC00141A
R020009



1	WP
2	SY

C140

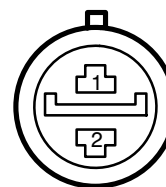
LC00139B
R020038



1	YU
2	NO

C145

LC00144B
R020011



1	BG
2	B

LC00140A

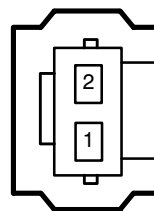
LC00145A

R020020

C146

1	BP
2	B

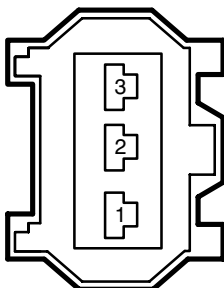
R020038

C150

1	RB
2	SW

LC00146A

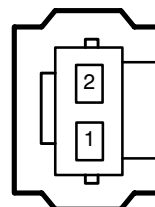
R030002

C148

1	U
2	-
3	R

LC00150B

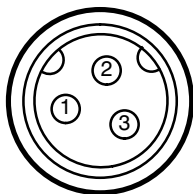
R020038

C152

1	RB/GU
2	GU/KB

LC00148A

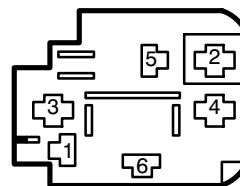
R030022

C149

1	RB
2	R
3	Y

LC00152B

R060018

C159

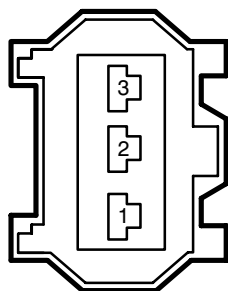
1	WR	4	B
2	BY	5	NO
3	WG	6	YB

LC00149B

LC00159A

R030002

C160

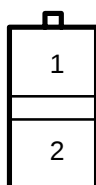


1	KB
2	R
3	RB

LC00160B

R020020

C162

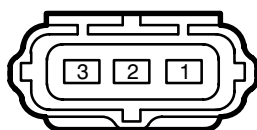


1	YB
2	G

LC00162B

R030002

C164

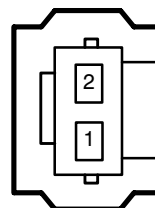


1	RB
2	KB
3	RU

LC00164B

R020038

C165

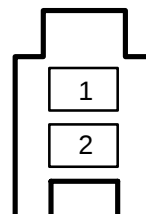


1	WG
2	BO

LC00165A

R020019

C166

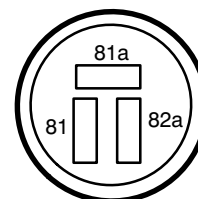


1	B
2	BLG

LC00166B

R030023

C167

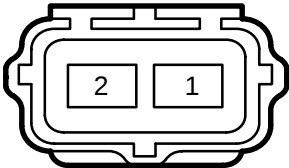


81	BY
81A	BR
82A	WU

LC00167A

R020037

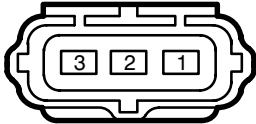
C168



1	B
2	PG

R030003

C171

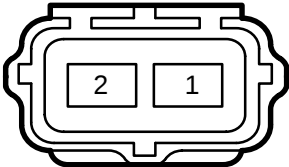


1	WP
2	-
3	WP

LC00168A

R020037

C169

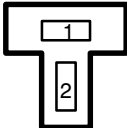


1	B
2	PG

LC00171A

R020015

C173

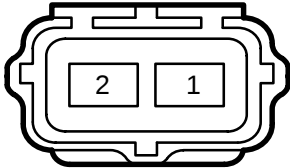


1	LGR
2	B

LC00169A

R020037

C170



1	B
2	LGB

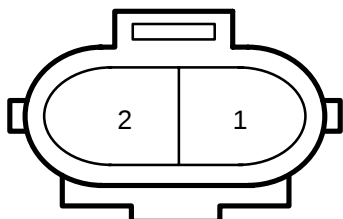
LC00173A

LC00170A

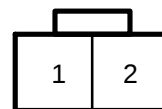
R020043

C174

R020027



1	B
2	G



1	LGW
2	RS

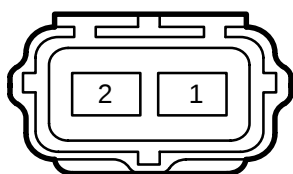
LC00174B

R020037

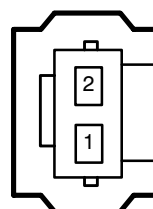
C177

LC00174B

R020038



1	NY
2	NO



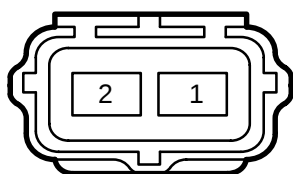
1	YR
2	B

LC00177E

R020037

C178

LC00179B



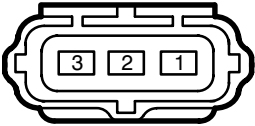
1	B
2	PO

LC00178A

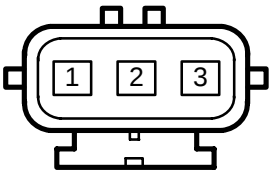
R030003

R030001

C180



1	B
2	BK
3	BW

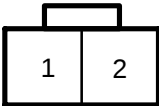


1	—
2	BW
3	BW

LC00180B

R020027

C181

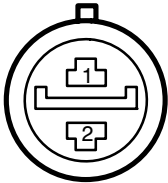


1	YB
2	NO

LC00180B

R020011

C183

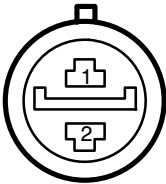


1	BN
2	B

LC00181B

R020011

C182

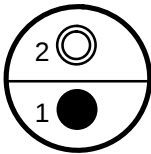


1	BN
2	B

LC00183A

R020006

C184



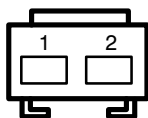
1	RS
2	B

LC00182A

LC00184B

C187

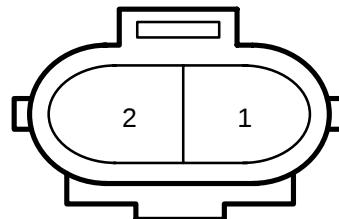
R020035



1	OS
2	N

C189

R020043

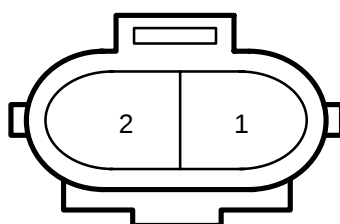


1	B
2	G

LC00189B

R020043

C188

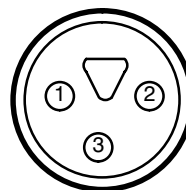


1	B
2	G

LC00188B

C1019

R030030

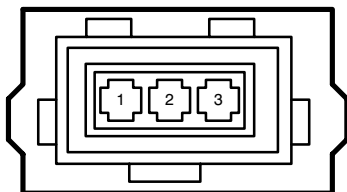


1	-
2	BW
3	BW

LC010019B

C1035

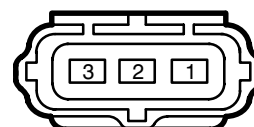
R030041



1	WB
2	-
3	W

C1036

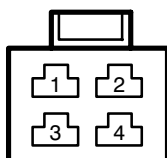
R030003



1	U
2	B
3	R

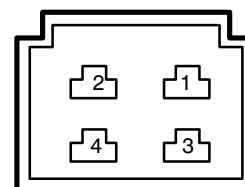
C200

R040018



1	NY	3	R
2	U	4	-

LC00200B

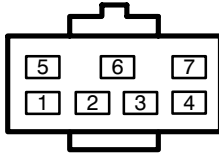


1	NP	3	R
2	U	4	-

R040015

LC00200B

R070011

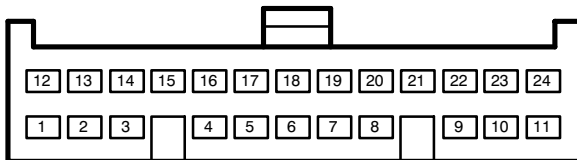
C201

1	R	5	UW
2	NG	6	NP
3	UR	7	PO
4	U		

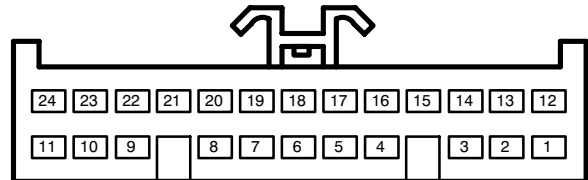
LC00201A

R240004

R240001

C202

1	B	7	WLG	13	GR	19	PN
2	UR	8	LGP	14	WP	20	PU
3	GS	9	LGN	15	GW	21	PO
4	LGG	10	ULG	16	WY	22	NG
5	-	11	LGB	17	RW	23	BR
6	UW	12	RLG	18	UW	24	P



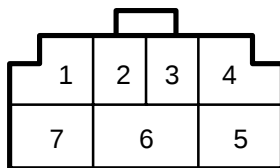
1	B	7	WLG	13	GR	19	PN
2	UR	8	LGP	14	WP	20	PW
3	GS	9	LGN	15	GW	21	PO
4	LGG	10	ULG	16	WY	22	NG
5	-	11	LGB	17	RW	23	BR
6	UW	12	RLG	18	UW	24	P

LC00202E

R070005

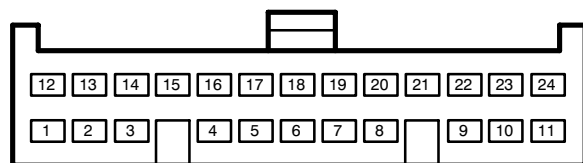
LC00202E

R240004

C203

1	UR	5	LGW
2	U	6	W
3	R	7	NP
4	W		

LC00203A

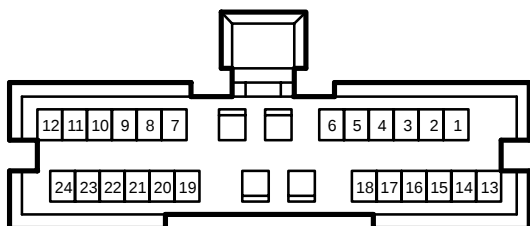
C204

1	LGP	7	GY	13	WY	19	GR
2	LGN	8	RB	14	GW	20	WR
3	WN	9	GLG	15	-	21	GO
4	P	10	GS	16	GR	22	UO
5	LGP	11	US	17	-	23	RD
6	-	12	UB	18	-	24	UK

LC00204B

R240003

C205

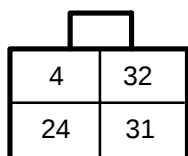


1	PU	7	—	13	LGB	19	BP
2	G	8	WLG	14	—	20	PB
3	—	9	LGG	15	OU	21	WP
4	PU	10	BK	16	LGS	22	NS
5	PW	11	BS	17	UB	23	NO
6	—	12	—	18	PG	24	PY

