

DISCOVERY



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

DISCOVERY

1995 model

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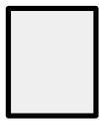
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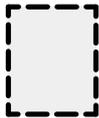


CIRCUIT DIAGRAMS

- Circuit diagrams are arranged so that current flow is from the top of the diagram (current source) to the bottom of the diagram (ground).
- 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	Ground

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 fuse 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.

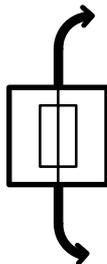
A self-powered test light consists of a light bulb, Battery and two leads. If the leads are touched together, the bulb will go on.

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

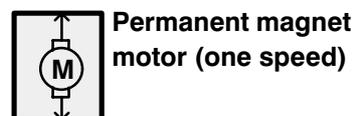
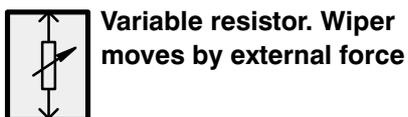
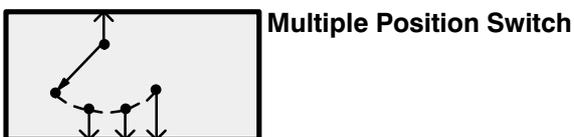
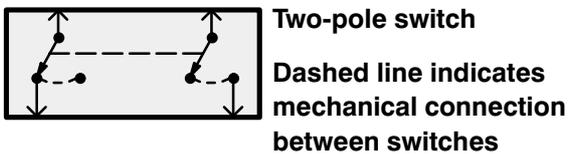
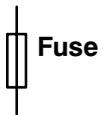
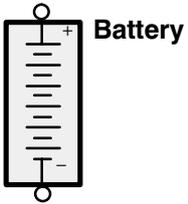
Use a fused jumper wire to bypass an open circuit. A fuse jumper wire is made up of an in-line fuse holder connected to a set of test leads. Never use a jumper wire across any load. This direct battery short will blow the fuse.

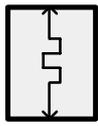
The following symbol represents a fused jumper:



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.

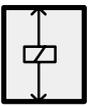




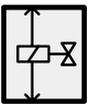
Heating Element



Loudspeaker or horn



Coil

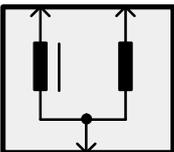


Solenoid

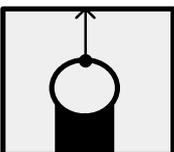


Relay

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



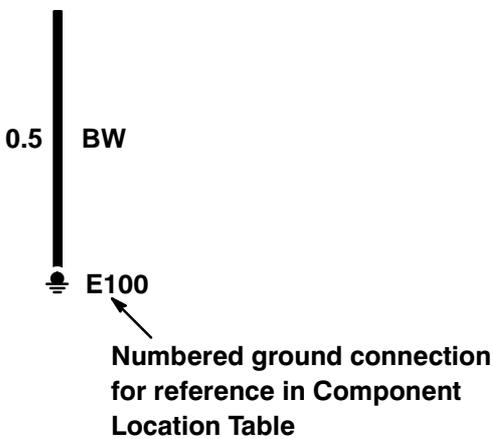
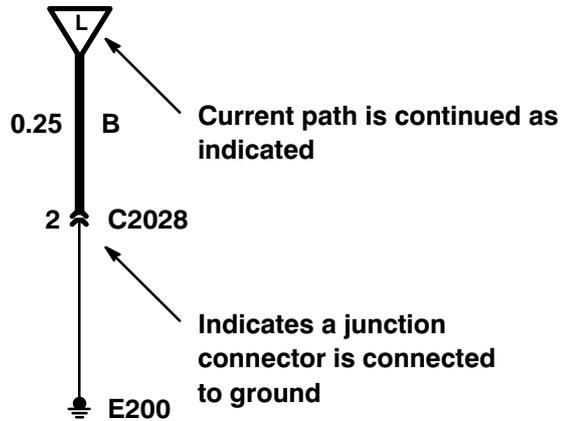
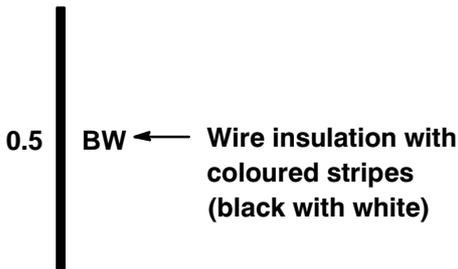
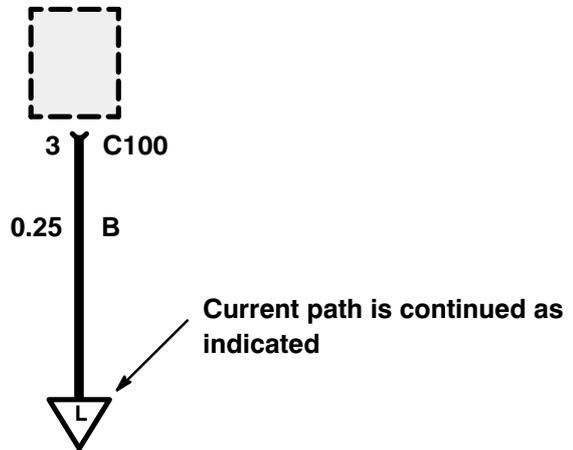
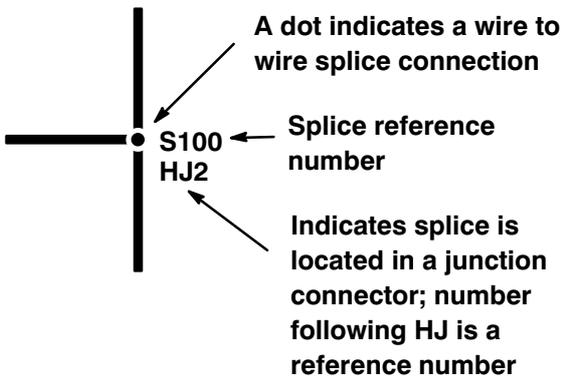
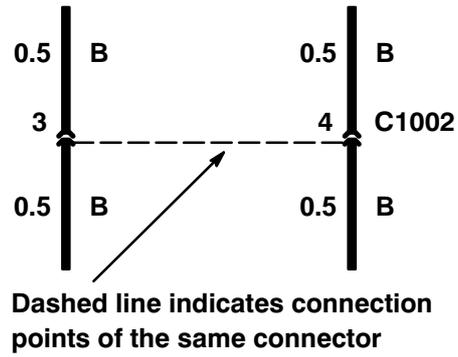
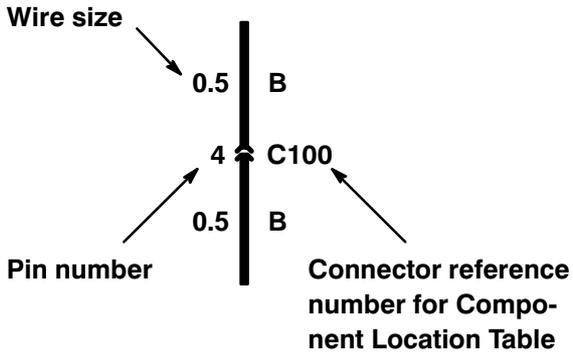
Ignition Coil

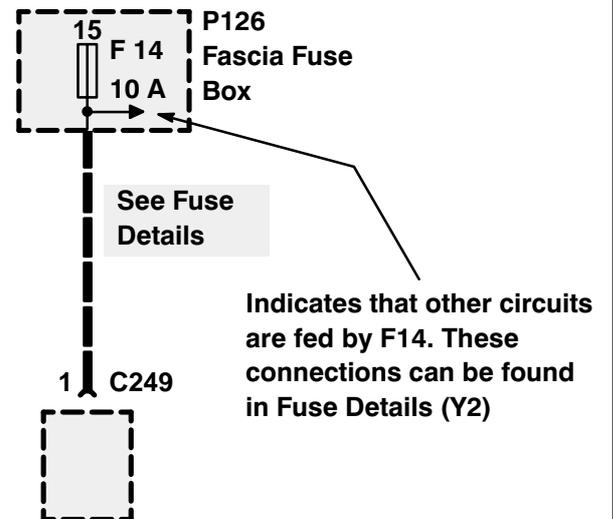
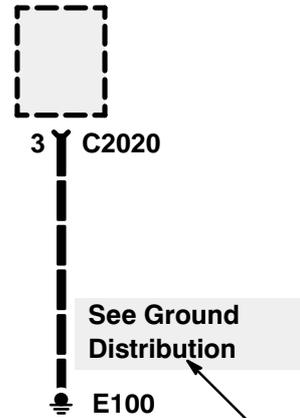
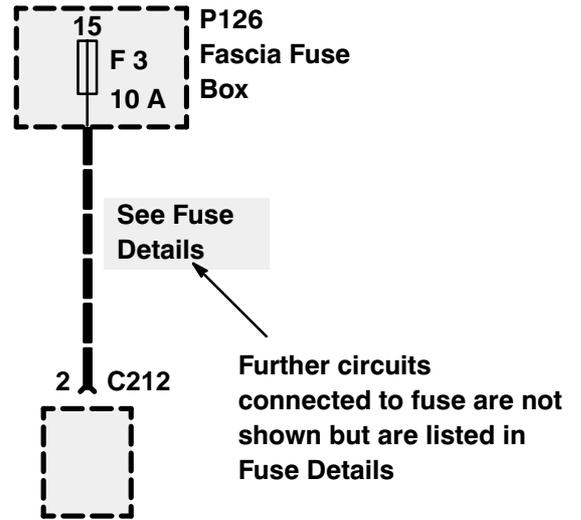
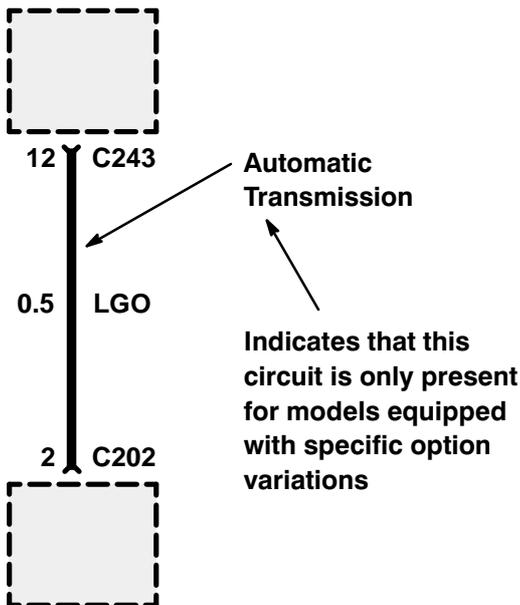
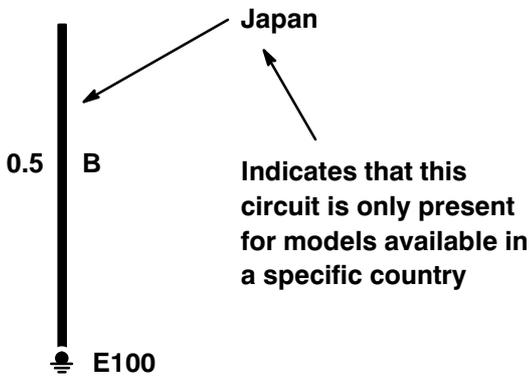
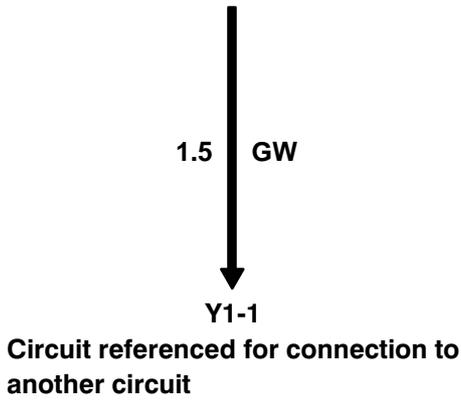


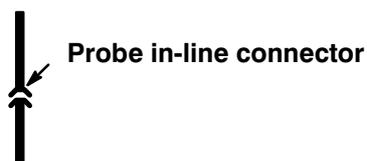
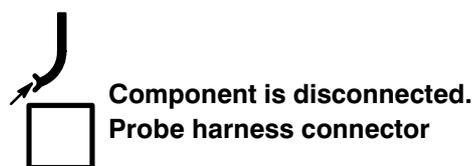
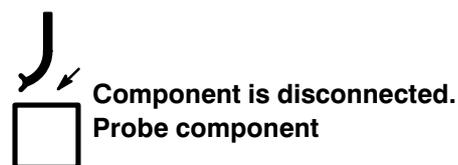
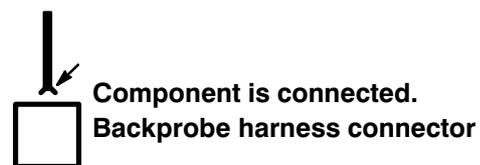
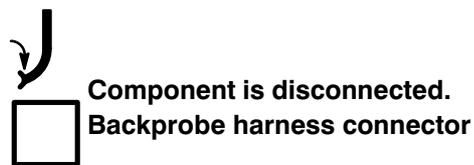
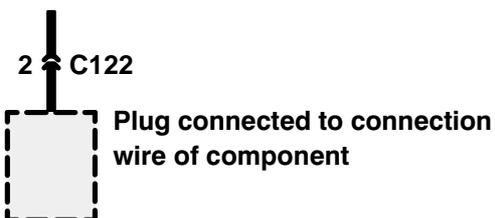
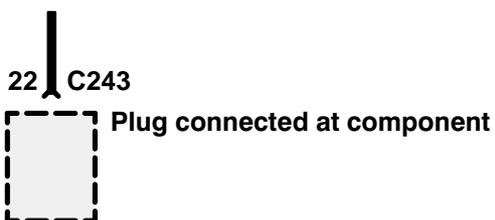
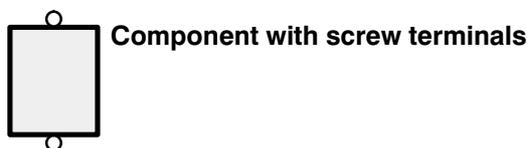
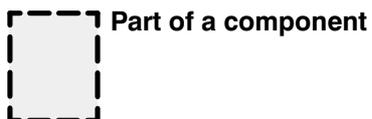
Steering Column
Horn Brush/
Slip Ring

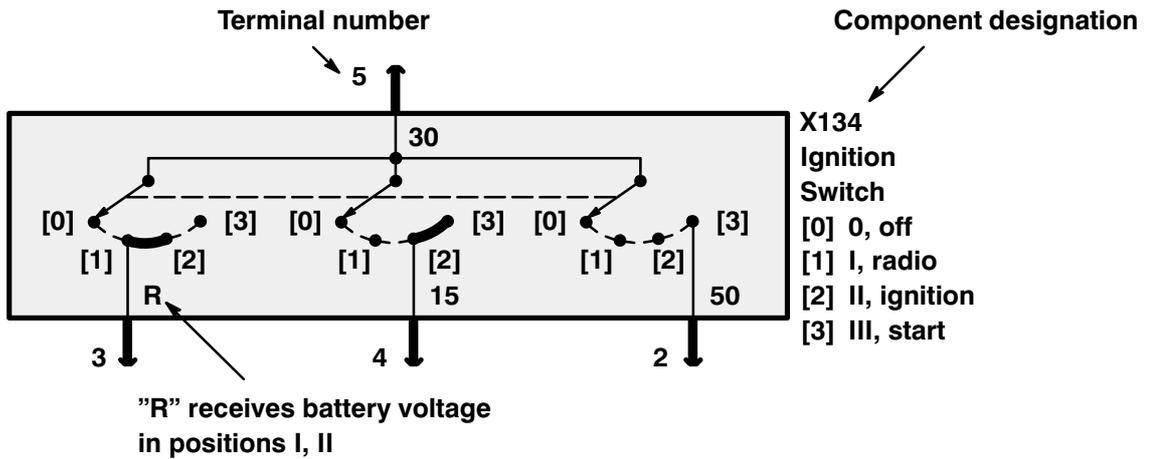


Antenna









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
LHD	Left Hand Drive
RHD	Right Hand 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 Electronic Diesel Control (EDC)

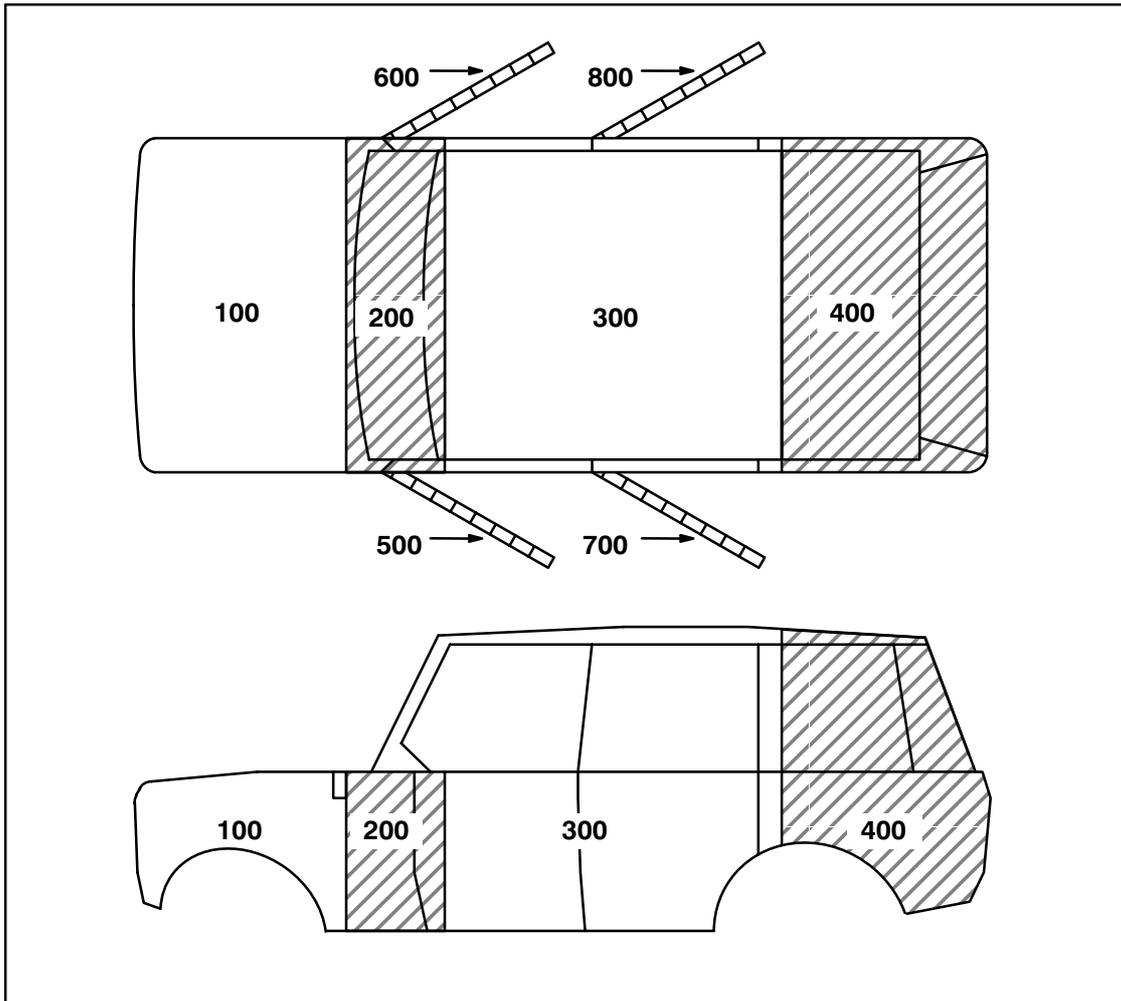
Switch Positions

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°

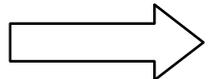
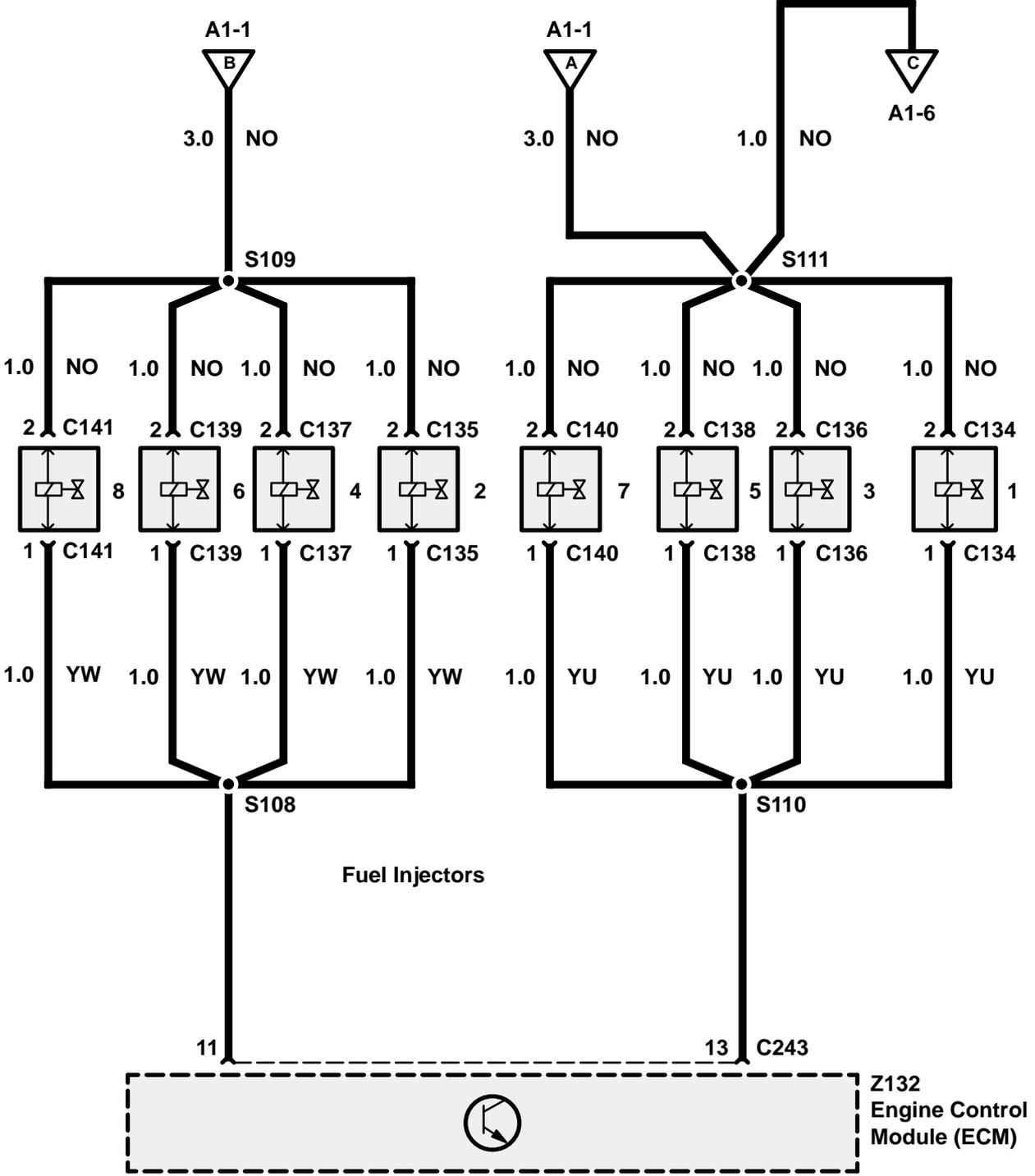
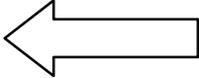
Connectors, Grounds, and Splices are identified by a letter followed by a number. Connectors are identified by C, grounds by E, and splices by S. Some splices are contained in junction connectors. These splices are identified by the prefix "HJ" below the splice's reference number. The number assigned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

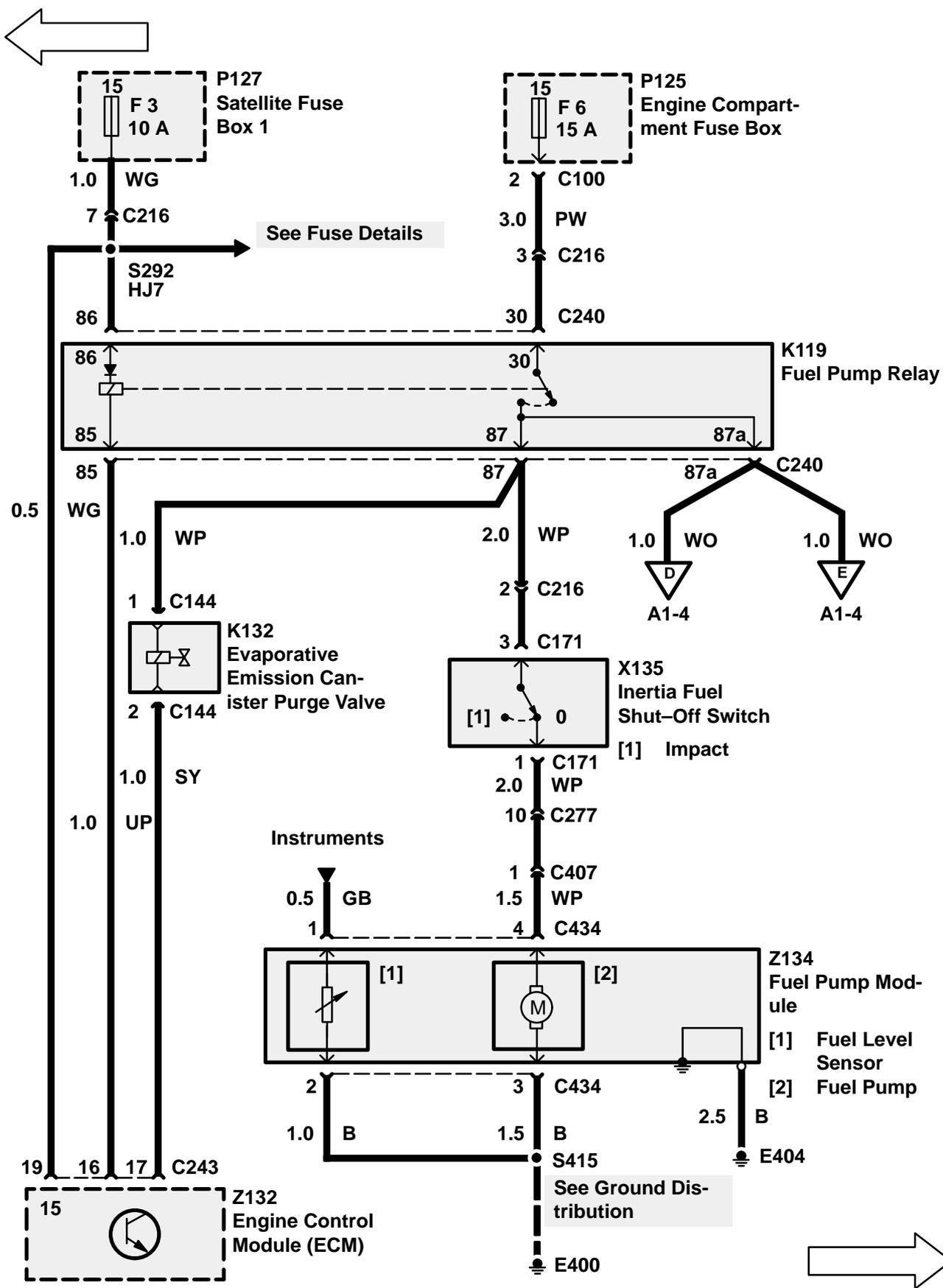
Connector, Ground, and Splice Identification by Location

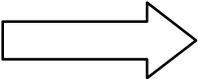
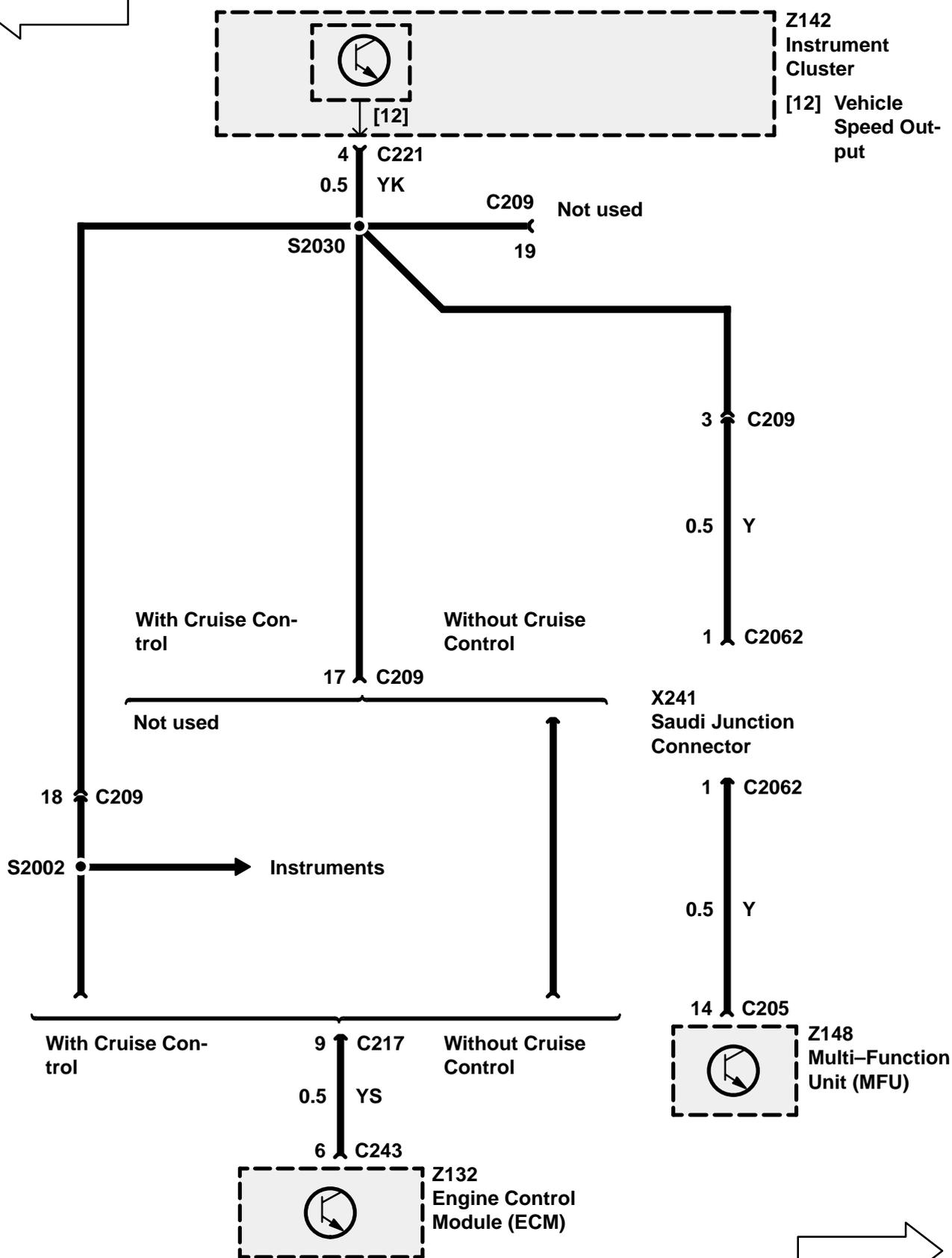
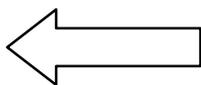


A1 ETM

DISCOVERY

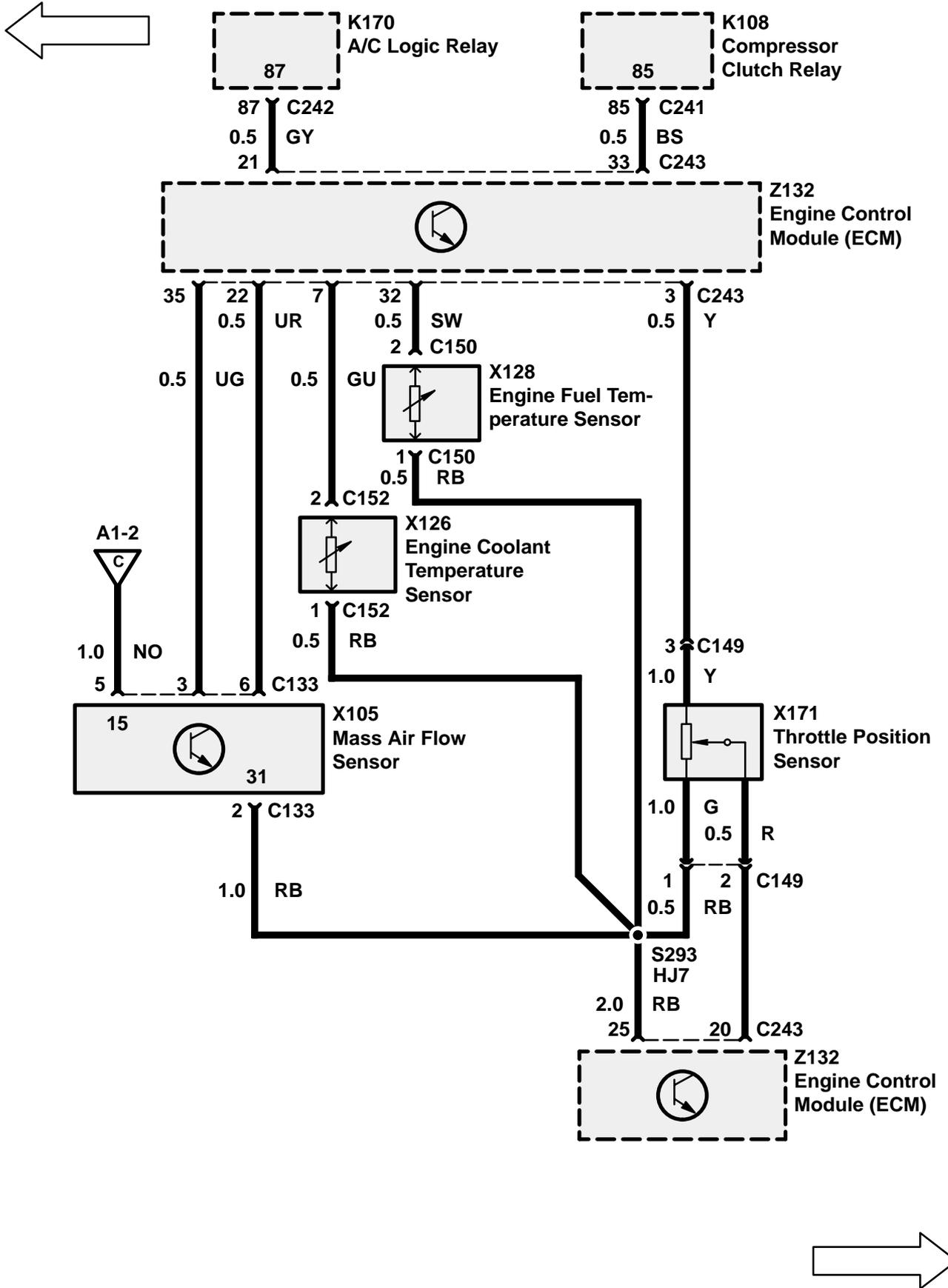


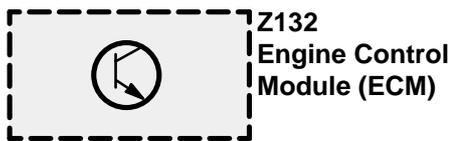
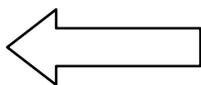




A1 ETM

DISCOVERY





34 C243

0.5 OB

10 C217



0.5 BY

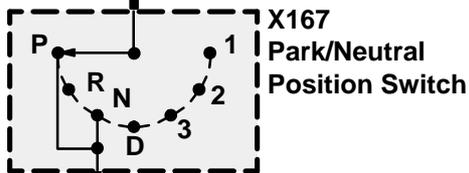
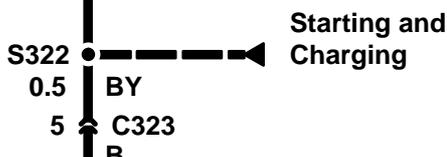
9 C105

0.5 YB

Automatic Transmission

Manual Transmission

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



0.5 BG

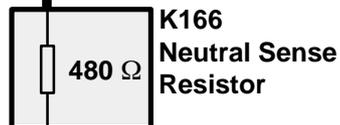
4 C323

0.5 BO

11 C105

Except Japan

Japan



See Ground Distribution

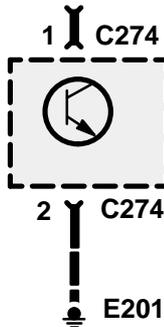
0.5 B

S343

5 C105

S204 HJ5

E201



Z163 * Theft Alarm Unit

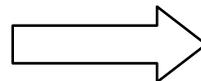
See Ground Distribution

0.5 B

S2025

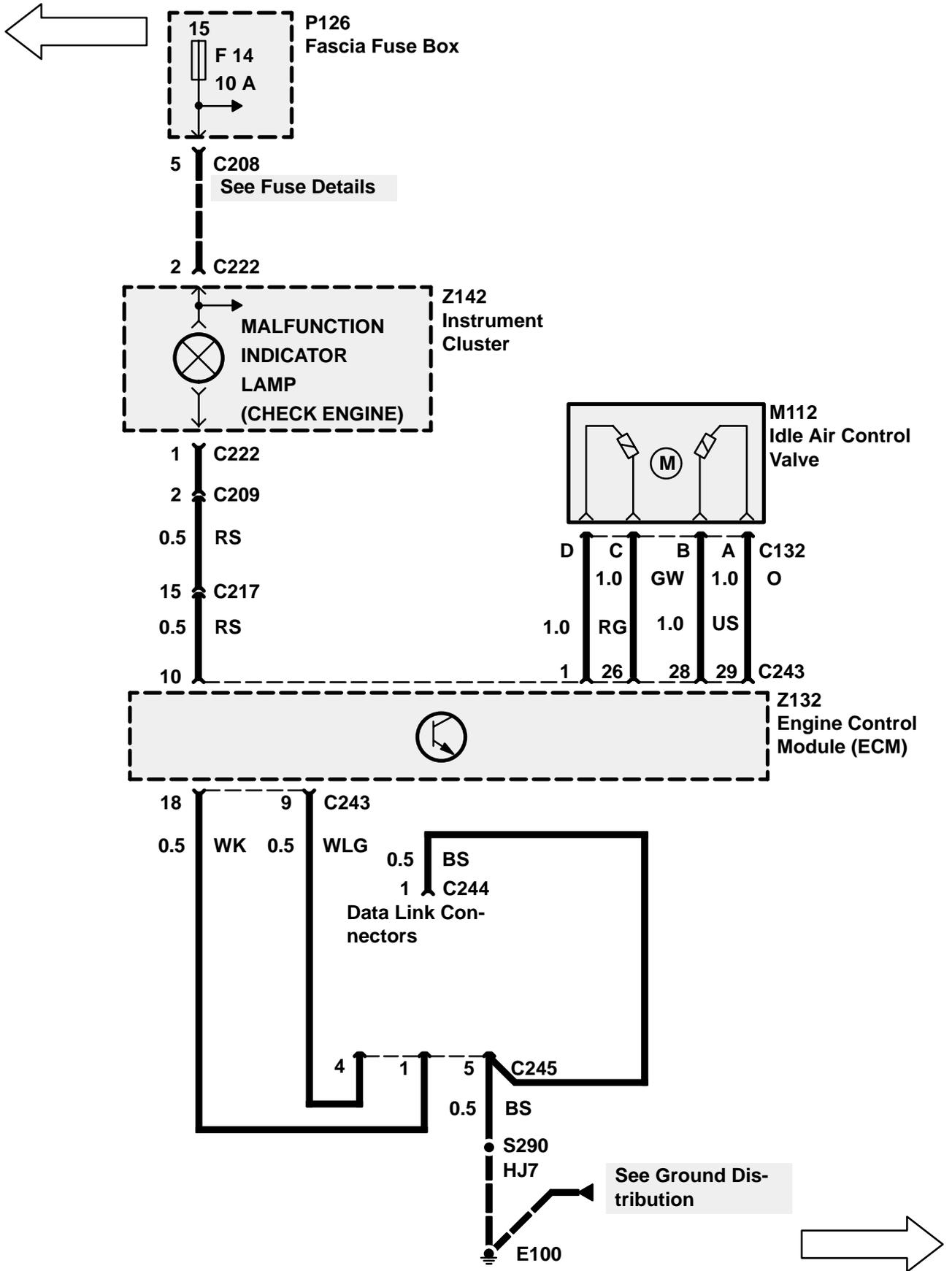
See Ground Distribution

E201



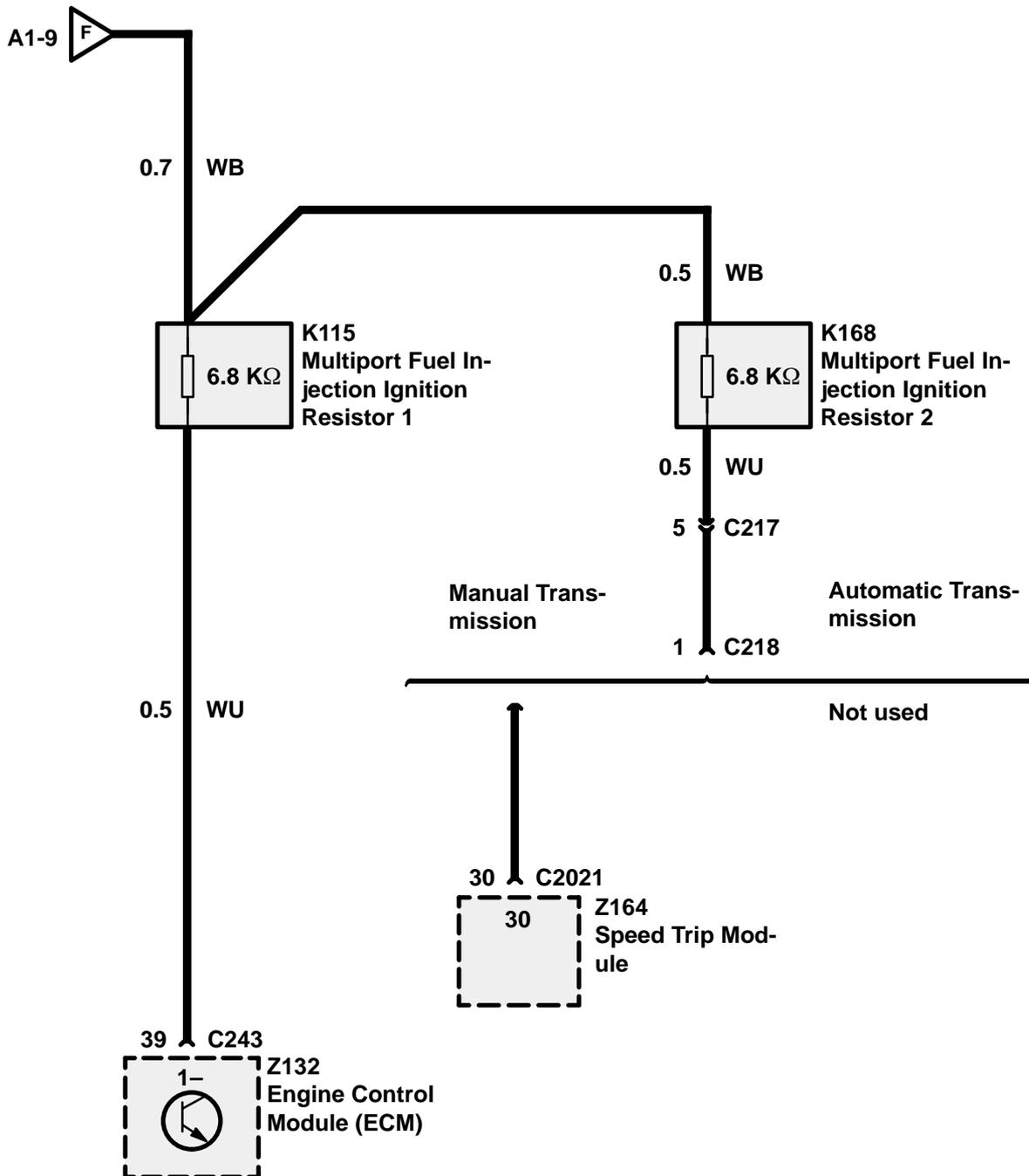
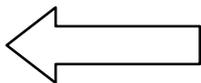
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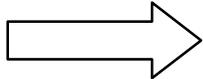
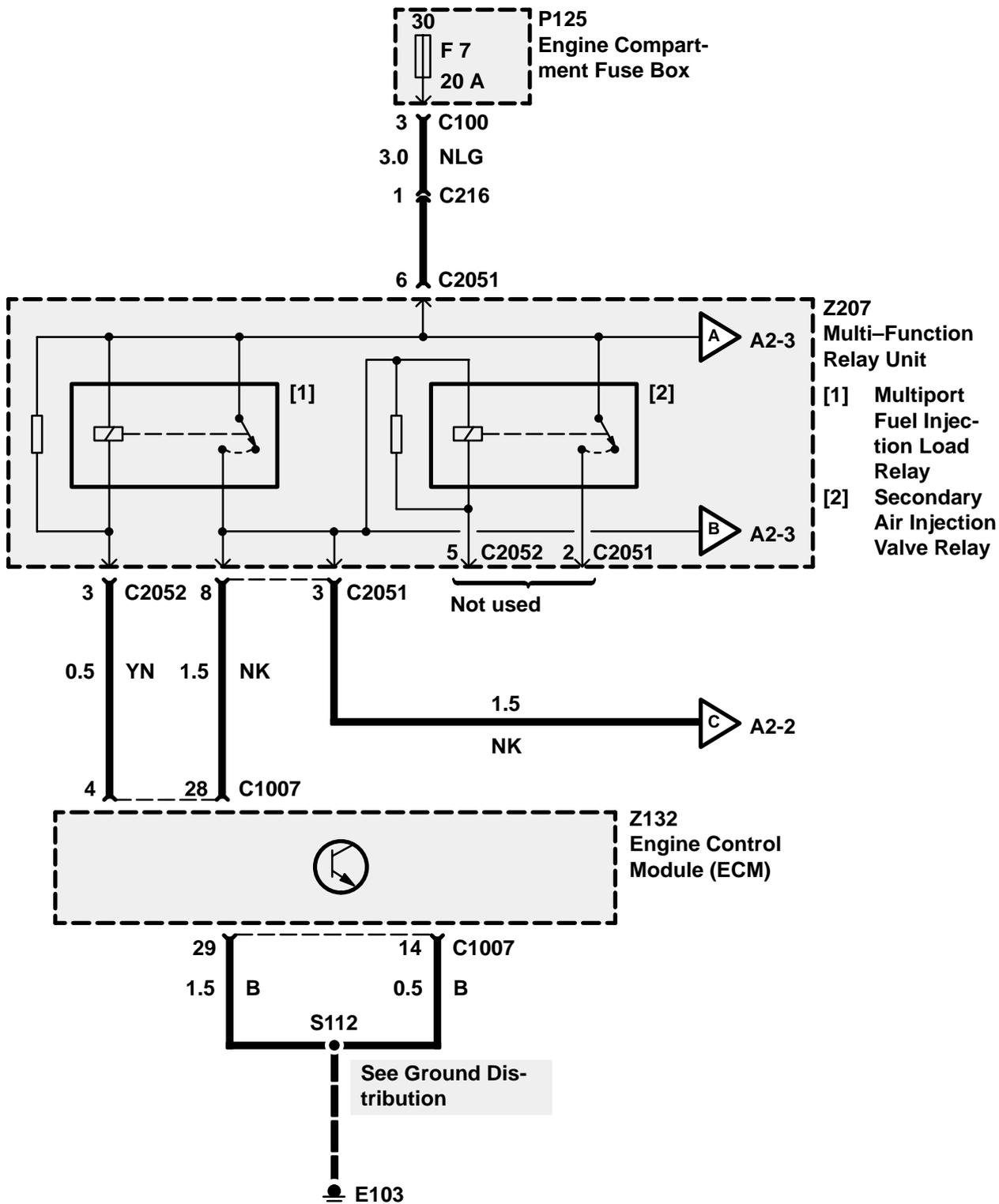
DISCOVERY

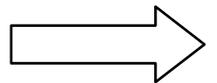
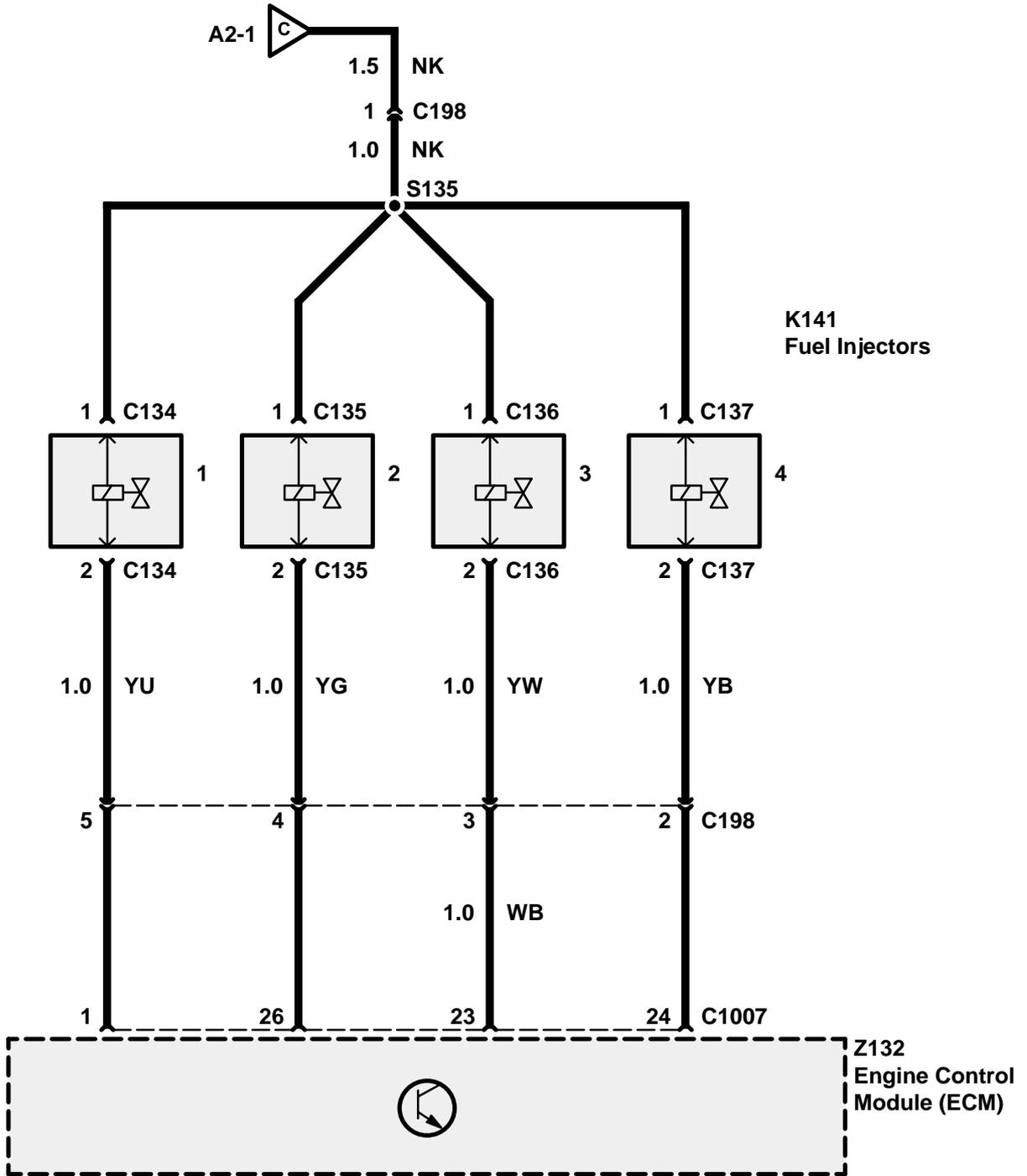
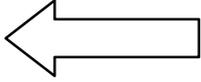


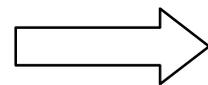
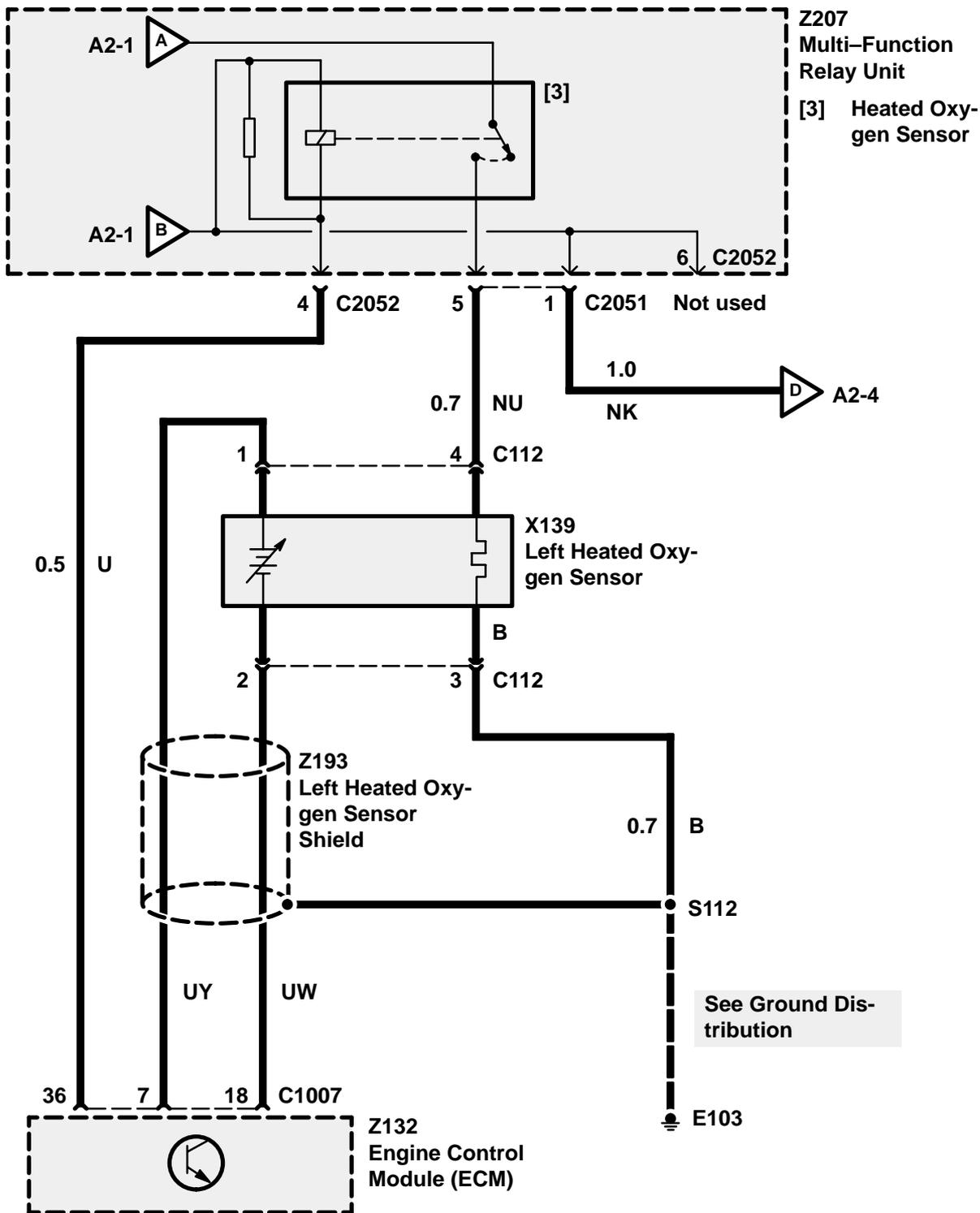
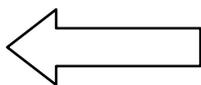
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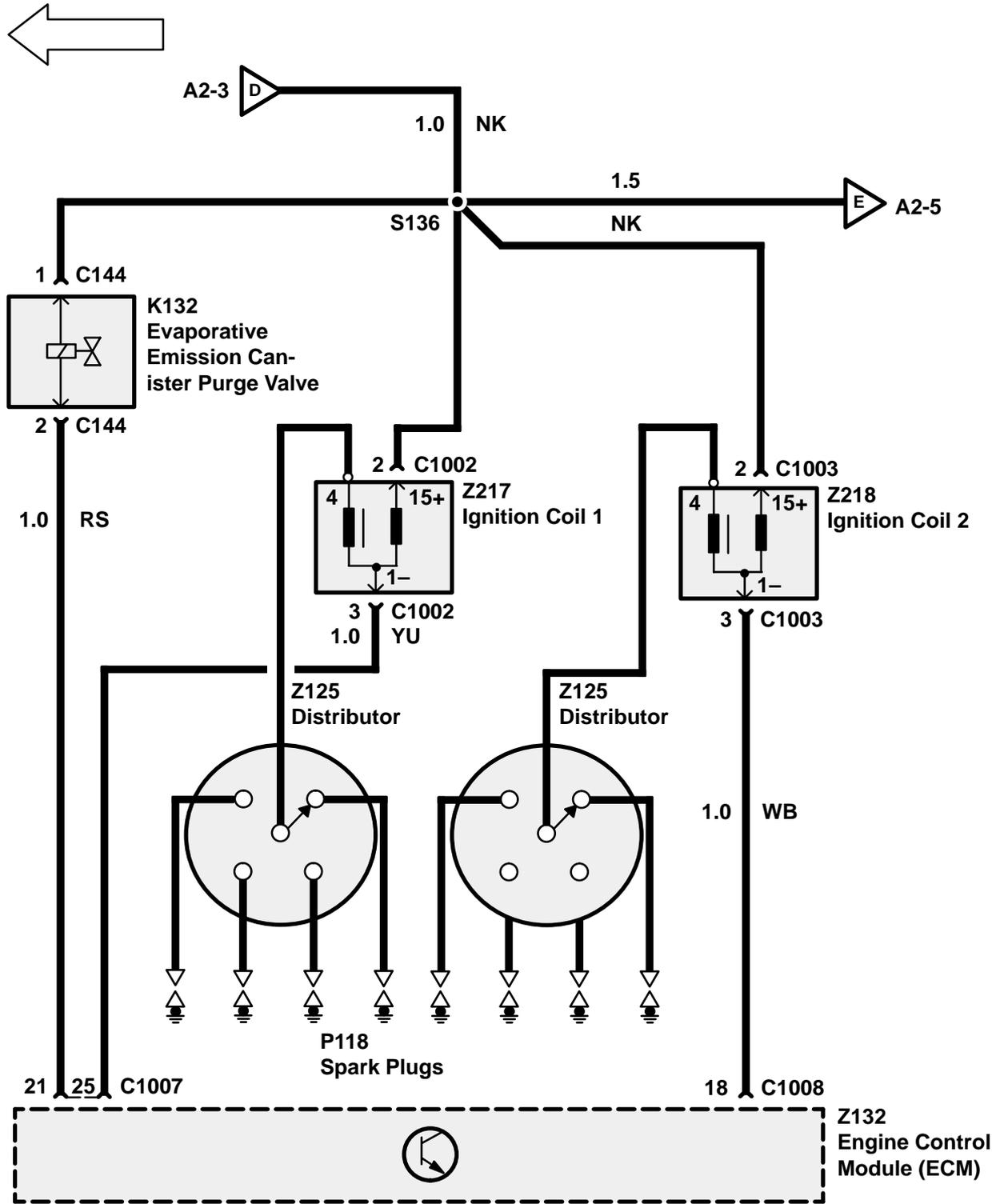
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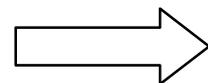
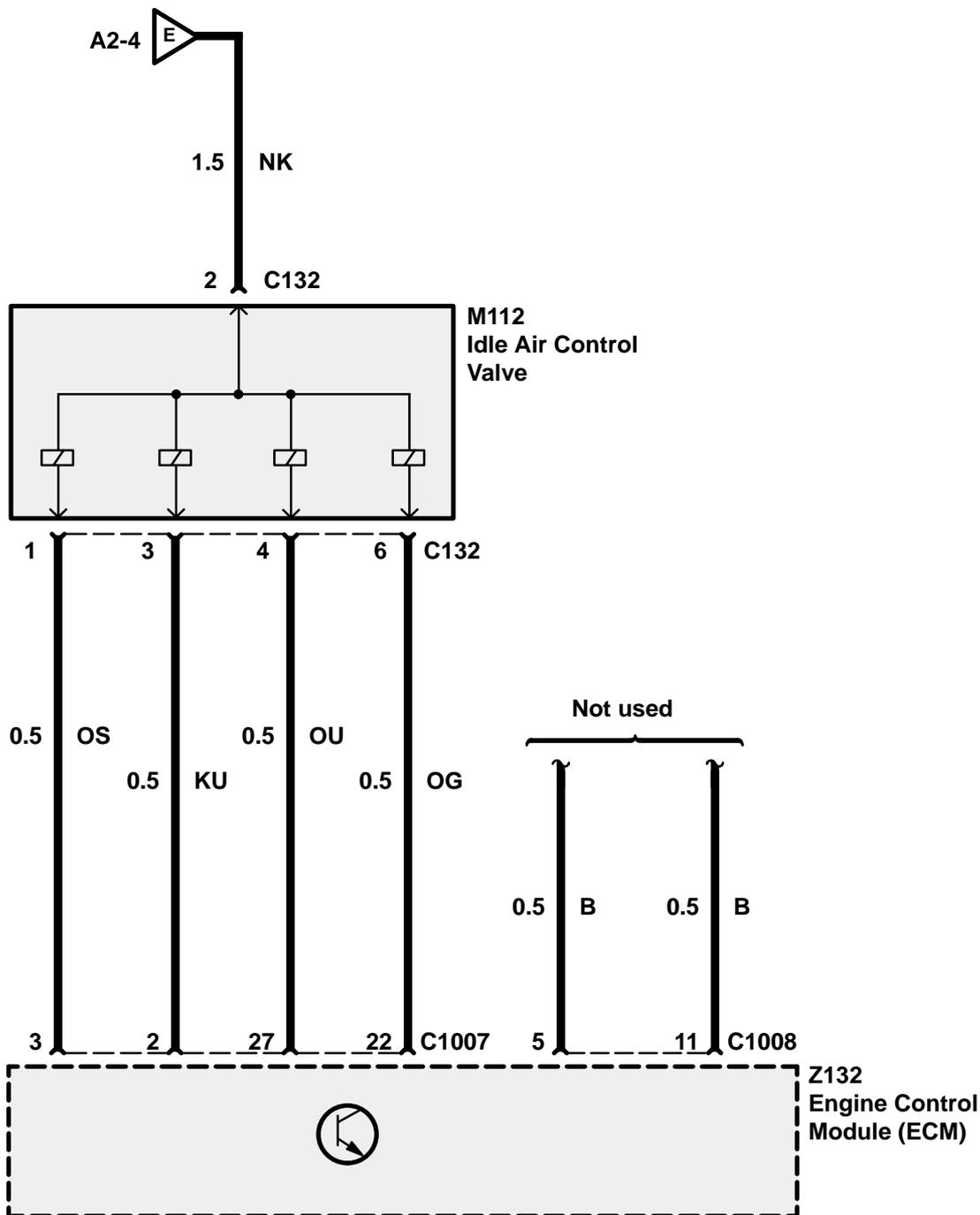
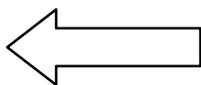






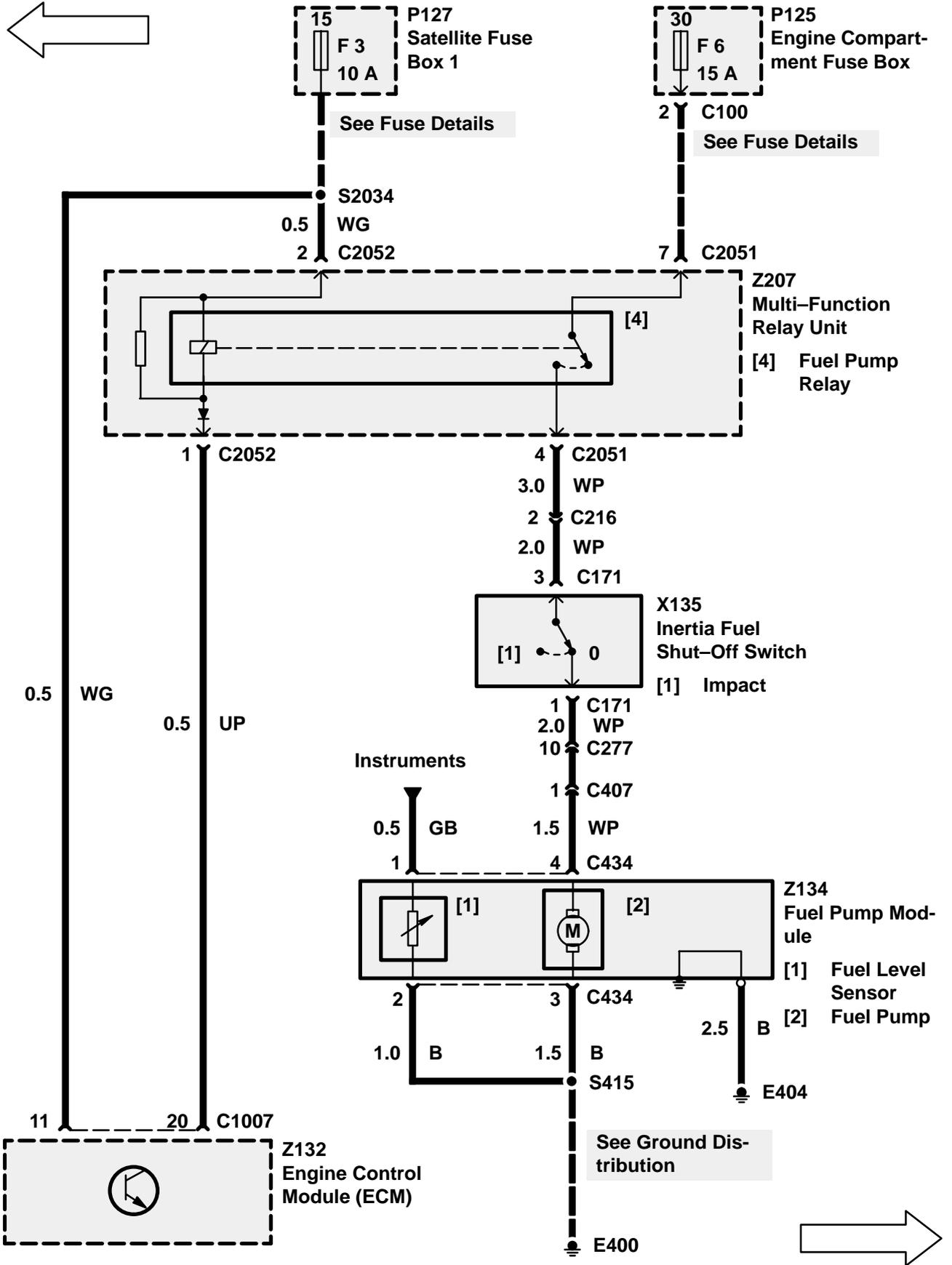


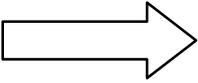
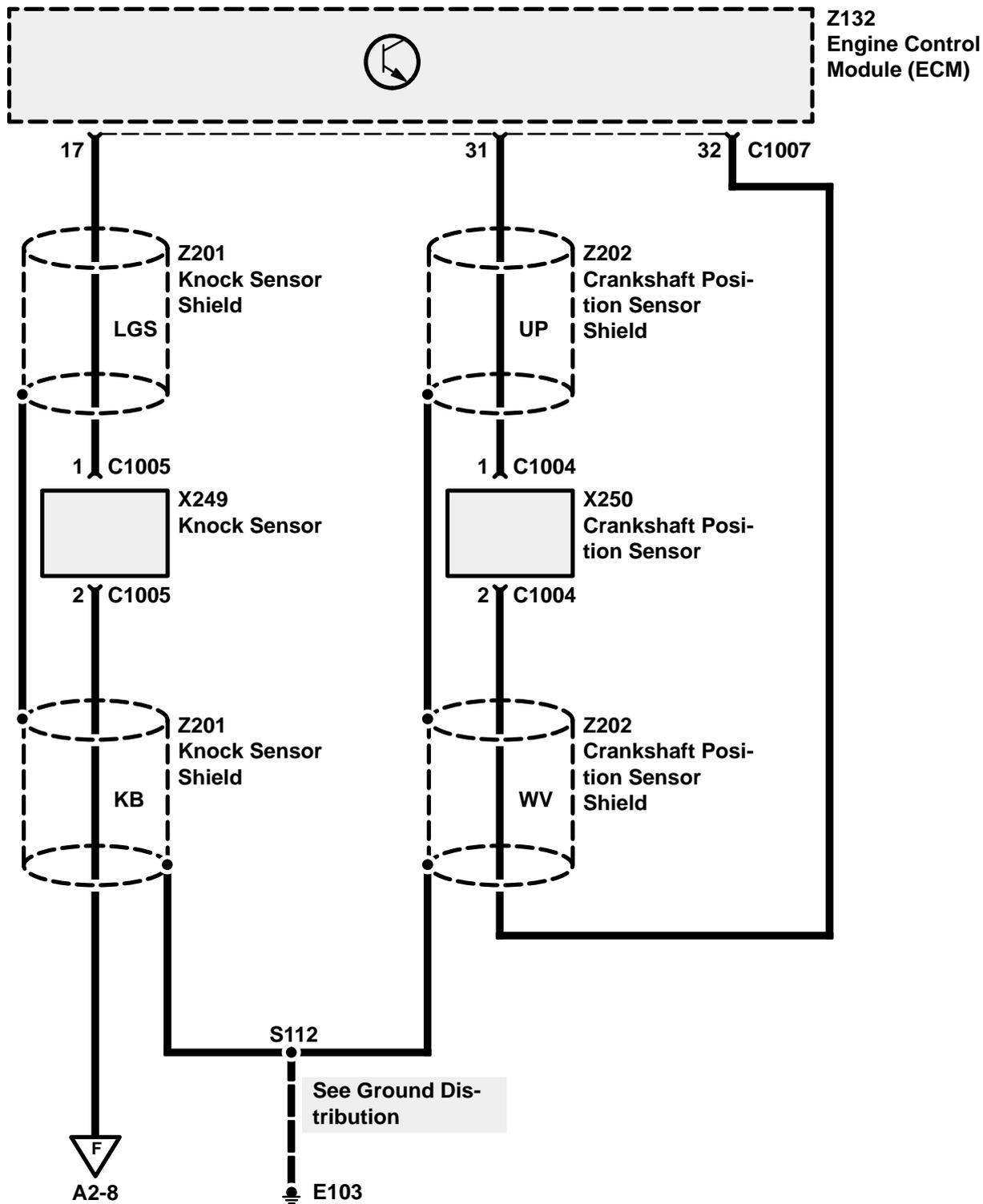
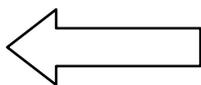




A2 ETM

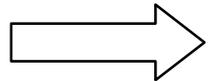
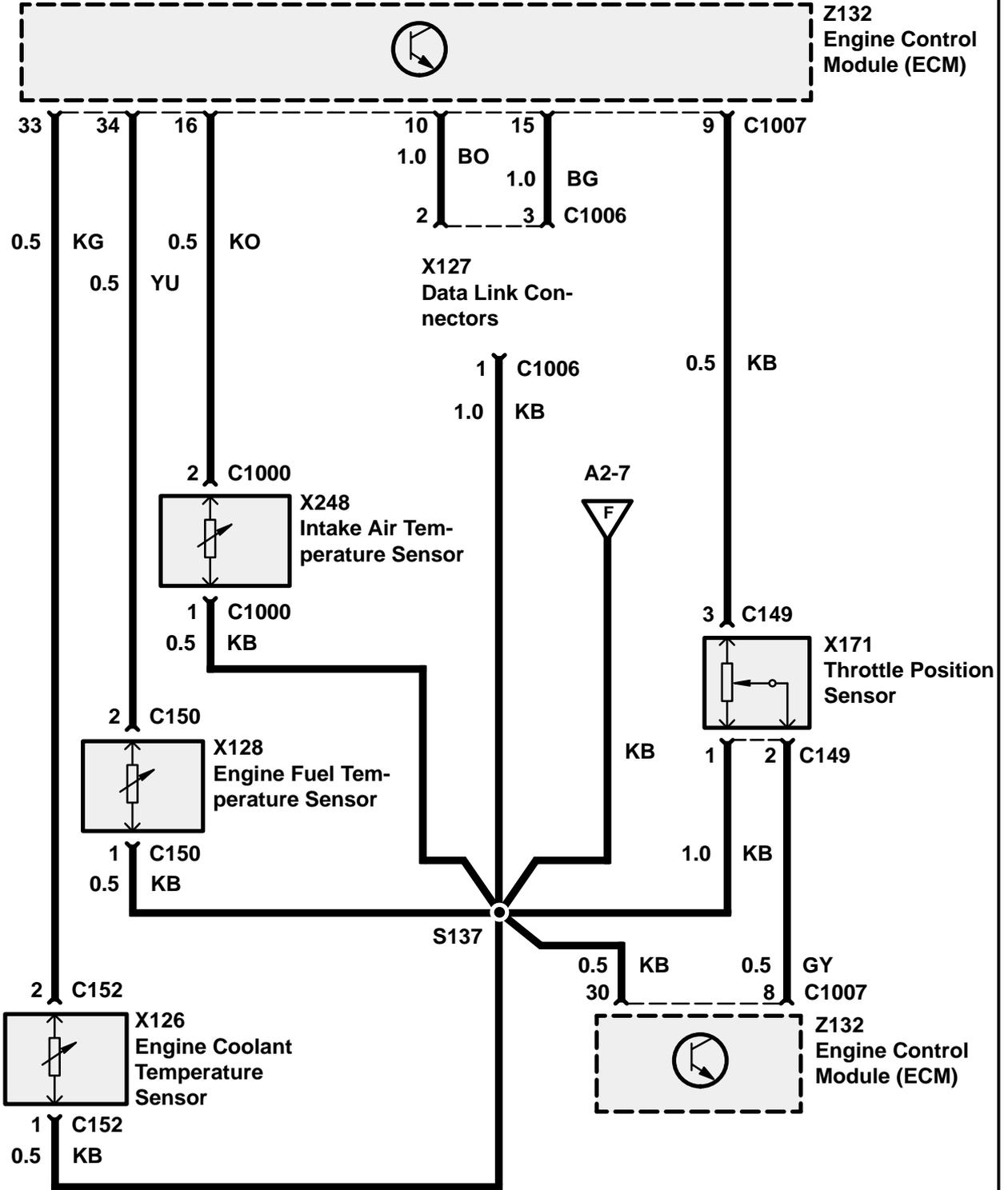
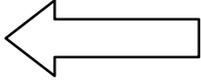
DISCOVERY

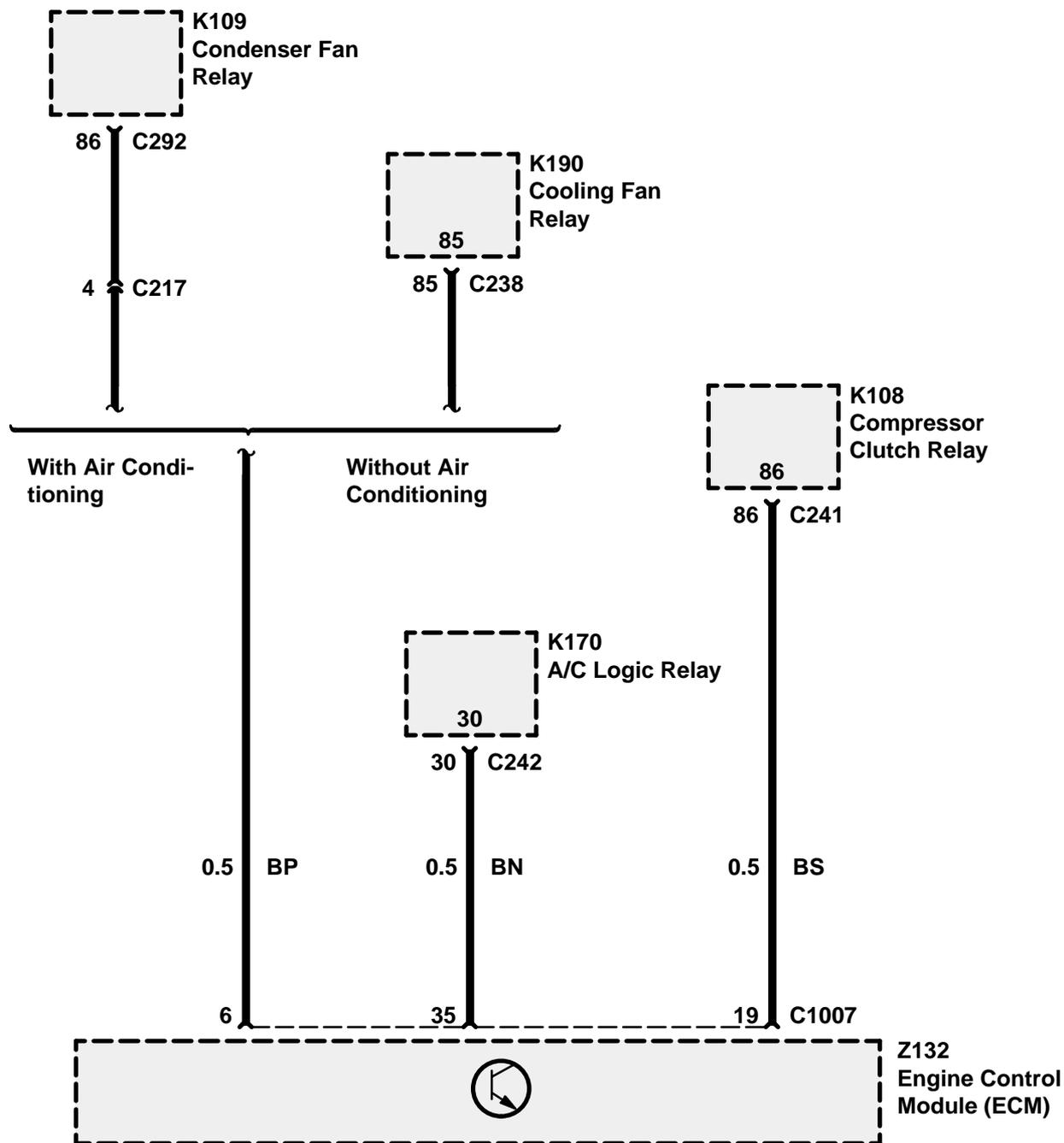
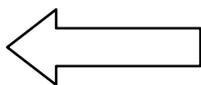


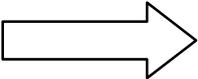
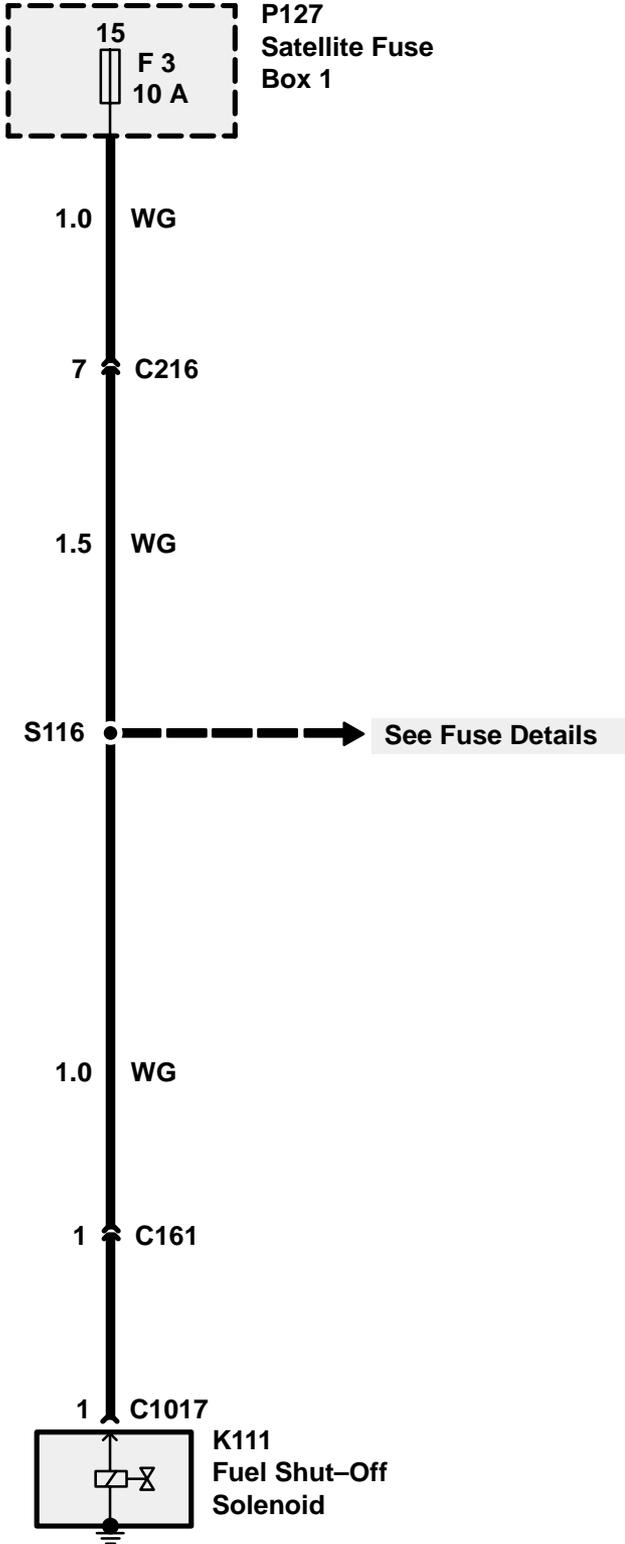


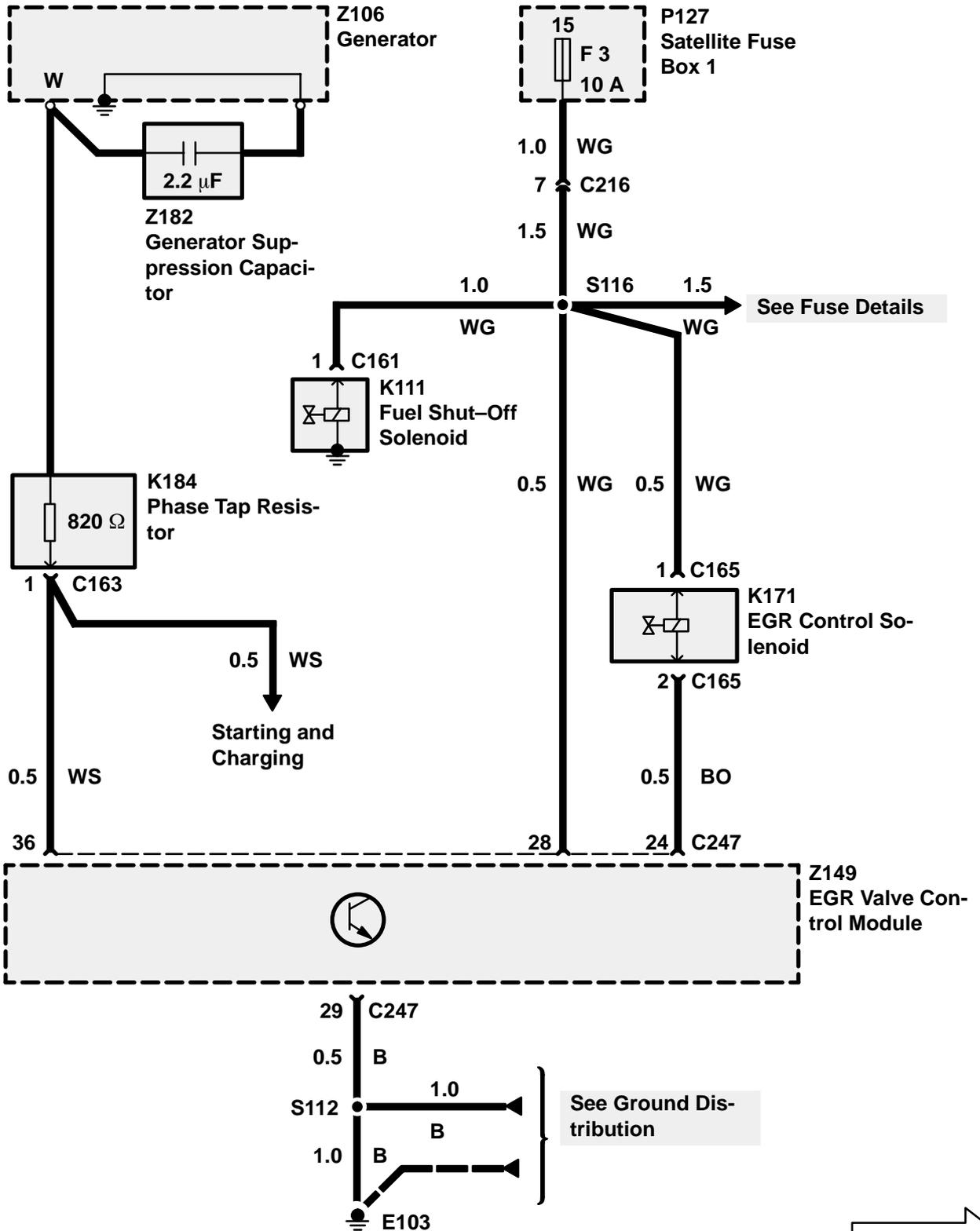
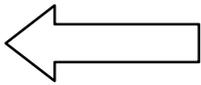
A2 ETM

DISCOVERY



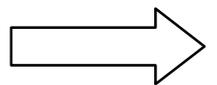


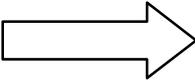
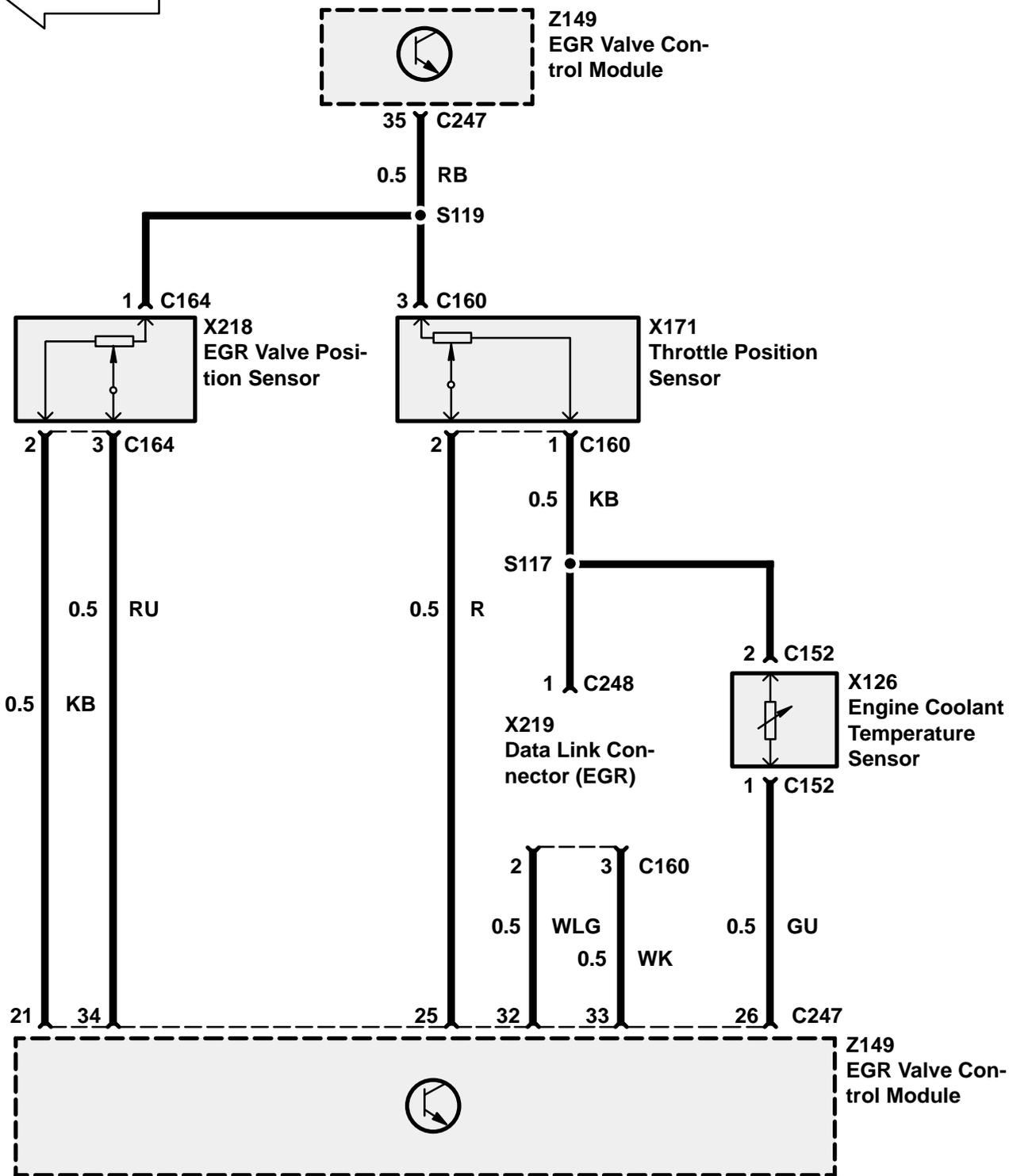
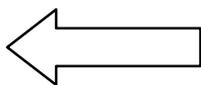


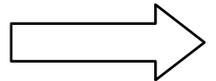
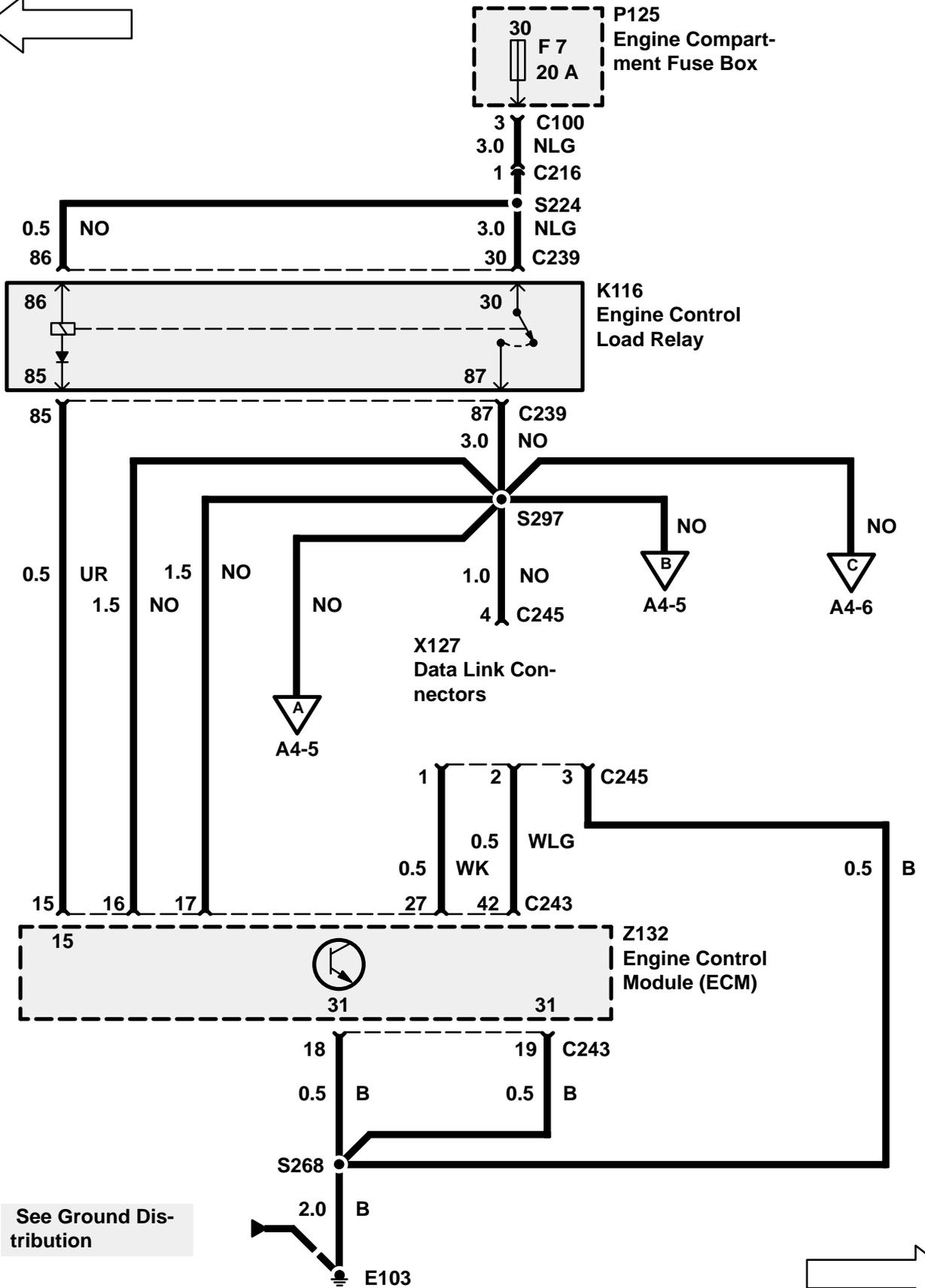
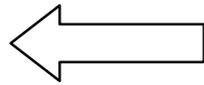


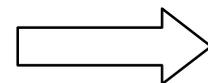
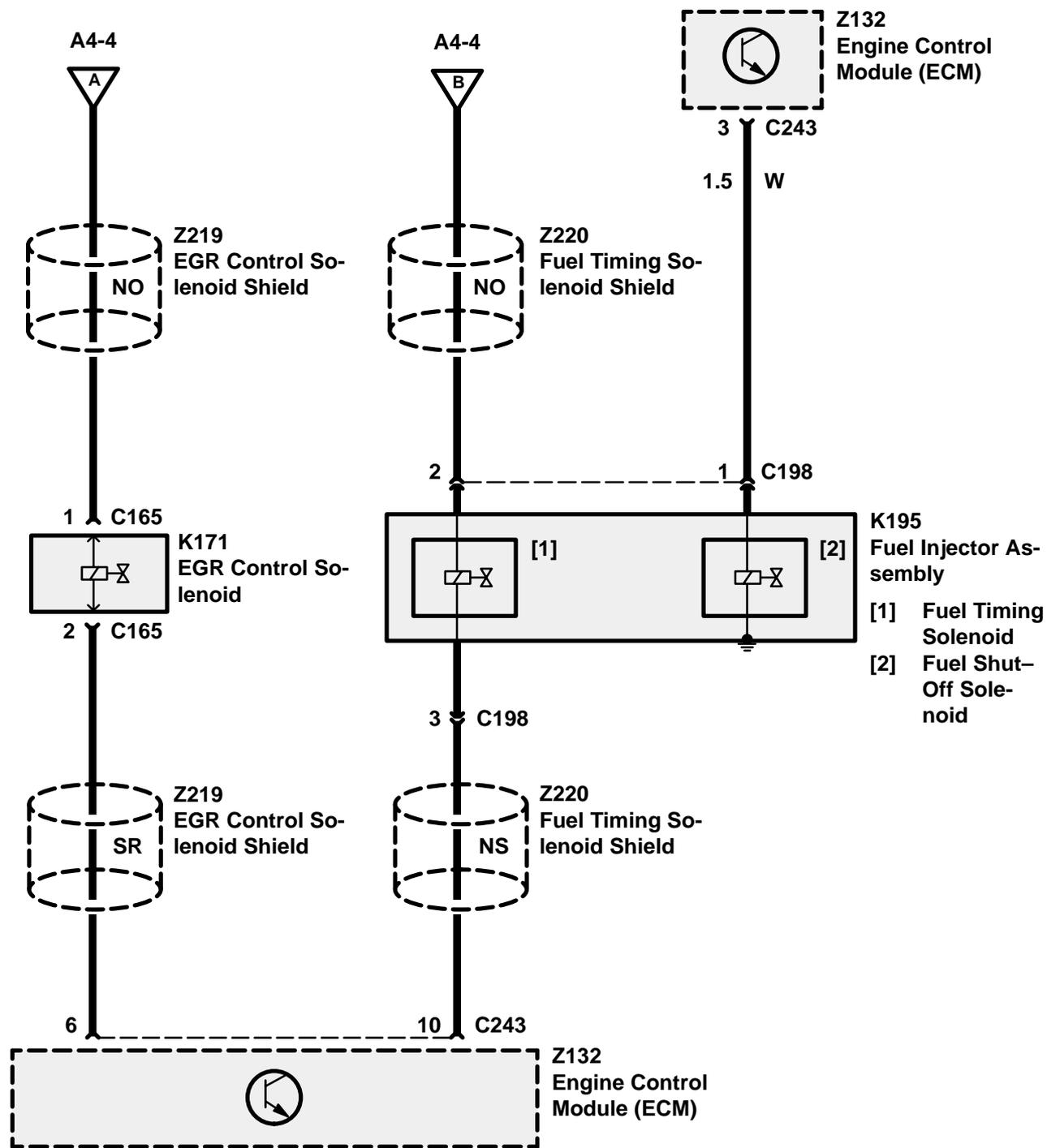
See Fuse Details

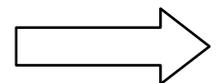
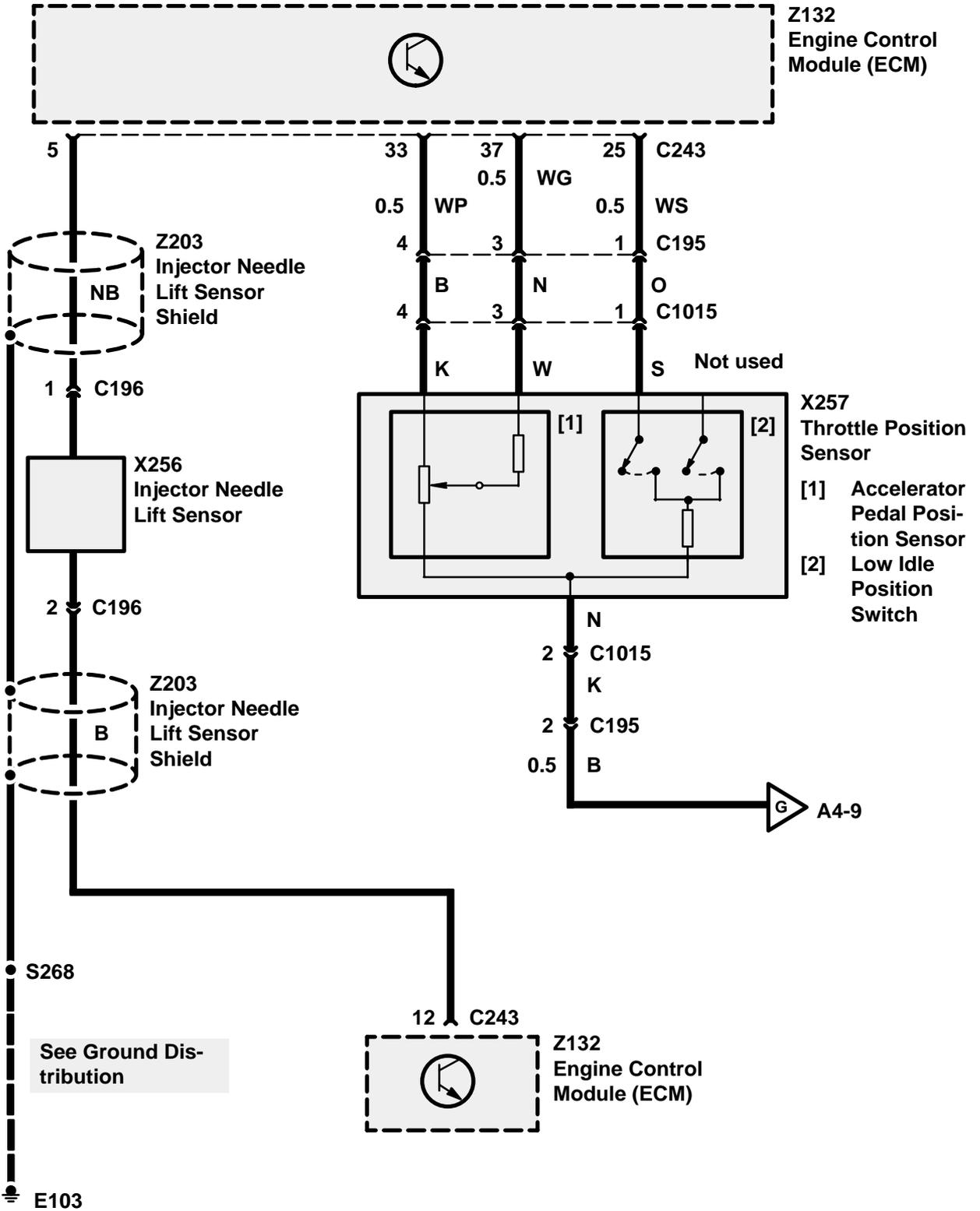
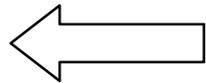
See Ground Distribution

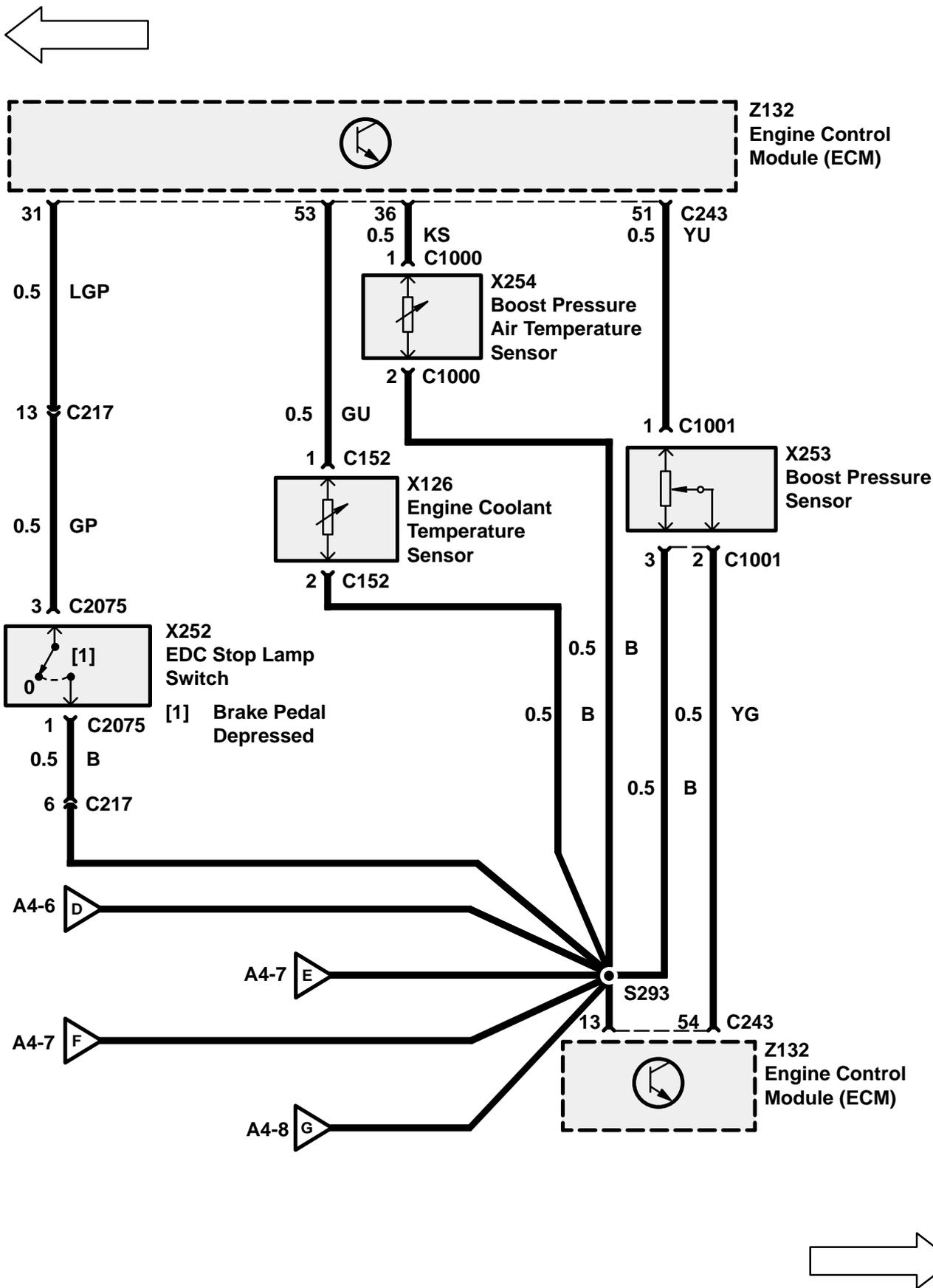


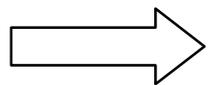
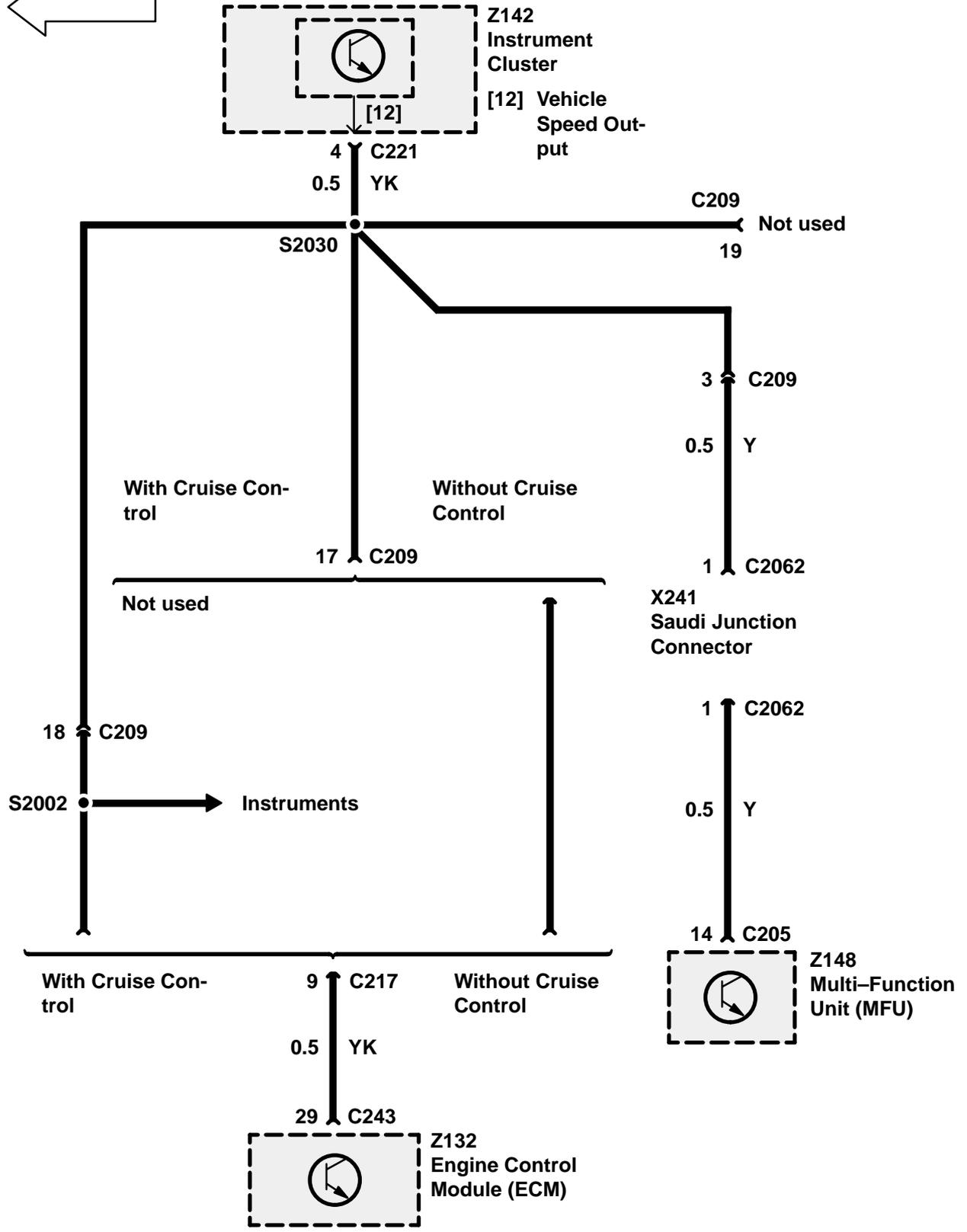


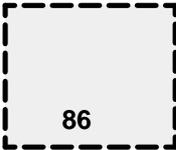
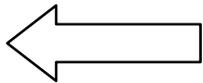








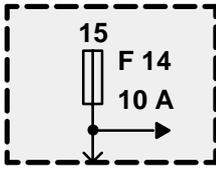




K108
Compressor
Clutch Relay

86

86 C241



P126
Fascia Fuse Box

15
F 14
10 A

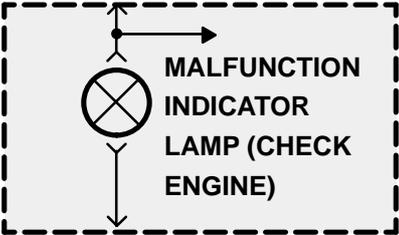
5 C208

See Fuse Details

S214

0.5 LG

2 C222



Z142
Instrument
Cluster

MALFUNCTION
INDICATOR
LAMP (CHECK
ENGINE)

1 C222

0.5 RS

2 C209

15 C217

4 C243



K170
A/C Logic Relay

30

30 C242

0.5 BS

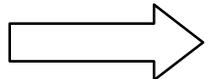
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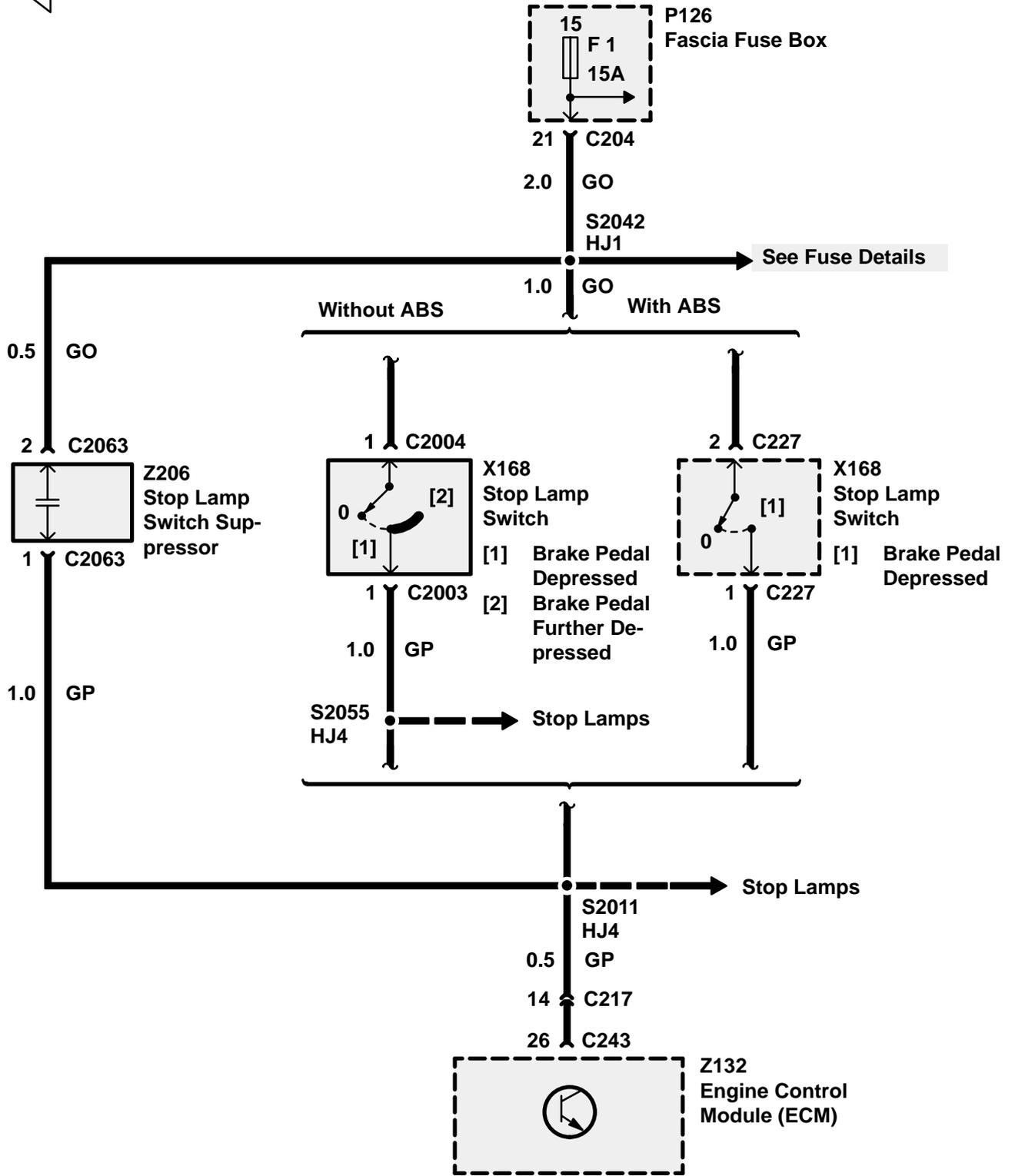
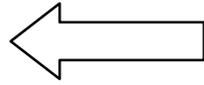
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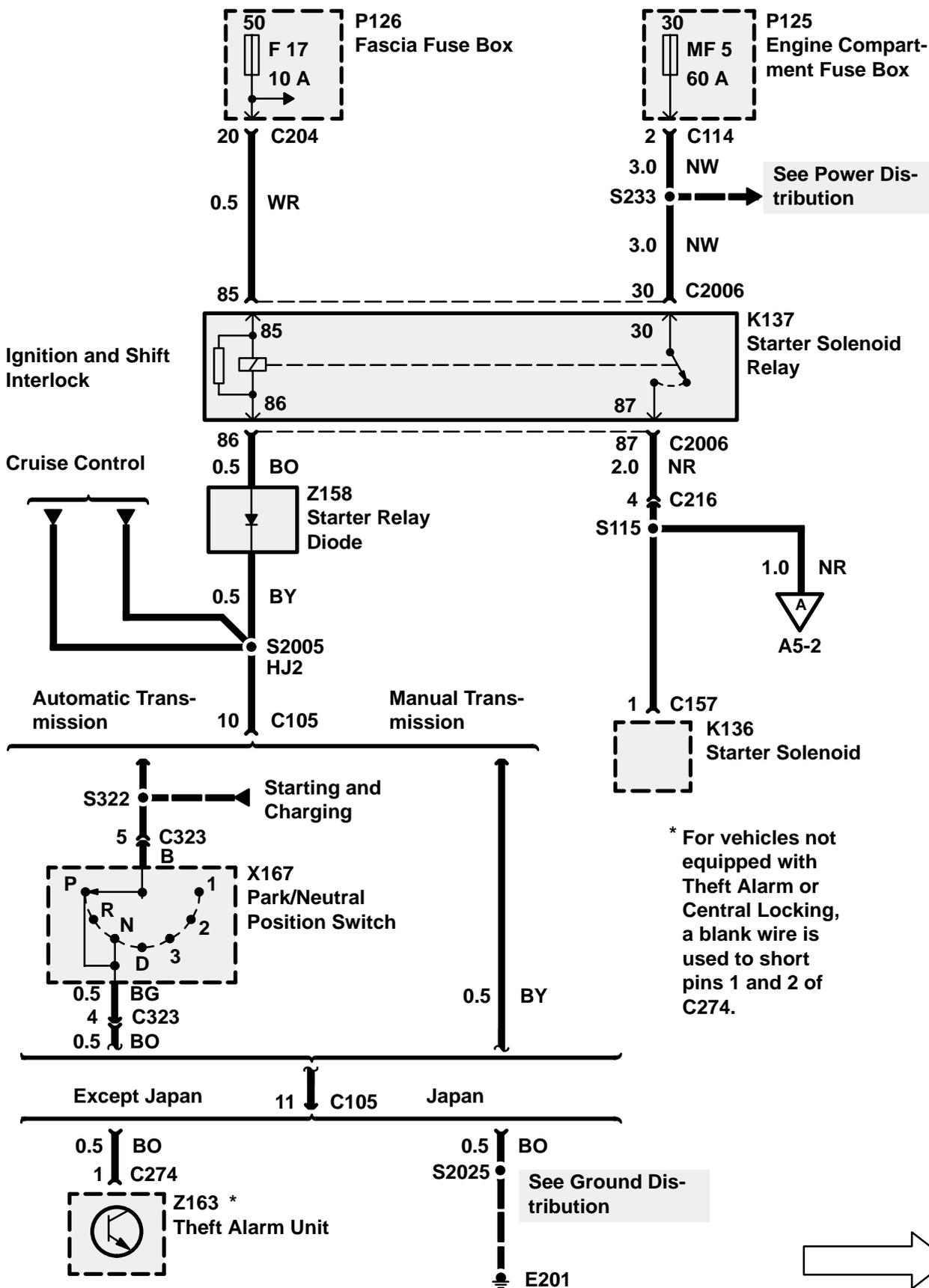
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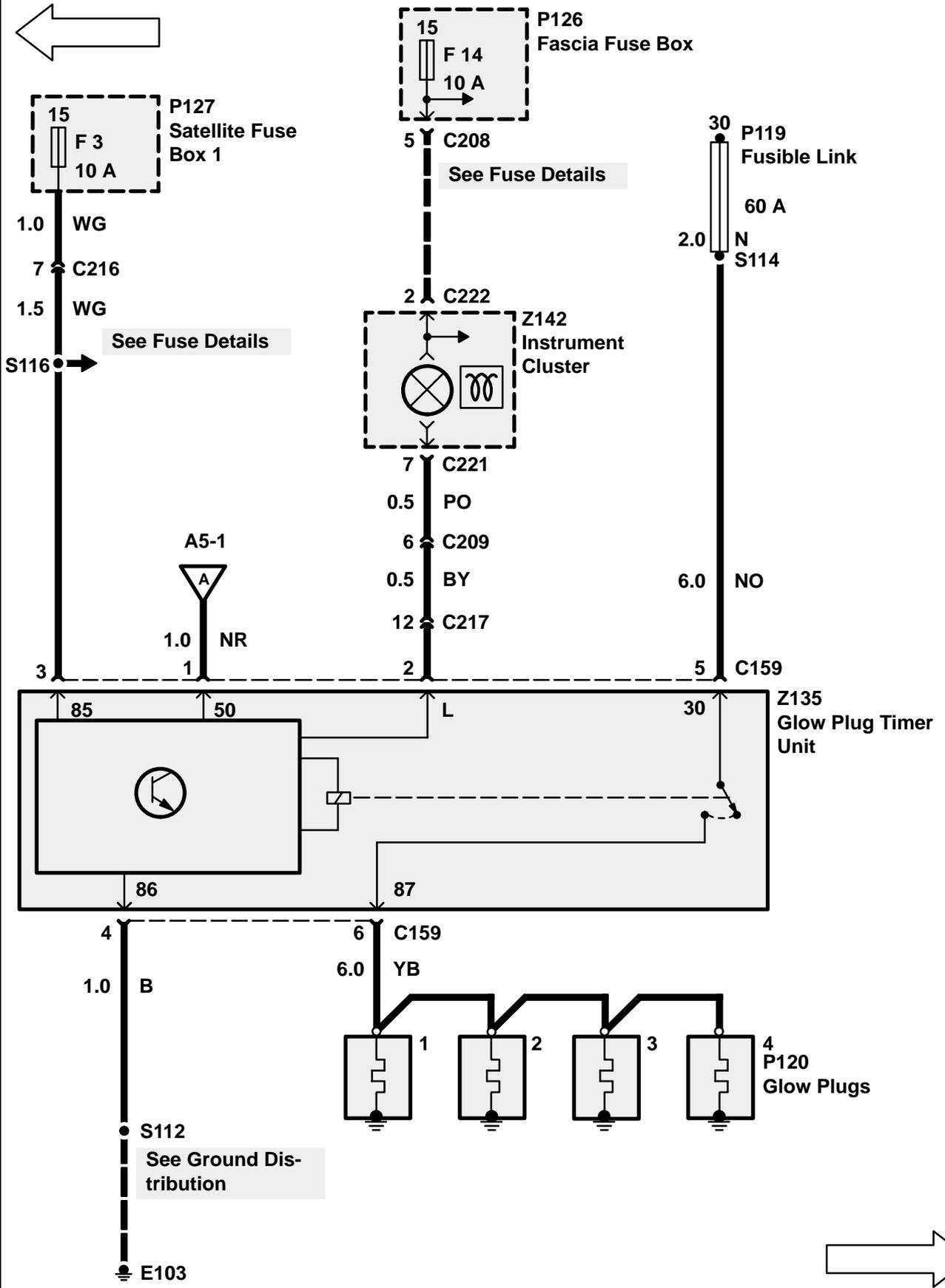


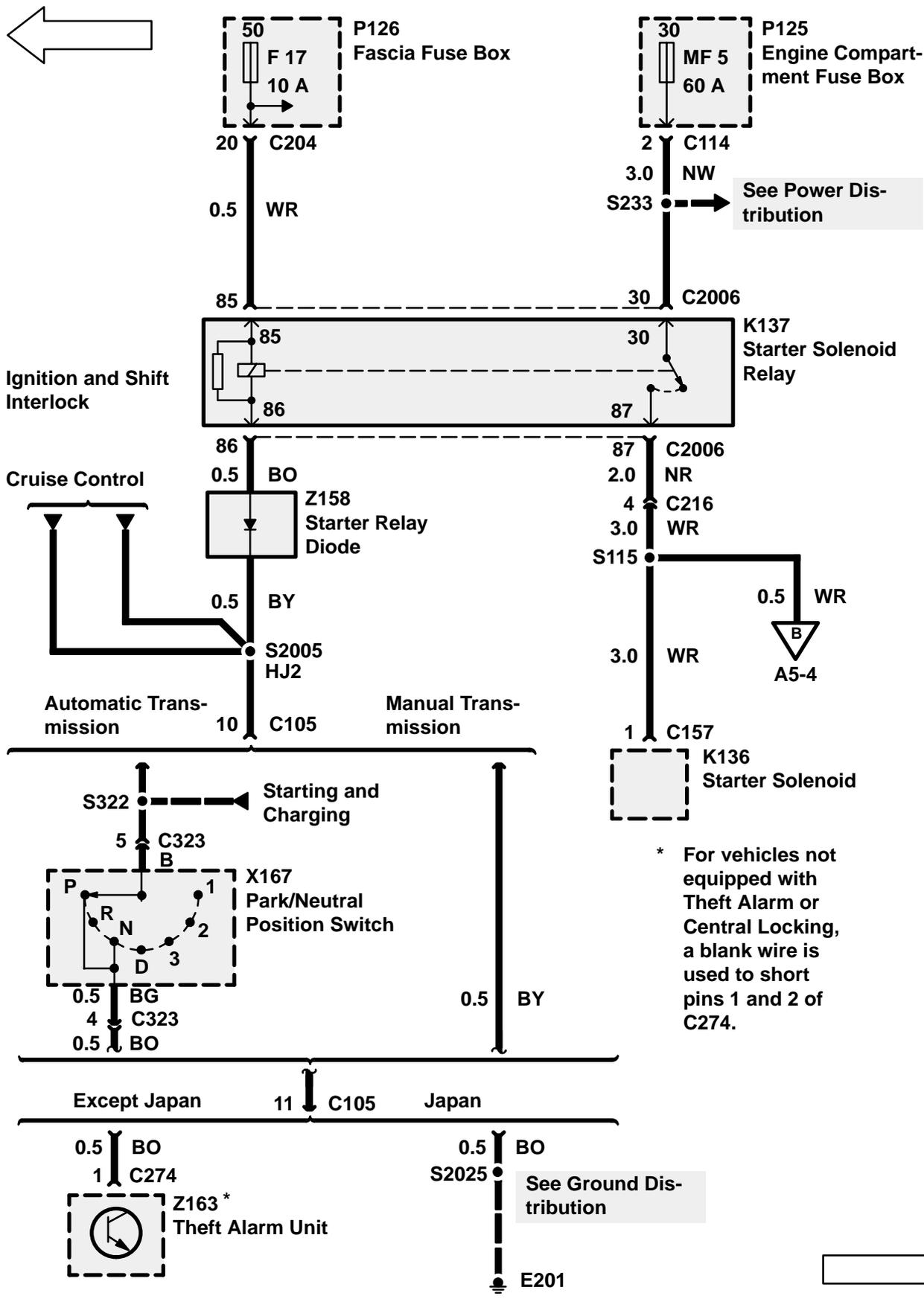
Z132
Engine Control
Module (ECM)





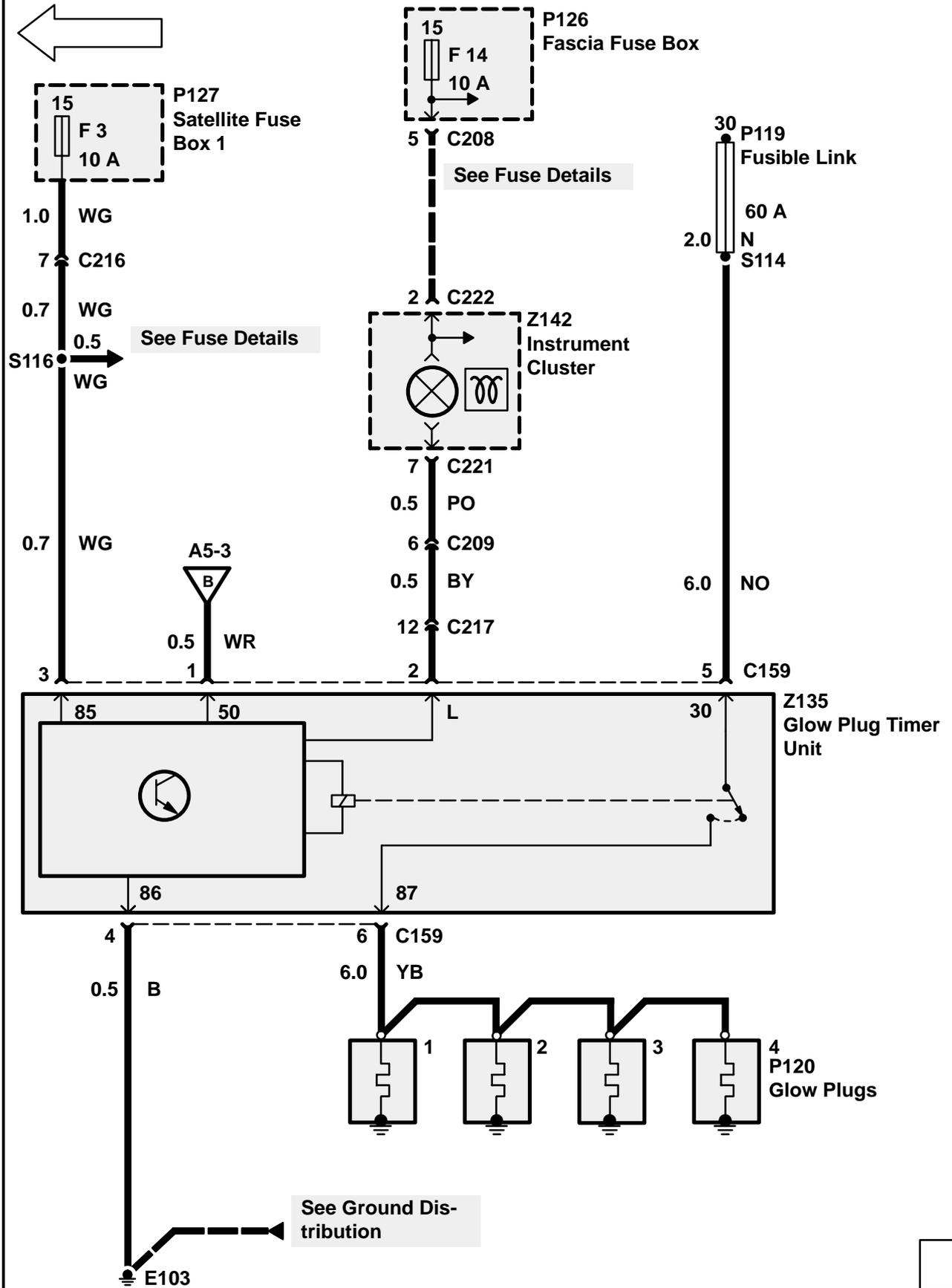






A5 ETM

DISCOVERY



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 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).

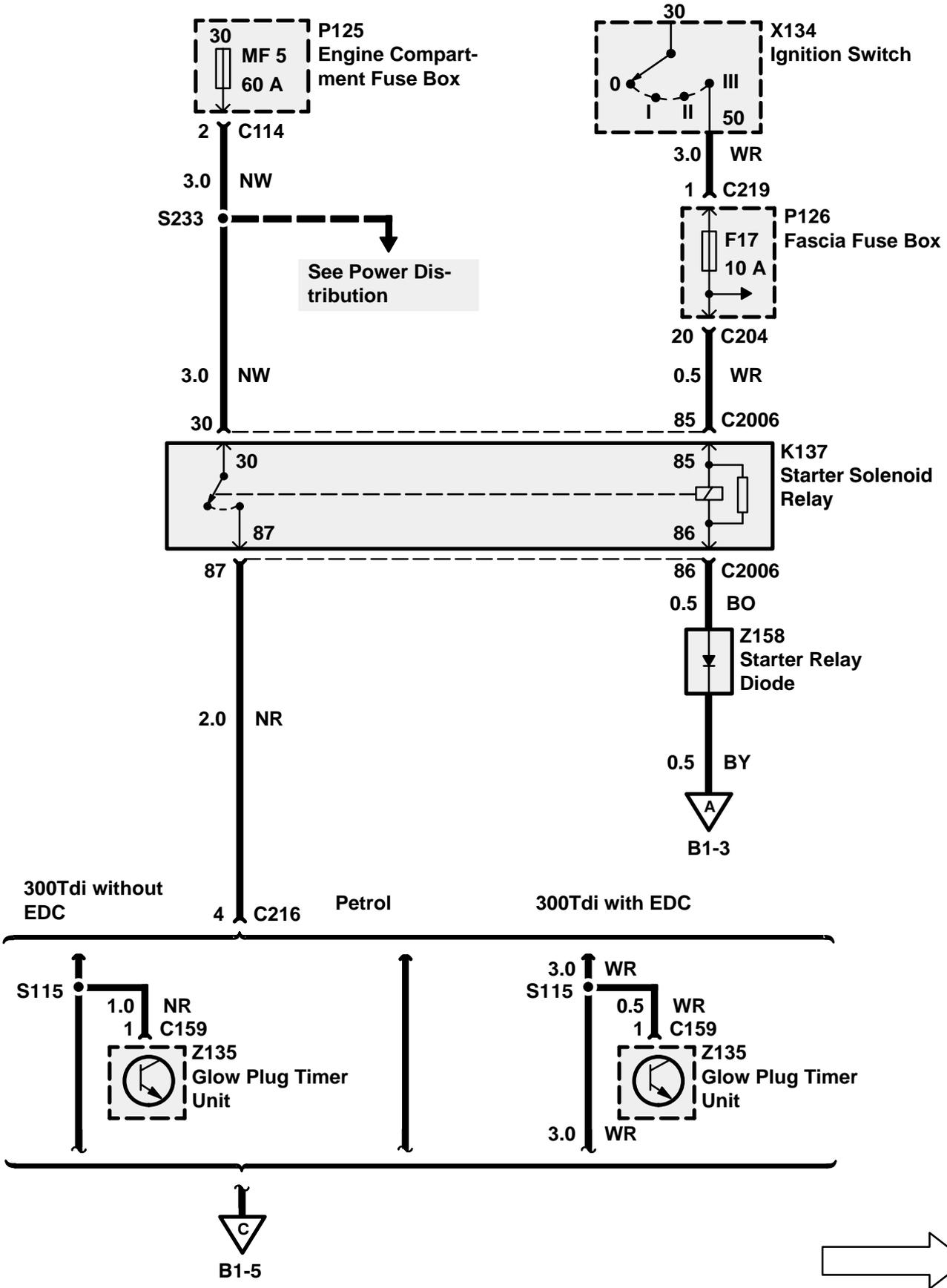
If the theft alarm is activated, the Theft Alarm Unit (Z163) will interrupt the Starter Solenoid Relay's (K137) ground path and prevent starting the engine.

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

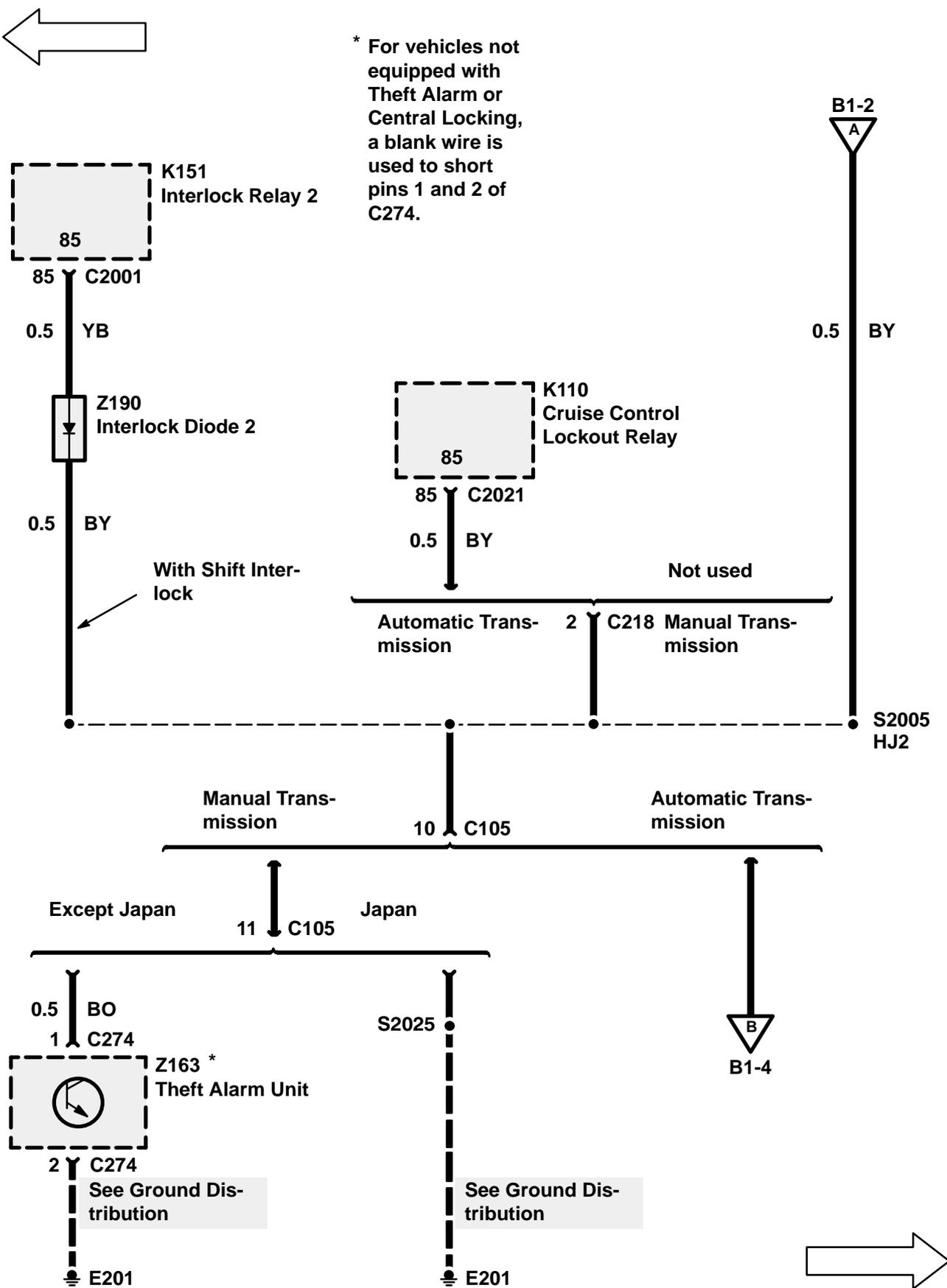
Charging System

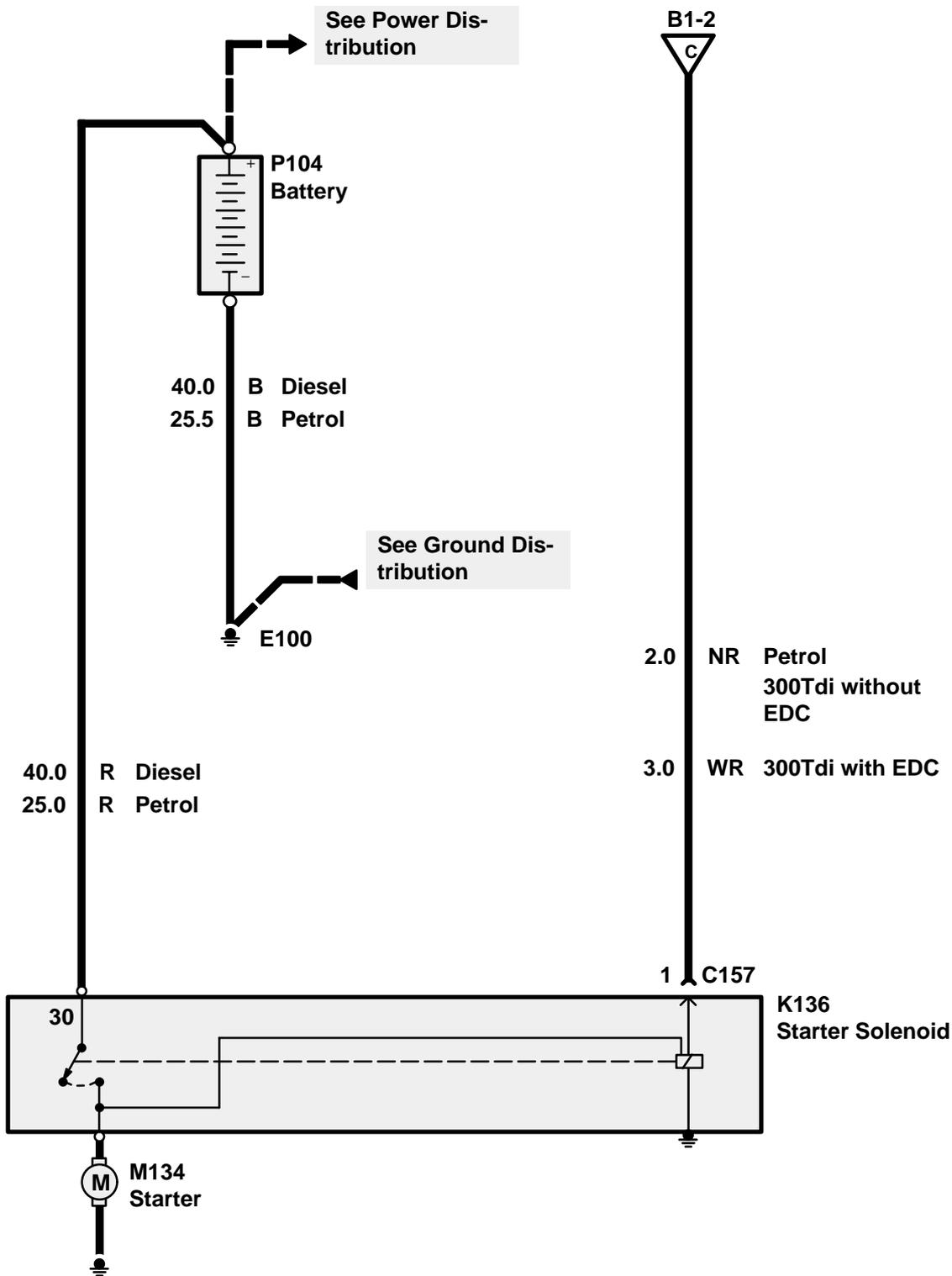
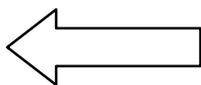
When the Ignition Switch (X134) is in position II, battery voltage is applied to the charging system fault light. When the Generator (Z106) is being turned by the engine, its stator windings are excited by voltage applied to the Generator (Z106) via the charging system fault light. The Generator (Z106) 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.

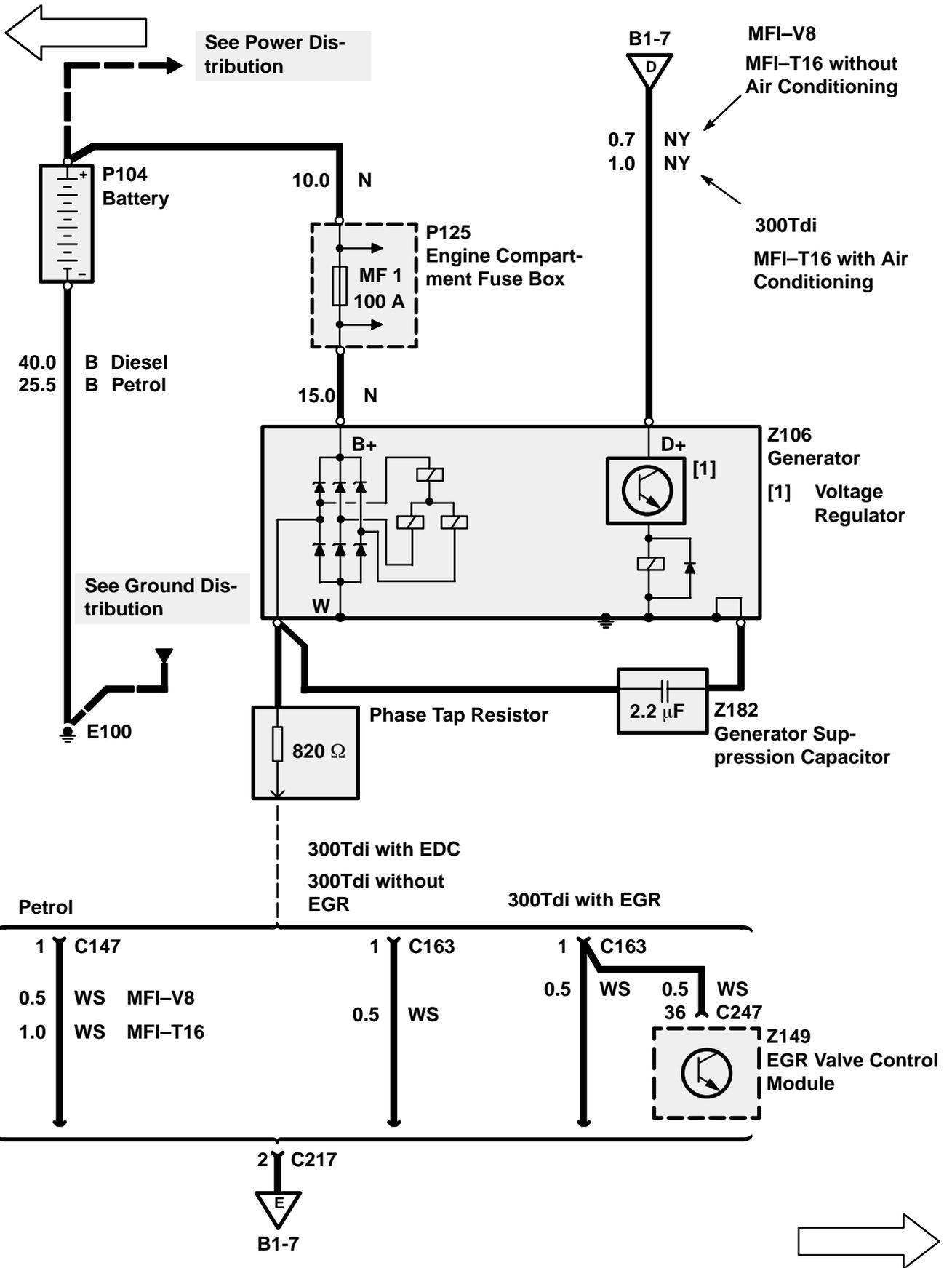
The tachometer displays engine speed in rpm. Voltage pulses are taken from the Generator (Z106) and are generated when the engine drive belt turns the Generator pulley. The tachometer responds to the frequency of the voltage pulses, which increases proportionally to that of the engine speed.

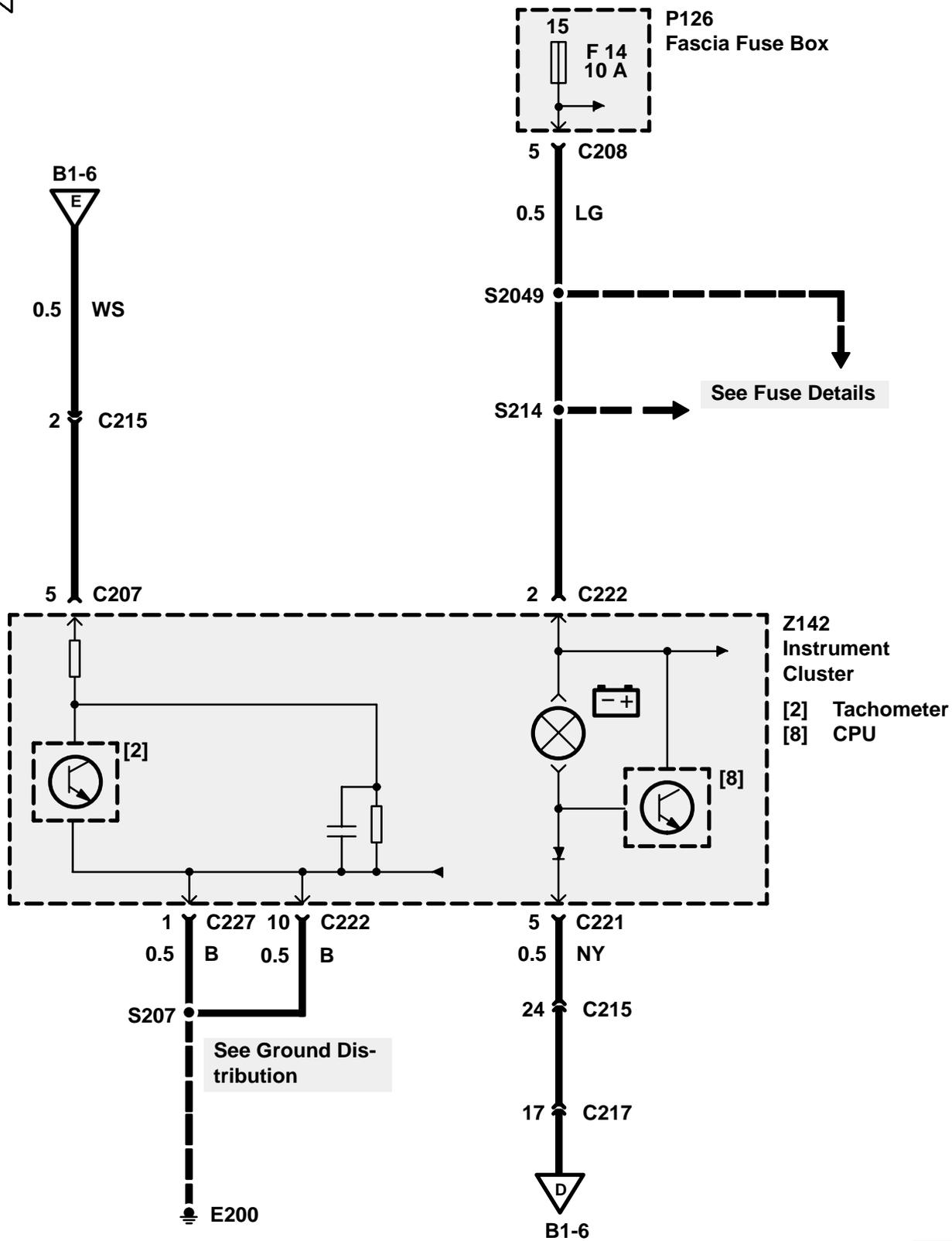
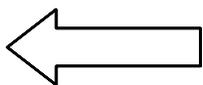


* For vehicles not equipped with Theft Alarm or Central Locking, a blank wire is used to short pins 1 and 2 of C274.









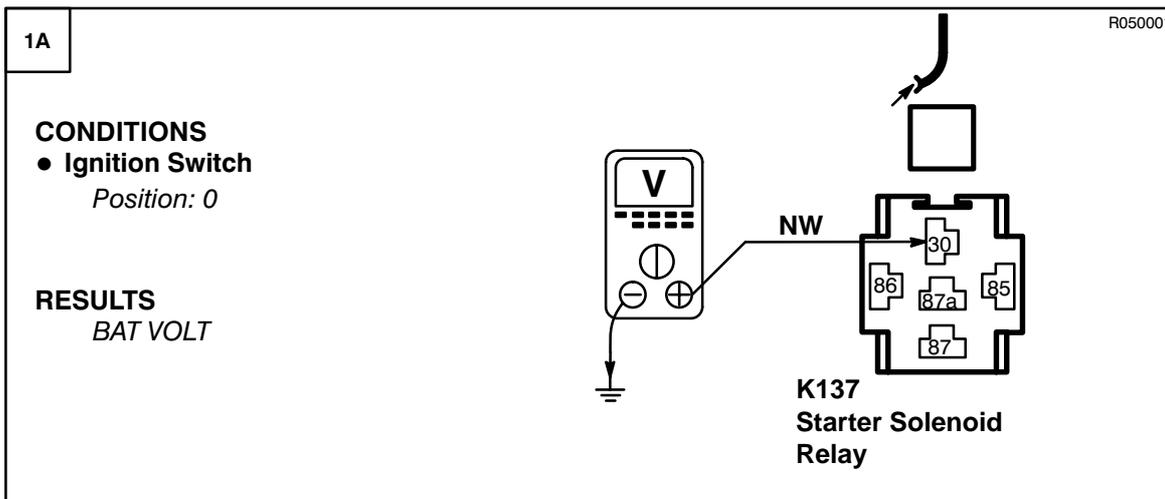
TROUBLESHOOTING HINTS

1. If the Starter Solenoid (K136) does not click, check the Park/Neutral Position Reverse Switch (X167) and the Theft Alarm Unit (Z163).

SYSTEM DIAGNOSIS

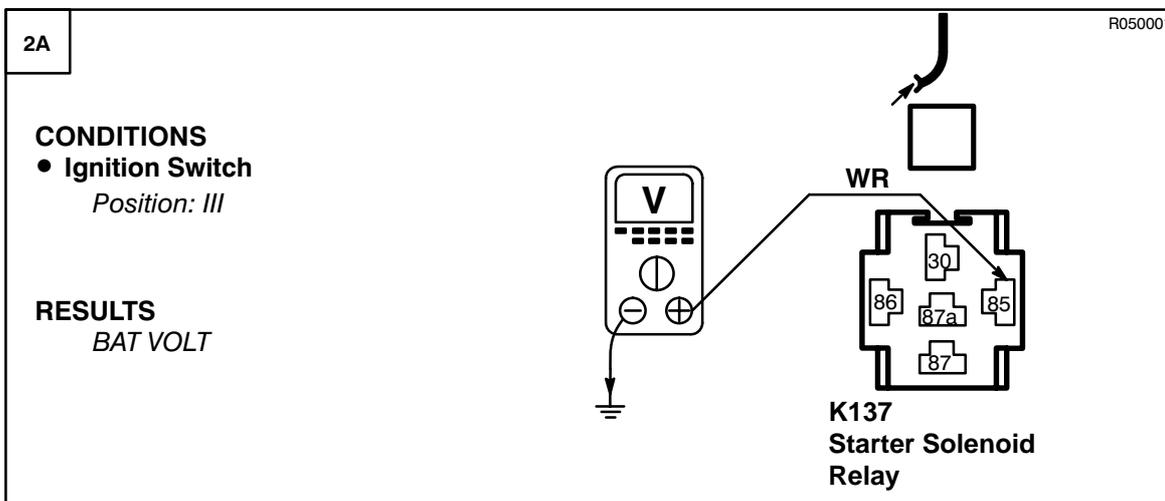
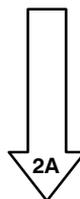
1. If the Starter Solenoid (K136) does not click and the engine does not crank, do Test A.
2. If the Starter Solenoid (K136) clicks but the engine does not crank or cranks slowly, do Test B.
3. If the charge warning light does not light with the engine off and the Ignition Switch (X134) in position II,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

Test A



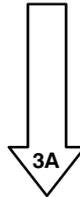
~~OK~~ PROBLEM CAUSE
- NW Wire

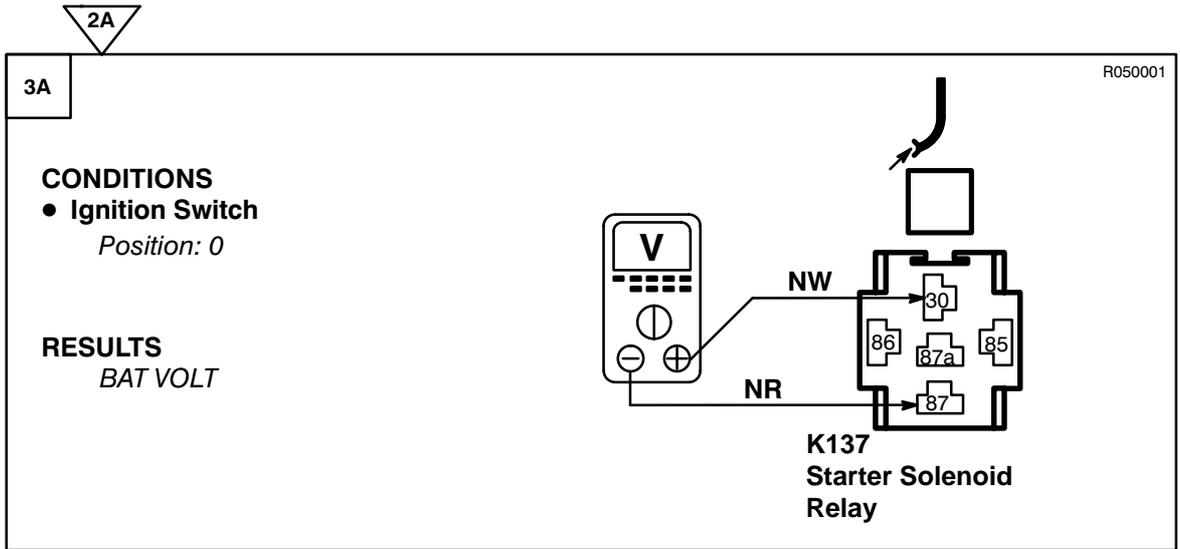
OK



~~OK~~ PROBLEM CAUSE
- F17 Fuse
- WR Wire
- Ignition Switch

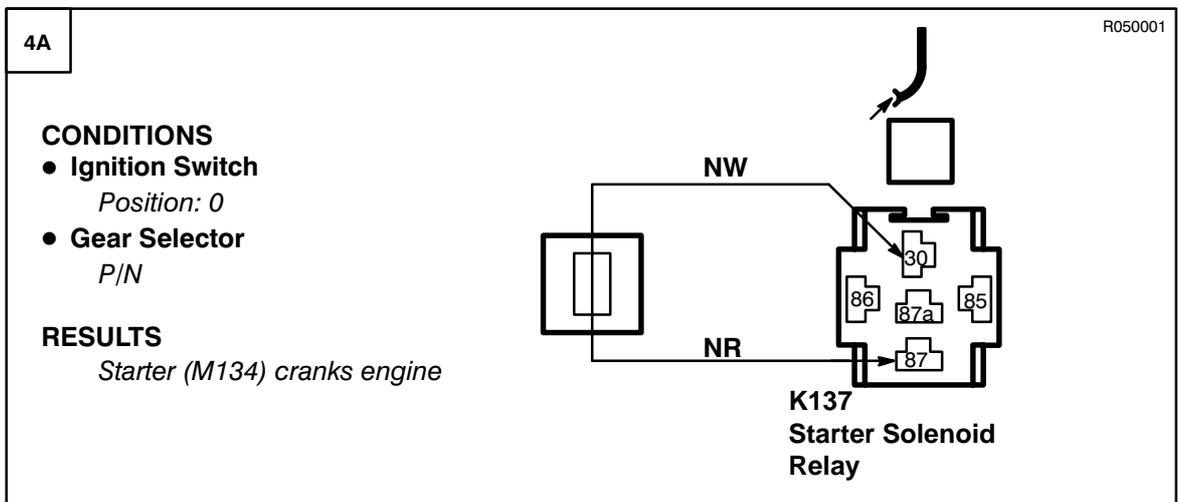
OK





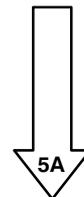
PROBLEM CAUSE

- B Wire
- Starter Solenoid



PROBLEM CAUSE

- NR Wire
- Starter Solenoid
- Starter



4A

5A

R050001

CONDITIONS

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

RESULTS
Starter (M134) cranks engine

**K137
Starter Solenoid
Relay**



PROBLEM CAUSE

- BY, BO Wire
- Starter Relay Diode
- Park/Neutral Position Switch
- Theft Alarm Unit



PROBLEM CAUSE

- Starter Solenoid Relay

Test B

1B

CONDITIONS

- Ignition Switch
Position: III

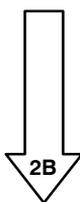
RESULTS
Less than 0.5V

**M134
Starter**



PROBLEM CAUSE

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



B1 ETM

DISCOVERY

1B

2B

CONDITIONS

- Ignition Switch
Position: III

RESULTS
Less than 0.5V



PROBLEM CAUSE

- B Wire
- Battery Terminal Connection
- Ground Connections



PROBLEM CAUSE

- Starter Solenoid
- Starter

Test C

1C

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

Z106 Generator



PROBLEM CAUSE

- NY Wire
- Bulb
- Instrument Cluster



PROBLEM CAUSE

- Generator

Test D

1D

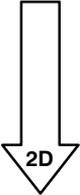
CONDITIONS
 • Ignition Switch
Position: 0

RESULTS
 BAT VOLT

Z106 Generator

~~OK~~ PROBLEM CAUSE
 - N Wire

OK



2D

CONDITIONS
 • Ignition Switch
Position: 0

RESULTS
 More than 1000 ohms

Z106 Generator

~~OK~~ PROBLEM CAUSE
 - NY Wire
 - Instrument Cluster

OK PROBLEM CAUSE
 - Generator

CIRCUIT OPERATION

With the Cruise Control Switch (X115) 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.

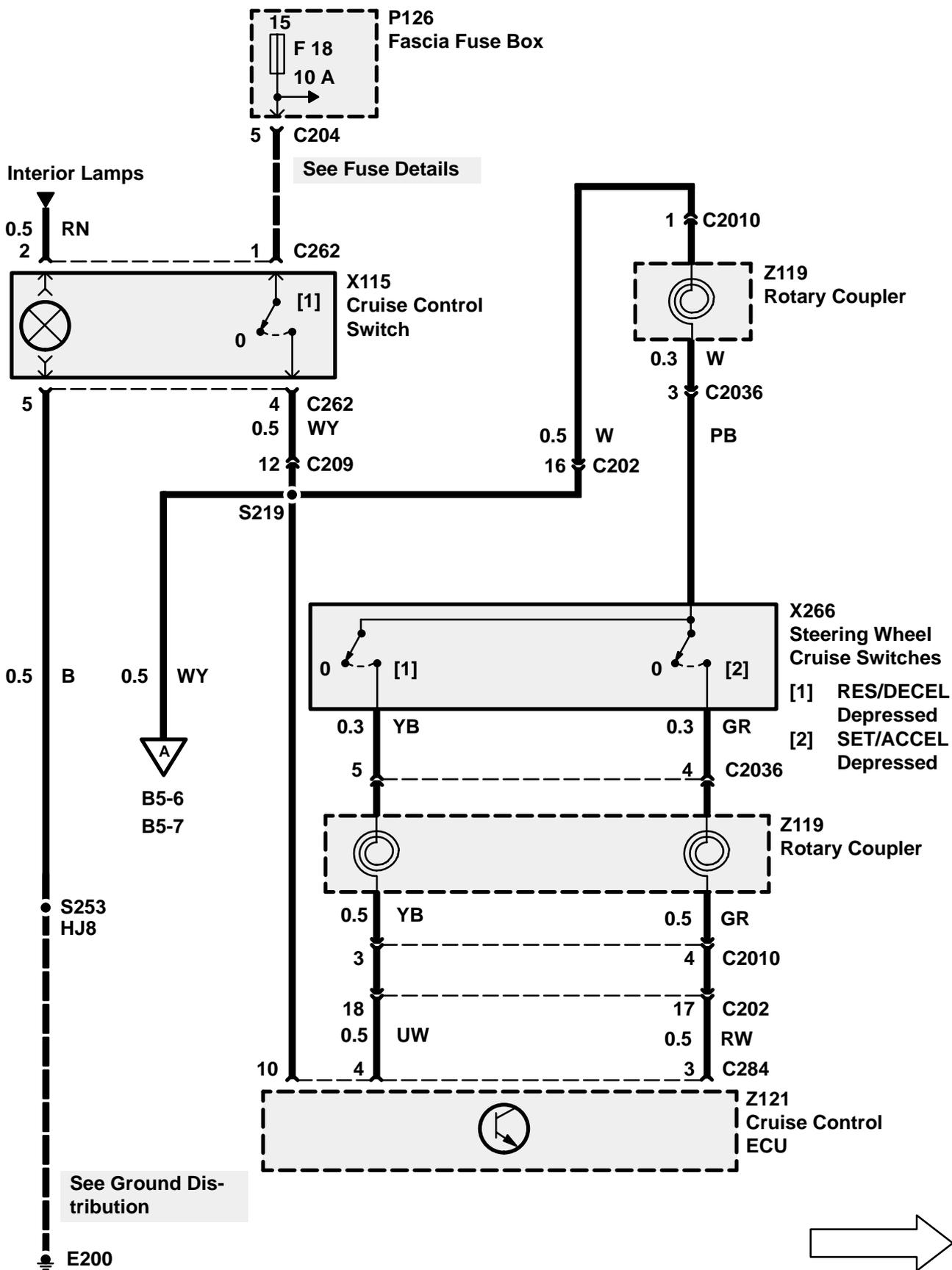
4. The Voltage applied to Cruise Control ECU (Z121) terminal 9 is interrupted, causing the Cruise Control ECU (Z121) to turn off the vacuum pump and de-energize the vacuum solenoid valve. This voltage path is interrupted when the brake pedal is depressed, the Clutch Pedal is depressed, or the vehicle is in Park or Neutral. With the brake pedal depressed, the Brake Switch Vent Valve (X112) moves to 1 and the circuit 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.

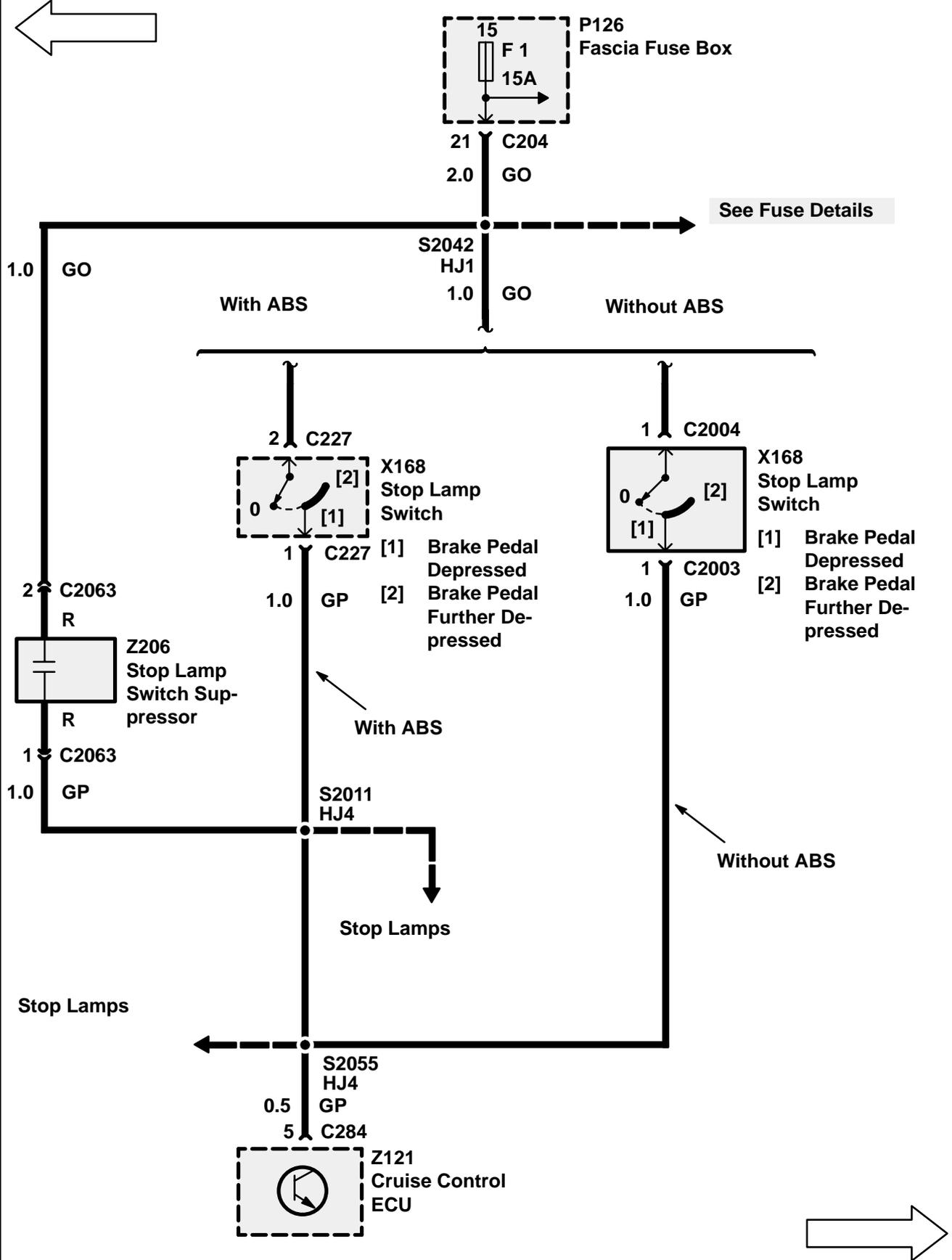
Road Test

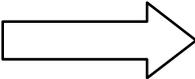
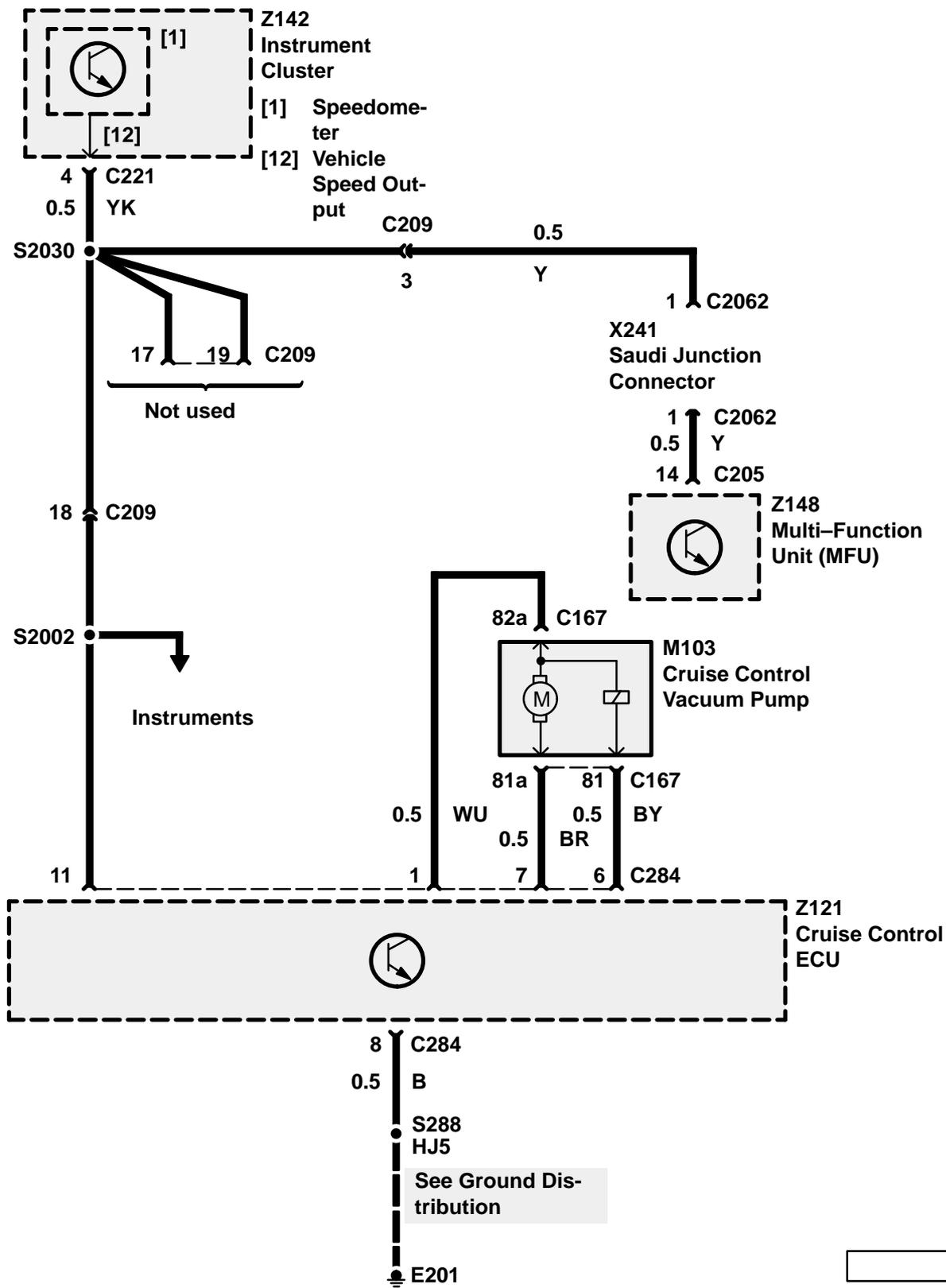
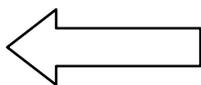
CAUTION: DO NOT ENGAGE CRUISE CONTROL WHEN VEHICLE IS BEING USED IN LOW TRANSFER GEARS

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.

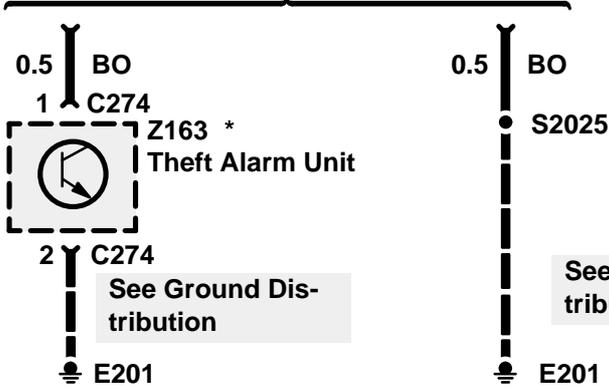
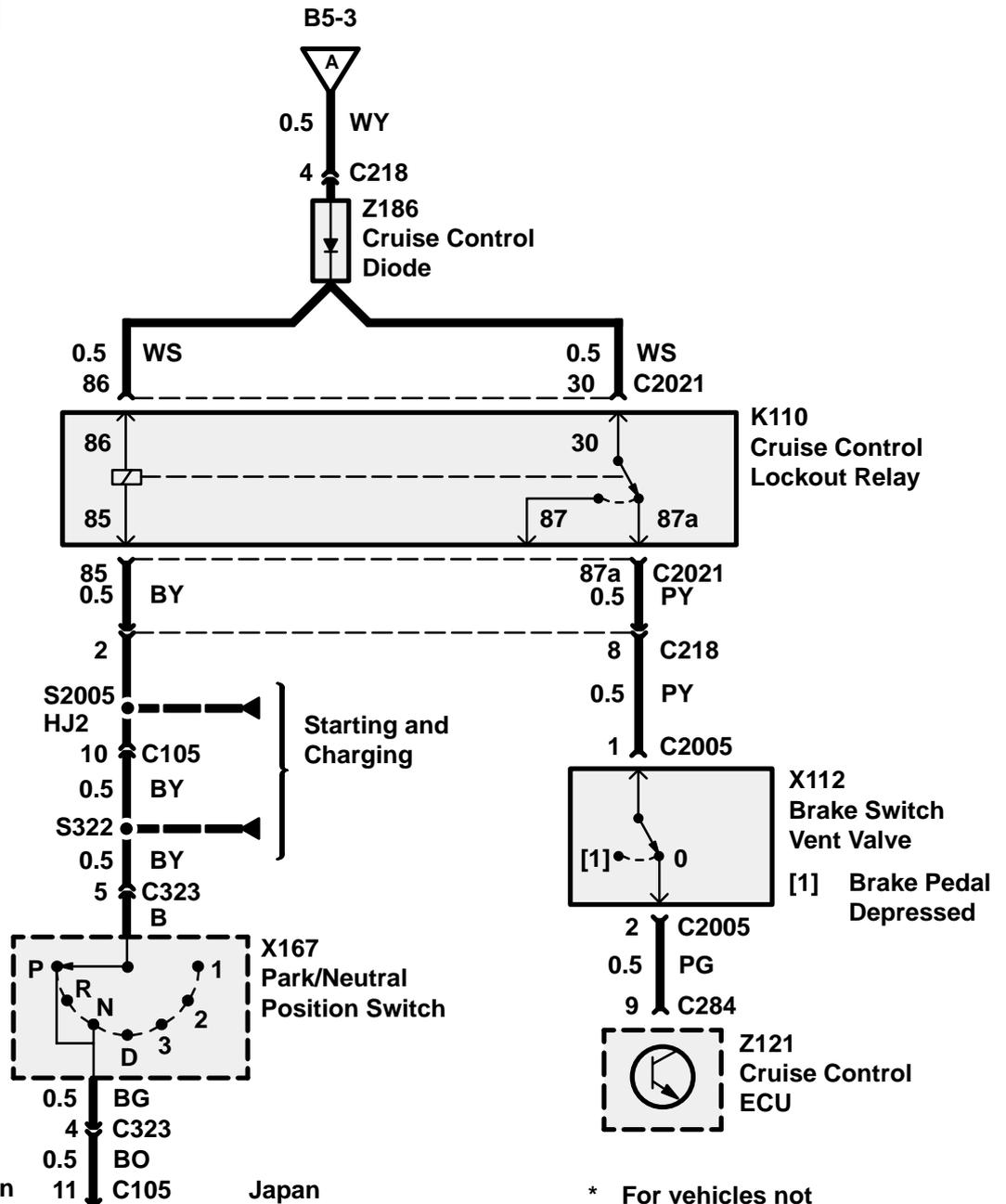
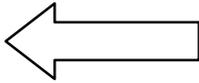




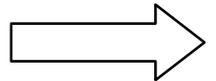


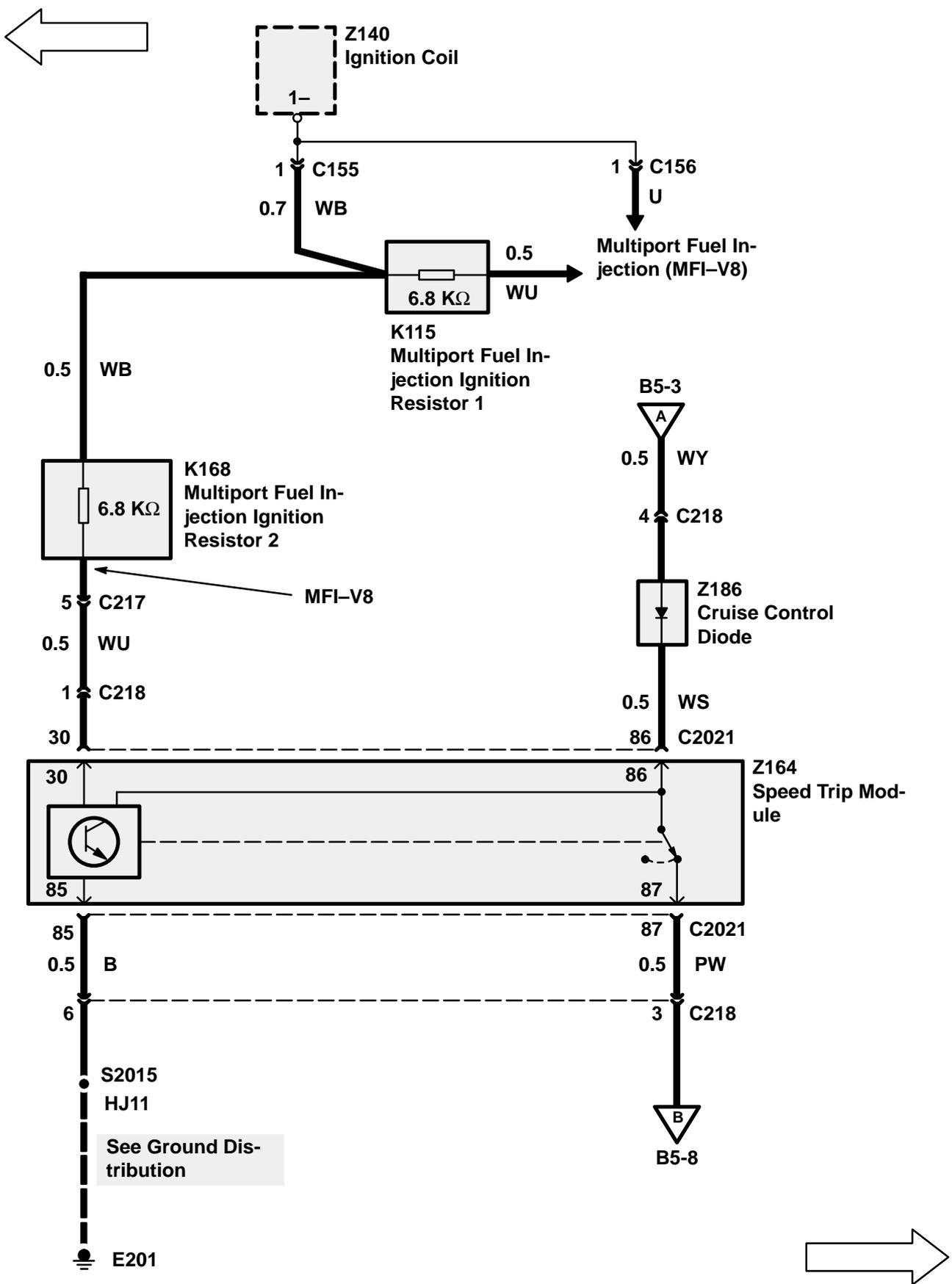
B5 ETM

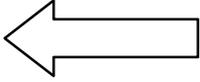
DISCOVERY



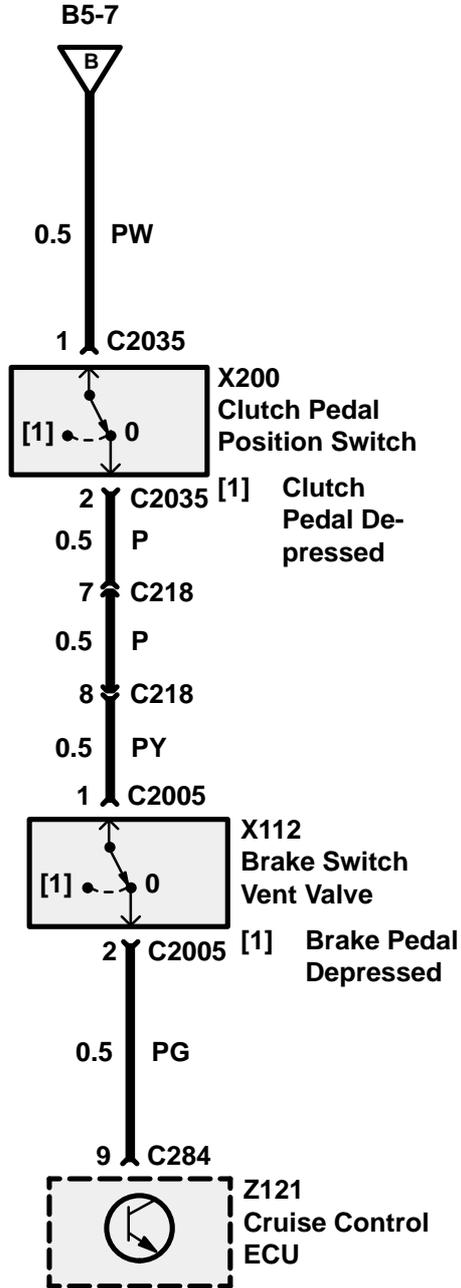
* For vehicles not equipped with Theft Alarm or Central Locking, a blank wire is used to short pins 1 and 2 of C274.







DISCOVERY



TROUBLESHOOTING HINTS

5. If the cruise control system operates but the cruise control switch light does not illuminate, check the bulb, B wire and RN wire.
6. Inspect vacuum hoses for kinks and restrictions.
7. 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

R150001

1A

CONDITIONS

- Ignition Switch
Position: II

RESULTS

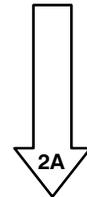
- Cruise Control Switch
On = BAT VOLT
Off = 0V

Z121
Cruise Control
ECU



PROBLEM CAUSE

- F18 Fuse
- WY Wire
- GLG Wire
- Cruise Control Switch



R150001

2A

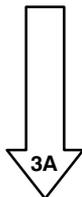
CONDITIONS

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

RESULTS

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

Z121
Cruise Control
ECU



GO TO TEST C

2A

3A

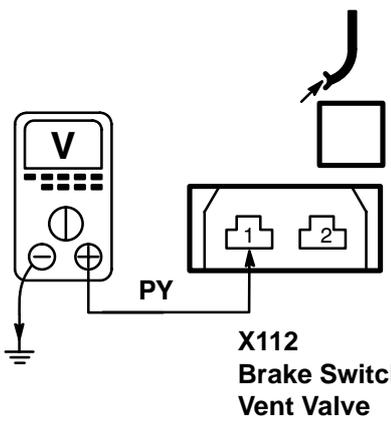
R020032

CONDITIONS

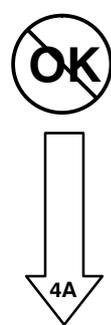
- Ignition Switch
Position: II
- Cruise Control Switch
On
- Engine running

RESULTS

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



X112
Brake Switch
Vent Valve



OK **PROBLEM CAUSE**

- PG Wire
- Brake Switch Vent Valve

4A

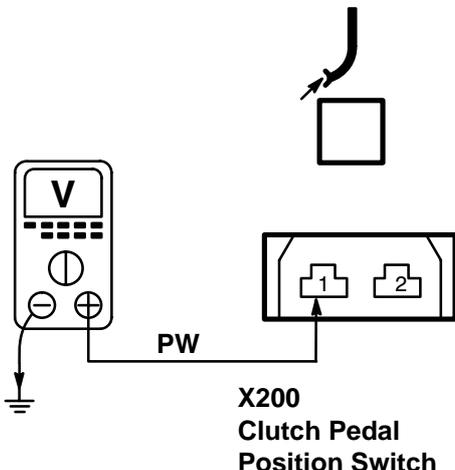
R020032

CONDITIONS

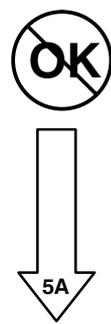
- Ignition Switch
Position: II
- Cruise Control Switch
On
- Engine running

RESULTS

BAT VOLT



X200
Clutch Pedal
Position Switch



OK **PROBLEM CAUSE**

- P Wire
- PY Wire
- Clutch Pedal Position Switch

R050001

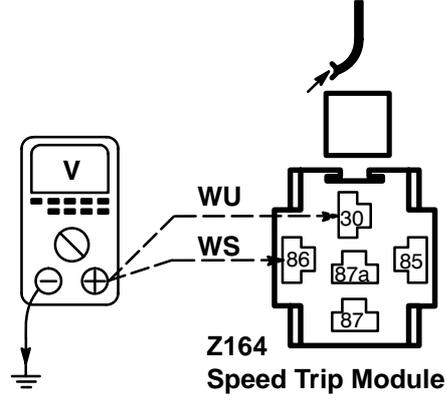
4A

5A

CONDITIONS

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

RESULTS
BAT VOLT

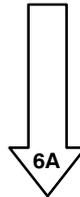


Z164
Speed Trip Module



PROBLEM CAUSE

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



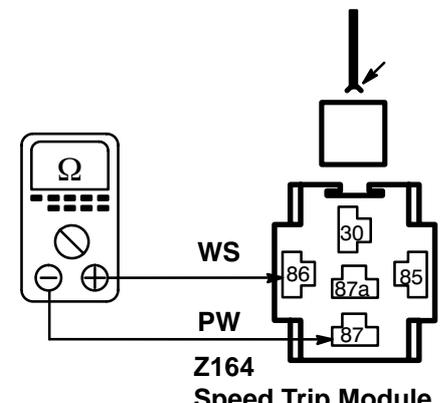
R050001

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

R150001

1B

CONDITIONS

- Ignition Switch
Position: II

RESULTS

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

Z121
Cruise Control
ECU

PROBLEM CAUSE

- F18 Fuse
- WY Wire
- GLG Wire
- Cruise Control Switch

R150001

2B

CONDITIONS

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

RESULTS

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

Z121
Cruise Control
ECU

GO TO TEST C

R020032

2B

3B

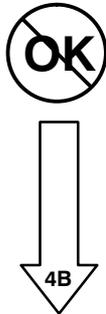
CONDITIONS

- Ignition Switch
Position: II
- Gear Selector
D

RESULTS

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

X112
Brake Switch
Vent Valve



OK

PROBLEM CAUSE

- PG Wire
- Brake Switch Vent Valve

R050001

4B

CONDITIONS

- Ignition Switch
Position: II

RESULTS

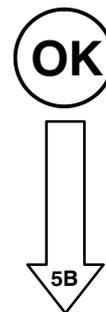
- Cruise Control Switch
On = BAT VOLT
Off = 0V

K110
Cruise Control
Lockout Relay

~~OK~~

PROBLEM CAUSE

- WS Wire
- WY Wire
- Cruise Control Diode



R050001

4B

5B

K110
Cruise Control
Lockout Relay

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- Gear Selector

<i>P = 0-1 Ω</i>	<i>3 = >100 Ω</i>
<i>R = >100 Ω</i>	<i>2 = >100 Ω</i>
<i>N = 0-1 Ω</i>	<i>1 = >100 Ω</i>
<i>D = >100 Ω</i>	

- OK**
- PROBLEM CAUSE**
- BY Wire
 - BO Wire
 - Park/Neutral Position Switch

- OK**
- PROBLEM CAUSE**
- PY Wire
 - Cruise Control Lockout Relay

Test C

R150001

1C

Z121
Cruise Control
ECU

CONDITIONS

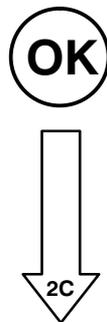
- Ignition Switch
Position: 0
- Cruise Control Switch
On

RESULTS

- Steering Wheel Cruise Switches
SET/ACCEL Switch

<i>On = BAT VOLT</i>
<i>Off = 0V</i>

- OK**
- PROBLEM CAUSE**
- RW, W, GR Wire
 - WY, PB Wire
 - Rotary Coupler
 - Steering Wheel Cruise Switches



R150001

1C

2C

CONDITIONS

- Ignition Switch
Position: II

RESULTS

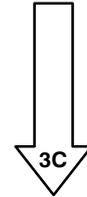
- Brake Pedal
BAT VOLT = Depressed
0V = Released

**Z121
Cruise Control
ECU**



PROBLEM CAUSE

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



R150001

3C

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

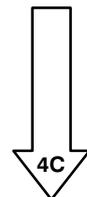
0-1 Ω

**Z121
Cruise Control
ECU**



PROBLEM CAUSE

- B Wire



R150001

3C

4C

CONDITIONS

- Ignition Switch
Position: II
- Cruise Control Switch
On

RESULTS

- Steering Wheel Cruise Switches
RES/DECEL Switch
Off = 0V
On = BAT VOLT



PROBLEM CAUSE

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



R150001

5C

CONDITIONS

- Ignition Switch
Position: II

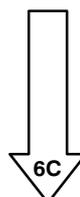
RESULTS

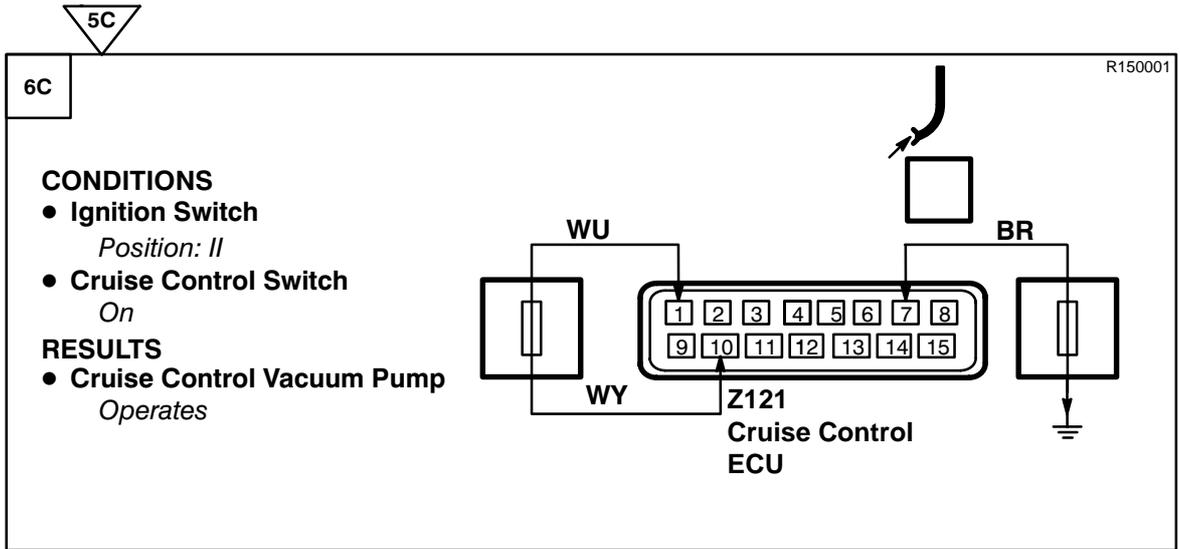
- Right rear wheel on ground
- Rotate left rear wheel
= 0V - BAT VOLT



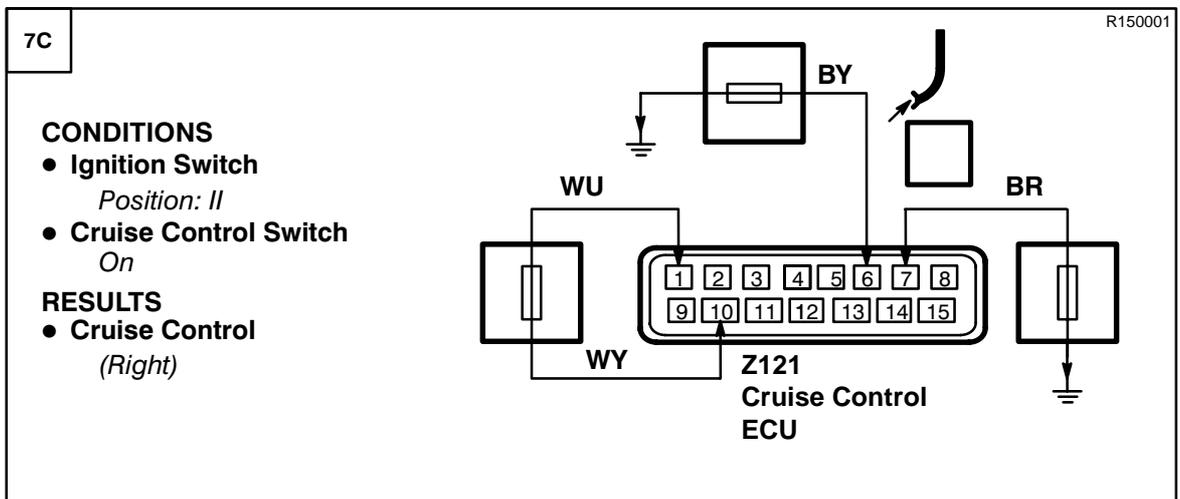
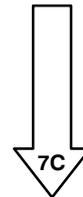
PROBLEM CAUSE

- YK Wire





GO TO TEST D



GO TO TEST D



PROBLEM CAUSE
- Cruise Control ECU

Test D

R030023

1D

CONDITIONS

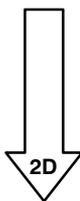
- Ignition Switch
Position: II
- Cruise Control Switch
On

RESULTS
BAT VOLT

M103
Cruise Control Vacuum Pump

~~OK~~ **PROBLEM CAUSE**
- WU Wire

OK



R030031

2D

CONDITIONS

- Ignition Switch
Position: 0

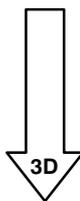
RESULTS

- Cruise Control Vacuum Pump
Operates

M103
Cruise Control Vacuum Pump

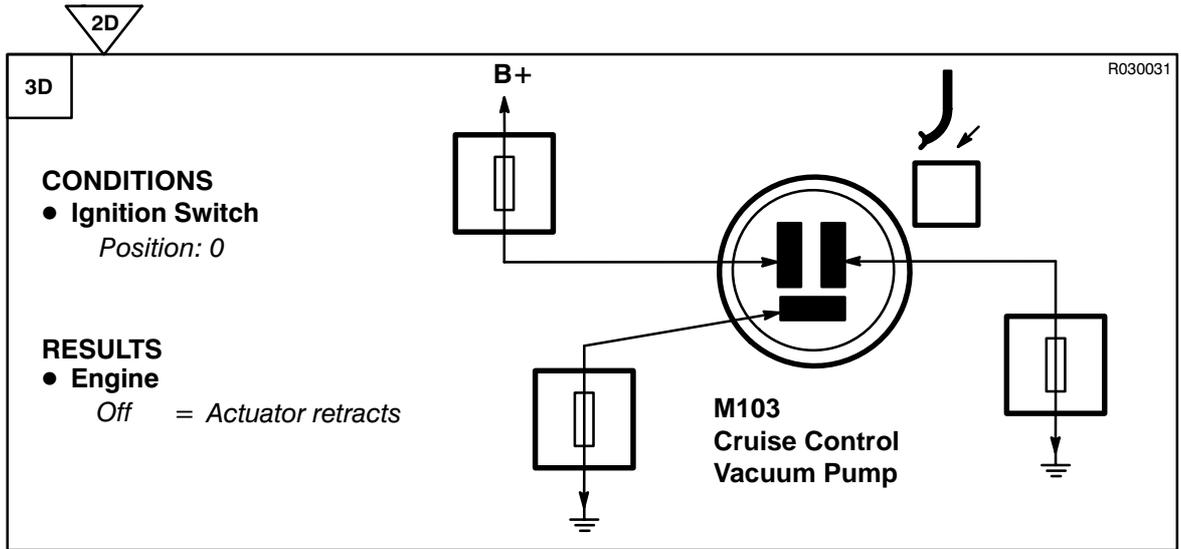
~~OK~~ **PROBLEM CAUSE**
- BR Wire
- Cruise Control Vacuum Pump

OK



B5 ETM

DISCOVERY



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 is 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.

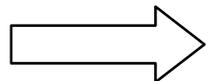
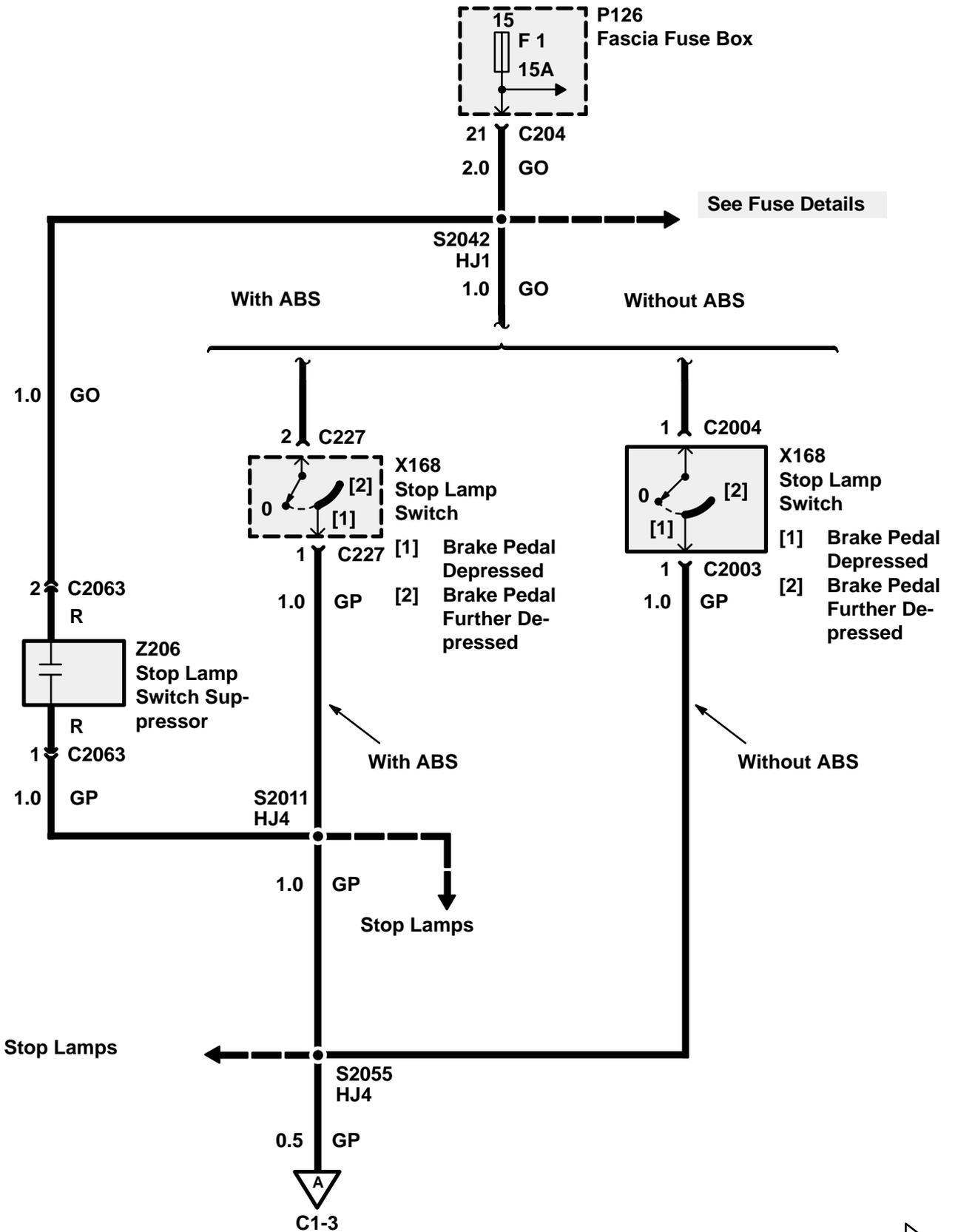
If the Transfer Box is in the "H" or "L" position, the Interlock Relay 1 (K153) is energized, since the relay coil is grounded by the Transfer Box Position Switch (X175). When the relay is energized, voltage to the Key Barrel Switch (X230) is interrupted. The Ignition Key Lock Solenoid (K191) is then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

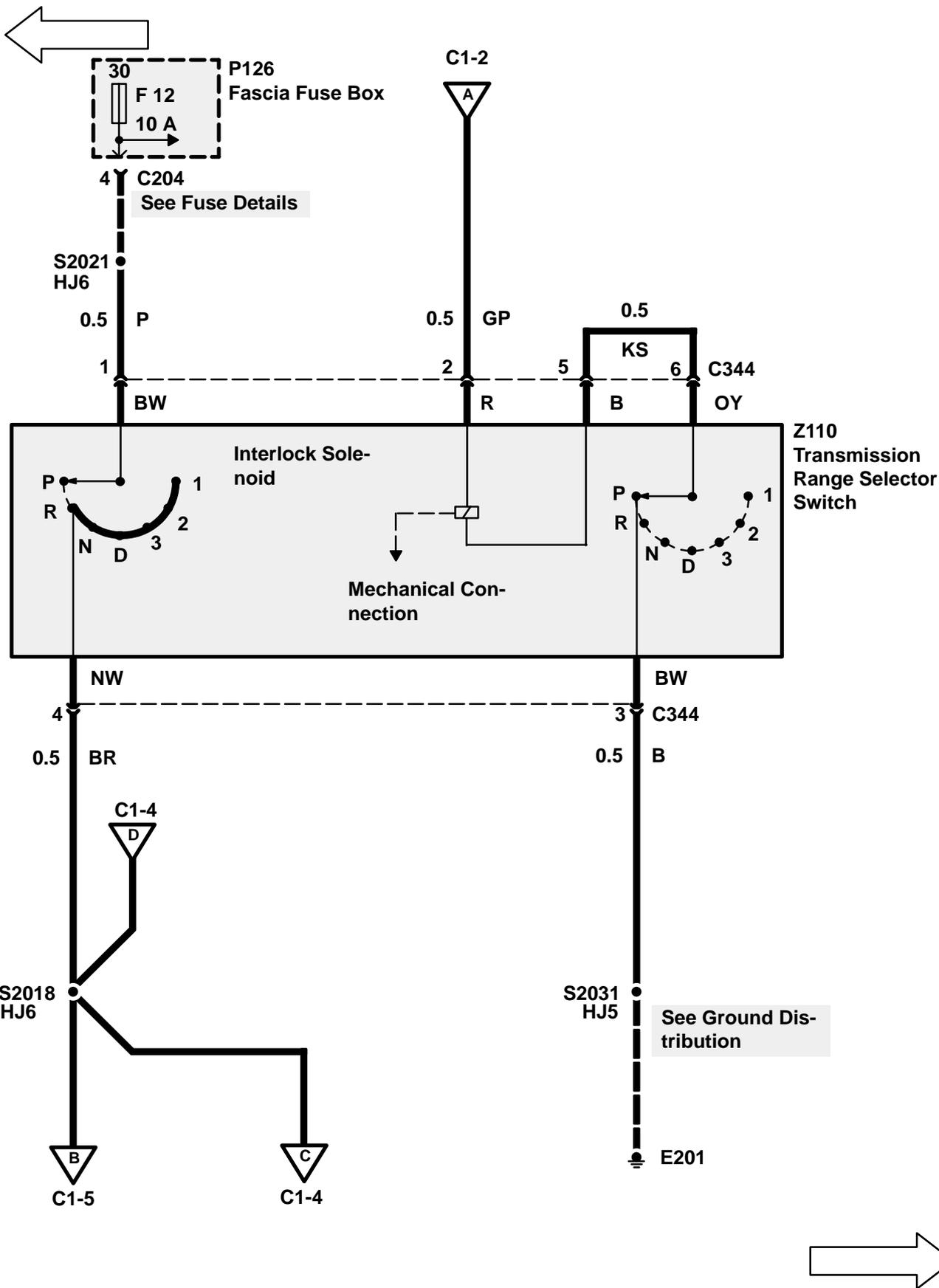
Transfer Box Interlock

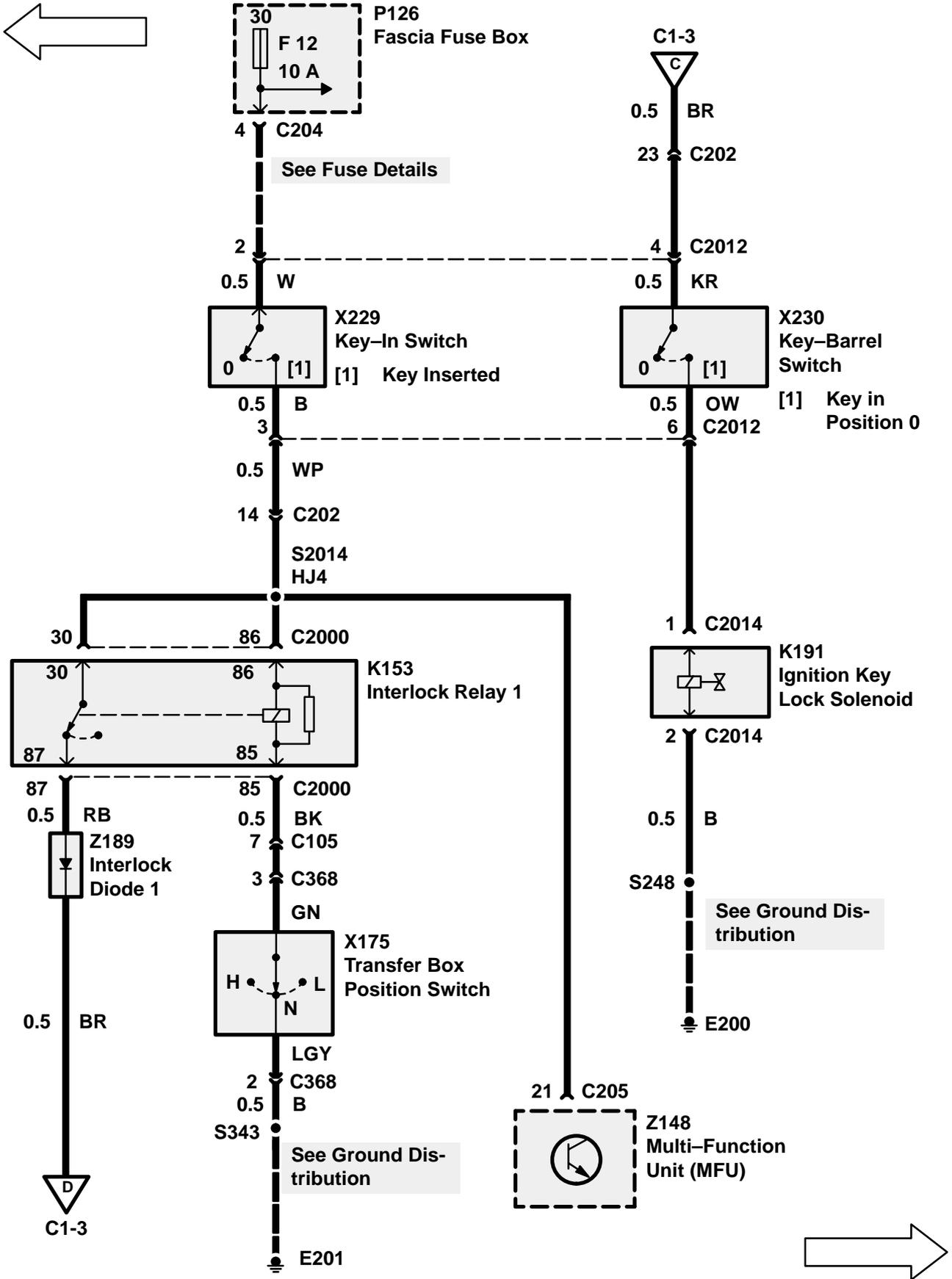
The Transfer Box Interlock safety feature is designed to prevent the transfer case shifter from being shifted out of "H" or "L" unless the vehicle's gear selector is in the neutral position.

