RANGE ROVER CLASSIC

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 avarias eléctricas

Electrical troubleshooting manual

RANGE ROVER

1995 model

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KEY INFORMATION

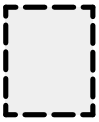
CIRCUIT DIAGRAMS

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

D 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.

D Remember:

Entire component



Part of a component

TERMINAL NUMBER	DESIGNATION
50	Battery voltage: Ignition Switch in position III
30	Battery voltage: supplied constantly
15	Battery voltage: Ignition Switch in position II or III
R	Battery voltage: Ignition Switch in positions I, II
31	Earth

See Introduction (i) for additional circuit diagram symbols

DIAGNOSIS

D If the diagram is accompanied by text:

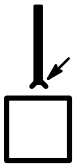
– Read the Circuit Operation before proceeding with the electrical diagnosis.

– Read the Troubleshooting Hints before performing the System Diagnosis.

– Tests follow the System Diagnosis

– When performing the System Diagnosis, be certain that all components disconnected in previous steps are reconnected unless otherwise directed.

Component is disconnected. Backprobe harness connector



Component is connected. Backprobe harness connector

Component is disconnected. Probe component

Component is disconnected. Probe harness connector

Probe in–line connector

INTRODUCTION

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

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

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

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

DESCRIPTION OF MANUAL

Circuit Operation And Diagram

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

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

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

Circuit Diagrams (schematics) break the entire electrical system into individual circuits. Electrical components that work together are shown together.

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

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

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

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

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

Power Distribution

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

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

Fuse Details

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

Ground Distribution

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

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

Connector Views

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

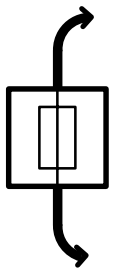
A self−powered test light consists of a light bulb, Battery and two leads. If the leads are touched together, the bulb will go on.

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:



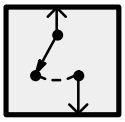
SYMBOLS

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

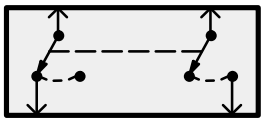
Battery

F1 Fuse

MF2 Maxi-Fuse®

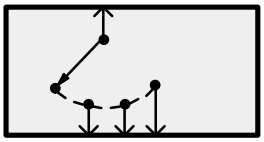


One-pole on/off switch

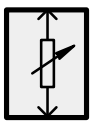


Two-pole switch

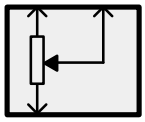
Dashed line indicates mechanical connection between switches



Multiple Position Switch



Variable resistor. Wiper moves by external force



Potentiometer. Wiper moves by external force

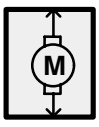
Steering Column Rotary Coupler

Diode. Current flows in direction of arrow only

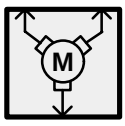
LED

Bulb

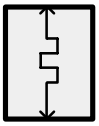
Electronic or Solid State device

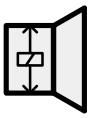


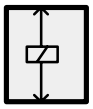
Permanent magnet motor (one speed)

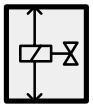


Permanent magnet motor (two speed)


Heating Element

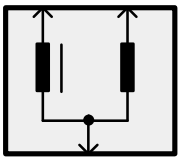

Loudspeaker or horn

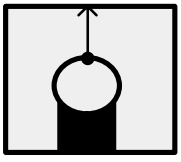

Coil


Solenoid

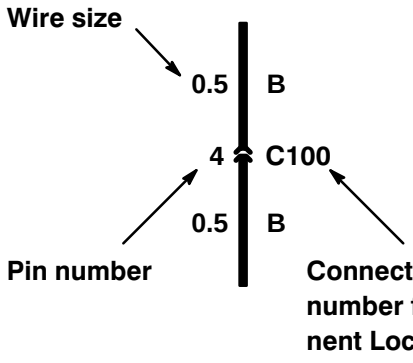
Relay

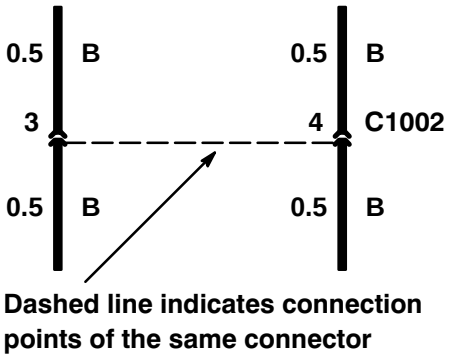
Switch is drawn into the closed position when current flows through coil

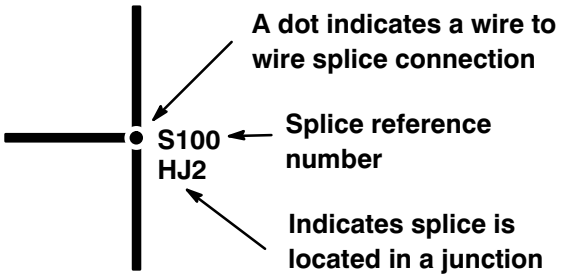

Ignition Coil

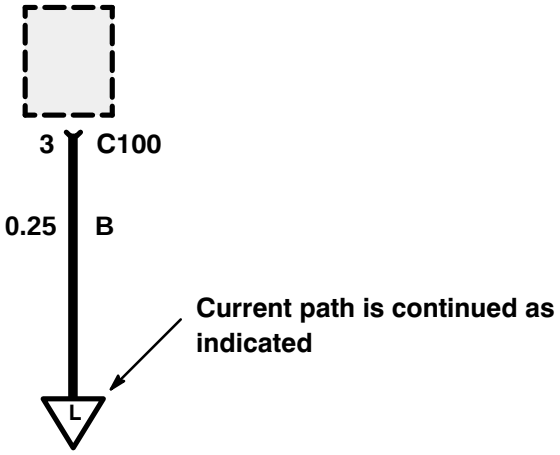

Steering Column
Horn Brush/
Slip Ring

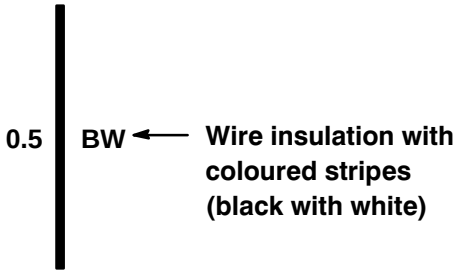
Antenna

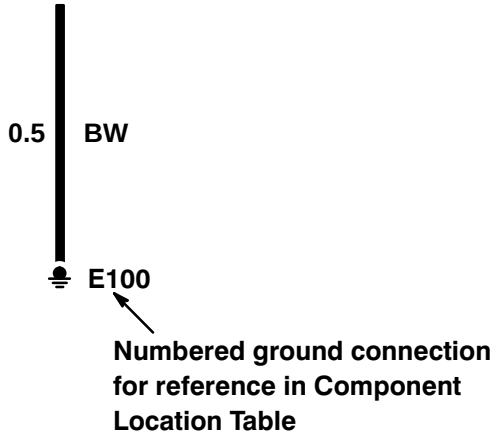

Wire size
0.5
B
4
C100
0.5
B
Pin number
Connector reference number for Component Location Table

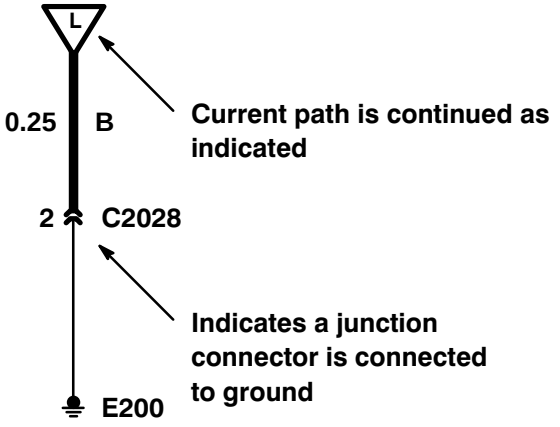

0.5
B
3
0.5
B
0.5
B
4
C1002
0.5
B
Dashed line indicates connection points of the same connector


A dot indicates a wire to wire splice connection
S100
HJ2
Splice reference number
Indicates splice is located in a junction connector; number following HJ is a reference number

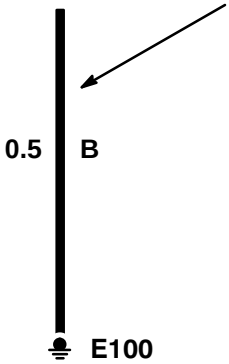

3
C100
0.25
B
Current path is continued as indicated
L


0.5
BW
Wire insulation with coloured stripes (black with white)

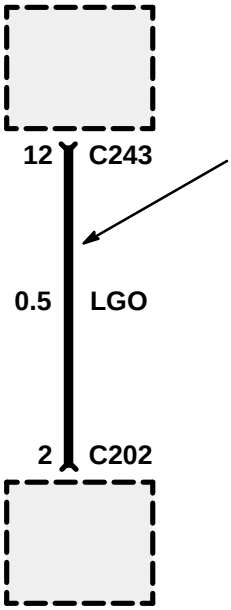

0.5
BW
E100
Numbered ground connection for reference in Component Location Table


L
0.25
B
Current path is continued as indicated
2
C2028
Indicates a junction connector is connected to ground
E200

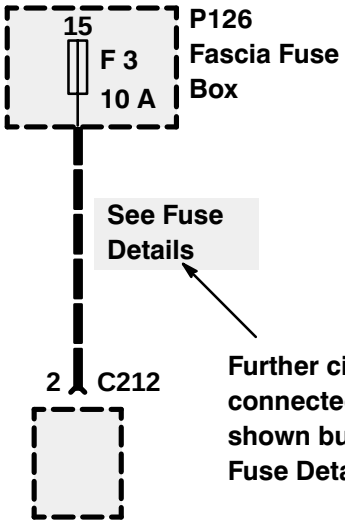
Circuit referenced for connection to another circuit



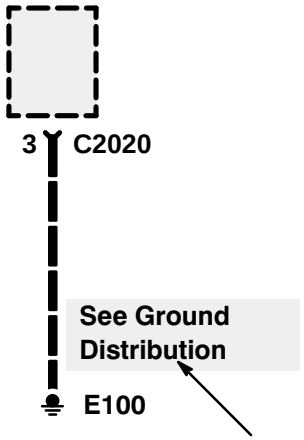
Indicates that this circuit is only present for models available in a specific country



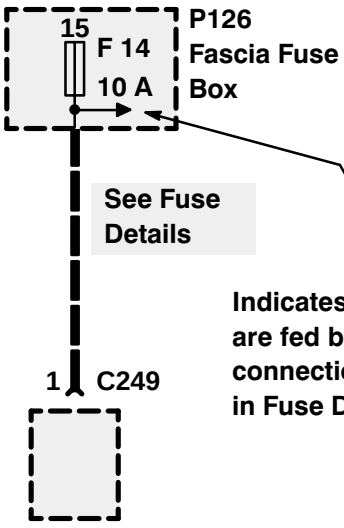
Indicates that this circuit is only present for models equipped with specific option variations



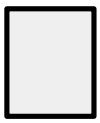
Further circuits connected to fuse are not shown but are listed in Fuse Details (Y2)



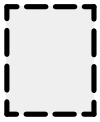
Further circuits connected at ground are not shown but are listed under Ground Distribution



Indicates that other circuits are fed by F14. These connections can be found in Fuse Details (Y2)

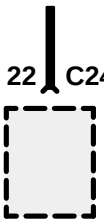


Entire component

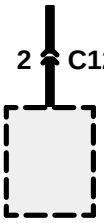


Part of a component

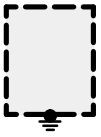
Component with screw terminals



Plug connected at component

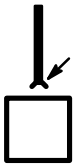


Plug connected to connection wire of component



Component housing connected directly to vehicle ground

Component is disconnected. Backprobe harness connector

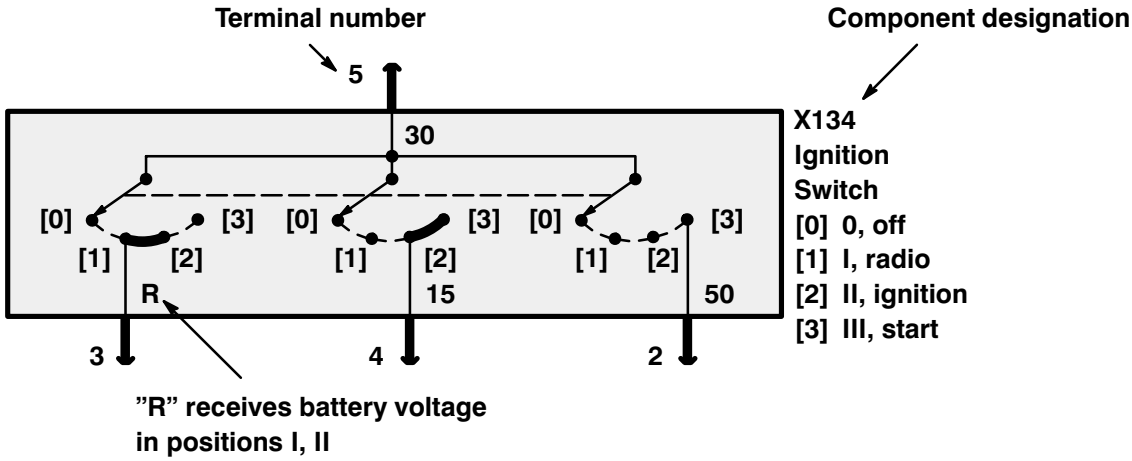


Component is connected. Backprobe harness connector

Component is disconnected. Probe component

Component is disconnected. Probe harness connector

Probe in-line connector



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

Terminal number	Designation
X	Switched battery voltage through the ignition load relay; ignition switch is in position II or III.
49	Flasher unit input
49a	Flasher unit output
56a	High beam
56b	Low beam
85	End of relay coil
86	Start of relay coil
87	Relay contact
87a	Relay contact

Definition of Vehicle Component Codes

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

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

Wire Colours

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

Wire Colour Chart

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

Circuit Qualifiers

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

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

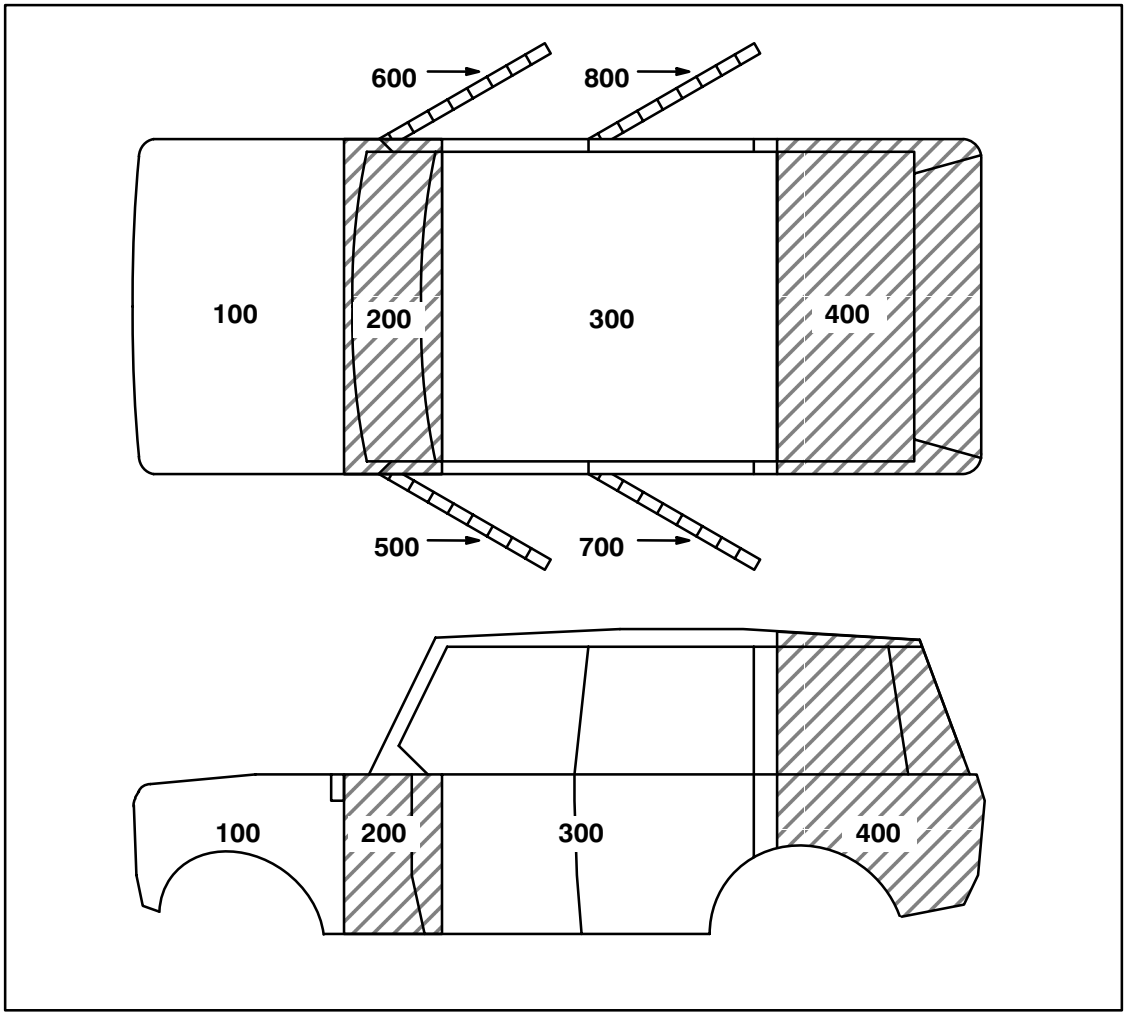
Switch Positions

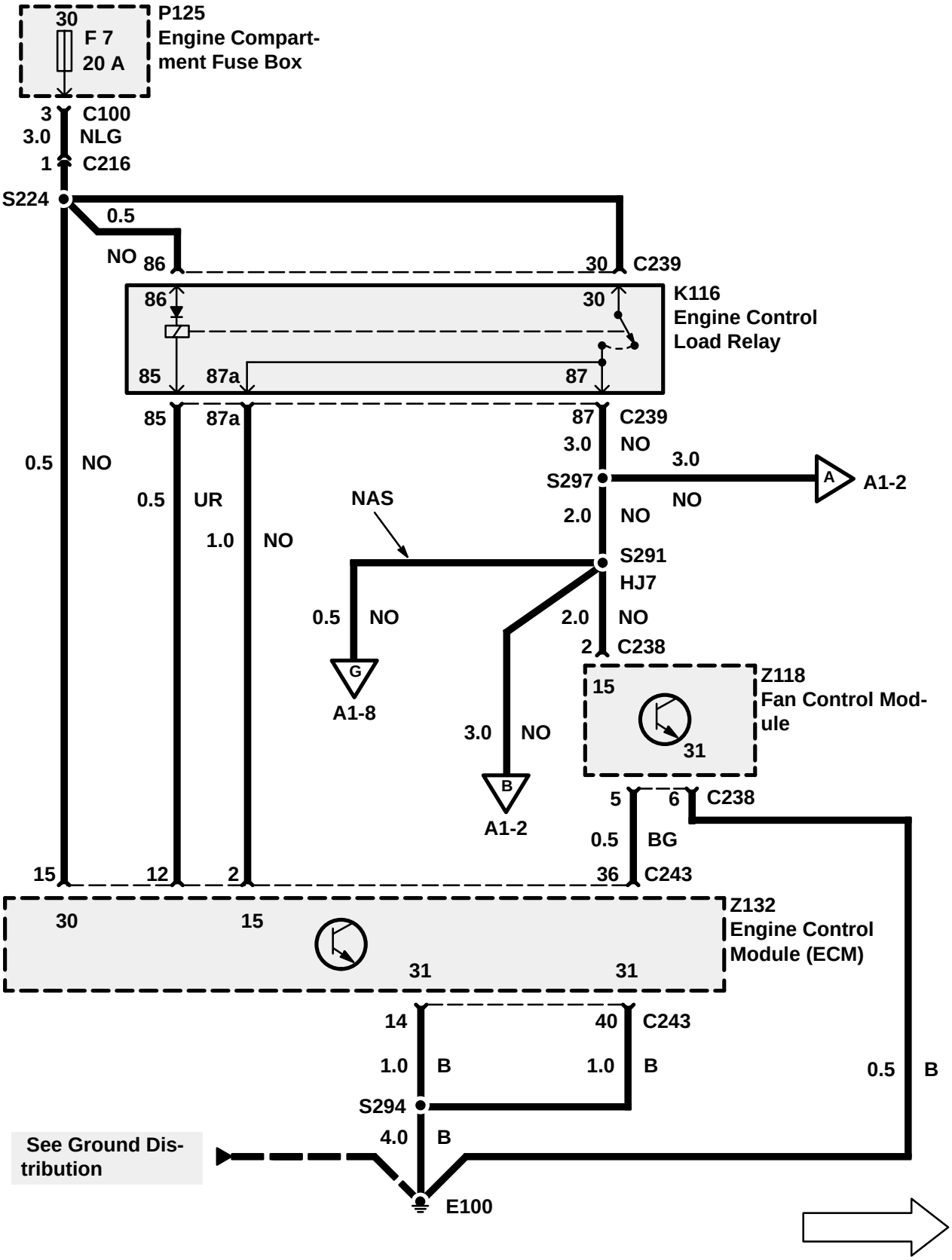
Certain abbreviations are used throughout the Electrical Troubleshooting Manual as Switch Position notes.The following list explains all abbreviations used as Switch Position notes in the Circuit Diagrams.

< 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.

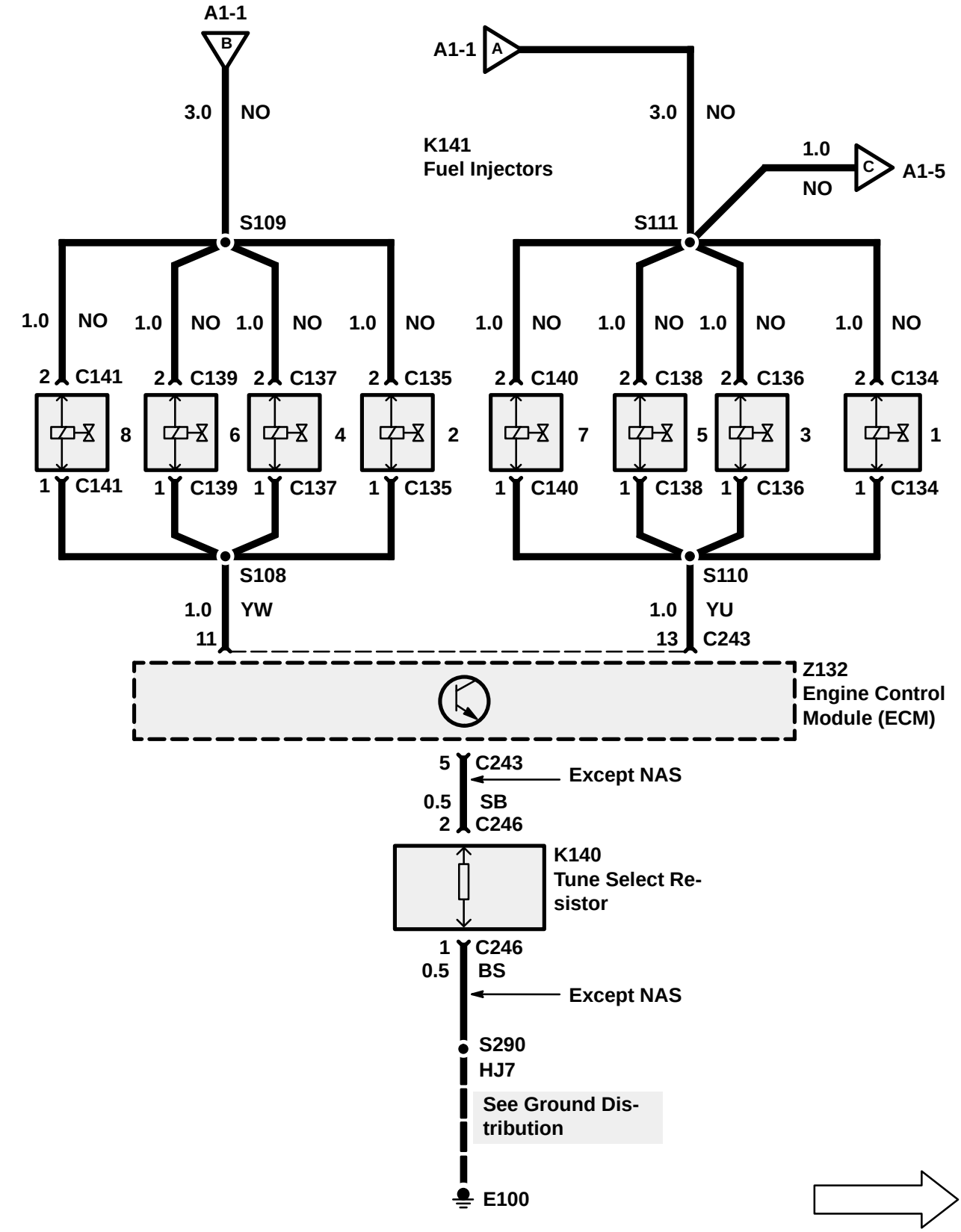
Connector, Ground, and Splice Identification by Location

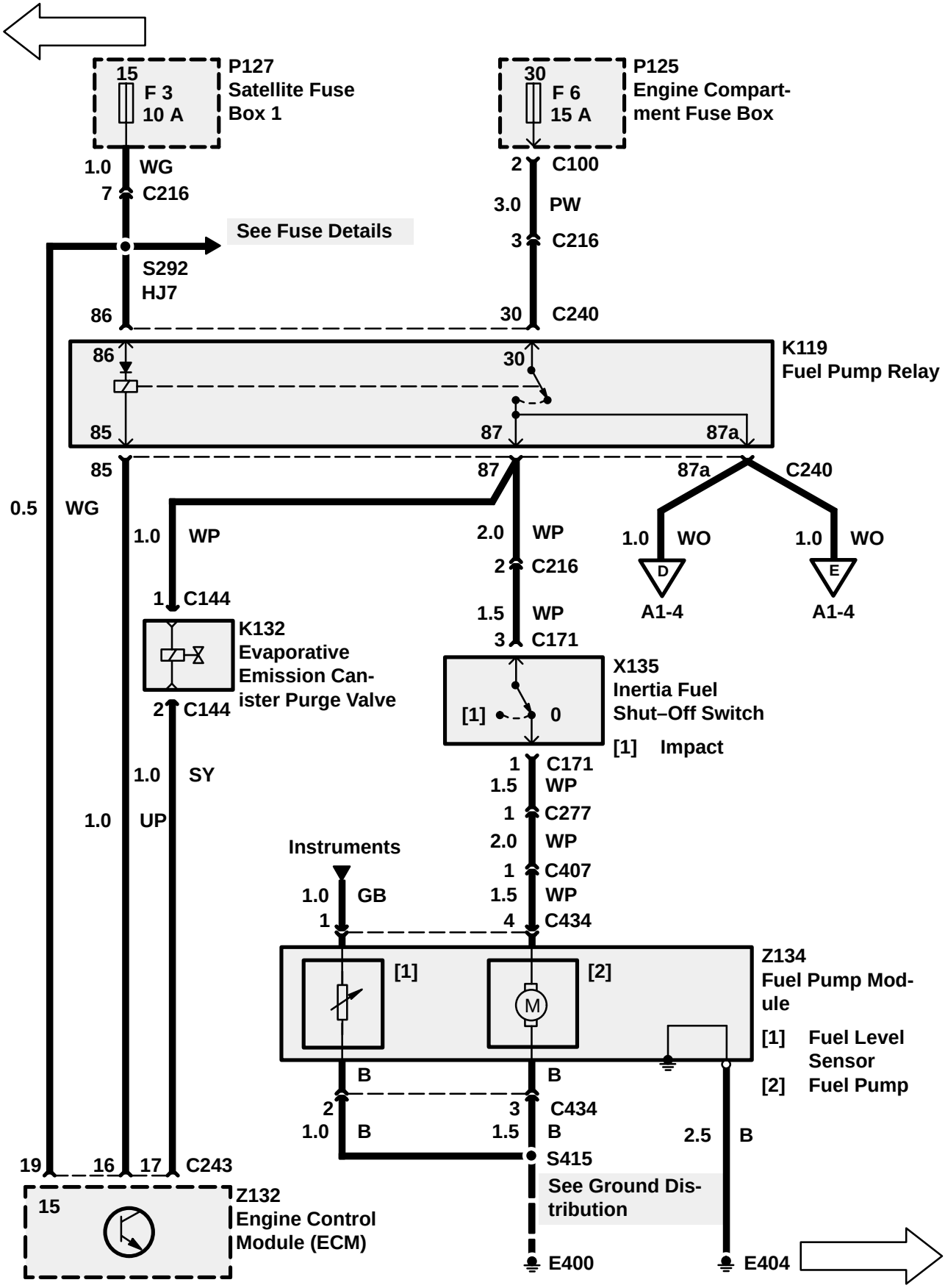



30
F 7
20 A
P125
Engine Compartment Fuse Box
3
C100
3.0
NLG
1
C216
S224
0.5
NO
86
30
C239
86
30
K116
Engine Control Load Relay
85
87a
87
85
87a
87
C239
0.5
NO
3.0
NO
3.0
S297
A
A1-2
NO
0.5
UR
NAS
2.0
NO
1.0
NO
S291
HJ7
0.5
NO
2.0
NO
2
C238
G
A1-8
15
Z118
Fan Control Module
31
3.0
NO
B
A1-2
5
6
C238
0.5
BG
15
12
2
36
C243
30
15
Z132
Engine Control Module (ECM)
31
31
14
40
C243
1.0
B
1.0
B
0.5
B
S294
4.0
B
See Ground Distribution
E100

A1 ETM

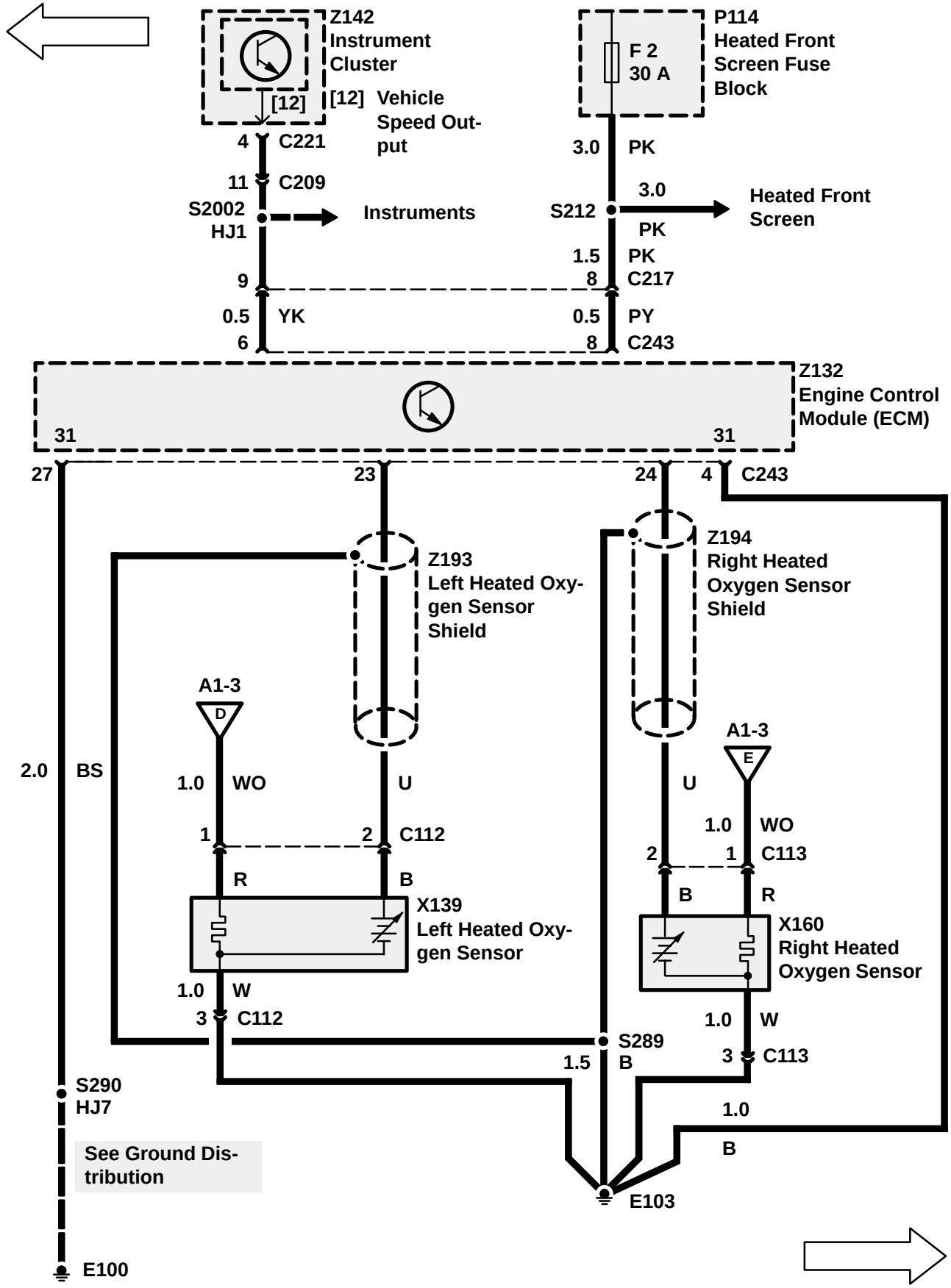
1995 RANGE ROVER

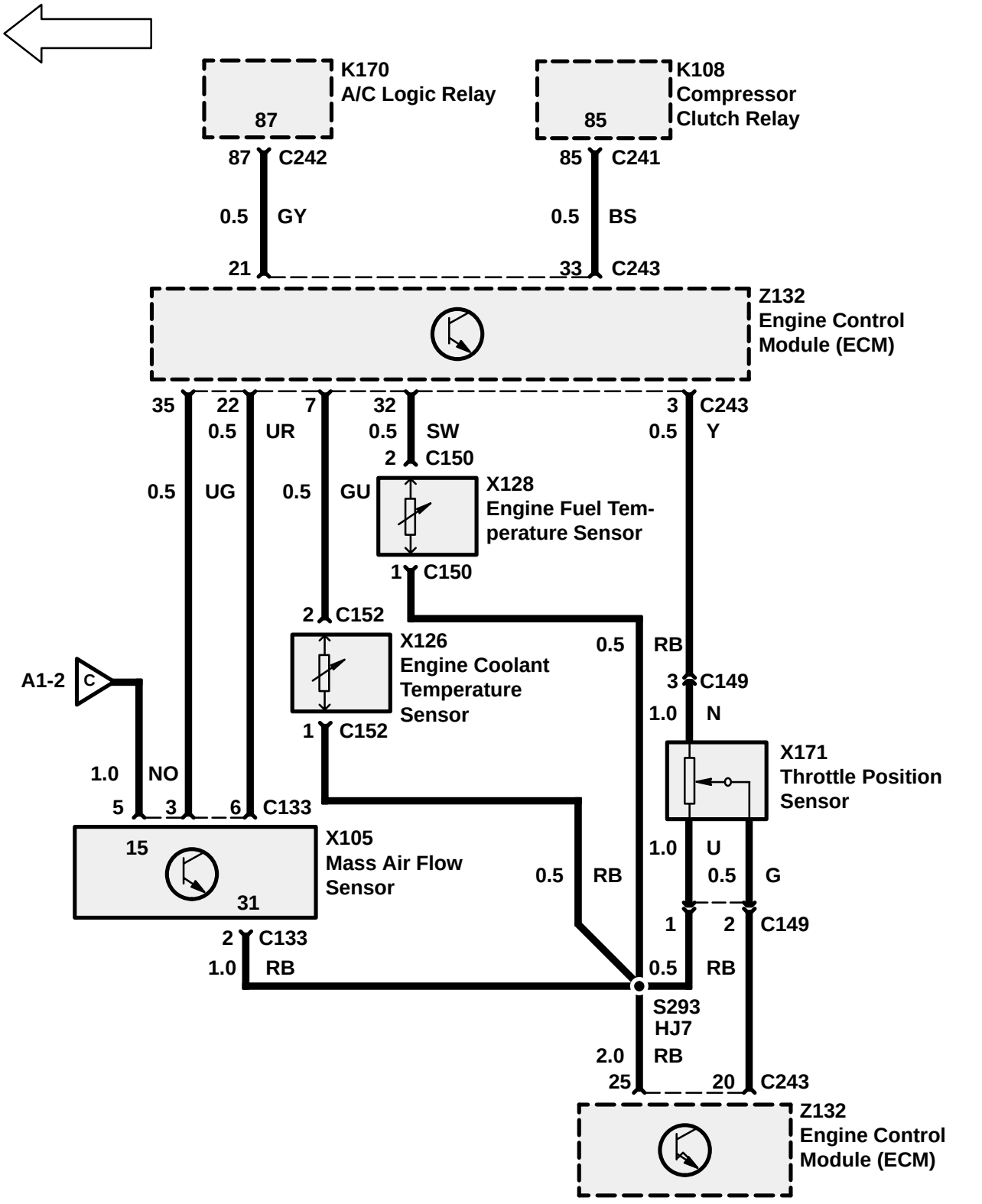



P127
Satellite Fuse Box 1
15
F 3
10 A
P125
Engine Compartment Fuse Box
30
F 6
15 A
1.0 WG
7 C216
See Fuse Details
S292
HJ7
86
2 C100
3.0 PW
3 C216
30 C240
K119
Fuel Pump Relay
86
30
85
87
87a
0.5 WG
1.0 WP
1 C144
K132
Evaporative Emission Canister Purge Valve
2 C144
2.0 WP
2 C216
1.5 WP
3 C171
1.0 WO
D
A1-4
1.0 WO
E
A1-4
X135
Inertia Fuel Shut–Off Switch
[1] 0
[1] Impact
1 C171
1.5 WP
1 C277
2.0 WP
1 C407
1.5 WP
4 C434
1.0 SY
1.0 UP
Instruments
1.0 GB
1
Z134
Fuel Pump Module
[1]
[2]
M
[1] Fuel Level Sensor
[2] Fuel Pump
B
2
1.0 B
3 C434
1.5 B
S415
2.5 B
See Ground Distribution
19 16 17 C243
15
Z132
Engine Control Module (ECM)
E400
E404

A1 ETM

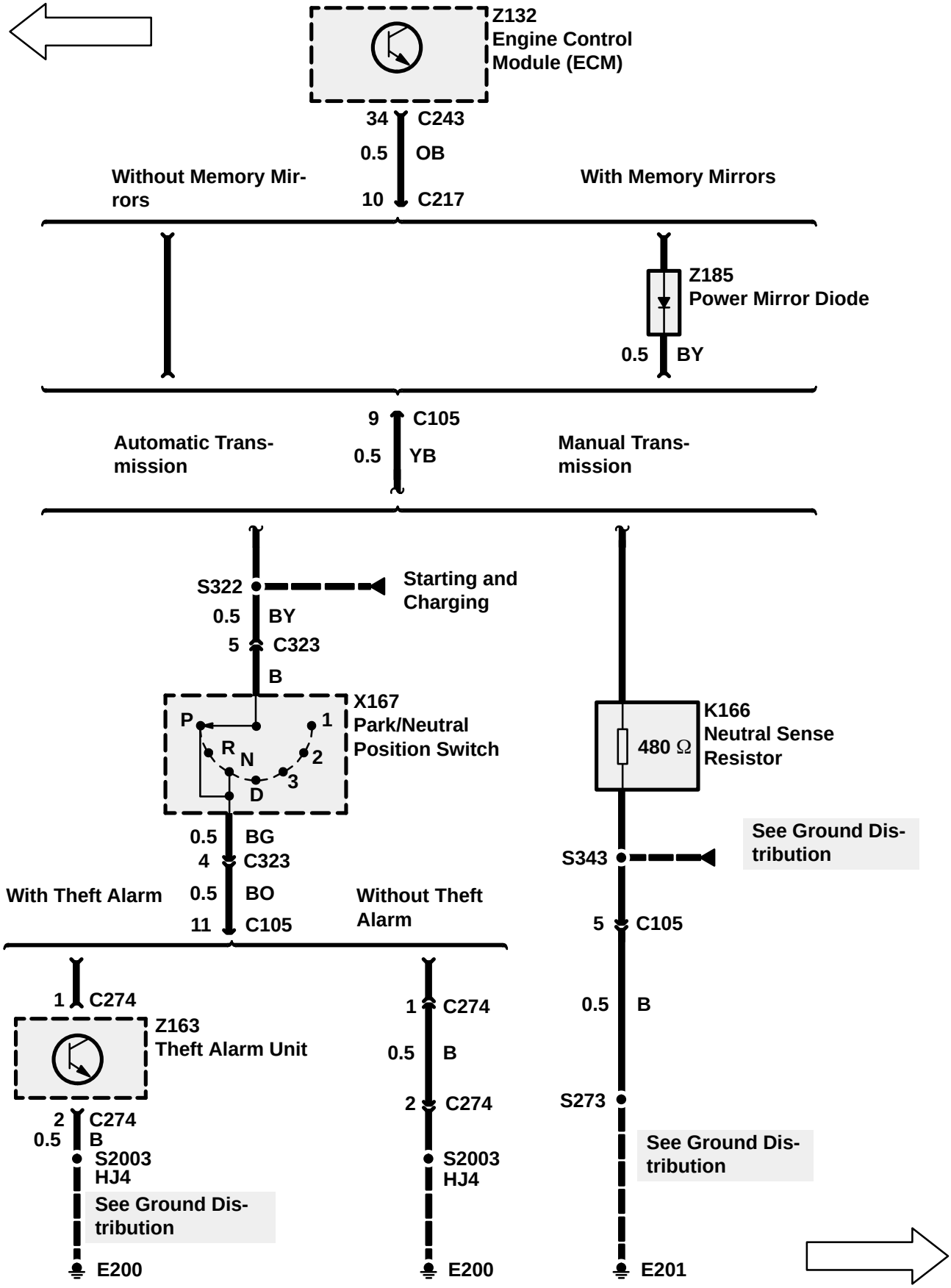
1995 RANGE ROVER

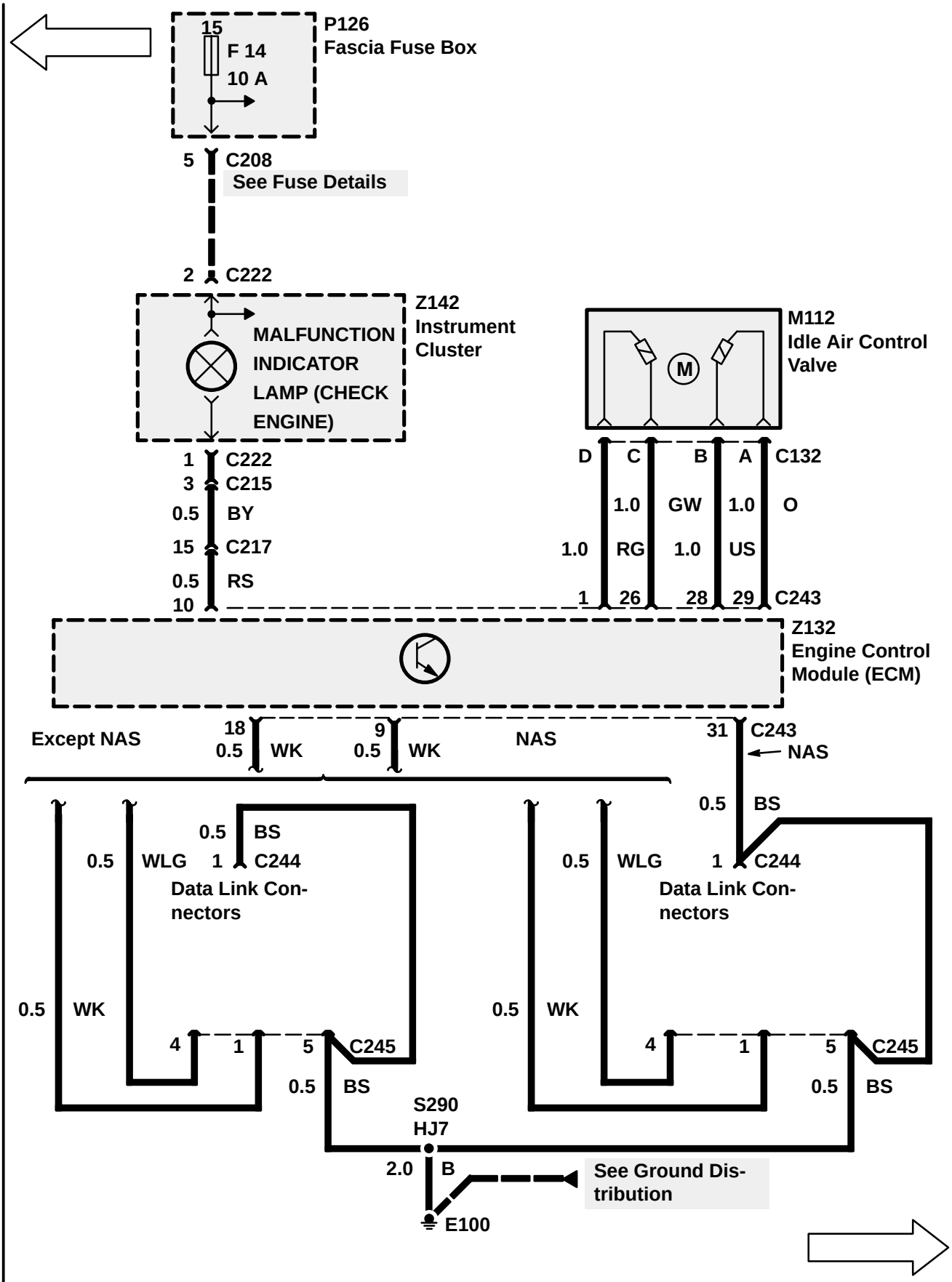



K170
A/C Logic Relay
87
K108
Compressor
Clutch Relay
85
87 C242
85 C241
0.5 GY
0.5 BS
21
33 C243
Z132
Engine Control
Module (ECM)
35 22 7 32 3 C243
0.5 UR 0.5 SW 0.5 Y
2 C150
0.5 UG 0.5 GU
X128
Engine Fuel Temperature Sensor
1 C150
2 C152
X126
Engine Coolant
Temperature
Sensor
1 C152
0.5 RB
3 C149
1.0 N
A1-2
C
1.0 NO
5 3 6 C133
X171
Throttle Position
Sensor
15
X105
Mass Air Flow
Sensor
31
1.0 U
0.5 G
0.5 RB
2 C133
1.0 RB
1 2 C149
0.5 RB
S293
HJ7
2.0 RB
25 20 C243
Z132
Engine Control
Module (ECM)

A1 ETM

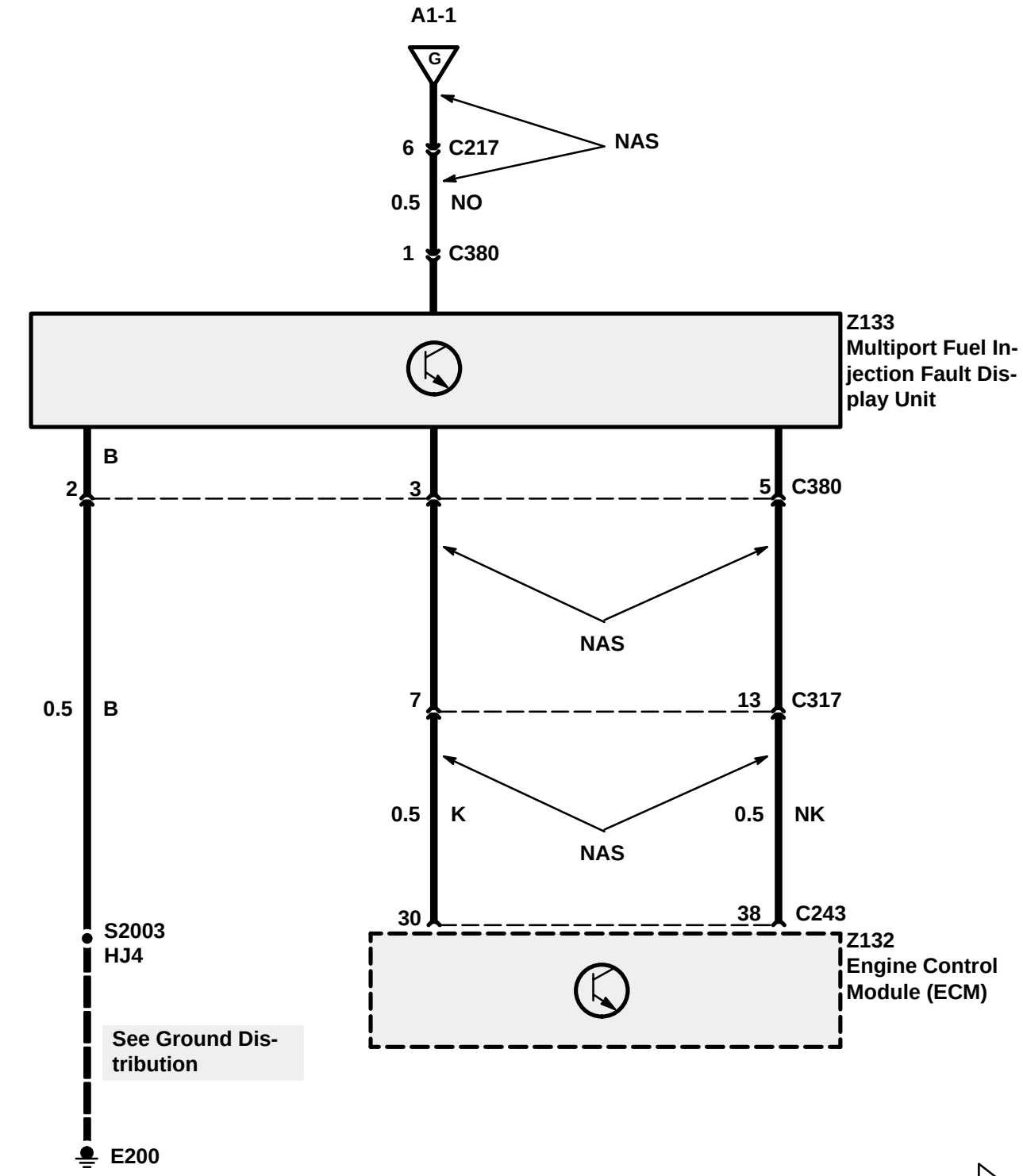
1995 RANGE ROVER

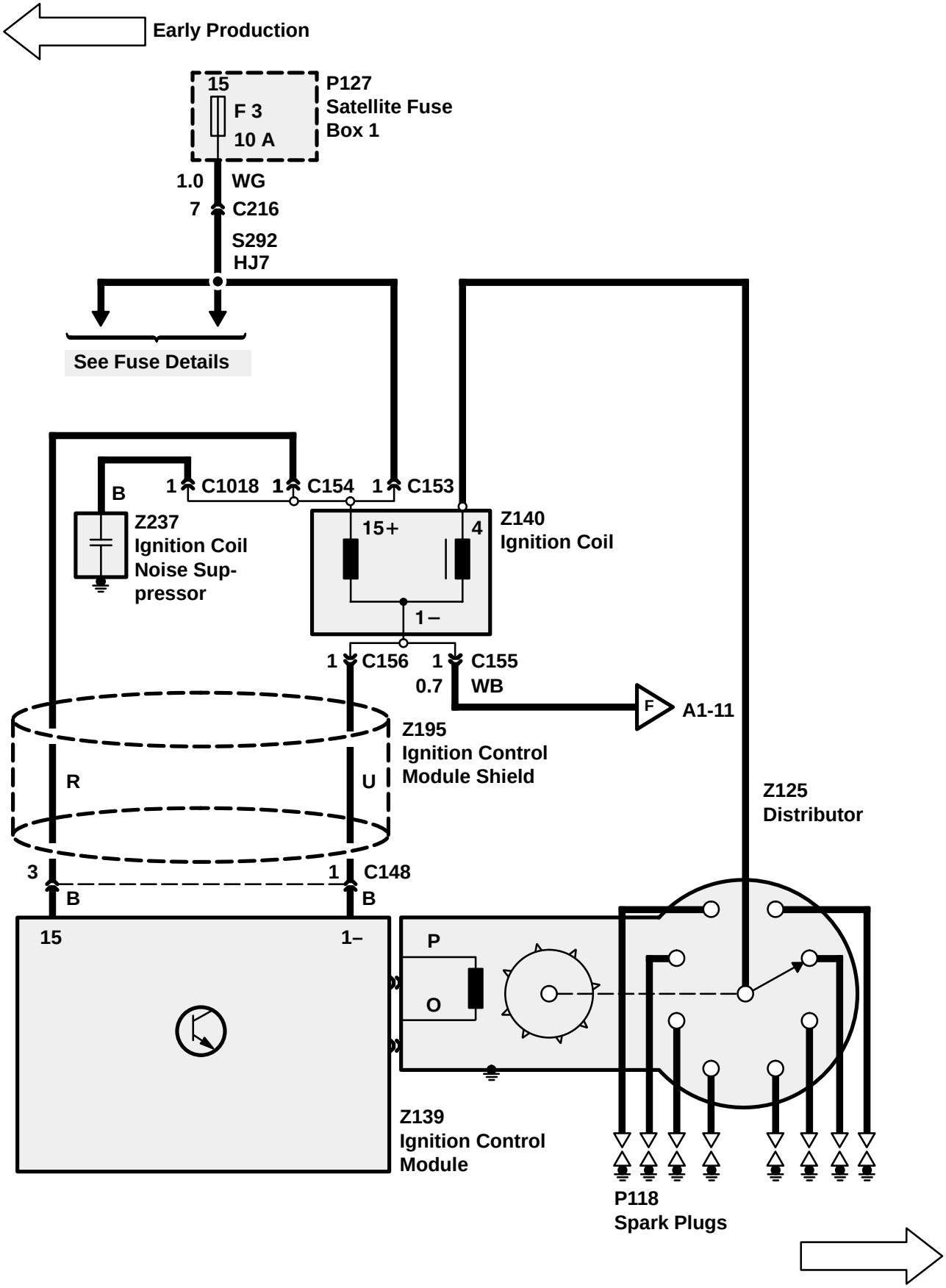



15
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
2
C222
Z142
Instrument
Cluster
MALFUNCTION
INDICATOR
LAMP (CHECK
ENGINE)
M112
Idle Air Control
Valve
M
1
C222
3
C215
0.5
BY
15
C217
0.5
RS
10
D
C
B
A
C132
1.0
GW
1.0
O
1.0
RG
1.0
US
1
26
28
29
C243
Z132
Engine Control
Module (ECM)
Except NAS
18
0.5
WK
9
0.5
WK
NAS
31
C243
NAS
0.5
BS
0.5
WLG
1
C244
Data Link Con-
nectors
0.5
WK
4
1
5
C245
0.5
BS
S290
HJ7
2.0
B
See Ground Dis-
tribution
E100

A1 ETM

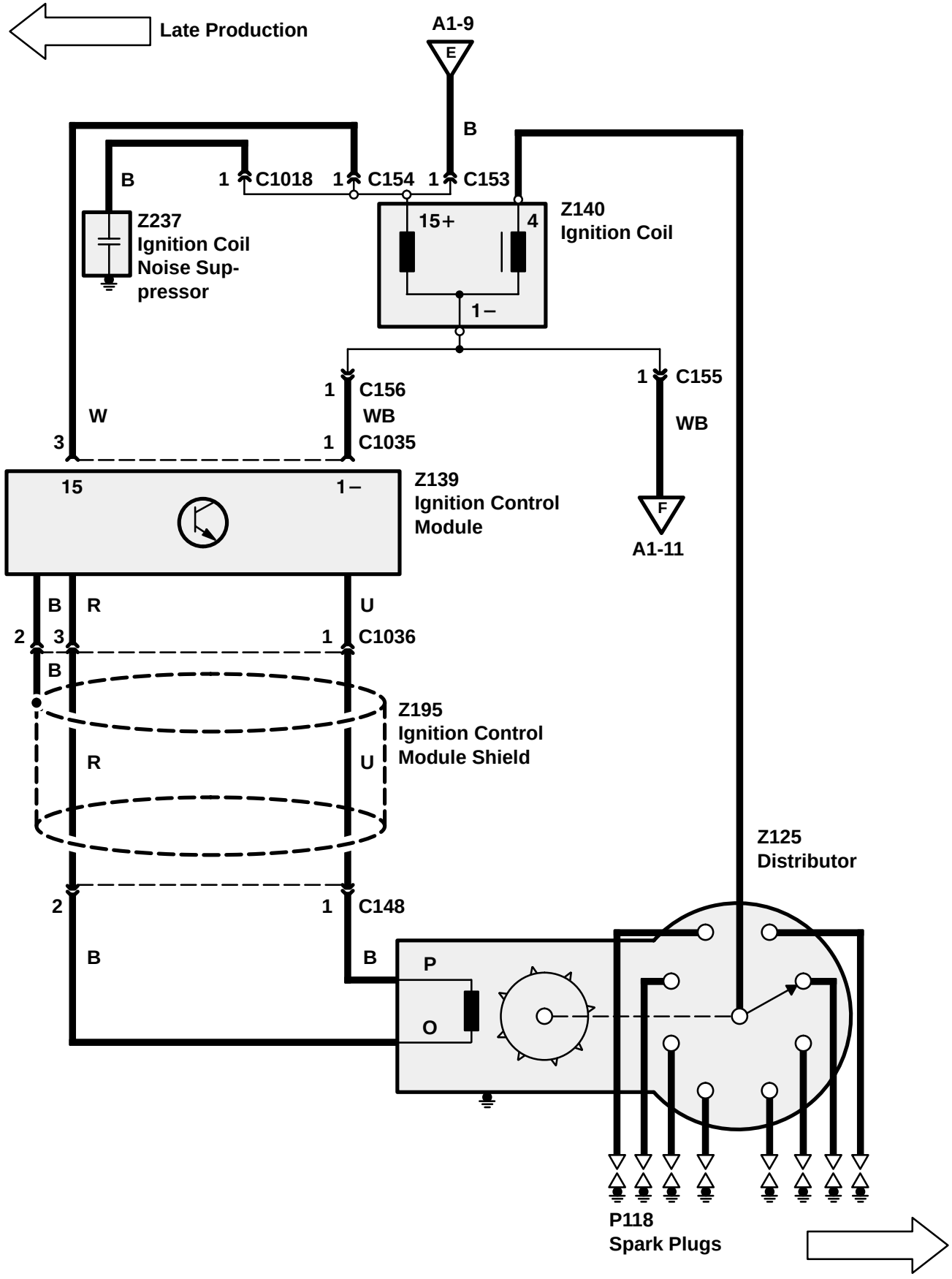
1995 RANGE ROVER

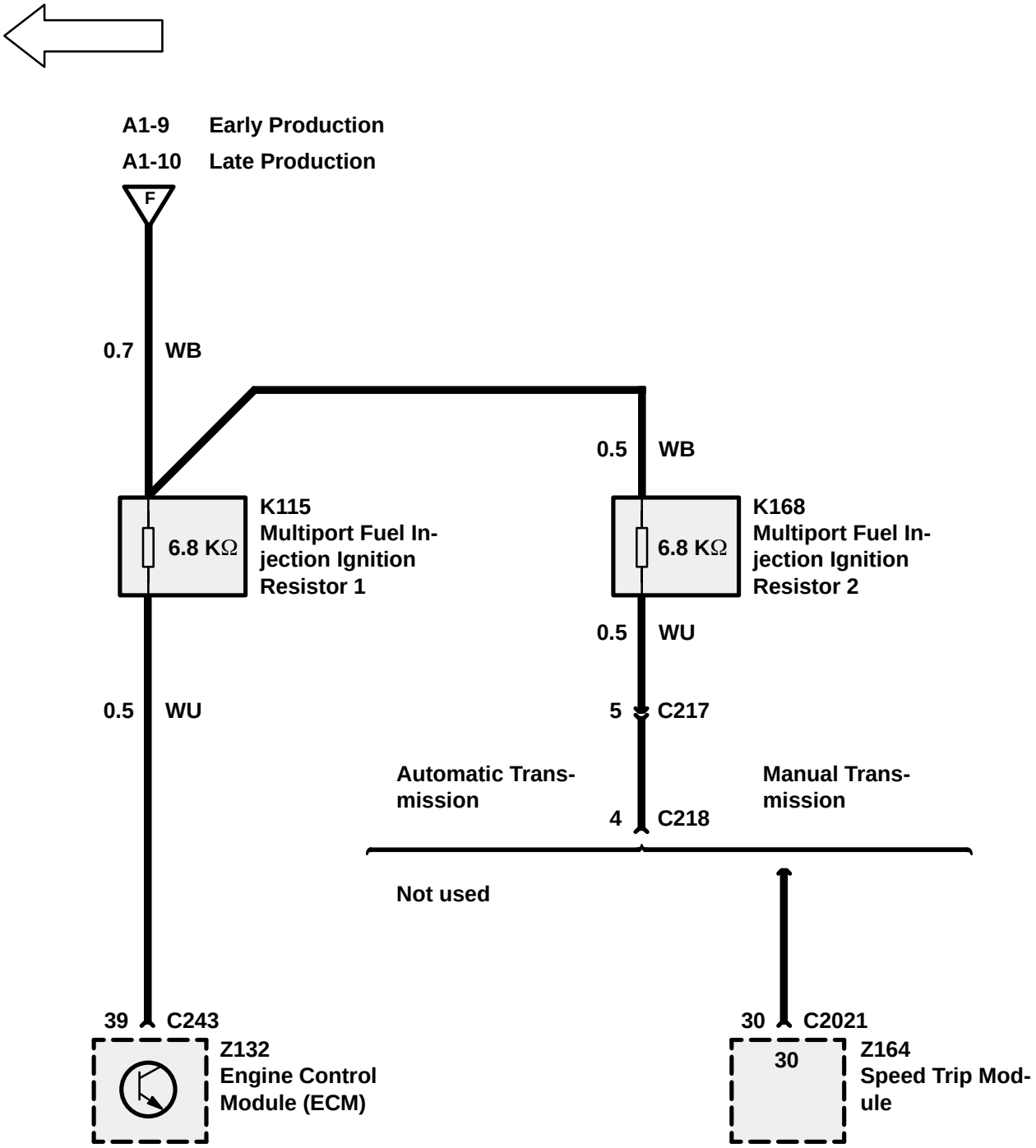


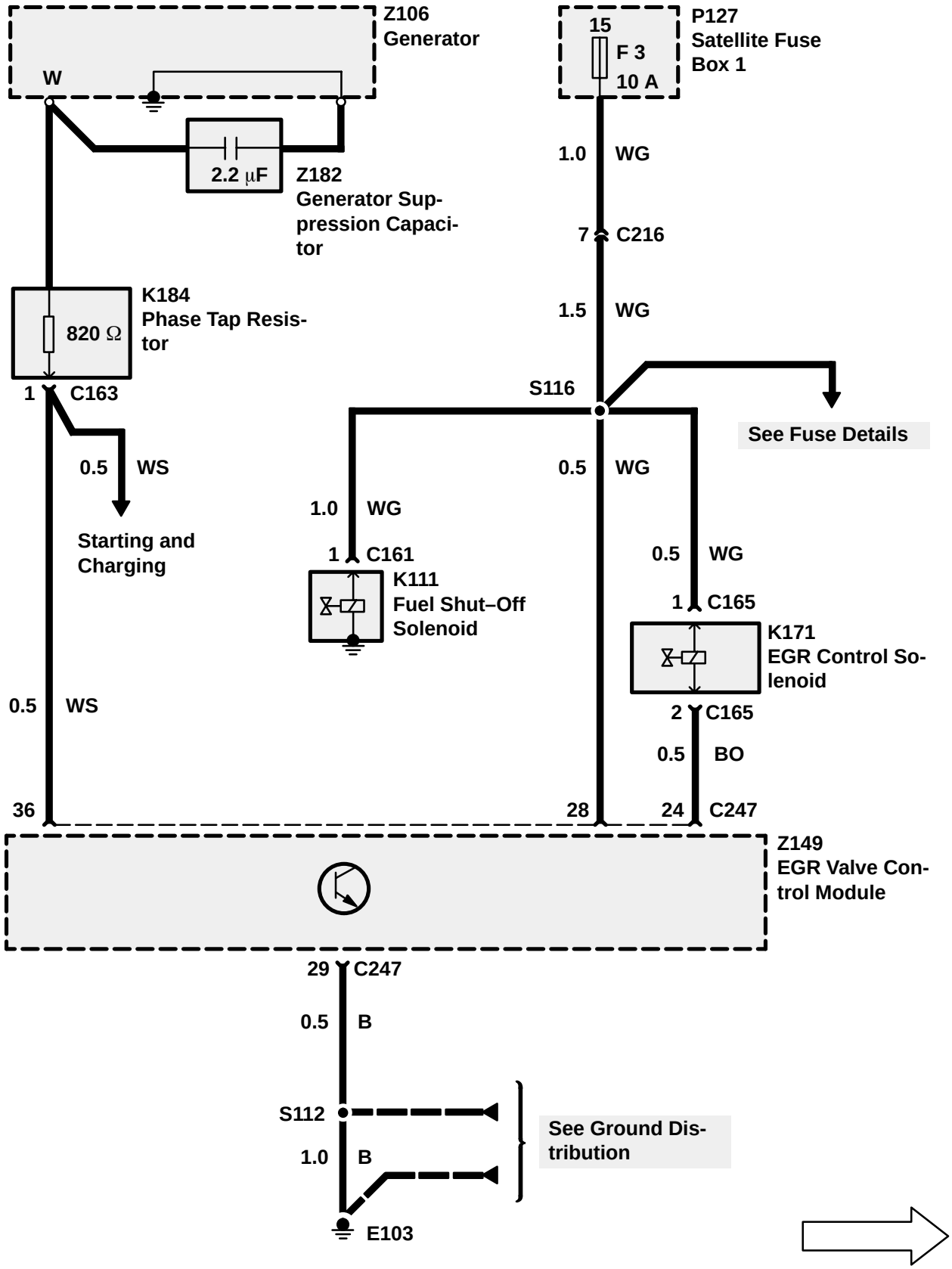

Early Production
15
F 3
10 A
P127
Satellite Fuse
Box 1
1.0
WG
7
C216
S292
HJ7
See Fuse Details
B
1
C1018
1
C154
1
C153
Z237
Ignition Coil
Noise Sup-
pressor
15+
4
Z140
Ignition Coil
1–
1
C156
1
C155
0.7
WB
F
A1-11
Z195
Ignition Control
Module Shield
R
U
Z125
Distributor
3
B
1
C148
B
15
1–
P
O
Z139
Ignition Control
Module
P118
Spark Plugs

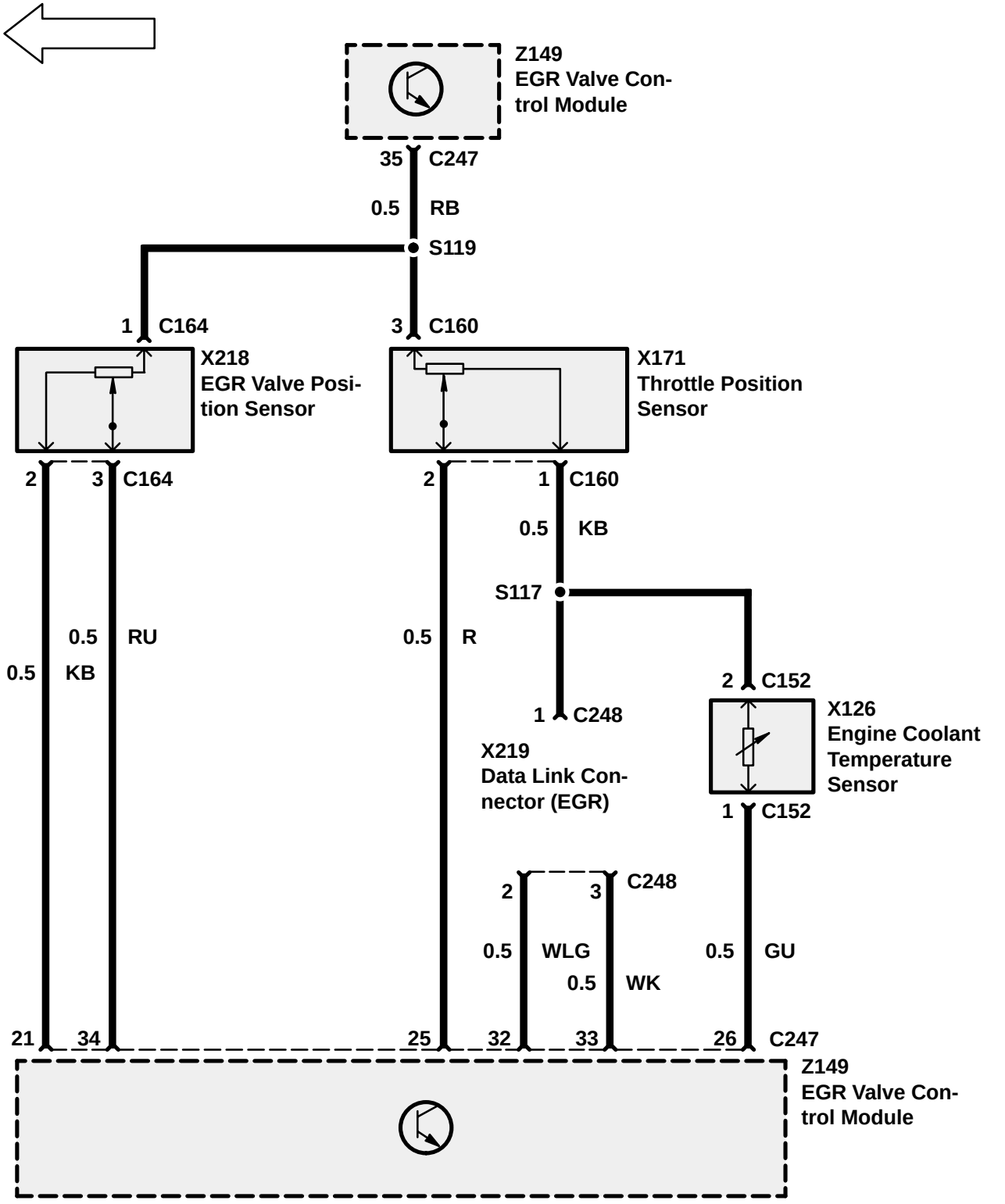
A1 ETM

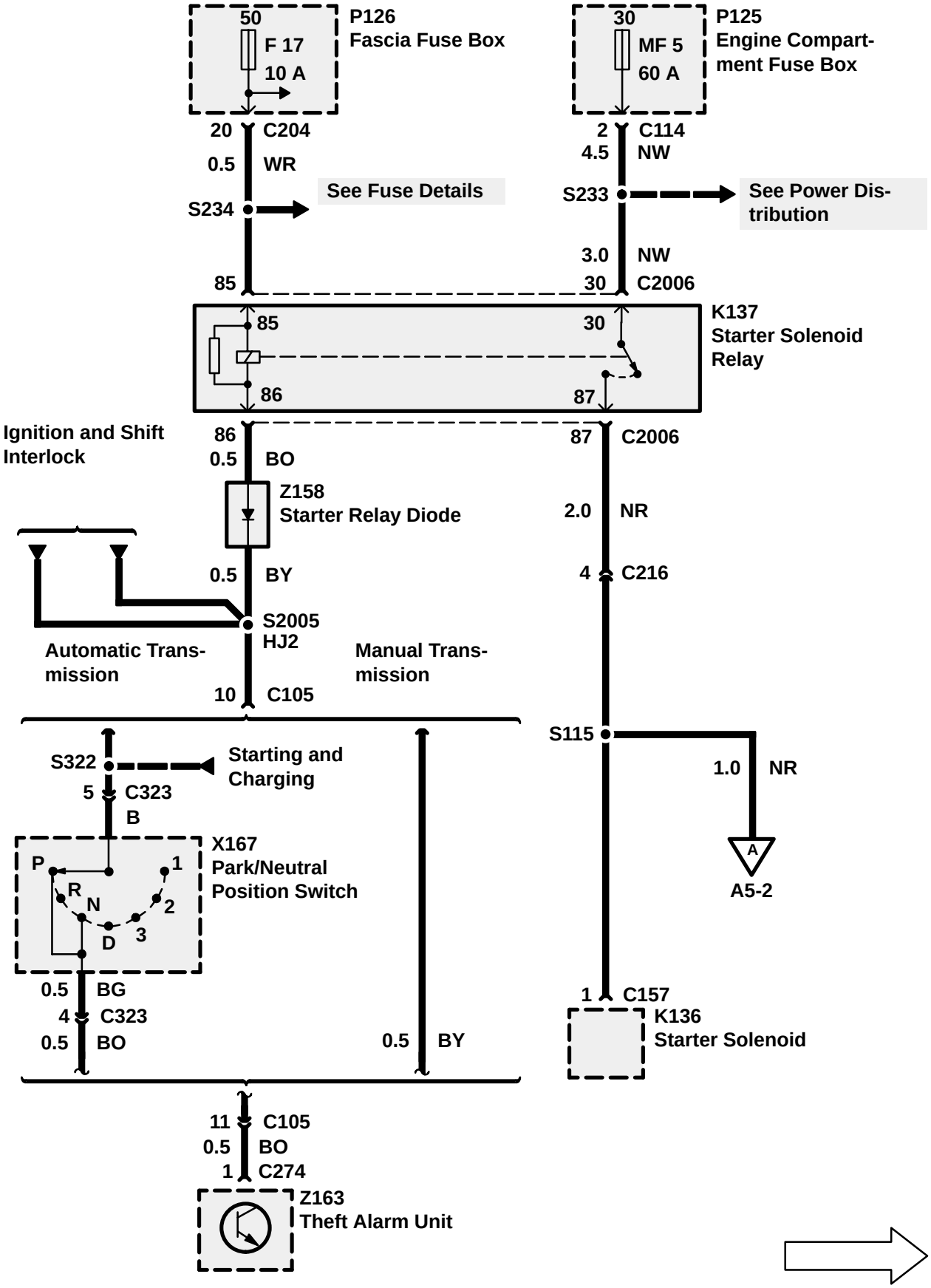
1995 RANGE ROVER




A1-9 Early Production
A1-10 Late Production
F
0.7 WB
0.5 WB
K115
Multiport Fuel Injection Ignition Resistor 1
6.8 KΩ
K168
Multiport Fuel Injection Ignition Resistor 2
6.8 KΩ
0.5 WU
0.5 WU
5 C217
Automatic Transmission
Manual Transmission
4 C218
Not used
39 C243
Z132
Engine Control Module (ECM)
30 C2021
30
Z164
Speed Trip Module

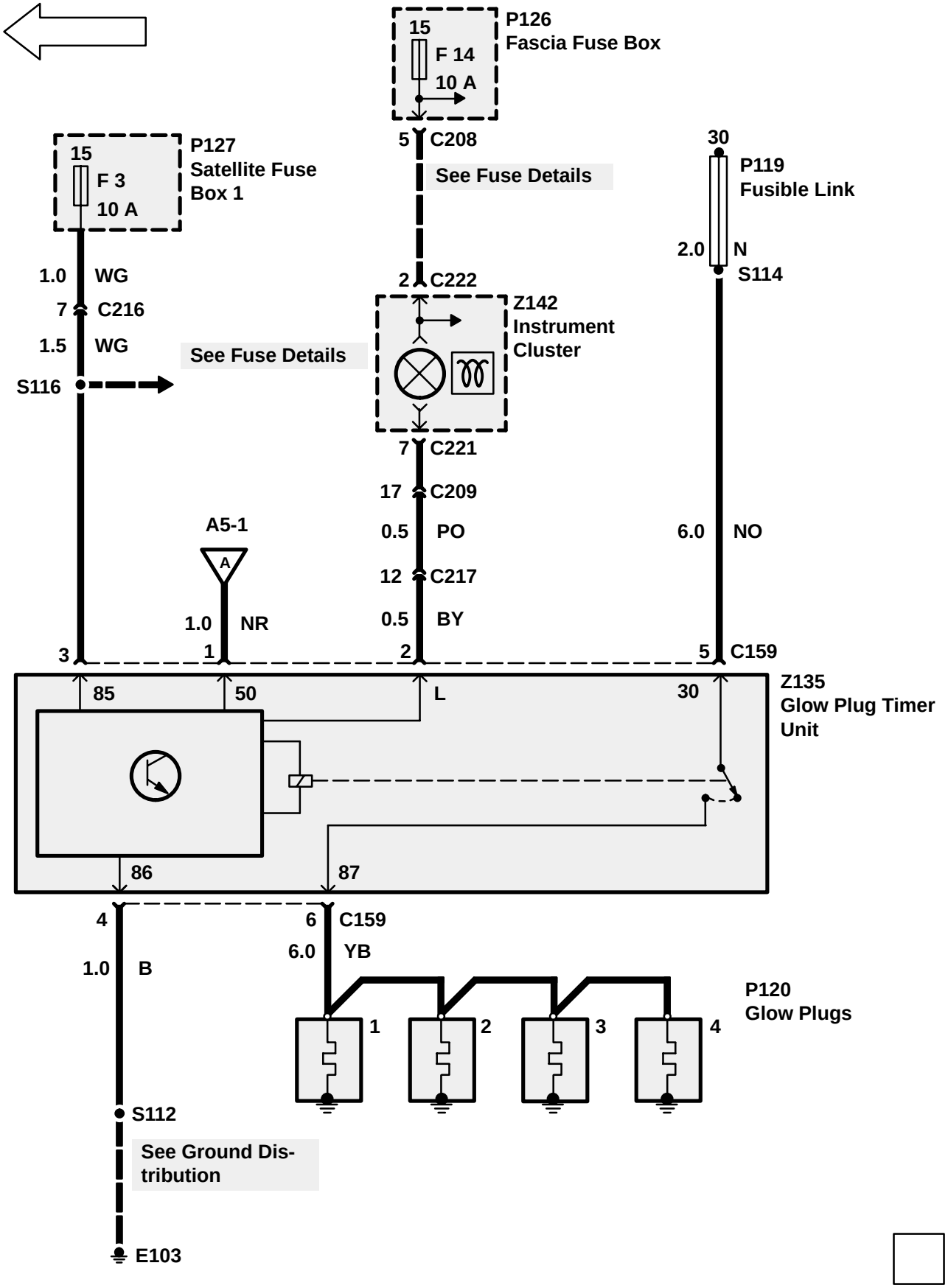

Z106
Generator
W
2.2 µF
Z182
Generator Suppression Capacitor
15
F 3
10 A
P127
Satellite Fuse Box 1
1.0 WG
7 C216
1.5 WG
S116
See Fuse Details
K184
Phase Tap Resistor
820 Ω
1 C163
0.5 WS
Starting and Charging
0.5 WG
1.0 WG
1 C161
K111
Fuel Shut–Off Solenoid
0.5 WG
1 C165
K171
EGR Control Solenoid
2 C165
0.5 BO
0.5 WS
36
28
24 C247
Z149
EGR Valve Control Module
29 C247
0.5 B
S112
See Ground Distribution
1.0 B
E103


Z149
EGR Valve Control Module
35 C247
0.5 RB
S119
1 C164
3 C160
X218
EGR Valve Position Sensor
X171
Throttle Position Sensor
2 3 C164
2 1 C160
0.5 KB
S117
0.5 RU
0.5 KB
0.5 R
2 C152
1 C248
X219
Data Link Connector (EGR)
X126
Engine Coolant Temperature Sensor
1 C152
2 3 C248
0.5 WLG
0.5 WK
0.5 GU
21 34 25 32 33 26 C247
Z149
EGR Valve Control Module


50
F 17
10 A
P126
Fascia Fuse Box
30
MF 5
60 A
P125
Engine Compartment Fuse Box
20
C204
0.5
WR
See Fuse Details
S234
2
C114
4.5
NW
S233
See Power Distribution
3.0
NW
85
30
C2006
K137
Starter Solenoid Relay
85
86
30
87
Ignition and Shift Interlock
86
0.5
BO
87
C2006
Z158
Starter Relay Diode
2.0
NR
0.5
BY
4
C216
S2005
HJ2
Automatic Transmission
Manual Transmission
10
C105
S115
S322
Starting and Charging
5
C323
B
1.0
NR
A
A5-2
X167
Park/Neutral Position Switch
P
R
N
D
1
2
3
0.5
BG
4
C323
0.5
BO
0.5
BY
1
C157
K136
Starter Solenoid
11
C105
0.5
BO
1
C274
Z163
Theft Alarm Unit

A5 ETM

1995 RANGE ROVER



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.

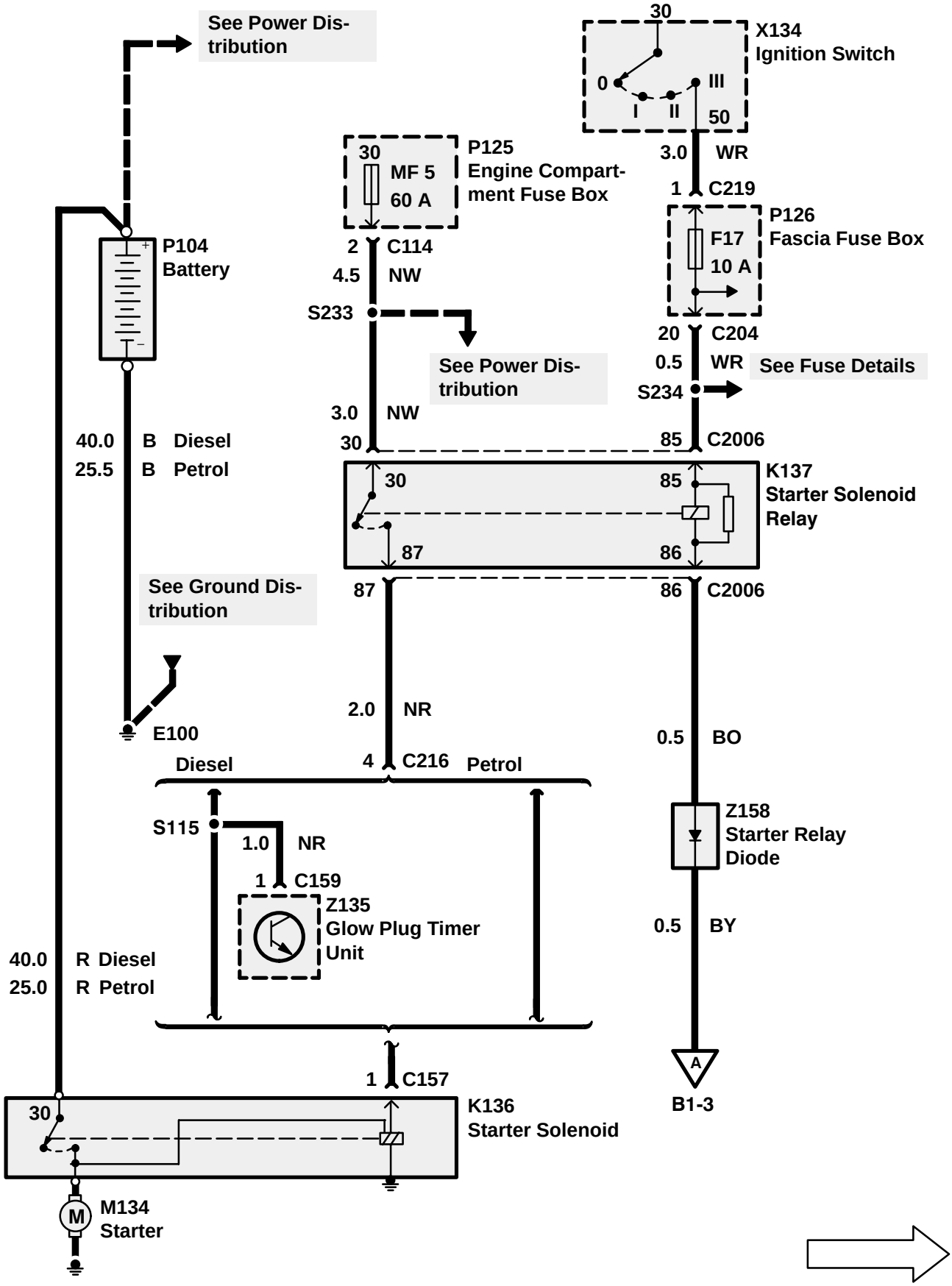
Charging System

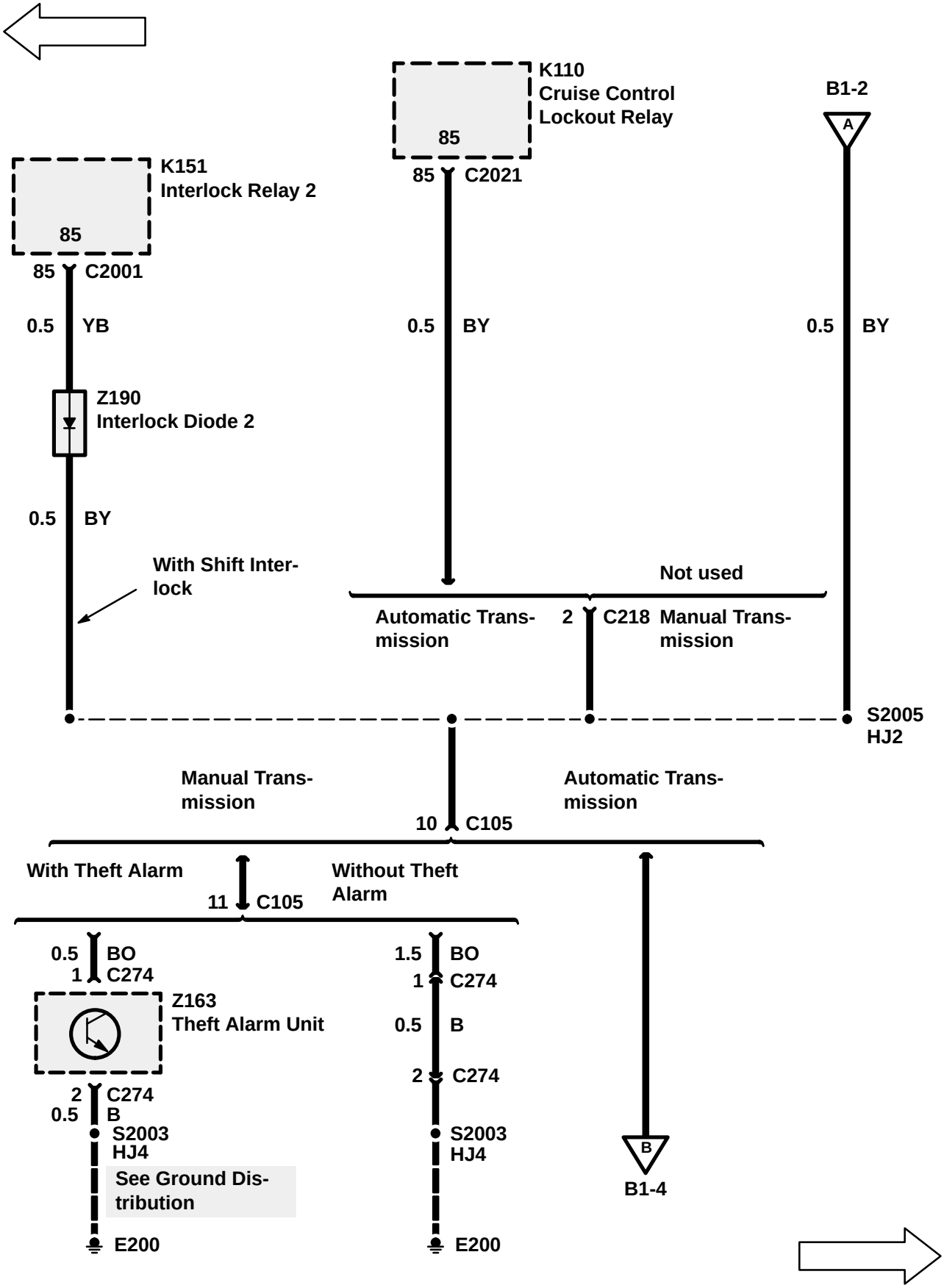
When the Ignition Switch (X134) is in position II, battery voltage is applied to the charging system fault light. When the Generator (Z106) is being turned by the engine, its stator windings are excited by voltage applied to the Generator (Z106) via the charging system fault light. The Generator (Z106)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

B1 ETM

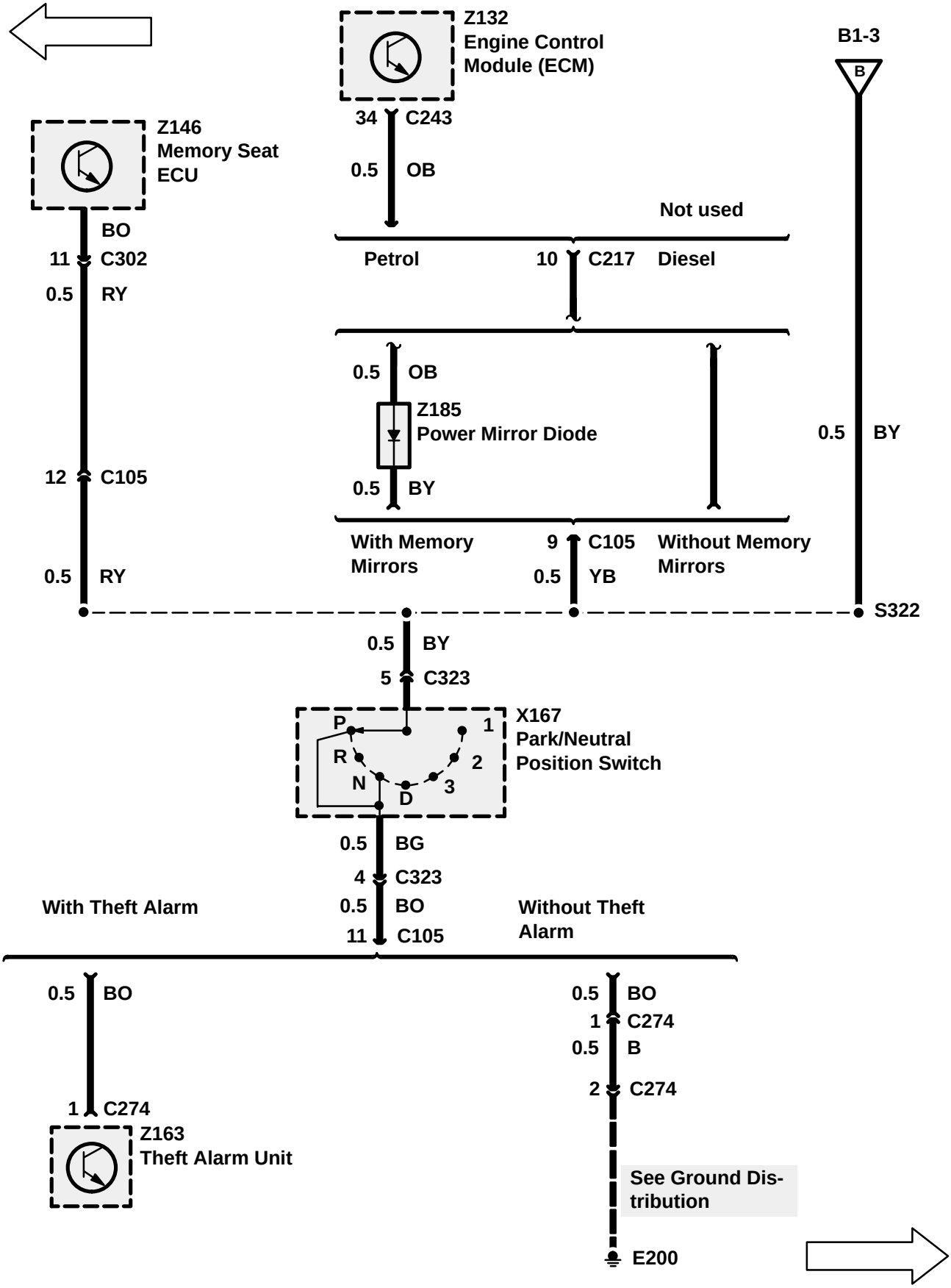
1995 RANGE ROVER

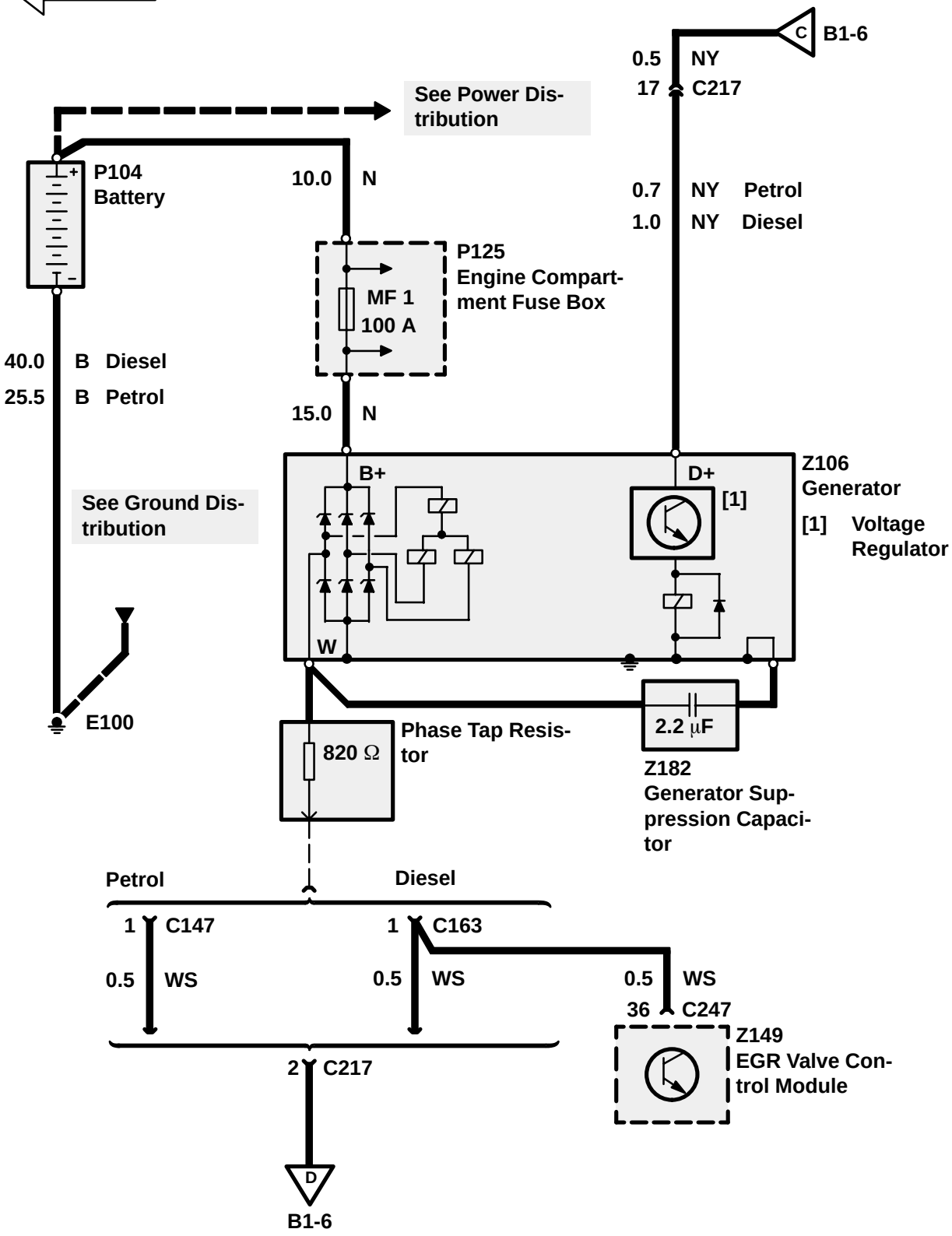



K110
Cruise Control
Lockout Relay
85
85 C2021
B1-2
A
K151
Interlock Relay 2
85
85 C2001
0.5 YB
0.5 BY
0.5 BY
Z190
Interlock Diode 2
0.5 BY
With Shift Inter-
lock
Not used
Automatic Trans-
mission
2 C218
Manual Trans-
mission
S2005
HJ2
Manual Trans-
mission
Automatic Trans-
mission
10 C105
With Theft Alarm
11 C105
Without Theft
Alarm
0.5 BO
1 C274
1.5 BO
1 C274
Z163
Theft Alarm Unit
0.5 B
2 C274
2 C274
0.5 B
S2003
HJ4
S2003
HJ4
B
B1-4
See Ground Dis-
tribution
E200
E200

B1 ETM

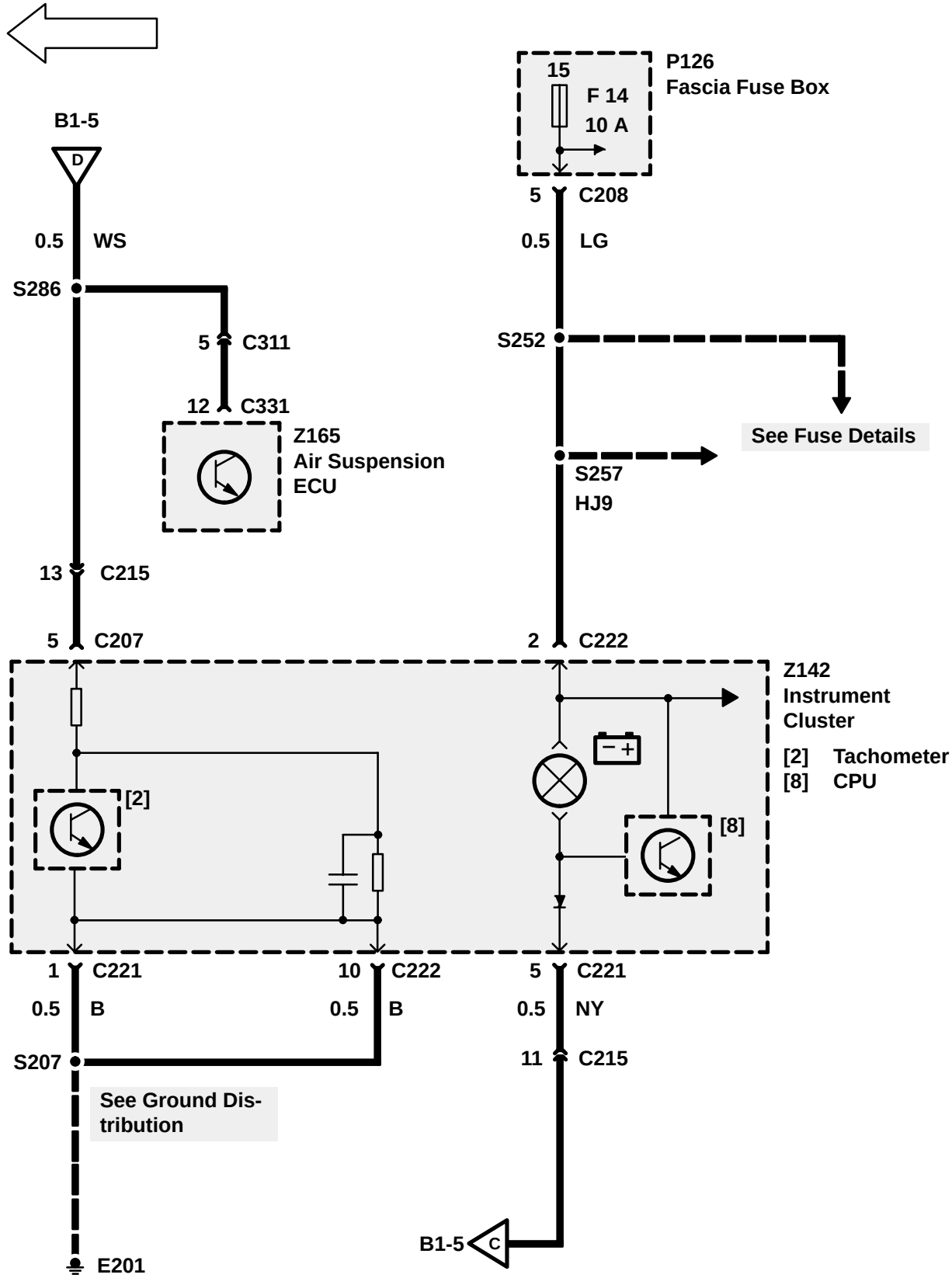
1995 RANGE ROVER




C
B1-6
0.5 NY
17 C217
See Power Distribution
P104
Battery
10.0 N
0.7 NY Petrol
1.0 NY Diesel
P125
Engine Compartment Fuse Box
MF 1
100 A
40.0 B Diesel
25.5 B Petrol
15.0 N
B+
D+
Z106
Generator
[1]
[1] Voltage Regulator
See Ground Distribution
W
E100
2.2 µF
820 Ω
Phase Tap Resistor
Z182
Generator Suppression Capacitor
Petrol
Diesel
1 C147
0.5 WS
1 C163
0.5 WS
0.5 WS
36 C247
Z149
EGR Valve Control Module
2 C217
D
B1-6

B1 ETM

1995 RANGE ROVER



TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS

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

B1 ETM

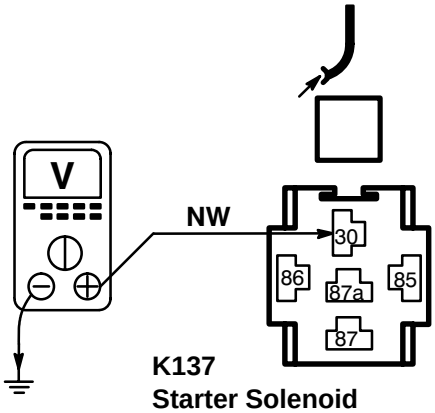
Test A

1A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **NW Wire**

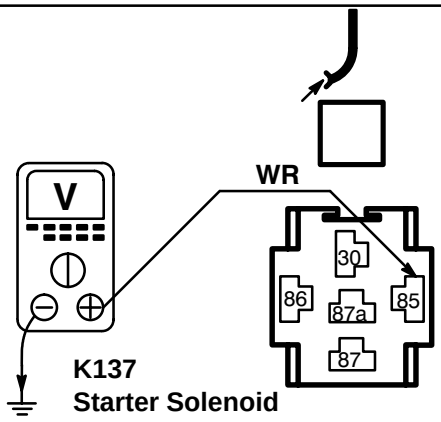
OK → 2A

2A

R050001

CONDITIONS
- **Ignition Switch**
  Position: III

RESULTS
BAT VOLT



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

OK → 3A

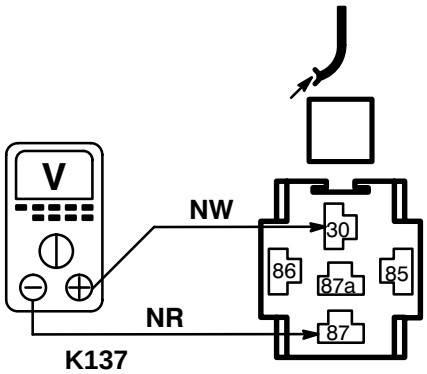
2A

3A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K137
Starter Solenoid
Relay

OK **PROBLEM CAUSE**
- **NR Wire**
- **Starter Solenoid**

OK

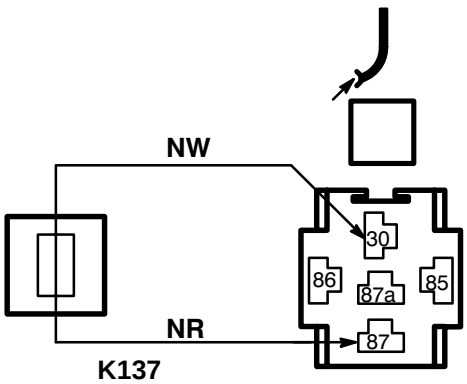
4A

4A

R050001

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

RESULTS
Starter (M134) cranks engine



K137
Starter Solenoid
Relay

OK **PROBLEM CAUSE**
- **NR Wire**
- **Starter Solenoid**
- **Starter**

OK

5A

B1 ETM

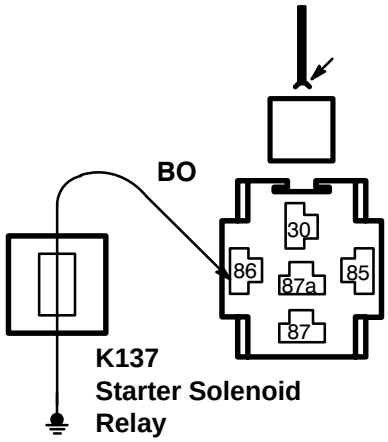
4A

5A

R050001

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

RESULTS
Starter (M134) cranks engine



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

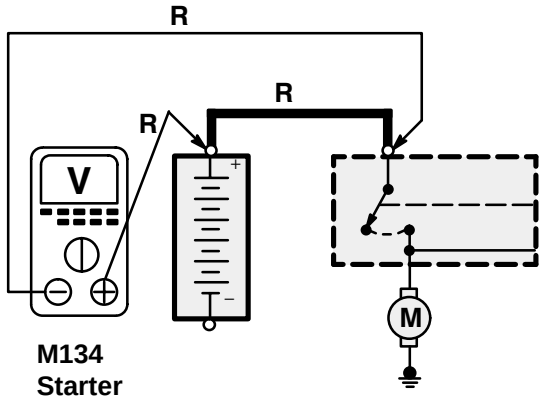
OK **PROBLEM CAUSE**
- **Starter Solenoid Relay**

Test B

1B

CONDITIONS
- **Ignition Switch**
  Position: III

RESULTS
Less than 0.5V



OK **PROBLEM CAUSE**
- **R Wire**
- **Battery Terminal Connection**
- **Starter Solenoid (K136) terminal connection**

OK

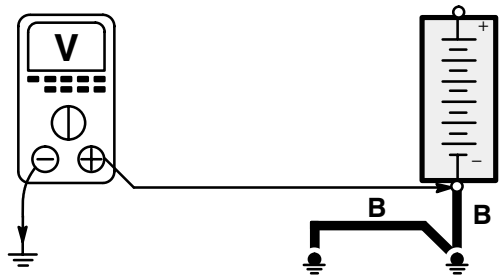
2B

1B

2B

CONDITIONS
- **Ignition Switch**
  Position: III

RESULTS
Less than 0.5V



OK **PROBLEM CAUSE**
- **B Wire**
- **Ground Connections**
- **Battery Terminal Connection**

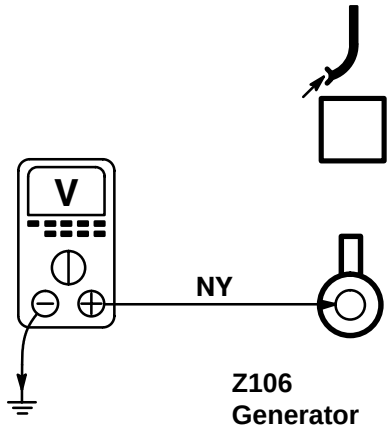
OK **PROBLEM CAUSE**
- **Starter Solenoid**
- **Starter**

Test C

1C

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **NY Wire**
- **Bulb**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **Generator**

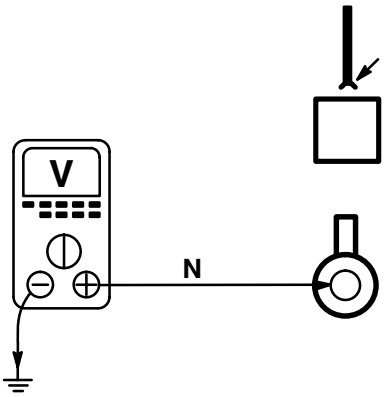
B1 ETM

Test D

1D

CONDITIONS
Ignition Switch
Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- N Wire

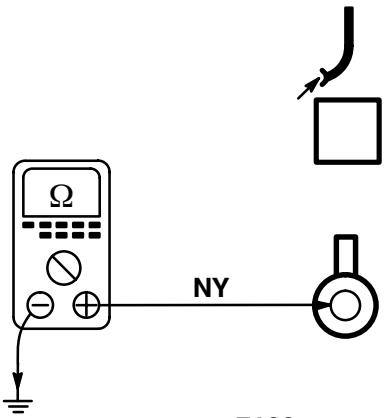
OK

2D

2D

CONDITIONS
● Ignition Switch
Position: 0

RESULTS
More than 1000 ohms



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 E200.

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.

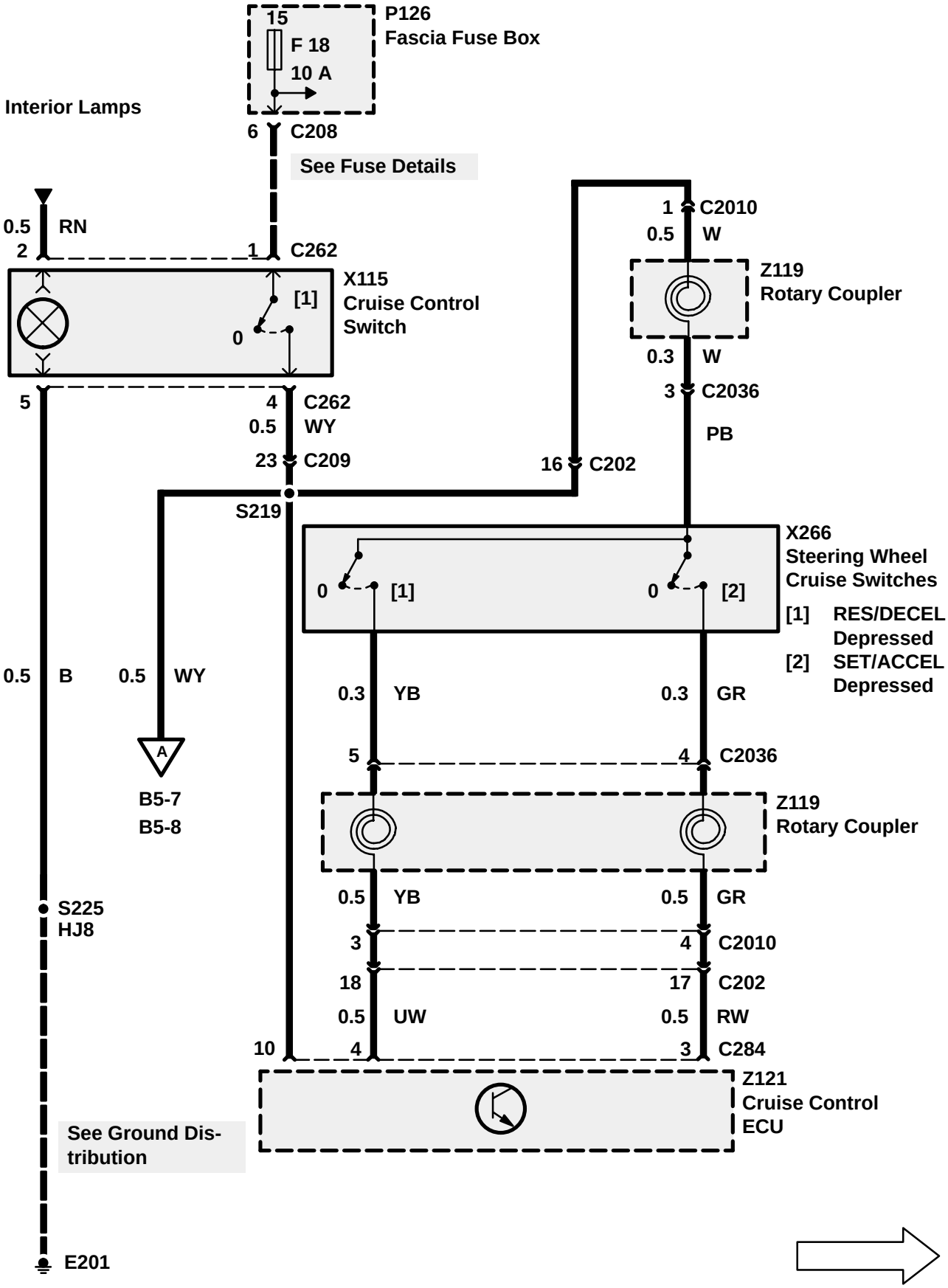
4. The Voltage applied to Cruise Control ECU (Z121) terminal 9 is interrupted, causing the Cruise Control ECU (Z121) to turn off the vacuum pump and de−energize the vacuum solenoid valve. This voltage path is interrupted when the brake pedal is depressed, the Clutch Pedal is depressed, or the vehicle 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

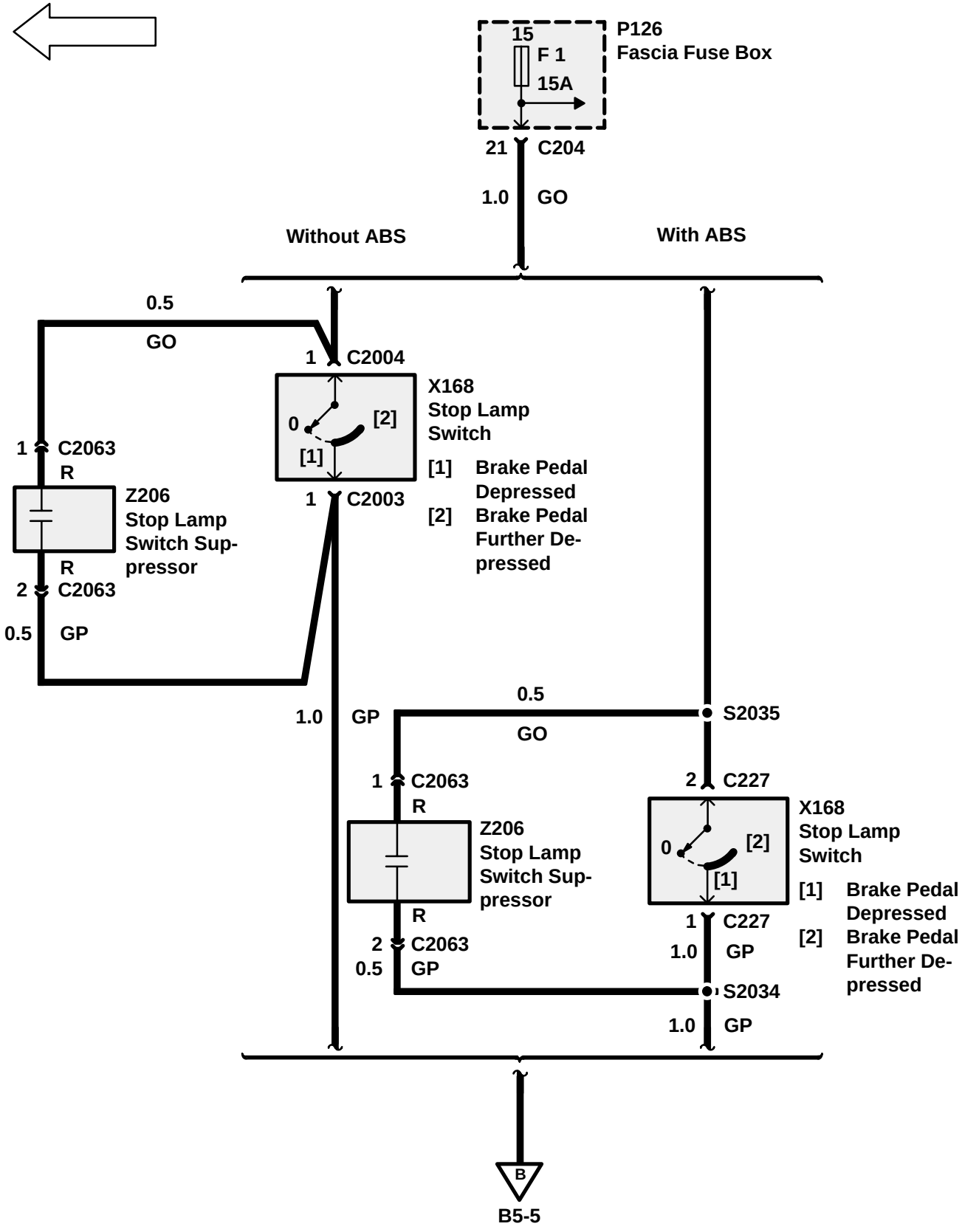
WARNING: The use of cruise control is not recommended on winding, snow covered or slippery roads, or in heavy traffic conditions where a constant speed cannot be maintained.

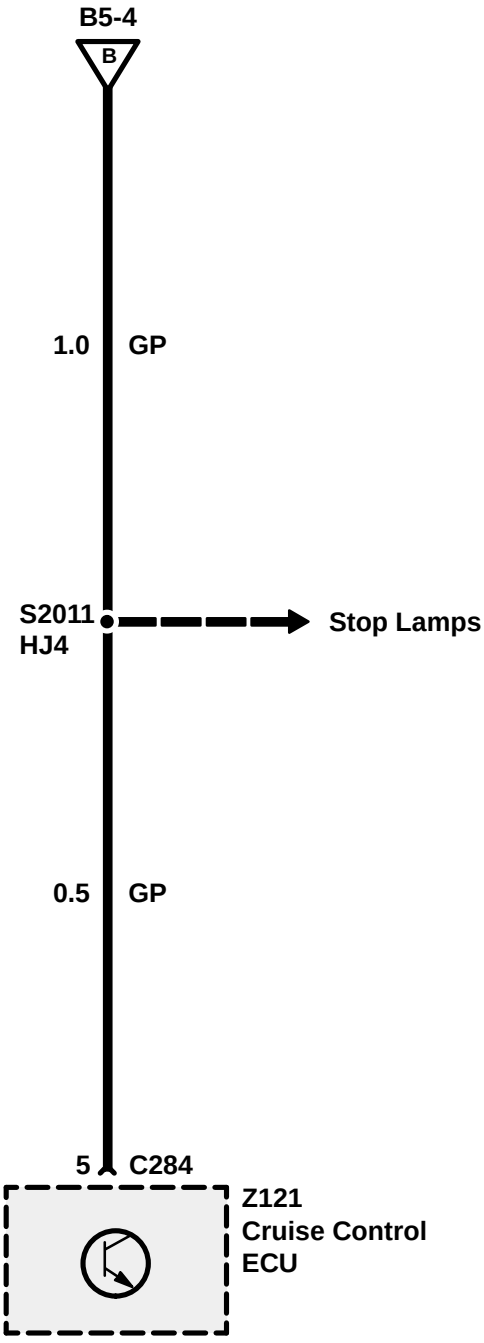
1. Start the engine and depress the Cruise Control Switch (X115) to activate the Cruise Control System. Accelerate to approximately 30 mph (50 km/h) and press the SET/ACCEL Switch. Immediately release the switch and remove foot from the accelerator pedal. The vehicle should maintain the speed at which 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.


15
F 18
10 A
P126
Fascia Fuse Box
Interior Lamps
6 C208
See Fuse Details
0.5 RN
2
1 C262
X115
Cruise Control
Switch
[1]
0
5
4 C262
0.5 WY
23 C209
S219
1 C2010
0.5 W
Z119
Rotary Coupler
0.3 W
3 C2036
PB
16 C202
X266
Steering Wheel
Cruise Switches
0 [1]
0 [2]
[1] RES/DECEL Depressed
[2] SET/ACCEL Depressed
0.5 B
0.5 WY
0.3 YB
0.3 GR
A
B5-7
B5-8
5 4 C2036
Z119
Rotary Coupler
0.5 YB
0.5 GR
S225
HJ8
3 4 C2010
18 17 C202
0.5 UW
0.5 RW
10 4 3 C284
Z121
Cruise Control
ECU
See Ground Distribution
E201

B5 ETM

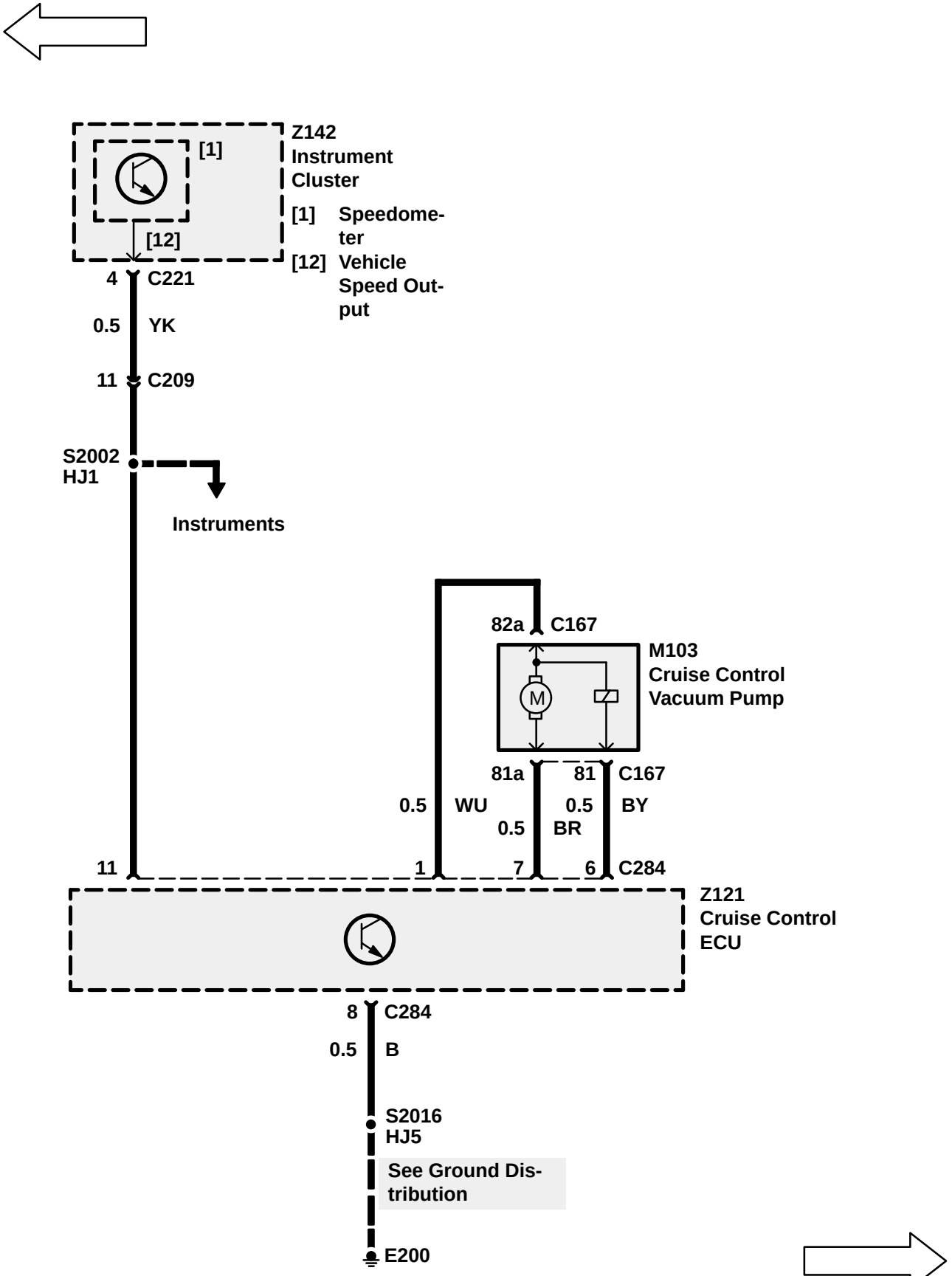
1995 RANGE ROVER

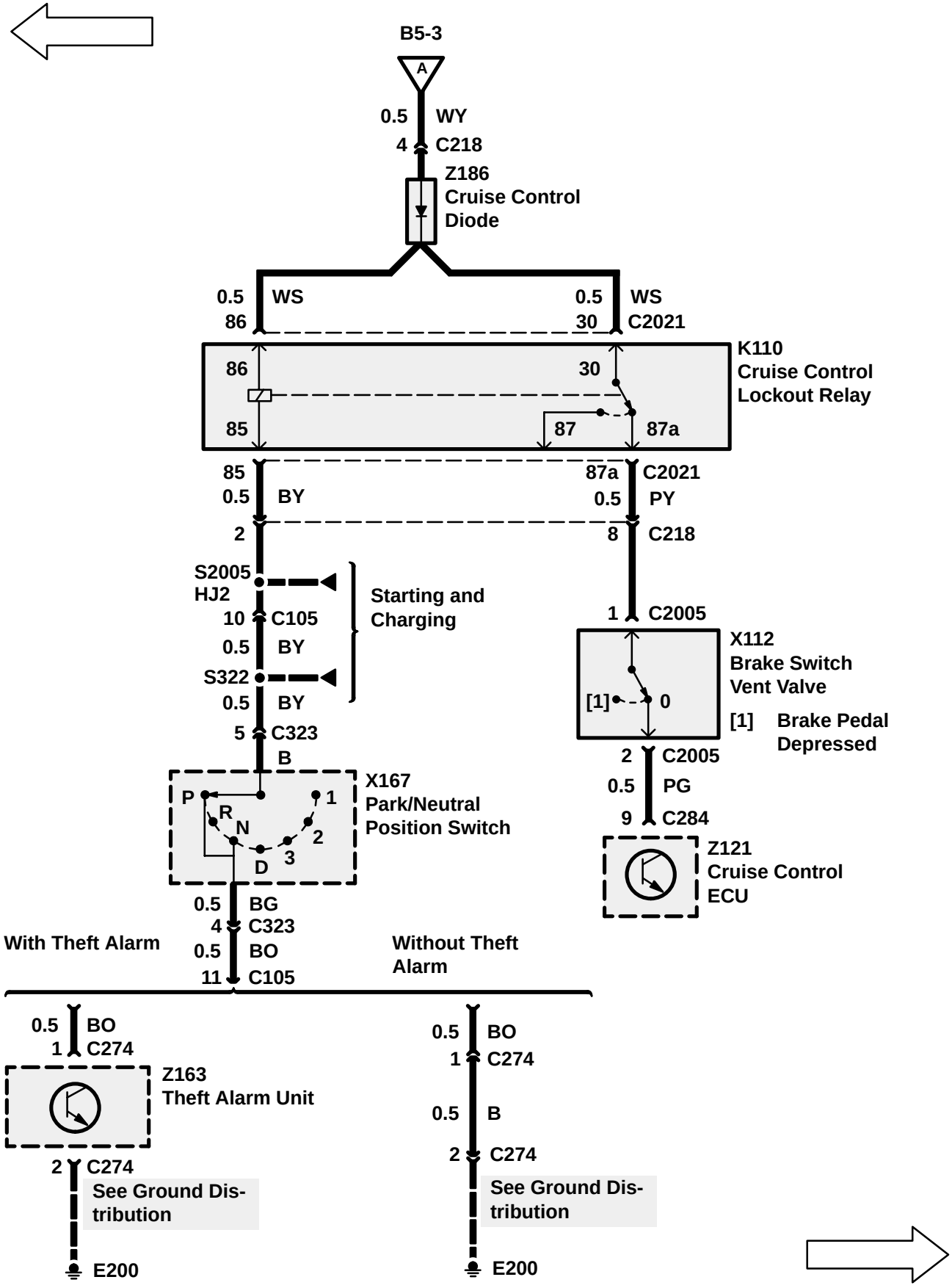



B5-4
B
1.0
GP
S2011
HJ4
Stop Lamps
0.5
GP
5
C284
Z121
Cruise Control
ECU

B5 ETM

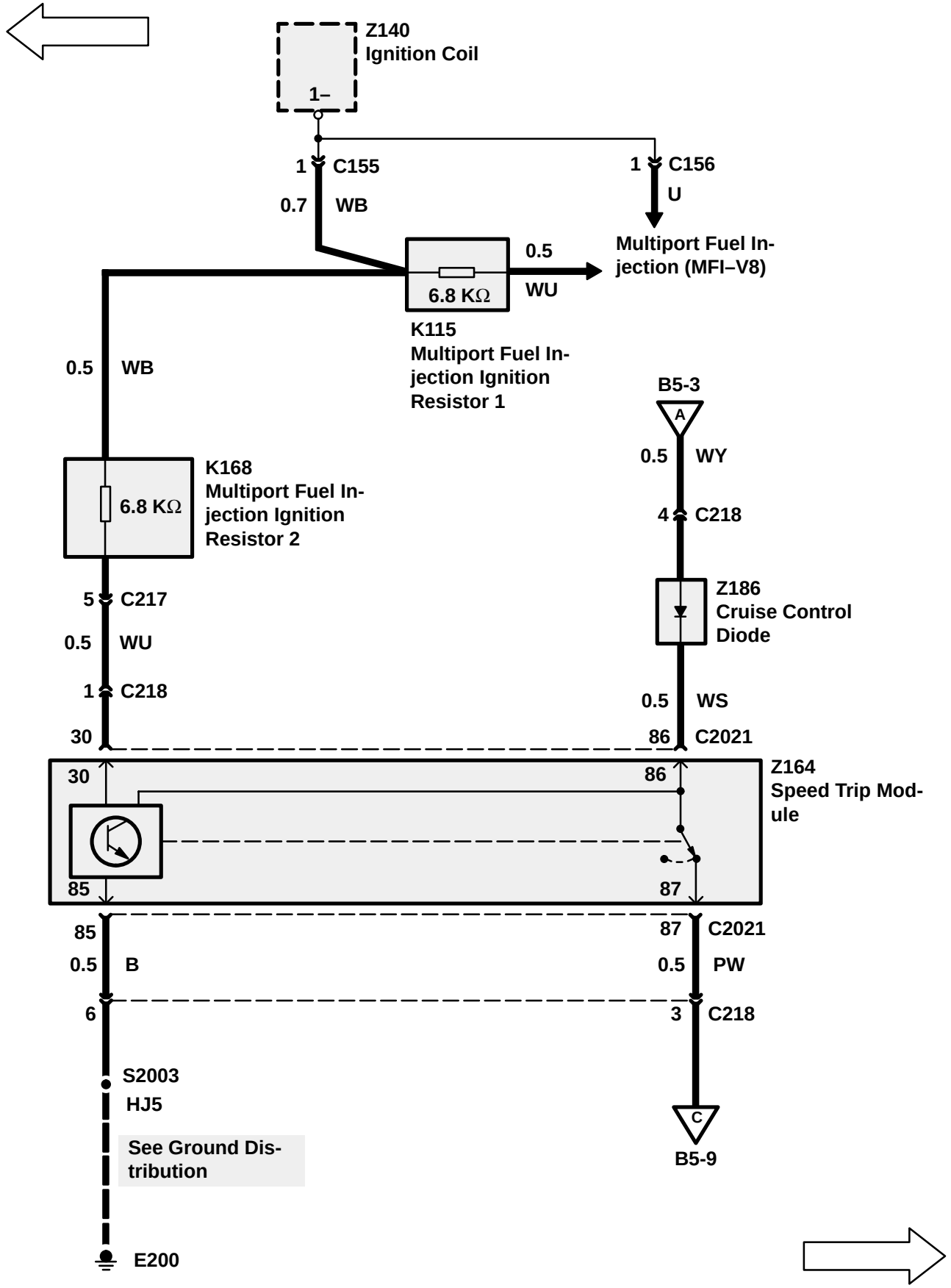
1995 RANGE ROVER

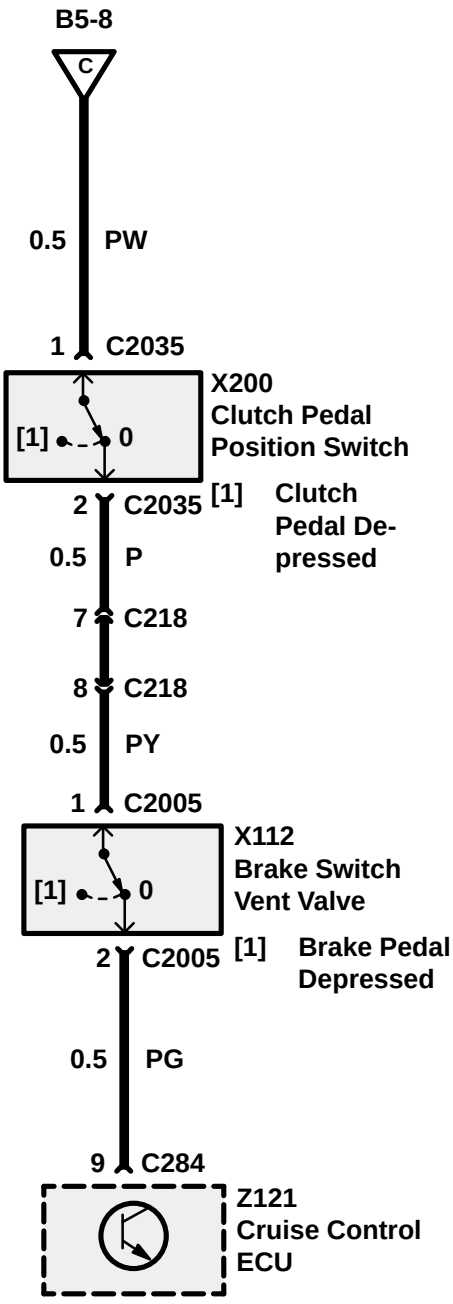



B5-3
A
0.5 WY
4 C218
Z186
Cruise Control
Diode
0.5 WS
86
0.5 WS
30 C2021
K110
Cruise Control
Lockout Relay
86
30
85
87
87a
85
0.5 BY
87a C2021
0.5 PY
2
8 C218
S2005
HJ2
10 C105
0.5 BY
S322
0.5 BY
5 C323
B
Starting and
Charging
1 C2005
X112
Brake Switch
Vent Valve
[1]
0
[1] Brake Pedal
Depressed
2 C2005
0.5 PG
9 C284
Z121
Cruise Control
ECU
P
R
N
D
1
2
3
X167
Park/Neutral
Position Switch
0.5 BG
4 C323
0.5 BO
11 C105
With Theft Alarm
Without Theft
Alarm
0.5 BO
1 C274
Z163
Theft Alarm Unit
2 C274
See Ground Dis-
tribution
E200
0.5 BO
1 C274
0.5 B
2 C274
See Ground Dis-
tribution
E200

B5 ETM

1995 RANGE ROVER




B5-8
C
0.5
PW
1
C2035
X200
Clutch Pedal
Position Switch
[1]
0
2
C2035
[1]
Clutch
Pedal De-
pressed
0.5
P
7
C218
8
C218
0.5
PY
1
C2005
X112
Brake Switch
Vent Valve
[1]
0
2
C2005
[1]
Brake Pedal
Depressed
0.5
PG
9
C284
Z121
Cruise Control
ECU

TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS

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

Test A

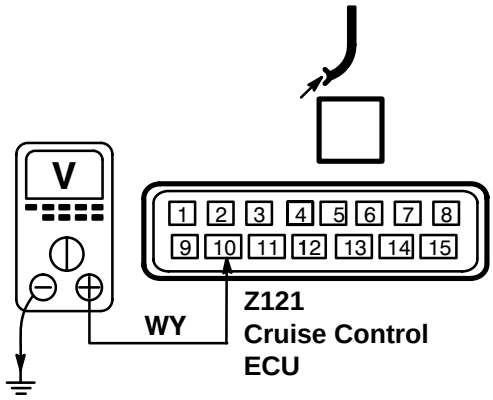
1A

R150001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Cruise Control Switch**

On = *BAT VOLT*
Off = *0V*



OK **PROBLEM CAUSE**
- **F 18 Fuse**
- **WY Wire**
- **GLG Wire**
- **Cruise Control Switch**

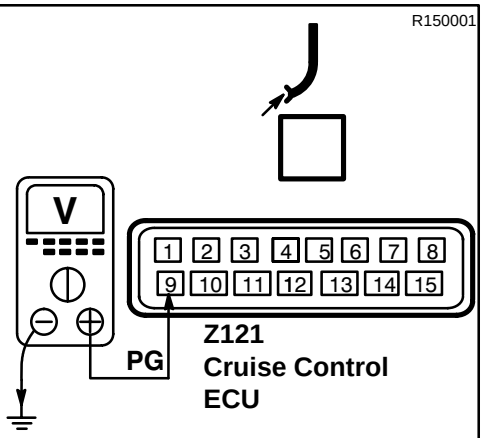
OK → 2A

2A

R150001

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



OK → 3A

OK **GO TO TEST C**

B5 ETM

1995 RANGE ROVER

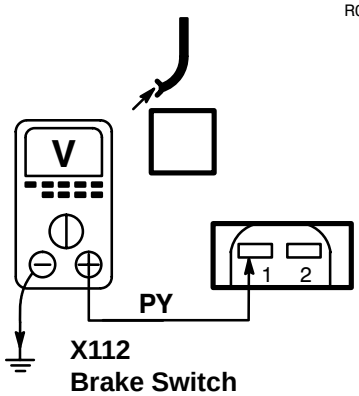
2A

3A

R020051

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

OK

PROBLEM CAUSE
- **PG Wire**
- **Brake Switch**
  Vent Valve

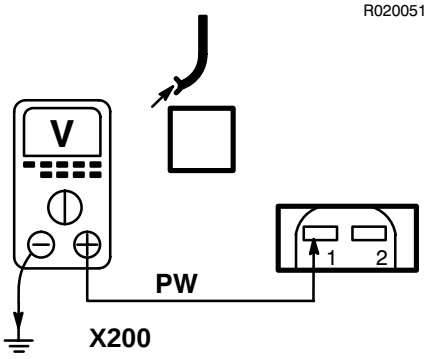
4A

4A

R020051

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

RESULTS
BAT VOLT



X200
Clutch Pedal
Position Switch

OK

OK

PROBLEM CAUSE
- **P Wire**
- **PY Wire**
- **Clutch Pedal**
  Position Switch

5A

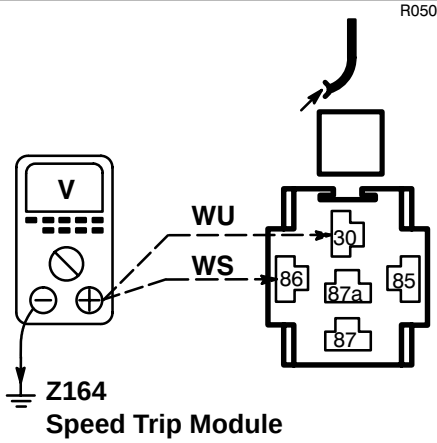
4A

5A

R050001

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

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **WU, WB Wire**
- **Multiport Fuel Injection Ignition Resistor 2**

- **WS, WY Wire**
- **Cruise Control Diode**

OK

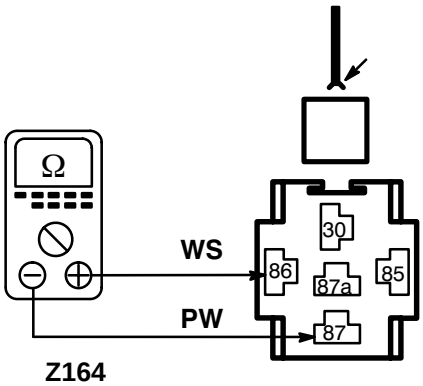
6A

6A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **Speed Trip Module**

OK **PROBLEM CAUSE**
- **PW Wire**
- **B Wire**

Test B

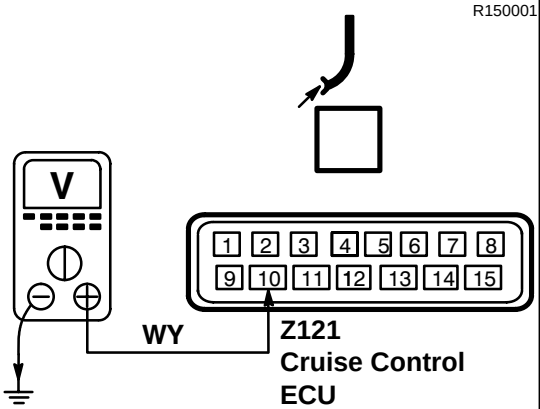
1B

R150001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Cruise Control Switch**

On = *BAT VOLT*
Off = *0V*



OK **PROBLEM CAUSE**
- **F18 Fuse**
- **WY Wire**
- **GLG Wire**
- **Cruise Control Switch**

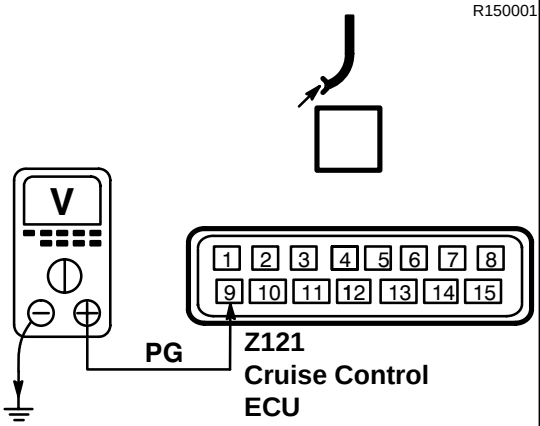
OK → 2B

2B

R150001

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

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



OK → 3B

OK **GO TO TEST C**

2B

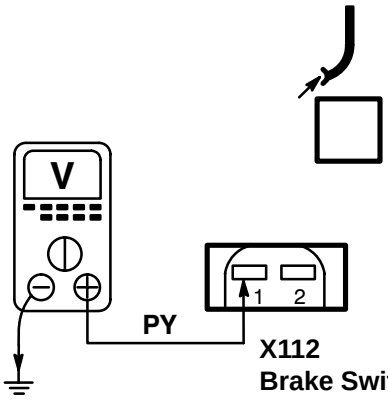
3B

R020051

CONDITIONS
- **Ignition Switch**
  Position: II
- **Gear Selector**
  D

RESULTS
- **Cruise Control Switch**

On = *BAT VOLT*
Off = *0V*



X112
Brake Switch Vent Valve

OK

4B

OK

PROBLEM CAUSE
- **PG Wire**
- **Brake Switch Vent Valve**

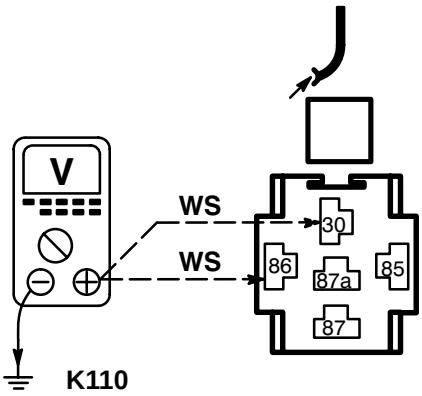
4B

R050001

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**

OK

5B

4B

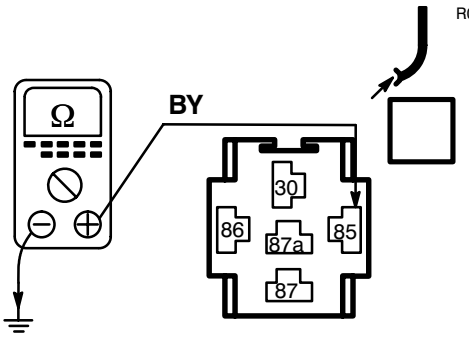
5B

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Gear Selector**

P = 0–1 Ω *3 = >100 Ω*
R = >100 Ω *2 = >100 Ω*
N = 0–1 Ω *1 = >100 Ω*
D = >100 Ω

R050001



K110
Cruise Control Lockout Relay

OK

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

OK

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

Test C

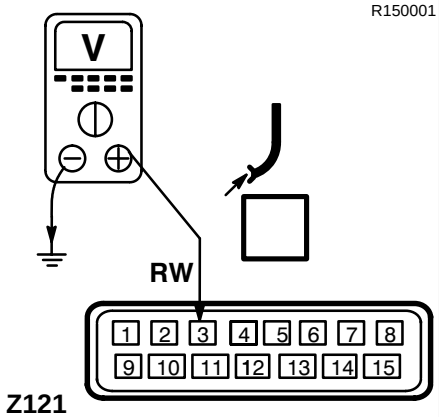
1C

CONDITIONS
- **Ignition Switch**
  Position: II
- **Cruise Control Switch**
  On

RESULTS
- **Steering Wheel Cruise Switches**
- **Cruise Control Switch**
- **SET/ACCEL Switch**

On *= BAT VOLT*
Off *= 0V*

R150001



Z121
Cruise Control ECU

OK

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

OK

2C

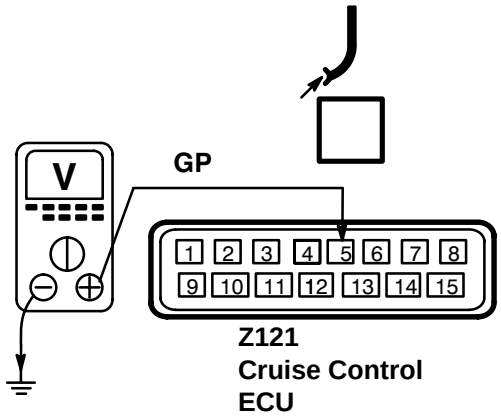
1C

2C

R150001

CONDITIONS
- **Ignition Switch**
  Position: II

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



OK

PROBLEM CAUSE
- **GP Wire**
- **F1 Fuse**
- **GO Wire**
- **Stop Lamp Switch**

OK

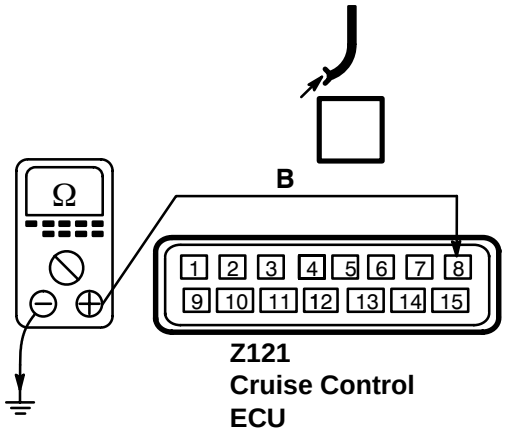
3C

3C

R150001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
0−1 Ω



OK

PROBLEM CAUSE
- **B Wire**

OK

4C

3C

4C

R150001

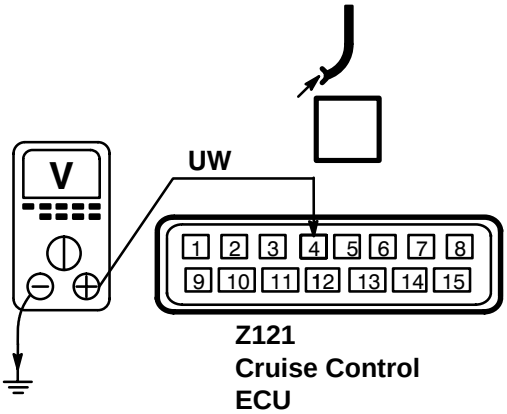
CONDITIONS
- **Ignition Switch**
  Position: II
- **Cruise Control Switch**

  On

RESULTS
- **Steering Wheel Cruise Switches**

- **RES/DECEL Switch**

Off = 0V
On = BAT VOLT



OK

PROBLEM CAUSE
- **UW, YB Wire**
- **WY, W Wire**
- **Rotary Coupler**

- **Steering Wheel Cruise Switches**

OK

5C

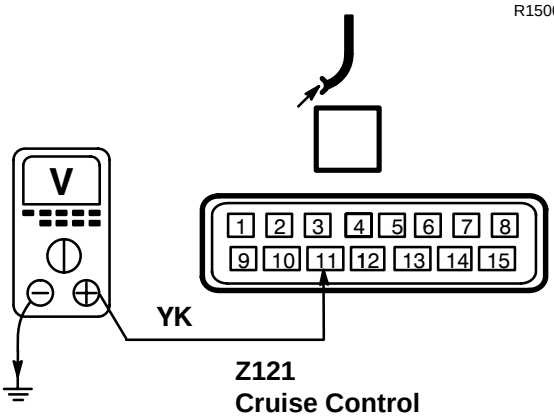
5C

R150001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Right rear wheel on ground**

- **Rotate left rear wheel**
  = ⎍⎍⎍ *0V – BAT VOLT*



OK

PROBLEM CAUSE
- **YK Wire**

OK

6C

5C

6C

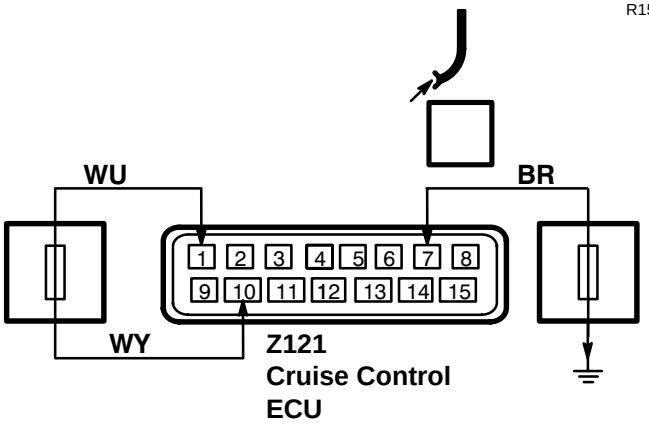
R150001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Cruise Control Switch**

  On

RESULTS
- **Cruise Control Vacuum Pump**

  Operates



OK **GO TO TEST D**

OK

7C

7C

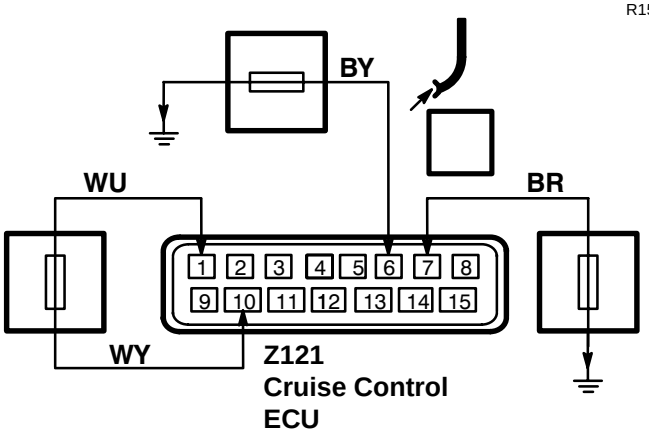
R150001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Cruise Control Switch**

  On

RESULTS
- **Cruise Control**

  Actuator retracts



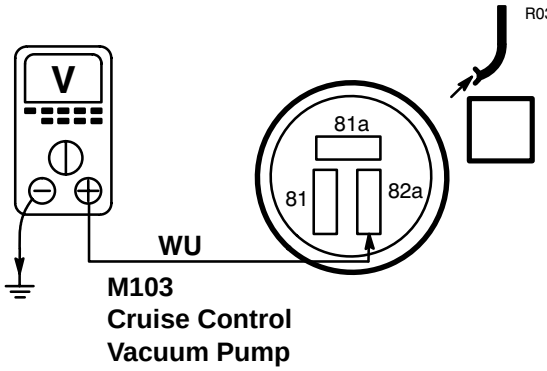
OK **GO TO TEST D**

OK **PROBLEM CAUSE**
- **Cruise Control ECU**

Test D

1D

R030023



CONDITIONS
- **Ignition Switch**

  Position: II
- **Cruise Control Switch**

  On

RESULTS

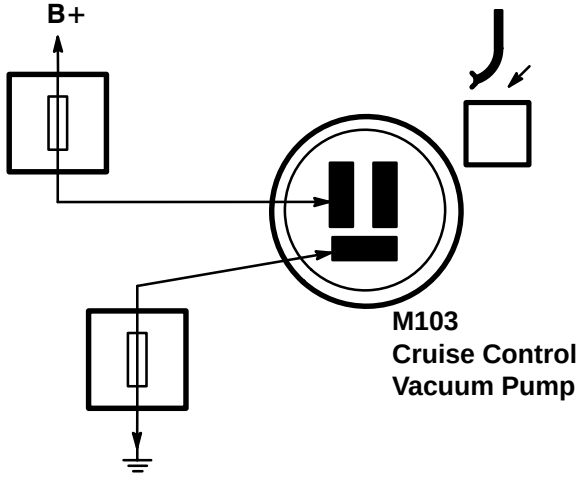
BAT VOLT

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

OK → 2D

2D

R030031



CONDITIONS
- **Ignition Switch**

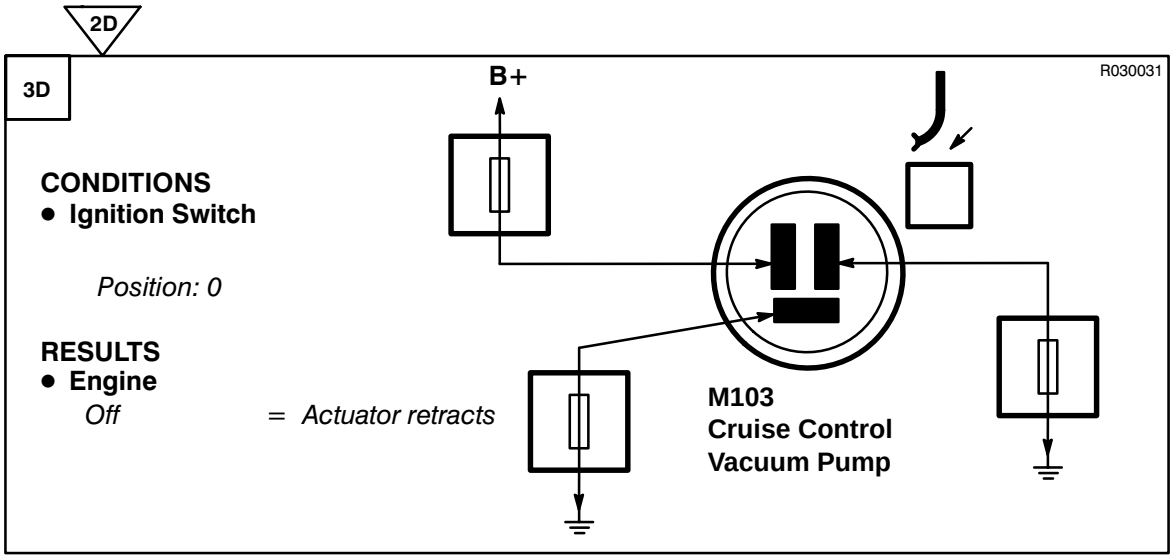
  Position: 0

RESULTS
- **Cruise Control Vacuum Pump**

  Operates

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

OK → 3D



OK

PROBLEM CAUSE

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

OK

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 E200 through the selector switch, the KS wire and the B wire. The solenoid then 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 are 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.

If the Transfer Box is switched to "N" position, the Transfer Box Warning Relay (K186) is de–energized, providing ground to the Multifunction Unit (Z148). An internal sounder provides a warning chime to the driver.

Transfer Box Interlock

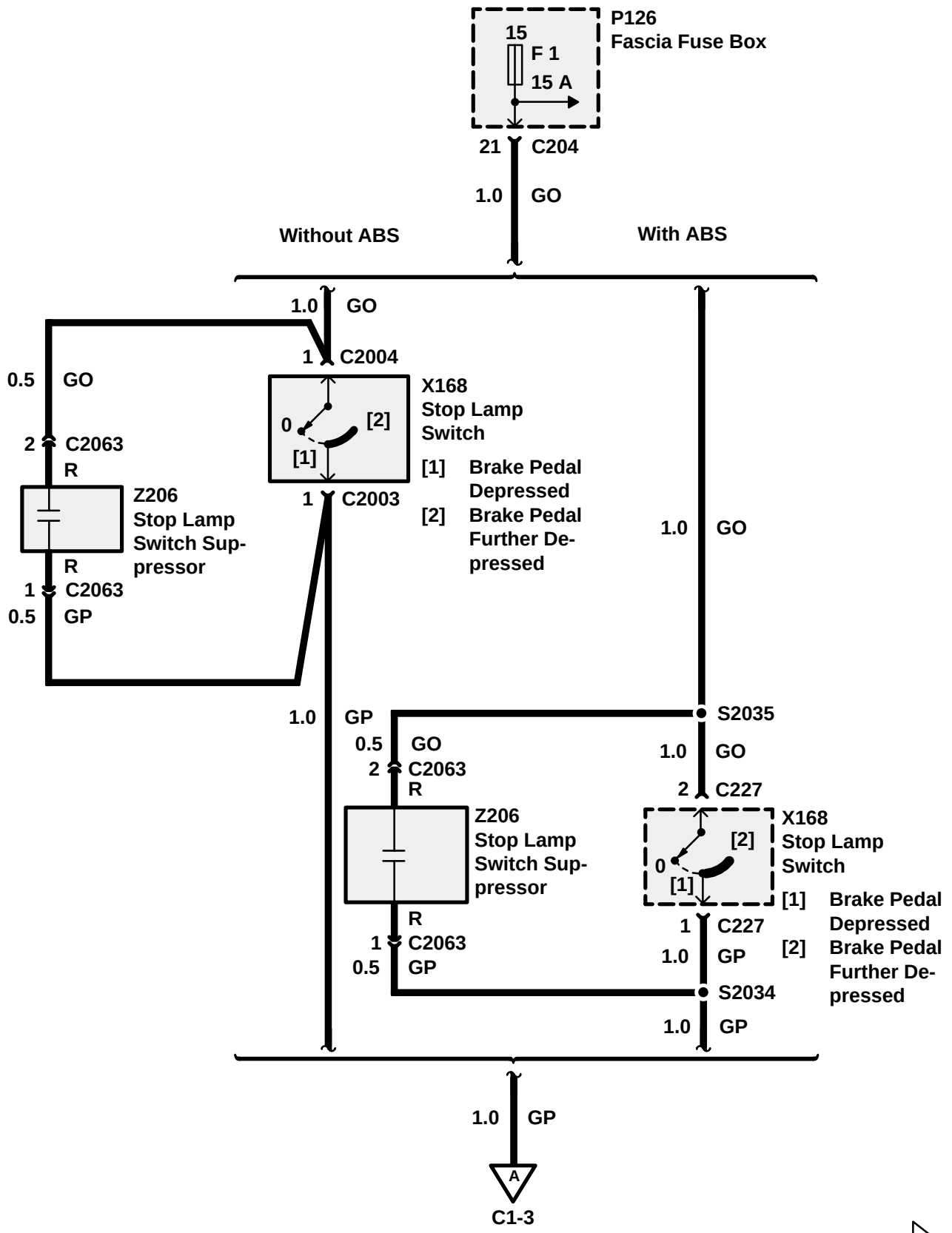
The Transfer Box Interlock Safety feature is designed to prevent the transfer case shifter from being shifted out of "H" or "L" unless the vehicle's gear selector is in the neutral position.

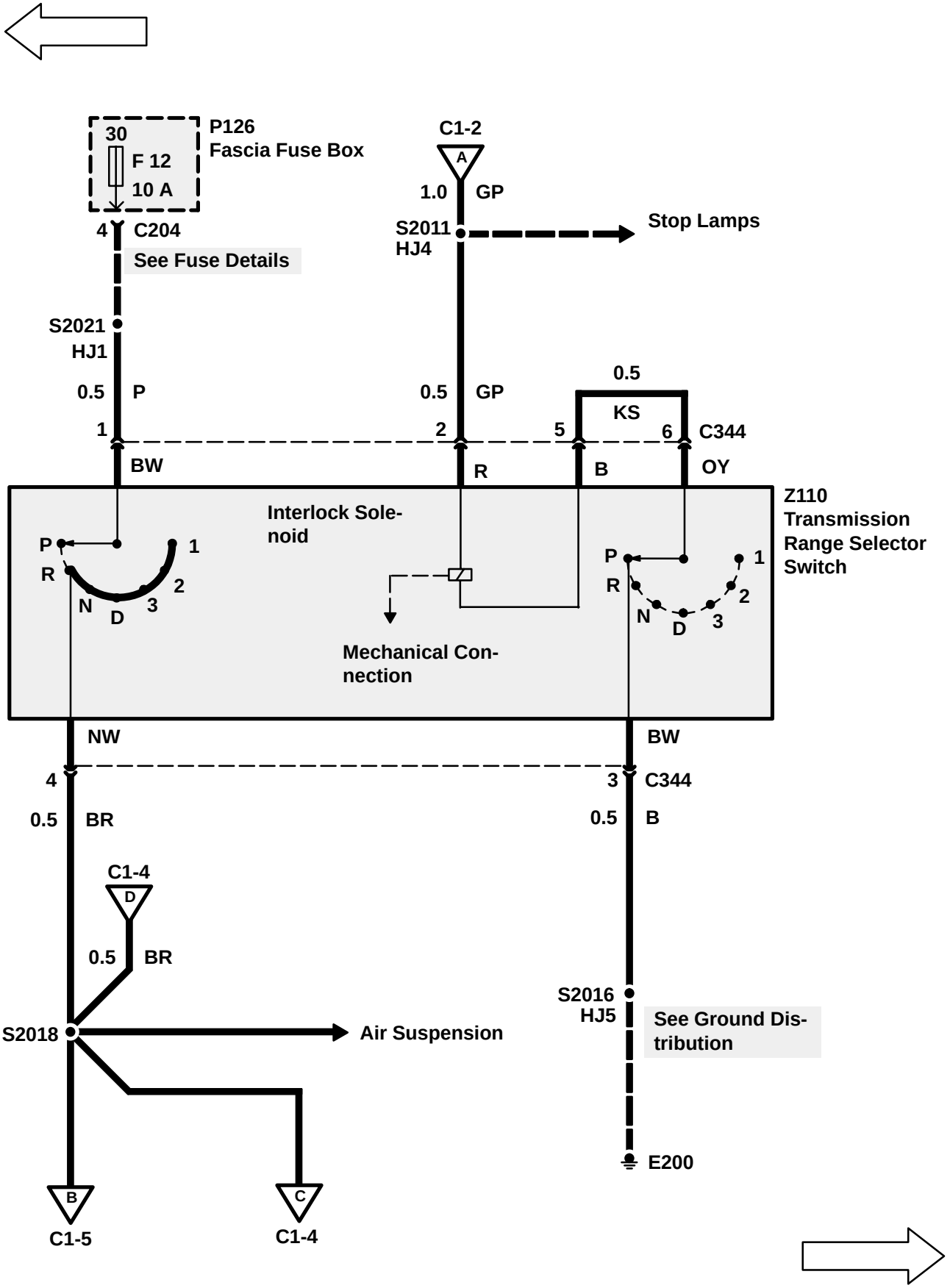
When the gear selector is placed in the neutral position, voltage is applied to the Interlock Relay 2's coil through the Transmission Range Selector Switch (Z110). The relay's coil is grounded through the Park/Neutral Position Switch (X167).

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.

C1 ETM

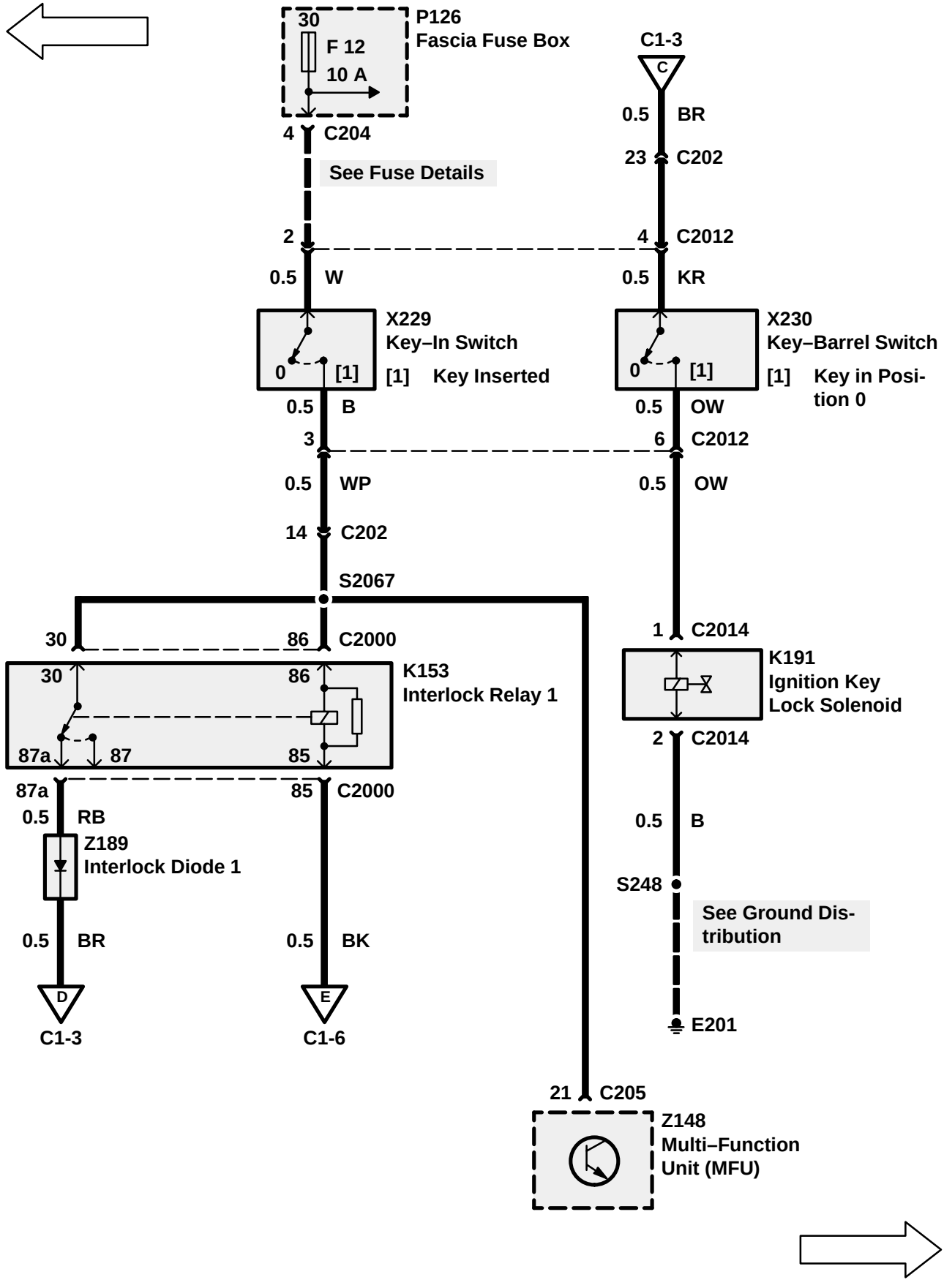
1995 RANGE ROVER

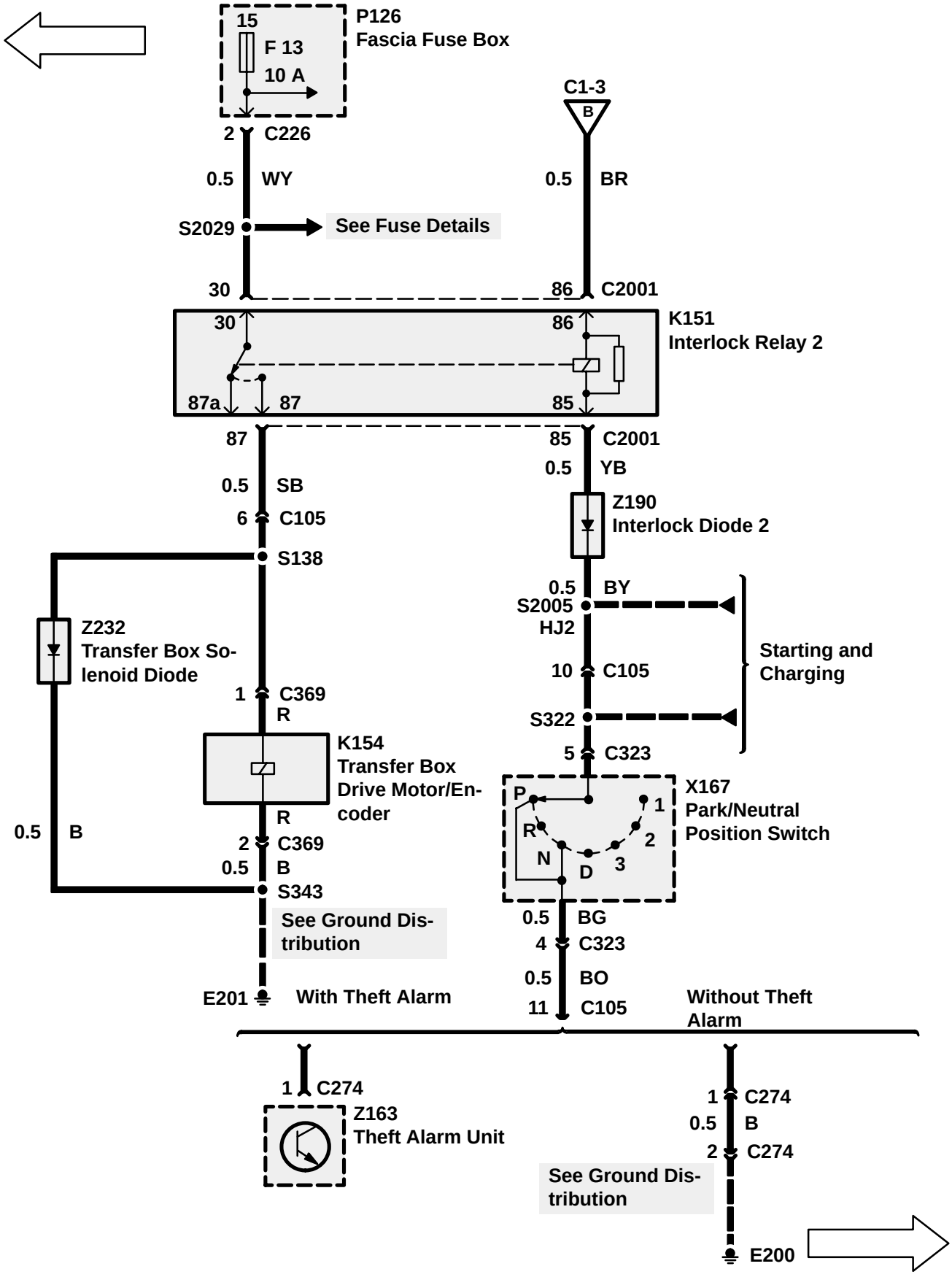



30
F 12
10 A
P126
Fascia Fuse Box
4
C204
See Fuse Details
S2021
HJ1
0.5
P
1
BW
C1-2
A
1.0
GP
S2011
HJ4
Stop Lamps
0.5
GP
2
R
0.5
KS
5
6
C344
B
OY
Z110
Transmission
Range Selector
Switch
Interlock Sole-
noid
P
R
N
D
1
2
3
Mechanical Con-
nection
NW
4
0.5
BR
BW
3
C344
0.5
B
C1-4
D
0.5
BR
S2018
Air Suspension
S2016
HJ5
See Ground Dis-
tribution
E200
B
C1-5
C
C1-4

C1 ETM

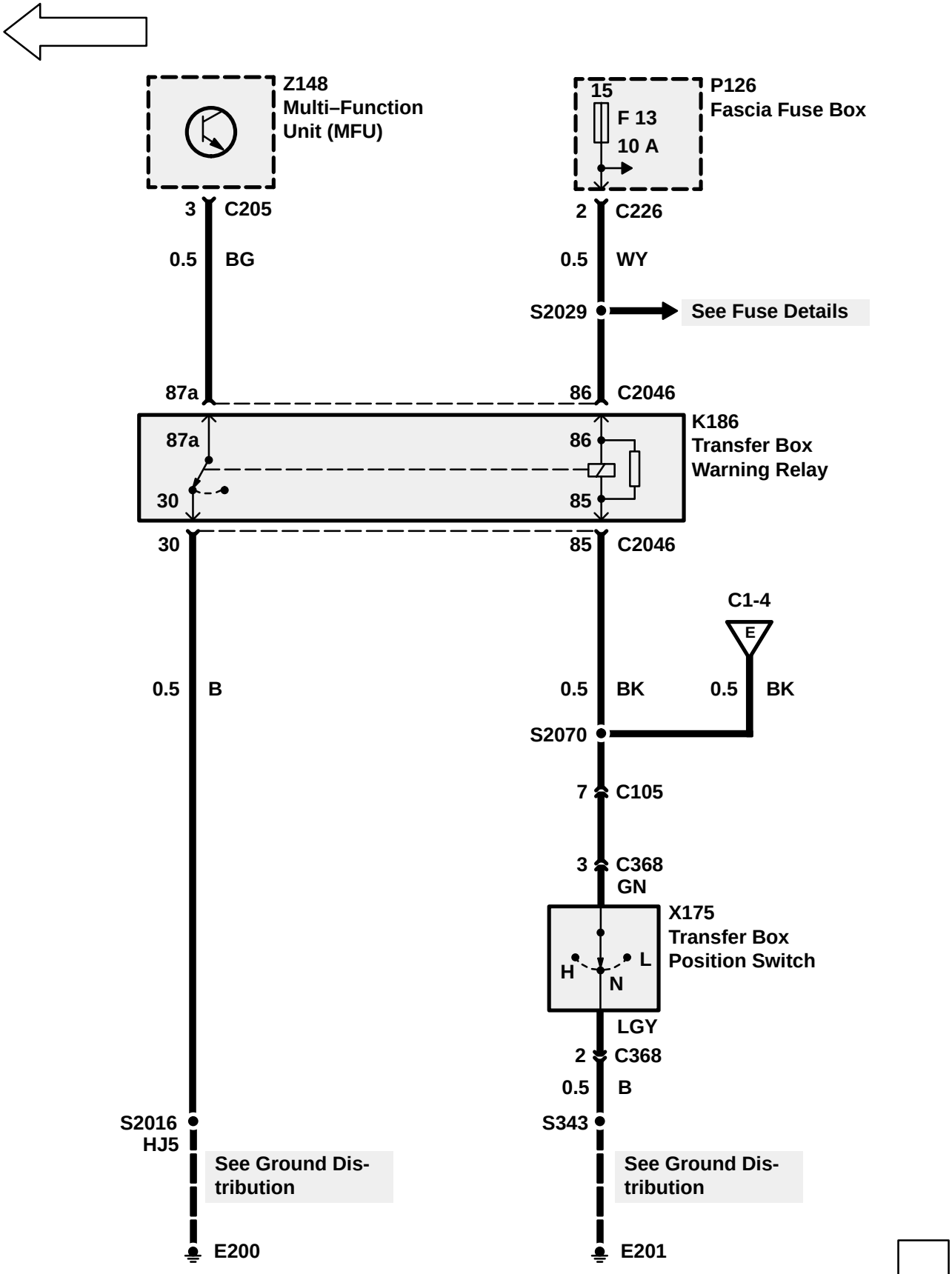
1995 RANGE ROVER




15
F 13
10 A
P126
Fascia Fuse Box
2
C226
0.5
WY
S2029
See Fuse Details
30
C1-3
B
0.5
BR
86
C2001
30
86
K151
Interlock Relay 2
87a
87
85
87
85
C2001
0.5
SB
0.5
YB
6
C105
Z190
Interlock Diode 2
S138
0.5
BY
S2005
HJ2
Z232
Transfer Box Solenoid Diode
10
C105
Starting and Charging
1
C369
R
S322
5
C323
K154
Transfer Box Drive Motor/Encoder
P
R
N
D
1
2
3
X167
Park/Neutral Position Switch
R
0.5
B
2
C369
0.5
B
S343
See Ground Distribution
0.5
BG
4
C323
E201
With Theft Alarm
0.5
BO
11
C105
Without Theft Alarm
1
C274
Z163
Theft Alarm Unit
1
C274
0.5
B
2
C274
See Ground Distribution
E200

C1 ETM

1995 RANGE ROVER



SYSTEM DIAGNOSIS

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

C1 ETM

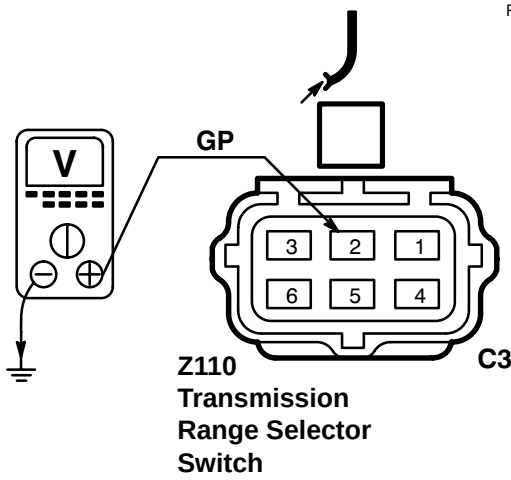
Test A

1A

R060016

CONDITIONS
- **Ignition Switch**
  Position: II

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



OK

PROBLEM CAUSE
- **GP Wire**
- **GO Wire**
- **F1 Fuse**
- **Stop Lamp Switch**

OK

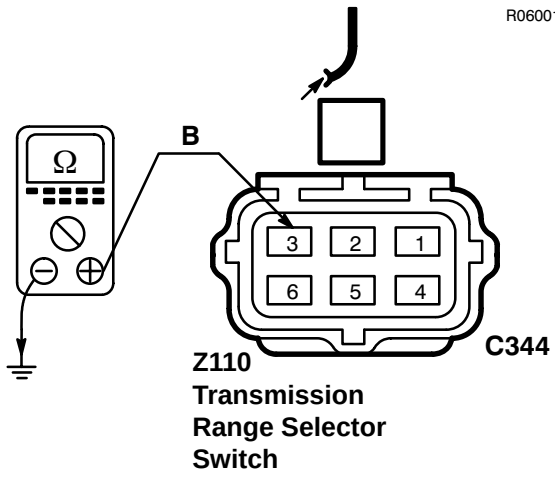
2A

2A

R060016

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **B Wire**

OK

3A

2A

3A

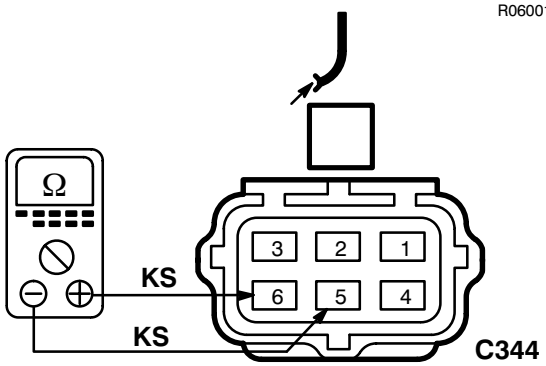
R060016

CONDITIONS

- **Ignition Switch**
  Position: 0

RESULTS

Less than 1 ohm



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

OK

4A

4A

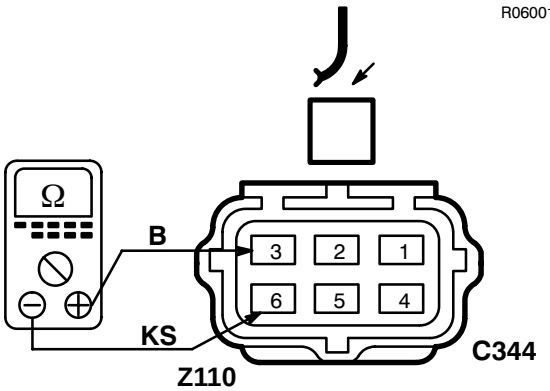
R060016

CONDITIONS

- **Ignition Switch**
  Position: 0

RESULTS

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



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

OK **PROBLEM CAUSE**
- **Interlock Solenoid**

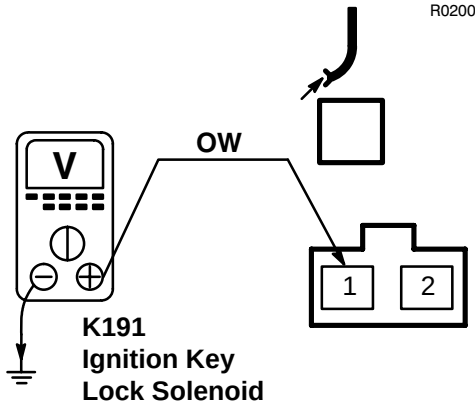
Test B

1B

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Gear Selector**
  P
- **Transfer Box Position Switch**

  H or L

RESULTS
0V



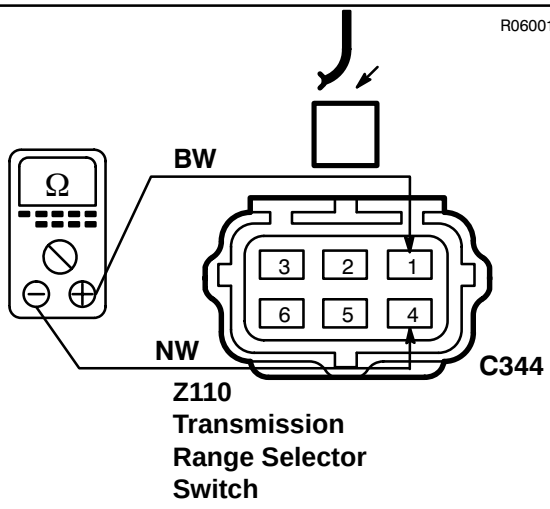
OK → **2B**

OK → **PROBLEM CAUSE**
- **Ignition Key Lock Solenoid**

2B

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Gear Selector**
  P = More than 10K ohms



OK → **PROBLEM CAUSE**
- **Transmission Range Selector Switch**

OK → **3B**

2B

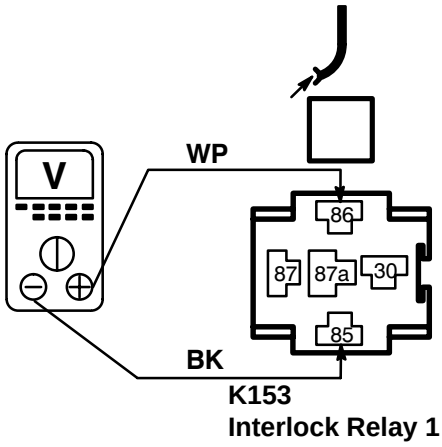
3B

R050001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Transfer Box Position Switch**

  H or L

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **BK Wire**
- **WP Wire**
- **B Wire**
- **Key–In Switch**

- **Transfer Box Position Switch**

OK **PROBLEM CAUSE**
- **Interlock Relay 1**

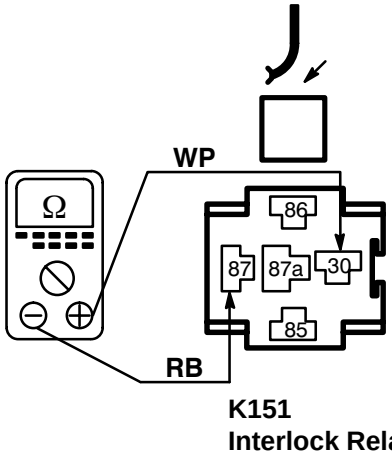
Test C

1C

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **Interlock Relay 2**

OK **PROBLEM CAUSE**
- **BY Wire**
- **YB Wire**
- **Transfer Box Drive Motor/Encoder**

- **Park/Neutral Position Switch**

Test D

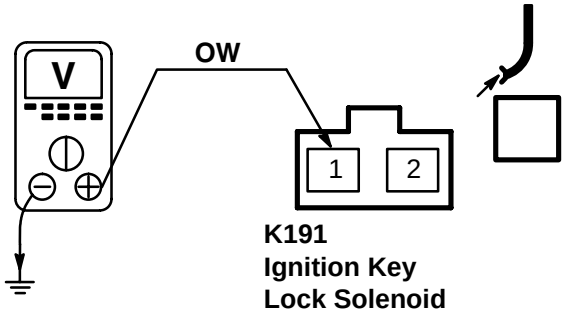
1D

R020022

CONDITIONS
- **Ignition Switch**
  Position: II
- **Gear Selector**
  P

RESULTS
- **Transfer Box Position Switch**

N = BAT VOLT



OK **GO TO TEST E**

OK

2D

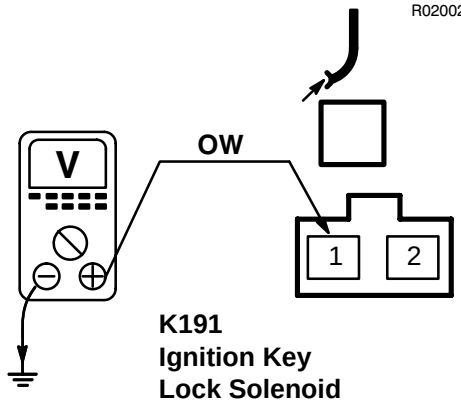
2D

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



OK **PROBLEM CAUSE**
- **BR Wire**
- **OW Wire**
- **Transmission Range Selector Switch**
- **Key–Barrel Switch**

OK **PROBLEM CAUSE**
- **Ignition Key Lock Solenoid**

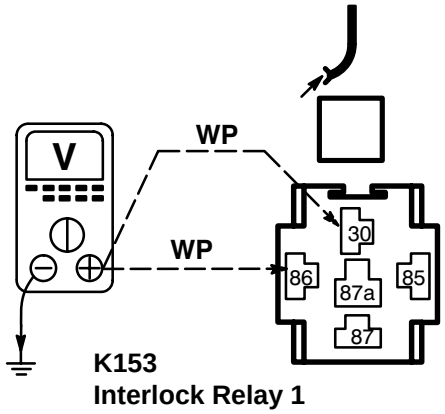
Test E

1E

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **WP Wire**
- **Key–In Switch**

OK

2E

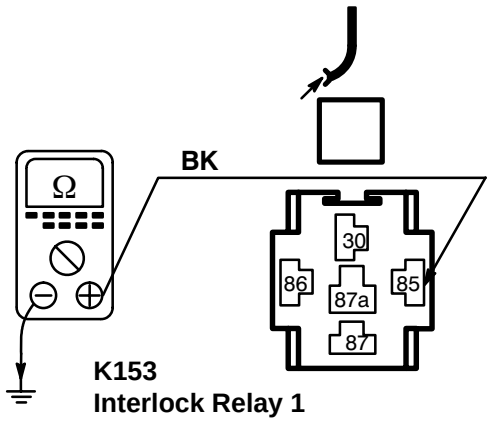
2E

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Transfer Box Position Switch**

  N

RESULTS
More than 10K ohms



OK

PROBLEM CAUSE
- **BK Wire**
- **Transfer Box Position Switch**

OK

3E

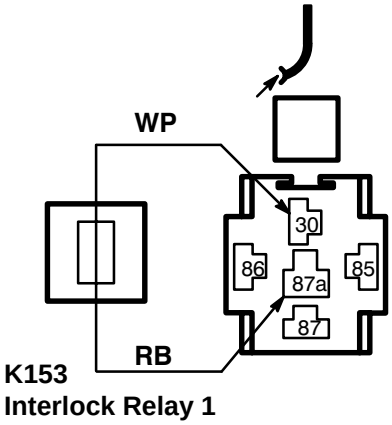
2E

3E

R050001

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**

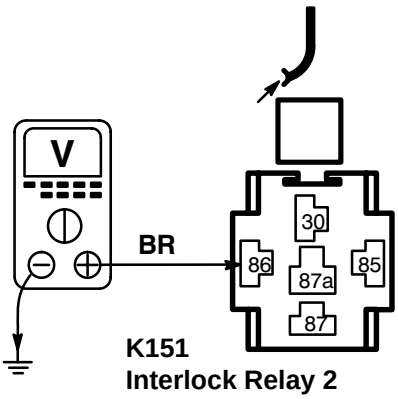
Test F

1F

R050001

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

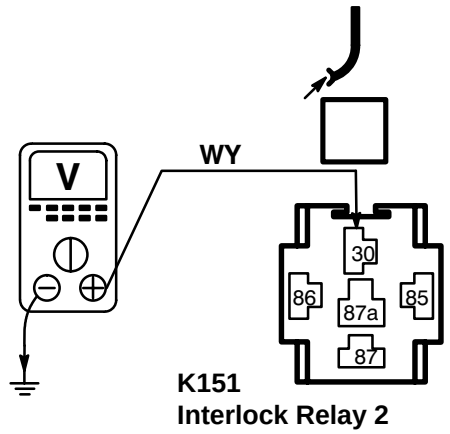
1F

2F

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **F13 Fuse**
- **WY Wire**

OK

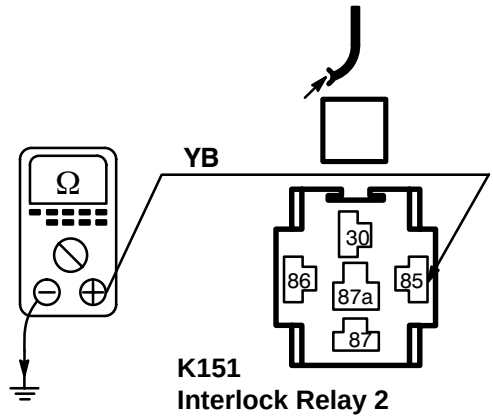
3F

3F

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Gear Selector**
  N

RESULTS
Less than 1 ohm



OK

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

OK

4F

C1 ETM

3F

4F

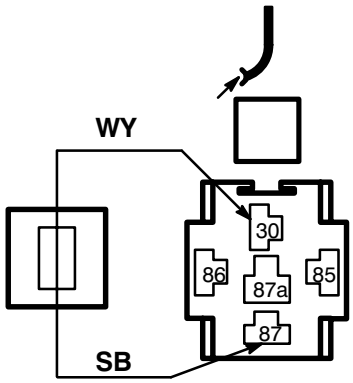
R050001

CONDITIONS

- **Ignition Switch**
  Position: II

RESULTS

Transfer box gear selector shifts



K151
Interlock Relay 2

OK

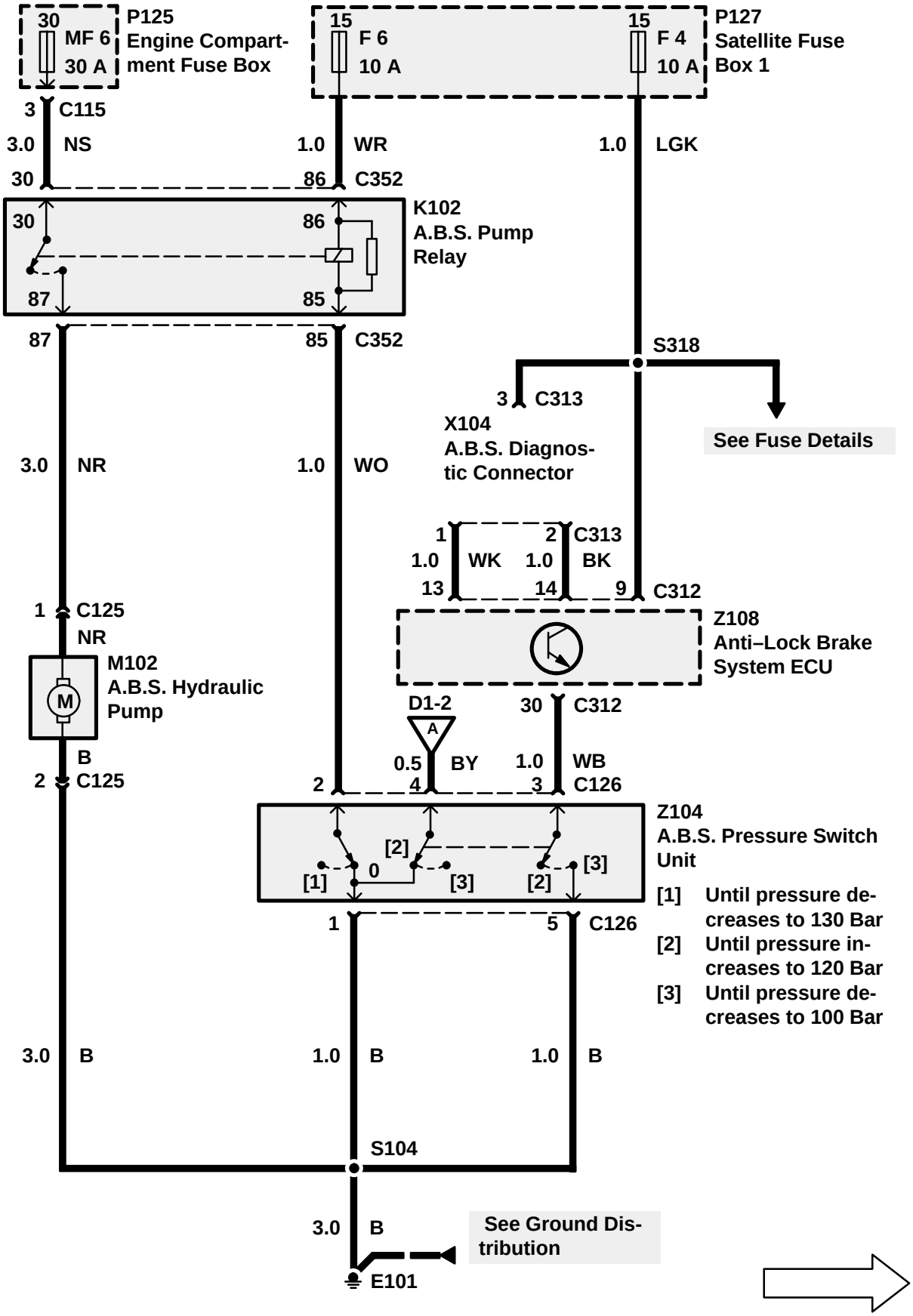
PROBLEM CAUSE

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

OK

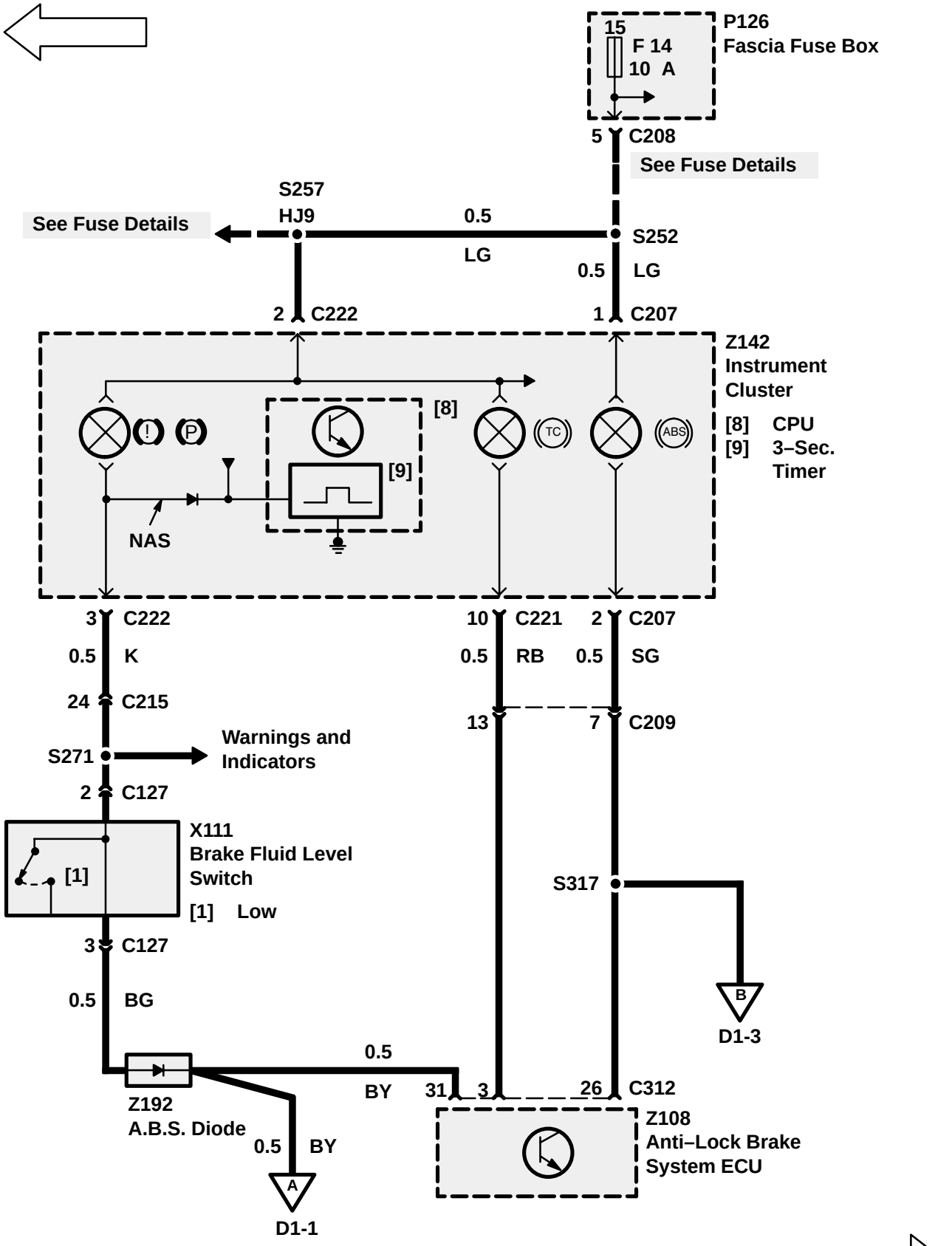
PROBLEM CAUSE

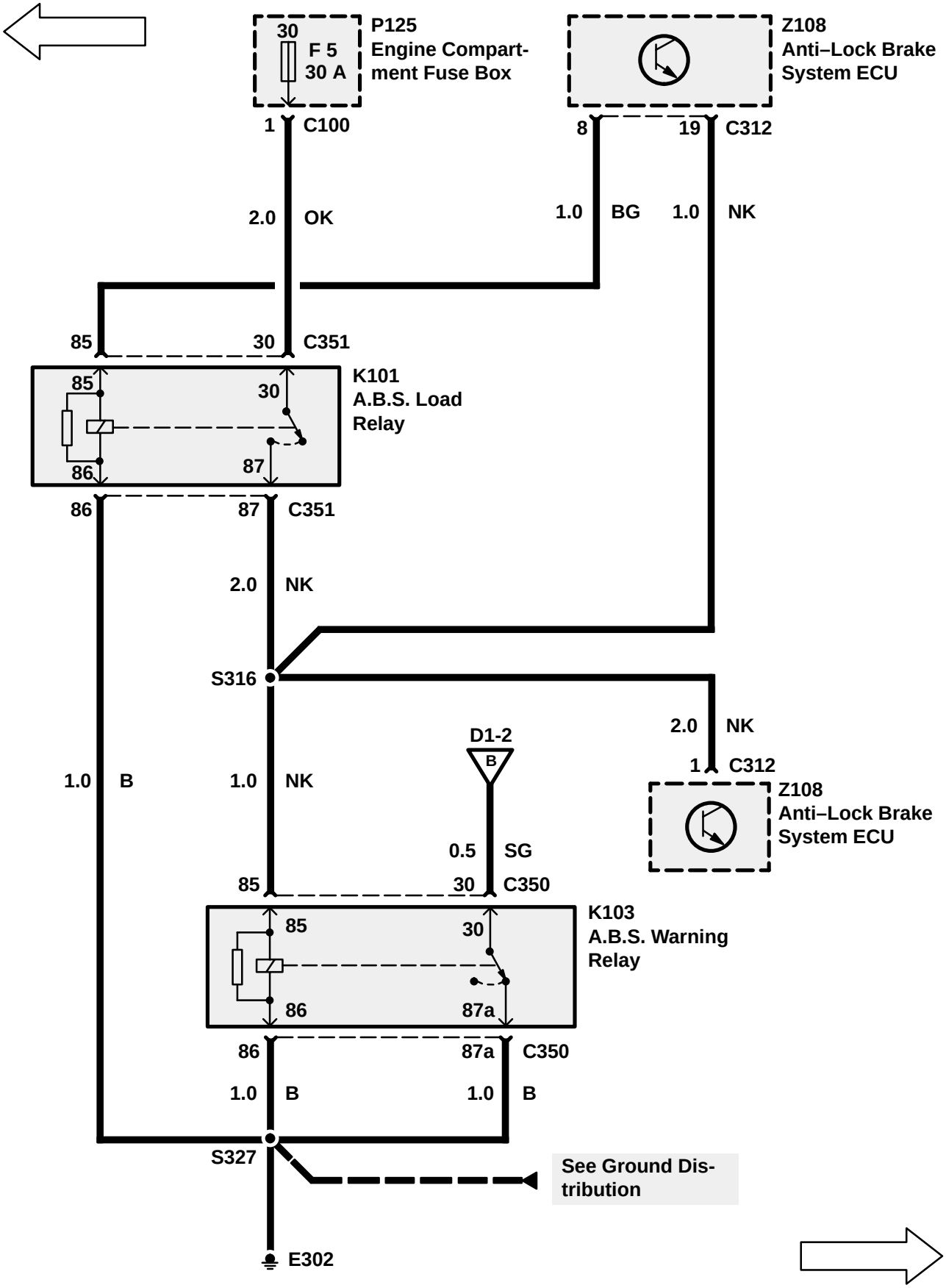
- **Interlock Relay 2**


30
MF 6
30 A
P125
Engine Compartment Fuse Box
15
F 6
10 A
15
F 4
10 A
P127
Satellite Fuse Box 1
3
C115
3.0
NS
30
1.0
WR
86
C352
1.0
LGK
30
86
K102
A.B.S. Pump Relay
87
85
87
85
C352
S318
3
C313
X104
A.B.S. Diagnostic Connector
See Fuse Details
3.0
NR
1.0
WO
1
2
C313
1.0
WK
1.0
BK
13
14
9
C312
1
C125
NR
Z108
Anti–Lock Brake System ECU
M102
A.B.S. Hydraulic Pump
M
D1-2
A
30
C312
0.5
BY
1.0
WB
B
2
C125
2
4
3
C126
Z104
A.B.S. Pressure Switch Unit
[1]
[2]
0
[3]
[1]
[3]
[2]
1
5
C126
[1] Until pressure decreases to 130 Bar
[2] Until pressure increases to 120 Bar
[3] Until pressure decreases to 100 Bar
3.0
B
1.0
B
1.0
B
S104
3.0
B
See Ground Distribution
E101

D1 ETM

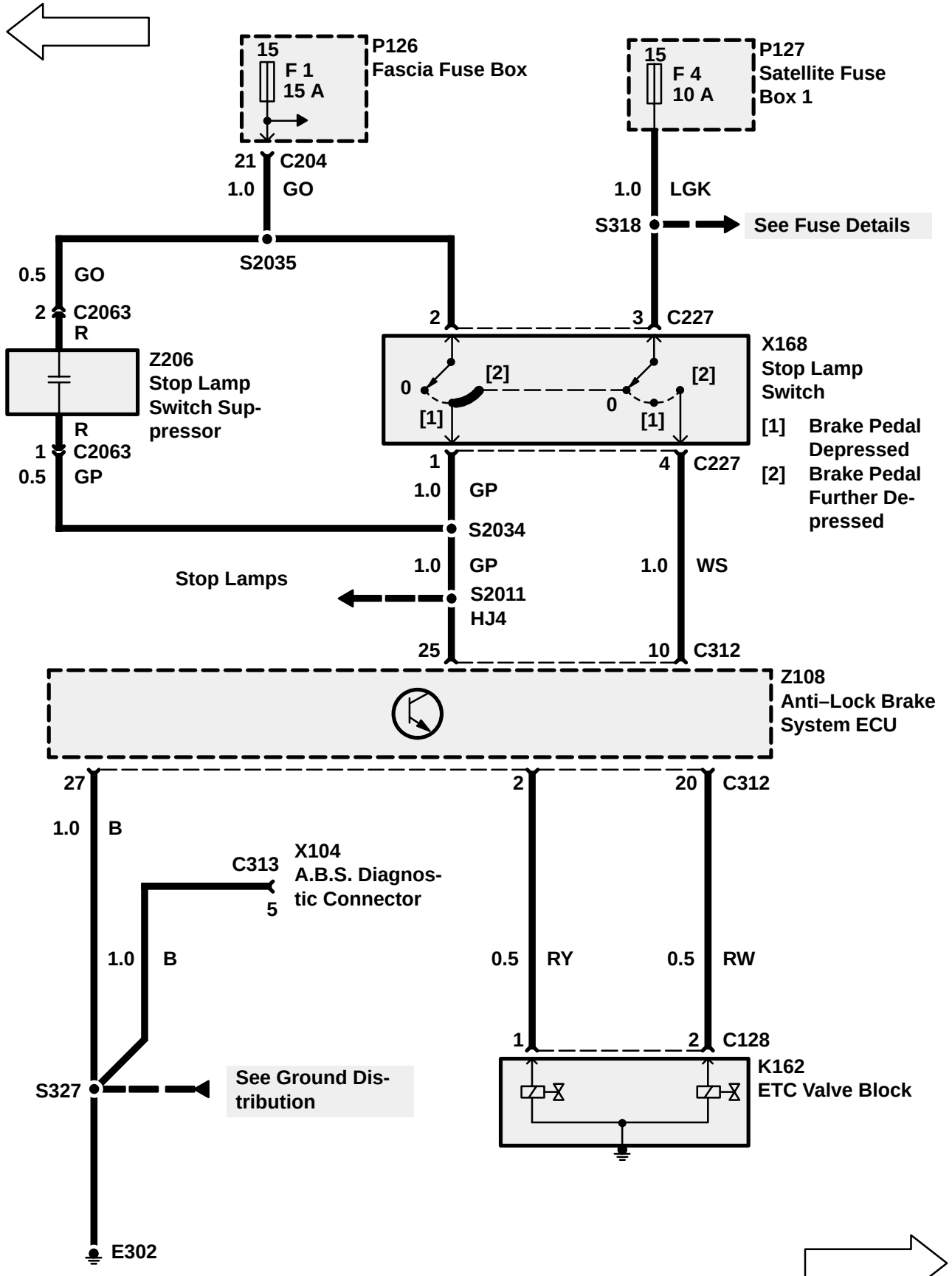
1995 RANGE ROVER

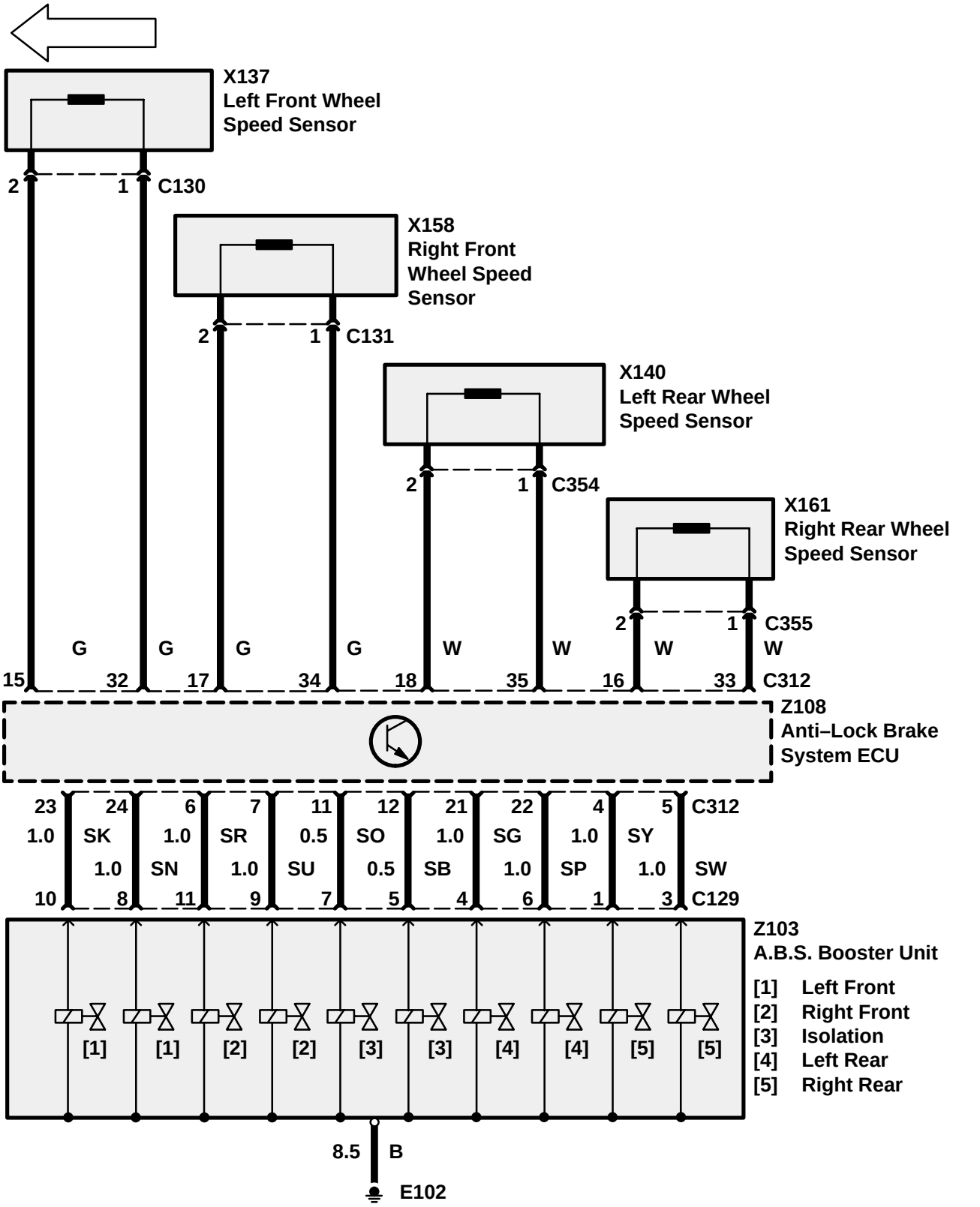



30
F 5
30 A
P125
Engine Compart-
ment Fuse Box
Z108
Anti–Lock Brake
System ECU
1
C100
8
19
C312
2.0
OK
1.0
BG
1.0
NK
85
30
C351
K101
A.B.S. Load
Relay
85
30
86
87
86
87
C351
2.0
NK
S316
2.0
NK
1
C312
Z108
Anti–Lock Brake
System ECU
D1-2
B
1.0
B
1.0
NK
0.5
SG
85
30
C350
K103
A.B.S. Warning
Relay
85
30
86
87a
86
87a
C350
1.0
B
1.0
B
S327
See Ground Dis-
tribution
E302

D1 ETM

1995 RANGE ROVER




X137
Left Front Wheel Speed Sensor
2
1
C130
X158
Right Front Wheel Speed Sensor
2
1
C131
X140
Left Rear Wheel Speed Sensor
2
1
C354
X161
Right Rear Wheel Speed Sensor
2
1
C355
G
G
G
G
W
W
W
W
15
32
17
34
18
35
16
33
C312
Z108
Anti–Lock Brake System ECU
23
24
6
7
11
12
21
22
4
5
C312
1.0
SK
1.0
SR
0.5
SO
1.0
SG
1.0
SY
1.0
SN
1.0
SU
0.5
SB
1.0
SP
1.0
SW
10
8
11
9
7
5
4
6
1
3
C129
Z103
A.B.S. Booster Unit
[1] Left Front
[2] Right Front
[3] Isolation
[4] Left Rear
[5] Right Rear
[1]
[1]
[2]
[2]
[3]
[3]
[4]
[4]
[5]
[5]
8.5
B
E102

CIRCUIT OPERATION

Engine Coolant Temperature Gauge

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

Fuel Gauge

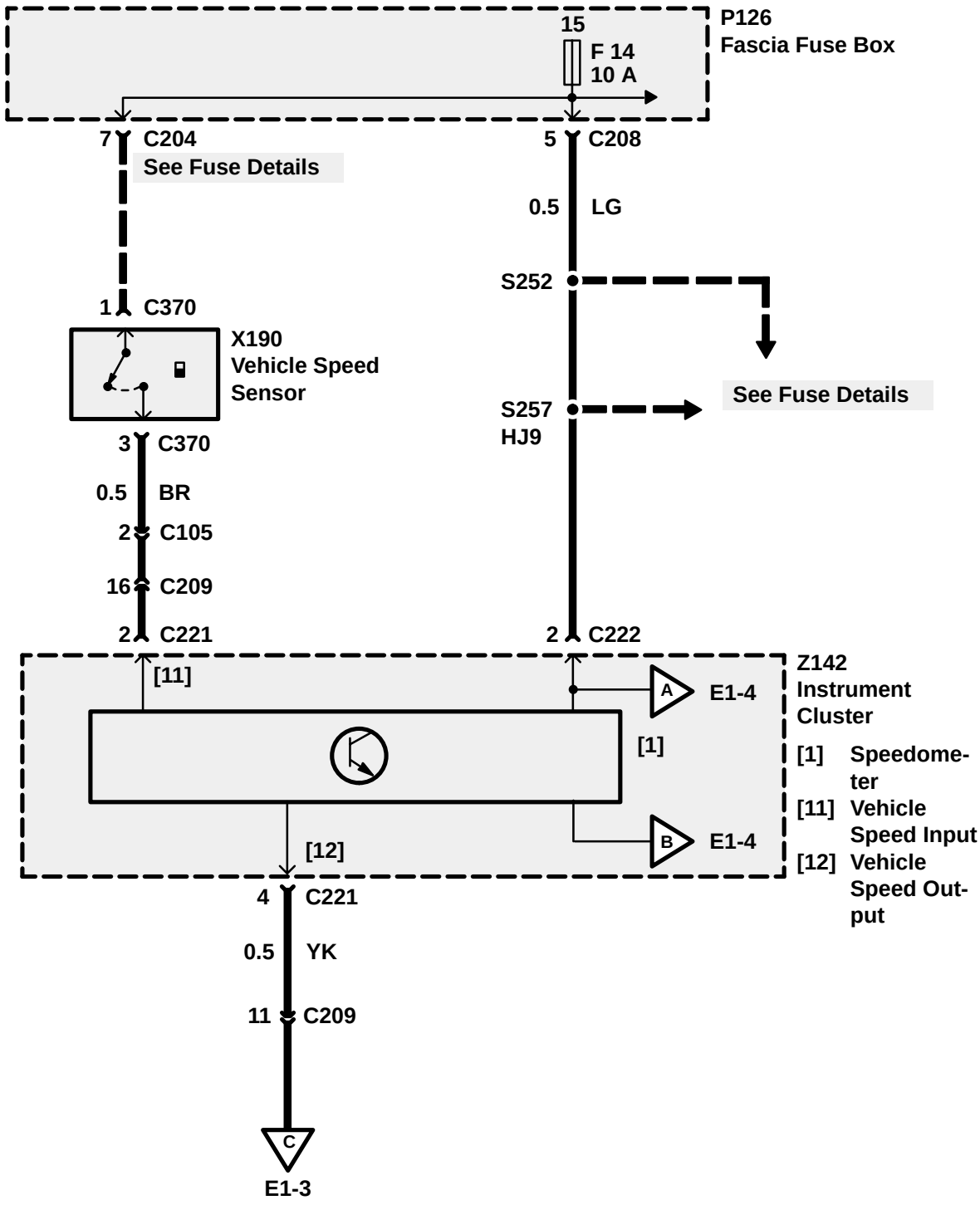
When the fuel tank level is low, the resistance of the fuel gauge sender is approximately 220 ohms. As the fuel level increases, the resistance of the sender decreases, causing the gauge to register the change. When the fuel tank is full, the resistance of the sender is approximately 10 ohms. When the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

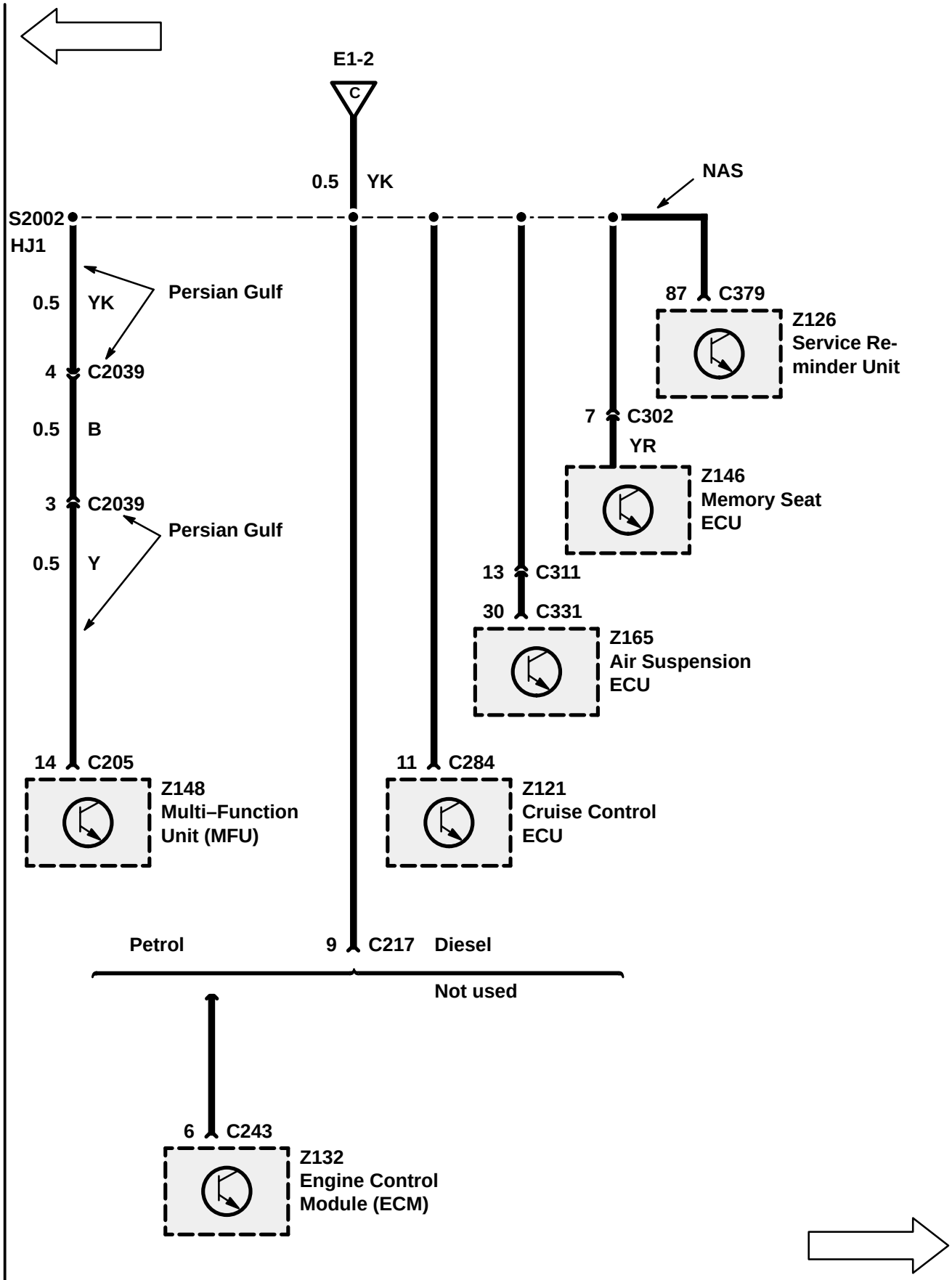
Speedometer

The Vehicle Speed Sensor (X190) sends a signal to the speedometer in the form of voltage pulses. The pulses are filtered by a Vehicle Speed Sensor Buffer inside the speedometer. The voltage alternates between battery voltage and 0 volts 6 times per wheel revolution. The speed sensor signal is also sent to the Cruise Control ECU (Z121), Engine Control Module (Z132), Memory Seat ECU (Z146), Air Suspension ECU (Z165), the Service Reminder Unit (NAS) (Z126), and the Multifunction Unit (MFU) (Z148) (Persian Gulf Countries).

Tachometer

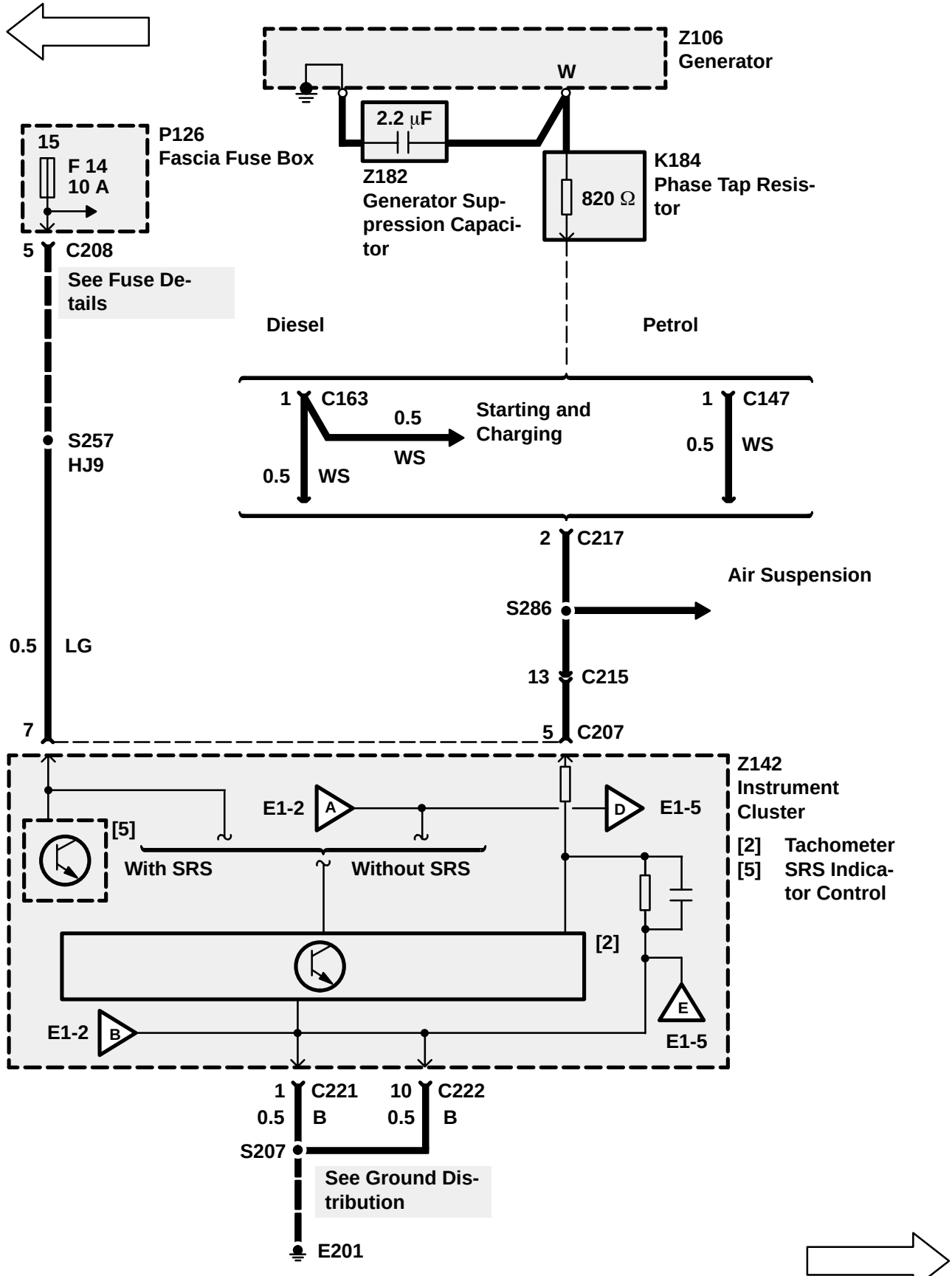
The tachometer displays engine speed in rpm. Voltage pulses are taken from the Generator (Z106) and are generated when the engine drive belt turns the Generator pulley. The tachometer responds to the frequency of the voltage pulses, which increases proportionally to that of the engine speed.