LC00205E

R040014

C206

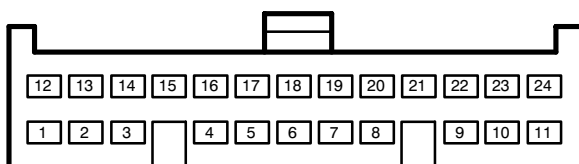


4	R	31	B
24	UW	32	OS

LC00206A

R240004

C209

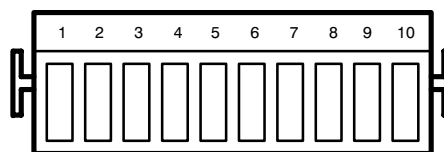


1	BK	7	SG	13	RB	19	BU
2	BR	8	LGO	14	B/SN	20	BK
3	BW	9	US	15	RW	21	BN
4	BN	10	G	16	BR	22	BP
5	UP	11	YK	17	PO	23	WY
6	GLG	12	RN	18	SW	24	PU

LC00209B

R100007

C207

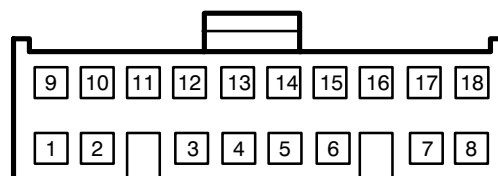


1	LG	4	G	6	LGU	8	B
2	SG	5	WS	7	LG	9	LGG
3	UO					10	BLG

LC00207B

R180001

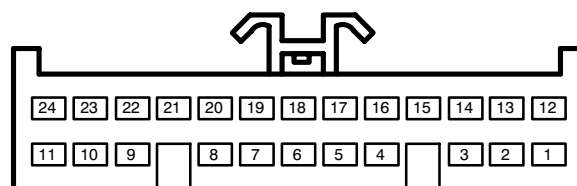
C208



1	G	6	GLG	11	—	16	—
2	—	7	GR	12	UO	17	B
3	PY	8	GW	13	UR	18	BO
4	RO	9	W	14	WN		
5	LG	10	—	15	—		

LC00208B

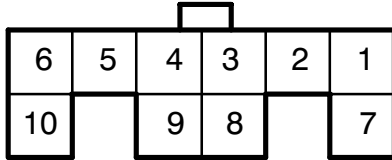
R240001



1	BK	7	SG	13	RB	19	BU
2	BR	8	LGO	14	SN	20	BK
3	BW	9	US	15	RW	21	BN
4	BN	10	G	16	BR	22	BP
5	UP	11	YK	17	PO	23	WY
6	SU	12	RN	18	SW	24	PU

LC00209B

R100010

C211

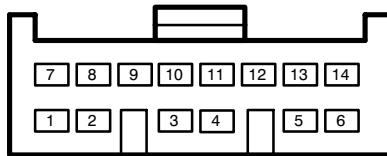
1	—	4	GR	6	GW	8	—
2	—	5	PY	7	RO	9	NP
3	—					10	—

LC00211E

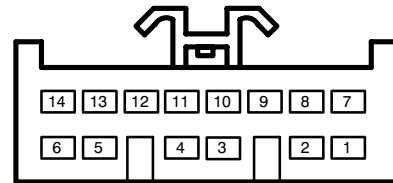
R140006

C212

R140001



1	LGO	6	PN	11	O
2	PB	7	NG	12	GP
3	RY	8	NO	13	PU
4	GB	9	RB	14	GR
5	GN	10	K		



1	LGO	6	PN	11	O
2	PB	7	NG	12	GP
3	RY	8	NR	13	PU
4	GB	9	RB	14	GR
5	GN	10	K		

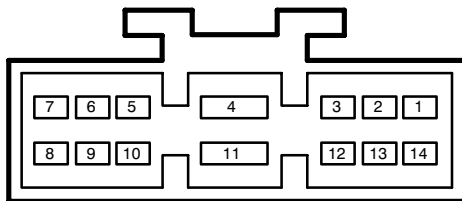
LC00212B

R140003

C213

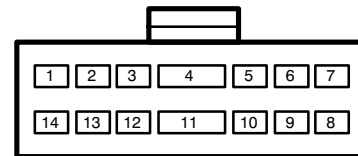
LC00212B

R140005



1	GW	6	RY	11	PN
2	RB	7	GN	12	LGO
3	RO	8	GR	13	—
4	—	9	GR	14	—
5	YP	10	PY		

LC00213B

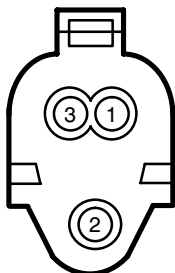


1	GW	6	RY	11	P
2	RB	7	GN	12	LGO
3	RO	8	GR	13	—
4	—	9	GP	14	—
5	YP	10	PY		

LC00213B

R030026

C214



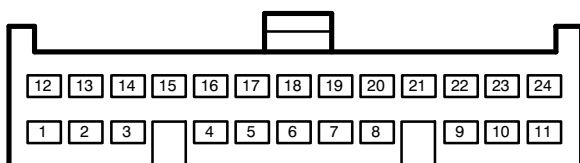
1	RN
2	RO
3	B

LC00214A

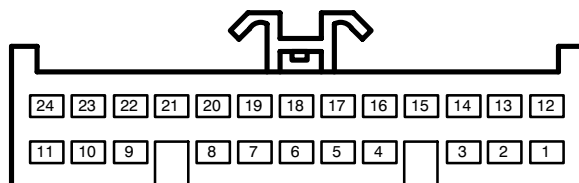
R240004

C215

R240001



1	OU	7	LGN	13	WS	19	UY
2	GU	8	—	14	G	20	PS
3	BY	9	PN	15	YO	21	WR
4	LGS	10	BP	16	LGP	22	RY
5	YR	11	NY	17	GB	23	NP
6	BLG	12	PG	18	UK	24	K



1	OU	7	LGN	13	WS	19	—
2	GU	8	—	14	G	20	PS
3	BY	9	PN	15	YO	21	WR
4	LGS	10	BP	16	LGP	22	RY
5	YP	11	NY	17	GB	23	NP
6	BLG	12	PN	18	—	24	K

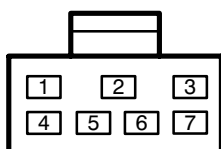
LC00215E

R070010

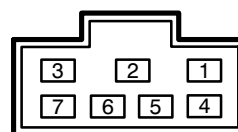
LC00215E

R070004

C216



1	NLG	5	BN
2	WP	6	—
3	PW	7	WG
4	NR		



1	NLG	5	BR
2	WP	6	BG
3	PW	7	WG
4	NR		

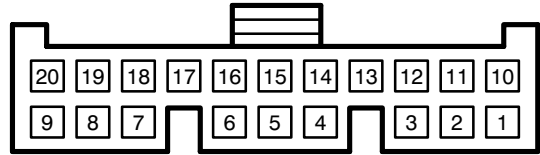
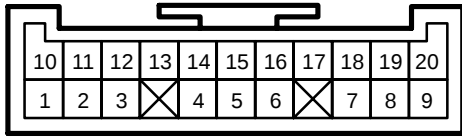
LC00216B

LC00216B

R200002

R200006

C217



1	GU	6	NO	11	YB	16	NG
2	WS	7	K	12	BY	17	NY
3	WN	8	PY	13	NK	18	WG
4	BP	9	YK	14	—	19	PB
5	WU	10	OB	15	RS	20	GW

1	GU	6	—	11	YB	16	NG
2	WS	7	—	12	PO	17	NY
3	WN	8	PK	13	—	18	WG
4	BP	9	YK	14	—	19	PB
5	WU	10	OB	15	BY	20	GW

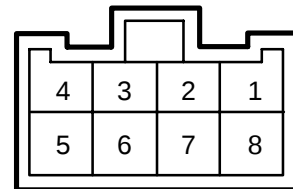
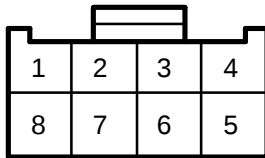
LC00217E

LC00217E

R080012

R080011

C218



1	WU	5	—
2	BY	6	B
3	PW	7	P
4	WY	8	PY

1	—	5	—
2	BY	6	—
3	—	7	—
4	WY	8	PY

LC00218B

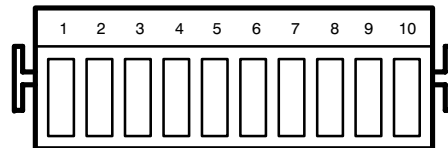
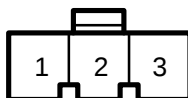
LC00218B

R030017

R100007

C220

C221



1	NW
2	LG
3	—

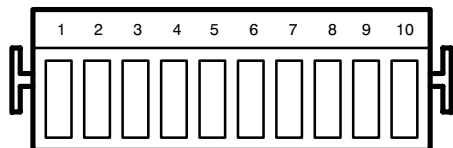
1	B	4	YK	6	—	8	LG
2	BR	5	NY	7	PO	9	WR
3	GB					10	RB

LC00220A

LC00221B

R100007

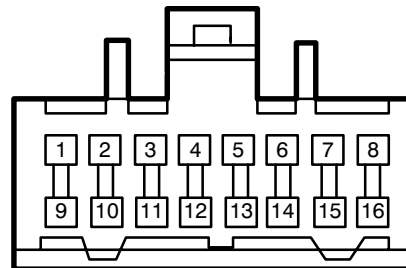
C222



1	BY	4	—	6	Y	8	GU
2	LG	5	WN	7	RN	9	RN
3	K					10	B

R160002

C225

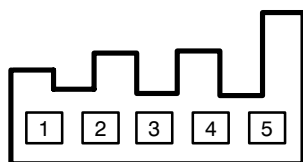


1	PO	5	—	9	—	13	—
2	OY	6	YO	10	GK	14	RW
3	YB	7	BY	11	BK	15	BN
4	—	8	WB	12	PU	16	PB

LC00222B

R050005

C223



1	G	4	—
2	—	5	S
3	P		

LC00225B

R030019

C226

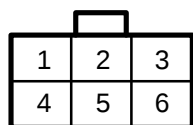


1	—
2	WY
3	LGW

LC00223A

R060008

C224

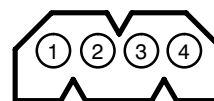


1	B	4	GS
2	NLG	5	RLG
3	ULG	6	—

LC00226A

R040007

C227



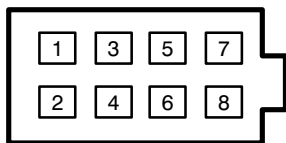
1	GP	3	LGK
2	GO	4	WS

LC00224A

LC00227B

R080015

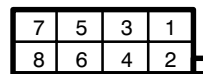
C228



1	BK	5	BP
2	BN	6	SU
3	SW	7	BU
4	SN	8	-

R080017

C230

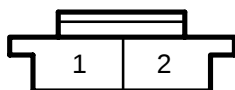


1	-	5	PY
2	-	6	RN
3	-	7	LGO
4	PN	8	B

LC00228B

R020029

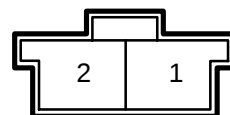
C231



1	RB
2	KB

LC00230B

R020013

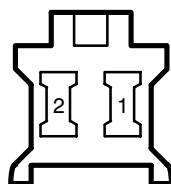


1	RB
2	KB

LC00231B

R020040

C232



1	UB
2	RB

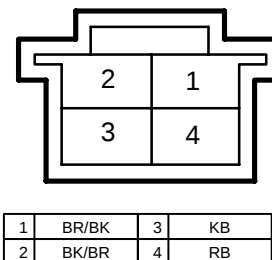
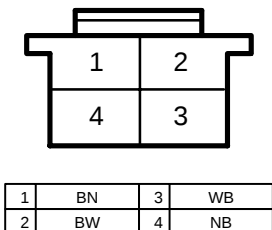
LC00231B