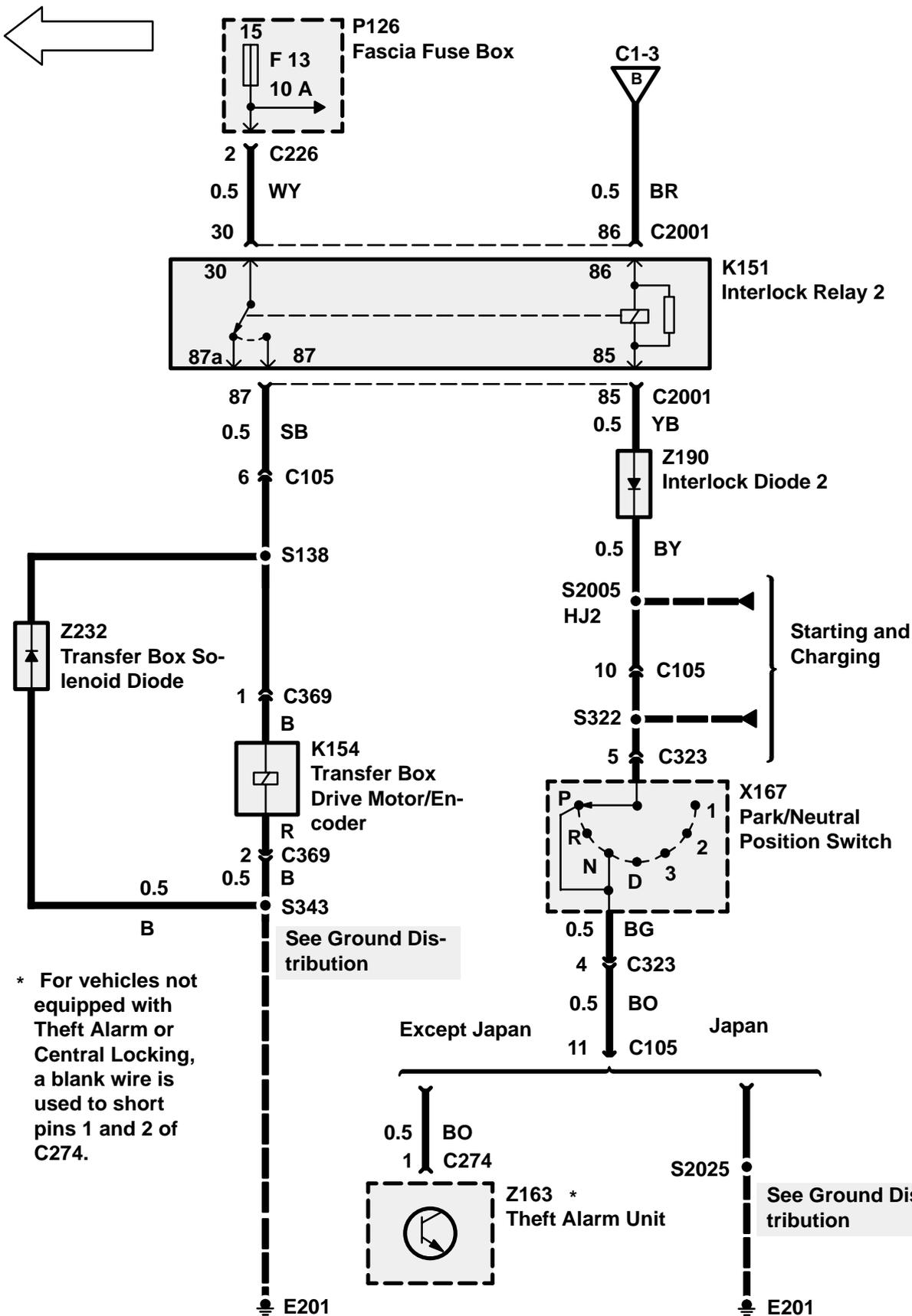
When the gear selector is placed in the neutral position, voltage is applied to the Interlock Relay 2's coil through the Transmission Range Selector Switch (Z110). The relay's coil is grounded through the Park/Neutral Position Switch (X167).

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









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

SYSTEM DIAGNOSIS

3. If the transmission range selector cannot be shifted out of park, do Test A.
4. 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.
5. If the transfer box can be shifted out of "H" or "L" while in any gear except neutral, do Test C.
6. 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.
7. 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

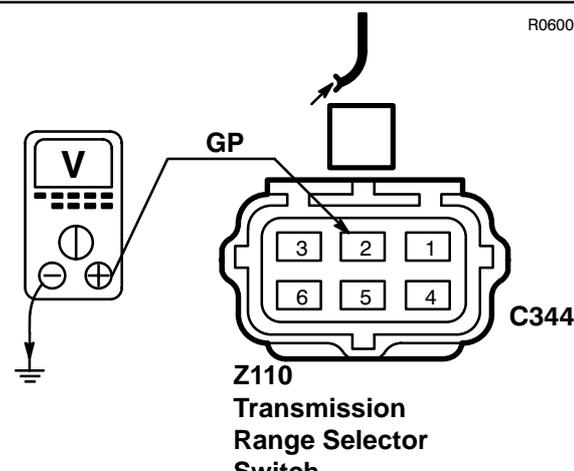
R060016

CONDITIONS

- Ignition Switch
Position: II

RESULTS

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

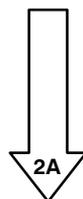


Z110
Transmission
Range Selector
Switch



PROBLEM CAUSE

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



2A

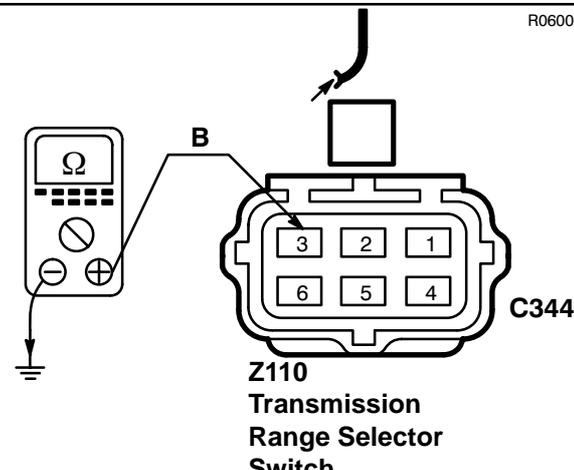
R060016

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm

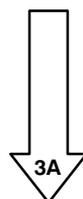


Z110
Transmission
Range Selector
Switch



PROBLEM CAUSE

- B Wire



R060016

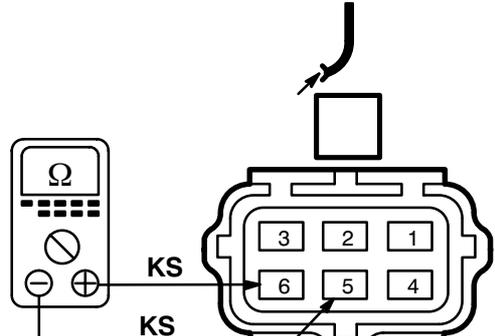
3A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm

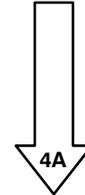


Z110
Transmission
Range Selector
Switch

C344

~~OK~~ **PROBLEM CAUSE**
- KS Wire

OK



R060016

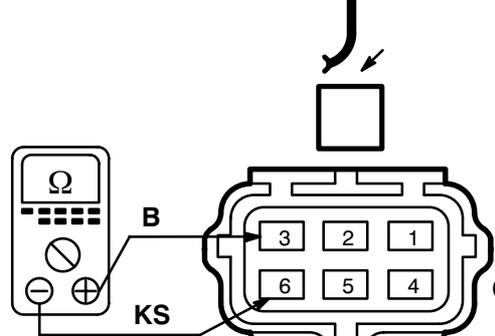
4A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

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



Z110
Transmission
Range Selector
Switch

C344

~~OK~~ **PROBLEM CAUSE**
- Microswitch (Gear Selector)

OK **PROBLEM CAUSE**
- Interlock Solenoid

Test B

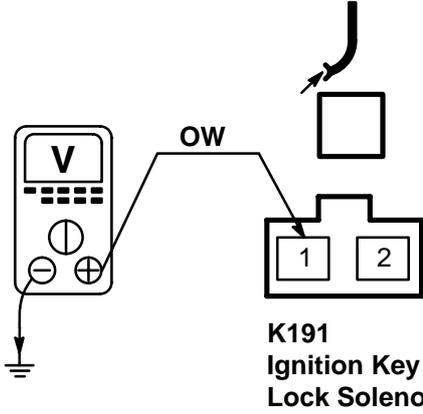
R020022

1B

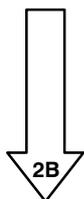
CONDITIONS

- 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

R060016

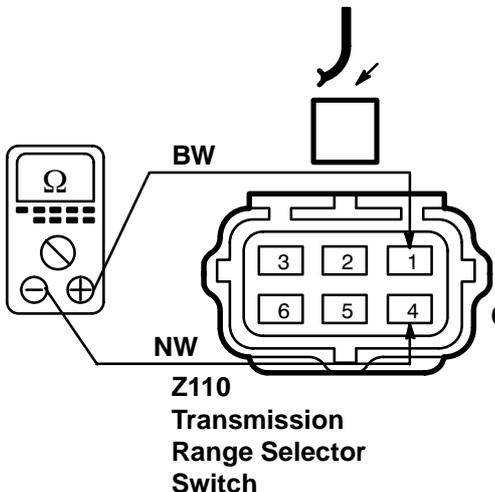
2B

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

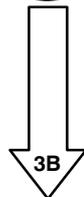
- Gear Selector
P = More than 10K ohms



**Z110
Transmission
Range Selector
Switch**

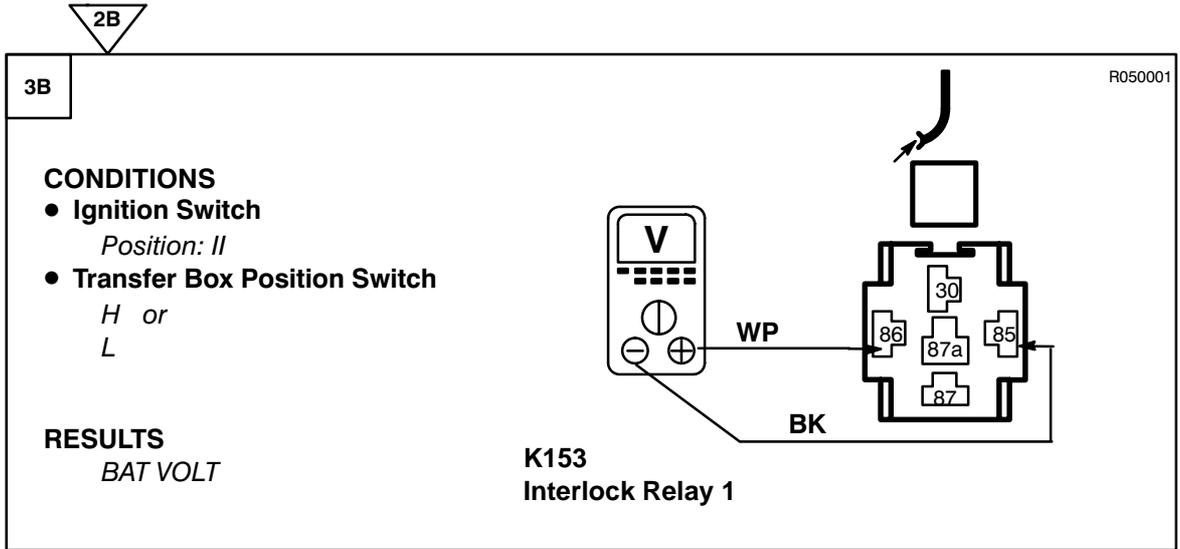


PROBLEM CAUSE
- Transmission
Range Selector
Switch



C1 ETM

DISCOVERY



PROBLEM CAUSE

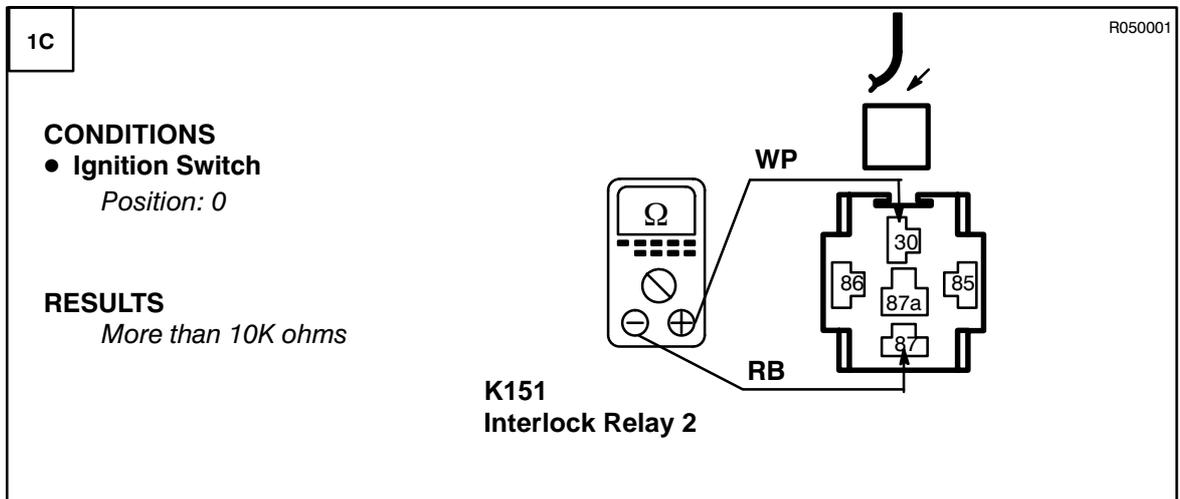
- BK, WP, B Wire
- Key-In Switch
- Transfer Box Position Switch



PROBLEM CAUSE

- Interlock Relay 1

Test C



PROBLEM CAUSE

- Interlock Relay 2



PROBLEM CAUSE

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

Test D

1D

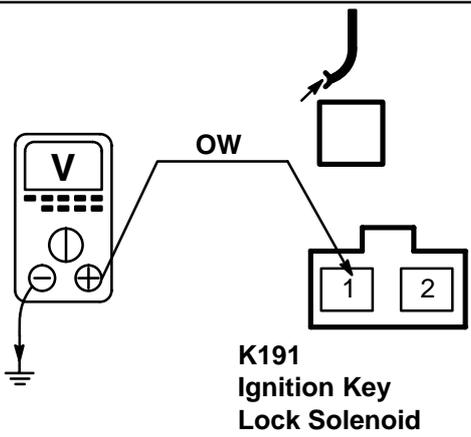
R020022

CONDITIONS

- Ignition Switch
Position: II
- Gear Selector
P

RESULTS

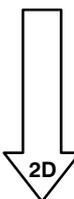
- Transfer Box Position Switch
N = BAT VOLT



**K191
Ignition Key
Lock Solenoid**



GO TO TEST E



2D

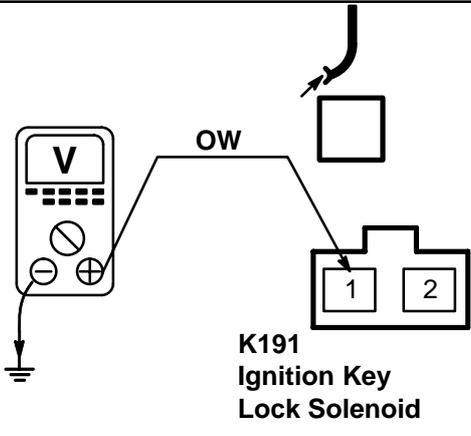
R020022

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 VOLT



**K191
Ignition Key
Lock Solenoid**



PROBLEM CAUSE

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



PROBLEM CAUSE

- Ignition Key
Lock Solenoid

Test E

R050001

1E

CONDITIONS

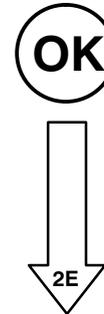
- Ignition Switch
Position: II

RESULTS
BAT VOLT

**K153
Interlock Relay 1**

OK PROBLEM CAUSE

- WP Wire
- Key-In Switch



R050001

2E

CONDITIONS

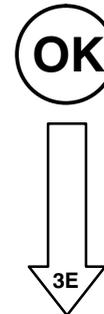
- Ignition Switch
Position: 0
- Transfer Box Position Switch
N

RESULTS
More than 10K ohms

**K153
Interlock Relay 1**

OK PROBLEM CAUSE

- BK Wire
- Transfer Box Position Switch



R050001

2E
3E

CONDITIONS

- Ignition Switch
Position: 0
- Gear Selector
P

RESULTS
Ignition key cannot be removed

K153
Interlock Relay 1

OK PROBLEM CAUSE

- RB Wire
- BR Wire
- Interlock Diode 1

OK PROBLEM CAUSE

- Interlock Relay 1

Test F

R050001

1F

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- Gear Selector
N = BAT VOLT

K151
Interlock Relay 2

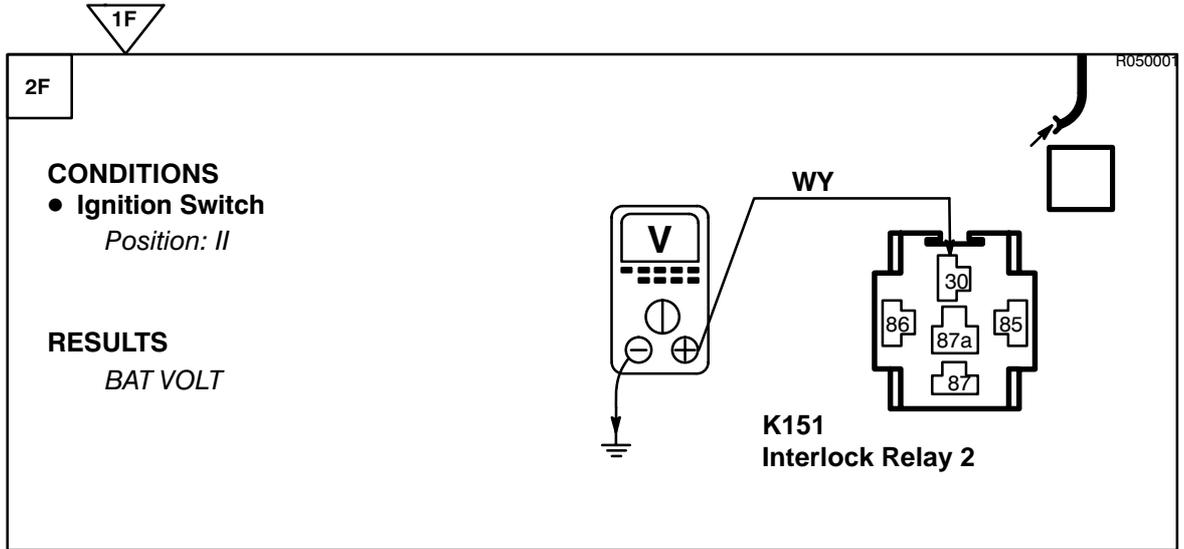
OK PROBLEM CAUSE

- BR Wire
- Transmission Range Selector Switch

OK

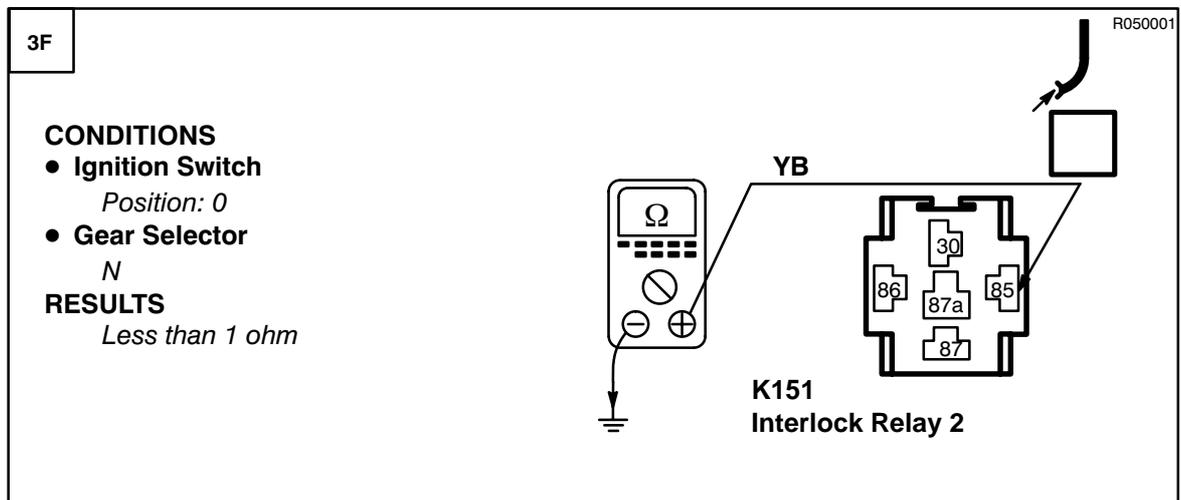
↓

2F



PROBLEM CAUSE

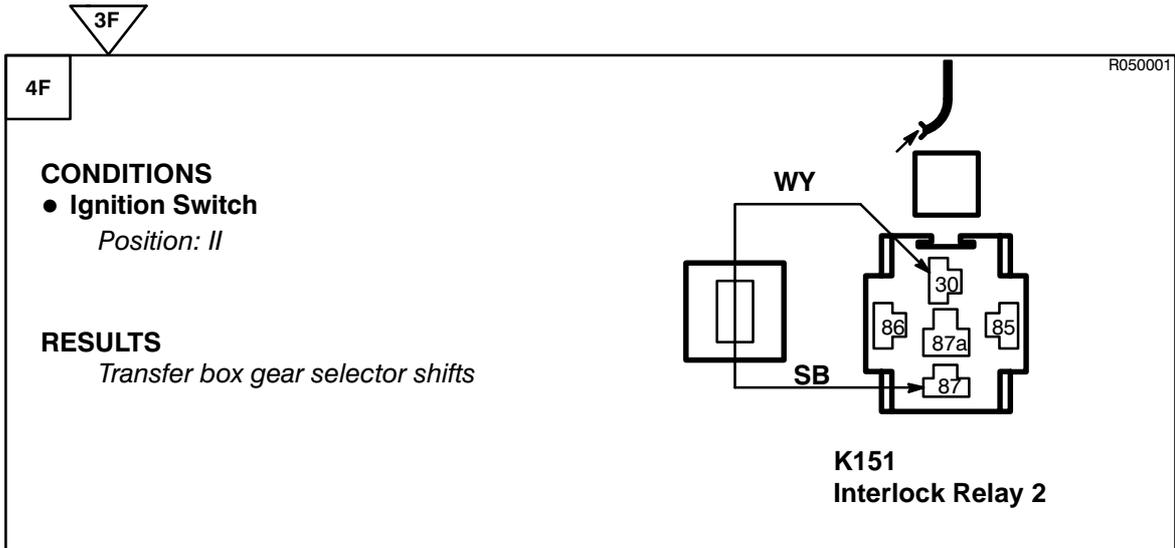
- F13 Fuse
- WY Wire



PROBLEM CAUSE

- YB, BY, BO Wire
- Interlock Diode 2
- Park/Neutral Position Switch
- Theft Alarm Unit





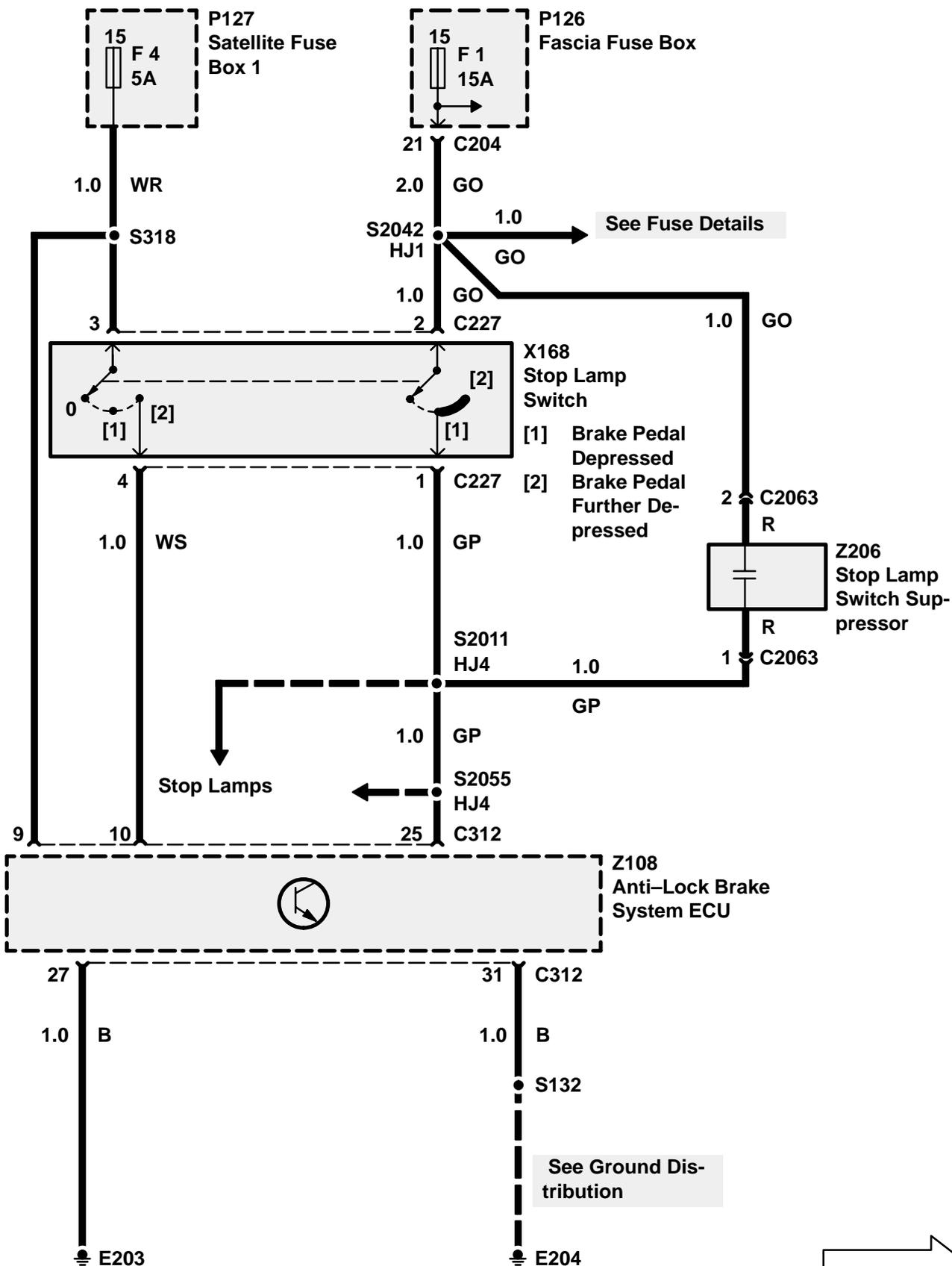
PROBLEM CAUSE

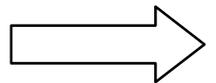
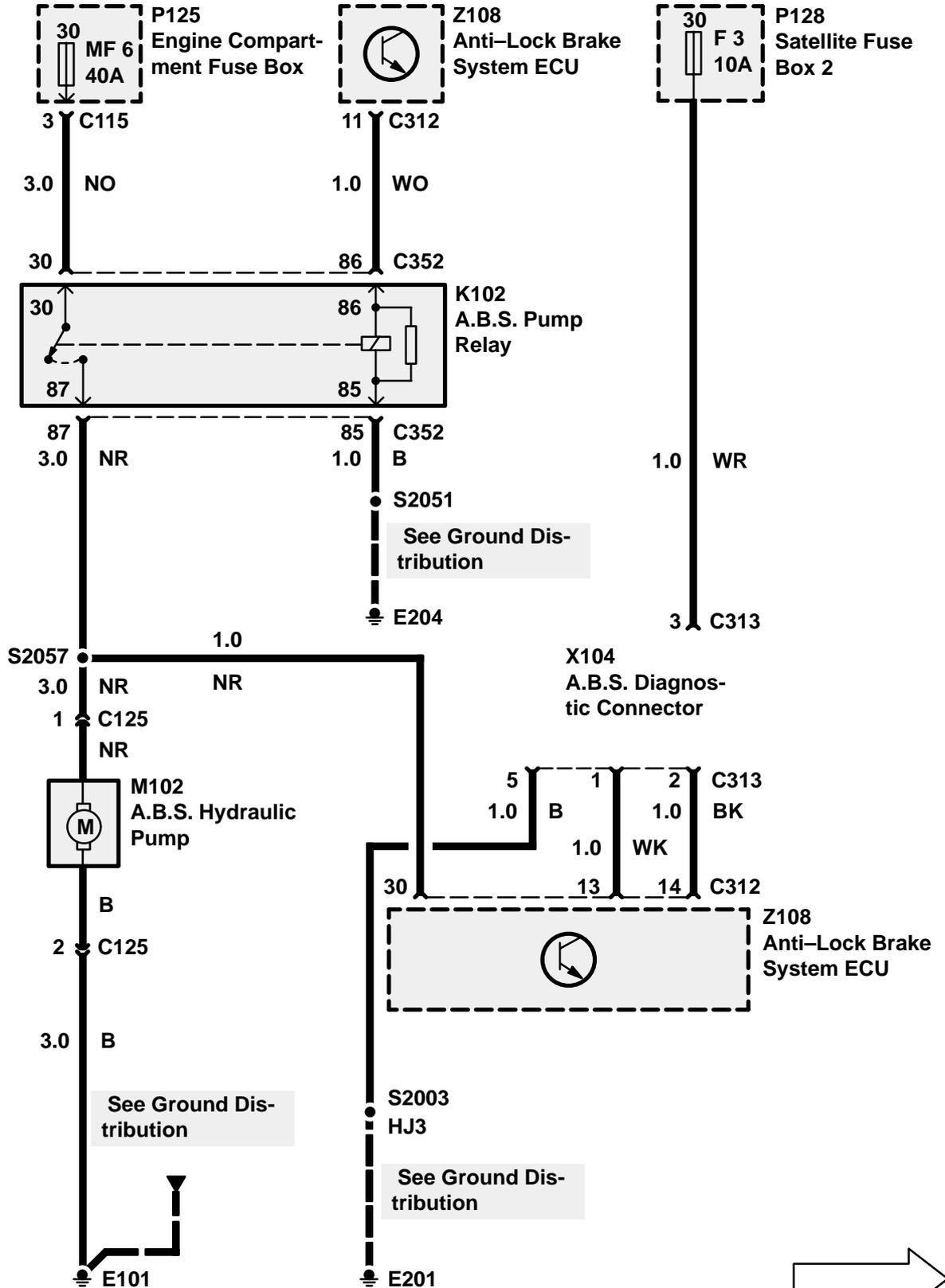
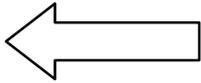
- SB Wire
- B Wire
- Transfer Box Drive Motor/Encoder

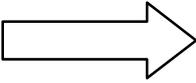
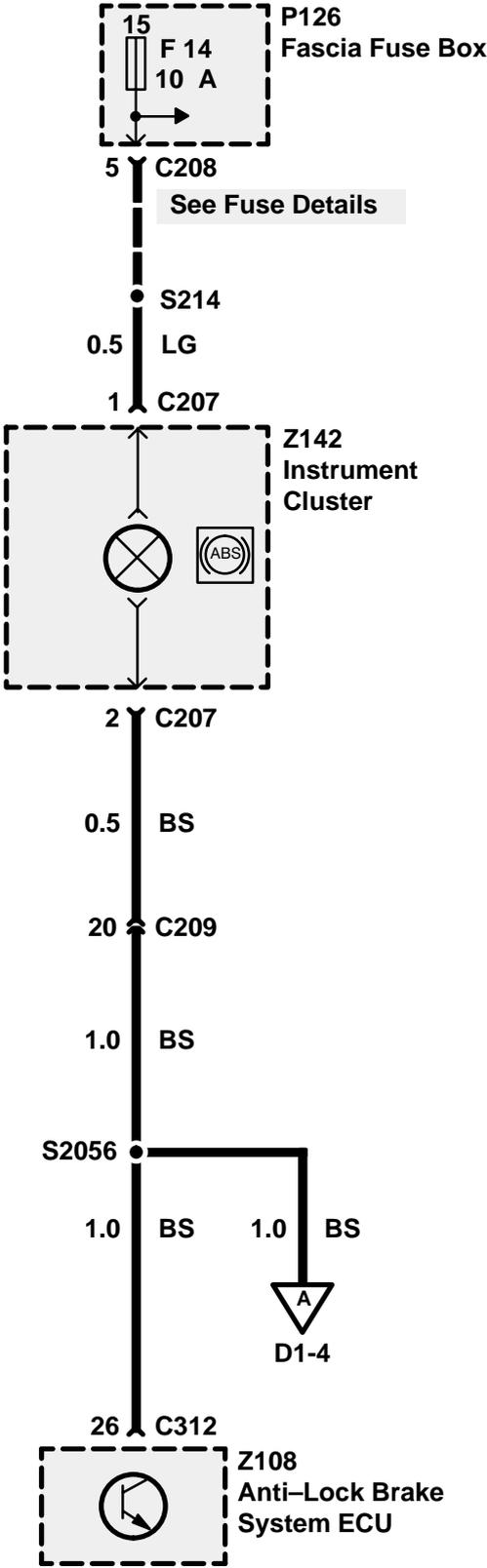
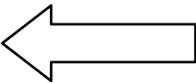


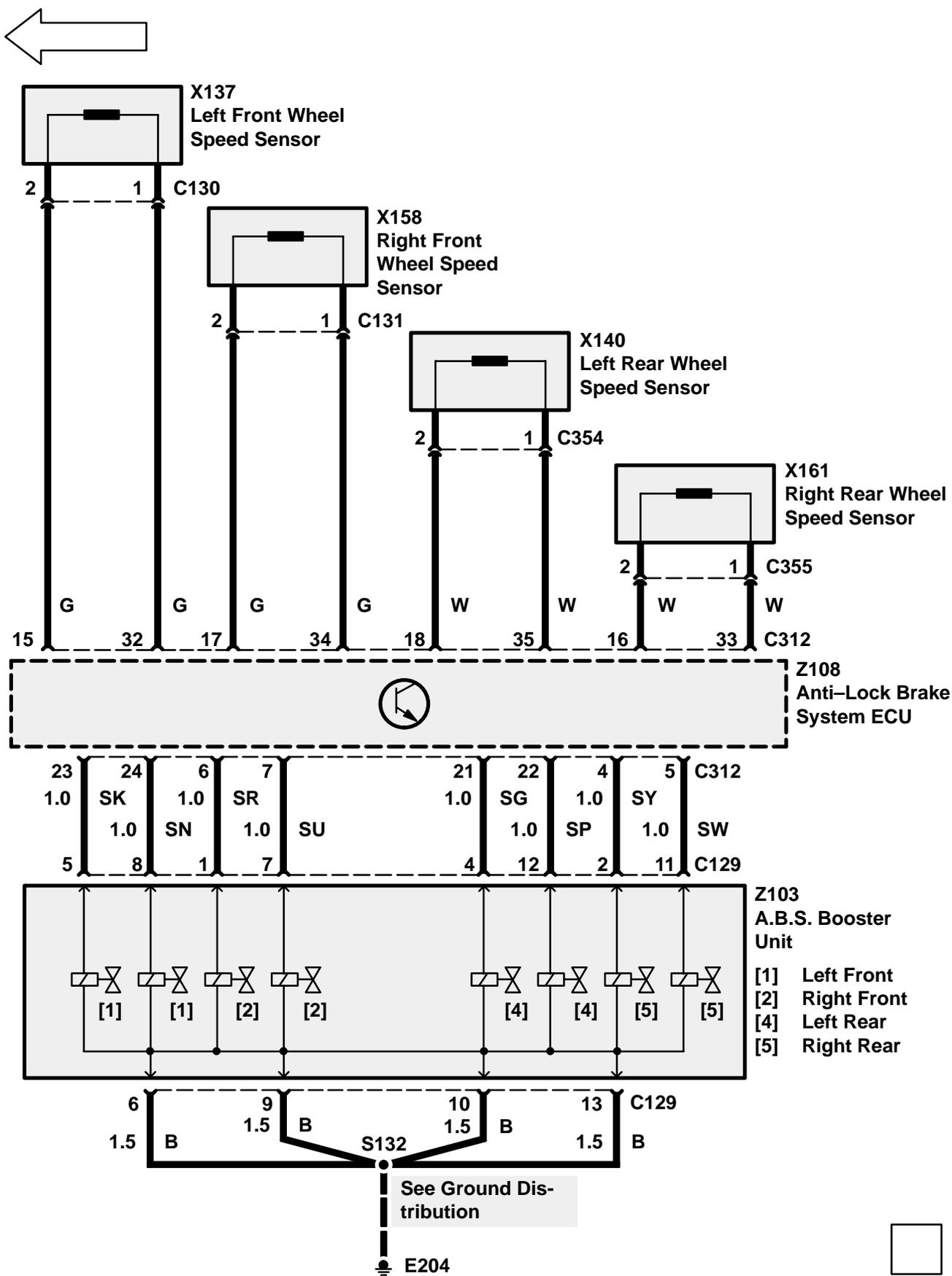
PROBLEM CAUSE

- Interlock Relay 2









CIRCUIT OPERATION

Engine Coolant Temperature Gauge

The Engine Coolant Temperature Gauge Sensor (X114) has approximately 136 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 17 ohms.

Fuel Gauge

When the fuel tank level is low, the resistance of the fuel gauge sender is approximately 245 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 19 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

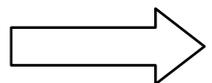
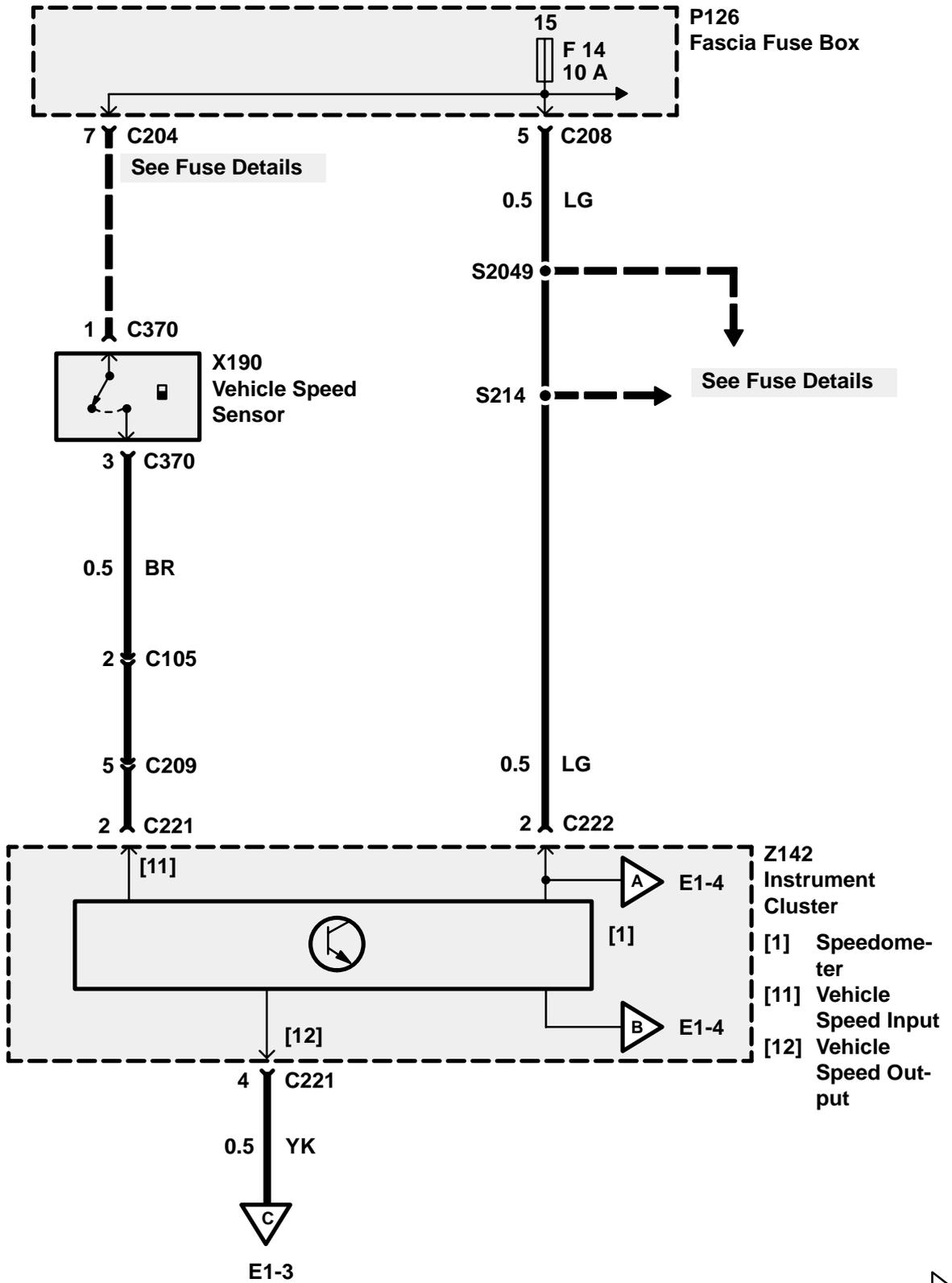
The Vehicle Speed Sensor (X190) sends a signal to the speedometer in the form of voltage pulses. The pulses are filtered by a Vehicle Speed Sensor Buffer inside the speedometer. The voltage alternates between battery voltage and 0 volts 6 times per wheel revolution. The speed sensor signal is also sent to the Cruise Control ECU (Z121), Multifunction Unit (MFU) (Z148) (Persian Gulf States), and the Engine Control Module (Z132).

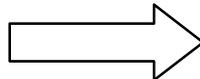
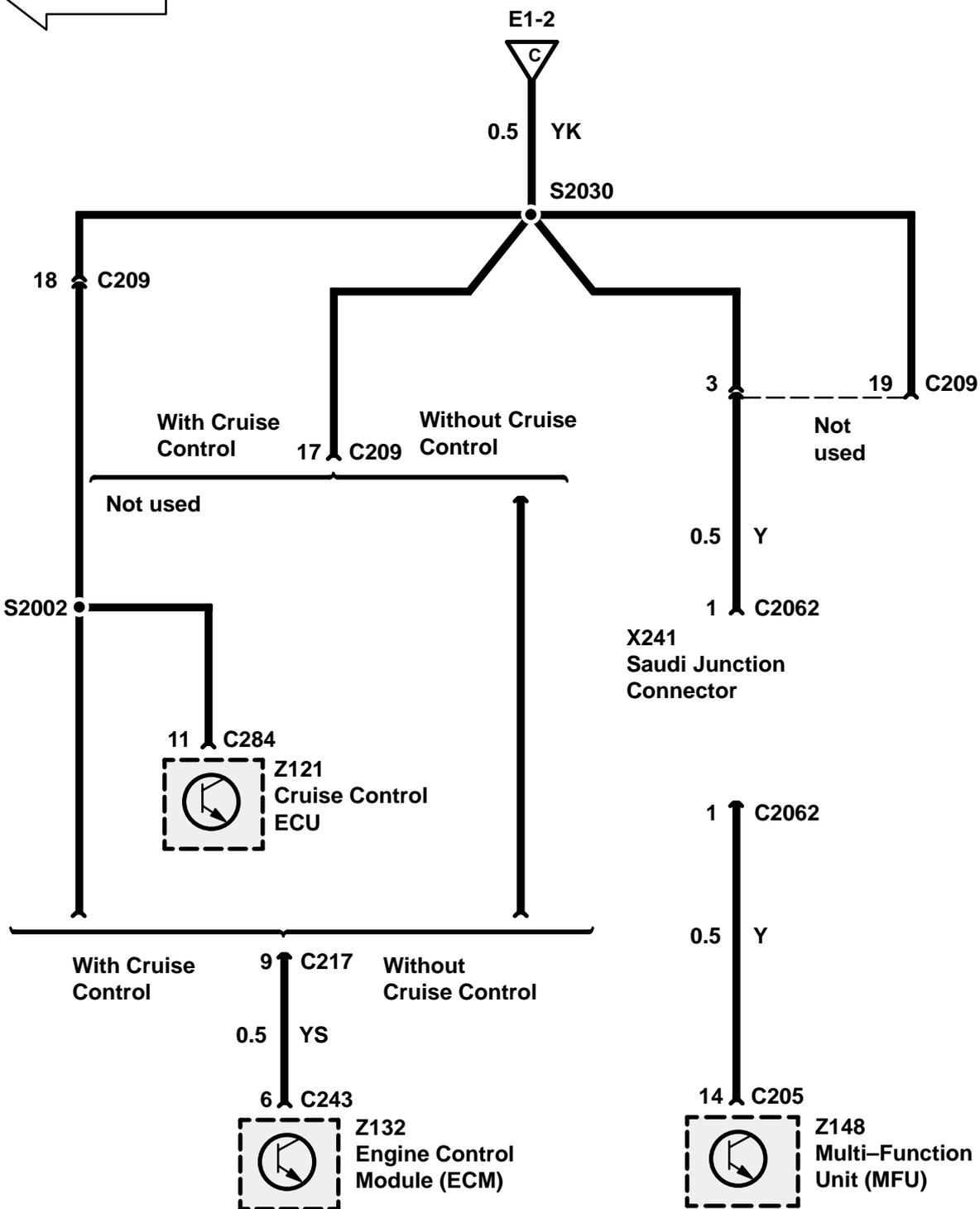
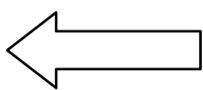
Tachometer

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.

E1 ETM

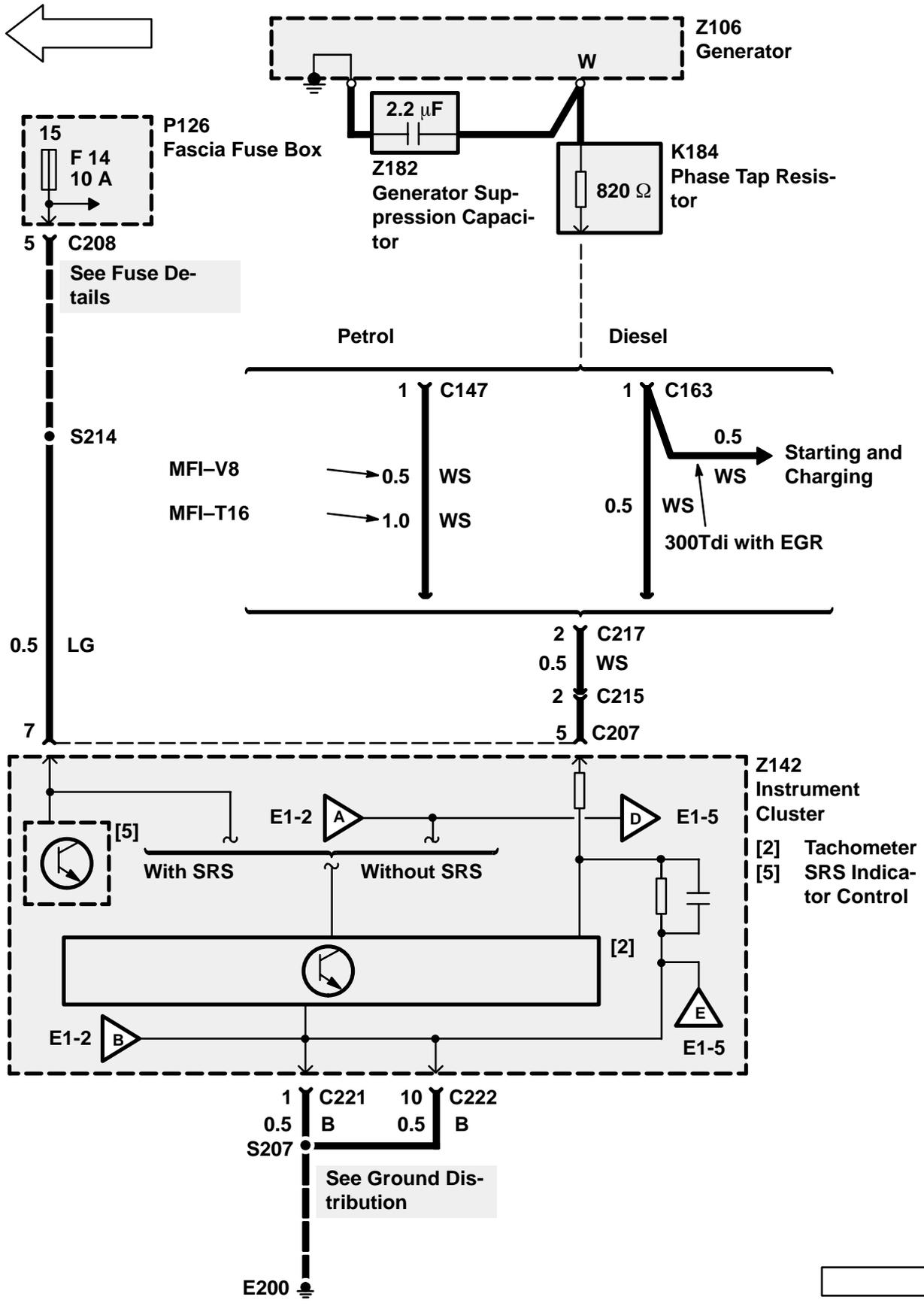
DISCOVERY

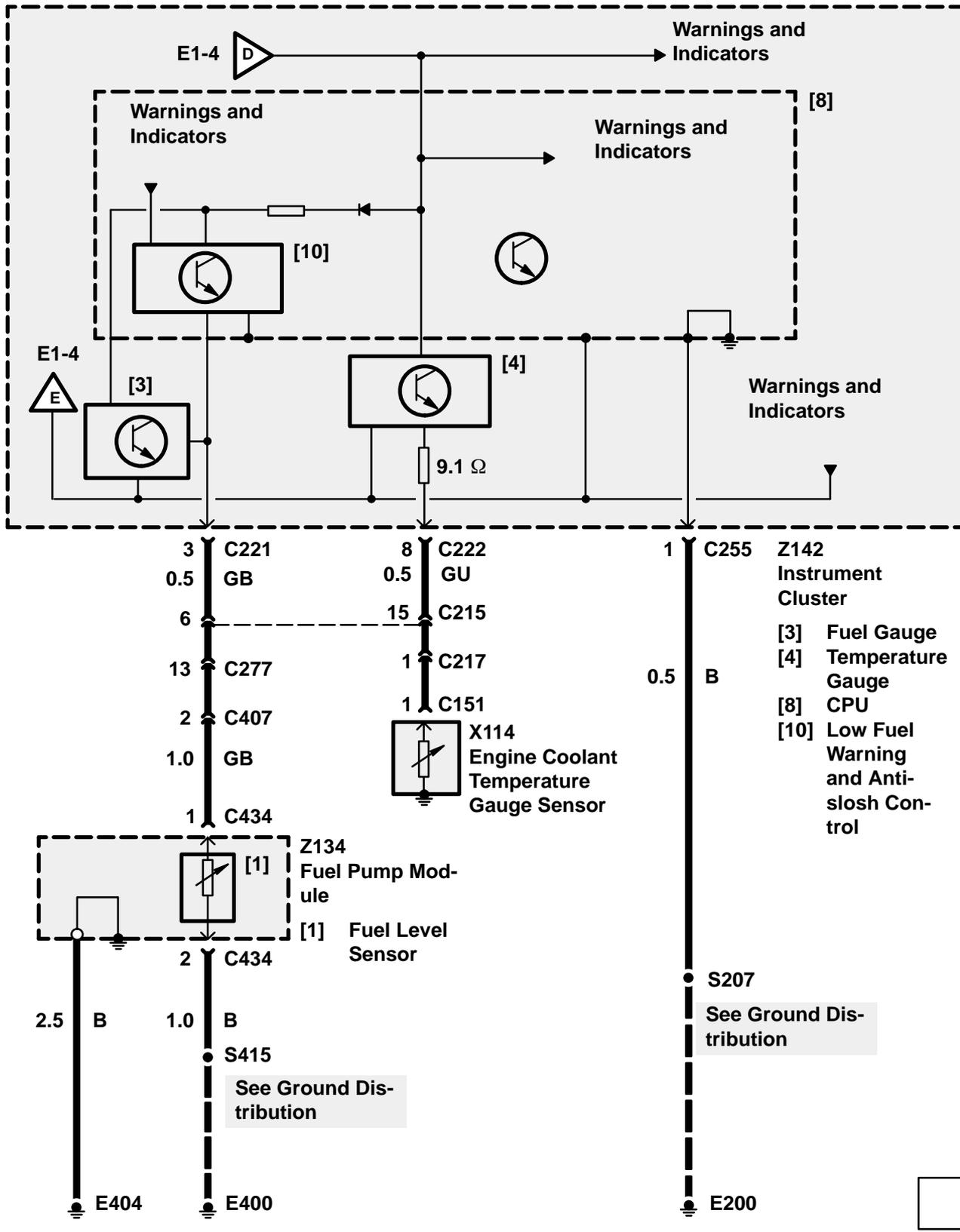
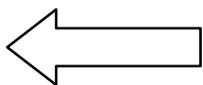




E1 ETM

DISCOVERY

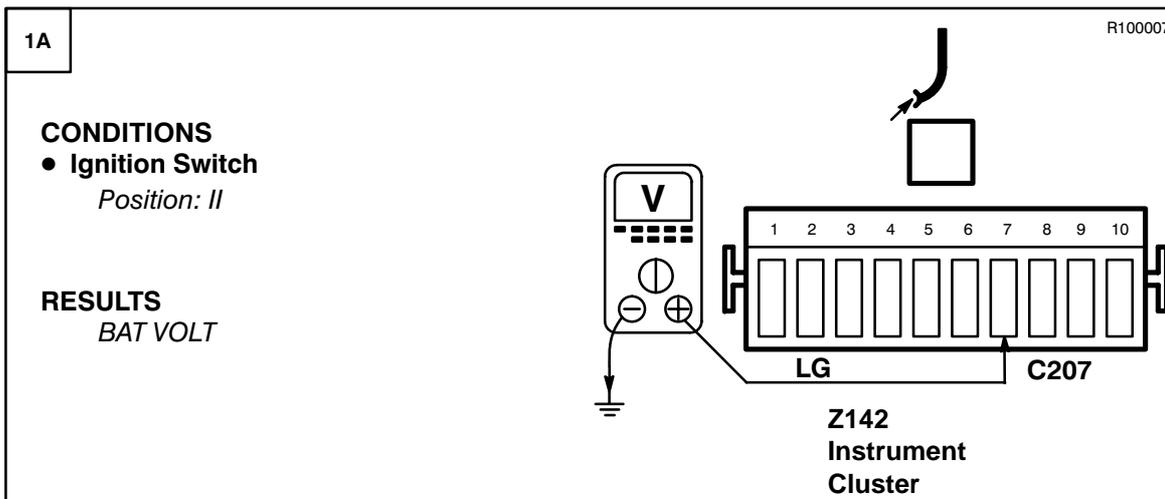




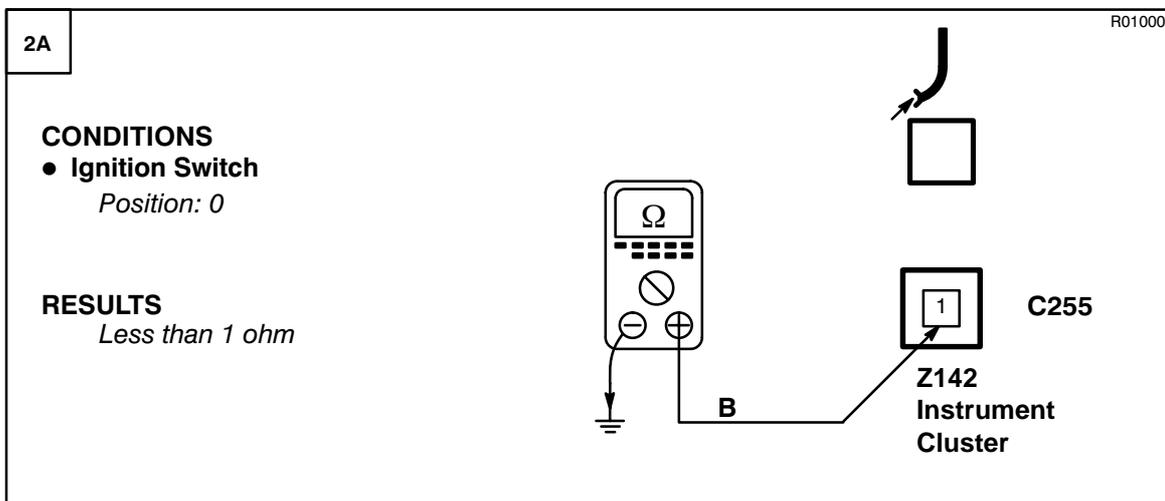
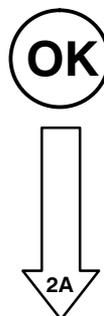
SYSTEM DIAGNOSIS

8. If no instruments operate, do Test A.
9. If the coolant temperature gauge reads hot with coolant cool, do Test B.
10. If the coolant temperature gauge reads cool with coolant hot, do Test B.
11. If the fuel gauge reads empty with fuel in the tank, do Test C.
12. If the fuel gauge reads full when the tank is empty, do Test C.
13. If the speedometer does not operate, do Test D.
14. If the tachometer does not operate, do Test E.

Test A



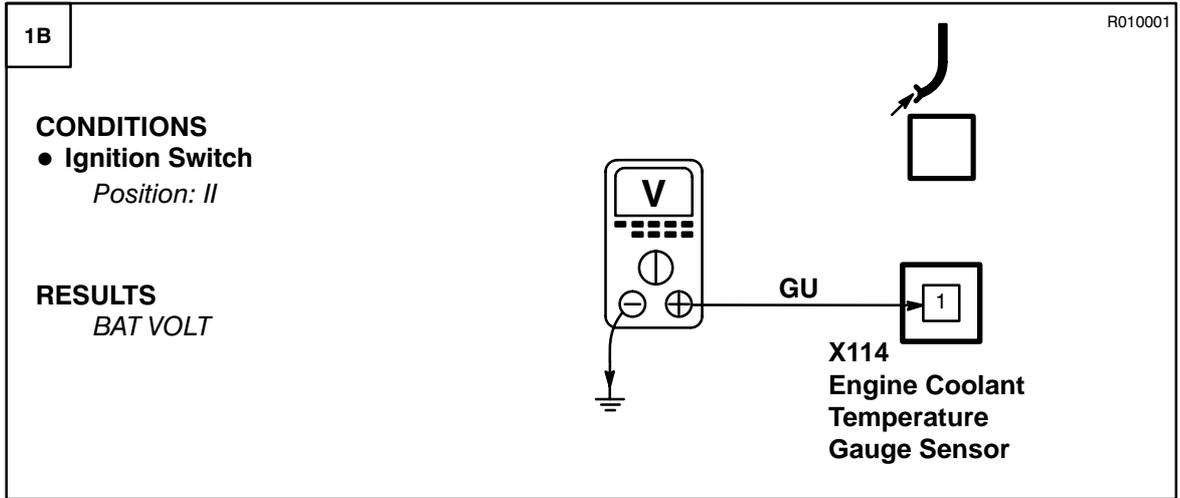
~~OK~~ **PROBLEM CAUSE**
 - LG Wire
 - F14 Fuse



~~OK~~ **PROBLEM CAUSE**
 - B Wire

OK **PROBLEM CAUSE**
 - Instrument
 Cluster

Test B



PROBLEM CAUSE

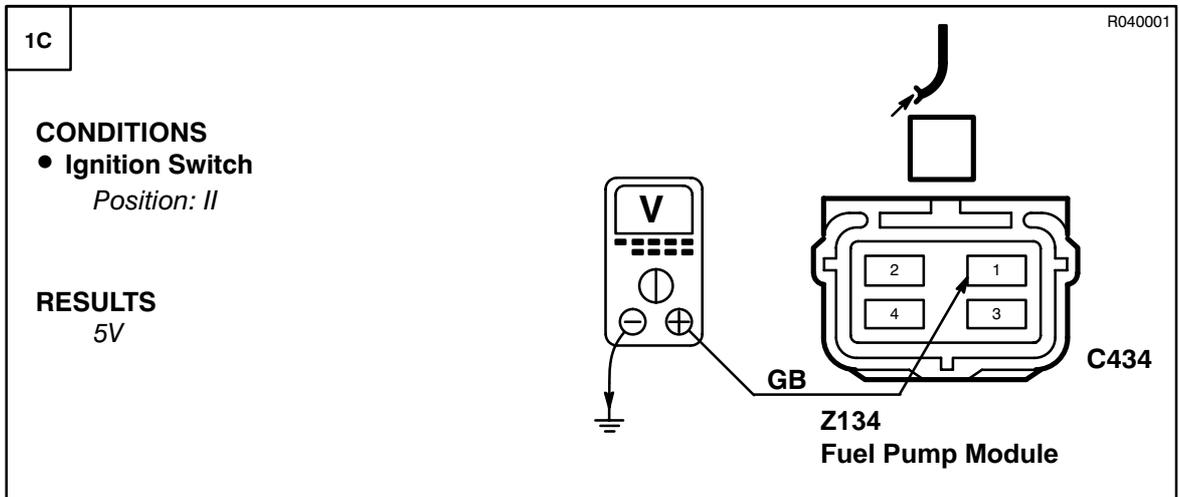
- GU Wire
- Instrument Cluster
- Coolant Temperature Gauge



PROBLEM CAUSE

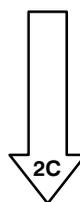
- Engine Coolant
Temperature
Gauge Sensor

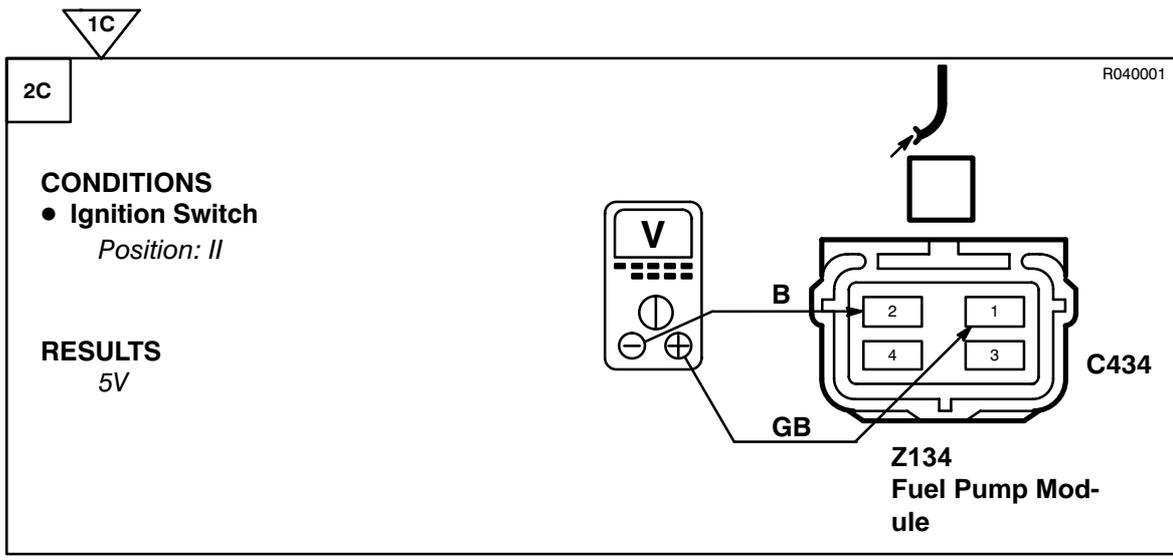
Test C



PROBLEM CAUSE

- GB Wire
- Instrument Cluster
- Fuel Gauge

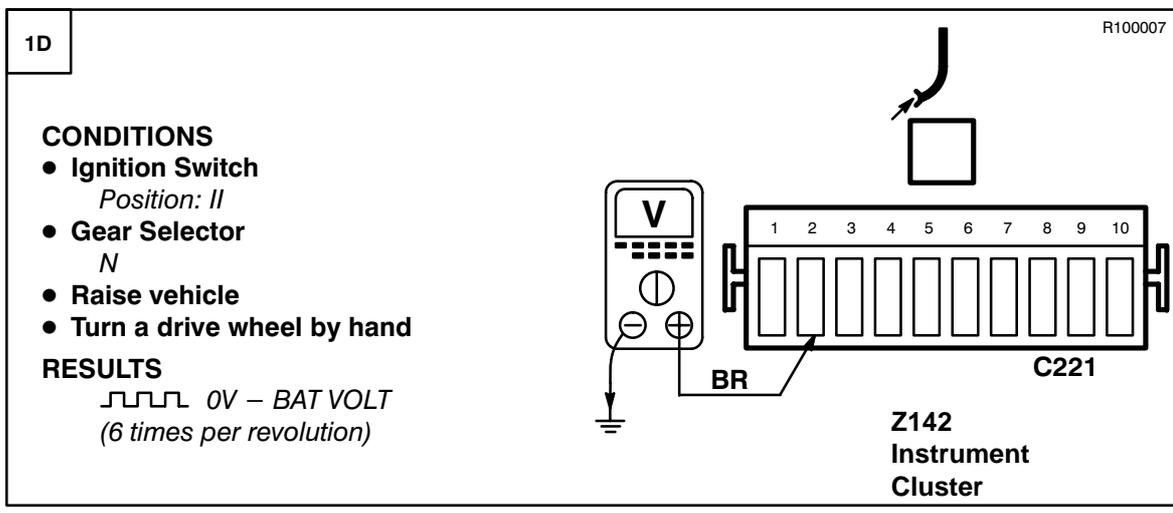




OK PROBLEM CAUSE
- B Wire

OK PROBLEM CAUSE
- Fuel Pump Module

Test D



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

OK PROBLEM CAUSE
- Instrument Cluster
- Speedometer

Test E

R010001

1E

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- Engine
On = 7V

**K184
Phase Tap Resistor**



- PROBLEM CAUSE**
- Generator
 - Phase Tap Resistor



- PROBLEM CAUSE**
- WS Wire
 - Instrument Cluster
 - Tachometer

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 when the Handbrake Switch (X191) is closed. On Australian vehicles the brake warning light is grounded by a 3 second timer as a bulb check.

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). On Australian vehicles the warning light is grounded by a 3 second timer as a bulb check.

MFI-V8 and 300Tdi with EDC**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.

Catalyst Warning Indicator (Japan Vehicles Only)

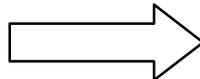
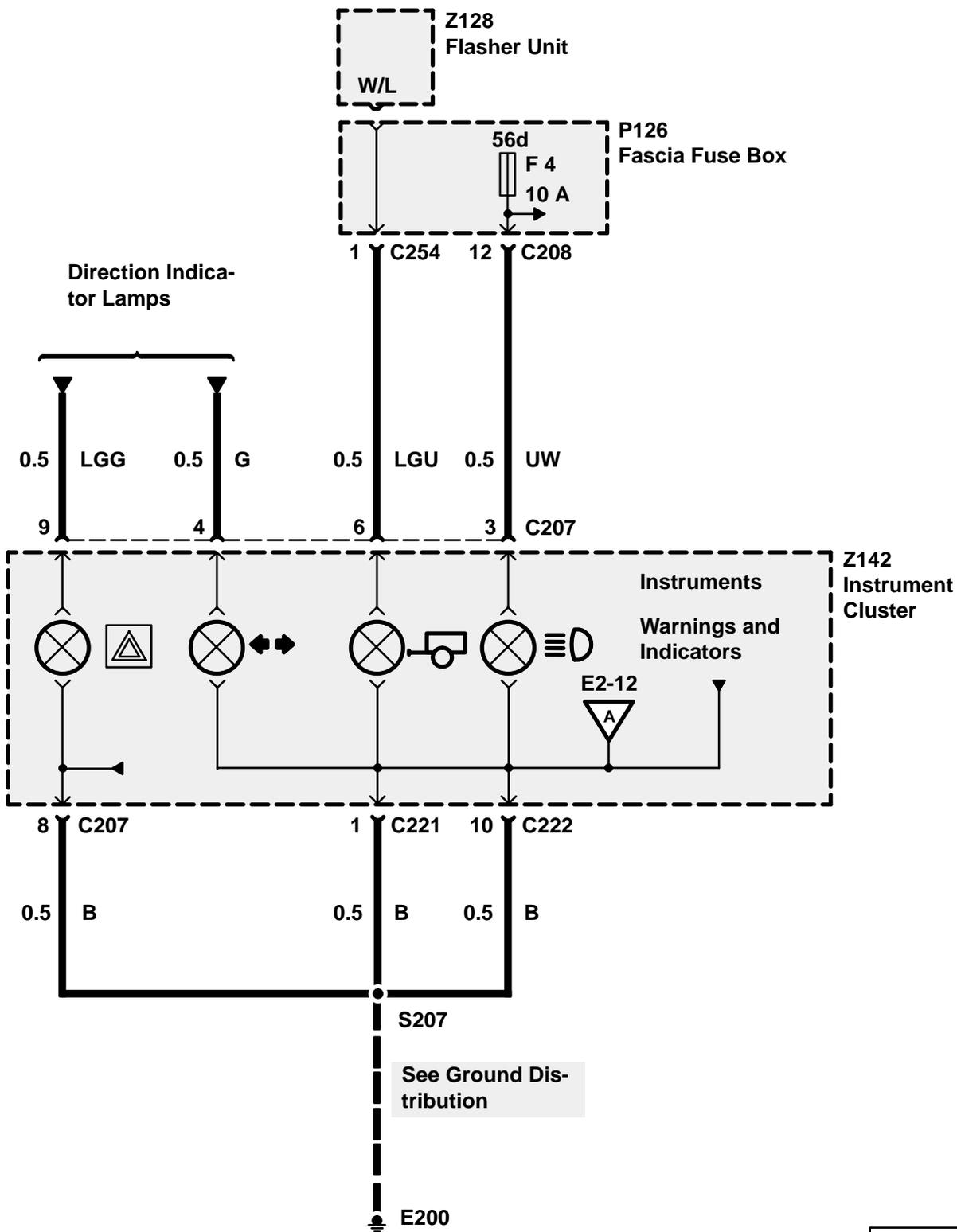
In case of a catalyst overheat, the catalyst thermocouples send a signal to the Catalyst Warning ECU's which then provide battery voltage to the Catalyst Warning Relay (K172). The relay is energized and provides ground to the Catalyst Warning Indicator. The Catalyst Warning Indicator is also grounded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

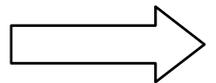
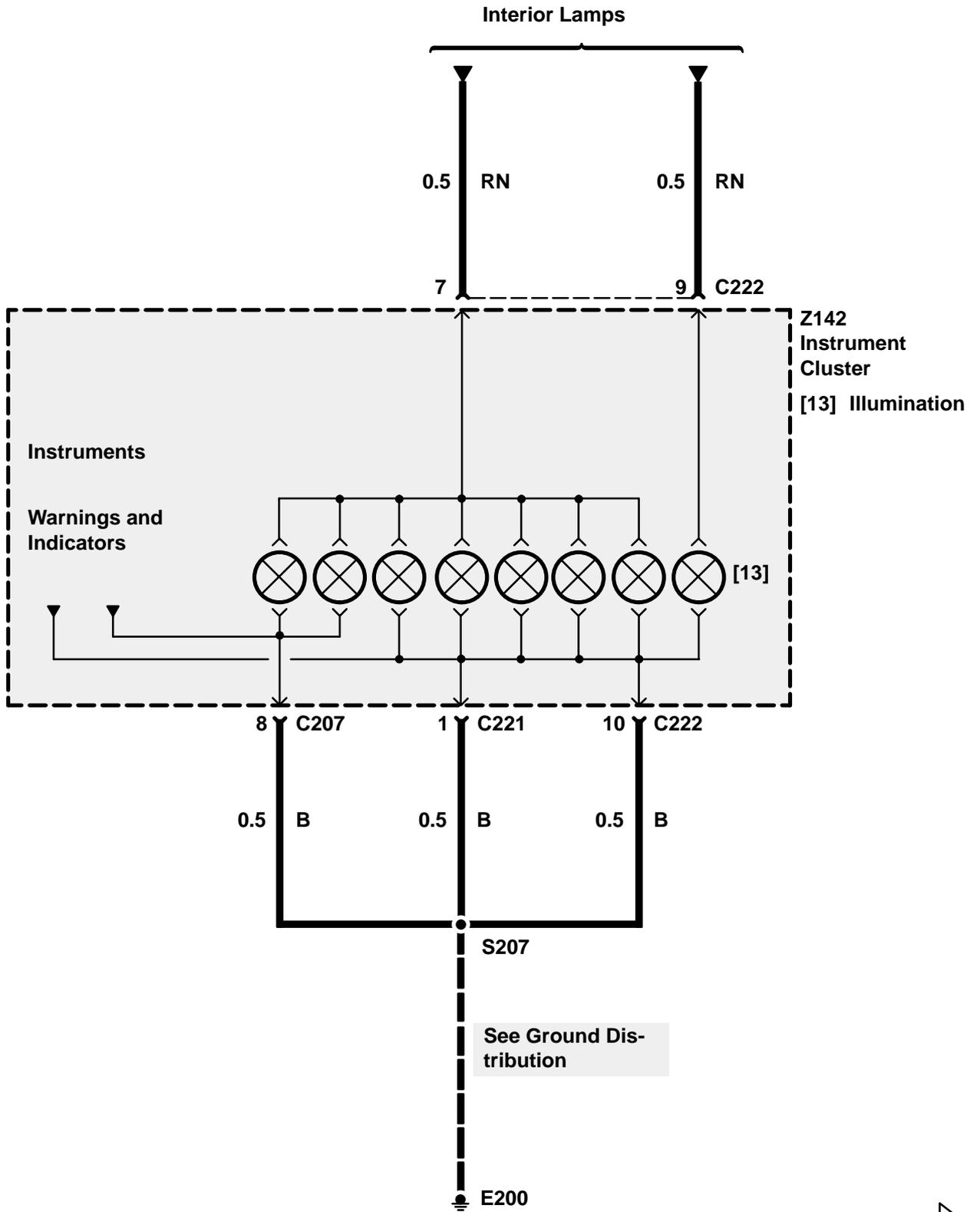
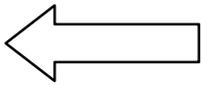
Differential Lock Indicator

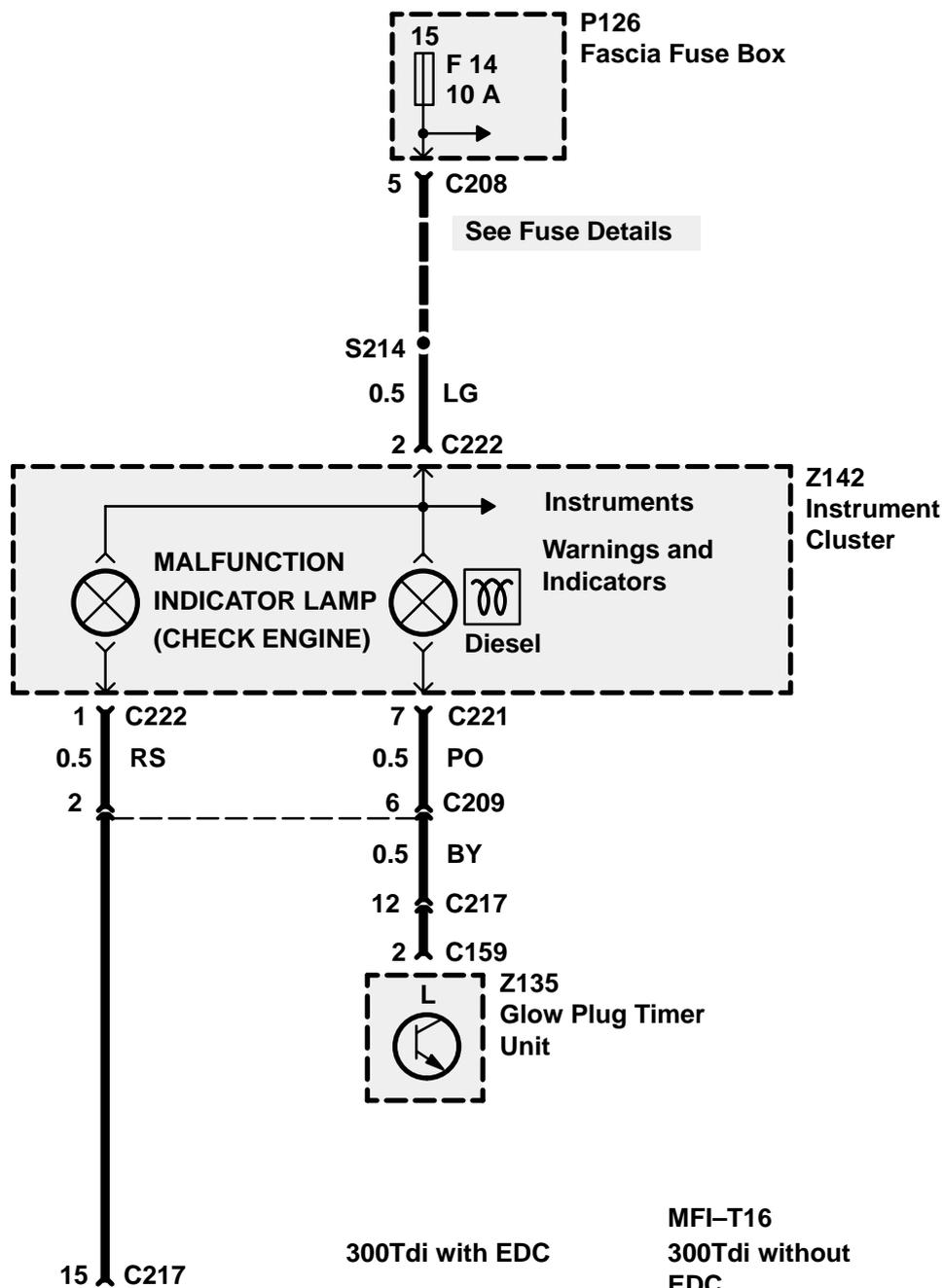
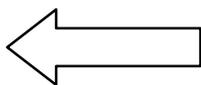
The Differential Lock Indicator receives battery voltage with the Ignition Switch (X134) in position II. It is grounded by the Differential Lock Switch (X238) when the Differential is locked.

Fasten Seat Belt Indicator (Except Japan Vehicles Only)

The Fasten Seat Belt Indicator receives battery voltage with the Ignition Switch (X134) in position II. The indicator is also grounded through the Multi-Function Unit (MFU) (Z148) and the Driver's Seat Buckle Switch (X120). If the Driver's Seat Belt is buckled the Driver's Seat Belt Buckle Switch opens and the Indicator turns off.





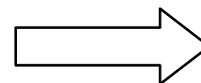
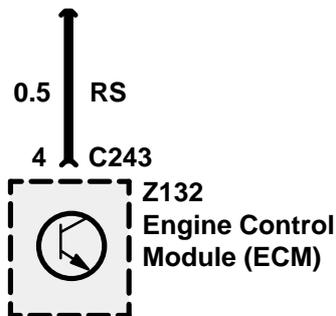
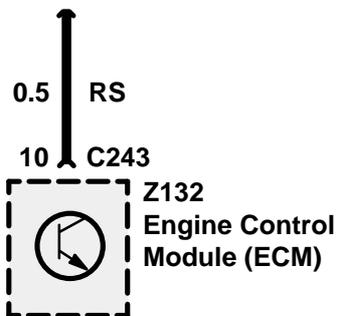


MFI-V8

300Tdi with EDC

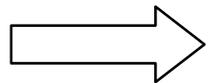
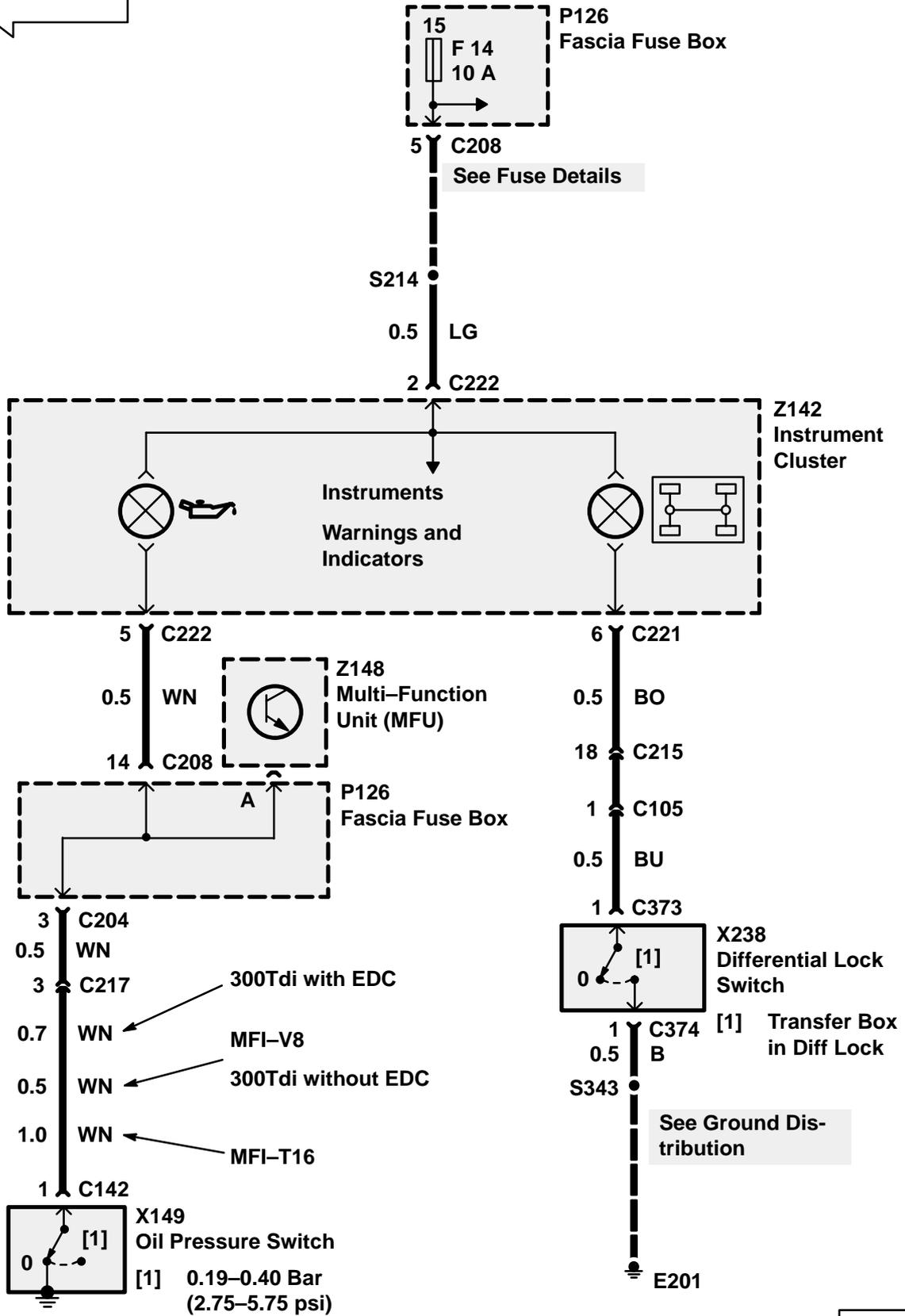
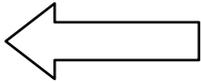
MFI-T16
300Tdi without EDC

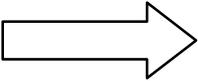
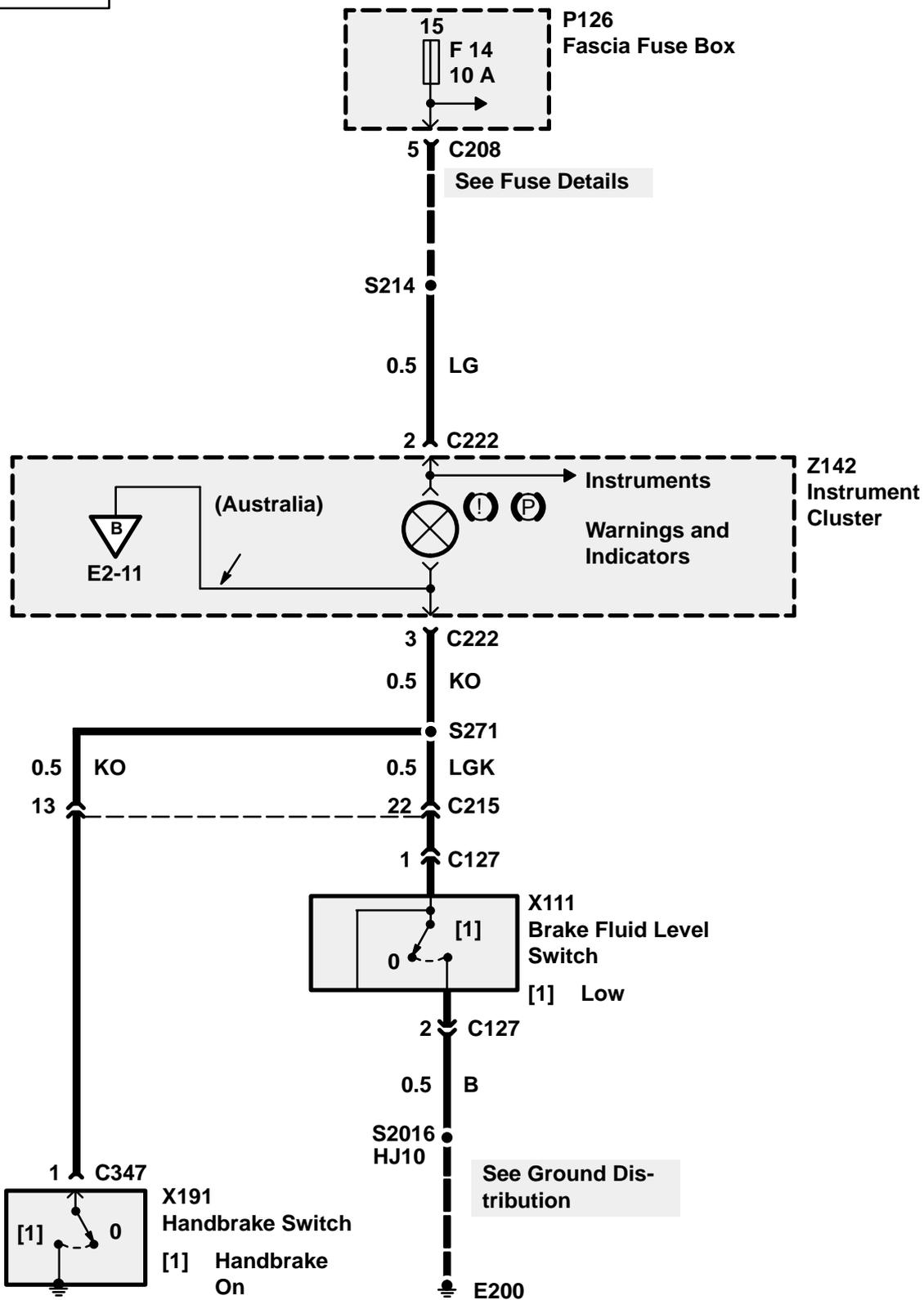
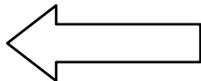
Not used



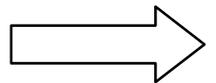
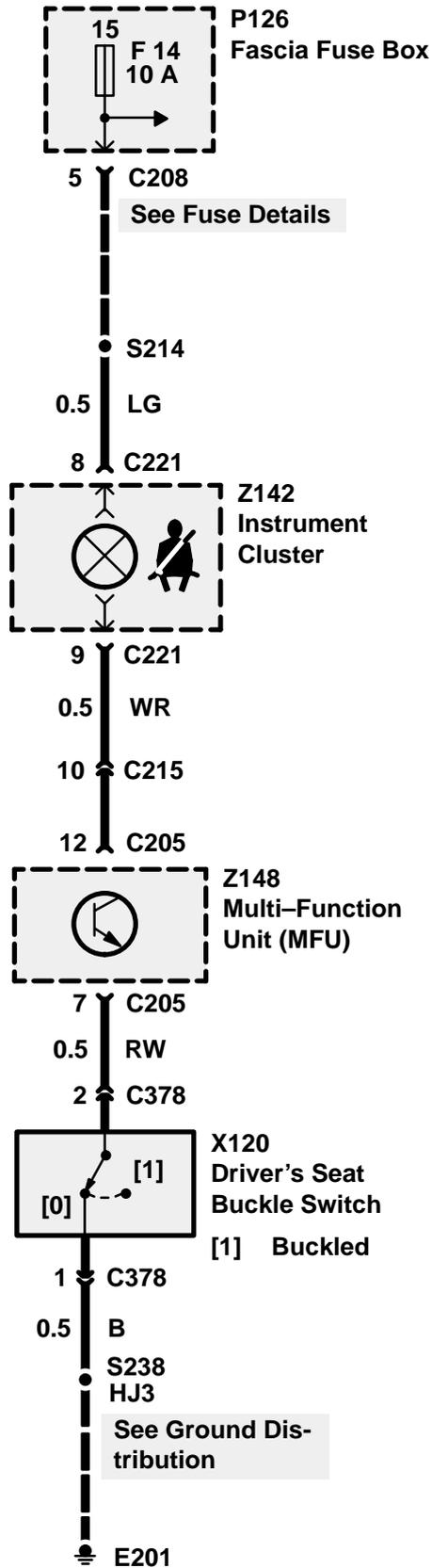
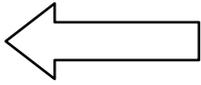
E2 ETM

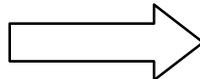
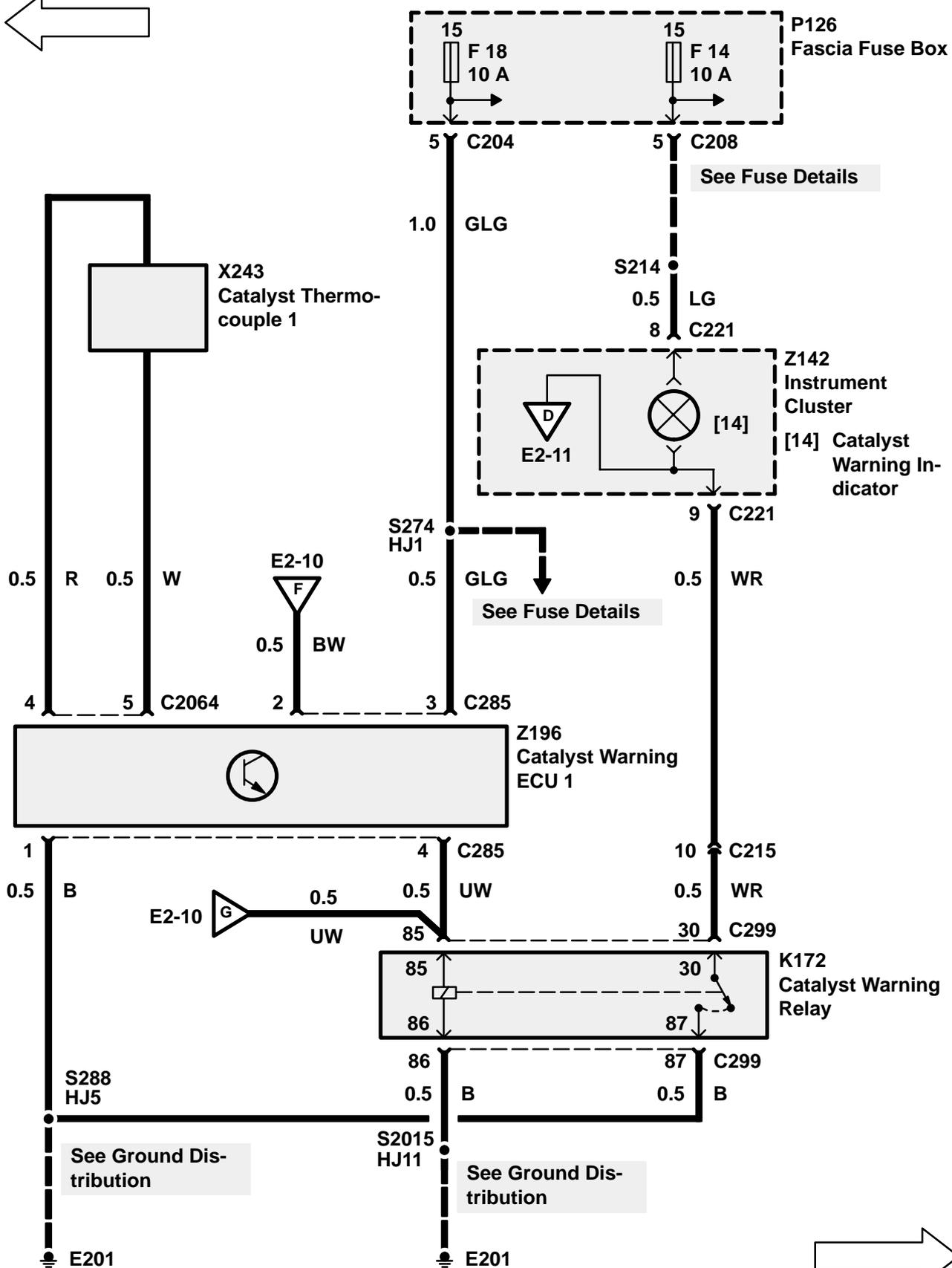
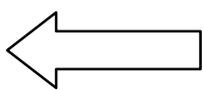
DISCOVERY

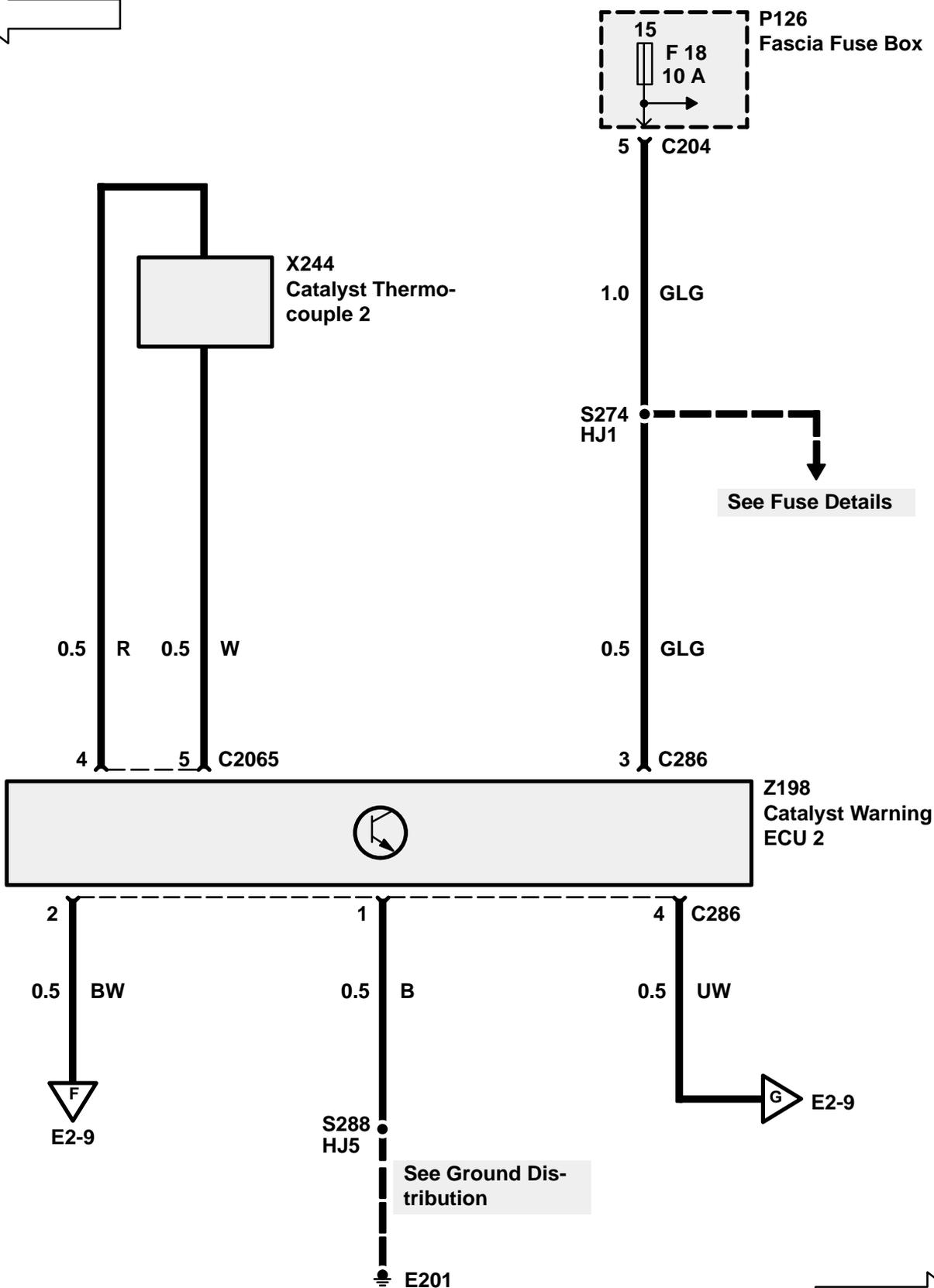
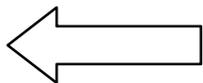




DISCOVERY

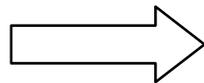


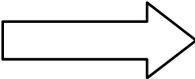
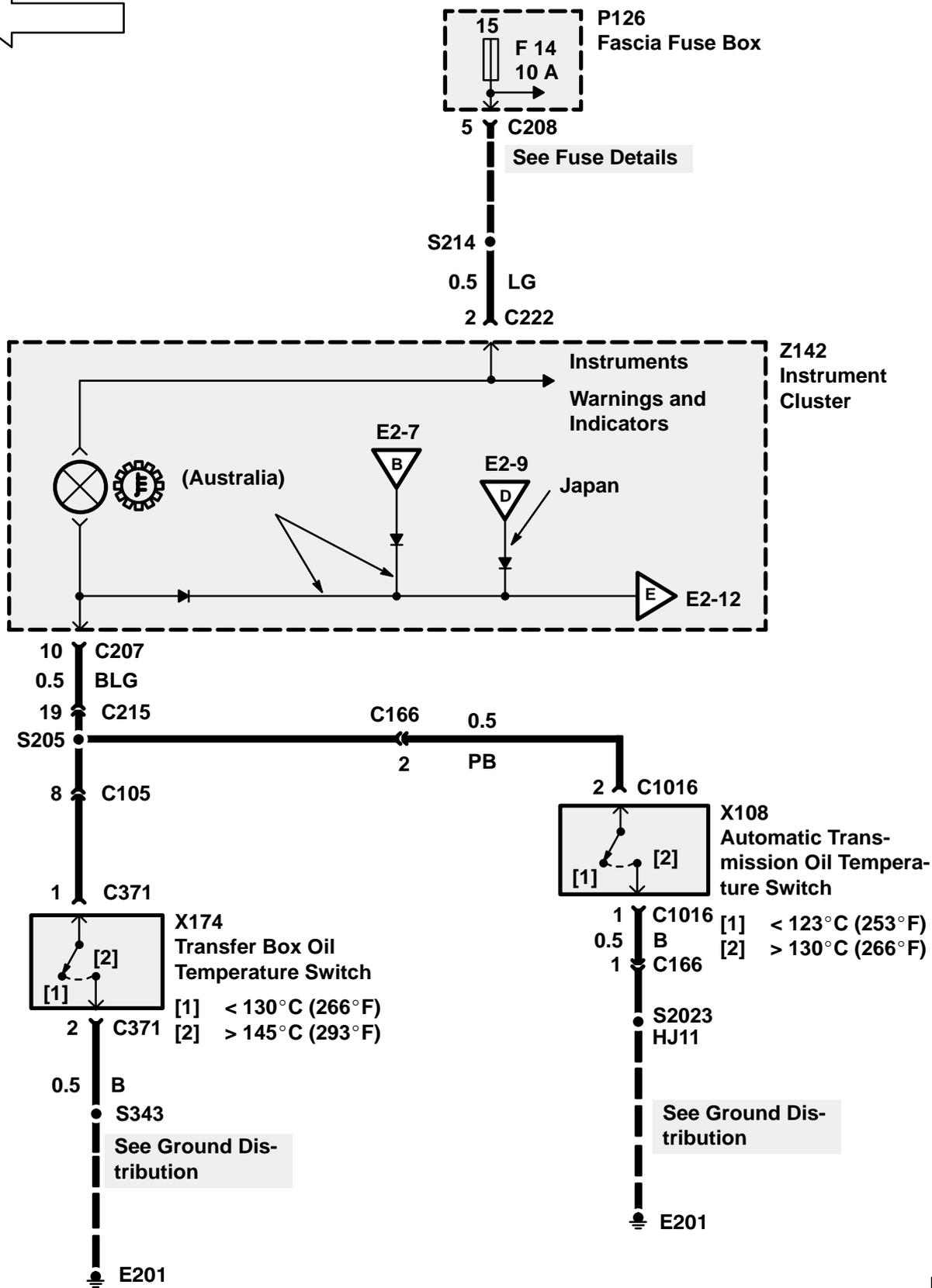
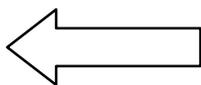




See Fuse Details

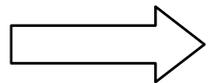
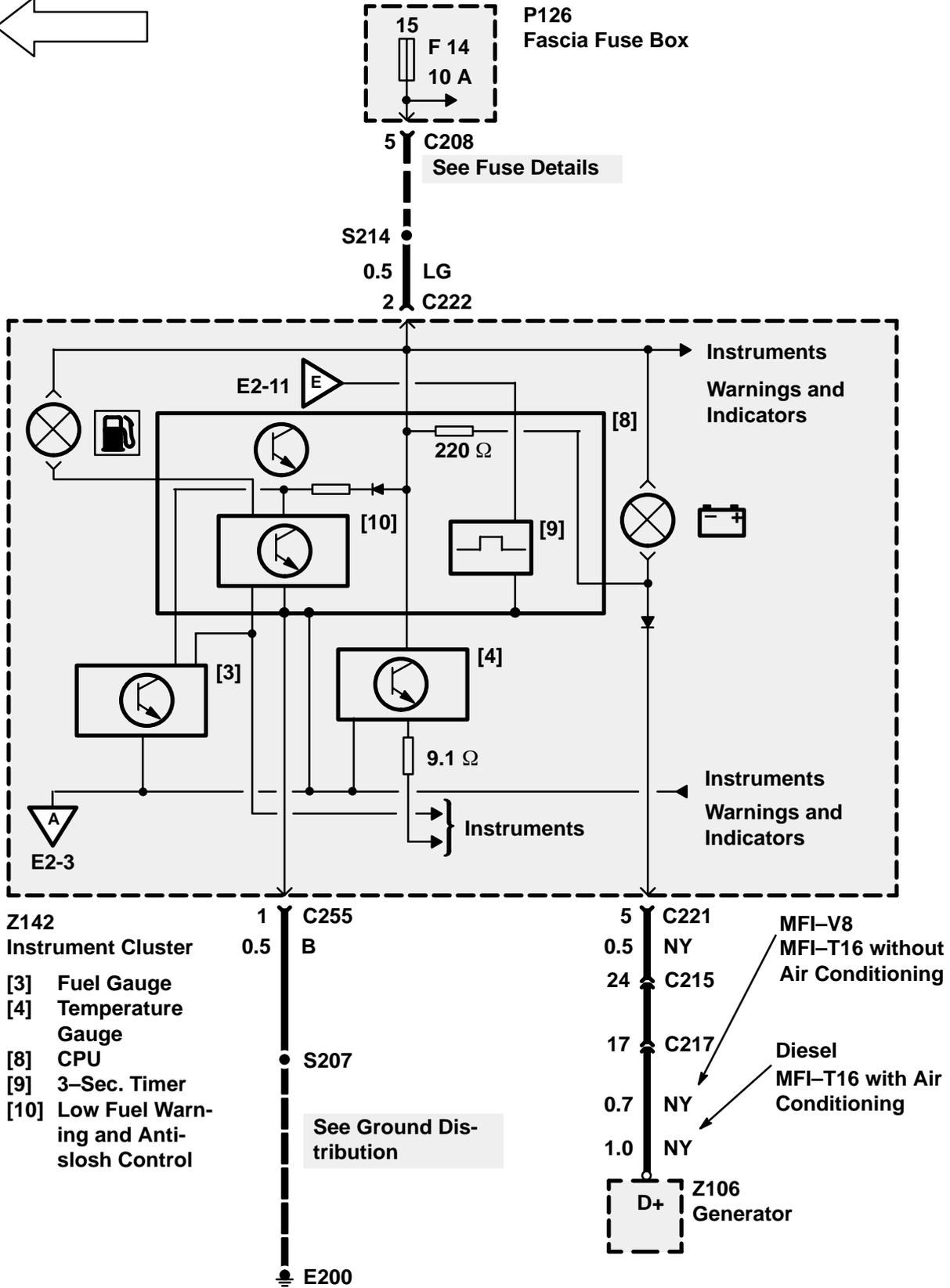
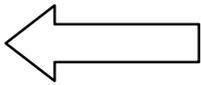
See Ground Distribution

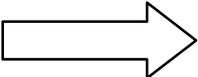
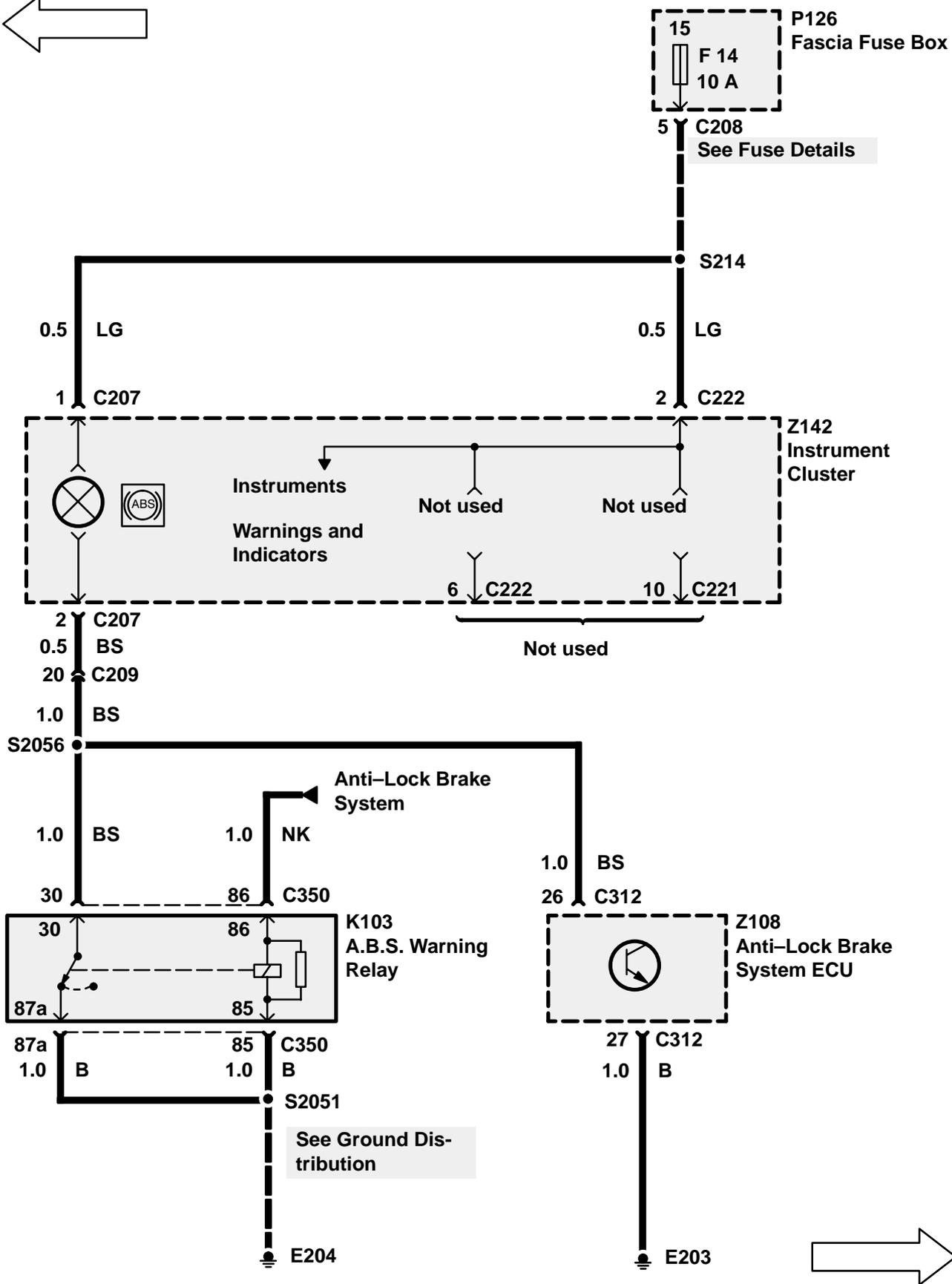
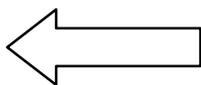


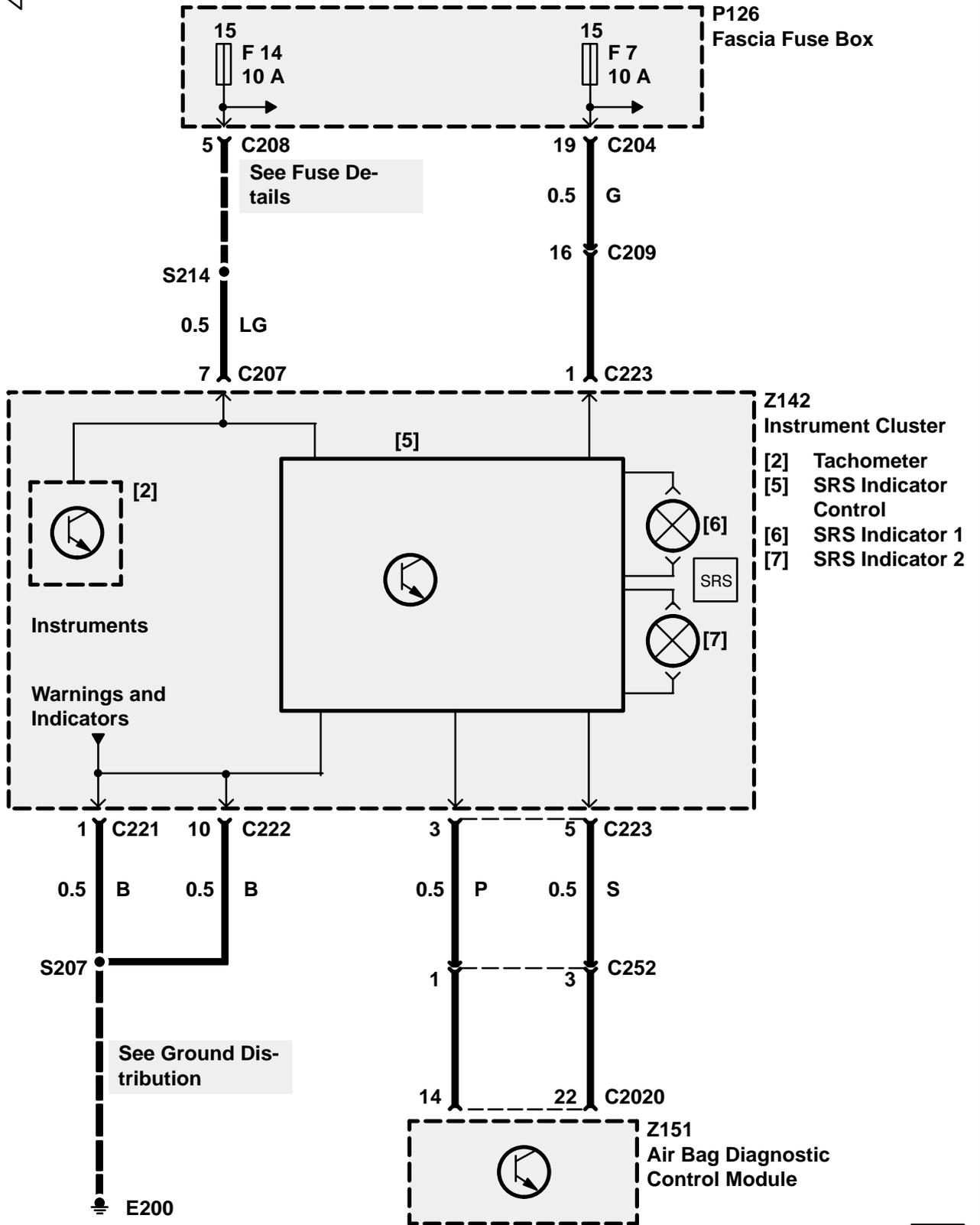
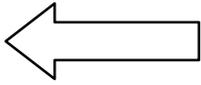


E2 ETM

DISCOVERY







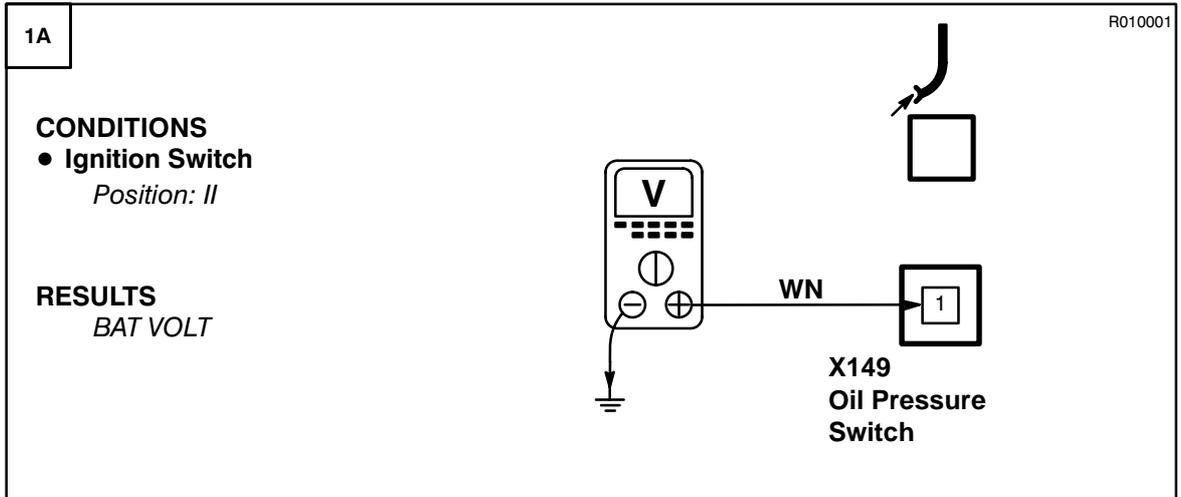
TROUBLESHOOTING HINTS

15. 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).
16. If the Brake Warning Light does not operate at all, check Instrument Cluster (Z142) and K Wire.
For Australian vehicles:
17. 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 the ignition on, replace Instrument Cluster (Z142). If all three indicators don't turn off with the engine running, replace Instrument Cluster (Z142).

SYSTEM DIAGNOSIS

1. If the Charge Warning Light does not operate, go to Section B1.
2. If the Oil Pressure Warning Light remains illuminated with the oil pressure OK, do Test A.
3. If the Malfunction Indicator Lamp (Check Engine) does not operate, do Test B for MFI-V8 engines, Test C for 300TDI with EDC engines.
4. If the Glow Plug Indicator does not operate, do Test D.
5. If the Brake Warning Light does not operate with the brake fluid level low, do Test E.
6. If the Brake Warning Light does not operate with the handbrake applied, do Test F.
7. If the Differential Lock Indicator remains on after the differential lock has been disengaged, transmission "wind up" may be present. Drive the vehicle in reverse for a short distance, then drive forward for a short distance. If the light remains on after driving in reverse, do Test G.
8. If the Fasten Seat Belt Indicator does not operate with the ignition on, do Test H.
9. 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 I.
10. If a warning light exhibits any symptom not mentioned above, check the associated bulb, wires, switches, and components.

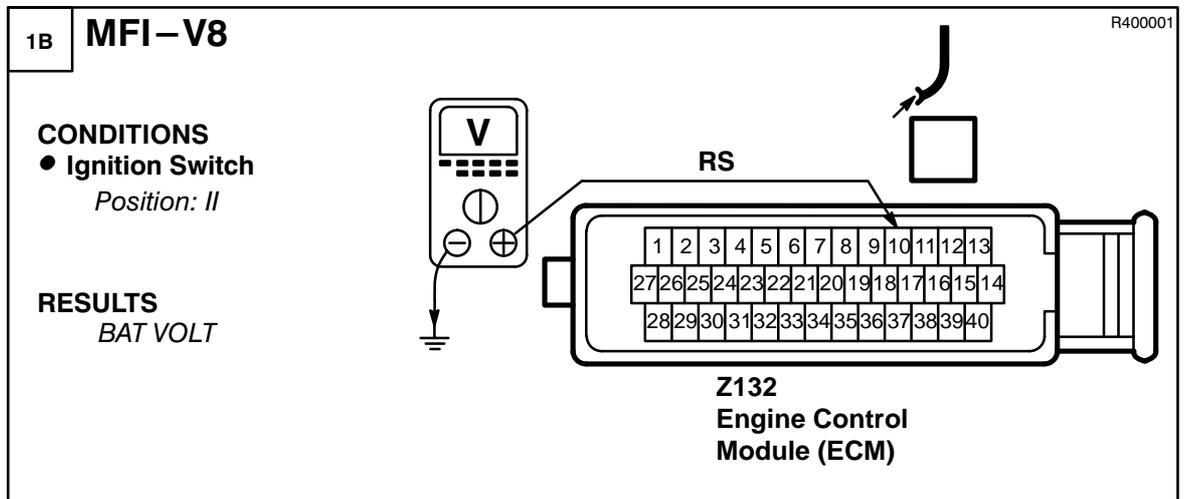
Test A



OK PROBLEM CAUSE
- WN Wire

OK PROBLEM CAUSE
- Oil Pressure
Switch

Test B

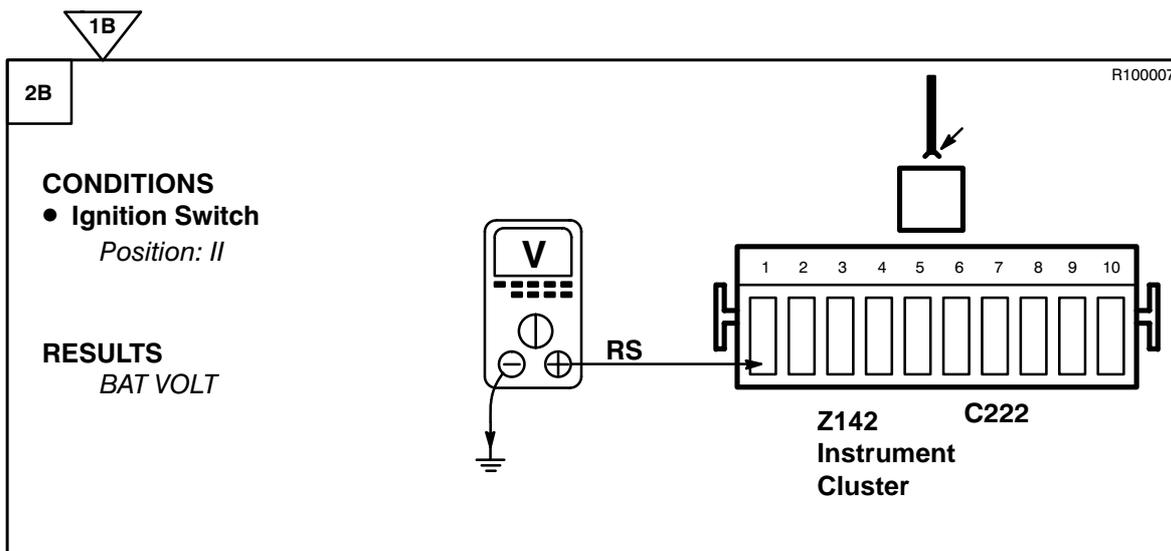


OK

↓

2B

OK PROBLEM CAUSE
- Engine Control
Module (ECM)

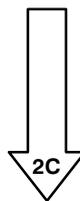
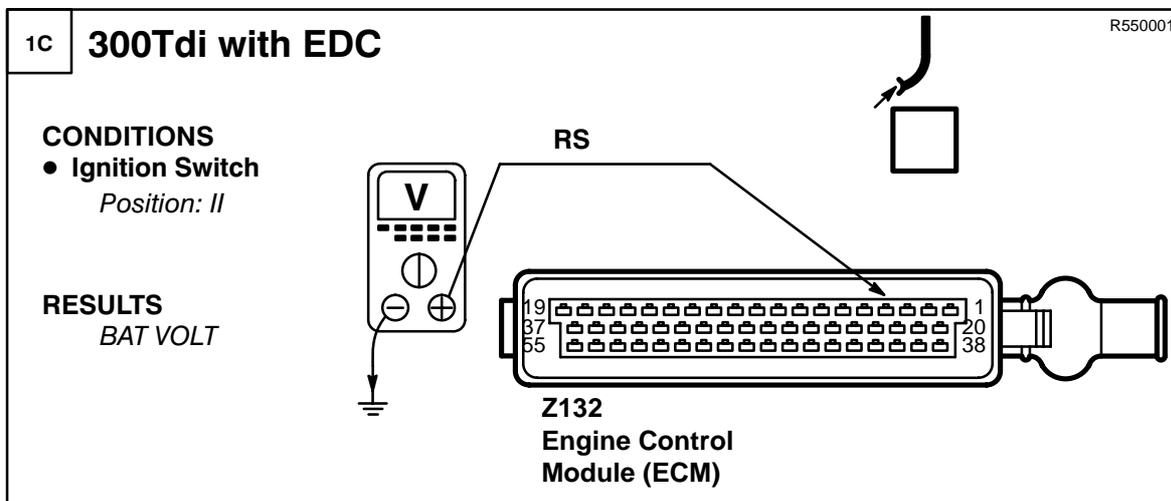


PROBLEM CAUSE
- Instrument Cluster

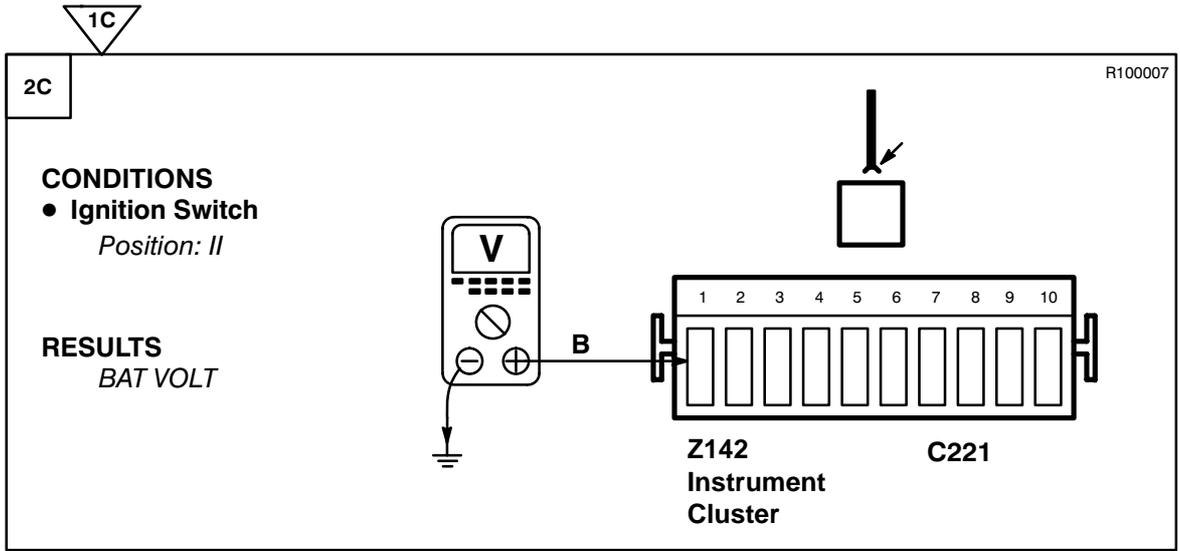


PROBLEM CAUSE
- LG Wire
- RS Wire

Test C



PROBLEM CAUSE
- Engine Control Module (ECM)

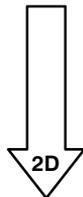
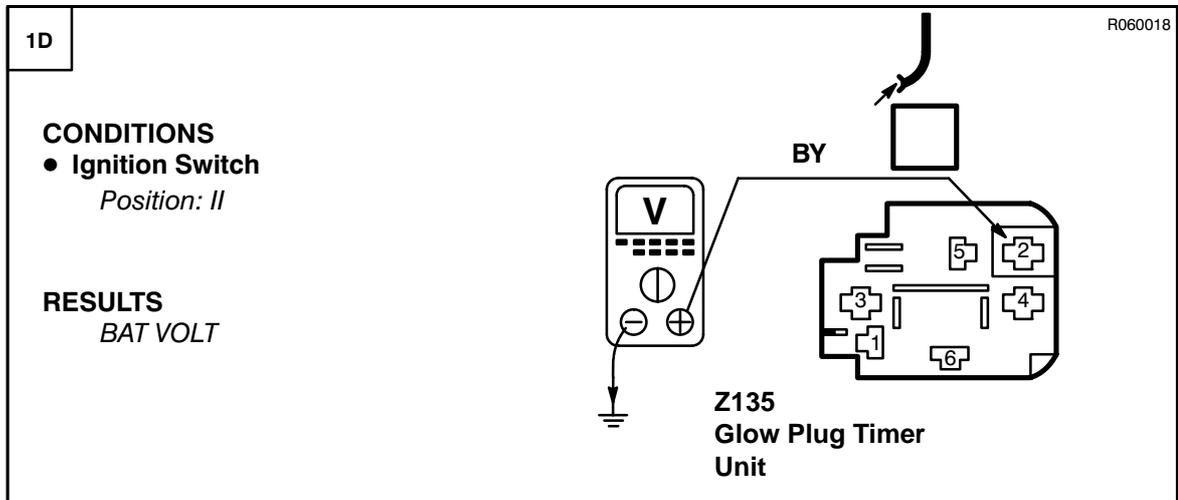


PROBLEM CAUSE
- Instrument Cluster

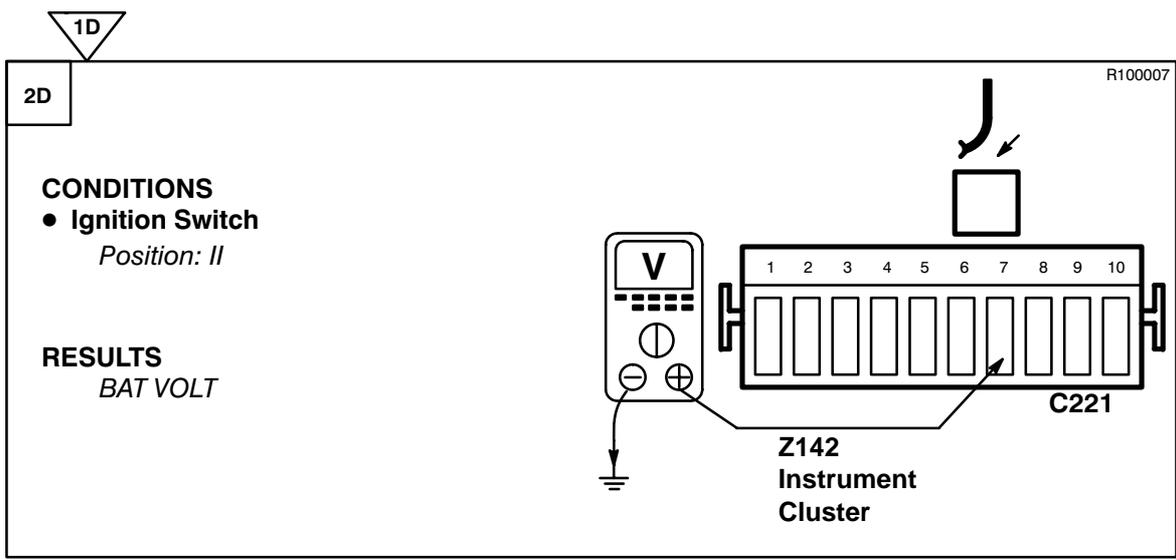


PROBLEM CAUSE
- LG Wire
- RS Wire

Test D



PROBLEM CAUSE
- Glow Plug Timer Unit

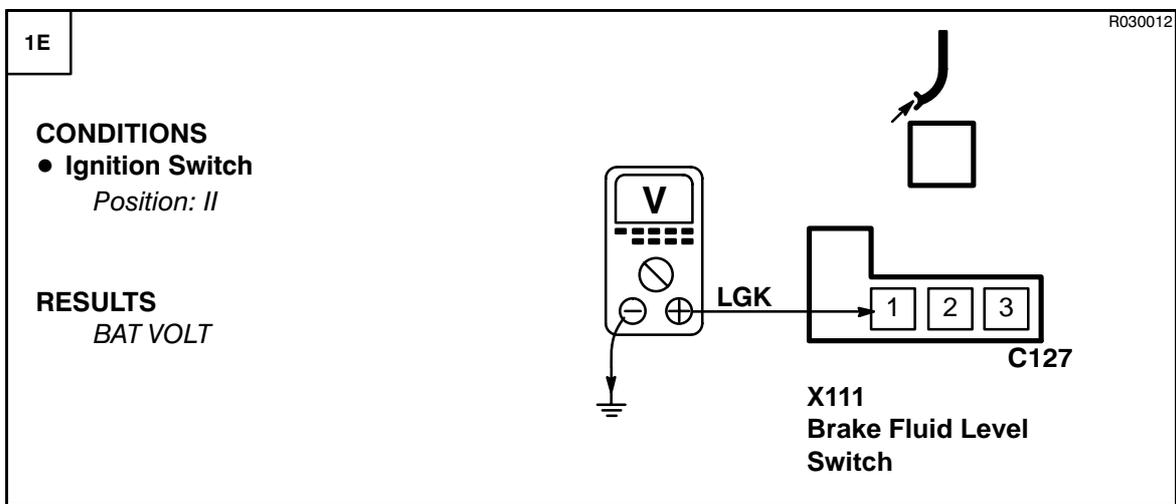


PROBLEM CAUSE
 - Instrument Cluster



PROBLEM CAUSE
 - PO Wire
 - BY Wire

Test E

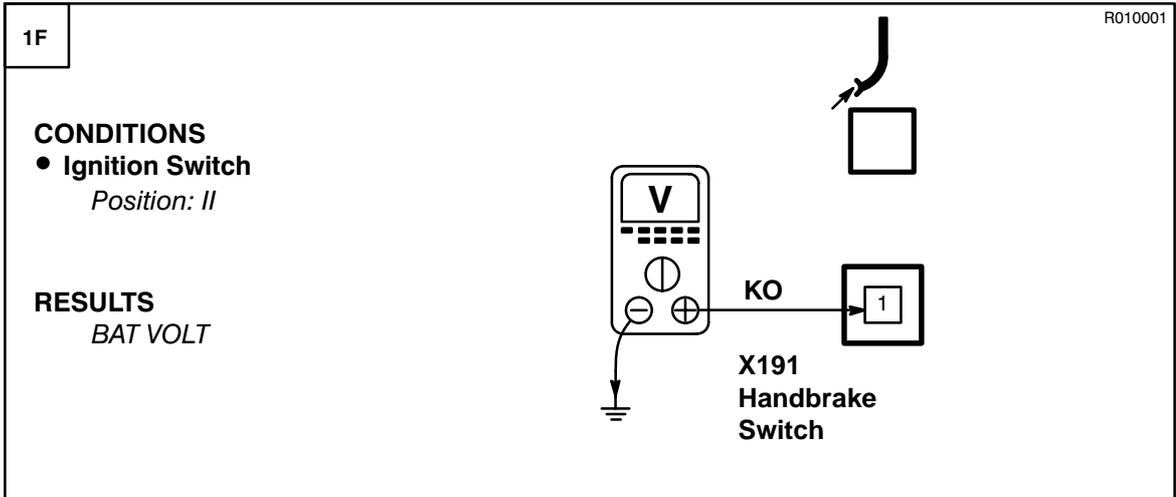


PROBLEM CAUSE
 - LGK Wire
 - Instrument Cluster



PROBLEM CAUSE
 - B Wire
 - Brake Fluid Level Switch

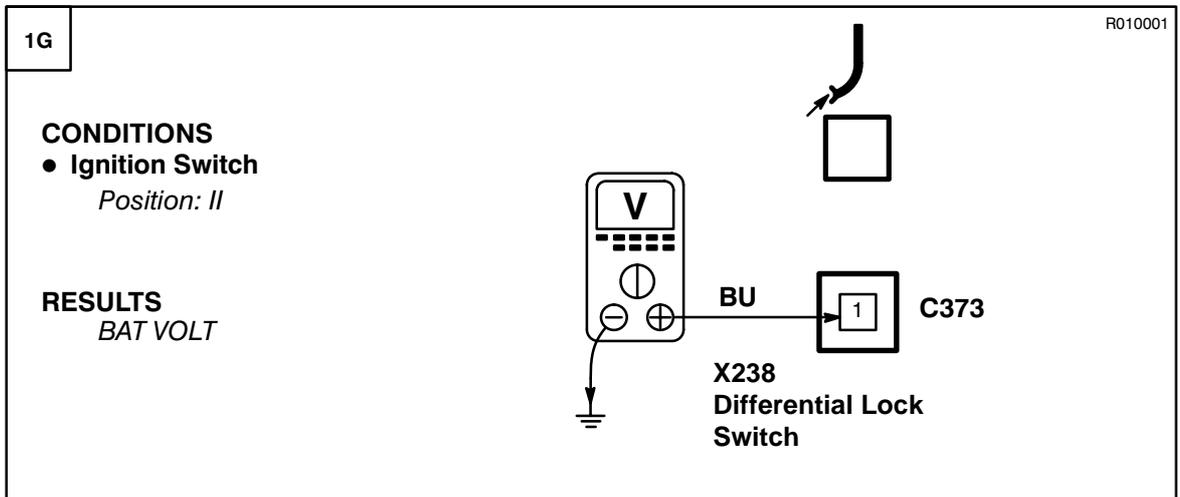
Test F



OK PROBLEM CAUSE
- KO Wire

OK PROBLEM CAUSE
- Handbrake Switch

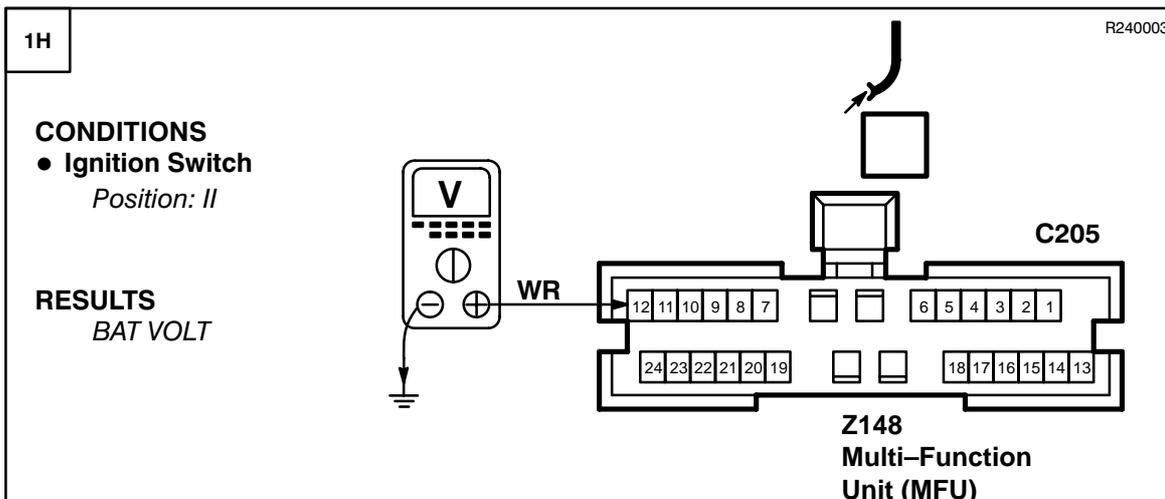
Test G



OK PROBLEM CAUSE
- LG Wire
- BO Wire
- BU Wire

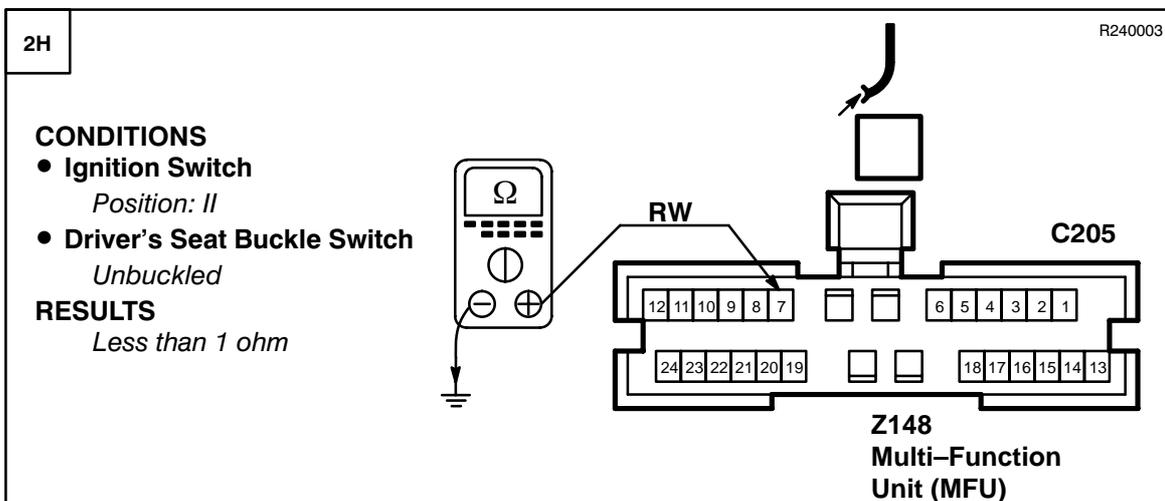
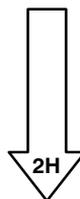
OK PROBLEM CAUSE
- Differential Lock
Switch

Test H



PROBLEM CAUSE

- WR Wire
- LG Wire
- Instrument Cluster



PROBLEM CAUSE

- RW Wire
- B Wire
- Driver's Seat Buckle Switch



PROBLEM CAUSE

- Multi-Function Unit (MFU)

Test I

R020003

11

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

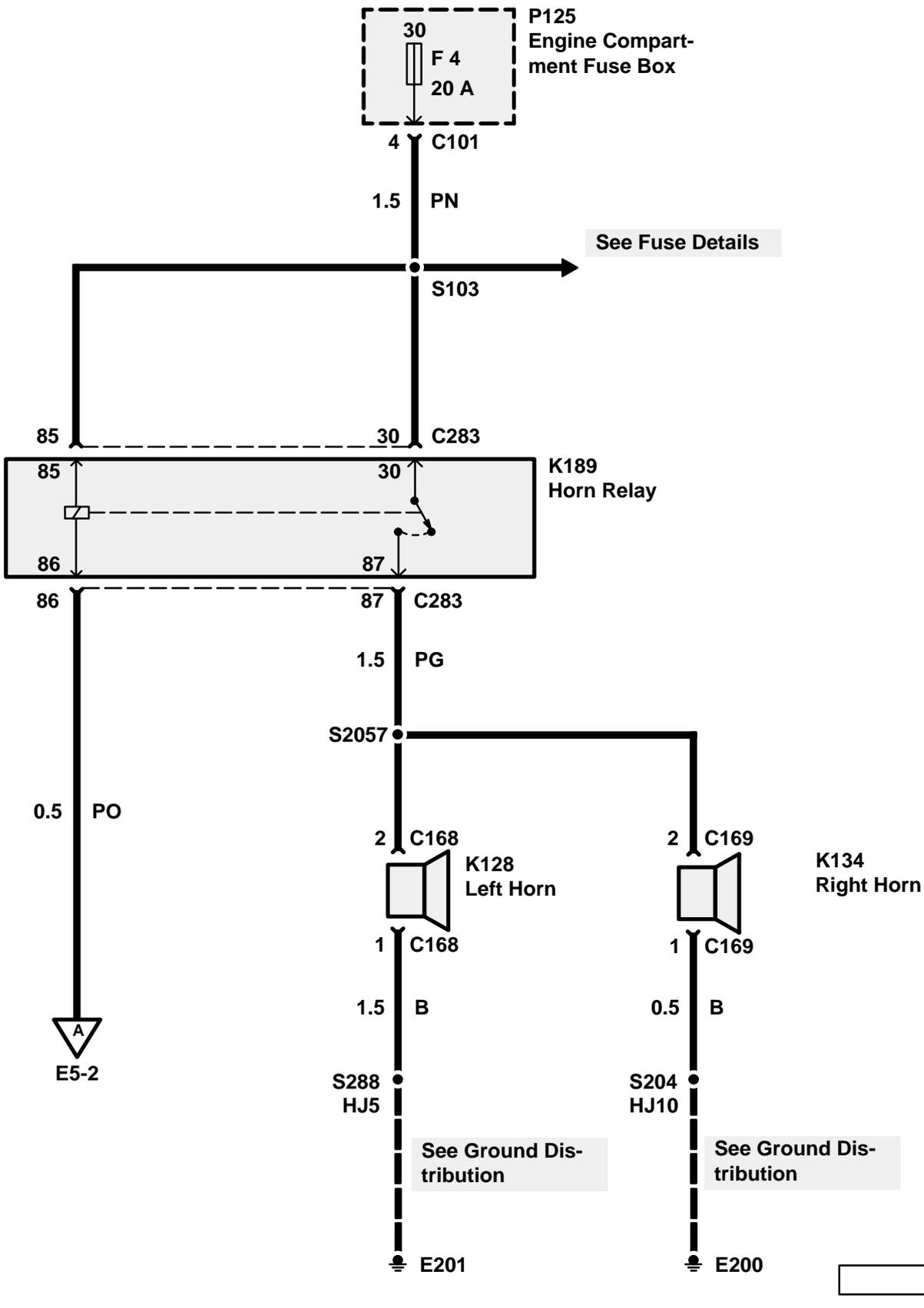
X108
Automatic Transmission Oil Temperature Switch

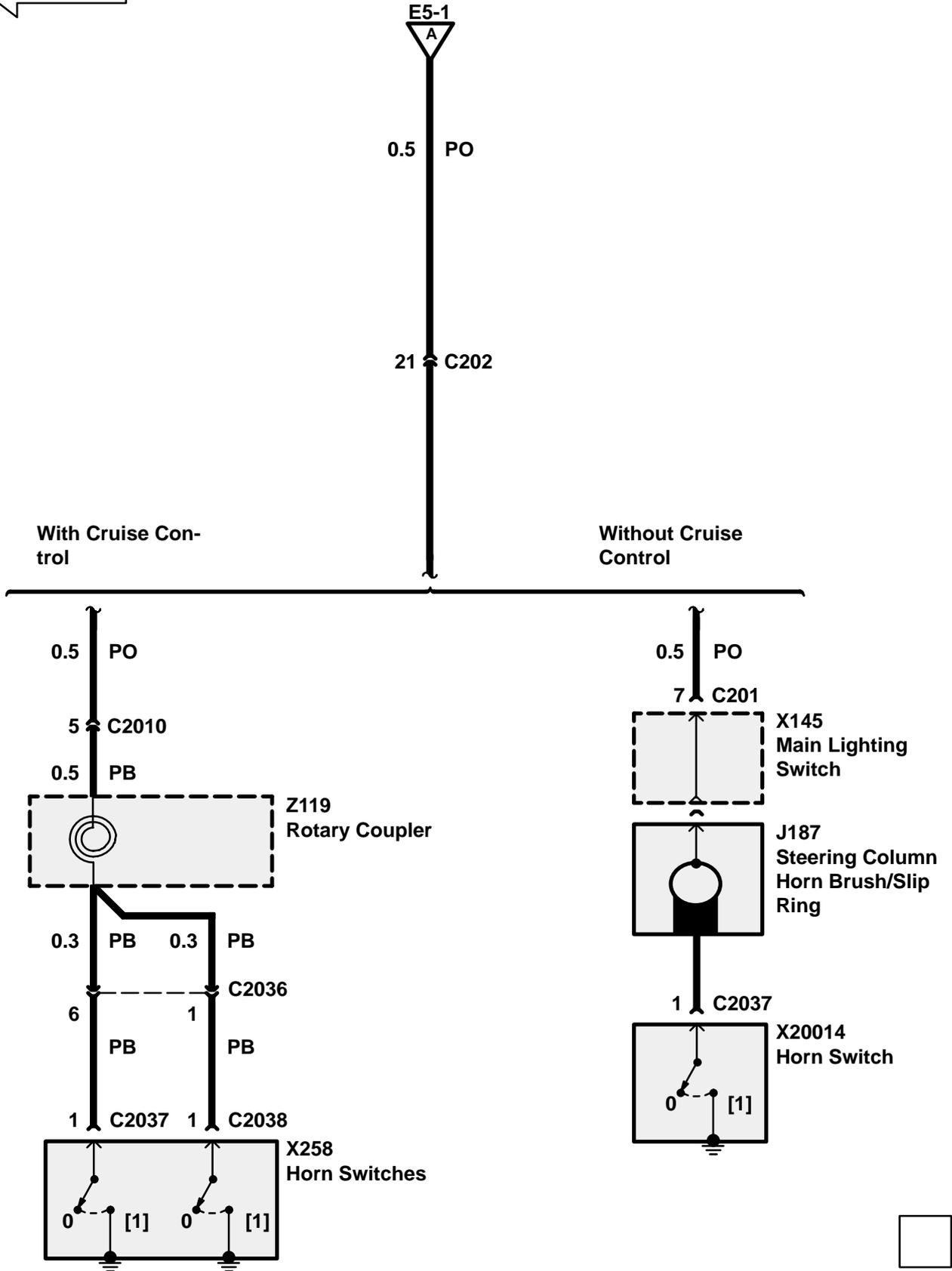
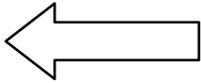
OK PROBLEM CAUSE

- BLG Wire
- Transfer Box Oil Temperature Switch

OK PROBLEM CAUSE

- Automatic Transmission Oil Temperature Switch





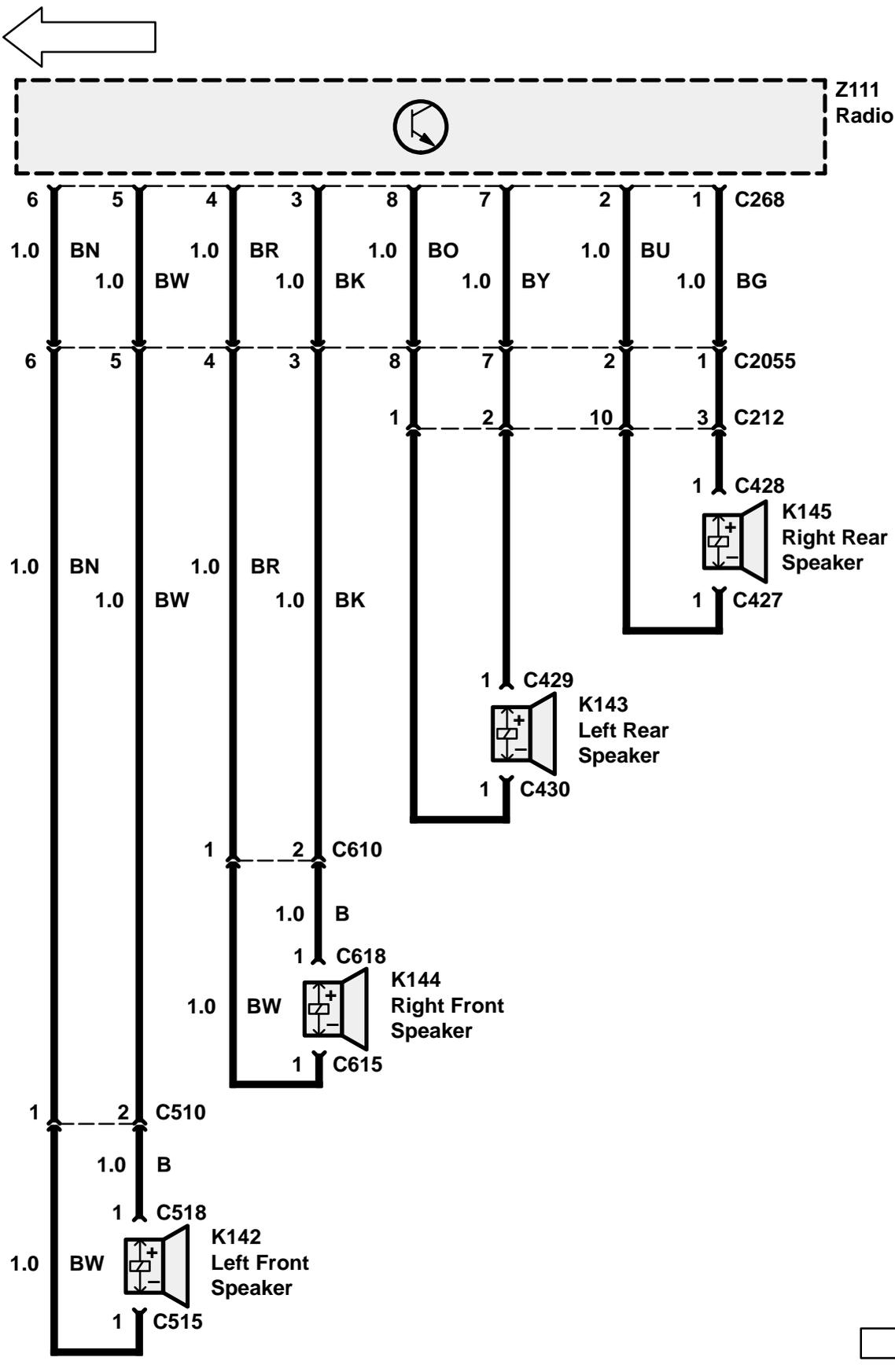
CIRCUIT OPERATION

The audio system consists of a new head unit and for mid/high range it is equipped with a subwoofer and subwoofer amplifier. For mid and high range the system also is equipped with a radio waveband switch and a tune switch, a volume up and a volume down switch which are located on the fascia next to the instrument cluster.

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. On every level the system is equipped with two rear and two front speakers.

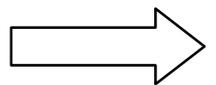
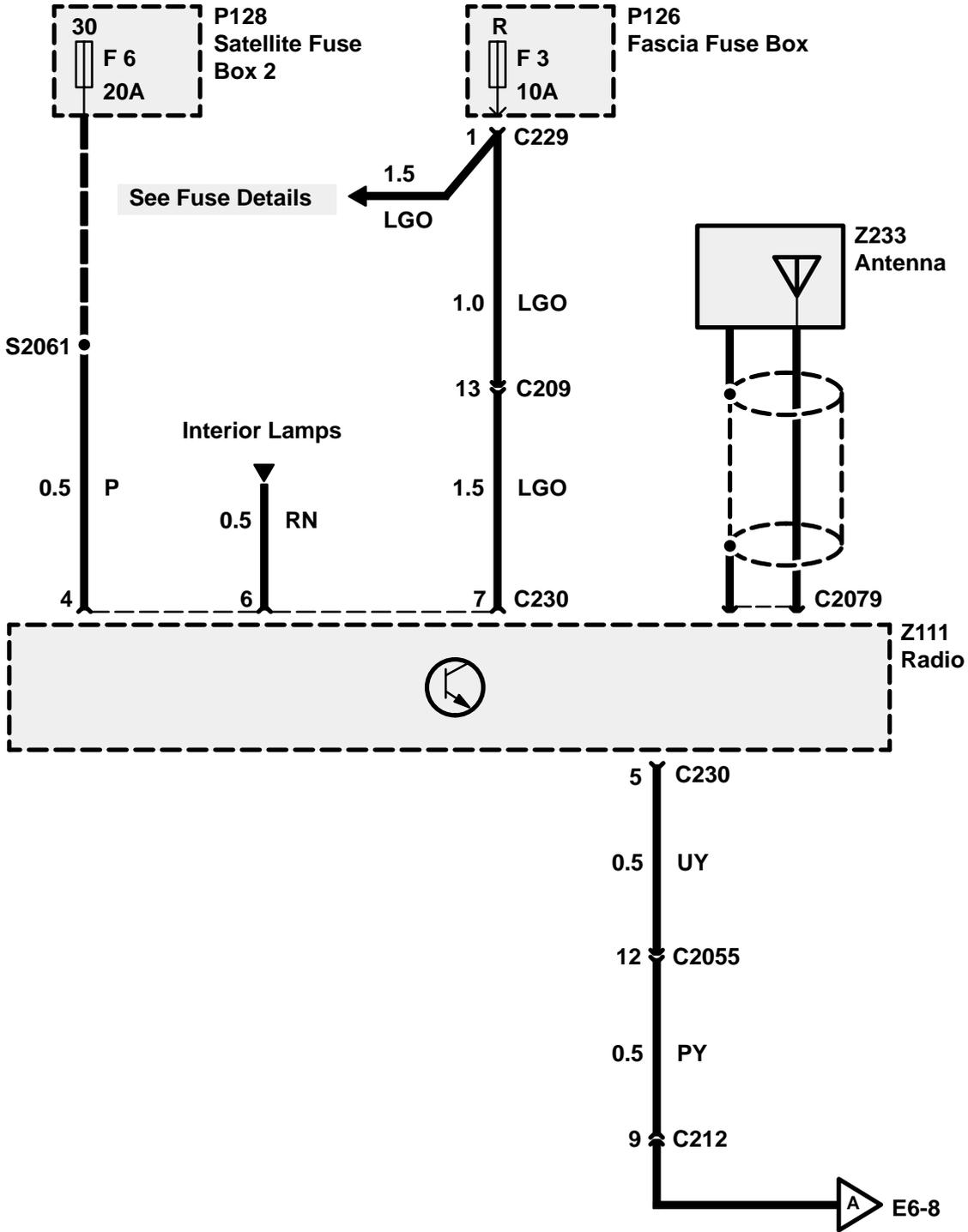
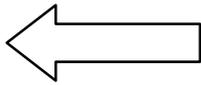
Battery voltage is provided to the control head at all times through the P wire. In addition to monitoring the anti-theft feature, this input keeps the preset station memory alive. Whenever battery power to the unit is lost, the anti-theft code must be entered and the preset stations must be reprogrammed.

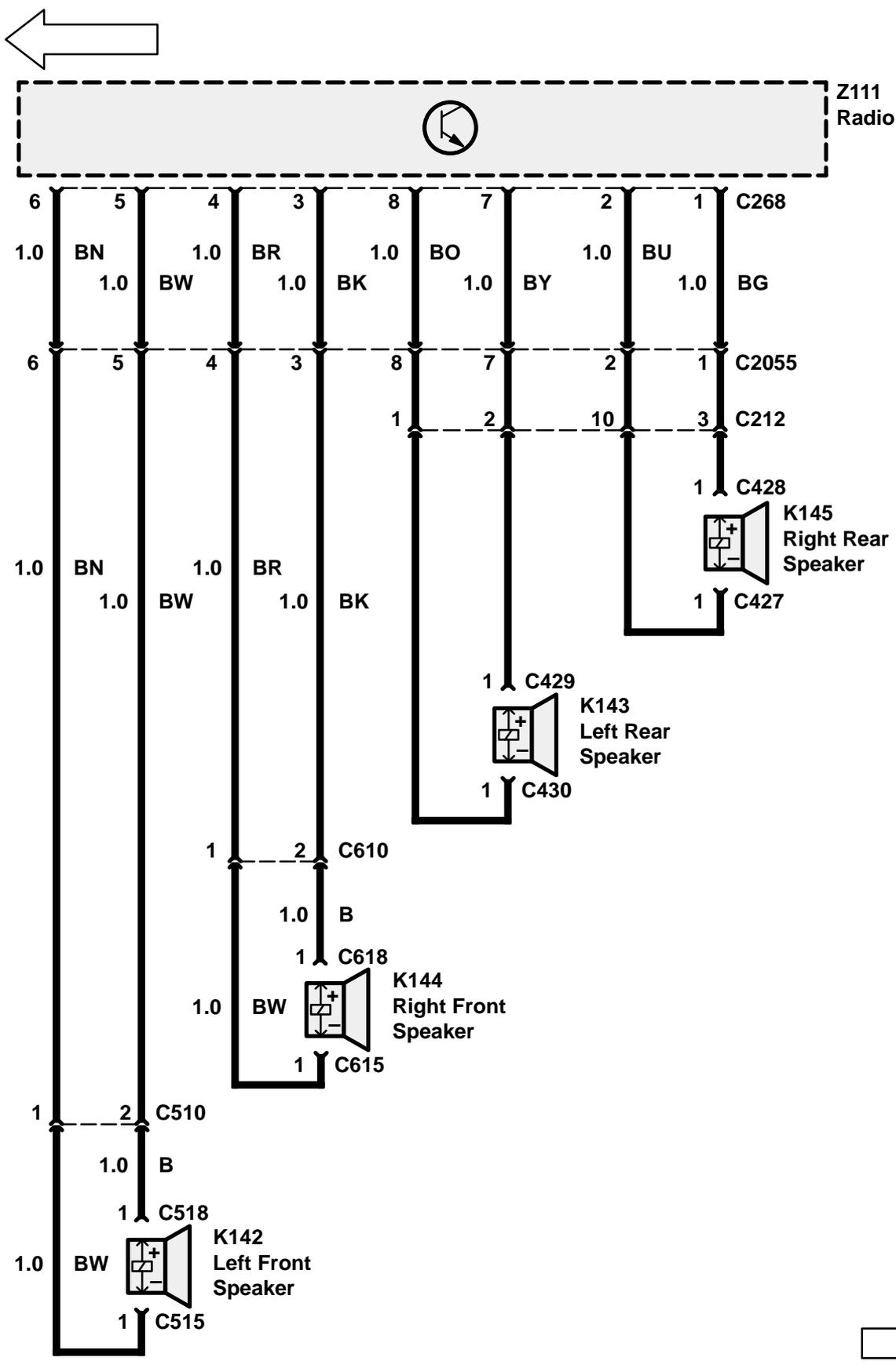
When the Radio (Z111) and the ignition are turned on, the voltage signal through the LGO wire and the control head 'wakes up' the unit. The Radio (Z111) plays, the VF display comes on and the control unit buttons illuminate. The VF display is dimmed when the headlights or park lights are turned on. When 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.

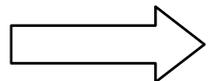
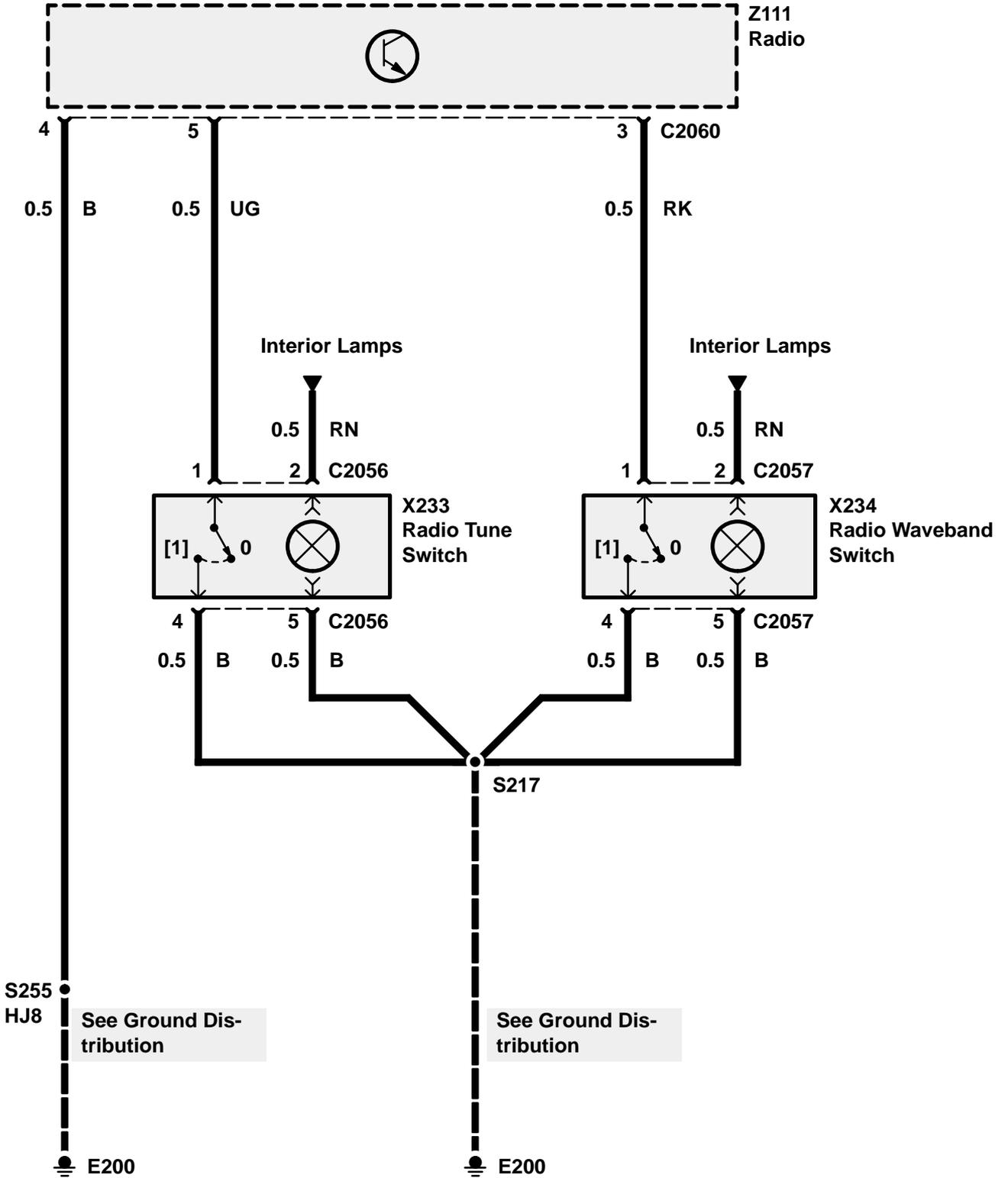
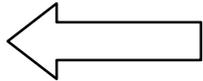


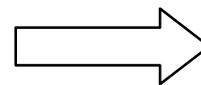
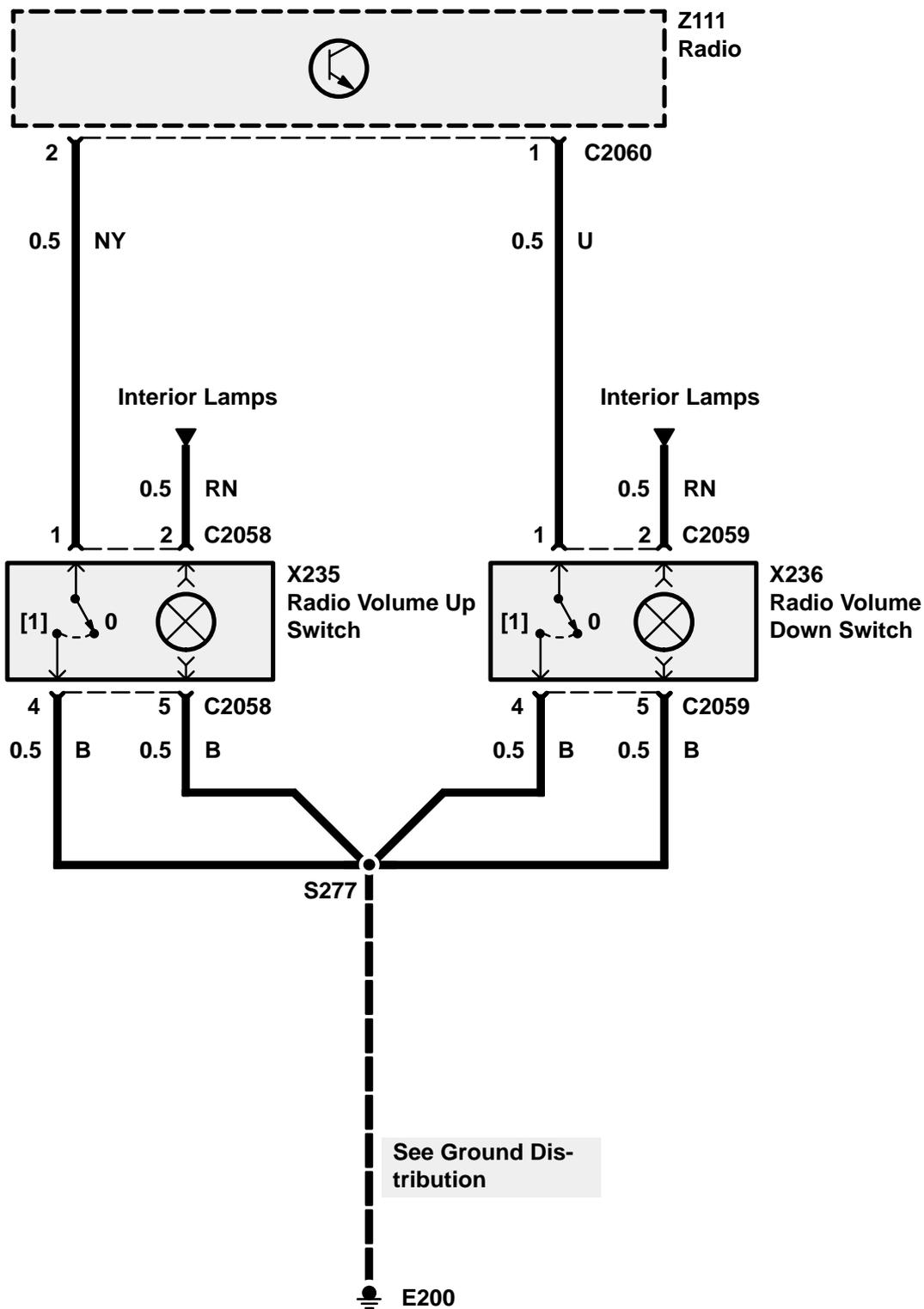
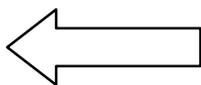
E6 ETM

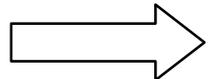
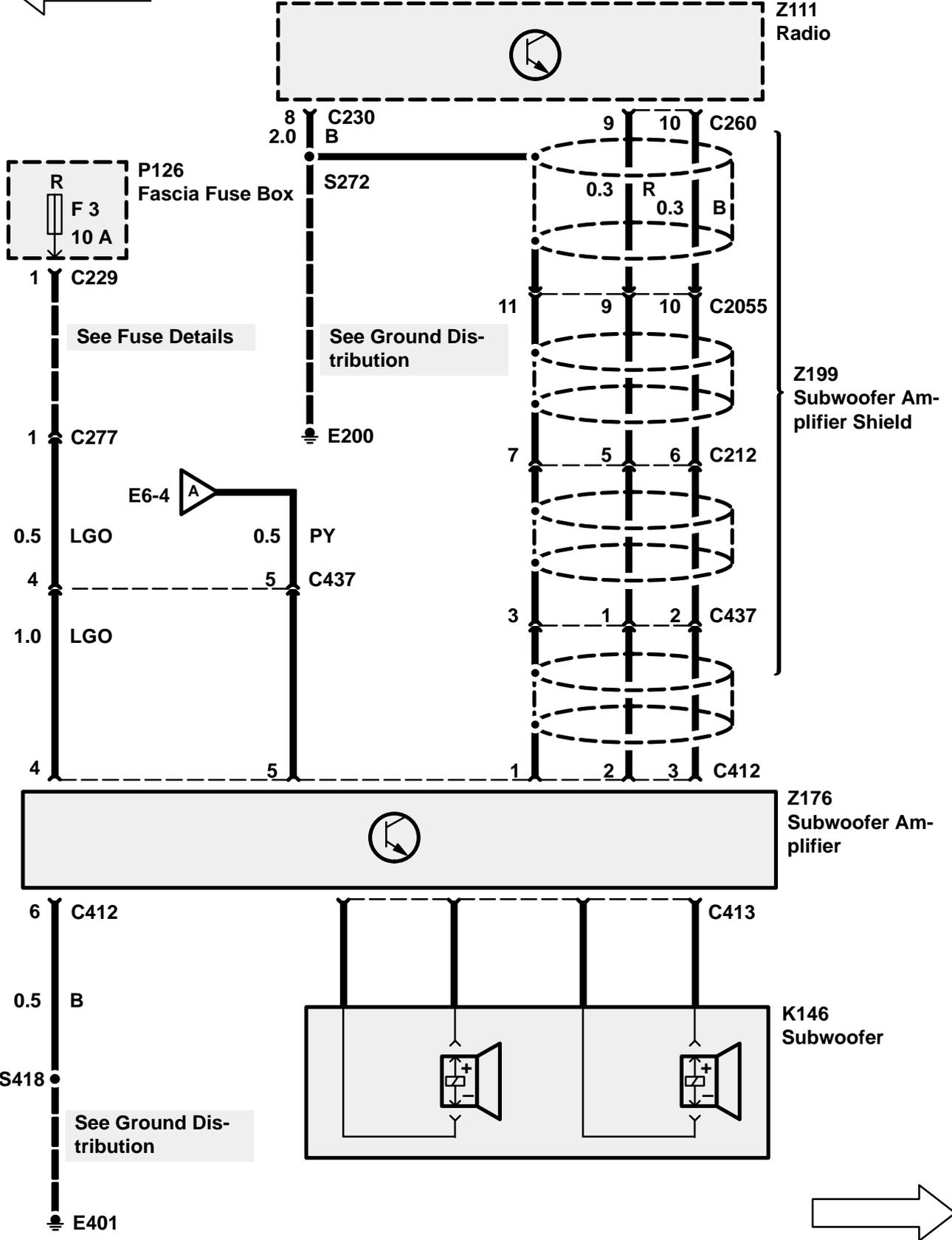
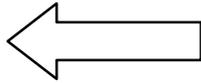
DISCOVERY

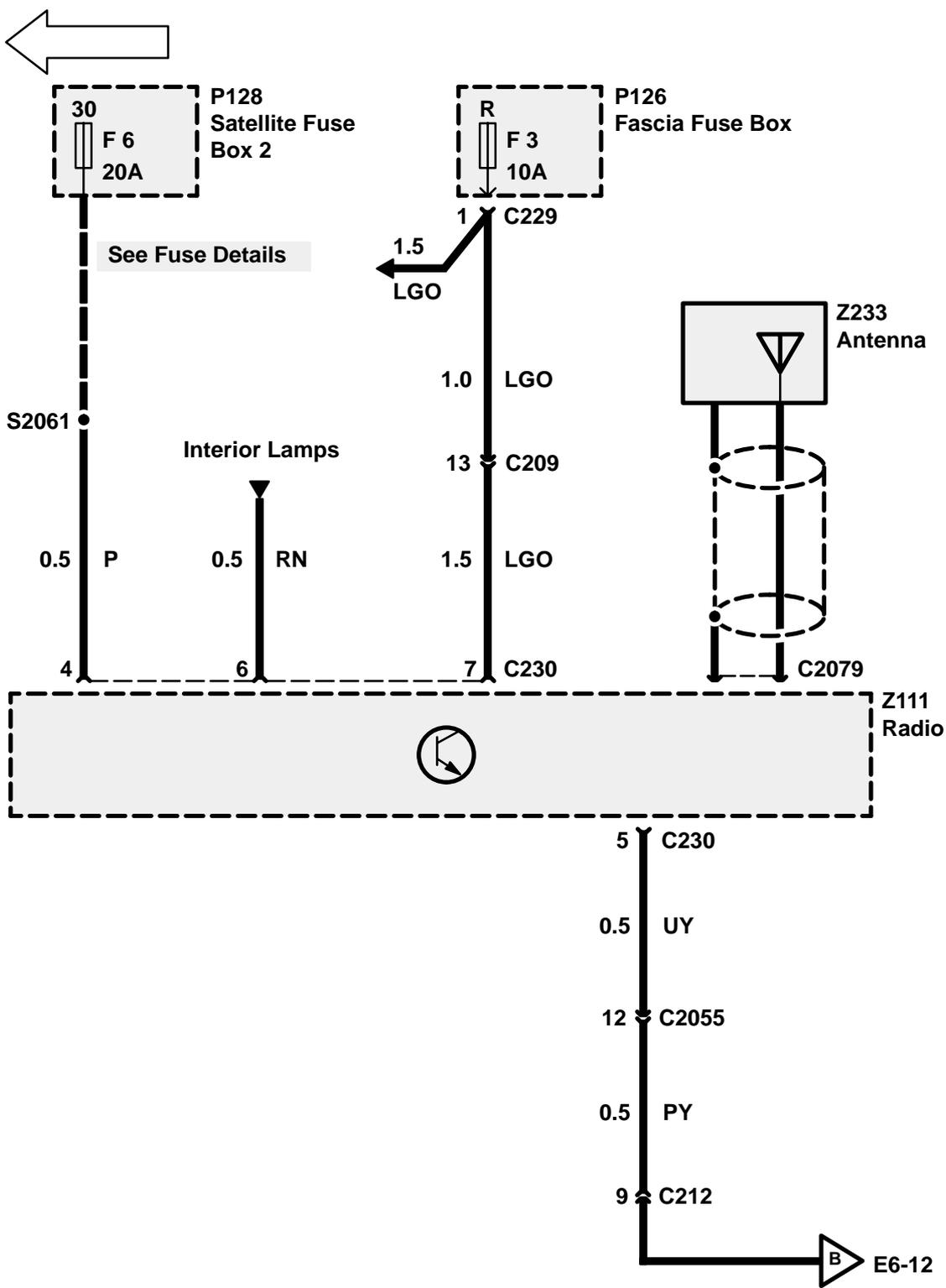


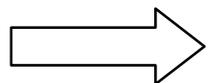
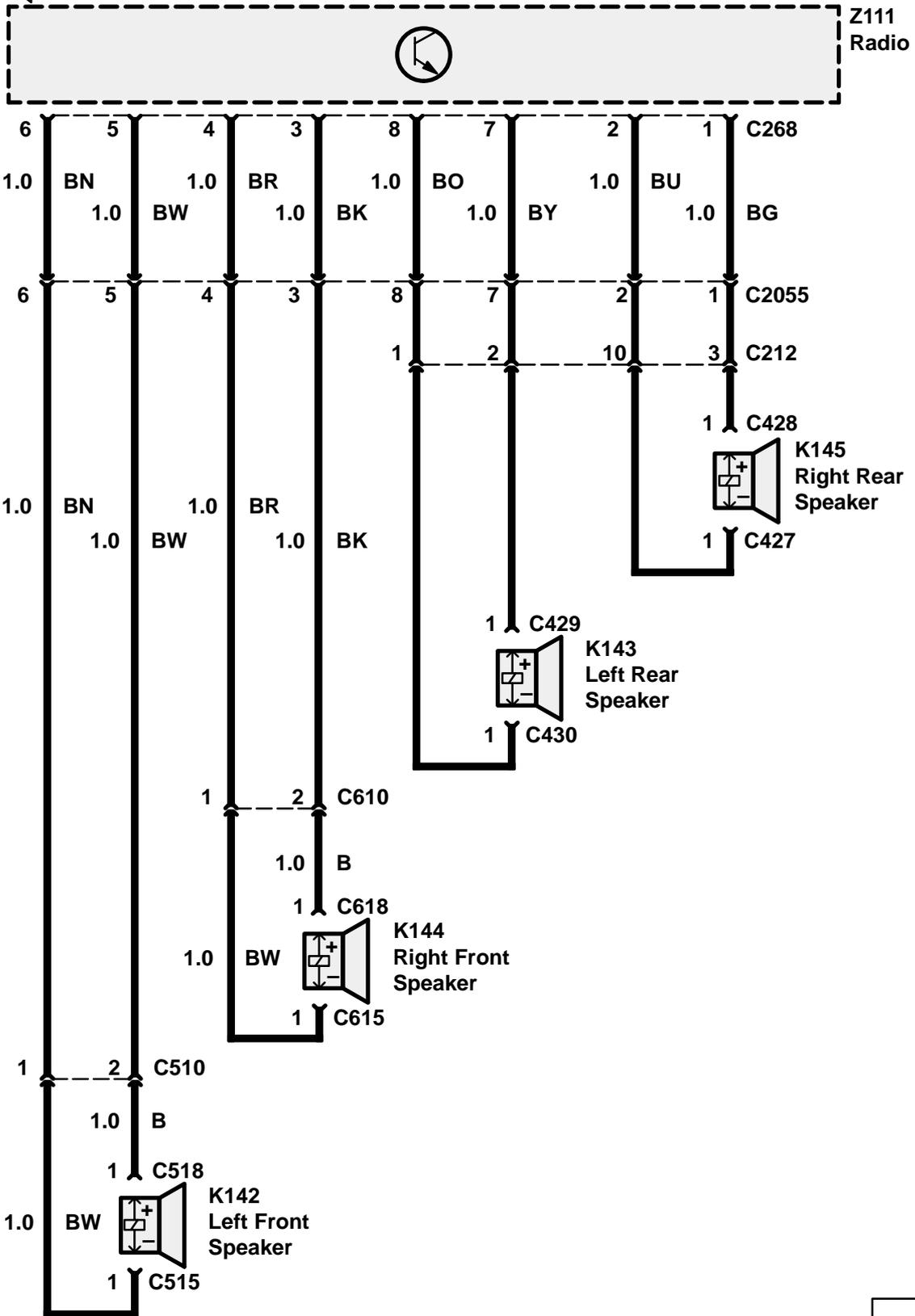
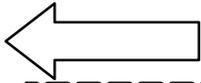


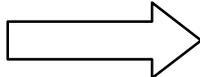
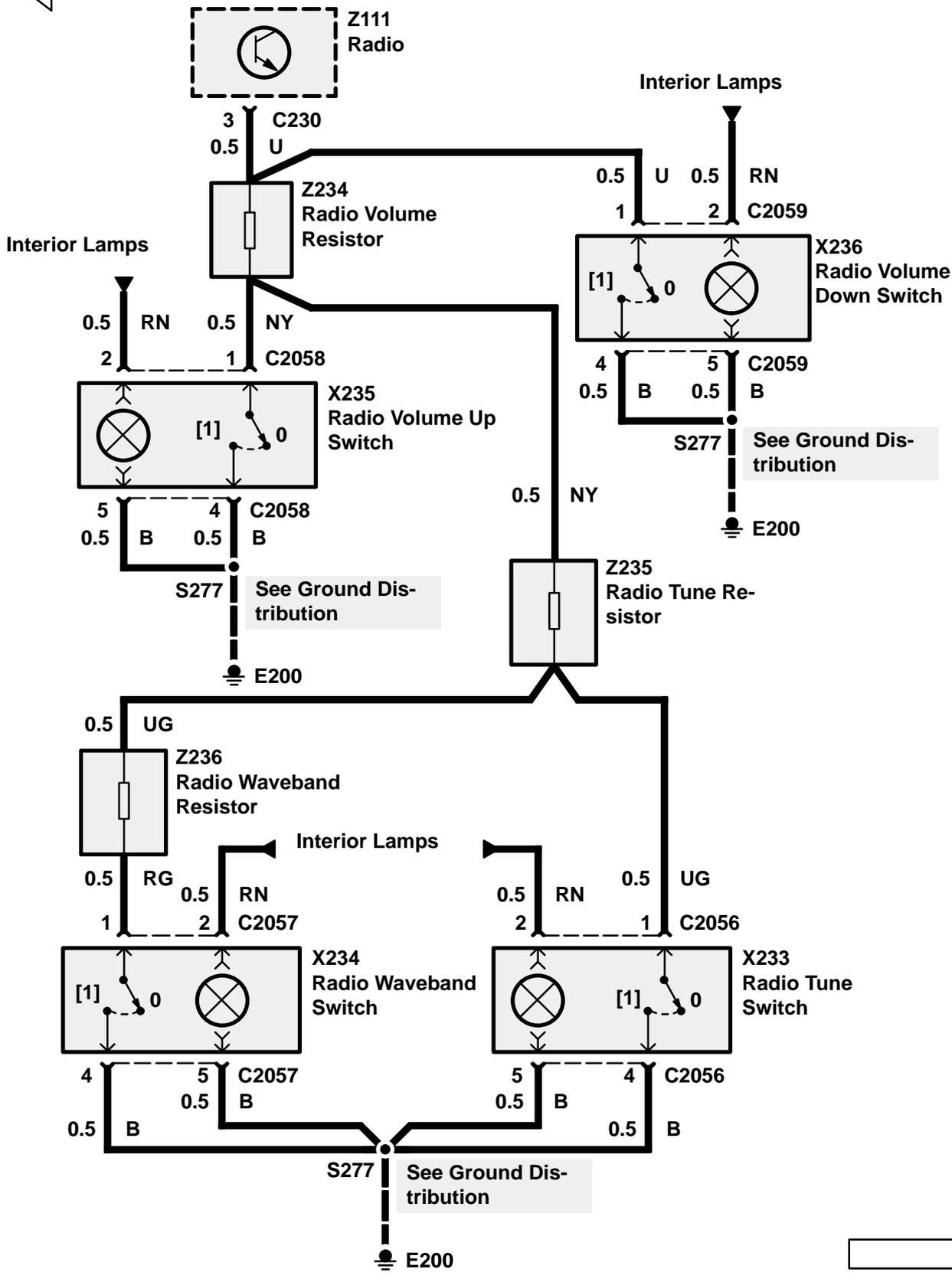
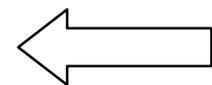






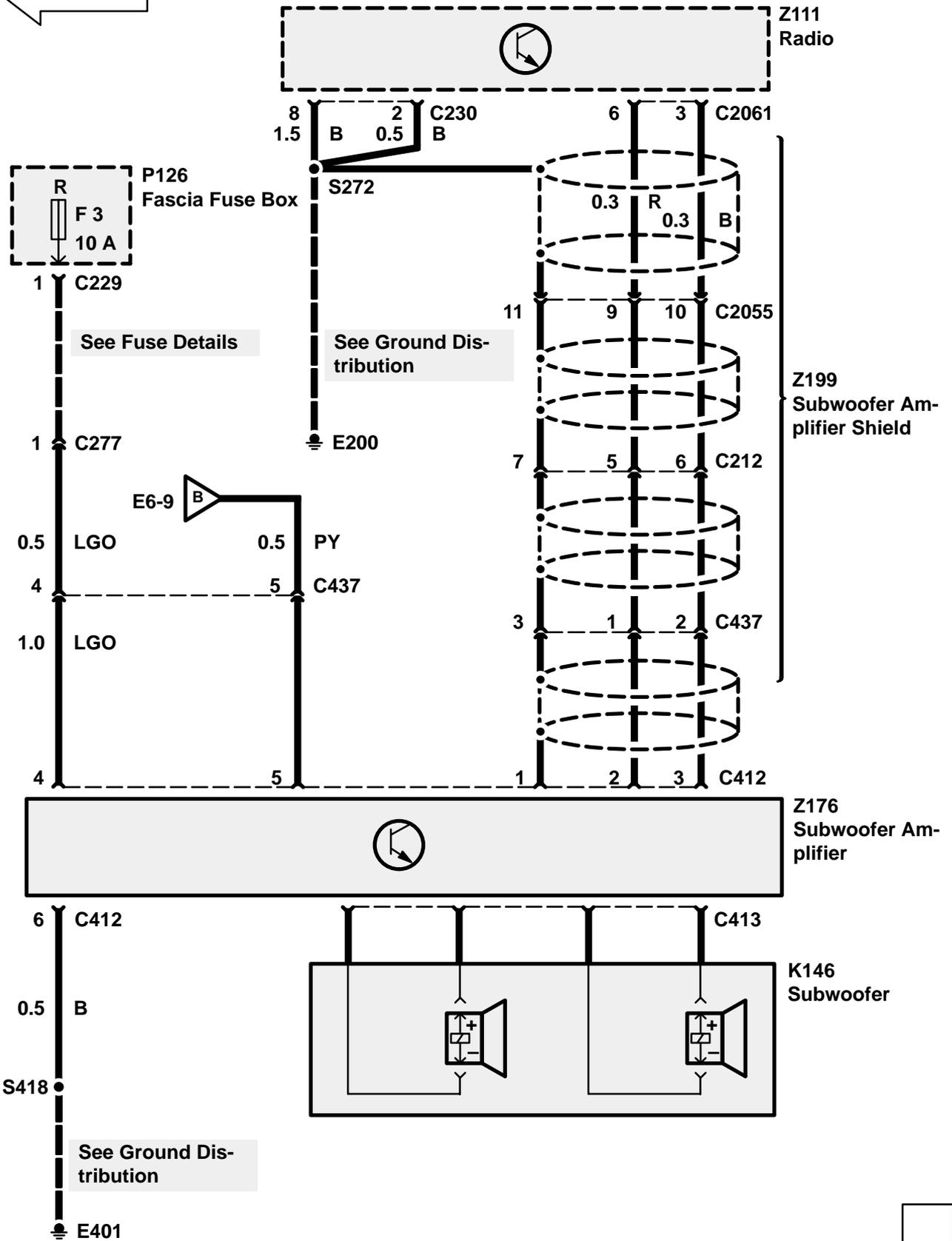
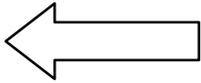






E6 ETM

DISCOVERY



TROUBLESHOOTING HINTS

1. Check fuses F6 in the Satellite Fusebox 2 (P128) and F3 in the 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 the Radio (Z111) is inoperative and 'code' is being shown on the display, follow the instructions below.
7. If the radio scans past all frequencies when in seek mode and hiss is present over most stations, substitute antenna with a known good antenna. If the reception is still inadequate, replace radio.

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.

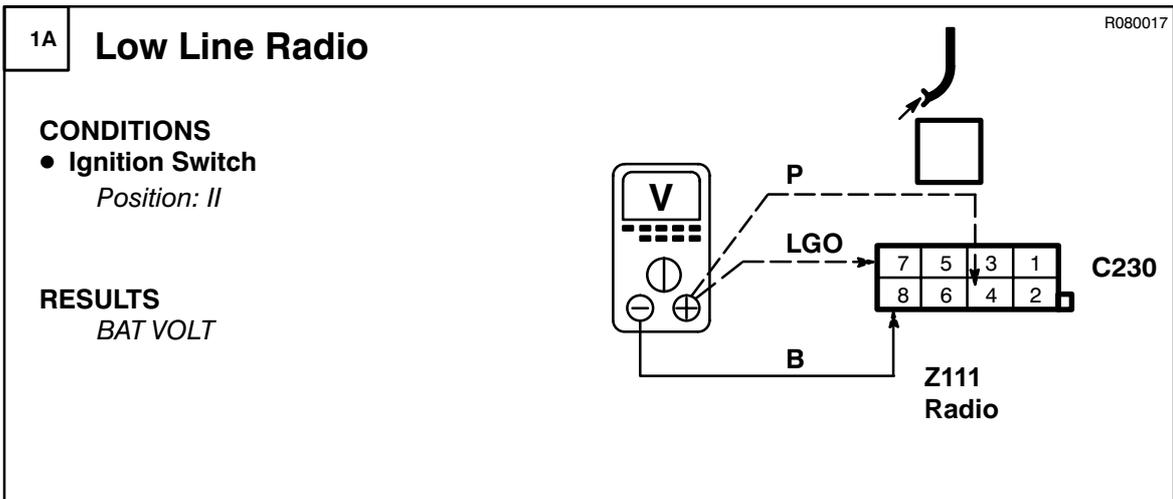
NOTE: If an audible 'beep' is heard while entering the code, STOP immediately. Begin entering the code again, starting with the first number of the 5-digit code.

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 the Radio (Z111) does not operate at all on vehicles equipped with the Low Line Radio, do Test A.
2. If the Radio (Z111) does not operate at all on vehicles equipped with the Mid Line Radio, do Test B.
3. If the Radio (Z111) does not operate at all on vehicles equipped with the High Line Radio, do Test C.
4. If VF display does not dim when headlamps or park lamps are turned on, do Test D.
5. If one or more speakers do not operate, do Test E.
6. If the Subwoofer (K146) does not operate, do Test F.
7. If none of Remote Radio Waveband, Tune, Volume Up, or Volume Down Switches operate for the Mid Line Radio, do Test R.
8. If the Radio Waveband Switch (X234) does not operate, do Test J for the Mid Line Radio, Test N for the High Line Radio.
9. If the Radio Tune Switch (X233) does not operate, do Test K for the Mid Line Radio, Test O for the High Line Radio.
10. If the Radio Volume Up Switch (X235) does not operate, do Test L for the Mid Line Radio, Test P for the High Line Radio.
11. If the Radio Volume Down Switch (X236) does not operate, do Test M for the Mid Line Radio, Test Q for the High Line Radio.

Test A



PROBLEM CAUSE

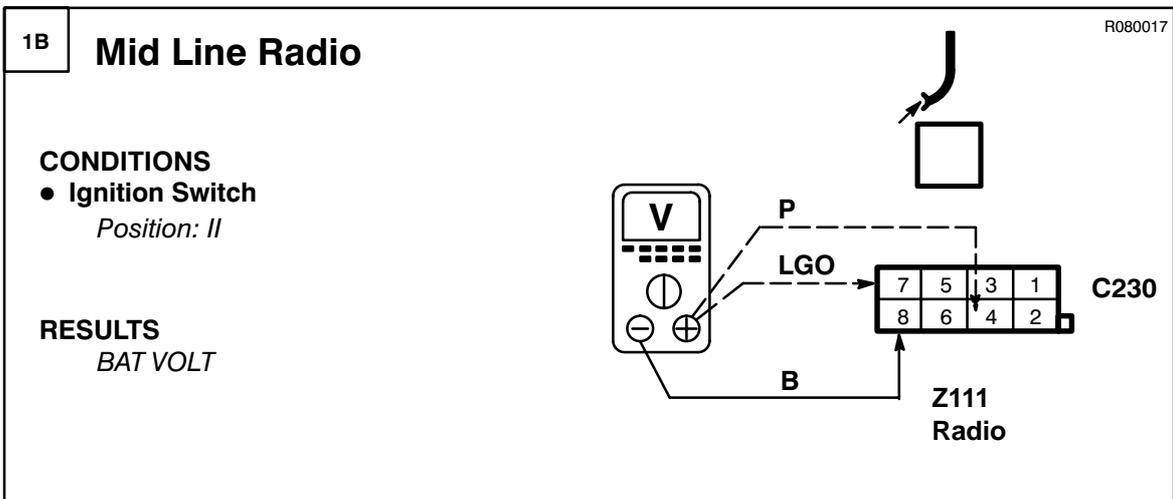
- P Wire
- LGO Wire
- F6 Fuse
- F3 Fuse
- B Wire



PROBLEM CAUSE

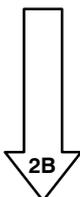
- Radio

Test B



PROBLEM CAUSE

- P, LGO Wire
- F6 Fuse
- F3 Fuse
- B Wire



E6 ETM

DISCOVERY

R050019

1B

2B

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm

~~OK~~ PROBLEM CAUSE
- B Wire

OK PROBLEM CAUSE
- Radio

Test C

R0800017

1C

High Line Radio

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

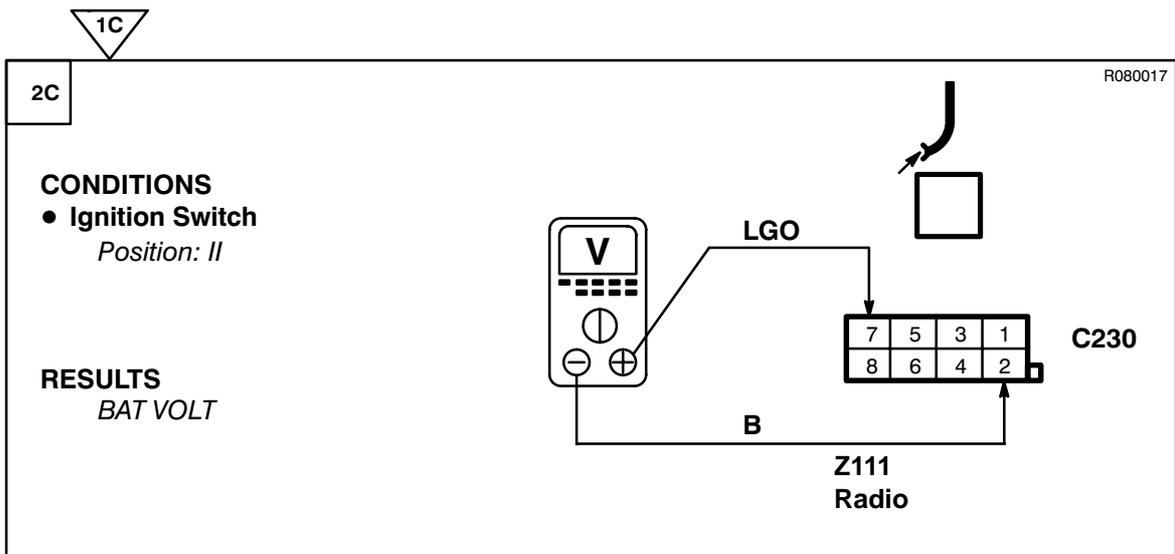
BAT VOLT

~~OK~~ PROBLEM CAUSE
- P Wire
- F6 Fuse
- B Wire

OK

↓

2C



PROBLEM CAUSE

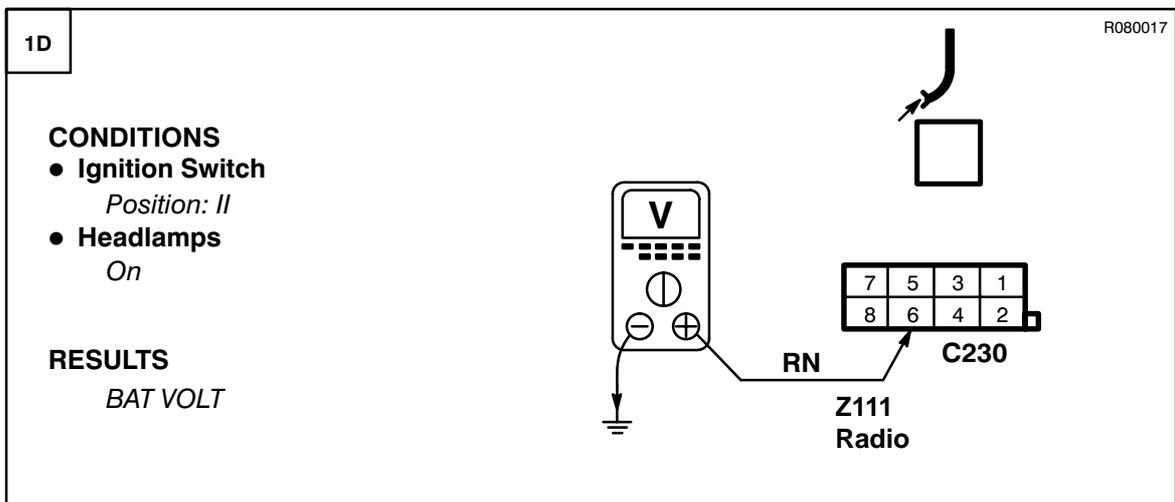
- LGO Wire
- F3 Fuse
- B Wire



PROBLEM CAUSE

- Radio

Test D



PROBLEM CAUSE

- RN Wire



PROBLEM CAUSE

- Radio

Test E

R010001

1E

CONDITIONS

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

RESULTS

Speaker 'pops'



PROBLEM CAUSE
- Speaker



PROBLEM CAUSE
- Speaker Wiring
- Radio

Test F

R060012

1F

CONDITIONS

- Ignition Switch
Position: I

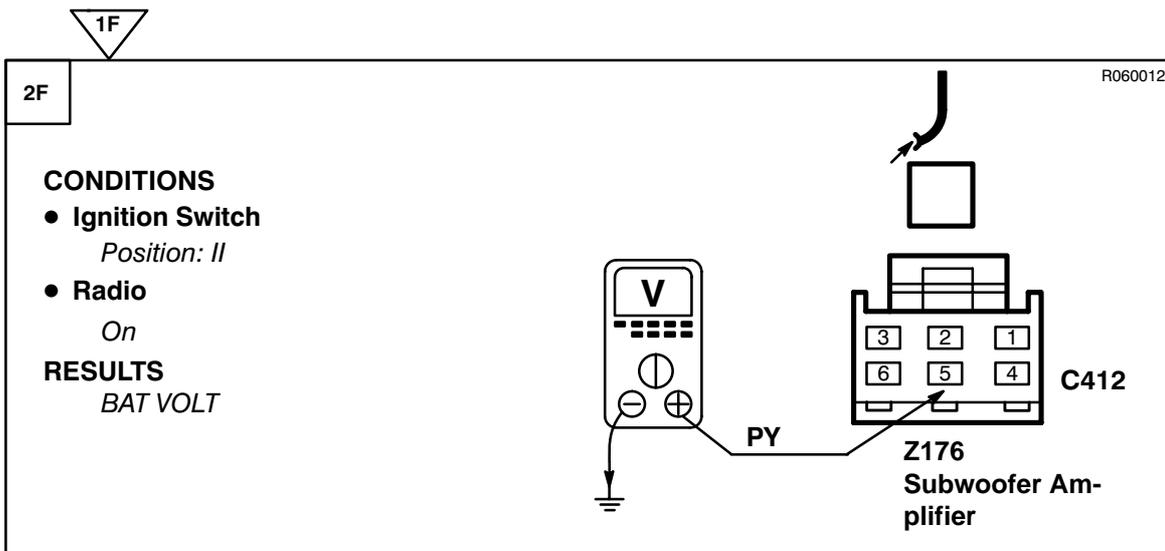
RESULTS

BAT VOLT



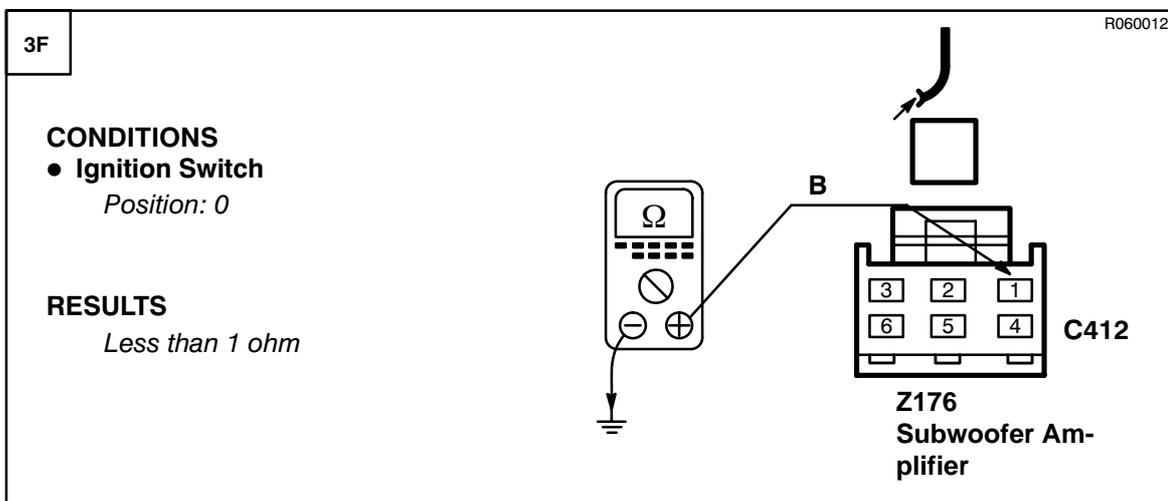
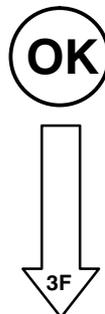
PROBLEM CAUSE
- LGO Wire
- B Wire





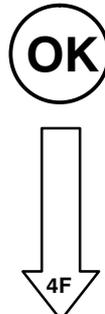
~~OK~~ **PROBLEM CAUSE**

- UY Wire
- PY Wire
- Radio



~~OK~~ **PROBLEM CAUSE**

- B Wire



3F

4F

R060012

CONDITIONS

- Ignition Switch
Position: 0
- Radio
Disconnected

RESULTS
More than 10K ohms

Z176
Subwoofer Amplifier
C412



PROBLEM CAUSE

- R Wire
- B Wire



MID LINE RADIO
GO TO TEST G
HIGH LINE RADIO
GO TO TEST H

Test G

1G

Mid Line Radio

R100011

R060012

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
0 Ω

Z111
Radio
C260

Z176
Subwoofer Amplifier
C412



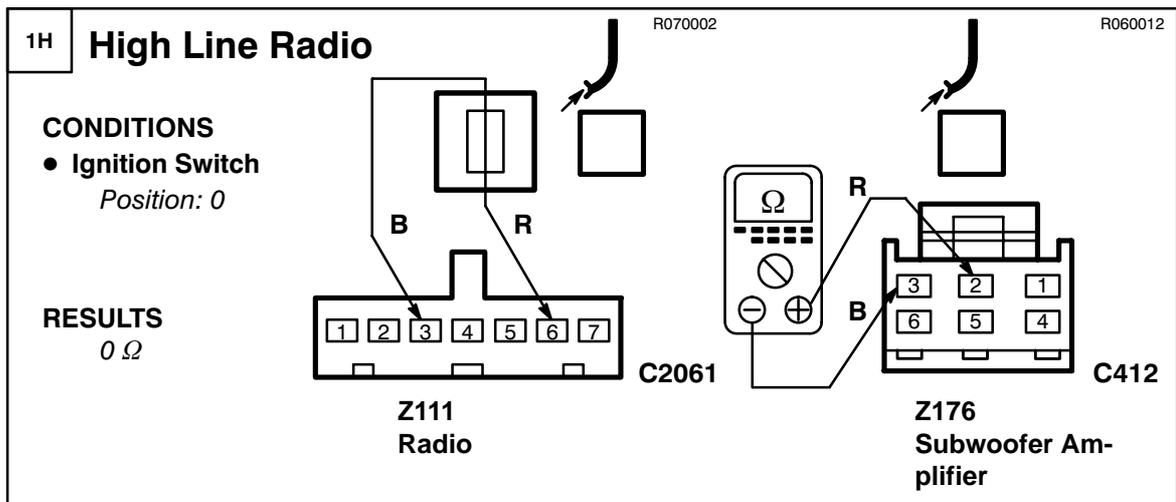
PROBLEM CAUSE

- R Wire
- B Wire



GO TO TEST I

Test H



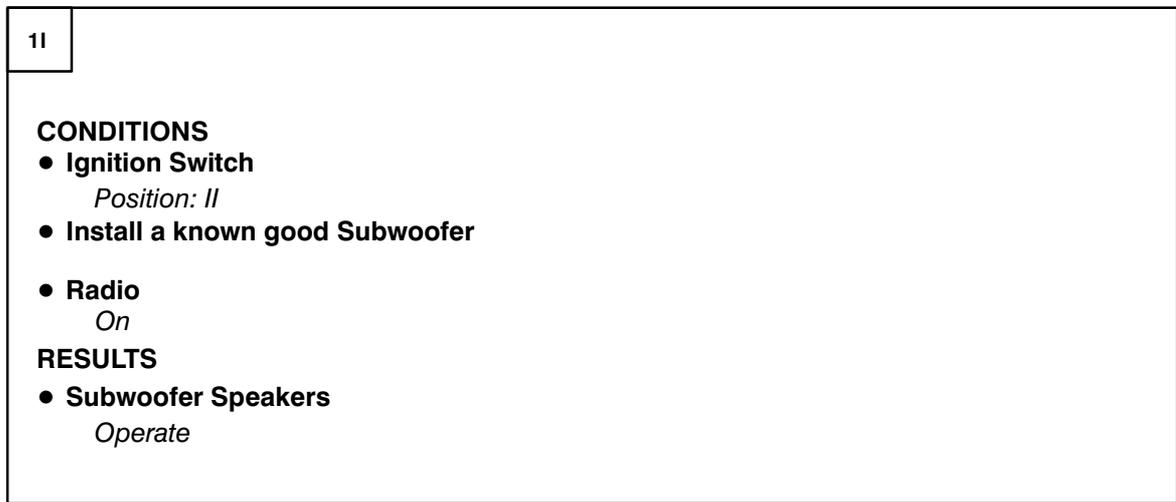
PROBLEM CAUSE

- R Wire
- B Wire



GO TO TEST I

Test I



PROBLEM CAUSE

- Subwoofer Amplifier
- Radio
- Subwoofer Wiring



PROBLEM CAUSE

- Subwoofer

Test J

1J Mid Line Radio R050019

CONDITIONS

- Ignition Switch
Position: 0
- Radio Waveband Switch
On

RESULTS
Less than 1 ohm



PROBLEM CAUSE

- RK Wire
- B Wire
- Radio Waveband Switch



PROBLEM CAUSE

- Radio

Test K

1K Mid Line Radio R050019

CONDITIONS

- Ignition Switch
Position: 0
- Radio Tune Switch
On

RESULTS
Less than 1 ohm



PROBLEM CAUSE

- UG Wire
- B Wire
- Radio Tune Switch



PROBLEM CAUSE

- Radio

Test L

R050019

1L

Mid Line Radio

CONDITIONS

- Ignition Switch
Position: 0
- Radio Volume Up Switch
On

RESULTS
Less than 1 ohm

Z111 Radio
C2060



- PROBLEM CAUSE**
- NY Wire
 - B Wire
 - Radio Volume Up Switch



- PROBLEM CAUSE**
- Radio

Test M

R050019

1M

Mid Line Radio

CONDITIONS

- Ignition Switch
Position: 0
- Radio Volume Down Switch
On

RESULTS
Less than 1 ohm

Z111 Radio
C2060



- PROBLEM CAUSE**
- U Wire
 - B Wire
 - Radio Volume Down Switch



- PROBLEM CAUSE**
- Radio

Test N

R050002.02

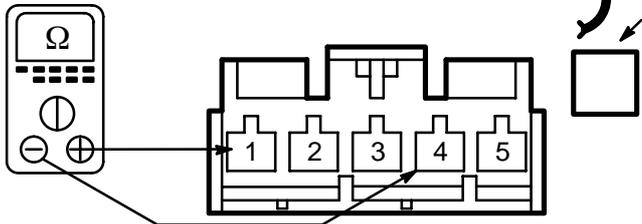
1N

High Line Radio

CONDITIONS

- Ignition Switch
Position: 0
- Radio Waveband Switch
On

RESULTS
Less than 1 ohm



X234
Radio Waveband
Switch



PROBLEM CAUSE
- Radio Waveband
Switch



PROBLEM CAUSE
- Radio Waveband Resistor
- Radio Tune Resistor
- Radio Volume Resistor
- RG, UG, NY, U, B Wire
- Radio

Test O

R050002.02

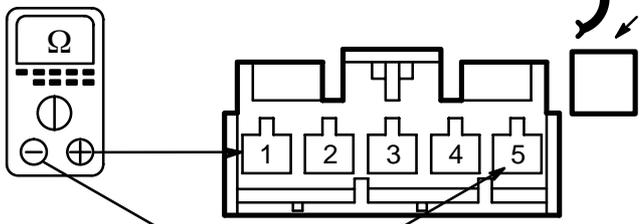
1O

High Line Radio

CONDITIONS

- Ignition Switch
Position: 0
- Radio Tune Switch
On

RESULTS
Less than 1 ohm



X233
Radio Tune
Switch



PROBLEM CAUSE
- Radio Tune
Switch



PROBLEM CAUSE
- Radio Tune Resistor
- Radio Volume Resistor
- UG, NY, U, B Wire
- Radio

Test P

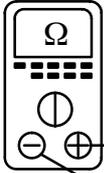
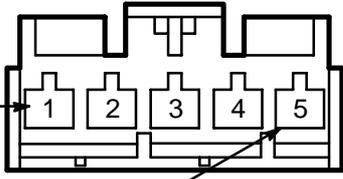
1P

High Line Radio

R050002.02

CONDITIONS

- Ignition Switch
Position: 0
- Radio Volume Up Switch
On


**X235
Radio Volume Up
Switch**

RESULTS
Less than 1 ohm



PROBLEM CAUSE
- Radio Volume Up
Switch



PROBLEM CAUSE
- Radio Volume Resistor
- NY, U, B Wire
- Radio

Test Q

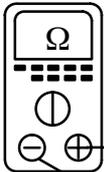
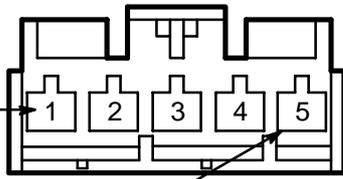
1Q

High Line Radio

R050002.02

CONDITIONS

- Ignition Switch
Position: 0
- Radio Volume Down Switch
On


**X236
Radio Volume
Down Switch**

RESULTS
Less than 1 ohm



PROBLEM CAUSE
- Radio Volume
Down Switch



PROBLEM CAUSE
- U,B Wire
- Radio

Test R

R050019

1R

Mid Line Radio

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm



PROBLEM CAUSE
- B Wire



PROBLEM CAUSE
- Radio

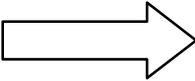
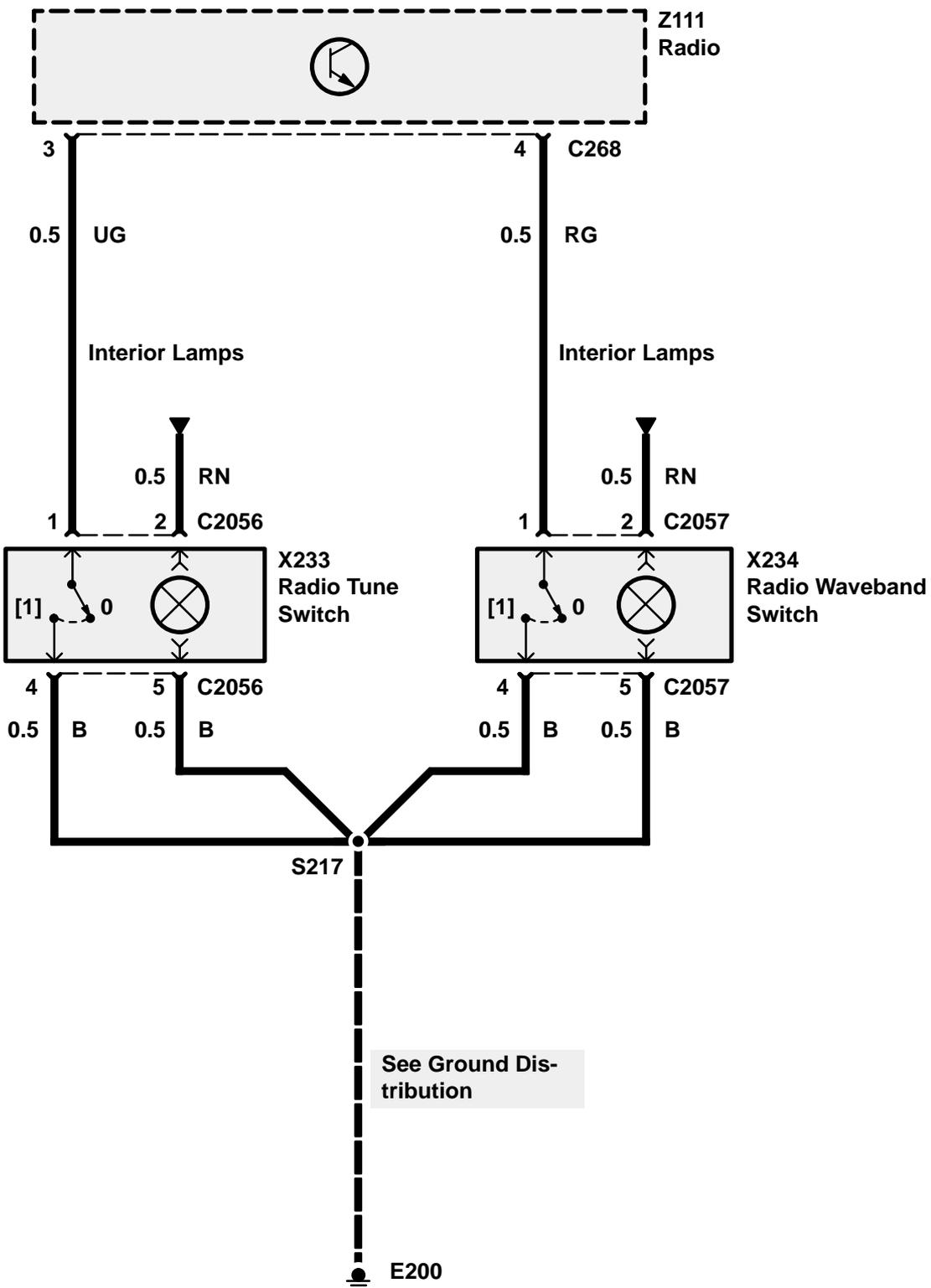
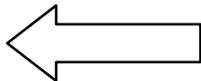
CIRCUIT OPERATION

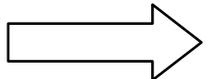
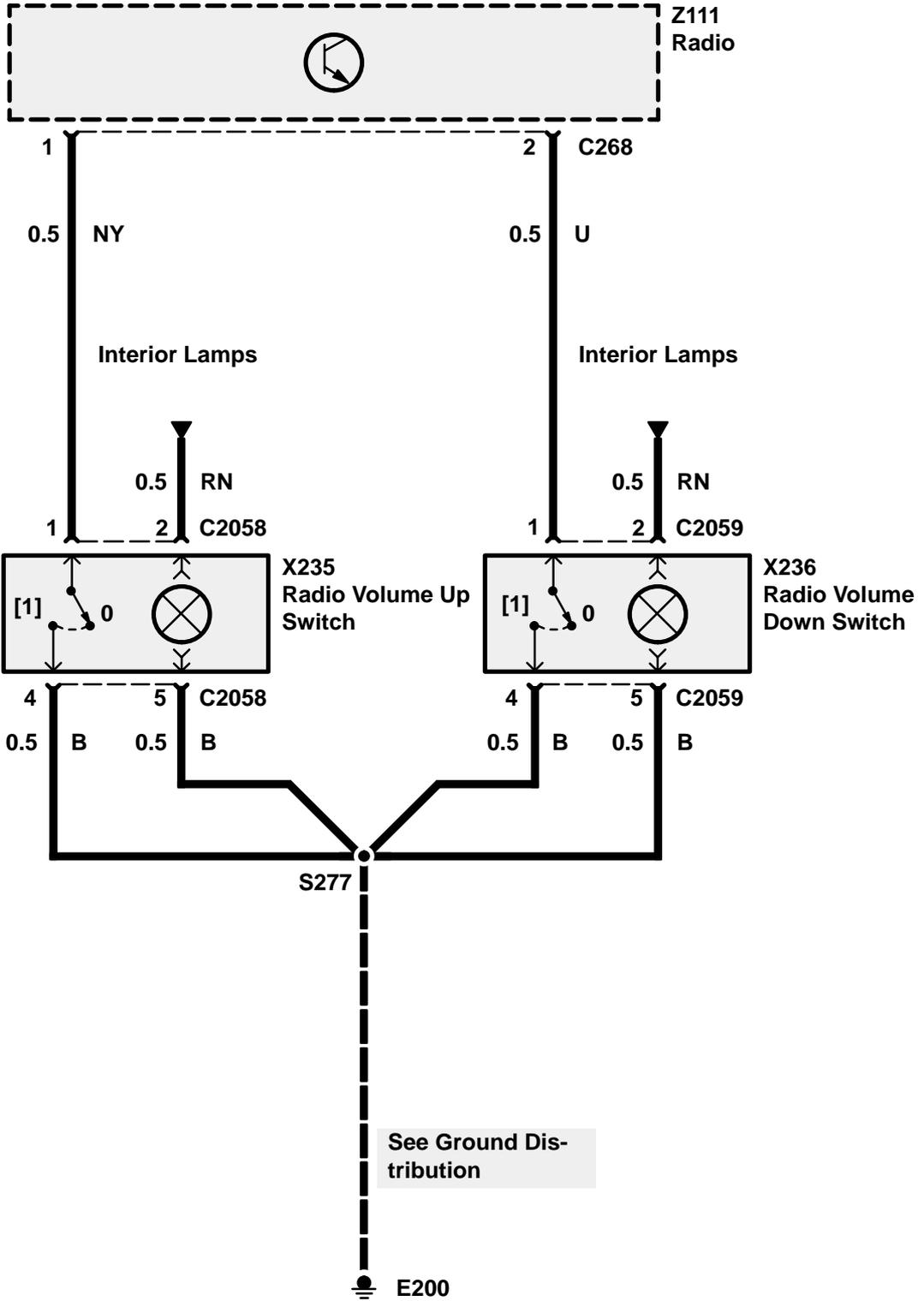
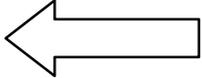
The audio system consists of a new head unit connected to a Radio Tune Switch, a waveband switch, a volume up and a volume down switch which are located on the fascia next to the Instrument Cluster. The system is also equipped with an amplifier, a subwoofer, a subwoofer amplifier and a CD changer which is connected to the Radio with a DIN cable. The amplifier is connected to power via a Power Amplifier Relay which is energized with Ignition on.