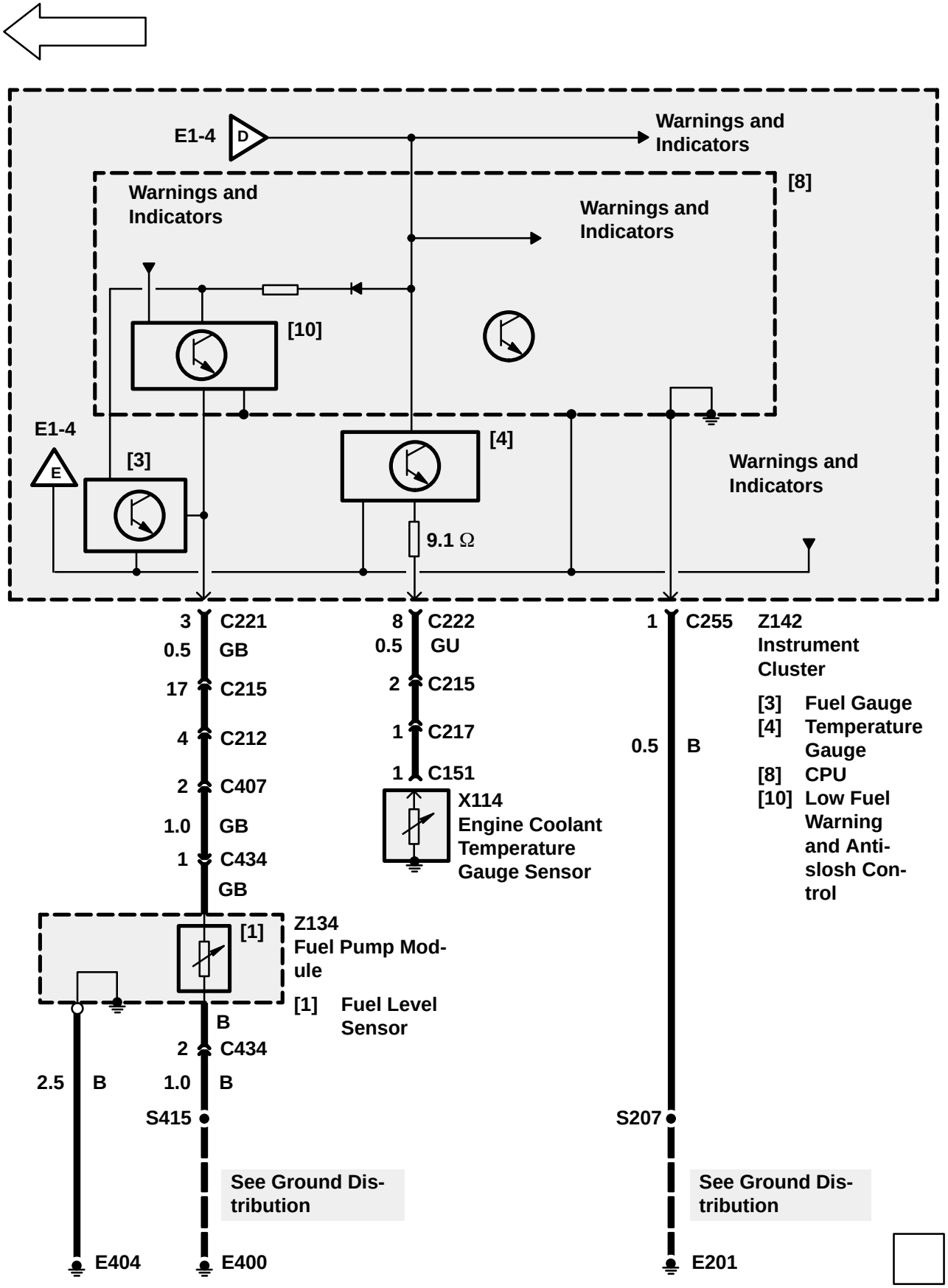

P126
Fascia Fuse Box
15
F 14
10 A
7 C204
See Fuse Details
5 C208
0.5 LG
S252
1 C370
X190
Vehicle Speed
Sensor
See Fuse Details
S257
HJ9
3 C370
0.5 BR
2 C105
16 C209
2 C221
2 C222
[11]
A
E1-4
[1]
B
E1-4
[12]
Z142
Instrument
Cluster
[1] Speedometer
[11] Vehicle Speed Input
[12] Vehicle Speed Output
4 C221
0.5 YK
11 C209
C
E1-3


E1-2
C
0.5 YK
NAS
S2002
HJ1
0.5 YK
Persian Gulf
4 C2039
0.5 B
3 C2039
Persian Gulf
0.5 Y
14 C205
Z148
Multi–Function
Unit (MFU)
11 C284
Z121
Cruise Control
ECU
13 C311
30 C331
Z165
Air Suspension
ECU
7 C302
YR
Z146
Memory Seat
ECU
87 C379
Z126
Service Re-
minder Unit
Petrol
9 C217 Diesel
Not used
6 C243
Z132
Engine Control
Module (ECM)

E1 ETM

1995 RANGE ROVER




E1-4
D
Warnings and Indicators
[8]
Warnings and Indicators
Warnings and Indicators
[10]
E1-4
E
[3]
[4]
Warnings and Indicators
9.1 Ω
3 C221
0.5 GB
17 C215
4 C212
2 C407
1.0 GB
1 C434
GB
8 C222
0.5 GU
2 C215
1 C217
1 C151
X114
Engine Coolant Temperature Gauge Sensor
1 C255
0.5 B
Z142
Instrument Cluster
[3] Fuel Gauge
[4] Temperature Gauge
[8] CPU
[10] Low Fuel Warning and Anti-slosh Control
[1]
Z134
Fuel Pump Module
[1] Fuel Level Sensor
B
2 C434
2.5 B
1.0 B
S415
S207
See Ground Distribution
See Ground Distribution
E404
E400
E201

SYSTEM DIAGNOSIS

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

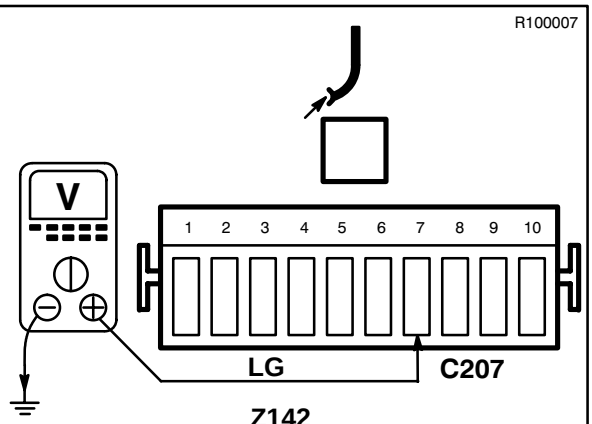
Test A

1A

R100007

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



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

OK

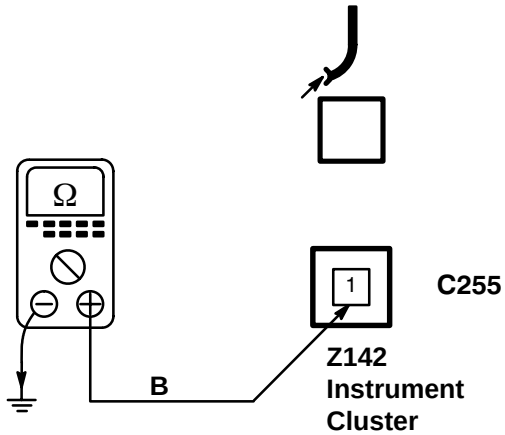
2A

2A

R010001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK **PROBLEM CAUSE**
- **Instrument Cluster**

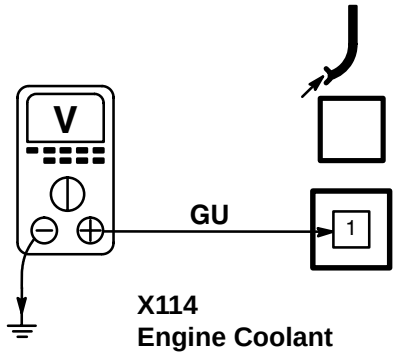
Test B

1B

R010001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- GU Wire
- Instrument Cluster
- Coolant Temperature Gauge

OK **PROBLEM CAUSE**
- Engine Coolant Temperature Gauge Sensor

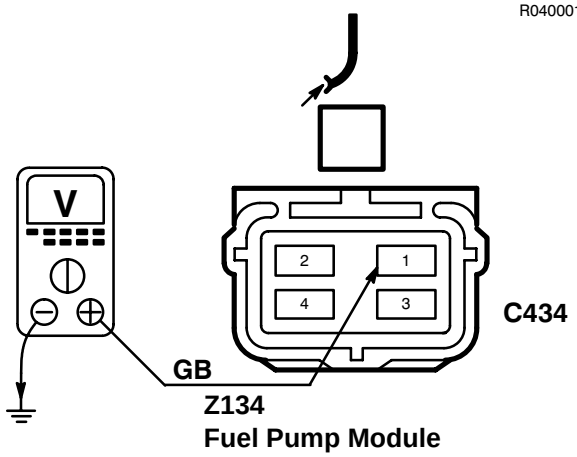
Test C

1C

R040001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
5V



OK **PROBLEM CAUSE**
- GB Wire
- Instrument Cluster
- Fuel Gauge

OK

2C

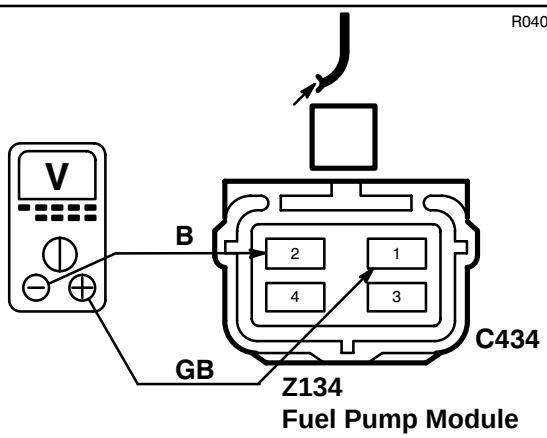
1C

2C

R040001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
5V



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

OK **PROBLEM CAUSE**
- **Fuel Pump Module**

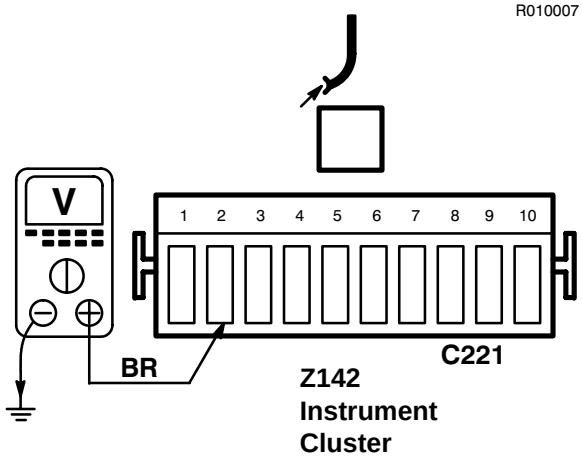
Test D

1D

R010007

CONDITIONS
- **Ignition Switch**
  Position: II
- **Gear Selector**
  N
- **Raise vehicle**
- **Turn a drive wheel by hand**

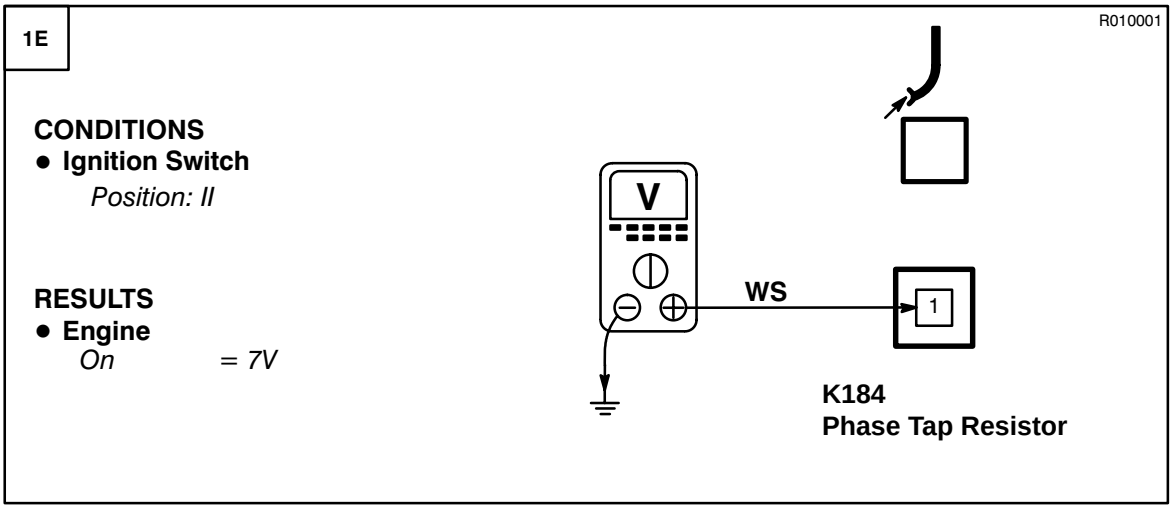
RESULTS
0V – BAT VOLT
(6 times per revolution)



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

OK **PROBLEM CAUSE**
- **Instrument Cluster**
- **Speedometer**

Test E



OK **PROBLEM CAUSE**

- Generator
- Phase Tap Resistor

OK **PROBLEM CAUSE**

- WS Wire
- Tachometer
- Instrument Cluster

CIRCUIT OPERATION

Charge Warning Light

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

ABS Warning Light

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

Brake Warning Light

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

Oil Pressure Warning Light

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

Transmission/Transfer Box Oil Temperature Warning Light

The transmission/transfer box oil temperature warning light is grounded by the Automatic Transmission Oil Temperature Switch (X108) when the temperature of the transmission fluid exceeds 130°C (266°F). The warning light is also grounded by the Transfer Box Oil Temperature Switch (X174) when the temperature of the transfer box fluid exceeds 145°C (266°F). The Bulb Check Relay (K173) will illuminate the warning light when the vehicle is first started to test the bulb.

Petrol

Malfunction Indicator Lamp (Check Engine)

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

Diesel

Glow Plug Indicator

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

Hazard Indicator

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

Direction Indicator

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

Trailer Indicator

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

SRS Indicators

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

Low Fuel Warning Indicator

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

Main Beam Indicator

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

TC Warning Light

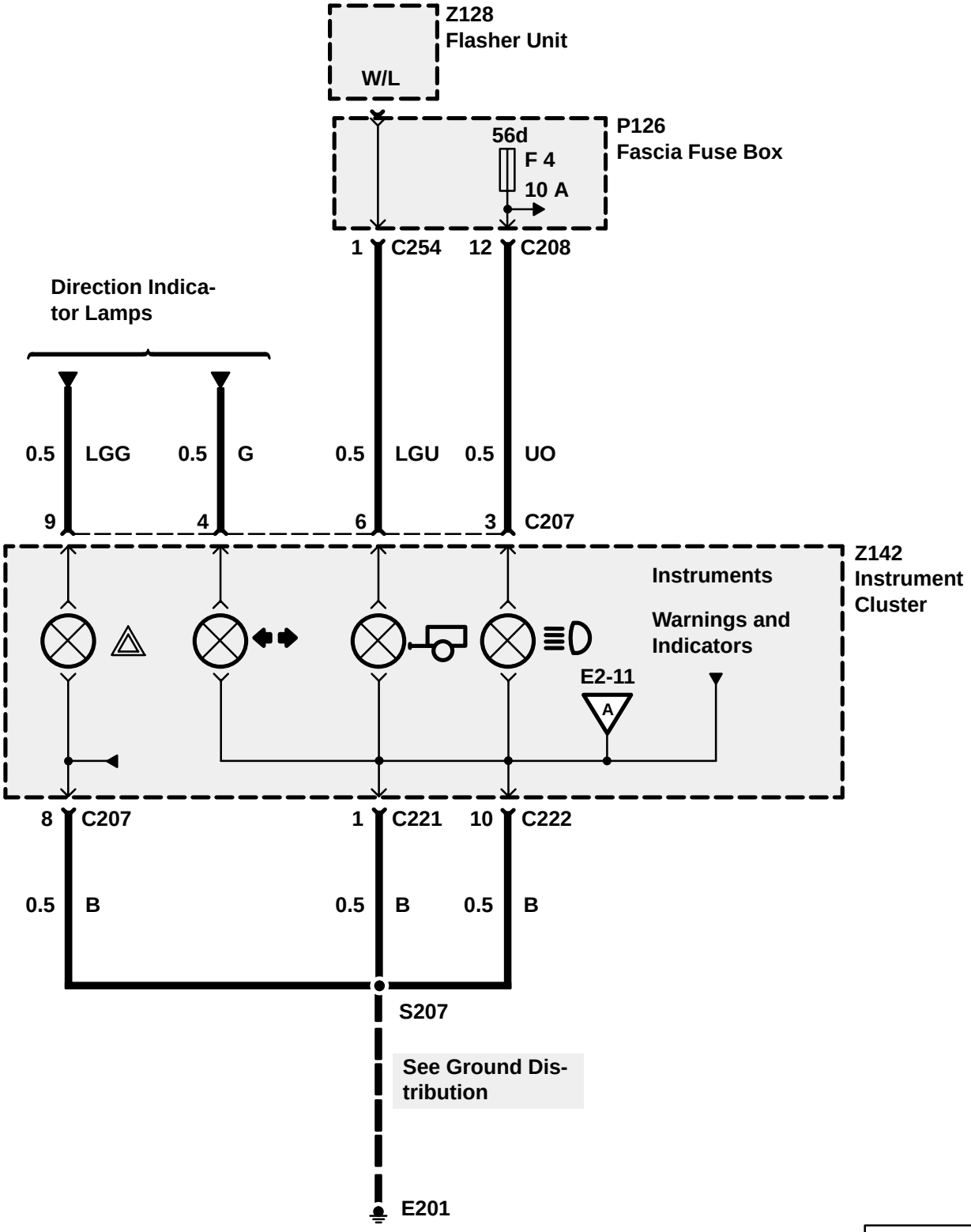
The TC warning light will be on for up to 60 seconds while the system is active. After 60 seconds of TC operation, the TC warning light will begin to flash to inform the driver that the system has been shut down to allow the brakes to cool. If the TC warning light stays on continuously for more than 60 seconds, a fault in the system is indicated. The TC warning light receives battery voltage with the Ignition Switch (X134) in position II. A ground supply is provided by the A.B.S. ECU (Z108) when the TC system is active.

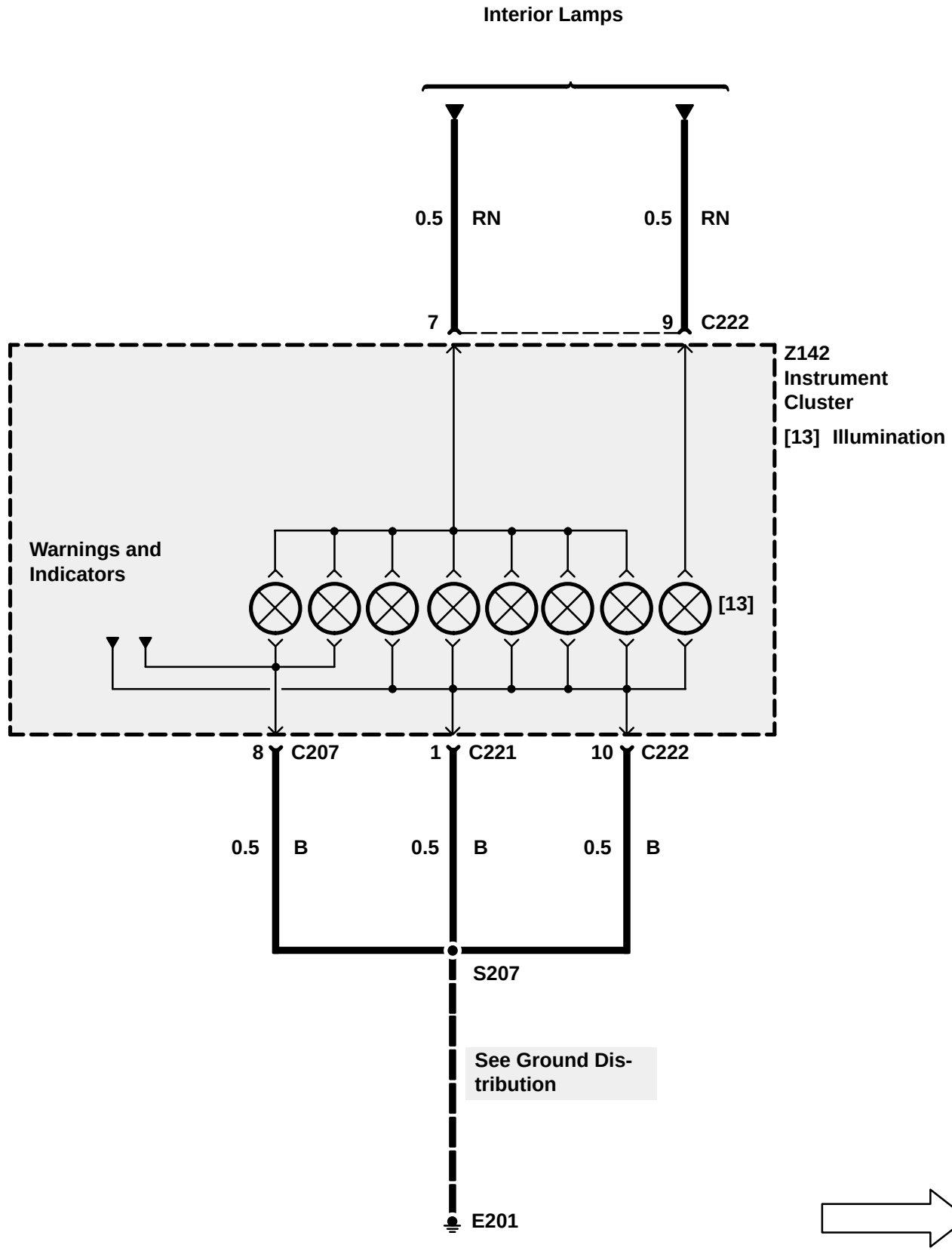
Air Suspension Indicator

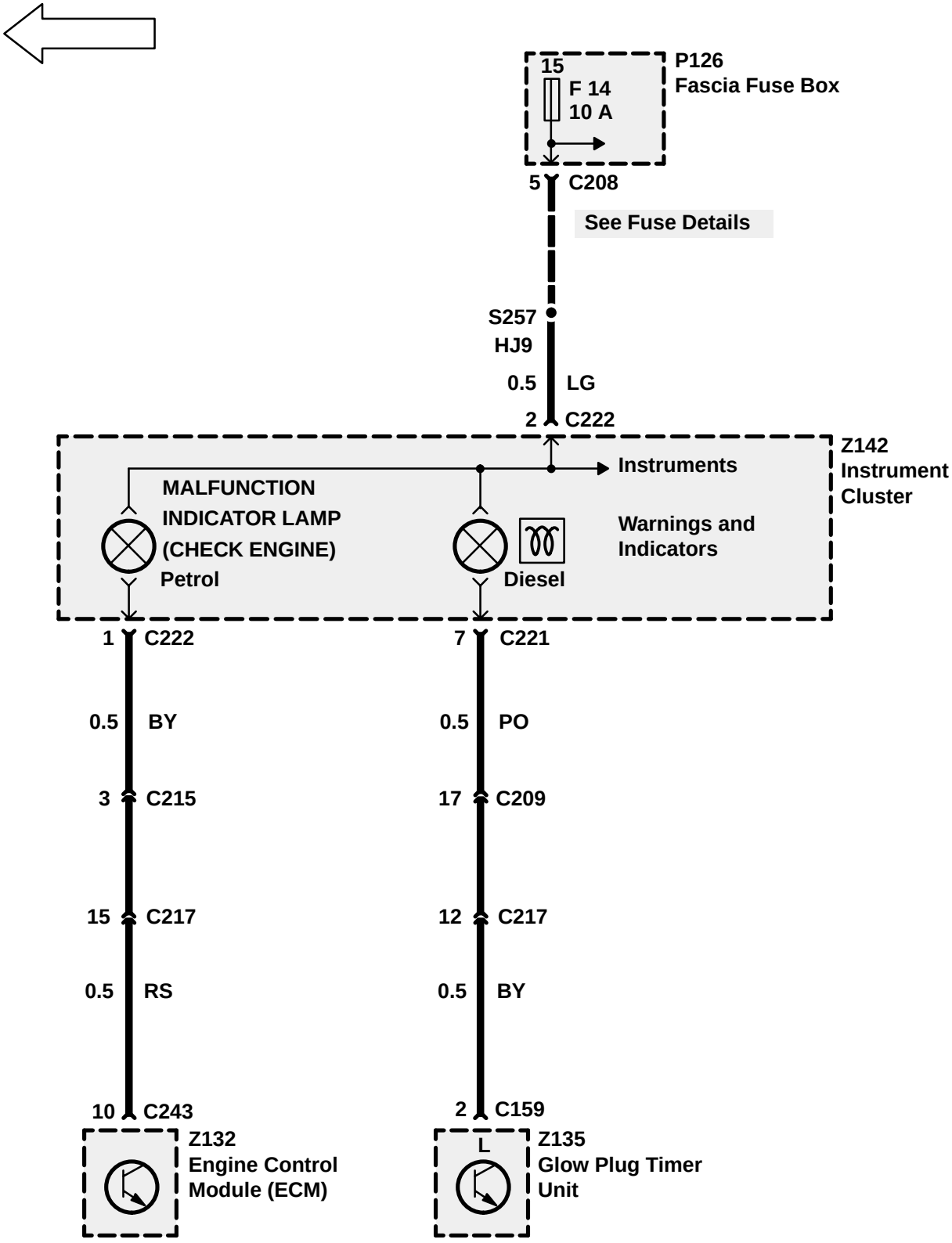
If the Air Suspension ECU (Z165) detects a fault in the system, the ECU will inform the driver by intermittently grounding the Warning Lamp Relay (K155) for 30 seconds. This causes the Air Suspension Indicator to flash for 30 seconds. After 30 seconds the indicator will remain on until the repair is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

Fasten Seat Belt Indicator

The Fasten Seat Belt Indicator receives battery voltage with the Ignition Switch (X134) in position II. The indicator is also grounded through the Multifunction 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.

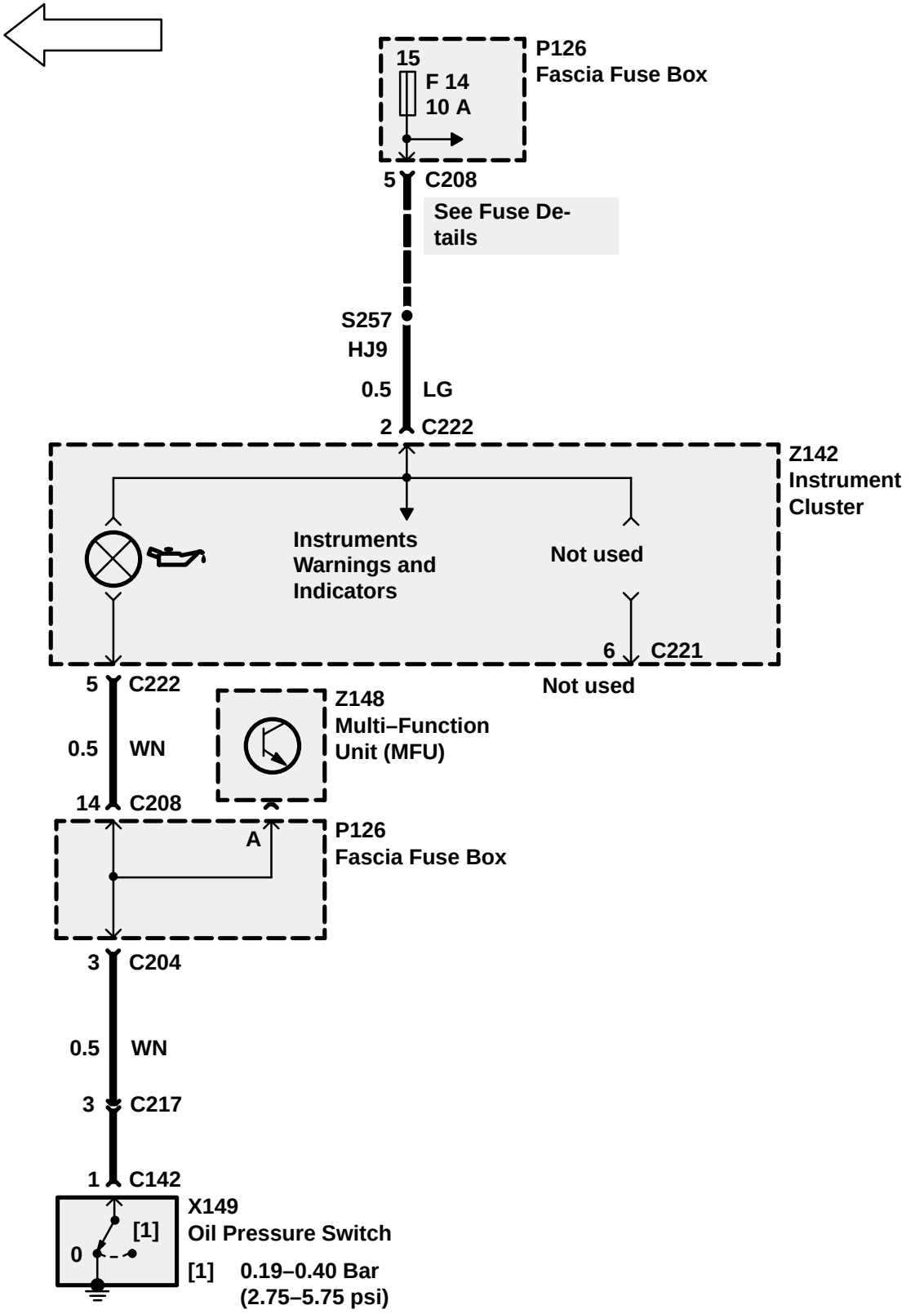

Z128
Flasher Unit
W/L
P126
Fascia Fuse Box
56d
F 4
10 A
1 C254
12 C208
Direction Indicator Lamps
0.5 LGG
0.5 G
0.5 LGU
0.5 UO
9
4
6
3 C207
Z142
Instrument Cluster
Instruments
Warnings and Indicators
E2-11
A
8 C207
1 C221
10 C222
0.5 B
0.5 B
0.5 B
S207
See Ground Distribution
E201

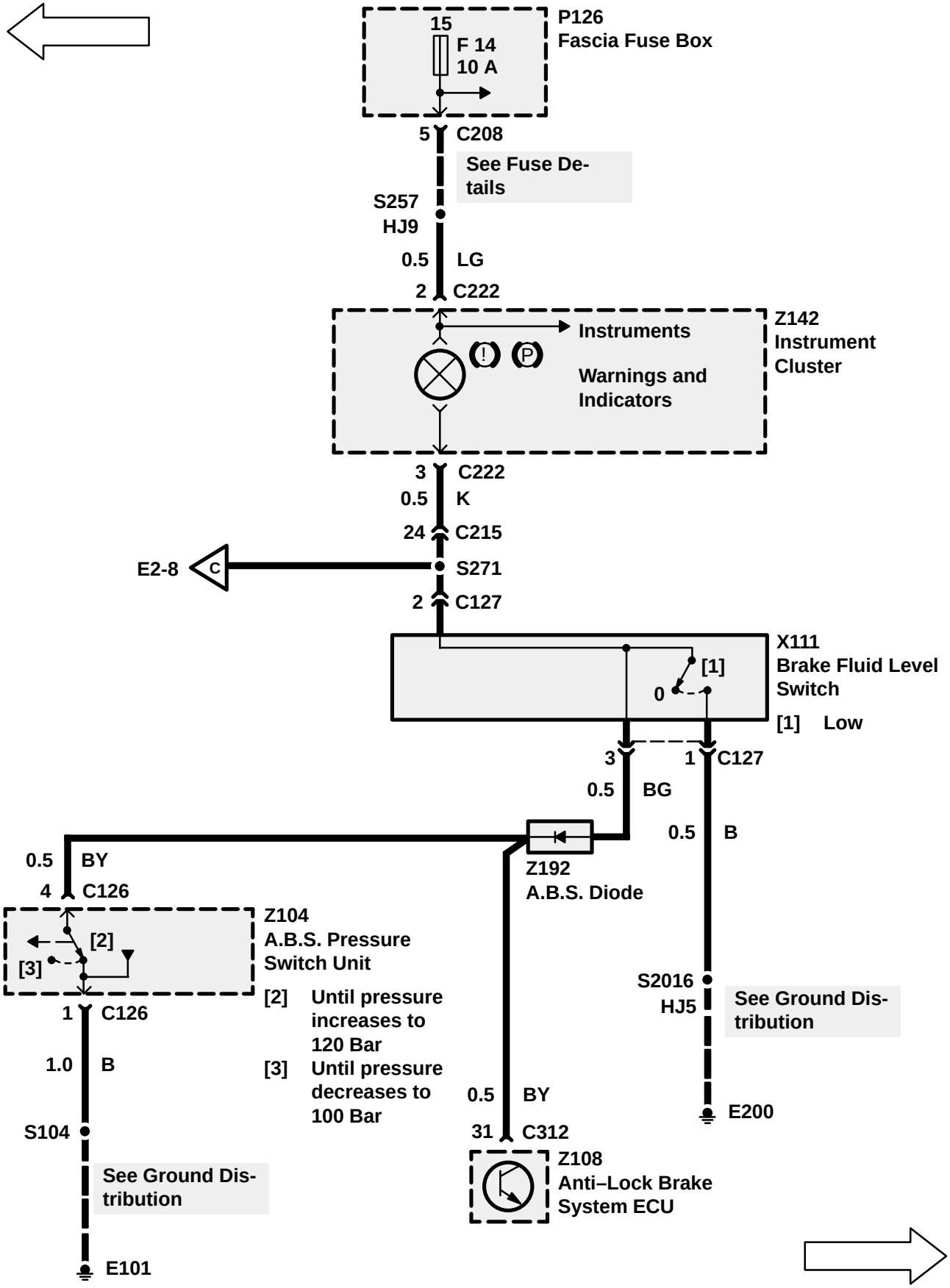

Interior Lamps
0.5 RN
0.5 RN
7
9 C222
Z142
Instrument
Cluster
[13] Illumination
Warnings and
Indicators
[13]
8 C207
1 C221
10 C222
0.5 B
0.5 B
0.5 B
S207
See Ground Dis-
tribution
E201


15
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S257
HJ9
0.5
LG
2
C222
Z142
Instrument
Cluster
Instruments
MALFUNCTION
INDICATOR LAMP
(CHECK ENGINE)
Petrol
Diesel
Warnings and
Indicators
1
C222
7
C221
0.5
BY
0.5
PO
3
C215
17
C209
15
C217
12
C217
0.5
RS
0.5
BY
10
C243
2
C159
Z132
Engine Control
Module (ECM)
L
Z135
Glow Plug Timer
Unit

E2 ETM

1995 RANGE ROVER

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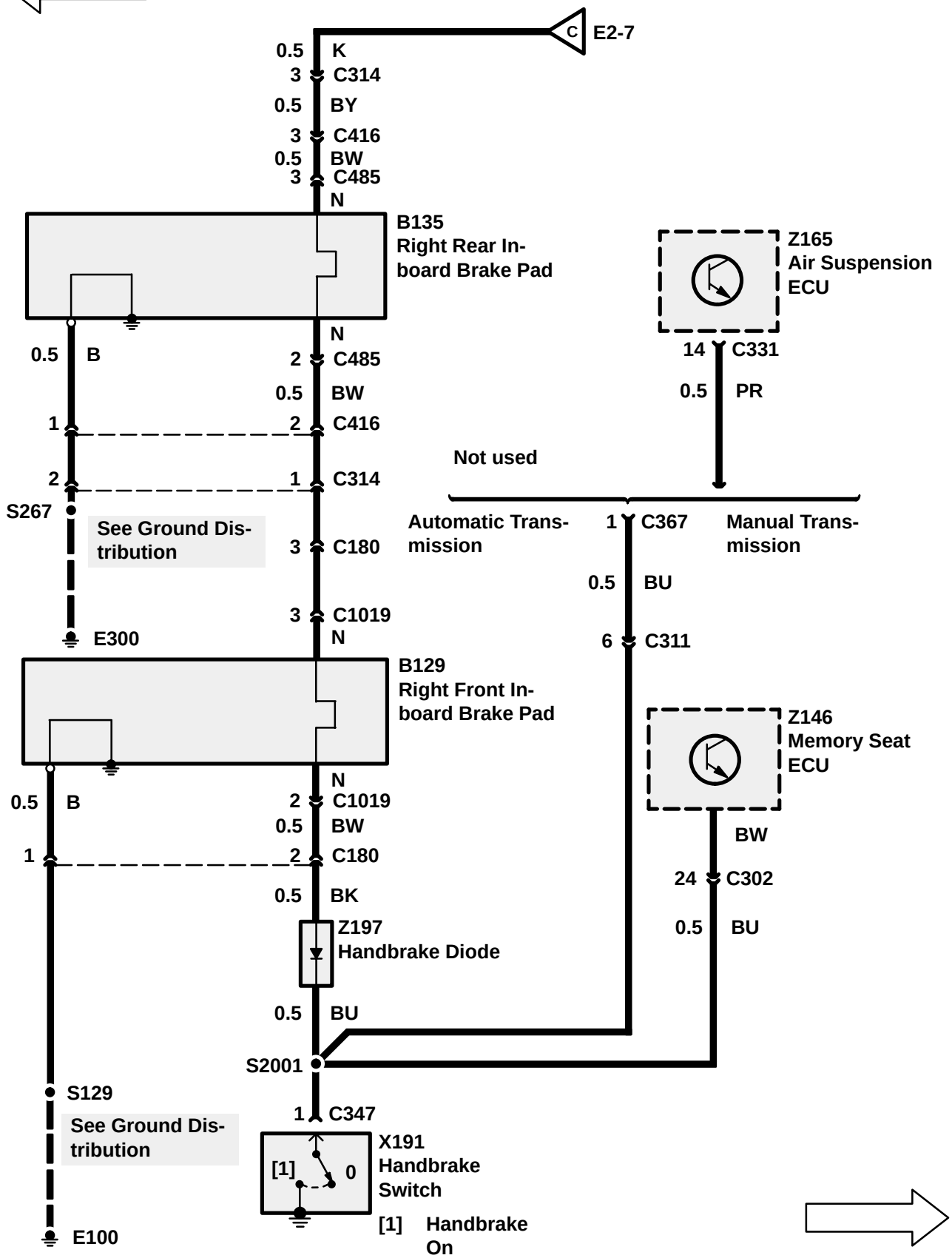
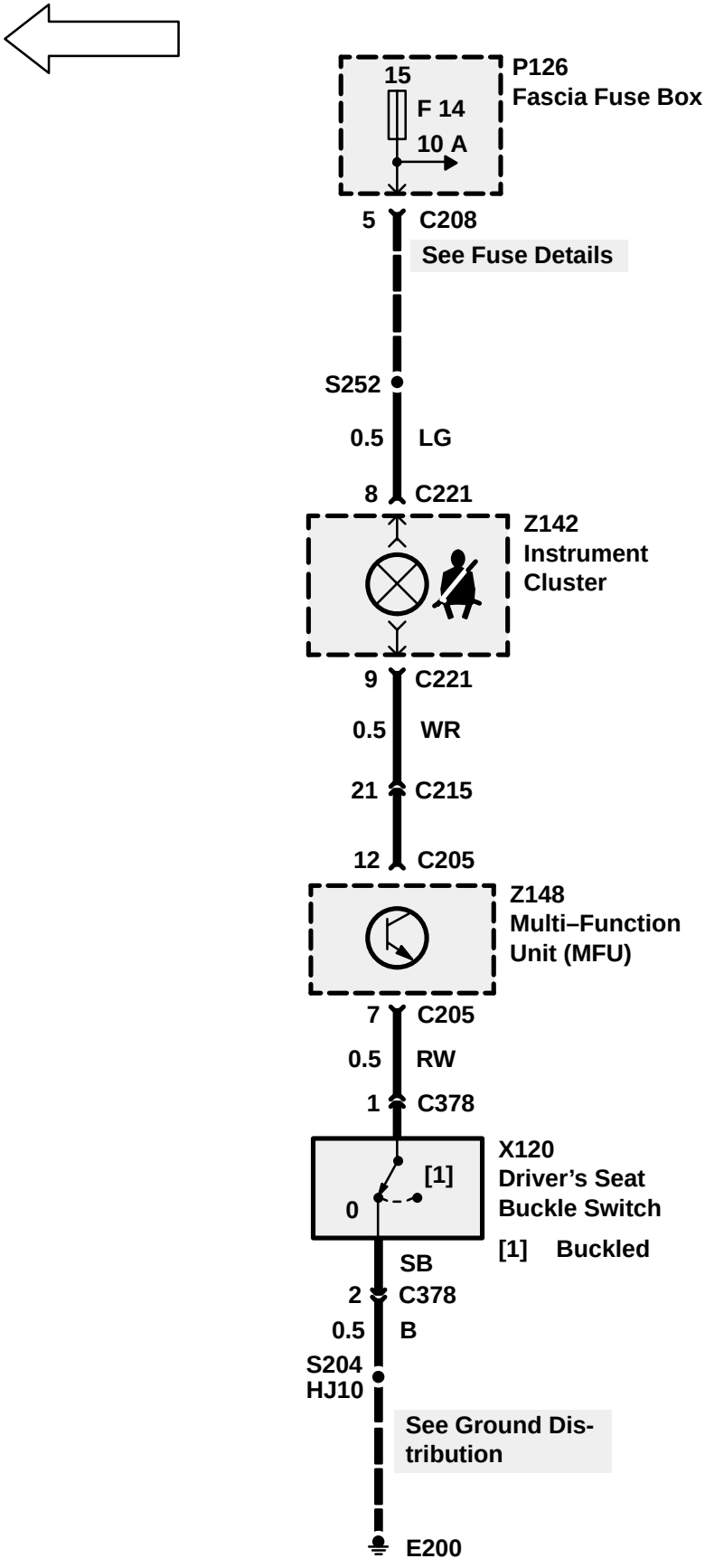
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S257
HJ9
0.5
LG
2
C222
Instruments
Warnings and Indicators
Z142
Instrument Cluster
3
C222
0.5
K
24
C215
E2-8
C
S271
2
C127
X111
Brake Fluid Level Switch
[1]
0
[1] Low
3
1
C127
0.5
BG
0.5
B
Z192
A.B.S. Diode
0.5
BY
4
C126
Z104
A.B.S. Pressure Switch Unit
[2]
[3]
[2] Until pressure increases to 120 Bar
[3] Until pressure decreases to 100 Bar
S2016
HJ5
See Ground Distribution
E200
1
C126
1.0
B
S104
See Ground Distribution
E101
0.5
BY
31
C312
Z108
Anti–Lock Brake System ECU

E2 ETM

1995 RANGE ROVER

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F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S252
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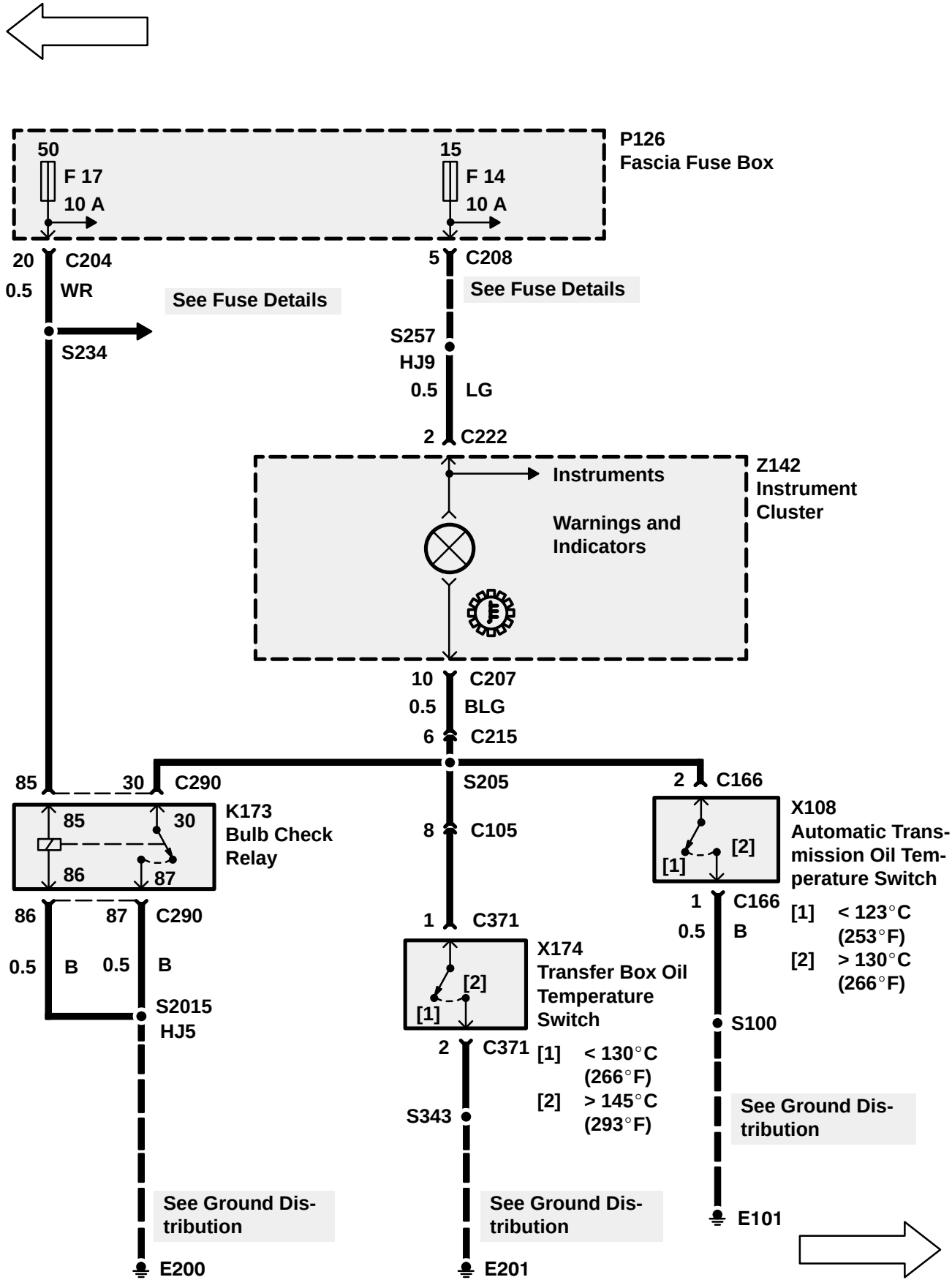
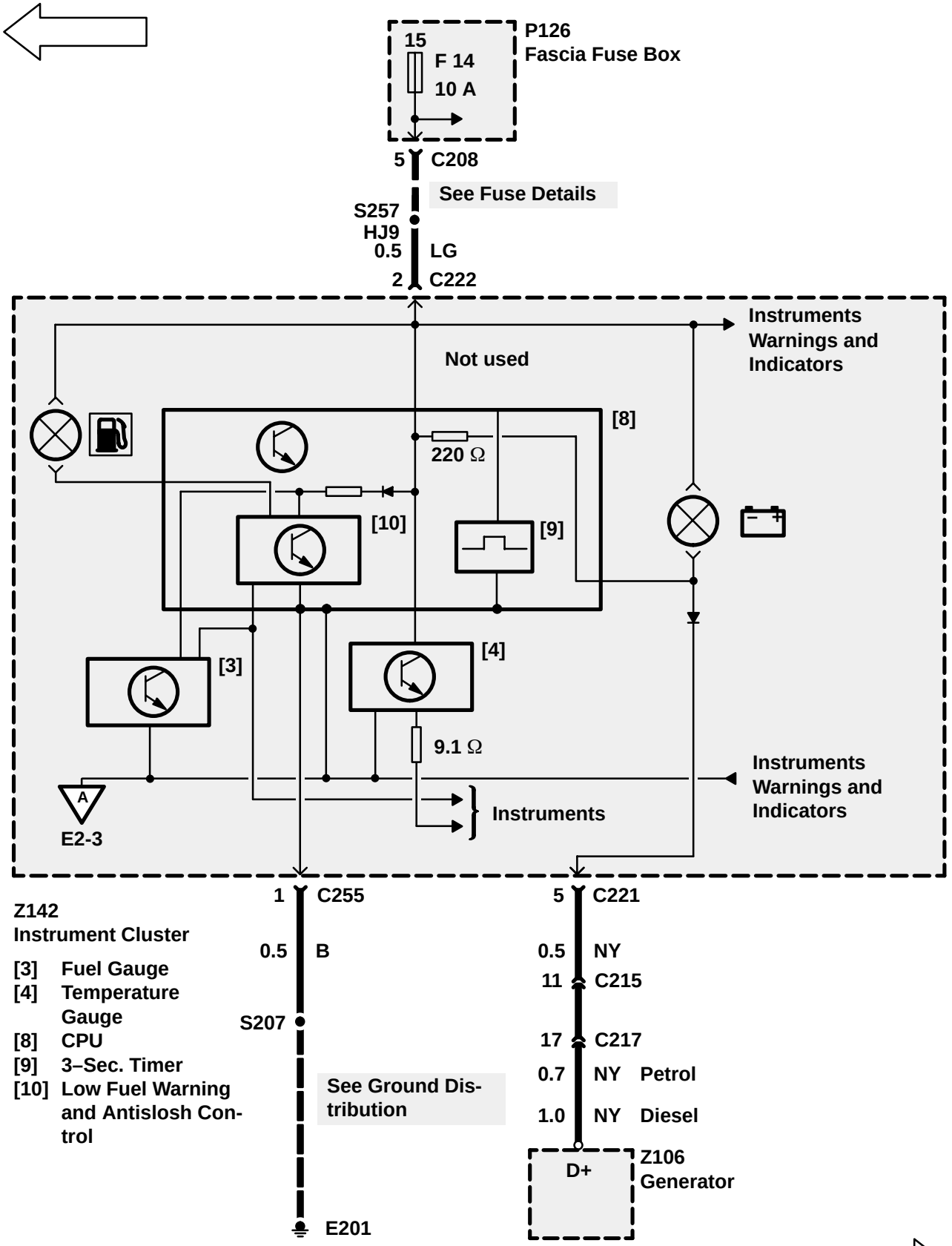
LG
8
C221
Z142
Instrument
Cluster
9
C221
0.5
WR
21
C215
12
C205
Z148
Multi–Function
Unit (MFU)
7
C205
0.5
RW
1
C378
[1]
0
X120
Driver's Seat
Buckle Switch
[1] Buckled
SB
2
C378
0.5
B
S204
HJ10
See Ground Dis-
tribution
E200

E2 ETM

1995 RANGE ROVER

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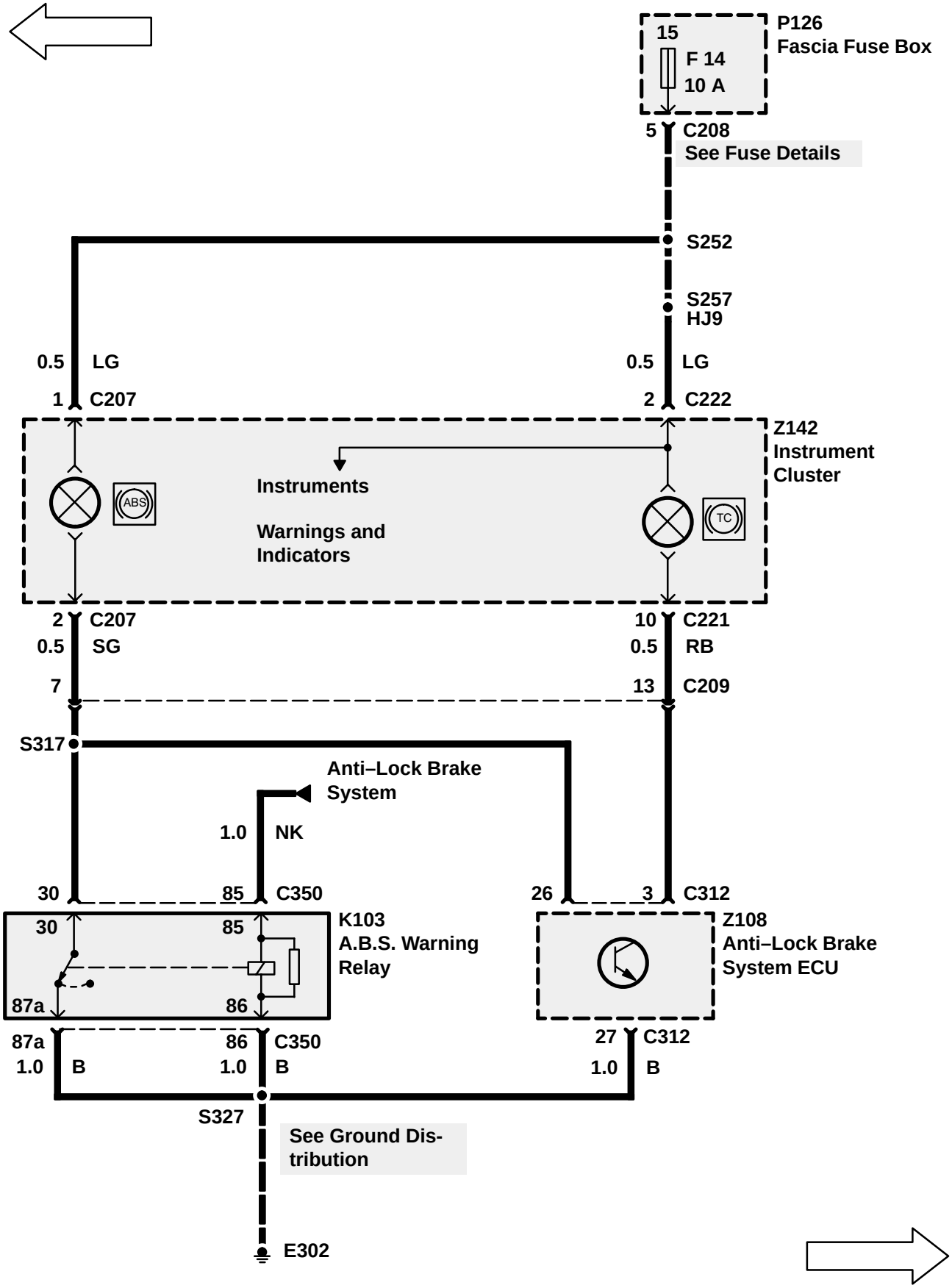
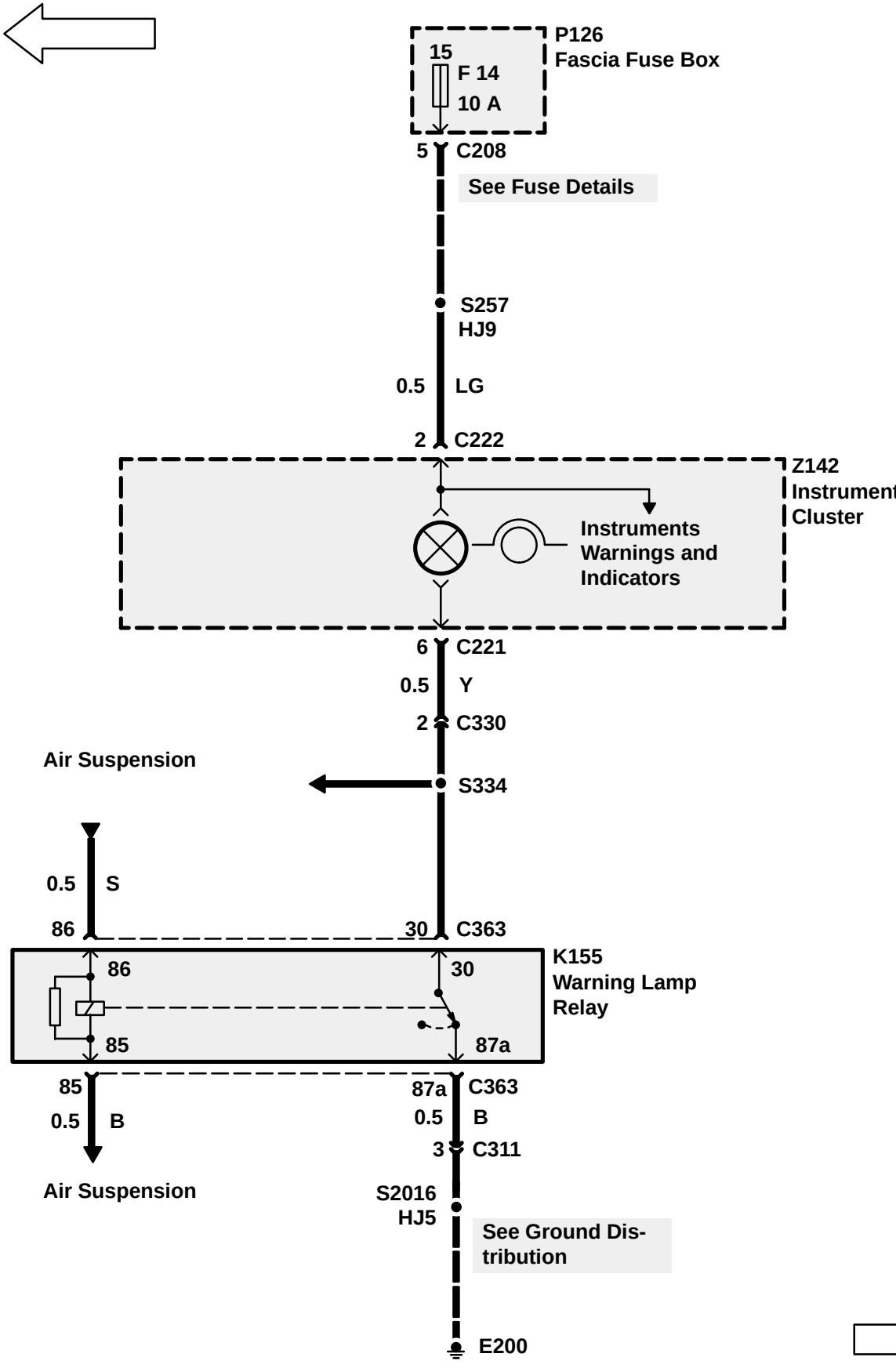
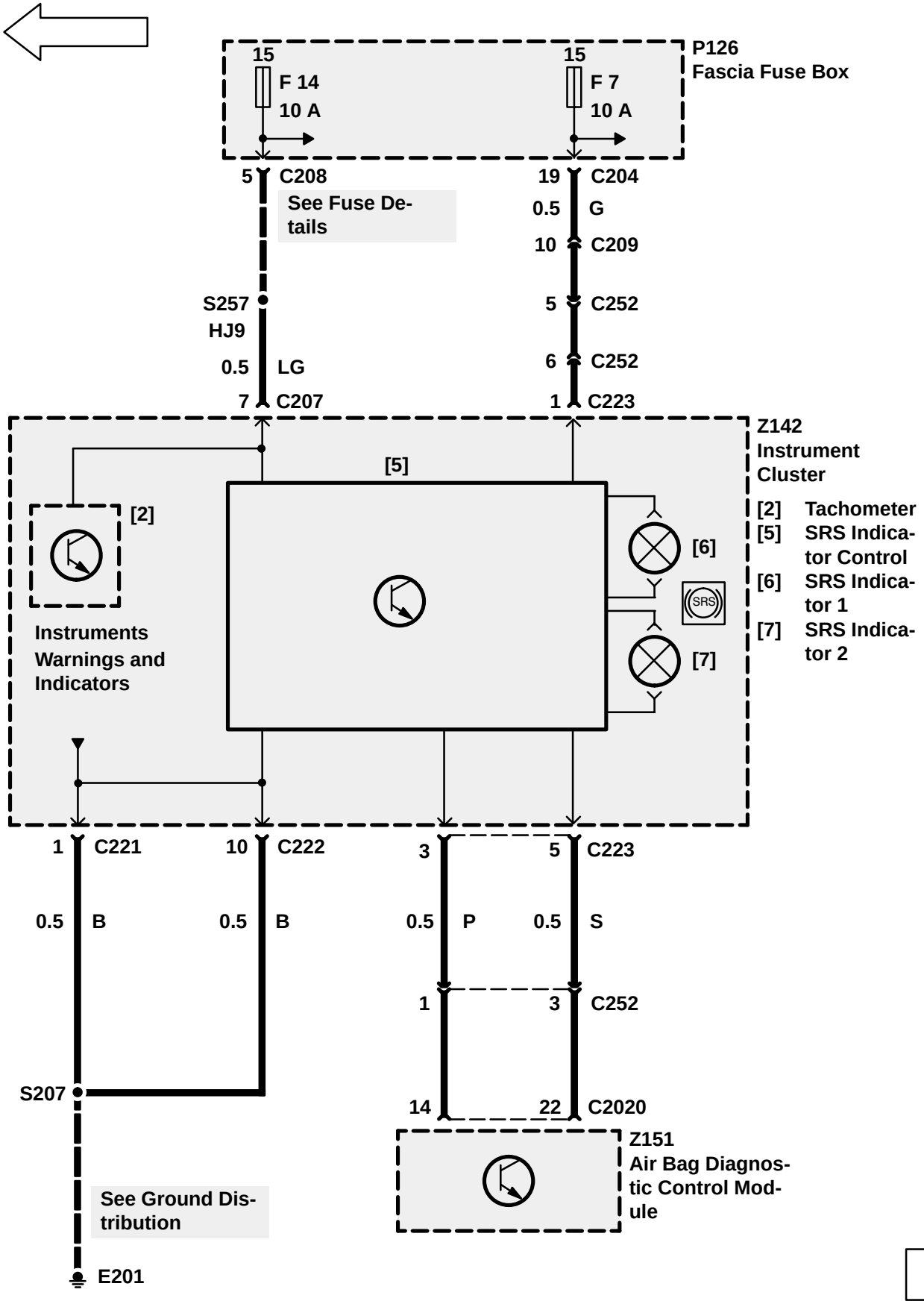
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S257
HJ9
0.5
LG
2
C222
Not used
Instruments
Warnings and
Indicators
[8]
220 Ω
[10]
[9]
[3]
[4]
9.1 Ω
A
E2-3
Instruments
Instruments
Warnings and
Indicators
1
C255
0.5
B
S207
See Ground Distribution
E201
5
C221
0.5
NY
11
C215
17
C217
0.7
NY
Petrol
1.0
NY
Diesel
D+
Z106
Generator
Z142
Instrument Cluster
[3] Fuel Gauge
[4] Temperature Gauge
[8] CPU
[9] 3–Sec. Timer
[10] Low Fuel Warning and Antislosh Control


15
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S252
S257
HJ9
0.5
LG
1
C207
0.5
LG
2
C222
Z142
Instrument
Cluster
Instruments
Warnings and
Indicators
ABS
TC
2
C207
0.5
SG
7
10
C221
0.5
RB
13
C209
S317
Anti–Lock Brake
System
1.0
NK
30
85
C350
26
3
C312
30
85
K103
A.B.S. Warning
Relay
87a
86
Z108
Anti–Lock Brake
System ECU
87a
1.0
B
86
1.0
B
C350
27
C312
1.0
B
S327
See Ground Dis-
tribution
E302


P126
Fascia Fuse Box
15
F 14
10 A
5
C208
See Fuse Details
S257
HJ9
0.5
LG
2
C222
Z142
Instrument
Cluster
Instruments
Warnings and
Indicators
6
C221
0.5
Y
2
C330
Air Suspension
S334
0.5
S
86
30
C363
K155
Warning Lamp
Relay
86
30
85
87a
85
87a
C363
0.5
B
0.5
B
3
C311
Air Suspension
S2016
HJ5
See Ground Dis-
tribution
E200

E2 ETM

1995 RANGE ROVER



TROUBLESHOOTING HINTS

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

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

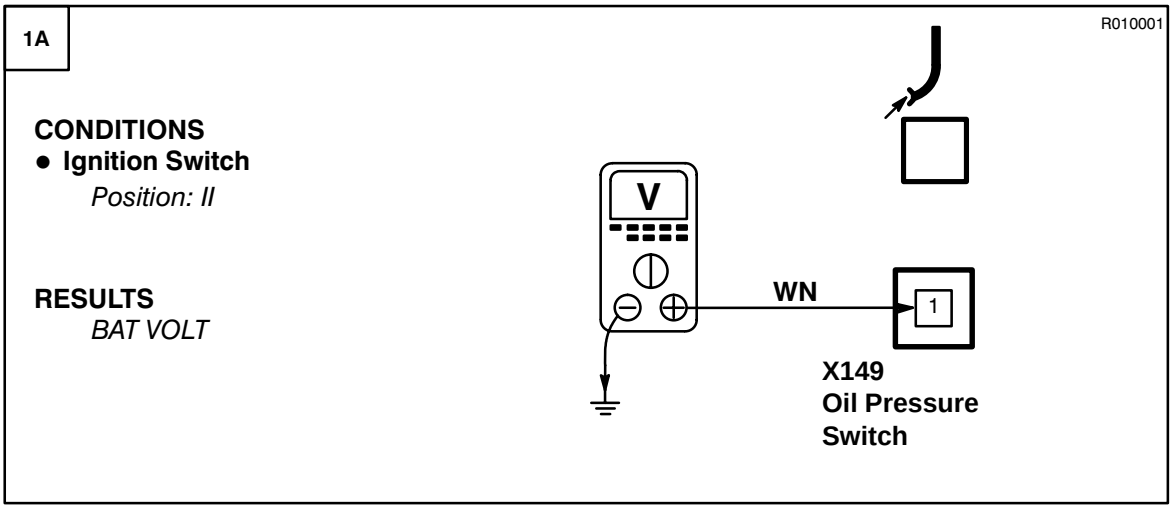
For Australian Vehicles:

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

SYSTEM DIAGNOSIS

17. If the Charge Warning Light does not operate, go to Section B1.
18. If the Oil Pressure Warning Light remains illuminated with the oil pressure OK, do Test A.
19. If the Malfunction Indicator Lamp (Check Engine) does not operate, do Test B.
20. If the Glow Plug Indictor does not operate, do Test C.
21. If the Brake Warning Light does not operate with the brake fluid level low, do Test D.
22. If the Brake Warning Light does not operate with an ABS problem, do Test E.
23. If the Brake Warning Light does not operate with the handbrake applied, do Test F.
24. The Transmission/Transfer Box Oil Temperature Warning Light is illuminated as a bulb test with the Ignition Switch (X134) in position III. If the light does not illuminate, do Test G.
25. If the Transmission/Transfer Box Oil Temperature Warning Light is illuminated with both the Transfer Box Oil Temperature and the Automatic Oil Temperature OK, do Test H.
26. If the Fasten Seat Belt Indicator does not operate with the Ignition on, do Test I.
27. If a warning light exhibits any symptom not mentioned above, check the associated bulb, wires, switches, and components.

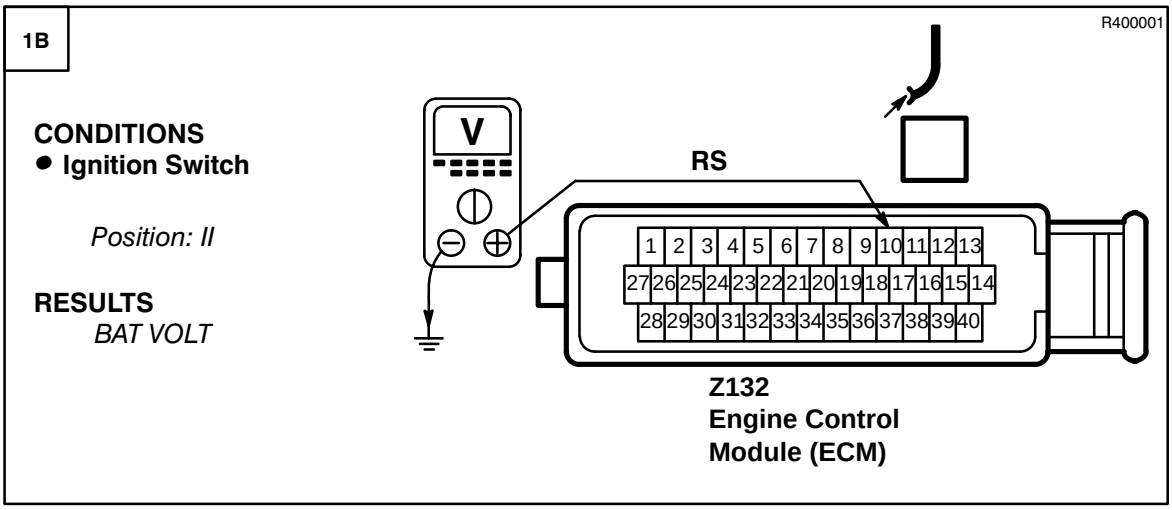
Test A



OK **PROBLEM CAUSE**
- **WN Wire**

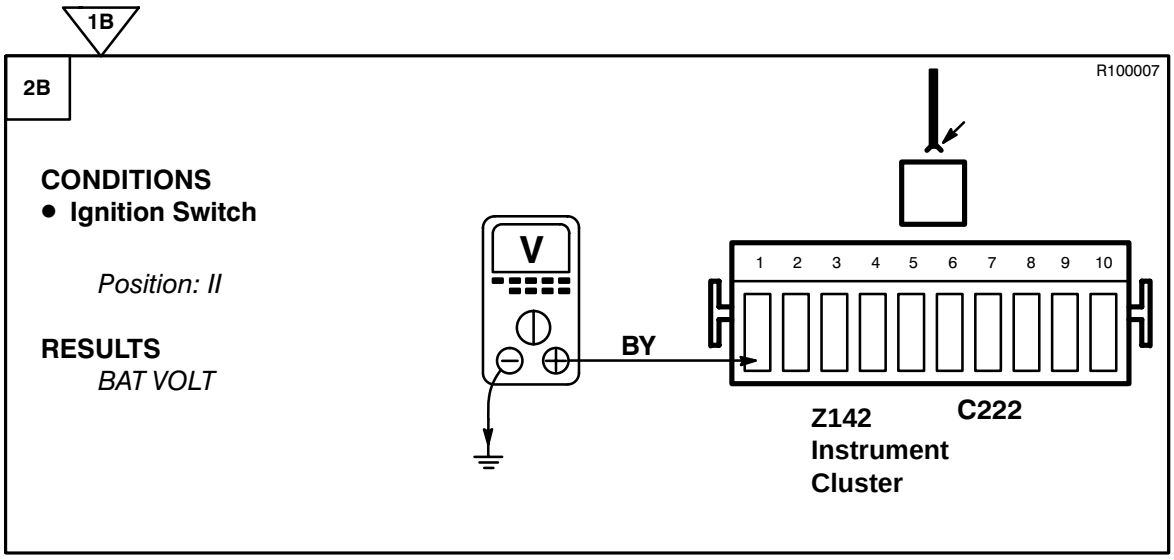
OK **PROBLEM CAUSE**
- **Oil Pressure Switch**

Test B



OK
2B

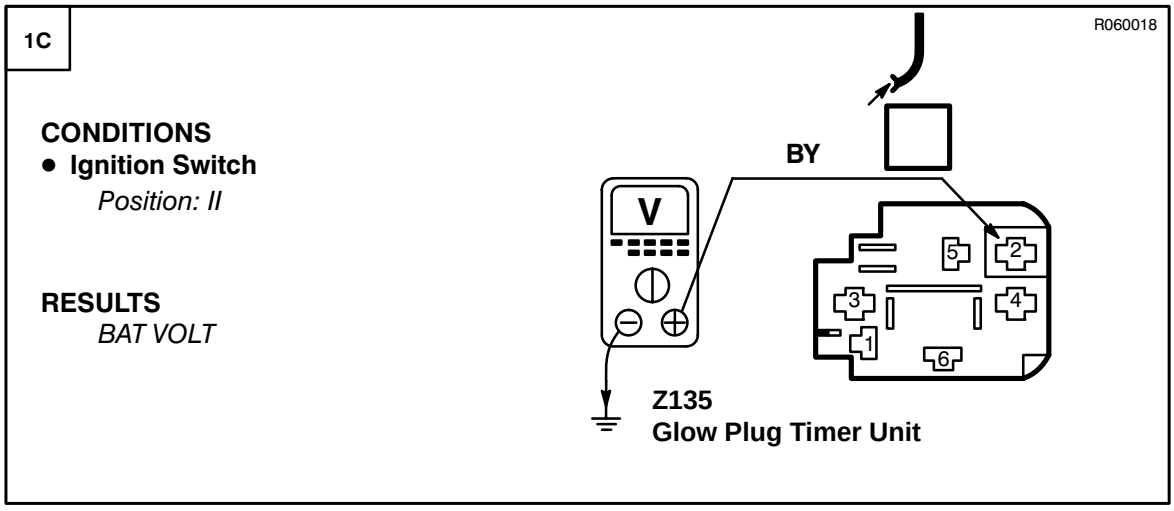
OK **PROBLEM CAUSE**
- **Engine Control Module (ECM)**



OK **PROBLEM CAUSE**
- **Bulb**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **BY Wire**
- **RS Wire**

Test C



OK

2C

OK **PROBLEM CAUSE**
- **Glow Plug Timer Unit**

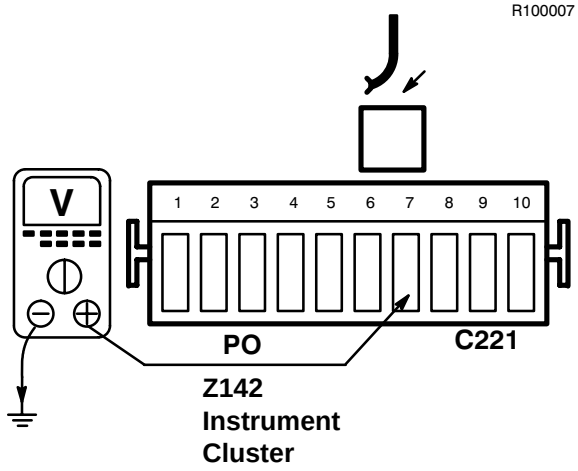
1C

2C

R100007

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **Bulb**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **PO Wire**
- **BY Wire**

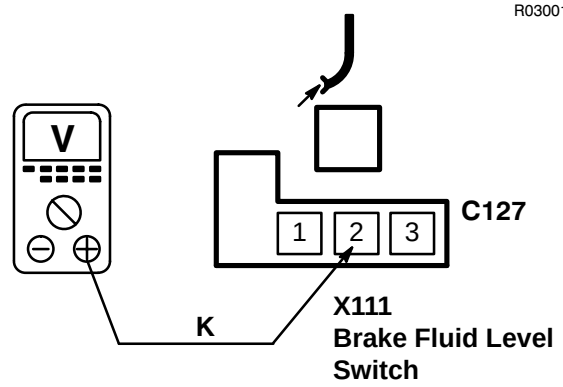
Test D

1D

R030012

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **K Wire**
- **Bulb**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **B Wire**
- **Brake Fluid Level Switch**

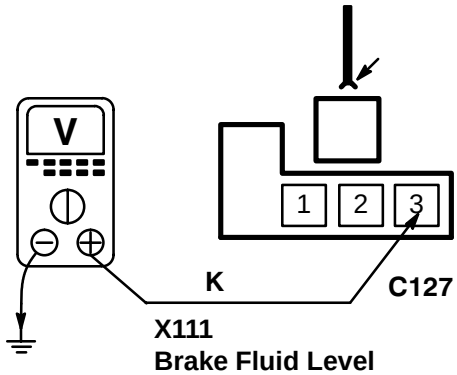
Test E

1E

R030012

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **K Wire**
- **Bulb**
- **Instrument Cluster**
- **Brake Fluid Level Switch**

OK

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

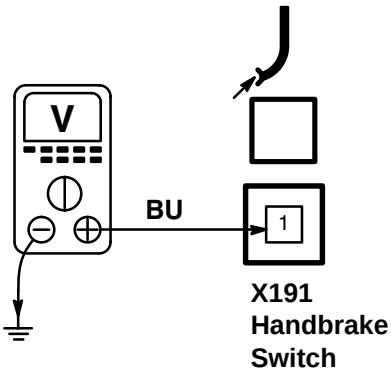
Test F

1F

R010001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

2F

OK

PROBLEM CAUSE
- **Handbrake Switch**

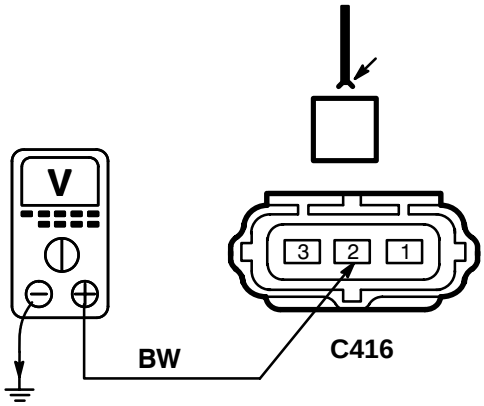
1F

2F

R030003

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **BY Wire**
- **K, BW Wire**
- **Right Rear Inboard Brake Pad**

OK **PROBLEM CAUSE**
- **BW Wire**
- **BK, BU Wire**
- **Handbrake Diode**
- **Right Front Inboard Brake Pad**

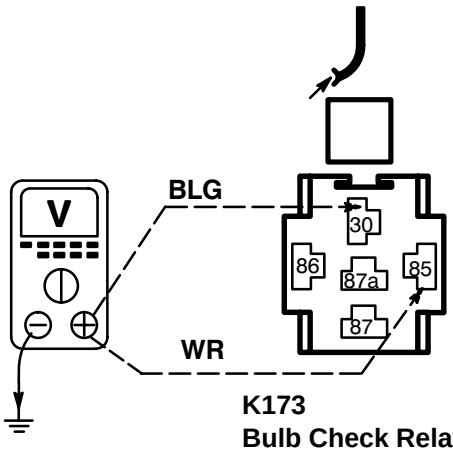
Test G

1G

R050001

CONDITIONS
- **Ignition Switch**
  Position: III

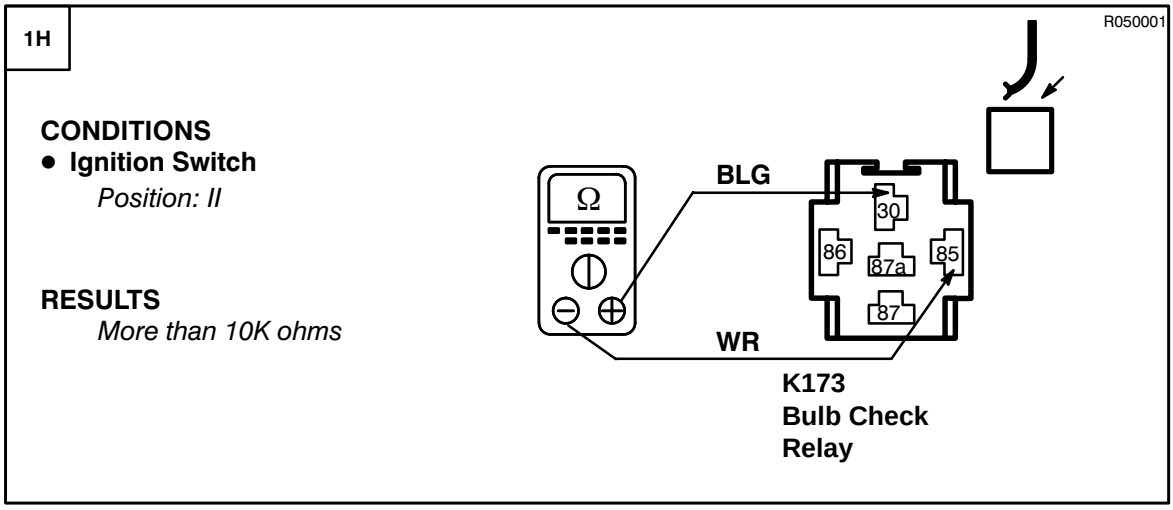
RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **BLG Wire**
- **WR Wire**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **B Wire**
- **Bulb Check Relay**

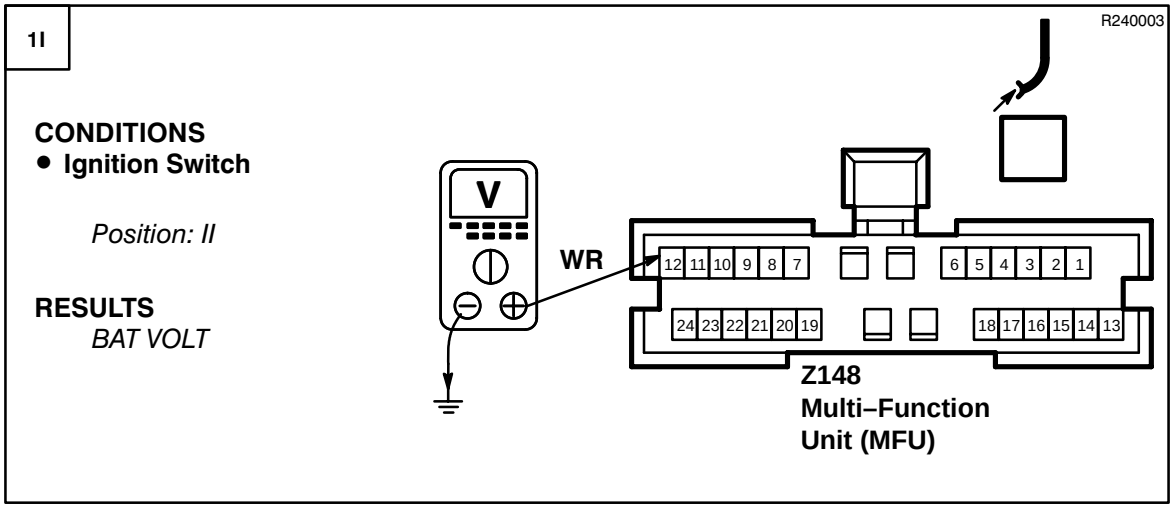
Test H



OK **PROBLEM CAUSE**
- **Bulb Check Relay**

OK **PROBLEM CAUSE**
- **BLG Wire**
- **Transfer Box Oil Temperature Switch**
- **Automatic Transmission Oil Temperature Switch**

Test I

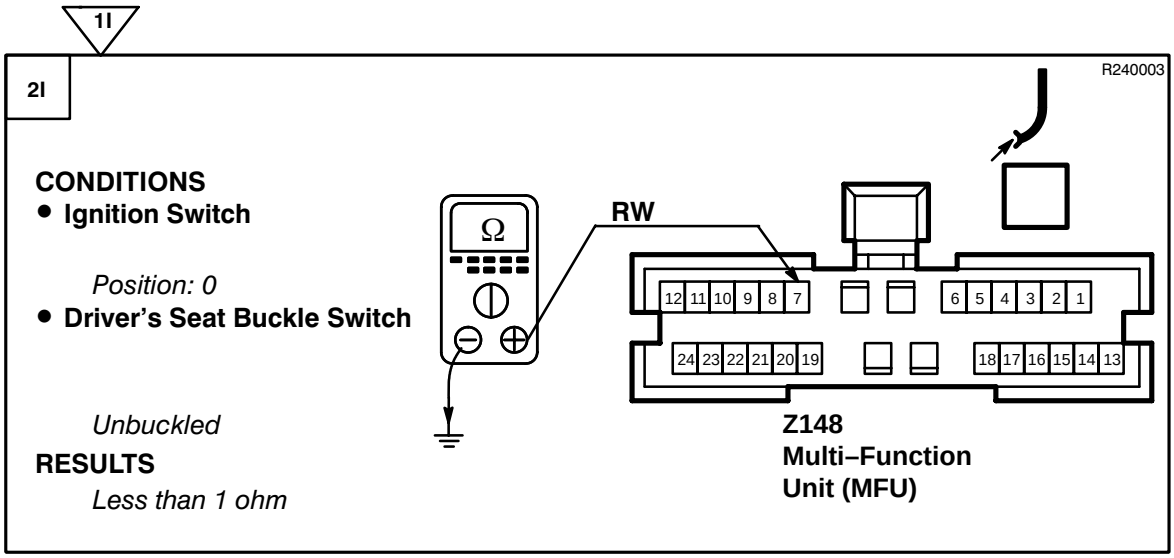


OK **PROBLEM CAUSE**
- **WR Wire**
- **LG Wire**
- **Instrument Cluster**

OK

2I

E2 ETM



OK

PROBLEM CAUSE
- **RW Wire**
- **B Wire**
- **Driver's Seat Buckle Switch**

OK

PROBLEM CAUSE
- **Multi–Function Unit (MFU)**

CIRCUIT OPERATION

Charge Warning Light

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

ABS Warning Light

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

Brake Warning Light

The brake warning light receives battery voltage with the Ignition Switch (X134) in position II. It is grounded by the Brake Fluid Level Switch (X111) when the brake fluid level is low. It may also be grounded through the Right Front and Right Rear Inboard Brake Pads (B129, B155), and the Handbrake Diode (Z197) when the Handbrake Switch (X191) is closed. The warning light is also grounded by the Anti–Lock Brake System ECU (Z108) or by the ABS Pressure Switch Unit (Z104) in the event of an ABS system problem.When the Right Front or Right Rear Inboard Brake Pad (B129, B135) is in need of replacement, the brake warning light is grounded through the Right Front or Right Rear Inboard Brake Pad (B129, B135). 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). The Bulb Check Relay (K173) will illuminate the warning light when the vehicle is first started to test the bulb.

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.

Service Reminder Indicator

The Service Reminder Indicator receives battery voltage with the Ignition Switch (X134) in position II. The Service Reminder Unit (Z126) grounds the Service Reminder Indicator when the vehicle requires service. The Service Reminder Indicator is also grounded by a 3 second timer as a bulb check.

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 Unit (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. The Low Fuel Warning Indicator is grounded by a 3 second timer as a bulb check.

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.

ETC Warning Light

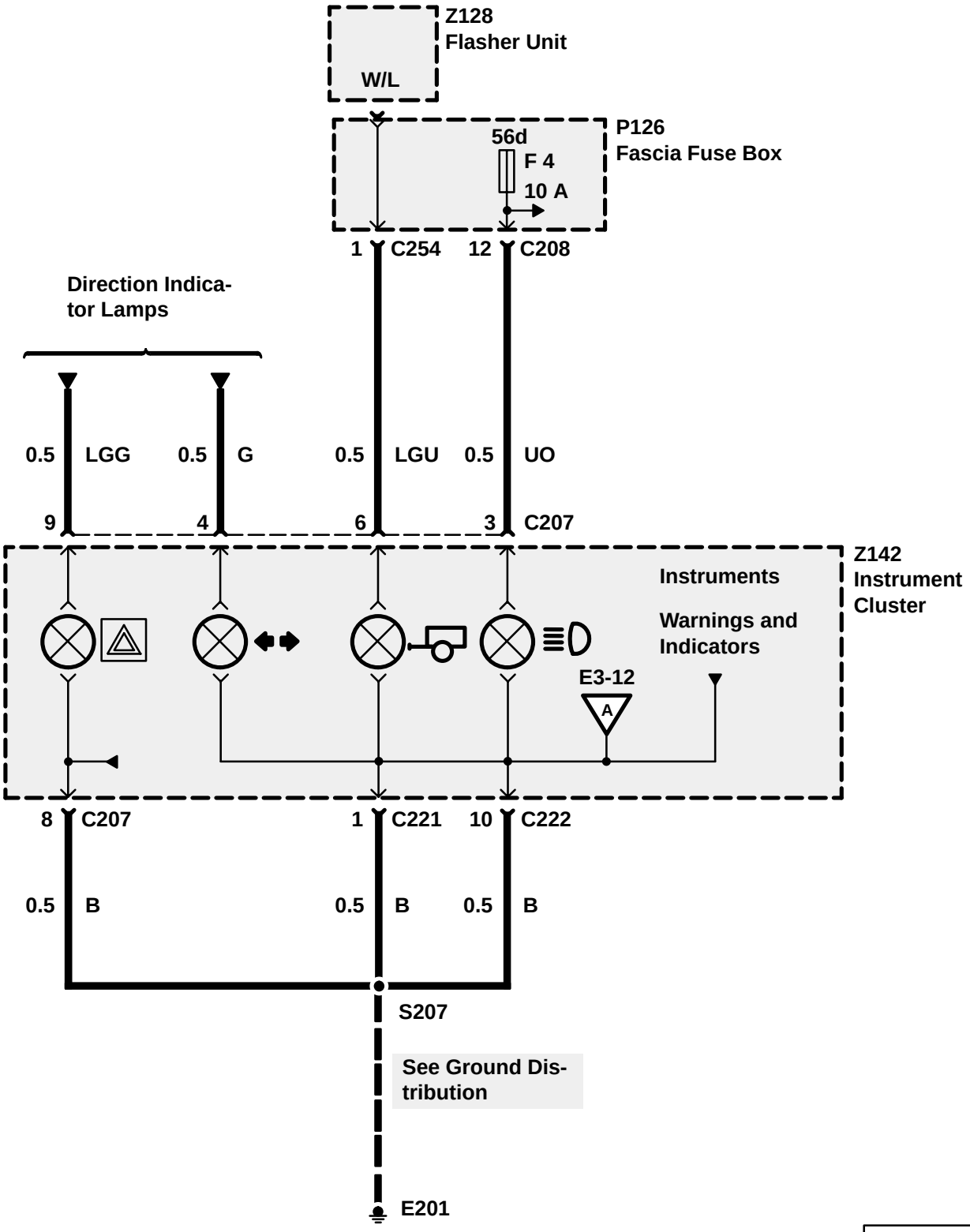
The ETC warning light will be on for up to 60 seconds while the system is active. After 60 seconds of ETC operation, the ETC warning light will begin to flash to inform the driver that the system has been shut down to allow the brakes to cool. If the ETC warning light stays on continuously for more than 60 seconds, a fault in the system is indicated.

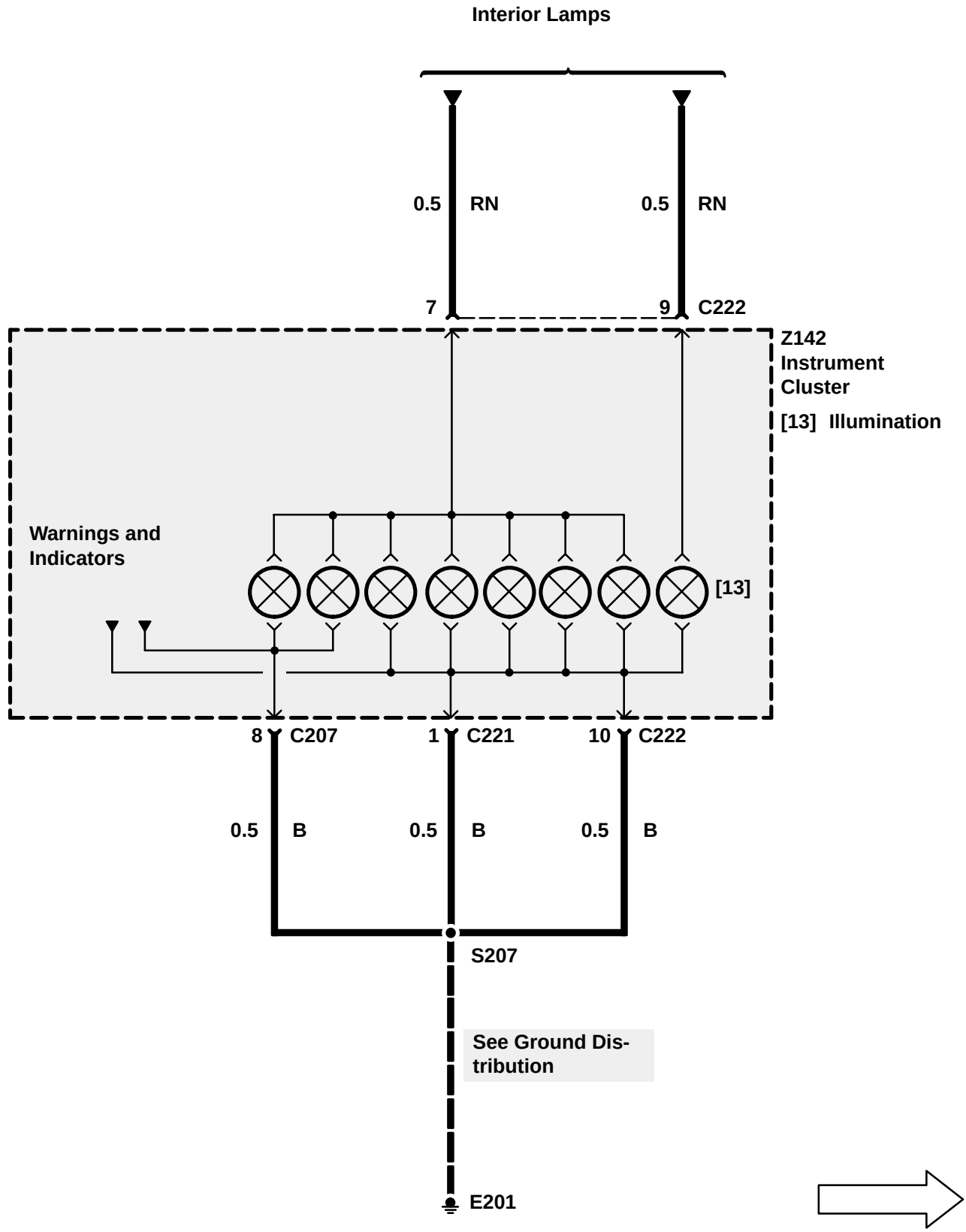
Air Suspension Indicator

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

Fasten Seat Belt Indicator

The Fasten Seat Belt Indicator receives battery voltage with the Ignition Switch (X134) in position II. The indicator is also grounded through the Multifunction 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.


Z128
Flasher Unit
W/L
P126
Fascia Fuse Box
56d
F 4
10 A
1
C254
12
C208
Direction Indicator Lamps
0.5
LGG
0.5
G
0.5
LGU
0.5
UO
9
4
6
3
C207
Z142
Instrument Cluster
Instruments
Warnings and Indicators
E3-12
A
8
C207
1
C221
10
C222
0.5
B
0.5
B
0.5
B
S207
See Ground Distribution
E201


Interior Lamps
0.5 RN
0.5 RN
7
9 C222
Z142
Instrument
Cluster
[13] Illumination
Warnings and
Indicators
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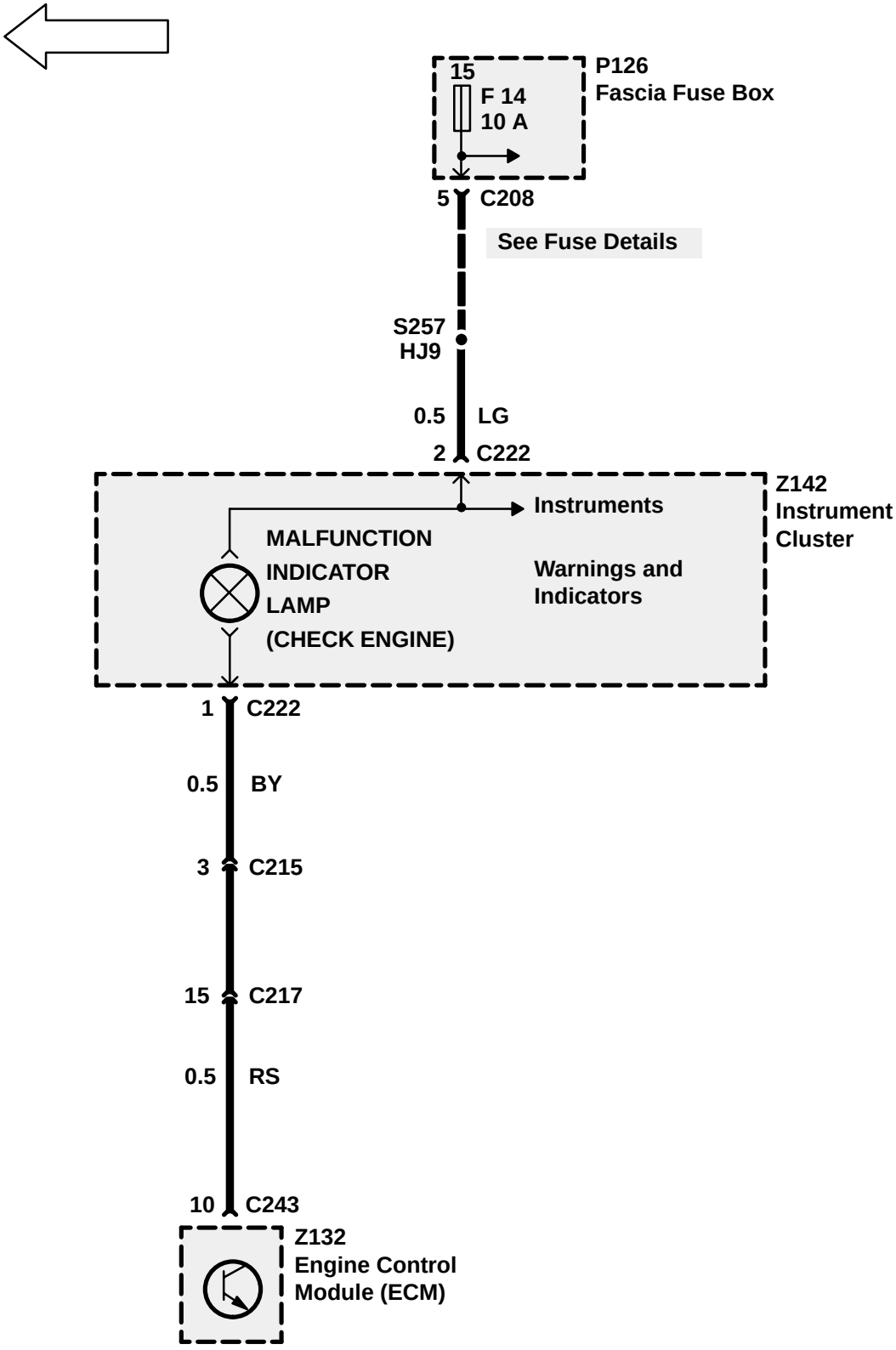
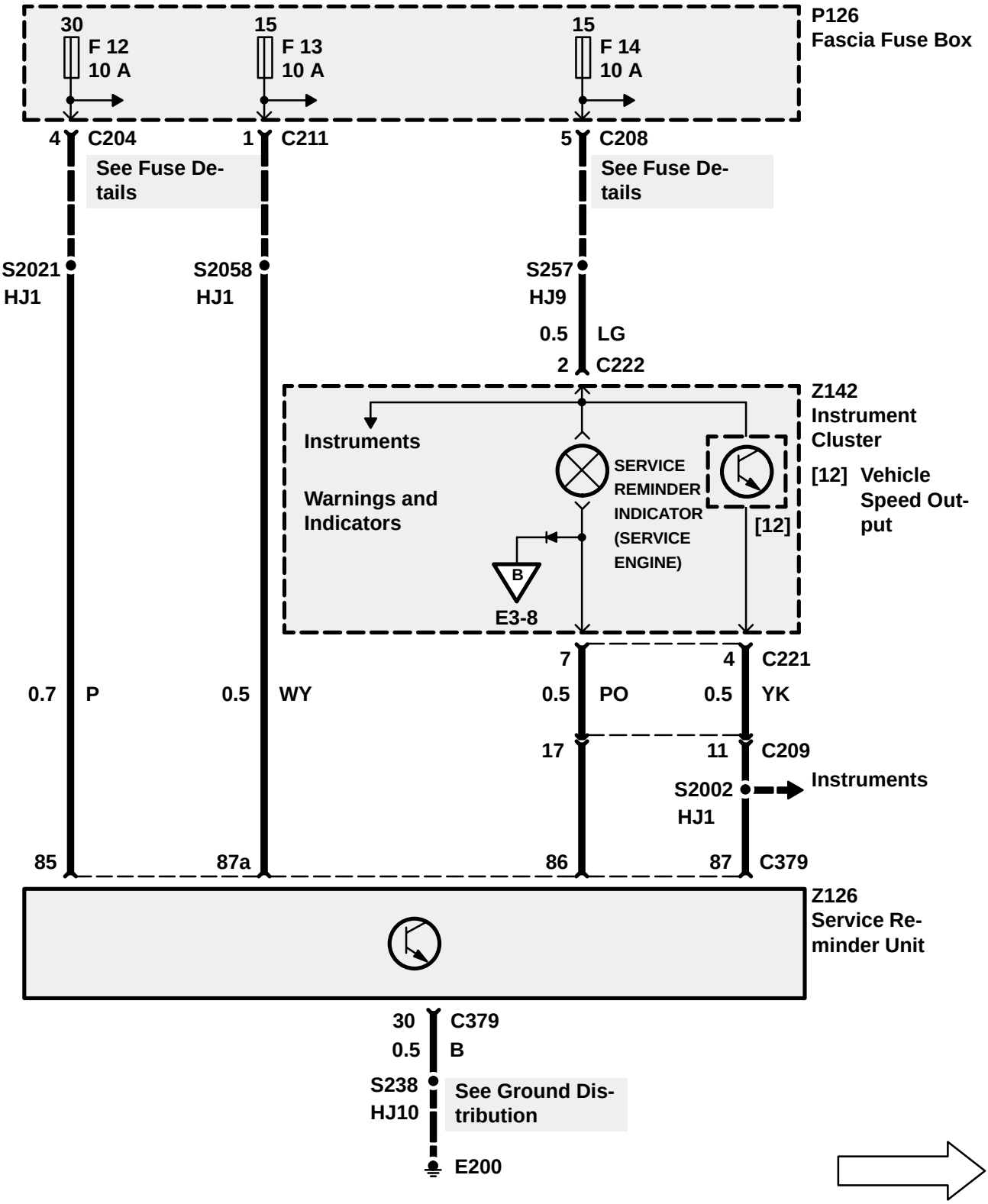
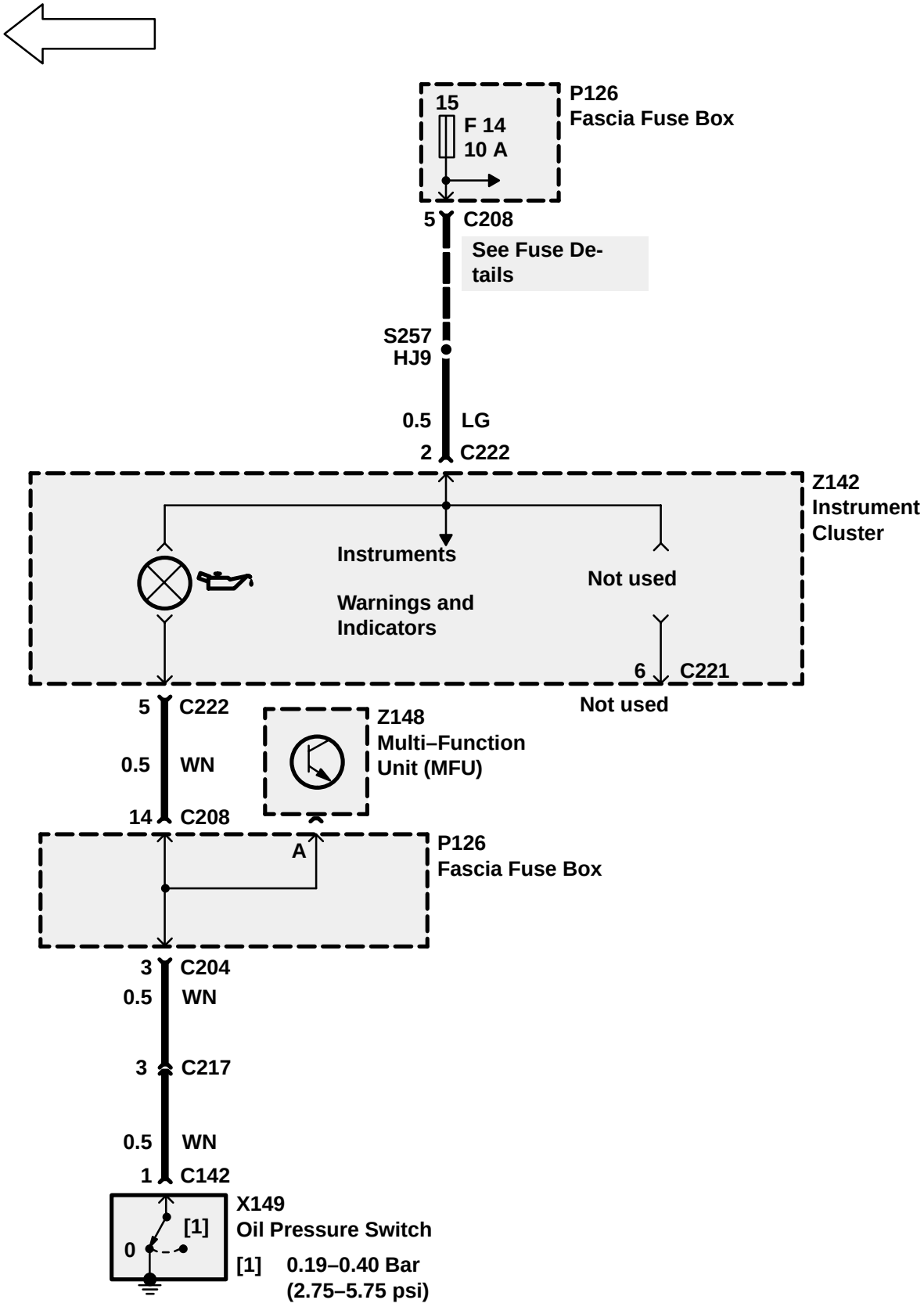
8 C207
1 C221
10 C222
0.5 B
0.5 B
0.5 B
S207
See Ground Dis-
tribution
E201

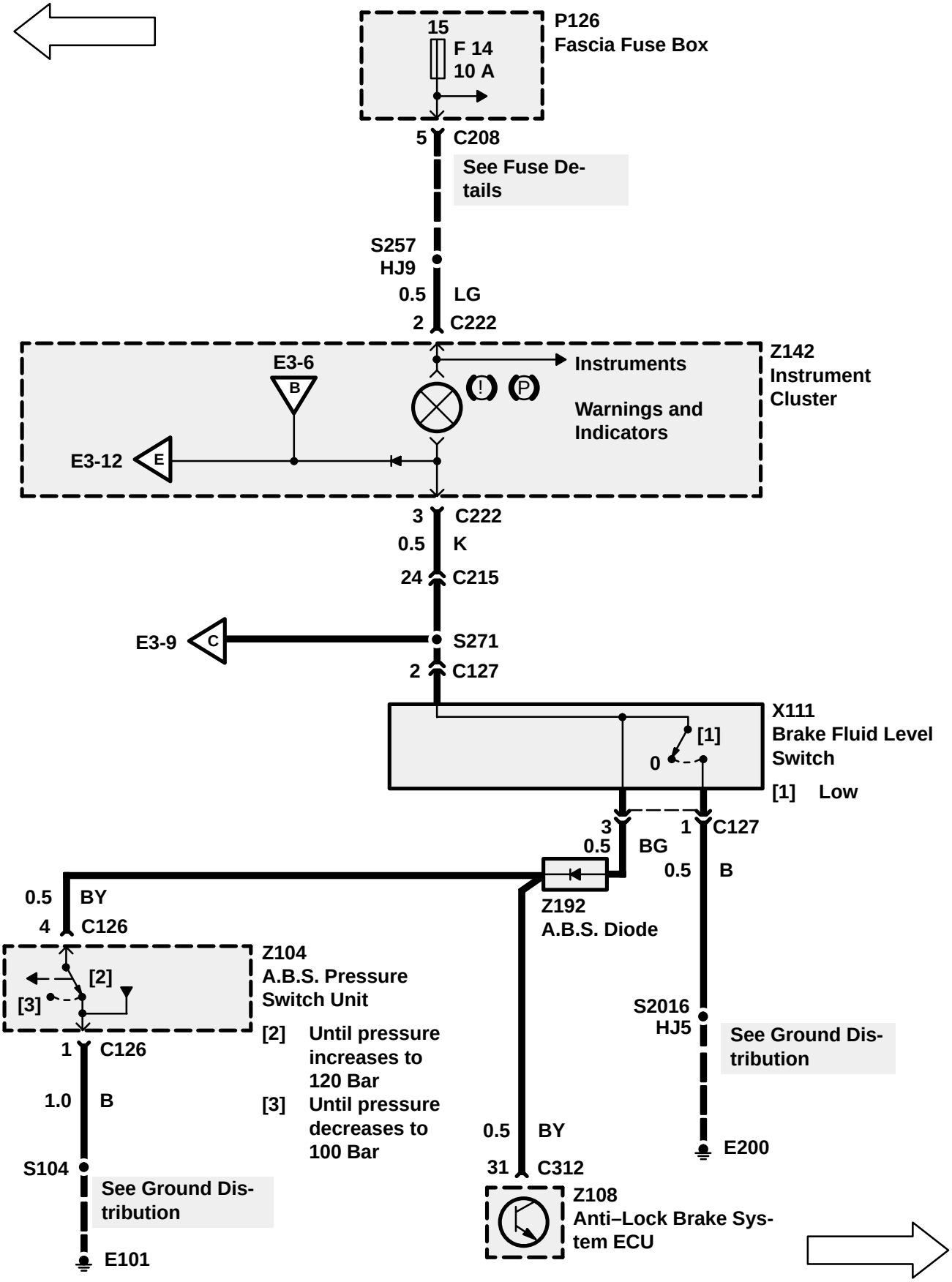

15
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S257
HJ9
0.5
LG
2
C222
Z142
Instrument
Cluster
Instruments
MALFUNCTION
INDICATOR
LAMP
(CHECK ENGINE)
Warnings and
Indicators
1
C222
0.5
BY
3
C215
15
C217
0.5
RS
10
C243
Z132
Engine Control
Module (ECM)

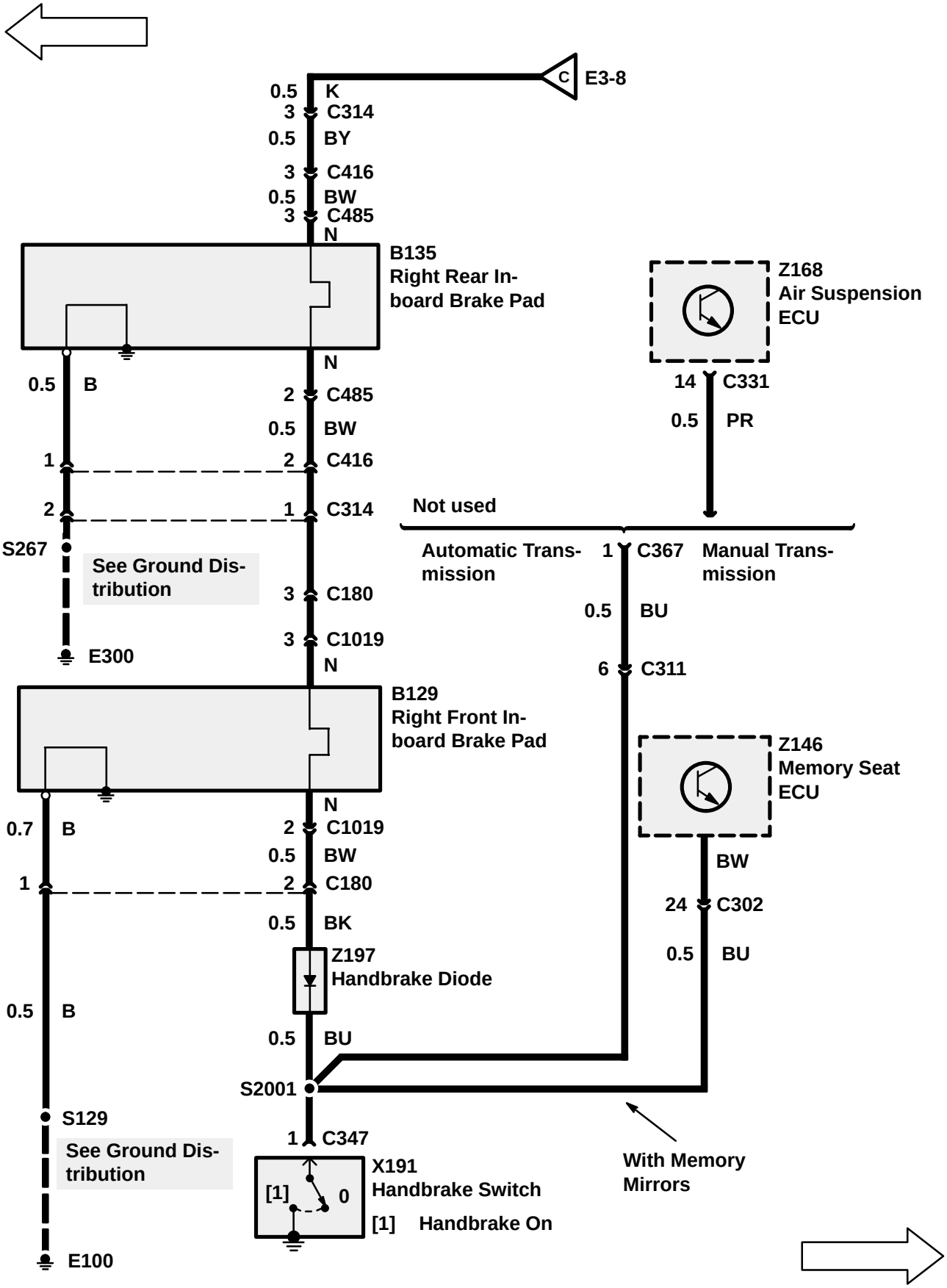

30
F 12
10 A
15
F 13
10 A
15
F 14
10 A
P126
Fascia Fuse Box
4 C204
See Fuse Details
1 C211
5 C208
See Fuse Details
S2021
HJ1
S2058
HJ1
S257
HJ9
0.5 LG
2 C222
Z142
Instrument Cluster
Instruments
Warnings and Indicators
SERVICE REMINDER INDICATOR (SERVICE ENGINE)
[12]
[12] Vehicle Speed Output
B
E3-8
7
4 C221
0.7 P
0.5 WY
0.5 PO
0.5 YK
17
11 C209
S2002
HJ1
Instruments
85
87a
86
87 C379
Z126
Service Reminder Unit
30 C379
0.5 B
S238
HJ10
See Ground Distribution
E200

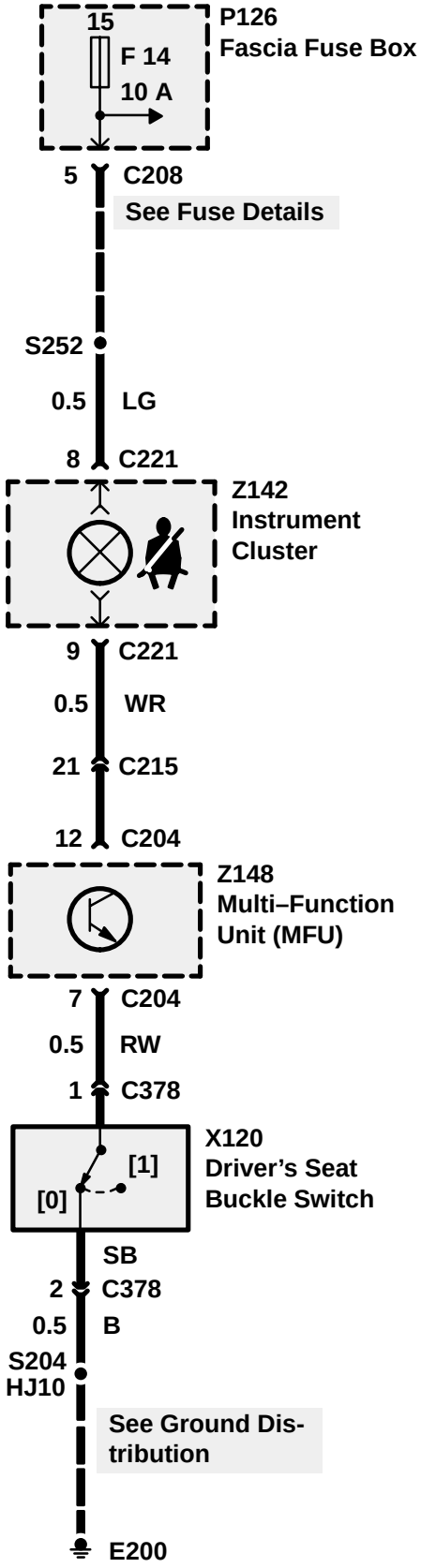

15
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S257
HJ9
0.5
LG
2
C222
Z142
Instrument Cluster
Instruments
Warnings and Indicators
Not used
6
C221
Not used
5
C222
0.5
WN
14
C208
Z148
Multi–Function Unit (MFU)
A
P126
Fascia Fuse Box
3
C204
0.5
WN
3
C217
0.5
WN
1
C142
X149
Oil Pressure Switch
[1]
0
[1] 0.19–0.40 Bar
(2.75–5.75 psi)

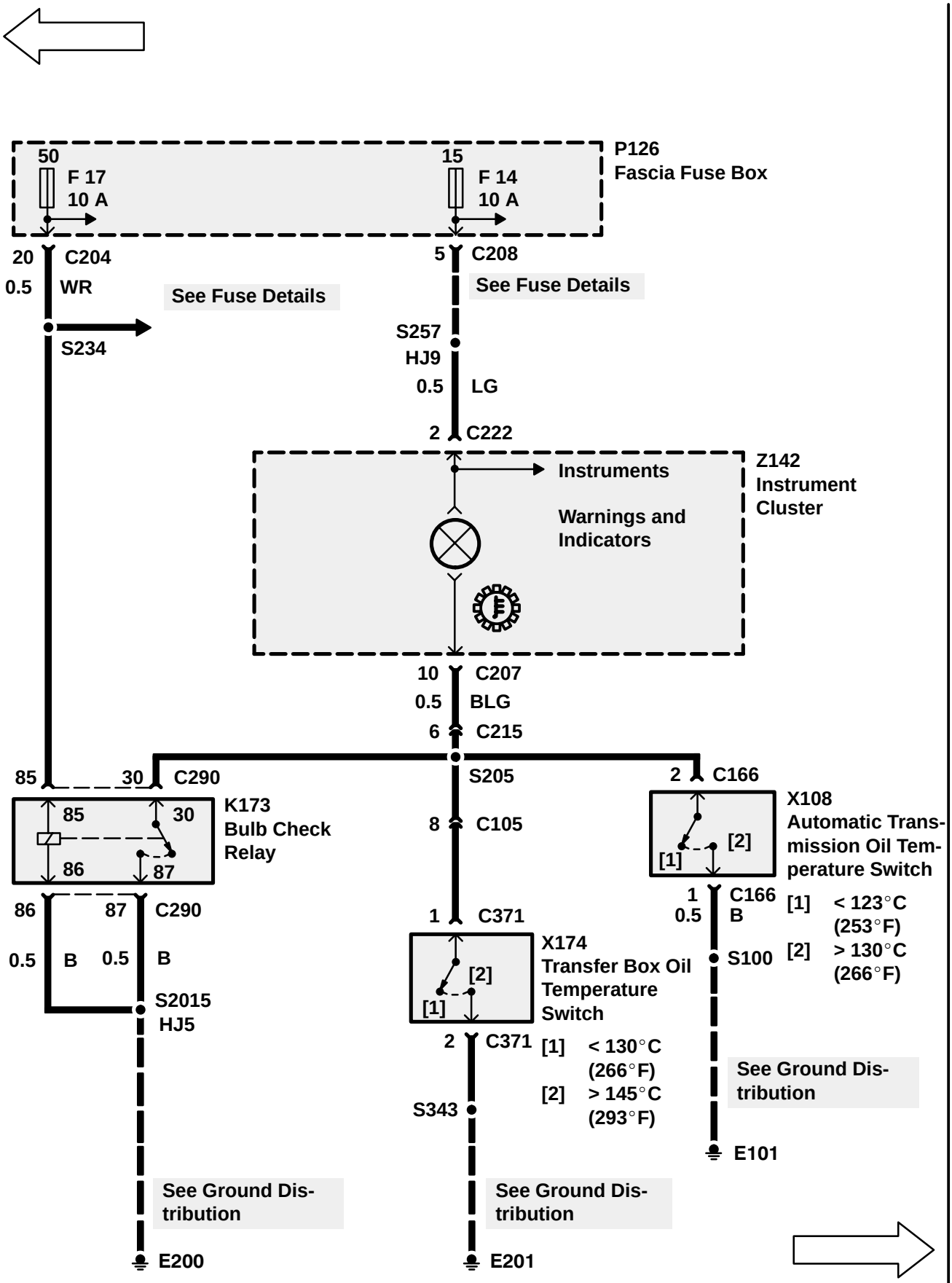
E3 ETM

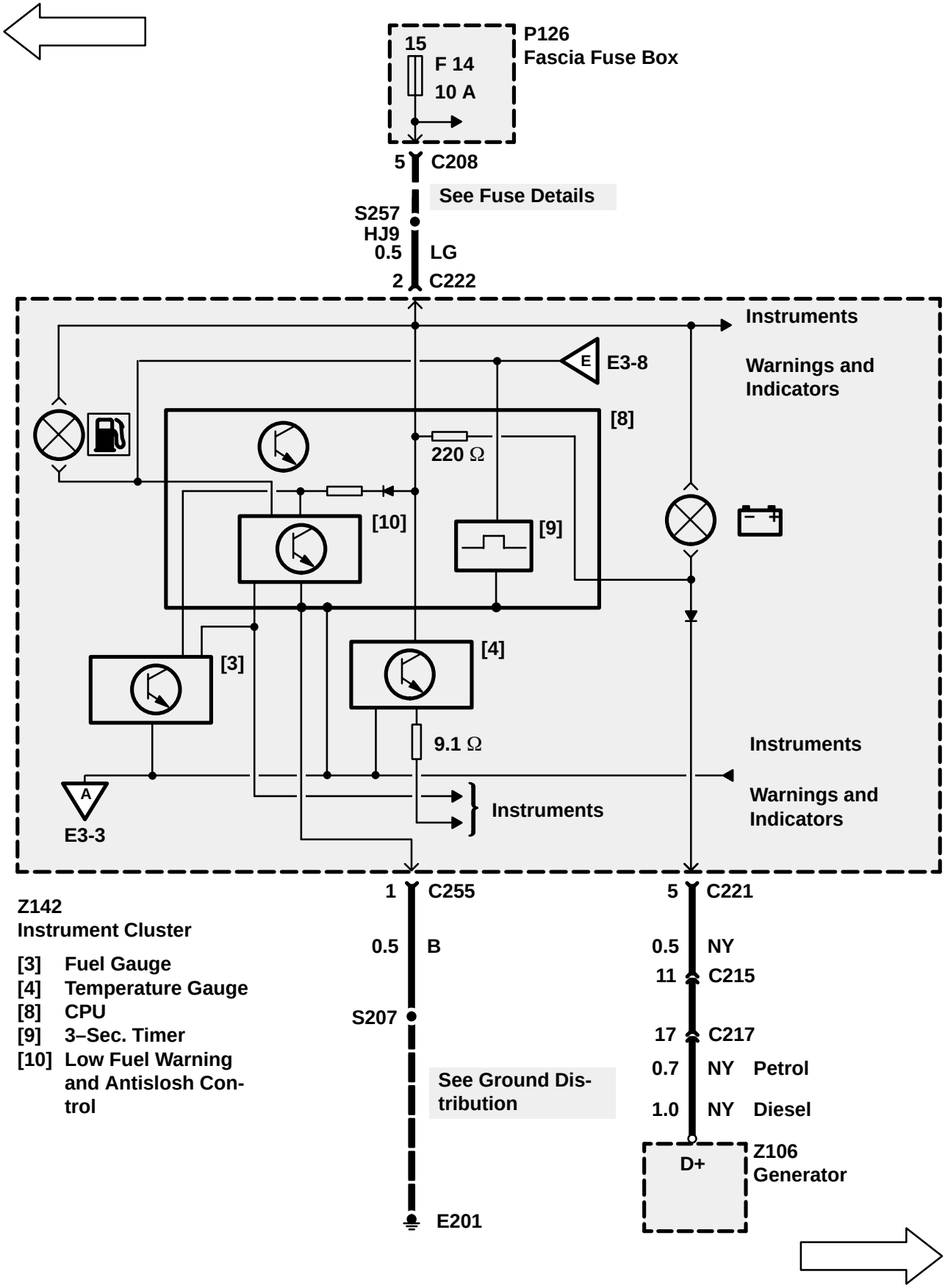
1995 RANGE ROVER




C
E3-8
0.5 K
3 C314
0.5 BY
3 C416
0.5 BW
3 C485
N
B135
Right Rear In-board Brake Pad
N
0.5 B
2 C485
0.5 BW
1
2 C416
2
1 C314
S267
See Ground Dis-tribution
3 C180
3 C1019
N
E300
B129
Right Front In-board Brake Pad
N
0.7 B
2 C1019
0.5 BW
1
2 C180
0.5 BK
Z197
Handbrake Diode
0.5 B
0.5 BU
S2001
S129
See Ground Dis-tribution
1 C347
E100
X191
Handbrake Switch
[1]
0
[1] Handbrake On
Z168
Air Suspension ECU
14 C331
0.5 PR
Not used
Automatic Trans-mission
1 C367
Manual Trans-mission
0.5 BU
6 C311
Z146
Memory Seat ECU
BW
24 C302
0.5 BU
With Memory Mirrors

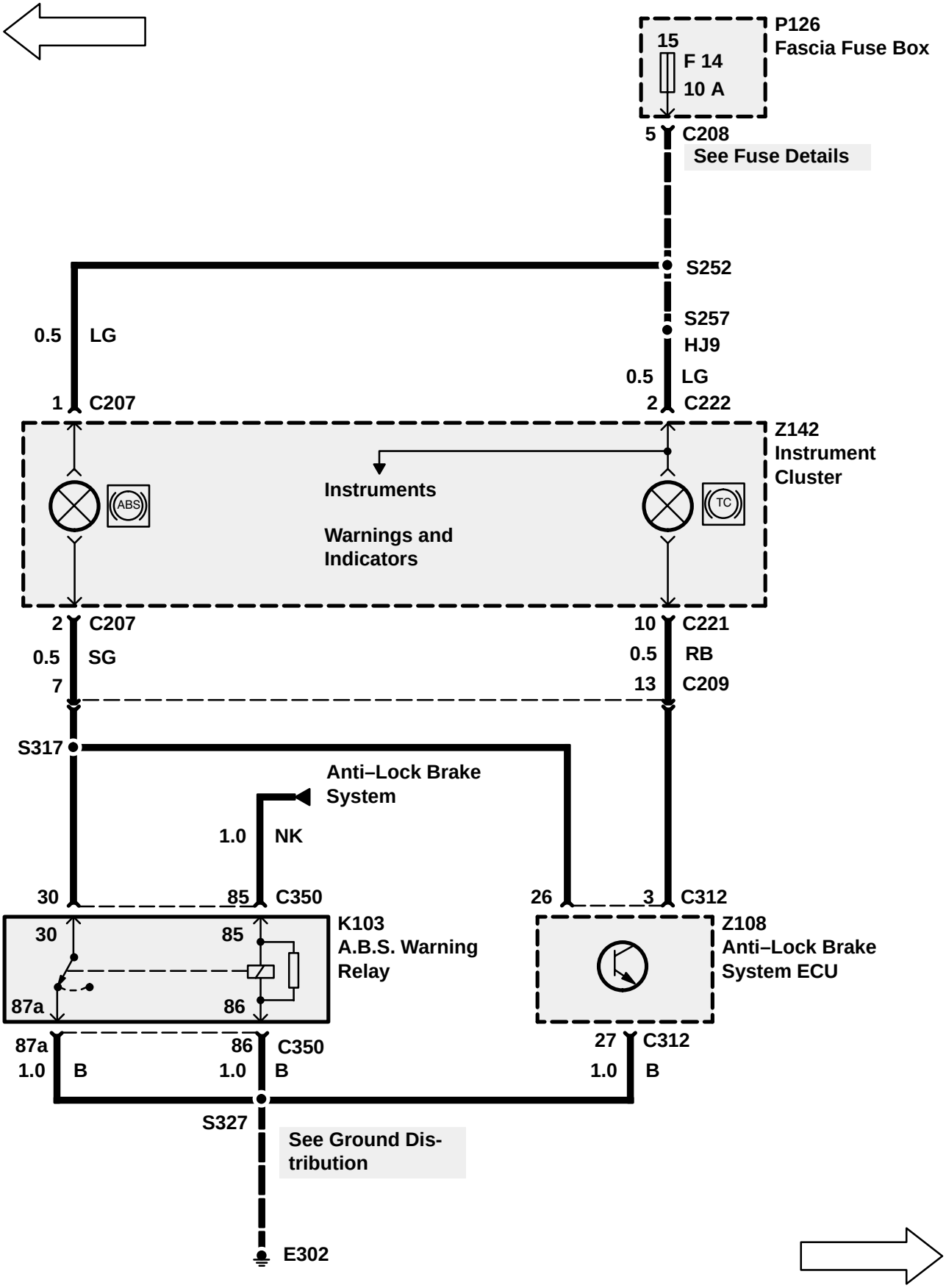

15
F 14
10 A
P126
Fascia Fuse Box
5
C208
See Fuse Details
S252
0.5
LG
8
C221
Z142
Instrument
Cluster
9
C221
0.5
WR
21
C215
12
C204
Z148
Multi–Function
Unit (MFU)
7
C204
0.5
RW
1
C378
[1]
[0]
X120
Driver's Seat
Buckle Switch
SB
2
C378
0.5
B
S204
HJ10
See Ground Dis-
tribution
E200


50
F 17
10 A
15
F 14
10 A
P126
Fascia Fuse Box
20
C204
0.5
WR
See Fuse Details
S234
5
C208
See Fuse Details
S257
HJ9
0.5
LG
2
C222
Instruments
Warnings and
Indicators
Z142
Instrument
Cluster
10
C207
0.5
BLG
6
C215
85
30
C290
K173
Bulb Check
Relay
86
87
C290
0.5
B
0.5
B
S2015
HJ5
See Ground Dis-
tribution
E200
S205
8
C105
1
C371
X174
Transfer Box Oil
Temperature
Switch
[1]
[2]
2
C371
[1] < 130°C
(266°F)
[2] > 145°C
(293°F)
S343
See Ground Dis-
tribution
E201
2
C166
X108
Automatic Trans-
mission Oil Tem-
perature Switch
[1] < 123°C
(253°F)
[2] > 130°C
(266°F)
1
C166
B
0.5
S100
See Ground Dis-
tribution
E101



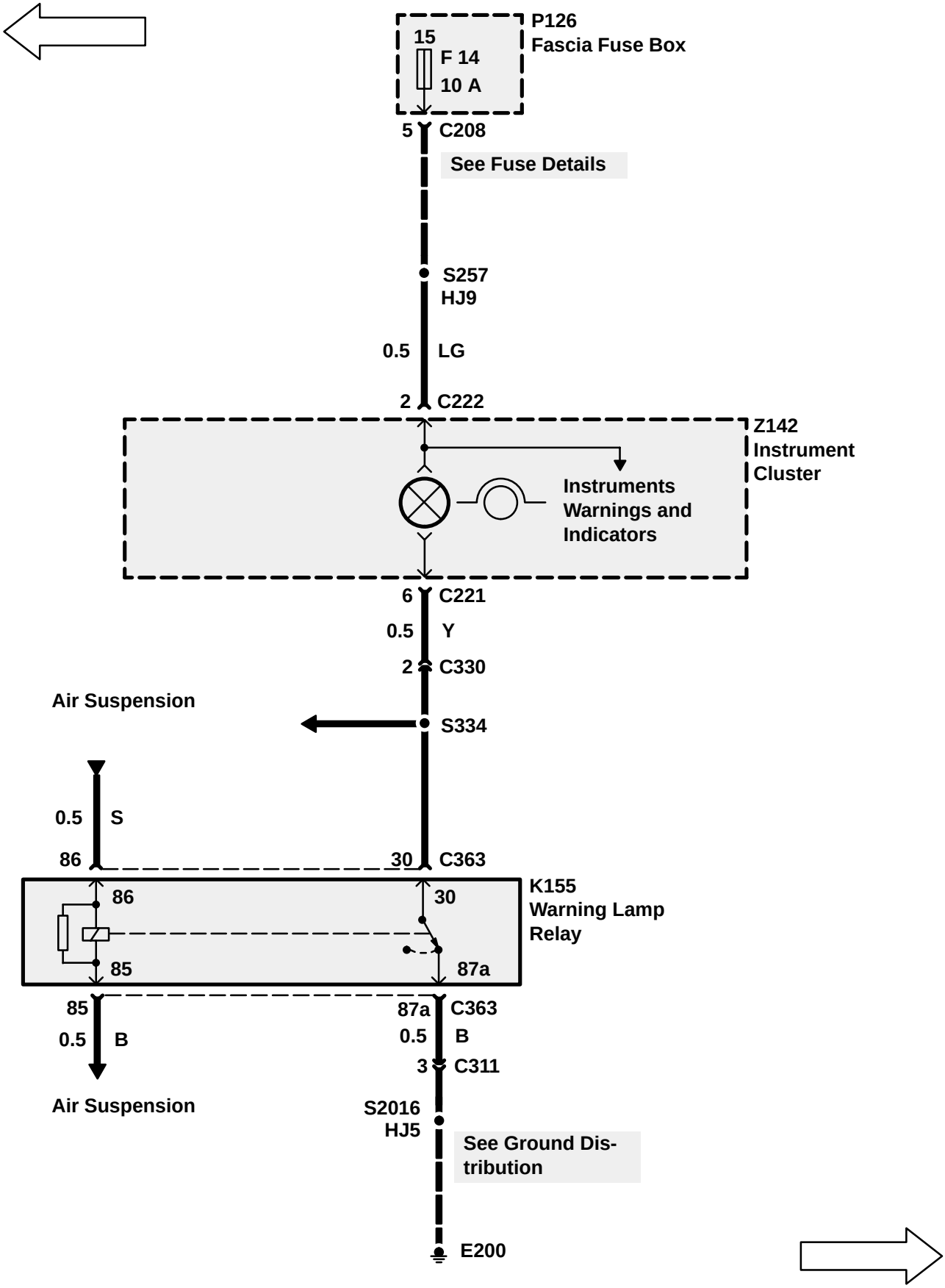
Z142
Instrument Cluster

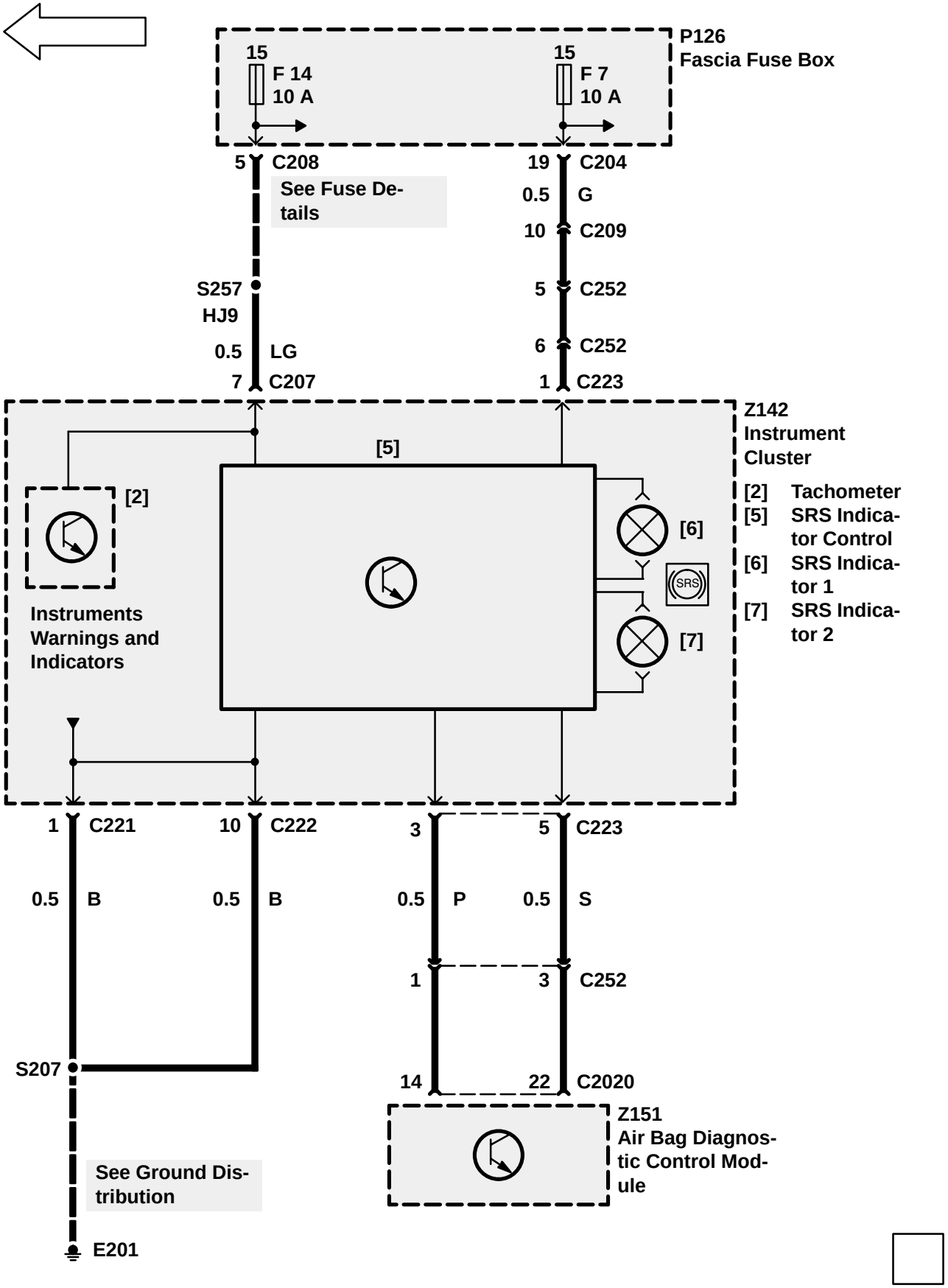
[3] Fuel Gauge
[4] Temperature Gauge
[8] CPU
[9] 3–Sec. Timer
[10] Low Fuel Warning and Antislosh Control


P126
Fascia Fuse Box
15
F 14
10 A
5
C208
See Fuse Details
S252
S257
HJ9
0.5
LG
1
C207
0.5
LG
2
C222
Z142
Instrument
Cluster
ABS
TC
Instruments
Warnings and
Indicators
2
C207
0.5
SG
7
10
C221
0.5
RB
13
C209
S317
Anti–Lock Brake
System
1.0
NK
30
85
C350
26
3
C312
K103
A.B.S. Warning
Relay
30
85
87a
86
Z108
Anti–Lock Brake
System ECU
87a
1.0
B
86
1.0
B
C350
27
1.0
B
C312
S327
See Ground Dis-
tribution
E302

E3 ETM

1995 RANGE ROVER




P126
Fascia Fuse Box
15
F 14
10 A
15
F 7
10 A
5 C208
See Fuse Details
19 C204
0.5 G
10 C209
S257
HJ9
5 C252
0.5 LG
6 C252
7 C207
1 C223
Z142
Instrument Cluster
[5]
[2]
[6]
[7]
SRS
Instruments Warnings and Indicators
[2] Tachometer
[5] SRS Indicator Control
[6] SRS Indicator 1
[7] SRS Indicator 2
1 C221
10 C222
3
5 C223
0.5 B
0.5 B
0.5 P
0.5 S
1
3 C252
S207
14
22 C2020
Z151
Air Bag Diagnostic Control Module
See Ground Distribution
E201

TROUBLESHOOTING HINTS

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

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

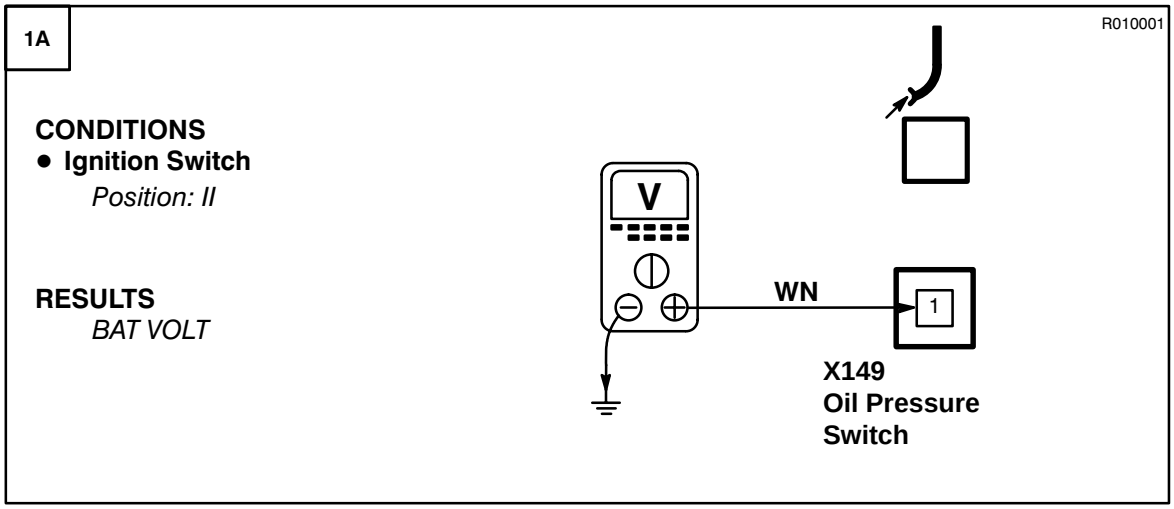
For Australian Vehicles:

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

SYSTEM DIAGNOSIS

28. If the Charge Warning Light does not operate, go to Section B1.
29. If the Oil Pressure Warning Light remains illuminated with the oil pressure OK, do Test A.
30. If the Check Engine Warning Light does not operate, do Test B.
31. If the Service Reminder Indicator (Service Engine) does not operate, do Test C.
32. If the Brake Warning Light does not operate with the Brake Fluid Level low, do Test D.
33. If the Brake Warning Light does not operate with an ABS problem, do Test E.
34. If the Brake Warning Light does not operate with the handbrake applied, do Test F.
35. The Transmission/Transfer Box Oil Temperature Warning Light is illuminated as a bulb test with the Ignition Switch (X134) in position III. If the light does not illuminate, do Test G.
36. If the Transmission/Transfer Box Oil Temperature Warning Light is illuminated with both the Transfer Box Oil Temperature and the Automatic Oil Temperature OK, do Test H.
37. If the Fasten Seat Belt Indicator does not operate with the ignition on, do Test I.
38. If a warning light exhibits any symptom not mentioned above, check the associated bulb, wires, switches, and components.

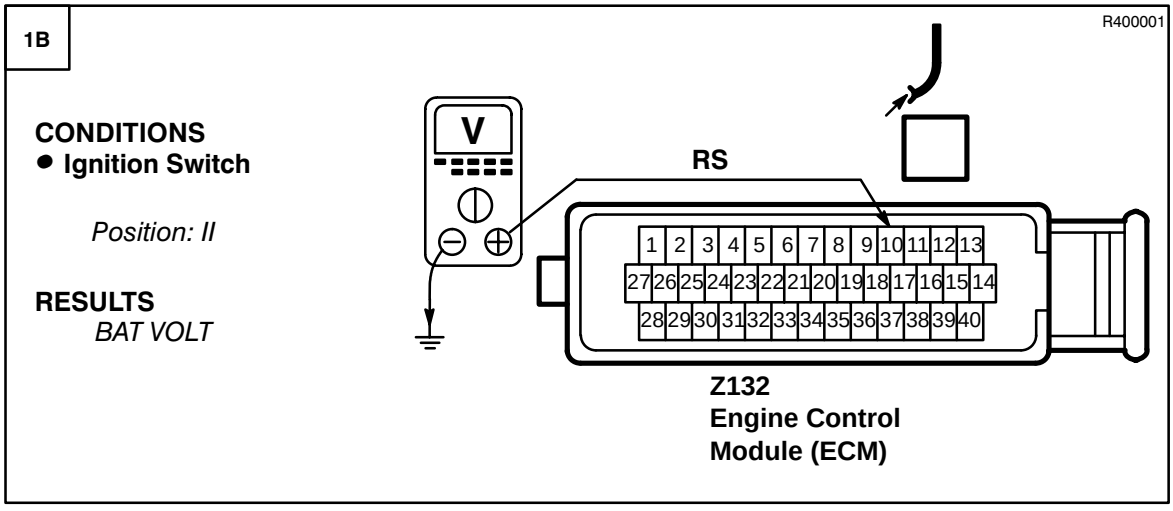
Test A



OK **PROBLEM CAUSE**
- **WN Wire**

OK **PROBLEM CAUSE**
- **Oil Pressure Switch**

Test B



OK

2B

OK **PROBLEM CAUSE**
- **Engine Control Module (ECM)**

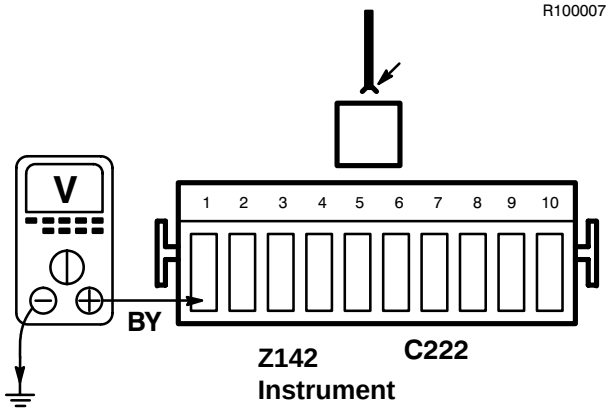
1B

2B

R100007

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **Bulb**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **BY Wire**
- **RS Wire**

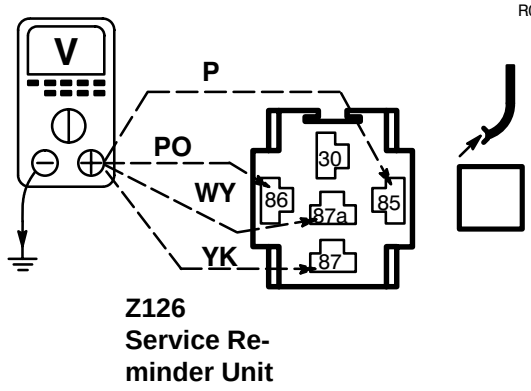
Test C

1C

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **PO, YK Wire**
- **WY, P Wire**
- **Instrument Cluster**

OK

2C

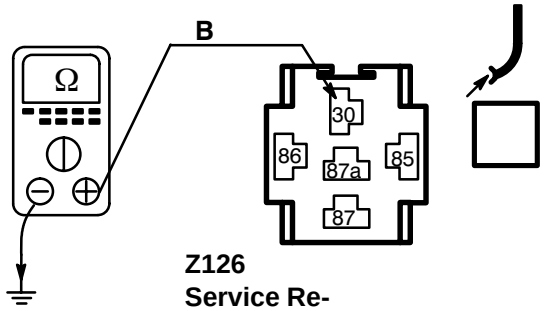
1C

2C

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK **PROBLEM CAUSE**
- **Service Re-minder Unit**

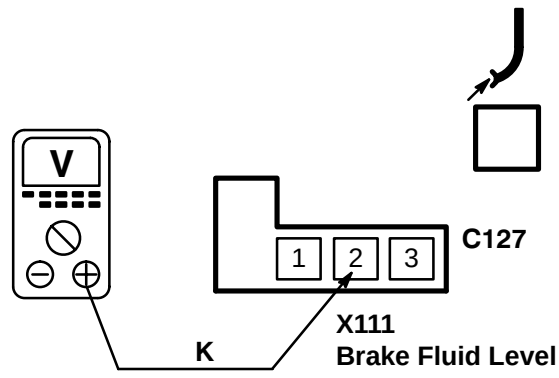
Test D

1D

R030012

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **K Wire**
- **Bulb**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **B Wire**
- **Brake Fluid Level Switch**

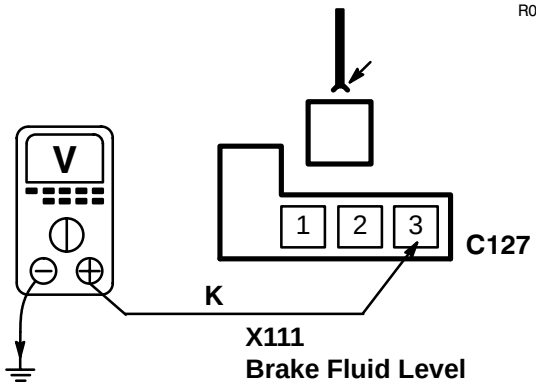
Test E

1E

R030012

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **K Wire**
- **Bulb**
- **Instrument Cluster**
- **Brake Fluid Level Switch**

OK

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

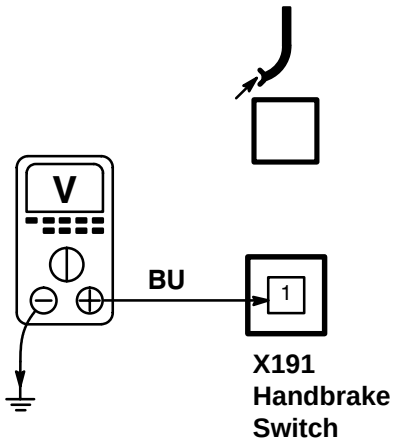
Test F

1F

R010001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

2F

OK

PROBLEM CAUSE
- **Handbrake Switch**

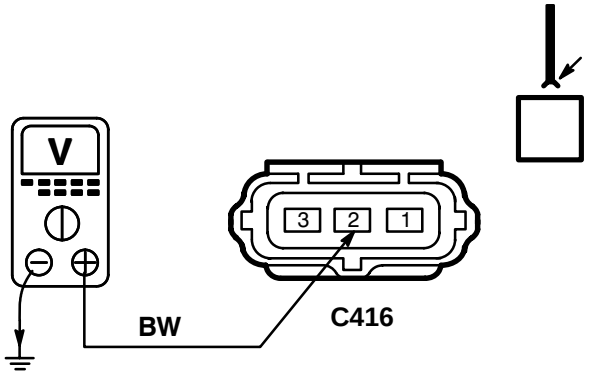
1F

2F

R030003

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **BY Wire**
- **K, BW Wire**
- **Right Rear Inboard Brake Pad**

OK **PROBLEM CAUSE**
- **BY Wire**
- **BW Wire**
- **BK, BU Wire**
- **Handbrake Diode**
- **Right Front Inboard Brake Pad**

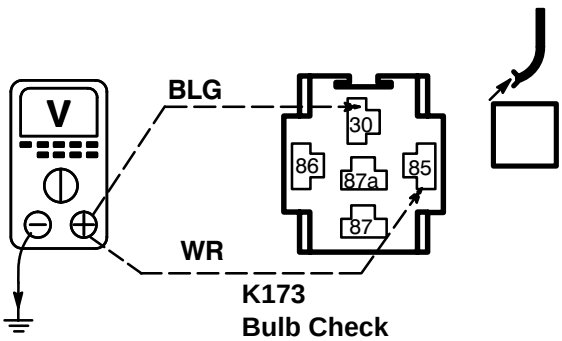
Test G

1G

R050001

CONDITIONS
- **Ignition Switch**
  Position: III

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **BLG Wire**
- **WR Wire**
- **Instrument Cluster**

OK **PROBLEM CAUSE**
- **B Wire**
- **Bulb Check Relay**

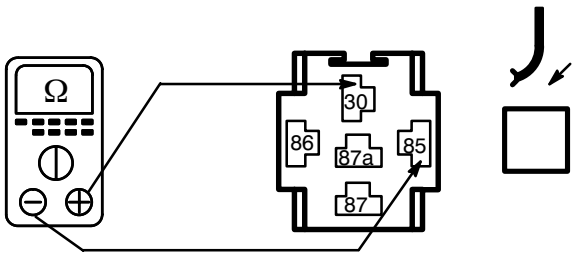
Test H

1H

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
More than 10K ohms



K173
Bulb Check
Relay

OK **PROBLEM CAUSE**
- **Bulb Check Relay**

OK **PROBLEM CAUSE**
- **BLG Wire**
- **Transfer Box Oil Temperature Switch**
- **Automatic Transmission Oil Temperature Switch**

Test I

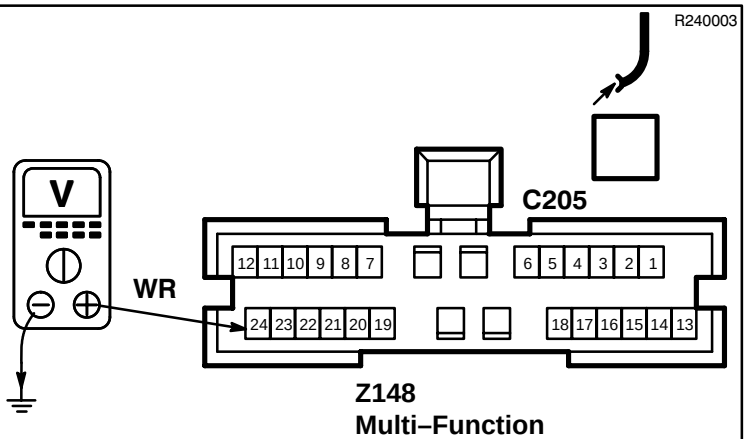
1I

R240003

CONDITIONS
- **Ignition Switch**

Position: II

RESULTS
BAT VOLT



Z148
Multi–Function Unit (MFU)

OK **PROBLEM CAUSE**
- **WR Wire**
- **LG Wire**
- **Instrument Cluster**

OK

2I

1I

2I

CONDITIONS

- **Ignition Switch**

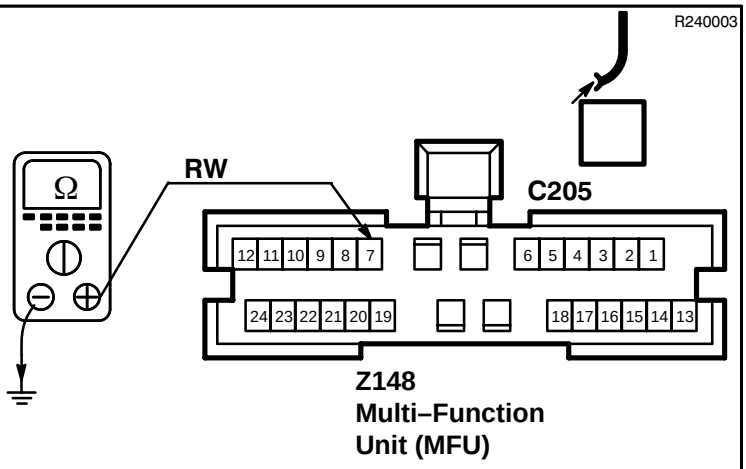
Position: 0

- **Driver's Seat Buckle Switch**

Unbuckled

RESULTS

Less than 1 ohm



OK

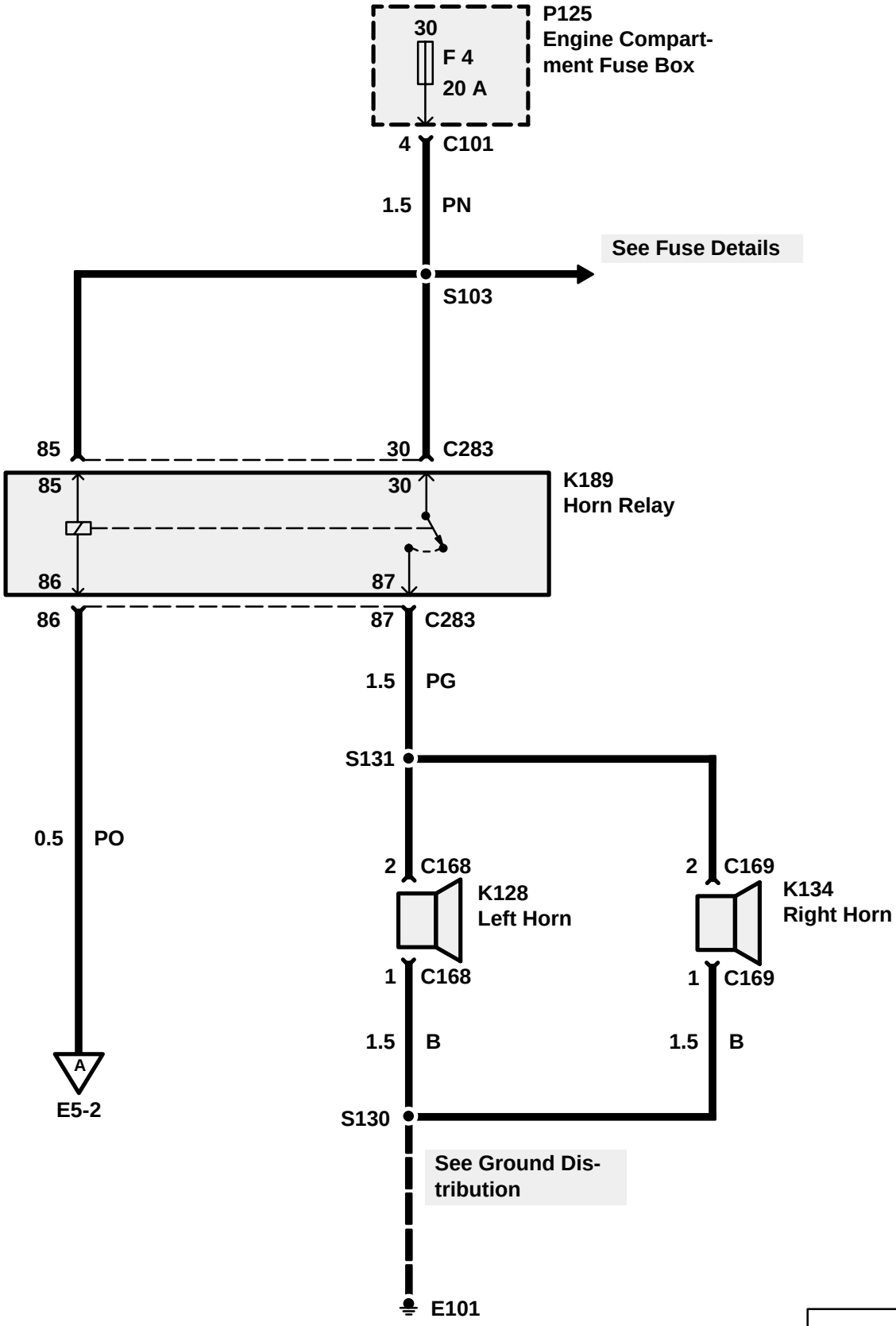
PROBLEM CAUSE

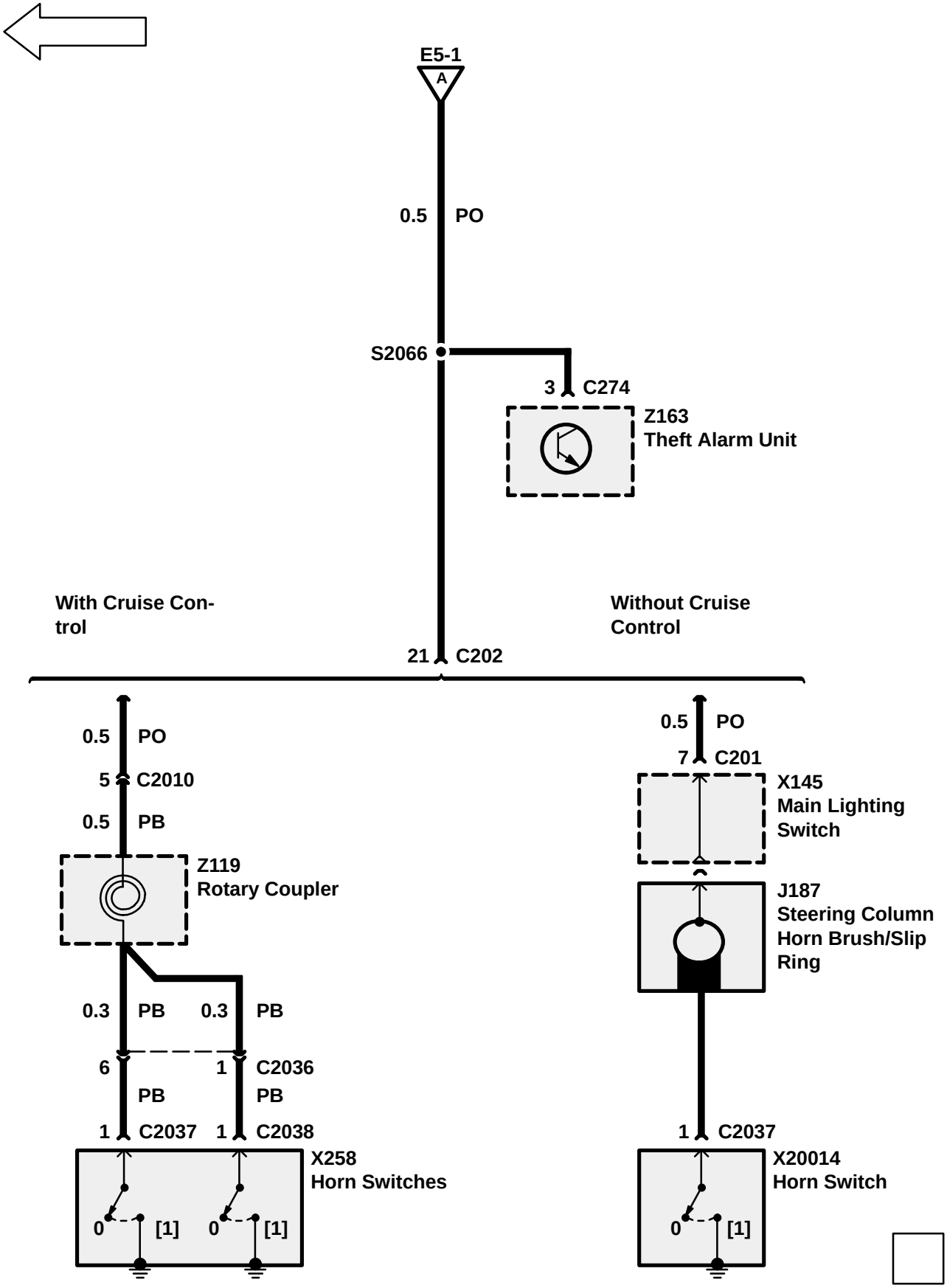
- **RW Wire**
- **B Wire**
- **Driver's Seat Buckle Switch**

OK

PROBLEM CAUSE

- **Multi–Function Unit (MFU)**


30
F 4
20 A
P125
Engine Compartment Fuse Box
4
C101
1.5
PN
See Fuse Details
S103
85
30
C283
85
30
K189
Horn Relay
86
87
86
87
C283
1.5
PG
S131
0.5
PO
2
C168
K128
Left Horn
2
C169
K134
Right Horn
1
C168
1
C169
1.5
B
1.5
B
A
E5-2
S130
See Ground Distribution
E101


E5-1
A
0.5 PO
S2066
3 C274
Z163
Theft Alarm Unit
With Cruise Control
Without Cruise Control
21 C202
0.5 PO
5 C2010
0.5 PB
Z119
Rotary Coupler
0.3 PB
0.3 PB
6
1 C2036
PB
PB
1 C2037
1 C2038
X258
Horn Switches
0
[1]
0
[1]
0.5 PO
7 C201
X145
Main Lighting Switch
J187
Steering Column Horn Brush/Slip Ring
1 C2037
X20014
Horn Switch
0
[1]

CIRCUIT OPERATION

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

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

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

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

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

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

New features are as follows:
Side screen antenna, new head units, subwoofer assembly, new speakers and new CD auto-changer.

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

High line radio is as above with the following exceptions:
Logic tape deck, blank skip/repeat, 5 channel line output, CD ready (this unit is fitted when the CD option is called for).

Subwoofer

The subwoofer unit is located in the right hand side of the luggage compartment. It amplifies frequencies between 20 and 150 Hz to give an enhanced bass sound.

Subwoofer Amplifier

The amplifier is fitted on top of the subwoofer unit.

Speaker Amplifier

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

Side Screen Antenna

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

Antenna Amplifier

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

Speakers

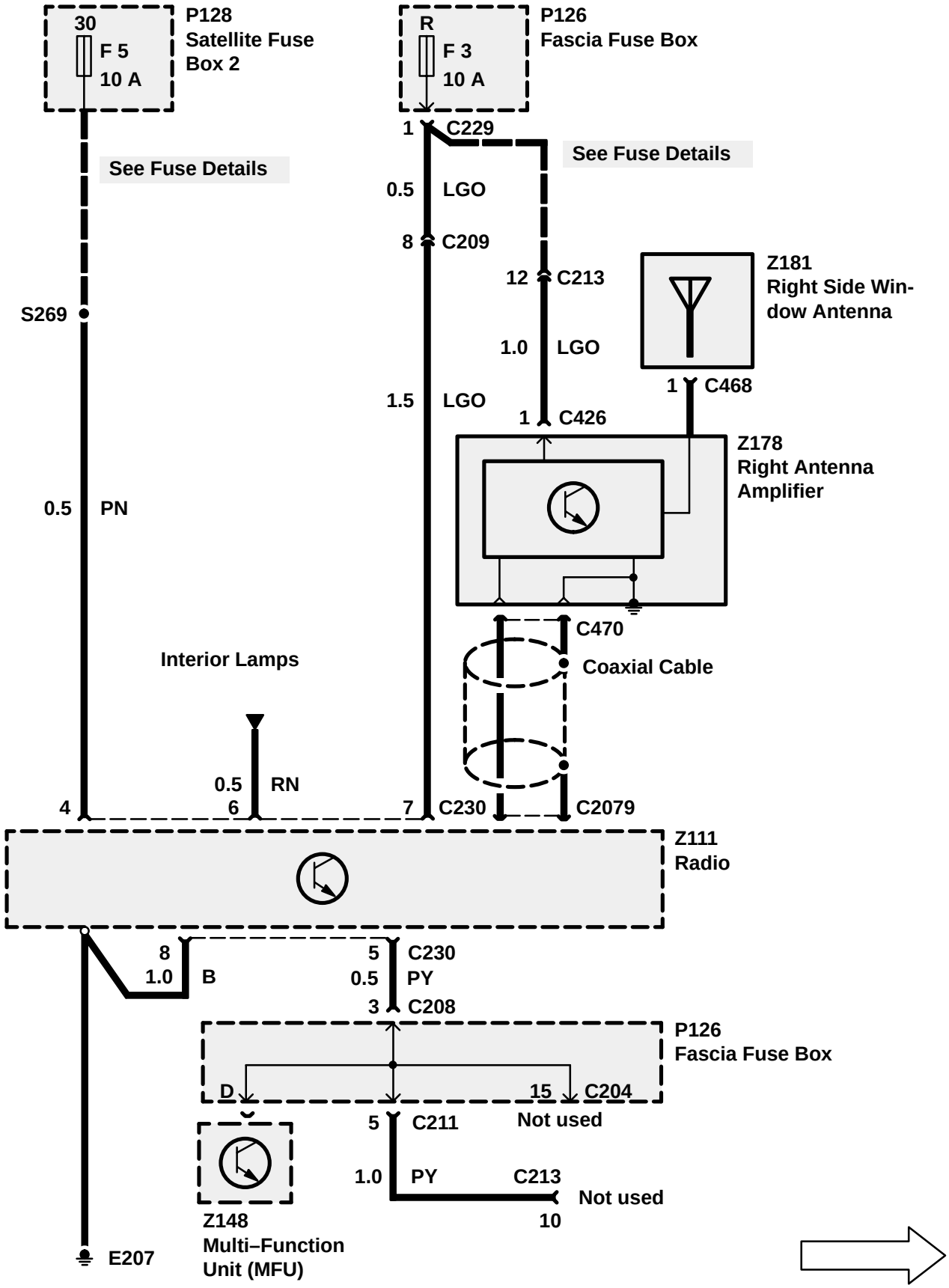
Trim level 1 – Two door vehicles have two front twin cone speakers. Four door vehicles have two coaxial front speakers and two twin cone rear speakers.

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

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

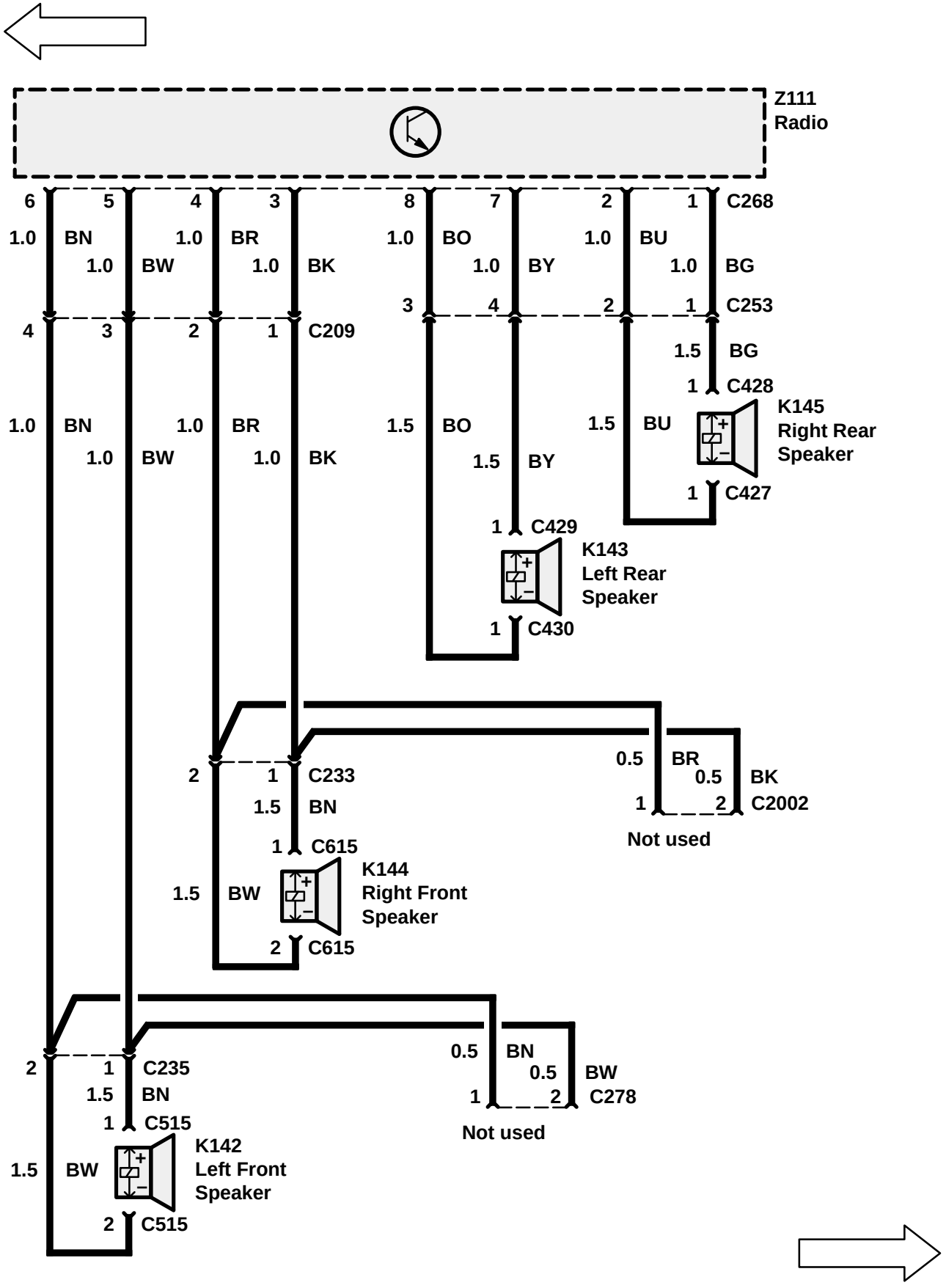
CD autochanger

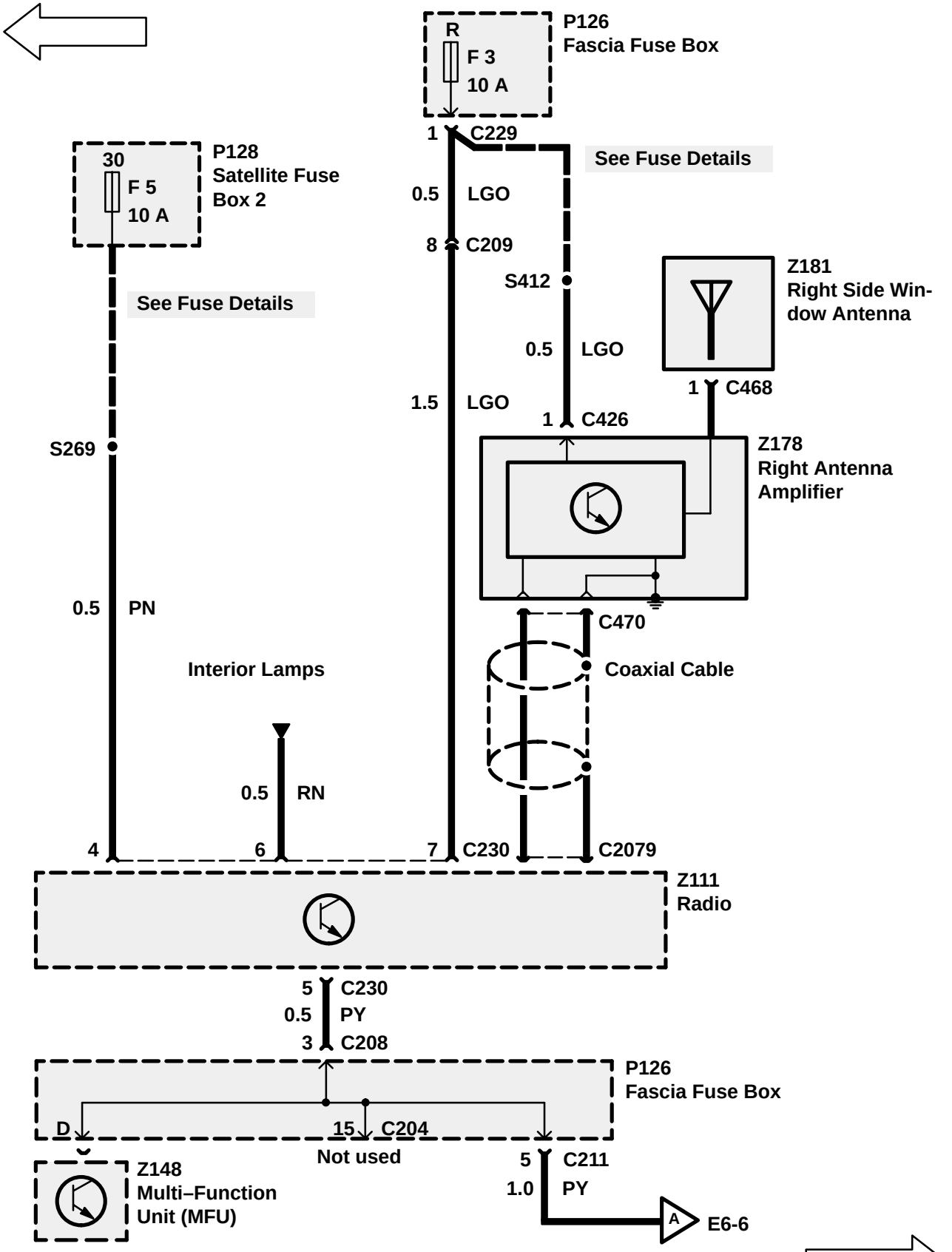
The CD autochanger is fitted underneath the subwoofer unit.

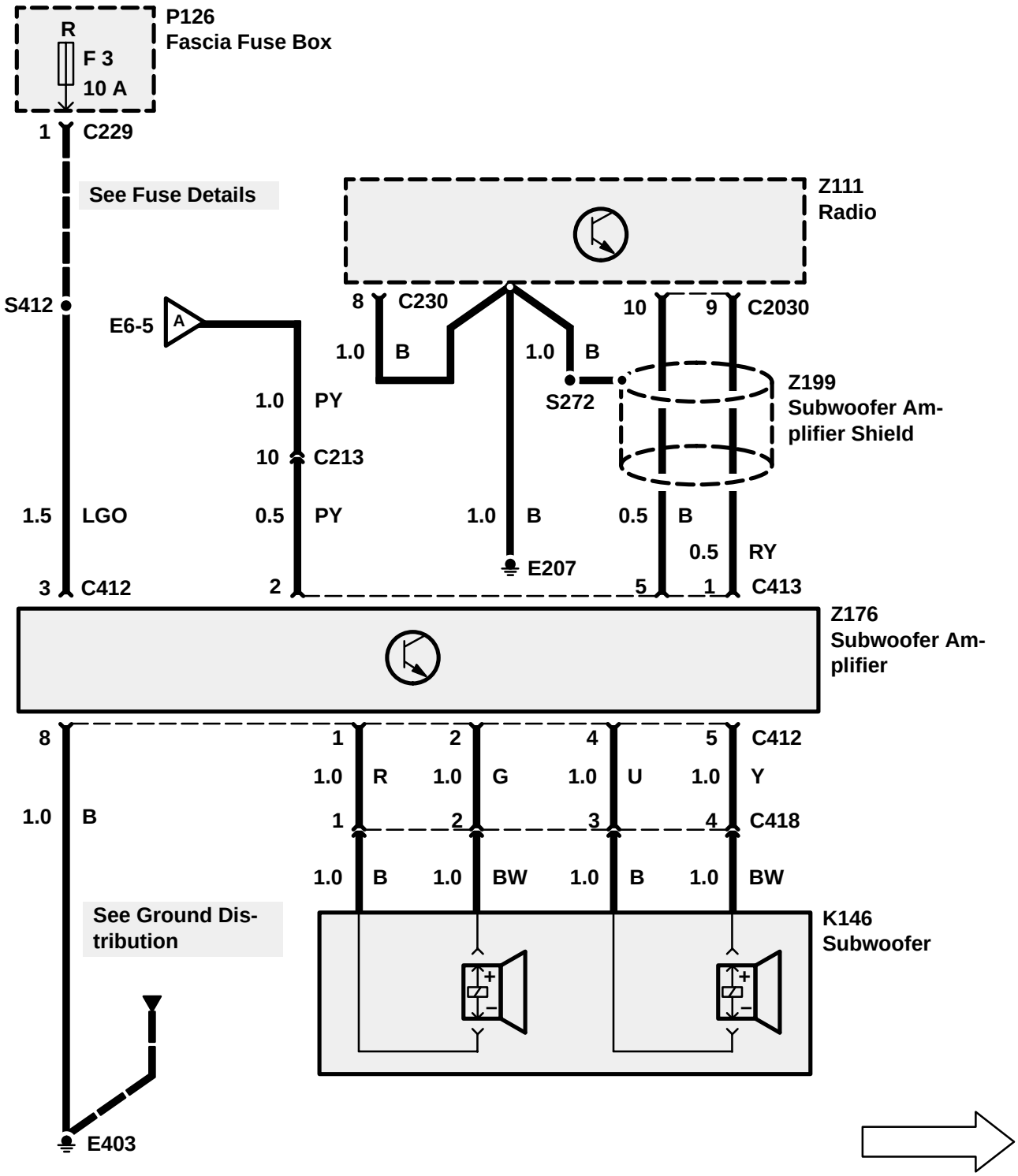

30
F 5
10 A
P128
Satellite Fuse Box 2
See Fuse Details
S269
0.5
PN
R
F 3
10 A
P126
Fascia Fuse Box
1
C229
See Fuse Details
0.5
LGO
8
C209
12
C213
1.0
LGO
1.5
LGO
1
C426
Z181
Right Side Window Antenna
1
C468
Z178
Right Antenna Amplifier
C470
Coaxial Cable
Interior Lamps
0.5
RN
4
6
7
C230
C2079
Z111
Radio
8
1.0
B
5
0.5
PY
3
C208
P126
Fascia Fuse Box
D
15
C204
5
C211
Not used
1.0
PY
C213
Not used
10
Z148
Multi–Function Unit (MFU)
E207

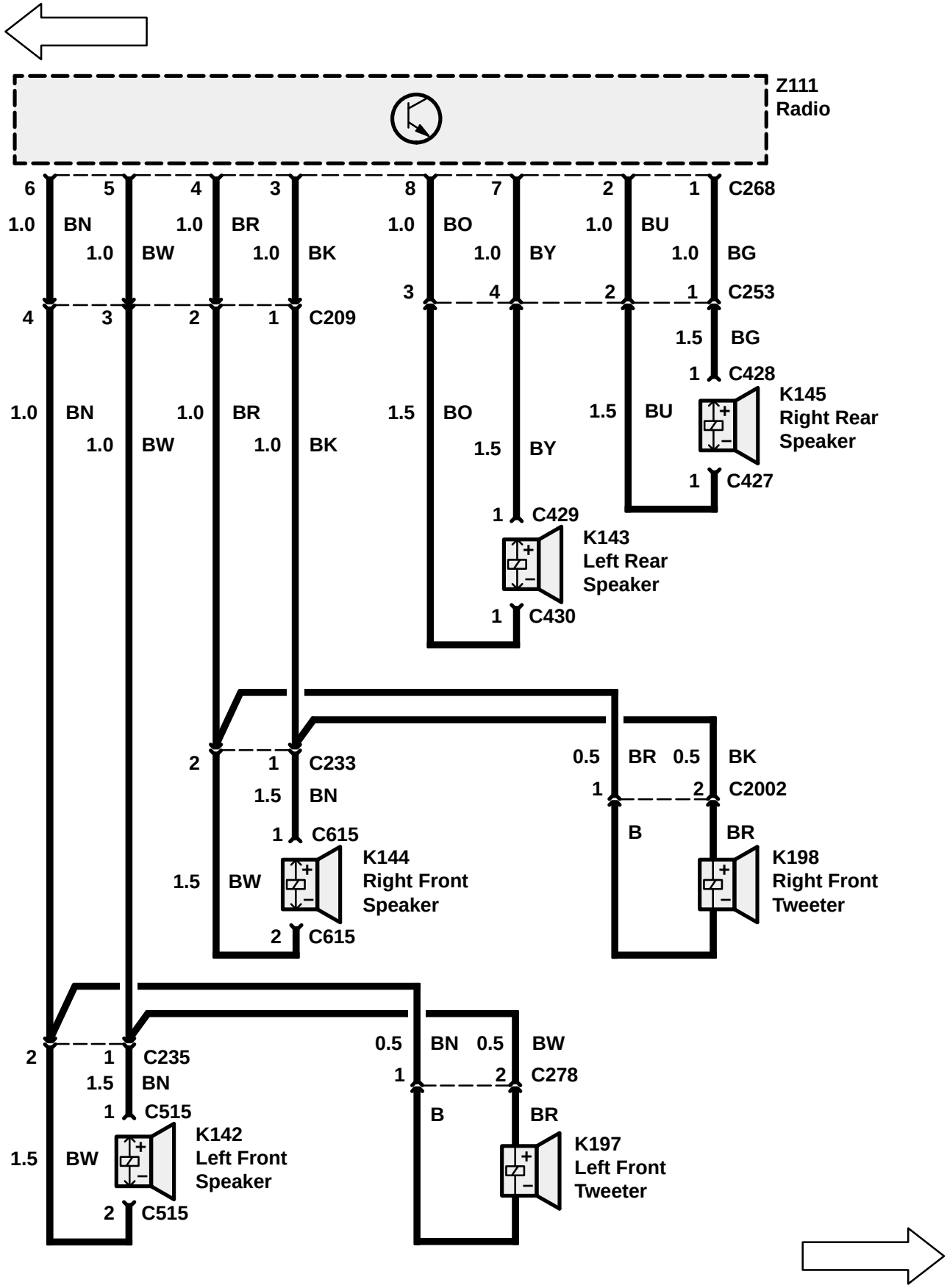
E6 ETM

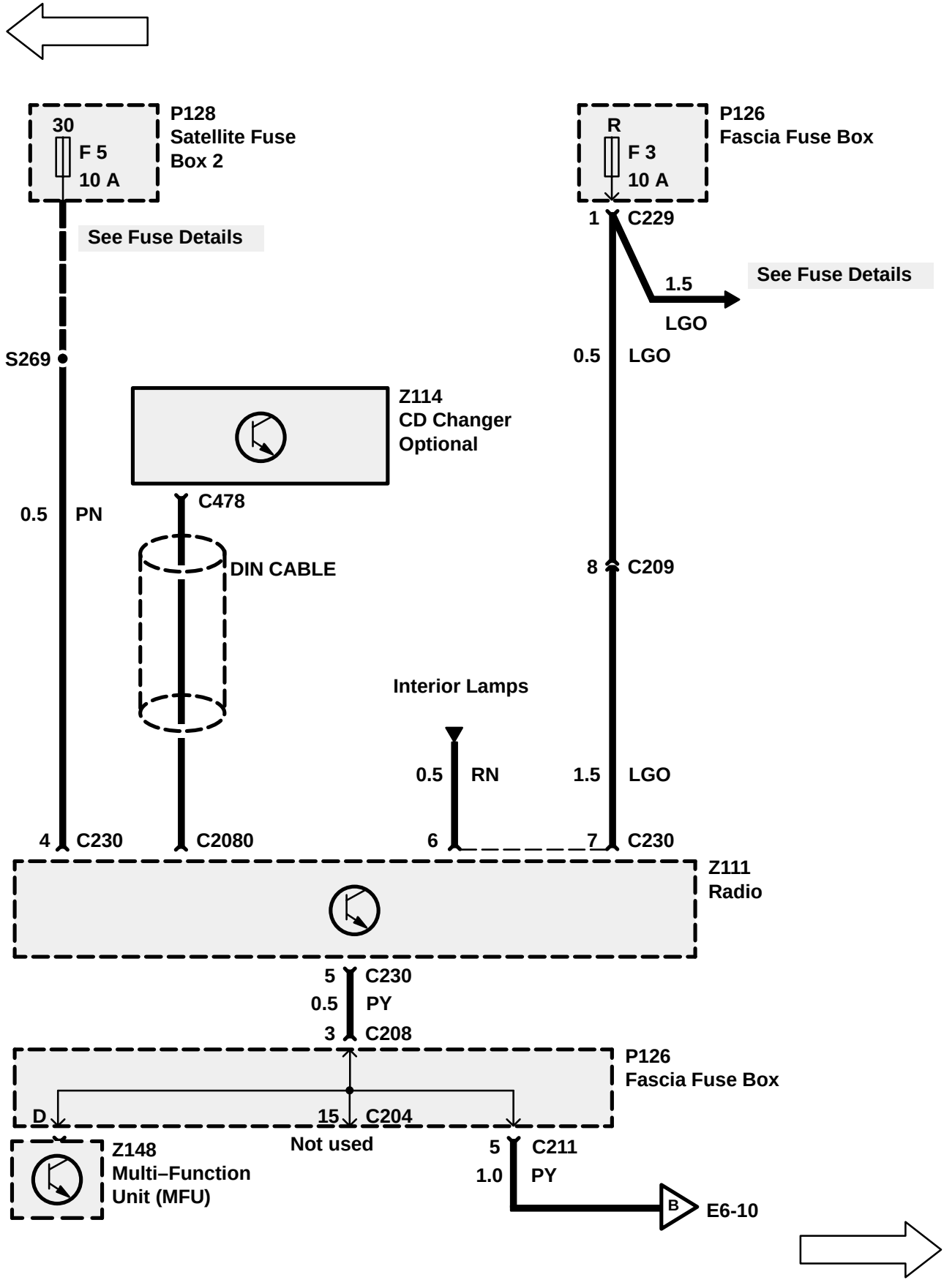
1995 RANGE ROVER

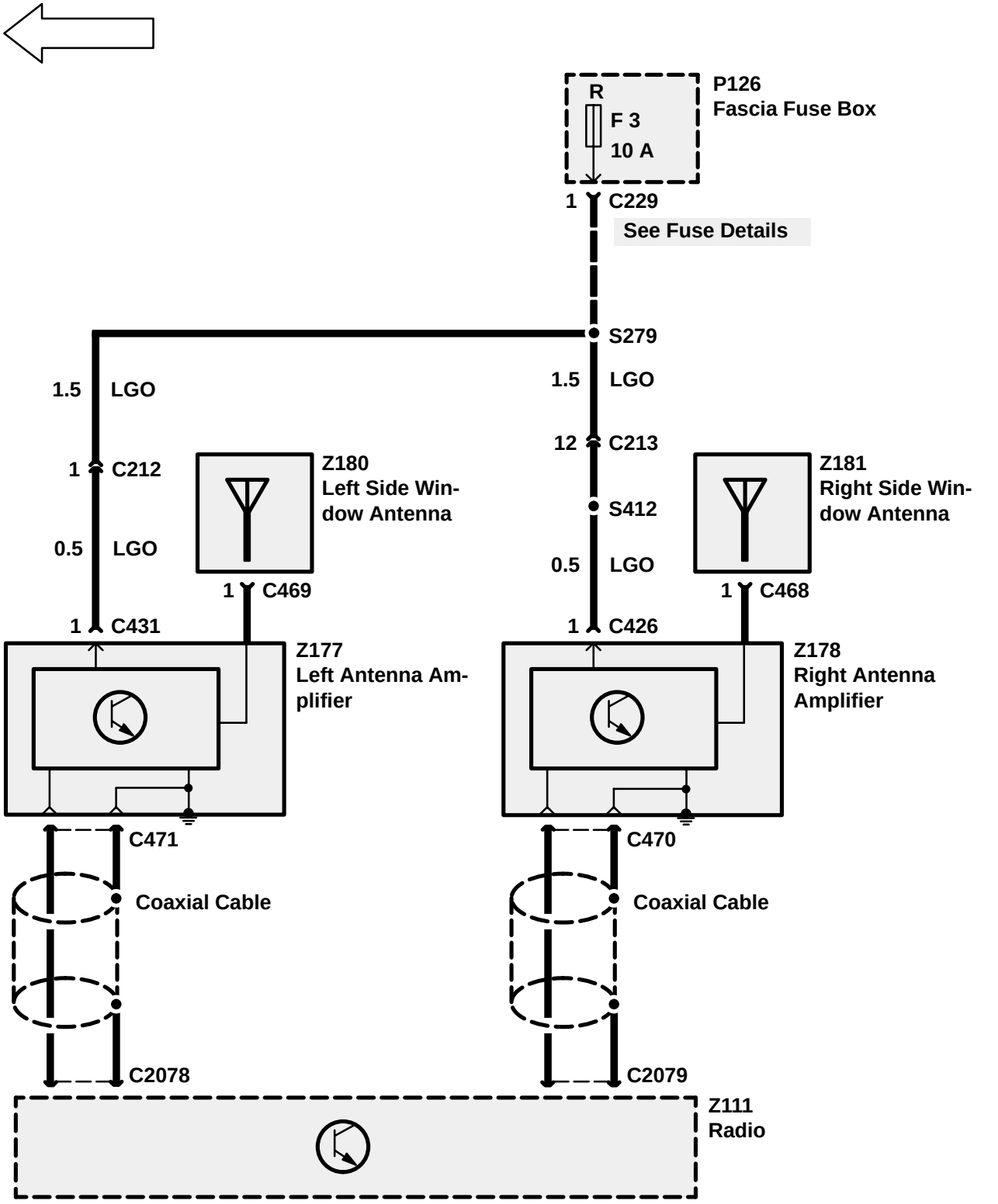


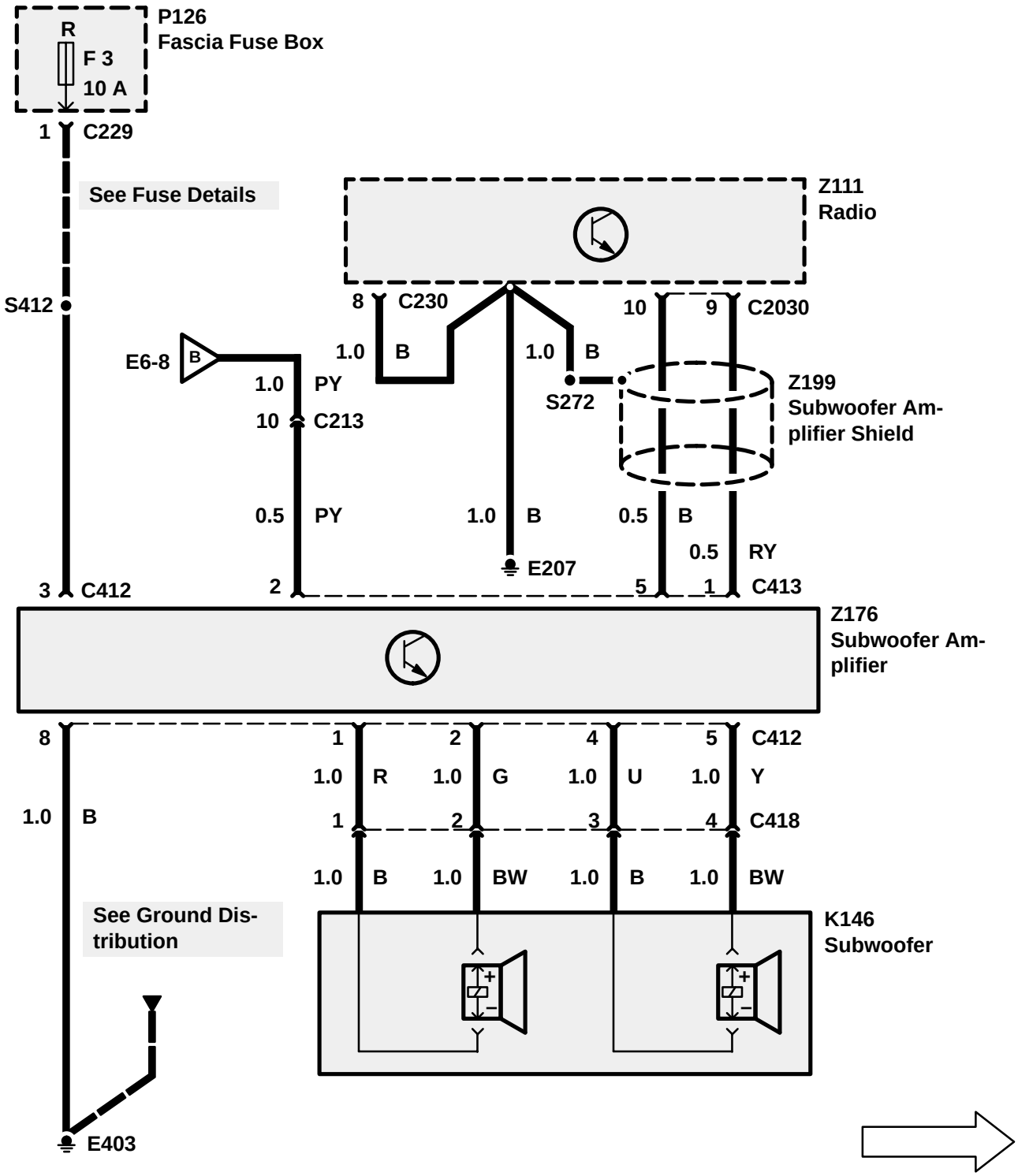

P126
Fascia Fuse Box
R
F 3
10 A
1
C229
See Fuse Details
0.5
LGO
8
C209
S412
0.5
LGO
1.5
LGO
1
C426
Z181
Right Side Window Antenna
1
C468
Z178
Right Antenna Amplifier
C470
Coaxial Cable
P128
Satellite Fuse Box 2
30
F 5
10 A
See Fuse Details
S269
0.5
PN
Interior Lamps
0.5
RN
4
6
7
C230
C2079
Z111
Radio
5
C230
0.5
PY
3
C208
P126
Fascia Fuse Box
D
15
C204
Not used
5
C211
1.0
PY
A
E6-6
Z148
Multi–Function Unit (MFU)

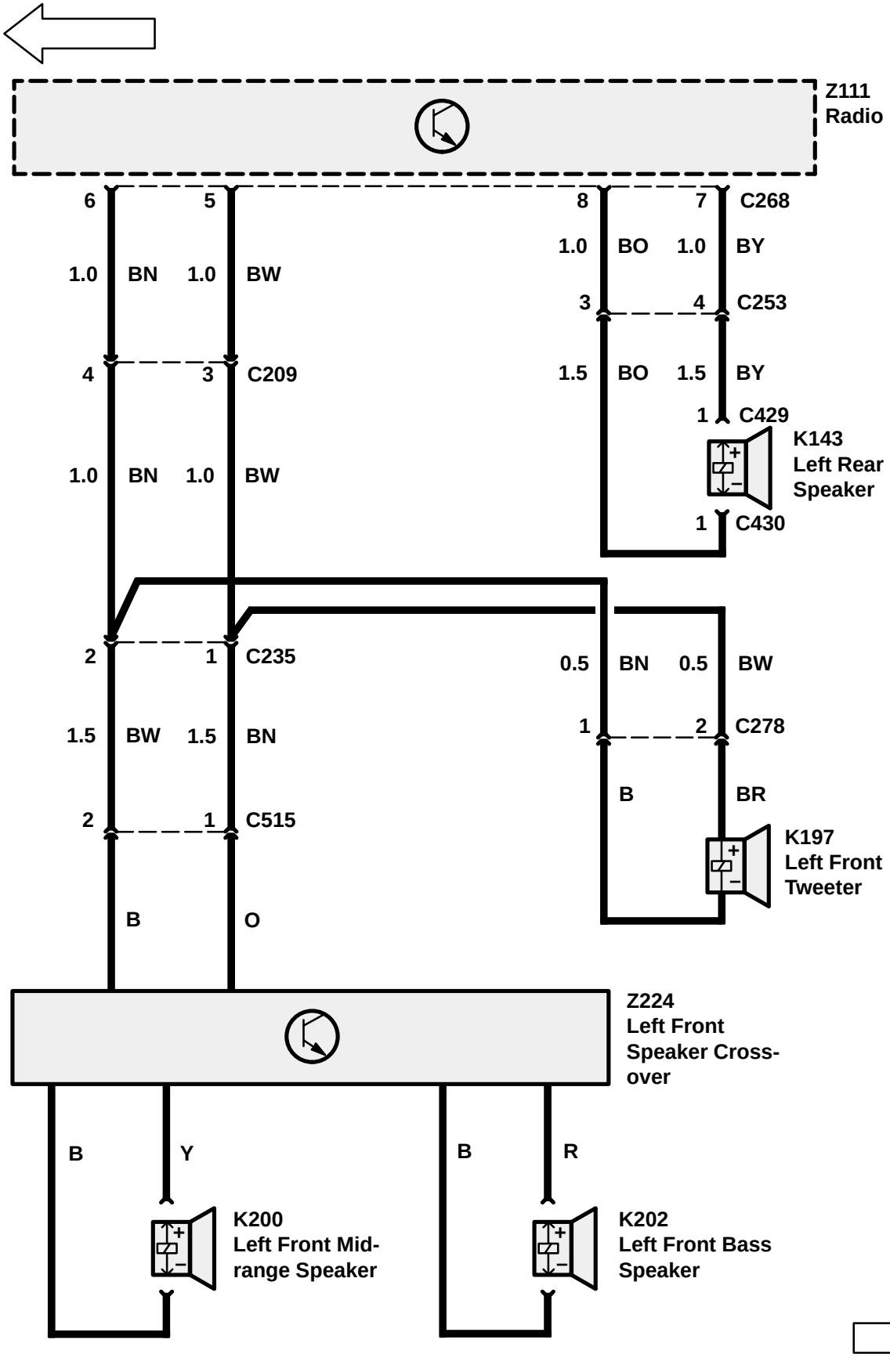

P126
Fascia Fuse Box
R
F 3
10 A
1
C229
See Fuse Details
Z111
Radio
S412
E6-5
A
8
C230
10
9
C2030
1.0
B
1.0
B
1.0
PY
S272
Z199
Subwoofer Amplifier Shield
10
C213
1.5
LGO
0.5
PY
1.0
B
0.5
B
0.5
RY
E207
3
C412
2
5
1
C413
Z176
Subwoofer Amplifier
8
1
2
4
5
C412
1.0
R
1.0
G
1.0
U
1.0
Y
1.0
B
1
2
3
4
C418
1.0
B
1.0
BW
1.0
B
1.0
BW
See Ground Distribution
K146
Subwoofer
E403

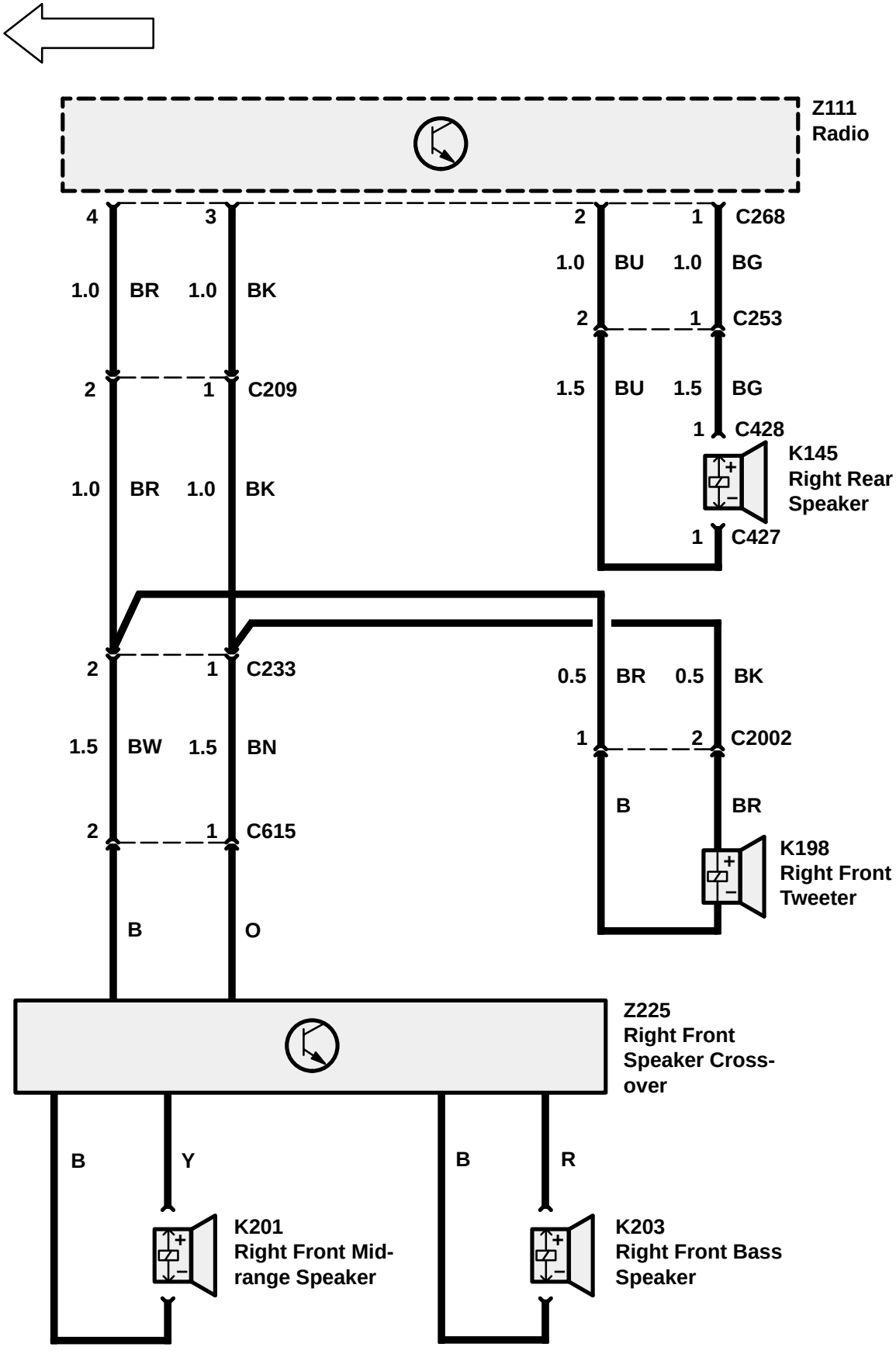

Z111
Radio
6 5 4 3 8 7 2 1 C268
1.0 BN 1.0 BR 1.0 BO 1.0 BU
1.0 BW 1.0 BK 1.0 BY 1.0 BG
3 4 2 1 C253
4 3 2 1 C209
1.5 BG
1 C428
1.0 BN 1.0 BR 1.5 BO 1.5 BU
1.0 BW 1.0 BK 1.5 BY
K145
Right Rear
Speaker
1 C427
1 C429
K143
Left Rear
Speaker
1 C430
2 1 C233
1.5 BN
1 C615
1.5 BW
K144
Right Front
Speaker
2 C615
0.5 BR 0.5 BK
1 2 C2002
B BR
K198
Right Front
Tweeter
2 1 C235
1.5 BN
1 C515
1.5 BW
K142
Left Front
Speaker
2 C515
0.5 BN 0.5 BW
1 2 C278
B BR
K197
Left Front
Tweeter


P128
Satellite Fuse
Box 2
30
F 5
10 A
See Fuse Details
S269
0.5 PN
Z114
CD Changer
Optional
C478
DIN CABLE
4 C230
C2080
P126
Fascia Fuse Box
R
F 3
10 A
1 C229
1.5
LGO
See Fuse Details
0.5 LGO
8 C209
Interior Lamps
0.5 RN
6
1.5 LGO
7 C230
Z111
Radio
5 C230
0.5 PY
3 C208
P126
Fascia Fuse Box
D
15 C204
Not used
Z148
Multi–Function
Unit (MFU)
5 C211
1.0 PY
B
E6-10


R
F 3
10 A
P126
Fascia Fuse Box
1 C229
See Fuse Details
S279
1.5 LGO
1.5 LGO
12 C213
1 C212
Z180
Left Side Window Antenna
S412
Z181
Right Side Window Antenna
0.5 LGO
0.5 LGO
1 C469
1 C468
1 C431
1 C426
Z177
Left Antenna Amplifier
Z178
Right Antenna Amplifier
C471
C470
Coaxial Cable
Coaxial Cable
C2078
C2079
Z111
Radio


P126
Fascia Fuse Box
R
F 3
10 A
1
C229
See Fuse Details
S412
3
C412
Z111
Radio
8
C230
10
9
C2030
E6-8
B
1.0
B
1.0
PY
10
C213
1.0
B
1.0
B
S272
Z199
Subwoofer Amplifier Shield
0.5
PY
0.5
B
0.5
RY
E207
2
5
1
C413
Z176
Subwoofer Amplifier
8
1
2
4
5
C412
1.0
R
1.0
G
1.0
U
1.0
Y
1.0
B
1
2
3
4
C418
1.0
B
1.0
BW
1.0
B
1.0
BW
See Ground Distribution
K146
Subwoofer
E403


Z111
Radio
6
5
8
7
C268
1.0
BN
1.0
BW
1.0
BO
1.0
BY
3
4
C253
4
3
C209
1.5
BO
1.5
BY
1
C429
K143
Left Rear
Speaker
1.0
BN
1.0
BW
1
C430
2
1
C235
0.5
BN
0.5
BW
1.5
BW
1.5
BN
1
2
C278
B
BR
2
1
C515
K197
Left Front
Tweeter
B
O
Z224
Left Front
Speaker Cross-
over
B
Y
B
R
K200
Left Front Mid-
range Speaker
K202
Left Front Bass
Speaker


Z111
Radio
4
3
1.0
BR
1.0
BK
2
1
C209
1.0
BR
1.0
BK
2
1
C233
1.5
BW
1.5
BN
2
1
C615
B
O
2
1
C268
1.0
BU
1.0
BG
2
1
C253
1.5
BU
1.5
BG
1
C428
K145
Right Rear
Speaker
1
C427
0.5
BR
0.5
BK
1
2
C2002
B
BR
K198
Right Front
Tweeter
Z225
Right Front
Speaker Cross-
over
B
Y
K201
Right Front Mid-
range Speaker
B
R
K203
Right Front Bass
Speaker

TROUBLESHOOTING HINTS

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

Security Code Instructions

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

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

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

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

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

SYSTEM DIAGNOSIS

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

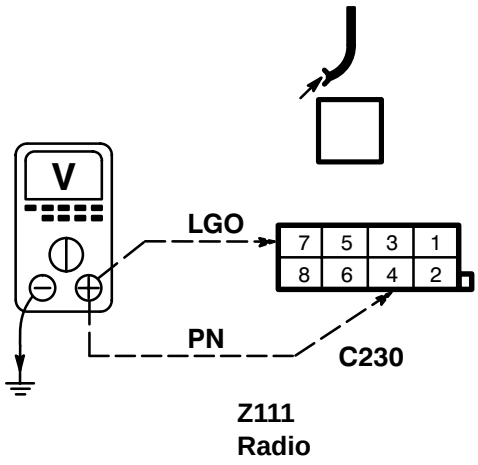
Test A

1A

R080017

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **PN Wire**
- **LGO Wire**
- **F5 Fuse**
- **F3 Fuse**

OK

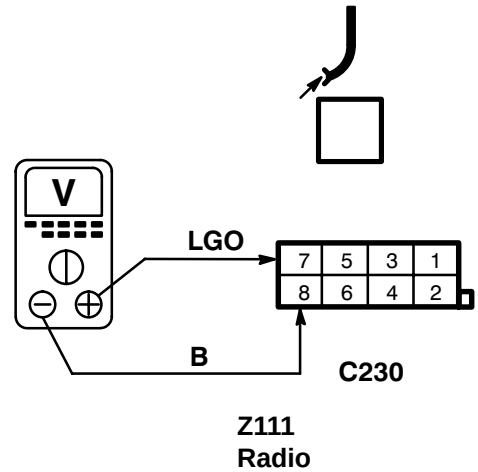
2A

2A

R080017

CONDITIONS
- **Ignition Switch**
  Position: II

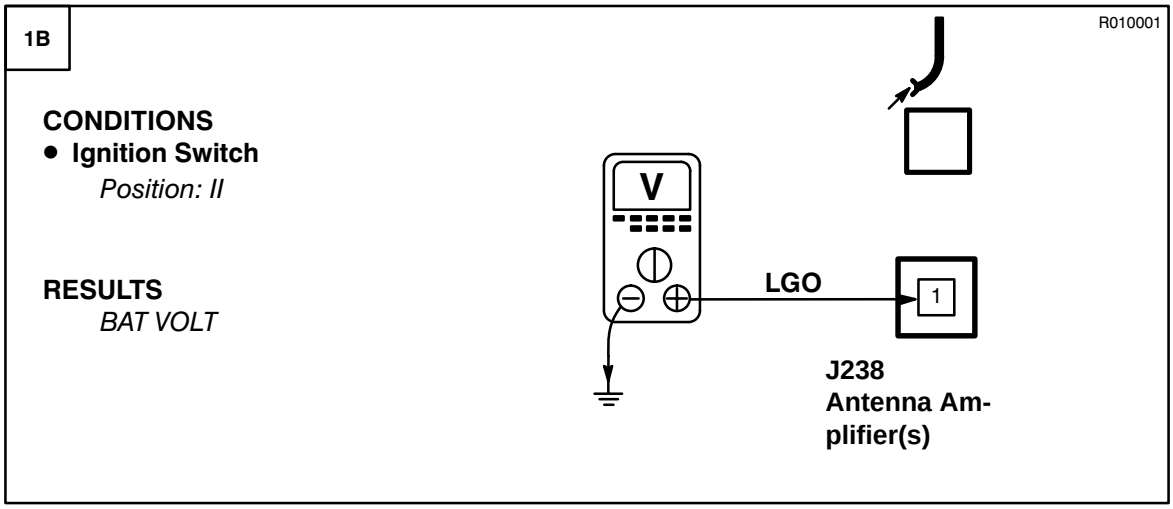
RESULTS
BAT VOLT



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

OK **PROBLEM CAUSE**
- **Radio**

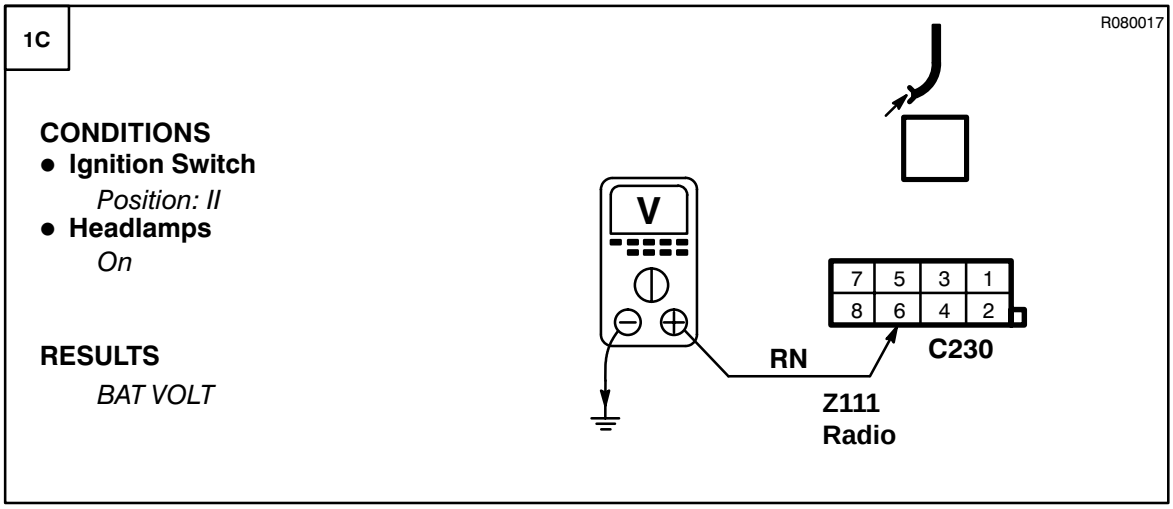
Test B



OK **PROBLEM CAUSE**
- **LGO Wire**

OK **PROBLEM CAUSE**
- **Coaxial Cable**
- **Radio**
- **Antenna Amplifier(s)**

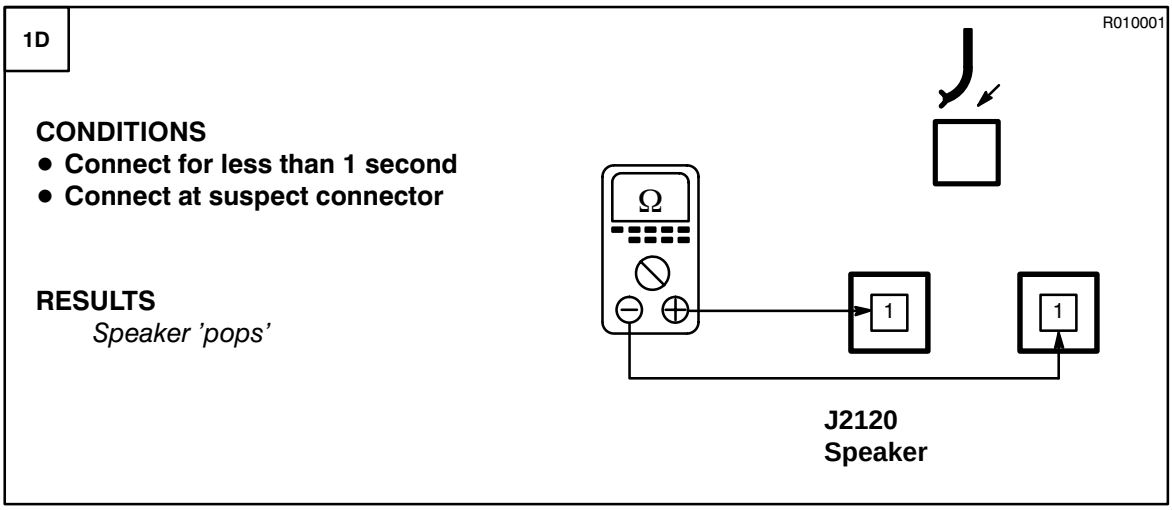
Test C



OK **PROBLEM CAUSE**
- **RN Wire**

OK **PROBLEM CAUSE**
- **Radio**

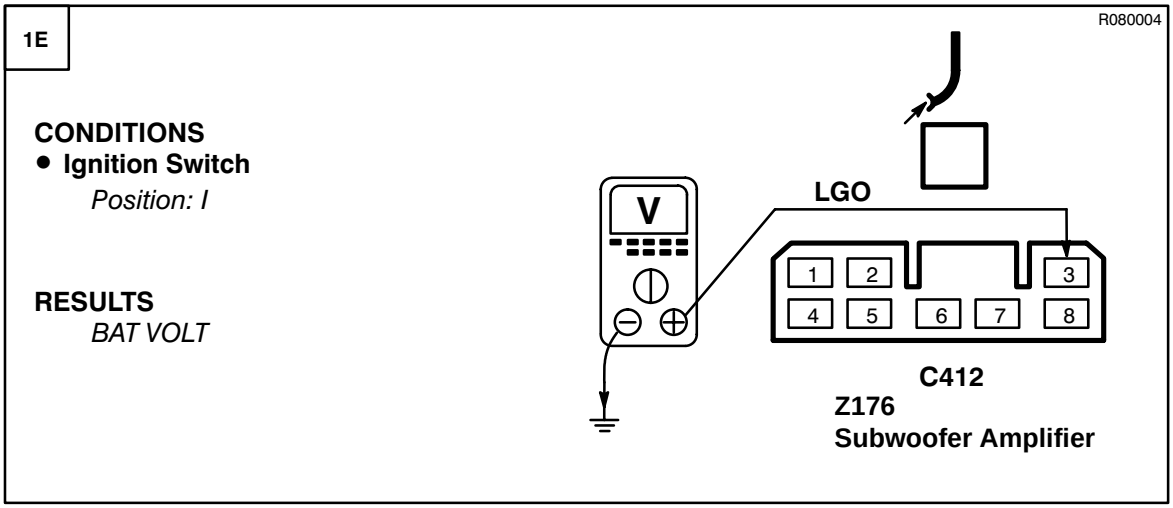
Test D



OK **PROBLEM CAUSE**
- **Speaker**

OK **PROBLEM CAUSE**
- **Speaker Wiring**
- **Radio**

Test E



OK **PROBLEM CAUSE**
- **LGO Wire**

OK

2E

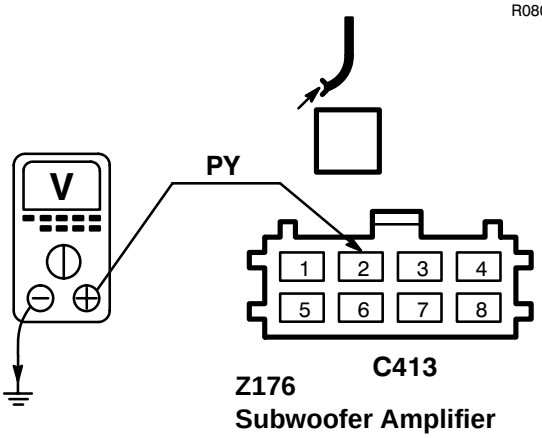
1E

2E

R080005

CONDITIONS
- **Ignition Switch**
  Position: II
- **Radio**
  On

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **PY Wire**
- **Fascia Fuse Box**
- **Radio**

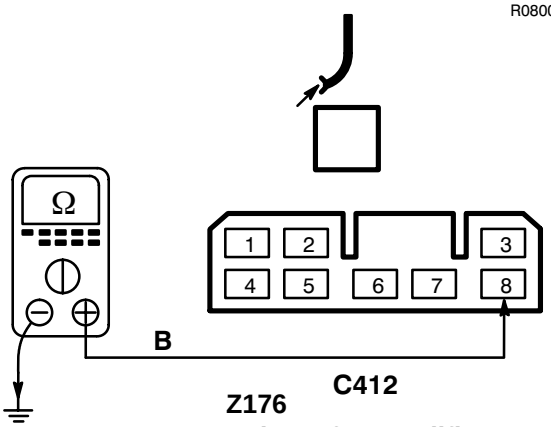
OK → 3E

3E

R080004

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK → 4E

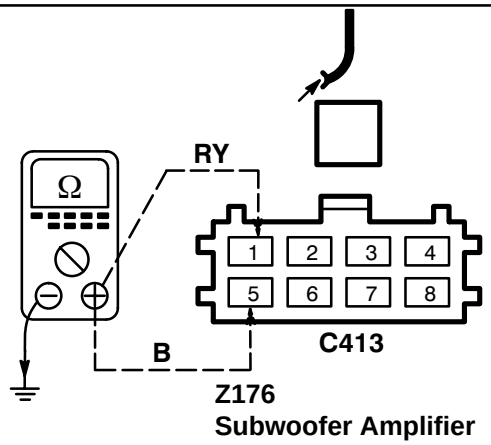
3E

4E

R080005

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Radio**
  Disconnected

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **RY Wire**
- **B Wire**

OK

5E

5E

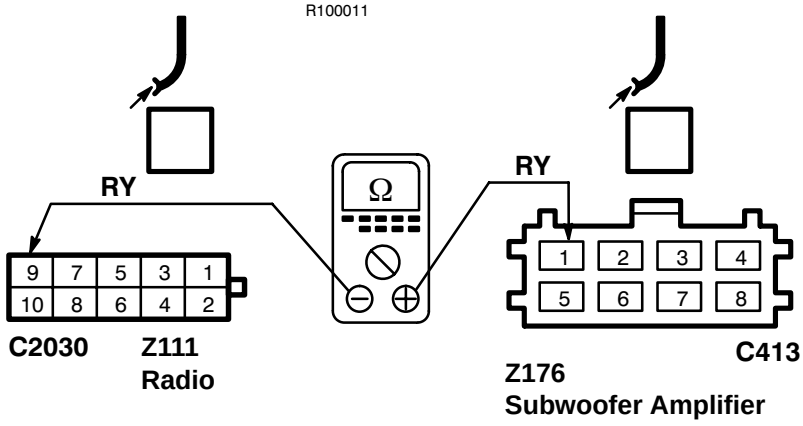
R100011

R080005

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
0 Ω



OK **PROBLEM CAUSE**
- **RY Wire**

OK

6E

5E

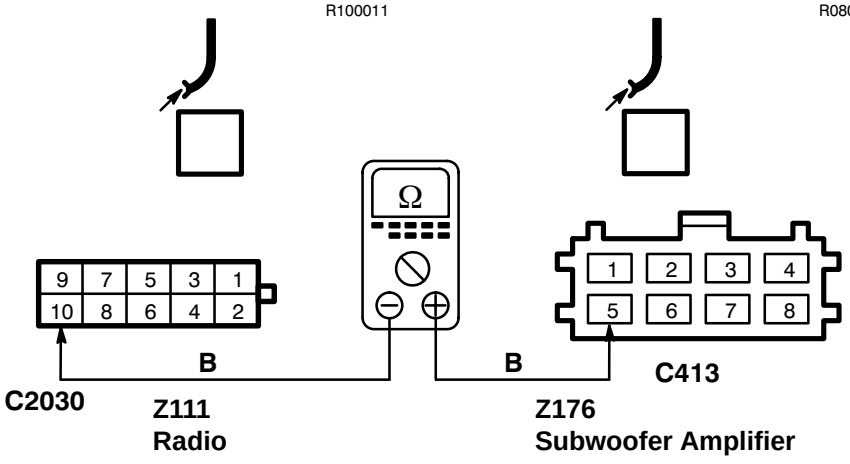
6E

R100011 R080005

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
0 Ω



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

OK

7E

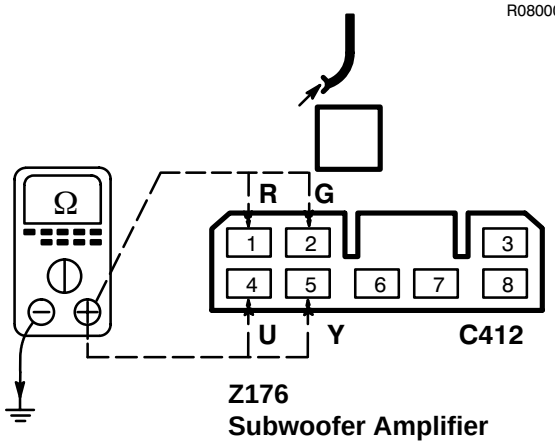
7E

R080004

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
More than 100K ohms



OK **PROBLEM CAUSE**
- **Wire (short)**
- **Subwoofer**

OK

8E

7E

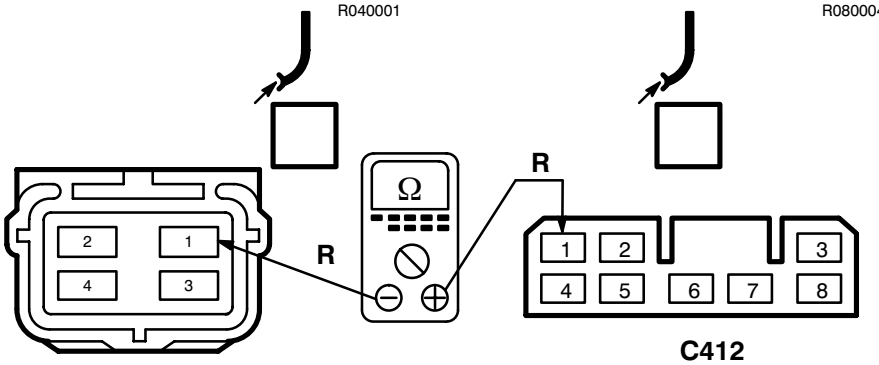
8E

R040001

R080004

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



K146
Subwoofer

C412
Z176
Subwoofer Amplifier

OK **PROBLEM CAUSE**
- R Wire

OK

9E

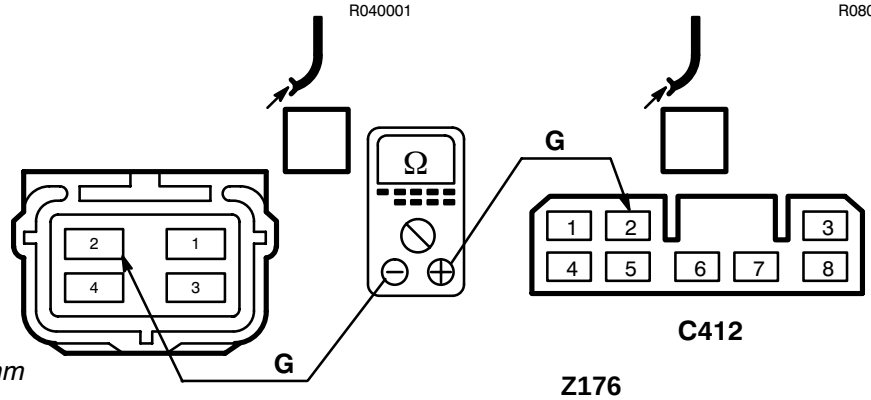
9E

R040001

R080004

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



K146
Subwoofer

C412
Z176
Subwoofer Amplifier

OK **PROBLEM CAUSE**
- G Wire

OK

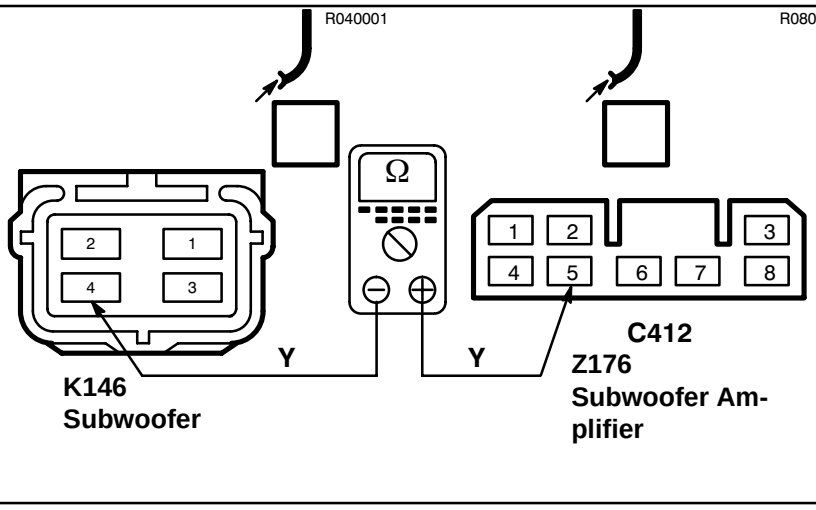
10E

9E

10E

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- Y Wire

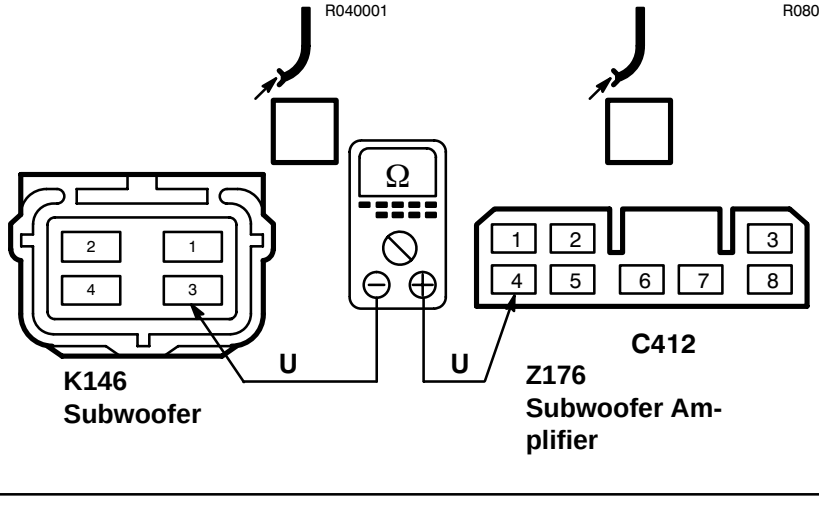
OK

11E

11E

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- U Wire

OK

12E

11E

12E

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

RESULTS
- **Subwoofer Speakers**
  Operate

OK **PROBLEM CAUSE**
- **Radio**
- **Subwoofer Amplifier**

OK **PROBLEM CAUSE**
- **Subwoofer**

CIRCUIT OPERATION

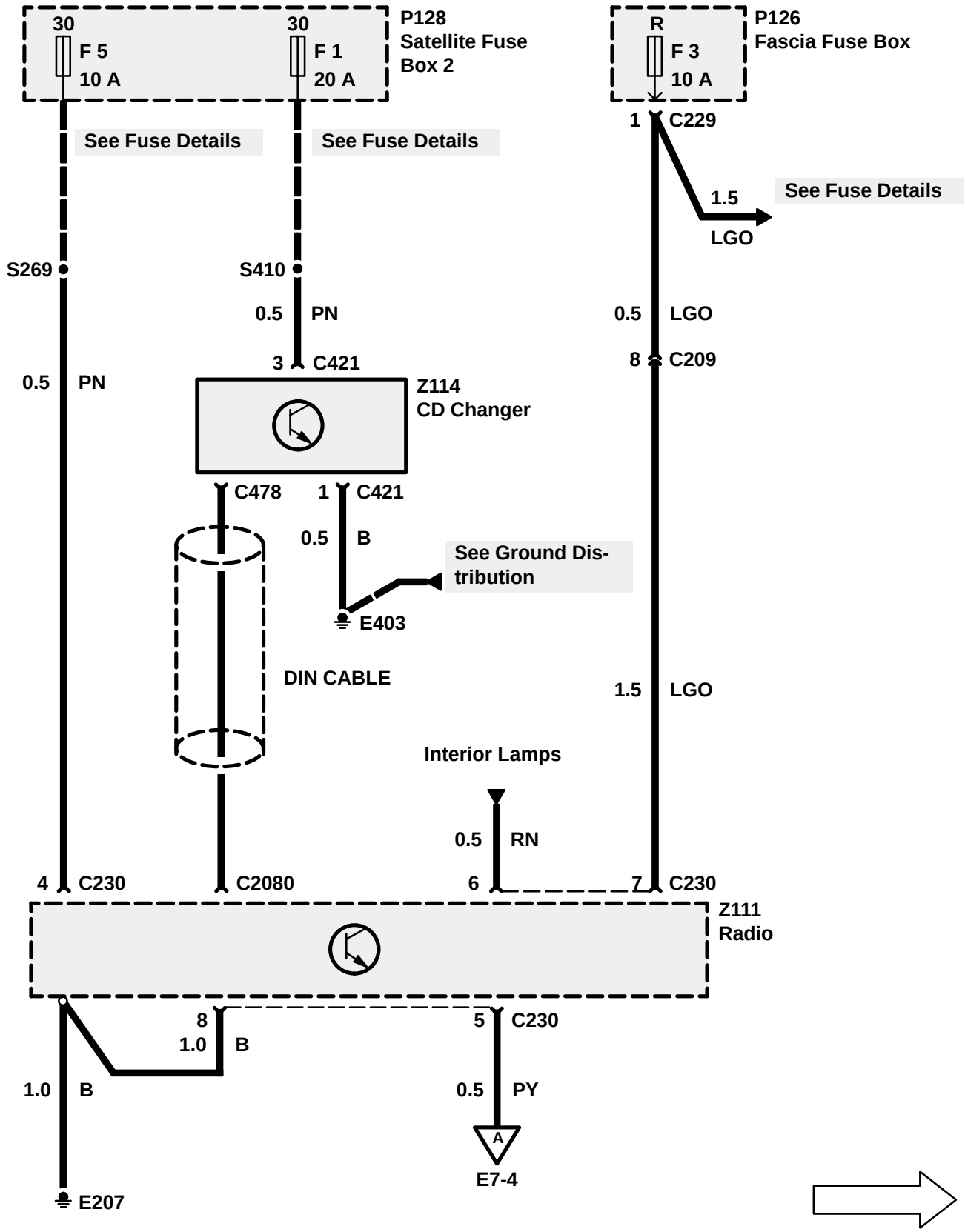
The NAS/JAPAN audio system consists of a new head unit, two Antenna Amplifiers, an Amplifier (Z175), a CD Changer (Z114) and a subwoofer. The control head is equipped with an anti−theft feature which makes the unit inoperative once battery power is removed. A security code must be entered to restore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

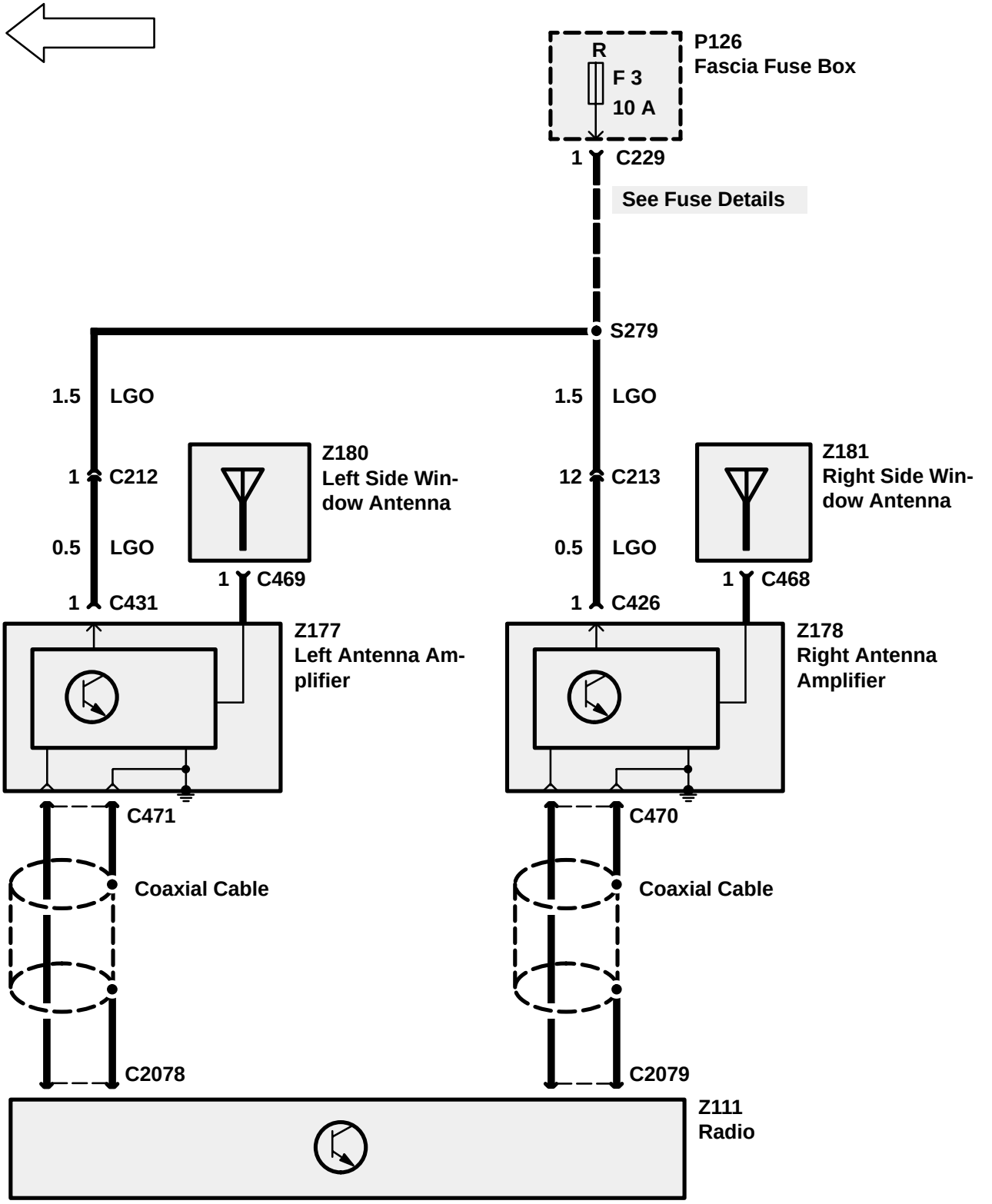
Battery voltage is provided to the control head at all times through the PN wire. In addition to monitoring the anti−theft feature, this input keeps the preset station memory alive. Whenever battery power to the unit is lost, the anti−theft code must be entered and the preset stations must be reprogrammed.