LC00232B

R040011

C233

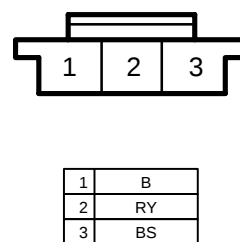
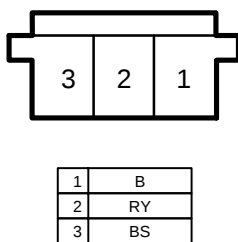
R040017



LC00233E
R030009

C234

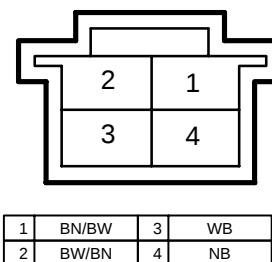
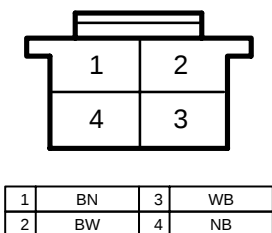
LC00233E
R030010



LC00234B
R040011

C235

LC00234B
R040017



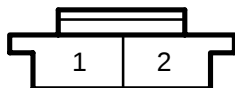
LC00235E

LC00235E

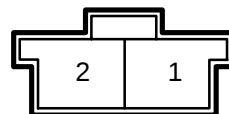
R020029

C236

R020013



1	NB
2	WB



1	NB
2	KB

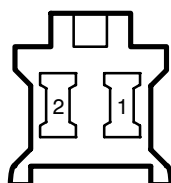
LC00236B

R020040

C237

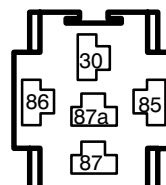
LC00236B

R050001



1	WB
2	NB

C239



30	NLG	87	NO
85	UR	87A	NO
86	NO		

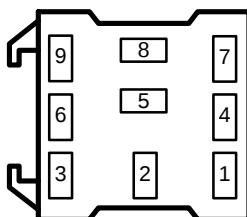
LC00237B

R090002

C238

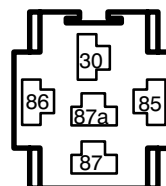
LC00239B

R050001



1	-	4	BR	7	-
2	NO	5	BG	8	GW
3	-	6	B	9	PB

C240



30	PW	87	WP
85	UP	87A	WO
86	WG		

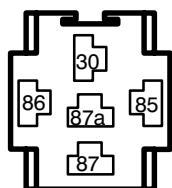
LC00238B

LC00240A

R050001

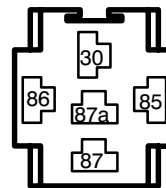
R050001

C241



30	NG	87	BG
85	BS/WG	87A	—
86	WG/G		

C242



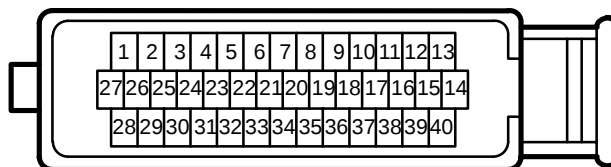
30	WG	87	GY
85	WG	87A	—
86	YB		

LC00241B

LC00242B

R400001

C243



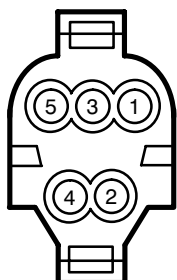
1	RG	7	GU	13	YU	19	WG	25	RB	31	BS	37	—
2	NO	8	PY	14	B	20	R	26	GW	32	SW	38	NK
3	Y	9	WLG	15	NO	21	GY	27	BS	33	BS	39	WU
4	B	10	RS	16	UP	22	UR	28	US	34	OB	40	B
5	SB	11	YW	17	SY	23	LORE	29	O	35	UG		
6	YK	12	WR	18	WK	24	LORE	30	K	36	BG		

LC00243B

R050012

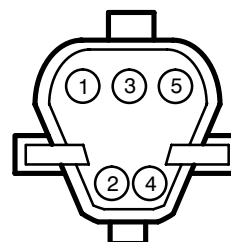
R050013

C244



1	BS	4	—
2	—	5	—
3	—		

C245



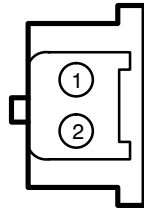
1	WK	4	WLG
2	—	5	BS
3	—		

LC00244A

LC00245B

R020033

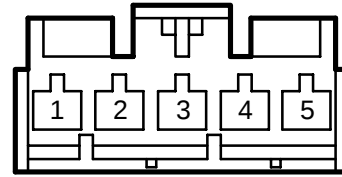
C246



1	BS
2	SB

R050002.03

C249

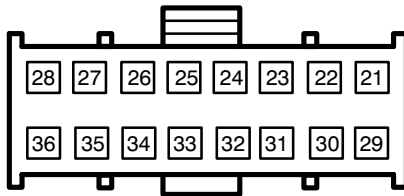


1	GLG	4	LGS
2	RN	5	B
3	—		

LC00246A

R160003

C247

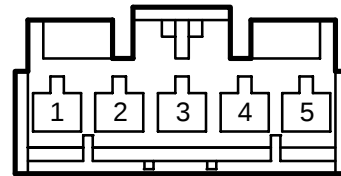


21	KB	25	R	29	B	33	WK
22	—	26	GU	30	—	34	RU
23	—	27	—	31	—	35	RB
24	BO	28	WG	32	WLG	36	WS

LC00249A

R050002.00

C250

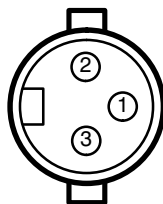


1	GLG	4	OU
2	RN	5	B
3	—		

LC00247A

R030024

C248

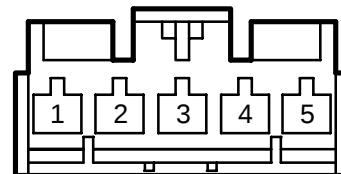


1	KB
2	WLG
3	WK

LC00250A

R050002.00

C251



1	YO	4	YR
2	RN	5	B
3	—		

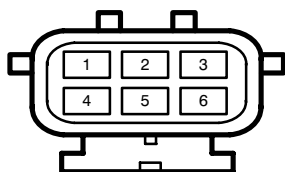
LC00248A

LC00251B

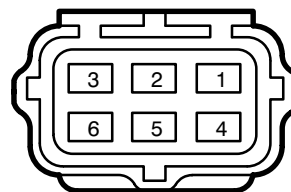
R060017

C252

R060016



1	P	4	B
2	LGP	5	G
3	S	6	G



1	P	4	B
2	LG	5	G
3	S	6	G

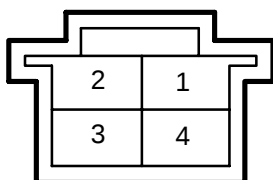
LC00252B

R040017

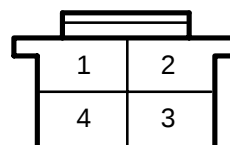
C253

LC00252B

R040011



1	BG	3	BO
2	BU	4	BY



1	BG	3	BO
2	BU	4	BY

LC00253B

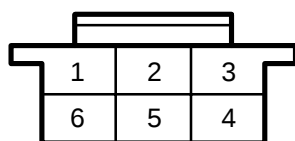
R060009

C256

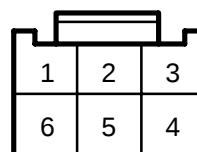
LC00253B

R060022

C257



1	RN	4	YU
2	B	5	YN
3	YR	6	LG



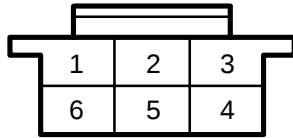
1	YS	4	—
2	YU	5	S
3	B	6	RN

LC00256B

LC00257B

C258

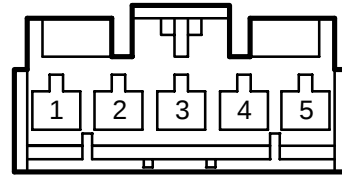
R060009



1	RN	4	YU
2	B	5	YO
3	YW	6	LG

C261

R050002.00

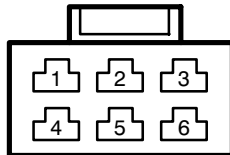


1	US	4	UP
2	RN	5	B
3	—		

C259

LC00258B

R060007

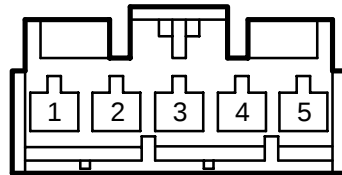


1	B	4	RN
2	UK	5	UY
3	—	6	—

C262

LC00261B

R050002.02

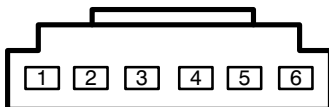


1	GLG	4	WY
2	RN	5	B
3	—		

C260

LC00259B

R060002

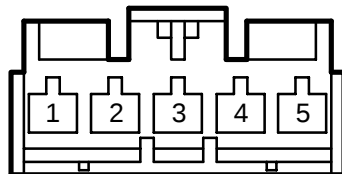


1	PN	4	—
2	B	5	RS
3	B	6	RY

C263

LC00262A

R050002.01



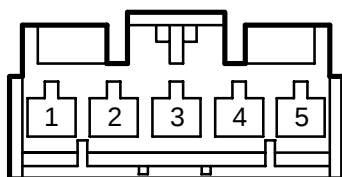
1	UR	4	RY
2	RN	5	B
3	—		

LC00260B

LC00263A

C264

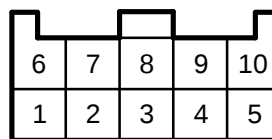
R050002.00



1	BO	4	B
2	RN	5	NR
3	—		

C267

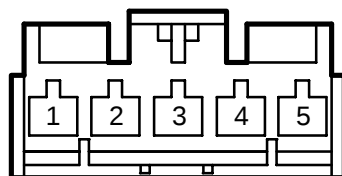
R100008



1	LGN	4	GW	6	W	8	LGP
2	GR	5	—	7	PG	9	RN
3	LGG					10	B

C265

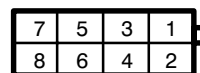
LC00264B
R050002.00



1	BO	4	B
2	RN	5	NR
3	—		

C268

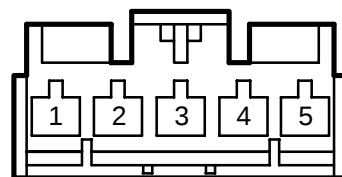
LC00267B
R080016



1	BG	5	BW
2	BU	6	BN
3	BR	7	BY
4	BR	8	BO

C266

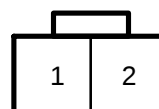
LC00265B
R050002.00



1	B	4	PU
2	RN	5	B
3	—		

C269

LC00268B
R020027



1	PN
2	RW

LC00266B

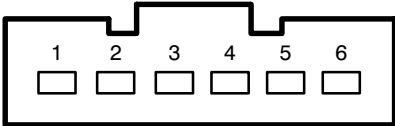
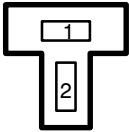
LC00269B