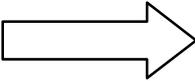
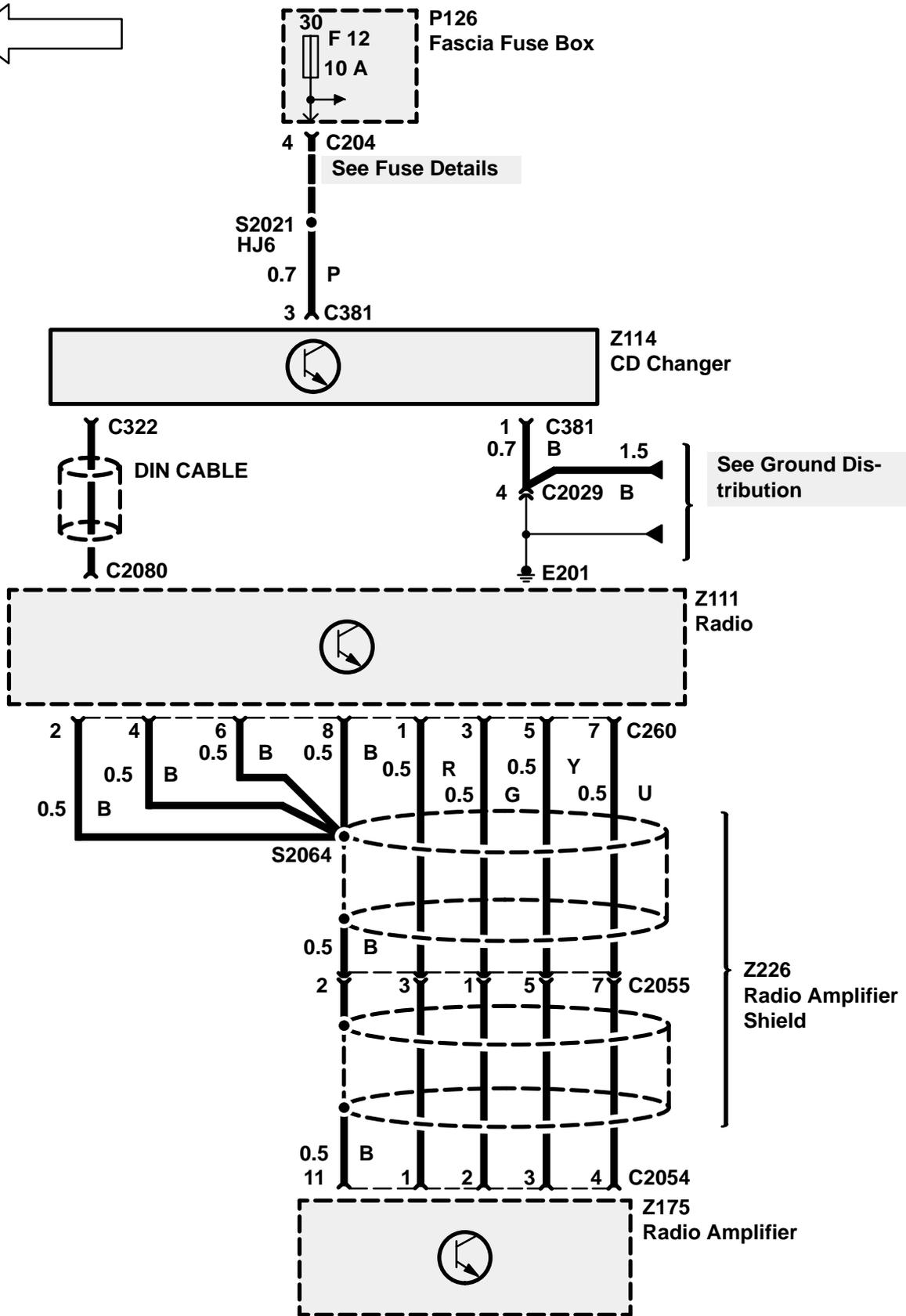
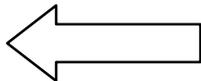
The control head is equipped with an anti-theft feature which makes the unit inoperative once battery power is removed. A security code must be entered to restore power to the unit. The system is equipped with two rear and two front speakers.

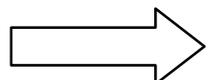
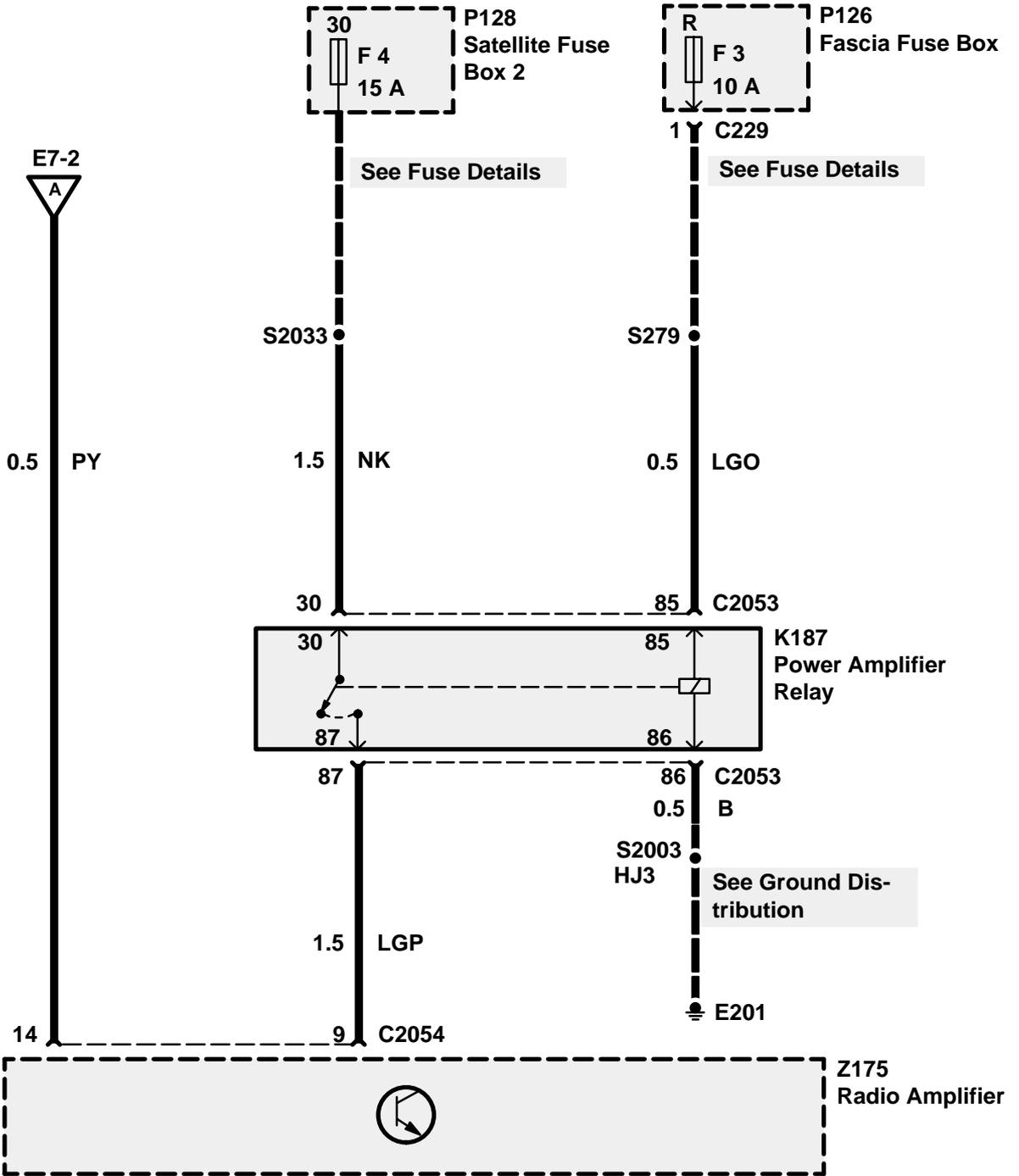
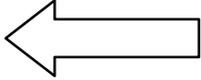
Battery voltage is provided to the control head at all times through the P wire. In addition to monitoring the anti-theft feature, this input keeps the preset station memory alive. Whenever battery power to the unit is lost, the anti-theft code must be entered and the preset stations must be reprogrammed.

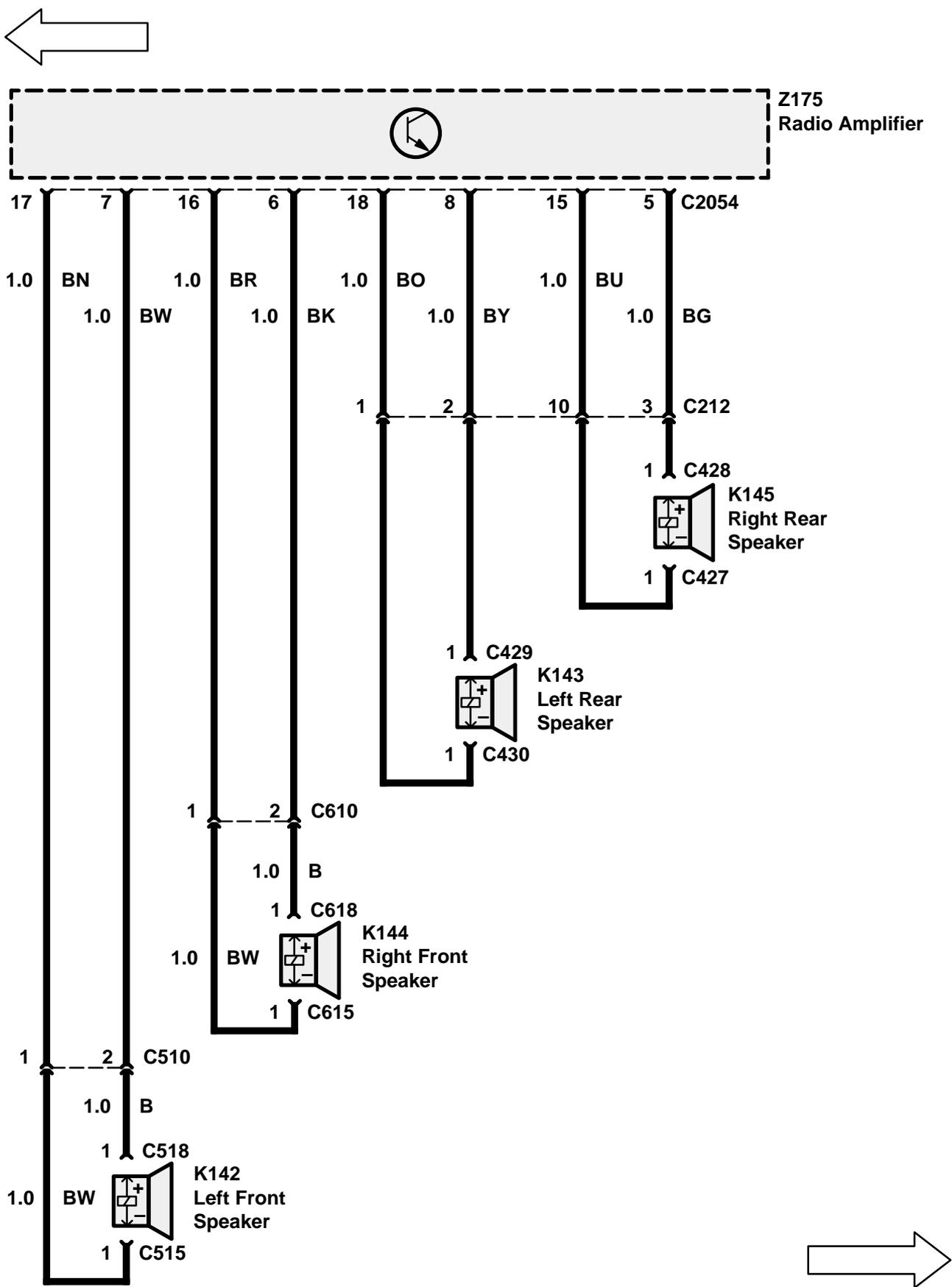
When the Radio (Z111) and the ignition are turned on, the voltage signal through the LGO wire and the control head 'wakes up' the unit. The Radio (Z111) plays, the VF display comes on and the control unit buttons illuminate. The VF display is dimmed when the headlights or park lights are turned on. When 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.

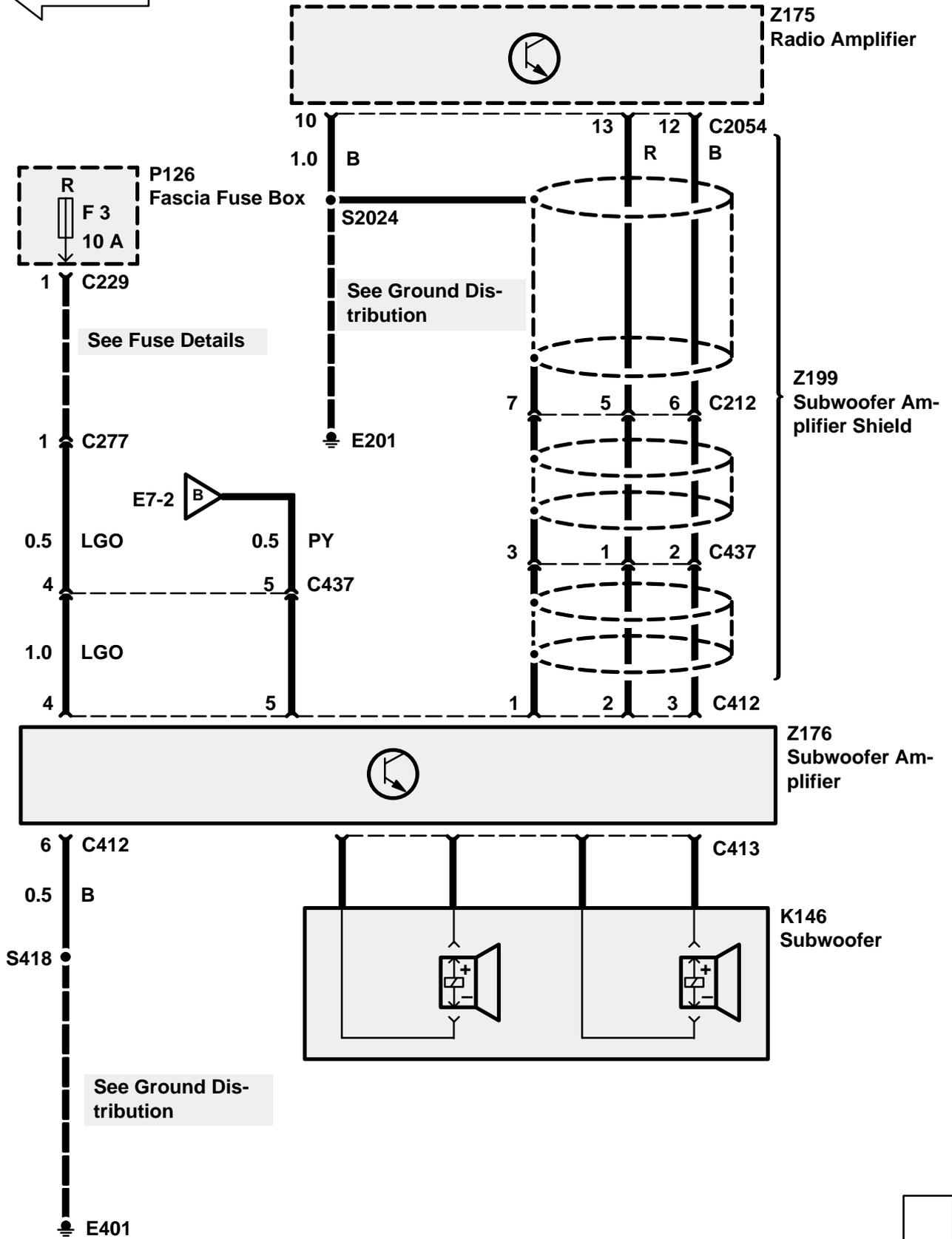
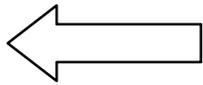












TROUBLESHOOTING HINTS

12. Check fuses F6 of Satellite Fusebox 2 (P128) and F3 of Fascia Fusebox (P126).
13. Check that Radio (Z111) connectors and coaxial cable are tight and properly connected.
14. 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.
15. If Radio (Z111) noise is excessive when an accessory is on, install a Radio noise suppression capacitor to the power lead of that accessory.
16. 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.
17. If only the CD Changer does not operate, check power, ground, and DIN Cable. If OK, check Radio and CD Changer.
18. If the Radio (Z111) is inoperative and 'code' is being shown on the display, follow the instructions below.
19. If Radio scans past all frequencies when in seek mode and hiss is present over most stations, substitute antenna with a known good antenna. If the reception is still inadequate, replace Radio.

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.

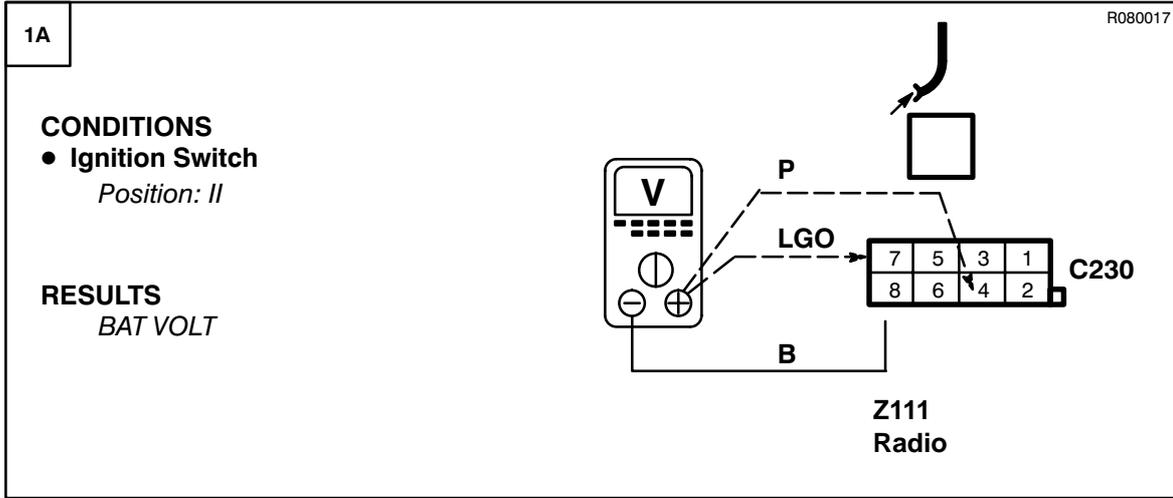
NOTE: If an audible 'beep' is heard while entering the code, STOP immediately. Begin entering the code again, starting with the first number of the 5-digit code.

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

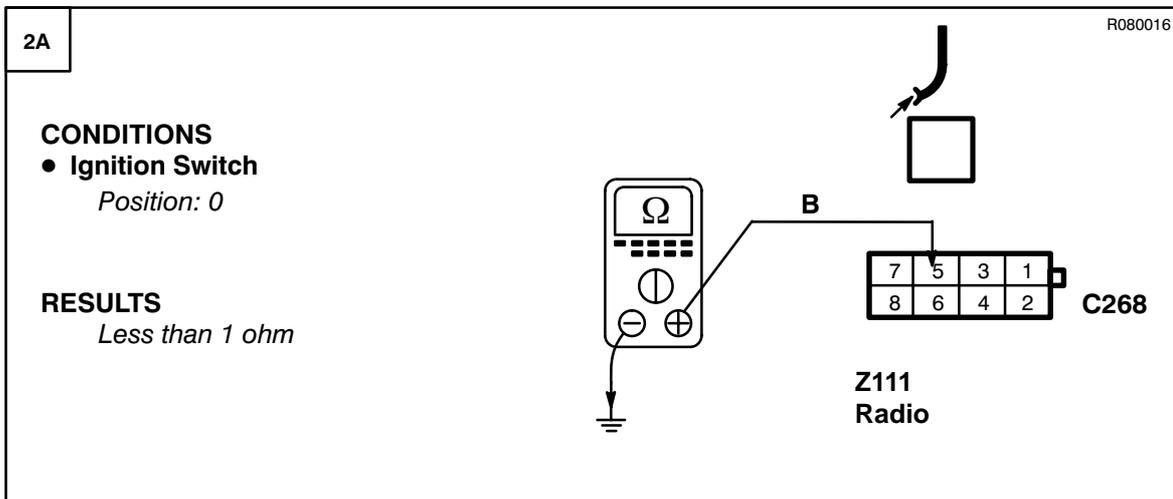
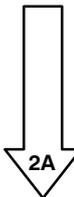
1. If the Radio (Z111) does not operate at all, do Test A.
2. If VF display does not dim when head lamps or park lamps are turned on, do Test B.
3. If one or more speakers do not operate, do Test C.
4. If the Radio (Z111) appears to operate properly, but the Subwoofer (K146) and/or none of the Speakers operate, do Test D.
5. If the Subwoofer (K146) does not operate, do Test E.
6. If none of the Remote Radio Waveband, Tune, Volume Up, or Volume Down Switches operate for the Mid Line Radio, do Test J.
7. If the Radio Waveband Switch (X234) does not operate, do Test F.
8. If the Radio Tune Switch (X233) does not operate, do Test G.
9. If the Radio Volume Up Switch (X235) does not operate, do Test H.
10. If the Radio Volume Down Switch (X236) does not operate, do Test I.

Test A



PROBLEM CAUSE

- P Wire
- LGO Wire
- F6 Fuse
- F3 Fuse
- B Wire



PROBLEM CAUSE

- B Wire



PROBLEM CAUSE

- Radio

Test B

R080017

1B

CONDITIONS

- Ignition Switch
Position: II
- Headlamps
On

RESULTS
BAT VOLT



PROBLEM CAUSE
- RN Wire



PROBLEM CAUSE
- Radio

Test C

R010001

1C

CONDITIONS

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

RESULTS
Speaker 'pops'

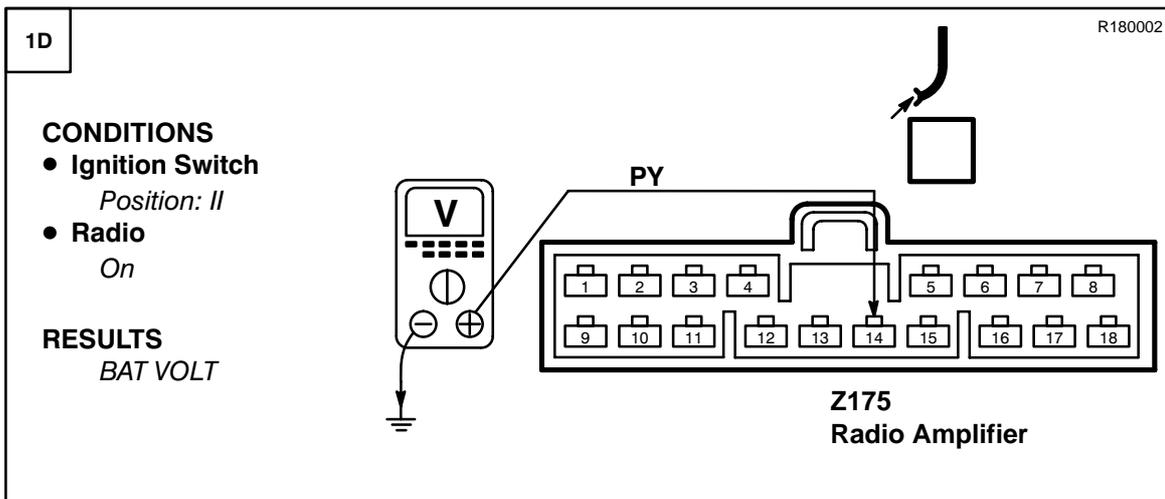


PROBLEM CAUSE
- Speaker



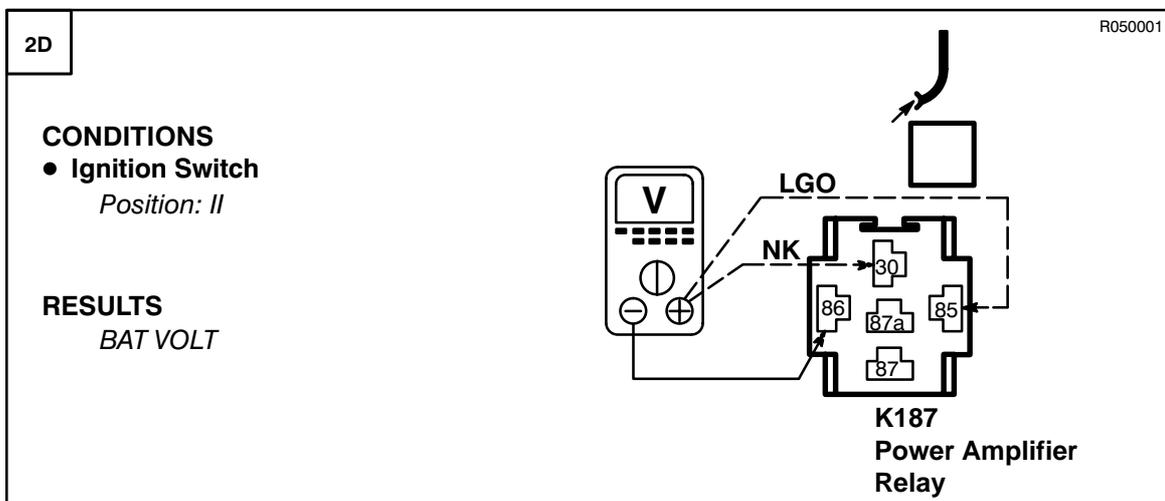
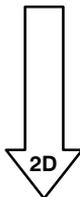
PROBLEM CAUSE
- Speaker Wiring
- Radio

Test D



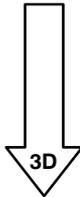
PROBLEM CAUSE

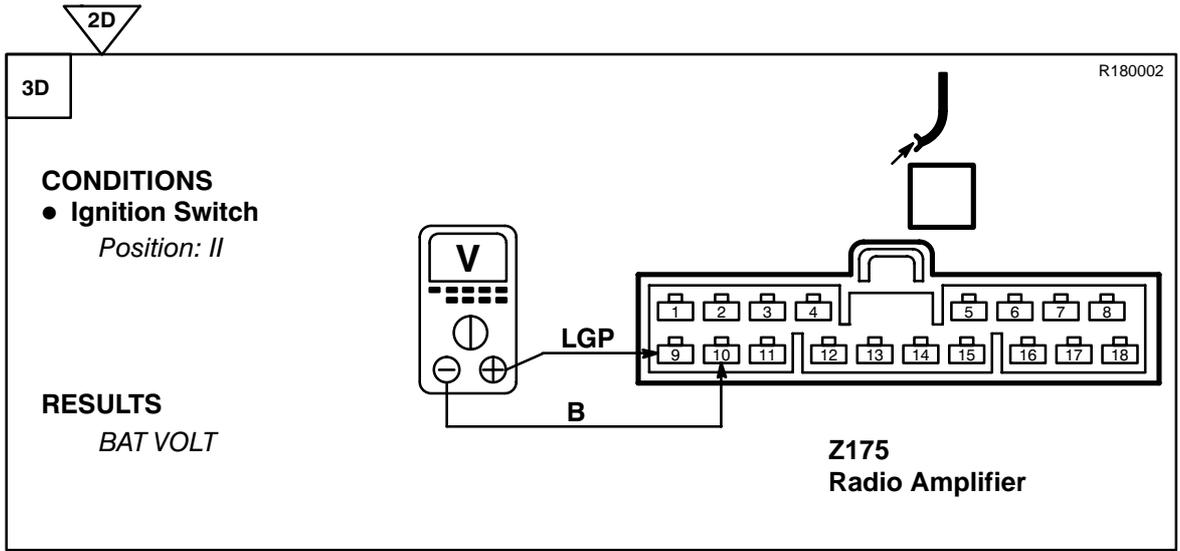
- UY Wire
- PY Wire
- Radio



PROBLEM CAUSE

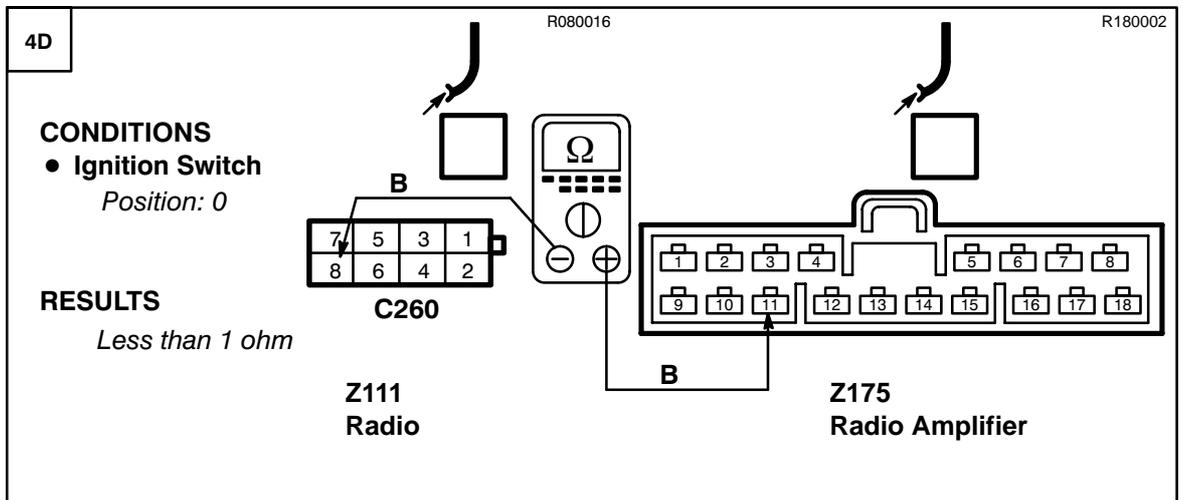
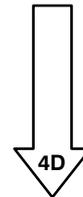
- F4 Fuse
- F3 Fuse
- NK Wire
- LGO Wire
- B Wire





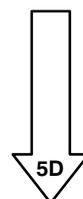
PROBLEM CAUSE

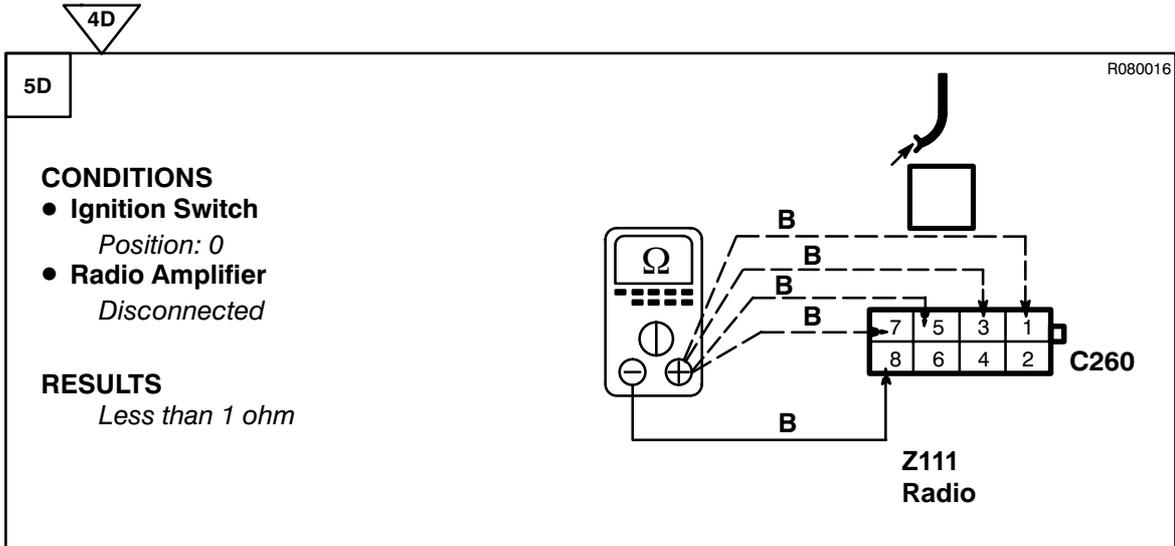
- LGP Wire
- B Wire
- Power Amplifier Relay



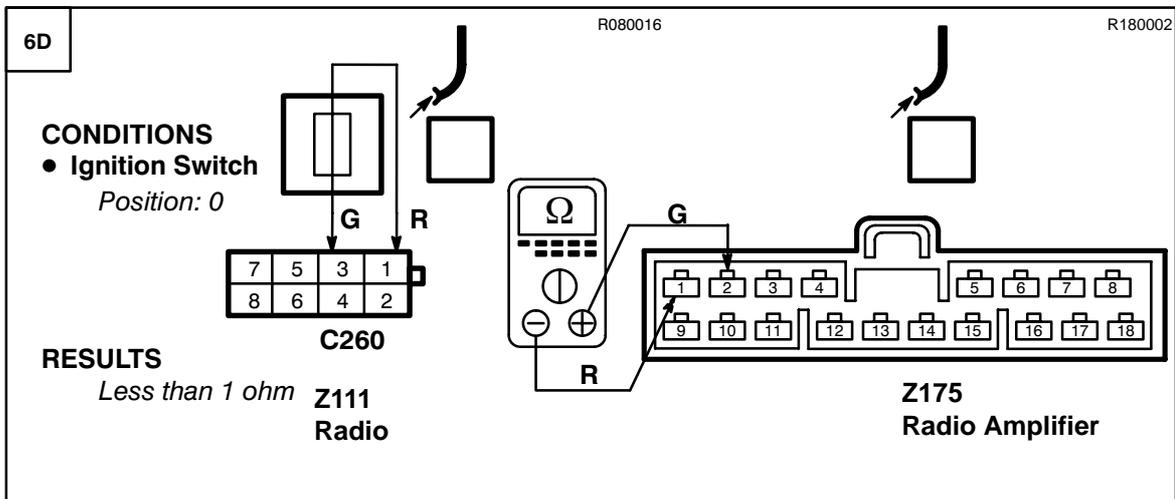
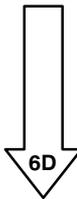
PROBLEM CAUSE

- B Wire

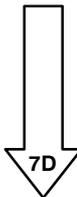


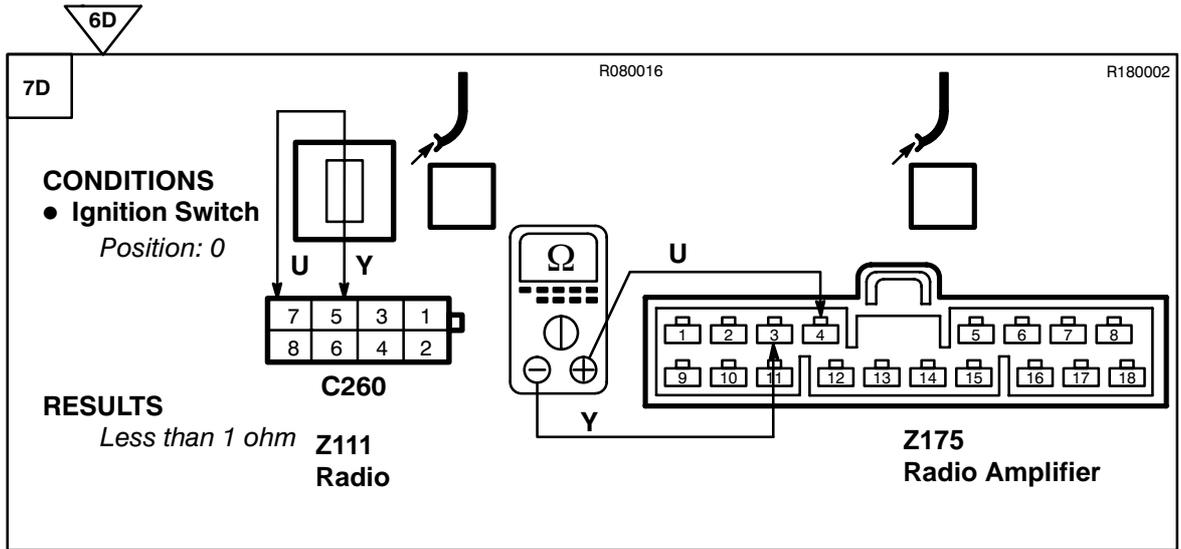


PROBLEM CAUSE
- B Wire



PROBLEM CAUSE
- G Wire
- R Wire





PROBLEM CAUSE

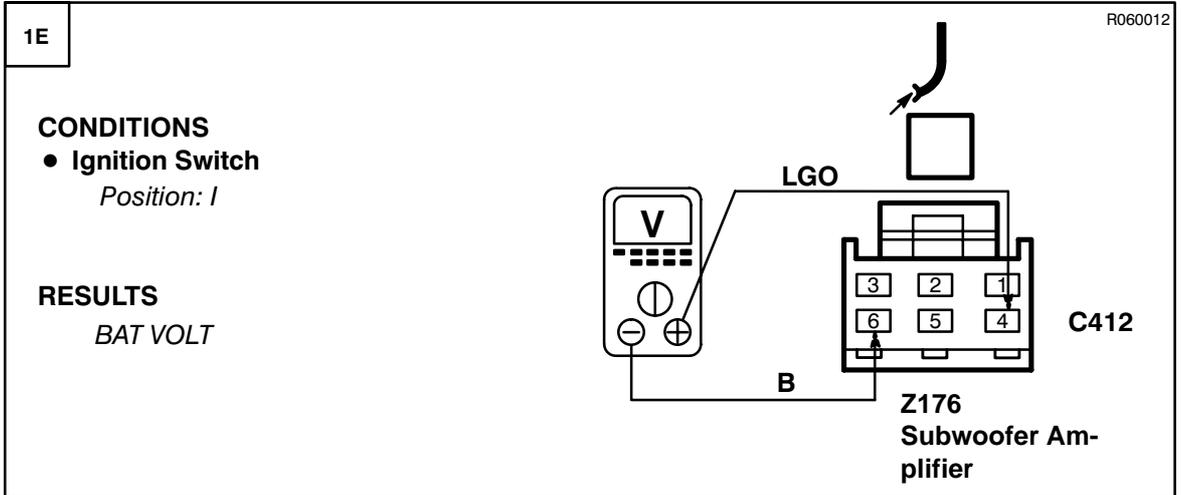
- U Wire
- Y Wire



PROBLEM CAUSE

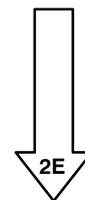
- Radio
- Radio Amplifier

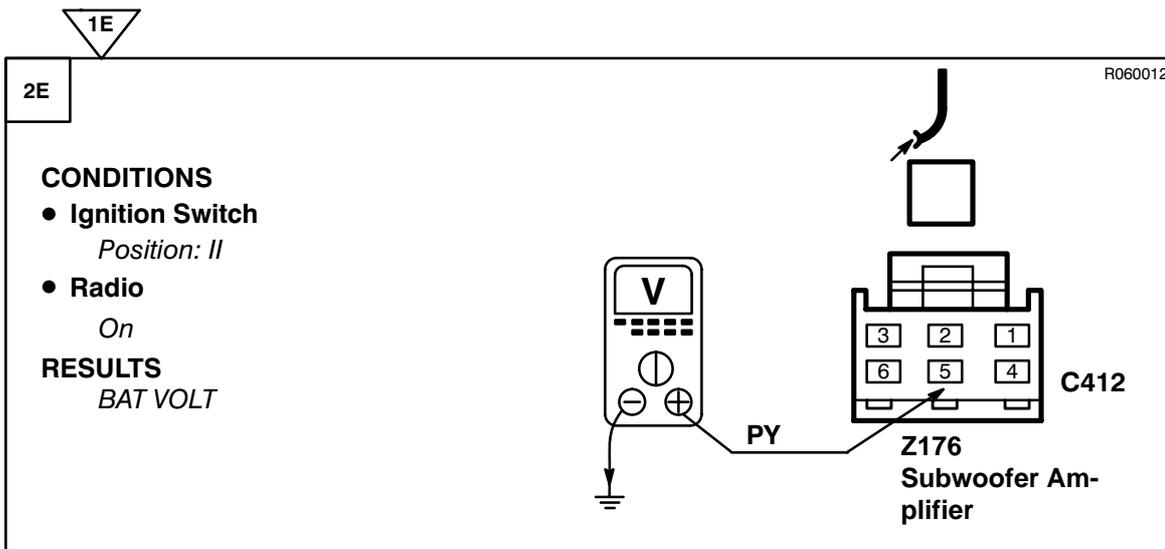
Test E



PROBLEM CAUSE

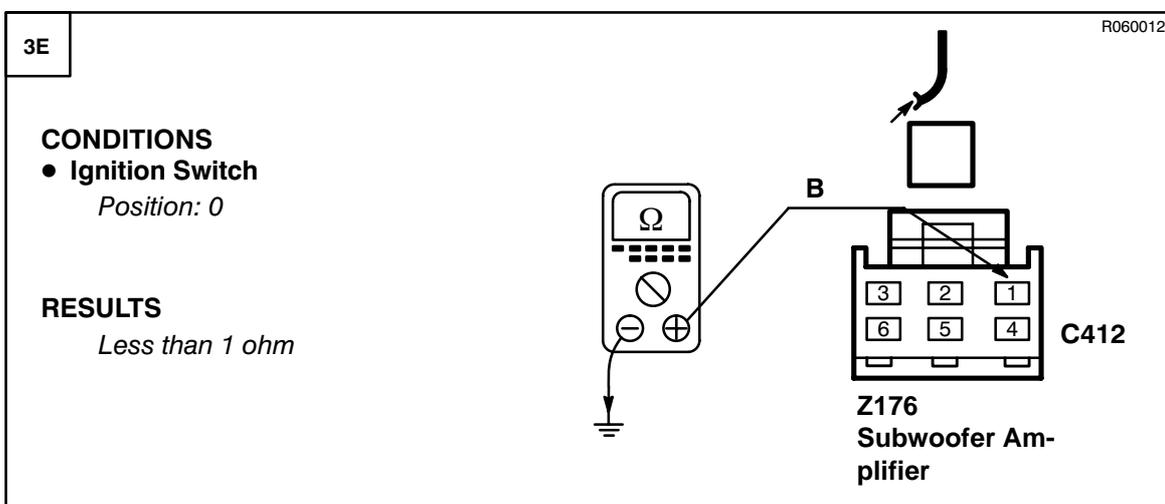
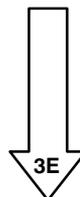
- LGO Wire
- B Wire





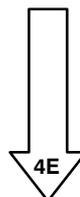
~~OK~~ **PROBLEM CAUSE**
- PY Wire

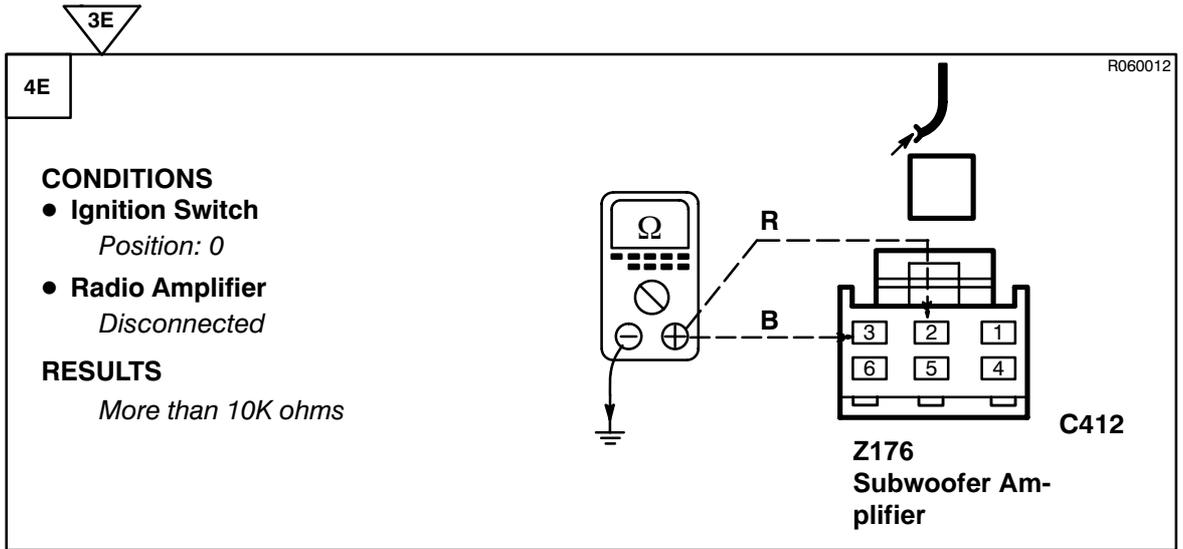
OK



~~OK~~ **PROBLEM CAUSE**
- B Wire

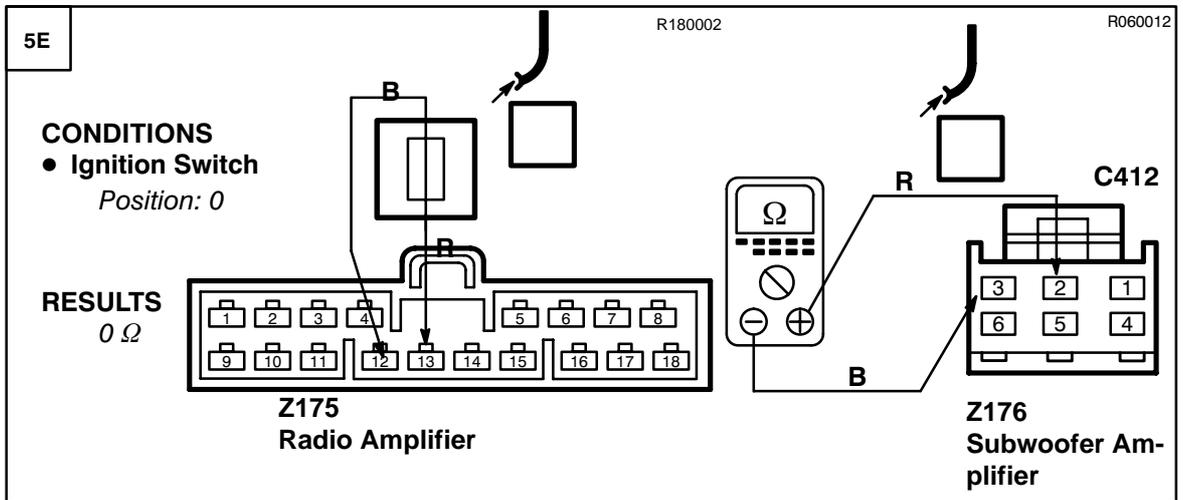
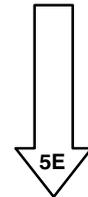
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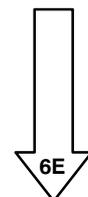
PROBLEM CAUSE

- R Wire
- B Wire



PROBLEM CAUSE

- R Wire
- B Wire



5E

6E

CONDITIONS

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

RESULTS

- Subwoofer Speakers
Operate



PROBLEM CAUSE

- Subwoofer Amplifier
- Radio
- Subwoofer Wiring



PROBLEM CAUSE

- Subwoofer

Test F

1F

CONDITIONS

- Ignition Switch
Position: 0
- Radio Waveband Switch
On

RESULTS

Less than 1 ohm



PROBLEM CAUSE

- RG Wire
- B Wire
- Radio Waveband Switch



PROBLEM CAUSE

- Radio

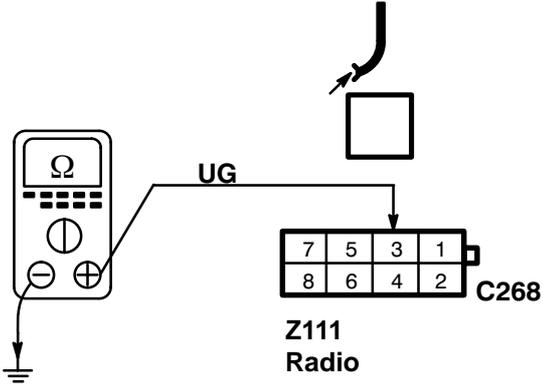
Test G

1G

R080016

CONDITIONS

- Ignition Switch
Position: 0
- Radio Tune Switch
On



RESULTS
Less than 1 ohm

**PROBLEM CAUSE**

- UG Wire
- B Wire
- Radio Tune Switch

**PROBLEM CAUSE**

- Radio

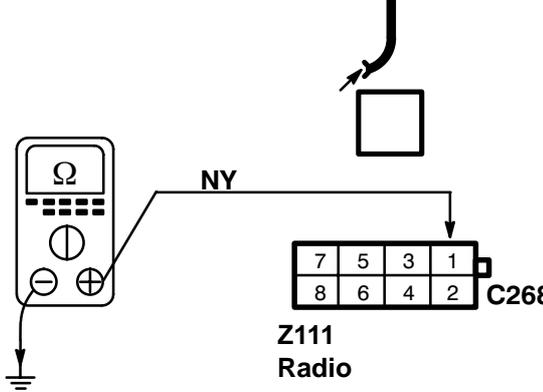
Test H

1H

R080016

CONDITIONS

- Ignition Switch
Position: 0
- Radio Volume Up Switch
On



RESULTS
Less than 1 ohm

**PROBLEM CAUSE**

- NY Wire
- B Wire
- Radio Volume Up Switch

**PROBLEM CAUSE**

- Radio

Test I

R080016

1I

CONDITIONS

- Ignition Switch
Position: 0
- Radio Volume Down Switch
On

RESULTS
Less than 1 ohm

Z111 Radio

C268



PROBLEM CAUSE

- U Wire
- B Wire
- Radio Volume Down Switch



PROBLEM CAUSE

- Radio

Test J

R080016

1J

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

Z111 Radio

C268



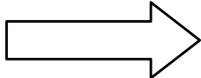
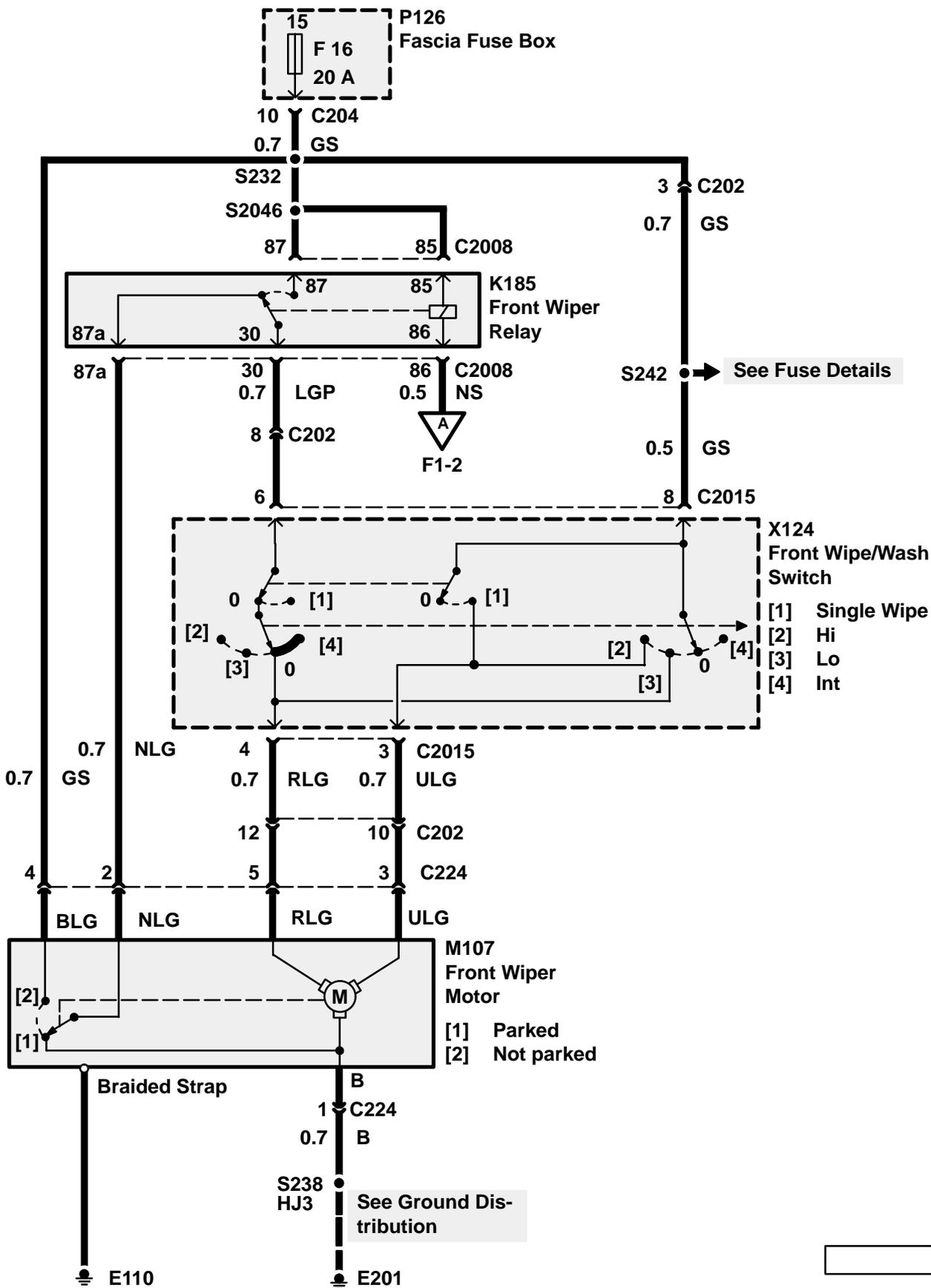
PROBLEM CAUSE

- B Wire



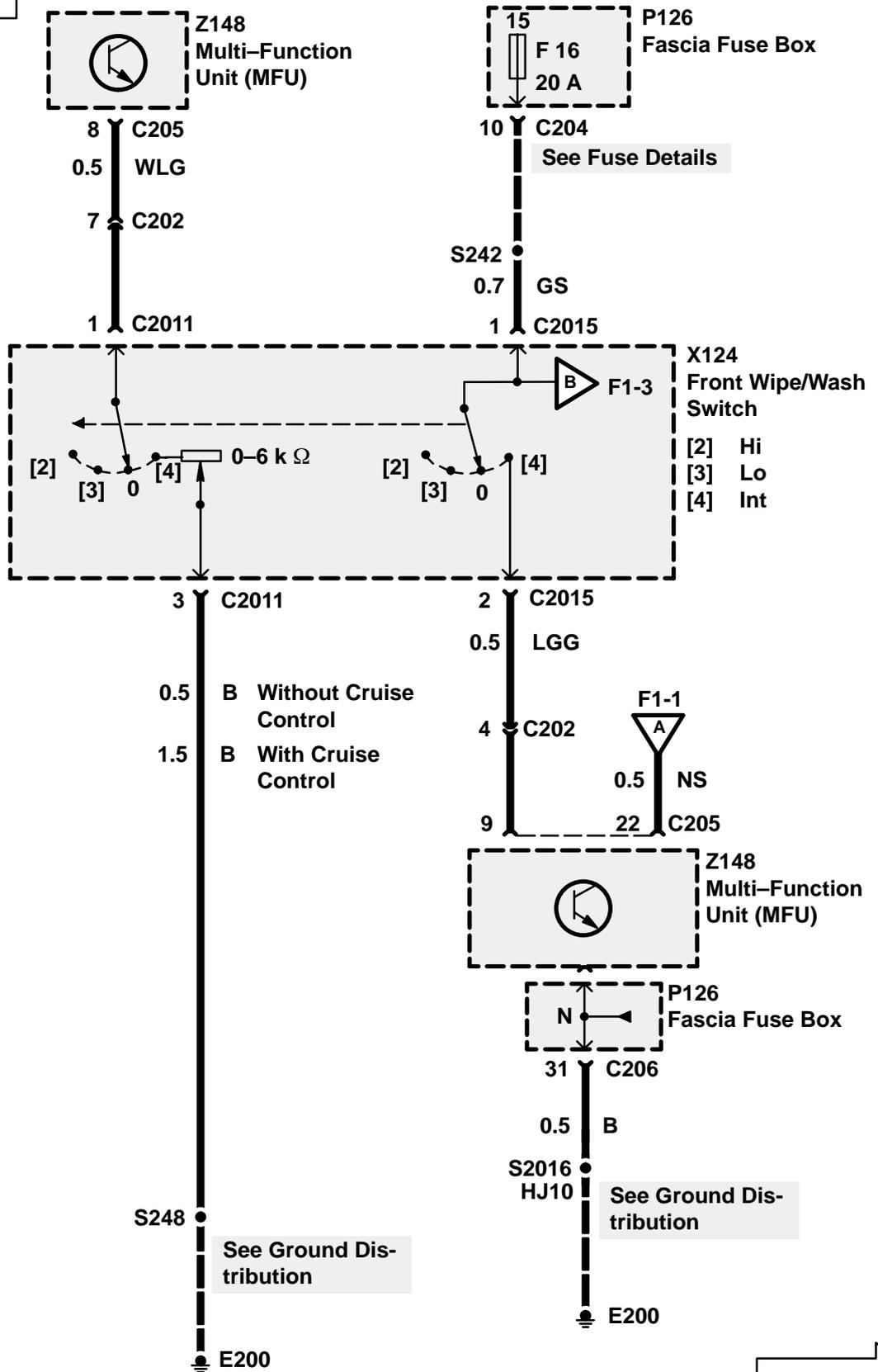
PROBLEM CAUSE

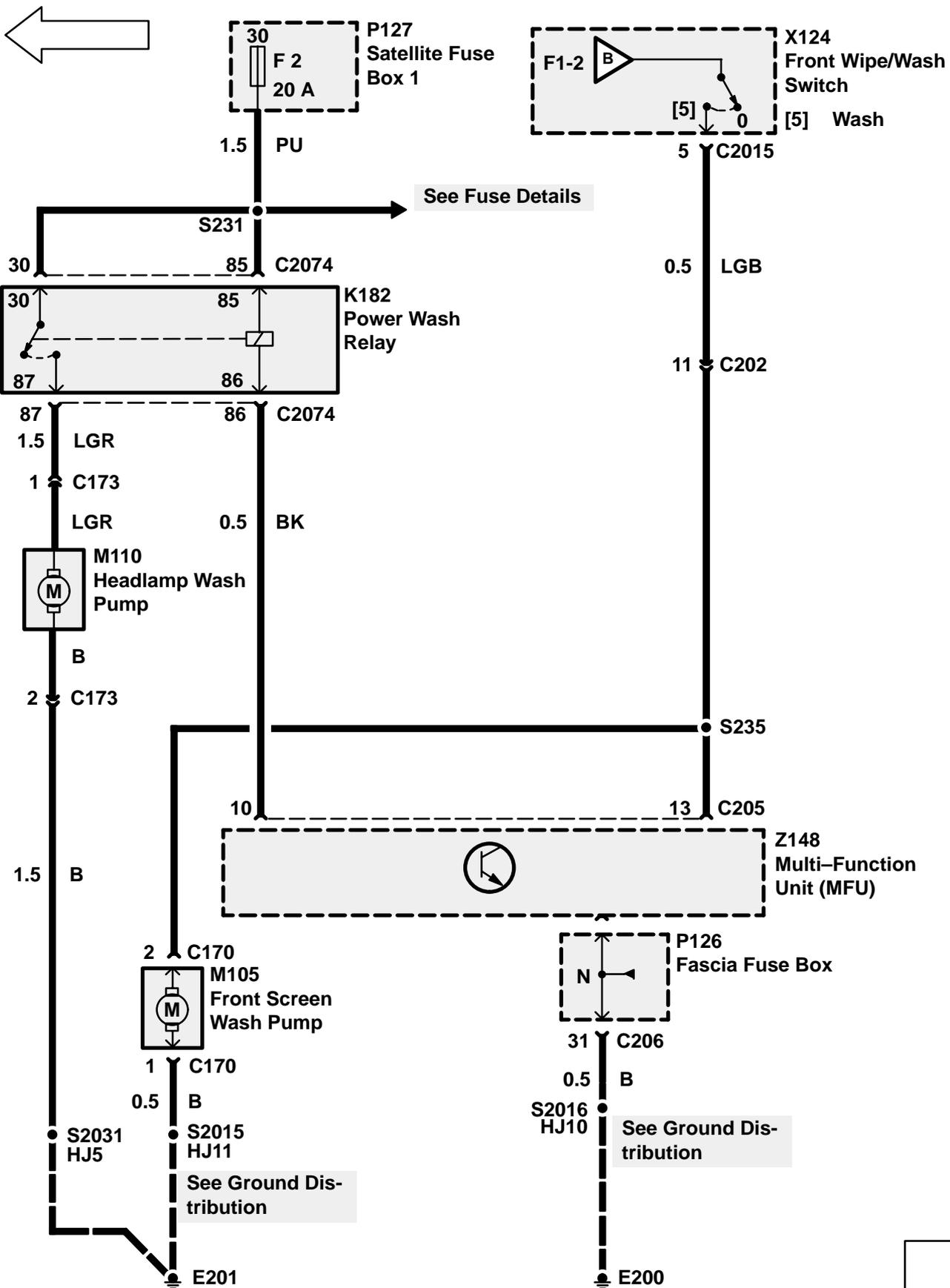
- Radio



F1 ETM

DISCOVERY



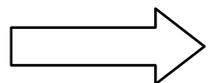
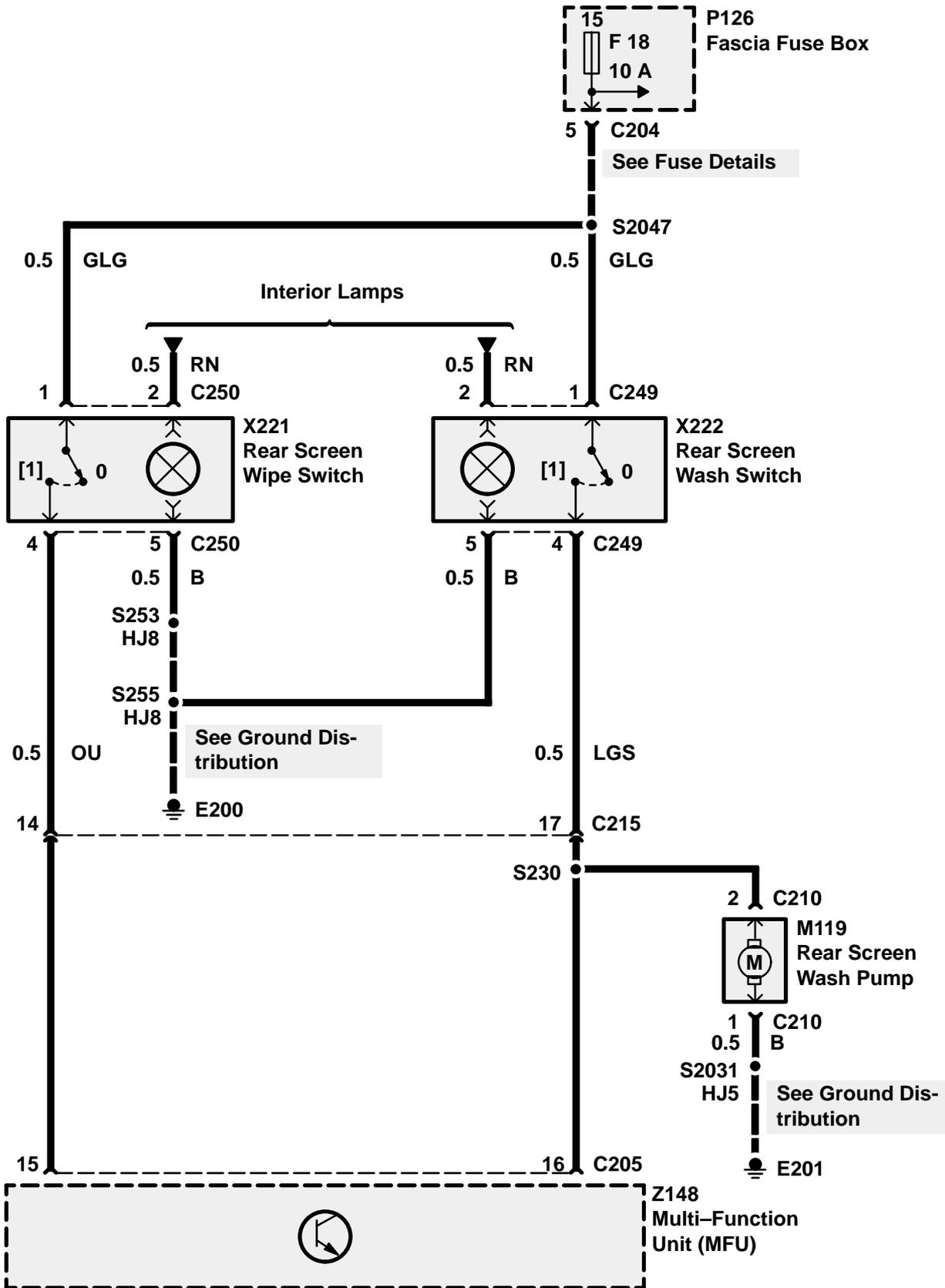


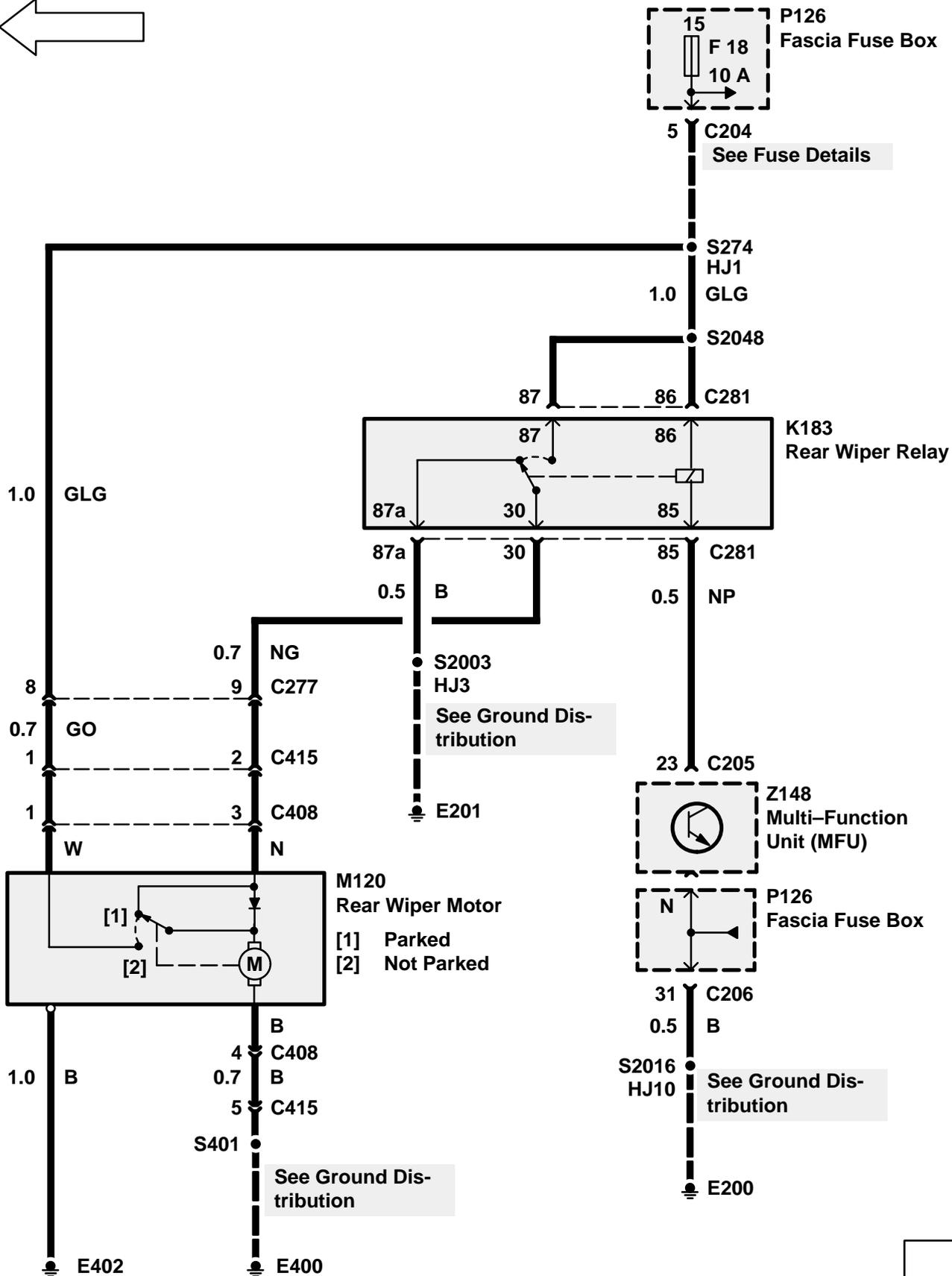
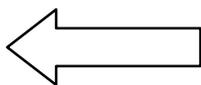
CIRCUIT OPERATION**Washer**

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 Screen 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 F18.





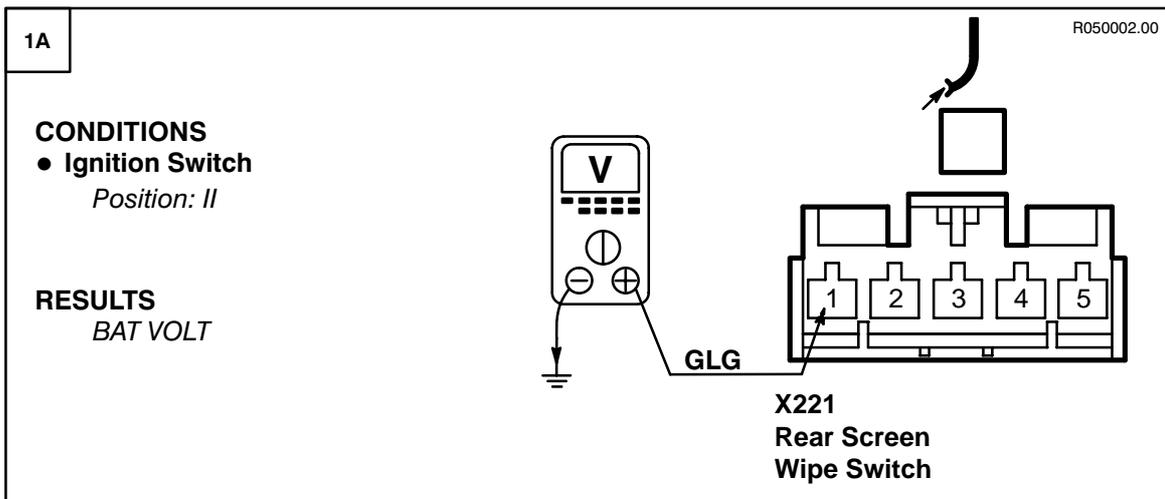
TROUBLESHOOTING HINTS

11. If the washer does not operate, check the washer fluid hoses for kinks or blockage.
12. If the wiper does not operate only when washer is requested, check LGS wire and Multifunction Unit (MFU) (Z148).
13. If the wiper operates with tailgate open, check Tailgate Switch (X170) and PB wires.
14. If the sunroof operates, see section L4, Sunroof.
15. If the washer runs continuously, replace the Rear Screen Wash Switch (X222).
16. If wiper and washer do not operate, check GLG wire and Fuse F18.
17. 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

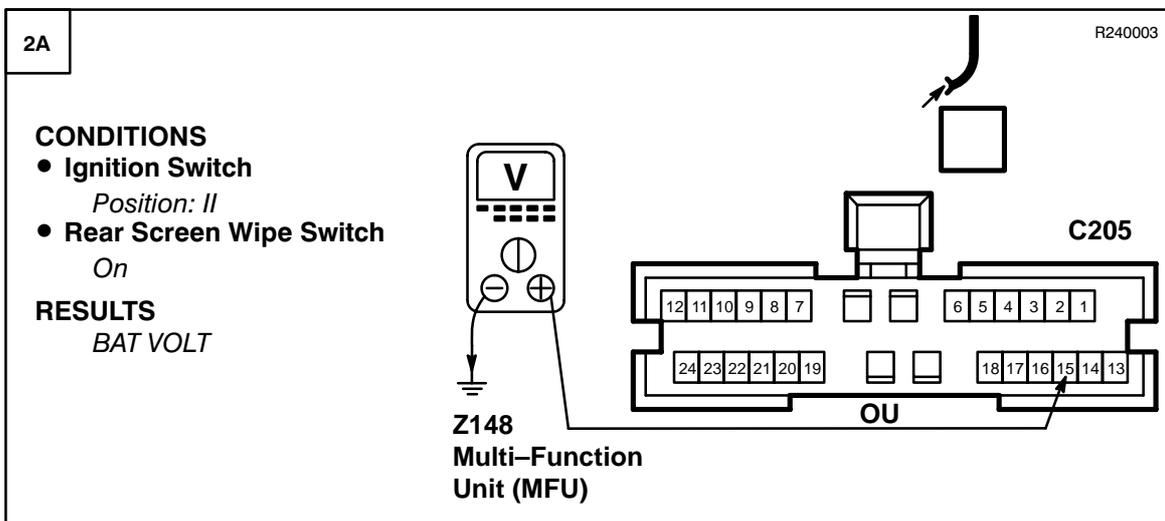
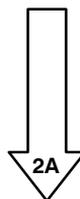
1. If the wiper does not operate, do Test A.
2. If the washer does not operate, do Test B.
3. If the wiper runs with Rear Screen Wipe Switch off, do Test C.

Test A



~~OK~~ PROBLEM CAUSE
- GLG Wire

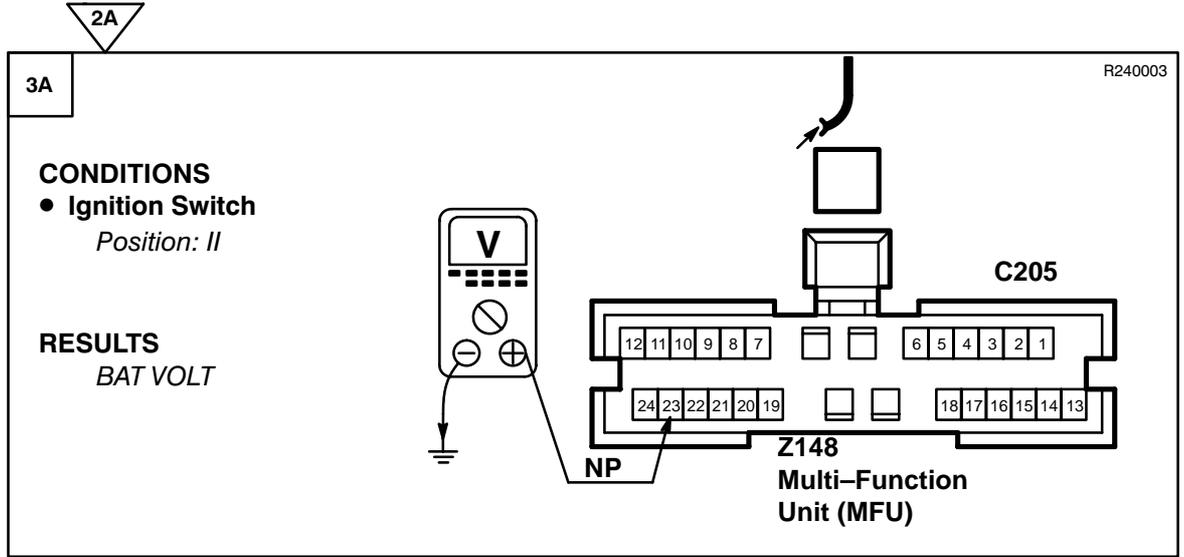
OK



~~OK~~ PROBLEM CAUSE
- OU Wire
- Rear Screen
Wipe Switch

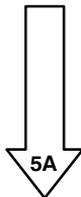
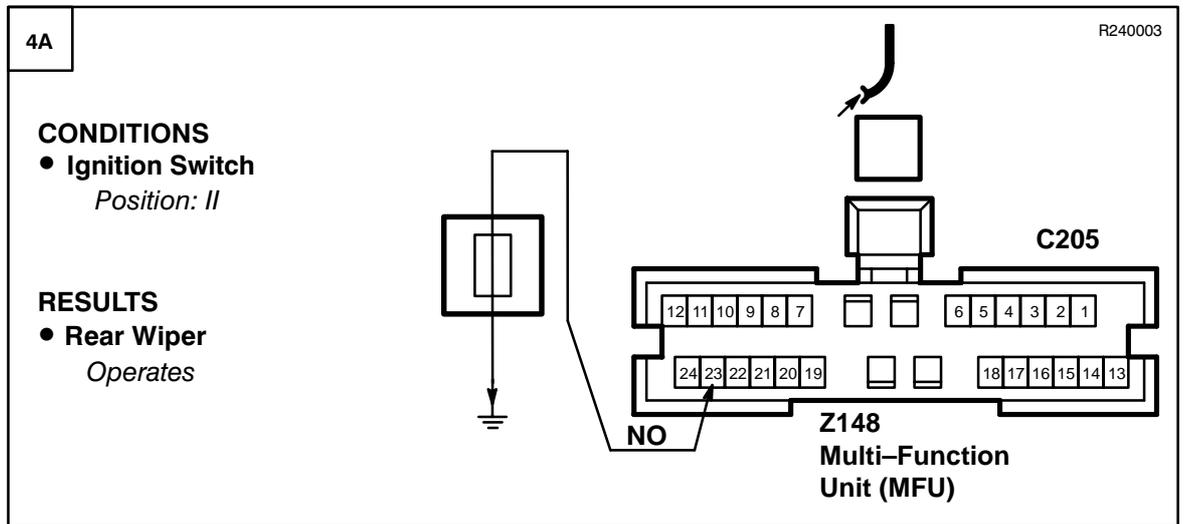
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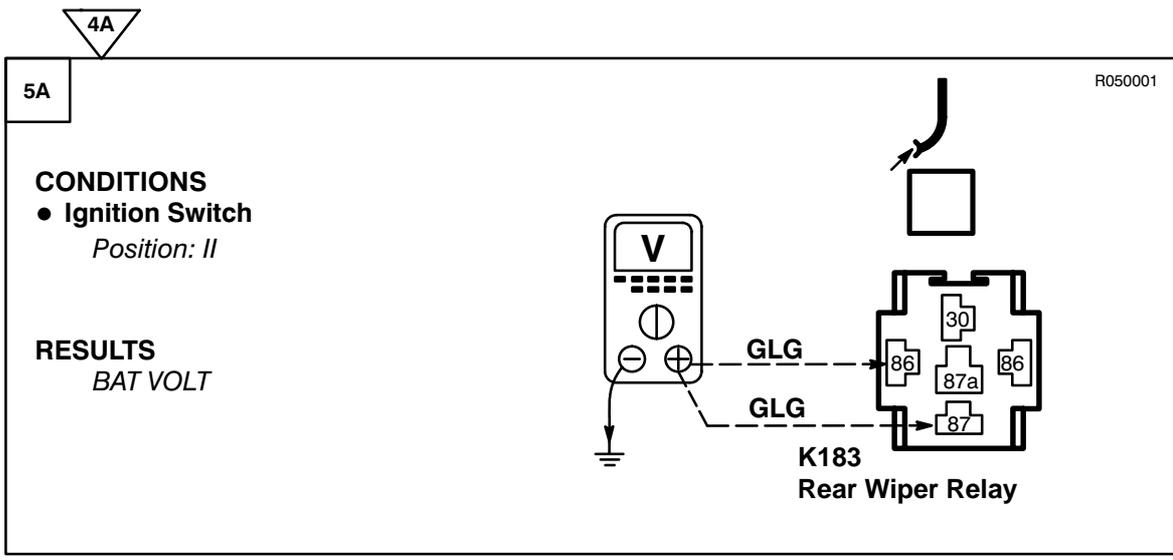
PROBLEM CAUSE

- GLG Wire
- NP Wire
- Rear Wiper Relay



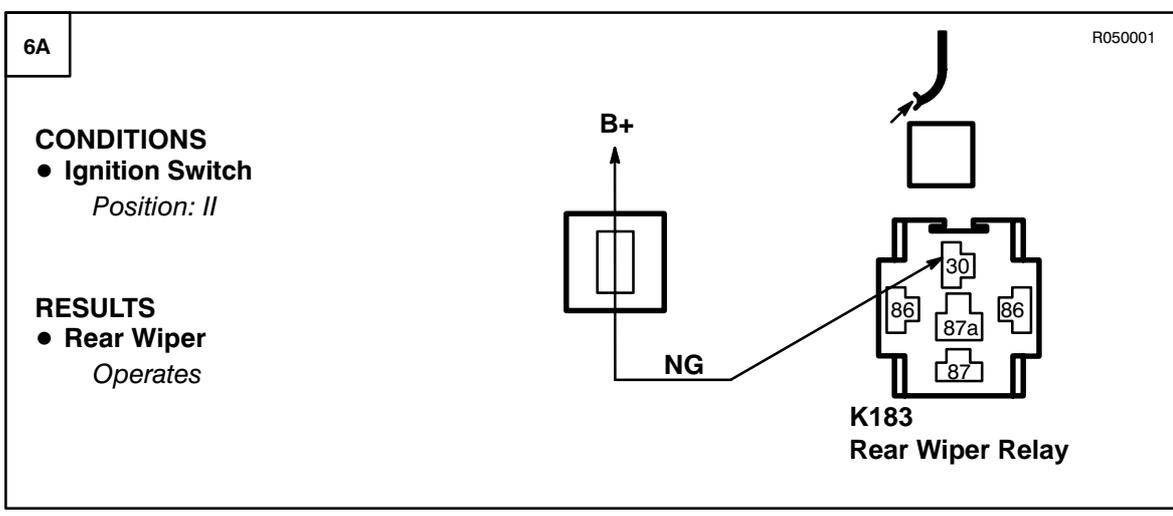
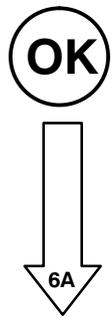
PROBLEM CAUSE

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



OK PROBLEM CAUSE

- GLG Wire
- F18 Fuse



OK PROBLEM CAUSE

- NG Wire
- B Wire
- Rear Wiper Motor

OK PROBLEM CAUSE

- Rear Wiper Relay

Test B

1B R020037

CONDITIONS

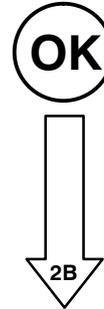
- Ignition Switch
Position: II
- Rear Screen Wash Switch
WASH

RESULTS
BAT VOLT

M119
Rear Screen
Wash Pump

OK PROBLEM CAUSE

- GLG Wire
- LGS Wire
- Rear Screen Wash Switch



2B R020037

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- Rear Wiper
Less than 2 ohms

M119
Rear Screen
Wash Pump

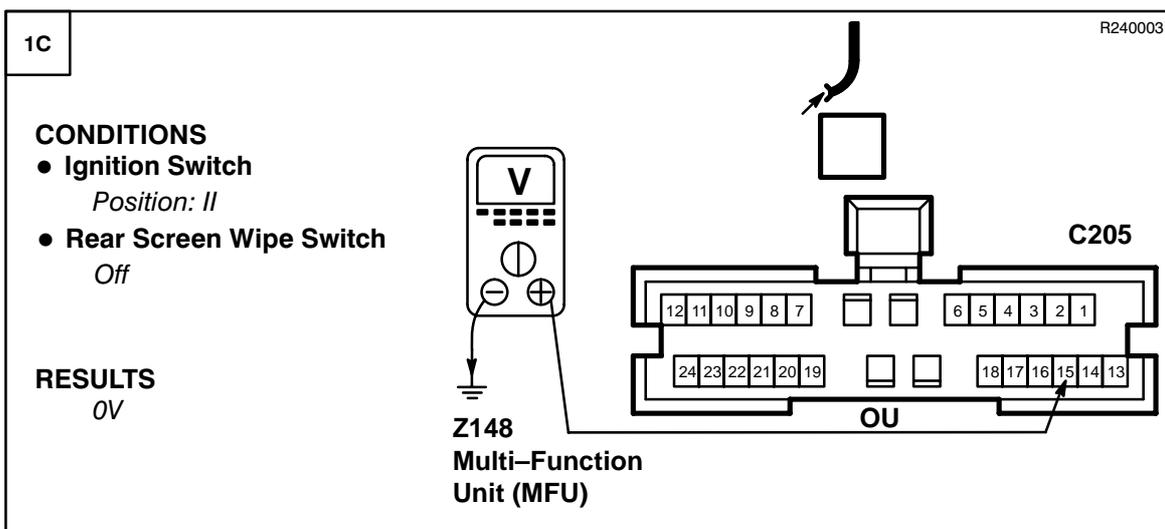
OK PROBLEM CAUSE

- B Wire

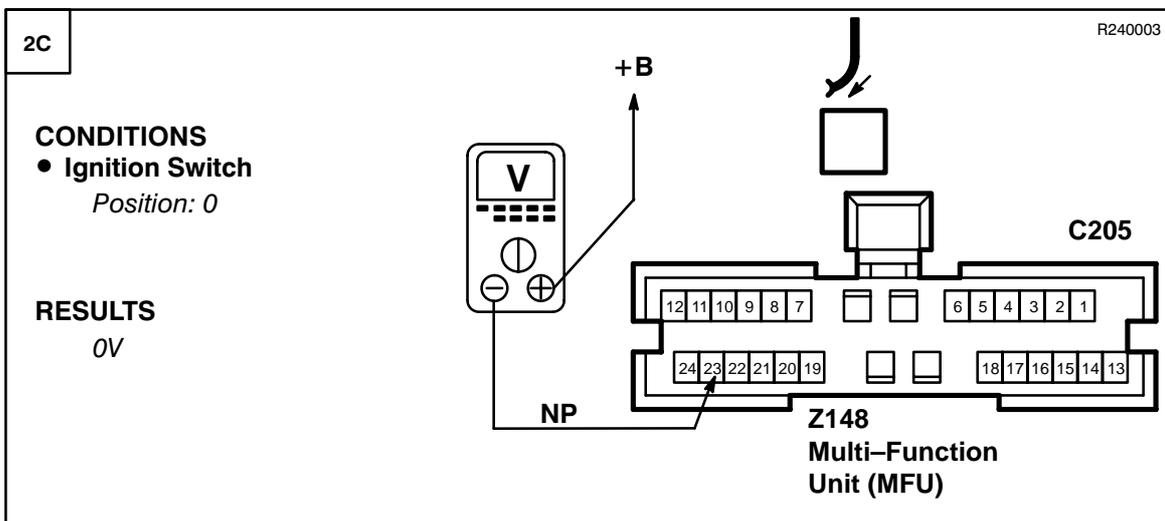
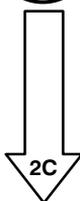
OK PROBLEM CAUSE

- Rear Screen Wash Pump

Test C



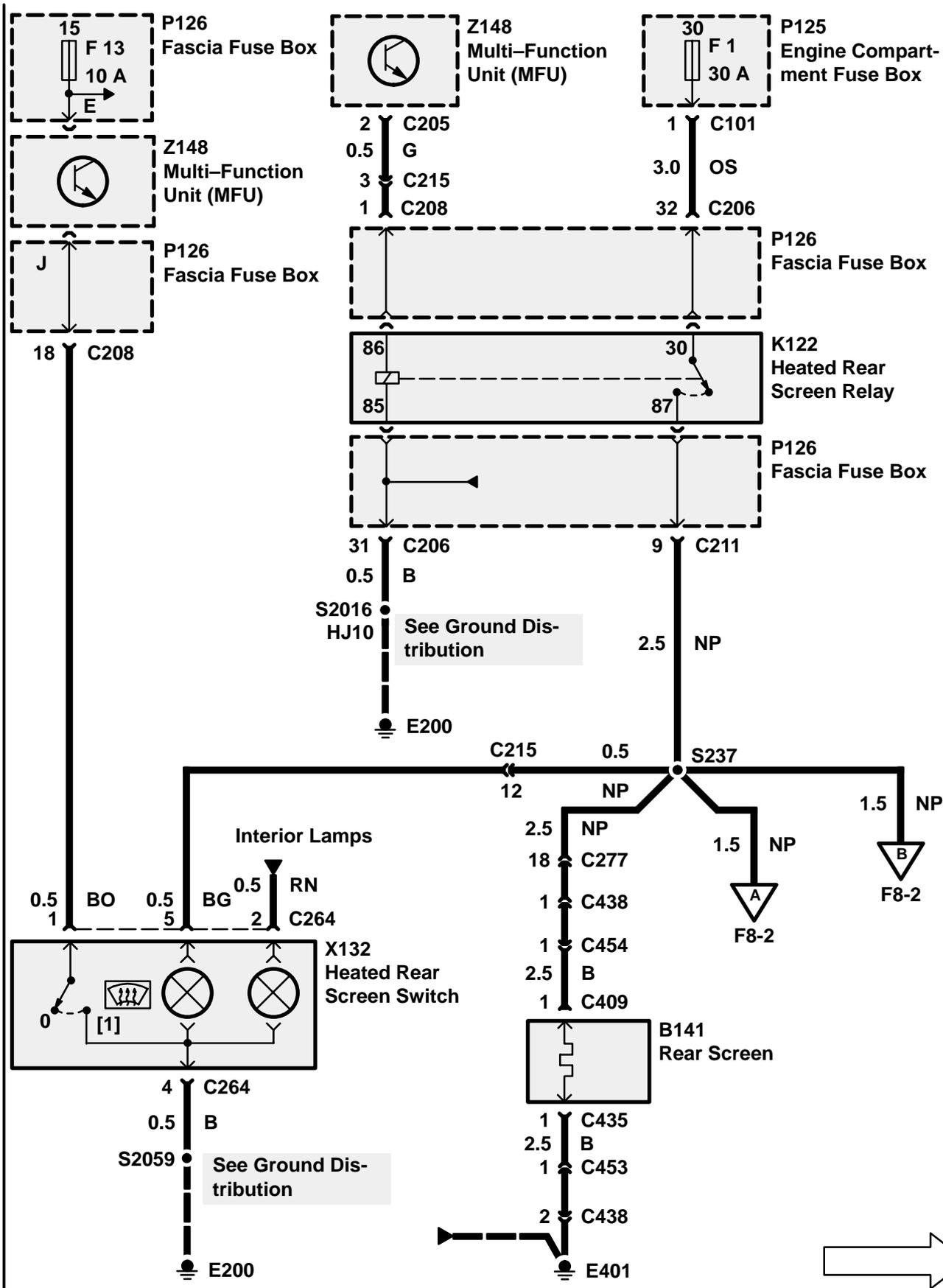
PROBLEM CAUSE
- Rear Screen
Wipe Switch



PROBLEM CAUSE
- Multi-Function
Unit (MFU)

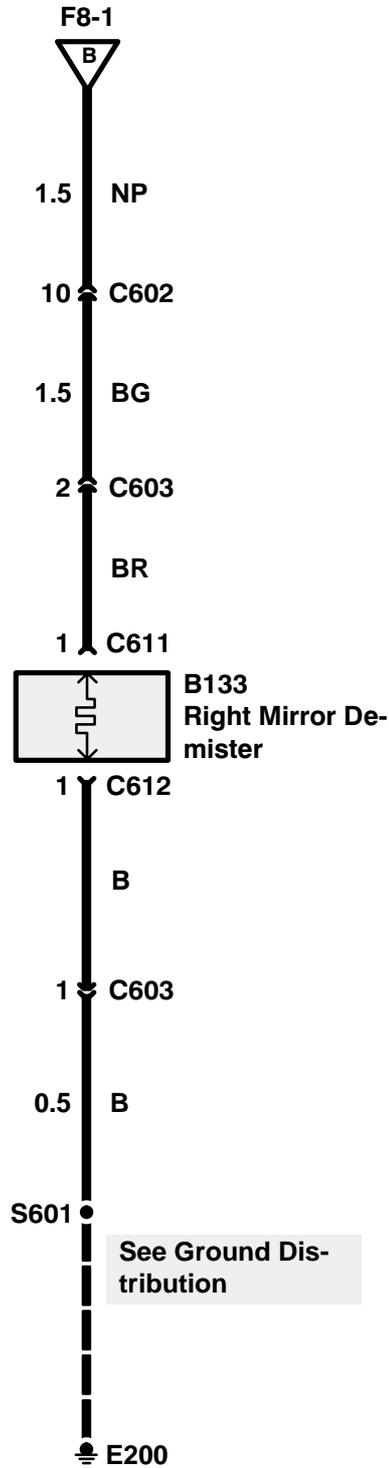
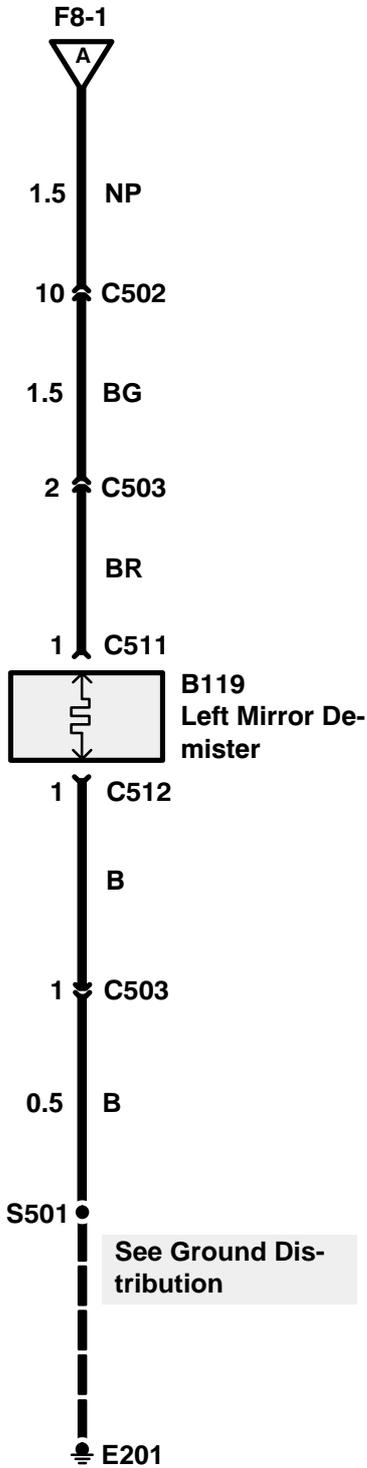
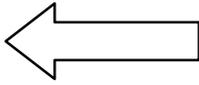


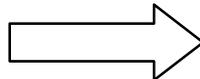
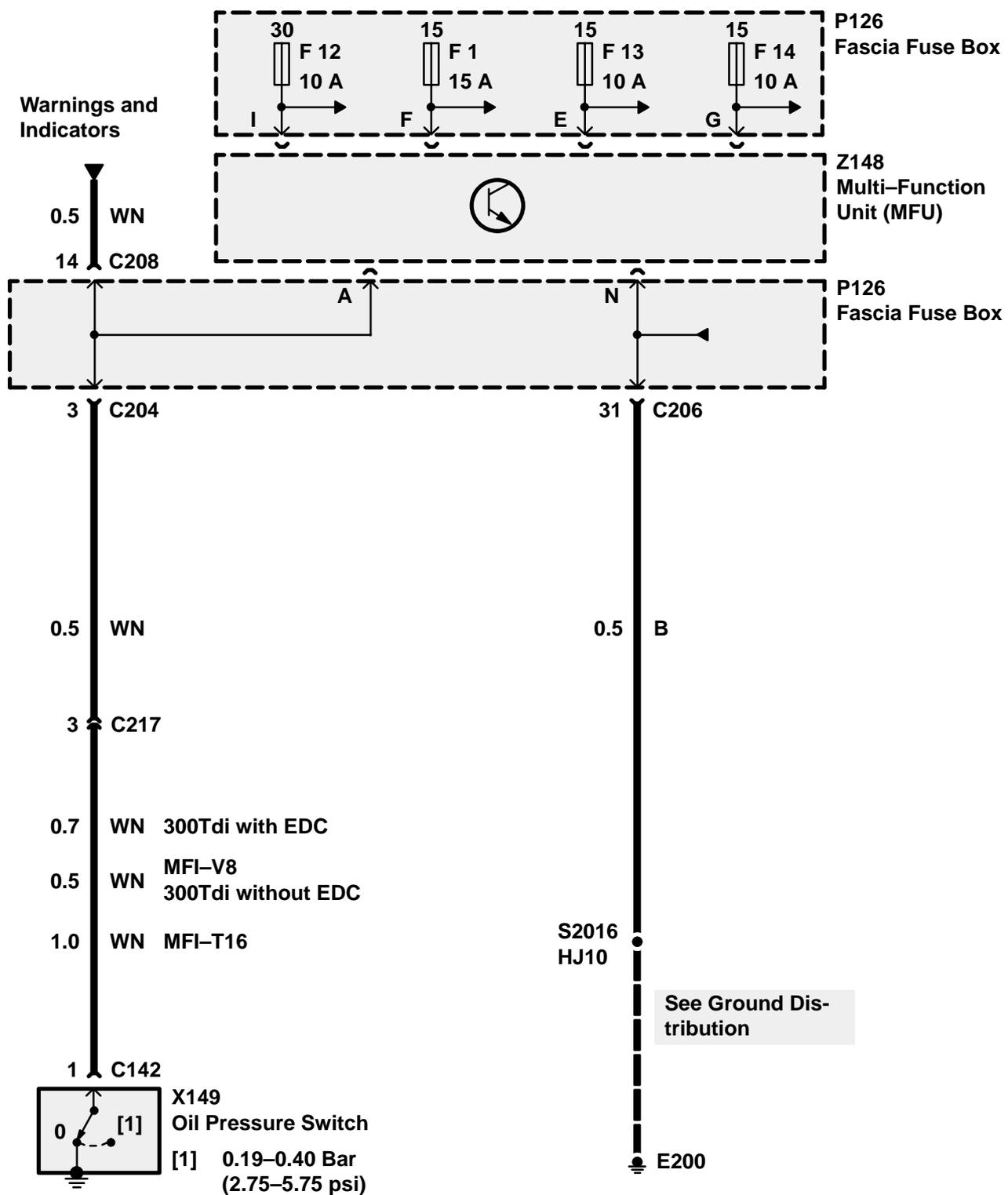
PROBLEM CAUSE
- Rear Wiper Relay

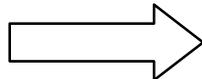
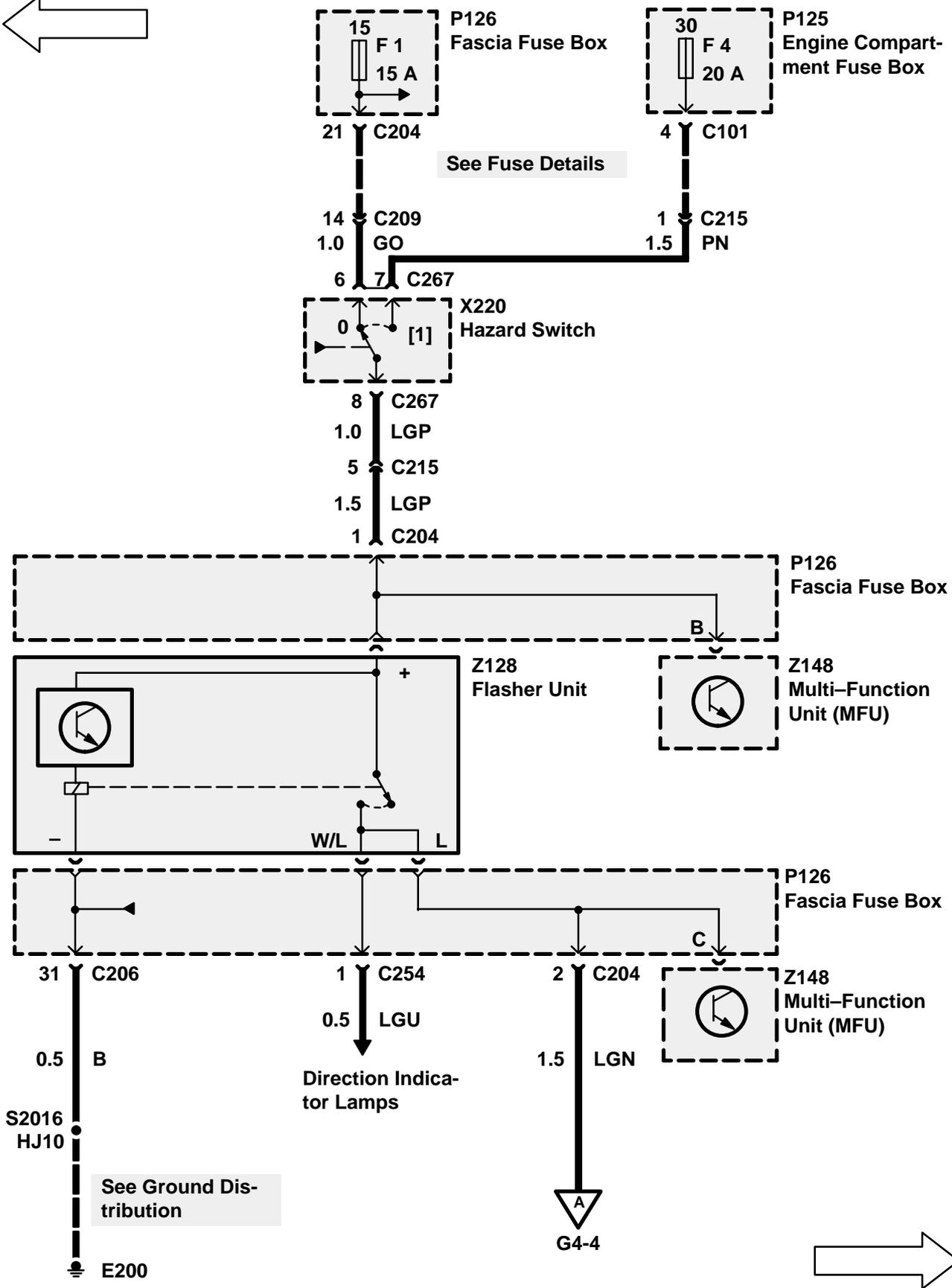
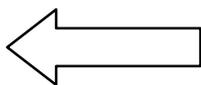


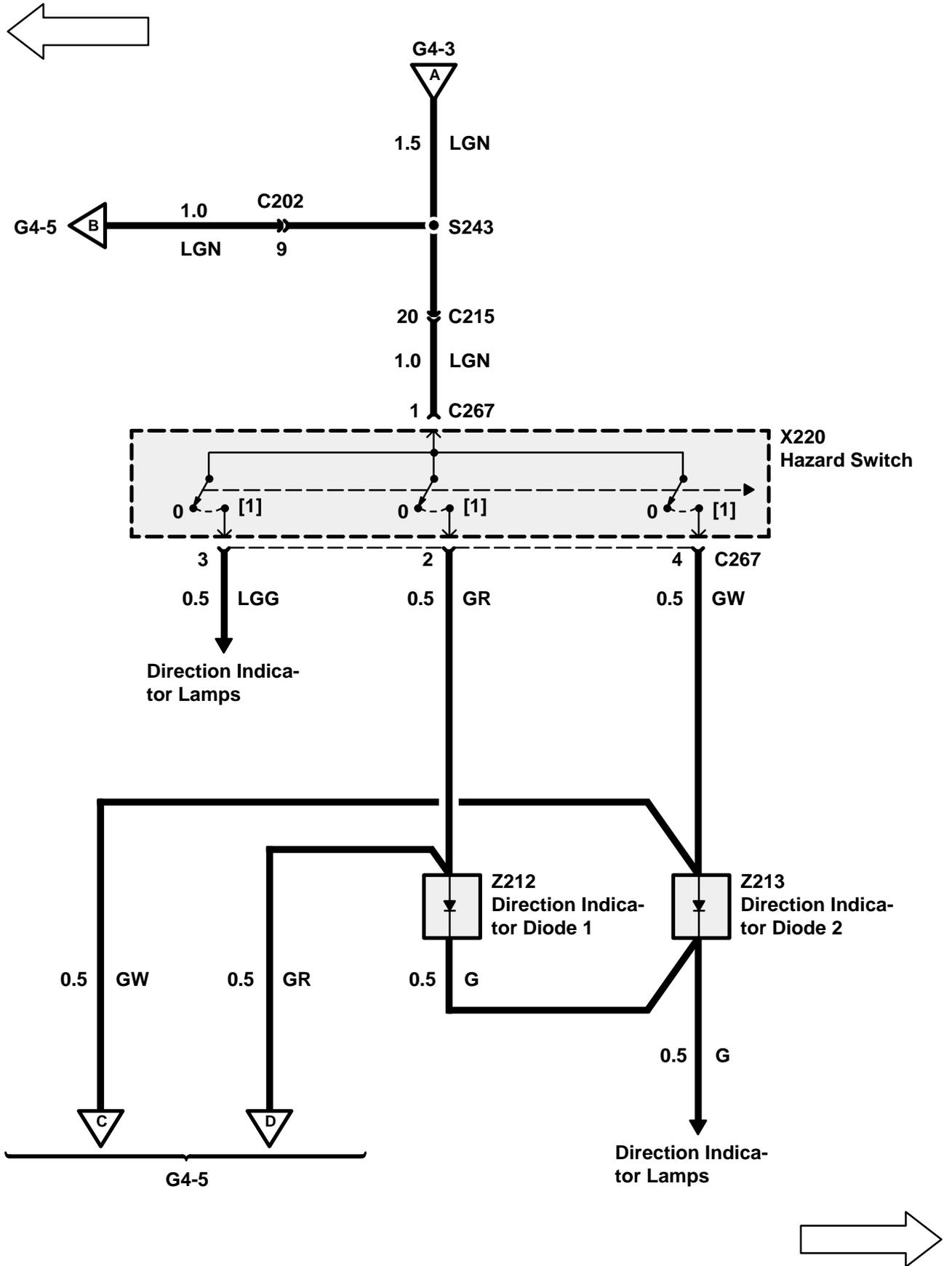
F8 ETM

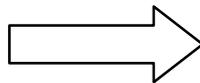
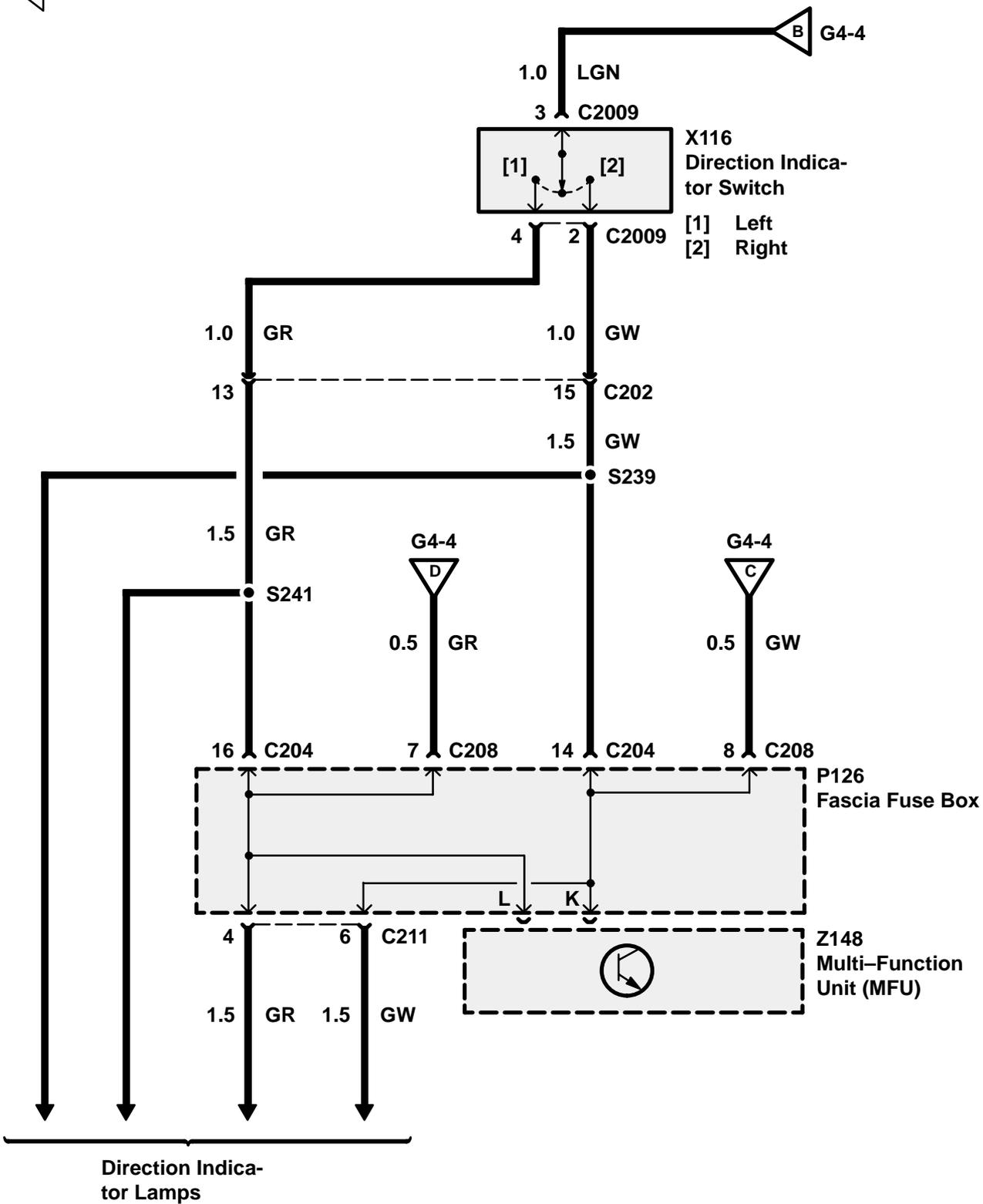
DISCOVERY

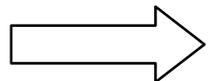
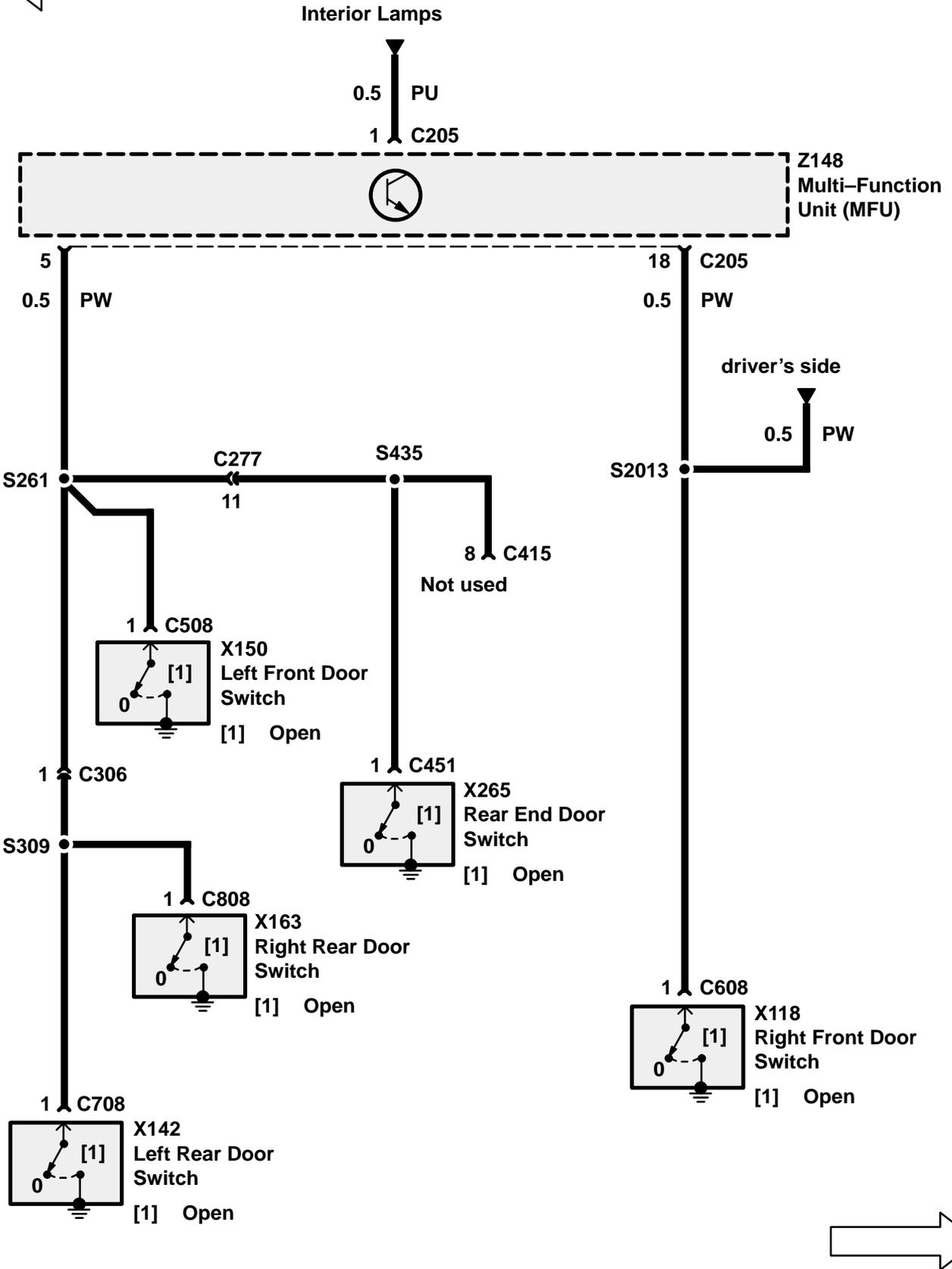
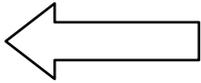


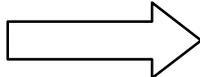
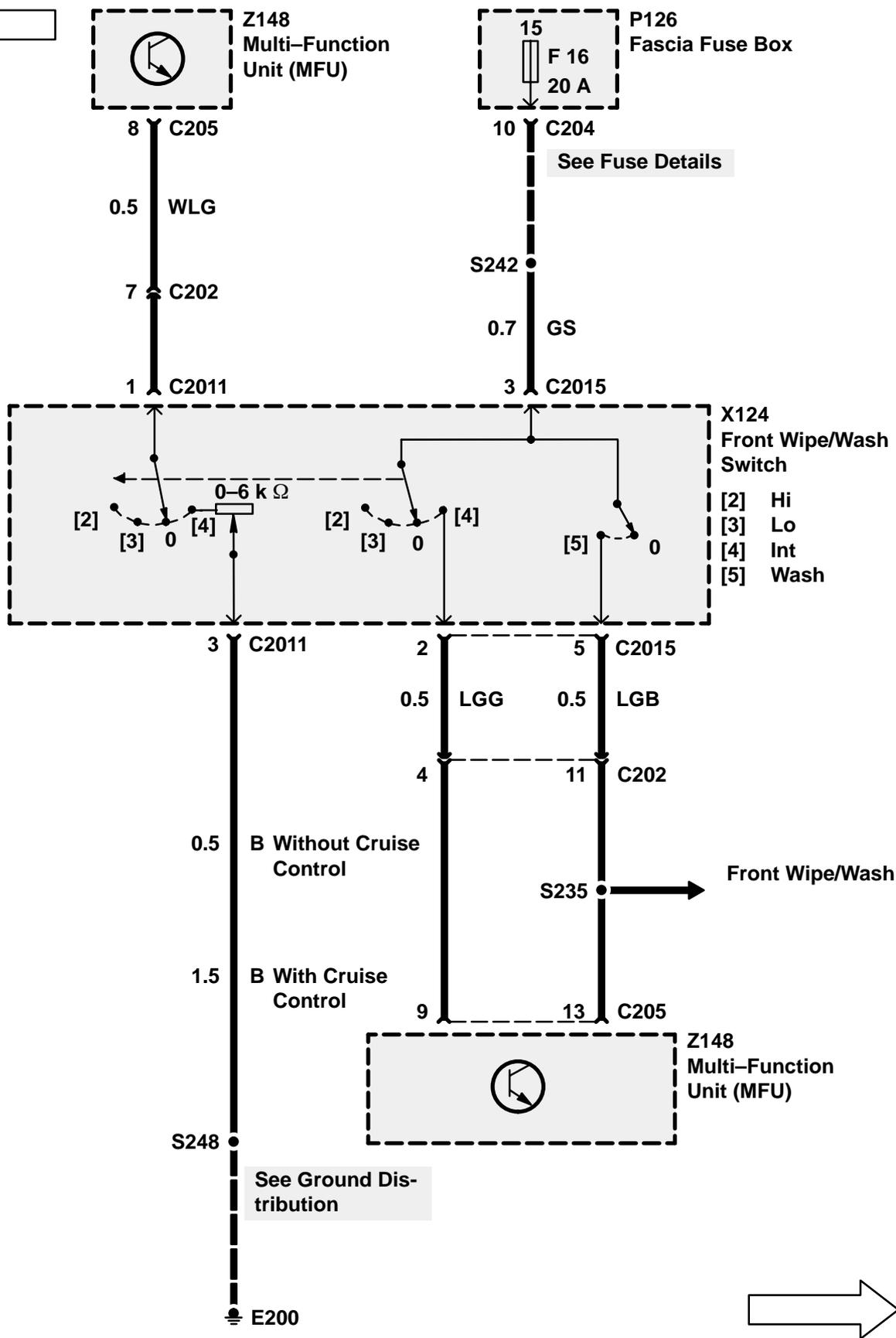
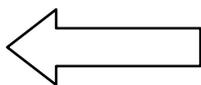


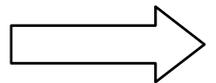
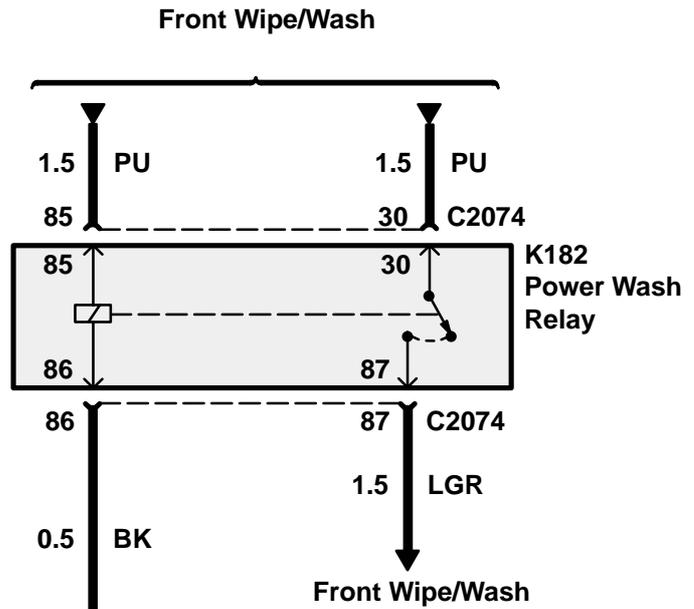
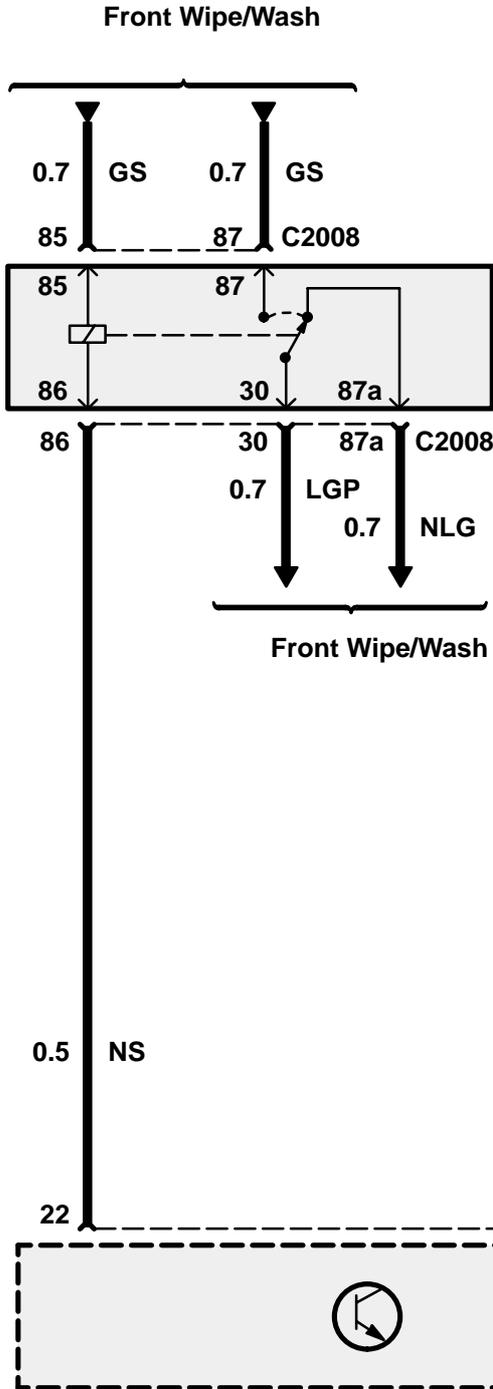
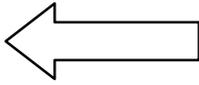


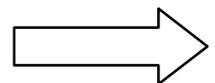
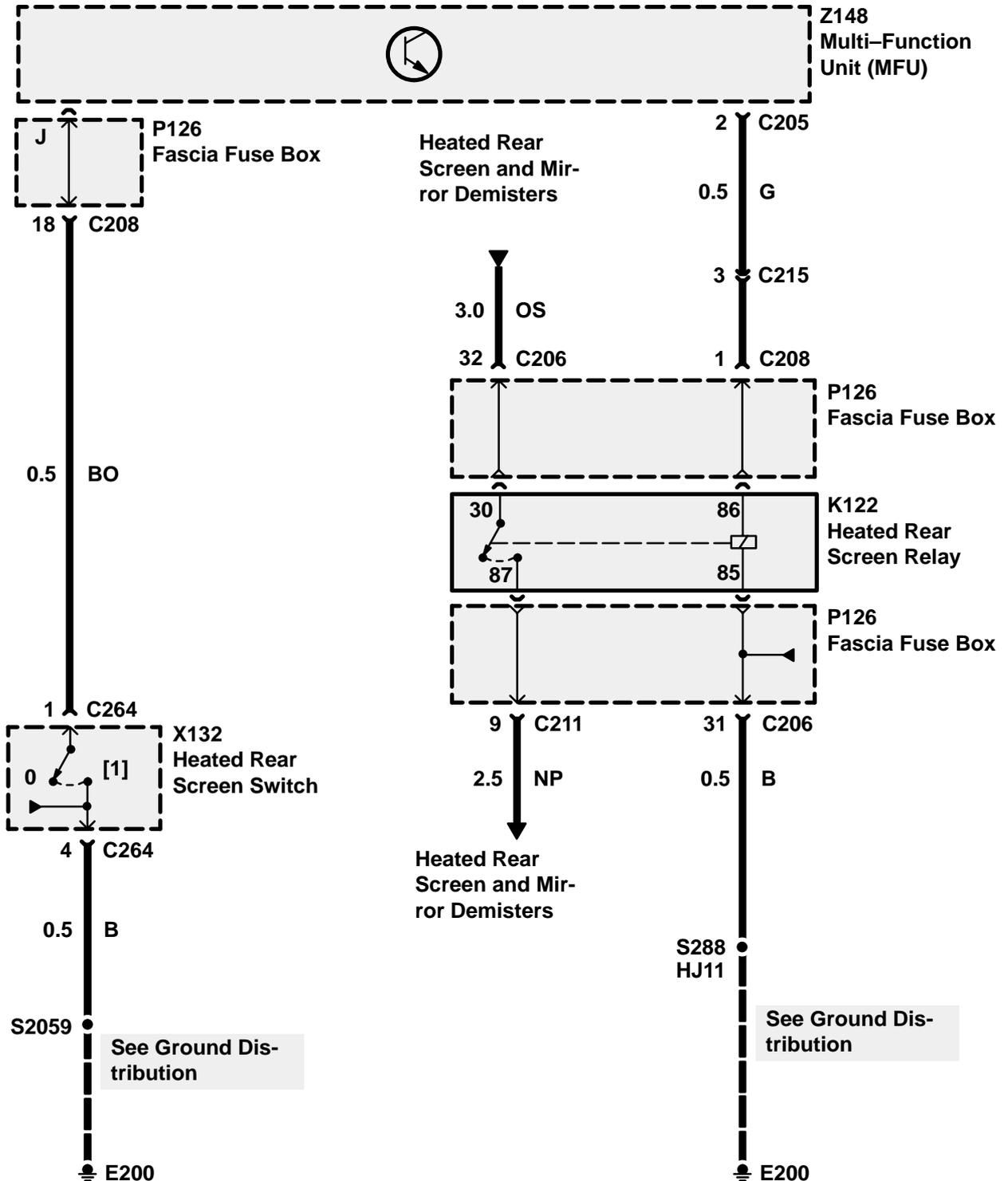
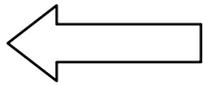


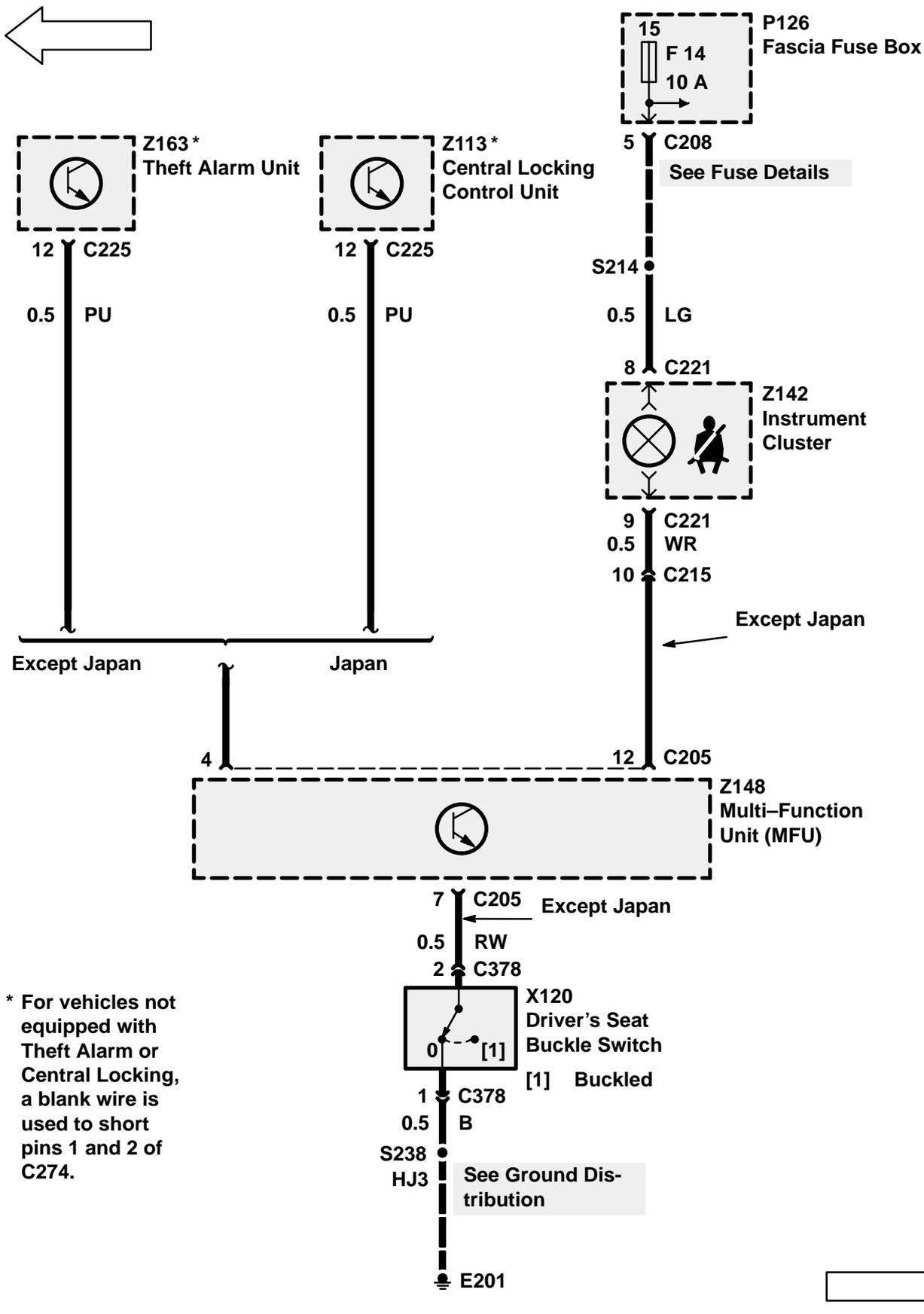




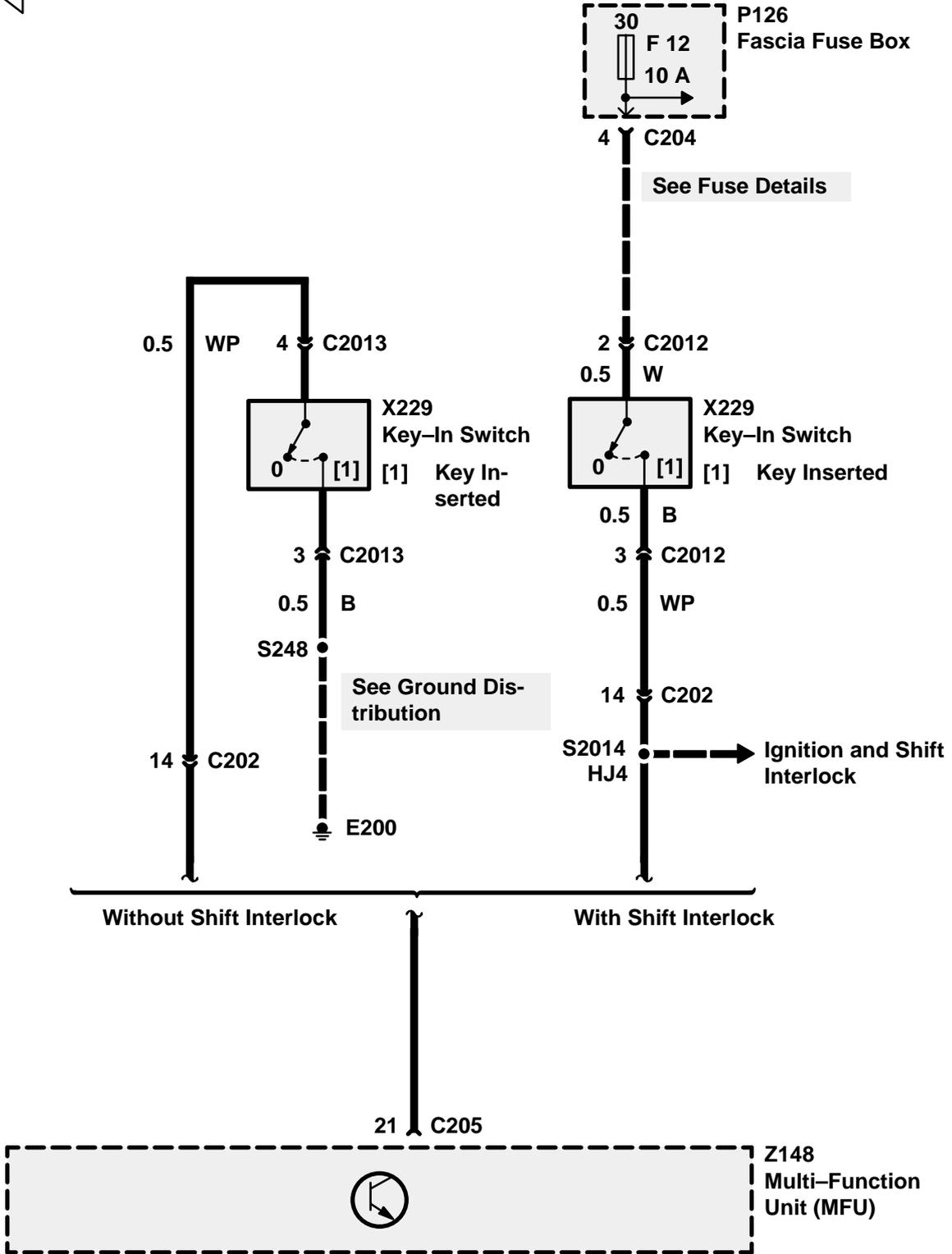
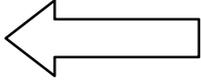


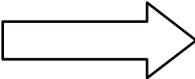
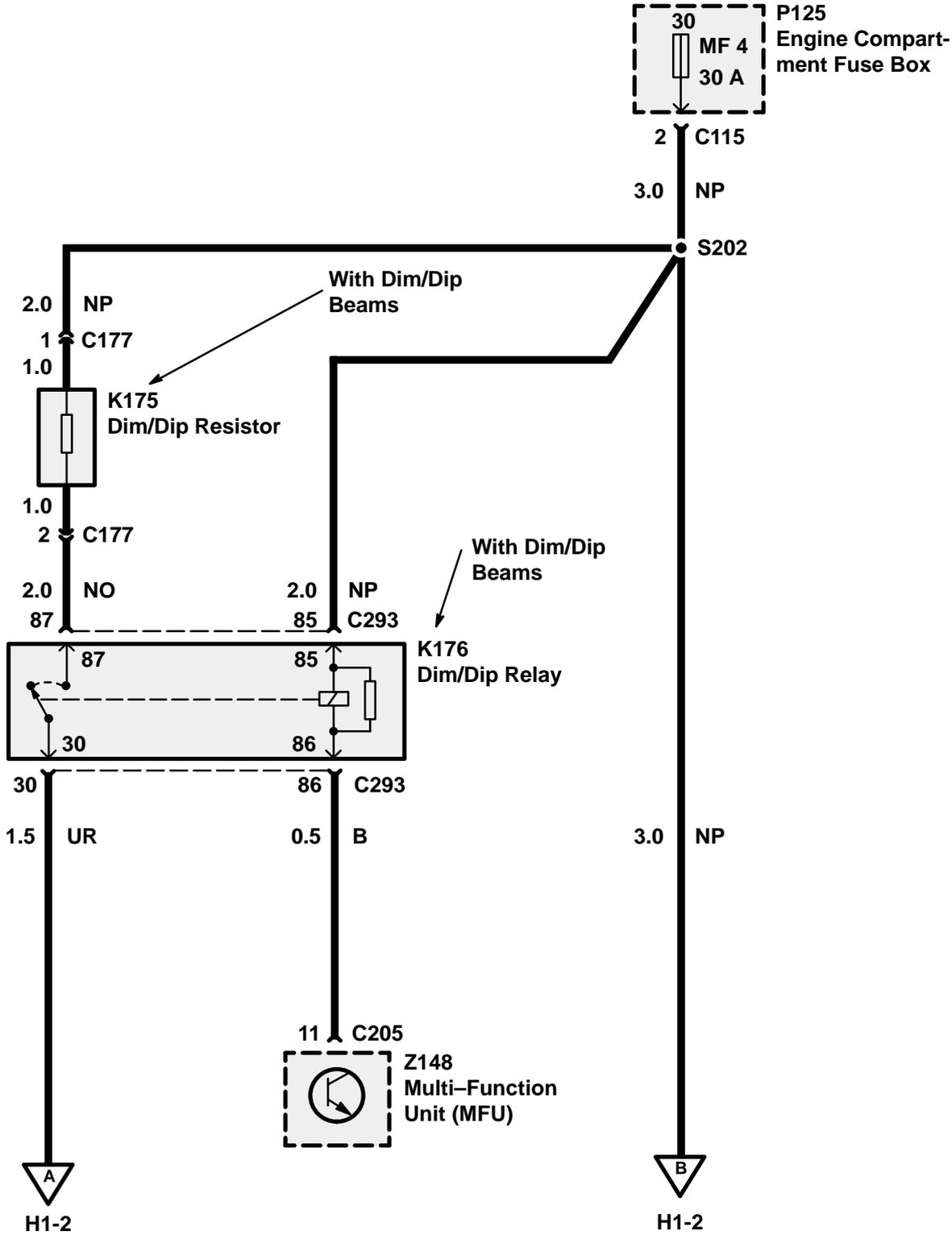


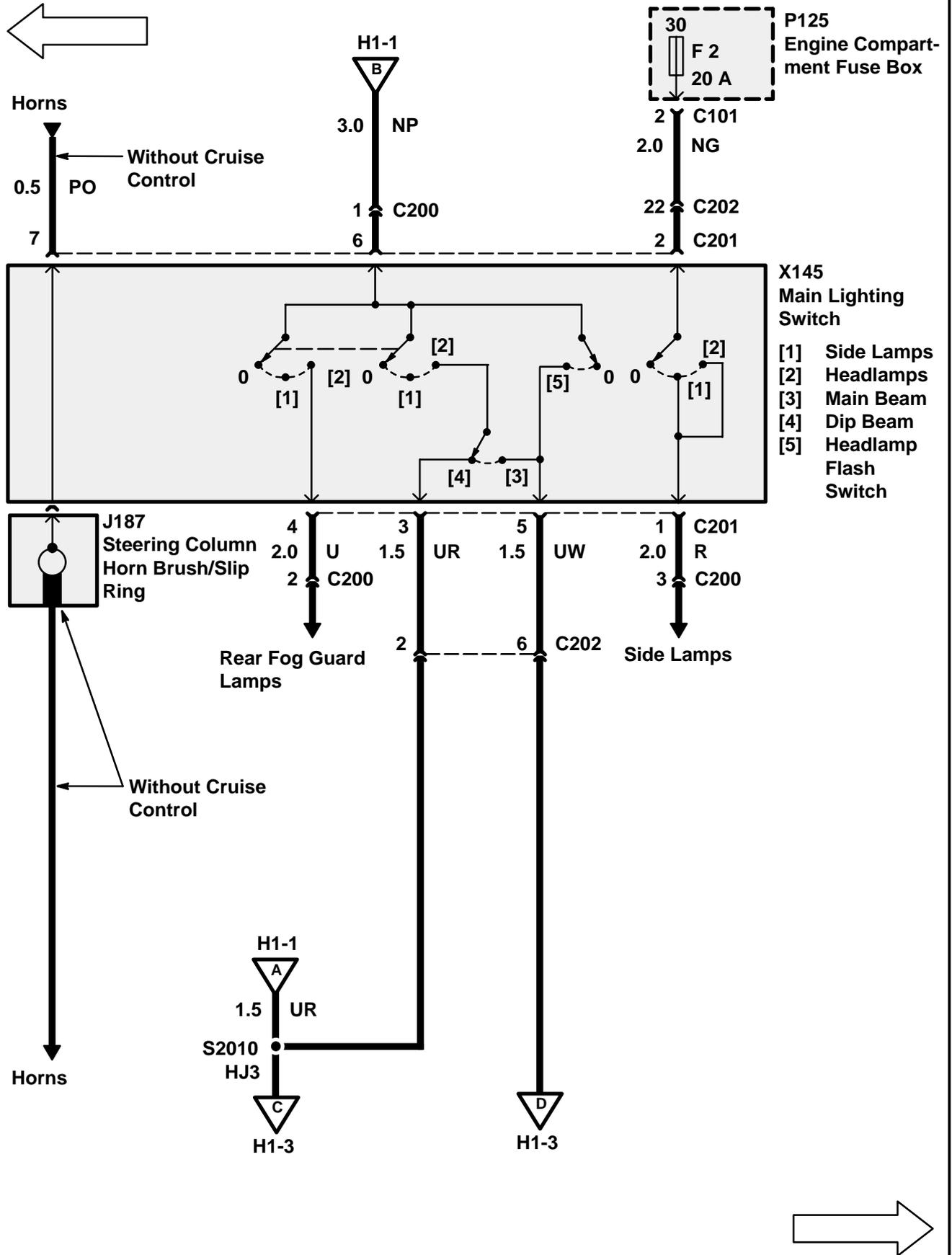


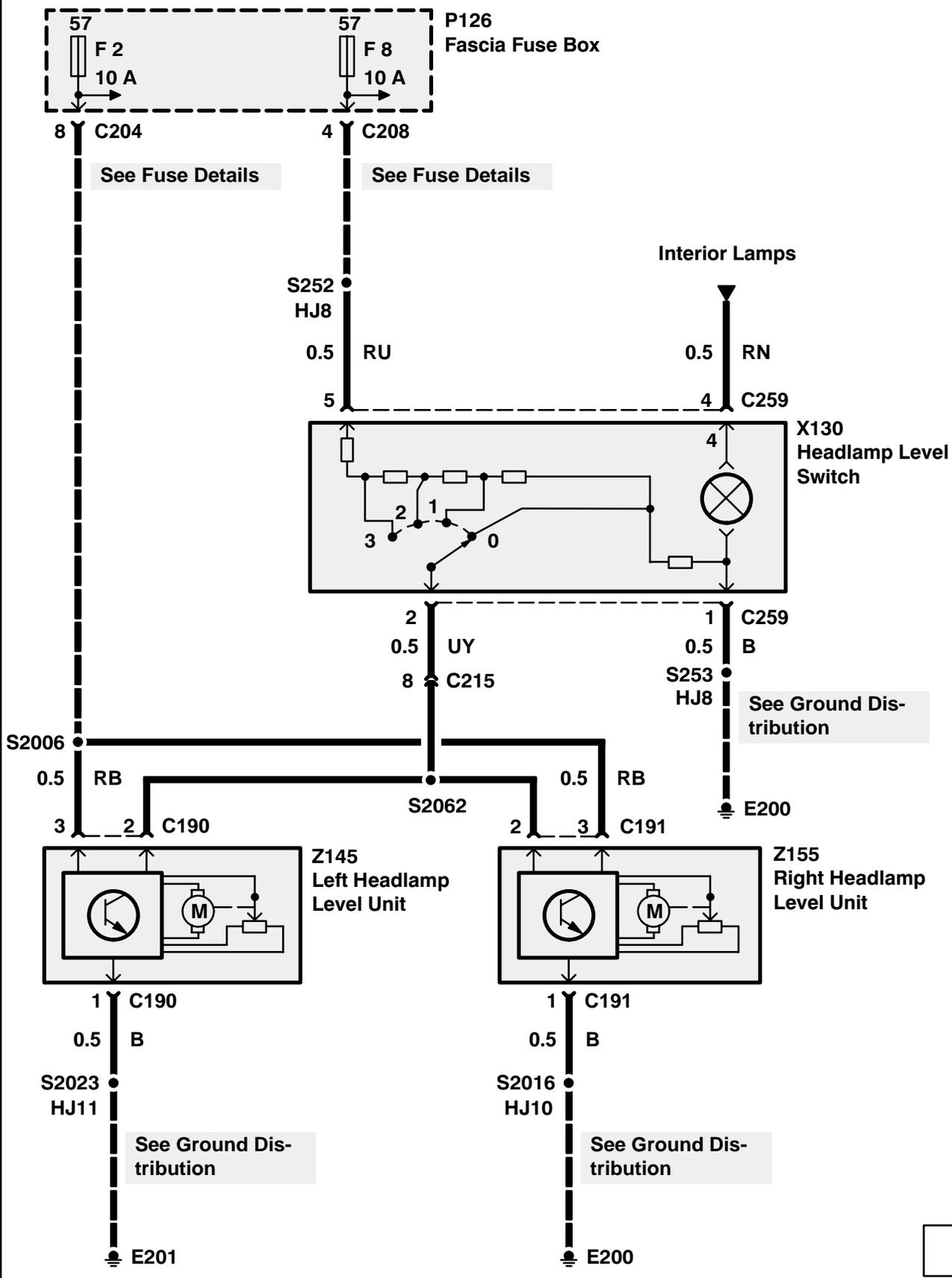


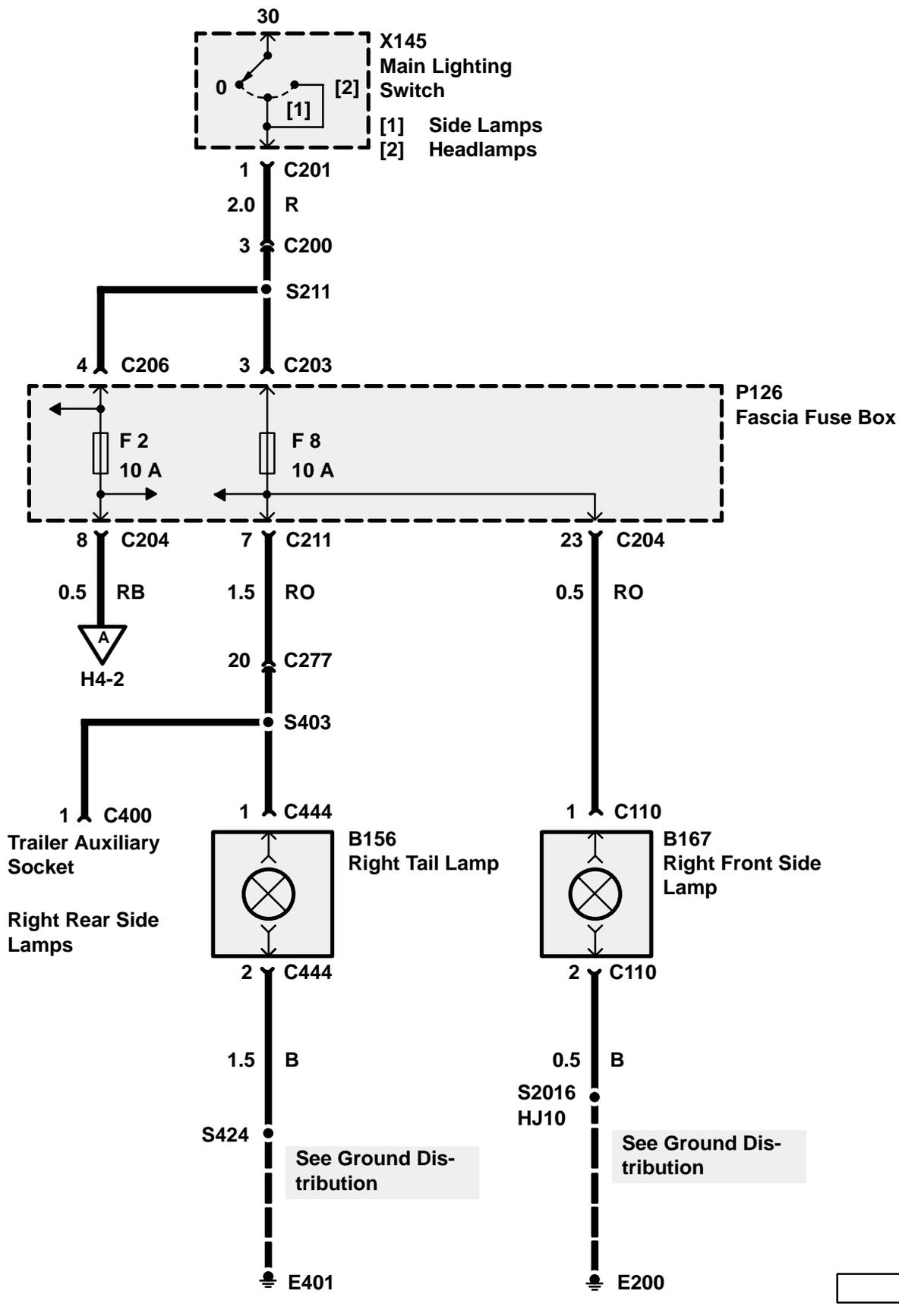
* For vehicles not equipped with Theft Alarm or Central Locking, a blank wire is used to short pins 1 and 2 of C274.





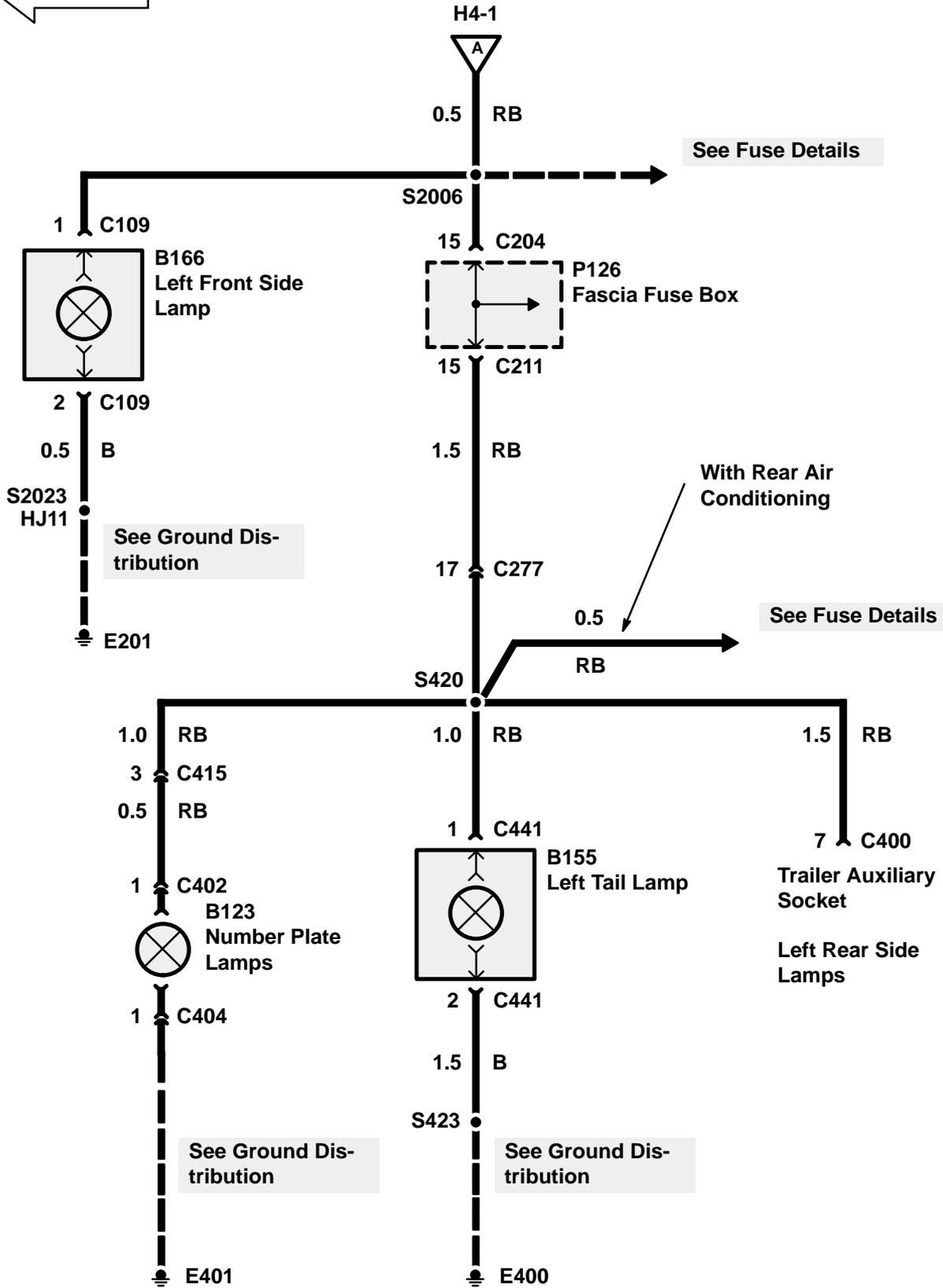
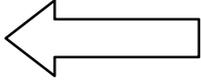


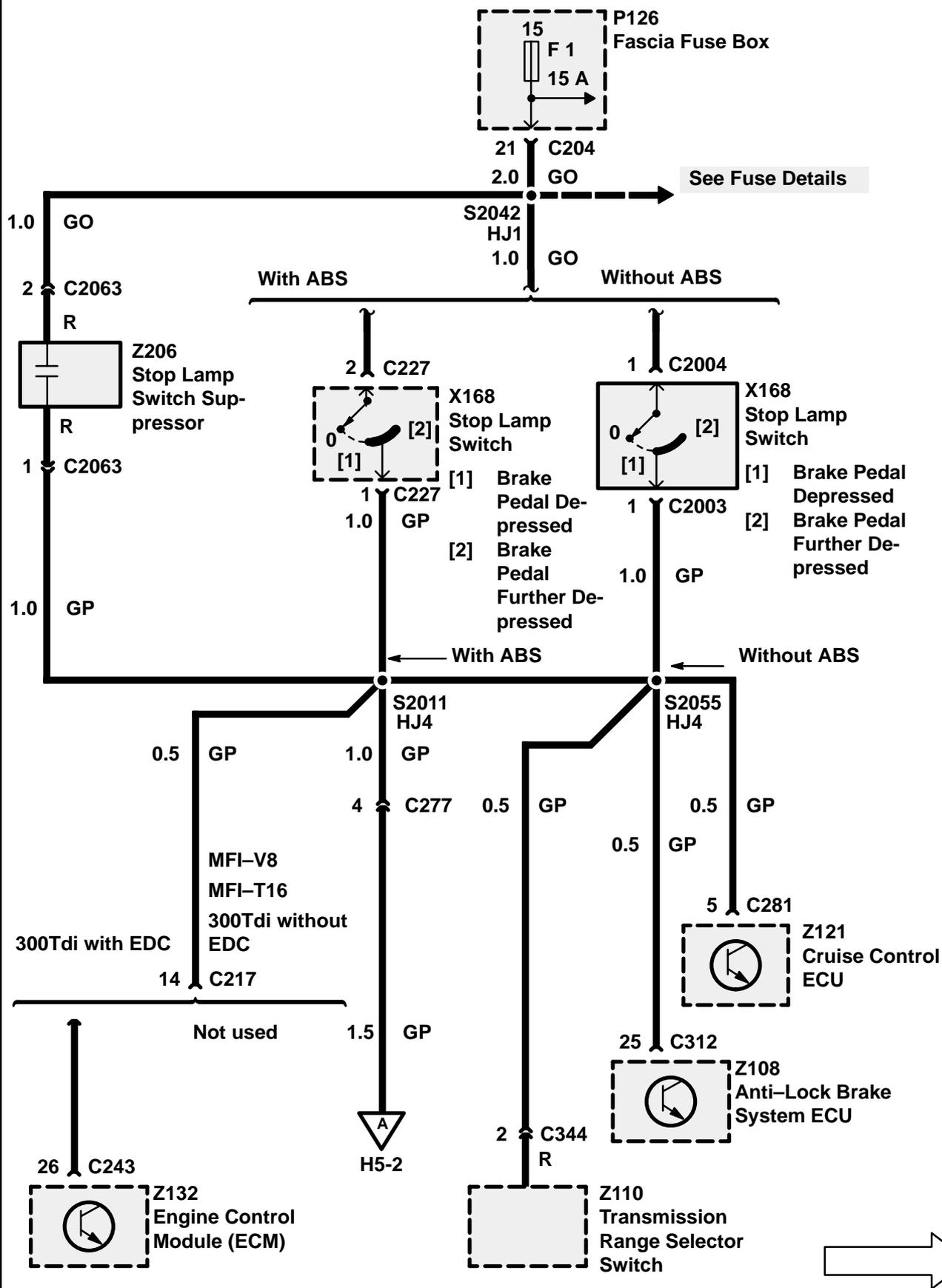


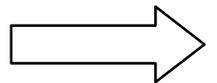
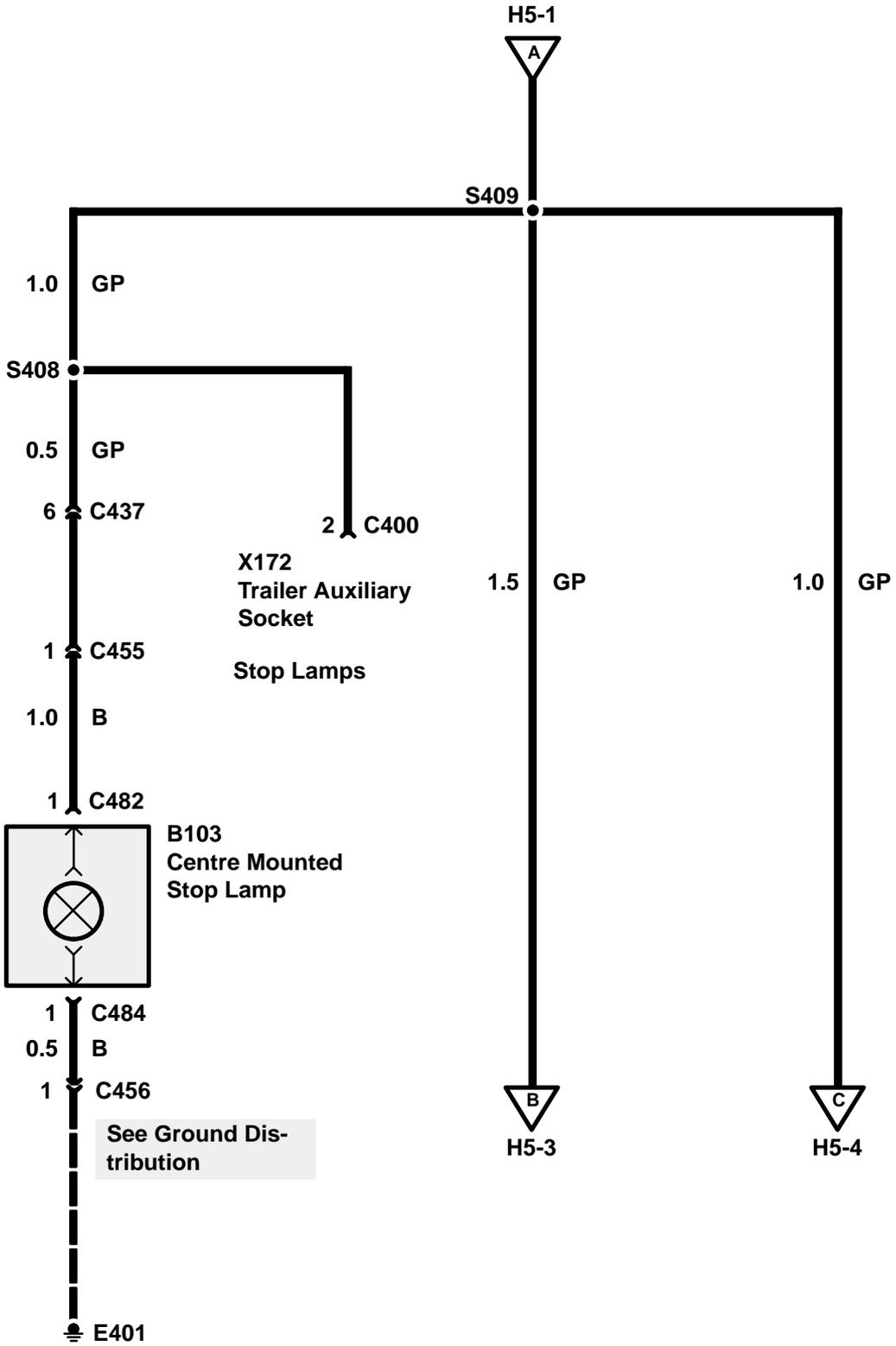
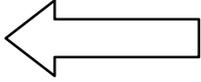


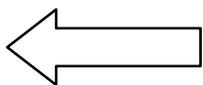
H4 ETM

DISCOVERY

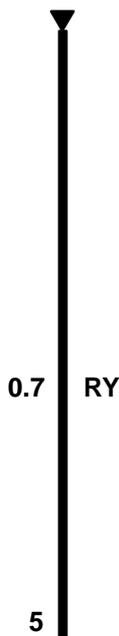




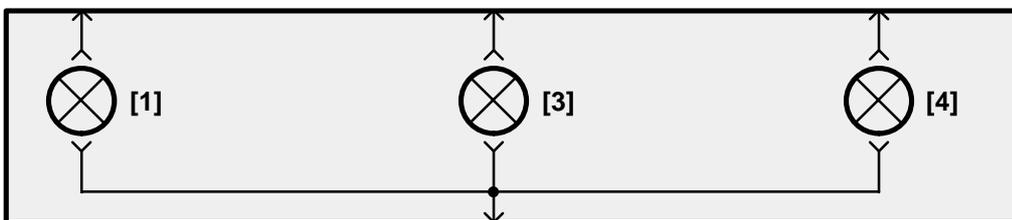
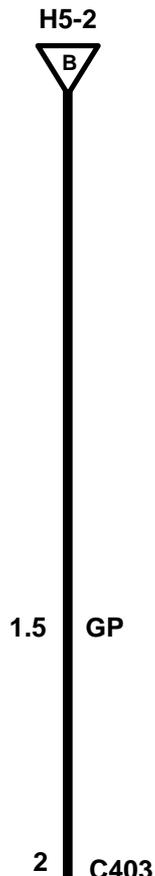
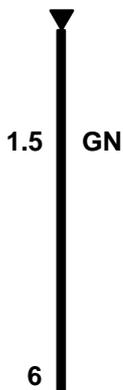




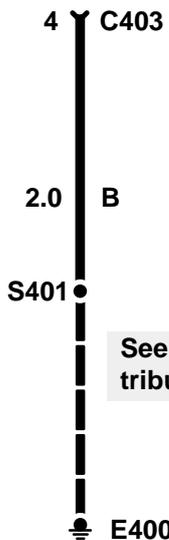
Rear Fog Guard Lamps



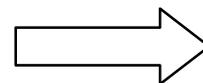
Reversing Lamps

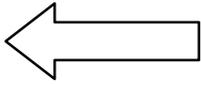


- B121
Left Rear Lamp
Assembly
- [1] Rear Fog Lamp
 - [3] Reverse Lamp
 - [4] Stop Lamp

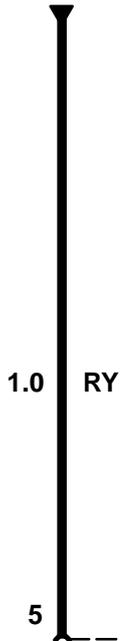


See Ground Dis-tribution

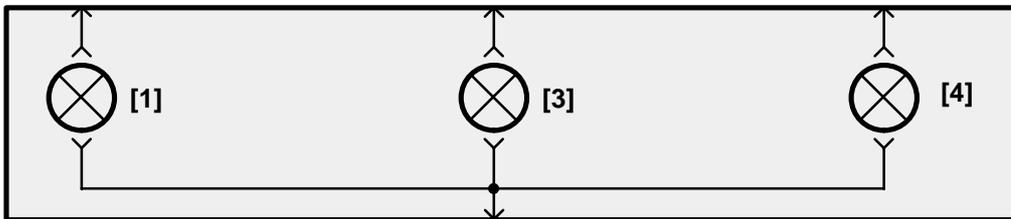
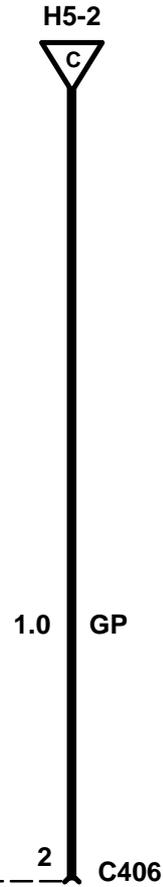




Rear Fog Guard Lamps

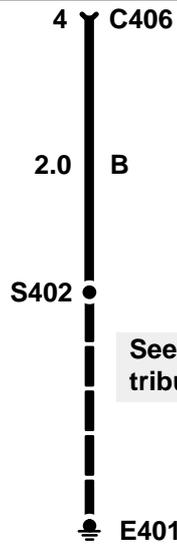


Reversing Lamps



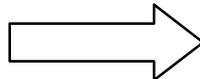
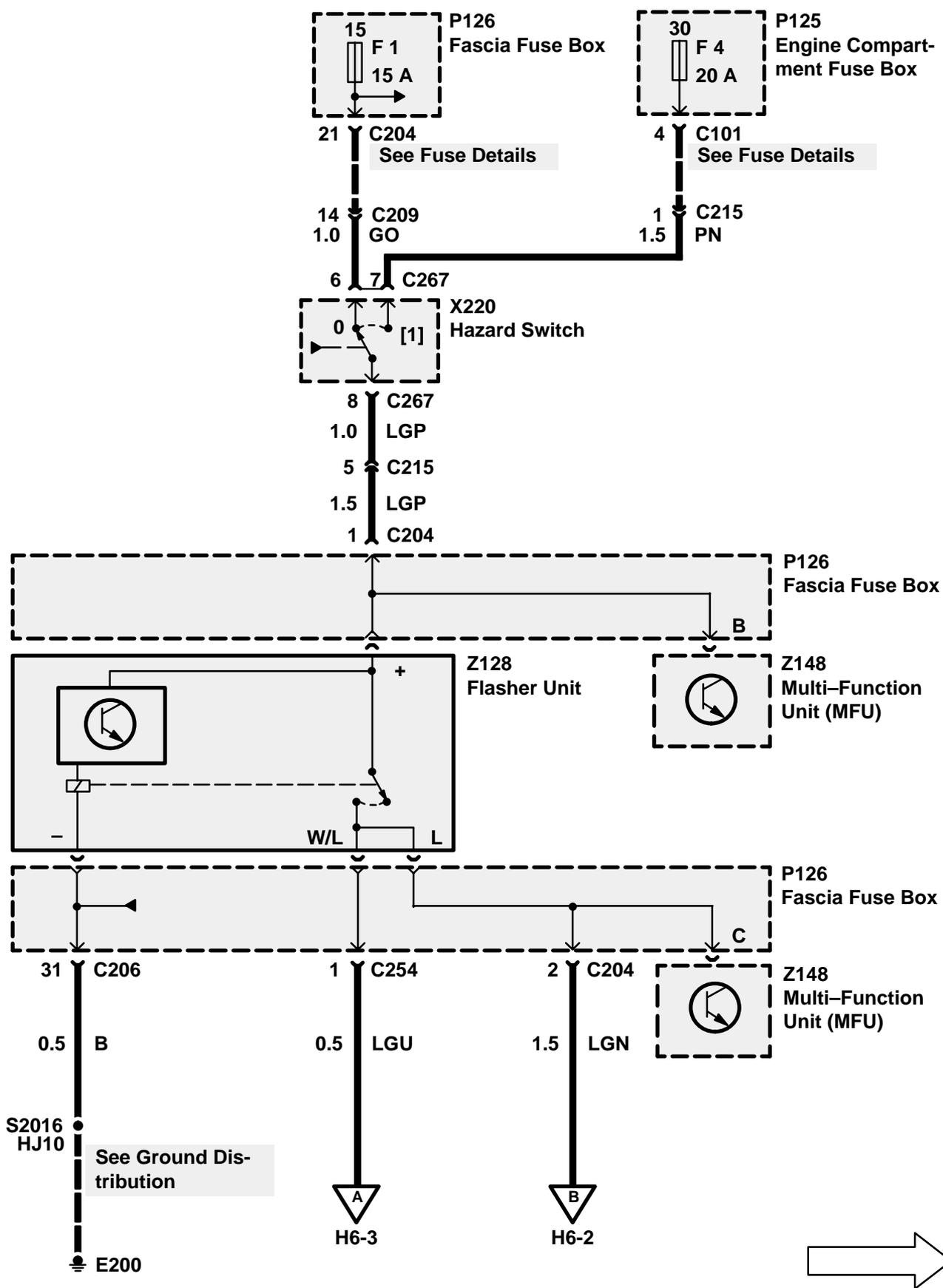
B136
Right Rear Lamp
Assembly

- [1] Rear Fog Lamp
- [3] Reverse Lamp
- [4] Stop Lamp



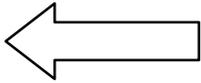
See Ground Dis-
tribution



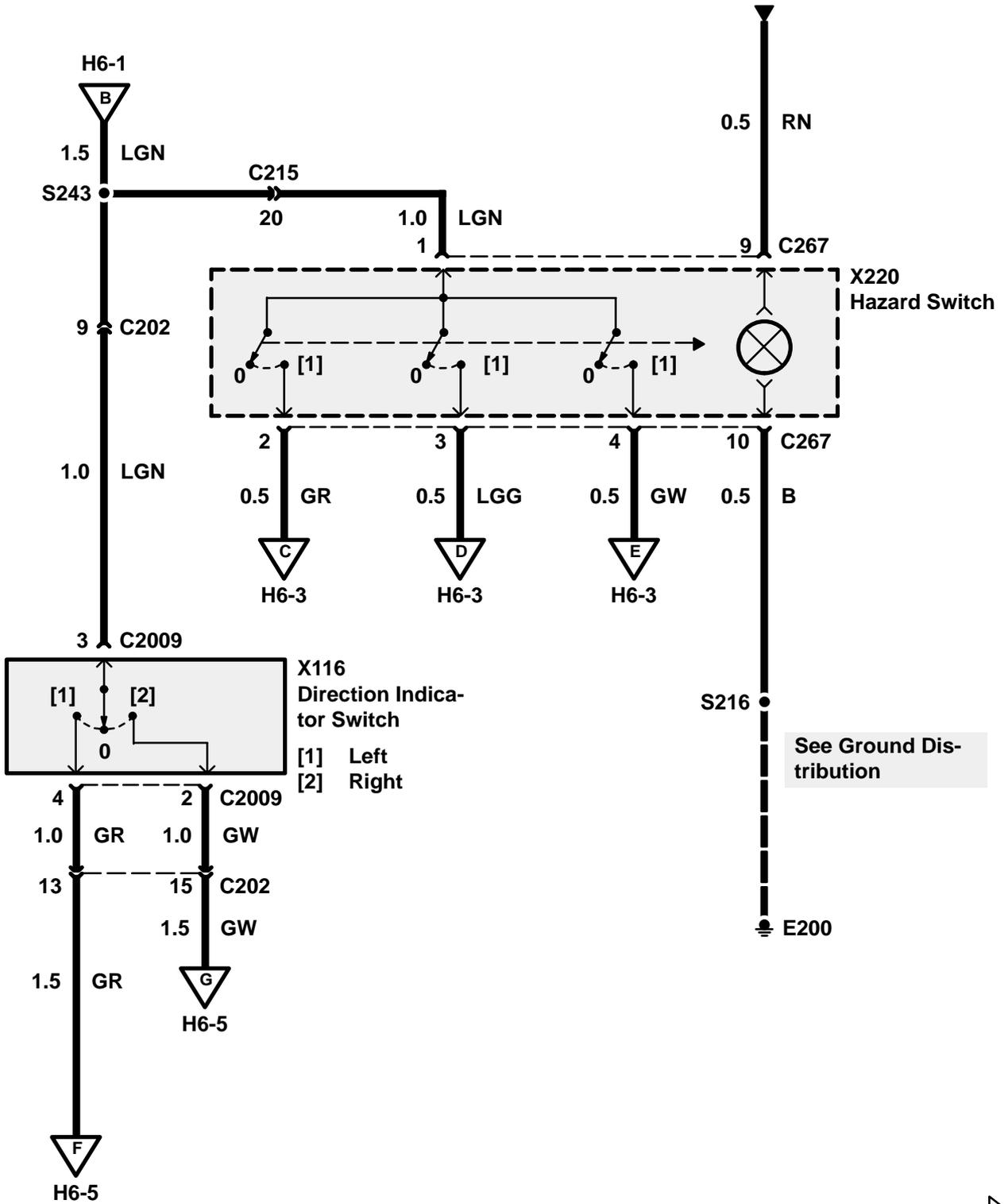


H6 ETM

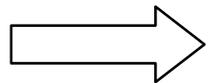
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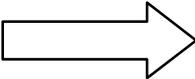
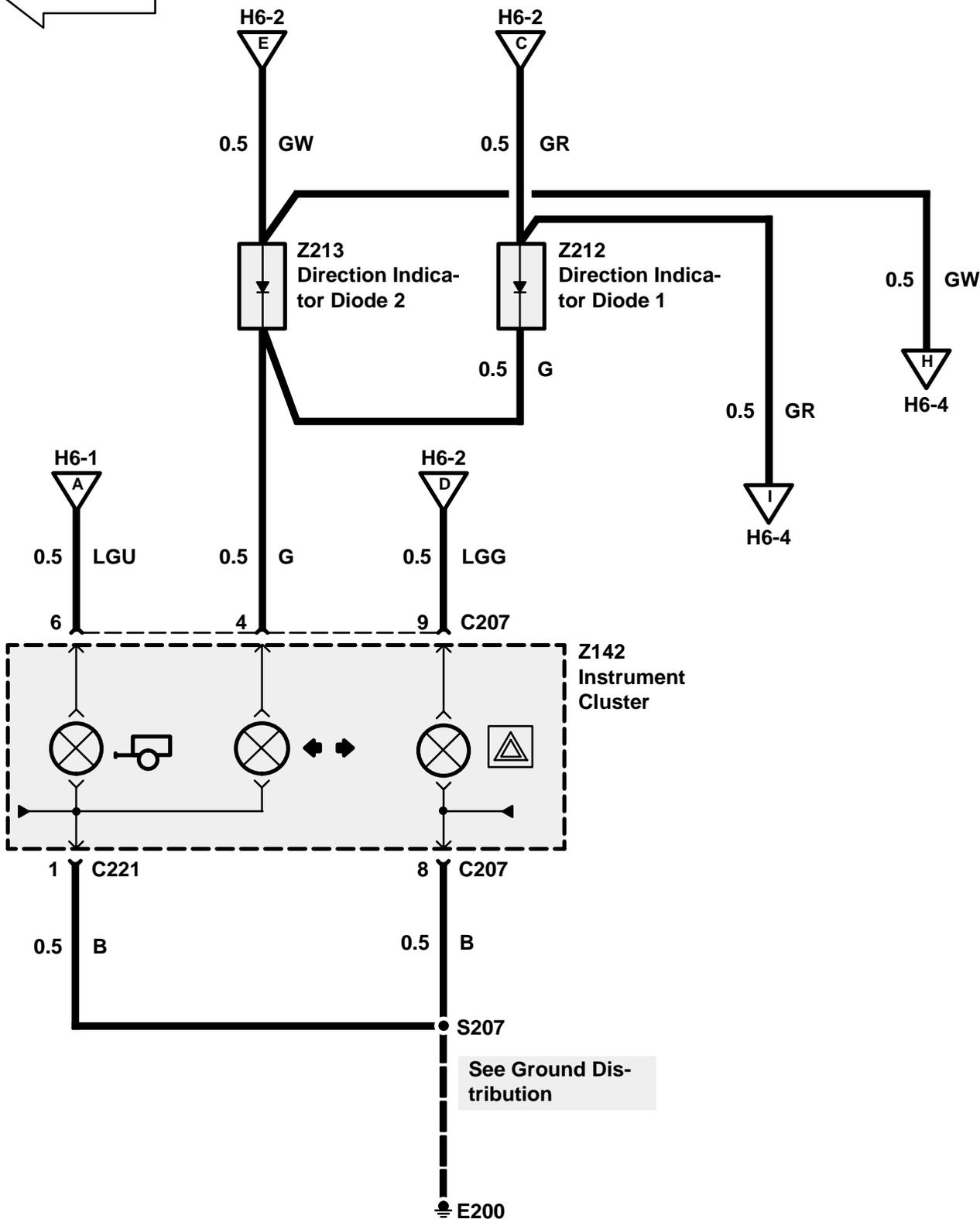
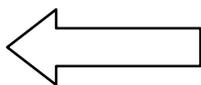


Interior Lamps



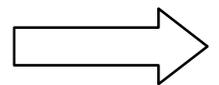
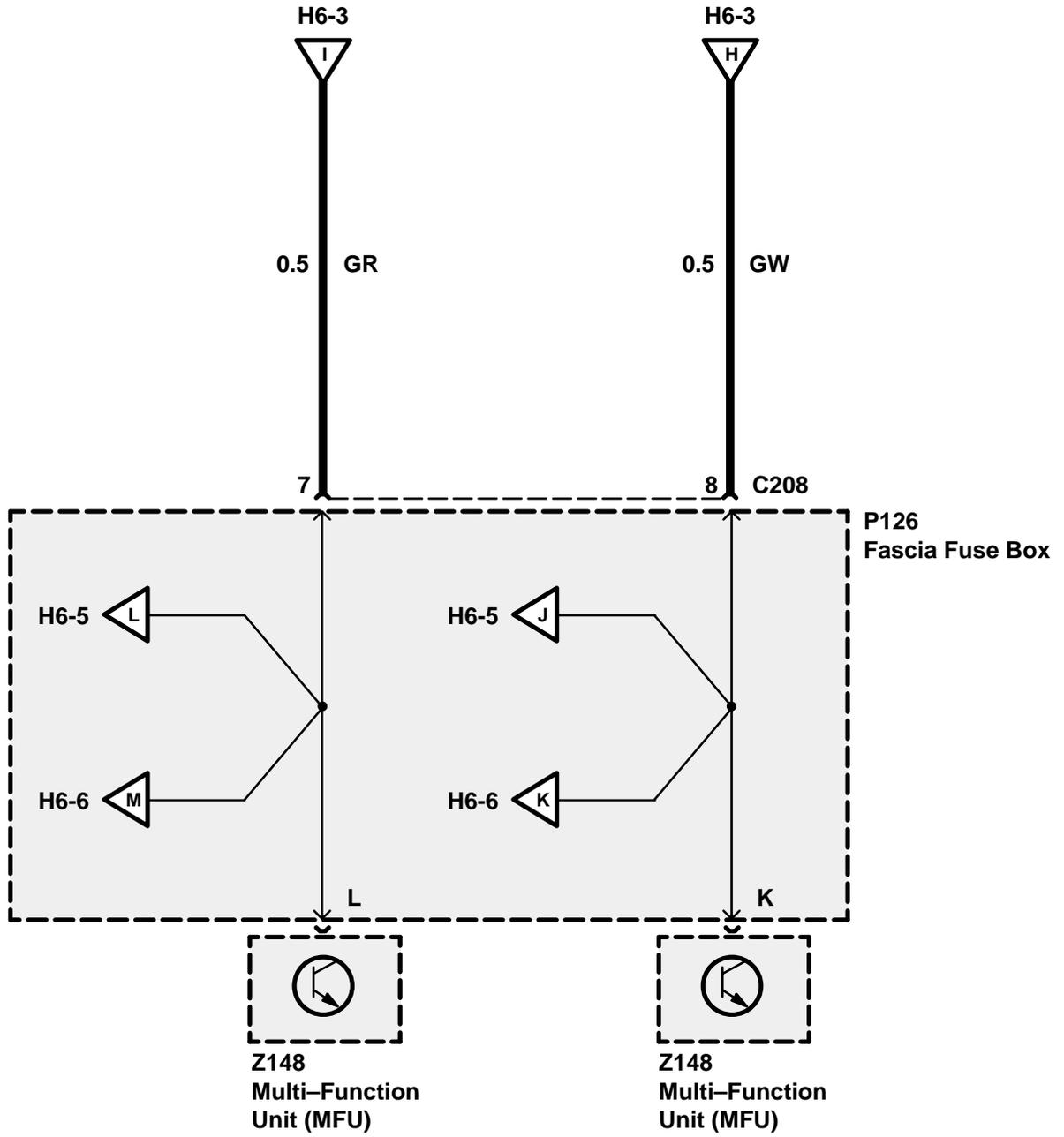
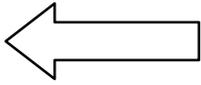
See Ground Distribution

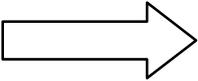
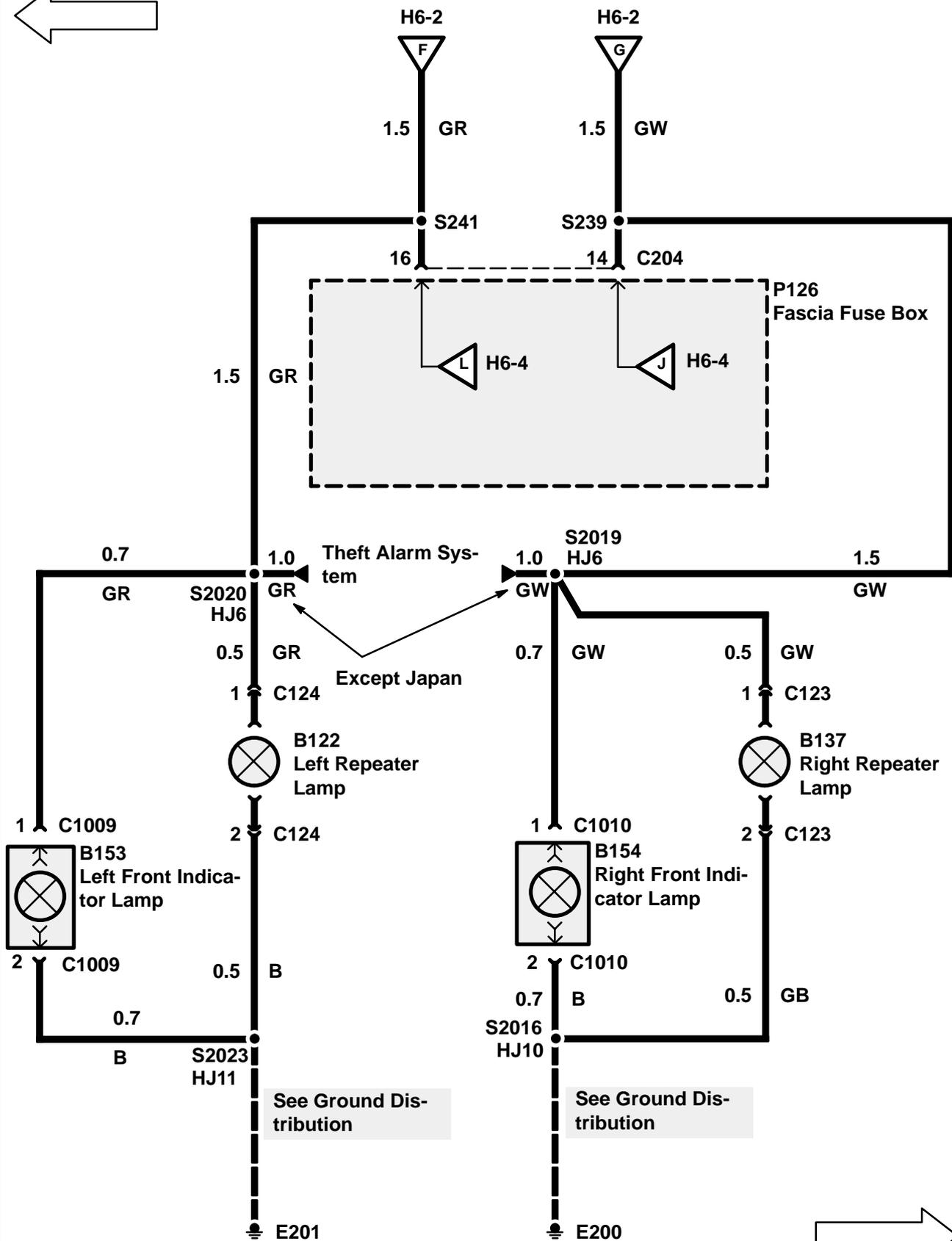
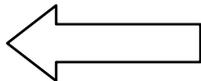


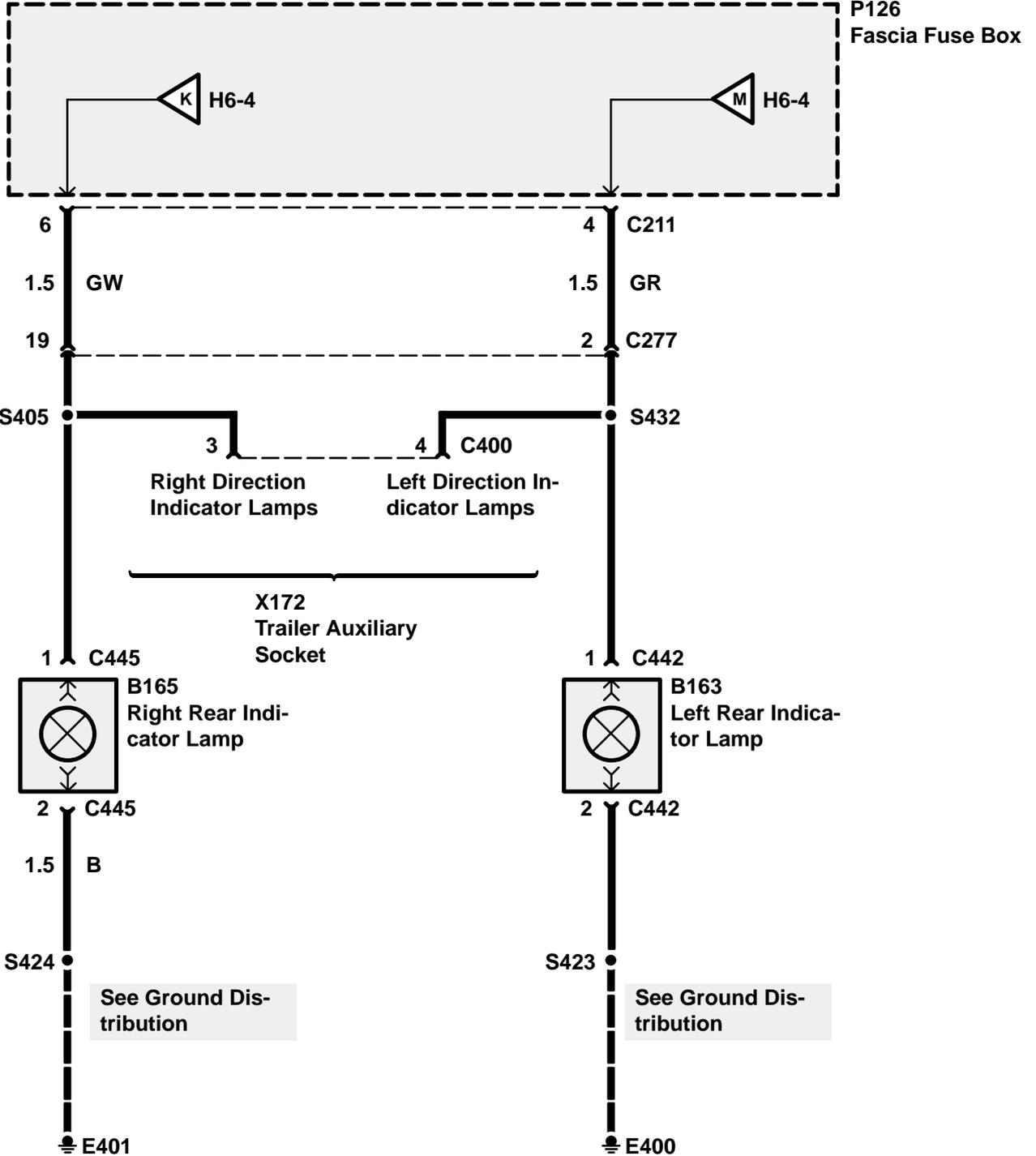
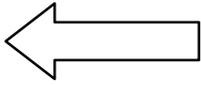


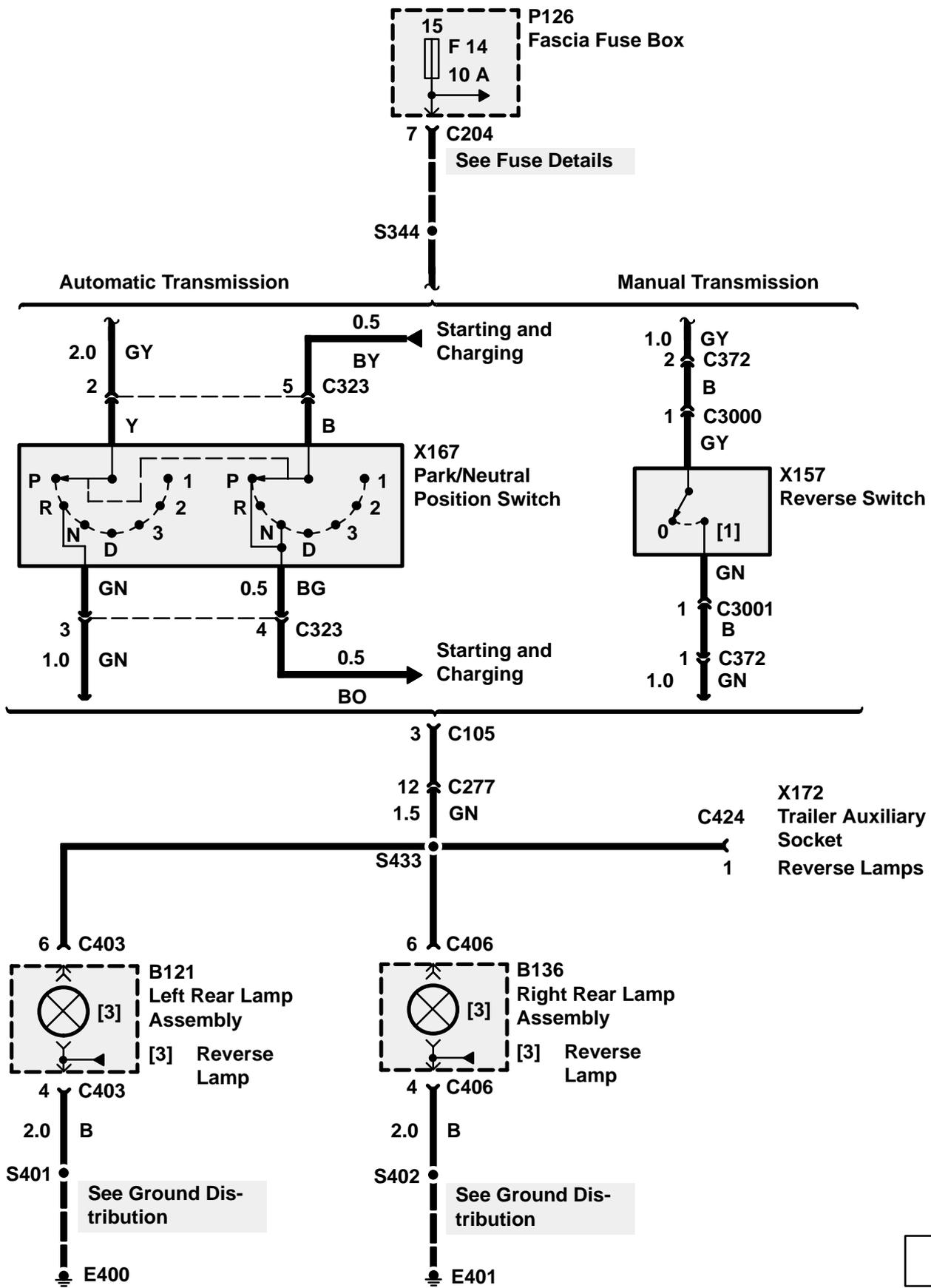
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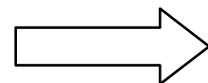
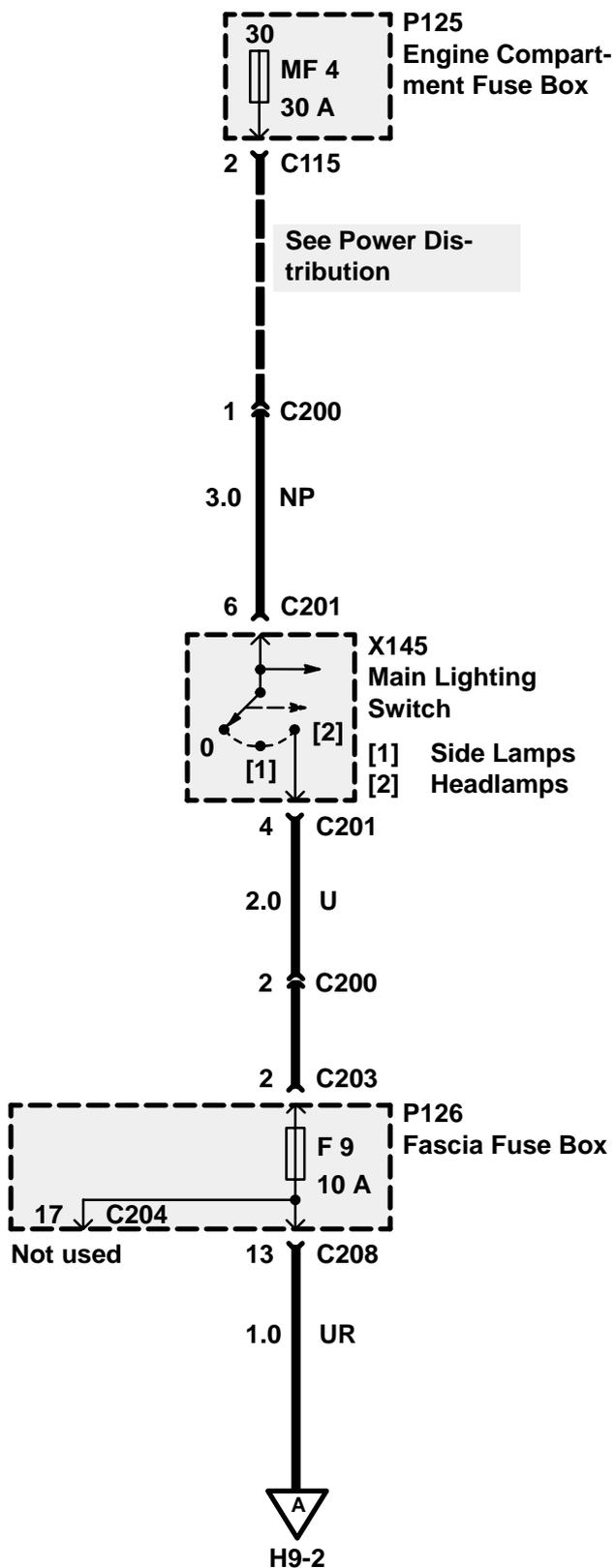
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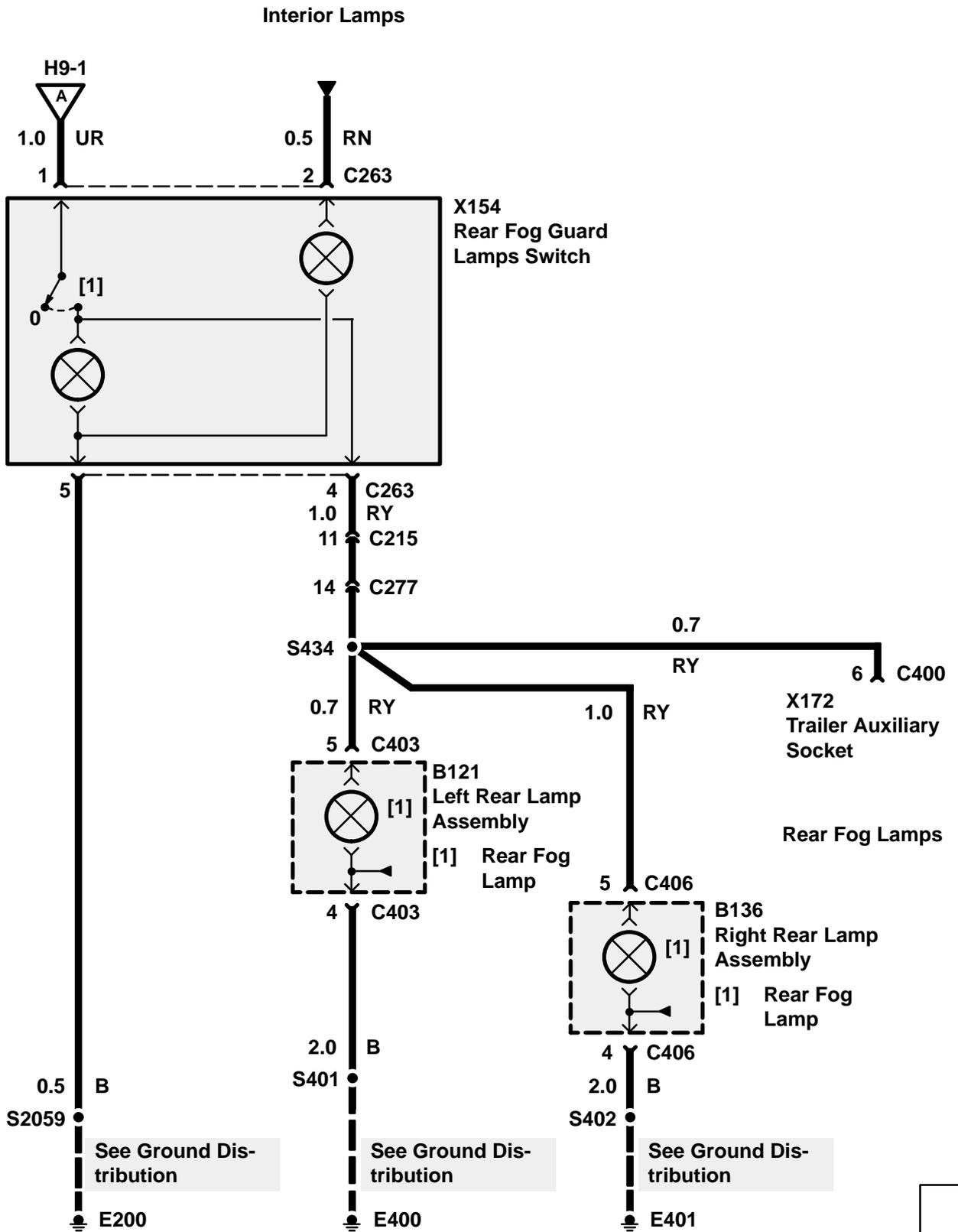
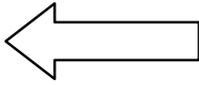