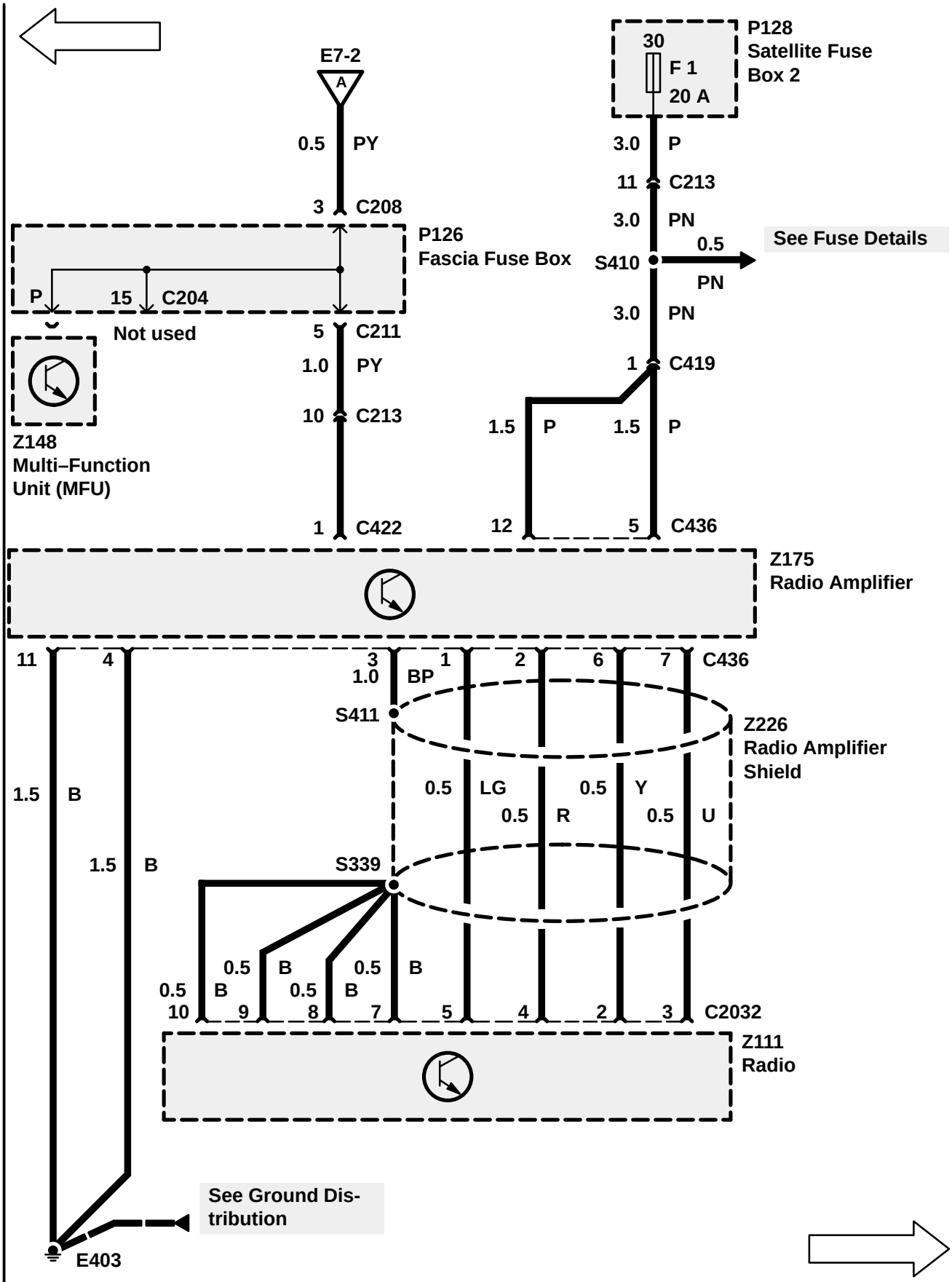
When the Radio (Z111) and the ignition are turned on, the voltage signal through the LGO wire and the control head 'wakes up' the unit. The Radio (Z111) plays, the VF display comes on and the control unit buttons illuminate. The VF display is dimmed when the headlights or park lights are turned on. When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

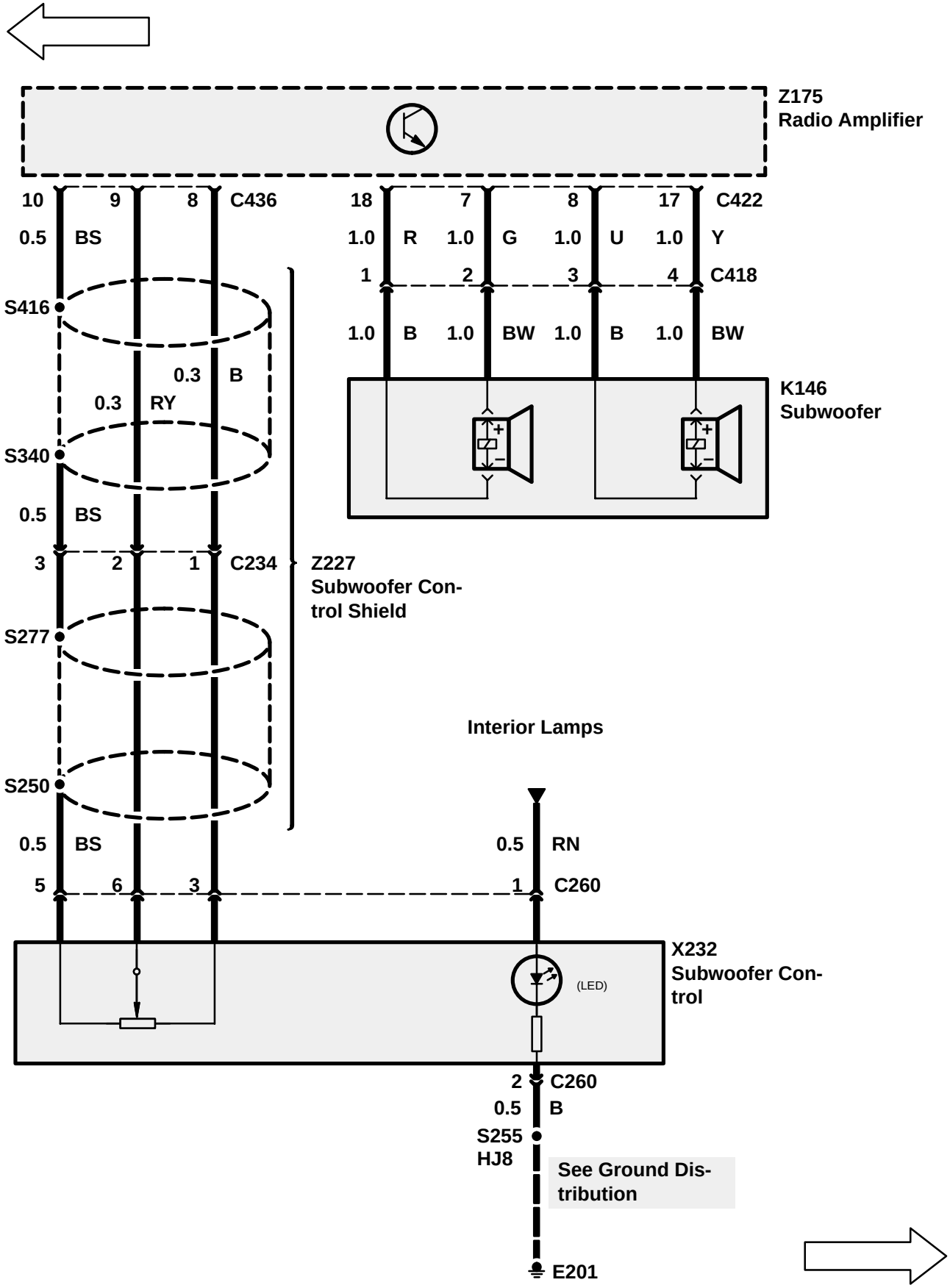
Power is available to the CD Changer (Z114) at all times. It is operated from the control head when 'CD' is selected. The control head communicates with the Changer (Z114) via a DIN cable.

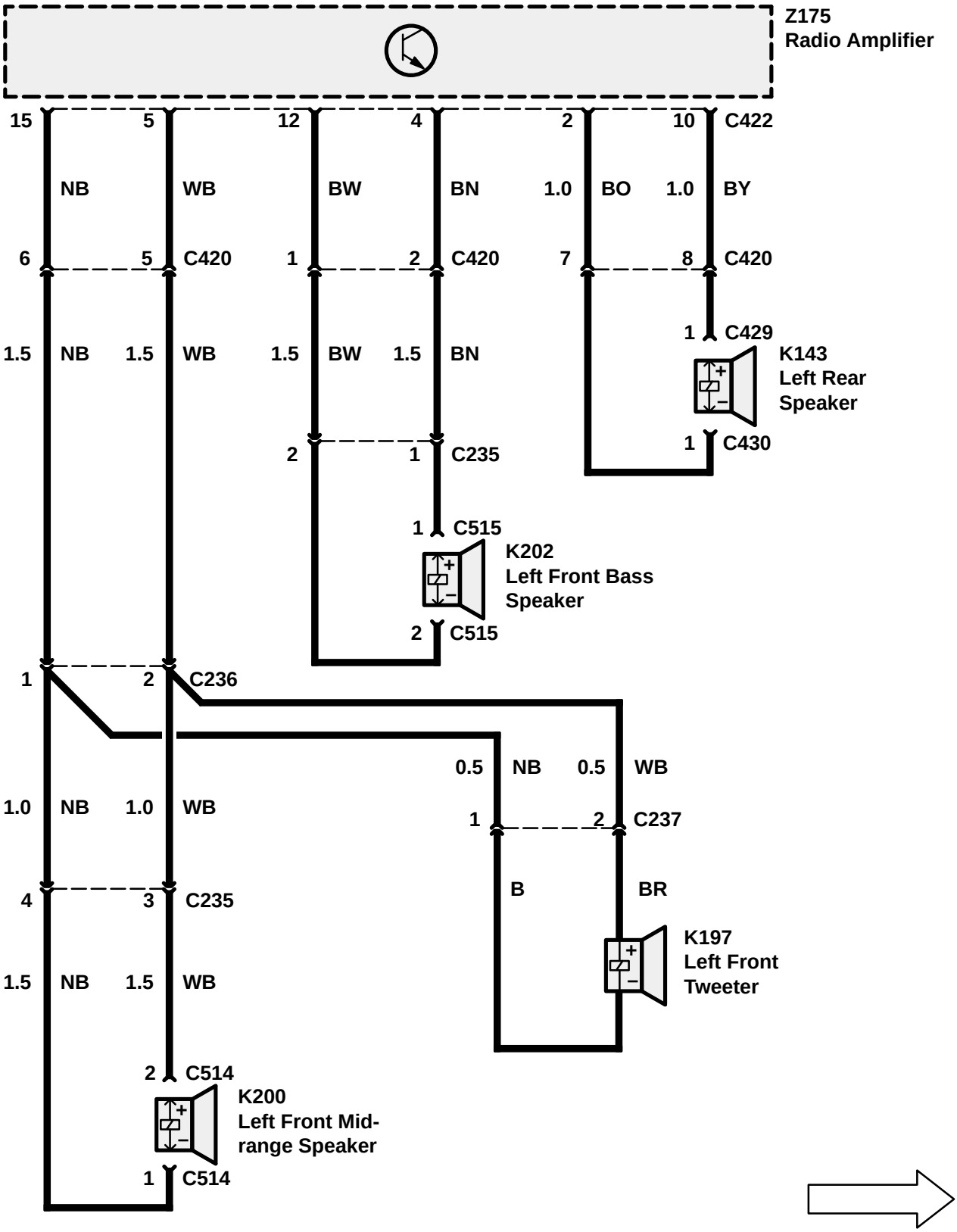
The amplifier receives power with the ignition on. It is enabled when the Radio (Z111) is turned on, sending a voltage signal through the PY wire.

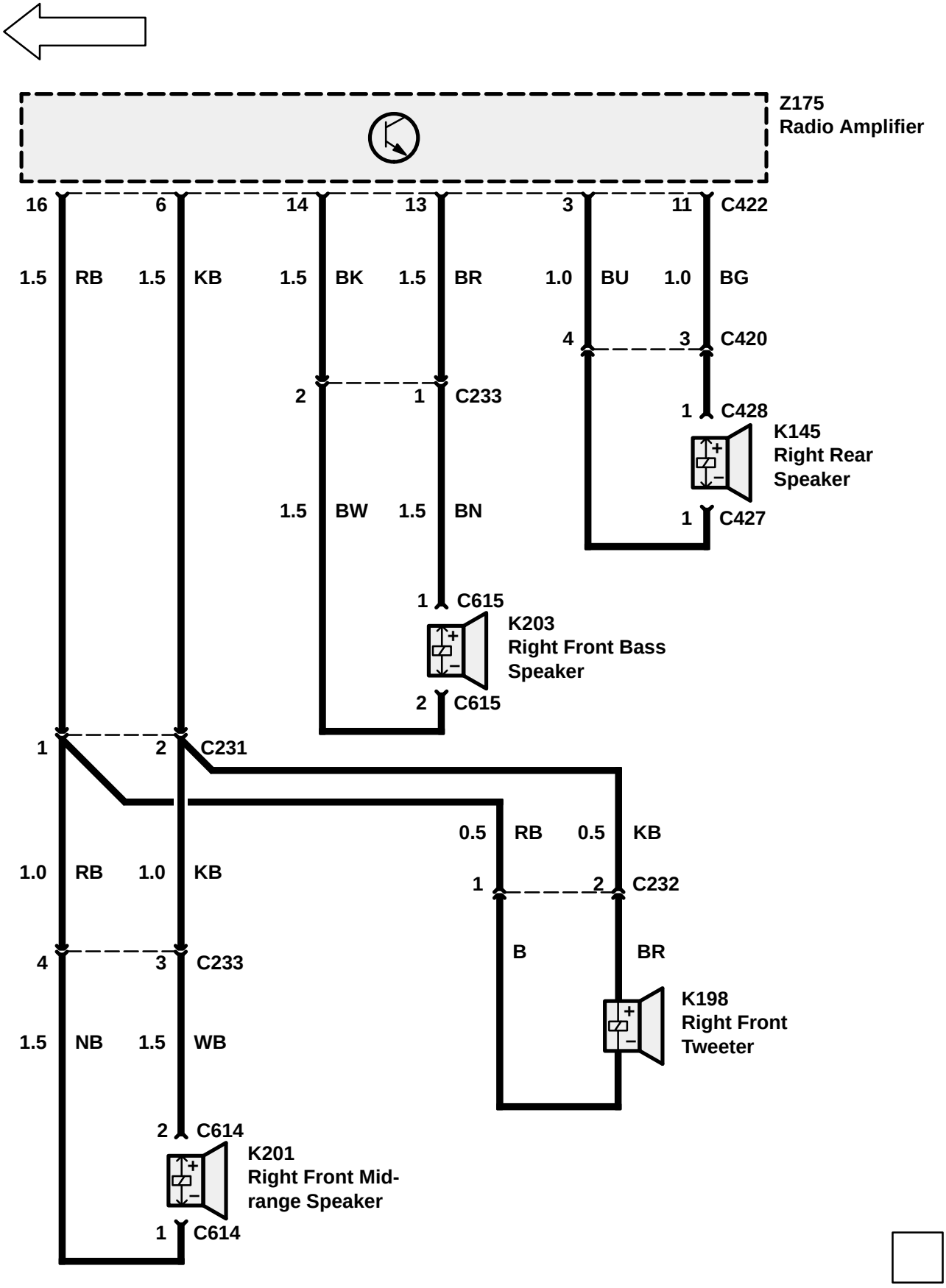

30
F 5
10 A
30
F 1
20 A
P128
Satellite Fuse
Box 2
R
F 3
10 A
P126
Fascia Fuse Box
See Fuse Details
See Fuse Details
1
C229
1.5
LGO
See Fuse Details
S269
S410
0.5
PN
0.5
LGO
3
C421
8
C209
0.5
PN
Z114
CD Changer
C478
1
C421
0.5
B
See Ground Dis-
tribution
E403
DIN CABLE
1.5
LGO
Interior Lamps
0.5
RN
4
C230
C2080
6
7
C230
Z111
Radio
8
1.0
B
5
C230
1.0
B
0.5
PY
A
E7-4
E207


R
F 3
10 A
P126
Fascia Fuse Box
1
C229
See Fuse Details
S279
1.5
LGO
1.5
LGO
1
C212
12
C213
Z180
Left Side Window Antenna
Z181
Right Side Window Antenna
0.5
LGO
0.5
LGO
1
C469
1
C468
1
C431
1
C426
Z177
Left Antenna Amplifier
Z178
Right Antenna Amplifier
C471
C470
Coaxial Cable
Coaxial Cable
C2078
C2079
Z111
Radio


E7-2
A
0.5 PY
3 C208
P126
Fascia Fuse Box
P 15 C204
Not used
5 C211
1.0 PY
10 C213
Z148
Multi–Function
Unit (MFU)
1 C422
30
F 1
20 A
P128
Satellite Fuse
Box 2
3.0 P
11 C213
3.0 PN
S410
0.5 PN
See Fuse Details
3.0 PN
1 C419
1.5 P
1.5 P
12
5 C436
Z175
Radio Amplifier
11
4
3
1.0 BP
1
2
6
7 C436
S411
Z226
Radio Amplifier
Shield
1.5 B
0.5 LG
0.5 Y
0.5 R
0.5 U
1.5 B
S339
0.5 B
0.5 B
0.5 B
0.5 B
10
9
8
7
5
4
2
3 C2032
Z111
Radio
See Ground Dis-
tribution
E403


Z175
Radio Amplifier
10 9 8 C436
0.5 BS
S416
0.3 B
0.3 RY
S340
0.5 BS
3 2 1 C234
S277
S250
0.5 BS
5 6 3
18 7 8 17 C422
1.0 R 1.0 G 1.0 U 1.0 Y
1 2 3 4 C418
1.0 B 1.0 BW 1.0 B 1.0 BW
K146
Subwoofer
Z227
Subwoofer Control Shield
Interior Lamps
0.5 RN
1 C260
X232
Subwoofer Control
(LED)
2 C260
0.5 B
S255
HJ8
See Ground Distribution
E201


Z175
Radio Amplifier
15
5
NB
WB
6
5
C420
1.5
NB
1.5
WB
12
4
BW
BN
1
2
C420
1.5
BW
1.5
BN
2
1
C235
1
C515
K202
Left Front Bass Speaker
2
C515
2
10
C422
1.0
BO
1.0
BY
7
8
C420
1
C429
K143
Left Rear Speaker
1
C430
1
2
C236
1.0
NB
1.0
WB
4
3
C235
1.5
NB
1.5
WB
2
C514
K200
Left Front Mid-range Speaker
1
C514
0.5
NB
0.5
WB
1
2
C237
B
BR
K197
Left Front Tweeter


Z175
Radio Amplifier
16
6
14
13
3
11
C422
1.5
RB
1.5
KB
1.5
BK
1.5
BR
1.0
BU
1.0
BG
4
3
C420
2
1
C233
1
C428
K145
Right Rear
Speaker
1.5
BW
1.5
BN
1
C427
1
C615
K203
Right Front Bass
Speaker
2
C615
1
2
C231
0.5
RB
0.5
KB
1.0
RB
1.0
KB
1
2
C232
B
BR
4
3
C233
K198
Right Front
Tweeter
1.5
NB
1.5
WB
2
C614
K201
Right Front Mid-
range Speaker
1
C614

TROUBLESHOOTING HINTS

39. Check fuses F5 and F1 of Satellite Fusebox 2, and fuse F3 of Fascia Fusbox.
40. Check that Radio (Z111) connectors and coaxial cable are tight and properly connected.
41. 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.
42. If Radio (Z111) noise is excessive when an accessory is on, install a Radio noise suppression capacitor to the power lead of that accessory.
43. If Radio (Z111) noise is excessive at all times, check antenna wiring. If OK, check spark plugs (P118), spark plug wiring and wiring close to the ignition system which could transmit noise to the Radio wiring.
44. If the Radio (Z111) is inoperative and 'code' is being shown on the display, follow the instructions below.

Security Code Instructions

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

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

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

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

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

SYSTEM DIAGNOSIS

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

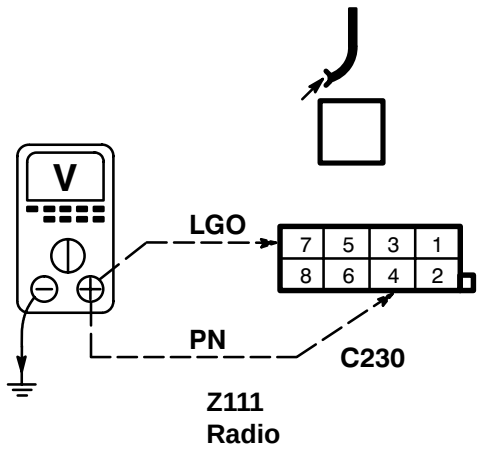
Test A

1A

R080017

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **PN Wire**
- **LGO Wire**
- **F5 Fuse**
- **F3 Fuse**

OK

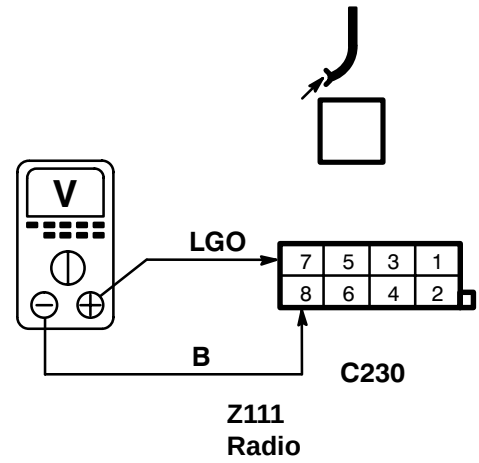
2A

2A

R080017

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **B Wire**

OK

3A

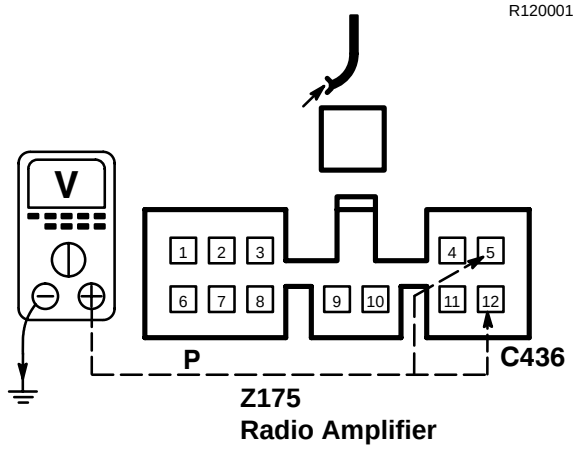
2A

3A

R120001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **PN Wire**
- **F1 Fuse**
- **P Wire**

OK

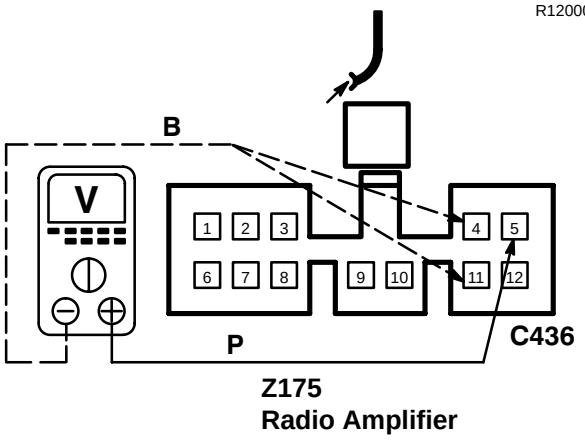
4A

4A

R120001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



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

OK

5A

4A

5A

R180003

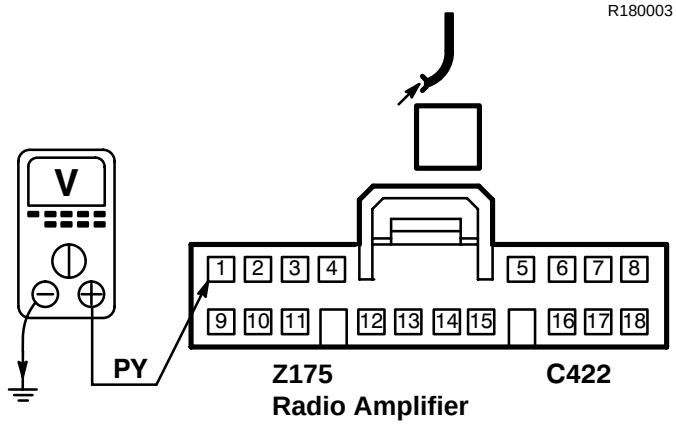
CONDITIONS

- **Ignition Switch**

Position: II

RESULTS

BAT VOLT



OK

PROBLEM CAUSE

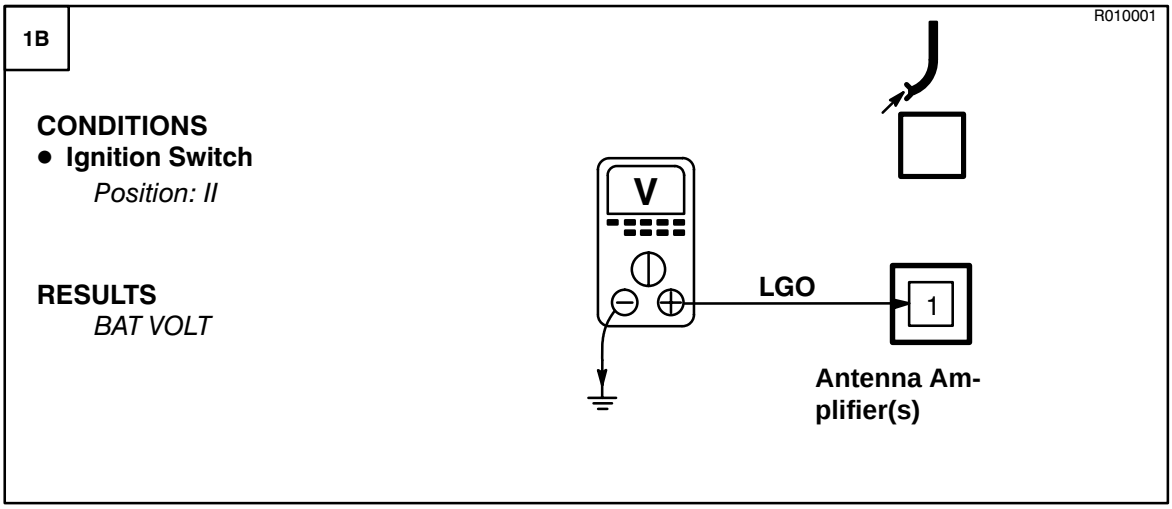
- **PY Wire**
- **Radio**
- **Fascia Fuse Box**

OK

PROBLEM CAUSE

- **Radio Amplifier**

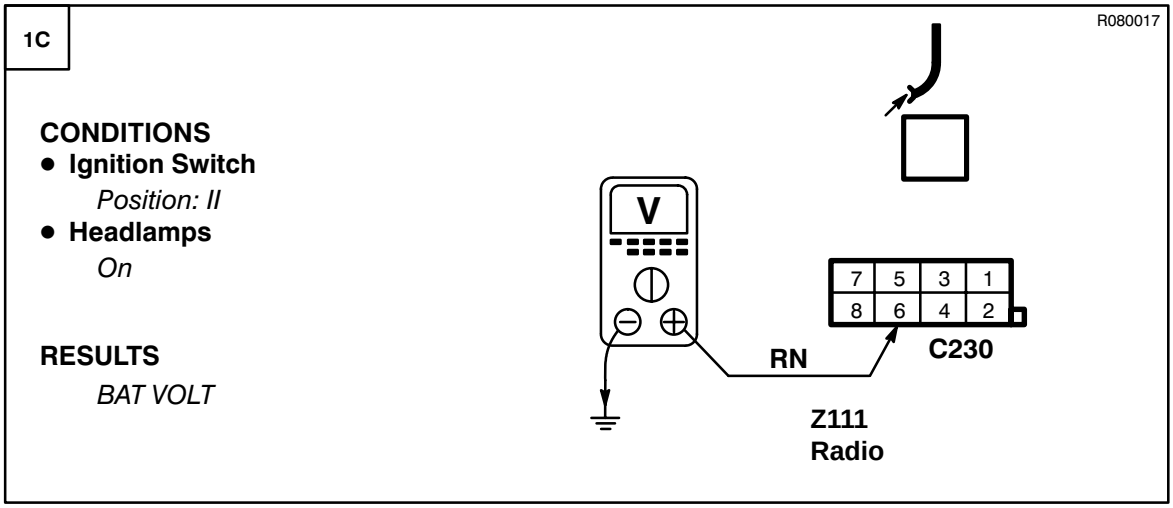
Test B



OK **PROBLEM CAUSE**
- **LGO Wire**

OK **PROBLEM CAUSE**
- **Coaxial Cable**
- **Radio**
- **Antenna Amplifier(s)**

Test C



OK **PROBLEM CAUSE**
- **RN Wire**

OK **PROBLEM CAUSE**
- **Radio**

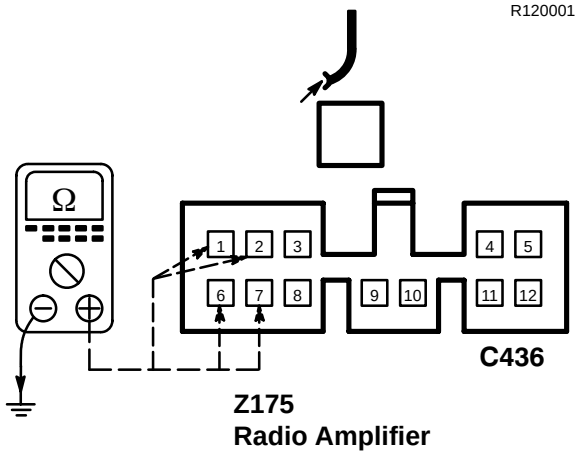
Test D

1D

R120001

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Radio**
  Disconnected

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- Wire (short)

OK

2D

2D

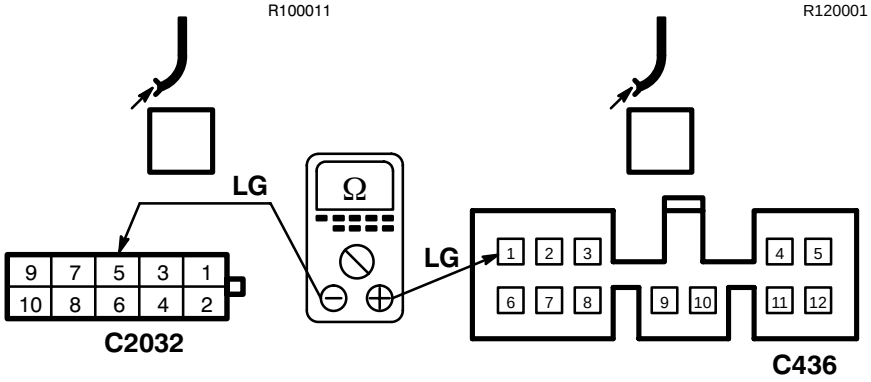
R100011

R120001

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
0 Ω



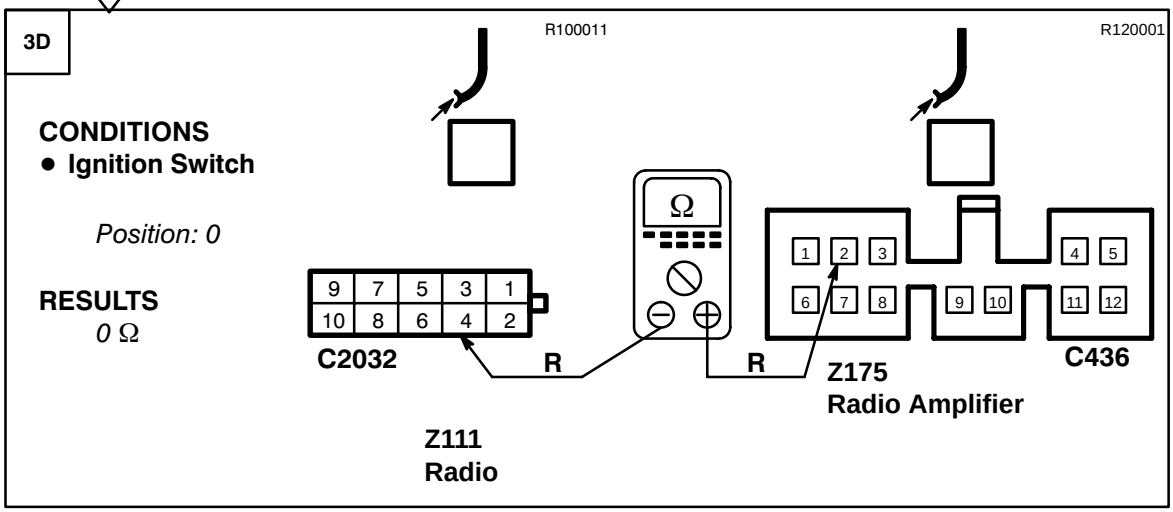
OK **PROBLEM CAUSE**
- LG Wire

OK

3D

2D

3D

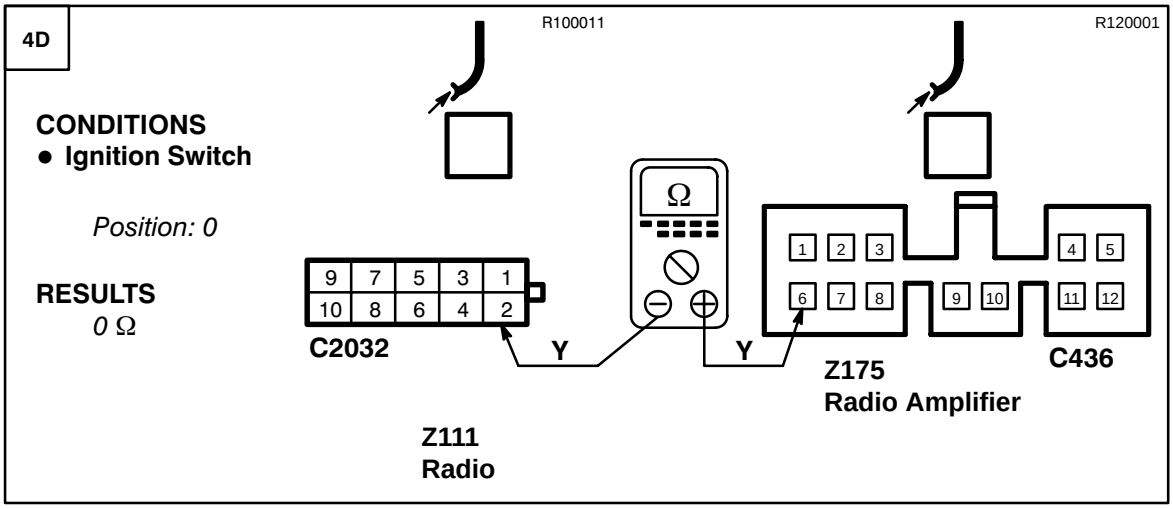


OK **PROBLEM CAUSE**
- R Wire

OK

4D

4D



OK **PROBLEM CAUSE**
- Y Wire

OK

5D

4D

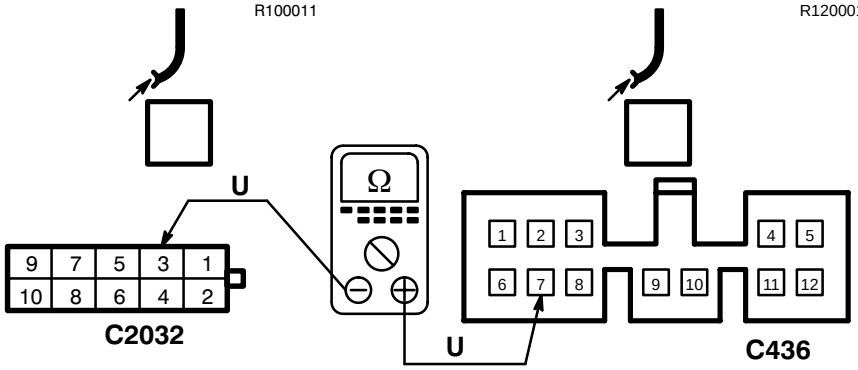
5D

R100011 R120001

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
0 Ω



OK **PROBLEM CAUSE**
- **U Wire**

OK

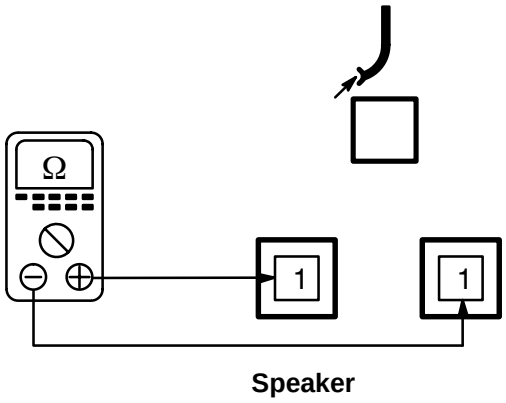
6D

6D

R010001

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

RESULTS
Speaker 'pops'



OK **PROBLEM CAUSE**
- **Speaker**

OK **PROBLEM CAUSE**
- **Speaker Wiring**
- **Radio Amplifier**

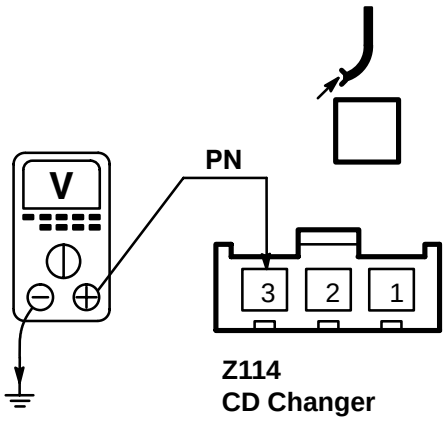
Test E

1E

R030029

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **PN Wire**

OK

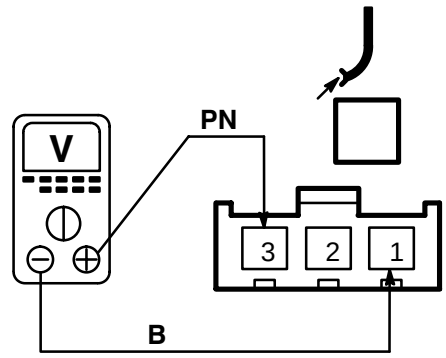
2E

2E

R030029

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



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

OK **PROBLEM CAUSE**
- **DIN CABLE**
- **CD Changer**
- **Radio**

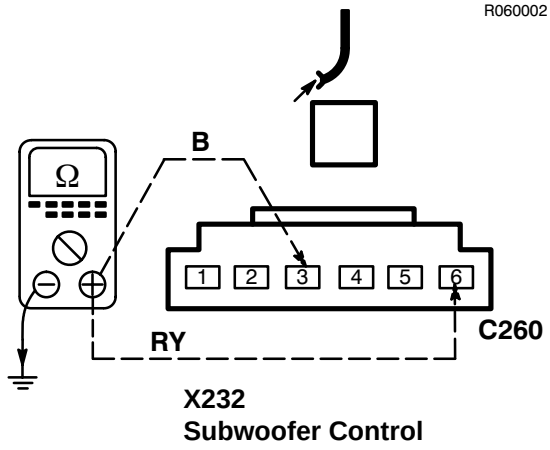
Test F

1F

R060002

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Amplifier**
  Disconnected

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **RY Wire**
- **B Wire**

OK → 2F

2F

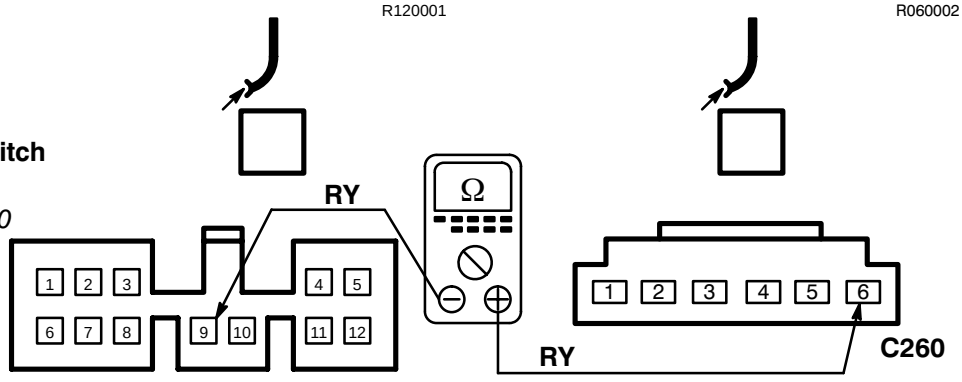
R120001

R060002

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
0 Ω



OK **PROBLEM CAUSE**
- **RY Wire**

OK → 3F

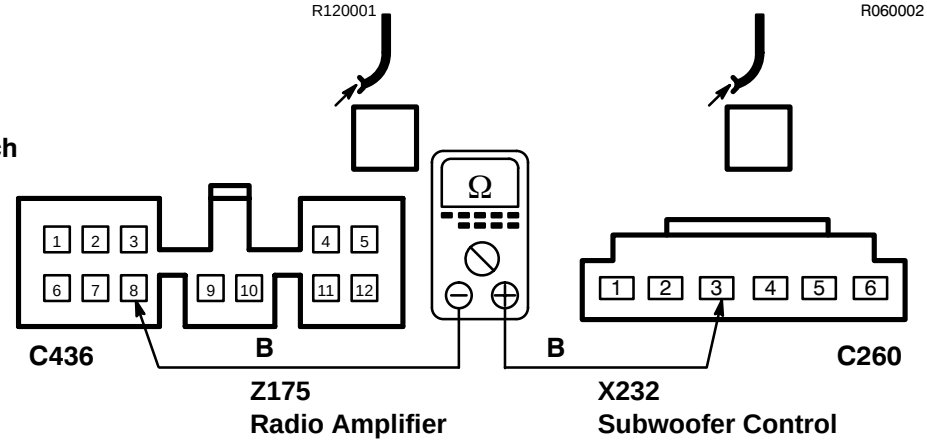
2F

3F

R120001 R060002

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
0 Ω



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

OK

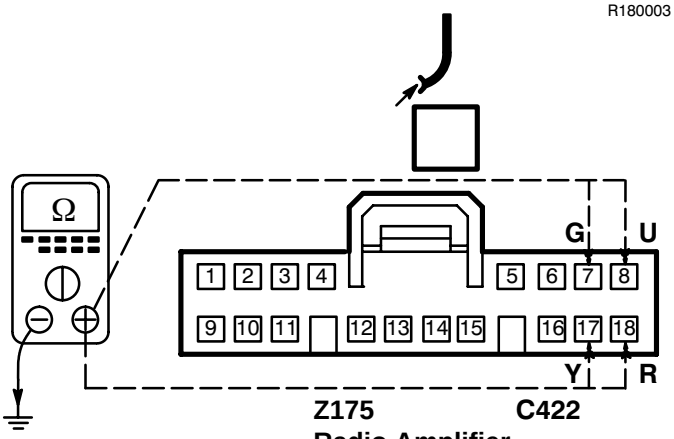
4F

4F

R180003

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 100K ohms



OK **PROBLEM CAUSE**
- **Wire (short)**
- **Subwoofer**

OK

5F

4F

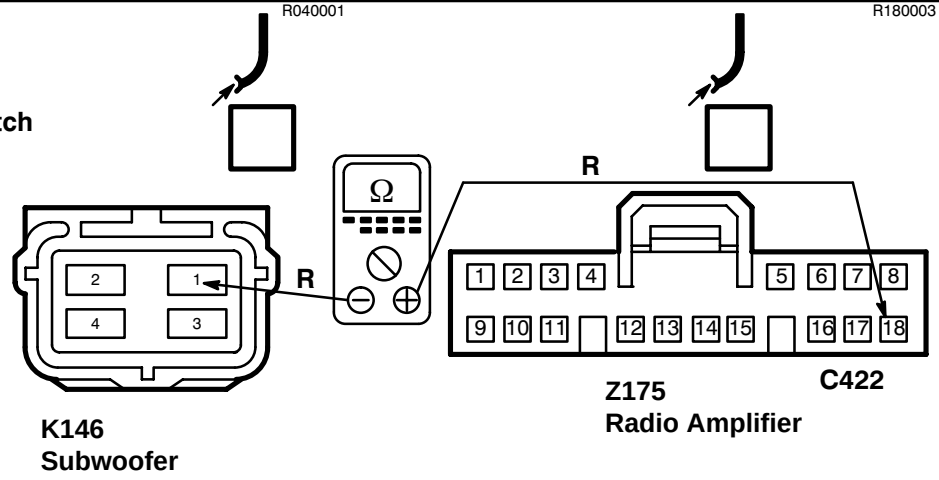
5F

R040001 R180003

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
Less than 1 ohm



K146
Subwoofer

Z175
Radio Amplifier

C422

OK **PROBLEM CAUSE**
- **R Wire**

OK

6F

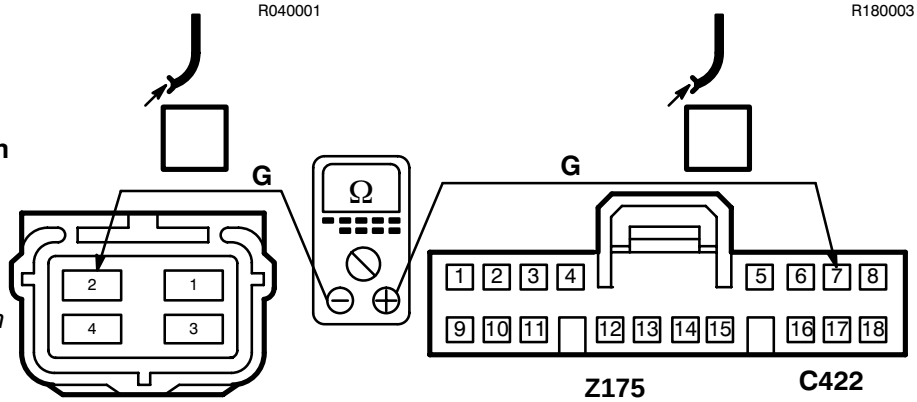
6F

R040001 R180003

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
Less than 1 ohm



K146
Subwoofer

Z175
Radio Amplifier

C422

OK **PROBLEM CAUSE**
- **G Wire**

OK

7F

6F

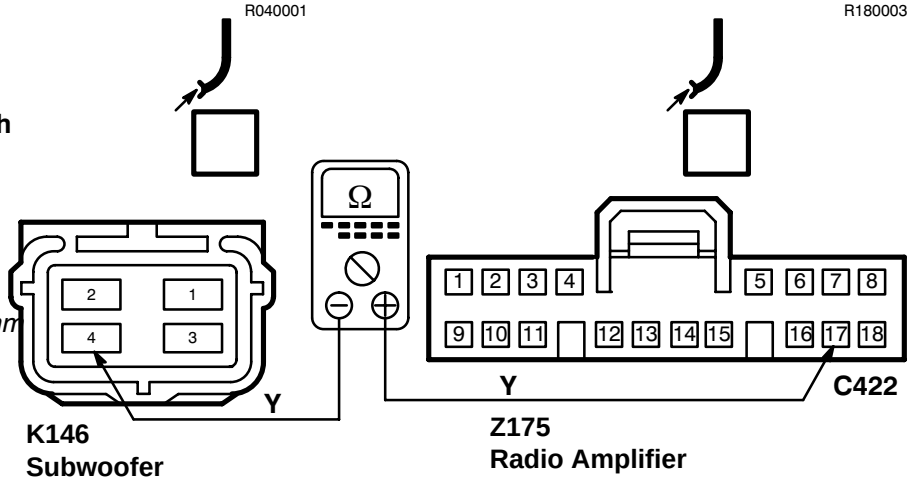
7F

R040001 R180003

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **Y Wire**

OK

8F

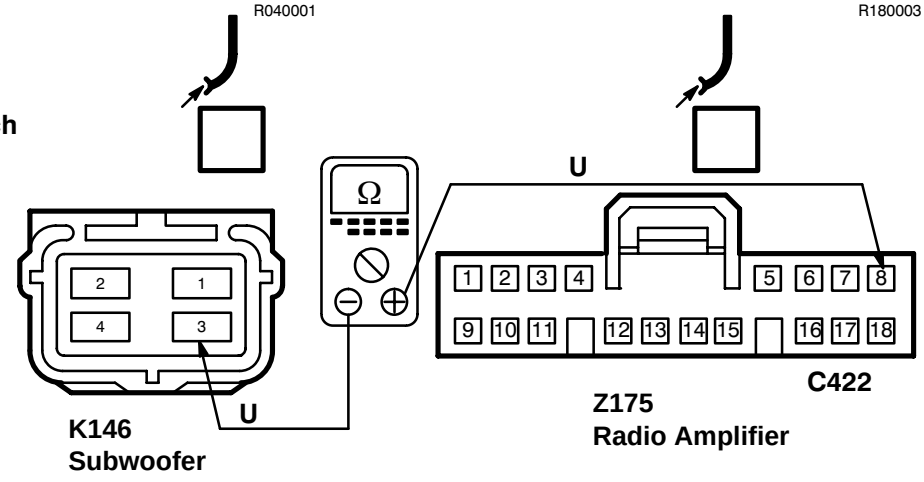
8F

R040001 R180003

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **U Wire**

OK

9F

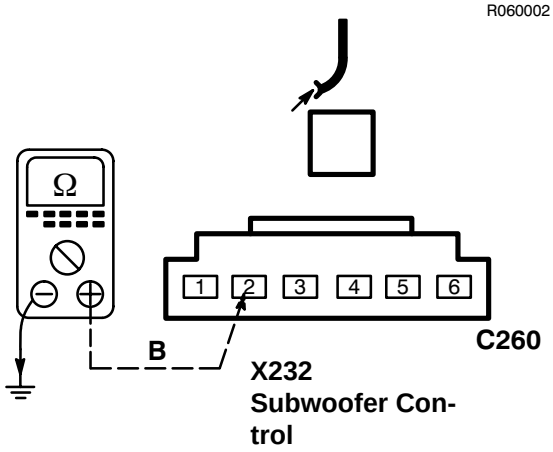
8F

9F

R060002

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK

10F

10F

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

RESULTS
- **Subwoofer Speakers**
  Operate

OK **PROBLEM CAUSE**
- **Radio Amplifier**
- **Subwoofer Control**

OK **PROBLEM CAUSE**
- **Subwoofer**

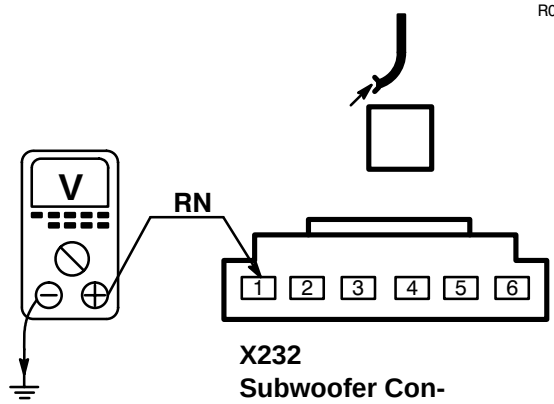
Test G

1G

R060002

CONDITIONS
- **Ignition Switch**
  Position: I
- **Headlamps**
  With Subwoofer

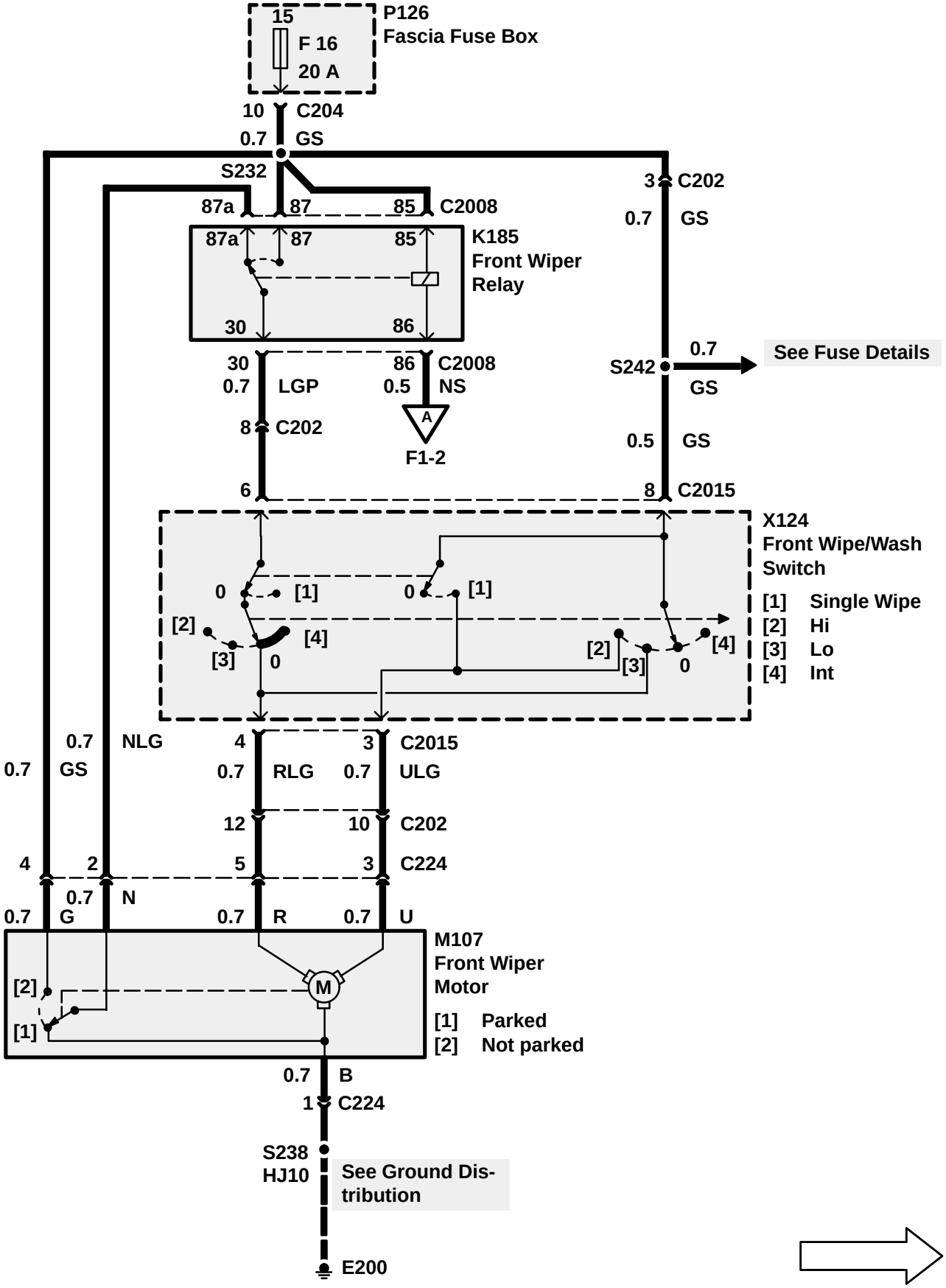
RESULTS
BAT VOLT



X232
Subwoofer Control

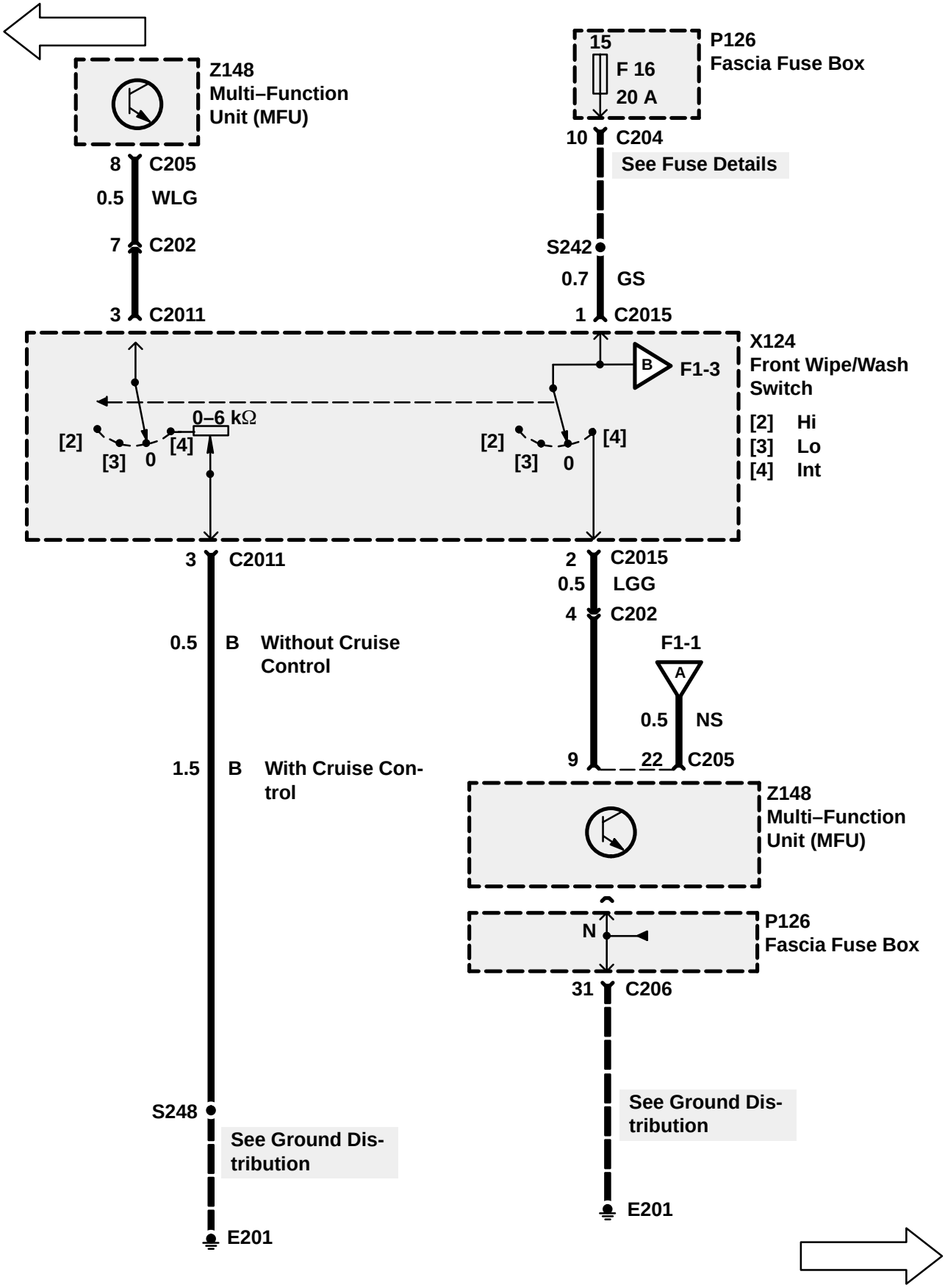
OK **PROBLEM CAUSE**
- RN Wire

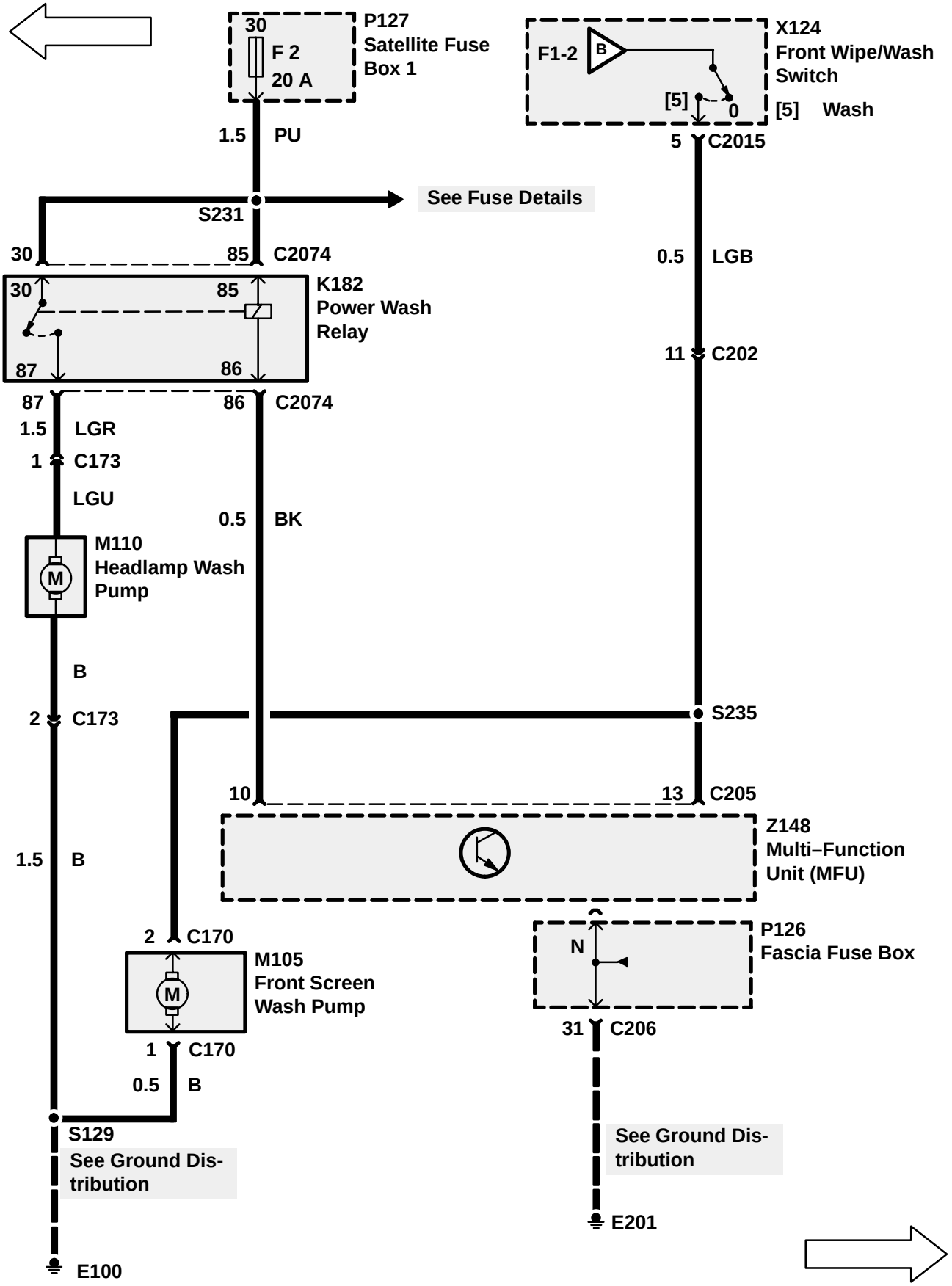
OK **PROBLEM CAUSE**
- Subwoofer Control


15
F 16
20 A
P126
Fascia Fuse Box
10
C204
0.7
GS
S232
87a
87
85
C2008
3
C202
0.7
GS
K185
Front Wiper
Relay
30
86
0.7
See Fuse Details
S242
GS
0.7
LGP
0.5
NS
8
C202
A
F1-2
0.5
GS
6
8
C2015
X124
Front Wipe/Wash
Switch
[1] Single Wipe
[2] Hi
[3] Lo
[4] Int
0
[1]
[2]
[3]
[4]
NLG
4
3
C2015
RLG
ULG
12
10
C202
5
C224
N
G
R
U
M107
Front Wiper
Motor
[1] Parked
[2] Not parked
M
B
1
C224
S238
HJ10
See Ground Dis-
tribution
E200

F1 ETM

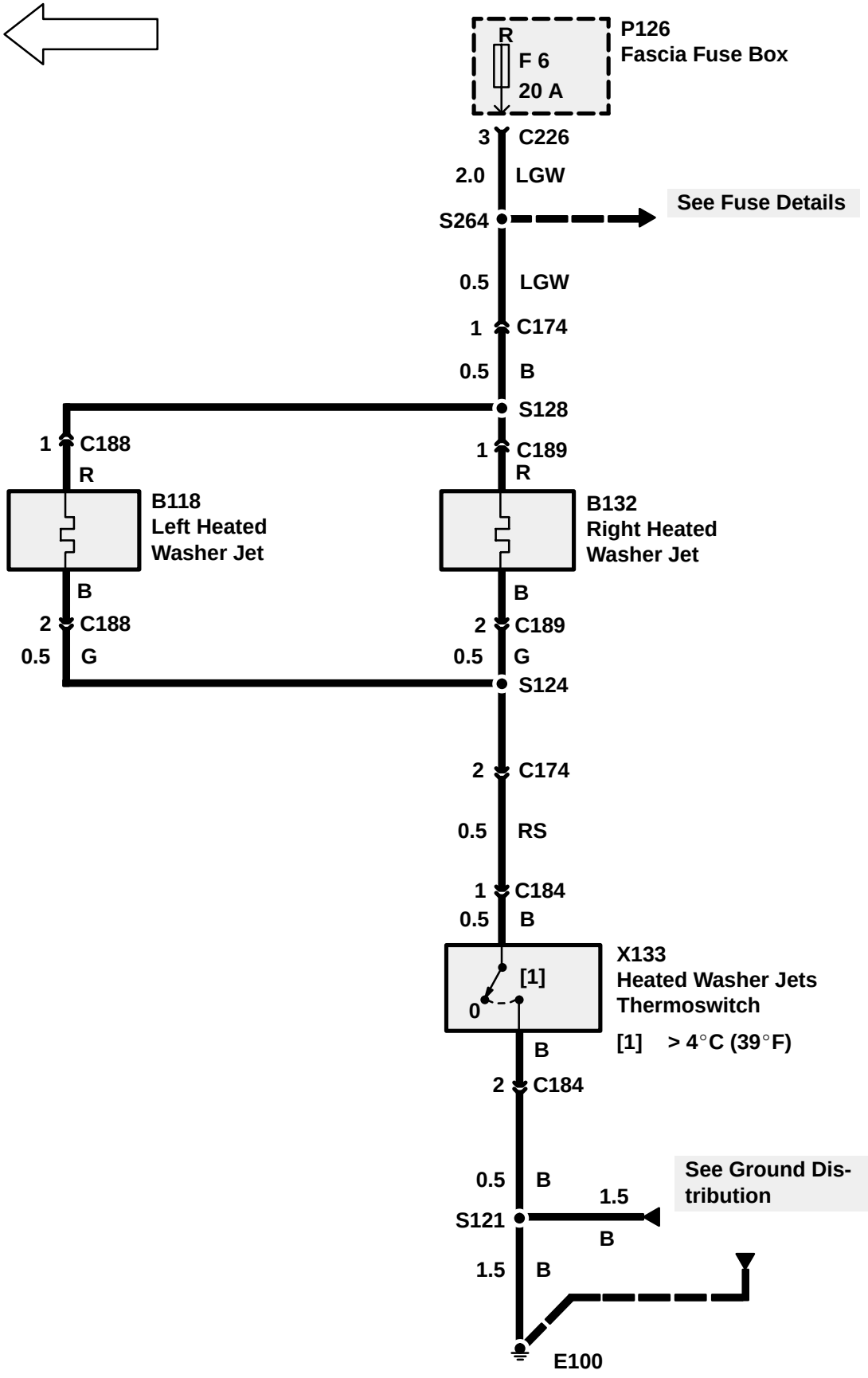
1995 RANGE ROVER




30
F 2
20 A
P127
Satellite Fuse
Box 1
1.5 PU
S231
See Fuse Details
30
85
C2074
30
85
87
86
K182
Power Wash
Relay
87
86
C2074
1.5 LGR
1 C173
LGU
0.5 BK
M110
Headlamp Wash
Pump
B
2 C173
1.5 B
S129
See Ground Dis-
tribution
E100
F1-2
B
[5]
0
X124
Front Wipe/Wash
Switch
[5] Wash
5 C2015
0.5 LGB
11 C202
S235
10
13 C205
Z148
Multi–Function
Unit (MFU)
2 C170
M105
Front Screen
Wash Pump
1 C170
0.5 B
N
P126
Fascia Fuse Box
31 C206
See Ground Dis-
tribution
E201

F1 ETM

1995 RANGE ROVER



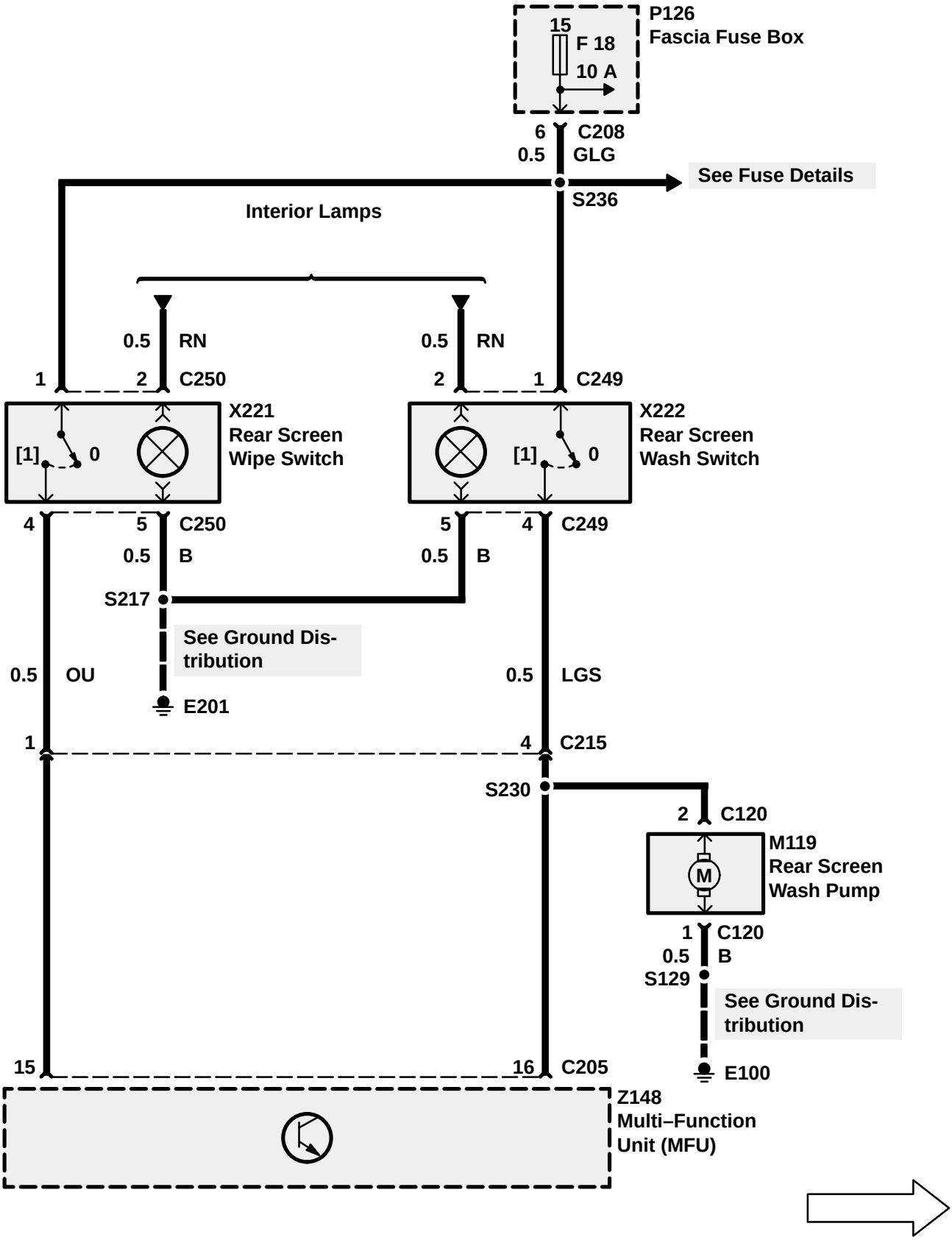
CIRCUIT OPERATION

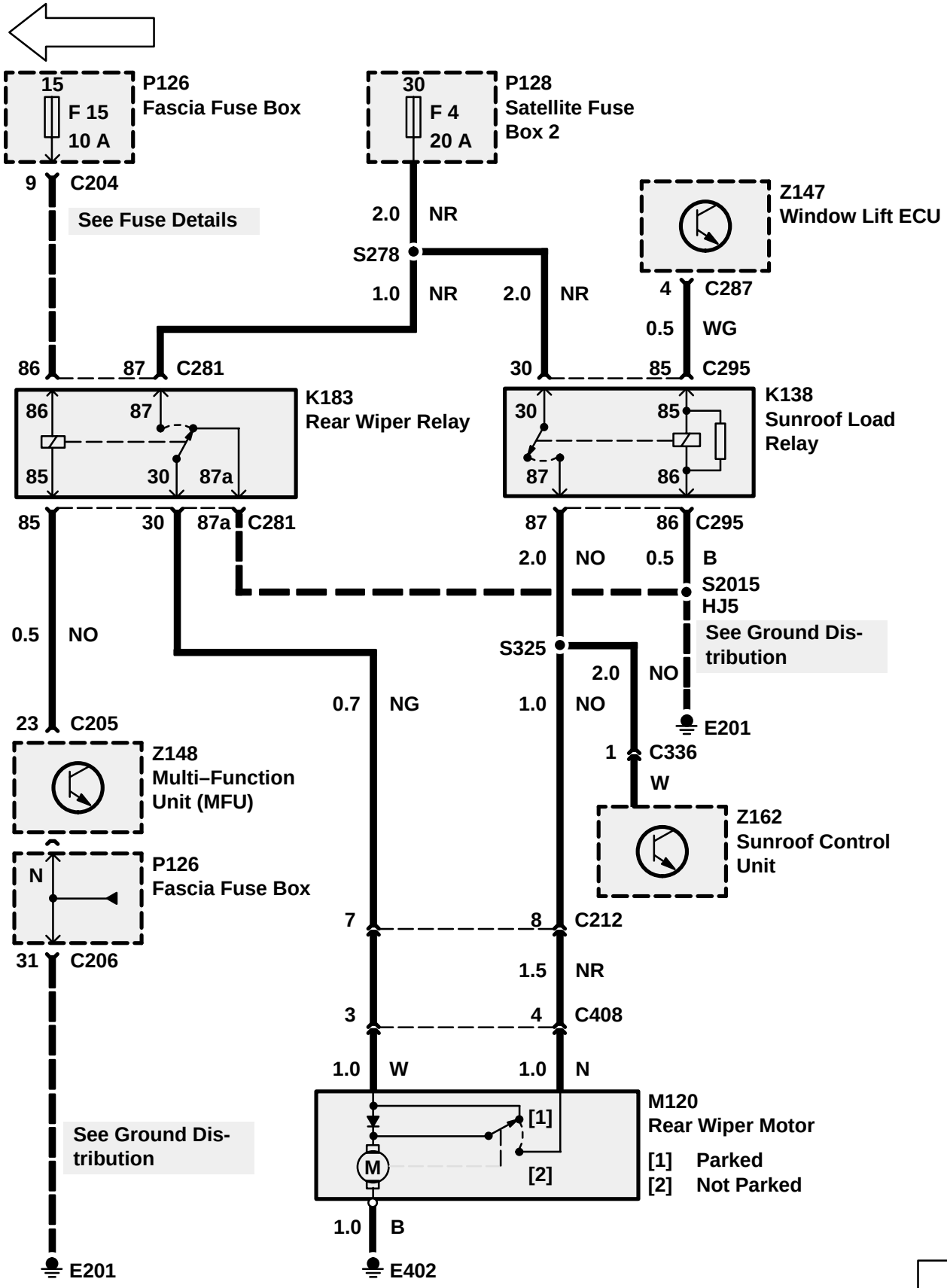
Washer

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

Wiper

When the Rear Wipe Switch (X221) is pulled to the WIPE position, the Multifunction Unit (MFU) (Z148) applies ground to the Rear Wipe Relay (K183). Battery voltage is then applied to the Rear Wiper Motor (M120) from Fuse F4. If the wiper is turned off, battery voltage is no longer supplied from Fuse F4. To allow the wiper to return to his parked position, the windowlift ECU (Z147) supplies terminal 87a of the Rear Wiper Relay (K183) with battery voltage for 30 seconds after the Ignition has been turned off.


P126
Fascia Fuse Box
15
F 18
10 A
6
0.5
C208
GLG
See Fuse Details
S236
Interior Lamps
0.5
RN
1
2
C250
0.5
RN
2
1
C249
X221
Rear Screen
Wipe Switch
[1]
0
X222
Rear Screen
Wash Switch
[1]
0
4
5
C250
5
4
C249
0.5
B
0.5
B
S217
See Ground Dis-
tribution
0.5
OU
E201
0.5
LGS
1
4
C215
S230
2
C120
M119
Rear Screen
Wash Pump
M
1
C120
0.5
B
S129
See Ground Dis-
tribution
E100
15
16
C205
Z148
Multi–Function
Unit (MFU)


15
F 15
10 A
P126
Fascia Fuse Box
9
C204
See Fuse Details
30
F 4
20 A
P128
Satellite Fuse
Box 2
2.0
NR
S278
1.0
NR
2.0
NR
Z147
Window Lift ECU
4
C287
0.5
WG
86
87
C281
30
85
C295
K183
Rear Wiper Relay
K138
Sunroof Load
Relay
85
30
87a
C281
87
86
C295
2.0
NO
0.5
B
S2015
HJ5
See Ground Dis-
tribution
0.5
NO
S325
2.0
NO
0.7
NG
1.0
NO
E201
23
C205
1
C336
W
Z148
Multi–Function
Unit (MFU)
Z162
Sunroof Control
Unit
N
P126
Fascia Fuse Box
7
8
C212
31
C206
1.5
NR
3
4
C408
1.0
W
1.0
N
M120
Rear Wiper Motor
[1]
M
[2]
[1] Parked
[2] Not Parked
See Ground Dis-
tribution
1.0
B
E201
E402

TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS

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

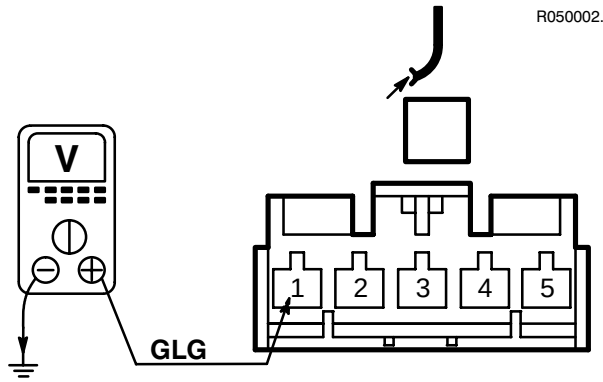
Test A

1A

R050002.00

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **GLG Wire**

OK

2A

2A

R240003

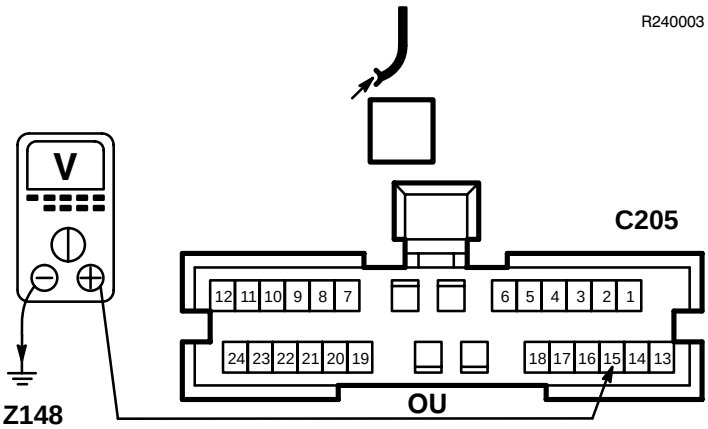
CONDITIONS
- **Ignition Switch**

  Position: II

- **Rear Screen Wipe Switch**

  On

RESULTS
BAT VOLT



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

OK

3A

2A

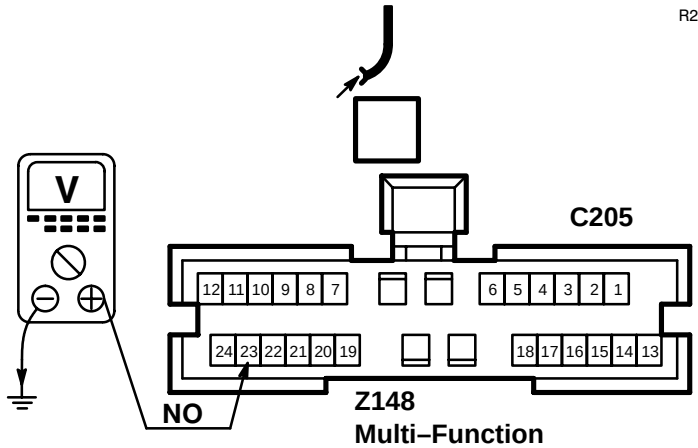
3A

R240003

CONDITIONS
- **Ignition Switch**

Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **GLG Wire**
- **NO Wire**
- **Rear Wiper Relay**

OK

4A

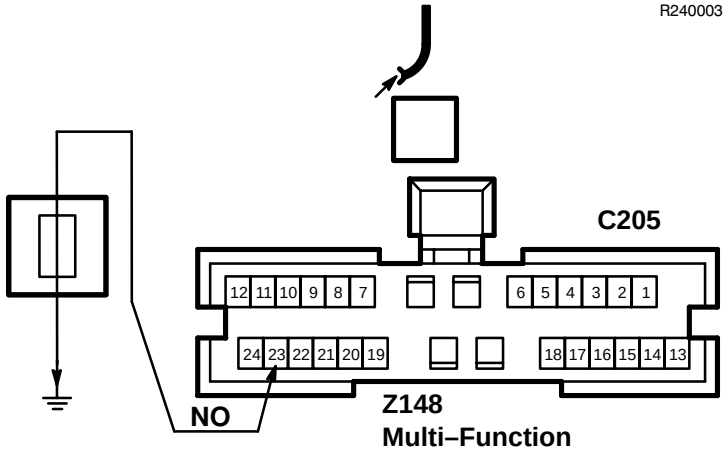
4A

R240003

CONDITIONS
- **Ignition Switch**

Position: II

RESULTS
- **Rear Wiper**
  Operates



OK

OK

PROBLEM CAUSE
- **B Wire**
- **Multi–Function Unit (MFU)**
- **Fascia Fuse Box**

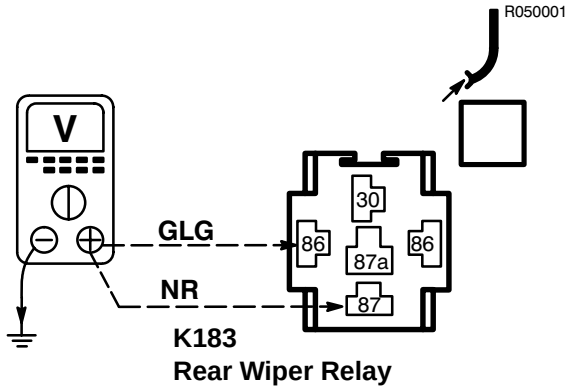
5A

4A

5A

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- NR Wire
- GLG Wire
- F15 Fuse
- F4 Fuse

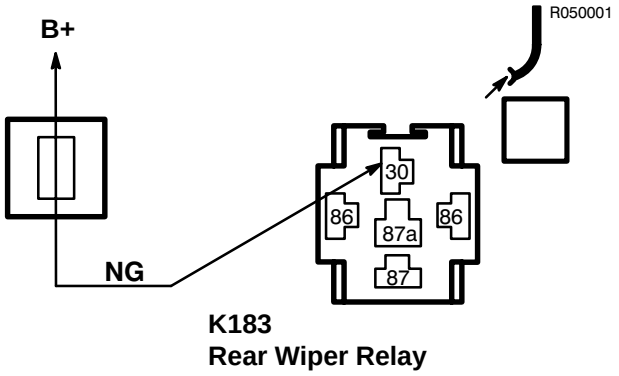
OK

6A

6A

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Rear Wiper**
  Operates



OK **PROBLEM CAUSE**
- NG Wire
- B Wire
- Rear Wiper Motor

OK **PROBLEM CAUSE**
- Rear Wiper Relay

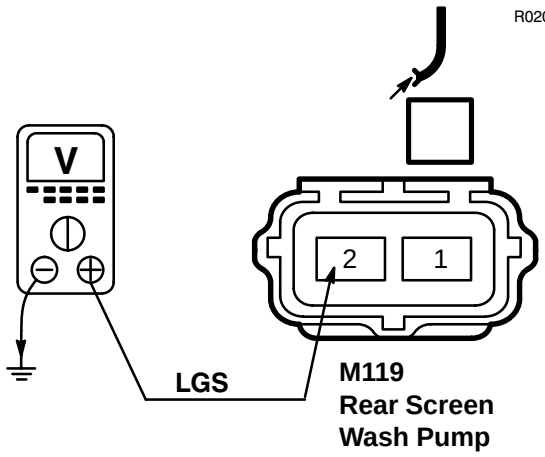
Test B

1B

R020037

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

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **GLG Wire**
- **LGS Wire**
- **Rear Screen Wash Switch**

OK → **2B**

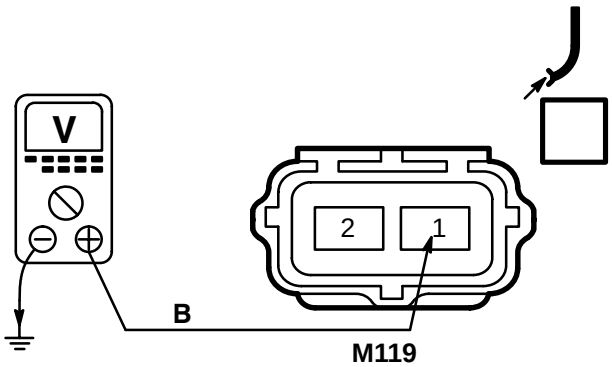
2B

R020037

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
Less than 2 ohms



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

OK **PROBLEM CAUSE**
- **Rear Screen Wash Pump**

Test C

1C

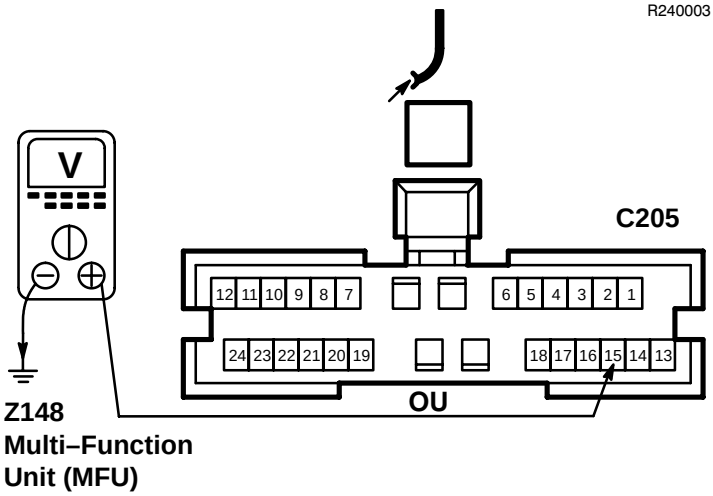
R240003

CONDITIONS
- **Ignition Switch**

Position: II
- **Rear Screen Wipe Switch**

Off

RESULTS
0V



Z148
Multi–Function
Unit (MFU)

OK **PROBLEM CAUSE**
- **Rear Screen Wipe Switch**

OK → 2C

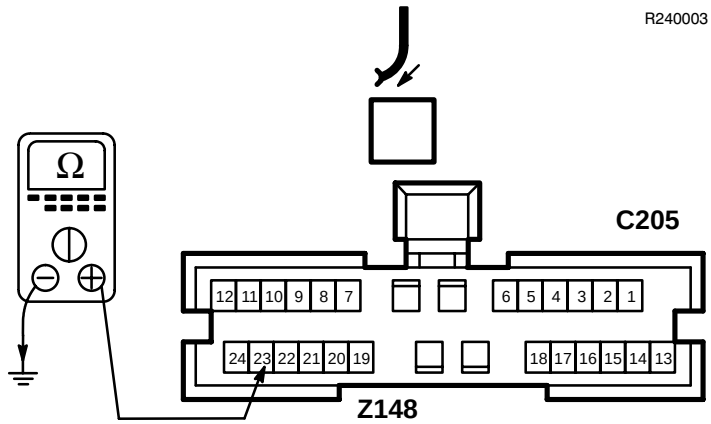
2C

R240003

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
More than 10K ohms



Z148
Multi–Function
Unit (MFU)

OK **PROBLEM CAUSE**
- **Multi–Function Unit (MFU)**

OK → 3C

F3 ETM

2C

3C

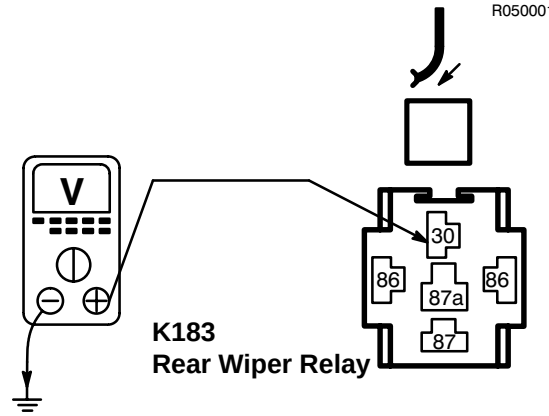
R050001

CONDITIONS

- **Ignition Switch**
  Position: 0
- **Rear Screen Wipe Switch**
  Off

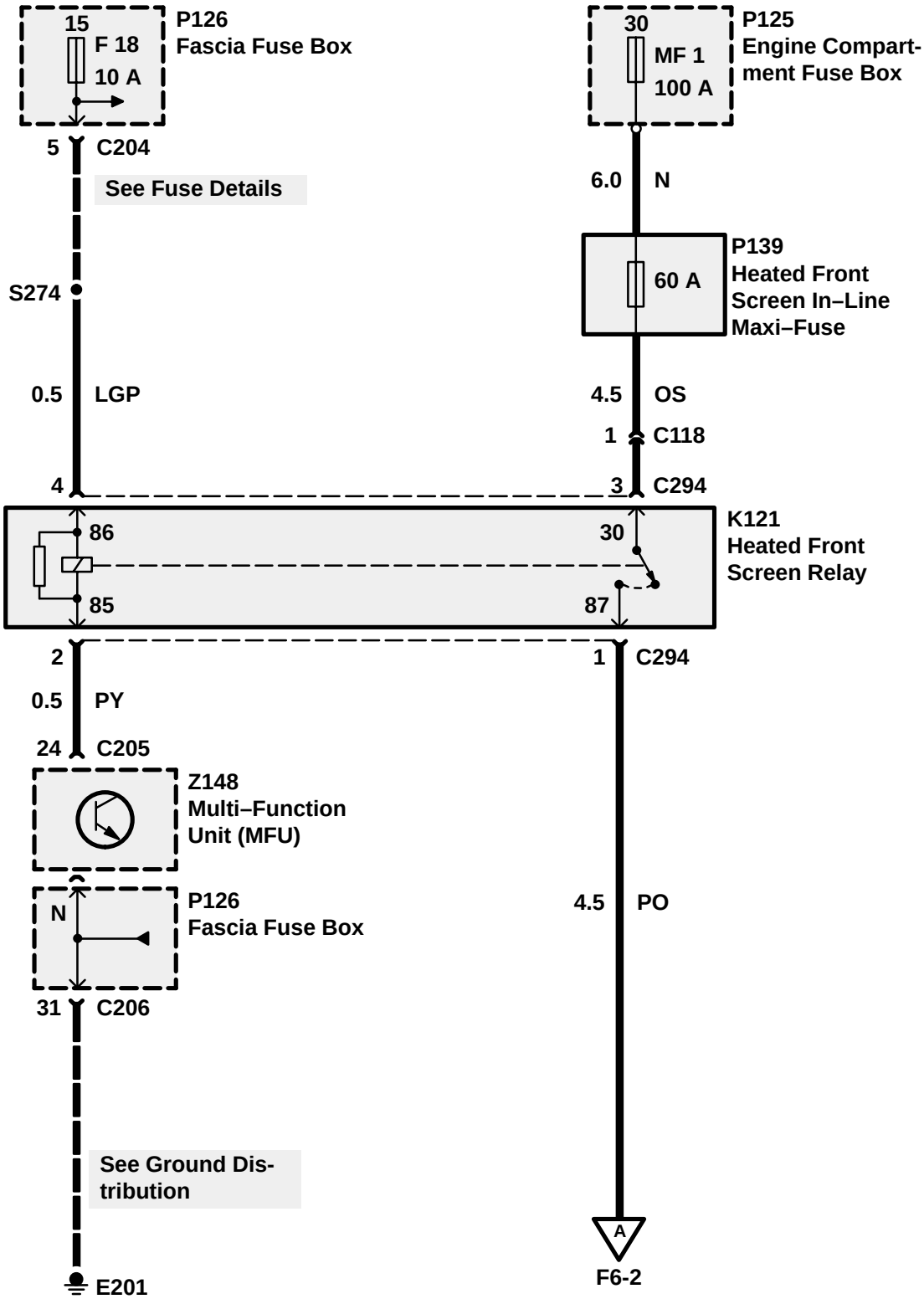
RESULTS

0V



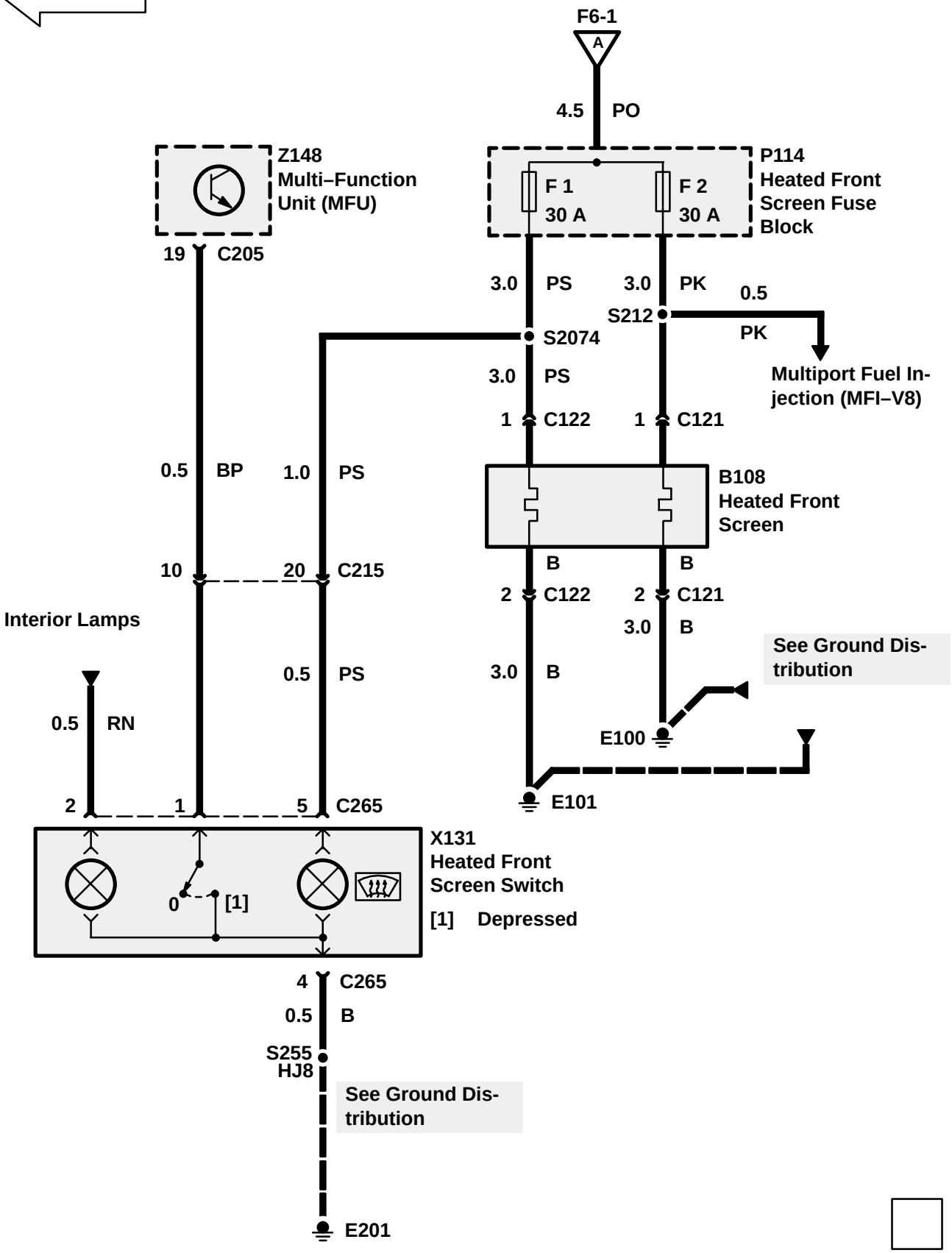
OK **PROBLEM CAUSE**
- **Rear Wiper Relay**

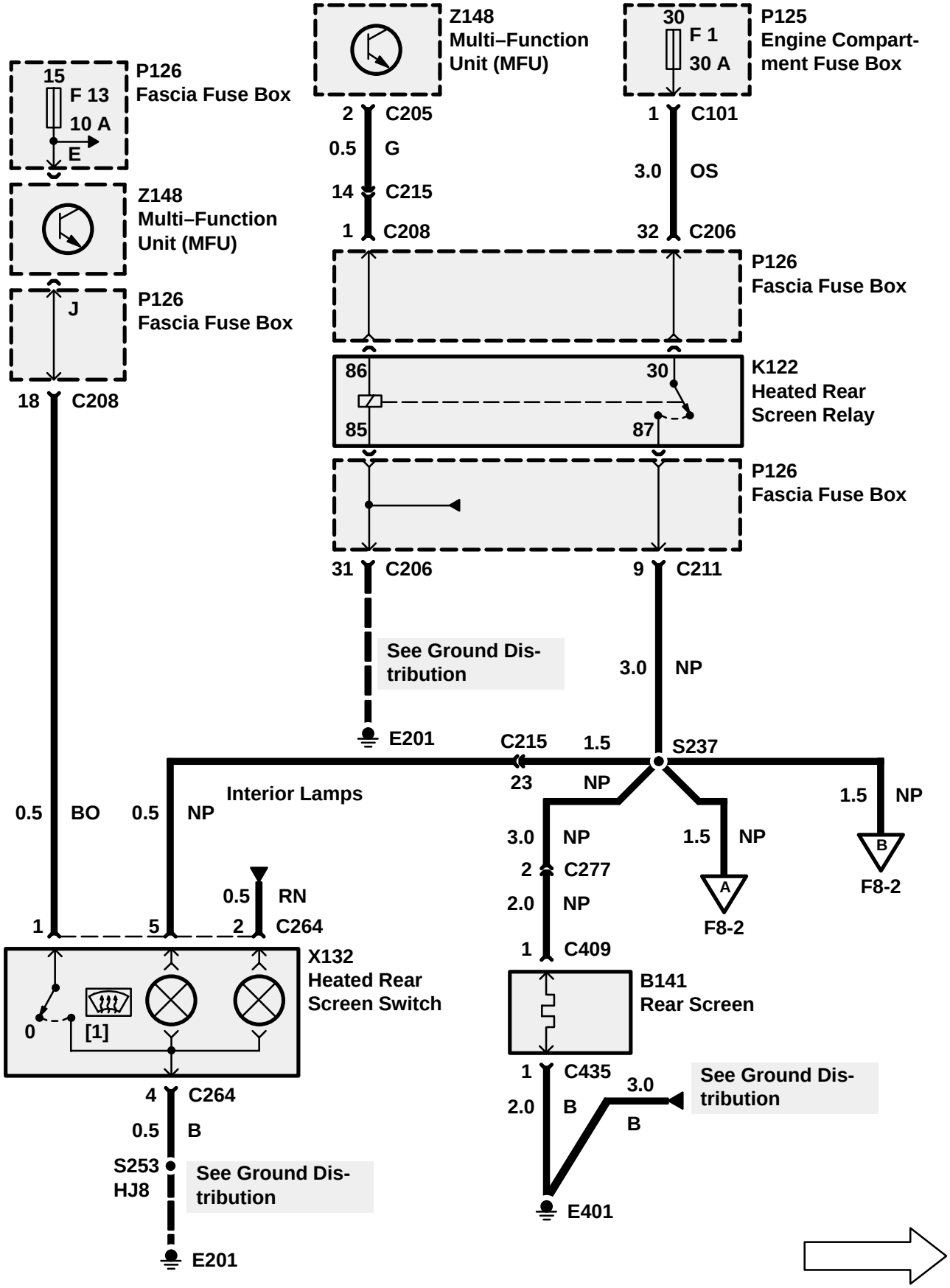
OK **PROBLEM CAUSE**
- **Window Lift ECU**

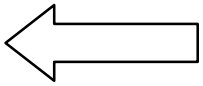

15
F 18
10 A
P126
Fascia Fuse Box
5
C204
See Fuse Details
S274
0.5
LGP
4
86
85
2
0.5
PY
24
C205
Z148
Multi–Function
Unit (MFU)
N
P126
Fascia Fuse Box
31
C206
See Ground Distribution
E201
30
MF 1
100 A
P125
Engine Compart-
ment Fuse Box
6.0
N
P139
Heated Front
Screen In–Line
Maxi–Fuse
60 A
4.5
OS
1
C118
3
C294
30
87
K121
Heated Front
Screen Relay
1
C294
4.5
PO
A
F6-2

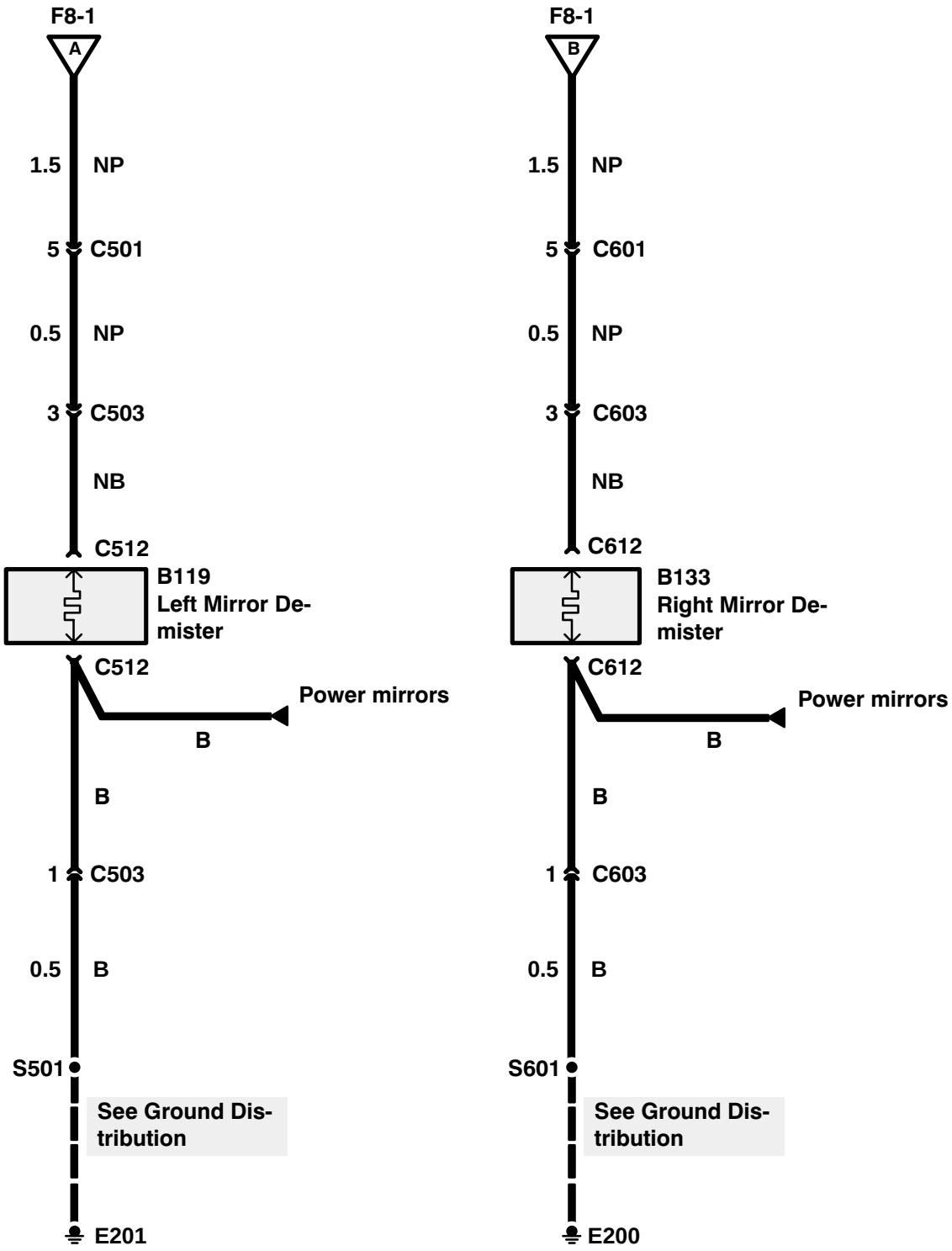
F6 ETM

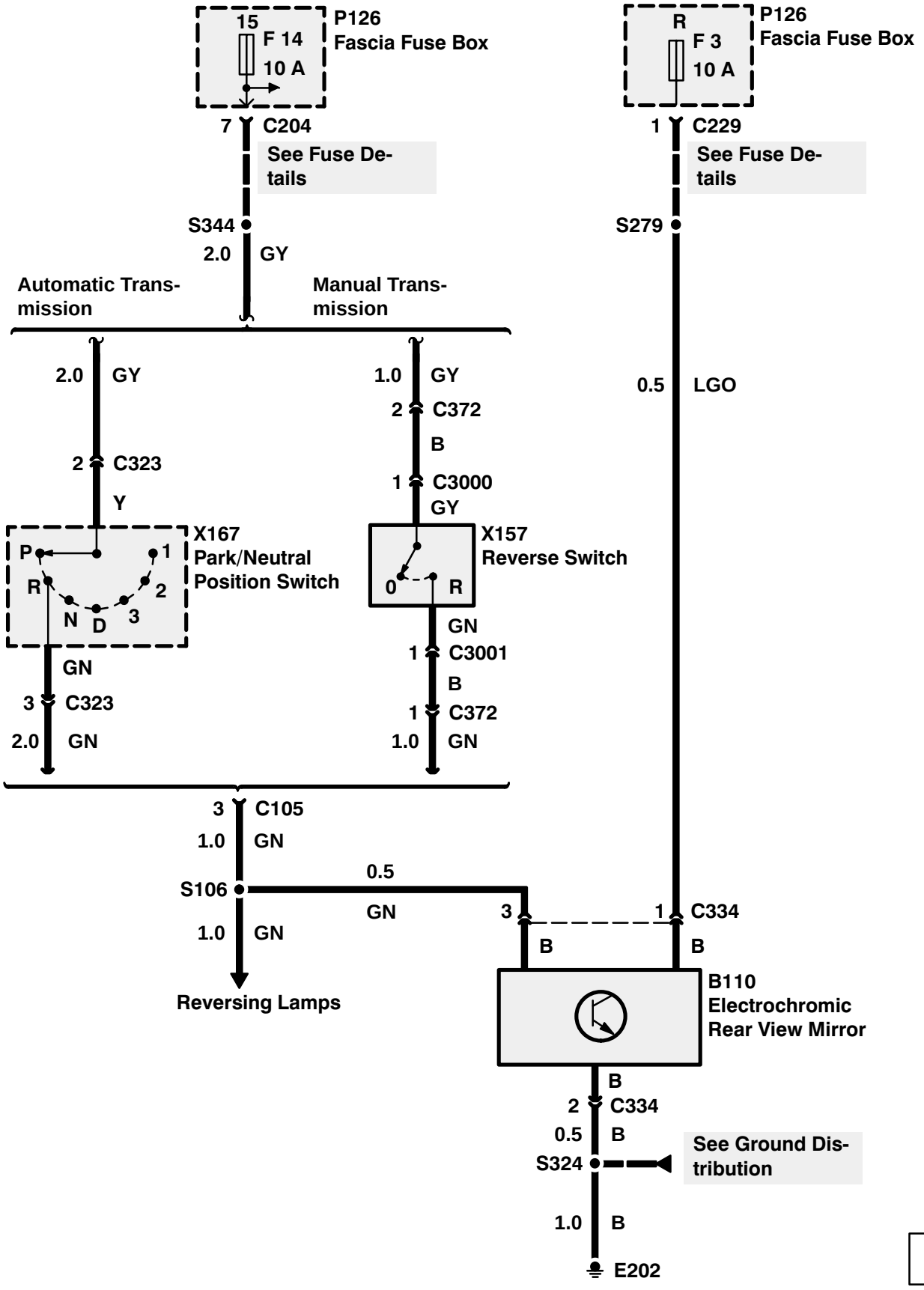
1995 RANGE ROVER

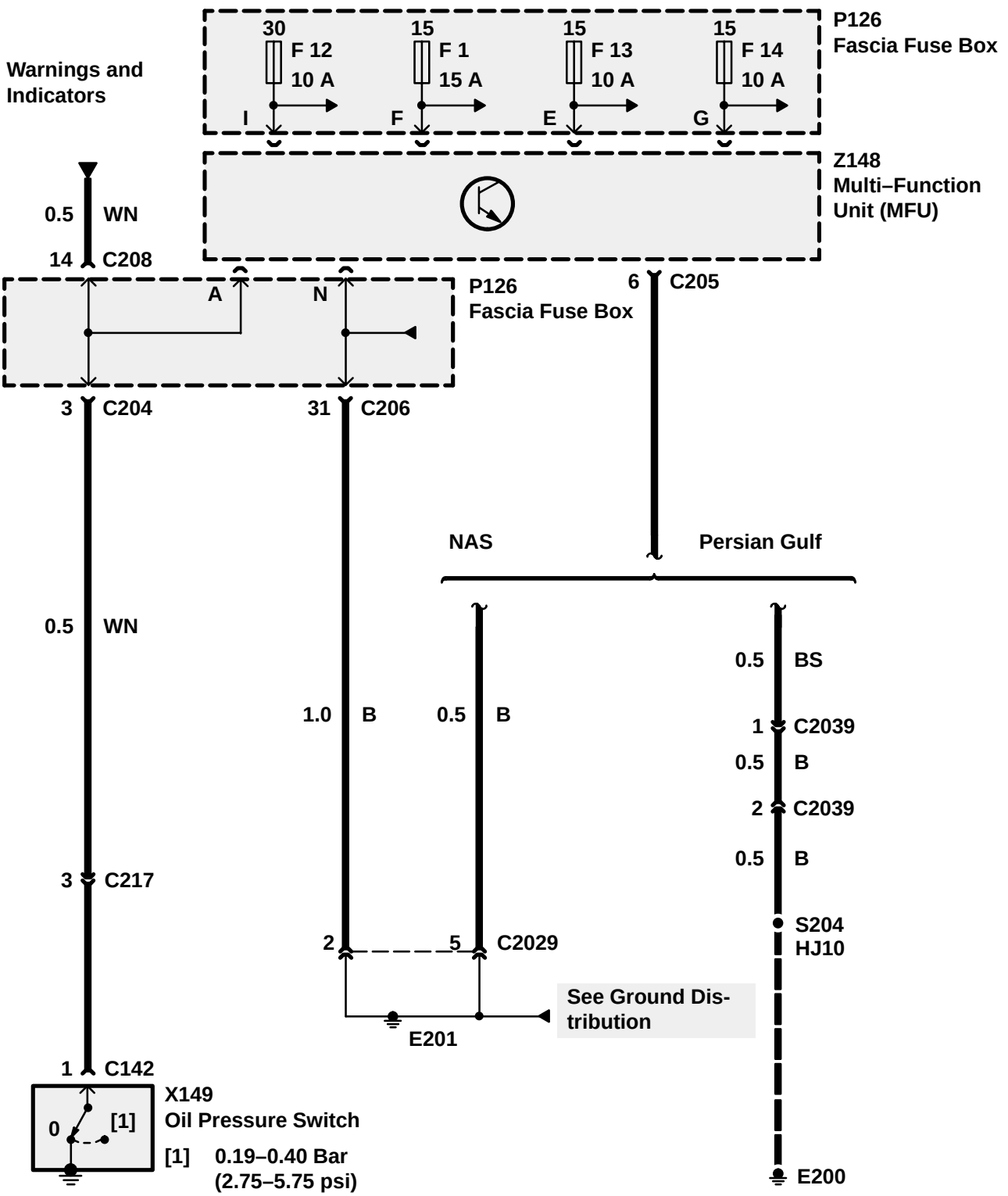


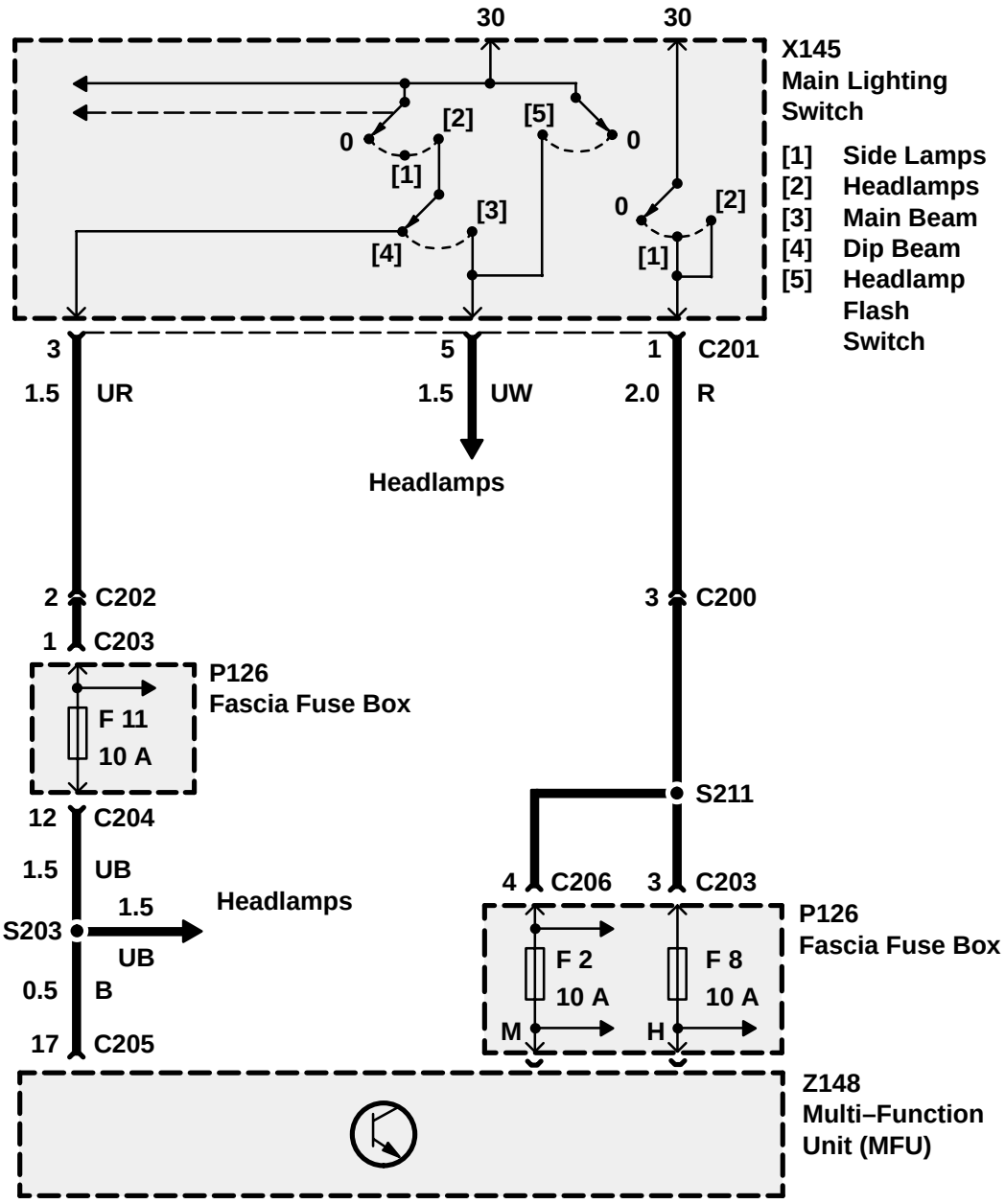

Z148
Multi–Function
Unit (MFU)
30
F 1
30 A
P125
Engine Compart-
ment Fuse Box
15
F 13
10 A
E
P126
Fascia Fuse Box
2
C205
1
C101
0.5
G
3.0
OS
14
C215
1
C208
32
C206
Z148
Multi–Function
Unit (MFU)
P126
Fascia Fuse Box
J
P126
Fascia Fuse Box
86
30
K122
Heated Rear
Screen Relay
85
87
18
C208
P126
Fascia Fuse Box
31
C206
9
C211
See Ground Dis-
tribution
3.0
NP
E201
C215
1.5
S237
23
NP
Interior Lamps
0.5
BO
0.5
NP
1.5
NP
3.0
NP
1.5
NP
B
F8-2
2
C277
2.0
NP
A
F8-2
0.5
RN
1
5
2
C264
1
C409
X132
Heated Rear
Screen Switch
B141
Rear Screen
0
[1]
1
C435
3.0
See Ground Dis-
tribution
2.0
B
B
4
C264
0.5
B
S253
HJ8
See Ground Dis-
tribution
E401
E201

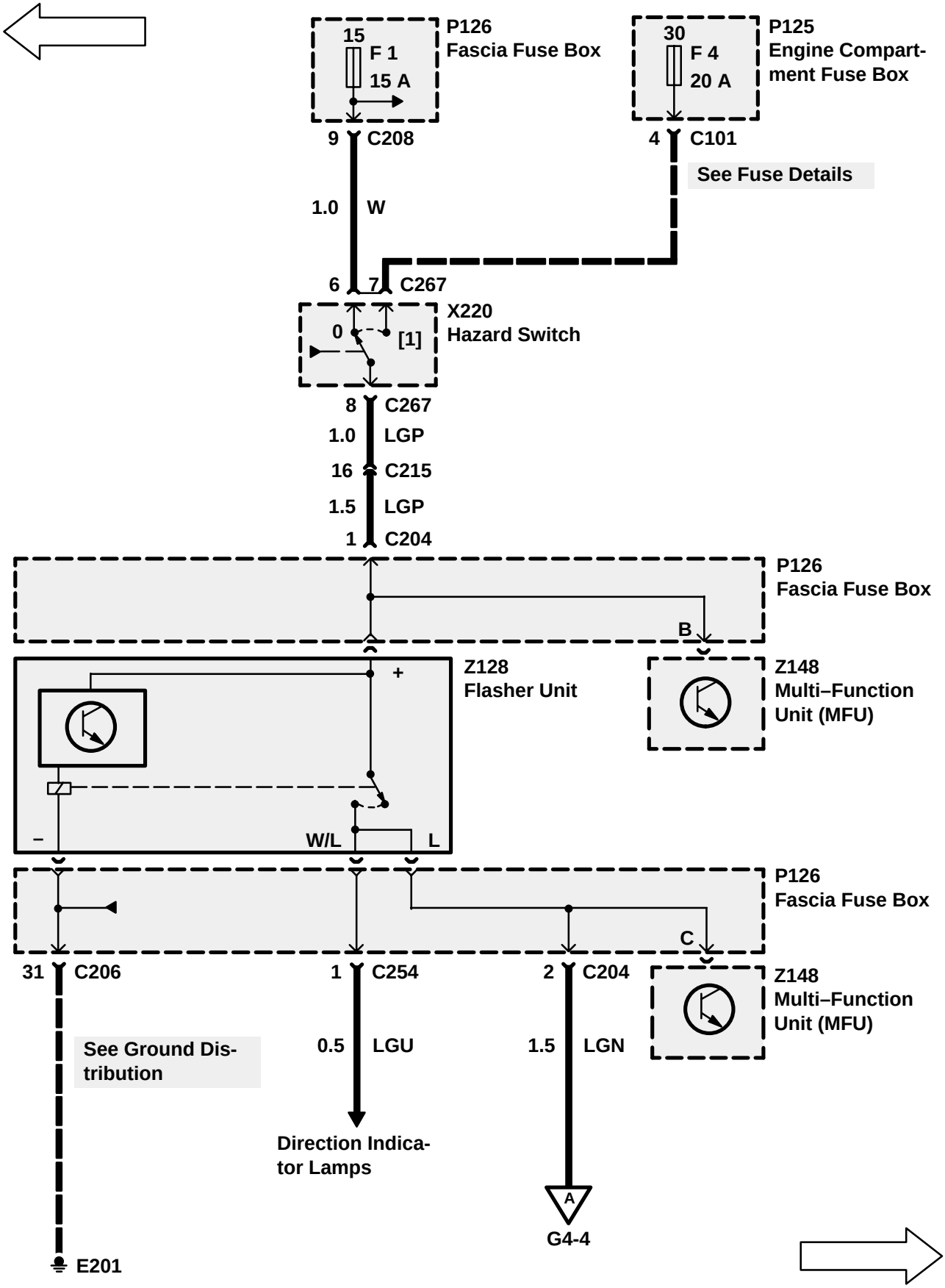



F8-1
A
1.5
NP
5
C501
0.5
NP
3
C503
NB
C512
B119
Left Mirror De-mister
C512
Power mirrors
B
B
1
C503
0.5
B
S501
See Ground Dis-tribution
E201
F8-1
B
1.5
NP
5
C601
0.5
NP
3
C603
NB
C612
B133
Right Mirror De-mister
C612
Power mirrors
B
B
1
C603
0.5
B
S601
See Ground Dis-tribution
E200


15
F 14
10 A
P126
Fascia Fuse Box
7
C204
See Fuse Details
S344
2.0
GY
Automatic Transmission
Manual Transmission
2.0
GY
2
C323
Y
X167
Park/Neutral Position Switch
P
R
N
D
1
2
3
GN
3
C323
2.0
GN
1.0
GY
2
C372
B
1
C3000
GY
X157
Reverse Switch
0
R
GN
1
C3001
B
1
C372
1.0
GN
R
F 3
10 A
P126
Fascia Fuse Box
1
C229
See Fuse Details
S279
0.5
LGO
3
C105
1.0
GN
S106
0.5
GN
1.0
GN
Reversing Lamps
3
C334
1
C334
B
B
B110
Electrochromic Rear View Mirror
B
2
C334
0.5
B
S324
See Ground Distribution
1.0
B
E202

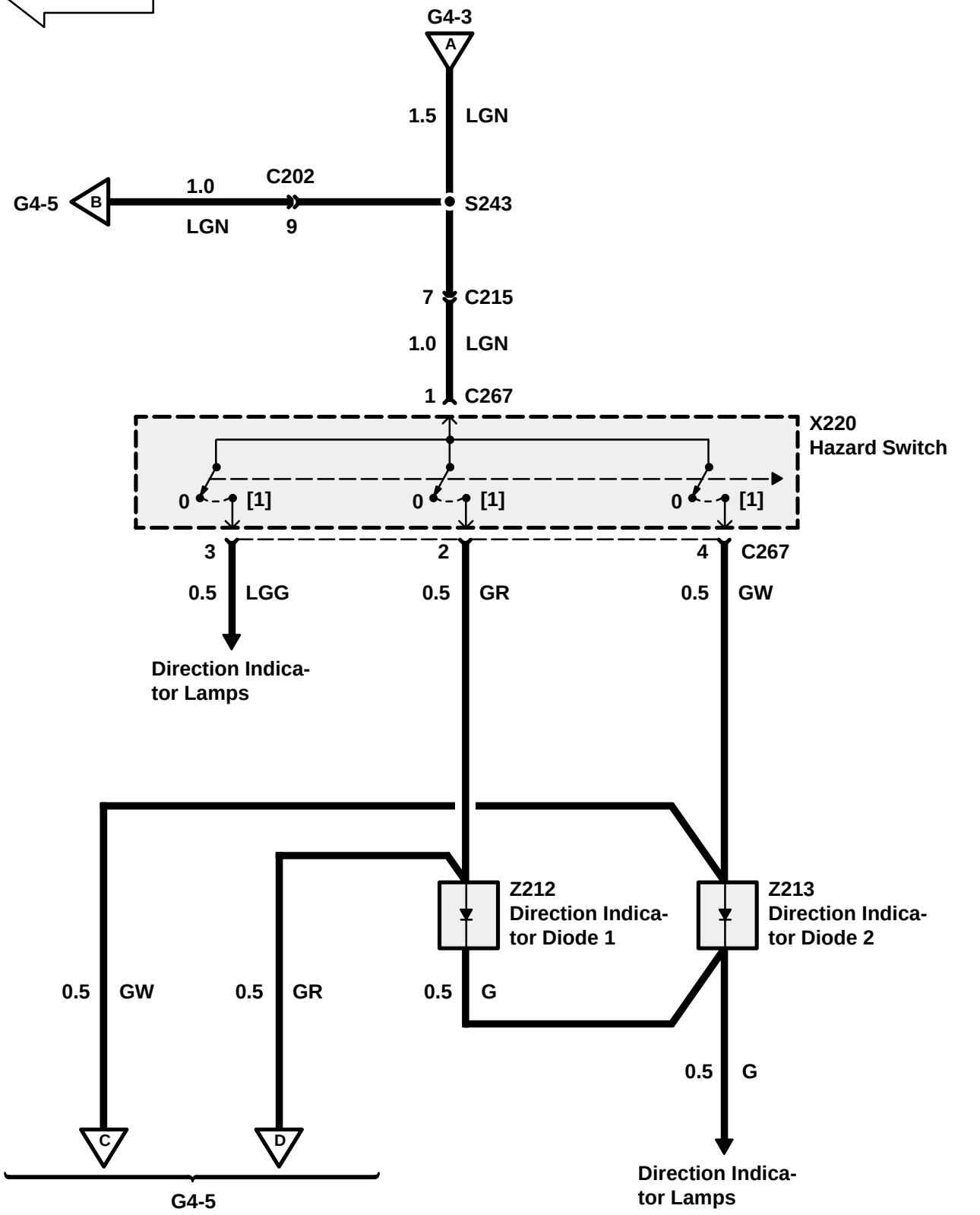

Warnings and Indicators
30
F 12
10 A
I
15
F 1
15 A
F
15
F 13
10 A
E
15
F 14
10 A
G
P126
Fascia Fuse Box
Z148
Multi–Function Unit (MFU)
0.5 WN
14 C208
A
N
P126
Fascia Fuse Box
6 C205
3 C204
31 C206
NAS
Persian Gulf
0.5 WN
1.0 B
0.5 B
0.5 BS
1 C2039
0.5 B
2 C2039
0.5 B
3 C217
2
5 C2029
S204
HJ10
See Ground Distribution
E201
1 C142
X149
Oil Pressure Switch
0
[1]
[1] 0.19–0.40 Bar
(2.75–5.75 psi)
E200

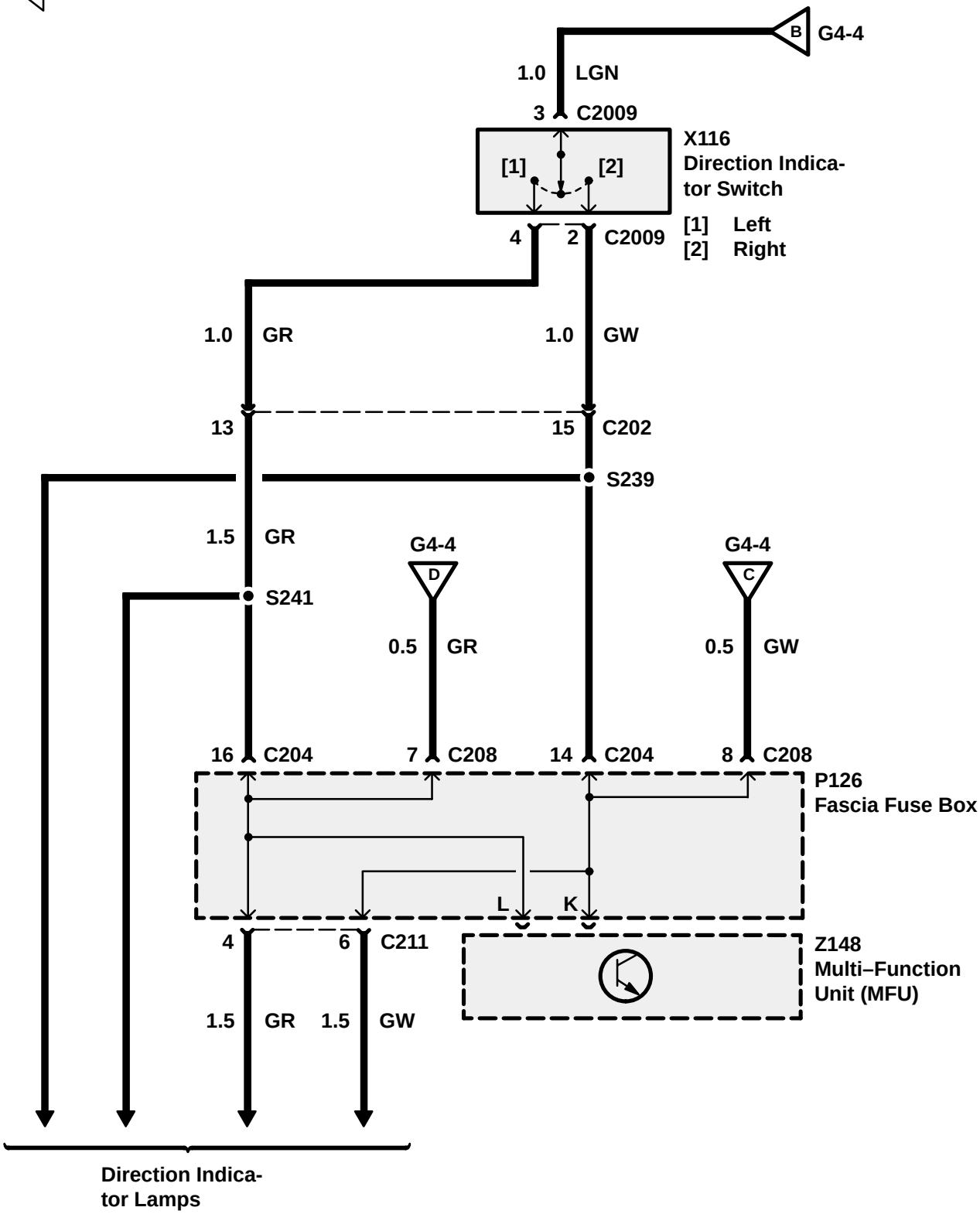

30
30
X145
Main Lighting
Switch
[1] Side Lamps
[2] Headlamps
[3] Main Beam
[4] Dip Beam
[5] Headlamp
Flash
Switch
[2]
[5]
0
0
[1]
[3]
[4]
0
[2]
[1]
3
1.5
UR
5
1.5
UW
1
2.0
R
C201
Headlamps
2
C202
1
C203
3
C200
P126
Fascia Fuse Box
F 11
10 A
S211
12
C204
1.5
UB
1.5
Headlamps
S203
UB
0.5
B
17
C205
4
C206
3
C203
P126
Fascia Fuse Box
F 2
10 A
F 8
10 A
M
H
Z148
Multi–Function
Unit (MFU)

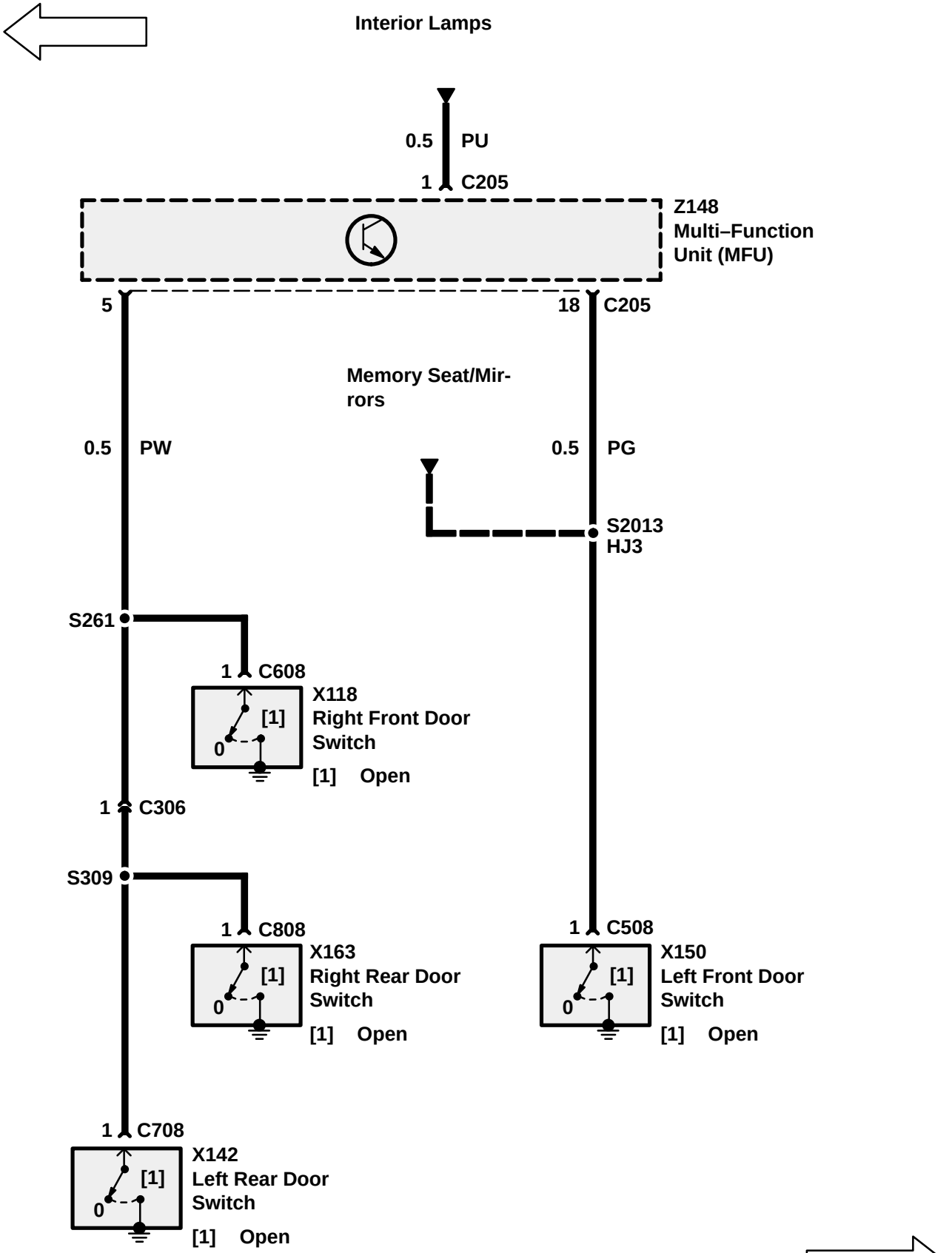

15
F 1
15 A
P126
Fascia Fuse Box
30
F 4
20 A
P125
Engine Compart-
ment Fuse Box
9 C208
4 C101
See Fuse Details
1.0 W
6 7 C267
X220
Hazard Switch
0
[1]
8 C267
1.0 LGP
16 C215
1.5 LGP
1 C204
P126
Fascia Fuse Box
B
Z128
Flasher Unit
+
–
W/L
L
Z148
Multi–Function
Unit (MFU)
P126
Fascia Fuse Box
C
31 C206
1 C254
2 C204
Z148
Multi–Function
Unit (MFU)
See Ground Dis-
tribution
0.5 LGU
1.5 LGN
Direction Indica-
tor Lamps
A
G4-4
E201

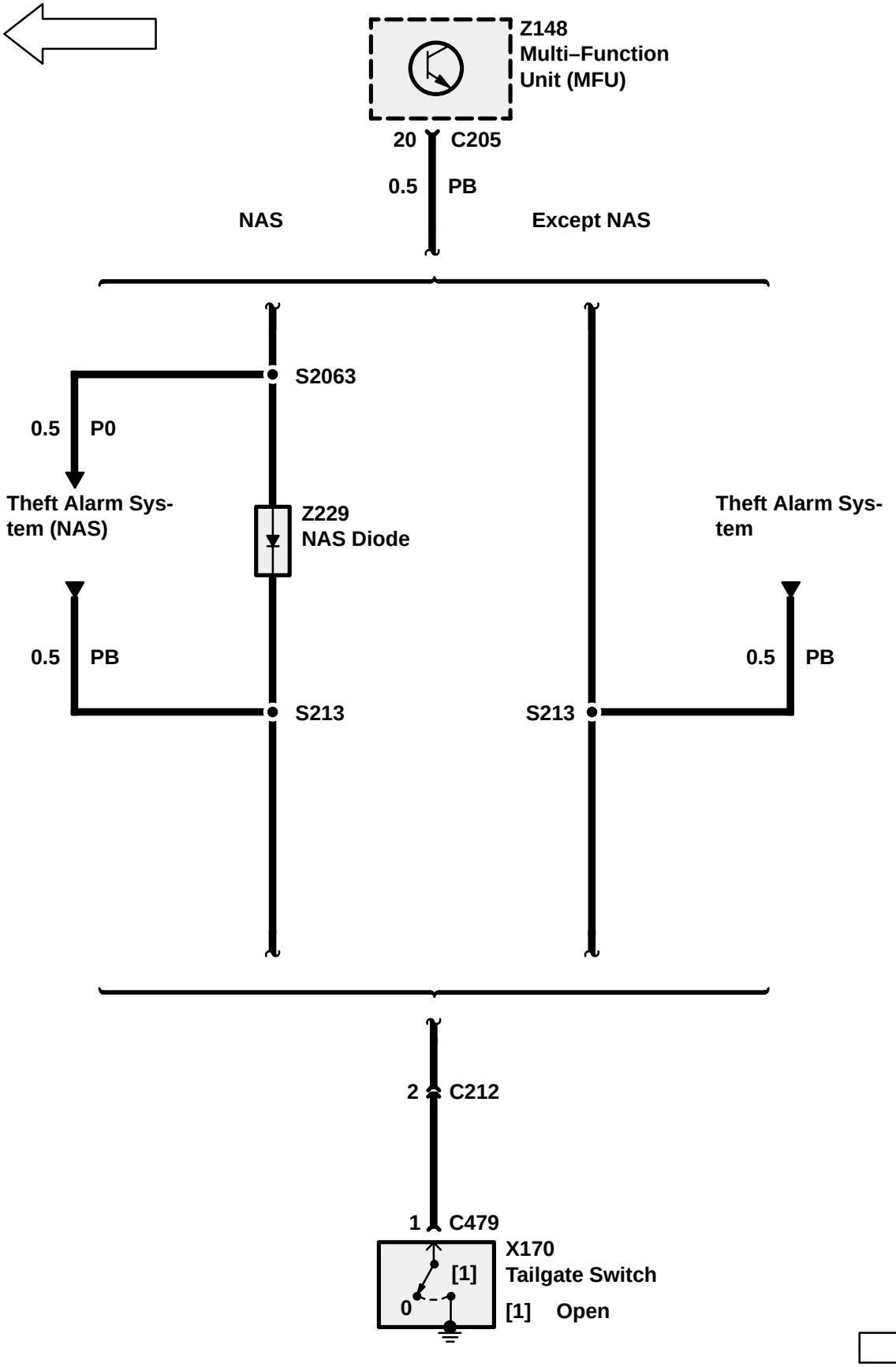
G4 ETM

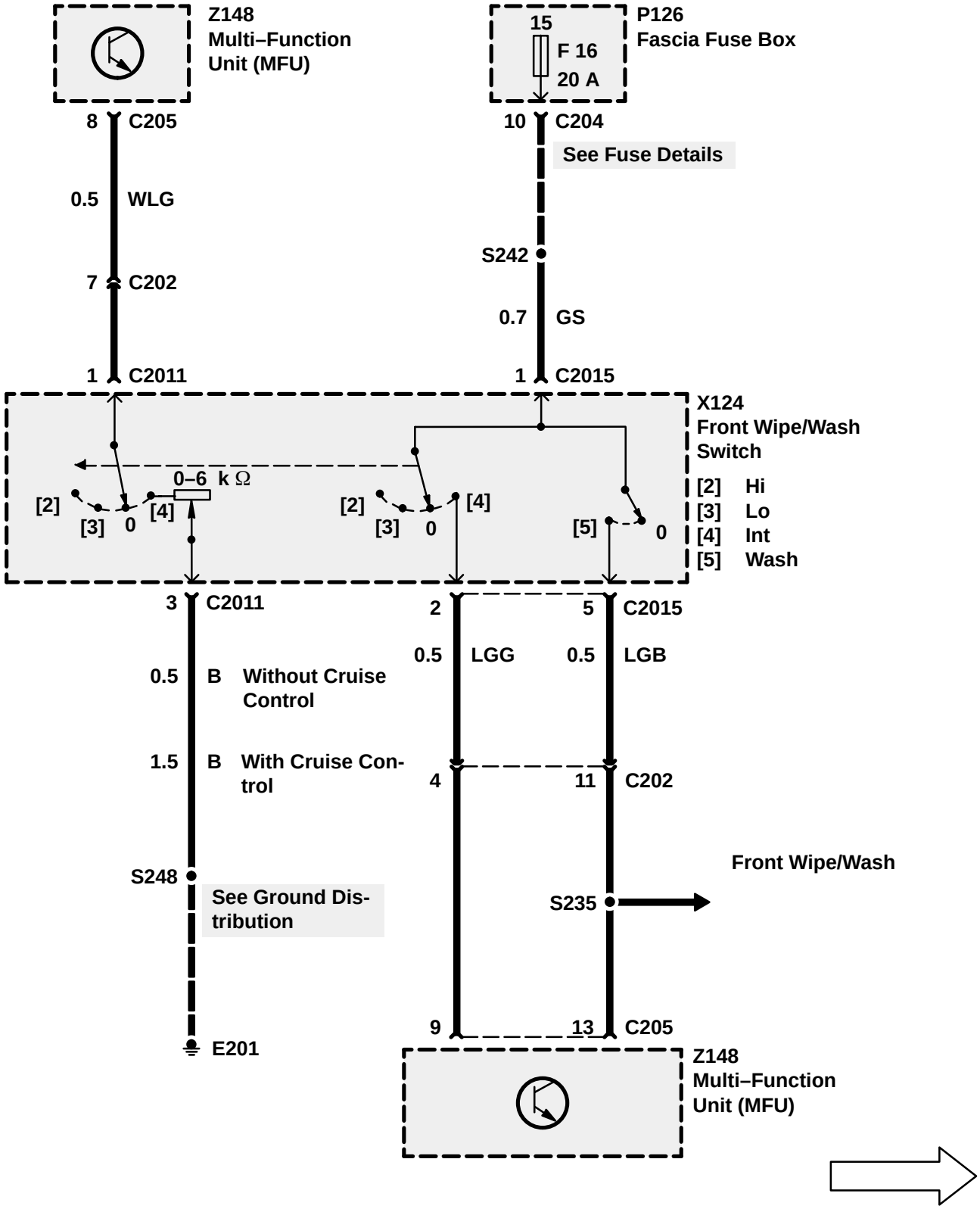
1995 RANGE ROVER

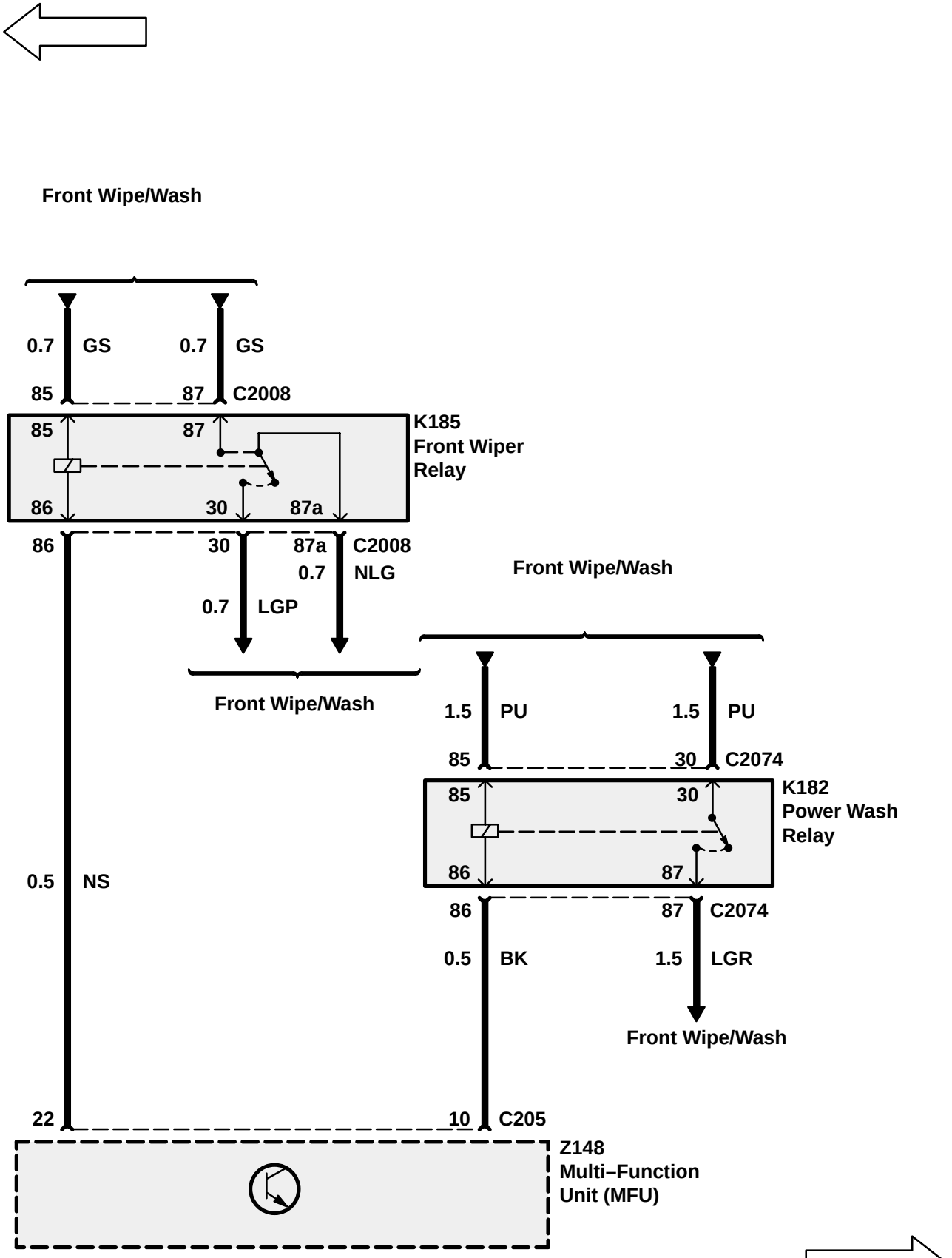



B
G4-4
1.0
LGN
3
C2009
X116
Direction Indicator Switch
[1]
[2]
[1] Left
[2] Right
4
2
C2009
1.0
GR
1.0
GW
13
15
C202
S239
1.5
GR
G4-4
D
G4-4
C
S241
0.5
GR
0.5
GW
16
C204
7
C208
14
C204
8
C208
P126
Fascia Fuse Box
L
K
4
6
C211
Z148
Multi–Function Unit (MFU)
1.5
GR
1.5
GW
Direction Indicator Lamps


Interior Lamps
0.5 PU
1 C205
Z148
Multi–Function
Unit (MFU)
5
18 C205
Memory Seat/Mir-
rors
0.5 PW
0.5 PG
S2013
HJ3
S261
1 C608
X118
Right Front Door
Switch
[1]
0
[1] Open
1 C306
S309
1 C808
X163
Right Rear Door
Switch
[1]
0
[1] Open
1 C508
X150
Left Front Door
Switch
[1]
0
[1] Open
1 C708
X142
Left Rear Door
Switch
[1]
0
[1] Open

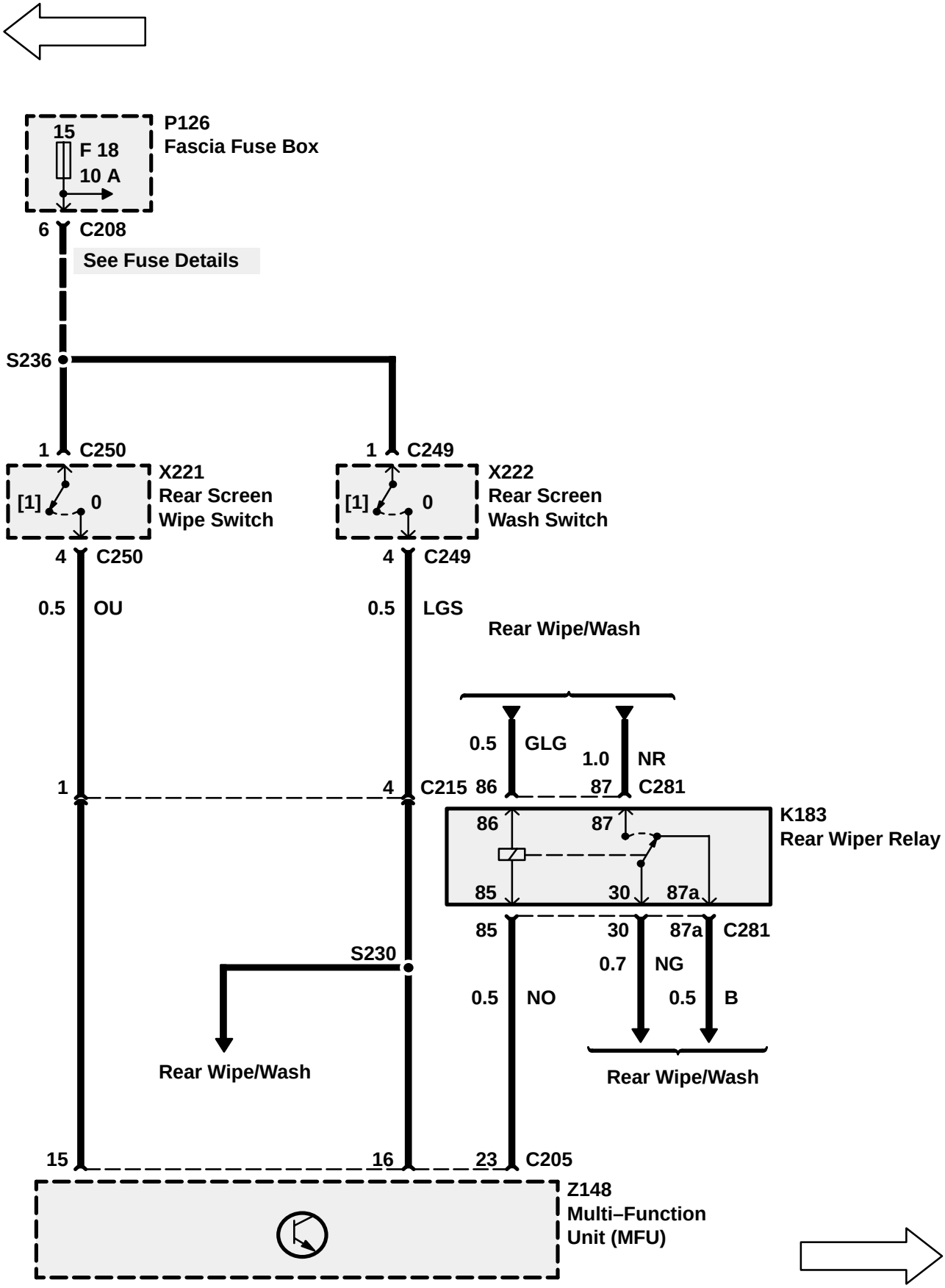

Z148
Multi–Function
Unit (MFU)
20
C205
0.5
PB
NAS
Except NAS
S2063
0.5
P0
Theft Alarm Sys-
tem (NAS)
Z229
NAS Diode
Theft Alarm Sys-
tem
0.5
PB
0.5
PB
S213
S213
2
C212
1
C479
X170
Tailgate Switch
[1]
0
[1] Open

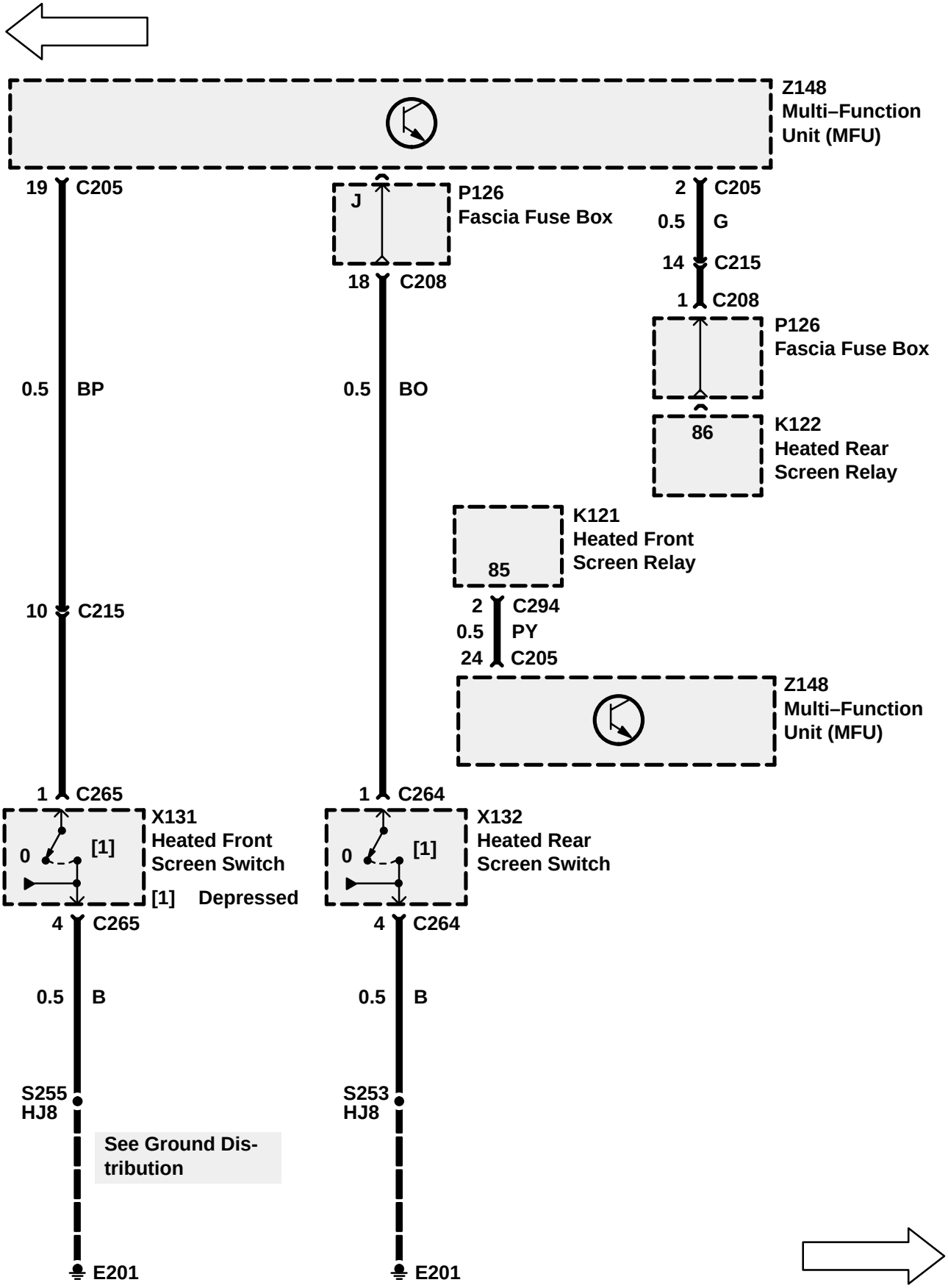

Z148
Multi–Function
Unit (MFU)
8 C205
0.5 WLG
7 C202
1 C2011
15
F 16
20 A
P126
Fascia Fuse Box
10 C204
See Fuse Details
S242
0.7 GS
1 C2015
X124
Front Wipe/Wash
Switch
[2] Hi
[3] Lo
[4] Int
[5] Wash
0–6 k Ω
[2]
[3]
0
[4]
[2]
[3]
0
[4]
[5]
0
3 C2011
0.5 B Without Cruise
Control
1.5 B With Cruise Con-
trol
S248
See Ground Dis-
tribution
E201
2 C2015
0.5 LGG
4 C202
5 C2015
0.5 LGB
11 C202
Front Wipe/Wash
S235
9 C205
13 C205
Z148
Multi–Function
Unit (MFU)

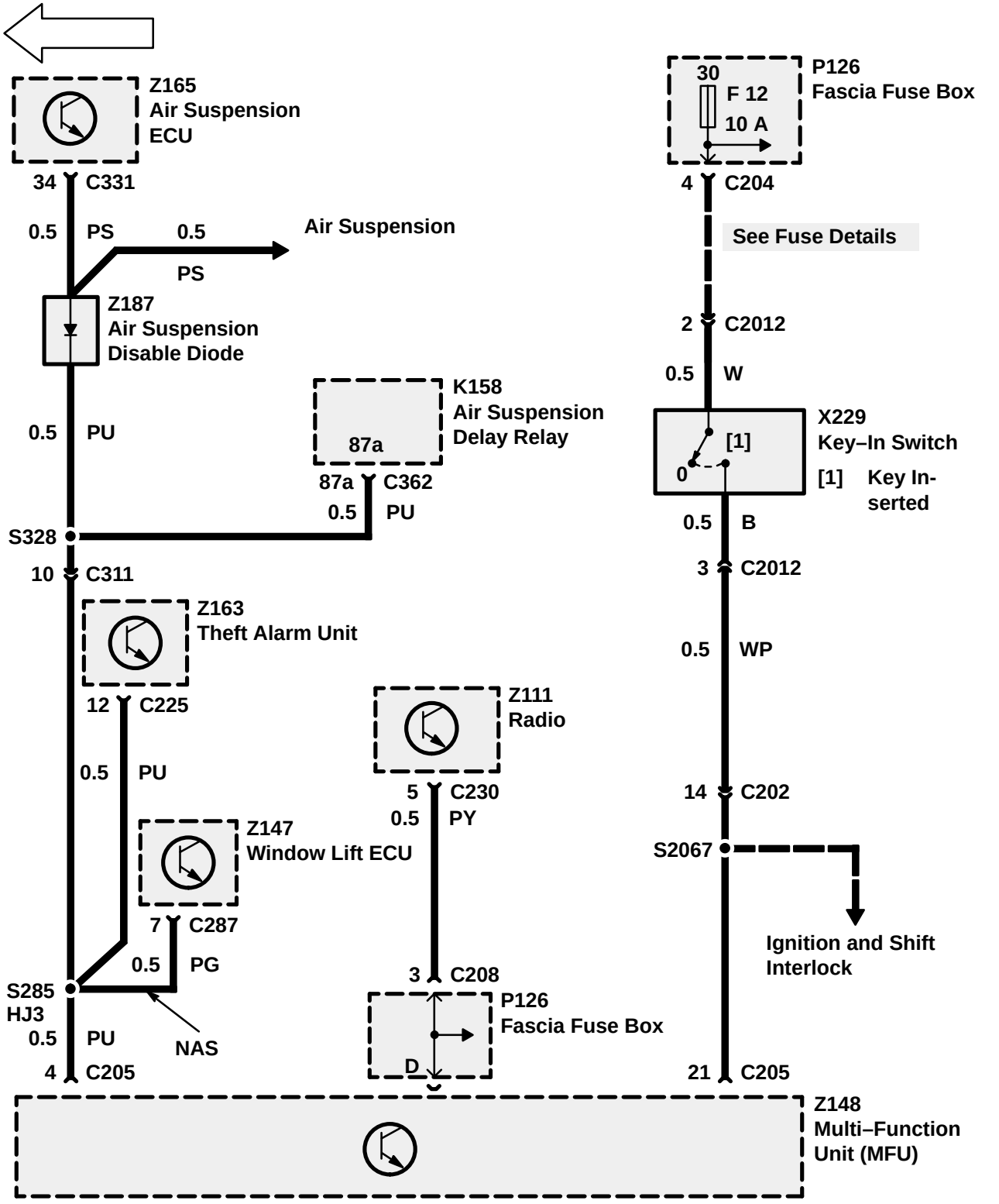

Front Wipe/Wash
0.7 GS
0.7 GS
85
87
C2008
K185
Front Wiper
Relay
85
87
86
30
87a
86
30
87a
C2008
0.7
NLG
0.7
LGP
Front Wipe/Wash
Front Wipe/Wash
1.5 PU
1.5 PU
85
30
C2074
K182
Power Wash
Relay
85
30
86
87
0.5
NS
86
87
C2074
0.5
BK
1.5
LGR
Front Wipe/Wash
22
10
C205
Z148
Multi–Function
Unit (MFU)

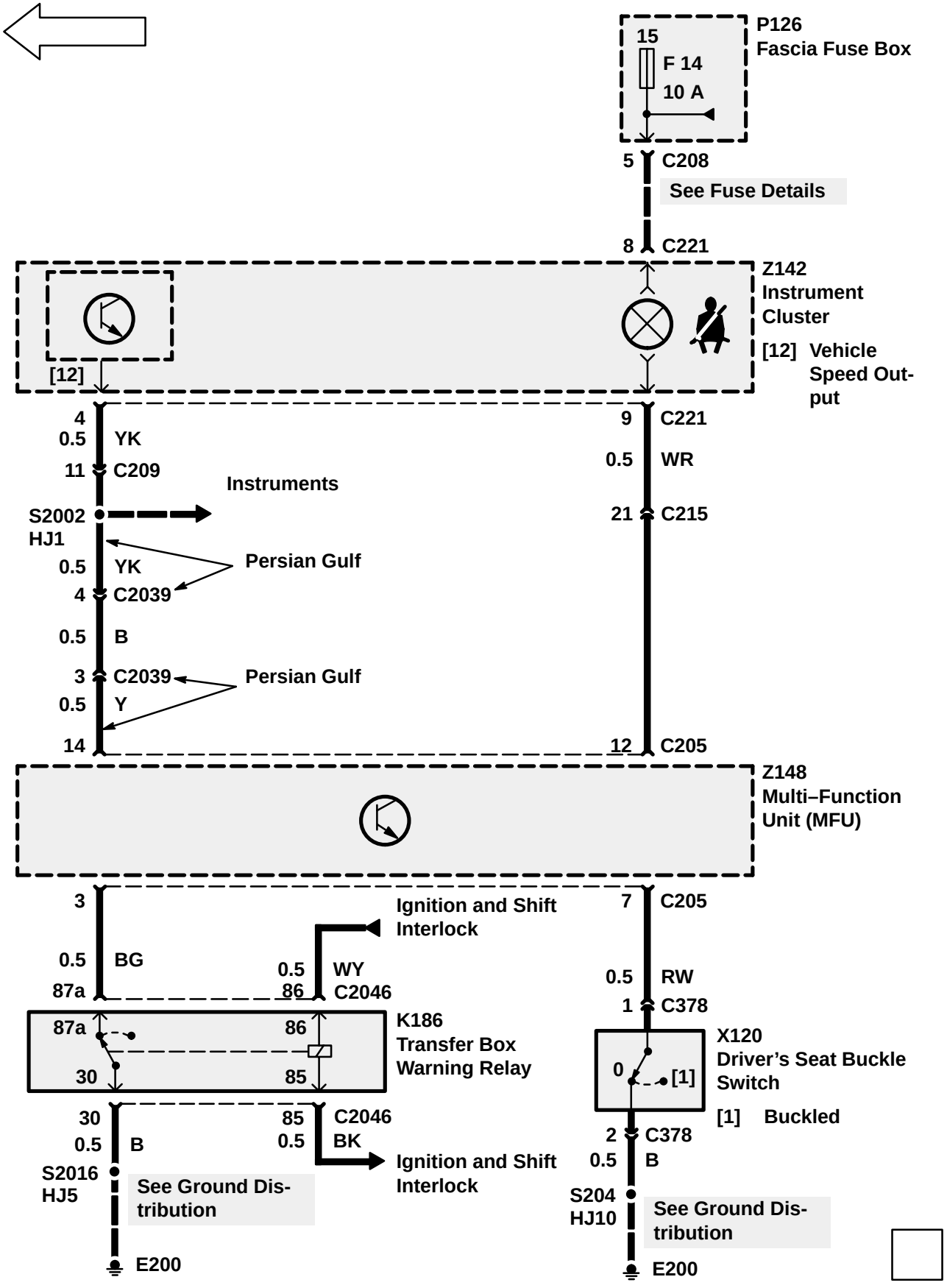
G4 ETM

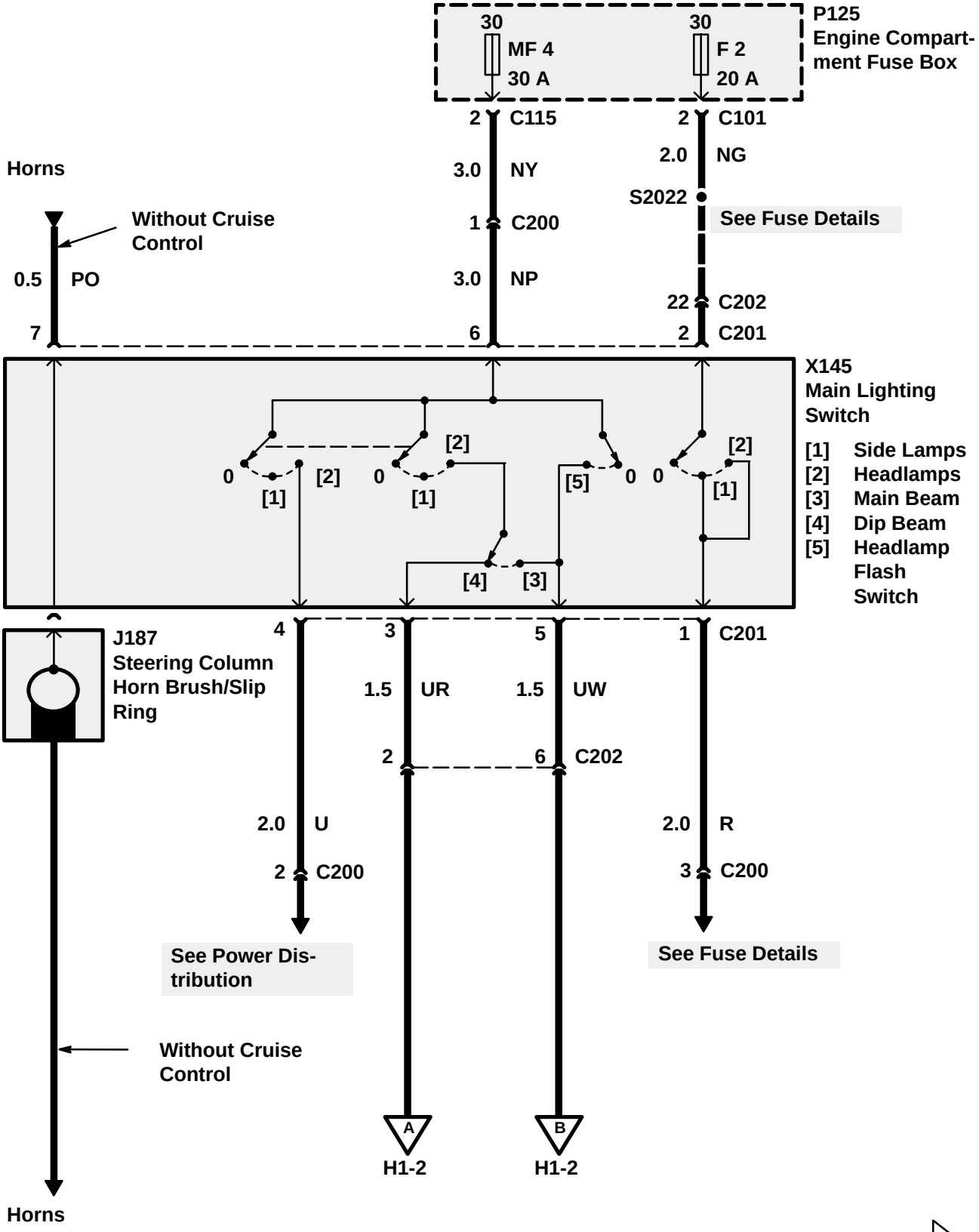
1995 RANGE ROVER




Z148
Multi–Function
Unit (MFU)
19 C205
0.5 BP
10 C215
1 C265
J
P126
Fascia Fuse Box
18 C208
0.5 BO
1 C264
2 C205
0.5 G
14 C215
1 C208
P126
Fascia Fuse Box
86
K122
Heated Rear
Screen Relay
85
K121
Heated Front
Screen Relay
2 C294
0.5 PY
24 C205
Z148
Multi–Function
Unit (MFU)
X131
Heated Front
Screen Switch
0
[1]
[1] Depressed
4 C265
0.5 B
S255
HJ8
See Ground Dis-
tribution
E201
X132
Heated Rear
Screen Switch
0
[1]
4 C264
0.5 B
S253
HJ8
E201

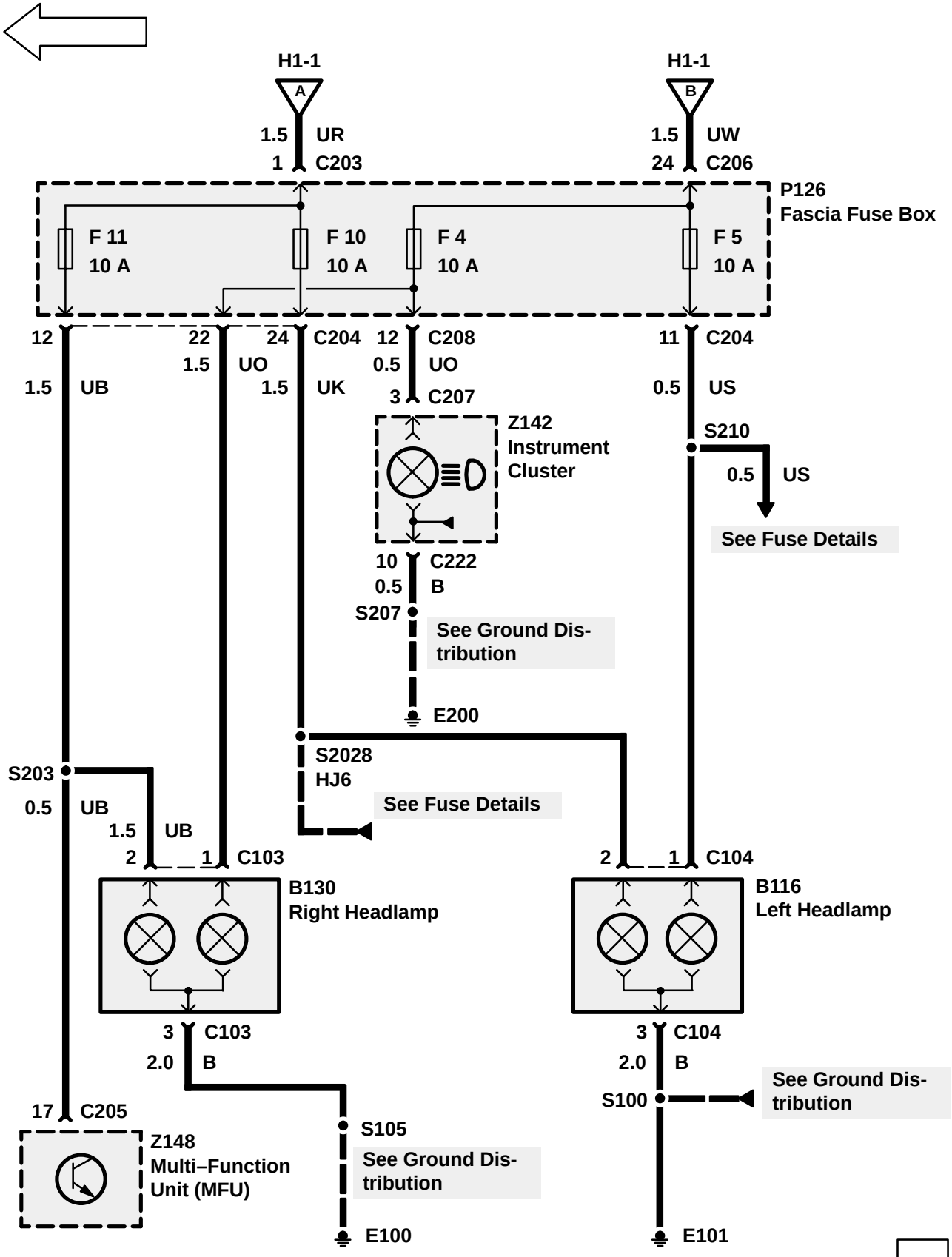

Z165
Air Suspension
ECU
34 C331
0.5 PS
0.5 PS
Air Suspension
Z187
Air Suspension
Disable Diode
0.5 PU
K158
Air Suspension
Delay Relay
87a
87a C362
0.5 PU
S328
10 C311
Z163
Theft Alarm Unit
12 C225
0.5 PU
Z147
Window Lift ECU
7 C287
0.5 PG
S285
HJ3
0.5 PU
NAS
4 C205
Z111
Radio
5 C230
0.5 PY
3 C208
P126
Fascia Fuse Box
D
30
F 12
10 A
P126
Fascia Fuse Box
4 C204
See Fuse Details
2 C2012
0.5 W
X229
Key–In Switch
[1]
0
[1] Key In-
serted
0.5 B
3 C2012
0.5 WP
14 C202
S2067
Ignition and Shift
Interlock
21 C205
Z148
Multi–Function
Unit (MFU)

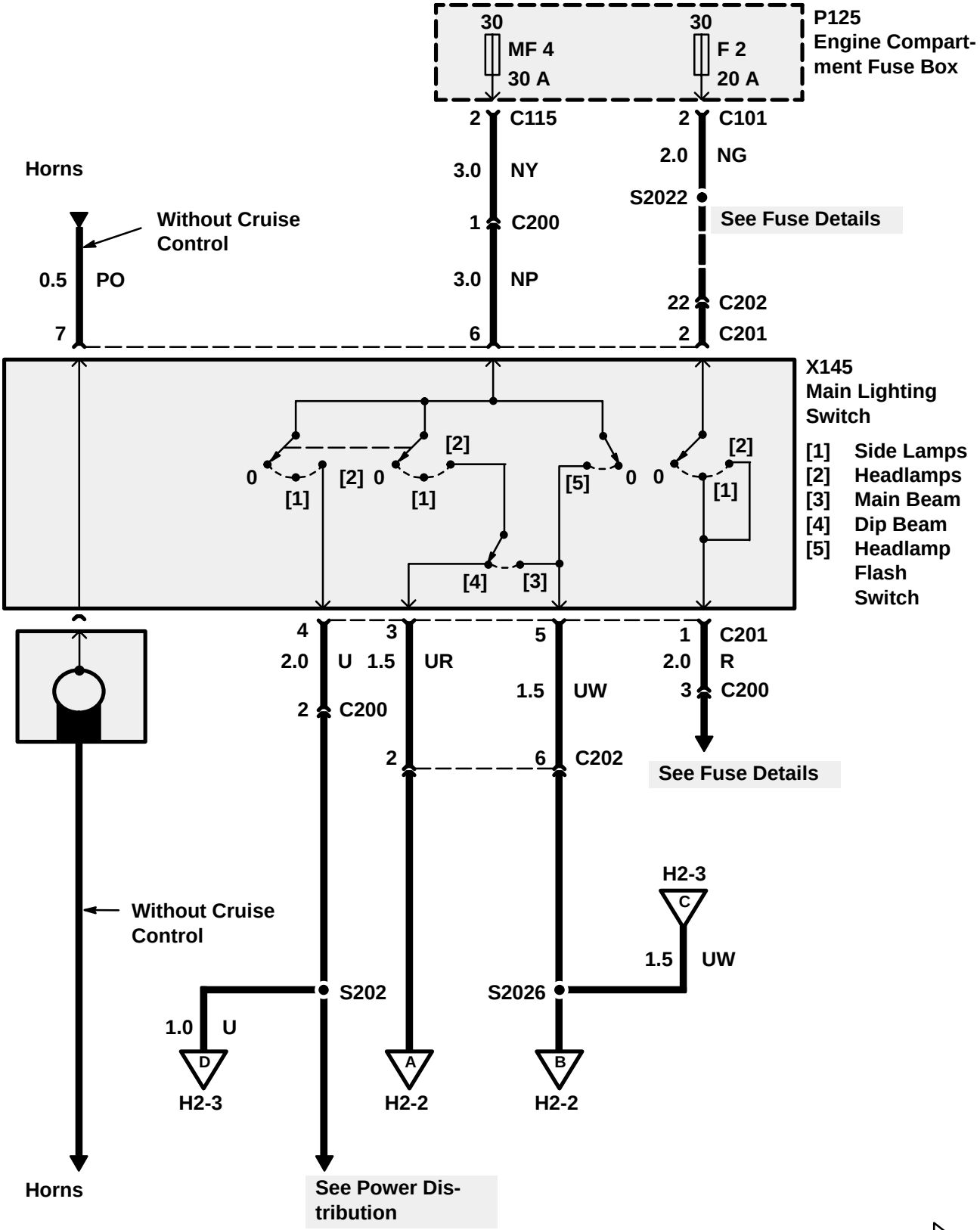

P126
Fascia Fuse Box
15
F 14
10 A
5 C208
See Fuse Details
8 C221
Z142
Instrument Cluster
[12] Vehicle Speed Output
[12]
4
0.5 YK
11 C209
Instruments
S2002
HJ1
0.5 YK
Persian Gulf
4 C2039
0.5 B
3 C2039
Persian Gulf
0.5 Y
14
9 C221
0.5 WR
21 C215
12 C205
Z148
Multi–Function Unit (MFU)
3
0.5 BG
87a
Ignition and Shift Interlock
0.5 WY
86 C2046
87a
86
30
85
K186
Transfer Box Warning Relay
30
0.5 B
S2016
HJ5
See Ground Distribution
E200
85 C2046
0.5 BK
Ignition and Shift Interlock
7 C205
0.5 RW
1 C378
X120
Driver's Seat Buckle Switch
0
[1]
[1] Buckled
2 C378
0.5 B
S204
HJ10
See Ground Distribution
E200


30
MF 4
30 A
30
F 2
20 A
P125
Engine Compartment Fuse Box
2 C115
3.0 NY
1 C200
3.0 NP
6
2 C101
2.0 NG
S2022
See Fuse Details
22 C202
2 C201
7
Horns
Without Cruise Control
0.5 PO
X145
Main Lighting Switch
[1] Side Lamps
[2] Headlamps
[3] Main Beam
[4] Dip Beam
[5] Headlamp Flash Switch
J187
Steering Column Horn Brush/Slip Ring
4
3
5
1 C201
1.5 UR
1.5 UW
2
6 C202
2.0 U
2 C200
2.0 R
3 C200
See Power Distribution
See Fuse Details
Without Cruise Control
A
B
H1-2
H1-2
Horns

H1 ETM

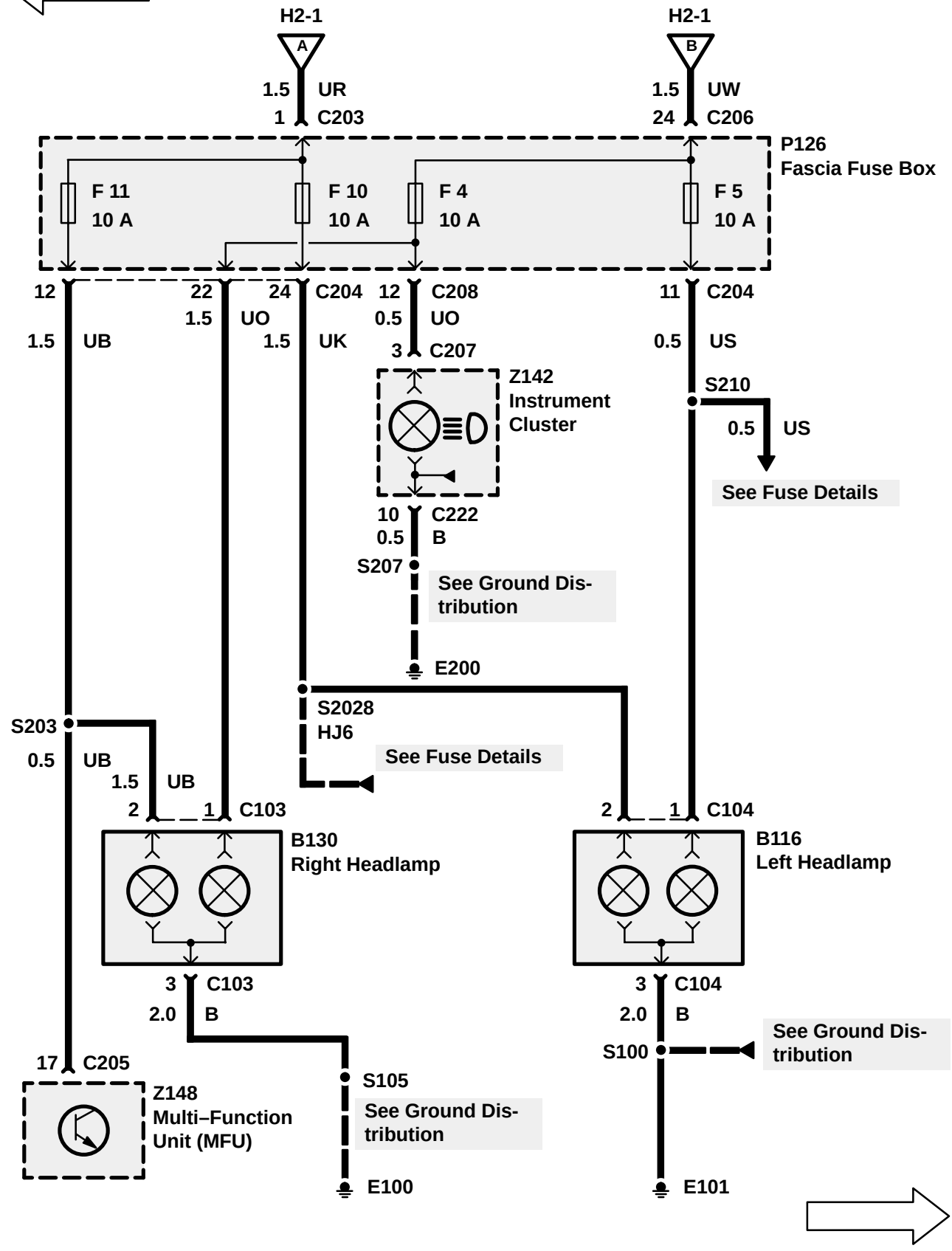
1995 RANGE ROVER

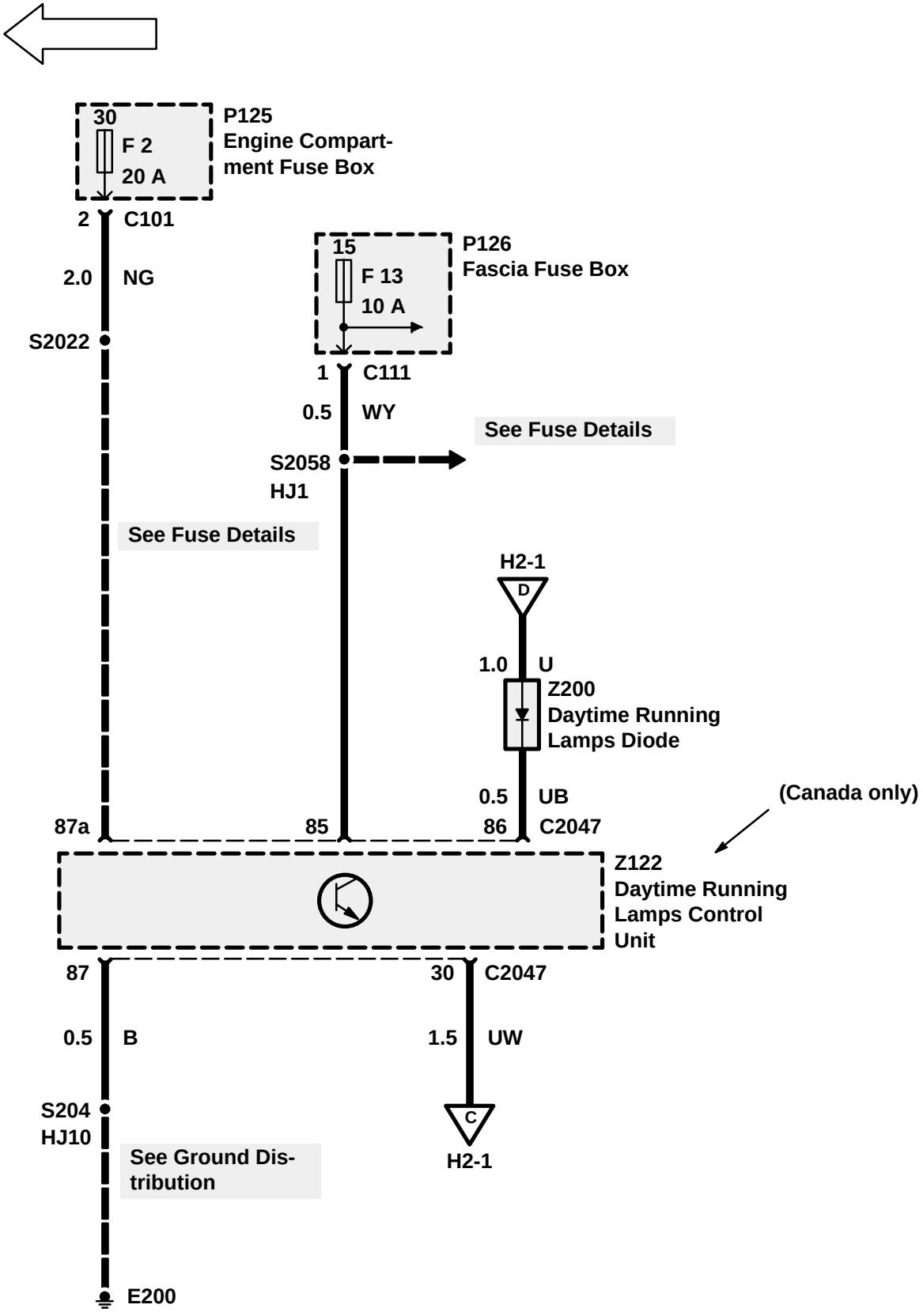


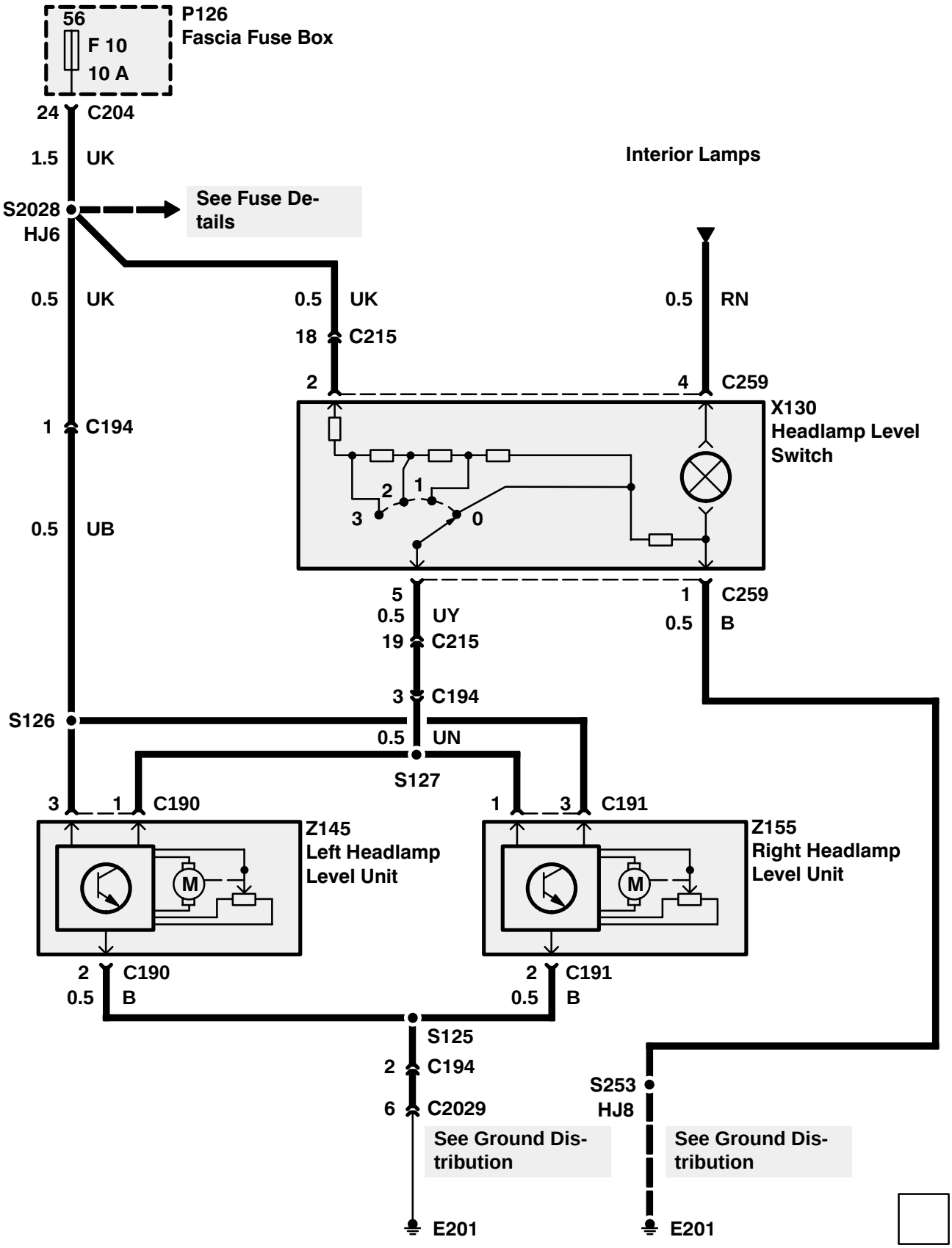

30
MF 4
30 A
30
F 2
20 A
P125
Engine Compartment Fuse Box
2 C115
3.0 NY
1 C200
3.0 NP
6
2 C101
2.0 NG
S2022
See Fuse Details
22 C202
2 C201
Horns
Without Cruise Control
0.5 PO
7
X145
Main Lighting Switch
[1] Side Lamps
[2] Headlamps
[3] Main Beam
[4] Dip Beam
[5] Headlamp Flash Switch
4
2.0 U
2 C200
3
1.5 UR
2
5
1.5 UW
6 C202
1 C201
2.0 R
3 C200
See Fuse Details
Without Cruise Control
H2-3
C
1.5 UW
S202
S2026
1.0 U
D
H2-3
A
H2-2
B
H2-2
Horns
See Power Distribution

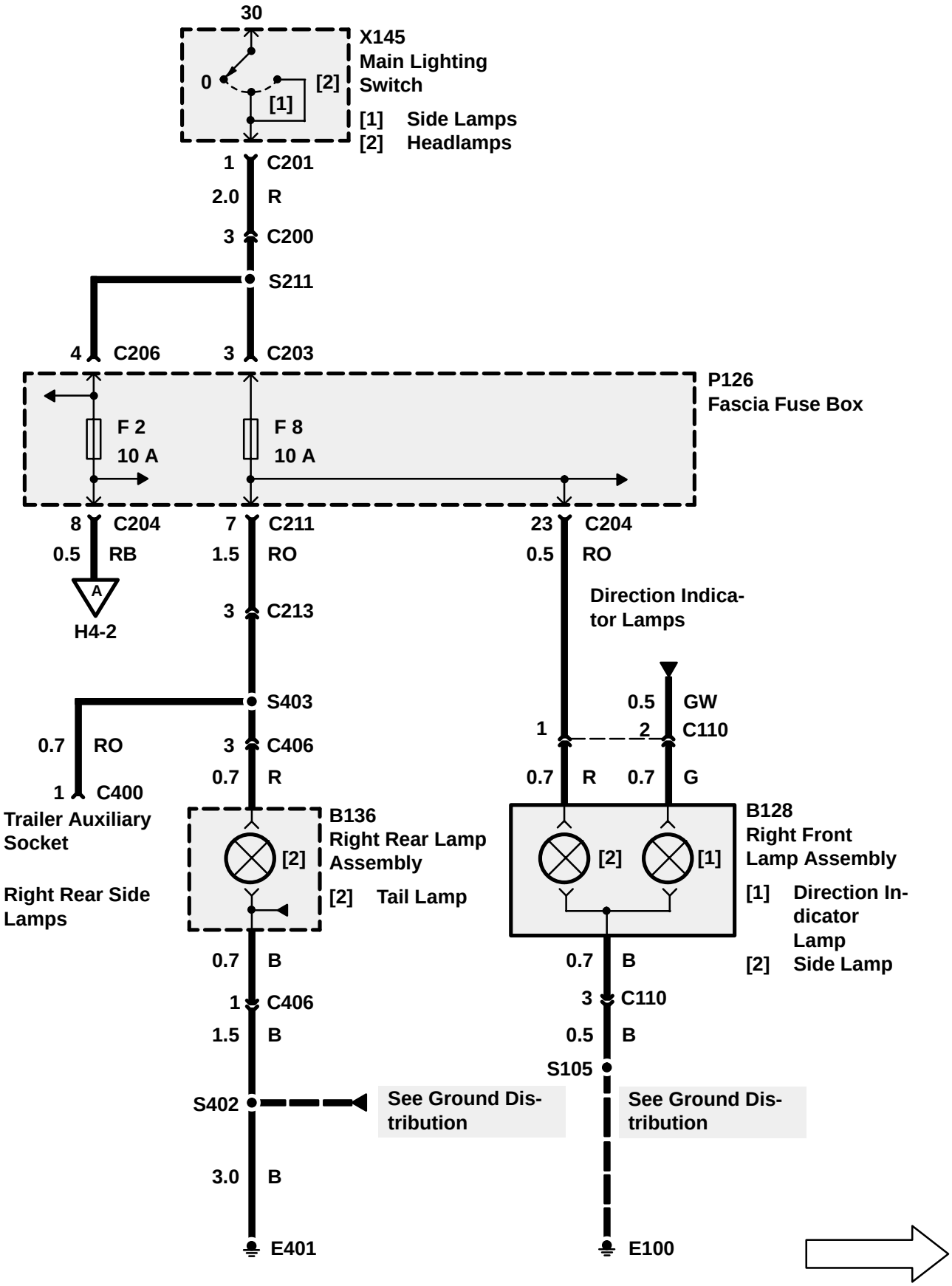
H2 ETM

1995 RANGE ROVER



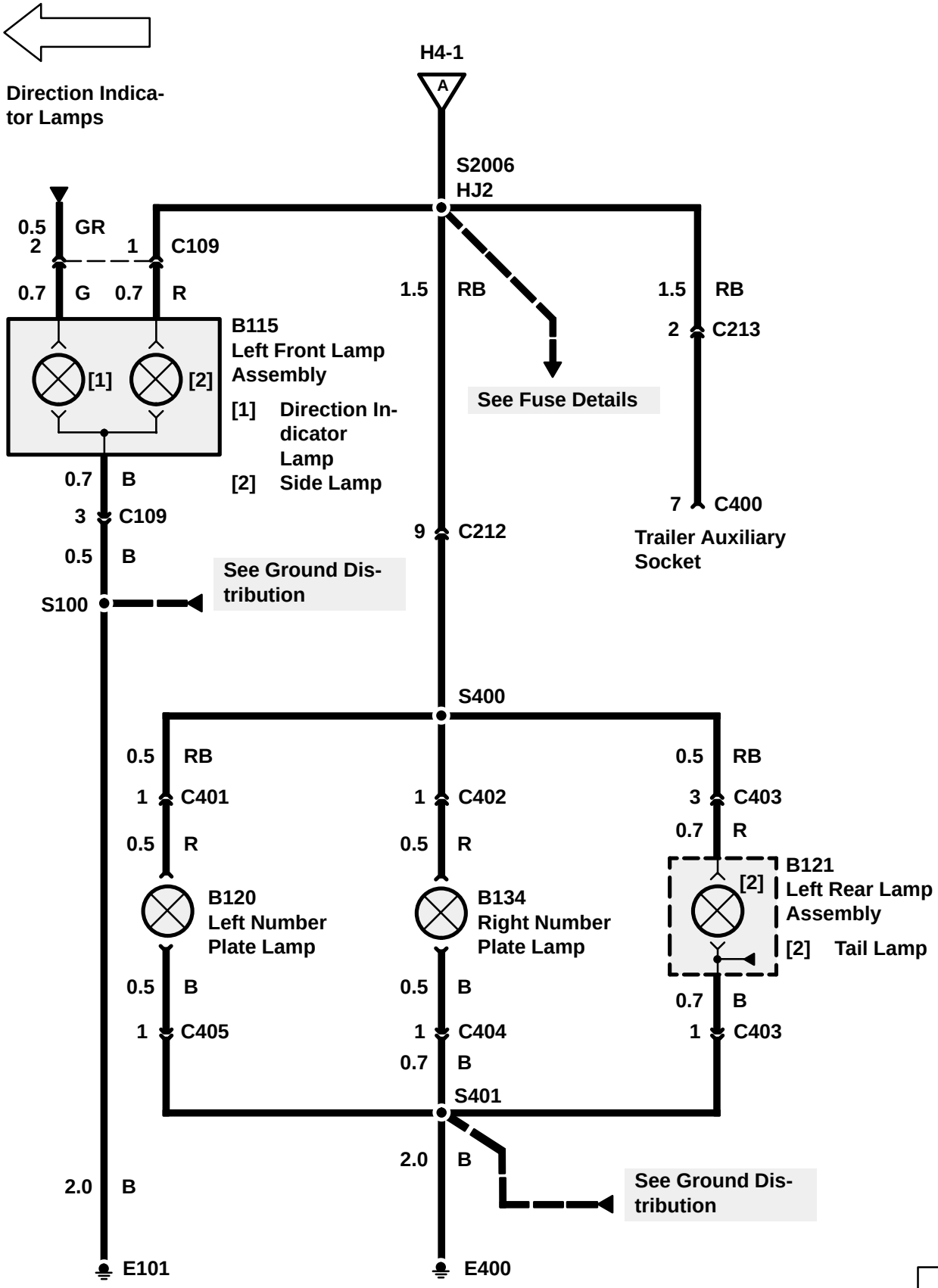

30
F 2
20 A
P125
Engine Compart-
ment Fuse Box
2
C101
2.0
NG
S2022
15
F 13
10 A
P126
Fascia Fuse Box
1
C111
0.5
WY
See Fuse Details
S2058
HJ1
See Fuse Details
H2-1
D
1.0
U
Z200
Daytime Running
Lamps Diode
0.5
UB
(Canada only)
87a
85
86
C2047
Z122
Daytime Running
Lamps Control
Unit
87
30
C2047
0.5
B
1.5
UW
S204
HJ10
C
H2-1
See Ground Dis-
tribution
E200

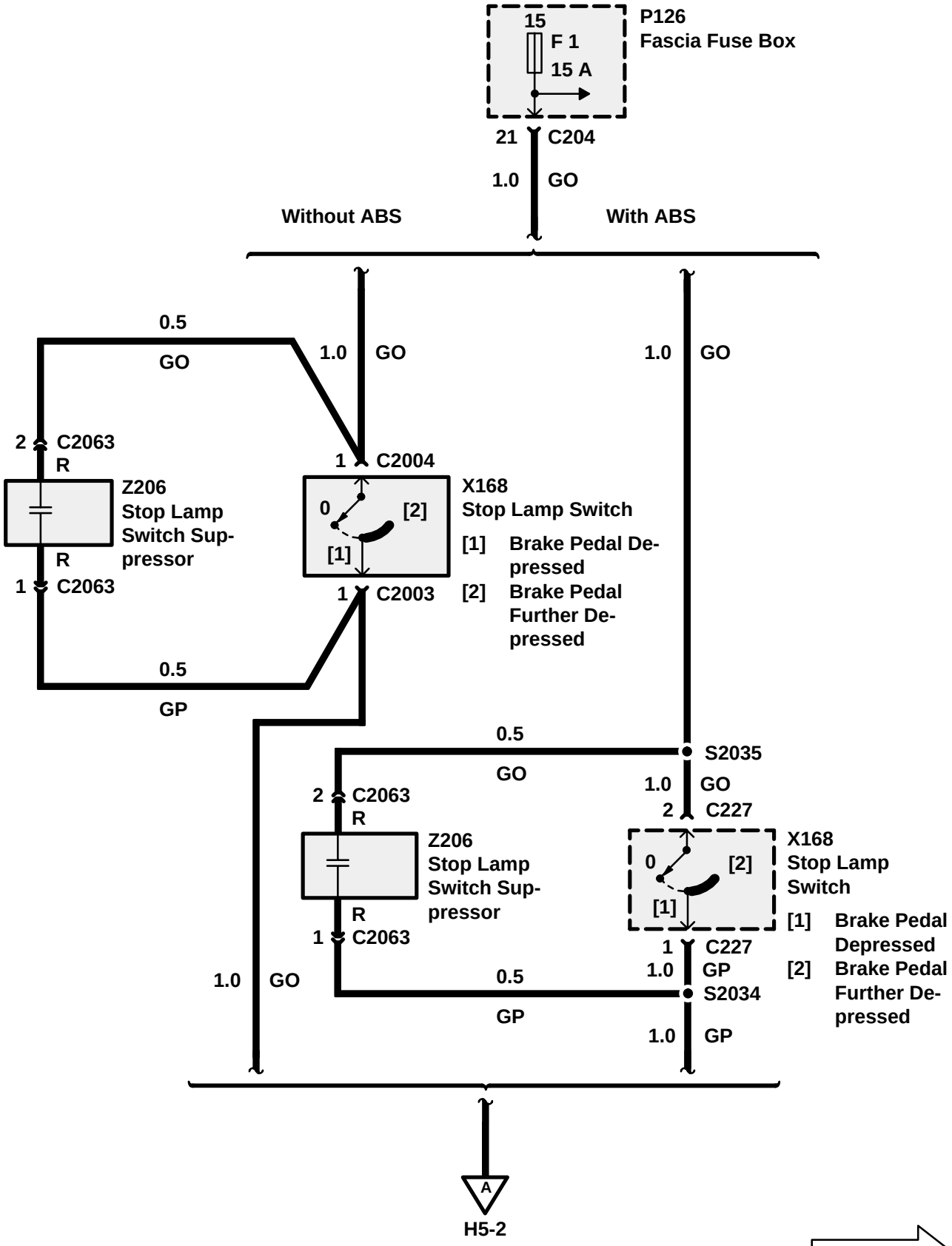

56
F 10
10 A
P126
Fascia Fuse Box
24 C204
1.5 UK
S2028
HJ6
See Fuse Details
Interior Lamps
0.5 UK
0.5 UK
18 C215
0.5 RN
2
4 C259
1 C194
X130
Headlamp Level Switch
2
1
3
0
0.5 UB
5
0.5 UY
19 C215
1 C259
0.5 B
3 C194
S126
0.5 UN
S127
3 1 C190
1 3 C191
Z145
Left Headlamp Level Unit
Z155
Right Headlamp Level Unit
M
M
2 C190
0.5 B
2 C191
0.5 B
S125
2 C194
6 C2029
S253
HJ8
See Ground Distribution
See Ground Distribution
E201
E201


30
X145
Main Lighting
Switch
0
[2]
[1]
[1] Side Lamps
[2] Headlamps
1 C201
2.0 R
3 C200
S211
4 C206
3 C203
P126
Fascia Fuse Box
F 2
10 A
F 8
10 A
8 C204
0.5 RB
A
H4-2
7 C211
1.5 RO
3 C213
23 C204
0.5 RO
Direction Indica-
tor Lamps
S403
0.7 RO
1 C400
Trailer Auxiliary
Socket
Right Rear Side
Lamps
3 C406
0.7 R
B136
Right Rear Lamp
Assembly
[2]
[2] Tail Lamp
0.5 GW
1
2 C110
0.7 R
0.7 G
B128
Right Front
Lamp Assembly
[2]
[1]
[1] Direction In-
dicator
Lamp
[2] Side Lamp
0.7 B
1 C406
1.5 B
0.7 B
3 C110
0.5 B
S105
S402
See Ground Dis-
tribution
See Ground Dis-
tribution
3.0 B
E401
E100