R020015

R060001

C270

C274



1	PN
2	B

1	BO	4	O
2	B	5	K
3	PO	6	P

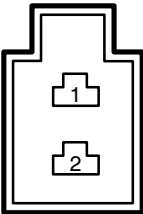
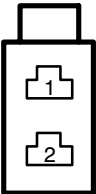
LC00270B

LC00274B

R020016

R020017

C277



1	WP
2	NP

1	WP
2	NP

LC00277B

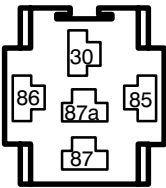
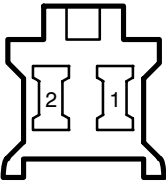
LC00277B

R020040

R050001

C278

C279



1	BN
2	BW

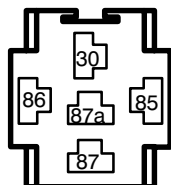
30	PU	86	PU
85	BK	87	GR
87A	GW		

LC00278B

LC00279A

R050001

C281

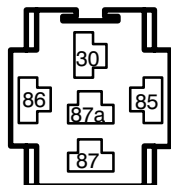


30	NG	86	GLG
85	NO	87	NR
87A	B		

LC00281B

R050001

C282

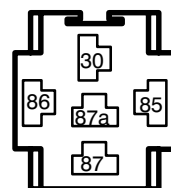


30	NW	86	LG
85	B	87	LGW
87A	—		

LC00282A

R050001

C283

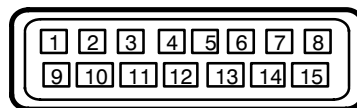


30	PN	86	PO
85	PN	87	PG
87A	—		

LC00283A

R150001

C284

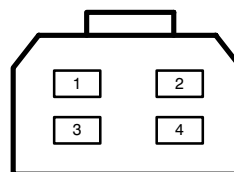


1	WU	6	BY	11	YK
2	—	7	BR	12	—
3	RW	8	B	13	—
4	UW	9	PG	14	—
5	GP	10	WY	15	—

LC00284A

R040010

C285

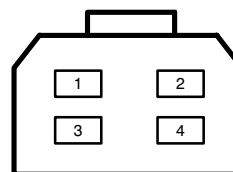


1	B	3	GY
2	BW	4	RW

LC00285E

R040010

C286

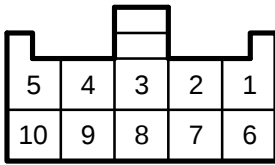


1	B	3	GY
2	BW	4	RW

LC00286E

R100005

C287

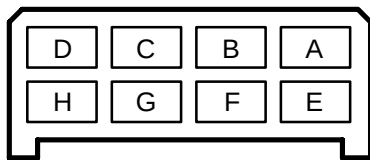


1	BK	4	WG	6	BR	8	—
2	—	5	BU	7	PG	9	BS
3	LGP					10	—

LC00287B

R080003

C288

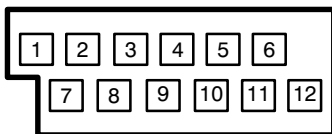


A	PN	E	WK
B	SB	F	SR
C	B	G	SK
D	PS	H	SU

LC00288A

R120003

C289

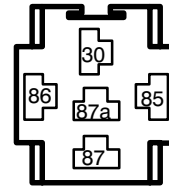


1	KR	5	—	9	P
2	RK	6	YO	10	—
3	GK	7	O	11	B
4	OY	8	K	12	—

LC00289B

R050001

C290

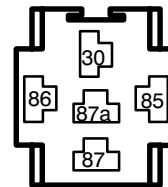


30	BLG	86	B
85	WR	87	PG
87A	—		

LC00290B

R050001

C291

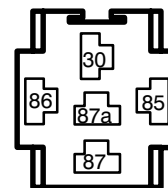


30	NG	86	UP
85	B	87	UP
87A	—		

LC00291B

R050001

C292



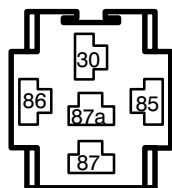
30	NG	86	BP
85	GW	87	BN
87A	—		

LC00292A

R050001

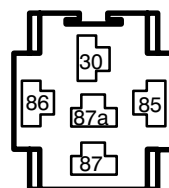
R050001

C293



30	UR	86	BS
85	NY	87	NO
87A	—		

C295



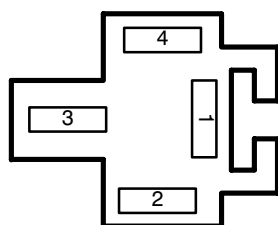
30	NR	86	B
85	WG	87	NO
87A	—		

LC00293E

LC00295B

R040025

C294



1	PO	3	OS
2	PY	4	LGP

LC00294B

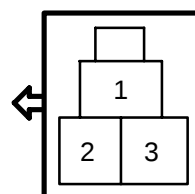
R030007

R030004

C298



1	—
2	B
3	R



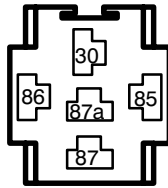
1	—
2	WB
3	R

LC00298A

LC00298A

R050001

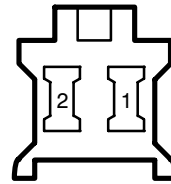
C299



30	B	86	B
85	RW	87	WR
87A	—		

R020040

C2002

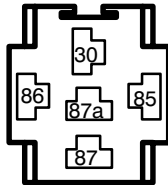


1	BR
2	BK

LC00299E

R050001

C2000

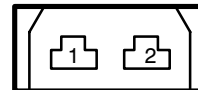


30	WP	86	WP
85	BK	87	RB
87A	—		

LC02002B

R020032

C2005

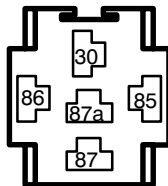


1	PY
2	PG

LC02000A

R050001

C2001

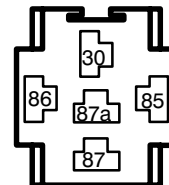


30	WY	86	BR
85	YB	87	SB
87A	—		

LC02005A

R050001

C2006



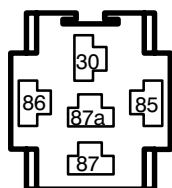
30	NW	86	BO
85	WR	87	NR
87A	—		

LC02001A

LC02006A

C2007

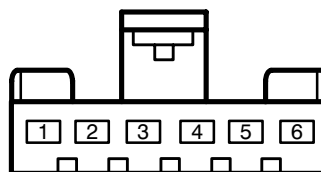
R050001



30	NG	86	B
85	LGP	87	WG
87A	YO		

C2010

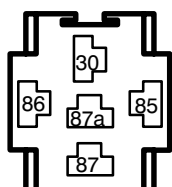
R060005



1	WY	4	RW
2	—	5	PO
3	UW	6	—

C2008

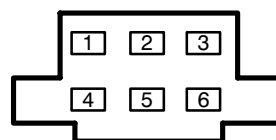
LC02007B
R050001



30	LGP	86	NS
85	GS	87	GS
87A	NLG		

C2011

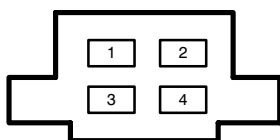
LC02010A
R060013



1	WLG	4	—
2	—	5	—
3	B	6	—

C2009

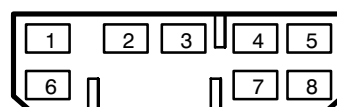
LC02008A
R040012



1	—	3	LGN
2	GW	4	GR

C2012

LC02011A
R080006



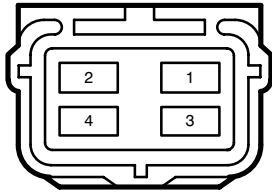
1	PW	5	PN
2	P	6	OW
3	WP	7	—
4	BR	8	—

LC02009A

LC02012A

C2013

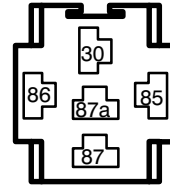
R040001



1	PN	3	B
2	PW	4	WP

C2021

R050001



30	WS/WU	86	WS
85	BY/B	87	PW
87A	PY		

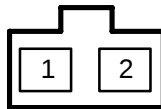
LC02013A

LC02021A

R020022

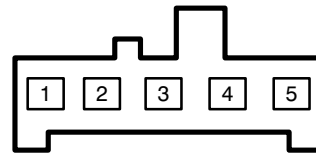
R050006

C2014



1	OW
2	B

C2022



1	WB	4	PU
2	BO	5	N
3	G		

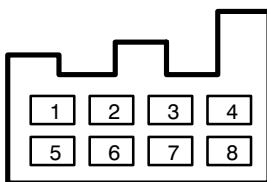
LC02014A

LC02022A

R080009

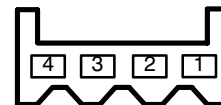
R040004

C2015



1	GS	5	LGB
2	LGG	6	LGB
3	ULG	7	-
4	RLG	8	GS

C2023



1	S	3	WB
2	UR	4	LG

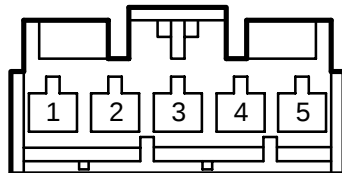
LC02015A

LC02023A

R050002.02 .