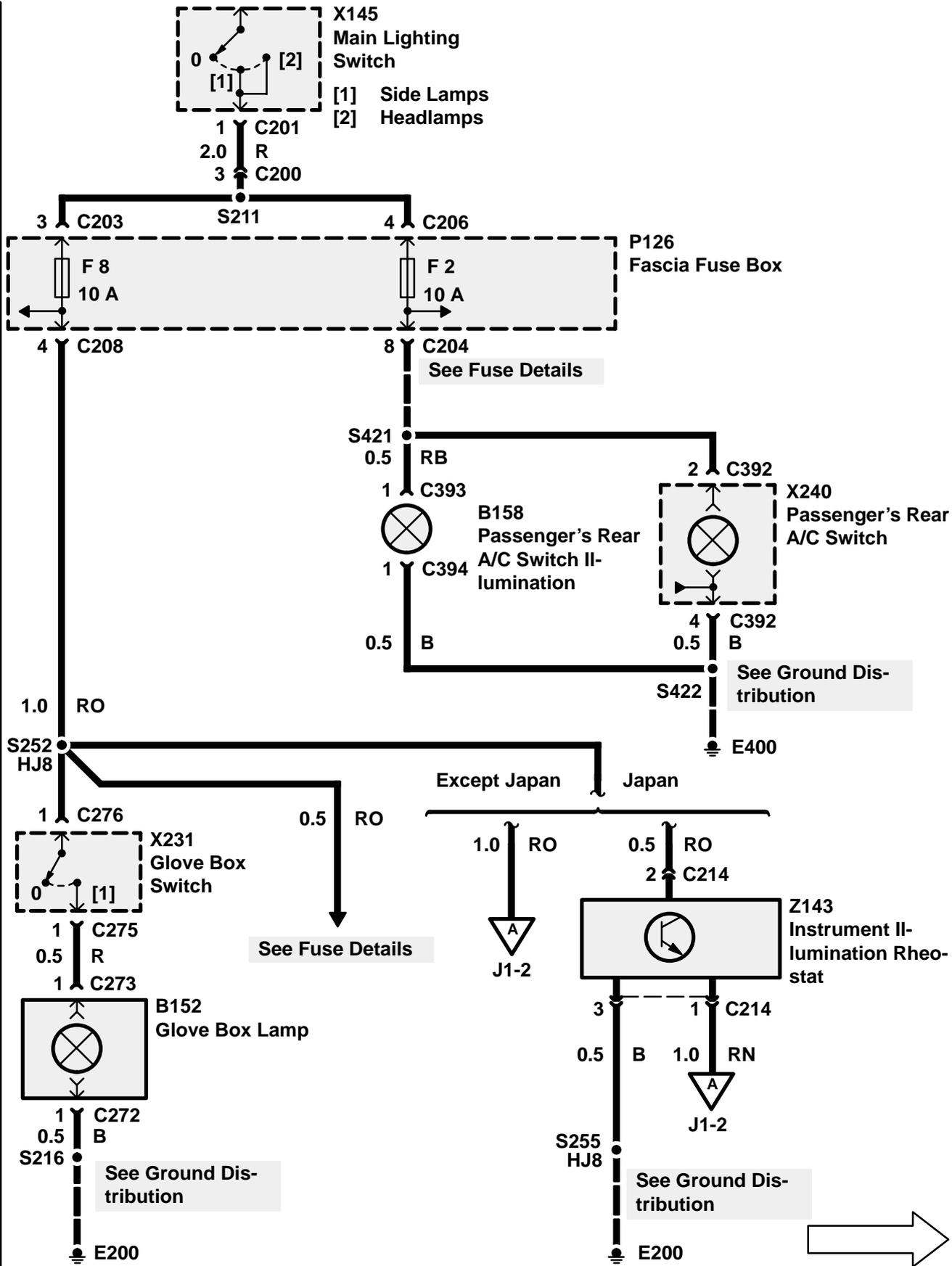






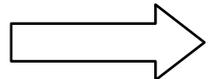
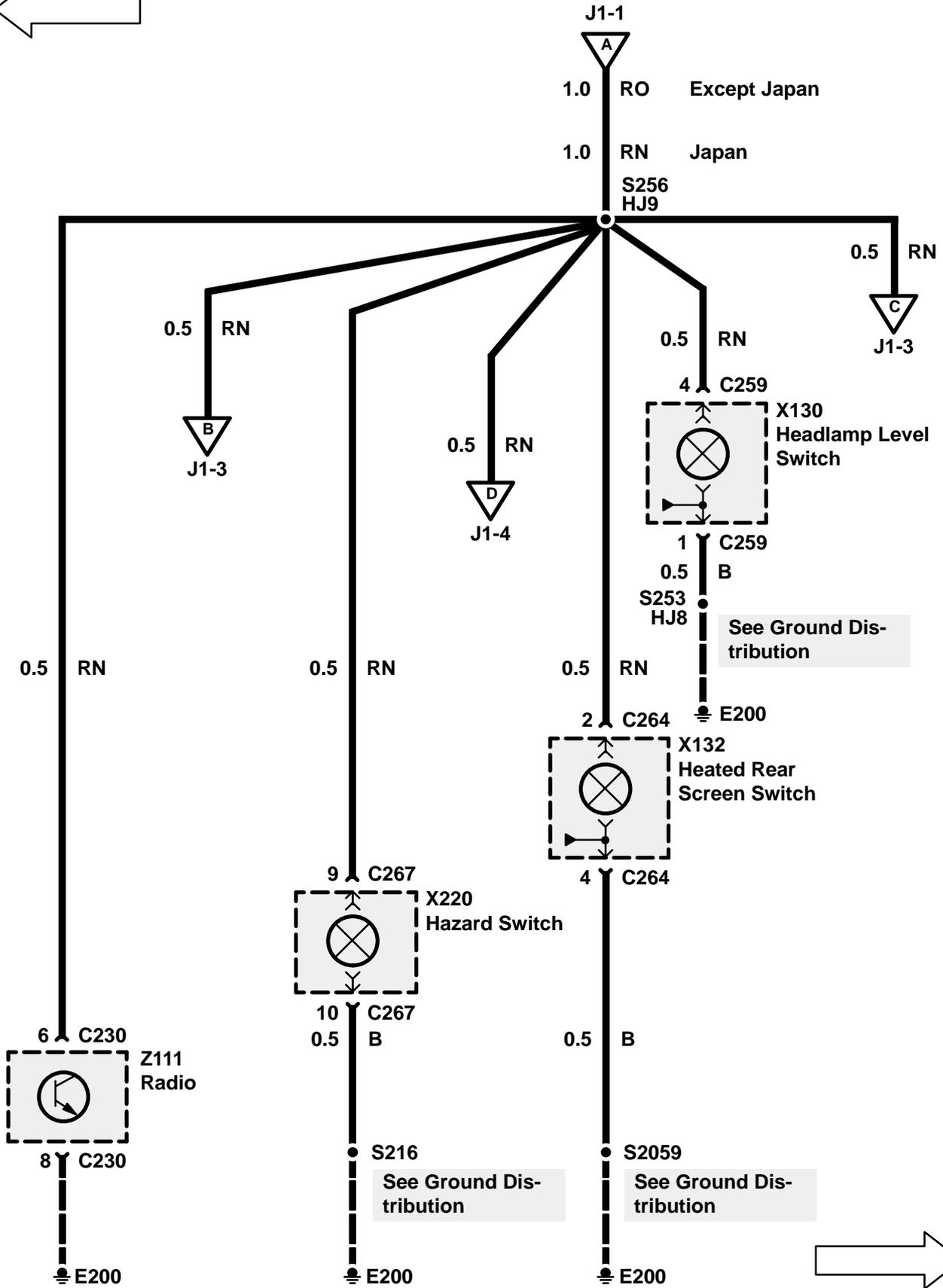
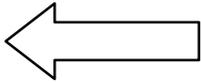


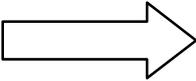
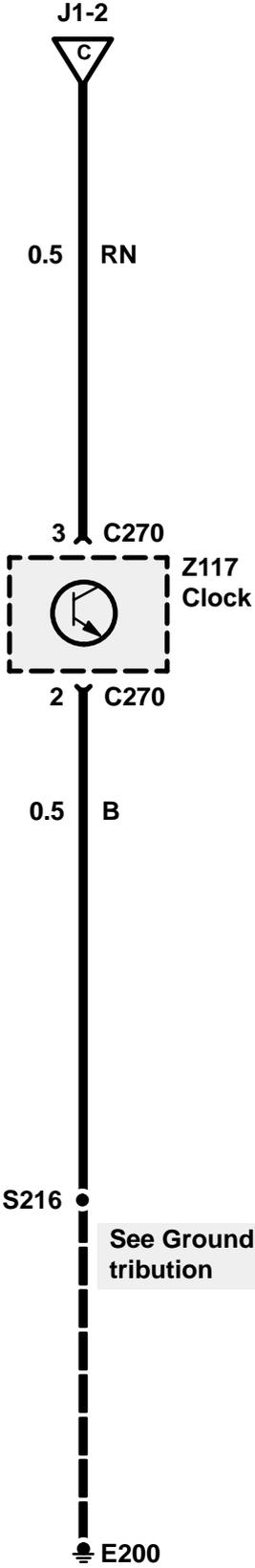
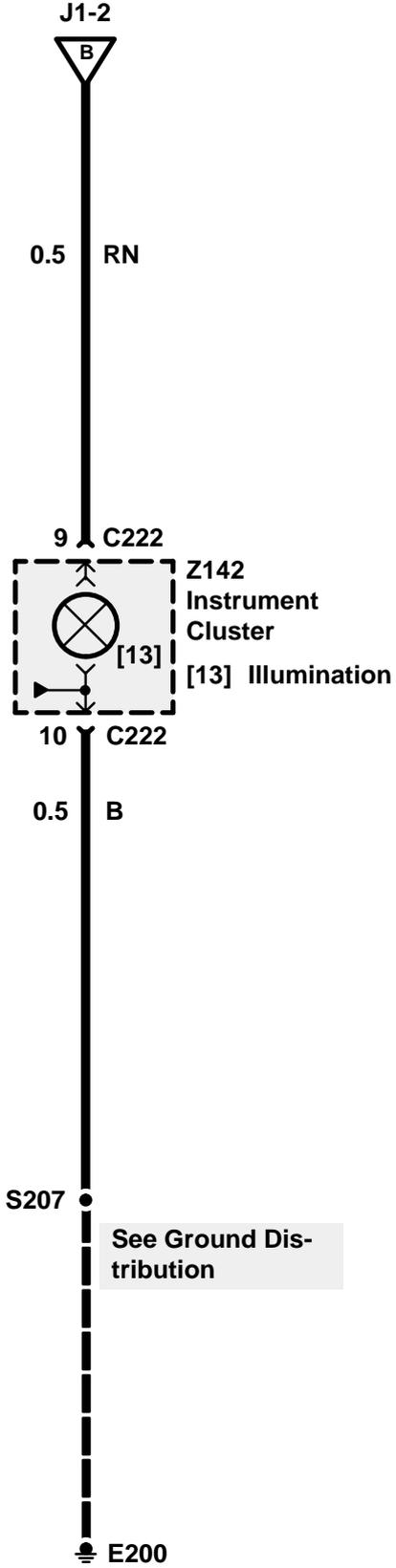
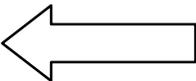




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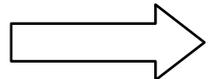
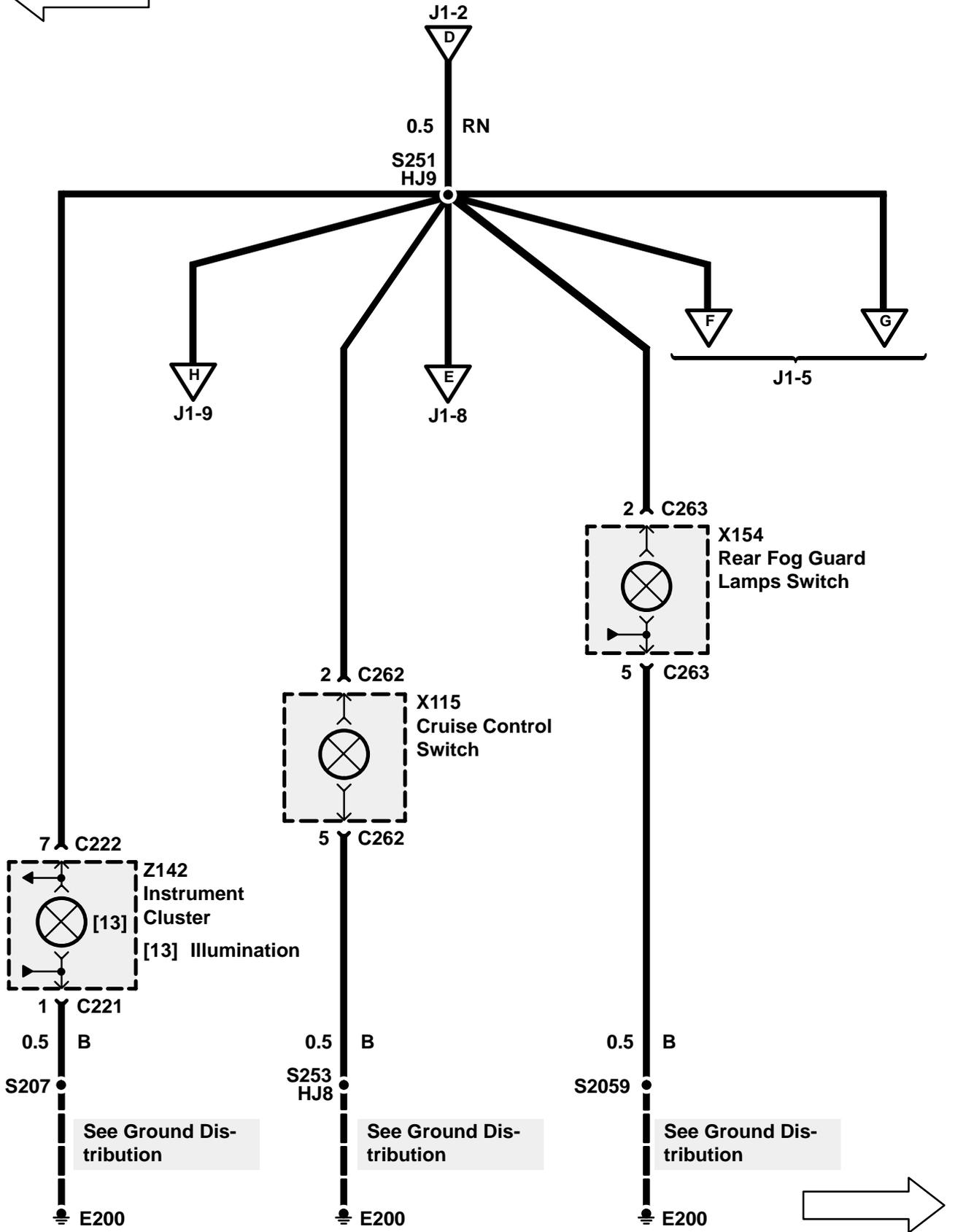
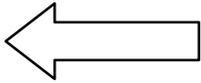
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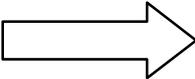
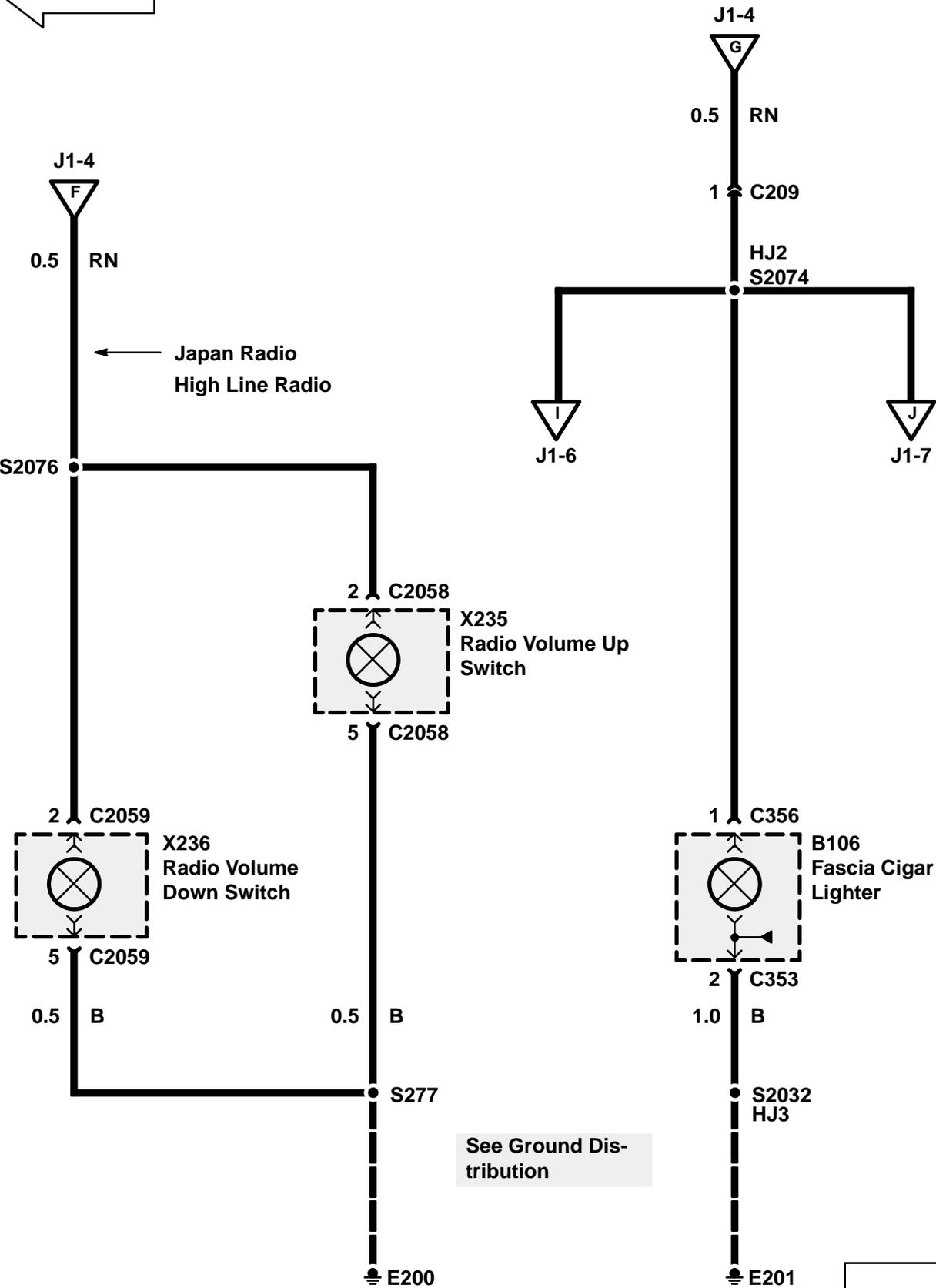


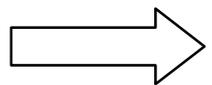
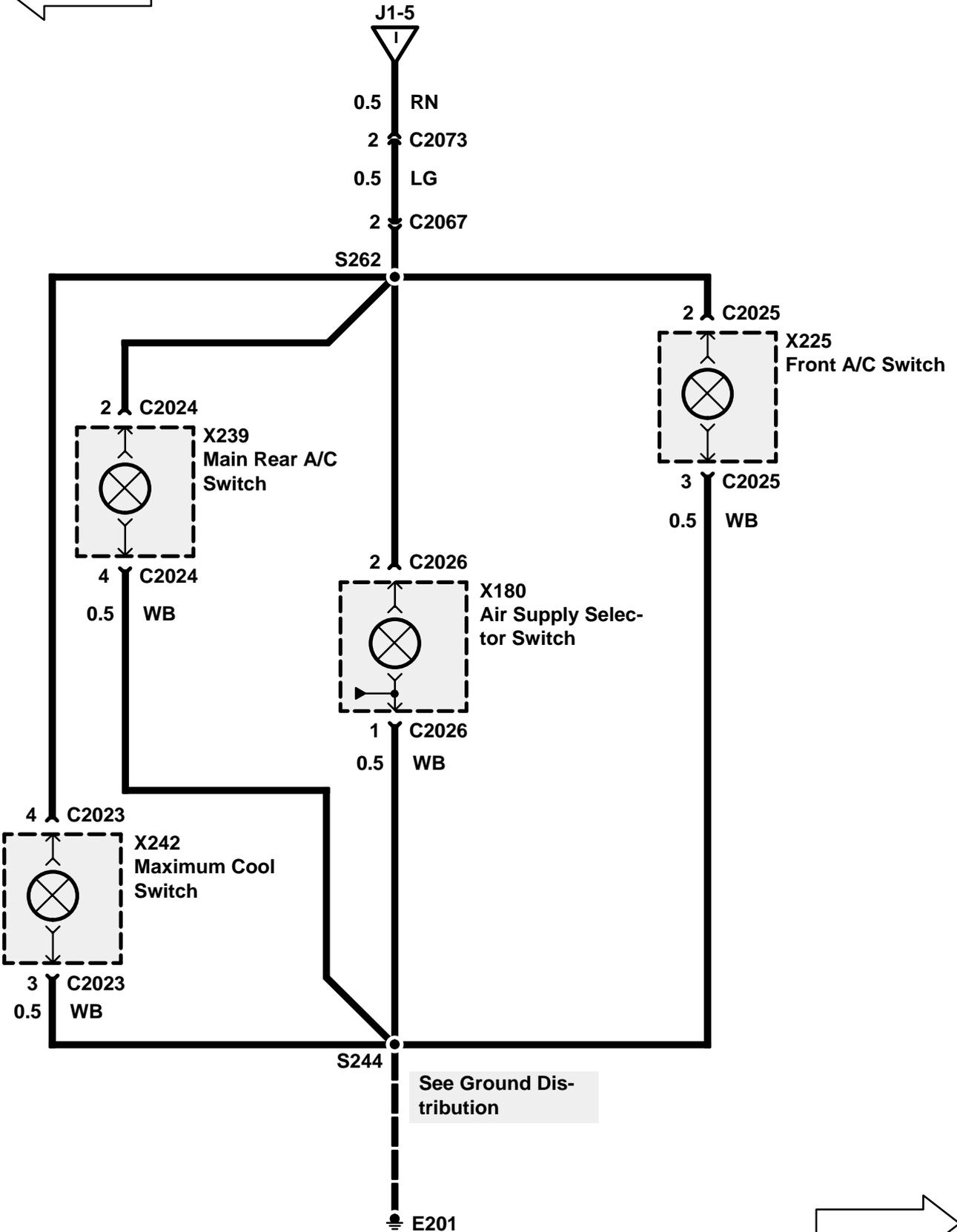


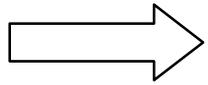
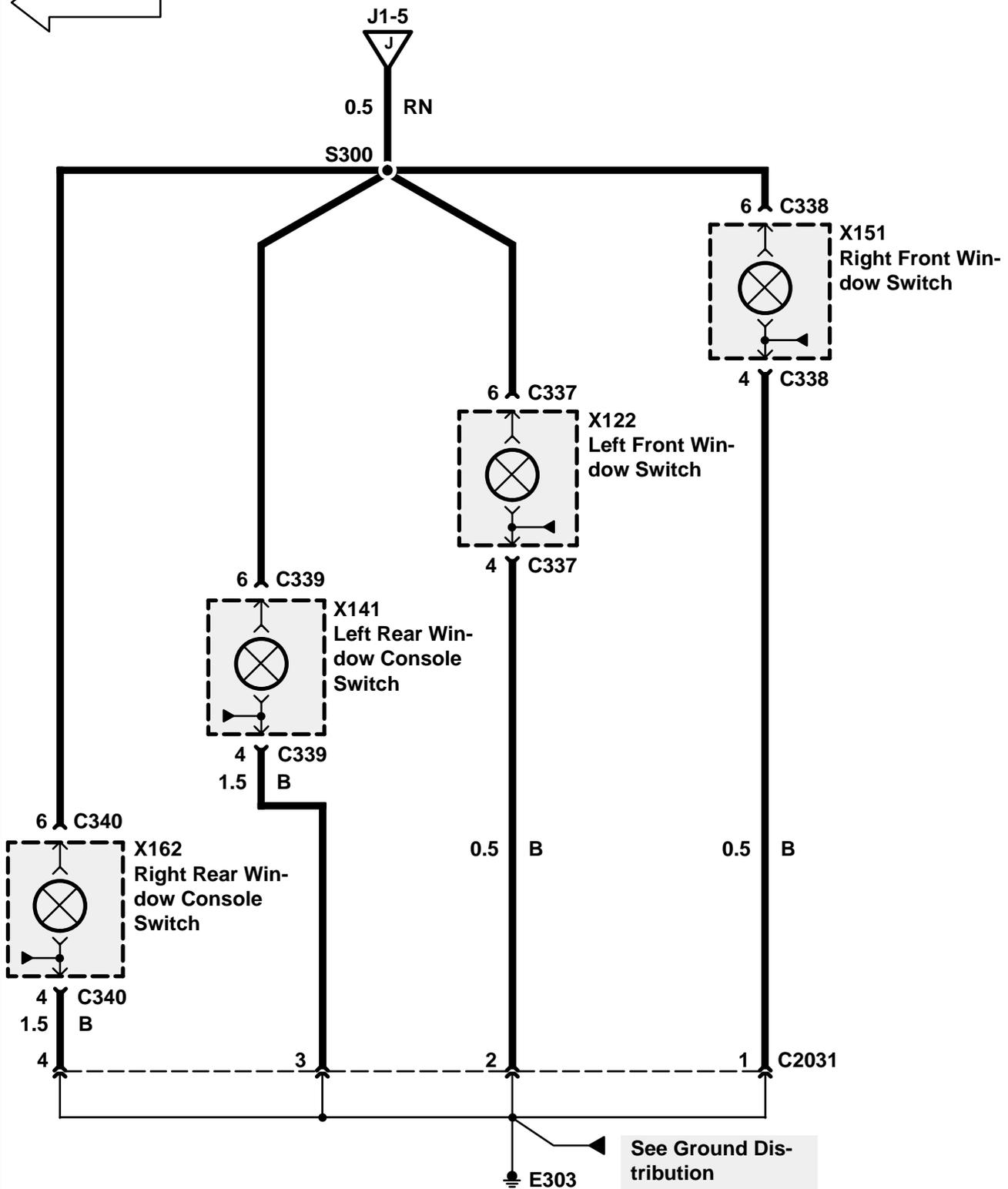
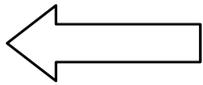
J1 ETM

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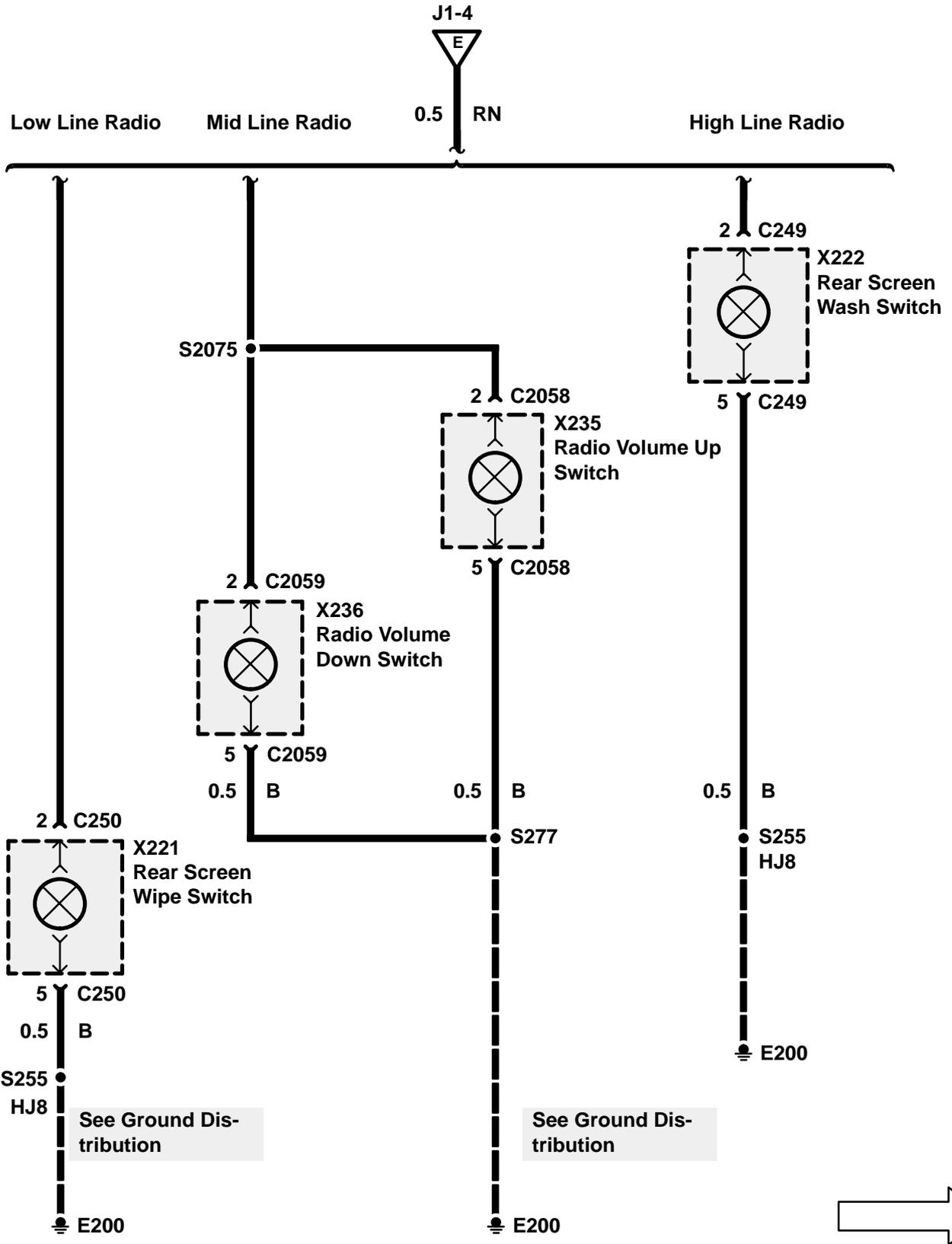


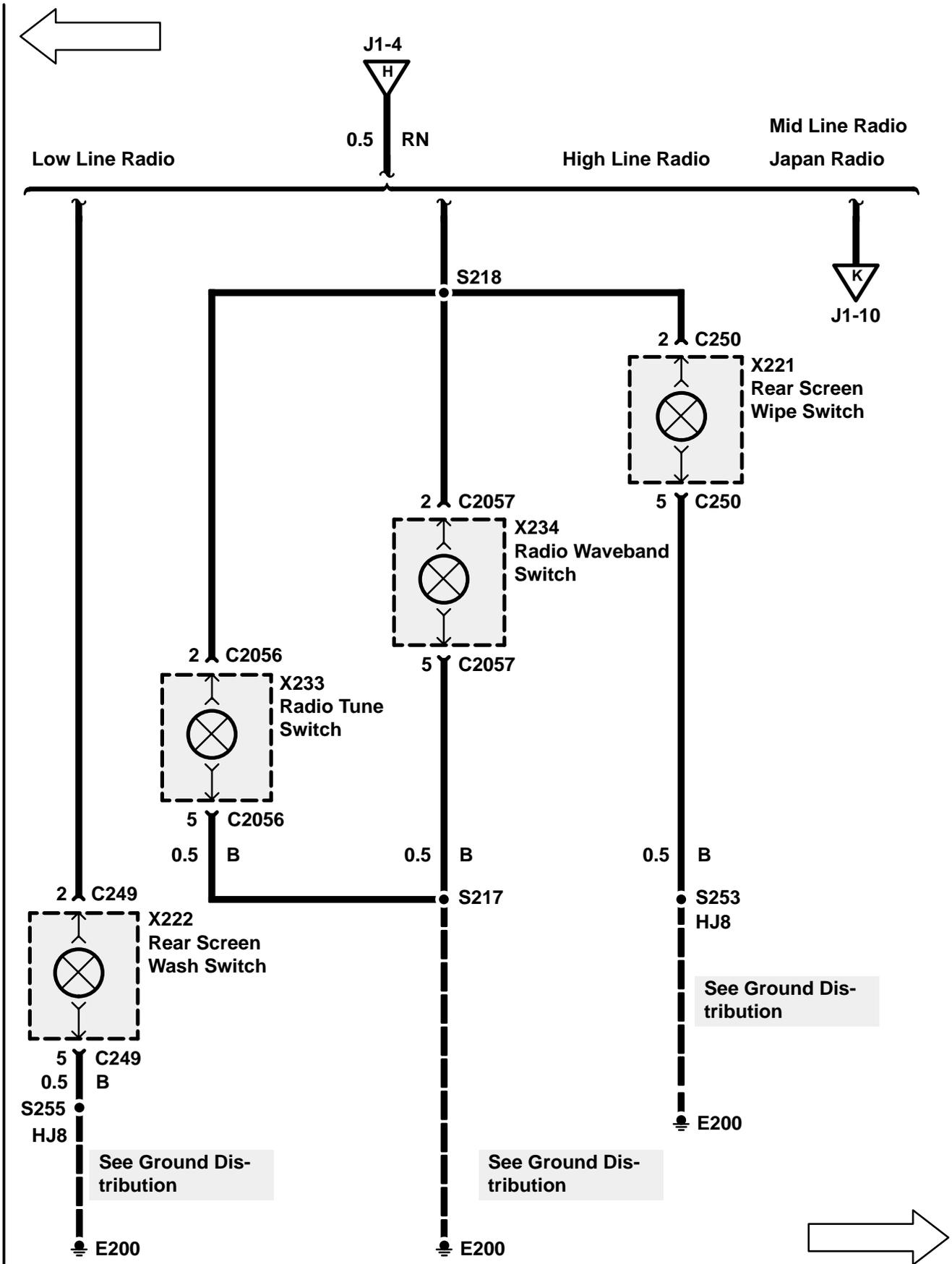


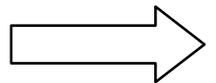
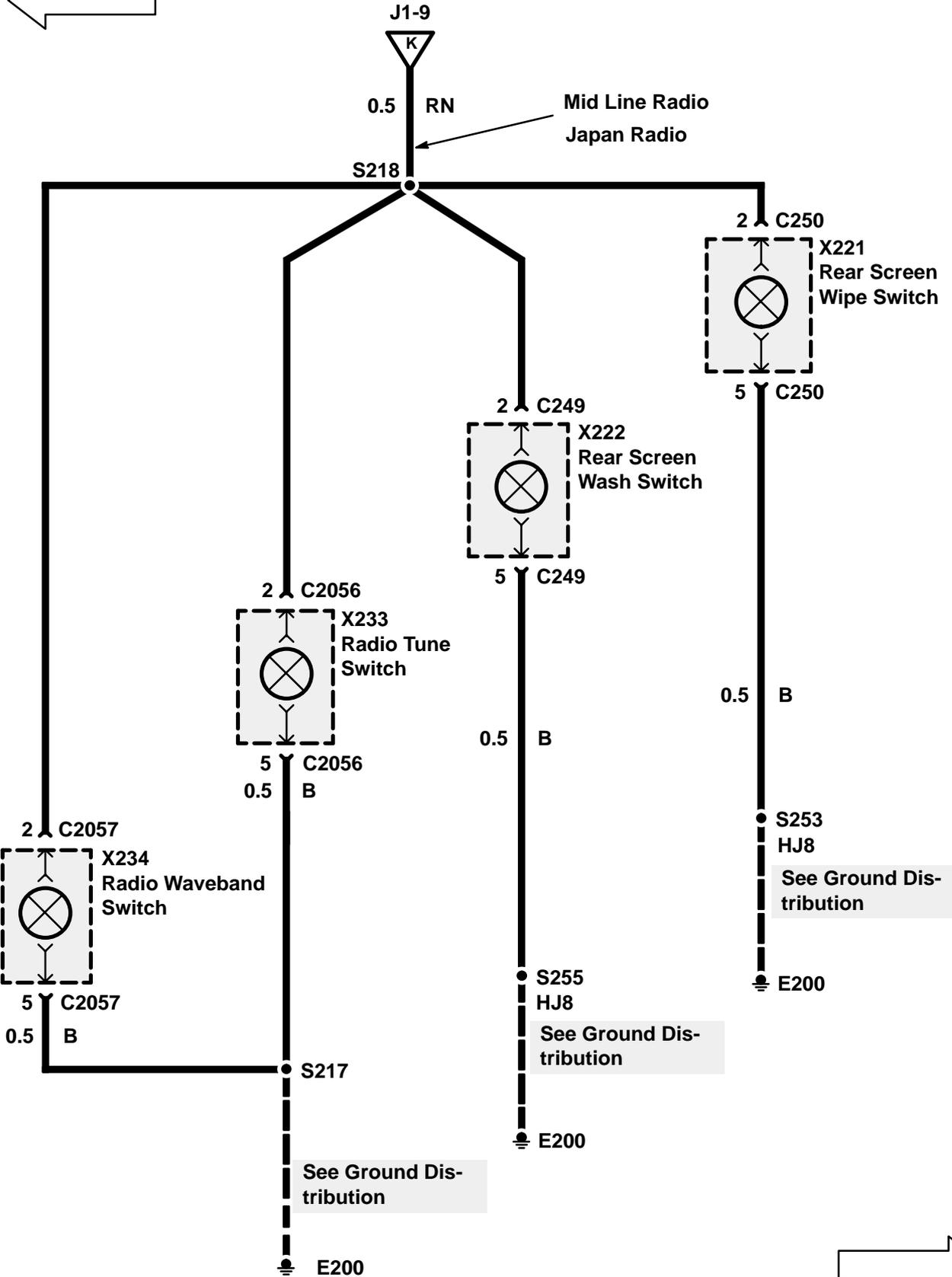
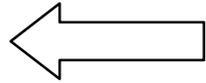


J1 ETM

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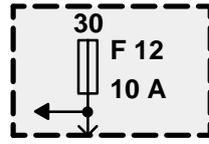
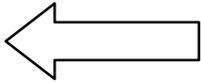






J1 ETM

DISCOVERY



P126
Fascia Fuse Box

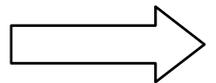
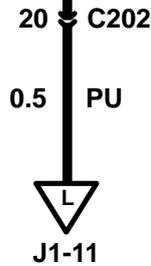
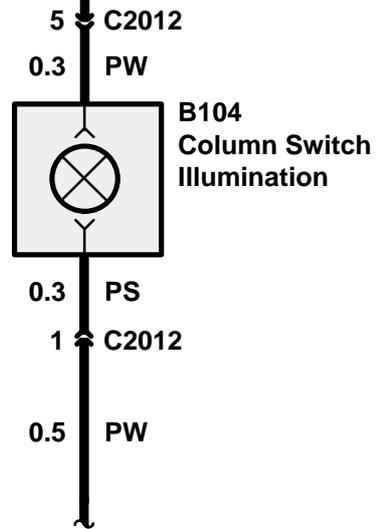
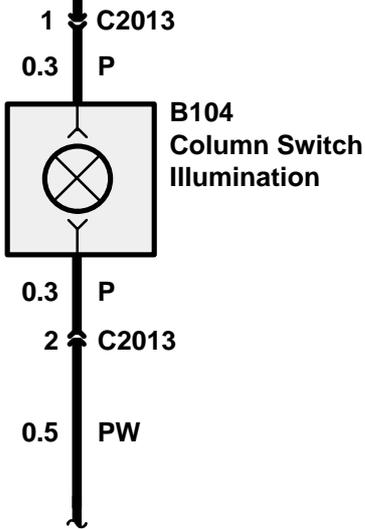
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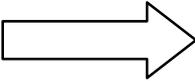
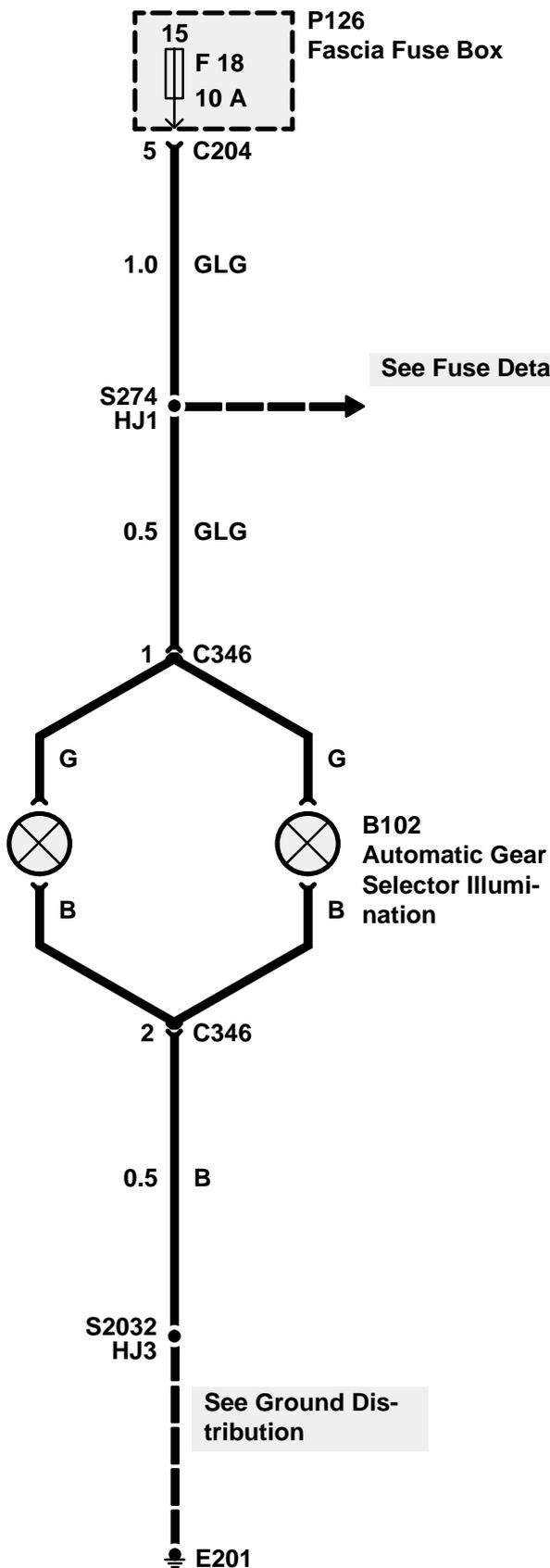
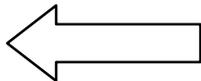
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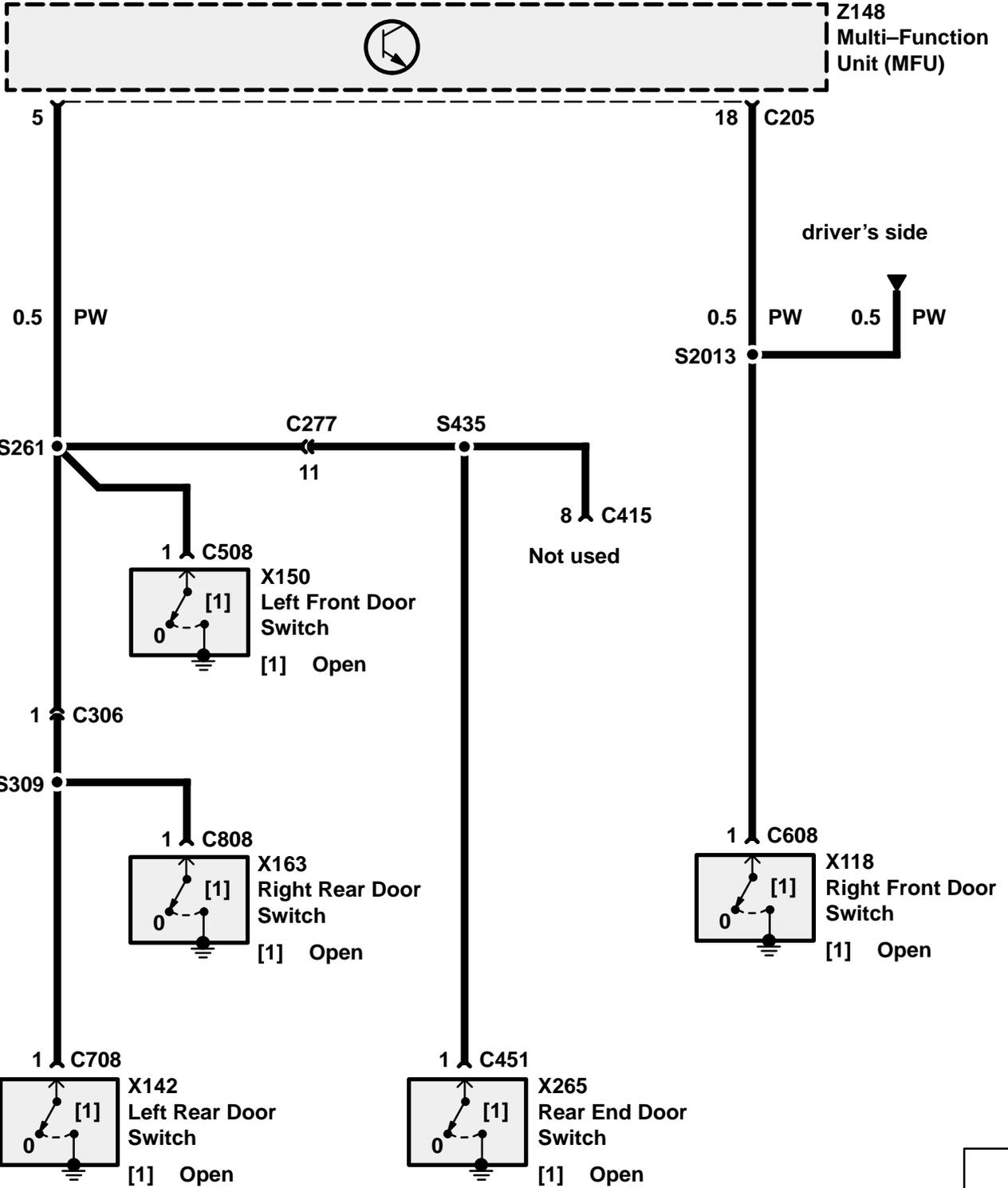
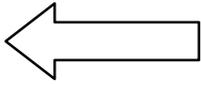
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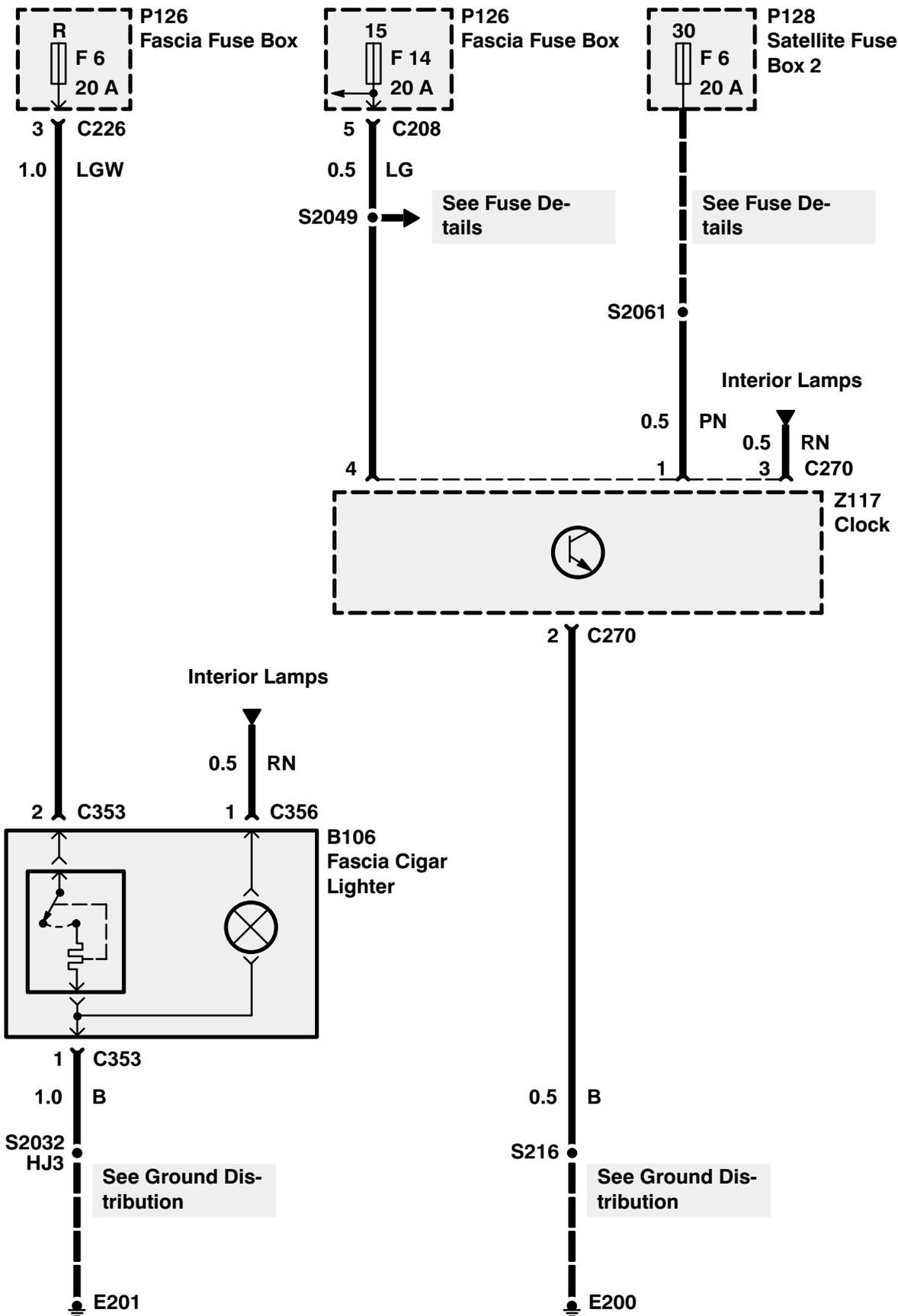
Without Shift Interlock

With Shift Interlock









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 Front Blower Motor Relay (K192).

When the Front Fan Speed Switch (X247) is turned to position I, ground is applied to terminal 85 of the Front Blower Motor Relay (K192). 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 Front Blower Resistor Unit (Z214). The Front Blower Motor (M101) then runs at low speed. When the Front Fan Speed Switch (X247) is turned to position II, the Front Blower Motor Relay (K192) 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 Front Blower Resistor Unit (Z214) and the Front Fan Speed Switch (X247). The motor then runs at the low-medium speed. When the Front Fan Speed Switch (X247) is turned to position III, the Front Blower Motor Relay (K192) remains energized. Ground is now applied to the Front Blower Motor (M101) through one resistor of the Front Blower Resistor Unit (Z214) and the Front Fan Speed Switch (X247). The motor then runs at the medium-high speed. When the Front Fan Speed Switch (X247) is turned to position IV, the Front Blower Motor Relay (K192) remains energized. Ground is now applied directly to the Front Blower Motor (M101) through the Front Fan Speed Switch (X247). 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). When the Air Supply Selector Switch is moved to the Fresh Air position, ground is applied to the 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.

Rear Blower

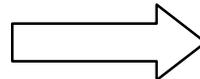
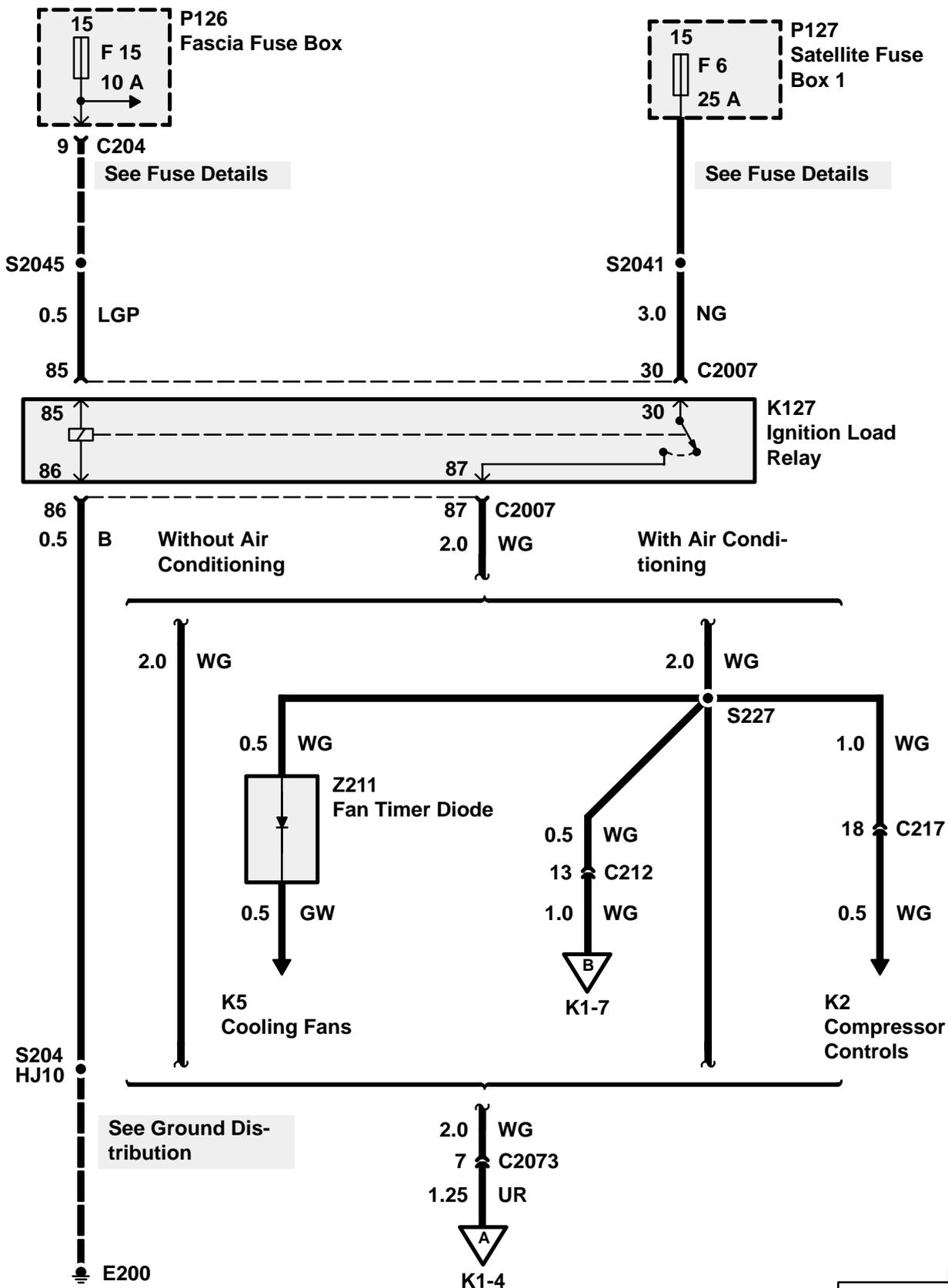
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Rear Blower Motor Relay (K193), the Rear A/C Fan Speed Relay (K205) and the Rear A/C Control Relay (K194).

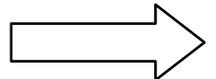
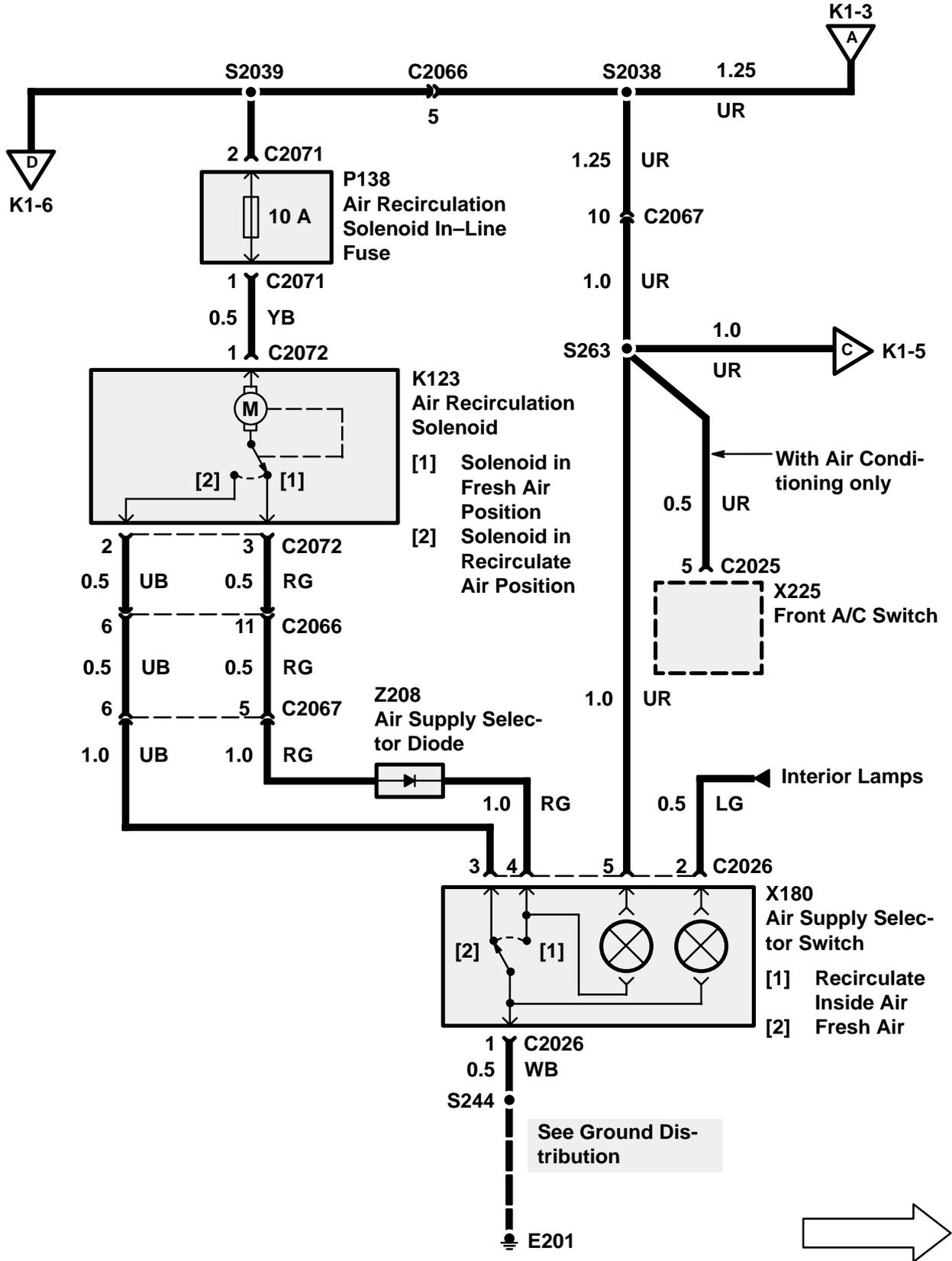
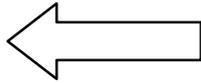
When the Rear A/C System is turned on, the Rear A/C Switch Amplifier provides ground to the Rear A/C Control Relay (K194). The relay is energized, applying ground to the Rear A/C Fan Speed Relay (K205). The Rear A/C Fan Speed Relay (K205) then energizes. When the Passenger's Rear Fan Speed Switch (X246) is turned to position I, ground is applied to terminal 85 of the Rear Blower Motor Relay (K193) through the closed switch contacts of the Rear A/C Fan Speed Relay (K205). The Rear Blower Motor Relay (K193) energizes, applying battery voltage to terminal 1 of the Rear Blower Motor (M145).

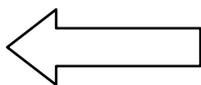
Ground is applied to the Rear Blower Motor (M145) through all three resistors of the Rear Blower Resistor Unit (Z215). The Rear Blower Motor (M145) then runs at low speed. When the Passenger's Rear Fan Speed Switch (X246) is turned to position II, the Rear Blower Motor Relay (K193) remains energized. Battery voltage is still applied to terminal 1 of the Rear Blower Motor (M145). Ground is now applied to the Rear Blower Motor (M145) through two resistors of the Rear Blower Motor Resistor Unit (Z215) and the Passenger's Rear Fan Speed Switch (X246). The

motor then runs at the low–medium speed. When the Passenger's Rear Fan Speed Switch (X246) is turned to position III, the Rear Blower Motor Relay (K193) remains energized. Ground is now applied to the Rear Blower Motor (M145) through one resistor of the Rear Blower Motor Resistor Unit (Z215) and the Passenger's Rear Fan Speed Switch (Z246).

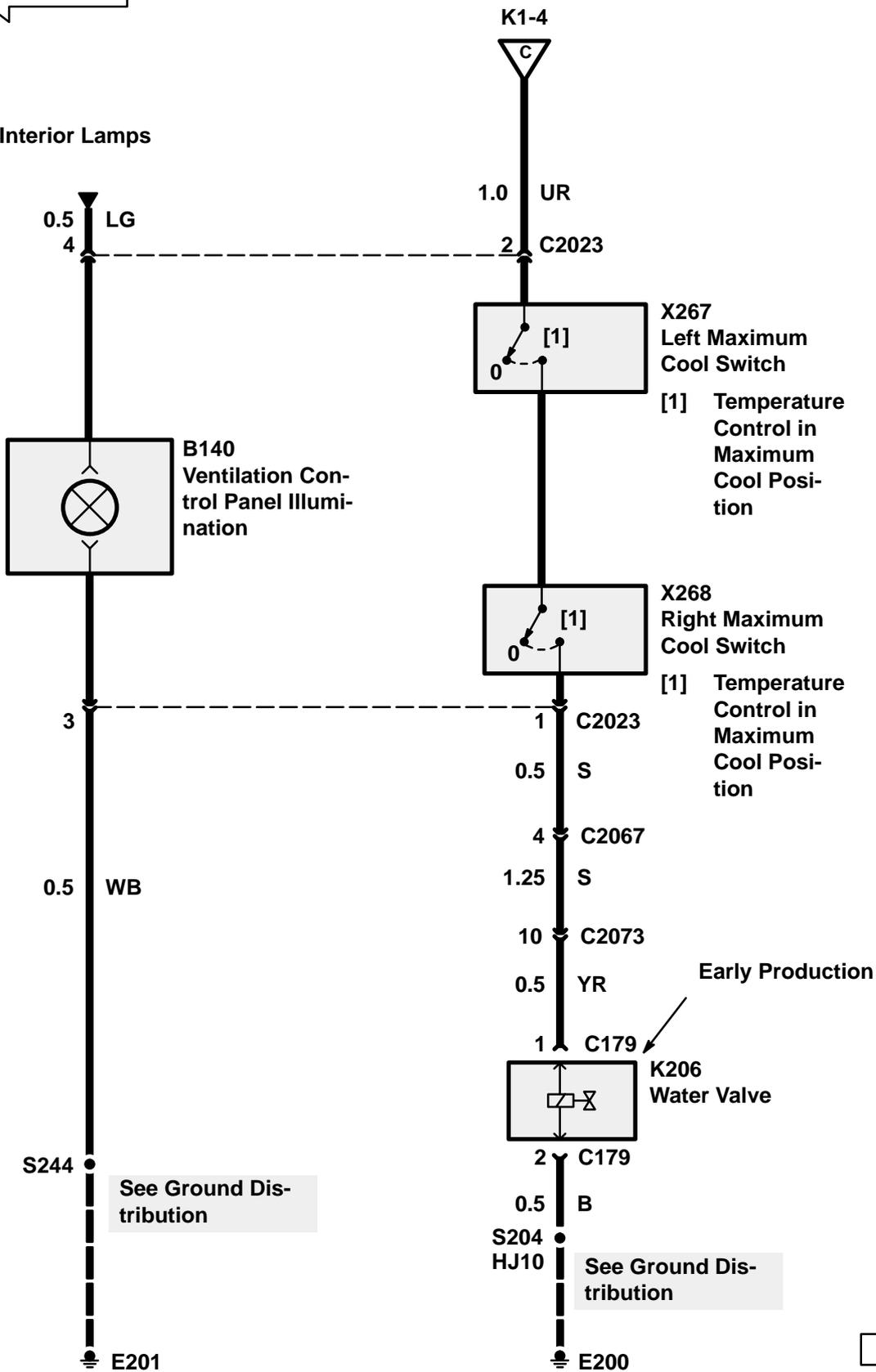
The motor then runs at medium–high speed. When the Passenger's Rear Fan Speed Switch (X246) is turned to position IV, the Rear Blower Motor Relay (K193) remains energized. Ground is now applied directly to the Rear Blower Motor (M145) through the Passenger's Rear Fan Speed Switch (X246). The motor then runs at high speed.

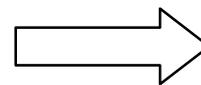
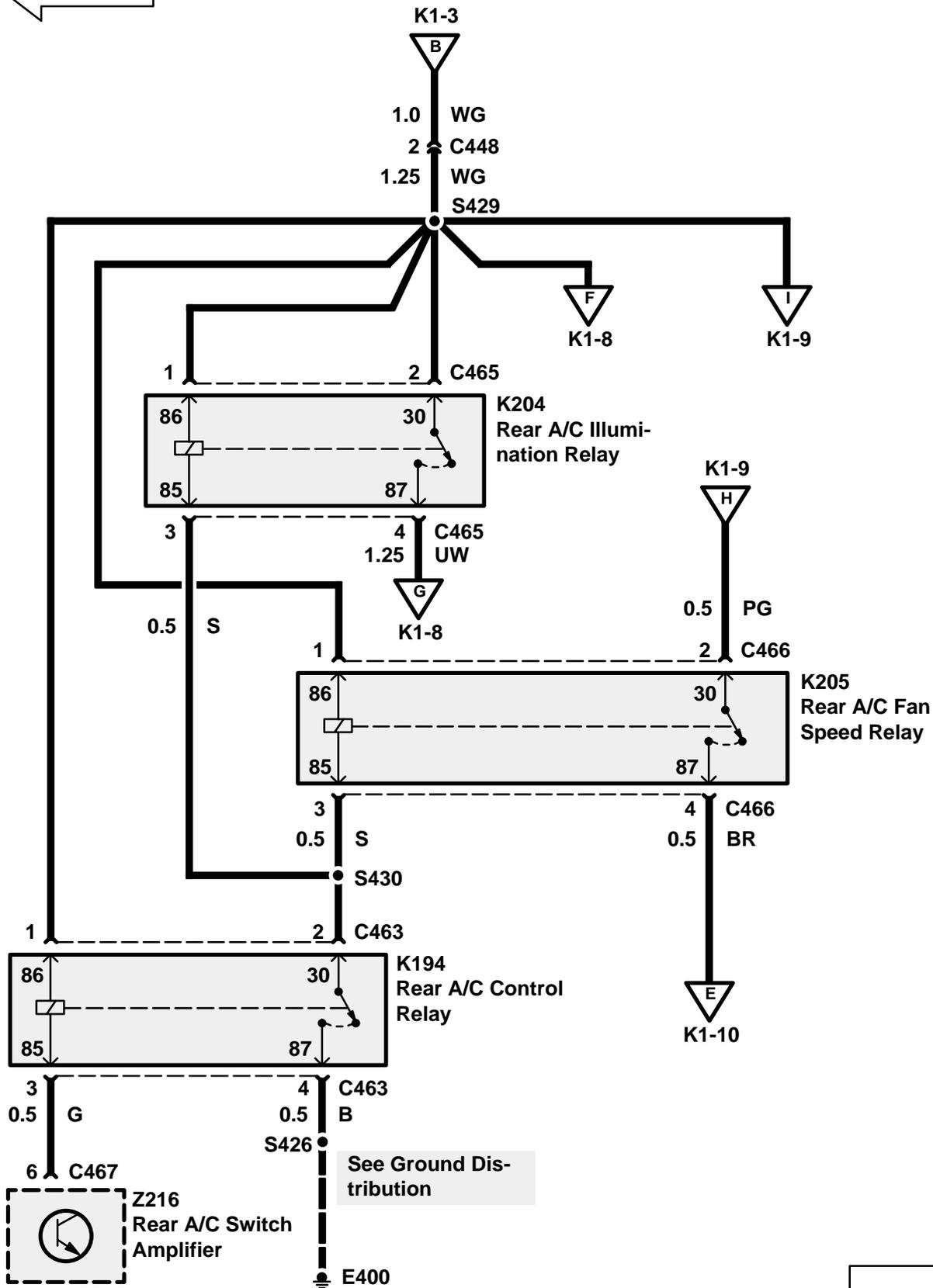
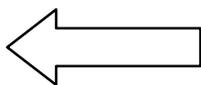






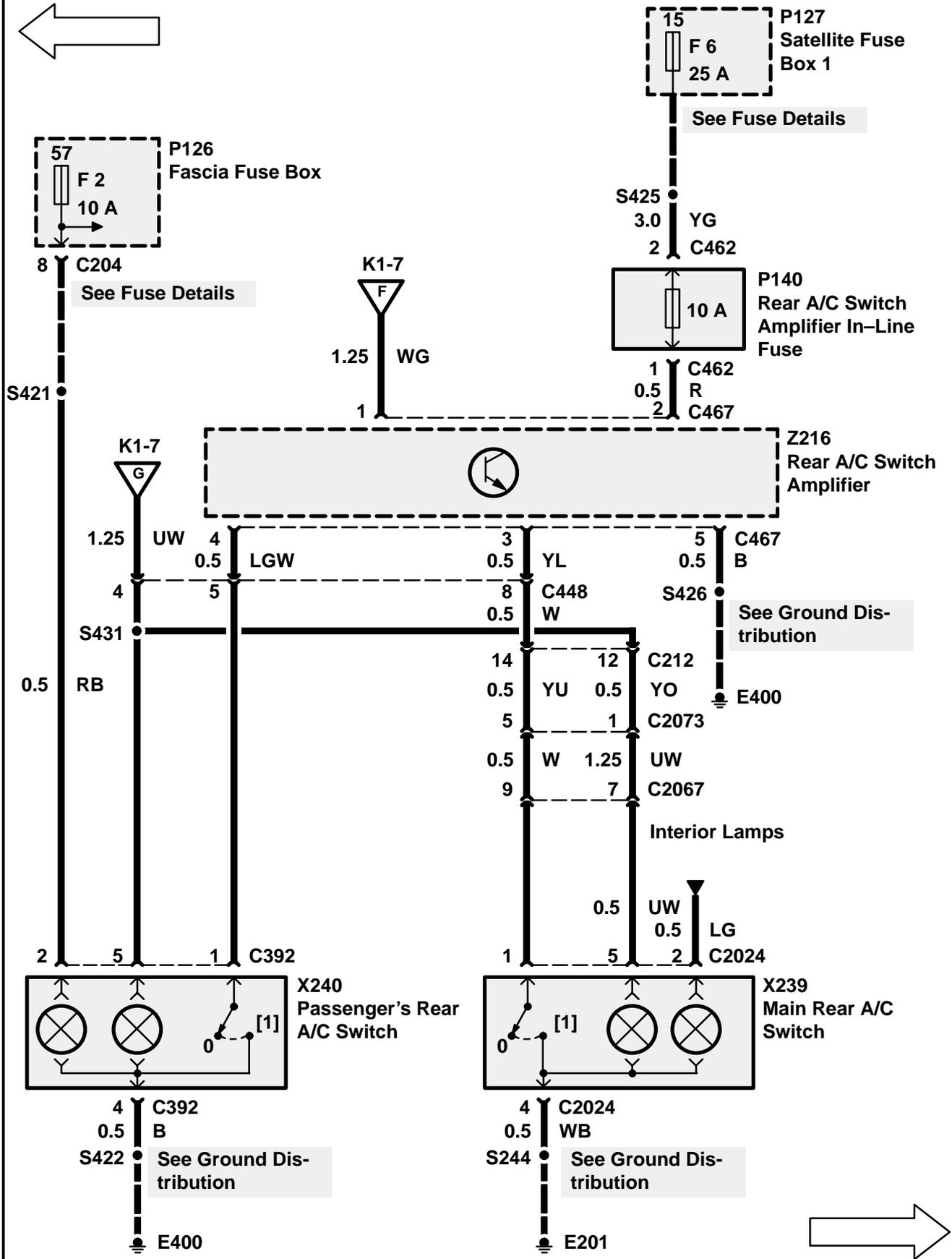
Interior Lamps

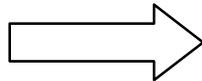
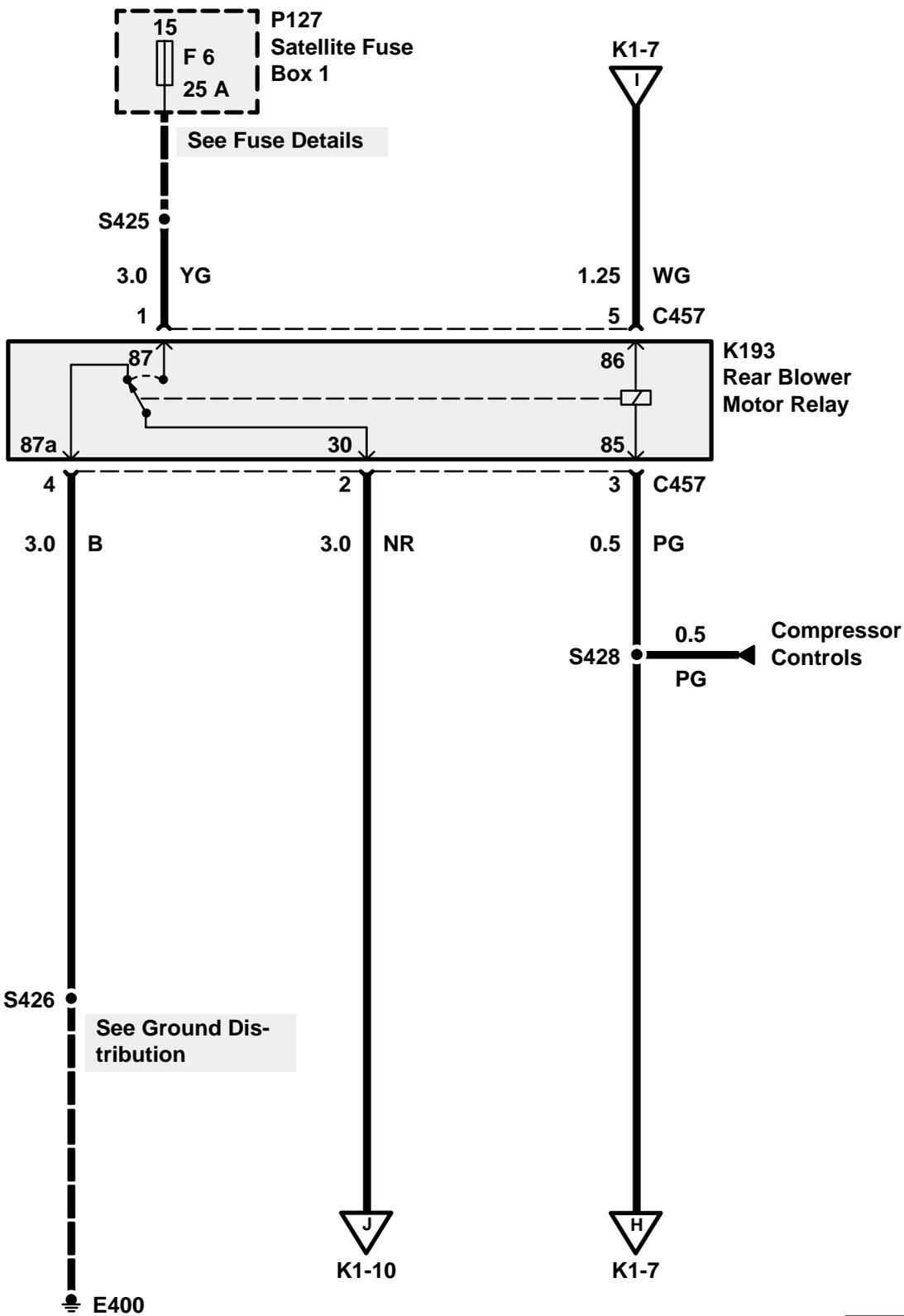
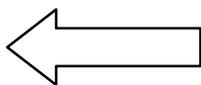




K1 ETM

DISCOVERY





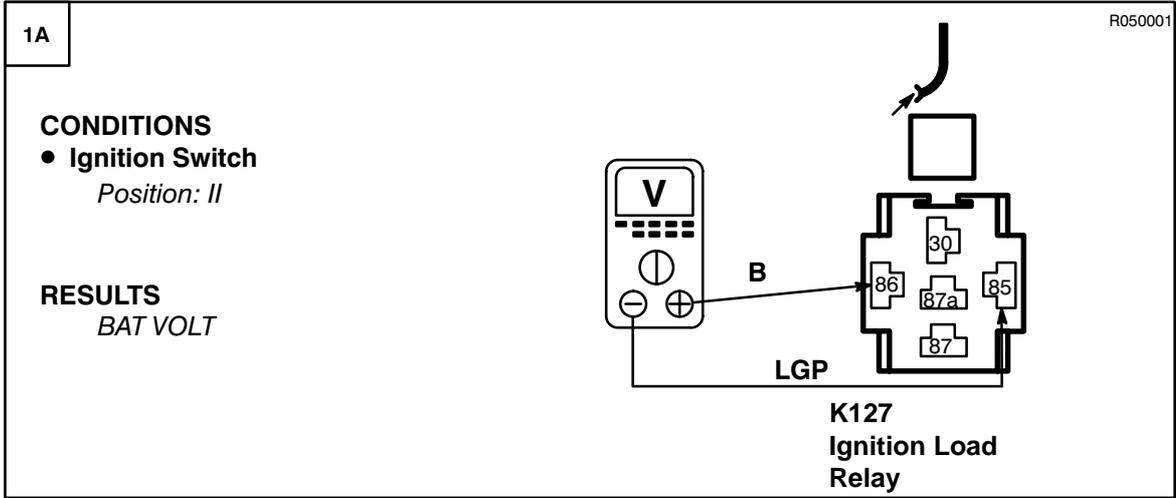
TROUBLESHOOTING HINTS

4. Check Maxi-Fuse[®] MF2 of the Engine Compartment Fuse Box (P125).
 5. Check Fuse F15 of the Fascia Fuse Box (P126).
 6. Check Fuse F6 of the Satellite Fuse Box 1 (P127).
 7. If the Front Blower Motor (M101) does not stop running with the Front Fan Speed Switch (X247) in Position 0, replace the Front Fan Speed Switch (X247).
 8. If the Rear Blower Motor (M145) does not stop running with the Passenger's Rear Fan Speed Switch (X246) in Position O, replace the Passenger's Rear Fan Speed Switch (K246).
 9. If fresh air does not enter the vehicle cabin with the Air Supply Selector Switch (X180) in the Fresh Air position, check the Air Recirculation Solenoid (K123) and linkage for sticking or binding.
 10. If the blower motor(s) operate with the ignition key removed, replace the Ignition Load Relay (K127).
 11. If the blower motor(s) run but not at the speed indicated by the Fan Speed Switches (X179), replace the appropriate Fan Speed Switch.
7. 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 D.
 8. With the engine running and the Fan Speed Switch (X179) in position III, put the Air Supply Selector Switch (X180) to Fresh Air Mode. Place a piece of paper in front of the recirculation air intake vents. If the paper is drawn toward the intake, do Test D.

SYSTEM DIAGNOSIS

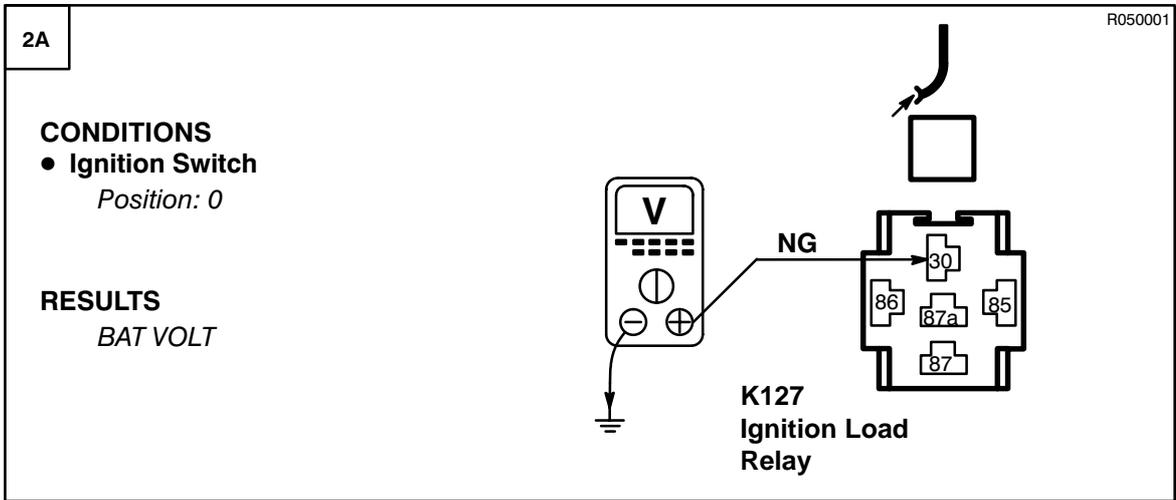
1. If the Blower Motor(s) do not run at any speed, do Test A.
2. If the Front Blower Motor (M101) does not run at any speed, but the Rear Blower Motor (M145) operates correctly, do Test B.
3. If the Rear Blower Motor (M145) does not run at any speed, but the Front Blower Motor (M101) operates correctly, do Test E.
4. If the Front Blower Motor (M101) runs in some but not all Front Fan Speed Switch (X247) positions, do Test C.
5. If the Rear Blower Motor (M145) runs in some but not all Rear Fan Speed Switch (X246) positions, do Test F.
6. If the Air Supply Selector Switch (X180) does not allow the driver to change between recirculation and fresh air modes, do Test D.

Test A



PROBLEM CAUSE

- F15 Fuse
- LGP Wire
- B Wire



PROBLEM CAUSE

- F6 Fuse
- NG Wire



R050001

2A
3A

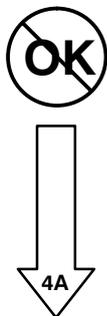
CONDITIONS

- Ignition Switch
Position: II
- Front Fan Speed Switch
Position: III

RESULTS

- Front Blower Motor
Operates

K127
Ignition Load
Relay



OK PROBLEM CAUSE
- Ignition Load Relay

R050016

4A

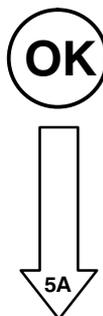
CONDITIONS

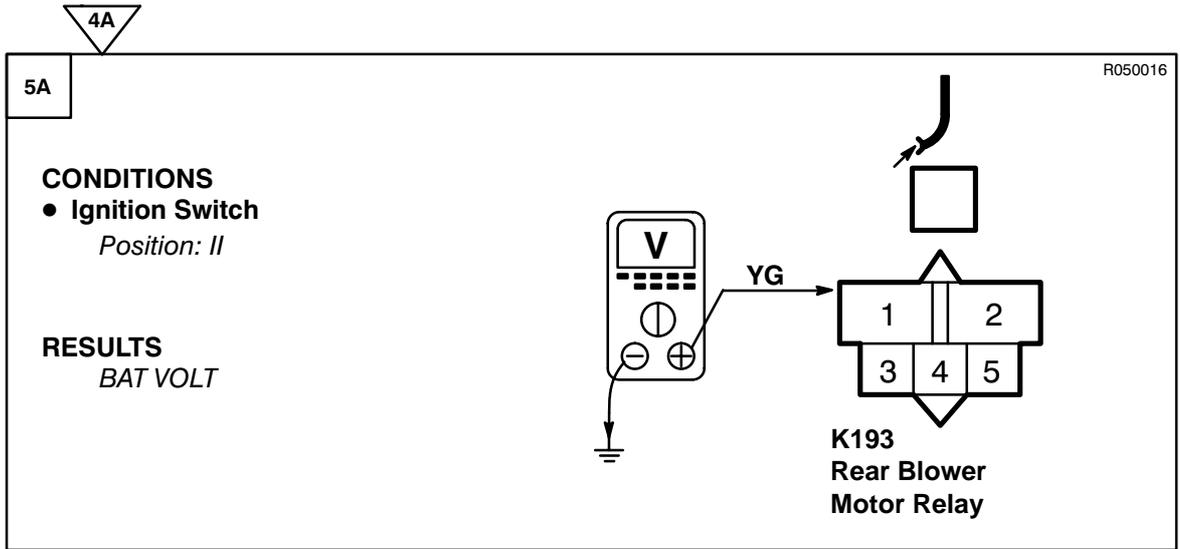
- Ignition Switch
Position: 0

RESULTS
BAT VOLT

K192
Front Blower
Motor Relay

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





PROBLEM CAUSE

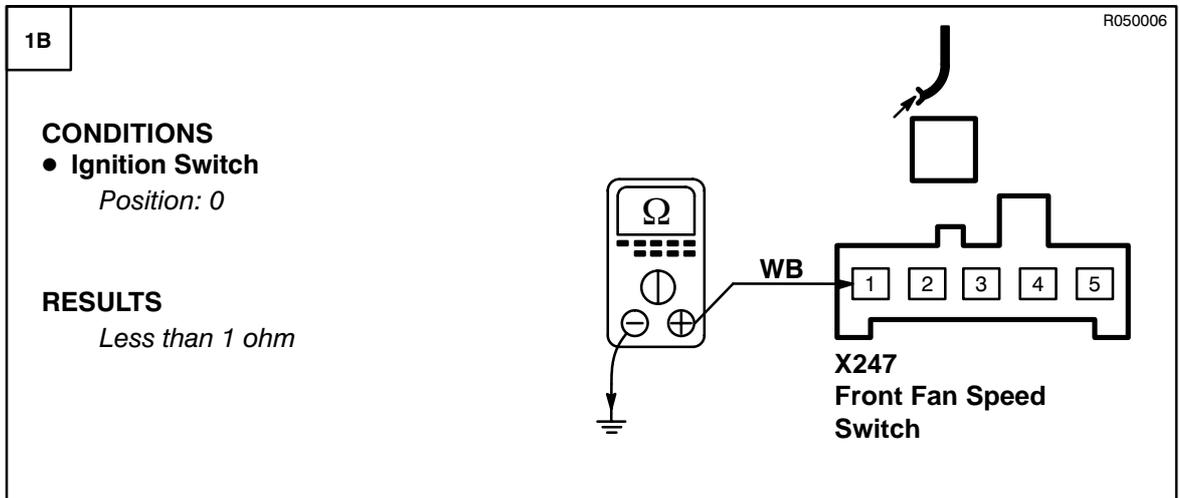
- YG Wire
- NG Wire



PROBLEM CAUSE

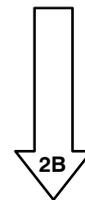
- WG Wire
- UR Wire

Test B



PROBLEM CAUSE

- WB Wire
- B Wire



R050016

1B

2B

CONDITIONS

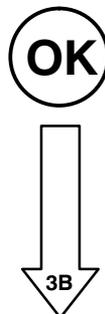
- Ignition Switch
Position: 0
- Front Fan Speed Switch
Position: I
Position: II
Position: III
Position: IV

RESULTS
Less than 1 ohm

K192
Front Blower
Motor Relay

~~OK~~ **PROBLEM CAUSE**

- N Wire
- WB Wire
- Front Fan Speed Switch



R020049

3B

CONDITIONS

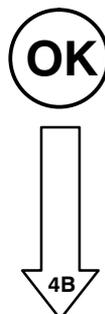
- Ignition Switch
Position: II
- Front Fan Speed Switch
Position: I

RESULTS
BAT VOLT

M101
Front Blower
Motor

~~OK~~ **PROBLEM CAUSE**

- WR Wire
- Front Blower Motor Relay



4B
3B
R040022

CONDITIONS

- Ignition Switch
Position: 0

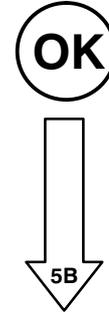
RESULTS

Less than 1 ohm

Z214
Front Blower Re-
sistor Unit

~~OK~~

PROBLEM CAUSE
 - WB Wire



5B
R040022

CONDITIONS

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

RESULTS

- Front Blower Motor
Operates

Z214
Front Blower Re-
sistor Unit

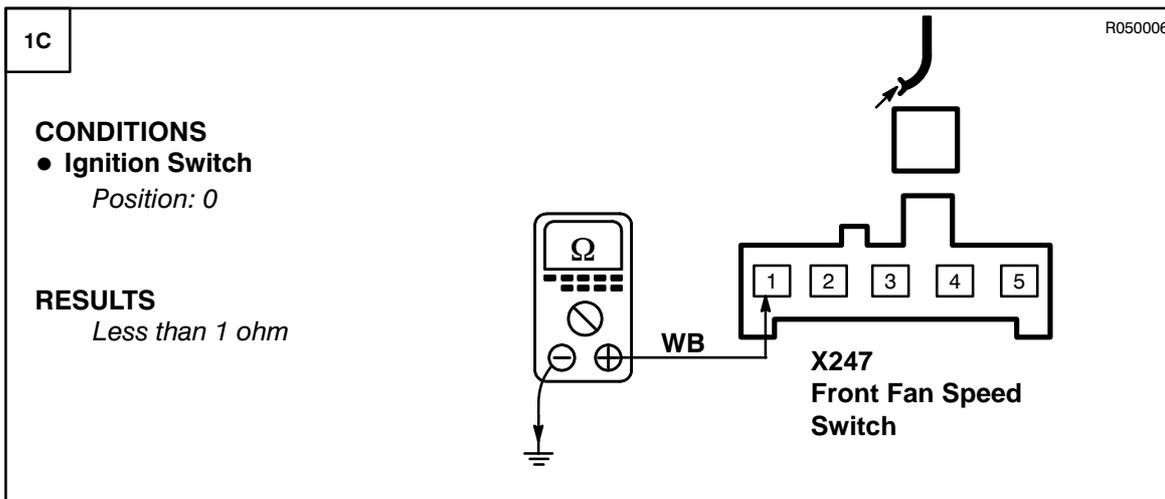
~~OK~~

PROBLEM CAUSE
 - BO Wire
 - Front Blower
 Motor

OK

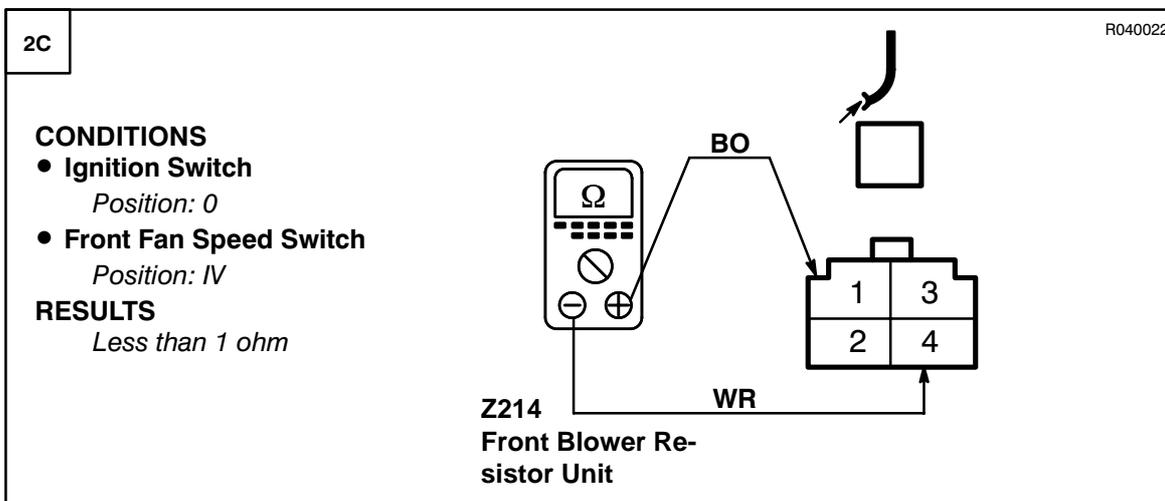
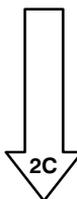
PROBLEM CAUSE
 - Front Blower Resistor Unit

Test C



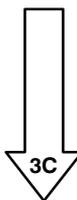
PROBLEM CAUSE

- WB Wire
- B Wire



PROBLEM CAUSE

- BO Wire
- WB Wire
- Front Fan Speed Switch



R040022

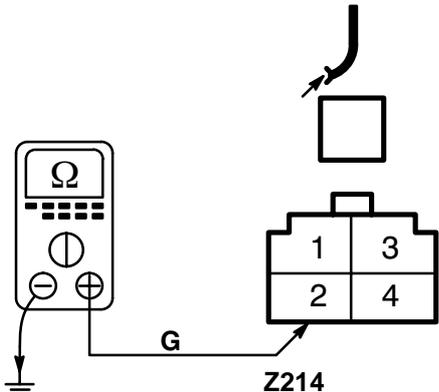
2C

3C

CONDITIONS

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

RESULTS
Less than 1 ohm

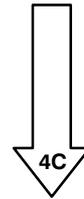


Z214
Front Blower Resistor Unit



PROBLEM CAUSE

- G Wire
- Front Fan Speed Switch



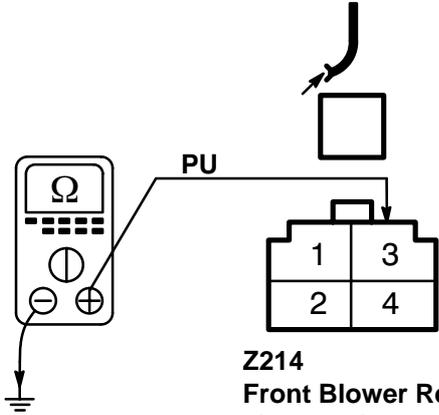
R040022

4C

CONDITIONS

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

RESULTS
Less than 1 ohm



Z214
Front Blower Resistor Unit



PROBLEM CAUSE

- PU Wire
- Front Fan Speed Switch



PROBLEM CAUSE

- Front Blower Resistor Unit

Test D

1D

R040029

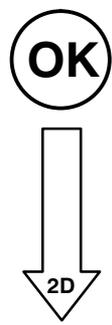
CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

OK PROBLEM CAUSE

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



2D

R050002.00

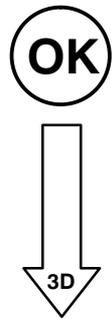
CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

OK PROBLEM CAUSE

- WB Wire
- B Wire



2D
3D
R040029

CONDITIONS

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

RESULTS
Less than 1 ohm

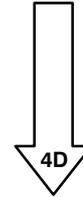
UB

K123
Air Recirculation Solenoid



PROBLEM CAUSE

- UB Wire
- Air Supply Selector Switch



4D
R040029

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

Test E

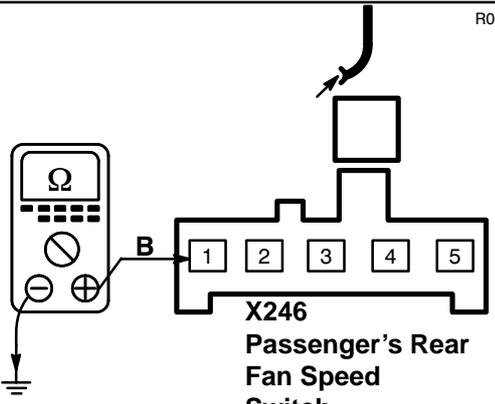
R050006

1E

CONDITIONS

- Ignition Switch
Position: 0

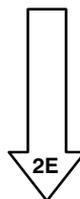
RESULTS
Less than 1 ohm



X246
Passenger's Rear
Fan Speed
Switch

~~OK~~ **PROBLEM CAUSE**
- B Wire

OK



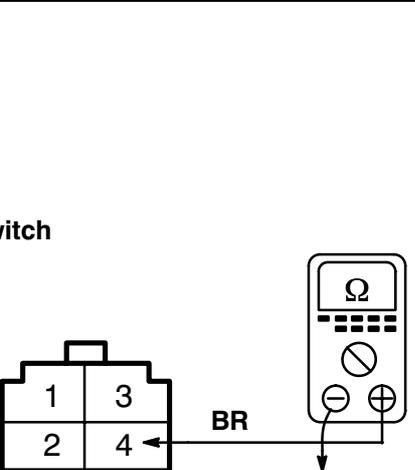
R040028

2E

CONDITIONS

- Ignition Switch
Position: 0
- Passenger's Rear Fan Speed Switch
Position: I
Position: II
Position: III
Position: IV

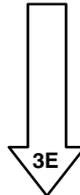
RESULTS
Less than 1 ohm



K205
Rear A/C Fan
Speed Relay

~~OK~~ **PROBLEM CAUSE**
- BR Wire
- Passenger's Rear
Fan Speed
Switch

OK



K1 ETM

DISCOVERY

R050016

2E

3E

CONDITIONS

- Ignition Switch
Position: II

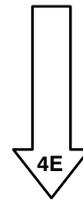
RESULTS
BAT VOLT

K193
Rear Blower
Motor Relay



PROBLEM CAUSE

- YG Wire
- WO Wire
- B Wire



R040022

4E

CONDITIONS

- Ignition Switch
Position: II

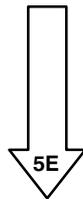
RESULTS
BAT VOLT

K205
Rear A/C Fan
Speed Relay



PROBLEM CAUSE

- WG Wire



4E

5E

R040022

CONDITIONS

- Ignition Switch
Position: II

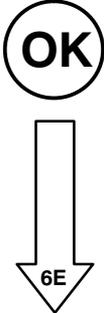
RESULTS
BAT VOLT

WG

1 3
2 4

K194
Rear A/C Control
Relay

~~OK~~ PROBLEM CAUSE
- WG Wire



6E

R040022

CONDITIONS

- Ignition Switch
Position: 0

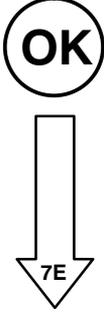
RESULTS
Less than 1 ohm

B

1 3
2 4

K194
Rear A/C Control
Relay

~~OK~~ PROBLEM CAUSE
- B Wire



6E
7E
R040022

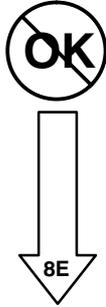
CONDITIONS

- Ignition Switch
Position: II
- Passenger's Rear Fan Speed Switch
Position: I

RESULTS

- Rear Blower Motor
Operates

K194
Rear A/C Control Relay



- PROBLEM CAUSE**

 - G Wire
 - Rear A/C Control Relay
 - Rear A/C Switch Amplifier

Test B

8E
8E
R040022

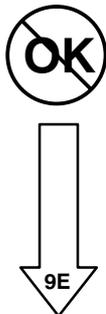
CONDITIONS

- Ignition Switch
Position: II
- Passenger's Rear Fan Speed Switch
Position: I
- Rear A/C
On

RESULTS

- Rear Blower Motor
Operates

K205
Rear A/C Fan Speed Relay



- PROBLEM CAUSE**

 - S Wire
 - Rear A/C Fan Speed Relay

R040022

8E

9E

CONDITIONS

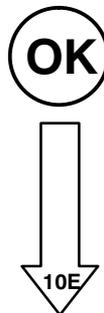
- Ignition Switch
Position: II
- Passenger's Rear Fan Speed Switch
Position: I
- Rear A/C
On

RESULTS
Less than 1 ohm

PG

K193
Rear Blower
Motor Relay

~~OK~~ PROBLEM CAUSE
- PG Wire



R050016

10E

CONDITIONS

- Ignition Switch
Position: II
- Passenger's Rear Fan Speed Switch
Position: I
- Rear A/C
On

RESULTS

- Rear Blower Motor
Operates

NR

YG

K193
Rear Blower
Motor Relay

~~OK~~ PROBLEM CAUSE
- NR Wire
- Rear Blower
Motor

~~OK~~ PROBLEM CAUSE
- Rear Blower
Motor Relay

Test F

1F

R050006

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

X246
Passenger's Rear
Fan Speed
Switch



PROBLEM CAUSE

- B Wire



2F

R040022

CONDITIONS

- Ignition Switch
Position: 0
- Passenger's Rear Fan Speed Switch
Position: IV

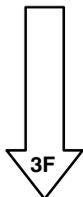
RESULTS
Less than 1 ohm

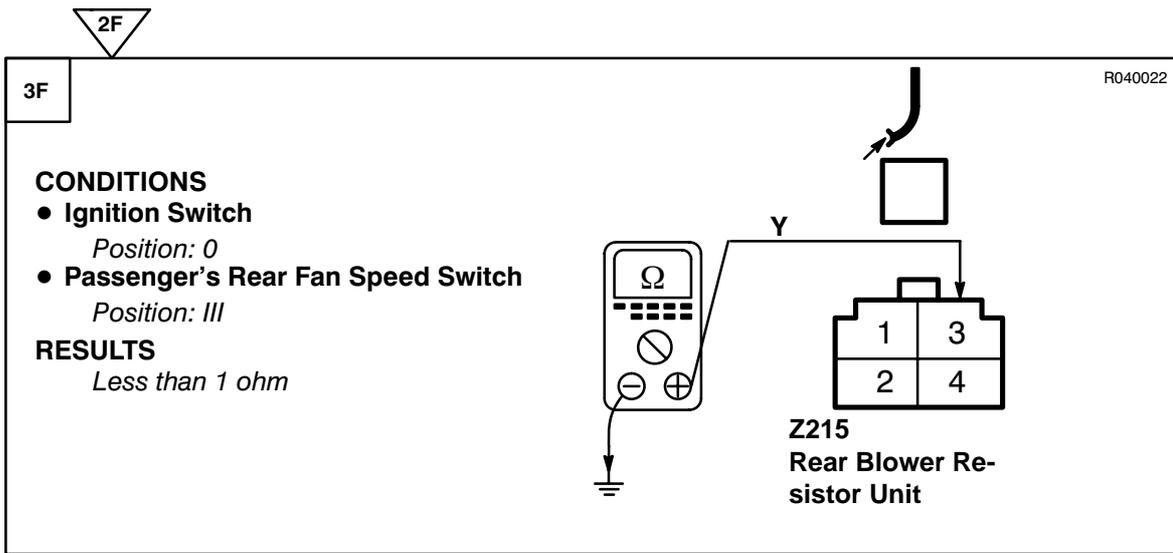
Z215
Rear Blower Re-
sistor Unit



PROBLEM CAUSE

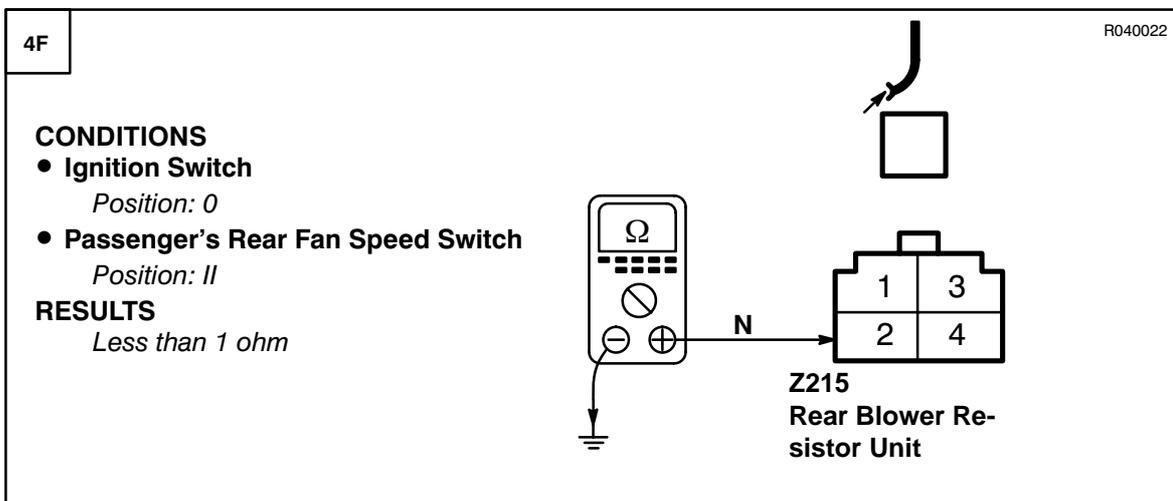
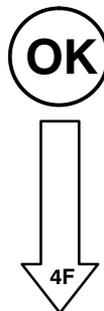
- B Wire
- G Wire
- Passenger's Rear
Fan Speed
Switch





OK PROBLEM CAUSE

- Y Wire
- Passenger's Rear Fan Speed Switch



OK PROBLEM CAUSE

- N Wire
- Passenger's Rear Fan Speed Switch

OK PROBLEM CAUSE

- Rear Blower Resistor Unit

CIRCUIT OPERATION**Compressor Control (MFI–V8) (300Tdi with EDC)**

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 Front Fan Speed Switch (X247) 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 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 (MFI–T16)

With the Ignition Switch (X134) in position II, battery voltage is applied to the Compressor Clutch Relay (K108) and the A/C Logic Relay (K170). When the Front Fan Speed Switch (X247) is turned

to positions I, II, III, or IV and the Front A/C Switch (X225) is turned On, ground is provided to terminal 85 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 ground to terminal 35 of the Engine Control Module (ECM) (Z132), signalling the ECM that compressor operation has been requested. The ECM then provides ground to the terminal 86 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 85 of the A/C Logic Relay (K170) will be interrupted. The relay de-energizes, removing the ground supply from terminal 35 of the Engine Control Module (ECM) (Z132), signalling the ECM that compressor operation should be turned off. The ECM removes the ground supply to terminal 86 of the Compressor Clutch Relay (K108). The relay then de-energizes, removing battery voltage from the Compressor Clutch (K107), disengaging the Compressor.

Compressor Control (300Tdi without EDC)

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 Front Fan Speed Switch (X247) 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.

Rear A/C Refrigerant Control Valve

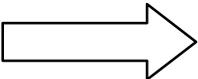
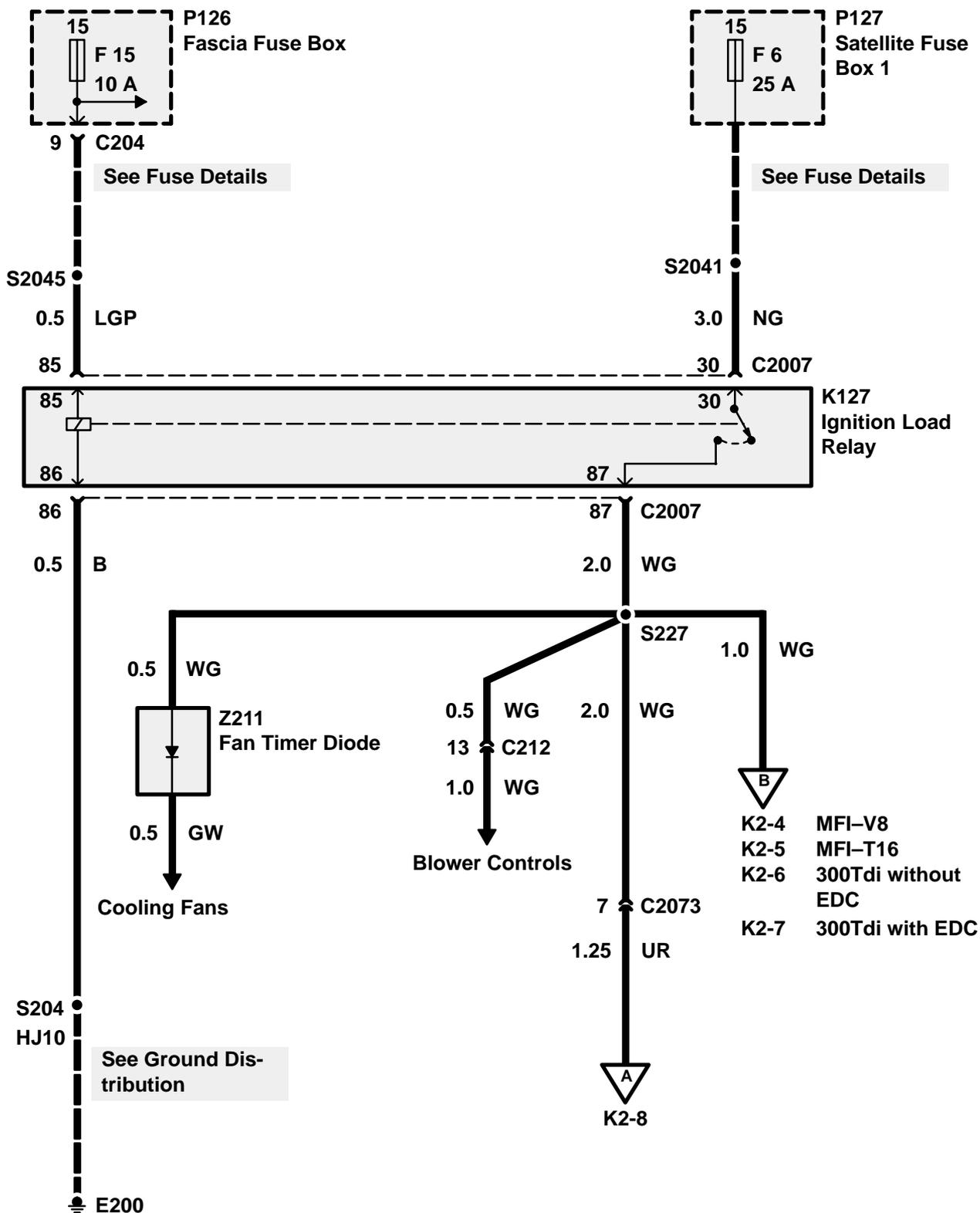
When front A/C has been selected and the Compressor Clutch (K107) is engaged, the Compressor Clutch Relay (K108) is energized and voltage is applied on the BG wires to the Rear A/C Refrigerant Control Valve (K207). When rear A/C is selected a ground signal is applied to the Rear A/C Switch Amplifier (Z216). The Rear A/C Switch Amplifier (Z216) then applies a ground signal to energise the Rear A/C Control Relay (K194) and the Rear A/C Fan Speed Relay (K205). When the Passenger's Rear Fan Speed Switch (X246) is in any position other than Off, ground is applied to the Rear A/C Refrigerant Control Valve (K207) through the closed contacts of the Passengers Rear Fan Speed Switch (X246), BR wire, closed contacts of the Rear A/C Fan Speed Relay (K205), PG wire, UB wire, Rear A/C Refrigerant Control Valve Diode

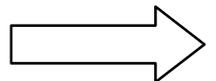
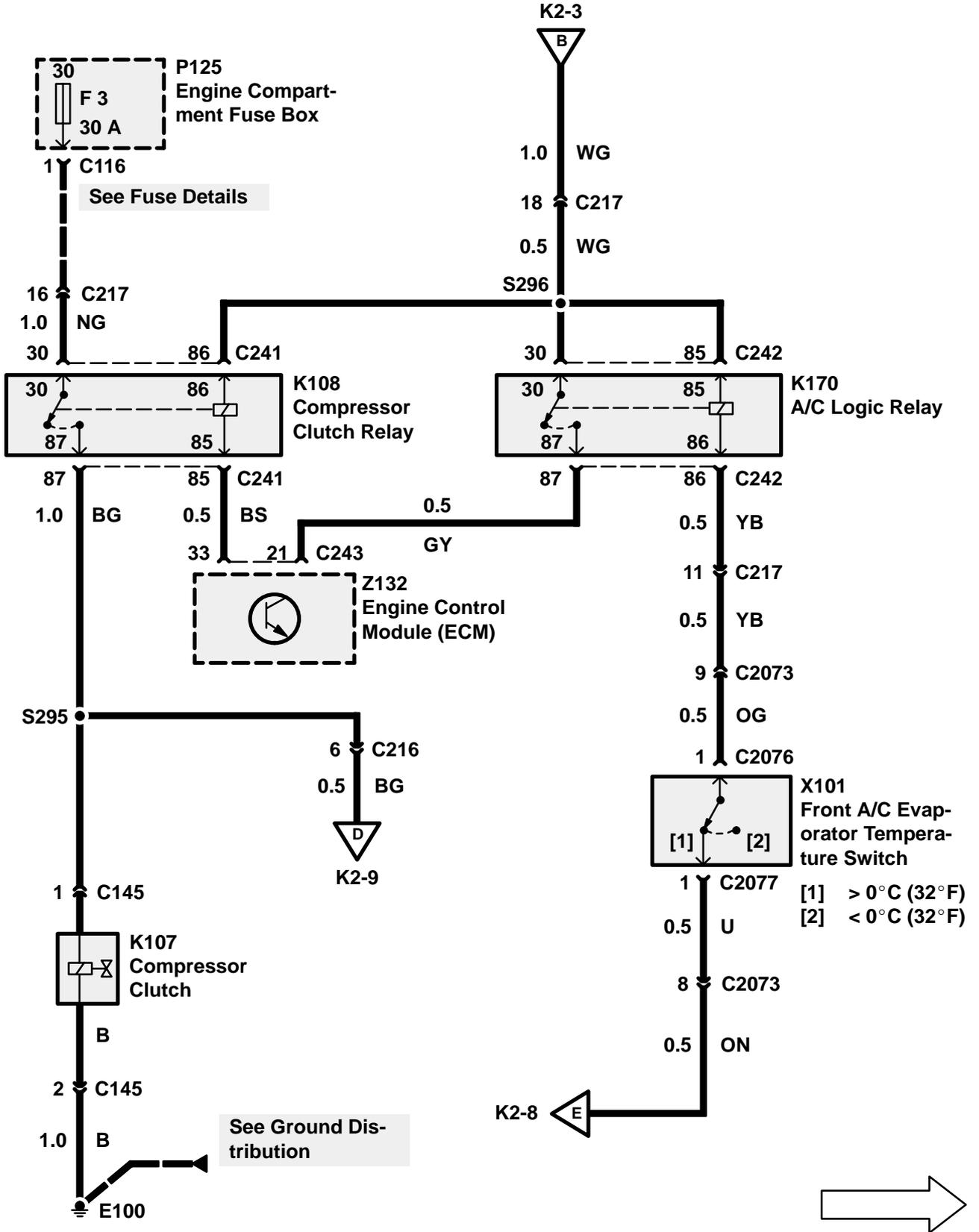
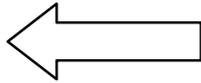
(Z228), P wire, closed contacts of the Rear A/C Evaporator Temperature Switch (X260), and the RG wire.

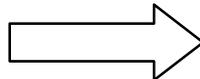
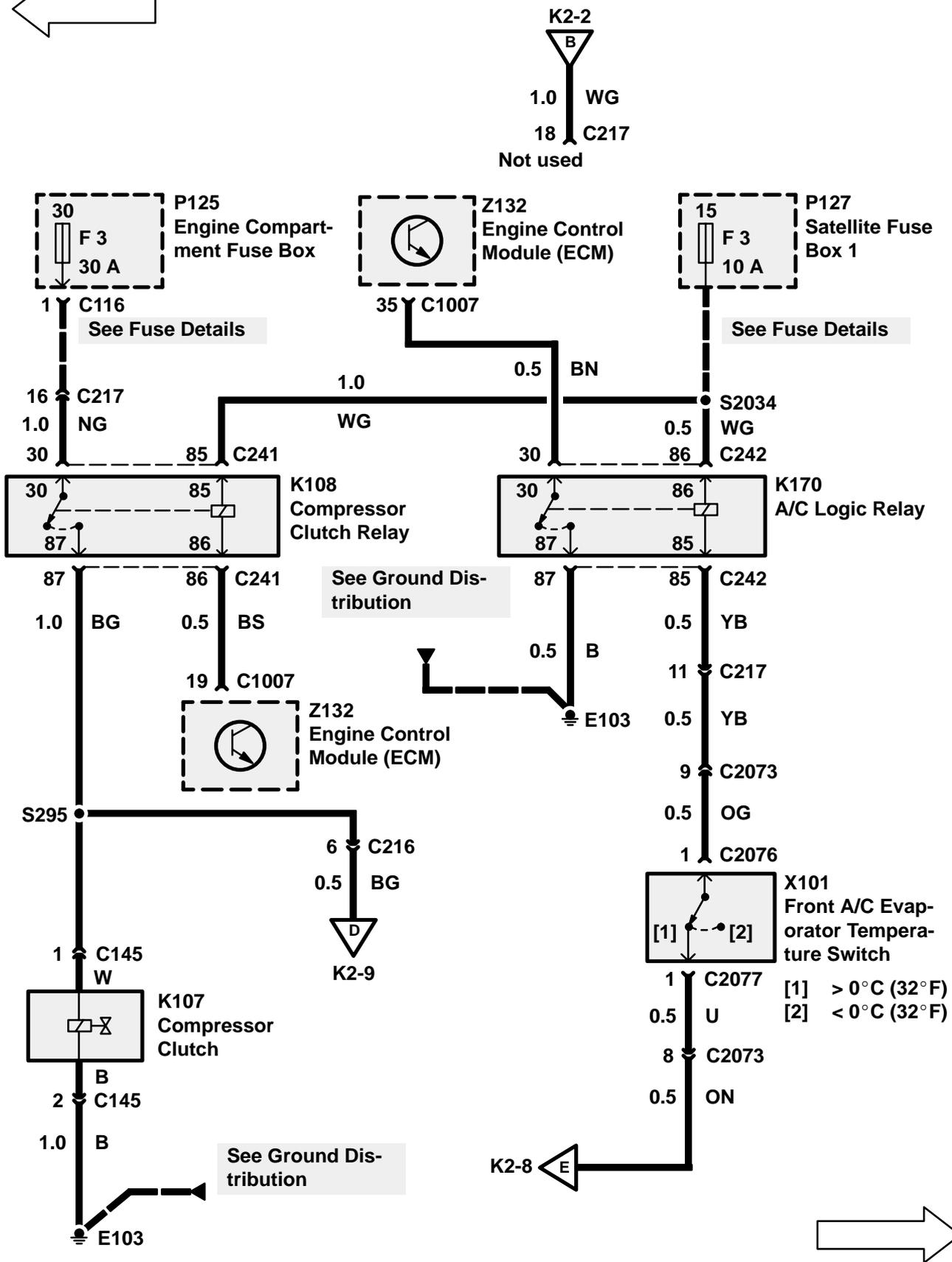
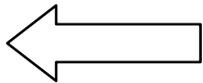
The Rear A/C Evaporator Temperature Switch (X260) senses the temperature of the exterior fins. Should ice begin to form due to low temperature, the switch will open and the ground supply to the Rear A/C Refrigerant Control Valve (K207) will then be interrupted. The valve de-energises and refrigerant flow is interrupted.

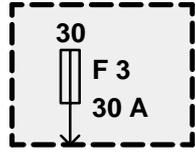
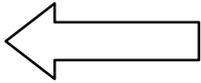
The Rear A/C Refrigerant Control Valve (K207) will also be de-energised if one or more of the following conditions occurs:

1. The Front A/C Switch (X225) has been turned OFF.
2. The Front Fan Speed Switch (X247) has been turned OFF.
3. The Rear A/C switches have been turned OFF.
4. The Passenger's Rear Fan Speed Switch (X246) has been turned OFF.
5. The ECM determines that compressor clutch operation is no longer required.
6. Compressor Clutch (K107) operation has been disabled by the A/C Dual Pressure Switch (X102) or the Front A/C Evaporator Temperature Switch (X101).
7. Compressor Clutch (K107) operation has been disabled by the Compressor Clutch Cut-Out Switch (X259) (300Tdi Without EDC Only).









P125
Engine Compartment Fuse Box

1 C116

See Fuse Details

16 C217

1.0 NG

30



K108
Compressor Clutch Relay

87

1.0 BG

S295

6 C216

0.5 BG



1 C145

W



K107
Compressor Clutch

2 C145

B

1.0 B

E103

See Ground Distribution



1.0 WG

18 C217

0.5 WG

85 C241

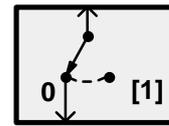
85

86

86 C241

0.5 G

2 C162



X259
Compressor Clutch Cut-out Switch

1 C162

0.5 YB

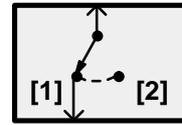
11 C217

0.5 YB

9 C2073

0.5 OG

1 C2076



X101
Front A/C Evaporator Temperature Switch

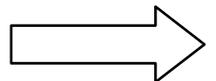
1 C2077

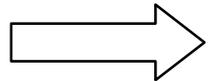
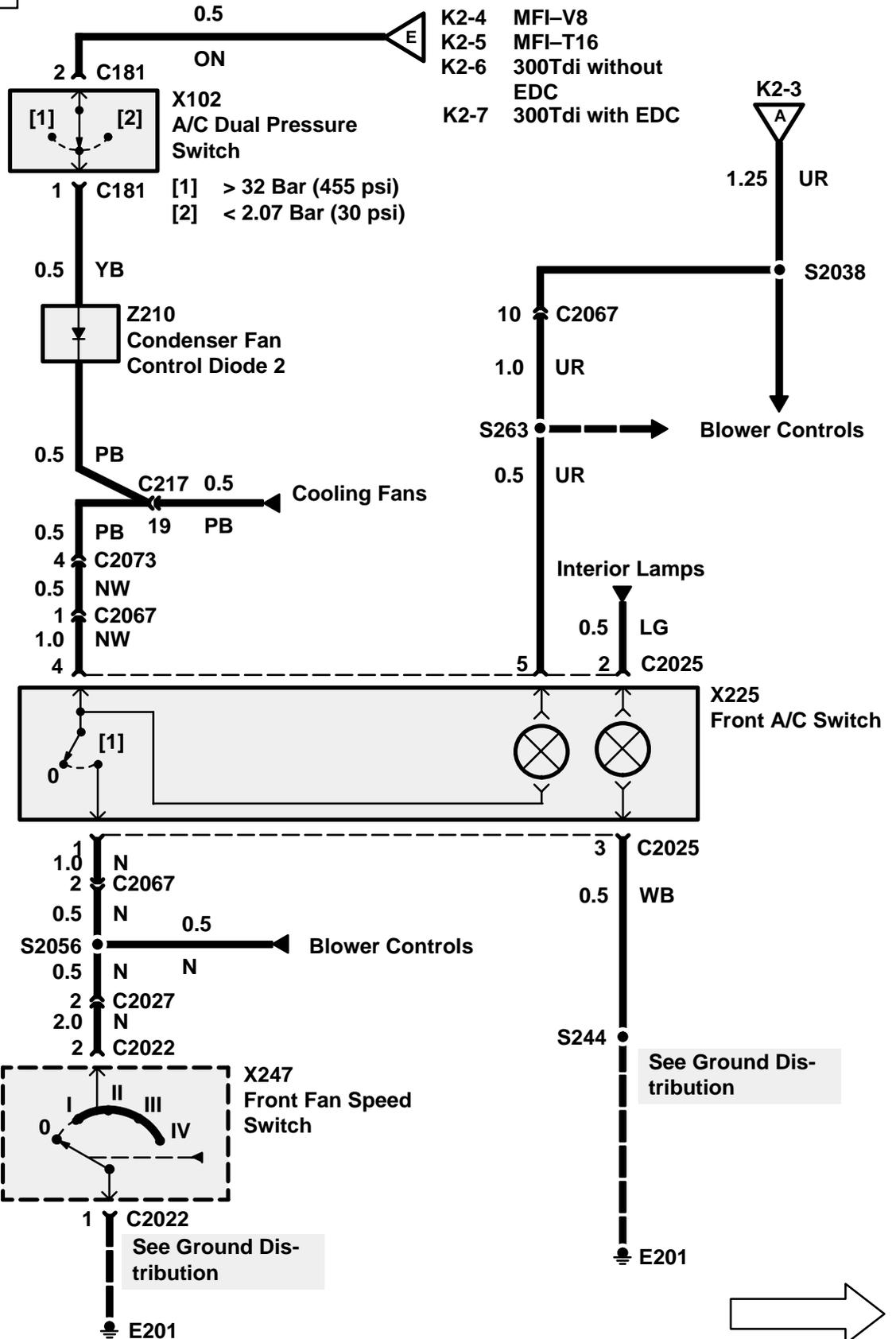
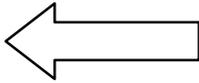
0.5 U

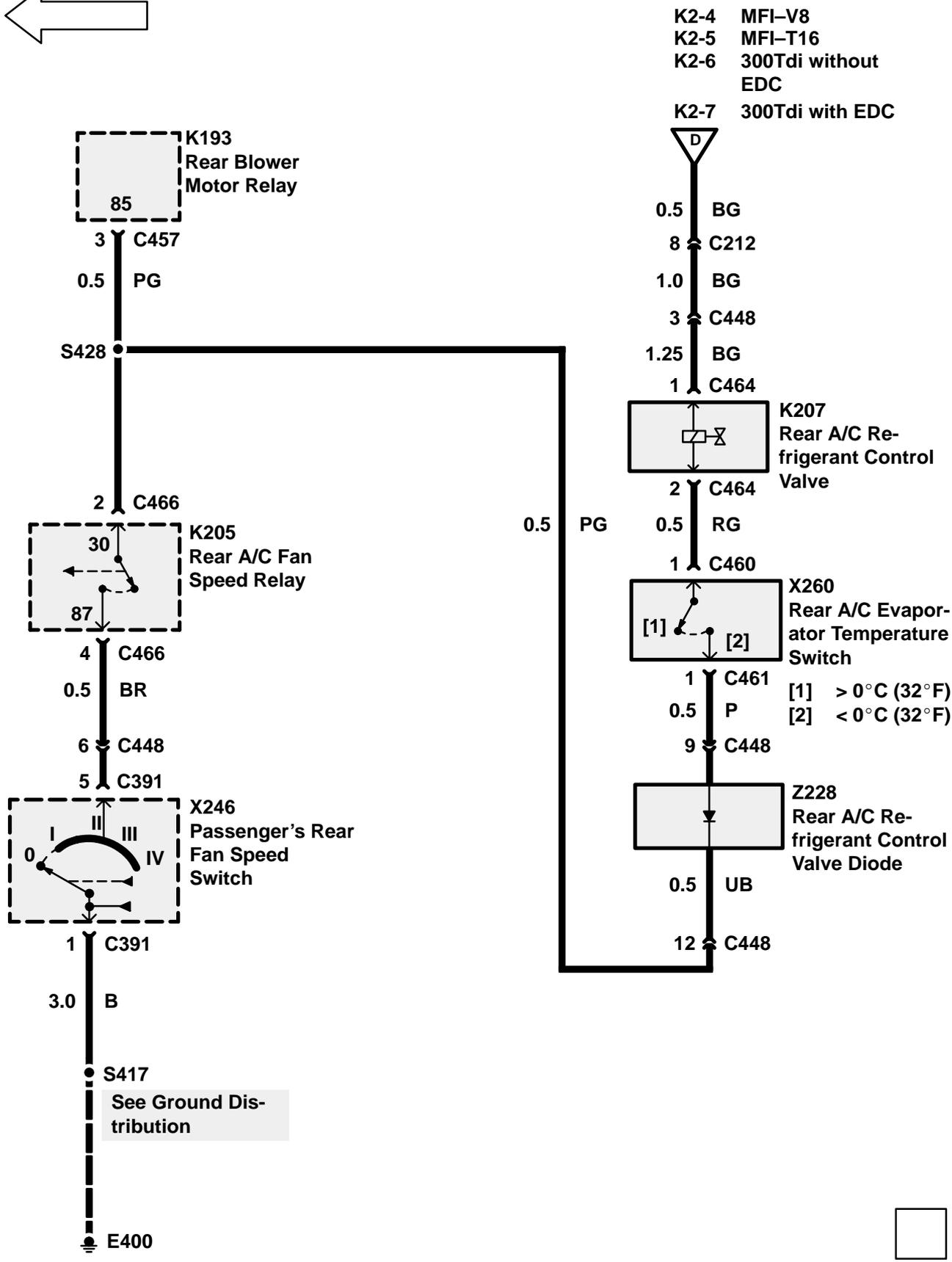
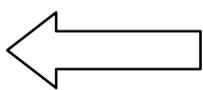
8 C2073

0.5 ON

[1] > 0°C (32°F)
[2] < 0°C (32°F)







- K2-4 MFI-V8
- K2-5 MFI-T16
- K2-6 300Tdi without EDC
- K2-7 300Tdi with EDC

TROUBLESHOOTING HINTS

9. If the Front Blower Motor(s) do not operate normally, refer to Blower Controls, Section K1.
10. Check Fuse F3 of the Engine Compartment Fuse Box (P125), F3 of the Satellite Fuse Box 1, and Fuse F15 of the Fascia Fuse Box (P126).
11. Verify that refrigerant pressure is OK before preceeding with the following diagnostic text.

SYSTEM DIAGNOSIS (MFI-V8)

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 F.

SYSTEM DIAGNOSIS (MFI-T16)

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 G.

SYSTEM DIAGNOSIS (300TDI WITHOUT EDC)

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

SYSTEM DIAGNOSIS (300TDI WITH EDC)

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

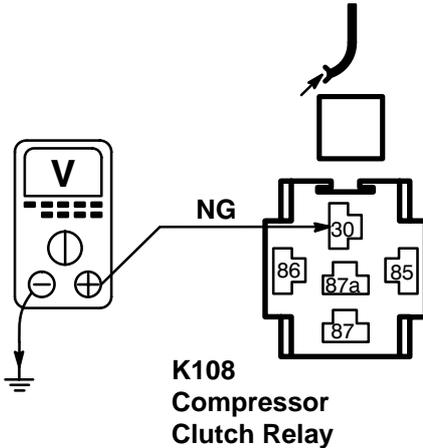
Test A

1A MFI-V8 R050001

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT

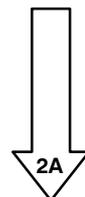


K108 Compressor Clutch Relay



PROBLEM CAUSE

- F3 Fuse
- NG Wire

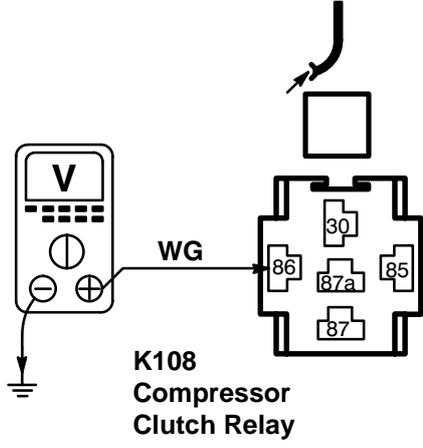


2A R050001

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

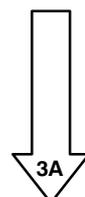


K108 Compressor Clutch Relay



PROBLEM CAUSE

- WG Wire



2A
R050001

3A

CONDITIONS

- Ignition Switch
Position: II

RESULTS

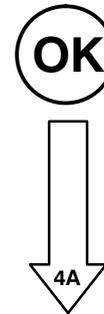
- Compressor Clutch
Operates

**K108
Compressor
Clutch Relay**

OK

PROBLEM CAUSE

- BG Wire
- B Wire
- Compressor Clutch



4A
R050001

4A

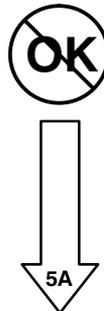
CONDITIONS

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

RESULTS

BAT VOLT

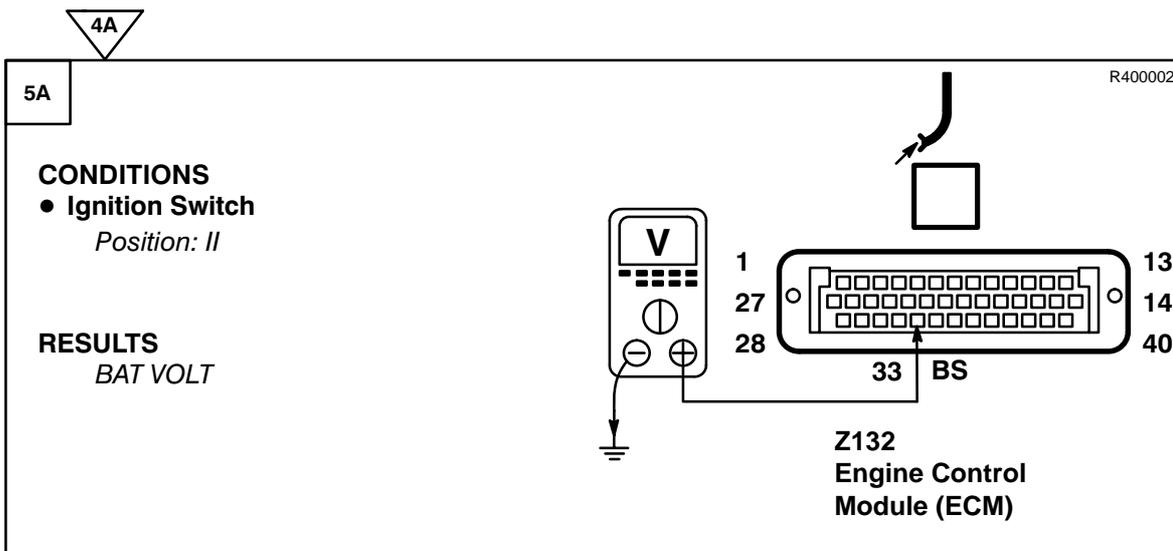
**K108
Compressor
Clutch Relay**



OK

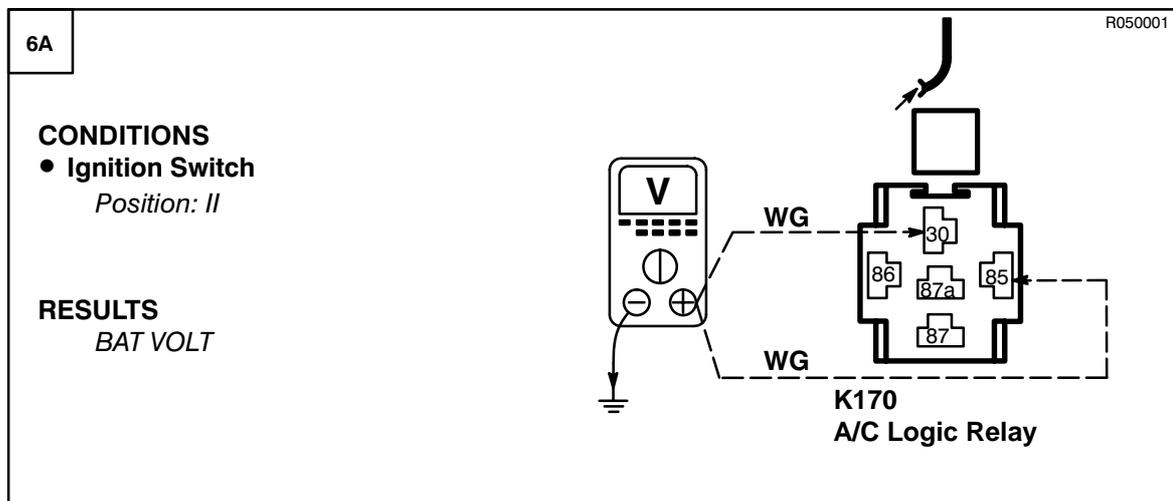
PROBLEM CAUSE

- Compressor Clutch Relay



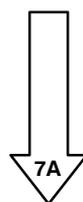
~~OK~~ PROBLEM CAUSE
- BS Wire

OK



~~OK~~ PROBLEM CAUSE
- WG Wire

OK



7A
6A
R050001

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

RESULTS

- Compressor Clutch
Operates

**K170
A/C Logic Relay**



PROBLEM CAUSE

- GY Wire
- Engine Control Module (ECM)



8A
R050001

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

RESULTS

- Compressor Clutch
Operates

**K170
A/C Logic Relay**



PROBLEM CAUSE

- A/C Logic Relay



8A

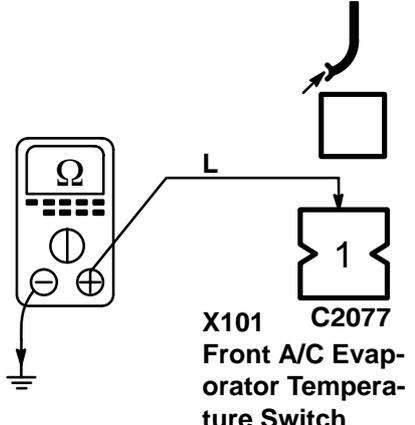
9A

R010002

CONDITIONS

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

RESULTS
Less than 2 ohms



X101 C2077
Front A/C Evaporator Temperature Switch

~~OK~~ GO TO TEST E

OK PROBLEM CAUSE

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

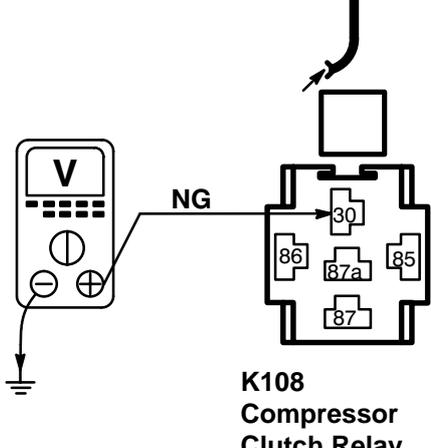
Test B

1B **MFI-T16** R050001

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT



K108
Compressor Clutch Relay

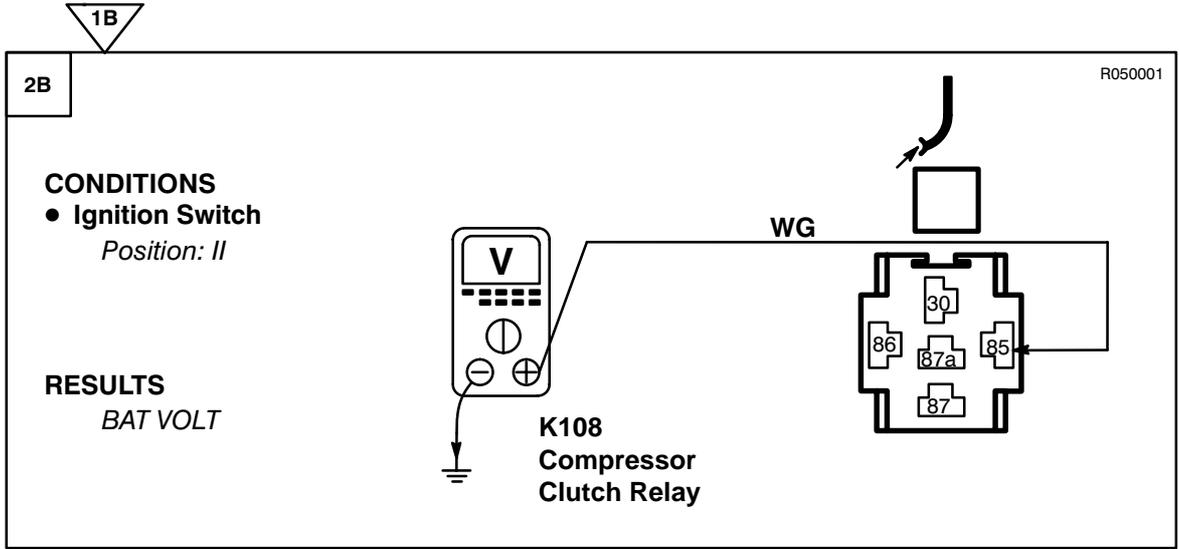
~~OK~~ PROBLEM CAUSE

- F3 Fuse
- NG Wire

OK

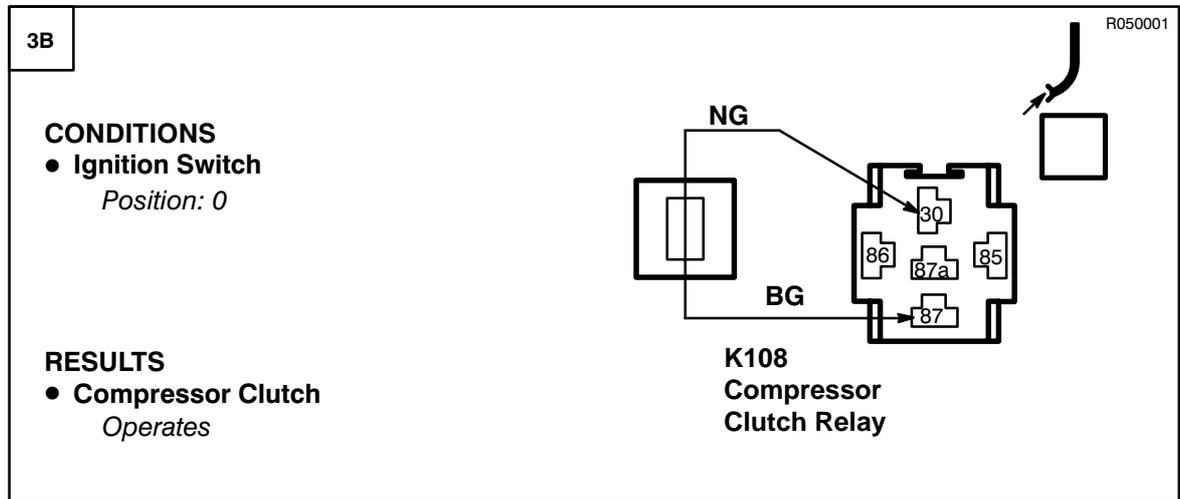
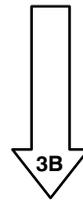
↓

2B



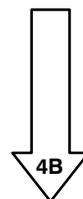
PROBLEM CAUSE

- F3 Fuse
- WG Wire



PROBLEM CAUSE

- BG Wire
- B Wire
- Compressor Clutch



R050001

3B

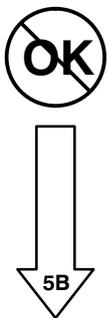
4B

CONDITIONS

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

RESULTS
BAT VOLT

K108
Compressor
Clutch Relay



OK **PROBLEM CAUSE**
- Compressor
Clutch Relay

R360001

5B

CONDITIONS

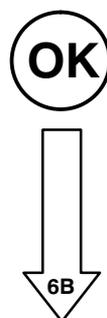
- Ignition Switch
Position: II

RESULTS
BAT VOLT

Z132
Engine Control
Module (ECM)

C1007

OK **PROBLEM CAUSE**
- BS Wire



5B
6B
R050001

CONDITIONS

- Ignition Switch
Position: II

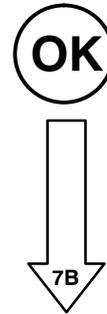
RESULTS

BAT VOLT

**K170
A/C Logic Relay**

OK

PROBLEM CAUSE
 - WG Wire
 - B Wire
 - E103



7B
R050001

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

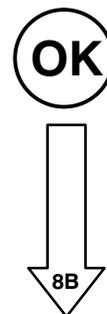
RESULTS

- Compressor Clutch
Operates

**K170
A/C Logic Relay**

OK

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



R050001

7B

8B

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

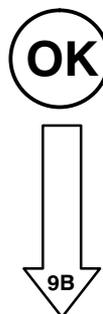
RESULTS

- Compressor Clutch
Operates

YB

K170
A/C Logic Relay

OK PROBLEM CAUSE
- A/C Logic Relay



R010002

9B

CONDITIONS

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

RESULTS

Less than 2 ohms

L

X101
Front A/C Evaporator Temperature Switch

OK GO TO TEST E

OK PROBLEM CAUSE

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

Test C

1C

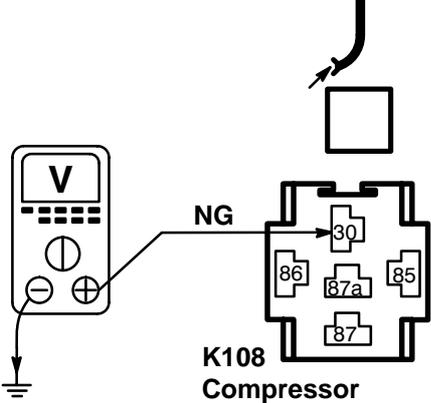
R050001

300Tdi without EDC

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT

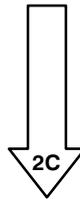


K108
Compressor
Clutch Relay



PROBLEM CAUSE

- F3 Fuse
- NG Wire



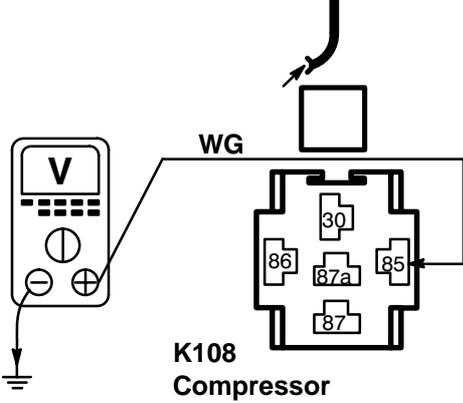
2C

R050001

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

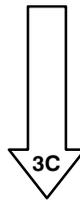


K108
Compressor
Clutch Relay



PROBLEM CAUSE

- WG Wire



R050001

2C
3C

CONDITIONS

- Ignition Switch
Position: 0

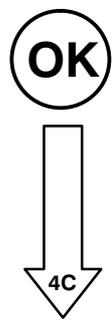
RESULTS

- Compressor Clutch
Operates

K108
Compressor
Clutch Relay

~~OK~~ **PROBLEM CAUSE**

- BG Wire
- B Wire
- Compressor Clutch



R050001

4C

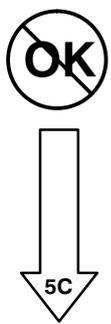
CONDITIONS

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

RESULTS

BAT VOLT

K108
Compressor
Clutch Relay



OK **PROBLEM CAUSE**

- Compressor Clutch Relay

4C

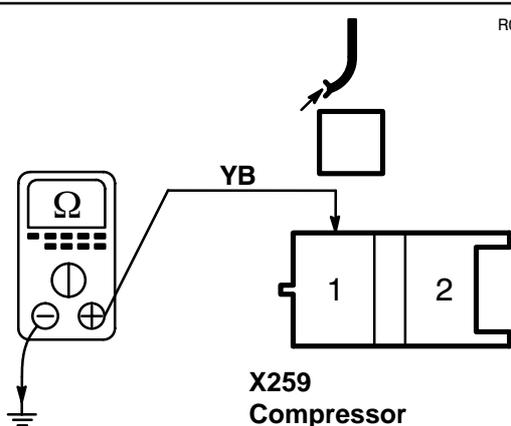
5C

R020003

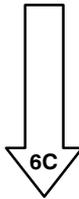
CONDITIONS

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

RESULTS
Less than 2 ohms



X259
Compressor
Clutch Cut-out
Switch



PROBLEM CAUSE

- G Wire
- Compressor Clutch Cut-out Switch

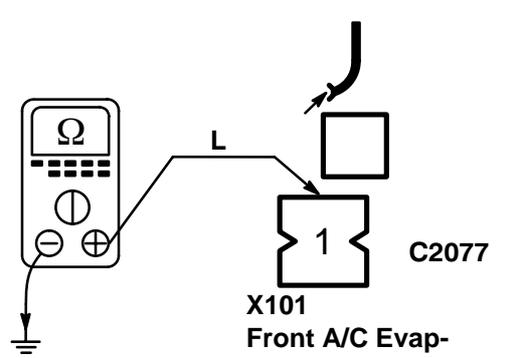
6C

R010002

CONDITIONS

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

RESULTS
Less than 2 ohms



X101
Front A/C Evap-
orator Tempera-
ture Switch



GO TO TEST E



PROBLEM CAUSE

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

Test D

1D

R050001

300Tdi with EDC

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT

K108
Compressor
Clutch Relay



PROBLEM CAUSE

- F3 Fuse
- NG Wire



2D

R050001

300Tdi with EDC

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

K108
Compressor
Clutch Relay



PROBLEM CAUSE

- WG Wire



3D
2D
R050001

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- Compressor Clutch
Operates

**K108
Compressor
Clutch Relay**



PROBLEM CAUSE

- BG Wire
- B Wire
- Compressor Clutch



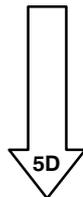
4D
R050001

CONDITIONS

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

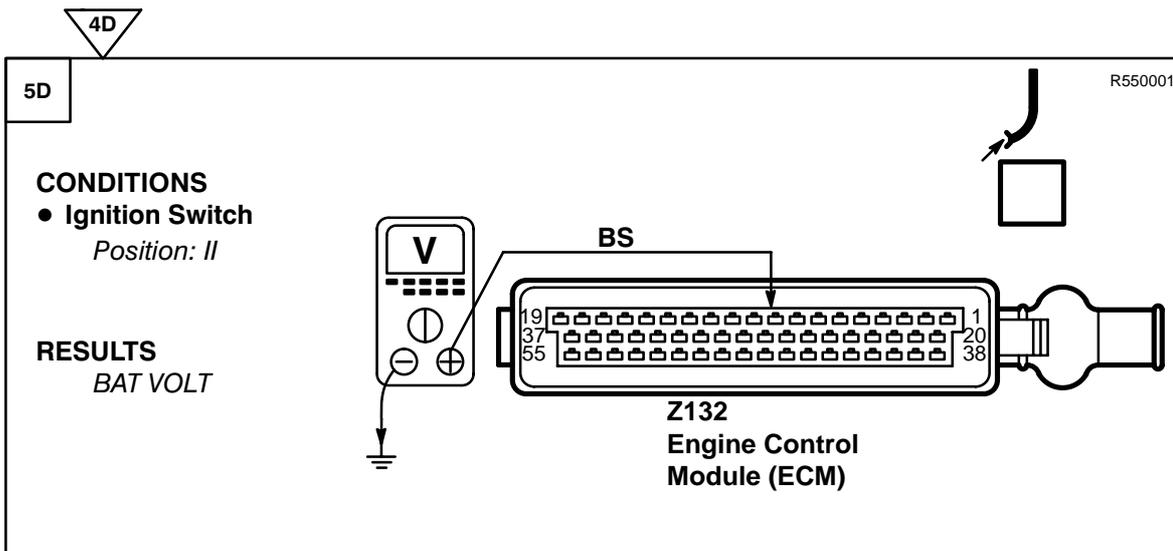
RESULTS
BAT VOLT

**K108
Compressor
Clutch Relay**



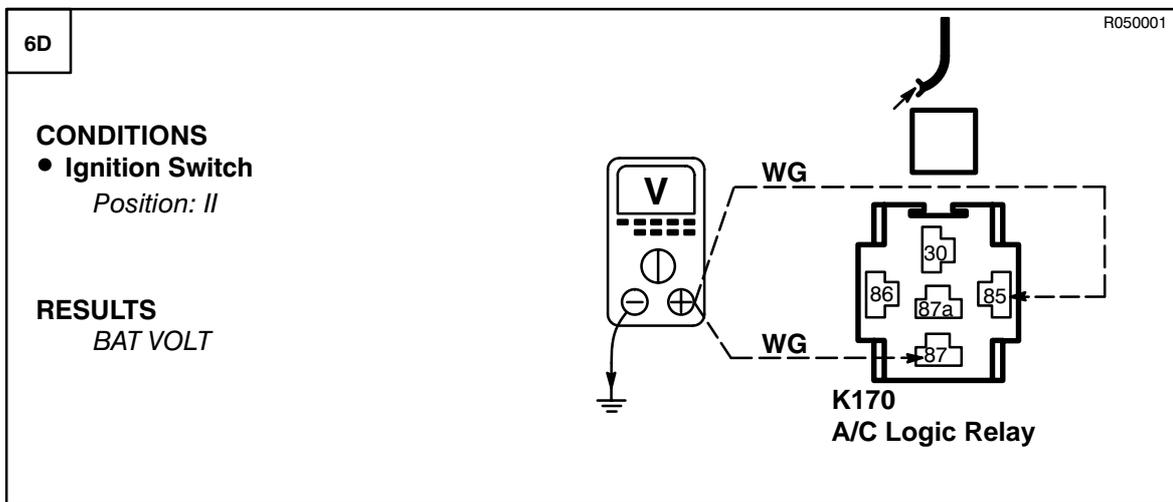
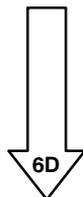
PROBLEM CAUSE

- Compressor Clutch Relay



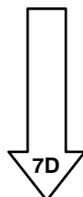
~~OK~~ PROBLEM CAUSE
- BS Wire

OK



~~OK~~ PROBLEM CAUSE
- WG Wire

OK



6D
7D
R050001

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

RESULTS

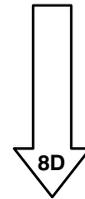
- Compressor Clutch
Operates

**K170
A/C Logic Relay**



PROBLEM CAUSE

- YG Wire
- Engine Control Module (ECM)



8D
R050001

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

RESULTS

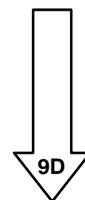
- Compressor Clutch
Operates

**K170
A/C Logic Relay**



PROBLEM CAUSE

- A/C Logic Relay



R010002

9D

CONDITIONS

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

RESULTS
Less than 2 ohms



GO TO TEST E



PROBLEM CAUSE

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

Test E

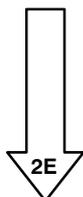
R020027

1E

CONDITIONS

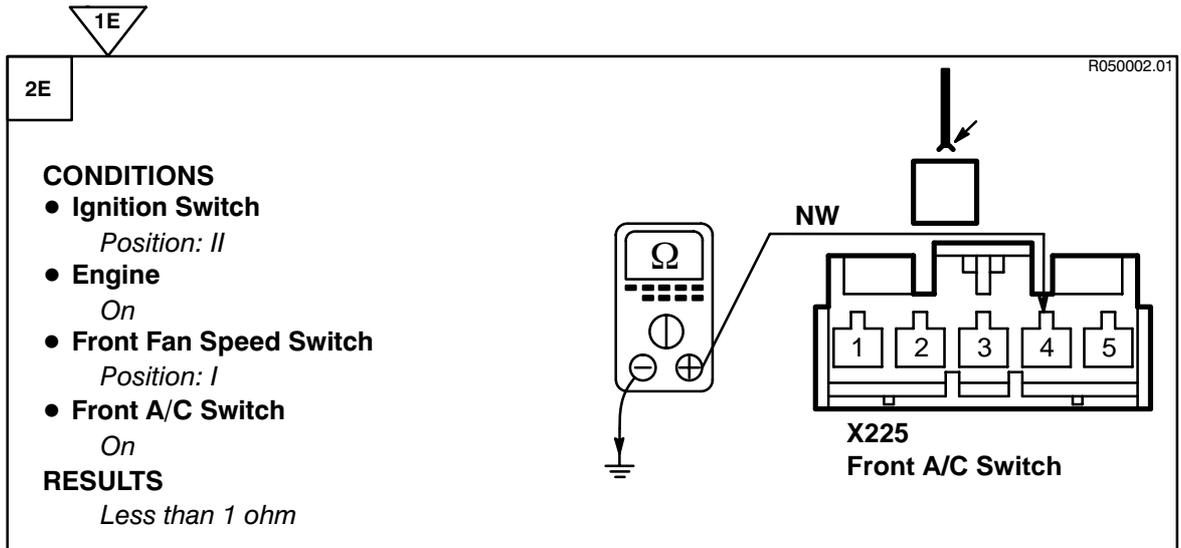
- Ignition Switch
Position: II
- Engine
On
- Front Fan Speed Switch
Position: I
- Front A/C Switch
On

RESULTS
Less than 2 ohms



PROBLEM CAUSE

- ON 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

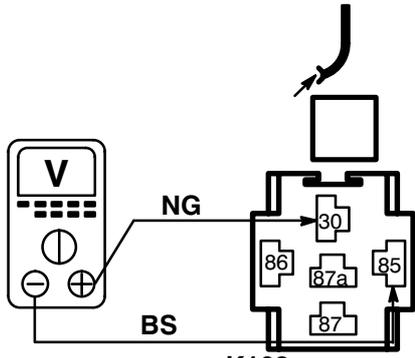
Test F

1F **MFI-V8** R050001

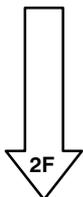
CONDITIONS

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

RESULTS
0V



K108
Compressor
Clutch Relay



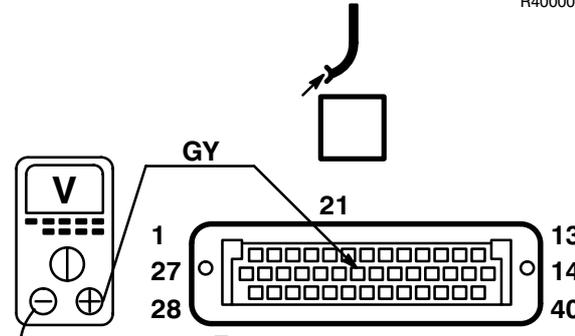
PROBLEM CAUSE
- Compressor
Clutch Relay

2F R400002

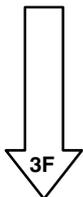
CONDITIONS

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

RESULTS
0V



Z132
Engine Control
Module (ECM)



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

2F
R050001

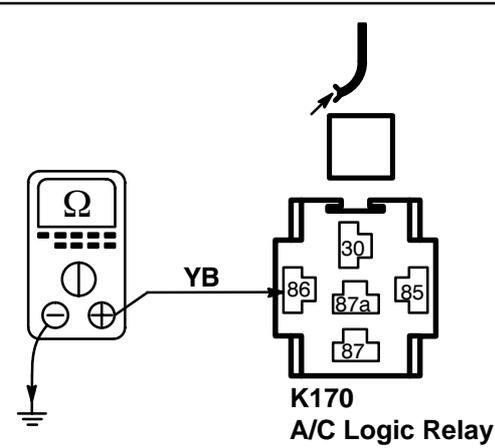
3F

CONDITIONS

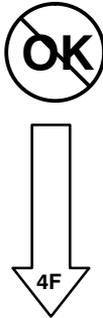
- Ignition Switch
Position: 0
- Front Fan Speed Switch
Position: 0

RESULTS

More than 10K ohms



K170
A/C Logic Relay



OK PROBLEM CAUSE
- A/C Logic Relay

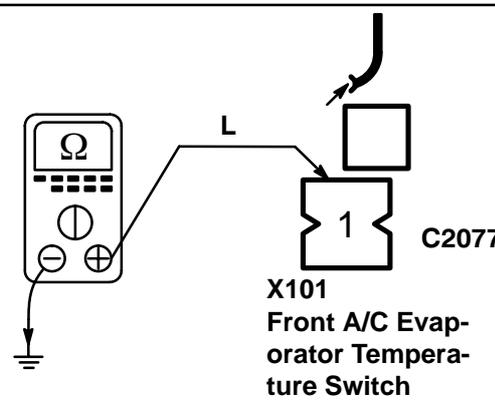
4F
R010002

CONDITIONS

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

RESULTS

More than 10K ohms



X101
Front A/C Evaporator Temperature Switch
C2077

OK GO TO TEST J

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

Test G

1G

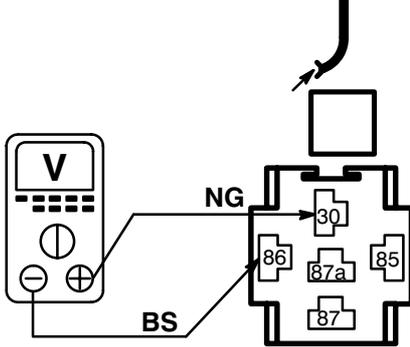
MFI-T16

R050001

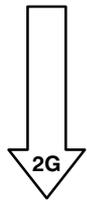
CONDITIONS

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

RESULTS
0V



K108
Compressor
Clutch Relay



PROBLEM CAUSE
- Compressor
Clutch Relay

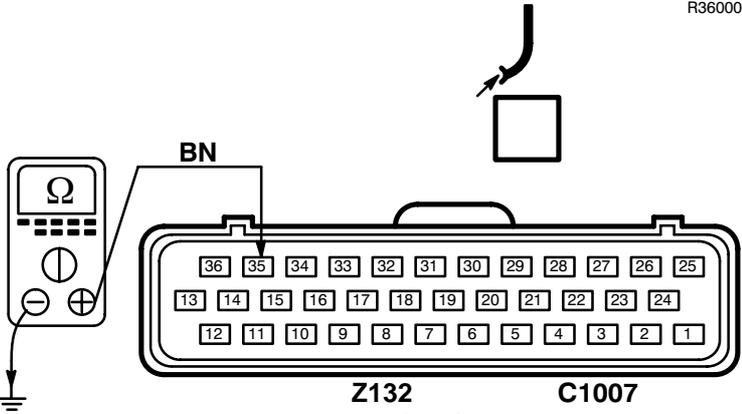
2G

R360001

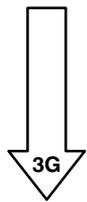
CONDITIONS

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

RESULTS
More than 10K ohms



Z132 **C1007**
Engine Control
Module (ECM)



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

2G
R050001

3G

CONDITIONS

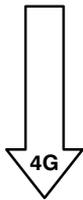
- Ignition Switch
Position: 0
- Front Fan Speed Switch
Position: 0

RESULTS
More than 10K ohms

**K170
A/C Logic Relay**



PROBLEM CAUSE
- A/C Logic Relay



4G
R010002

4G

CONDITIONS

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

RESULTS
More than 10K ohms

**X101
Front A/C Evap-
orator Tempera-
ture Switch**



GO TO TEST J

PROBLEM CAUSE
- YB Wire
- G Wire
- Front A/C Evap-
orator Tempera-
ture Switch

Test H

1H

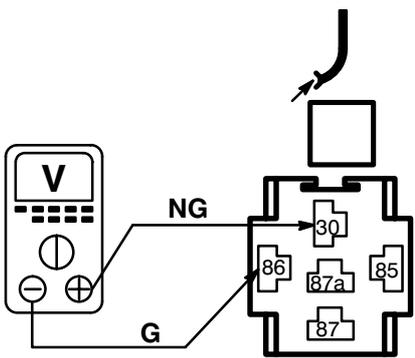
300Tdi without EDC

R050001

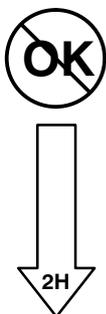
CONDITIONS

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

RESULTS
0V



K108
Compressor
Clutch Relay



OK PROBLEM CAUSE
- Compressor
Clutch Relay

2H

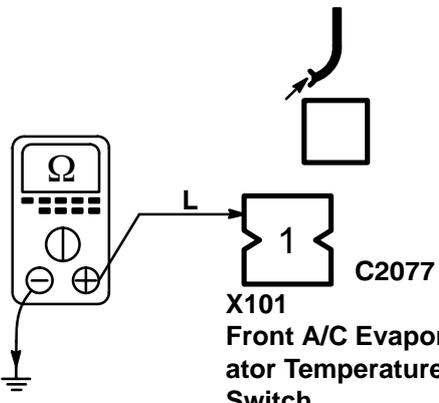
300Tdi without EDC

R010002

CONDITIONS

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

RESULTS
More than 10K ohms



X101
Front A/C Evaporator
Temperature
Switch

OK GO TO TEST J

OK PROBLEM CAUSE
- G, YB Wire
- Compressor Clutch
Cut-out Switch
- Front A/C Evaporator
Temperature Switch

Test I

11

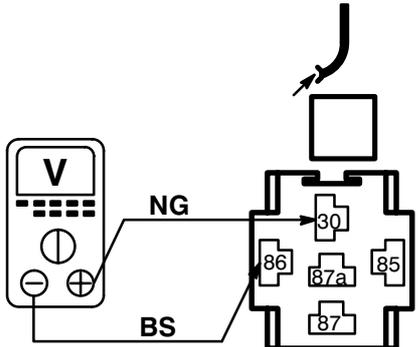
R050001

300Tdi with EDC

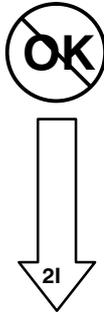
CONDITIONS

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

RESULTS
0V



K108
Compressor
Clutch Relay



OK PROBLEM CAUSE
- Compressor
Clutch Relay

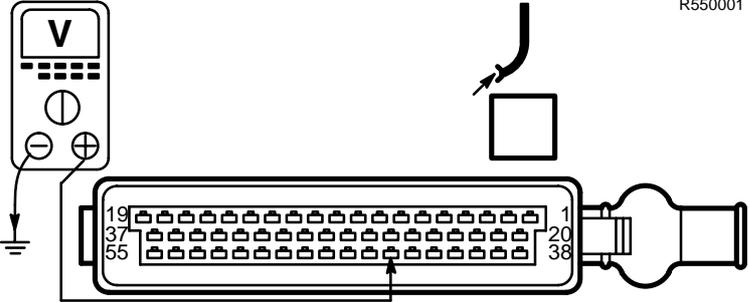
21

R550001

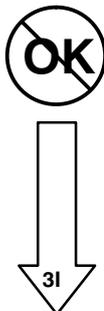
CONDITIONS

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

RESULTS
0V



Z132
Engine Control
Module (ECM)



OK PROBLEM CAUSE
- BS Wire
- Engine Control
Module (ECM)

R050001

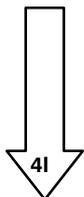
21
31

CONDITIONS

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

RESULTS
More than 10K ohms

**K170
A/C Logic Relay**



PROBLEM CAUSE
- A/C Logic Relay

R010002

41
41

CONDITIONS

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

RESULTS
More than 10K ohms

**X101
Front A/C Evaporator Temperature Switch**



GO TO TEST J



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

Test J

R050002.02

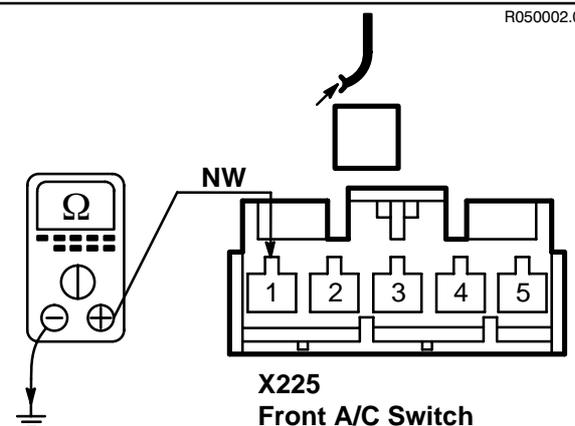
1J

CONDITIONS

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

RESULTS

More than 10K ohms



X225
Front A/C Switch



- PROBLEM CAUSE**
- N Wire
 - Front Fan Speed Switch



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

CIRCUIT OPERATION

Condenser Fan Operation (MFI-V8)

The Condenser Fans Motors (M113, M121) on vehicles equipped with MFI-V8 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 (MFI-V8)

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 (MFI-V8)

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 Front Fan Speed Switch (X247) 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 (MFI-V8)

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 the Condenser Fan Motors (M113, M121) through the relay contacts.

Cooling Fan and Condenser Fan Operation (MFI-T16)

The Cooling Fan 1 (M141) or Cooling Fans (M141, M142) and Condenser Fan Motors (M113, M121) on vehicles equipped with MFI-T16 engines operate when any of the following conditions occur:

1. The A/C system is operating.
2. The Engine Control Module (ECM) determines that Cooling Fan and/or Condenser Fan Motor operation is required.

Cooling Fan Operation without A/C (MFI-T16)

With the Ignition Switch (X134) in position II, battery voltage is applied to the Cooling Fan Relay (K190) from fuse F3 of the Satellite Fuse Box 1 (P127). When Cooling Fan Operation is required, the Engine Control Module (ECM) (Z132) grounds terminal 86 of the Cooling Fan Relay (K190). The relay energizes, applying battery voltage from fuse F3 of the Engine Compartment Fuse Box (P125) to the Cooling Fan Motor 1 (M141). When Cooling Fan Operation is no longer required, the ECM removes the ground supply to the Cooling Fan Relay (K190). The Relay de-energizes, removing the voltage supply to the Cooling Fan Motor 1 (M141).

Cooling Fan and Condenser Fan Operation with A/C (MFI-T16)

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 Cooling Fan and Condenser Fan operation is required, the Engine Control Module (ECM) (Z132) grounds terminal 86 of the Condenser Fan Relay (K109). The relay energizes, applying battery voltage from fuse F3 of the Engine Compartment Fuse Box (P125) to the Cooling Fan Motors (M141, 142) and the Condenser Fan Motors (M113, M121). When Cooling Fan and Condenser Fan operation is no longer required, the ECM removes the ground supply to the Condenser Fan Relay (K109). The relay de-energizes, removing the voltage supply to the Cooling Fans (M141, M142) and the Condenser Fan Motors (M113, M121).

Condenser Fan Operation (300Tdi)

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

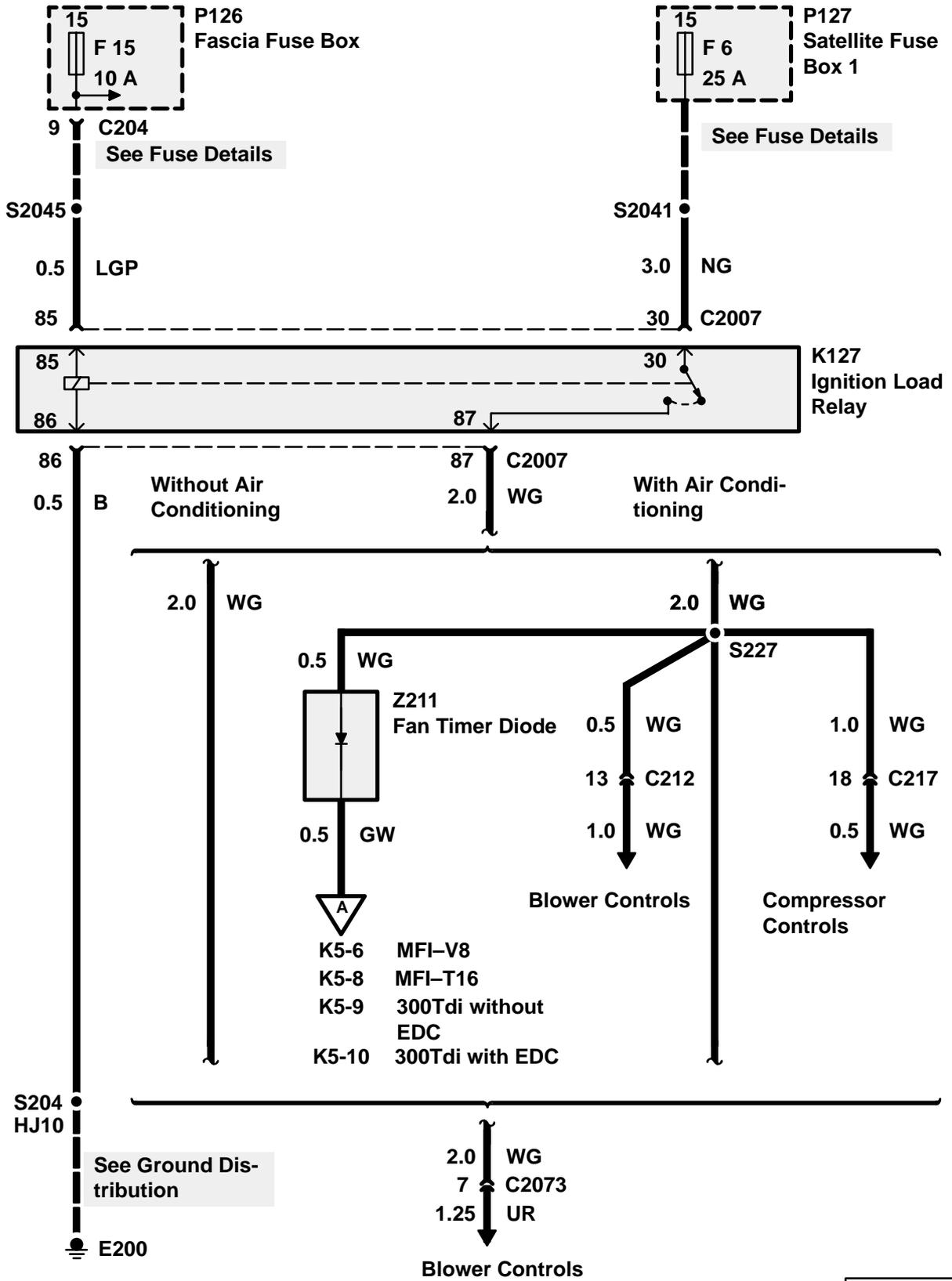
1. Coolant temperature exceeds 100°C (212°F).
2. The A/C is operating.

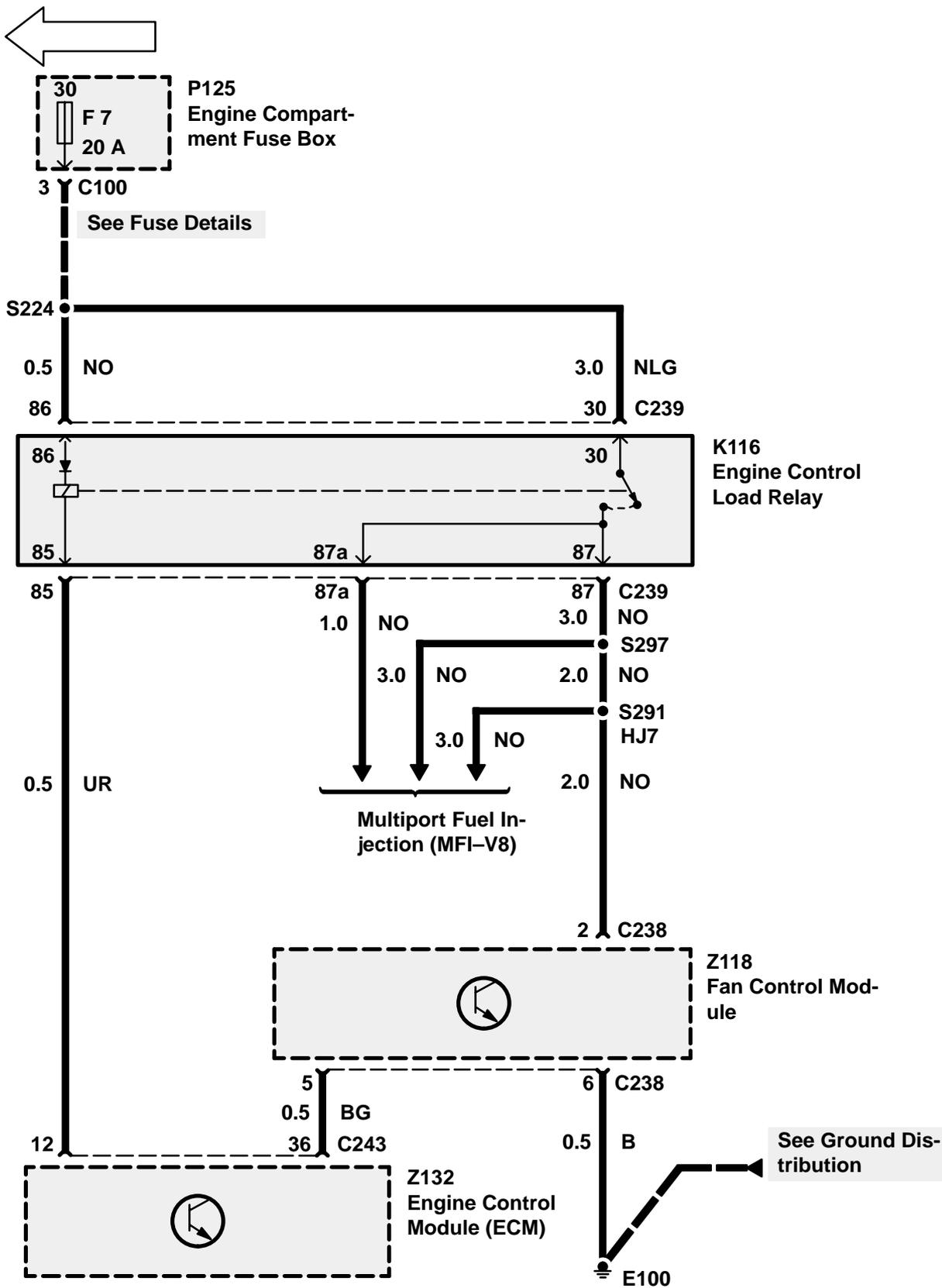
Condenser Fan with High Coolant Temperature Operation (300Tdi)

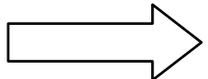
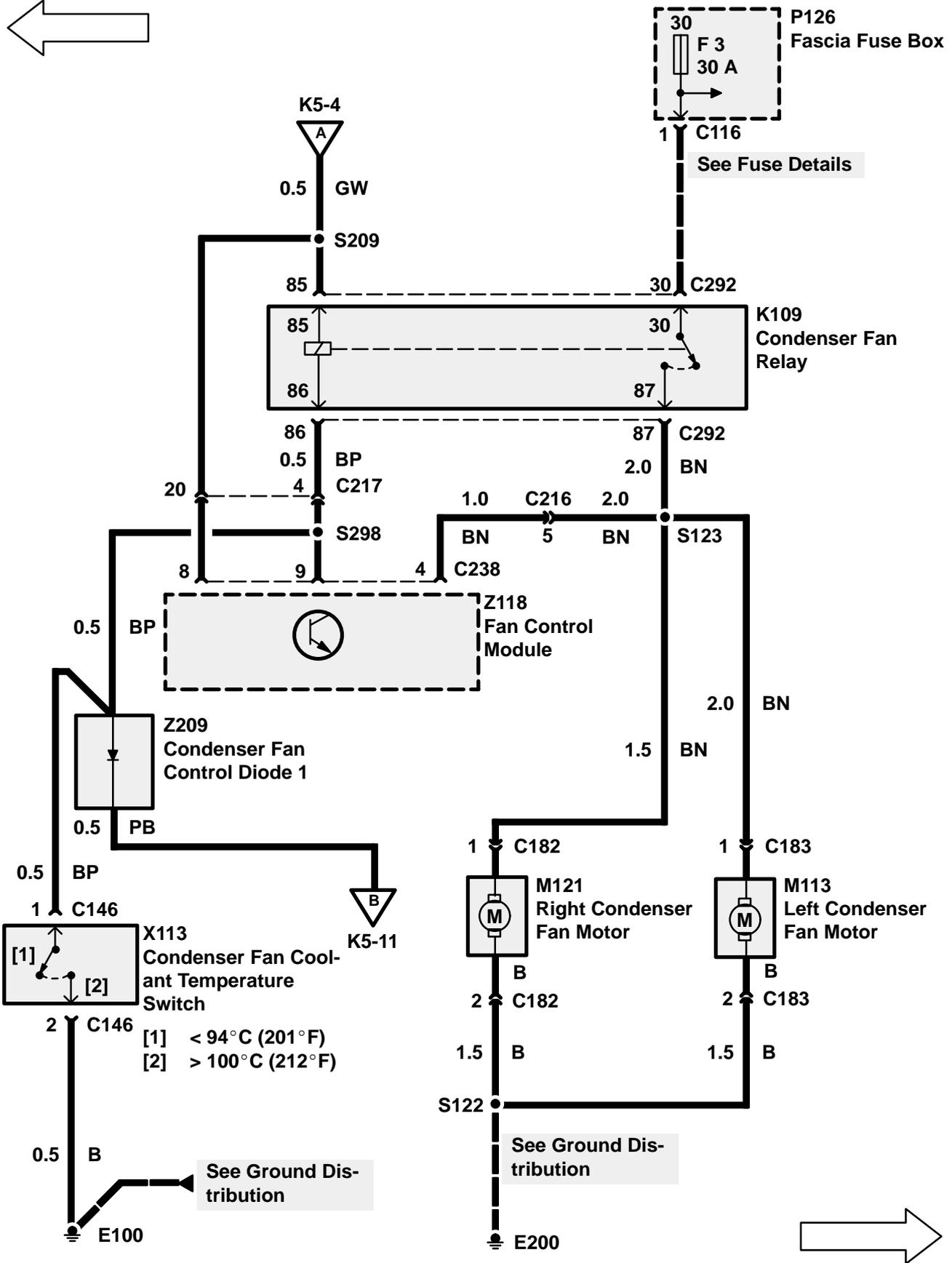
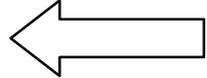
When the Ignition Switch (X134) is in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Condenser Fan Relay (K109). If the coolant temperature exceeds 100°C (212°F), the Condenser Fan Coolant Temperature Switch (X113) closes 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.

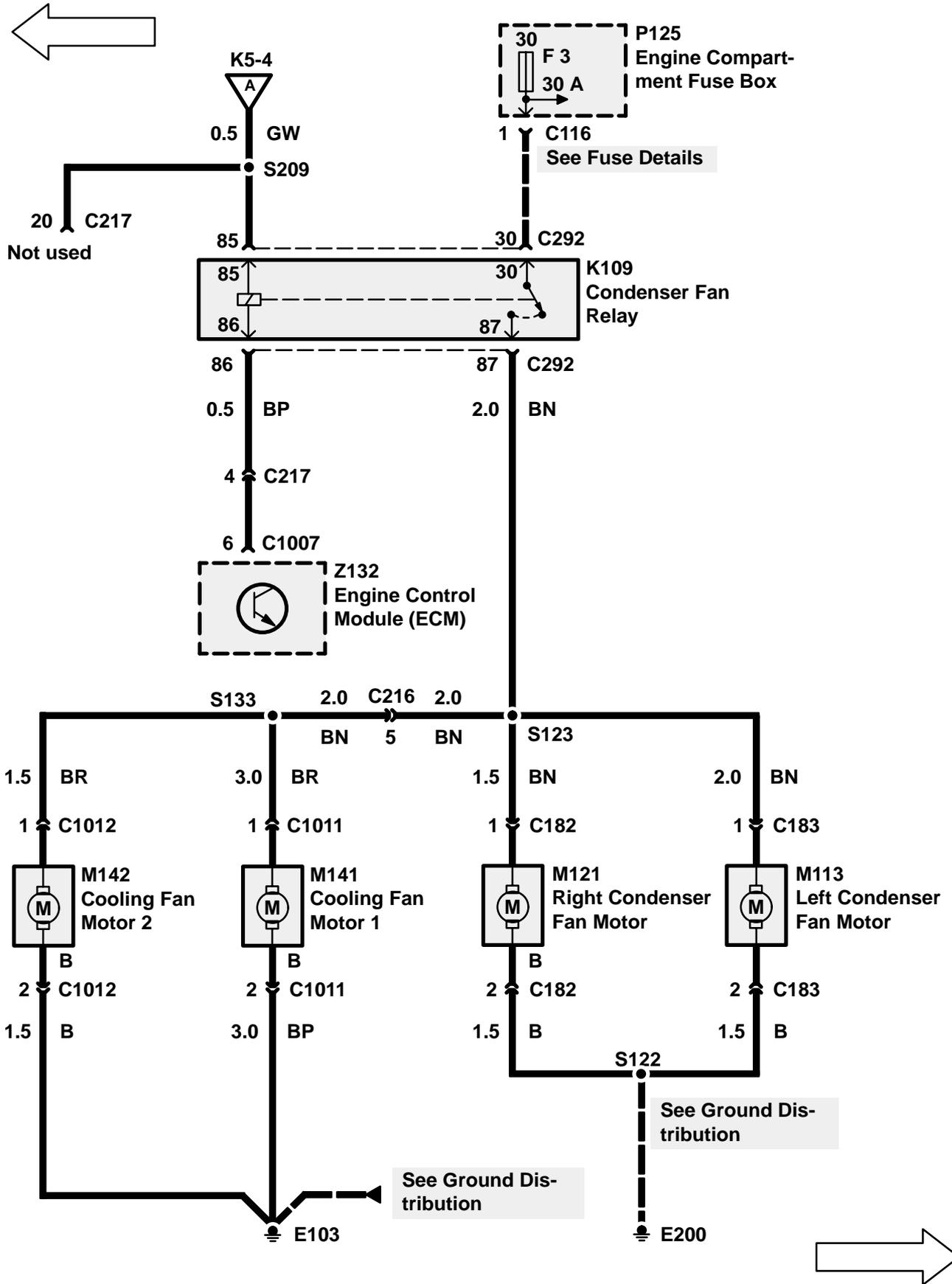
Fan Operation with A/C (300Tdi)

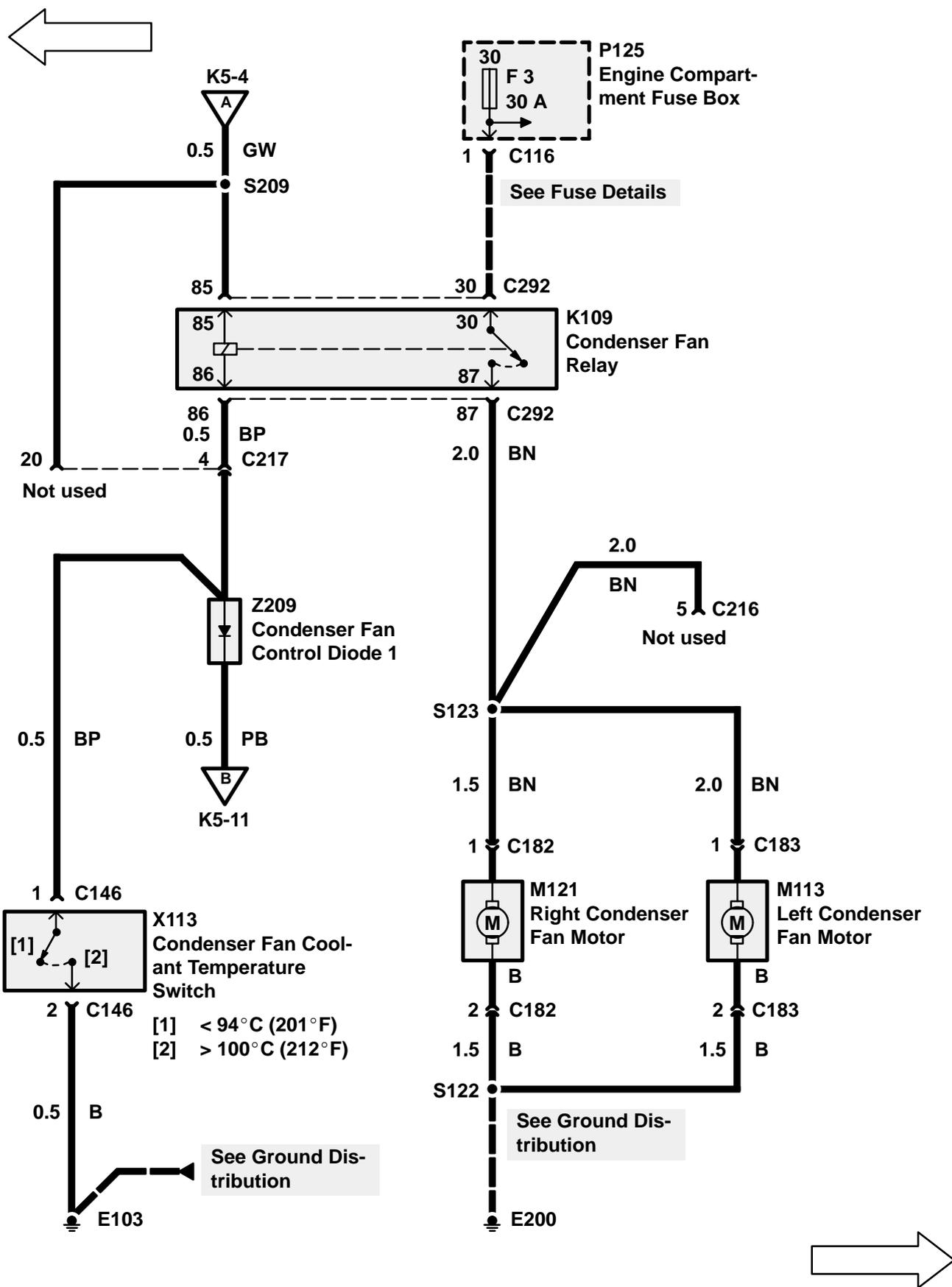
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Condenser Fan Relay (K109) when the Front A/C Switch (X225) is turned on and the Front Fan Speed Switch (X247) is turned to positions I, 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).

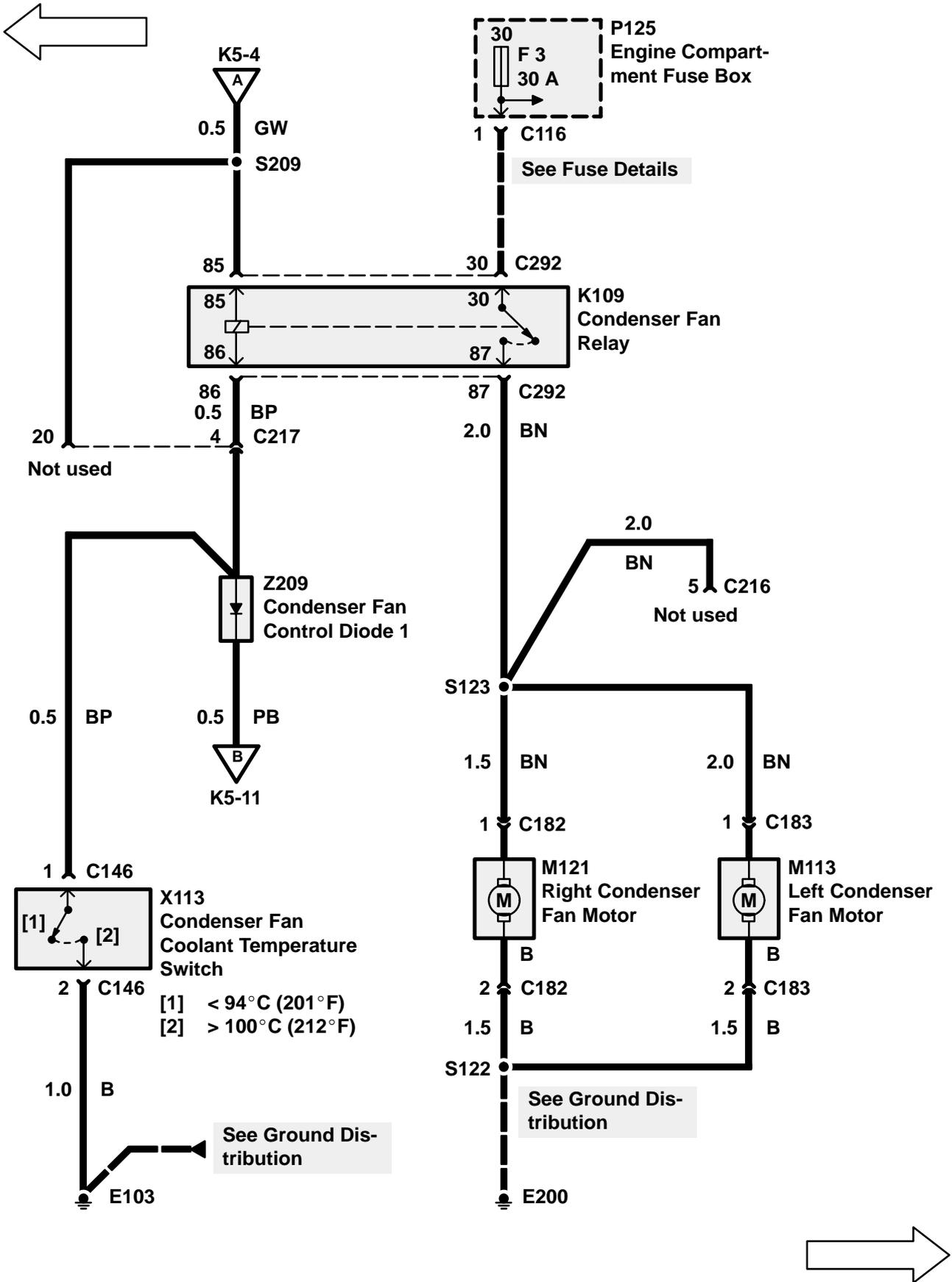


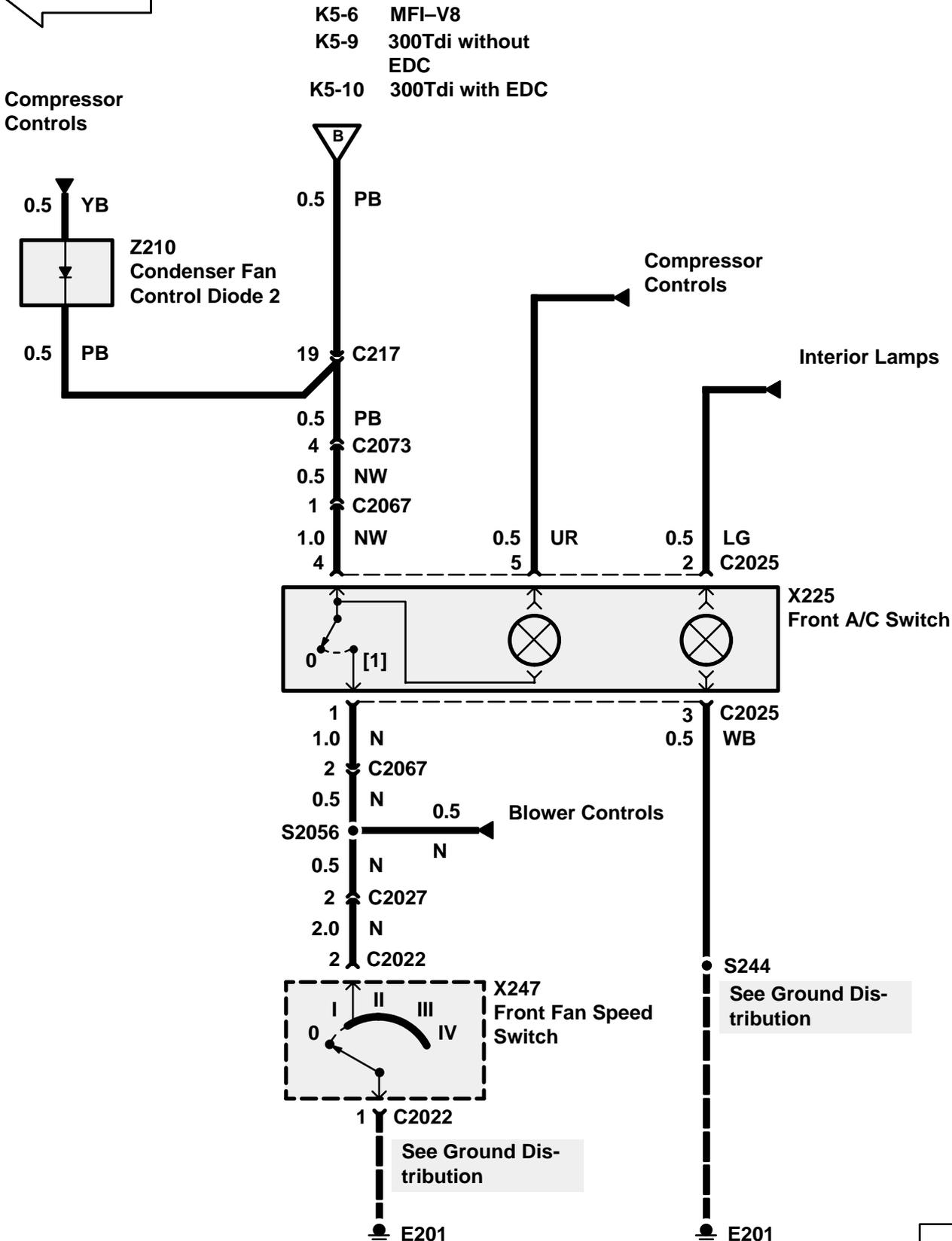
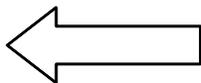












TROUBLESHOOTING HINTS

1. Check Fuses F3, and F7 in the Engine Compartment Fuse Box (P125).
2. Check Fuse F15 in the Fascia Fuse Box (P126).
3. If the Blower Motor(s) do not operate normally, refer to Blower Controls, Section K1.

SYSTEM DIAGNOSIS (MFI–V8)

1. If the Condenser Fans do not turn on when the A/C is turned on, do Test A, the Condenser Fan Relay (K109) test.
2. If only one of the Condenser Fans operate, do Test H, 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 J, the Temperature Switch (X113) test.
4. 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 K, the Fan Control Module (Z118) test.

SYSTEM DIAGNOSIS (MFI–T16)

1. For models without A/C, if the Cooling Fan does not operate, do Test B, the Cooling Fan Relay (K190) test.
2. For models with A/C, if the fans do not operate, do Test C, the Condenser Fan Relay (K109) test.
3. If only one of the Condenser Fans operate, do Test H, the Condenser Fan Motor (M113, M121) test.
4. If only one of the Cooling Fans operate, do Test I, the Cooling Fan (M141, M142) test.

SYSTEM DIAGNOSIS (300TDI WITH EDC)

1. If the Condenser Fans do not turn on when the A/C is turned on, do Test D, the Condenser Fan Relay (K109) test.
2. If only one of the Condenser Fans operate, do test H, 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 J, the Temperature Switch (X113) test.

SYSTEM DIAGNOSIS (300 TDI WITHOUT EDC)

1. If the Condenser Fans do not turn on when the A/C is turned on, do Test E, the Condenser Fan Relay (K109) test.
2. If only one of the Condenser Fans operate, do Test H, the Condenser Fan Motor (M113, M121) test.
3. If the Condenser Fans do not turn on when the coolant temperature exceeds 100°C (212°F), do Test S, the Temperature Switch test.