H4 ETM

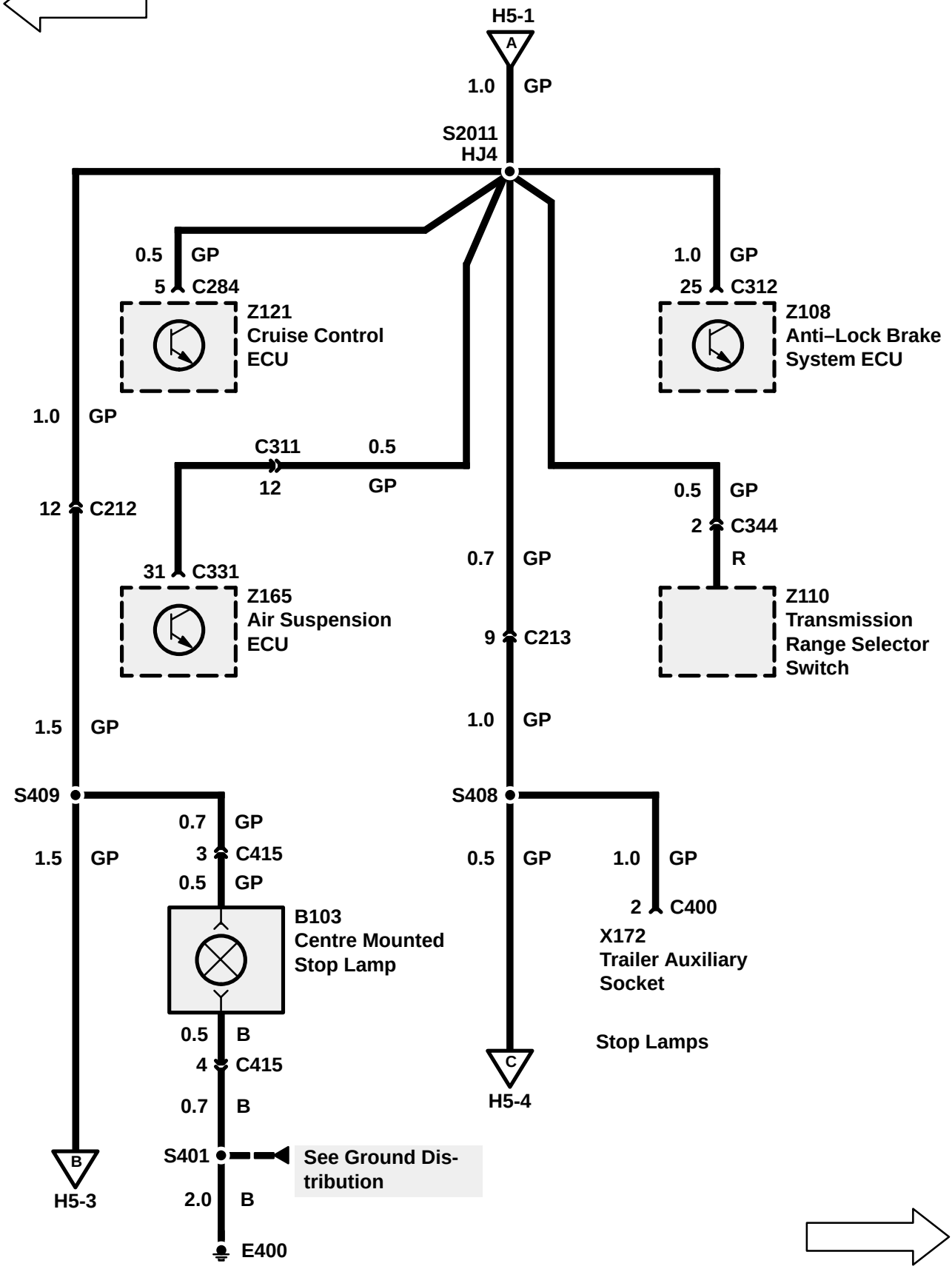
1995 RANGE ROVER

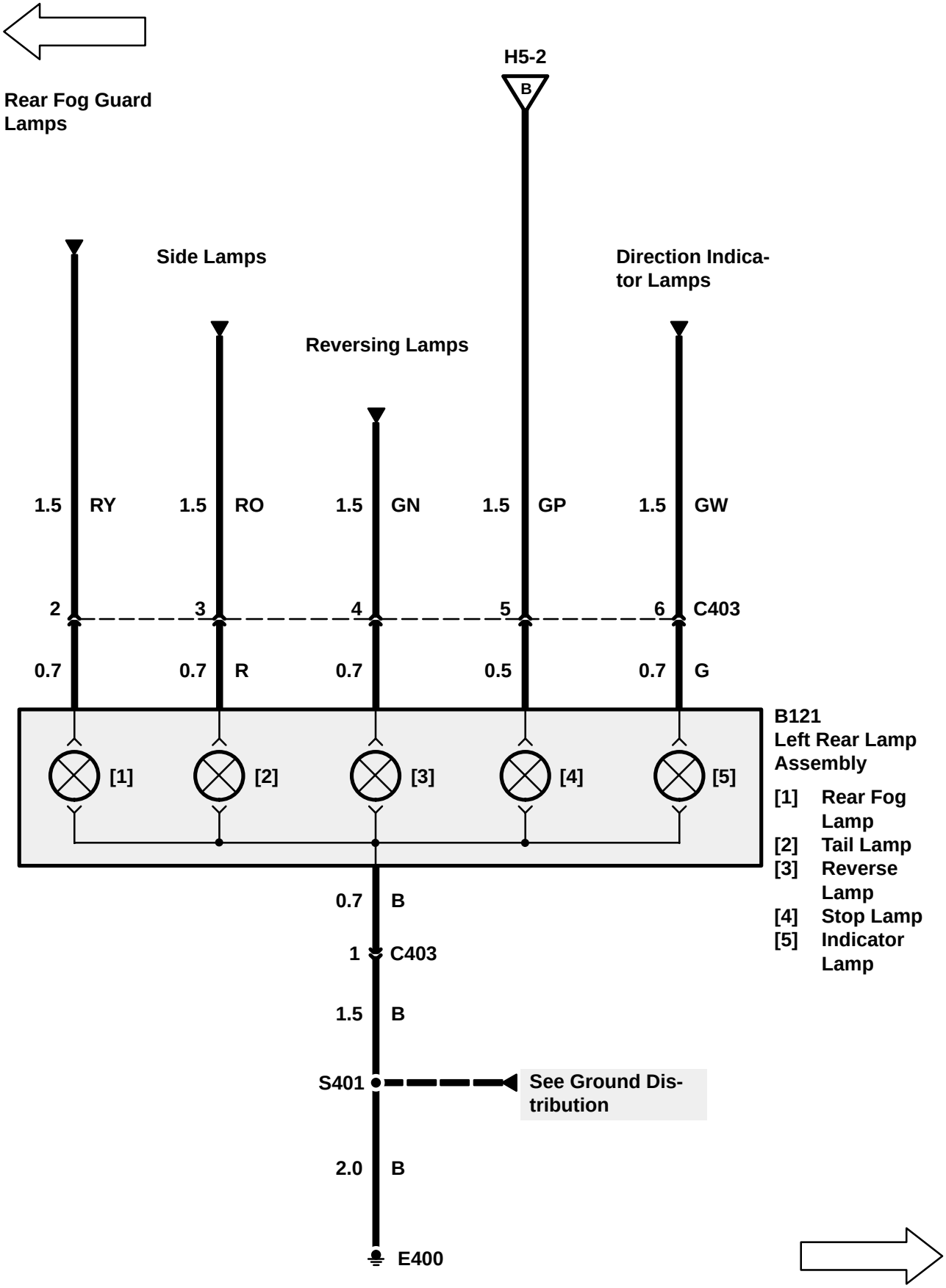



15
F 1
15 A
P126
Fascia Fuse Box
21
C204
1.0
GO
Without ABS
With ABS
0.5
GO
1.0
GO
1.0
GO
2
C2063
R
Z206
Stop Lamp
Switch Sup-
pressor
R
1
C2063
1
C2004
0
[2]
[1]
X168
Stop Lamp Switch
[1] Brake Pedal De-
pressed
[2] Brake Pedal
Further De-
pressed
1
C2003
0.5
GP
0.5
GO
S2035
2
C2063
R
Z206
Stop Lamp
Switch Sup-
pressor
R
1
C2063
1.0
GO
1.0
GO
2
C227
X168
Stop Lamp
Switch
[1] Brake Pedal
Depressed
[2] Brake Pedal
Further De-
pressed
1
C227
1.0
GP
S2034
0.5
GP
1.0
GP
A
H5-2

H5 ETM

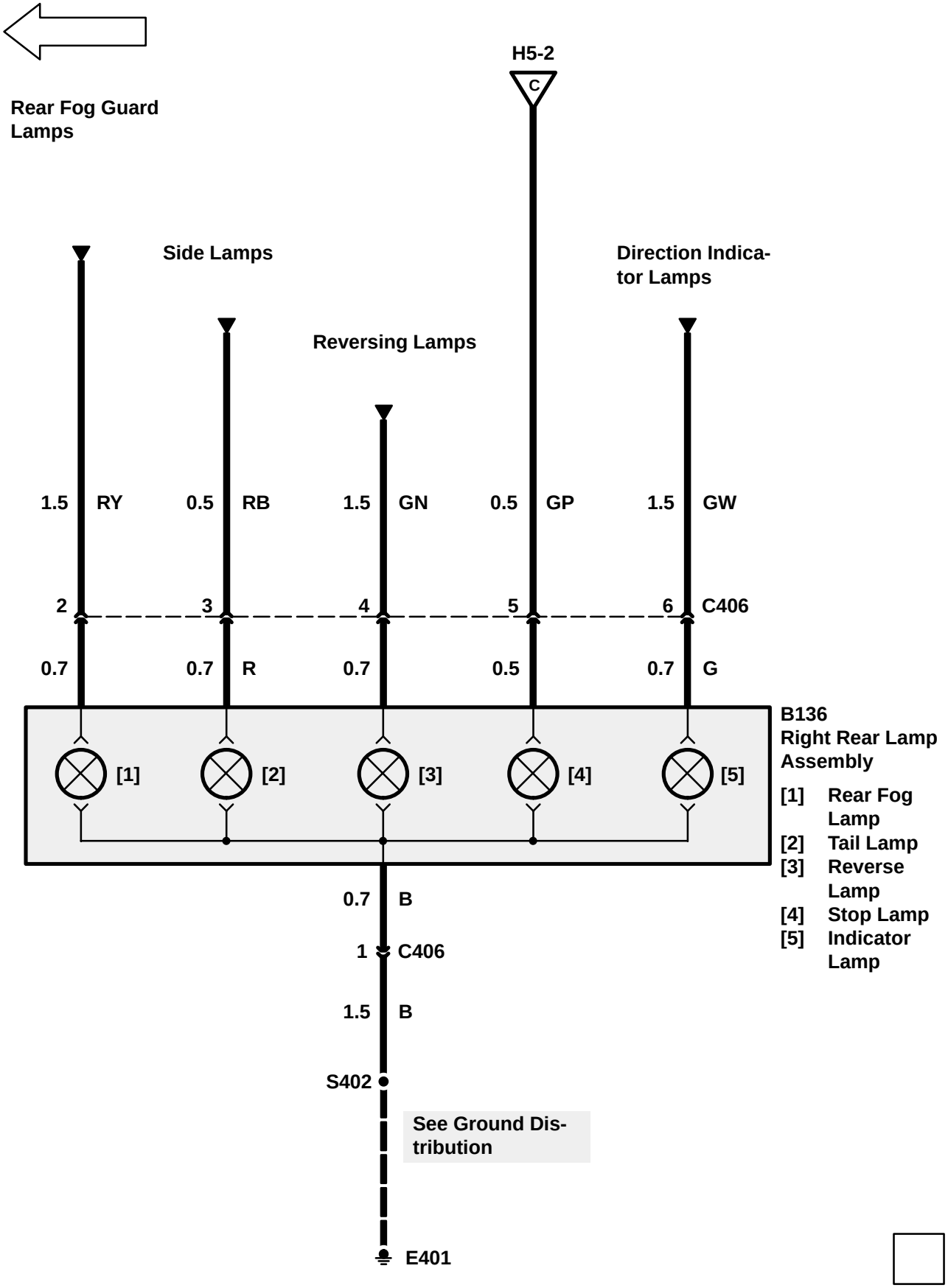
1995 RANGE ROVER

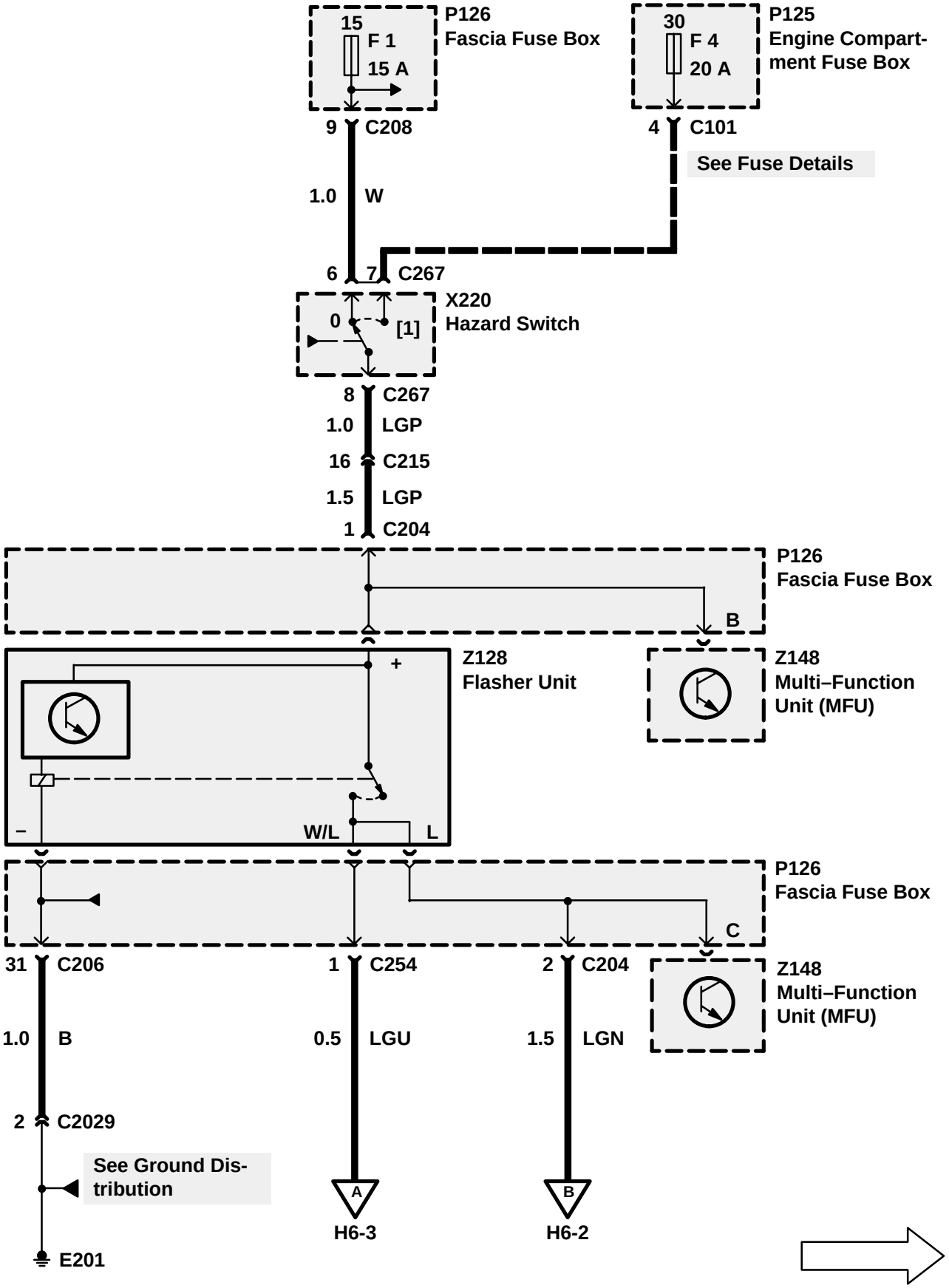



Rear Fog Guard Lamps
H5-2
B
Side Lamps
Reversing Lamps
Direction Indicator Lamps
1.5 RY
1.5 RO
1.5 GN
1.5 GP
1.5 GW
2
3
4
5
6
C403
0.7
0.7 R
0.7
0.5
0.7 G
[1]
[2]
[3]
[4]
[5]
B121
Left Rear Lamp Assembly
[1] Rear Fog Lamp
[2] Tail Lamp
[3] Reverse Lamp
[4] Stop Lamp
[5] Indicator Lamp
0.7 B
1
C403
1.5 B
S401
See Ground Distribution
2.0 B
E400

H5 ETM

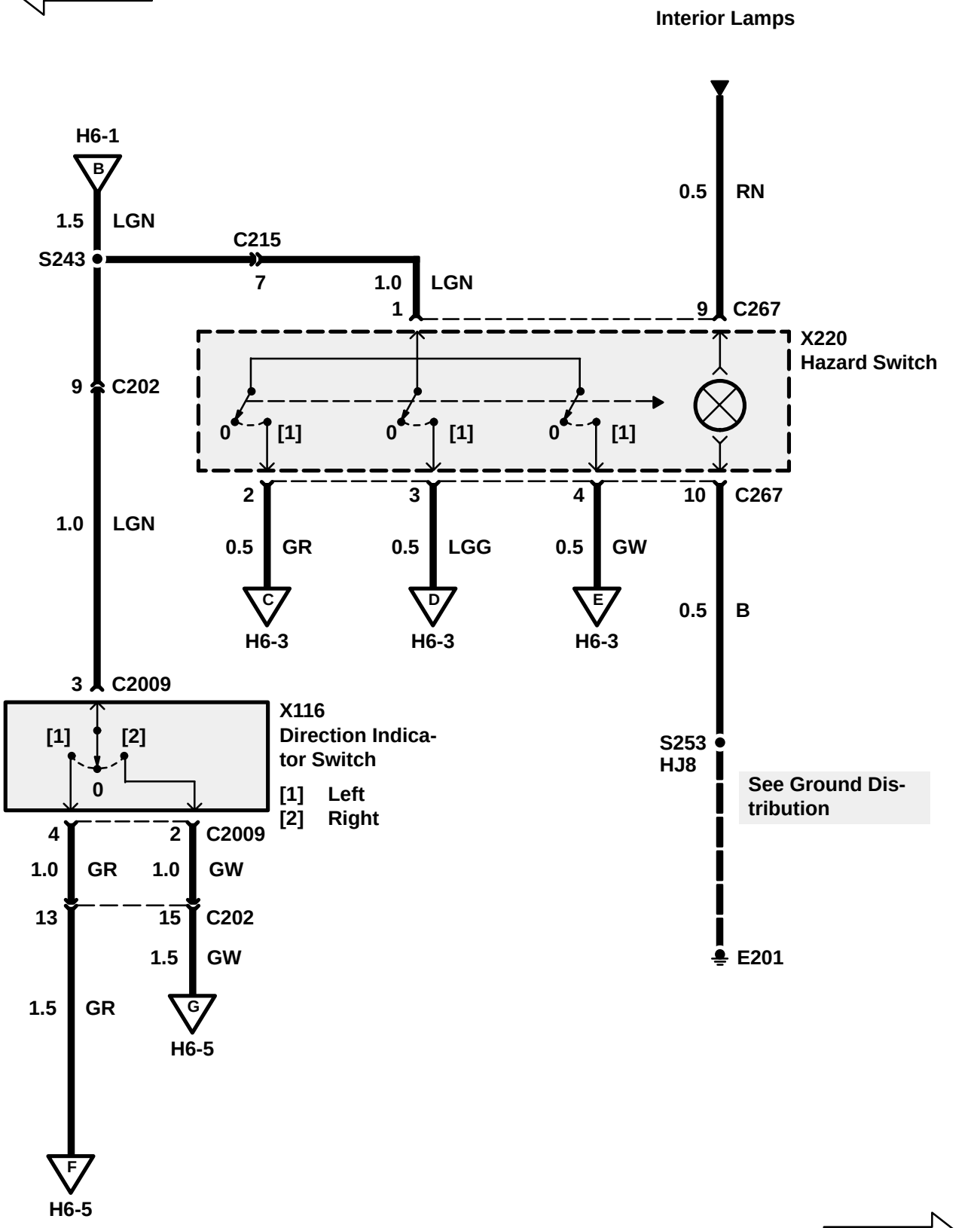
1995 RANGE ROVER

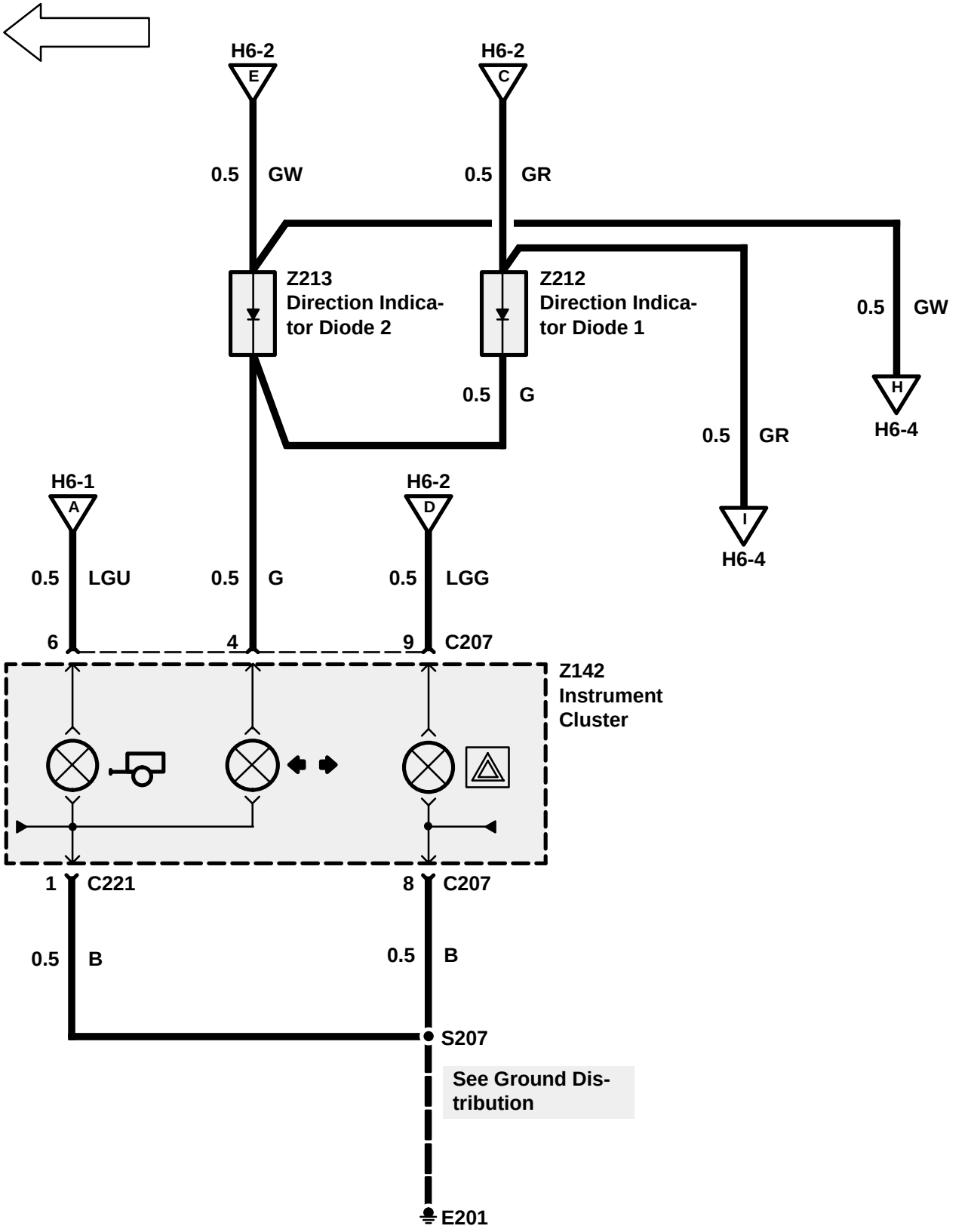



15
F 1
15 A
P126
Fascia Fuse Box
30
F 4
20 A
P125
Engine Compart-
ment Fuse Box
9 C208
4 C101
See Fuse Details
1.0 W
6 7 C267
X220
Hazard Switch
0 [1]
8 C267
1.0 LGP
16 C215
1.5 LGP
1 C204
P126
Fascia Fuse Box
B
Z128
Flasher Unit
+
Z148
Multi–Function
Unit (MFU)
–
W/L
L
P126
Fascia Fuse Box
C
31 C206
1 C254
2 C204
Z148
Multi–Function
Unit (MFU)
1.0 B
0.5 LGU
1.5 LGN
2 C2029
See Ground Dis-
tribution
A
B
H6-3
H6-2
E201

H6 ETM

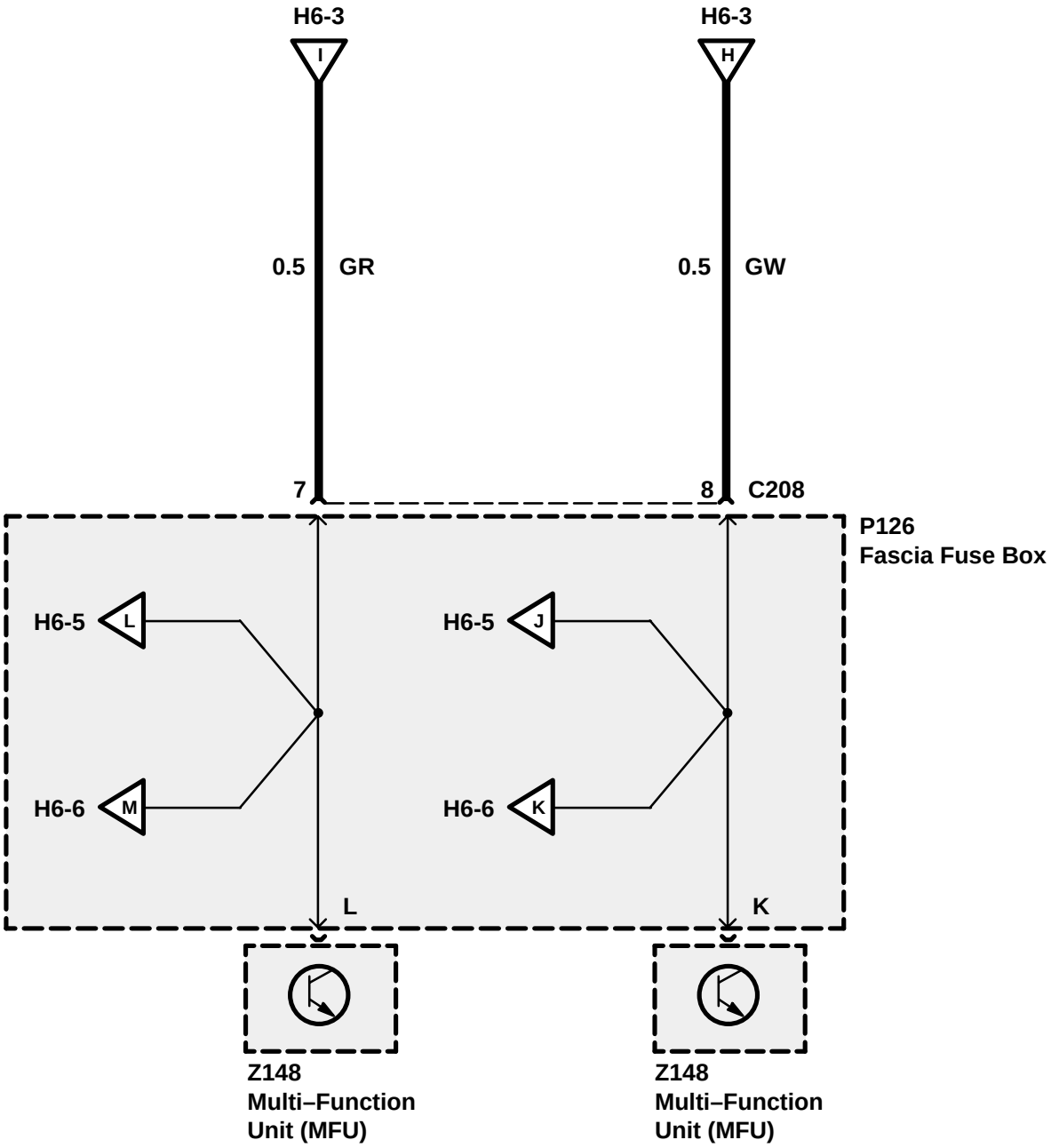
1995 RANGE ROVER

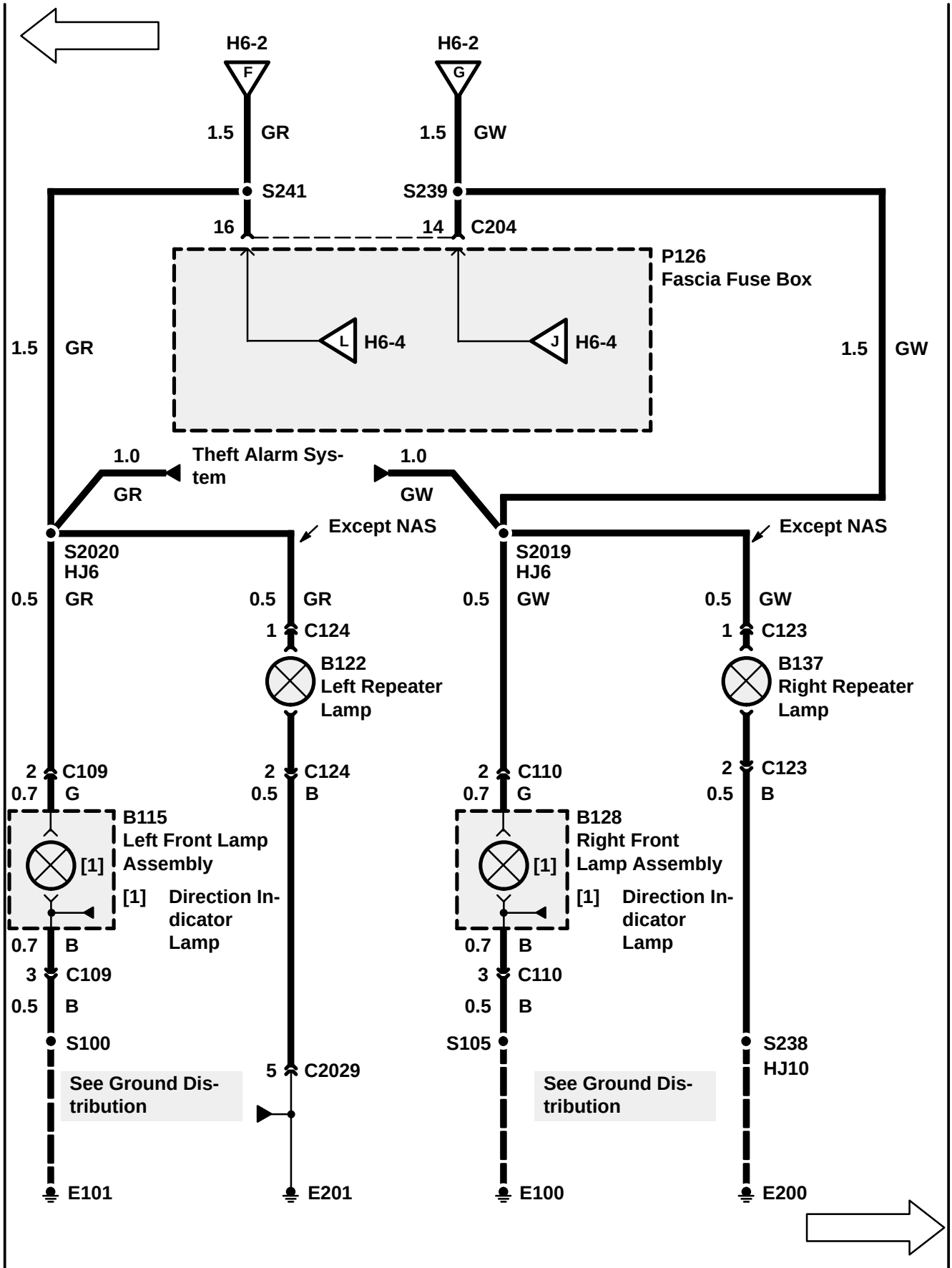



H6-2
E
H6-2
C
0.5 GW
0.5 GR
Z213
Direction Indicator Diode 2
Z212
Direction Indicator Diode 1
0.5 GW
H
H6-4
0.5 G
0.5 GR
I
H6-4
H6-1
A
H6-2
D
0.5 LGU
0.5 G
0.5 LGG
6
4
9
C207
Z142
Instrument Cluster
1
C221
8
C207
0.5 B
0.5 B
S207
See Ground Distribution
E201

H6 ETM

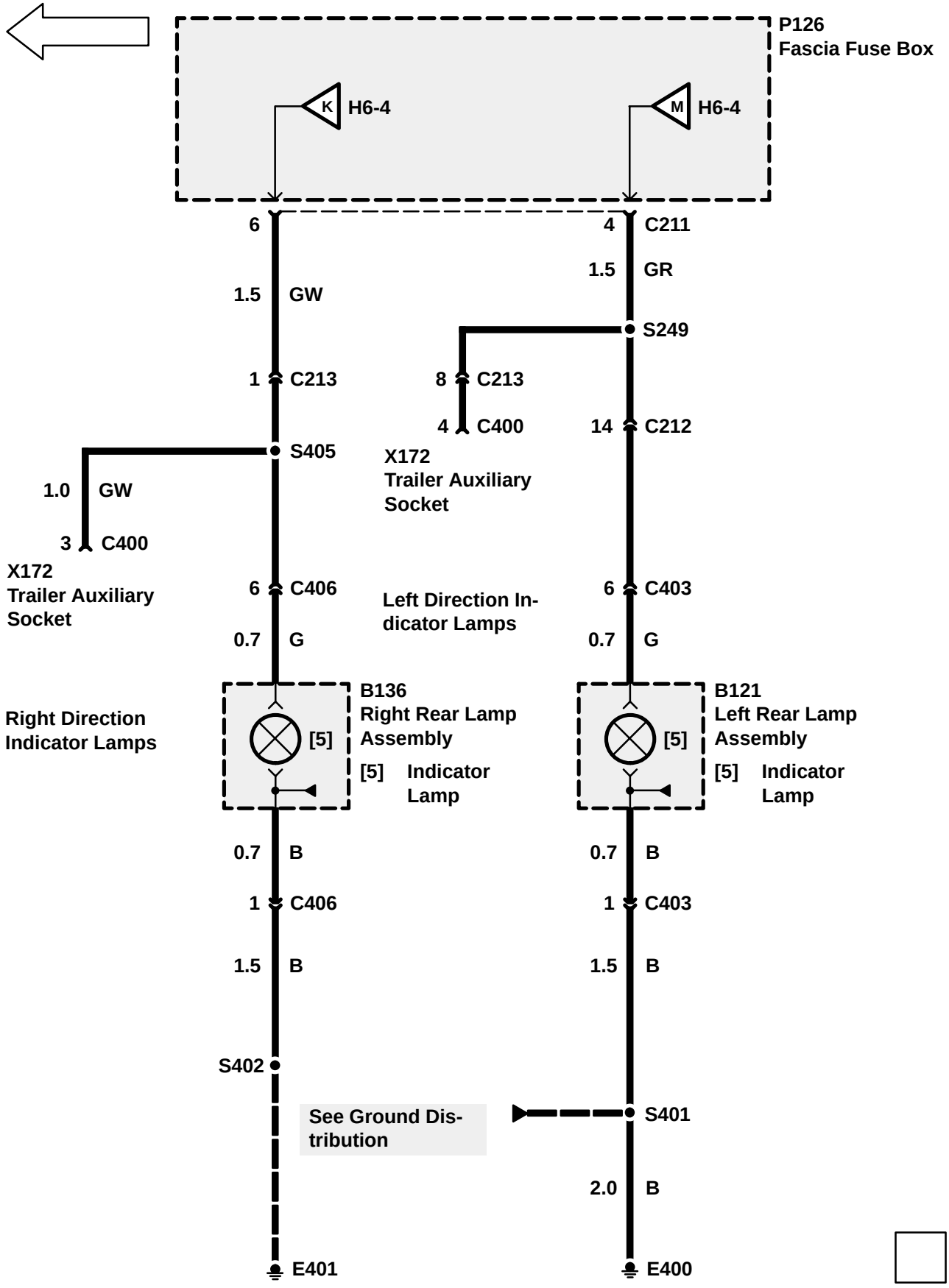
1995 RANGE ROVER

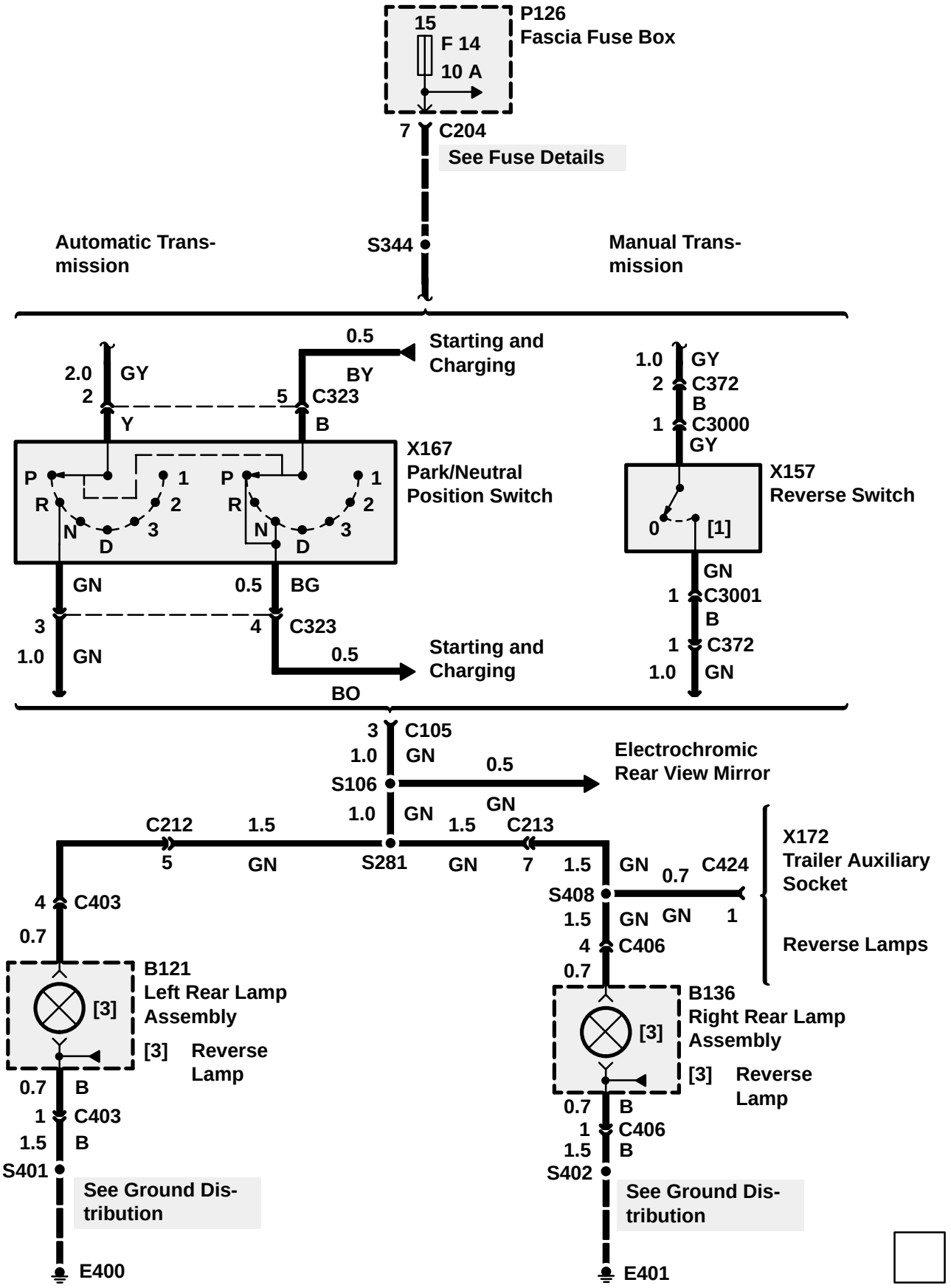


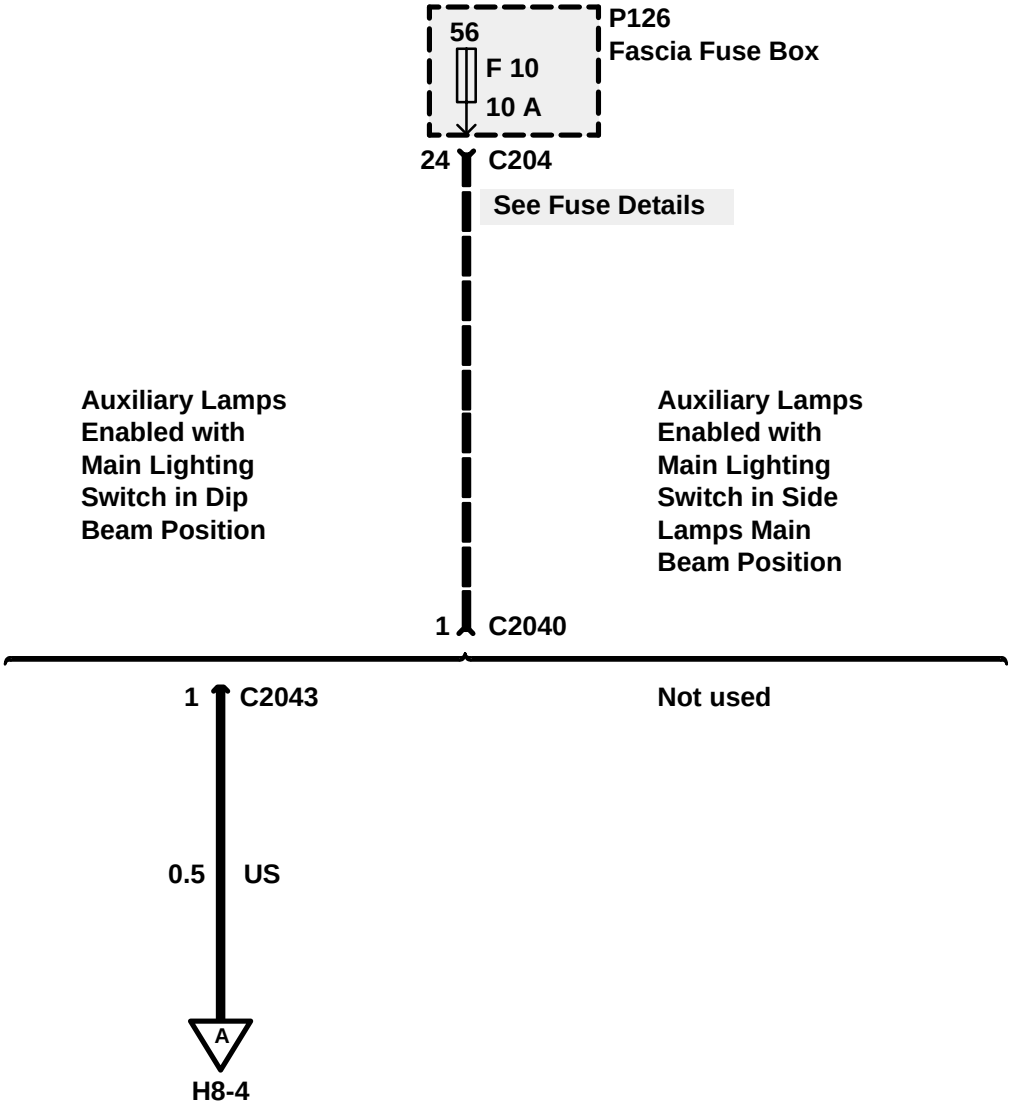

H6-2
F
1.5 GR
S241
16
H6-2
G
1.5 GW
S239
14 C204
P126
Fascia Fuse Box
L H6-4
J H6-4
1.5 GR
1.5 GW
1.0 GR
Theft Alarm System
1.0 GW
Except NAS
S2020
HJ6
0.5 GR
0.5 GR
1 C124
B122
Left Repeater Lamp
2 C109
0.7 G
2 C124
0.5 B
B115
Left Front Lamp Assembly
[1]
[1] Direction Indicator Lamp
0.7 B
3 C109
0.5 B
S100
See Ground Distribution
5 C2029
E101
E201
Except NAS
S2019
HJ6
0.5 GW
0.5 GW
1 C123
B137
Right Repeater Lamp
2 C110
0.7 G
2 C123
0.5 B
B128
Right Front Lamp Assembly
[1]
[1] Direction Indicator Lamp
0.7 B
3 C110
0.5 B
S105
See Ground Distribution
S238
HJ10
E100
E200

H6 ETM

1995 RANGE ROVER

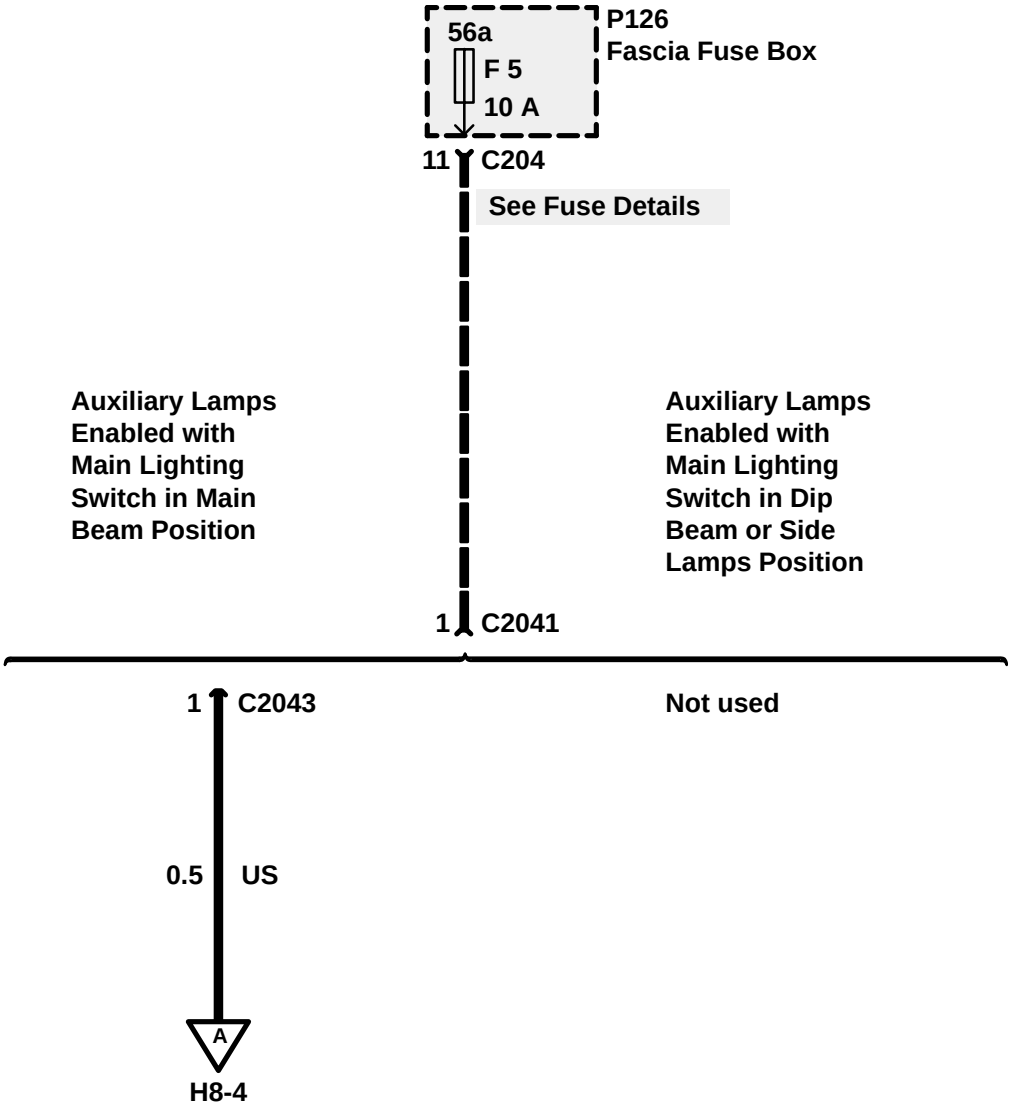


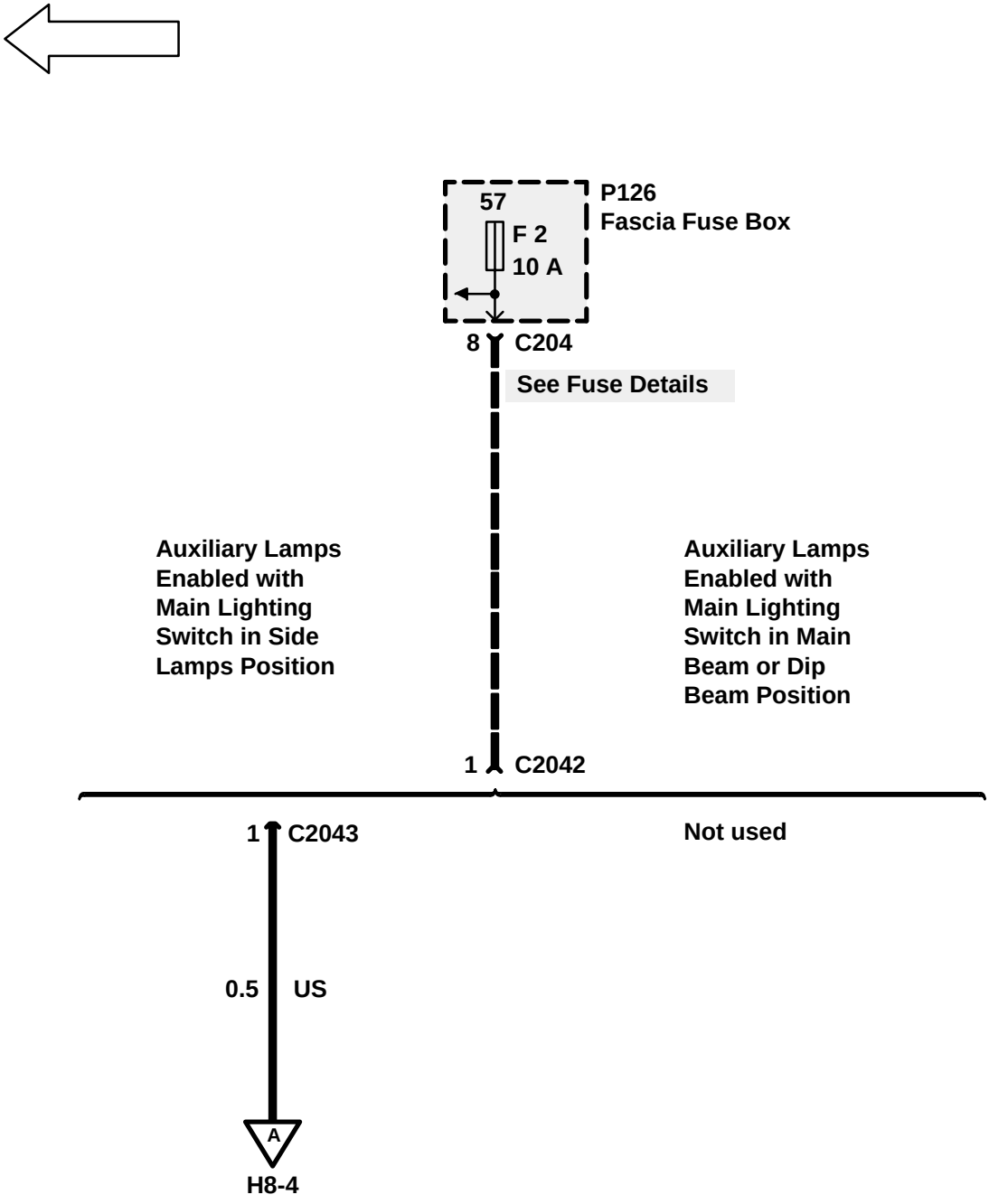

P126
Fascia Fuse Box
15
F 14
10 A
7 C204
See Fuse Details
S344
Automatic Transmission
Manual Transmission
2.0 GY
2
Y
0.5 BY
5 C323
B
Starting and Charging
X167
Park/Neutral Position Switch
P R N D 1 2 3
GN
3
1.0 GN
0.5 BG
4 C323
0.5
Starting and Charging
BO
1.0 GY
2 C372
B
1 C3000
GY
X157
Reverse Switch
0 [1]
GN
1 C3001
B
1 C372
1.0 GN
3 C105
1.0 GN
S106
1.0 GN
0.5
GN
Electrochromic Rear View Mirror
C212 1.5 5 GN S281 GN 1.5 C213 7
1.5 GN 0.7 C424
S408
1.5 GN GN 1
4 C406
0.7
X172
Trailer Auxiliary Socket
Reverse Lamps
4 C403
0.7
B121
Left Rear Lamp Assembly
[3]
[3] Reverse Lamp
0.7 B
1 C403
1.5 B
S401
See Ground Distribution
E400
B136
Right Rear Lamp Assembly
[3]
[3] Reverse Lamp
0.7 B
1 C406
1.5 B
S402
See Ground Distribution
E401


56
F 10
10 A
P126
Fascia Fuse Box
24
C204
See Fuse Details
Auxiliary Lamps Enabled with Main Lighting Switch in Dip Beam Position
Auxiliary Lamps Enabled with Main Lighting Switch in Side Lamps Main Beam Position
1
C2040
1
C2043
Not used
0.5
US
A
H8-4

H8 ETM

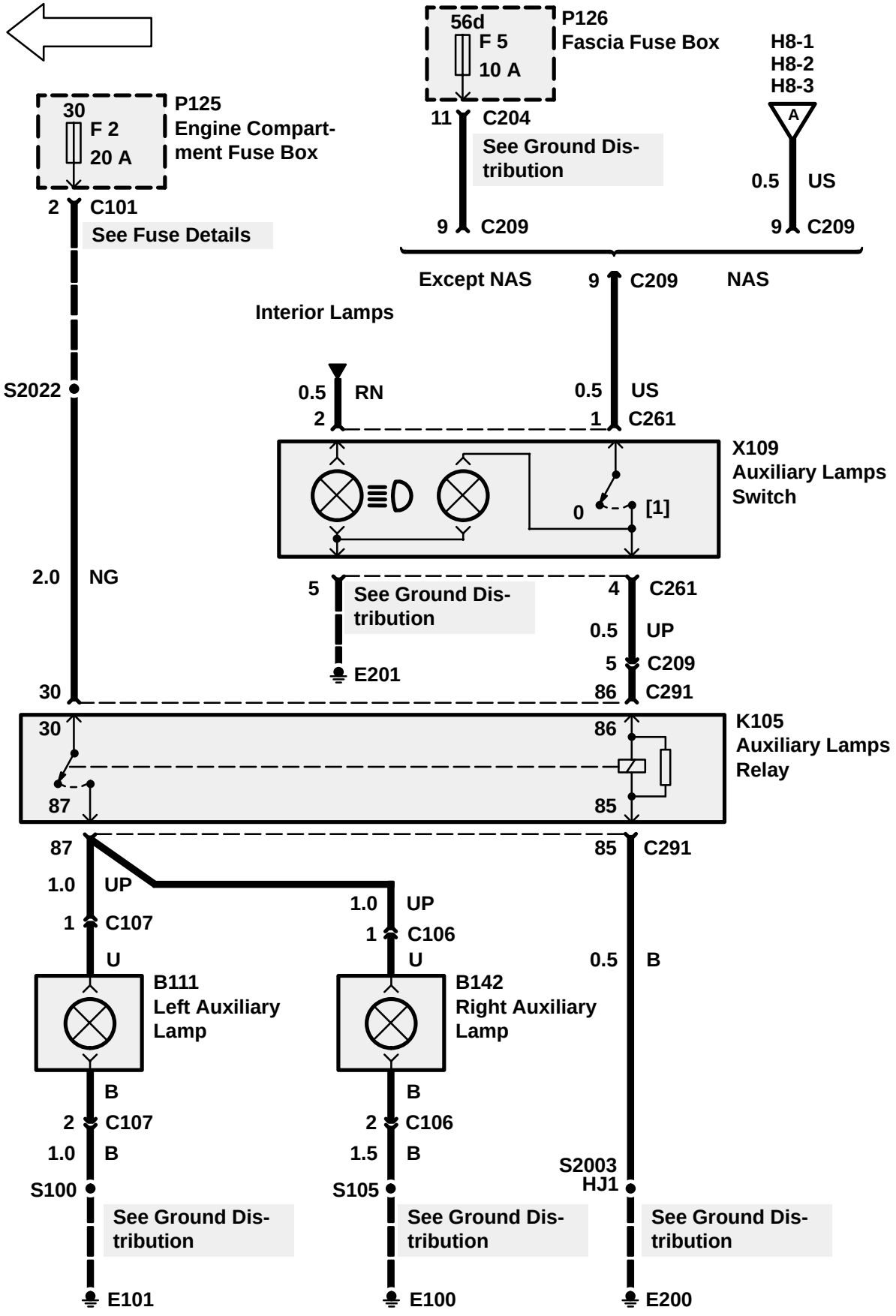
1995 RANGE ROVER

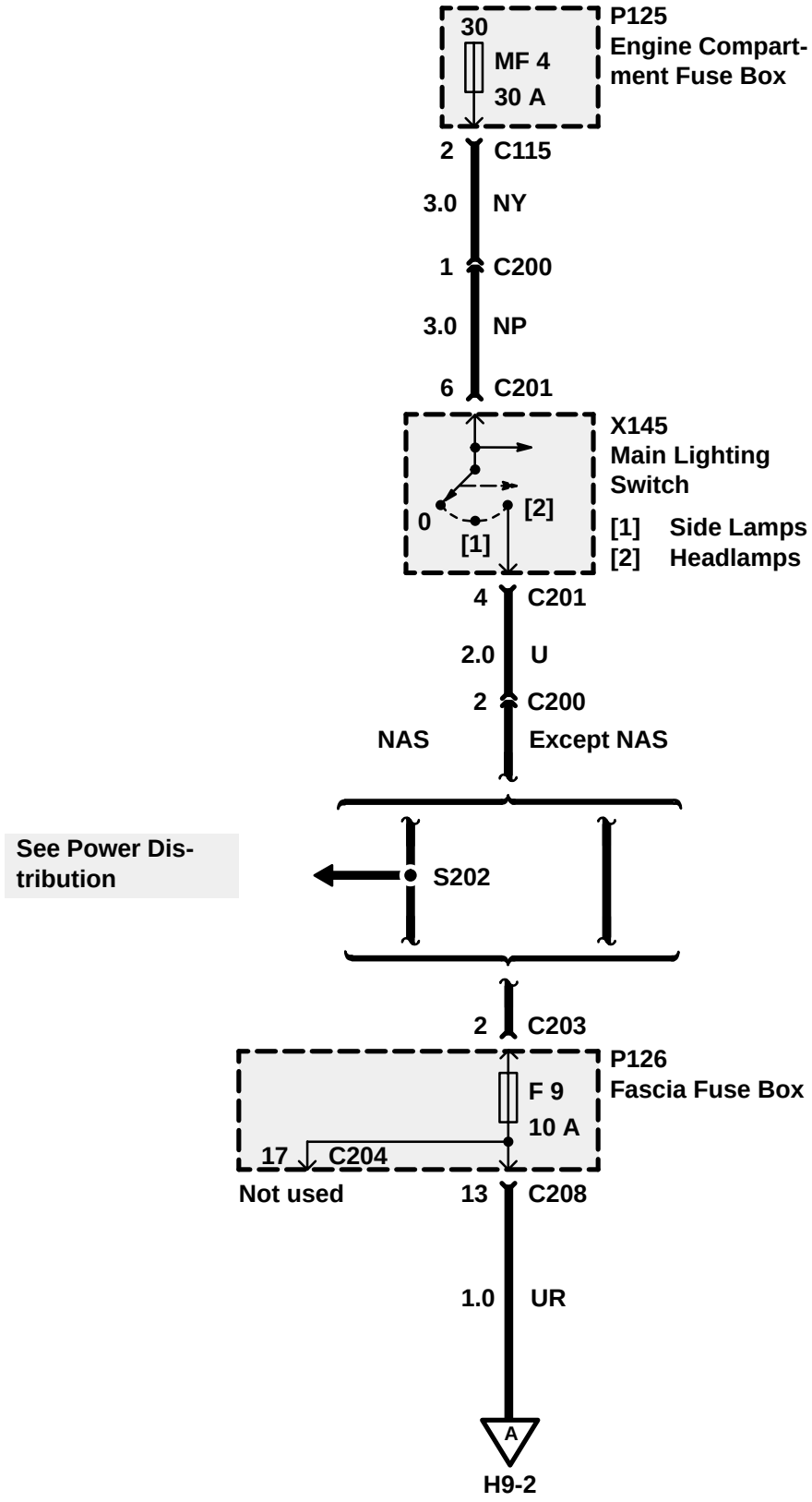



57
F 2
10 A
P126
Fascia Fuse Box
8
C204
See Fuse Details
Auxiliary Lamps Enabled with Main Lighting Switch in Side Lamps Position
Auxiliary Lamps Enabled with Main Lighting Switch in Main Beam or Dip Beam Position
1
C2042
1
C2043
Not used
0.5
US
A
H8-4

H8 ETM

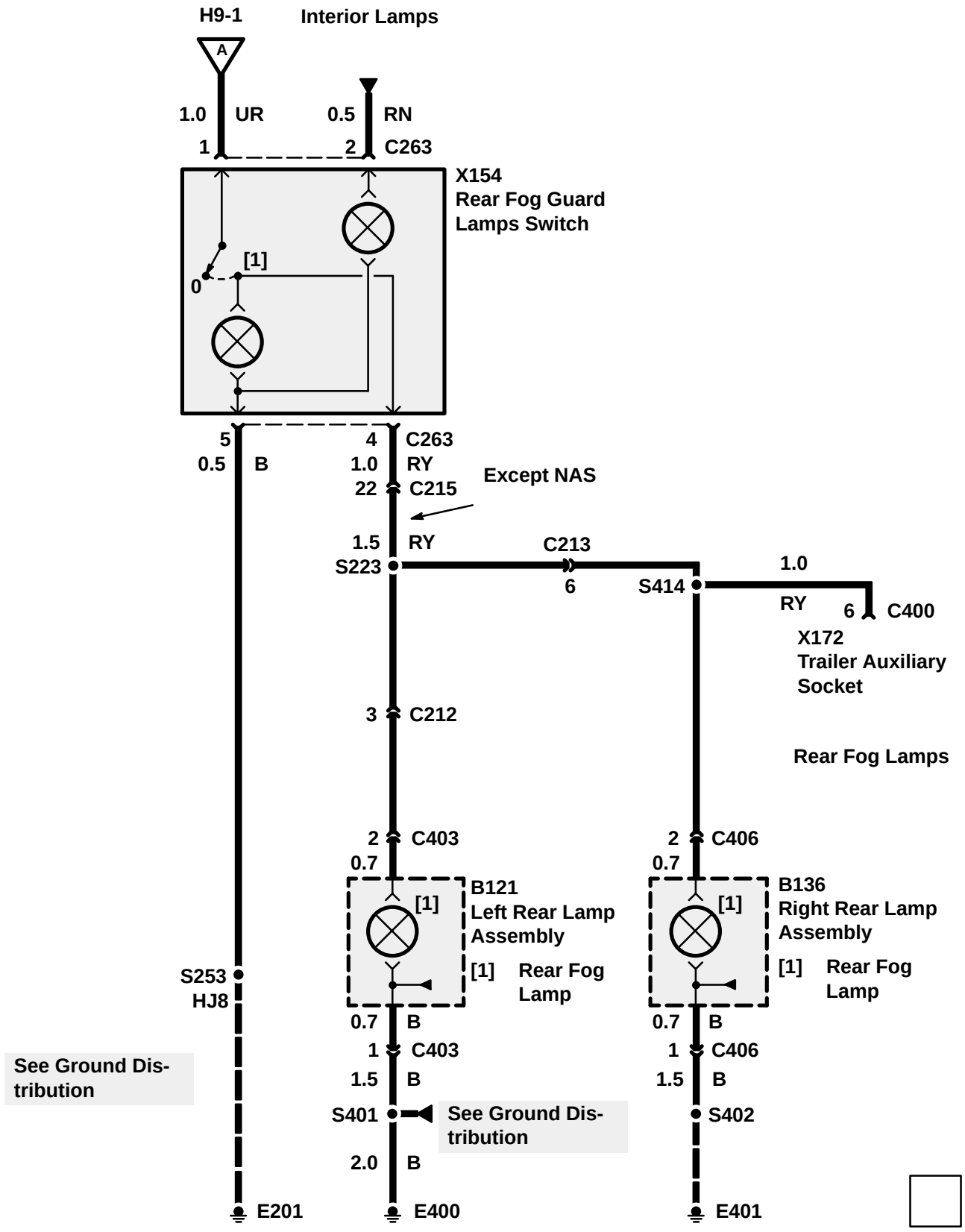
1995 RANGE ROVER

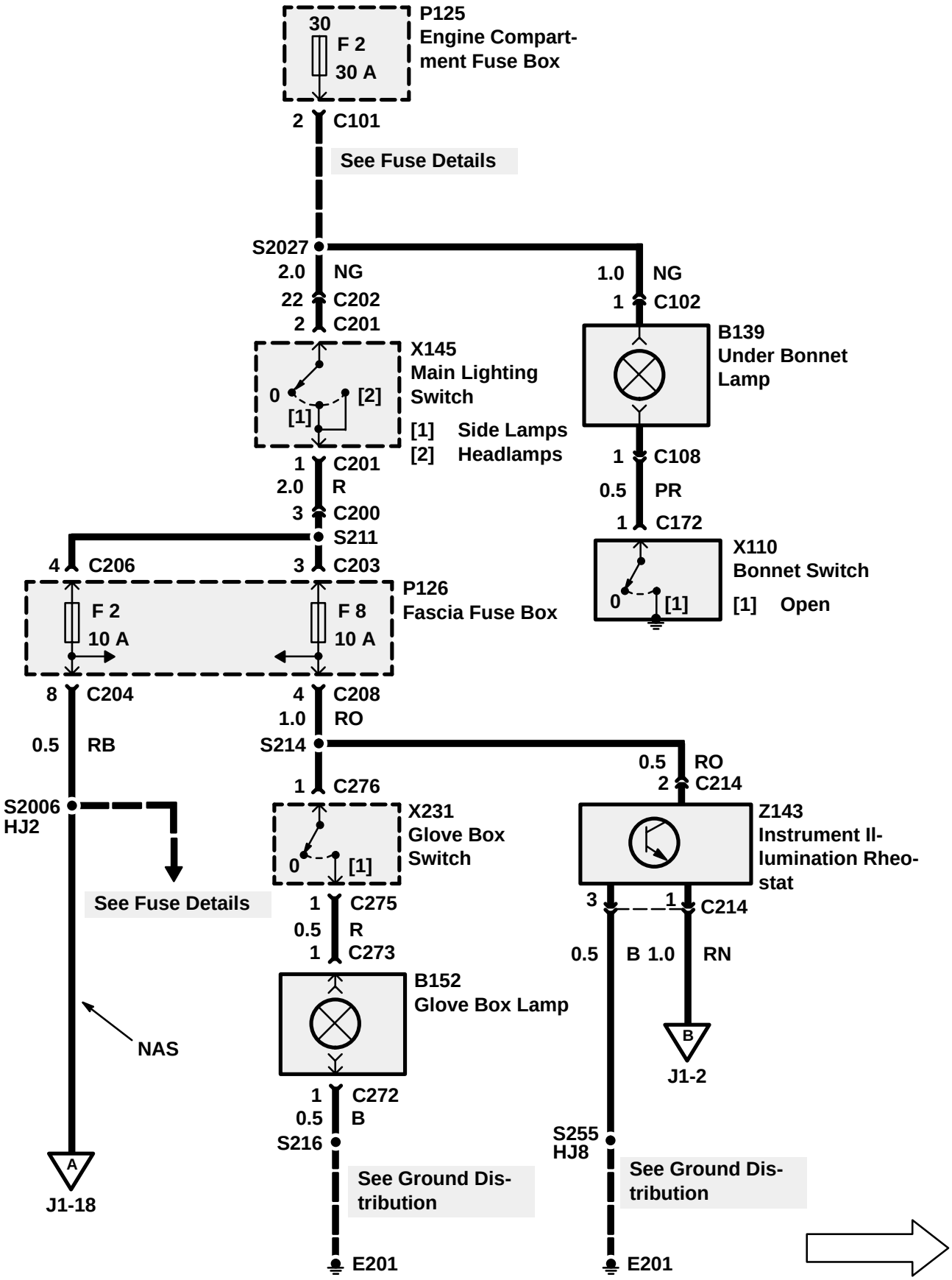



30
MF 4
30 A
P125
Engine Compartment Fuse Box
2
C115
3.0
NY
1
C200
3.0
NP
6
C201
X145
Main Lighting Switch
0
[1]
[2]
[1] Side Lamps
[2] Headlamps
4
C201
2.0
U
2
C200
NAS
Except NAS
See Power Distribution
S202
2
C203
P126
Fascia Fuse Box
F 9
10 A
17
C204
Not used
13
C208
1.0
UR
A
H9-2

H9 ETM

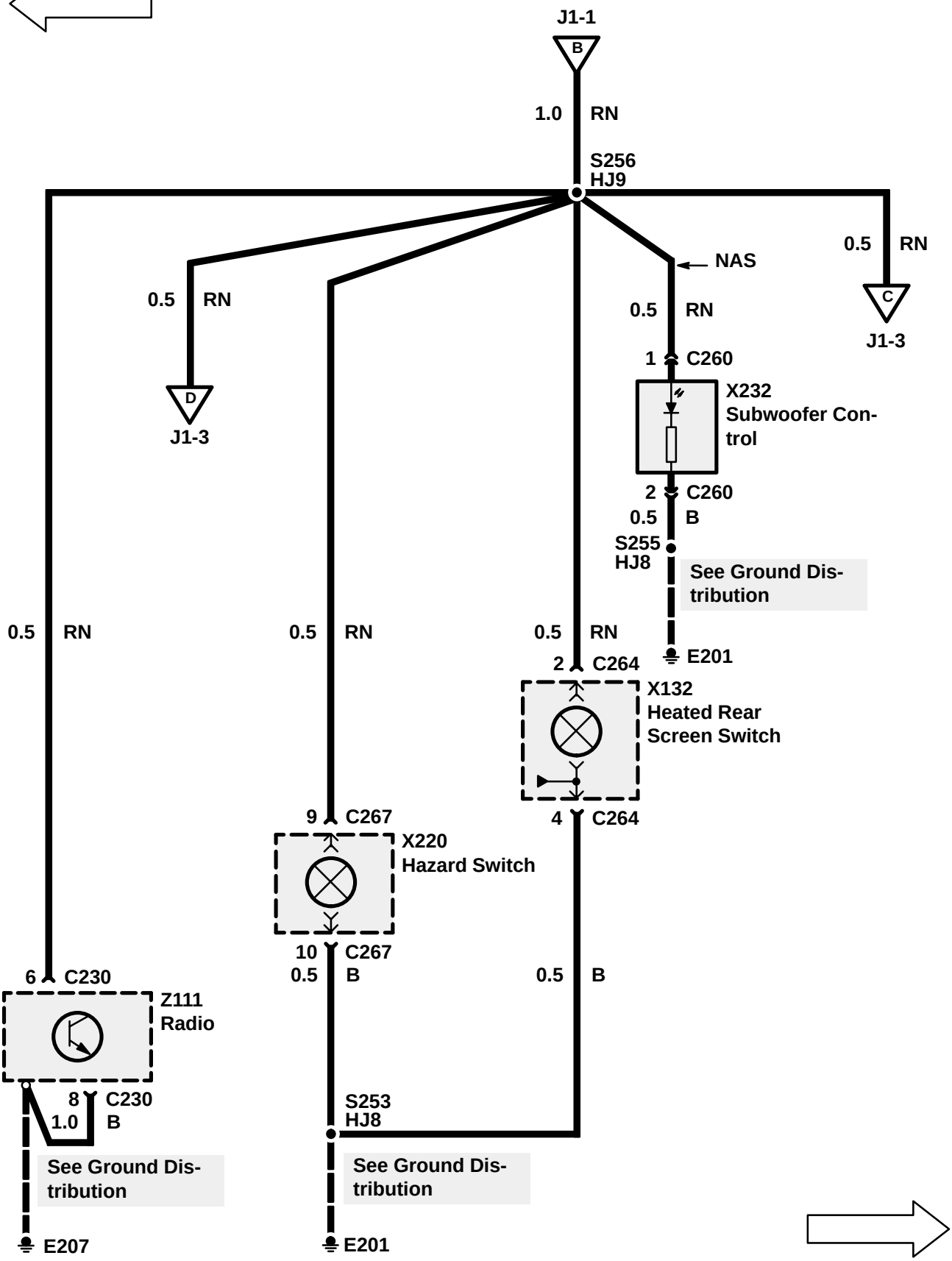
1995 RANGE ROVER

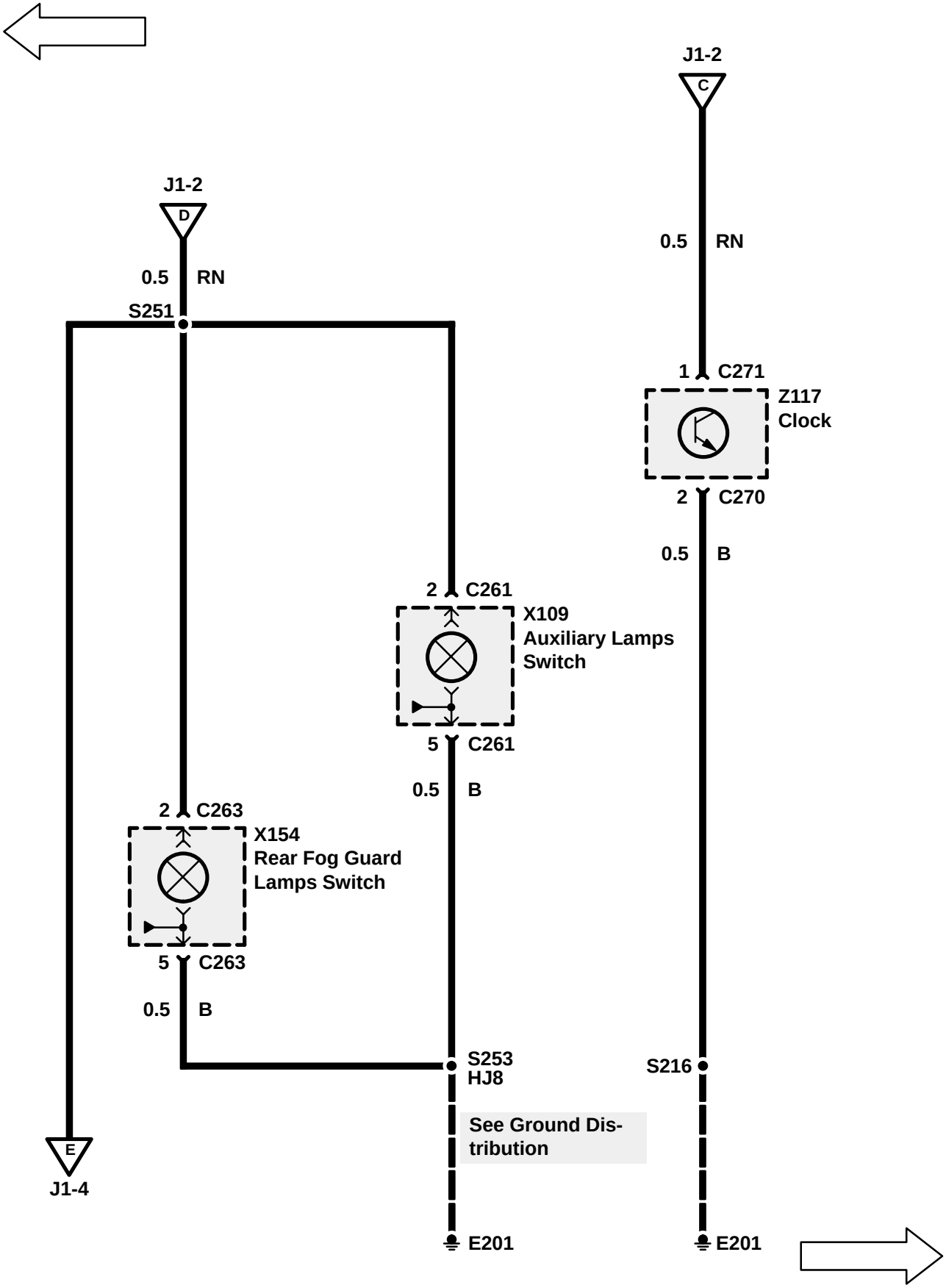



P125
Engine Compartment Fuse Box
30
F 2
30 A
2 C101
See Fuse Details
S2027
2.0 NG
22 C202
2 C201
X145
Main Lighting Switch
0 [1] [2]
[1] Side Lamps
[2] Headlamps
1 C201
2.0 R
3 C200
S211
4 C206
3 C203
P126
Fascia Fuse Box
F 2
10 A
F 8
10 A
8 C204
0.5 RB
4 C208
1.0 RO
S214
1 C276
S2006
HJ2
See Fuse Details
X231
Glove Box Switch
0 [1]
1 C275
0.5 R
1 C273
B152
Glove Box Lamp
1 C272
0.5 B
S216
See Ground Distribution
E201
NAS
A
J1-18
1.0 NG
1 C102
B139
Under Bonnet Lamp
1 C108
0.5 PR
1 C172
X110
Bonnet Switch
0 [1]
[1] Open
0.5 RO
2 C214
Z143
Instrument Illumination Rheostat
3 1 C214
0.5 B 1.0 RN
B
J1-2
S255
HJ8
See Ground Distribution
E201

J1 ETM

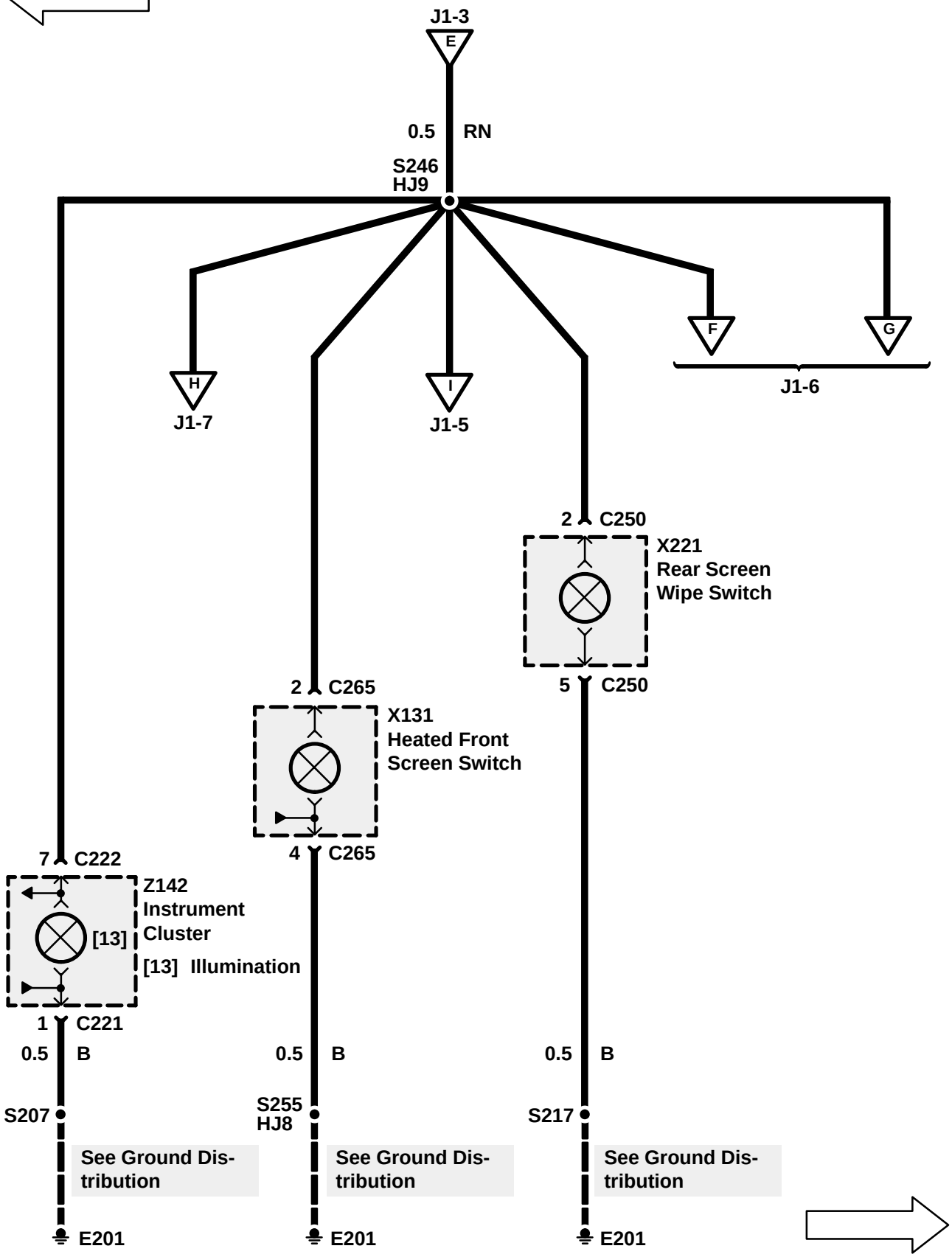
1995 RANGE ROVER

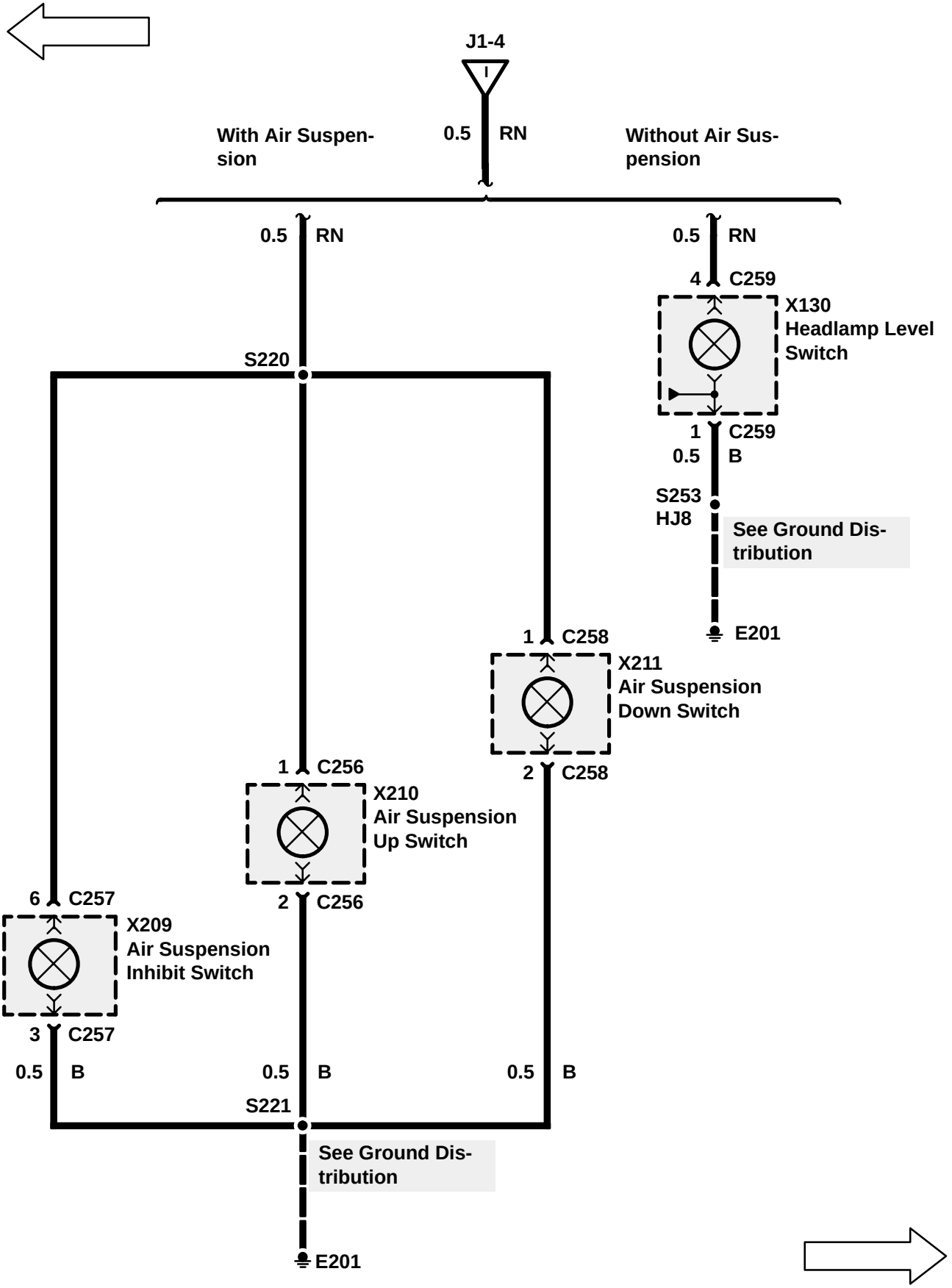



J1-2
C
0.5 RN
1 C271
Z117
Clock
2 C270
0.5 B
S216
E201
J1-2
D
0.5 RN
S251
2 C261
X109
Auxiliary Lamps
Switch
5 C261
0.5 B
2 C263
X154
Rear Fog Guard
Lamps Switch
5 C263
0.5 B
S253
HJ8
See Ground Dis-
tribution
E201
E
J1-4

J1 ETM

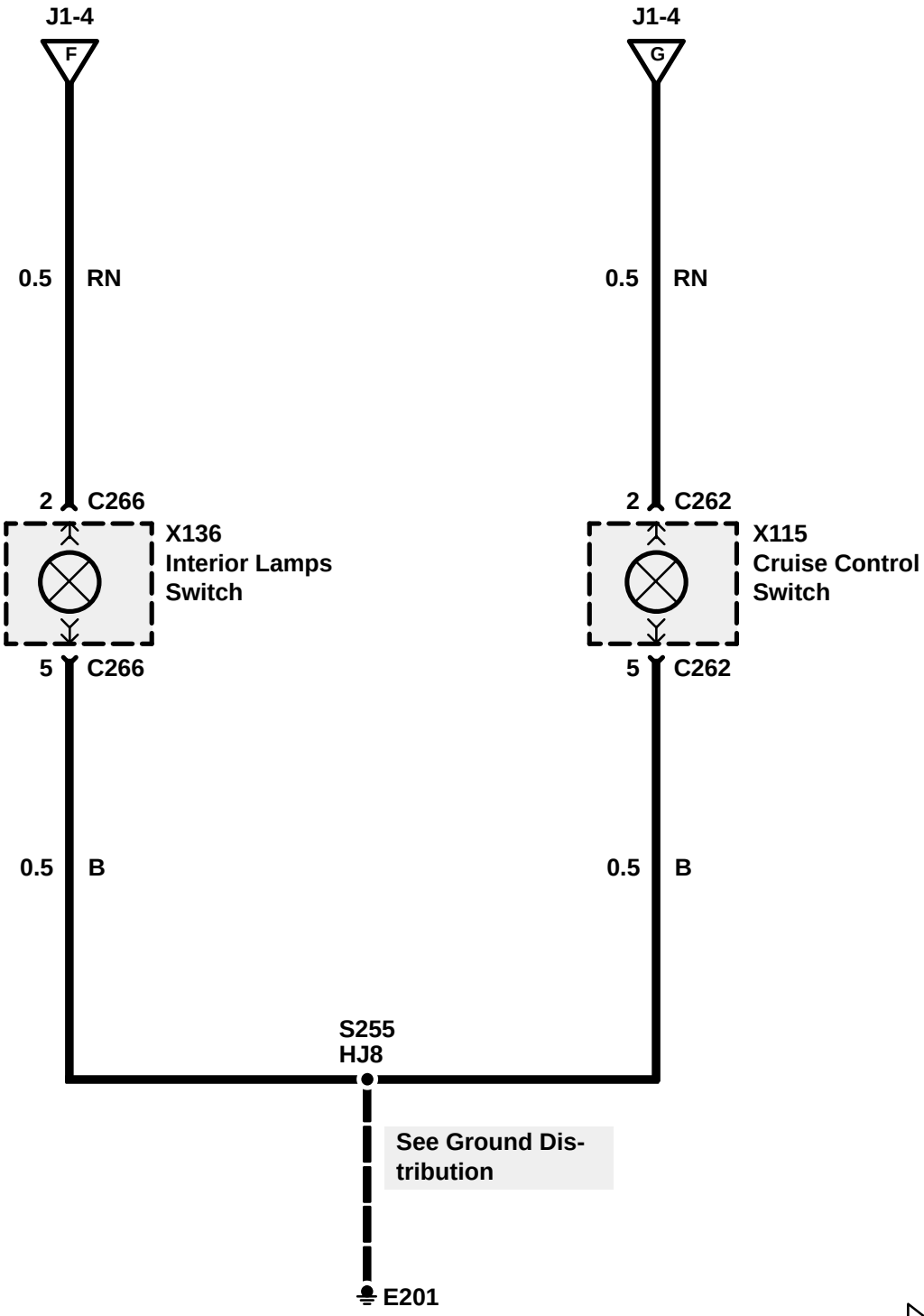
1995 RANGE ROVER

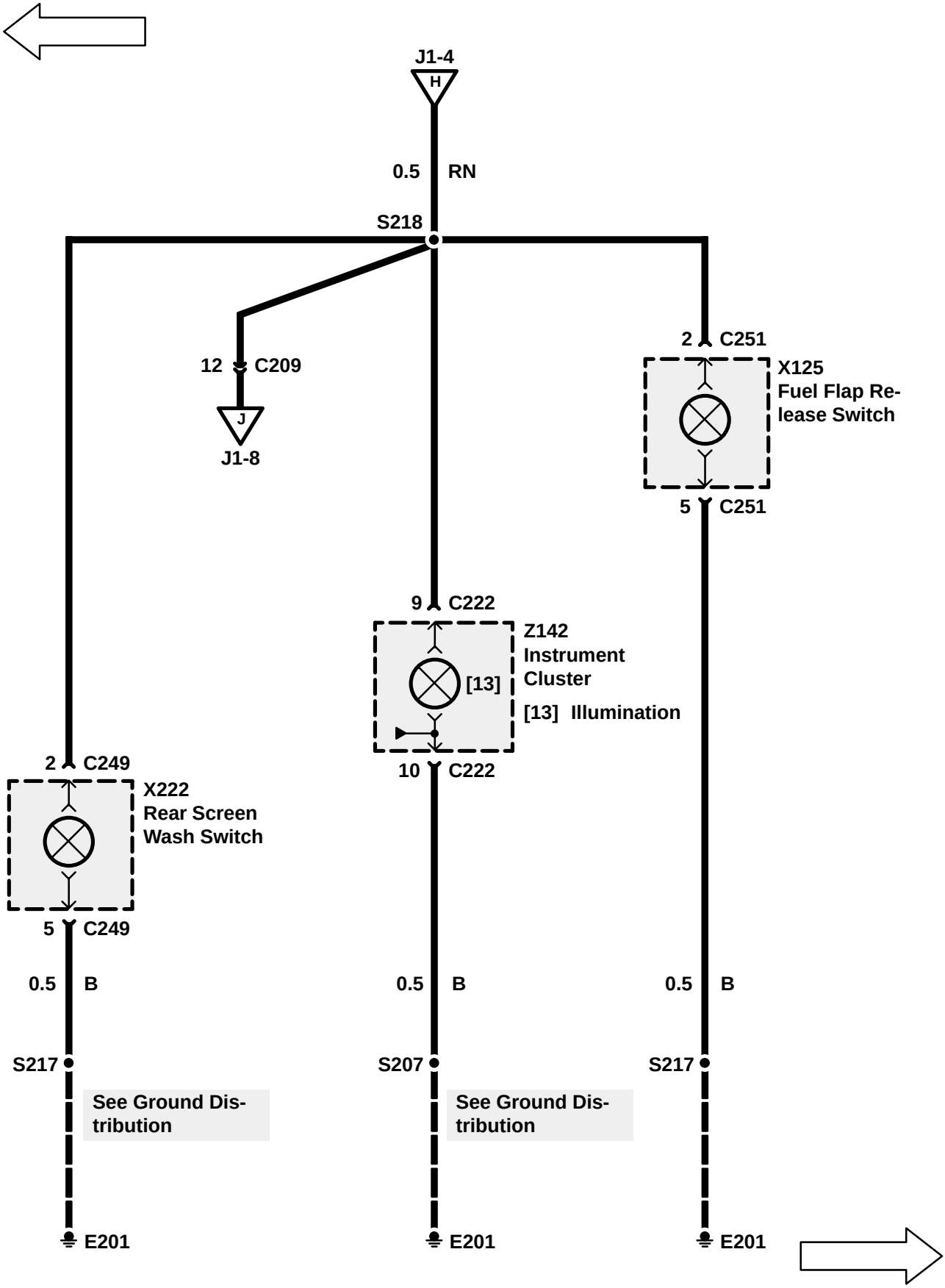



J1-4
0.5 RN
With Air Suspension
Without Air Suspension
0.5 RN
0.5 RN
4 C259
X130
Headlamp Level Switch
S220
1 C259
0.5 B
S253
HJ8
See Ground Distribution
E201
1 C258
X211
Air Suspension Down Switch
2 C258
1 C256
X210
Air Suspension Up Switch
2 C256
6 C257
X209
Air Suspension Inhibit Switch
3 C257
0.5 B
0.5 B
0.5 B
S221
See Ground Distribution
E201

J1 ETM

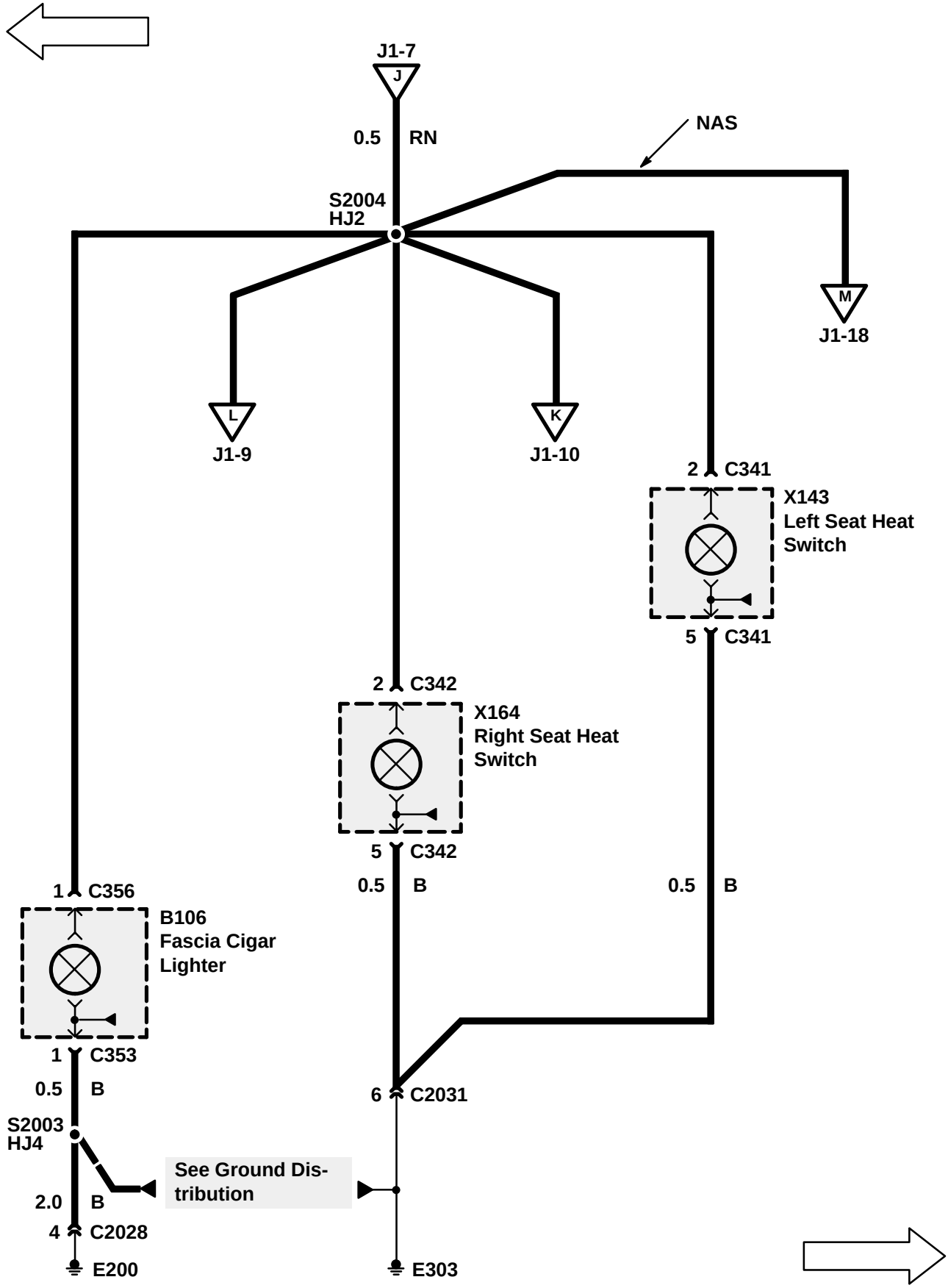
1995 RANGE ROVER

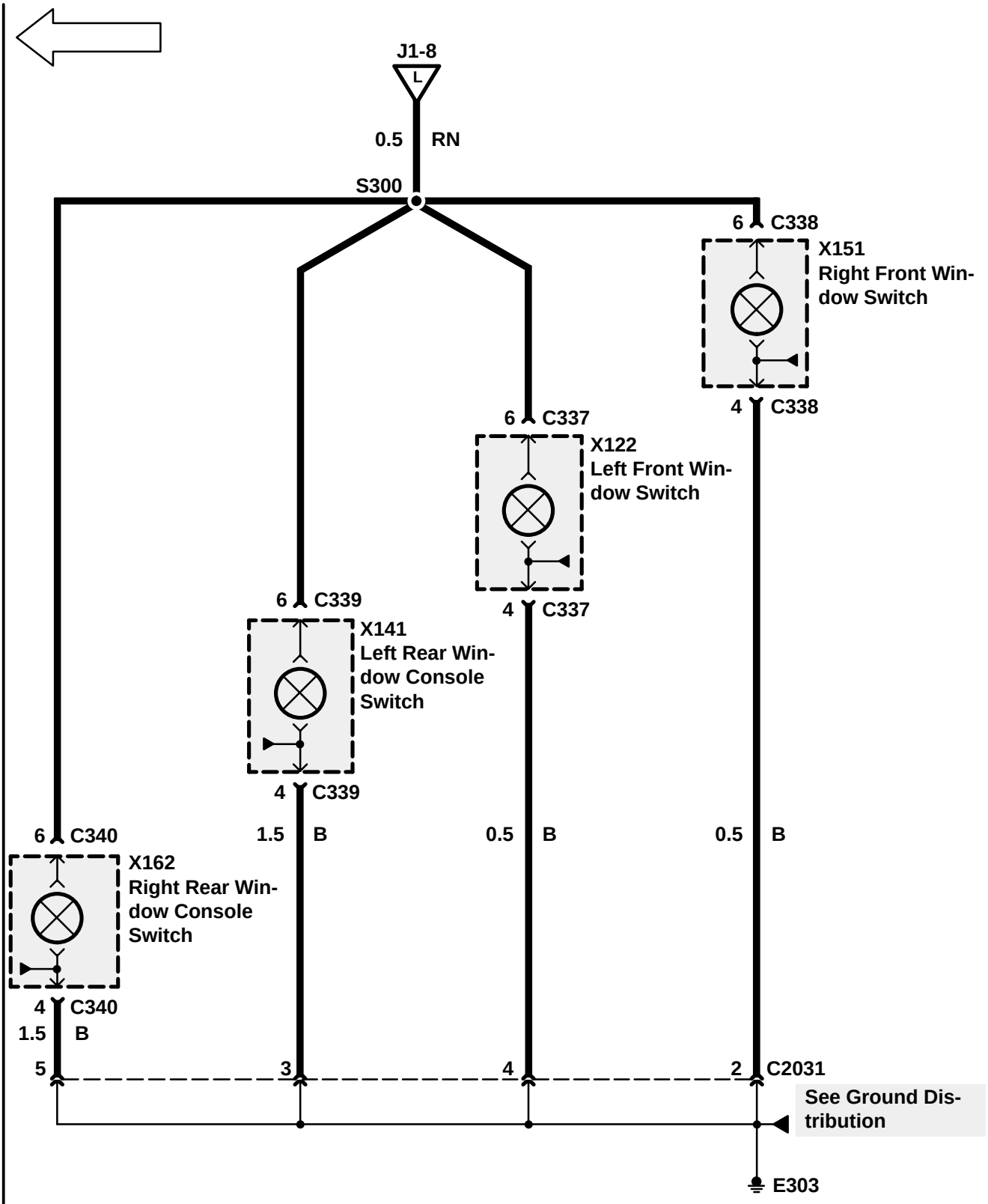



J1-4
H
0.5 RN
S218
12 C209
J
J1-8
2 C251
X125
Fuel Flap Release Switch
5 C251
9 C222
Z142
Instrument Cluster
[13]
[13] Illumination
10 C222
2 C249
X222
Rear Screen Wash Switch
5 C249
0.5 B
0.5 B
0.5 B
S217
S207
S217
See Ground Distribution
See Ground Distribution
E201
E201
E201

J1 ETM

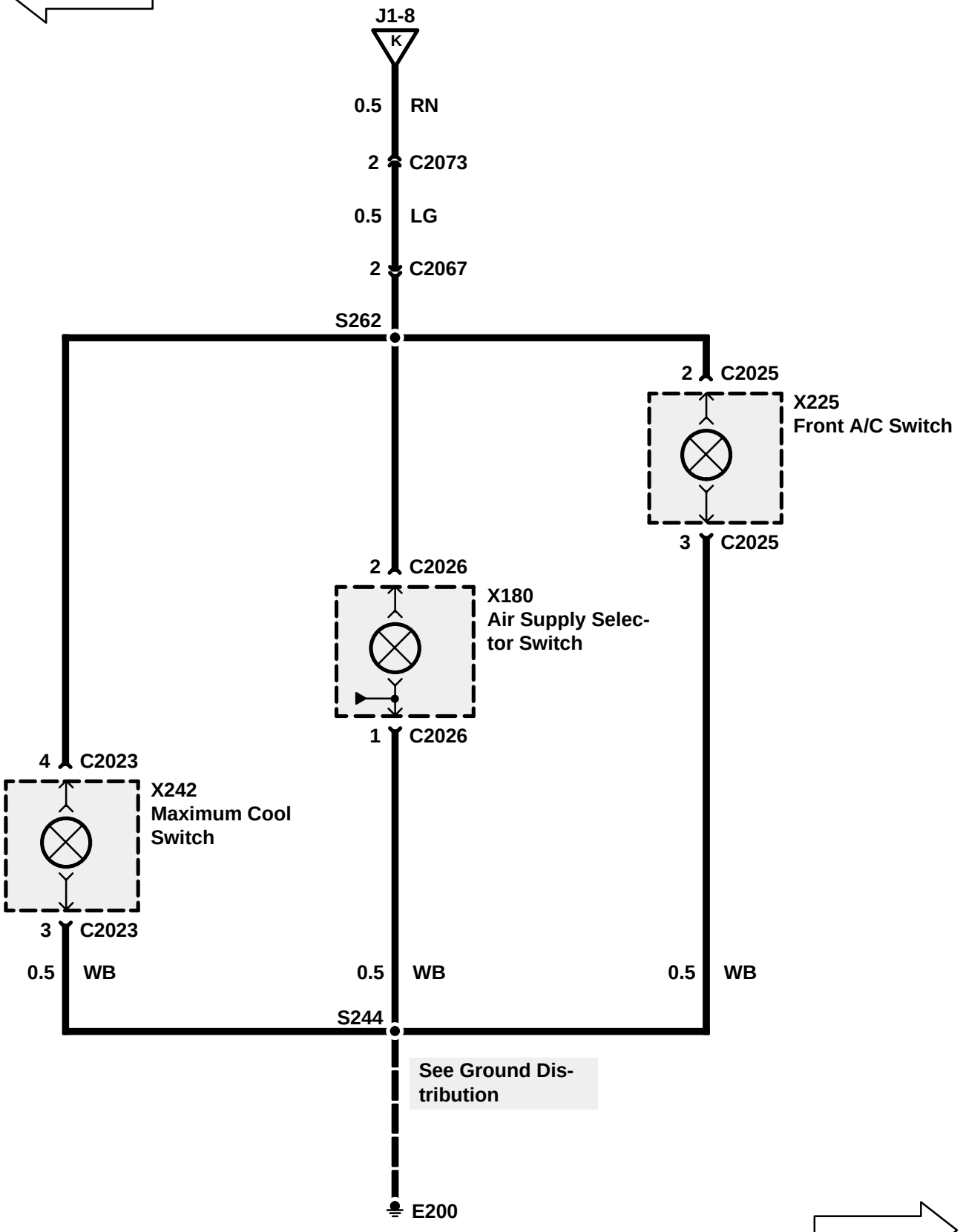
1995 RANGE ROVER

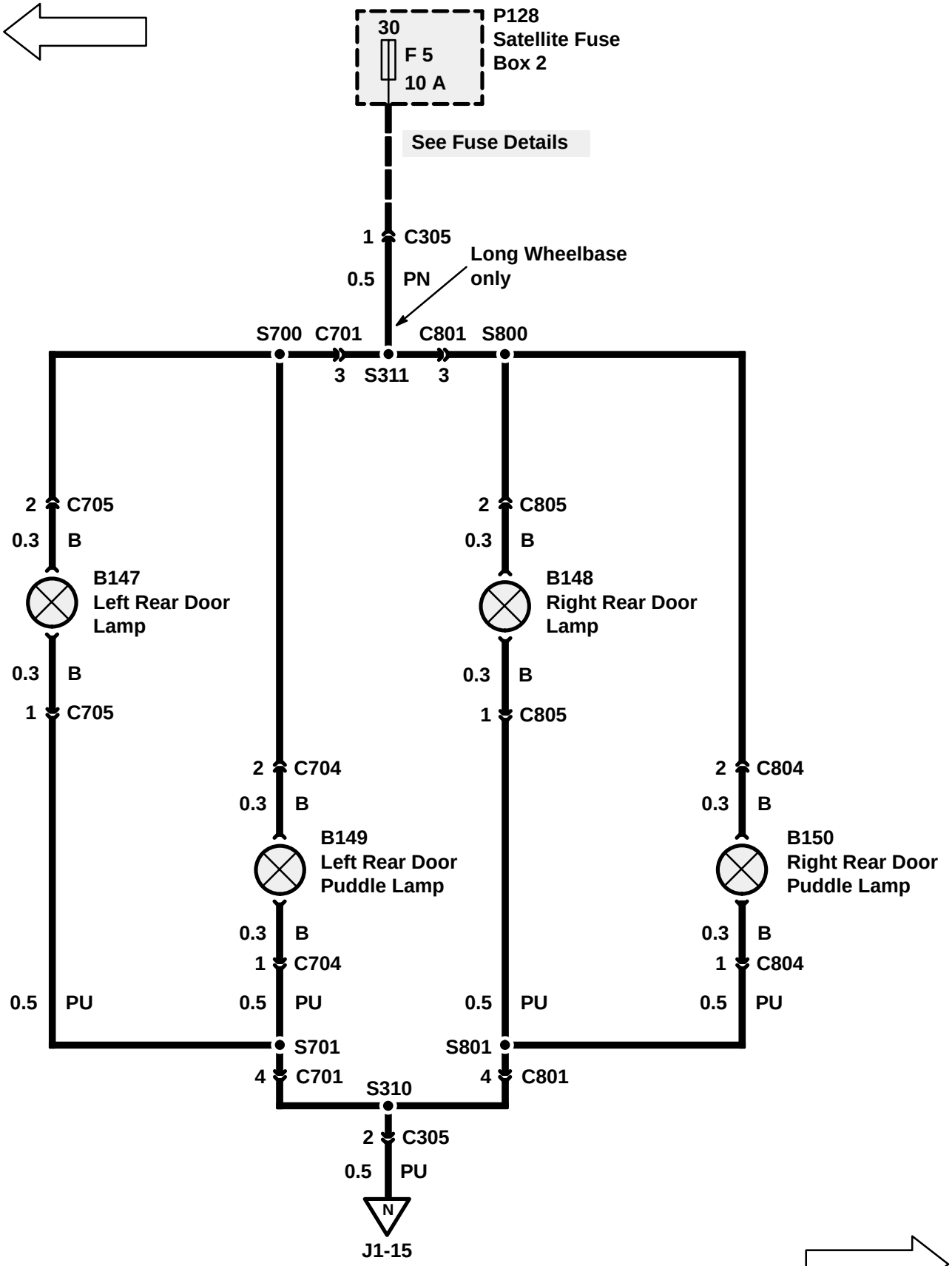



J1-8
L
0.5 RN
S300
6 C338
X151
Right Front Window Switch
4 C338
6 C337
X122
Left Front Window Switch
4 C337
6 C339
X141
Left Rear Window Console Switch
4 C339
6 C340
X162
Right Rear Window Console Switch
4 C340
1.5 B
5
1.5 B
3
0.5 B
4
0.5 B
2 C2031
See Ground Distribution
E303

J1 ETM

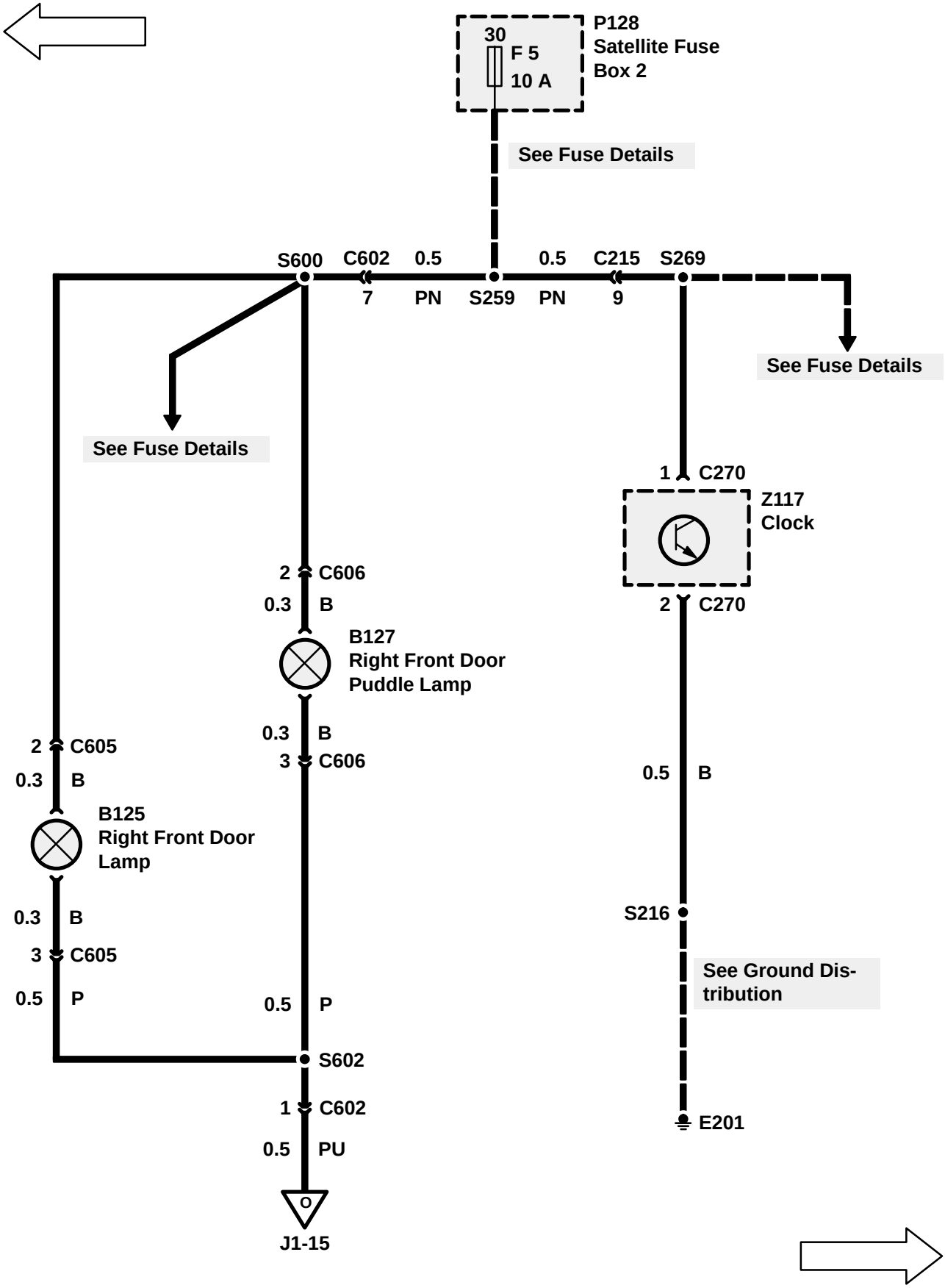
1995 RANGE ROVER

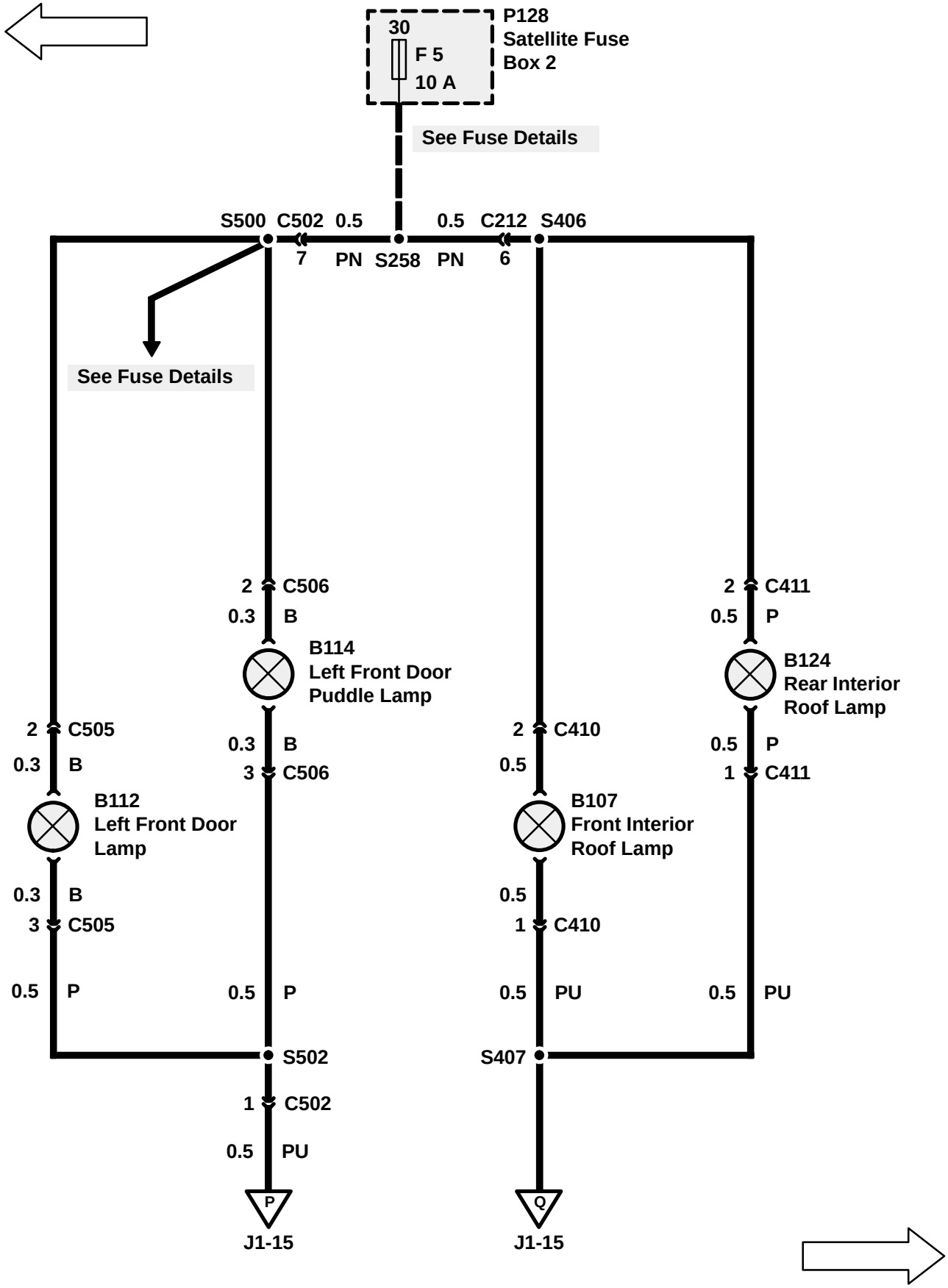



30
F 5
10 A
P128
Satellite Fuse
Box 2
See Fuse Details
1 C305
0.5 PN
Long Wheelbase
only
S700 C701
C801 S800
3 S311 3
2 C705
0.3 B
B147
Left Rear Door
Lamp
0.3 B
1 C705
2 C805
0.3 B
B148
Right Rear Door
Lamp
0.3 B
1 C805
2 C704
0.3 B
B149
Left Rear Door
Puddle Lamp
0.3 B
1 C704
2 C804
0.3 B
B150
Right Rear Door
Puddle Lamp
0.3 B
1 C804
0.5 PU
0.5 PU
0.5 PU
0.5 PU
S701
4 C701
S801
4 C801
S310
2 C305
0.5 PU
N
J1-15

J1 ETM

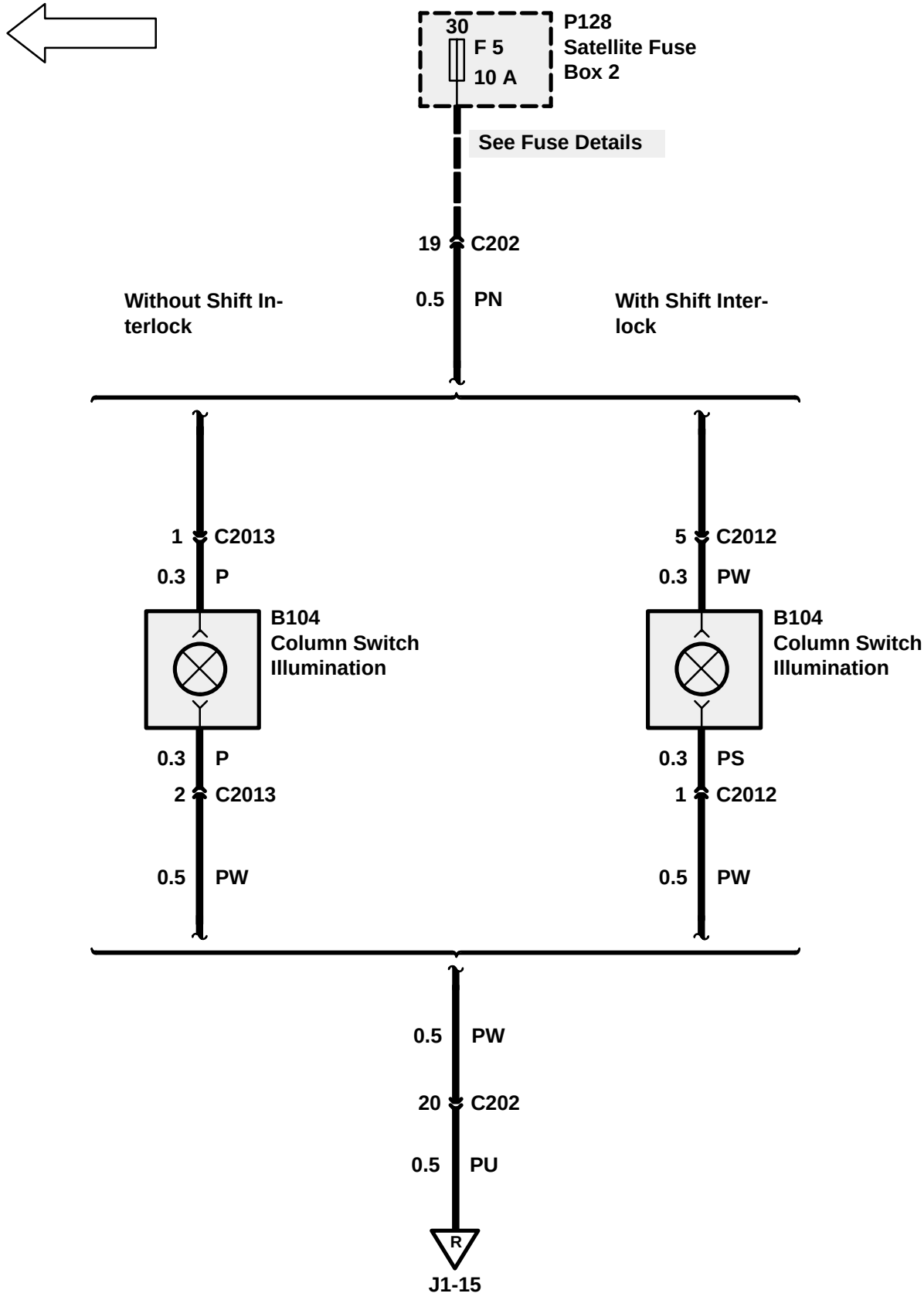
1995 RANGE ROVER

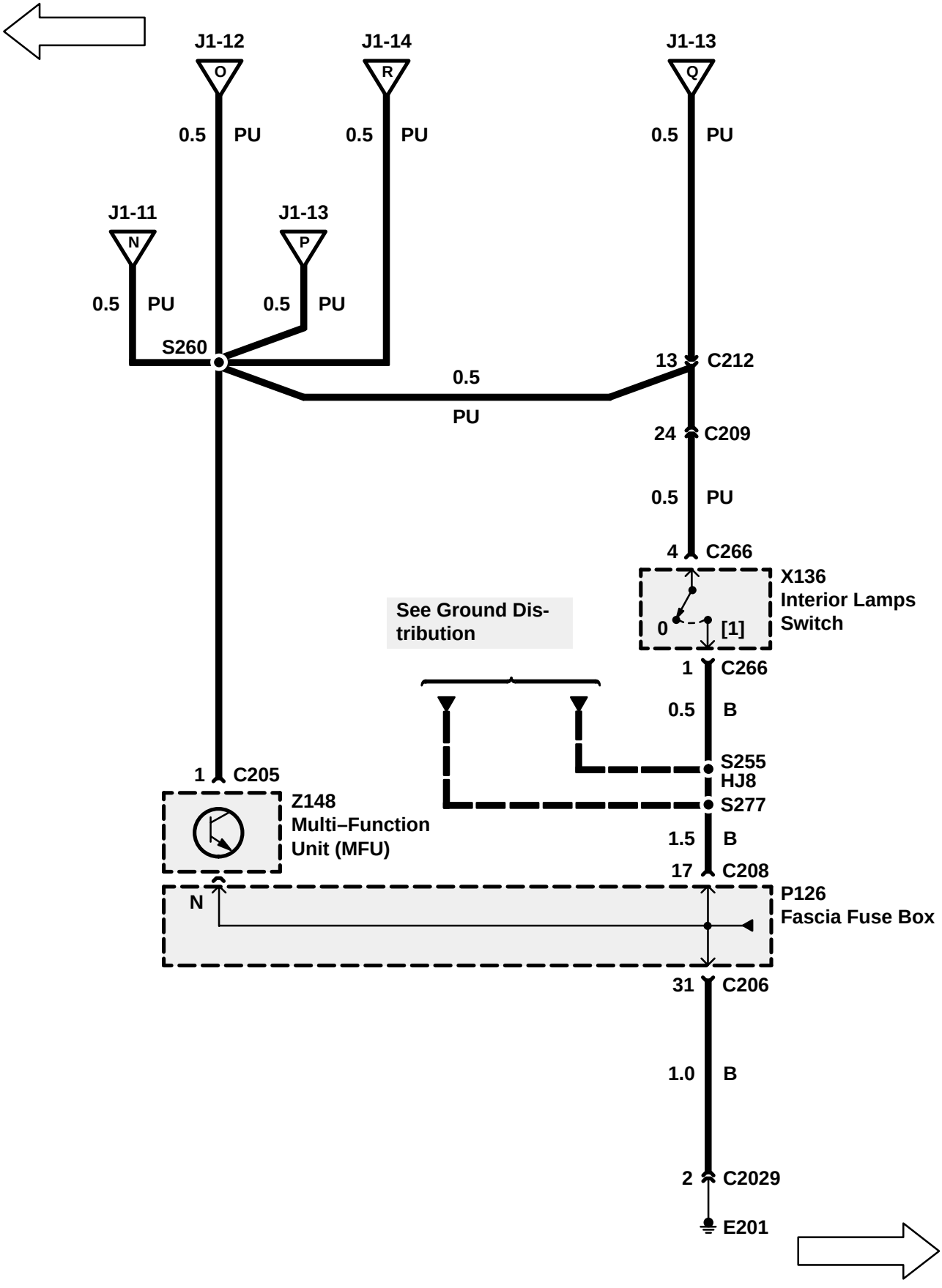



30
F 5
10 A
P128
Satellite Fuse
Box 2
See Fuse Details
S500
C502
0.5
7
PN
S258
0.5
PN
C212
6
S406
See Fuse Details
2
C506
0.3
B
B114
Left Front Door
Puddle Lamp
0.3
B
3
C506
2
C505
0.3
B
B112
Left Front Door
Lamp
0.3
B
3
C505
0.5
P
0.5
P
S502
1
C502
0.5
PU
P
J1-15
2
C410
0.5
B107
Front Interior
Roof Lamp
0.5
1
C410
0.5
PU
S407
Q
J1-15
2
C411
0.5
P
B124
Rear Interior
Roof Lamp
0.5
P
1
C411
0.5
PU

J1 ETM

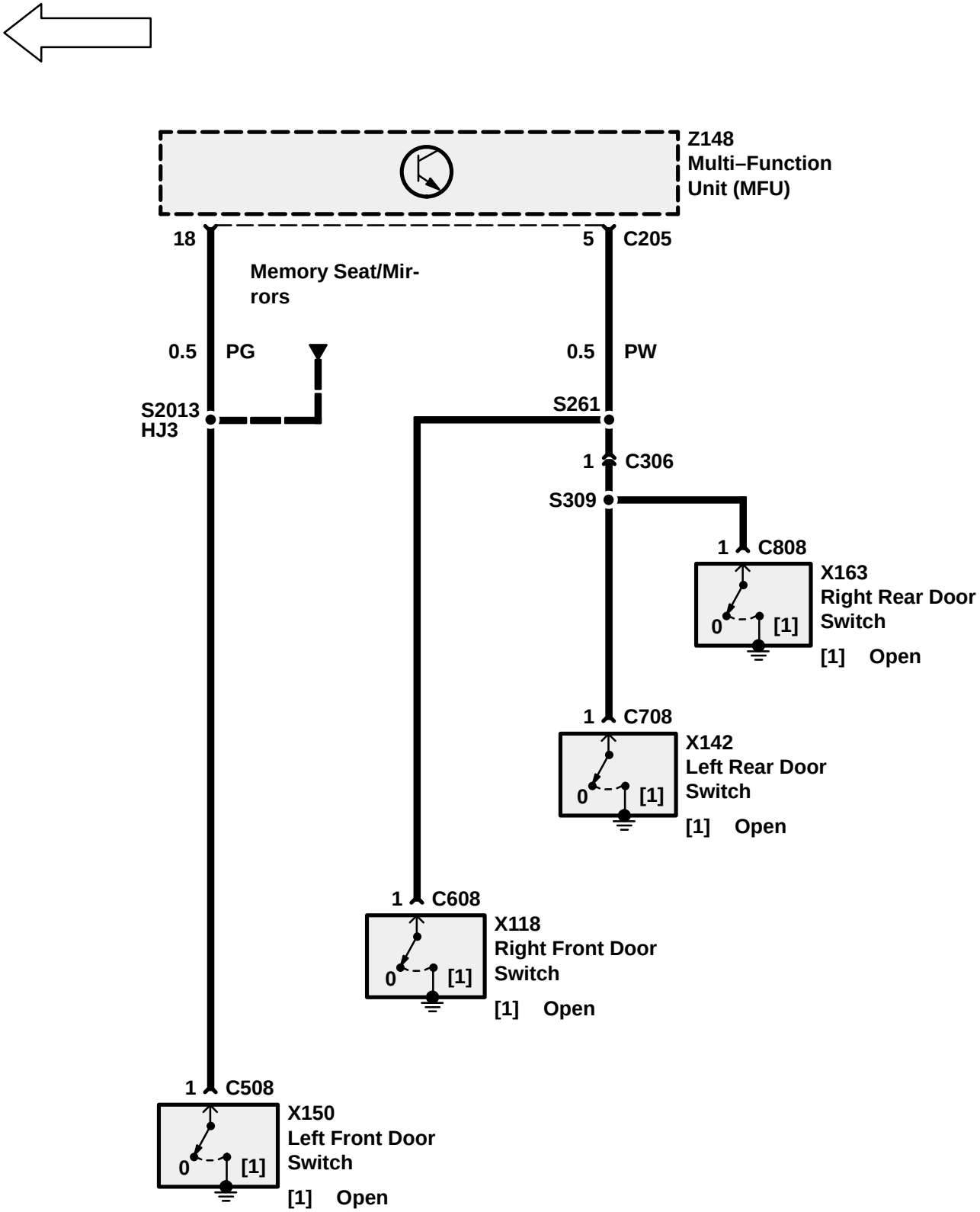
1995 RANGE ROVER

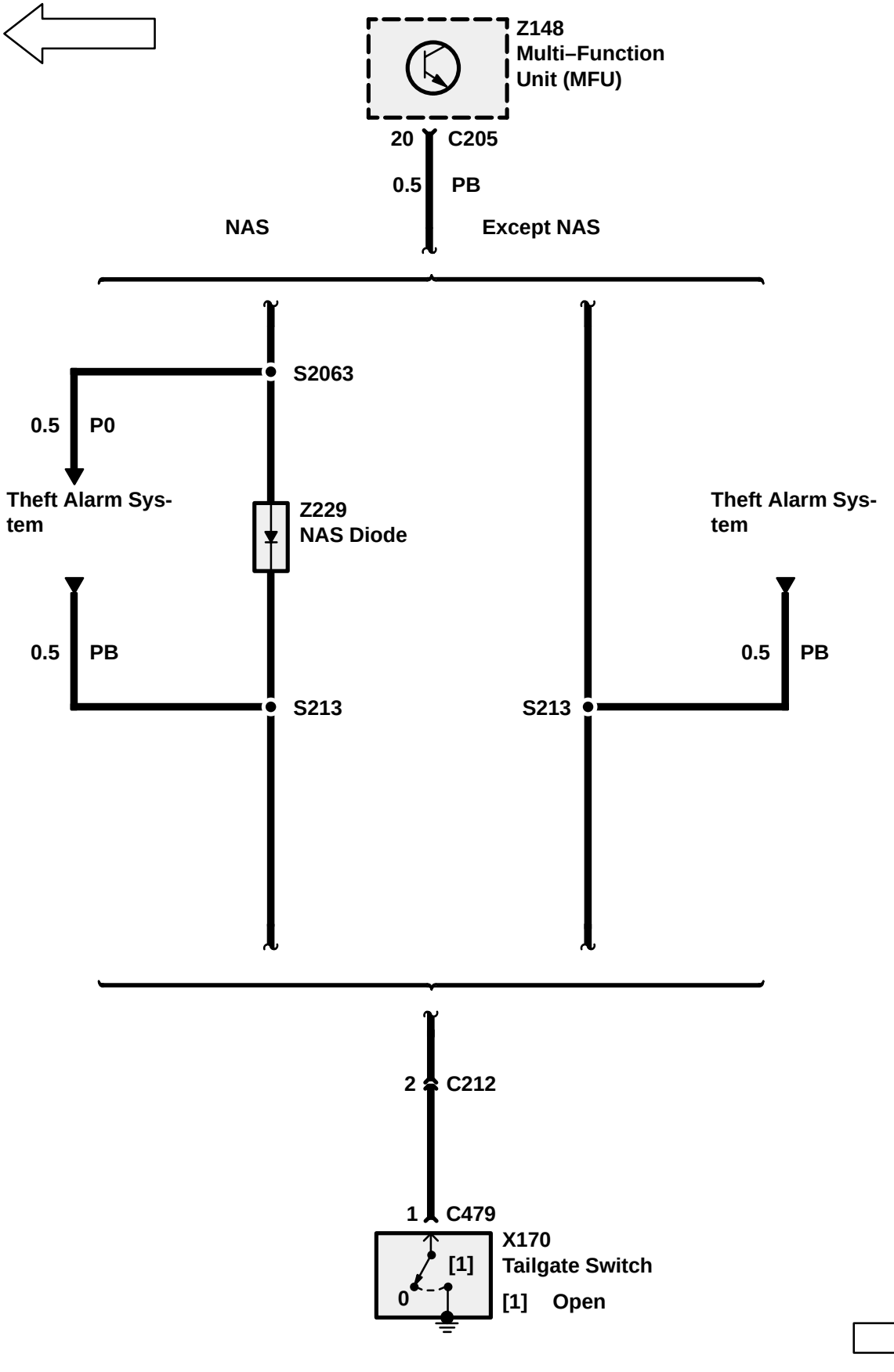


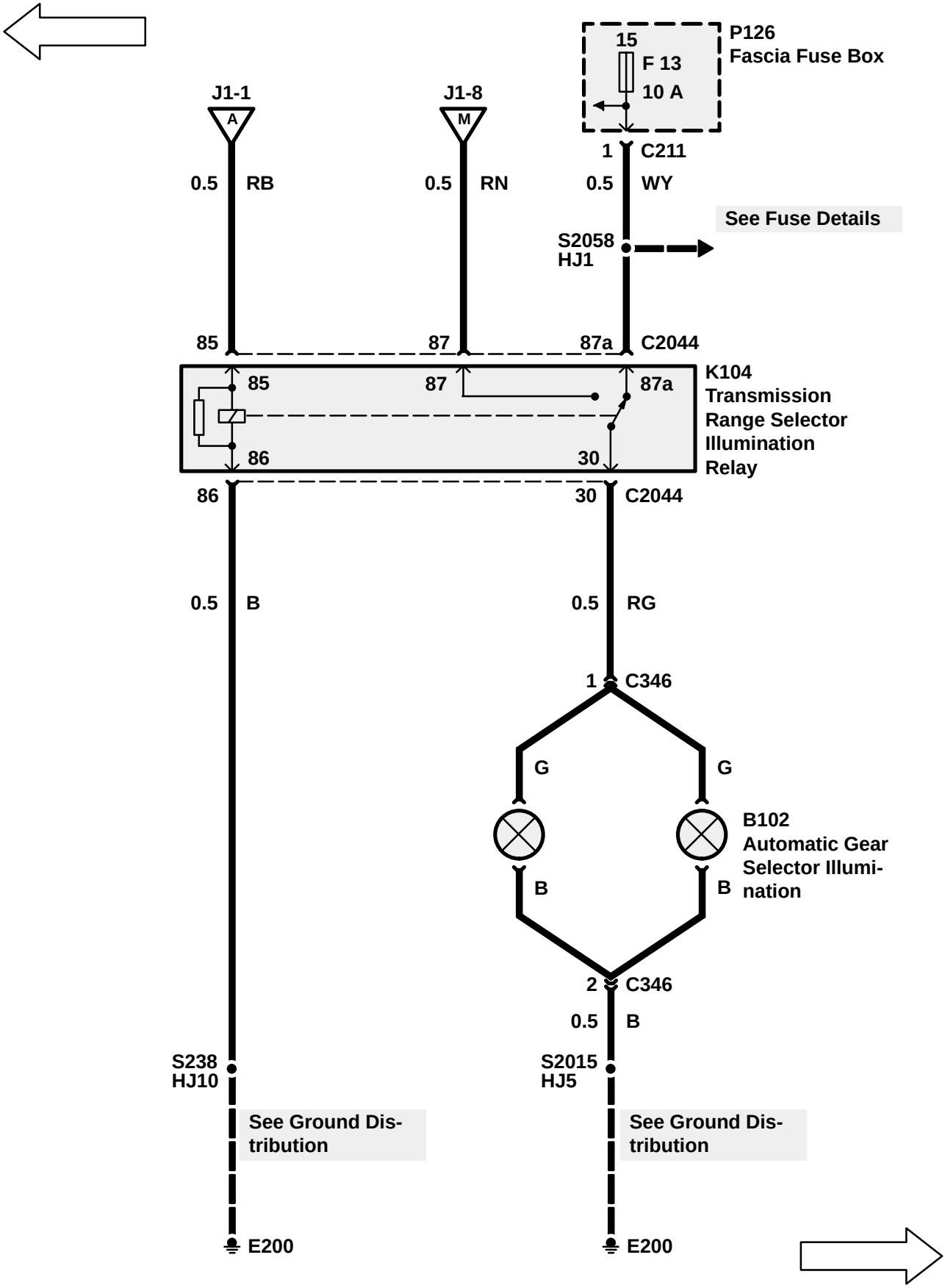

J1-12
O
0.5 PU
J1-14
R
0.5 PU
J1-13
Q
0.5 PU
J1-11
N
0.5 PU
J1-13
P
0.5 PU
S260
0.5 PU
13 C212
24 C209
0.5 PU
4 C266
X136
Interior Lamps Switch
0
[1]
See Ground Distribution
1 C266
0.5 B
S255
HJ8
S277
1 C205
Z148
Multi–Function Unit (MFU)
1.5 B
17 C208
N
P126
Fascia Fuse Box
31 C206
1.0 B
2 C2029
E201

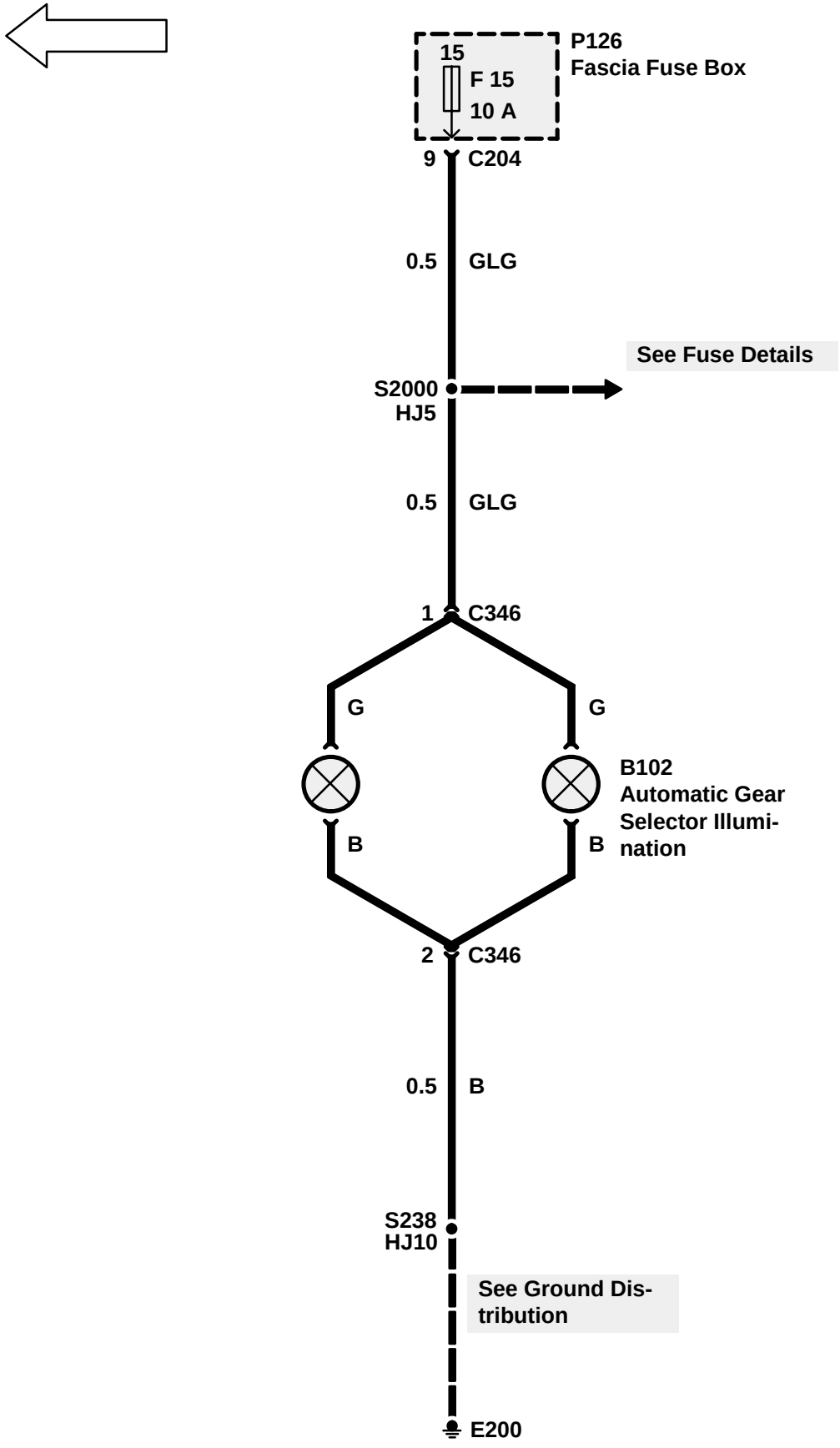
J1 ETM

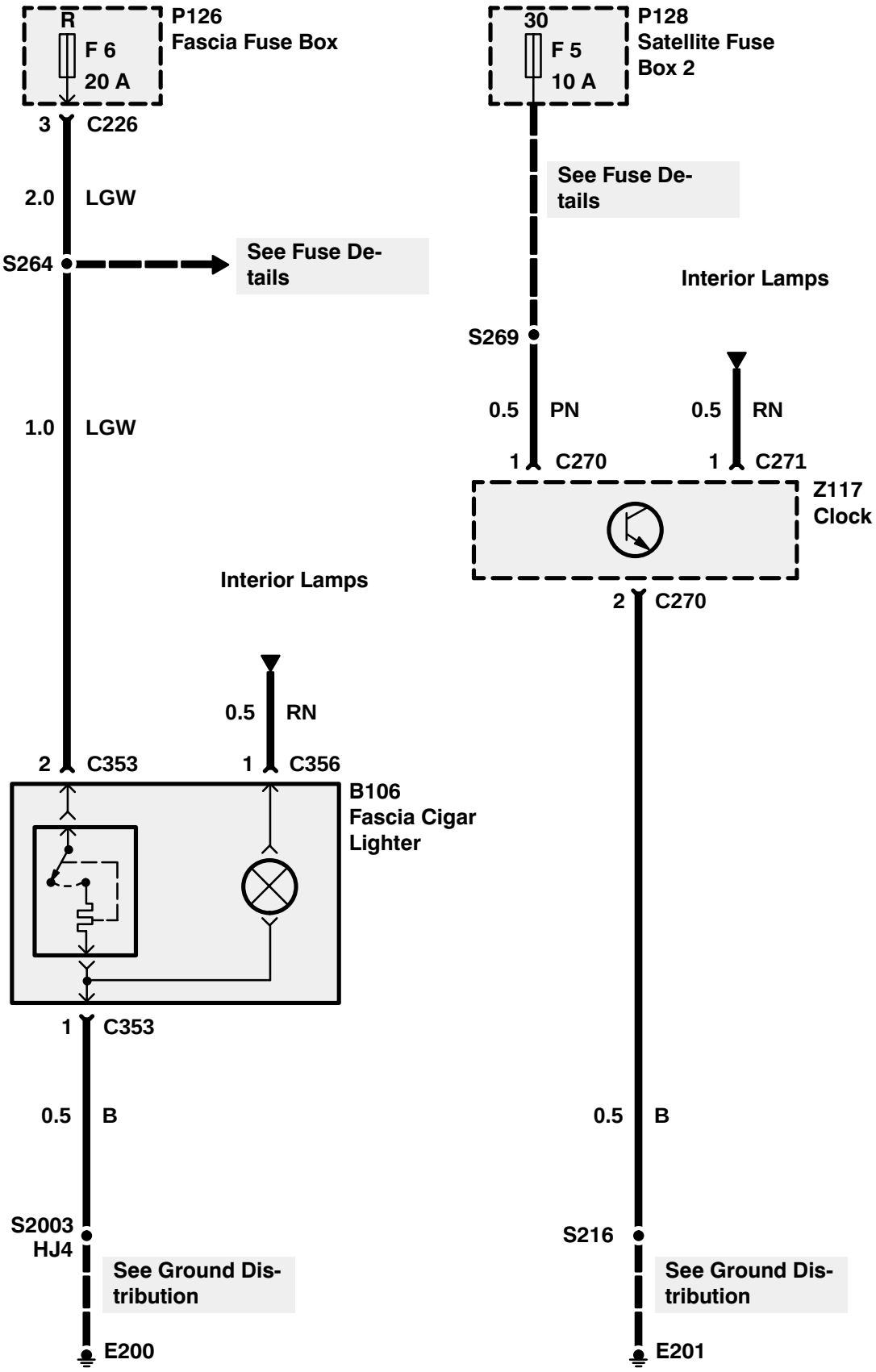
1995 RANGE ROVER




Z148
Multi–Function
Unit (MFU)
20
C205
0.5
PB
NAS
Except NAS
S2063
0.5
P0
Theft Alarm Sys-
tem
Z229
NAS Diode
Theft Alarm Sys-
tem
0.5
PB
0.5
PB
S213
S213
2
C212
1
C479
X170
Tailgate Switch
[1]
0
[1] Open


P126
Fascia Fuse Box
15
F 13
10 A
J1-1
A
J1-8
M
1
C211
0.5
RB
0.5
RN
0.5
WY
See Fuse Details
S2058
HJ1
85
87
87a
C2044
K104
Transmission
Range Selector
Illumination
Relay
85
87
87a
86
30
86
30
C2044
0.5
B
0.5
RG
1
C346
G
G
B102
Automatic Gear
Selector Illumi-
nation
B
B
2
C346
0.5
B
S238
HJ10
S2015
HJ5
See Ground Dis-
tribution
See Ground Dis-
tribution
E200
E200


15
F 15
10 A
P126
Fascia Fuse Box
9
C204
0.5
GLG
See Fuse Details
S2000
HJ5
0.5
GLG
1
C346
G
G
B102
Automatic Gear
Selector Illumi-
nation
B
B
2
C346
0.5
B
S238
HJ10
See Ground Dis-
tribution
E200


R
F 6
20 A
P126
Fascia Fuse Box
3
C226
2.0
LGW
S264
See Fuse Details
1.0
LGW
2
C353
Interior Lamps
0.5
RN
1
C356
B106
Fascia Cigar Lighter
1
C353
0.5
B
S2003
HJ4
See Ground Distribution
E200
30
F 5
10 A
P128
Satellite Fuse Box 2
See Fuse Details
Interior Lamps
S269
0.5
PN
1
C270
0.5
RN
1
C271
Z117
Clock
2
C270
0.5
B
S216
See Ground Distribution
E201

CIRCUIT OPERATION

Front Blower

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

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

Fresh Air Mode

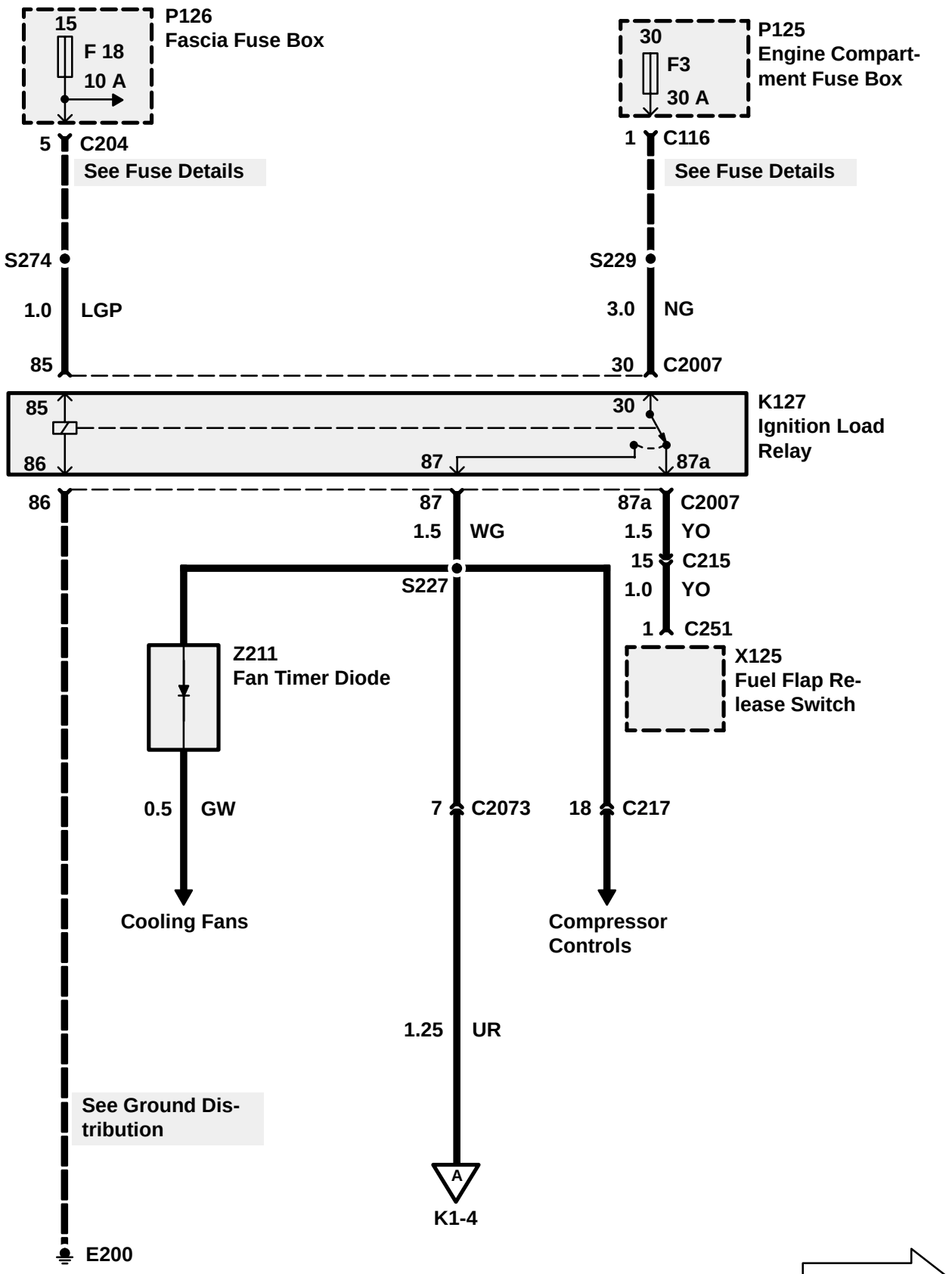
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Air Recirculation Solenoid In–Line Fuse (P138) and Air Recirculation Solenoid (K123). The solenoid now opens the fresh air intake flap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

Recirculated Air Mode

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

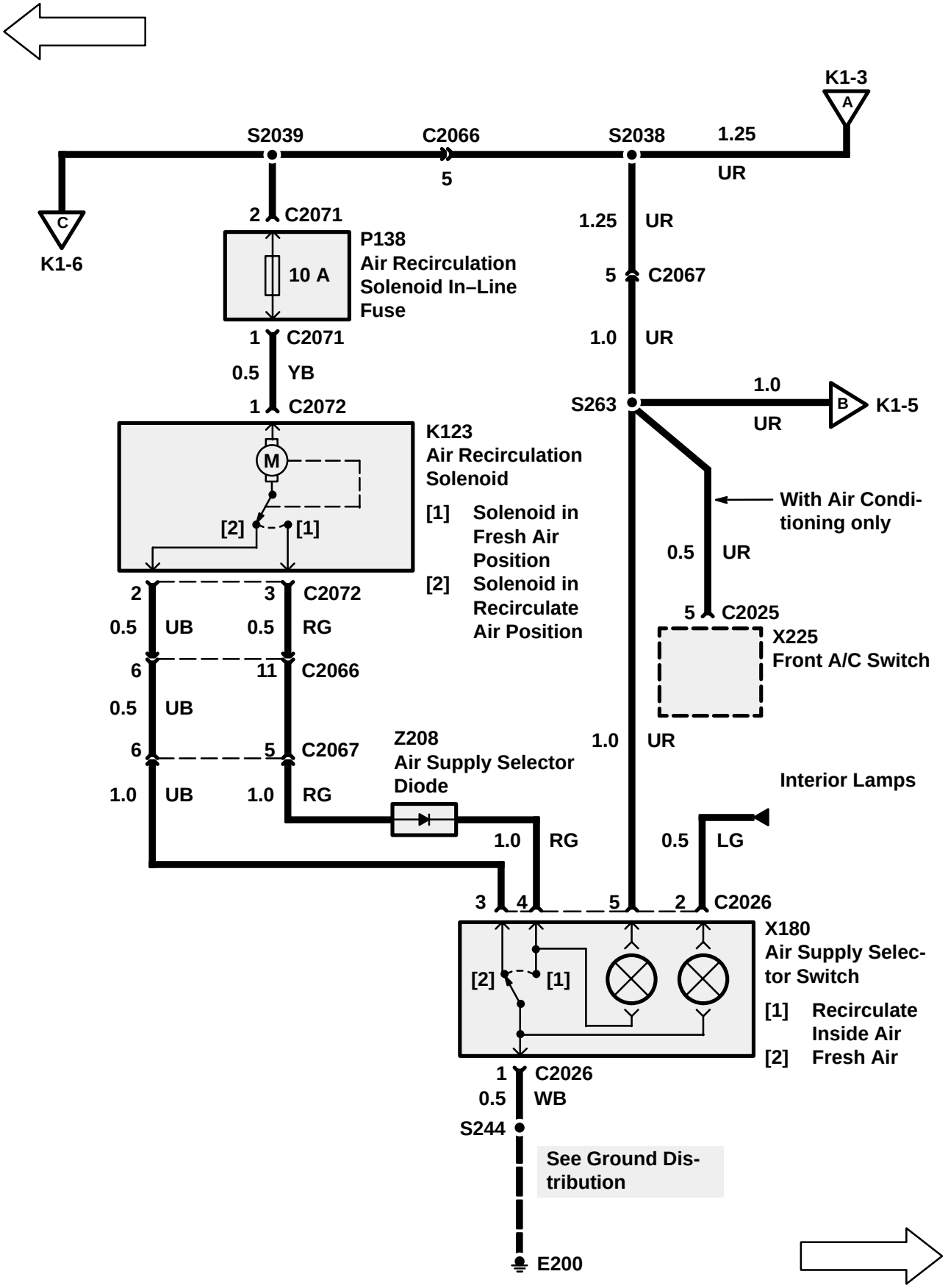
Heated Air

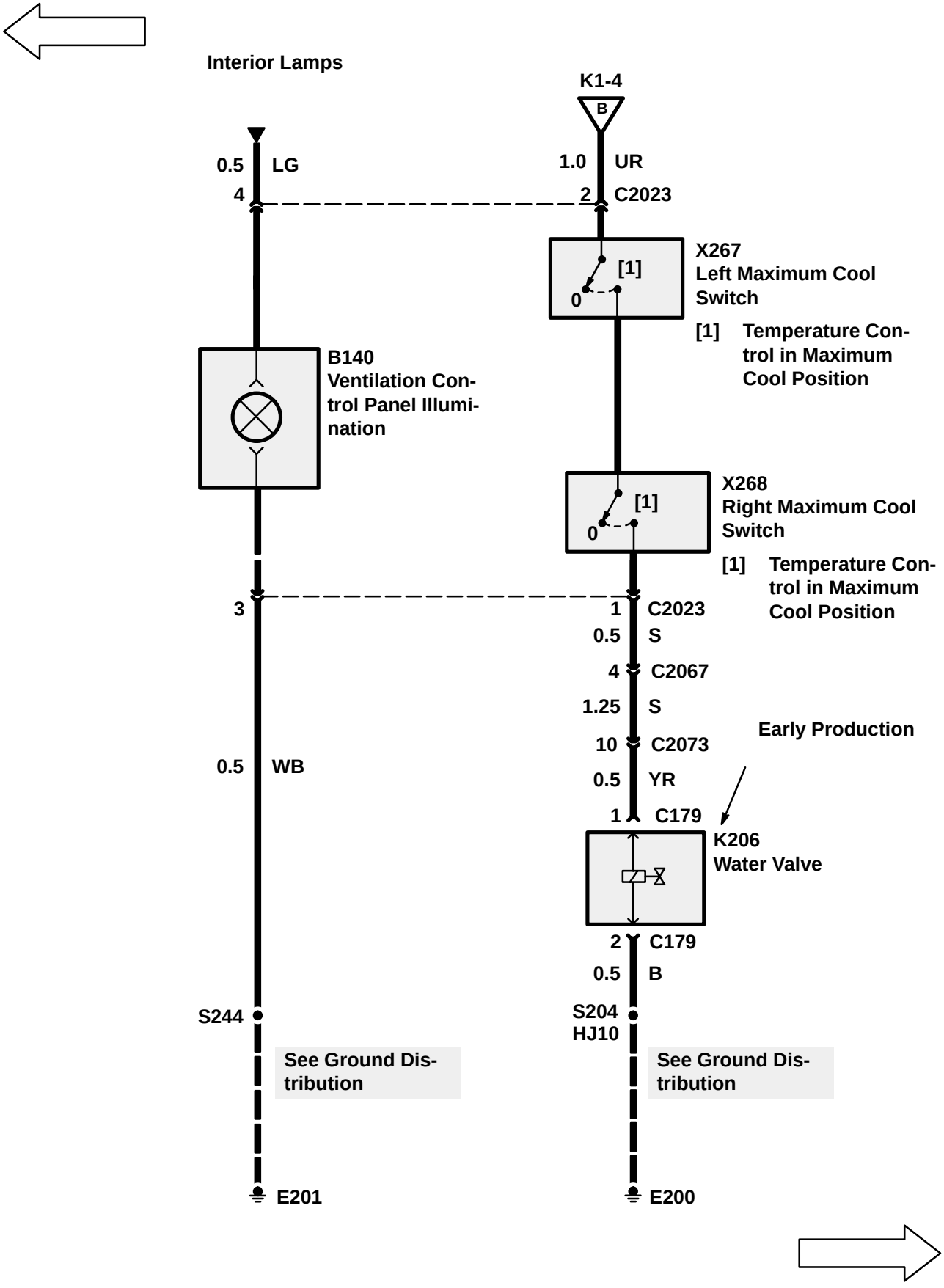
With the Ignition Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Left Maximun Cool Switch (X267). When the Left and Right Temperature Controls are turned to the maximum cool position, the Left Maximum 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.


15
F 18
10 A
P126
Fascia Fuse Box
30
F3
30 A
P125
Engine Compartment Fuse Box
5
C204
See Fuse Details
1
C116
See Fuse Details
S274
1.0
LGP
S229
3.0
NG
85
30
C2007
85
86
30
87
87a
K127
Ignition Load Relay
86
87
1.5
WG
87a
1.5
YO
15
C215
S227
1.0
YO
1
C251
Z211
Fan Timer Diode
X125
Fuel Flap Release Switch
0.5
GW
7
C2073
18
C217
Cooling Fans
Compressor Controls
1.25
UR
See Ground Distribution
A
K1-4
E200

K1 ETM

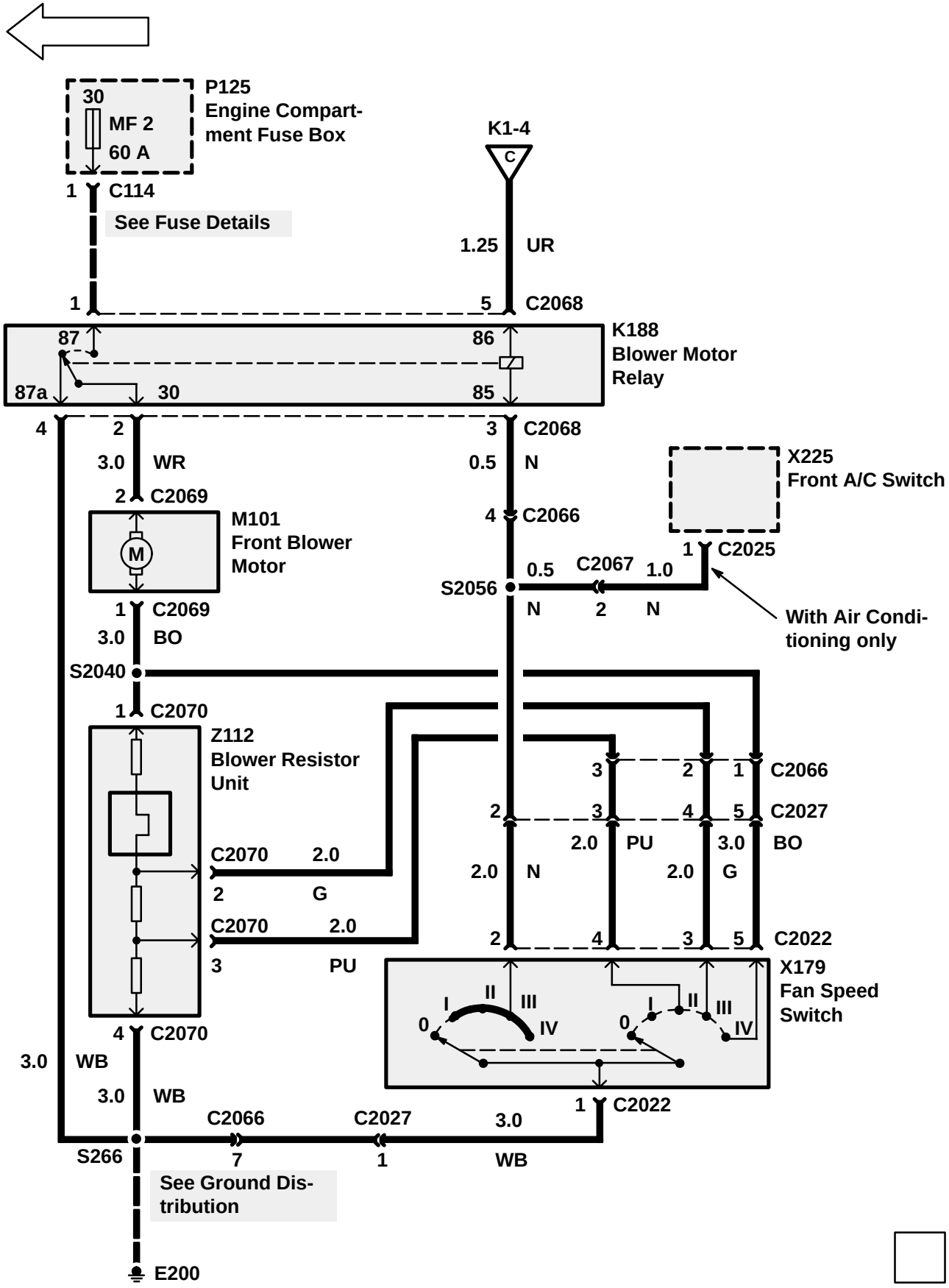
1995 RANGE ROVER




Interior Lamps
K1-4
B
0.5 LG
4
1.0 UR
2 C2023
X267
Left Maximum Cool Switch
[1]
0
[1] Temperature Control in Maximum Cool Position
B140
Ventilation Control Panel Illumination
X268
Right Maximum Cool Switch
[1]
0
[1] Temperature Control in Maximum Cool Position
3
1 C2023
0.5 S
4 C2067
1.25 S
10 C2073
0.5 WB
0.5 YR
1 C179
Early Production
K206
Water Valve
2 C179
0.5 B
S244
S204
HJ10
See Ground Distribution
See Ground Distribution
E201
E200

K1 ETM

1995 RANGE ROVER



TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS

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

K1 ETM

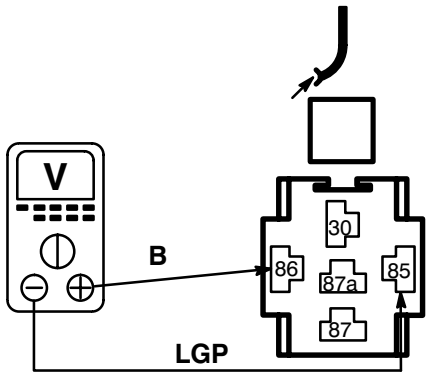
Test A

1A

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



K127
Ignition Load Relay

OK **PROBLEM CAUSE**
- **F18 Fuse**
- **LGP Wire**
- **B Wire**

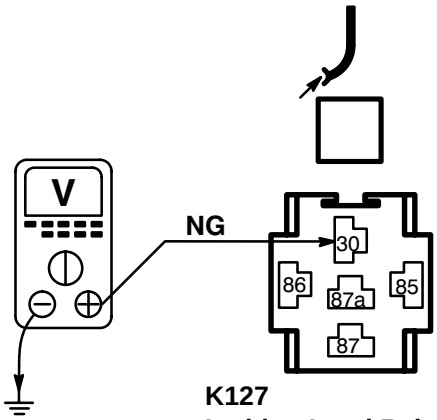
OK → 2A

2A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K127
Ignition Load Relay

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

OK → 3A

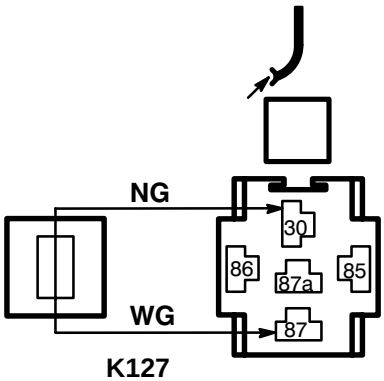
2A

3A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Fan Speed Switch**
  Position: III

RESULTS
- **Front Blower Motor**
  Operates



K127
Ignition Load
Relay

OK

OK **PROBLEM CAUSE**
- **Ignition Load Relay**

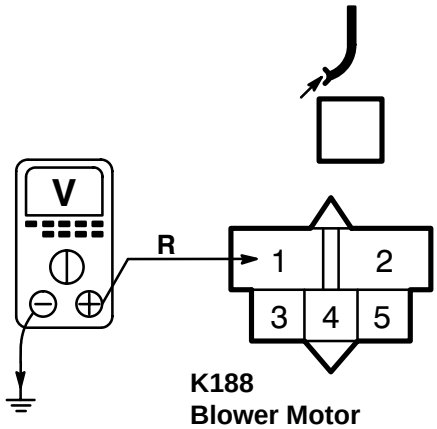
4A

4A

R050016

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K188
Blower Motor
Relay

OK

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

OK

5A

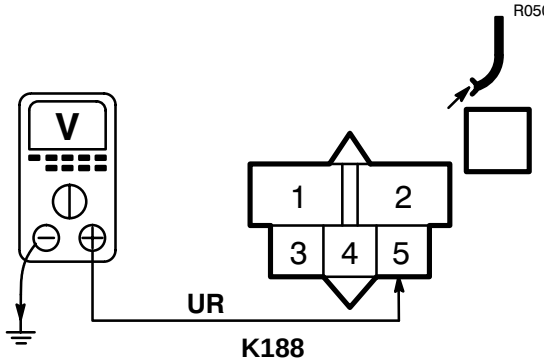
4A

5A

R050016

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



K188
Blower Motor
Relay

OK **PROBLEM CAUSE**
- **WG Wire**
- **UR Wire**

OK

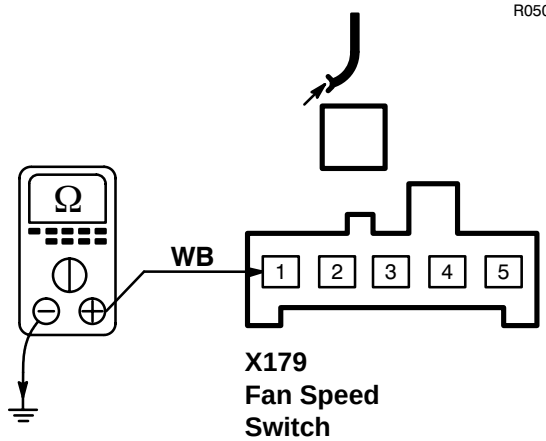
6A

6A

R050006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



X179
Fan Speed
Switch

OK **PROBLEM CAUSE**
- **WB Wire**
- **B Wire**

OK

7A

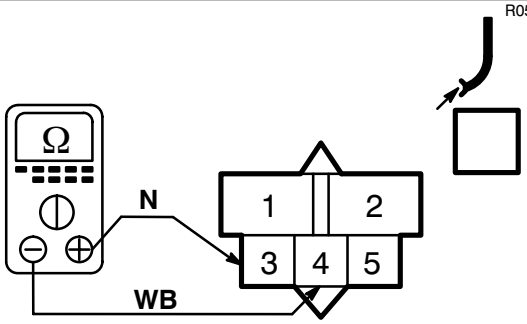
6A

7A

R050016

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

RESULTS
Less than 1 ohm



K188
Blower Motor
Relay

OK **PROBLEM CAUSE**
- **N Wire**
- **WB Wire**
- **Fan Speed Switch**

OK

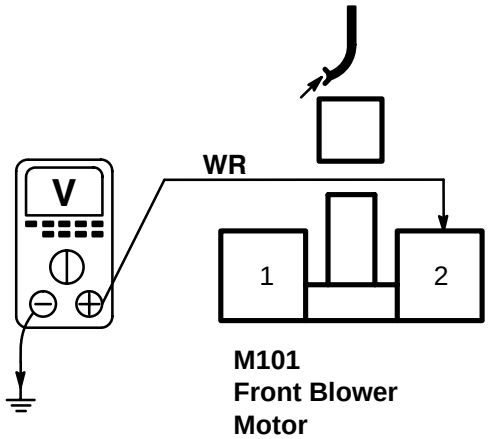
8A

8A

R020049

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

RESULTS
BAT VOLT



M101
Front Blower
Motor

OK **PROBLEM CAUSE**
- **WR Wire**
- **Blower Motor Relay**

OK

9A

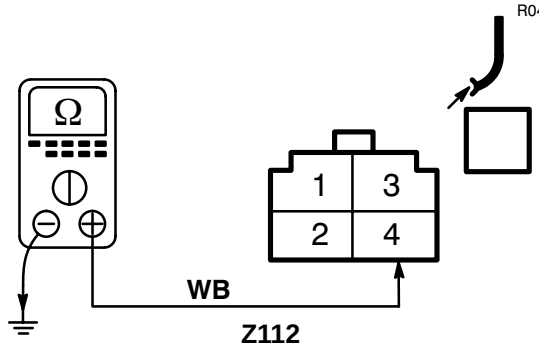
8A

9A

R040028

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **WB Wire**

OK

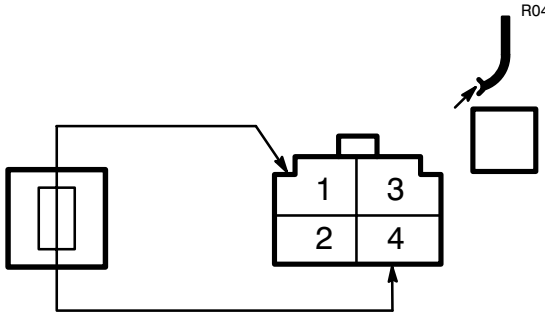
10A

10A

R040028

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Front Blower Motor**
  Operates



OK **PROBLEM CAUSE**
- **BO Wire**
- **Front Blower Motor**

OK **PROBLEM CAUSE**
- **Blower Resistor Unit**

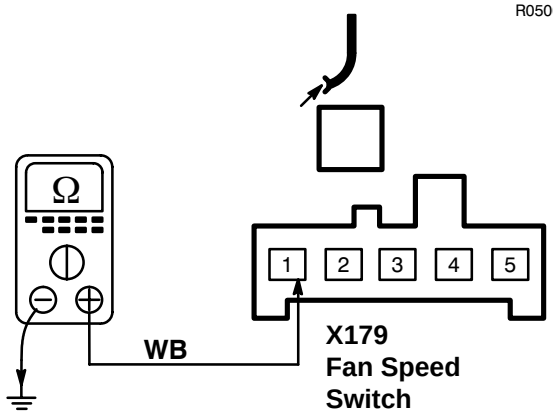
Test B

1B

R050006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **WB Wire**
- **B Wire**

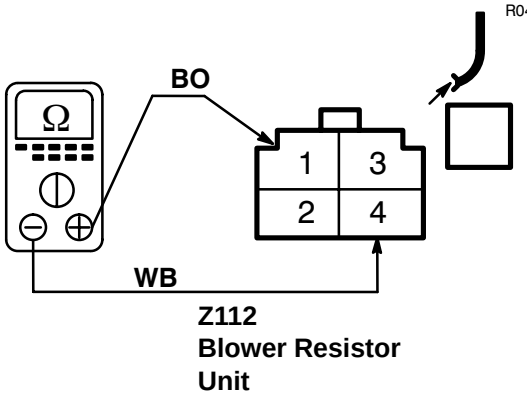
OK → 2B

2B

R040028

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

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **BO Wire**
- **WB Wire**
- **Fan Speed Switch**

OK → 3B

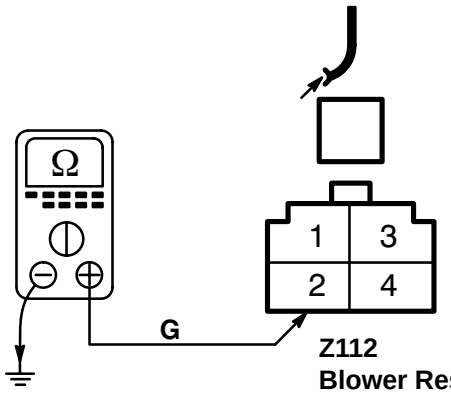
2B

3B

R040028

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Fan Speed Switch**
  Position: III

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **G Wire**
- **Fan Speed Switch**

OK

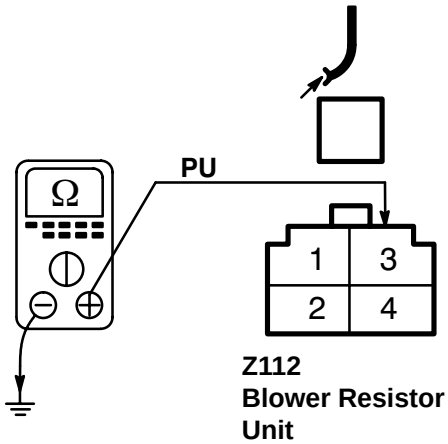
4B

4B

R040028

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

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **PU Wire**
- **Fan Speed Switch**

OK **PROBLEM CAUSE**
- **Blower Resistor Unit**

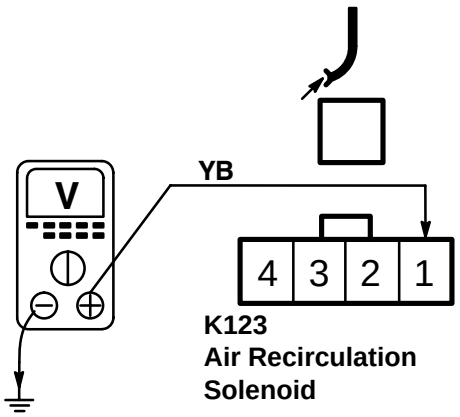
Test C

1C

R040029

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **UR Wire**
- **YB Wire**
- **Air Recirculation Solenoid In–Line Fuse**

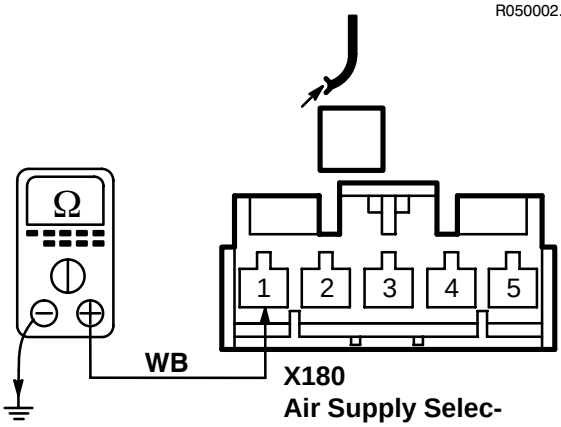
OK → 2C

2C

R050002.00

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **WB Wire**
- **B Wire**

OK → 3C

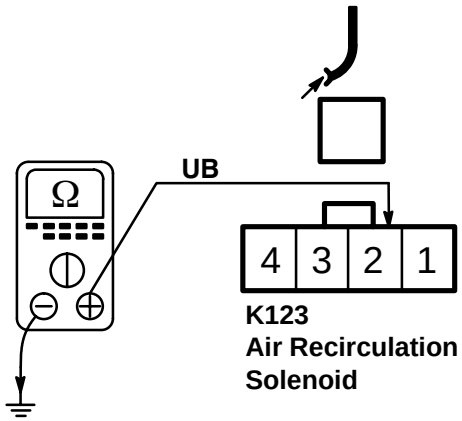
2C

3C

R040029

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

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **UB Wire**
- **Air Supply Selector Switch**

OK

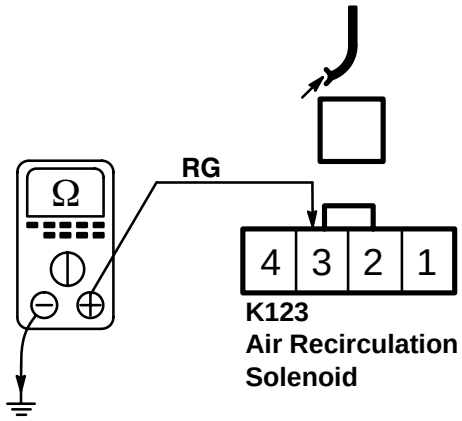
4C

4C

R040029

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

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **RG Wire**
- **Air Supply Selector Switch**
- **Air Supply Selector Diode**

OK

PROBLEM CAUSE
- **Air Recirculation Solenoid**

CIRCUIT OPERATION

Compressor Control (Petrol)

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

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

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

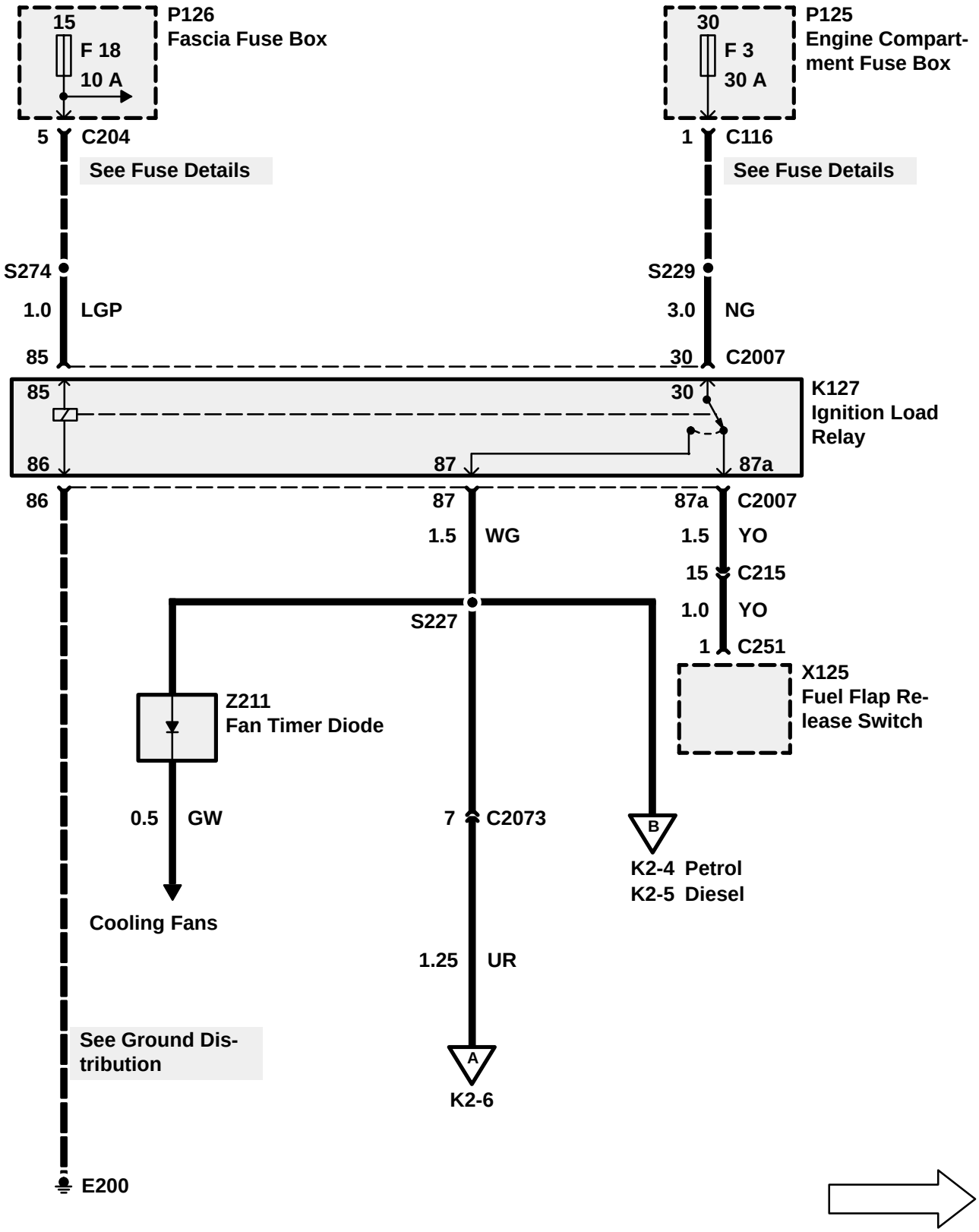
Compressor Control (Diesel)

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

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

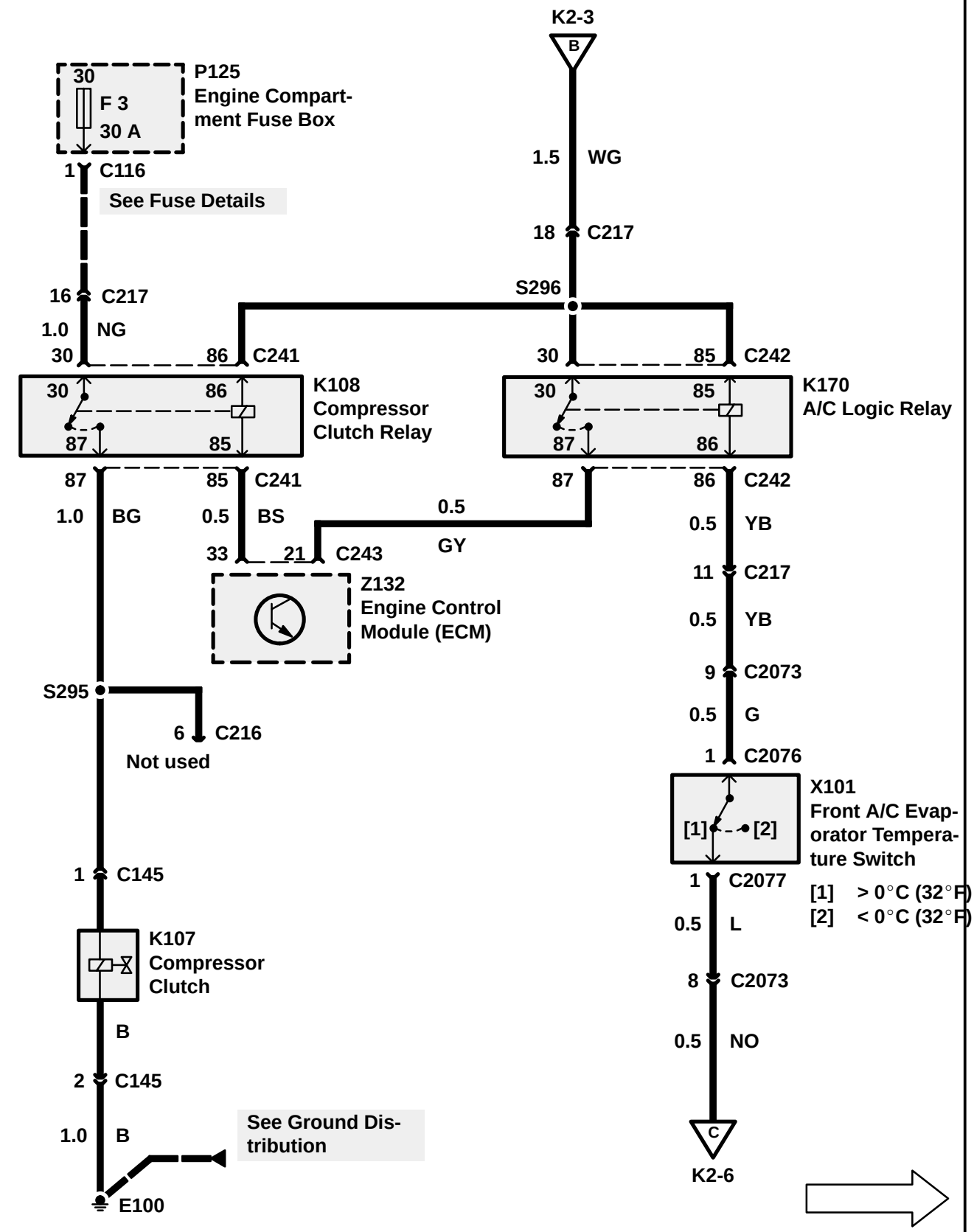
The relay is energized, applying battery voltage to the Compressor Clutch (K107). Compressor Clutch operation is now controlled by the status of the A/C Dual Pressure Switch (X102), the Front A/C Evaporator Temperature Switch (X101) and the Compressor Clutch Cut–out Switch (X259).

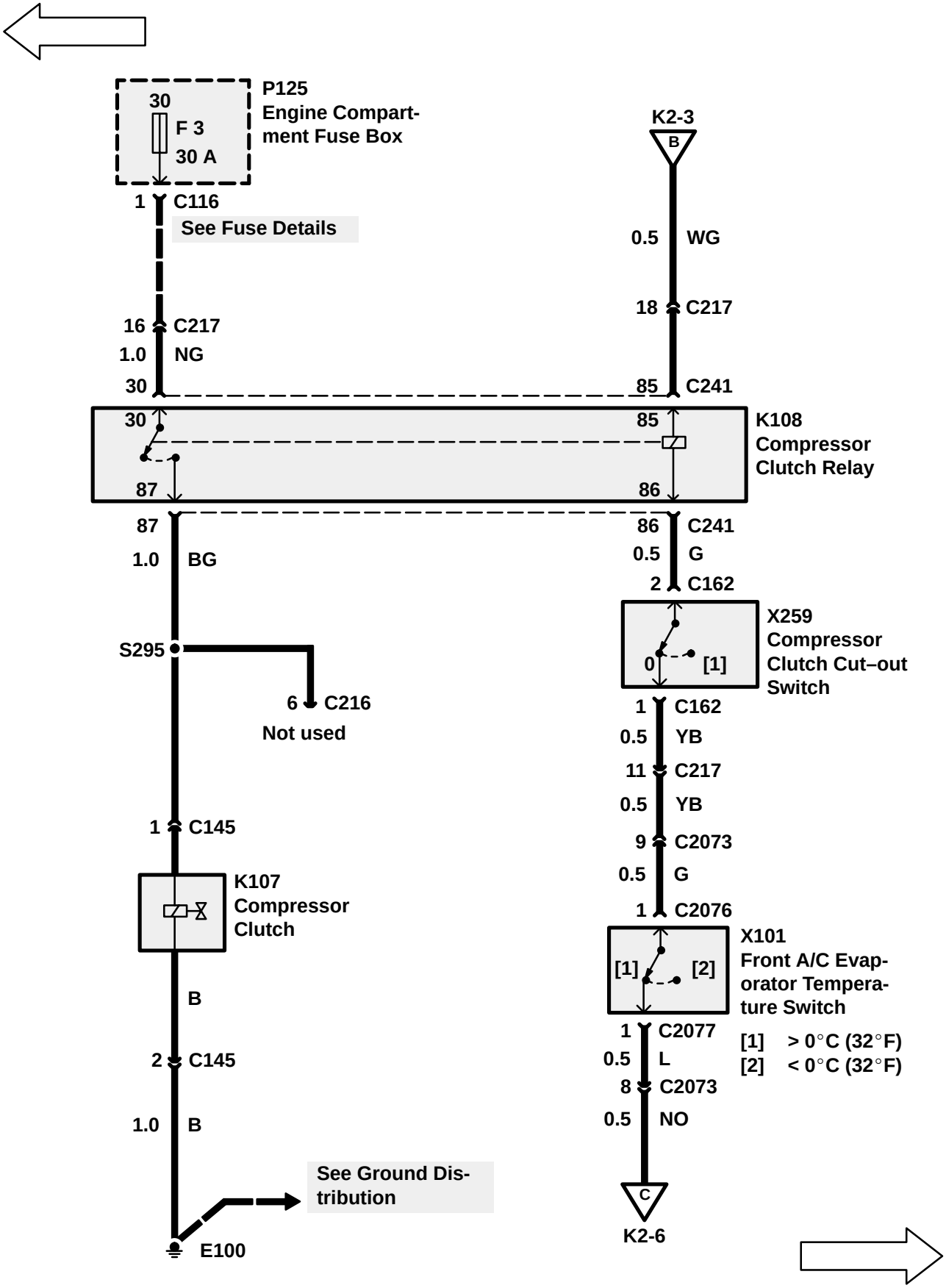
The Front A/C Evaporator Temperature Switch (X101) is fitted in the airflow out of the front evaporator to sense the temperaure of the exterior fins. Should ice begin to form, due to low temperature, the switch will open. The A/C Dual Pressure Switch (X102) monitors refrigerant pressure in the high pressure 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.


P126
Fascia Fuse Box
15
F 18
10 A
5
C204
See Fuse Details
P125
Engine Compartment Fuse Box
30
F 3
30 A
1
C116
See Fuse Details
S274
1.0
LGP
85
S229
3.0
NG
30
C2007
K127
Ignition Load Relay
85
86
87
30
87a
86
87
1.5
WG
87a
C2007
1.5
YO
15
C215
1.0
YO
1
C251
S227
X125
Fuel Flap Release Switch
Z211
Fan Timer Diode
0.5
GW
Cooling Fans
7
C2073
1.25
UR
B
K2-4 Petrol
K2-5 Diesel
A
K2-6
See Ground Distribution
E200

K2 ETM

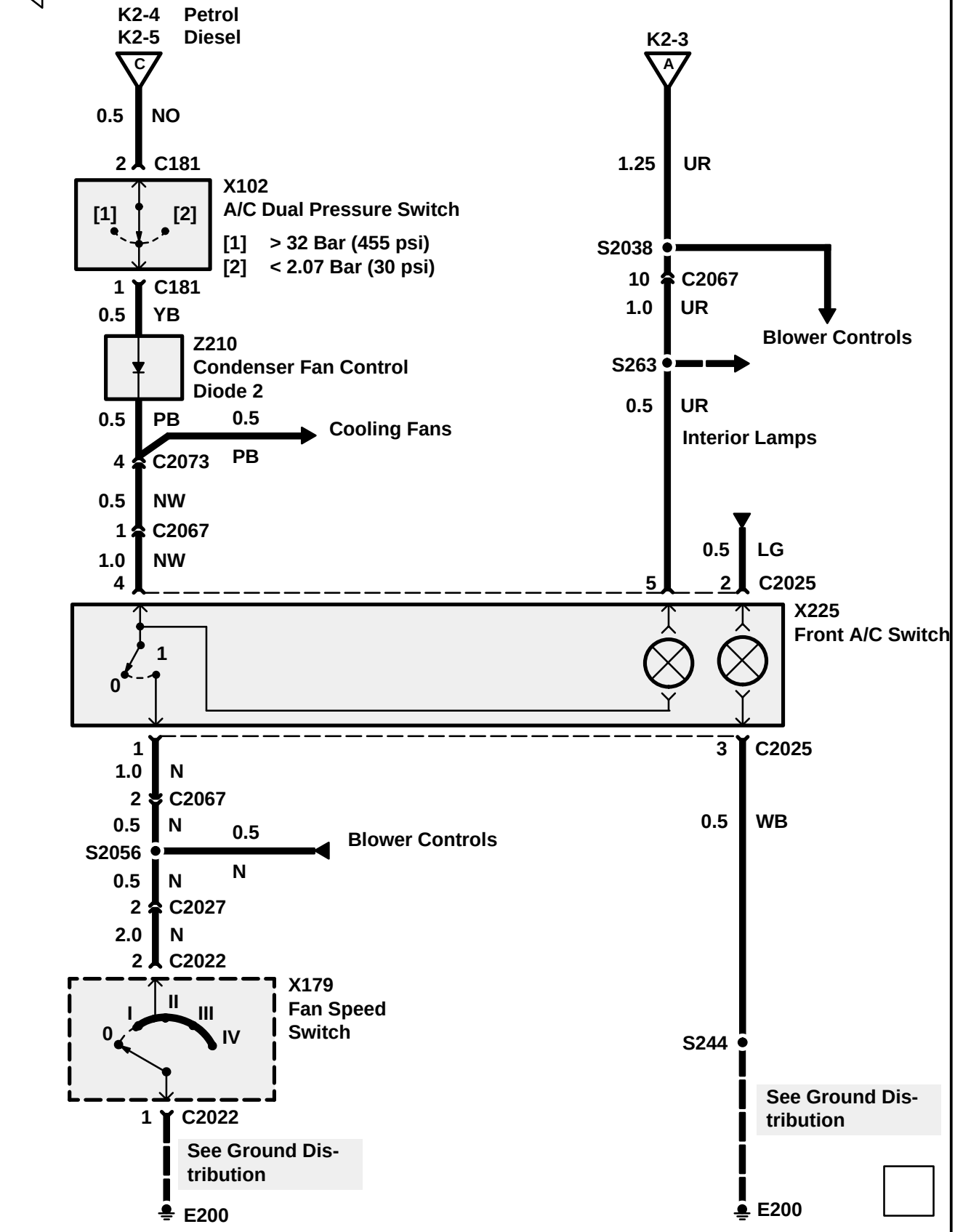
1995 RANGE ROVER




P125
Engine Compartment Fuse Box
30
F 3
30 A
1 C116
See Fuse Details
16 C217
1.0 NG
30
K2-3
B
0.5 WG
18 C217
85 C241
30
85
K108
Compressor Clutch Relay
87
86
87
1.0 BG
86 C241
0.5 G
2 C162
S295
6 C216
Not used
X259
Compressor Clutch Cut–out Switch
0
[1]
1 C162
0.5 YB
11 C217
0.5 YB
9 C2073
0.5 G
1 C2076
1 C145
K107
Compressor Clutch
X101
Front A/C Evaporator Temperature Switch
[1]
[2]
[1] > 0°C (32°F)
[2] < 0°C (32°F)
B
1 C2077
0.5 L
8 C2073
0.5 NO
2 C145
1.0 B
See Ground Distribution
C
E100
K2-6

K2 ETM

1995 RANGE ROVER



TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS (PETROL)

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

SYSTEM DIAGNOSIS (DIESEL)

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

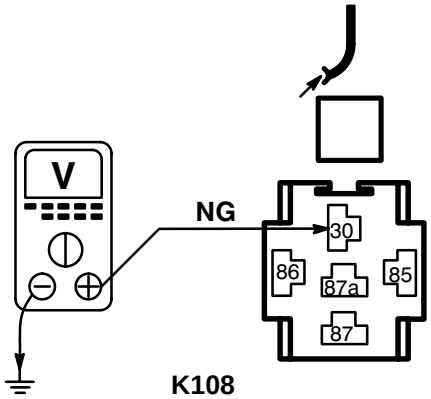
Test A

1A **Petrol**

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K108
Compressor Clutch Relay

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

OK

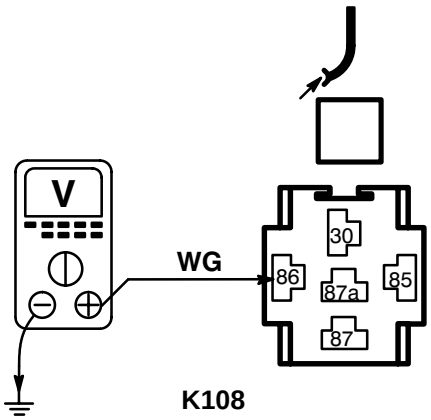
2A

2A

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



K108
Compressor Clutch Relay

OK **PROBLEM CAUSE**
- **WG Wire**

OK

3A

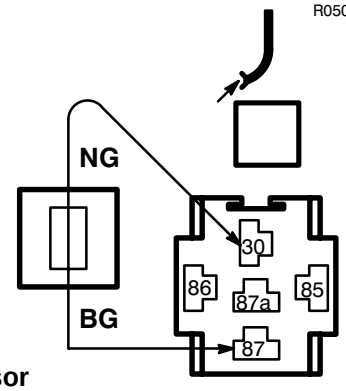
2A

3A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Compressor Clutch**
  Operates



K108 Compressor Clutch Relay

OK **PROBLEM CAUSE**
- **BG Wire**
- **B Wire**
- **Compressor Clutch**

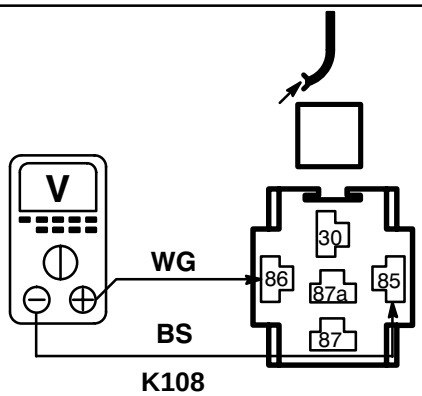
OK → 4A

4A

R050001

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

RESULTS
BAT VOLT



K108 Compressor Clutch Relay

OK → 5A

OK **PROBLEM CAUSE**
- **Compressor Clutch Relay**

K2 ETM

1995 RANGE ROVER

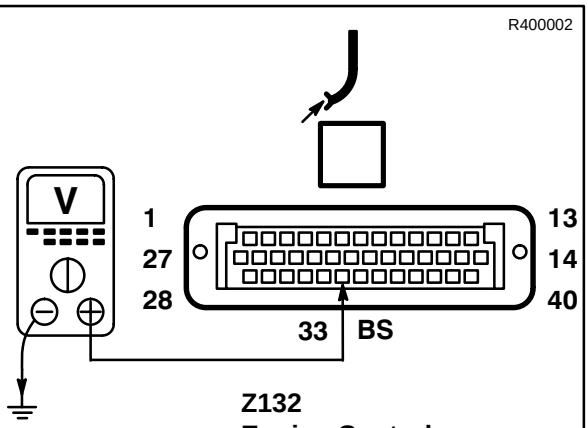
4A

5A

R400002

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



Z132
Engine Control Module (ECM)

OK **PROBLEM CAUSE**
- BS Wire

OK

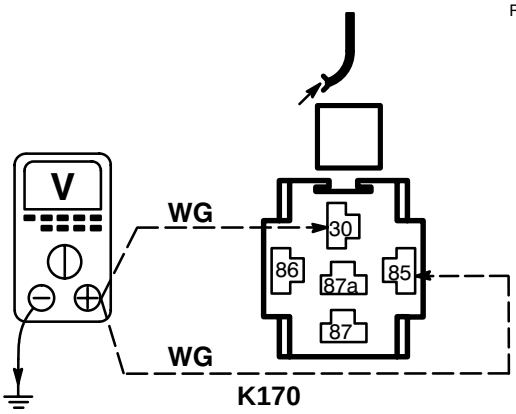
6A

6A

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



K170
A/C Logic Relay

OK **PROBLEM CAUSE**
- WG Wire

OK

7A

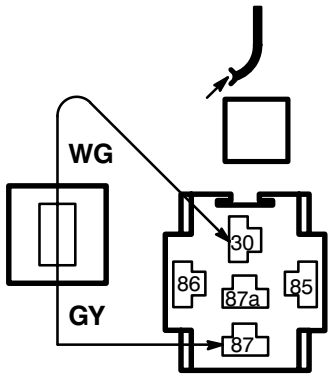
6A

7A

R050001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Engine**
  On

RESULTS
- **Compressor Clutch**
  Operates



K170
A/C Logic Relay

OK

PROBLEM CAUSE
- **GY Wire**
- **Engine Control Module (ECM)**

OK

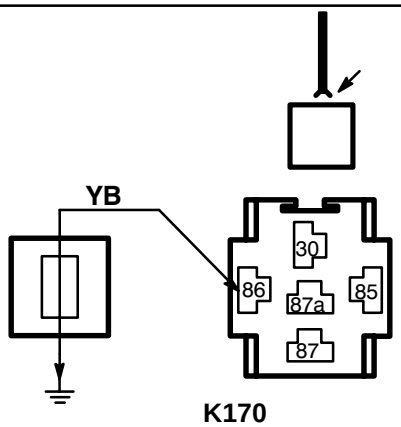
8A

8A

R050001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Engine**
  On

RESULTS
- **Compressor Clutch**
  Operates



K170
A/C Logic Relay

OK

PROBLEM CAUSE
- **A/C Logic Relay**

OK

9A

8A

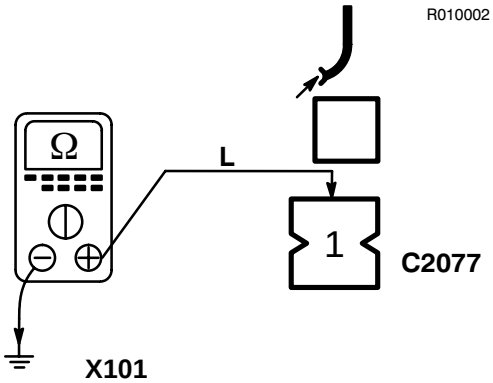
9A

R010002

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

  On

RESULTS
Less than 2 ohms



X101
Front A/C Evaporator Temperature Switch

OK **GO TO TEST C**

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

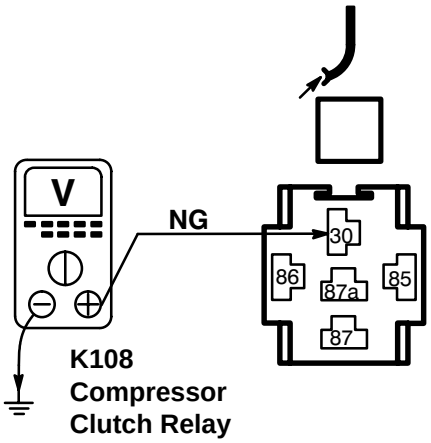
Test B

1B **Diesel**

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K108
Compressor Clutch Relay

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

OK

2B

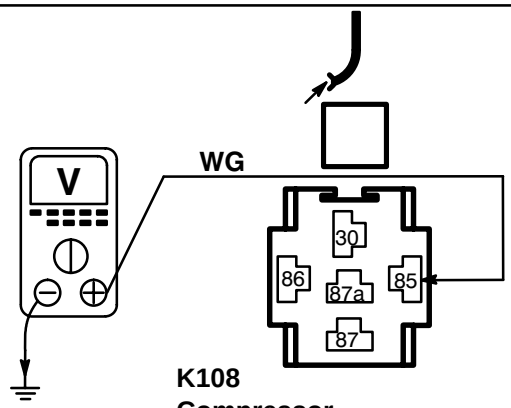
1B

2B

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **WG Wire**

OK

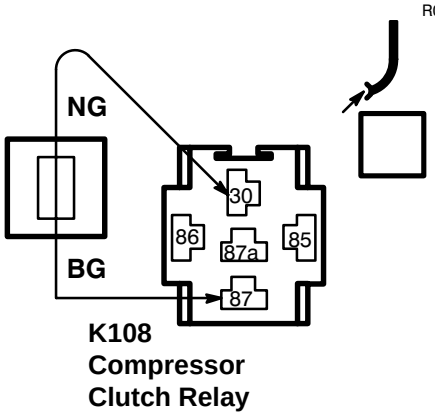
3B

3B

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Compressor Clutch**
  Operates



OK **PROBLEM CAUSE**
- **BG Wire**
- **B Wire**
- **Compressor Clutch**

OK

4B

3B

4B

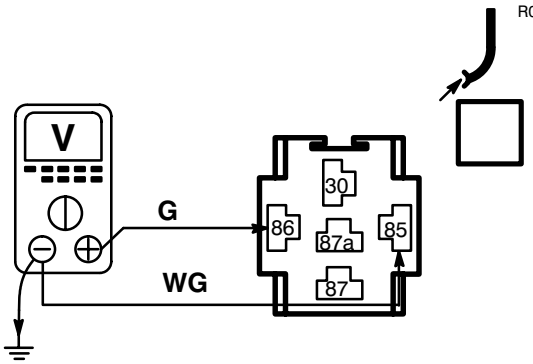
CONDITIONS

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

  On

RESULTS

BAT VOLT



K108
Compressor Clutch Relay

OK

OK **PROBLEM CAUSE**
- **Compressor Clutch Relay**

5B

5B

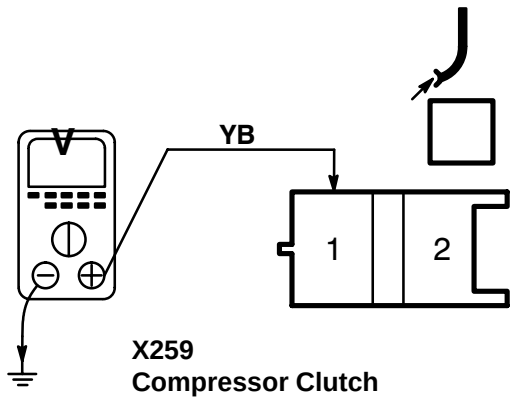
CONDITIONS

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

  On

RESULTS

BAT VOLT



X259
Compressor Clutch Cut–out Switch

OK

OK **PROBLEM CAUSE**
- **G Wire**
- **Compressor Clutch Cut–out Switch**

6B

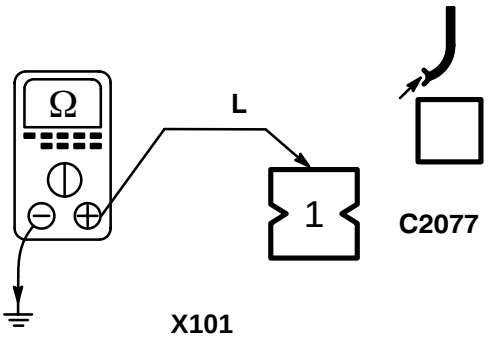
5B

6B

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

  On

RESULTS
Less than 2 ohms



OK **GO TO TEST C**

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

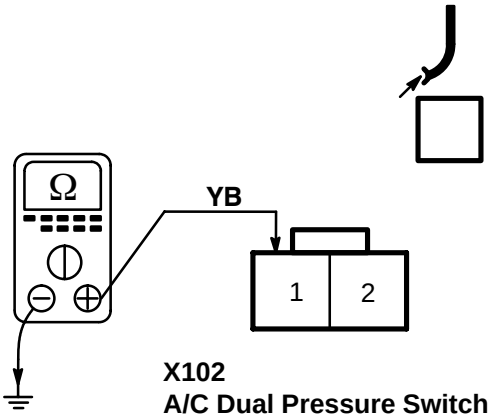
Test C

1C

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

  On

RESULTS
Less than 2 ohms



OK

2C

OK **PROBLEM CAUSE**
- **NO Wire**
- **L Wire**
- **A/C Dual Pressure Switch**

1C

2C

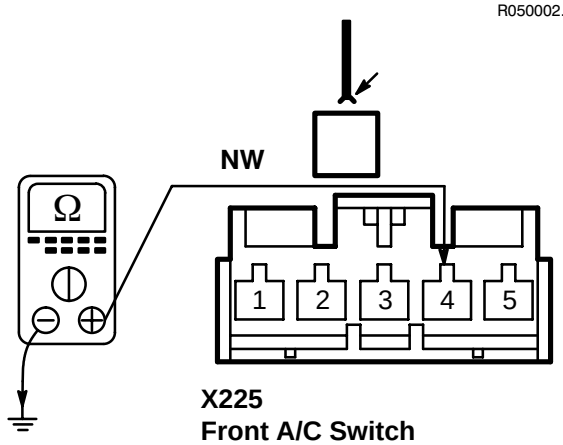
CONDITIONS

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

  On

RESULTS

Less than 1 ohm



OK

PROBLEM CAUSE

- **N Wire**
- **Front A/C Switch**

OK

PROBLEM CAUSE

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

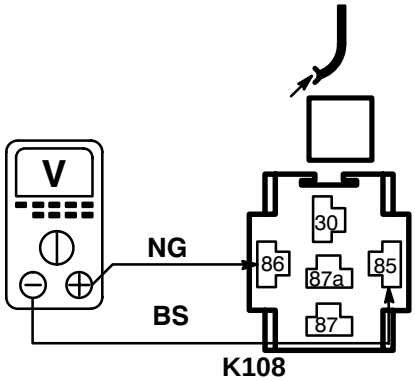
Test D

1D **Petrol**

R050001

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

RESULTS
0V



K108
Compressor
Clutch Relay

OK

OK **PROBLEM CAUSE**
- **Compressor Clutch Relay**

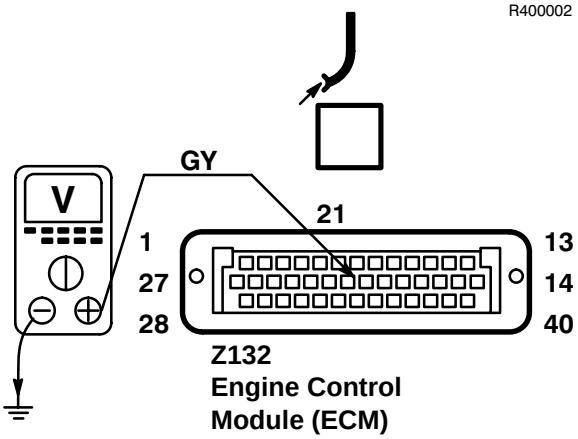
2D

2D

R400002

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

RESULTS
0V



Z132
Engine Control
Module (ECM)

OK

OK **PROBLEM CAUSE**
- **GY Wire**
- **Engine Control Module (ECM)**

3D

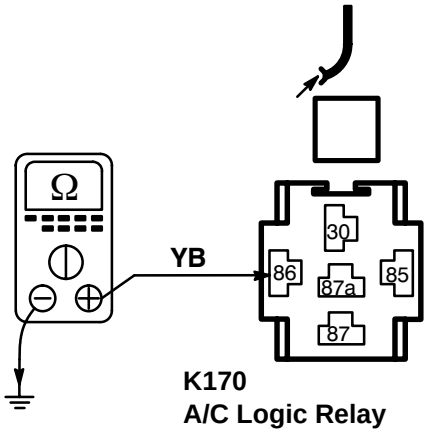
2D

3D

R050001

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

RESULTS
More than 10K ohms



K170
A/C Logic Relay

OK

OK **PROBLEM CAUSE**
- **A/C Logic Relay**

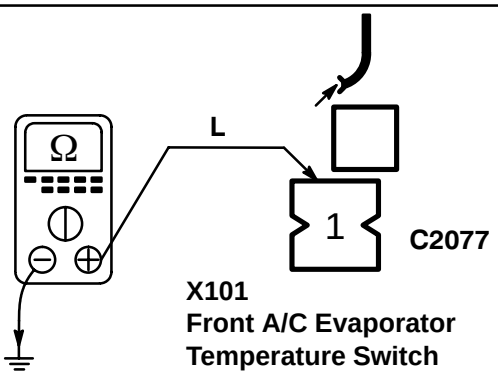
4D

4D

R010002

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

RESULTS
More than 10K ohms



C2077
X101
Front A/C Evaporator Temperature Switch

OK **GO TO TEST F**

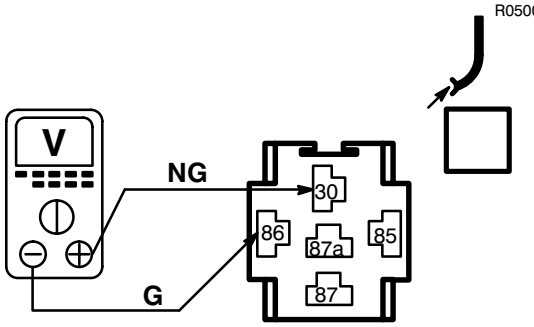
OK **PROBLEM CAUSE**
- **YB Wire**
- **G Wire**
- **Front A/C Evaporator Temperature Switch**

Test E

1E **Diesel**

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

RESULTS
0V



K108
Compressor Clutch Relay

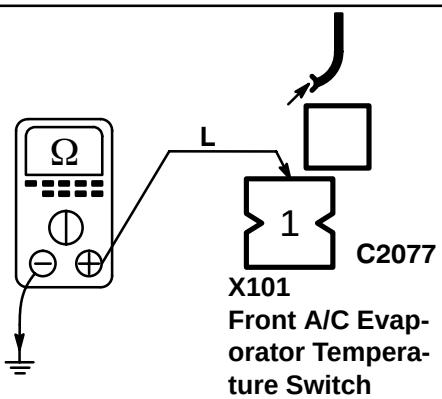
OK → 2E

OK → **PROBLEM CAUSE**
- **Compressor Clutch Relay**

2E

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

RESULTS
More than 10K ohms



C2077
X101
Front A/C Evaporator Temperature Switch

OK → **GO TO TEST F**

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

Test F

1F

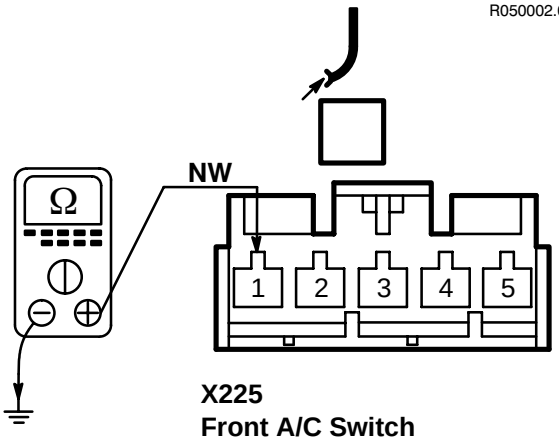
R050002.02

CONDITIONS

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

RESULTS

More than 10K ohms



X225
Front A/C Switch

OK **PROBLEM CAUSE**

- **N Wire**
- **Fan Speed Switch**

OK **PROBLEM CAUSE**

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

CIRCUIT OPERATION

Condenser Fan Operation (Petrol)

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

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

Operation with High Coolant Temperature (Petrol)

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

Fan Operation with A/C (Petrol)

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

Operation with the Engine Off (Petrol)

The Engine Control Module (Z132) monitors fuel temperature and coolant temperature through sensors. When the ECM determines than fuel temperature is above 70°C and coolant temperature exceeds 110°C after engine shutdown, the ECM will command fan operation for approximately10 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.

Condenser Fan Operation (Diesel)

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

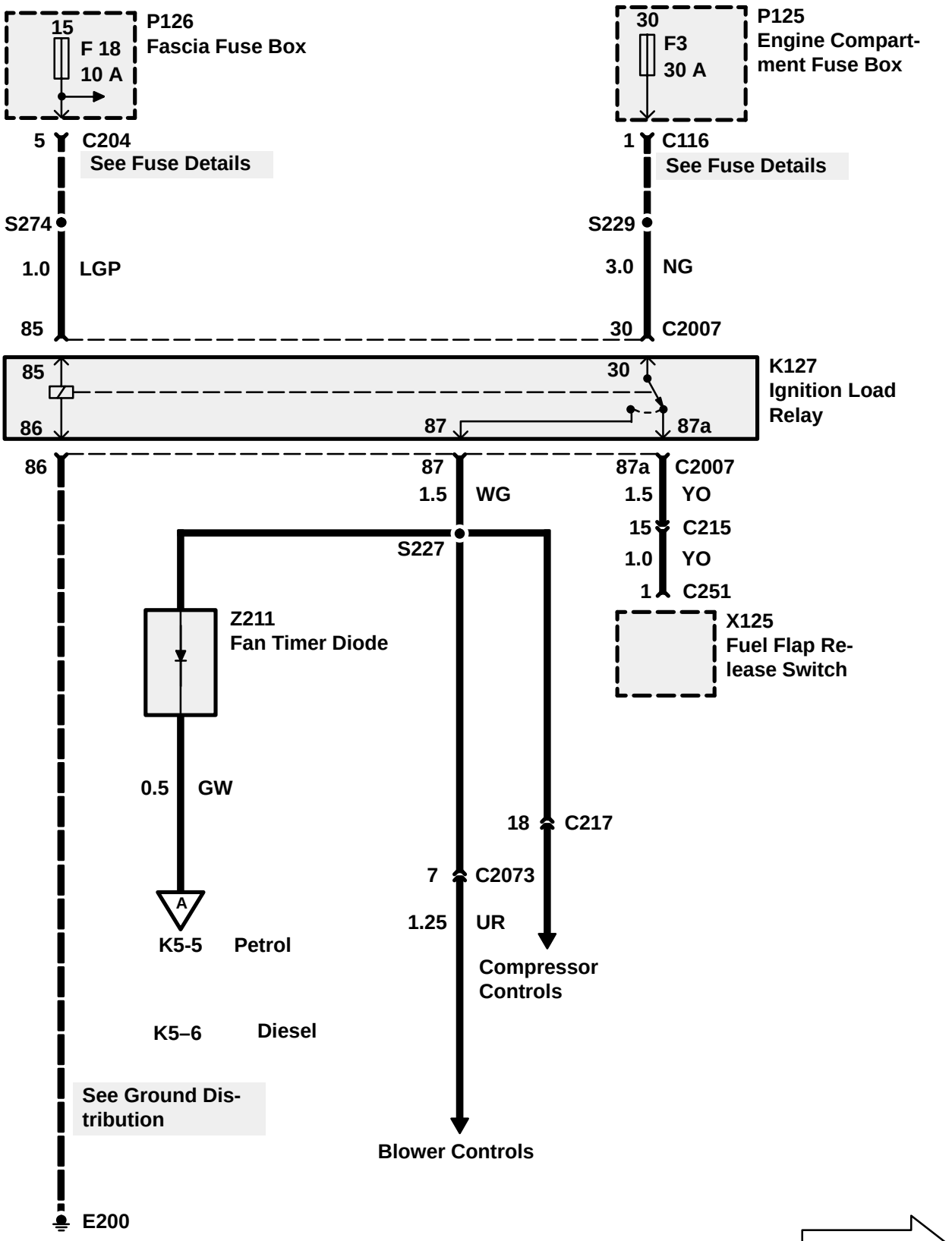
1. Coolant temperature exceeds 100°C (212°F).
2. The A/C is operating.

Condenser Fan with High Coolant Temperature Operation (Diesel)

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

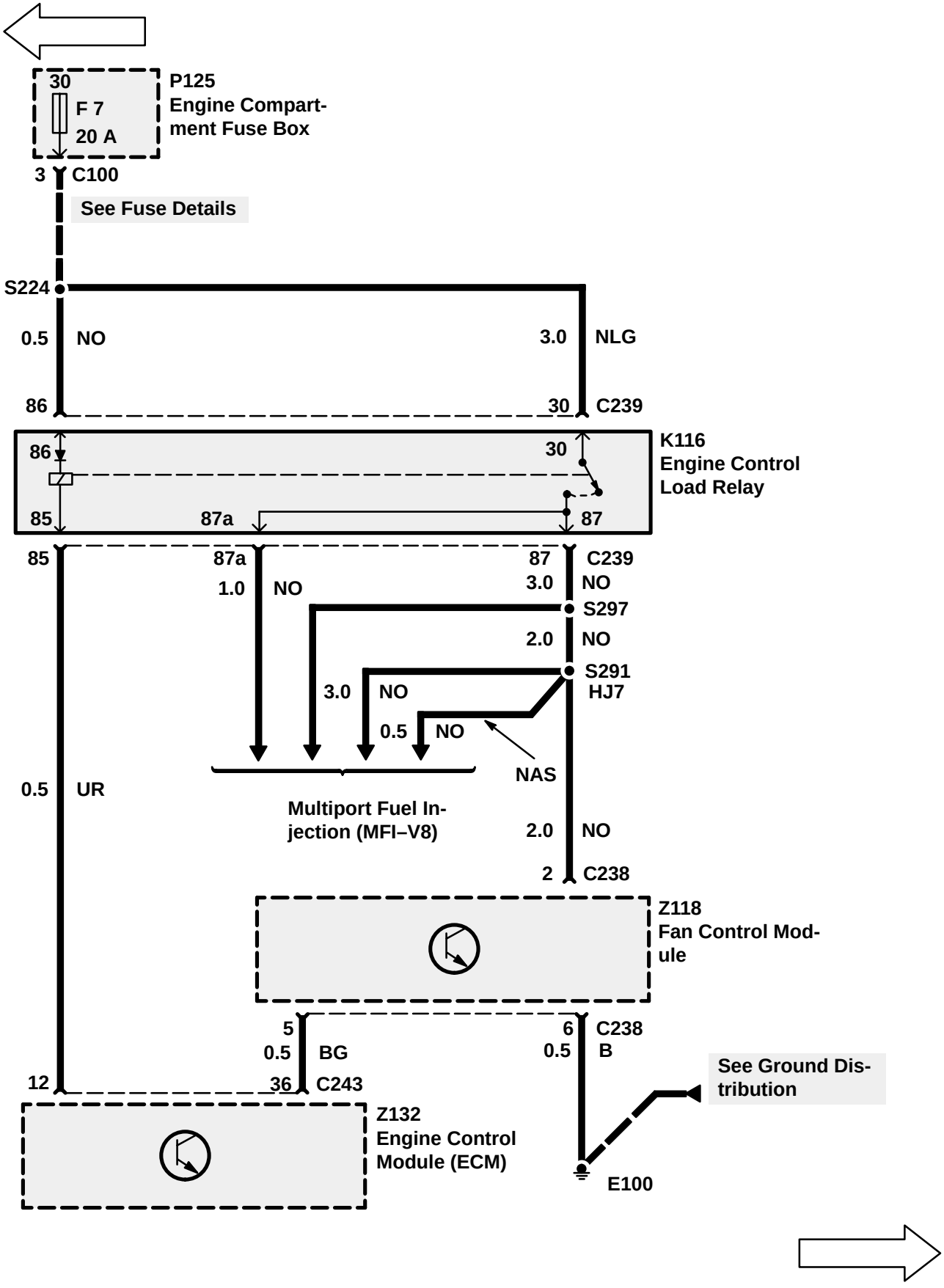
Fan Operation with A/C (Diesel)

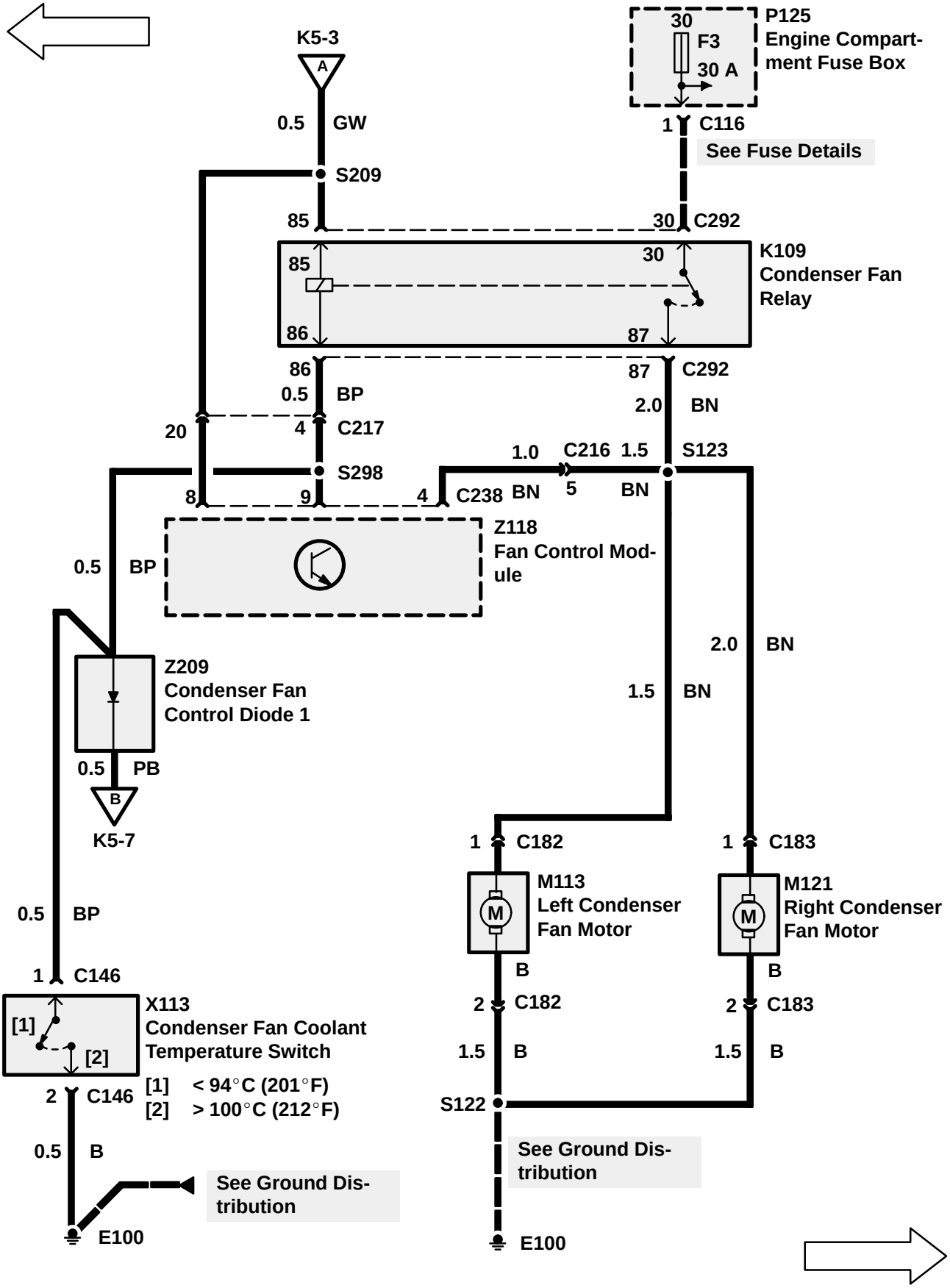
With the Igntion Switch (X134) in position II, battery voltage is applied to the Ignition Load Relay (K127). The relay is energized, applying battery voltage to the Condenser Fan Relay (K109) when the Front A/C Switch (X225) is turned on and the Fan Speed Switch (X179) is turned to positions I, II, II, 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).