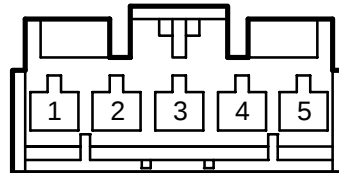
R050002.00

C2025



1	N	4	NW
2	LG	5	UR
3	WB		

C2026



1	WB	4	RG
2	LG	5	UR
3	UB		

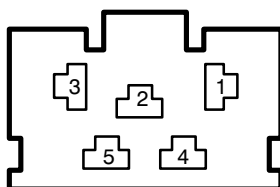
LC02025A

LC02026A

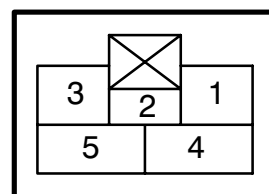
R050003

R050018

C2027



1	WB	4	G
2	N	5	BO
3	PU		



1	WB	4	G
2	N	5	BO
3	PU		

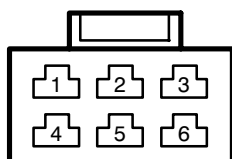
LC02027A

LC02027A

R060007

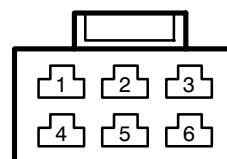
R060007

C2028



1	B	4	B
2	B	5	B
3	B	6	B

C2029



1	B	4	B
2	B	5	B
3	B	6	B

LC02028A

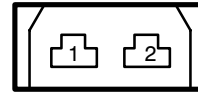
LC02029A

R100011

C2030

1	—	4	—	6	—	8	—
2	—	5	—	7	—	9	RY
3	—					10	B

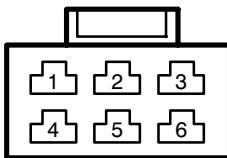
R020032

C2035

1	PW
2	P

LC02030B

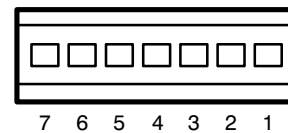
R060007

C2031

1	B	4	B
2	B	5	B
3	B	6	B

LC02035A

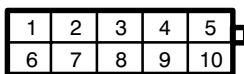
R070001

C2036

1	PB	5	YB
2	W	6	PB
3	R	7	PB
4	GR		

LC02031B

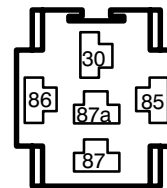
R100014

C2032

1	—	4	R	6	—	8	B
2	Y	5	LG	7	B	9	B
3	U					10	B

LC02036A

R050001

C2046

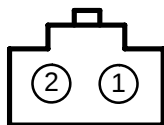
30	B	86	WY
85	BK	87	—
87A	BG		

LC02032B

LC02046B

R020026

C2063



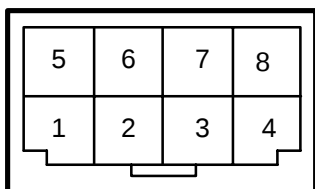
1	GP
2	GO

LC02063B

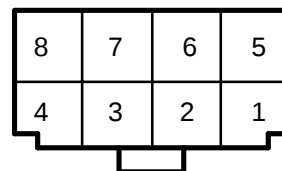
R080001

R080002

C2066



1	BO	5	UR
2	G	6	UB
3	PU	7	WB
4	N	8	RG



1	BO	5	UR
2	G	6	UB
3	PU	7	WB
4	N	8	RG

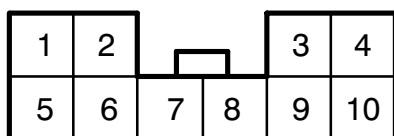
LC02066A

LC02066A

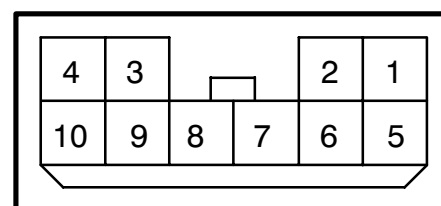
R100003

R100001

C2067



1	NW	4	S	6	UB	8	WB
2	N	5	RG	7	UW	9	W
3	LG					10	UR



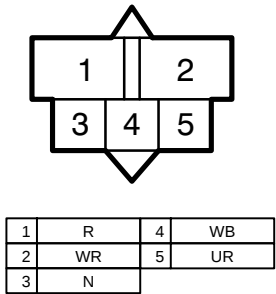
1	NW	4	S	6	UB	8	WB
2	N	5	RG	7	UW	9	W
3	LG					10	UR

LC02067A

LC02067A

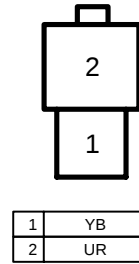
R050016

C2068



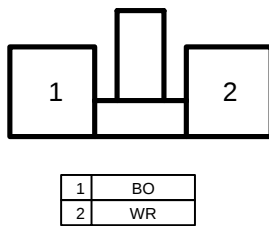
R020046

C2071



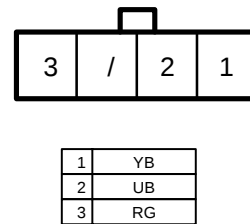
LC02068A
R020049

C2069



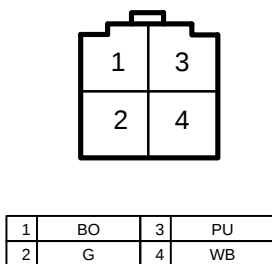
LC02071A
R030015

C2072



LC02069A
R040022

C2070



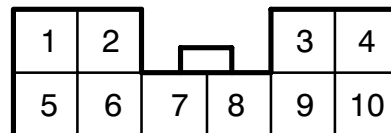
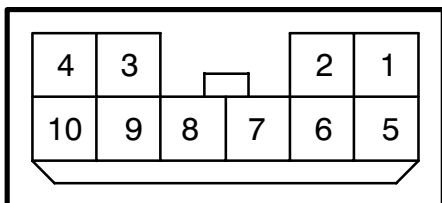
LC02072A

LC02070A

R100001

R100003

C2073



1	UW	4	NW	6	—	8	L
2	LG	5	W	7	UR	9	OG
3	P					10	SP

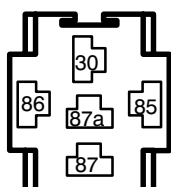
1	—	4	PB	6	—	8	NO
2	RN	5	—	7	WG	9	YB
3	B					10	YR

LC02073B

LC02073B

R050001

C2074



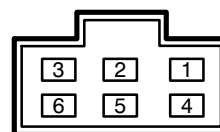
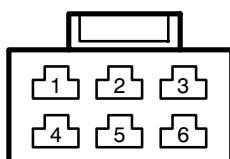
30	PU	86	BK
85	PU	87	LGR
87A	—		

LC02074A

R060007

R060006

C301



1	SG	4	SW
2	SG	5	SN
3	SO	6	S

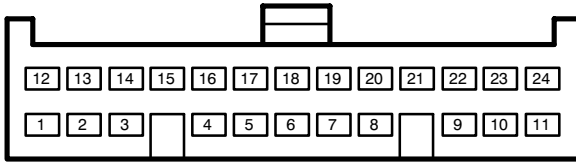
1	SG	4	SW
2	SG	5	SN
3	SO	6	S

LC00301A

LC00301A

R240004

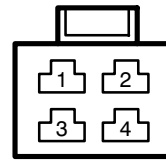
C302



1	BK	7	YK	13	ON	19	OP
2	SW	8		14	YG	20	PB
3	BN	9	WS	15	PN	21	OW
4	BU	10		16	OU	22	WK
5	BP	11	RY	17	PG	23	OK
6	SN	12	PK	18	WG	24	BU

R040018

C303

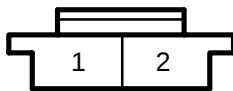


1	WY	3	WR
2	B	4	B

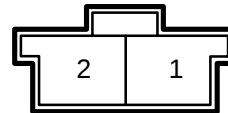
LC00302B

R020029

C305



1	PN
2	PU



1	PN
2	PU

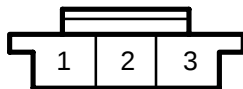
LC00303B

R020013

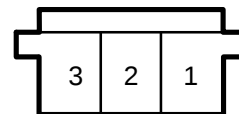
LC00305B

R030010

C306



1	PW
2	O
3	K



1	PW
2	O
3	K

LC00305B

R030009

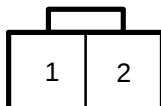
LC00306A

LC00306A

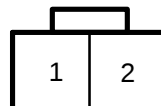
R020027

R020027

C307



1	GN
2	B



1	GN
2	B

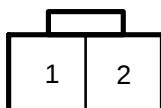
LC00307B

LC00307B

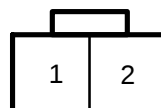
R020027

R020027

C309



1	GR
2	B



1	GR
2	B

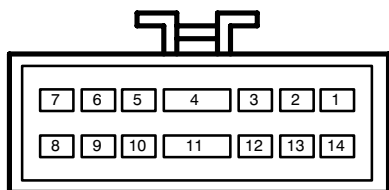
LC00309B

LC00309B

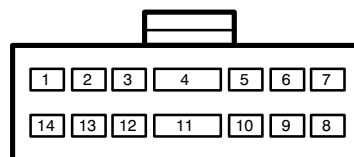
R140004

R140005

C311



1	—	6	BU	11	NK
2	WY	7	—	12	GP
3	B	8	—	13	YK
4	OW	9	BR	14	—
5	WS	10	PU		



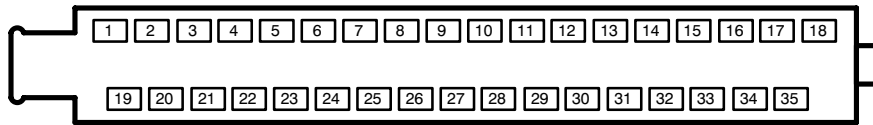
1	—	6	BU	11	NK
2	WY	7	—	12	GP
3	B	8	—	13	YK
4	OW	9	BR	14	—
5	WS	10	PU		

LC00311B

LC00311B

R350002

C312



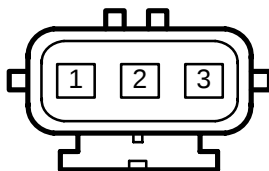
1	NK	6	SR	11	SO	16	W	21	SG	26	SG	31	BY
2	RY	7	SU	12	SB	17	G	22	SP	27	B	32	G
3	RB	8	BG	13	WK	18	W	23	SK	28	–	33	W
4	SY	9	LGK	14	BK	19	NK	24	SN	29	–	34	G
5	SW	10	WS	15	G	20	RW	25	GP	30	WB	35	W

R030001

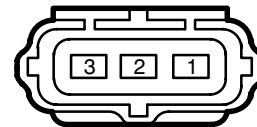
LC00312B

R030003

C314



1	BW
2	B
3	BY



1	BW
2	B
3	K

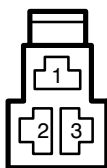
LC00314B

LC00314B

R030008

R030007

C315



1	B
2	WR
3	WY



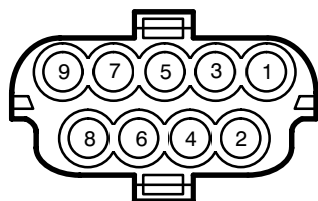
1	BP
2	WO
3	WU

LC00315E

LC00315E

C318

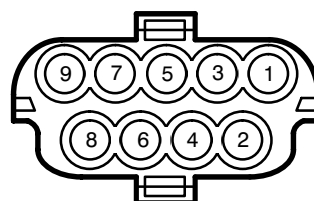
R090001



1	SB	4	SR	7	SY
2	SG	5	SN	8	SW
3	SP	6	SU	9	—

C321

R090001

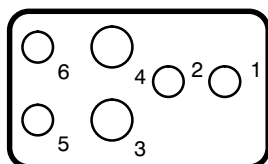


1	WS	4	WP	7	WK
2	WLG	5	WN	8	WB
3	WO	6	WU	9	—

C319

LC00318B

R060014

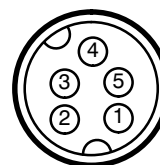


1	WU	4	WY
2	WN	5	WO
3	—	6	WP

C323

LC00321B

R050009

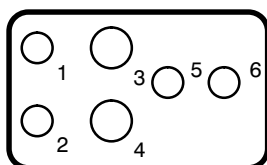


1	—	4	BO
2	GY	5	BY
3	GN		

C320

LC00319B

R060015

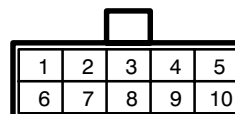


1	WS	4	B
2	WLG	5	WB
3	WR	6	WK

C324

LC00323A

R100013



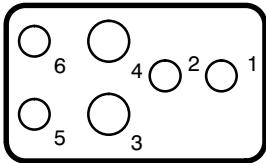
1	S	4	P	6	O	8	R
2	SG	5	BY	7	B	9	G
3	SP					10	Y