Test A

R050001

1A

Condenser Fan Relay Test MFI-V8

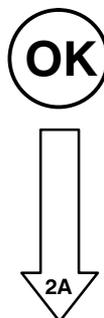
CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT

**K109
Condenser Fan
Relay**

OK PROBLEM CAUSE
 - F3 Fuse
 - NG Wire



R050001

2A

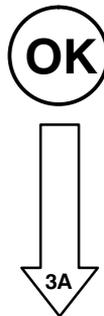
CONDITIONS

- Ignition Switch
Position: II
- Engine
On

RESULTS
BAT VOLT

**K109
Condenser Fan
Relay**

OK PROBLEM CAUSE
 - GW Wire
 - Fan Timer Diode



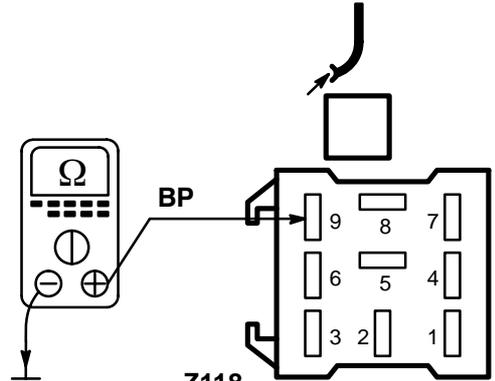
3A
2A
R090002

CONDITIONS

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

RESULTS

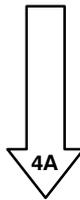
Less than 1 ohm



Z118
Fan Control Module

~~OK~~ GO TO TEST F

OK



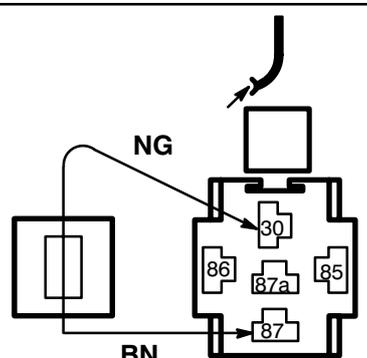
4A
R050001

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- M113, M121 Condenser Fan Motors
Operate



K109
Condenser Fan Relay

~~OK~~ PROBLEM CAUSE
- BN Wire

OK PROBLEM CAUSE
- Condenser Fan Relay

Test B

R050001

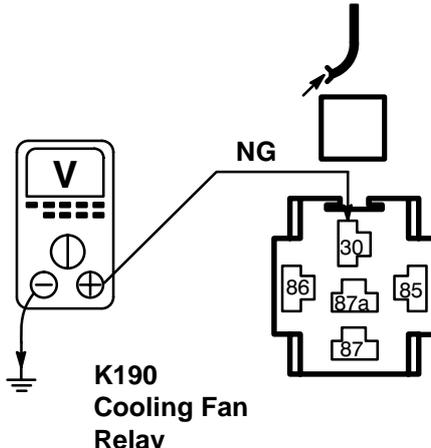
1B

Cooling Fan Relay Test MFI-T16

CONDITIONS

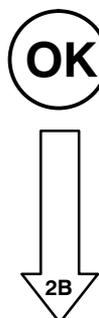
- Ignition Switch
Position: 0

RESULTS
BAT VOLT



**K190
Cooling Fan
Relay**

OK PROBLEM CAUSE
 - F3 Fuse
 - NG Wire



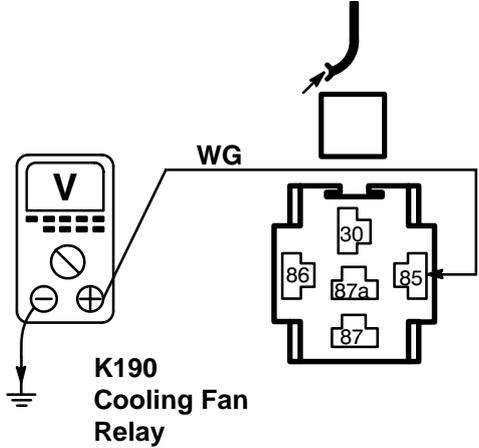
R050001

2B

CONDITIONS

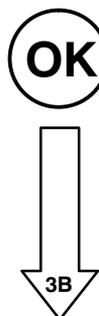
- Ignition Switch
Position: II

RESULTS
BAT VOLT



**K190
Cooling Fan
Relay**

OK PROBLEM CAUSE
 - F3 Fuse
 - WG Wire



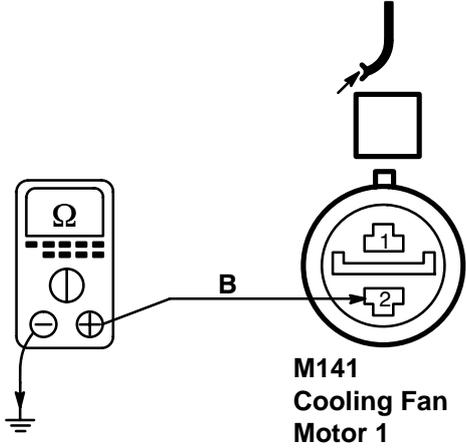
3B
2B
R020011

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

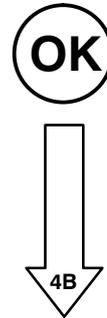
Less than 1 ohm



**M141
Cooling Fan
Motor 1**

OK **PROBLEM CAUSE**

- B Wire
- E103



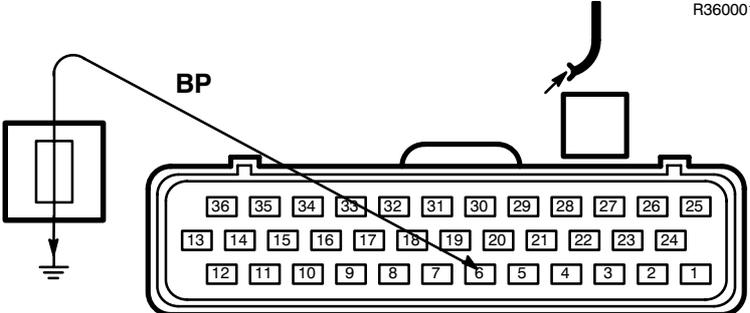
4B
4B
R360001

CONDITIONS

- Ignition Switch
Position: II

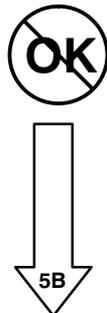
RESULTS

- Cooling Fan Motor 1
Operates



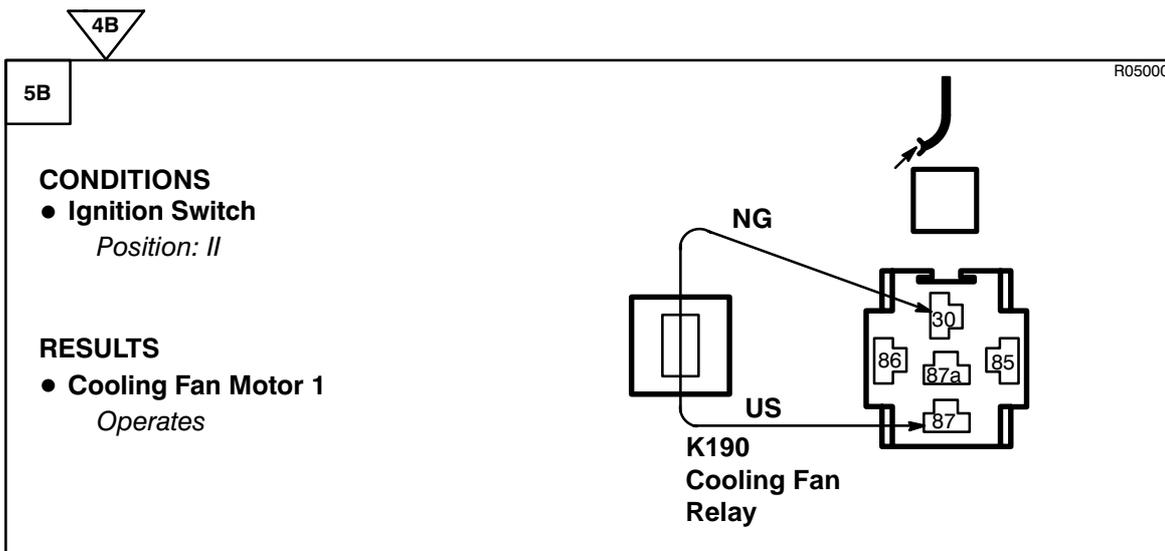
**Z132
Engine Control
Module (ECM)**

C1007



OK **PROBLEM CAUSE**

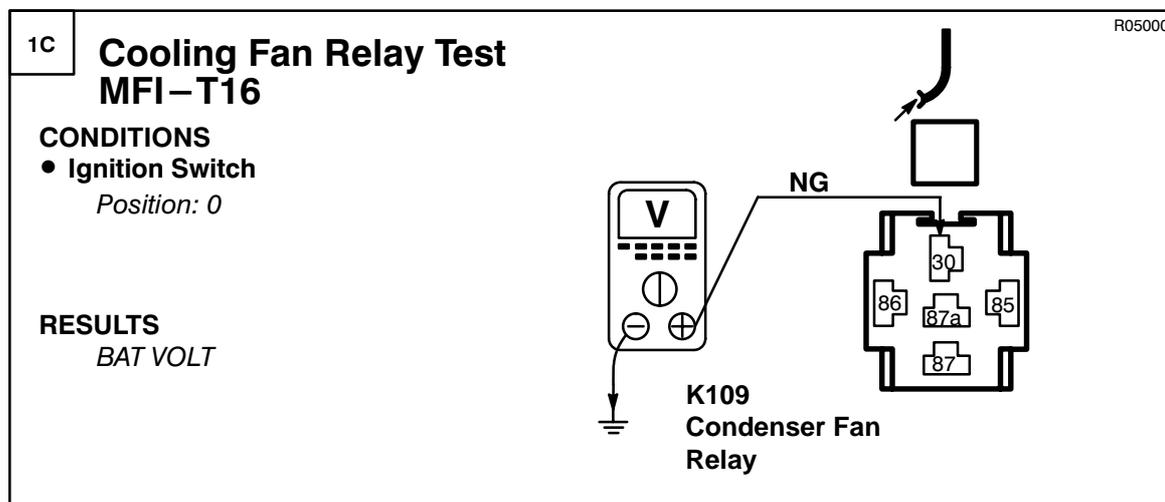
- BP Wire
- Engine Control Module (ECM)



OK PROBLEM CAUSE
 - US Wire
 - Cooling Fan Motor 1

OK PROBLEM CAUSE
 - Cooling Fan Relay

Test C



OK PROBLEM CAUSE
 - F3 Fuse
 - NG Wire

OK

↓
2C

1C
2C
R050001

CONDITIONS

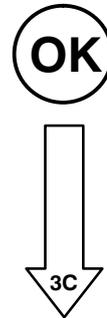
- Ignition Switch
Position: II
- Engine
On

RESULTS
BAT VOLT

K109
Condenser Fan Relay

~~OK~~

PROBLEM CAUSE
 - GW Wire
 - Fan Timer Diode



3C
3C
R360001

CONDITIONS

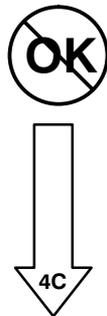
- Ignition Switch
Position: II

RESULTS

- Fan Motors
Operate

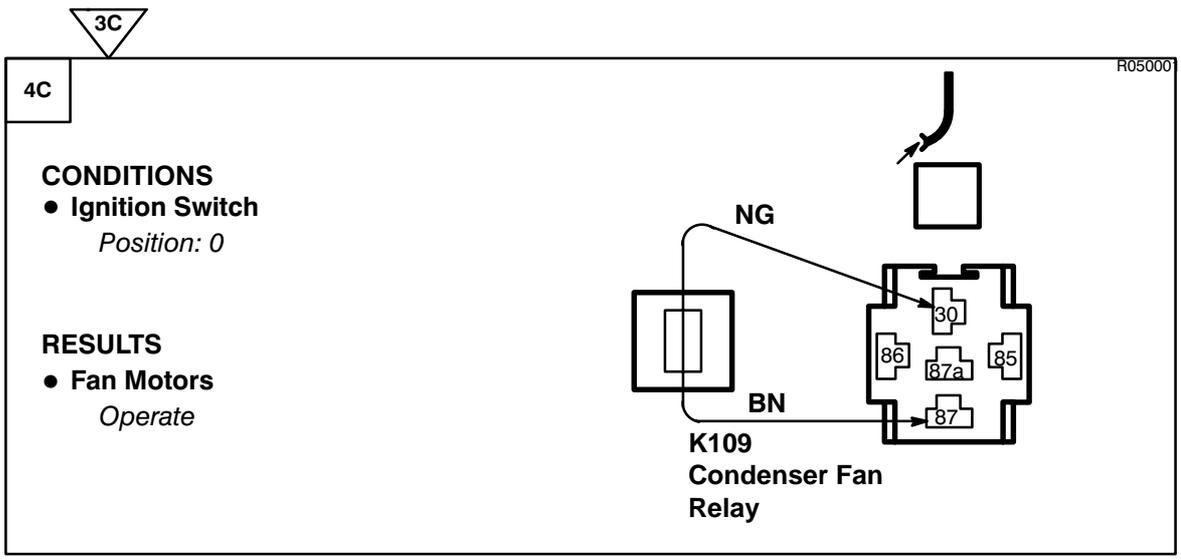
Z132
Engine Control Module (ECM)

C1007



OK

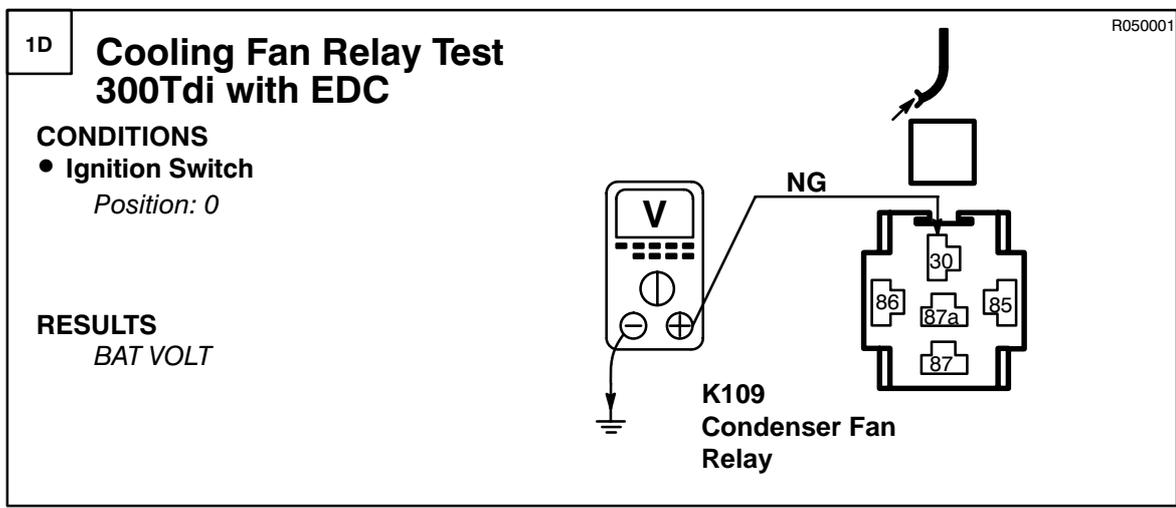
PROBLEM CAUSE
 - BP Wire
 - Engine Control Module (ECM)



~~OK~~ PROBLEM CAUSE
- BN Wire

OK PROBLEM CAUSE
- Condenser Fan Relay

Test D



~~OK~~ PROBLEM CAUSE
- F3 Fuse
- NG Wire

OK

↓
2D

2D
1D
R050001

CONDITIONS

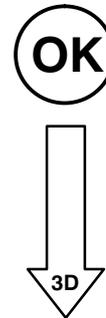
- Ignition Switch
Position: II
- Engine
On

RESULTS
BAT VOLT

K109
Condenser Fan Relay

~~OK~~

PROBLEM CAUSE
 - GW Wire
 - Fan Timer Diode



3D
R050001

CONDITIONS

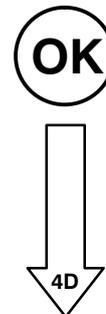
- Ignition Switch
Position: II
- Front Fan Speed Switch
Position: I
- Front A/C Switch
A/C Mode

RESULTS
Less than 1 ohm

K109
Condenser Fan Relay

~~OK~~

GO TO TEST G



3D

4D

R050001

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- M113, M121 Condenser Fan Motors
Operate

K109
Condenser Fan
Relay

~~OK~~ PROBLEM CAUSE
- BN Wire

OK PROBLEM CAUSE
- Condenser Fan Relay

Test E

1E

**Condenser Fan Relay Test
300Tdi without EDC**

R050001

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

BAT VOLT

K109
Condenser Fan
Relay

~~OK~~ PROBLEM CAUSE
- F3 Fuse
- NG Wire

OK

↓
2E

R050001

1E
2E

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

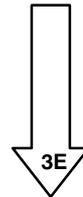
RESULTS
BAT VOLT

**K109
Condenser Fan
Relay**



PROBLEM CAUSE

- GW Wire
- Fan Timer Diode



R050001

3E
3E

CONDITIONS

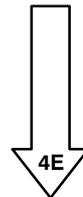
- Ignition Switch
Position: II
- Front Fan Speed Switch
Position: I
- Front A/C Switch
A/C Mode

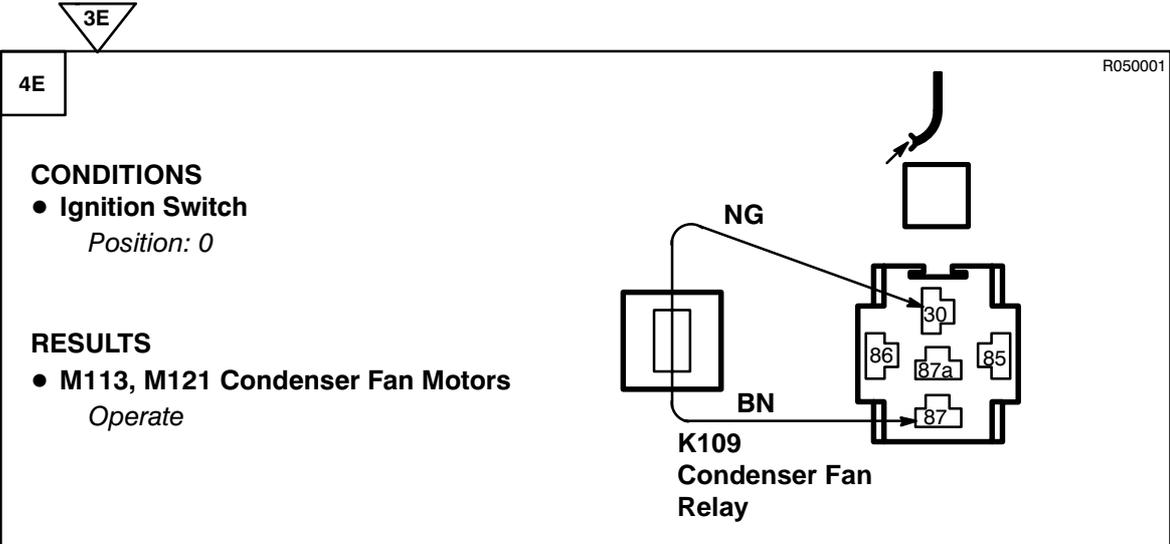
RESULTS
BAT VOLT

**K109
Condenser Fan
Relay**



GO TO TEST G





OK PROBLEM CAUSE
- BN Wire

OK PROBLEM CAUSE
- Condenser Fan Relay

Test F

1F

A/C Mode

CONDITIONS

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

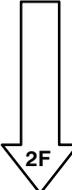
RESULTS

- Compressor Clutch
On
- Front Blower Motor
On



GO TO SECTION K1





2F

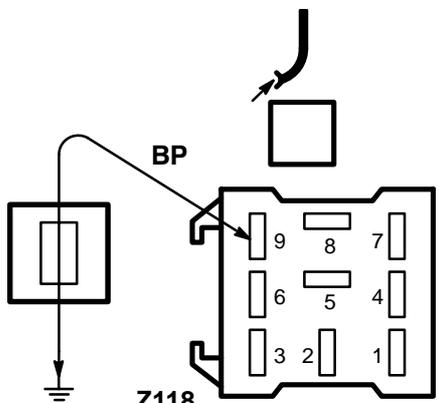
R090002

CONDITIONS

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

RESULTS

- M113, M121 Condenser Fan Motors
Operate



Z118
Fan Control Module



PROBLEM CAUSE
- BP Wire



PROBLEM CAUSE
- PB Wire
- Condenser Fan Control Diode 1

Test G

1G A/C Mode

CONDITIONS

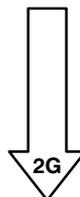
- **Ignition Switch**
Position: II
- **Front Fan Speed Switch**
Position: I
- **Front A/C Switch**
A/C Mode

RESULTS

- **Compressor Clutch**
On
- **Front Blower Motor**
On



GO TO SECTION K1



2G R200003

CONDITIONS

- **Ignition Switch**
Position: II
- **Front 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 H

R020011

1H

Condenser Fan Motor Test

CONDITIONS

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

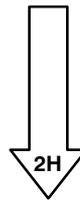
RESULTS
BAT VOLT

M113, M121 Condenser Fan Motor

~~OK~~

PROBLEM CAUSE
 - BN Wire

OK



R020011

2H

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

M113, M121 Condenser Fan Motor

~~OK~~

PROBLEM CAUSE
 - B Wire
 - Ground Connections

OK

PROBLEM CAUSE
 - M113, M121 Condenser Fan Motor

Test I

R020011

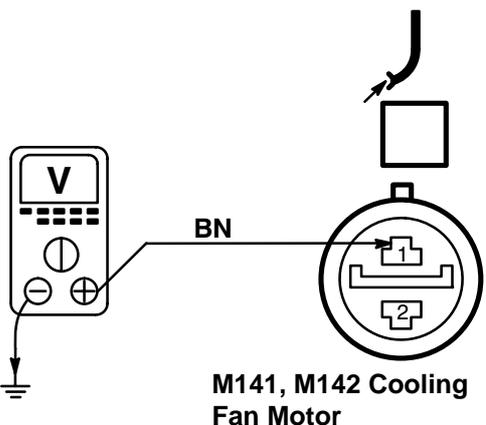
11

Cooling Fan Motor Test

CONDITIONS

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

RESULTS
BAT VOLT



M141, M142 Cooling Fan Motor

C1011
C1012

~~OK~~ PROBLEM CAUSE
- BR Wire

OK



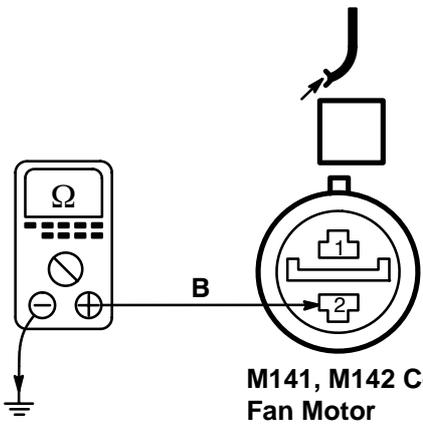
R020011

21

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm



M141, M142 Cooling Fan Motor

C1011
C1012

~~OK~~ PROBLEM CAUSE
- B Wire
- Ground Connections

OK PROBLEM CAUSE
- M141, M142 Cooling Fan Motor

Test J

R020003

1J

Temperature Switch Test

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

X113
Condenser Fan
Coolant Tem-
perature Switch



PROBLEM CAUSE
- BP Wire



R020003

2J

Temperature Switch Test

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- M113, M121 Condenser Fan Motors
Operate

X113
Condenser Fan
Coolant Tem-
perature Switch



PROBLEM CAUSE
- B Wire
- E100
- E103



PROBLEM CAUSE
- Condenser Fan
Coolant Tem-
perature Switch

Test K

R090002

1K

Fan Timer Test

CONDITIONS

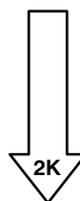
- Ignition Switch
Position: II
- Engine
On

RESULTS
BAT VOLT

Z118
Fan Control Module

~~OK~~ PROBLEM CAUSE
- NO Wire

OK



R090002

2K

CONDITIONS

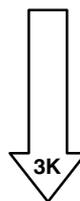
- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

Z118
Fan Control Module

~~OK~~ PROBLEM CAUSE
- B Wire
- E100

OK



2K

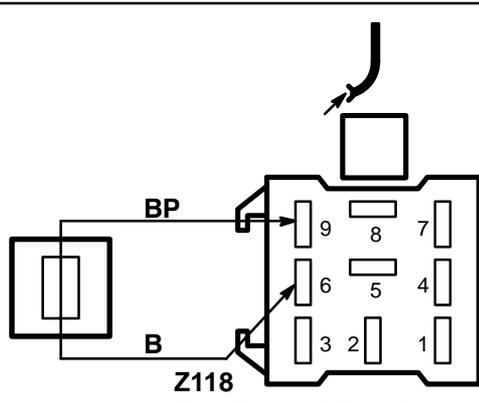
3K

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- M113, M121 Condenser Fan Motors
Operate



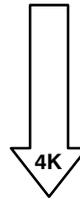
**Z118
Fan Control Module**

R090002



PROBLEM CAUSE

- BP Wire
- B Wire



4K

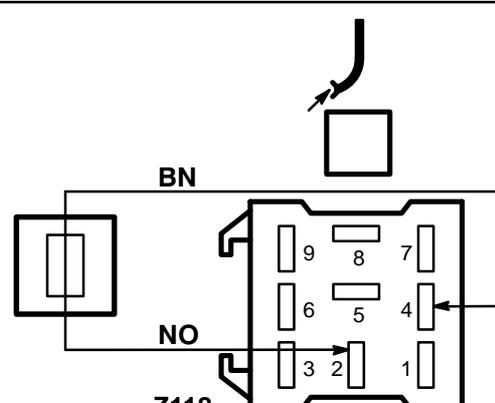
4K

CONDITIONS

- Ignition Switch
Position: II
- Engine
On

RESULTS

- M113, M121 Condenser Fan Motors
Operate



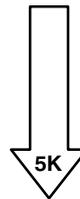
**Z118
Fan Control Module**

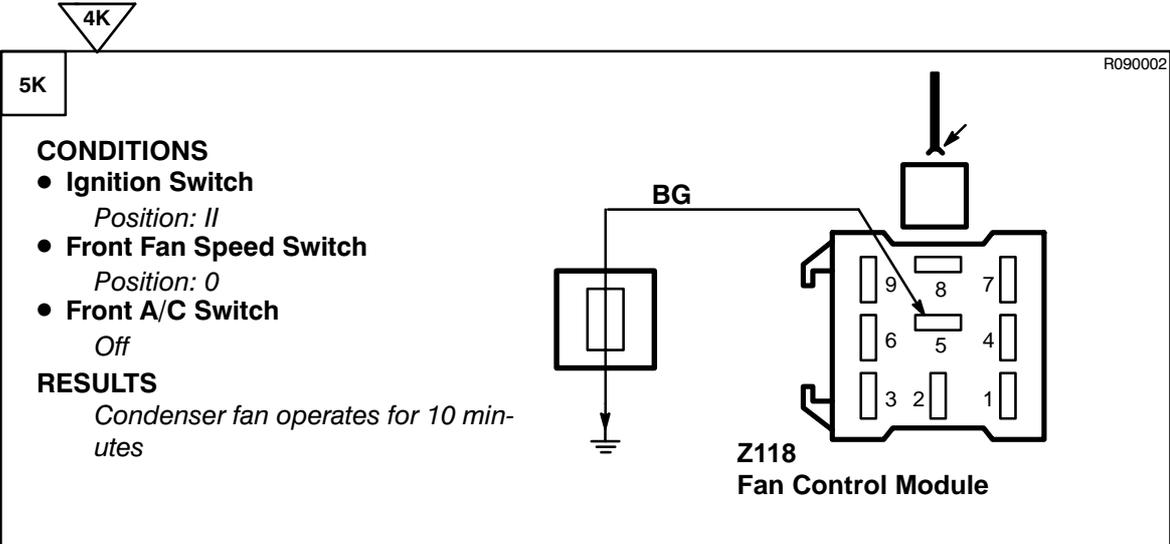
R090002



PROBLEM CAUSE

- BN Wire





OK PROBLEM CAUSE
- Fan Control Module

OK 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 F1 and F2. The Window Lift ECU is grounded through the B wire at ground E201.

Timeout Feature

Fuse F15 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.

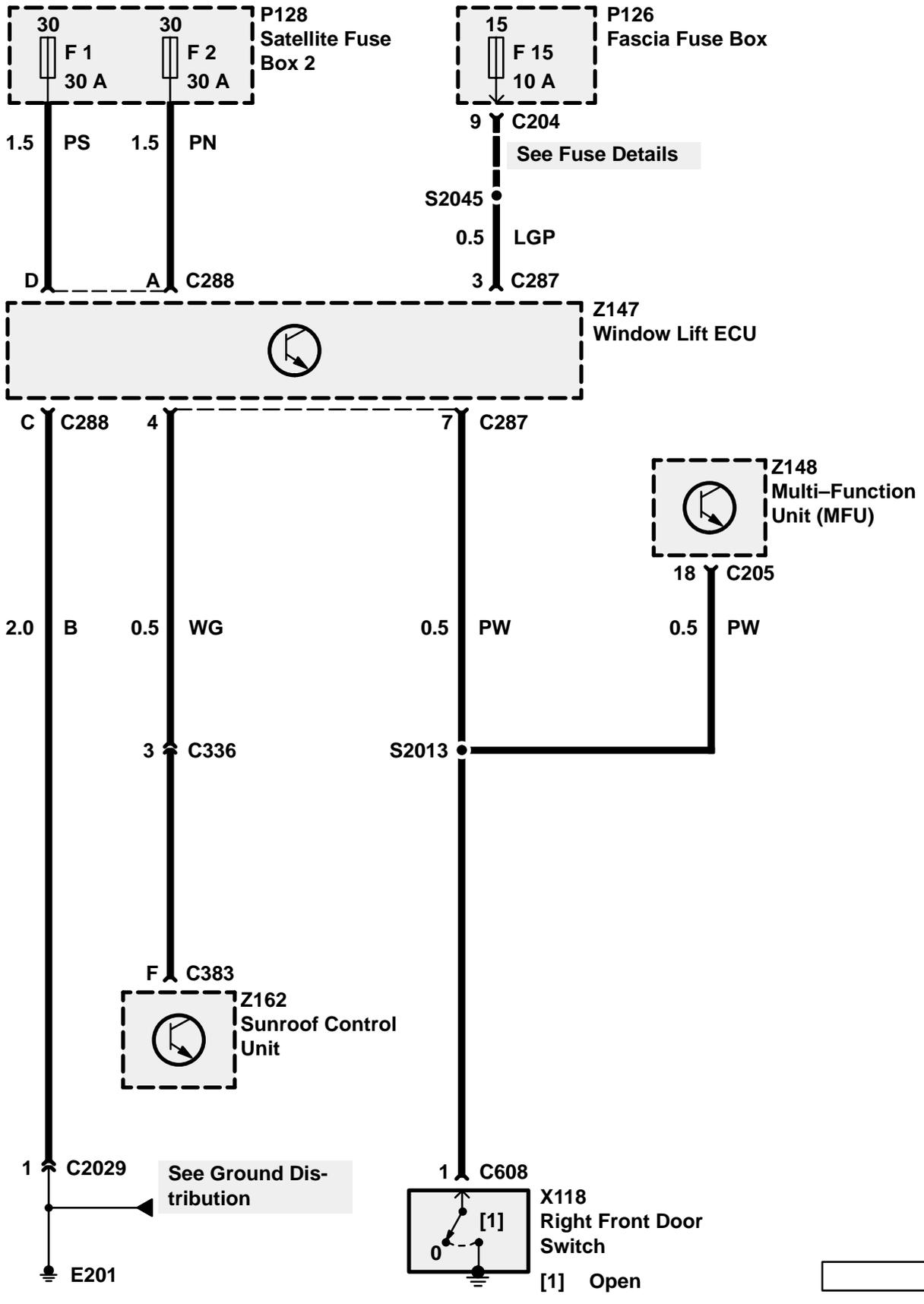
Rear Window

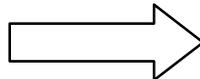
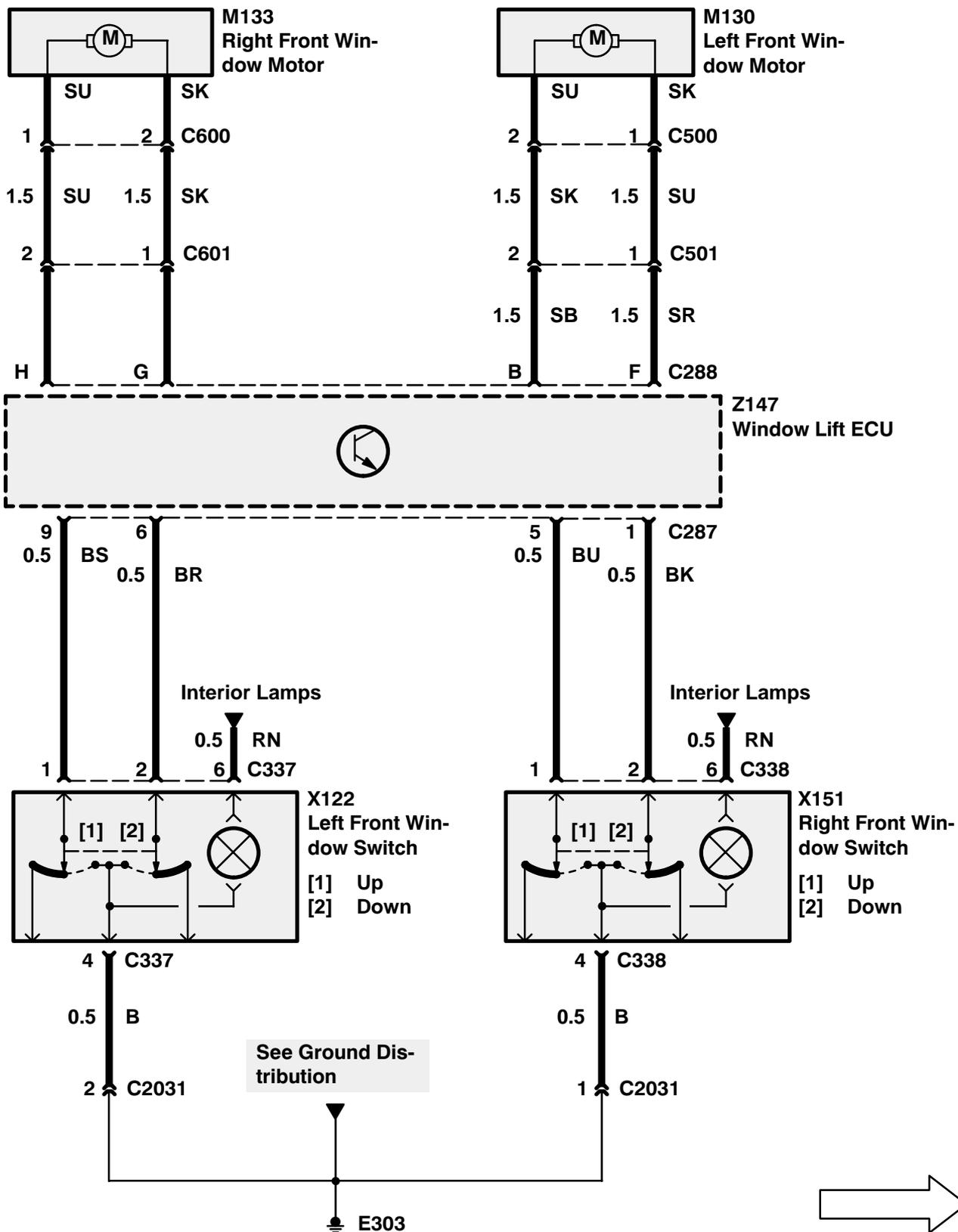
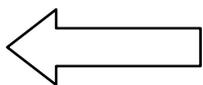
The Window Lift ECU terminal E supplies voltage to the Rear Window Console and door switches for rear window operation.

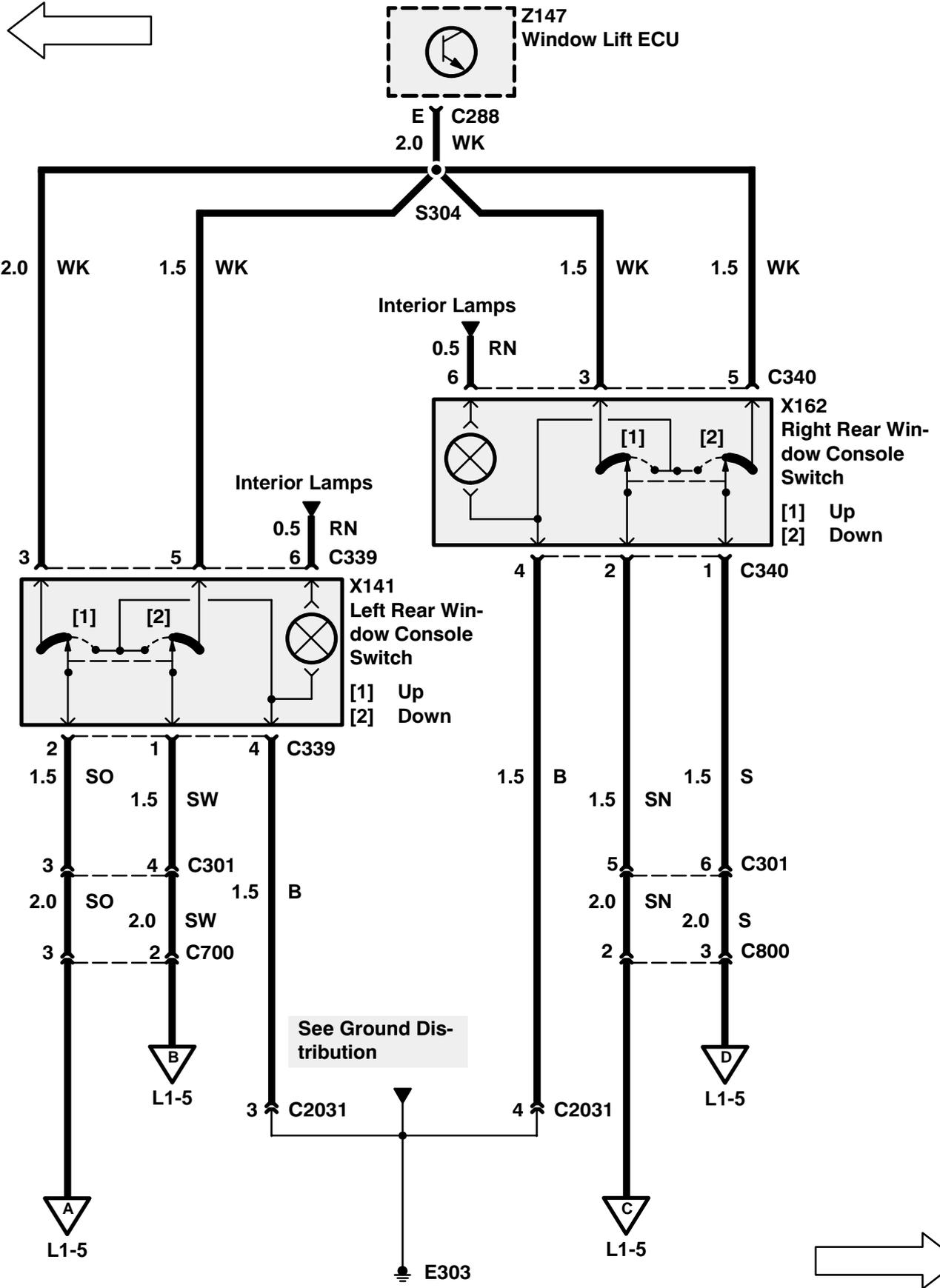
When a window console switch is in the 'DOWN' position, voltage is applied to the window motor through the 'up' switch contacts. The window motors operate because they are grounded through the 'down' contacts of the window console switch. When a switch is in the 'UP' position, the polarity applied to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

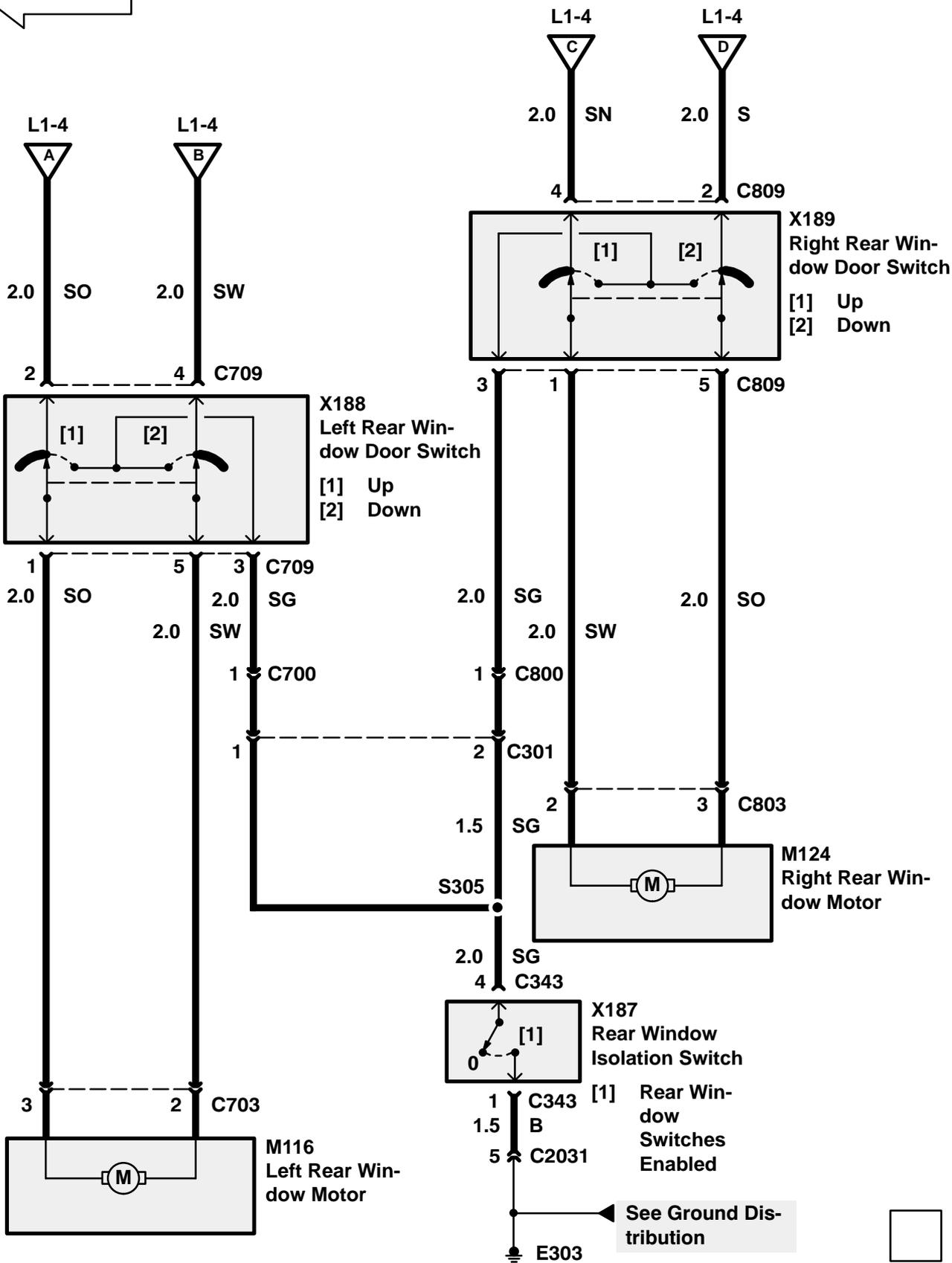
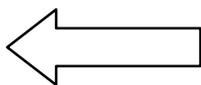
Rear Window Isolation Switch (X187)

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.









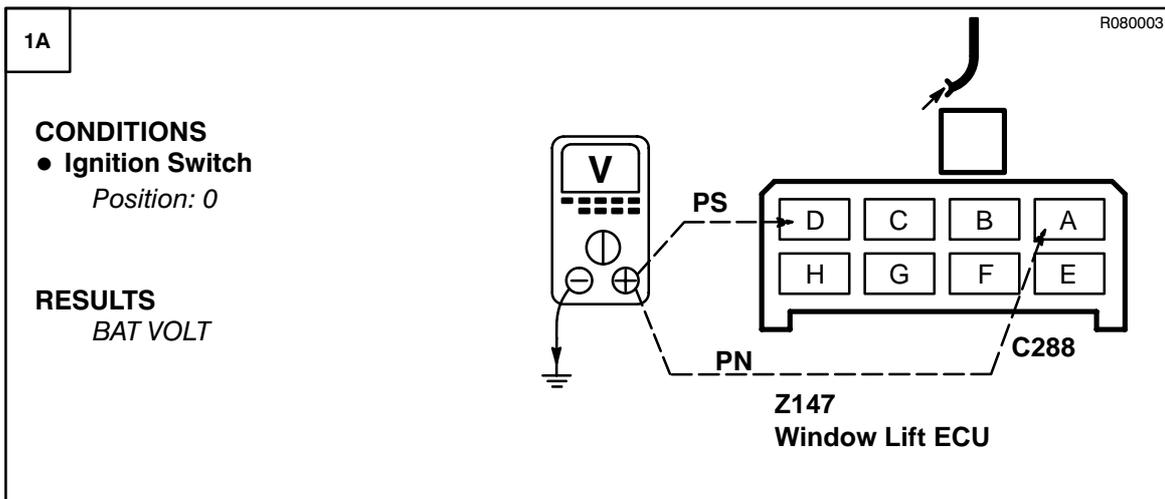
TROUBLESHOOTING HINTS

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

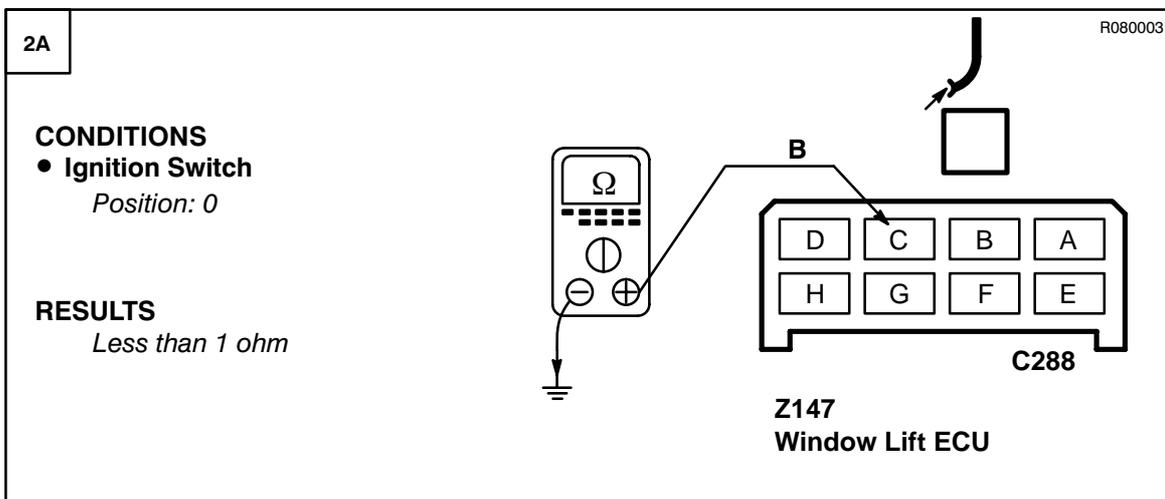
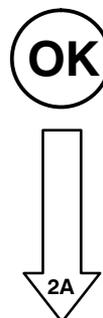
SYSTEM DIAGNOSIS

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



~~OK~~ **PROBLEM CAUSE**
 - F1 Fuse
 - PS Wire
 - F2 Fuse
 - PN Wire



~~OK~~ **PROBLEM CAUSE**
 - B Wire

OK **PROBLEM CAUSE**
 - Window Lift ECU

Test B

R060019

1B

CONDITIONS

- Ignition Switch
Position: I
- Rear Window Isolation Switch
On

RESULTS
Less than 1 ohm

X187
Rear Window
Isolation Switch

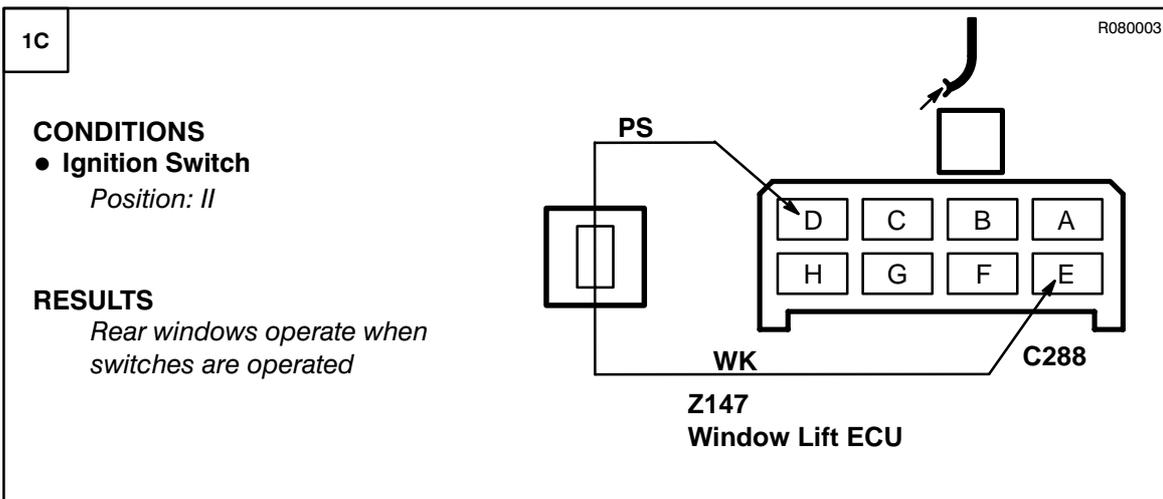


PROBLEM CAUSE
- Rear Window Isolation Switch



PROBLEM CAUSE
- B Wire
- SG Wire

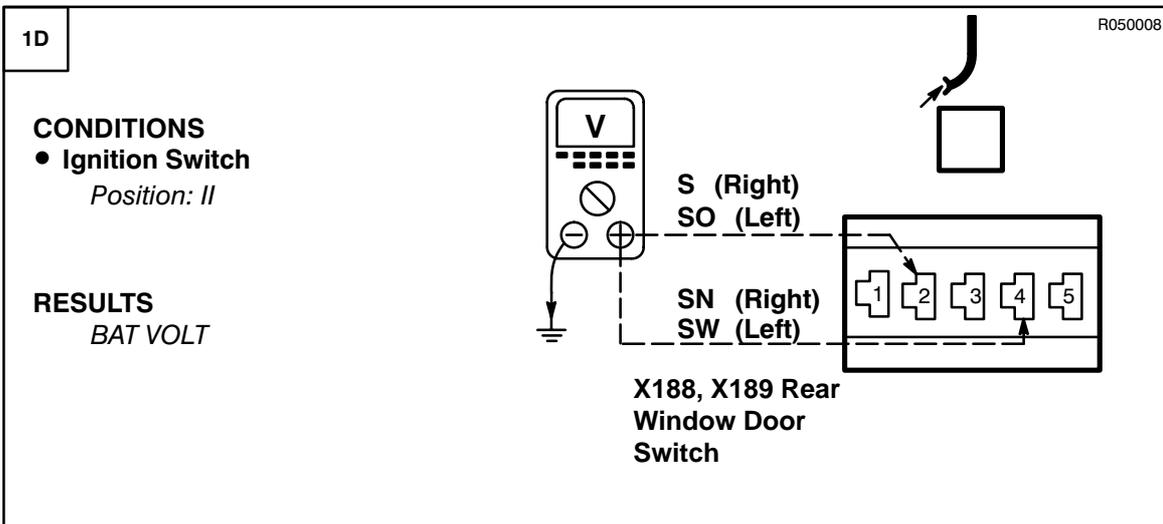
Test C



OK PROBLEM CAUSE
- WK Wire

OK PROBLEM CAUSE
- Window Lift ECU

Test D



OK GO TO TEST E

OK
↓
2D

R030021

1D

2D

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

M116, M124 Rear Window Motor

OK PROBLEM CAUSE

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

↓
3D

R030021

3D

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- X188, X189 Rear Window Door Switch

⬇ = 0 VOLT
Off = BAT VOLT

M116, M124 Rear Window Motor

OK PROBLEM CAUSE

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

↓
4D

3D

4D

R030021

CONDITIONS

- Ignition Switch
Position: II

RESULTS

- X188, X189 Rear Window Door Switch

▲ = 0 VOLT
Off = BAT VOLT

M116, M124 Rear Window Motor

OK PROBLEM CAUSE

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

OK PROBLEM CAUSE

- M116, M124 Rear Window Motor

Test E

1E

R070008

PROBLEM CAUSE

- Ignition Switch
Position: II

RESULTS

BAT VOLT

X141, X162 Rear Window Console Switch

OK PROBLEM CAUSE

- WK Wire

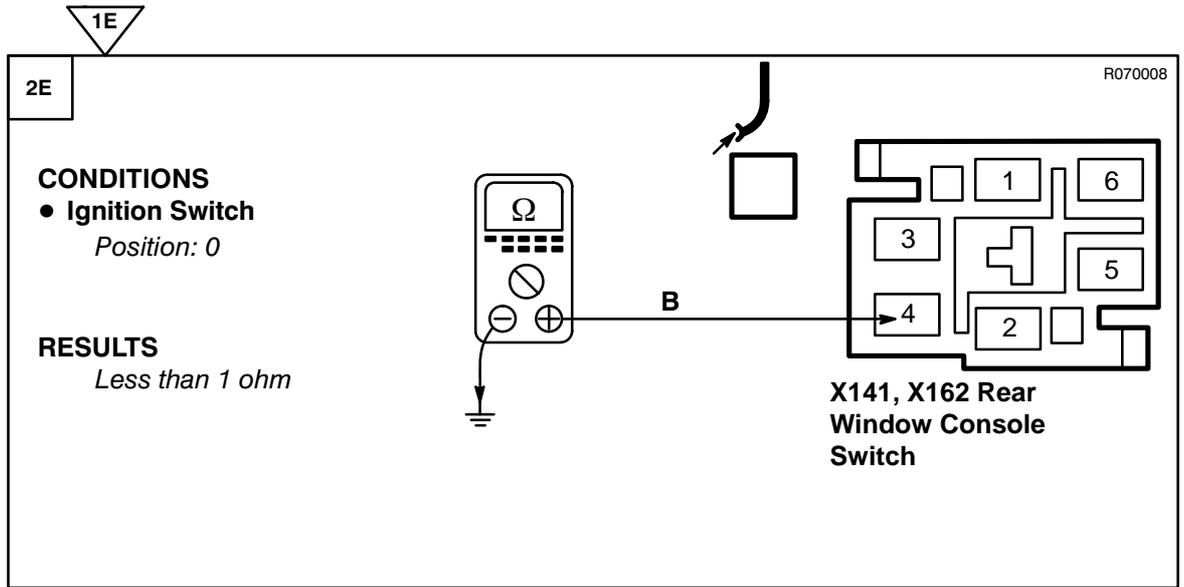
OK

↓

2E

L1 ETM

DISCOVERY

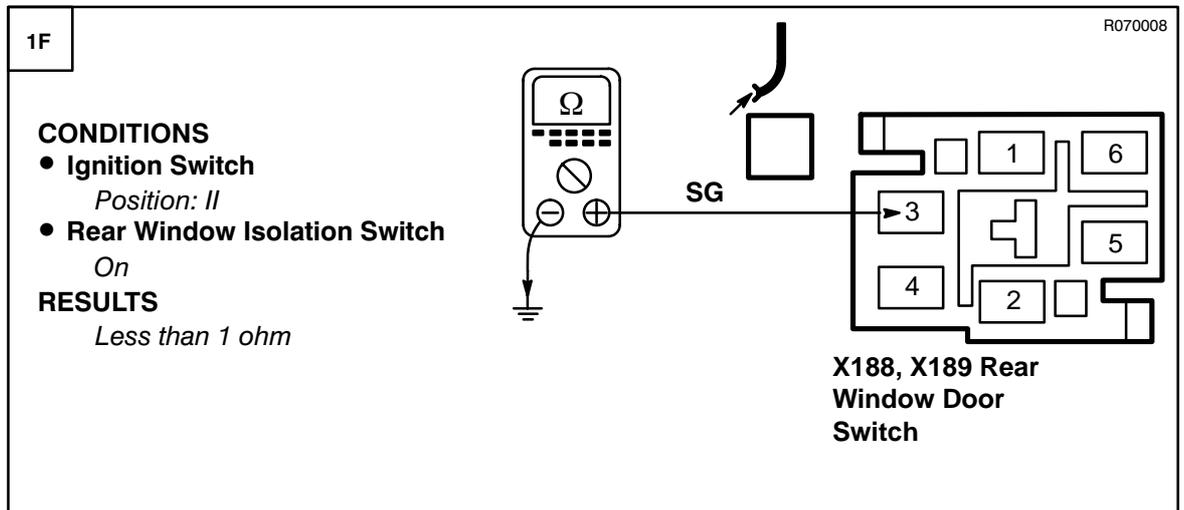


PROBLEM CAUSE
- B Wire



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

Z147
Window Lift ECU

~~OK~~ GO TO TEST H

OK
↓
2G

2G

R100005

CONDITIONS

- Ignition Switch
Position: 0

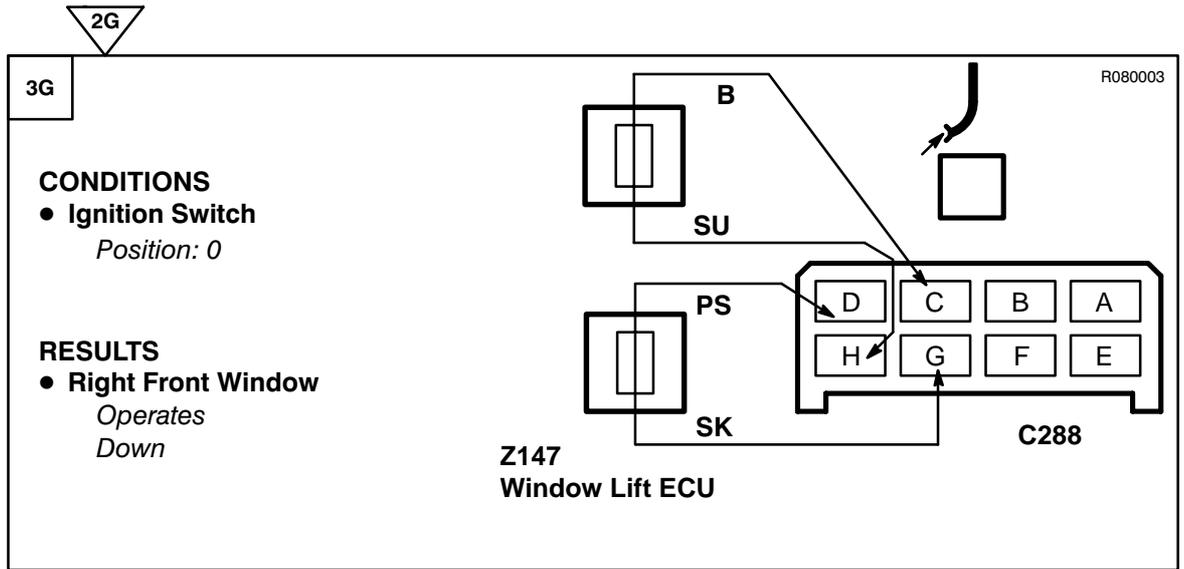
RESULTS

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

Z147
Window Lift ECU

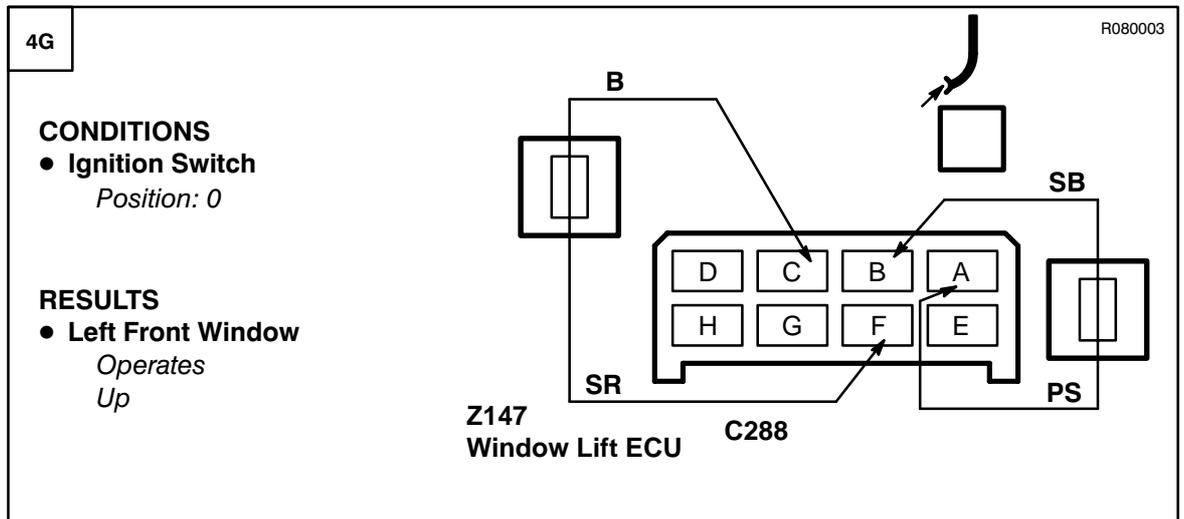
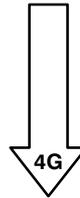
~~OK~~ GO TO TEST H

OK
↓
3G



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

1H

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

- Right Front Door
Open = Less than 1 ohm
Closed = More than 10K ohms

Z147
Window Lift ECU



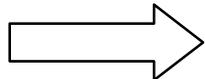
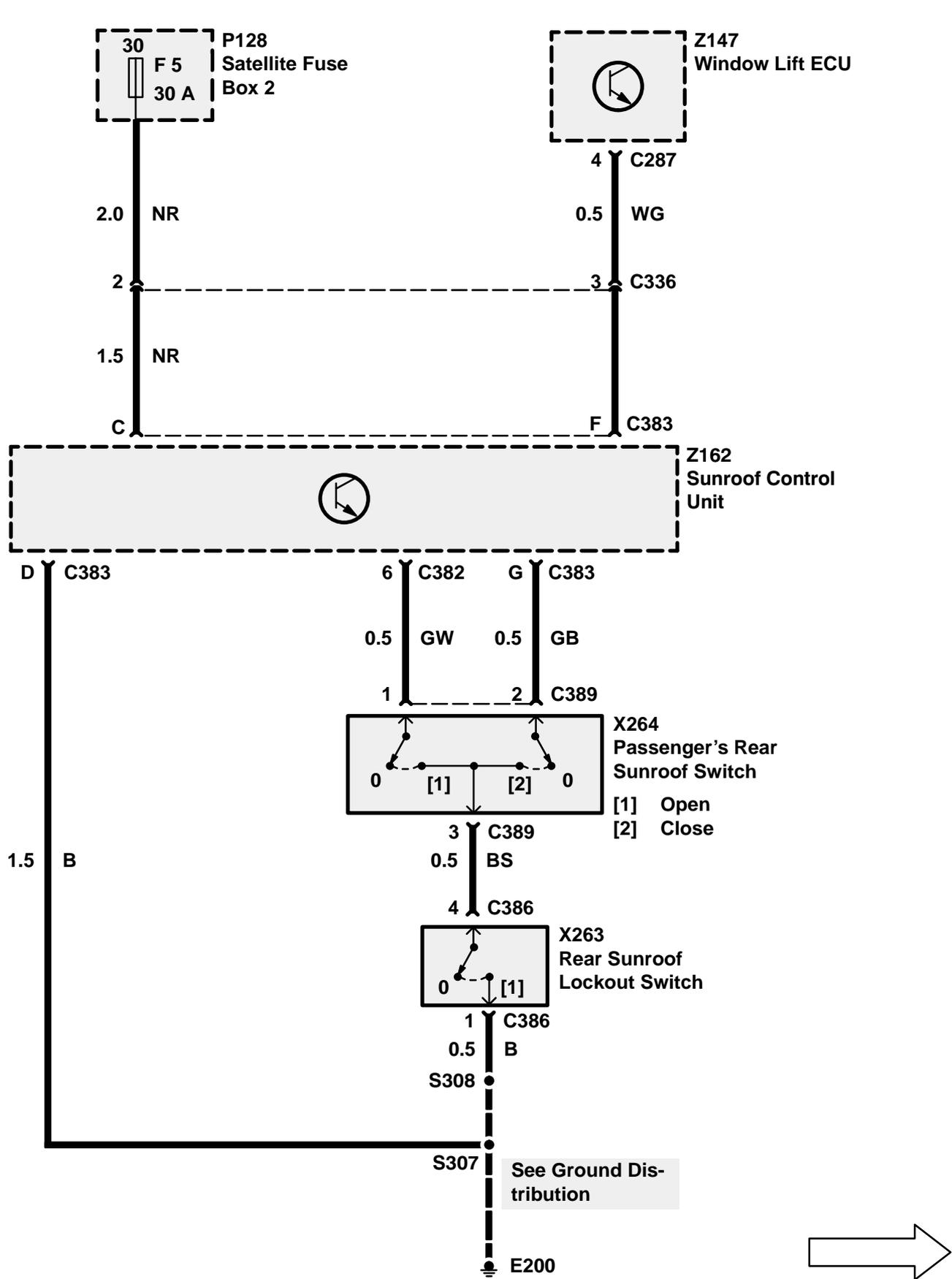
PROBLEM CAUSE

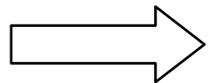
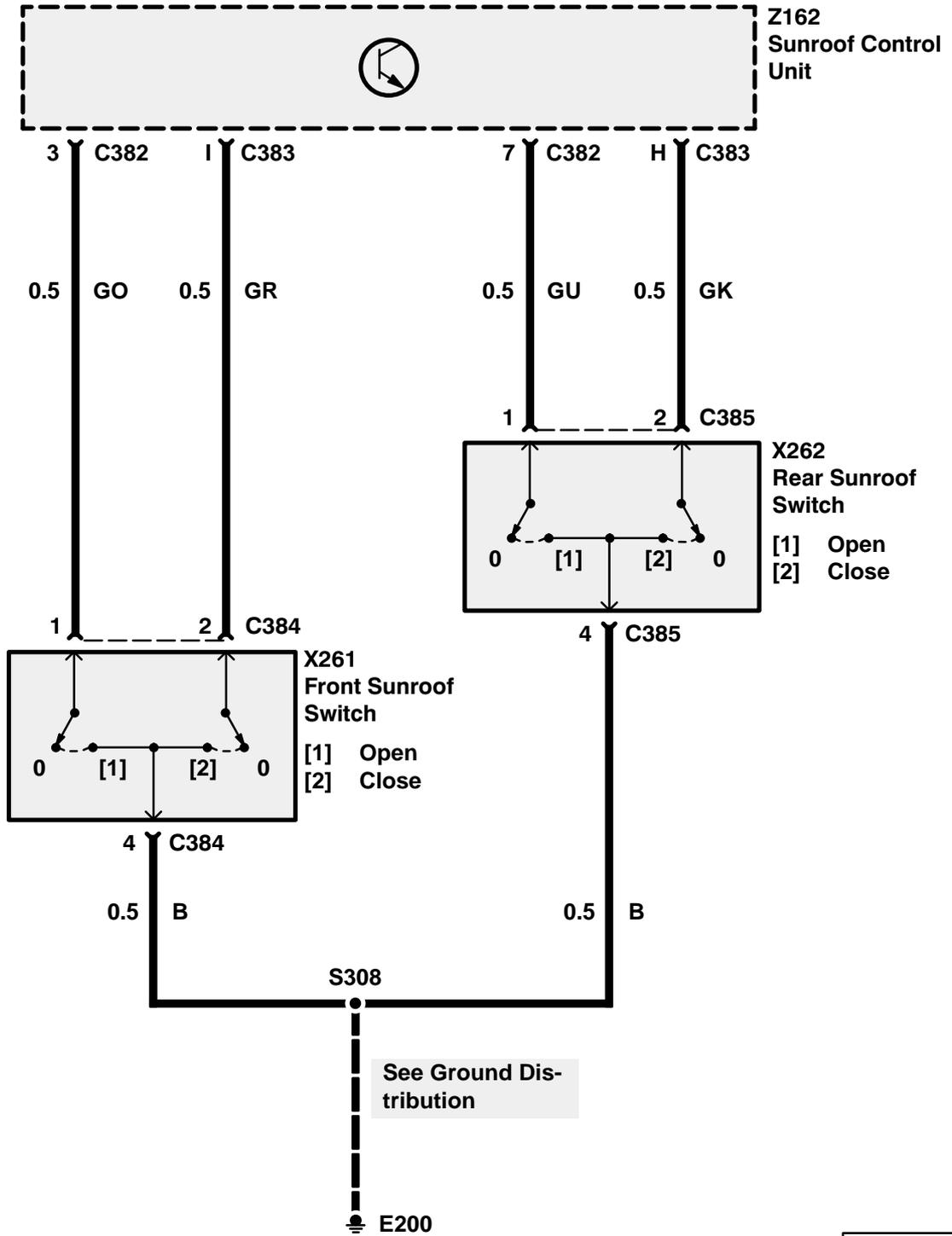
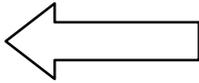
- PW Wire
- Right Front Door Switch

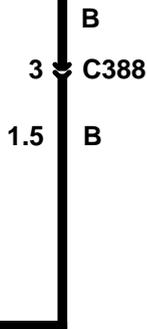
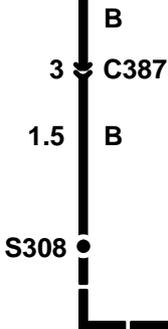
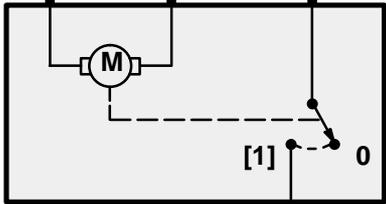
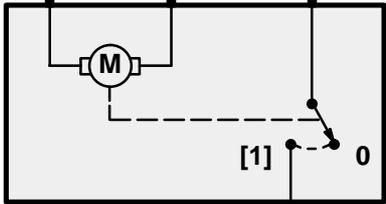
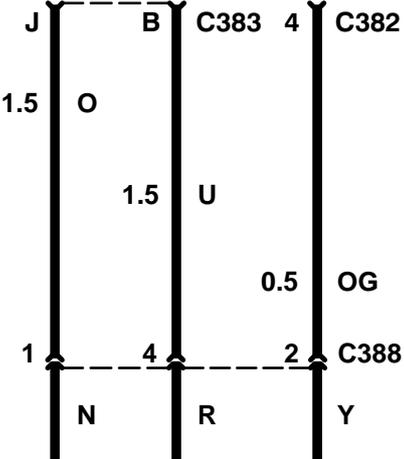
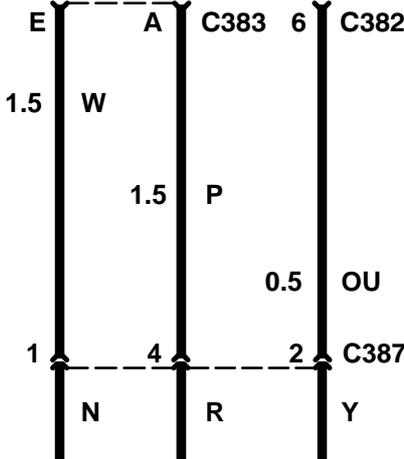
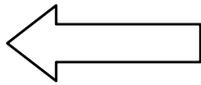


PROBLEM CAUSE

- Window Lift ECU







S307

See Ground Distribution

E200



CIRCUIT OPERATION

The locking functions on models with the Theft Alarm System are controlled by the Theft Alarm Unit (Z163). Refer to the Theft Alarm System (T1). The locking functions on models without the Theft Alarm System are controlled by the Right Front Door Lock Actuator (M122).

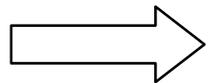
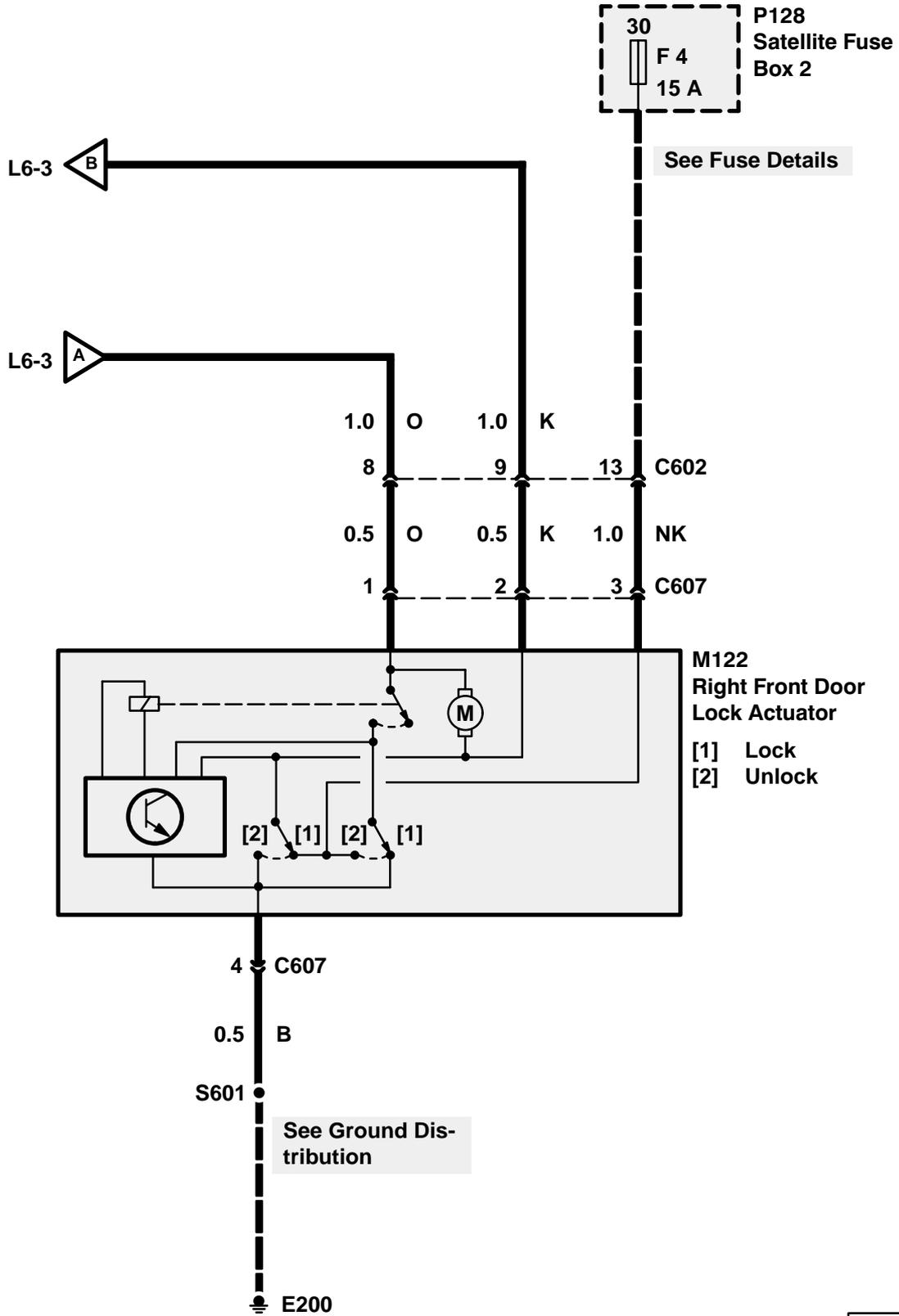
The four doors and the tailgate are locked or unlocked using the right front exterior key or the interior door sill knob. The rear doors can be independently locked or unlocked from the inside by using the appropriate door sill knob. These can be overridden when the lock controls in the right front door are used. The left front door and the rear doors may be locked or unlocked in isolation, from the outside using the key or from the inside using the door sill knob.

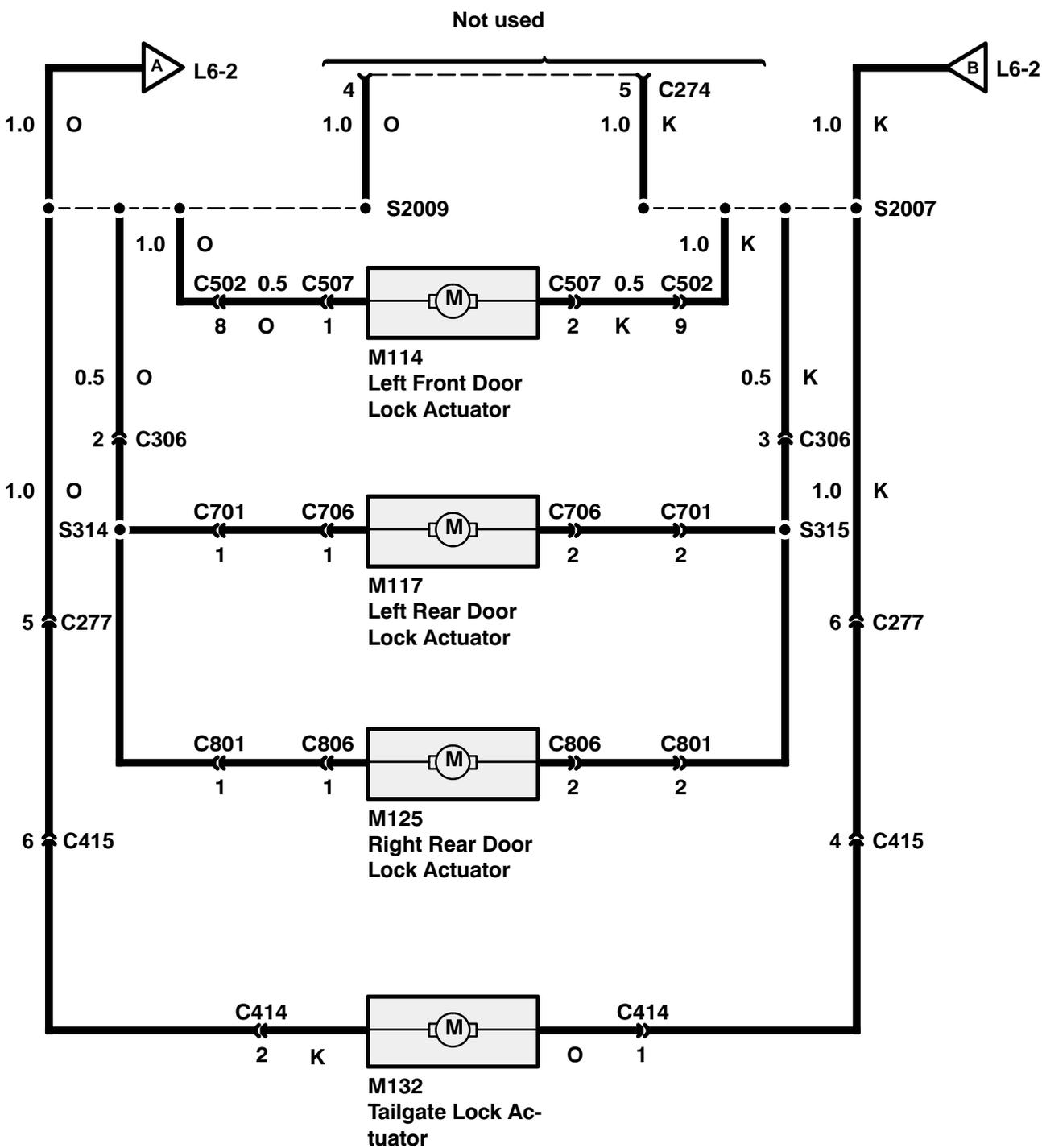
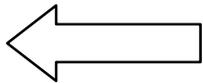
Lock

When the doors are locked by the right front exterior key or the interior door sill knob the internal microswitches in the Right Front Door Lock Actuator (M122) move to the "Lock" Position. Voltage from fuse F4 is applied to the lock actuators through the K wires. The lock actuators are grounded at E200 through the microswitch contacts and the O wires. The doors and the tailgate now lock. The solid state load sensor/timer ensure that the motors operate only for the time required to lock or unlock the doors and the tailgate.

Unlock

When the doors are unlocked by the right front exterior key or the interior door sill knob the internal microswitches in the Right Front Door Lock Actuator (M122) move to the "Unlock" Position. Voltage from Fuse F4 is applied to the lock actuators through the O wires. The lock actuators are grounded at E200 through the microswitch contacts and the K wires. Since the polarity of the voltage is now reversed the doors and the tailgate unlock.





TROUBLESHOOTING HINTS

9. Check Fuse F4 of Satellite Fuse Box 2.
10. If all the central locking functions except the right front door operate, replace the Right Front Door Lock Actuator (M122).

SYSTEM DIAGNOSIS

1. If the central locking functions do not operate at all, do Test A.
2. If the Left Front Door Actuator (M114) does not operate, do Test B.
3. If the Tailgate Lock Actuator (M132) does not operate, do Test C.
4. If both Rear Door Lock Actuators (M117, M125) do not operate, do Test D.

Test A

R040011

1A

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT

M122
Right Front Door
Lock Actuator



PROBLEM CAUSE

- F4 Fuse
- NK Wire
- B Wire



PROBLEM CAUSE

- Right Front Door Lock Actuator

Test B

R020053

1B

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock Right Front Door

RESULTS
BAT VOLT (Momentary)

M114
Left Front Door
Lock Actuator



PROBLEM CAUSE

- O Wire
- K Wire



PROBLEM CAUSE

- Left Front Door Lock Actuator

Test C

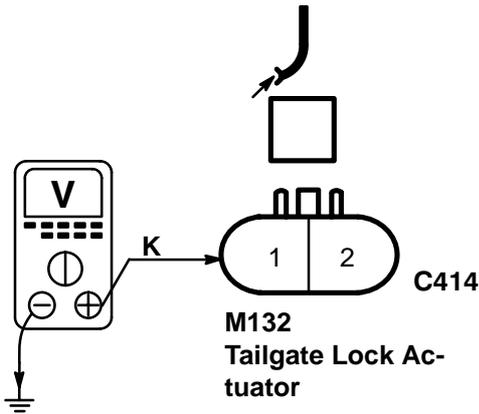
R020031

1C

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock Right Front Door

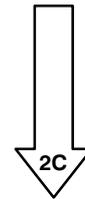
RESULTS
BAT VOLT (Momentary)



M132
Tailgate Lock Ac-
tuator



PROBLEM CAUSE
- K Wire



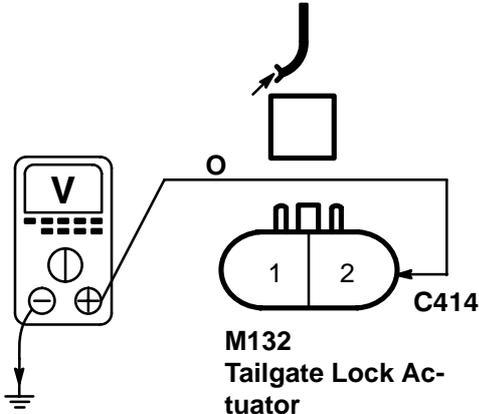
R020031

2C

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock Right Front Door

RESULTS
BAT VOLT (Momentary)



M132
Tailgate Lock Ac-
tuator



PROBLEM CAUSE
- O Wire



PROBLEM CAUSE
- Tailgate Lock Actuator

Test D

R020029

1D

CONDITIONS

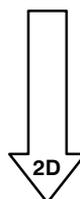
- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock Right Front Door

RESULTS
BAT VOLT (Momentary)

K
C706
C806
M117, M125 Rear
Door Lock Actuator

~~OK~~ PROBLEM CAUSE
- K Wire

OK



R020029

2D

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Locked
- Unlock Right Front Door

RESULTS
BAT VOLT (Momentary)

0
C706
C806
M117, M125 Rear
Door Lock Actuator

~~OK~~ PROBLEM CAUSE
- O Wire

OK PROBLEM CAUSE
- M117, M125 Rear
Door Lock Actuator

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

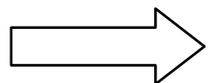
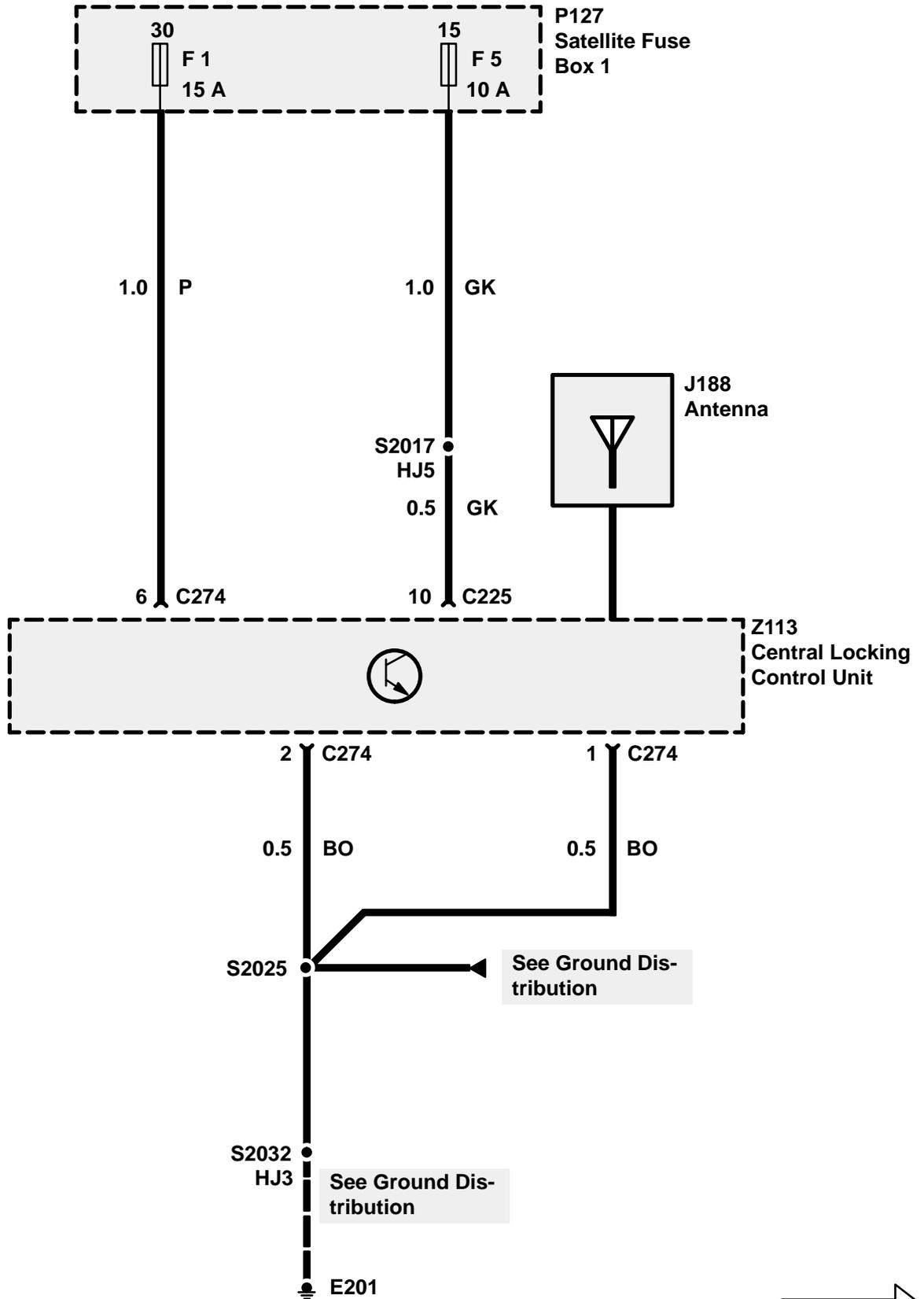
The Central Locking Control Unit (Z113) monitors the position of the front door locks through input switches that are part of the Front Door Lock Actuators (M114, M122). When the control unit sees an input switch change position, the control unit responds by locking or unlocking the doors and the tailgate.

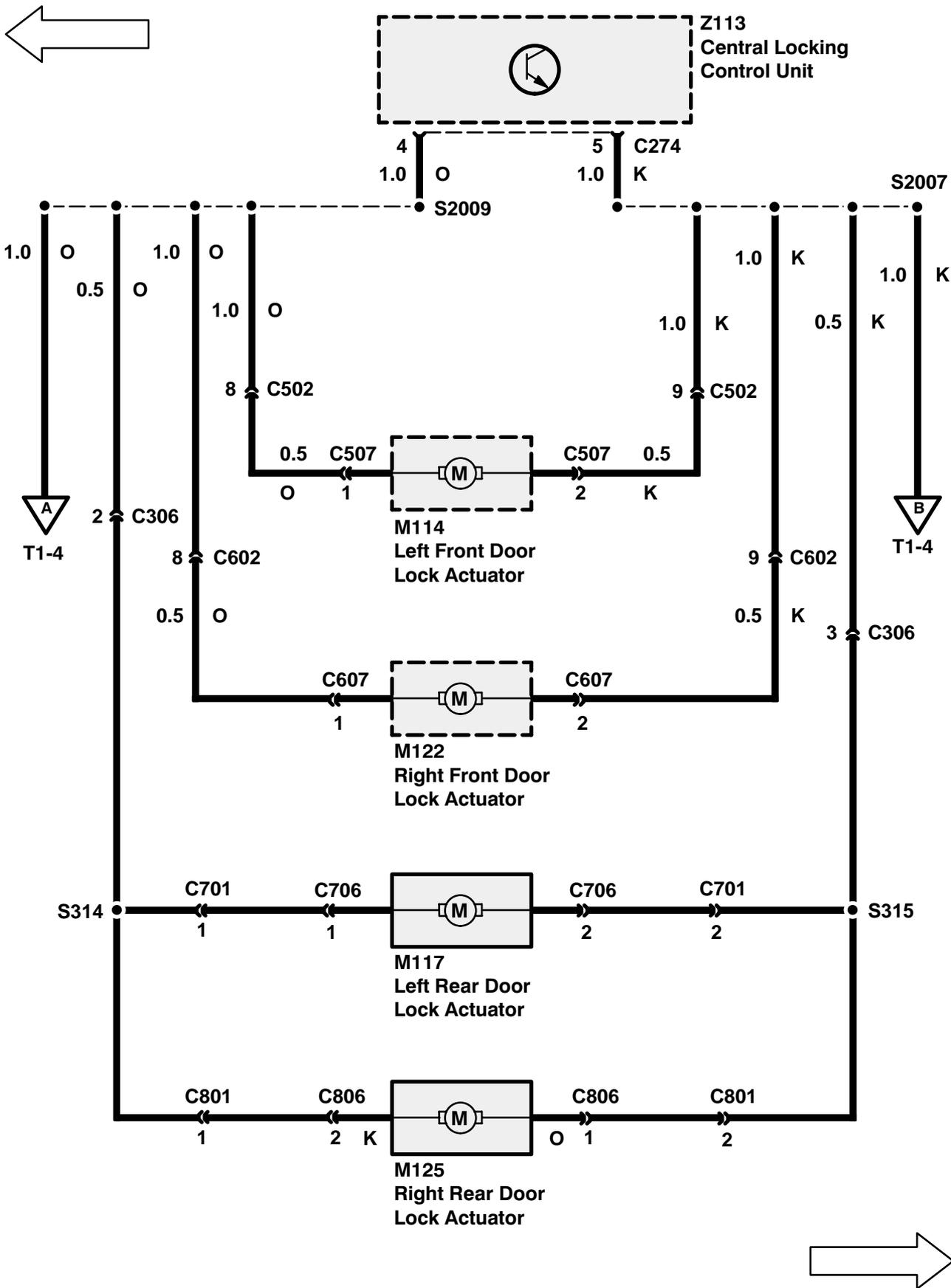
Lock

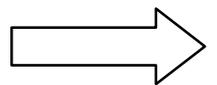
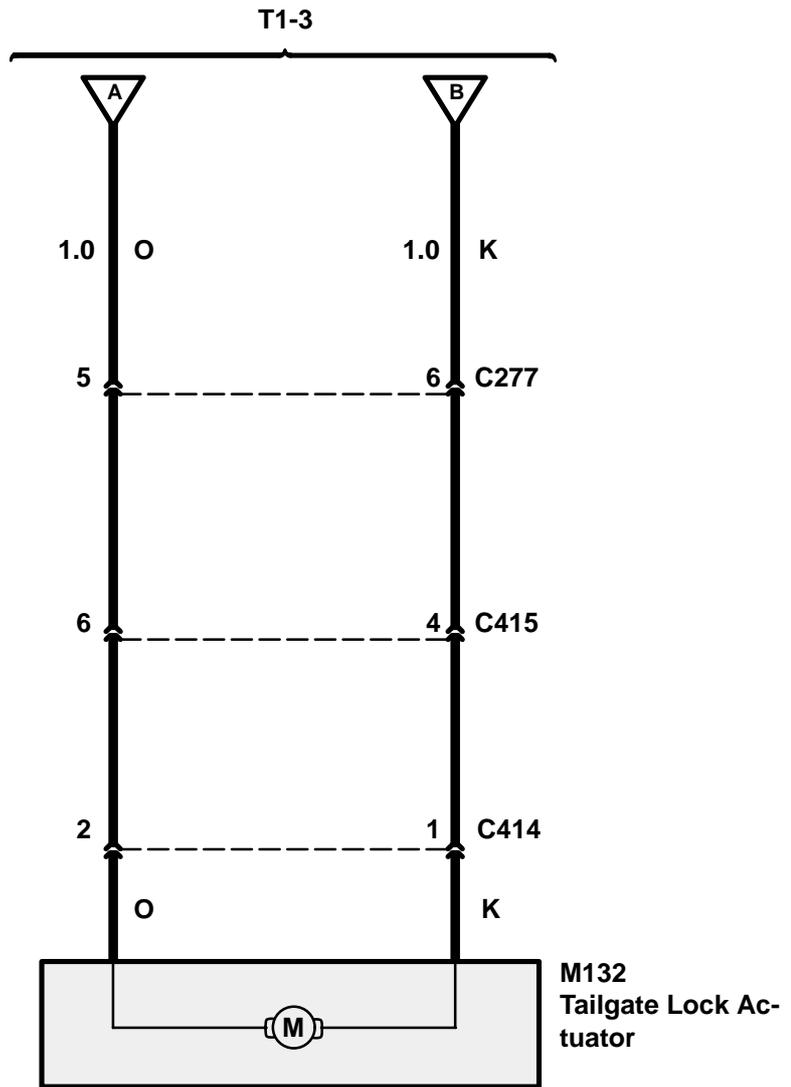
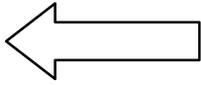
The Central Locking Control Unit (Z113) locks the doors and the tailgate by momentarily applying battery voltage to the actuators through the K wire. The lock actuators are grounded by the Central Locking Control Unit through the O wire. The actuators now move to the locked position.

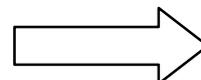
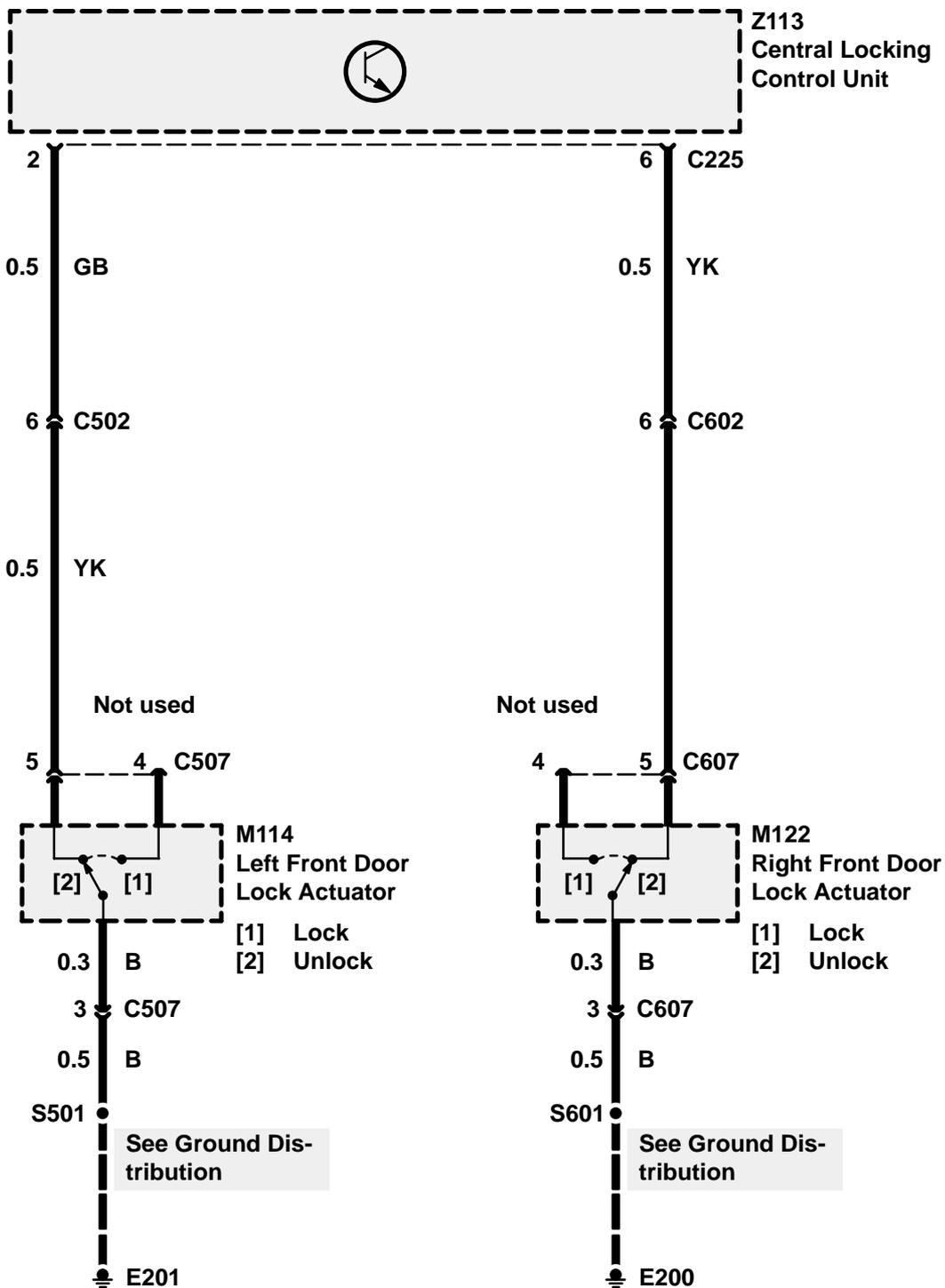
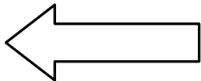
Unlock

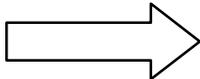
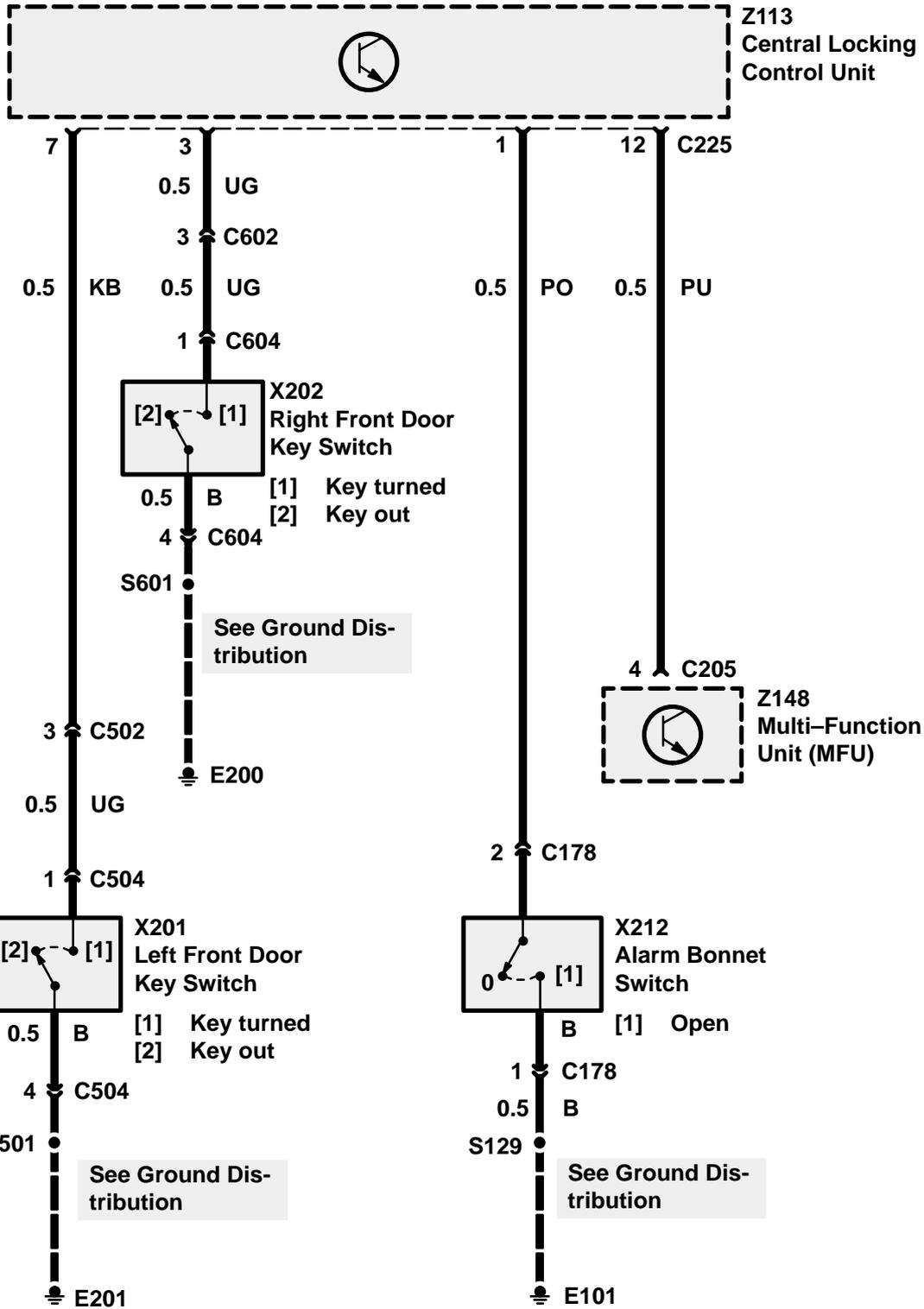
To unlock the doors and the tailgate the Central Locking Control Unit (Z113) momentarily applies battery voltage to the actuators through the O wire. The actuators are grounded by the Central Locking Control Unit through the K wire. The lock actuators now unlock.

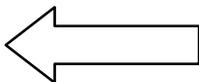




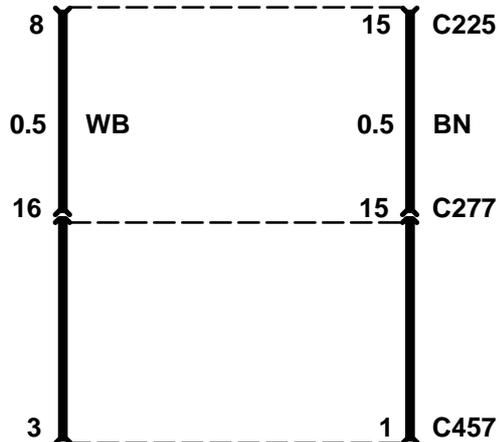




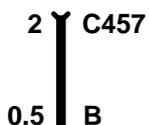




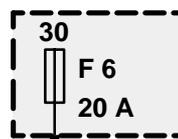
Z113
Central Locking
Control Unit



Not used

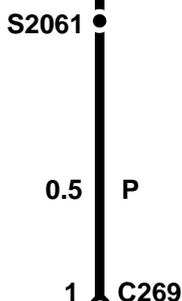


See Ground Dis-
tribution



P128
Satellite Fuse
Box 2

See Fuse Details



Not used



Z113
Central Locking
Control Unit



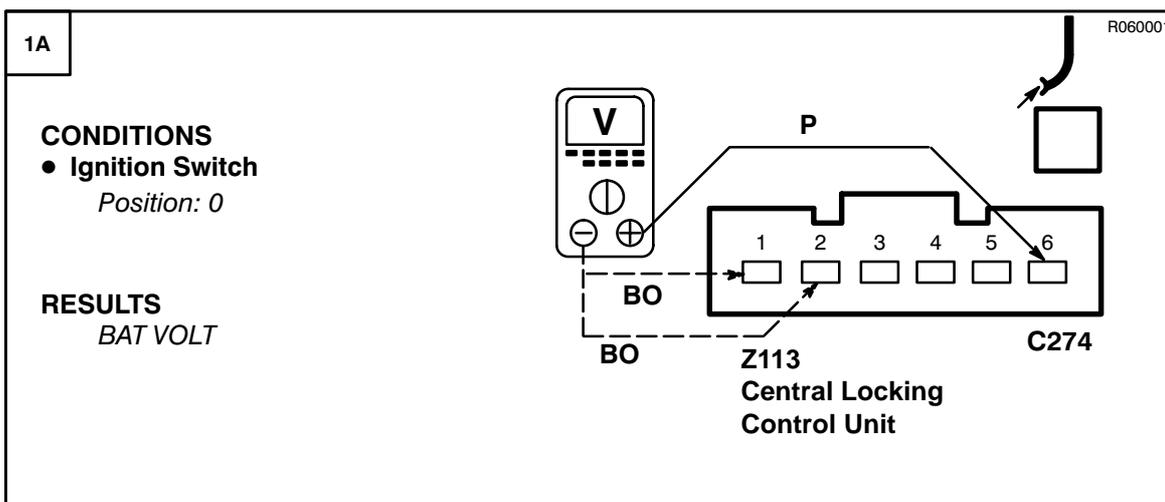
TROUBLESHOOTING HINTS

5. Check Fuses F1, F5 in Satellite Fuse Box 1.
6. If the interior lights do not come on when a door is open, check suspect door switch and associated wiring.

SYSTEM DIAGNOSIS

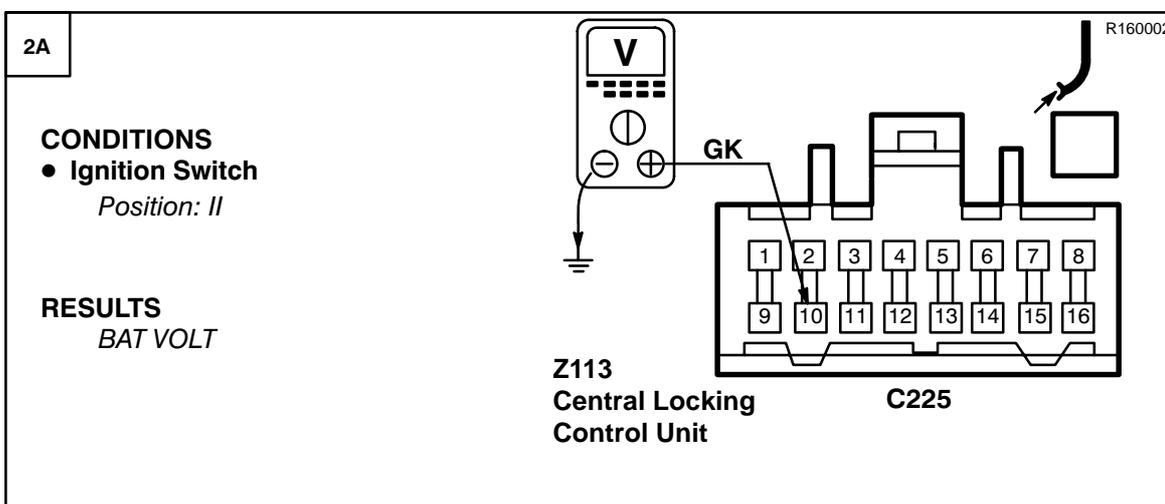
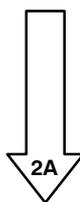
1. If the central locking function does not operate at all, do Test A.
2. If a Front Door Lock Actuator (M114, M122) does not operate, do Test B.
3. If the doors unlock themselves after operating the door locks, do Test C.
4. If the central locking function does not operate from one of the front doors, 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.

Test A



PROBLEM CAUSE

- BO Wire
- P Wire



PROBLEM CAUSE

- GK Wire



PROBLEM CAUSE

- Central Locking
 Control Unit

Test B

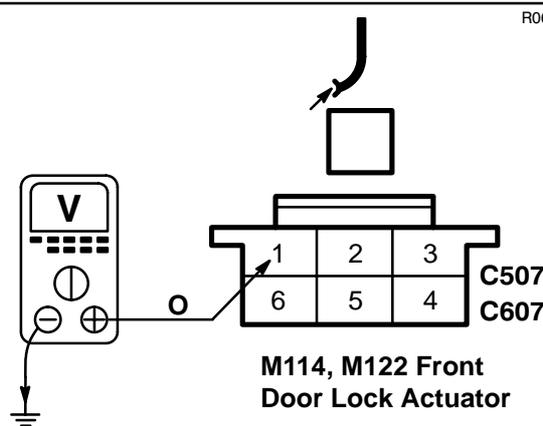
R060009

1B

CONDITIONS

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

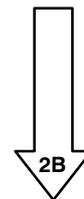
RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator

OK PROBLEM CAUSE
- O Wire

OK



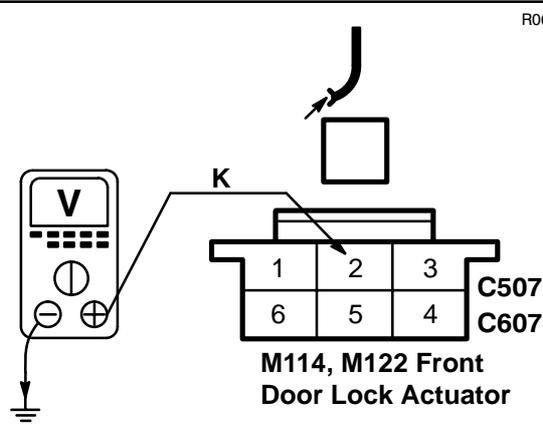
R060009

2B

CONDITIONS

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

RESULTS
BAT VOLT (Momentary)

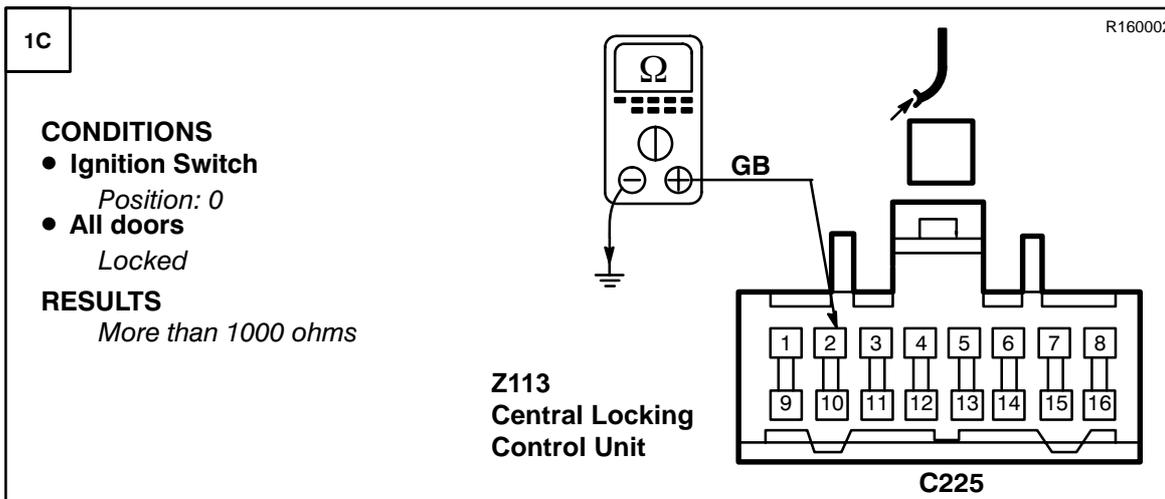


M114, M122 Front Door Lock Actuator

OK PROBLEM CAUSE
- K Wire

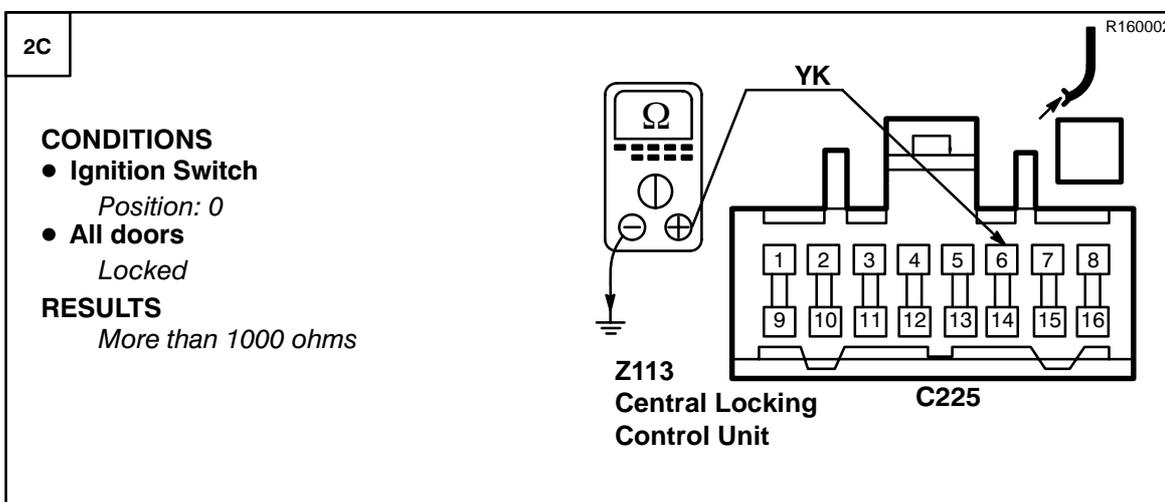
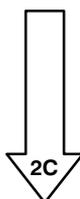
OK PROBLEM CAUSE
- M114, M122 Front Door Lock Actuator

Test C



PROBLEM CAUSE

- GB, YK Wire
- B Wire
- M114, M122 Front Door Lock Actuator



PROBLEM CAUSE

- YK Wire
- B Wire
- M114, M122 Front Door Lock Actuator



PROBLEM CAUSE

- Central Locking Control Unit

Test D

R160002

1D

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked

RESULTS
Less than 1 ohm

Z113
Central Locking
Control Unit

C225

~~OK~~ GO TO TEST 3D

OK



R160002

2D

CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked

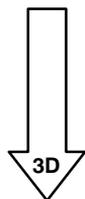
RESULTS
Less than 1 ohm

Z113
Central Locking
Control Unit

C225

~~OK~~

OK
PROBLEM CAUSE
- Central Locking
Control Unit



R060009

2D
3D

CONDITIONS

- Ignition Switch
Position: 0

RESULTS

Less than 1 ohm

M114, M122 Front Door Lock Actuator

~~OK~~ **PROBLEM CAUSE**
- B Wire

OK



4D
R060009

CONDITIONS

- Ignition Switch
Position: II
- All doors
Lock

RESULTS

- All doors
Unlocked

M114, M122 Front Door Lock Actuator

~~OK~~ **PROBLEM CAUSE**
- YK Wire
- GB (Left)
- Condenser Fan Coolant Temperature Switch

OK **PROBLEM CAUSE**
- M114, M122 Front Door Lock Actuator

Test E

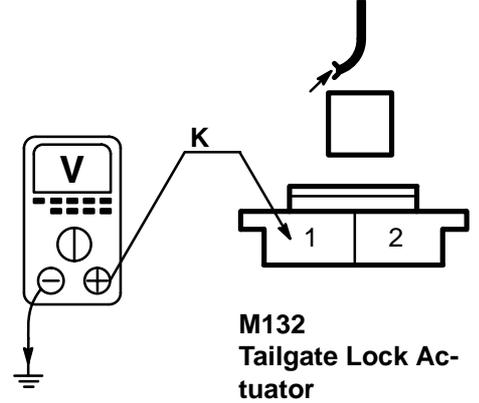
R020029

1E

CONDITIONS

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

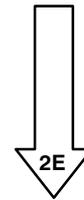
RESULTS
BAT VOLT (Momentary)



**M132
Tailgate Lock Ac-
tuator**



PROBLEM CAUSE
- K Wire



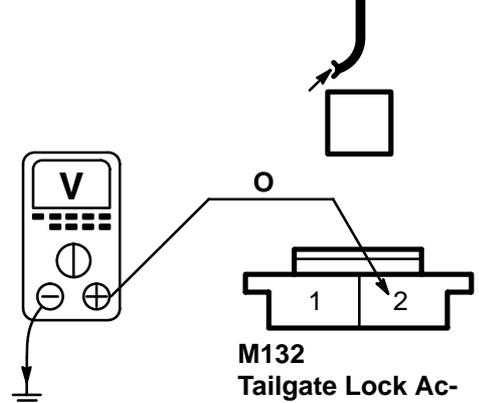
R020029

2E

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

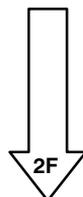
- Ignition Switch
Position: 0
- All doors
Unlocked
- Lock a front door

RESULTS
BAT VOLT (Momentary)

M117, M125 Rear Door Lock Actuator

OK PROBLEM CAUSE
- K Wire

OK



R020029

2F

CONDITIONS

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

RESULTS
BAT VOLT (Momentary)

M117, M125 Rear Door Lock Actuator

OK PROBLEM CAUSE
- O Wire

OK PROBLEM CAUSE
- M117, M125 Rear Door Lock Actuator

CIRCUIT OPERATION

When the Ignition Switch (X134) is in Position II, voltage is supplied to the power mirrors circuit by fuse F18.

Left/Right Movement

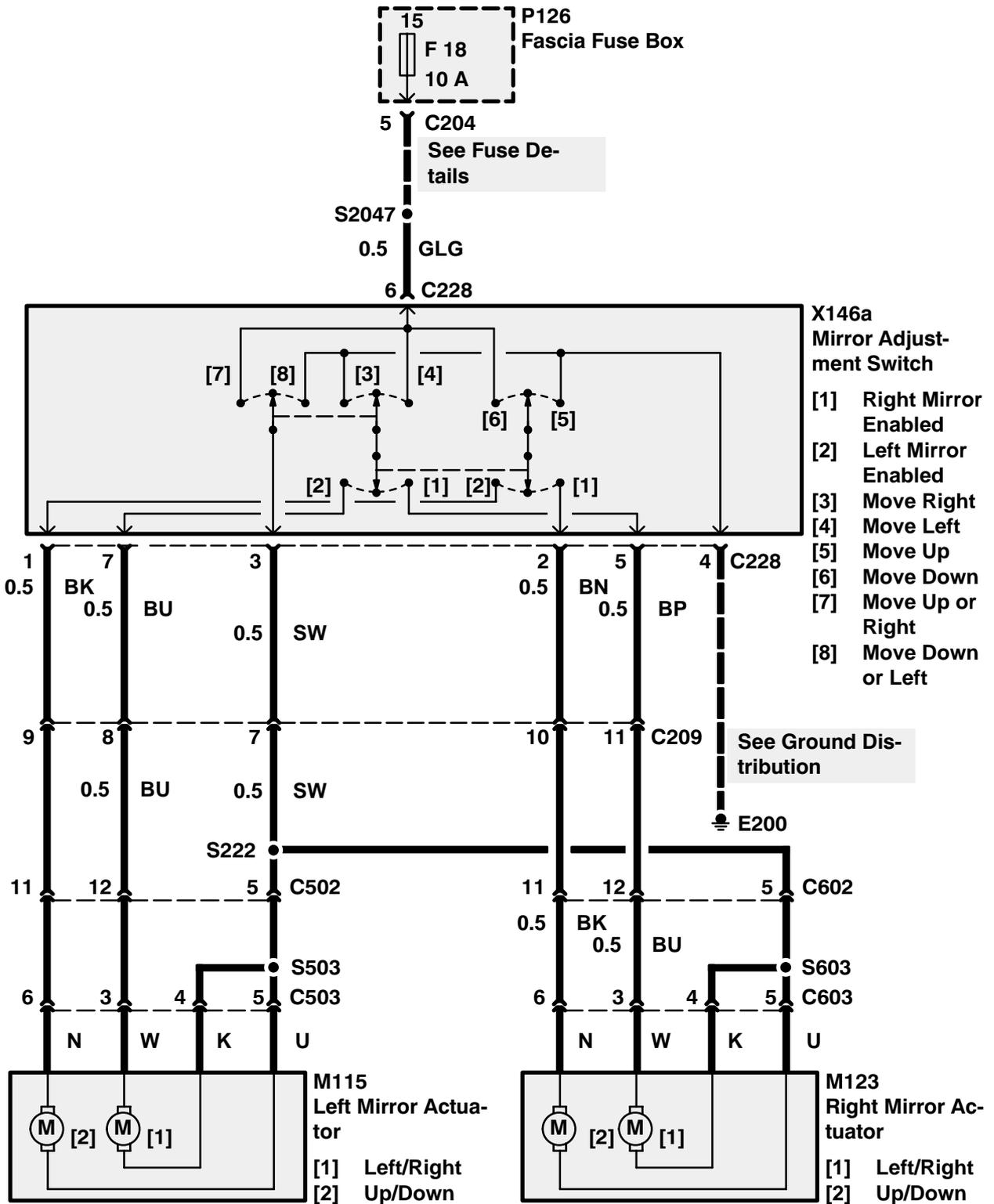
When a selected mirror is moved to the left by the Mirror Adjustment Switch (X146) the internal contacts move to the "Move Down or Left" and the "Move Left" Positions. The Left/Right Motor of the selected actuator is grounded at E200 through the SW wires and the switch contacts. Voltage is applied to the Left/Right Motor through the BP, BU wires. The mirror now moves left.

When a selected mirror is moved to the right by the Mirror Adjustment Switch (X146) the internal contacts move to the "Move Up or Right" and the "Move Right" positions. The Left/Right Motor of the selected actuator is grounded at E200 through the BU, BP wires and the switch contacts. Voltage is applied to the Left/Right Motor through the SW wires. 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 down by the Mirror Adjustment Switch (X146) the internal contacts move to the "Move Down or Left" and the "Move Down" positions. The Up/Down Motor of the selected actuator is grounded at E200 through the SW wires and the switch contacts. Voltage is applied to the Up/Down Motor through the BK, BN wires. The mirror now moves down.

When a selected mirror is moved Up by the Mirror Adjustment Switch (X146) the internal contacts move to the "Move Up or Right" and the "Move Up" positions. The Up/Down Motor of the selected actuator is grounded at E200 through the BN, BK wires and the switch contacts. Voltage is applied to the Up/Down Motor through the SW wires. Since the polarity of the voltage to the motor has been reversed, the mirror now moves up.



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

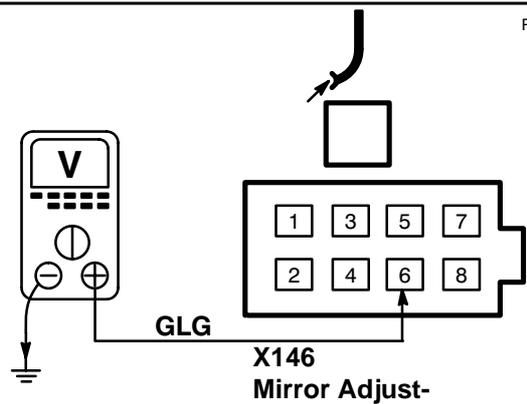
R080015

1A

CONDITIONS

- Ignition Switch
Position: II

RESULTS
BAT VOLT

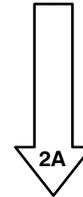


**X146
Mirror Adjust-
ment Switch**



PROBLEM CAUSE

- F18 Fuse
- GLG Wire



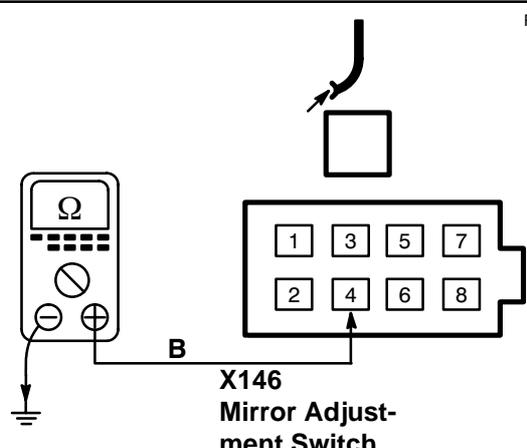
R080015

2A

CONDITIONS

- Ignition Switch
Position: II

RESULTS
Less than 1 ohm

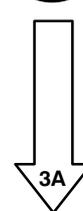


**X146
Mirror Adjust-
ment Switch**



PROBLEM CAUSE

- B Wire
- Ground Connections



R060008

2A

3A

CONDITIONS

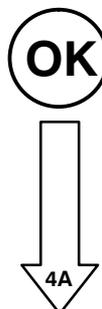
- Ignition Switch
Position: II

RESULTS

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

OK PROBLEM CAUSE

- SW Wire
- Mirror Adjust-ment Switch



R060008

4A

CONDITIONS

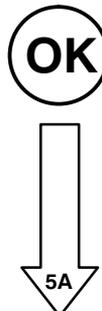
- Ignition Switch
Position: II

RESULTS

- Mirror Adjustment Switch
Move Down or Left
Less than 1 ohm
Neutral
More than 10K ohms

OK PROBLEM CAUSE

- Mirror Adjust-ment Switch



R060008

4A

5A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Right Mirror Enabled

RESULTS

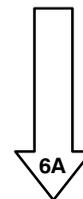
- Mirror Adjustment Switch
Left
BAT VOLT
- Neutral*
0V

M123
Right Mirror Ac-
tuator



PROBLEM CAUSE

- BP, BU Wire
- Mirror Adjust-
ment Switch



R060008

6A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Right Mirror Enabled

RESULTS

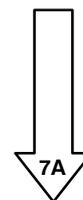
- Mirror Adjustment Switch
Right
Less than 1 ohm
- Neutral*
More than 10K ohms

M123
Right Mirror Ac-
tuator



PROBLEM CAUSE

- Mirror Adjust-
ment Switch



R060008

6A

7A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Right Mirror Enabled

RESULTS

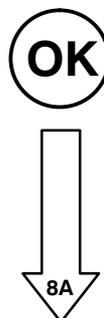
- Mirror Adjustment Switch
Down
BAT VOLT
- Mirror Adjustment Switch
Neutral
0V

C603

M123
Right Mirror Ac-
tuator

~~OK~~ **PROBLEM CAUSE**

- BN,BK Wire
- Mirror Adjust-
ment Switch



R060008

8A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Right Mirror Enabled

RESULTS

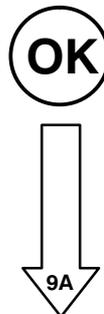
- Mirror Adjustment Switch
Up
Less than 1 ohm
- Mirror Adjustment Switch
Neutral
More than 10K ohms

C603

M123
Right Mirror Ac-
tuator

~~OK~~ **PROBLEM CAUSE**

- Mirror Adjust-
ment Switch



M3 ETM

DISCOVERY

R060008

8A

9A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Left Mirror Enabled

RESULTS

- Mirror Adjustment Switch
Left
BAT VOLT
Neutral
0V



PROBLEM CAUSE

- BU Wire
- Mirror Adjust-ment Switch



R060008

10A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Left Mirror Enabled

RESULTS

- Mirror Adjustment Switch
Right
Less than 1 ohm
Neutral
More than 10K ohms



PROBLEM CAUSE

- Mirror Adjust-ment Switch



R060008

10A

11A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Left Mirror Enabled

RESULTS

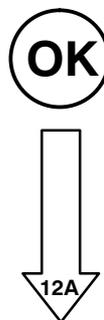
- Mirror Adjustment Switch
Down
BAT VOLT
- Neutral*
0V

C503

M115
Left Mirror Actuator

~~OK~~ **PROBLEM CAUSE**

- BK Wire
- Mirror Adjustment Switch



R060008

12A

CONDITIONS

- Ignition Switch
Position: II
- Mirror Adjustment Switch
Left Mirror Enabled

RESULTS

- Mirror Adjustment Switch
Up
Less than 1 ohm
- Neutral*
More than 10K ohms

C503

M115
Left Mirror Actuator

~~OK~~ **PROBLEM CAUSE**

- Mirror Adjustment Switch

OK **PROBLEM CAUSE**

- M115, M123 Mirror Actuator

Test B

R060008

1B

CONDITIONS

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

RESULTS

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

C503
C603

M115, M123 Mirror Actuator



PROBLEM CAUSE

- SW Wire
- Mirror Adjustment Switch



R060008

2B

CONDITIONS

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

RESULTS

- Mirror Adjustment Switch
Left
BAT VOLT
Right
0V

C503
C603

M115, M123 Mirror Actuator



PROBLEM CAUSE

- BP, BU Wire
- Mirror Adjustment Switch



2B
R060008

3B

CONDITIONS

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

RESULTS

- Mirror Adjustment Switch
Down
BAT VOLT
- Up*
0V

M115, M123 Mirror Actuator



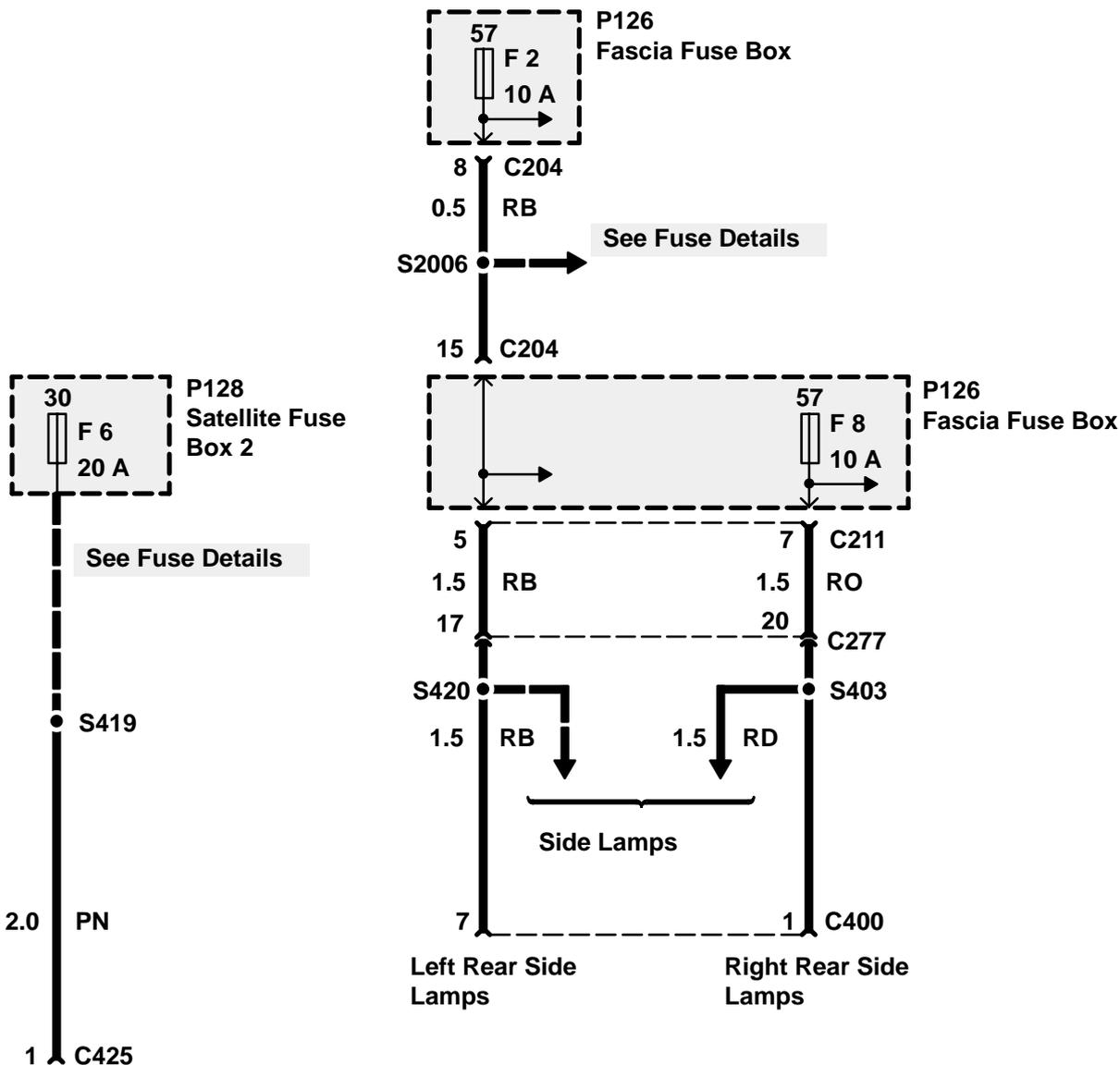
PROBLEM CAUSE

- BK, BN Wire
- Mirror Adjustment Switch

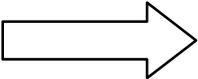
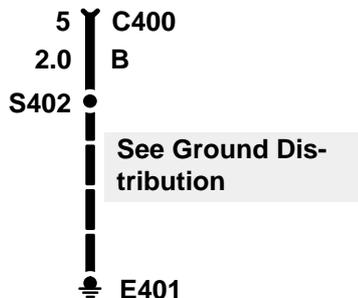


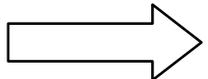
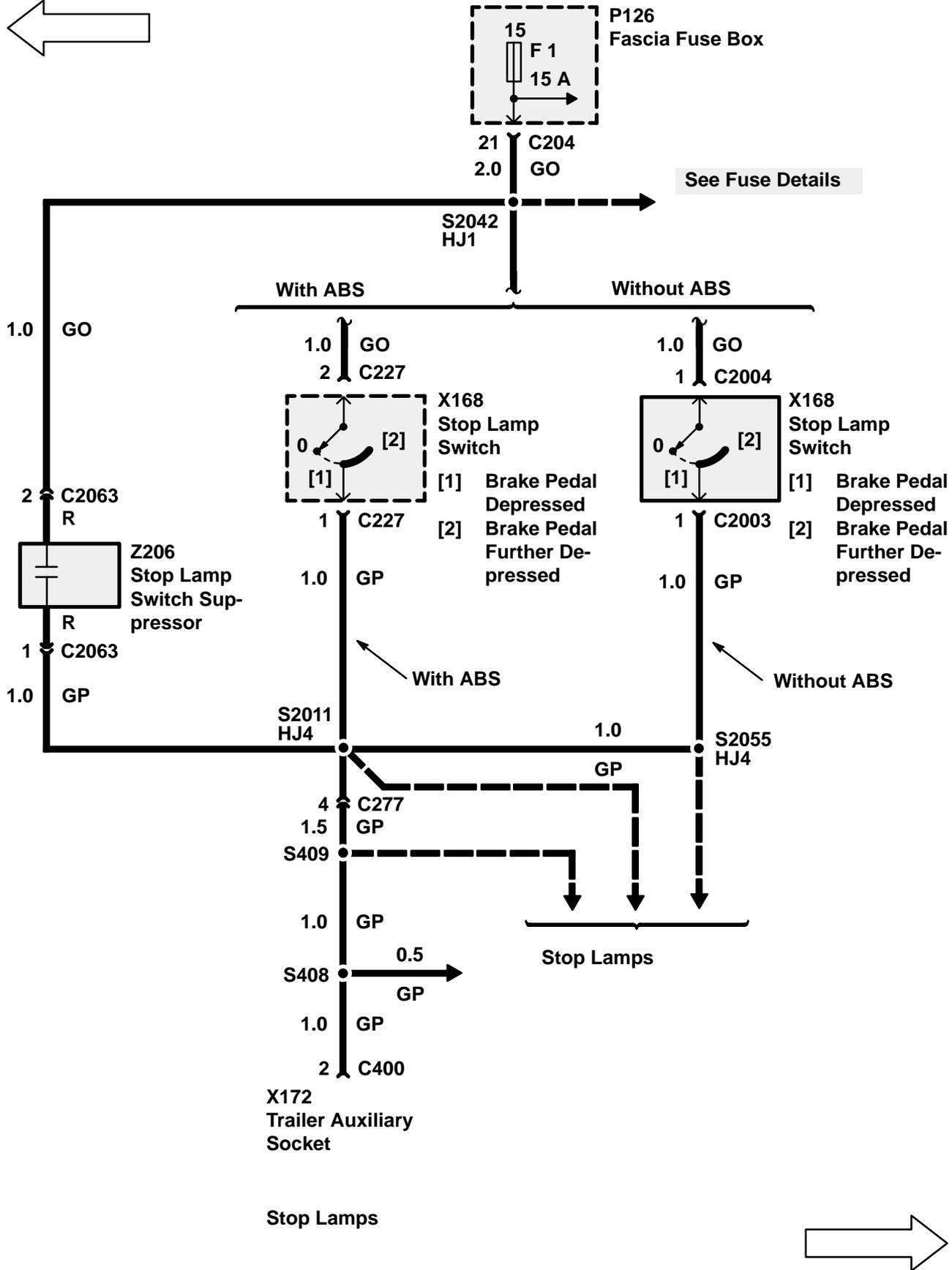
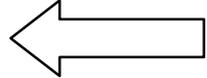
PROBLEM CAUSE

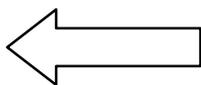
- M115, M123 Mirror Actuator



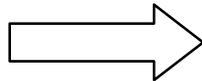
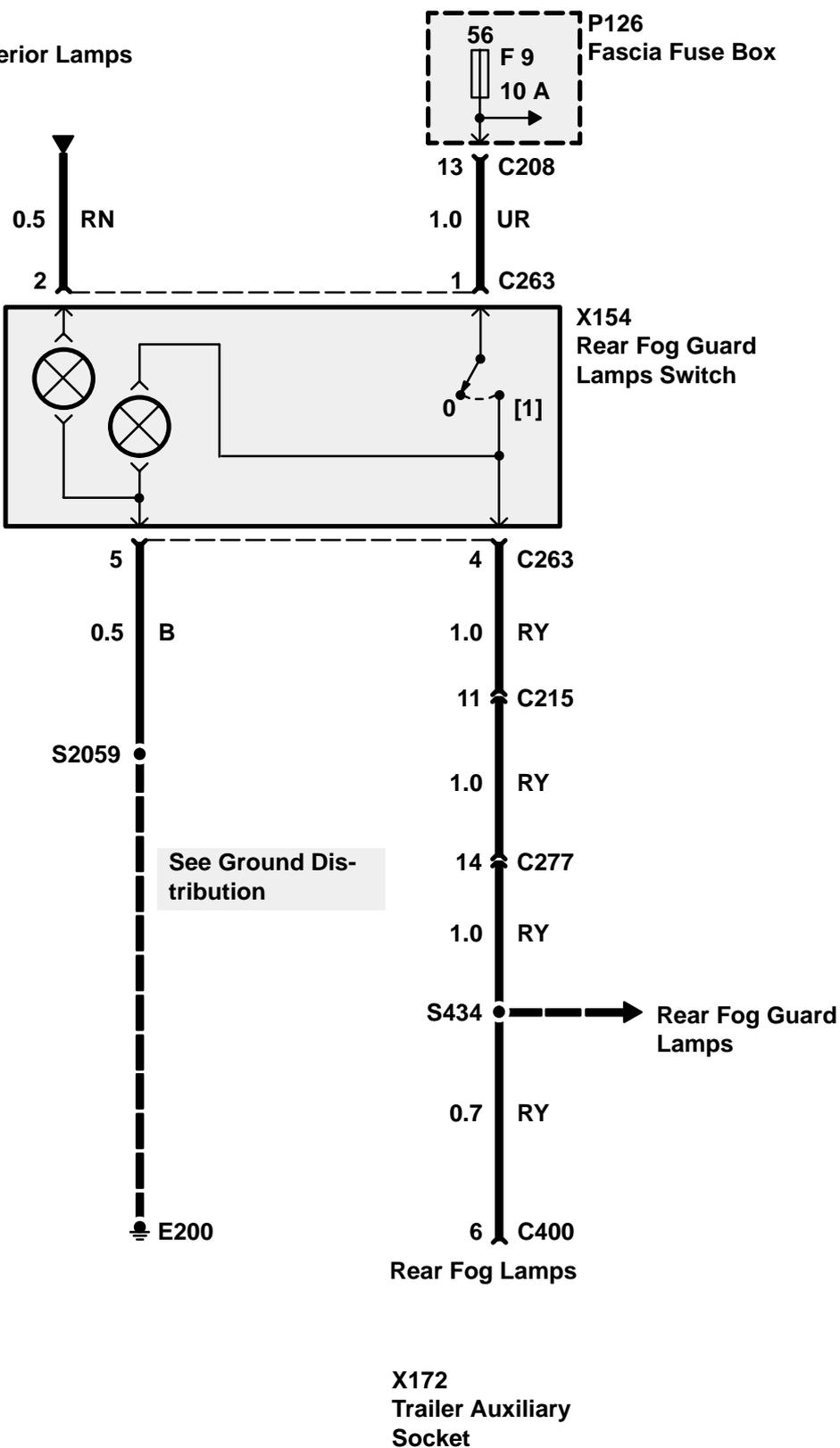
X172
Trailer Auxiliary
Socket

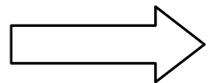
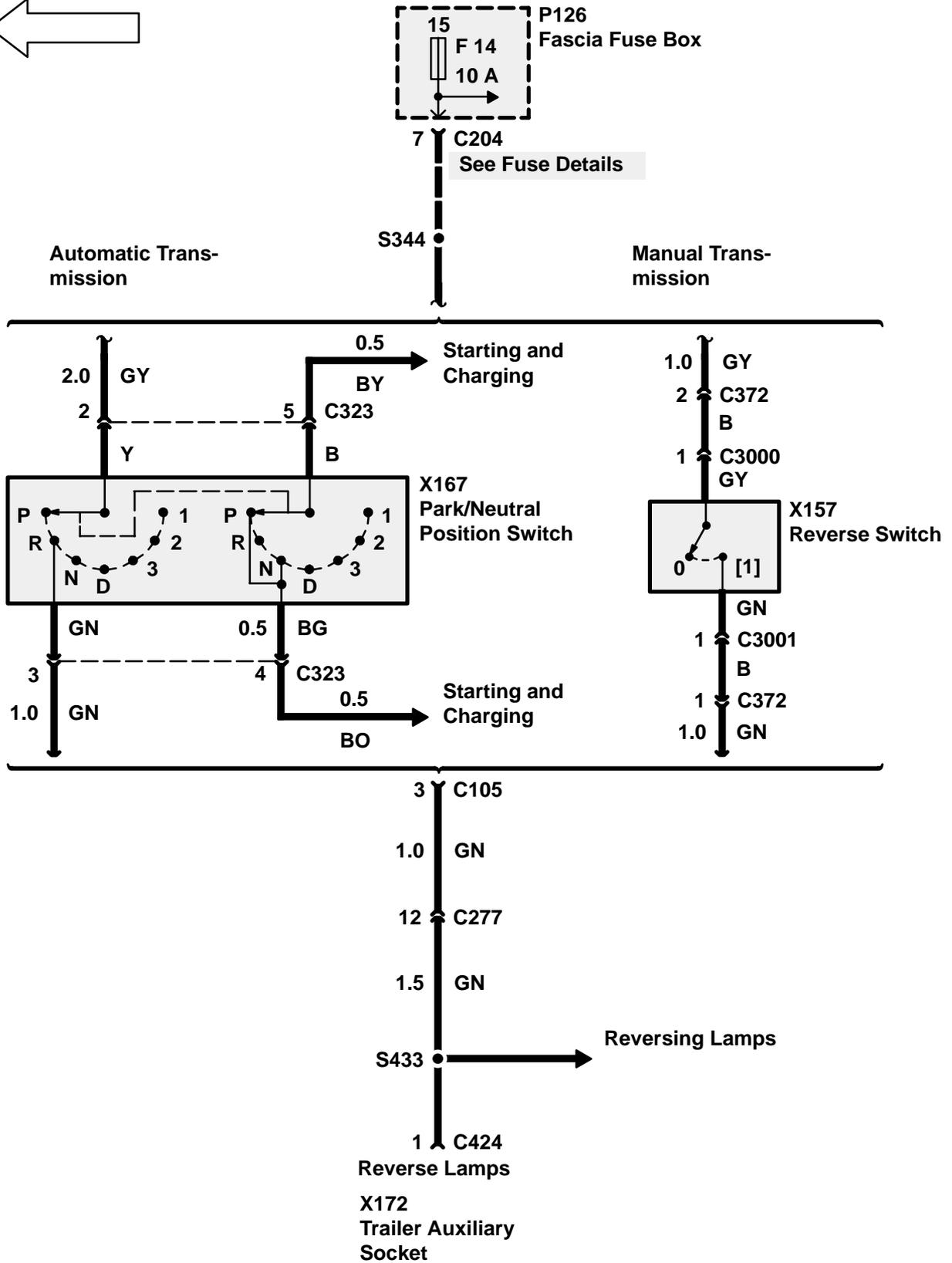


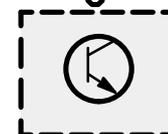
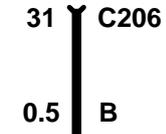
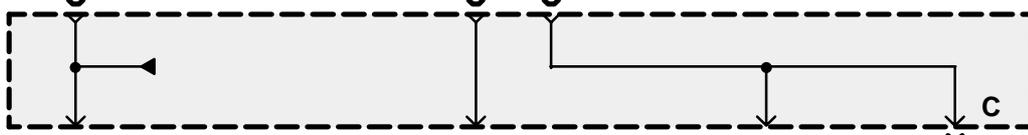
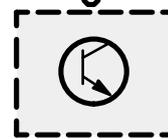
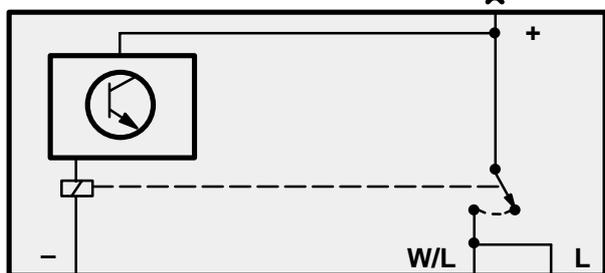
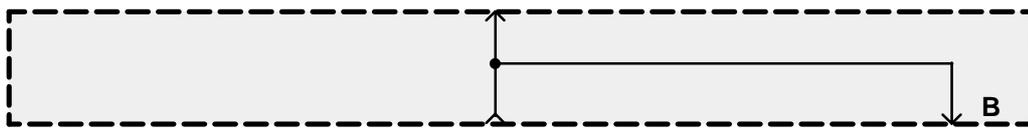
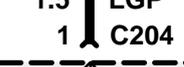
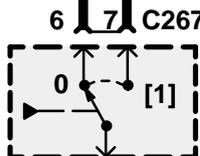
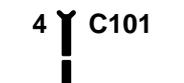
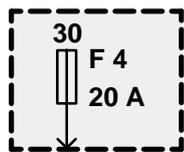
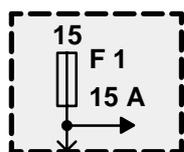
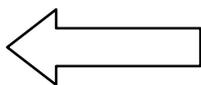




Interior Lamps





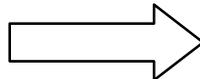


Direction Indicator Lamps



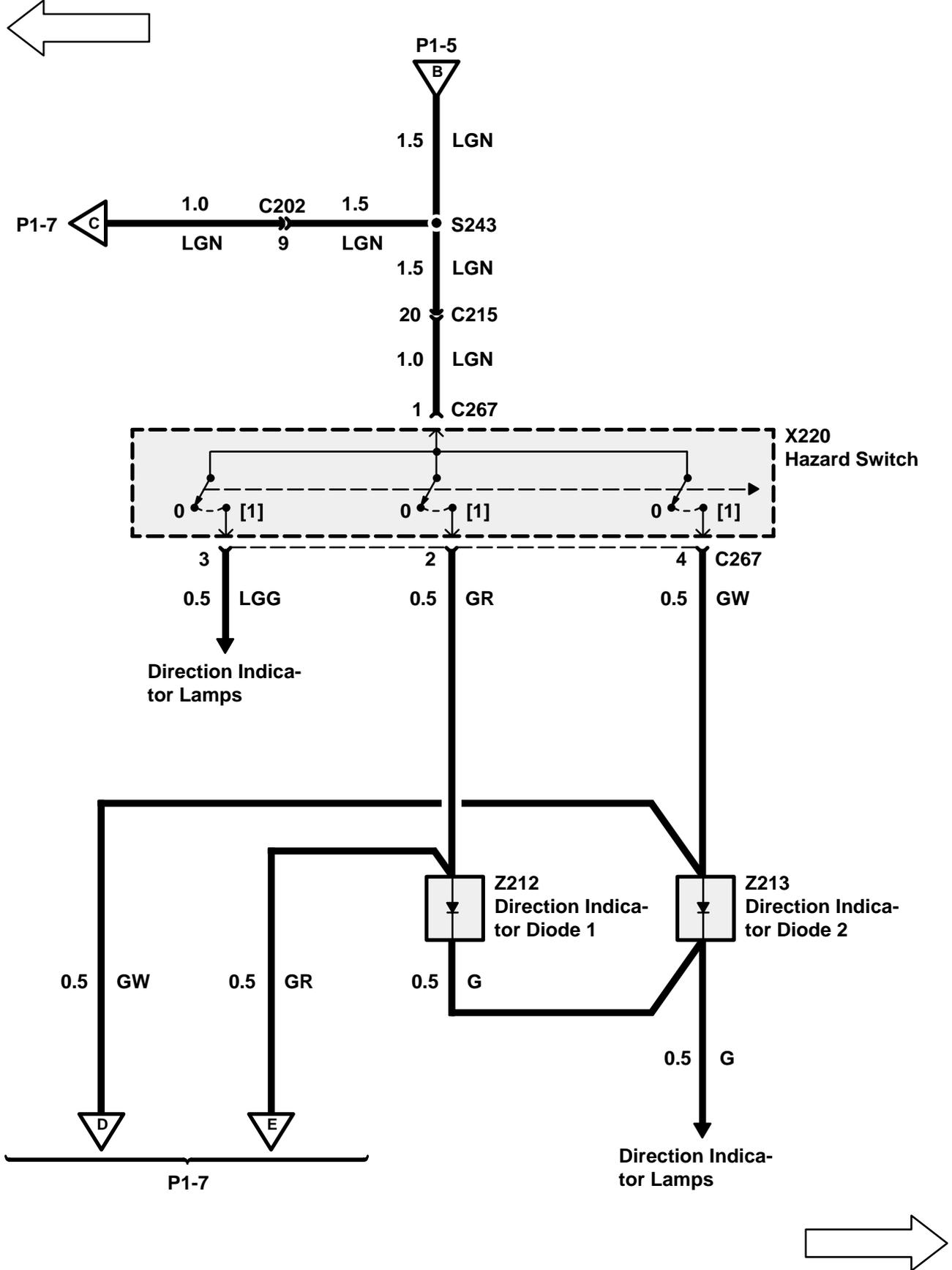
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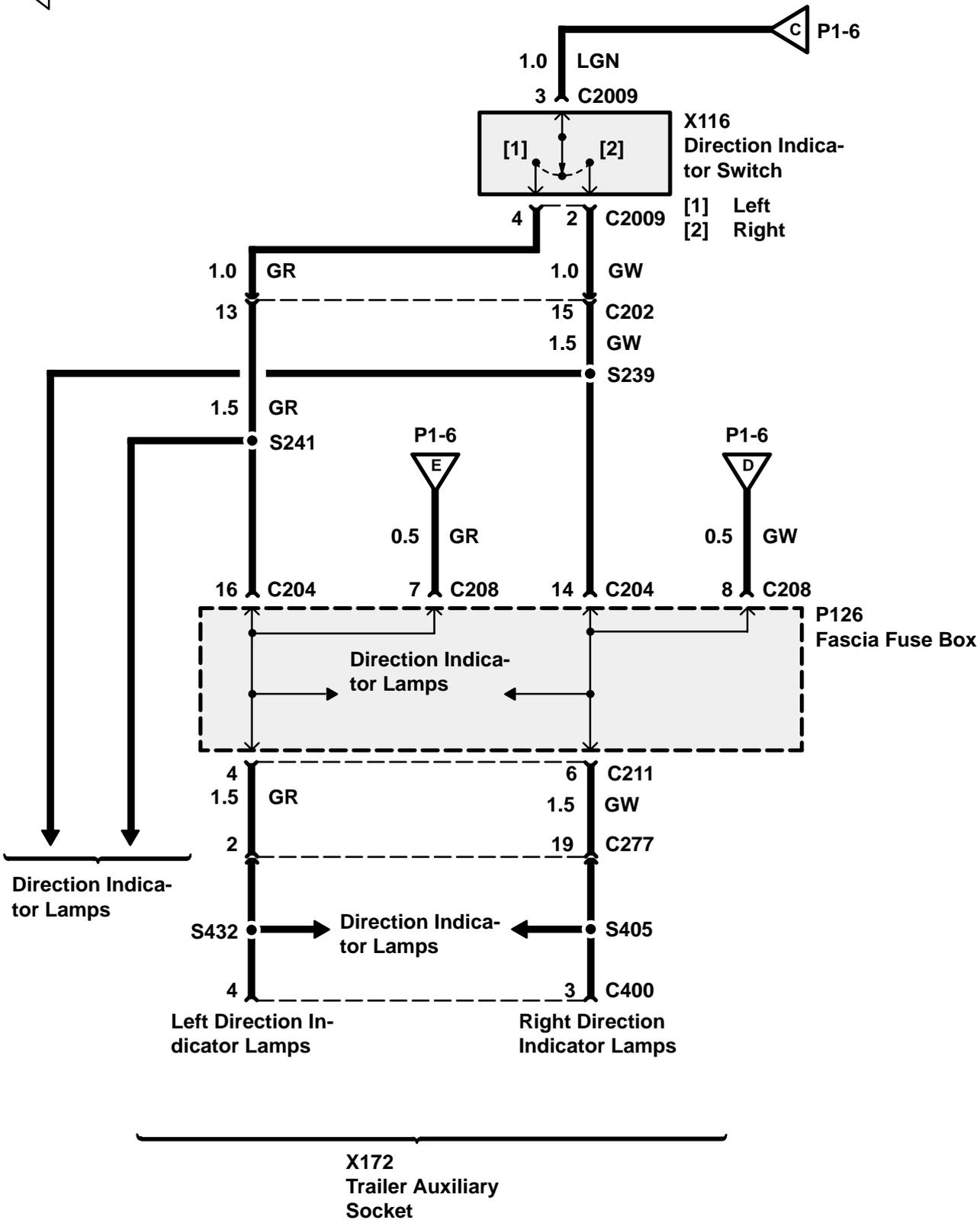
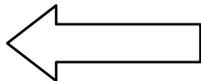
See Ground Distribution



P1 ETM

DISCOVERY





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.

Alarm Sounder (Z171)

When an intrusion is detected the Alarm Sounder (Z171) 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 Alarm Sounder (Z171) will sound again.

Vehicle Status Indication

Vehicle status is indicated by up to three devices: (a) Alarm Sounder (Z171), (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:

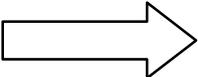
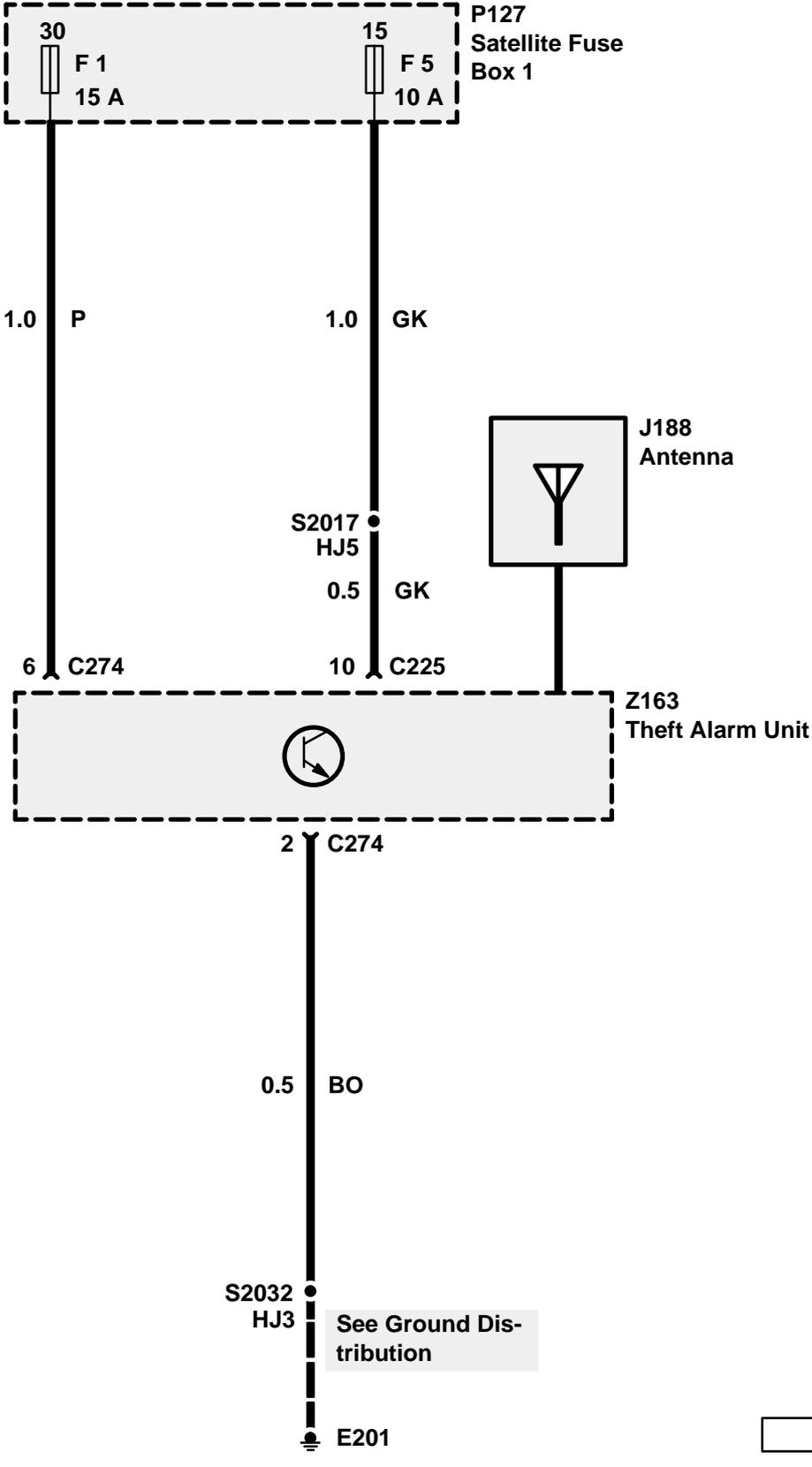
1. Starting conditions: ignition off, doors unlocked, bonnet switch depressed.
2. Carry out instructions 3 to 7 within 8 seconds.
3. Release bonnet switch.
4. Switch ignition ON.
5. Lock doors.
6. Switch ignition OFF.
7. Switch ignition ON.

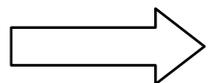
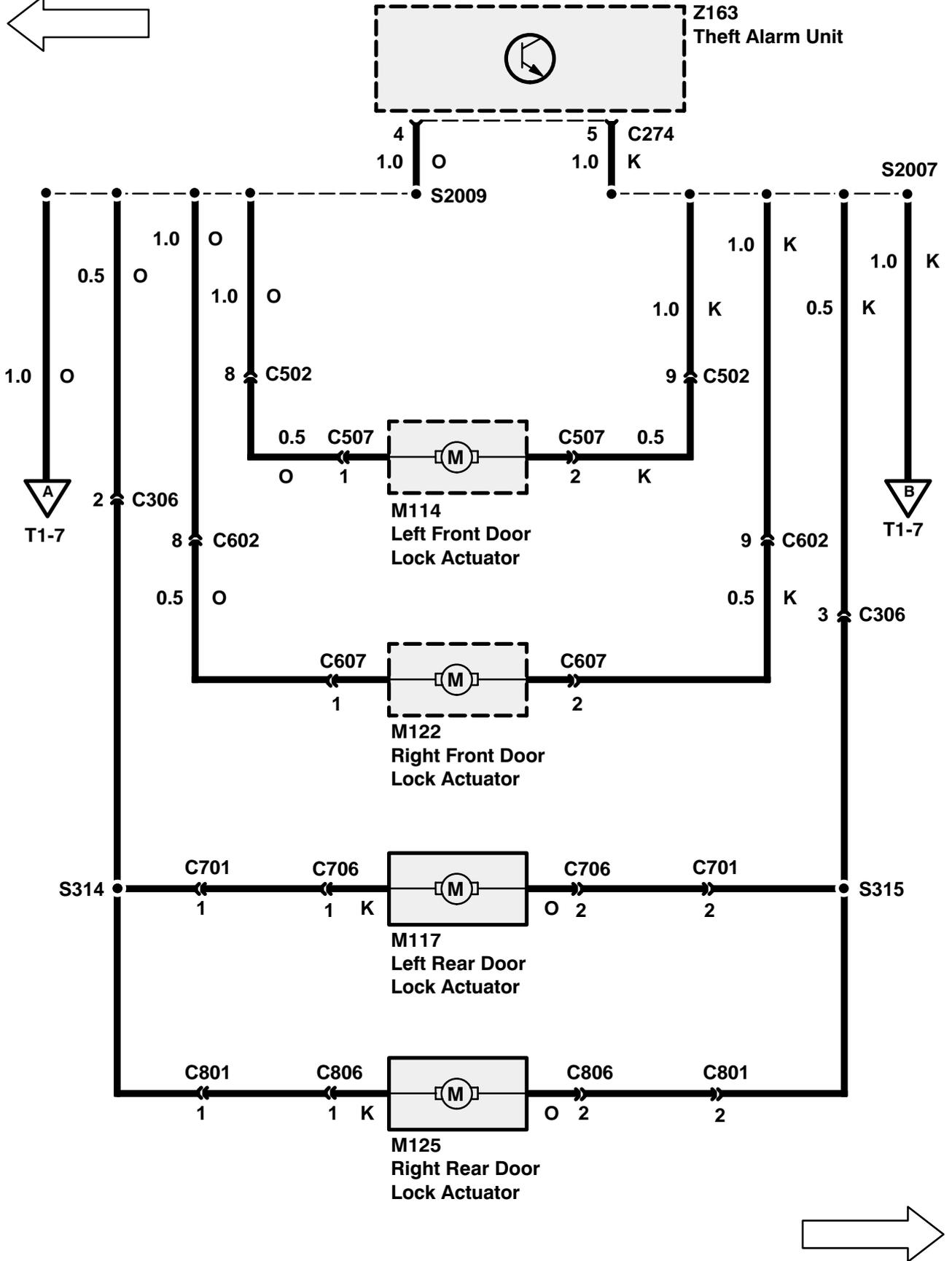
If alarm is correctly accessed, horn will sound and LED will flash. The following checks can be made:

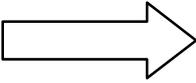
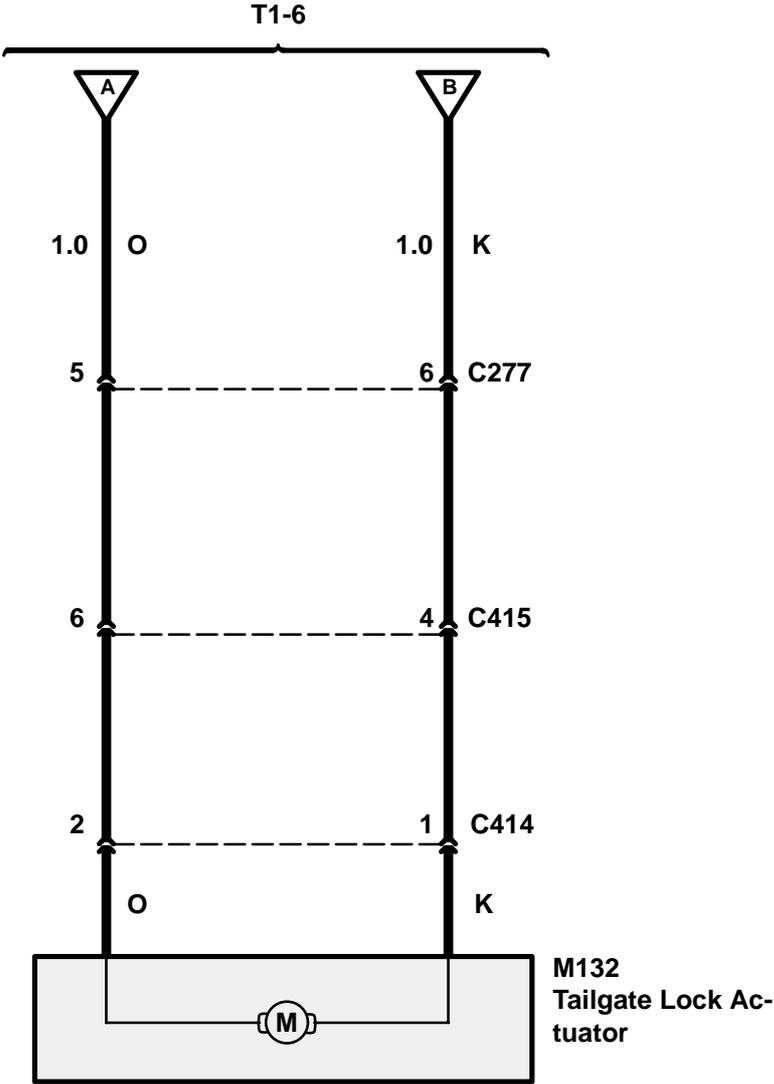
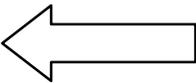
8. Open and close any door or tailgate – LED will light.
9. Depress bonnet switch – hazards will flash.
10. Check engine cranking is disabled. Do not turn off ignition.
11. Check ultrasonic by operating handset, LED will emit one 5 second flash, and will flash if interior is disturbed.

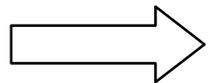
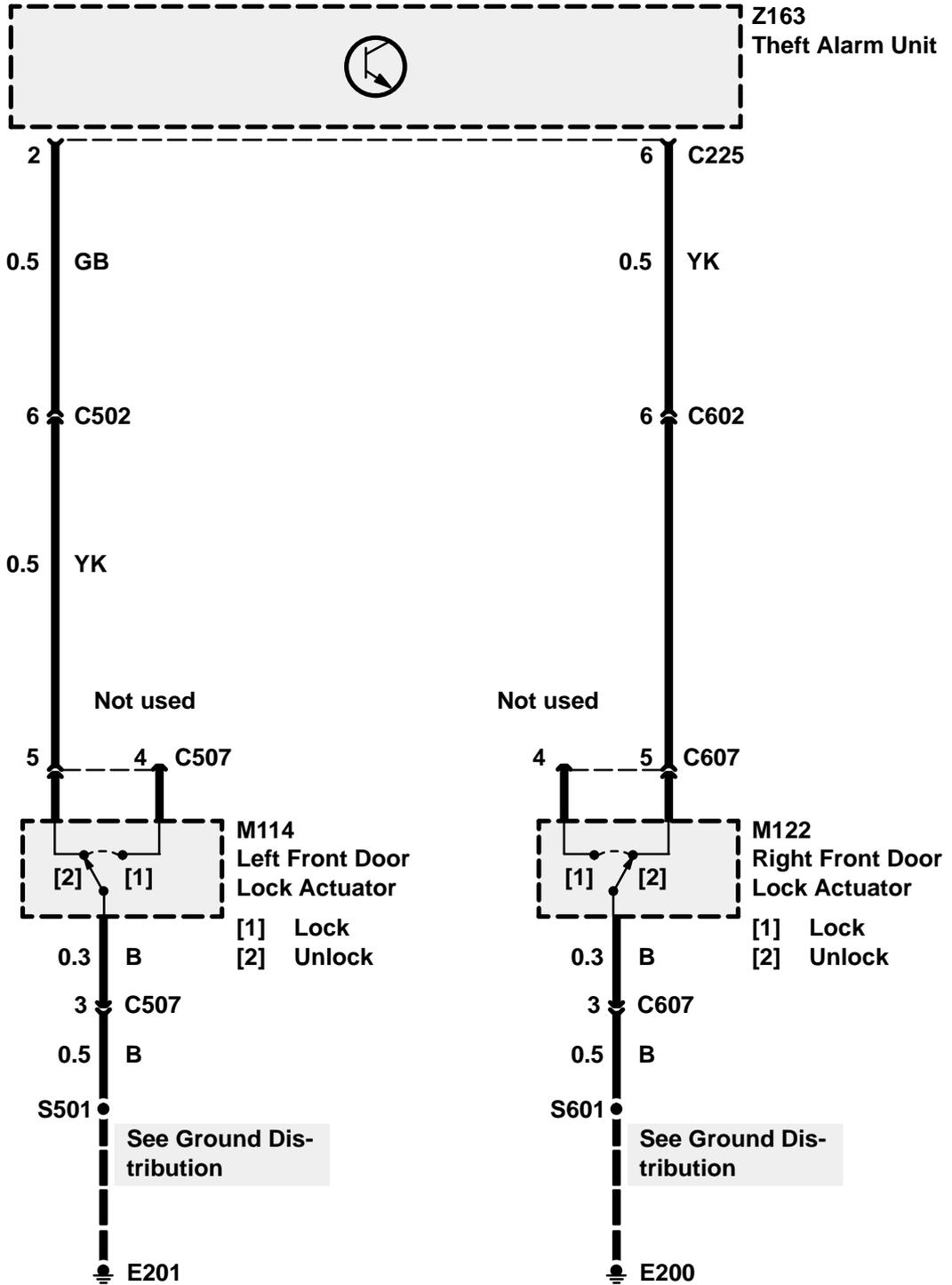
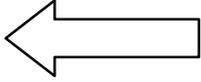
NOTE: If ECU is in new born mode, any handset of the right frequency will work. If not, initialised handset is required. See Handset Initialisation.

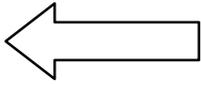
12. Turn OFF ignition or press handset to end test procedure. Horn will sound as before to indicate end of test mode.



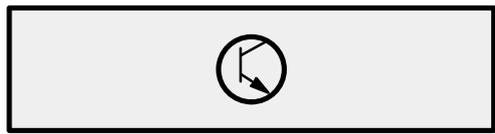
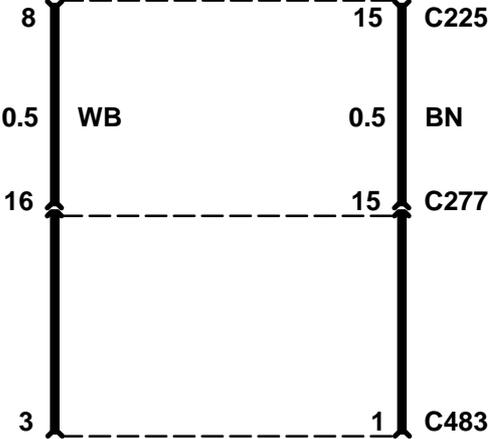




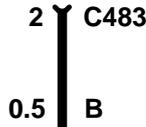




Z163 Theft Alarm Unit

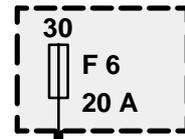


X213 Alarm Sensor



See Ground Distribution

E401



P128 Satellite Fuse Box 2



S2061

0.5 P

1 C269

B151 Theft Alarm LED

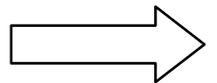
2 C269

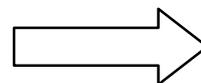
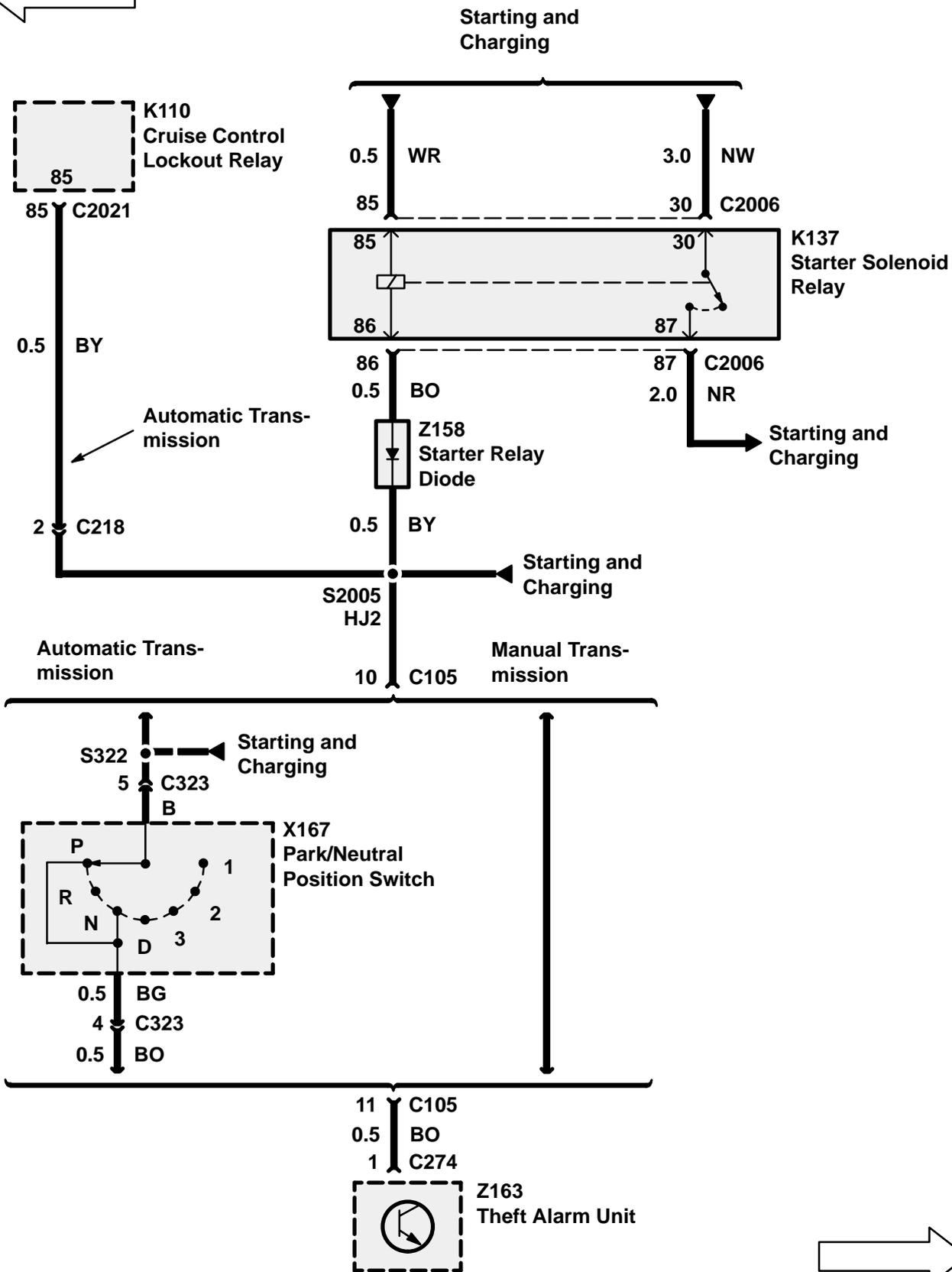
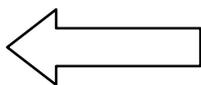
0.5 RW

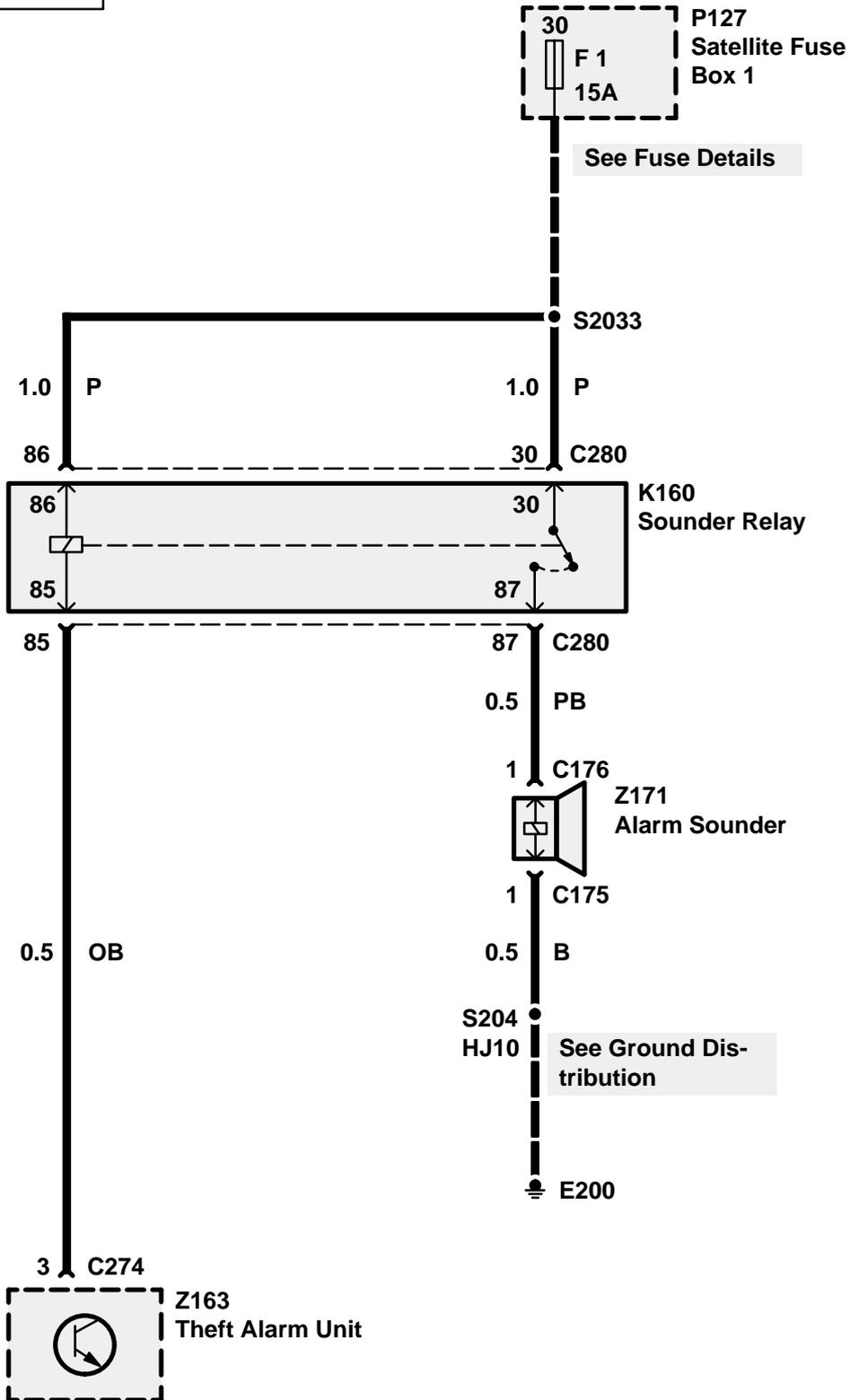
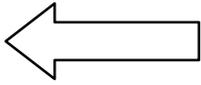
4 C209

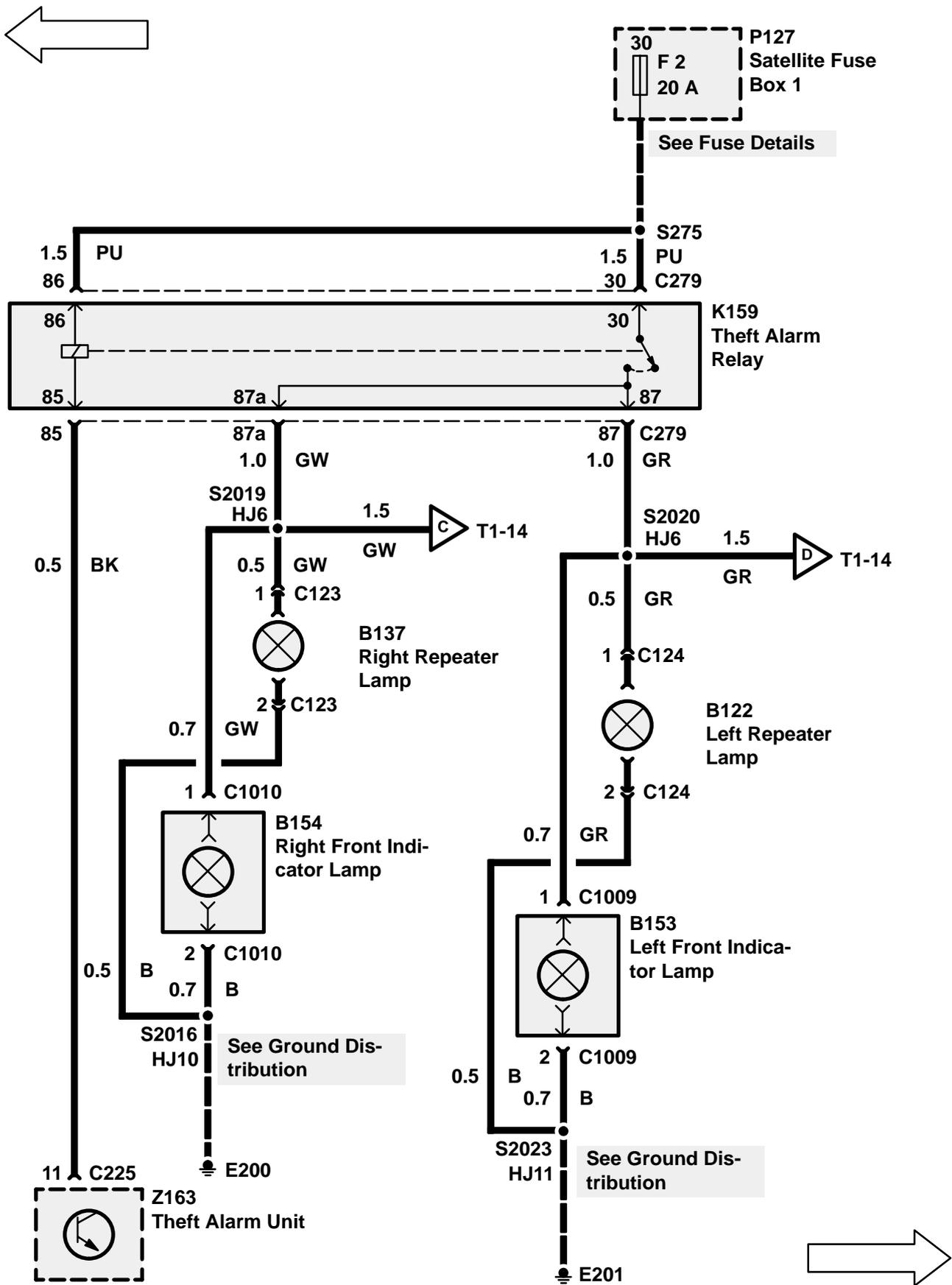
14 C225

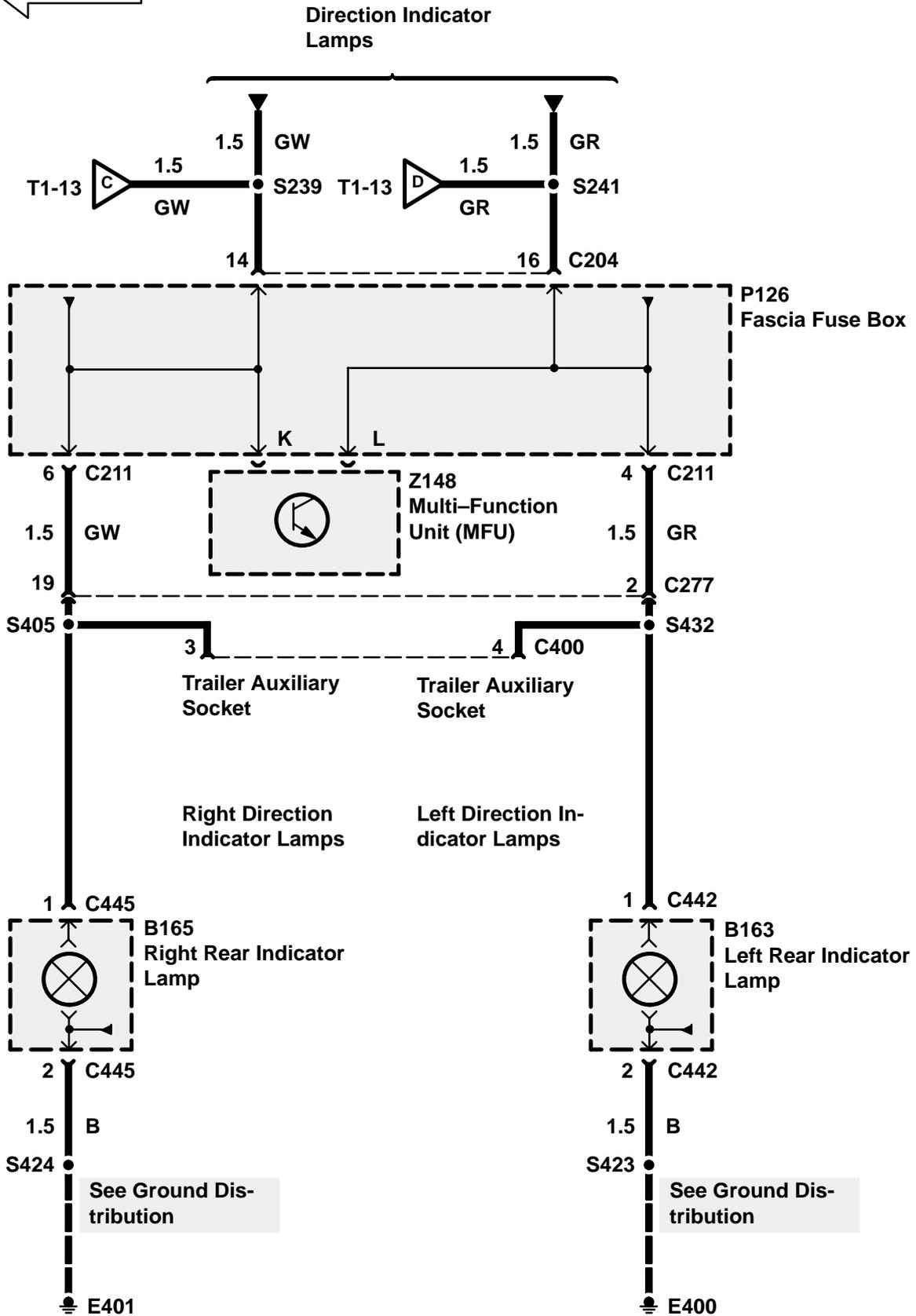
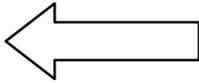
Z163 Theft Alarm Unit









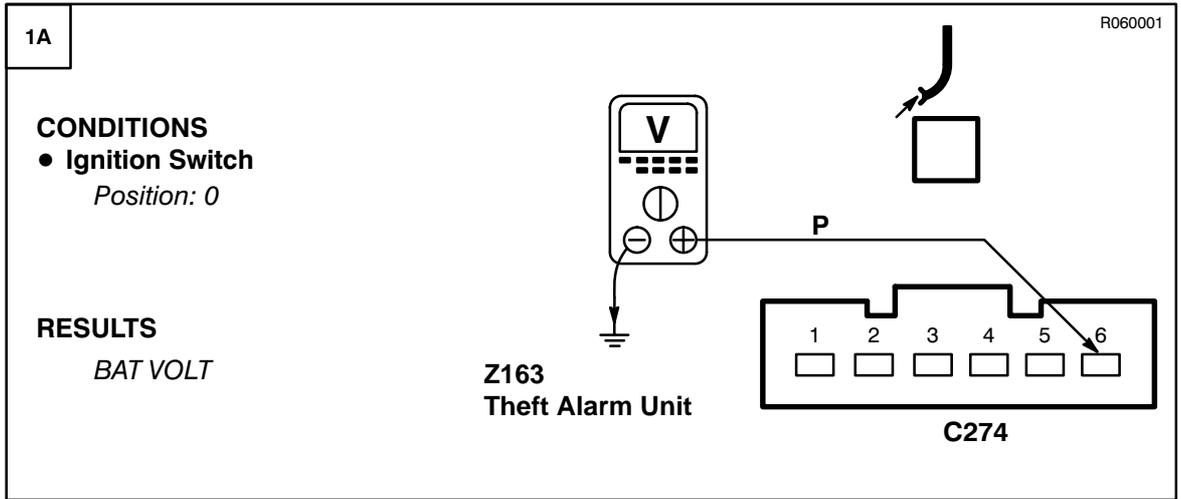


TROUBLESHOOTING HINTS

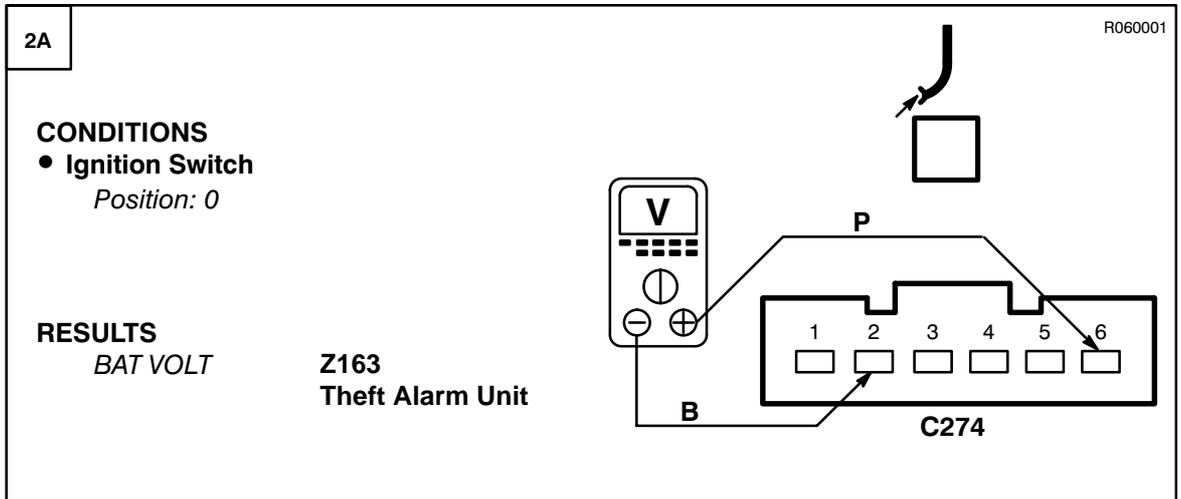
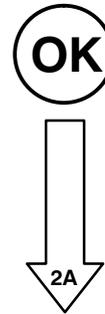
13. Check Fuses F1, F2 and F5 in Satellite Fuse Box 1.
14. Check Fuse F5 in Satellite Fuse Box 2.
15. If the interior lights do not come on when a door is open, check suspect door switch and associated wiring.
16. If all of the lock actuators do not operate, check O and K Wire. If OK, replace Theft Alarm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

SYSTEM DIAGNOSIS

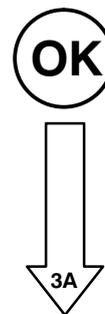
1. If the system will not arm, do Test A.
2. If the system arms, but will not trigger at all, do Test C.
3. If the Alarm Sounder (Z171) does not sound when triggered, do Test C.
4. If the hazard lights do not flash when triggered, do Test F.
5. If the system will not trigger when the bonnet is open, do Test G.
6. 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 H.
7. If the Theft Alarm LED (B151) does not operate, do Test D.
8. If the Alarm Sounder (Z171) sounds continuously, do Test E.
9. If the system will not disarm, do Test A.
10. If a Front Door Lock Actuator (M114, M122) does not operate, do Test J.
11. If the doors unlock themselves after operating the door locks, do Test K.
12. If the central locking function does not operate from one of the front doors, do Test L.
13. If the Tailgate Lock Actuator (M132) does not operate, do Test M.
14. If both Rear Door Lock Actuators (M117, M125) do not operate, do Test N.