15
F 18
10 A
P126
Fascia Fuse Box
30
F3
30 A
P125
Engine Compartment Fuse Box
5
C204
See Fuse Details
1
C116
See Fuse Details
S274
1.0
LGP
S229
3.0
NG
85
30
C2007
85
86
30
87
87a
K127
Ignition Load Relay
86
87
1.5
WG
87a
1.5
YO
C2007
15
C215
1.0
YO
1
C251
S227
Z211
Fan Timer Diode
X125
Fuel Flap Release Switch
0.5
GW
18
C217
7
C2073
1.25
UR
A
K5-5
Petrol
K5–6
Diesel
Compressor Controls
See Ground Distribution
Blower Controls
E200

K5 ETM

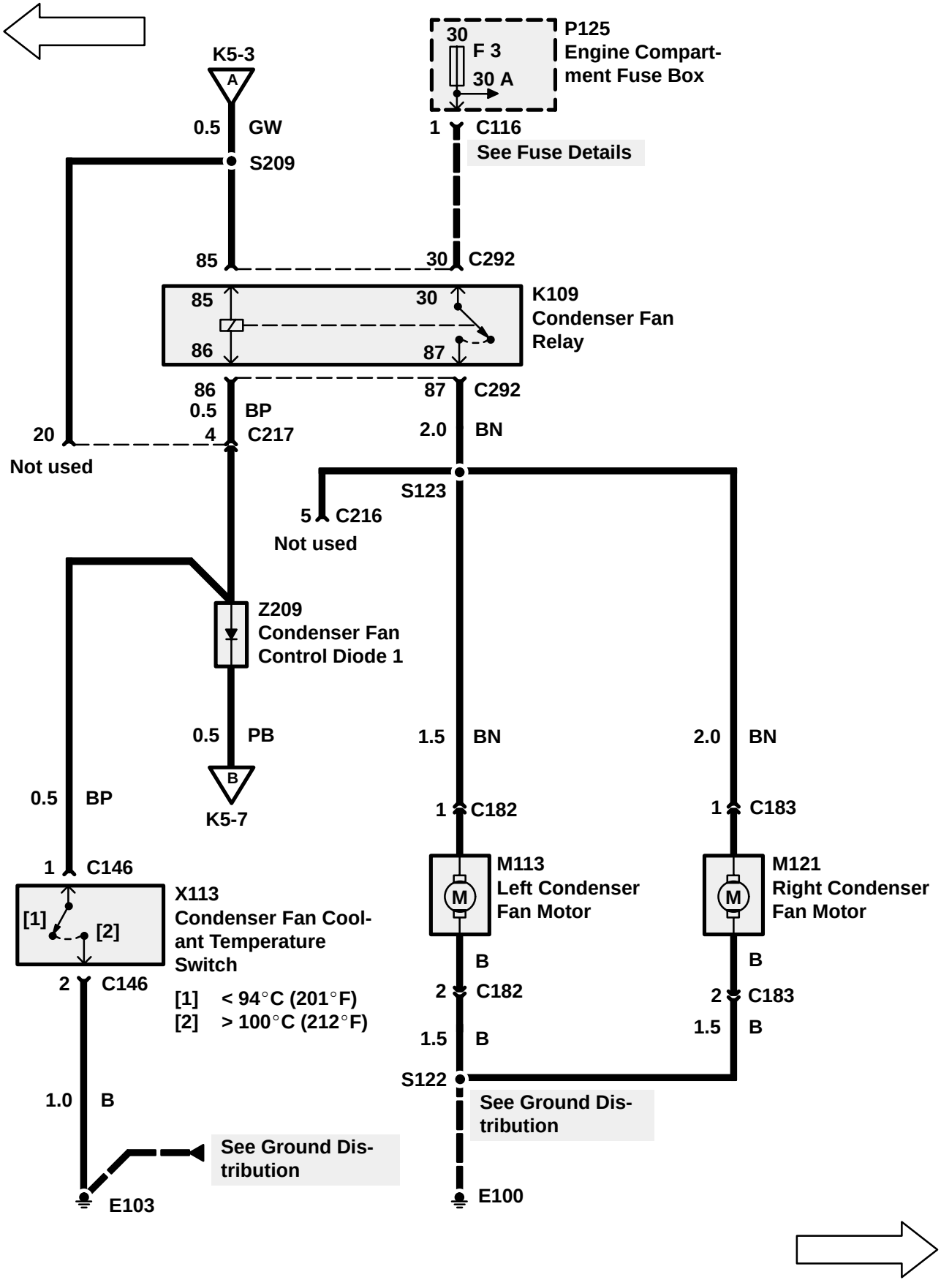
1995 RANGE ROVER

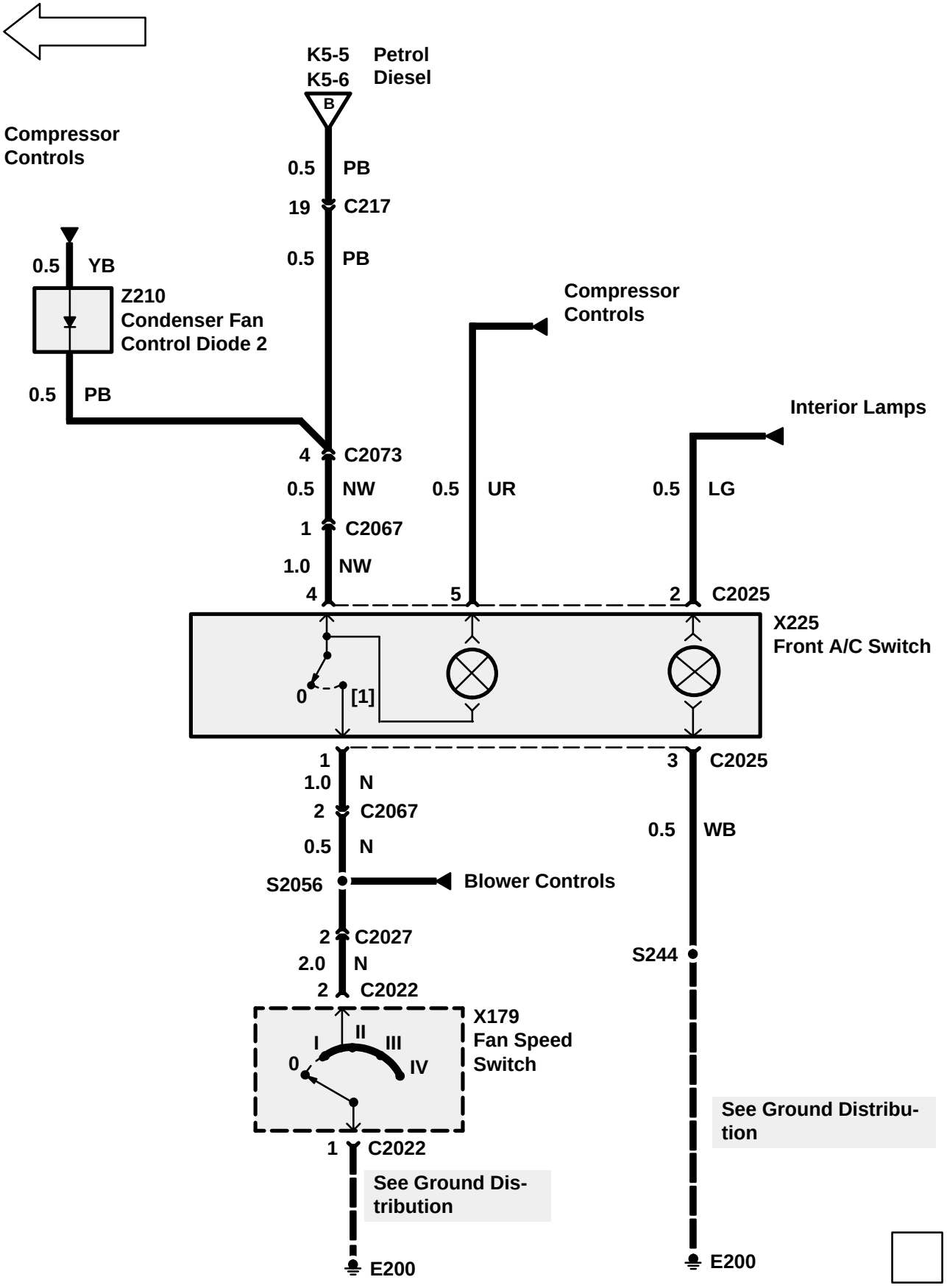



K5-3
A
0.5 GW
S209
85
30 F3
30 A
P125
Engine Compartment Fuse Box
1 C116
See Fuse Details
30 C292
K109
Condenser Fan Relay
85
86
30
87
86 0.5 BP
4 C217
20
S298
8
9
4 C238 BN
1.0 C216 1.5 S123
5 BN
87 C292
2.0 BN
Z118
Fan Control Module
0.5 BP
Z209
Condenser Fan Control Diode 1
0.5 PB
B
K5-7
2.0 BN
1.5 BN
1 C182
1 C183
M113
Left Condenser Fan Motor
M121
Right Condenser Fan Motor
M
B
2 C182
2 C183
1.5 B
1.5 B
S122
0.5 BP
1 C146
X113
Condenser Fan Coolant Temperature Switch
[1]
[2]
[1] < 94°C (201°F)
[2] > 100°C (212°F)
2 C146
0.5 B
See Ground Distribution
E100
See Ground Distribution
E100

K5 ETM

1995 RANGE ROVER




K5-5 Petrol
K5-6 Diesel
B
Compressor Controls
0.5 PB
19 C217
0.5 PB
0.5 YB
Z210
Condenser Fan
Control Diode 2
0.5 PB
Compressor Controls
Interior Lamps
4 C2073
0.5 NW
0.5 UR
0.5 LG
1 C2067
1.0 NW
4
5
2 C2025
X225
Front A/C Switch
0
[1]
1
1.0 N
2 C2067
0.5 N
3 C2025
0.5 WB
S2056
Blower Controls
2 C2027
2.0 N
2 C2022
S244
X179
Fan Speed
Switch
I
II
III
IV
0
1 C2022
See Ground Distribution
See Ground Distribution
E200
E200

TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS

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

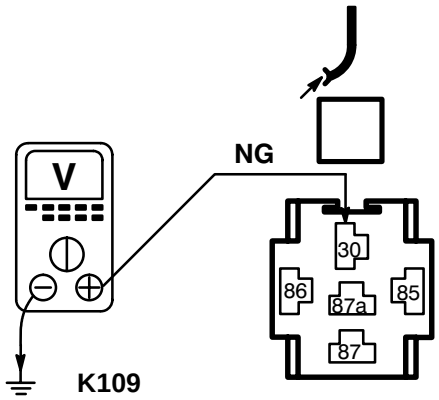
Test A

1A **Condenser Fan Relay Test Petrol**

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K109 Condenser Fan Relay

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

OK

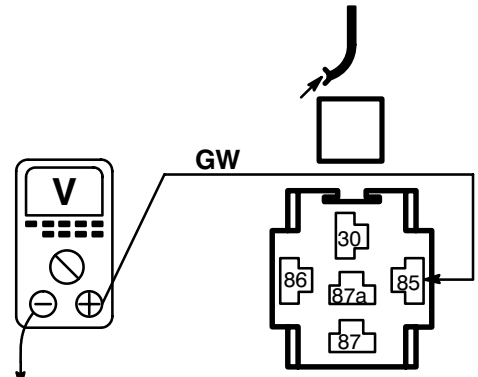
2A

2A

R050001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Engine**
  On

RESULTS
BAT VOLT



K109 Condenser Fan Relay

OK **PROBLEM CAUSE**
- **GW Wire**

OK

3A

2A

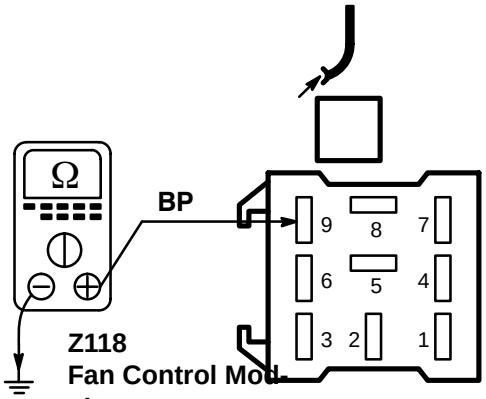
3A

R090002

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

A/C Mode

RESULTS
Less than 1 ohm



OK **GO TO TEST C**

OK

4A

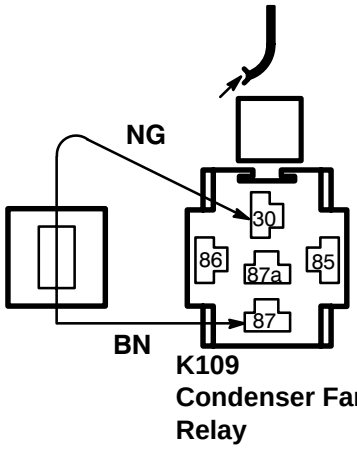
4A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **M113, M121 Condenser Fan Motors**

Operate



OK **PROBLEM CAUSE**
- BN Wire

OK **PROBLEM CAUSE**
- Condenser Fan Relay

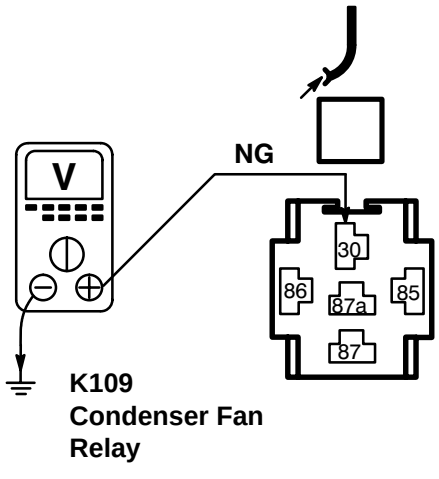
Test B

1B **Condenser Fan Relay Test Diesel**

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



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

OK

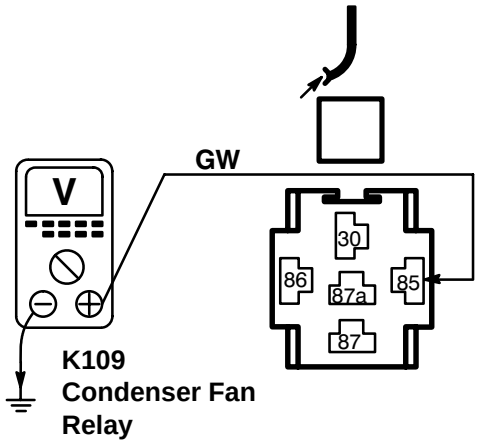
2B

2B

R050001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Engine**
  On

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **GW Wire**

OK

3B

2B

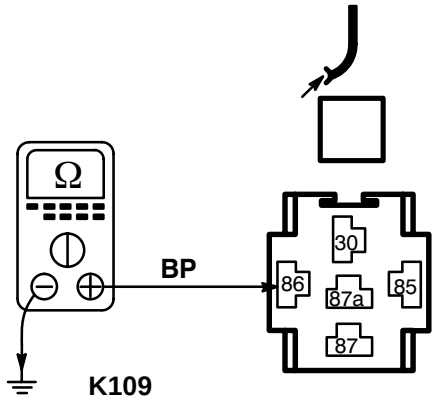
3B

R050001

CONDITIONS
- **Ignition Switch**
  Position: II
- **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 D**

OK

4B

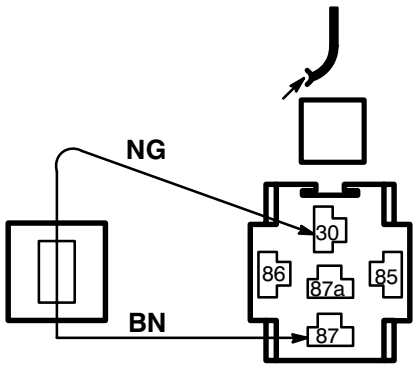
4B

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 C

1C A/C Mode

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

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

OK **GO TO SECTION K1**

OK

2C

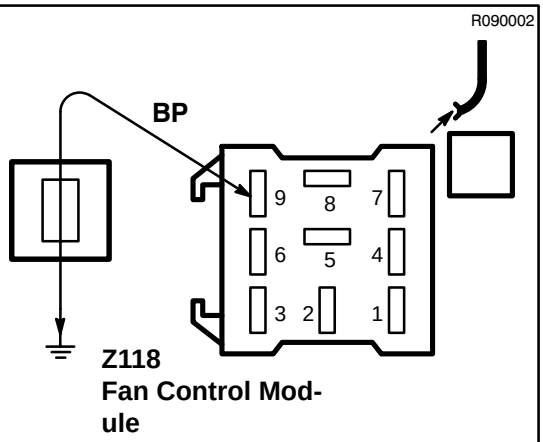
2C

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

  A/C Mode

RESULTS
- **M113, M121 Condenser Fan Motors**

  Operate



Z118
Fan Control Module

OK **PROBLEM CAUSE**
- **BP Wire**

OK **PROBLEM CAUSE**
- **PB Wire**
- **Condenser Fan Control Diode 1**

Test D

1D A/C Mode

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

  A/C Mode

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

OK **GO TO SECTION K1**

OK

2D

2D

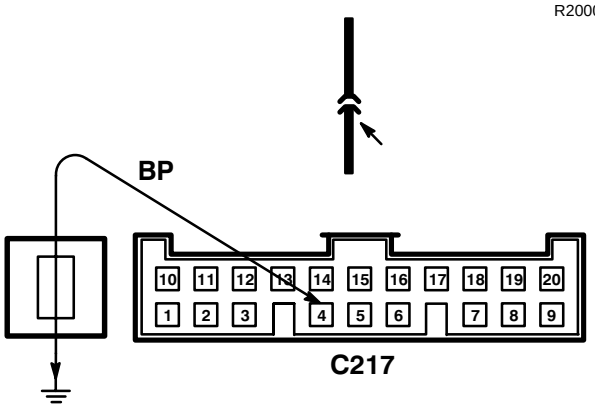
R200003

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

  A/C Mode

RESULTS
- **M113, M121 Condenser Fan Motors**

  Operate



OK **PROBLEM CAUSE**
- **BP Wire**

OK **PROBLEM CAUSE**
- **PB Wire**
- **Condenser Fan Control Diode 1**

Test E

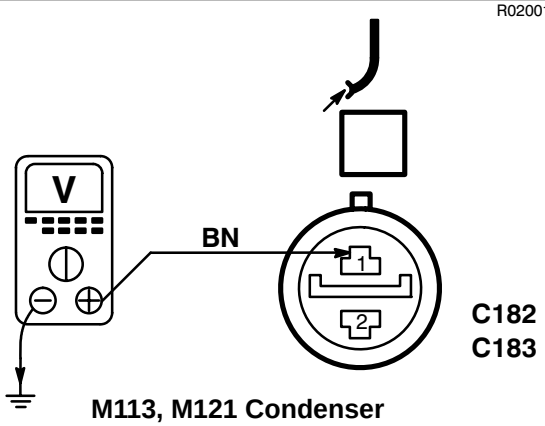
1E Condenser Fan Motor Test

R020011

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

A/C Mode

RESULTS
BAT VOLT



M113, M121 Condenser Fan Motor

OK **PROBLEM CAUSE**
- **BN Wire**

OK

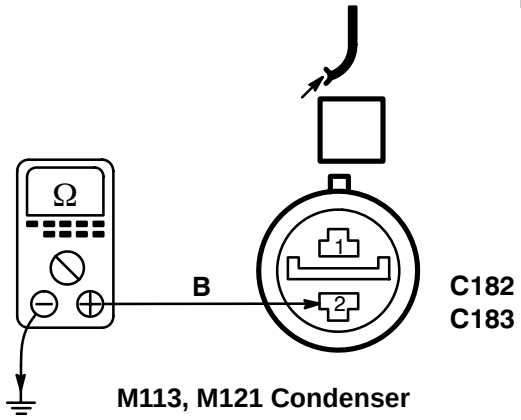
2E

2E

R020011

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



M113, M121 Condenser Fan Motor

OK **PROBLEM CAUSE**
- **B Wire**
- **E100**

OK **PROBLEM CAUSE**
- **M113, M121 Condenser Fan Motor**

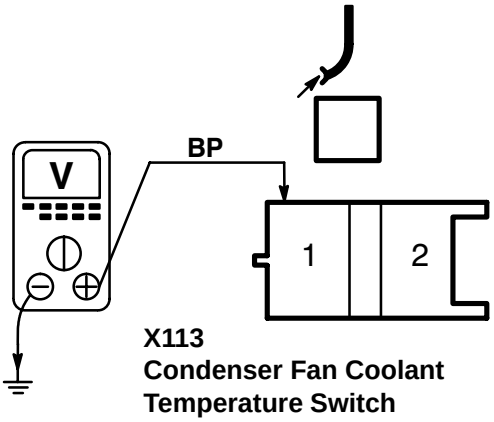
Test F

1F Temperature Switch Test

R020003

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



X113
Condenser Fan Coolant Temperature Switch

OK **PROBLEM CAUSE**
- **BP Wire**

OK

2F

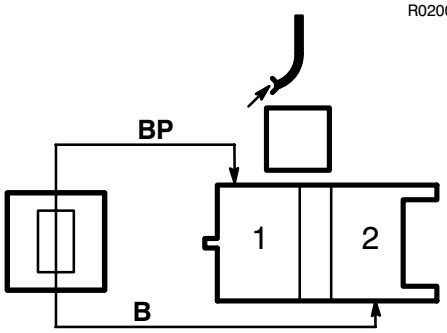
2F

R020003

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **M113, M121 Condenser Fan Motors**

  Operate



X113
Condenser Fan Coolant Temperature Switch

OK **PROBLEM CAUSE**
- **B Wire**
- **E100, E103**

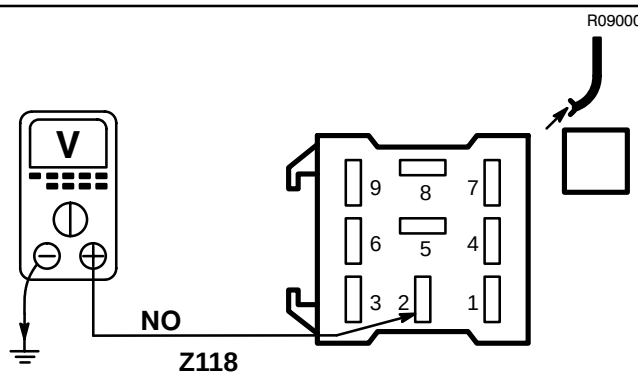
OK **PROBLEM CAUSE**
- **Condenser Fan Coolant Temperature Switch**

Test G

1G Fan Timer Test

CONDITIONS
- **Ignition Switch**
  Position: II
- **Engine**
  On

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- NO Wire

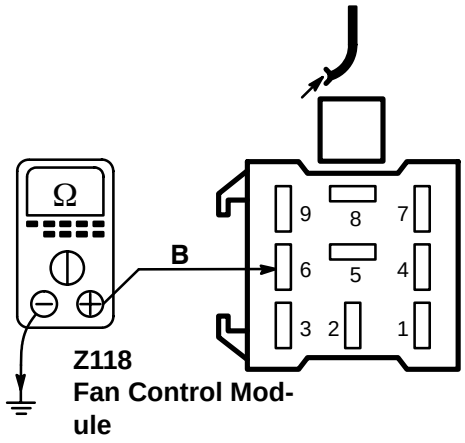
OK

2G

2G

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- B Wire
- E100

OK

3G

2G

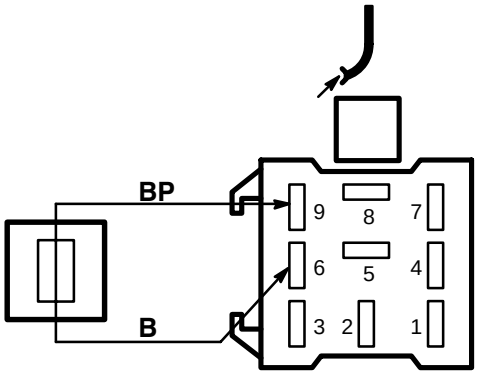
3G

R090002

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **M113, M121 Condenser Fan Motors**

  Operate



Z118
Fan Control Module

OK **PROBLEM CAUSE**
- **BP Wire**
- **B Wire**

OK

4G

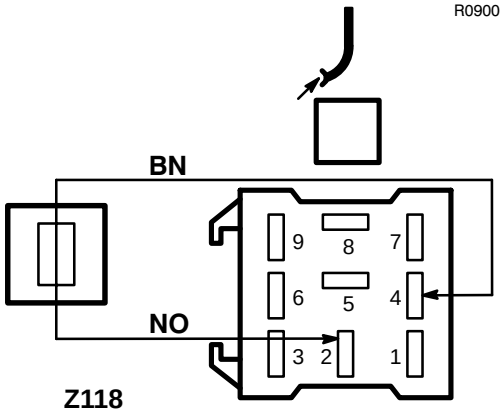
4G

R090002

CONDITIONS
- **Ignition Switch**
  Position: II
- **Engine**
  On

RESULTS
- **M113, M121 Condenser Fan Motors**

  Operate



Z118
Fan Control Module

OK **PROBLEM CAUSE**
- **BN Wire**

OK

5G

4G

5G

R090002

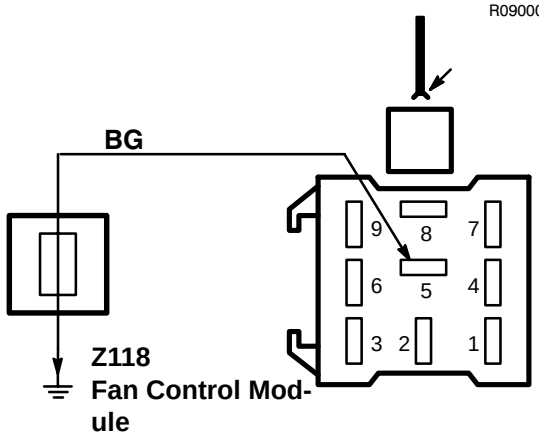
CONDITIONS

- **Ignition Switch**
  Position: II
- **Fan Speed Switch**
  Position: 0
- **Front A/C Switch**

  Off

RESULTS

Condenser fan operates for 10 minutes



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 F2 and F3. The Window Lift ECU is grounded through the B wire at ground E200.

Timeout Feature

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

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

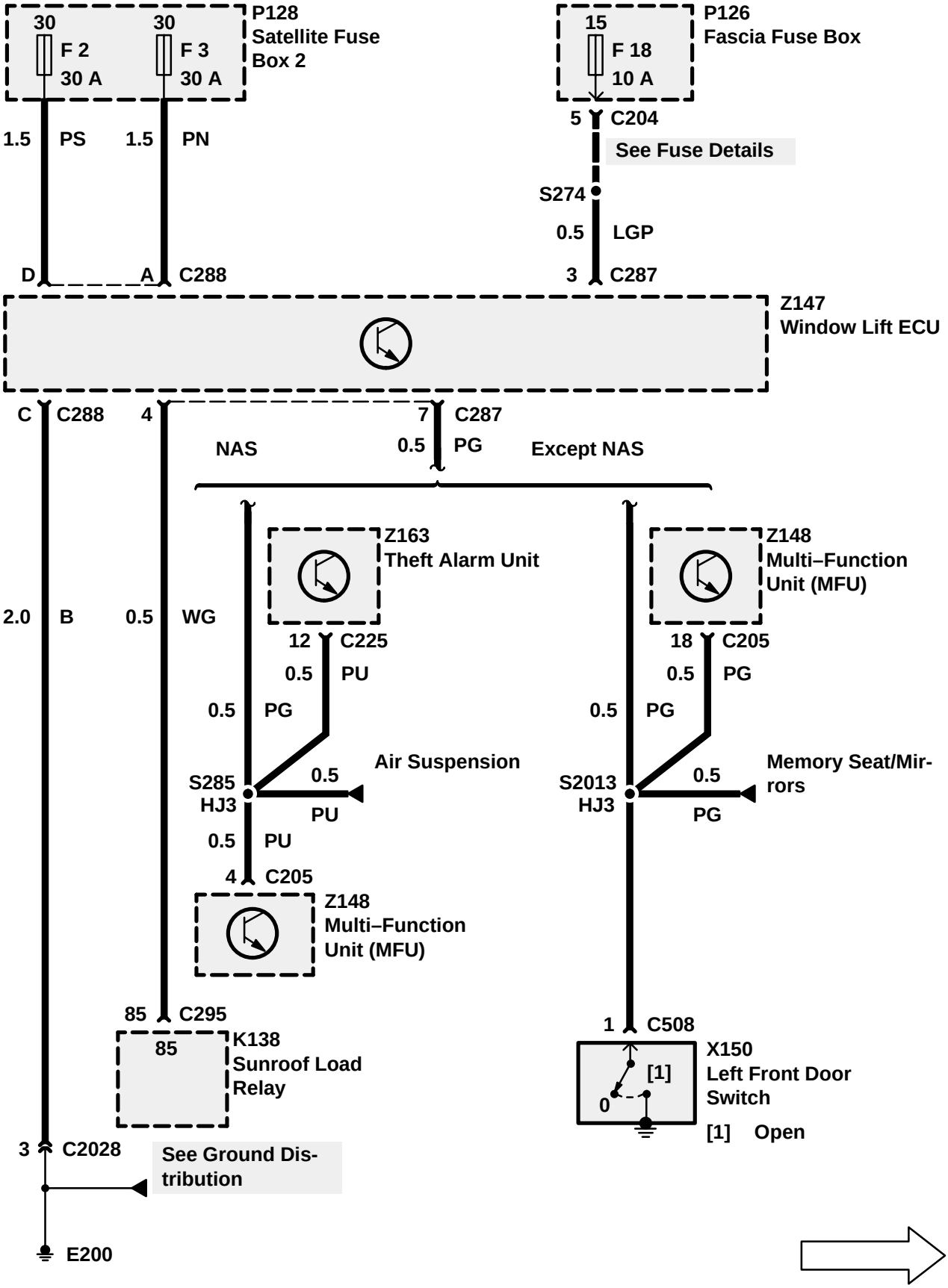
When a window console switch is in the 'DOWN' position, voltage is applied to the window motor through the 'up' switch contacts. The window motors operate because they are grounded through the 'down' contacts of the window console switch. When a switch is in the UP position, the polarity applied to the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

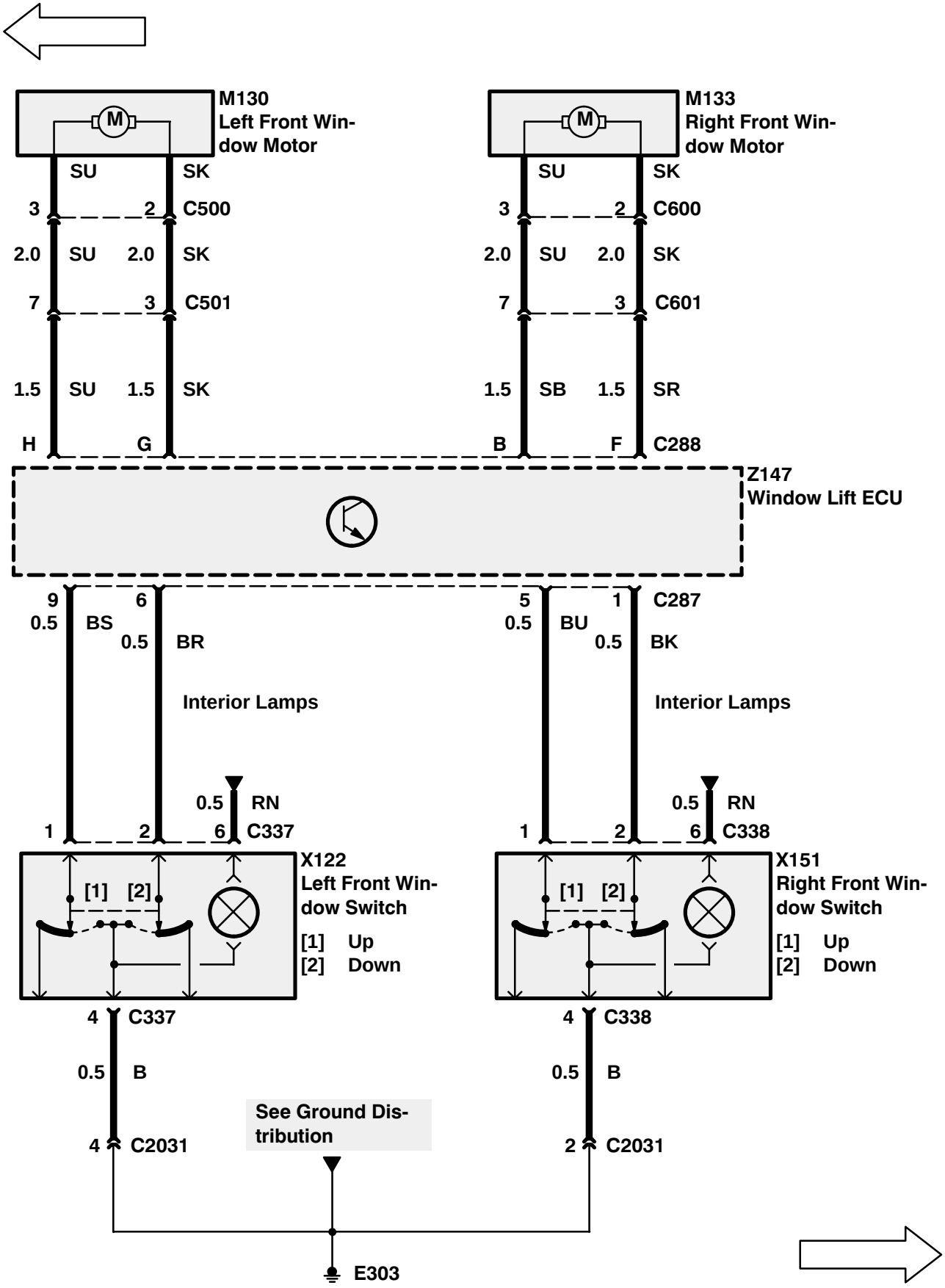
Rear Window Isolation Switch (X187)

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.

L1 ETM

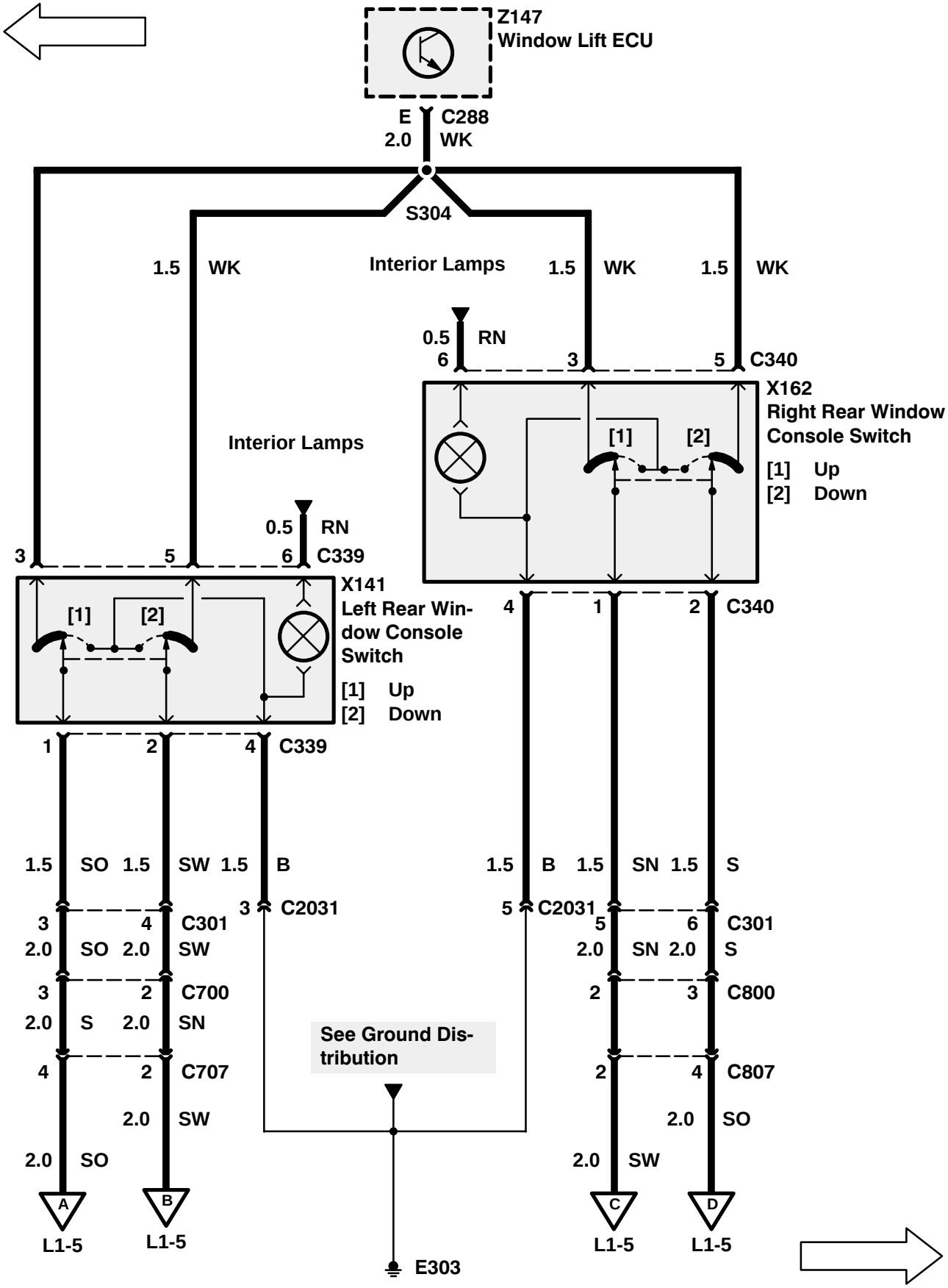
1995 RANGE ROVER

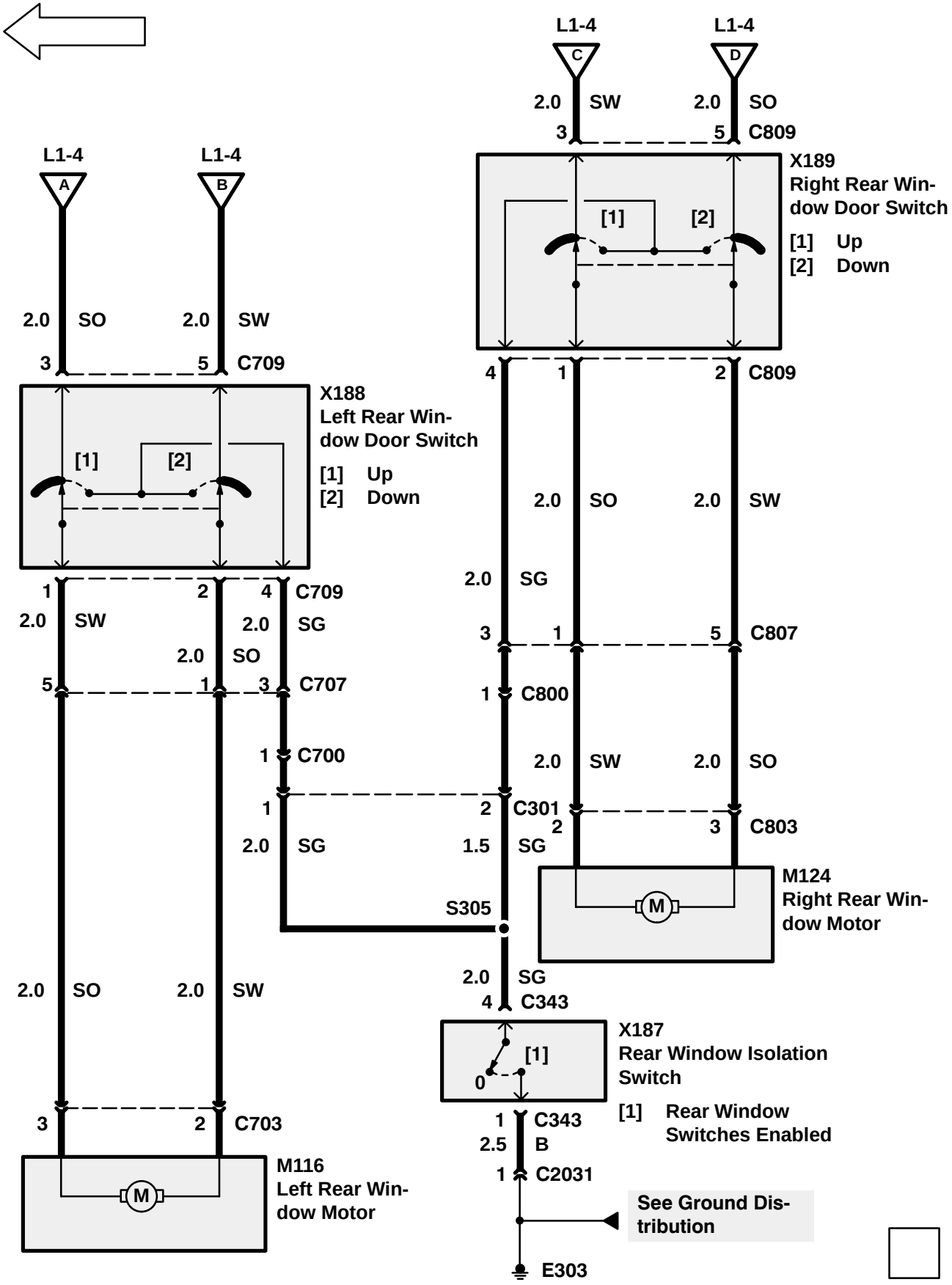



M130
Left Front Window Motor
M133
Right Front Window Motor
SU
SK
3
2
C500
C600
2.0
SU
2.0
SK
7
3
C501
C601
1.5
SU
1.5
SK
1.5
SB
1.5
SR
H
G
B
F
C288
Z147
Window Lift ECU
9
0.5
BS
6
0.5
BR
5
0.5
BU
1
C287
0.5
BK
Interior Lamps
Interior Lamps
0.5
RN
1
2
6
C337
C338
X122
Left Front Window Switch
X151
Right Front Window Switch
[1]
[2]
[1] Up
[2] Down
4
C337
C338
0.5
B
See Ground Distribution
4
C2031
2
C2031
E303

L1 ETM

1995 RANGE ROVER




L1-4
A
B
C
D
2.0 SO
2.0 SW
3
5
C709
X188
Left Rear Window Door Switch
[1] Up
[2] Down
X189
Right Rear Window Door Switch
[1] Up
[2] Down
C809
4
1
2
C807
C800
C301
C803
C343
C703
C707
C700
S305
M116
Left Rear Window Motor
M124
Right Rear Window Motor
X187
Rear Window Isolation Switch
[1] Rear Window Switches Enabled
2.0 SG
1.5 SG
2.5 B
C2031
See Ground Distribution
E303

L1 ETM

TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS

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

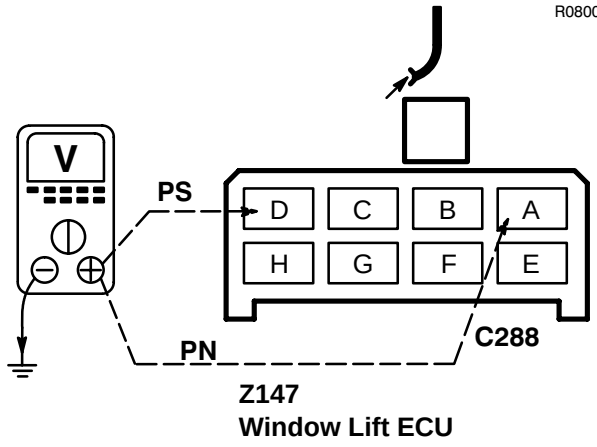
Test A

1A

R080003

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **F2 Fuse**
- **PS Wire**
- **F3 Fuse**
- **PN Wire**

OK

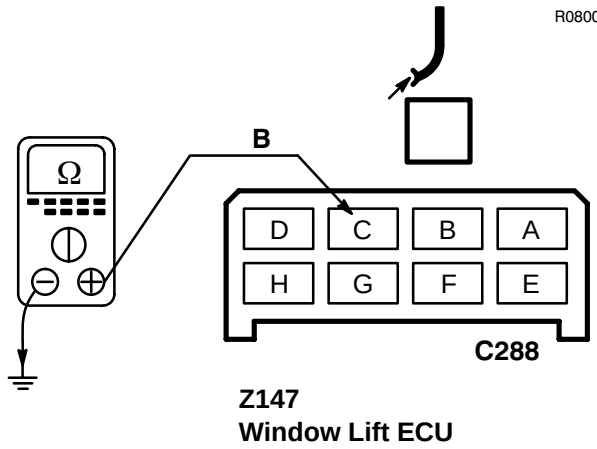
2A

2A

R080003

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK **PROBLEM CAUSE**
- **Window Lift ECU**

Test B

1B

R060019

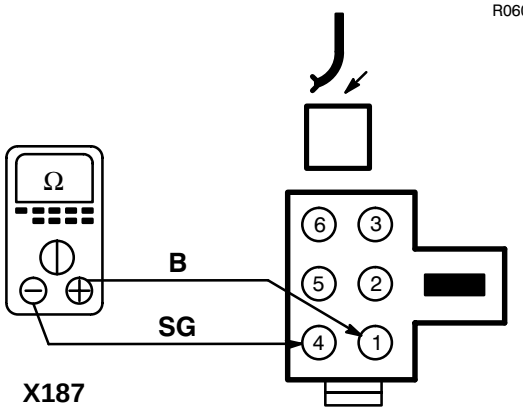
CONDITIONS

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

  On

RESULTS

Less than 1 ohm



X187
Rear Window Isolation Switch

OK **PROBLEM CAUSE**
- **Rear Window Isolation Switch**

OK **PROBLEM CAUSE**
- **B Wire**
- **SG Wire**

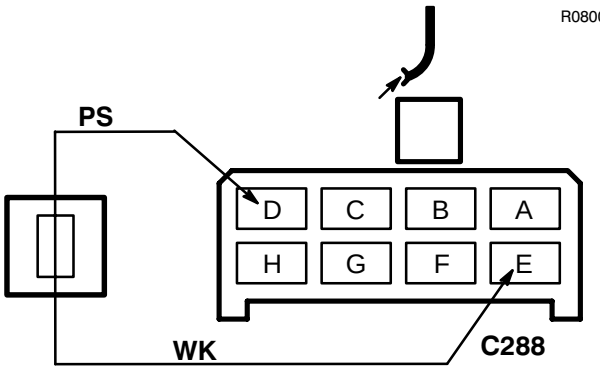
Test C

1C

R080003

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
Rear windows operate when switches are operated



Z147
Window Lift ECU

OK **PROBLEM CAUSE**
- WK Wire

OK **PROBLEM CAUSE**
- Window Lift ECU

Test D

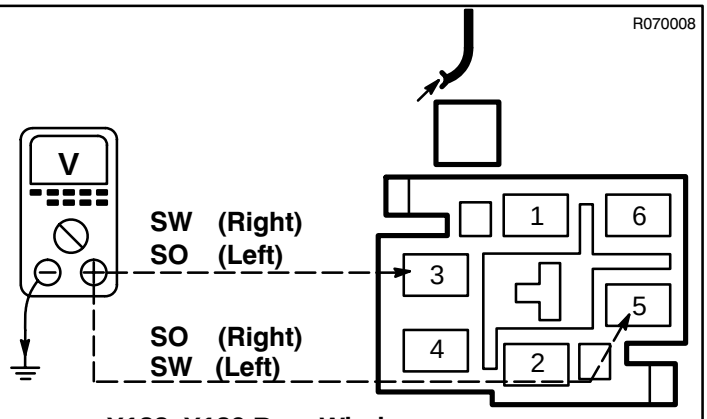
1D

R070008

CONDITIONS
- **Ignition Switch**

Position: II

RESULTS
BAT VOLT



X188, X189 Rear Window Door Switch

OK **GO TO TEST E**

OK

2D

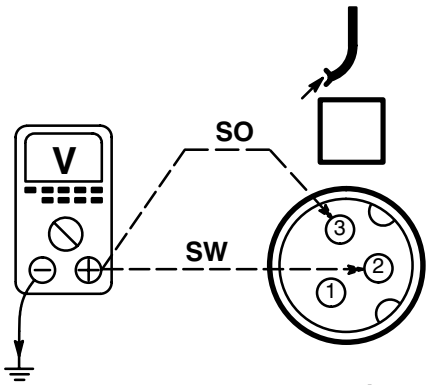
1D

2D

R030021

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**

OK

3D

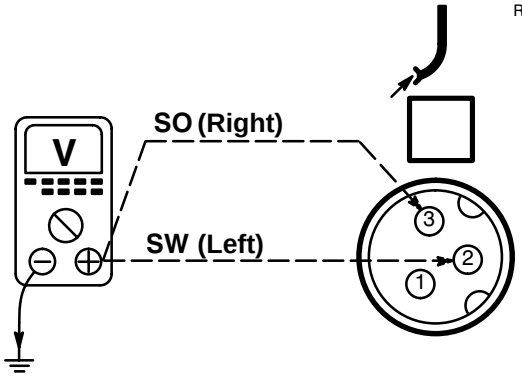
3D

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

OK

4D

3D

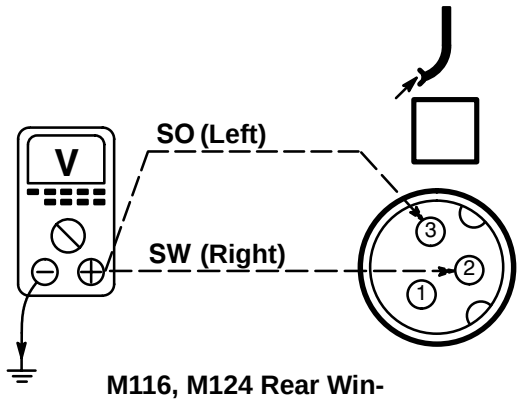
4D

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

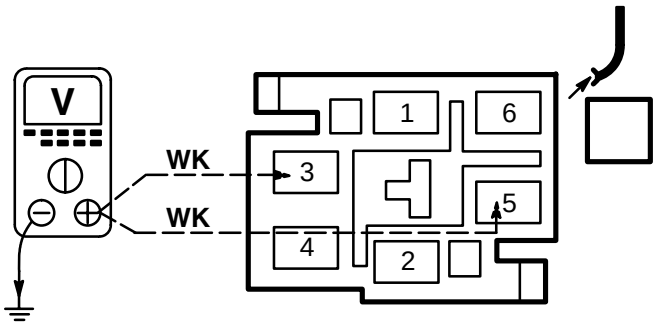
1E

R070008

PROBLEM CAUSE
- **Ignition Switch**

Position: II

RESULTS
BAT VOLT



X141, X162 Rear Window Console Switch

OK **PROBLEM CAUSE**
- **WK Wire**

OK

2E

1E

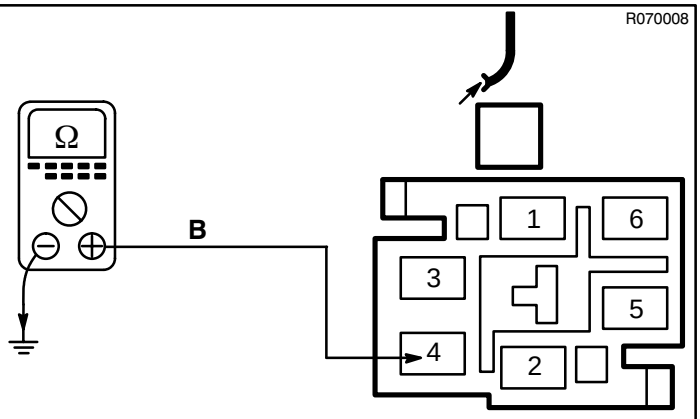
2E

R070008

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
Less than 1 ohm



X141, X162 Rear Window Console Switch

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

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

Test F

1F

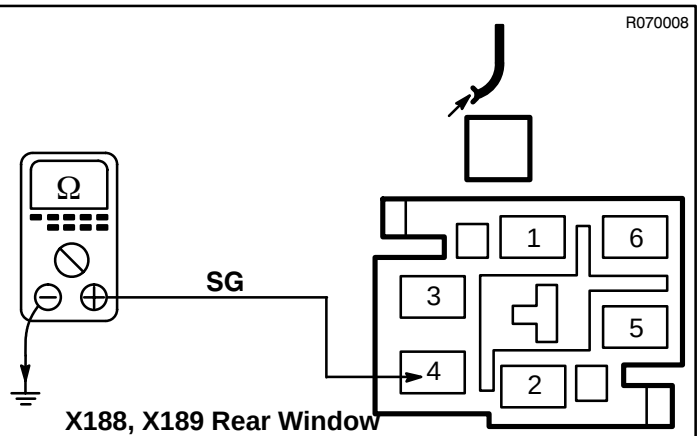
R070008

CONDITIONS
- **Ignition Switch**

Position: II
- **Rear Window Isolation Switch**

On

RESULTS
Less than 1 ohm



X188, X189 Rear Window Door Switch

OK **PROBLEM CAUSE**
- **SG Wire**

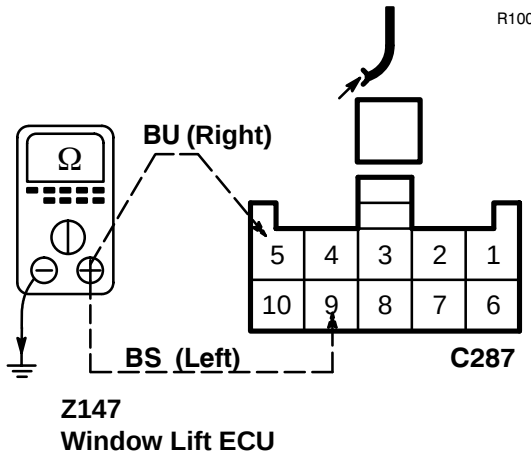
OK **PROBLEM CAUSE**
- **X188, X189 Rear Window Door Switch**

Test G

1G

CONDITIONS
- **Ignition Switch**
  Position: 0

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



OK **GO TO TEST H**

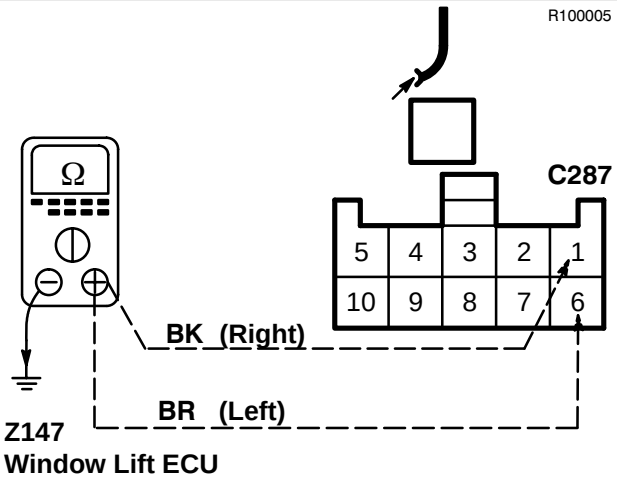
OK

2G

2G

CONDITIONS
- **Ignition Switch**
  Position: 0

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



OK **GO TO TEST H**

OK

3G

L1 ETM

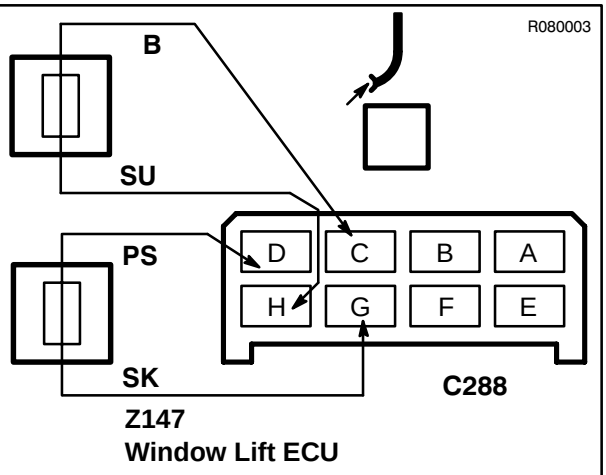
1995 RANGE ROVER

2G

3G

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Right Front Window**
  Operates
  Down



OK

PROBLEM CAUSE
- **SU Wire**
- **SK Wire**
- **Right Front Window Motor**

OK

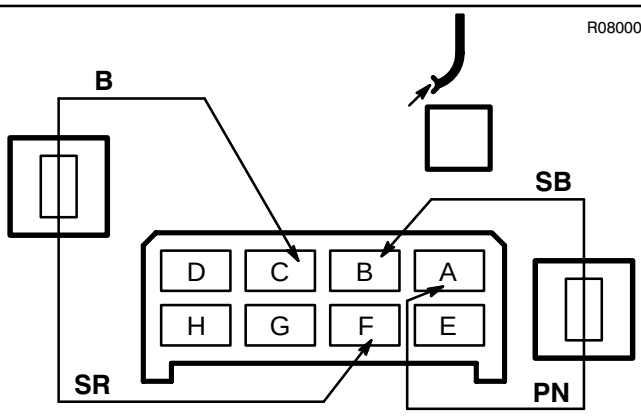
4G

4G

CONDITIONS
- **Ignition Switch**

Position: II

RESULTS
- **Left Front Window**
  Operates
  Up



OK

PROBLEM CAUSE
- **SB Wire**
- **SR Wire**
- **Left Front Window Motor**

OK

PROBLEM CAUSE
- **Window Lift ECU**

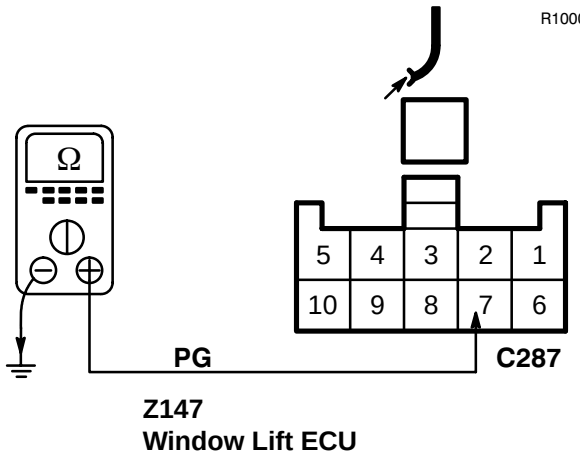
Test H

1H

R100005

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Left Front Door**
  Open = Less than 1 ohm
  Closed = More than 10K ohms

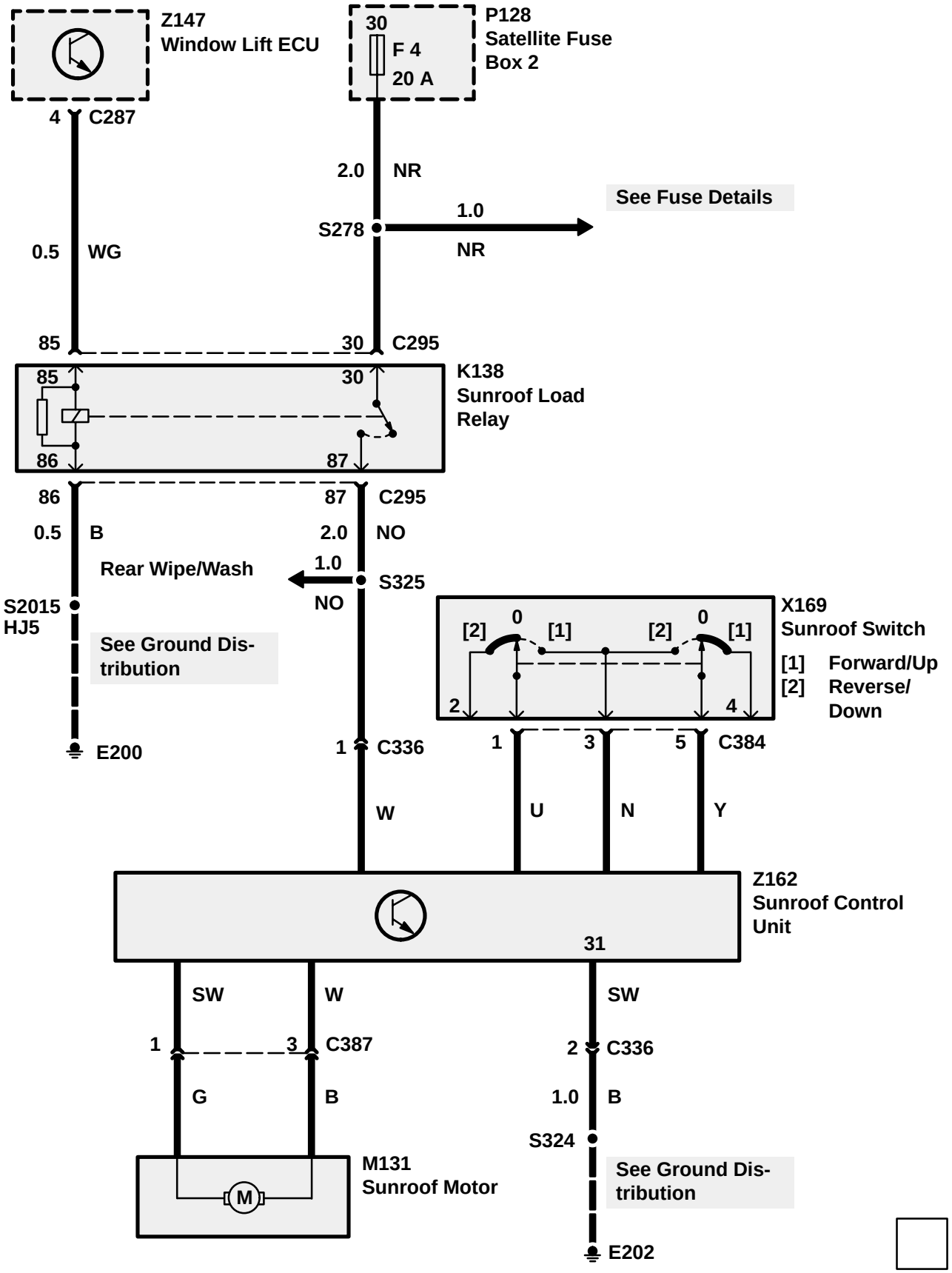


OK

PROBLEM CAUSE
- **PG Wire**
- **NAS PU Wire**
- **NAS Multi−Function Unit (MFU)**
- **Left Front Door Switch**

OK

PROBLEM CAUSE
- **Window Lift ECU**


Z147
Window Lift ECU
30
F 4
20 A
P128
Satellite Fuse
Box 2
4 C287
2.0 NR
See Fuse Details
1.0
S278
NR
0.5 WG
85
30 C295
K138
Sunroof Load
Relay
85
30
86
87
86
87 C295
0.5 B
2.0 NO
Rear Wipe/Wash
1.0
S325
NO
S2015
HJ5
See Ground Dis-
tribution
X169
Sunroof Switch
[2] 0 [1] [2] 0 [1]
[1] Forward/Up
[2] Reverse/
Down
2
4
E200
1 C336
1 3 5 C384
W
U
N
Y
Z162
Sunroof Control
Unit
31
SW
W
SW
1
3 C387
2 C336
G
B
1.0 B
S324
M131
Sunroof Motor
M
See Ground Dis-
tribution
E202

CIRCUIT OPERATION

Fuses F1 and F5 supply voltage to the Central Locking Control Unit (Z113). The control unit is grounded at terminal 11 to ground E200.

Inputs

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

Lock

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

Unlock

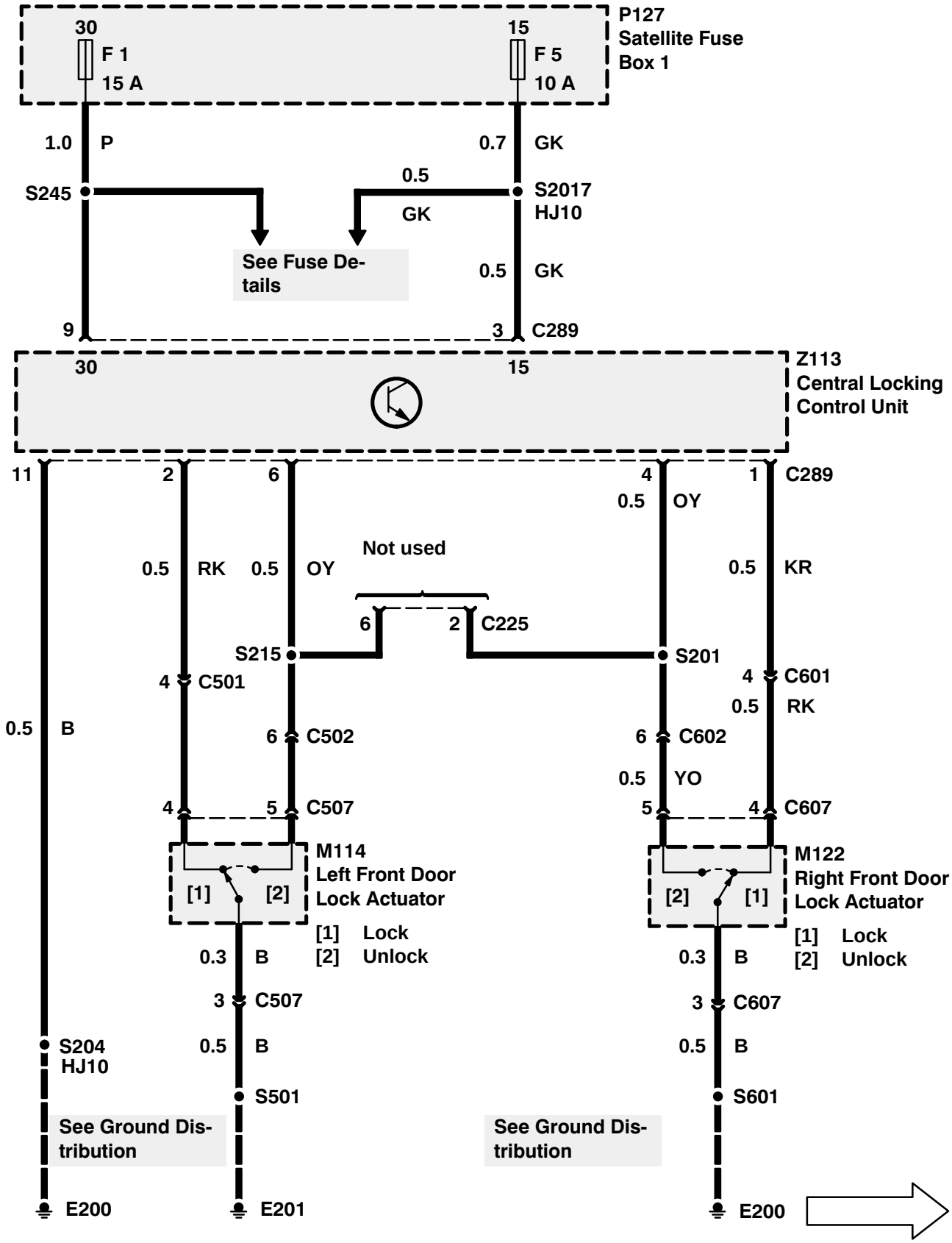
To unlock the doors and the tailgate the Central Locking Control Unit (Z113) momentarily applies battery voltage to the actuators through the O wire. The actuators are grounded by the Central Locking Control Unit through the K wire. The lock actuators now unlock.

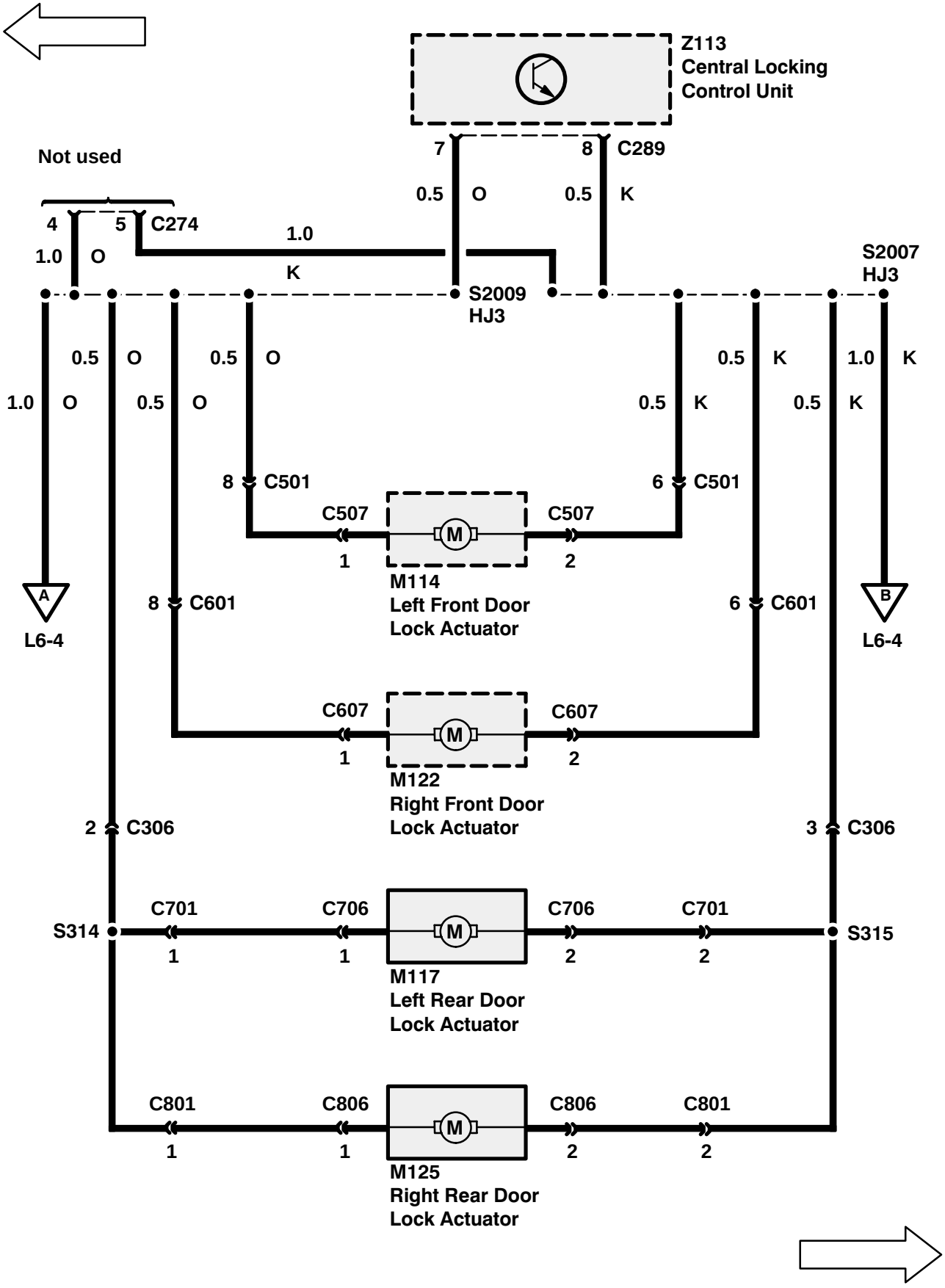
Fuel Flap

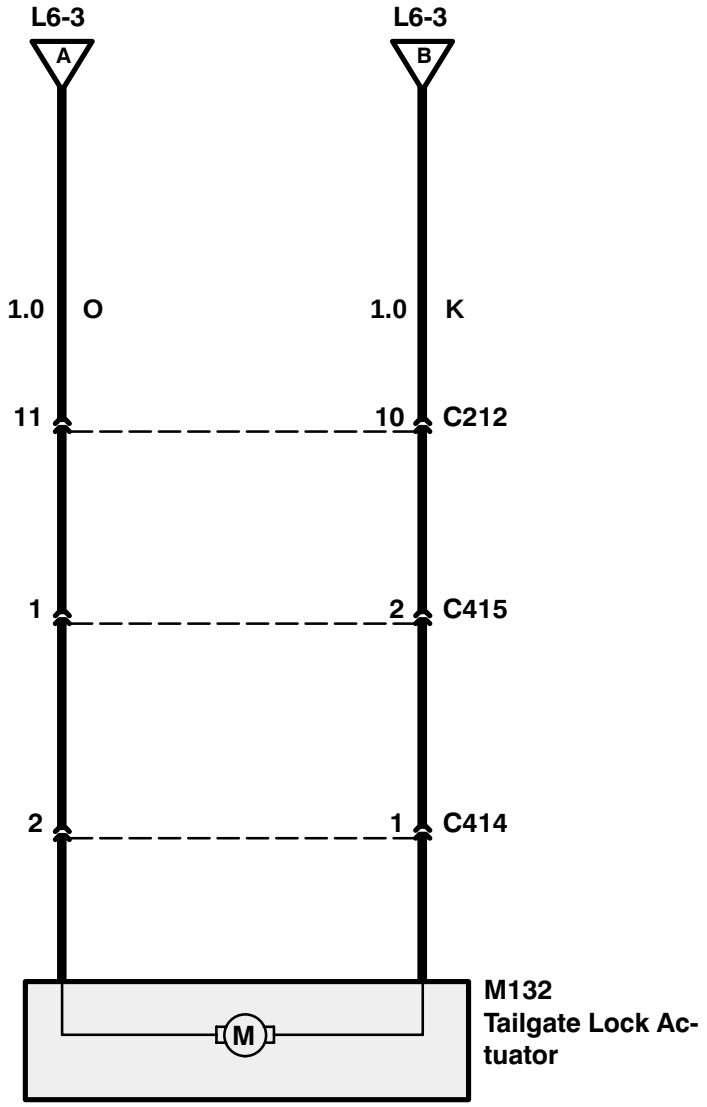
When the Fuel Flap Release Switch (X125) is operated, voltage from the Ignition Load Relay (K127) is applied to the Fuel Flap Actuator (M108) through the switch, the YR wire and the YP wire. Voltage is only applied when the Ignition Switch is not in Position II, to keep the fuel flap from being opened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

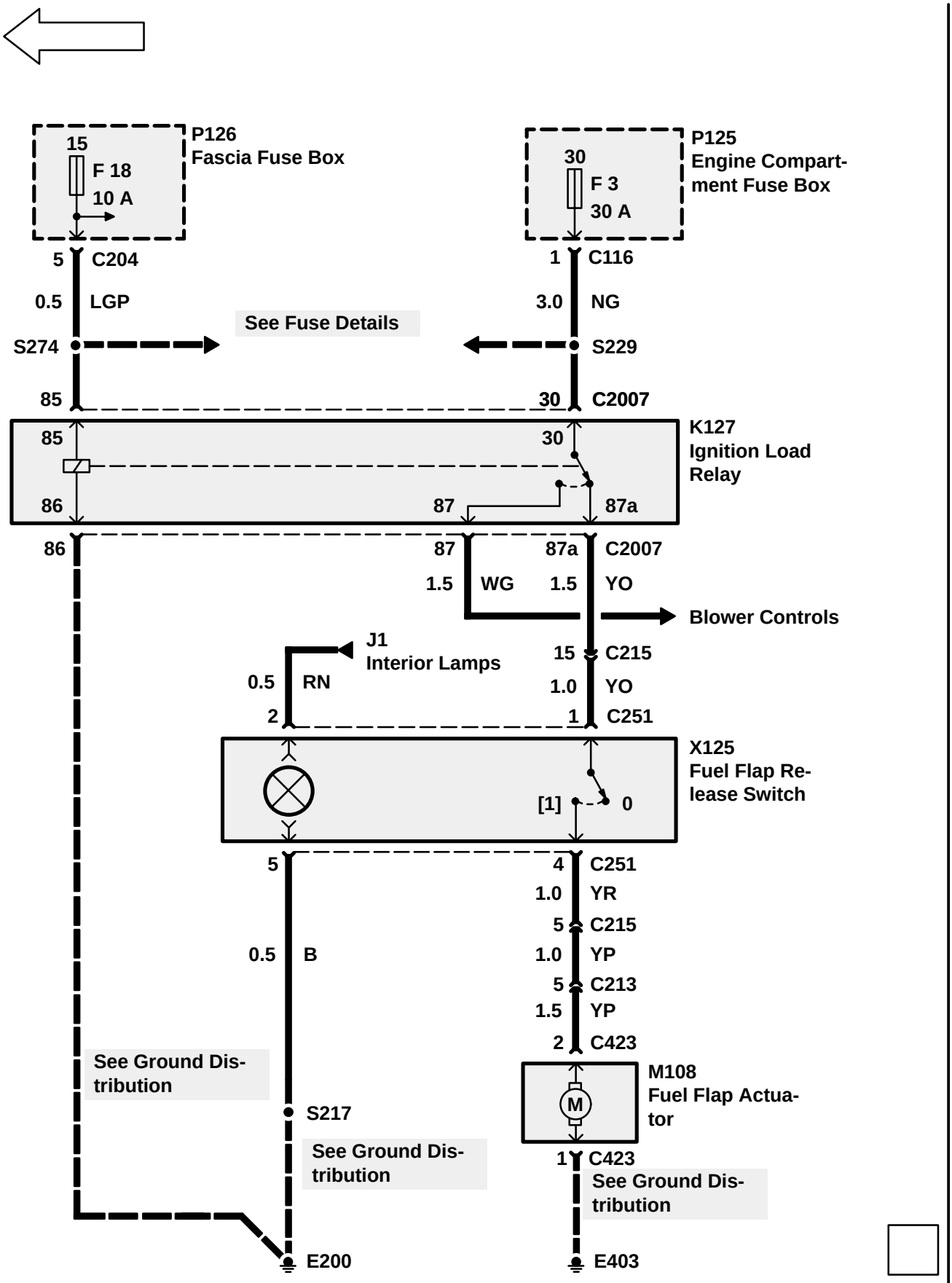
L6 ETM

1995 RANGE ROVER




Z113
Central Locking
Control Unit
7
8 C289
0.5 O
0.5 K
Not used
4
5 C274
1.0
1.0 O
1.0
K
S2007
HJ3
S2009
HJ3
0.5 O
0.5 O
0.5 K
1.0 K
1.0 O
0.5 O
0.5 K
0.5 K
8 C501
6 C501
C507
C507
1
2
M
M114
Left Front Door
Lock Actuator
A
L6-4
8 C601
6 C601
B
L6-4
C607
C607
1
2
M
M122
Right Front Door
Lock Actuator
2 C306
3 C306
S314
C701
C706
C706
C701
S315
1
1
2
2
M
M117
Left Rear Door
Lock Actuator
C801
C806
C806
C801
1
1
2
2
M
M125
Right Rear Door
Lock Actuator


L6-3
A
L6-3
B
1.0
O
1.0
K
11
10
C212
1
2
C415
2
1
C414
M
M132
Tailgate Lock Actuator


P126
Fascia Fuse Box
15
F 18
10 A
P125
Engine Compartment Fuse Box
30
F 3
30 A
5
C204
0.5
LGP
See Fuse Details
S274
1
C116
3.0
NG
S229
85
30
C2007
K127
Ignition Load Relay
85
30
86
87
87a
86
87
87a
C2007
1.5
WG
1.5
YO
Blower Controls
J1
Interior Lamps
15
C215
0.5
RN
1.0
YO
2
1
C251
X125
Fuel Flap Release Switch
[1]
0
5
4
C251
1.0
YR
5
C215
0.5
B
1.0
YP
5
C213
1.5
YP
2
C423
See Ground Distribution
M108
Fuel Flap Actuator
M
S217
See Ground Distribution
1
C423
See Ground Distribution
E200
E403

L6 ETM

TROUBLESHOOTING HINTS

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

SYSTEM DIAGNOSIS

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

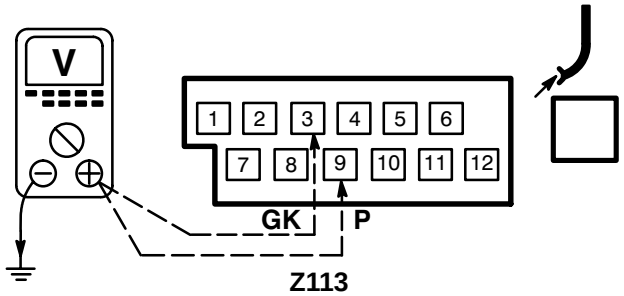
Test A

1A

R120003

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **F1 Fuse**
- **F5 Fuse**
- **GK Wire**
- **P Wire**

OK

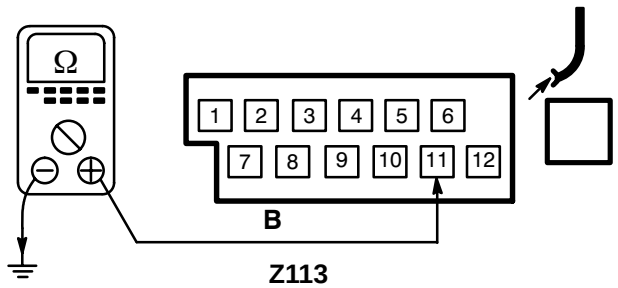
2A

2A

R120003

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK **PROBLEM CAUSE**
- **O Wire**
- **K Wire**
- **Central Locking Control Unit**

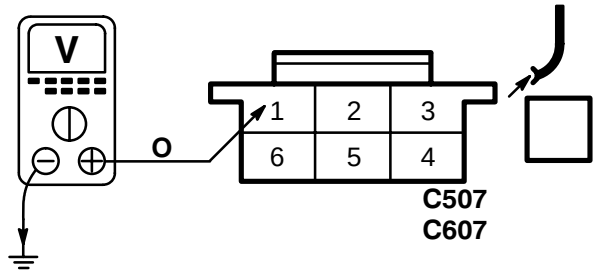
Test B

1B

R060009

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

RESULTS
BAT VOLT (Momentary)



M114, M122 Front Door Lock Actuator

OK **PROBLEM CAUSE**
- **O Wire**

OK

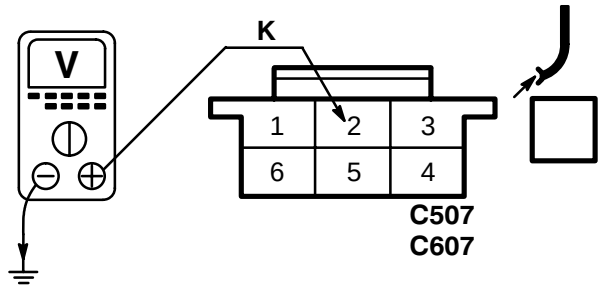
2B

2B

R060009

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**

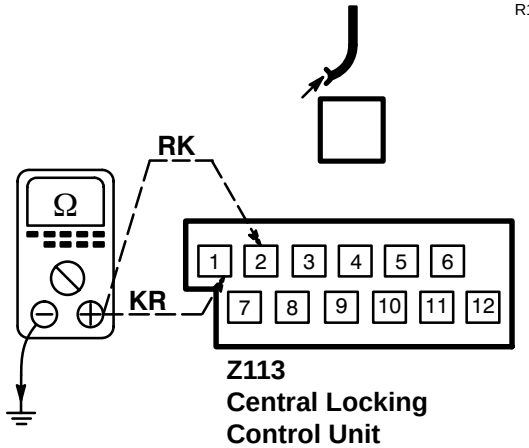
Test C

1C

R120003

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Unlocked

RESULTS
More than 1000 ohms



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

OK

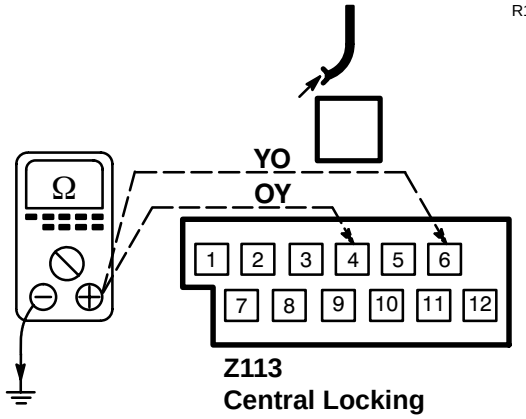
2C

2C

R120003

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Locked

RESULTS
More than 1000 ohms



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

OK **PROBLEM CAUSE**
- **Central Locking Control Unit**

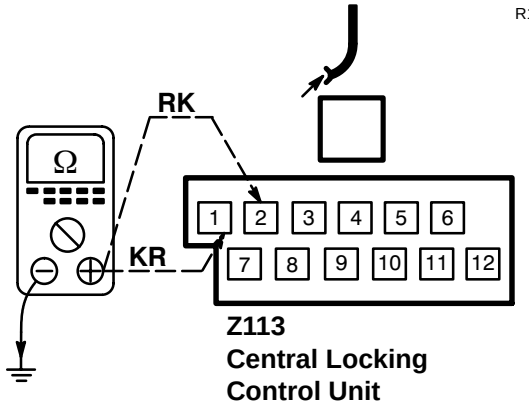
Test D

1D

R120003

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Locked

RESULTS
Less than 1 ohm



Z113
Central Locking
Control Unit

OK **GO TO TEST 3D**

OK

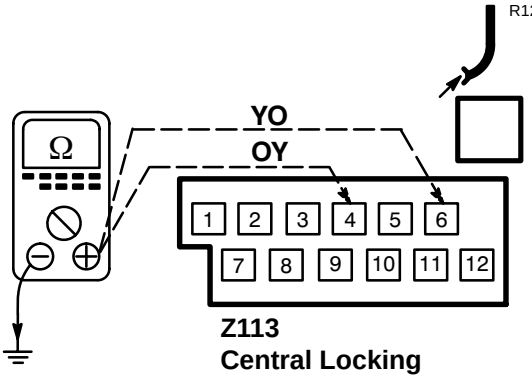
2D

2D

R120003

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Unlocked

RESULTS
Less than 1 ohm



Z113
Central Locking
Control Unit

OK

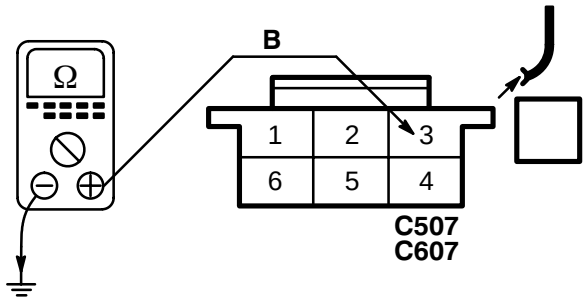
3D

OK **PROBLEM CAUSE**
- **Central Locking Control Unit**

2D

3D

R060009



CONDITIONS

- **Ignition Switch**
  Position: 0

RESULTS

Less than 1 ohm

M114, M122 Front Door Lock Actuator

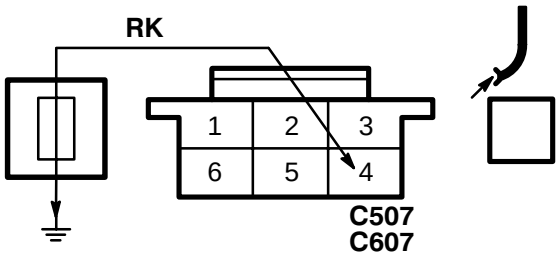
OK **PROBLEM CAUSE**
- **B Wire**

OK

4D

4D

R060009



CONDITIONS

- **Ignition Switch**
  Position: II
- **All doors**
  Unlocked

RESULTS

- **All doors**
  Lock

M114, M122 Front Door Lock Actuator

OK **PROBLEM CAUSE**
- **RK, KR Wire**
- **Central Locking Control Unit**

OK

5D

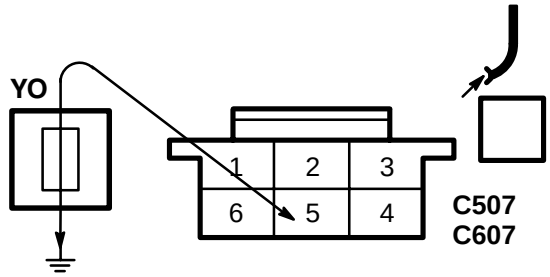
4D

5D

R060009

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Locked

RESULTS
- **All doors**
  Unlock



M114, M122 Front Door Lock Actuator

OK **PROBLEM CAUSE**
- **YO, OY Wire**
- **Central Locking Control Unit**

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

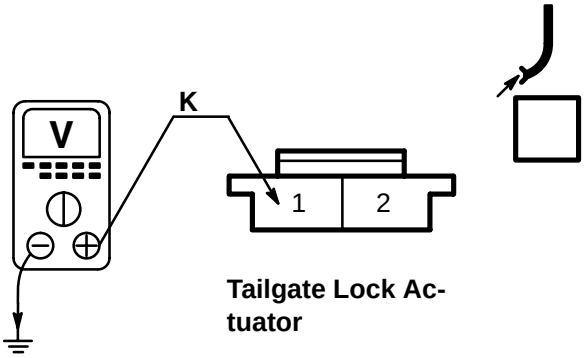
Test E

1E

R020029

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

RESULTS
BAT VOLT (Momentary)



Tailgate Lock Actuator

OK **PROBLEM CAUSE**
- **K Wire**

OK

2E

1E

2E

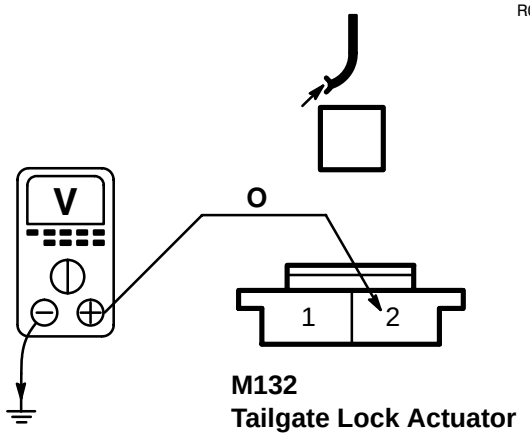
R020029

CONDITIONS

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

RESULTS

BAT VOLT (Momentary)



M132
Tailgate Lock Actuator

OK **PROBLEM CAUSE**
- **O Wire**

OK **PROBLEM CAUSE**
- **Tailgate Lock Actuator**

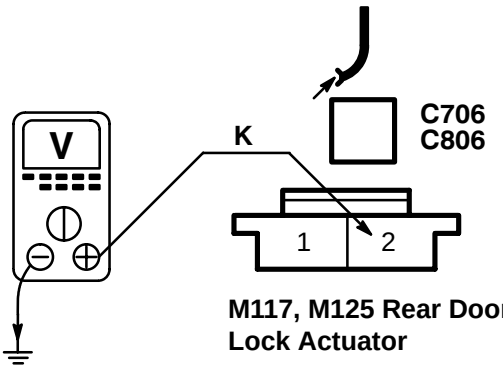
Test F

1F

R020029

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

RESULTS
BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- **K Wire**

OK

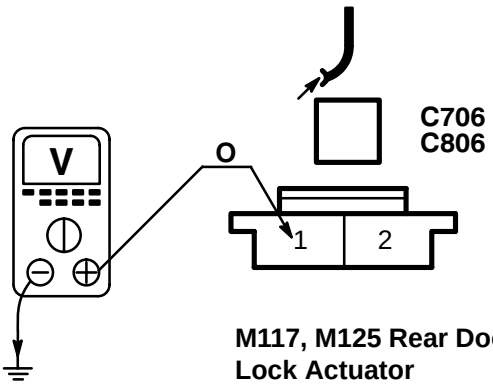
2F

2F

R020029

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

RESULTS
BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- **O Wire**

OK **PROBLEM CAUSE**
- **M117, M125 Rear Door Lock Actuator**

Test G

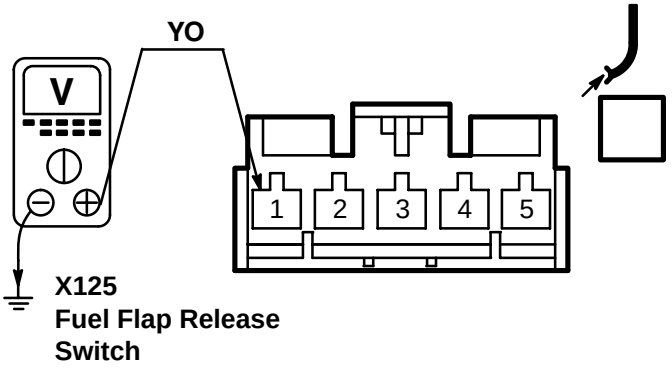
1G

R050002.00

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **F 3 Fuse**
- **YO Wire**
- **NG Wire**
- **Ignition Load Relay**

OK

2G

2G

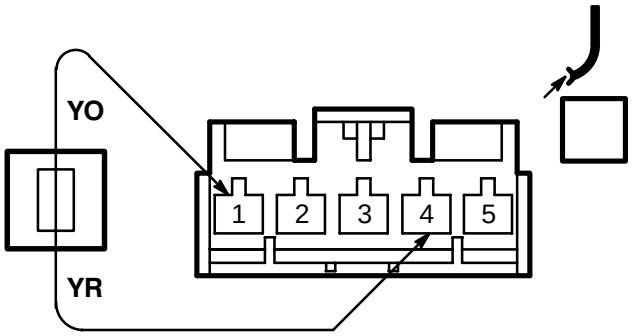
R050002.00

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
- **Fuel flap**

Released

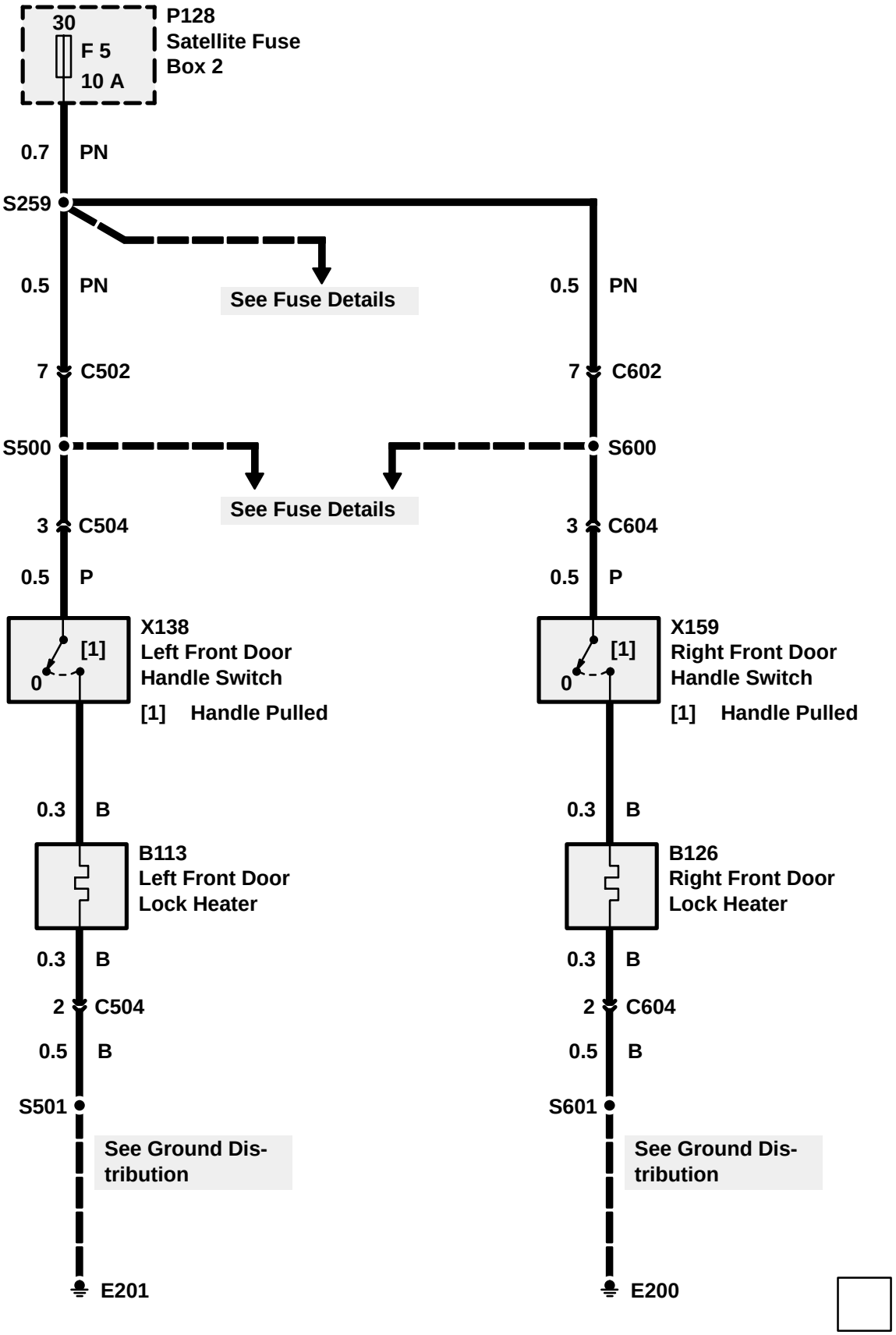


OK

PROBLEM CAUSE
- **YR Wire**
- **YP Wire**
- **B Wire**
- **Fuel Flap Actuator**

OK

PROBLEM CAUSE
- **Fuel Flap Release Switch**


30
F 5
10 A
P128
Satellite Fuse
Box 2
0.7 PN
S259
0.5 PN
See Fuse Details
0.5 PN
7 C502
7 C602
S500
S600
See Fuse Details
3 C504
3 C604
0.5 P
0.5 P
[1]
0
X138
Left Front Door
Handle Switch
[1] Handle Pulled
[1]
0
X159
Right Front Door
Handle Switch
[1] Handle Pulled
0.3 B
0.3 B
B113
Left Front Door
Lock Heater
B126
Right Front Door
Lock Heater
0.3 B
0.3 B
2 C504
2 C604
0.5 B
0.5 B
S501
S601
See Ground Dis-
tribution
See Ground Dis-
tribution
E201
E200

CIRCUIT OPERATION

When the Ignition Switch (X134) is in position I or II, the Right Seat Power Relay (K131) is energized, applying ground to the Left Seat Power Relay (K113).

The Left Seat Power Relay (K113) energizes, applying battery voltage to the Left Front Seat Control Switch (X152).

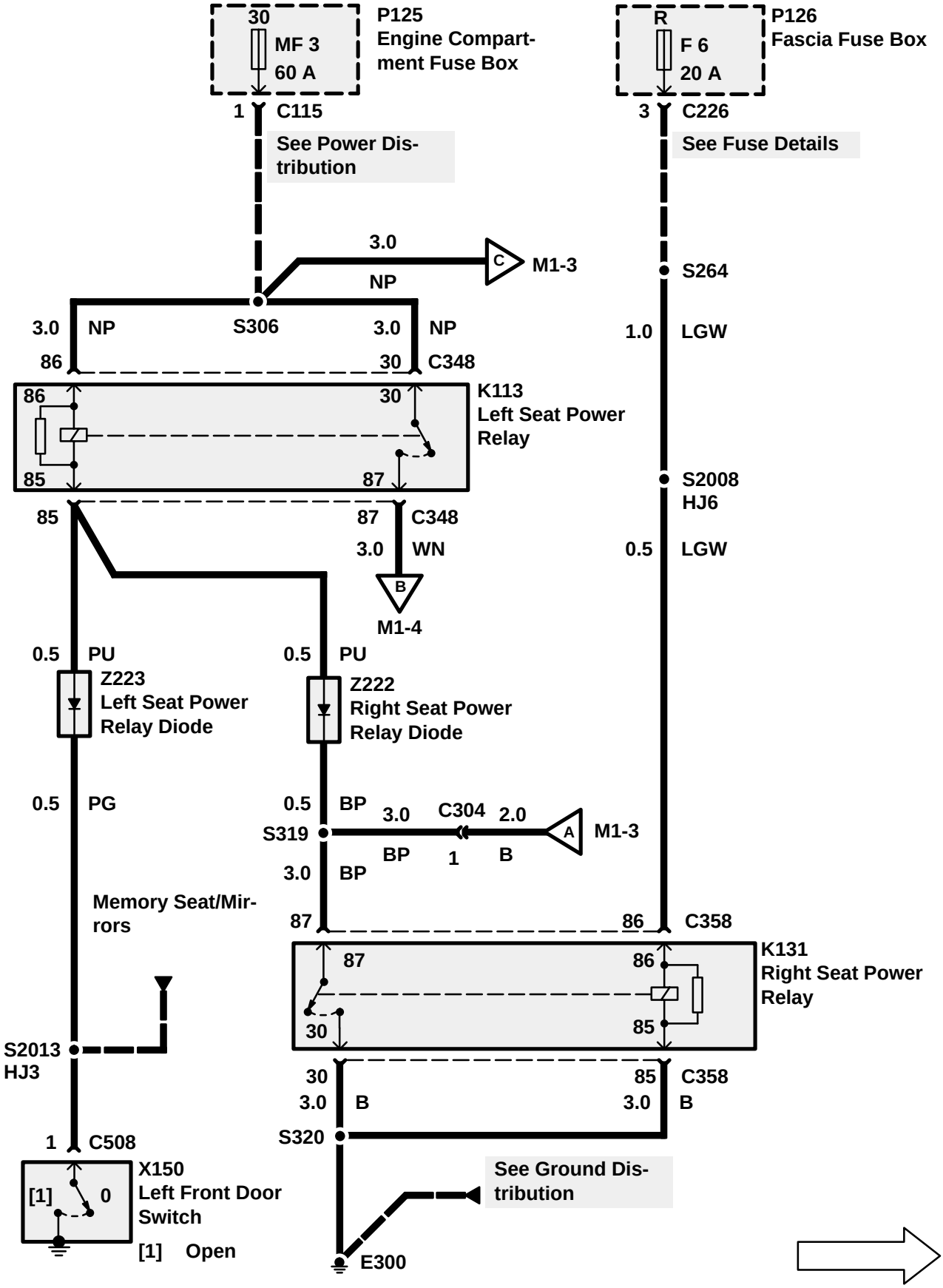
The Left Front Seat Control Switch (X152) controls 4 seat control motors via 8 switches. When each switch is moved to operate its corresponding motor, one seat switch applies ground while the other applies battery voltage to the respective seat motor. The motor turns to adjust the seat in the requested direction.

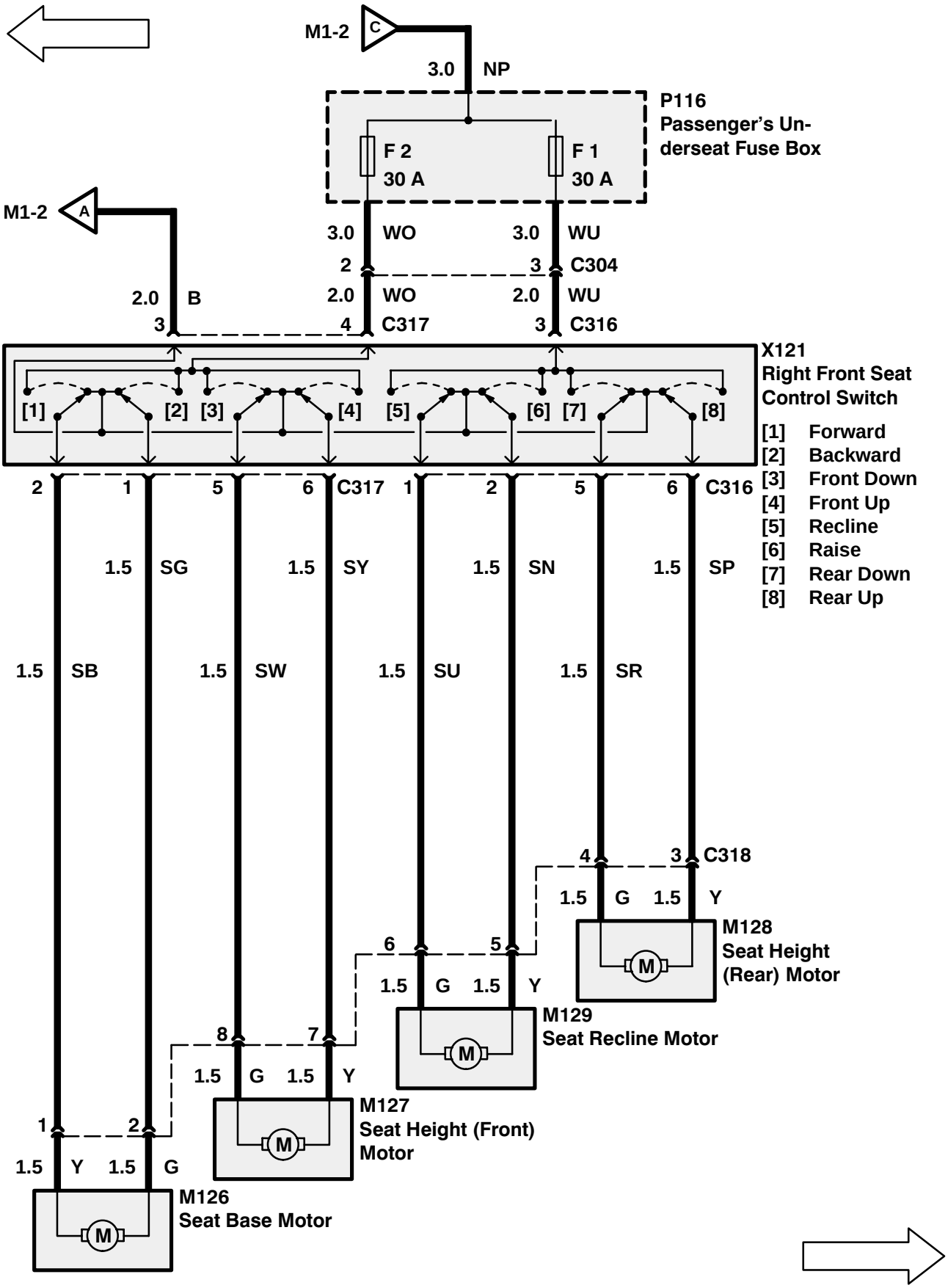
Passenger Seat

Battery voltage is applied to the Right Front Seat Control Switch (X121) at all times. When the Ignition Switch (X134) is in position I or II, the Right Seat Power Relay (K131) is energized, applying ground to the Right Front Seat Control Switch (X121). The Right Front Seat Control Switch (X121) controls 4 seat control motors via 8 switches. When each switch is moved to operate its corresponding motor, one seat switch applies ground while the other applies battery voltage to the respective seat motor. The motor turns to adjust the seat in the requested direction.

M1 ETM

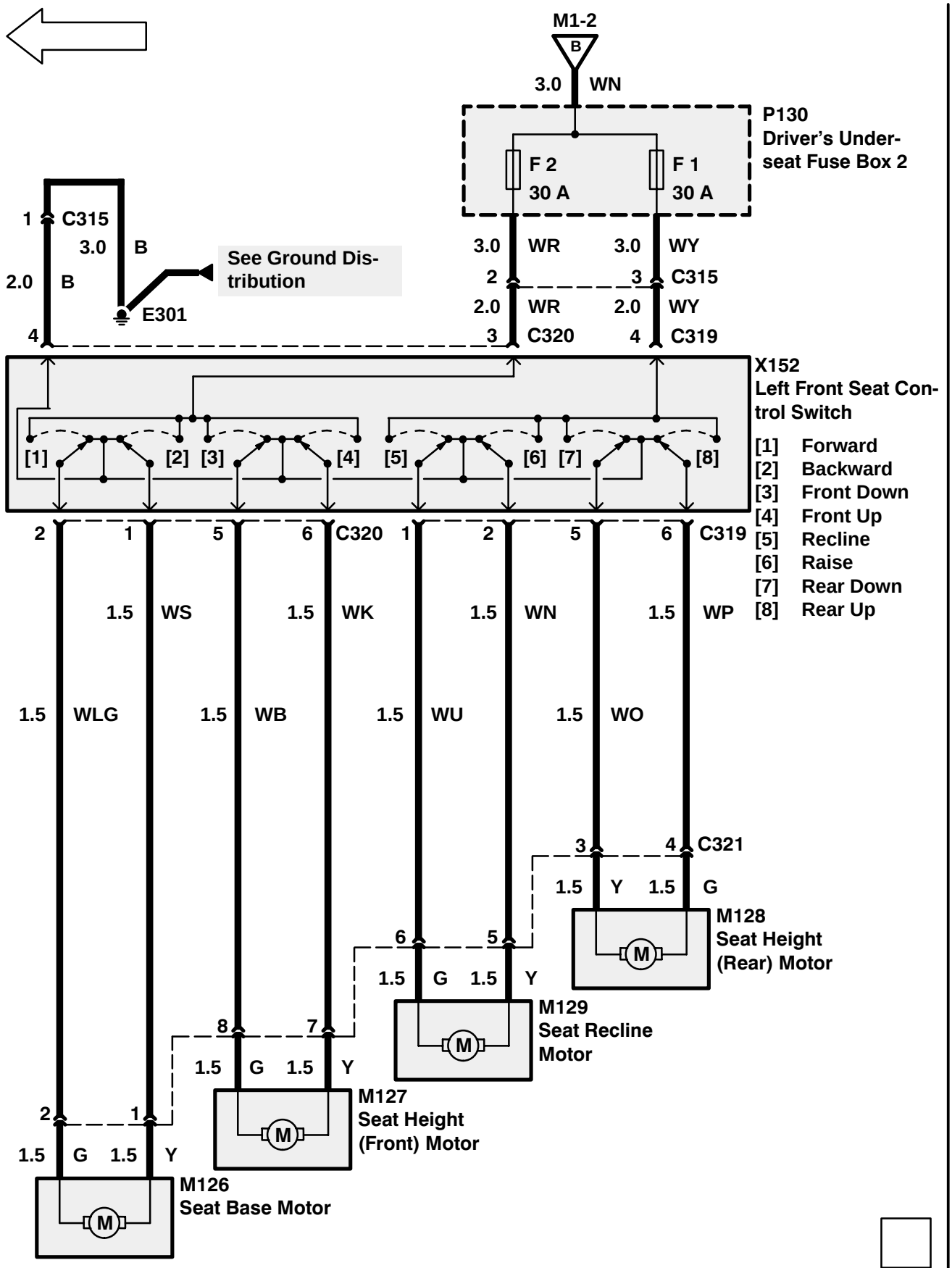
1995 RANGE ROVER




M1-2 C
3.0 NP
P116
Passenger's Underseat Fuse Box
F 2
30 A
F 1
30 A
M1-2 A
3.0 WO
3.0 WU
2
3 C304
2.0 B
2.0 WO
2.0 WU
3
4 C317
3 C316
X121
Right Front Seat
Control Switch
[1] [2] [3] [4] [5] [6] [7] [8]
[1] Forward
[2] Backward
[3] Front Down
[4] Front Up
[5] Recline
[6] Raise
[7] Rear Down
[8] Rear Up
2 1 5 6 C317
1 2 5 6 C316
1.5 SG
1.5 SY
1.5 SN
1.5 SP
1.5 SB
1.5 SW
1.5 SU
1.5 SR
4 3 C318
1.5 G 1.5 Y
M128
Seat Height
(Rear) Motor
6 5
1.5 G 1.5 Y
M129
Seat Recline Motor
8 7
1.5 G 1.5 Y
M127
Seat Height (Front)
Motor
1 2
1.5 Y 1.5 G
M126
Seat Base Motor

M1 ETM

1995 RANGE ROVER



TROUBLESHOOTING HINTS

9. If the Right Front seat does not operate, check Maxi Fuse® MF3 of the Engine Compartment Fusebox (P125), Fuses F1 and F2 of Passenger's Underseat Fusebox (P116) and Fuse F6 of Fascia Fusebox (P126).
10. If the Left Front seat does not operate, check Maxi Fuse® MF3 of the Engine Compartment Fuse Box (P125) and Fuses F1, F2 of the Driver's Underseat Fuse Box (P130).
11. If both seats do not operate with the Left Front door closed, check Right Seat Power Relay (K131), B and BP wire.

SYSTEM DIAGNOSIS

1. If the Right Front seat does not move in any direction, do Test A.
2. If some, but not all, of the Right Front power seat functions operate, do Test B.
3. If the Right Front seat is not moving forward or backward, do Test C.
4. If the rear of the Right Front seat does not move up or down, do Test D.
5. If the Right Font seatback does not move forward or recline, do Test E.
6. If the front of the Right Front seat does not move up or down, do Test F.
7. If the Left Front seat does not move in any direction, do Test G.
8. If some, but not all, of the Left Front seat functions operate, do Test H.
9. If the Left Front seat is not moving forward or backward, do Test I.
10. If the rear of the Left Front seat does not move up or down, do Test J.
11. If the Left Front seatback does not move forward or recline, do Test K.
12. If the front of the Left Front seat does not move up or down, do Test L.

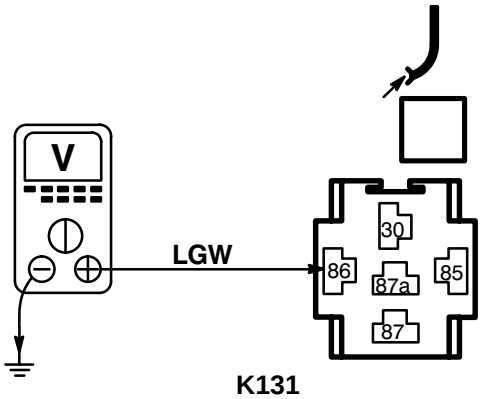
Test A

1A

R050001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
BAT VOLT



K131
Right Seat Power Relay

OK **PROBLEM CAUSE**
- **LGW Wire**
- **F6 Fuse**

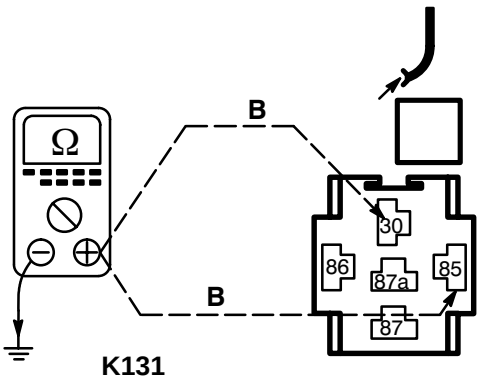
OK → 2A

2A

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



K131
Right Seat Power Relay

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

OK → 3A

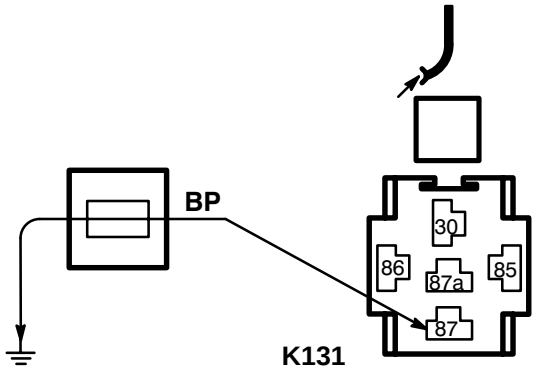
2A

3A

R050001

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
Seat
Operates



OK **PROBLEM CAUSE**
- **BP Wire**
- **B Wire**

OK **PROBLEM CAUSE**
- **Right Seat Power Relay**

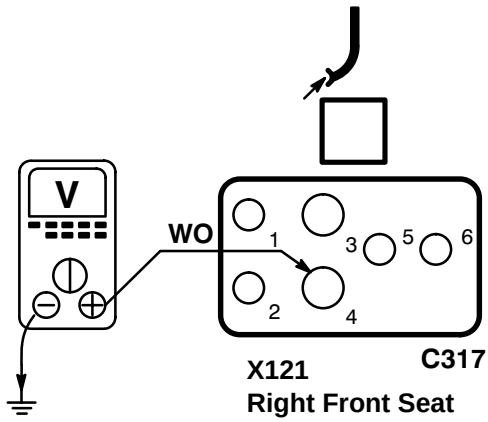
Test B

1B

R060015

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **F2 Fuse**
- **WO Wire**

OK

2B

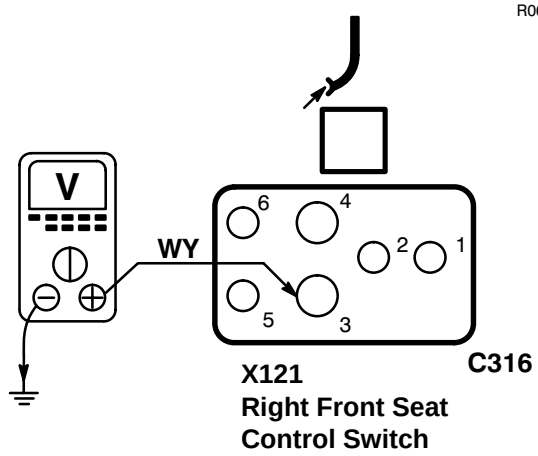
1B

2B

R060014

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **F1 Fuse**
- **WU Wire**

OK **PROBLEM CAUSE**
- **Right Front Seat Control Switch**

Test C

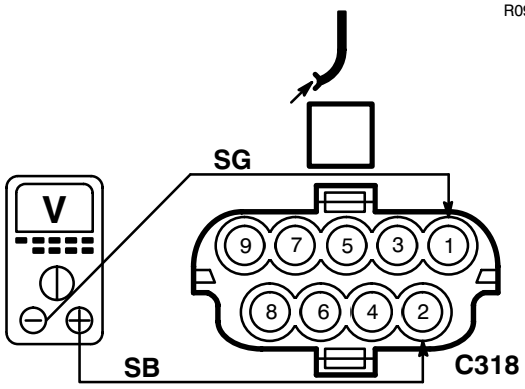
1C

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Right Front Seat Control Switch**

Forward
+BAT VOLT
Backward
−BAT VOLT



OK **PROBLEM CAUSE**
- **SG Wire**
- **SB Wire**
- **Right Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Seat Base Motor**

Test D

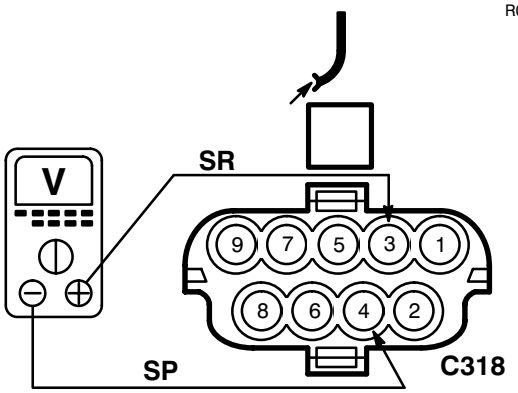
1D

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Right Front Seat Control Switch**

Rear up
−BAT VOLT
Rear down
+BAT VOLT



Seat motors connector

OK **PROBLEM CAUSE**
- **SR Wire**
- **SP Wire**
- **Right Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Seat Height (Rear) Motor**

Test E

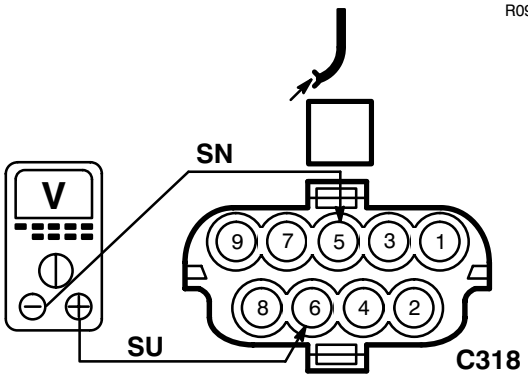
1E

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Right Front Seat Control Switch**

Recline
+BAT VOLT
Raise
−BAT VOLT



Seat motors connector

OK **PROBLEM CAUSE**
- **SN Wire**
- **SU Wire**
- **Right Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Seat Recline Motor**

Test F

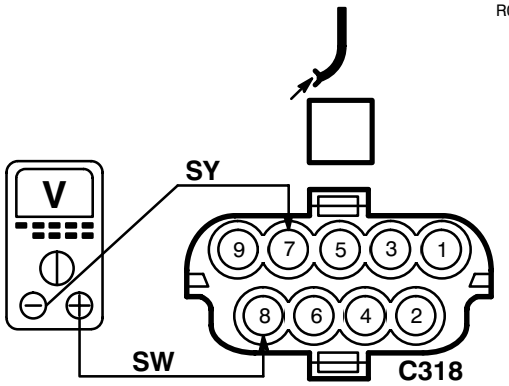
1F

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Right Front Seat Control Switch**

Front down
+BAT VOLT
Front up
–BAT VOLT



Seat motors connector

OK

PROBLEM CAUSE
- **SY Wire**
- **SW Wire**
- **Right Front Seat Control Switch**

OK

PROBLEM CAUSE
- **Seat Height (Front) Motor**

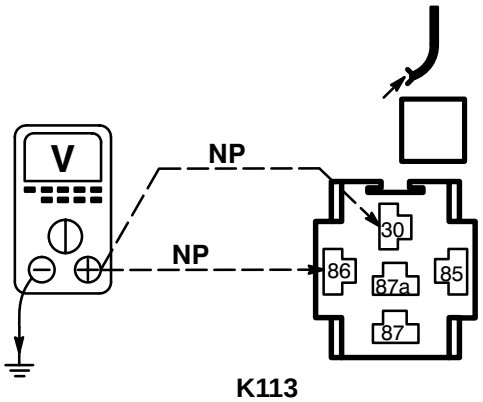
Test G

1G

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K113
Left Seat Power Relay

OK **PROBLEM CAUSE**
- **NP Wire**

OK

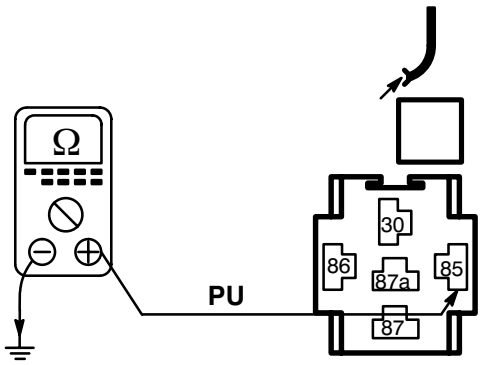
2G

2G

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Left Front Door**
  Closed

RESULTS
Less than 1 ohm



K113
Left Seat Power Relay

OK **PROBLEM CAUSE**
- **PU Wire**
- **PG Wire**
- **Left Seat Power Relay Diode**
- **Left Front Door Switch**

OK

3G

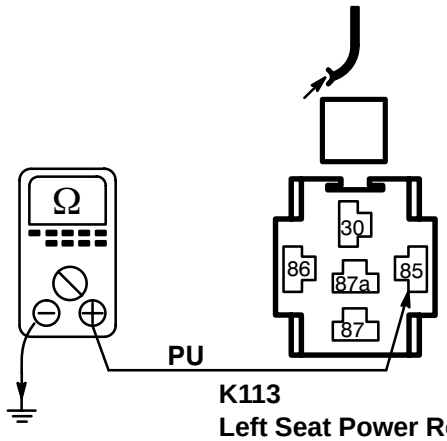
2G

3G

R050001

CONDITIONS
- **Ignition Switch**
  Position: II
- **Left Front Door**
  Open

RESULTS
Less than 1 ohm



K113
Left Seat Power Relay

OK **PROBLEM CAUSE**
- **BP Wire**
- **PU Wire**
- **Right Seat Power Relay Diode**

OK **PROBLEM CAUSE**
- **Left Seat Power Relay**

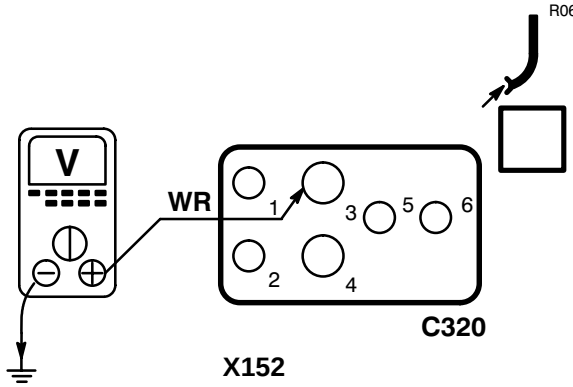
Test H

1H

R060015

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
BAT VOLT



C320

X152
Left Front Seat Control Switch

OK **PROBLEM CAUSE**
- **F2 Fuse**
- **WR Wire**

OK

2H

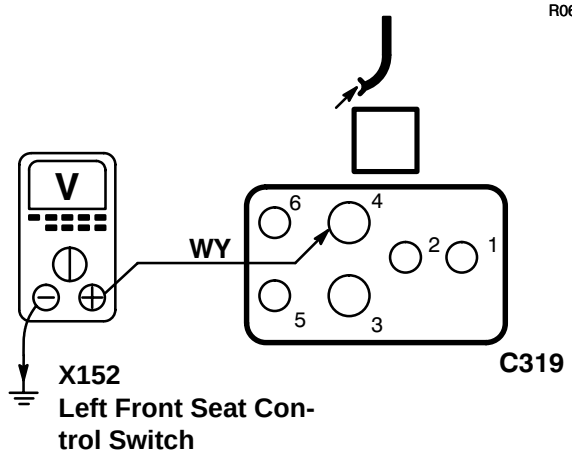
1H

2H

R060014

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **F1 Fuse**
- **WY Wire**

OK **PROBLEM CAUSE**
- **Left Front Seat Control Switch**

Test I

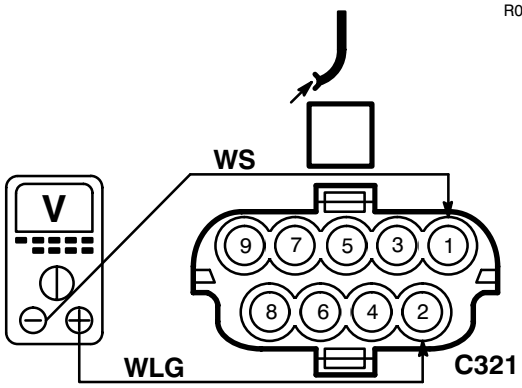
1I

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Left Front Seat Control Switch**

Forward
+BAT VOLT
Backward
−BAT VOLT



OK **PROBLEM CAUSE**
- **WLG Wire**
- **WS Wire**
- **Left Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Seat Base Motor**

Test J

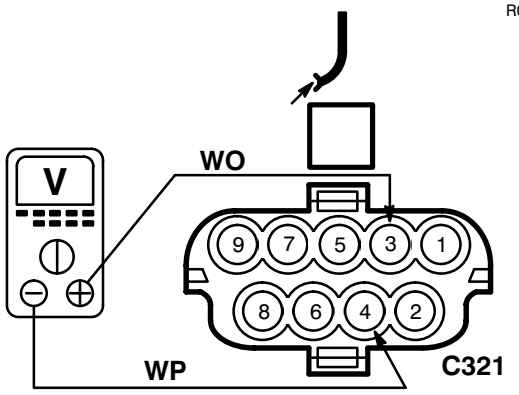
1J

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Left Front Seat Control Switch**

Rear up
−BAT VOLT
Rear down
+BAT VOLT



Seat motors connector

OK **PROBLEM CAUSE**
- **WP Wire**
- **WO Wire**
- **Left Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Seat Height (Rear) Motor**

Test K

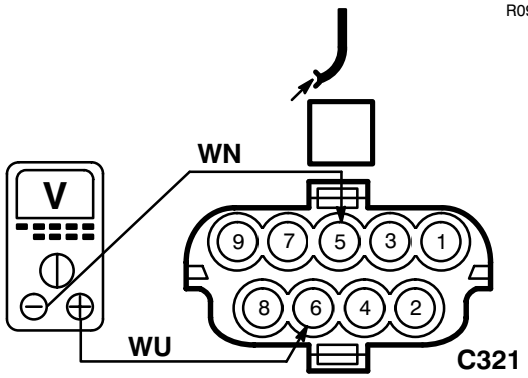
1K

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Left Front Seat Control Switch**

Recline
+BAT VOLT
Raise
−BAT VOLT



Seat motors connector

OK **PROBLEM CAUSE**
- **WU Wire**
- **WN Wire**
- **Left Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Seat Recline Motor**

Test L

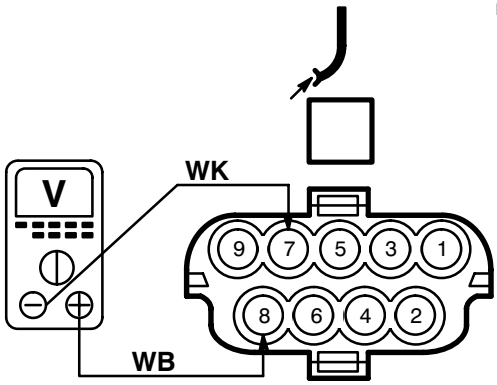
1L

R090001

CONDITIONS
- **Ignition Switch**
  Position: I

RESULTS
- **Left Front Seat Control Switch**

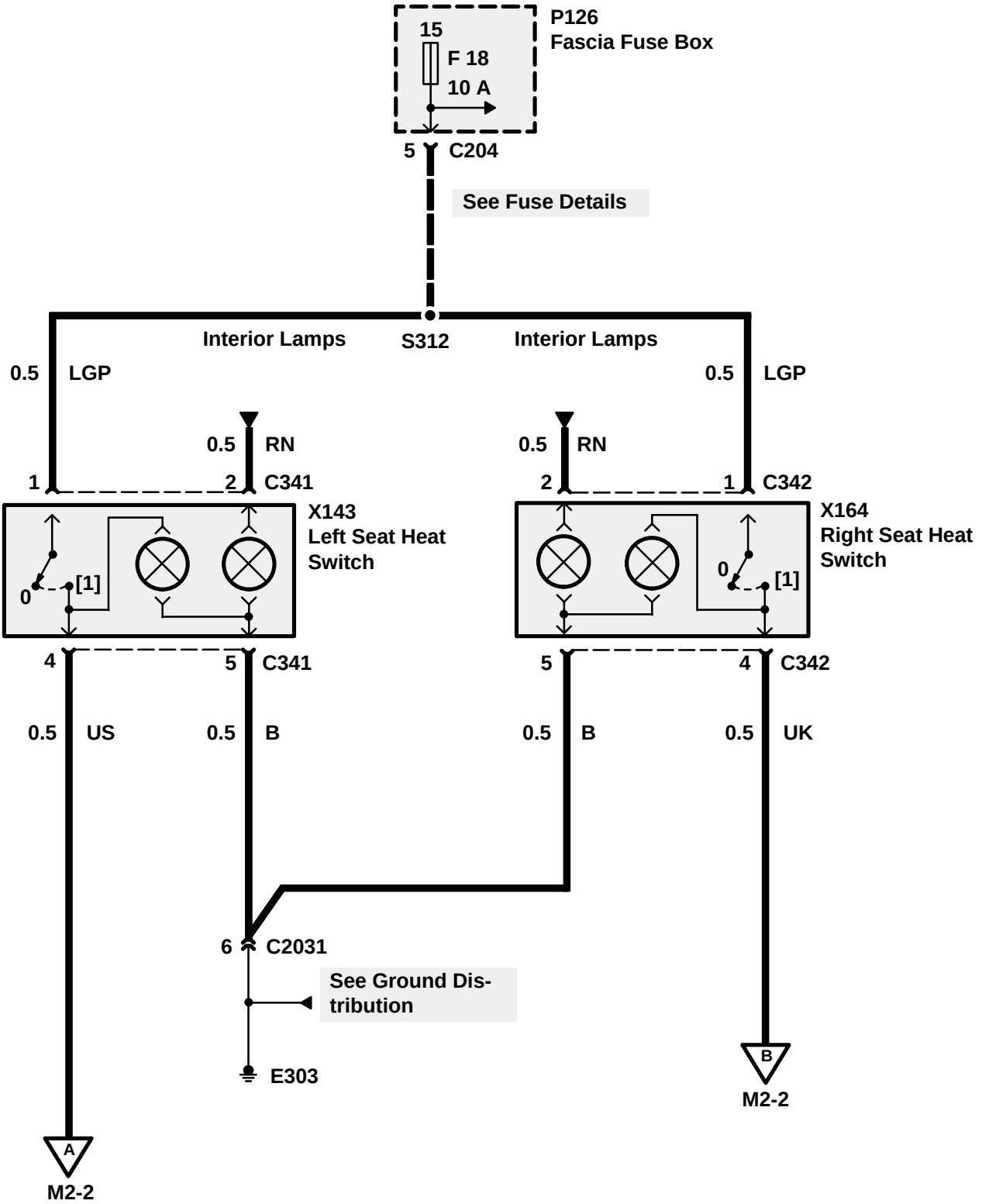
Front down
+BAT VOLT
Front up
−BAT VOLT



Seat motors connector

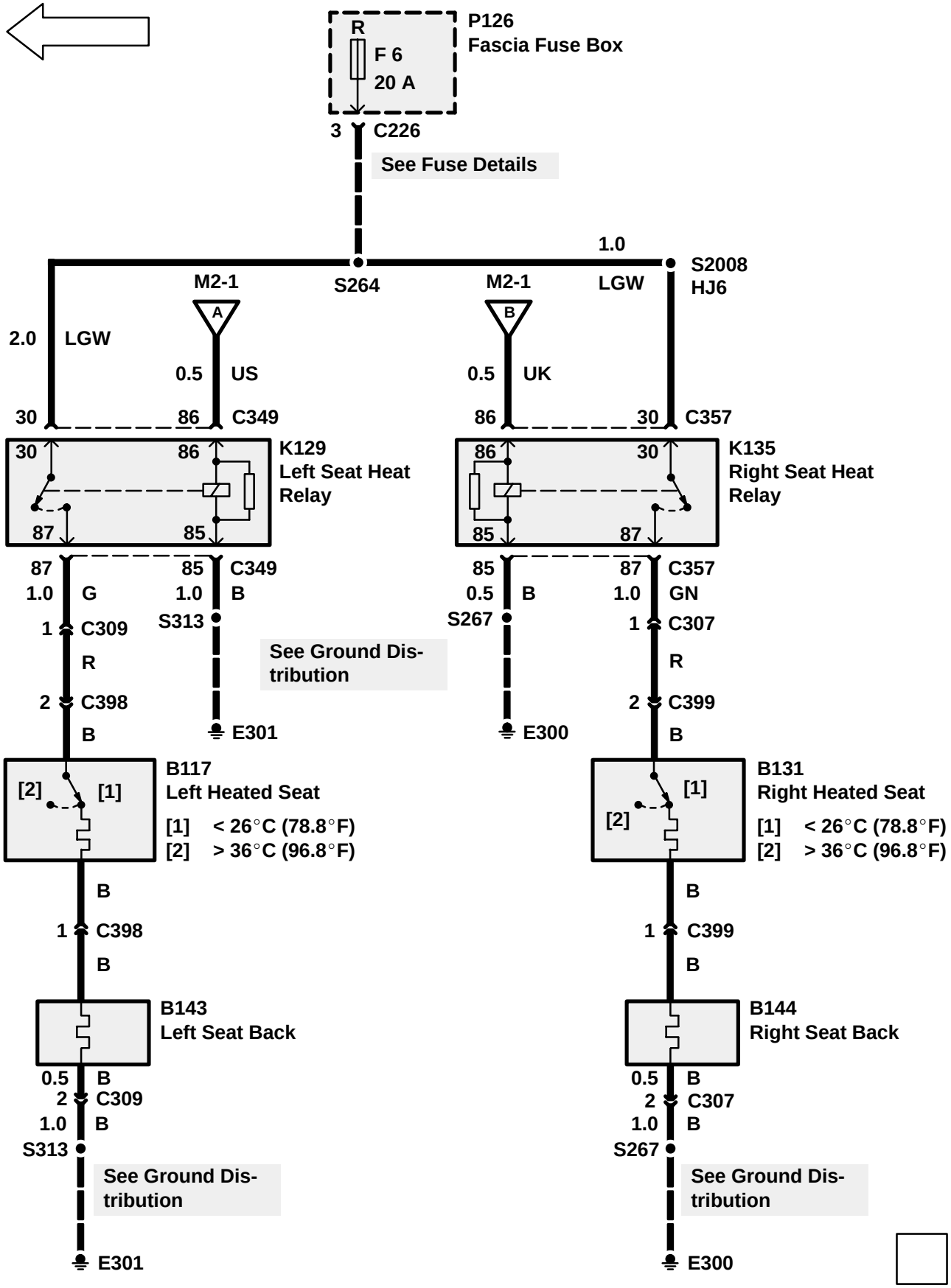
OK **PROBLEM CAUSE**
- **WB Wire**
- **WK Wire**
- **Left Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Seat Height (Front) Motor**


P126
Fascia Fuse Box
15
F 18
10 A
5 C204
See Fuse Details
Interior Lamps
S312
Interior Lamps
0.5 LGP
0.5 LGP
0.5 RN
0.5 RN
1
2 C341
2
1 C342
X143
Left Seat Heat
Switch
X164
Right Seat Heat
Switch
0
[1]
0
[1]
4
5 C341
5
4 C342
0.5 US
0.5 B
0.5 B
0.5 UK
6 C2031
See Ground Dis-
tribution
E303
A
M2-2
B
M2-2

M2 ETM

1995 RANGE ROVER



CIRCUIT OPERATION

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

Left/Right Movement

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

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

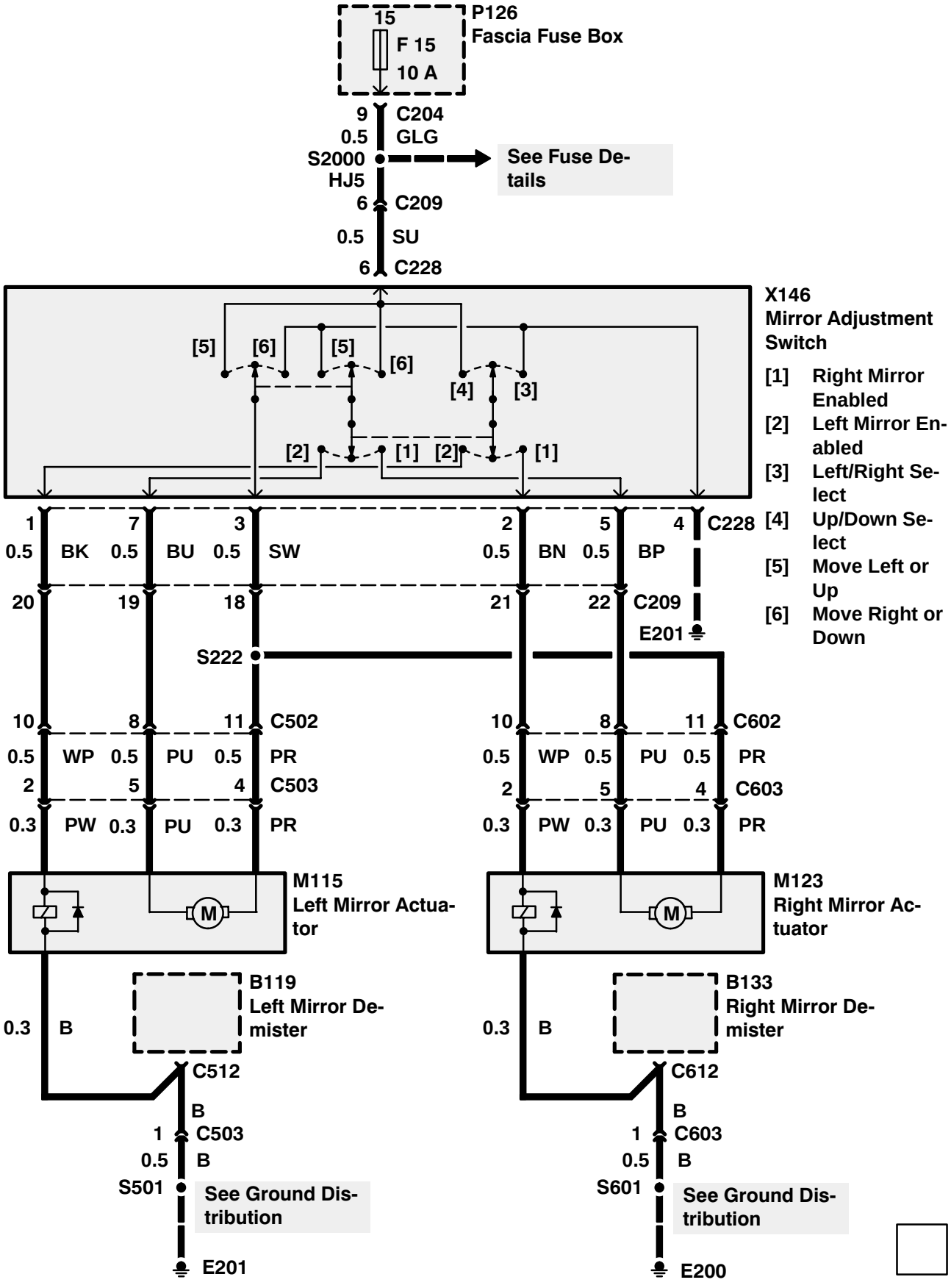
UP/Down Movement

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

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

M3 ETM

1995 RANGE ROVER



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.

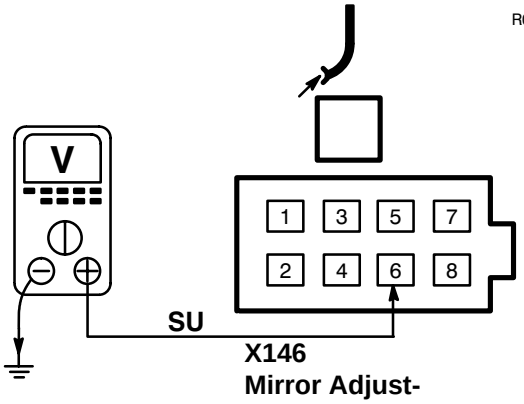
Test A

1A

R080015

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK

PROBLEM CAUSE
- **F15 Wire**
- **GLG Wire**
- **SU Wire**

OK

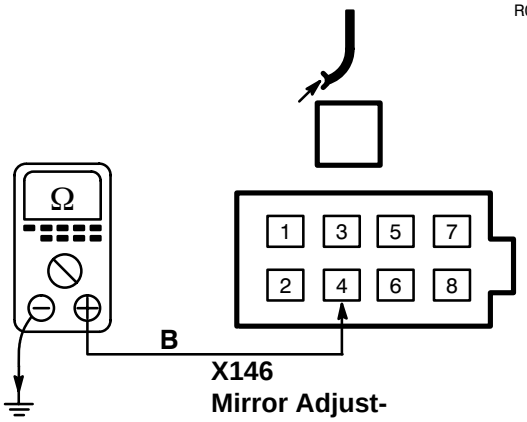
2A

2A

R080015

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **B Wire**
- **Ground Connec-
  tions**

OK

3A

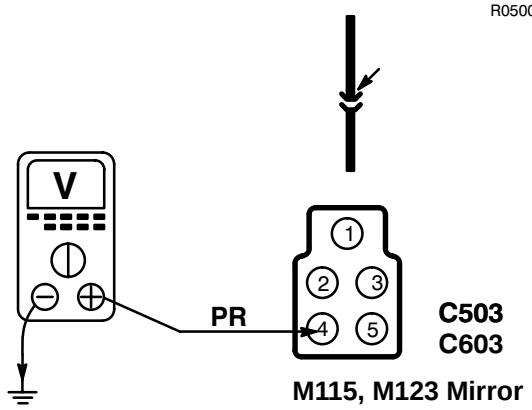
2A

3A

R050020.01

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Mirror Adjustment Switch**
  Move Left or Up
  BAT VOLT
  Neutral
  0V



OK **PROBLEM CAUSE**
- **SW Wire**
- **PR Wire**
- **Mirror Adjustment Switch**

OK

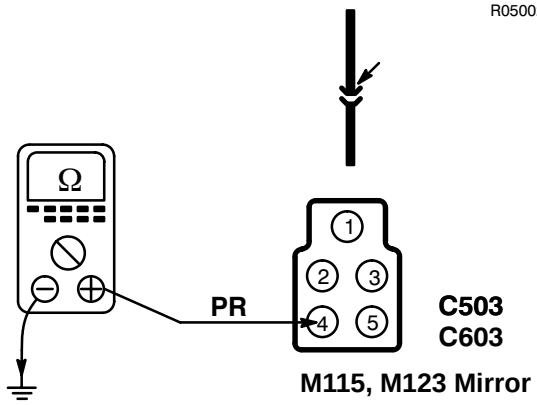
4A

4A

R050020.01

CONDITIONS
- **Ignition Switch**
  Position: II

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



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

5A

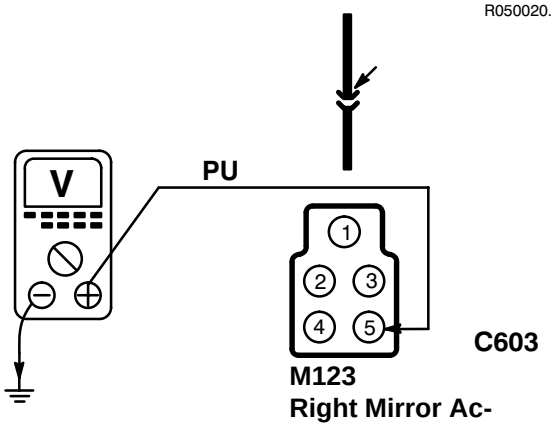
4A

5A

R050020.01

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

RESULTS
- **Mirror Adjustment Switch**
  Move Right or Down
  BAT VOLT
  Neutral
  0V



OK **PROBLEM CAUSE**
- **BU Wire**
- **PU Wire**
- **Mirror Adjustment Switch**

OK

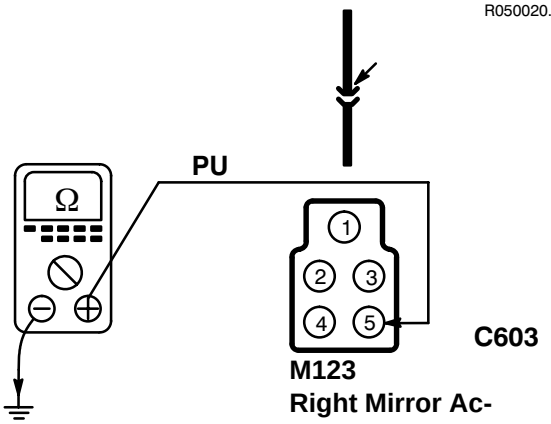
6A

6A

R050020.01

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

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



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

7A

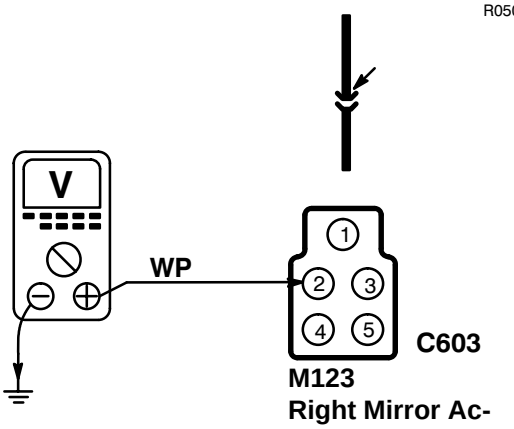
6A

7A

R050020.01

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

RESULTS
- **Mirror Adjustment Switch**
  Move Up or Down
  BAT VOLT
  Neutral
  0V



OK **PROBLEM CAUSE**
- **BN Wire**
- **WP Wire**
- **Mirror Adjustment Switch**

OK

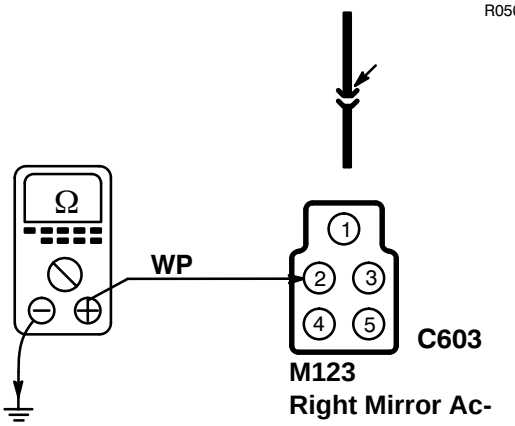
8A

8A

R050020.01

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

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



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

9A

8A

9A

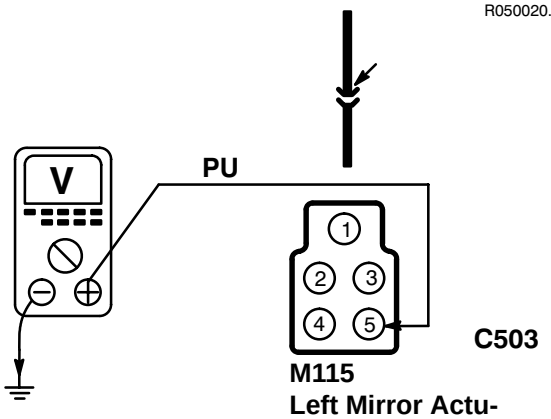
R050020.01

CONDITIONS

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

RESULTS

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



OK

PROBLEM CAUSE

- **BU Wire**
- **PU Wire**
- **Mirror Adjustment Switch**

OK

10A

10A

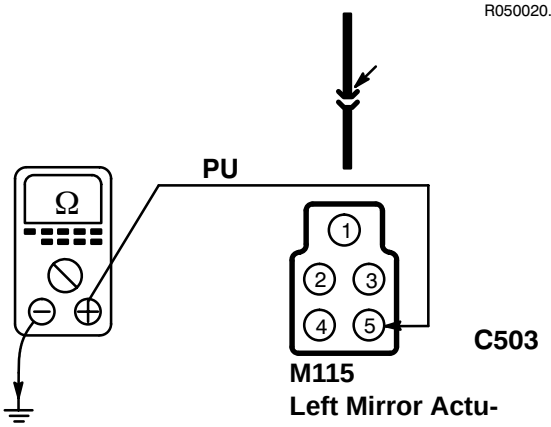
R050020.01

CONDITIONS

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

RESULTS

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



OK

PROBLEM CAUSE

- **Mirror Adjustment Switch**

OK

11A

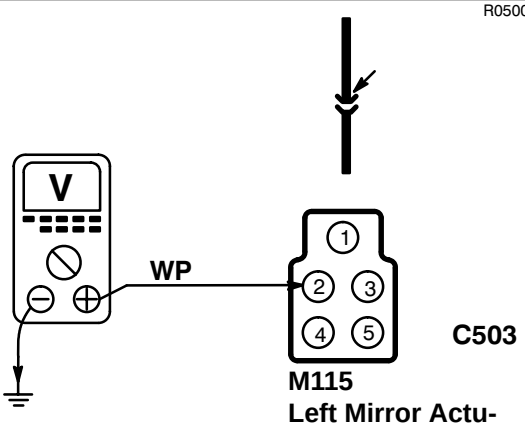
10A

11A

R050020.01

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

RESULTS
- **Mirror Adjustment Switch**
  Move Up or Down
  BAT VOLT
  Neutral
  0V



OK

PROBLEM CAUSE
- **BK Wire**
- **WP Wire**
- **Mirror Adjustment Switch**

OK

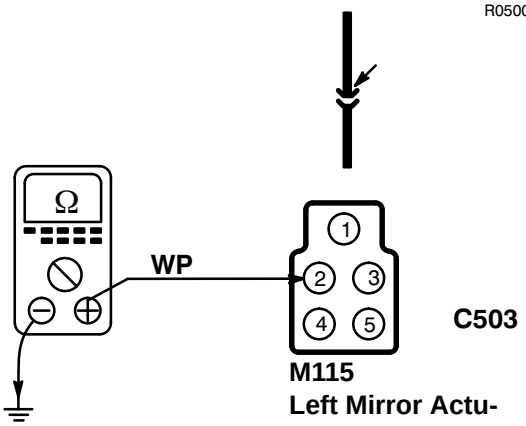
12A

12A

R050020.01

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

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



OK

PROBLEM CAUSE
- **Mirror Adjustment Switch**

OK

PROBLEM CAUSE
- **M115, M123 Mirror Actuator**

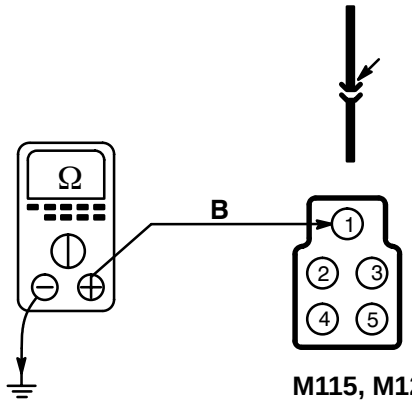
Test B

1B

R050020.01

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **B Wire**
- **Ground Connections**

OK

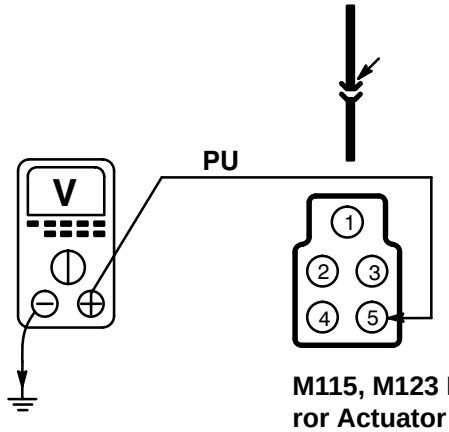
2B

2B

R050020.01

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

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



OK

PROBLEM CAUSE
- **BU Wire**
- **PU Wire**
- **Mirror Adjustment Switch**

OK

3B

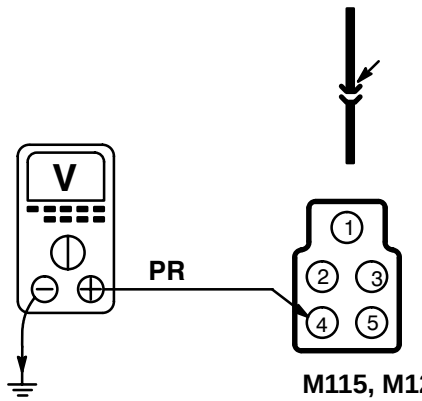
2B

3B

R050020.01

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

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



C503
C603

M115, M123 Mirror Actuator

OK

PROBLEM CAUSE
- **SW Wire**
- **PR Wire**
- **Mirror Adjustment Switch**

OK

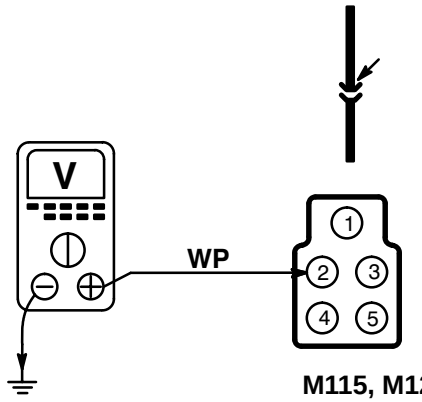
4B

4B

R050020.01

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

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



C503
C603

M115, M123 Mirror Actuator

OK

PROBLEM CAUSE
- **BK Wire**
- **WP, BN Wire**
- **Mirror Adjustment Switch**

OK

PROBLEM CAUSE
- **M115, M123 Mirror Actuator**

CIRCUIT OPERATION

Power and Ground

Fuse F4 applies battery voltage to retain the memory circuit of the Memory Seat ECU (Z146) at all times. Voltage to operate the seat motors (M126, M127, M128, M129) and the mirror actuators (M115, M123) is supplied to the Memory Seat ECU from fuses F2 and F3. The Maxi Fuse MF3 supplies voltage to fuses F2 and F3 whenever the Left Seat Power Relay (K113) is energized. The relay is energized when the driver's door is open, causing the Left Front Door Switch (X150) to ground the relay's coil, or when the ignition is in position II, causing the Right Seat Power Relay (K131) to ground the Left Seat Power Relay. The Memory Seat ECU is grounded at ground E300 through the B wires.

Inhibit Inputs

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

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

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

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

Seat Motors

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

Memory Mirror Actuators (M115, M123)

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

Setting Memory

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

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

SELF TEST MODE

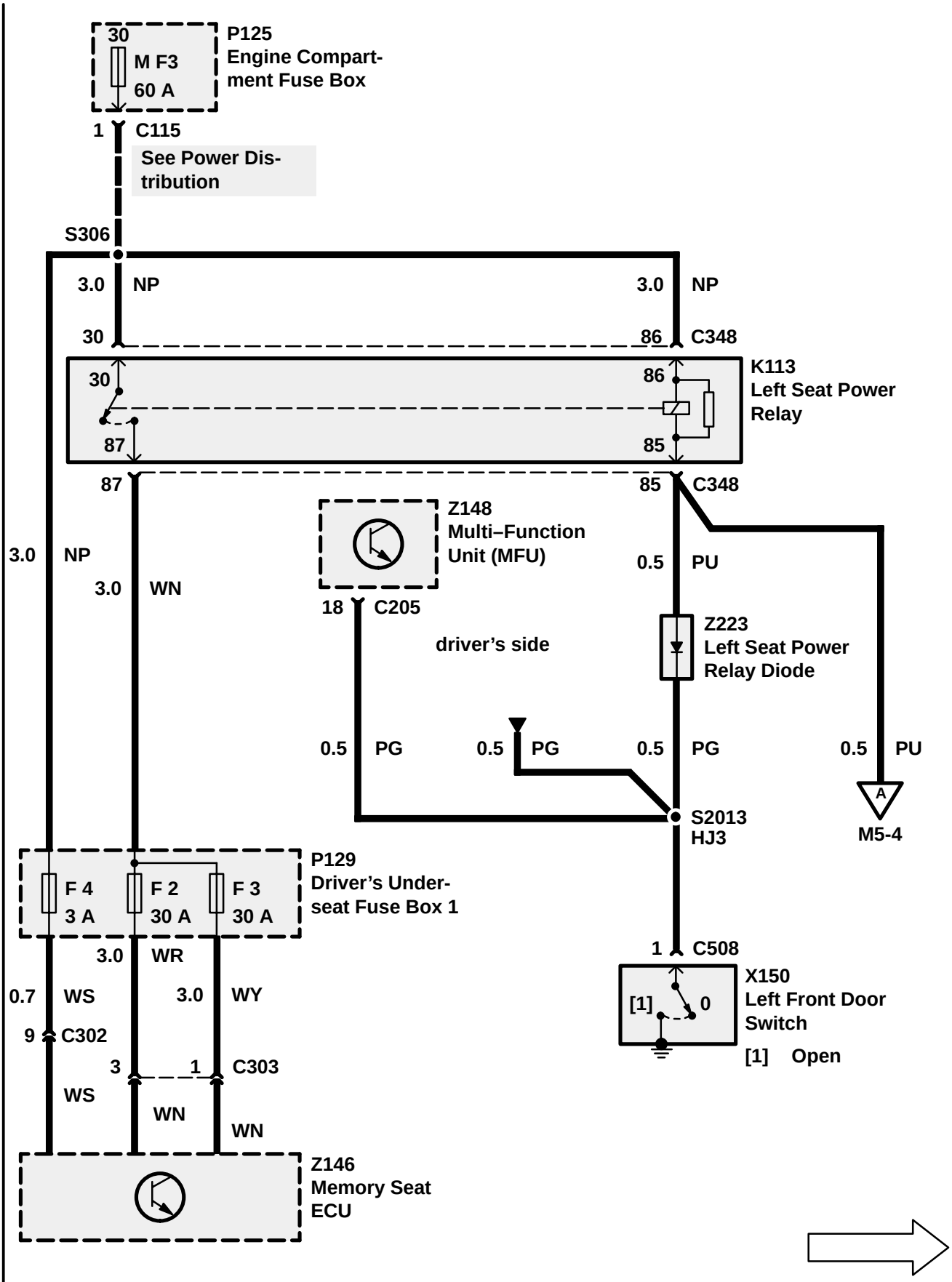
The Self Test Mode is a test routine the Memory Seat ECU (Z146) performs when initialized. When the ECU is commanded into the Self Test Mode, it operates the seats and the mirrors in all planes of travel. Perform the self test before attempting any diagnosis of the memory seat and mirror system. The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

To initialize the Self Test Mode, do the following:

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

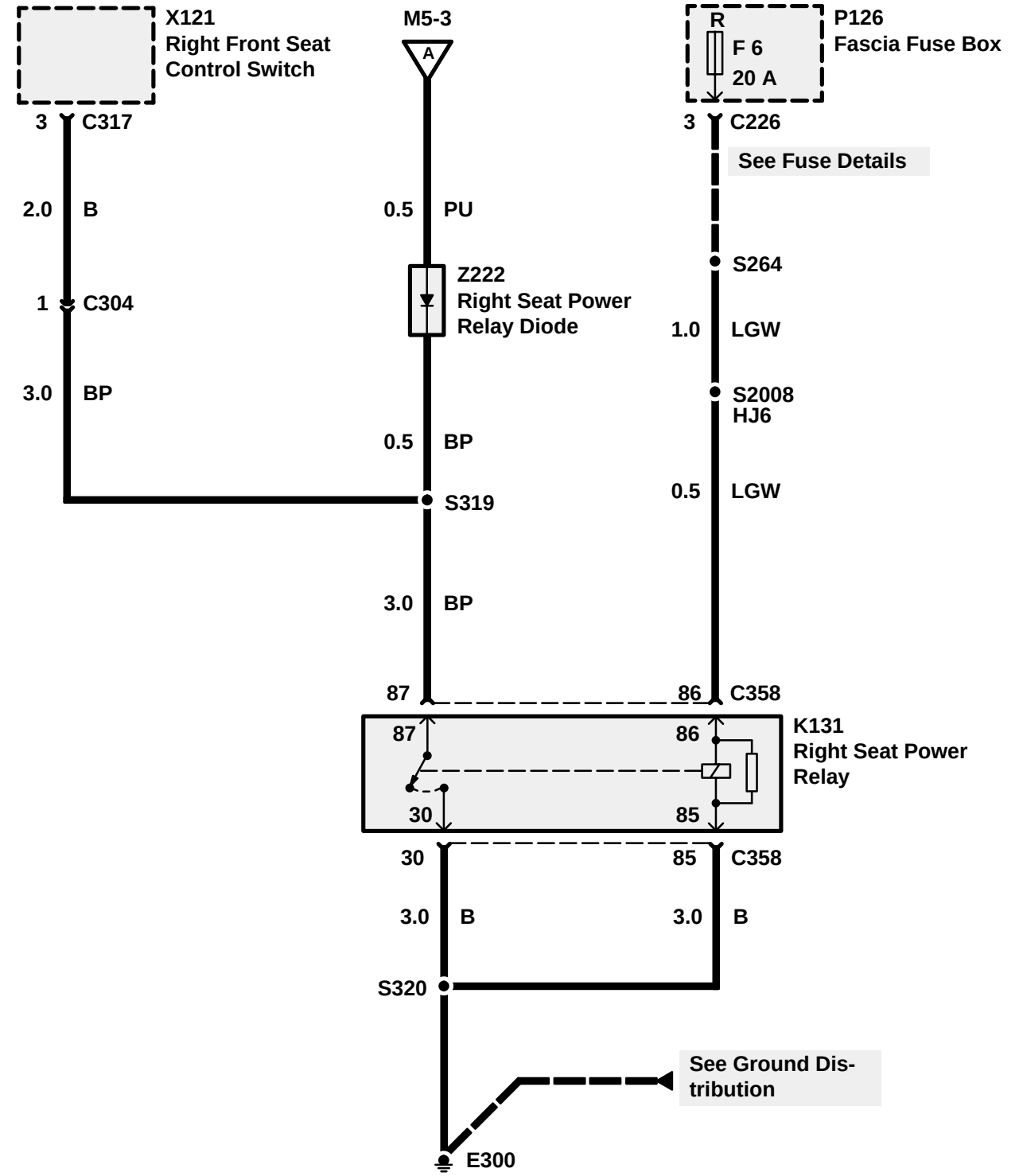
Seat and mirrors will now move. The test is completed when the seat and mirrors stop in the mid–travel position.

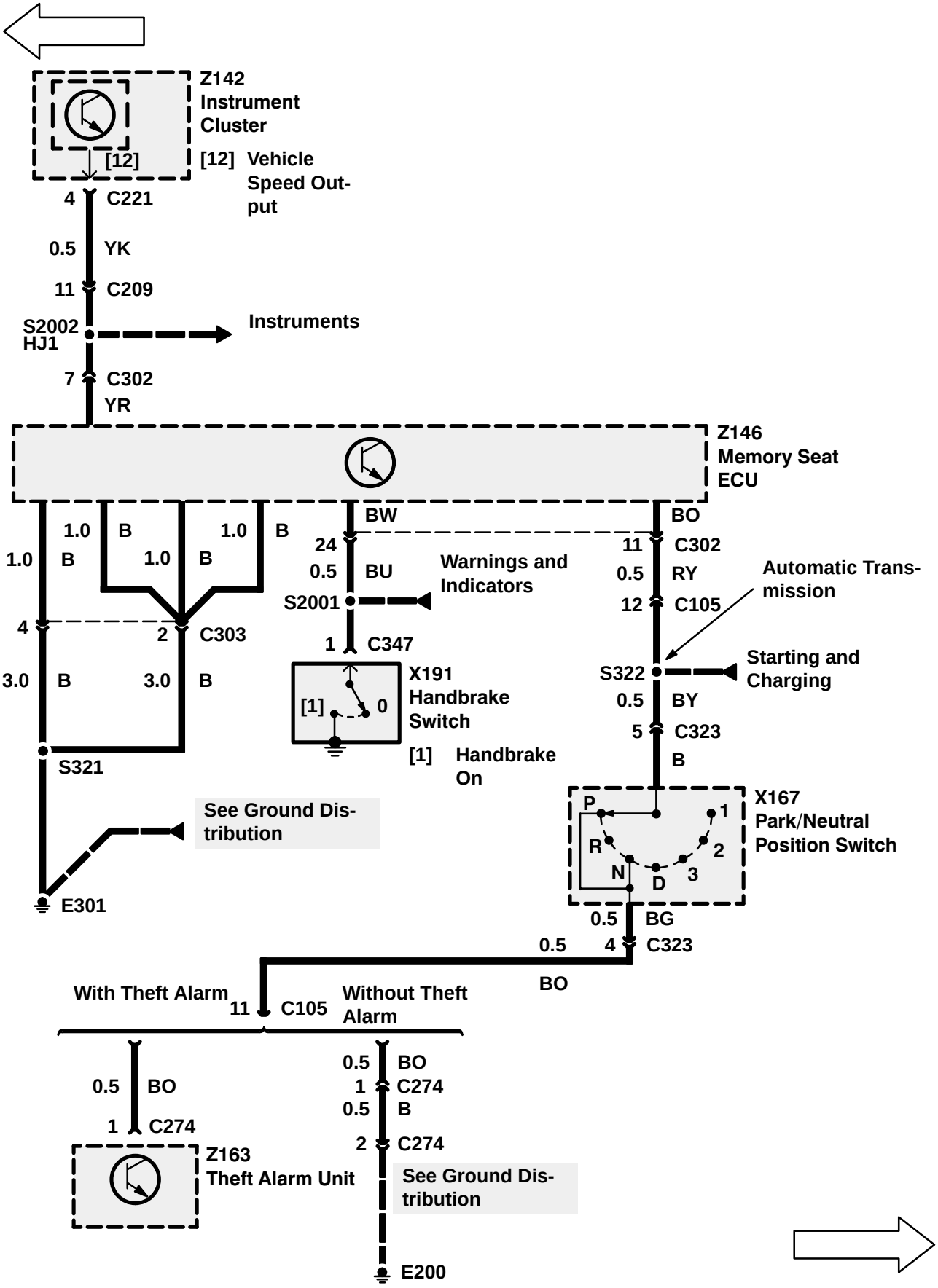
If a motor did not operate at all during the test sequence, that motor or its wiring is faulty. If a motor moves in a plane and then suddenly stops, a loss of the feedback position is indicated. Proceed to the System Diagnosis for further testing.


30
M F3
60 A
P125
Engine Compart-
ment Fuse Box
1
C115
See Power Dis-
tribution
S306
3.0
NP
3.0
NP
30
86
C348
30
86
87
85
K113
Left Seat Power
Relay
87
85
C348
Z148
Multi–Function
Unit (MFU)
3.0
NP
3.0
WN
0.5
PU
18
C205
driver's side
Z223
Left Seat Power
Relay Diode
0.5
PG
0.5
PG
0.5
PG
0.5
PU
A
M5-4
S2013
HJ3
P129
Driver's Under-
seat Fuse Box 1
F 4
3 A
F 2
30 A
F 3
30 A
3.0
WR
1
C508
X150
Left Front Door
Switch
[1]
0
[1] Open
0.7
WS
3.0
WY
9
C302
3
1
C303
WS
WN
WN
Z146
Memory Seat
ECU

M5 ETM

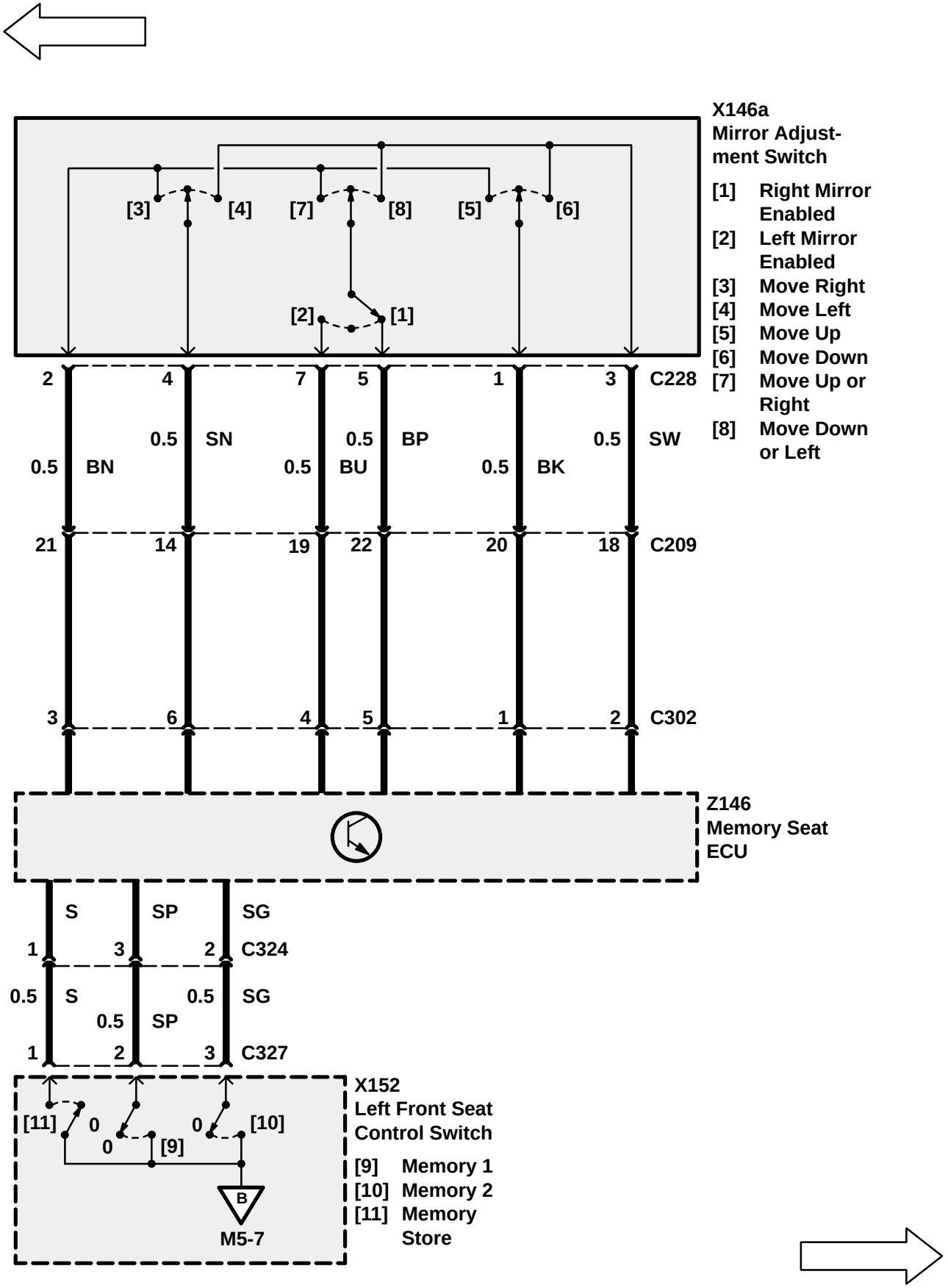
1995 RANGE ROVER

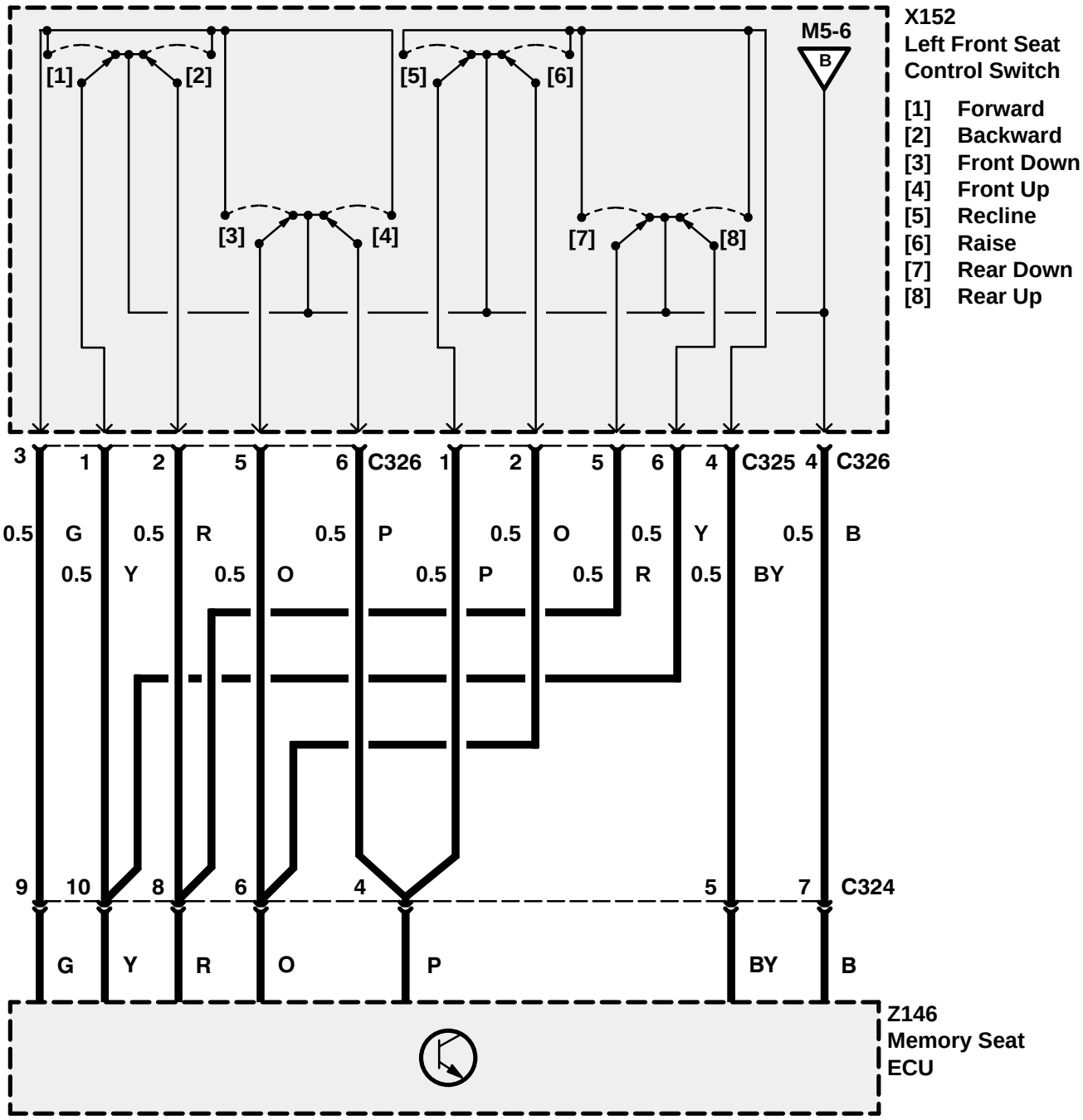



Z142
Instrument
Cluster
[12]
[12] Vehicle
Speed Out-
put
4 C221
0.5 YK
11 C209
S2002
HJ1
Instruments
7 C302
YR
Z146
Memory Seat
ECU
1.0 B
1.0 B
1.0 B
1.0 B
4
2 C303
3.0 B
3.0 B
S321
See Ground Dis-
tribution
E301
BW
24
0.5 BU
S2001
Warnings and
Indicators
1 C347
X191
Handbrake
Switch
[1]
[1] Handbrake
On
BO
11 C302
0.5 RY
12 C105
Automatic Trans-
mission
S322
Starting and
Charging
0.5 BY
5 C323
B
X167
Park/Neutral
Position Switch
P
R
N
D
1
2
3
0.5 BG
0.5 4 C323
BO
With Theft Alarm
11 C105
Without Theft
Alarm
0.5 BO
1 C274
0.5 B
2 C274
See Ground Dis-
tribution
0.5 BO
1 C274
Z163
Theft Alarm Unit
E200

M5 ETM

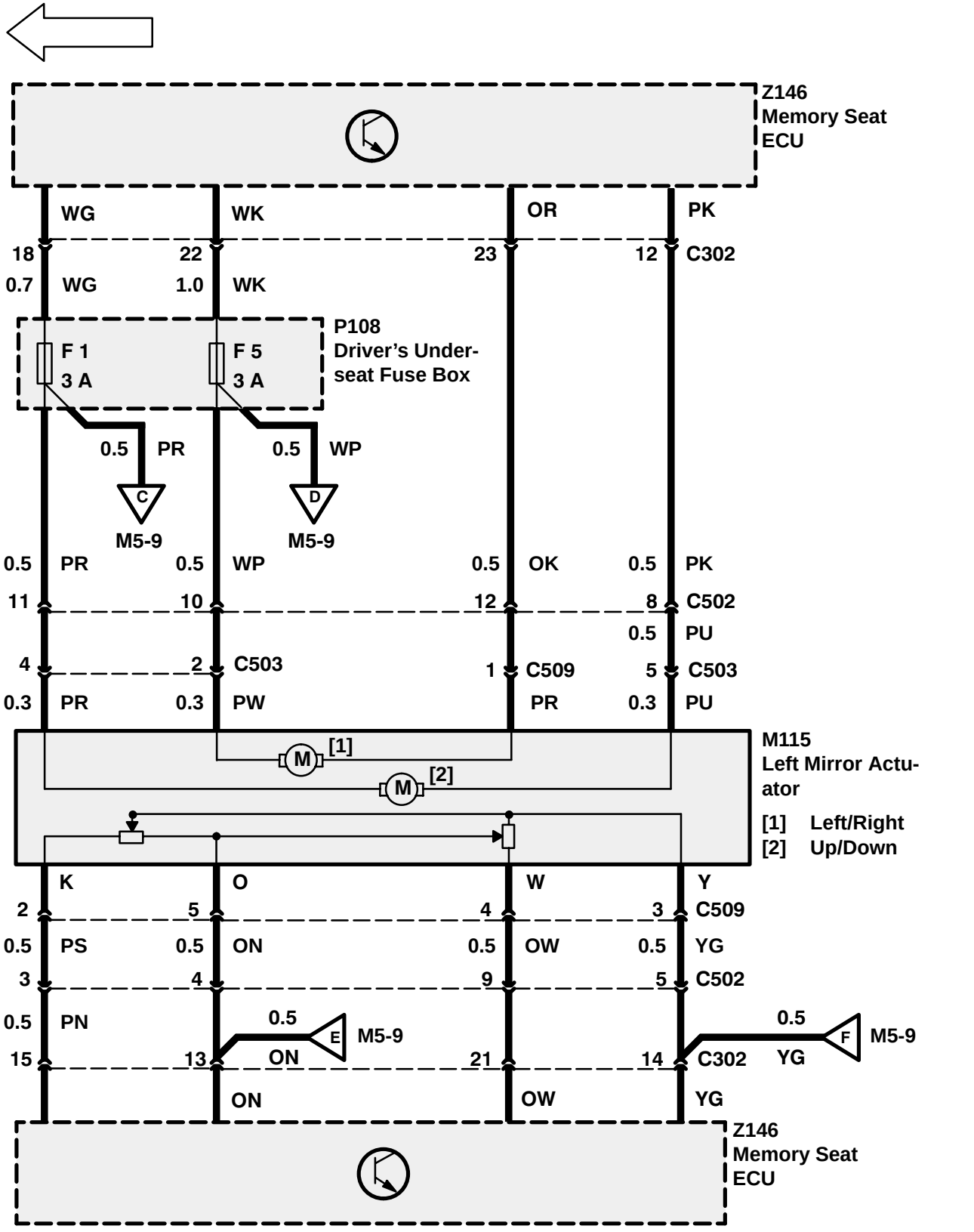
1995 RANGE ROVER

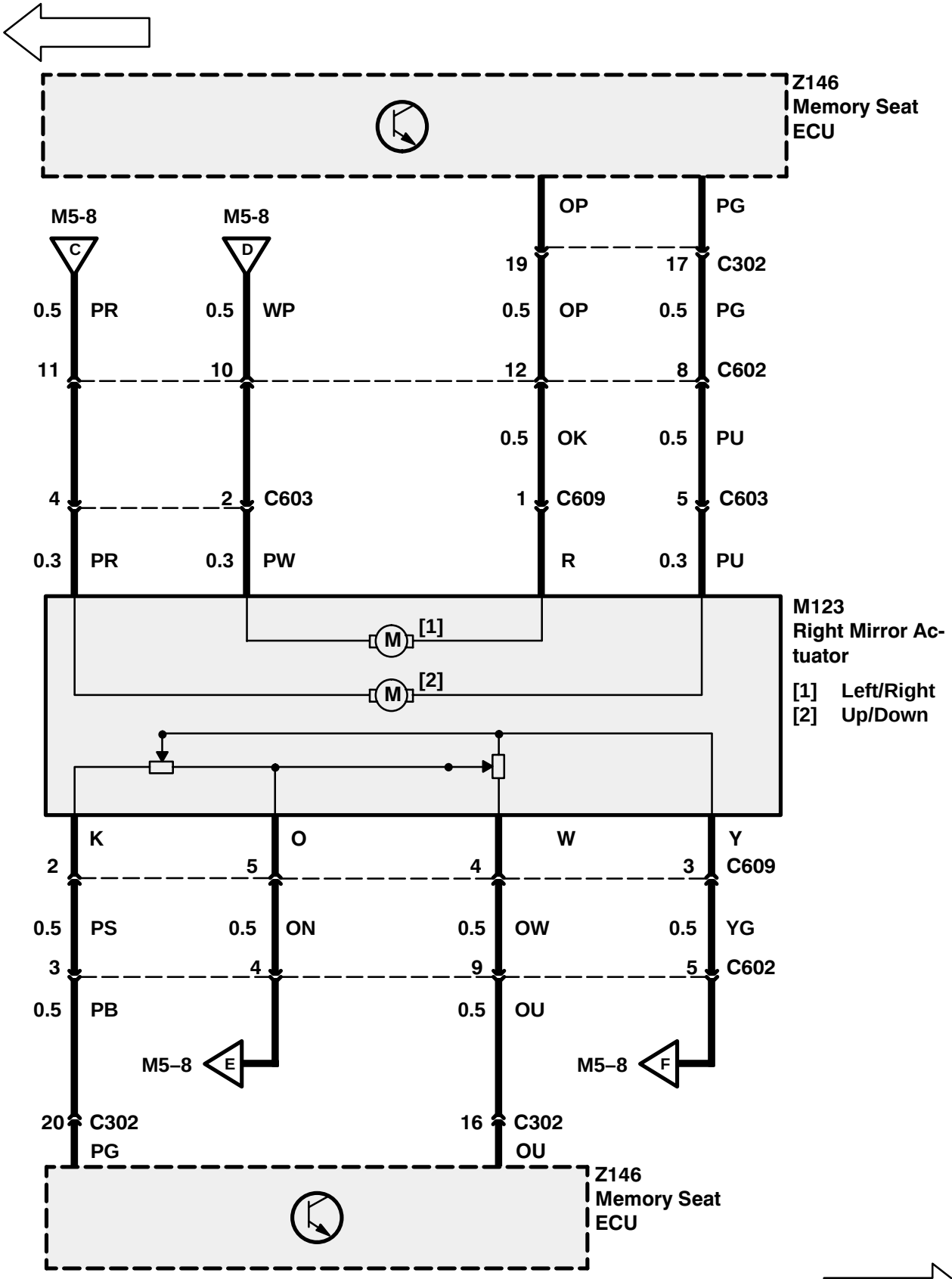



[1]
[2]
[3]
[4]
[5]
[6]
[7]
[8]
M5-6
B
X152
Left Front Seat
Control Switch
[1] Forward
[2] Backward
[3] Front Down
[4] Front Up
[5] Recline
[6] Raise
[7] Rear Down
[8] Rear Up
3 1 2 5 6 C326 1 2 5 6 4 C325 4 C326
0.5 G 0.5 R 0.5 P 0.5 O 0.5 Y 0.5 B
0.5 Y 0.5 O 0.5 P 0.5 R 0.5 BY
9 10 8 6 4 5 7 C324
G Y R O P BY B
Z146
Memory Seat
ECU

M5 ETM

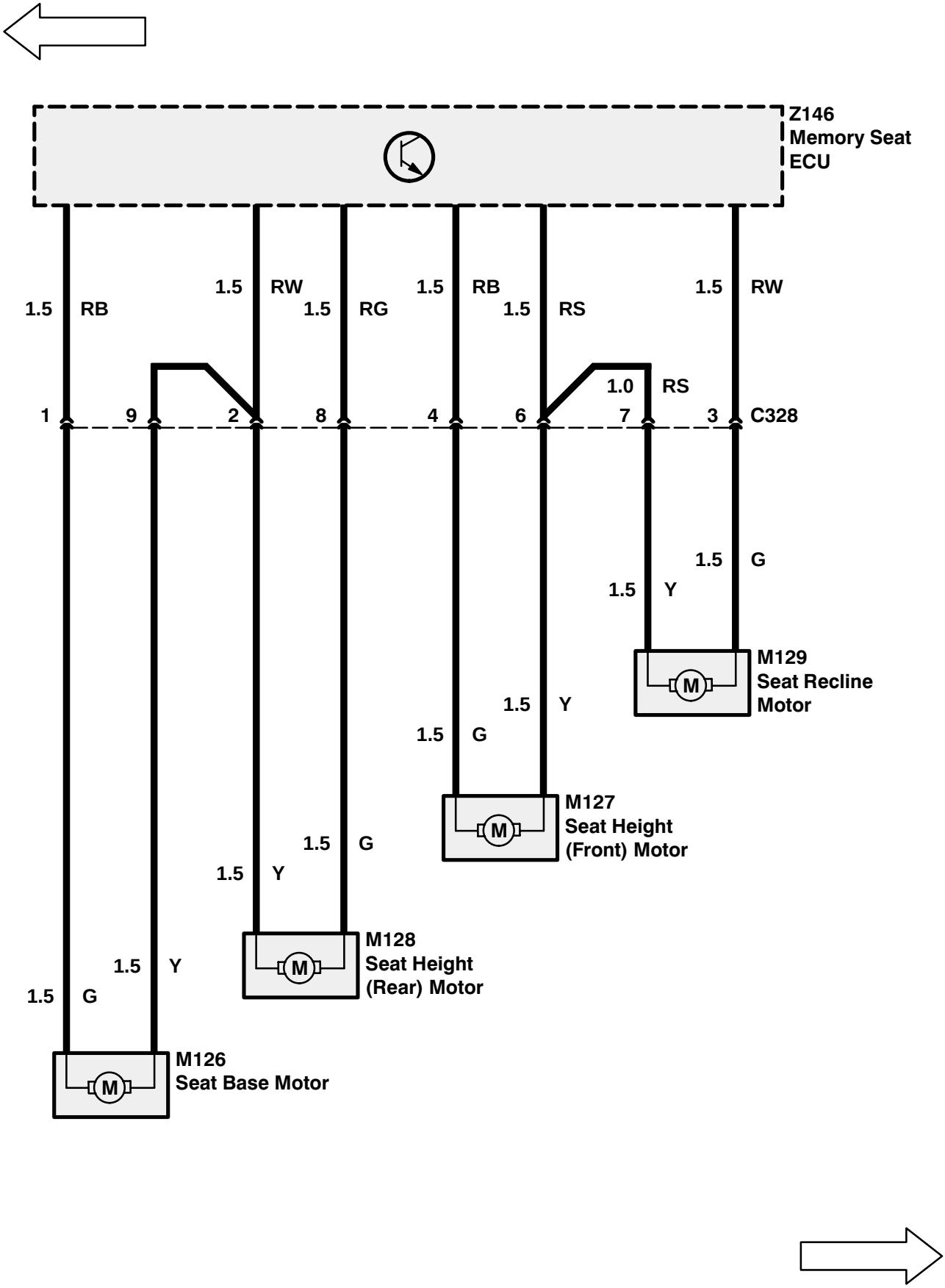
1995 RANGE ROVER

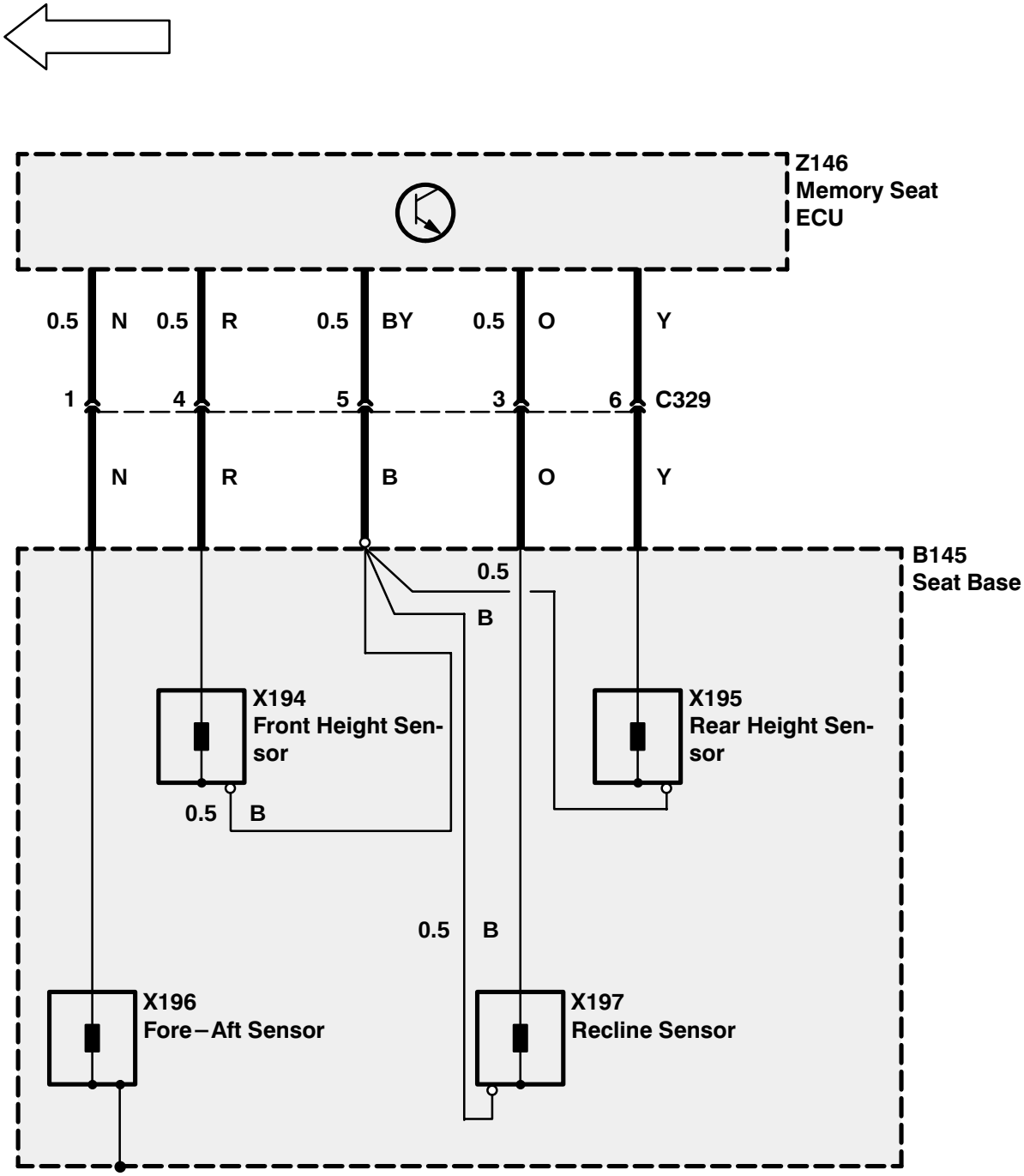



Z146
Memory Seat
ECU
M5-8
C
M5-8
D
OP
PG
19
17
C302
0.5 PR
0.5 WP
0.5 OP
0.5 PG
11
10
12
8
C602
0.5 OK
0.5 PU
4
2
C603
1
C609
5
C603
0.3 PR
0.3 PW
R
0.3 PU
M123
Right Mirror Actuator
[1] Left/Right
[2] Up/Down
M
[1]
M
[2]
K
O
W
Y
2
5
4
3
C609
0.5 PS
0.5 ON
0.5 OW
0.5 YG
3
4
9
5
C602
0.5 PB
0.5 OU
M5–8
E
M5–8
F
20
C302
PG
16
C302
OU
Z146
Memory Seat
ECU

M5 ETM

1995 RANGE ROVER




Z146
Memory Seat
ECU
0.5 N
0.5 R
0.5 BY
0.5 O
Y
1
4
5
3
6
C329
N
R
B
O
Y
B145
Seat Base
0.5
B
X194
Front Height Sen-
sor
0.5 B
X195
Rear Height Sen-
sor
0.5 B
X196
Fore–Aft Sensor
X197
Recline Sensor

SYSTEM DIAGNOSIS

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

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

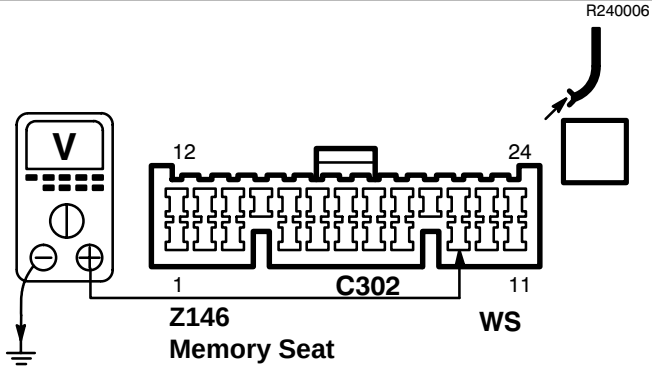
Test A

1A

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- **WS Wire**
- **F4 Fuse**
- **MF3 Maxi–Fuse**

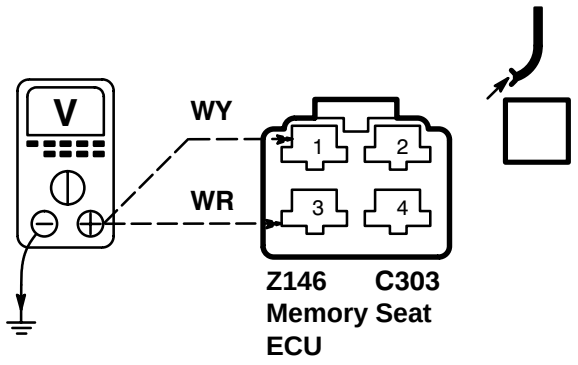
OK → 2A

2A

R040027

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Left Front Door**
  Open

RESULTS
BAT VOLT



OK **GO TO TEST D**

OK → 3A

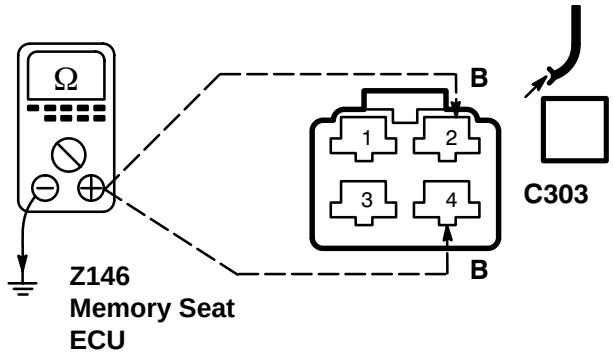
2A

3A

R040027

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK **PROBLEM CAUSE**
- **Memory Seat ECU**

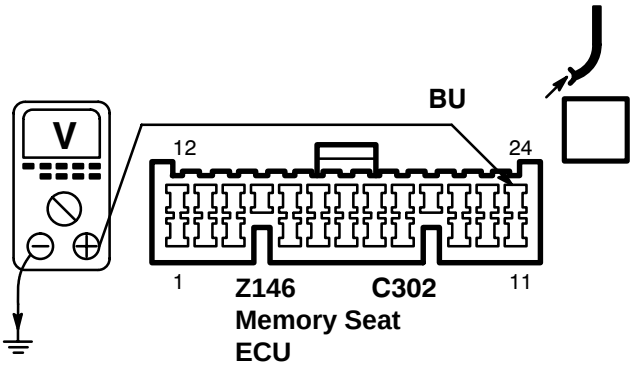
Test B

1B

R240006

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Handbrake**
  Applied
  0 VOLT
  Released
  BAT VOLT



OK **PROBLEM CAUSE**
- **BU Wire**
- **Handbrake Switch**

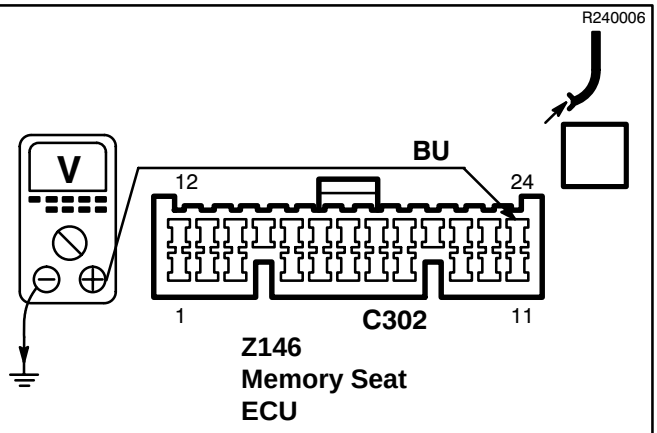
OK **PROBLEM CAUSE**
- **Memory Seat ECU**

Test C

1C

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
- **Handbrake**
  Applied
  0 VOLT
  Released
  BAT VOLT



OK **PROBLEM CAUSE**
- **BU Wire**
- **Handbrake Switch**

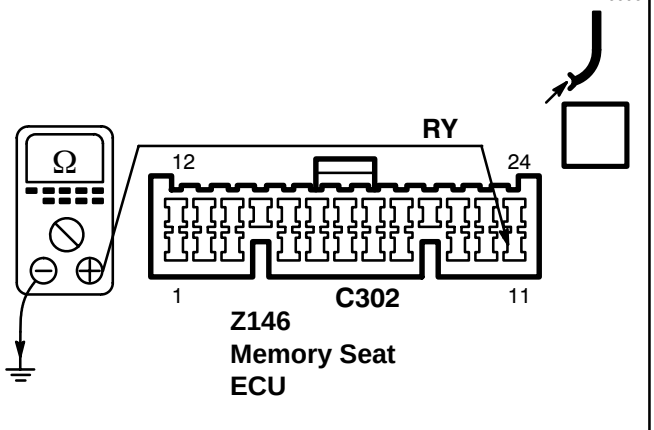
OK

2C

2C

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

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **RY Wire**
- **BO,BY Wire**
- **Park/Neutral Position Switch**
- **Theft Alarm Unit**

OK **PROBLEM CAUSE**
- **Memory Seat ECU**

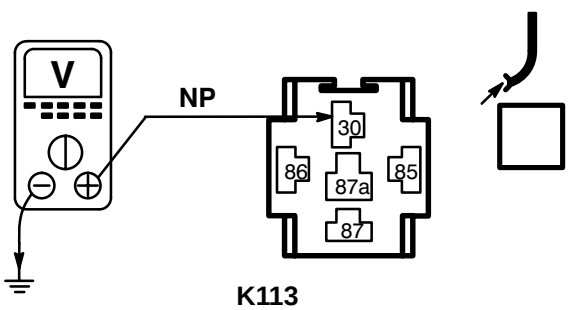
Test D

1D

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K113
Left Seat Power Relay

OK

PROBLEM CAUSE
- **NP Wire**
- **MF3 Maxi−Fuse**

OK

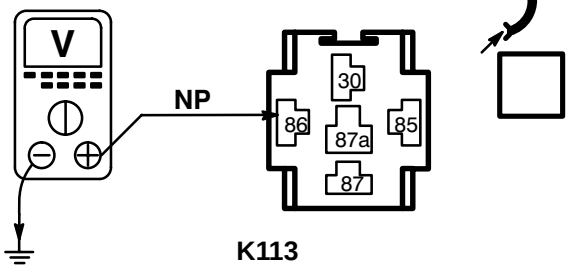
2D

2D

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



K113
Left Seat Power Relay

OK

PROBLEM CAUSE
- **NP Wire**
- **MF3 Maxi−Fuse**

OK

3D

2D

3D

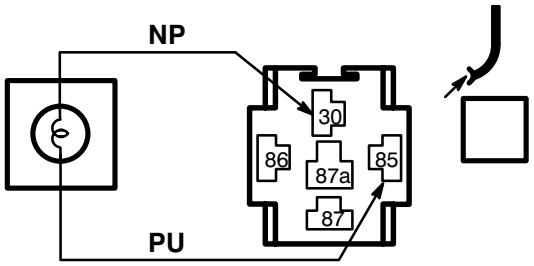
R050001

CONDITIONS

- **Ignition Switch**
  Position: 0
- **Left Front Door**
  Open

RESULTS

Test Lamp Illuminates



K113
Left Seat Power Relay

OK

PROBLEM CAUSE

- **PU Wire**
- **PG Wire**
- **Left Seat Power Relay Diode**
- **Left Front Door Switch**

OK

4D

4D

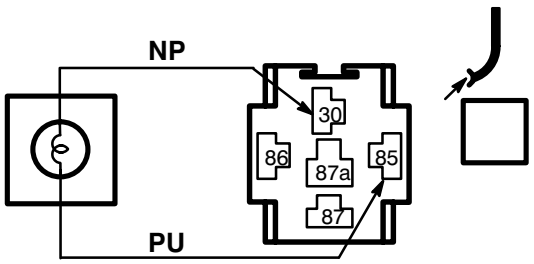
R050001

CONDITIONS

- **Ignition Switch**
  Position: II
- **Left Front Door**
  Closed

RESULTS

Test Lamp Illuminates



K113
Left Seat Power Relay

OK

PROBLEM CAUSE

- **PU Wire**
- **Right Seat Power Relay Diode**
- **BP Wire**
- **F6 Fuse**
- **Right Seat Power Relay**

OK

5D

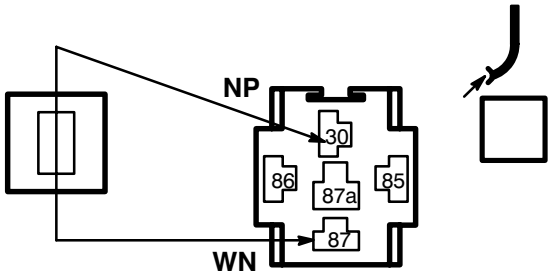
4D

5D

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Seat Memory**
  Operates



K113
Left Seat Power Relay

OK **PROBLEM CAUSE**
- **F2 Fuse**
- **F3 Fuse**
- **WN Wire**

OK **PROBLEM CAUSE**
- **Left Seat Power Relay**

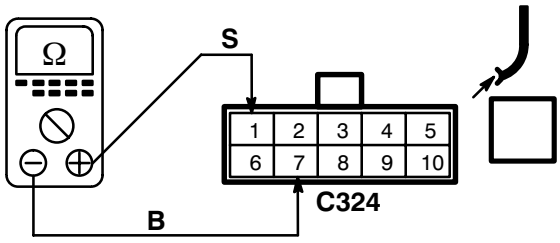
Test E

1E

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Green Memory Button**
  Depressed
  Less than 1 ohm
  Released
  More than 10K ohms



Z146
Memory Seat ECU

OK **PROBLEM CAUSE**
- **S Wire**
- **B Wire**
- **Left Front Seat Control Switch**

OK

2E

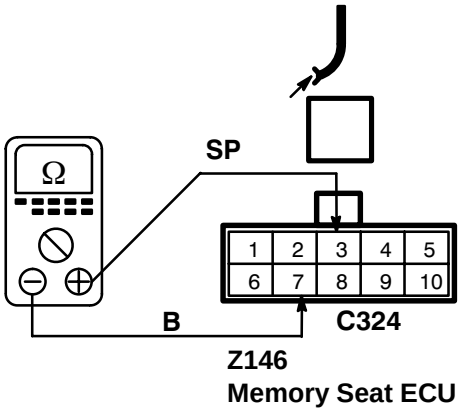
1E

2E

R100013

CONDITIONS
- **Ignition Switch**
  Position: II

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



OK **PROBLEM CAUSE**
- **SP Wire**
- **Left Front Seat Control Switch**

OK

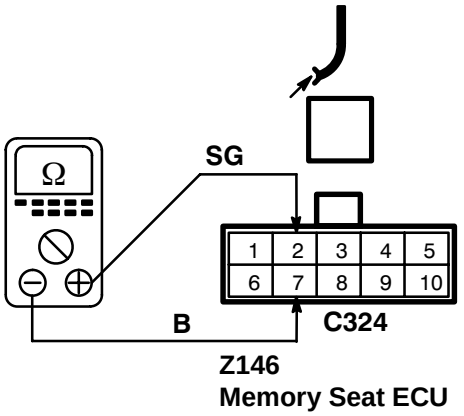
3E

3E

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0

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



OK **PROBLEM CAUSE**
- **SG Wire**
- **Left Front Seat Control Switch**

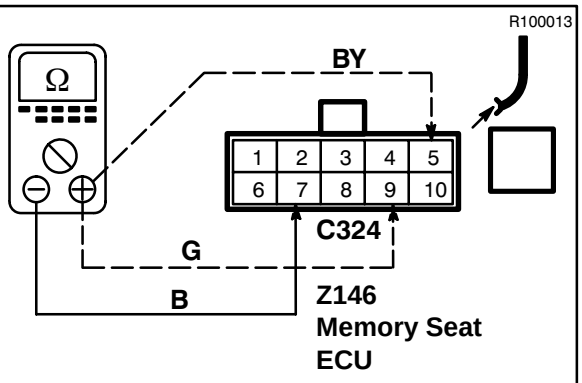
OK **PROBLEM CAUSE**
- **Memory Seat ECU**

Test F

1F

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 10K ohms



OK

PROBLEM CAUSE
- **BY Wire**
- **G Wire**
- **Left Front Seat Control Switch**

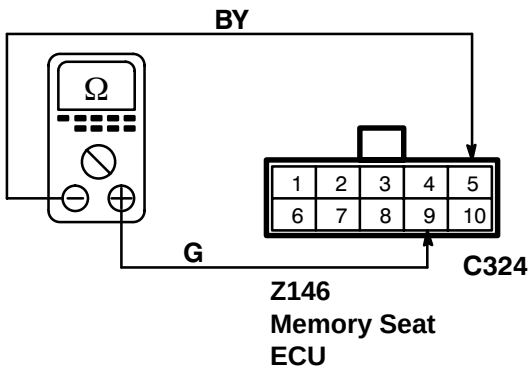
OK

2F

2F

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 10K ohms



OK

PROBLEM CAUSE
- **Left Front Seat Control Switch**

OK

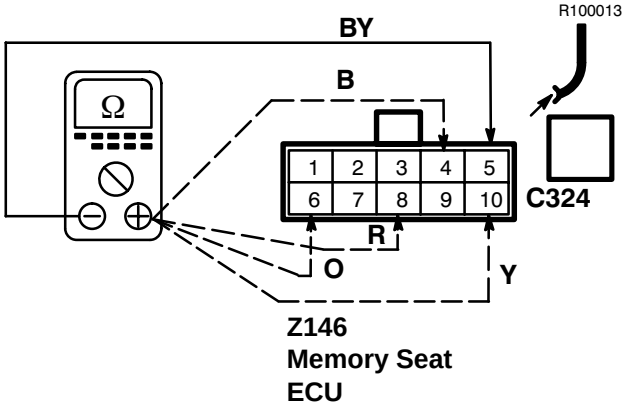
3F

2F

3F

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 10K ohms



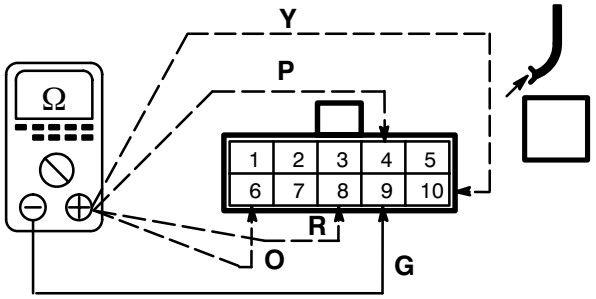
OK **PROBLEM CAUSE**
- R Wire
- P Wire
- Y Wire
- O Wire
- Left Front Seat Control Switch

OK → 4F

4F

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- Y Wire
- R Wire
- O Wire
- P Wire
- Left Front Seat Control Switch

OK → 5F

4F

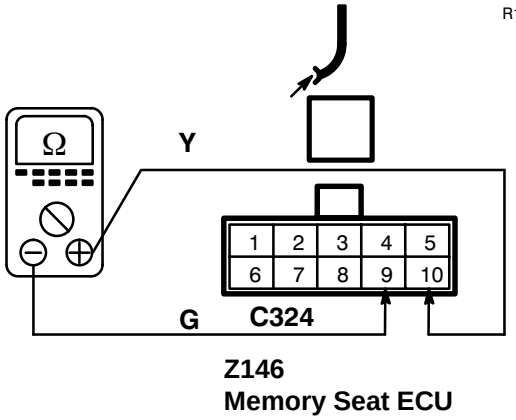
5F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Raise

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **G Wire**
- **Y Wire**
- **Left Front Seat Control Switch**

OK

6F

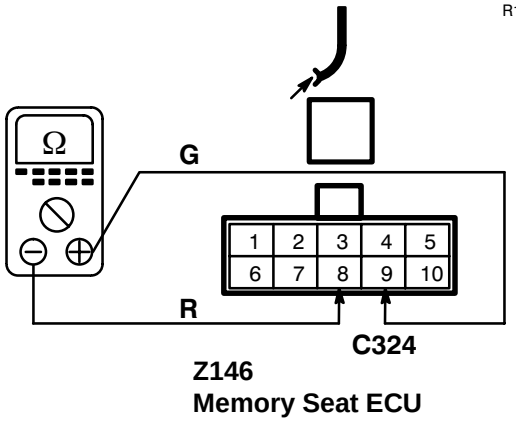
6F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Backward

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **R Wire**
- **Left Front Seat Control Switch**

OK

7F

6F

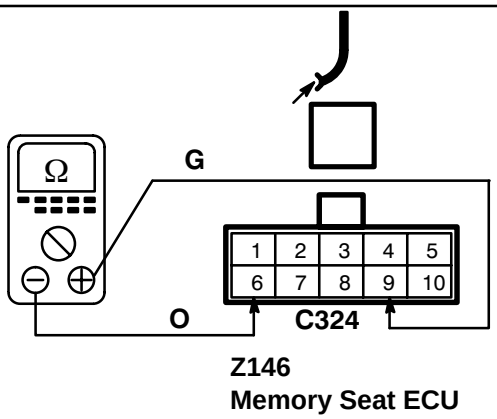
7F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Front down

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **O Wire**
- **Left Front Seat Control Switch**

OK

8F

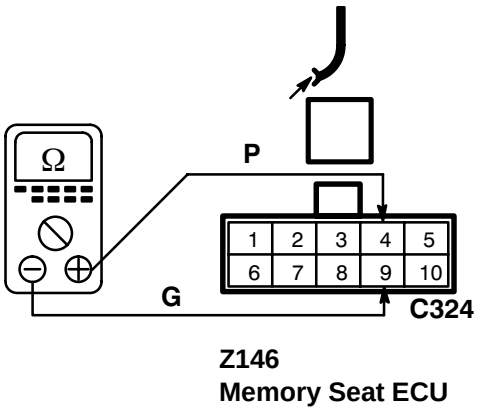
8F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Front up

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **P Wire**
- **Left Front Seat Control Switch**

OK

9F

8F

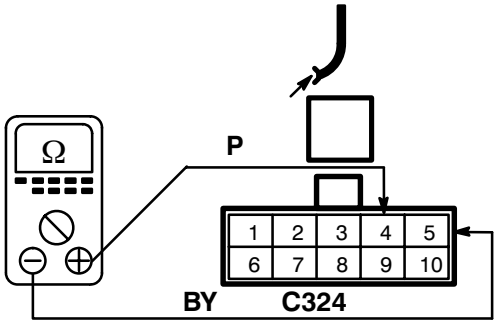
9F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Recline

RESULTS
Less than 1 ohm



Z146
Memory Seat ECU

OK

PROBLEM CAUSE
- **BY Wire**
- **P Wire**
- **Left Front Seat Control Switch**

OK

10F

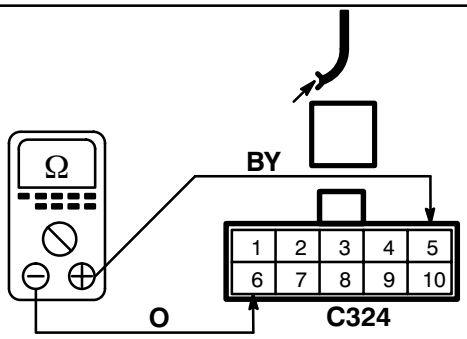
10F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Raise

RESULTS
Less than 1 ohm



Z146
Memory Seat ECU

OK

PROBLEM CAUSE
- **O Wire**
- **Left Front Seat Control Switch**

OK

11F

10F

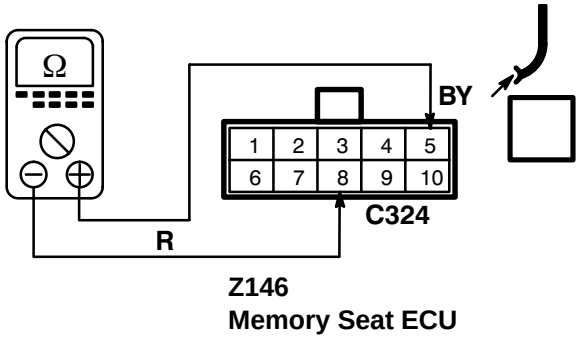
11F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Rear down

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **R Wire**
- **Right Front Seat Control Switch**

OK

12F

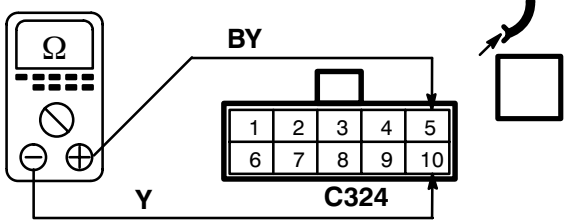
12F

R100013

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Right Front Seat Control Switch**

  Rear up

RESULTS
Less than 1 ohm



OK

PROBLEM CAUSE
- **Y Wire**
- **Right Front Seat Control Switch**

OK

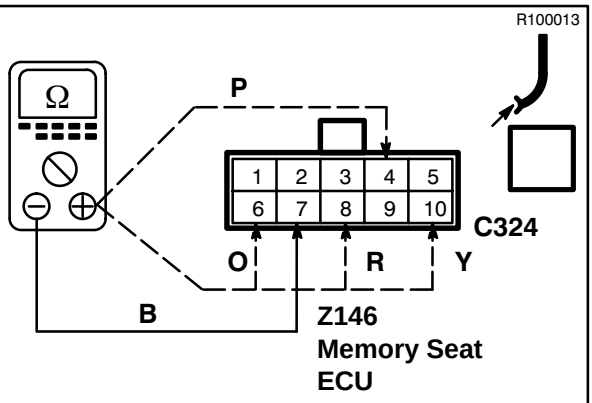
13F

12F

13F

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **Left Front Seat Control Switch**

OK **PROBLEM CAUSE**
- **Memory Seat ECU**

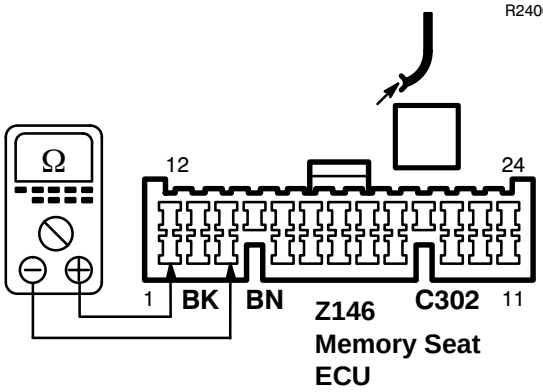
Test G

1G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Up

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **BK Wire**
- **BN Wire**
- **Mirror Adjustment Switch**

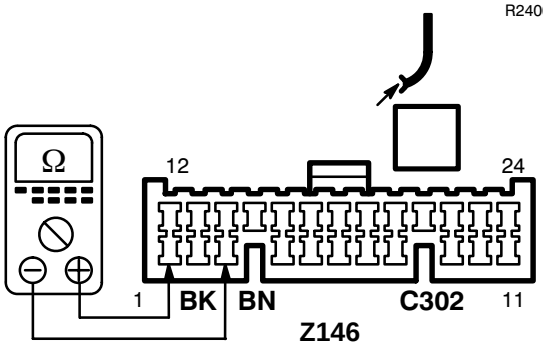
OK → **2G**

2G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Down

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK → **3G**

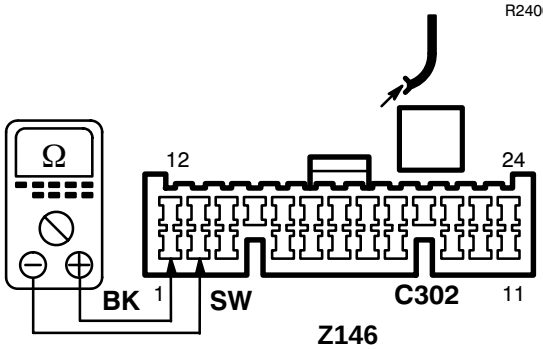
2G

3G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Up

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **SW Wire**
- **Mirror Adjustment Switch**

OK

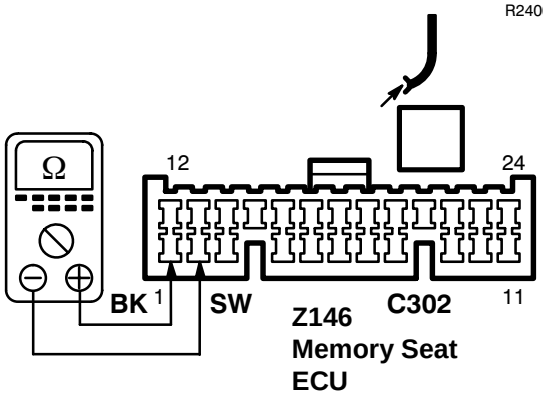
4G

4G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Down

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

5G

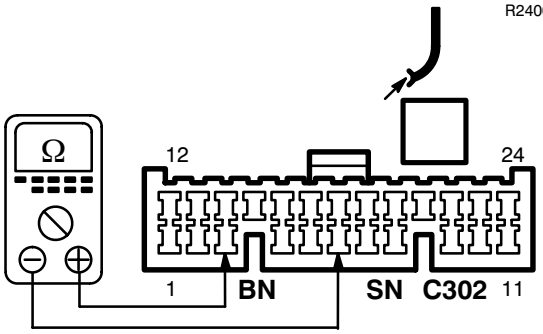
4G

5G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Right

RESULTS
Less than 1 ohm



Z146
Memory Seat ECU

OK **PROBLEM CAUSE**
- **SN, B Wire**
- **Mirror Adjustment Switch**

OK

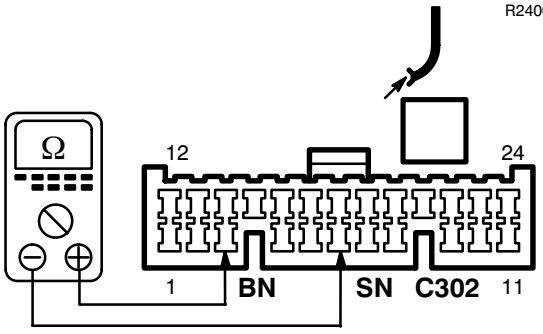
6G

6G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Left

RESULTS
More than 10K ohms



Z146
Memory Seat ECU

OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

7G

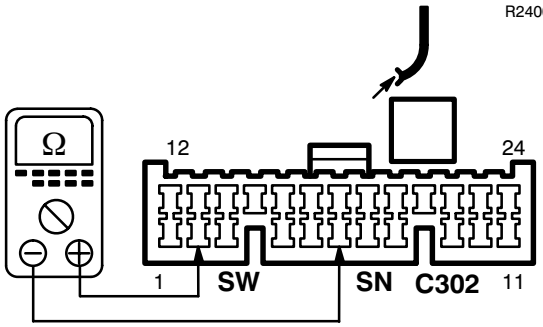
6G

7G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Right

RESULTS
More than 10K ohms



Z146
Memory Seat ECU

OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

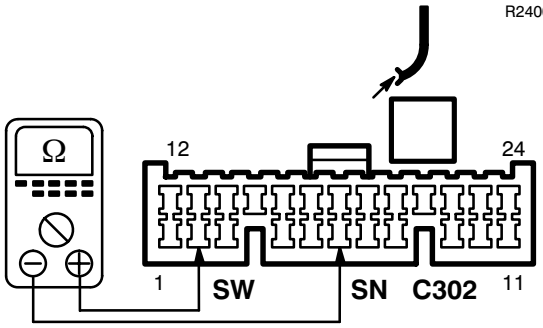
8G

8G

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Mirror Adjustment Switch**
  Left

RESULTS
Less than 1 ohm



Z146
Memory Seat ECU

OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

9G

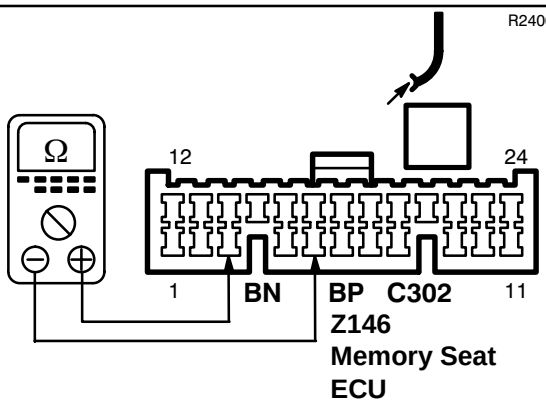
8G

9G

R240006

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

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **BP Wire**
- **Mirror Adjustment Switch**