LC00320B

LC00324B

R060014

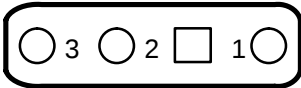
C325



1	P	4	—
2	O	5	Y
3	BY	6	R

R030013

C327



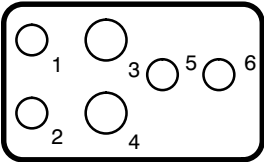
1	S
2	SP
3	SG

LC00325B

LC00327B

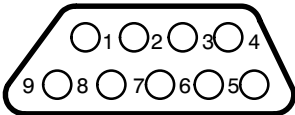
R060015

C326



1	Y	4	B
2	R	5	O
3	G	6	P

C328



1	G	4	G	7	Y
2	Y	5	—	8	G
3	G	6	Y	9	Y

R090003

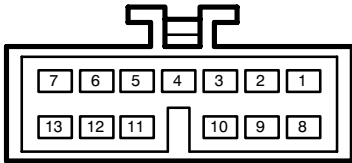
LC00326B

LC00328B

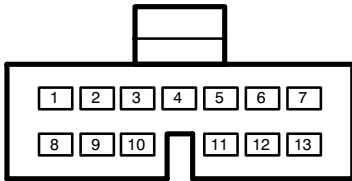
R130003

R130008

C330



1	—	6	YR	11	YW
2	Y	7	—	12	YO
3	—	8	—	13	—
4	—	9	YN		
5	YU	10	YS		



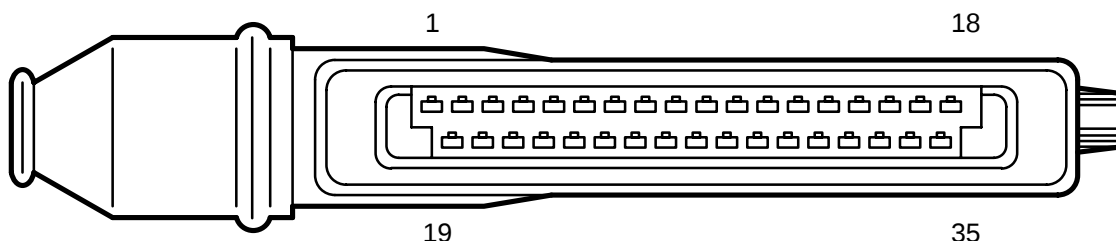
1	—	6	YR	11	YW
2	Y	7	—	12	YO
3	—	8	—	13	—
4	—	9	YN		
5	YU	10	YS		

LC00330B

LC00330B

R350001

C331

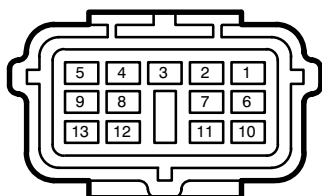


1	SR	6	BY	11	GW	16	BO	21	OK	26	GS	31	GP
2	OU	7	YW	12	WS	17	WK	22	RY	27	GK	32	YN
3	OB	8	SY	13	SU	18	B	23	RK	28	GY	33	YO
4	RU	9	GO	14	PR	19	S	24	BS	29	YU	34	PS
5	RB	10	GN	15	YS	20	OY	25	YR	30	YK	35	WLG