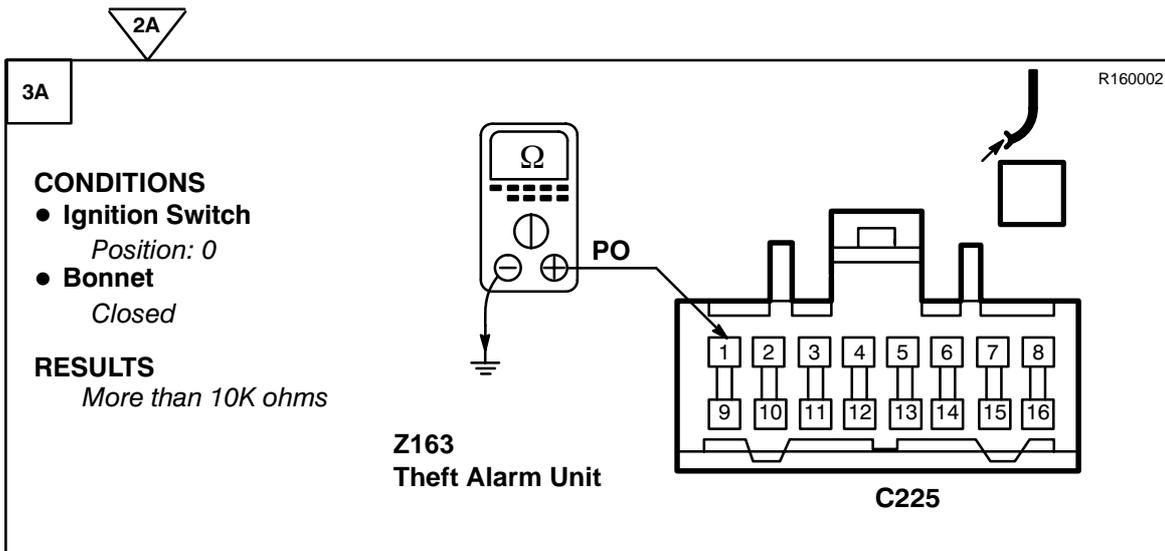


~~OK~~ PROBLEM CAUSE
 - P Wire

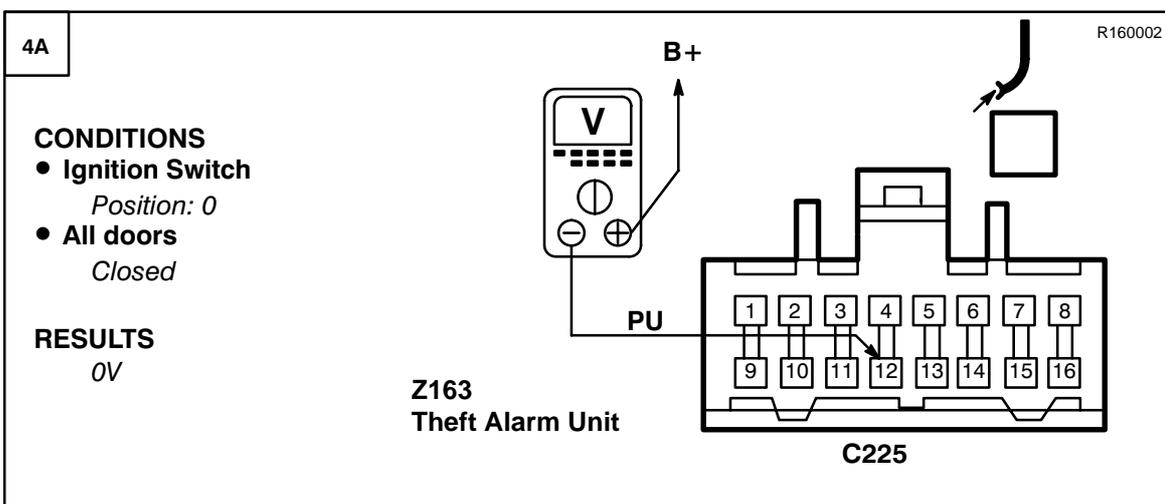
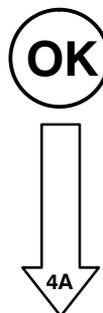


~~OK~~ PROBLEM CAUSE
 - B Wire

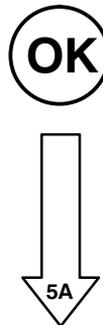


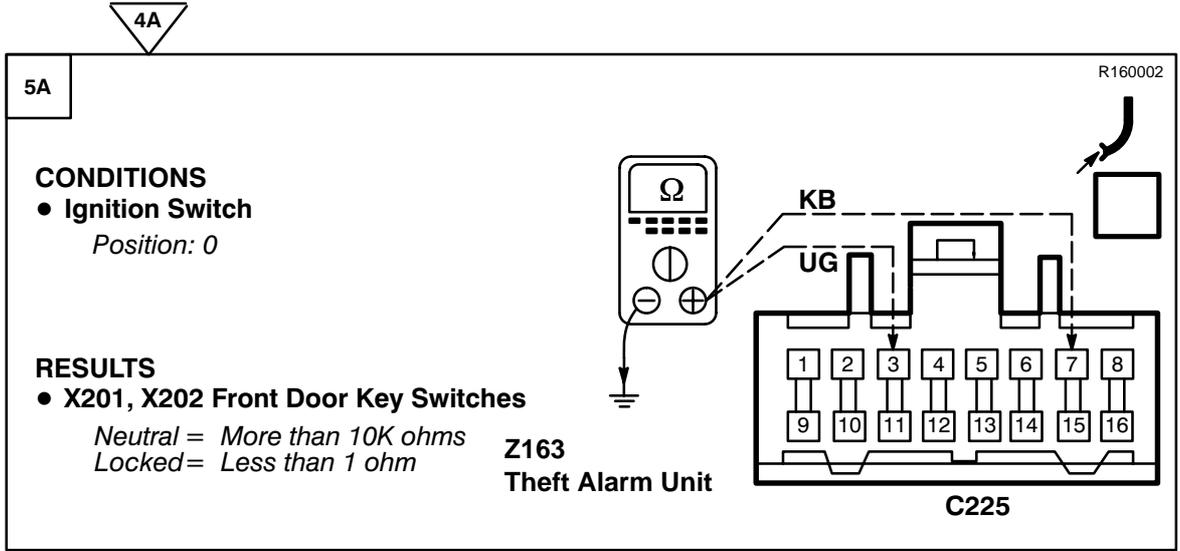


~~OK~~ **PROBLEM CAUSE**
 - PO Wire
 - Alarm Bonnet Switch



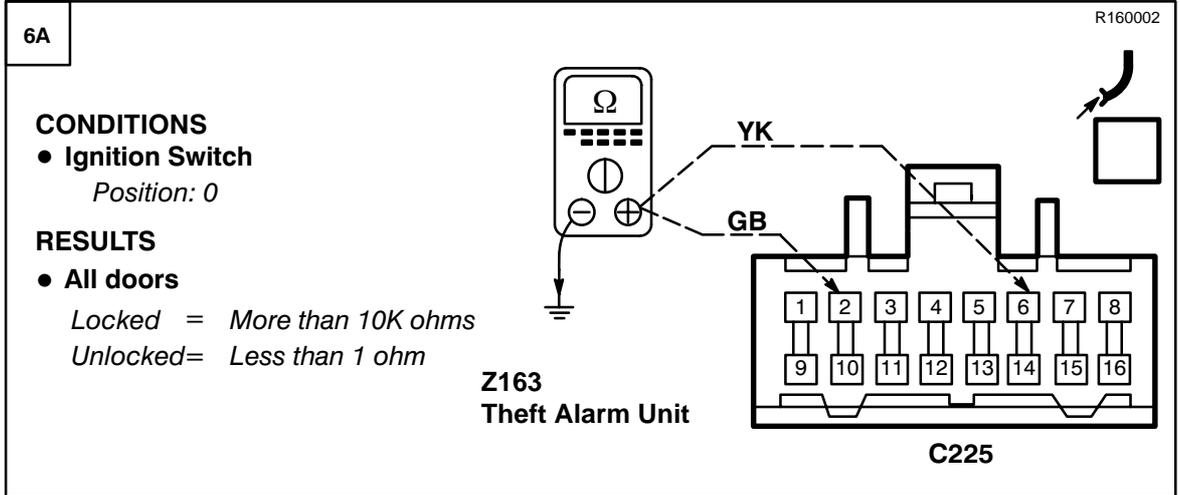
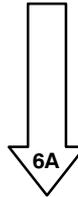
~~OK~~ **GO TO TEST B**





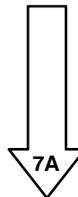
PROBLEM CAUSE

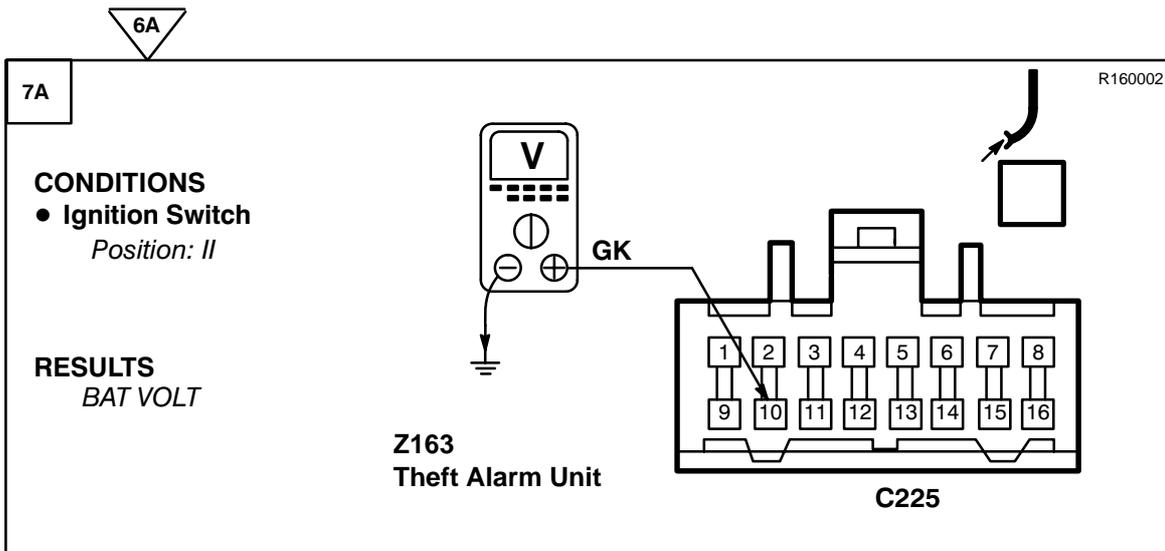
- UG Wire
- KB Wire
- B Wire
- X201, X202 Front Door Key Switches



PROBLEM CAUSE

- GB Wire
- YK Wire
- B Wire



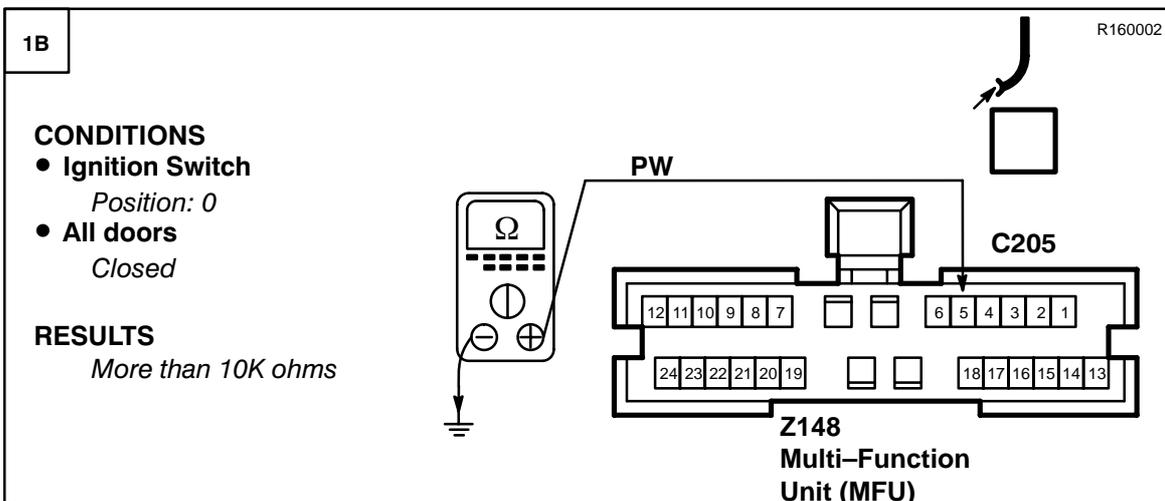


PROBLEM CAUSE
- GK Wire



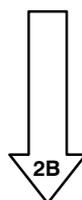
PROBLEM CAUSE
- Theft Alarm Unit

Test B



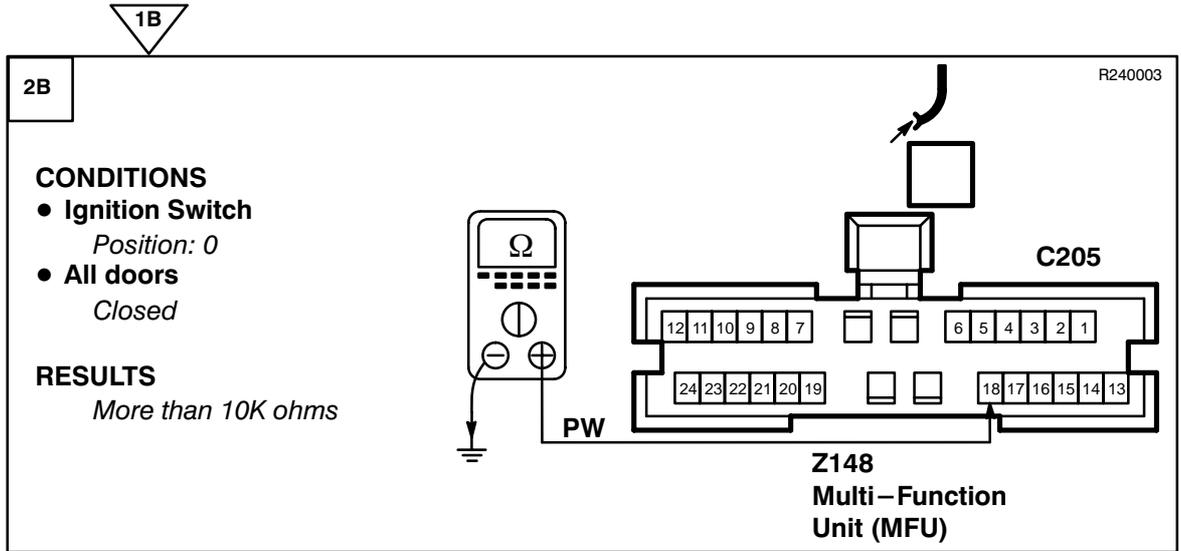
PROBLEM CAUSE

- PW Wire
- Left Front Door Switch
- Left Rear Door Switch
- Right Rear Door Switch
- Rear End Door Switch



T1 ETM

DISCOVERY



PROBLEM CAUSE

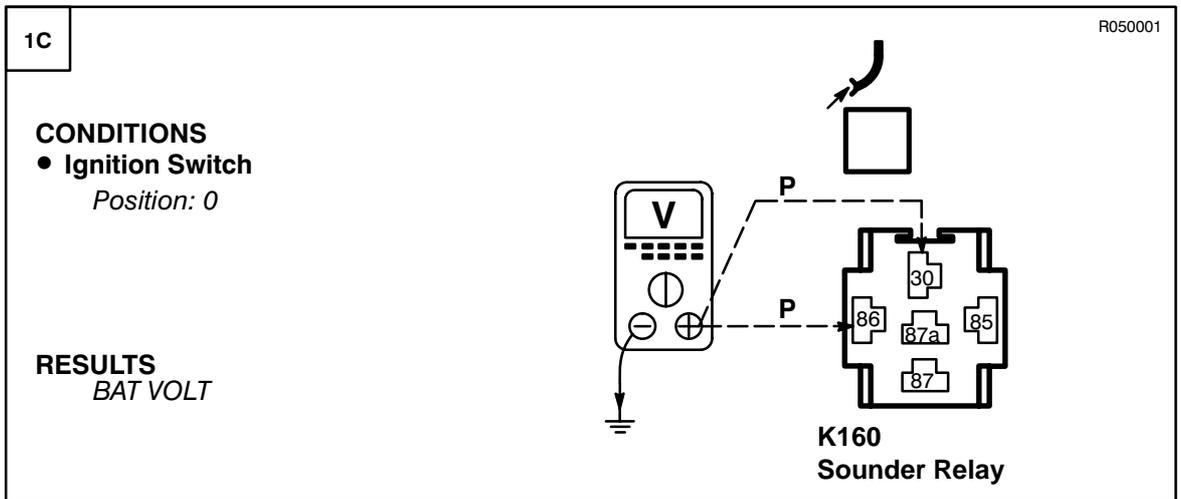
- PW Wire
- Right Front Door Switch



PROBLEM CAUSE

- PU Wire
- Multi-Function Unit (MFU)

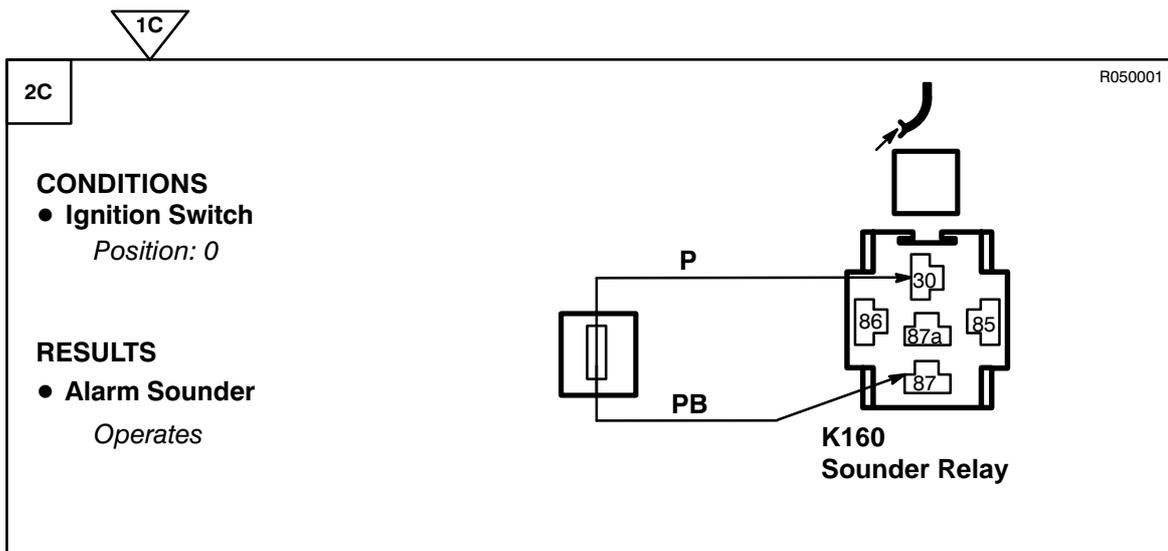
Test C



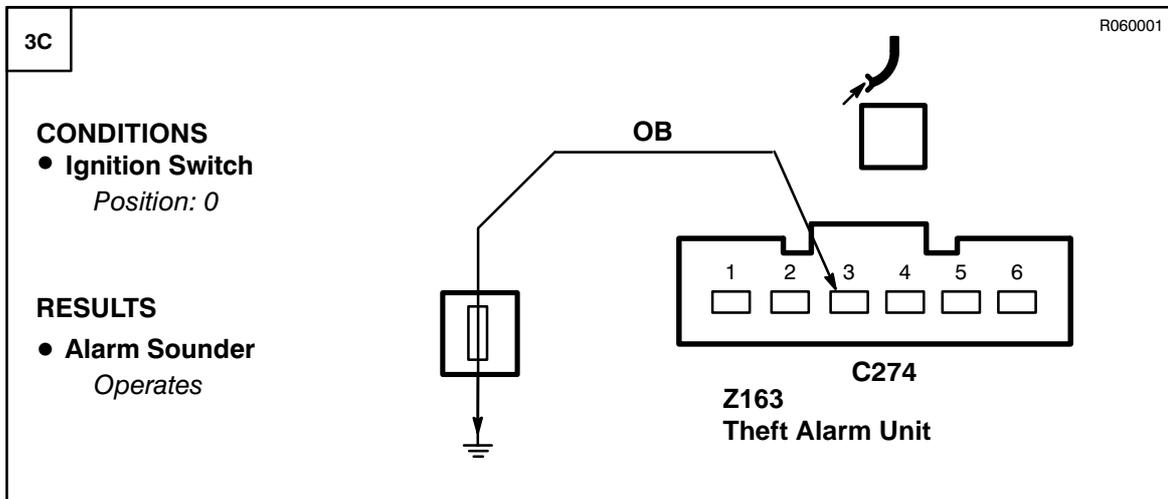
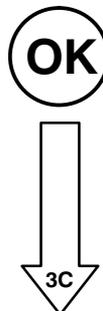
PROBLEM CAUSE

- P Wire





~~OK~~ **PROBLEM CAUSE**
- PB Wire
- Alarm Sounder



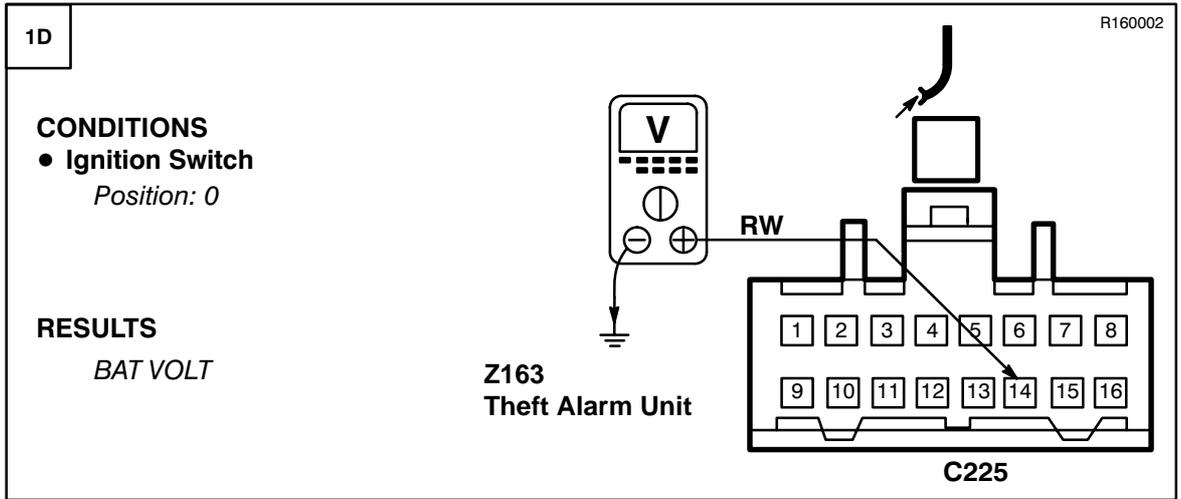
~~OK~~ **PROBLEM CAUSE**
- OB Wire
- Sounder Relay

~~OK~~ **PROBLEM CAUSE**
- Theft Alarm Unit

T1 ETM

DISCOVERY

Test D



PROBLEM CAUSE

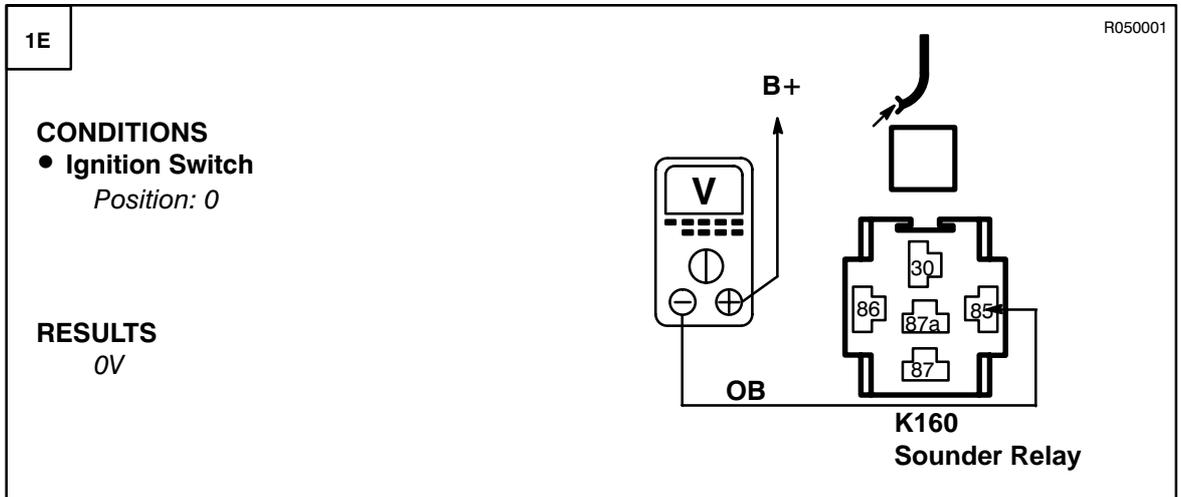
- RW Wire
- P Wire
- Theft Alarm LED



PROBLEM CAUSE

- Theft Alarm Unit

Test E



PROBLEM CAUSE

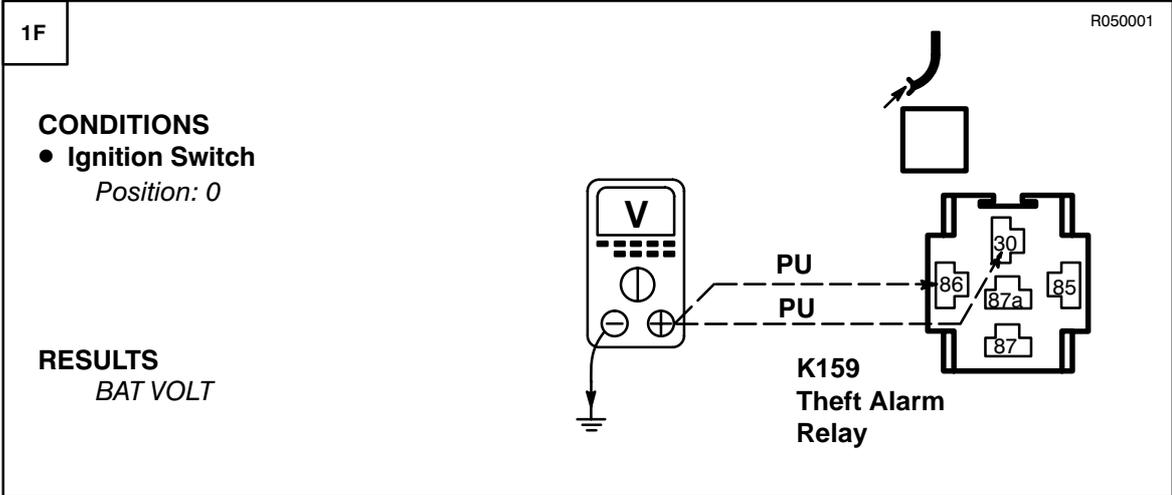
- OB Wire
- Theft Alarm Unit



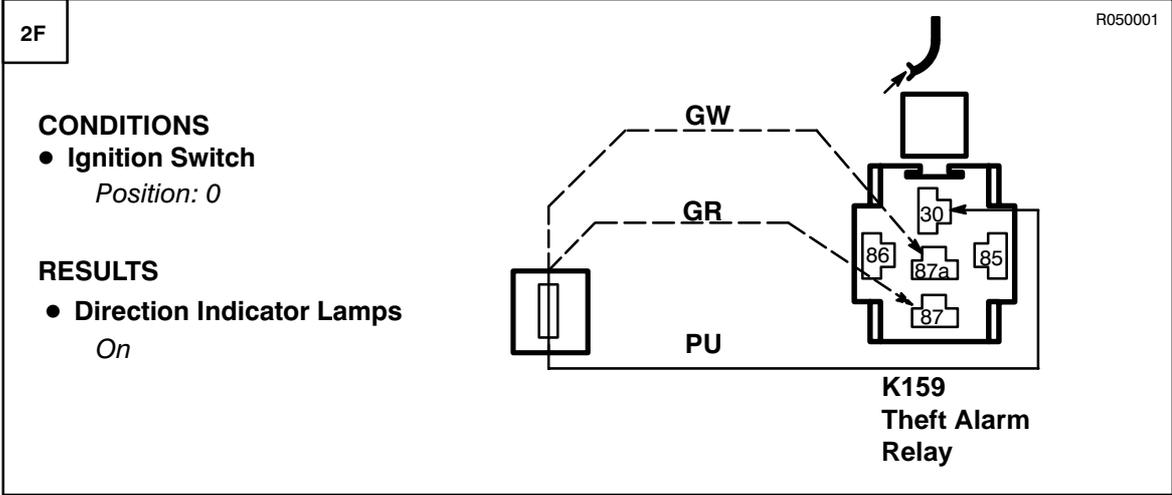
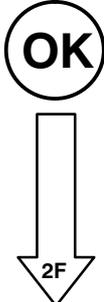
PROBLEM CAUSE

- Sounder Relay

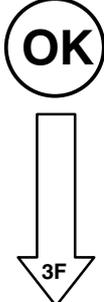
Test F



~~OK~~ **PROBLEM CAUSE**
- PU Wire

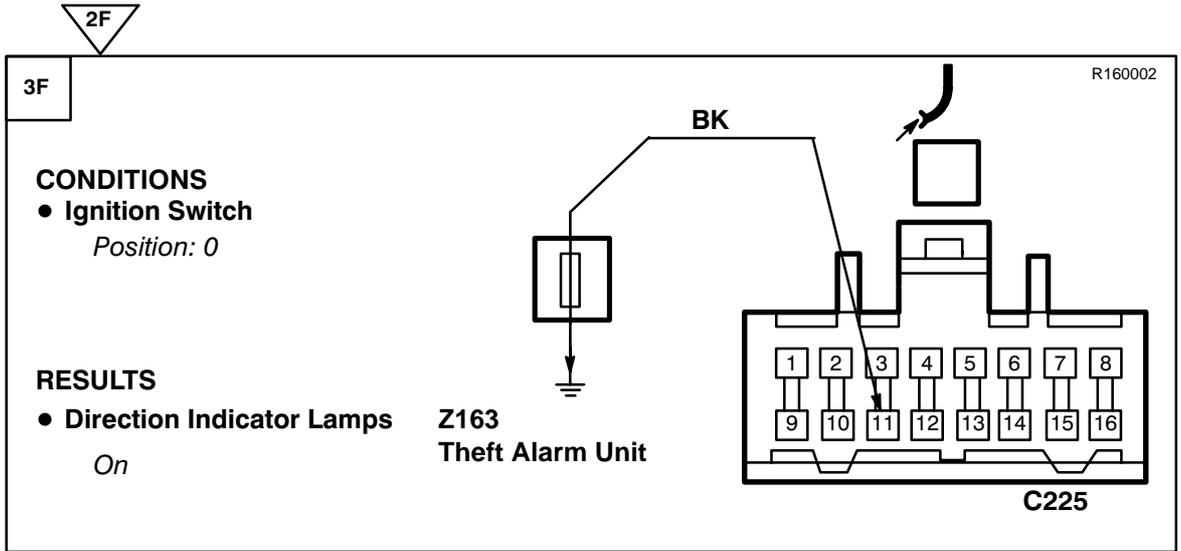


~~OK~~ **PROBLEM CAUSE**
- GR Wire
- GW Wire



T1 ETM

DISCOVERY



PROBLEM CAUSE

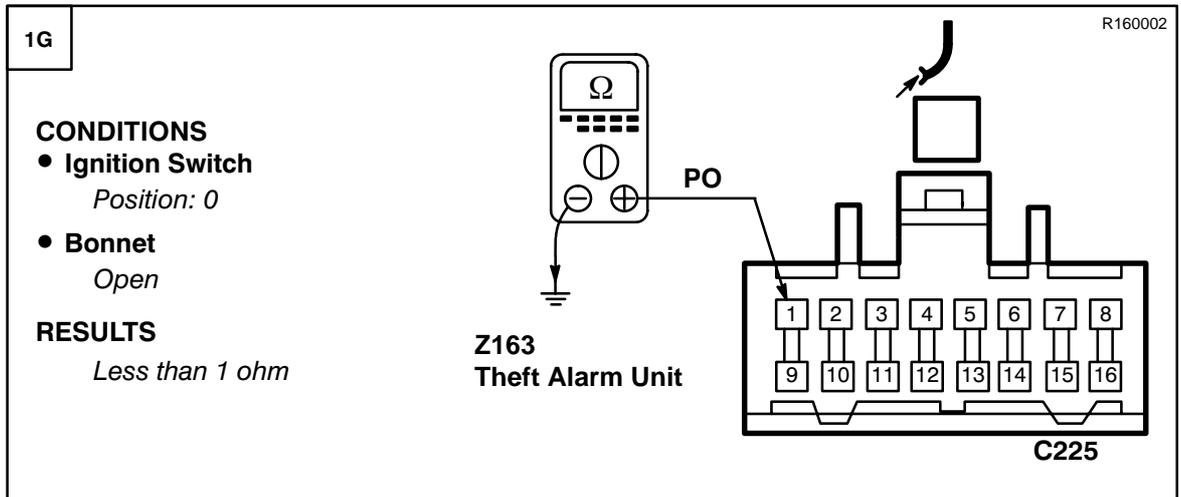
- BK Wire
- Theft Alarm Relay



PROBLEM CAUSE

- Theft Alarm Unit

Test G



PROBLEM CAUSE

- PO Wire
- B Wire
- Alarm Bonnet Switch



PROBLEM CAUSE

- Theft Alarm Unit

Test H

R040006

1H

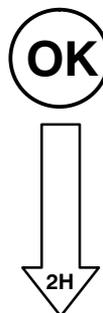
CONDITIONS

- Ignition Switch
Position: 0

RESULTS
BAT VOLT

X213 Alarm Sensor

OK PROBLEM CAUSE
- WB Wire
- Theft Alarm Unit



R040006

2H

CONDITIONS

- Ignition Switch
Position: 0

RESULTS
Less than 1 ohm

X213 Alarm Sensor

OK PROBLEM CAUSE
- B Wire

OK PROBLEM CAUSE
- BN Wire
- Alarm Sensor
- Theft Alarm Unit

Test J

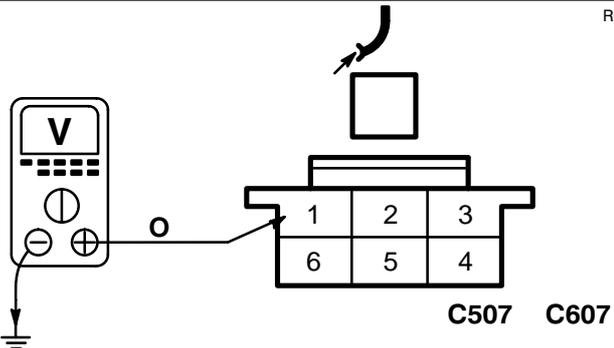
R060009

1J

CONDITIONS

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

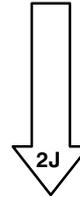
RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator



PROBLEM CAUSE
- O Wire



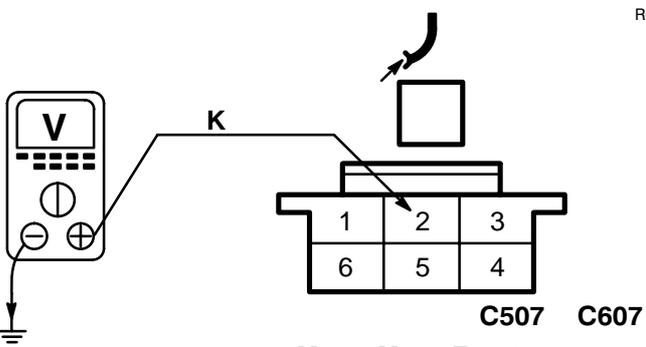
R060009

2J

CONDITIONS

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

RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator

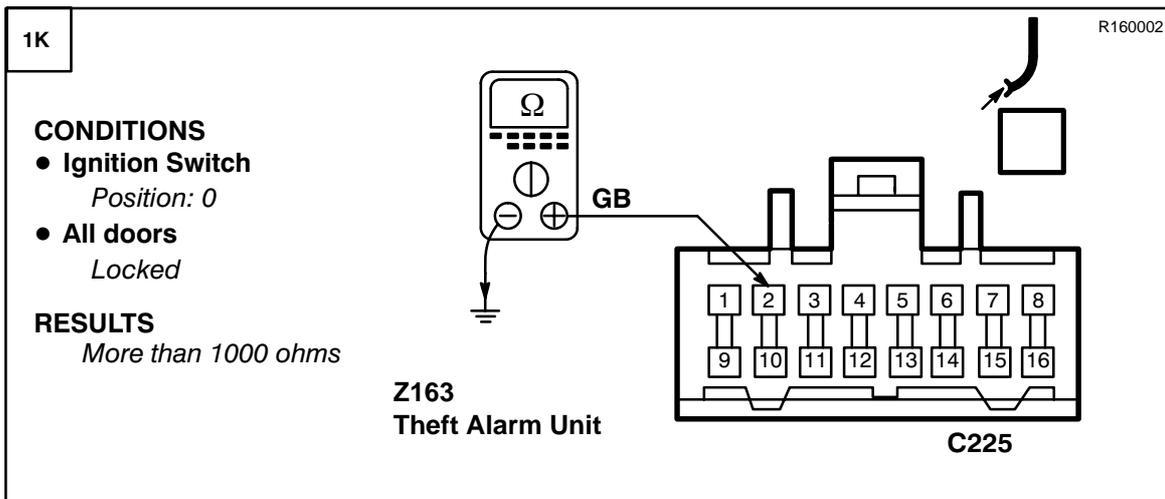


PROBLEM CAUSE
- K Wire



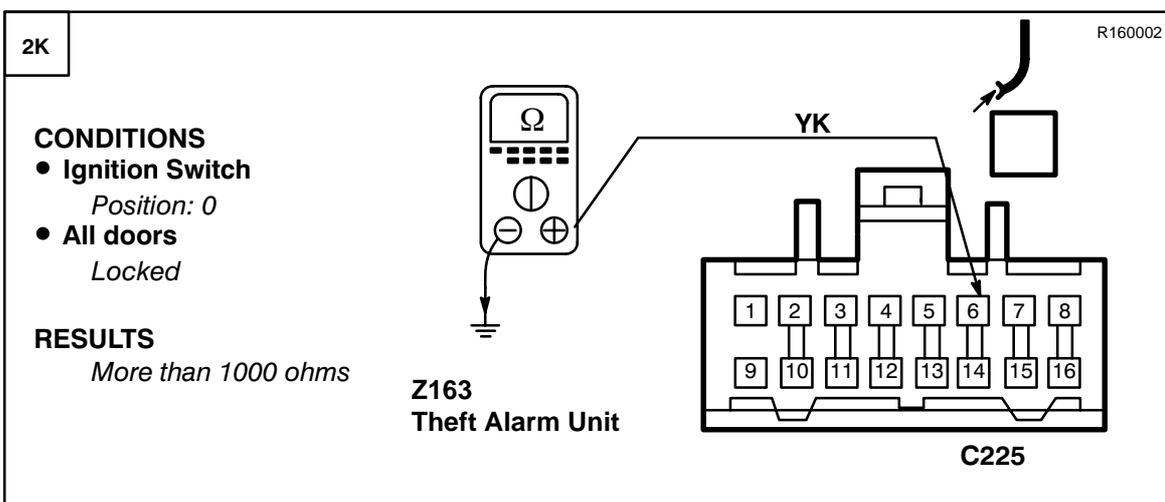
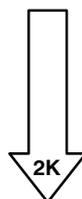
PROBLEM CAUSE
- M114, M122 Front Door Lock Actuator

Test K



PROBLEM CAUSE

- GB Wire
- YK Wire
- Left Front Door Lock Actuator



PROBLEM CAUSE

- YK Wire
- Right Front Door Lock Actuator



PROBLEM CAUSE

- Theft Alarm Unit

T1 ETM

DISCOVERY

Test L

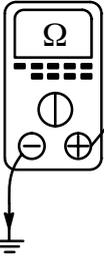
1L

R160002

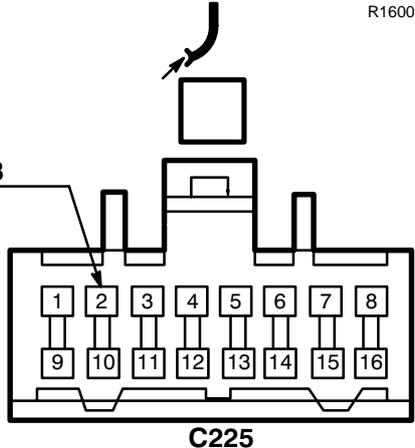
CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked

RESULTS
Less than 1 ohm



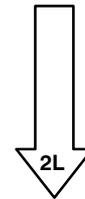
Z163
Theft Alarm Unit



C225

~~OK~~ SHORTING LINK 1

OK



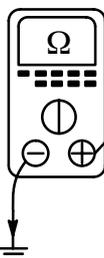
2L

R160002

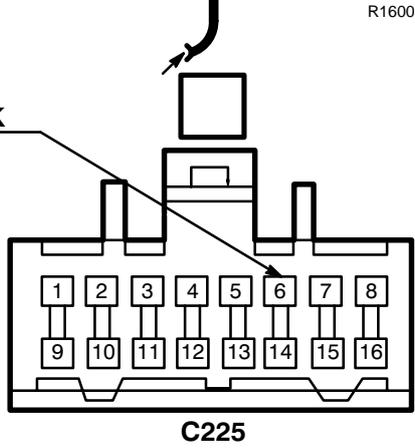
CONDITIONS

- Ignition Switch
Position: 0
- All doors
Unlocked

RESULTS
Less than 1 ohm



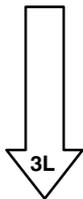
Z163
Theft Alarm Unit

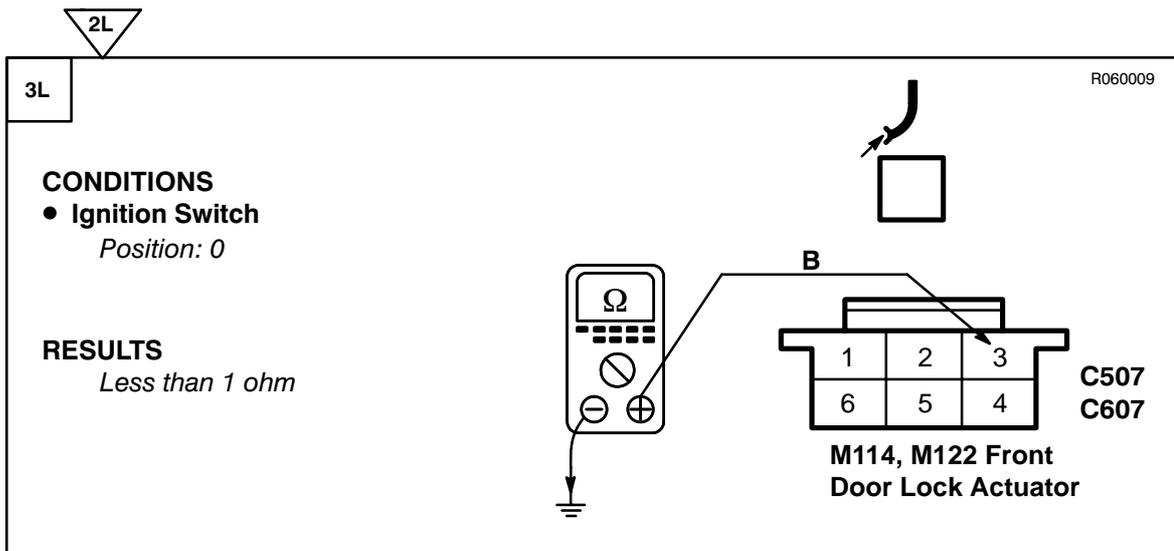


C225

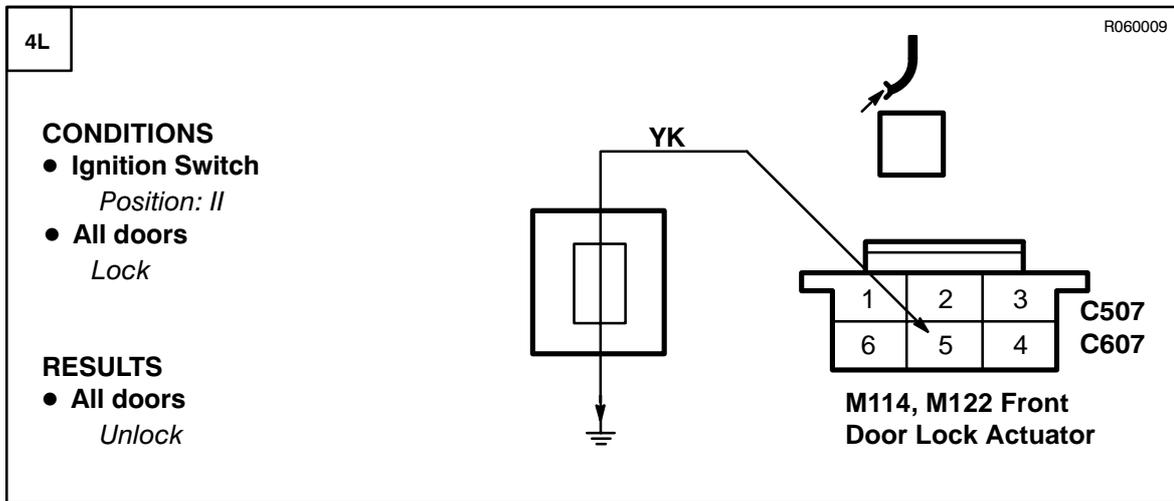
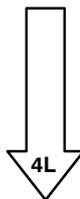
~~OK~~

OK PROBLEM CAUSE
- Theft Alarm Unit





PROBLEM CAUSE
- B Wire



PROBLEM CAUSE
- YK Wire
- GB Wire
- Theft Alarm Unit



PROBLEM CAUSE
- M114, M122 Front Door Lock Actuator

Test M

1M R020029

CONDITIONS

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

RESULTS
BAT VOLT (Momentary)

M132
Tailgate Lock Ac-
tuator

~~OK~~ PROBLEM CAUSE
- K Wire

OK



2M R020029

CONDITIONS

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

RESULTS
BAT VOLT (Momentary)

M132
Tailgate Lock Ac-
tuator

~~OK~~ PROBLEM CAUSE
- O Wire

OK PROBLEM CAUSE
- Tailgate Lock Ac-
tuator

Test N

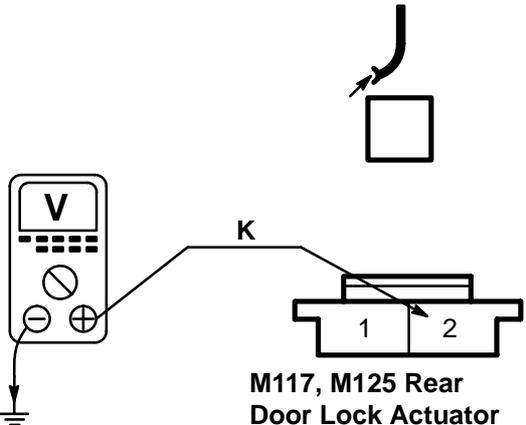
R020029

1N

CONDITIONS

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

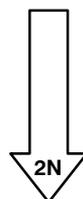
RESULTS
BAT VOLT (Momentary)



M117, M125 Rear
Door Lock Actuator
C706
C806



PROBLEM CAUSE
- K Wire



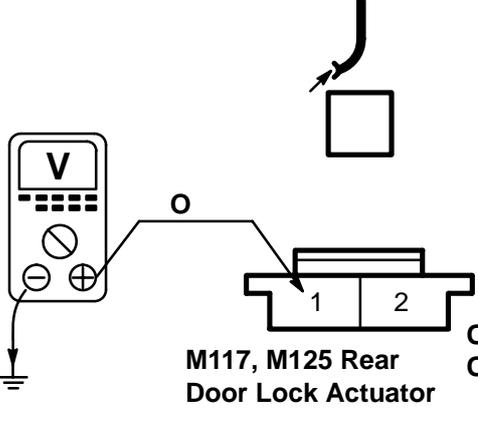
R020029

2N

CONDITIONS

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

RESULTS
BAT VOLT (Momentary)



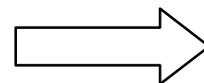
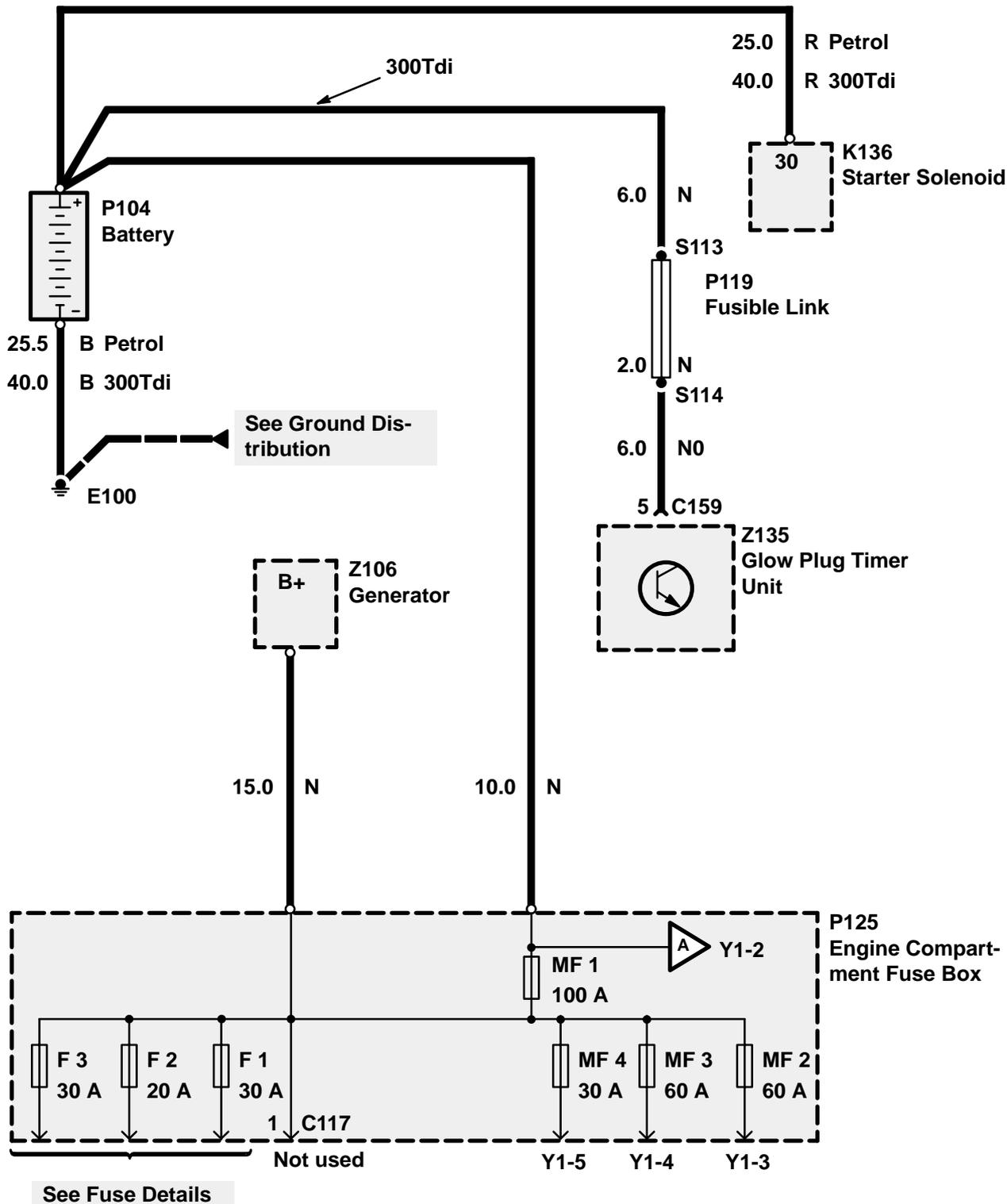
M117, M125 Rear
Door Lock Actuator
C706
C806



PROBLEM CAUSE
- O Wire

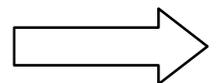
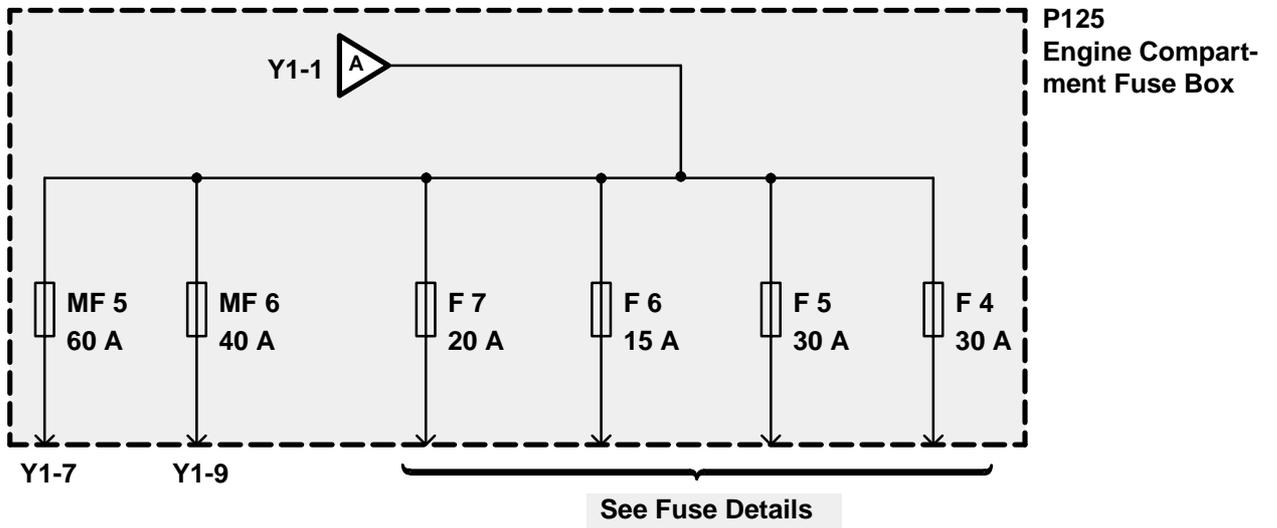
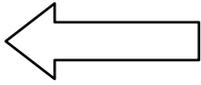


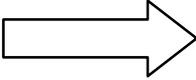
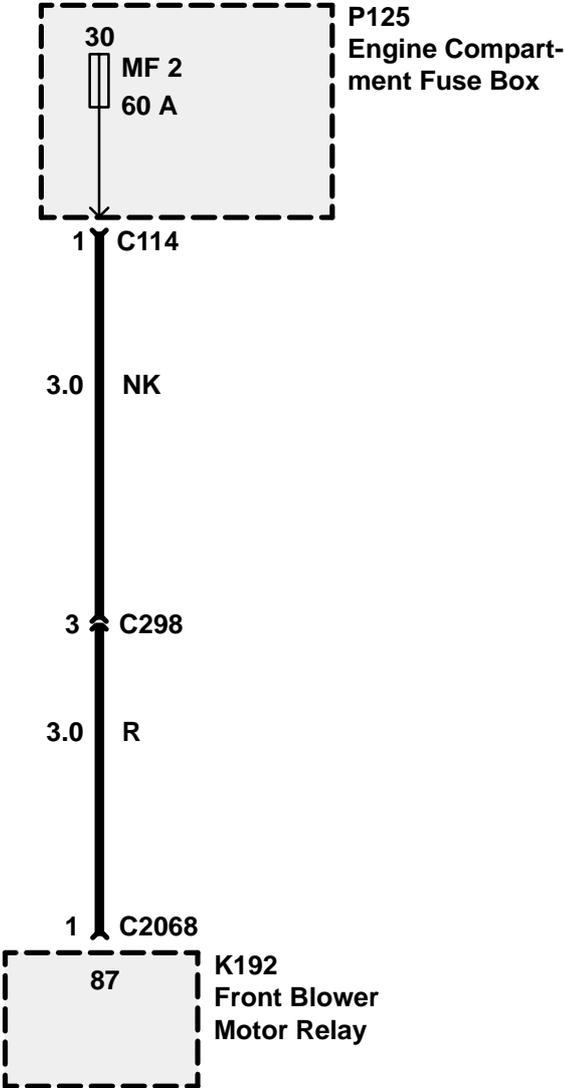
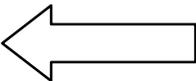
PROBLEM CAUSE
- M117, M125 Rear
Door Lock Actuator

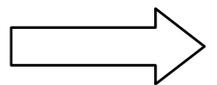
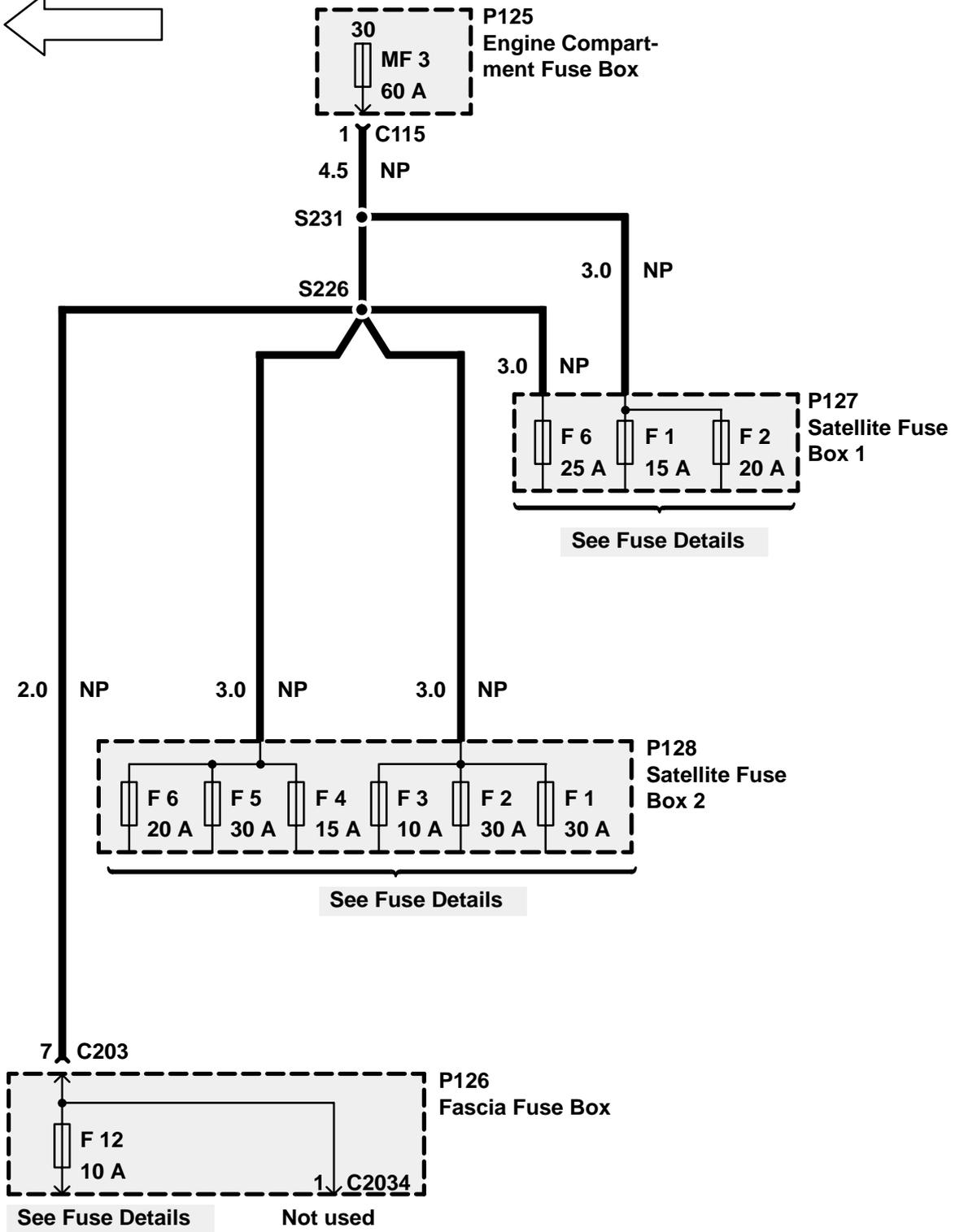
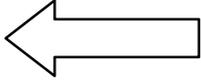


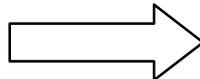
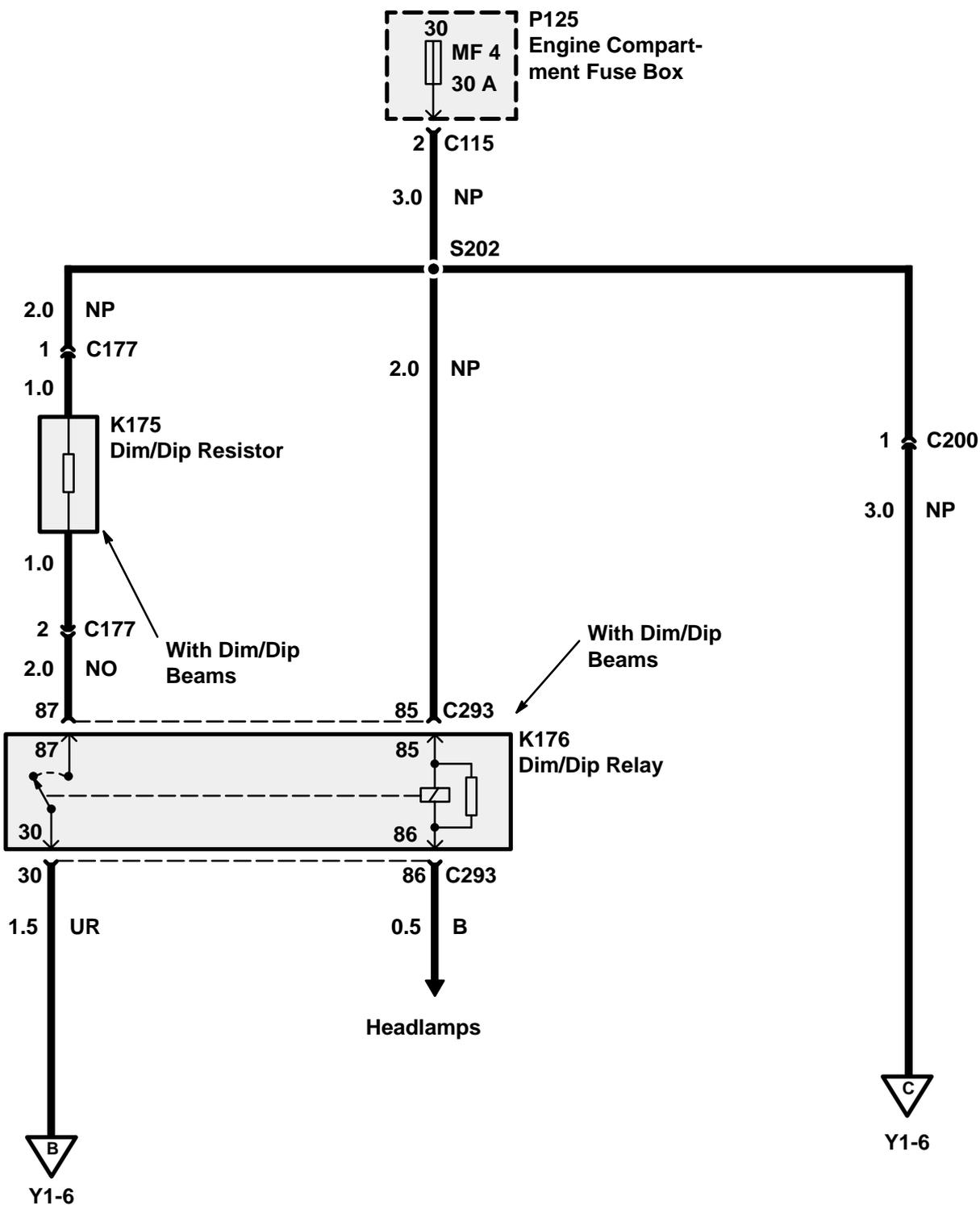
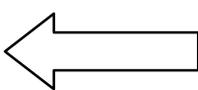
Y1 ETM

DISCOVERY



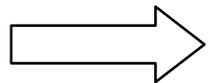
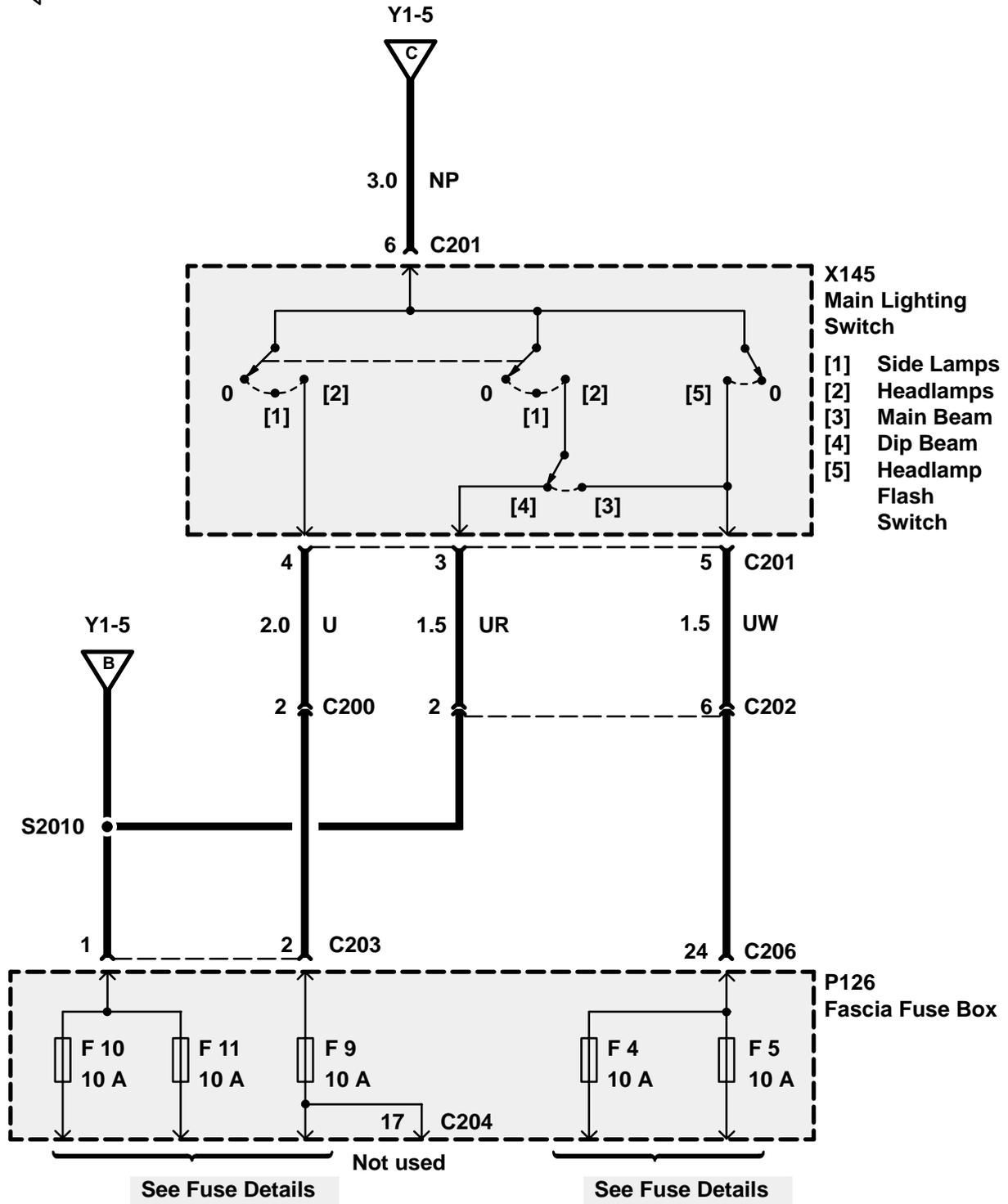
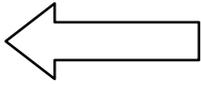


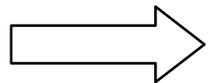
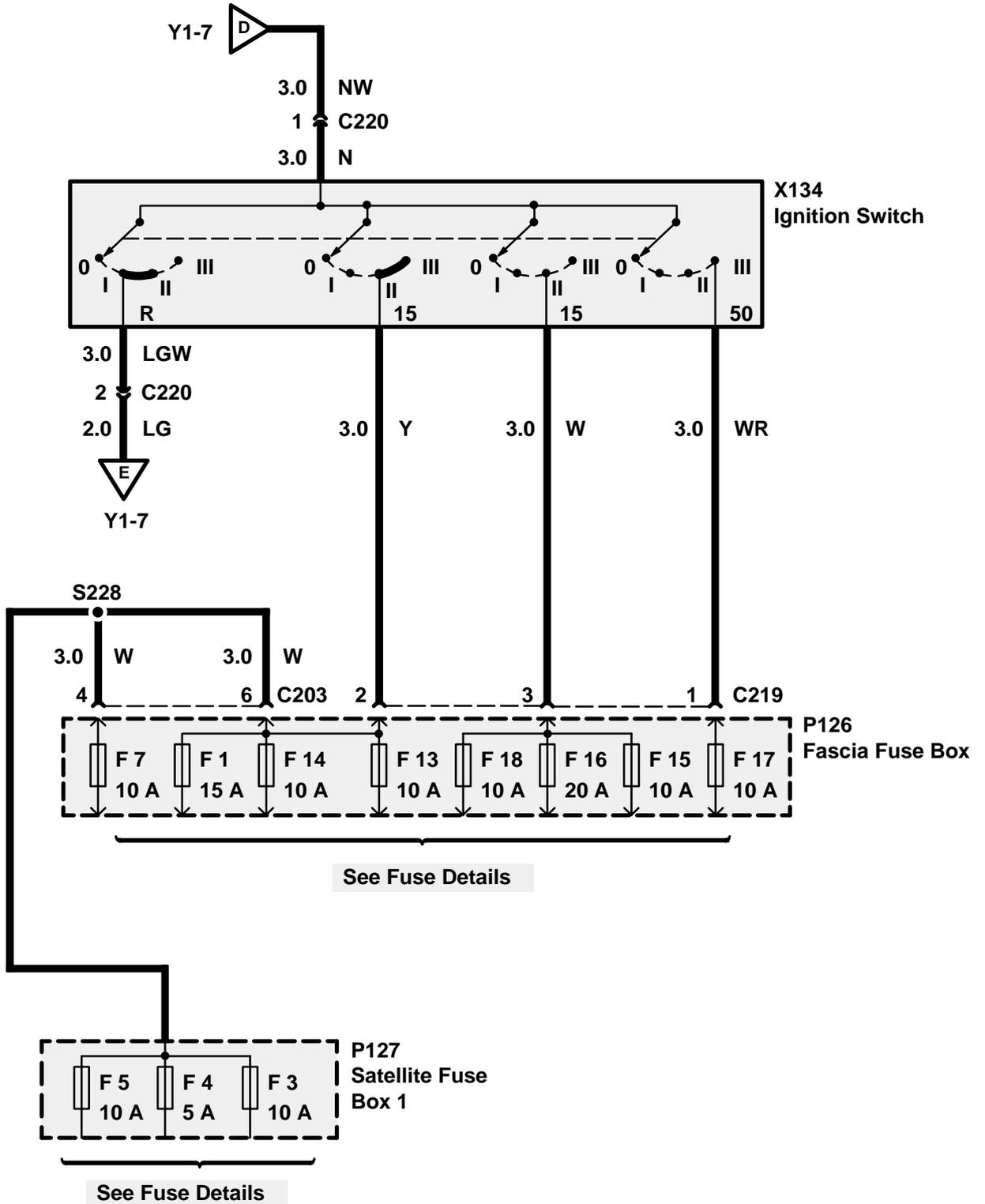
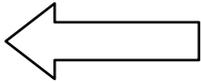


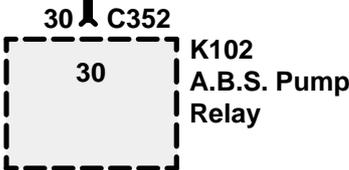
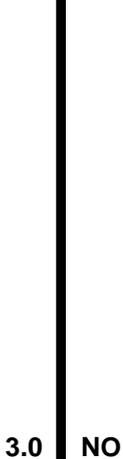
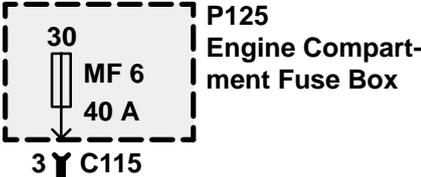
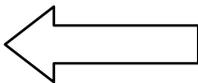


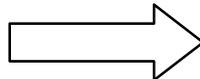
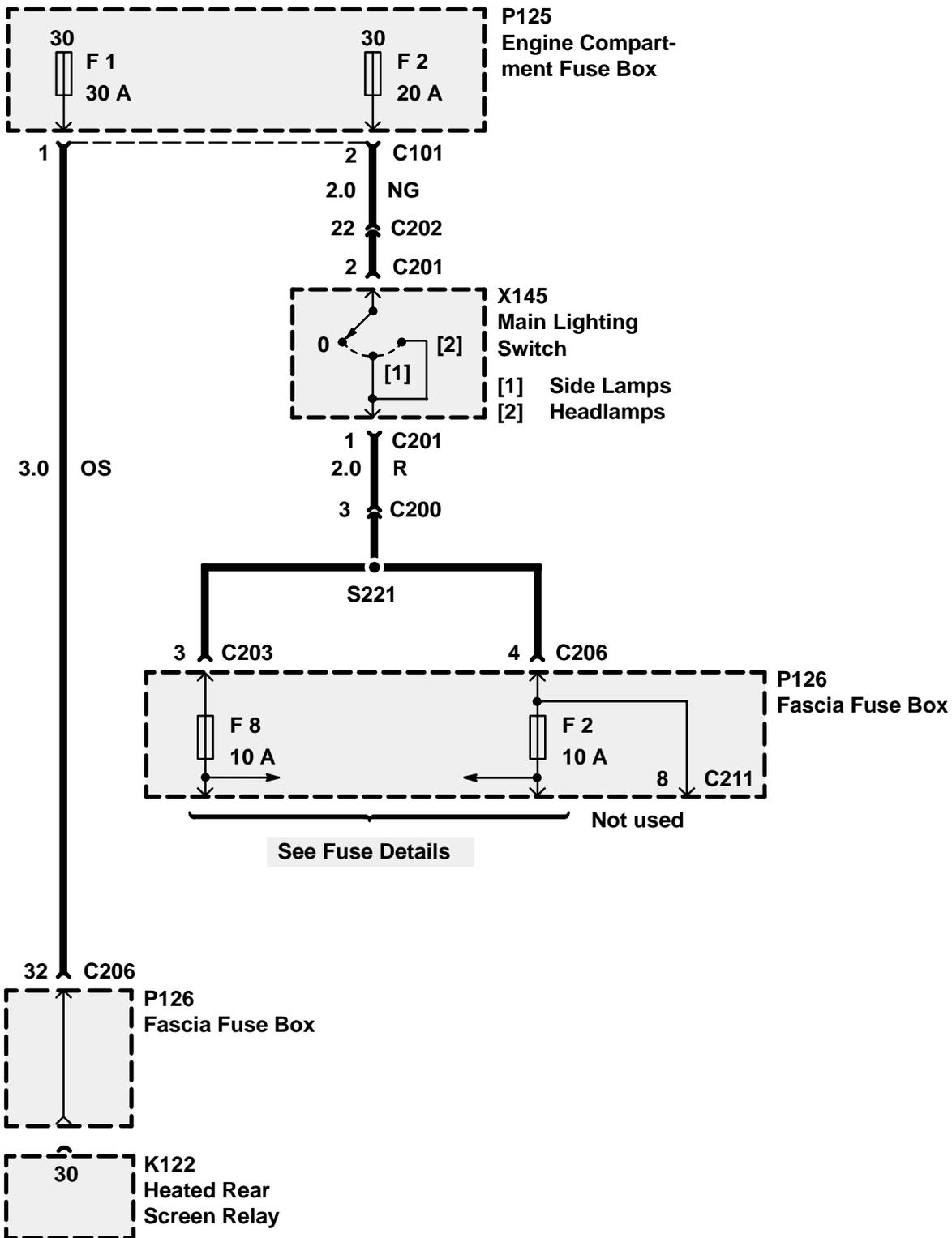
Y1 ETM

DISCOVERY



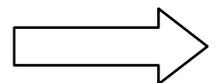
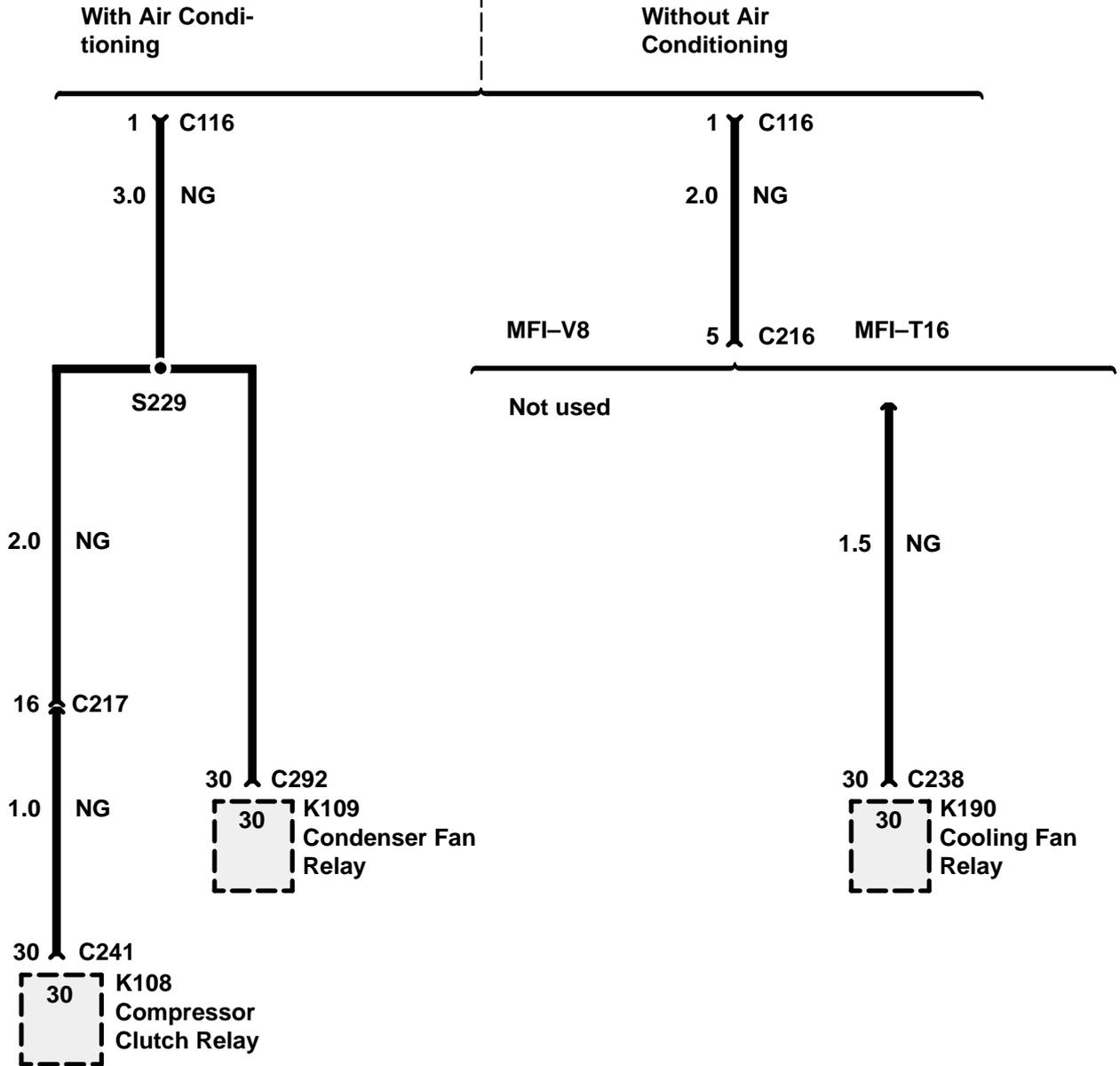
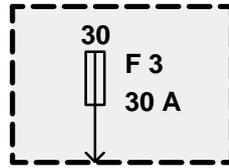
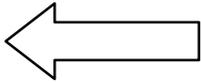


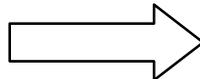
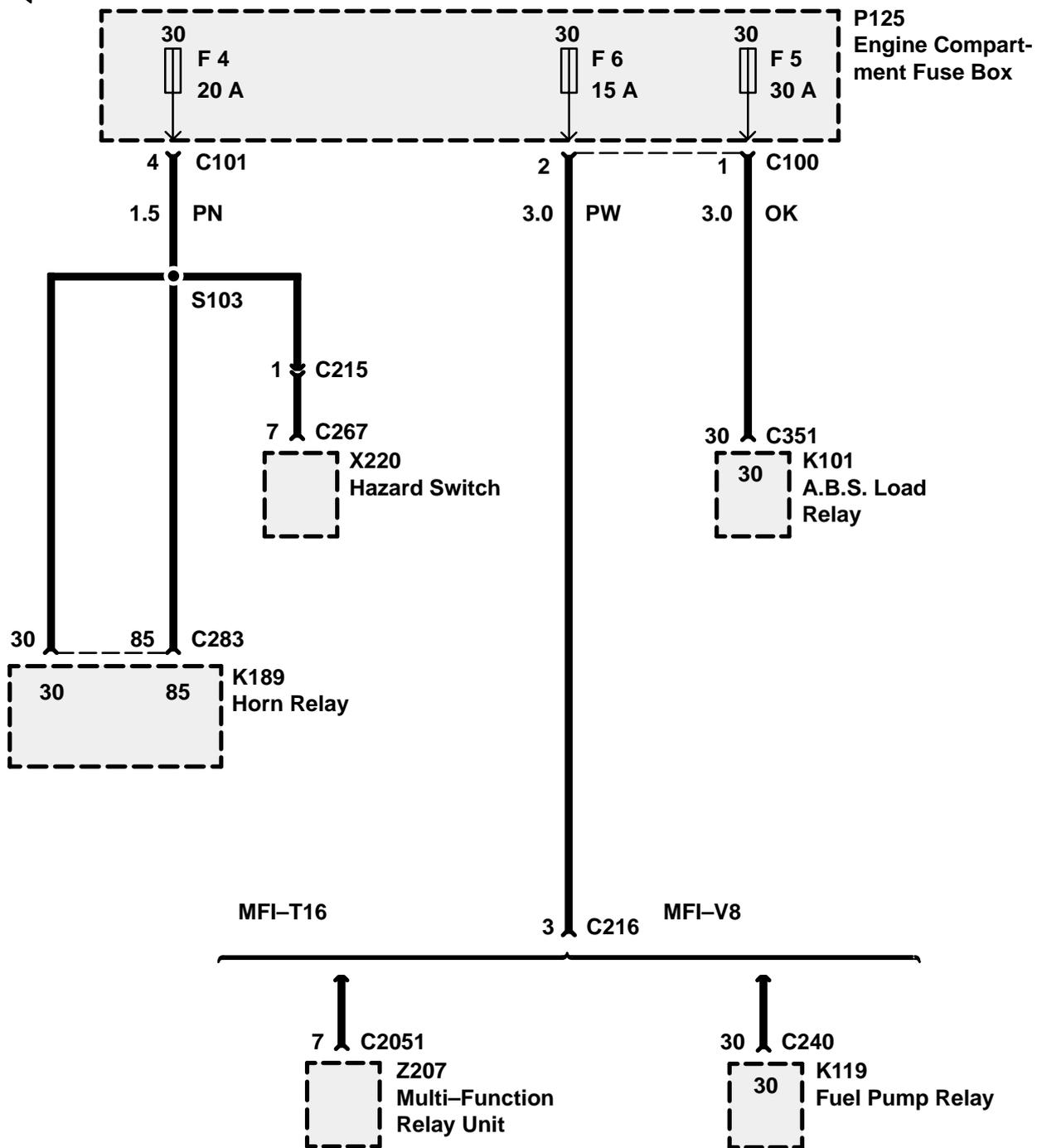


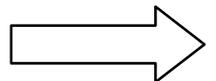
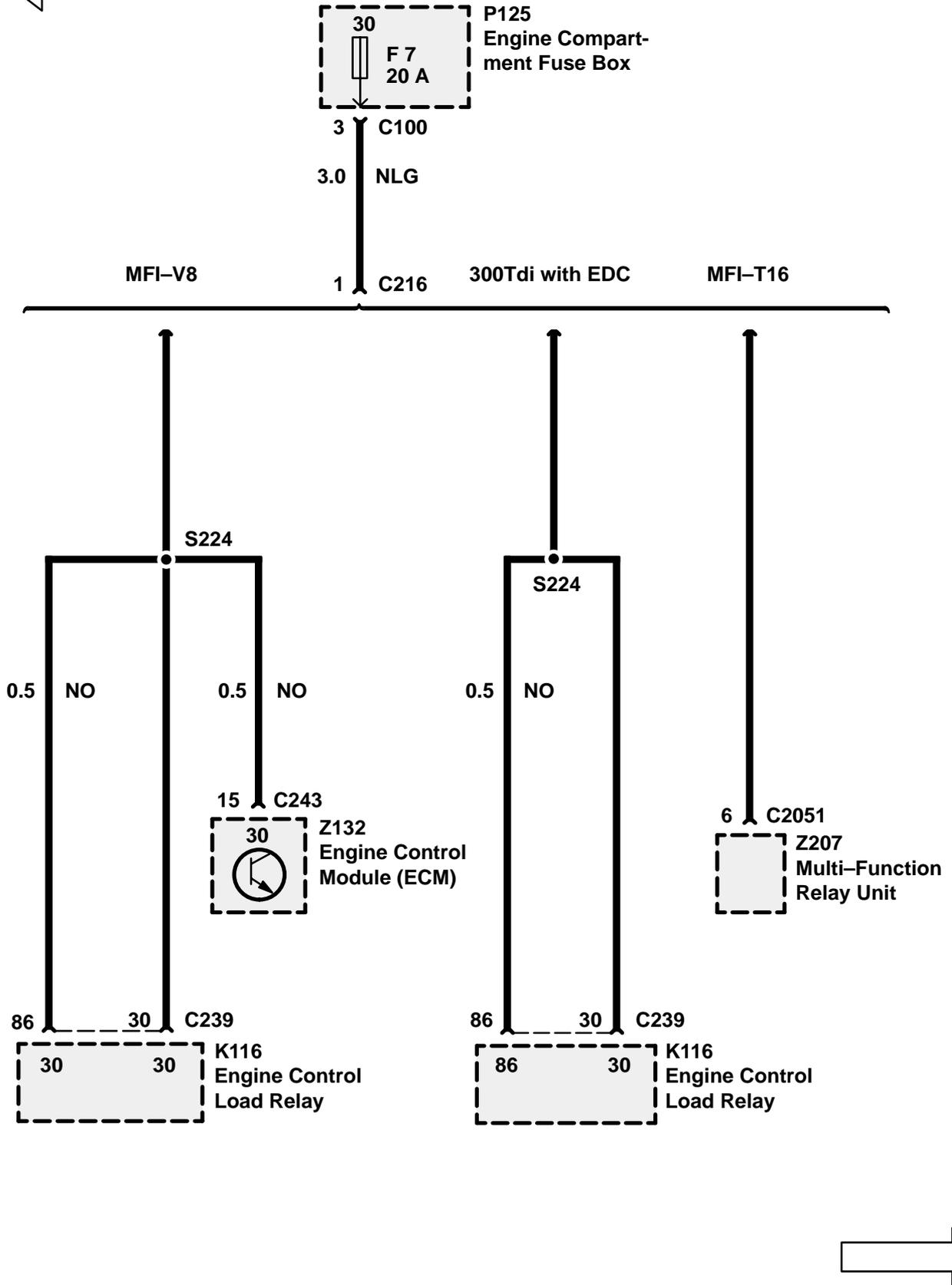
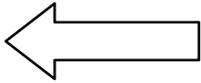


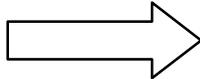
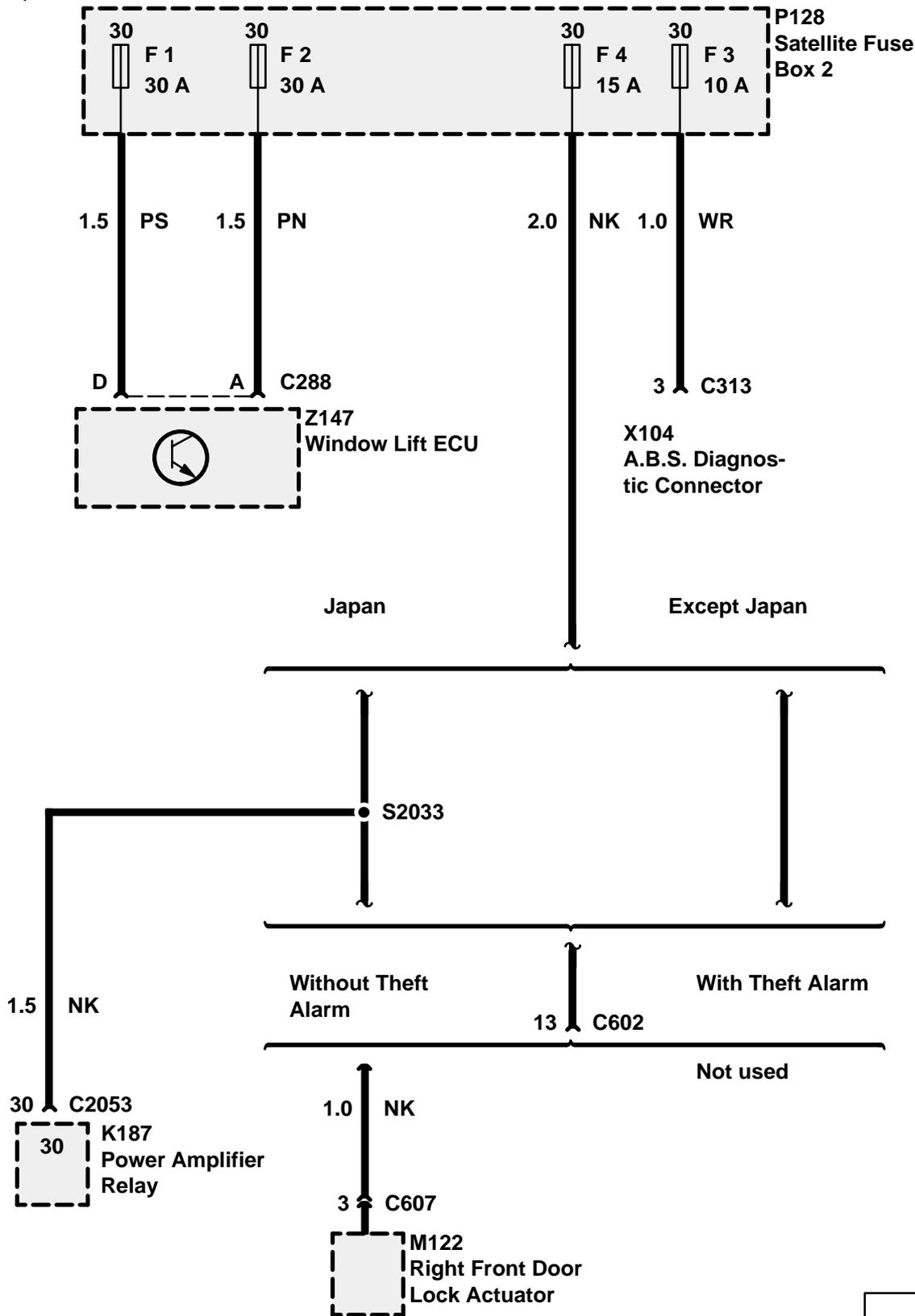
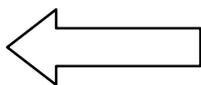
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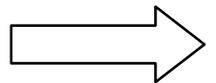
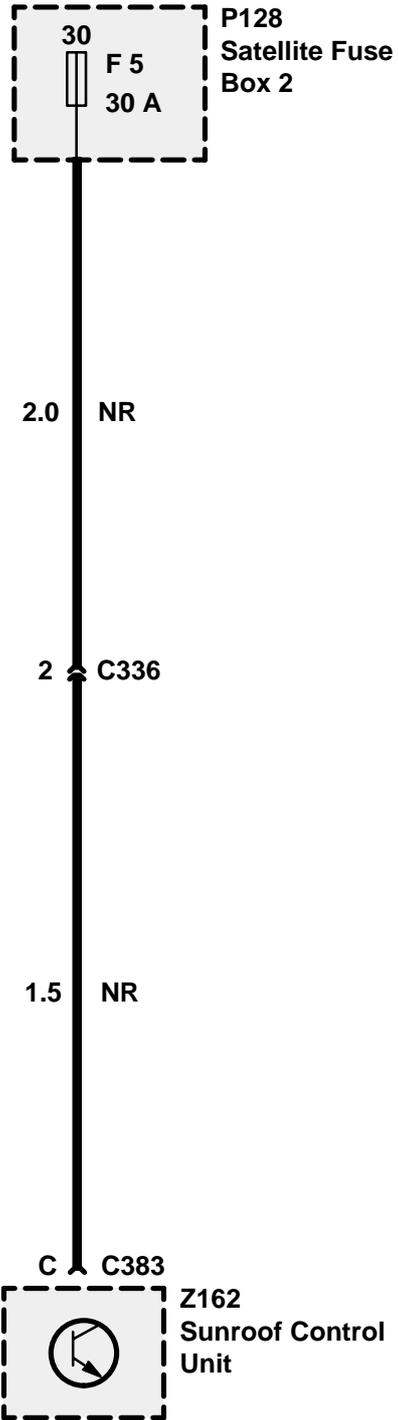
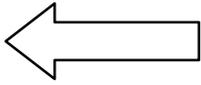
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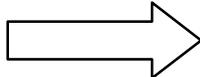
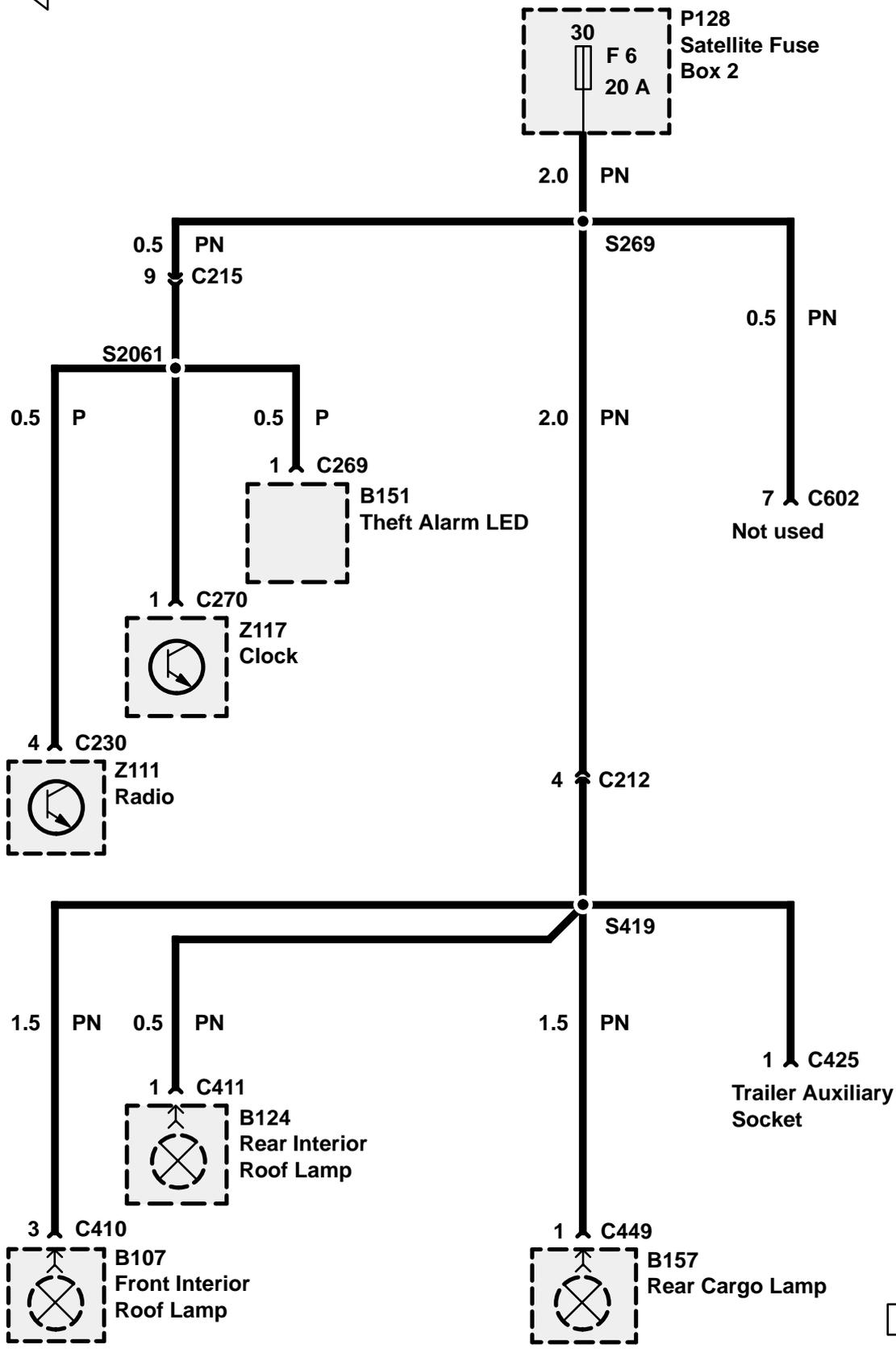
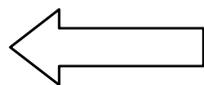


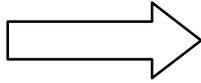
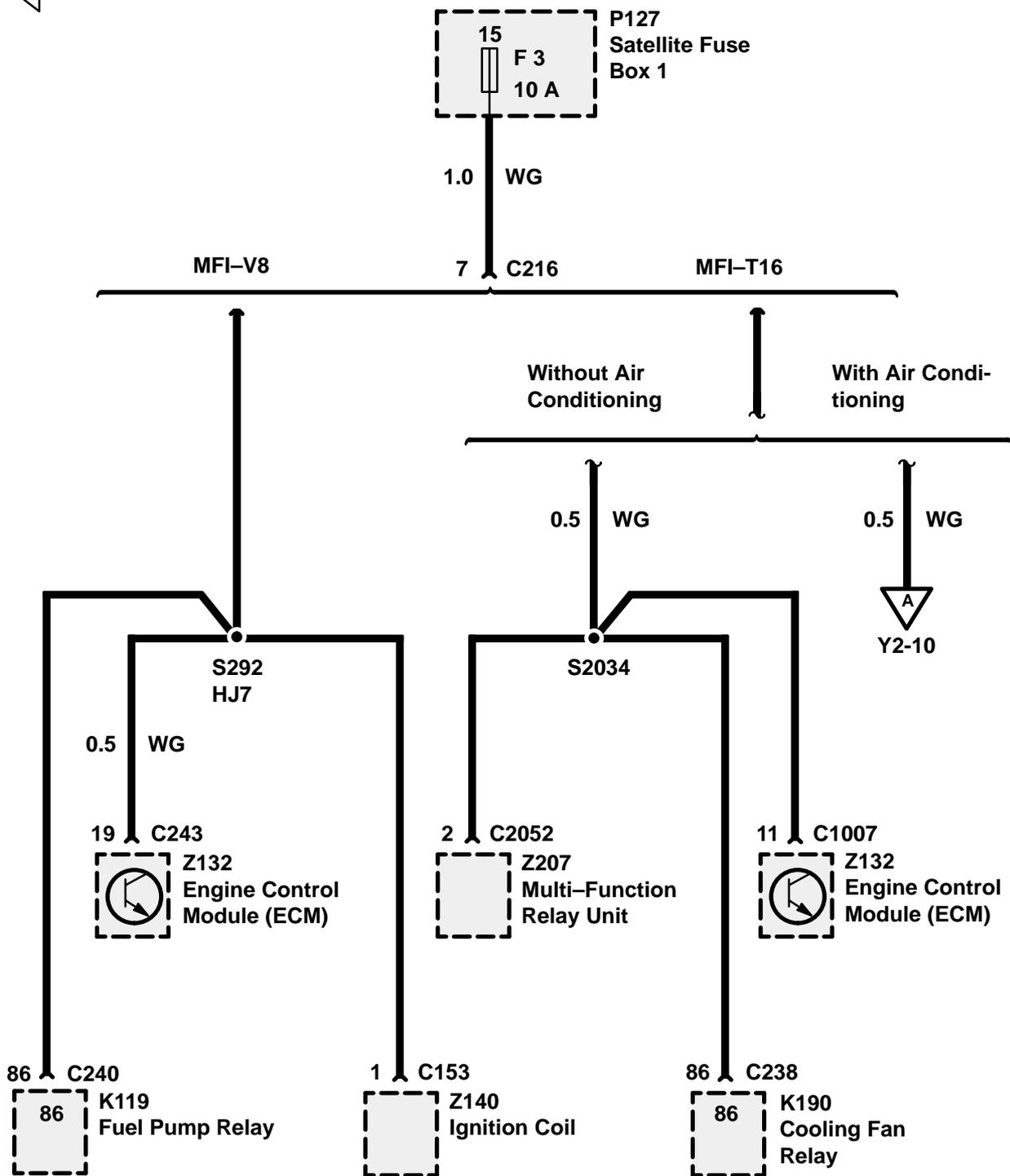
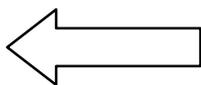






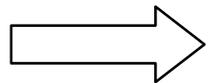
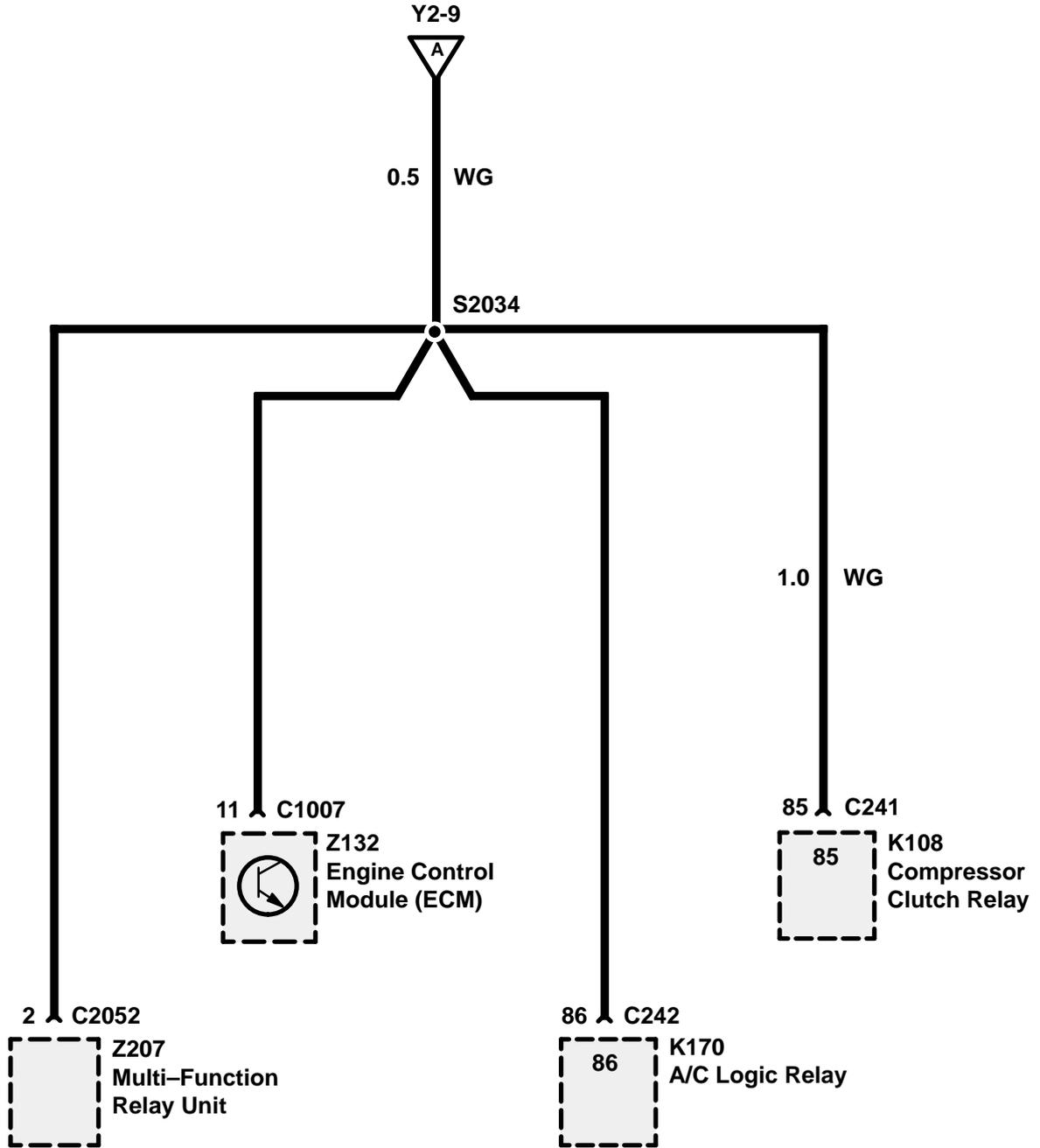
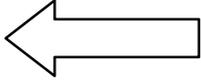


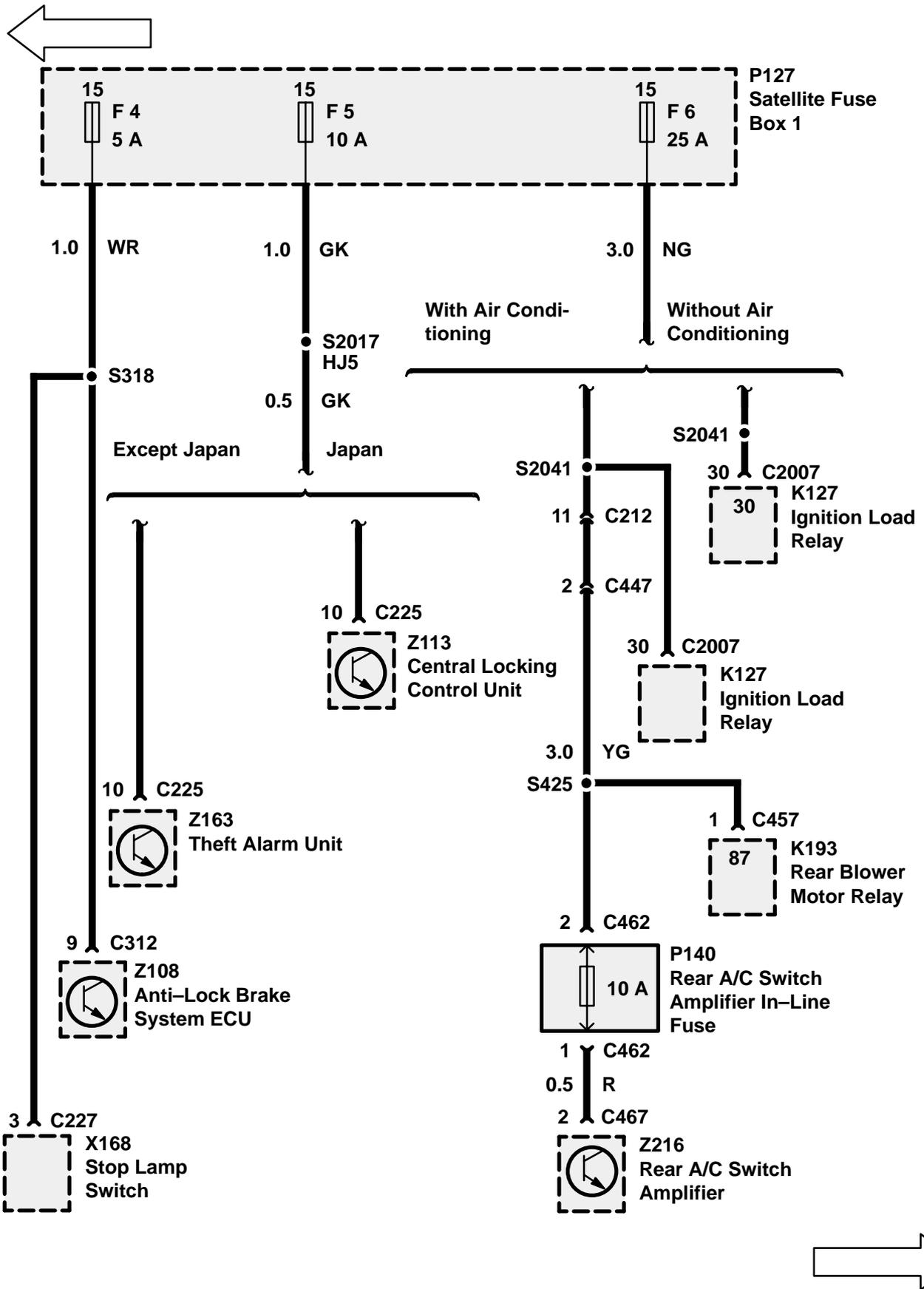


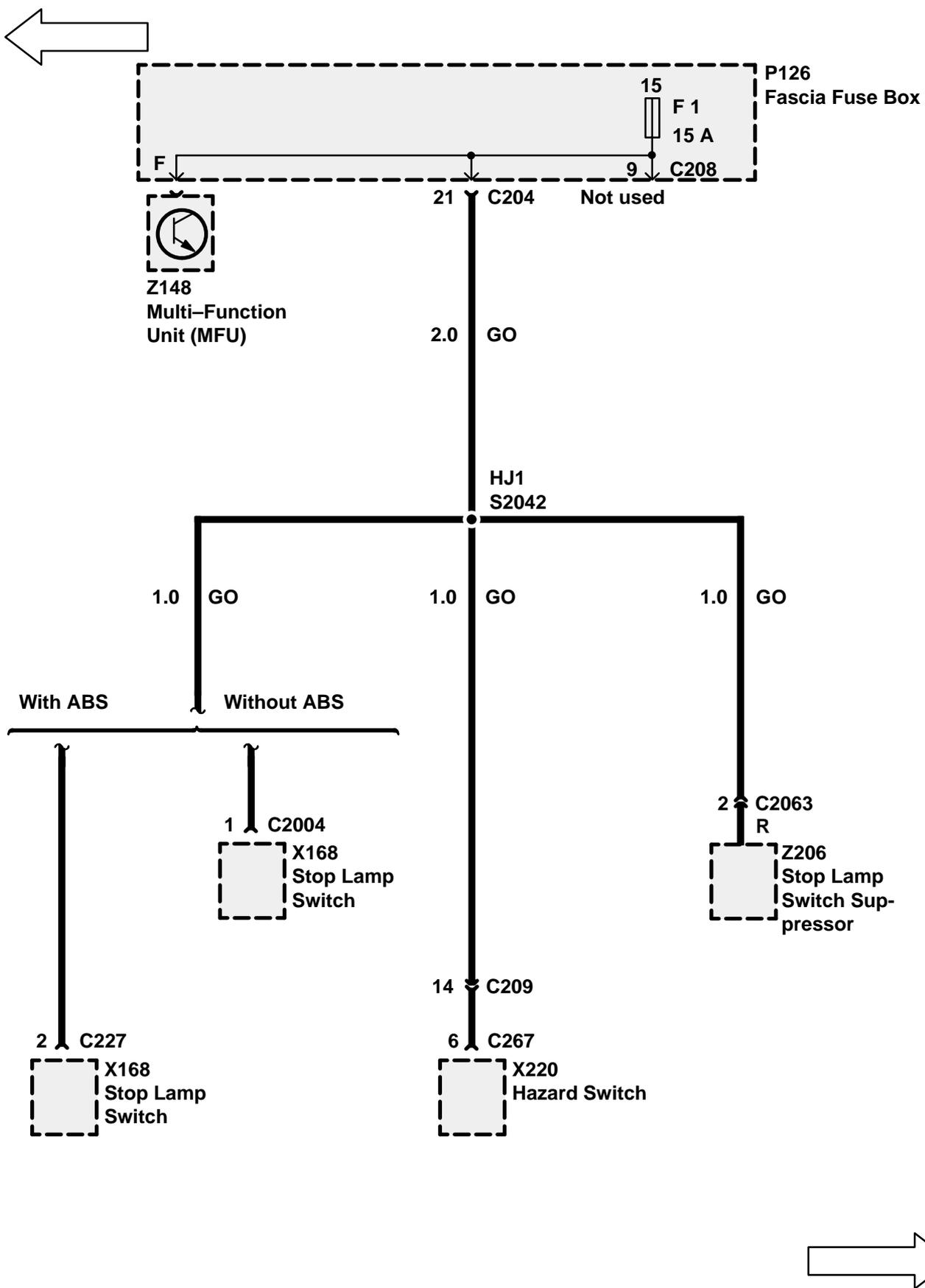


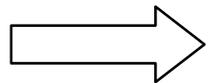
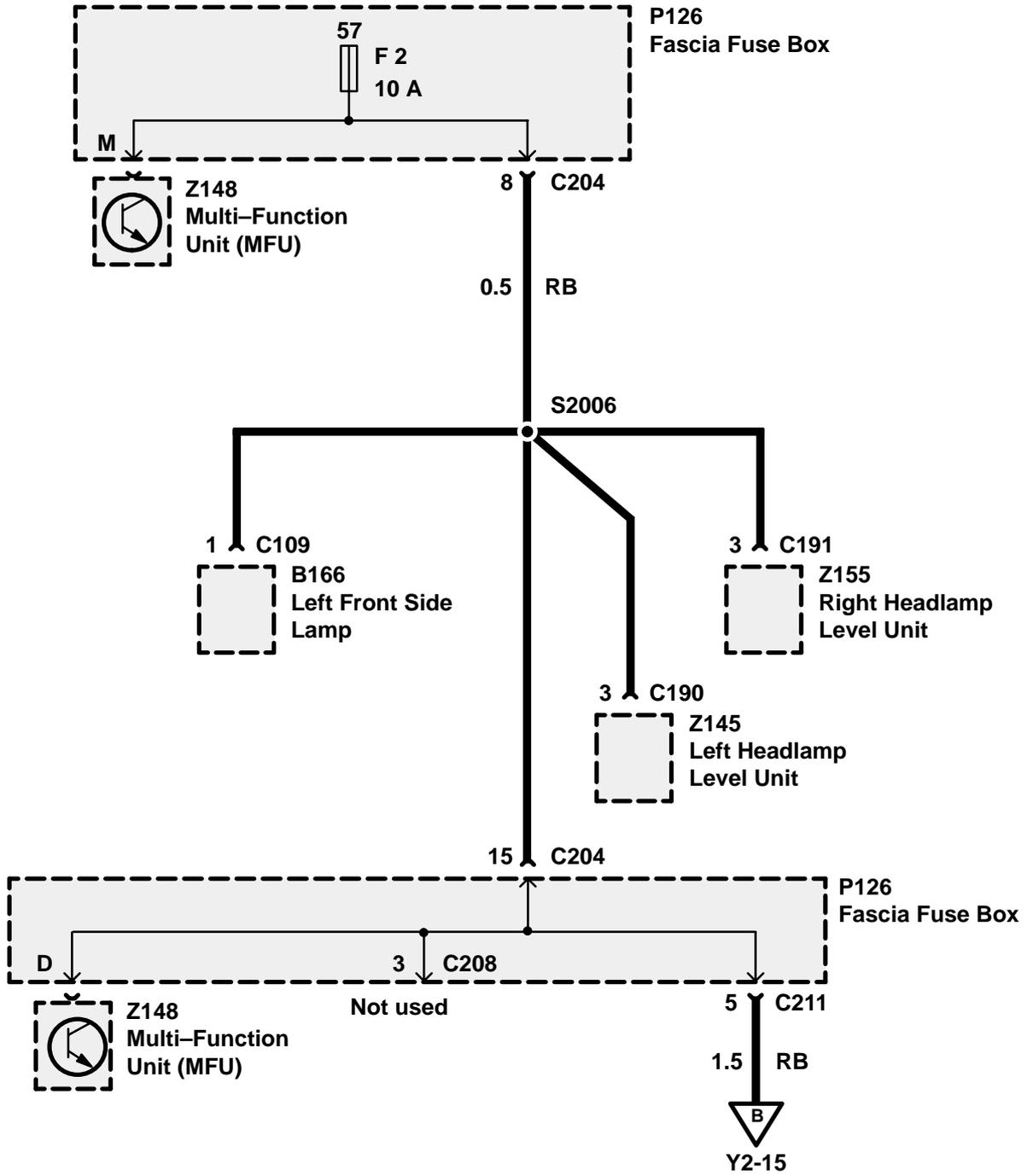
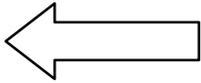
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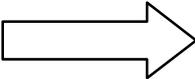
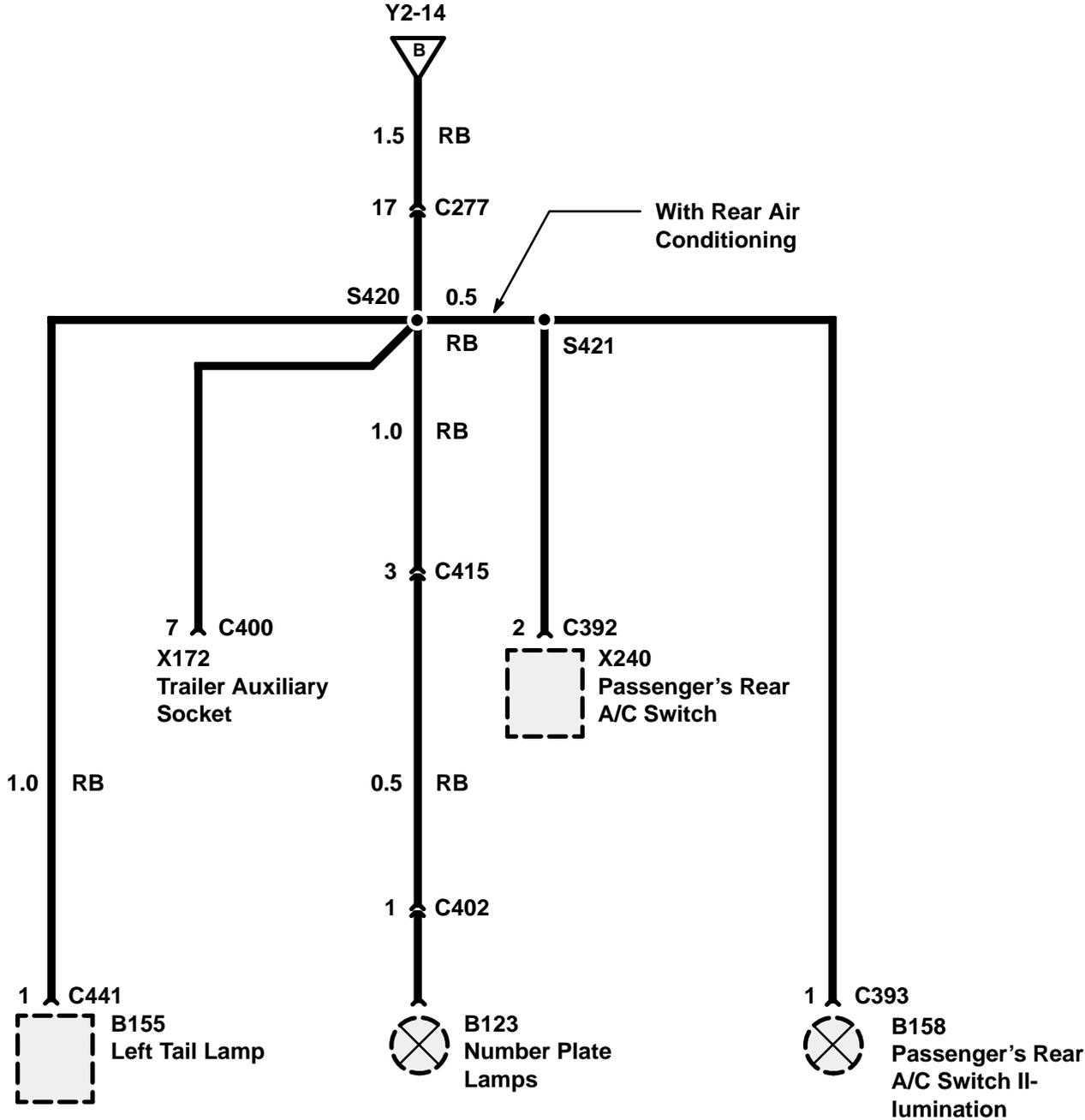
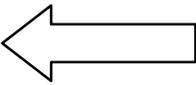
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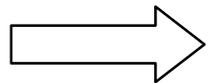
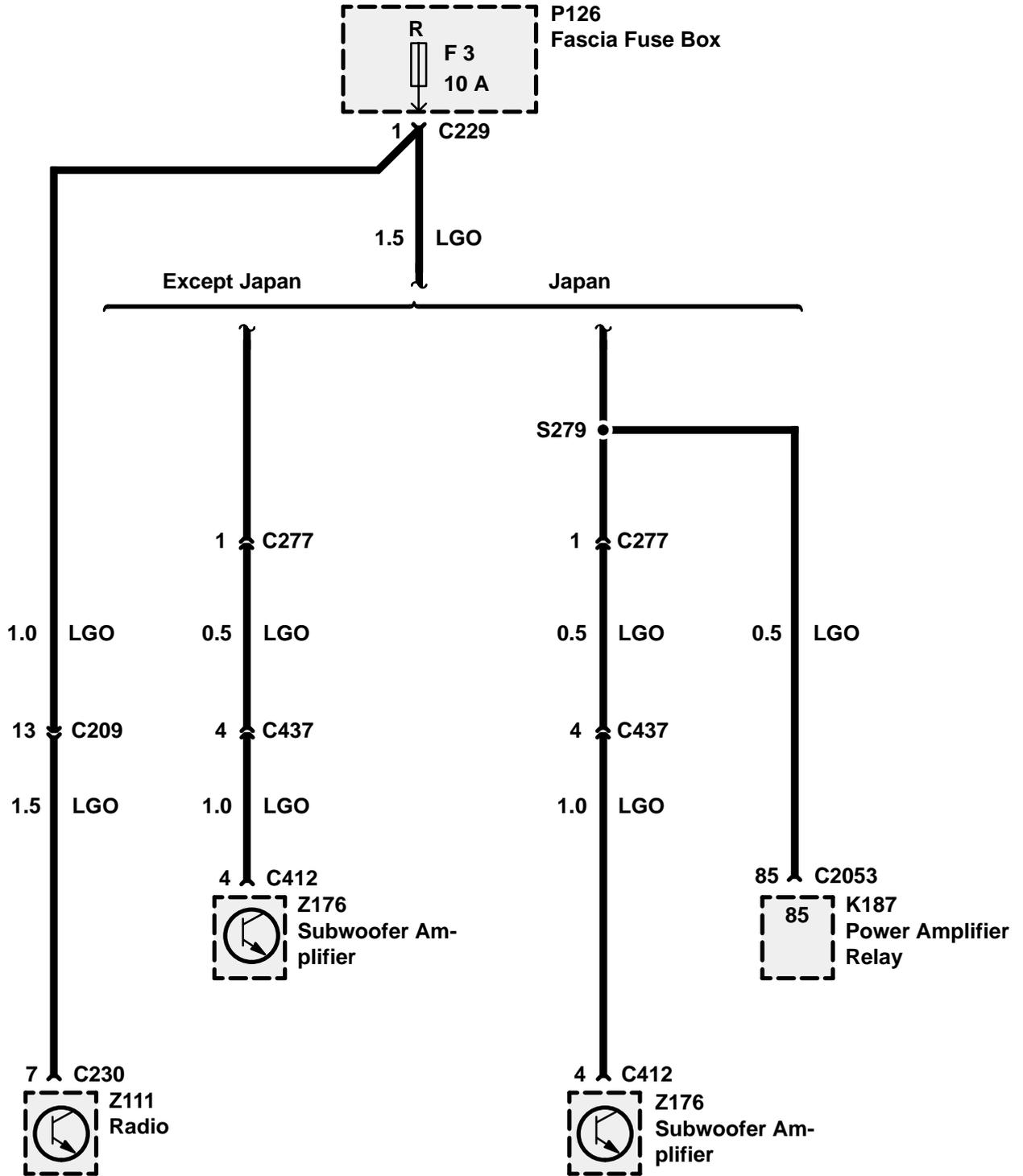
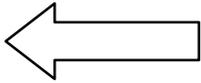


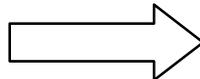
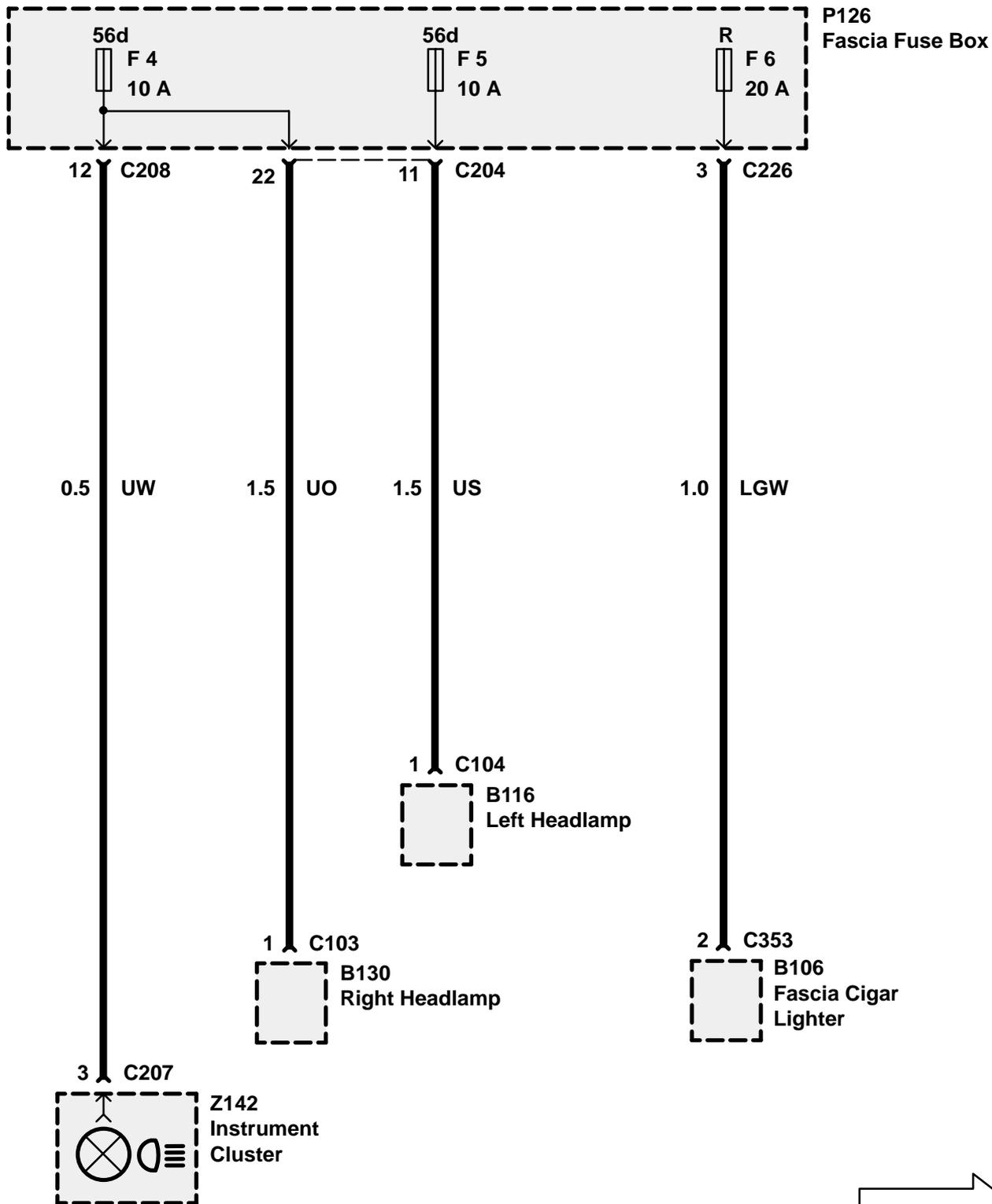






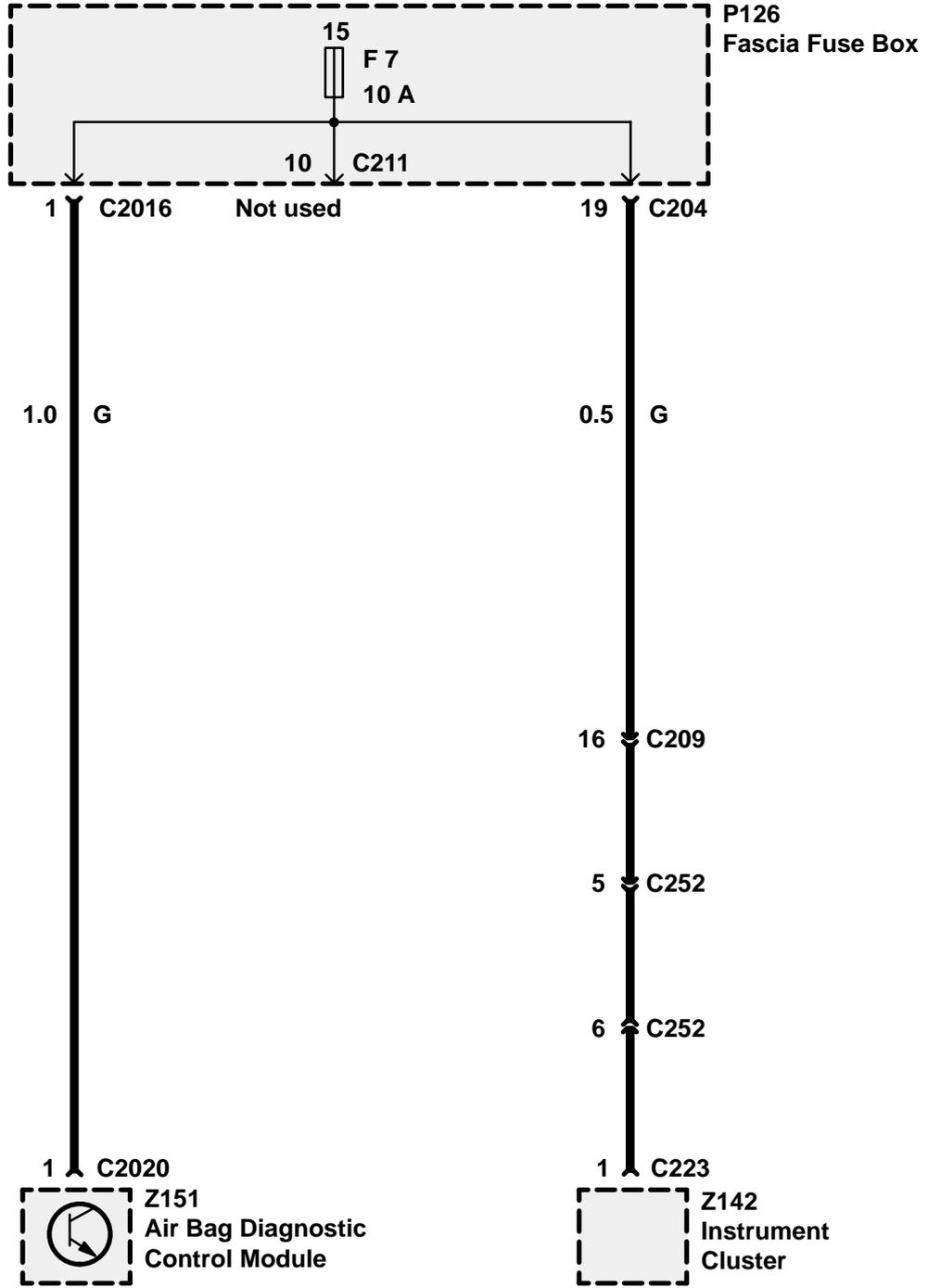


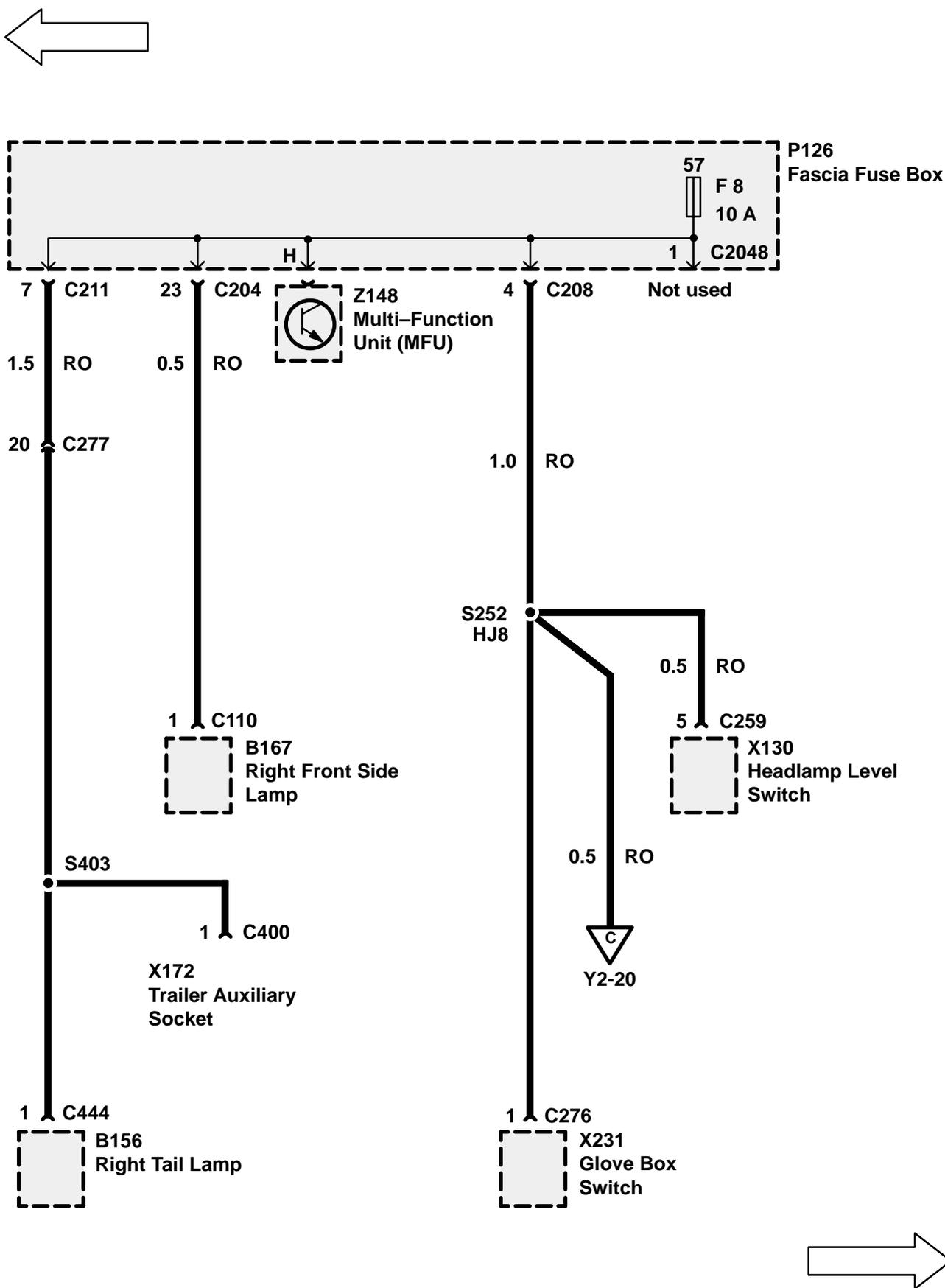




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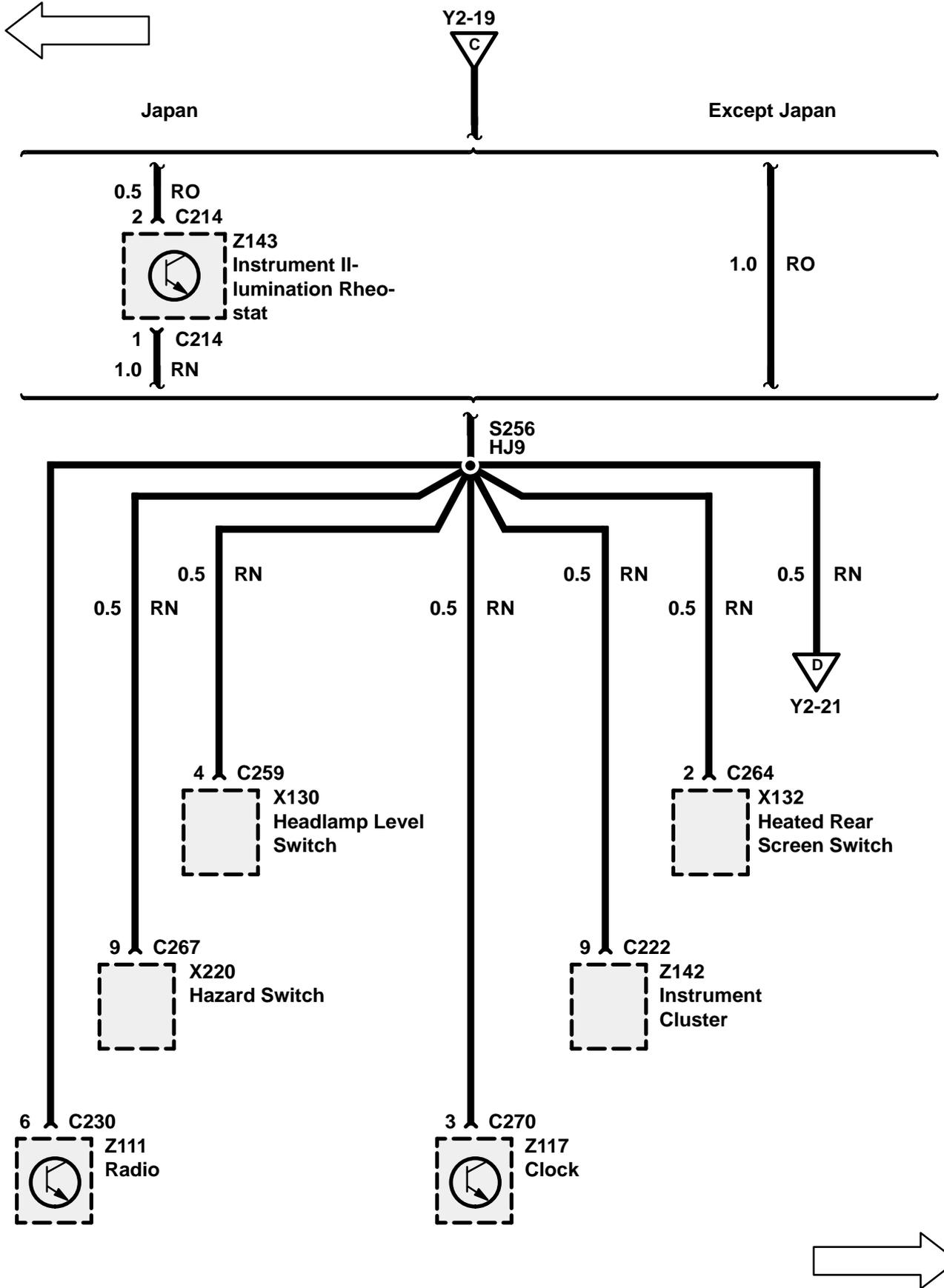
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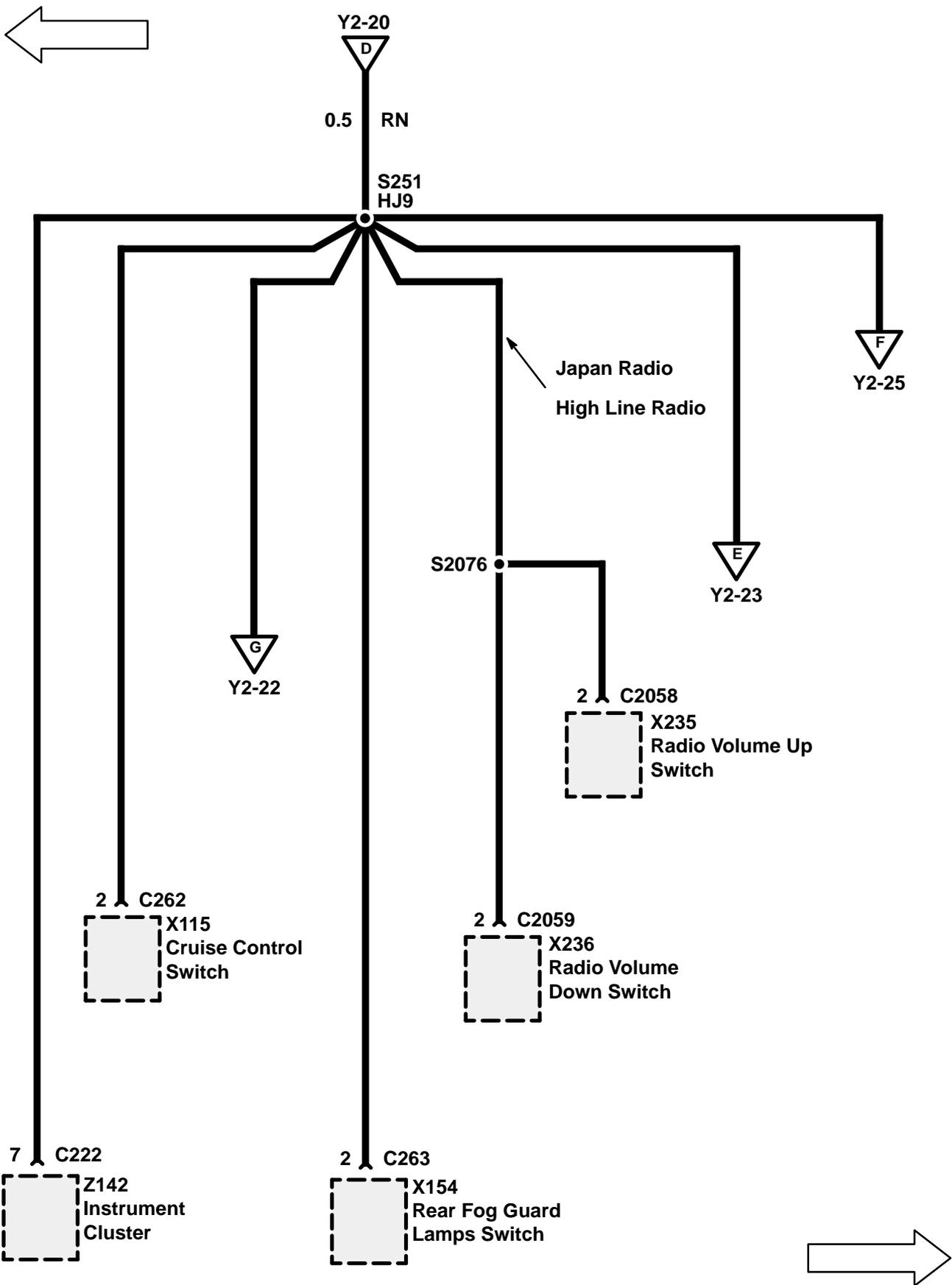


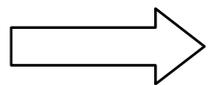
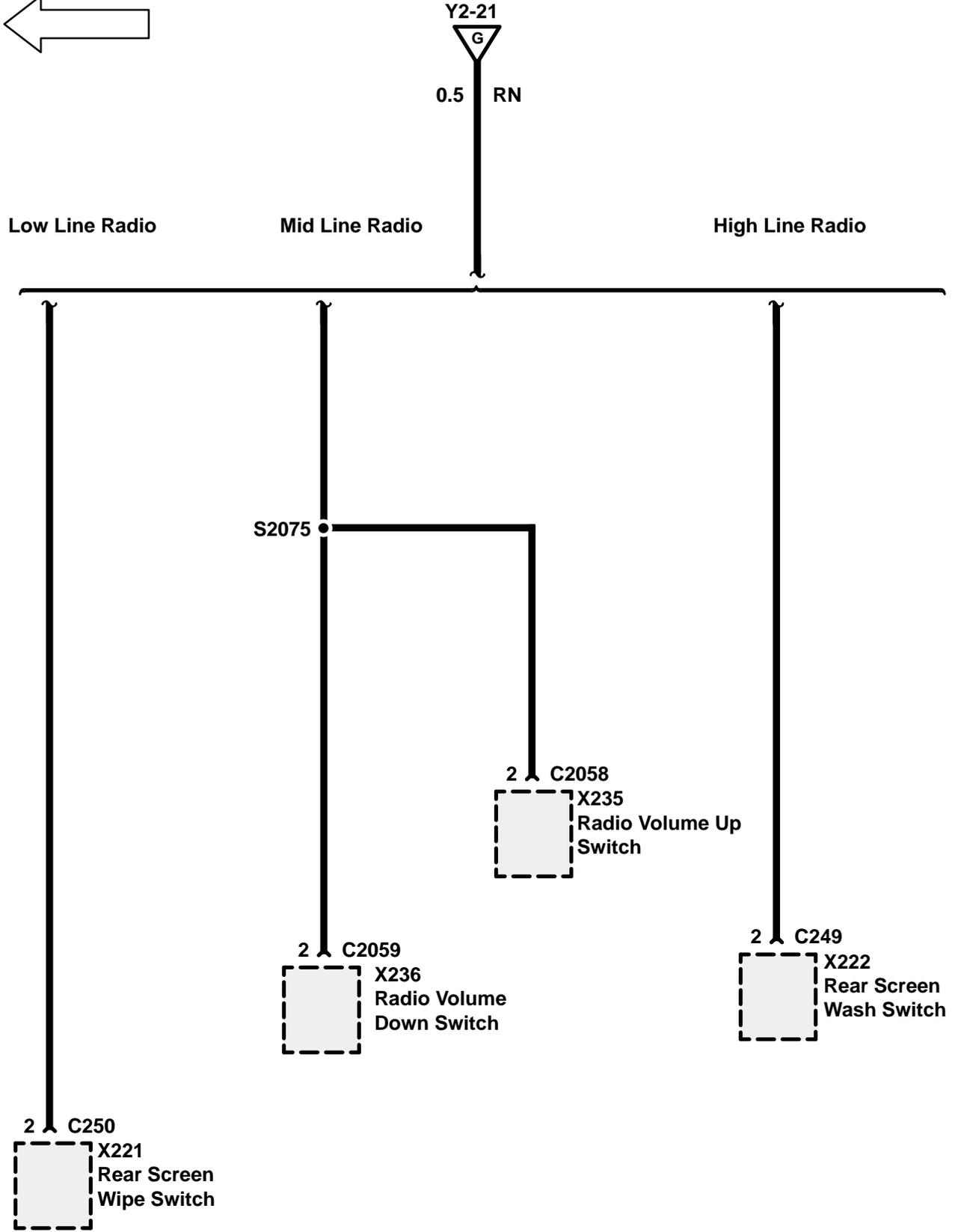
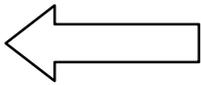


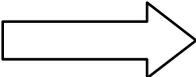
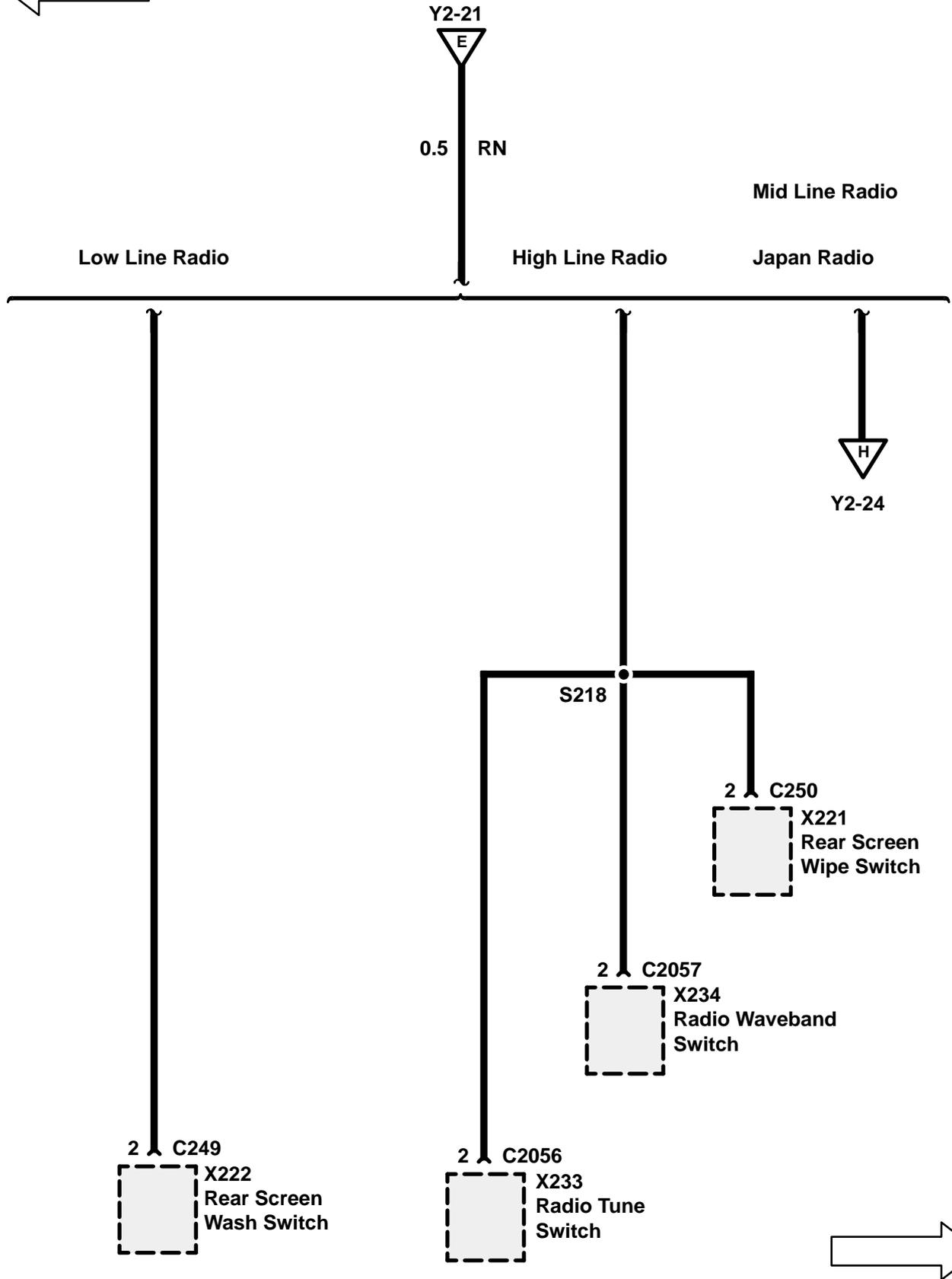
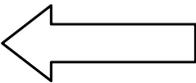
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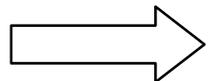
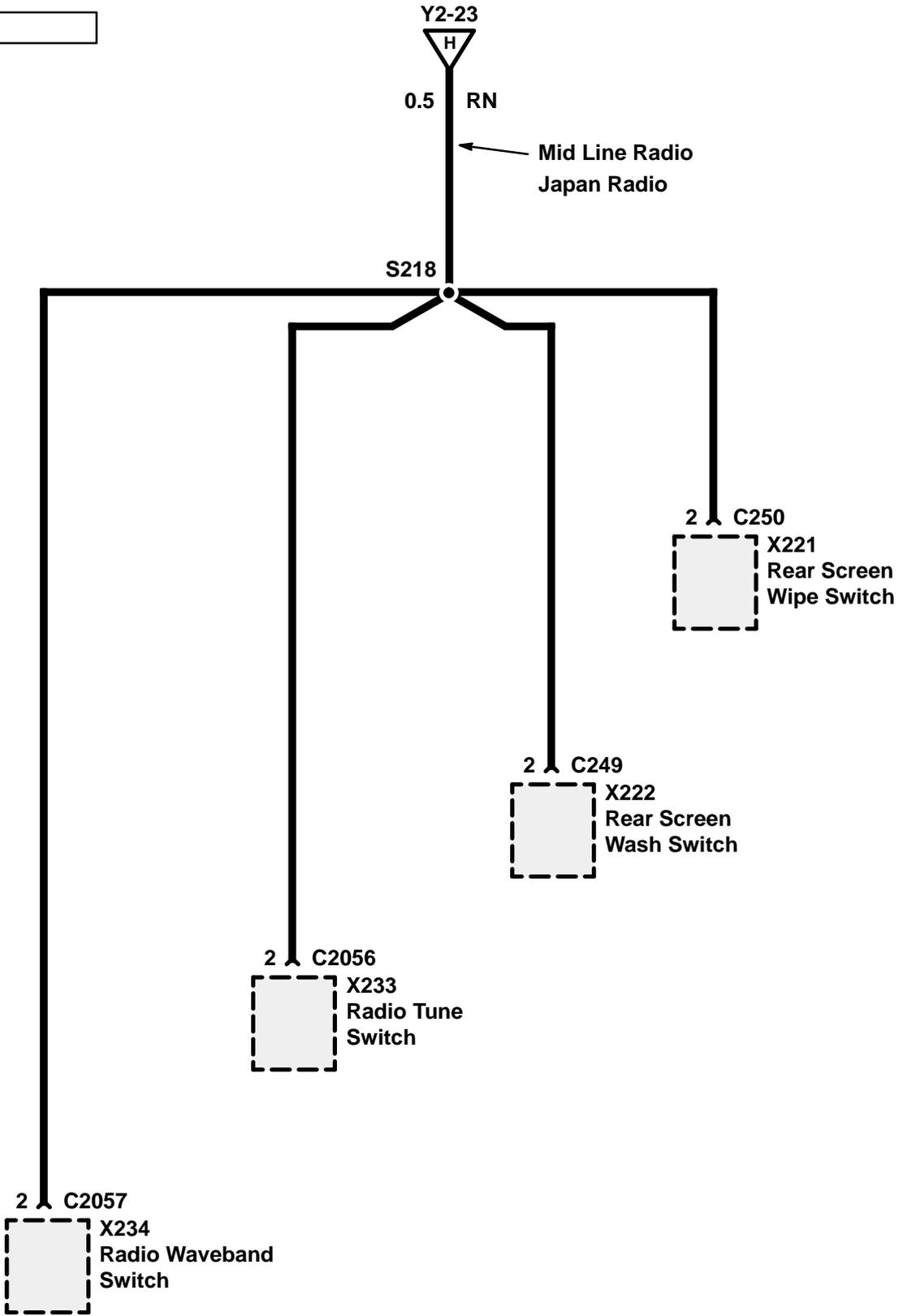
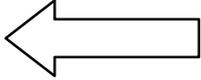
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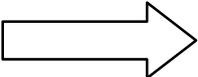
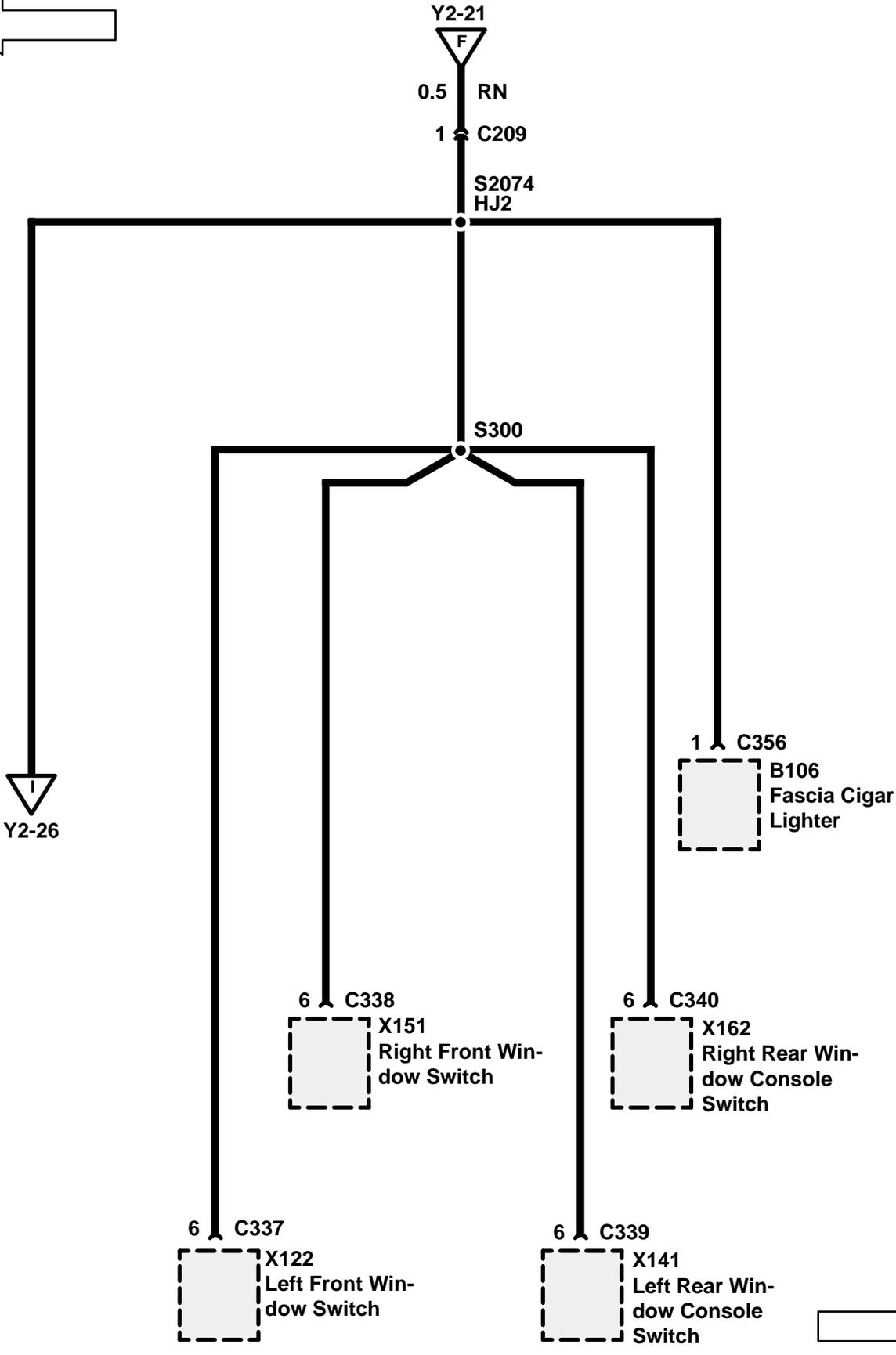
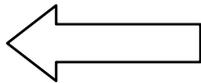






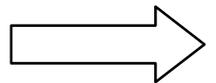
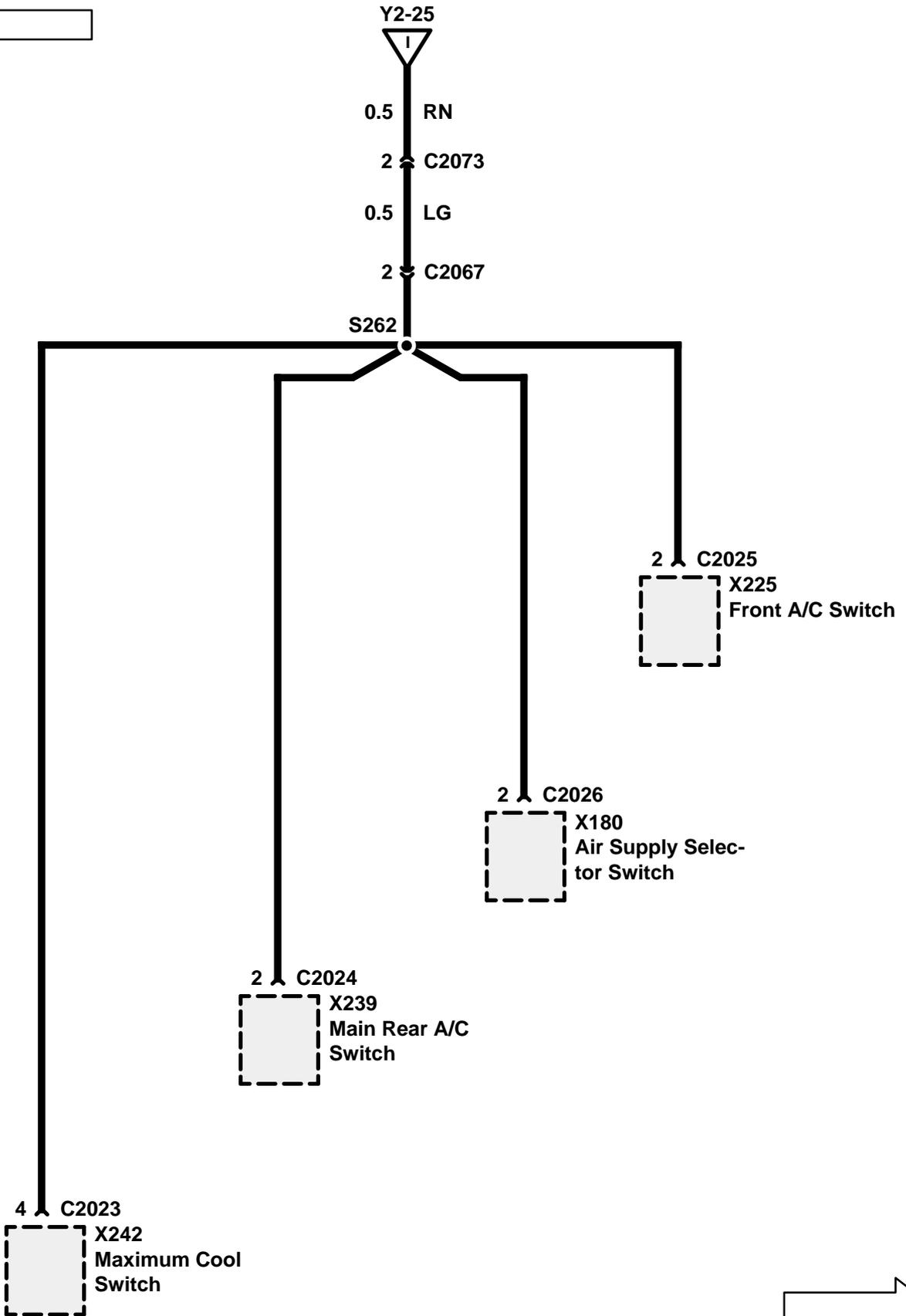
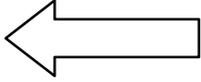


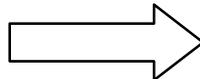
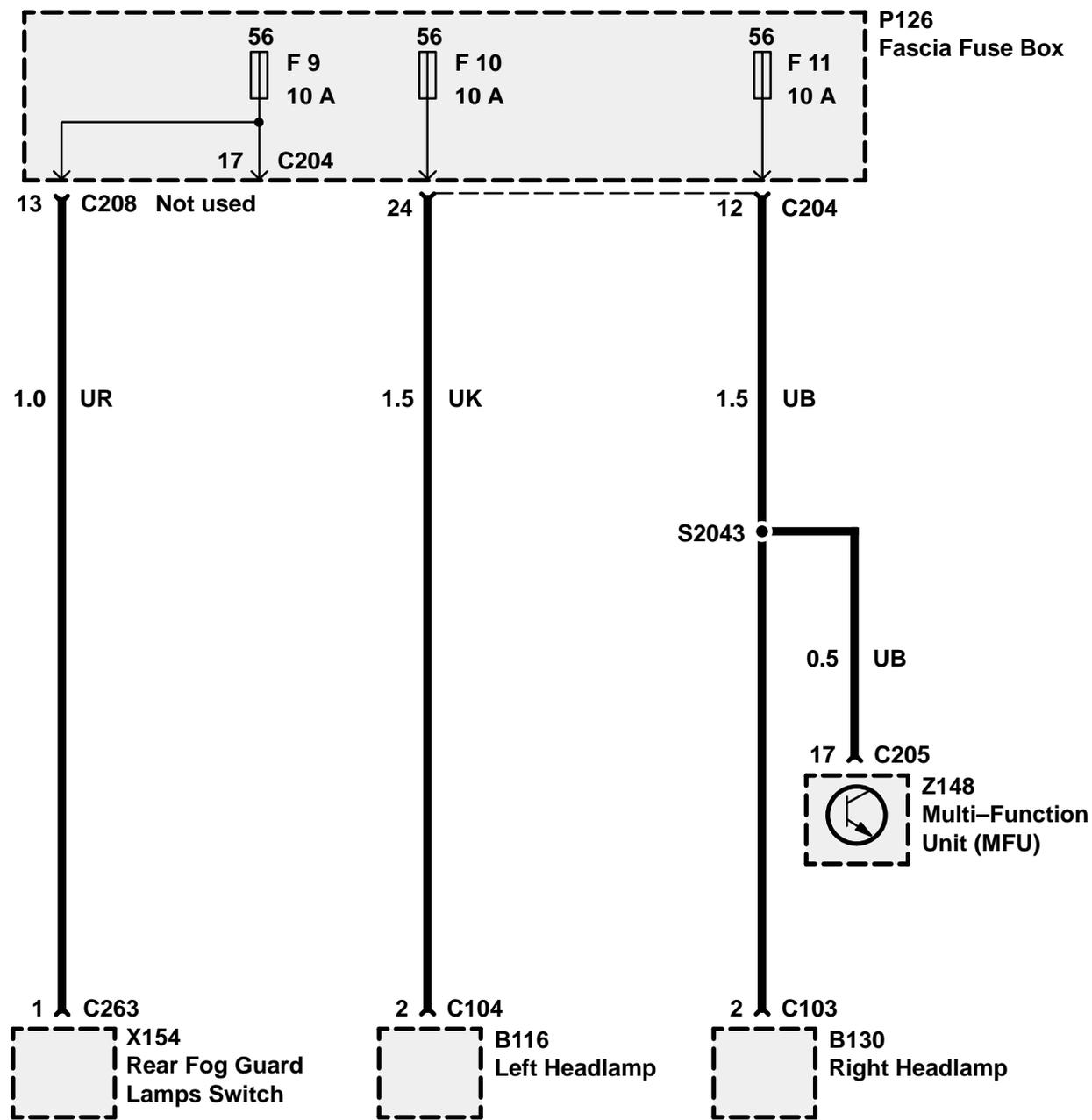
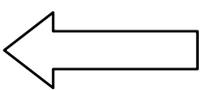


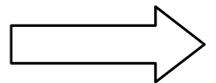
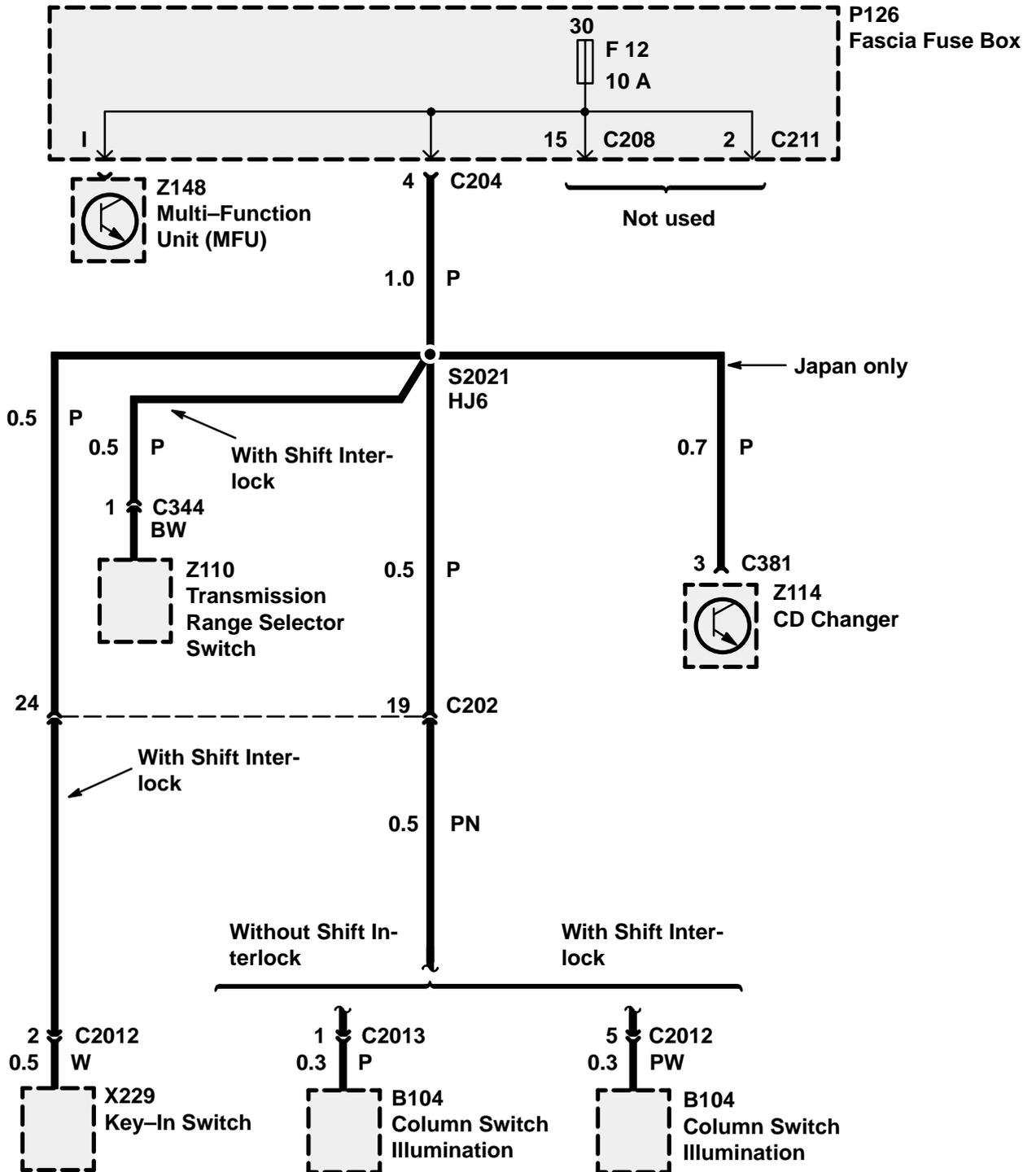
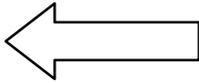


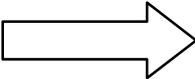
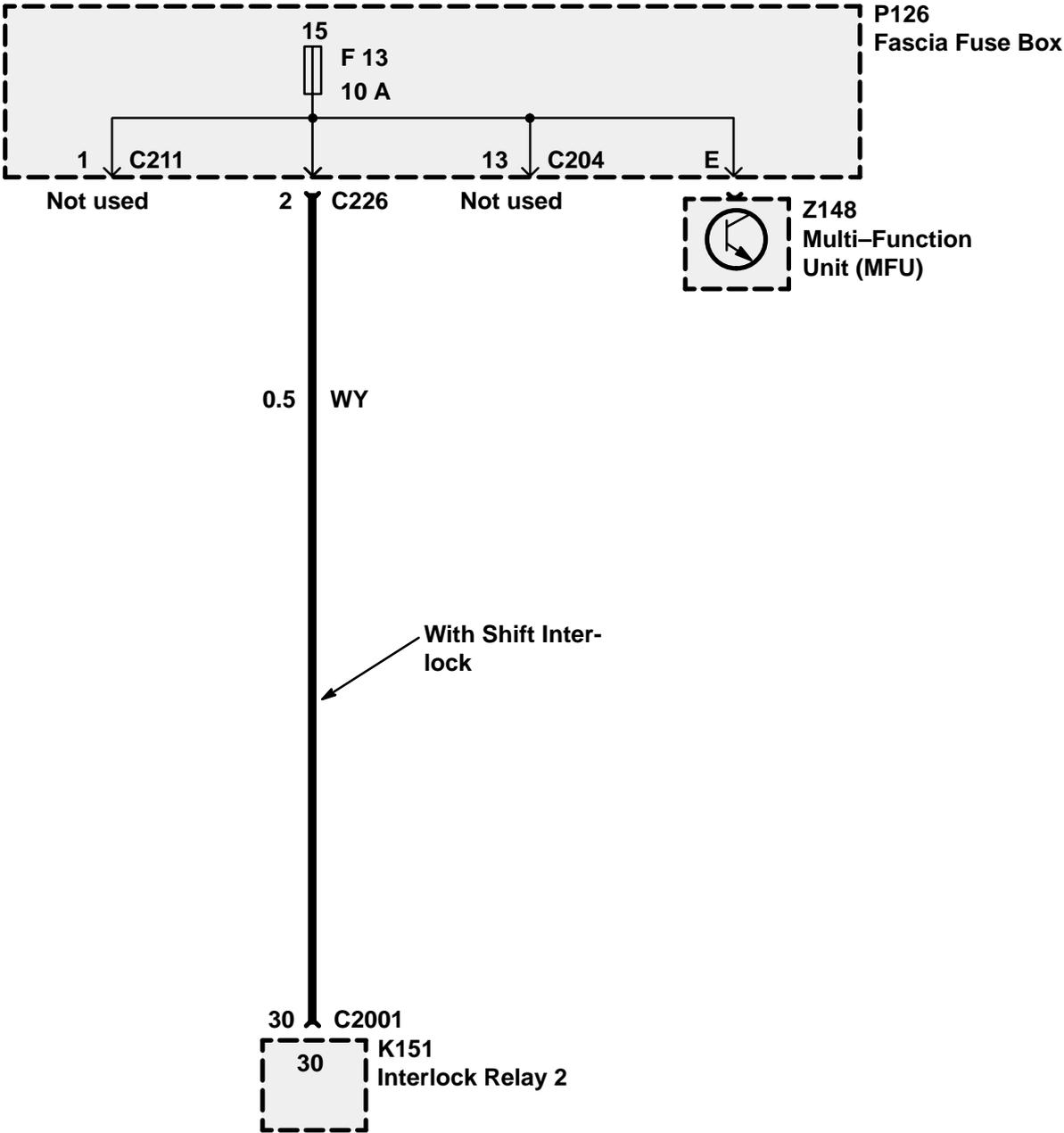
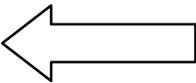
Y2 ETM

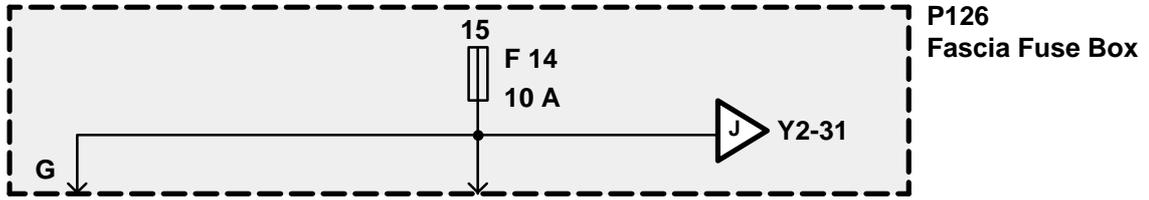
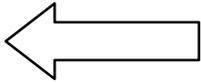
DISCOVERY





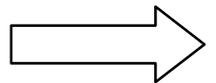
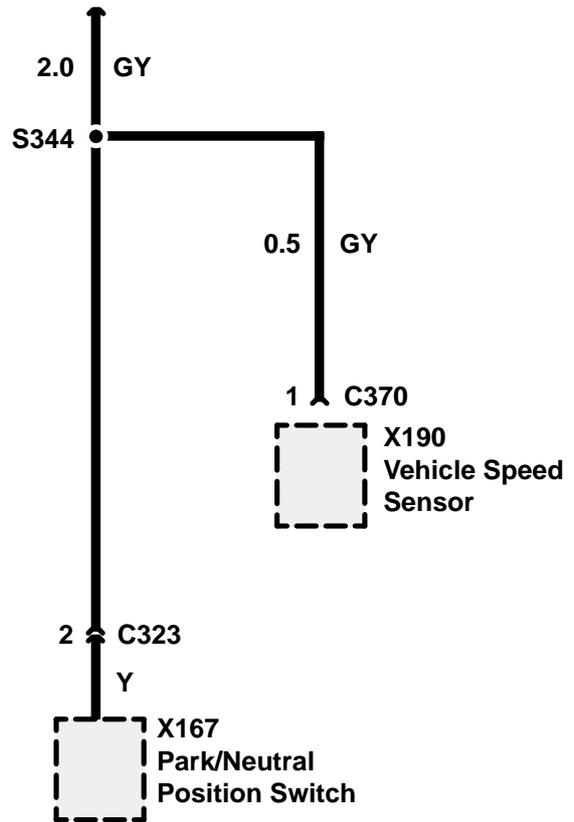
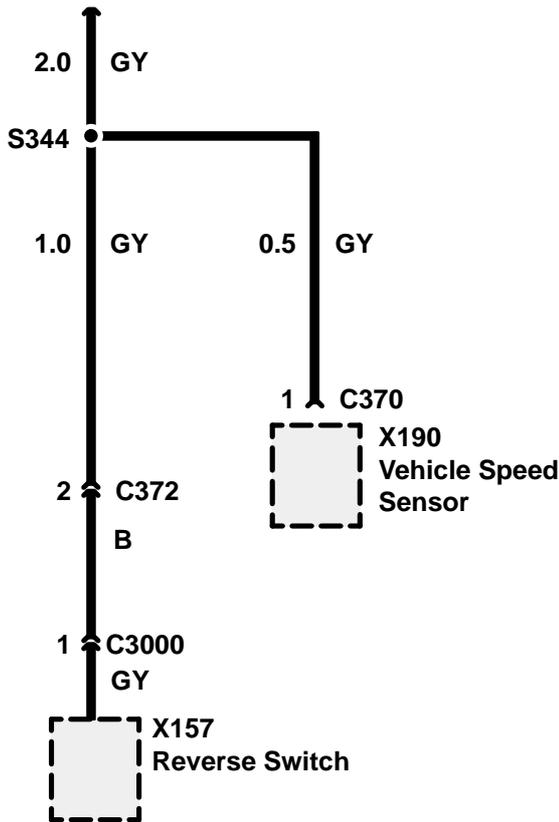


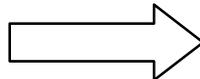
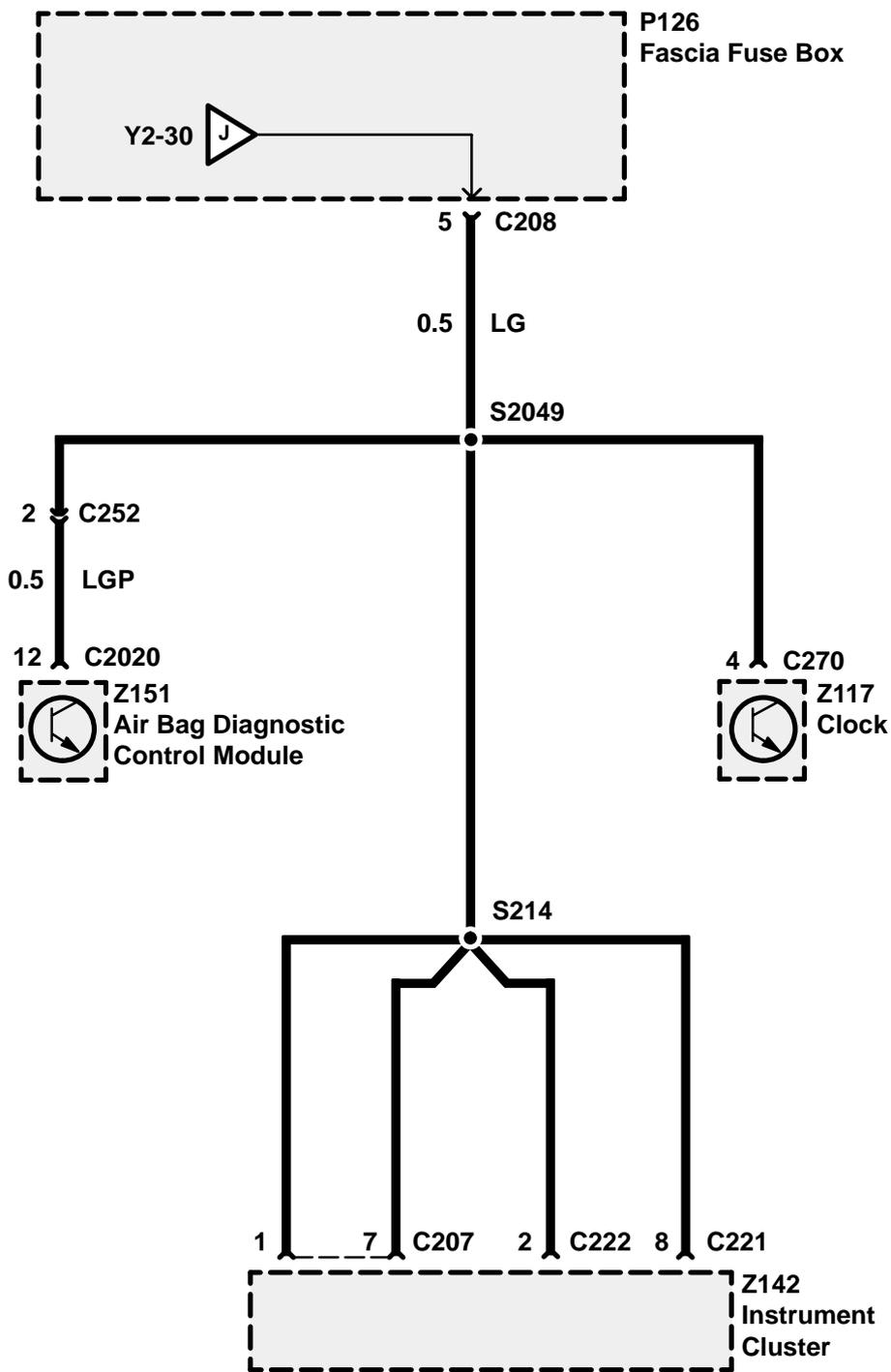
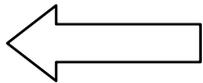


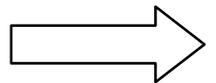
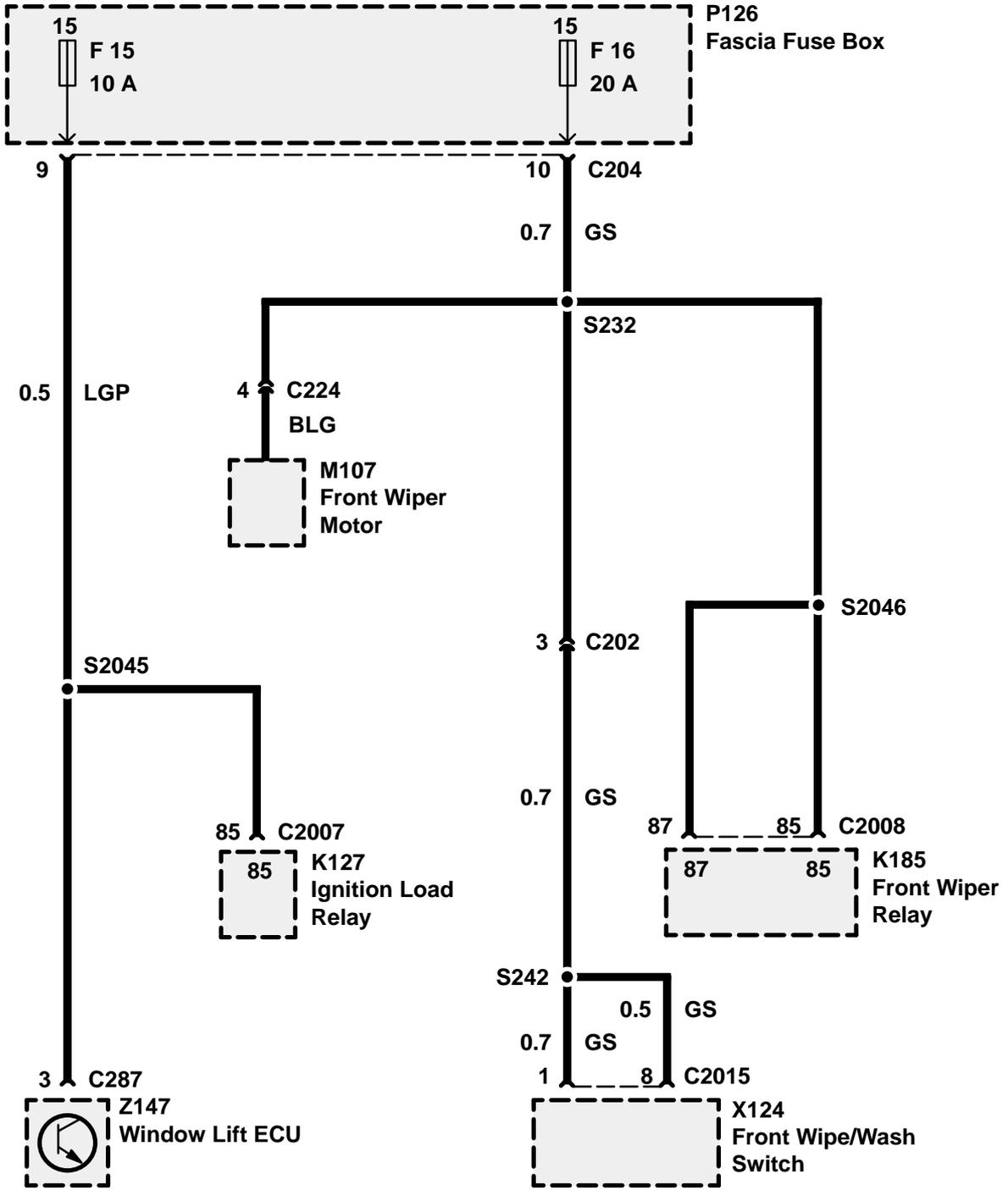
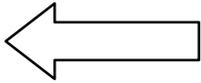


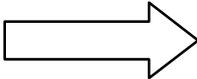
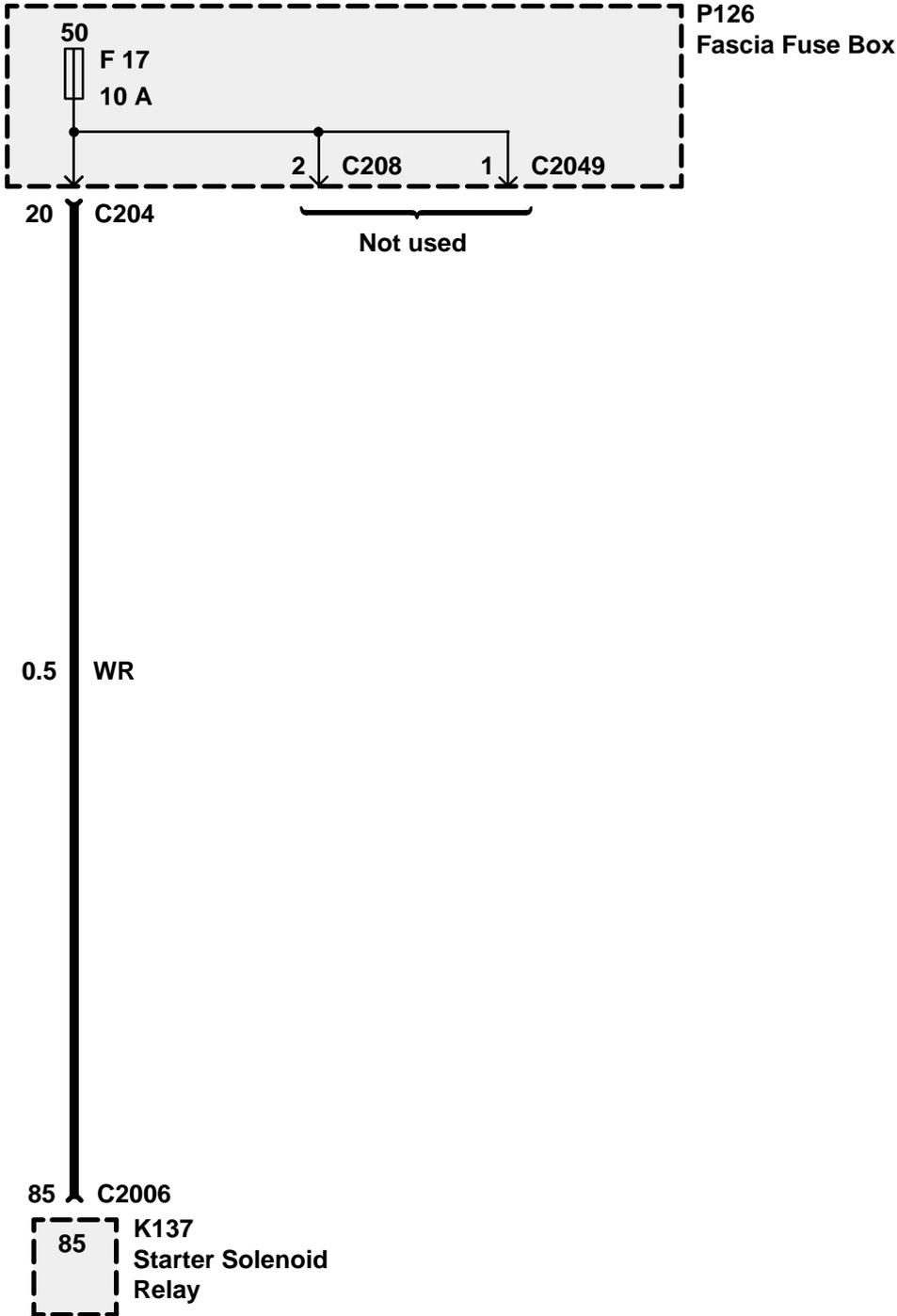
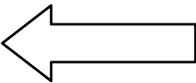
Manual Trans-
mission

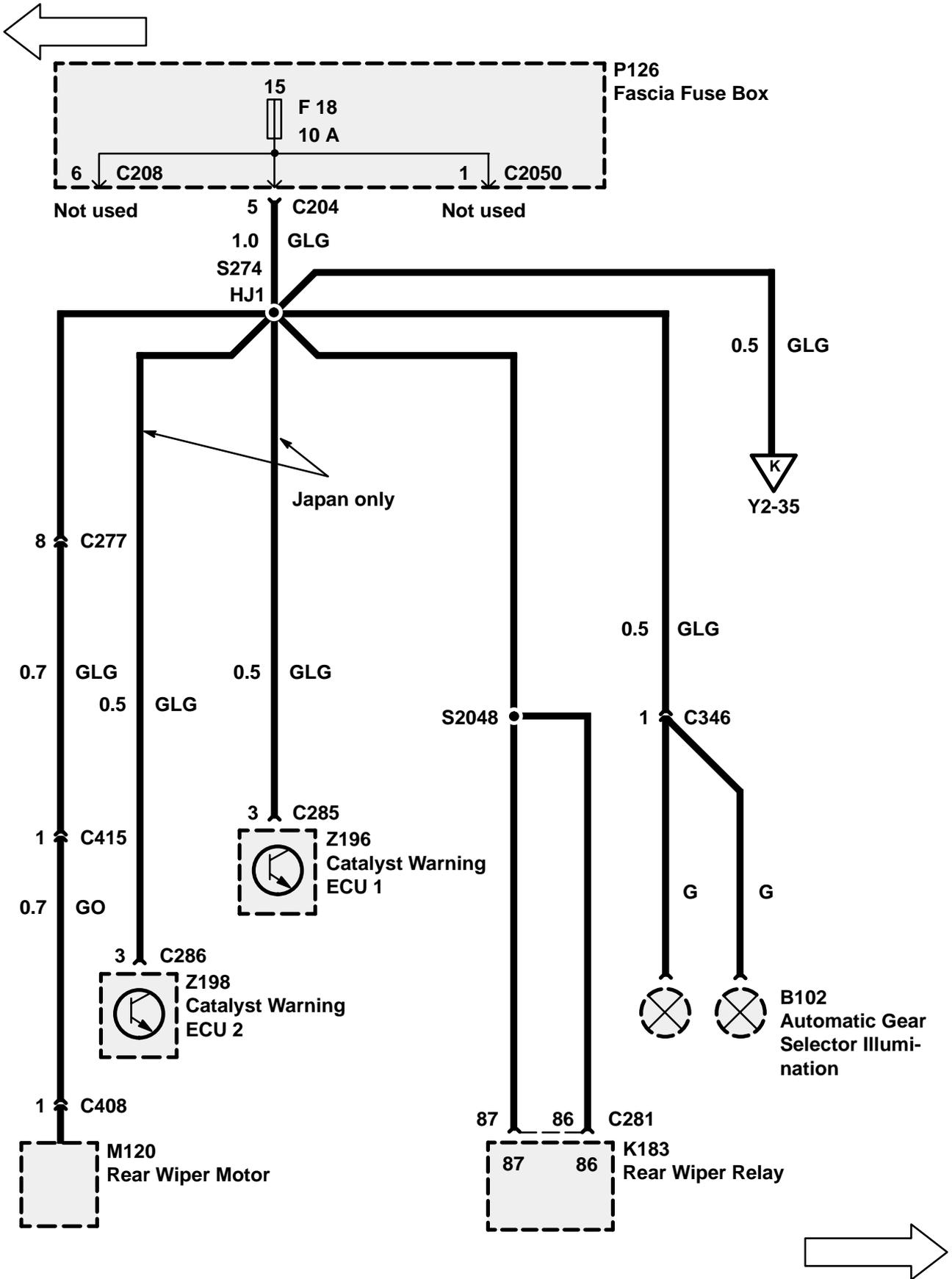
Automatic Trans-
mission

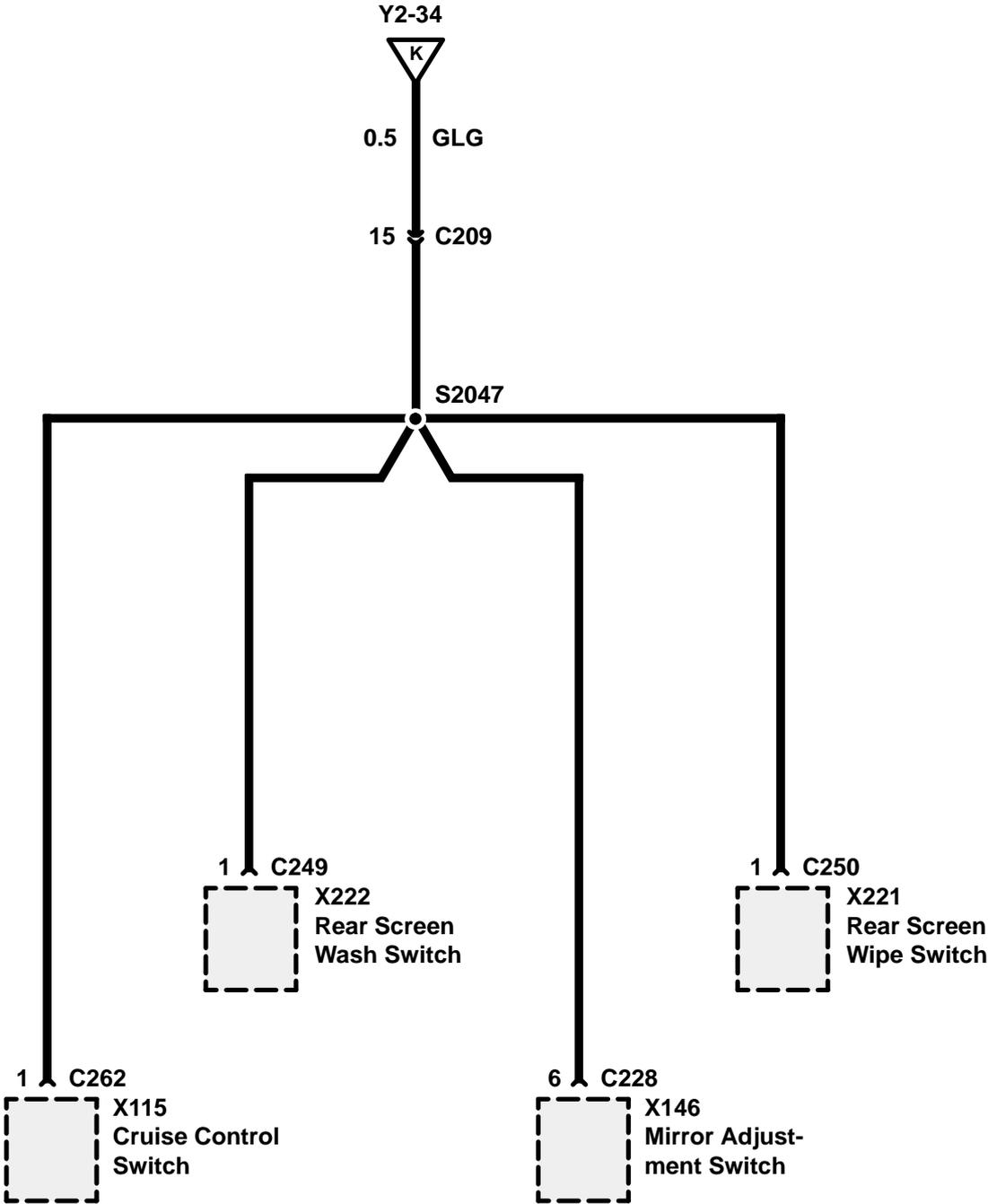
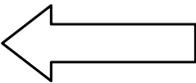






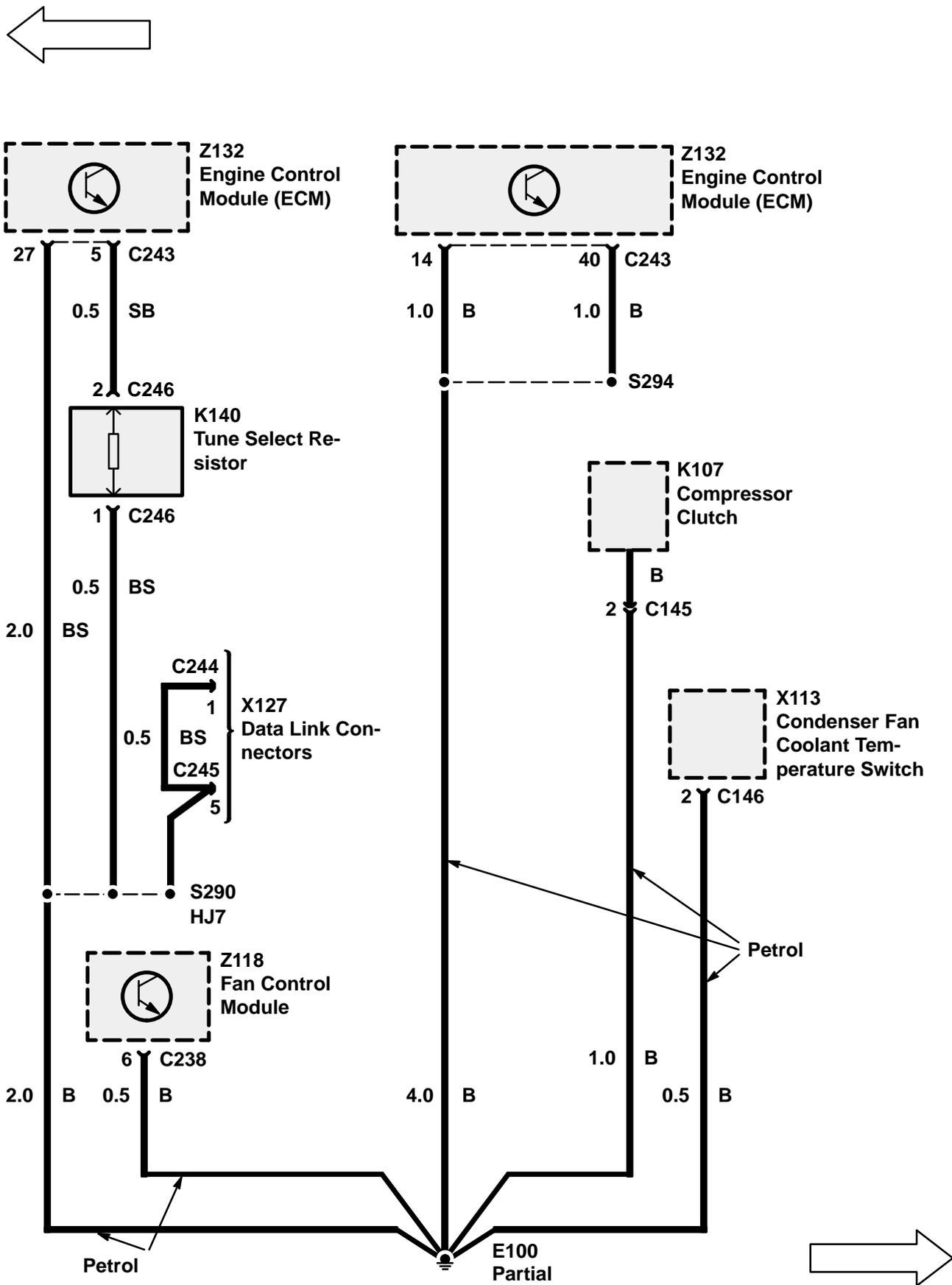






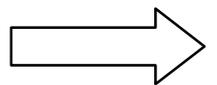
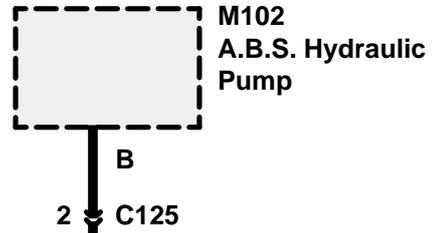
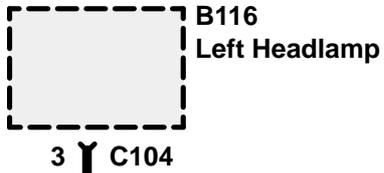
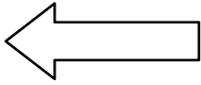
GROUND AND SPLICE INDEX

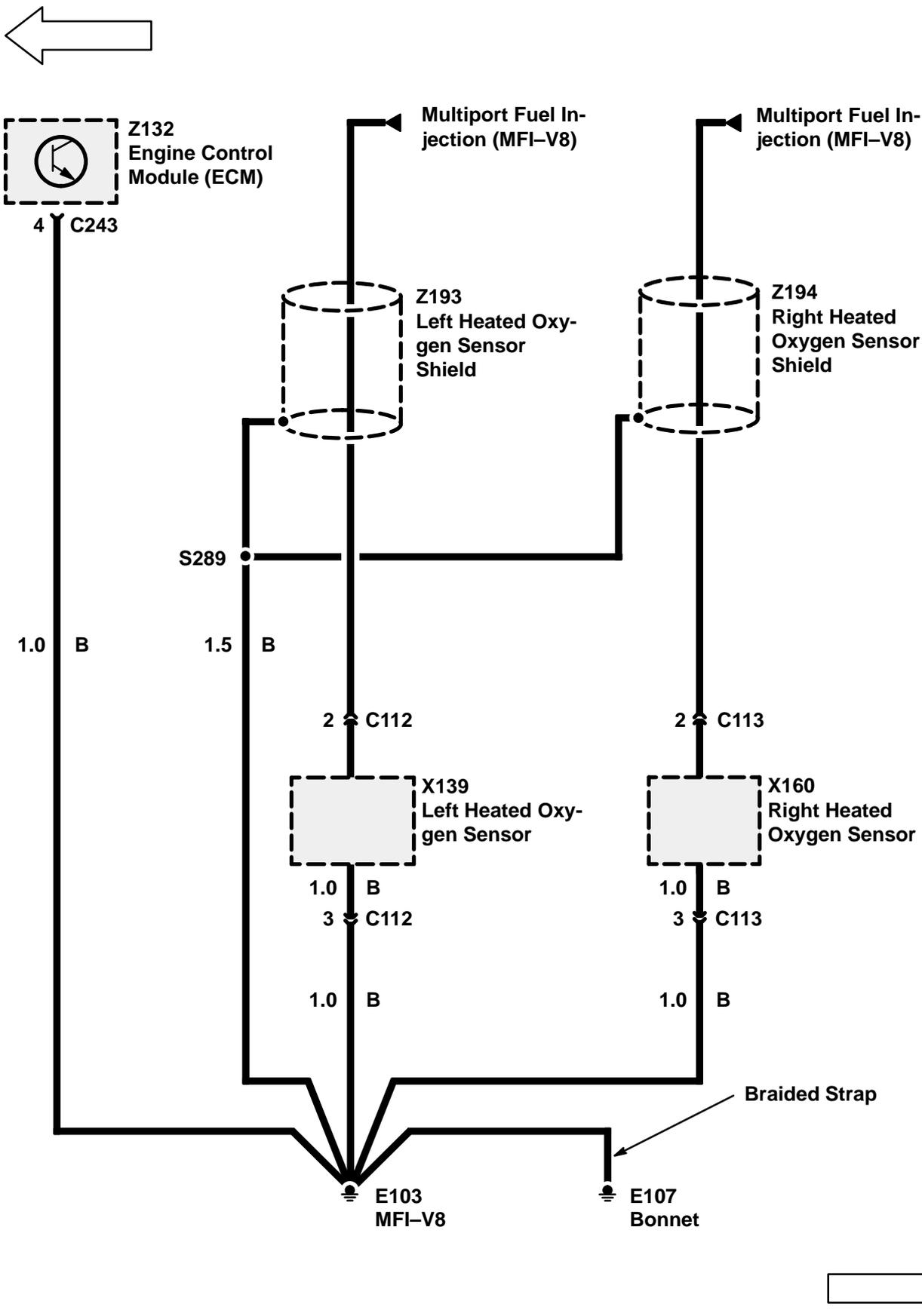
Ground	Page	Splice	Page
E100	Y5-2, 3	S112	Y5-6, 8
E101	Y5-4	S122	Y5-13
E103 MFI-V8	Y5-5	S132	Y5-35
E103 MFI-T16	Y5-6, 7	S203/HJ3	Y5-15
E103 300Tdi without EDC	Y5-8	S204/HJ3	Y5-15
E103 300Tdi with EDC	Y5-9, 10	S207	Y5-23
E104	Y5-11	S216	Y5-22
E105	Y5-11	S217	Y5-21
E106	Y5-11	S238/HJ5	Y5-17
E107	Y5-5	S244	Y5-19
E108	Y5-11	S248	Y5-31
E109	Y5-2	S253/HJ8	Y5-22
E110	Y5-11	S255/HJ8	Y5-23
E200	Y5-12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22	S266	Y5-13
E201	Y5-21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	S268	Y5-9
E203	Y5-35	S272	Y5-33, 34
E204	Y5-35	S277	Y5-21
E303	Y5-36	S288/HJ11	Y5-27
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E401	Y5-40, 41	S290/HJ7	Y5-3
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		S2003/HJ10	Y5-19
		S2015/HJ10	Y5-20
		S2016/HJ10	Y5-18
		S2023/HJ11	Y5-30
		S2024	Y5-32
		S2025/HJ5	Y5-16
		S2031/HJ5	Y5-16
		S2032/HJ3	Y5-15
		S2044/HJ11	Y5-27
		S2050	Y5-12
		S2051	Y5-35
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		S402	Y5-41
		S415	Y5-38
		S417	Y5-37
		S418	Y5-40
		S422	Y5-37
		S423	Y5-39
		S424	Y5-41
		S426	Y5-37
		S501	Y5-28
		S601	Y5-14

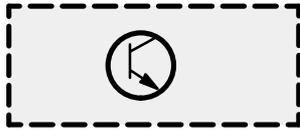
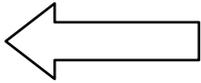


Y5 ETM

Ground Distribution







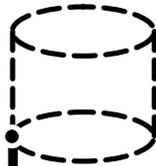
Z132
Engine Control
Module (ECM)

29 14 C1007

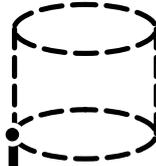


X139
Left Heated Oxy-
gen Sensor

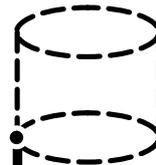
3 C112



Z193
Left Heated Oxy-
gen Sensor
Shield



Z201
Knock Sensor
Shield



Z202
Crankshaft Posi-
tion Sensor
Shield

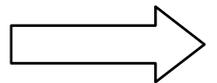
1.5 B 0.5 B 0.7 B

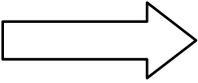
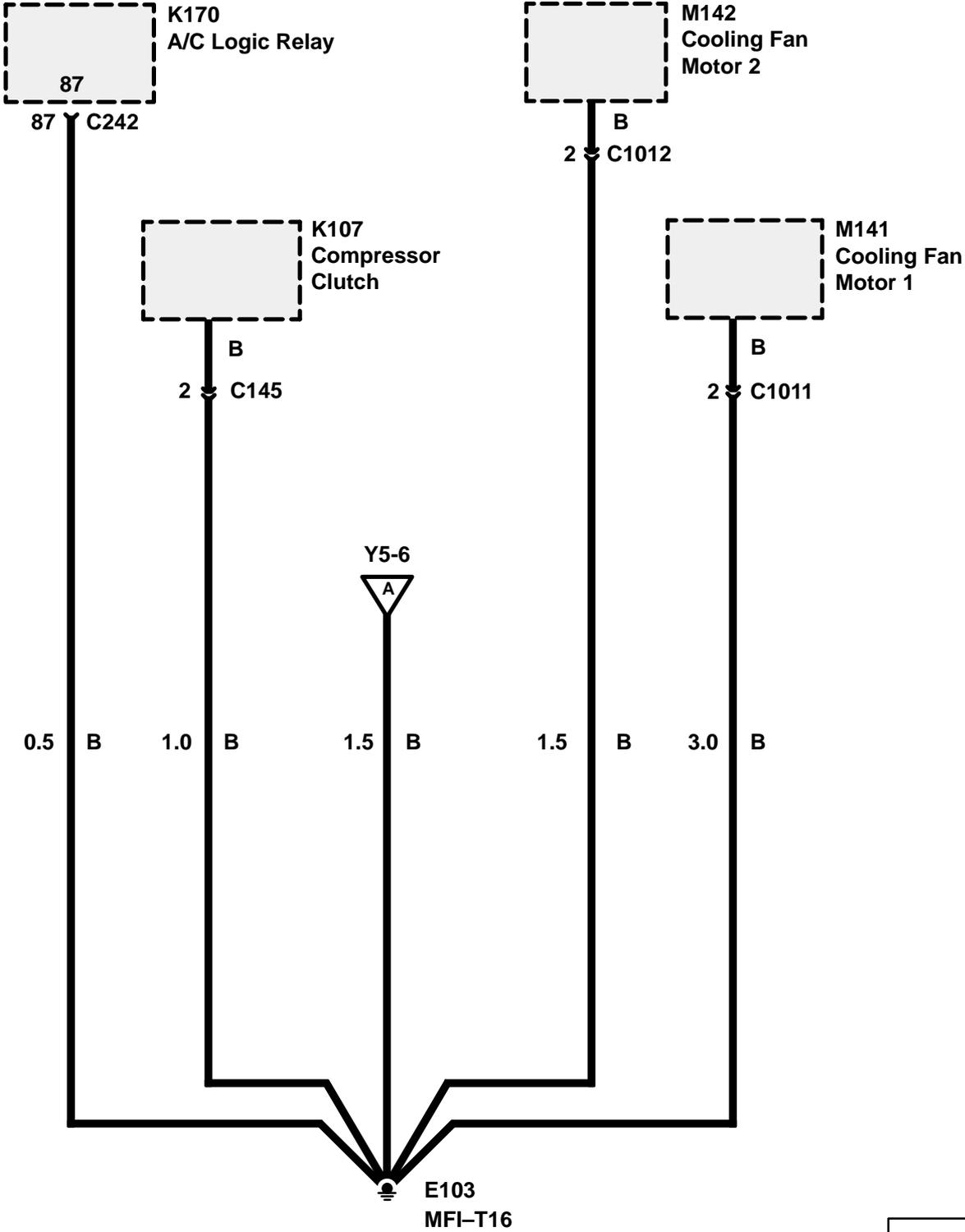
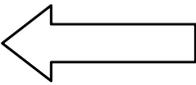
S112

1.5 B



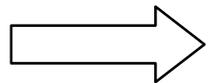
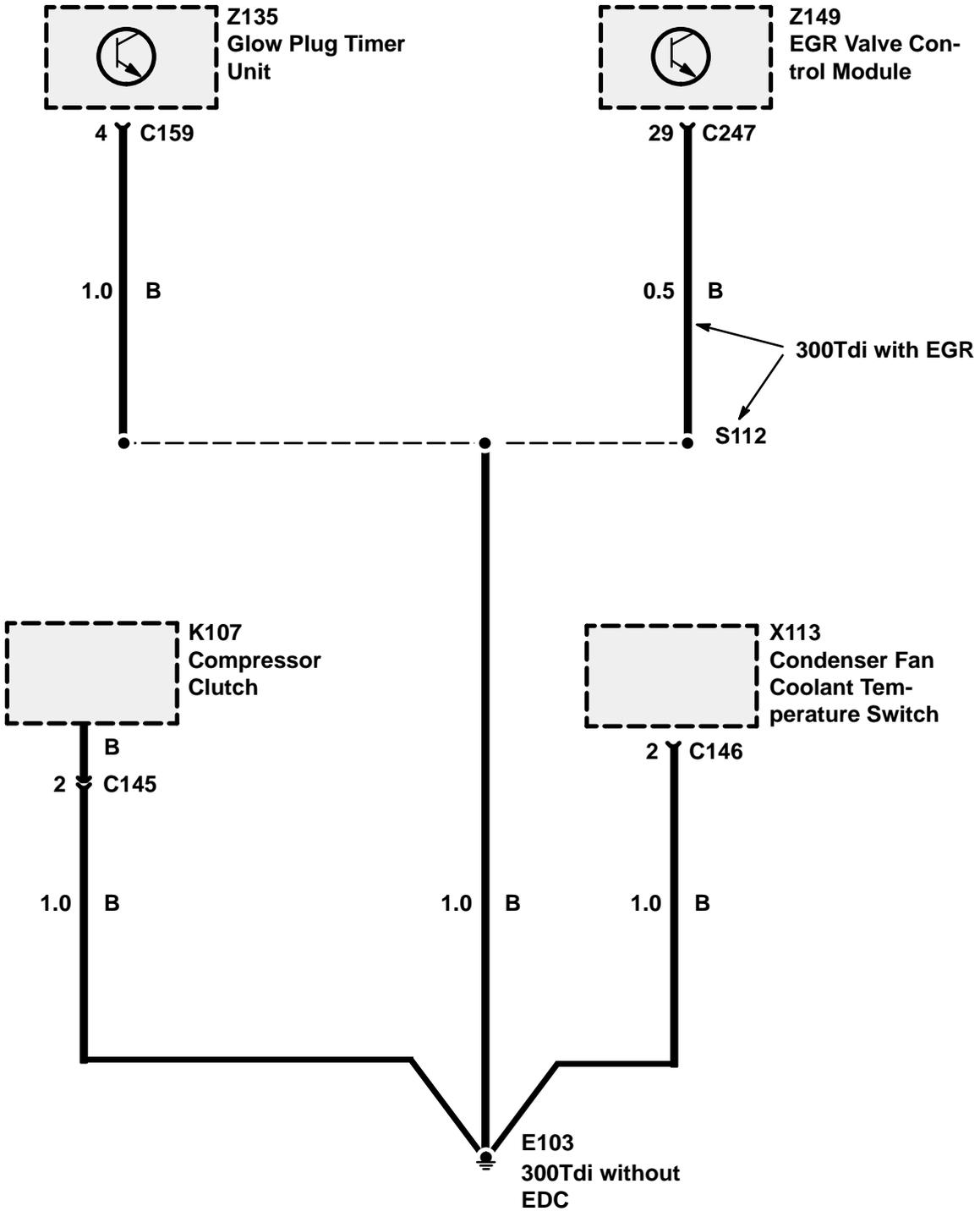
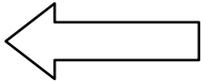
Y5-7

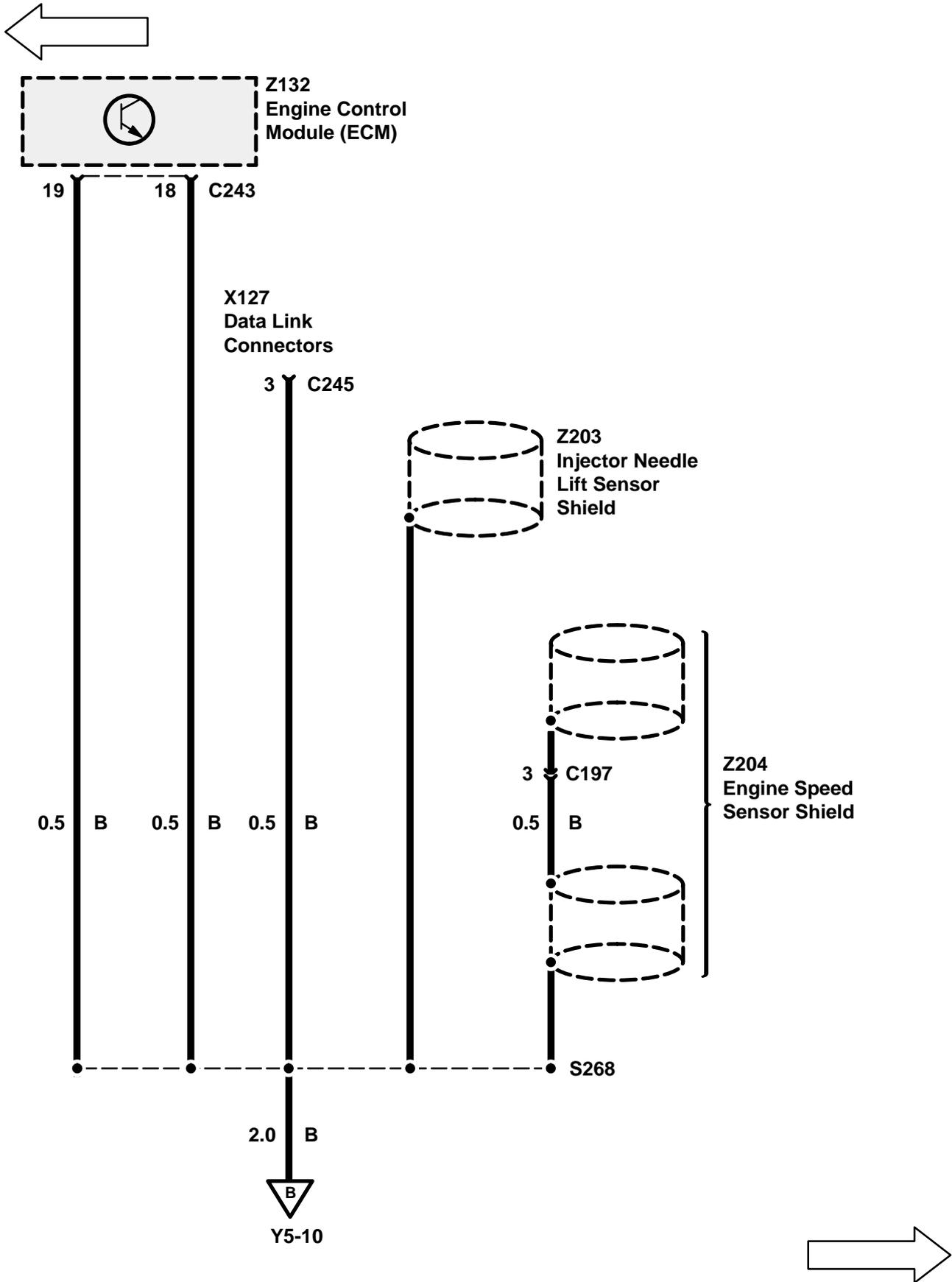




Y5 ETM

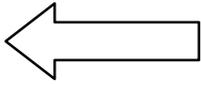
DISCOVERY





Y5 ETM

DISCOVERY



Z135
Glow Plug Timer
Unit

4 C159



X113
Condenser Fan
Coolant Tem-
perature Switch

2 C146



K107
Compressor
Clutch

B
2 C145

0.5 B

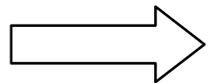
0.5 B

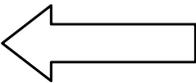
2.0 B

1.0 B



E103
300Tdi with EDC





Braided Strap

Braided Strap



E105 Ignition Coil

E106 Engine

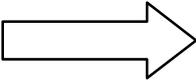
Braided Strap

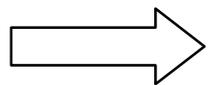
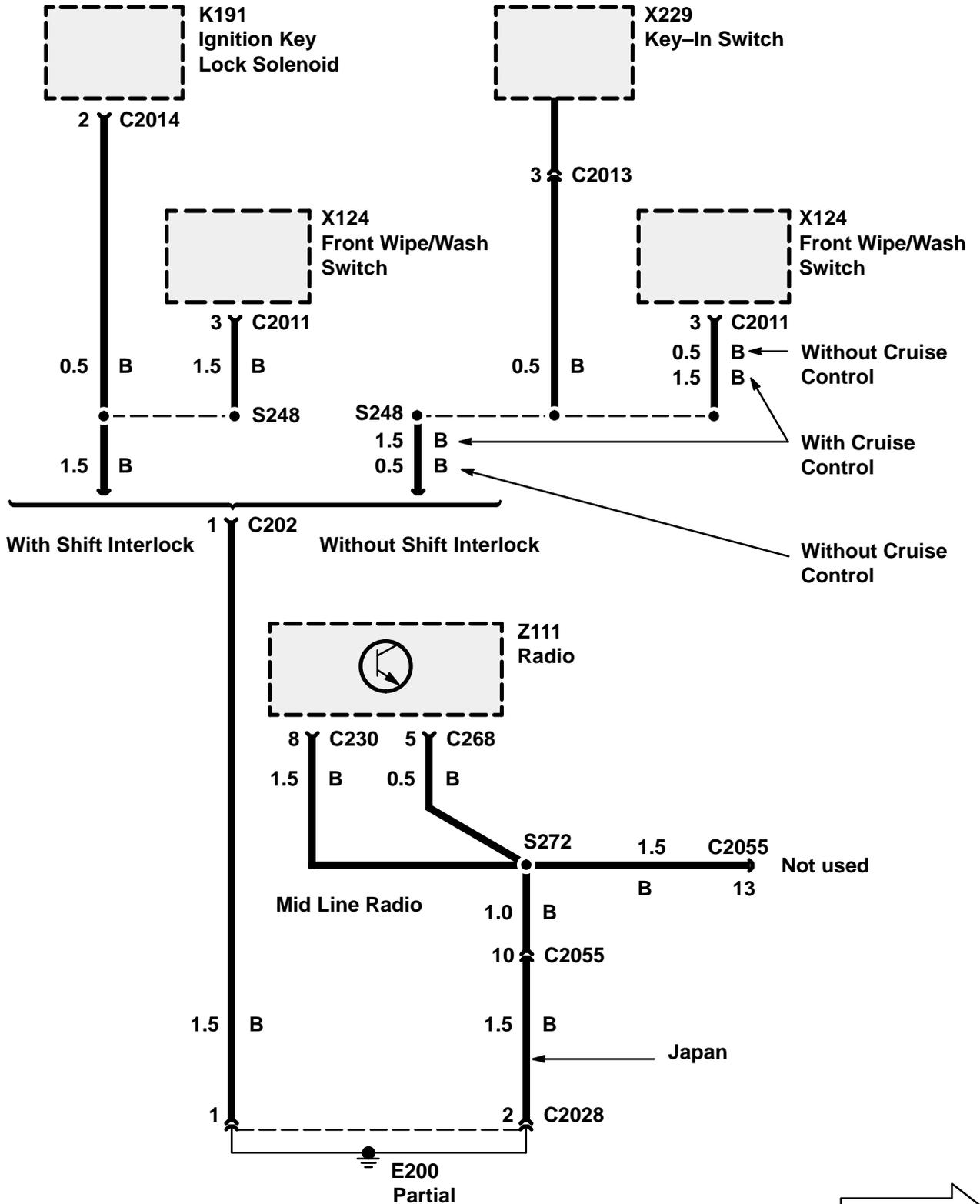
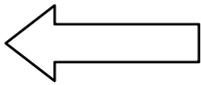


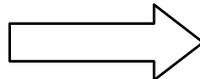
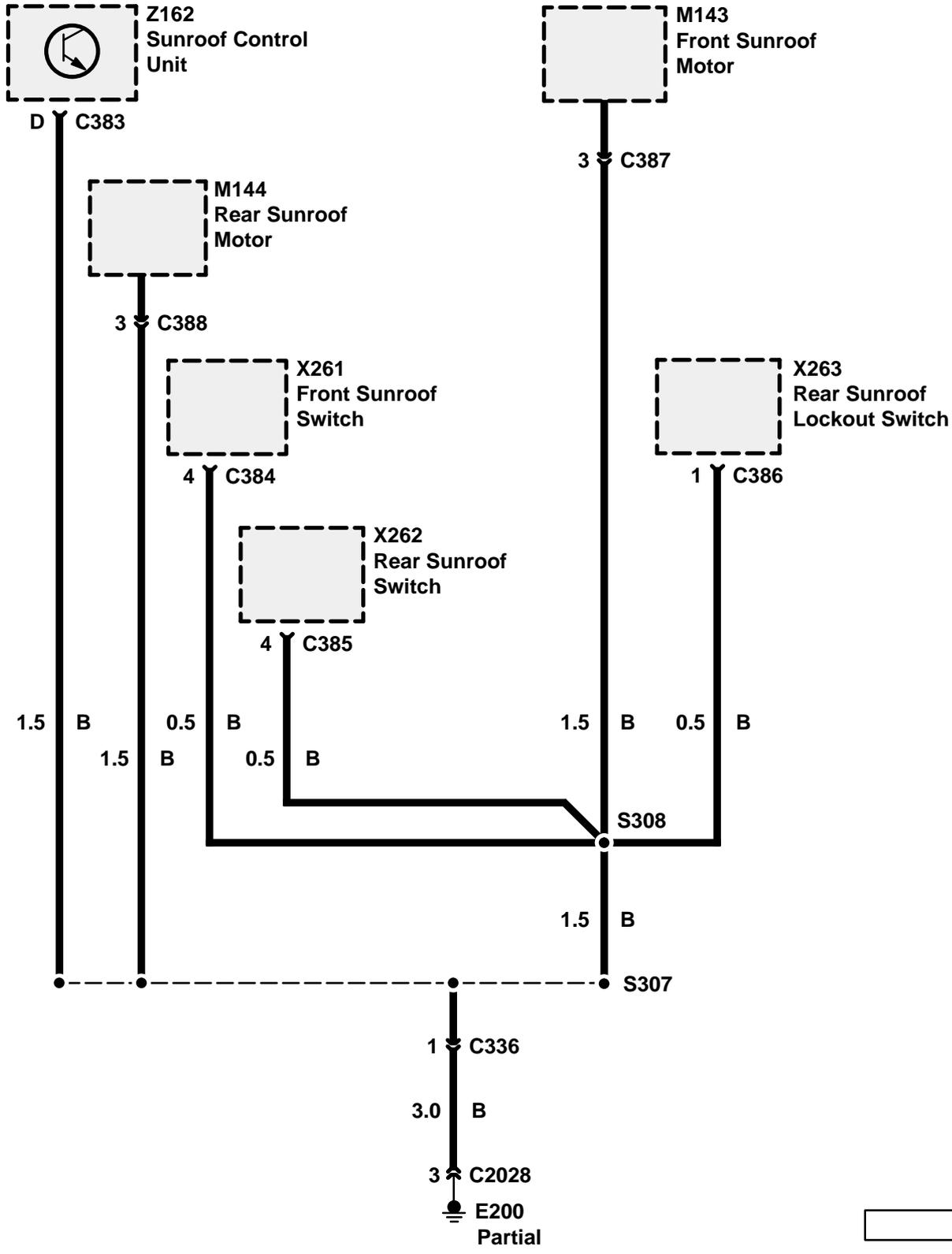
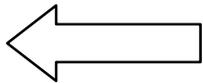
E104 Chassis

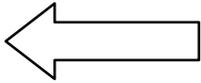
E108 Starter

E110









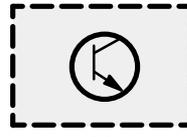
M121
Right Condenser
Fan Motor

B
2 C182



M113
Left Condenser
Fan Motor

B
2 C183



Z176
Subwoofer
Amplifier

1 C412

3 C437

7 C212

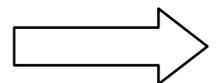
Z199
Subwoofer Am-
plifier Shield

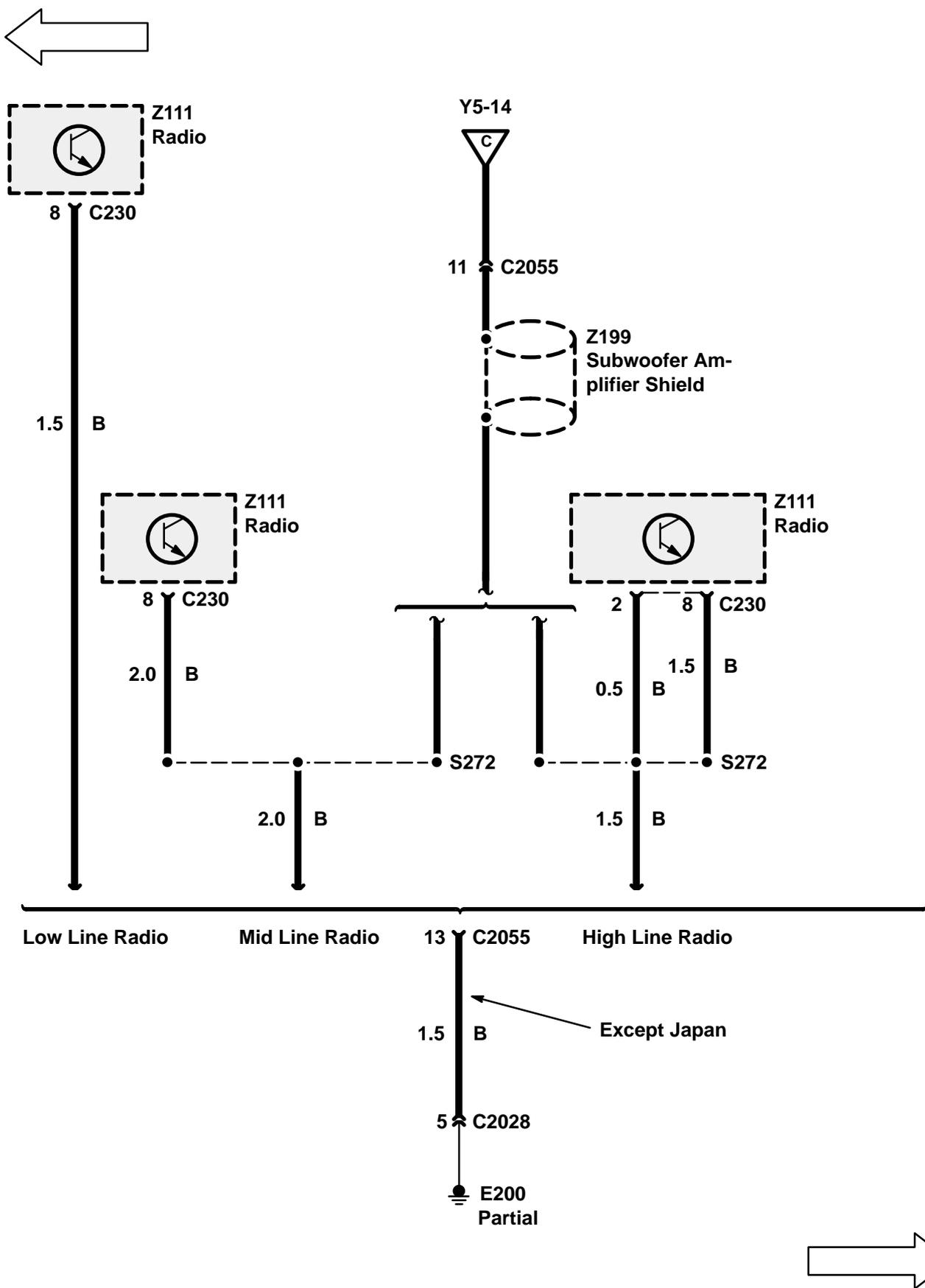
S122

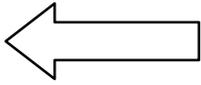
C
Y5-15

1.5 B

4 C2028
E200
Partial







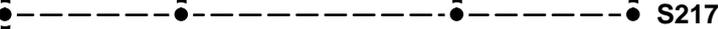
X233
Radio Tune
Switch

4 5 C2056



X234
Radio Waveband
Switch

4 5 C2057



S217



X235
Radio Volume Up
Switch

4 5 C2058



X236
Radio Volume
Down Switch

4 5 C2059

0.5 B



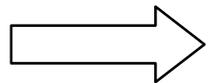
Y5-17

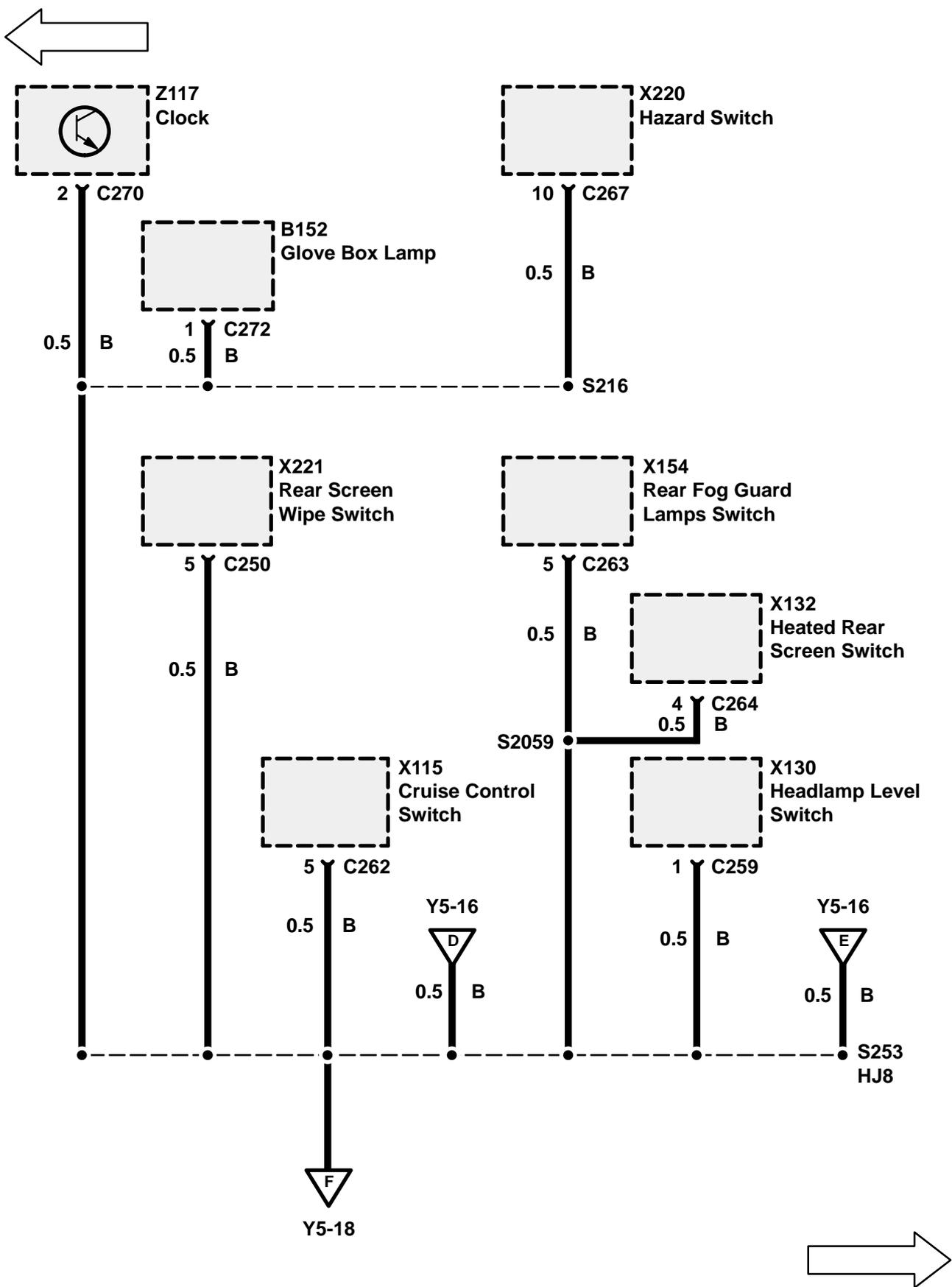
0.5 B



Y5-17

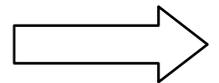
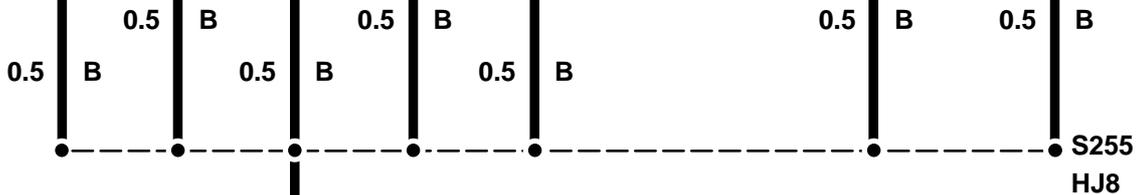
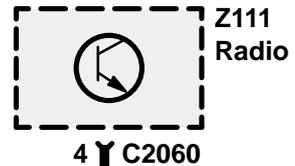
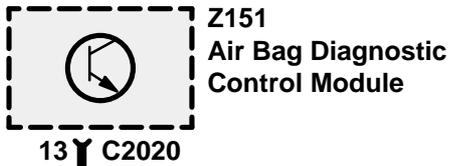
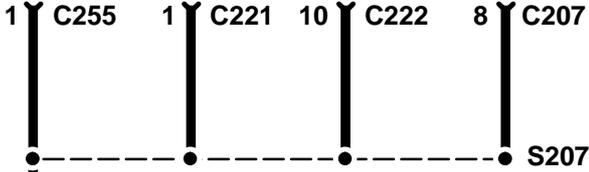
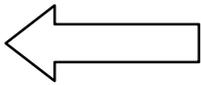
S277