OK

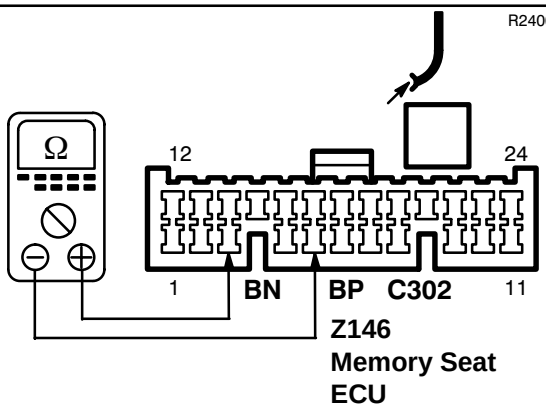
10G

10G

R240006

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

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

11G

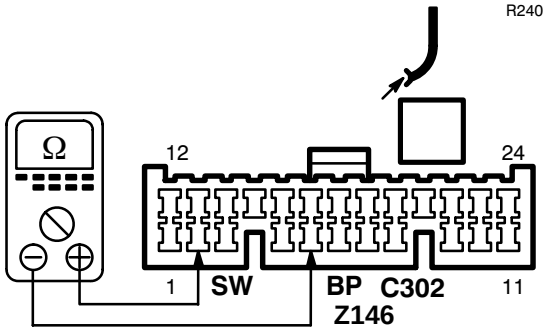
10G

11G

R240006

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

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

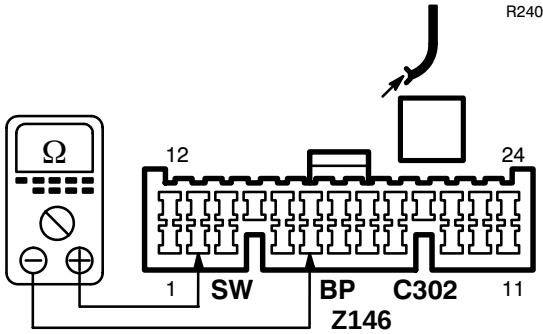
12G

12G

R240006

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

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

13G

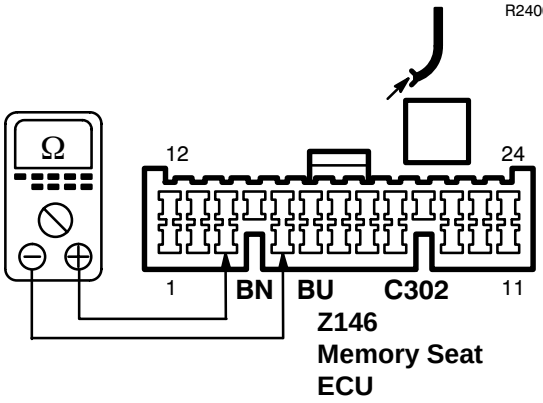
12G

13G

R240006

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

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **BU Wire**
- **Mirror Adjustment Switch**

OK

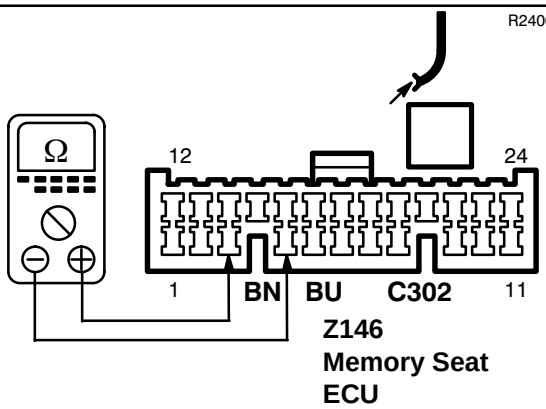
14G

14G

R240006

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

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

15G

M5 ETM

1995 RANGE ROVER

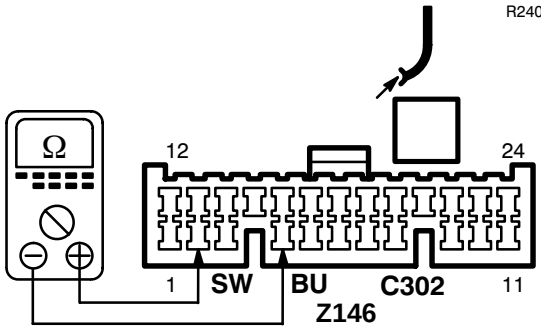
14G

15G

R240006

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

RESULTS
More than 10K ohms



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK

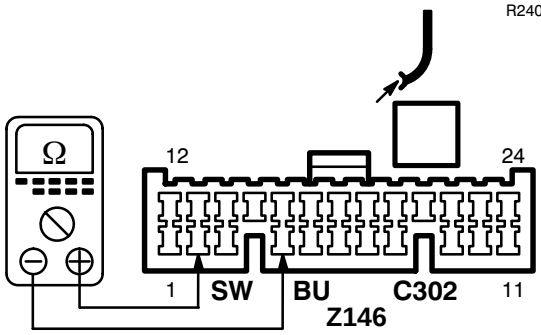
16G

16G

R240006

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

RESULTS
Less than 1 ohm



OK **PROBLEM CAUSE**
- **Mirror Adjustment Switch**

OK **PROBLEM CAUSE**
- **Memory Seat ECU**

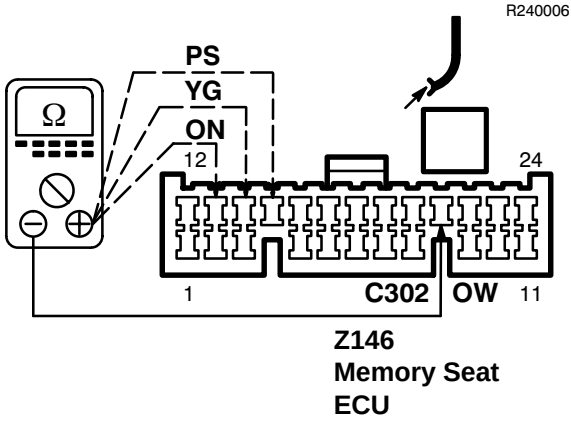
Test H

1H

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 1000 ohms



OK

PROBLEM CAUSE
- **YG Wire**
- **OW Wire**
- **PS Wire**
- **ON Wire**
- **Left Mirror Actuator**

OK

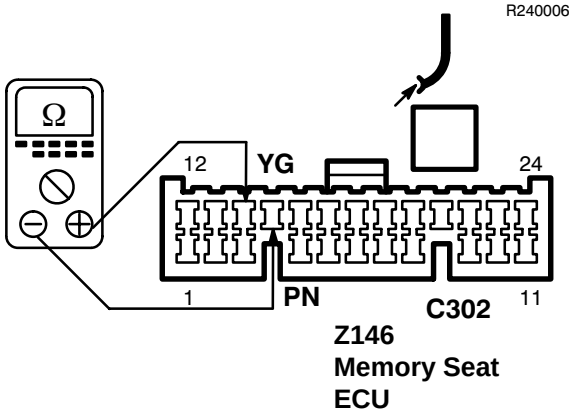
2H

2H

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 50K ohms



OK

PROBLEM CAUSE
- **Left Mirror Actuator**

OK

3H

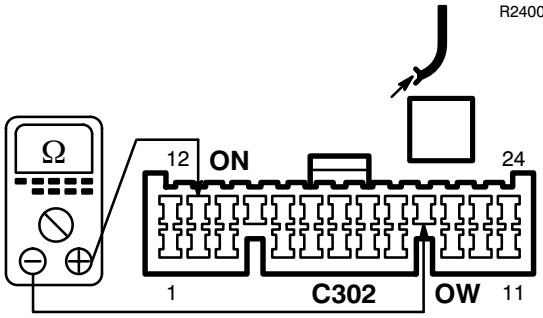
2H

3H

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 50K ohms



Z146
Memory Seat
ECU

OK **PROBLEM CAUSE**
- **Left Mirror Actuator**

OK **PROBLEM CAUSE**
- **Memory Seat ECU**

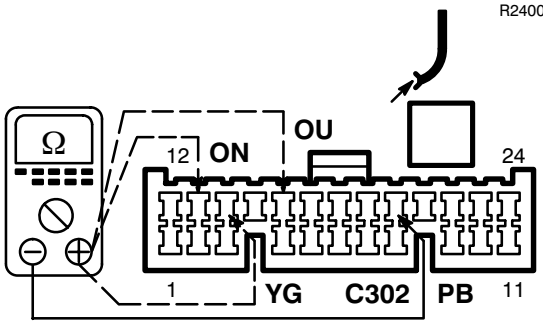
Test I

1I

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
More than 1000 ohms



Z146
Memory Seat
ECU

OK **PROBLEM CAUSE**
- **OU, OW Wire**
- **ON Wire**
- **YG Wire**
- **PB, PS Wire**
- **Right Mirror Actuator**

OK

2I

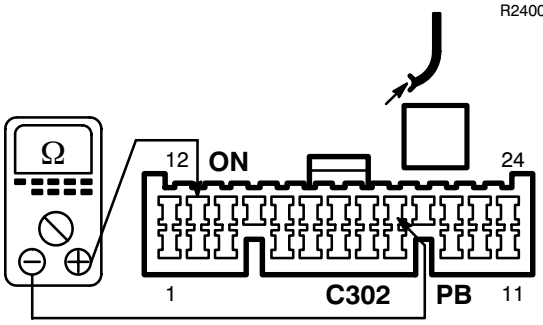
1I

2I

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 50K ohms



Z146
Memory Seat
ECU

OK **PROBLEM CAUSE**
- **Right Mirror Actuator**

OK

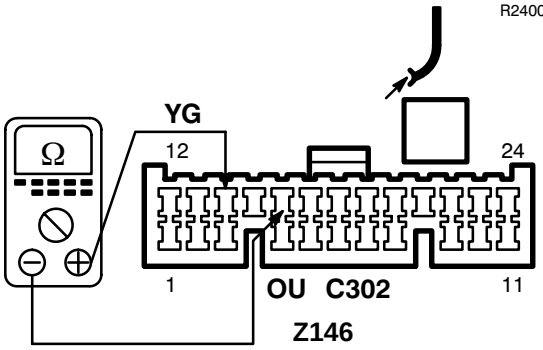
3I

3I

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 50K ohms



Z146
Memory Seat
ECU

OK **PROBLEM CAUSE**
- **Right Mirror Actuator**

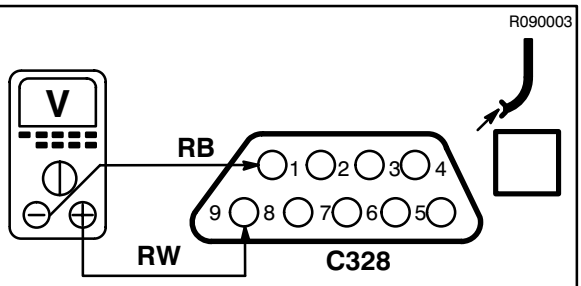
OK **PROBLEM CAUSE**
- **Memory Seat ECU**

Test J

1J

CONDITIONS
- **Ignition Switch**
  Position: I
- **Left Front Door**
  Open

RESULTS
- **Left Front Seat Control Switch**
  Forward
  +BAT VOLT
  Backward
  −BAT VOLT



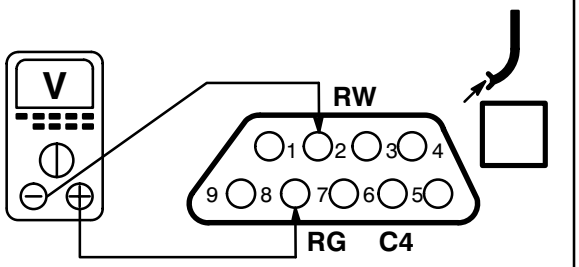
OK **PROBLEM CAUSE**
- **Memory Seat ECU**

OK → **2J**

2J

CONDITIONS
- **Ignition Switch**
  Position: I
- **Left Front Door**
  Open

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



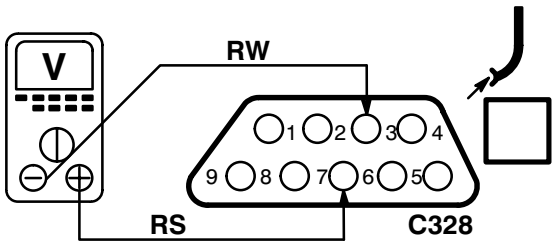
OK **PROBLEM CAUSE**
- **Memory Seat ECU**

OK → **3J**

2J

3J

R090003



Z146
Memory Seat
ECU

CONDITIONS
- **Ignition Switch**
  Position: I
- **Left Front Door**
  Open

RESULTS
- **Left Front Seat Control Switch**
  Recline
  +BAT VOLT
  Raise
  −BAT VOLT

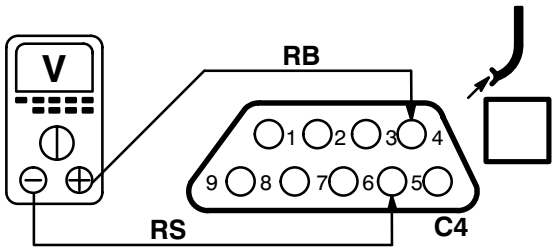
OK **PROBLEM CAUSE**
- **Memory Seat ECU**

OK

4J

4J

R090003



Z146
Memory Seat
ECU

CONDITIONS
- **Ignition Switch**
  Position: I
- **Left Front Door**
  Open

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

OK **PROBLEM CAUSE**
- **Memory Seat ECU**

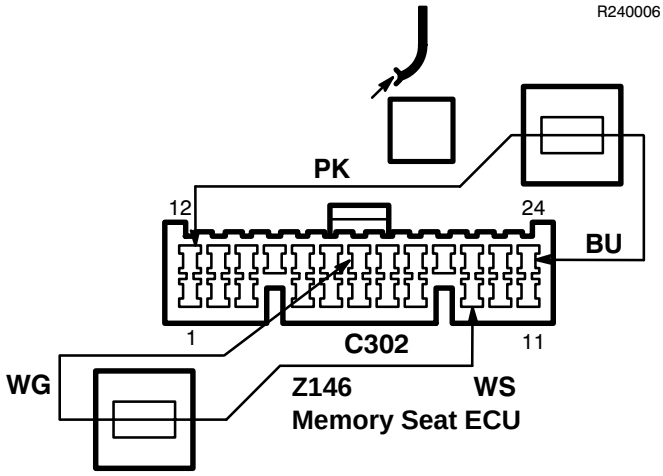
OK **PROBLEM CAUSE**
- **Seat Motors**

Test K

1K

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Handbrake**
  Applied

RESULTS
- **Door Lock Unit**
  Operates



OK **PROBLEM CAUSE**
- **WG, PR Wire**
- **PK, PU Wire**
- **Left Mirror Actuator**

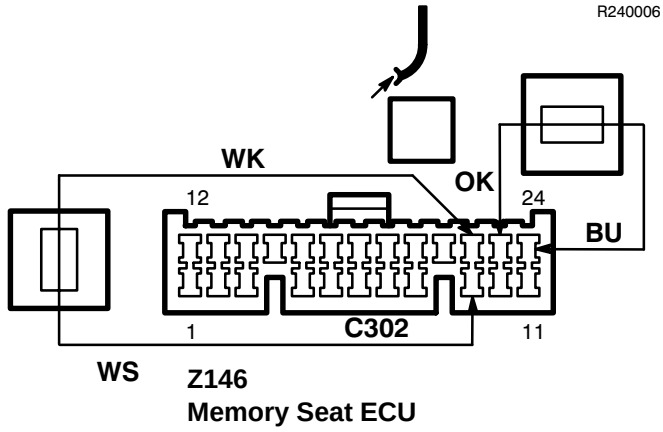
OK

2K

2K

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Handbrake**
  Applied

RESULTS
- **Left Lumbar Pump**
  Operates



OK **PROBLEM CAUSE**
- **WK, WP Wire**
- **OK Wire**
- **Left Mirror Actuator**

OK **PROBLEM CAUSE**
- **Memory Seat ECU**

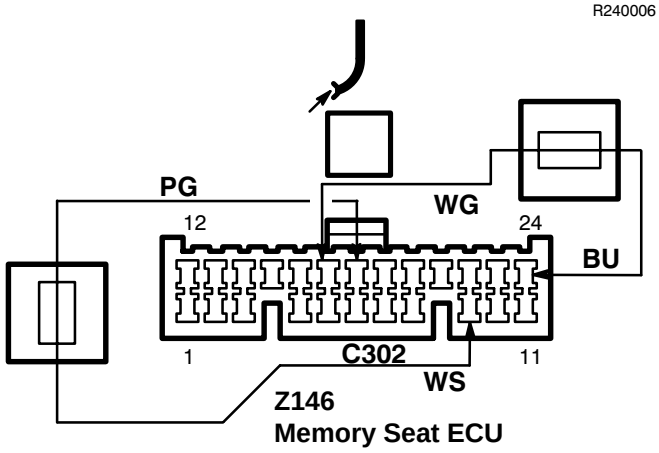
Test L

1L

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Handbrake**
  Applied

RESULTS
- **Headrest Motor**
  Operates



OK

PROBLEM CAUSE
- **PU, PG Wire**
- **PR Wire**
- **Right Mirror Actuator**

OK

2L

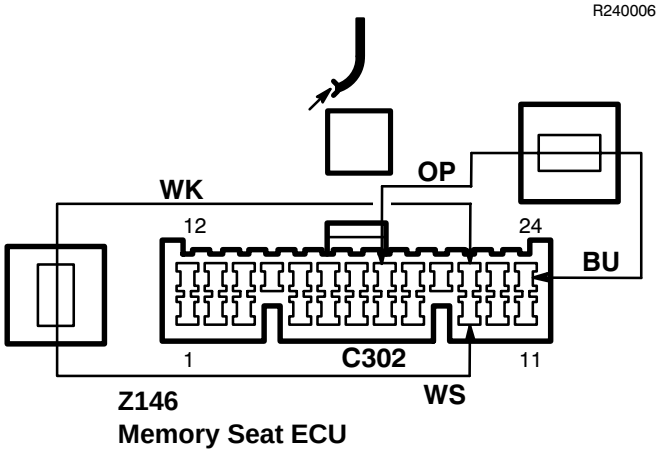
2L

R240006

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Handbrake**
  Applied

RESULTS
- **Left Rear Door Lock Actuator**

  Operates

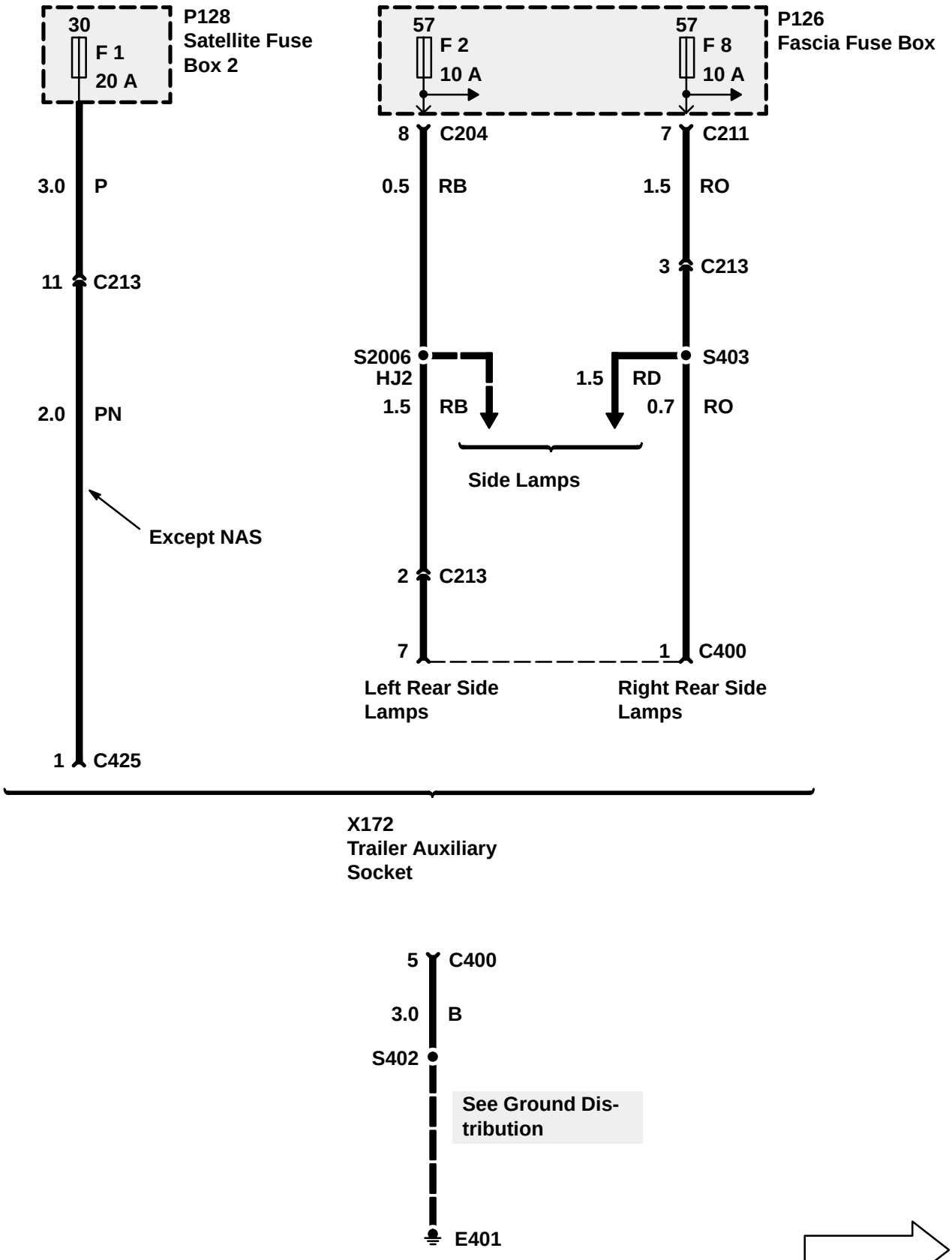


OK

PROBLEM CAUSE
- **OP, OK Wire**
- **WP Wire**
- **Right Mirror Actuator**

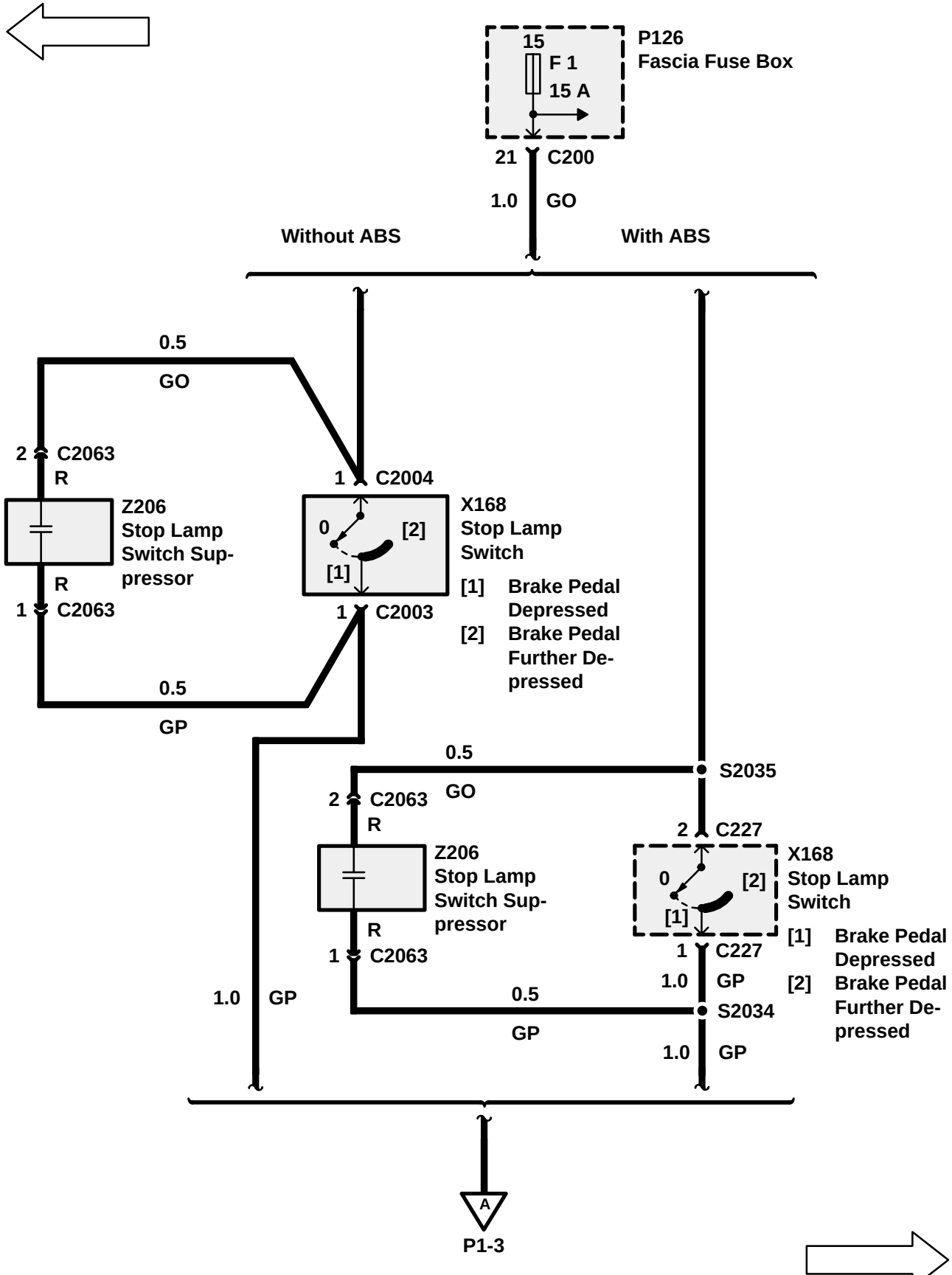
OK

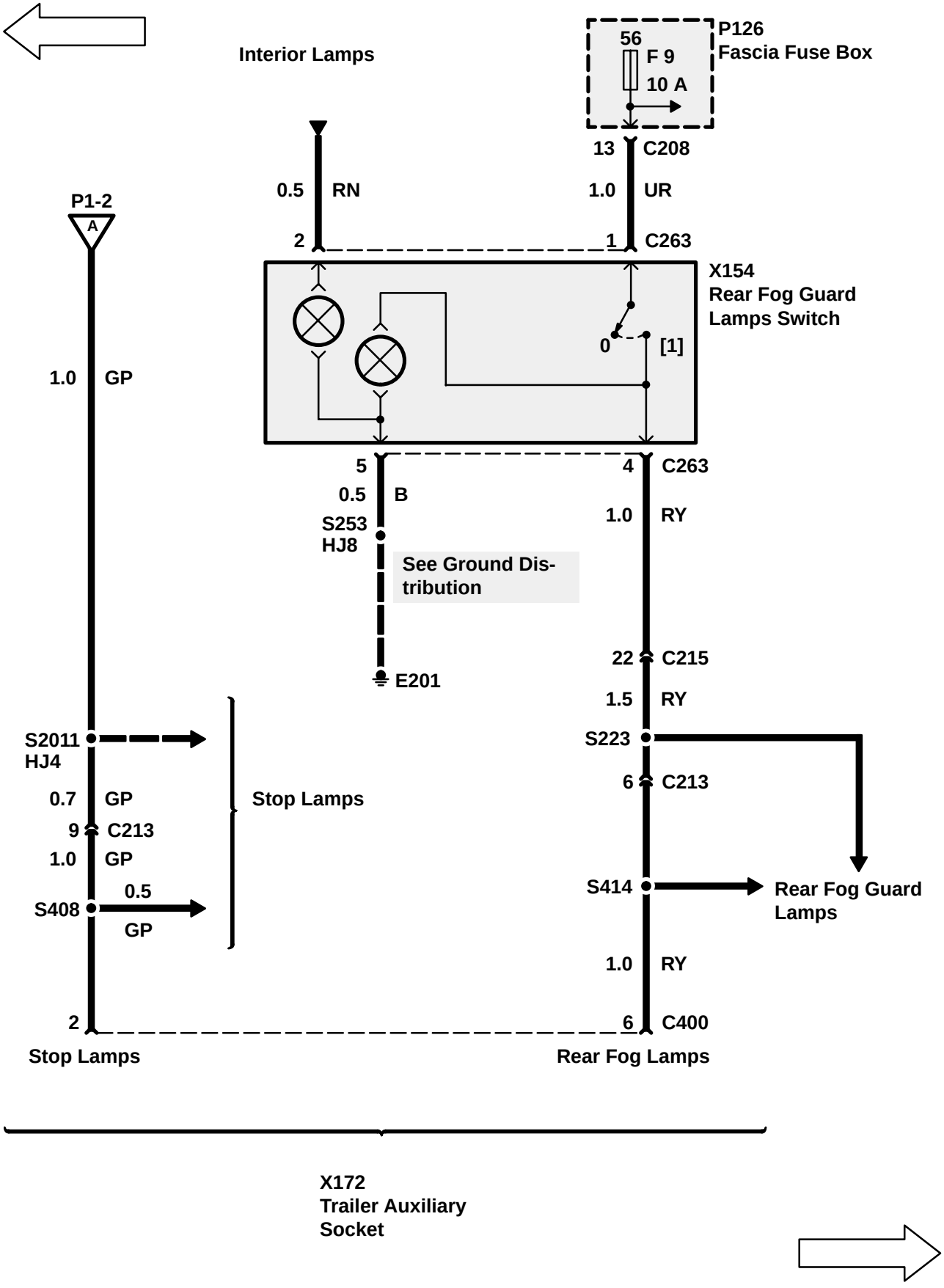
PROBLEM CAUSE
- **Memory Seat ECU**


30
F 1
20 A
P128
Satellite Fuse
Box 2
57
F 2
10 A
57
F 8
10 A
P126
Fascia Fuse Box
8 C204
7 C211
3.0 P
0.5 RB
1.5 RO
11 C213
3 C213
S2006
HJ2
S403
1.5 RD
1.5 RB
0.7 RO
2.0 PN
Side Lamps
Except NAS
2 C213
7
1 C400
Left Rear Side
Lamps
Right Rear Side
Lamps
1 C425
X172
Trailer Auxiliary
Socket
5 C400
3.0 B
S402
See Ground Dis-
tribution
E401

P1 ETM

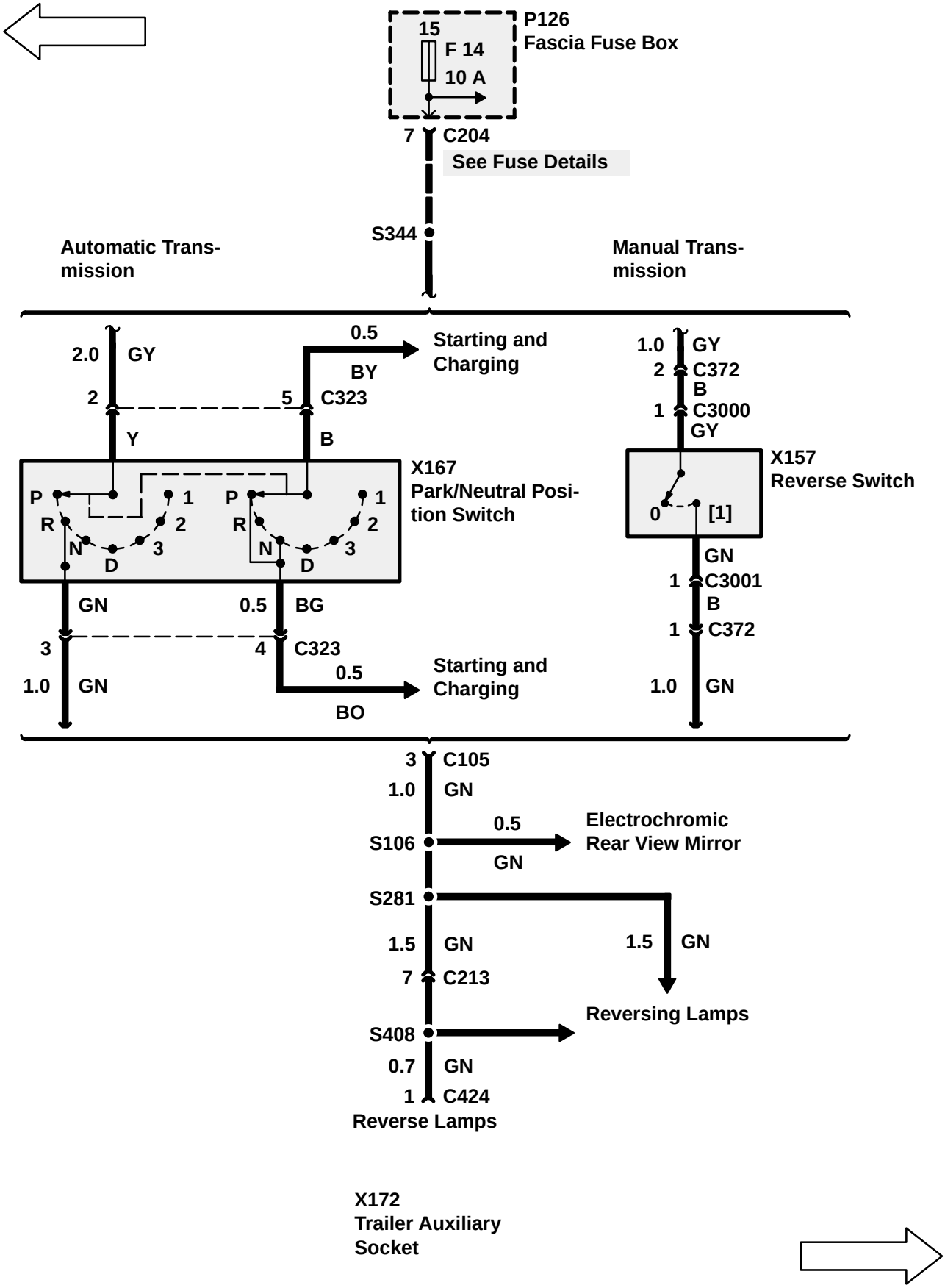
1995 RANGE ROVER

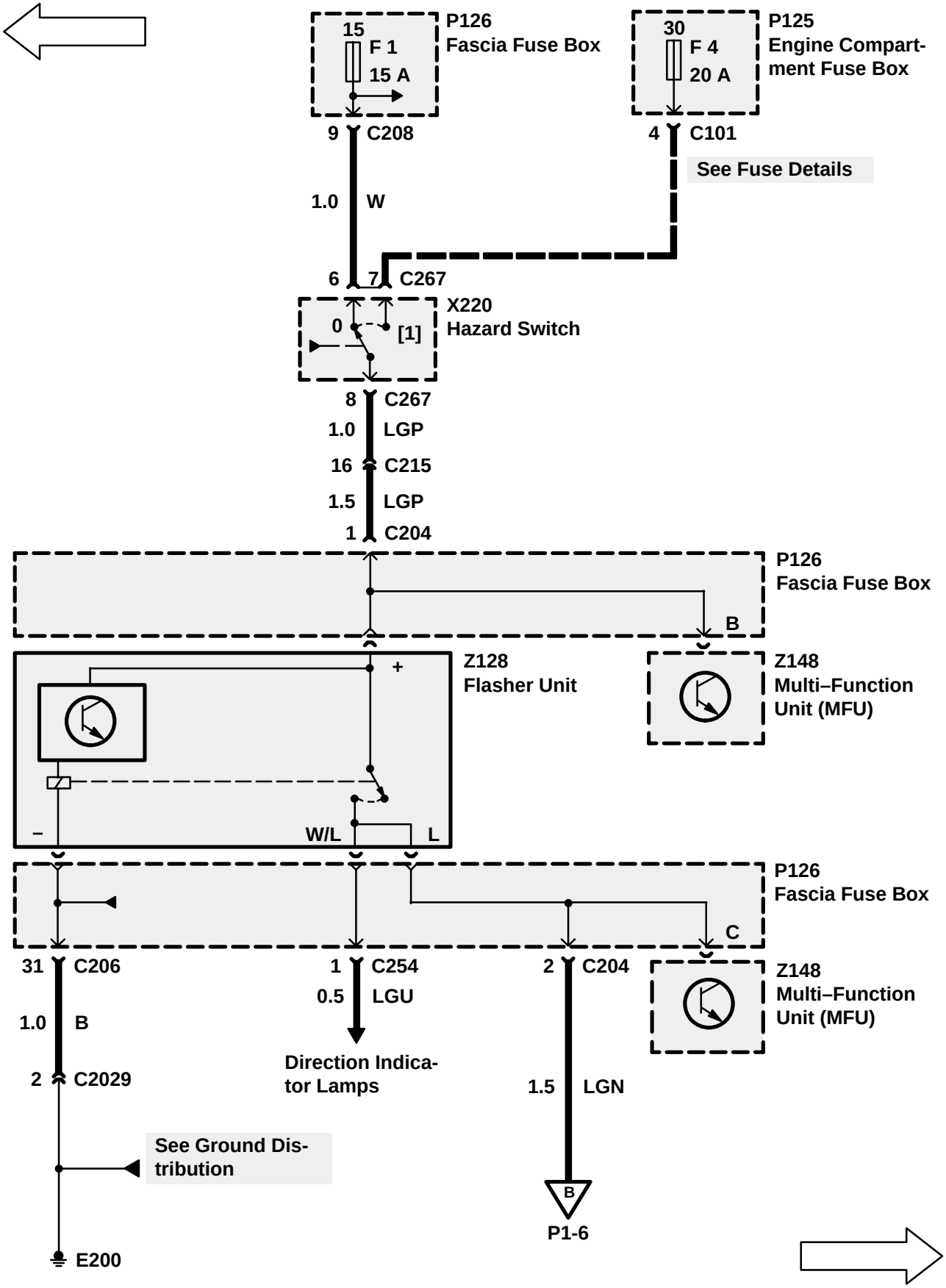



Interior Lamps
P126
Fascia Fuse Box
56
F 9
10 A
13
C208
0.5
RN
1.0
UR
P1-2
A
2
1
C263
X154
Rear Fog Guard
Lamps Switch
0
[1]
1.0
GP
5
4
C263
0.5
B
1.0
RY
S253
HJ8
See Ground Distribution
E201
22
C215
1.5
RY
S2011
HJ4
S223
6
C213
0.7
GP
Stop Lamps
9
C213
1.0
GP
S414
Rear Fog Guard
Lamps
0.5
S408
GP
1.0
RY
2
6
C400
Stop Lamps
Rear Fog Lamps
X172
Trailer Auxiliary
Socket

P1 ETM

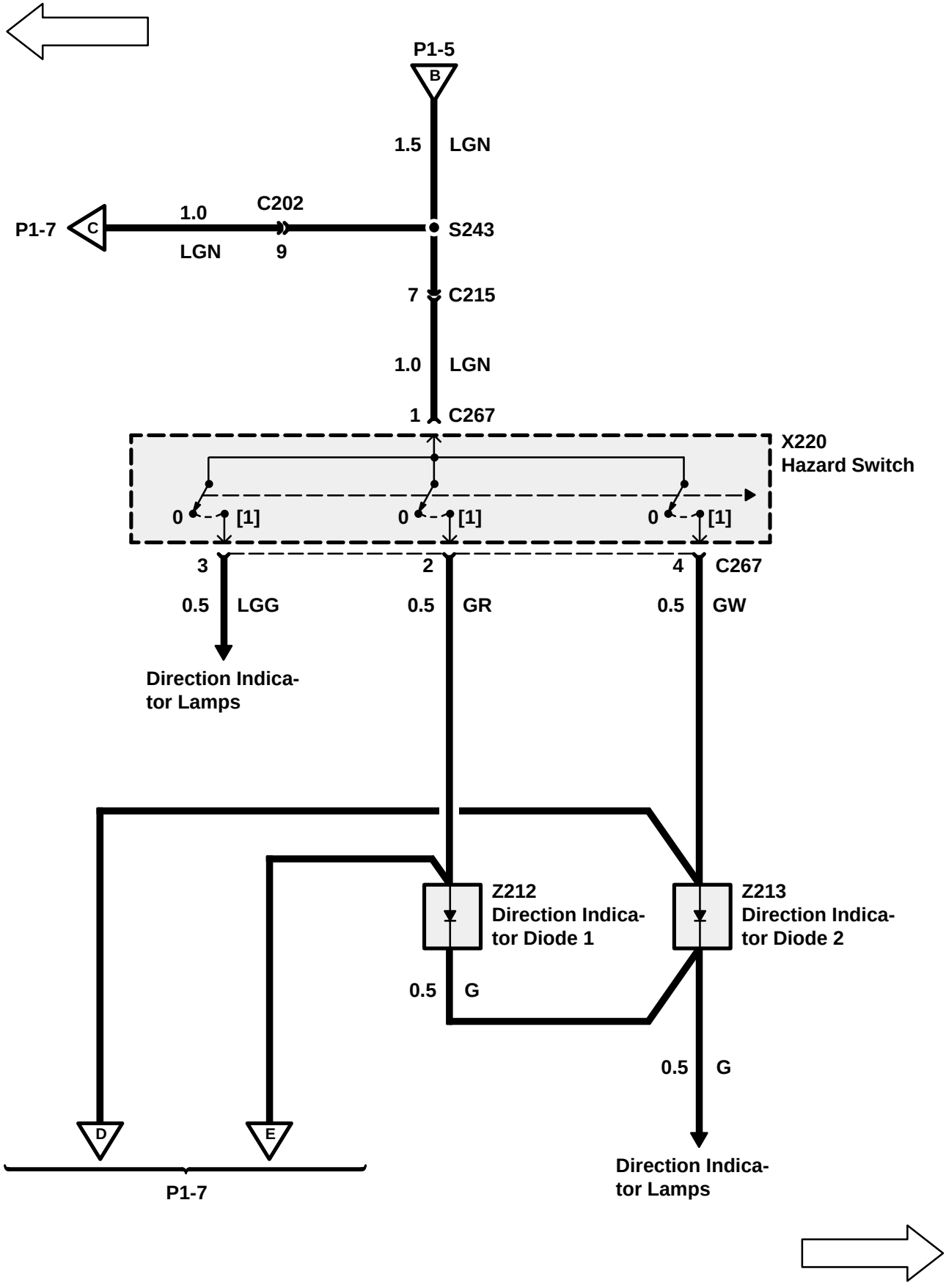
1995 RANGE ROVER

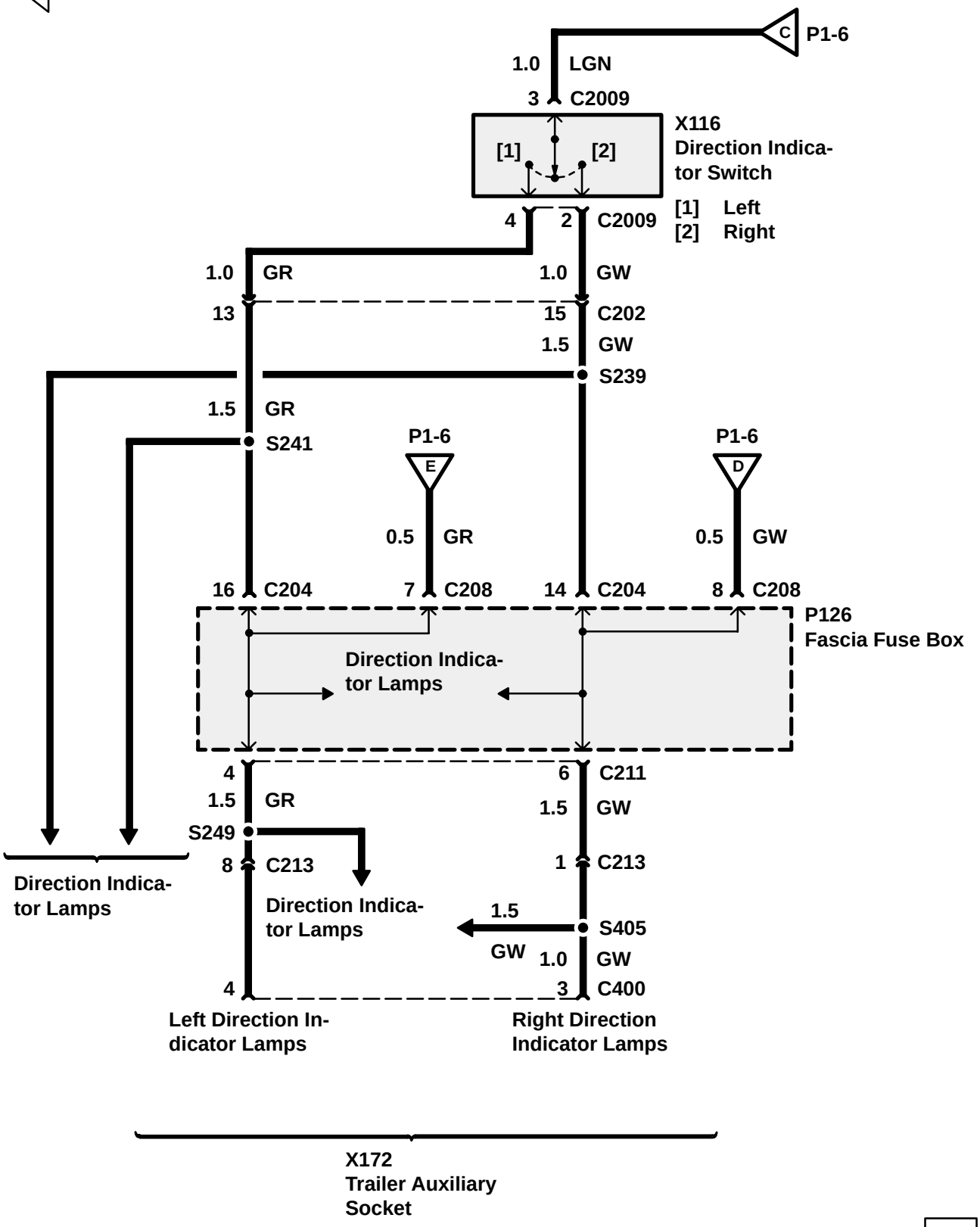


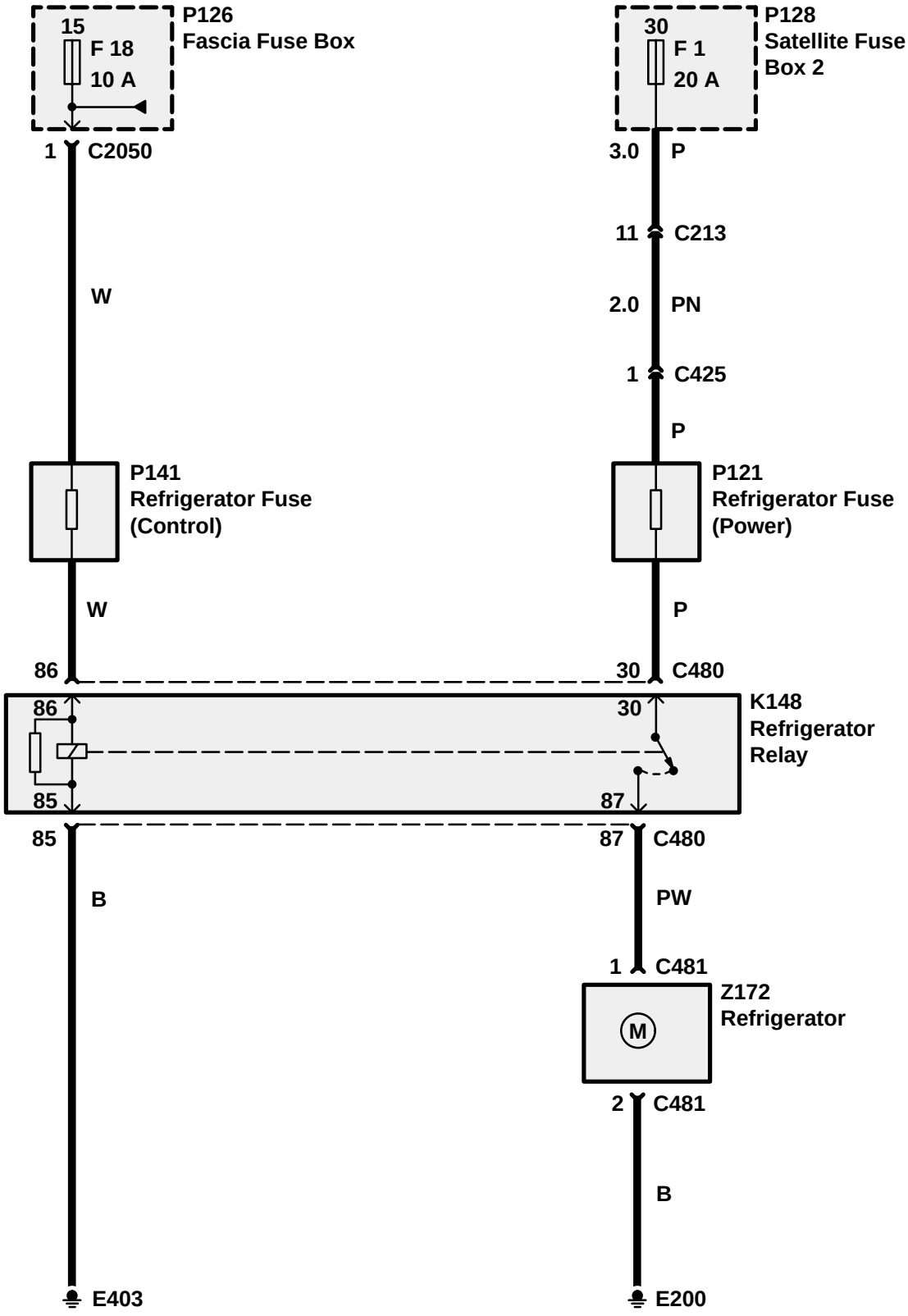

15
F 1
15 A
P126
Fascia Fuse Box
30
F 4
20 A
P125
Engine Compart-
ment Fuse Box
9
C208
4
C101
See Fuse Details
1.0
W
6
7
C267
X220
Hazard Switch
0
[1]
8
C267
1.0
LGP
16
C215
1.5
LGP
1
C204
P126
Fascia Fuse Box
B
Z128
Flasher Unit
+
Z148
Multi–Function
Unit (MFU)
–
W/L
L
P126
Fascia Fuse Box
C
31
C206
1.0
B
2
C2029
1
C254
0.5
LGU
Direction Indica-
tor Lamps
2
C204
1.5
LGN
Z148
Multi–Function
Unit (MFU)
See Ground Dis-
tribution
E200
B
P1-6

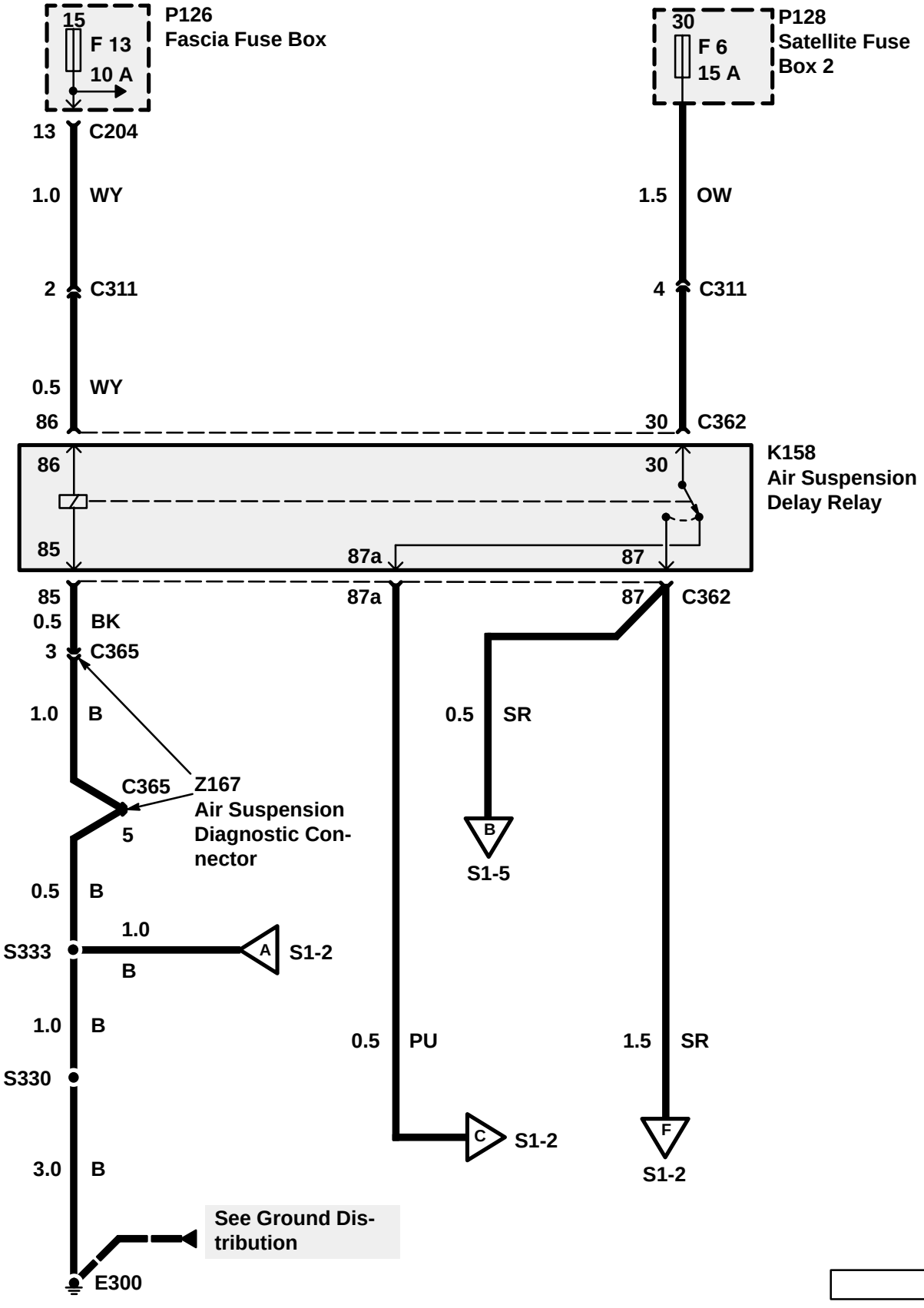
P1 ETM

1995 RANGE ROVER



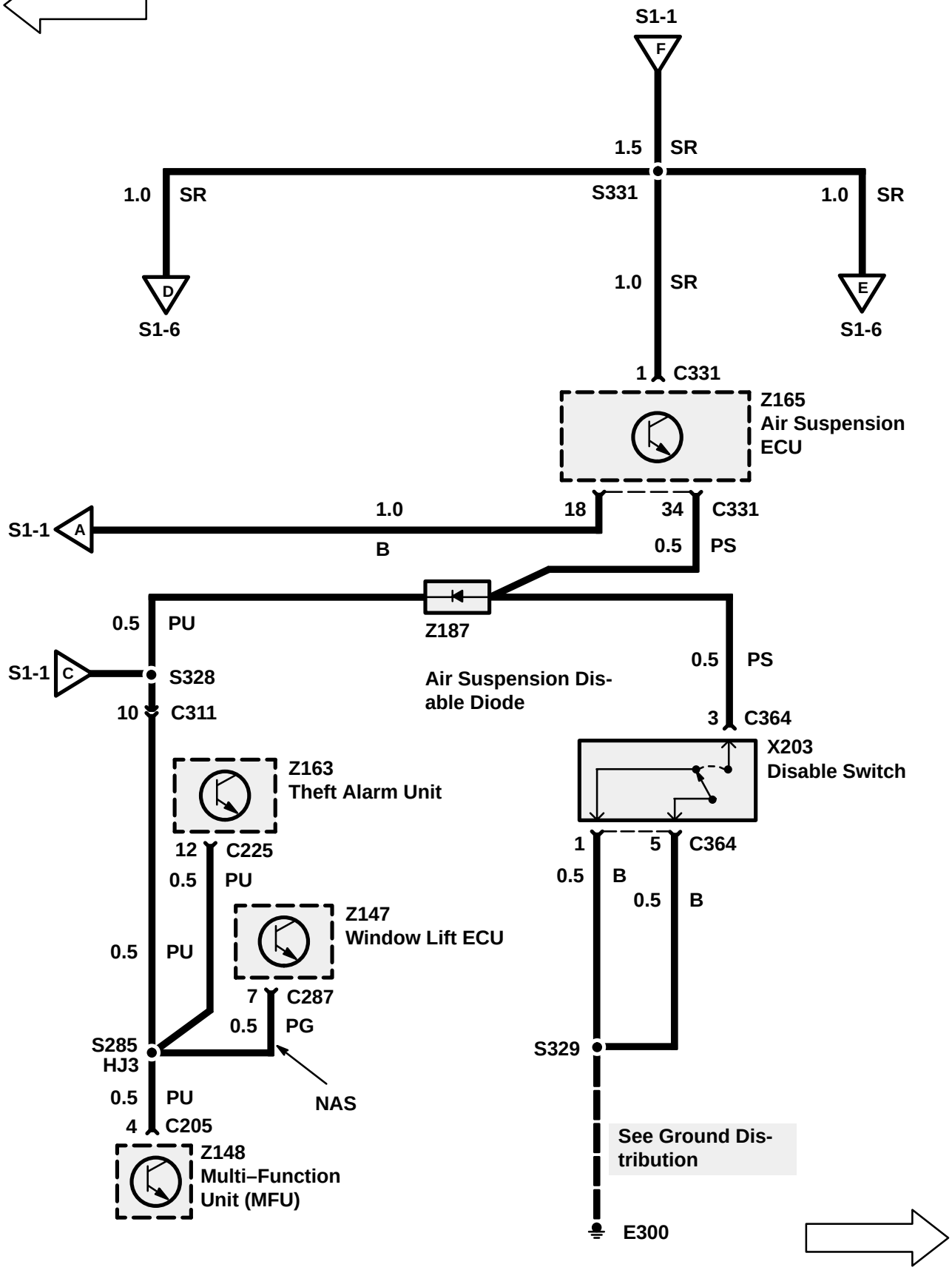

C
P1-6
1.0
LGN
3
C2009
X116
Direction Indicator Switch
[1]
[2]
[1] Left
[2] Right
4
2
C2009
1.0
GR
1.0
GW
13
15
C202
1.5
GW
S239
1.5
GR
S241
P1-6
E
P1-6
D
0.5
GR
0.5
GW
16
C204
7
C208
14
C204
8
C208
P126
Fascia Fuse Box
Direction Indicator Lamps
4
6
C211
1.5
GR
1.5
GW
S249
8
C213
1
C213
Direction Indicator Lamps
Direction Indicator Lamps
1.5
GW
S405
1.0
GW
4
3
C400
Left Direction Indicator Lamps
Right Direction Indicator Lamps
X172
Trailer Auxiliary Socket

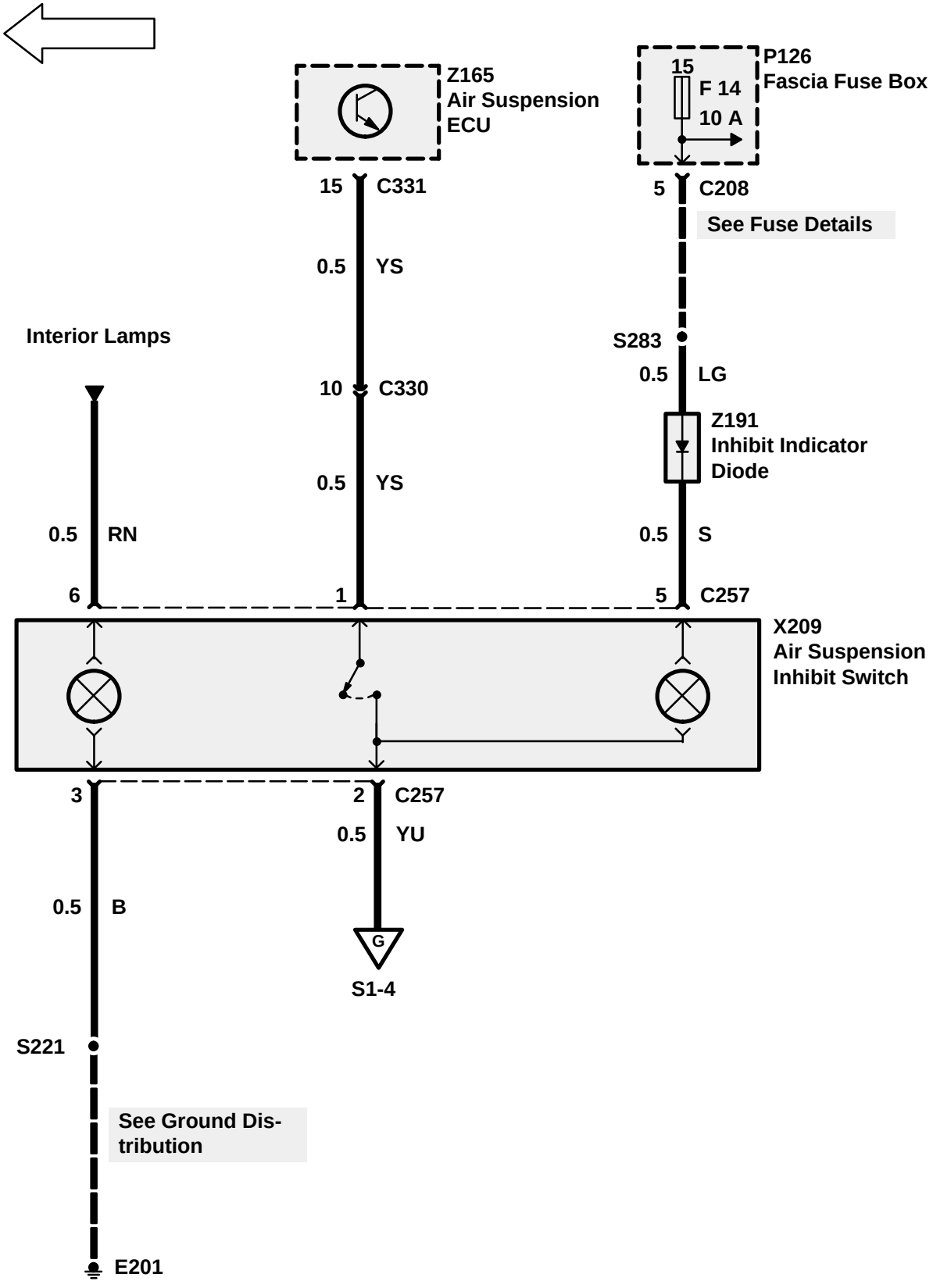

P126
Fascia Fuse Box
15
F 18
10 A
1
C2050
W
P141
Refrigerator Fuse
(Control)
W
86
P128
Satellite Fuse
Box 2
30
F 1
20 A
3.0
P
11
C213
2.0
PN
1
C425
P
P121
Refrigerator Fuse
(Power)
P
30
C480
86
30
85
87
K148
Refrigerator
Relay
85
B
E403
87
C480
PW
1
C481
M
Z172
Refrigerator
2
C481
B
E200


15
F 13
10 A
P126
Fascia Fuse Box
30
F 6
15 A
P128
Satellite Fuse
Box 2
13
C204
1.0
WY
1.5
OW
2
C311
4
C311
0.5
WY
86
30
C362
K158
Air Suspension
Delay Relay
86
30
85
87a
87
85
87a
87
C362
0.5
BK
3
C365
1.0
B
0.5
SR
C365
Z167
Air Suspension
Diagnostic Con-
nector
5
B
S1-5
0.5
B
1.0
S333
A
S1-2
B
1.0
B
0.5
PU
1.5
SR
S330
C
S1-2
F
S1-2
3.0
B
See Ground Dis-
tribution
E300

S1 ETM

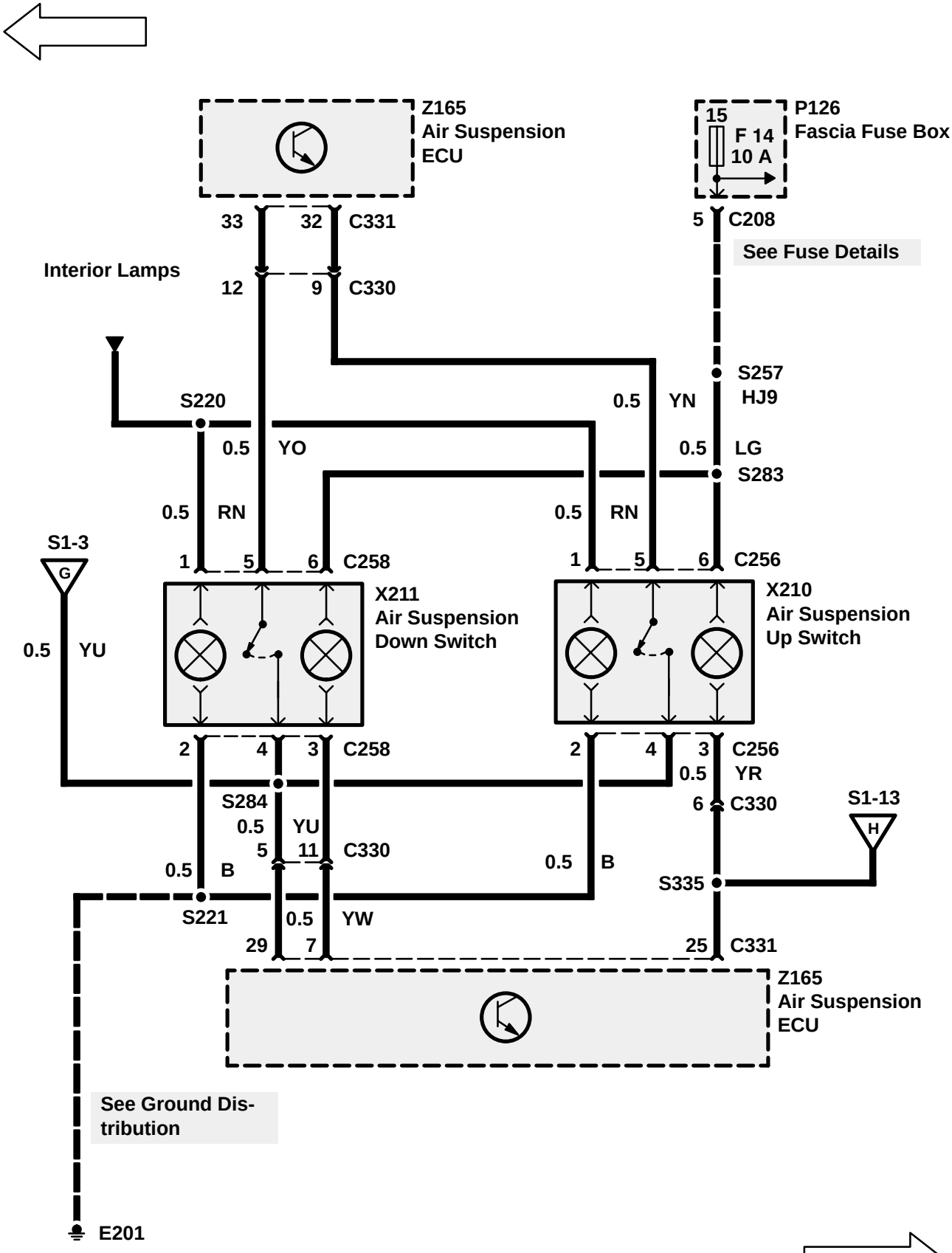
1995 RANGE ROVER

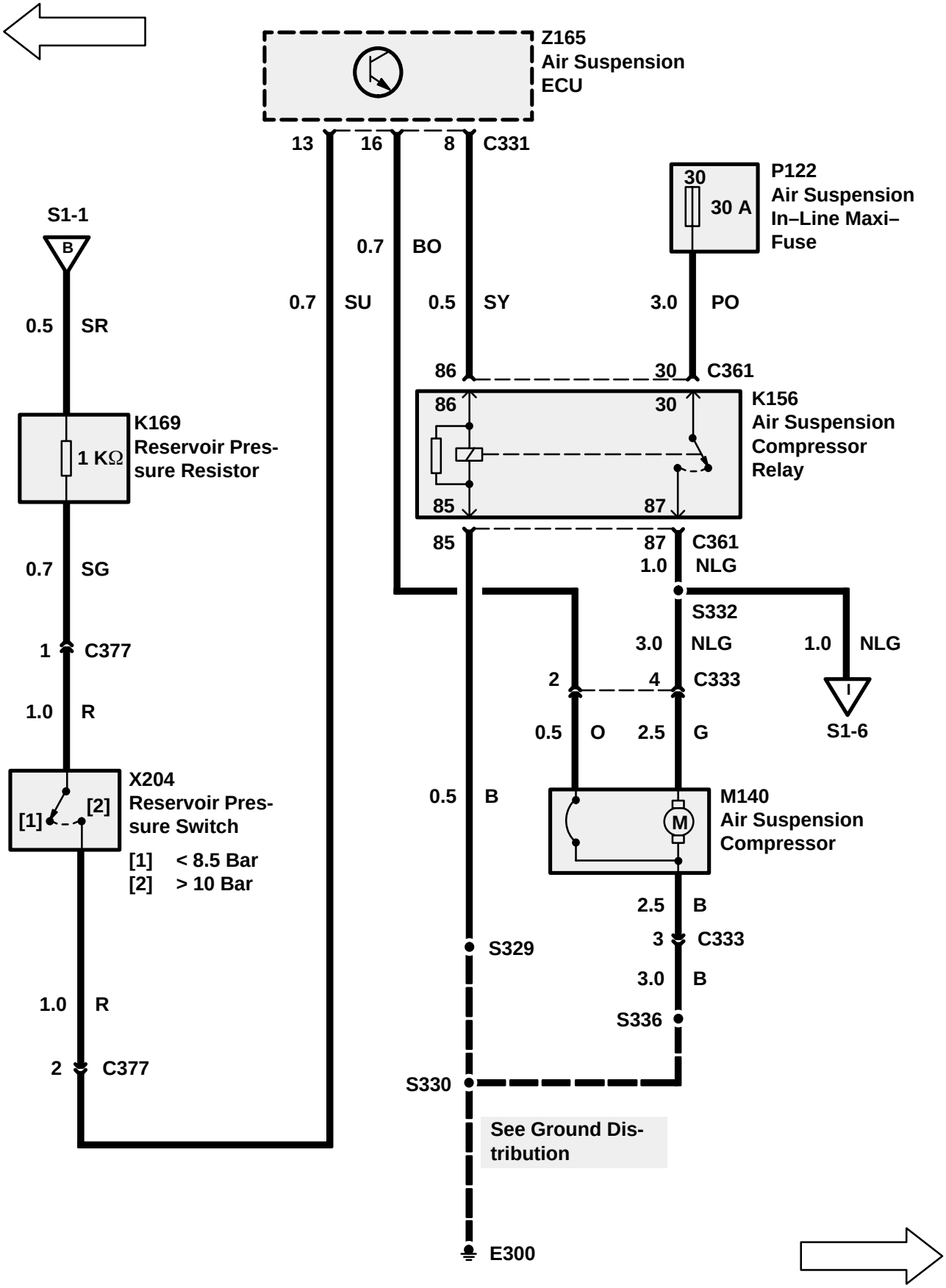



Z165
Air Suspension
ECU
15
C331
0.5
YS
10
C330
0.5
YS
Interior Lamps
0.5
RN
6
1
P126
Fascia Fuse Box
15
F 14
10 A
5
C208
See Fuse Details
S283
0.5
LG
Z191
Inhibit Indicator
Diode
0.5
S
5
C257
X209
Air Suspension
Inhibit Switch
3
2
C257
0.5
YU
0.5
B
G
S1-4
S221
See Ground Dis-
tribution
E201

S1 ETM

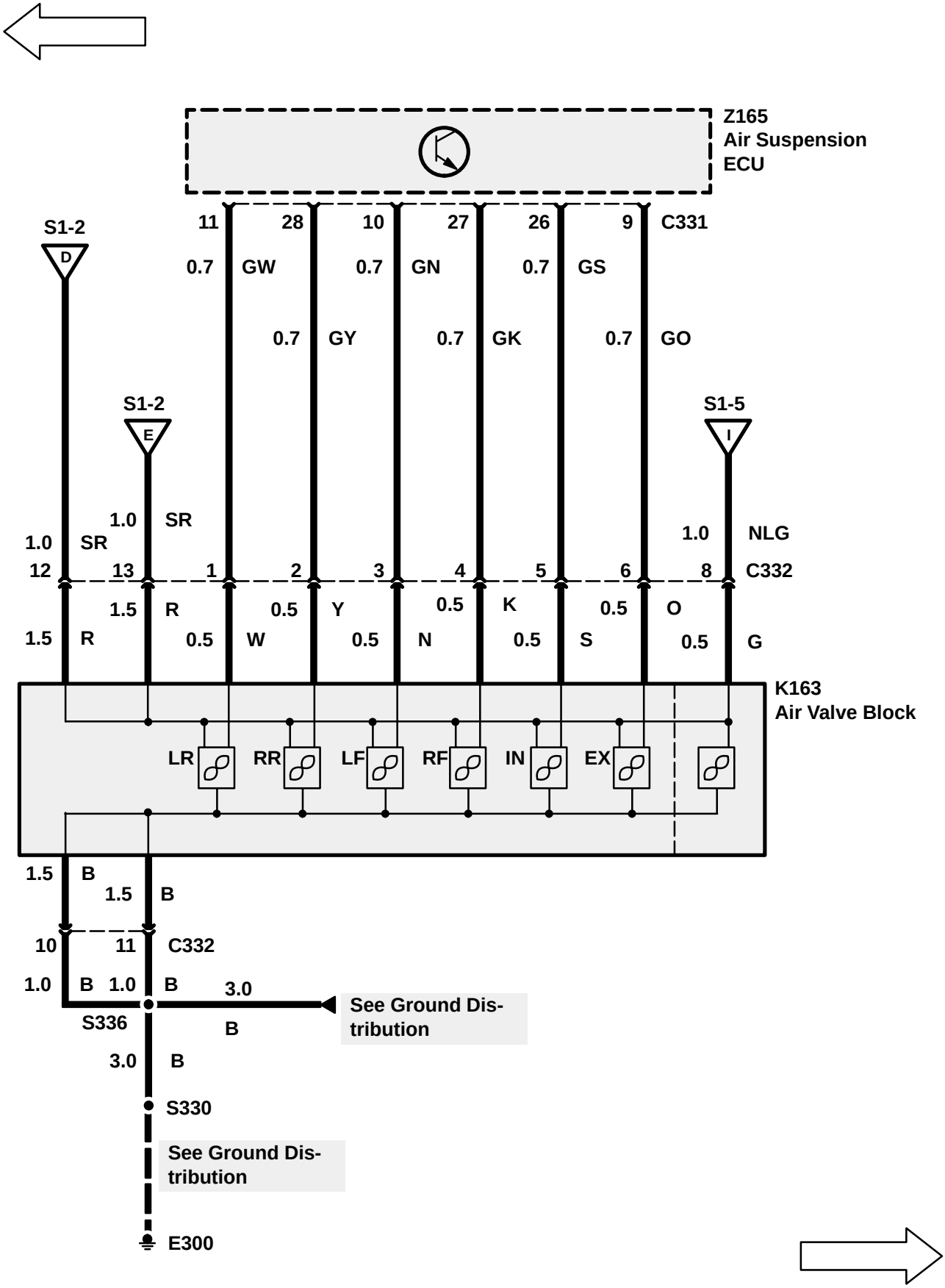
1995 RANGE ROVER

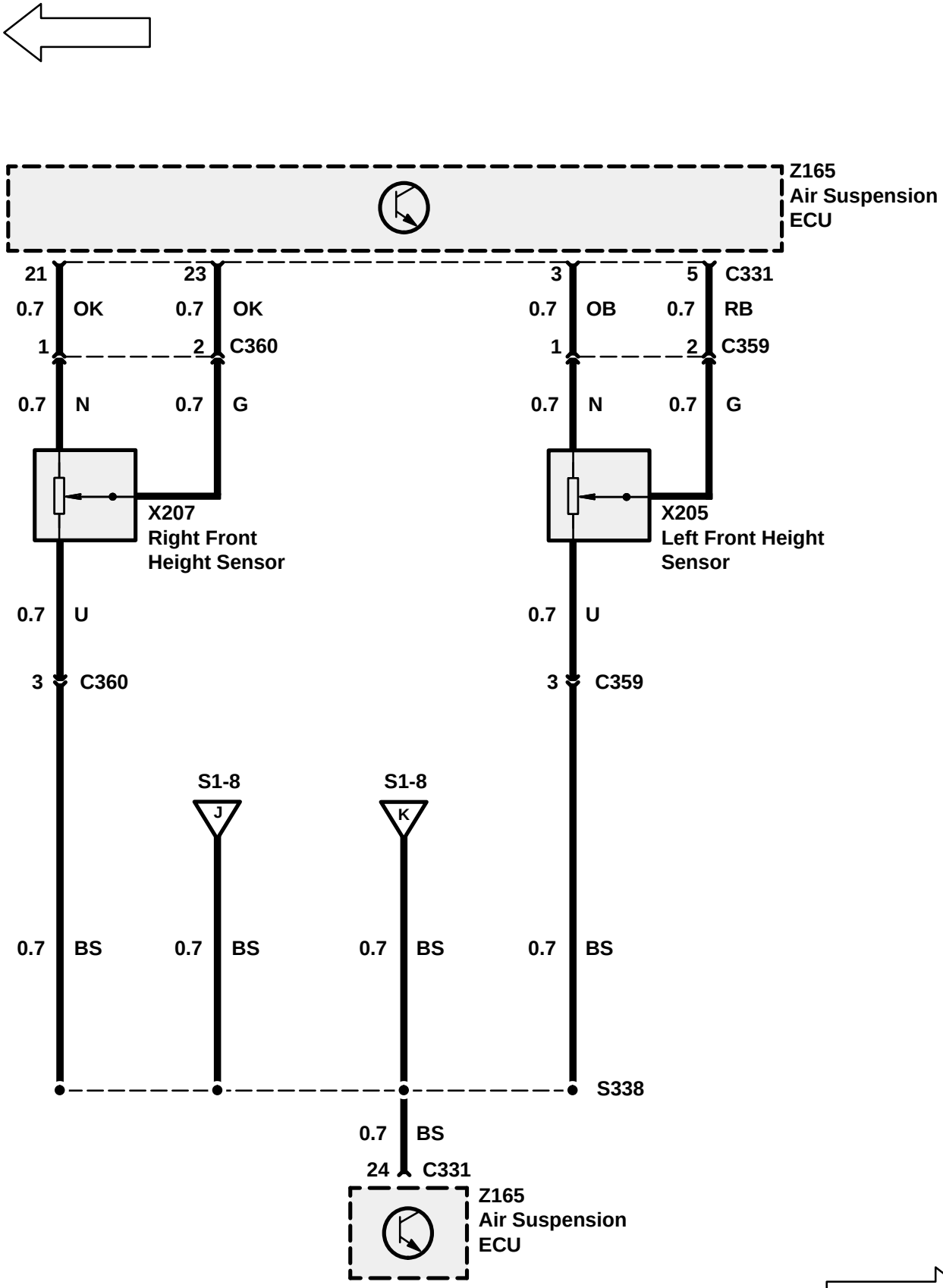



Z165
Air Suspension
ECU
13
16
8
C331
30
30 A
P122
Air Suspension
In–Line Maxi–
Fuse
S1-1
B
0.7
BO
0.7
SU
0.5
SY
3.0
PO
0.5
SR
86
30
C361
K169
Reservoir Pres-
sure Resistor
1 KΩ
86
30
K156
Air Suspension
Compressor
Relay
85
87
85
87
C361
1.0
NLG
0.7
SG
S332
3.0
NLG
1.0
NLG
1
C377
2
4
C333
1.0
R
0.5
O
2.5
G
I
S1-6
X204
Reservoir Pres-
sure Switch
[1]
[2]
[1] < 8.5 Bar
[2] > 10 Bar
0.5
B
M140
Air Suspension
Compressor
M
2.5
B
3
C333
S329
3.0
B
1.0
R
S336
2
C377
S330
See Ground Dis-
tribution
E300

S1 ETM

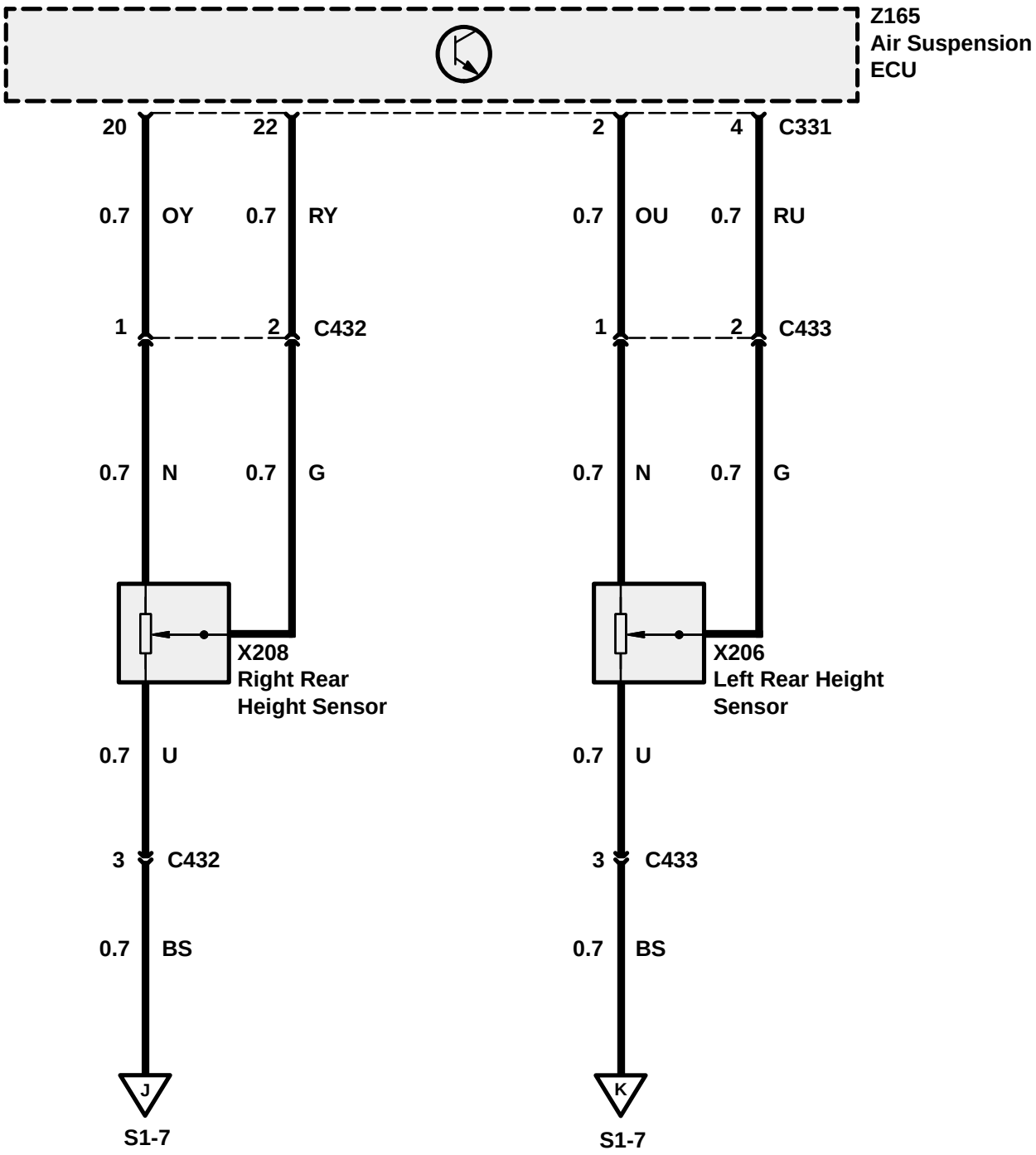
1995 RANGE ROVER

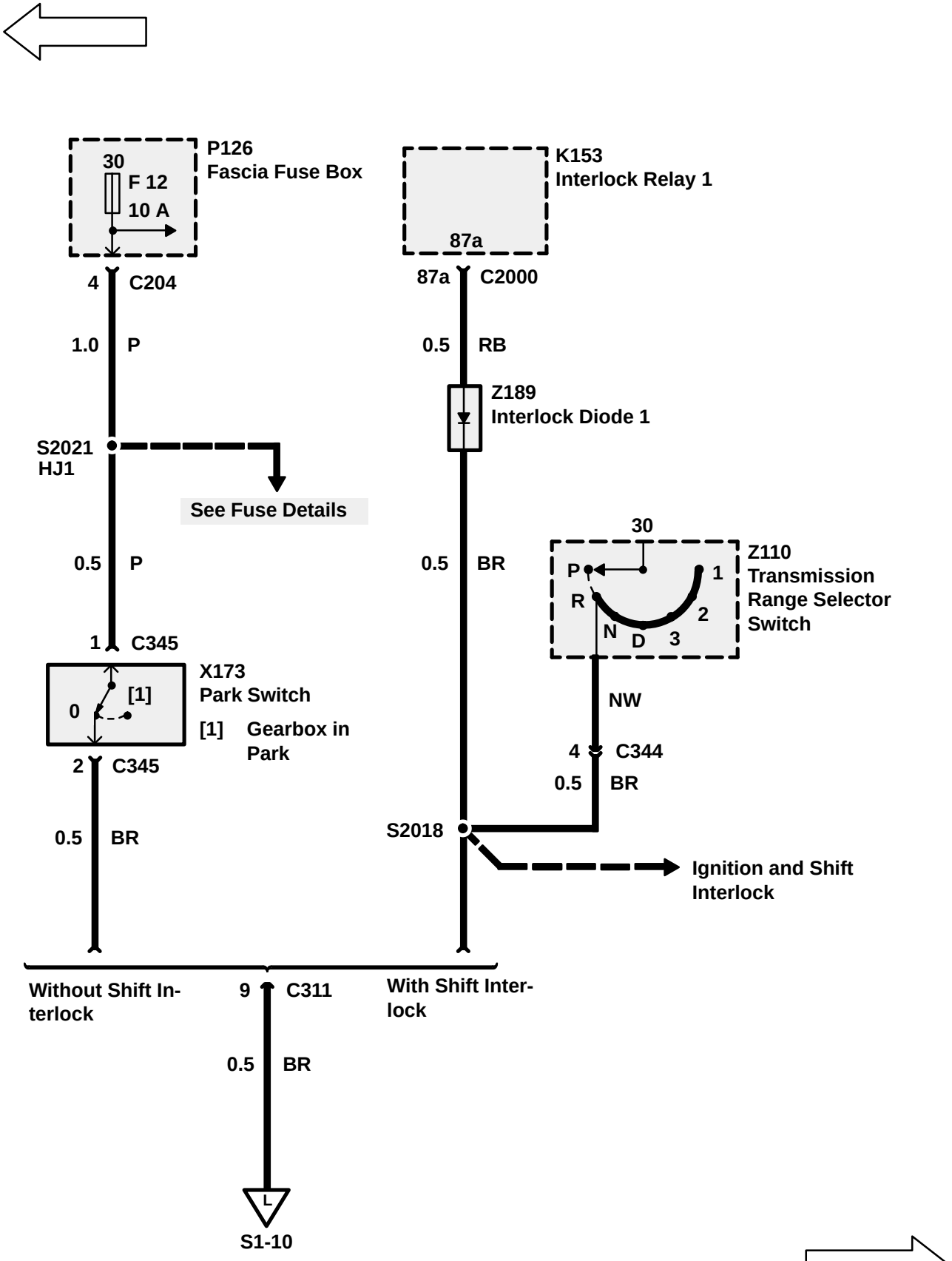



Z165
Air Suspension
ECU
21
23
3
5
C331
0.7 OK
0.7 OK
0.7 OB
0.7 RB
1
2
C360
1
2
C359
0.7 N
0.7 G
0.7 N
0.7 G
X207
Right Front
Height Sensor
X205
Left Front Height
Sensor
0.7 U
0.7 U
3 C360
3 C359
S1-8
J
S1-8
K
0.7 BS
0.7 BS
0.7 BS
0.7 BS
S338
0.7 BS
24 C331
Z165
Air Suspension
ECU

S1 ETM

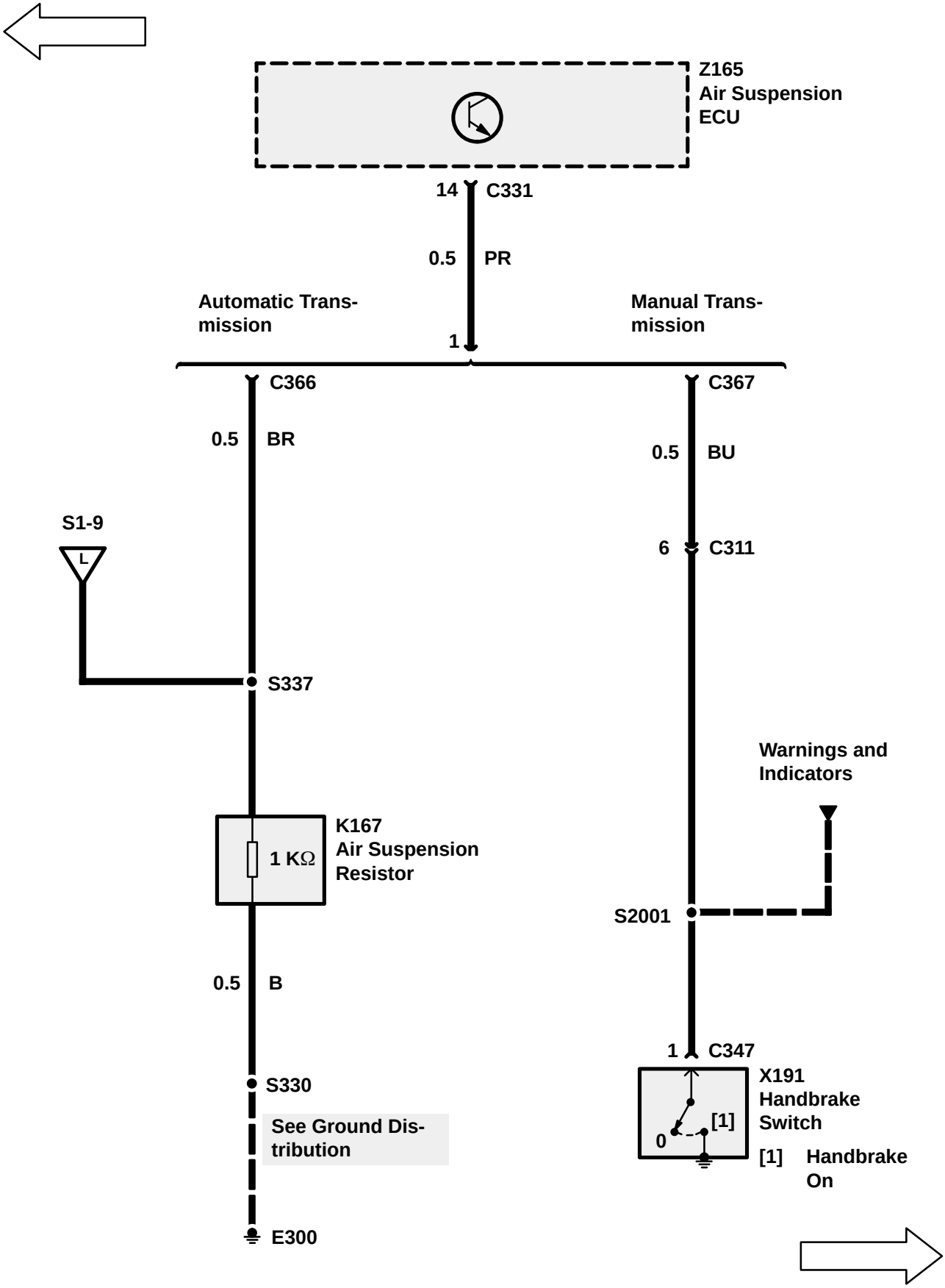
1995 RANGE ROVER

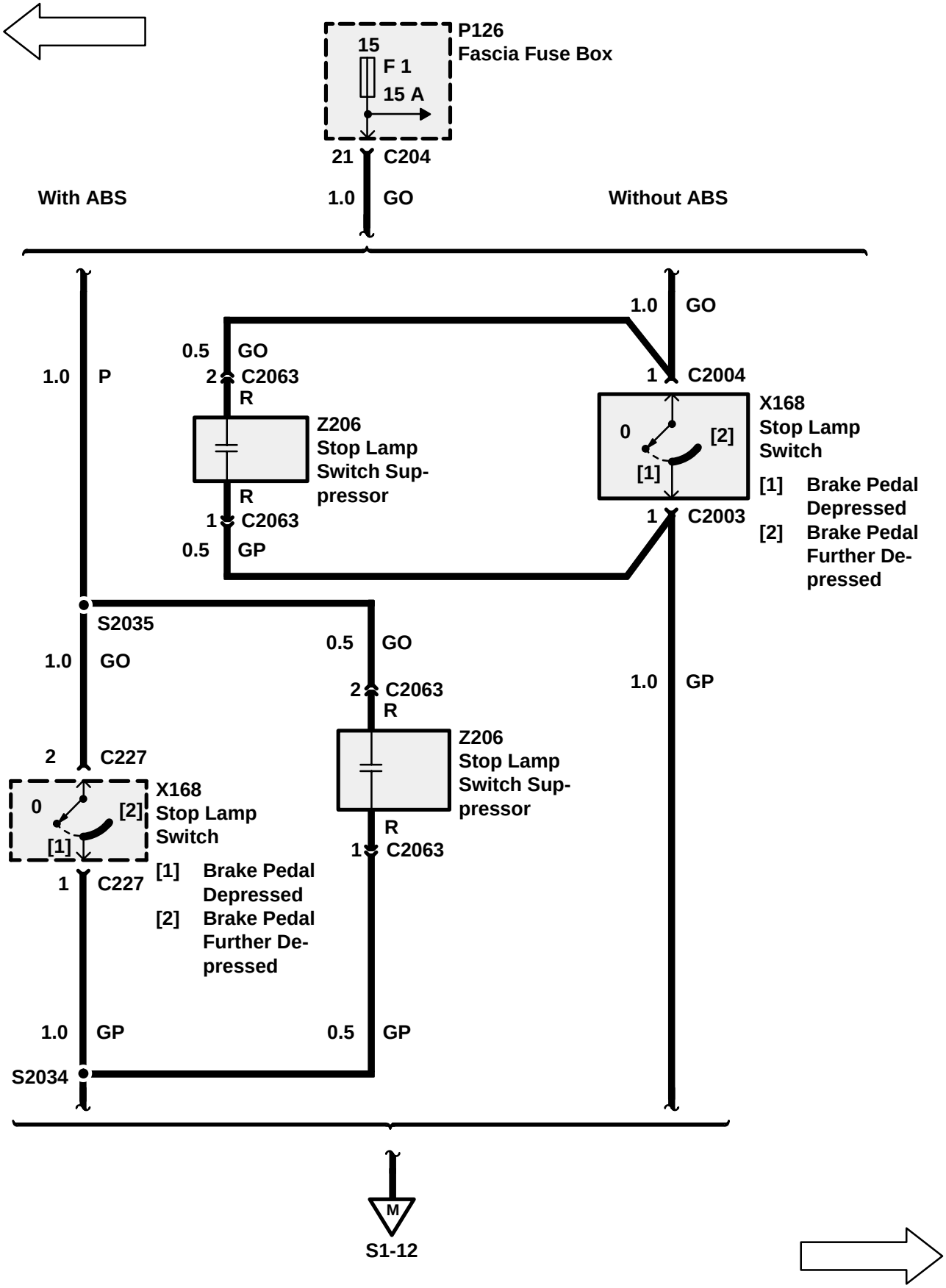


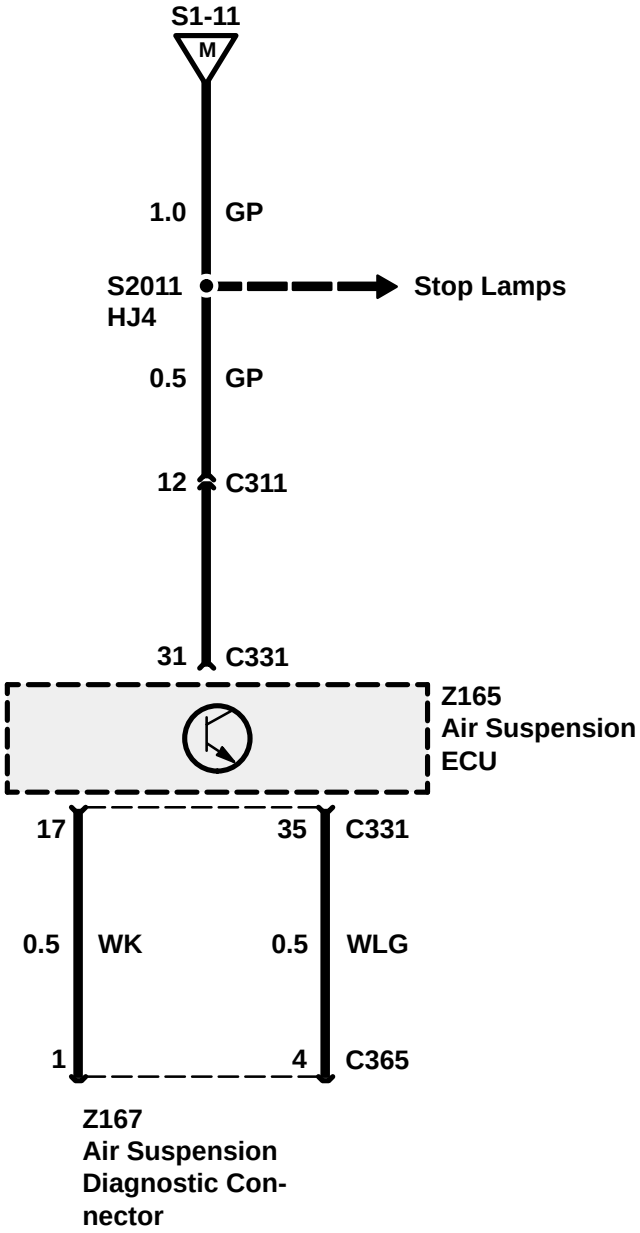

P126
Fascia Fuse Box
30
F 12
10 A
4
C204
1.0
P
S2021
HJ1
See Fuse Details
0.5
P
1
C345
X173
Park Switch
[1]
0
[1] Gearbox in Park
2
C345
0.5
BR
Without Shift Interlock
K153
Interlock Relay 1
87a
87a
C2000
0.5
RB
Z189
Interlock Diode 1
0.5
BR
30
Z110
Transmission
Range Selector
Switch
P
R
N
D
1
2
3
NW
4
C344
0.5
BR
S2018
Ignition and Shift Interlock
With Shift Interlock
9
C311
0.5
BR
L
S1-10

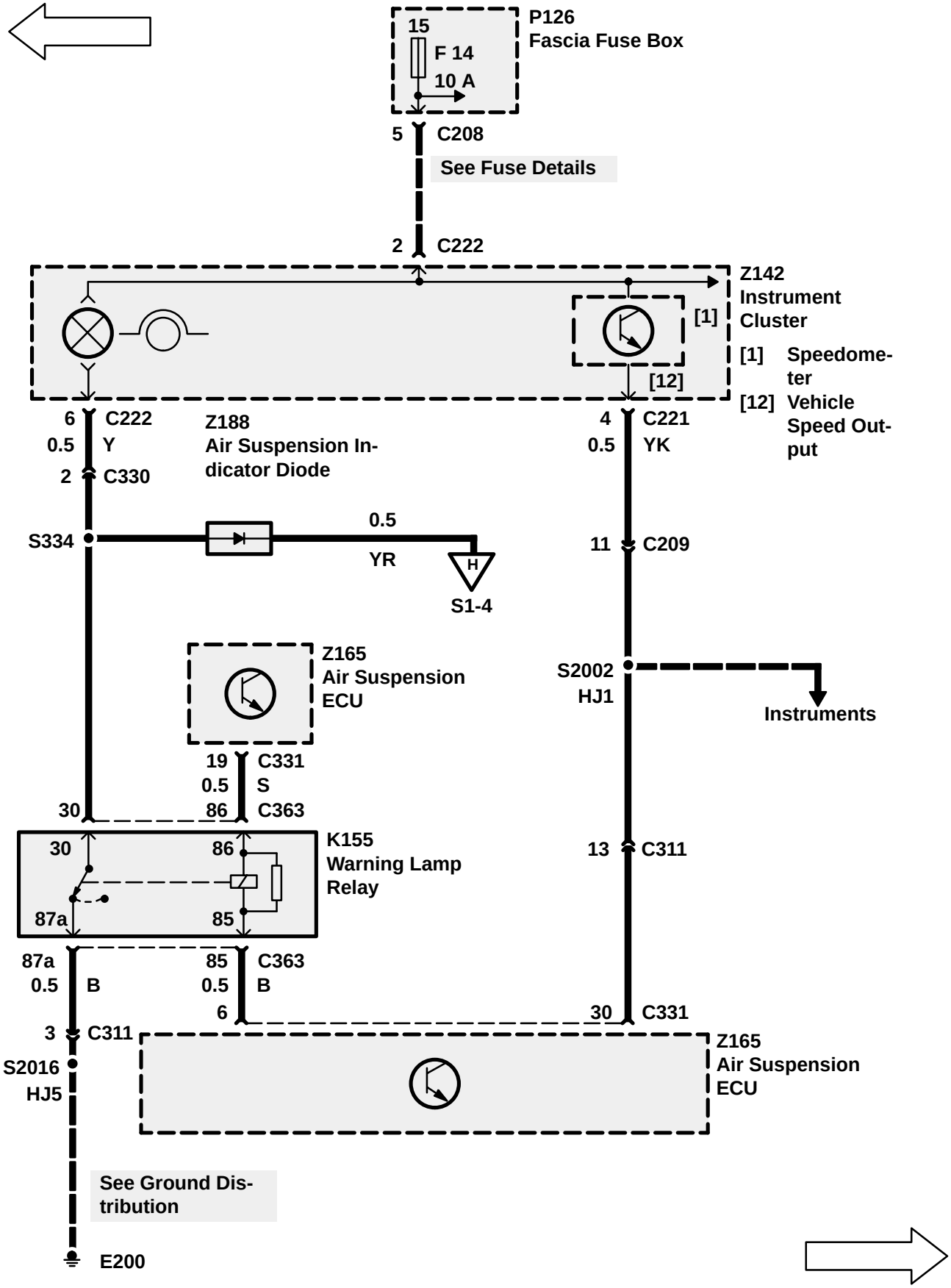
S1 ETM

1995 RANGE ROVER



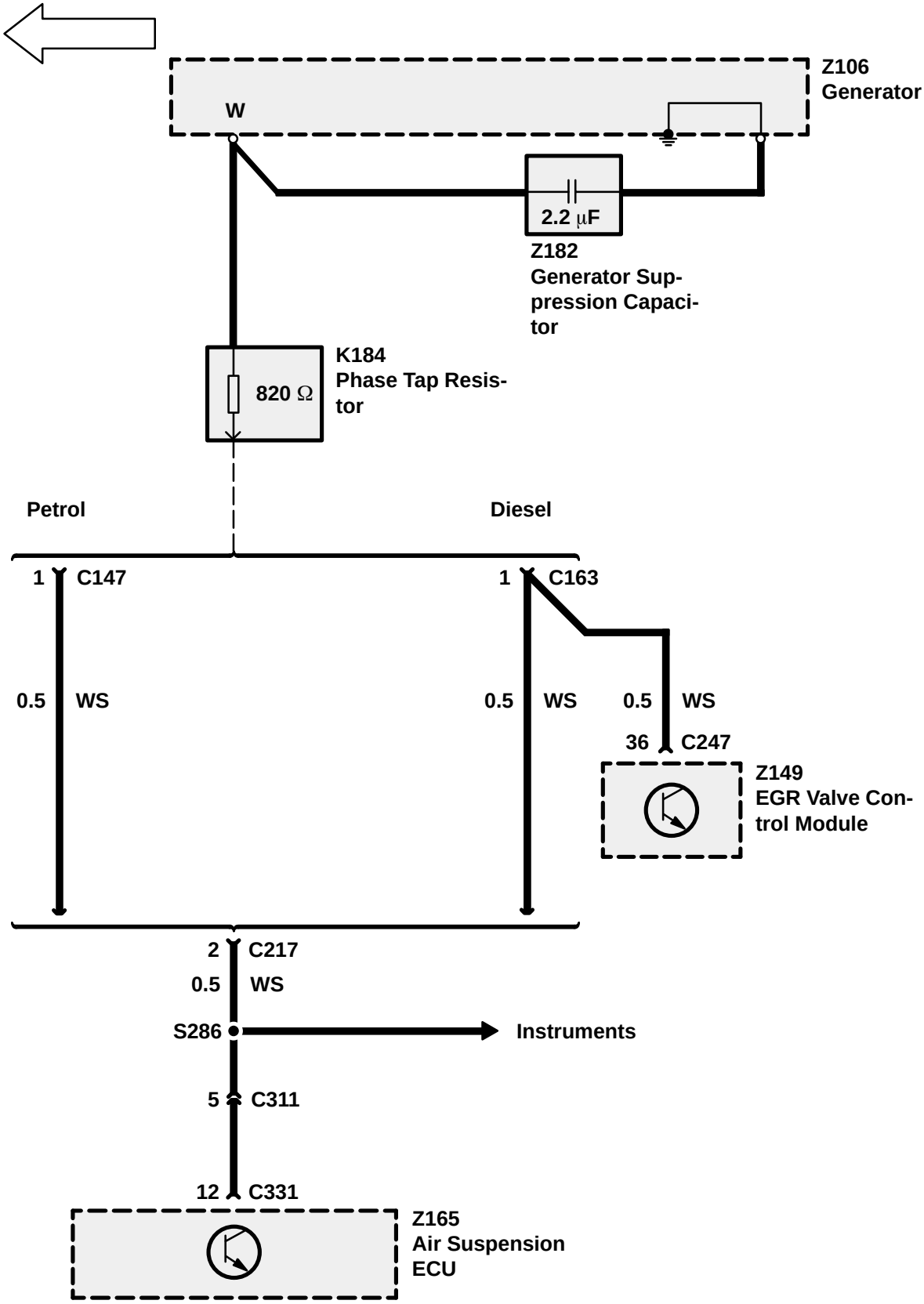

P126
Fascia Fuse Box
15
F 1
15 A
21 C204
1.0 GO
With ABS
Without ABS
1.0 GO
1 C2004
X168
Stop Lamp
Switch
0
[2]
[1]
[1] Brake Pedal Depressed
[2] Brake Pedal Further Depressed
1 C2003
0.5 GO
2 C2063
R
Z206
Stop Lamp
Switch Suppressor
R
1 C2063
0.5 GP
1.0 P
S2035
1.0 GO
2 C227
X168
Stop Lamp
Switch
0
[2]
[1]
1 C227
[1] Brake Pedal Depressed
[2] Brake Pedal Further Depressed
0.5 GO
2 C2063
R
Z206
Stop Lamp
Switch Suppressor
R
1 C2063
1.0 GP
1.0 GP
0.5 GP
S2034
M
S1-12


S1-11
M
1.0
GP
S2011
HJ4
Stop Lamps
0.5
GP
12
C311
31
C331
Z165
Air Suspension
ECU
17
35
C331
0.5
WK
0.5
WLG
1
4
C365
Z167
Air Suspension
Diagnostic Con-
nector


P126
Fascia Fuse Box
15
F 14
10 A
5 C208
See Fuse Details
2 C222
Z142
Instrument Cluster
[1] Speedometer
[12] Vehicle Speed Output
[1]
[12]
6 C222
0.5 Y
2 C330
Z188
Air Suspension Indicator Diode
4 C221
0.5 YK
S334
0.5
YR
H
S1-4
11 C209
Z165
Air Suspension ECU
S2002
HJ1
Instruments
19 C331
0.5 S
86 C363
30
K155
Warning Lamp Relay
30
86
87a
85
13 C311
87a
0.5 B
85 C363
0.5 B
6
30 C331
3 C311
S2016
HJ5
Z165
Air Suspension ECU
See Ground Distribution
E200

S1 ETM

1995 RANGE ROVER



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

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

ANTI–THEFT SYSTEM FUNCTION

Perimetric Protection

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

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

Volumetric Protection

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

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

Horns

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

Vehicle Status Indication

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

Central Locking

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

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

Inertia Switch

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

Alarm Sensor (X213)

The sensor operates by emitting an air pressure carrier wave and receiving the wave back. Any disturbace 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 hanset 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 alarmed 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:

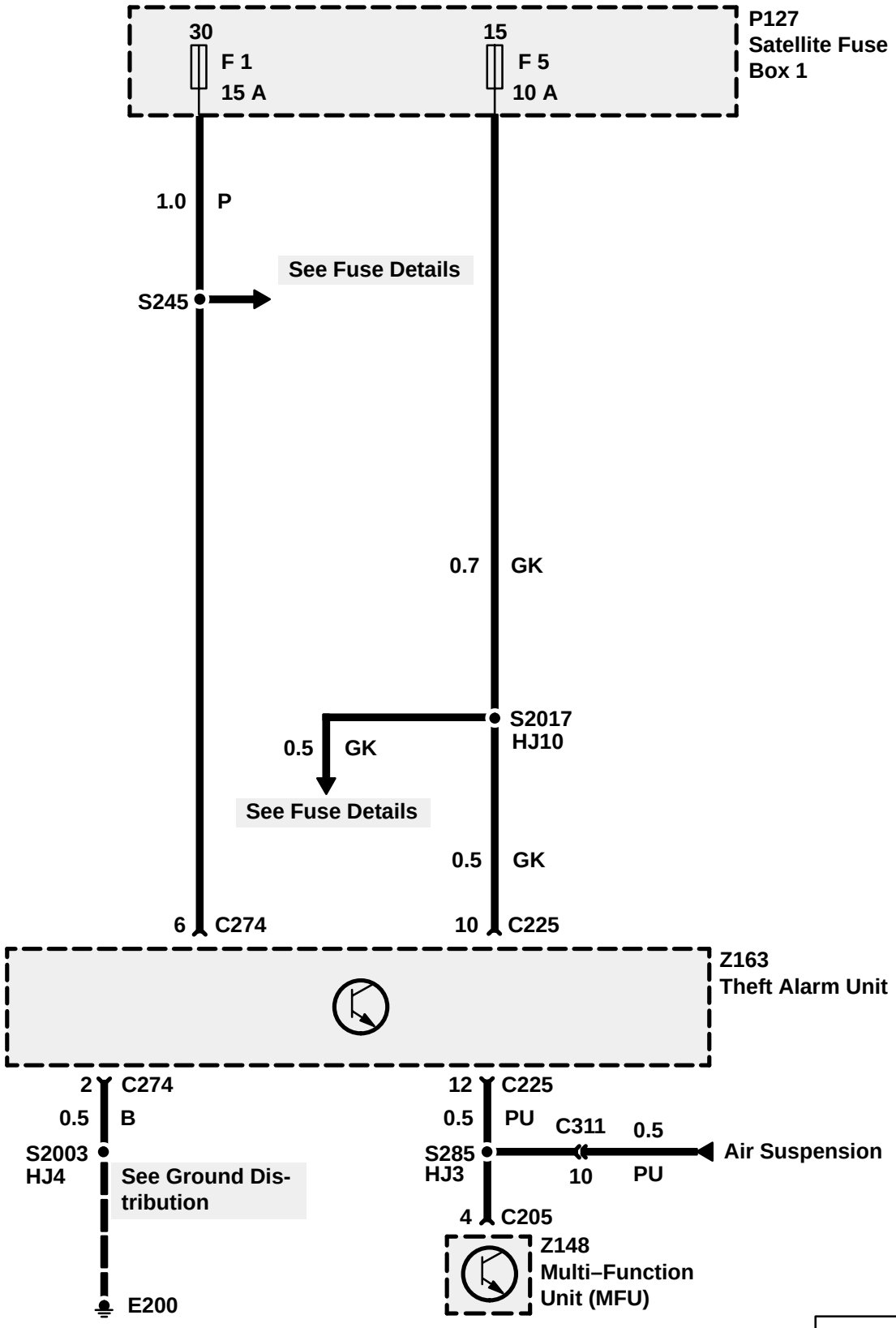
1. Starting conditions: ignition off, doors unlocked, bonnet switch depressed.
2. Carry out instructions 3 to 7 within 8 seconds.
3. Release bonnet switch.
4. Switch ignition ON.
5. Lock doors.
6. Switch ignition OFF.
7. Switch ignition ON.

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 bonnett 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.

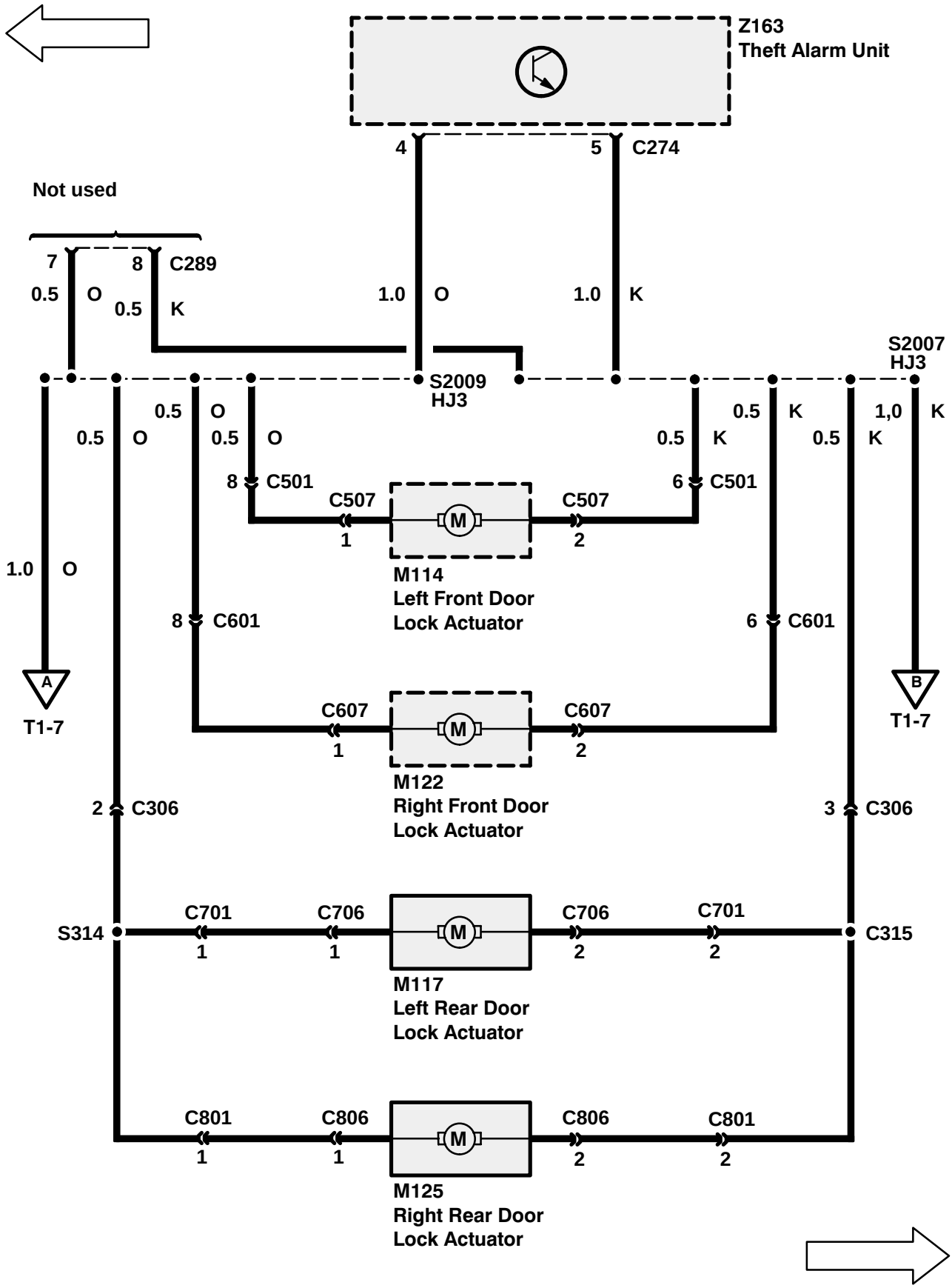
NOTE: If ECU is in new born mode, any handset of the right frequency will work. If not, initialised handset is required. See Handset Initialisation.

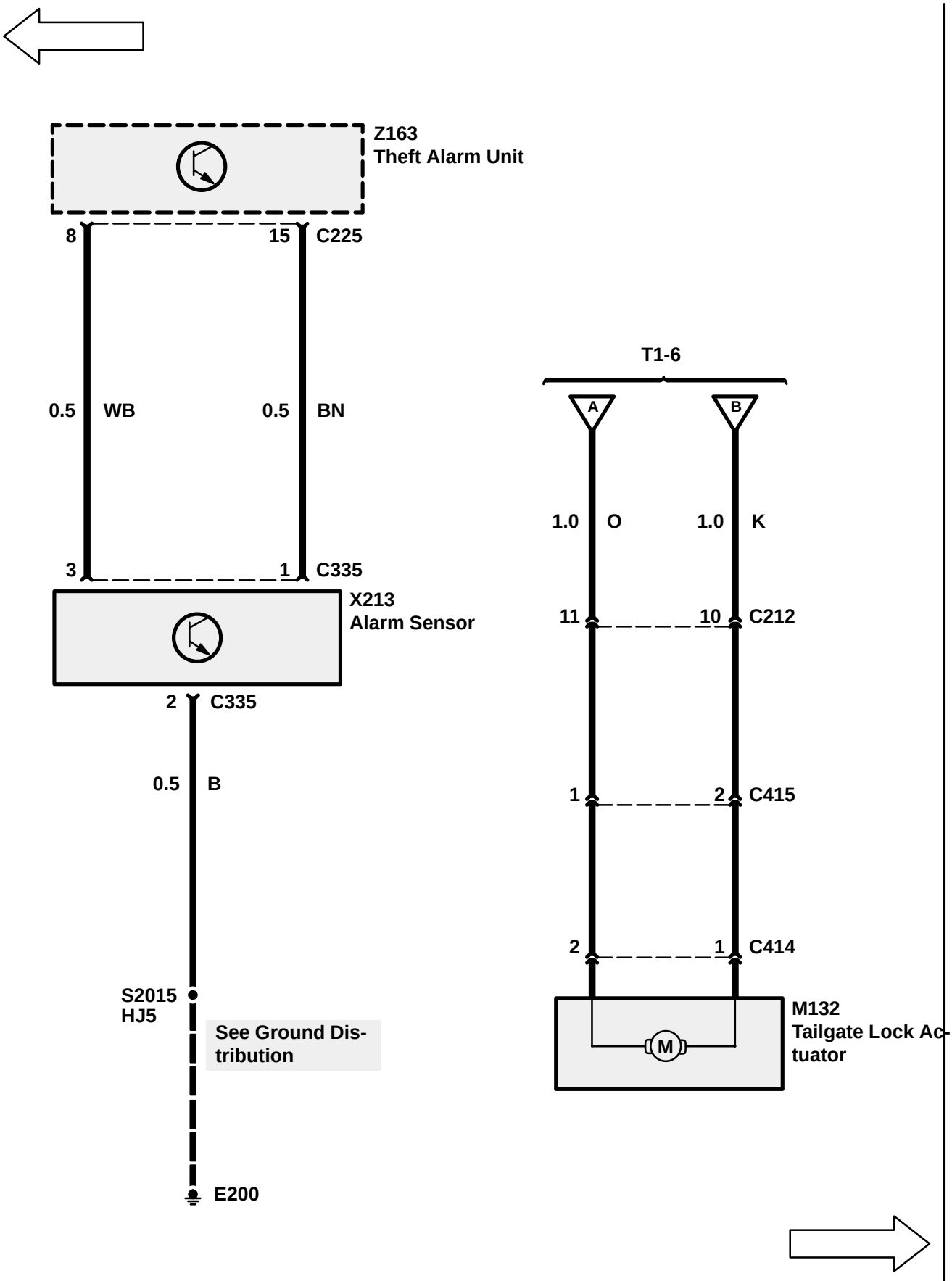
12. Turn OFF ignition or press handset to end test procedure. Horn will sound as before to indicate end of test mode.

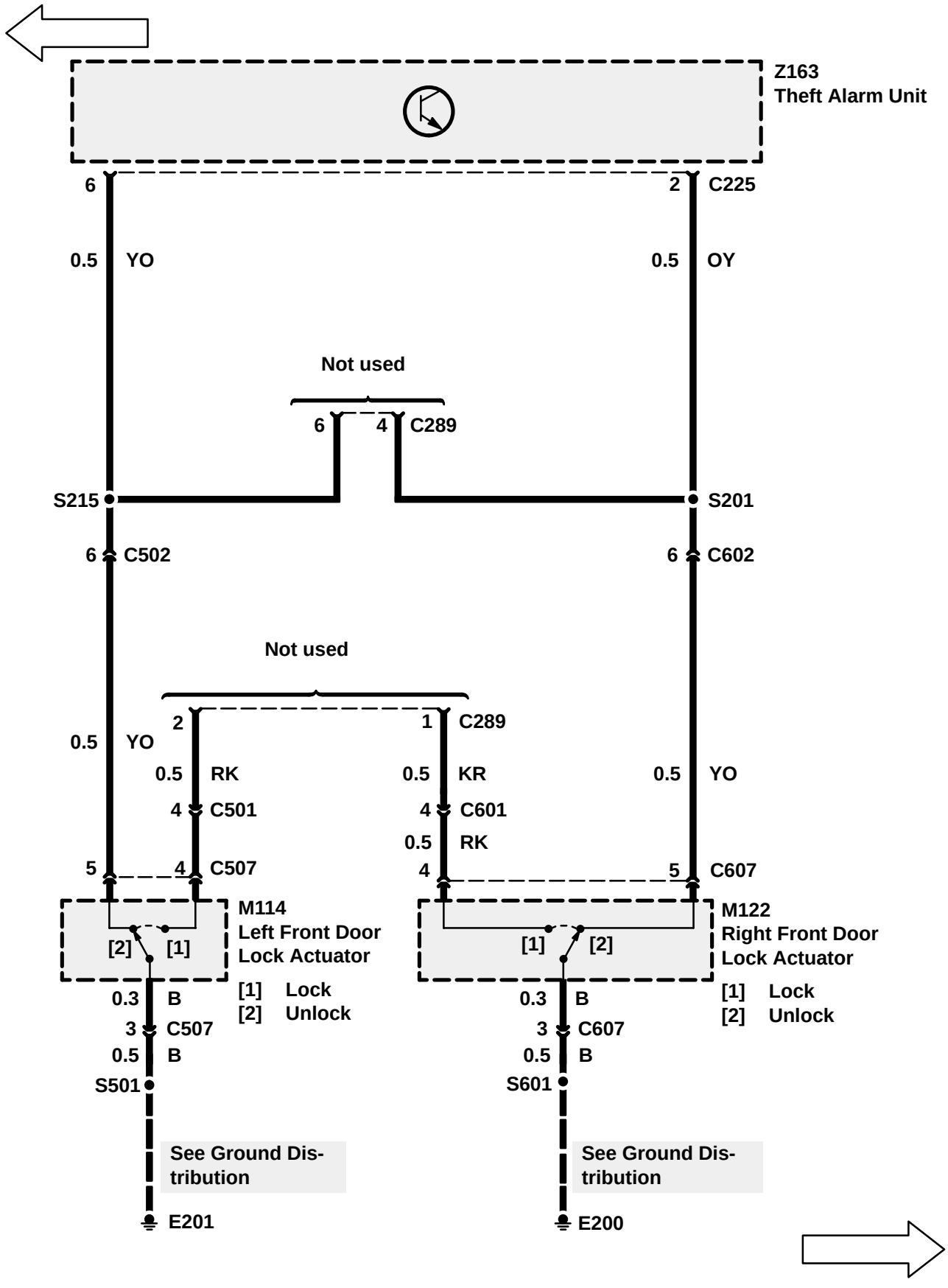

P127
Satellite Fuse Box 1
30
F 1
15 A
15
F 5
10 A
1.0
P
See Fuse Details
S245
0.7
GK
S2017
HJ10
0.5
GK
See Fuse Details
0.5
GK
6
C274
10
C225
Z163
Theft Alarm Unit
2
C274
0.5
B
S2003
HJ4
See Ground Distribution
E200
12
C225
0.5
PU
C311
0.5
S285
HJ3
10
PU
Air Suspension
4
C205
Z148
Multi–Function Unit (MFU)

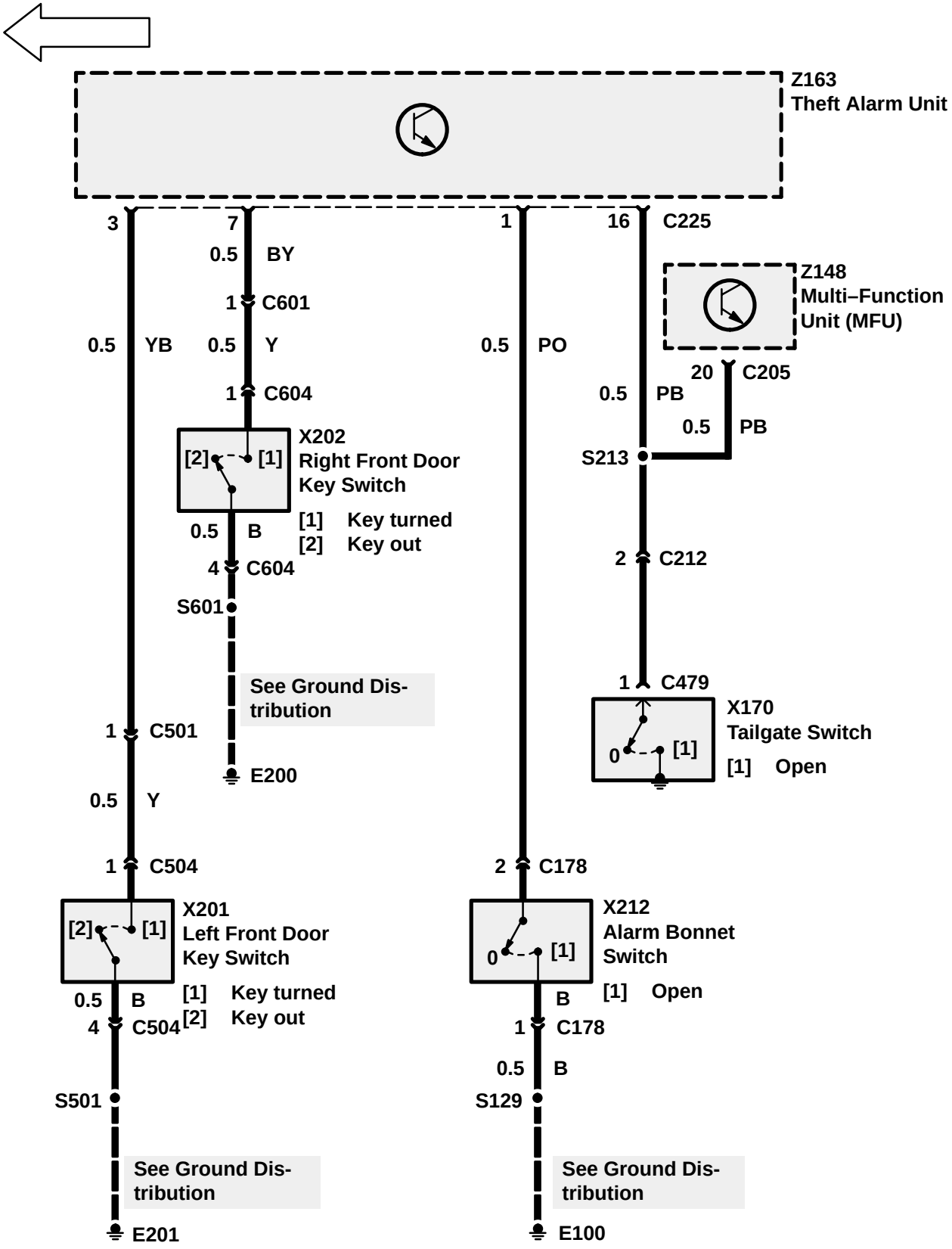
T1 ETM

1995 RANGE ROVER



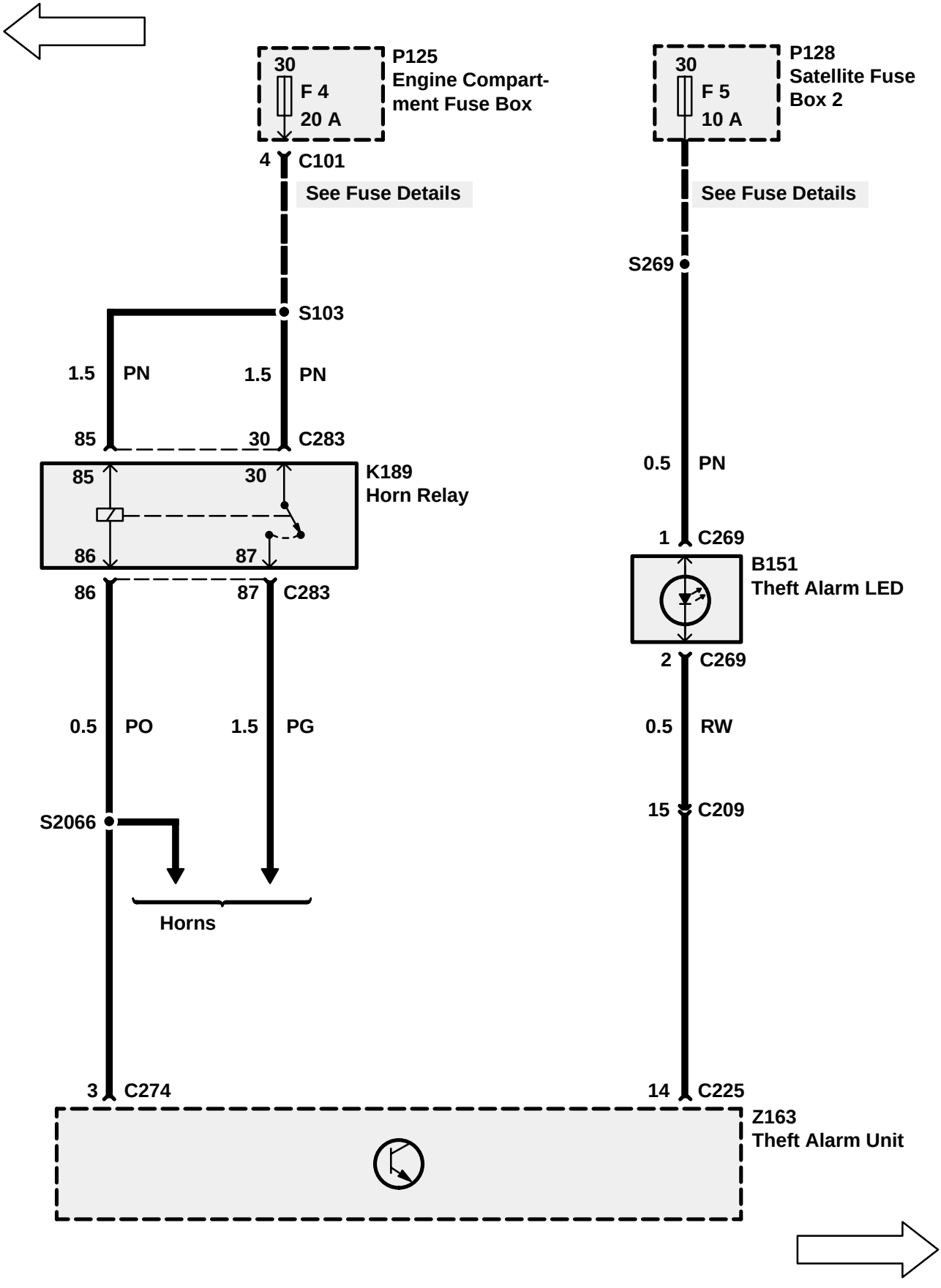

Z163
Theft Alarm Unit
8
15
C225
0.5
WB
0.5
BN
3
1
C335
X213
Alarm Sensor
2
C335
0.5
B
S2015
HJ5
See Ground Distribution
E200
T1-6
A
B
1.0
O
1.0
K
11
10
C212
1
2
C415
2
1
C414
M
M132
Tailgate Lock Actuator

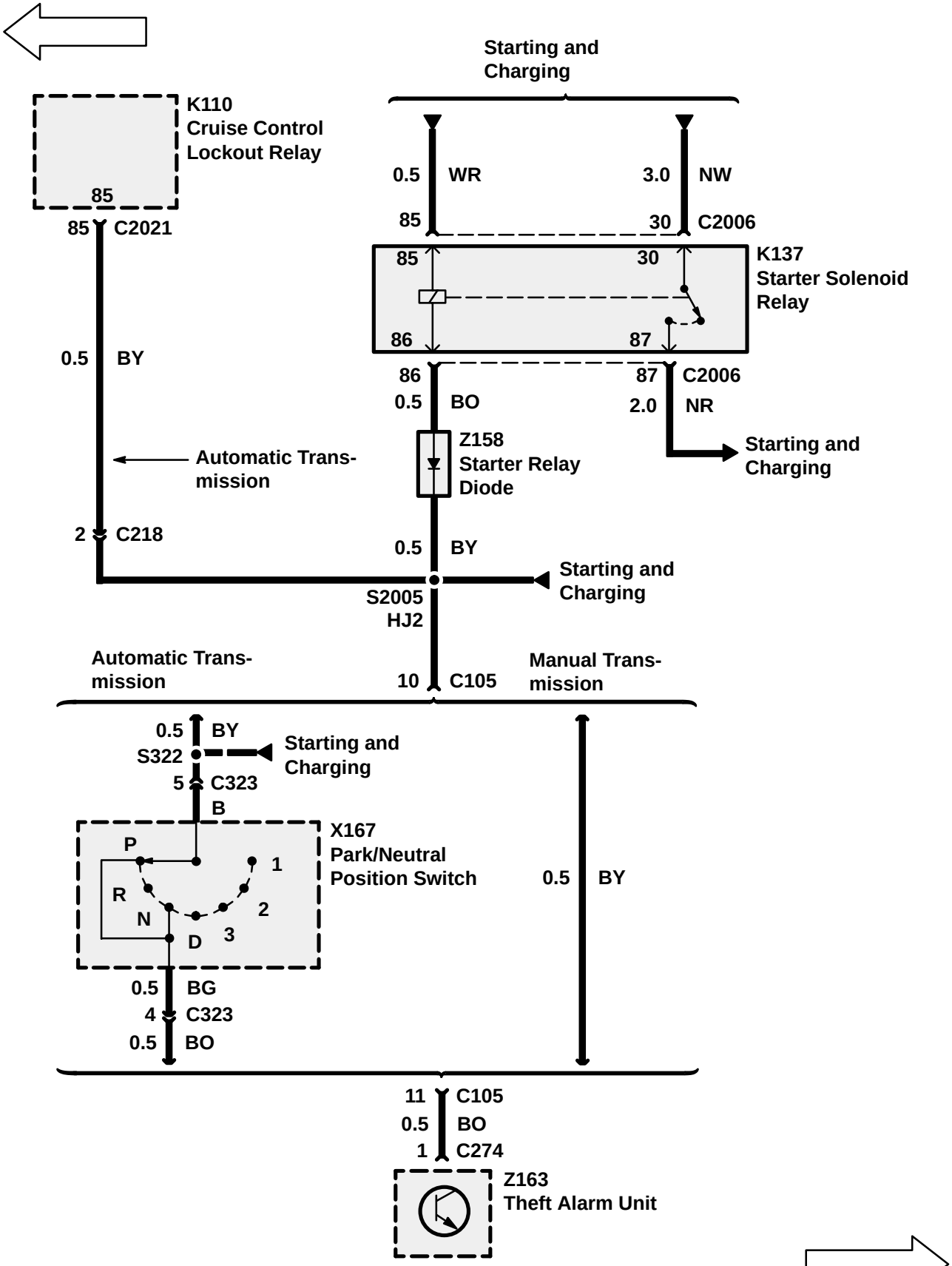

Z163
Theft Alarm Unit
6
2
C225
0.5
YO
0.5
OY
Not used
6
4
C289
S215
S201
6
C502
6
C602
Not used
2
1
C289
0.5
YO
0.5
RK
0.5
KR
0.5
YO
4
C501
4
C601
0.5
RK
5
4
C507
4
5
C607
M114
Left Front Door
Lock Actuator
M122
Right Front Door
Lock Actuator
[2]
[1]
[1]
[2]
[1] Lock
[2] Unlock
[1] Lock
[2] Unlock
0.3
B
0.3
B
3
C507
3
C607
0.5
B
0.5
B
S501
S601
See Ground Distribution
See Ground Distribution
E201
E200


Z163
Theft Alarm Unit
3
7
0.5
BY
1
C601
0.5
YB
0.5
Y
1
C604
X202
Right Front Door
Key Switch
[2]
[1]
[1] Key turned
[2] Key out
0.5
B
4
C604
S601
See Ground Distribution
1
C501
E200
0.5
Y
1
C504
X201
Left Front Door
Key Switch
[2]
[1]
[1] Key turned
[2] Key out
0.5
B
4
C504
S501
See Ground Distribution
E201
1
16
C225
Z148
Multi–Function
Unit (MFU)
0.5
PO
20
C205
0.5
PB
0.5
PB
S213
2
C212
1
C479
X170
Tailgate Switch
0
[1]
[1] Open
2
C178
X212
Alarm Bonnet
Switch
0
[1]
[1] Open
B
1
C178
0.5
B
S129
See Ground Distribution
E100

T1 ETM

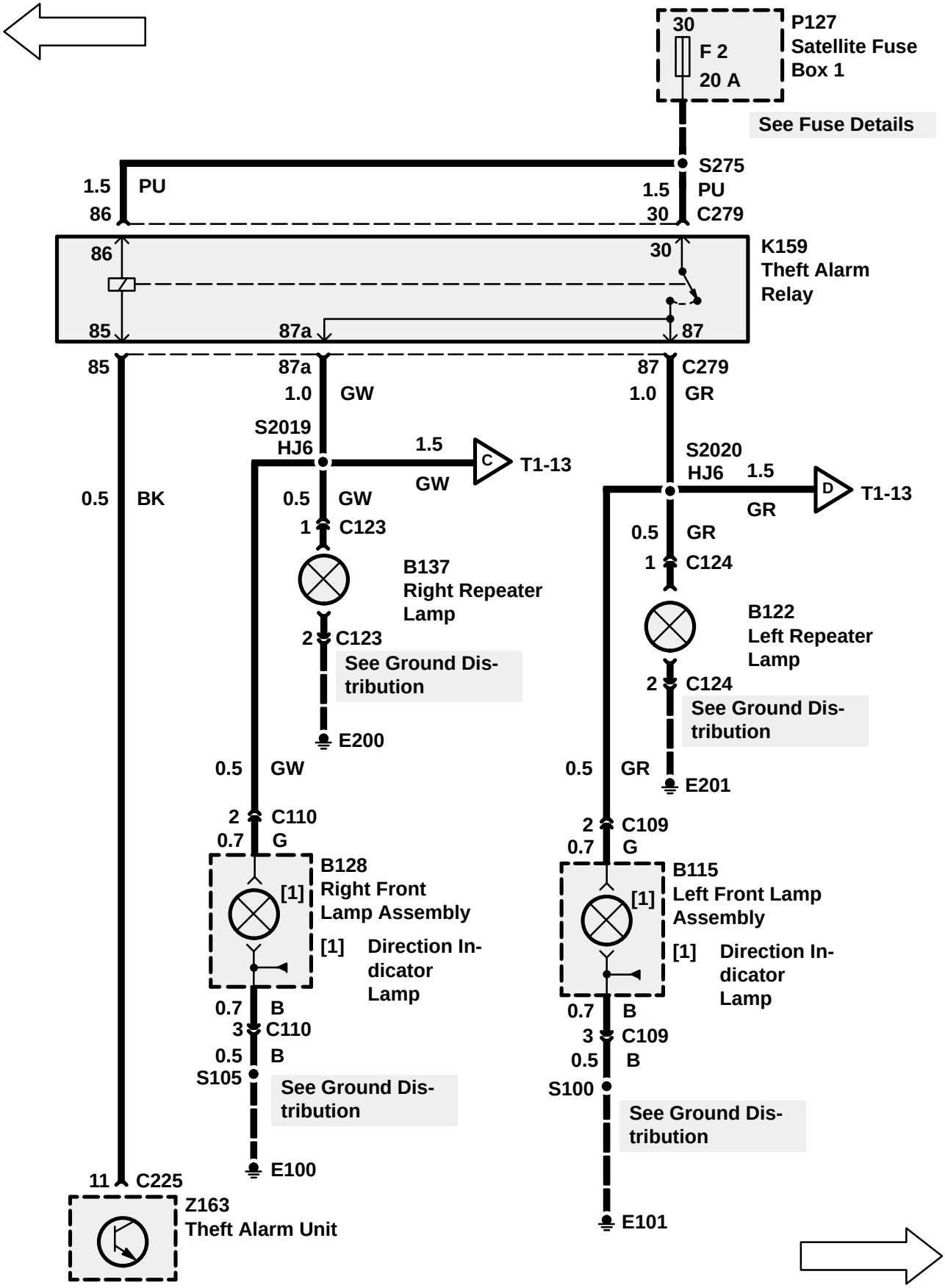
1995 RANGE ROVER

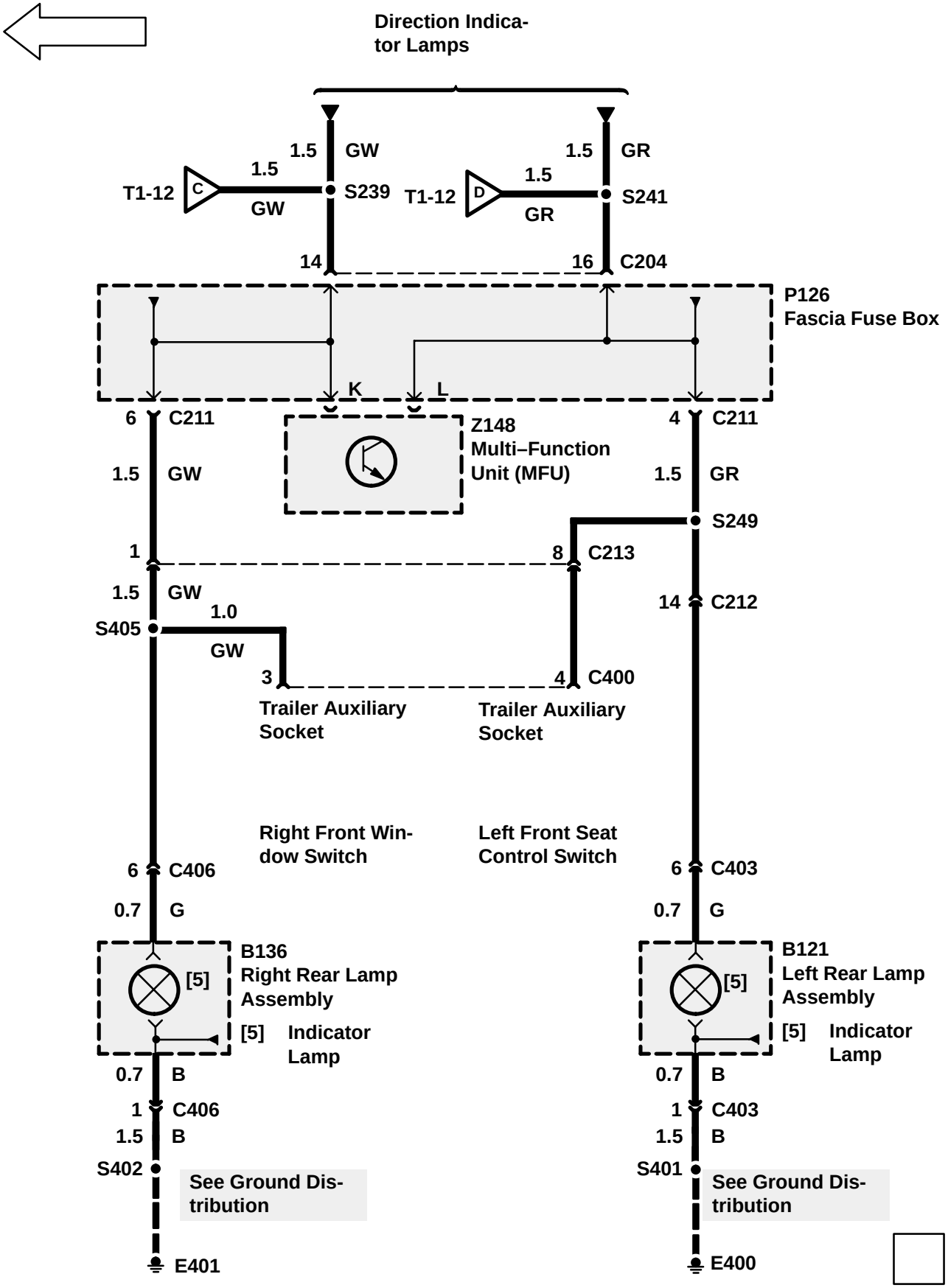



Starting and Charging
K110
Cruise Control Lockout Relay
85
85 C2021
0.5 WR
3.0 NW
85
30 C2006
85
30
K137
Starter Solenoid Relay
86
87
0.5 BY
86
87 C2006
0.5 BO
2.0 NR
Z158
Starter Relay Diode
Automatic Transmission
Starting and Charging
2 C218
0.5 BY
Starting and Charging
S2005
HJ2
Automatic Transmission
10 C105
Manual Transmission
0.5 BY
S322
Starting and Charging
5 C323
B
X167
Park/Neutral Position Switch
P
R
N
D
1
2
3
0.5 BY
0.5 BG
4 C323
0.5 BO
11 C105
0.5 BO
1 C274
Z163
Theft Alarm Unit

T1 ETM

1995 RANGE ROVER




Direction Indicator Lamps
1.5 GW
1.5 GR
T1-12 C
1.5
GW
S239
T1-12 D
1.5
GR
S241
14
16 C204
P126
Fascia Fuse Box
K
L
6 C211
1.5 GW
Z148
Multi–Function Unit (MFU)
4 C211
1.5 GR
S249
1
8 C213
1.5 GW
14 C212
S405
1.0
GW
3
4 C400
Trailer Auxiliary Socket
Trailer Auxiliary Socket
Right Front Window Switch
Left Front Seat Control Switch
6 C406
0.7 G
6 C403
0.7 G
B136
Right Rear Lamp Assembly
[5]
[5] Indicator Lamp
B121
Left Rear Lamp Assembly
[5]
[5] Indicator Lamp
0.7 B
1 C406
1.5 B
S402
See Ground Distribution
0.7 B
1 C403
1.5 B
S401
See Ground Distribution
E401
E400

T1 ETM

TROUBLESHOOTING HINTS

13. Check Fuses F1, F2 and F5 in Satellite Fuse Box 1.
14. Check Fuse F5 in Satellite Fuse Box 2.
15. Check Fuse F4 in Engine Compartment Fuse Box.
16. If the interior lights do not come on when a door is open, check suspect door switch and associated wiring.
17. If none of the Lock Actuators does operate check O and K wire. If OK, replace Theft Alarm Unit (Z163).

SYSTEM DIAGNOSIS

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

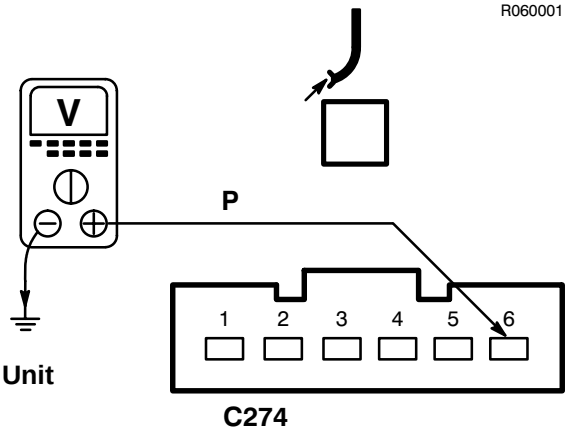
Test A

1A

R060001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- P Wire

OK

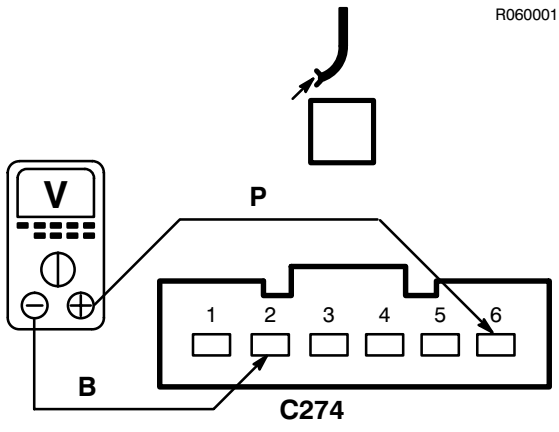
2A

2A

R060001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- B Wire

OK

3A

2A

3A

R160002

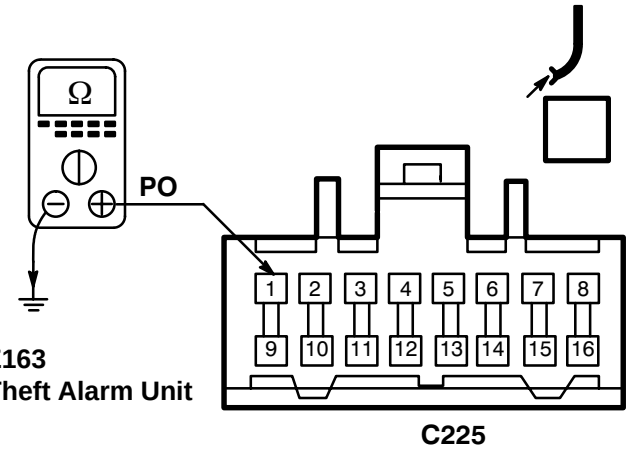
CONDITIONS
- **Ignition Switch**

  Position: 0
- **Bonnet**

  Closed

RESULTS

More than 10K ohms



Z163
Theft Alarm Unit

C225

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

OK

4A

4A

R160002

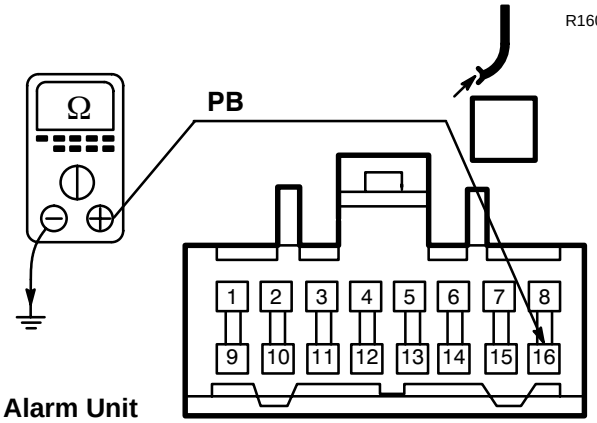
CONDITIONS
- **Ignition Switch**

  Position: 0
- **Tailgate**

  Closed

RESULTS

More than 10K ohms



Z163
Theft Alarm Unit

C225

OK **PROBLEM CAUSE**
- **PB Wire**
- **Tailgate Switch**

OK

5A

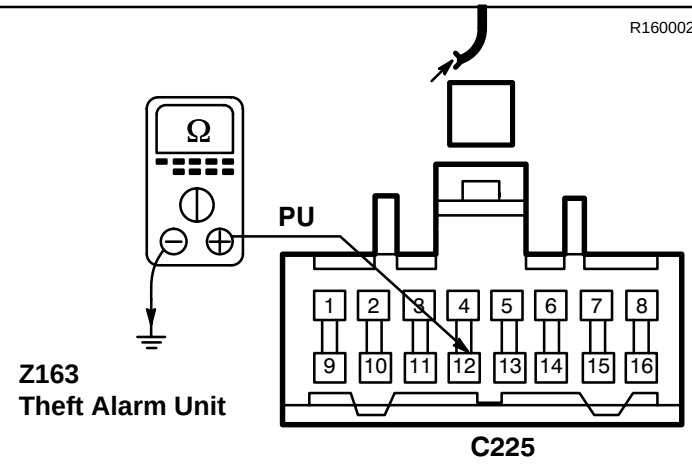
4A

5A

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Closed

RESULTS
More than 10K ohms



Z163
Theft Alarm Unit

C225

OK **PROBLEM CAUSE**
- PU Wire

OK

6A

6A

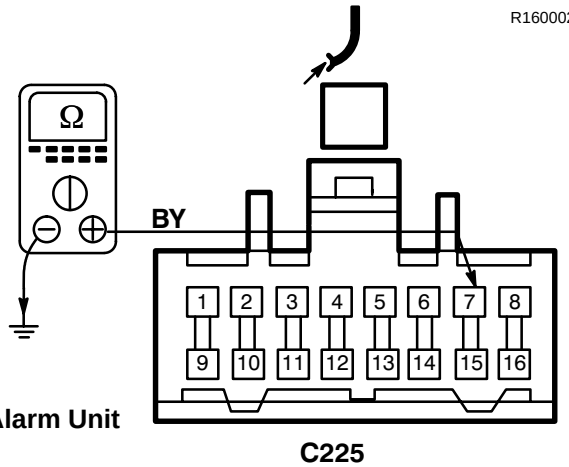
R160002

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Right Front Door Key Switch**

Neutral = More than 10K ohms

Locked = Less than 1 ohm



Z163
Theft Alarm Unit

C225

OK **PROBLEM CAUSE**
- BY Wire
- Y Wire
- B Wire
- Right Front Door Key Switch

OK

7A

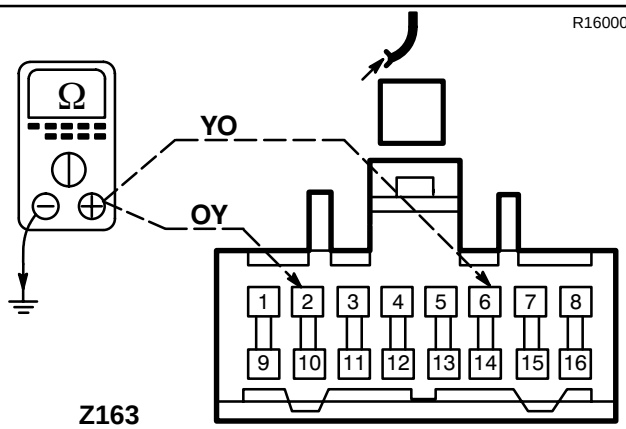
6A

7A

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0

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



OK **PROBLEM CAUSE**
- **OY Wire**
- **YO Wire**
- **B Wire**

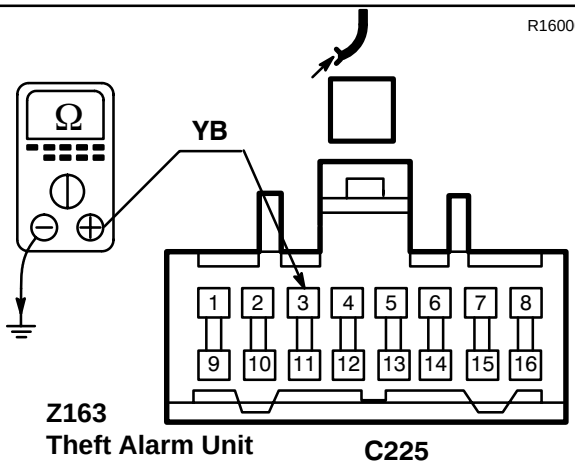
OK → 8A

8A

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0

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



OK **PROBLEM CAUSE**
- **YB Wire**
- **Y Wire**
- **B Wire**
- **Left Front Door Key Switch**

OK → 9A

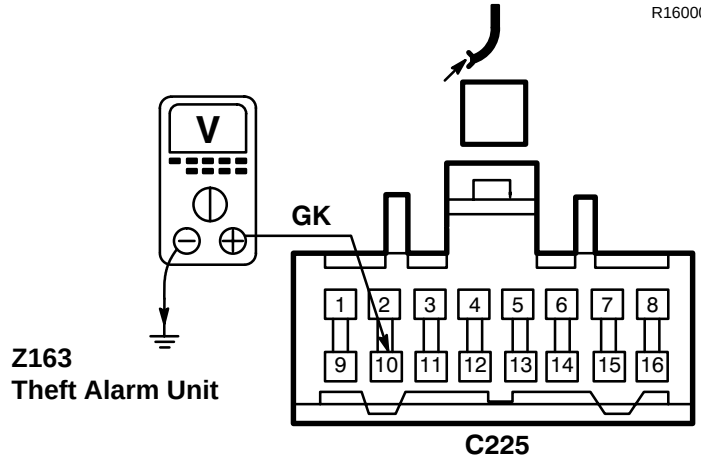
8A

9A

R160002

CONDITIONS
- **Ignition Switch**
  Position: II

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- GK Wire

OK **PROBLEM CAUSE**
- Theft Alarm Unit

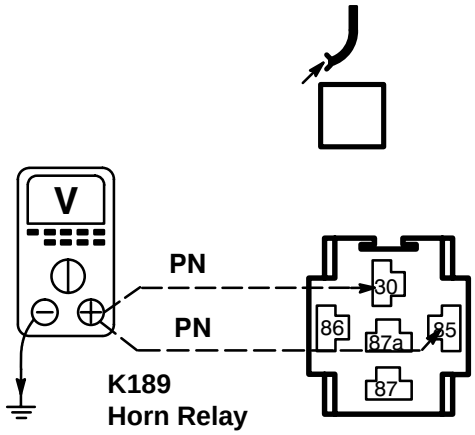
Test B

1B

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- PN Wire

OK

2B

T1 ETM

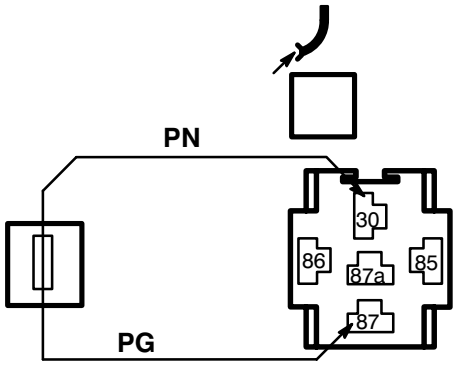
1B

2B

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Horns**
  Operates



K189
Horn Relay

OK **PROBLEM CAUSE**
- PG Wire
- Horns

OK

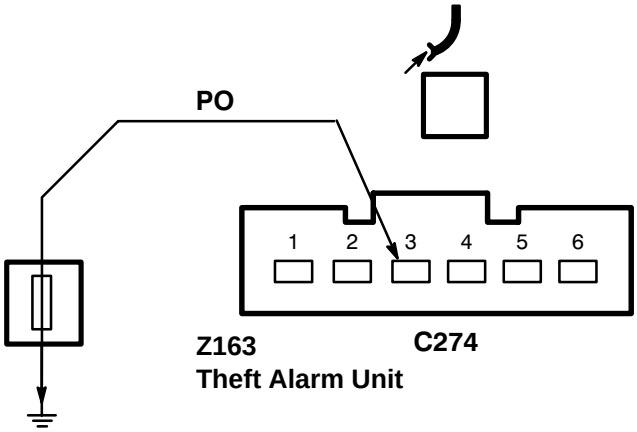
3B

3B

R060001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Horns**
  Operates



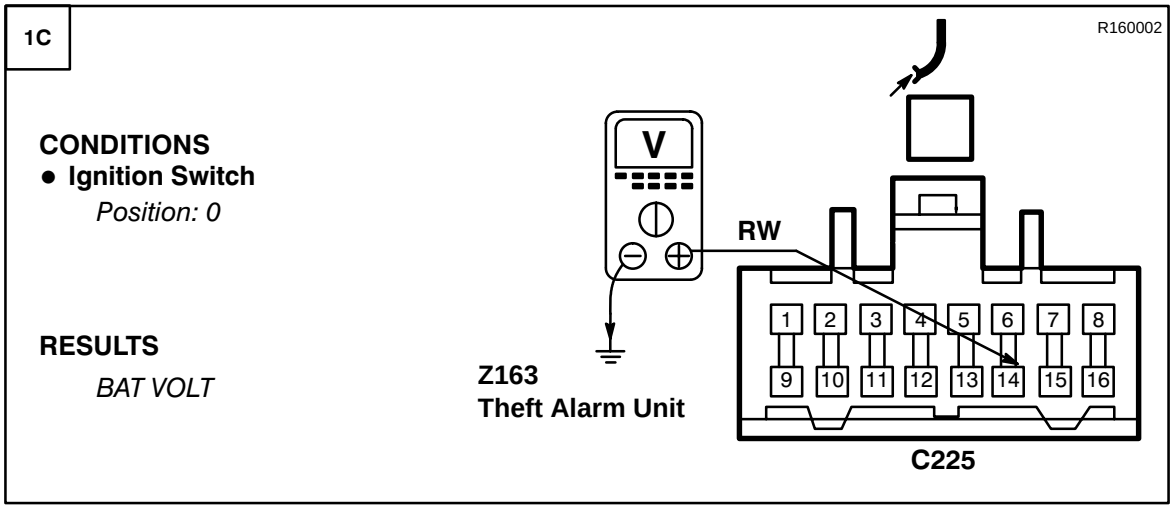
Z163
Theft Alarm Unit

C274

OK **PROBLEM CAUSE**
- PO Wire
- Horn Relay

OK **PROBLEM CAUSE**
- Theft Alarm Unit

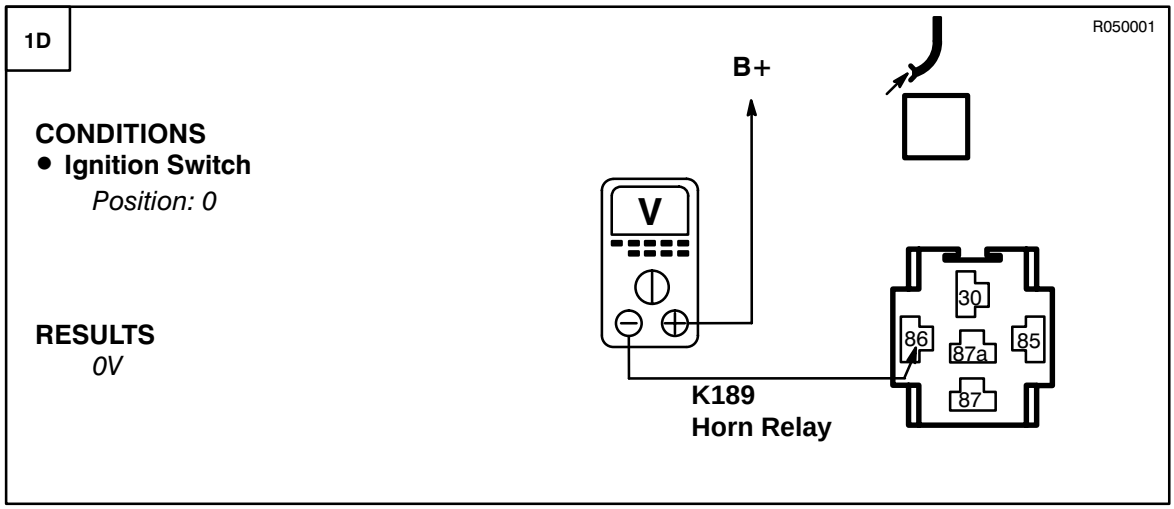
Test C



OK **PROBLEM CAUSE**
- **RW Wire**
- **PN Wire**
- **Theft Alarm LED**

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

Test D



OK **PROBLEM CAUSE**
- **PO Wire**
- **Theft Alarm Unit**

OK **PROBLEM CAUSE**
- **Horn Relay**

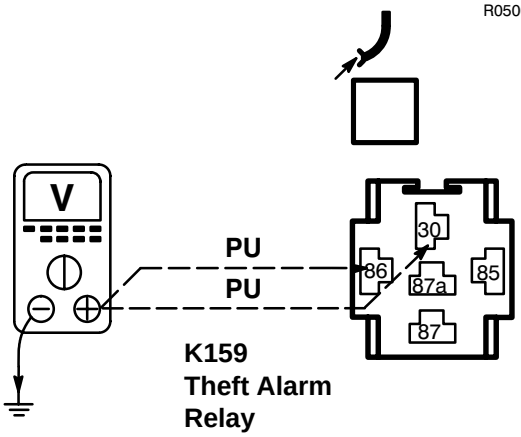
Test E

1E

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



OK **PROBLEM CAUSE**
- PU Wire

OK

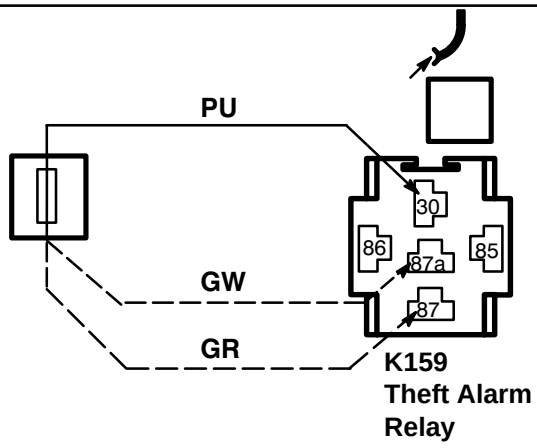
2E

2E

R050001

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Direction Indicator Lamps**
  On



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

OK

3E

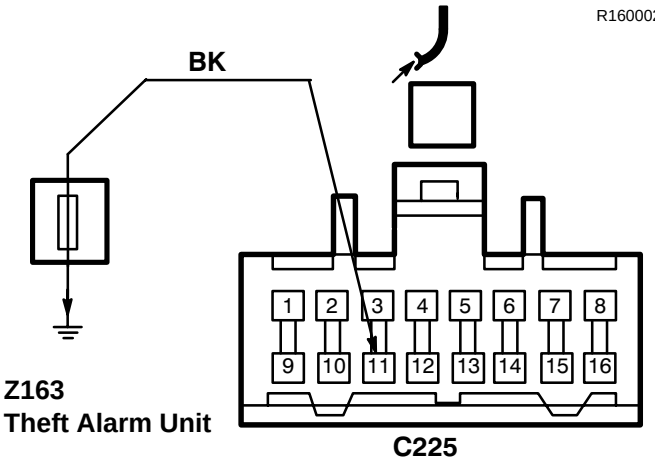
2E

3E

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Direction Indicator Lamps**
  On



Z163
Theft Alarm Unit

C225

OK **PROBLEM CAUSE**
- **BK Wire**
- **Theft Alarm Relay**

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

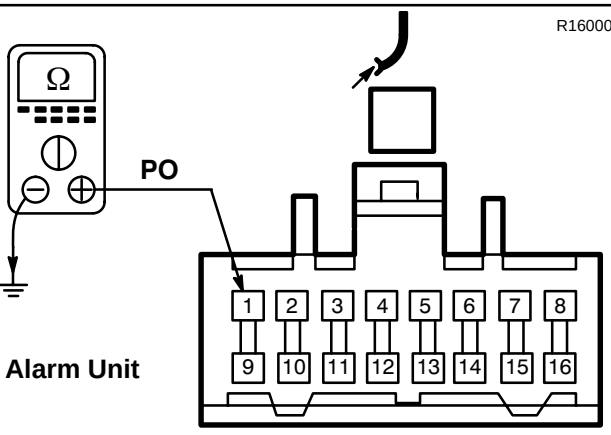
Test F

1F

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0
- **Bonnet**
  Open

RESULTS
Less than 1 ohm



Z163
Theft Alarm Unit

C225

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

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

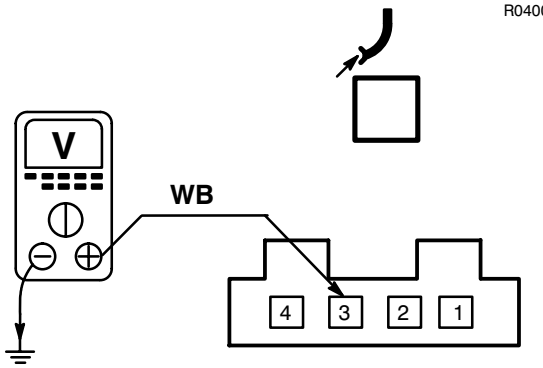
Test G

1G

R040006

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
BAT VOLT



X213
Alarm Sensor

OK **PROBLEM CAUSE**
- **WB Wire**
- **Theft Alarm Unit**

OK

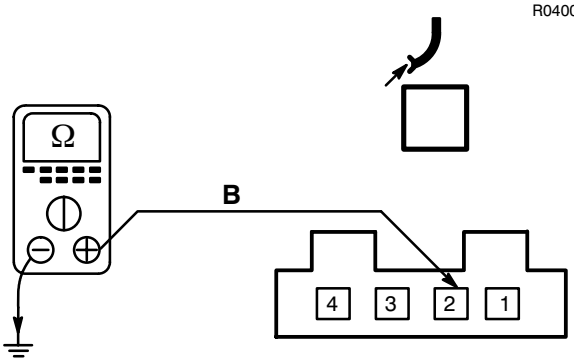
2G

2G

R040006

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 H

1H

R160002

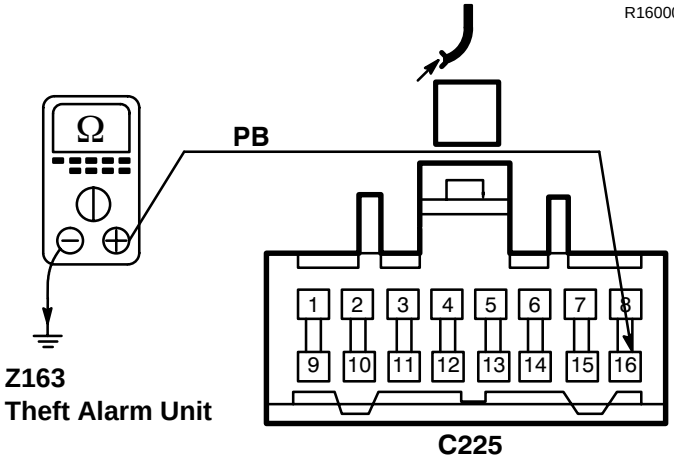
CONDITIONS
- **Ignition Switch**

  Position: 0
- **Tailgate**

  Open

RESULTS

Less than 1 ohm



OK **PROBLEM CAUSE**
- **PB Wire**
- **Tailgate Switch**

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

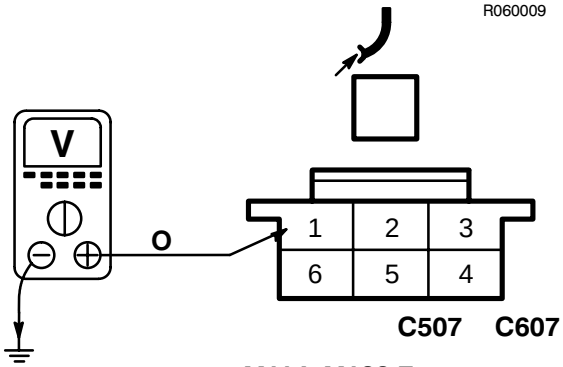
Test I

1I

R060009

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

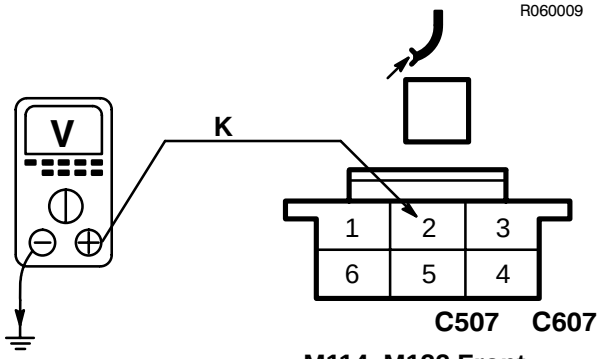
2I

2I

R060009

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 J

1J

R160002

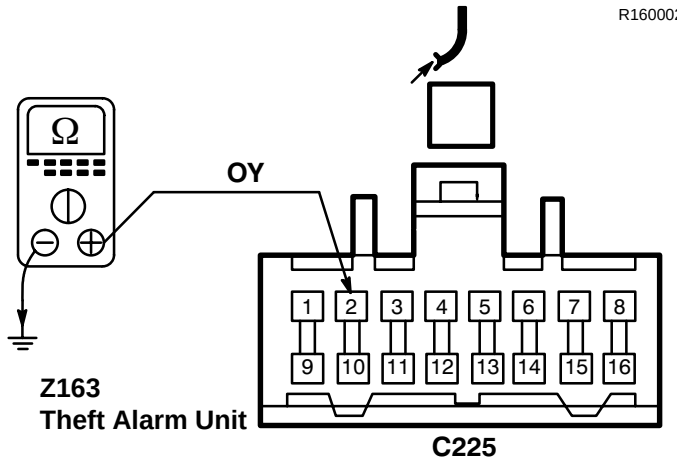
CONDITIONS
- **Ignition Switch**

  Position: 0
- **All doors**

  Locked

RESULTS

More than 1000 ohms



OK

PROBLEM CAUSE
- **OY Wire**
- **M114, M122 Front Door Lock Actuator**

OK

2J

2J

R050001

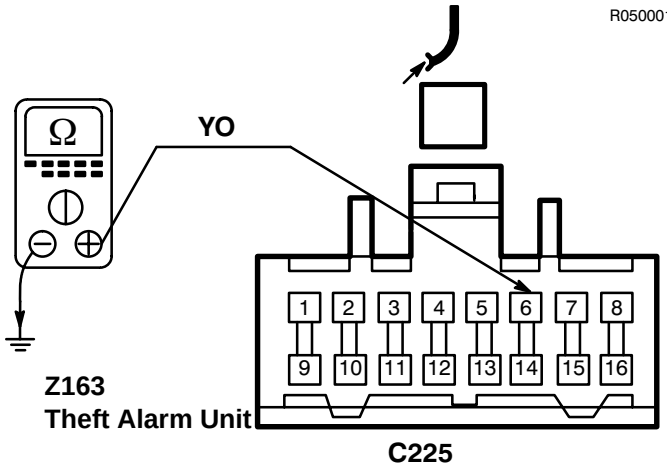
CONDITIONS
- **Ignition Switch**

  Position: 0
- **All doors**

  Locked

RESULTS

More than 1000 ohms



OK

PROBLEM CAUSE
- **YO Wire**
- **M114, M122 Front Door Lock Actuator**

OK

PROBLEM CAUSE
- **Central Locking Control Unit**

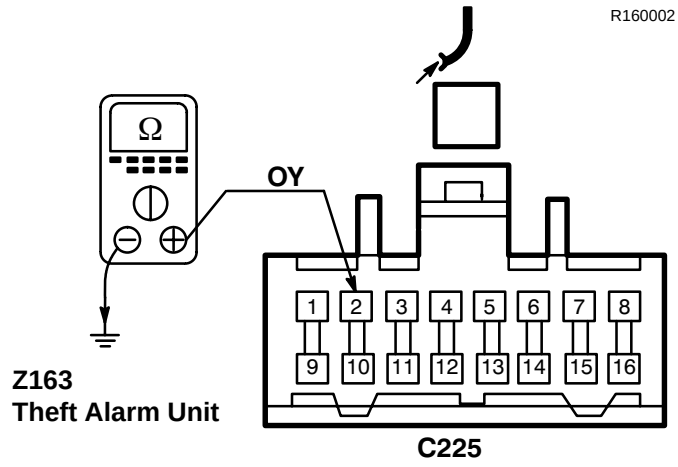
Test K

1K

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Unlocked

RESULTS
Less than 1 ohm



Z163
Theft Alarm Unit

C225

OK **GO TO TEST 3K**

OK

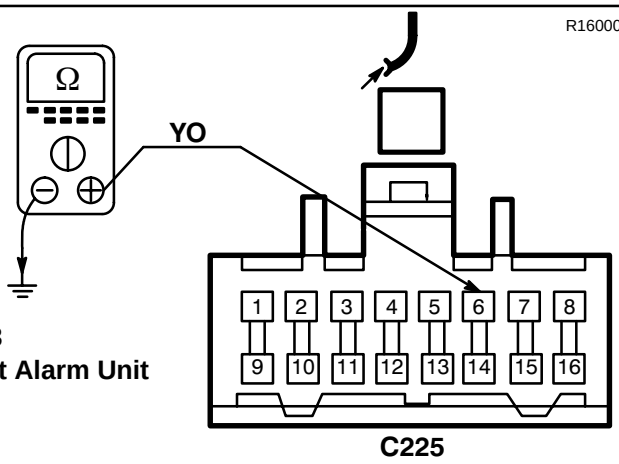
2K

2K

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Unlocked

RESULTS
Less than 1 ohm



Z163
Theft Alarm Unit

C225

OK

3K

OK **PROBLEM CAUSE**
- **YO Wire**
- **Central Locking Control Unit**

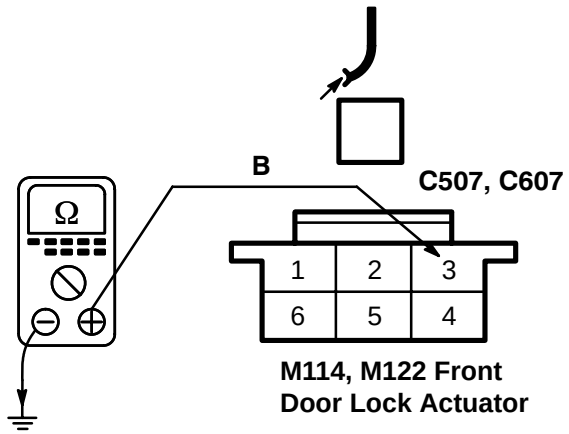
2K

3K

R060009

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
Less than 1 ohm



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

OK

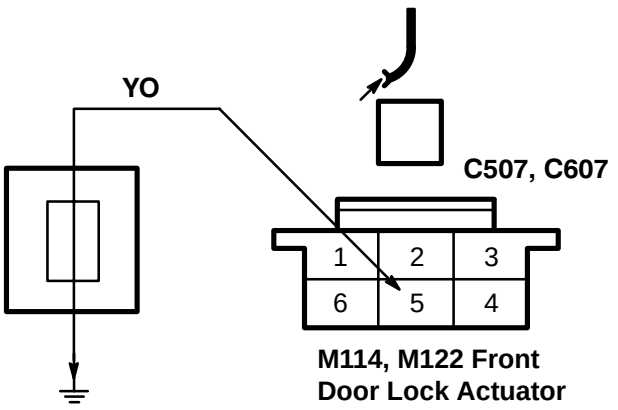
4K

4K

R060009

CONDITIONS
- **Ignition Switch**
  Position: II
- **All doors**
  Lock

RESULTS
- **All doors**
  Unlocked



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

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

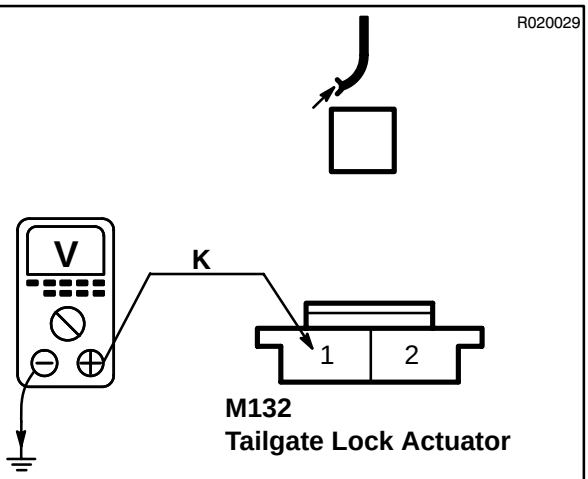
Test L

1L

R020029

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

RESULTS
BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- K Wire

OK

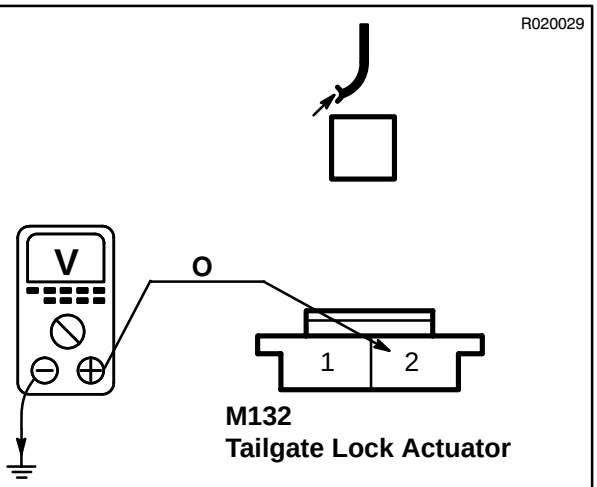
2L

2L

R020029

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

RESULTS
BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- O Wire

OK **PROBLEM CAUSE**
- Tailgate Lock Actuator

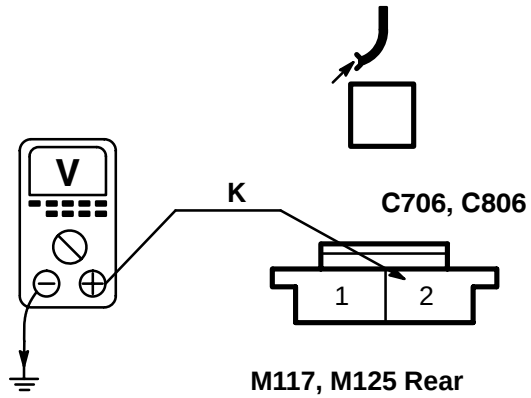
Test M

1M

R160002

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

RESULTS
BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- K Wire

OK

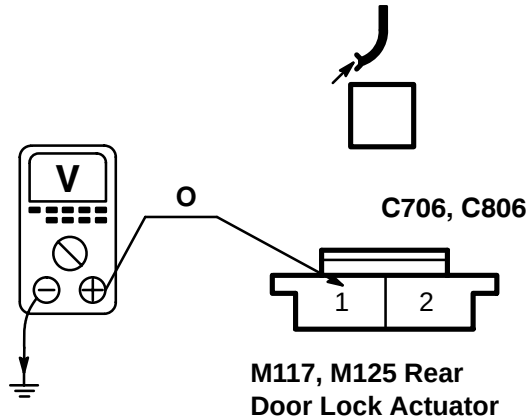
2M

2M

R050001

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

RESULTS
BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- O Wire

OK **PROBLEM CAUSE**
- **M117, M125 Rear Door Lock Actuator**

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

16. Theft Alarm Unit (Z163) and Theft Alarm Relay (K159)
17. Alarm Bonnet Switch (X212)
18. Tailgate Switch (X170)
19. Horns (K128, K134) and Horn Relay (K189)
20. Theft Alarm LED (B151)
21. Alarm Sensor (X213) (Not on all vehicles!)
22. Front Door Key Switches (X201, X202)
23. Lock Actuators (M114, M122, M117, M125, M132)
24. Handset Transmitter (two supplied)

ANTI–THEFT SYSTEM FUNCTION

Perimetric Protection

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

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

Volumetric Protection

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

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

Horns

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

Vehicle Status Indication

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

Central Locking

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

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

Inertia Switch

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

Alarm Sensor (X213)

The sensor operates by emitting an air pressure carrier wave and receiving the wave back. Any disturbace 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 hanset 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 alarmed 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:

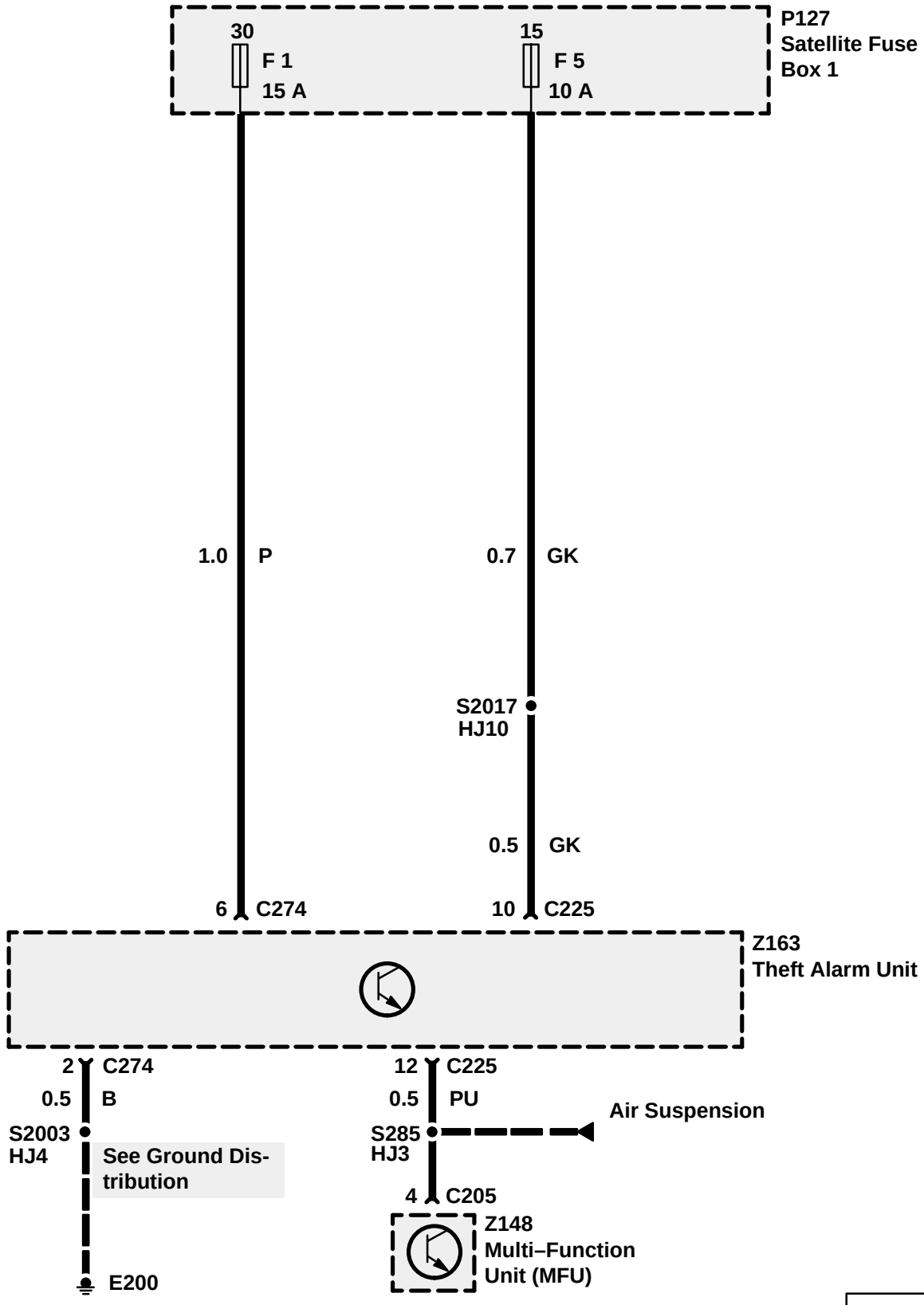
1. Starting conditions: ignition off, doors unlocked, bonnet switch depressed.
2. Carry out instructions 3 to 7 within 8 seconds.
3. Release bonnet switch.
4. Switch ignition ON.
5. Lock doors.
6. Switch ignition OFF.
7. Switch ignition ON.

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 bonnett 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.

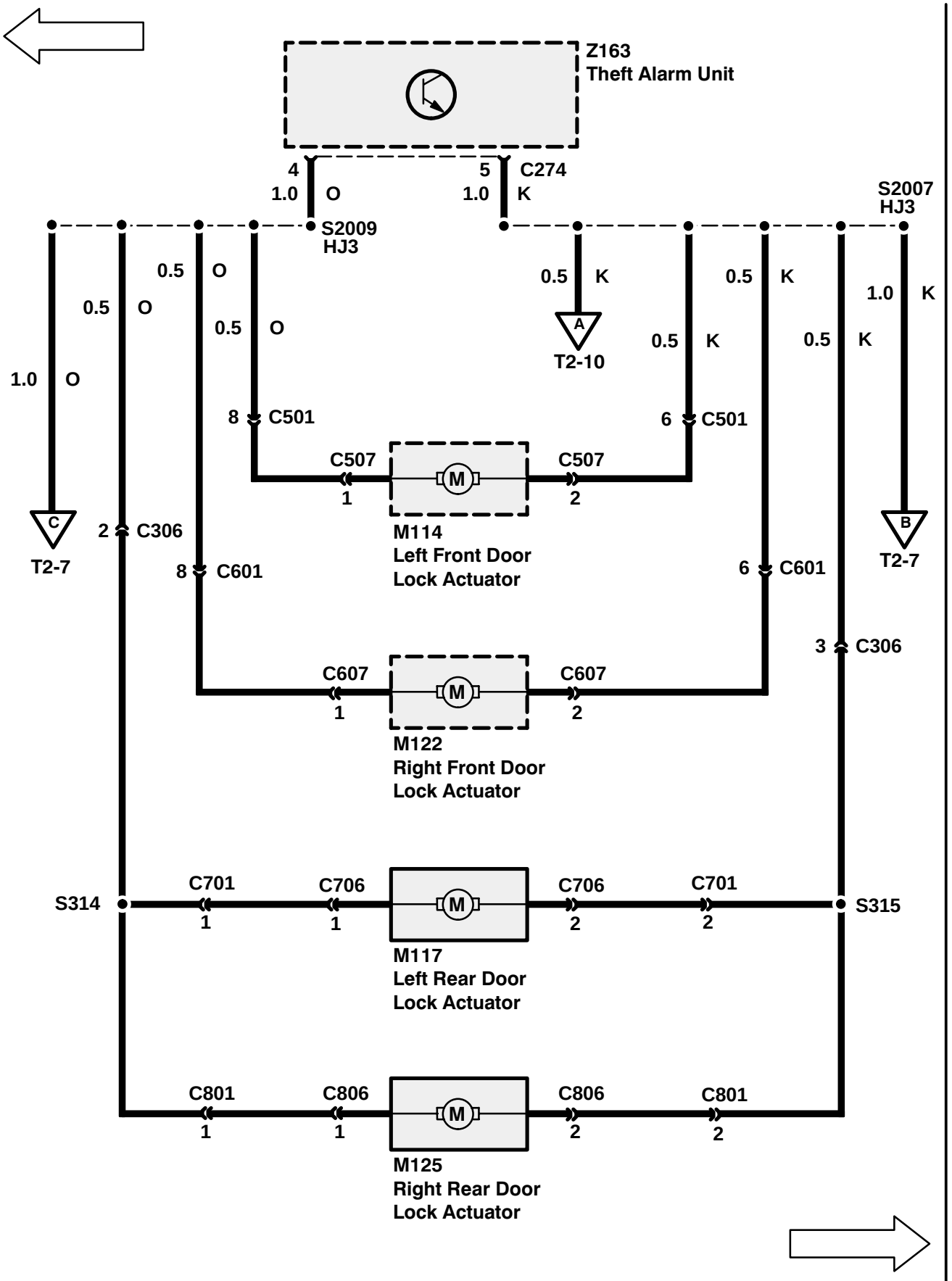
NOTE: If ECU is in new born mode, any handset of the right frequency will work. If not, initialised handset is required. See Handset Initialisation.

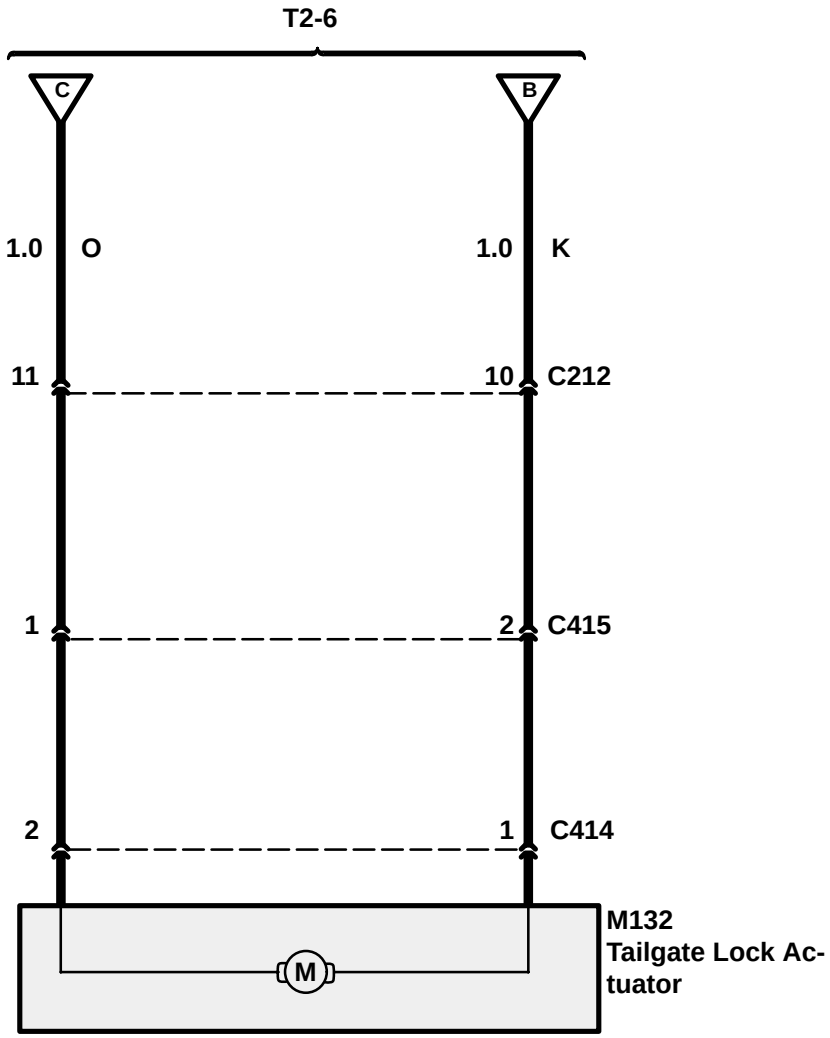
12. Turn OFF ignition or press handset to end test procedure. Horn will sound as before to indicate end of test mode.

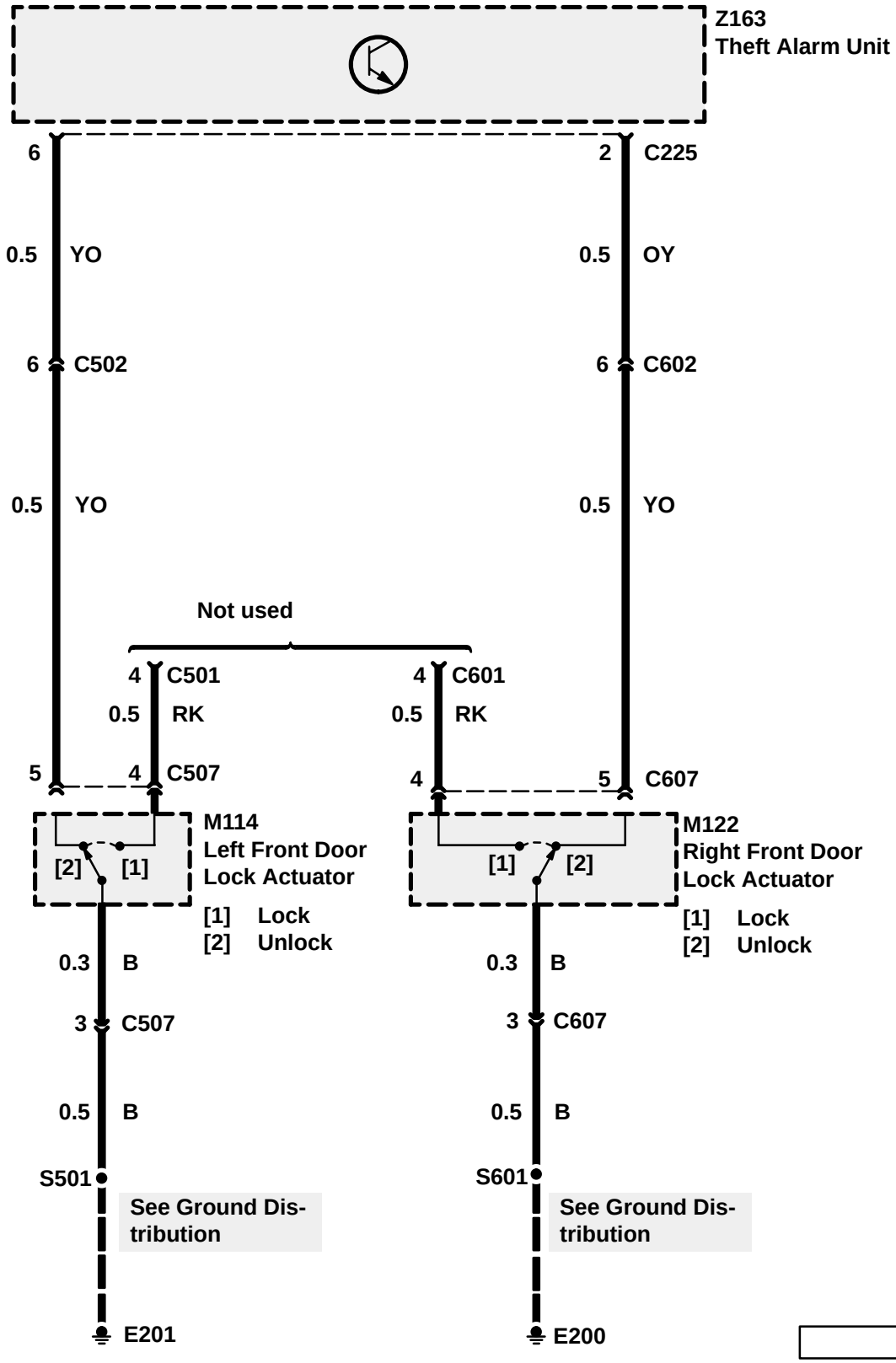

30
F 1
15 A
15
F 5
10 A
P127
Satellite Fuse
Box 1
1.0
P
0.7
GK
S2017
HJ10
0.5
GK
6
C274
10
C225
Z163
Theft Alarm Unit
2
C274
0.5
B
S2003
HJ4
See Ground Dis-
tribution
E200
12
C225
0.5
PU
S285
HJ3
Air Suspension
4
C205
Z148
Multi–Function
Unit (MFU)

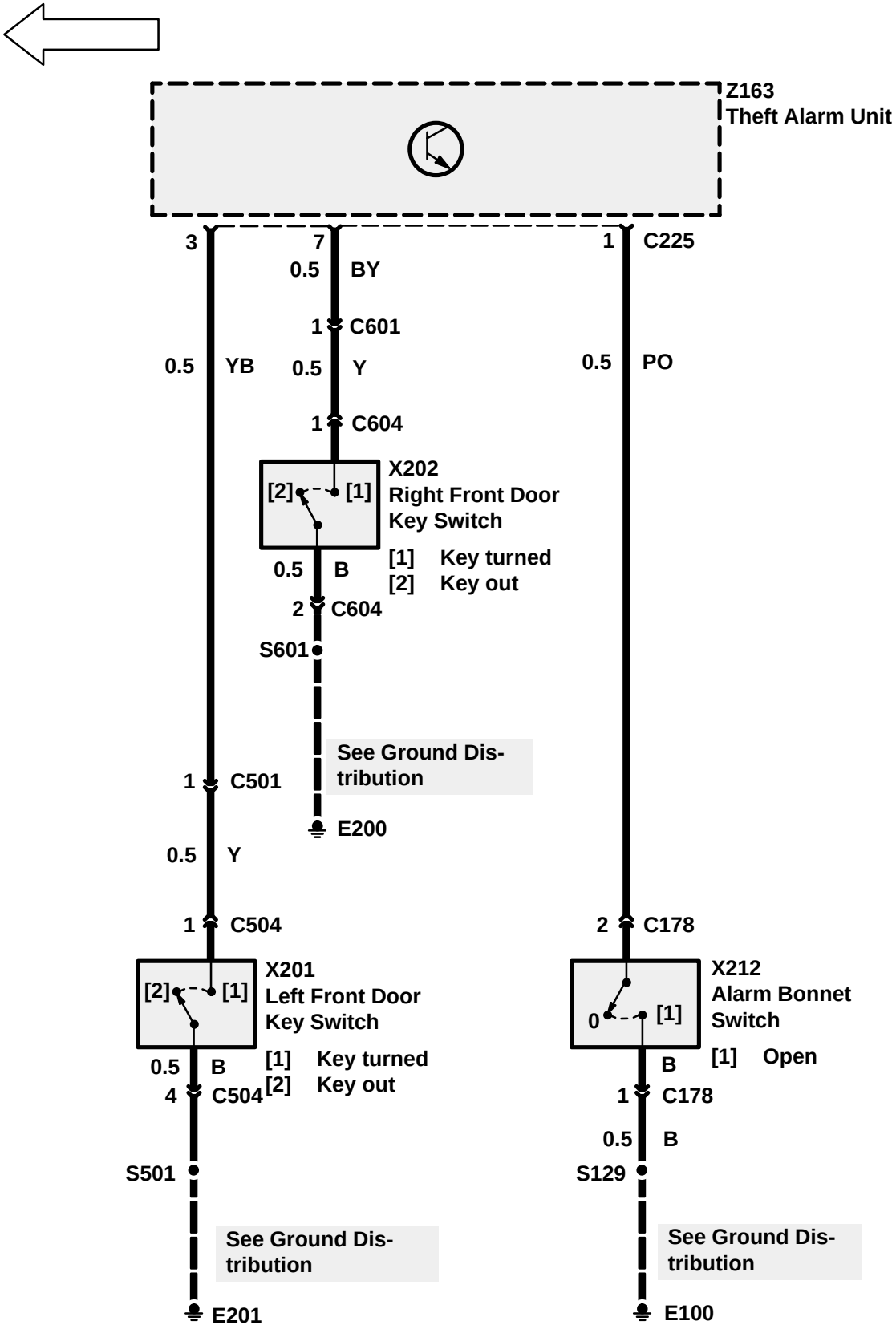
T2 ETM

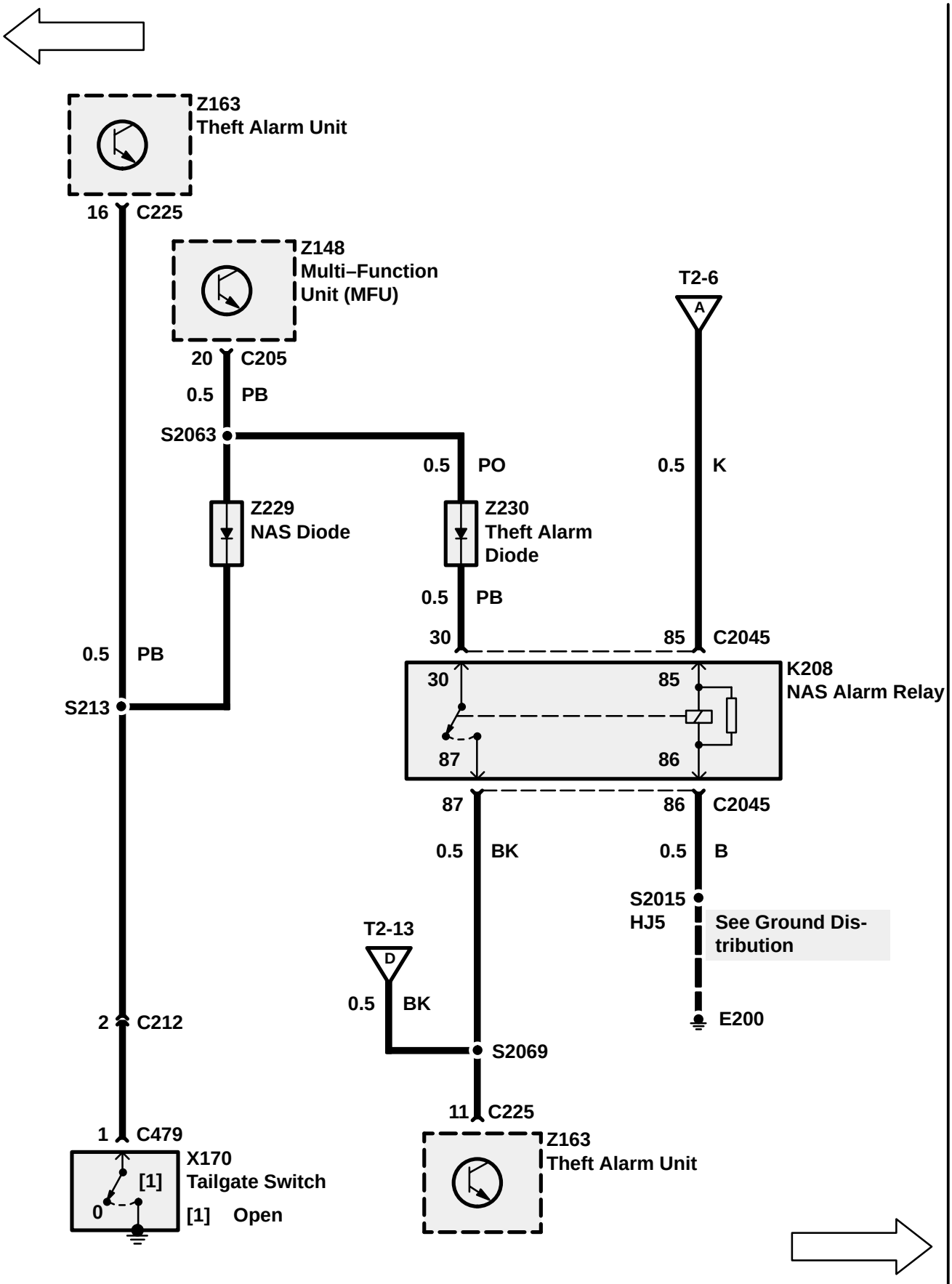
1995 RANGE ROVER

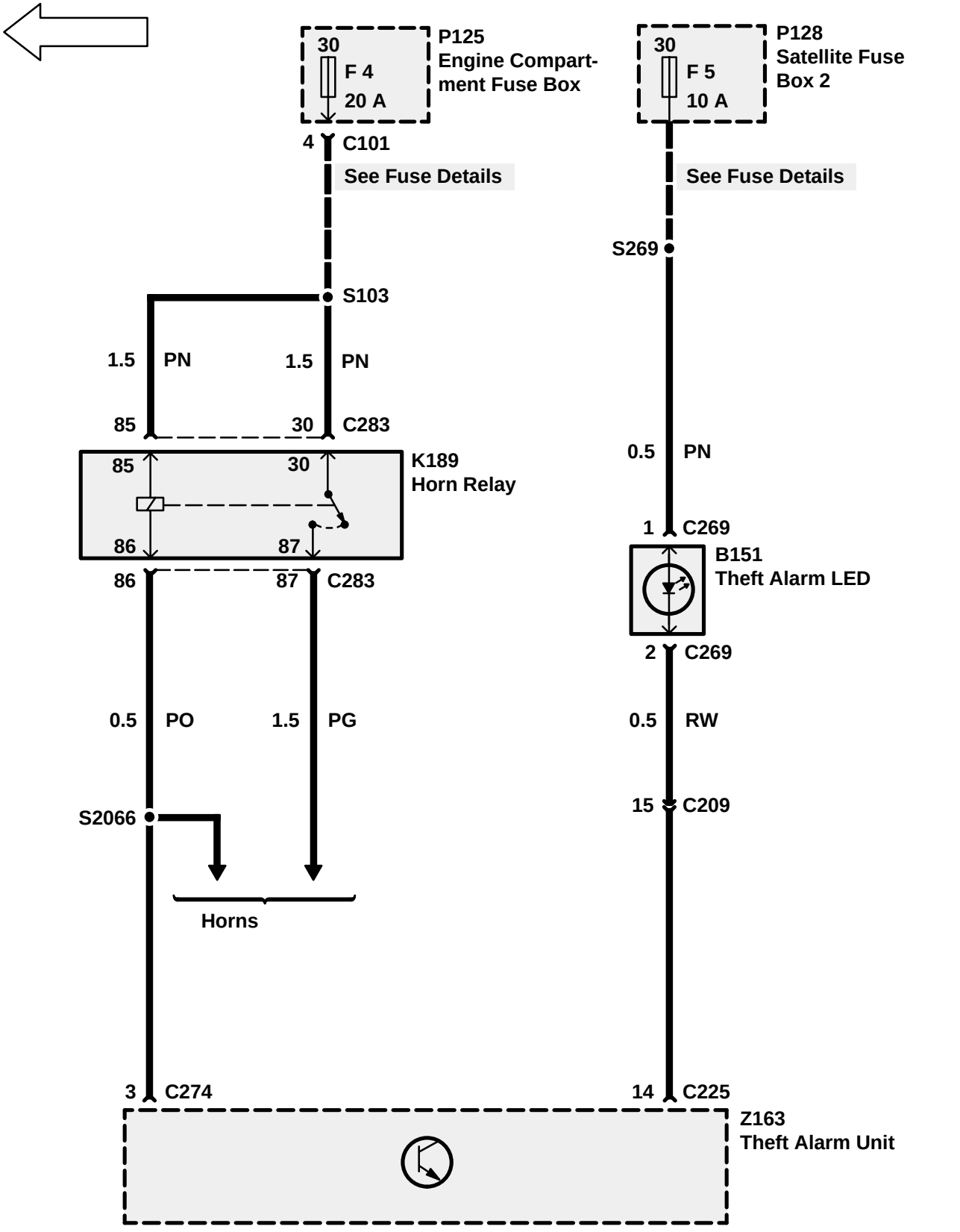


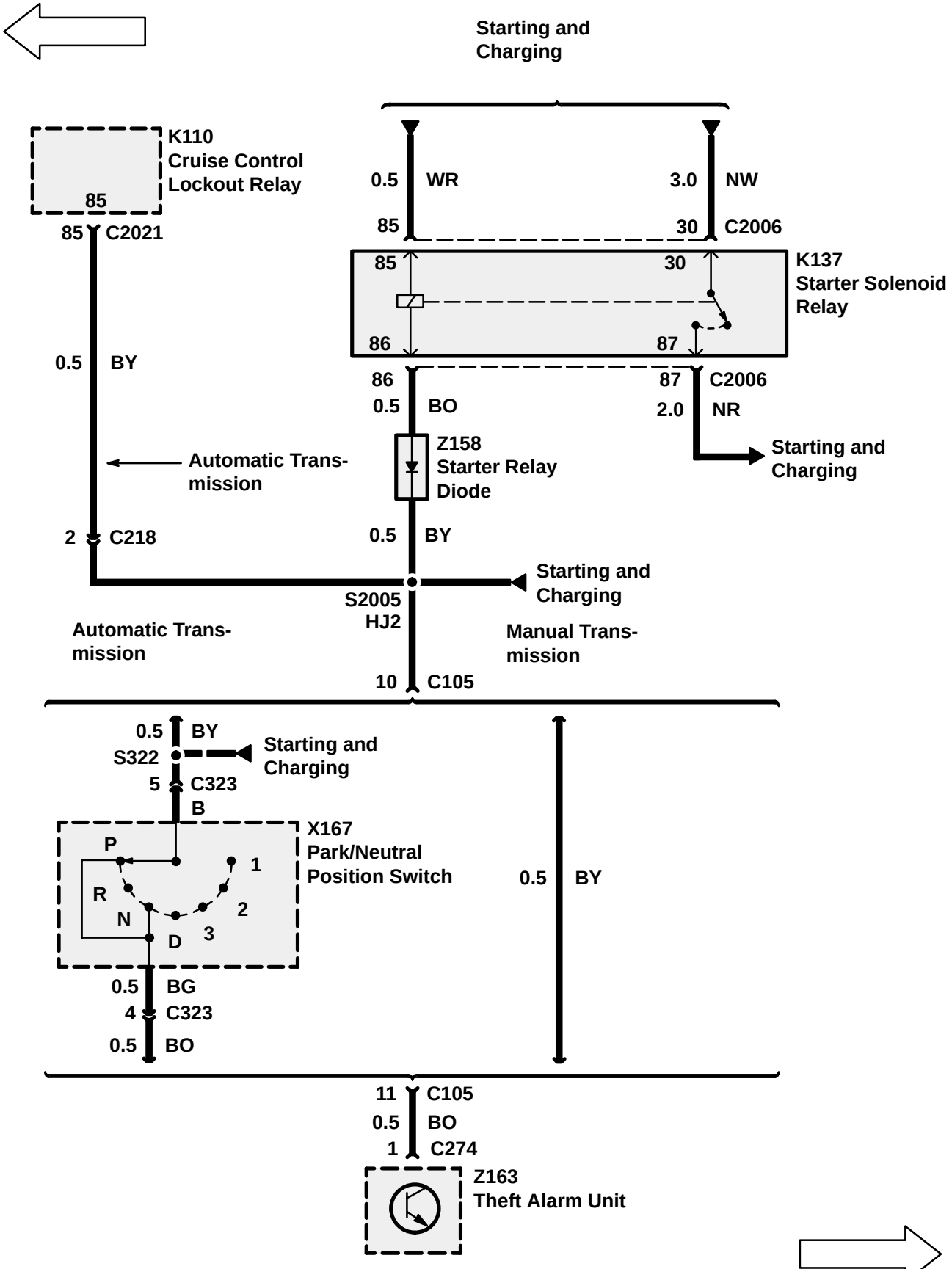

T2-6
C
B
1.0
O
1.0
K
11
10
C212
1
2
C415
2
1
C414
M
M132
Tailgate Lock Actuator

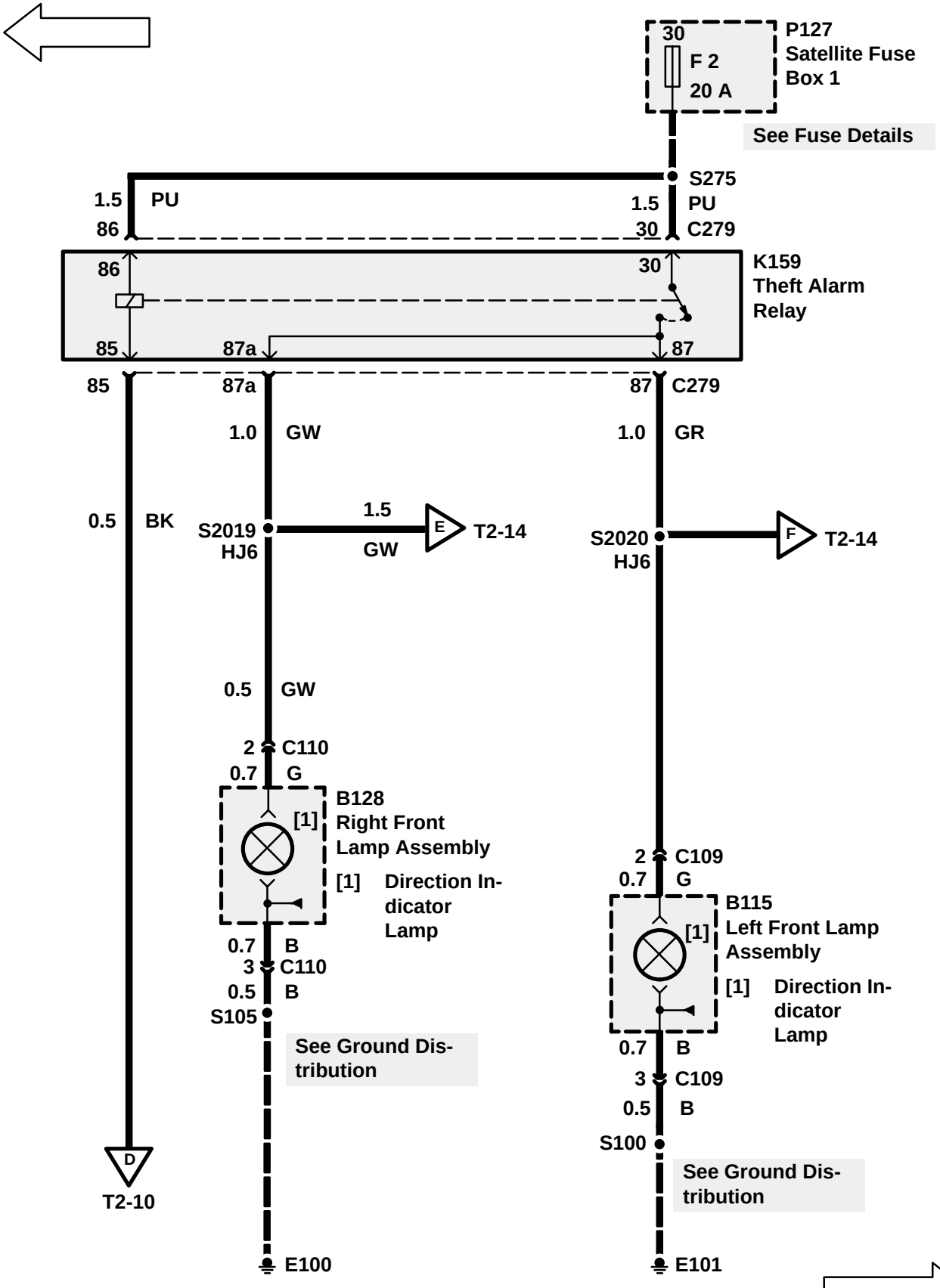

Z163
Theft Alarm Unit
6
2
C225
0.5
YO
0.5
OY
6
C502
6
C602
0.5
YO
0.5
YO
Not used
4
C501
4
C601
0.5
RK
0.5
RK
5
4
C507
4
5
C607
M114
Left Front Door
Lock Actuator
[2]
[1]
[1] Lock
[2] Unlock
M122
Right Front Door
Lock Actuator
[1]
[2]
[1] Lock
[2] Unlock
0.3
B
0.3
B
3
C507
3
C607
0.5
B
0.5
B
S501
S601
See Ground Distribution
See Ground Distribution
E201
E200


Z163
Theft Alarm Unit
3
7
0.5
BY
1
C601
0.5
YB
0.5
Y
1
C604
X202
Right Front Door
Key Switch
[2]
[1]
[1] Key turned
[2] Key out
0.5
B
2
C604
S601
See Ground Distribution
1
C501
E200
0.5
Y
1
C504
X201
Left Front Door
Key Switch
[2]
[1]
[1] Key turned
[2] Key out
0.5
B
4
C504
S501
See Ground Distribution
E201
1
C225
0.5
PO
2
C178
X212
Alarm Bonnet
Switch
0
[1]
[1] Open
B
1
C178
0.5
B
S129
See Ground Distribution
E100


Z163
Theft Alarm Unit
16 C225
Z148
Multi–Function
Unit (MFU)
20 C205
0.5 PB
S2063
T2-6
A
0.5 K
0.5 PO
Z229
NAS Diode
Z230
Theft Alarm
Diode
0.5 PB
30
85 C2045
0.5 PB
S213
K208
NAS Alarm Relay
30
85
87
86
87
86 C2045
0.5 BK
0.5 B
S2015
HJ5
See Ground Dis-
tribution
T2-13
D
0.5 BK
E200
2 C212
S2069
11 C225
1 C479
X170
Tailgate Switch
[1]
0
[1] Open
Z163
Theft Alarm Unit

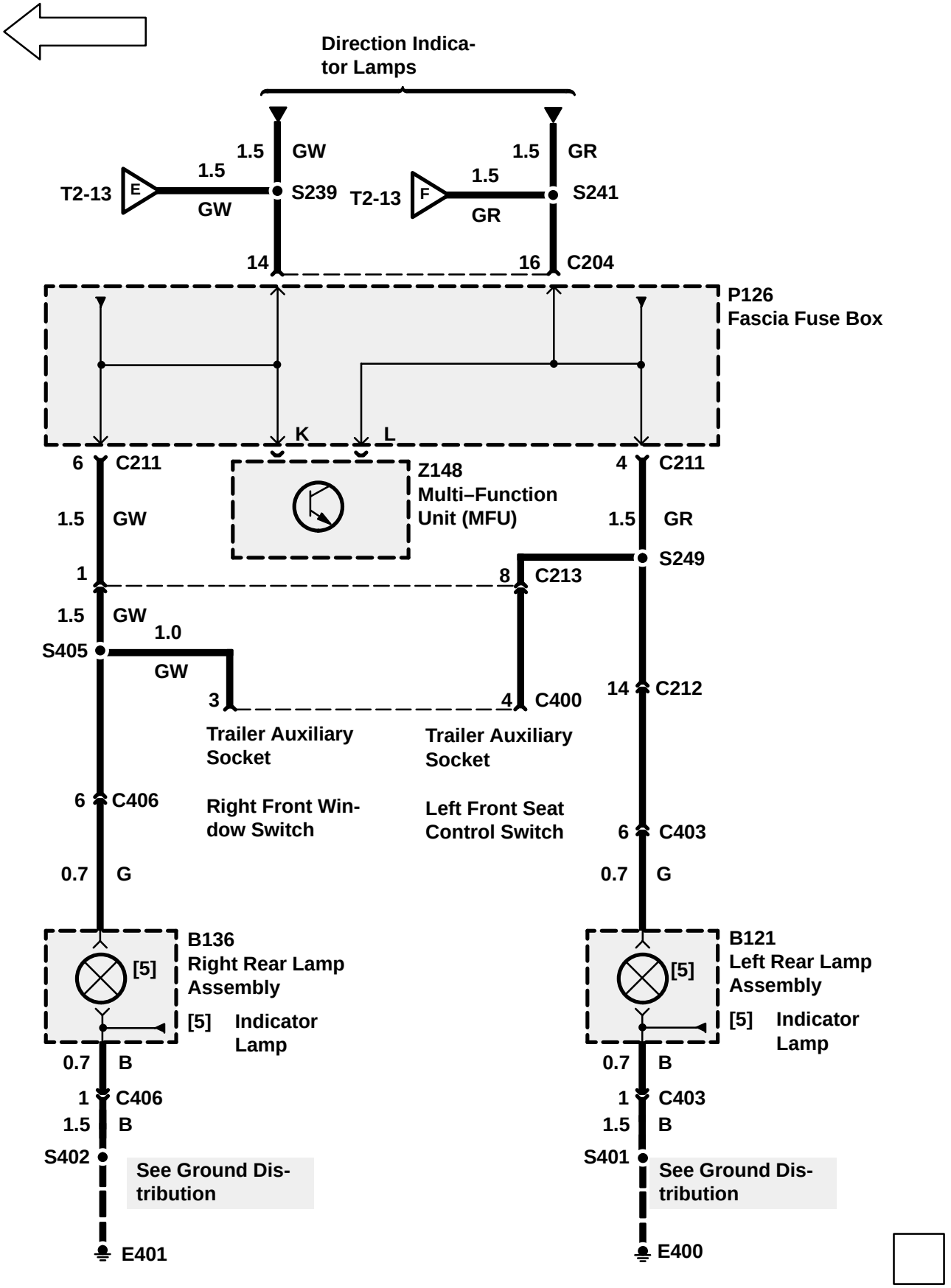

30
F 4
20 A
P125
Engine Compart-
ment Fuse Box
4
C101
See Fuse Details
S103
1.5
PN
1.5
PN
85
30
C283
85
30
K189
Horn Relay
86
87
86
87
C283
0.5
PO
1.5
PG
S2066
Horns
3
C274
30
F 5
10 A
P128
Satellite Fuse
Box 2
See Fuse Details
S269
0.5
PN
1
C269
B151
Theft Alarm LED
2
C269
0.5
RW
15
C209
14
C225
Z163
Theft Alarm Unit


Starting and Charging
K110
Cruise Control Lockout Relay
85
85 C2021
0.5 BY
0.5 WR
3.0 NW
85
30 C2006
85
30
K137
Starter Solenoid Relay
86
87
86
0.5 BO
87 C2006
2.0 NR
Starting and Charging
Z158
Starter Relay Diode
Automatic Trans-mission
2 C218
0.5 BY
Starting and Charging
S2005
HJ2
Automatic Trans-mission
Manual Trans-mission
10 C105
0.5 BY
S322
Starting and Charging
5 C323
B
X167
Park/Neutral Position Switch
P
R
N
D
1
2
3
0.5 BY
0.5 BG
4 C323
0.5 BO
11 C105
0.5 BO
1 C274
Z163
Theft Alarm Unit


30
F 2
20 A
P127
Satellite Fuse
Box 1
See Fuse Details
S275
1.5
PU
86
1.5
PU
30
C279
86
30
K159
Theft Alarm
Relay
85
87a
87
85
87a
87
C279
1.0
GW
1.0
GR
0.5
BK
S2019
HJ6
1.5
GW
E
T2-14
S2020
HJ6
F
T2-14
0.5
GW
2
C110
0.7
G
B128
[1]
Right Front
Lamp Assembly
[1]
Direction In-
dicator
Lamp
0.7
B
3
C110
0.5
B
S105
See Ground Dis-
tribution
2
C109
0.7
G
B115
[1]
Left Front Lamp
Assembly
[1]
Direction In-
dicator
Lamp
0.7
B
3
C109
0.5
B
S100
See Ground Dis-
tribution
D
T2-10
E100
E101

T2 ETM

1995 RANGE ROVER



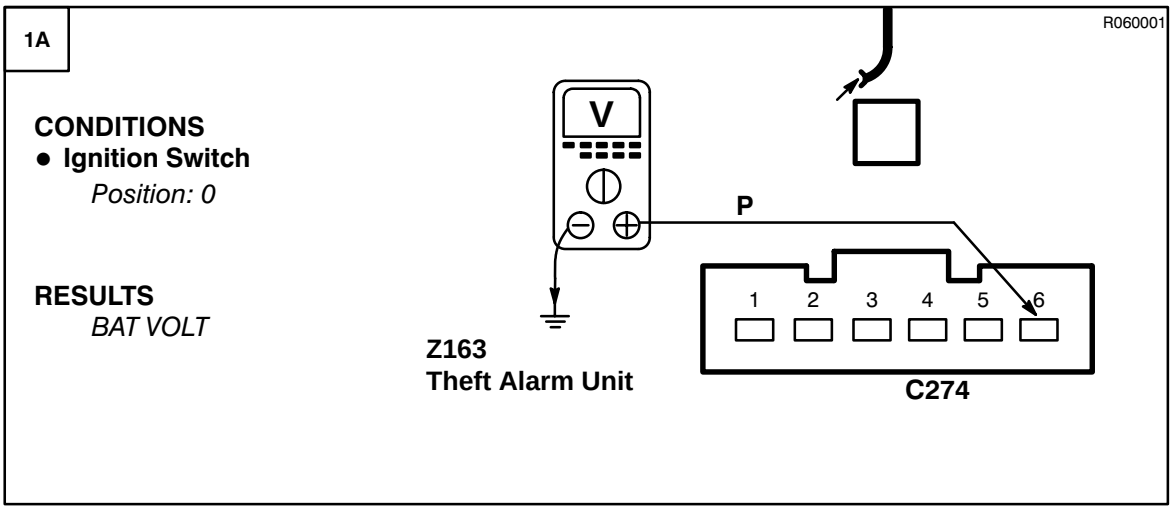
TROUBLESHOOTING HINTS

13. Check Fuses F1, F2 and F5 in Satellite Fuse Box 1.
14. Check Fuse F5 in Satellite Fuse Box 2.
15. Check Fuse F4 in Engine Compartment Fuse Box.
16. If the interior lights do not come on when a door is open, check suspect door switch and associated wiring.
17. If none of the lock actuators operate, check O and K Wire. If OK, replace Theft Alarm Unit (Z163).