LC00331B

R130002

C332

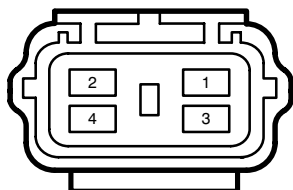


1	GW	6	GO	11	B
2	GY	7	—	12	SR
3	GN	8	NLG	13	SR
4	GK	9	—		
5	GS	10	B		

LC00332B

R040003

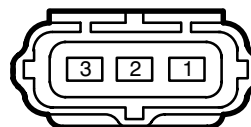
C333



1	—	3	B
2	BO	4	NLG

LC00333B

C334



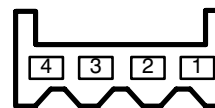
1	LGO
2	B
3	GN

R030003

LC00334B

R040006

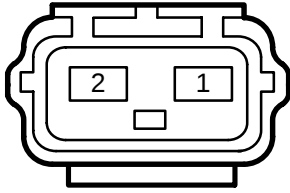
C335



1	BN	3	WB
2	B	4	—

LC00335B

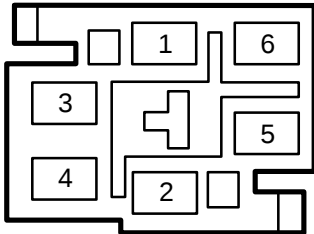
R020042

C336

1	NO
2	B

LC00336B

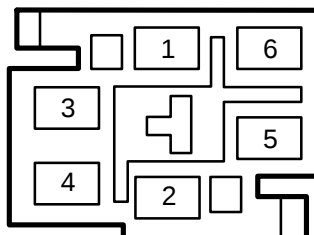
R070008

C337

1	BS	5	–
2	BR	6	RN
3	–	7	–
4	B		

LC00337A

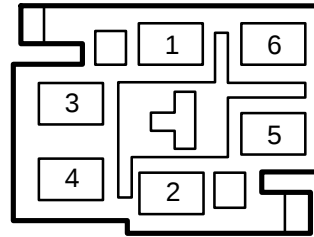
R070008

C338

1	BU	5	–
2	BK	6	RN
3	–	7	–
4	B		

LC00338A

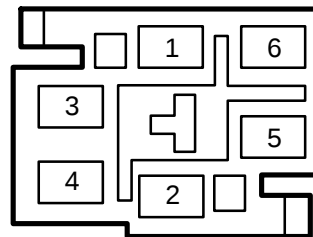
R070008

C339

1	SO	5	WK
2	SW	6	RN
3	WK	7	–
4	B		

LC00339B

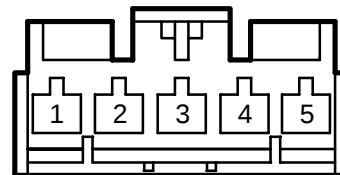
R070008

C340

1	SN	5	WK
2	S	6	RN
3	WK	7	–
4	B		

LC00340B

R050002.00

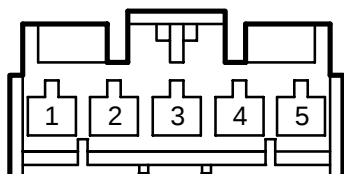
C341

1	LGP	4	US
2	RN	5	B
3	–		

LC00341B

C342

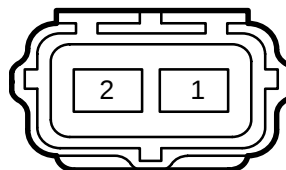
R050002.00



1	LGP	4	UK
2	RN	5	B
3	-		

C345

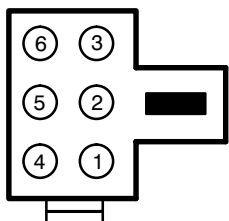
R020037



1	P
2	GR

C343

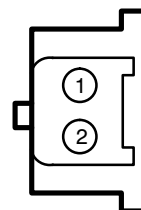
LC00342B
R060019



1	B	4	SG
2	-	5	-
3	-	6	-

C346

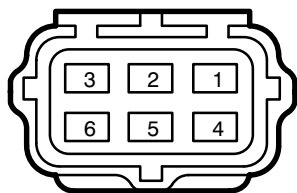
LC00345B
R020033



1	RG/CLG
2	B

C344

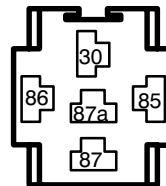
LC00343A
R060016



1	P	4	BR
2	GP	5	KS
3	B	6	KS

C348

LC00346B
R050001



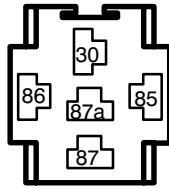
30	B	86	LGW
85	B	87	BP
87A	-		

LC00344A

LC00348E

R050001

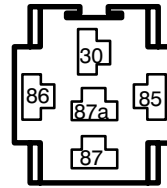
C349



30	LGW	86	US
85	B	87	GR
87A	—		

R050001

C352

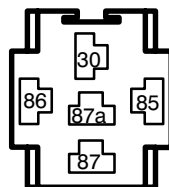


30	NS	86	WR
85	WO	87	NR
87A	—		

LC00349B

R050001

C350

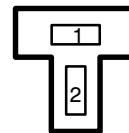


30	SG	86	B
85	NK	87	—
87A	B		

LC00352B

R020015

C353

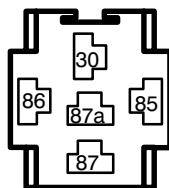


1	B
2	LGW

LC00350B

R050001

C351

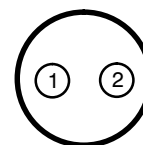


30	OK	86	B
85	BG	87	NK
87A	—		

LC00353A

R020007

C354



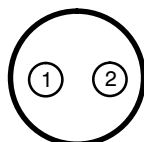
1	W
2	W

LC00351B

LC00354A

C355

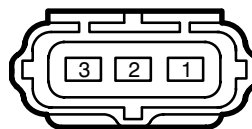
R020007



1	W
2	W

C359

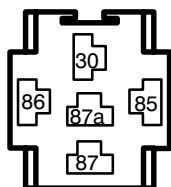
R030003



1	OB
2	RB
3	BS

C357

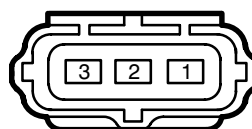
LC00355A
R050001



30	LGW	86	UK
85	B	87	GN
87A	—		

C360

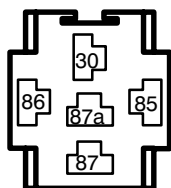
LC00359B
R030003



1	OK
2	RK
3	BS

C358

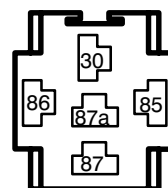
LC00357B
R050001



30	NP	86	NP
85	PU	87	WN
87A	—		

C361

LC00360B
R050001



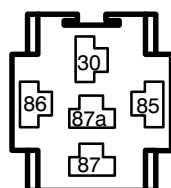
30	PO	86	SY
85	B	87	NLG
87A	—		

LC00358E

LC00361B

R050001

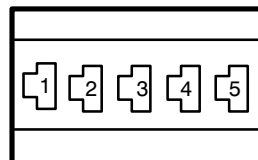
C362



30	OW	86	WY
85	BK	87	SR
87A	PU		

R050008

C364



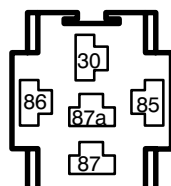
1	B	4	—
2	—	5	B
3	PS		

LC00362B

LC00364B

R050001

C363



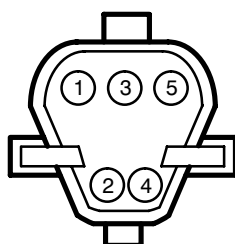
30	Y	86	S
85	BY	87	—
87A	B		

LC00363B

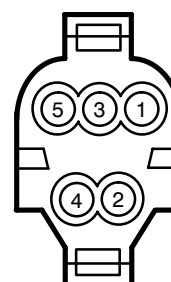
R050012

R050013

C365



1	WK	4	WLG
2	—	5	B
3	BK		



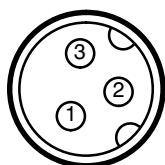
1	—	4	—
2	—	5	—
3	B		

LC00365B

LC00365B

C368

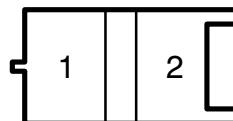
R030021



1	—
2	B
3	BK

C371

R020003

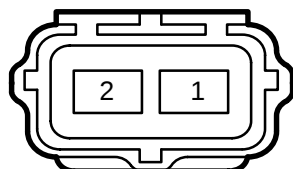


1	BLG
2	B

C369

LC00368A

R020037

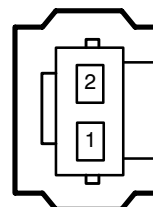


1	SB
2	B

C372

LC00371A

R020038

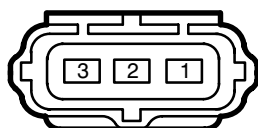


1	GN
2	GY

C370

LC00369A

R030003

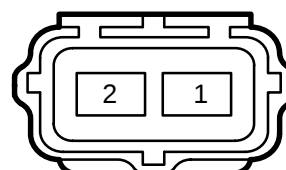


1	GY
2	—
3	BR

C377

LC00372A

R020037



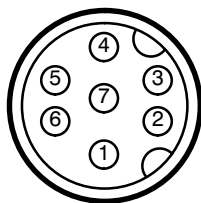
1	SG
2	SU

LC00370A

LC00377B

R070003

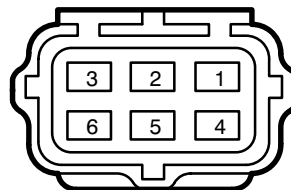
C400



1	RO	5	B
2	GP	6	RY
3	GW	7	RB
4	GR		

R060016

C403



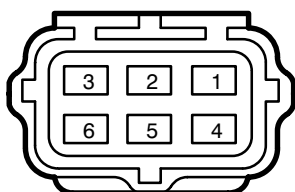
1	B	4	GN
2	RY	5	GP
3	RB	6	GR

LC00400A

LC00403B

R060016

C406



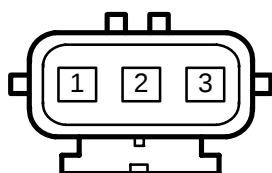
1	B	4	GN
2	RY	5	GP
3	RO	6	GW

LC00406B

R030001

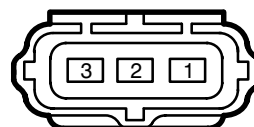
R030003

C407



1	WP
2	GB
3	B

LC00407A

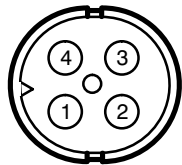


1	WP
2	GB
3	B

LC00407A

C408

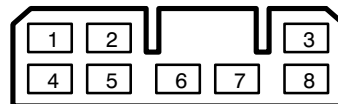
R040009



1	-	3	NG
2	-	4	NR

C412

R080004

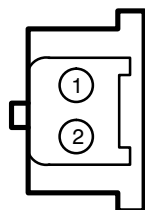


1	R	5	Y
2	G	6	
3	LGO	7	
4	U	8	B

C410

LC00408B

R020033

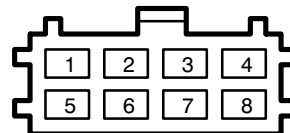


1	PU
2	PN

C413

LC0041B

R080005

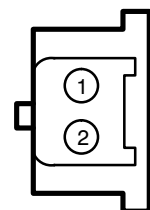


1	RY	5	B
2	PY	6	-
3	-	7	-
4	-	8	-

C411

LC00410B

R020033

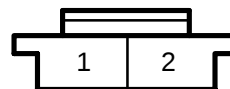


1	PU
2	PN

C414

LC00413B

R020029



1	K
2	O

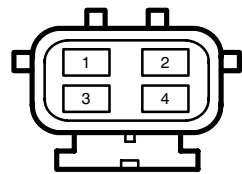
LC00411B

LC00414B

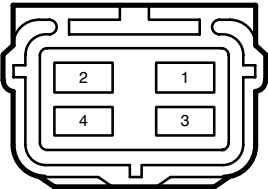
R040002

R040001

C415



1	O	3	GP
2	K	4	B



1	O	3	GP
2	K	4	B

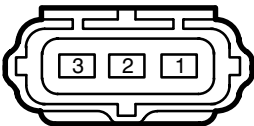
LC00415B

LC00415B

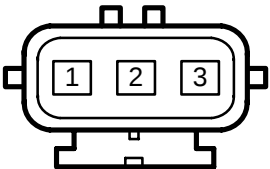
R030003

R030001

C416



1	B
2	BW
3	BY



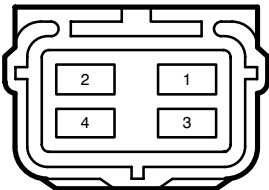
1	—
2	BW
3	BW

LC00416B

LC00416B

R040001

C418

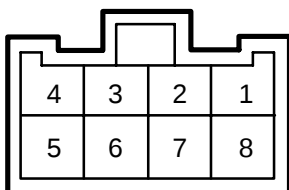


1	Y/R	3	R/U
2	G	4	U/Y

LC00418E

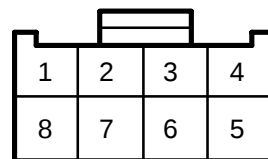
R080011

C420



1	BW	5	WB
2	BN	6	NB
3	BG	7	BO
4	BU	8	BY

R080012

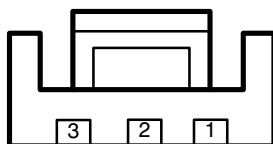


1	BW	5	WB
2	BN	6	NB
3	BG	7	BO
4	BK	8	BY

LC00420B

R030018

C421

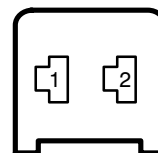


1	B
2	-
3	PN

LC00420B

R020039

C423

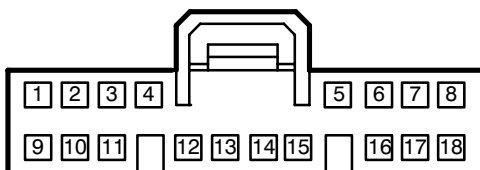


1	B
2	YP

LC00421B

R180003

C422



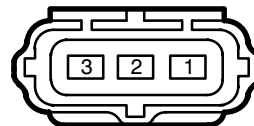
1	PY	6	KB	11	BG	16	RB
2	BO	7	G	12	BW	17	Y
3	BU	8	U	13	BR	18	R
4	BN	9	-	14	BK		
5	WB	10	BY	15	NB		

LC00422B

LC00423B

R030003

C432

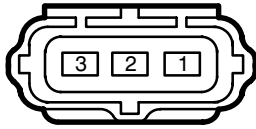


1	OY
2	RY
3	BS

LC00432B

C433

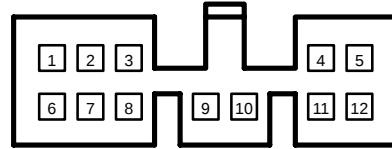
R030003



1	OU
2	RU
3	BS

C436

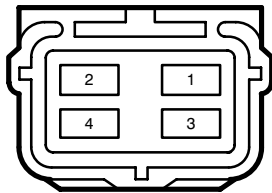
R120001



1	LG	5	P	9	RY
2	R	6	Y	10	BS
3	BP	7	U	11	B
4	B	8	B	12	P

C434

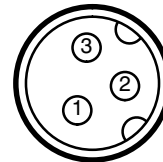
LC00433B
R040001



1	GB	3	B
2	B	4	WP

C500

LC00436B
R030021

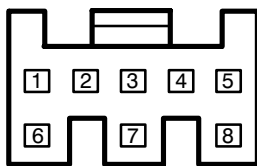


1	-
2	SK
3	SU

C501

LC00434A

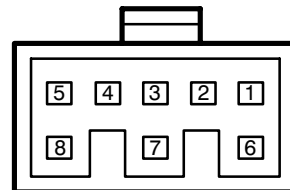
R080010



1	Y	5	NP
2	-	6	K
3	SK	7	SU
4	RK	8	O

LC00501E

LC00500B
R080007



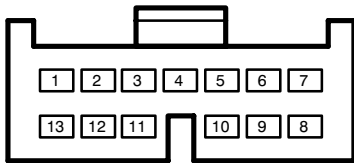
1	YB	5	NP
2	-	6	K
3	SK	7	SU
4	RK	8	O

LC00501E

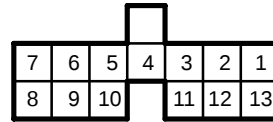
R130007

C502

R130005



1	P	6	YO	11	PR
2	B	7	PN	12	OK
3	PS	8	PU	13	—
4	ON	9	OW		
5	YG	10	WP		

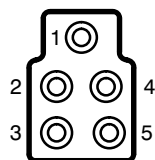


1	PU	6	OY	11	SW/PR
2	B	7	PN	12	OK
3	PS	8	BU/PK	13	—
4	ON	9	OW		
5	YG	10	BK/WP		

LC00502E

C503

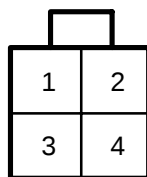
R050010



1	B	4	PR
2	WP	5	PU
3	NP		

LC00503B
R040016

C504

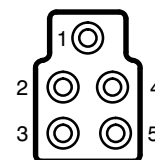


1	Y	3	PN
2	B	4	B

LC00504B

C505

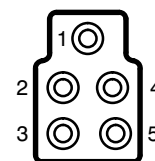
LC00502E
R050010



1	—	4	—
2	PN	5	—
3	P		

LC00505B
R050010

C506

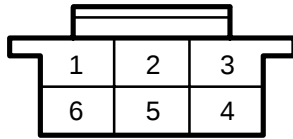


1	—	4	—
2	PN	5	—
3	P		

LC00506B

C507

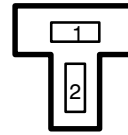
R060009



1	O	4	RK
2	K	5	YO
3	B	6	—

C515

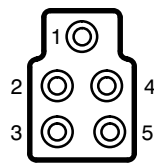
R020015



1	BN
2	BW

C509

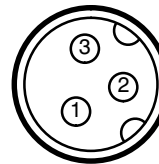
LC00507B
R050010



1	OK	4	OW
2	PS	5	ON
3	YG		

C600

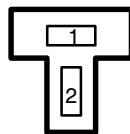
LC00515B
R030021



1	—
2	SK
3	SU

C514

LC00509B
R020015



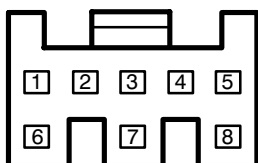
1	NB
2	WB

LC00514B

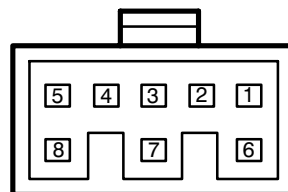
R080010

C601

R080007



1	Y	5	NP
2	—	6	K
3	SK	7	SU
4	RK	8	O



1	YB	5	NP
2	—	6	K
3	SR	7	SB
4	KR	8	O

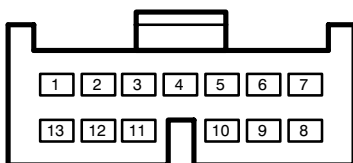
LC00601E

R130007

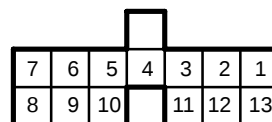
C602

LC00601E

R130005



1	P	6	YO	11	PR
2	B	7	PN	12	OK
3	PS	8	PU	13	—
4	ON	9	OW		
5	YG	10	WP		



1	PU	6	YO	11	SW
2	B	7	PN	12	OP
3	PB	8	PG/BP	13	—
4	ON	9	OU		
5	YG	10	WP/BN		

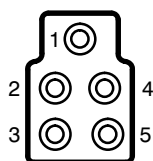
LC00602B

R050010

C603

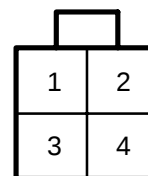
LC00602B

R040016



1	B	4	PR
2	WP	5	PU
3	NP		

C604



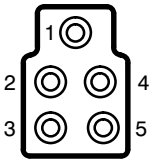
1	Y	3	PN
2	B	4	B

LC00603B

LC00604B

R050010

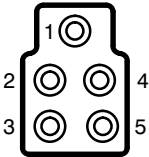
C605



1	-	4	-
2	PN	5	-
3	P		

R050010

C609

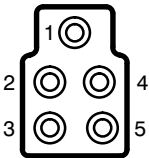


1	OK	4	OW
2	PS	5	ON
3	YG		

LC00605B

R050010

C606

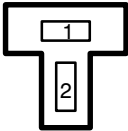


1	-	4	-
2	PN	5	-
3	P		

LC00609B

R020015

C614

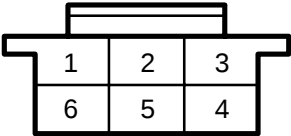


1	NB
2	WB

LC00606B

R060009

C607

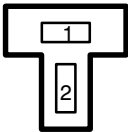


1	O	4	RK
2	K	5	YO
3	B	6	-

LC00614B

R020015

C615



1	BN
2	BW

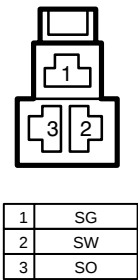
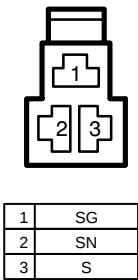
LC00607B