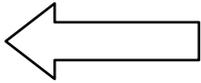
Y5 ETM

DISCOVERY



Y5 ETM

DISCOVERY



M122
Right Front Door
Lock Actuator

4 C607



B133
Right Mirror De-
mister

C612

B

1 C603

S601

0.5 B



M122
Right Front Door
Lock Actuator

3 C607



B133
Right Mirror De-
mister

C612

B

1 C603



X202
Right Front Door
Key Switch

P

4 C604

S601

0.5 B

Without Theft Alarm

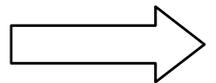
With Theft Alarm

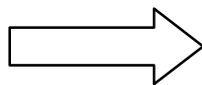
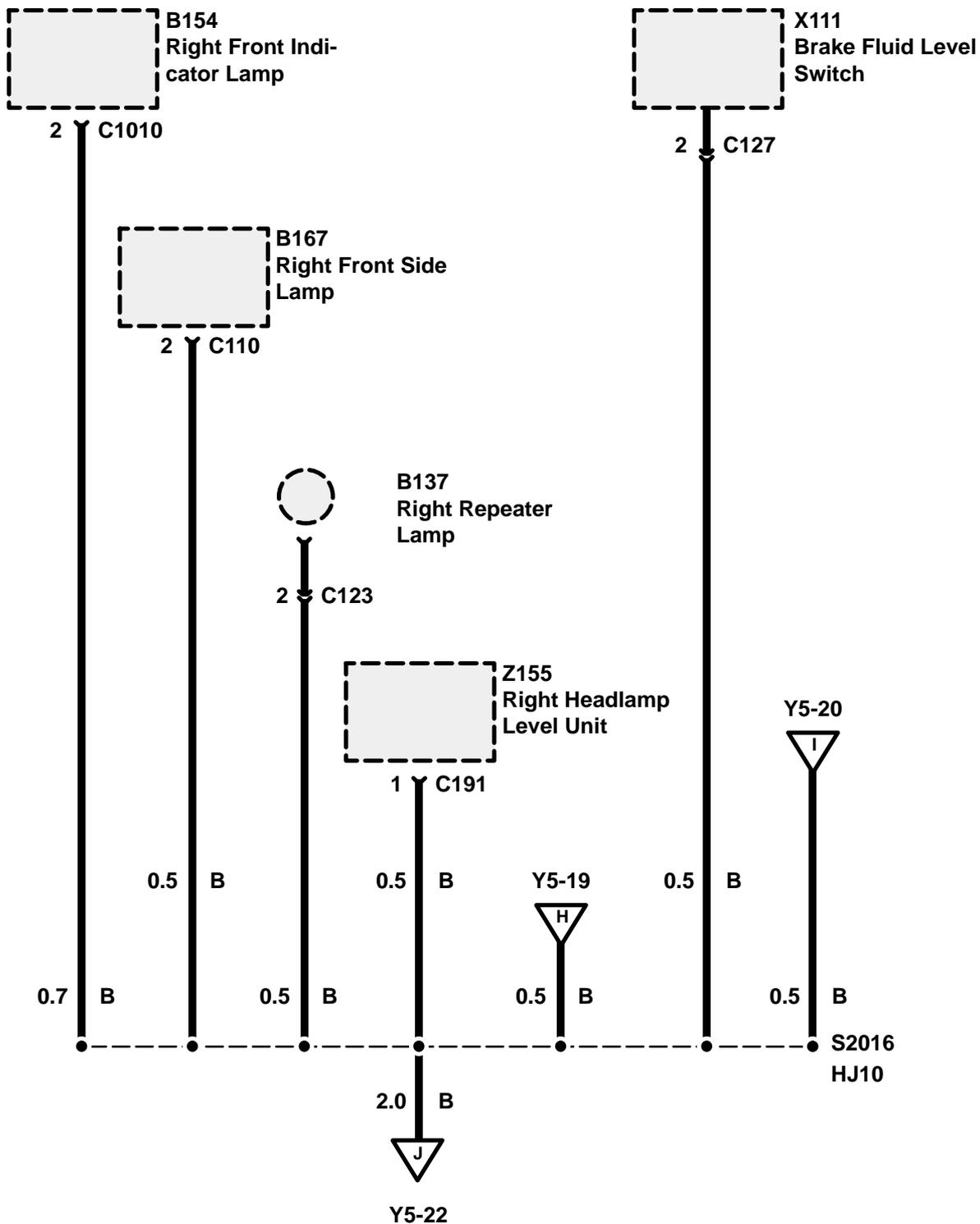
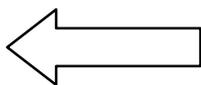
2 C602

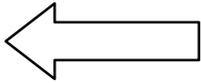
0.5 B



Y5-21

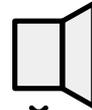






K127
Ignition Load
Relay

86 C2007



K134
Right Horn

1 C169



X212
Alarm Bonnet
Switch

N
1 C178



Z171
Alarm Sounder

1 C175



K206
Water Valve

2 C179

← Except Japan

Not used

S203
HJ10

Y5-21



0.5 B

0.5 B

0.5 B

0.5 B

0.5 B

0.5 B

2.0 B

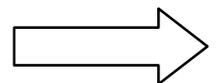


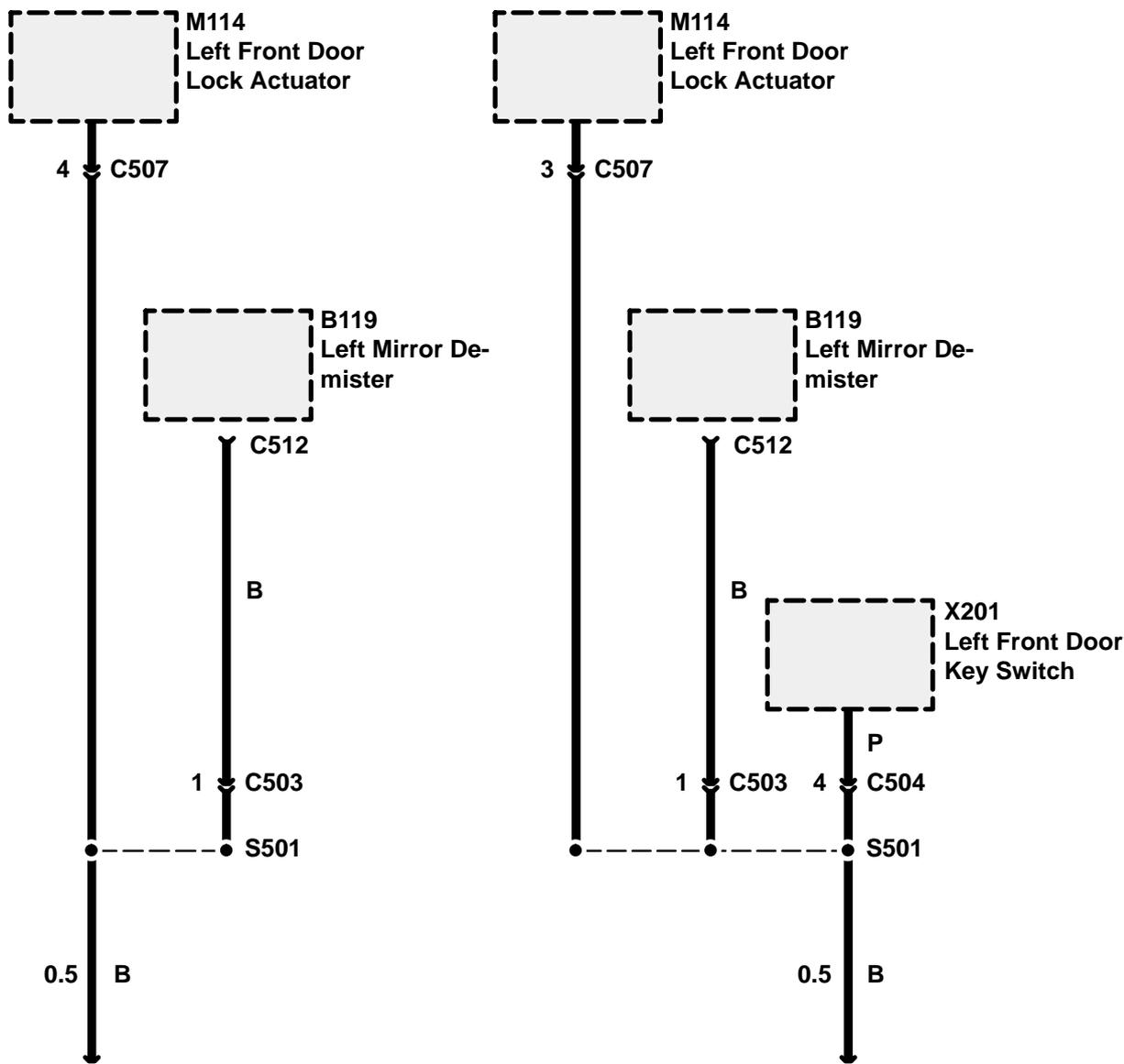
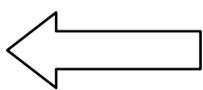
S204
HJ10

2.0 B

6 C2028

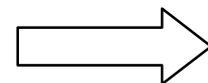
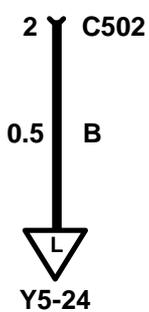
E200
Partial

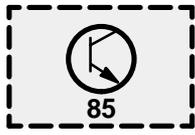
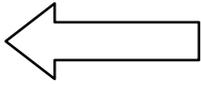




Without Theft Alarm

With Theft Alarm





Z164
Speed Trip Module

85 C2021

Manual Transmission



K174
Accessory Relay

86 C282

0.5 B



M105
Front Screen
Wash Pump

1 C170

6 C218



K172
Catalyst Warning
Relay

86 C299

0.5 B

0.5 B

0.5 B

0.5 B



S2015
HJ11

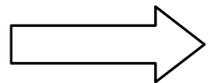
2.0 B

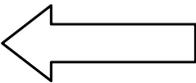


Y5-25



Y5-23





B166
Left Front Side
Lamp

2 C109



X108
Automatic Trans-
mission Oil Tem-
perature Switch

1 C1016

1 C166



B122
Left Repeater
Lamp

2 C124



Z145
Left Headlamp
Level Unit

1 C190



B153
Left Front Indica-
tor Lamp

2 C1009



Y5-24

0.5 B

0.5 B

0.5 B

0.7 B

2.0 B

0.5 B

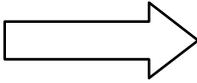


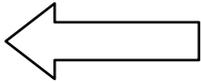
S2023
HJ11

2.0 B

2 C2029

E201
Partial





X247
Front Fan Speed
Switch



Z214
Front Blower Re-
sistor Unit

1 C2022

4 C2070

1 C2027



K192
Front Blower
Motor Relay

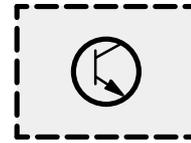
87a

4 C2068

7 C2066

S266

3.0 WB



Z147
Window Lift ECU

C C288

2 C298

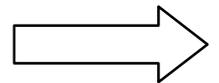
2.0 B

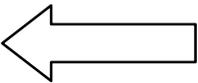
3.0 B

3

1 C2029

E201
Partial





Z176
Subwoofer Amplifier



Z175
Radio Amplifier

1 C412

10 C2054

3 C437

Z199
Subwoofer Amplifier Shield

7 C212

1.0 B

S2024

Japan

1.5 B



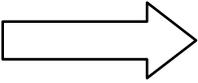
Z114
CD Changer

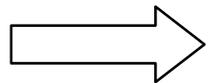
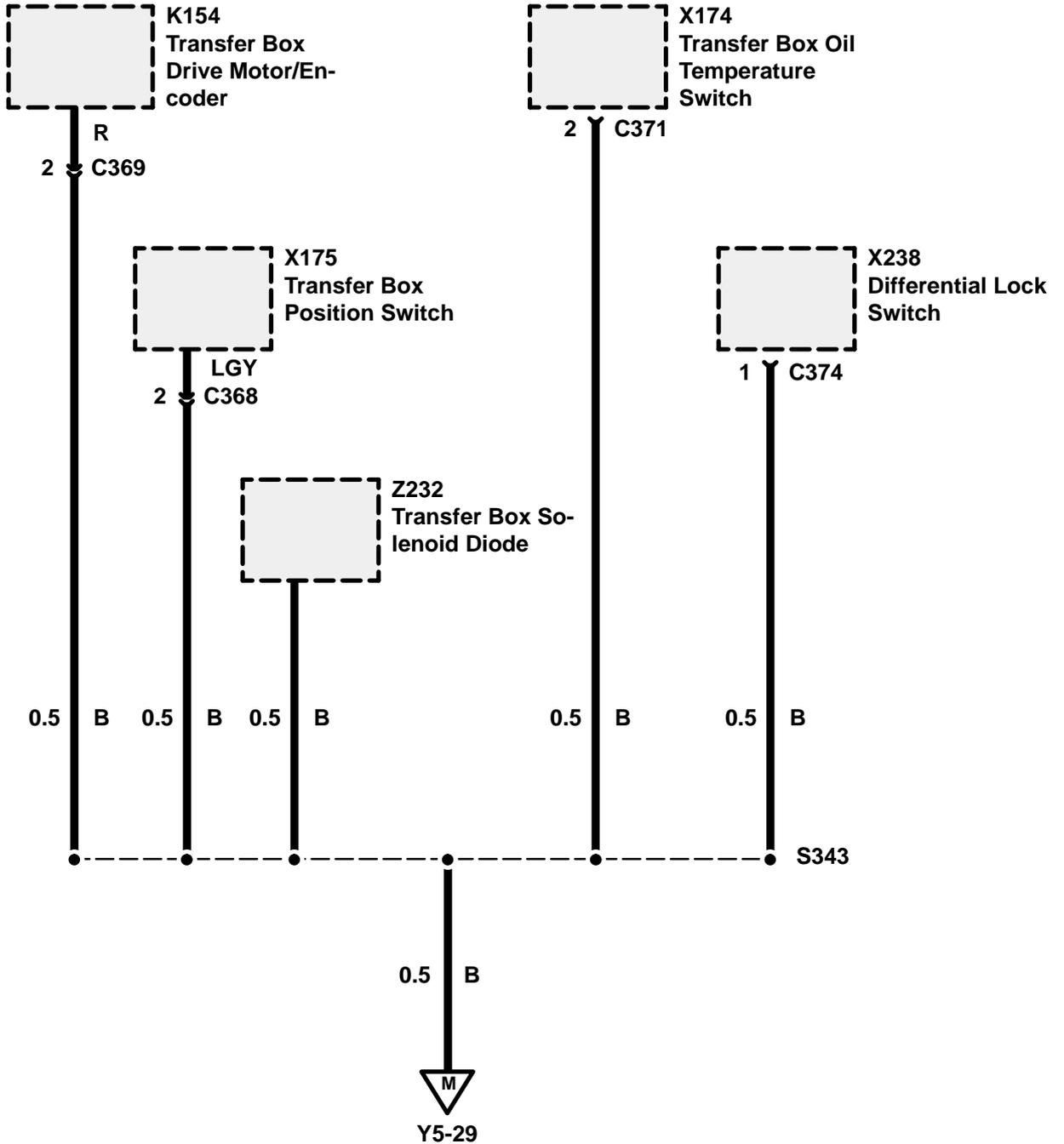
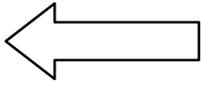
1 C381

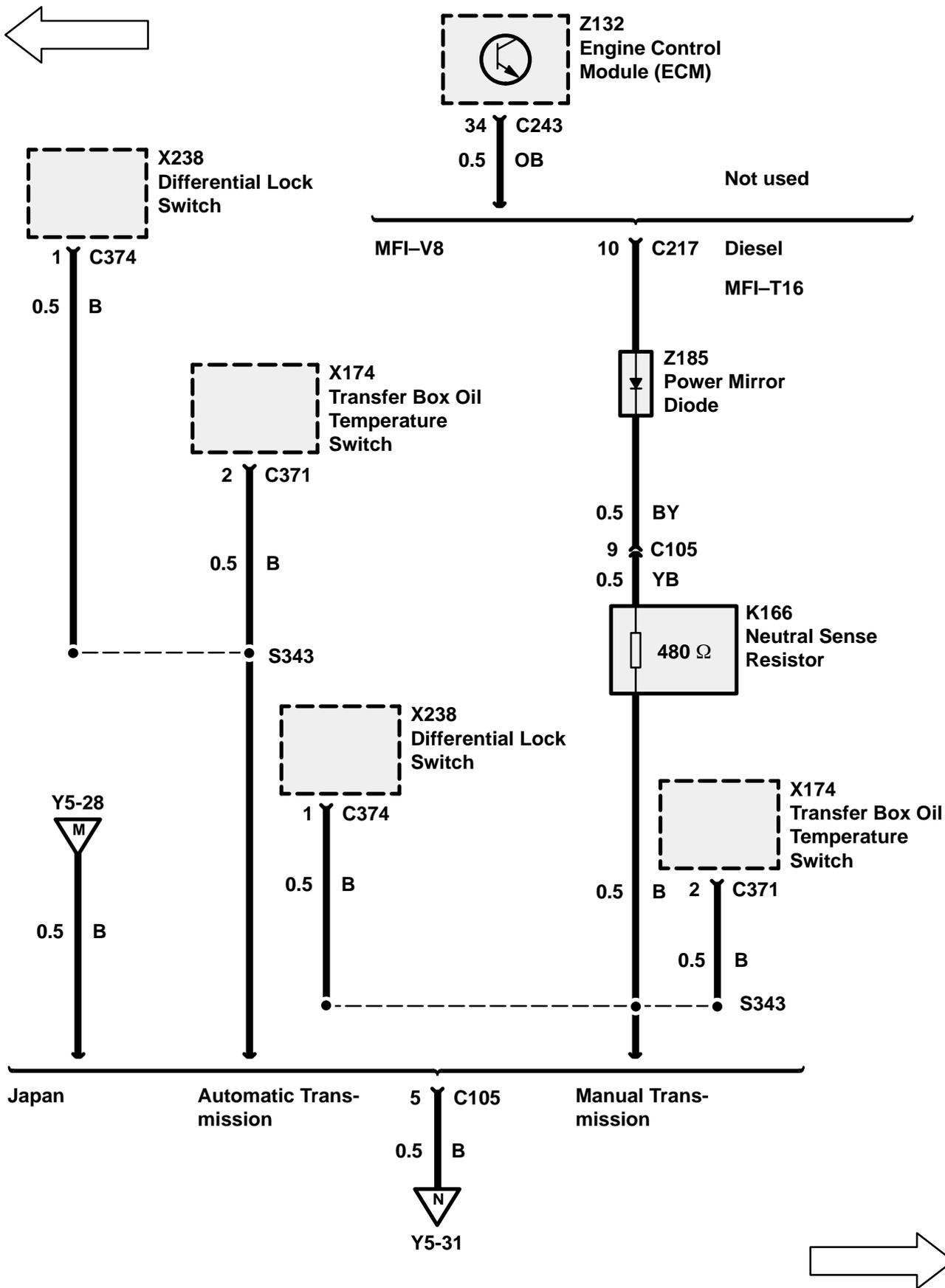
0.7 B

4 C2029

E201
Partial

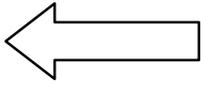






Y5 ETM

DISCOVERY



Z121
Cruise Control
ECU

8 C284



Z196
Catalyst Warning
ECU 1

1 C285



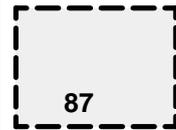
K128
Left Horn

1 C168



Z198
Catalyst Warning
ECU 2

1 C286



K172
Catalyst Warning
Relay

87 C299

0.5 B
1.5 B

0.5 B

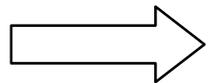
0.5 B
0.5 B

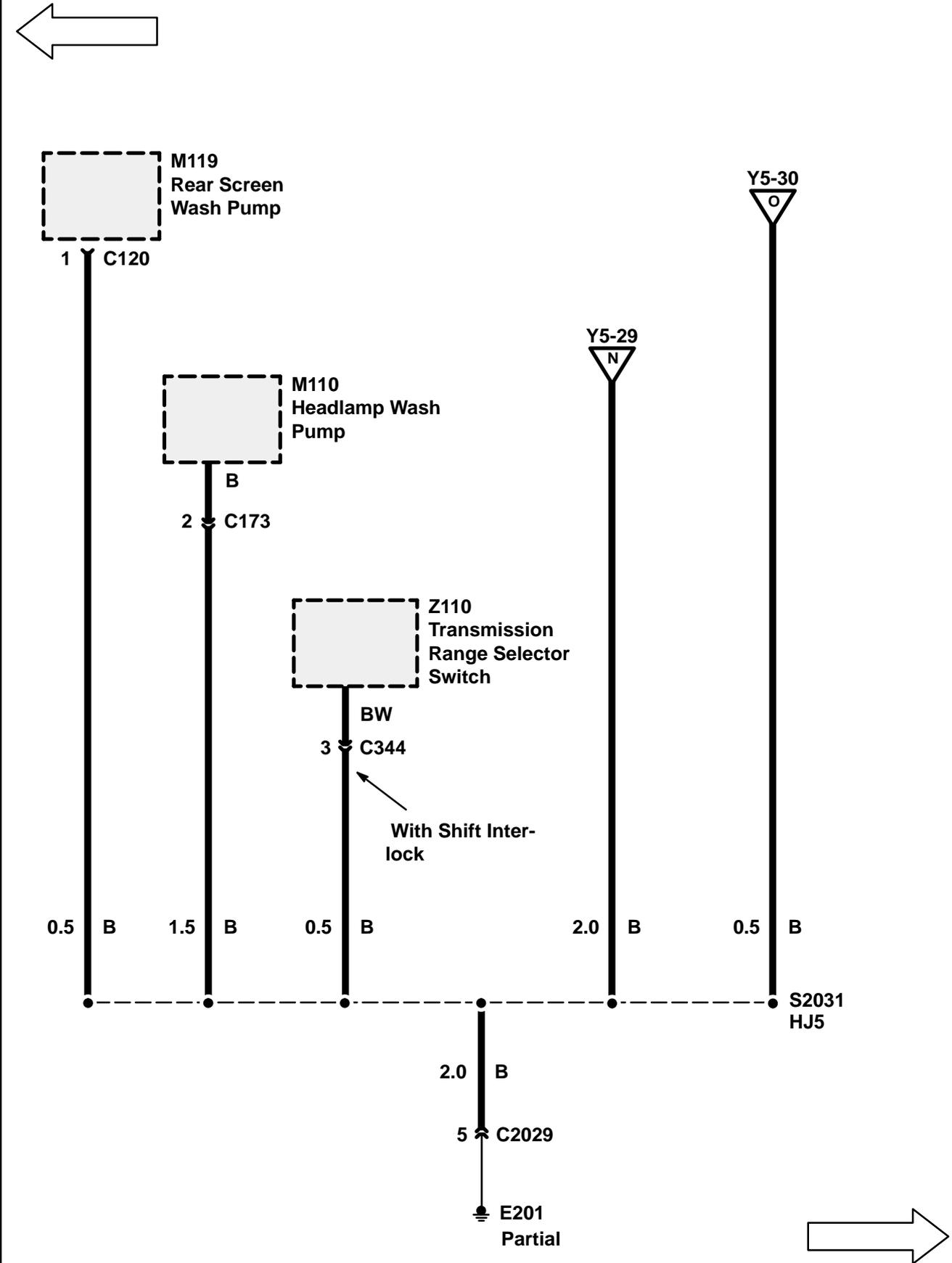
S288
HJ5

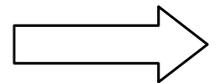
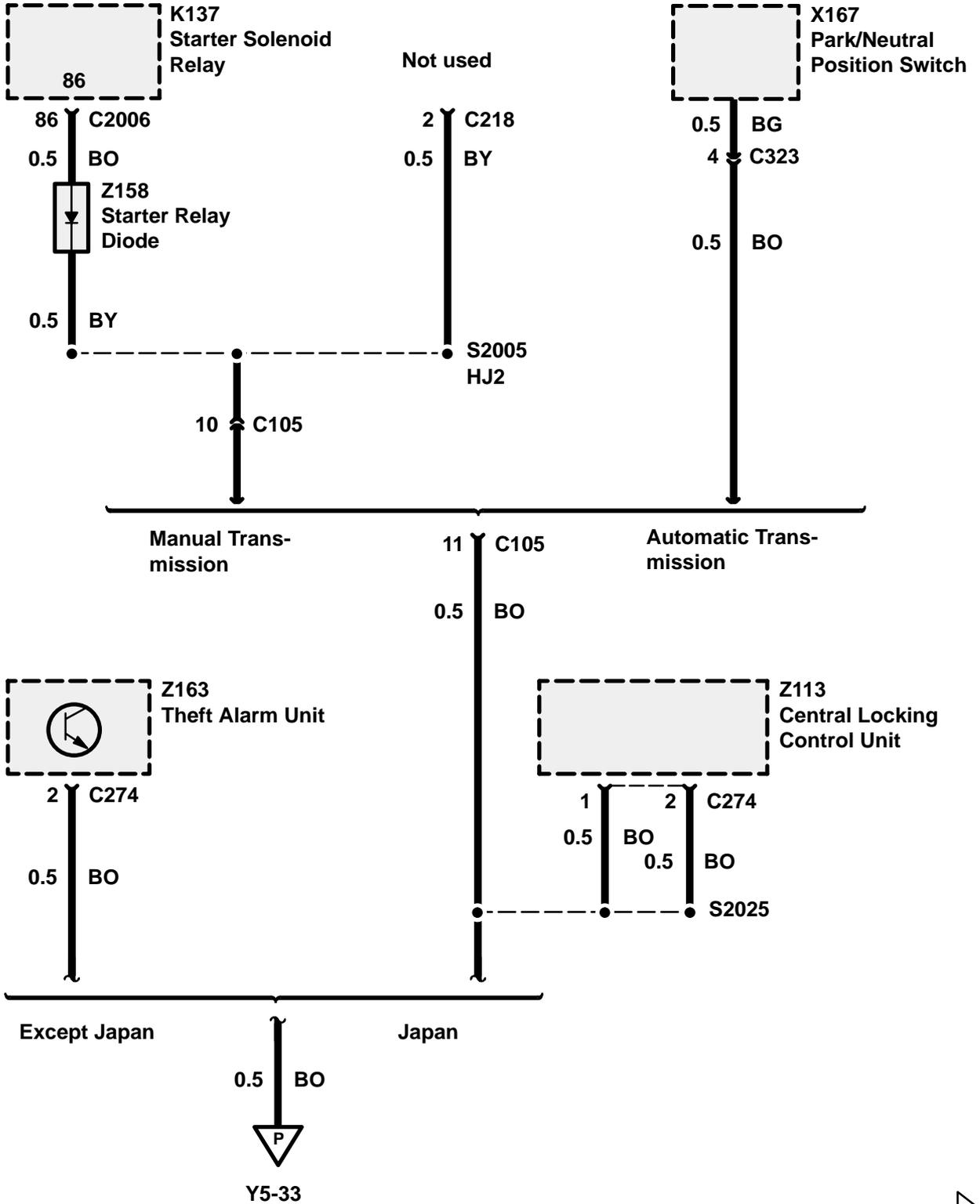
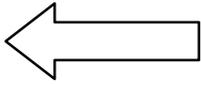
2.0 B

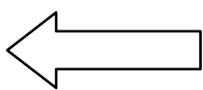


Japan

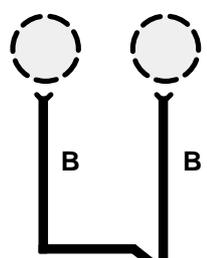




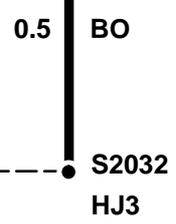
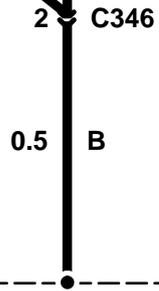
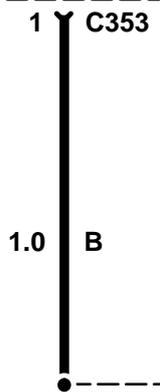




B106
Fascia Cigar
Lighter



B102
Automatic Gear
Selector Illumi-
nation

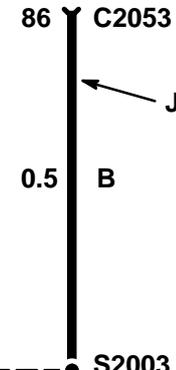
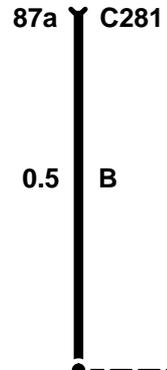


K183
Rear Wiper Relay

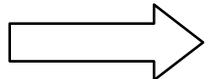
X104
A.B.S. Diagnos-
tic Connector



K187
Power Amplifier
Relay

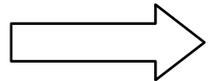
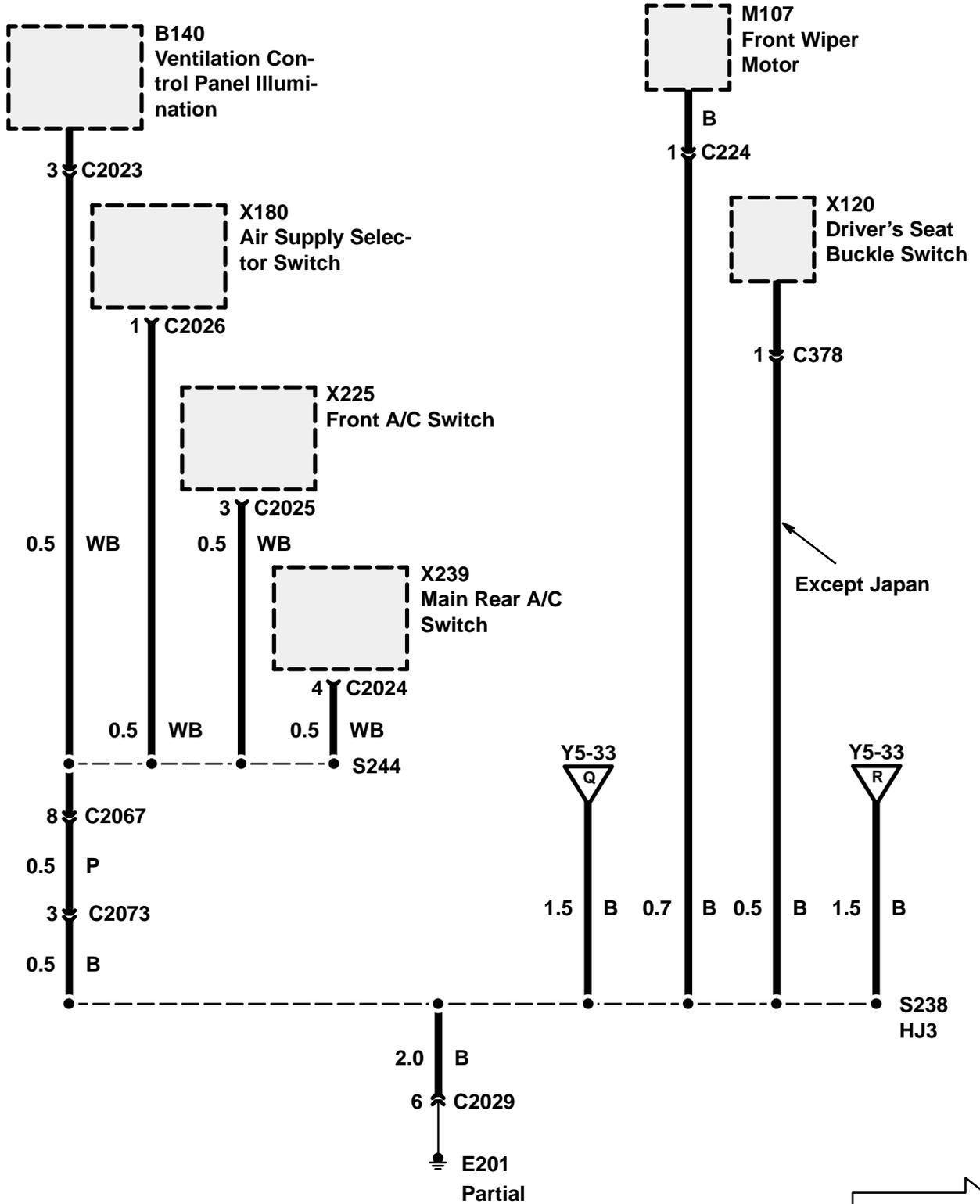
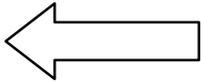


Japan



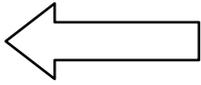
Y5 ETM

DISCOVERY



Y5 ETM

DISCOVERY



X122
Left Front Win-
dow Switch

4 C337



X141
Left Rear Win-
dow Console
Switch

4 C339



X187
Rear Window
Isolation Switch

1 C343



X151
Right Front Win-
dow Switch

4 C338



X162
Right Rear Win-
dow Console
Switch

4 C340

0.5 B

0.5 B

1.5 B

1.5 B

1.5 B

2

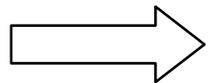
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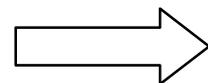
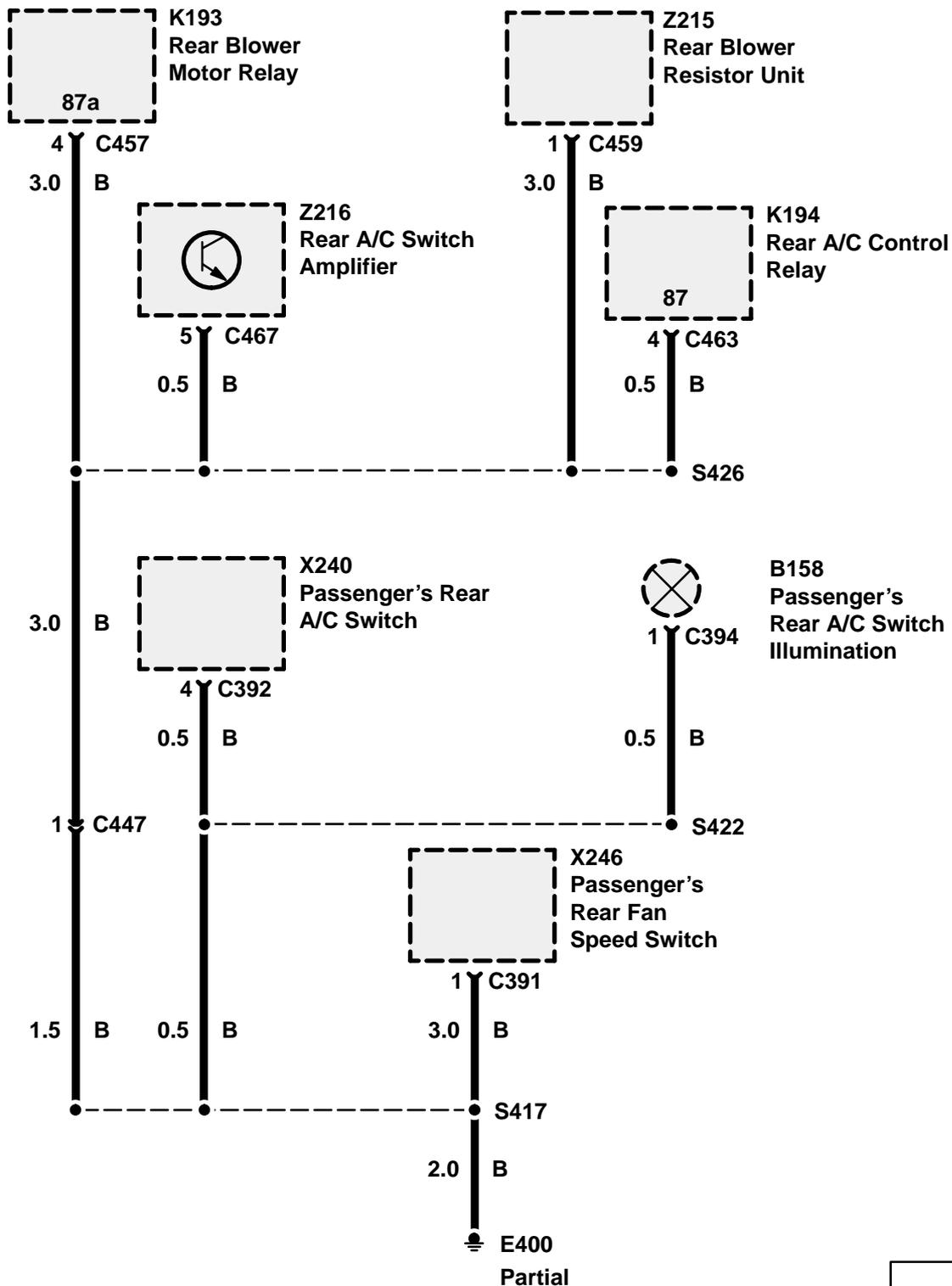
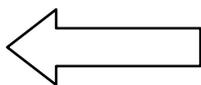
3

4

5 S2031

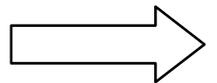
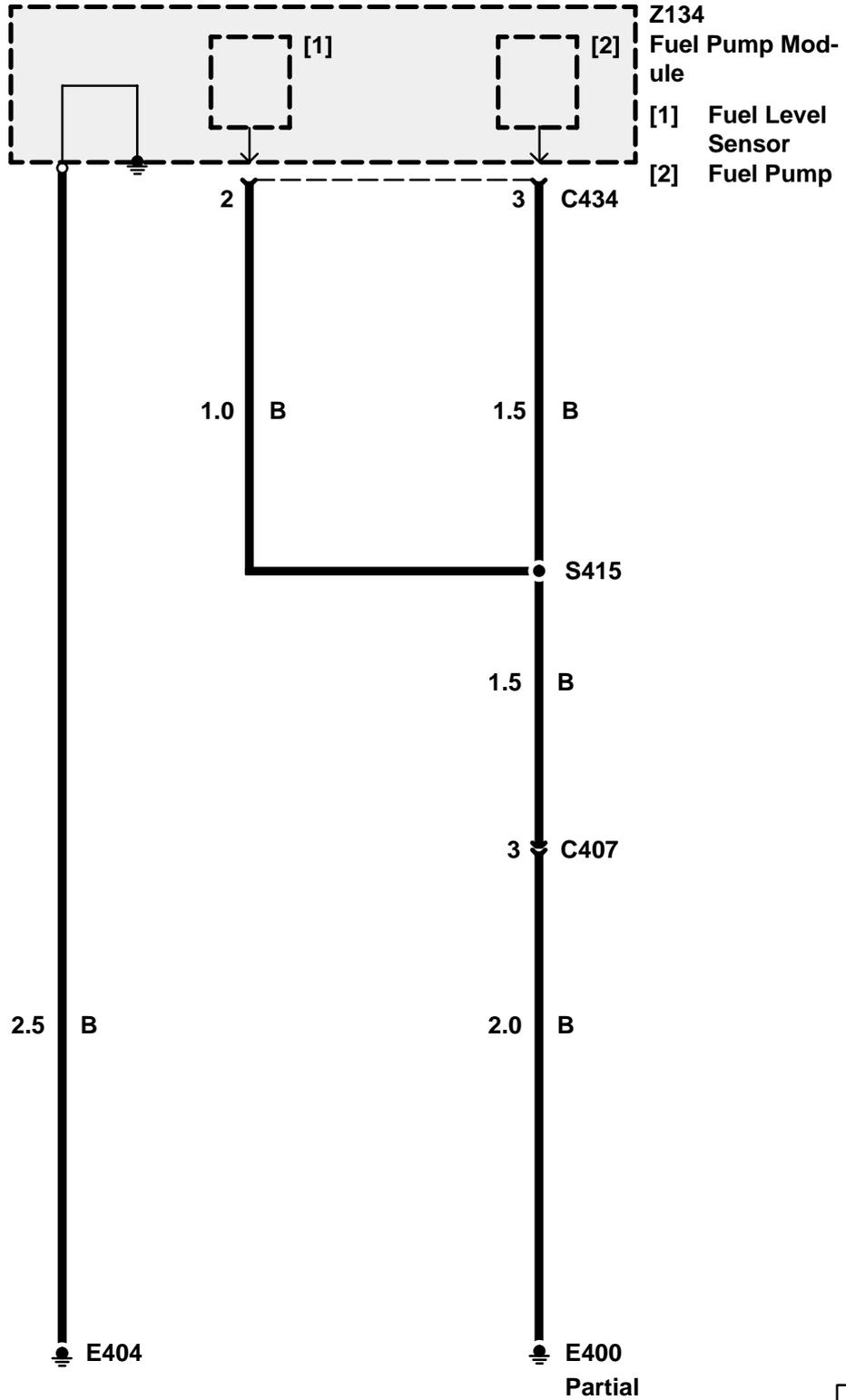
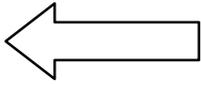
E303

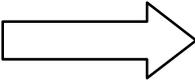
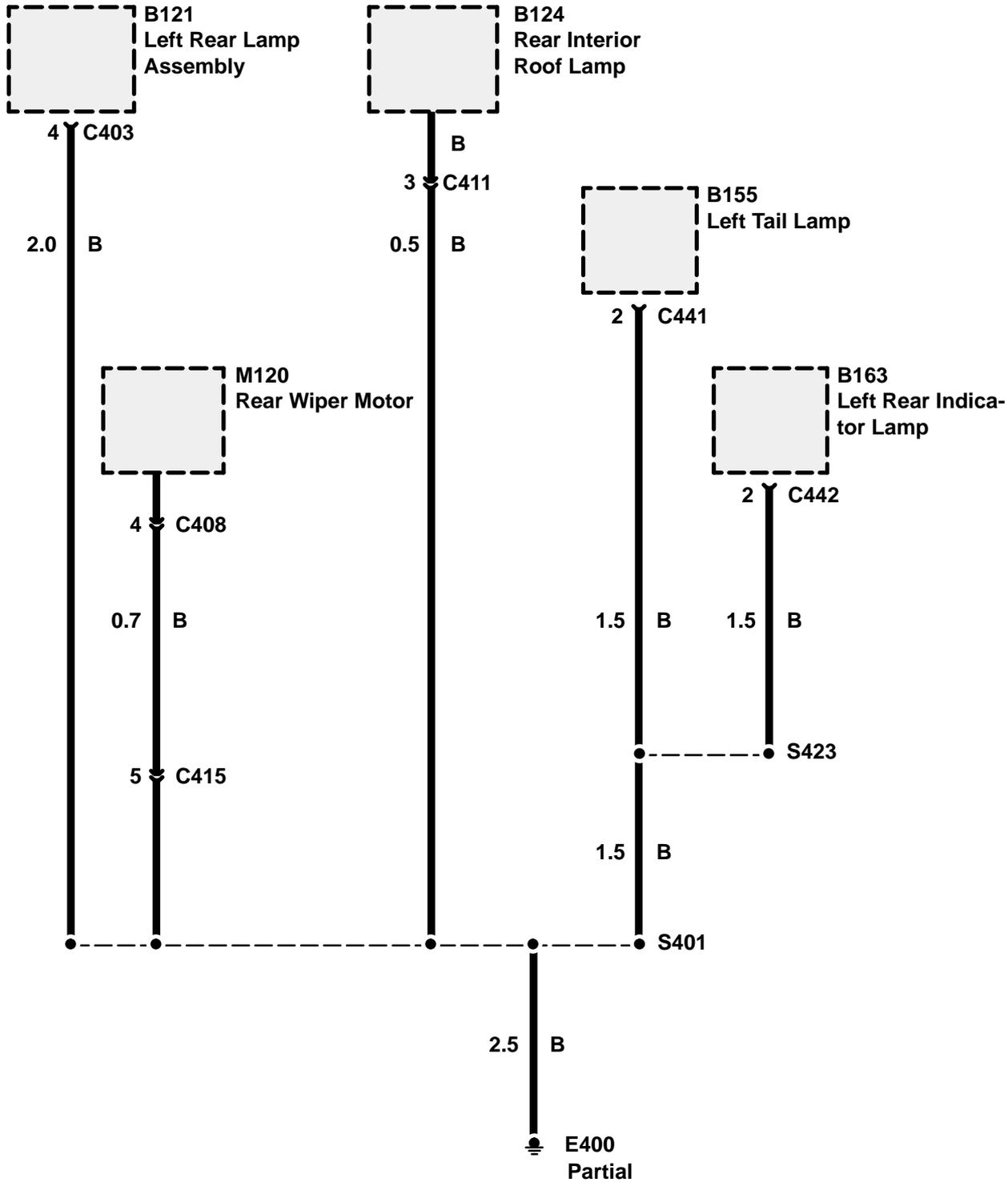
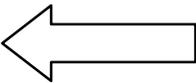




Y5 ETM

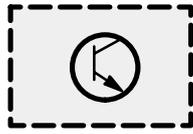
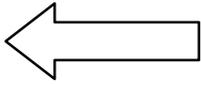
DISCOVERY





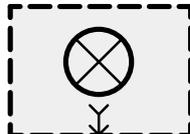
Y5 ETM

DISCOVERY



Z176
Subwoofer Am-
plifier

6 C412



B103
Centre Mounted
Stop Lamp

1 C484



B123
Number Plate
Lamps

1 C404



B123
Number Plate
Lamps

1 C404

S418

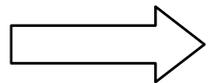
With Subwoofer

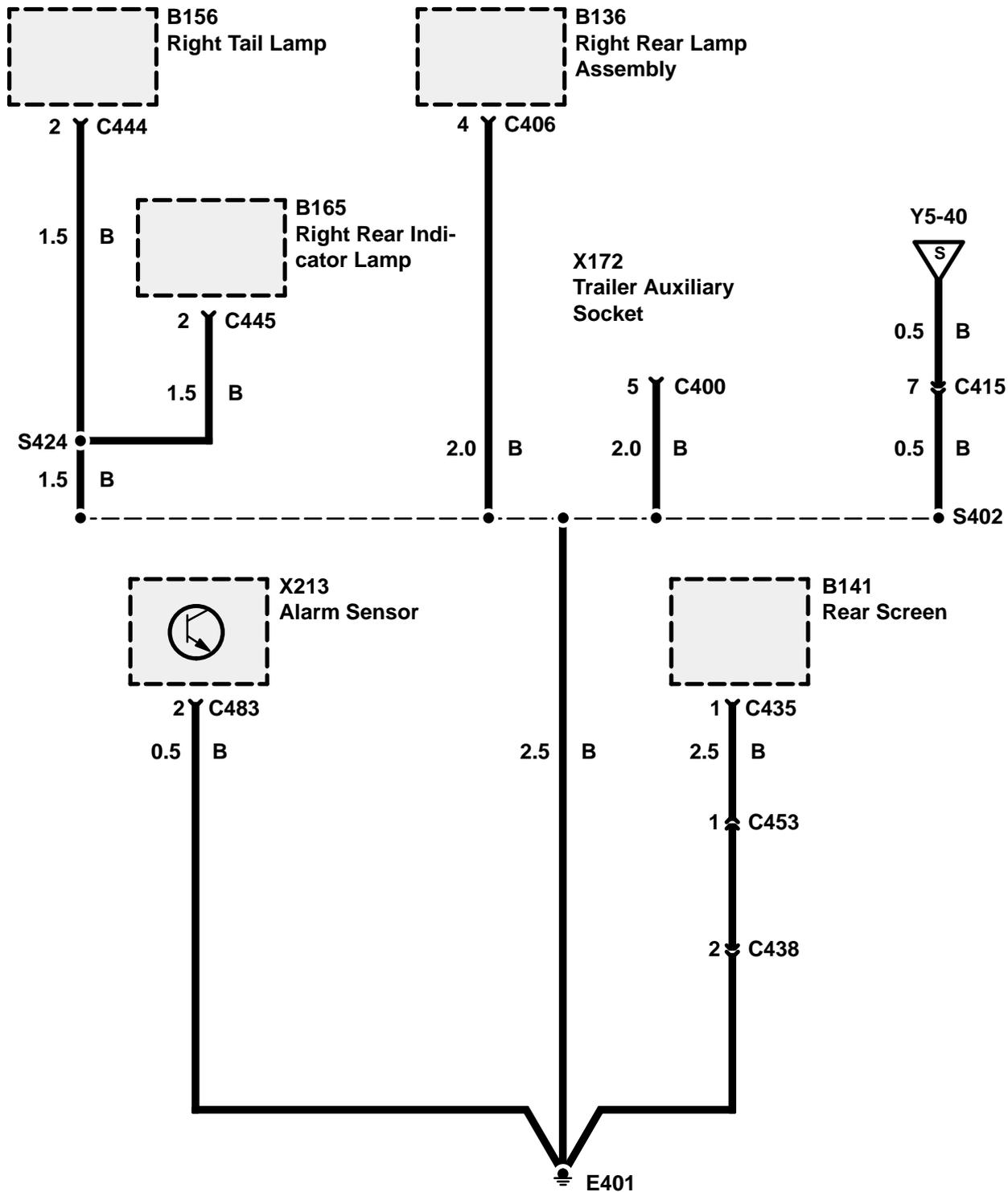
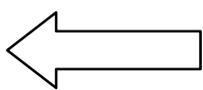
Without Subwoofer

0.5 B



Y5-41





Component	Location	Manual	View
A.B.S. Booster Unit (Z103) ..	LH rear corner of engine compartment	70	4
A.B.S. Diagnostic Connector (X104)	behind RH side of fascia near Fascia Fuse Box	70	
A.B.S. Hydraulic Pump (M102)	LH rear corner of engine compartment	70	4
A.B.S. Load Relay (K101) ...	behind LH side of fascia on bracket	70	96
A.B.S. Pump Relay (K102) ..	behind LH side of fascia on bracket	70	96
A.B.S. Warning Relay (K103)	behind LH side of fascia on bracket	70	96
A/C Dual Pressure Switch (X102)	RH rear corner of engine compartment	82	70
A/C Logic Relay (K170)	behind RH footwell trim panel	82	155
Accessory Relay (K174)	behind LH footwell trim panel	86	86
Air Bag Diagnostic Control Module (Z151)	beneath centre console	76	112
Air Recirculation Solenoid (K123)	behind LH side of fascia LH side of heater evaporator unit	82	91
Air Recirculation Solenoid In-Line Fuse (P138)	behind LH side of fascia	82	98
Air Supply Selector Diode (Z208)	Heater Switch Wire Harness near C2067	82	103
Air Supply Selector Switch (X180)	centre of fascia	82	107
Alarm Bonnet Switch (X212) 300Tdi	RH front of engine compartment	86	39
Alarm Bonnet Switch (X212) MFI – V8 MFI – T16	RH front of engine compartment	86	37
Alarm Sensor (X213)	front centre of roof	86	115
Alarm Sounder (Z171) 300Tdi	RH front of engine compartment	86	39
Alarm Sounder (Z171) MFI – V8 MFI – T16	RH front of engine compartment	86	37
Anti-Lock Brake System ECU (Z108)	behind LH side of fascia on bracket	70	97
Automatic Gear Selector Illumination (B102)	beneath centre console	86	
Automatic Transmission Oil Temperature Switch (X108)	lower LH front of engine compartment	86	24
Boost Pressure Air Temperature Sensor (X254)	top centre front of engine	19	20
Boost Pressure Sensor (X253)	LH rear of engine compartment	19	11
Brake Fluid Level Switch (X111)	RH rear corner of engine compartment top of brake fluid reservoir	70	72
Brake Switch Vent Valve (X112)	behind RH side of fascia on brake pedal support ...	19	126

Component	Location	Manual	View
Catalyst Thermocouple 1 (X243)	LH side of transmission	86	77
Catalyst Thermocouple 2 (X244)	LH side of transmission	86	77
Catalyst Warning ECU 1 (Z196)	behind LH side of fascia	86	89
Catalyst Warning ECU 2 (Z198)	behind LH side of fascia	86	88
Catalyst Warning Relay (K172)	behind LH side of fascia	86	
CD Changer (Z114)	beneath LH front seat	86	
Central Locking Control Unit (Z113)	behind LH side of fascia on bracket	86	93
Clock (Z117)	centre of fascia	86	
Clutch Pedal Position Switch (X200)	behind RH side of fascia near steering column	86	
Column Switch Illumination (B104)	top of steering column on Ignition Switch	86	137
Compressor Clutch (K107) 300Tdi with EDC	RH side of engine on front of A/C compressor	82	50
Compressor Clutch (K107) 300Tdi without EDC	RH side of engine on front of A/C compressor	82	49
Compressor Clutch (K107) MFI – T16	RH side of engine on front of A/C compressor	82	
Compressor Clutch (K107) MFI – V8	RH side of engine on front of A/C compressor	82	41
Compressor Clutch Cut-out Switch (X259)	RH front of engine	82	45
Compressor Clutch Relay (K108)	behind RH footwell trim panel	82	154
Condenser Fan Control Diode 1 (Z209)	Engine Wire Harness near C217	82	
Condenser Fan Control Diode 2 (Z210)	Engine Wire Harness near C217	82	121
Condenser Fan Coolant Temperature Switch (X113) 300Tdi with EDC	RH front of engine on thermostat housing	82	44
Condenser Fan Coolant Temperature Switch (X113) MFI – V8	top centre front of engine	82	55
Condenser Fan Coolant Temperature Switch (X113) 300Tdi without EDC	RH front of engine	82	46
Condenser Fan Relay (K109)	behind LH side of fascia on bracket	86	95
Cooling Fan Motor 1 (M141) MFI – T16 with Air Conditioning	front of engine compartment	82	

Component	Location	Manual	View
Cooling Fan Motor 1 (M141) MFI – T16 without Air Conditioning	front of engine compartment	82	31
Cooling Fan Motor 2 (M142)	front of engine compartment	82	
Cooling Fan Relay (K190)	behind RH footwell trim panel	82	150
Crankshaft Position Sensor (X250)	lower RH rear of engine	19	65
Cruise Control Diode (Z186)	Cruise Control Wire Harness near C218	19	
Cruise Control ECU (Z121)	behind LH side of fascia on bracket	19	90
Cruise Control Lockout Relay (K110)	behind LH side of fascia on bracket	19	
Cruise Control Switch (X115)	centre of fascia	19	
Cruise Control Vacuum Pump (M103)	LH front corner of engine compartment	19	21
Data Link Connector (EGR) (X219) 300Tdi with EGR	behind RH side of fascia	19	157
Data Link Connectors (X127) 300Tdi with EDC	behind RH side of fascia	19	156
Data Link Connectors (X127) MFI – T16	RH rear corner of engine compartment	19	68
Data Link Connectors (X127) MFI – V8	behind RH side of fascia	19	156
Differential Lock Switch (X238)	top RH side of transfer box	86	83
Dim/Dip Relay (K176)	behind LH side of fascia on bracket	86	95
Dim/Dip Resistor (K175)	LH rear of engine compartment	86	3
Direction Indicator Diode 1 (Z212)	behind instrument cluster	86	141
Direction Indicator Diode 2 (Z213)	behind instrument cluster	86	140
Direction Indicator Switch (X116)	top of steering column	86	129
Distributor (Z125) MFI – T16	top rear of engine	86	
Distributor (Z125) MFI – V8	top centre front of engine	86	17
Driver's Seat Buckle Switch (X120)	inside driver's seat belt buckle assembly	86	
EDC Stop Lamp Switch (X252)	behind RH side of fascia on brake pedal support	19	124
EGR Control Solenoid (K171)	LH front of engine compartment	19	23
EGR Valve Control Module (Z149)	behind RH side of fascia	19	157
EGR Valve Position Sensor (X218)	LH side of engine	19	7
Engine Compartment Fuse Box (P125) 300Tdi	RH front of engine compartment	86	38

Component	Location	Manual	View
Engine Compartment Fuse Box (P125) MFI – V8 MFI – T16	RH front of engine compartment	86	36
Engine Control Load Relay (K116)	behind RH footwell trim panel	19	153
Engine Control Module (ECM) (Z132) 300Tdi with EDC	behind RH side of fascia	19	156
Engine Control Module (ECM) (Z132) MFI – T16	RH rear corner of engine compartment	19	69
Engine Control Module (ECM) (Z132) MFI – V8	behind RH side of fascia	19	156
Engine Coolant Temperature Gauge Sensor (X114) 300Tdi with EDC	RH front of engine on thermostat housing	86	44
Engine Coolant Temperature Gauge Sensor (X114) 300Tdi without EDC	RH front of engine	86	45
Engine Coolant Temperature Gauge Sensor (X114) MFI – T16	LH front of engine	86	15
Engine Coolant Temperature Gauge Sensor (X114) MFI – V8	top centre front of engine on intake manifold	86	13
Engine Coolant Temperature Sensor (X126) 300Tdi with EDC	top centre front of engine	19	20
Engine Coolant Temperature Sensor (X126) 300Tdi without EDC	top centre front of engine	19	19
Engine Coolant Temperature Sensor (X126) MFI – T16	LH front of engine	19	15
Engine Coolant Temperature Sensor (X126) MFI – V8	top centre front of engine on intake manifold	19	13
Engine Fuel Temperature Sensor (X128) MFI – T16	RH side of engine	19	43
Engine Fuel Temperature Sensor (X128) MFI – V8	top centre front of engine	19	13
Engine Speed Sensor (X255)	RH rear of engine	19	62
Evaporative Emission Canister Purge Valve (K132) MFI – T16	RH rear corner of engine compartment	17	68
Evaporative Emission Canister Purge Valve (K132) MFI – V8	RH side of engine compartment	17	67
Fan Control Module (Z118)	behind RH footwell trim panel	82	154
Fan Timer Diode (Z211)	Main Wire Harness near HJ3	82	100
Fascia Cigar Lighter (B106)	in front of centre console	86	108

Component	Location	Manual	View
Fascia Fuse Box (P126)	behind RH side of fascia	86	142
Flasher Unit (Z128)	behind RH side of fascia on Fascia Fuse Box	86	143
Front A/C Evaporator Temperature Switch (X101)	LH side of heater evaporator unit	82	104
Front A/C Switch (X225)	centre of fascia	82	105
Front Blower Motor (M101)	behind LH side of fascia LH side of heater evaporator unit	82	99
Front Blower Motor Relay (K192)	behind LH side of fascia	82	98
Front Blower Resistor Unit (Z214)	behind LH side of fascia LH side of heater evaporator unit	80	103
Front Fan Speed Switch (X247)	centre of fascia	82	105
Front Interior Roof Lamp (B107)	front centre of roof	86	115
Front Screen Wash Pump (M105)	LH rear of engine compartment	84	2
Front Sunroof Motor (M143)	front centre of roof	76	116
Front Sunroof Switch (X261)	front centre of roof	76	117
Front Wipe/Wash Switch (X124)	top of steering column	84	138
Front Wiper Motor (M107)	RH side of bulkhead	84	73
Front Wiper Relay (K185)	behind RH footwell trim panel	84	152
Fuel Injector Assembly (K195)	RH side of engine	19	53
Fuel Injectors (K141) MFI – T16	top centre front of engine	19	18
Fuel Injectors (K141) MFI – V8	top centre front of engine	19	12
Fuel Pump Assembly (K196)	RH side of engine	19	52
Fuel Pump Module (Z134)	top of fuel tank	86	188
Fuel Pump Relay (K119)	behind RH footwell trim panel	86	153
Fuel Shut–Off Solenoid (K111) 300Tdi with EGR	RH side of engine on injector pump	19	48
Fuel Shut–Off Solenoid (K111) 300Tdi without EGR	RH side of engine on injector pump	19	47
Fusible Link (P119)	RH front of engine compartment behind battery	86	38
Generator (Z106) 300Tdi	lower LH side of engine	86	16
Generator (Z106) MFI – T16 with Air Conditioning	LH front of engine	86	
Generator (Z106) MFI – T16 without Air Conditioning	RH side of engine	86	58
Generator (Z106) MFI – V8	top centre front of engine	86	56

Component	Location	Manual	View
Generator Suppression Capacitor (Z182) 300Tdi	lower LH side of engine on Generator	86	16
Generator Suppression Capacitor (Z182) MFI – T16 with Air Conditioning	LH front of engine on Generator	86	
Generator Suppression Capacitor (Z182) MFI – T16 without Air Conditioning	RH side of engine on Generator	86	58
Generator Suppression Capacitor (Z182) MFI – V8	top centre front of engine on Generator	86	56
Glow Plug Timer Unit (Z135)	RH front of engine compartment	19	39
Glow Plugs (P120)	RH side of engine	19	51
Handbrake Switch (X191)	beneath centre console on handbrake lever	86	114
Hazard Switch (X220)	centre of fascia	86	
Headlamp Level Switch (X130)	top RH side of fascia	86	
Headlamp Wash Pump (M110)	LH rear of engine compartment	86	2
Heated Rear Screen Relay (K122)	behind RH side of fascia on Fascia Fuse Box	86	143
Heated Rear Screen Switch (X132)	top RH side of fascia near Instrument Cluster	86	133
Horn Relay (K189)	behind LH footwell trim panel	86	86
Horn Switches (X258)	in steering wheel	86	128
Idle Air Control Valve (M112) MFI – T16	RH front of engine	19	42
Idle Air Control Valve (M112) MFI – V8	top rear of engine	19	57
Ignition Coil (Z140) MFI – V8	LH front corner of engine compartment	86	29
Ignition Coil 1 (Z217) MFI – T16	top rear of engine	86	
Ignition Coil 2 (Z218) MFI – T16	top rear of engine	86	
Ignition Coil Noise Suppressor (Z237)	LH front corner of engine compartment on Ignition Coil	86	29
Ignition Control Module (Z139)	top centre front of engine attached to distributor	86	17
Ignition Key Lock Solenoid (K191)	top of steering column	86	132
Ignition Load Relay (K127)	behind RH footwell trim panel	86	151
Ignition Switch (X134)	top of steering column	86	130
Inertia Fuel Shut-Off Switch (X135)	LH rear of engine compartment	19	1
Injector Needle Lift Sensor (X256)	RH rear of engine	19	62

Component	Location	Manual	View
Instrument Cluster (Z142) . . .	top RH side of fascia	86	
Instrument Illumination Rheostat (Z143)	top RH side of fascia near Instrument Cluster	86	
Intake Air Temperature Sensor (X248)	RH rear of engine	19	
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	131
Key-In Switch (X229)	top of steering column on Ignition Switch	86	130
Knock Sensor (X249)	RH side of engine	19	43
Left Condenser Fan Motor (M113)	behind front grille	86	32
Left Front Door Key Switch (X201)	in top rear of LH front door at door handle	86	161
Left Front Door Lock Actuator (M114)	in rear of LH front door	76	160
Left Front Door Switch (X150)	front of LH front door jamb	86	158
Left Front Indicator Lamp (B153)	LH front of vehicle	86	26
Left Front Side Lamp (B166) .	LH front of engine compartment	86	27
Left Front Wheel Speed Sensor (X137)	behind LH front wheel	70	75
Left Front Window Motor (M130)	in front of LH front door	86	162
Left Front Window Switch (X122)	in rear of centre console	86	110
Left Headlamp (B116)	LH front of engine compartment	86	28
Left Headlamp Level Unit (Z145)	behind LH headlamp	86	
Left Heated Oxygen Sensor (X139) MFI – T16	lower LH side of engine compartment	19	9
Left Heated Oxygen Sensor (X139) MFI – V8	lower LH side of engine compartment	19	74
Left Horn (K128)	behind LH side of front grille	86	191
Left Maximum Cool Switch (X267)	behind heater and A/C control panel	82	106
Left Mirror Actuator (M115) . .	top front of LH front door	76	159
Left Rear Door Lock Actuator (M117)	inside front of LH rear door	76	164
Left Rear Door Switch (X142)	in lower part of LH B–post	86	163
Left Rear Indicator Lamp (B163)	LH side of rear bumper	86	189

Component	Location	Manual	View
Left Rear Lamp Assembly (B121)	LH side of luggage compartment	86	173
Left Rear Wheel Speed Sensor (X140)	behind LH rear wheel	70	76
Left Rear Window Console Switch (X141)	in rear of centre console	86	111
Left Rear Window Door Switch (X188)	inside front of LH rear door	86	165
Left Rear Window Motor (M116)	inside front of LH rear door	86	166
Left Repeater Lamp (B122)	LH front side of vehicle	86	25
Left Tail Lamp (B155)	LH side of rear bumper	86	189
Main Lighting Switch (X145)	top of steering column	86	129
Main Rear A/C Switch (X239)	centre of fascia	82	107
Mass Air Flow Sensor (X105) 300Tdi with EDC	LH rear of engine compartment	19	11
Mass Air Flow Sensor (X105) MFI – V8	LH side of engine	19	10
Mirror Adjustment Switch (X146)	top RH side of fascia right of steering column	86	
Multi-Function Relay Unit (Z207)	behind RH footwell trim panel	19	149
Multi-Function Unit (MFU) (Z148)	behind RH side of fascia on Fascia Fuse Box	86	145
Multipoint Fuel Injection Ignition Resistor 1 (K115)	LH front corner of engine compartment near Ignition Coil	86	29
Multipoint Fuel Injection Ignition Resistor 2 (K168)	LH front corner of engine compartment near Ignition Coil	86	29
Neutral Sense Resistor (K166)	Gearbox Wire Harness near C105	86	
Oil Pressure Switch (X149) 300Tdi with EDC	lower RH side of engine	86	52
Oil Pressure Switch (X149) 300Tdi with EGR	lower RH side of engine	86	48
Oil Pressure Switch (X149) 300Tdi without EGR	lower RH side of engine	86	47
Oil Pressure Switch (X149) MFI – T16	lower RH side of engine near oil filter	86	35
Oil Pressure Switch (X149) MFI – V8	lower RH side of engine near oil filter	86	34
Park/Neutral Position Switch (X167)	LH side of transmission	86	78
Passenger's Rear A/C Switch (X240)	centre of roof	82	167
Passenger's Rear Fan Speed Switch (X246)	centre of roof	82	167

Component	Location	Manual	View
Passenger's Rear Sunroof Switch (X264)	centre of roof	76	119
Phase Tap Resistor (K184) 300Tdi	lower LH side of engine on Generator	86	16
Phase Tap Resistor (K184) MFI – T16 with Air Conditioning	LH front of engine on Generator	86	
Phase Tap Resistor (K184) MFI – T16 without Air Conditioning	RH side of engine on Generator	86	58
Phase Tap Resistor (K184) MFI – V8	top centre front of engine on Generator	86	56
Power Amplifier Relay (K187)	behind LH side of fascia	86	
Power Mirror Diode (Z185)	Main Wire Harness near HJ3	86	100
Power Wash Relay (K182)	behind LH side of fascia on bracket	86	94
Radio (Z111)	centre of fascia	86	
Radio Amplifier (Z175)	behind LH side of fascia	86	
Radio Tune Resistor (Z235)	Fascia Wire Harness near Rear Screen Wipe Switch	86	
Radio Tune Switch (X233)	top RH side of fascia near Instrument Cluster	86	136
Radio Volume Down Switch (X236)	top RH side of fascia near Instrument Cluster	86	134
Radio Volume Resistor (Z234)	Fascia Wire Harness near Heated Rear Screen Switch	86	
Radio Volume Up Switch (X235)	top RH side of fascia near Instrument Cluster	86	134
Radio Waveband Resistor (Z236)	Fascia Wire Harness near Rear Screen Wipe Switch	86	
Radio Waveband Switch (X234)	top RH side of fascia near Instrument Cluster	86	136
Rear A/C Control Relay (K194)	LH side of luggage compartment on rear A/C evaporator	82	170
Rear A/C Evaporator Temperature Switch (X260)	LH side of luggage compartment on rear A/C evaporator	82	171
Rear A/C Fan Speed Relay (K205)	LH side of luggage compartment on rear A/C evaporator	82	172
Rear A/C Illumination Relay (K204)	LH side of luggage compartment on rear A/C evaporator	82	171
Rear A/C Refrigerant Control Valve (K207)	LH side of luggage compartment on rear A/C evaporator	82	170
Rear A/C Refrigerant Control Valve Diode (Z228)	LH side of luggage compartment behind trim panel	82	170
Rear A/C Switch Amplifier (Z216)	LH side of luggage compartment on rear A/C evaporator	82	169
Rear A/C Switch Amplifier In-Line Fuse (P140)	LH side of luggage compartment behind trim panel	82	173

Component	Location	Manual	View
Rear Blower Motor (M145) . .	LH side of luggage compartment on rear A/C evaporator	82	169
Rear Blower Motor Relay (K193)	LH side of luggage compartment on rear A/C evaporator	82	172
Rear Blower Resistor Unit (Z215)	LH side of luggage compartment on rear A/C evaporator	82	
Rear Cargo Lamp (B157)	RH rear of luggage compartment	86	
Rear Fog Guard Lamps Switch (X154)	top RH side of fascia near Instrument Cluster	86	133
Rear Interior Roof Lamp (B124)	centre of roof	86	168
Rear Screen Wash Pump (M119)	LH rear of engine compartment	86	2
Rear Screen Wash Switch (X222)	top RH side of fascia near Instrument Cluster	86	135
Rear Screen Wipe Switch (X221)	top RH side of fascia near Instrument Cluster	86	135
Rear Sunroof Lockout Switch (X263)	front centre of roof	76	117
Rear Sunroof Motor (M144)	centre of roof	76	119
Rear Sunroof Switch (X262)	front centre of roof	76	118
Rear Window Isolation Switch (X187)	in rear of centre console	86	111
Rear Wiper Motor (M120)	RH side of tailgate	84	181
Rear Wiper Relay (K183)	behind LH footwell trim panel	86	87
Reverse Switch (X157)	LH side of transmission	86	80
Right Condenser Fan Motor (M121)	behind front grille	82	33
Right Front Door Key Switch (X202)	in top rear of RH front door at door handle	86	161
Right Front Door Lock Actuator (M122)	in rear of RH front door	76	160
Right Front Door Switch (X118)	front of RH front door jamb	86	158
Right Front Indicator Lamp (B154)	RH front of vehicle	86	26
Right Front Side Lamp (B167)	RH front of engine compartment	86	27
Right Front Wheel Speed Sensor (X158)	behind RH front wheel	70	75
Right Front Window Motor (M133)	in front of RH front door	86	162
Right Front Window Switch (X151)	in rear of centre console	86	110
Right Headlamp (B130)	RH front of engine compartment	86	28

Component	Location	Manual	View
Right Headlamp Level Unit (Z155)	behind RH headlamp	86	
Right Heated Oxygen Sensor (X160)	lower RH side of engine	19	66
Right Horn (K134)	behind RH side of front grille	86	191
Right Maximum Cool Switch (X268)	behind heater and A/C control panel	82	106
Right Mirror Actuator (M123)	top front of RH front door	86	159
Right Rear Door Lock Actuator (M125)	inside front of RH rear door	76	164
Right Rear Door Switch (X163)	in lower part of RH B-post	86	163
Right Rear Indicator Lamp (B165)	RH side of rear bumper	86	190
Right Rear Lamp Assembly (B136)	RH rear of luggage compartment	86	177
Right Rear Wheel Speed Sensor (X161)	behind RH rear wheel	70	76
Right Rear Window Console Switch (X162)	in rear of centre console	86	111
Right Rear Window Door Switch (X189)	inside front of RH rear door	86	165
Right Rear Window Motor (M124)	inside front of RH rear door	86	166
Right Repeater Lamp (B137)	RH front side of vehicle	86	25
Right Tail Lamp (B156)	RH side of rear bumper	86	190
Rotary Coupler (Z119)	top of steering column	76	130
Satellite Fuse Box 1 (P127)	behind RH side of fascia on Fascia Fuse Box	86	142
Satellite Fuse Box 2 (P128)	behind RH side of fascia on Fascia Fuse Box	86	142
Saudi Junction Connector (X241)	behind RH side of fascia	86	147
Sounder Relay (K160)	behind LH footwell trim panel	86	87
Speed Trip Module (Z164)	behind LH side of fascia	19	
Starter (M134) 300Tdi with EDC	lower LH side of engine	86	8
Starter (M134) 300Tdi without EDC	lower LH side of engine	86	7
Starter (M134) MFI – T16	lower RH side of engine	86	64
Starter (M134) MFI – V8	lower RH side of engine	86	63
Starter Relay Diode (Z158)	Main Wire Harness near Starter Solenoid Relay	86	150
Starter Solenoid (K136) 300Tdi with EDC	lower LH side of engine	86	8
Starter Solenoid (K136) 300Tdi without EDC	lower LH side of engine	86	7

Component	Location	Manual	View
Starter Solenoid (K136) MFI – T16	lower RH side of engine	86	64
Starter Solenoid (K136) MFI – V8	lower RH side of engine	86	63
Starter Solenoid Relay (K137)	behind RH footwell trim panel	86	151
Steering Wheel Cruise Switches (X266)	in steering wheel	19	128
Stop Lamp Switch (X168)	behind RH side of fascia on brake pedal support	86	125
Stop Lamp Switch Sup- pressor (Z206)	behind RH side of fascia near steering column	86	125
Subwoofer (K146)	LH side of tailgate	86	184
Subwoofer Amplifier (Z176)	LH side of tailgate on Subwoofer	86	184
Sunroof Control Unit (Z162)	front centre of roof	76	116
Tailgate Lock Actuator (M132)	LH side of tailgate	76	182
Tailgate Switch (X170)	in RH side of tailgate door jamb	86	
Theft Alarm LED (B151)	centre of fascia	86	
Theft Alarm Relay (K159)	behind LH footwell trim panel	86	87
Theft Alarm Unit (Z163)	behind LH side of fascia on bracket	86	93
Throttle Position Sensor (X171) 300Tdi with EGR	RH side of engine on injector pump	19	48
Throttle Position Sensor (X171) MFI – T16	RH front of engine	19	42
Throttle Position Sensor (X171) MFI – V8	top centre front of engine	19	14
Throttle Position Sensor (X257)	behind RH side of fascia	19	123
Trailer Auxiliary Socket (X172)	RH rear of luggage compartment behind trim panel	86	178
Transfer Box Oil Temperature Switch (X174)	LH side of transfer box	86	81
Transfer Box Position Switch (X175)	top RH side of transfer box	86	84
Transfer Box Solenoid (K154)	top RH side of transfer box	86	84
Transfer Box Solenoid Diode (Z232)	Gearbox Wire Harness near C105	86	
Transmission Range Selector Switch (Z110)	beneath centre console near transmission range selector	86	109
Tune Select Resistor (K140)	behind RH side of fascia	19	122
Vehicle Speed Sensor (X190)	LH side of transfer box	86	82
Water Valve (K206)	RH rear corner of engine compartment	82	61
Window Lift ECU (Z147)	behind LH side of fascia on bracket	86	92

Connector	Location	View
C100 (3-W)	RH front of engine compartment on Engine Compartment Fuse Box	40
C101 (4-W)	RH front of engine compartment on Engine Compartment Fuse Box	40
C103 (3-B)	RH front of engine compartment on Right Headlamp	28
C104 (3-B)	LH front of engine compartment on Left Headlamp	28
C105 (13-B)	LH rear of engine compartment	1
C109 (2-W)	LH front of engine compartment on Left Front Side Lamp	27
C110 (2-W)	RH front of engine compartment on Right Front Side Lamp	27
C112 (3-W) MFI – V8	LH rear corner of engine to Left Heated Oxygen Sensor	74
C112 (4-B) MFI – T16	lower LH side of engine to Left Heated Oxygen Sensor	9
C113 (3-W)	RH rear of engine to Right Heated Oxygen Sensor	57
C114 (2-W)	RH front of engine compartment on Engine Compartment Fuse Box	40
C115 (3-W)	RH front of engine compartment on Engine Compartment Fuse Box	40
C116 (1-W)	RH front of engine compartment on Engine Compartment Fuse Box	40
C120 (2-B)	LH rear of engine compartment on Rear Screen Wash Pump	2
C123 (2-B)	RH front side of vehicle on Right Repeater Lamp	25
C124 (2-B)	LH front side of vehicle on Left Repeater Lamp	25
C125 (2-B)	LH rear corner of engine compartment to A.B.S. Hydraulic Pump	4
C127 (3-B)	RH rear corner of engine compartment on Brake Fluid Level Switch	72
C129 (13-B)	LH rear corner of engine compartment on A.B.S. Booster Unit	4
C130 (2-W)	LH rear corner of engine compartment to Left Front Wheel Speed Sensor	4
C131 (2-W)	RH side of engine compartment to Right Front Wheel Speed Sensor	60
C132 (4-B) MFI – V8	top rear of engine on Idle Air Control Valve	57
C132 (6-B) MFI – T16	RH front of engine on Idle Air Control Valve	42
C133 (5-B) 300Tdi with EDC	LH rear of engine compartment on Mass Air Flow Sensor	11
C133 (6-B) MFI – V8	LH side of engine on Mass Air Flow Sensor	10
C134 (2-B) MFI – T16	top centre front of engine on Fuel Injectors	18
C134 (2-B) MFI – V8	LH side of engine on Fuel Injectors	12
C135 (2-B) MFI – T16	top centre front of engine on Fuel Injectors	18
C135 (2-B) MFI – V8	RH side of engine on Fuel Injectors	54
C136 (2-B) MFI – T16	top centre front of engine on Fuel Injectors	18
C136 (2-B) MFI – V8	LH side of engine on Fuel Injectors	12
C137 (2-B) MFI – T16	top centre front of engine on Fuel Injectors	18
C137 (2-B) MFI – V8	RH side of engine on Fuel Injectors	54
C138 (2-B) MFI – V8	LH side of engine on Fuel Injectors	12
C139 (2-B) MFI – V8	RH side of engine on Fuel Injectors	54
C140 (2-B) MFI – V8	LH rear of engine on Fuel Injectors	5
C141 (2-B) MFI – V8	RH side of engine on Fuel Injectors	57
C142 (2-N)	lower RH side of engine on Oil Pressure Switch	35

Connector	Location	View
C144 (2–RU) MFI – T16	RH rear corner of engine compartment on Evaporative Emission Canister Purge Valve	68
C144 (2–RU) MFI – V8	RH side of engine compartment on Evaporative Emission Canister Purge Valve	67
C145 (2–W) 300Tdi with EDC	RH side of engine to Compressor Clutch	50
C145 (2–W) 300Tdi without EDC	RH side of engine to Compressor Clutch	49
C145 (2–W) MFI – T16	RH side of engine to Compressor Clutch	
C145 (2–W) MFI – V8	RH side of engine to Compressor Clutch	41
C146 (2–B) 300Tdi with EDC	RH front of engine on Condenser Fan Coolant Temperature Switch	44
C146 (2–B) 300Tdi without EDC	RH front of engine on Condenser Fan Coolant Temperature Switch	46
C146 (2–B) MFI – V8	top centre front of engine on Condenser Fan Coolant Temperature Switch	55
C148 (3–B)	top centre front of engine on Ignition Control Module	17
C149 (3–B) MFI – T16	RH front of engine on Throttle Position Sensor	42
C149 (3–B) MFI – V8	top centre front of engine to Throttle Position Sensor	14
C150 (2–S) MFI – T16	RH side of engine on Engine Fuel Temperature Sensor	43
C150 (2–U) MFI – V8	top centre front of engine on Engine Fuel Temperature Sensor	13
C152 (2–N) 300Tdi with EDC	top centre front of engine on Engine Coolant Temperature Sensor	20
C152 (2–N) 300Tdi without EDC	top centre front of engine on Engine Coolant Temperature Sensor	19
C152 (2–N) MFI – T16	LH front of engine on Engine Coolant Temperature Sensor	15
C152 (2–N) MFI – V8	top centre front of engine on Engine Coolant Temperature Sensor	13
C153 (1–B)	LH front corner of engine compartment on Ignition Coil	30
C154 (1–B)	LH front corner of engine compartment on Ignition Coil	30
C155 (1–B)	LH front corner of engine compartment on Ignition Coil	30
C156 (1–B)	LH front corner of engine compartment on Ignition Coil	30
C159 (6–B)	RH front of engine compartment on Glow Plug Timer Unit	39
C160 (3–B)	RH side of engine to Throttle Position Sensor	59
C161 (1–W) 300Tdi without EGR	RH side of engine to Compressor Clutch	47
C162 (2–B)	RH front of engine on Compressor Clutch Cut–out Switch	45
C164 (3–B)	LH side of engine on EGR Valve Position Sensor	7
C165 (2–B)	LH front of engine compartment on EGR Control Solenoid	23
C166 (2–B) 300Tdi	LH front of engine compartment	23
C166 (2–B) MFI – V8 MFI – T16	LH front of engine compartment	22
C167 (3–B)	LH front corner of engine compartment on Cruise Control Vacuum Pump	21
C168 (2–B)	behind LH side of front grille on Left Horn	191
C169 (2–B)	behind RH side of front grille on Right Horn	191

Connector	Location	View
C170 (2-R)	LH rear of engine compartment on Front Screen Wash Pump	2
C171 (3-B)	LH rear of engine compartment on Inertia Fuel Shut-Off Switch	1
C173 (2-B)	LH rear of engine compartment on Headlamp Wash Pump	2
C177 (2-B)	LH rear of engine compartment to Dim/Dip Resistor	3
C178 (2-B) 300Tdi	RH front of engine compartment to Alarm Bonnet Switch	39
C178 (2-B) MFI – V8 MFI – T16	RH front of engine compartment to Alarm Bonnet Switch	37
C179 (2-U)	RH rear corner of engine compartment on Water Valve	61
C181 (2-S)	RH rear corner of engine compartment on A/C Dual Pressure Switch	70
C182 (2-B)	behind front grille to Right Condenser Fan Motor	33
C183 (2-B)	behind front grille to Left Condenser Fan Motor	32
C190 (3-B)	behind LH headlamp on Left Headlamp Level Unit	28
C191 (3-B)	behind RH headlamp on Right Headlamp Level Unit	28
C195 (4-W)	RH rear corner of engine compartment	71
C196 (2-NU)	RH rear of engine to Injector Needle Lift Sensor	62
C197 (3-B)	RH rear of engine to Engine Speed Sensor	62
C198 (3-W) 300Tdi with EDC	RH side of engine to Fuel Injector Assembly	53
C198 (6-B) MFI – T16	top rear of engine to Fuel Injectors	61
C199 (8-W)	RH side of engine to Fuel Pump Assembly	52
C200 (4-W)	behind RH side of fascia near steering column	127
C201 (7-W)	top of steering column on Main Lighting Switch	129
C202 (24-W)	behind RH side of fascia near steering column	127
C203 (7-W)	behind RH side of fascia on Fascia Fuse Box	145
C204 (24-W)	behind RH side of fascia on Fascia Fuse Box	146
C205 (24-B)	behind RH side of fascia on Multi-Function Unit (MFU)	145
C206 (4-W)	behind RH side of fascia on Fascia Fuse Box	147
C207 (10-B)	on Instrument Cluster	139
C208 (18-W)	behind RH side of fascia on Fascia Fuse Box	144
C209 (24-W)	behind RH side of fascia left of steering column	120
C211 (10-W)	behind RH side of fascia on Fascia Fuse Box	146
C212 (14-W)	behind LH side of fascia	91
C214 (3-B)	top RH side of fascia on Instrument Illumination Rheostat	
C215 (24-Y)	behind RH side of fascia left of steering column	120
C216 (7-N)	behind RH side of fascia right of heater evaporator unit	121
C217 (20-W)	behind RH side of fascia right of heater evaporator unit	121
C218 (8-W)	behind LH side of fascia on bracket	94
C219 (4-W)	behind RH side of fascia on Fascia Fuse Box	144
C220 (3-N)	behind RH side of fascia to Ignition Switch	127
C221 (10-W)	on Instrument Cluster	141

Connector	Location	View
C222 (10-W)	on Instrument Cluster	139
C223 (5-U)	on Instrument Cluster	139
C224 (6-W)	behind RH side of fascia to Front Wiper Motor	
C225 (16-B) Except Japan ..	behind LH side of fascia on Theft Alarm Unit	93
C225 (16-B) Japan	behind LH side of fascia on Central Locking Control Unit	93
C226 (3-W)	behind RH side of fascia on Fascia Fuse Box	147
C227 (4-B)	behind RH side of fascia on Stop Lamp Switch	125
C228 (8-W)	behind RH side of fascia on Mirror Adjustment Switch	
C229 (1-W)	behind RH side of fascia on Fascia Fuse Box	145
C230 (8-S)	centre of fascia on Radio	
C238 (5-Y) MFI – T16	behind RH footwell trim panel on Cooling Fan Relay	150
C238 (9-B) MFI – V8	behind RH footwell trim panel on Fan Control Module	154
C239 (5-U)	behind RH footwell trim panel on Engine Control Load Relay	153
C240 (5-Y)	behind RH footwell trim panel on Fuel Pump Relay	153
C241 (5-Y)	behind RH footwell trim panel on Compressor Clutch Relay	154
C242 (5-B)	behind RH footwell trim panel on A/C Logic Relay	155
C243 (40-B) MFI – V8	behind RH side of fascia on Engine Control Module (ECM)	156
C243 (55-B) 300Tdi with EDC	behind RH side of fascia on Engine Control Module (ECM)	156
C244 (5-W) MFI – V8	behind RH side of fascia Data Link Connectors	156
C245 (4-W) 300Tdi with EDC	behind RH side of fascia Data Link Connectors	156
C245 (5-W) MFI – V8	behind RH side of fascia Data Link Connectors	156
C246 (2-U)	behind RH side of fascia on Tune Select Resistor	122
C247 (16-B)	behind RH side of fascia on EGR Valve Control Module	157
C248 (3-W)	behind RH side of fascia Data Link Connector (EGR)	157
C249 (5-G)	top RH side of fascia on Rear Screen Wash Switch	135
C250 (5-W)	top RH side of fascia on Rear Screen Wipe Switch	135
C252 (6-R)	behind RH side of fascia near steering column	120
C254 (1-W)	behind RH side of fascia on Fascia Fuse Box	144
C255 (1-B)	on Instrument Cluster	139
C259 (6-W)	behind RH side of fascia on Headlamp Level Switch	143
C260 (10-K)	centre of fascia on Radio	
C262 (5-U)	centre of fascia on Cruise Control Switch	
C263 (5-U)	top RH side of fascia on Rear Fog Guard Lamps Switch	133
C264 (5-U)	top RH side of fascia on Heated Rear Screen Switch	133
C267 (10-B)	centre of fascia on Hazard Switch	
C268 (8-N)	centre of fascia on Radio	
C269 (2-)	centre of fascia on Theft Alarm LED	
C270 (4-B)	centre of fascia on Clock	

Connector	Location	View
C274 (6-W) Except Japan . . .	behind LH side of fascia on Theft Alarm Unit	93
C274 (6-W) Japan	behind LH side of fascia on Central Locking Control Unit	93
C277 (23-W)	behind LH side of fascia	91
C279 (5-N)	behind LH footwell trim panel on Theft Alarm Relay	87
C280 (5-W)	behind LH footwell trim panel on Sounder Relay	87
C281 (5-G)	behind LH footwell trim panel on Rear Wiper Relay	87
C282 (5-Y)	behind LH footwell trim panel on Accessory Relay	86
C283 (5-Y)	behind LH footwell trim panel on Horn Relay	86
C284 (15-B)	behind LH side of fascia on Cruise Control ECU	90
C285 (4-W)	behind LH side of fascia on Catalyst Warning ECU 1	89
C286 (4-W)	behind LH side of fascia on Catalyst Warning ECU 2	88
C287 (10-W)	behind LH side of fascia on Window Lift ECU	92
C288 (8-W)	behind LH side of fascia on Window Lift ECU	92
C292 (5-Y)	behind LH side of fascia on Condenser Fan Relay	95
C293 (5-U)	behind LH side of fascia on Dim/Dip Relay	95
C298 (3-W)	behind LH side of fascia	99
C299 (5-Y)	behind LH side of fascia on Catalyst Warning Relay	
C301 (6-W)	beneath centre console	113
C306 (3-W)	beneath centre console	113
C312 (35-B)	behind LH side of fascia on Anti-Lock Brake System ECU	97
C313 (5-U)	behind RH side of fascia A.B.S. Diagnostic Connector	
C323 (5-B)	LH side of transmission to Park/Neutral Position Switch	78
C336 (3-W)	behind RH footwell trim panel	150
C337 (7-G)	in rear of centre console on Left Front Window Switch	110
C338 (7-W)	in rear of centre console on Right Front Window Switch	110
C339 (7-Y)	in rear of centre console on Left Rear Window Console Switch	111
C340 (7-R)	in rear of centre console on Right Rear Window Console Switch	111
C343 (7-N)	in rear of centre console on Rear Window Isolation Switch	111
C344 (6-B)	beneath centre console to Transmission Range Selector Switch	109
C346 (2-U)	beneath centre console to Automatic Gear Selector Illumination	109
C350 (5-G)	behind LH side of fascia on A.B.S. Warning Relay	96
C351 (5-Y)	behind LH side of fascia on A.B.S. Load Relay	96
C352 (5-B)	behind LH side of fascia on A.B.S. Pump Relay	96
C353 (2-W)	beneath centre console on Fascia Cigar Lighter	108
C354 (2-W)	beneath RH rear of vehicle to Left Rear Wheel Speed Sensor	187
C355 (2-W)	beneath LH rear of vehicle to Right Rear Wheel Speed Sensor	186
C356 (1-B)	beneath centre console on Fascia Cigar Lighter	108
C368 (3-B)	top RH side of transfer box to Transfer Box Position Switch	84
C369 (2-B)	top RH side of transfer box to Transfer Box Solenoid	84

Connector	Location	View
C370 (3-B)	LH side of transfer box on Vehicle Speed Sensor	82
C371 (2-B)	LH side of transfer box on Transfer Box Oil Temperature Switch	81
C372 (2-W)	on top of transmission	79
C378 (2-B)	beneath centre console to Driver's Seat Buckle Switch	108
C381 (3-)	beneath LH front seat on CD Changer	
C382 (8-W)	front centre of roof on Sunroof Control Unit	116
C383 (10-W)	front centre of roof on Sunroof Control Unit	116
C384 (7-G)	front centre of roof on Front Sunroof Switch	117
C385 (7-W)	front centre of roof on Rear Sunroof Switch	118
C386 (5-S)	front centre of roof on Rear Sunroof Lockout Switch	117
C387 (4-W)	front centre of roof to Front Sunroof Motor	116
C388 (4-W)	centre of roof to Rear Sunroof Motor	119
C389 (3-W)	centre of roof on Passenger's Rear Sunroof Switch	119
C391 (5-W)	centre of roof on Passenger's Rear Fan Speed Switch	167
C392 (5-U)	centre of roof on Passenger's Rear A/C Switch	167
C400 (7-B)	RH rear of luggage compartment Trailer Auxiliary Socket	178
C402 (1-B)	LH side of tailgate to Number Plate Lamps	183
C403 (6-W)	LH side of luggage compartment on Left Rear Lamp Assembly	173
C404 (1-B)	LH side of tailgate to Number Plate Lamps	183
C406 (6-W)	RH rear of luggage compartment on Right Rear Lamp Assembly	177
C407 (3-B)	beneath LH rear of vehicle	185
C408 (4-W)	RH side of tailgate to Rear Wiper Motor	181
C410 (3-W)	front centre of roof on Front Interior Roof Lamp	115
C411 (4-B)	centre of roof to Right Front Door Lamp	168
C412 (6-W)	LH side of tailgate on Subwoofer Amplifier	184
C413 (4-W)	LH side of tailgate on Subwoofer Amplifier	184
C414 (2-W)	LH side of tailgate to Tailgate Lock Actuator	182
C415 (8-W)	in RH side of tailgate door jamb	179
C424 (1-B)	RH rear of luggage compartment Trailer Auxiliary Socket	178
C425 (1-B)	RH rear of luggage compartment Trailer Auxiliary Socket	178
C434 (4-B)	top of fuel tank to Fuel Pump Module	188
C437 (6-W)	in RH side of tailgate door jamb	179
C438 (2-W)	in RH side of tailgate door jamb	179
C441 (2-R)	behind LH side of rear bumper on Left Tail Lamp	189
C442 (2-B)	behind LH side of rear bumper on Left Rear Indicator Lamp	189
C444 (2-B)	behind RH side of rear bumper on Right Tail Lamp	190
C445 (2-R)	behind RH side of rear bumper on Right Rear Indicator Lamp	190
C447 (2-W)	LH side of luggage compartment	174
C448 (16-W)	LH side of luggage compartment	174

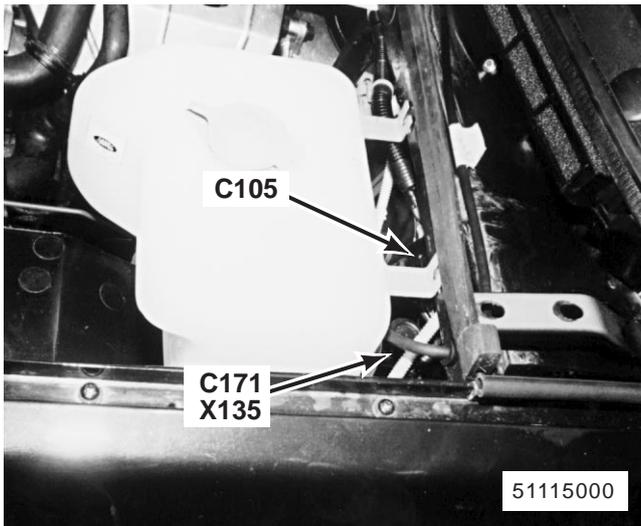
Connector	Location	View
C453 (1-B)	LH side of tailgate	183
C454 (1-B)	RH side of tailgate to Rear Screen	180
C455 (1-B)	RH side of tailgate	180
C456 (1-B)	LH side of tailgate	183
C457 (5-W)	LH side of luggage compartment on Rear Blower Motor Relay	172
C458 (2-B)	LH side of luggage compartment on Rear Blower Motor	169
C459 (4-B)	LH side of luggage compartment on Rear Blower Resistor Unit	
C462 (2-B)	LH side of luggage compartment on Rear A/C Switch Amplifier In-Line Fuse	173
C463 (4-W)	LH side of luggage compartment on Rear A/C Control Relay	170
C464 (2-S)	LH side of luggage compartment on Rear A/C Refrigerant Control Valve	170
C465 (4-W)	LH side of luggage compartment on Rear A/C Illumination Relay	171
C466 (4-W)	LH side of luggage compartment on Rear A/C Fan Speed Relay	172
C467 (6-W)	LH side of luggage compartment on Rear A/C Switch Amplifier	169
C483 (4-B)	front centre of roof on Alarm Sensor	115
C500 (2-B)	in front of LH front door to Left Front Window Motor	162
C501 (2-W)	behind LH footwell trim panel	85
C502 (13-W)	behind LH footwell trim panel	85
C503 (6-W)	top front of LH front door to Left Mirror Actuator	159
C504 (4-W)	in top rear of LH front door to Left Front Door Key Switch	161
C507 (2-W) Japan	in rear of LH front door to Left Front Door Lock Actuator	160
C507 (4-W) Except Japan Without Theft Alarm	in rear of LH front door to Left Front Door Lock Actuator	160
C507 (6-W) Except Japan With Theft Alarm	in rear of LH front door to Left Front Door Lock Actuator	160
C510 (2-W)	behind LH footwell trim panel	85
C600 (2-B)	in front of RH front door to Right Front Window Motor	162
C601 (2-W)	behind RH footwell trim panel	148
C602 (13-W)	behind RH footwell trim panel	148
C603 (6-W)	top front of RH front door to Right Mirror Actuator	159
C604 (4-W)	in top rear of RH front door to Right Front Door Key Switch	161
C607 (4-W) Except Japan Without Theft Alarm	in rear of RH front door to Right Front Door Lock Actuator	160
C607 (6-W) Except Japan With Theft Alarm	in rear of RH front door to Right Front Door Lock Actuator	160
C610 (2-W)	behind RH footwell trim panel	148
C700 (3-W)	in lower part of LH B-post	163
C701 (2-W)	in lower part of LH B-post	163
C703 (3-B)	inside front of LH rear door to Left Rear Window Motor	166
C706 (2-W)	inside front of LH rear door to Left Rear Door Lock Actuator	164

Connector	Location	View
C709 (5-W)	inside front of LH rear door on Left Rear Window Door Switch	165
C800 (3-W)	in lower part of LH B-post	163
C801 (2-W)	in lower part of LH B-post	163
C803 (3-B)	inside front of RH rear door to Right Rear Window Motor	166
C806 (2-W)	inside front of RH rear door to Right Rear Door Lock Actuator	164
C809 (5-W)	inside front of RH rear door on Right Rear Window Door Switch	165
C1000 (2-G) 300Tdi with EDC	top centre front of engine on Boost Pressure Air Temperature Sensor ..	20
C1000 (2-G) MFI – T16	RH rear of engine on Intake Air Temperature Sensor	
C1001 (3-B)	LH rear of engine compartment on Boost Pressure Sensor	11
C1002 (3-B)	top rear of engine on Ignition Coil 1	
C1003 (3-B)	top rear of engine on Ignition Coil 2	
C1004 (2-U)	lower RH rear of engine to Crankshaft Position Sensor	65
C1005 (2-W)	RH side of engine on Knock Sensor	43
C1006 (3-W)	RH rear corner of engine compartment Data Link Connectors	68
C1007 (36-B)	RH rear corner of engine compartment on Engine Control Module (ECM)	69
C1008 (18-B)	RH rear corner of engine compartment on Engine Control Module (ECM)	69
C1009 (2-B)	LH front of vehicle on Left Front Indicator Lamp	26
C1010 (2-B)	RH front of vehicle on Right Front Indicator Lamp	26
C1011 (2-W) MFI – T16 with Air Conditioning	front of engine compartment to Cooling Fan Motor 1	
C1011 (2-W) MFI – T16 without Air Conditioning	front of engine compartment to Cooling Fan Motor 1	31
C1012 (2-W)	front of engine compartment to Cooling Fan Motor 2	
C1015 (4-W)	RH rear corner of engine compartment to Throttle Position Sensor	71
C1016 (2-B)	lower LH front of engine compartment on Automatic Transmission Oil Temperature Switch	24
C1018 (1-W)	LH front corner of engine compartment on Ignition Coil	30
C2000 (5-Y)	behind LH side of fascia on Interlock Relay 1	
C2001 (5-)	behind LH side of fascia on Interlock Relay 2	
C2005 (2-W)	behind RH side of fascia on Brake Switch Vent Valve	126
C2006 (5-Y)	behind RH footwell trim panel on Starter Solenoid Relay	151
C2007 (5-Y)	behind RH footwell trim panel on Ignition Load Relay	151
C2008 (5-G)	behind RH footwell trim panel on Front Wiper Relay	152
C2009 (4-W)	top of steering column on Direction Indicator Switch	129
C2010 (6-W)	top of steering column to Rotary Coupler	130
C2011 (6-W)	top of steering column on Front Wipe/Wash Switch	138
C2012 (8-W)	top of steering column	131
C2013 (4-B)	top of steering column	137

Connector	Location	View
C2014 (2-B)	top of steering column on Ignition Key Lock Solenoid	132
C2015 (8-W)	top of steering column on Front Wipe/Wash Switch	138
C2016 (1-W)	behind RH side of fascia on Fascia Fuse Box	144
C2020 (29-R)	beneath centre console on Air Bag Diagnostic Control Module	112
C2021 (5-) Manual Transmission	behind LH side of fascia on Speed Trip Module	
C2021 (5-) Automatic Transmission	behind LH side of fascia on Cruise Control Lockout Relay	
C2022 (5-W)	behind heater and A/C control panel on Front Fan Speed Switch	105
C2023 (4-W)	behind heater and A/C control panel	106
C2024 (5-W)	behind heater and A/C control panel on Main Rear A/C Switch	107
C2025 (5-W)	behind heater and A/C control panel on Front A/C Switch	105
C2026 (5-B)	behind heater and A/C control panel on Air Supply Selector Switch	107
C2027 (5-W)	behind LH side of fascia LH side of heater evaporator unit	102
C2028 (6-W)	behind RH footwell trim panel on E200	152
C2029 (6-W)	behind LH footwell trim panel on E201	85
C2031 (6-W)	beneath centre console on E303	114
C2035 (2-B)	behind RH side of fascia on Clutch Pedal Position Switch	
C2036 (7-B)	in steering wheel to Rotary Coupler	128
C2051 (8-B)	behind RH footwell trim panel on Multi-Function Relay Unit	149
C2052 (6-B)	behind RH footwell trim panel on Multi-Function Relay Unit	149
C2053 (5-Y)	behind LH side of fascia on Power Amplifier Relay	
C2054 (18-)	behind LH side of fascia on Radio Amplifier	
C2055 (13-W)	behind RH side of fascia left of steering column	120
C2056 (5-U)	top RH side of fascia on Radio Tune Switch	136
C2057 (5-U)	top RH side of fascia on Radio Waveband Switch	136
C2058 (5-W)	top RH side of fascia on Radio Volume Up Switch	134
C2059 (5-G)	top RH side of fascia on Radio Volume Down Switch	134
C2060 (5-)	centre of fascia on Radio	
C2061 (7-)	centre of fascia on Radio	
C2062 (1-B)	behind RH side of fascia Saudi Junction Connector	147
C2063 (2-B)	behind RH side of fascia to Stop Lamp Switch Suppressor	125
C2064 (2-W)	behind LH side of fascia on Catalyst Warning ECU 1	89
C2065 (2-W)	behind LH side of fascia on Catalyst Warning ECU 2	88
C2066 (8-W)	behind LH side of fascia LH side of heater evaporator unit	101
C2067 (10-W)	behind LH side of fascia LH side of heater evaporator unit	102
C2068 (5-W)	behind LH side of fascia on Front Blower Motor Relay	98
C2069 (2-B)	behind LH side of fascia on Front Blower Motor	99
C2070 (4-B)	behind LH side of fascia on Front Blower Resistor Unit	103

Connector	Location	View
C2071 (2-B)	behind LH side of fascia on Air Recirculation Solenoid In-Line Fuse ...	98
C2072 (4-Y)	behind LH side of fascia on Air Recirculation Solenoid	91
C2073 (10-W)	behind RH side of fascia right of heater evaporator unit	121
C2074 (5-Y)	behind LH side of fascia on Power Wash Relay	94
C2075 (3-W)	behind RH side of fascia on EDC Stop Lamp Switch	124
C2079 (2-)	centre of fascia on Radio	
C3000 (1-B)	on top of transmission to Reverse Switch	79
C3001 (1-B)	on top of transmission to Reverse Switch	79
Ground	Location	View
E100 300Tdi	RH front of engine compartment behind battery	38
E100 MFI – V8 MFI – T16 ...	RH front of engine compartment behind battery	36
E101 300Tdi	LH front of engine compartment on fender well	23
E101 MFI – V8 MFI – T16 ...	LH front of engine compartment on fender well	22
E103 300Tdi	RH front of engine compartment behind battery	38
E103 MFI – T16	RH front of engine compartment behind battery	36
E103 MFI – V8	LH rear corner of engine below valve cover	6
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	73
E200	behind RH footwell trim panel	152
E201	behind LH footwell trim panel	85
E203	behind LH side of fascia	97
E204	behind LH footwell trim panel	85
E303	beneath centre console	114
E400	LH side of luggage compartment	175
E401	RH rear of luggage compartment	176
E402	RH side of tailgate	181
Splice	Location	View
HJ1 (20-W)	behind LH side of fascia	101
HJ2 (20-U)	behind LH side of fascia	100
HJ3 (20-W)	behind LH side of fascia	100
HJ4 (20-W)	behind LH side of fascia	101
HJ5 (20-W)	behind LH side of fascia	101
HJ6 (20-G)	behind LH side of fascia	101
HJ7 (20-U)	behind RH side of fascia	122

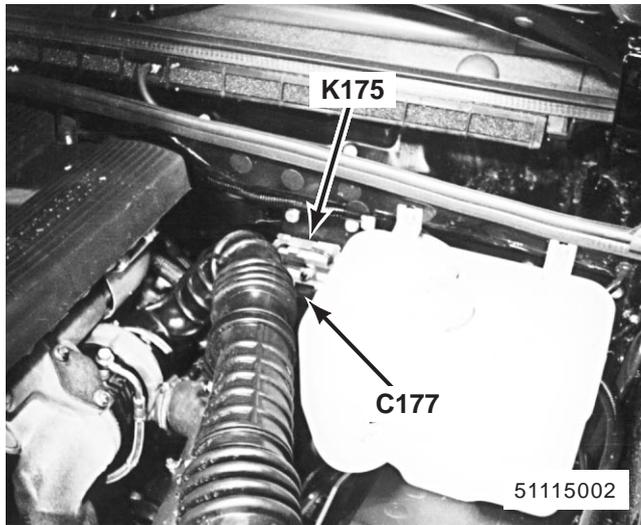
Splice	Location	View
HJ8 (20-S)	behind instrument cluster	141
HJ9 (20-S)	behind instrument cluster	140
HJ10 (20-B)	behind RH footwell trim panel	148
HJ11 (20-W)	behind LH side of fascia	100



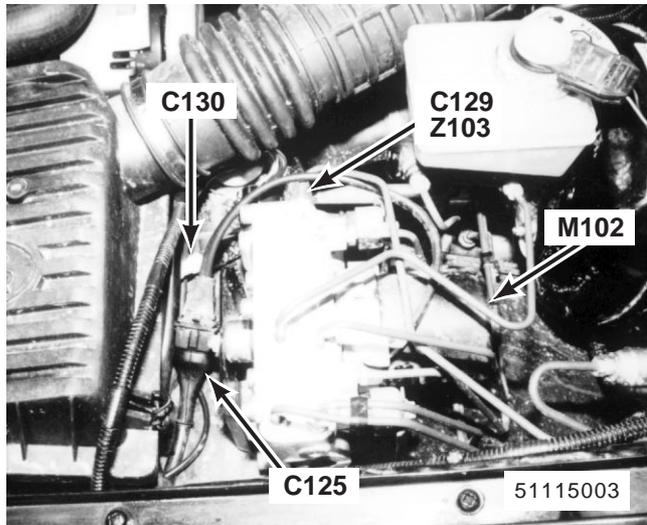
1. LH rear of engine compartment
 X135 Inertia Fuel Shut-Off Switch
 C105 (13-B)
 C171 (3-B)



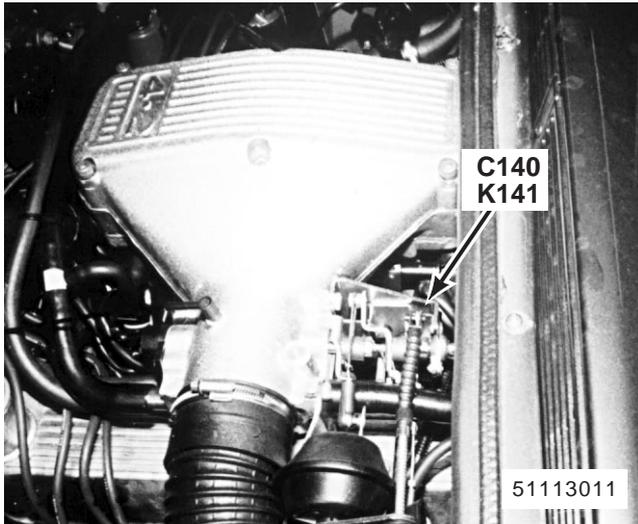
2. LH rear of engine compartment
 M105 Front Screen Wash Pump
 M110 Headlamp Wash Pump
 M119 Rear Screen Wash Pump
 C120 (2-B)
 C170 (2-R)
 C173 (2-B)



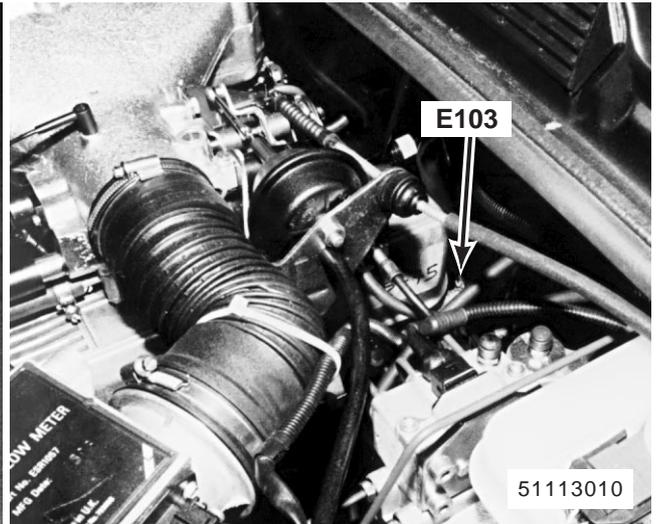
3. LH rear of engine compartment
 K175 Dim/Dip Resistor
 C177 (2-B)



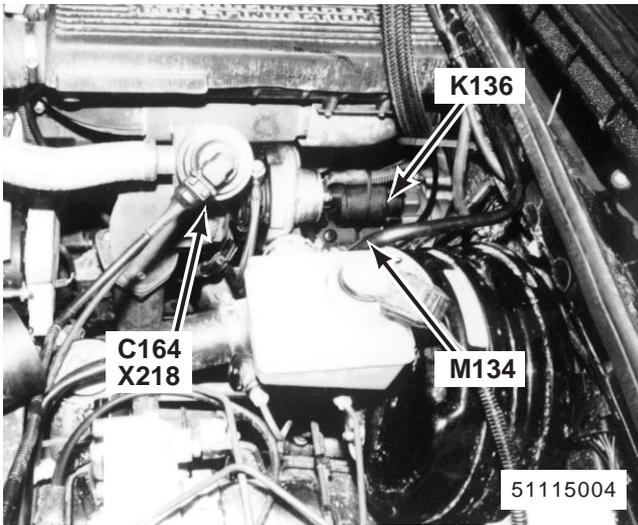
4. LH rear corner of engine compartment
 M102 A.B.S. Hydraulic Pump
 Z103 A.B.S. Booster Unit
 C125 (2-B)
 C129 (13-B)
 C130 (2-W)



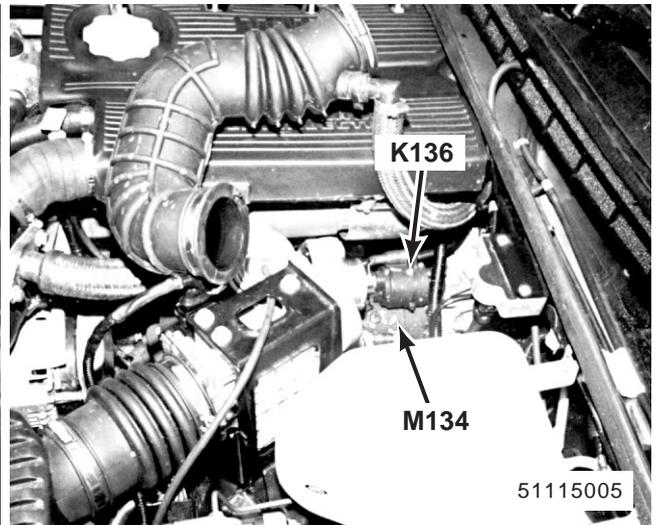
5. LH rear of engine MFI-V8
K141 Fuel Injectors
C140 (2-B)



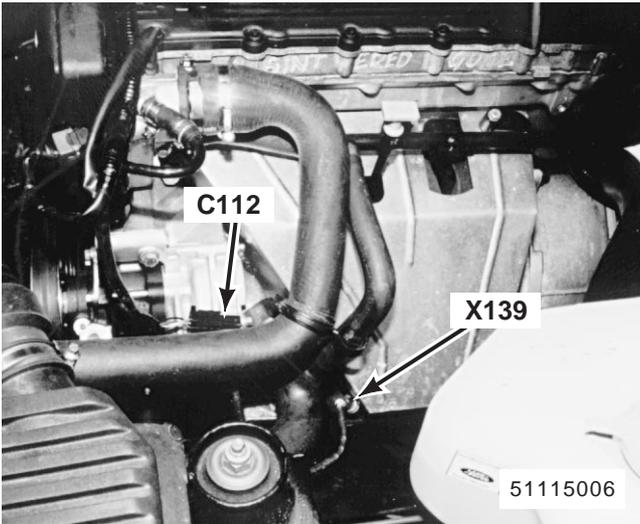
6. LH rear of engine MFI-V8
E103



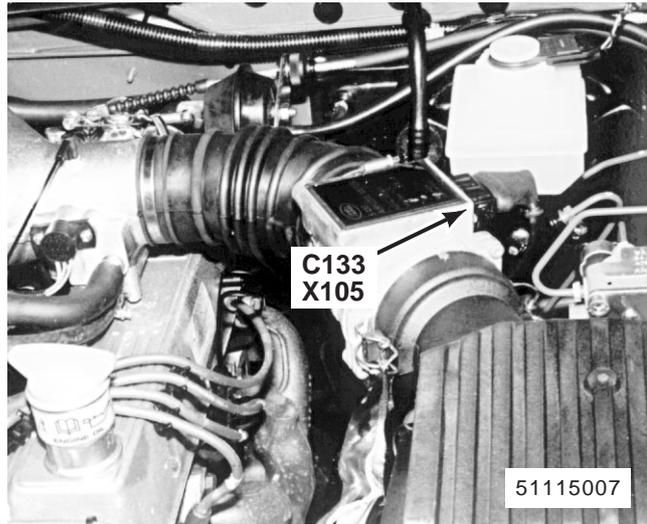
7. lower LH side of engine 300Tdi without EDC
K136 Starter Solenoid
M134 Starter
X218 EGR Valve Position Sensor
C164 (3-B)



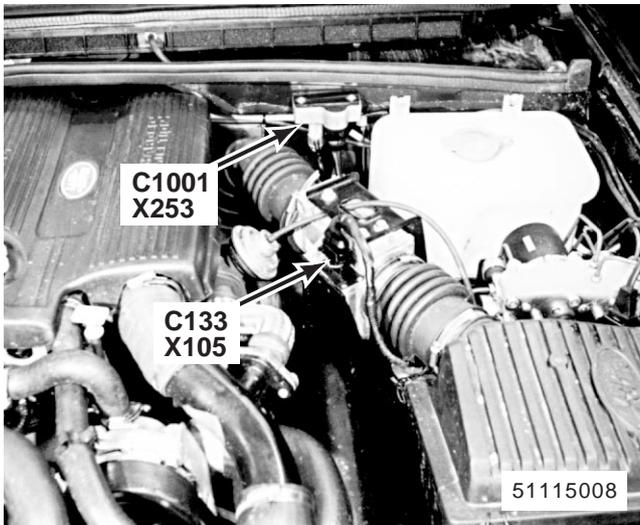
8. lower LH side of engine 300Tdi with EDC
K136 Starter Solenoid
M134 Starter



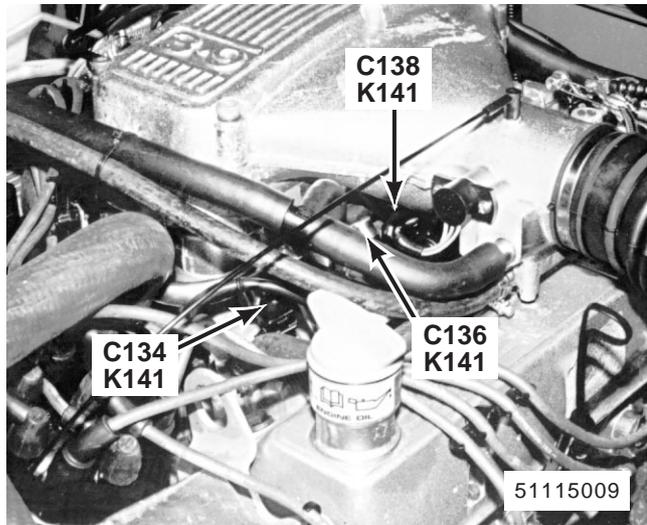
9. lower LH side of engine MFI-T16
X139 Left Heated Oxygen Sensor
C112 (4-B)



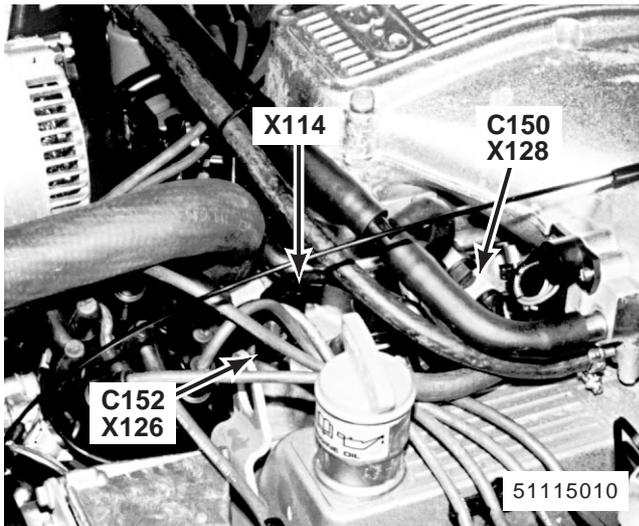
10. LH side of engine MFI-V8
X105 Mass Air Flow Sensor
C133 (6-B)



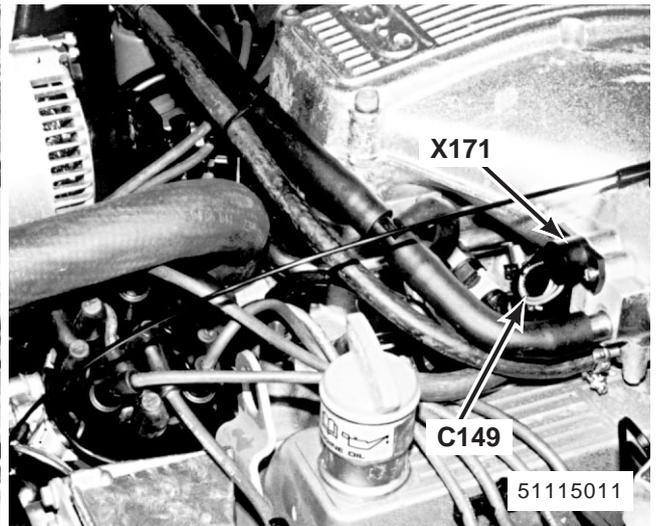
11. LH rear of engine compartment 300Tdi with EDC
X105 Mass Air Flow Sensor
X253 Boost Pressure Sensor
C133 (5-B)
C1001 (3-B)



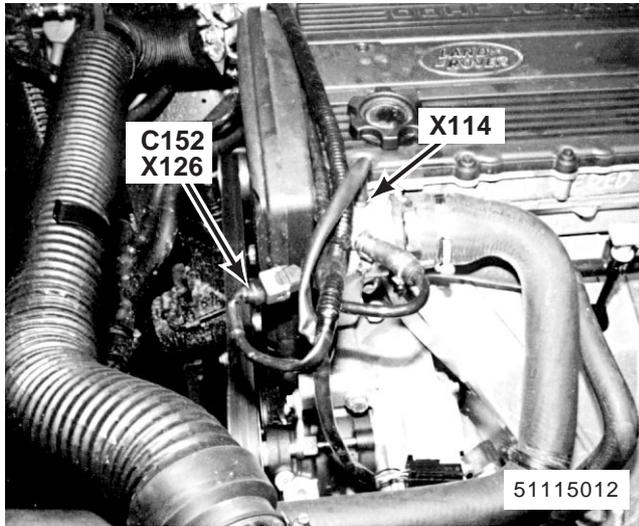
12. LH side of engine MFI-V8
K141 Fuel Injectors
C134 (2-B)
C136 (2-B)
C138 (2-B)



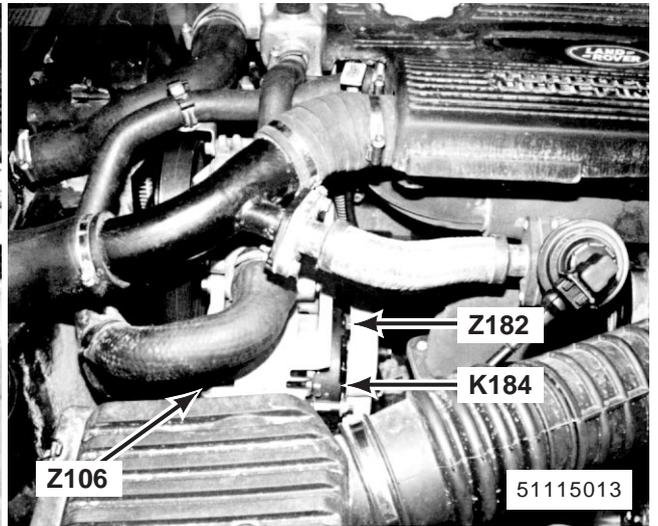
13. LH side of engine MFI-V8
 X114 Engine Coolant Temperature Gauge Sensor
 X126 Engine Coolant Temperature Sensor
 X128 Engine Fuel Temperature Sensor
 C150 (2-U)
 C152 (2-N)



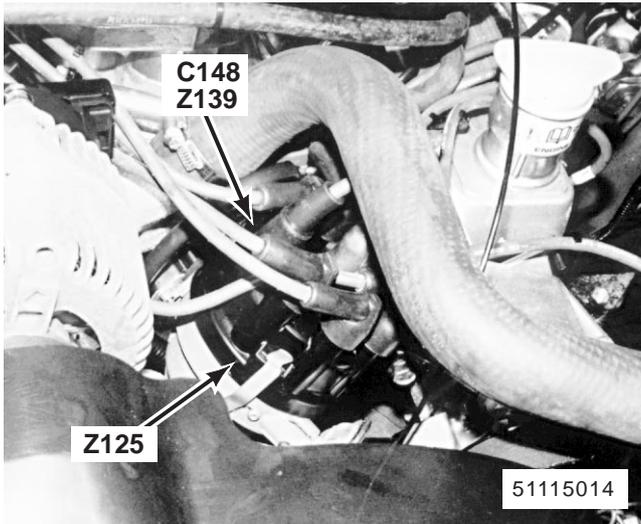
14. LH side of engine MFI-V8
 X171 Throttle Position Sensor
 C149 (3-B)



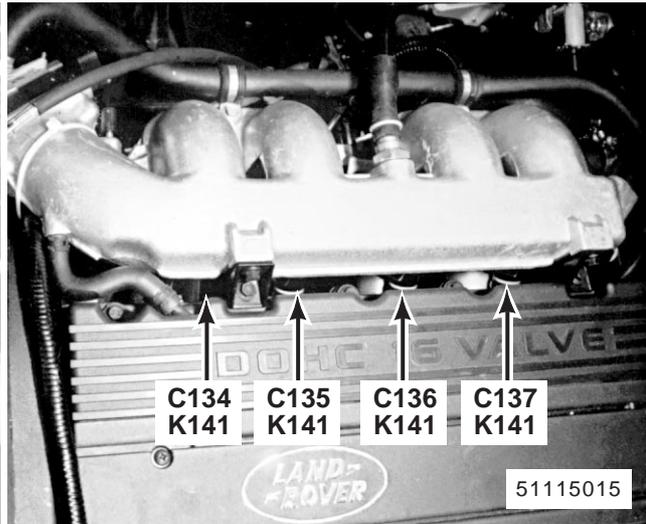
15. LH front of engine MFI-T16
 X114 Engine Coolant Temperature Gauge Sensor
 X126 Engine Coolant Temperature Sensor
 C152 (2-N)



16. lower LH side of engine 300Tdi
 K184 Phase Tap Resistor
 Z106 Generator
 Z182 Generator Suppression Capacitor



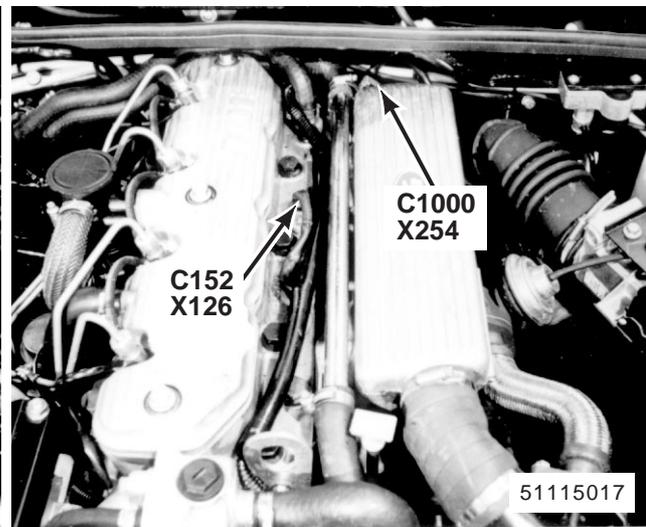
17. top centre front of engine MFI-V8
Z125 Distributor
Z139 Ignition Control Module
C148 (3-B)



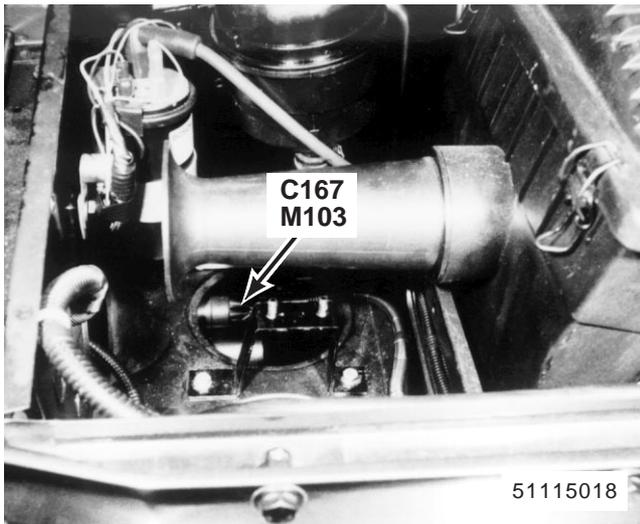
18. top centre front of engine MFI-T16
K141 Fuel Injectors
C134 (2-B)
C135 (2-B)
C136 (2-B)
C137 (2-B)



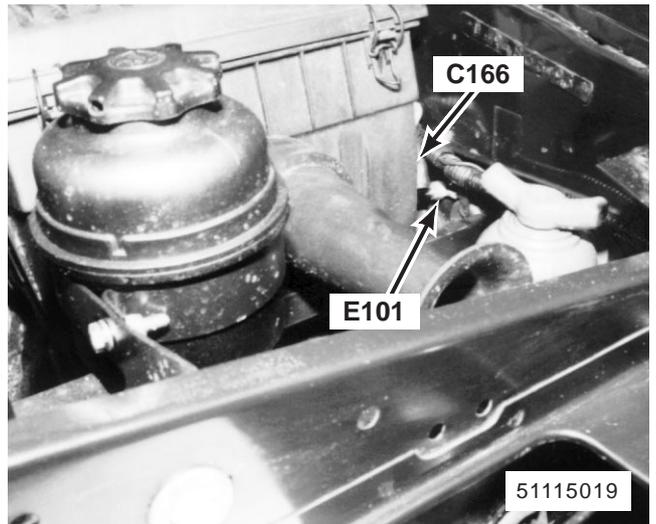
19. top centre front of engine 300Tdi without EDC
X126 Engine Coolant Temperature Sensor
C152 (2-N)



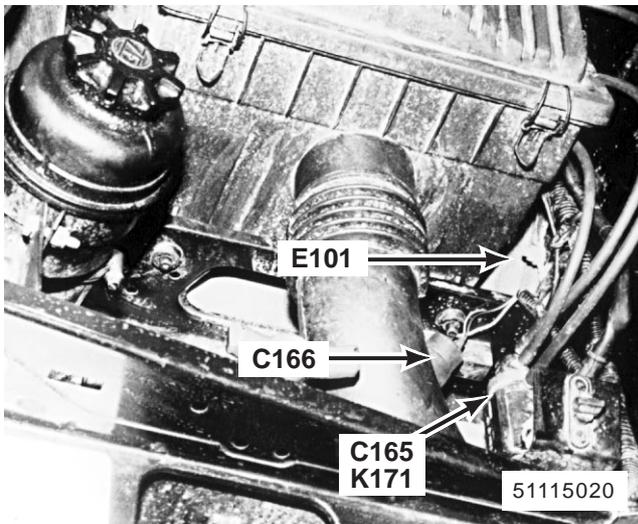
20. top centre front of engine 300Tdi with EDC
X126 Engine Coolant Temperature Sensor
X254 Boost Pressure Air Temperature Sensor
C152 (2-N)
C1000 (2-G)



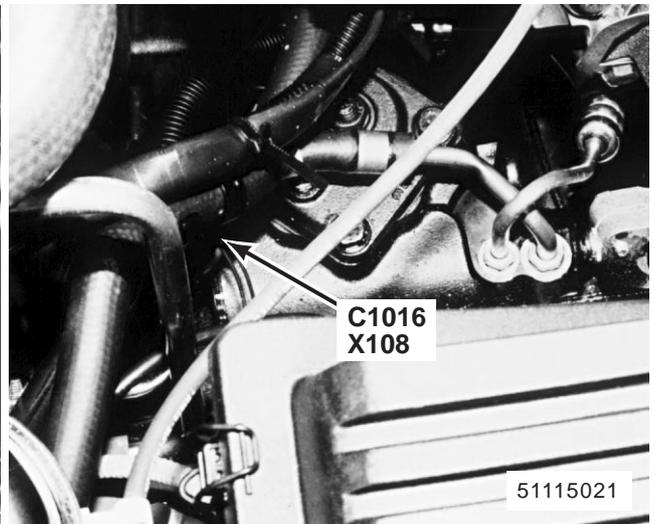
21. LH front corner of engine compartment (MFI-V8 shown; others similar)
M103 Cruise Control Vacuum Pump
C167 (3-B)



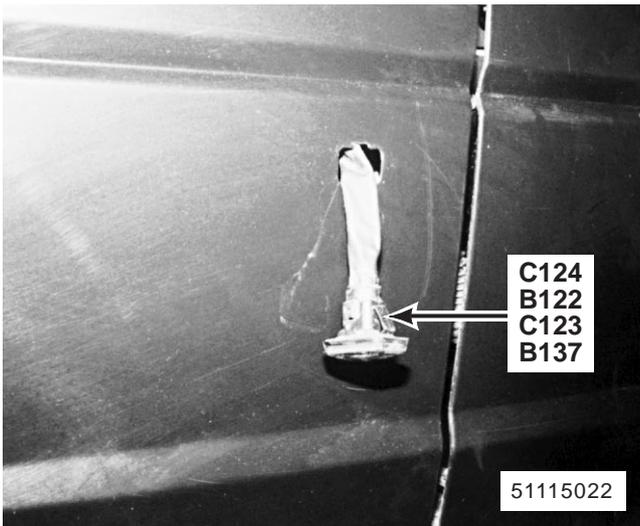
22. LH front of engine compartment MFI-V8
MFI-T16
C166 (2-B)
E101



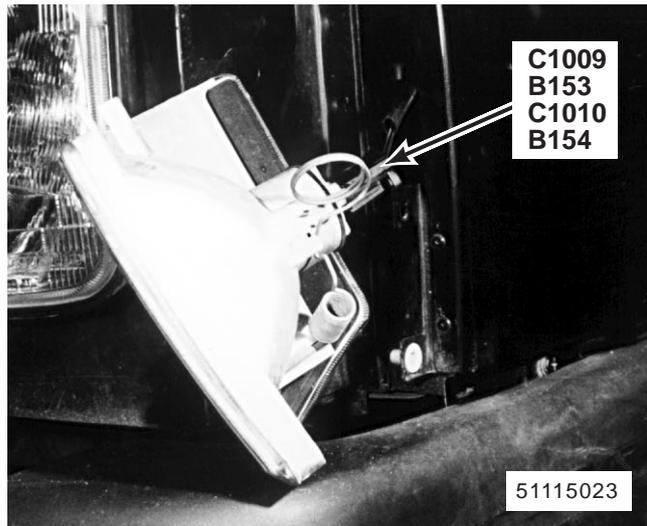
23. LH front of engine compartment 300Tdi
K171 EGR Control Solenoid
C165 (2-B)
C166 (2-B)
E101



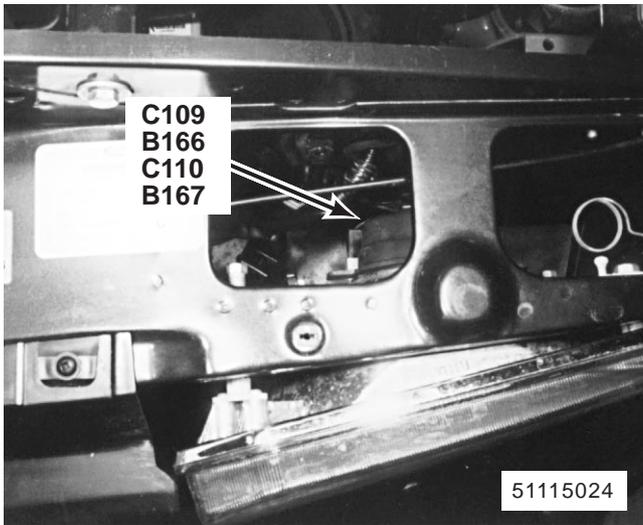
24. lower LH front of engine compartment (MFI-V8 shown; others similar)
X108 Automatic Transmission Oil Temperature Switch
C1016 (2-B)



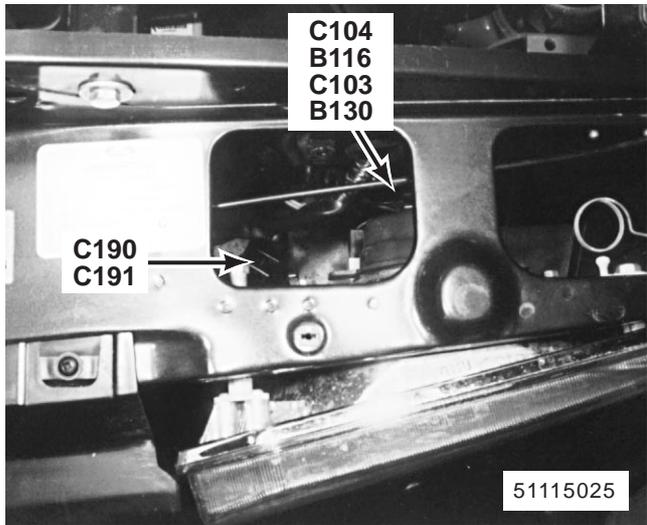
25. LH front side of vehicle (RH similar)
 B122 Left Repeater Lamp
 B137 Right Repeater Lamp
 C123 (2-B) (Right)
 C124 (2-B) (Left)



26. LH front of vehicle (RH similar)
 B153 Left Front Indicator Lamp
 B154 Right Front Indicator Lamp
 C1009 (2-B) (Left)
 C1010 (2-B) (Right)



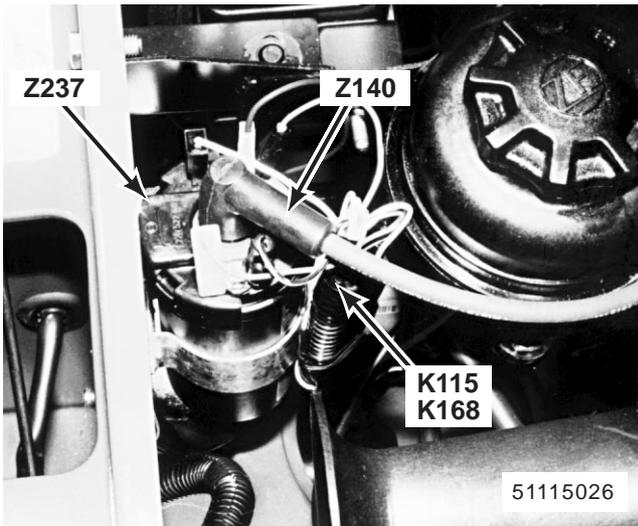
27. LH front of engine compartment (RH similar)
 B166 Left Front Side Lamp
 B167 Right Front Side Lamp
 C109 (2-W) (Left)
 C110 (2-W) (Right)



28. LH front of engine compartment (RH similar)
 B116 Left Headlamp
 B130 Right Headlamp
 C103 (3-B) (Right)
 C104 (3-B) (Left)
 C190 (3-B) (Left)
 C191 (3-B) (Right)

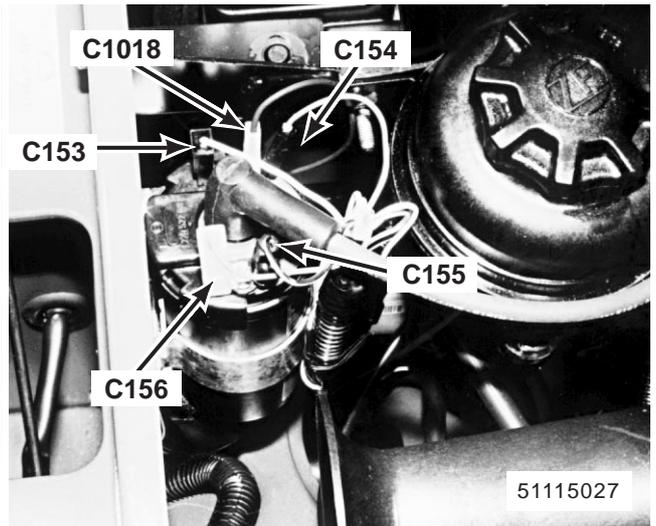
Z5 ETM

DISCOVERY



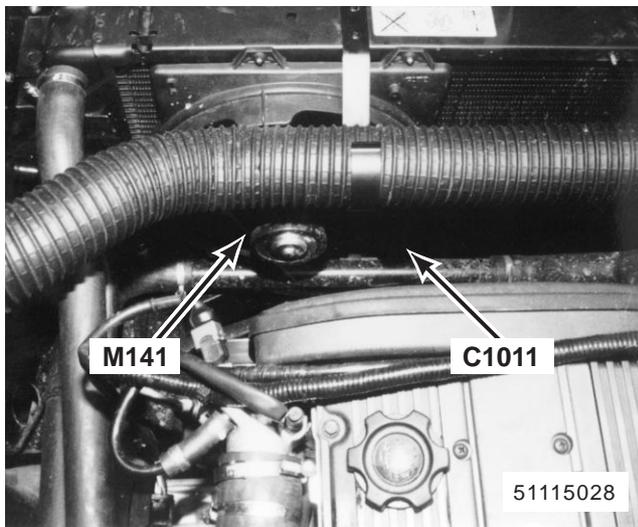
29. LH front corner of engine compartment MFI-V8

- K115 Multiport Fuel Injection Ignition Resistor 1
- K168 Multiport Fuel Injection Ignition Resistor 2
- Z140 Ignition Coil
- Z237 Ignition Coil Noise Suppressor



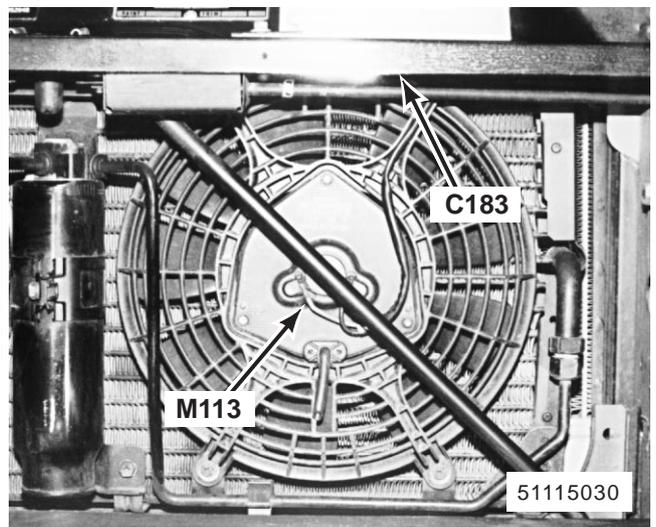
30. LH front corner of engine compartment MFI-V8

- C153 (1-B)
- C154 (1-B)
- C155 (1-B)
- C156 (1-W)
- C1018 (1-W)



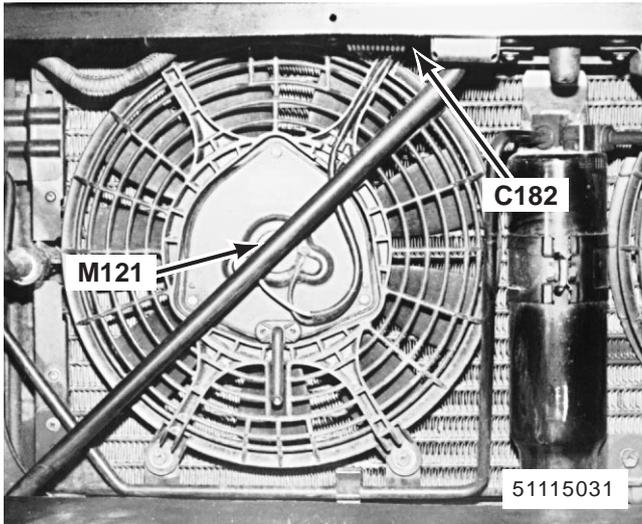
31. front of engine compartment MFI-T16 without Air Conditioning

- M141 Cooling Fan Motor 1
- C1011 (2-W)

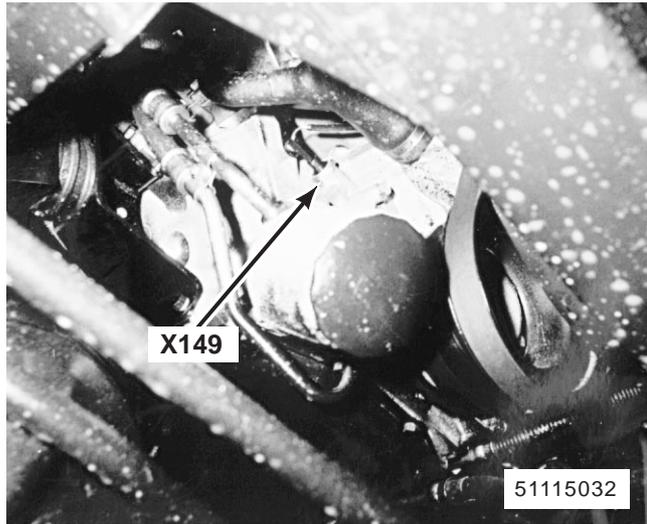


32. behind front grille

- M113 Left Condenser Fan Motor
- C183 (2-B)



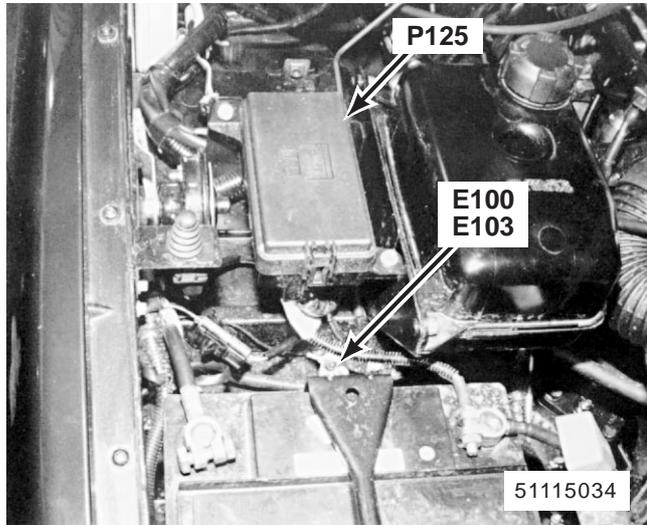
33. behind front grille
M121 Right Condenser Fan Motor
C182 (2-B)



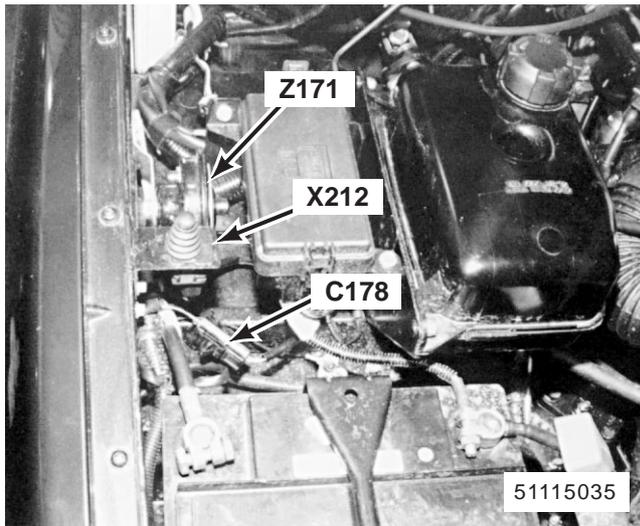
34. lower RH side of engine MFI-V8
X149 Oil Pressure Switch



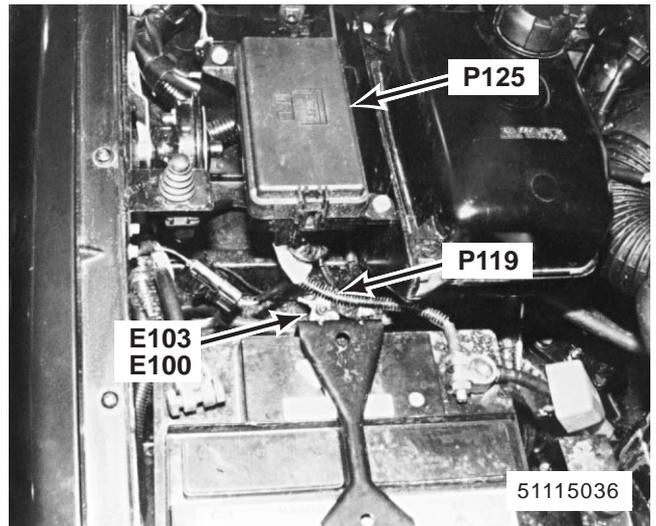
35. lower RH side of engine MFI-T16
X149 Oil Pressure Switch
C142 (2-N)



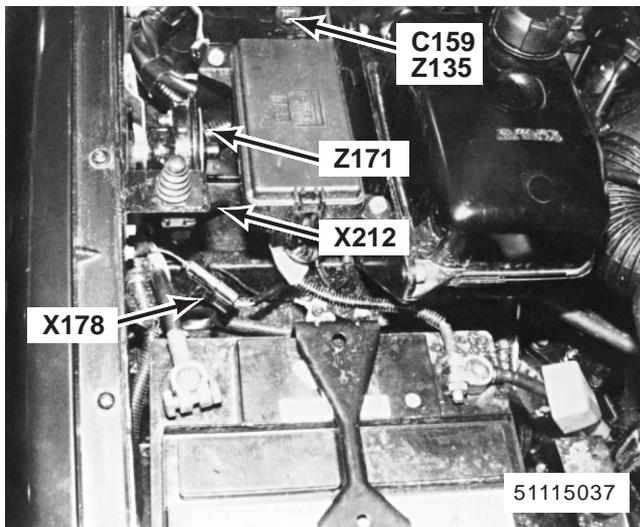
36. RH front of engine compartment MFI-V8
MFI-T16
P125 Engine Compartment Fuse Box
E100
E103 MFI-T16



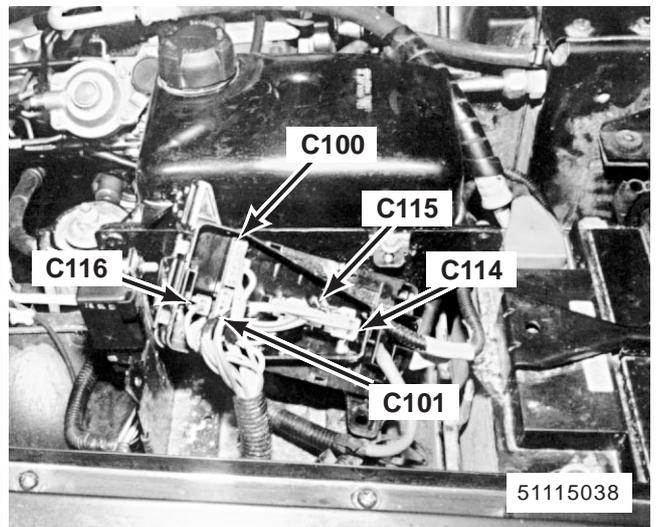
37. RH front of engine compartment MFI-V8
MFI-T16
X212 Alarm Bonnet Switch
Z171 Alarm Sounder
C178 (2-B)



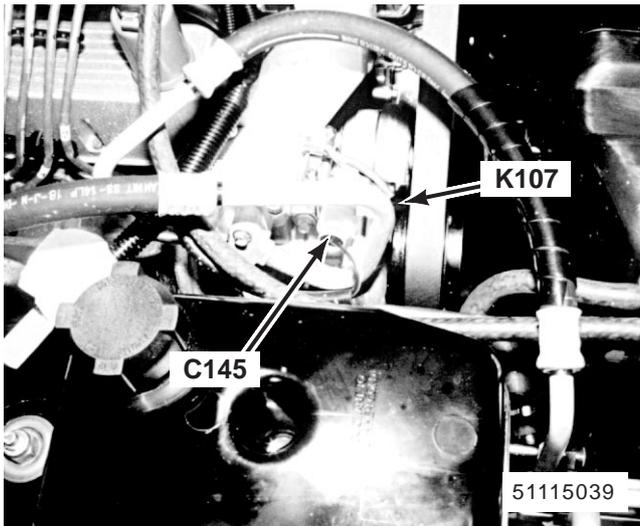
38. RH front of engine compartment 300Tdi
P119 Fusible Link
P125 Engine Compartment Fuse Box
E100
E103



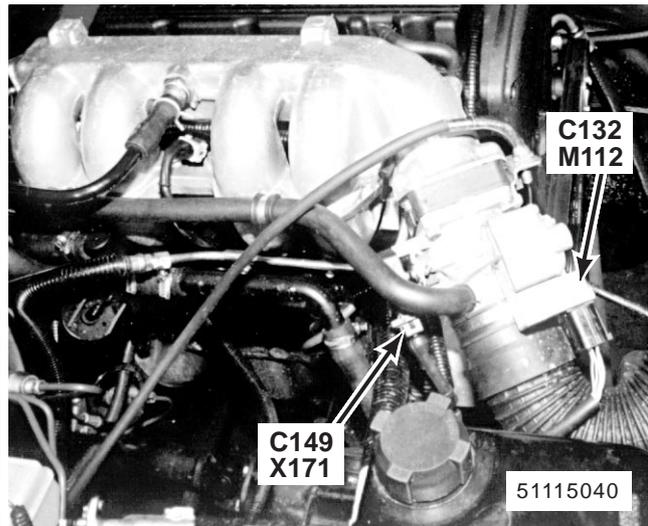
39. RH front of engine compartment 300Tdi
X212 Alarm Bonnet Switch
Z135 Glow Plug Timer Unit
Z171 Alarm Sounder
C159 (6-B)
C178 (2-B)



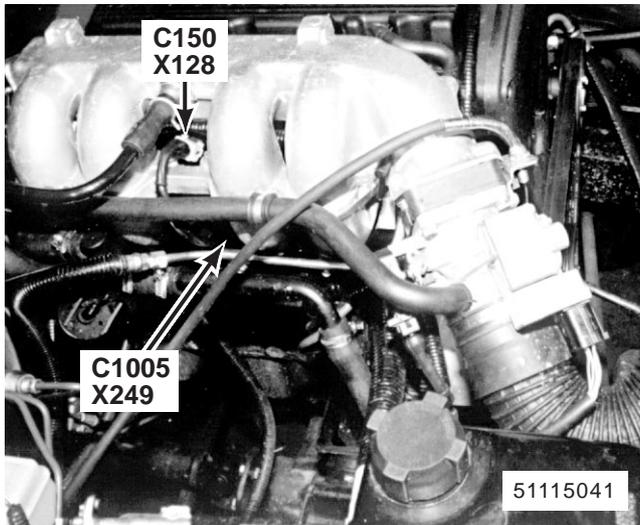
40. RH front of engine compartment
C100 (3-W)
C114 (2-W)
C115 (3-W)
C116 (1-W)
C101 (4-W)



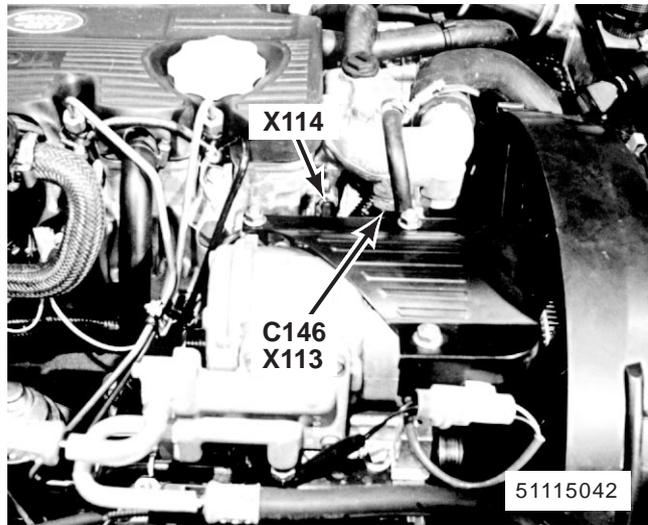
41. RH side of engine MFI-V8
K107 Compressor Clutch
C145 (2-W)



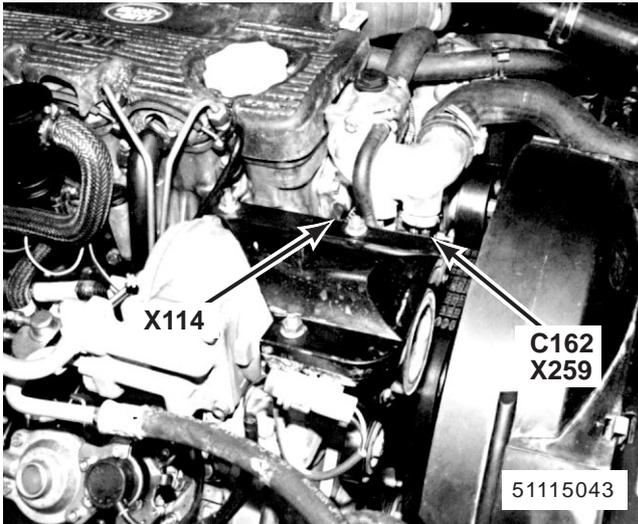
42. RH front of engine MFI-T16
M112 Idle Air Control Valve
X171 Throttle Position Sensor
C132 (6-B)
C149 (3-B)



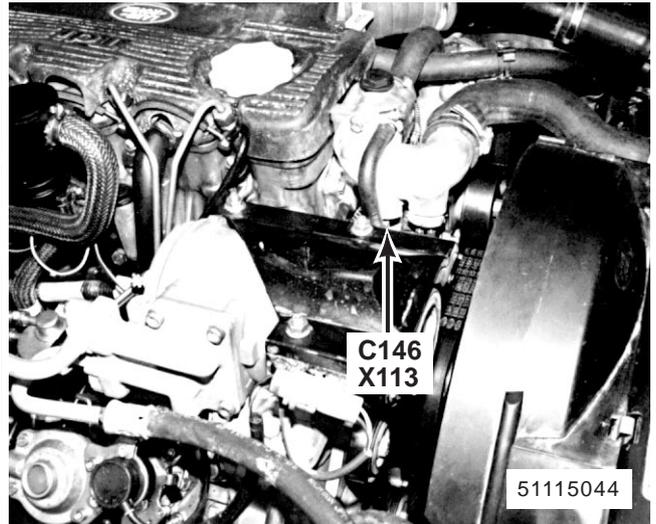
43. RH side of engine MFI-T16
X128 Engine Fuel Temperature Sensor
X249 Knock Sensor
C150 (2-S)
C1005 (2-W)



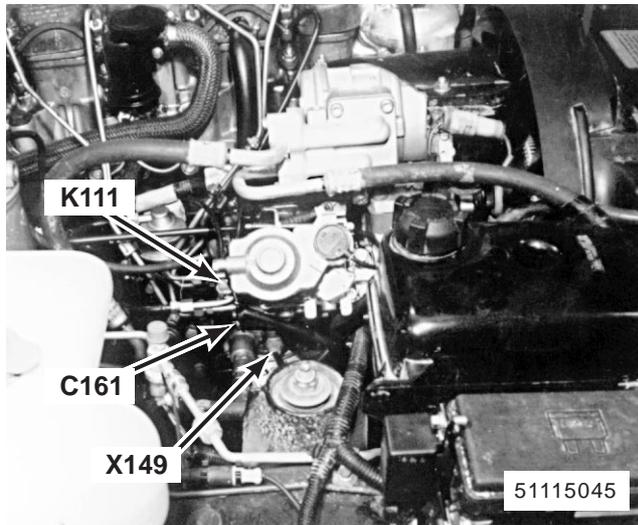
44. RH front of engine 300Tdi with EDC
X113 Condenser Fan Coolant Temperature Switch
X114 Engine Coolant Temperature Gauge Sensor
C146 (2-B)



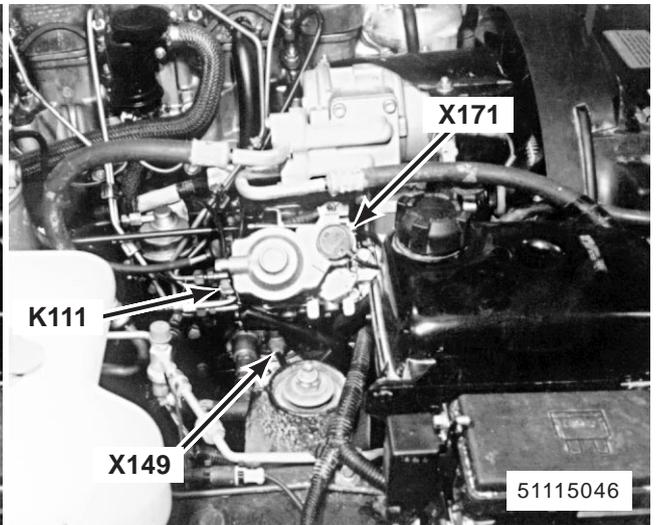
45. RH front of engine 300Tdi without EDC
 X114 Engine Coolant Temperature Gauge Sensor
 X259 Compressor Clutch Cut-out Switch
 C162 (2-B)



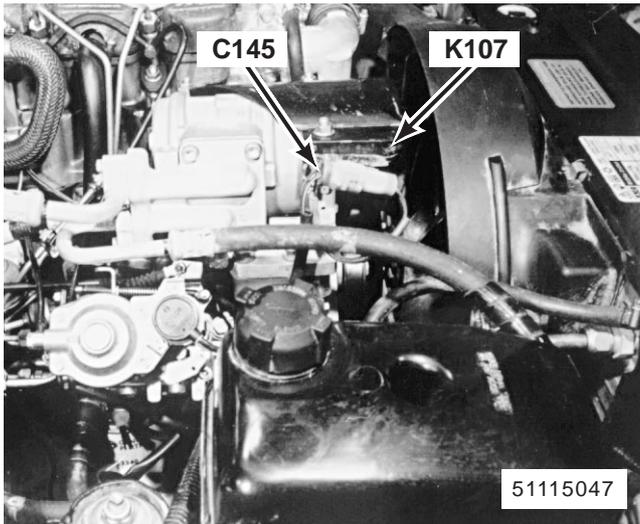
46. RH front of engine 300Tdi without EDC
 X113 Condenser Fan Coolant Temperature Switch
 C146 (2-B)



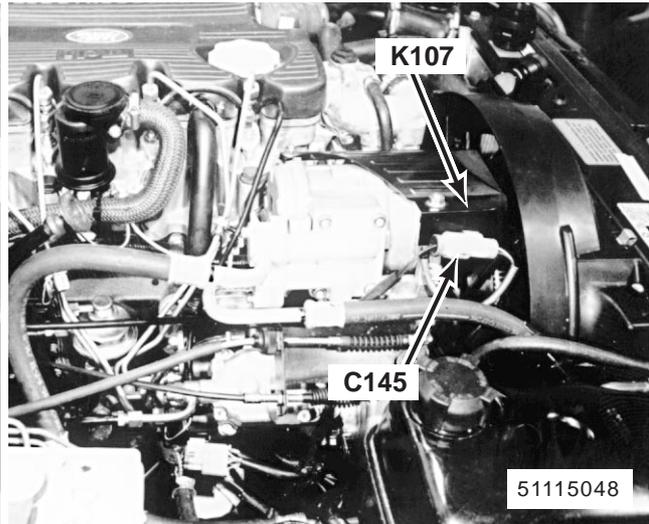
47. RH side of engine 300Tdi without EGR
 K111 Fuel Shut-Off Solenoid
 X149 Oil Pressure Switch
 C161 (1-W)



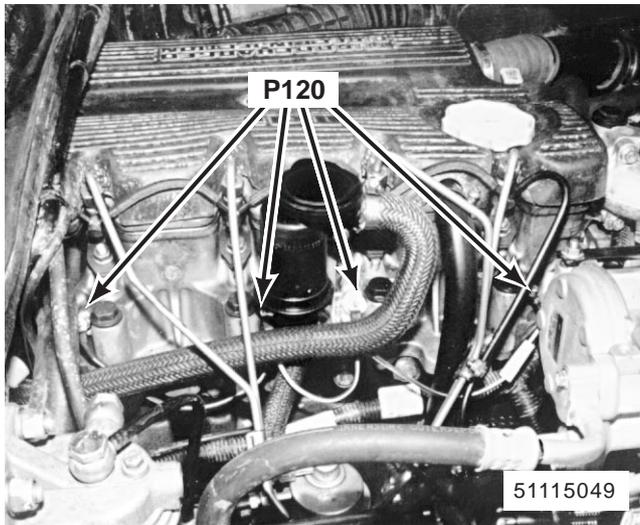
48. RH side of engine 300Tdi with EGR
 K111 Fuel Shut-Off Solenoid
 X149 Oil Pressure Switch
 X171 Throttle Position Sensor



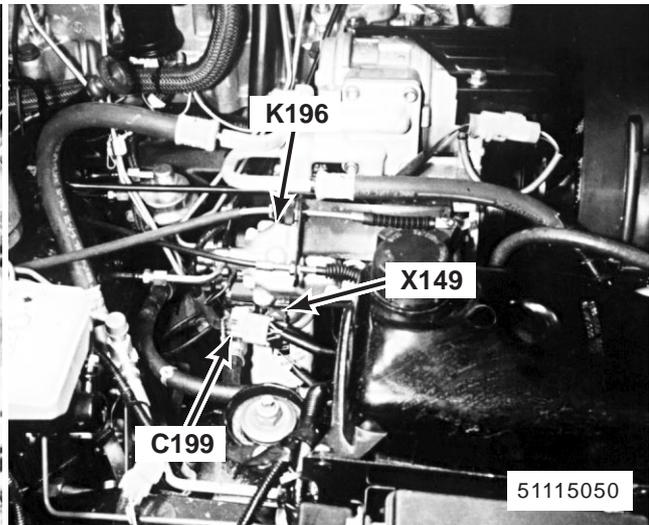
49. RH side of engine 300Tdi without EDC
K107 Compressor Clutch
C145 (2-W)



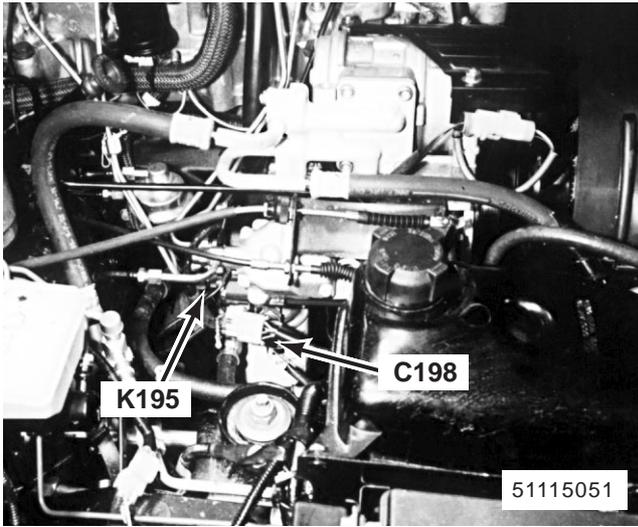
50. RH side of engine 300Tdi with EDC
K107 Compressor Clutch
C145 (2-W)



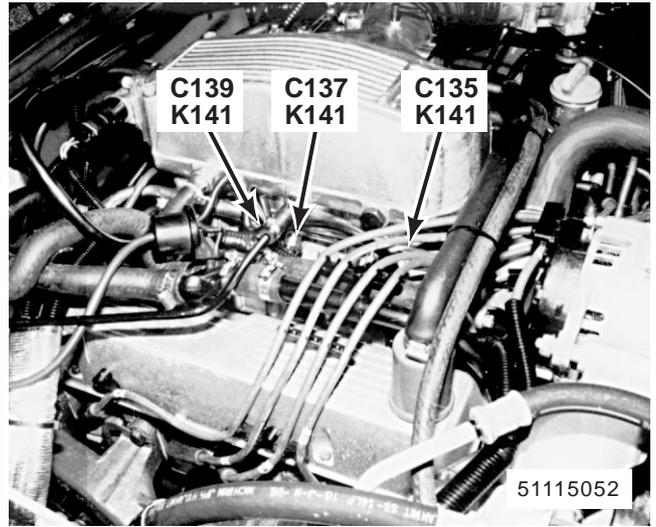
51. RH side of engine 300Tdi
P120 Glow Plugs



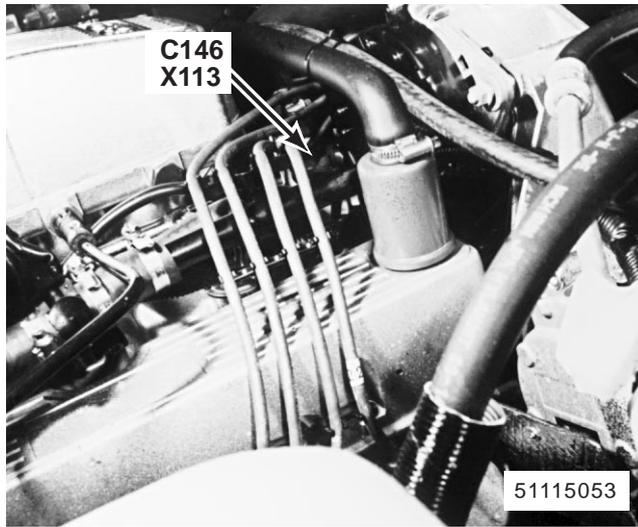
52. RH side of engine 300Tdi with EDC
K196 Fuel Pump Assembly
X149 Oil Pressure Switch
C199 (8-W)



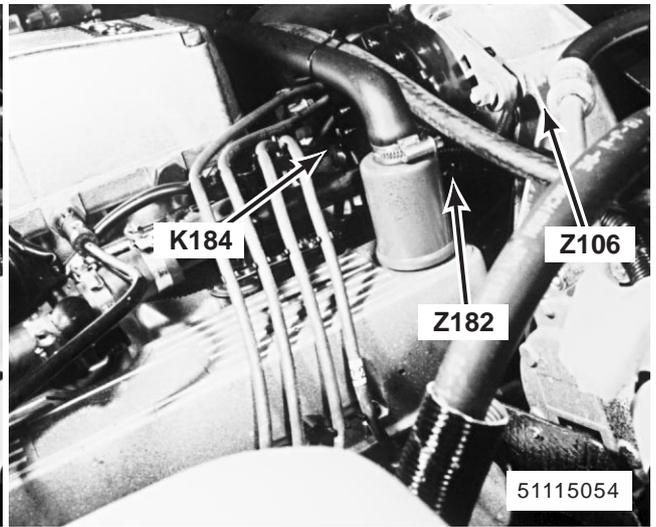
53. RH side of engine 300Tdi with EDC
K195 Fuel Injector Assembly
C198 (3-W)



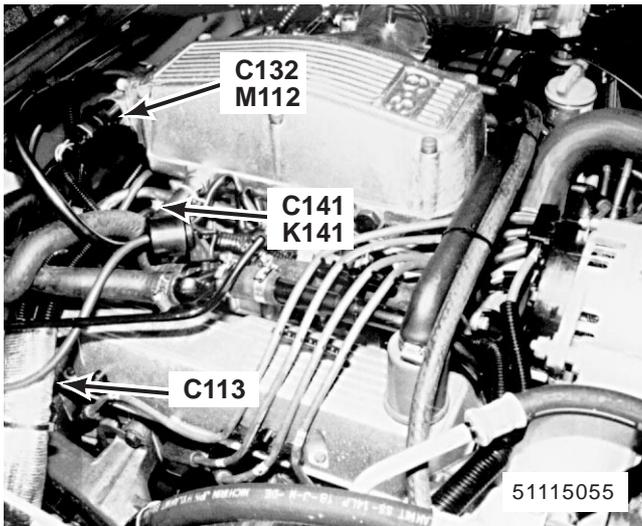
54. RH side of engine MFI-V8
K141 Fuel Injectors
C135 (2-B)
C137 (2-B)
C139 (2-B)



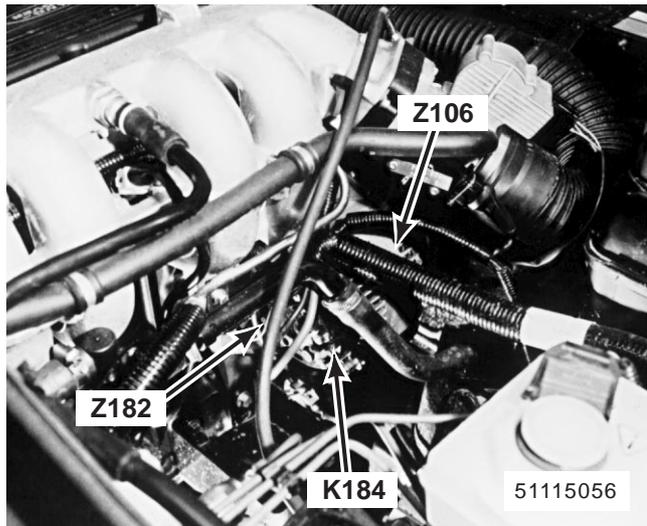
55. RH front of engine MFI-V8
X113 Condenser Fan Coolant Temperature Switch
C146 (2-B)



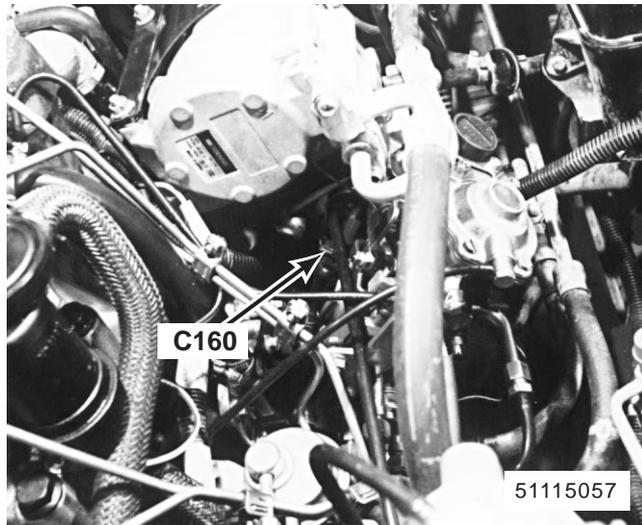
56. RH front of engine MFI-V8
K184 Phase Tap Resistor
Z106 Generator
Z182 Generator Suppression Capacitor



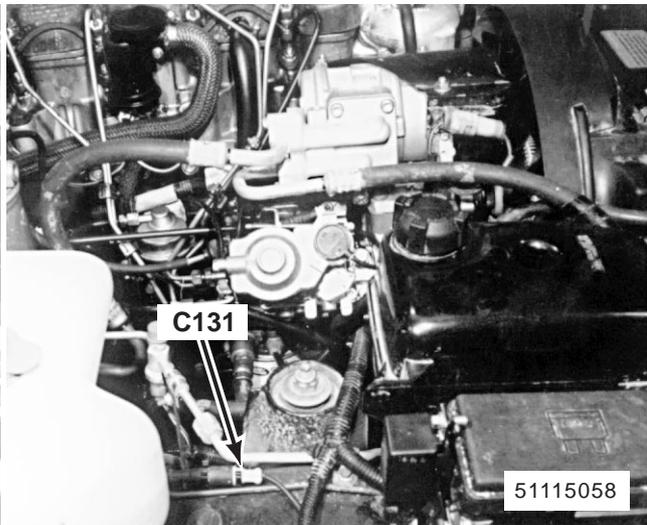
57. RH side of engine MFI-V8
 K141 Fuel Injectors
 M112 Idle Air Control Valve
 C113 (3-W)
 C132 (4-B)
 C141 (2-B)



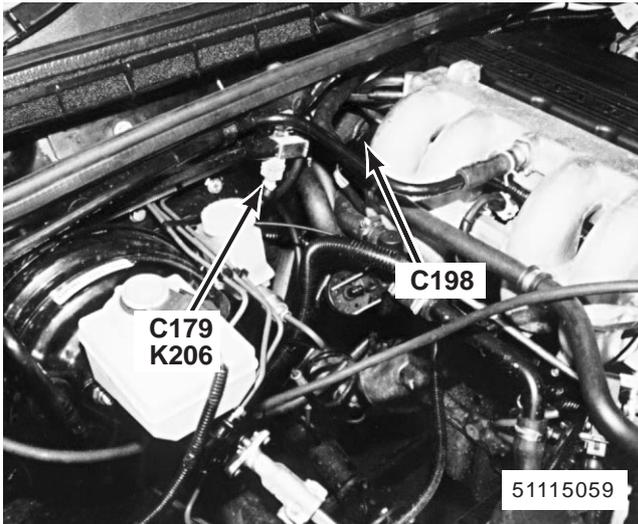
58. RH side of engine MFI-T16 without Air Conditioning
 K184 Phase Tap Resistor
 Z106 Generator
 Z182 Generator Suppression Capacitor



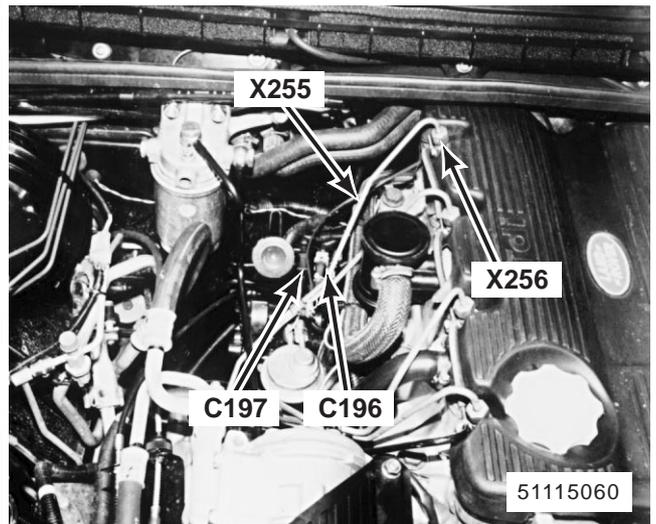
59. RH side of engine 300Tdi with EGR
 C160 (3-B)



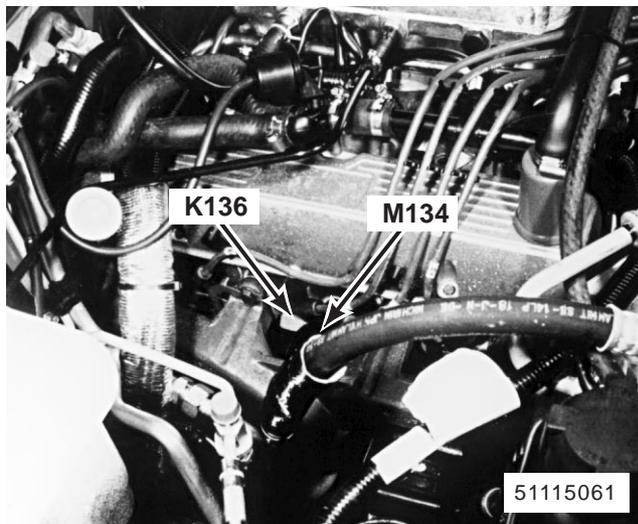
60. RH side of engine compartment
 C131 (2-W)



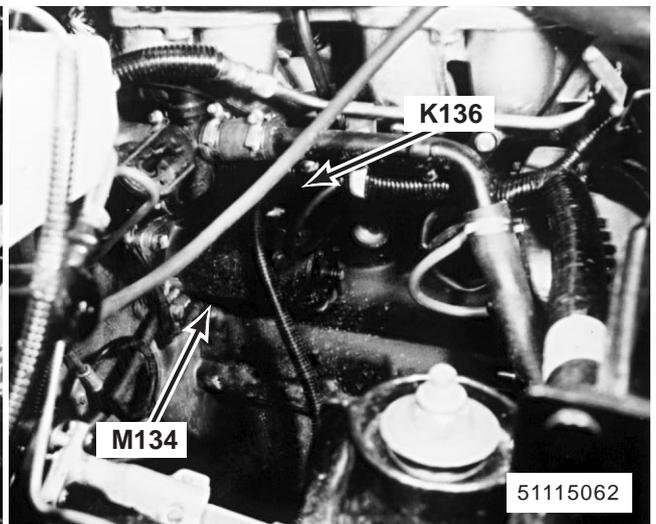
61. RH rear corner of engine compartment MFI-T16
 K206 Water Valve
 C179 (2-U)
 C198 (6-B)



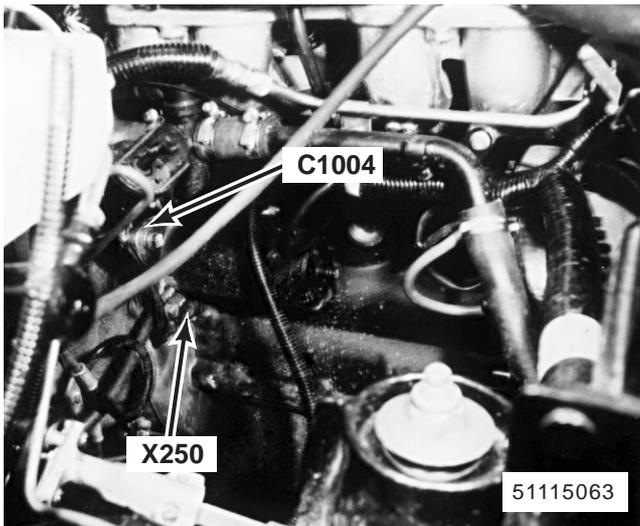
62. RH rear of engine 300Tdi with EDC
 X255 Engine Speed Sensor
 X256 Injector Needle Lift Sensor
 C196 (2-NU)
 C197 (3-B)



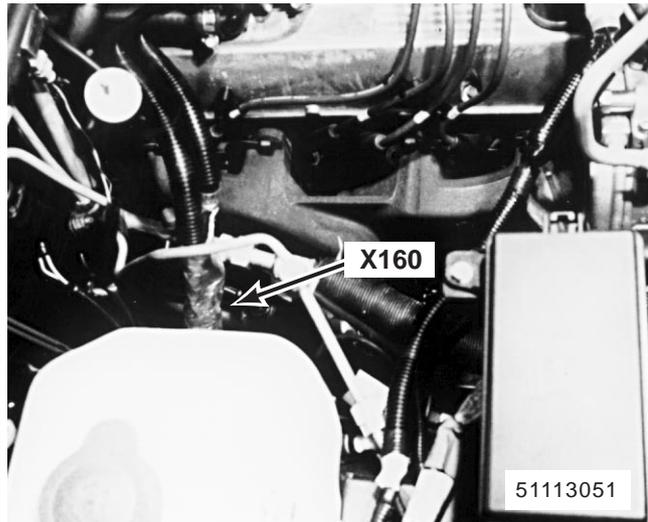
63. lower RH side of engine MFI-V8
 K136 Starter Solenoid
 M134 Starter



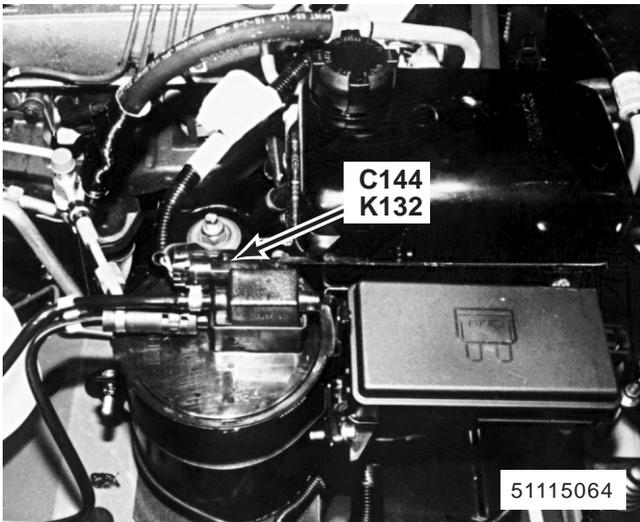
64. lower RH side of engine MFI-T16
 K136 Starter Solenoid
 M134 Starter



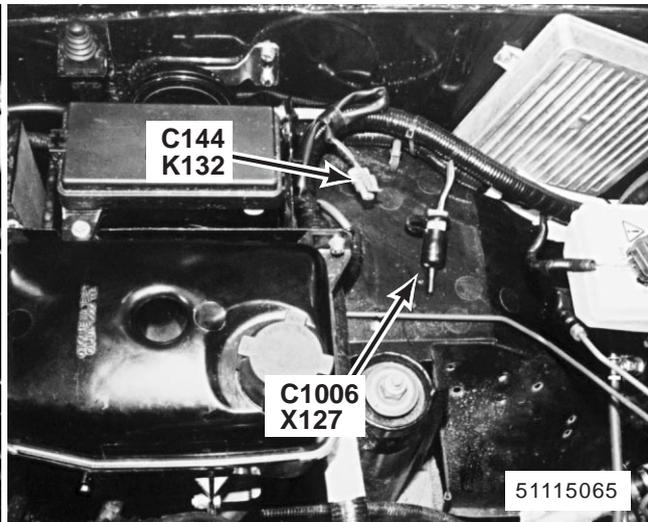
65. lower RH side of engine MFI-T16
X250 Crankshaft Position Sensor
C1004 (2-U)



66. lower RH side of engine MFI-V8
X160 Right Heated Oxygen Sensor



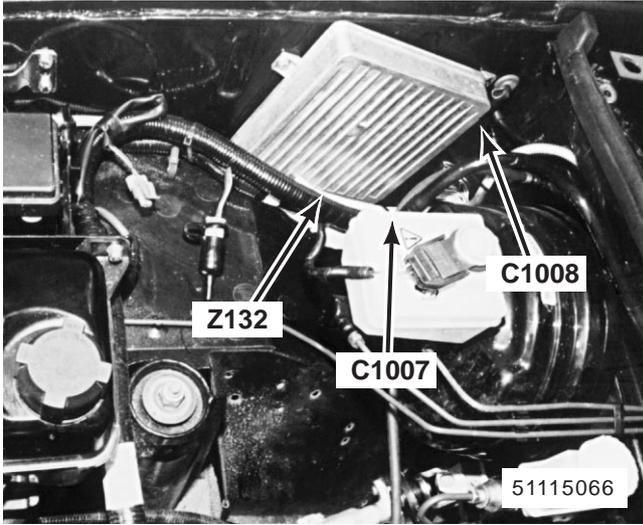
67. RH side of engine compartment MFI-V8
K132 Evaporative Emission Canister Purge Valve
C144 (2-RU)



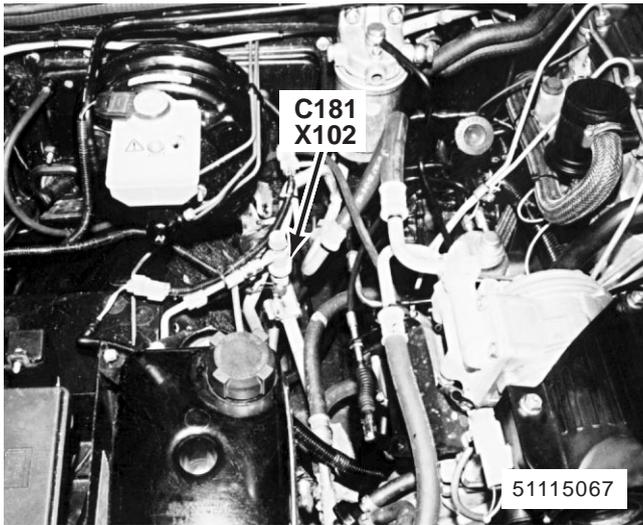
68. RH rear corner of engine compartment MFI-T16
K132 Evaporative Emission Canister Purge Valve
X127 Data Link Connectors
C144 (2-RU)
C1006 (3-W)

Z5 ETM

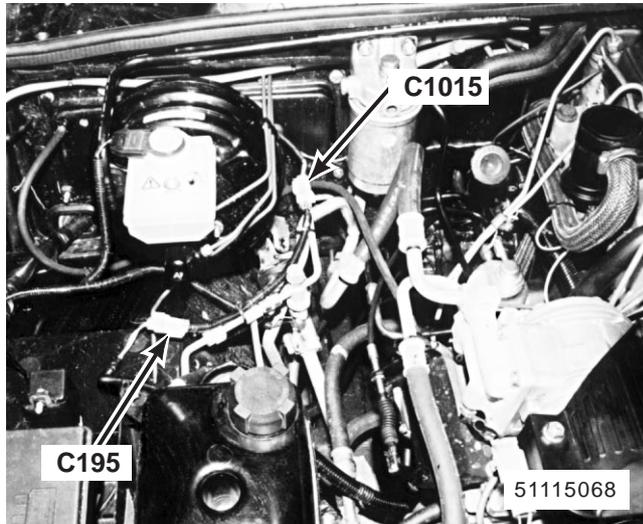
DISCOVERY



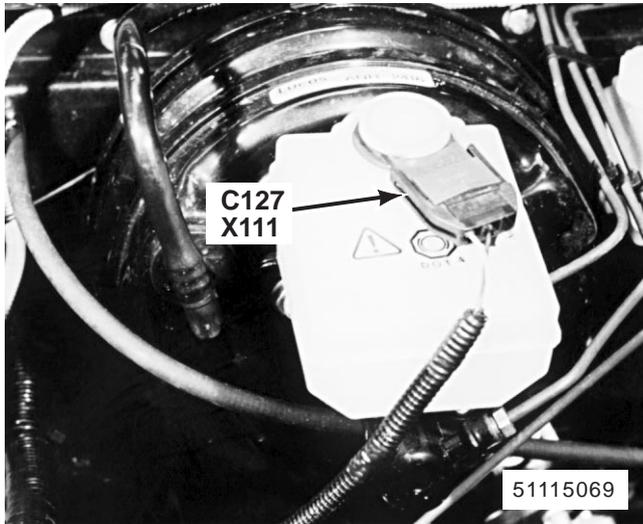
69. RH rear corner of engine compartment MFI-T16
 Z132 Engine Control Module (ECM)
 C1007 (36-B)
 C1008 (18-B)



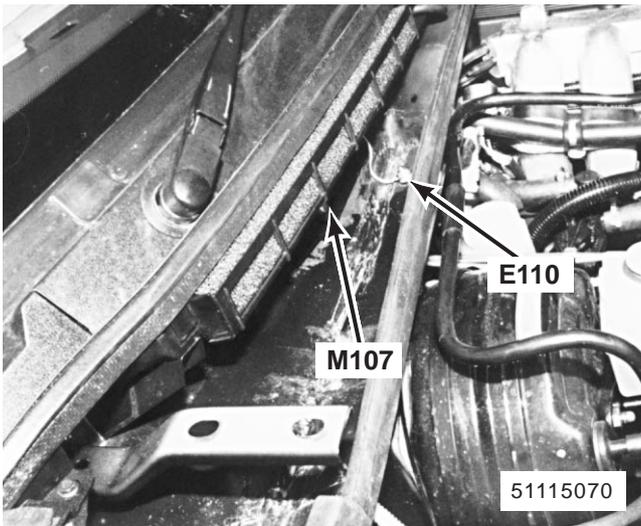
70. RH rear corner of engine compartment X102 A/C Dual Pressure Switch
 C181 (2-S)



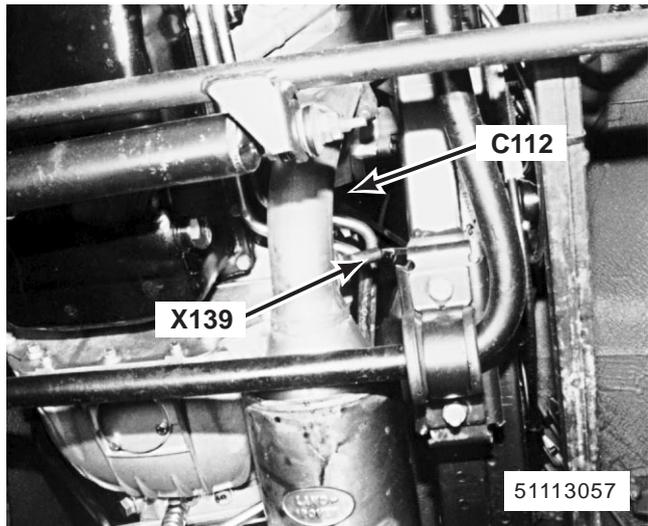
71. RH rear corner of engine compartment 300Tdi with EDC
 C195 (4-W)
 C1015 (4-W)



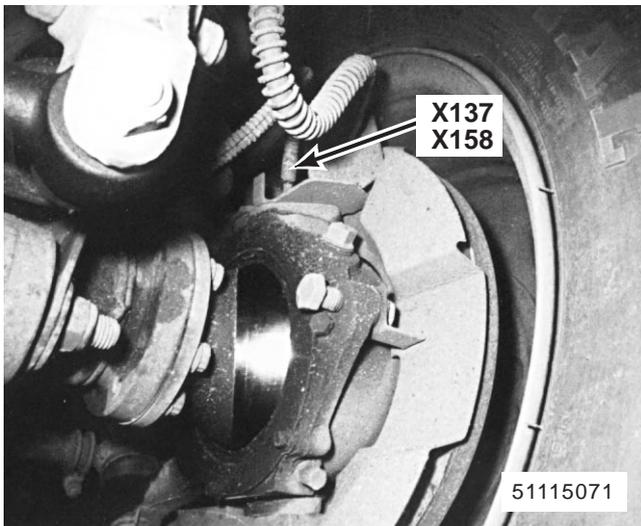
72. RH rear corner of engine compartment X111 Brake Fluid Level Switch
 C127 (3-B)



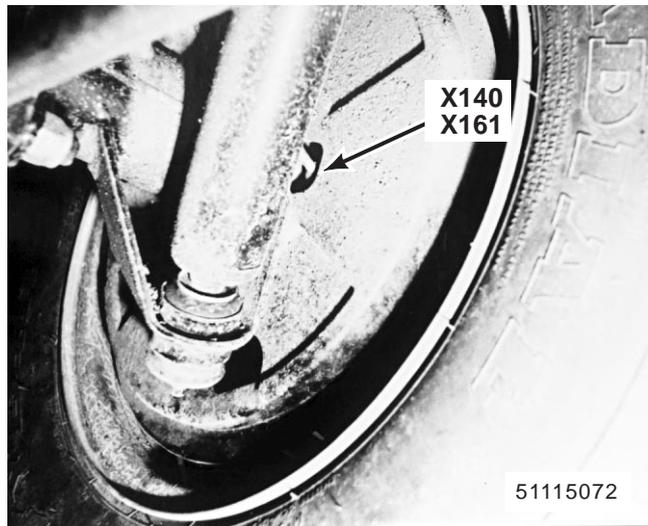
73. RH rear corner of engine compartment
M107 Front Wiper Motor
E110



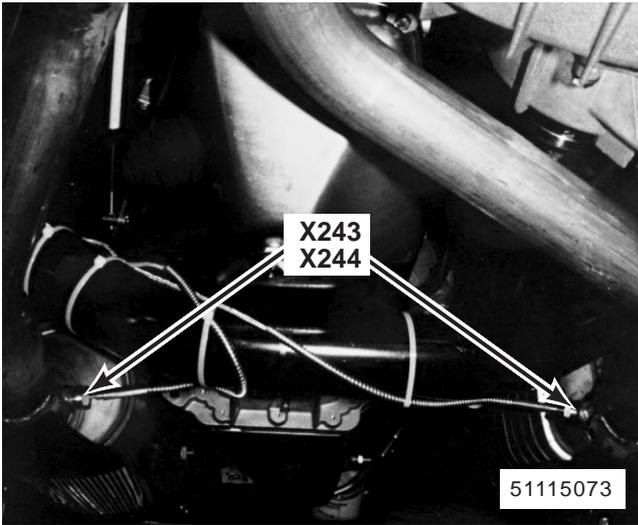
74. lower LH side of engine compartment MFI-V8
X139 Left Heated Oxygen Sensor
C112 (3-W)



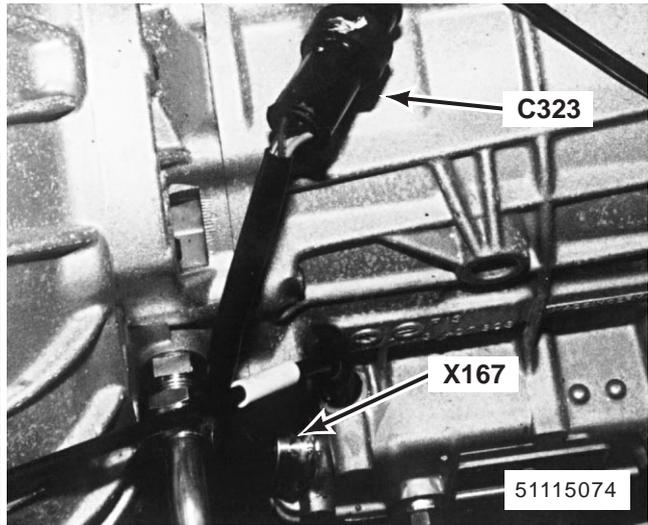
75. behind LH front wheel on handbrake lever
(RH front wheel similar)
X137 Left Front Wheel Speed Sensor
X158 Right Front Wheel Speed Sensor



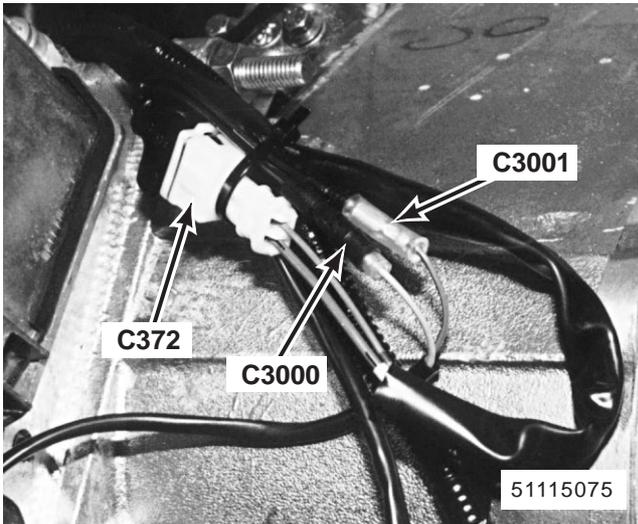
76. behind LH rear wheel (RH rear wheel similar)
X140 Left Rear Wheel Speed Sensor
X161 Right Rear Wheel Speed Sensor



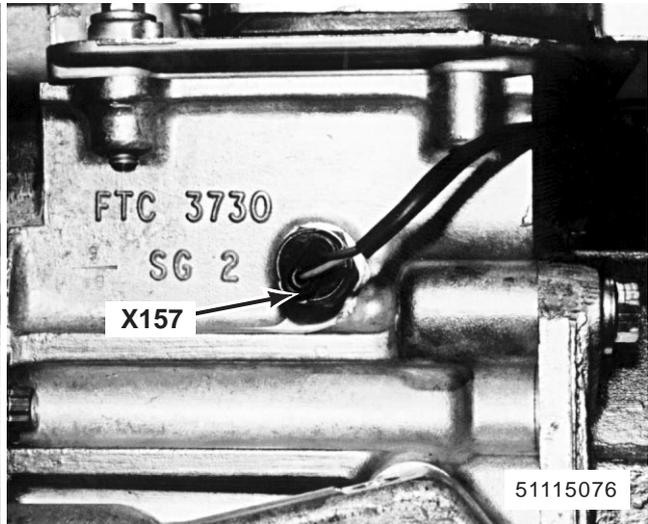
77. LH side of transmission
 X243 Catalyst Thermocouple 1
 X244 Catalyst Thermocouple 2



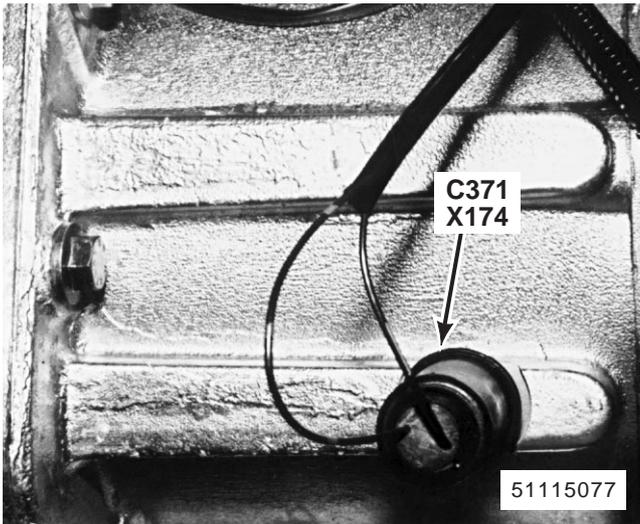
78. LH side of transmission
 X167 Park/Neutral Position Switch
 C323 (5-B)



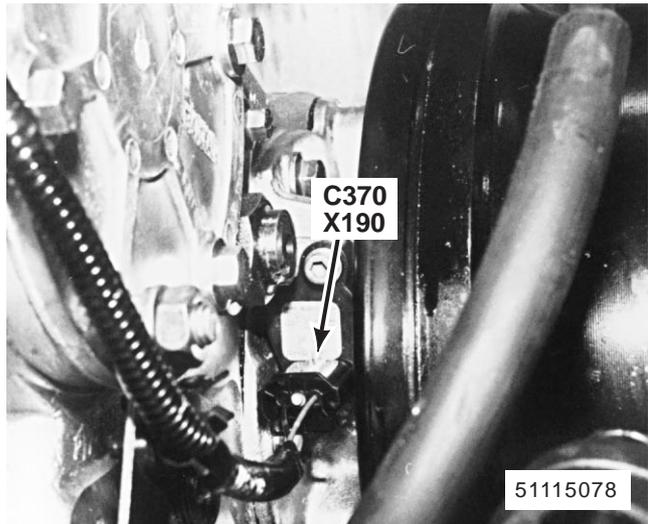
79. LH side of transmission
 C372 (2-W)
 C3000 (1-B)
 C3001 (1-B)



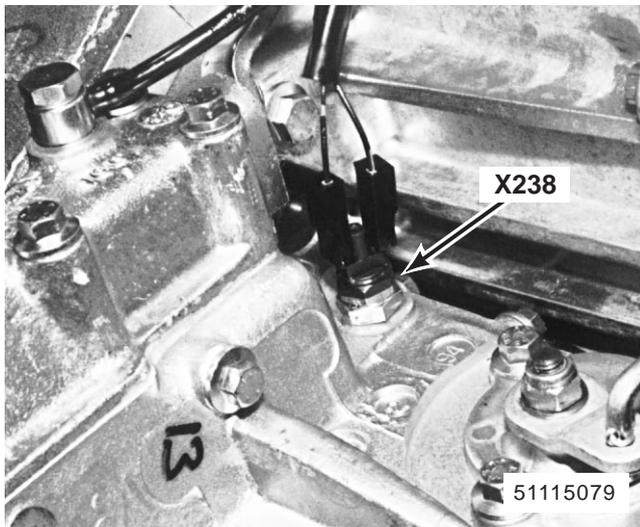
80. LH side of transmission
 X157 Reverse Switch



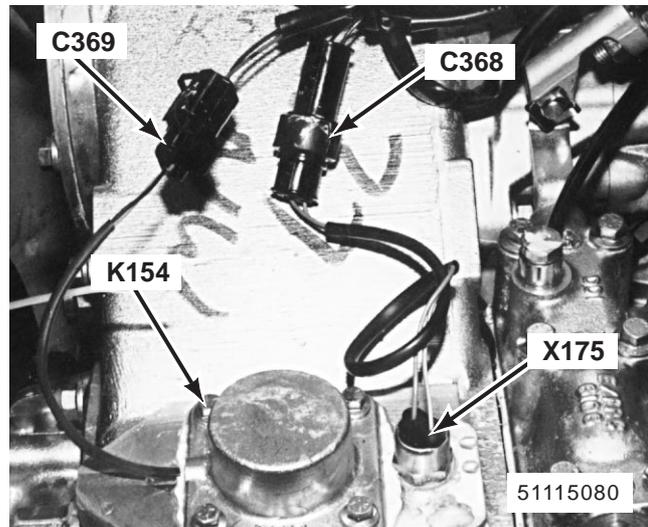
81. LH side of transfer box
X174 Transfer Box Oil Temperature Switch
C371 (2-B)



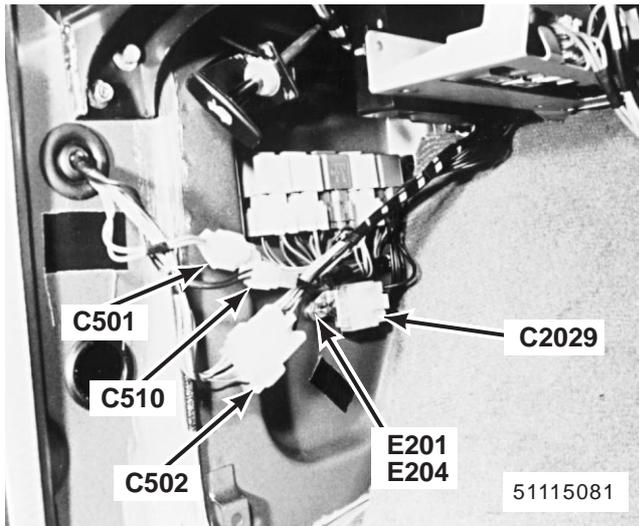
82. LH side of transfer box
X190 Vehicle Speed Sensor
C370 (3-B)



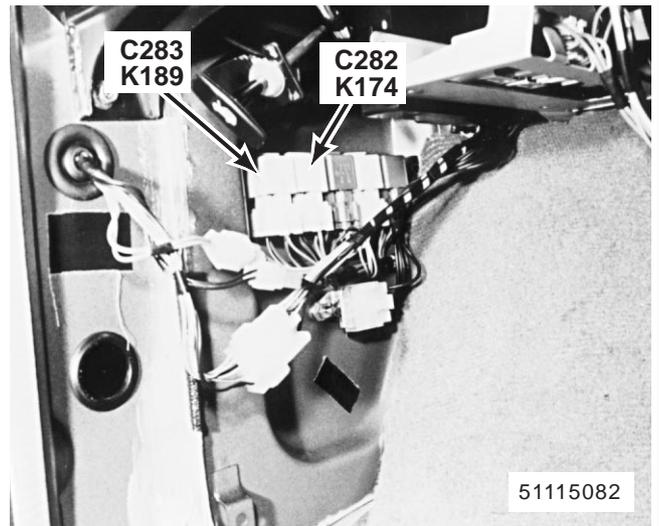
83. top RH side of transfer box
X238 Differential Lock Switch



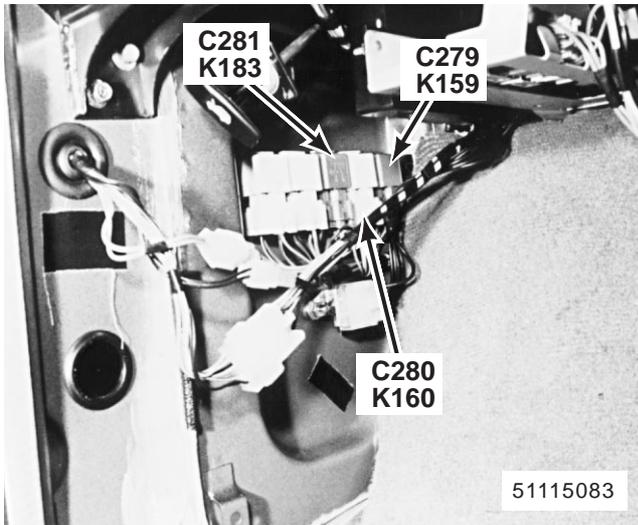
84. top RH side of transfer box
K154 Transfer Box Drive Motor/Encoder
X175 Transfer Box Position Switch
C368 (3-B)
C369 (2-B)



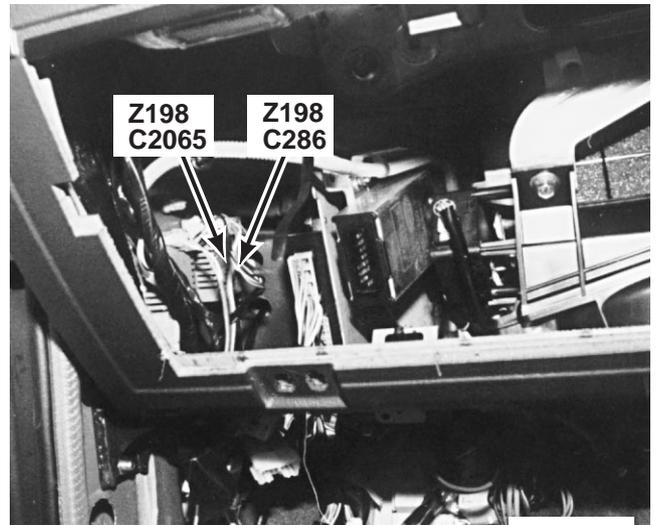
85. behind LH footwell trim panel
 C2029 (6-W)
 C501 (2-W)
 C502 (13-W)
 C510 (2-W)
 E201
 E204