SYSTEM DIAGNOSIS

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

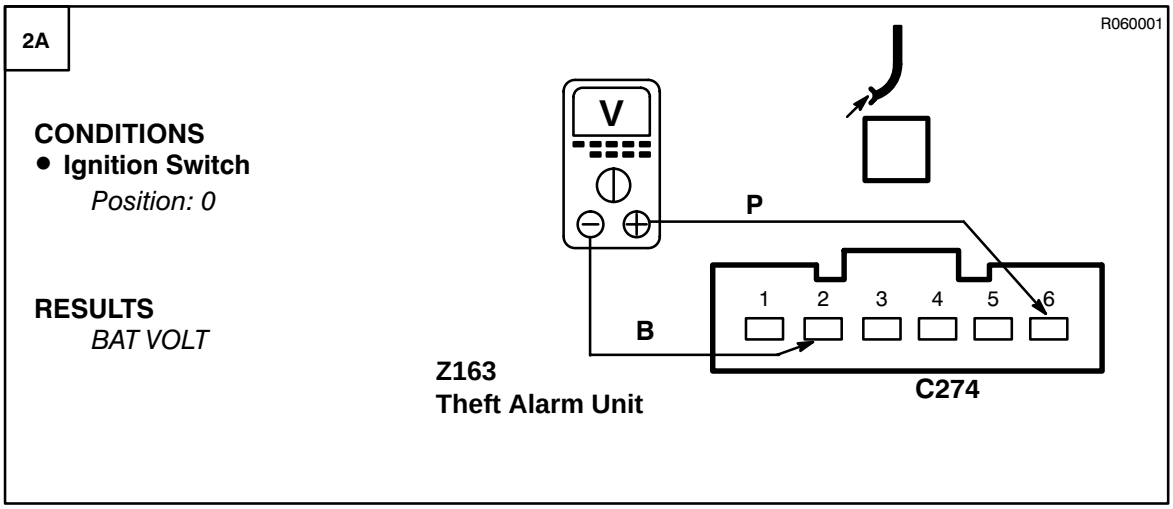
Test A



OK **PROBLEM CAUSE**
- P Wire

OK

2A



OK **PROBLEM CAUSE**
- B Wire

OK

3A

2A

3A

R160002

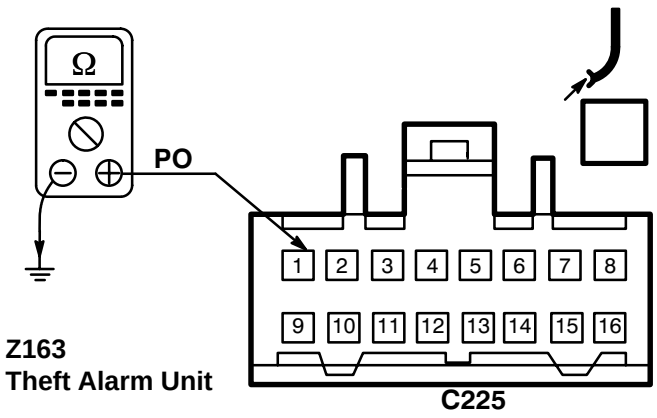
CONDITIONS
- **Ignition Switch**

  Position: 0
- **Bonnet**

  Closed

RESULTS

More than 10K ohms



Z163
Theft Alarm Unit

C225

OK

PROBLEM CAUSE
- **PO, B Wire**
- **Alarm Bonnet Switch**

OK

4A

4A

R160002

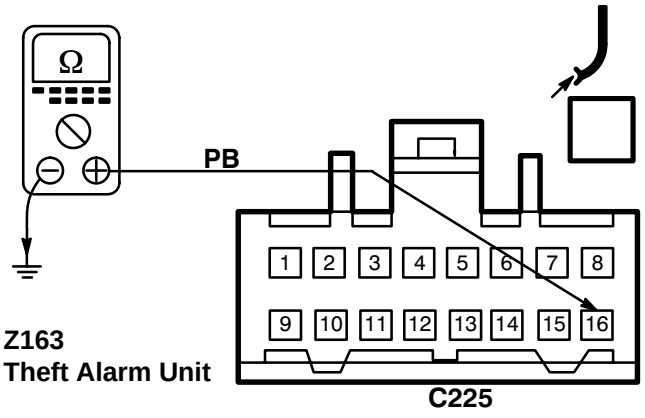
CONDITIONS
- **Ignition Switch**

  Position: 0
- **Tailgate**

  Closed

RESULTS

More than 10K ohms



Z163
Theft Alarm Unit

C225

OK

PROBLEM CAUSE
- **PB Wire**
- **Tailgate Switch**

OK

5A

4A

5A

R160002

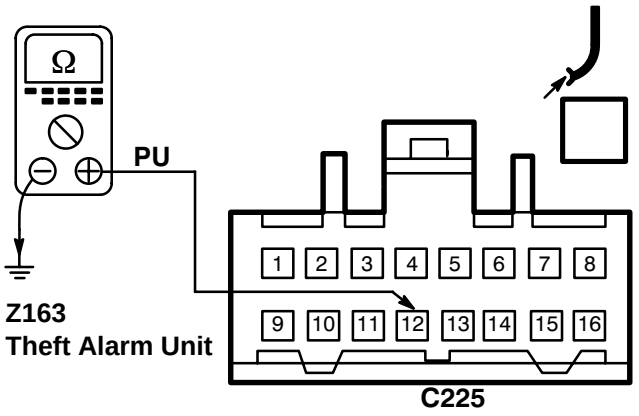
CONDITIONS
- **Ignition Switch**

  Position: 0
- **All doors**

  Closed

RESULTS

More than 10K ohms



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

OK

6A

6A

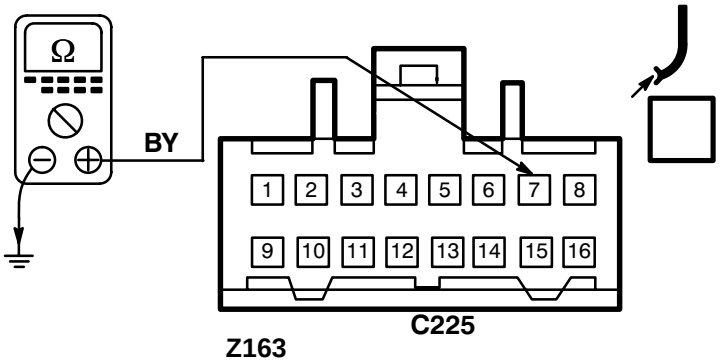
R160002

CONDITIONS
- **Ignition Switch**

  Position: 0

RESULTS
- **Right Front Door Key Switch**

  Neutral = More than 10K ohms
  Locked = Less than 1 ohm



OK **PROBLEM CAUSE**
- **BY Wire**
- **Y Wire**
- **B Wire**
- **Right Front Door Key Switch**

OK

7A

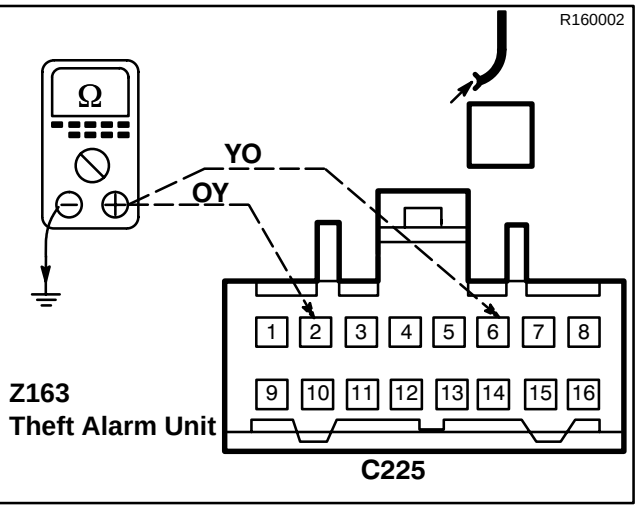
6A

7A

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0

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



OK

PROBLEM CAUSE
- **OY Wire**
- **YO Wire**
- **B Wire**

OK

8A

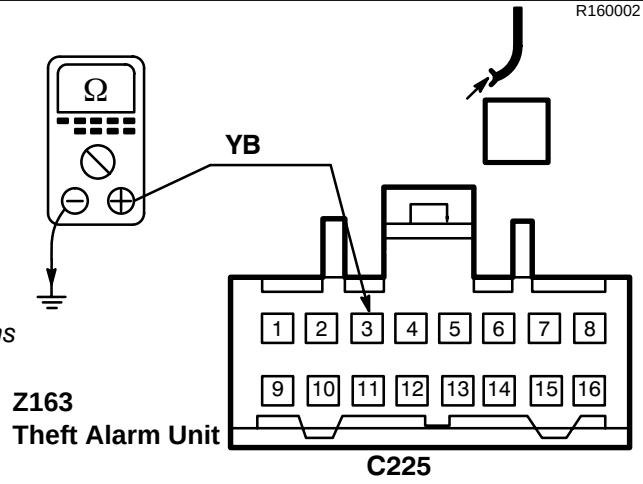
8A

R160002

CONDITIONS
- **Ignition Switch**
  Position: 0

RESULTS
- **Left Front Door Key Switch**

  Neutral = More than 10K ohms
  Locked = Less than 1 ohm

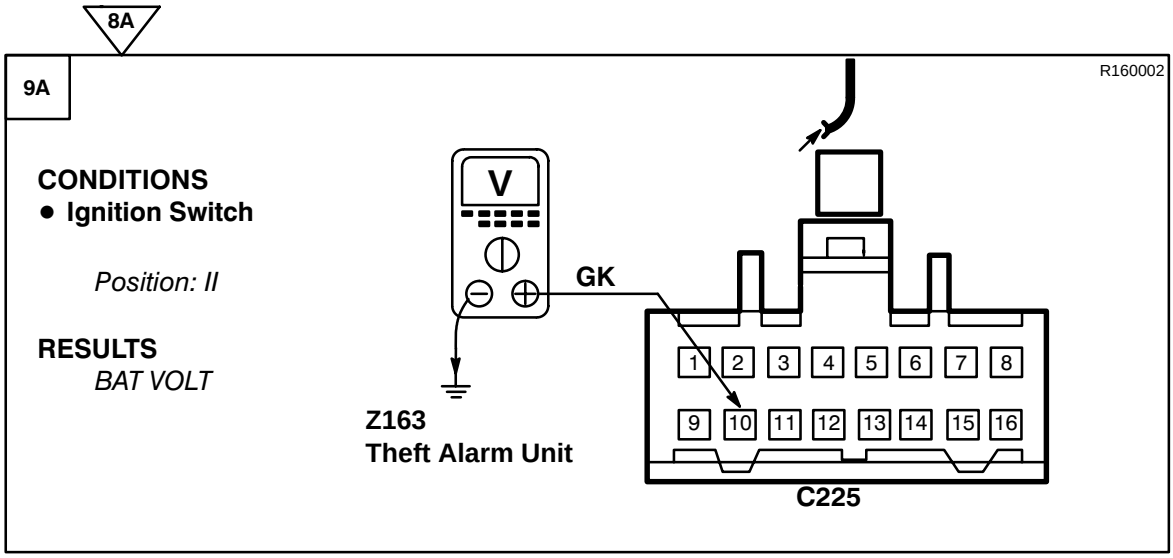


OK

PROBLEM CAUSE
- **YB Wire**
- **Y Wire**
- **B Wire**
- **Left Front Door Key Switch**

OK

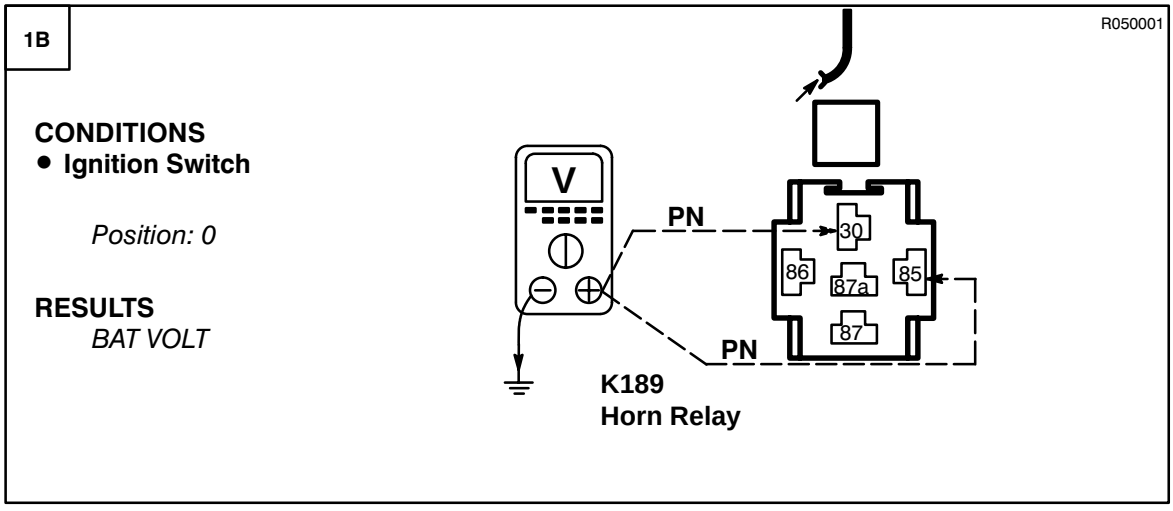
9A



OK **PROBLEM CAUSE**
- GK Wire

OK **PROBLEM CAUSE**
- Theft Alarm Unit

Test B



OK **PROBLEM CAUSE**
- PN Wire

OK

2B

1B

2B

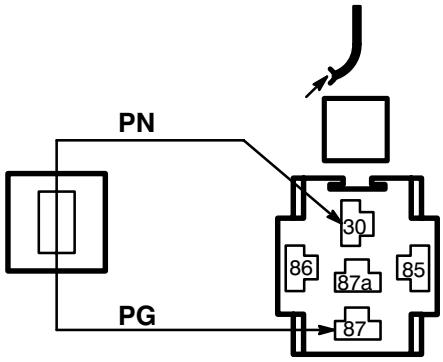
R050001

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
- **Horns**

Operates



K189
Horn Relay

OK

PROBLEM CAUSE
- **PG Wire**
- **Horns**

OK

3B

3B

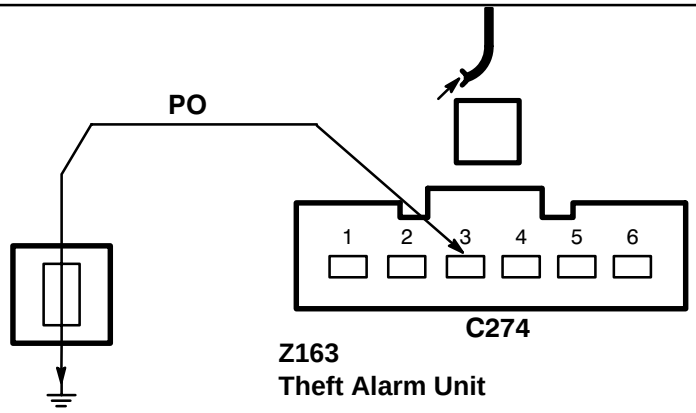
R060001

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
- **Horns**

Operates



C274

Z163
Theft Alarm Unit

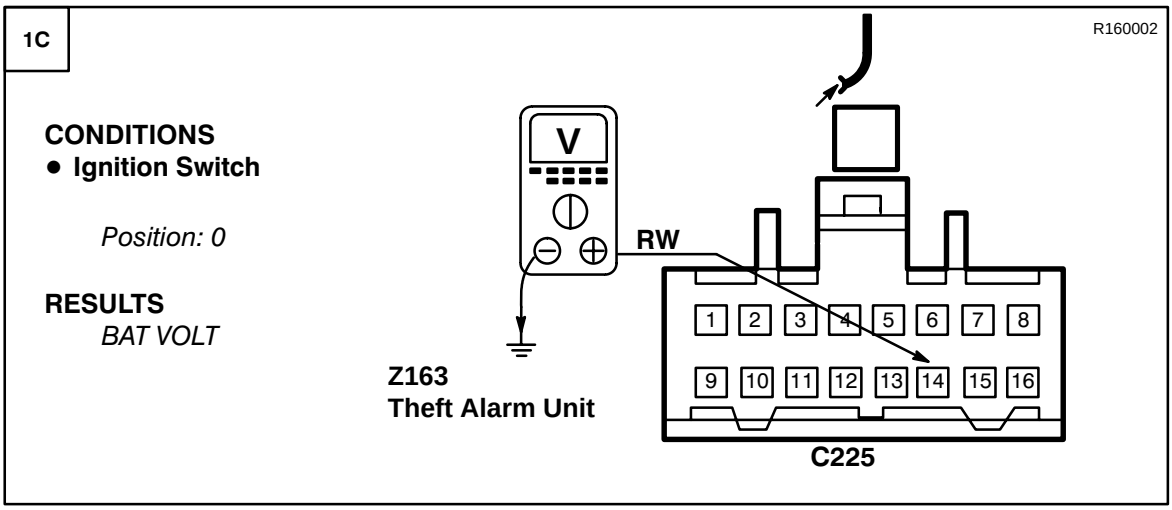
OK

PROBLEM CAUSE
- **PO Wire**
- **Horn Relay**

OK

PROBLEM CAUSE
- **Theft Alarm Unit**

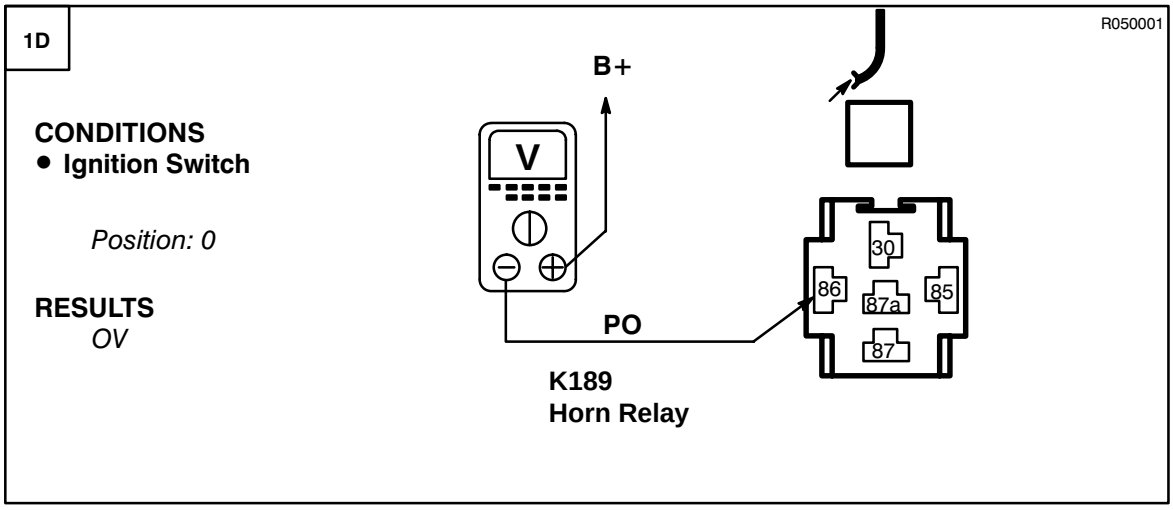
Test C



OK **PROBLEM CAUSE**
- **RW Wire**
- **PN Wire**
- **Theft Alarm LED**

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

Test D



OK **PROBLEM CAUSE**
- **PO Wire**
- **Theft Alarm Unit**

OK **PROBLEM CAUSE**
- **Horn Relay**

Test E

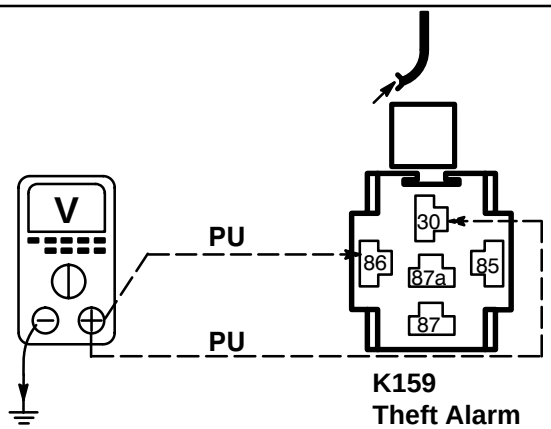
1E

R050001

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
BAT VOLT



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

OK

2E

2E

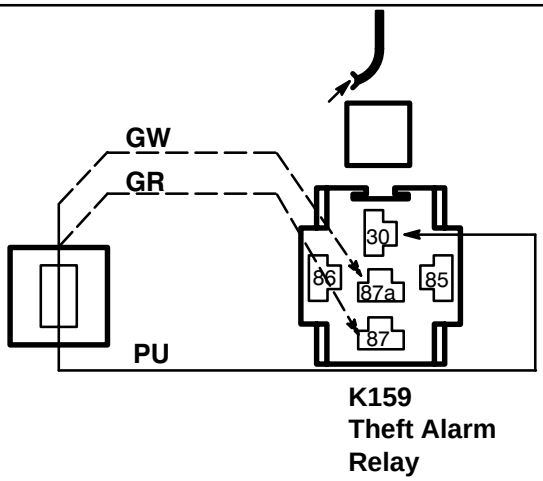
R050001

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
- **Direction Indicator Lamps**

On



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

OK

3E

2E

3E

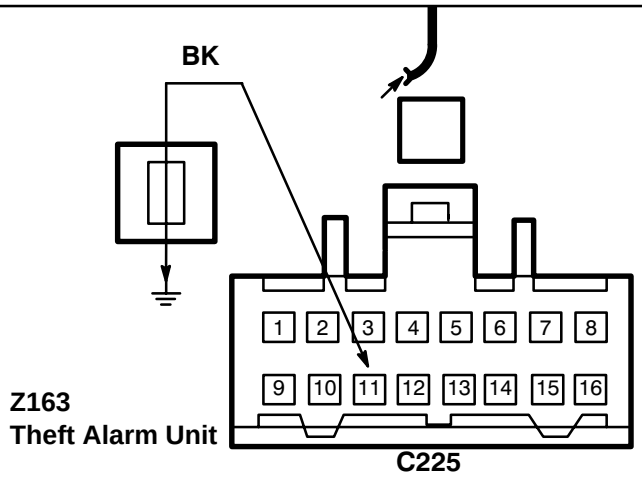
R160002

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
- **Direction Indicator Lamps**

On



OK **PROBLEM CAUSE**
- **BK Wire**
- **Theft Alarm Relay**

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

Test F

1F

R160002

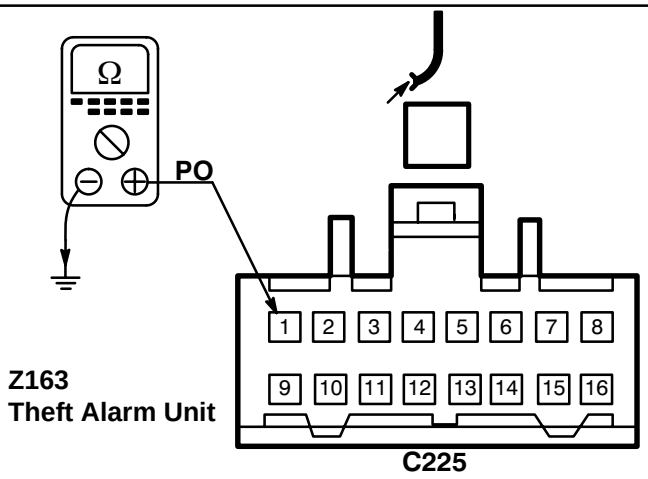
CONDITIONS
- **Ignition Switch**

Position: 0
- **Bonnet**

Open

RESULTS

Less than 1 ohm



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

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

Test G

1G

R160002

CONDITIONS

- **Ignition Switch**

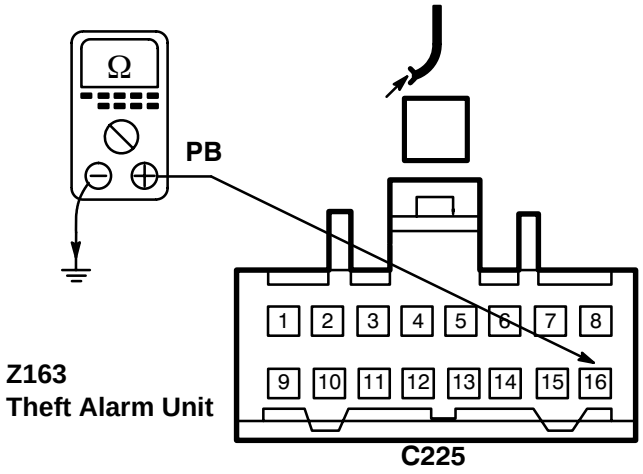
  Position: 0

- **Tailgate**

  Open

RESULTS

Less than 1 ohm



OK

PROBLEM CAUSE

- **PB Wire**
- **Tailgate Switch**

OK

PROBLEM CAUSE

- **Theft Alarm Unit**

Test H

1H

R060009

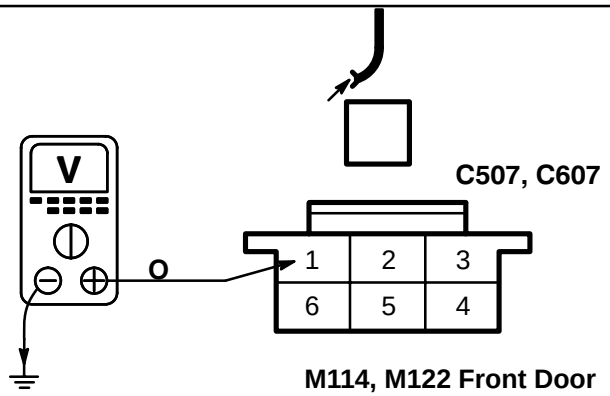
CONDITIONS
- **Ignition Switch**

  Position: II
- **All doors**

  Locked
- **Unlock a front door**

RESULTS

BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- **O Wire**

OK

2H

2H

R060009

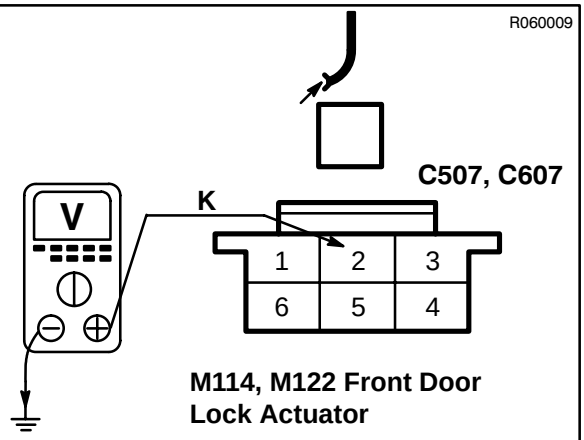
CONDITIONS
- **Ignition Switch**

  Position: II
- **All doors**

  Unlocked
- **Lock a front door**

RESULTS

BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- **K Wire**

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

Test I

1I

R160002

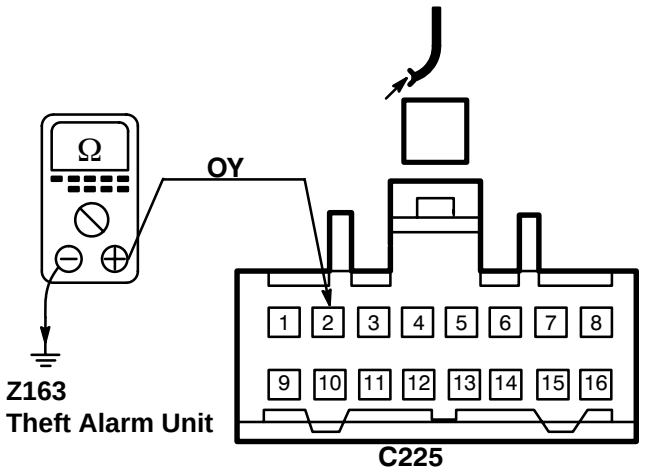
CONDITIONS
- **Ignition Switch**

Position: 0
- **All doors**

Locked

RESULTS

More than 1000 ohms



OK

PROBLEM CAUSE
- **OY Wire**
- **YO Wire**
- **M114, M122 Front Door Lock Actuator**

OK

2I

2I

R160002

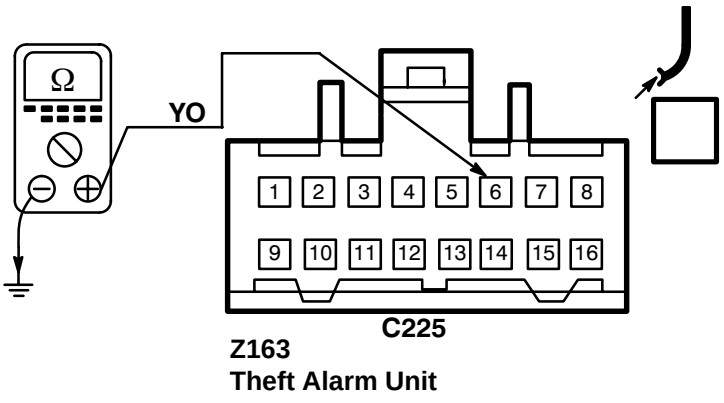
CONDITIONS
- **Ignition Switch**

Position: 0
- **All doors**

Locked

RESULTS

More than 1000 ohms



OK

PROBLEM CAUSE
- **YO Wire**
- **OY Wire**
- **M114, M122 Front Door Lock Actuator**

OK

PROBLEM CAUSE
- **Theft Alarm Unit**

Test J

1J

R160002

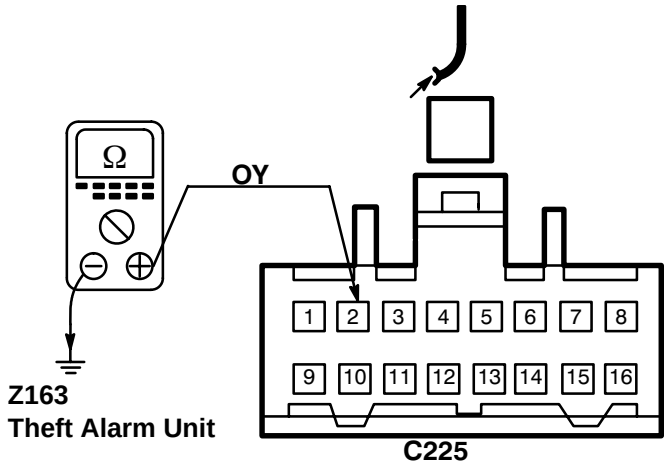
CONDITIONS
- **Ignition Switch**

Position: 0
- **All doors**

Unlocked

RESULTS

Less than 1 ohm



Z163
Theft Alarm Unit

C225

OK **GO TO TEST 3J**

OK

2J

2J

R160002

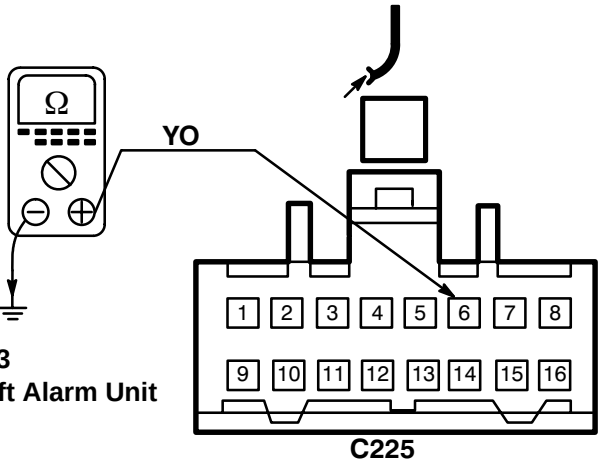
CONDITIONS
- **Ignition Switch**

Position: 0
- **All doors**

Unlocked

RESULTS

Less than 1 ohm



Z163
Theft Alarm Unit

C225

OK

3J

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

2J

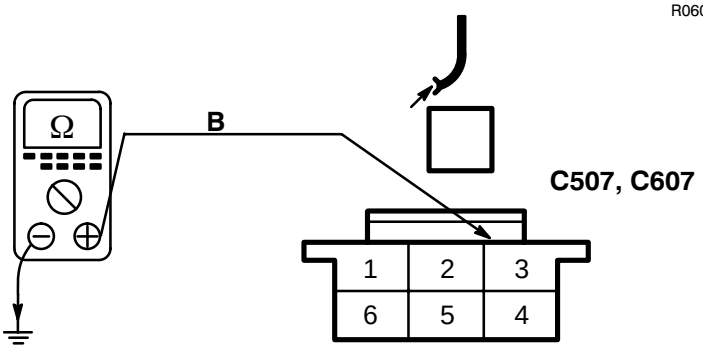
3J

R060009

CONDITIONS
- **Ignition Switch**

Position: 0

RESULTS
Less than 1 ohm



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

OK

4J

4J

R060009

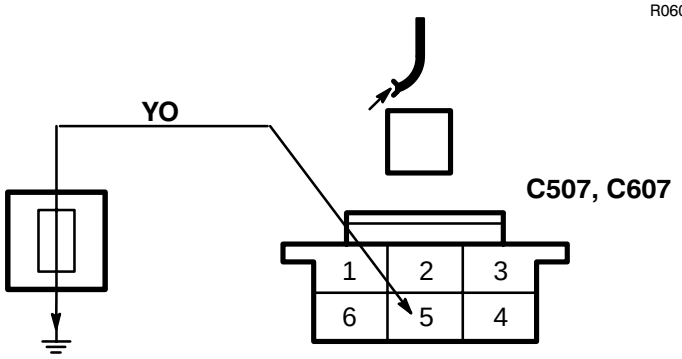
CONDITIONS
- **Ignition Switch**

Position: II
- **All doors**

Locked

RESULTS
- **All doors**

Unlock



OK **PROBLEM CAUSE**
- **YO Wire**
- **OY Wire (Right)**
- **Theft Alarm Unit**

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

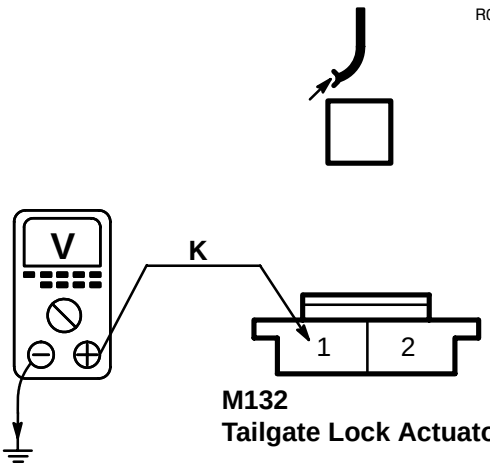
Test K

1K

R020029.00

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

RESULTS
BAT VOLT (Momentary)



M132
Tailgate Lock Actuator

OK **PROBLEM CAUSE**
- **K Wire**

OK

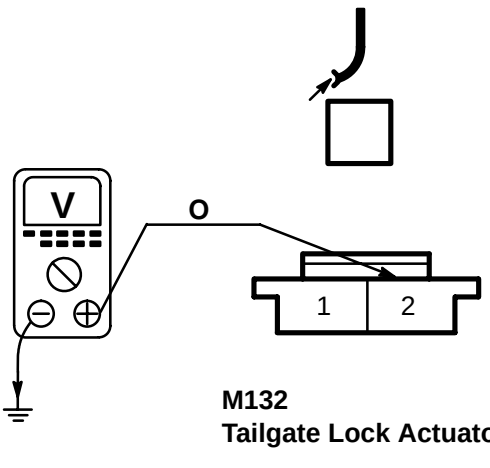
2K

2K

R020029.00

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

RESULTS
BAT VOLT (Momentary)



M132
Tailgate Lock Actuator

OK **PROBLEM CAUSE**
- **O Wire**

OK **PROBLEM CAUSE**
- **Tailgate Lock Actuator**

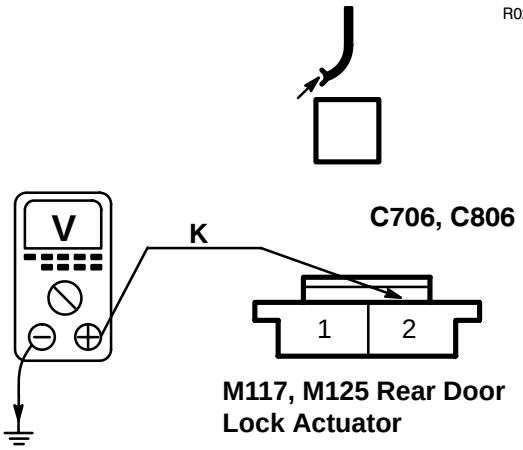
Test L

1L

R020029

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

RESULTS
BAT VOLT (Momentary)



OK **PROBLEM CAUSE**
- **K Wire**

OK

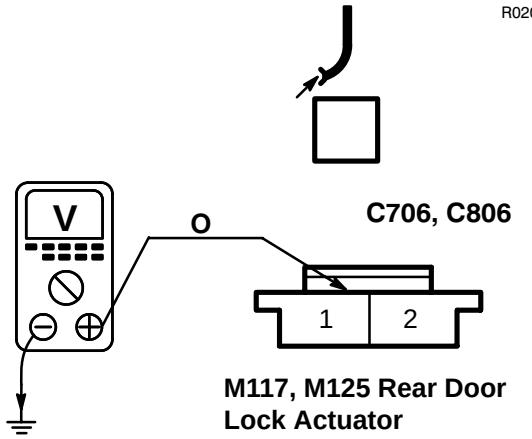
2L

2L

R020029

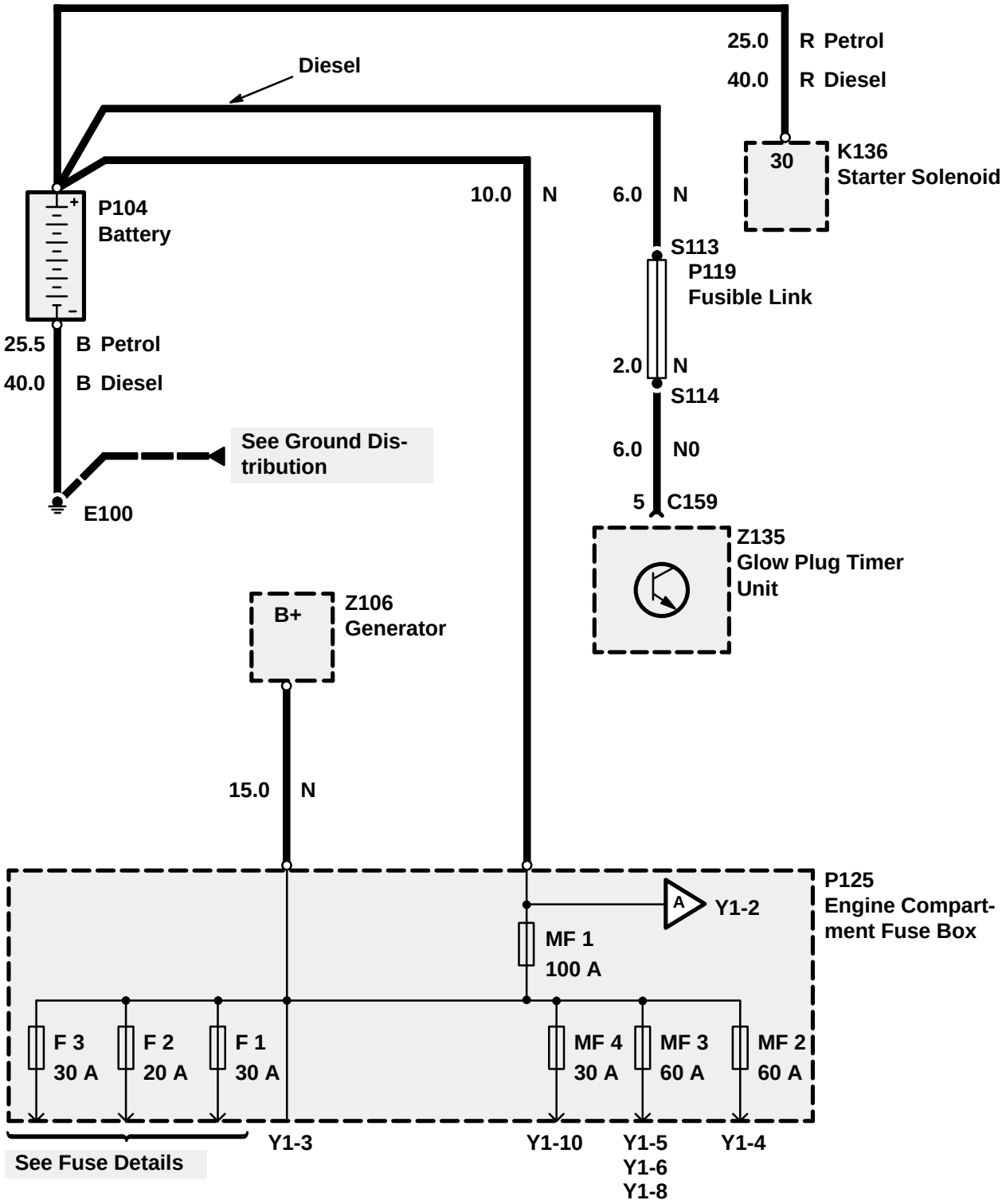
CONDITIONS
- **Ignition Switch**
  Position: 0
- **All doors**
  Locked
- **Unlock a front door**

RESULTS
BAT VOLT (Momentary)



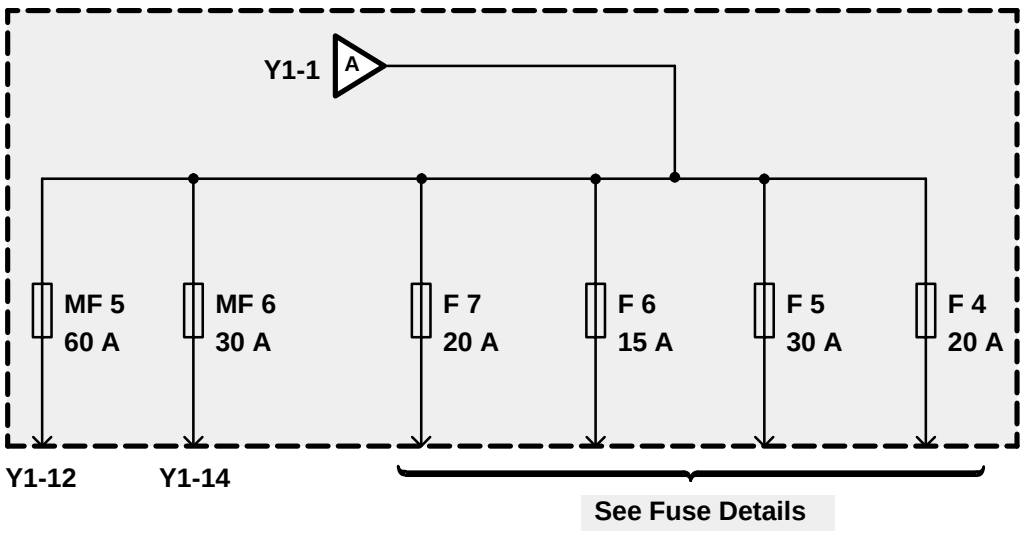
OK **PROBLEM CAUSE**
- **O Wire**

OK **PROBLEM CAUSE**
- **M117, M125 Rear Door Lock Actuator**

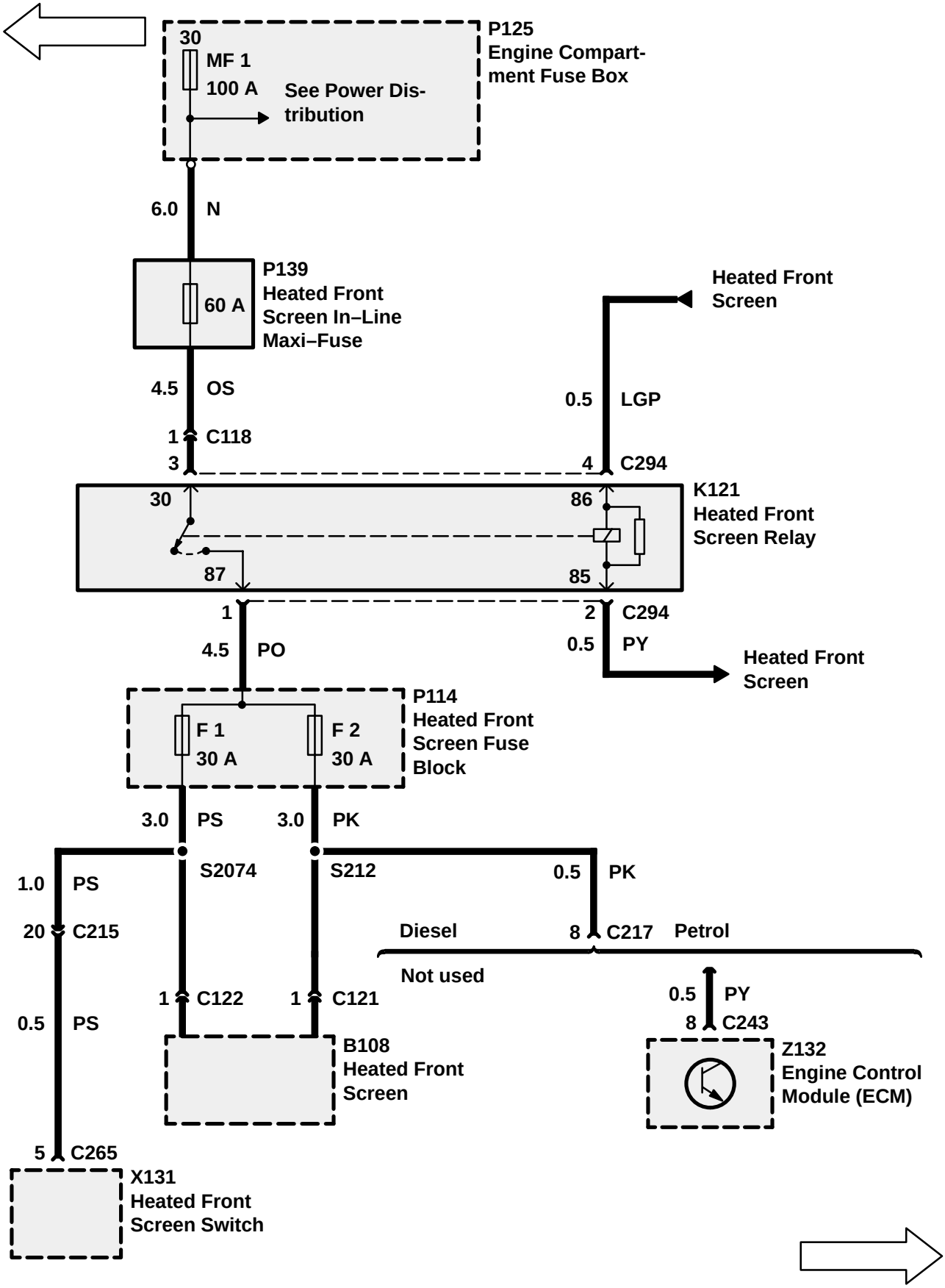

25.0 R Petrol
40.0 R Diesel
Diesel
30
K136
Starter Solenoid
10.0 N
6.0 N
P104
Battery
S113
P119
Fusible Link
25.5 B Petrol
40.0 B Diesel
2.0 N
S114
See Ground Distribution
6.0 N0
E100
5 C159
Z135
Glow Plug Timer Unit
B+
Z106
Generator
15.0 N
P125
Engine Compartment Fuse Box
A
Y1-2
MF 1
100 A
F 3
30 A
F 2
20 A
F 1
30 A
MF 4
30 A
MF 3
60 A
MF 2
60 A
See Fuse Details
Y1-3
Y1-10
Y1-5
Y1-6
Y1-8
Y1-4

Y1 ETM

1995 RANGE ROVER

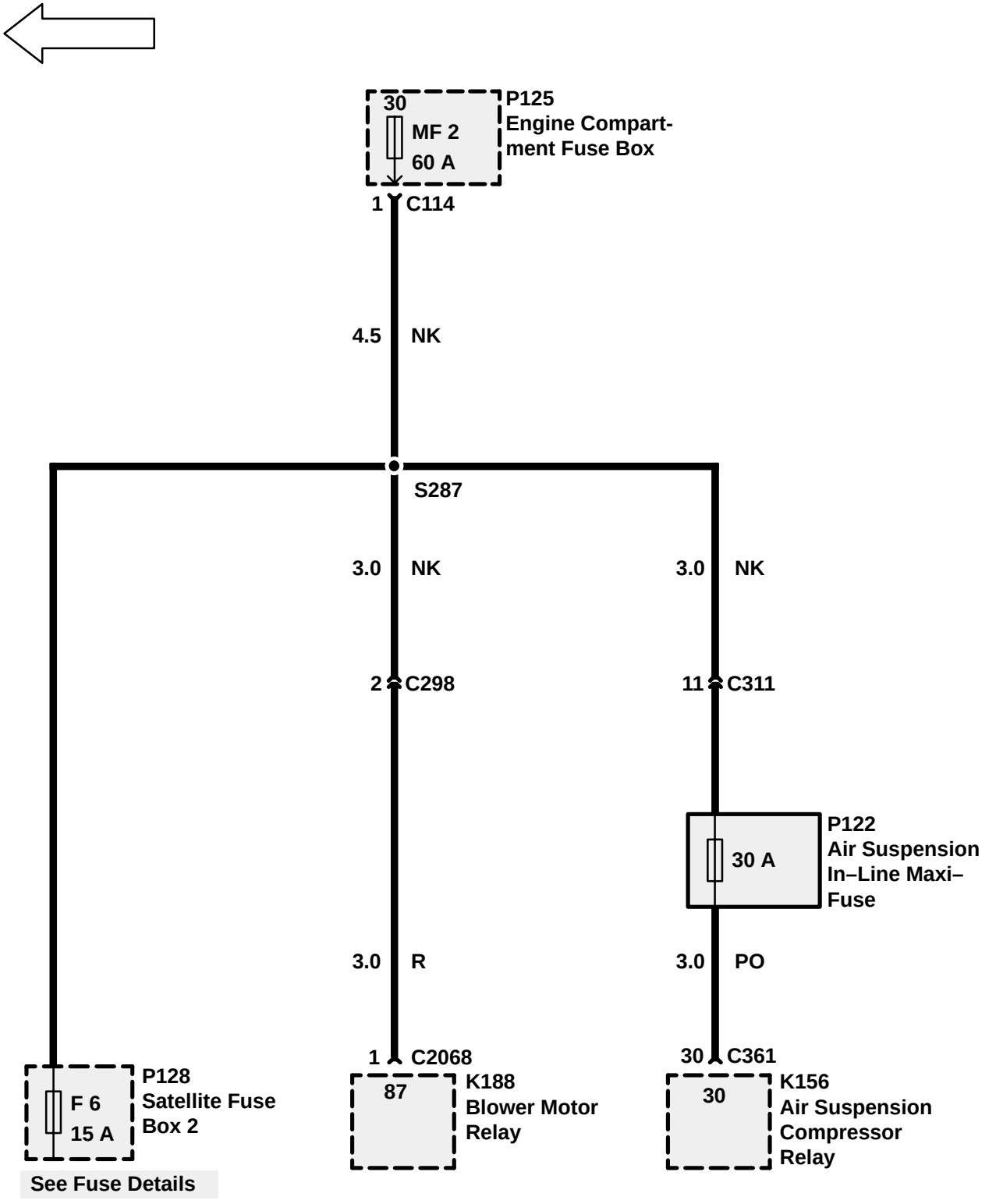


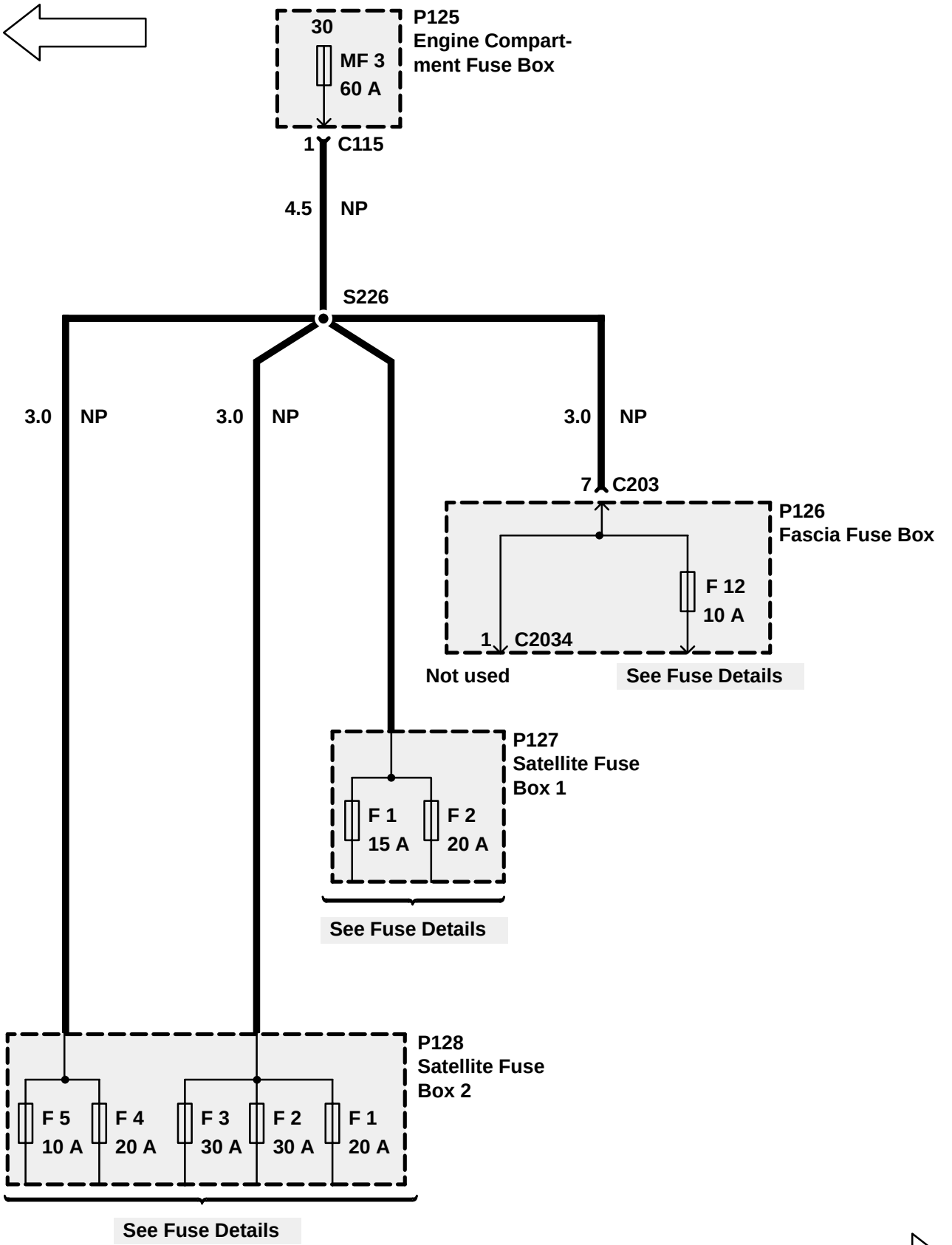
P125
Engine Compartment Fuse Box


30
MF 1
100 A
See Power Distribution
P125
Engine Compartment Fuse Box
6.0 N
P139
60 A
Heated Front Screen In–Line Maxi–Fuse
Heated Front Screen
4.5 OS
0.5 LGP
1 C118
3
4 C294
30
86
87
85
K121
Heated Front Screen Relay
1
2 C294
4.5 PO
0.5 PY
Heated Front Screen
P114
F 1
30 A
F 2
30 A
Heated Front Screen Fuse Block
3.0 PS
3.0 PK
S2074
S212
1.0 PS
0.5 PK
20 C215
Diesel
8 C217
Petrol
Not used
1 C122
1 C121
0.5 PY
8 C243
0.5 PS
B108
Heated Front Screen
Z132
Engine Control Module (ECM)
5 C265
X131
Heated Front Screen Switch

Y1 ETM

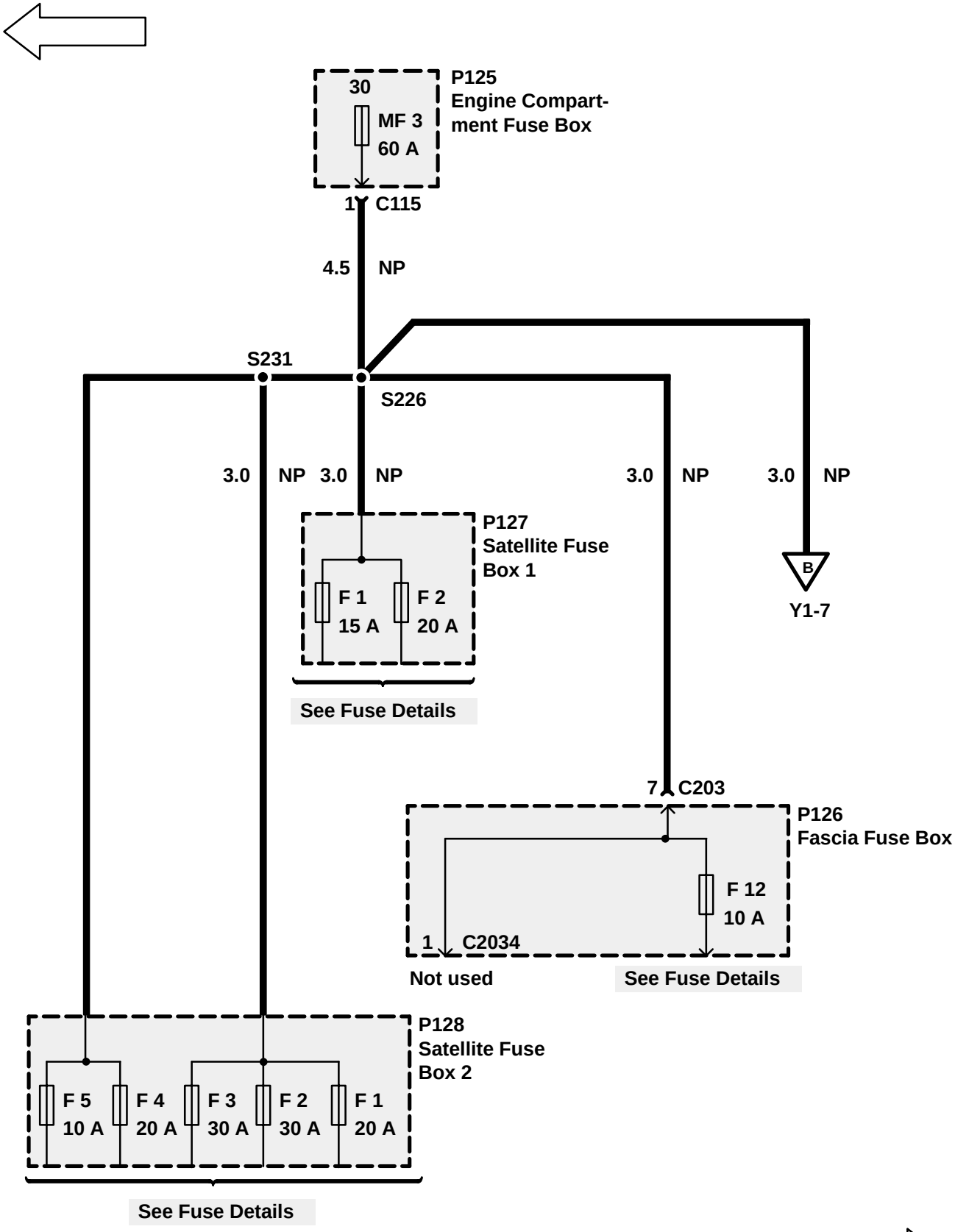
1995 RANGE ROVER

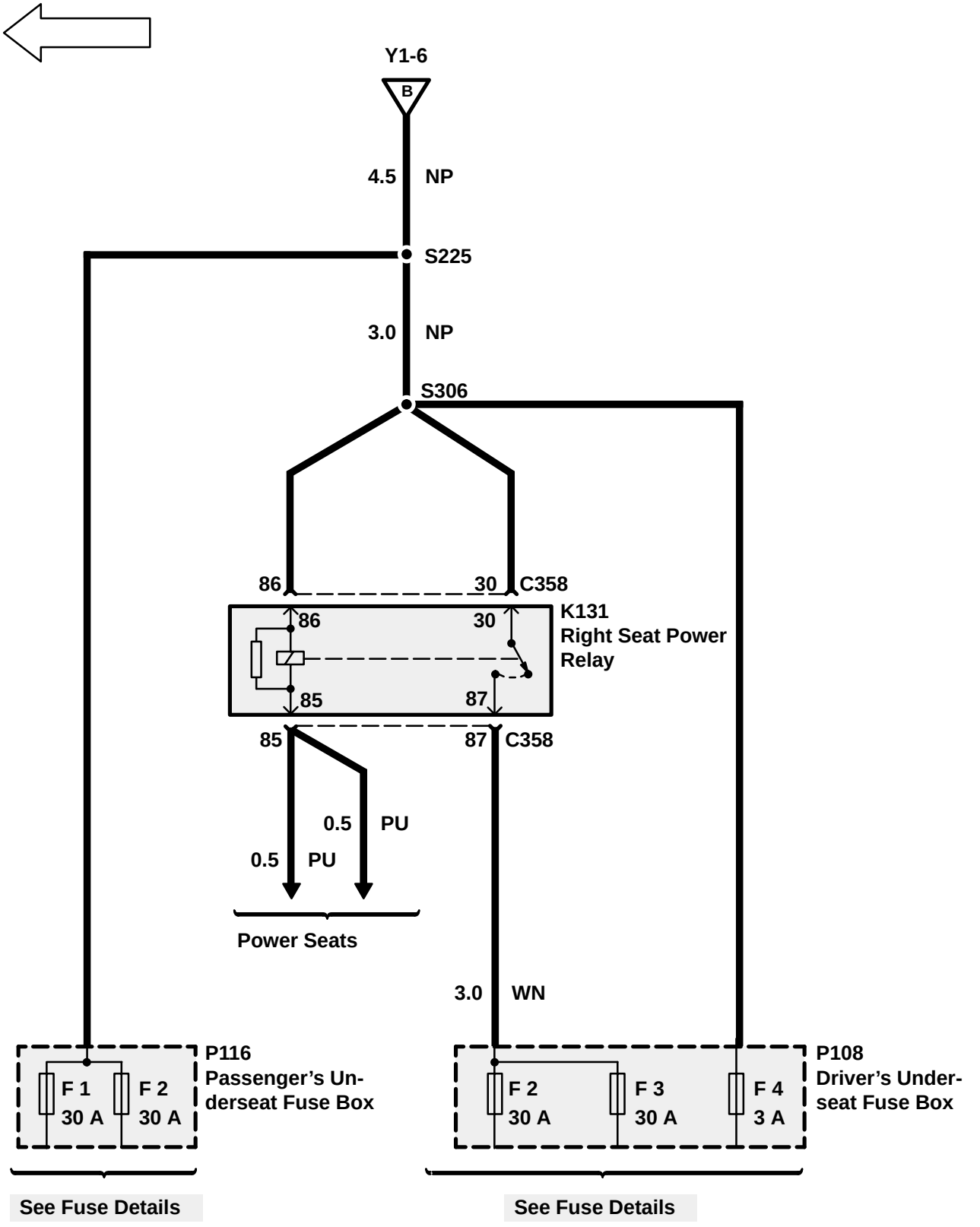



30
MF 3
60 A
P125
Engine Compart-
ment Fuse Box
1
C115
4.5
NP
S226
3.0
NP
3.0
NP
3.0
NP
7
C203
P126
Fascia Fuse Box
F 12
10 A
1
C2034
Not used
See Fuse Details
P127
Satellite Fuse
Box 1
F 1
15 A
F 2
20 A
See Fuse Details
P128
Satellite Fuse
Box 2
F 5
10 A
F 4
20 A
F 3
30 A
F 2
30 A
F 1
20 A
See Fuse Details

Y1 ETM

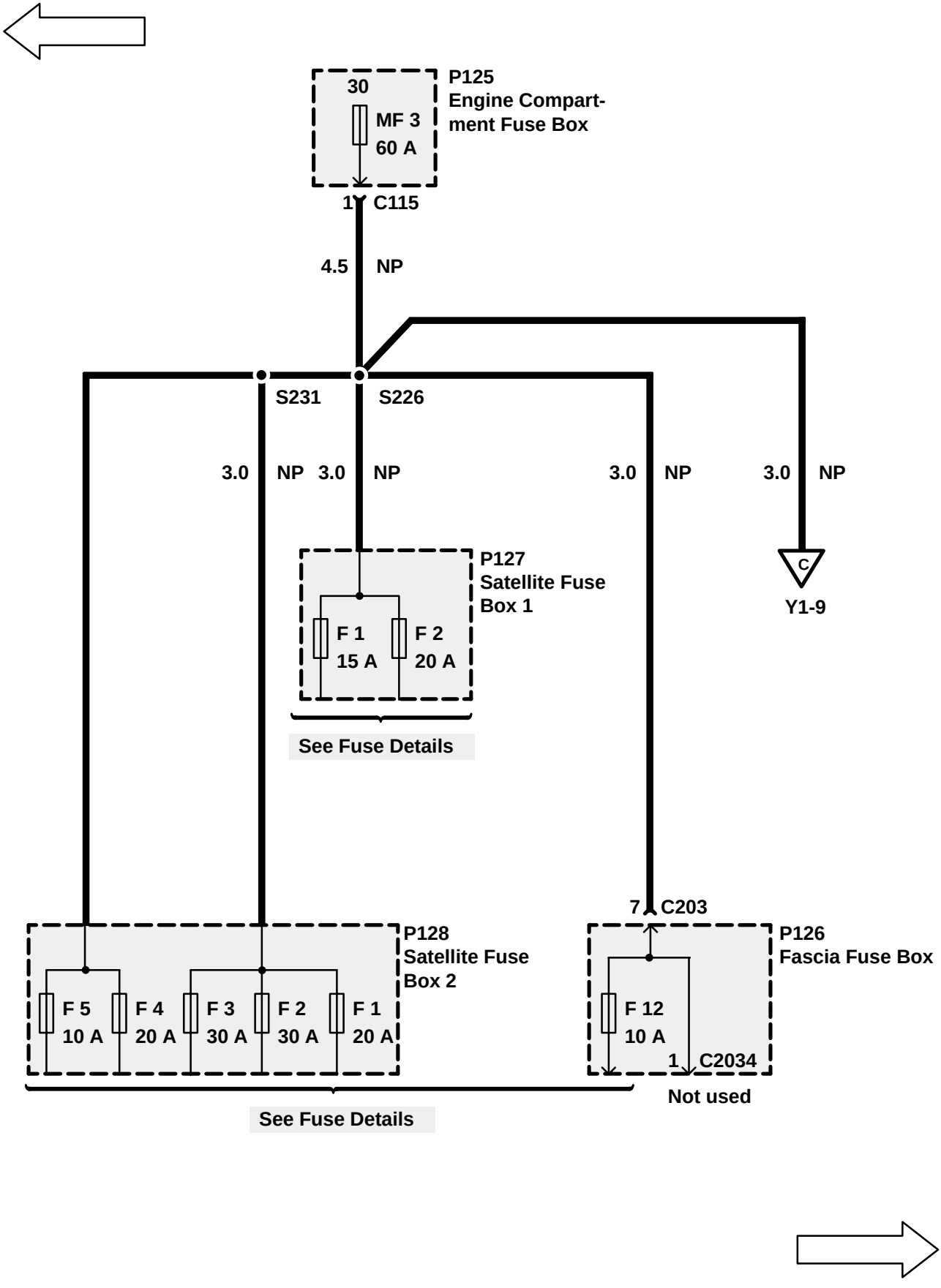
1995 RANGE ROVER

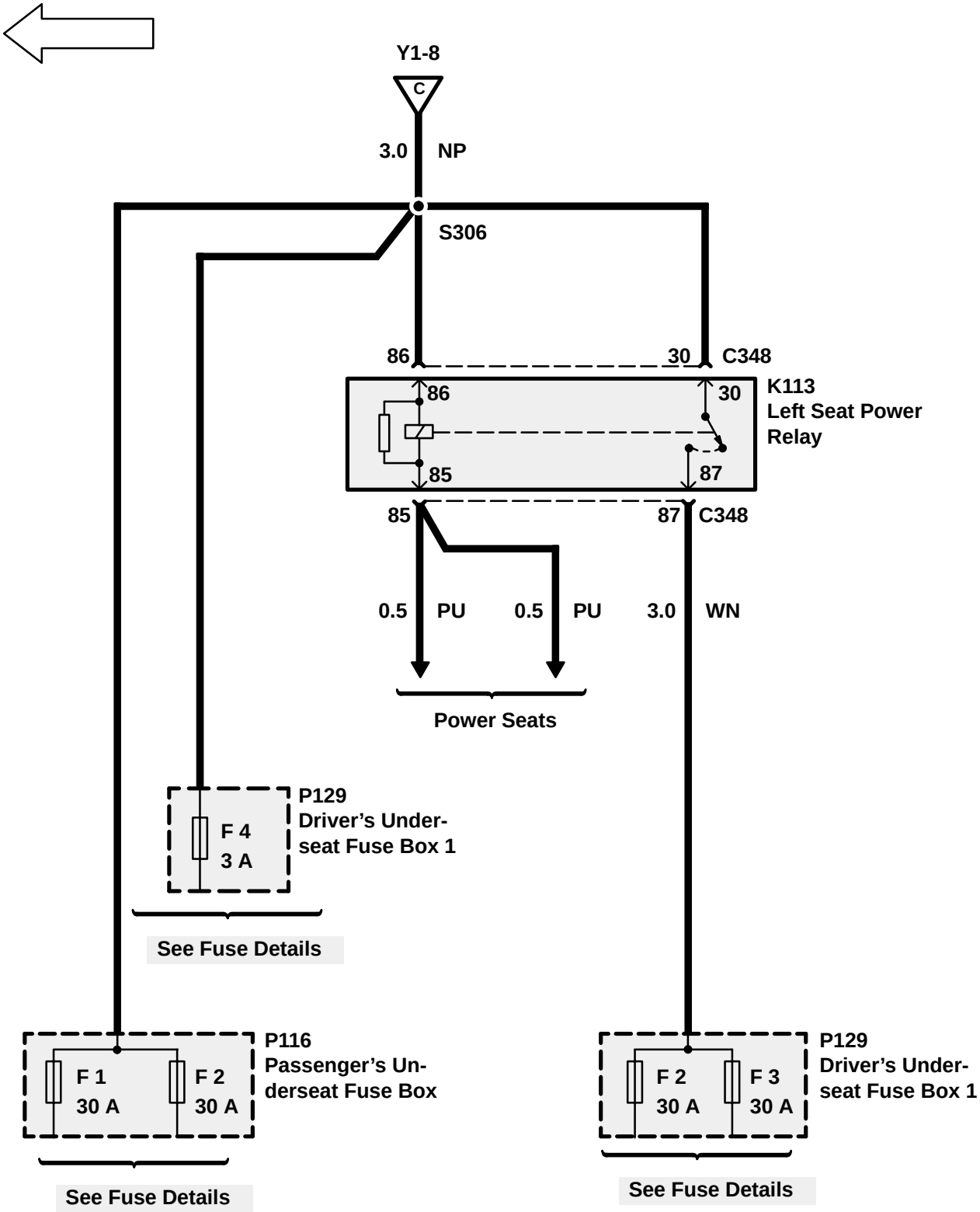



Y1-6
B
4.5 NP
S225
3.0 NP
S306
86
30
C358
K131
Right Seat Power Relay
86
30
85
87
85
87
C358
0.5 PU
0.5 PU
Power Seats
3.0 WN
P116
Passenger's Underseat Fuse Box
F 1
30 A
F 2
30 A
See Fuse Details
P108
Driver's Underseat Fuse Box
F 2
30 A
F 3
30 A
F 4
3 A
See Fuse Details

Y1 ETM

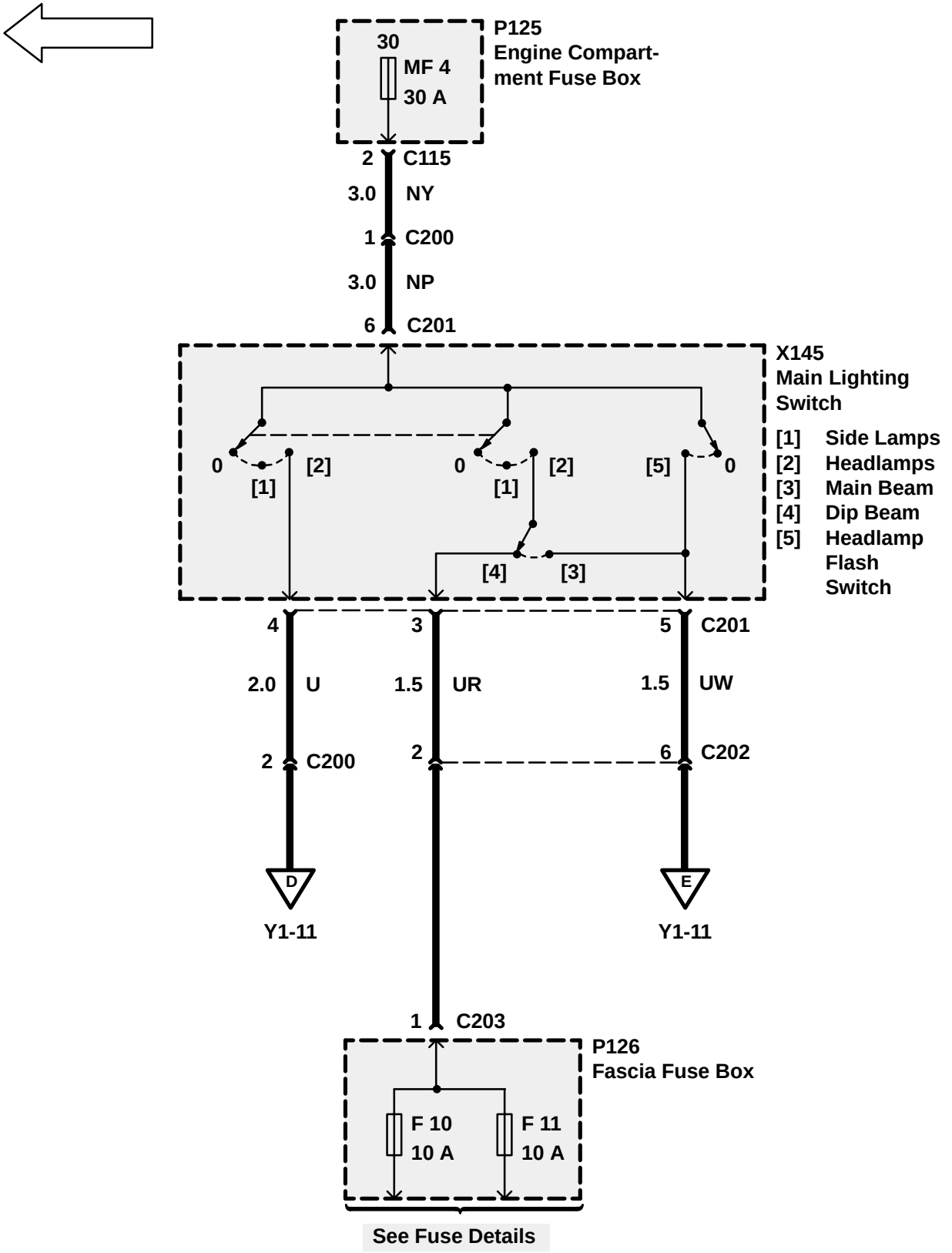
1995 RANGE ROVER

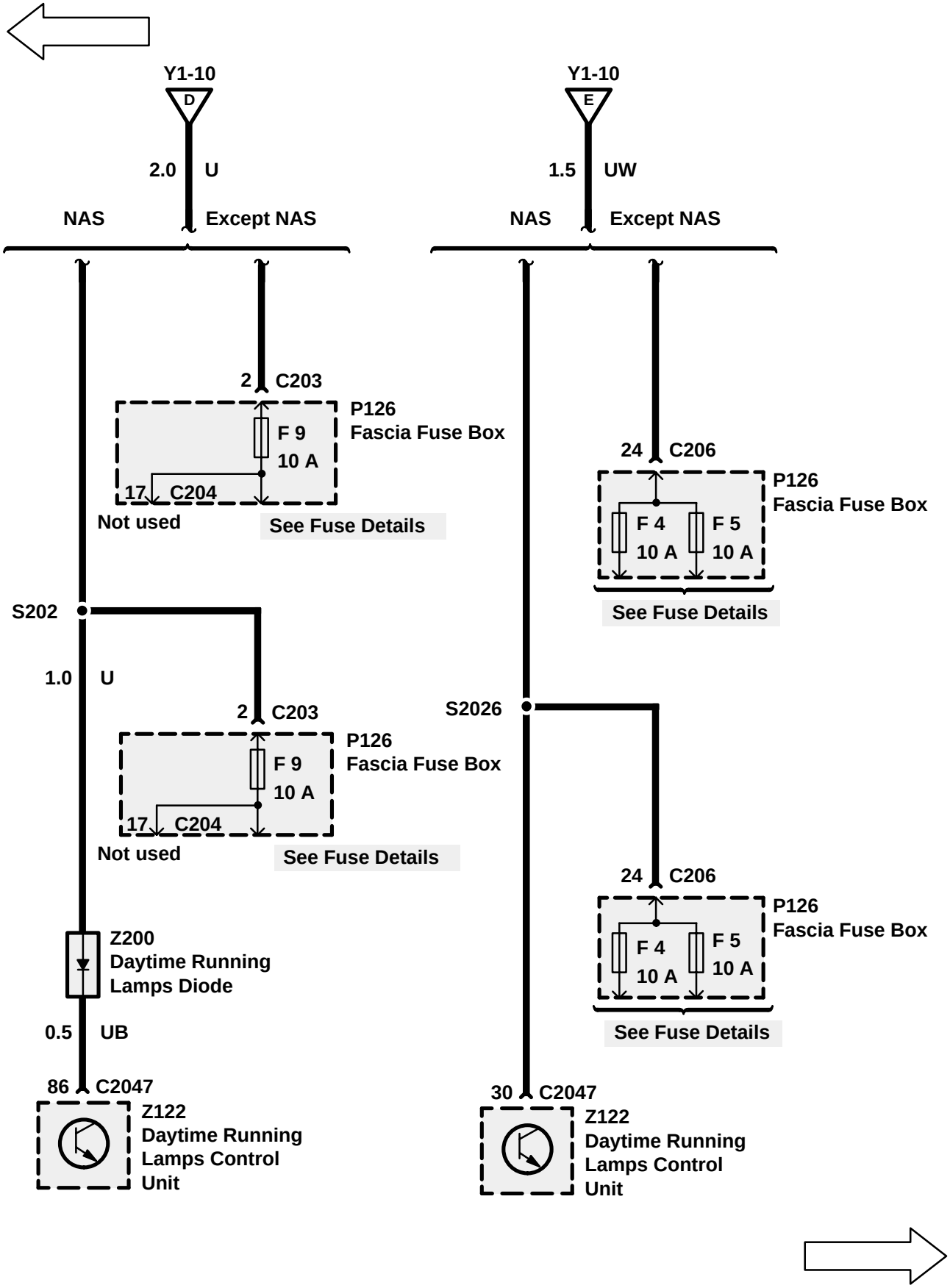



Y1-8
C
3.0
NP
S306
86
30
C348
K113
Left Seat Power
Relay
86
30
85
87
85
87
C348
0.5
PU
0.5
PU
3.0
WN
Power Seats
P129
Driver's Under-
seat Fuse Box 1
F 4
3 A
See Fuse Details
P116
Passenger's Un-
derseat Fuse Box
F 1
30 A
F 2
30 A
See Fuse Details
P129
Driver's Under-
seat Fuse Box 1
F 2
30 A
F 3
30 A
See Fuse Details

Y1 ETM

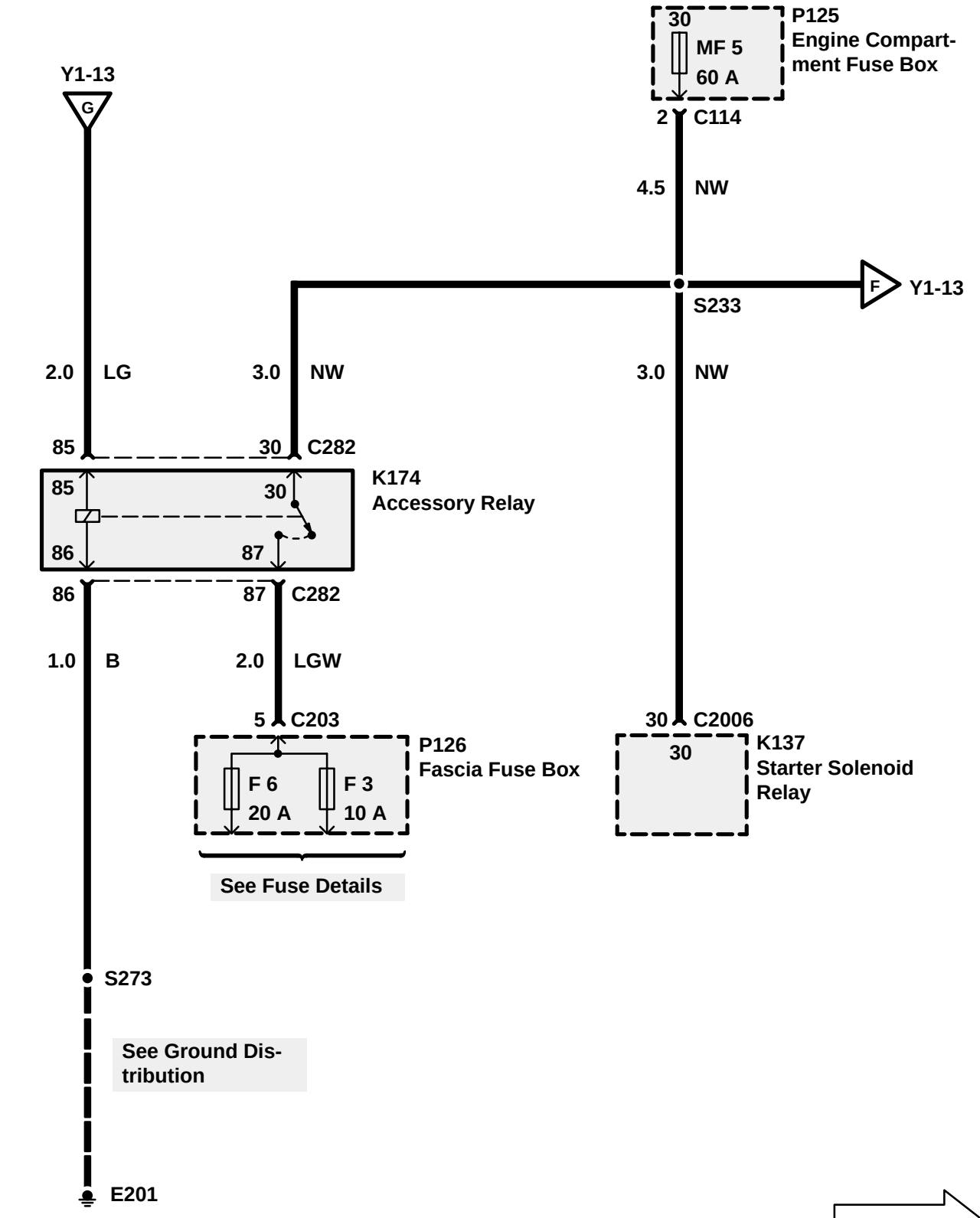
1995 RANGE ROVER

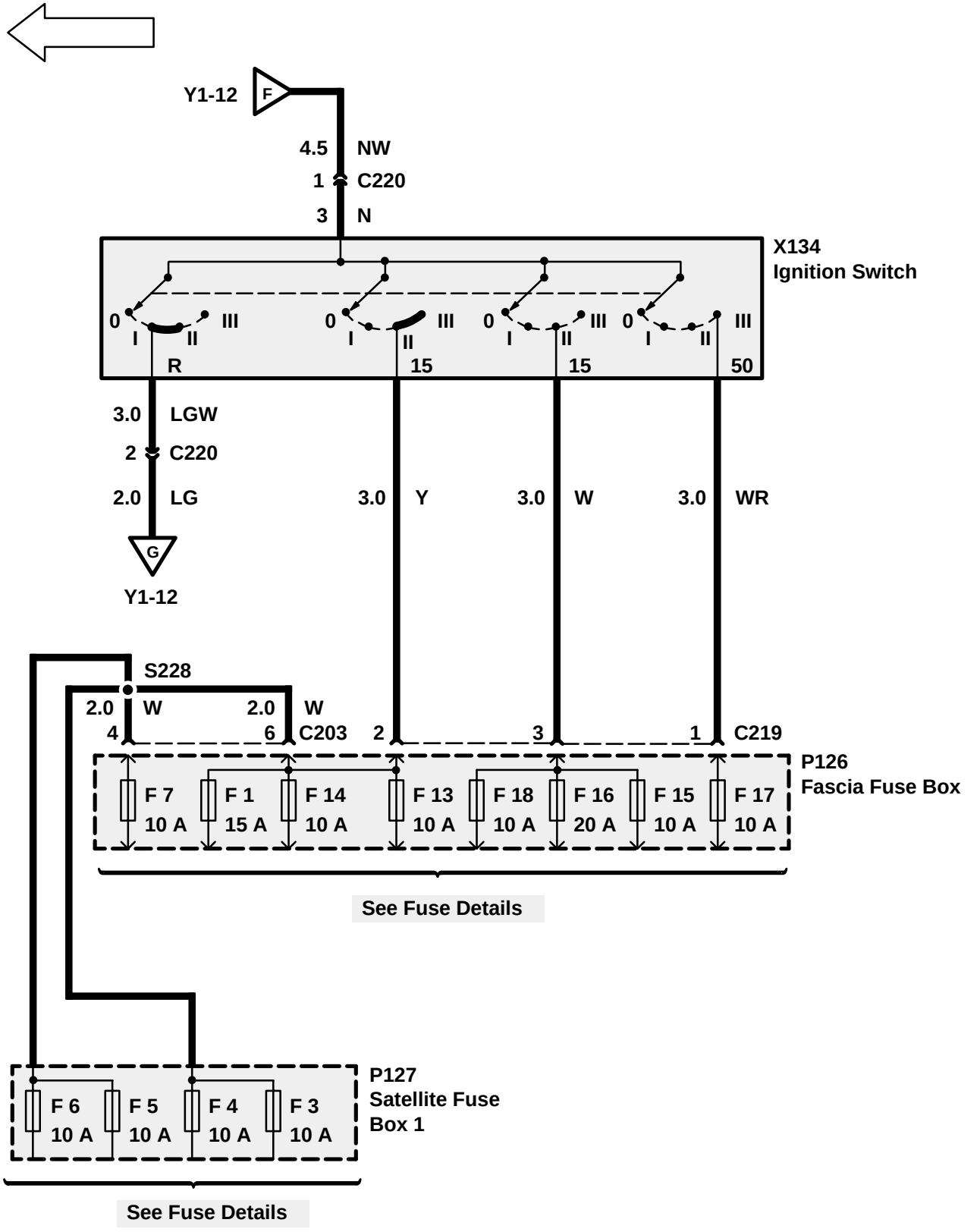



Y1-10
D
2.0
U
NAS
Except NAS
2
C203
P126
Fascia Fuse Box
F 9
10 A
17
C204
Not used
See Fuse Details
S202
1.0
U
2
C203
P126
Fascia Fuse Box
F 9
10 A
17
C204
Not used
See Fuse Details
Z200
Daytime Running
Lamps Diode
0.5
UB
86
C2047
Z122
Daytime Running
Lamps Control
Unit
Y1-10
E
1.5
UW
NAS
Except NAS
24
C206
P126
Fascia Fuse Box
F 4
10 A
F 5
10 A
See Fuse Details
S2026
24
C206
P126
Fascia Fuse Box
F 4
10 A
F 5
10 A
See Fuse Details
30
C2047
Z122
Daytime Running
Lamps Control
Unit

Y1 ETM

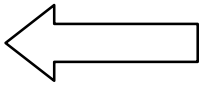
1995 RANGE ROVER

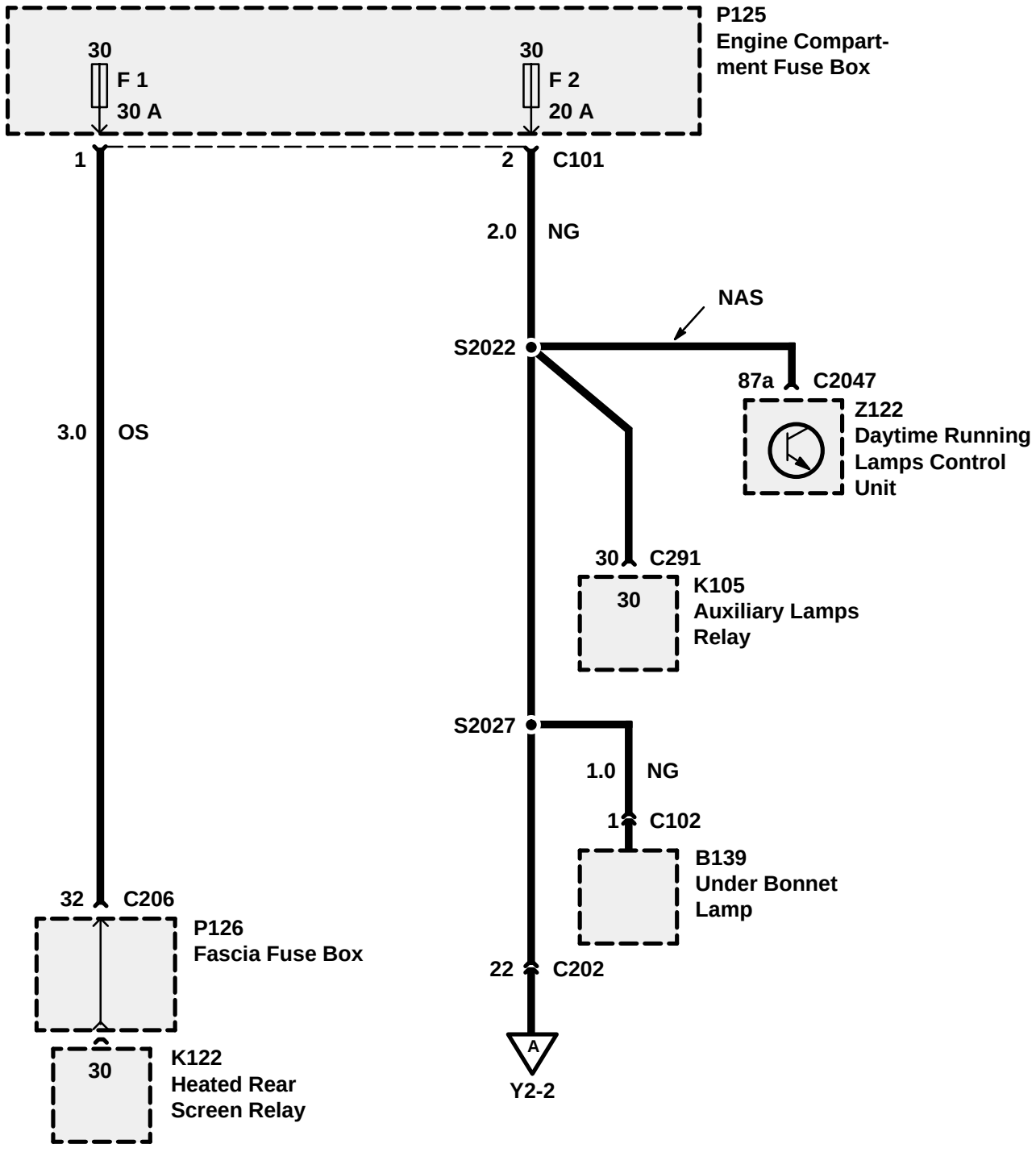



Y1-12
F
4.5 NW
1 C220
3 N
X134
Ignition Switch
0 I II III
R
15
15
50
3.0 LGW
2 C220
2.0 LG
3.0 Y
3.0 W
3.0 WR
G
Y1-12
S228
2.0 W
4
2.0 W
6 C203
2
3
1 C219
P126
Fascia Fuse Box
F 7 10 A
F 1 15 A
F 14 10 A
F 13 10 A
F 18 10 A
F 16 20 A
F 15 10 A
F 17 10 A
See Fuse Details
P127
Satellite Fuse Box 1
F 6 10 A
F 5 10 A
F 4 10 A
F 3 10 A
See Fuse Details

Y1 ETM

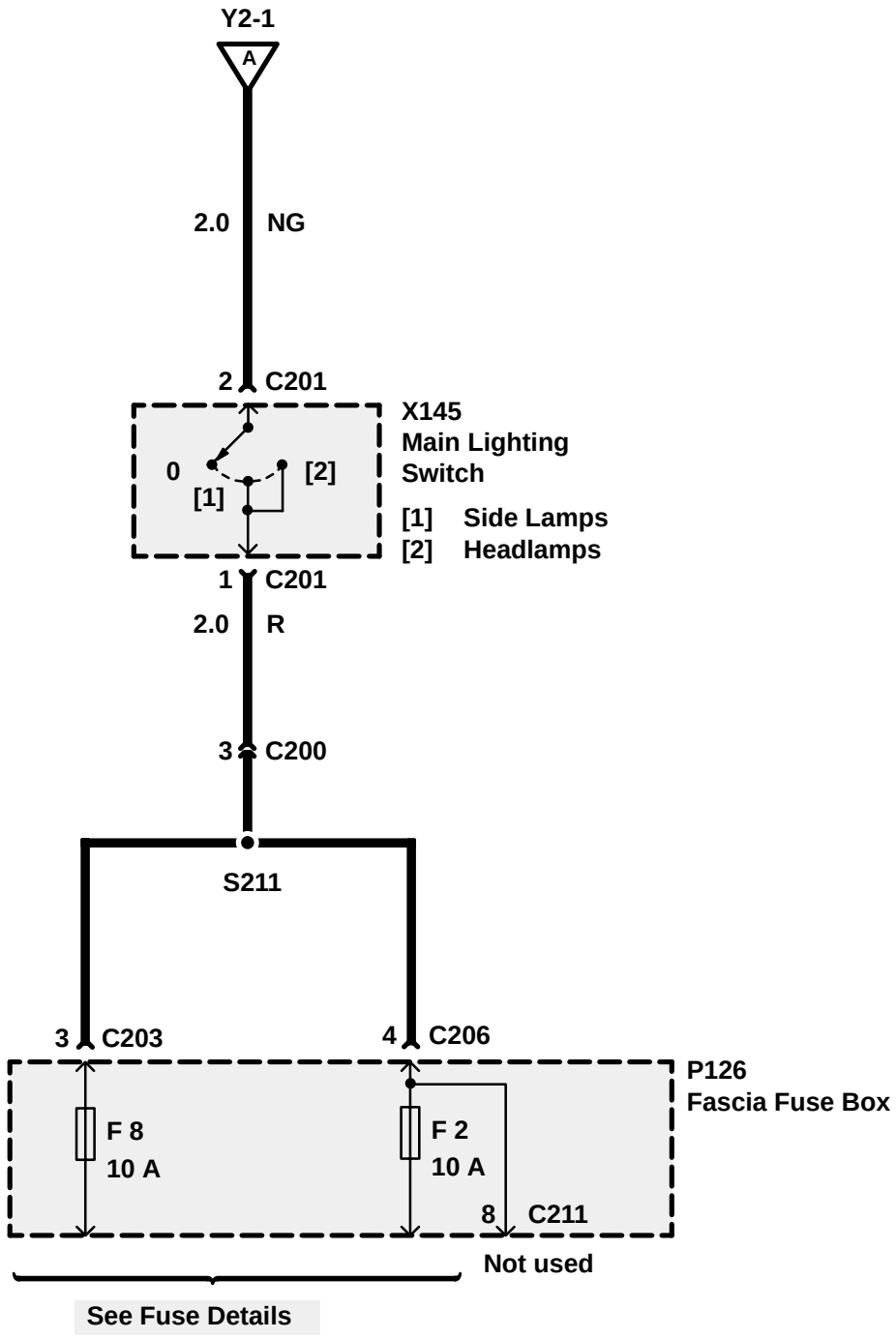
1995 RANGE ROVER

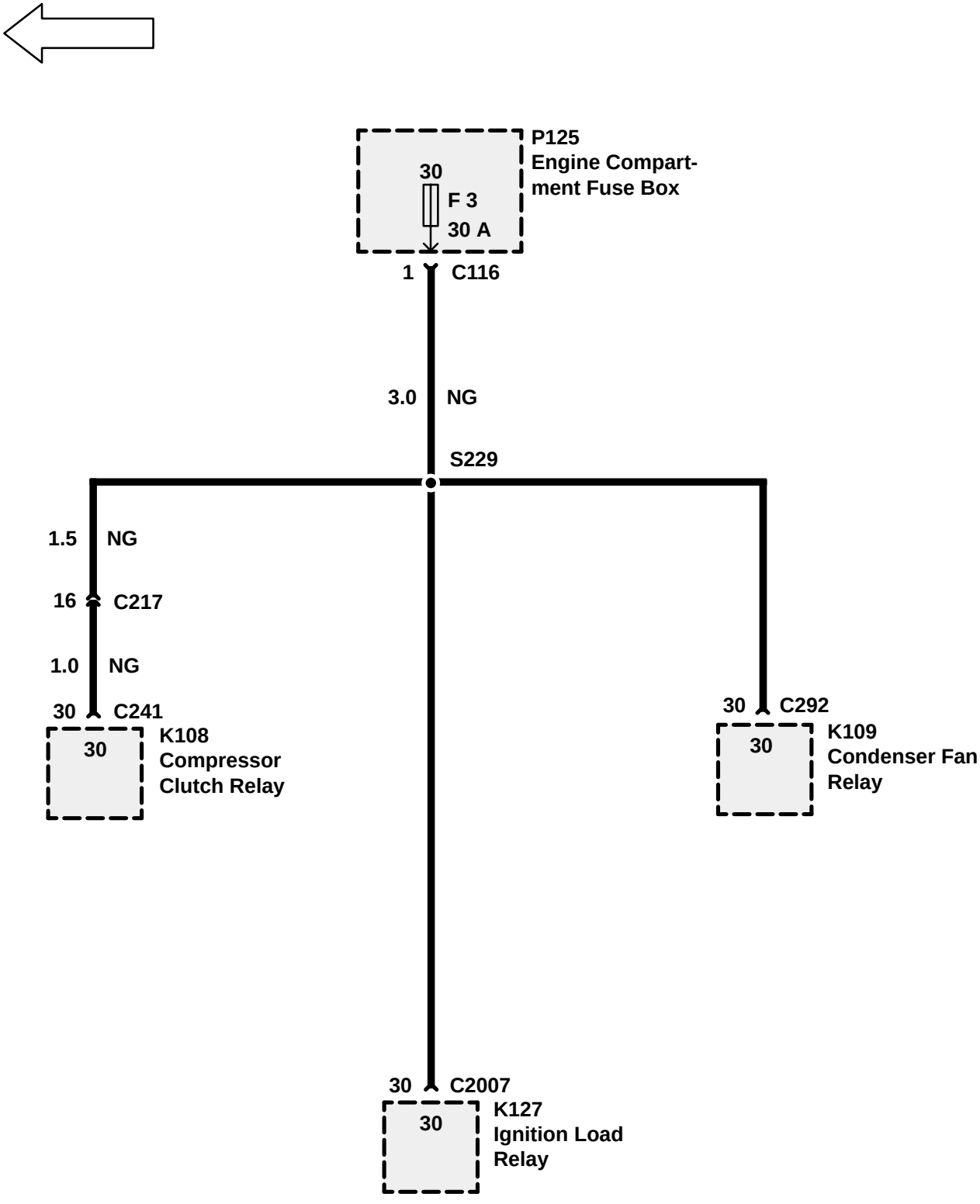



P125
Engine Compart-
ment Fuse Box
30
F 1
30 A
30
F 2
20 A
1
2
C101
2.0
NG
NAS
S2022
87a
C2047
Z122
Daytime Running
Lamps Control
Unit
3.0
OS
30
C291
K105
Auxiliary Lamps
Relay
30
S2027
1.0
NG
1
C102
B139
Under Bonnet
Lamp
32
C206
P126
Fascia Fuse Box
22
C202
A
Y2-2
30
K122
Heated Rear
Screen Relay

Y2 ETM

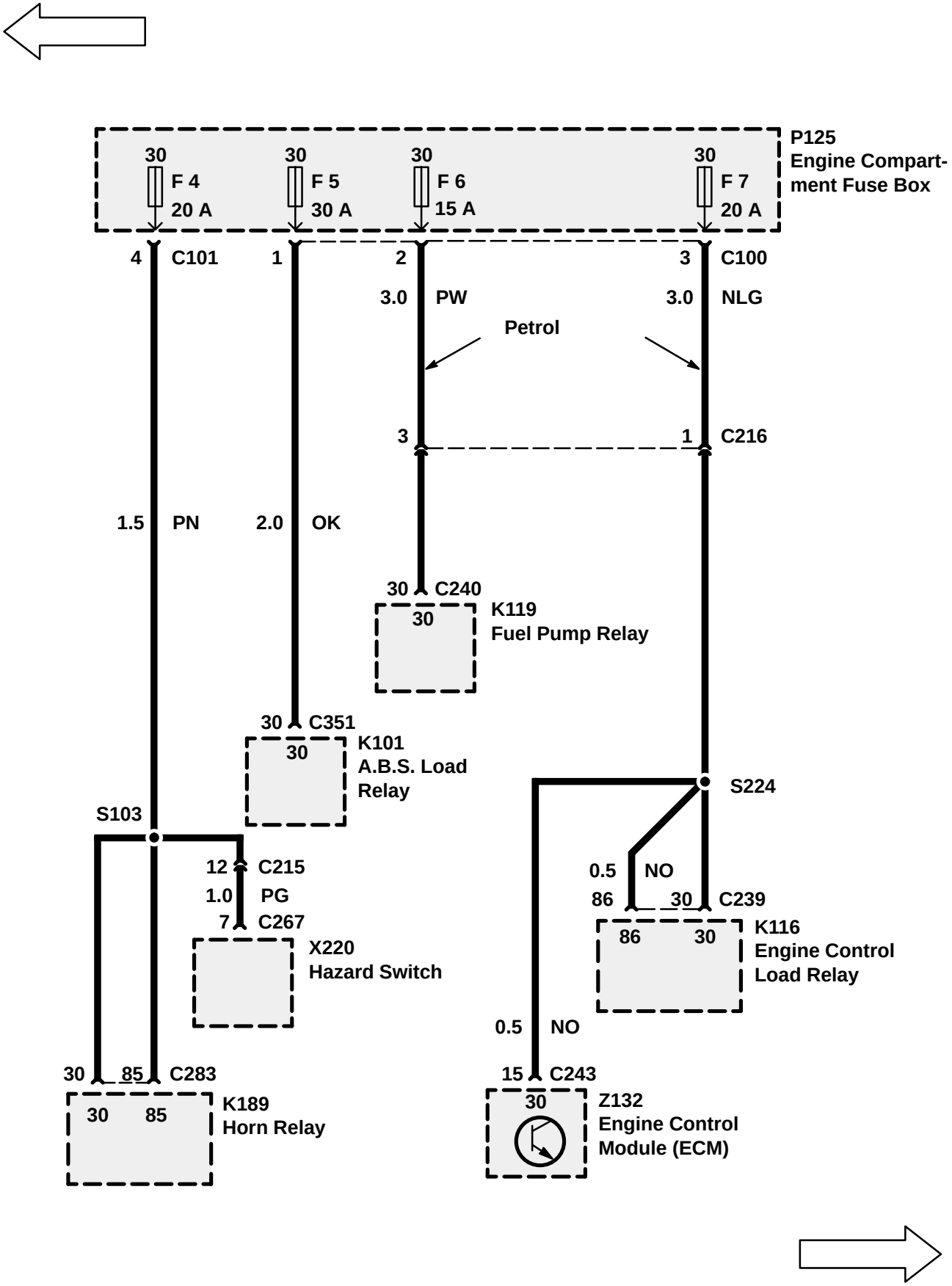
1995 RANGE ROVER

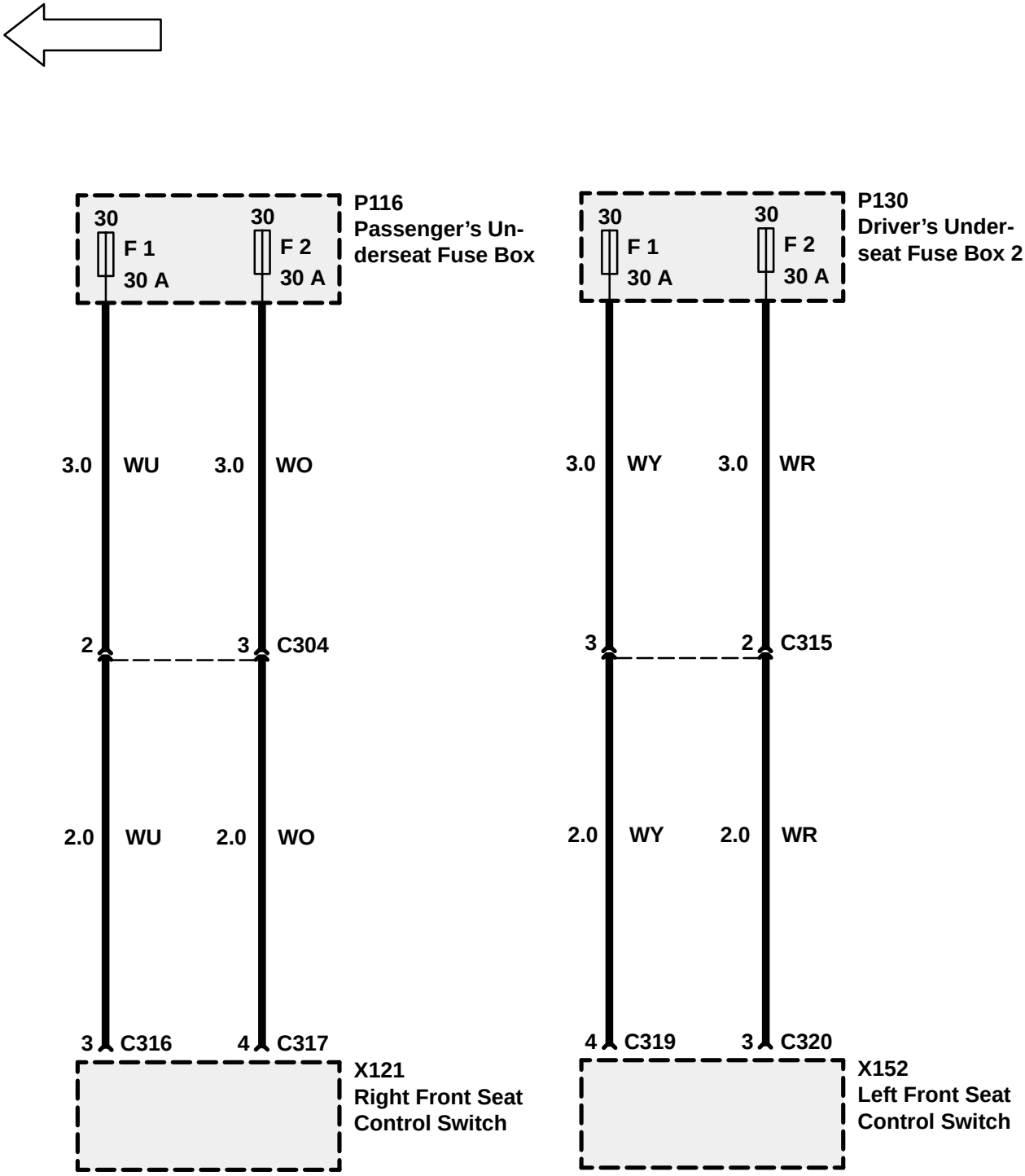



P125
Engine Compart-
ment Fuse Box
30
F 3
30 A
1
C116
3.0
NG
S229
1.5
NG
16
C217
1.0
NG
30
C241
30
K108
Compressor
Clutch Relay
30
C292
30
K109
Condenser Fan
Relay
30
C2007
30
K127
Ignition Load
Relay

Y2 ETM

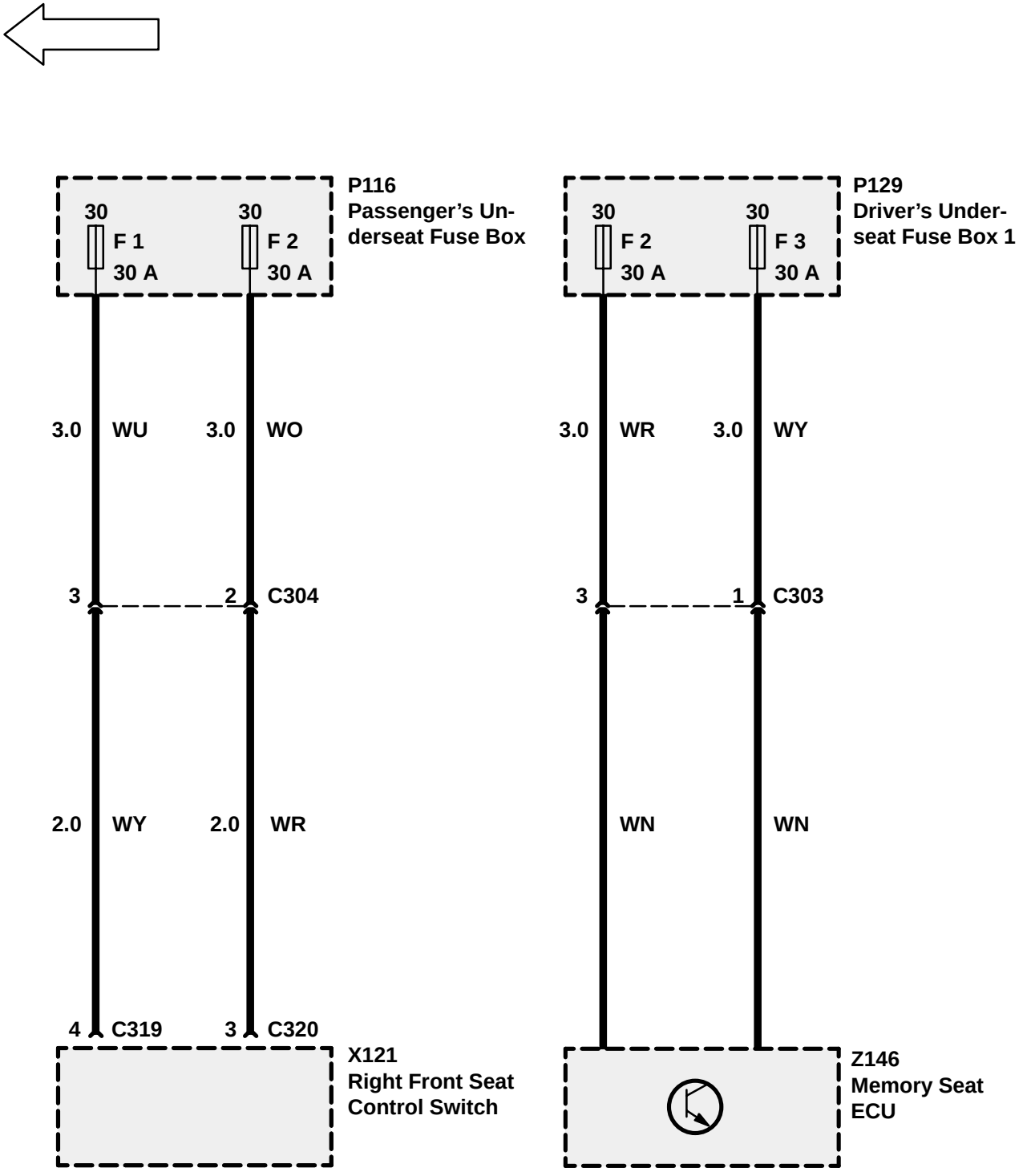
1995 RANGE ROVER

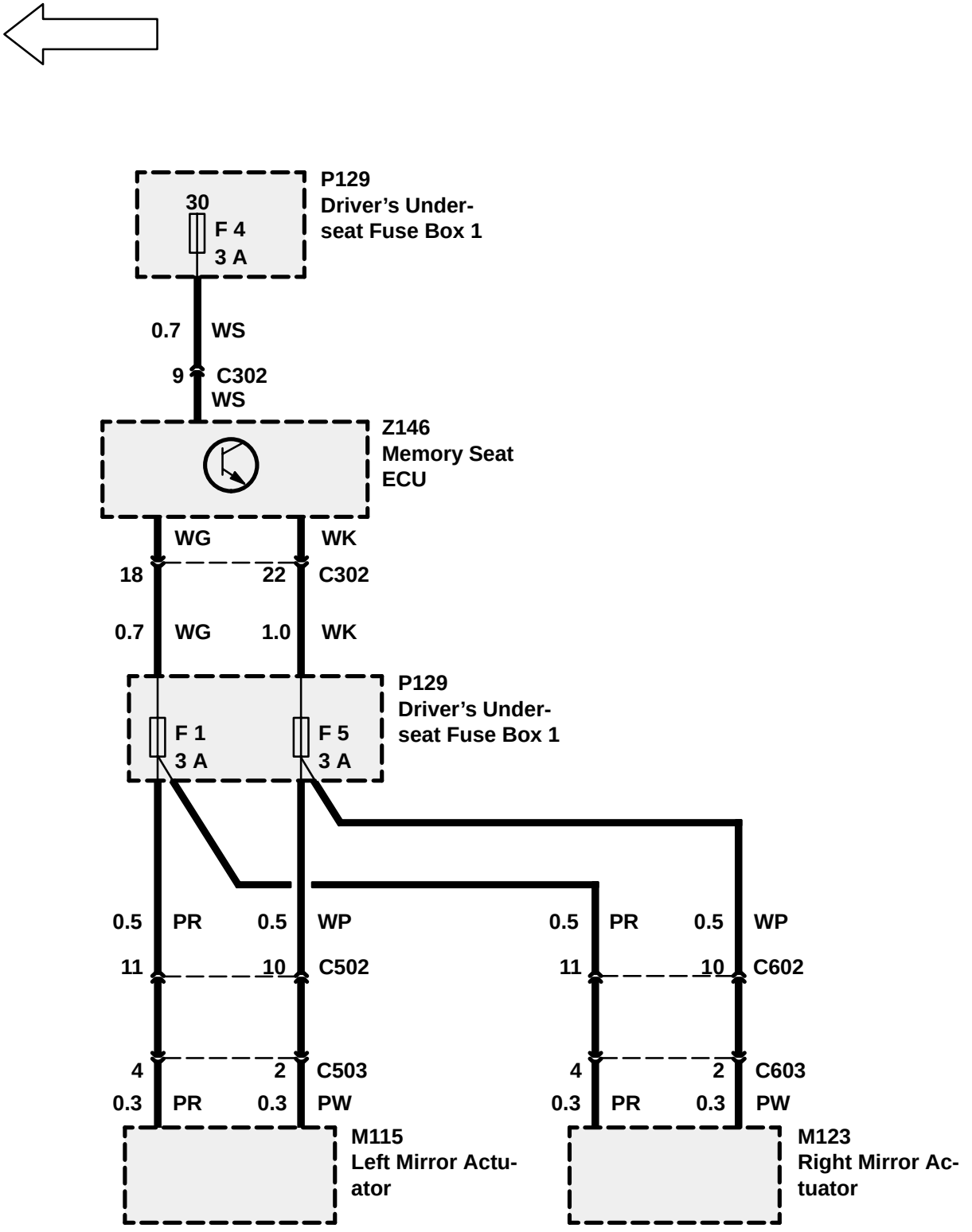



30
F 1
30 A
30
F 2
30 A
P116
Passenger's Under-seat Fuse Box
3.0 WU
3.0 WO
2
3 C304
2.0 WU
2.0 WO
3 C316
4 C317
X121
Right Front Seat Control Switch
30
F 1
30 A
30
F 2
30 A
P130
Driver's Under-seat Fuse Box 2
3.0 WY
3.0 WR
3
2 C315
2.0 WY
2.0 WR
4 C319
3 C320
X152
Left Front Seat Control Switch

Y2 ETM

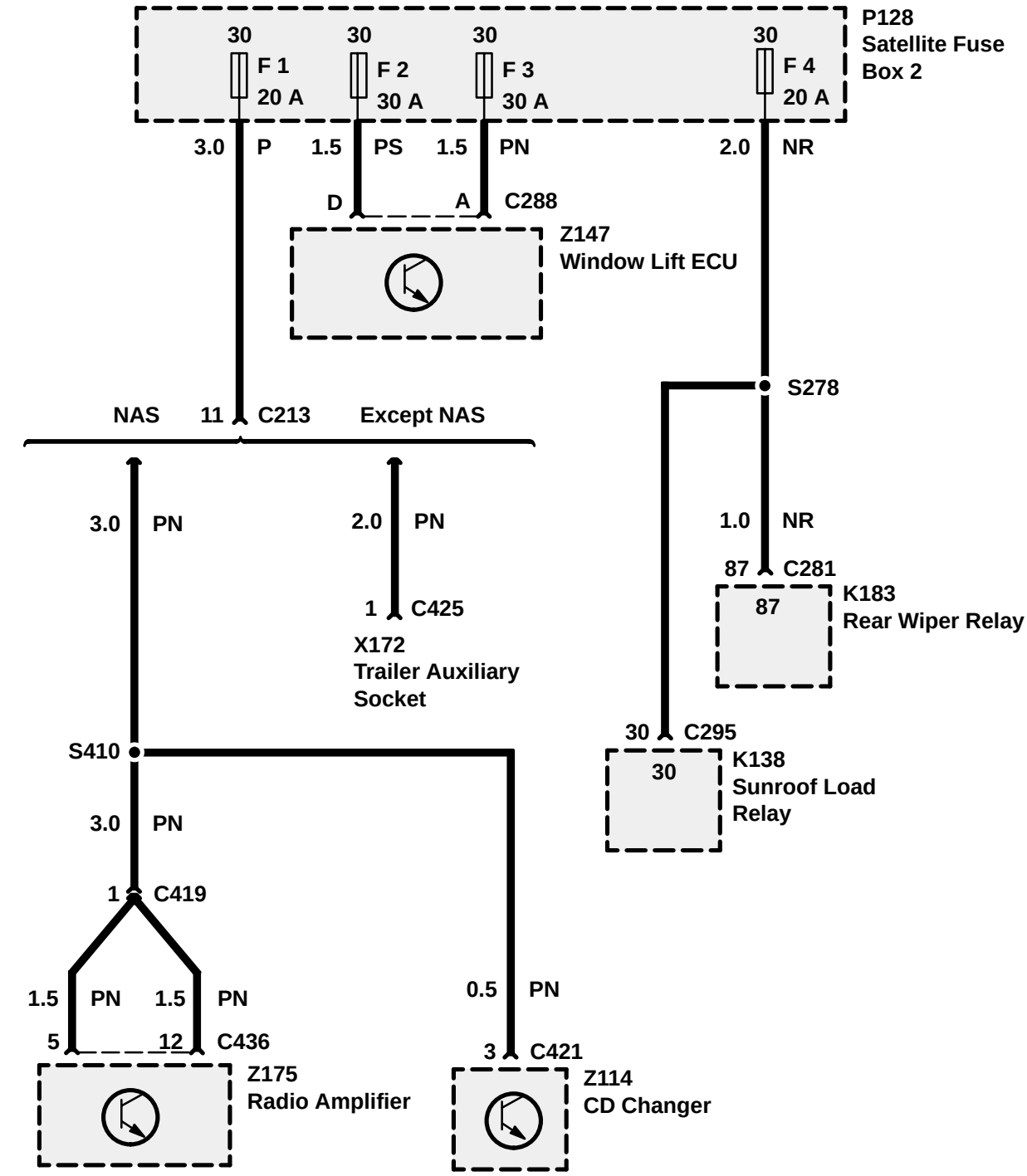
1995 RANGE ROVER

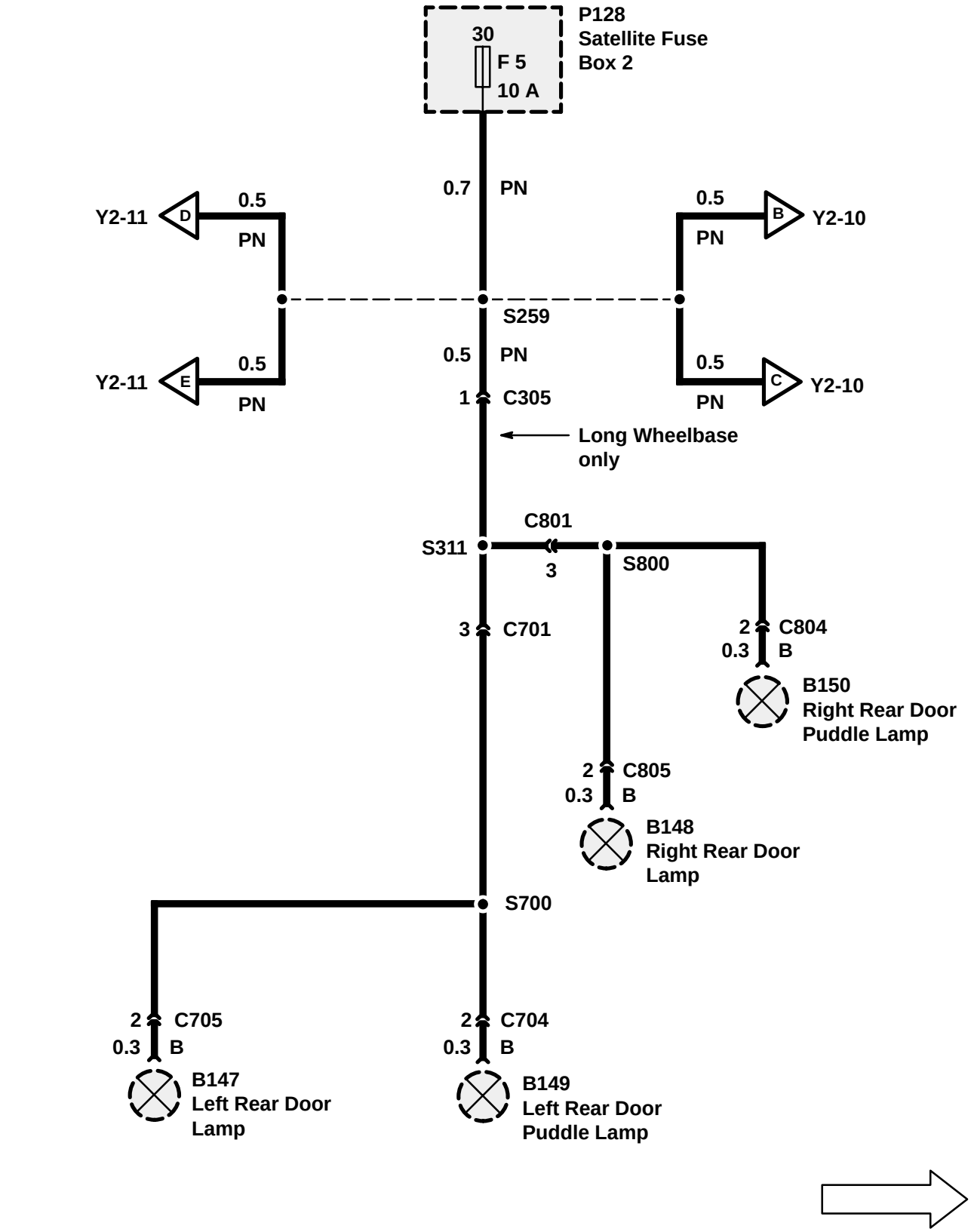



P129
Driver's Under-seat Fuse Box 1
30
F 4
3 A
0.7 WS
9 C302
WS
Z146
Memory Seat ECU
WG WK
18 22 C302
0.7 WG 1.0 WK
P129
Driver's Under-seat Fuse Box 1
F 1
3 A
F 5
3 A
0.5 PR 0.5 WP
11 10 C502
4 2 C503
0.3 PR 0.3 PW
M115
Left Mirror Actuator
0.5 PR 0.5 WP
11 10 C602
4 2 C603
0.3 PR 0.3 PW
M123
Right Mirror Actuator

Y2 ETM

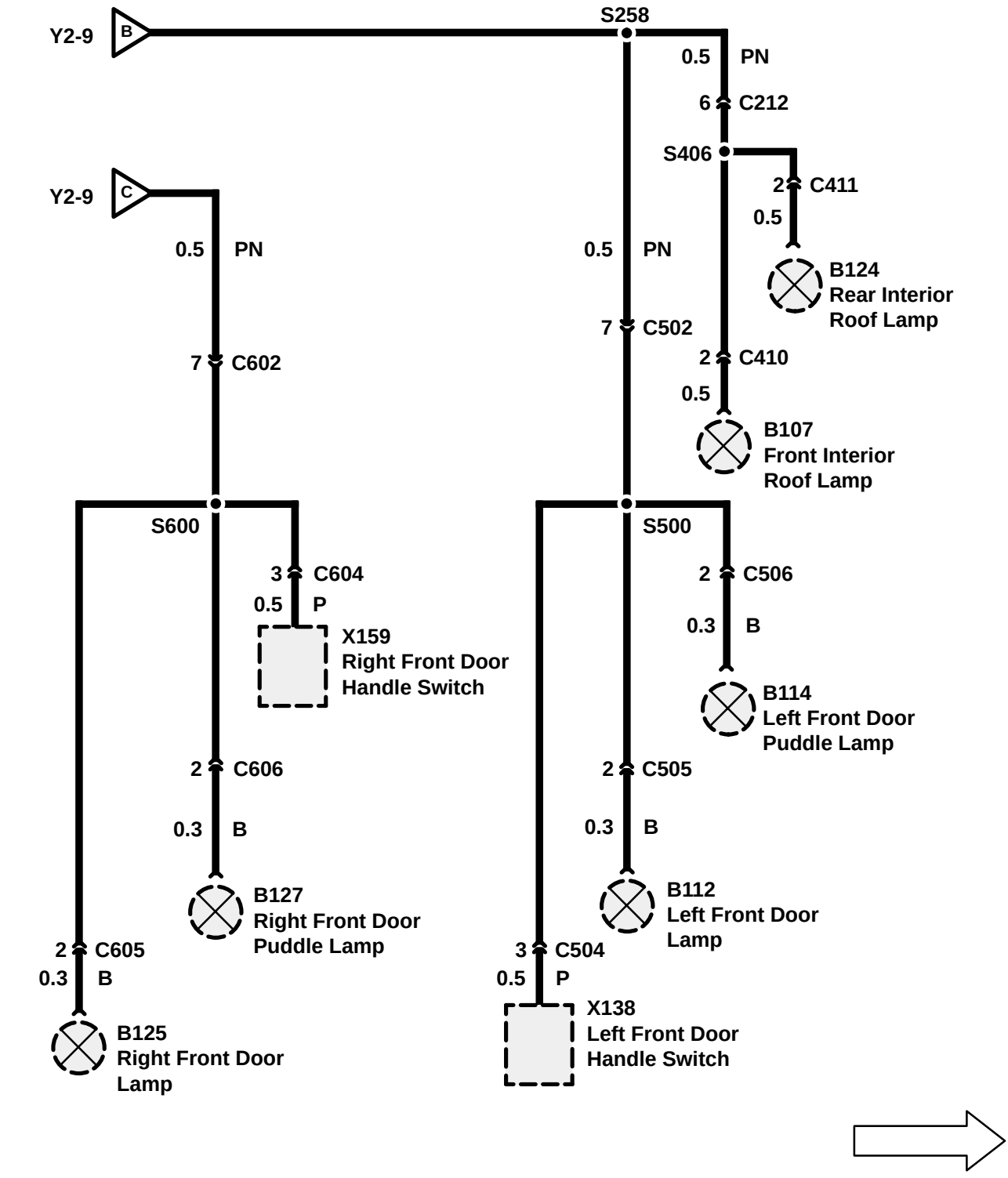
1995 RANGE ROVER

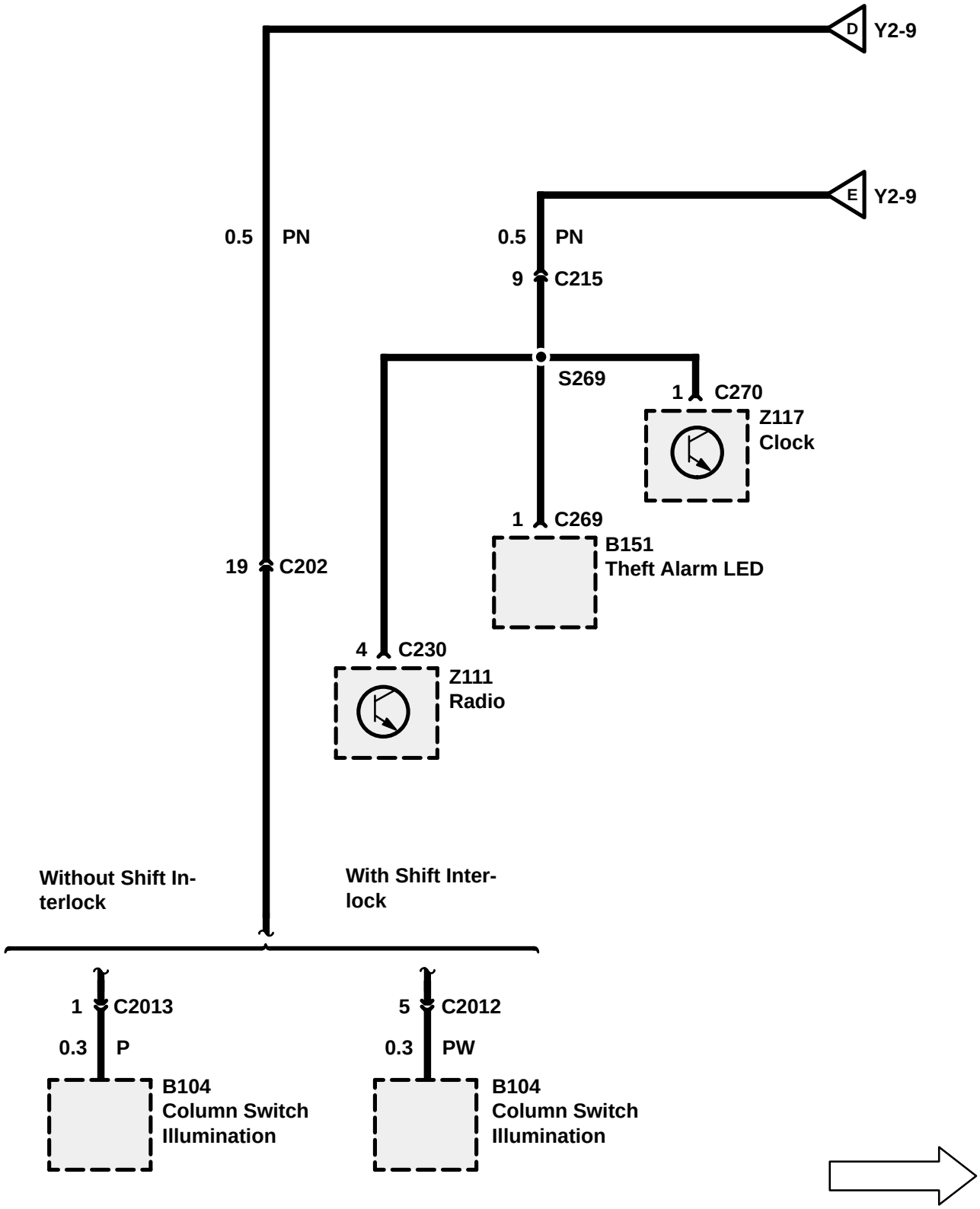



P128
Satellite Fuse
Box 2
30
F 5
10 A
0.7 PN
Y2-11
D
0.5
PN
0.5
B
Y2-10
PN
S259
0.5 PN
Y2-11
E
0.5
PN
0.5
C
Y2-10
PN
1 C305
Long Wheelbase
only
C801
S311
3
S800
3 C701
2 C804
0.3 B
B150
Right Rear Door
Puddle Lamp
2 C805
0.3 B
B148
Right Rear Door
Lamp
S700
2 C705
0.3 B
B147
Left Rear Door
Lamp
2 C704
0.3 B
B149
Left Rear Door
Puddle Lamp

Y2 ETM

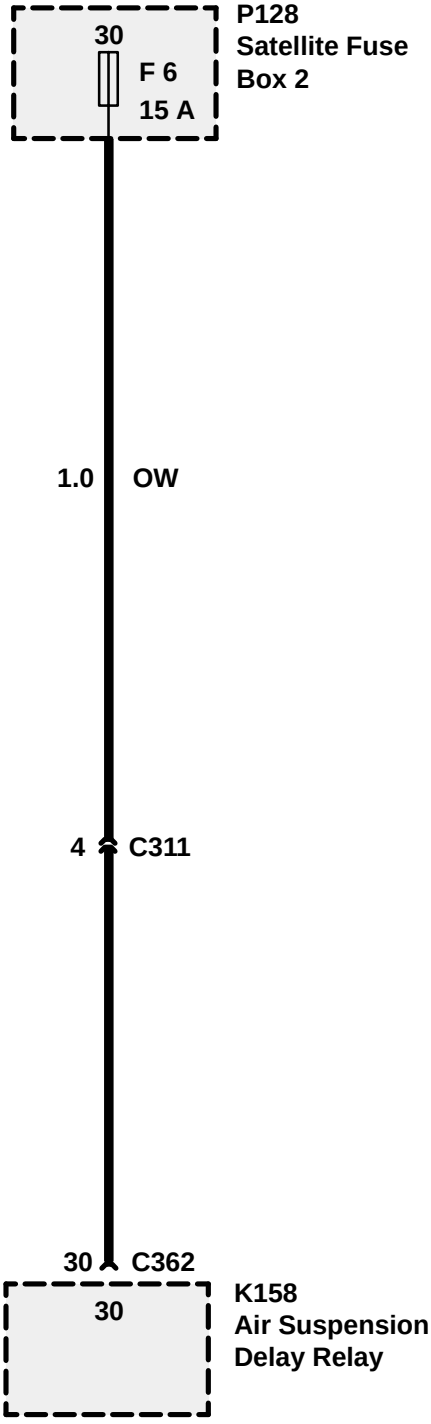
1995 RANGE ROVER

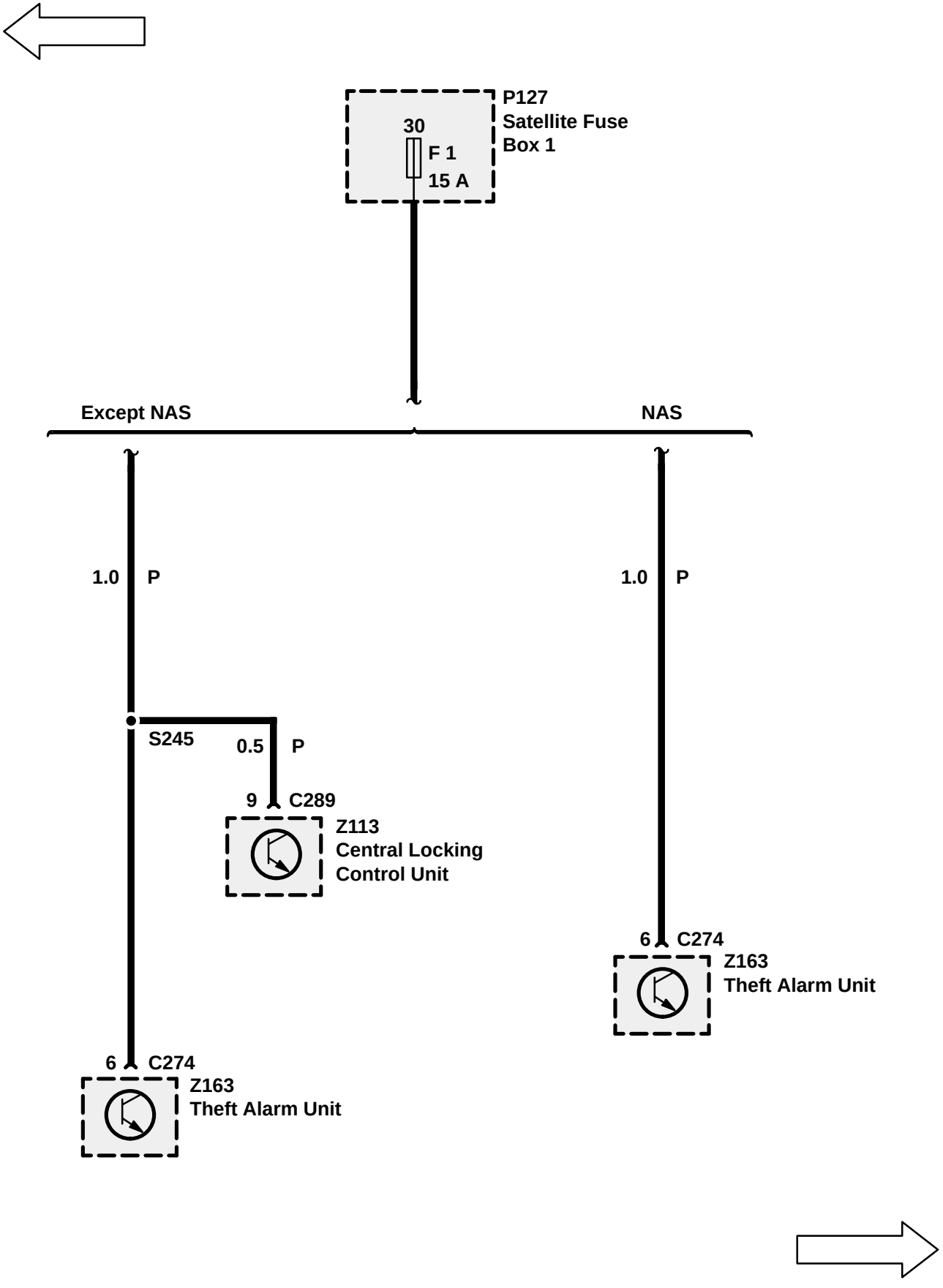



D
Y2-9
E
Y2-9
0.5
PN
0.5
PN
9
C215
S269
1
C270
Z117
Clock
1
C269
B151
Theft Alarm LED
19
C202
4
C230
Z111
Radio
Without Shift In-
terlock
With Shift Inter-
lock
1
C2013
0.3
P
B104
Column Switch
Illumination
5
C2012
0.3
PW
B104
Column Switch
Illumination

Y2 ETM

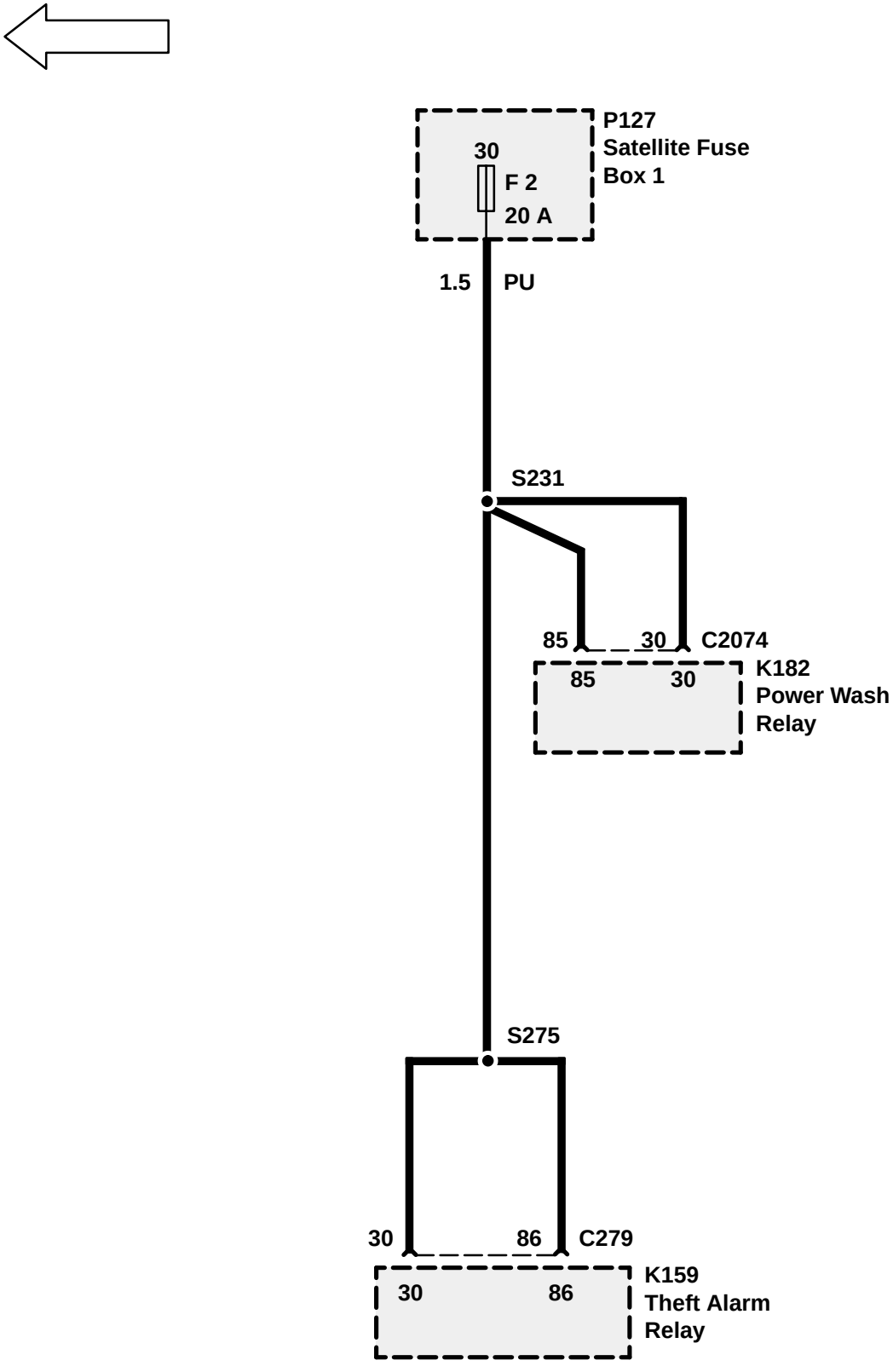
1995 RANGE ROVER

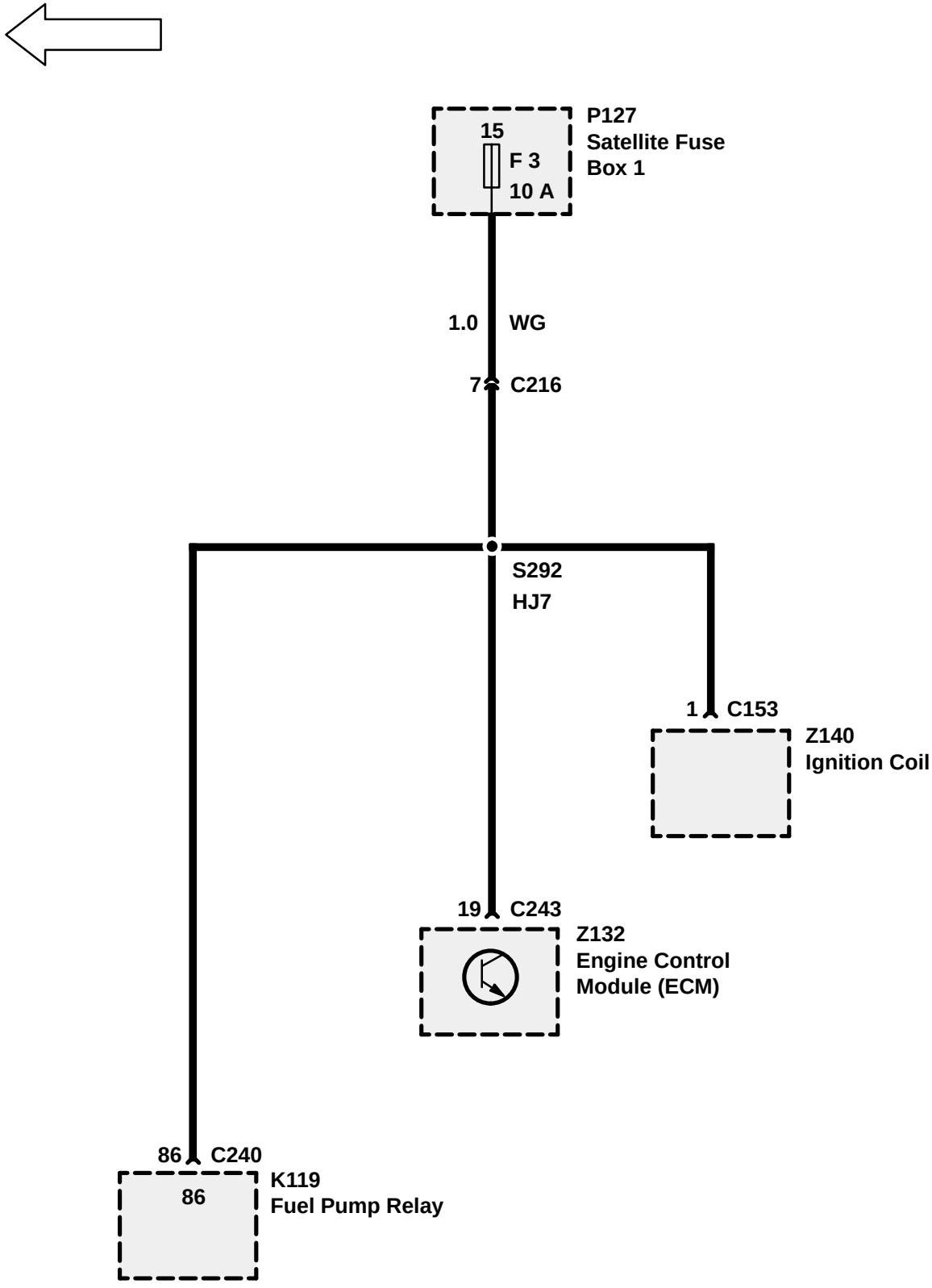



P127
Satellite Fuse
Box 1
30
F 1
15 A
Except NAS
NAS
1.0
P
1.0
P
S245
0.5
P
9
C289
Z113
Central Locking
Control Unit
6
C274
Z163
Theft Alarm Unit
6
C274
Z163
Theft Alarm Unit

Y2 ETM

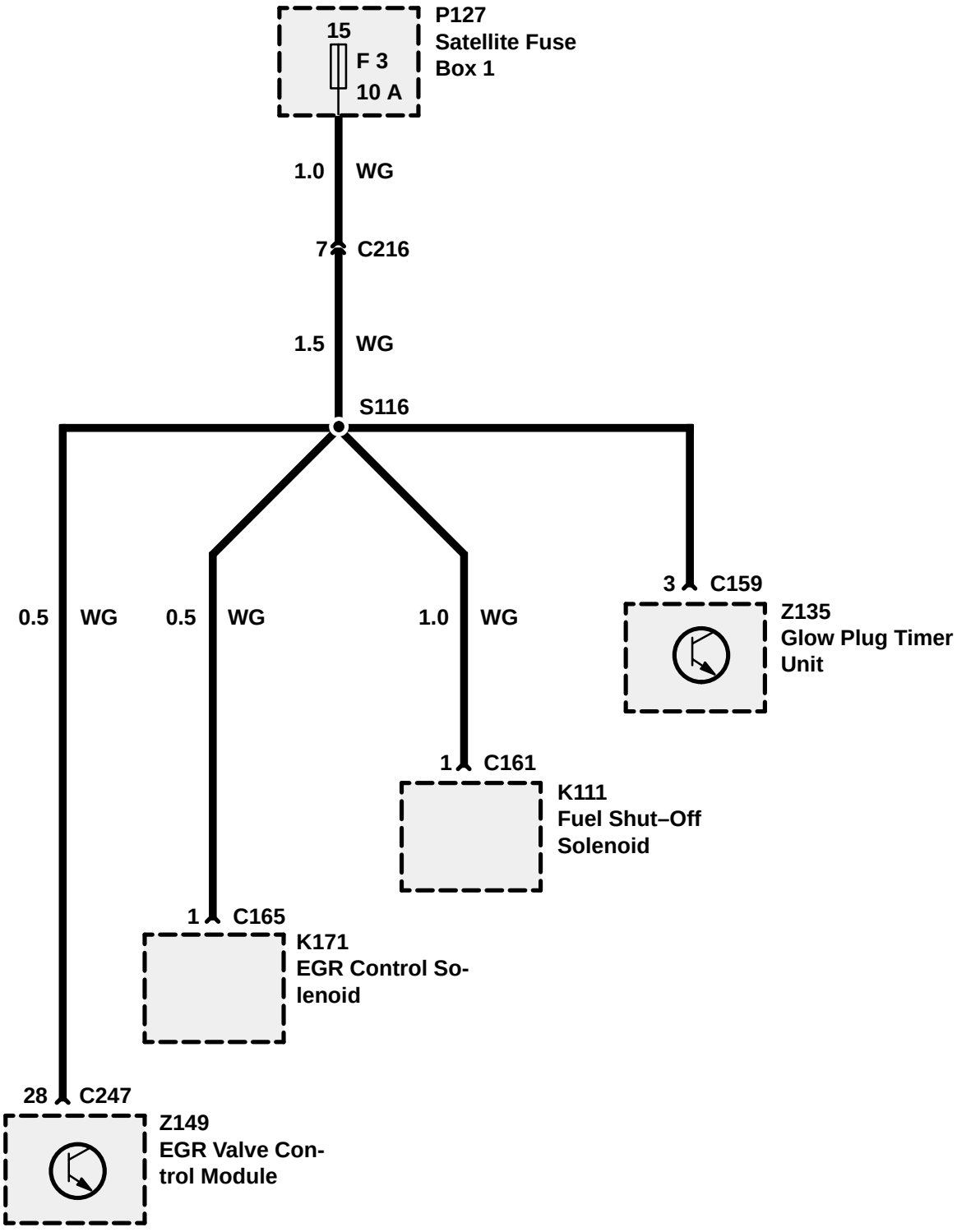
1995 RANGE ROVER

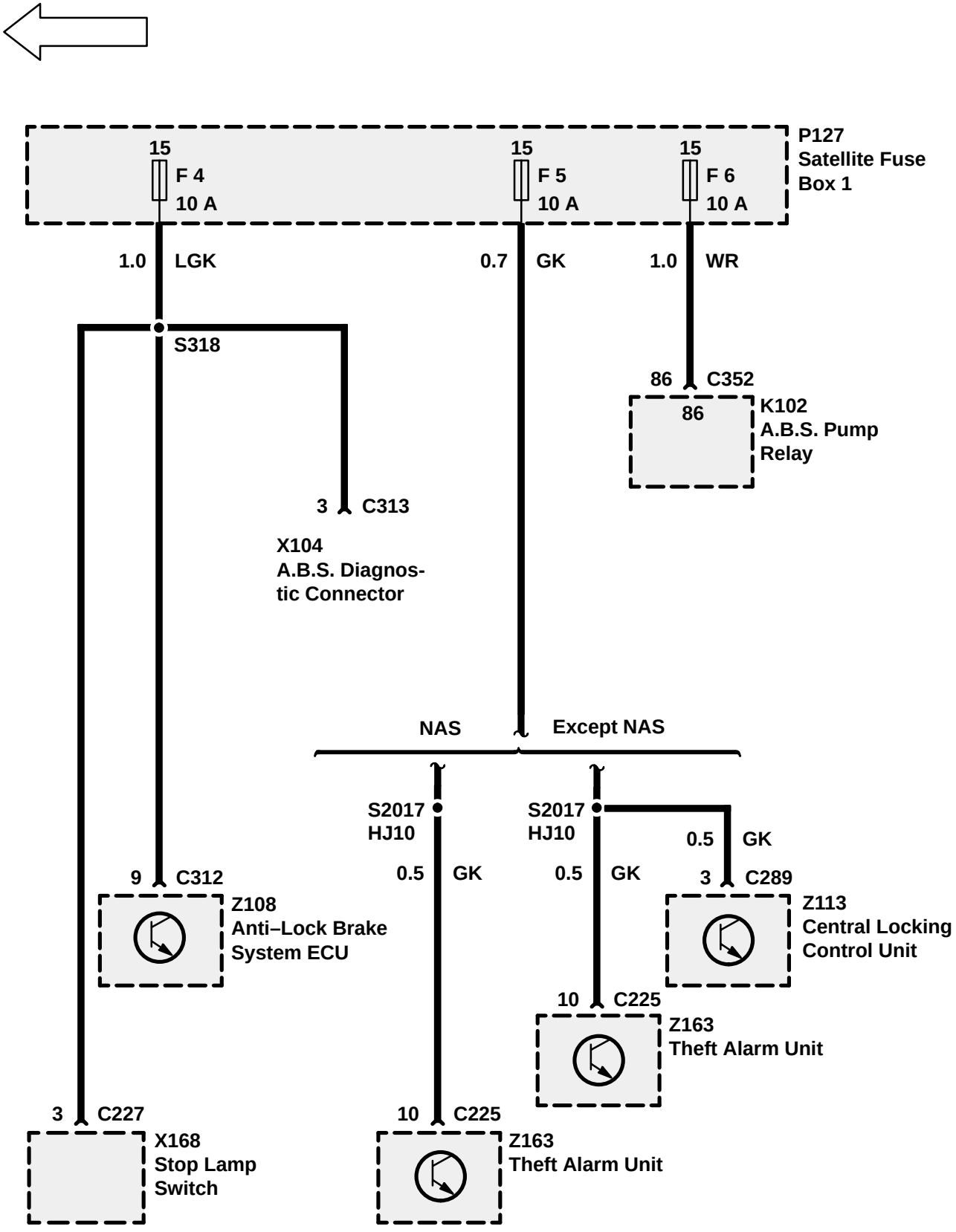



15
F 3
10 A
P127
Satellite Fuse
Box 1
1.0
WG
7
C216
S292
HJ7
1
C153
Z140
Ignition Coil
19
C243
Z132
Engine Control
Module (ECM)
86
C240
86
K119
Fuel Pump Relay

Y2 ETM

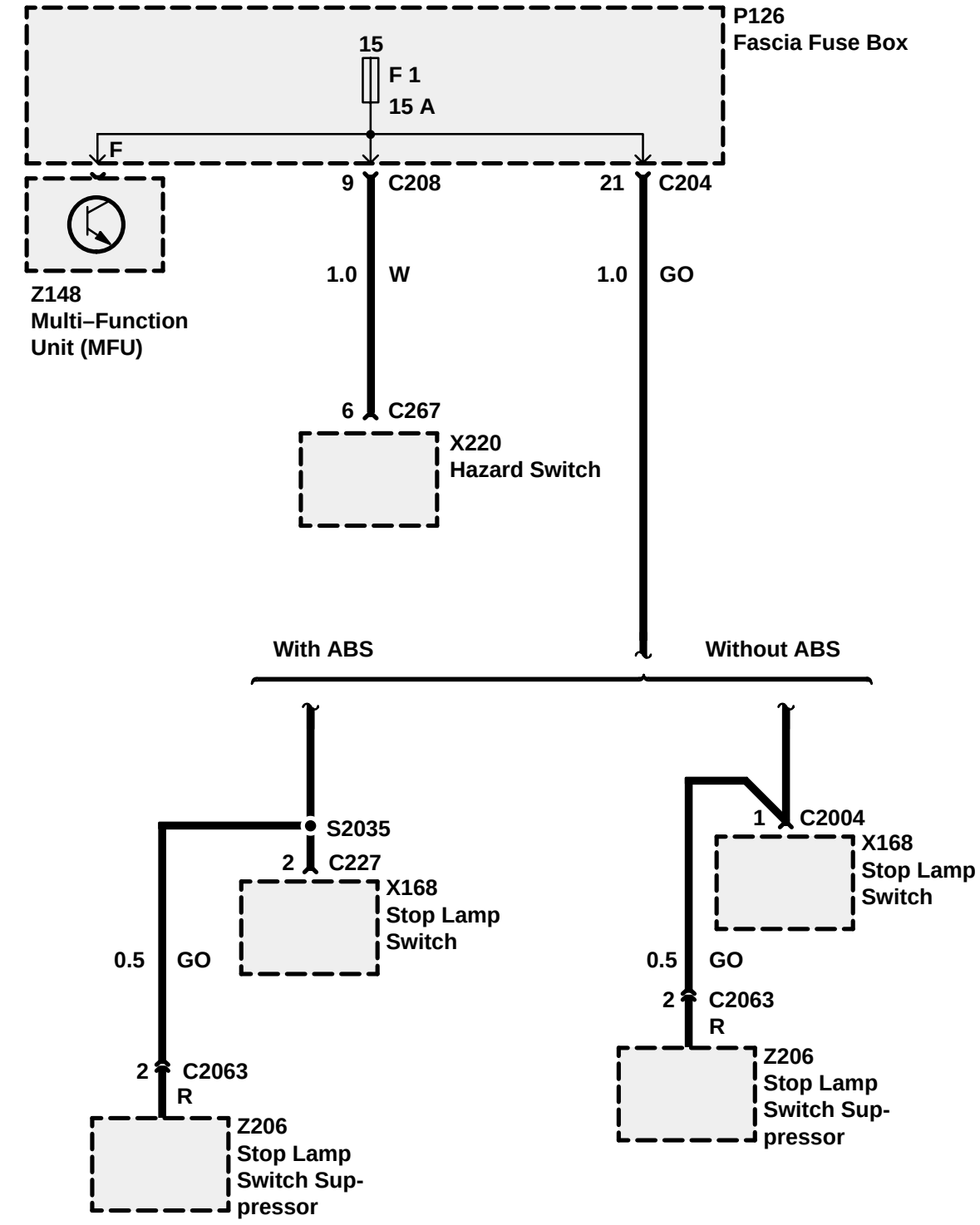
1995 RANGE ROVER

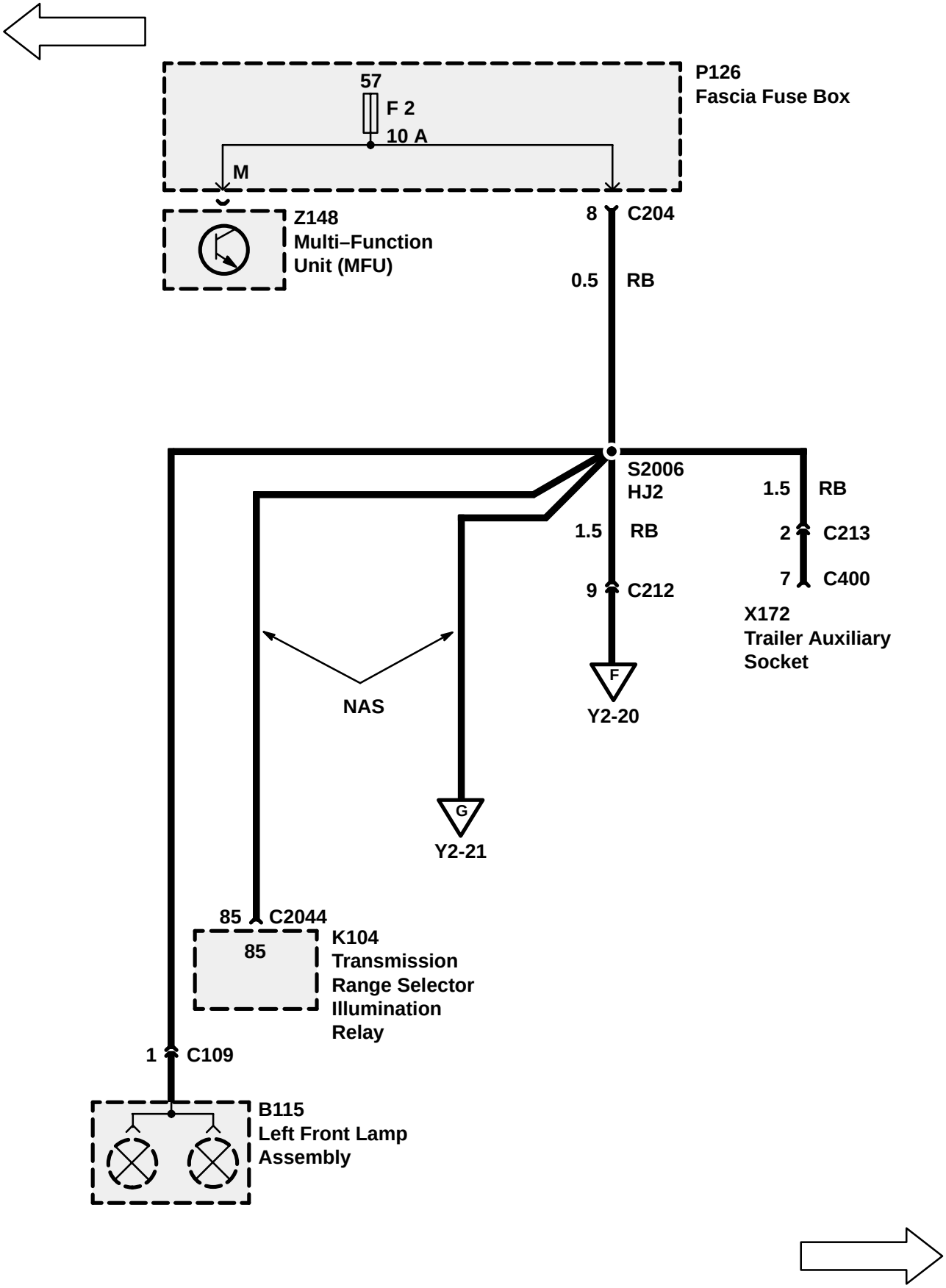



15
F 4
10 A
15
F 5
10 A
15
F 6
10 A
P127
Satellite Fuse
Box 1
1.0 LGK
0.7 GK
1.0 WR
S318
86 C352
86
K102
A.B.S. Pump
Relay
3 C313
X104
A.B.S. Diagnos-
tic Connector
NAS
Except NAS
S2017
HJ10
S2017
HJ10
0.5 GK
9 C312
0.5 GK
0.5 GK
3 C289
Z108
Anti–Lock Brake
System ECU
Z113
Central Locking
Control Unit
10 C225
Z163
Theft Alarm Unit
3 C227
10 C225
X168
Stop Lamp
Switch
Z163
Theft Alarm Unit

Y2 ETM

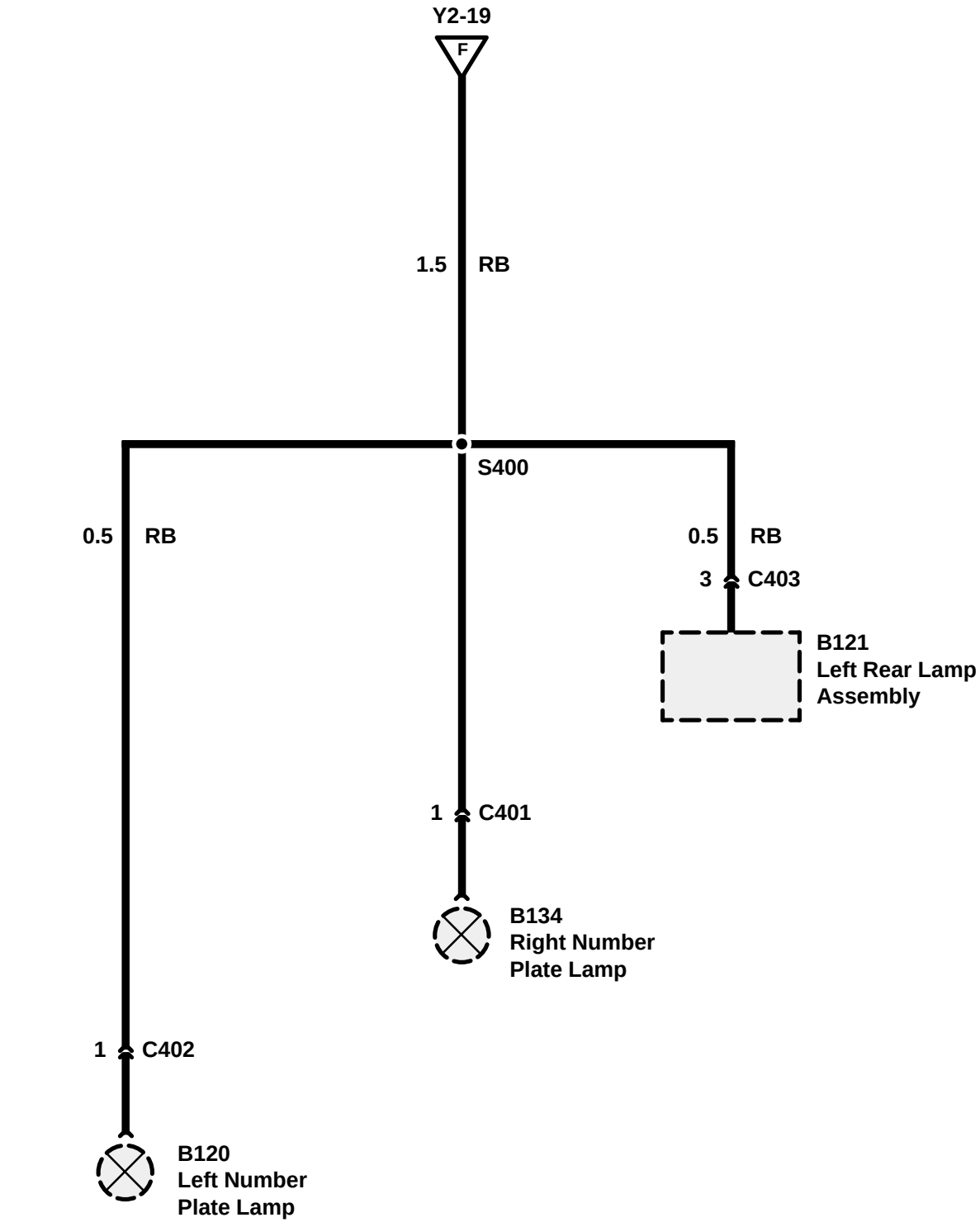
1995 RANGE ROVER

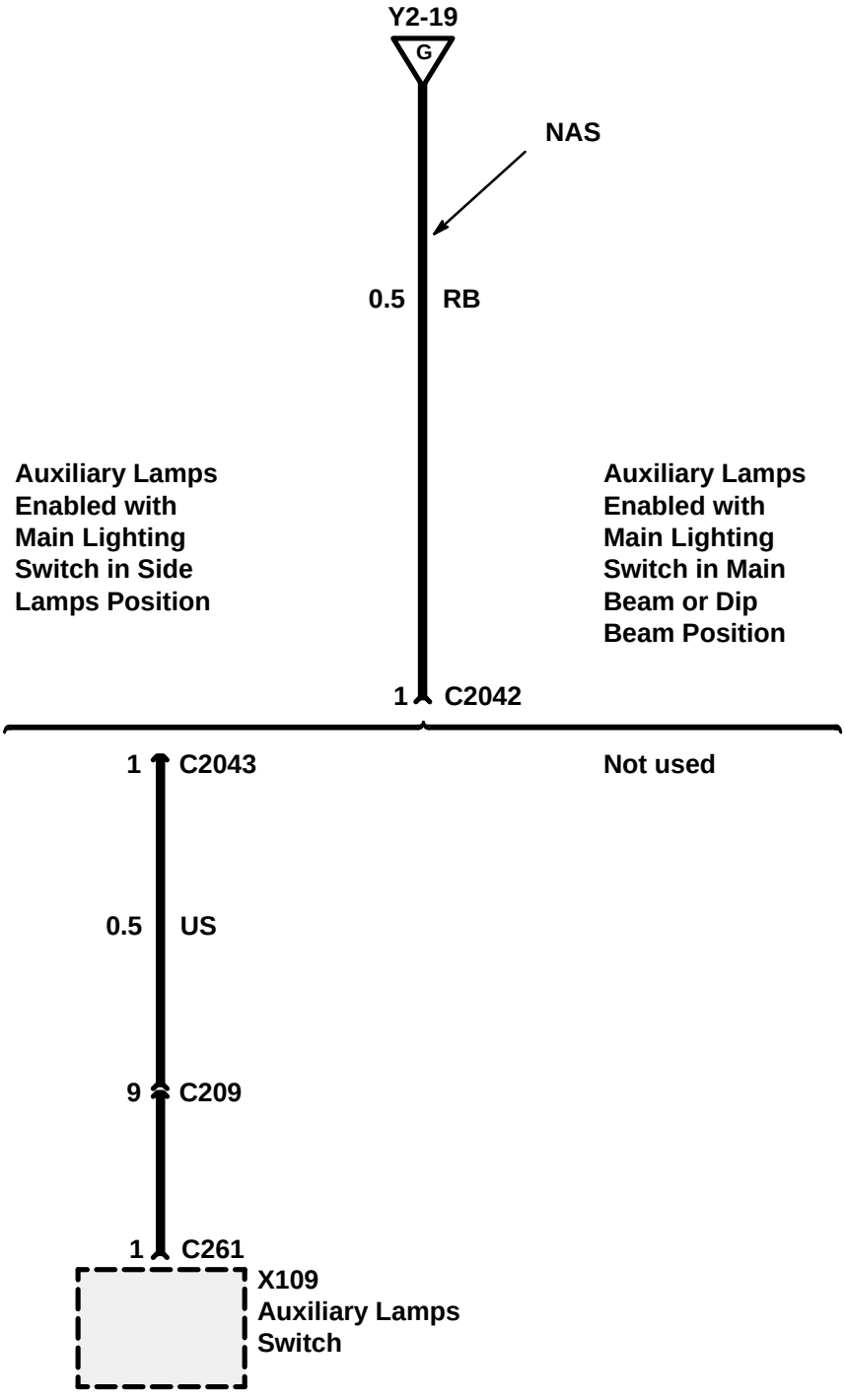



57
F 2
10 A
M
P126
Fascia Fuse Box
Z148
Multi–Function
Unit (MFU)
8 C204
0.5 RB
S2006
HJ2
1.5 RB
9 C212
F
Y2-20
1.5 RB
2 C213
7 C400
X172
Trailer Auxiliary
Socket
NAS
G
Y2-21
85 C2044
85
K104
Transmission
Range Selector
Illumination
Relay
1 C109
B115
Left Front Lamp
Assembly

Y2 ETM

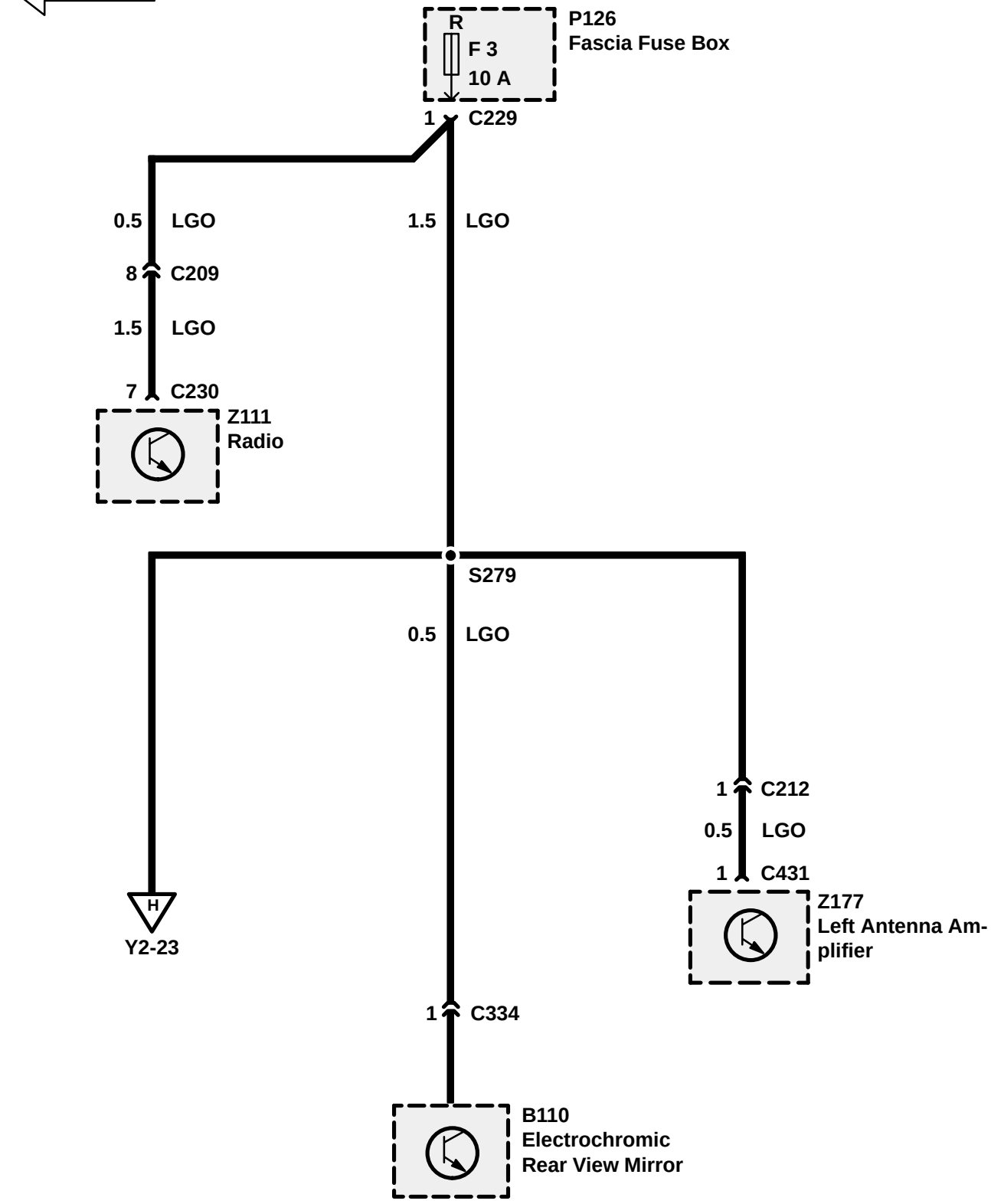
1995 RANGE ROVER

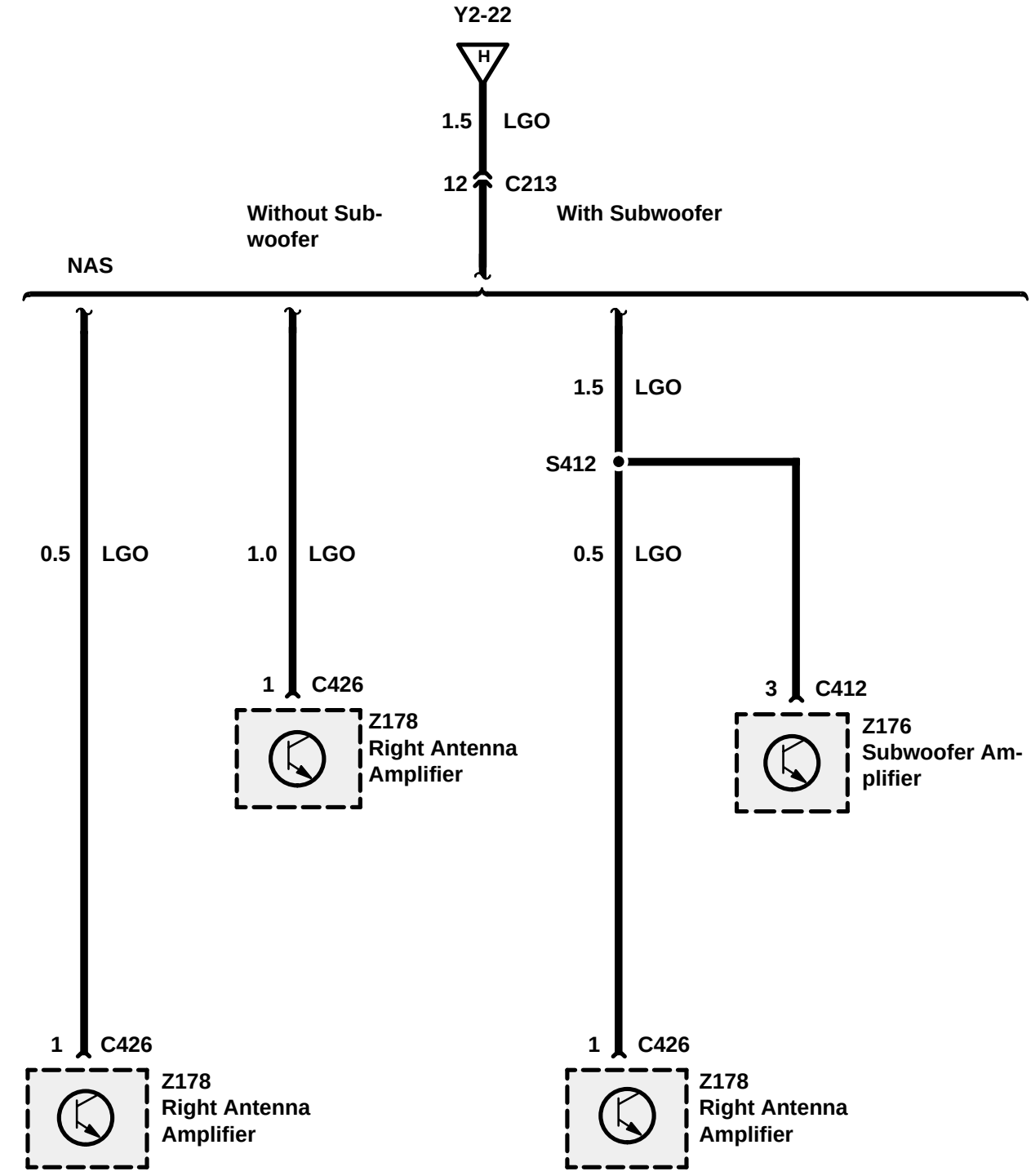



Y2-19
G
NAS
0.5
RB
Auxiliary Lamps Enabled with Main Lighting Switch in Side Lamps Position
Auxiliary Lamps Enabled with Main Lighting Switch in Main Beam or Dip Beam Position
1
C2042
1
C2043
Not used
0.5
US
9
C209
1
C261
X109
Auxiliary Lamps Switch

Y2 ETM

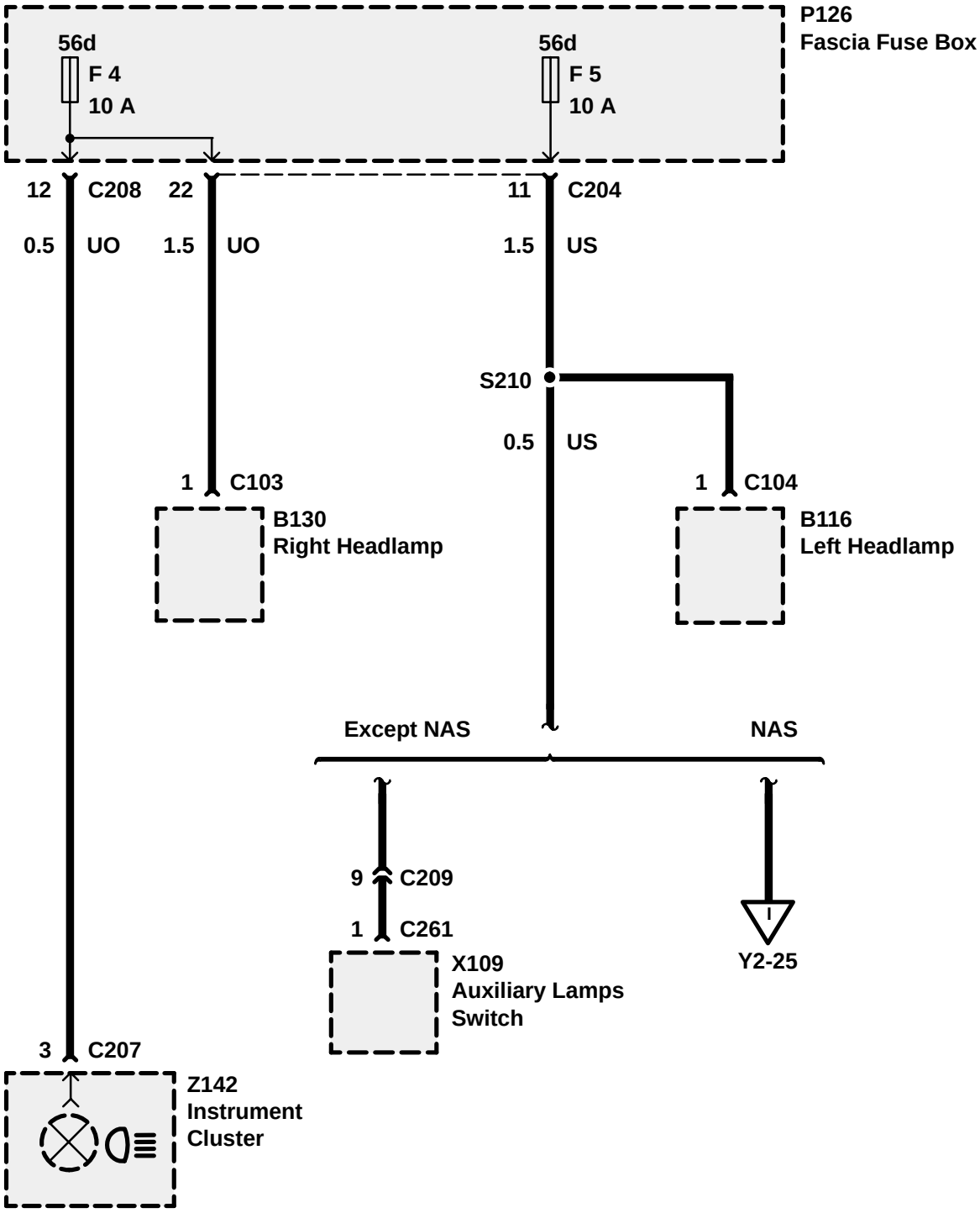
1995 RANGE ROVER

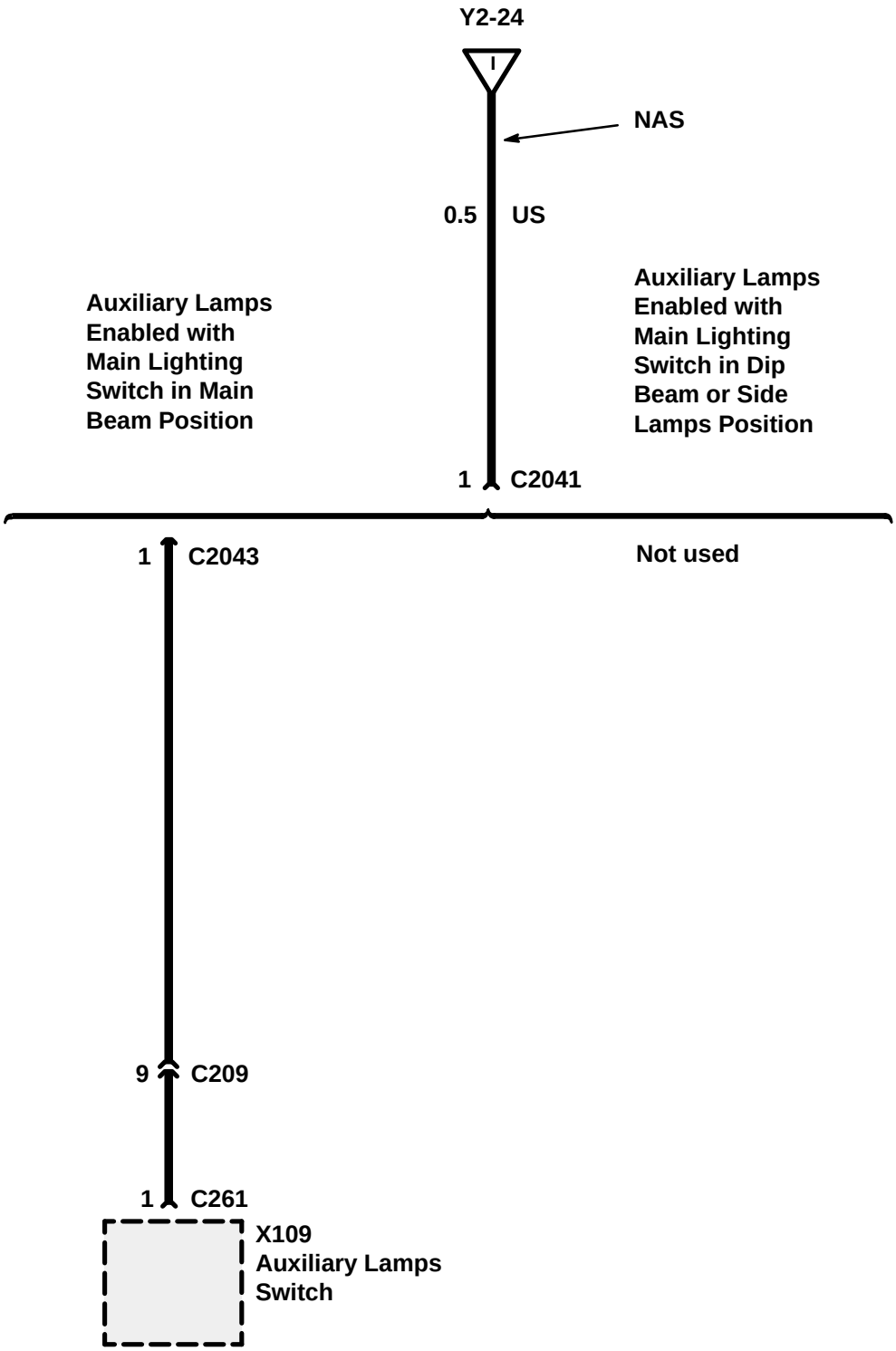



Y2-22
H
1.5 LGO
12 C213
Without Sub-woofer
With Subwoofer
NAS
0.5 LGO
1.0 LGO
1.5 LGO
S412
0.5 LGO
1 C426
Z178
Right Antenna Amplifier
3 C412
Z176
Subwoofer Amplifier
1 C426
Z178
Right Antenna Amplifier
1 C426
Z178
Right Antenna Amplifier

Y2 ETM

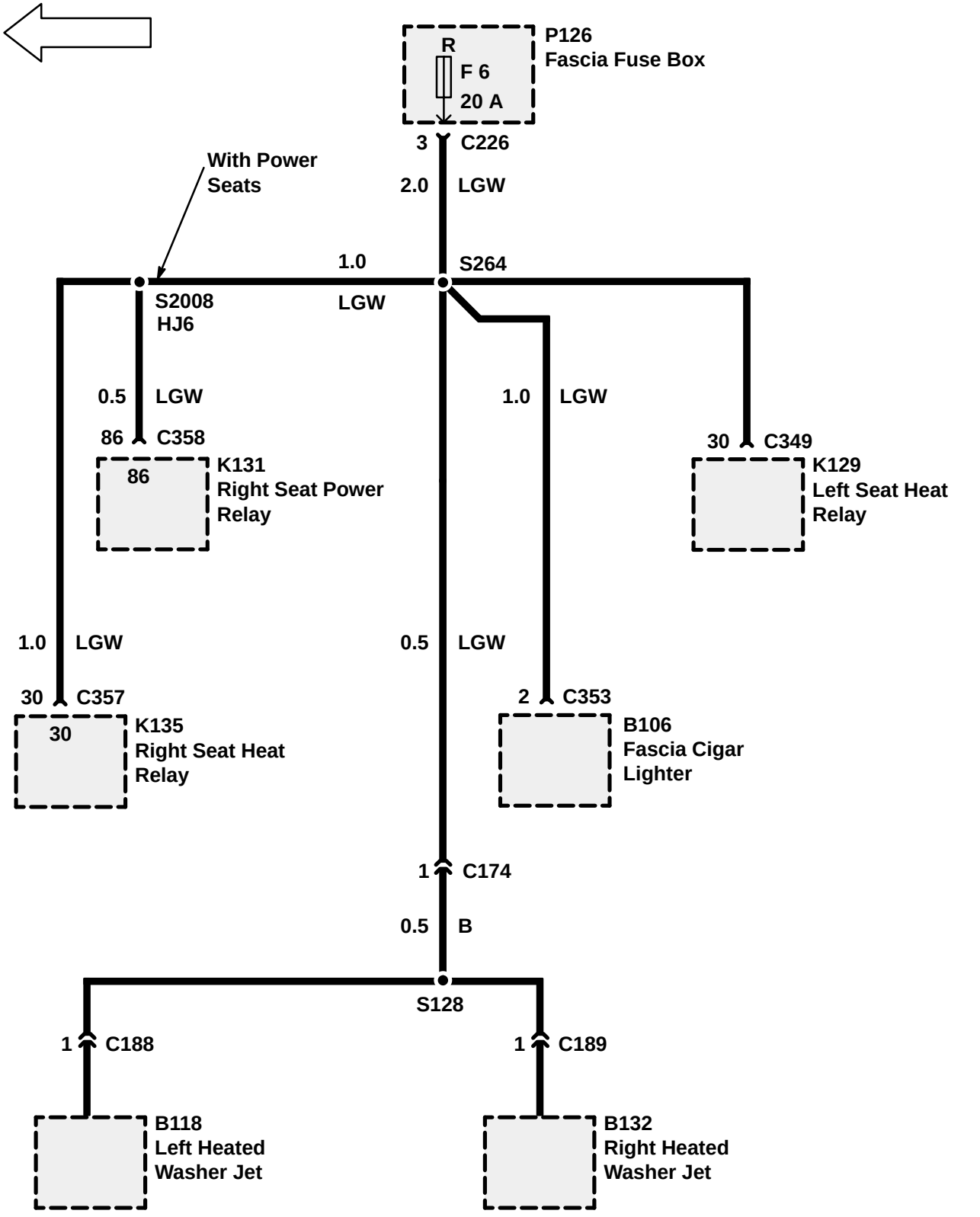
1995 RANGE ROVER

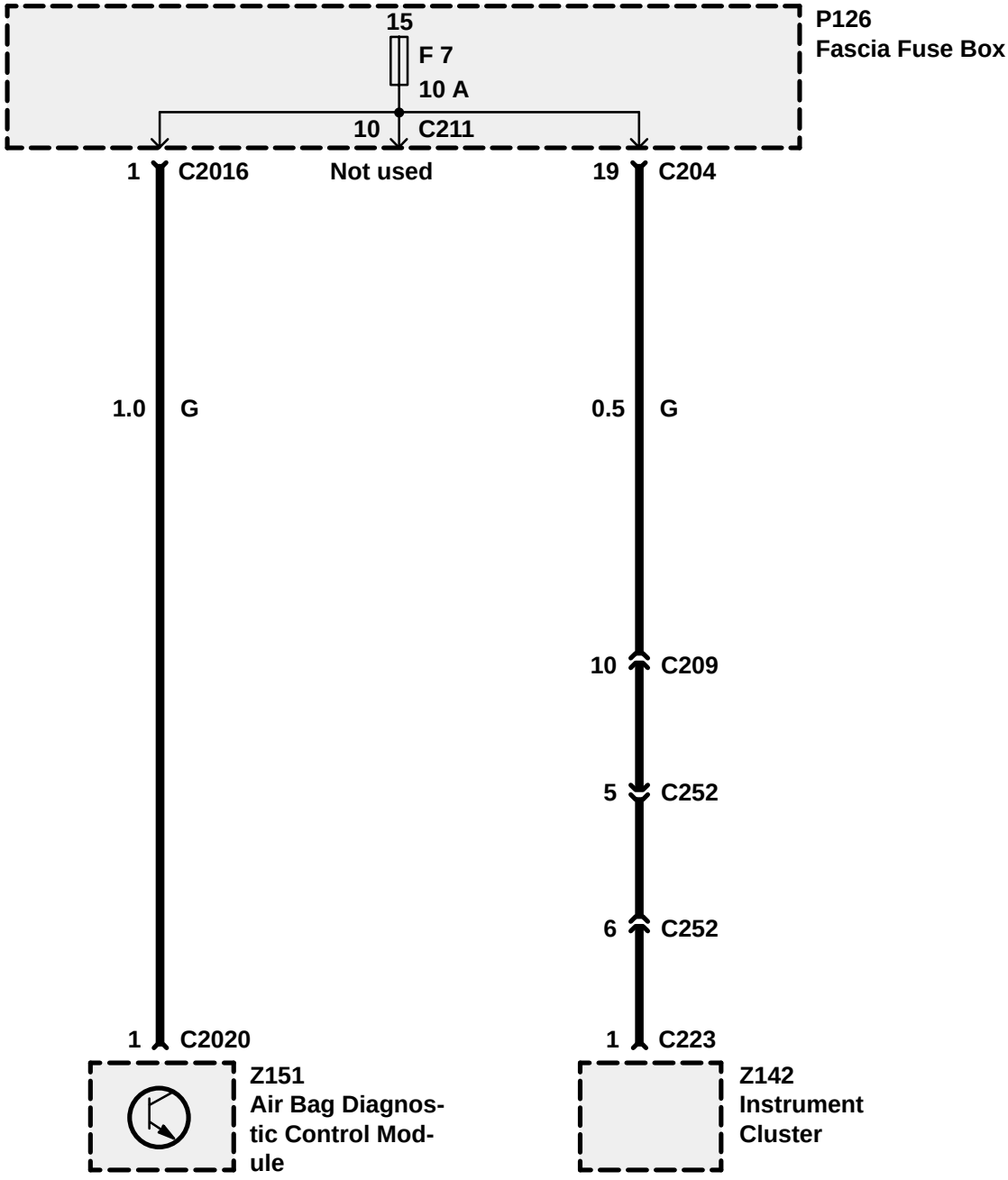



Y2-24
NAS
0.5 US
Auxiliary Lamps Enabled with Main Lighting Switch in Main Beam Position
Auxiliary Lamps Enabled with Main Lighting Switch in Dip Beam or Side Lamps Position
1 C2041
1 C2043
Not used
9 C209
1 C261
X109
Auxiliary Lamps Switch

Y2 ETM

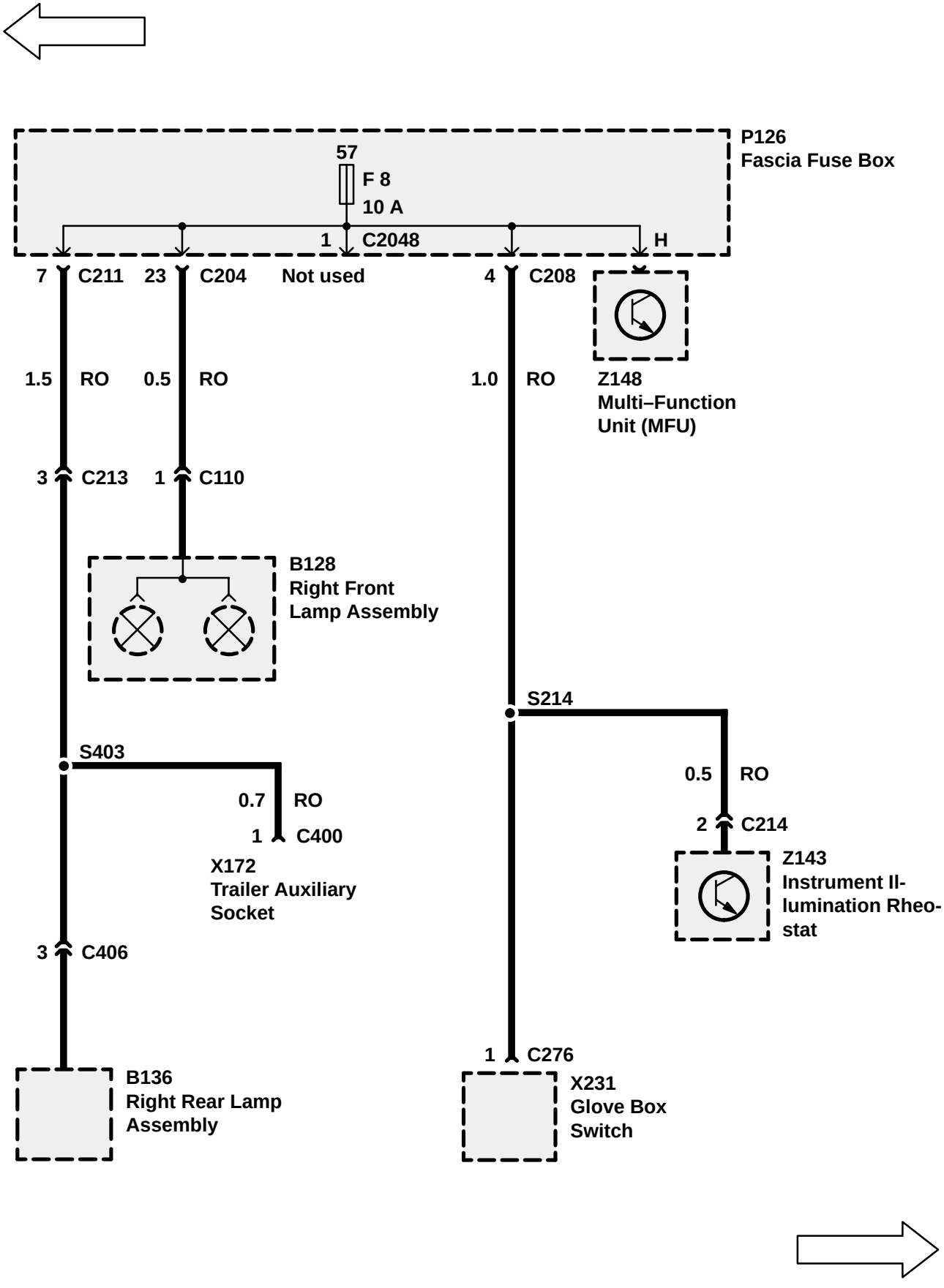
1995 RANGE ROVER

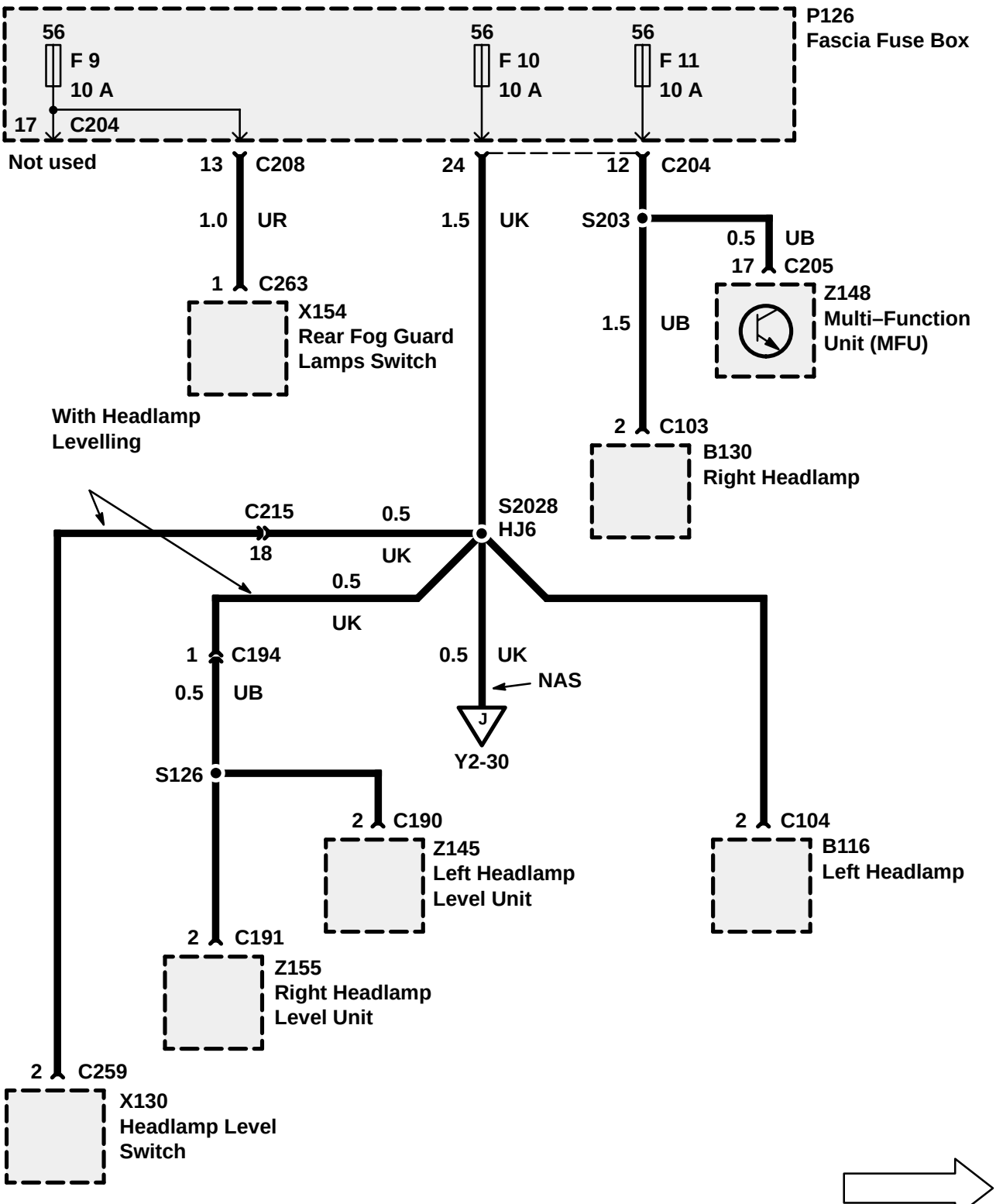



15
F 7
10 A
10
C211
P126
Fascia Fuse Box
1
C2016
Not used
19
C204
1.0
G
0.5
G
10
C209
5
C252
6
C252
1
C2020
1
C223
Z151
Air Bag Diagnostic Control Module
Z142
Instrument Cluster

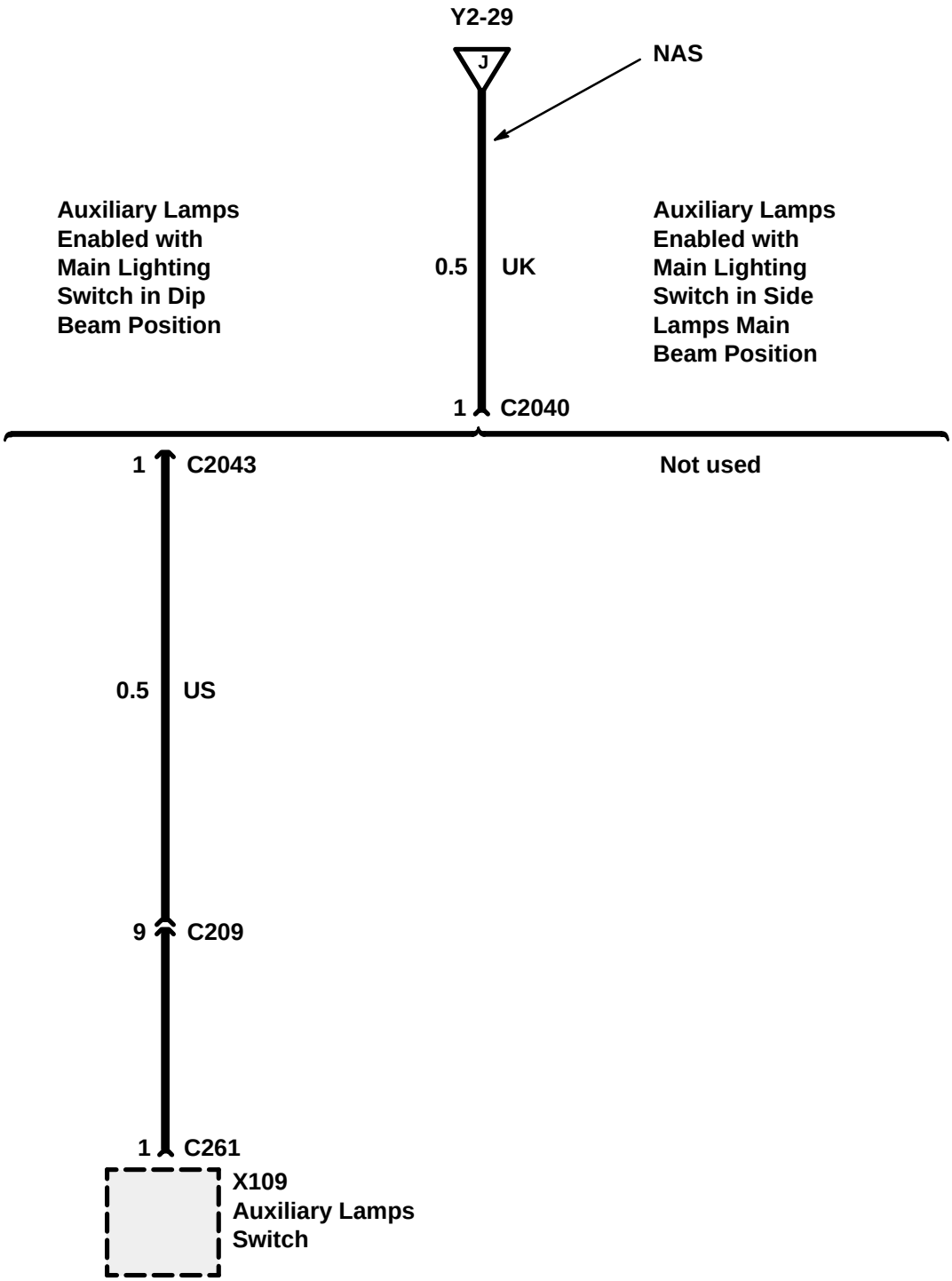
Y2 ETM

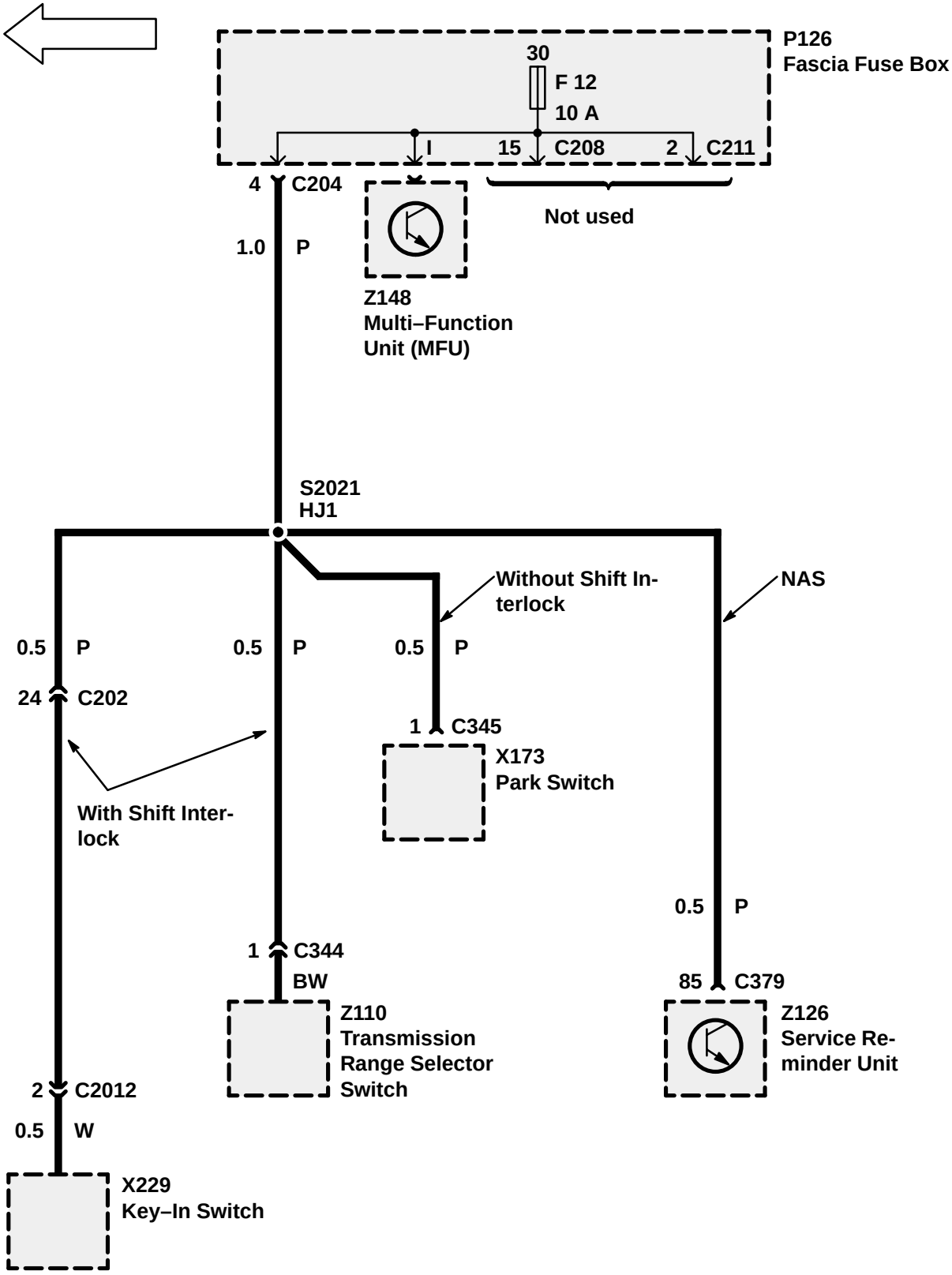
1995 RANGE ROVER




P126
Fascia Fuse Box
56
F 9
10 A
17
C204
56
F 10
10 A
56
F 11
10 A
Not used
13
C208
1.0
UR
1
C263
X154
Rear Fog Guard
Lamps Switch
With Headlamp
Levelling
24
1.5
UK
12
C204
S203
0.5
UB
17
C205
Z148
Multi–Function
Unit (MFU)
1.5
UB
2
C103
B130
Right Headlamp
C215
18
0.5
UK
S2028
HJ6
0.5
UK
1
C194
0.5
UB
0.5
UK
NAS
J
Y2-30
S126
2
C190
Z145
Left Headlamp
Level Unit
2
C104
B116
Left Headlamp
2
C191
Z155
Right Headlamp
Level Unit
2
C259
X130
Headlamp Level
Switch

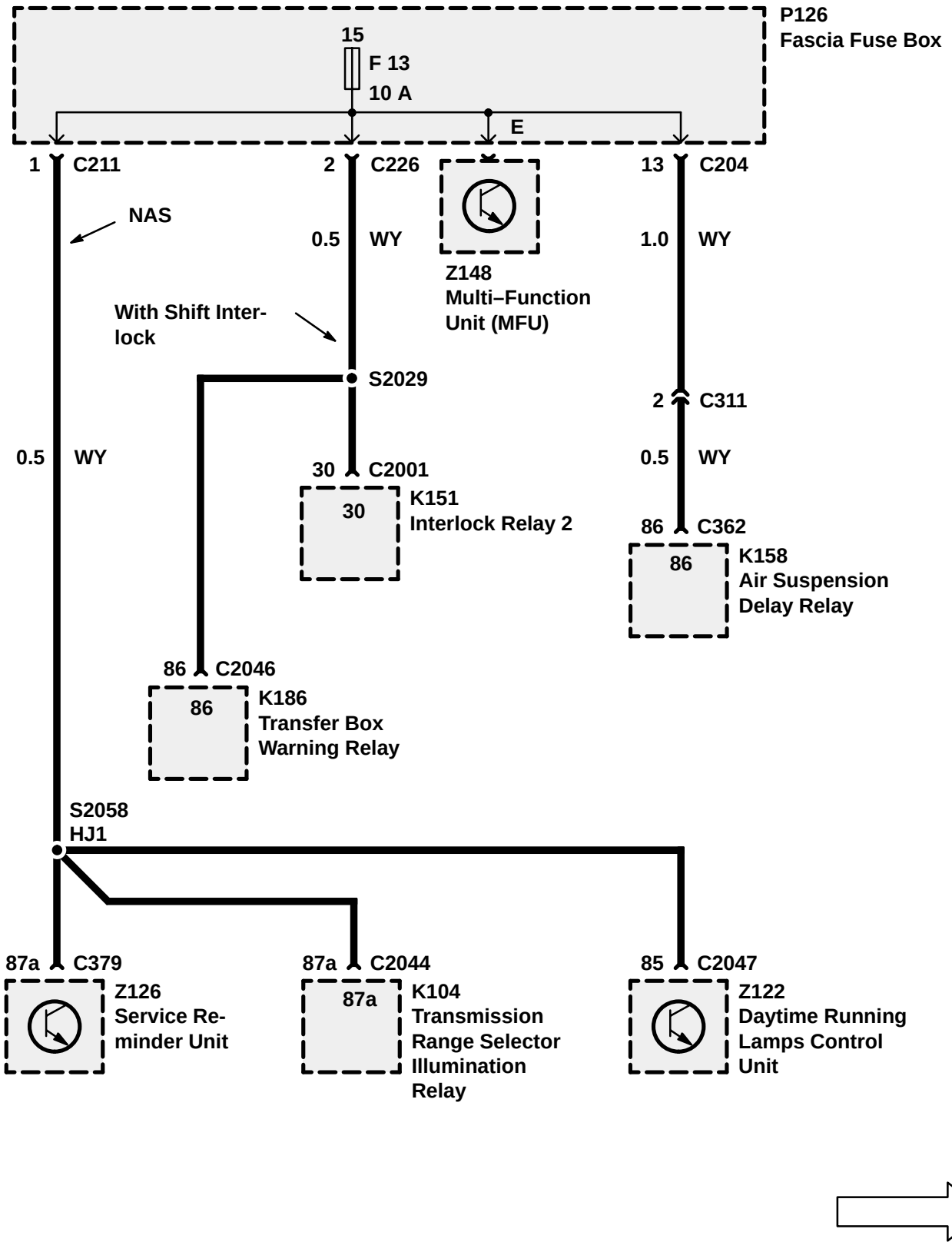
Y2 ETM

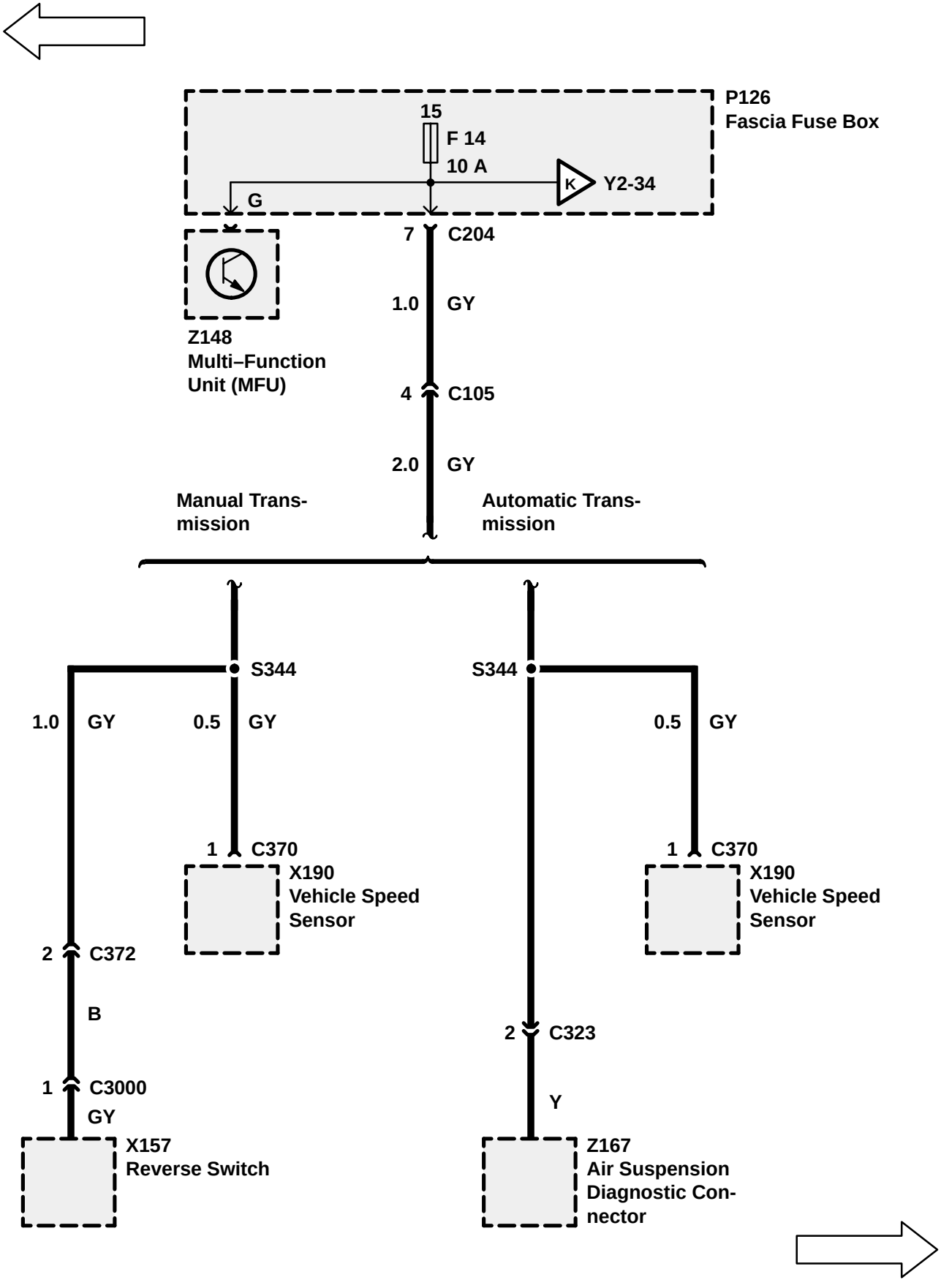

Y2-29
J
NAS
Auxiliary Lamps Enabled with Main Lighting Switch in Dip Beam Position
0.5 UK
Auxiliary Lamps Enabled with Main Lighting Switch in Side Lamps Main Beam Position
1 C2040
1 C2043
Not used
0.5 US
9 C209
1 C261
X109
Auxiliary Lamps Switch


P126
Fascia Fuse Box
30
F 12
10 A
I
15
C208
2
C211
Not used
4
C204
1.0
P
Z148
Multi–Function
Unit (MFU)
S2021
HJ1
Without Shift In-
terlock
NAS
0.5
P
0.5
P
0.5
P
24
C202
1
C345
X173
Park Switch
With Shift Inter-
lock
0.5
P
1
C344
BW
85
C379
Z110
Transmission
Range Selector
Switch
Z126
Service Re-
minder Unit
2
C2012
0.5
W
X229
Key–In Switch