LC00615B

R030008

C700

R030007



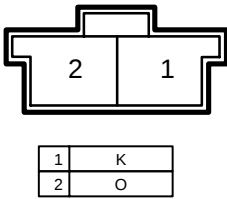
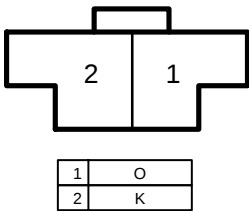
LC00700B

R020028.01

C701

LC00700B

R020013



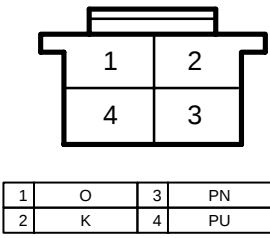
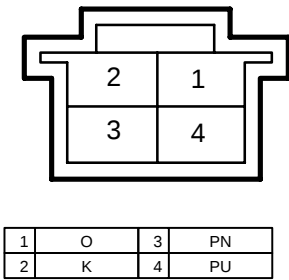
LC00701B

LC00701B

R040017

R040011

C701

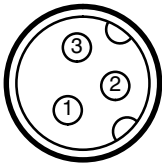


LC00701B

LC00701B

C703

R030021

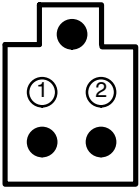


1	—
2	SW
3	SO

LC00703B

C705

R050011

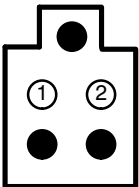


1	PU	4	—
2	PN	5	—
3	—		

LC00705B

C704

R050011

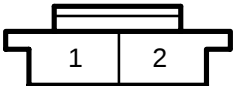


1	PU	4	—
2	PN	5	—
3	—		

LC00704B

C706

R020029



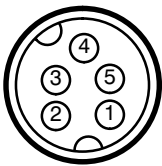
1	O
2	K

LC00706B

R050009

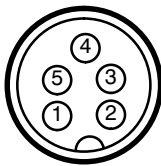
C707

R050020



1	SW	4	S
2	SN	5	SO
3	SG		

LC00707B



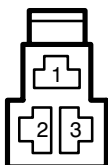
1	SW	4	S
2	SN	5	SO
3	SG		

LC00707B

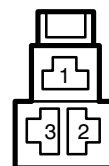
R030008

R030007

C800



1	SG
2	SN
3	S



1	SG
2	SN
3	S

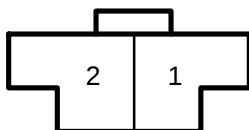
LC00800B

LC00800B

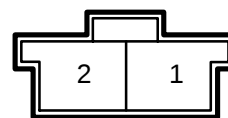
R020028.00

R020013

C801



1	O
2	K



1	K
2	O

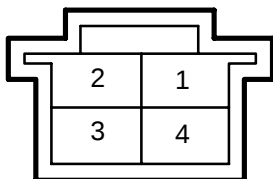
LC00801B

LC00801B

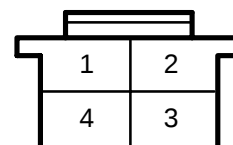
R040017

R040011

C801



1	O	3	PN
2	K	4	PU



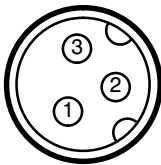
1	O	3	PN
2	K	4	PU

LC00801B

LC00801B

C803

R030021

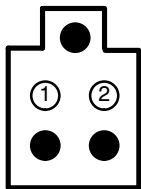


1	—
2	SW
3	SO

LC00803B

R050011

C804

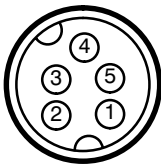


1	PU	4	—
2	PN	5	—
3	—		

LC00804B

R050009

C807

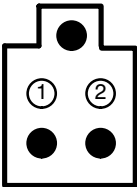


1	SW	4	S
2	SN	5	SO
3	SG		

LC00807B

C805

R050011

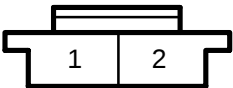


1	PU	4	—
2	PN	5	—
3	—		

LC00805B

R020029

C806



1	O
2	K

LC00806B

R050020

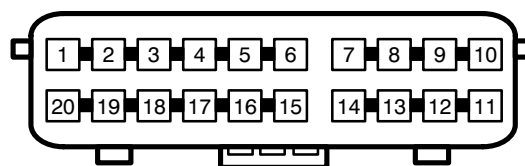


1	SW	4	S
2	SN	5	SO
3	SG		

LC00707B

R200008

HJ1



S2000

1	GLG
2	GLG
3	GLG
4	—
5	GLG
6	—

S2001

7	BU
8	BU
9	BU
10	BU

S2003

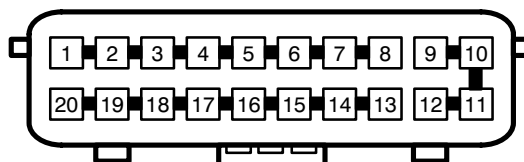
11	B
12	B
13	B
14	B

S2002

15	YK
16	YK
17	YK
18	YK
19	YK
20	—

LC00HJ1E
R200001

HJ2



S2004

1	RN
2	RN
3	—
4	RN
5	RN
6	RN
7	RN
8	—

S2005

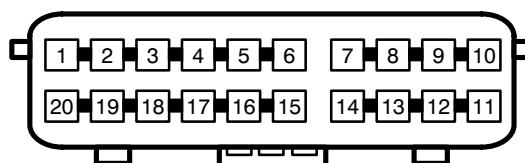
9	BY
10	BY
11	BY
12	BY

S2006

13	—
14	RB
15	RB
16	RB
17	RB
18	—
19	—
20	—

LC00HJ2E
R200008

HJ3



S2007

1	K
2	K
3	K
4	K
5	K
6	K

S2008

7	—
8	LGW
9	LGW
10	—

S2010

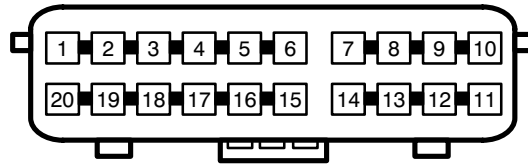
11	UR
12	UR
13	UR
14	—

S2009

15	O
16	O
17	O
18	O
19	O
20	O

LC00HJ3E

R200008

HJ4**S2011**

1	GP
2	GP
3	GP
4	GP
5	GP
6	GP

S2013

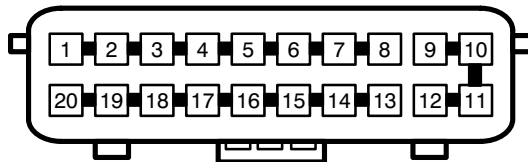
7	PG
8	PG
9	PG
10	PG

S2014

11	WP
12	WP
13	WP
14	WP

S2012

15	–
16	–
17	GP
18	GP
19	GP
20	GP

LC00HJ4E
R200001**HJ5****S2016**

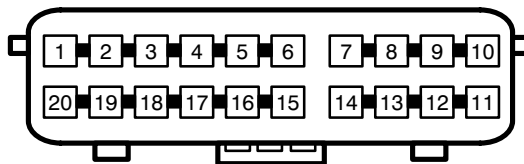
1	B
2	B
3	B
4	B
5	B
6	–
7	B
8	B

S2017

9	GK
10	GK
11	GK
12	GK

S2015

13	B
14	B
15	B
16	B
17	B
18	B
19	–
20	B

LC00HJ5E
R200008**HJ6****S2019**

1	GW
2	GW
3	GW
4	GW

S2020

5	GR
6	GR
7	GR
8	GR

S2021

9	P
10	P
11	P
12	P

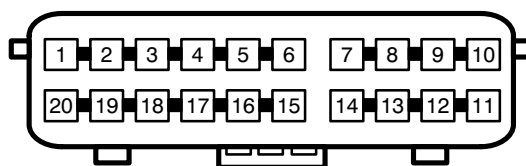
S2018

13	BR
14	BR
15	BR
16	BR
17	BR
18	–
19	–
20	–

LC00HJ6E

R200008

HJ7



S290

1	BS
2	BS
3	BS
4	BS
5	—
6	BS

S291

7	NO
8	NO
9	NO
10	NO

S292

11	WG
12	WG
13	WG
14	WG

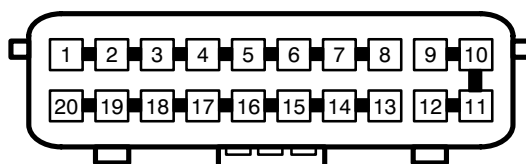
S293

15	RB
16	RB
17	RB
18	RB
19	RB
20	—

LC00HJ7B

R200001

HJ8



S253

1	B
2	B
3	B
4	B
5	B
6	B
7	B
8	B

S254

9	—
10	—
11	—
12	—

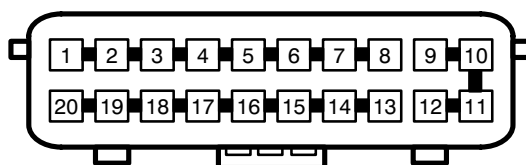
S255

13	B
14	B
15	B
16	B
17	B
18	B
19	B
20	B

LC00HJ8B

R200001

HJ9



S256

1	RN
2	RN
3	RN
4	RN
5	—
6	RN
7	RN
8	RN

S257

9	LG
10	LG
11	LG
12	LG

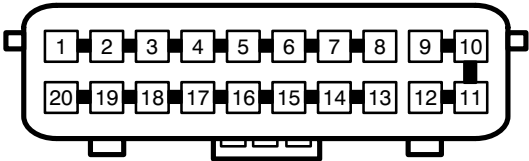
S255

13	RN
14	RN
15	RN
16	RN
17	RN
18	RN
19	RN
20	RN

LC00HJ9B

R200001

HJ10



S204

1	B
2	B
3	-
4	-
5	B
6	B
7	B
8	B

S2017

9	GK
10	GK
11	GK
12	-

S238

13	B
14	B
15	-
16	-
17	-
18	-
19	B
20	B

LC0HJ10B