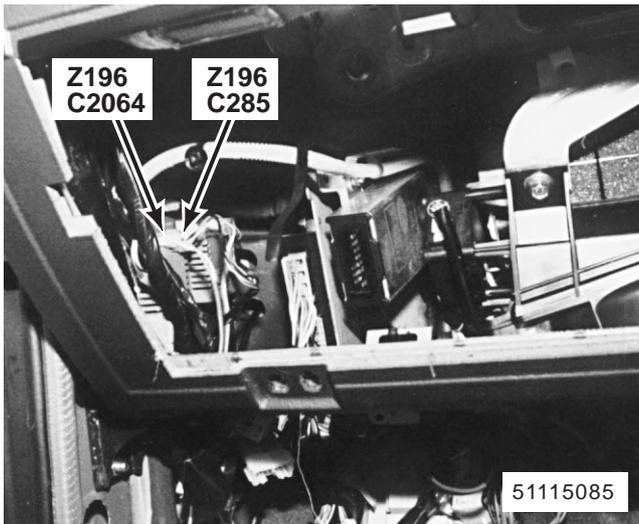
86. behind LH footwell trim panel
 K174 Accessory Relay
 K189 Horn Relay
 C282 (5-Y)
 C283 (5-Y)



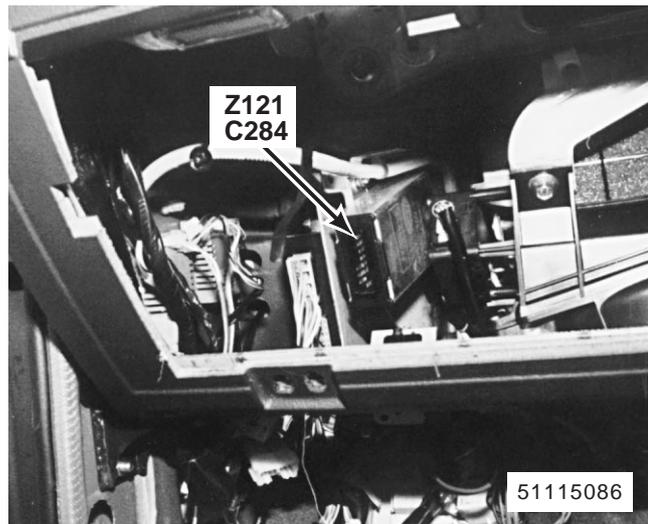
87. behind LH footwell trim panel
 K159 Theft Alarm Relay
 K160 Sounder Relay
 K183 Rear Wiper Relay
 C279 (5-N)
 C280 (5-W)
 C281 (5-G)



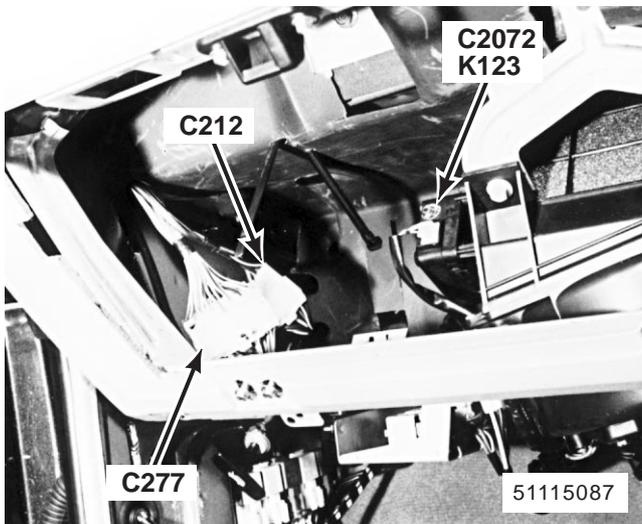
88. behind LH side of fascia
 Z198 Catalyst Warning ECU 2
 C286 (4-W)
 C2065 (2-W)



89. behind LH side of fascia
 Z196 Catalyst Warning ECU 1
 C285 (4-W)
 C2064 (2-W)



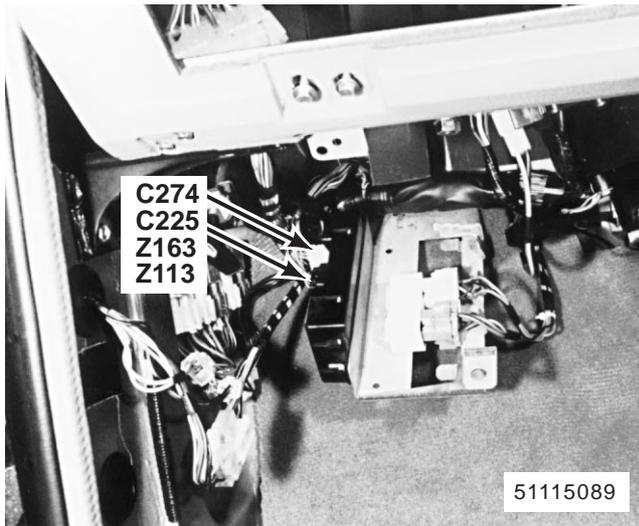
90. behind LH side of fascia
 Z121 Cruise Control ECU
 C284 (15-B)



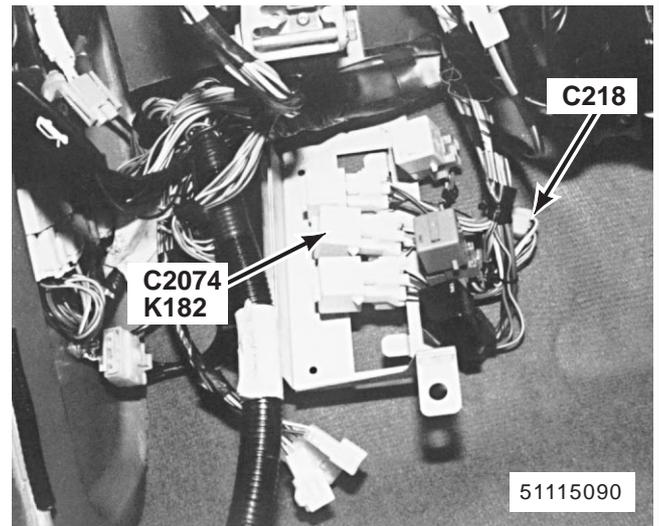
91. behind LH side of fascia
 K123 Air Recirculation Solenoid
 C212 (14-W)
 C277 (23-W)
 C2072 (4-Y)



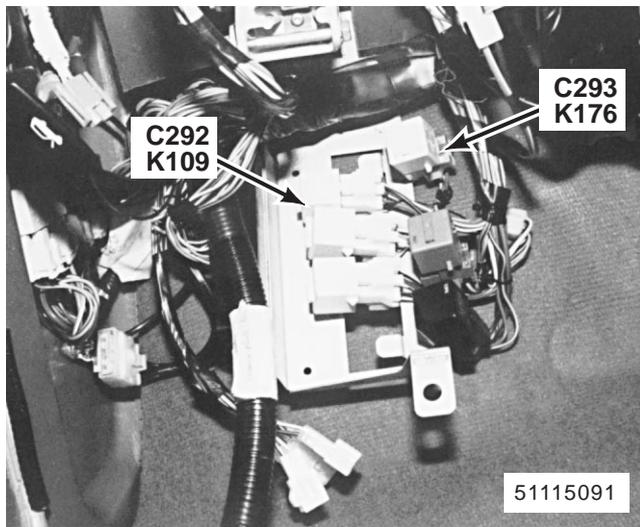
92. behind LH side of fascia
 Z147 Window Lift ECU
 C287 (10-W)
 C288 (8-W)



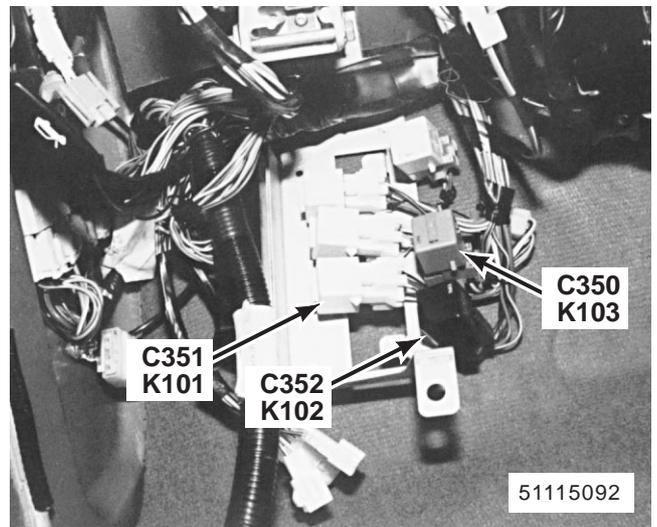
93. behind LH side of fascia
 Z163 Theft Alarm Unit Except Japan
 Z113 Central Locking Control Unit Japan
 C225 (16-B)
 C274 (6-W)



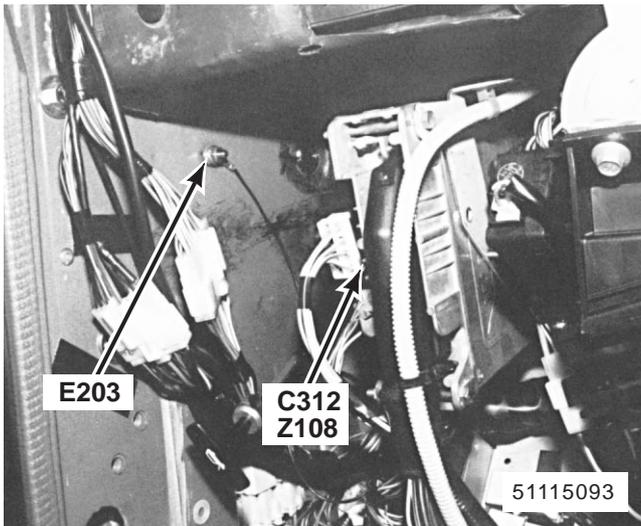
94. behind LH side of fascia
 K182 Power Wash Relay
 C218 (8-W)
 C2074 (5-Y)



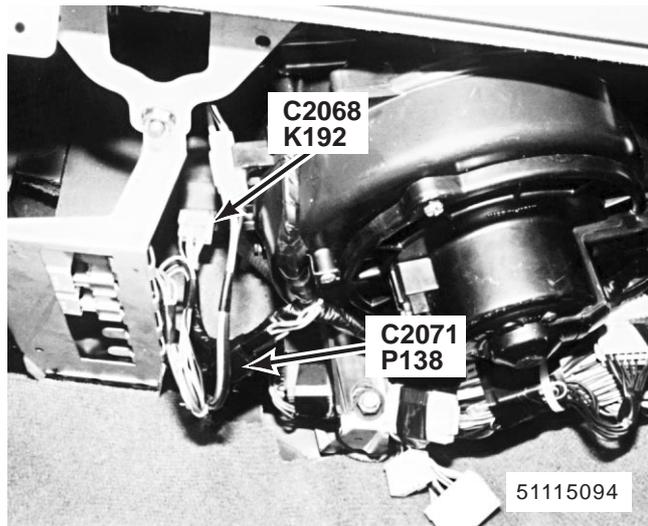
95. behind LH side of fascia
 K109 Condenser Fan Relay
 K176 Dim/Dip Relay
 C292 (5-Y)
 C293 (5-U)



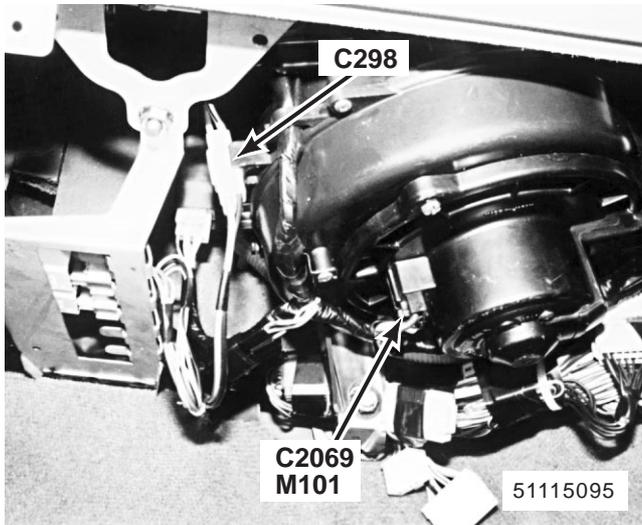
96. behind LH side of fascia
 K101 A.B.S. Load Relay
 K102 A.B.S. Pump Relay
 K103 A.B.S. Warning Relay
 C350 (5-G)
 C351 (5-Y)
 C352 (5-B)



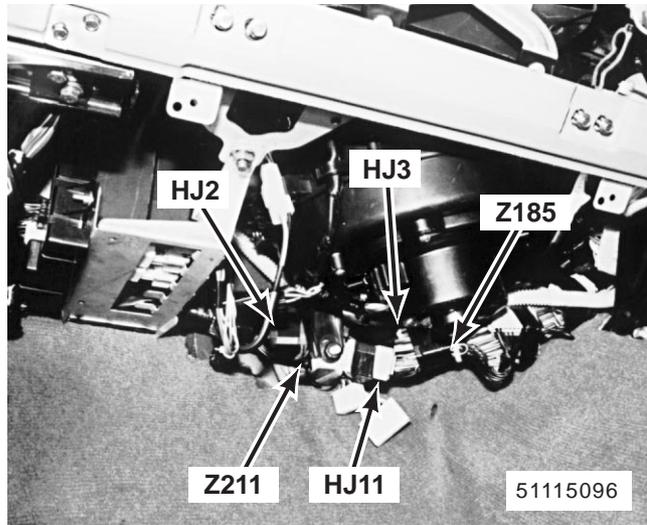
97. behind LH side of fascia
 Z108 Anti-Lock Brake System ECU
 C312 (35-B)
 E203



98. behind LH side of fascia
 K192 Front Blower Motor Relay
 P138 Air Recirculation Solenoid In-Line Fuse
 C2068 (5-W)
 C2071 (2-B)



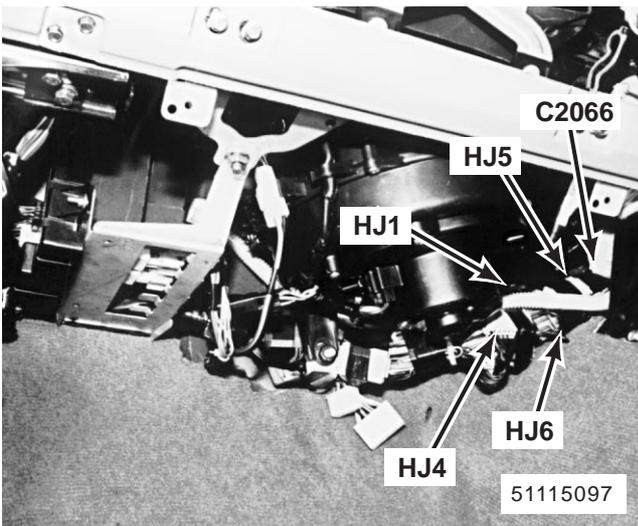
99. behind LH side of fascia
 M101 Front Blower Motor
 C298 (3-W)
 C2069 (2-B)



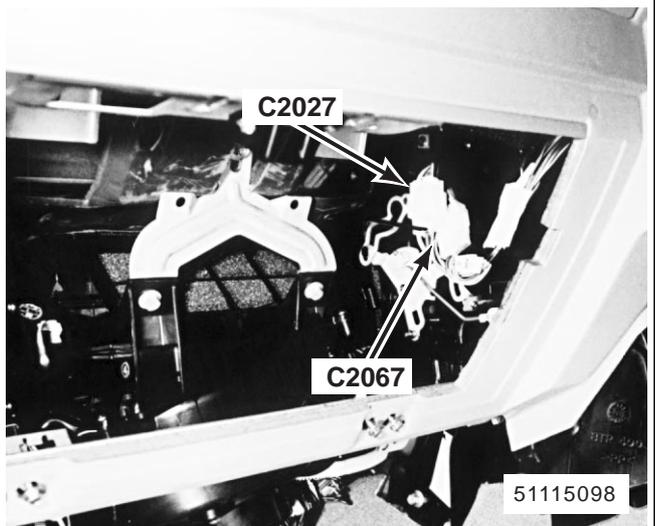
100. behind LH side of fascia
 Z185 Power Mirror Diode
 Z211 Fan Timer Diode
 HJ2 (20-U)
 HJ3 (20-W)
 HJ11 (20-W)

Z5 ETM

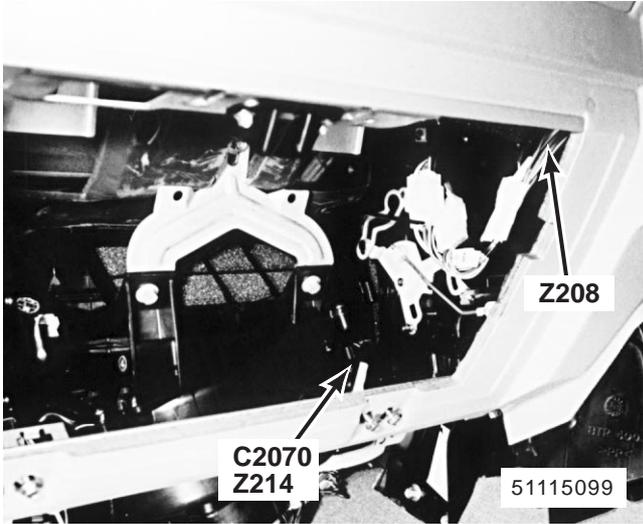
DISCOVERY



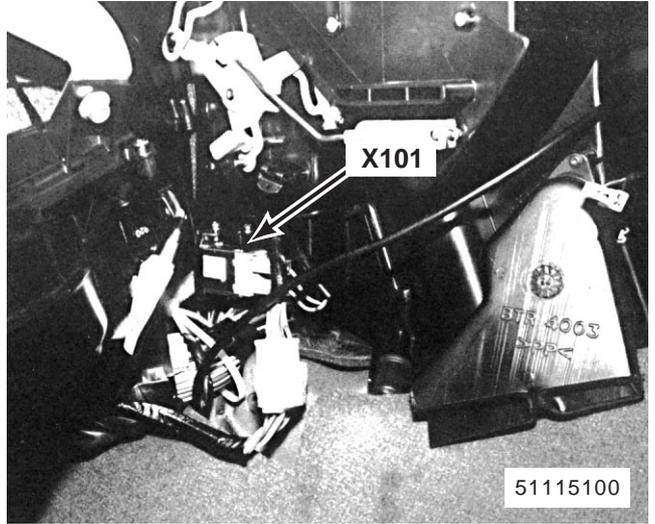
101. behind LH side of fascia
 C2066 (8-W)
 HJ1 (20-W)
 HJ4 (20-W)
 HJ5 (20-W)
 HJ6 (20-G)



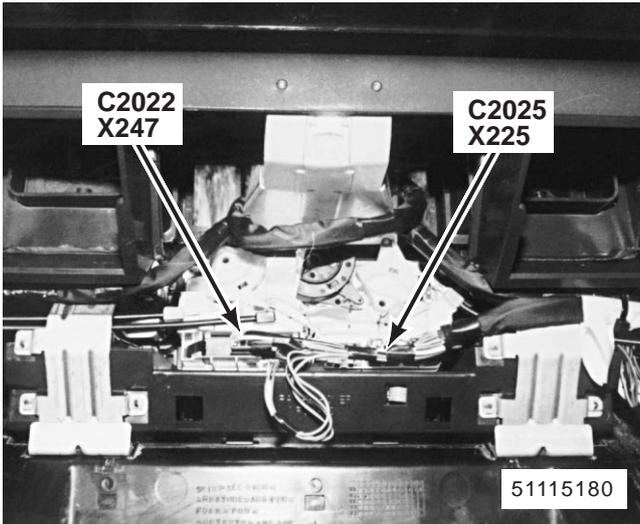
102. behind LH side of fascia
 C2027 (5-W)
 C2067 (10-W)



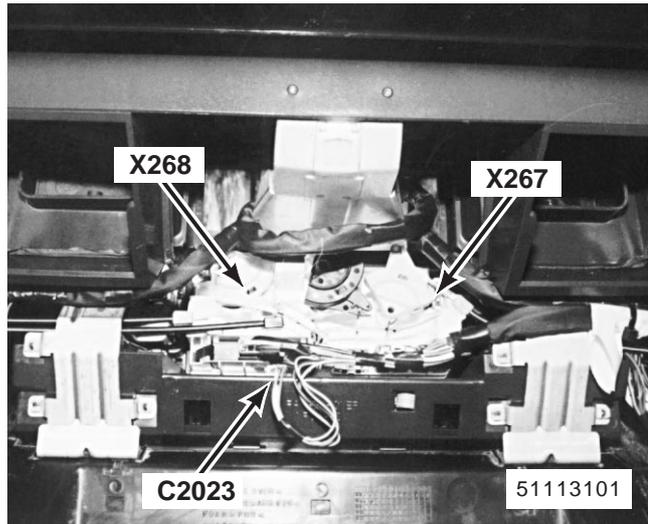
103. behind LH side of fascia
 Z208 Air Supply Selector Diode
 Z214 Front Blower Resistor Unit
 C2070 (4-B)



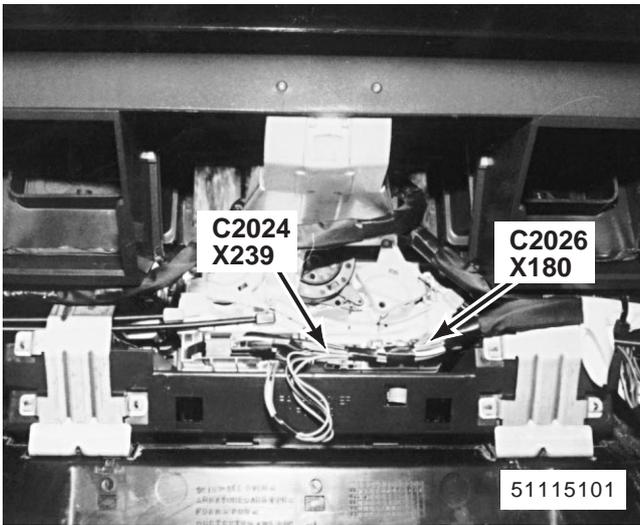
104. LH side of heater evaporator unit
 X101 Front A/C Evaporator Temperature Switch



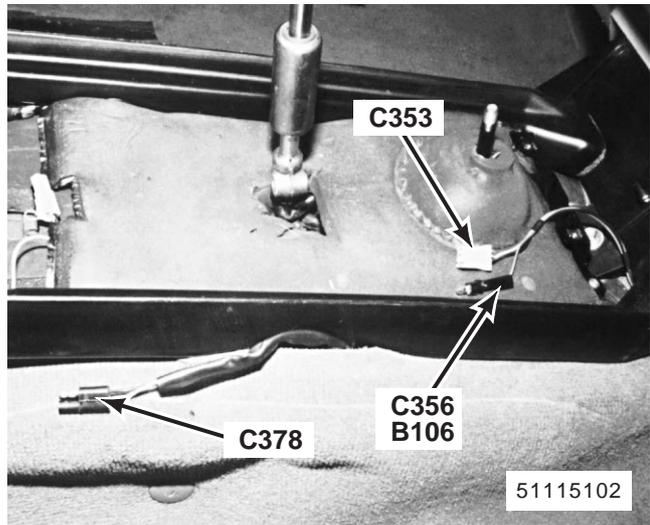
105. behind heater and A/C control panel
 X247 Front Fan Speed Switch
 X225 Front A/C Switch
 C2022 (5-W)
 C2025 (5-W)



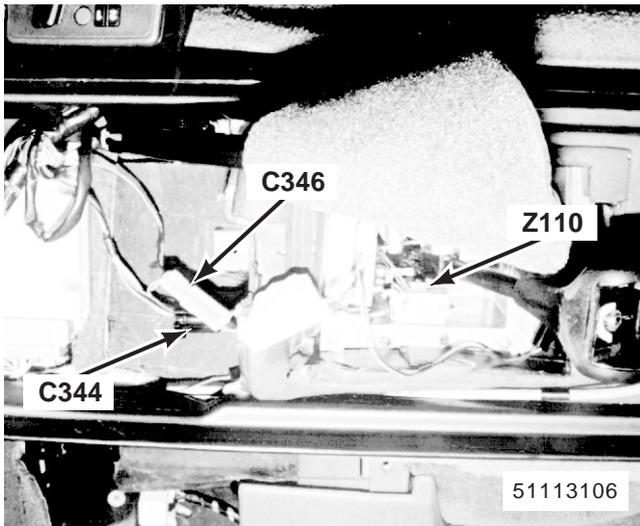
106. behind heater and A/C control panel
 X267 Left Maximum Cool Switch
 X268 Right Maximum Cool Switch
 C2023 (4-W)



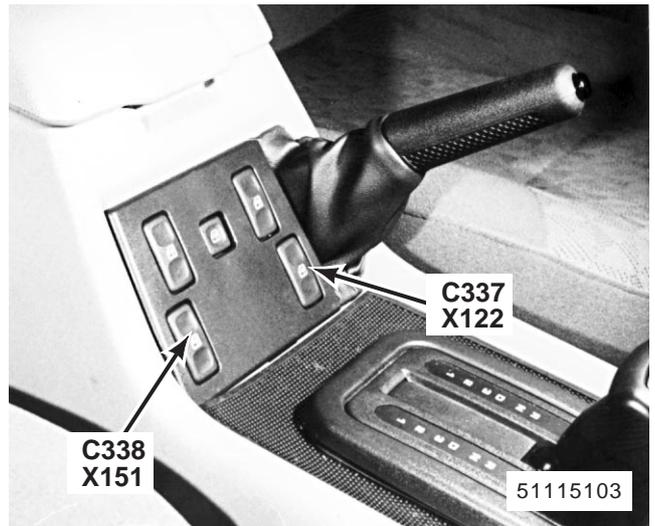
107. behind heater and A/C control panel
 X180 Air Supply Selector Switch
 X239 Main Rear A/C Switch
 C2024 (5-W)
 C2026 (5-B)



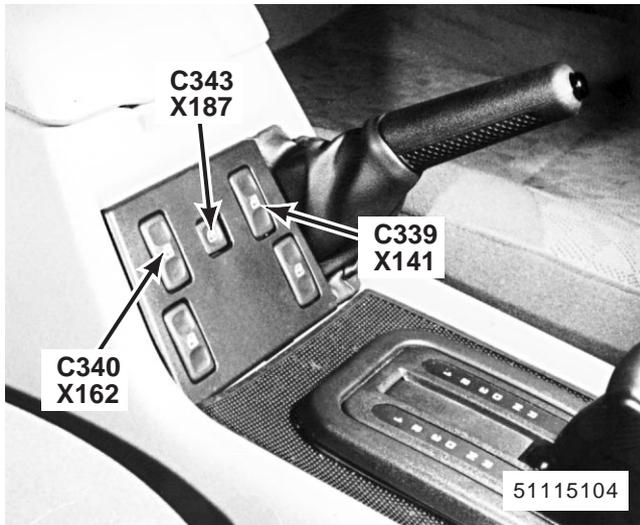
108. beneath centre console
 B106 Fascia Cigar Lighter
 C353 (2-W)
 C356 (1-B)
 C378 (2-B)



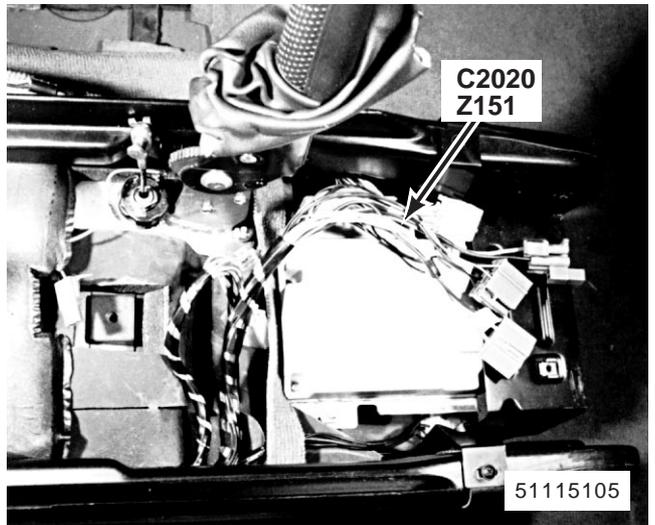
109. beneath centre console
 Z110 Transmission Range Selector Switch
 C344 (6-B)
 C346 (2-U)



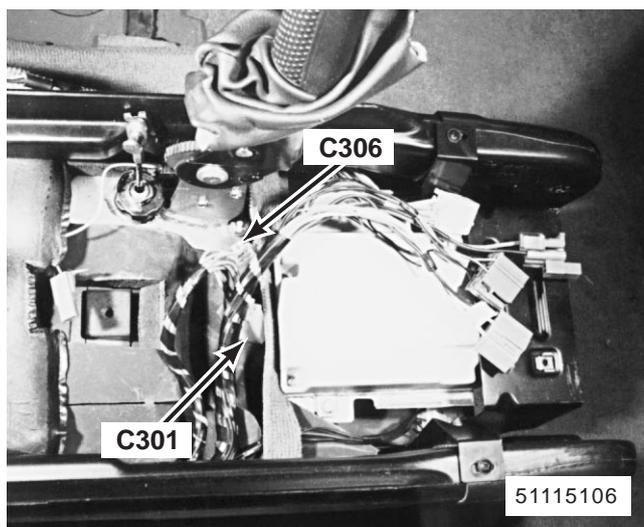
110. in rear of centre console
 X122 Left Front Window Switch
 X151 Right Front Window Switch
 C337 (7-G)
 C338 (7-W)



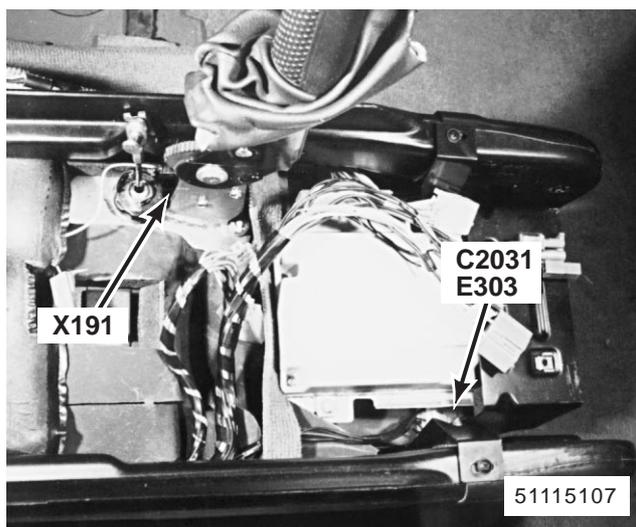
111. in rear of centre console
 X141 Left Rear Window Console Switch
 X162 Right Rear Window Console Switch
 X187 Rear Window Isolation Switch
 C339 (7-Y)
 C340 (7-R)
 C343 (7-N)



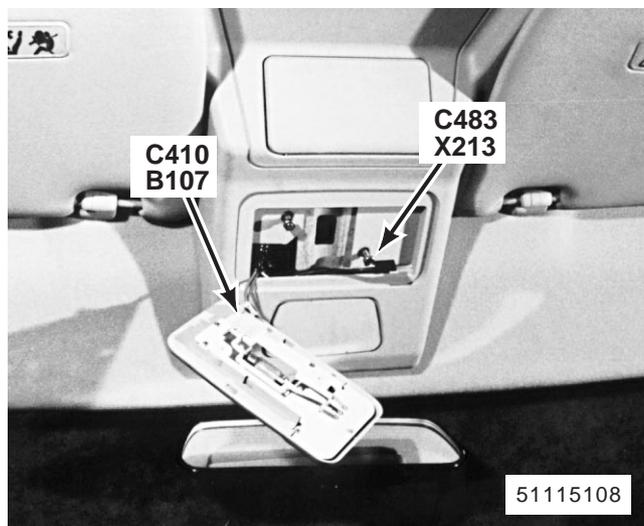
112. beneath centre console
 Z151 Air Bag Diagnostic Control Module
 C2020 (29-R)



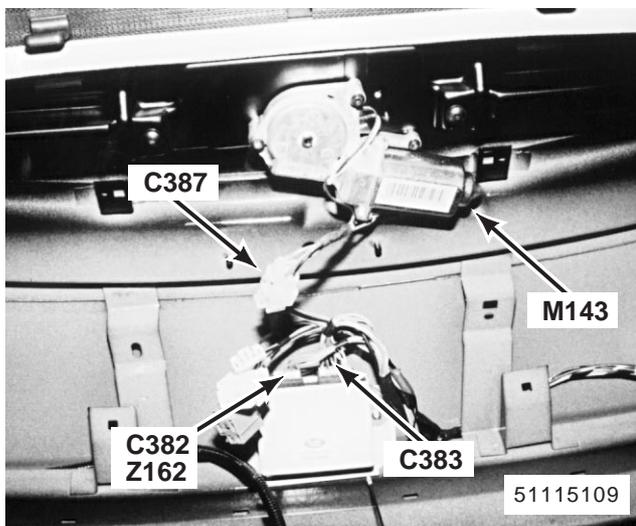
113. beneath centre console
 C301 (6-W)
 C306 (3-W)



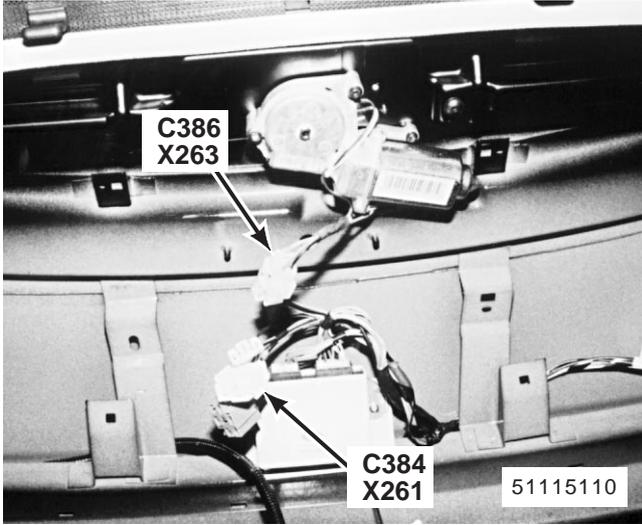
114. beneath centre console
 X191 Handbrake Switch
 C2031 (6-W)
 E303



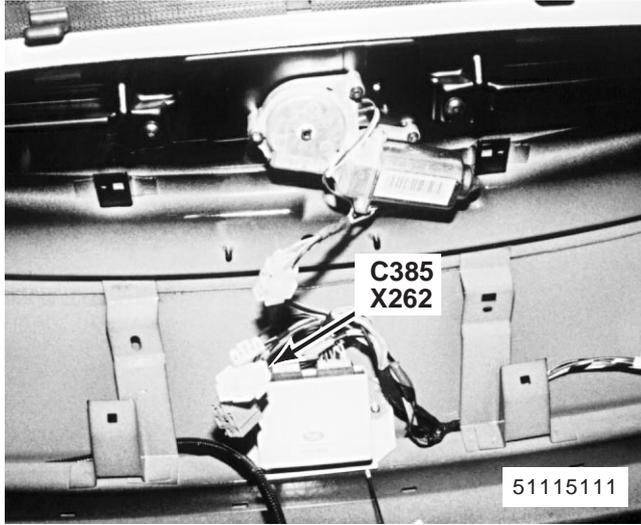
115. front centre of roof
 B107 Front Interior Roof Lamp
 X213 Alarm Sensor
 C410 (3-W)
 C483 (4-B)



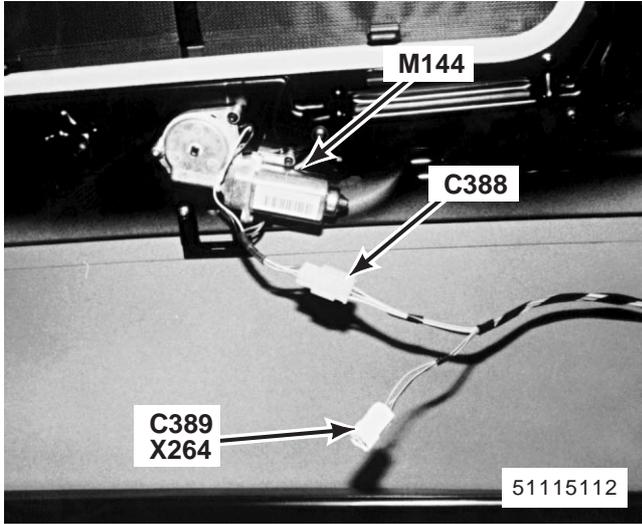
116. front centre of roof
 Z162 Sunroof Control Unit
 M143 Front Sunroof Motor
 C382 (8-W)
 C383 (10-W)
 C387 (4-W)



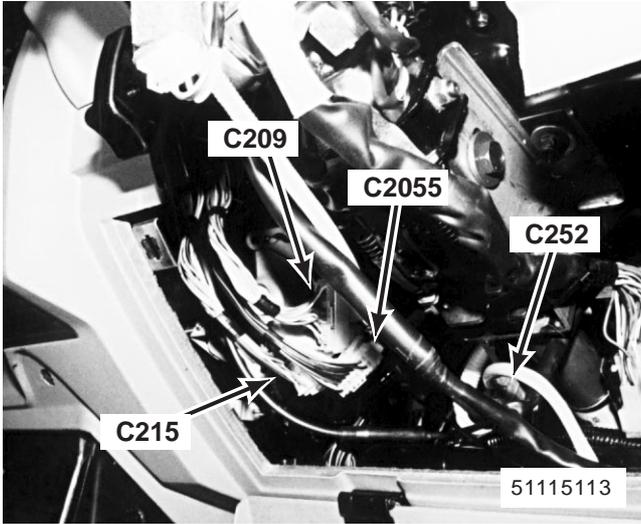
117. front centre of roof
 X261 Front Sunroof Switch
 X263 Rear Sunroof Lockout Switch
 C384 (7-G)
 C386 (5-S)



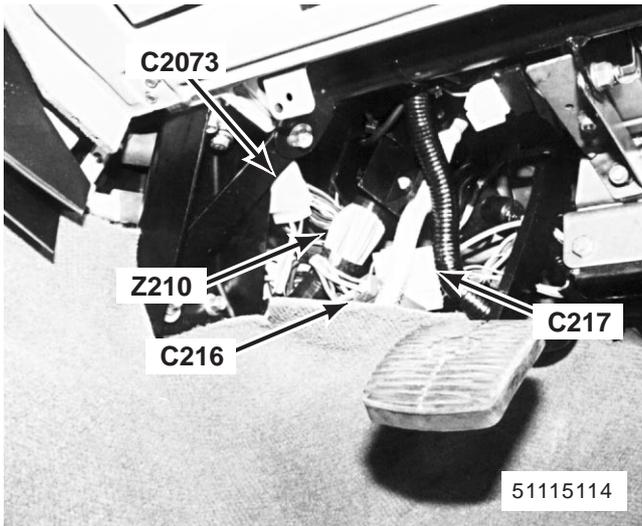
118. front centre of roof
 X262 Rear Sunroof Switch
 C385 (7-W)



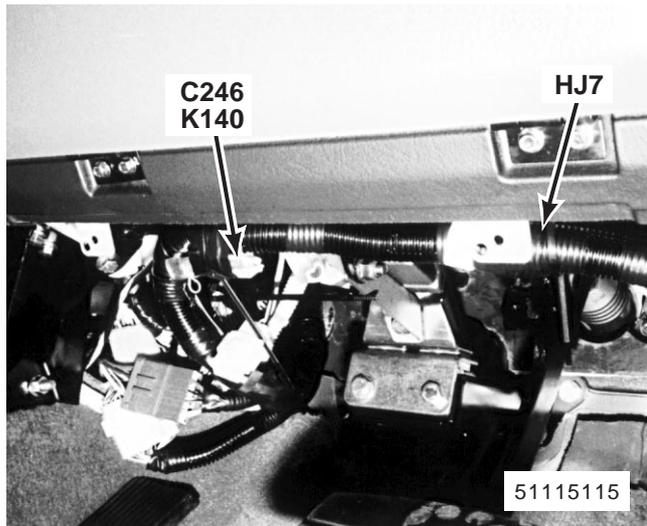
119. centre of roof
 M144 Rear Sunroof Motor
 X264 Passenger's Rear Sunroof Switch
 C388 (4-W)
 C389 (3-W)



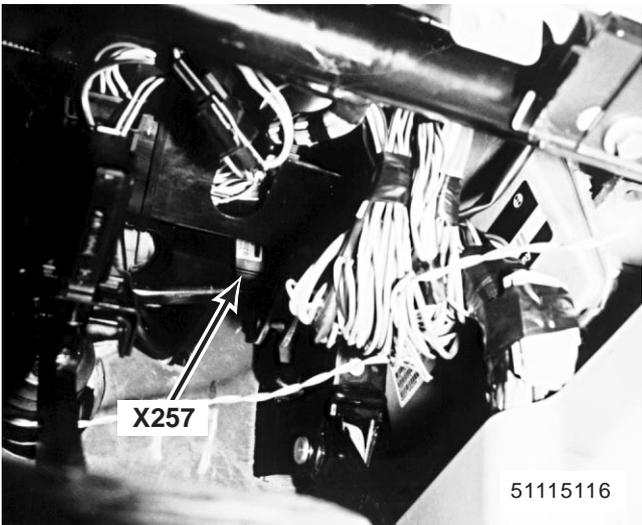
120. behind RH side of fascia left of steering column
 C209 (24-W)
 C215 (24-Y)
 C252 (6-R)
 C2055 (13-W)



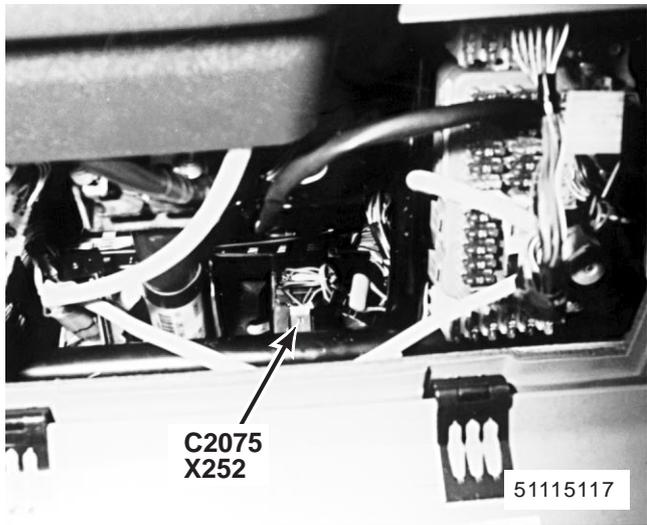
121. behind RH side of fascia right of heater evaporator unit
 Z210 Condenser Fan Control Diode 2
 C216 (7-N)
 C217 (20-W)
 C2073 (10-W)



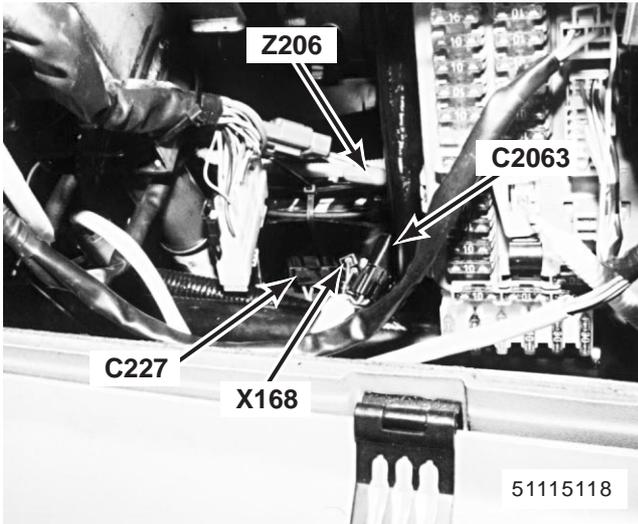
122. behind RH side of fascia
 K140 Tune Select Resistor
 C246 (2-U)
 HJ7 (20-U)



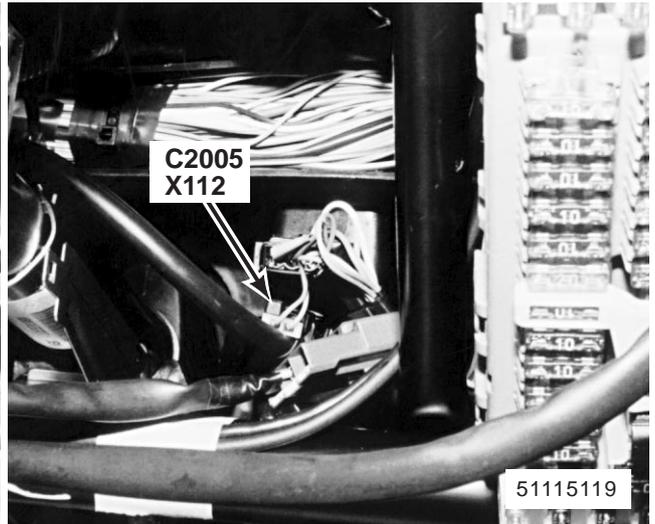
123. behind RH side of fascia right of steering column
 X257 Throttle Position Sensor



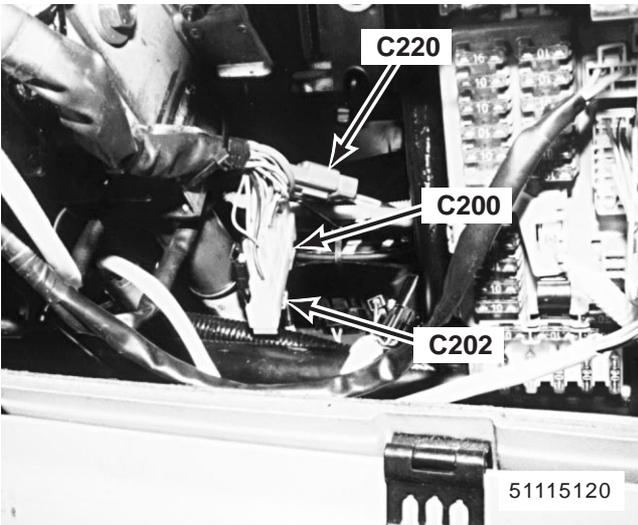
124. behind RH side of fascia right of steering column
 X252 EDC Stop Lamp Switch
 C2075 (3-W)



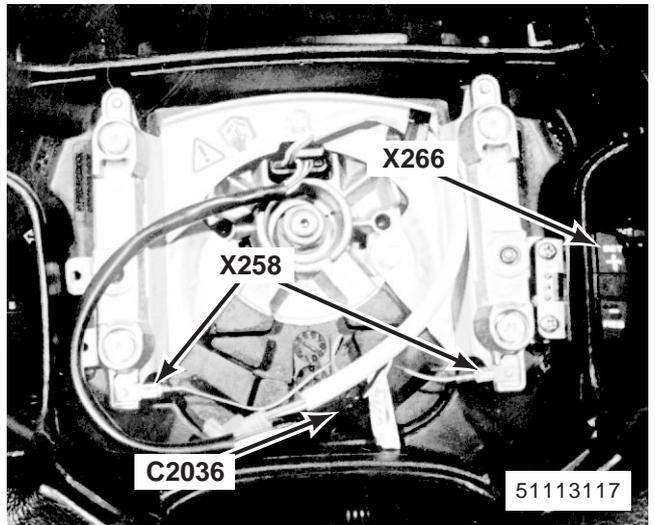
125. behind RH side of fascia right of steering column
 X168 Stop Lamp Switch
 Z206 Stop Lamp Switch Suppressor
 C227 (4-B)
 C2063 (2-B)



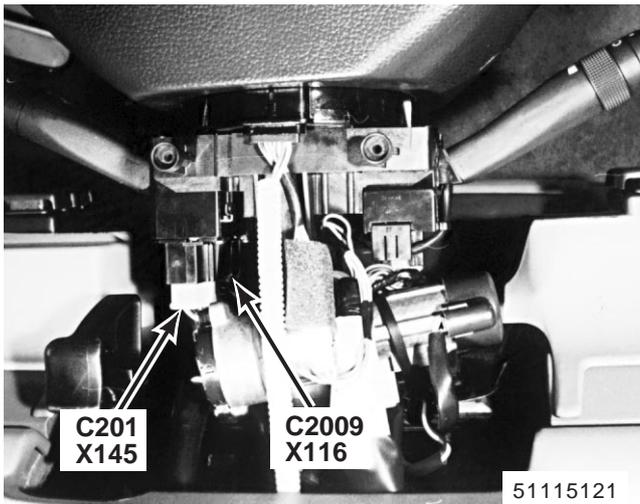
126. behind RH side of fascia right of steering column
 X112 Brake Switch Vent Valve
 C2005 (2-W)



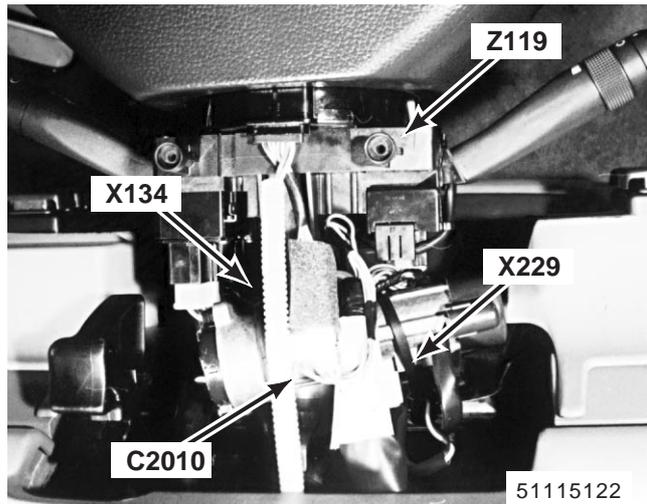
127. behind RH side of fascia right of steering column
 C200 (4-W)
 C202 (24-W)
 C220 (3-N)



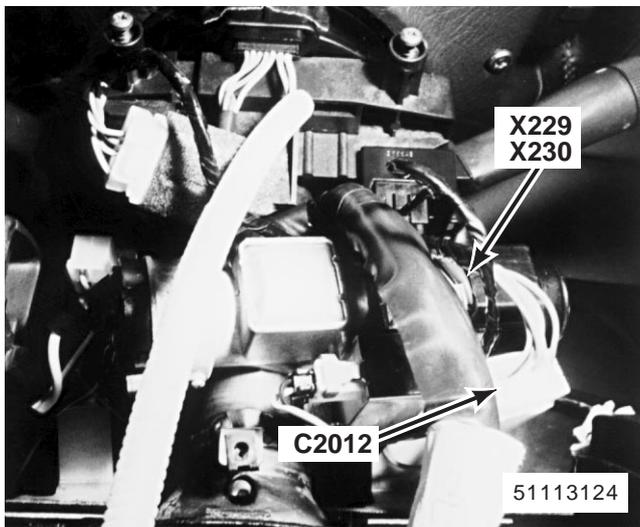
128. in steering wheel
 X258 Horn Switches
 X266 Steering Wheel Cruise Switches
 C2036 (7-B)



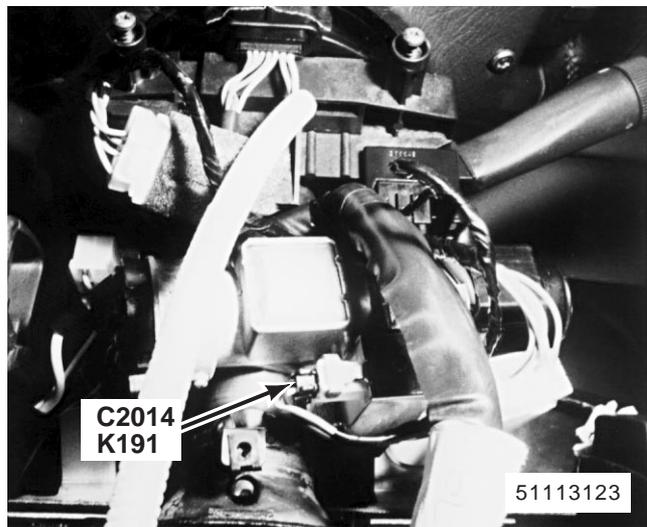
129. underside of steering column
 X116 Direction Indicator Switch
 X145 Main Lighting Switch
 C201 (7-W)
 C2009 (4-W)



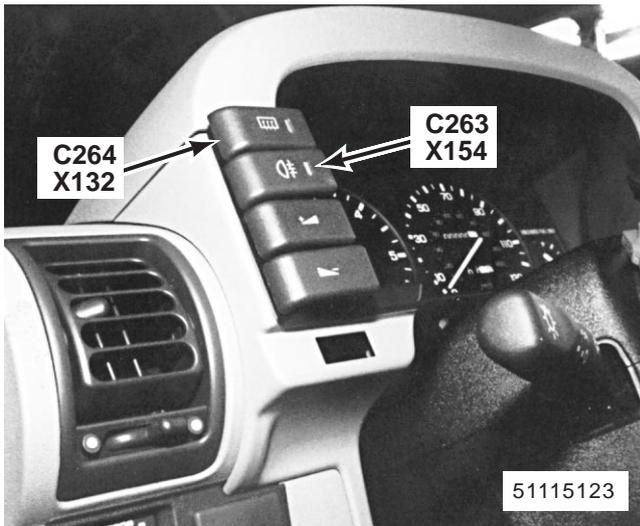
130. underside of steering column
 X134 Ignition Switch
 X229 Key-In Switch
 Z119 Rotary Coupler
 C2010 (6-W)



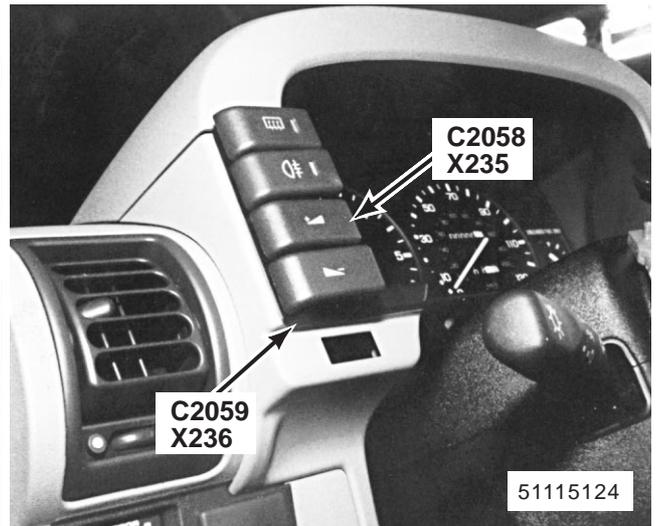
131. underside of steering column
 X229 Key-In Switch
 X230 Key-Barrel Switch
 C2012 (8-W)



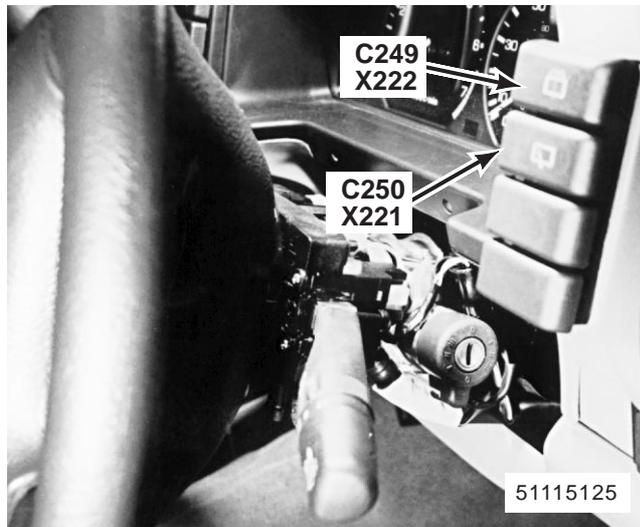
132. underside of steering column
 K191 Ignition Key Lock Solenoid
 C2014 (2-B)



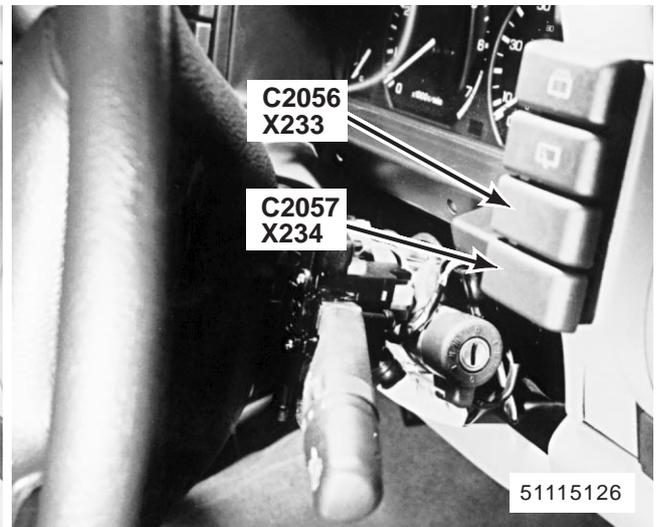
133. top RH side of fascia
 X132 Heated Rear Screen Switch
 X154 Rear Fog Guard Lamps Switch
 C263 (5-U)
 C264 (5-U)



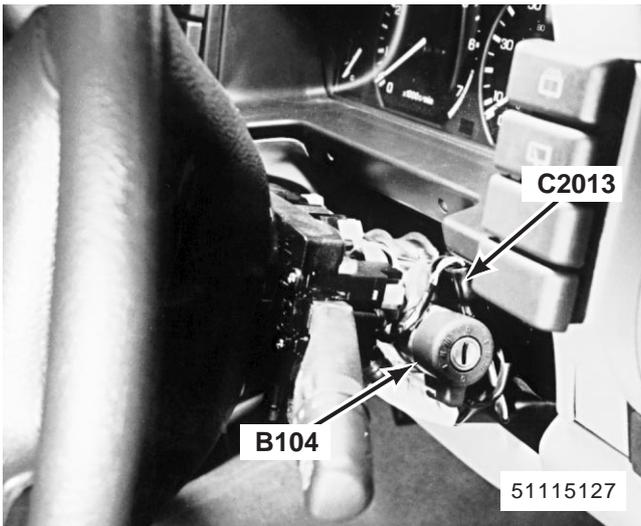
134. top RH side of fascia
 X235 Radio Volume Up Switch
 X236 Radio Volume Down Switch
 C2058 (5-W)
 C2059 (5-G)



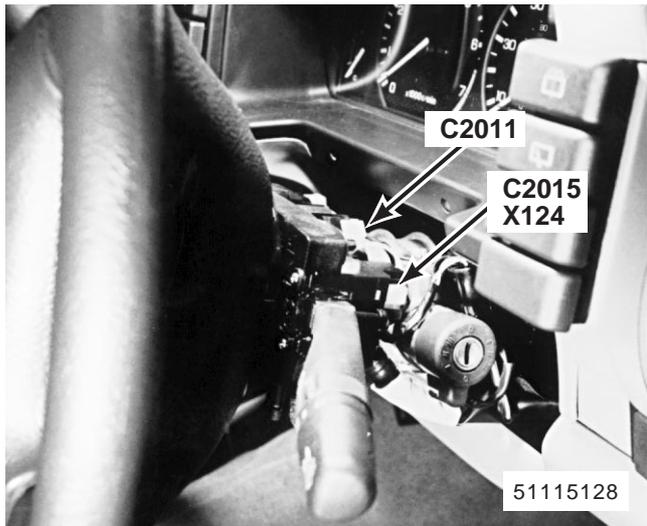
135. top RH side of fascia
 X221 Rear Screen Wipe Switch
 X222 Rear Screen Wash Switch
 C249 (5-G)
 C250 (5-W)



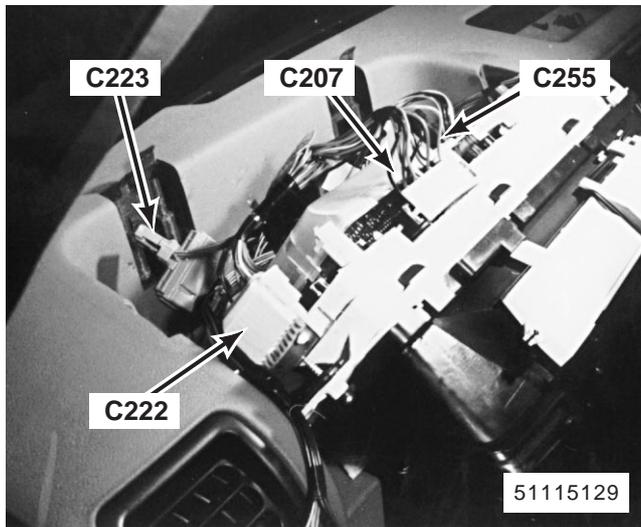
136. top RH side of fascia
 X233 Radio Tune Switch
 X234 Radio Waveband Switch
 C2056 (5-U)
 C2057 (5-U)



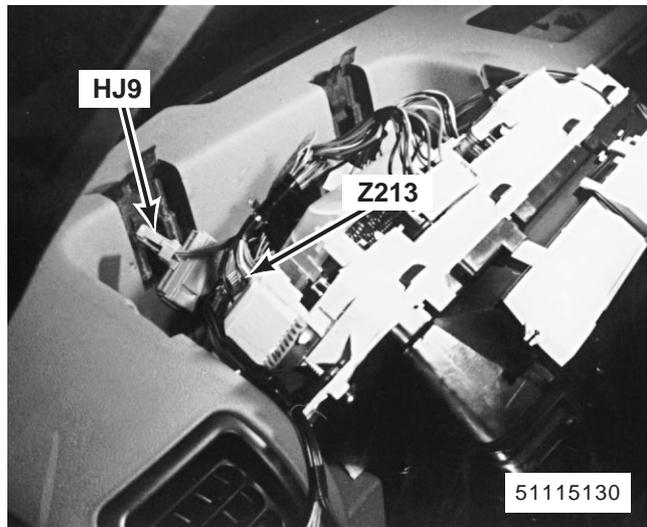
137. top of steering column
 B104 Column Switch Illumination
 C2013 (4-B)



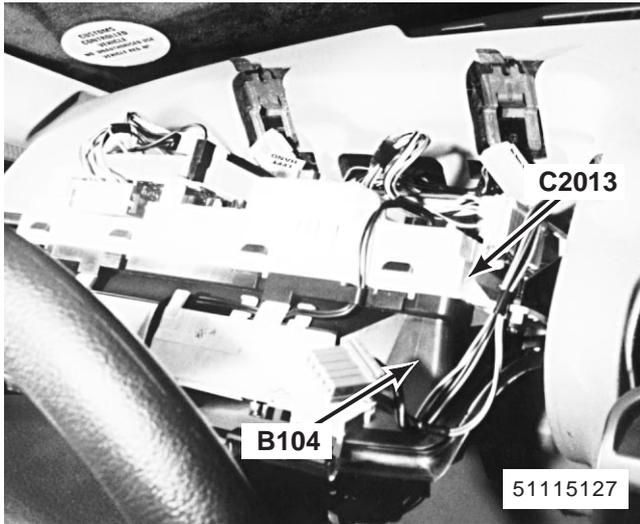
138. top of steering column
 X124 Front Wipe/Wash Switch
 C2011 (6-W)
 C2015 (8-W)



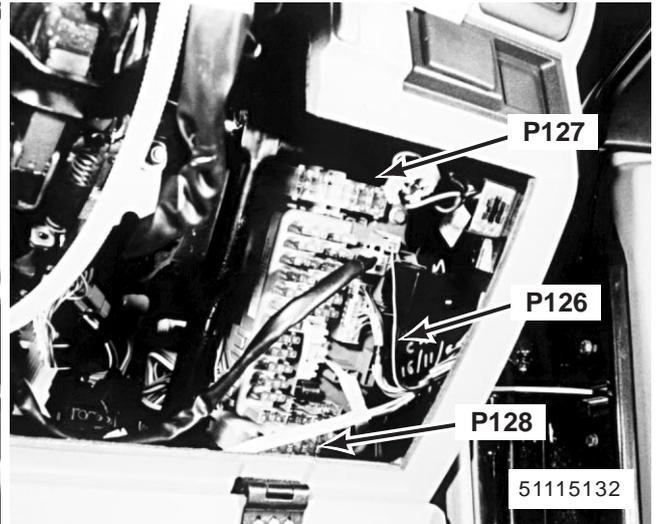
139. behind instrument cluster
 C207 (10-B)
 C222 (10-W)
 C223 (5-U)
 C255 (1-B)



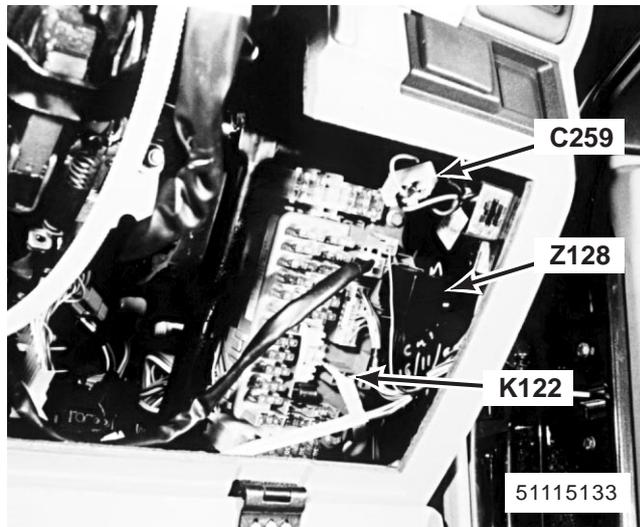
140. behind instrument cluster
 Z213 Direction Indicator Diode 2
 HJ9 (20-S)



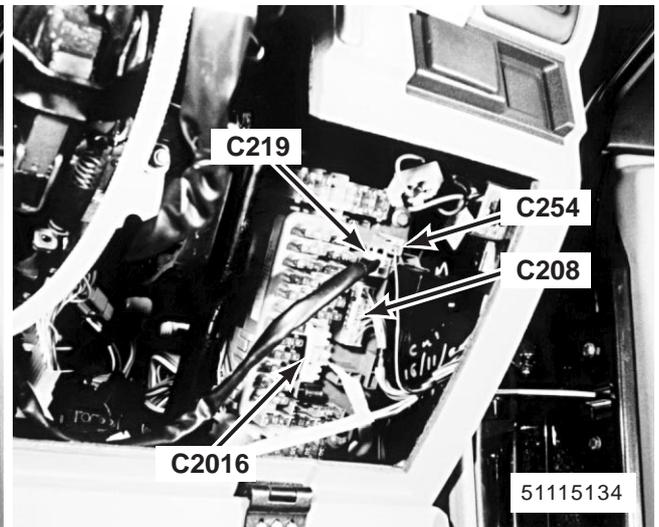
141. behind instrument cluster
 Z212 Direction Indicator Diode 1
 C221 (10-W)
 HJ8 (20-S)



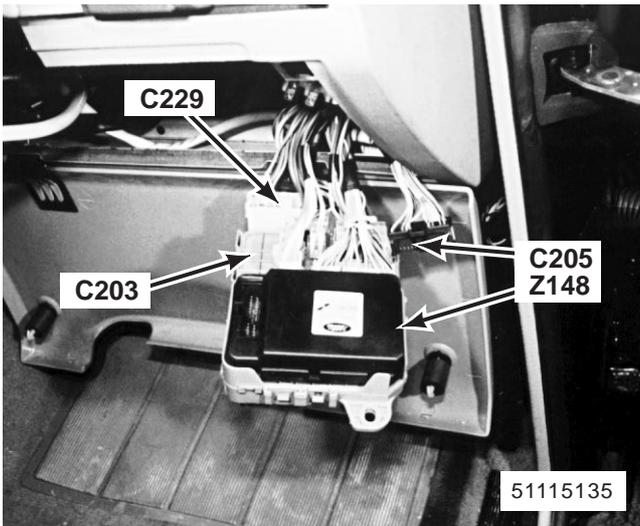
142. behind RH side of fascia right of steering column
 P126 Fascia Fuse Box
 P127 Satellite Fuse Box 1
 P128 Satellite Fuse Box 2



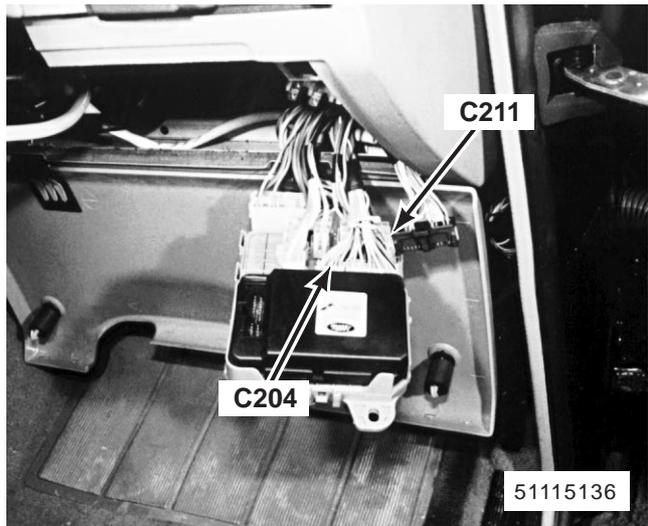
143. behind RH side of fascia right of steering column
 K122 Heated Rear Screen Relay
 Z128 Flasher Unit
 C259 (6-W)



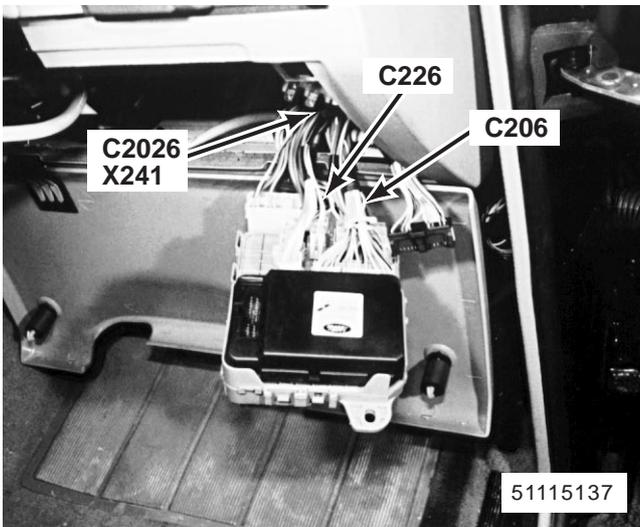
144. behind RH side of fascia right of steering column
 C208 (18-W)
 C219 (4-W)
 C254 (1-W)
 C2016 (1-W)



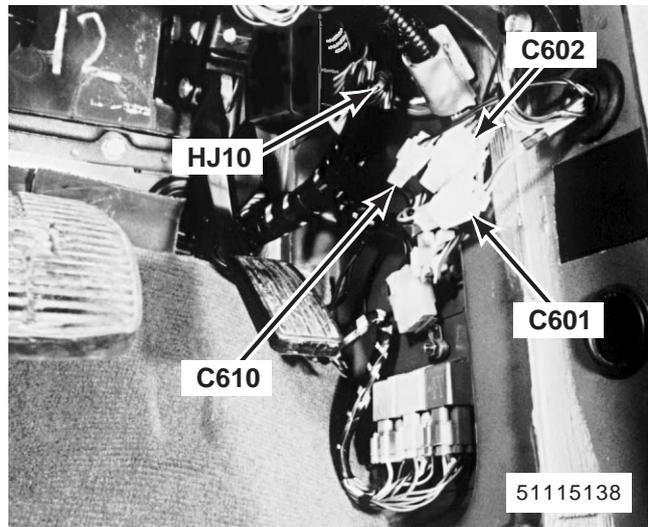
145. behind RH side of fascia rear of Fascia Fuse Box
 Z148 Multi-Function Unit (MFU)
 C203 (7-W)
 C205 (24-B)
 C229 (1-W)



146. behind RH side of fascia rear of Fascia Fuse Box
 C204 (24-W)
 C211 (10-W)



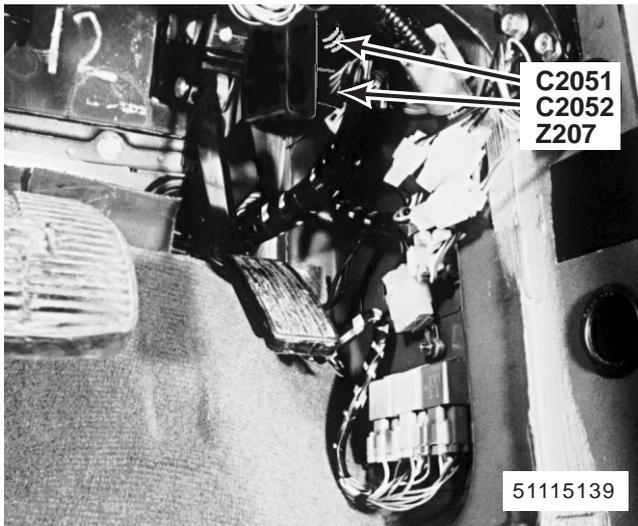
147. behind RH side of fascia rear of Fascia Fuse Box
 X241 Saudi Junction Connector
 C206 (4-W)
 C226 (3-W)
 C2062 (1-B)



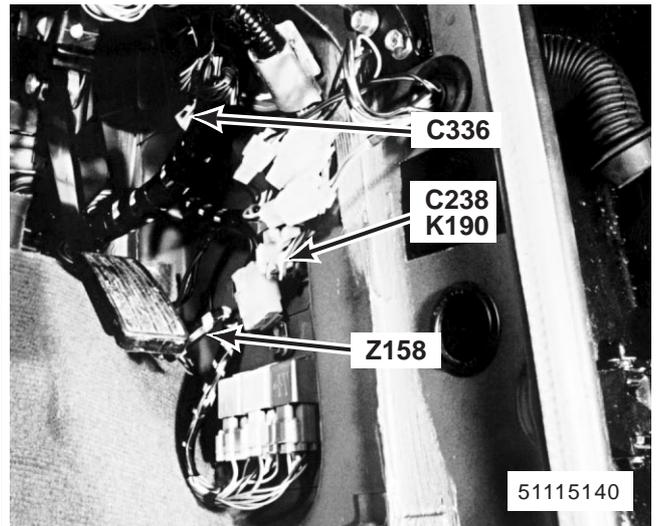
148. behind RH footwell trim panel
 C601 (2-W)
 C602 (13-W)
 C610 (2-W)
 HJ10 (20-B)

Z5 ETM

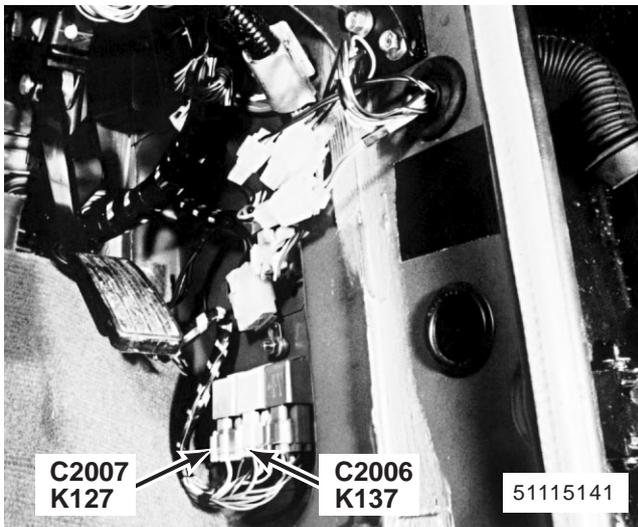
DISCOVERY



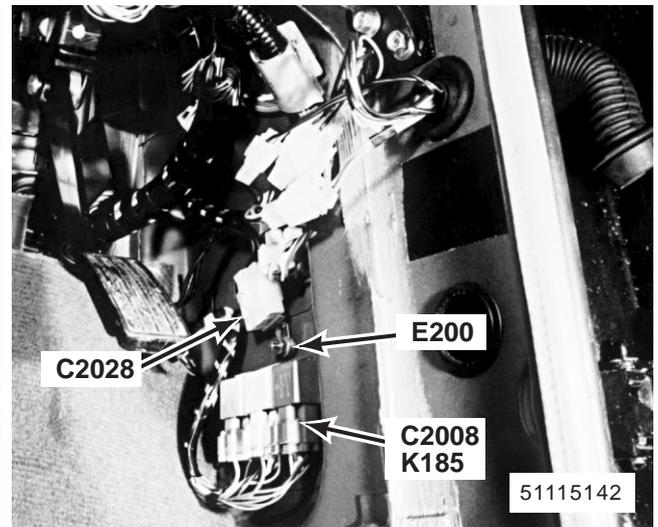
149. behind RH footwell trim panel
 Z207 Multi-Function Relay Unit
 C2051 (8-B)
 C2052 (6-B)



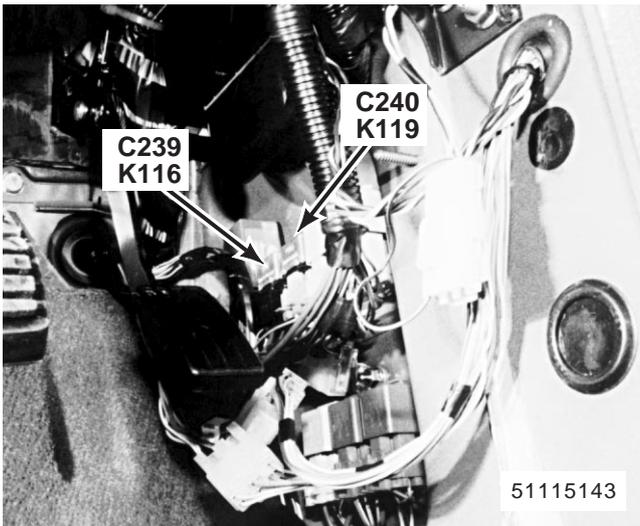
150. behind RH footwell trim panel
 K190 Cooling Fan Relay
 Z158 Starter Relay Diode
 C238 (5-Y)
 C336 (3-W)



151. behind RH footwell trim panel
 K127 Ignition Load Relay
 K137 Starter Solenoid Relay
 C2006 (5-Y)
 C2007 (5-Y)

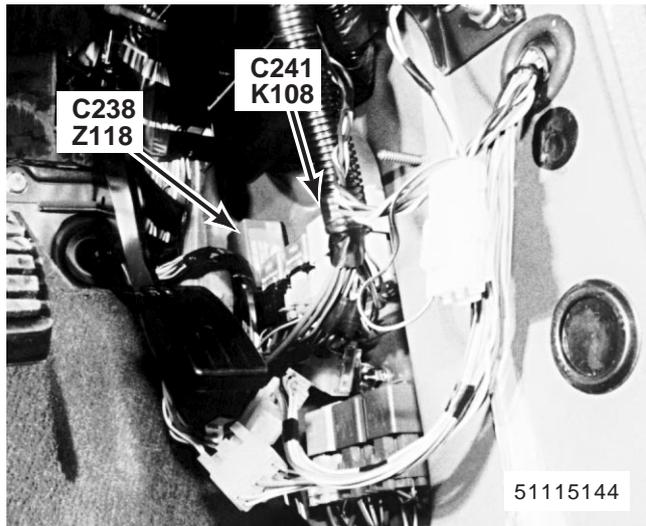


152. behind RH footwell trim panel
 K185 Front Wiper Relay
 C2008 (5-G)
 C2028 (6-W)
 E200



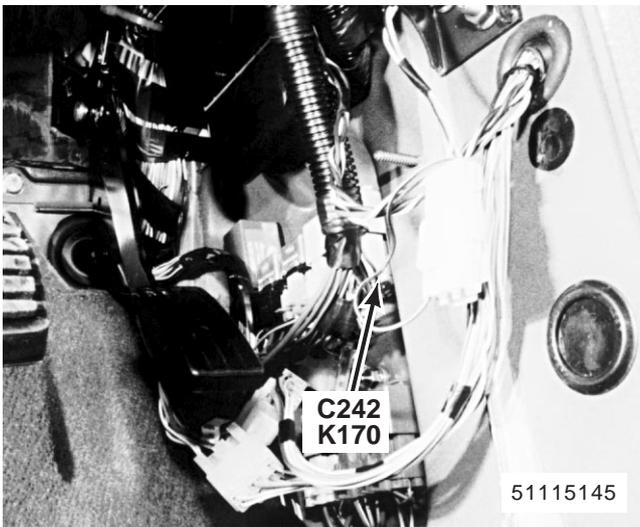
153. behind RH footwell trim panel (MFI-V8 shown; others similar)

- K116 Engine Control Load Relay
- K119 Fuel Pump Relay
- C239 (5-U)
- C240 (5-Y)



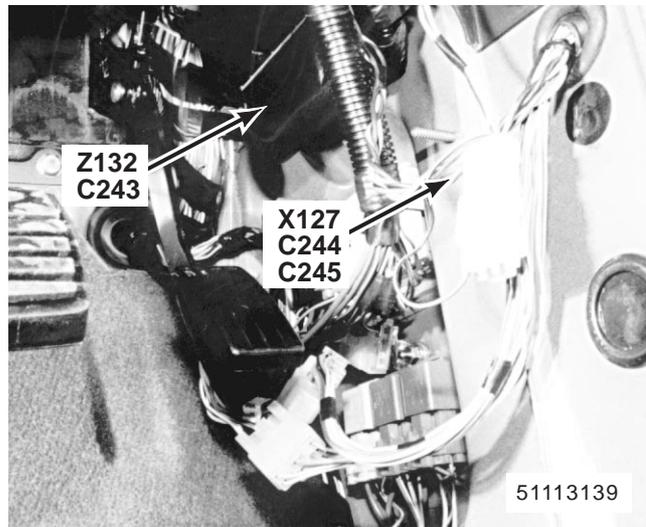
154. behind RH footwell trim panel (MFI-V8 shown; others similar)

- K108 Compressor Clutch Relay
- Z118 Fan Control Module
- C238 (9-B)
- C241 (5-Y)



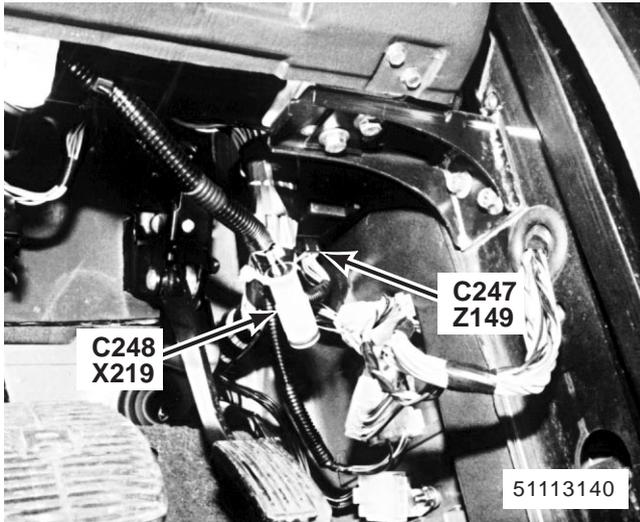
155. behind RH footwell trim panel (MFI-V8 shown; others similar)

- K170 A/C Logic Relay
- C242 (5-B)

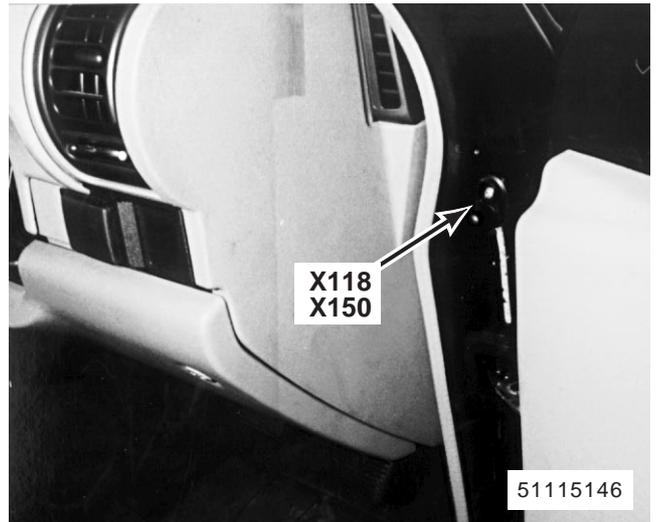


156. behind RH side of fascia

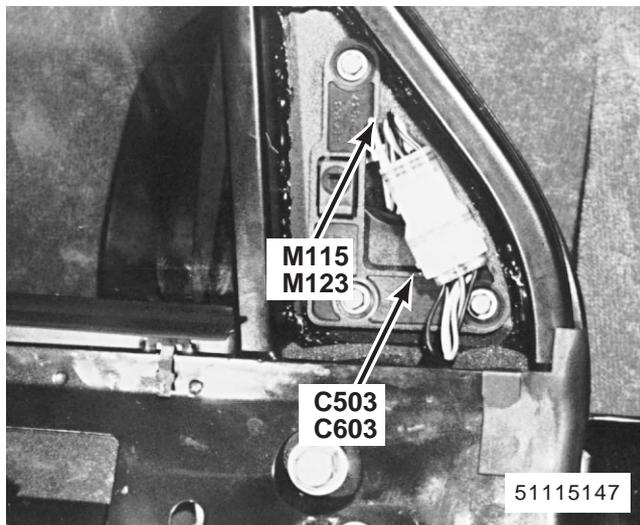
- X127 Data Link Connectors
- Z132 Engine Control Module (ECM)
- C243 (40-B) MFI-V8
- C243 (55-B) 300Tdi with EDC
- C244 (5-W) MFI-V8
- C245 (5-W) MFI-V8
- C245 (4-W) 300Tdi with EDC



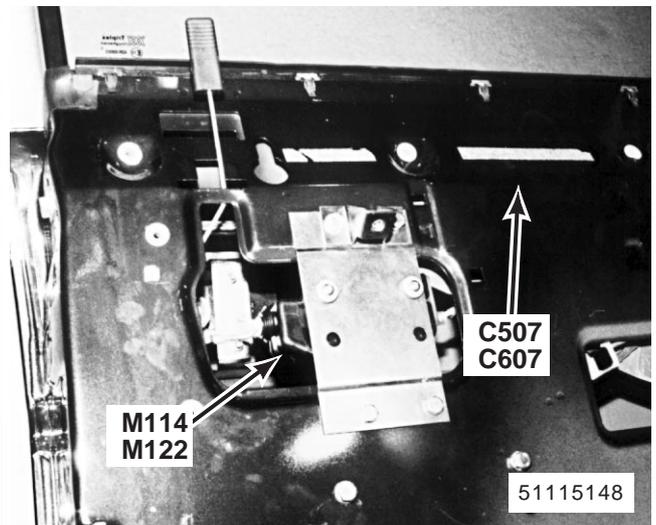
157. behind RH side of fascia
 X219 Data Link Connector (EGR)
 Z149 EGR Valve Control Module
 C247 (16-B)
 C248 (3-W)



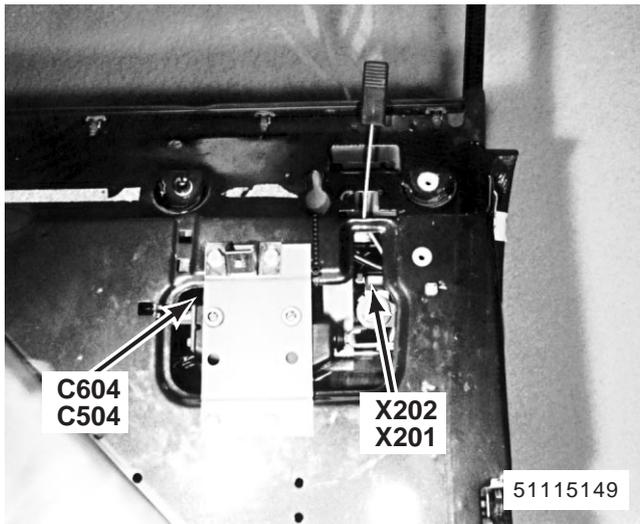
158. front of RH front door jamb (LH similar)
 X118 Right Front Door Switch
 X150 Left Front Door Switch



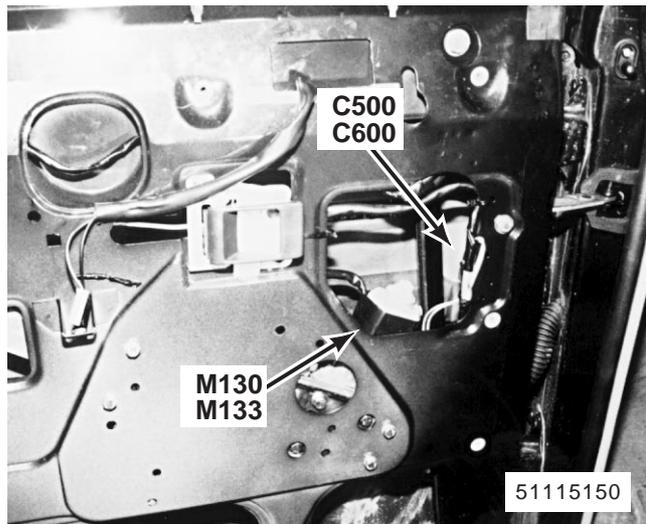
159. top front of LH front door (RH similar)
 M115 Left Mirror Actuator
 M123 Right Mirror Actuator
 C503 (6-W) (Left)
 C603 (6-W) (Right)



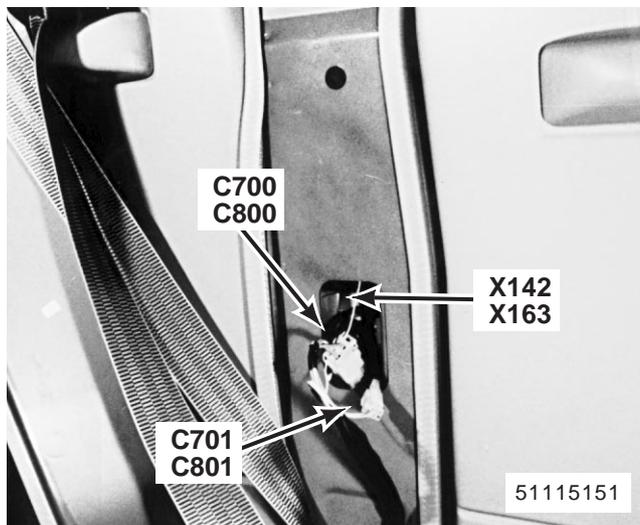
160. in rear of LH front door (RH similar)
 M114 Left Front Door Lock Actuator
 M122 Right Front Door Lock Actuator
 C507 (2-W) (Left) Japan
 C507 (4-W) (Left) Without Theft Alarm
 C507 (6-W) (Left) With Theft Alarm
 C607 (4-W) (Right) Without Theft Alarm
 C607 (6-W) (Right) With Theft Alarm



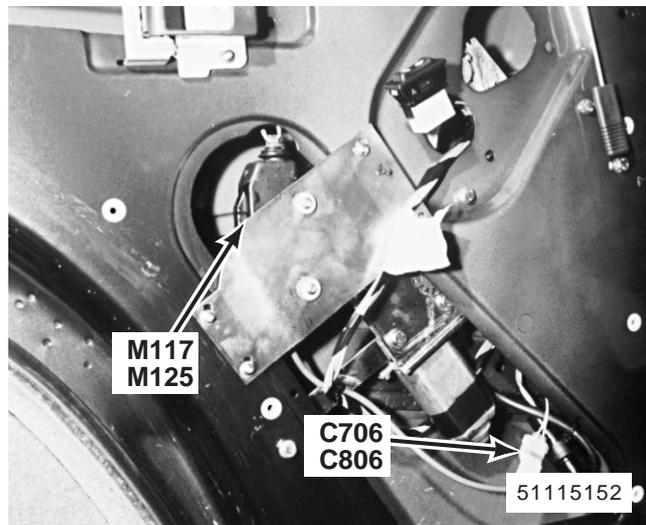
161. in top rear of RH front door (LH similar)
 X201 Left Front Door Key Switch
 X202 Right Front Door Key Switch
 C504 (4-W) (Left)
 C604 (4-W) (Right)



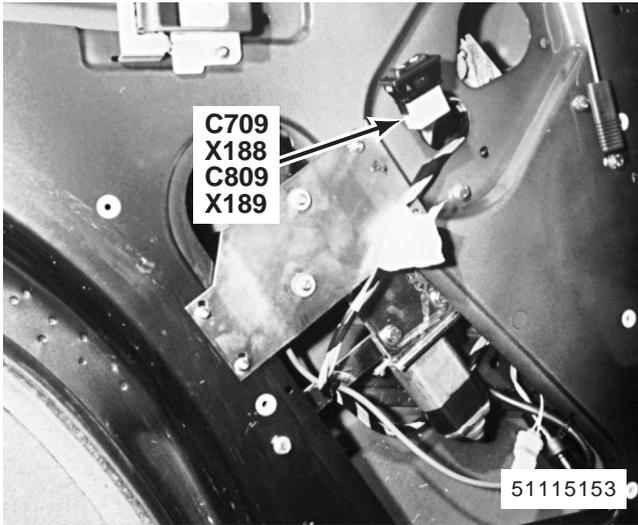
162. in front of LH front door (RH similar)
 M130 Left Front Window Motor
 M133 Right Front Window Motor
 C500 (2-B) (Left)
 C600 (2-B) (Right)



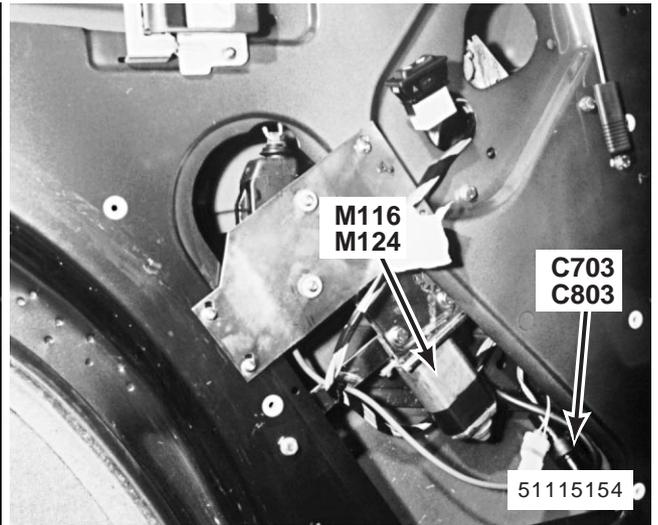
163. in lower part of LH B-post (RH similar)
 X142 Left Rear Door Switch
 X163 Right Rear Door Switch
 C700 (3-W) (Left)
 C800 (3-W) (Right)
 C701 (2-W) (Left)
 C801 (2-W) (Right)



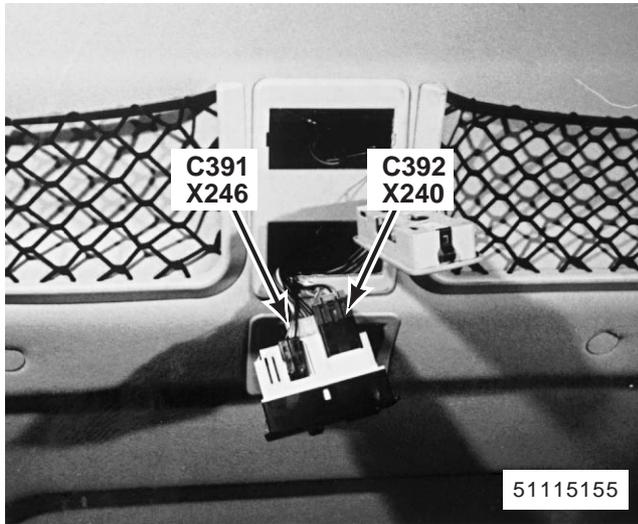
164. inside front of LH rear door (RH similar)
 M117 Left Rear Door Lock Actuator
 M125 Right Rear Door Lock Actuator
 C706 (2-W) (Left)
 C806 (2-W) (Right)



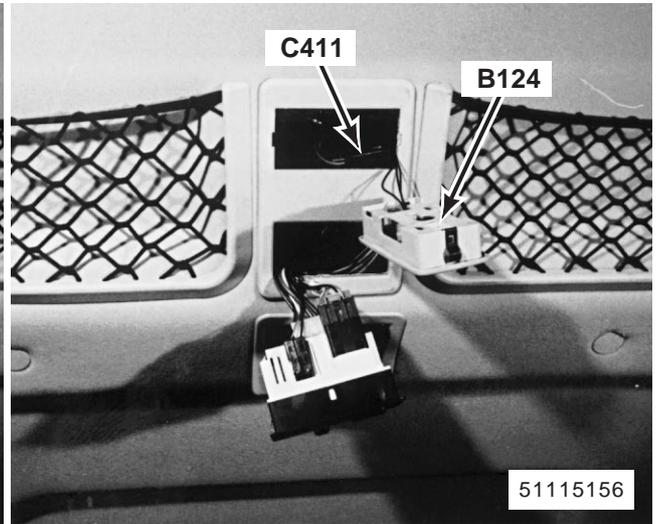
165. inside front of LH rear door (RH similar)
 X188 Left Rear Window Door Switch
 X189 Right Rear Window Door Switch
 C709 (5-W) (Left)
 C809 (5-W) (Right)



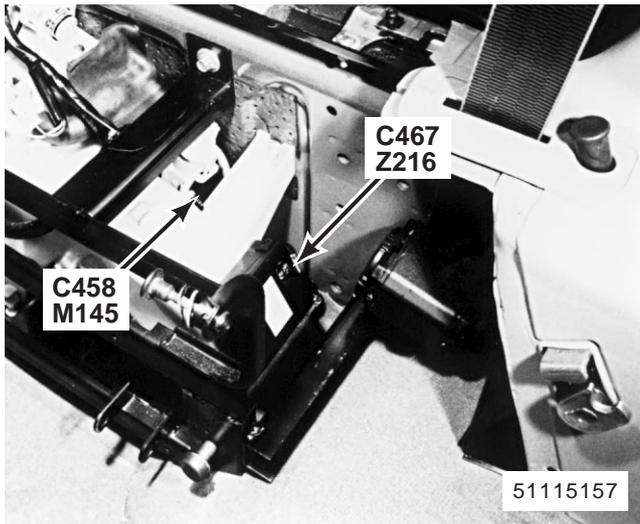
166. inside front of LH rear door (RH similar)
 M116 Left Rear Window Motor
 M124 Right Rear Window Motor
 C703 (3-B) (Left)
 C803 (3-B) (Right)



167. centre of roof
 X240 Passenger's Rear A/C Switch
 X246 Passenger's Rear Fan Speed Switch
 C391 (5-W)
 C392 (5-U)



168. centre of roof
 B124 Rear Interior Roof Lamp
 C411 (4-B)



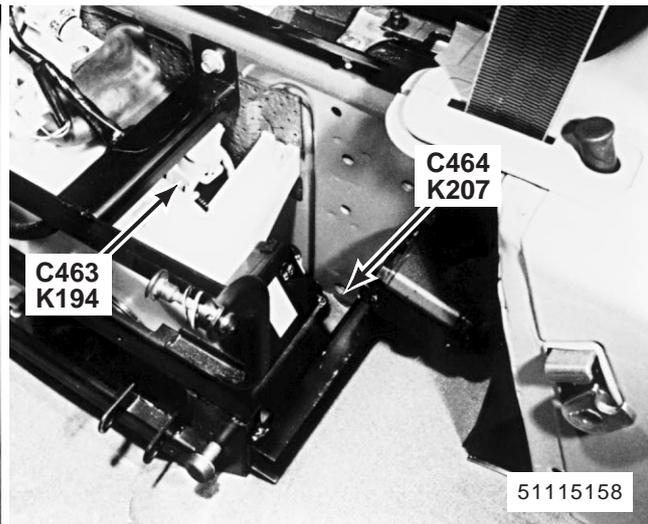
169. LH side of luggage compartment behind trim panel

M145 Rear Blower Motor

Z216 Rear A/C Switch Amplifier

C458 (2-B)

C467 (6-W)



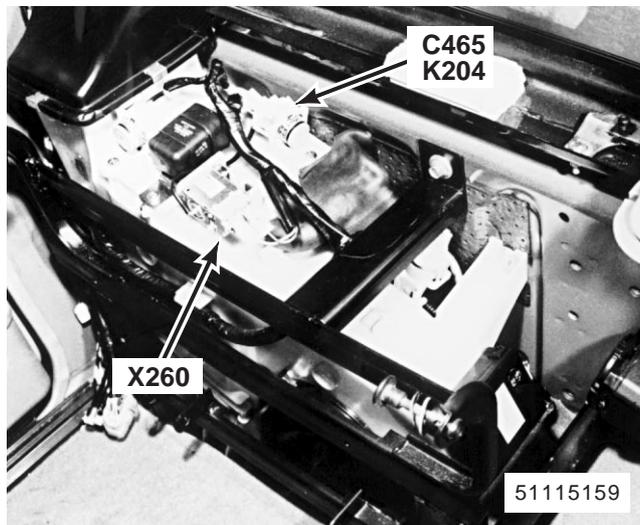
170. LH side of luggage compartment behind trim panel

K194 Rear A/C Control Relay

K207 Rear A/C Refrigerant Control Valve

C463 (4-W)

C464 (2-S)

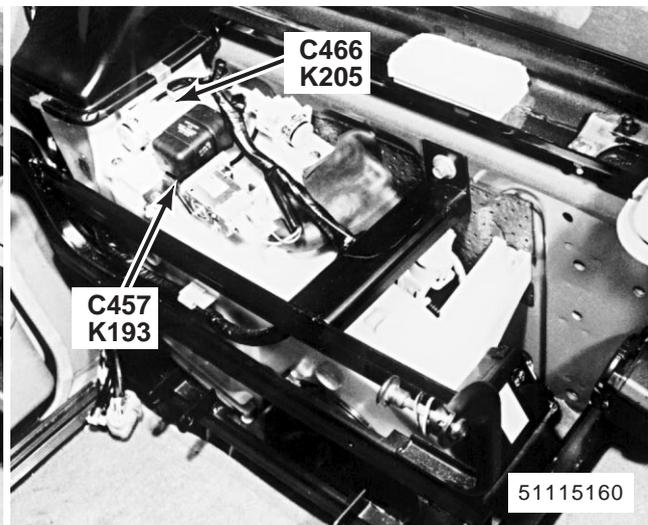


171. LH side of luggage compartment behind trim panel

X260 Rear A/C Evaporator Temperature Switch

K204 Rear A/C Illumination Relay

C465 (4-W)



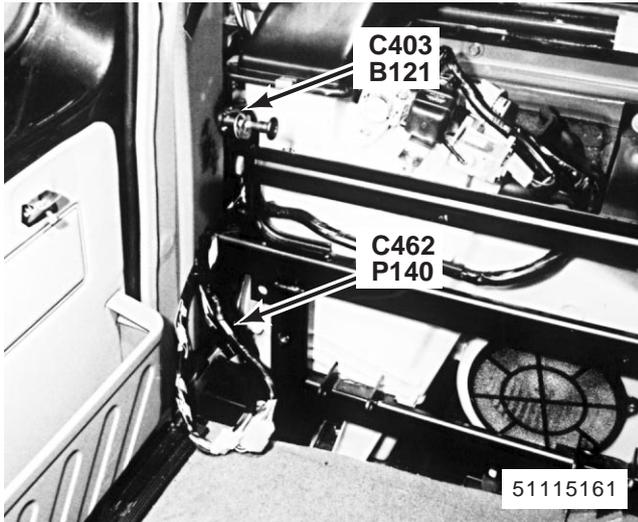
172. LH side of luggage compartment behind trim panel

K193 Rear Blower Motor Relay

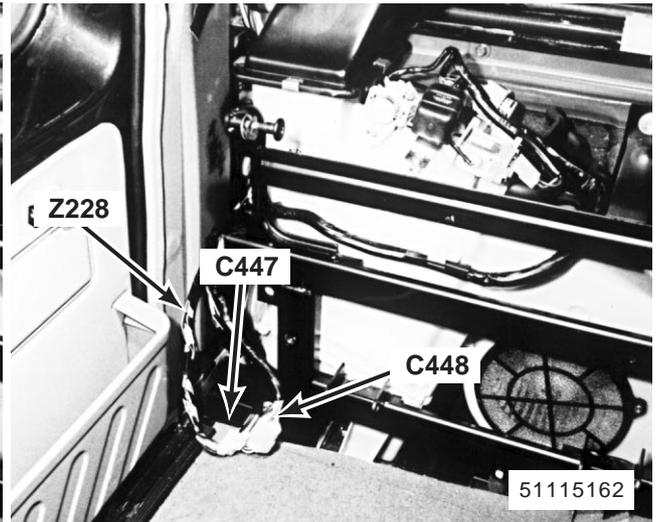
K205 Rear A/C Fan Speed Relay

C457 (5-W)

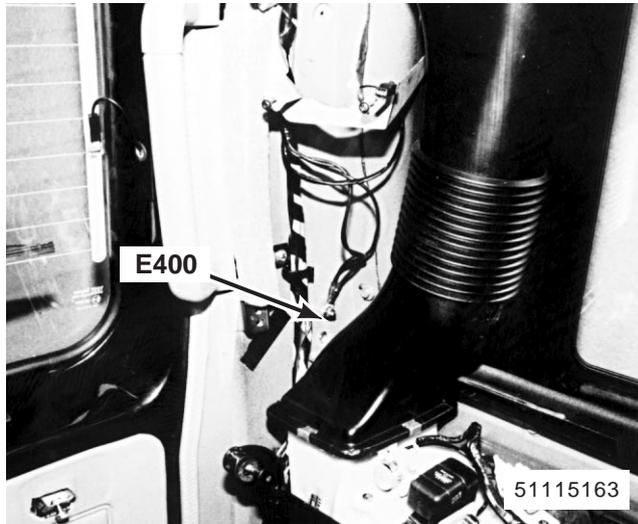
C466 (4-W)



173. LH side of luggage compartment behind trim panel
 B121 Left Rear Lamp Assembly
 P140 Rear A/C Switch Amplifier In-Line Fuse
 C403 (6-W)
 C462 (2-B)



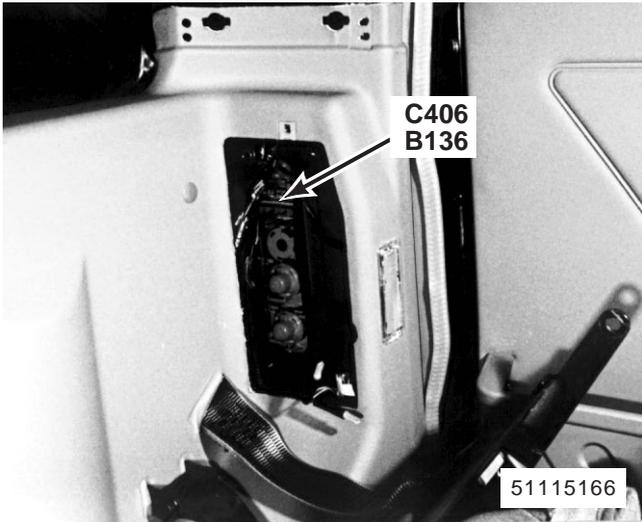
174. LH side of luggage compartment behind trim panel
 Z228 Rear A/C Refrigerant Control Valve Diode
 C447 (2-W)
 C448 (16-W)



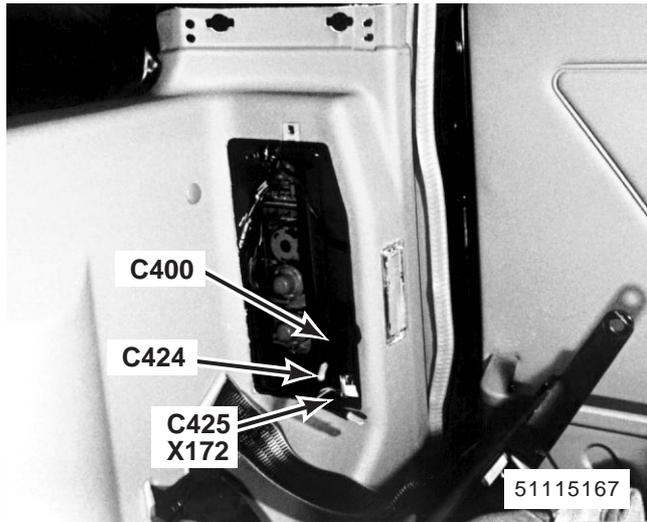
175. LH side of luggage compartment behind trim panel
 E400



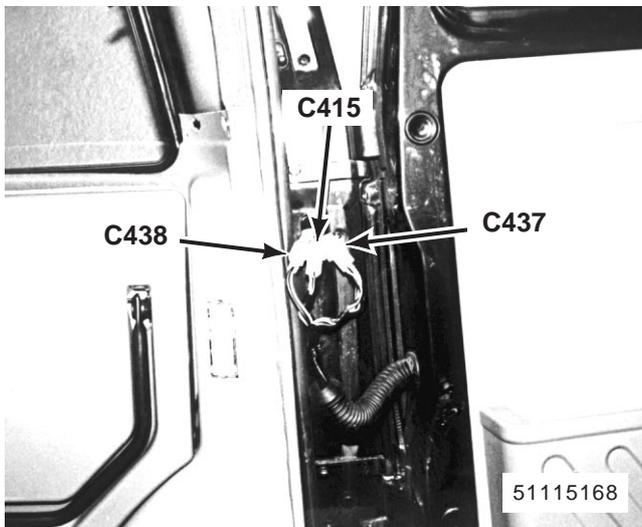
176. RH rear of luggage compartment behind trim panel
 E401



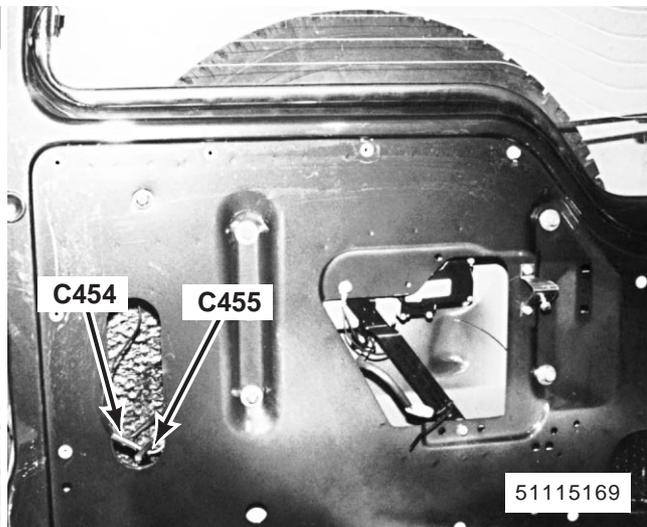
177. RH rear of luggage compartment behind trim panel
 B136 Right Rear Lamp Assembly
 C406 (6-W)



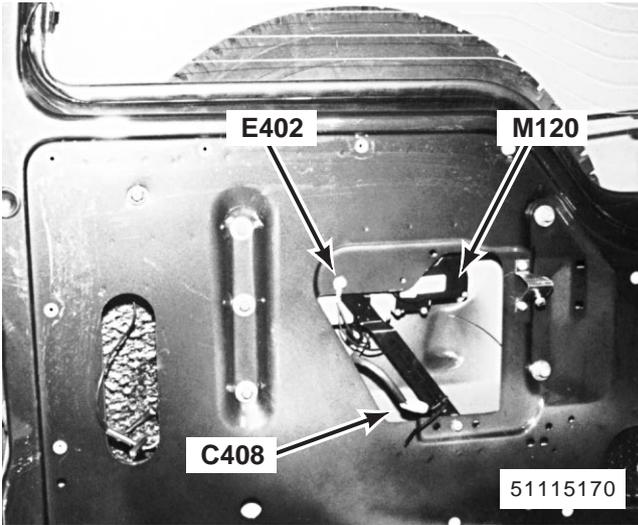
178. RH rear of luggage compartment behind trim panel
 X172 Trailer Auxiliary Socket
 C400 (7-B)
 C424 (1-B)
 C425 (1-B)



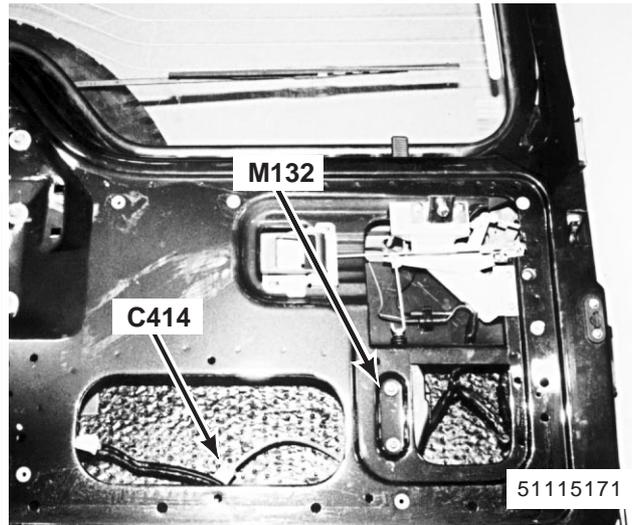
179. in RH side of tailgate door jamb
 C415 (8-W)
 C437 (6-W)
 C438 (2-W)



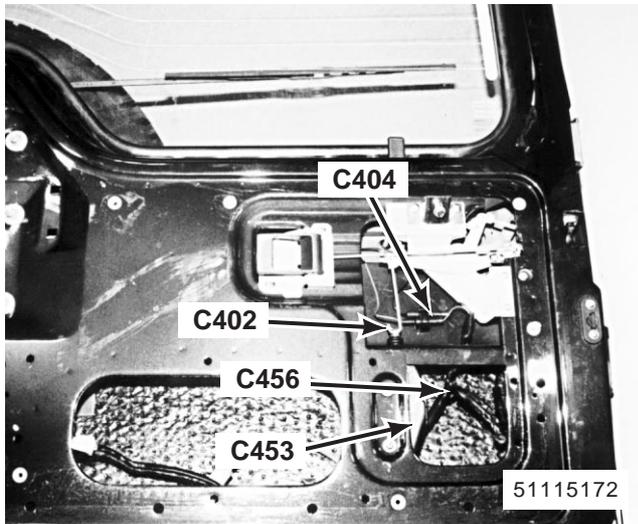
180. RH side of tailgate
 C454 (1-B)
 C455 (1-B)



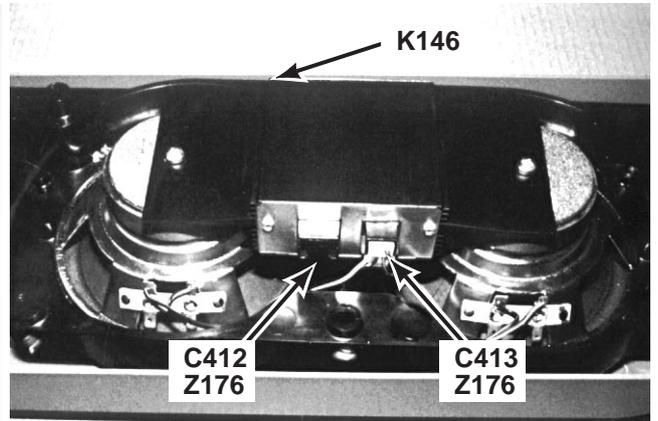
181. RH side of tailgate
 M120 Rear Wiper Motor
 C408 (4-W)
 E402



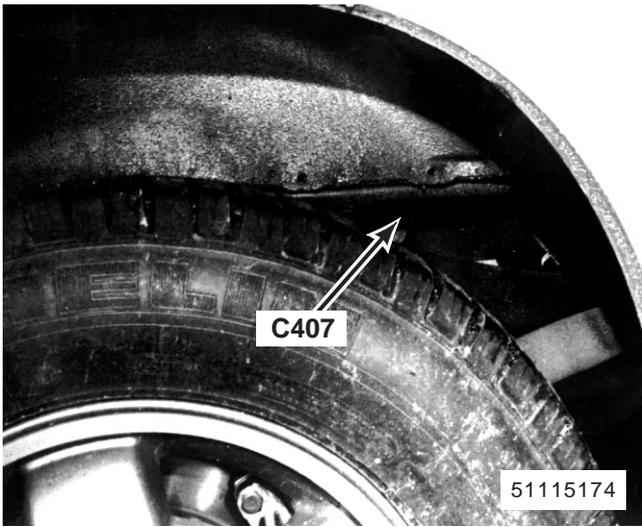
182. LH side of tailgate
 M132 Tailgate Lock Actuator
 C414 (2-W)



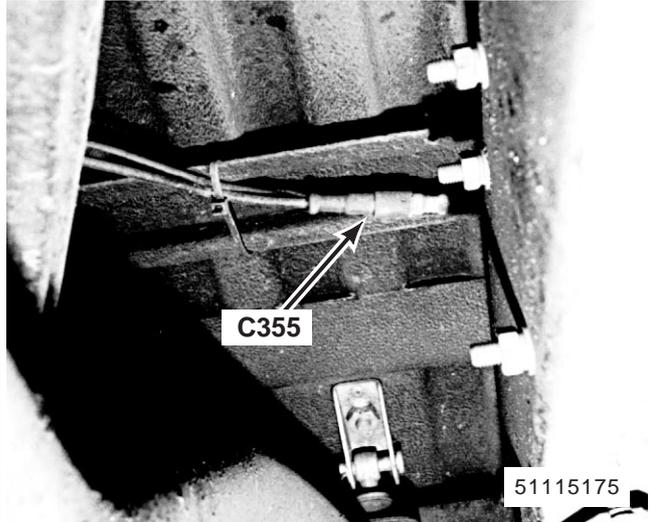
183. LH side of tailgate
 C402 (1-B)
 C404 (1-B)
 C456 (1-B)
 C453 (1-B)



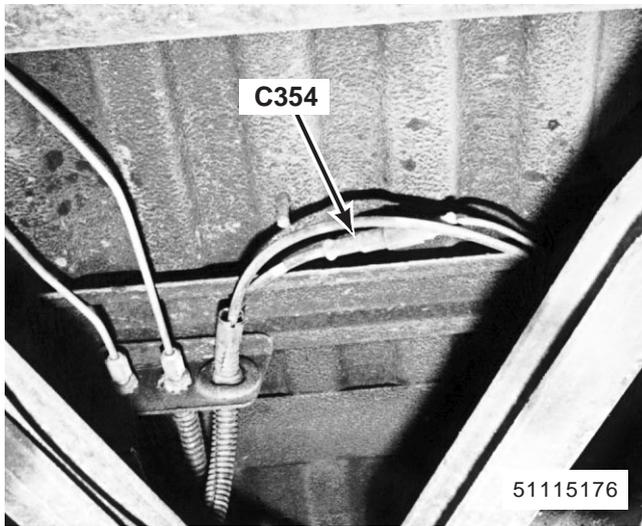
184. LH side of tailgate
 K146 Subwoofer
 Z176 Subwoofer Amplifier
 C412 (6-W)
 C413 (4-W)



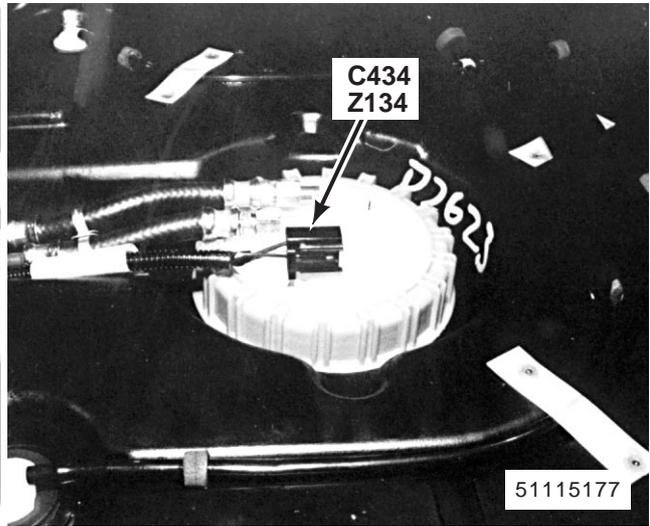
185. beneath LH rear of vehicle
C407 (3-B)



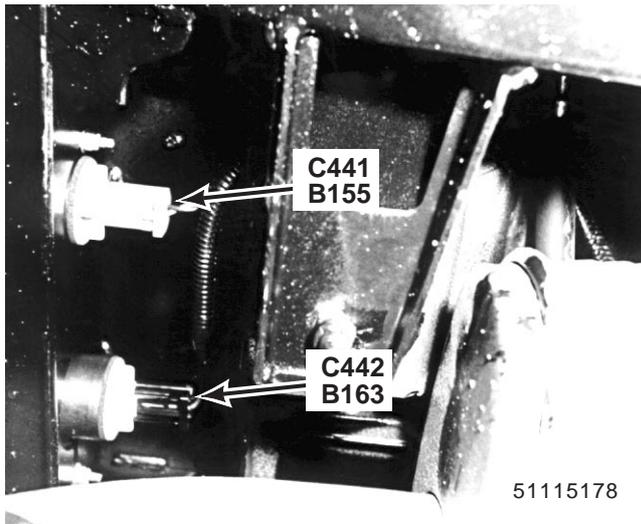
186. beneath LH rear of vehicle
C355 (2-W)



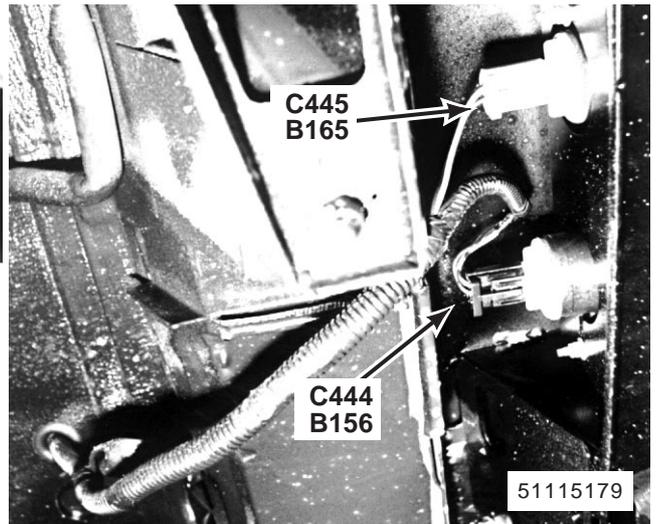
187. beneath RH rear of vehicle
C354 (2-W)



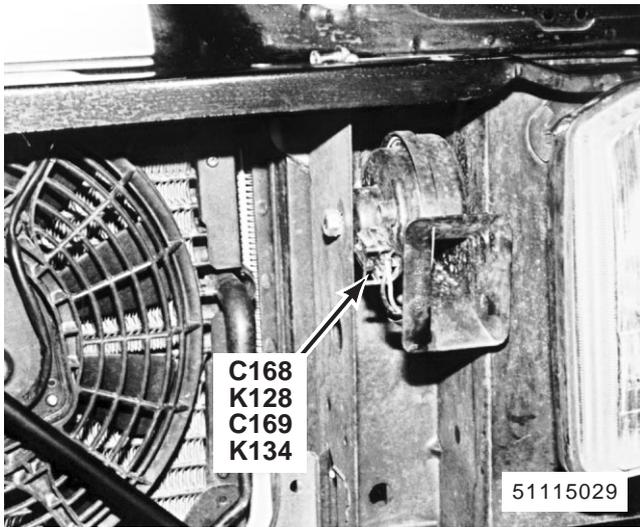
188. top of fuel tank
Z134 Fuel Pump Module
C434 (4-B)



189. behind LH side of rear bumper
 B155 Left Tail Lamp
 B163 Left Rear Indicator Lamp
 C441 (2-R)
 C442 (2-B)



190. behind RH side of rear bumper
 B165 Right Rear Indicator Lamp
 B156 Right Tail Lamp
 C444 (2-B)
 C445 (2-R)

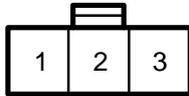


191. LH front of vehicle (RH similar)
 K128 Left Horn
 K134 Right Horn
 C168 (2-B) (Left)
 C169 (2-B) (Right)

C100

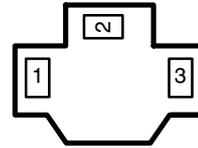
R030016

R030005



1	OK
2	PW
3	NLG

C103



1	UO
2	UB
3	B

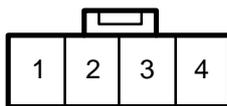
C101

LC00100A

R040005

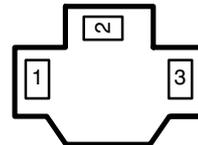
LC00103A

R030005



1	OS	3	-
2	NG	4	PN

C104



1	US
2	UK
3	B

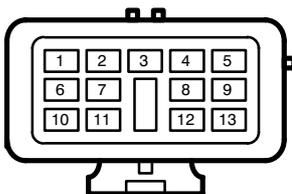
LC00101A

R130001

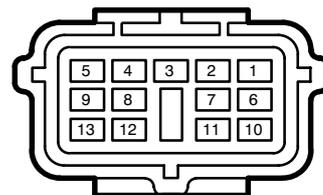
C105

LC00104A

R130002



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



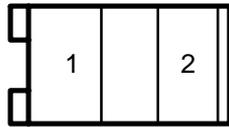
1	BO	6	SB	11	BO
2	BR	7	BK	12	-
3	GN	8	BLG	13	-
4	GY	9	BY		
5	B	10	BY		

LC00105C

LC00105C

C109

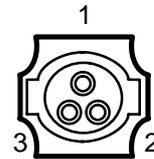
R020002



1	RB
2	B

C113

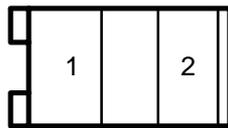
R030025



1	WO
2	CORE
3	B

C110

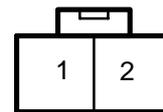
LC00109C
R020002



1	RO
2	B

C114

LC00113A
R020023



1	NK
2	NW

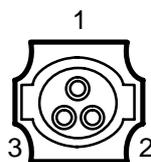
R030025

LC00110C

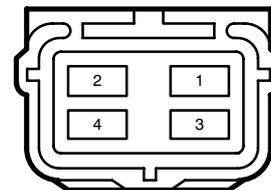
LC00114A

R040001

C112



1	WO
2	CORE
3	B



1	UY	3	B
2	UW	4	NU

LC00112C

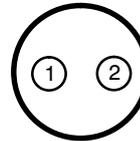
LC00112C

R030019

R020007

C115

C124



1	NP
2	NP
3	NO

1	GR
2	B

LC00115C

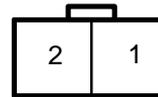
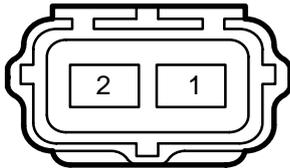
LC00124C

R020037

R020025

C120

C125



1	B
2	LGS

1	NR
2	B

LC00120A

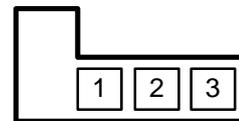
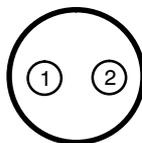
LC00125C

R020007

R030012

C123

C127



1	GW
2	B

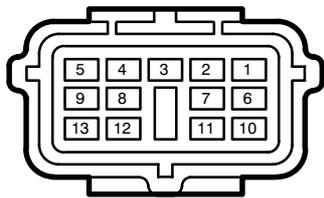
1	LGK
2	B
3	-

LC00123C

LC00127C

C129

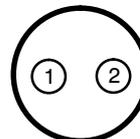
R130002



1	SR	6	B	11	SW
2	SY	7	SU	12	SP
3	-	8	SN	13	B
4	SG	9	B		
5	SK	10	B		

C131

R020007



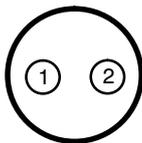
1	G
2	G

LC00129C

LC00131A

R020007

C130



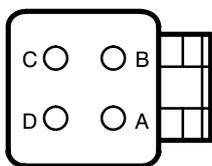
1	G
2	G

LC00130A

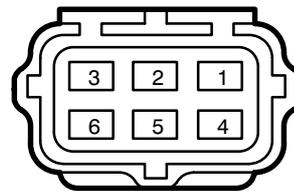
R040019

R060016

C132



A	O	C	GW
B	US	D	RG



1	OS	4	OU
2	NK	5	-
3	KU	6	OG

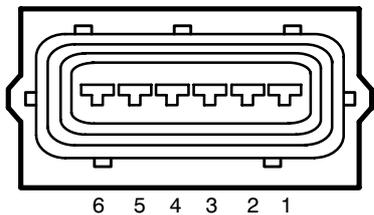
LC00132C

LC00132C

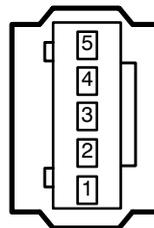
R060004

R050007

C133



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



1	YB	4	B
2	UG	5	-
3	UR		

LC00133C

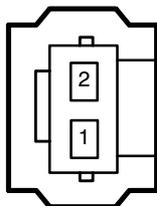
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R020038

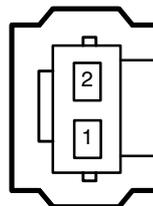
R020038

C134

C136



1	YU/NK
2	NO/YU



1	YU/NK
2	NO/YW

LC00134C

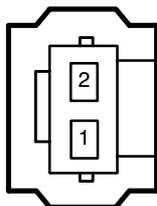
LC00136C

R020038

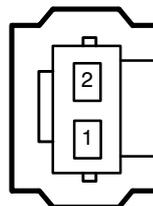
R020038

C135

C137



1	YW/NK
2	NO/YG



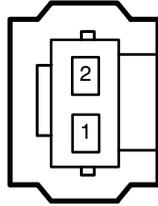
1	YW/NK
2	NO/YB

LC00135C

LC00137C

R020038

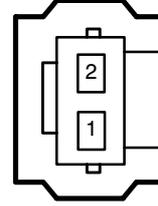
C138



1	YU
2	NO

R020038

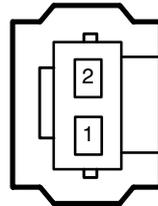
C141



1	YW
2	NO

LC00138C
R020038

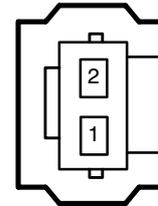
C140



1	YU
2	NO

LC00141A
R020038

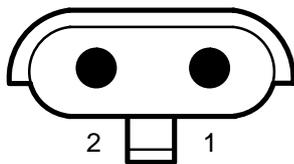
C142



1	WN
2	-

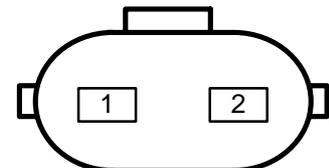
LC00140A
R020009

C144



1	WP
2	SY

LC00142C
R020045



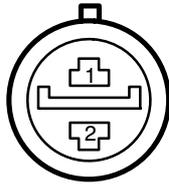
1	NK
2	RS

LC00144C

LC00144C

C145

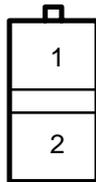
R020011



1	BG
2	B

LC00145A
R020020

C146

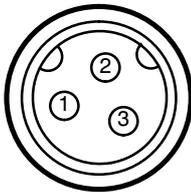


1	BP
2	B

LC00146A

R030022

C149

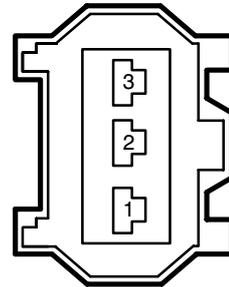


1	RB
2	R
3	Y

LC00149C

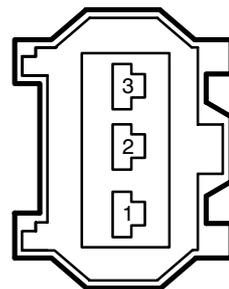
C148

R030002



1	U
2	-
3	R

LC00148A



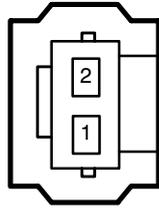
1	KP
2	GY
3	KB

LC00149C

R020038

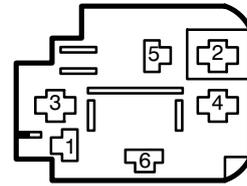
R060018

C150



1	RB/YU
2	SW/KB

C159



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

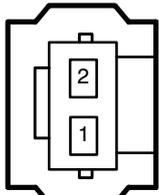
LC00150C

LC00159A

R020038

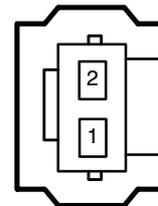
R020038

C152



1	GU/RB/KB
2	B/GU/KG

C165



1	WG
2	BO

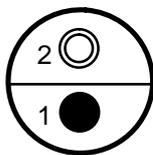
LC00152C

LC00165A

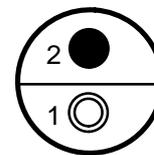
R020006

R020054

C166



1	B
2	BLG



1	B
2	PB

LC00166C

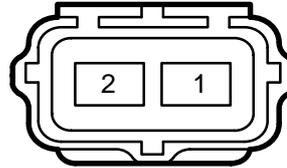
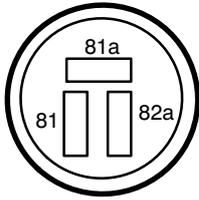
LC00166C

R030023

R020037

C167

C170



81	BY
81A	BR
82A	WU

1	B
2	LGB

LC00167A

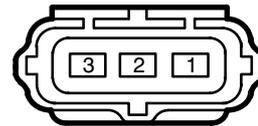
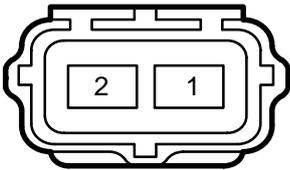
LC00170A

R020037

R030003

C168

C171



1	B
2	PG

1	WP
2	-
3	WP

LC00168A

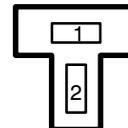
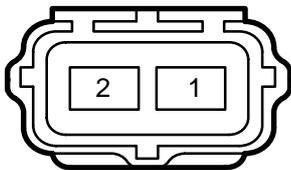
LC00171A

R020037

R020015

C169

C173



1	B
2	PG

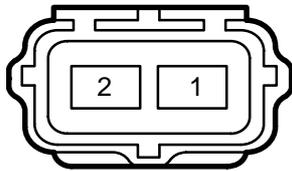
1	LGR
2	B

LC00169A

LC00173A

R020037

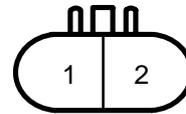
C177



1	NP
2	NO

R020031

C181

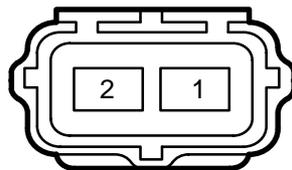


1	YB
2	ON

LC00177G

R020037

C178

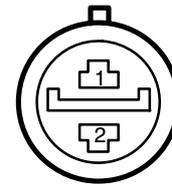


1	B
2	PO

LC00181C

R020011

C182

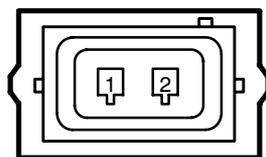


1	BN
2	B

LC00178A

R020036

C179

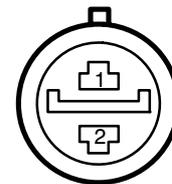


1	YR
2	B

LC00182A

R020011

C183



1	BN
2	B

LC00179C

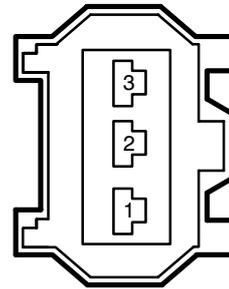
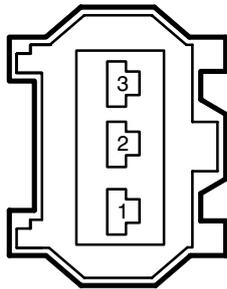
LC00183A

R030002

R030002

C190

C191



1	B
2	UY
3	RB

1	B
2	UY
3	RB

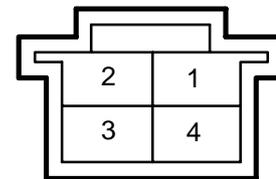
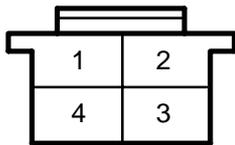
LC00190C

LC00191C

R040011

R040017

C195



1	WS	3	WG
2	B	4	WP

1	O	3	N
2	K	4	B

LC00195C

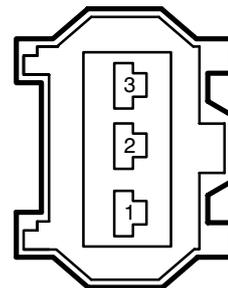
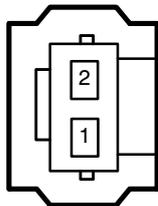
LC00195C

R020038

R030002

C196

C197



1	NB
2	B

1	Y
2	B
3	B

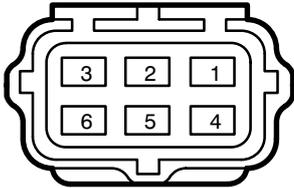
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LC00197C

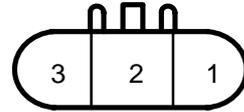
R060016

C198

R030028



1	NK	4	YG
2	YB	5	YU
3	WB	6	-

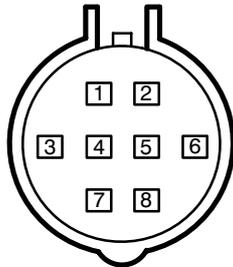


1	WO
2	NO
3	NS

LC00198C

R080018

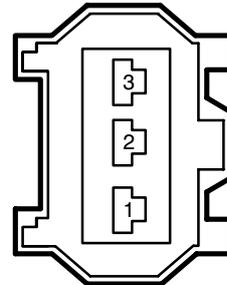
C199



1	GO	5	NO
2	R	6	WP
3	GK	7	WS
4	B	8	-

LC00198C
R030002

C1001

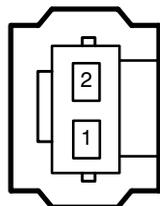


1	YU
2	YG
3	B

LC00199C

R020038

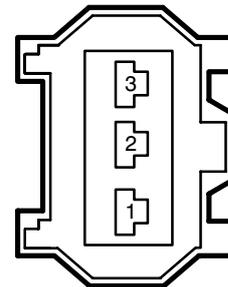
C1000



1	KO/KS
2	KB/B

LC01001C
R030002

C1002



1	-
2	NK
3	YU

LC001000C

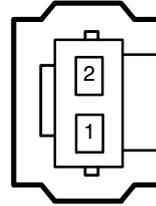
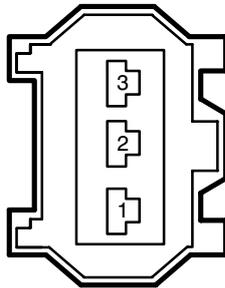
LC01002C

R030002

R020038

C1003

C1005



1	-
2	NK
3	WB

1	KB
2	LGS

LC01003C

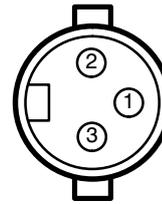
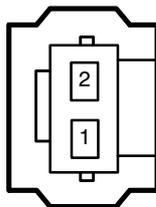
LC01005C

R020038

R030024

C1004

C1006



1	WU
2	UP

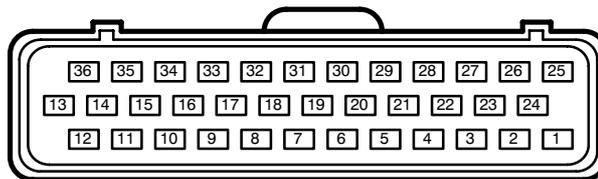
1	KB
2	BO
3	

LC01004C

LC01006C

R360001

C1007

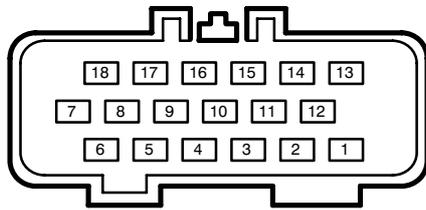


1	YU	7	UY	13	-	19	BS	25	YU	31	UP
2	KU	8	GY	14	B	20	UP	26	YG	32	WU
3	OS	9	KP	15	BG	21	RS	27	OU	33	KG
4	YN	10	BO	16	KO	22	OG	28	NK	34	YU
5	-	11	WG	17	LGS	23	WB	29	B	35	BN
6	BP	12	-	18	UW	24	YB	30	KB	36	U

LC01007C

C1008

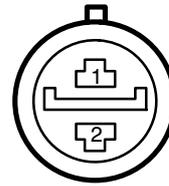
R180005



1	-	6	-	11	B	16	-
2	-	7	-	12	-	17	-
3	-	8	-	13	-	18	WB
4	-	9	-	14	-		
5	B	10	-	15	-		

C1011

R020011

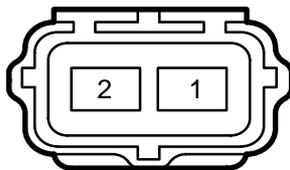


1	US/BR
2	B

C1009

LC01008C

R020037

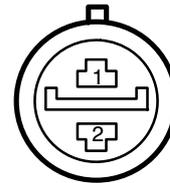


1	B/GR
2	GR/B

C1012

LC01011C

R020011

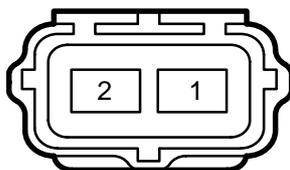


1	BR
2	B

C1010

LC01009F

R020037

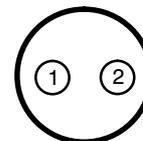


1	B
2	GW

C1013

LC01012C

R020007



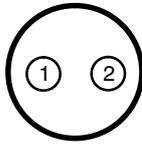
1	RB
2	B

LC01010F

LC01013C

R020007

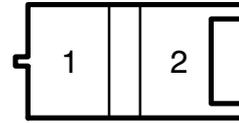
C1014



1	RO
2	B

R020003

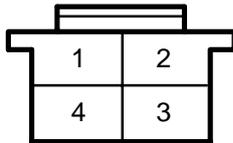
C1016



1	B
2	PB

LC01014C
R040011

C1015



1	O	3	N
2	K	4	B

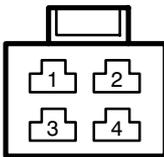
LC010016C

LC010015C

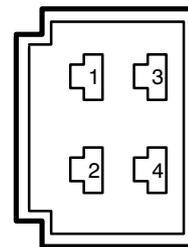
R040018

C200

R040015



1	NP	3	R
2	U	4	-



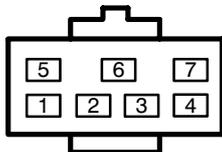
1	NP	3	R
2	U	4	-

LC00200C

LC00200C

R070011

C201



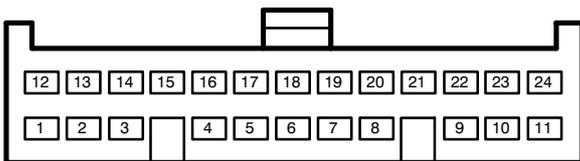
1	R	5	UW
2	NG	6	NP
3	UR	7	PO
4	U		

LC00201A

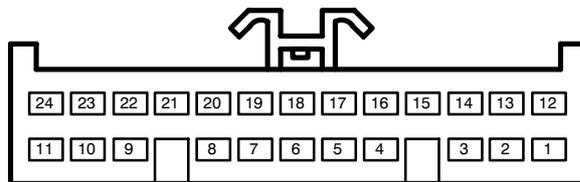
R240004

R240001

C202



1	B	7	WLG	13	GR	19	P
2	UR	8	LGP	14	WP	20	PU
3	GR	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

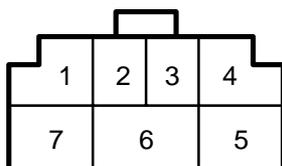
LC00202C

R070005

LC00202C

R240004

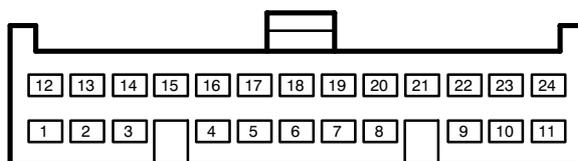
C203



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

LC00203A

C204



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

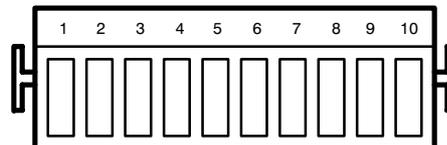
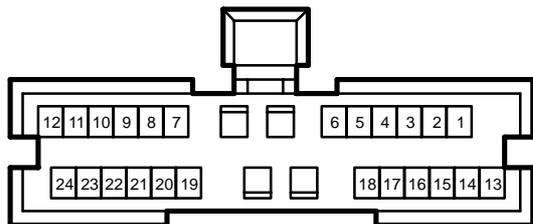
LC00204C

R240003

R100007

C205

C207



1	PU	7	RW	13	LGB	19	-
2	G	8	WLG	14	Y	20	-
3	-	9	LGG	15	OU	21	WP
4	PU	10	BK	16	LGS	22	NS
5	PW	11	B	17	UB	23	NP
6	-	12	WR	18	PW	24	-

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

LC00205G

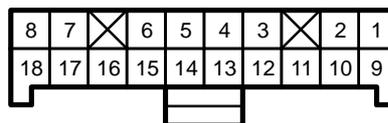
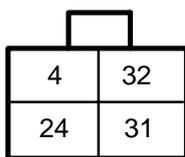
LC00207C

R040014

R180004

C206

C208



4	R	31	B
24	UW	32	OS

1	G	6	-	11	-	16	-
2	-	7	GR	12	UW	17	B
3	-	8	GW	13	UR	18	BO
4	RO	9	-	14	WN		
5	LG	10	-	15	-		

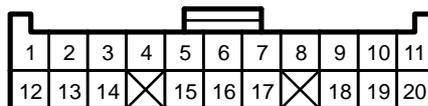
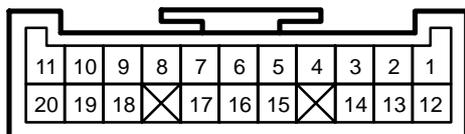
LC00206A

LC00208C

R200002

R200007

C209



1	RN	6	BY	11	BP	16	G
2	RS	7	SW	12	WY	17	YK
3	Y	8	BU	13	LGO	18	YK
4	RW	9	BK	14	GO	19	-
5	BR	10	BN	15	GLG	20	BS

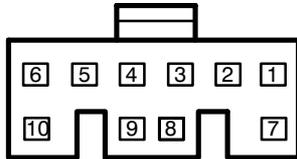
1	RN	6	PO	11	BP	16	G
2	RS	7	SW	12	WY	17	YK
3	YK	8	BU	13	LGO	18	YK
4	RW	9	BK	14	GO	19	YK
5	BR	10	BN	15	GLG	20	BS

LC00209G

LC00209G

R100004

C211



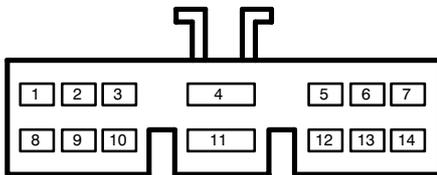
1	-	4	GR	6	GW	8	-
2	-	5	RB	7	RO	9	ND
3	-					10	-

LC0100211C

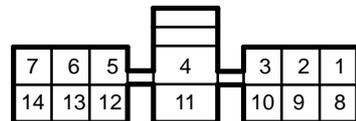
R140002

C212

R140007



1	BO	6	B	11	NG
2	BY	7	SCR	12	UW
3	BG	8	BG	13	WG
4	PN	9	BY	14	W
5	R	10	BU		



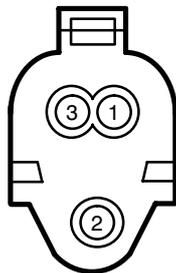
1	BO	6	B	11	NG
2	BY	7	SCR	12	YO
3	BG	8	BG	13	WG
4	PN	9	PY	14	YU
5	R	10	BU		

LC00212C

R030026

LC00212C

C214



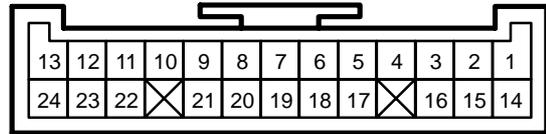
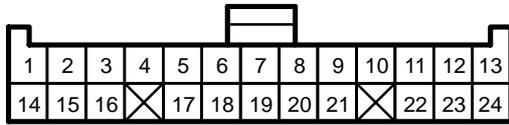
1	RN
2	RO
3	B

LC00214A

R240005

R240002

C215



1	PN	7	-	13	KO	19	BLG
2	WS	8	UY	14	OU	20	LGN
3	G	9	PN	15	GU	21	-
4	-	10	WR	16	-	22	LGK
5	LGP	11	RY	17	LGS	23	-
6	GB	12	BG	18	BO	24	NY

1	PN	7	-	13	KO	19	BLG
2	WS	8	UY	14	OU	20	LGN
3	G	9	PN	15	GU	21	-
4	-	10	WR	16	-	22	LGK
5	LGP	11	RY	17	LGS	23	-
6	GP	12	NP	18	BO	24	NY

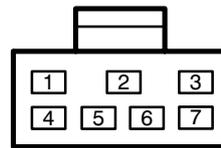
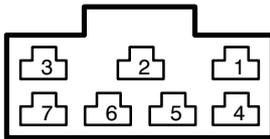
LC00215C

LC00215C

R070009

R070010

C216



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

1	NLG	5	BN/NG
2	WP	6	BG
3	PW	7	WG
4	NR		

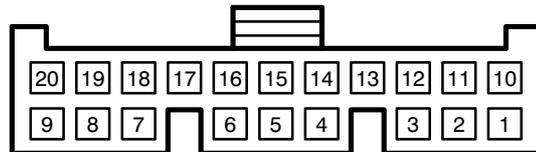
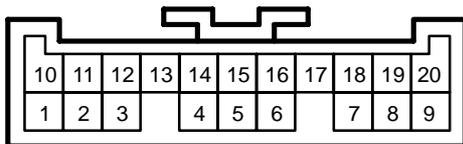
LC00216C

LC00216C

R200005

R200006

C217



1	GU	6	B	11	YB	16	NG
2	WS	7	-	12	BY	17	NY
3	WN	8	PY	13	LGP	18	WG
4	BP	9	YK	14	GP	19	PB
5	WU	10	OB	15	RS	20	GW

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

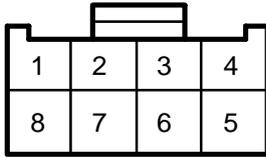
LC00217G

LC00217G

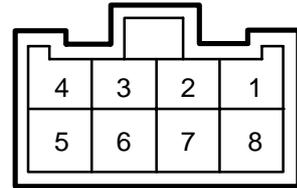
R080012

C218

R080011



1	WU	5	-
2	BY	6	B
3	PW	7	P
4	WY	8	PY



1	WU	5	-
2	-	6	B
3	PW	7	P
4	WY	8	P

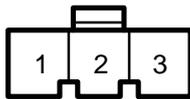
LC00218C

R030017

C220

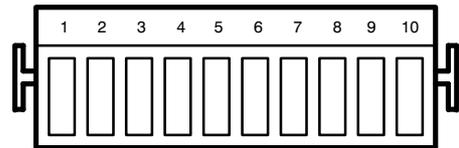
LC00218C

R100007



1	NW
2	LG
3	-

C222



1	RS	4	-	6	-	8	GU
2	LG	5	WN	7	RN	9	RN
3	KO					10	B

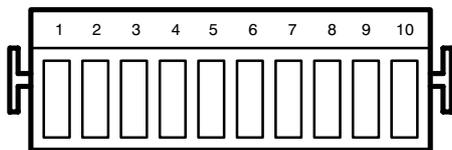
LC00220A

R100007

C221

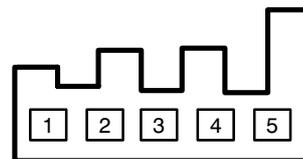
LC00222C

R050005



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

C223



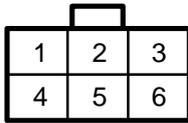
1	G	4	-
2	-	5	S
3	P		

LC00221C

LC00223A

R060008

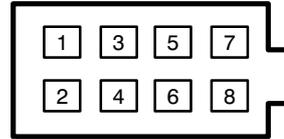
C224



1	B	4	GS
2	NLG	5	RLG
3	ULG	6	-

R080015

C228

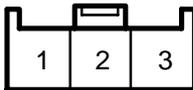


1	BK	5	BP
2	BN	6	GLG
3	SW	7	BU
4	B	8	-

LC00224A

R030019

C226

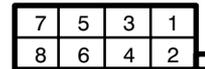


1	-
2	WY
3	LGW

LC00228C

R080017

C230

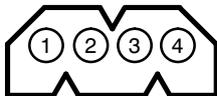


1	-	5	UY
2	B	6	RN
3	U	7	LGO
4	P	8	B

LC00226A

R040007

C227



1	GP	3	WR
2	GO	4	WS

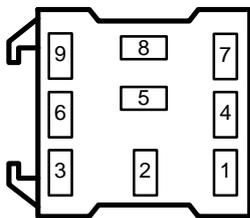
LC00230C

LC00227C

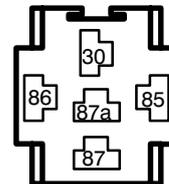
R090002

R050001

C238



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



30	NG	87	US
85	BP	87A	-
86	WG		

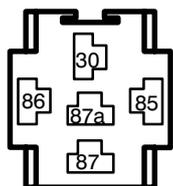
LC00238C

LC00238C

R050001

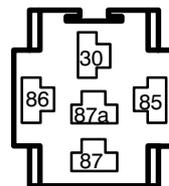
R050001

C239



30	NLG	87	NO
85	UR	87A	NO
86	NO		

C241



30	NG	87	WG/BS
85	BS	87A	BG
86	WG		

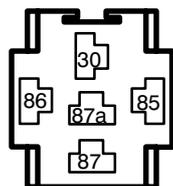
LC00239C

LC00241C

R050001

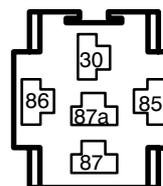
R050001

C240



30	PW	87	WP
85	UP	87A	WO
86	WG		

C242



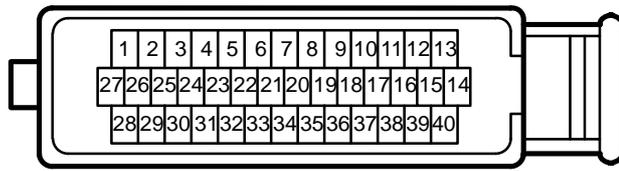
30	WG/BN/NG/YG	87	GY/B/BG/WG
85	WG/YB	87a	-
86	YB/WG/G		

LC00240A

LC00242C

R40001

C243

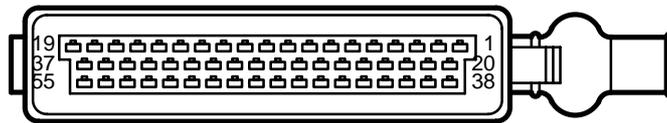


1	RG	7	GU	13	YU	19	WG	25	RB	31	BS	37	-
2	NO	8	PY	14	B	20	R	26	GW	32	SW	38	NK
3	Y	9	WLG	15	NO	21	GY	27	BS	33	BS	39	WU
4	B	10	RS	16	UP	22	UR	28	US	34	OB	40	B
5	SB	11	YW	17	SY	23	CORE	29	O	35	UG		
6	YK	12	UR	18	WK	24	CORE	30	K	36	BG		

LC00243C

R55001

C243

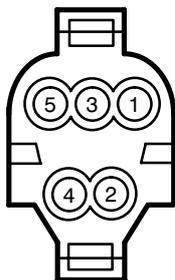


1	WP	8	-	15	UR	22	-	29	YK	36	KS	43	-	50	-
2	WP	9	BS	16	NO	23	-	30	-	37	WG	44	YG	51	YU
3	W	10	NS	17	NO	24	-	31	LGP	38	UG	45	-	52	YB
4	RS	11	-	18	B	25	WS	32	-	39	GK	46	-	53	GU
5	NB	12	B	19	B	26	GP	33	WP	40	-	47	Y	54	YG
6	SR	13	B	20	-	27	WK	34	UR	41	-	48	-	55	WG
7	-	14	R	21	GO	28	-	35	WS	42	WLG	49	-		

LC00243C

R050012

C244



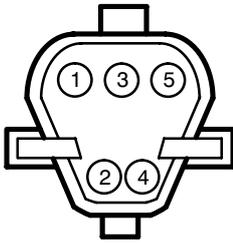
1	BS	4	-
2	-	5	-
3	-		

LC00244A

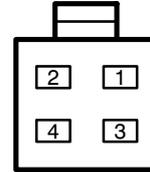
R050013

R040013

C245



1	WK	4	WLG
2	-	5	BS
3	-		



1	WK	3	B
2	WLG	4	NO

LC00245C

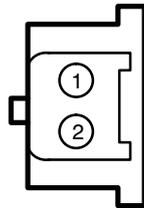
LC00245C

R020033

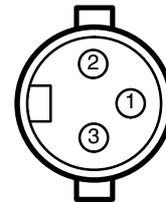
R030024

C246

C248



1	BS
2	SB



1	KB
2	WLG
3	WK

LC00246A

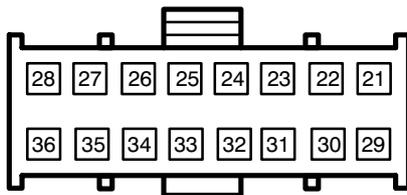
LC00248A

R160003

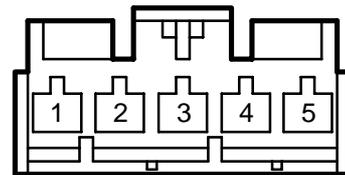
R050002.03

C247

C249



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



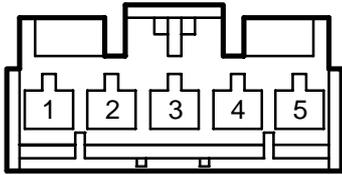
1	GLG	4	LGS
2	RN	5	B
3	-		

LC00247A

LC00249A

R050002.00

C250



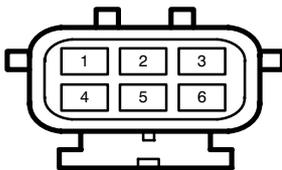
1	GLG	4	OU
2	RN	5	B
3	-		

LC00250A

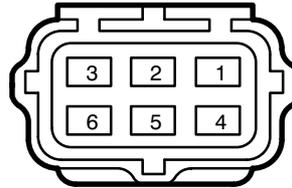
R060017

R060016

C252



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



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

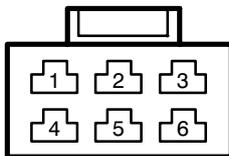
LC00252C

R060007

LC00252C

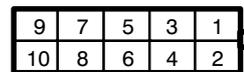
R100011

C259



1	B	4	RN
2	UY	5	RO
3	-	6	-

C260



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

LC00259C

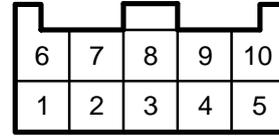
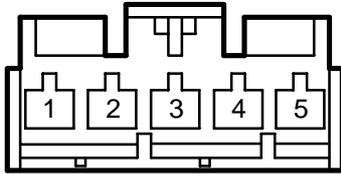
LC00260C

R050002.02

R100008

C262

C267



1	GLG	4	WY
2	RN	5	B
3	-		

1	LGN	4	GW	6	GO	8	LGP
2	GR	5	-	7	PN	9	RN
3	LGG					10	B

LC00262A

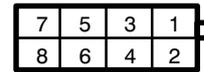
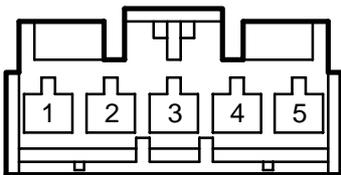
LC00267C

R050002.01

R080016

C263

C268



1	UR	4	RY
2	RN	5	B
3	-		

1	NY/BG	5	B/BW
2	U/BU	6	BN
3	UG/BK	7	BY
4	RG/BR	8	BO

LC00263A

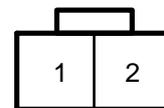
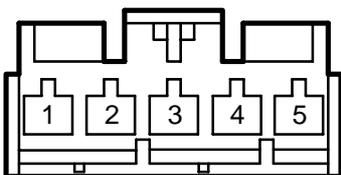
LC00268C

R050002.02

R020027

C264

C269



1	BO	4	B
2	RN	5	BG
3	-		

1	P
2	RW

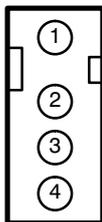
LC00264C

LC00269C

R040008

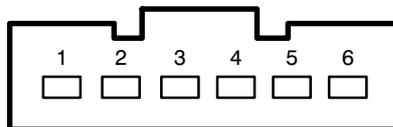
R060001

C270



1	PN	3	RN
2	B	4	LG

C274



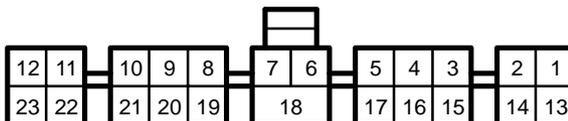
1	BO	4	O
2	BO	5	K
3	OB	6	P

LC00270C

LC00274G

R230001

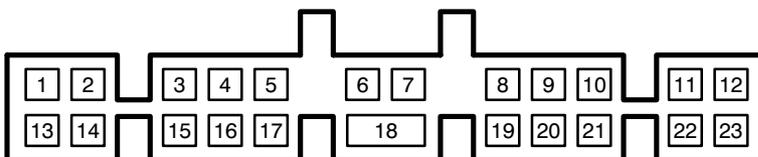
C277



1	LGO	7	-	13	GP	19	GW
2	GR	8	GLG	14	RY	20	RO
3	PU	9	NG	15	BN	21	-
4	GP	10	WP	16	WB	22	-
5	O	11	PW	17	RB	23	-
6	K	12	GN	18	NP		

LC00277C

R230002



1	LGO	7	-	13	GB	19	GW
2	GR	8	GLG	14	RY	20	RO
3	PU	9	NG	15	BN	21	RO
4	GP	10	WP	16	WB	22	-
5	O	11	PW	17	RB	23	-
6	K	12	GN	18	NP		

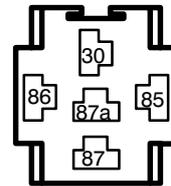
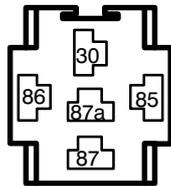
LC00277C

R050001

R050001

C279

C282



30	PU	86	PU
85	BK	87	GR
87A	GW		

30	NW	86	LG
85	B	87	LGW
87A	-		

LC00279A

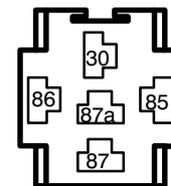
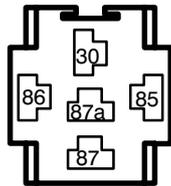
LC00282A

R050001

R050001

C280

C283



30	P	86	P
85	OB	87	PB
87A	-		

30	PN	86	PO
85	PN	87	PG
87A	-		

LC00280C

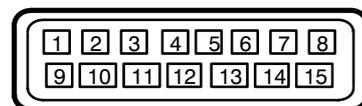
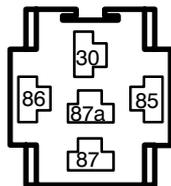
LC00283A

R050001

R150001

C281

C284



30	NG	86	GLG
85	NP	87	GLG
87A	B		

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	-

LC00281C

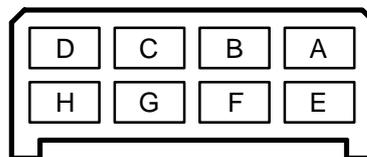
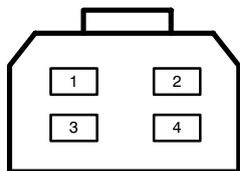
LC00284A

R040010

R080003

C285

C288



1	B	3	GLG
2	BW	4	UW

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

LC00285G

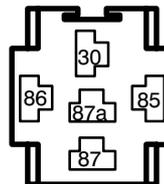
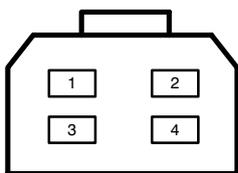
LC00288A

R040010

R050001

C286

C292



1	B	3	GLG
2	BW	4	UE

30	NG	86	BP
85	GW	87	BN
87A	-		

LC00286G

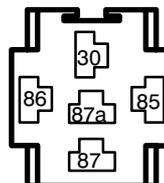
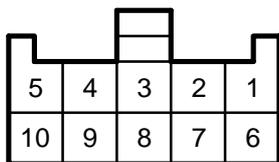
LC00292A

R100005

R050001

C287

C293



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

30	UR	86	BS
85	NP	87	NO
87A	-		

LC00287C

LC00293G

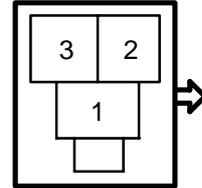
R030007

R030004

C298



1	-
2	B
3	R



1	-
2	WB
3	R

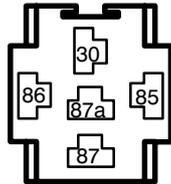
LC00298A

R050001

LC00298A

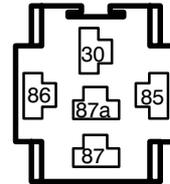
R050001

C299



30	WR	86	B
85	UW	87	B
87A	-		

C2001



30	WY	86	BR
85	YB	87	SB
87A	-		

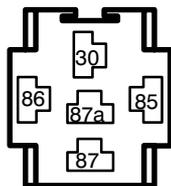
LC00299G

R050001

LC02001A

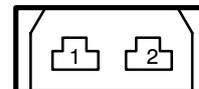
R020032

C2000



30	WP	86	WP
85	BK	87	RB
87A	-		

C2005



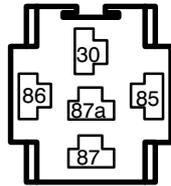
1	PY
2	PG

LC02000A

LC02005A

C2006

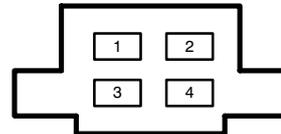
R050001



30	NW	86	BO
85	WR	87	NR
87A	-		

C2009

R040012

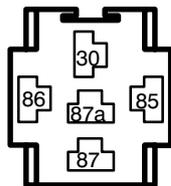


1	-	3	LGN
2	GW	4	GR

C2007

LC02006A

R050001

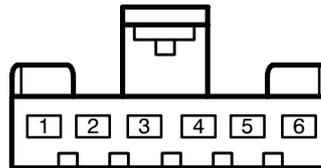


30	NG	86	B
85	LGP	87	WG
87A	-		

C2010

LC02009A

R060005

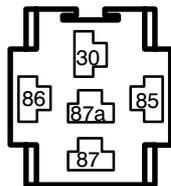


1	WY	4	RW
2	-	5	PO
3	UW	6	-

C2008

LC02007C

R050001

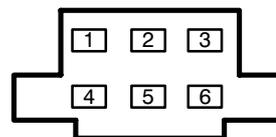


30	LGP	86	NS
85	GS	87	GS
87A	NLG		

C2011

LC02010A

R060013



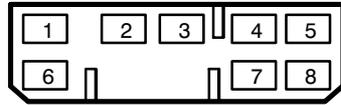
1	WLG	4	-
2	-	5	-
3	B	6	-

LC02008A

LC02011A

C2012

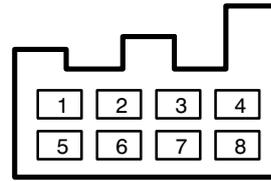
R080006



1	PW	5	PN
2	P	6	OW
3	WP	7	-
4	BR	8	-

C2015

R080009

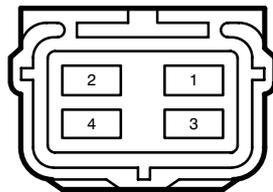


1	GS	5	LGB
2	LGG	6	LGB
3	ULG	7	-
4	RLG	8	GS

C2013

LC02012A

R040001

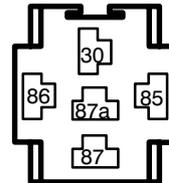


1	PN	3	B
2	PW	4	WP

C2021

LC02015A

R050001

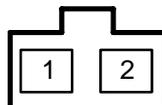


30	WS/WU	86	WS
85	BY/B	87	PW
87A	PY		

C2014

LC02013A

R020022

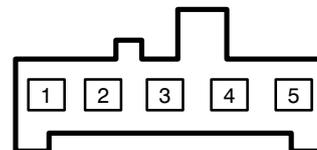


1	OW
2	B

C2022

LC02021A

R050006



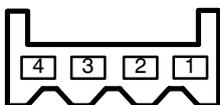
1	WB	4	PU
2	BO	5	N
3	G		

LC02014A

LC02022A

R040004

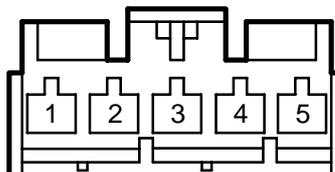
C2023



1	S	3	WB
2	UR	4	LG

R050002.02

C2025

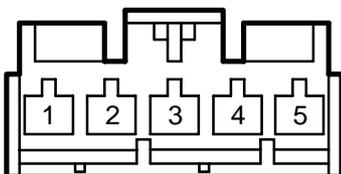


1	N	4	NW
2	LG	5	UR
3	WB		

LC02023A

R050002.02

C2024

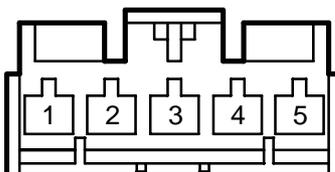


1	W	4	WB
2	LG	5	UW
3	-		

LC02025A

R050002.00

C2026

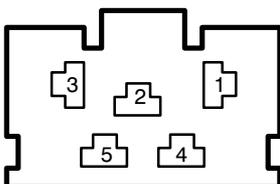


1	WB	4	RG
2	LG	5	UR
3	UB		

LC02024C

R050003

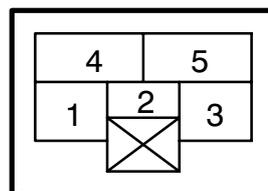
C2027



1	WB	4	G
2	N	5	BO
3	PU		

LC02026A

R050018



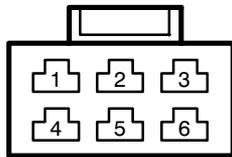
1	WB	4	G
2	N	5	BO
3	PU		

LC02027A

LC02027A

C2028

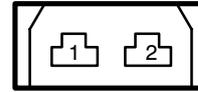
R060007



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

C2035

R020032

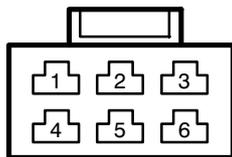


1	PW
2	P

C2029

LC02028A

R060007

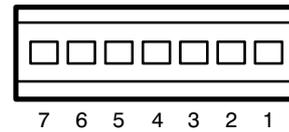


1	B	4	B
2	B	5	B
3	B	6	-

C2036

LC02035A

R070001

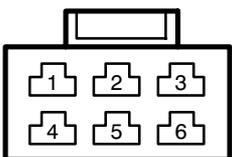


1	PB	5	YB
2	W	6	PB
3	R	7	PB
4	GR		

C2031

LC02029A

R060007

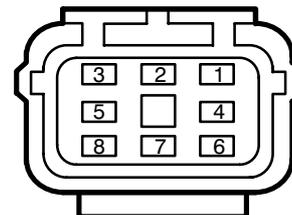


1	B	4	B
2	B	5	B
3	B	6	-

C2051

LC02036A

R080019



1	NK	5	NU
2	-	6	NLG
3	NK	7	PW
4	WP	8	NK

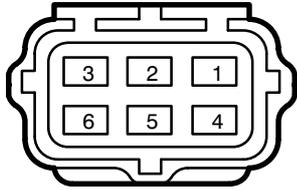
LC02031C

LC02051C

R060016

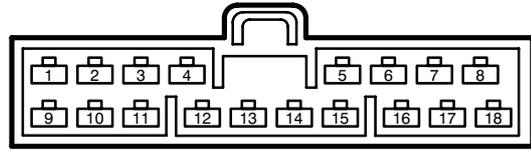
R180002

C2052



1	UP	4	U
2	WG	5	-
3	YN	6	-

C2054



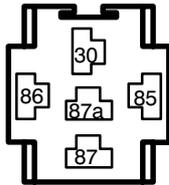
1	R	6	BK	11	B	16	BR
2	G	7	BW	12	B	17	BN
3	Y	8	BY	13	R	18	BO
4	U	9	LGP	14	PY		
5	BG	10	B	15	BU		

LC02052C

LC02054C

R050001

C2053



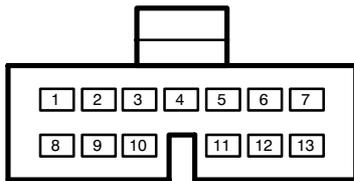
30	NK	86	B
85	LGO	87	LGP
87A	-		

LC02053C

R130008

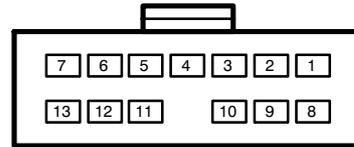
C2055

R130004



1	G/BG	6	BN	11	SCR
2	B/BU	7	U/BY	12	UY
3	R/BK	8	BO	13	B
4	BR	9	R		
5	Y/YB	10	B		

LC02055C

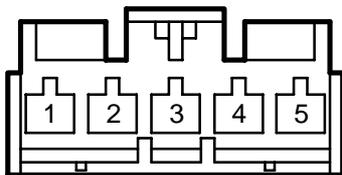


1	G/BG	6	BW/BN	11	SCR
2	B/BU	7	U/BY	12	PY
3	R/BK	8	BO	13	B
4	BR	9	R		
5	Y/BW	10	B		

LC02055C

C2056

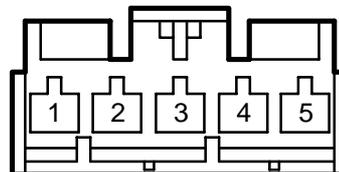
R050002.00



1	UG	4	B
2	RN	5	B
3	-		

C2059

R050002.10

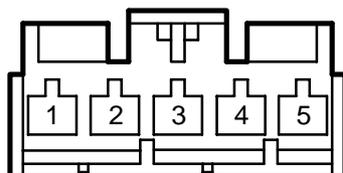


1	U	4	B
2	RN	5	B
3	-		

C2057

LC02056C

R050002.10

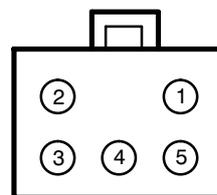


1	RG	4	B
2	RN	5	B
3	-		

C2060

LC02059C

R050019

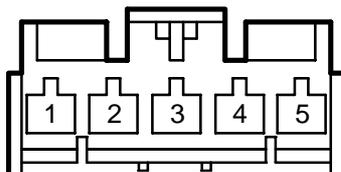


1	U	4	B
2	NY	5	UG
3	RK		

C2058

LC02057C

R050002.00

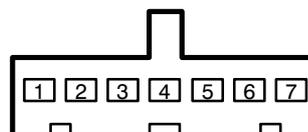


1	NY	4	B
2	RN	5	B
3	-		

C2061

LC02060C

R070002



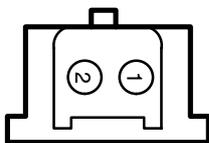
1	-	5	-
2	-	6	R
3	B	7	-
4	-		

LC02058C

LC02061C

R020010

C2063



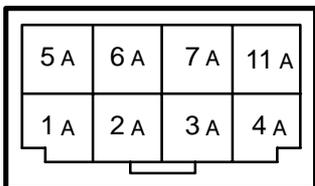
1	GP
2	GO

LC02063C

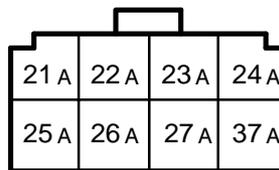
R080001

C2066

R080002



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

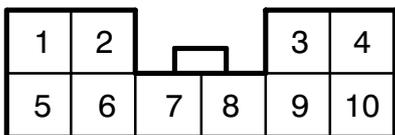
LC02066A

R100003

C2067

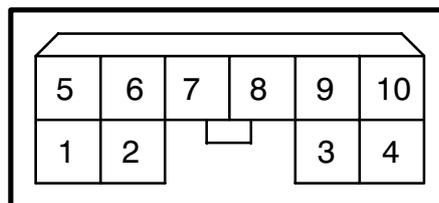
LC02066A

R100001



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

LC02067A

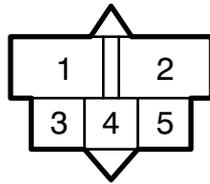


1	NW	4	S	6	UB	8	WB
2	N	5	RG	7	UW	9	W
3	LG					10	UR

LC02067A

R050016

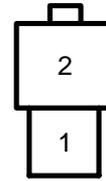
C2068



1	R	4	WB
2	WR	5	UR
3	N		

R020046

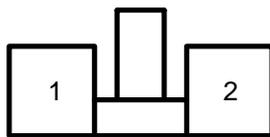
C2071



1	YB
2	UR

LC02068A
R020049

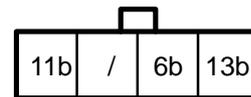
C2069



1	BO
2	WR

LC02071A
R030015

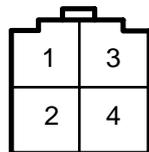
C2072



1	YB
2	UB
3	RG

LC02069A
R040022

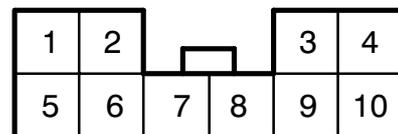
C2070



1	BO	3	PU
2	G	4	WB

LC02072A
R100003

C2073



1	YO	4	PB	6	-	8	ON
2	RN	5	YU	7	WG	9	YB
3	B					10	YR

LC02070A

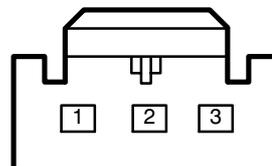
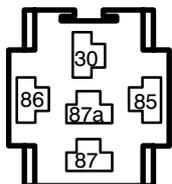
LC02073C

R050001

R030020

C2074

C2075



30	PU	86	BK
85	PU	87	LGR
87A	-		

1	B
2	-
3	GP

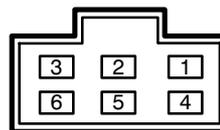
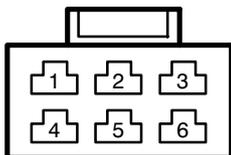
LC02074A

LC0275C

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

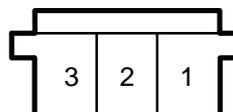
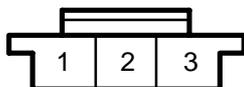
LC00301A

LC00301A

R030010

R030009

C306



1	PW
2	O
3	K

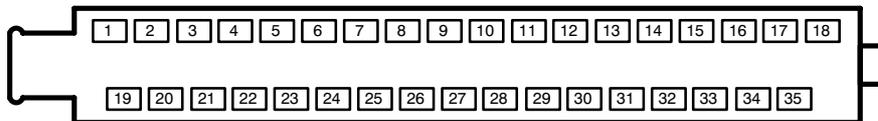
1	PW
2	O
3	K

LC00306A

LC00306A

R350002

C312

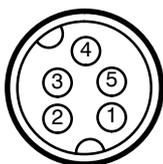


1	NK	6	SR	11	WO	16	W	21	SG	26	BS	31	B
2	-	7	SU	12	-	17	G	22	SP	27	B	32	G
3	-	8	BG	13	WK	18	W	23	SK	28	-	33	W
4	SY	9	WG	14	BK	19	NK	24	SN	29	-	34	G
5	SW	10	WS	15	G	20	-	25	GP	30	NR	35	W

LC00312C

R050009

C323



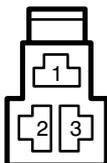
1	-	4	BO
2	GY	5	BY
3	GN		

R030007

LC00323A

R030008

C336



1	B
2	NR
3	WG



1	B
2	NR
3	WG

LC00336C

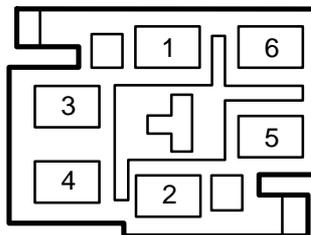
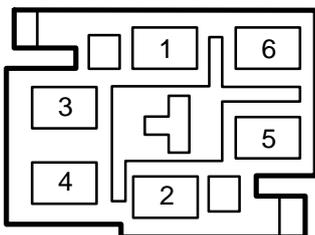
LC00336C

R070008

R070008

C337

C340



1	BS	5	-
2	BR	6	RN
3	-	7	-
4	B		

1	S	5	WK
2	SN	6	RN
3	WK	7	-
4	B		

LC00337A

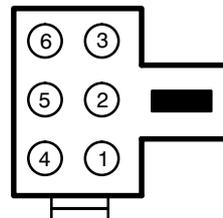
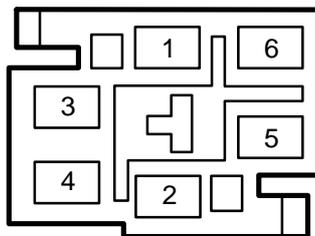
LC00340C

R070008

R060019

C338

C343



1	BU	5	-
2	BK	6	RN
3	-	7	-
4	B		

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

LC00338A

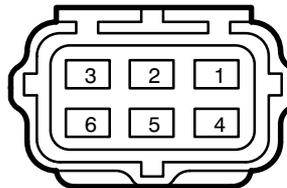
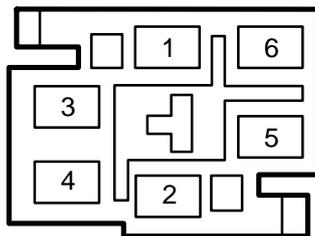
LC00343A

R070008

R060016

C339

C344



1	SW	5	WK
2	SO	6	RN
3	WK	7	-
4	B		

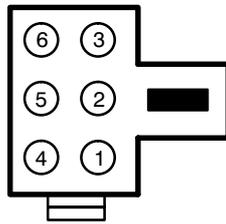
1	P	4	BR
2	GP	5	KS
3	B	6	KS

LC00339C

LC00344A

C345

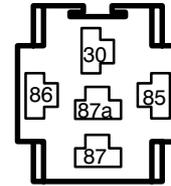
R060019



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

C351

R050001

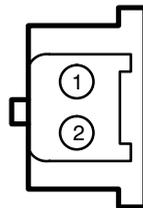


30	OK	86	BG
85	B	87	NK
87A	-		

C346

LC00345C

R020033

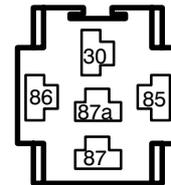


1	GLG/RG
2	B

C352

LC00351C

R050001

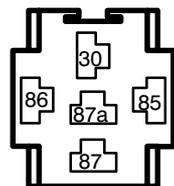


30	NO	86	WO
85	B	87	NR
87A	-		

C350

LC00346C

R050001

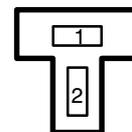


30	BS	87	-
86	NK	85	B
87A	B		

C353

LC00352C

R020015



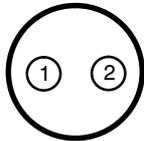
1	B
2	LGW

LC00350C

LC00353A

C354

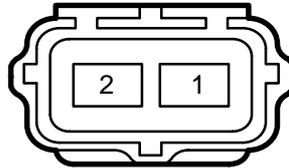
R020007



1	W
2	W

C369

R020037

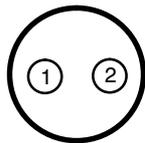


1	SB
2	B

C355

LC00354A

R020007

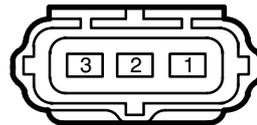


1	W
2	W

C370

LC00369A

R030003

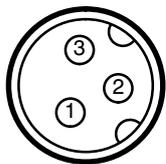


1	GY
2	-
3	BR

C368

LC00355A

R030021

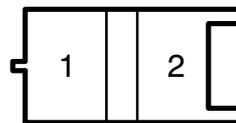


1	-
2	B
3	BK

C371

LC00370A

R020003



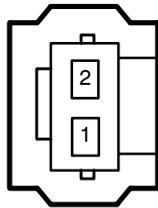
1	BLG
2	B

LC00368A

LC00371A

C372

R020038

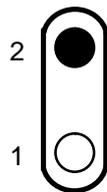


1	GN
2	GY

LC00372A

R020005

C378

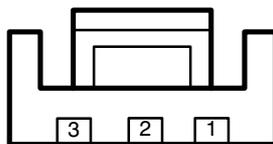


1	B
2	RW

LC00378C

R030018

C381

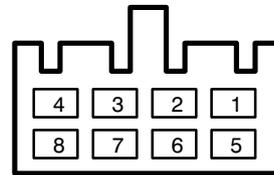


1	B
2	
3	P

LC00381C

C382

R080008

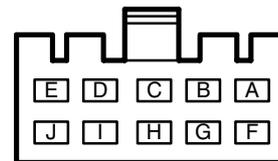


1		5	
2		6	GW
3	GO	7	GU
4	OG	8	OU

LC00382C

R100006

C383

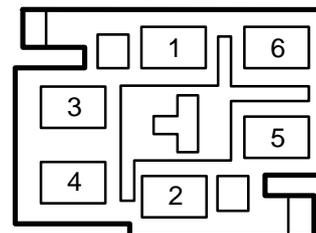


A	P	D	B	F	WG	H	GK
B	U	E	W	G	GB	I	GR
C	NR					J	O

LC00383C

R070008

C384



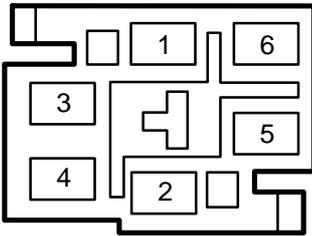
1	GO	5	
2	GR	6	
3		7	
4	B		

LC00384C

R070008

R040018

C385



1	GU	5	
2	GK	6	
3		7	
4	B		

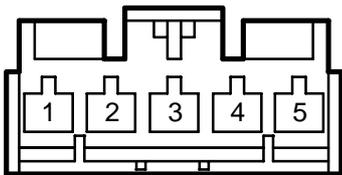
LC00385C

LC00388C

R050002.00

R030027

C386



1	B	4	BS
2		5	
3			

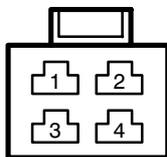
LC00386C

LC00389C

R040018

R020033

C387

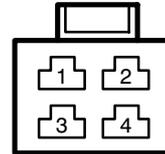


1	W	3	B
2	OU	4	P

LC00387C

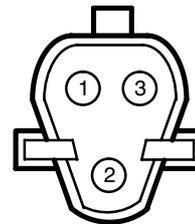
LC00390C

C388



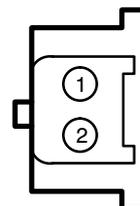
1	O	3	B
2	OG	4	U

C389



1	GW
2	GB
3	BS

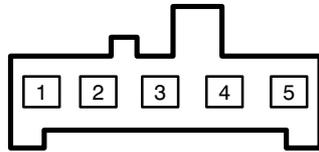
C390



1	BS
2	

C391

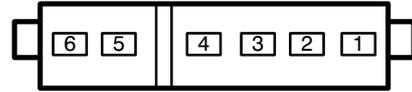
R050006



1	B	4	N
2	GR	5	BR
3	Y		

C403

R060003

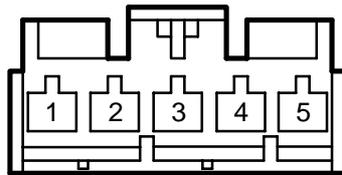


1	GP	4	B
2	GP	5	RY
3	-	6	GN

C392

LC00391C

R050002.02

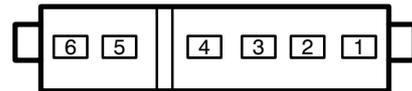


1	LGW	4	B
2	RB	5	UW
3			

C406

LC00403C

R060003

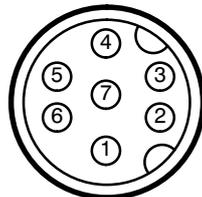


1	GP	4	B
2	GP	5	RY
3	-	6	GN

C400

LC00392C

R070003



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

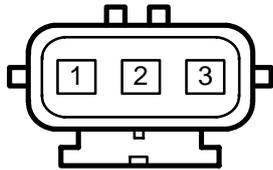
LC00406C

LC00400A

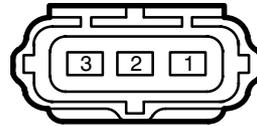
R030001

R030003

C407



1	WP
2	GB
3	B



1	WP
2	GB
3	B

LC00407A

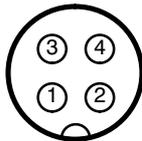
LC00407A

R040026

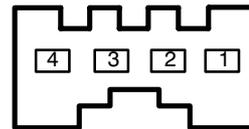
R040024

C408

C411



1	GO	3	NG
2	-	4	B



1	PN	3	B
2	PU	4	-

LC00408C

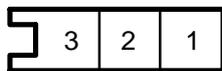
LC00411C

R030014

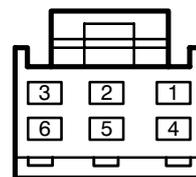
R060012

C410

C412



1	PU
2	-
3	PN



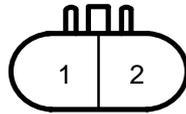
1	SCR	4	LGO
2	R	5	PY
3	B	6	B

LC00410C

LC00412C

C414

R020031



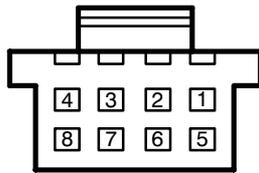
1	K
2	O

LC00414C

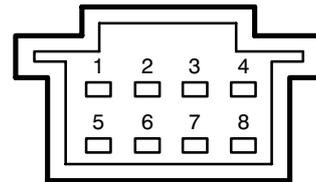
R080014

C415

R080013



1	GLG	5	B
2	NG	6	O
3	RB	7	B
4	K	8	PW



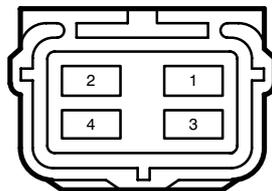
1	GO	5	B
2	NG	6	O
3	RB	7	B
4	K	8	-

LC00415C

R040001

LC00415C

C434



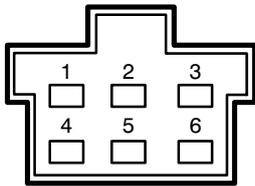
1	GB	3	B
2	B	4	WP

LC00434A

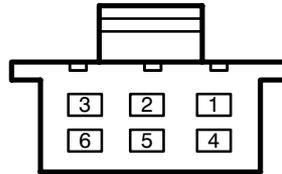
R060011

C437

R060010



1	R	4	LGO
2	B	5	PY
3	SCR	6	GP



1	R	4	LGO
2	B	5	PY
3	SCR	6	GP

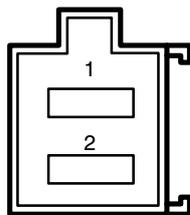
LC00437C

LC00437C

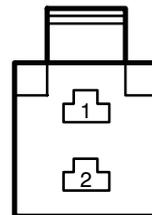
R020041

C438

R020018



1	NP
2	B



1	NP
2	B

LC00438C

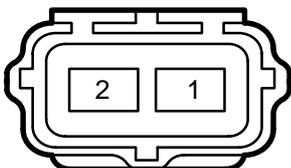
LC00438C

R020037

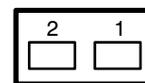
C442

R020034

C443



1	GR
2	B



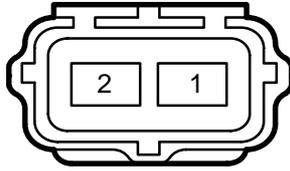
1	RB
2	B

LC00442C

LC00443C

C444

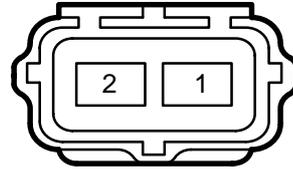
R020037



1	RO
2	B

C445

R020037



1	GW
2	B

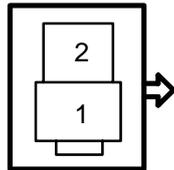
LC00444C

LC00445C

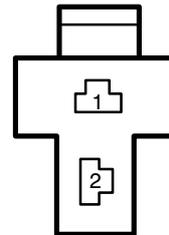
R020050

R020014

C447



1	G
2	B



1	B
2	NG

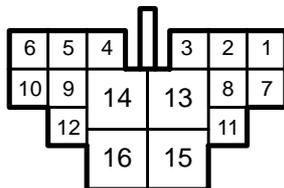
LC00447C

LC00447C

R160001

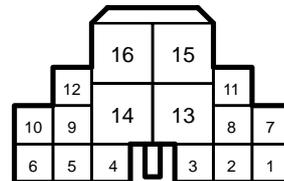
R160005

C448



1	-	5	LGW	9	P	13	N
2	WG	6	BR	10	-	14	-
3	BG	7	-	11	-	15	Y
4	UW	8	W	12	UB	16	GR

LC00448C

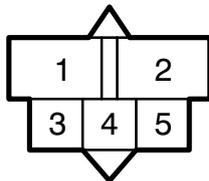


1	-	5	GW	9	V	13	BR
2	WG	6	BR	10	-	14	-
3	BG	7	-	11	-	15	Y
4	LW	8	YL	12	VG	16	G

LC00448C

C457

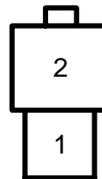
R050016



1	YG	4	B
2	NR	5	WG
3	VG		

C462

R020046



1	R
2	YG

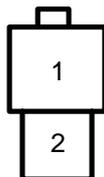
LC00457C

LC00462C

R020047

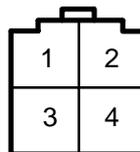
R040023

C458



1	BRB
2	G

C463



1	WG	3	LG
2	GR	4	B

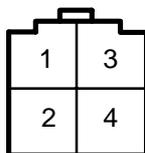
LC00458C

LC00463C

R040022

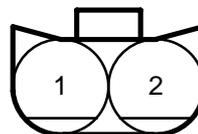
R020048

C459



1	B	3	Y
2	BR	4	G

C464



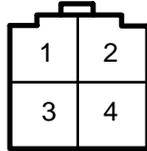
1	BG
2	RG

LC00459C

LC00464C

C465

R040023

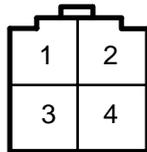


1	WG	3	G
2	WG	4	LW

LC00465C

R040023

C466

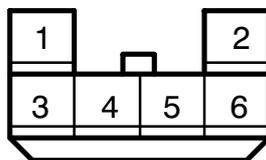


1	WG	3	G
2	VG	4	N

LC00466C

R060020

C467

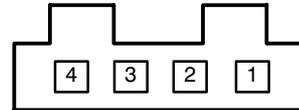


1	WG	4	GW
2	R	5	B
3	Y	6	LG

LC00467C

C483

R040006

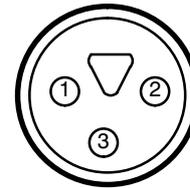


1	BN	3	WB
2	B	4	-

LC00483C

R030030

C485

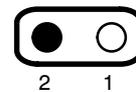


1	-
2	BW
3	BW

LC00485C

R020008

C500



1	SU
2	SK

LC00500C

R020021

C501

R020021



1	SK
2	SU



1	SR
2	SB

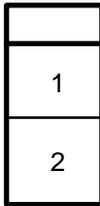
LC00501C

C501

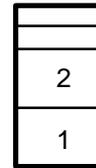
LC00501C

R020001

R020021



1	SU
2	SK



1	SR
2	SB

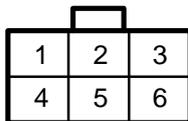
LC00501C

R060008

C503

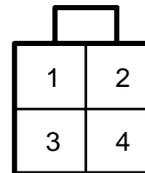
LC00501C

R040016



1	B	4	SW
2	BG	5	SW
3	BU	6	BK

C504



1	UG	3	-
2	-	4	B

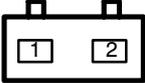
LC00503C

LC00504C

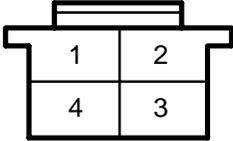
R020053

R040011

C507



1	O
2	K



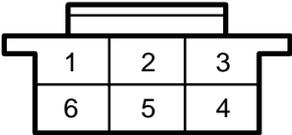
1	O	3	NK
2	K	4	B

LC00507C

LC00507C

C507

R060009



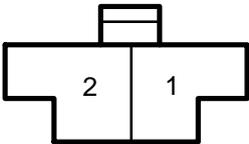
1	O	4	-
2	K	5	YK
3	B	6	-

LC00507C

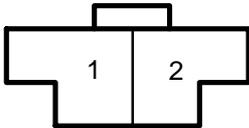
R020030

R020028.00

C510



1	BN
2	BW



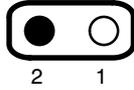
1	BW
2	B

LC00510C

LC00510C

R020008

C600



1	SU
2	SK

LC00600C

R020021

R020021

C601



1	SK
2	SU



1	SR
2	SB

LC00601C

R020001

LC00601C

R020021

C601



1	SU
2	SK



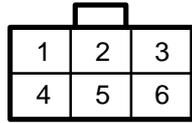
1	SR
2	SB

LC00601C

LC00601C

C603

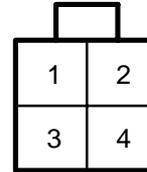
R060008



1	B	4	SW
2	BG	5	SW
3	BU	6	BK

C604

R040016



1	UG	3	-
2	-	4	B

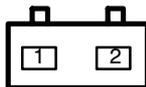
LC00603C

LC00604C

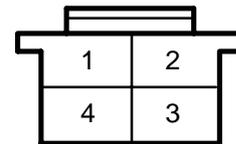
R020053

R040011

C607



1	O
2	K



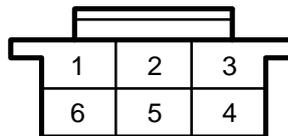
1	O	3	NK
2	K	4	B

LC00607C

LC00607C

R060009

C607



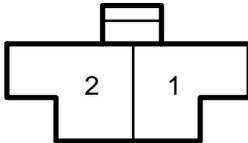
1	O	4	-
2	K	5	YK
3	B	6	-

LC00607C

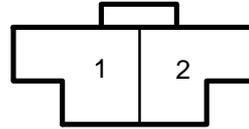
R020030

R020028.00

C610



1	BN
2	BW



1	BW
2	B

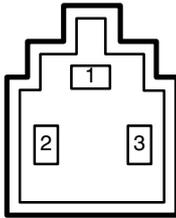
LC00610C

LC00610C

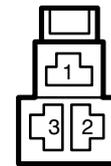
R030006

R030007

C700



1	SG
2	SW
3	SO



1	SG
2	SW
3	SO

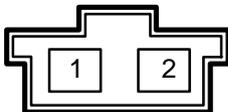
LC00700C

LC00700C

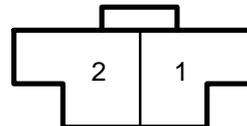
R020012

R020028.01

C701



1	O
2	K



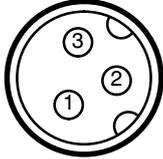
1	O
2	K

LC00701C

LC00701C

C703

R030021

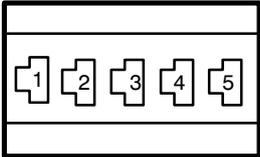


1	-
2	SW
3	SO

LC00703C

C709

R050008

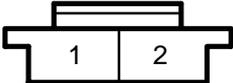


1	SO	4	SW
2	SO	5	SW
3	SG		

LC00704C

C706

R020029



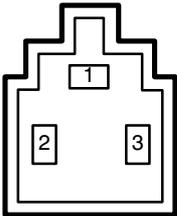
1	O
2	K

LC00706C

C800

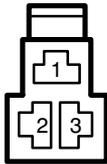
R030006

R030008



1	SG
2	SN
3	S

LC00800C



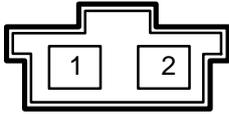
1	SG
2	SN
3	S

LC00800C

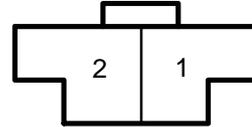
R020012

R020028.01

C801



1	O
2	K



1	O
2	K

LC00801C

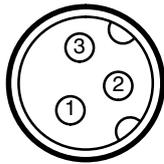
LC00801C

R030021

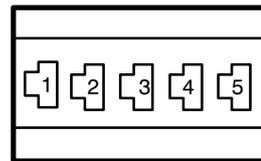
R050008

C803

C809



1	-
2	SW
3	SO



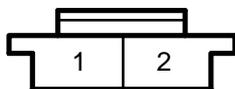
1	SW	4	SN
2	S	5	SO
3	SG		

LC00803C

LC00809C

R020029

C806

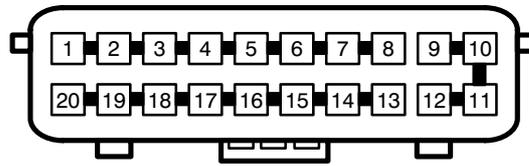


1	O
2	K

LC00806C

R200001

HJ1



S2042

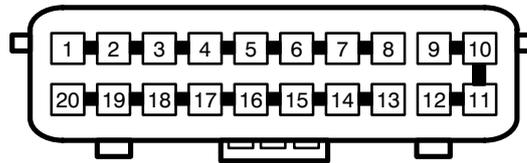
1	GO
2	GO
3	GO
4	GO
5	GO
6	-
7	-
8	-

S274

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

LC00HJ1G
R200001

HJ2



S2074

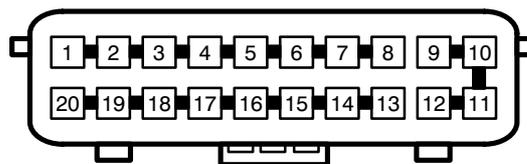
1	RN
2	RN
3	RN
4	RN
5	-
6	-

S2005

17	BY
18	BY
19	BY
20	BY

LC00HJ2G
R200001

HJ3



S238

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

S2032

9	B
10	BO
11	BO
12	B

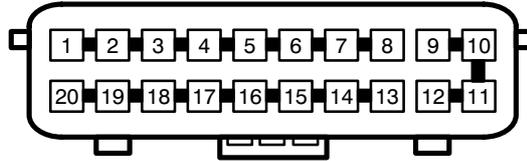
S2003

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

LC00HJ3G

R200001

HJ4



S2055

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

S2014

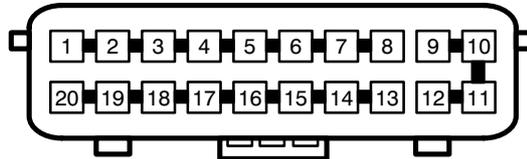
9	WP
10	WP
11	WP
12	WP

S2011

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

LC00HJ4G
R200001

HJ5



S2031

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

S2017

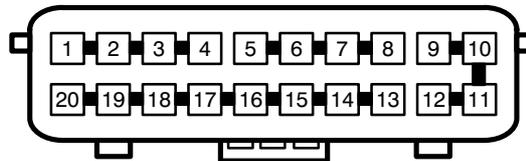
9	-
10	-
11	GK
12	GK

S288

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

LC00HJ5G
R200009

HJ6



S2019

1	GW
2	GW
3	GW
4	GW

S2020

5	GR
6	GR
7	GR
8	GR

S2018

9	BR
10	BR
11	BR
12	BR

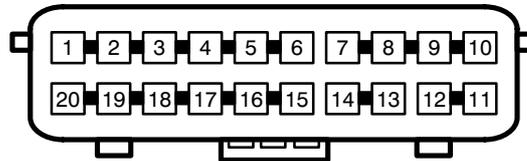
S2021

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

LC00HJ6G

R200010

HJ7



S290

1	BS
2	B
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

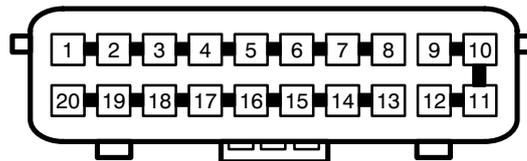
S293

15	RB
16	RB
17	RB
18	RB
19	RB
20	-

LC00HJ7C

R200001

HJ8



S253

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

S252

9	RO
10	RO
11	RO
12	RO

S255

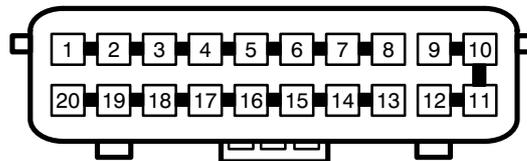
13	B
14	B
15	B
16	B
17	B
18	B
19	B
20	B

LC00HJ8C

R200001

HJ9

LC00HJ2F



S256

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

S251

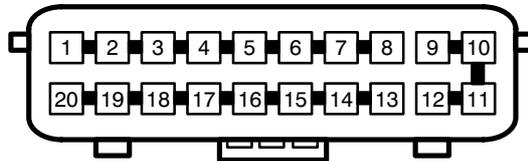
13	RN
14	RN
15	RN
16	RN
17	RN
18	RN
19	RN
20	RN

LC00HJ9C

LC00HJ2F

R200001

HJ10



S204

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

S2016

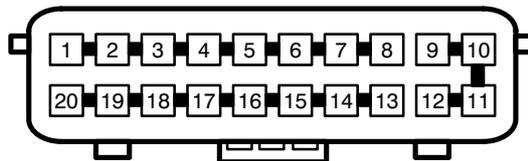
13	B
14	B
15	B
16	B
17	B
18	B
19	B
20	B

LC0HJ10G

R200001

HJ11

LC00HJ2F



S2033

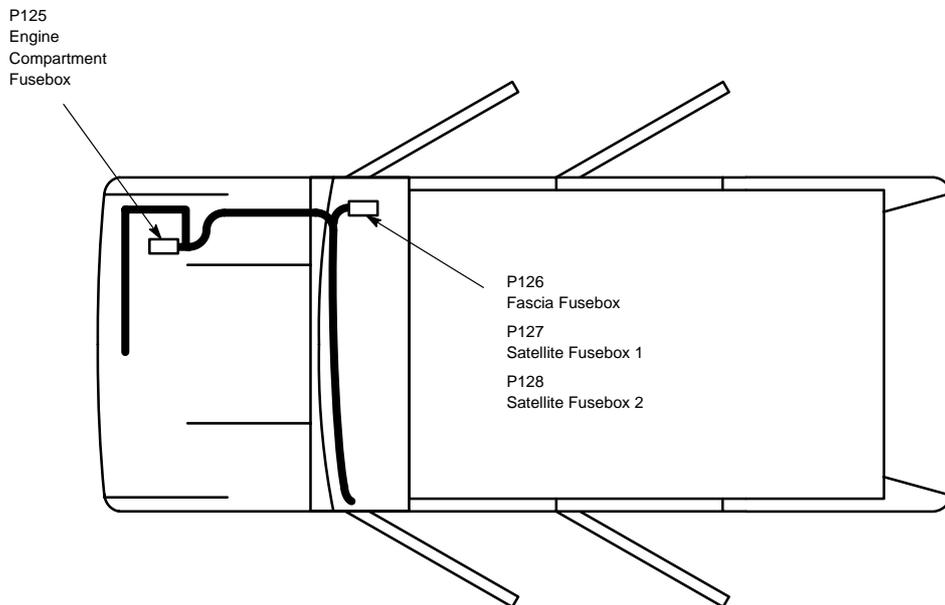
1	B
2	B
3	B
4	B
5	B
6	-
7	B
8	B

S2015

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

LC0HJ11G

LC00HJ2F



Main Harness (Partial)