Y2 ETM

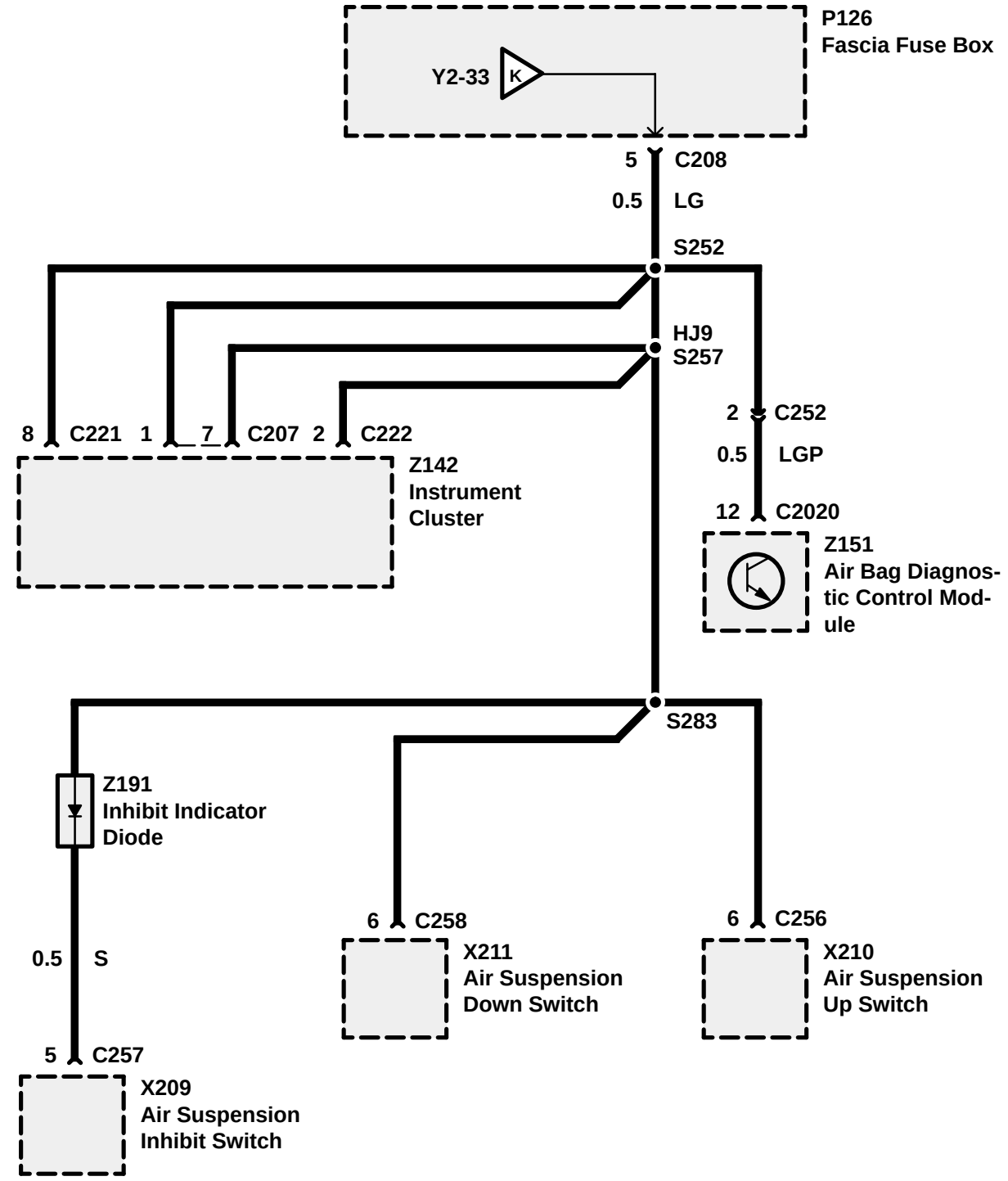
1995 RANGE ROVER

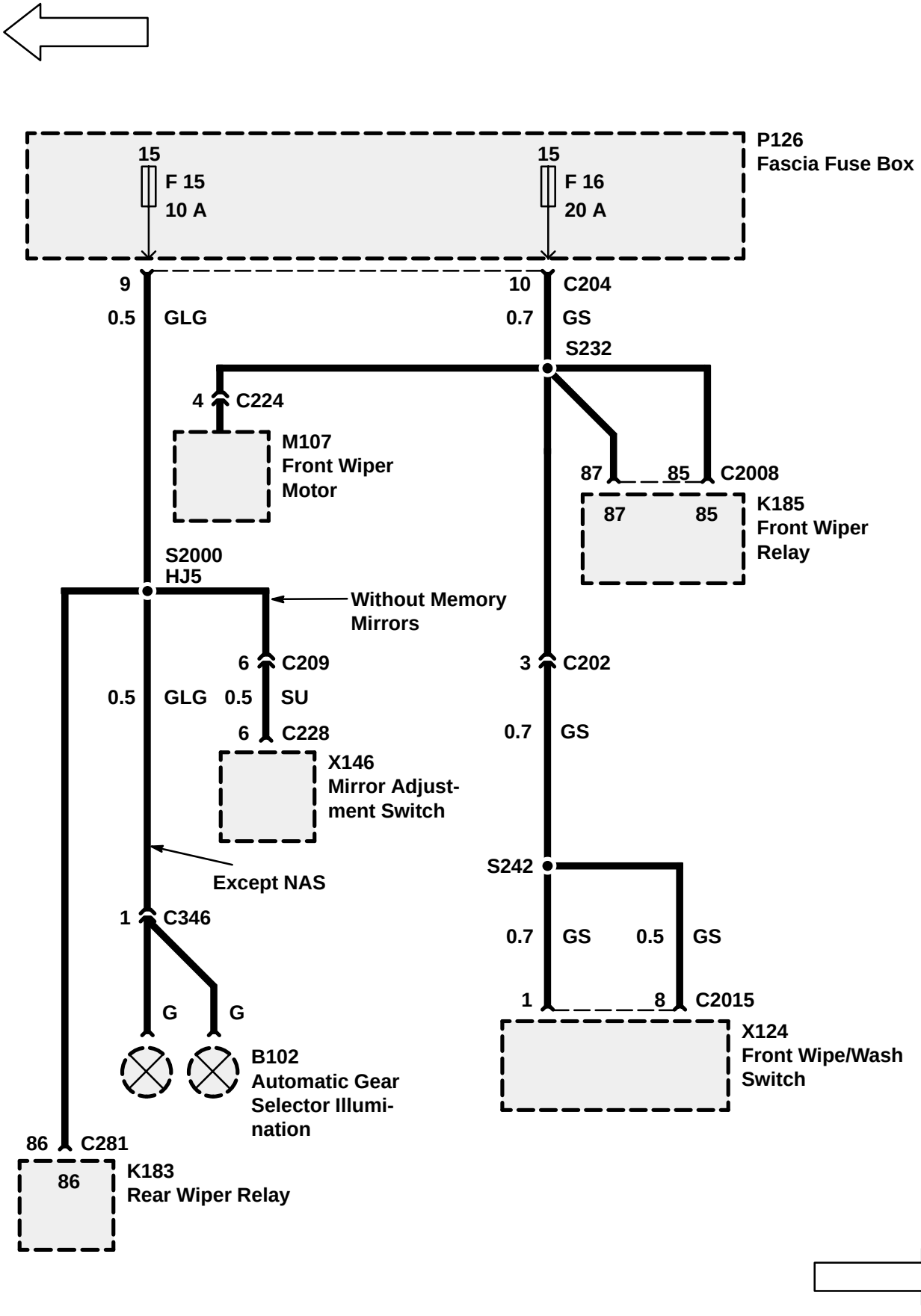



P126
Fascia Fuse Box
15
F 14
10 A
K
Y2-34
G
7
C204
1.0
GY
Z148
Multi–Function
Unit (MFU)
4
C105
2.0
GY
Manual Trans-
mission
Automatic Trans-
mission
S344
1.0
GY
0.5
GY
1
C370
X190
Vehicle Speed
Sensor
2
C372
B
1
C3000
GY
X157
Reverse Switch
S344
0.5
GY
1
C370
X190
Vehicle Speed
Sensor
2
C323
Y
Z167
Air Suspension
Diagnostic Con-
nector

Y2 ETM

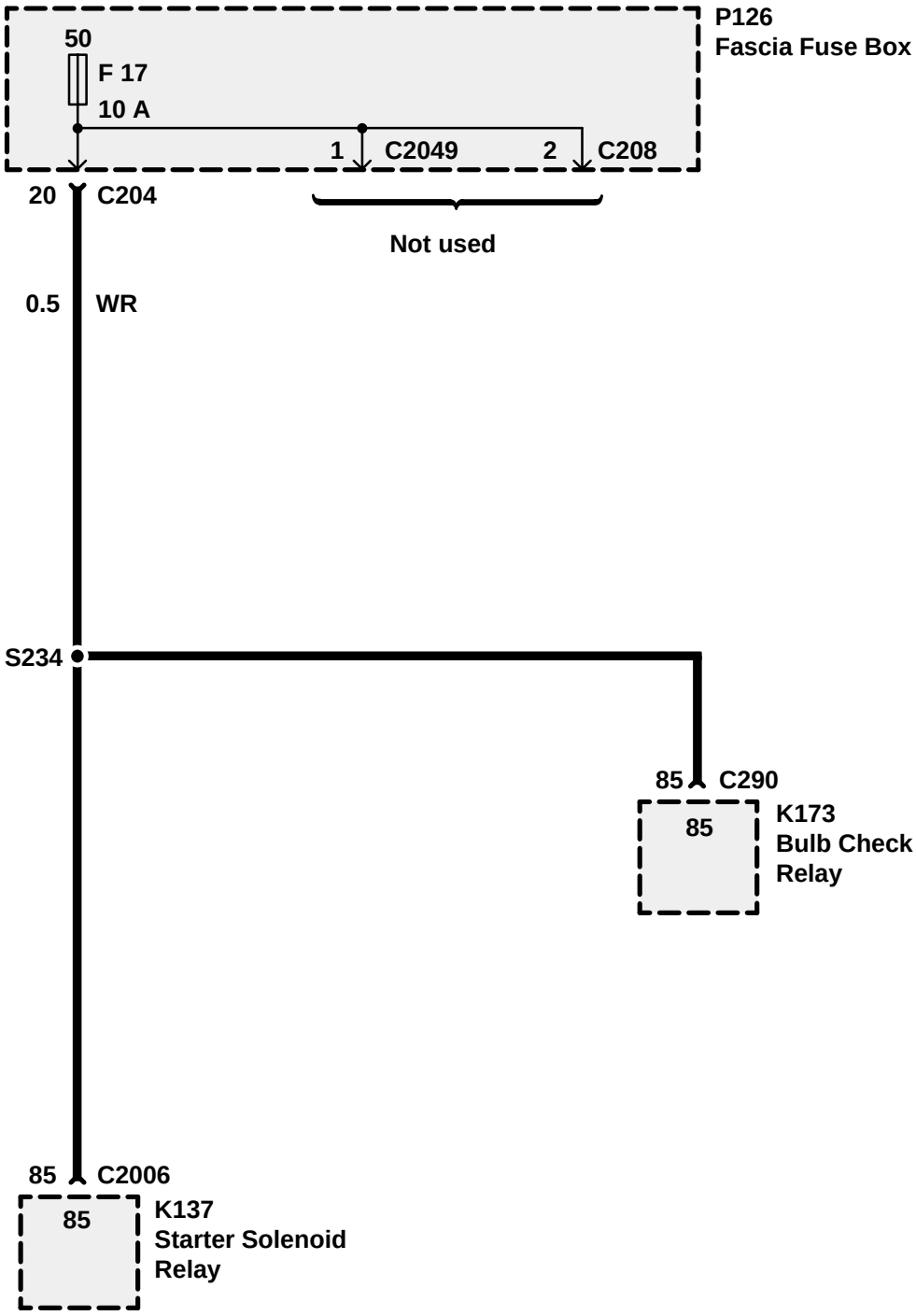
1995 RANGE ROVER

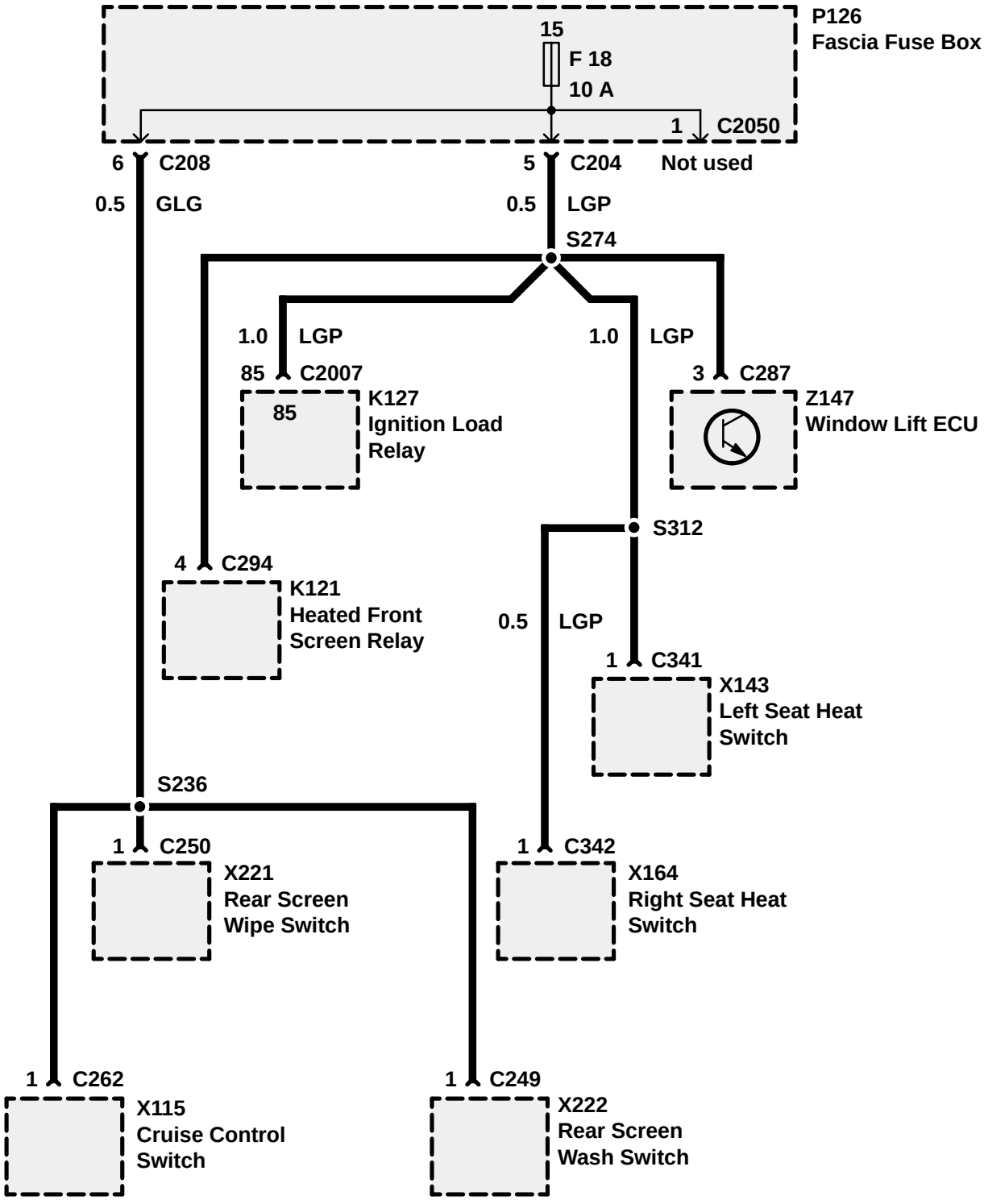



P126
Fascia Fuse Box
15
F 15
10 A
15
F 16
20 A
9
0.5
GLG
10
0.7
GS
C204
S232
4
C224
M107
Front Wiper
Motor
87
85
C2008
K185
Front Wiper
Relay
87
85
S2000
HJ5
Without Memory
Mirrors
6
C209
0.5
GLG
0.5
SU
6
C228
X146
Mirror Adjust-
ment Switch
3
C202
0.7
GS
Except NAS
S242
1
C346
0.7
GS
0.5
GS
1
8
C2015
X124
Front Wipe/Wash
Switch
G
G
B102
Automatic Gear
Selector Illumi-
nation
86
C281
86
K183
Rear Wiper Relay

Y2 ETM

1995 RANGE ROVER




P126
Fascia Fuse Box
15
F 18
10 A
1
C2050
Not used
6
C208
0.5
GLG
5
C204
0.5
LGP
S274
1.0
LGP
85
C2007
K127
Ignition Load
Relay
85
1.0
LGP
3
C287
Z147
Window Lift ECU
S312
4
C294
K121
Heated Front
Screen Relay
0.5
LGP
1
C341
X143
Left Seat Heat
Switch
S236
1
C250
X221
Rear Screen
Wipe Switch
1
C342
X164
Right Seat Heat
Switch
1
C262
X115
Cruise Control
Switch
1
C249
X222
Rear Screen
Wash Switch

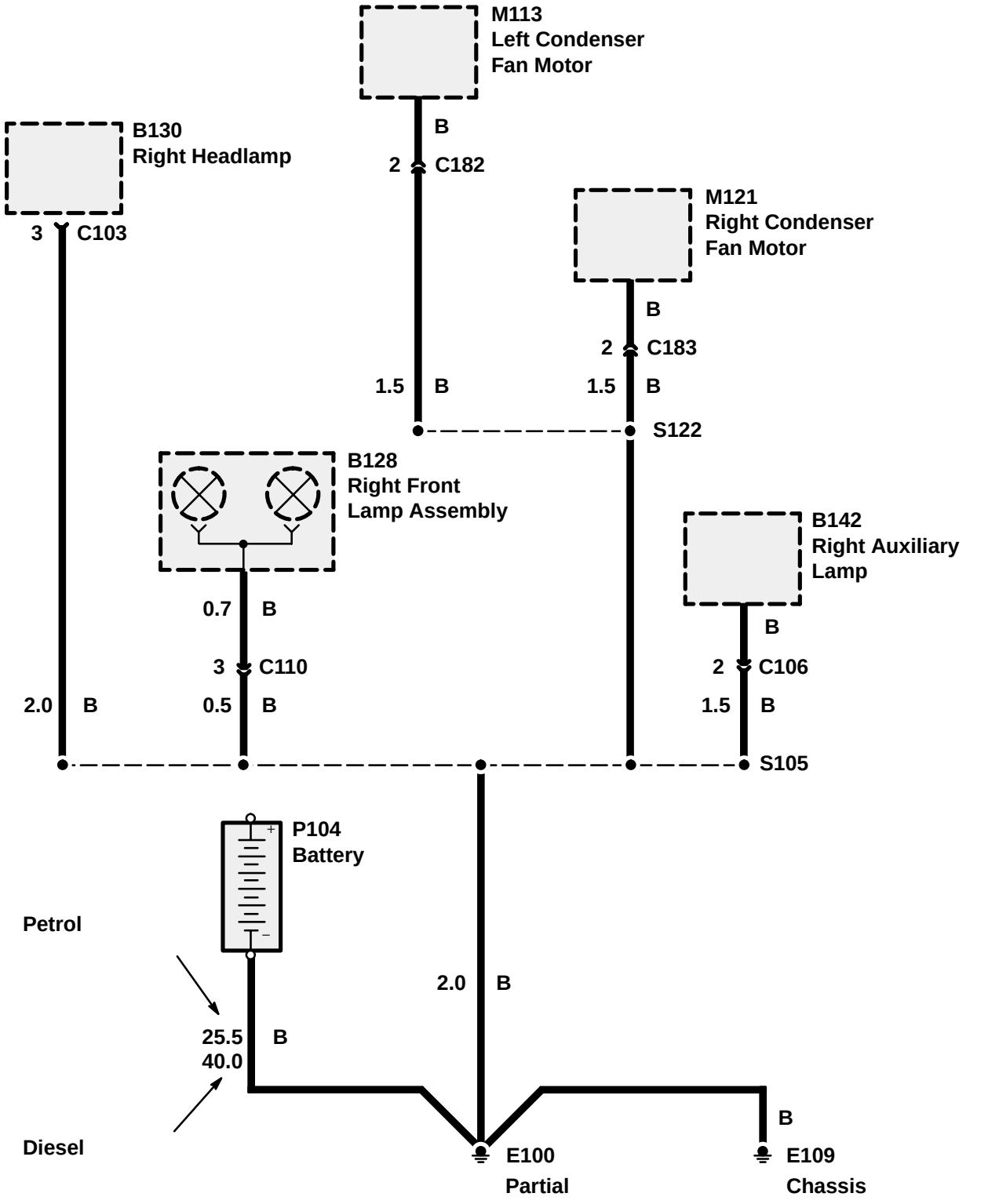
GROUND AND SPLICE INDEX

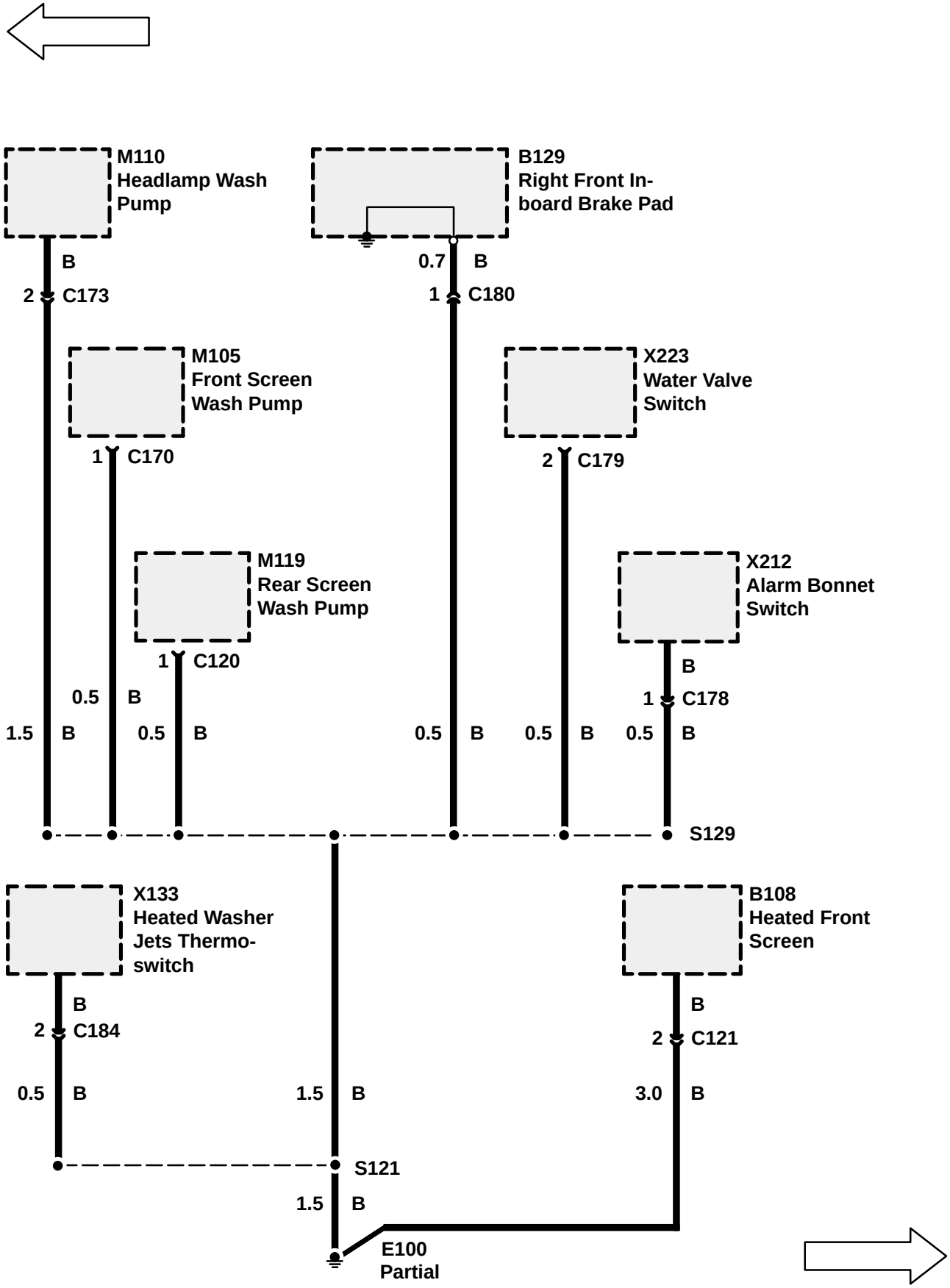
Ground	Page
E100	Y5-2, 3, 4, 5
E101	Y5-6
E102	Y5-9
E103 Petrol	Y5-7
E103 Diesel	Y5-8
E104	Y5-9
E105	Y5-9
E106	Y5-9
E107	Y5-7
E108	Y5-9
E109	Y5-2
E110	Y5-9
E200	Y5-10, 11, 12, 13, 14, 15, 16, 17
E201	Y5-18, 19, 20, 21, 22, 23, 24, 25, 26, 27
E202	Y5-28
E207	Y5-28
E300	Y5-29, 30, 31, 32, 33
E301	Y5-34
E302	Y5-35
E303	Y5-36
E400	Y5-37
E401	Y5-38
E403	Y5-39
E404	Y5-37

Splice	Page
S100	Y5-6
S104	Y5-6
S105	Y5-2
S112	Y5-8
S121	Y5-3
S122	Y5-2
S125	Y5-22
S129	Y5-3
S130	Y5-6
S204/HJ10	Y5-17
S207	Y5-21
S216	Y5-20
S217	Y5-19
S221	Y5-18
S238/HJ10	Y5-16
S244	Y5-12
S248	Y5-26
S253/HJ8	Y5-20
S255/HJ8	Y5-21
S266	Y5-10
S267	Y5-29
S272	Y5-28
S273	Y5-27
S277	Y5-21
S289	Y5-7
S290/HJ7	Y5-4
S294	Y5-5
S2003/HJ4	Y5-13
S2015/HJ5	Y5-15
S2016/HJ5	Y5-14
S2018	Y5-30
S313	Y5-34
S320	Y5-29
S321	Y5-34
S324	Y5-28
S327	Y5-35
S329	Y5-33
S330	Y5-33
S333	Y5-32
S336	Y5-33
S337	Y5-31
S343	Y5-24, 25
S401	Y5-37
S402	Y5-38
S415	Y5-37
S501	Y5-27
S601	Y5-11

Y5 ETM

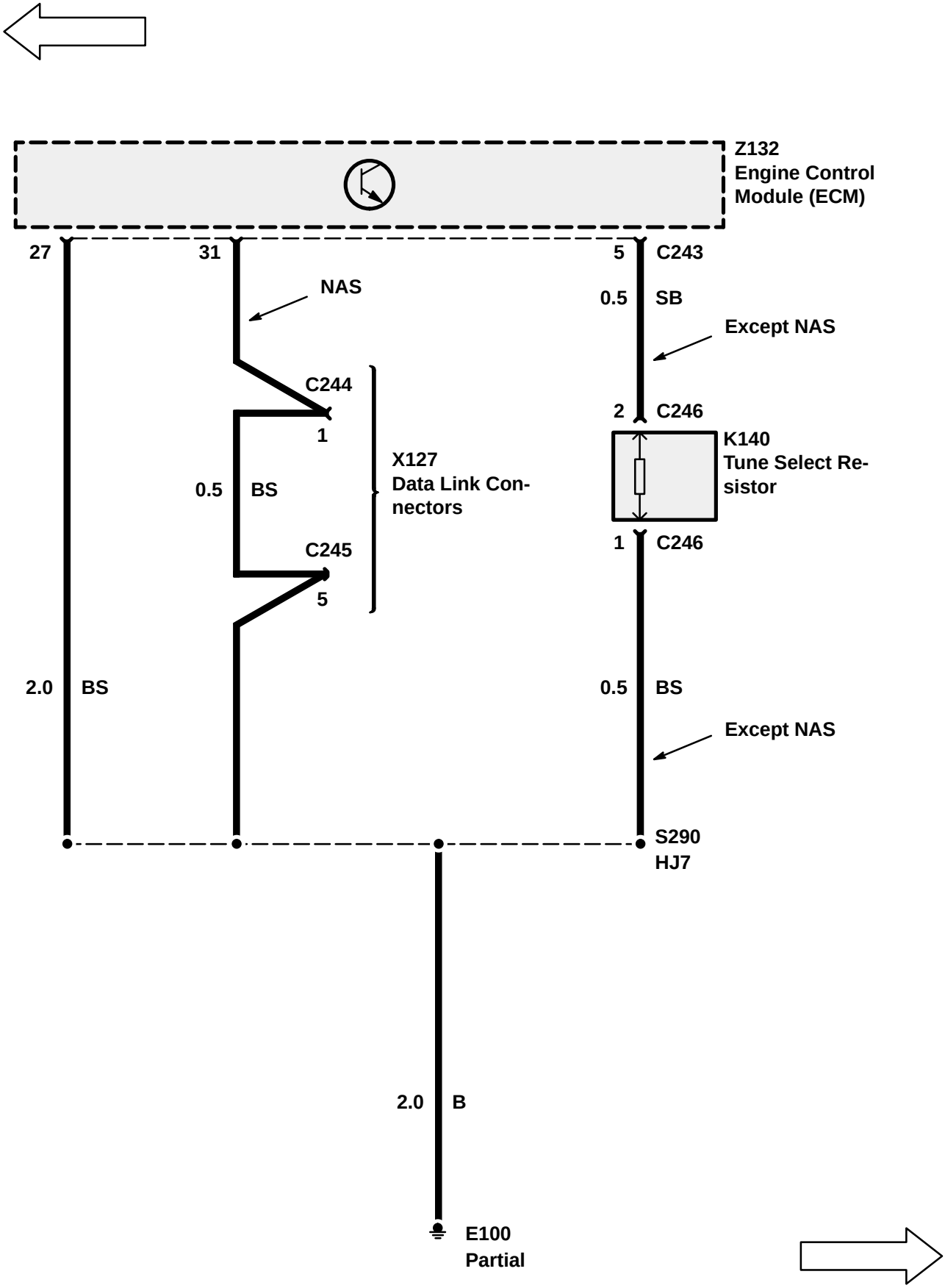
1995 RANGE ROVER

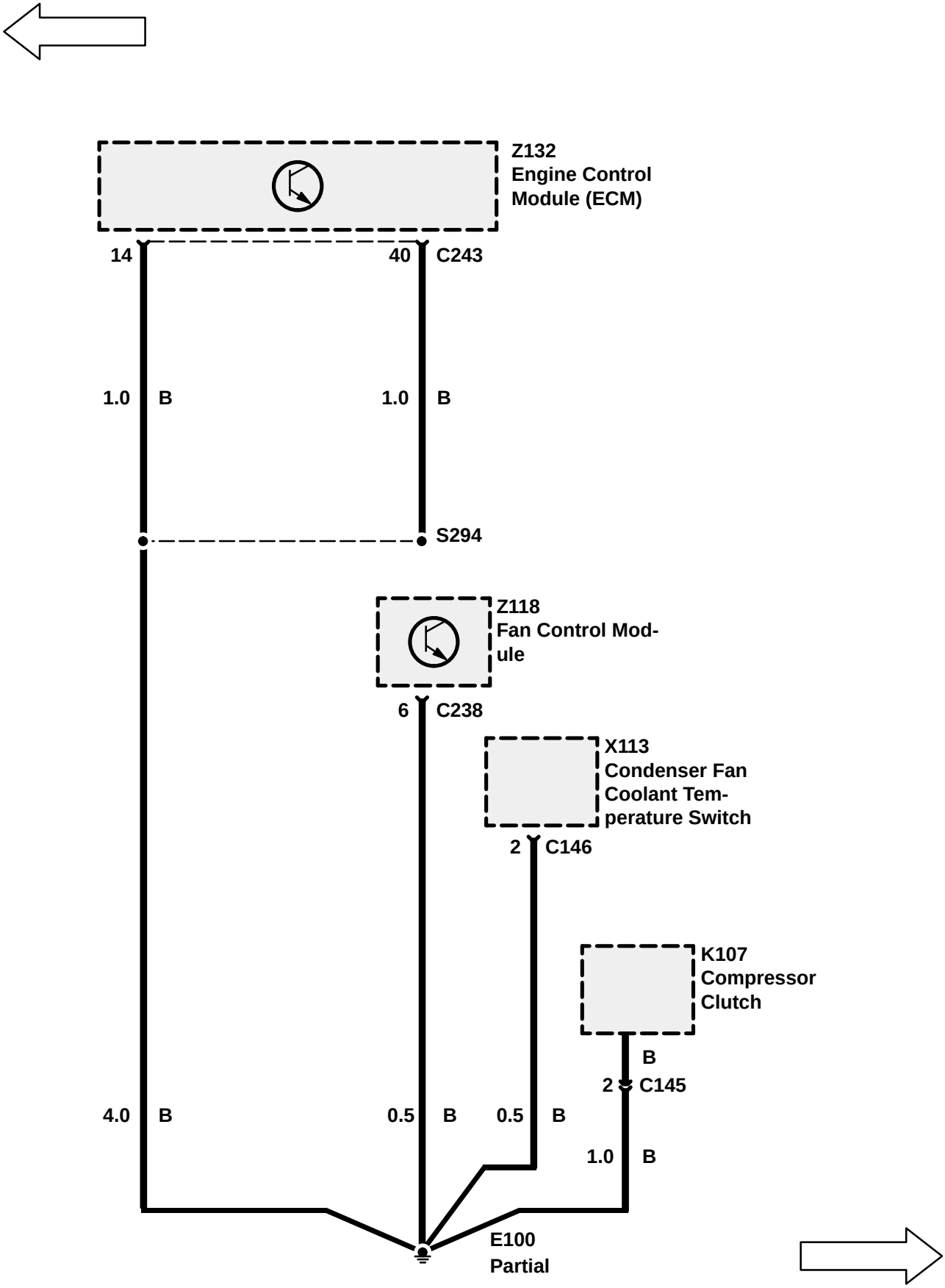



M110
Headlamp Wash Pump
B
2 C173
B129
Right Front In-board Brake Pad
0.7 B
1 C180
M105
Front Screen Wash Pump
1 C170
X223
Water Valve Switch
2 C179
M119
Rear Screen Wash Pump
1 C120
X212
Alarm Bonnet Switch
B
1 C178
0.5 B
1.5 B
0.5 B
0.5 B
0.5 B
0.5 B
S129
X133
Heated Washer Jets Thermo-switch
B
2 C184
B108
Heated Front Screen
B
2 C121
0.5 B
1.5 B
3.0 B
S121
1.5 B
E100
Partial

Y5 ETM

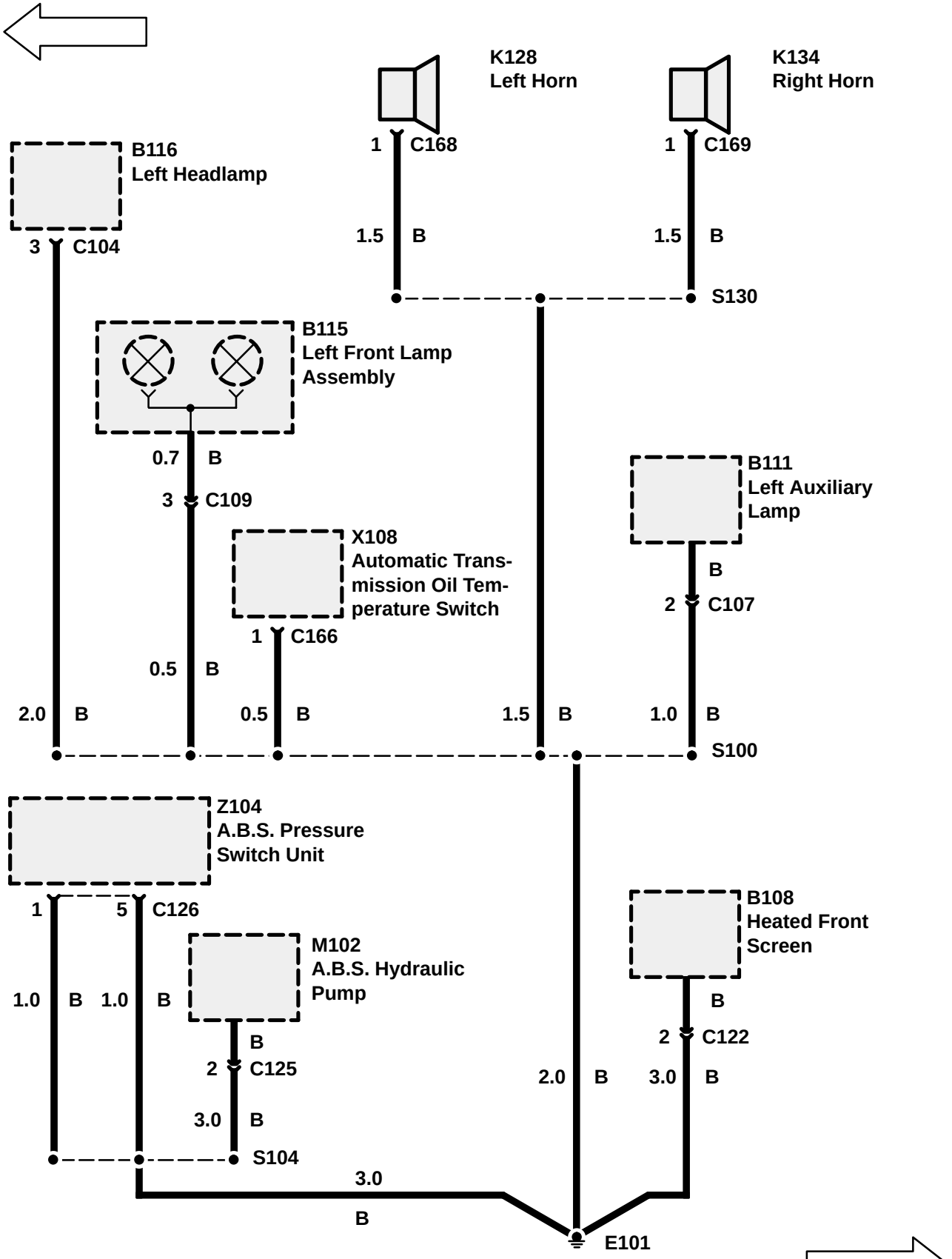
1995 RANGE ROVER

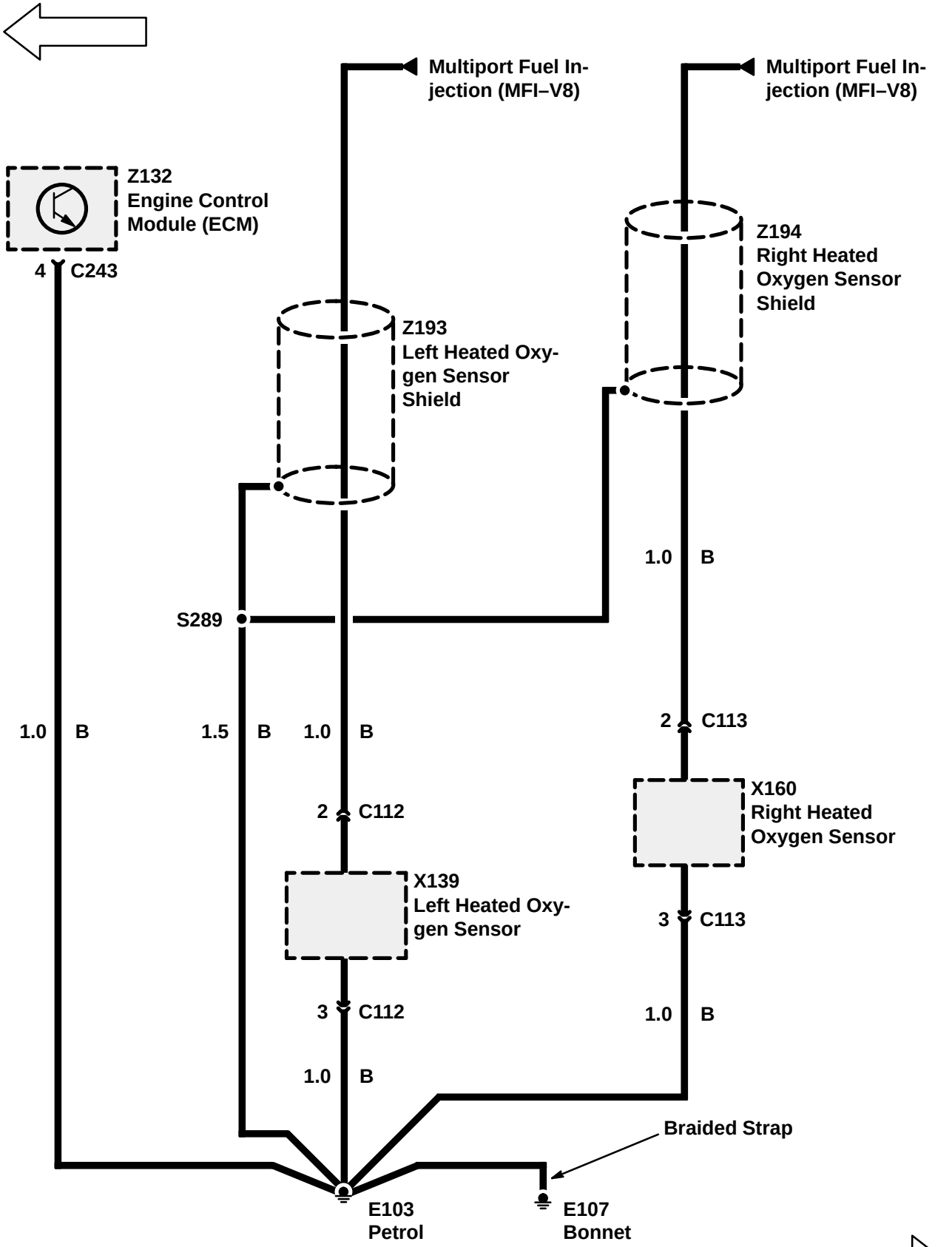



Z132
Engine Control
Module (ECM)
14
40
C243
1.0
B
1.0
B
S294
Z118
Fan Control Mod-
ule
6
C238
X113
Condenser Fan
Coolant Tem-
perature Switch
2
C146
K107
Compressor
Clutch
B
2
C145
4.0
B
0.5
B
0.5
B
1.0
B
E100
Partial

Y5 ETM

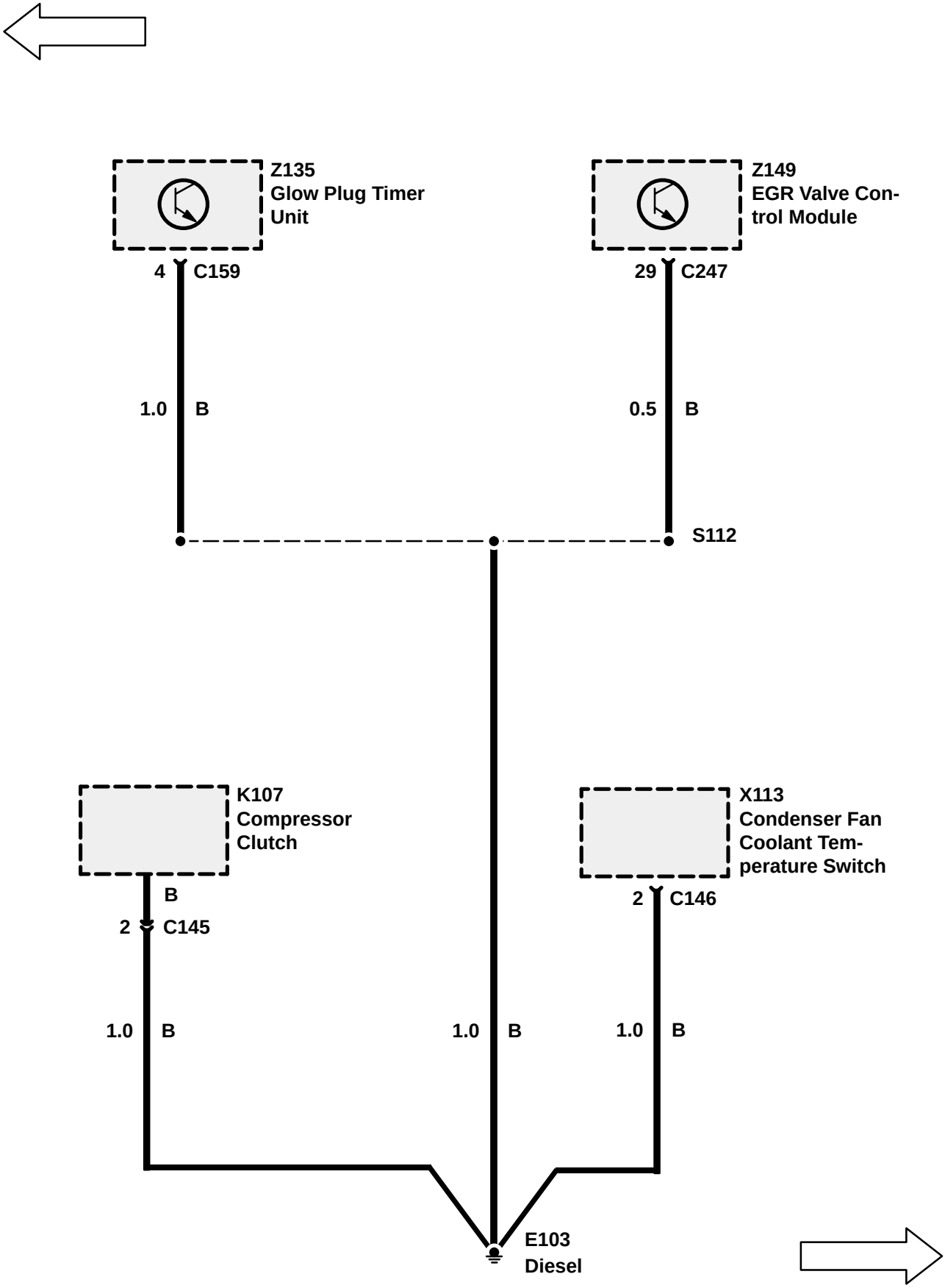
1995 RANGE ROVER

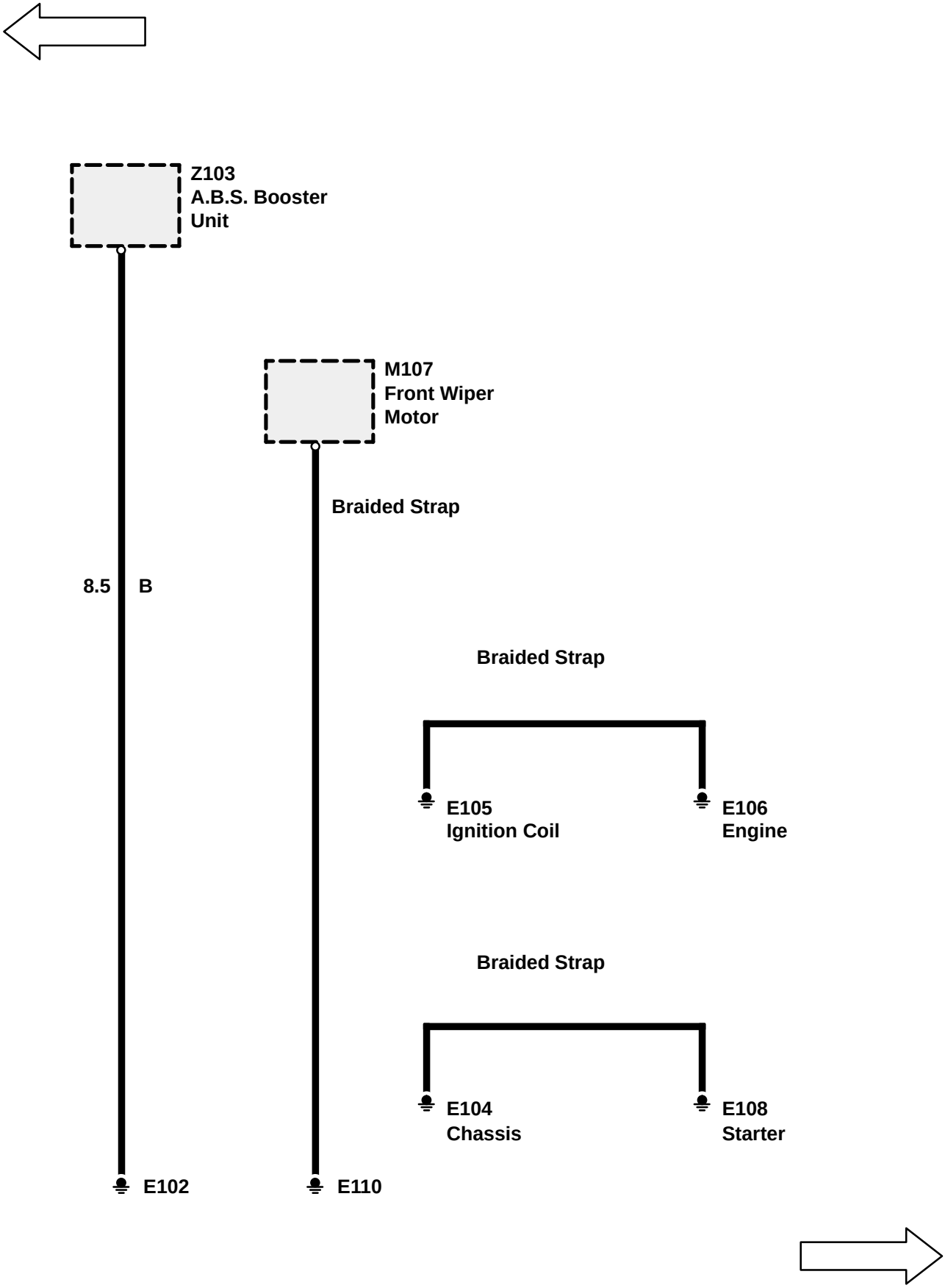



Multiport Fuel Injection (MFI–V8)
Multiport Fuel Injection (MFI–V8)
Z132
Engine Control Module (ECM)
4 C243
Z193
Left Heated Oxygen Sensor Shield
Z194
Right Heated Oxygen Sensor Shield
1.0 B
S289
1.0 B
1.5 B
1.0 B
2 C113
2 C112
X160
Right Heated Oxygen Sensor
X139
Left Heated Oxygen Sensor
3 C113
3 C112
1.0 B
1.0 B
Braided Strap
E103
Petrol
E107
Bonnet

Y5 ETM

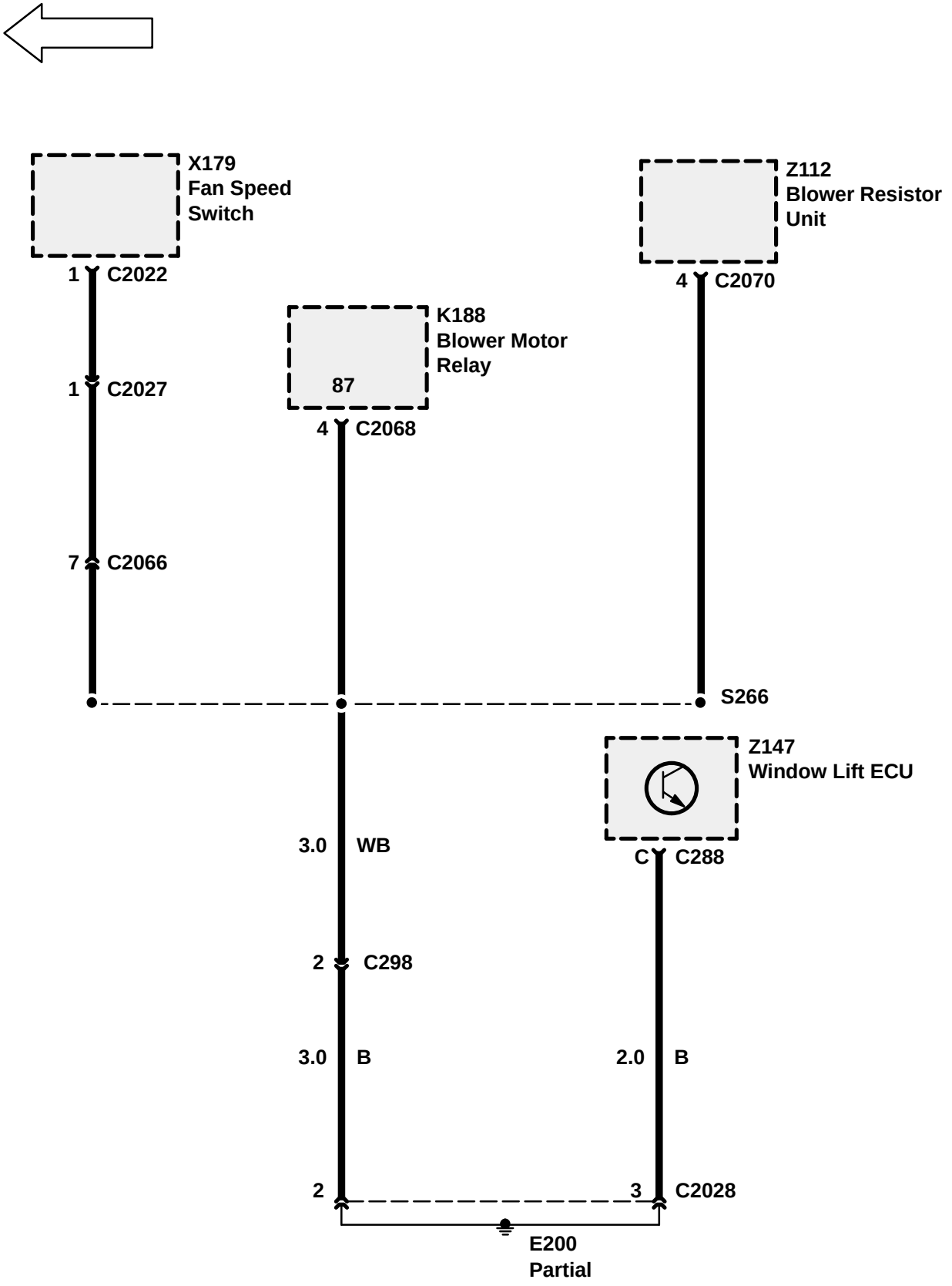
1995 RANGE ROVER

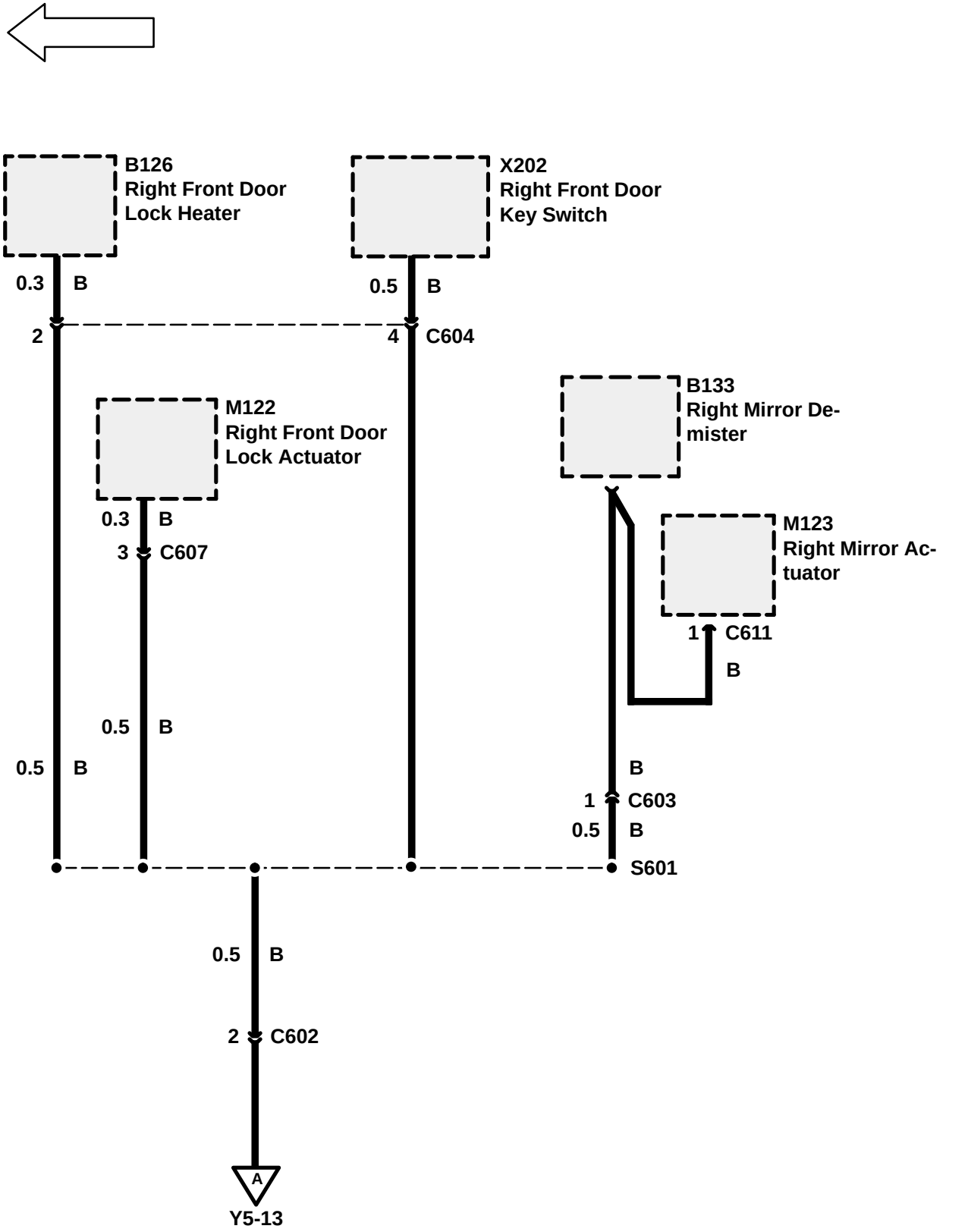



Z103
A.B.S. Booster
Unit
M107
Front Wiper
Motor
Braided Strap
8.5 B
Braided Strap
E105
Ignition Coil
E106
Engine
Braided Strap
E104
Chassis
E108
Starter
E102
E110

Y5 ETM

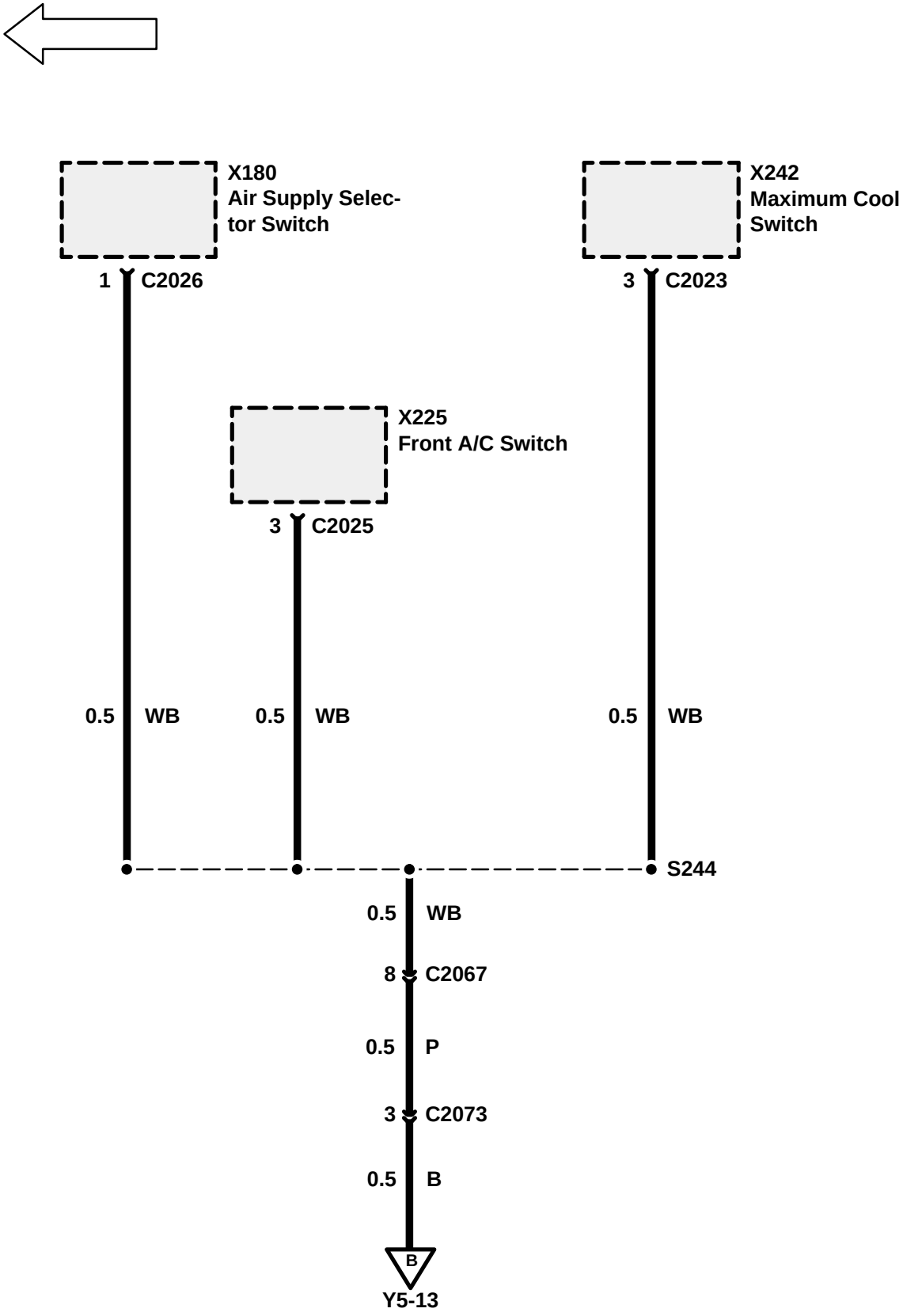
1995 RANGE ROVER

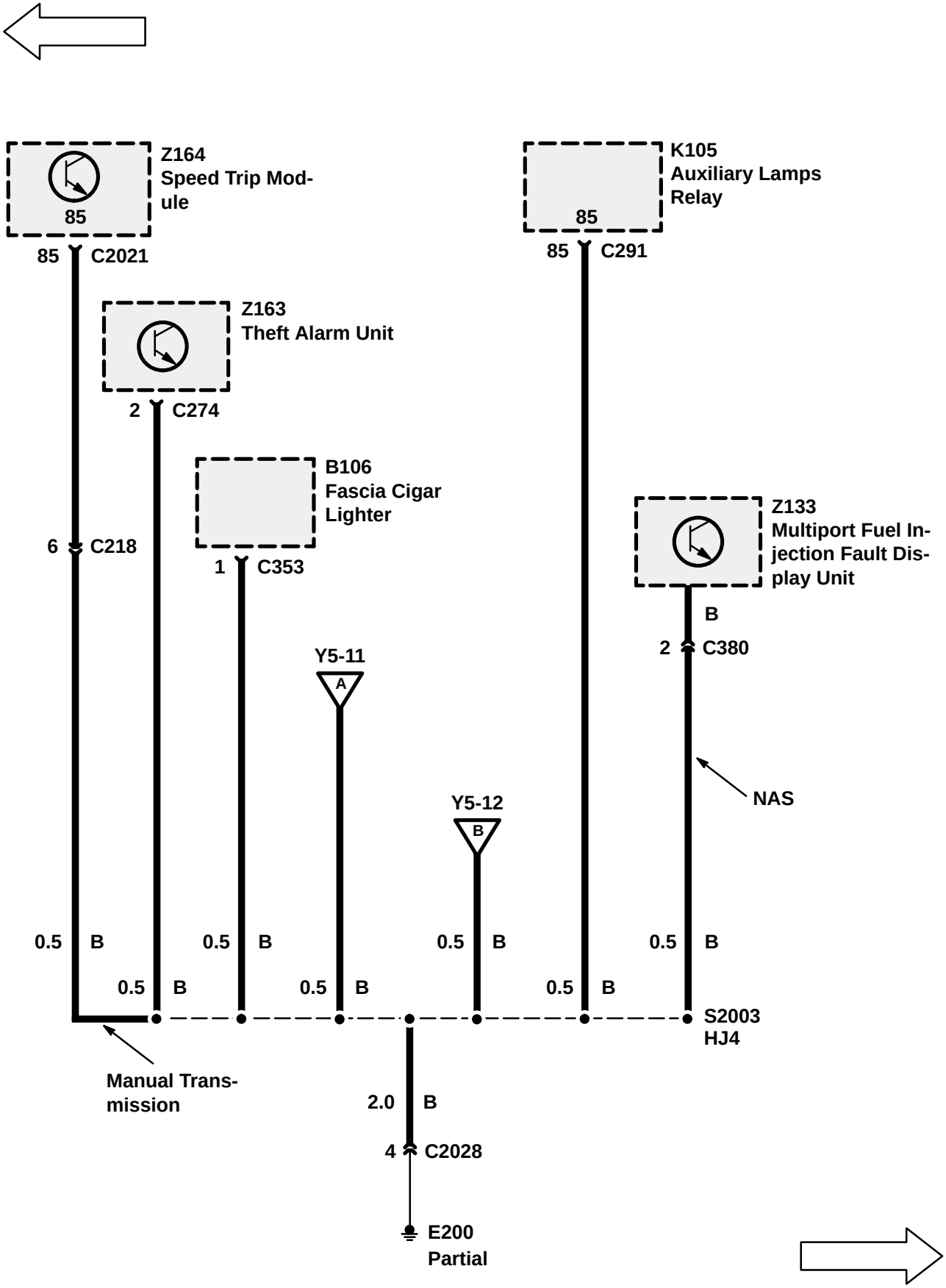



B126
Right Front Door
Lock Heater
X202
Right Front Door
Key Switch
0.3 B
2
0.5 B
4 C604
M122
Right Front Door
Lock Actuator
B133
Right Mirror De-
mister
0.3 B
3 C607
M123
Right Mirror Ac-
tuator
1 C611
B
0.5 B
0.5 B
B
1 C603
0.5 B
S601
0.5 B
2 C602
A
Y5-13

Y5 ETM

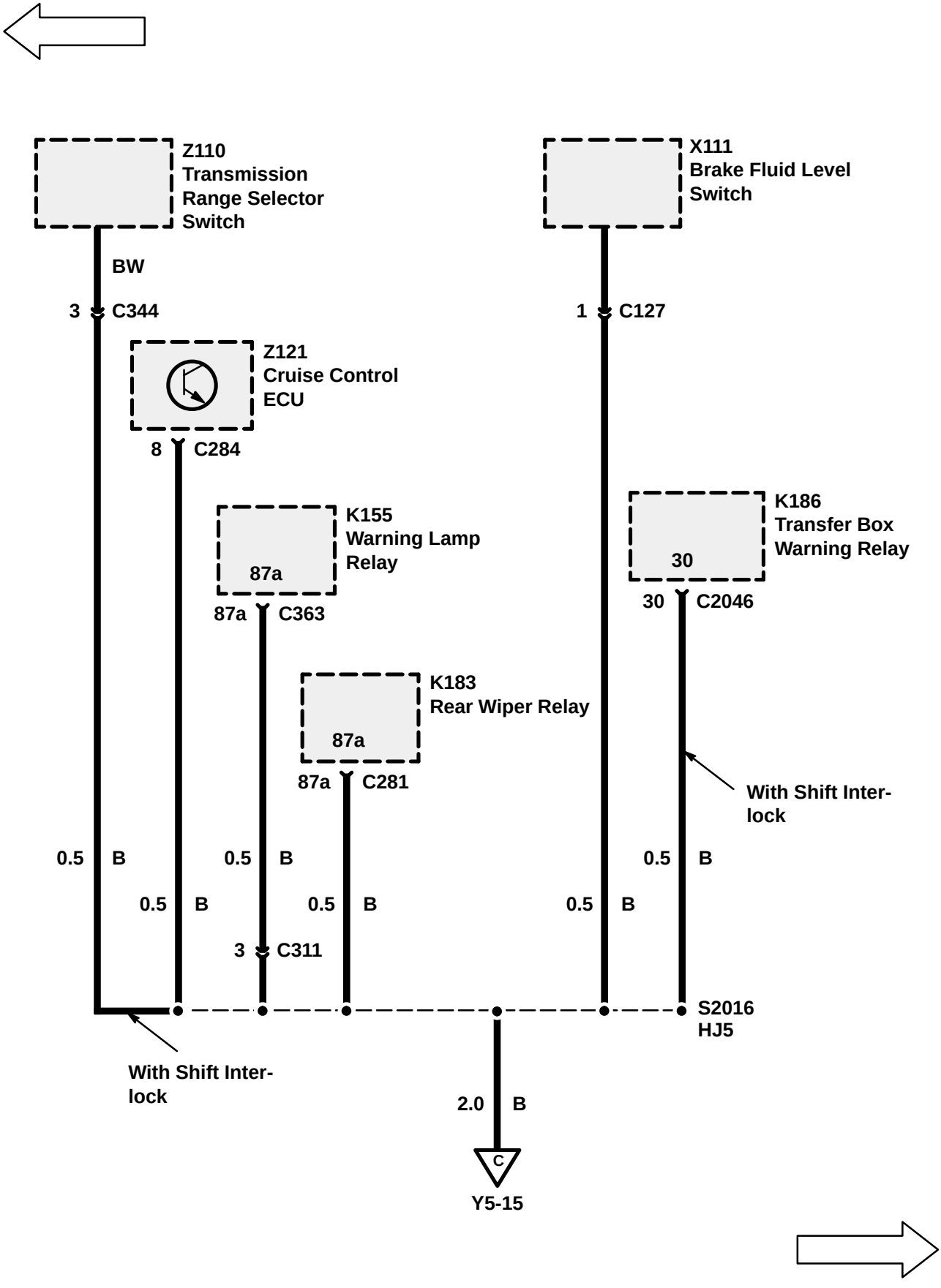
1995 RANGE ROVER

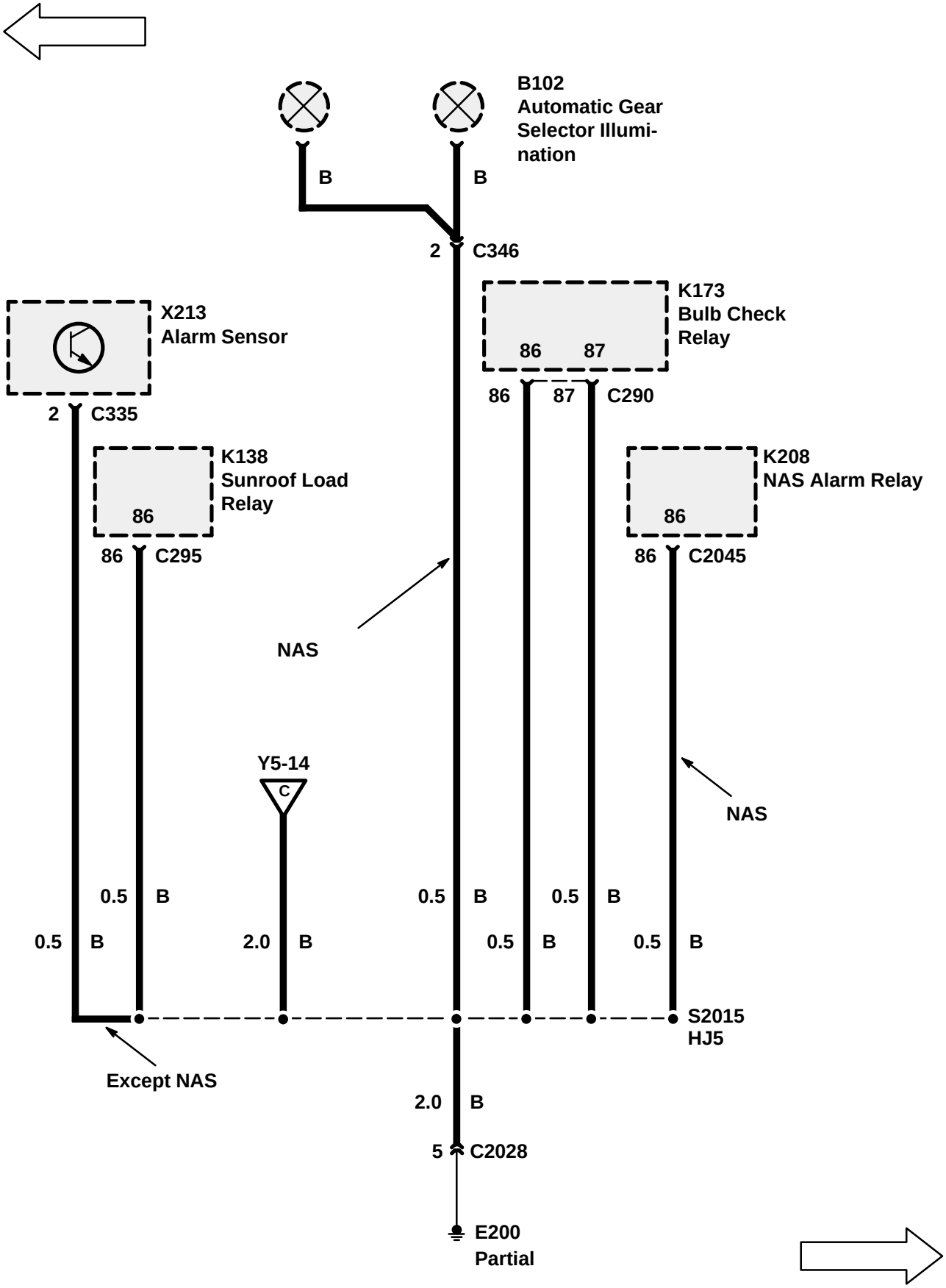



Z164
Speed Trip Module
85
85 C2021
Z163
Theft Alarm Unit
2 C274
B106
Fascia Cigar Lighter
1 C353
6 C218
K105
Auxiliary Lamps Relay
85
85 C291
Z133
Multiport Fuel Injection Fault Display Unit
B
2 C380
NAS
Y5-11
A
Y5-12
B
0.5 B
0.5 B
0.5 B
0.5 B
0.5 B
0.5 B
S2003
HJ4
Manual Transmission
2.0 B
4 C2028
E200
Partial

Y5 ETM

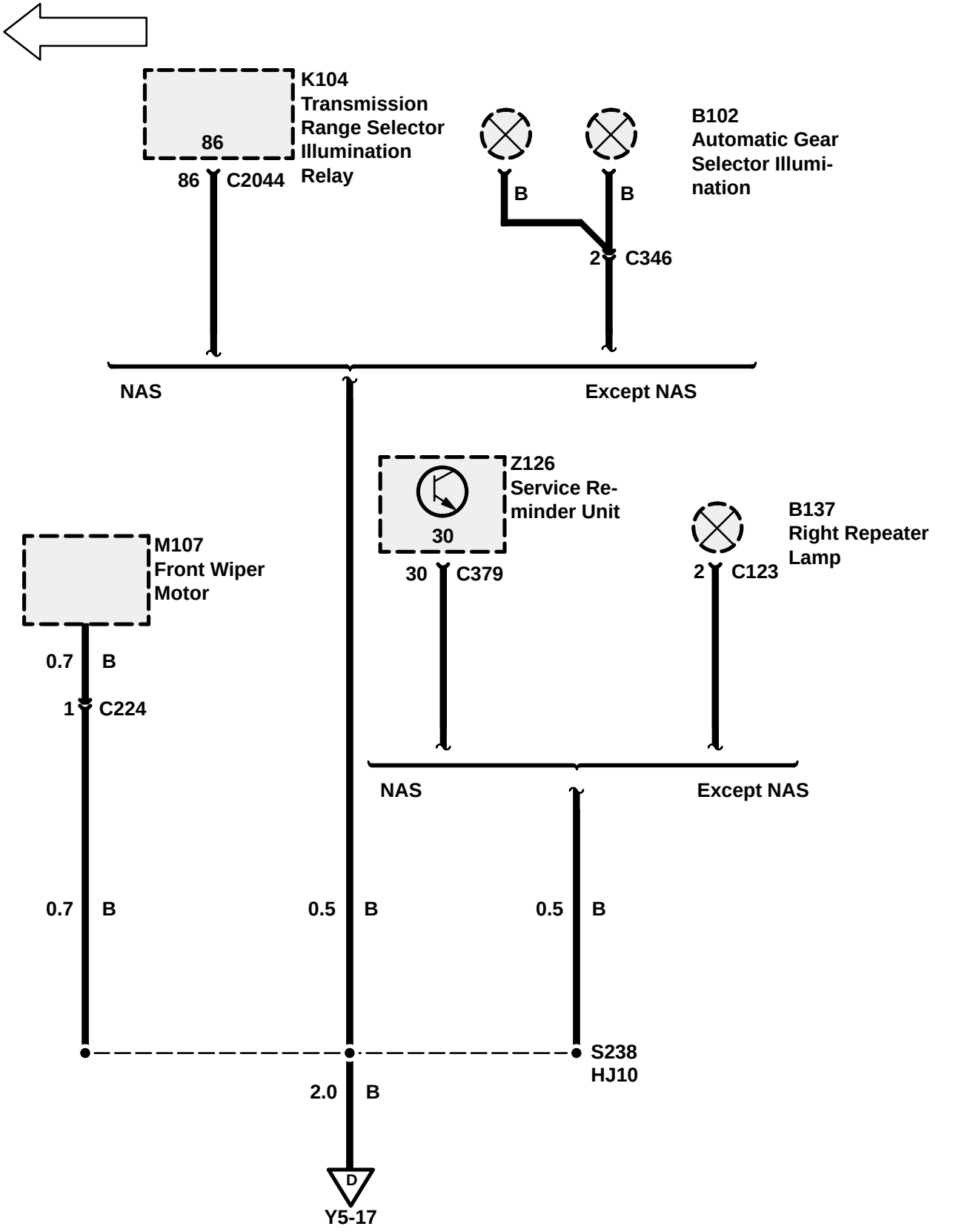
1995 RANGE ROVER

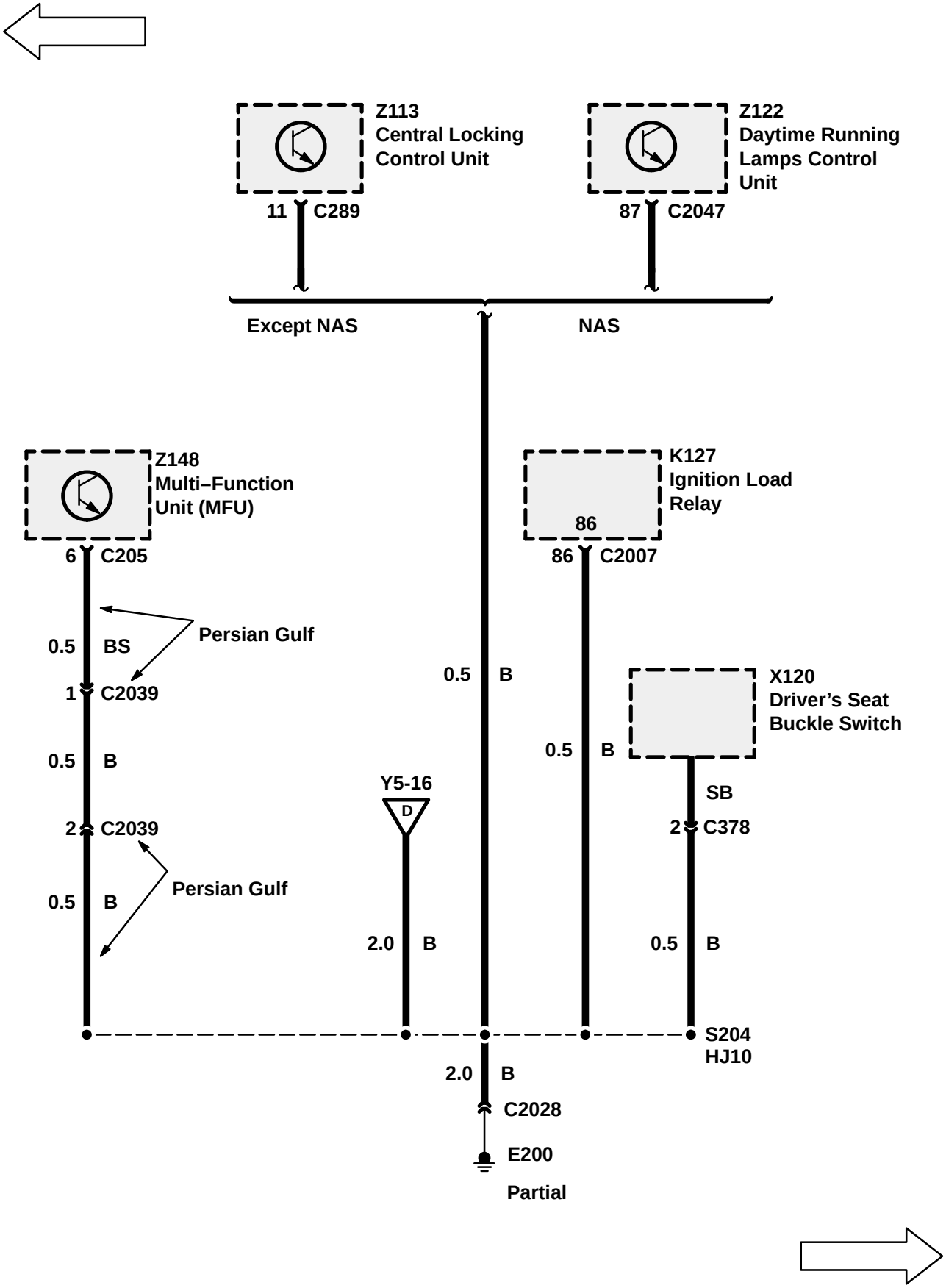



B102
Automatic Gear Selector Illumination
B
B
2 C346
X213
Alarm Sensor
2 C335
K173
Bulb Check Relay
86 87
86 87 C290
K138
Sunroof Load Relay
86
86 C295
K208
NAS Alarm Relay
86
86 C2045
NAS
Y5-14
C
NAS
0.5 B
0.5 B
2.0 B
0.5 B
0.5 B
0.5 B
0.5 B
S2015
HJ5
Except NAS
2.0 B
5 C2028
E200
Partial

Y5 ETM

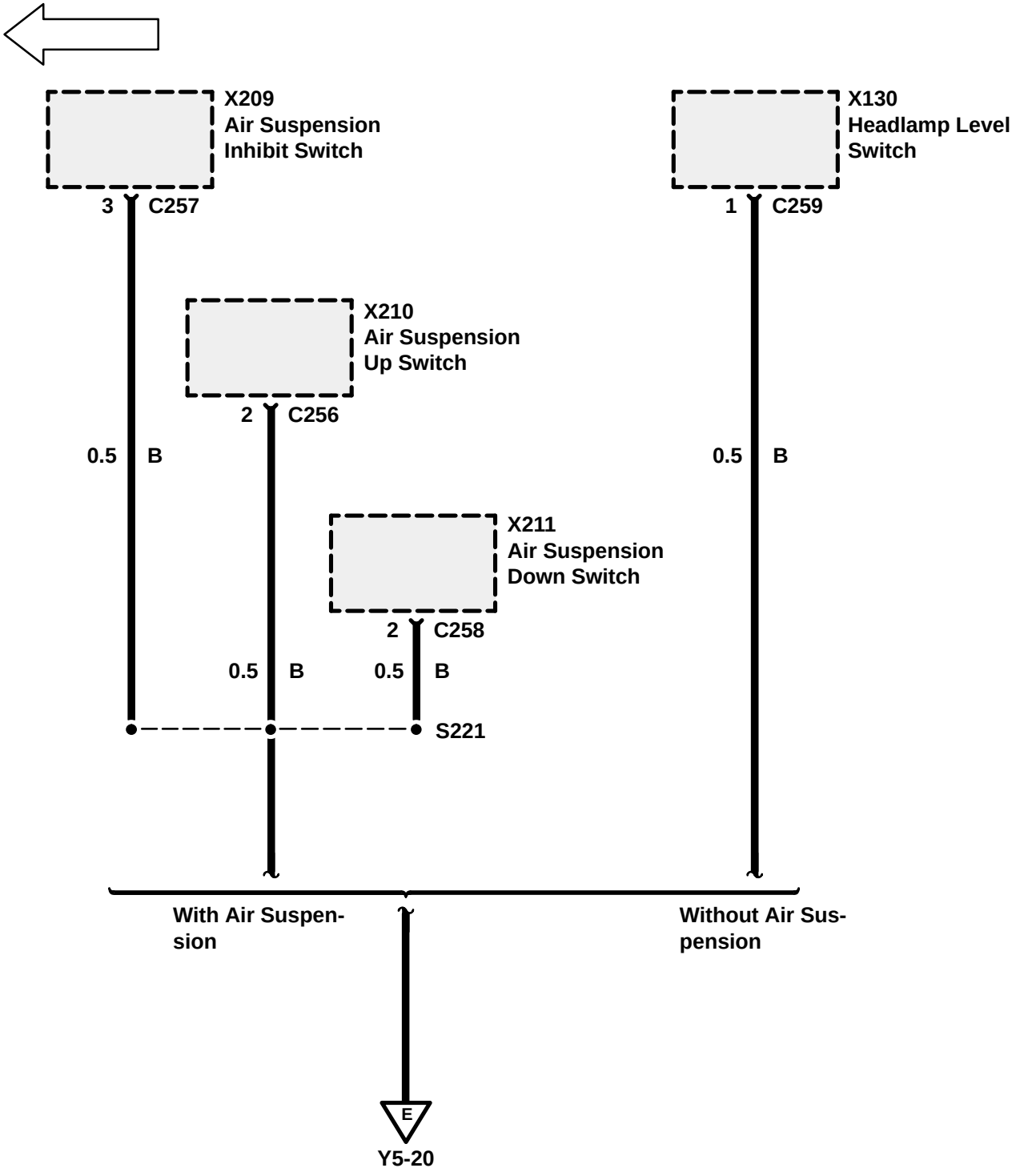
1995 RANGE ROVER

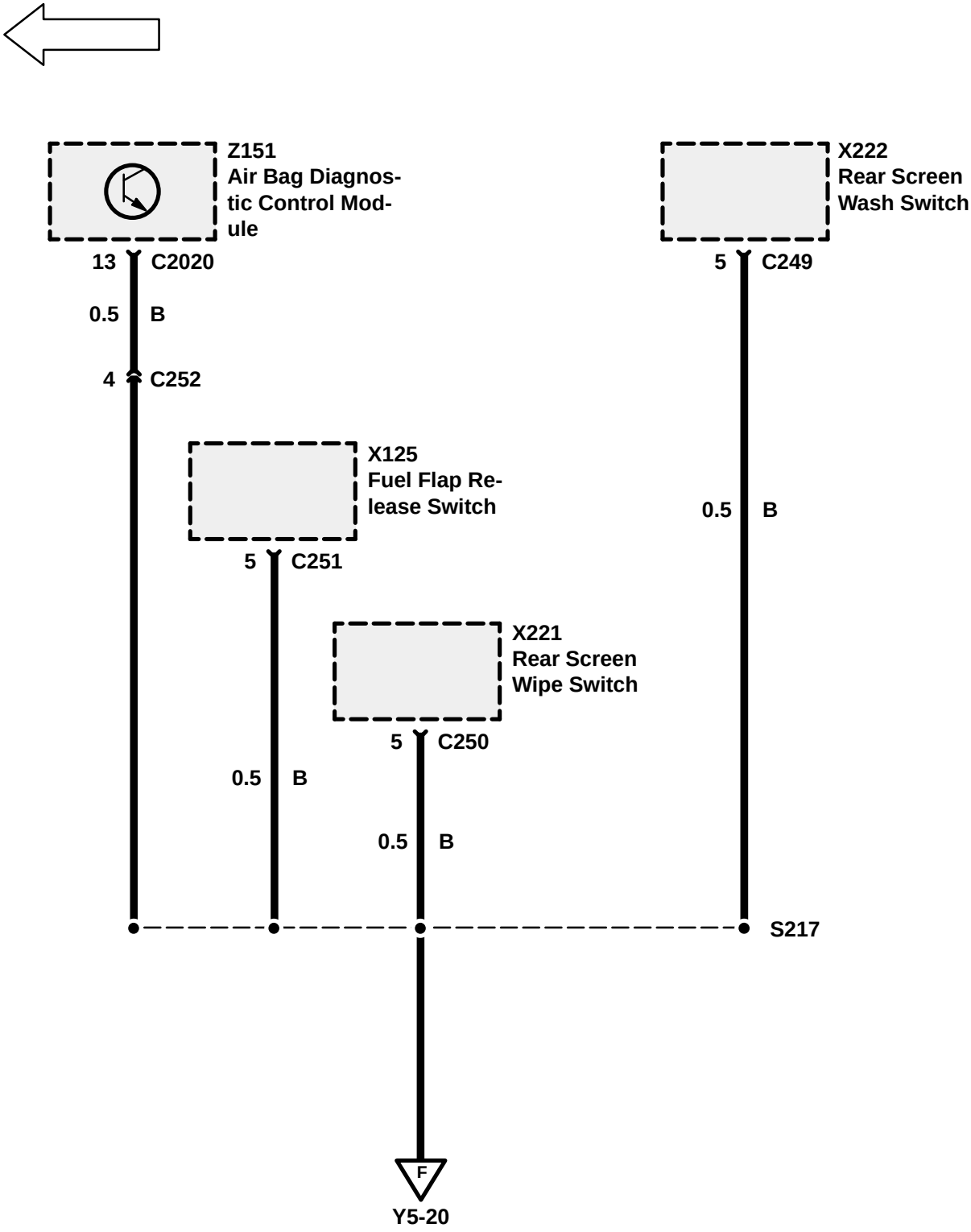



Z113
Central Locking
Control Unit
11 C289
Z122
Daytime Running
Lamps Control
Unit
87 C2047
Except NAS
NAS
Z148
Multi–Function
Unit (MFU)
6 C205
K127
Ignition Load
Relay
86
86 C2007
0.5 BS
Persian Gulf
1 C2039
0.5 B
2 C2039
0.5 B
Persian Gulf
0.5 B
Y5-16
D
2.0 B
0.5 B
X120
Driver's Seat
Buckle Switch
SB
2 C378
0.5 B
S204
HJ10
2.0 B
C2028
E200
Partial

Y5 ETM

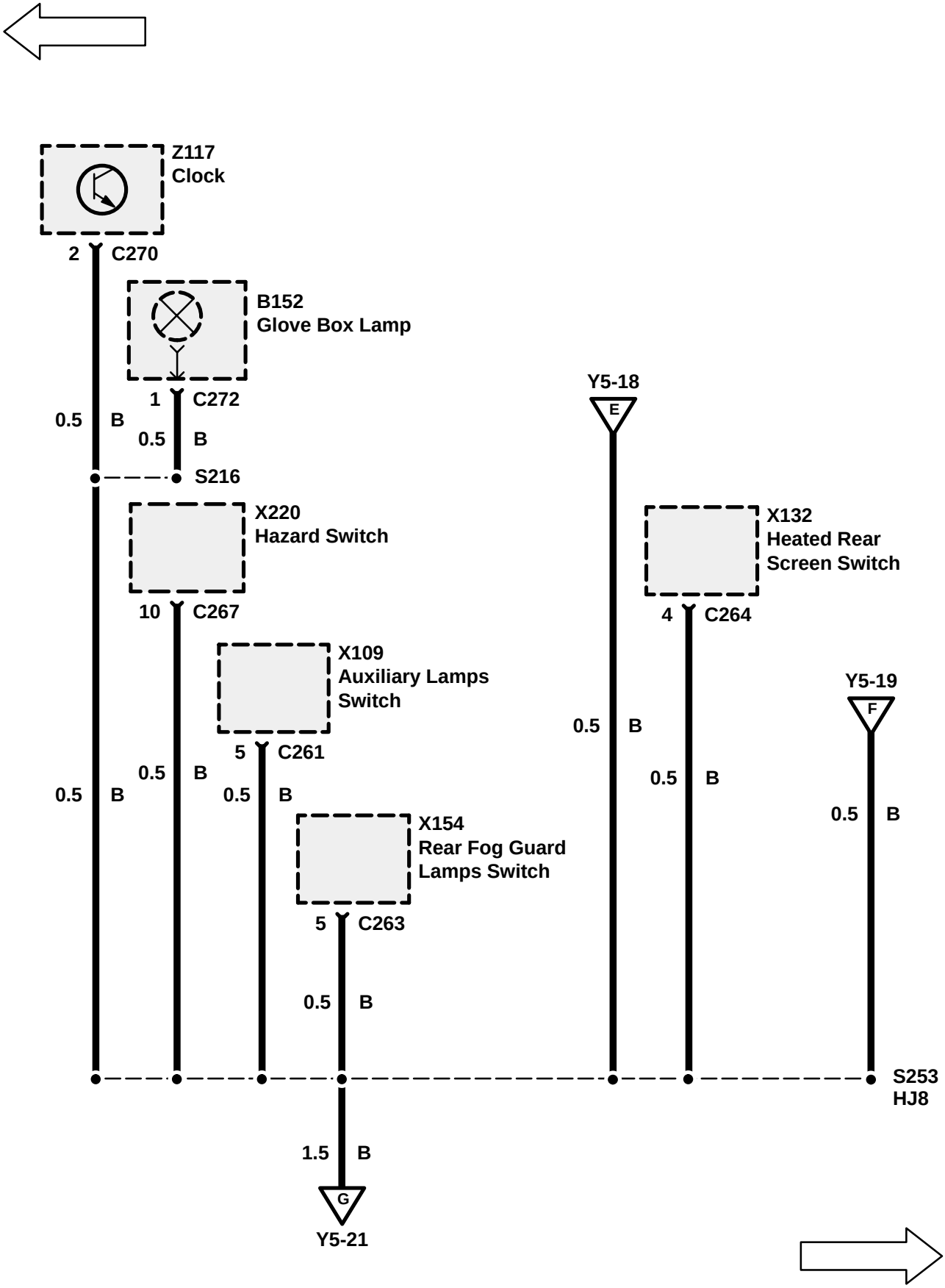
1995 RANGE ROVER

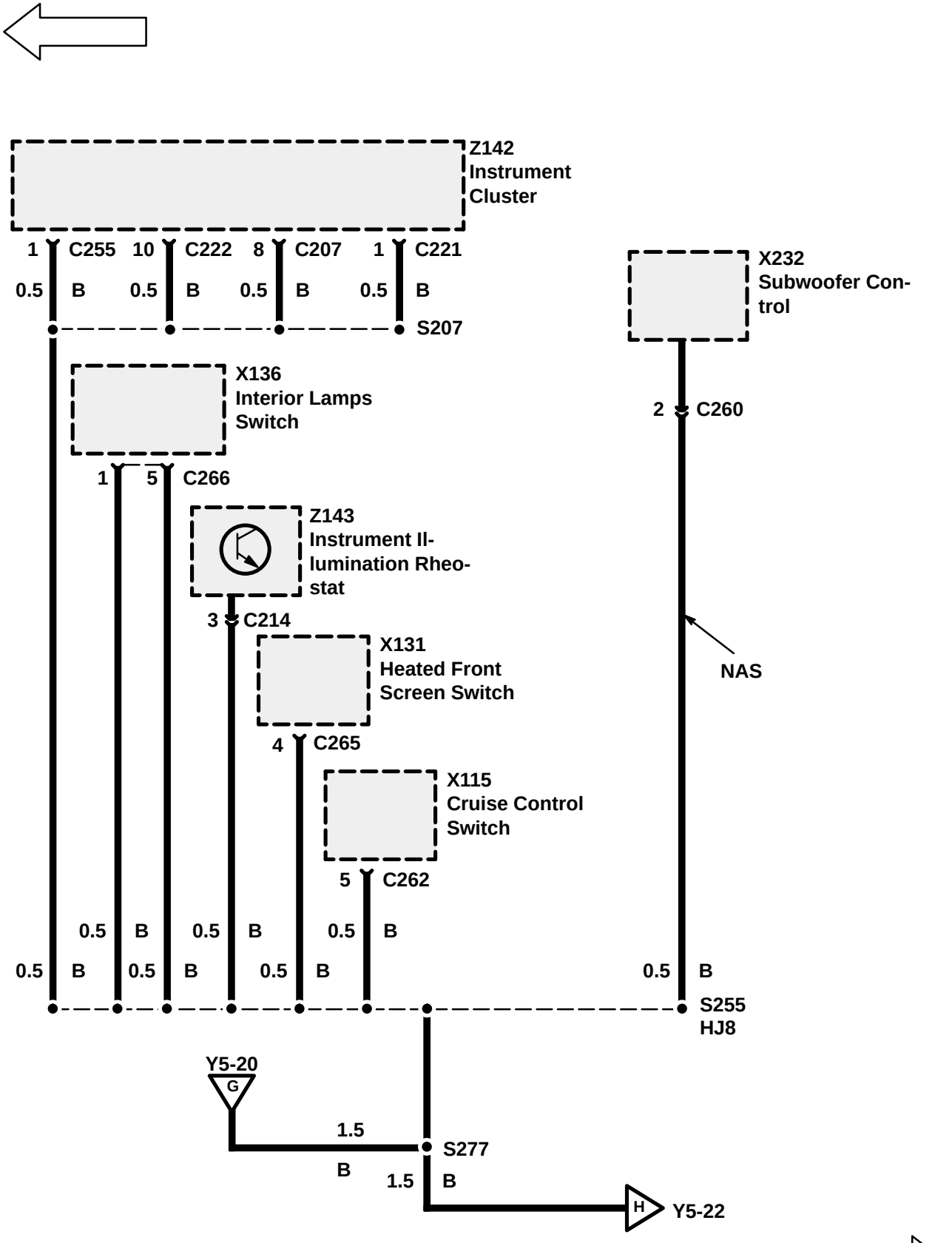



Z151
Air Bag Diagnostic Control Module
13
C2020
0.5
B
4
C252
X125
Fuel Flap Release Switch
5
C251
0.5
B
X221
Rear Screen Wipe Switch
5
C250
0.5
B
X222
Rear Screen Wash Switch
5
C249
0.5
B
S217
F
Y5-20

Y5 ETM

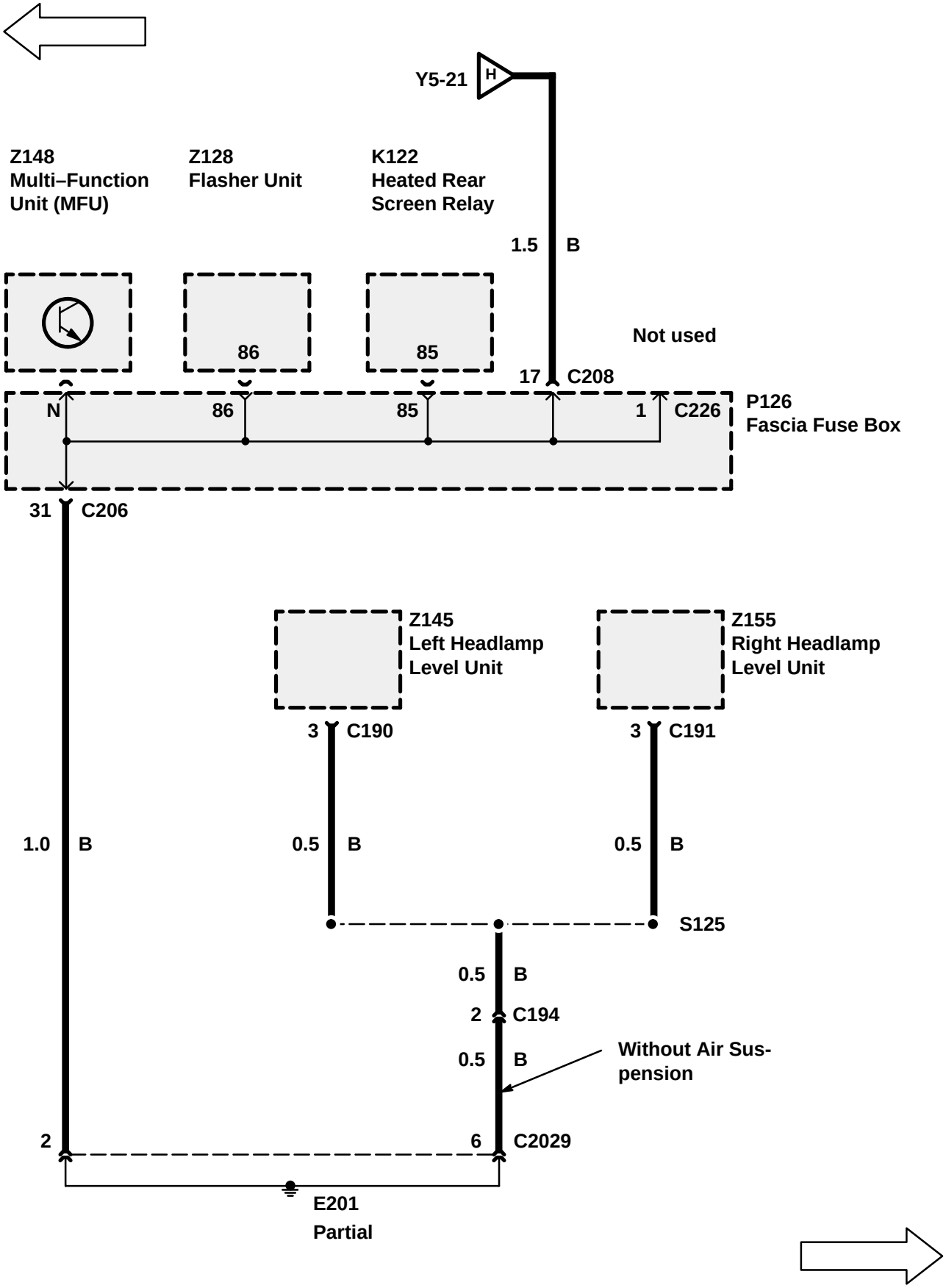
1995 RANGE ROVER

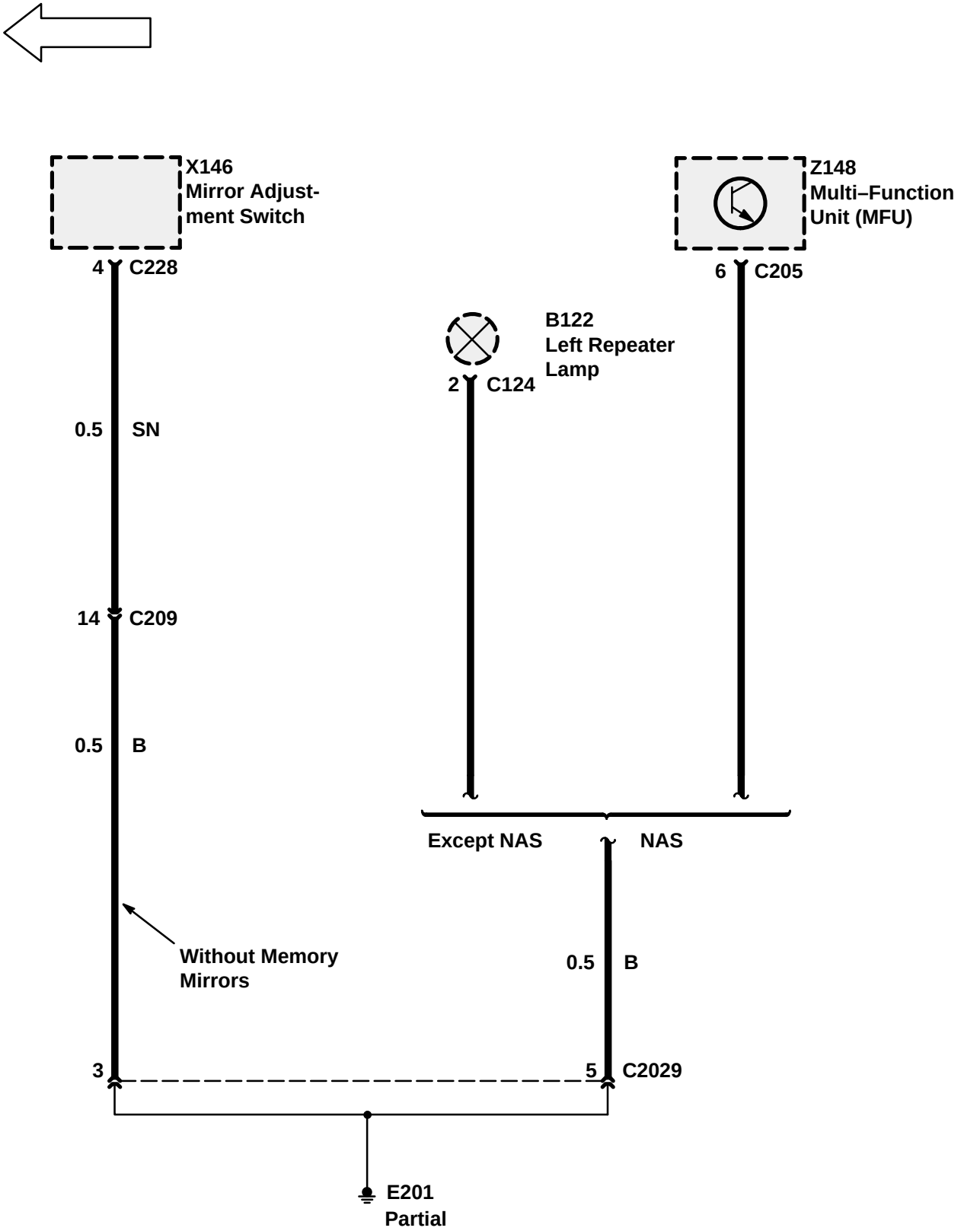



Z142
Instrument
Cluster
1 C255 10 C222 8 C207 1 C221
0.5 B 0.5 B 0.5 B 0.5 B
S207
X232
Subwoofer Con-
trol
X136
Interior Lamps
Switch
2 C260
1 5 C266
Z143
Instrument Il-
lumination Rheo-
stat
3 C214
X131
Heated Front
Screen Switch
NAS
4 C265
X115
Cruise Control
Switch
5 C262
0.5 B 0.5 B 0.5 B
0.5 B 0.5 B 0.5 B 0.5 B
S255
HJ8
Y5-20
G
1.5
B
S277
1.5 B
H
Y5-22

Y5 ETM

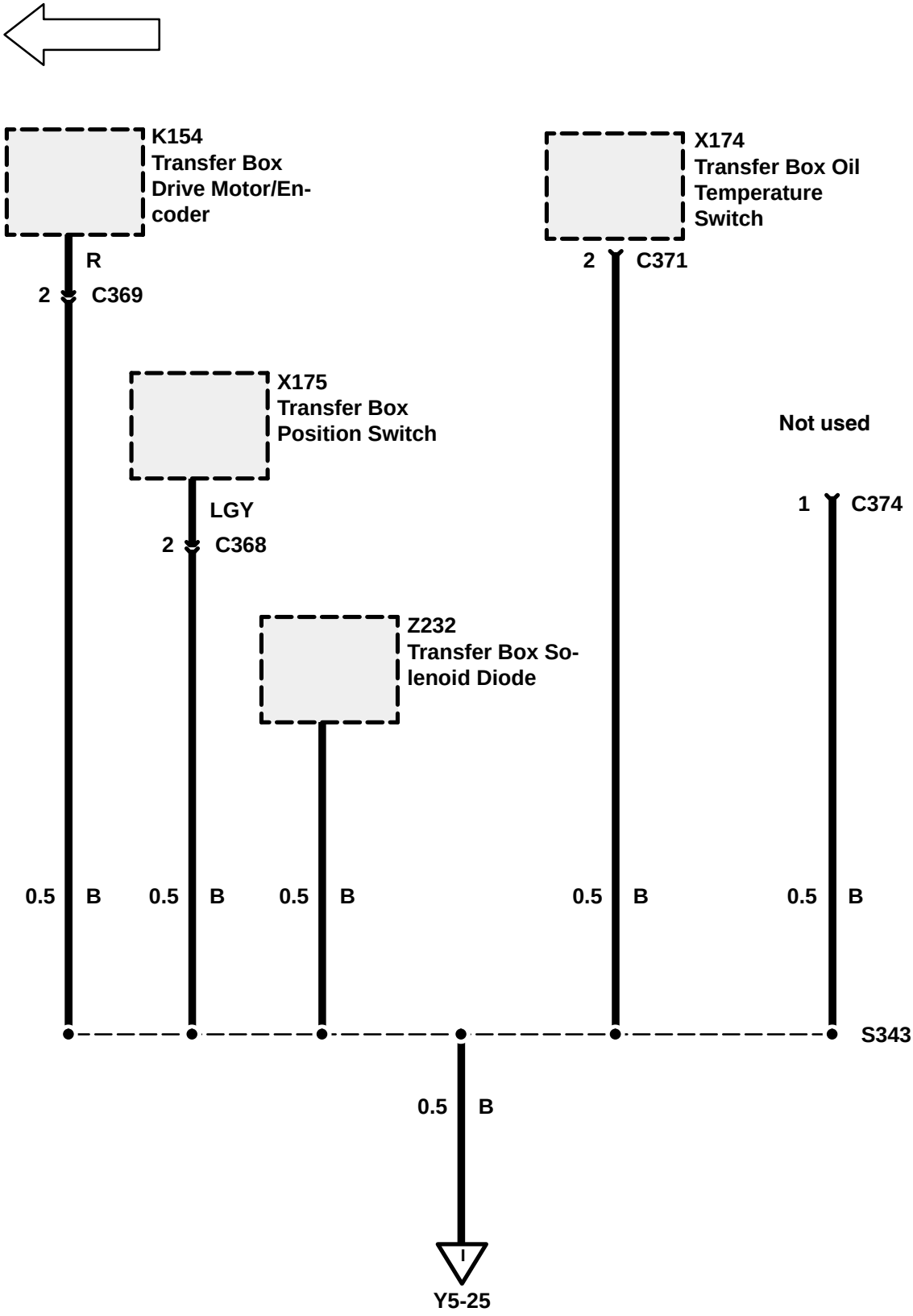
1995 RANGE ROVER

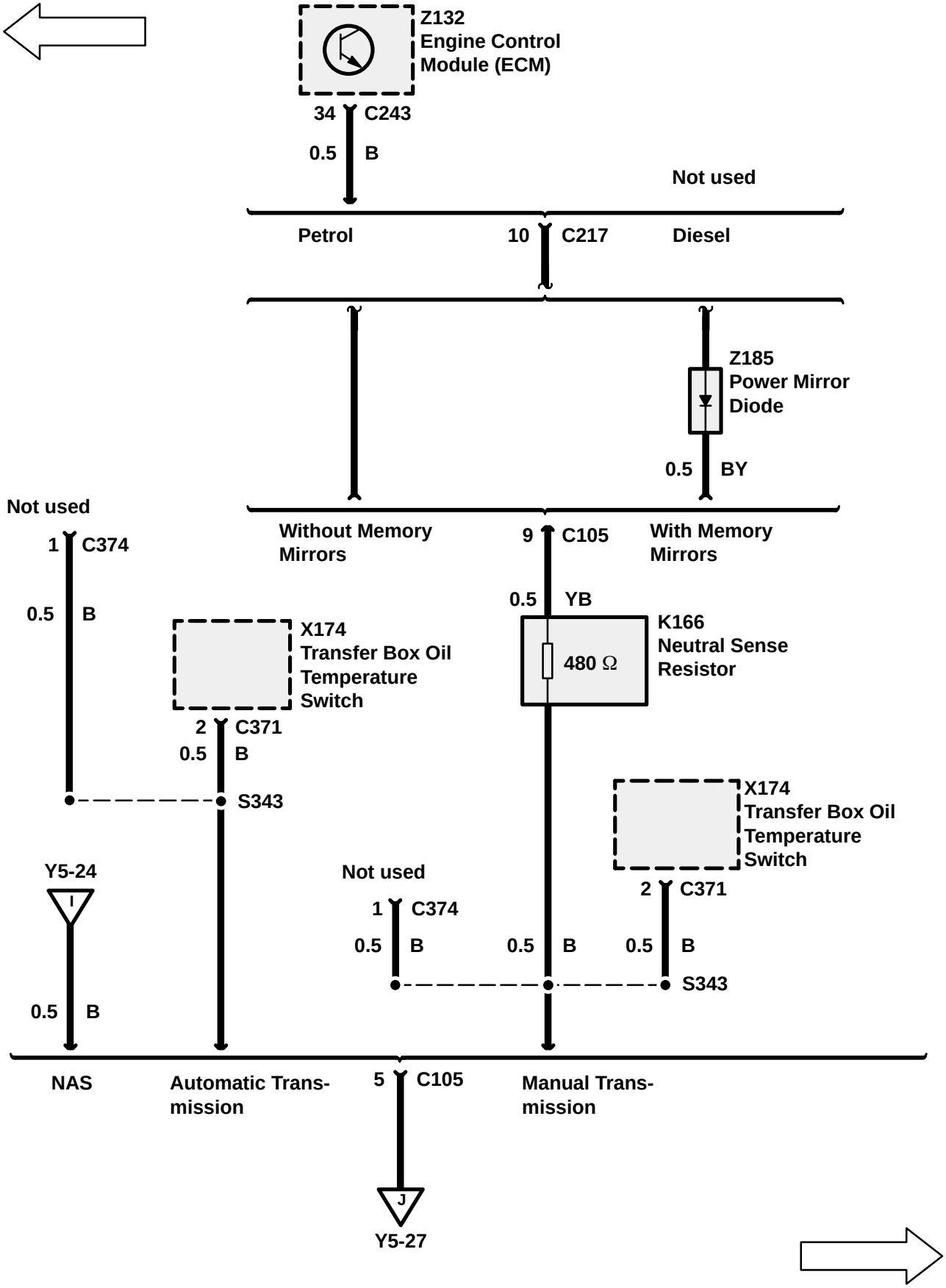



X146
Mirror Adjust-
ment Switch
4 C228
Z148
Multi–Function
Unit (MFU)
6 C205
B122
Left Repeater
Lamp
2 C124
0.5 SN
14 C209
0.5 B
Except NAS
NAS
Without Memory
Mirrors
0.5 B
3
5 C2029
E201
Partial

Y5 ETM

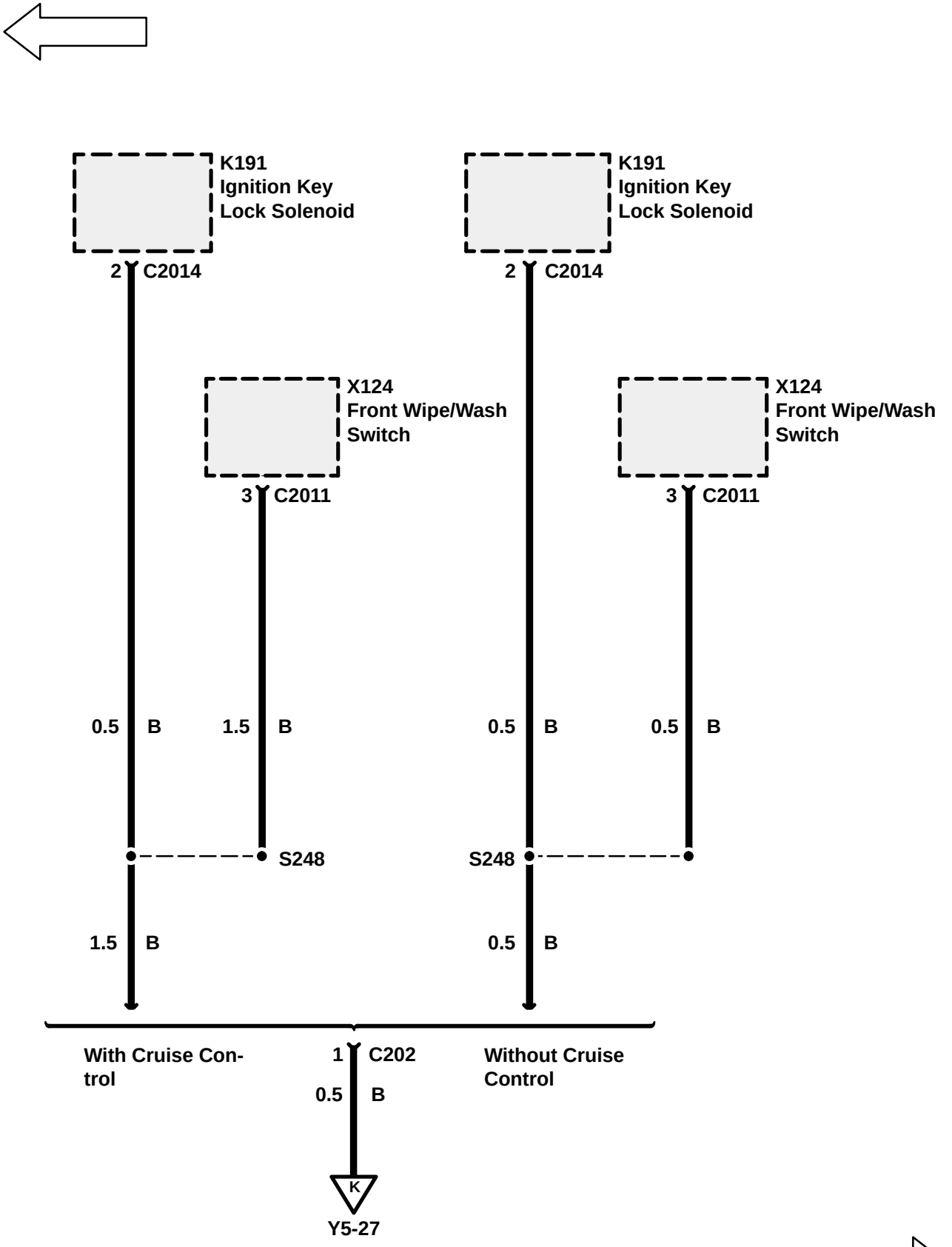
1995 RANGE ROVER

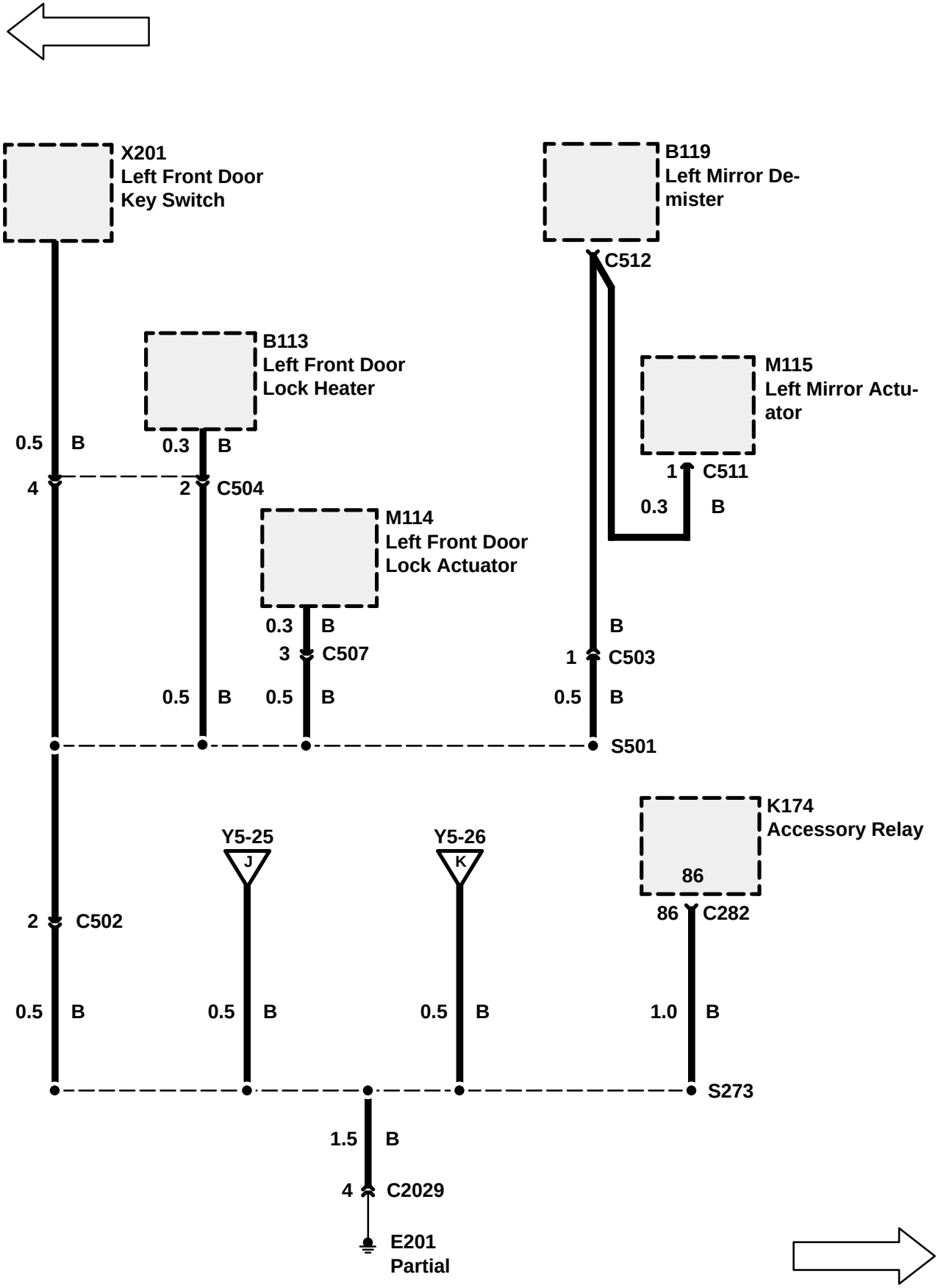



Z132
Engine Control
Module (ECM)
34 C243
0.5 B
Not used
Petrol
10 C217
Diesel
Z185
Power Mirror
Diode
0.5 BY
Not used
1 C374
0.5 B
Without Memory
Mirrors
9 C105
With Memory
Mirrors
0.5 YB
X174
Transfer Box Oil
Temperature
Switch
K166
Neutral Sense
Resistor
480 Ω
2 C371
0.5 B
S343
X174
Transfer Box Oil
Temperature
Switch
Y5-24
I
Not used
1 C374
0.5 B
2 C371
0.5 B
0.5 B
0.5 B
S343
0.5 B
NAS
Automatic Trans-
mission
5 C105
Manual Trans-
mission
J
Y5-27

Y5 ETM

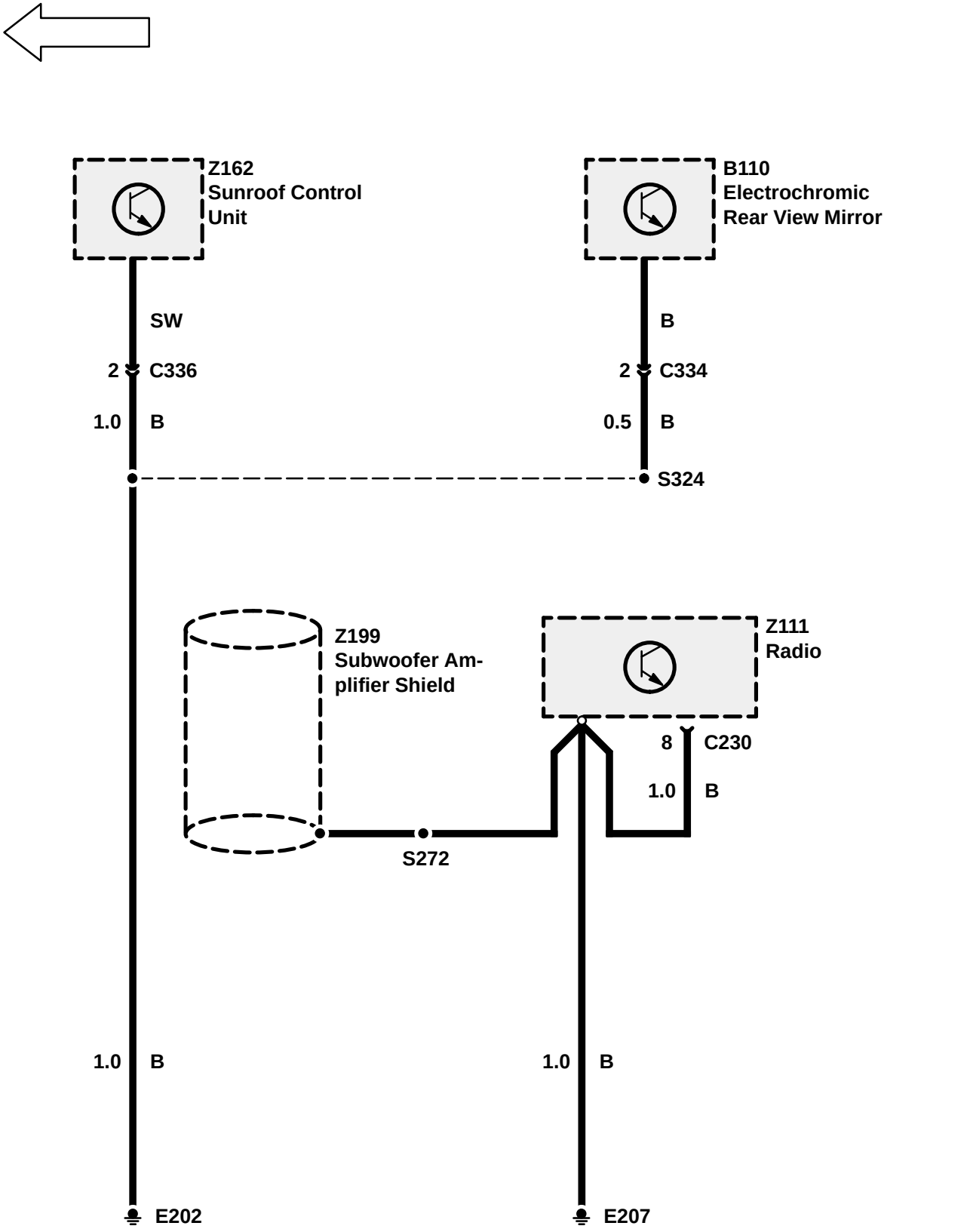
1995 RANGE ROVER

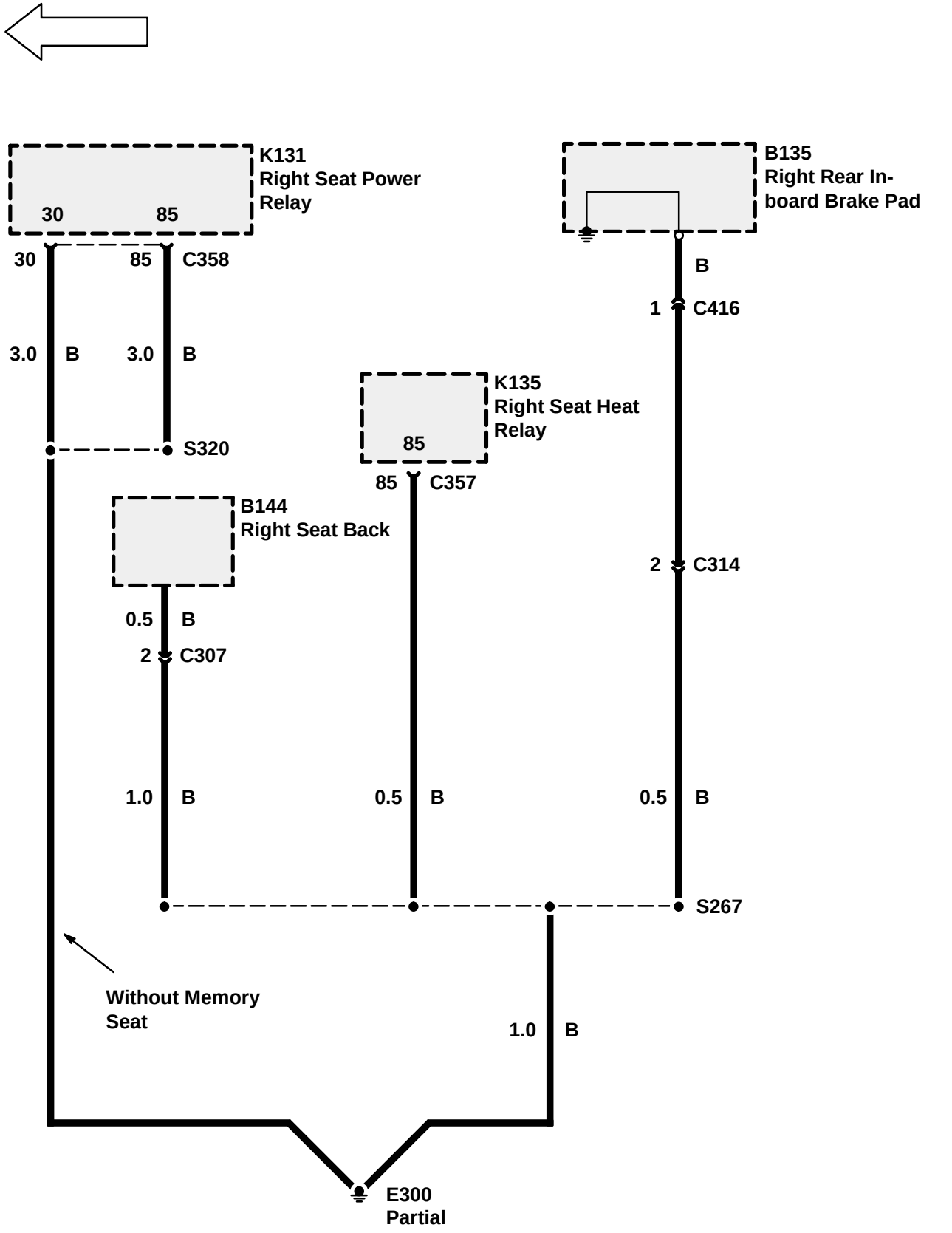



X201
Left Front Door
Key Switch
B119
Left Mirror De-
mister
C512
B113
Left Front Door
Lock Heater
M115
Left Mirror Actu-
ator
0.5 B
4
0.3 B
2 C504
1 C511
0.3 B
M114
Left Front Door
Lock Actuator
0.3 B
3 C507
B
1 C503
0.5 B
0.5 B
0.5 B
S501
K174
Accessory Relay
Y5-25
J
Y5-26
K
86
86 C282
2 C502
0.5 B
0.5 B
0.5 B
1.0 B
S273
1.5 B
4 C2029
E201
Partial

Y5 ETM

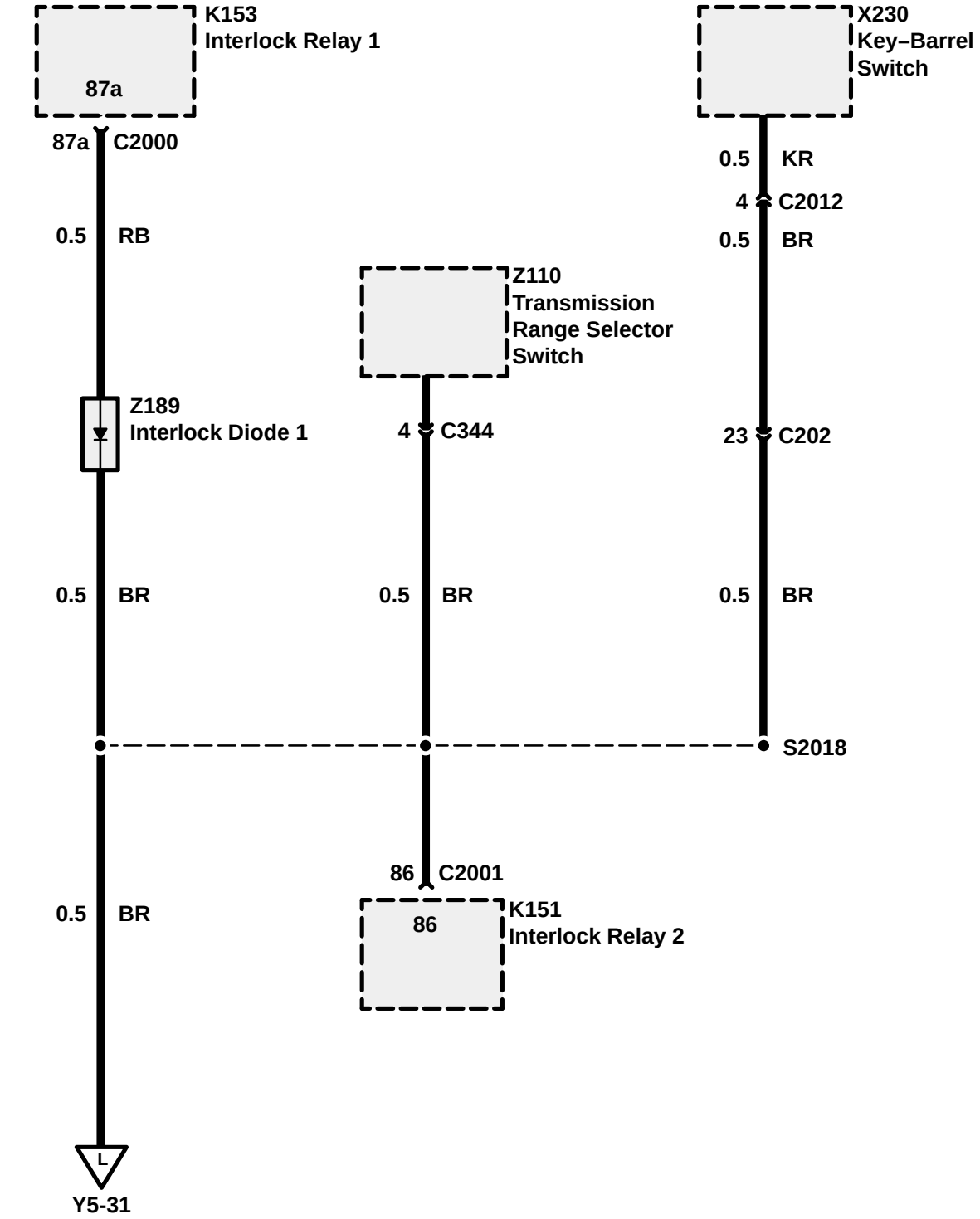
1995 RANGE ROVER

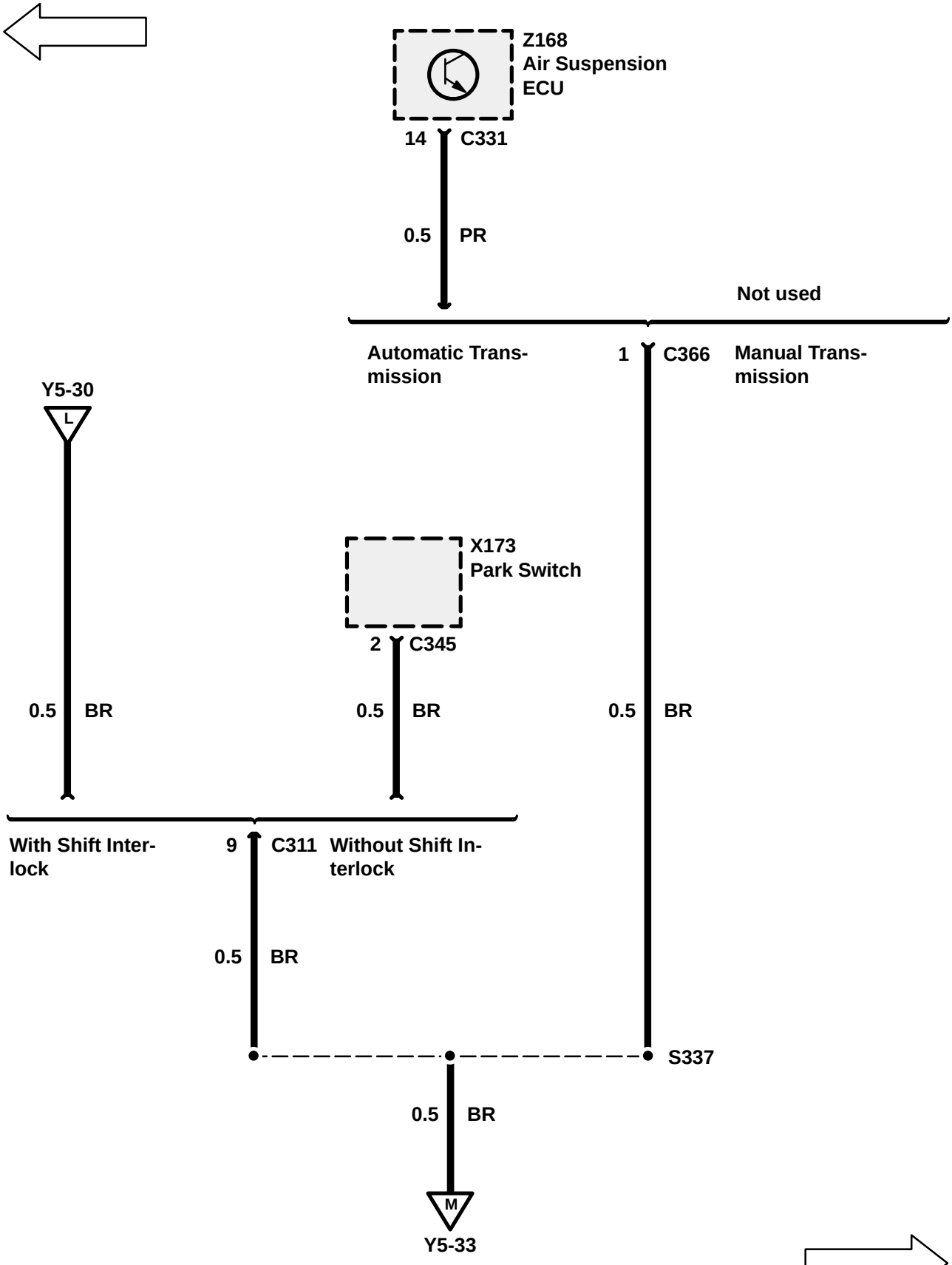



K131
Right Seat Power Relay
30
85
30
85
C358
3.0
B
3.0
B
S320
B144
Right Seat Back
0.5
B
2
C307
1.0
B
K135
Right Seat Heat Relay
85
85
C357
0.5
B
B135
Right Rear In-board Brake Pad
B
1
C416
2
C314
0.5
B
S267
Without Memory Seat
1.0
B
E300
Partial

Y5 ETM

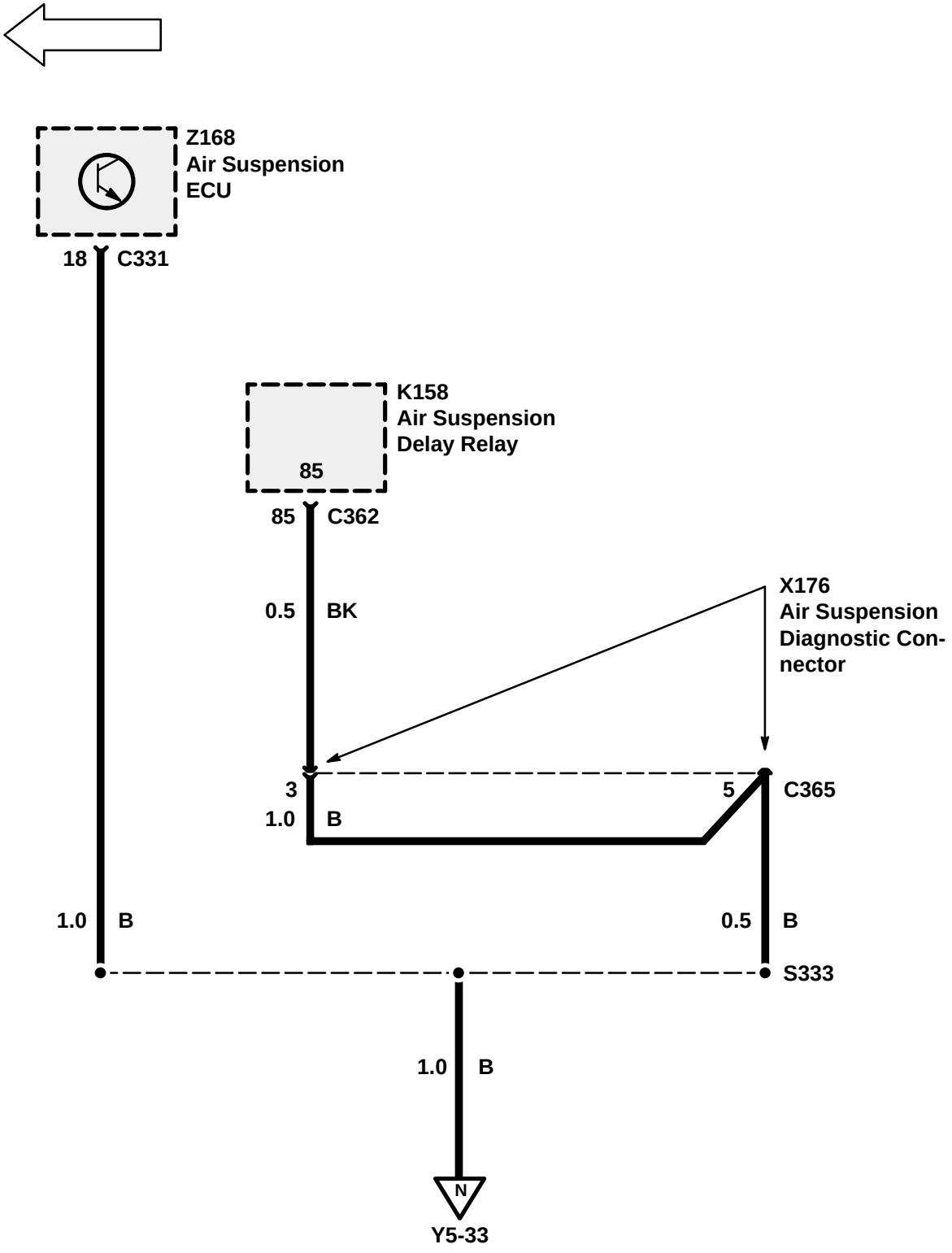
1995 RANGE ROVER

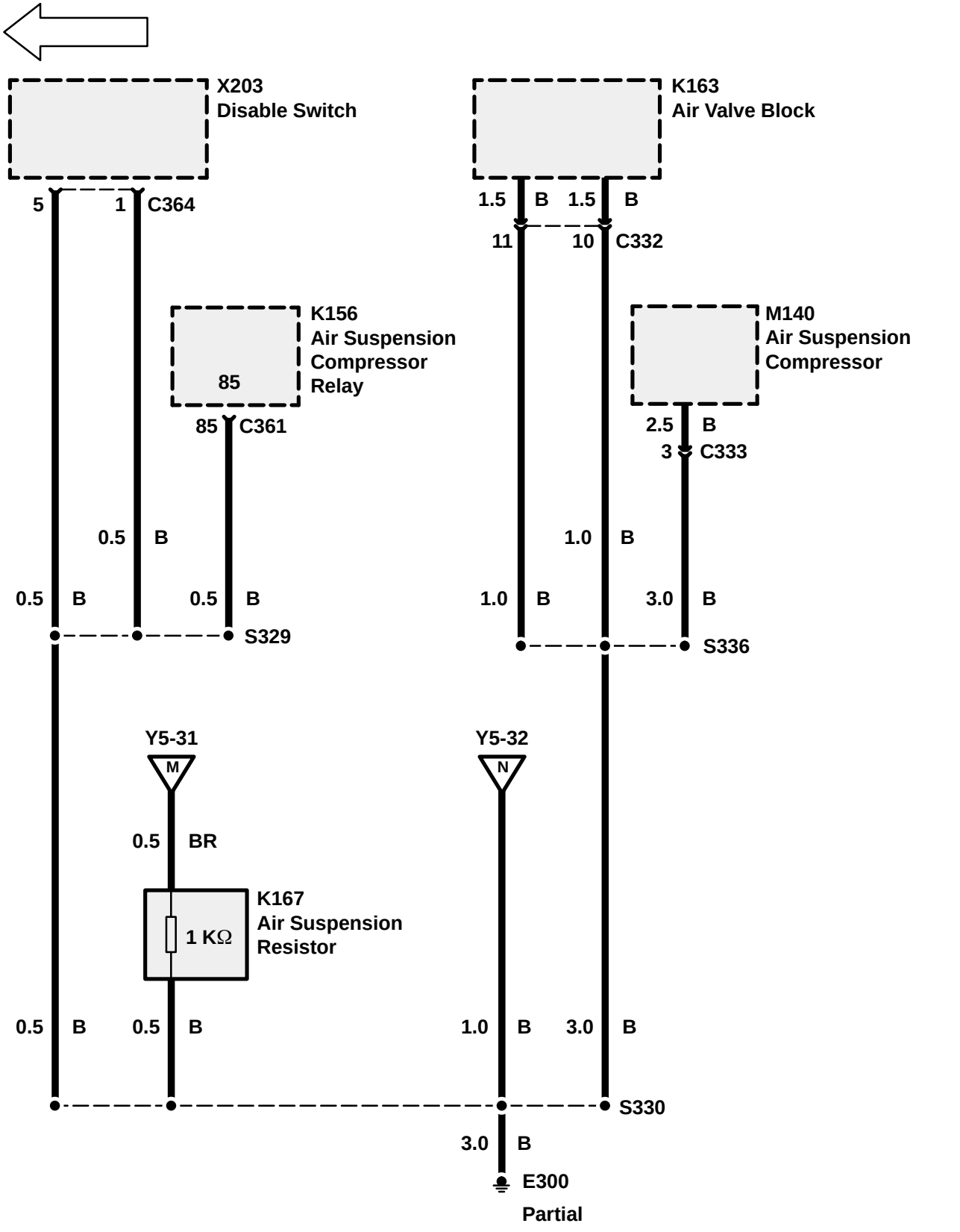



Z168
Air Suspension
ECU
14
C331
0.5
PR
Not used
Automatic Trans-
mission
1
C366
Manual Trans-
mission
Y5-30
L
X173
Park Switch
2
C345
0.5
BR
0.5
BR
0.5
BR
With Shift Inter-
lock
9
C311
Without Shift In-
terlock
0.5
BR
S337
0.5
BR
M
Y5-33

Y5 ETM

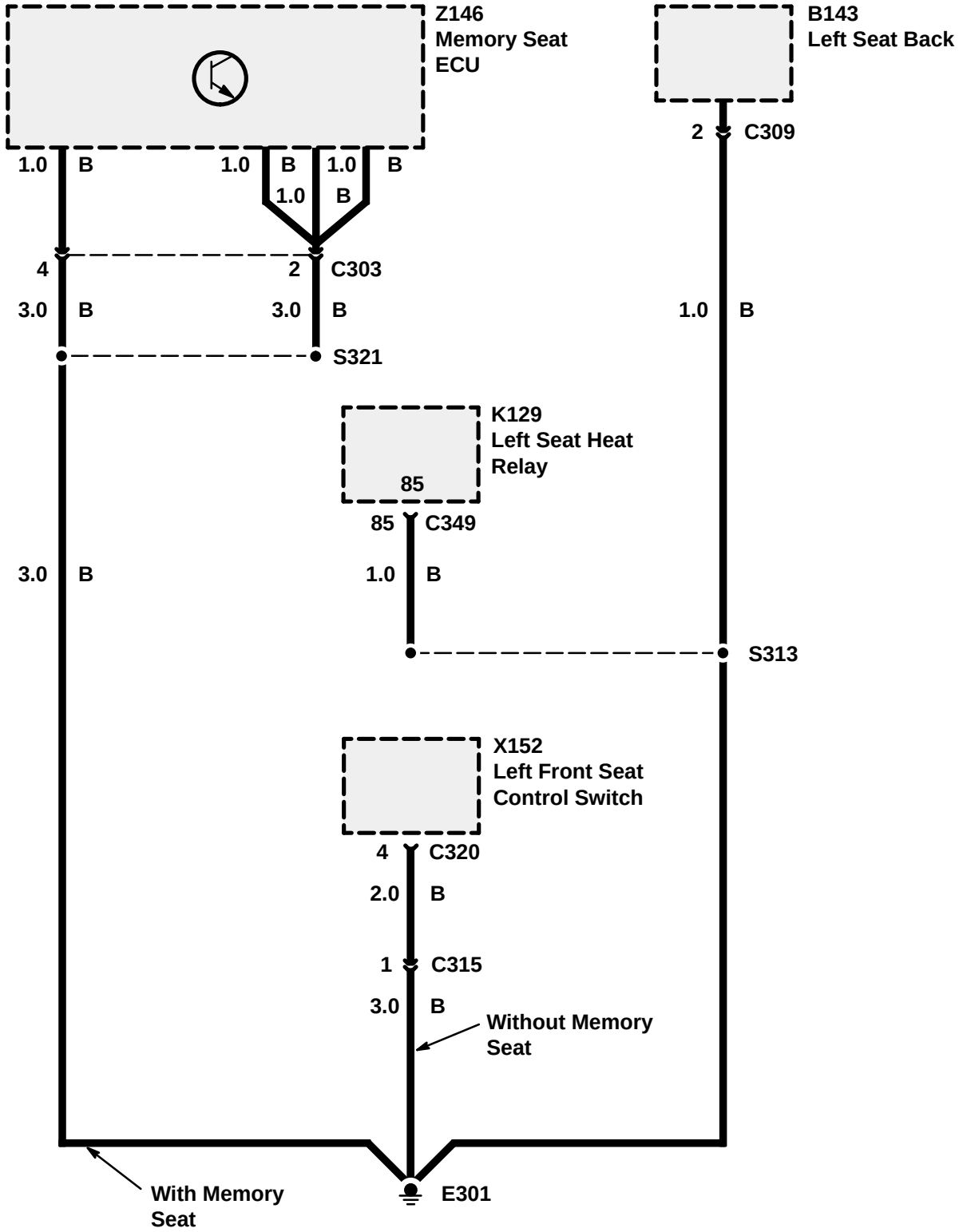
1995 RANGE ROVER

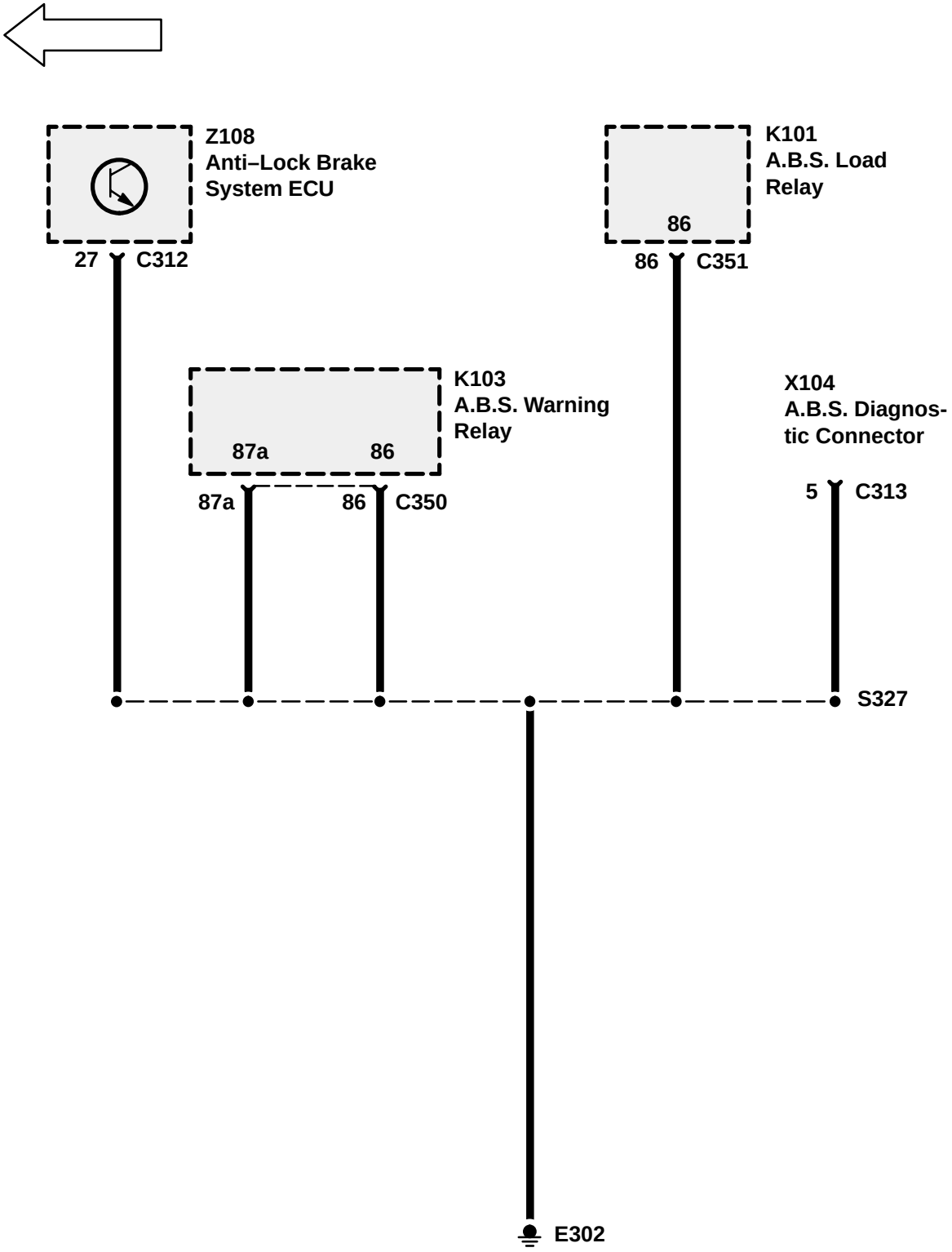



X203
Disable Switch
5
1
C364
K156
Air Suspension
Compressor
Relay
85
85
C361
0.5
B
0.5
B
0.5
B
S329
K163
Air Valve Block
1.5
B
1.5
B
11
10
C332
M140
Air Suspension
Compressor
2.5
B
3
C333
1.0
B
1.0
B
3.0
B
S336
Y5-31
M
0.5
BR
K167
Air Suspension
Resistor
1 KΩ
0.5
B
0.5
B
Y5-32
N
1.0
B
3.0
B
S330
3.0
B
E300
Partial

Y5 ETM

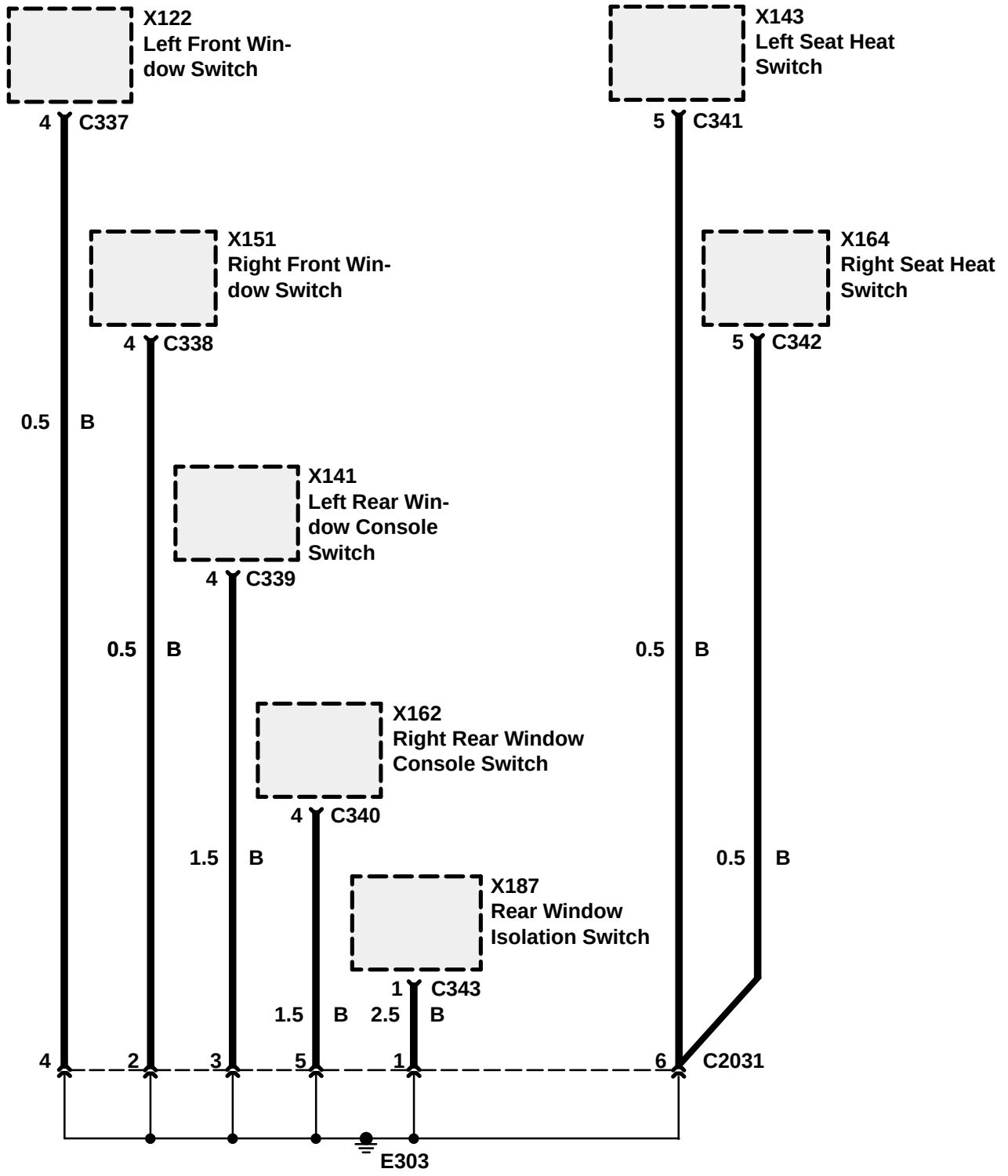
1995 RANGE ROVER

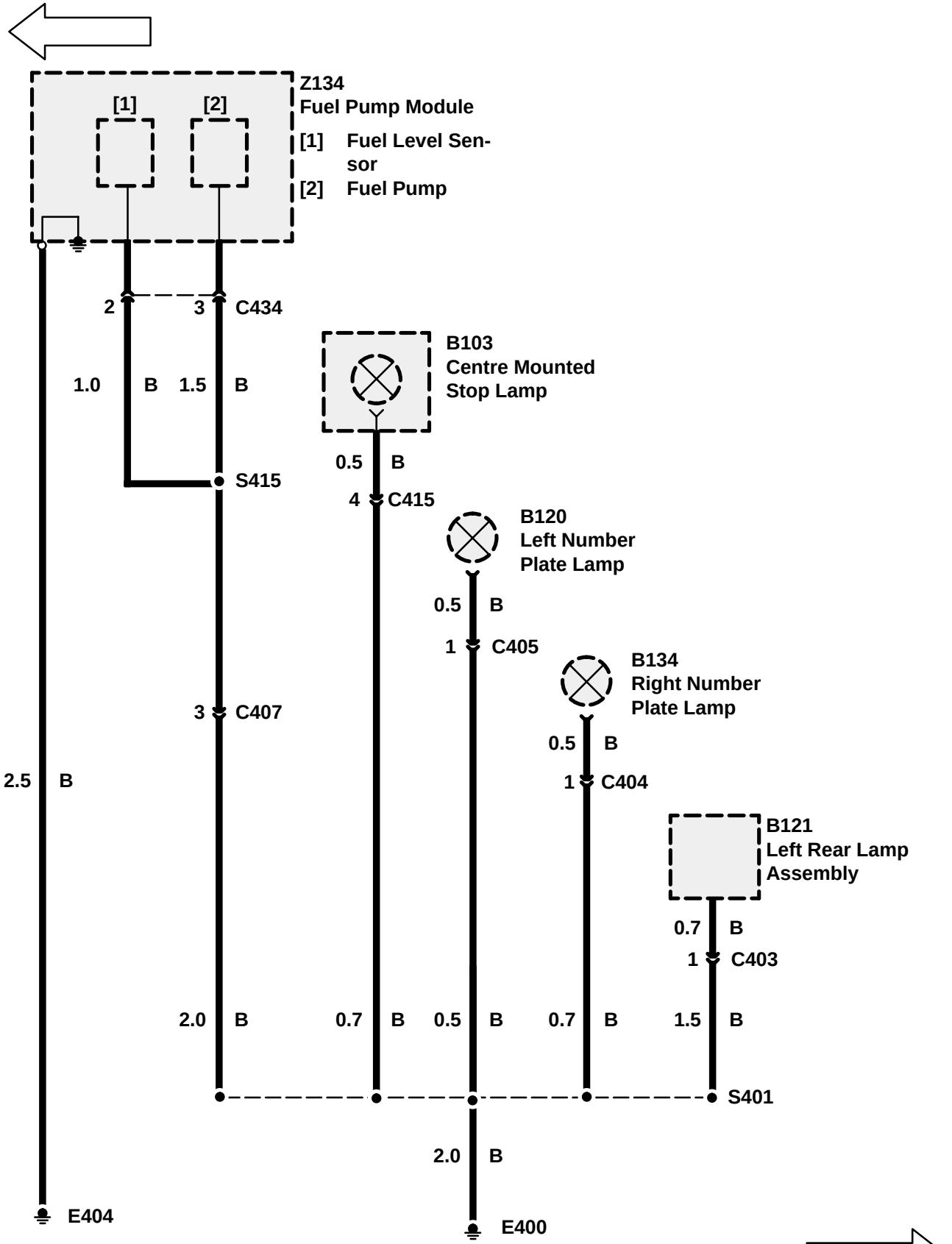



Z108
Anti–Lock Brake
System ECU
27 C312
K101
A.B.S. Load
Relay
86
86 C351
K103
A.B.S. Warning
Relay
87a 86
87a 86 C350
X104
A.B.S. Diagnos-
tic Connector
5 C313
S327
E302

Y5 ETM

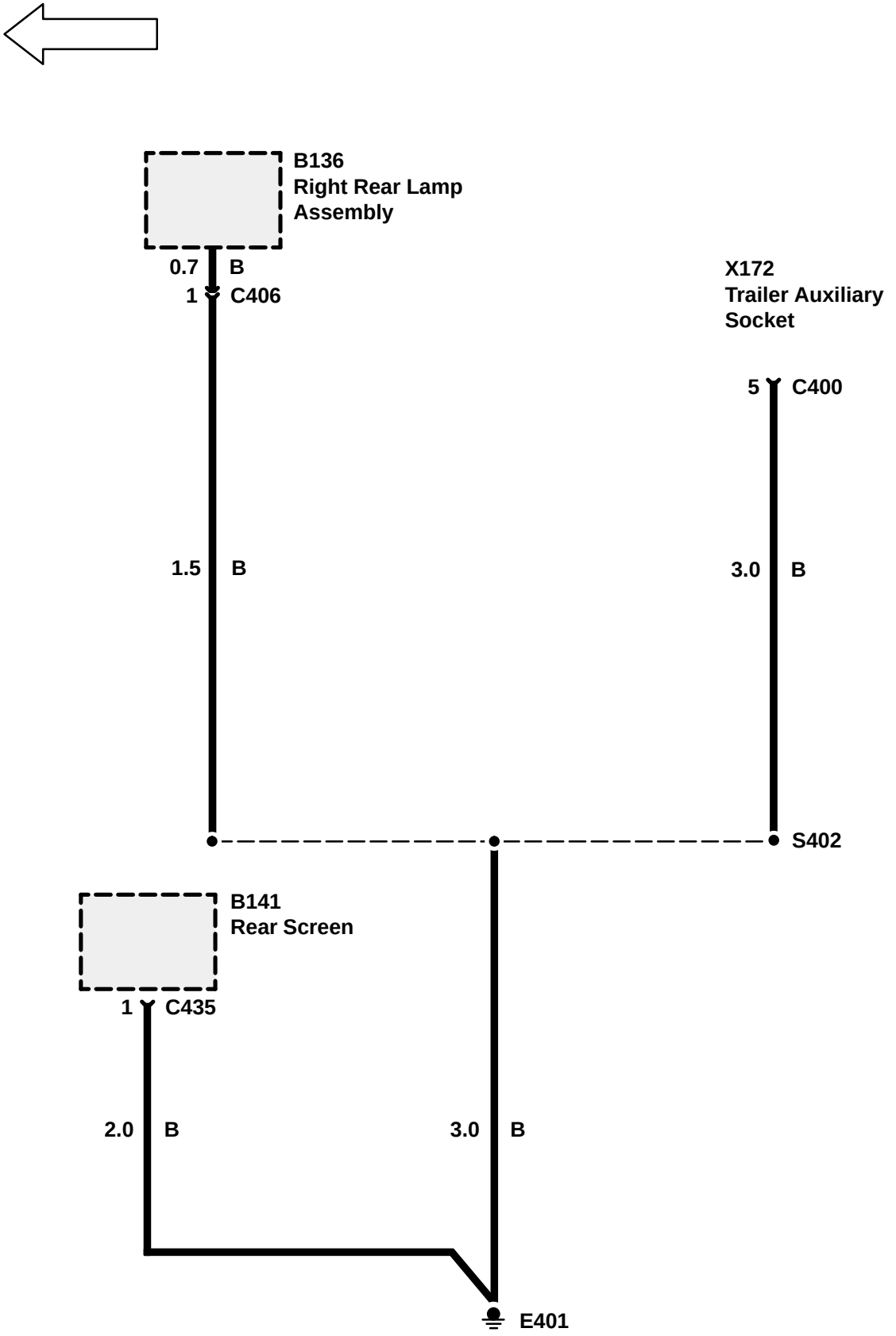
1995 RANGE ROVER

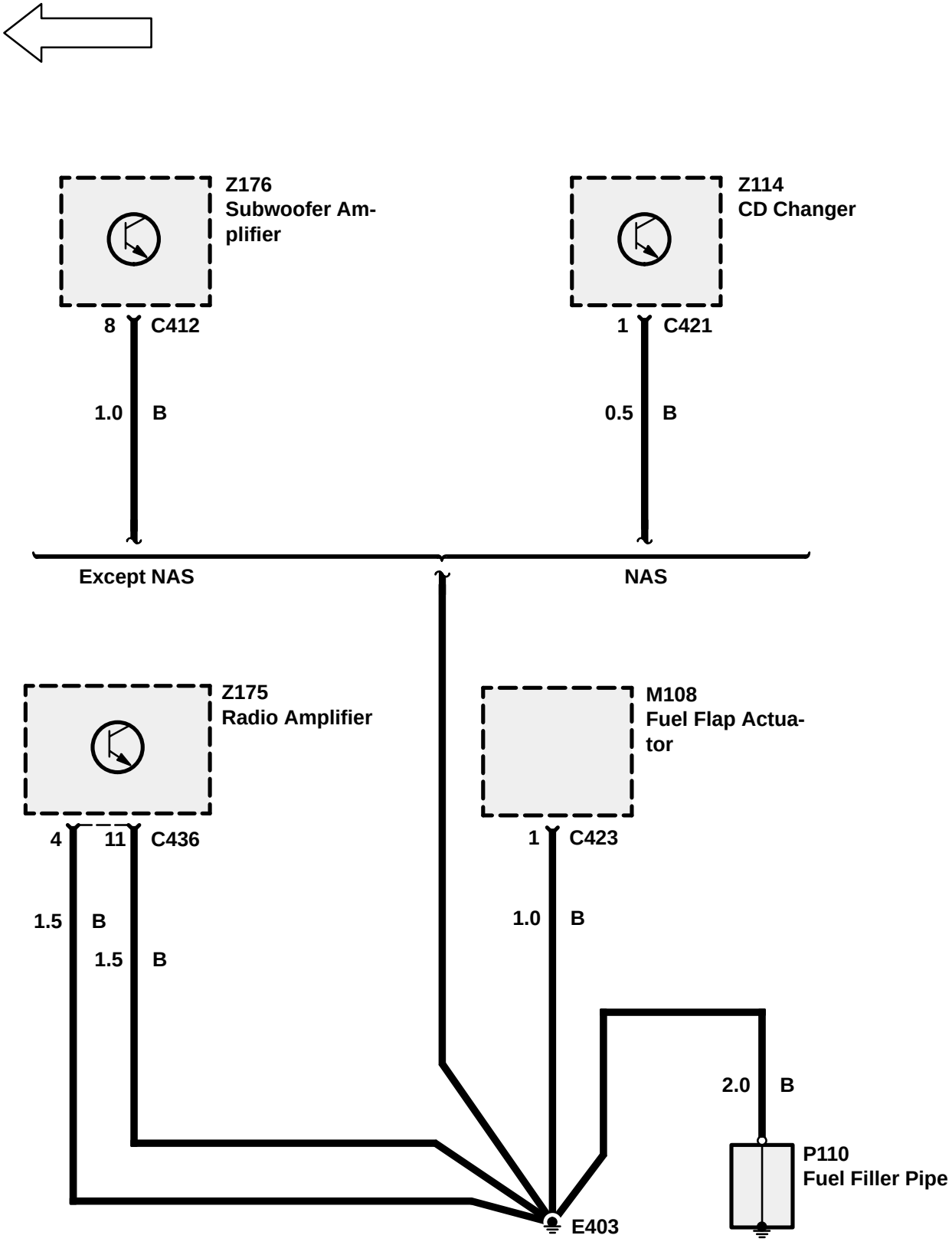



Z134
Fuel Pump Module
[1] Fuel Level Sensor
[2] Fuel Pump
[1]
[2]
2
3
C434
1.0
B
1.5
B
S415
3
C407
2.5
B
E404
B103
Centre Mounted Stop Lamp
0.5
B
4
C415
B120
Left Number Plate Lamp
0.5
B
1
C405
B134
Right Number Plate Lamp
0.5
B
1
C404
B121
Left Rear Lamp Assembly
0.7
B
1
C403
2.0
B
0.7
B
0.5
B
0.7
B
1.5
B
S401
2.0
B
E400

Y5 ETM

1995 RANGE ROVER




Z176
Subwoofer Amplifier
8
C412
1.0
B
Z114
CD Changer
1
C421
0.5
B
Except NAS
NAS
Z175
Radio Amplifier
4
11
C436
1.5
B
1.5
B
M108
Fuel Flap Actuator
1
C423
1.0
B
2.0
B
P110
Fuel Filler Pipe
E403

Component	Location	Manual	View
A.B.S. Booster Unit (Z103)	LH rear corner of engine compartment	70	6
A.B.S. Diagnostic Connector (X104)	beneath LH front seat	70	169
A.B.S. Diode (Z192)	beneath LH front seat	70	167
A.B.S. Hydraulic Pump (M102)	LH rear corner of engine compartment	70	5
A.B.S. Load Relay (K101)	beneath LH front seat	70	168
A.B.S. Pressure Switch Unit (Z104)	LH rear corner of engine compartment	70	5
A.B.S. Pump Relay (K102)	beneath LH front seat	70	168
A.B.S. Warning Relay (K103)	beneath LH front seat	70	169
Accessory Relay (K174)	behind LH footwell trim panel	86	71
A/C Dual Pressure Switch (X102)	RH rear corner of engine compartment	82	52
A/C Logic Relay (K170)	behind RH footwell trim panel	82	146
Air Bag Diagnostic Control Module (Z151)	beneath centre console	76	115
Air Recirculation Solenoid In–Line Fuse (P138)	behind RH side of fascia	82	126
Air Recirculation Solenoid (K123)	behind RH side of fascia LH side of heater evaporator unit	82	120
Air Supply Selector Diode (Z208)	behind LH side of fascia LH side of heater evaporator unit	82	94
Air Supply Selector Switch (X180)	centre of fascia	82	106
Air Suspension Compressor (M140)	beneath RH side of vehicle	68	198
Air Suspension Compressor Relay (K156)	beneath RH front seat	68	182
Air Suspension Delay Relay (K158)	beneath RH front seat	68	181
Air Suspension Diagnostic Connector (Z167)	beneath RH front seat	68	180
Air Suspension Disable Diode (Z187)	beneath RH front seat	68	184
Air Suspension Down Switch (X211)	centre of fascia	86	102
Air Suspension ECU (Z165)	beneath RH front seat	68	184
Air Suspension Indicator Diode (Z188)	beneath RH front seat	68	180
Air Suspension Inhibit Switch (X209)	centre of fascia	86	101
Air Suspension In–Line Maxi–Fuse (P122)	beneath RH front seat	68	181

Z4 ETM

1995 RANGE ROVER

Component	Location	Manual	View
Air Suspension Resistor (K167)	beneath RH front seat	68	184
Air Suspension Up Switch (X210)	centre of fascia	86	102
Air Valve Block (K163)	beneath RH side of vehicle	68	198
Alarm Bonnet Switch (X212)	RH rear corner of engine compartment	86	51
Alarm Sensor (X213)	front centre of roof	86	116
Anti–Lock Brake System ECU (Z108)	beneath LH front seat	70	167
Automatic Transmission Oil Temperature Switch (X108)	lower LH front of engine compartment	86	33
Auxiliary Lamps Relay (K105)	behind RH side of fascia on bracket	86	139
Auxiliary Lamps Switch (X109)	centre of fascia	86	98
Blower Motor Relay (K188)	behind RH side of fascia	82	120
Blower Resistor Unit (Z112)	behind RH side of fascia LH side of heater evaporator unit	80	119
Bonnet Switch (X110)	LH rear corner of engine compartment	86	2
Brake Fluid Level Switch (X111)	LH rear corner of engine compartment	70	4
Brake Switch Vent Valve (X112)	behind LH side of fascia on brake pedal support	19	
Bulb Check Relay (K173)	behind RH side of fascia on bracket	86	141
CD Changer (Z114)	RH rear of luggage compartment	86	
Central Locking Control Unit (Z113)	behind RH side of fascia on bracket	86	131
Clock (Z117)	centre of fascia	86	97
Clutch Pedal Position Switch (X200)	behind LH side of fascia near steering column	86	
Column Switch Illumination (B104)	top of steering column on Ignition Switch	86	84
Compressor Clutch (K107) Diesel	RH side of engine on front of A/C compressor	82	38
Compressor Clutch (K107) Petrol	RH side of engine on front of A/C compressor	82	46
Compressor Clutch Cut–out Switch (X259)	RH front of engine	82	39
Compressor Clutch Relay (K108)	behind RH footwell trim panel	82	143
Condenser Fan Control Diode 1 (Z209)	behind RH side of fascia	82	
Condenser Fan Control Diode 2 (Z210)	behind RH side of fascia	82	125

Component	Location	Manual	View
Condenser Fan Coolant Temperature Switch (X113) Diesel	RH front of engine	82	40
Condenser Fan Coolant Temperature Switch (X113) Petrol	top centre front of engine	82	23
Condenser Fan Relay (K109)	behind RH side of fascia on bracket	86	141
Cruise Control Diode (Z186)	behind RH side of fascia	19	138
Cruise Control ECU (Z121)	behind RH side of fascia on bracket	19	
Cruise Control Lockout Relay (K110)	behind RH side of fascia on bracket	19	137
Cruise Control Switch (X115)	centre of fascia	19	99
Cruise Control Vacuum Pump (M103)	LH front corner of engine compartment	19	20
Data Link Connector (EGR) (X219) Diesel	behind RH side of fascia	19	122
Data Link Connectors (X127) Petrol	behind RH side of fascia	19	123
Daytime Running Lamps Control Unit (Z122)	behind RH side of fascia on bracket	86	
Daytime Running Lamps Diode (Z200)	behind RH side of fascia near Daytime Running Lamps Control Unit	86	
Direction Indicator Diode 1 (Z212)	behind instrument cluster	86	89
Direction Indicator Diode 2 (Z213)	behind instrument cluster	86	89
Direction Indicator Switch (X116)	top of steering column	86	85
Disable Switch (X203)	beneath RH front seat	68	183
Distributor (Z125)	top centre front of engine	86	23
Driver's Underseat Fuse Box (P108)	beneath LH front seat	86	
EGR Control Solenoid (K171)	LH front corner of engine compartment	19	18
EGR Valve Control Module (Z149)	behind RH side of fascia	19	132
EGR Valve Position Sensor (X218)	LH side of engine	19	12
Engine Compartment Fuse Box (P125)	RH front of engine compartment	86	34
Engine Control Load Relay (K116)	behind RH footwell trim panel	19	148
Engine Control Module (ECM) (Z132)	behind RH side of fascia	19	132
Engine Coolant Temperature Gauge Sensor (X114) Diesel	RH front of engine	86	39

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Component	Location	Manual	View
Engine Coolant Temperature Gauge Sensor (X114) Petrol	top centre front of engine on intake manifold	86	14
Engine Coolant Temperature Sensor (X126) Diesel	top centre front of engine	19	24
Engine Coolant Temperature Sensor (X126) Petrol	top centre front of engine on intake manifold	19	14
Engine Fuel Temperature Sensor (X128)	top centre front of engine	19	13
ETC Valve Block (K162)	LH rear corner of engine compartment	70	6
Evaporative Emission Canister Purge Valve (K132)	RH side of engine compartment	17	50
Fan Control Module (Z118)	behind RH footwell trim panel	82	147
Fan Speed Switch (X179)	centre of fascia	82	105
Fan Timer Diode (Z211)	behind RH side of fascia	82	
Fascia Cigar Lighter (B106)	in front of centre console	86	97
Fascia Fuse Box (P126)	behind LH side of fascia left of steering column	86	72
Flasher Unit (Z128)	behind LH side of fascia on Fascia Fuse Box	86	73
Fore–Aft Sensor (X196)	underside of LH front seat	86	178
Front A/C Evaporator Temperature Switch (X101)	LH side of heater evaporator unit	82	96
Front A/C Switch (X225)	centre of fascia	82	105
Front Blower Motor (M101)	behind RH side of fascia	82	127
Front Height Sensor (X194)	underside of LH front seat	86	177
Front Interior Roof Lamp (B107)	front centre of roof	86	
Front Screen Wash Pump (M105)	RH rear corner of engine compartment	84	53
Front Wipe/Wash Switch (X124)	top of steering column	84	83
Front Wiper Motor (M107)	LH side of bulkhead	84	
Front Wiper Relay (K185)	behind RH footwell trim panel	84	145
Fuel Flap Actuator (M108)	RH rear of luggage compartment	86	212
Fuel Flap Release Switch (X125)	top LH side of fascia left of steering column	86	79
Fuel Injectors (K141)	top centre front of engine	19	15
Fuel Pump Module (Z134)	top of fuel tank	86	203
Fuel Pump Relay (K119)	behind RH footwell trim panel	86	148
Fuel Shut–Off Solenoid (K111)	RH side of engine on injector pump	19	42
Fusible Link (P119)	RH front of engine compartment behind battery	86	36
Generator (Z106) Diesel	lower LH side of engine	86	16

Component	Location	Manual	View
Generator (Z106) Petrol	top centre front of engine	86	47
Generator Suppression Capacitor (Z182) Diesel	lower LH side of engine on Generator	86	16
Generator Suppression Capacitor (Z182) Petrol	top centre front of engine on Generator	86	47
Glow Plug Timer Unit (Z135)	RH front of engine compartment behind battery	19	36
Glow Plugs (P120)	RH side of engine	19	41
Handbrake Diode (Z197)	beneath centre console near Handbrake Switch	86	
Handbrake Switch (X191)	beneath centre console on handbrake lever	86	114
Hazard Switch (X220)	centre of fascia	86	98
Headlamp Wash Pump (M110)	RH rear corner of engine compartment	86	54
Heated Front Screen Fuse Block (P114)	behind RH side of fascia	86	121
Heated Front Screen In–Line Maxi–Fuse (P139)	RH front of engine compartment behind battery	86	34
Heated Front Screen Relay (K121)	behind RH side of fascia on bracket	86	140
Heated Rear Screen Relay (K122)	behind LH side of fascia on Fascia Fuse Box	86	73
Heated Front Screen Switch (X131)	centre of fascia	86	100
Heated Rear Screen Switch (X132)	centre of fascia	86	100
Heated Washer Jets Thermoswitch (X133)	behind RH side of front grille	86	28
Horn Relay (K189)	behind LH footwell trim panel	86	70
Horn Switches (X258)	in steering wheel	86	82
Idle Air Control Valve (M112) MFI – V8	top rear of engine	19	44
Ignition Coil (Z140) MFI – V8	LH front of engine compartment	86	21
Ignition Coil Noise Suppressor (Z237)	LH front of engine compartment on Ignition Coil	86	21
Ignition Control Module (Z139)	top centre front of engine attached to distributor	86	23
Ignition Key Lock Solenoid (K191)	top of steering column	86	87
Ignition Load Relay (K127)	behind RH footwell trim panel	86	145
Ignition Switch (X134)	top of steering column	86	86
Inertia Fuel Shut–Off Switch (X135)	RH rear corner of engine compartment	19	55
Inhibit Indicator Diode (Z191)	Fascia Wire Harness near Air Suspussion Inhibit Switch	68	
Instrument Cluster (Z142)	top LH side of fascia	86	90

Component	Location	Manual	View
Instrument Illumination Rheostat (Z143)	top LH side of fascia	86	81
Interior Lamps Switch (X136)	centre of fascia	86	101
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 RH side of fascia	86	133
Interlock Relay 2 (K151)	behind RH side of fascia	86	133
Key–Barrel Switch (X230)	top of steering column on Ignition Switch	86	88
Key–In Switch (X229)	top of steering column on Ignition Switch	86	86
Left Antenna Amplifier (Z177)	LH rear of roof	86	217
Left Condenser Fan Motor (M113)	behind front grille	86	26
Left Front Door Handle Switch (X138)	in top rear of LH front door at door handle	86	
Left Front Door Key Switch (X201)	in top rear of LH front door at door handle	86	157
Left Front Door Lock Actuator (M114)	in rear of LH front door	76	156
Left Front Door Switch (X150)	front of LH front door jamb	86	
Left Front Height Sensor (X205)	behind LH front wheel	68	199
Left Front Seat Control Switch (X152) With Memory	RH side of LH front seat	86	171
Left Front Seat Control Switch (X152) Without Memory	RH side of LH front seat	86	170
Left Front Speaker Crossover (Z224)	in front of LH front door	86	
Left Front Wheel Speed Sensor (X137)	behind LH front wheel	70	57
Left Front Window Motor (M130)	in front of LH front door	86	152
Left Front Window Switch (X122)	in rear of centre console	86	108
Left Headlamp (B116)	LH front corner of engine compartment	86	29
Left Headlamp Level Unit (Z145)	behind LH headlamp	86	
Left Heated Oxygen Sensor (X139)	lower LH side of engine compartment	19	56
Left Heated Washer Jet (B118)	mounted on bonnet (hood)	80	7
Left Horn (K128)	LH front corner of engine compartment	86	19
Left Maximum Cool Switch (X267)	behind heater and A/C control panel	82	107
Left Mirror Actuator (M115)	top front of LH front door	86	

Component	Location	Manual	View
Left Rear Door Lock Actuator (M117)	inside front of LH rear door	76	163
Left Rear Door Switch (X142)	in lower part of LH B–post	86	160
Left Rear Height Sensor (X206)	behind LH rear wheel	68	194
Left Rear Wheel Speed Sensor (X140)	behind LH rear wheel	68	58
Left Rear Window Console Switch (X141)	in rear of centre console	86	109
Left Rear Window Door Switch (X188)	in top of LH rear door	86	161
Left Rear Window Motor (M116)	inside front of LH rear door	86	162
Left Repeater Lamp (B122)	LH front of vehicle	86	31
Left Seat Heat Relay (K129)	beneath LH front seat	86	
Left Seat Heat Switch (X143)	in rear of centre console	86	111
Left Seat Power Relay (K113)	beneath LH front seat	86	
Left Seat Power Relay Diode (Z223)	beneath LH front seat	86	
Main Lighting Switch (X145)	top of steering column	86	85
Mass Air Flow Sensor (X105)	LH side of engine	19	11
Memory Seat ECU (Z146)	underside of LH front seat	86	175
Mirror Adjustment Switch (X146)	top LH side of fascia left of steering column	86	79
Multi–Function Unit (MFU) (Z148)	behind LH side of fascia on Fascia Fuse Box	86	75
Multiport Fuel Injection Fault Display Unit (Z133)	beneath RH front seat	86	188
Multiport Fuel Injection Ignition Resistor 1 (K115)	LH front of engine compartment near Ignition Coil	86	21
Multiport Fuel Injection Ignition Resistor 2 (K168)	LH front of engine compartment near Ignition Coil	86	21
NAS Alarm Relay (K208)	behind RH side of fascia	86	135
NAS Diode (Z229)	behind LH side of fascia near Fascia Fuse Box	86	
Neutral Sense Resistor (K166)	Gearbox Wire Harness near C105	86	
Oil Pressure Switch (X149) Diesel	RH side of engine	86	42
Oil Pressure Switch (X149) Petrol	lower RH side of engine near oil filter	86	32
Park/Neutral Position Switch (X167)	LH side of transmission	86	62
Park Switch (X173)	beneath centre console	86	
Passenger's Underseat Fuse Box (P116)	beneath RH front seat	86	186

Component	Location	Manual	View
Phase Tap Resistor (K184) Diesel	lower LH side of engine on Generator	86	16
Phase Tap Resistor (K184) Petrol	top centre front of engine on Generator	86	47
Power Mirror Diode (Z185)	behind RH side of fascia	86	
Power Wash Relay (K182)	behind LH side of fascia on bracket	86	139
Radio (Z111)	centre of fascia	86	103
Radio Amplifier (Z175)	RH side of luggage compartment on Subwoofer	86	215
Rear Fog Guard Lamps Switch (X154)	centre of fascia	86	99
Rear Height Sensor (X195)	underside of LH front seat	86	179
Rear Interior Roof Lamp (B124)	centre of roof	86	
Rear Screen Wash Pump (M119)	RH rear corner of engine compartment	86	53
Rear Screen Wash Switch (X222)	top LH side of fascia left of steering column	86	80
Rear Screen Wipe Switch (X221)	top LH side of fascia left of steering column	86	80
Rear Window Isolation Switch (X187)	in rear of centre console	86	110
Rear Wiper Motor (M120)	centre rear of roof	84	208
Rear Wiper Relay (K183)	behind LH footwell trim panel	86	71
Recline Sensor (X197)	underside of LH front seat	86	178
Refrigerator (Z172)	rear of luggage compartment	86	
Refrigerator Fuse (Control) (P141)	RH side of luggage compartment	86	
Refrigerator Fuse (Power) (P121)	RH side of luggage compartment	86	
Refrigerator Relay (K148)	RH side of luggage compartment	86	
Reservoir Pressure Resistor (K169)	beneath RH front seat	68	180
Reservoir Pressure Switch (X204)	beneath LH side of vehicle	68	193
Reverse Switch (X157)	LH side of transmission	86	61
Right Antenna Amplifier (Z178)	RH rear of roof	86	217
Right Condenser Fan Motor (M121)	behind front grille	82	27
Right Front Seat Control Switch (X121)	LH side of RH front seat	86	189
Right Front Door Handle Switch (X159)	in top rear of RH front door	86	
Right Front Door Key Switch (X202)	in top rear of RH front door at door handle	86	157

Component	Location	Manual	View
Right Front Door Lock Actuator (M122)	in rear of RH front door	76	156
Right Front Door Switch (X118)	front of RH front door jamb	86	
Right Front Height Sensor (X207)	behind RH front wheel	68	199
Right Front Inboard Brake Pad (B129)	in RH front brake caliper	70	59
Right Front Speaker Crossover (Z225)	in front of RH front door	86	
Right Front Wheel Speed Sensor (X158)	behind RH front wheel	70	57
Right Front Window Motor (M133)	in front of RH front door	86	152
Right Front Window Switch (X151)	in rear of centre console	86	108
Right Headlamp (B130)	RH front of engine compartment	86	29
Right Headlamp Level Unit (Z155)	behind RH headlamp	86	
Right Heated Oxygen Sensor (X160)	lower RH side of engine	19	49
Right Heated Washer Jet (B132)	mounted on bonnet (hood)	80	8
Right Horn (K134)	LH front corner of engine compartment	86	19
Right Maximum Cool Switch (X268)	behind heater and A/C control panel	82	107
Right Mirror Actuator (M123)	top front of RH front door	86	
Right Rear Door Lock Actuator (M125)	inside front of RH rear door	76	163
Right Rear Door Switch (X163)	in lower part of RH B–post	86	160
Right Rear Height Sensor (X208)	behind RH rear wheel	68	194
Right Rear Inboard Brake Pad (B135)	in RH rear brake caliper	70	59
Right Rear Wheel Speed Sensor (X161)	behind RH rear wheel	70	58
Right Rear Window Console Switch (X162)	in rear of centre console	86	109
Right Rear Window Door Switch (X189)	in top of RH rear door	86	161
Right Rear Window Motor (M124)	inside front of RH rear door	86	162
Right Repeater Lamp (B137)	RH front of vehicle	86	31
Right Seat Heat Relay (K135)	beneath RH front seat	86	187

Component	Location	Manual	View
Right Seat Heat Switch (X164)	in rear of centre console	86	111
Right Seat Power Relay (K131)	beneath RH front seat	86	187
Right Seat Power Relay Diode (Z222)	beneath LH front seat	86	
Rotary Coupler (Z119)	top of steering column	76	86
Satellite Fuse Box 1 (P127)	behind LH side of fascia on Fascia Fuse Box	86	72
Satellite Fuse Box 2 (P128)	behind LH side of fascia on Fascia Fuse Box	86	72
Seat Base Motor (M126) With Memory	underside of respective front seat	86	174
Seat Base Motor (M126) Without Memory	underside of respective front seat	86	172
Seat Height (Front) Motor (M127) With Memory	underside of respective front seat	86	174
Seat Height (Front) Motor (M127) Without Memory	underside of respective front seat	86	172
Seat Height (Rear) Motor (M128) With Memory	underside of respective front seat	86	174
Seat Height (Rear) Motor (M128) Without Memory	underside of respective front seat	86	172
Seat Recline Motor (M129) With Memory	underside of respective front seat	86	174
Seat Recline Motor (M129) Without Memory	underside of respective front seat	86	172
Service Reminder Unit (Z126)	beneath RH front seat	86	188
Speed Trip Module (Z164)	behind RH side of fascia on bracket	19	137
Starter (M134) Diesel	lower LH side of engine	86	12
Starter (M134) Petrol	lower RH side of engine	86	48
Starter Relay Diode (Z158)	behind RH footwell trim panel	86	144
Starter Solenoid (K136) Diesel	lower LH side of engine	86	12
Starter Solenoid (K136) Petrol	lower RH side of engine	86	48
Starter Solenoid Relay (K137)	behind RH footwell trim panel	86	144
Steering Wheel Cruise Switches (X266)	in steering wheel	19	82
Stop Lamp Switch (X168)	behind LH side of fascia on brake pedal support	86	77
Stop Lamp Switch Suppressor (Z206)	behind LH side of fascia near steering column	86	77
Subwoofer Amplifier (Z176)	RH rear of luggage compartment on Subwoofer	86	213
Subwoofer Control (X232)	centre of fascia	86	
Subwoofer (K146) Except NAS	RH rear of luggage compartment	86	214

Component	Location	Manual	View
Subwoofer (K146) NAS	RH rear of luggage compartment	86	216
Sunroof Control Unit (Z162)	front centre of roof	76	117
Sunroof Load Relay (K138)	behind RH side of fascia on bracket	76	140
Sunroof Motor (M131)	front centre of roof	76	117
Sunroof Switch (X169)	front centre of roof	76	116
Tailgate Lock Actuator (M132)	lower centre of rear screen	76	210
Tailgate Switch (X170)	top LH side of rear screen opening	86	207
Theft Alarm LED (B151)	centre of fascia	86	104
Theft Alarm Relay (K159)	behind LH footwell trim panel	86	70
Theft Alarm Unit (Z163)	behind RH side of fascia on bracket	86	136
Throttle Position Sensor (X171) Diesel	RH side of engine on injector pump	19	42
Throttle Position Sensor (X171) Petrol	top centre front of engine	19	13
Trailer Auxiliary Socket (X172)	behind RH side of rear bumper	86	204
Transfer Box Oil Temperature Switch (X174)	top RH side of transfer box	86	64
Transfer Box Position Switch (X175)	top RH side of transfer box	86	65
Transfer Box Solenoid (K154)	top RH side of transfer box	86	
Transfer Box Solenoid Diode (Z232)	Gearbox Wire Harness near C105	86	
Transfer Box Warning Relay (K186)	behind RH side of fascia	86	135
Transmission Range Selector Illumination Relay (K104)	behind RH side of fascia	86	134
Transmission Range Selector Switch (Z110)	beneath centre console near transmission range selector	86	112
Tune Select Resistor (K140)	behind RH side of fascia	19	124
Vehicle Speed Sensor (X190)	LH side of transfer box	86	63
Water Valve (K206)	RH rear corner of engine compartment	82	55
Warning Lamp Relay (K155)	beneath RH front seat	86	182
Window Lift ECU (Z147)	behind RH side of fascia on bracket	86	131

Connector	Location	View
C100 (3–W)	RH front of engine compartment on Engine Compartment Fuse Box	37
C101 (4–W)	RH front of engine compartment on Engine Compartment Fuse Box	37
C102 (1–B)	LH rear corner of engine compartment	3
C103 (3–B)	RH front of engine compartment on Right Headlamp	29
C104 (3–B)	LH front corner of engine compartment on Left Headlamp	29
C105 (13–B)	LH rear corner of engine compartment	3

Connector	Location	View
C106 (2–B)	behind RH side of front bumper to Right Auxiliary Lamp	25
C107 (2–B)	behind LH side of front bumper to Left Auxiliary Lamp	25
C108 (1–B)	LH rear corner of engine compartment	3
C109 (4–B)	LH front of vehicle to Left Front Lamp Assembly	30
C110 (4–B)	RH front of vehicle to Right Front Lamp Assembly	30
C112 (3–W)	LH rear corner of engine to Left Heated Oxygen Sensor	56
C113 (3–W)	RH rear of engine to Right Heated Oxygen Sensor	44
C114 (2–W)	RH front of engine compartment on Engine Compartment Fuse Box	37
C115 (3–W)	RH front of engine compartment on Engine Compartment Fuse Box	37
C116 (1–W)	RH front of engine compartment on Engine Compartment Fuse Box	37
C118 (1–W)	RH front of engine compartment behind battery	34
C120 (2–W)	RH rear corner of engine compartment on Rear Screen Wash Pump	53
C121 (2–B)	lower RH side of windscreen to Heated Front Screen	1
C122 (2–B)	lower LH side of windscreen to Heated Front Screen	1
C123 (2–B)	RH front of vehicle on Right Repeater Lamp	31
C124 (2–B)	LH front of vehicle on Left Repeater Lamp	31
C125 (2–W)	LH rear corner of engine compartment to A.B.S. Hydraulic Pump	5
C126 (5–B)	LH rear corner of engine compartment on A.B.S. Pressure Switch Unit	5
C127 (3–B)	LH rear corner of engine compartment on Brake Fluid Level Switch	4
C128 (2–B)	LH rear corner of engine compartment on ETC Valve Block	6
C129 (12–B)	LH rear corner of engine compartment on A.B.S. Booster Unit	6
C130 (2–W)	LH rear of engine compartment to Left Front Wheel Speed Sensor	5
C131 (2–W)	RH side of engine compartment to Right Front Wheel Speed Sensor	52
C132 (4–B)	top rear of engine on Idle Air Control Valve	44
C133 (6–B)	LH side of engine on Fuel Injectors	11
C134 (2–B)	LH side of engine on Fuel Injectors	15
C135 (2–B)	RH side of engine on Fuel Injectors	45
C136 (2–B)	LH side of engine on Fuel Injectors	15
C137 (2–B)	RH side of engine on Fuel Injectors	45
C138 (2–B)	LH side of engine on Fuel Injectors	15
C139 (2–B)	RH side of engine on Fuel Injectors	45
C140 (2–B)	LH rear of engine on Fuel Injectors	10
C141 (2–B)	RH side of engine on Fuel Injectors	45
C144 (2–RU)	RH side of engine compartment on Evaporative Emission Canister Purge Valve	50
C145 (2–W) Diesel	RH side of engine to Compressor Clutch	38
C145 (2–W) Petrol	RH side of engine to Compressor Clutch	46
C146 (2–B) Diesel	RH front of engine on Condenser Fan Coolant Temperature Switch	40

Connector	Location	View
C146 (2–B) Petrol	top centre front of engine on Condenser Fan Coolant Temperature Switch	23
C148 (3–B)	top centre front of engine to Distributor	23
C149 (3–B) Petrol	top centre front of engine to Throttle Position Sensor	13
C150 (2–S)	top centre front of engine on Engine Fuel Temperature Sensor	13
C152 (2–N) Diesel	top centre front of engine on Engine Coolant Temperature Sensor	24
C152 (2–N) Petrol	top centre front of engine on Engine Coolant Temperature Sensor	14
C153 (1–B)	LH front of engine compartment on Ignition Coil	22
C154 (1–B)	LH front of engine compartment on Ignition Coil	22
C155 (1–B)	LH front of engine compartment on Ignition Coil	22
C156 (1–W)	LH front of engine compartment on Ignition Coil	22
C159 (6–B)	RH front of engine compartment on Glow Plug Timer Unit	36
C160 (3–B) Diesel	RH side of engine to Throttle Position Sensor	43
C162 (2–B)	RH front of engine on Compressor Clutch Cut–out Switch	39
C164 (3–B)	LH side of engine on EGR Valve Position Sensor	12
C165 (2–S)	LH front corner of engine compartment on EGR Control Solenoid	18
C166 (2–B)	lower LH front of engine compartment on Automatic Transmission Oil Temperature Switch	33
C167 (3–B)	LH front corner of engine compartment on Cruise Control Vacuum Pump	20
C168 (2–B)	LH front of engine compartment on Left Horn	19
C169 (2–B)	LH front of engine compartment on Right Horn	19
C170 (2–B)	RH rear corner of engine compartment on Front Screen Wash Pump	53
C171 (3–B)	RH rear corner of engine compartment on Inertia Fuel Shut–Off Switch	55
C173 (2–WR)	RH rear corner of engine compartment to Headlamp Wash Pump	54
C174 (2–W)	RH rear corner of engine compartment	51
C178 (2–B)	RH rear corner of engine compartment to Alarm Bonnet Switch	51
C179 (2–U)	RH rear corner of engine compartment on Water Valve	55
C180 (3–B)	RH rear corner of engine compartment	52
C181 (2–S)	RH rear corner of engine compartment on A/C Dual Pressure Switch	52
C182 (2–B)	behind front grille to Left Condenser Fan Motor	26
C183 (2–B)	behind front grille to Right Condenser Fan Motor	27
C184 (2–B)	RH front of vehicle to Heated Washer Jets Thermoswitch	28
C188 (2–W)	mounted on bonnet (hood) to Left Heated Washer Jet	7
C189 (2–W)	mounted on bonnet (hood) to Right Heated Washer Jet	8
C200 (4–W)	behind LH side of fascia near steering column	92
C201 (7–W)	top of steering column on Main Lighting Switch	85
C202 (24–W)	behind LH side of fascia near steering column	92
C203 (7–W)	behind LH side of fascia on Fascia Fuse Box	76
C204 (24–W)	behind LH side of fascia on Fascia Fuse Box	75

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Connector	Location	View
C205 (24–B)	behind LH side of fascia on Multi–Function Unit (MFU)	75
C206 (4–W)	behind LH side of fascia on Fascia Fuse Box	76
C207 (10–B)	on Instrument Cluster	91
C208 (18–W)	behind LH side of fascia on Fascia Fuse Box	73
C209 (24–G)	behind LH side of fascia left of steering column	93
C211 (10–W)	behind LH side of fascia on Fascia Fuse Box	76
C212 (14–W)	top of LH A–post	66
C213 (14–W)	top of RH A–post	149
C214 (3–B)	top LH side of fascia on Instrument Illumination Rheostat	81
C215 (24–Y)	behind LH side of fascia left of steering column	93
C216 (7–N)	behind RH side of fascia right of heater evaporator unit	130
C217 (20–W)	behind RH side of fascia right of heater evaporator unit	130
C218 (8–W)	behind RH side of fascia on bracket	138
C219 (4–W)	behind LH side of fascia on Fascia Fuse Box	73
C220 (3–N)	behind LH side of fascia to Ignition Switch	78
C221 (10–W)	on Instrument Cluster	90
C222 (10–W)	on Instrument Cluster	90
C223 (5–U)	on Instrument Cluster	91
C224 (6–W)	behind LH side of fascia to Front Wiper Motor	95
C225 (16–B)	behind RH side of fascia on Theft Alarm Unit	136
C226 (3–W)	behind LH side of fascia on Fascia Fuse Box	76
C227 (4–B)	behind LH side of fascia on Stop Lamp Switch	77
C228 (8–W)	behind LH side of fascia on Mirror Adjustment Switch	79
C229 (1–W)	behind LH side of fascia on Fascia Fuse Box	75
C230 (8–S)	centre of fascia on Radio	103
C231 (2–W)	behind RH footwell trim panel	
C232 (2–)	behind RH side of fascia near Right Front Tweeter	
C233 (4–W)	behind RH footwell trim panel	142
C234 (3–)	centre of fascia	
C235 (4–W)	behind LH footwell trim panel	68
C236 (2–W)	behind LH footwell trim panel	
C237 (2–)	behind LH side of fascia near Left Front Tweeter	
C238 (9–B)	behind RH footwell trim panel on Fan Control Module	147
C239 (5–B)	behind RH footwell trim panel on Engine Control Load Relay	148
C240 (5–U)	behind RH footwell trim panel on Fuel Pump Relay	148
C241 (5–Y)	behind RH footwell trim panel on Compressor Clutch Relay	143
C242 (5–Y)	behind RH footwell trim panel on A/C Logic Relay	146
C243 (40–B)	behind RH side of fascia on Engine Control Module (ECM)	132
C244 (5–W)	behind RH side of fascia Data Link Connectors	123

Connector	Location	View
C245 (5–W)	behind RH side of fascia Data Link Connectors	123
C246 (2–U)	behind RH side of fascia on Tune Select Resistor	124
C247 (16–B)	behind RH side of fascia on EGR Valve Control Module	132
C248 (3–W)	behind RH side of fascia Data Link Connector (EGR)	122
C249 (5–G)	behind LH side of fascia on Rear Screen Wash Switch	80
C250 (5–W)	behind LH side of fascia on Rear Screen Wipe Switch	80
C251 (5–U)	behind LH side of fascia on Fuel Flap Release Switch	79
C252 (6–R)	behind LH side of fascia near steering column	78
C253 (4–W)	behind LH side of fascia	74
C254 (1–W)	behind LH side of fascia on Fascia Fuse Box	74
C255 (1–B)	on Instrument Cluster	91
C256 (6–R)	centre of fascia on Air Suspension Up Switch	102
C257 (6–W)	centre of fascia on Air Suspension Inhibit Switch	101
C258 (6–G)	centre of fascia on Air Suspension Down Switch	102
C260 (6–)	centre of fascia to Subwoofer Control	
C261 (5–W)	centre of fascia on Auxiliary Lamps Switch	98
C262 (5–U)	centre of fascia on Cruise Control Switch	99
C263 (5–U)	centre of fascia on Rear Fog Guard Lamps Switch	99
C264 (5–U)	centre of fascia on Heated Rear Screen Switch	100
C265 (5–G)	centre of fascia on Heated Front Screen Switch	100
C266 (5–W)	centre of fascia on Interior Lamps Switch	101
C267 (10–W)	centre of fascia on Hazard Switch	98
C268 (8–N)	centre of fascia on Radio	103
C269 (2–B)	centre of fascia on Theft Alarm LED	104
C270 (2–W)	centre of fascia on Clock	97
C274 (6–W)	behind RH side of fascia on Theft Alarm Unit	136
C277 (2–W)	top of LH A–post	66
C278 (2–S)	LH A–post	67
C279 (5–N)	behind LH footwell trim panel on Theft Alarm Relay	70
C281 (5–G)	behind LH footwell trim panel on Rear Wiper Relay	71
C282 (5–Y)	behind LH footwell trim panel on Accessory Relay	71
C283 (5–Y)	behind LH footwell trim panel on Horn Relay	70
C284 (15–B)	behind RH side of fascia on Cruise Control ECU	
C287 (10–W)	behind RH side of fascia on Window Lift ECU	131
C288 (8–W)	behind RH side of fascia on Window Lift ECU	131
C289 (12–B)	behind RH side of fascia on Central Locking Control Unit	131
C290 (5–Y)	behind RH side of fascia on Bulb Check Relay	141
C291 (5–Y)	behind RH side of fascia on Auxiliary Lamps Relay	139
C292 (5–Y)	behind RH side of fascia on Condenser Fan Relay	141

Connector	Location	View
C294 (5–B)	behind RH side of fascia on Heated Front Screen Relay	140
C295 (5–Y)	behind RH side of fascia on Sunroof Load Relay	140
C298 (3–W)	behind RH side of fascia	127
C301 (6–W)	beneath centre console	113
C302 (24–W)	beneath LH front seat to Memory Seat ECU	175
C303 (4–W)	beneath LH front seat to Memory Seat ECU	175
C304 (3–W)	beneath RH front seat	186
C305 (2–W)	beneath centre console	113
C306 (3–W)	beneath centre console	113
C307 (2–W)	beneath RH front seat	186
C309 (2–W)	beneath LH front seat	
C311 (14–W)	beneath RH front seat	185
C312 (35–B)	beneath LH front seat on Anti–Lock Brake System ECU	167
C313 (5–U)	beneath LH front seat A.B.S. Diagnostic Connector	169
C314 (3–B)	beneath RH front seat	183
C315 (3–W)	beneath LH front seat	173
C316 (6–B)	LH side of RH front seat on Right Front Seat Control Switch	189
C317 (6–B)	LH side of RH front seat on Right Front Seat Control Switch	189
C318 (9–U)	Underside of RH Front Seat	191
C319 (6–B)	RH side of LH front seat on Left Front Seat Control Switch	170
C320 (6–B)	RH side of LH front seat on Left Front Seat Control Switch	170
C321 (9–U)	underside of LH front seat	173
C323 (5–B)	LH side of transmission to Park/Neutral Position Switch	62
C324 (10–W)	underside of LH front seat to Memory Seat ECU	176
C325 (6–B)	RH side of LH front seat on Left Front Seat Control Switch	171
C326 (6–B)	RH side of LH front seat on Left Front Seat Control Switch	171
C327 (3–B)	RH side of LH front seat on Left Front Seat Control Switch	171
C328 (9–UB)	underside of LH front seat	176
C329 (6–W)	underside of LH front seat	177
C330 (13–W)	beneath RH front seat	184
C331 (35–B)	beneath RH front seat on Air Suspension ECU	184
C332 (13–B)	beneath RH side of vehicle to Air Valve Block	198
C333 (4–B)	beneath RH side of vehicle to Air Suspension Compressor	198
C334 (3–B)	front centre of roof to Electrochromic Rear View Mirror	118
C335 (4–B)	front centre of roof on Alarm Sensor	116
C336 (2–W)	front centre of roof to Sunroof Control Unit	
C337 (7–G)	in rear of centre console on Left Front Window Switch	108
C338 (7–W)	in rear of centre console on Right Front Window Switch	108
C339 (7–Y)	in rear of centre console on Left Rear Window Console Switch	109

Connector	Location	View
C340 (7–R)	in rear of centre console on Right Rear Window Console Switch	109
C341 (5–W)	in rear of centre console on Left Seat Heat Switch	111
C342 (5–G)	in rear of centre console on Right Seat Heat Switch	111
C343 (7–N)	in rear of centre console on Rear Window Isolation Switch	110
C344 (6–B)	beneath centre console to Transmission Range Selector Switch	112
C345 (2–B)	beneath centre console on Park Switch	114
C346 (2–U)	beneath centre console to Automatic Gear Selector Illumination	112
C348 (5–Y)	beneath LH front seat on Left Seat Power Relay	
C349 (5–W)	beneath LH front seat on Left Seat Heat Relay	
C350 (5–U)	beneath LH front seat on A.B.S. Warning Relay	169
C351 (5–B)	beneath LH front seat on A.B.S. Load Relay	168
C352 (5–B)	beneath LH front seat on A.B.S. Pump Relay	168
C353 (2–W)	centre of fascia on Fascia Cigar Lighter	97
C354 (2–W)	beneath centre rear of vehicle to Left Rear Wheel Speed Sensor	201
C355 (2–W)	beneath centre rear of vehicle to Right Rear Wheel Speed Sensor	201
C357 (5–W)	beneath RH front seat on Right Seat Heat Relay	187
C358 (5–Y)	beneath RH front seat on Right Seat Power Relay	187
C359 (3–B)	behind LH front wheel to Left Front Height Sensor	195
C360 (3–B)	behind RH front wheel to Right Front Height Sensor	197
C361 (5–Y)	beneath RH front seat on Air Suspension Compressor Relay	182
C362 (5–W)	beneath RH front seat on Air Suspension Delay Relay	181
C363 (5–G)	beneath RH front seat on Warning Lamp Relay	182
C364 (5–B)	beneath RH front seat on Disable Switch	183
C365 (5–B)	beneath RH front seat on Air Suspension Diagnostic Connector	180
C366 (1–W) Automatic Transmission	beneath RH front seat	185
C366 (1–W) Manual Transmission	beneath RH front seat	185
C367 (1–W) Automatic Transmission	beneath RH front seat	185
C367 (1–W) Manual Transmission	beneath RH front seat	185
C368 (3–B)	top RH side of transfer box to Transfer Box Position Switch	65
C369 (2–B)	top RH side of transfer box to Transfer Box Solenoid	
C370 (3–B)	LH side of transfer box on Vehicle Speed Sensor	63
C371 (2–B)	top RH side of transfer box on Transfer Box Oil Temperature Switch	64
C372 (2–W)	LH side of transmission to Reverse Switch	60
C377 (2–B)	forward of LH rear wheel to Reservoir Pressure Switch	196
C379 (5–N)	beneath RH front seat on Service Reminder Unit	188
C380 (5–B)	beneath RH front seat on Multiport Fuel Injection Fault Display Unit	188

Z4 ETM

1995 RANGE ROVER

Connector	Location	View
C384 (5–W)	front centre of roof on Sunroof Switch	116
C387 (3–B)	front centre of roof to Sunroof Motor	118
C398 (2–W)	underside of LH front seat to Left Heated Seat	192
C399 (2–W)	underside of RH front seat to Right Heated Seat	192
C400 (7–B)	behind RH side of rear bumper Trailer Auxiliary Socket	204
C401 (1–B)	centre of tailgate	218
C402 (1–B)	centre of tailgate	218
C403 (6–B)	LH side of rear bumper	219
C404 (1–B)	centre of tailgate	218
C405 (1–B)	centre of tailgate	218
C406 (6–B)	RH side of rear bumper	219
C407 (3–B)	beneath LH rear of vehicle near fuel tank	202
C408 (4–W)	LH rear corner of roof	206
C410 (2–W)	front centre of roof to Front Interior Roof Lamp	118
C411 (2–W)	centre of roof to Rear Interior Roof Lamp	205
C412 (8–W)	RH rear of luggage compartment on Subwoofer Amplifier	213
C413 (8–B)	RH rear of luggage compartment on Subwoofer Amplifier	213
C414 (2–W)	lower centre of rear screen to Tailgate Lock Actuator	210
C415 (4–B)	RH rear of roof	209
C416 (3–B)	beneath centre rear of vehicle	201
C418 (4–B) Except NAS	RH rear of luggage compartment to Subwoofer	214
C418 (4–B) NAS	RH rear of luggage compartment to Subwoofer	216
C419 (1–B)	RH rear of luggage compartment	215
C420 (8–W)	RH rear corner of roof	211
C421 (3–W)	RH rear of luggage compartment on CD Changer	215
C422 (18–W)	RH rear of luggage compartment on Radio Amplifier	215
C423 (2–N)	RH rear of luggage compartment on Fuel Flap Actuator	212
C424 (1–B)	behind RH side of rear bumper Trailer Auxiliary Socket	204
C425 (1–B)	behind RH side of rear bumper Trailer Auxiliary Socket	204
C432 (3–W)	forward of RH rear wheel to Right Rear Height Sensor	200
C433 (3–W)	forward of LH rear wheel to Left Rear Height Sensor	196
C436 (12–)	RH rear of luggage compartment on Radio Amplifier	
C434 (4–B)	top of fuel tank to Fuel Pump Module	203
C485 (2–B)	behind RH rear wheel to Right Rear Inboard Brake Pad	59
C500 (3–B)	in front of LH front door to Left Front Window Motor	152
C501 (8–W)	behind LH footwell trim panel	68
C502 (13–W)	behind LH footwell trim panel	68
C503 (5–W)	top front of LH front door to Left Mirror Actuator	151
C504 (4–W)	in top rear of LH front door to Left Front Door Key Switch	155

Connector	Location	View
C505 (5–B)	in lower portion of LH front door	158
C506 (5–B)	in lower portion of LH front door	154
C507 (6–W)	in rear of LH front door to Left Front Door Lock Actuator	156
C509 (5–U)	in top front of LH front door to Left Mirror Actuator	151
C514 (2–B)	in front of LH front door on Left Front Midrange Speaker	153
C515 (2–W) High Line Radio	in front of LH front door	153
C515 (2–W) Low Line Radio Mid Line Radio	in front of LH front door on Left Front Speaker	153
C515 (2–W) NAS	in front of LH front door on Left Front Bass Speaker	153
C600 (3–B)	in front of RH front door to Right Front Window Motor	152
C601 (8–W)	behind RH footwell trim panel	142
C602 (13–W)	behind RH footwell trim panel	142
C603 (5–W)	top front of RH front door to Right Mirror Actuator	151
C604 (4–W)	in top rear of RH front door to Right Front Door Key Switch	155
C605 (5–B)	in lower portion of RH front door	158
C606 (5–B)	in lower portion of RH front door	154
C607 (6–W)	in rear of RH front door to Right Front Door Lock Actuator	156
C609 (5–U)	top front of RH front door to Right Mirror Actuator	151
C614 (2–B)	in front of RH front door on Right Front Midrange Speaker	153
C615 (2–W) High Line Radio	in front of RH front door	153
C615 (2–W) Low Line Radio Mid Line Radio	in front of RH front door on Right Front Speaker	153
C615 (2–W) NAS	in front of RH front door on Right Front Bass Speaker	153
C700 (3–W)	in lower part of LH B–post	159
C701 (2–W) SWB	in lower part of LH B–post	159
C701 (4–W) LWB	in lower part of LH B–post	159
C703 (3–W)	in lower portion of LH rear door to Left Rear Window Motor	164
C704 (5–B)	in lower portion of LH rear door	165
C705 (5–B)	in lower portion of LH rear door	164
C706 (2–W)	in lower portion of LH rear door to Left Rear Door Lock Actuator	162
C707(5–B)	inside front of LH rear door	166
C709 (5–W)	in top of LH rear door on Left Rear Window Door Switch	161
C800 (3–W)	in lower part of RH B–post	159
C801 (2–W) SWB	in lower part of RH B–post	159
C801 (4–W) LWB	in lower part of RH B–post	159
C803 (3–W)	in lower portion of RH rear door to Right Rear Window Motor	164
C804 (5–B)	in lower portion of RH rear door	165
C805 (5–B)	in lower portion of RH rear door	164
C806 (2–W)	in lower portion of RH rear door to Right Rear Door Lock Actuator	162

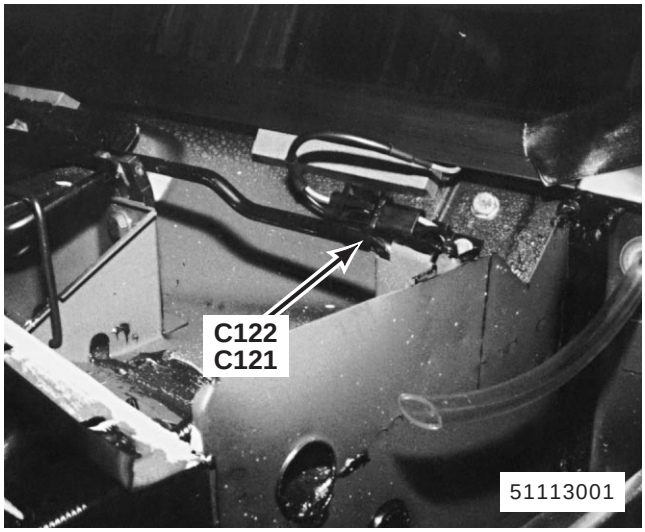
Connector	Location	View
C807 (5–B)	inside front of RH rear door	166
C809 (5–W)	in top of RH rear door on Right Rear Window Door Switch	161
C1018 (1–W)	LH front of engine compartment on Ignition Coil	22
C1019 (2–B)	behind RH front wheel to Right Front Inboard Brake Pad	59
C1035 (3–B)	LH front of engine compartment on Ignition Control Module	220
C1036 (3–B)	LH front of engine compartment on Ignition Control Module	220
C2000 (5–G)	behind RH side of fascia on Interlock Relay 1	133
C2001 (5–Y)	behind RH side of fascia on Interlock Relay 2	133
C2002 (2–S)	RH A–post	150
C2005 (2–W)	behind LH side of fascia on Brake Switch Vent Valve	
C2006 (5–Y)	behind RH footwell trim panel on Starter Solenoid Relay	144
C2007 (5–G)	behind RH footwell trim panel on Ignition Load Relay	145
C2008 (5–G)	behind RH footwell trim panel on Front Wiper Relay	145
C2009 (4–W)	top of steering column on Direction Indicator Switch	85
C2010 (6–W)	top of steering column to Rotary Coupler	86
C2011 (6–W)	top of steering column on Front Wipe/Wash Switch	83
C2012 (8–W)	top of steering column	88
C2013 (4–W)	top of steering column	84
C2014 (2–B)	top of steering column on Ignition Key Lock Solenoid	87
C2015 (8–W)	top of steering column on Front Wipe/Wash Switch	83
C2016 (1–W)	behind LH side of fascia on Fascia Fuse Box	74
C2020 (29–R)	beneath centre console on Air Bag Diagnostic Control Module	115
C2021 (5–B) Automatic Transmission	behind RH side of fascia on Cruise Control Lockout Relay	137
C2021 (5–B) Manual Transmission	behind RH side of fascia on Speed Trip Module	137
C2022 (5–W)	behind heater and A/C control panel on Fan Speed Switch	105
C2023 (4–W)	behind heater and A/C control panel	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	106
C2027 (5–W)	behind LH side of fascia LH side of heater evaporator unit	94
C2028 (6–W)	behind RH footwell trim panel on E200	143
C2029 (6–W)	behind LH footwell trim panel on E201	69
C2030 (10–K)	centre of fascia on Radio	103
C2031 (6–W)	beneath centre console on E303	113
C2032 (10–)	centre of fascia on Radio	
C2035 (2–B)	behind LH side of fascia on Clutch Pedal Position Switch	
C2036 (7–B)	in steering wheel to Rotary Coupler	82
C2039 (4–B)	behind LH side of fascia left of steering column	76

Connector	Location	View
C2040 (1–W)	behind LH side of fascia near Fascia Fuse Box	
C2041 (1–W)	behind LH side of fascia near Fascia Fuse Box	
C2042 (1–W)	behind LH side of fascia near Fascia Fuse Box	
C2043 (1–W)	behind LH side of fascia near Fascia Fuse Box	
C2044 (5–G)	behind RH side of fascia on Transmission Range Selector Illumination Relay	134
C2045 (5–Y)	behind RH side of fascia on NAS Alarm Relay	135
C2046 (5–G)	behind RH side of fascia on Transfer Box Warning Relay	135
C2063 (2–B)	behind LH side of fascia to Stop Lamp Switch Suppressor	77
C2066 (8–W)	behind RH side of fascia right of heater evaporator unit	119
C2067 (10–W)	behind LH side of fascia LH side of heater evaporator unit	94
C2068 (5–B)	behind RH side of fascia on Blower Motor Relay	120
C2069 (2–B)	behind RH side of fascia on Front Blower Motor	127
C2070 (4–B)	behind RH side of fascia on Blower Resistor Unit	119
C2071 (2–B)	behind RH side of fascia on Air Recirculation Solenoid In–Line Fuse	126
C2072 (4–Y)	behind RH side of fascia on Air Recirculation Solenoid	120
C2073 (10–W)	behind RH side of fascia right of heater evaporator unit	125
C2074 (5–Y)	behind RH side of fascia on Power Wash Relay	139
C2078 (2–W)	centre of fascia on Radio	
C2079 (2–W)	centre of fascia on Radio	
C3000 (1–B)	LH side of transmission to Reverse Switch	60
C3001 (1–B)	LH side of transmission to Reverse Switch	60

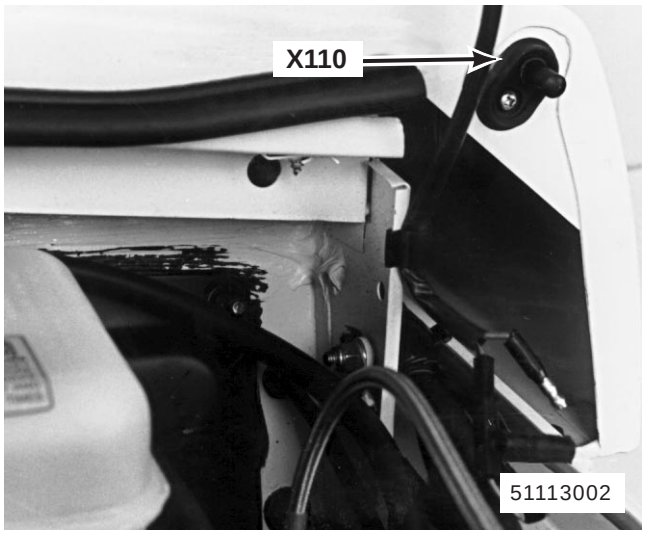
Ground	Location	View
E100 Diesel	RH front of engine compartment behind battery	35
E100 Petrol	RH front of engine compartment behind battery	
E101 Diesel	LH front of engine compartment on fender well	18
E101 Petrol	LH front of engine compartment on fender well	17
E102	LH rear corner of engine compartment	3
E103 Diesel	RH front of engine compartment behind battery	35
E103 Petrol	LH rear corner of engine below valve cover	9
E104	lower RH rear of engine compartment on frame rail	
E105	lower LH front of engine compartment	
E106	lower LH rear of engine	
E107	mounted on bonnet (hood)	
E108	near Starter	
E109	LH rear corner of engine	
E110	RH side of bulkhead	
E200	behind RH footwell trim panel	143

Ground	Location	View
E201	behind LH footwell trim panel	69
E202	front centre of roof	117
E207	centre of fascia	
E300	beneath RH front seat	186
E301	beneath LH front seat	167
E302	beneath LH front seat	167
E303	beneath centre console	113
E400	LH rear corner of roof	206
E401	RH rear corner of roof	211
E402	centre rear of roof	208
E403 Except NAS	RH rear of luggage compartment	214
E403 NAS	RH rear of luggage compartment	216

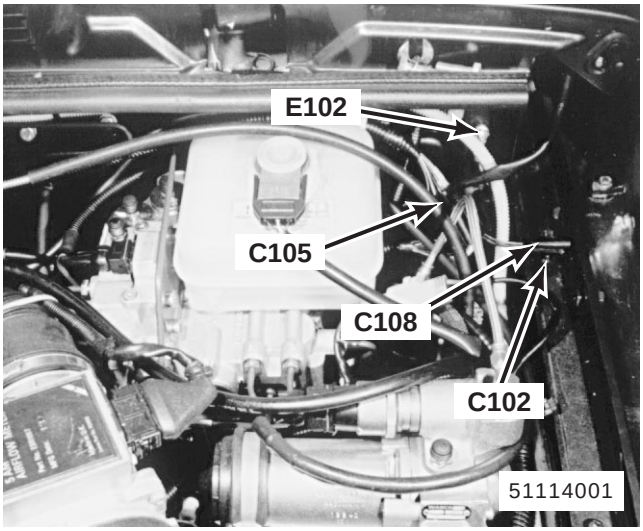
Splice	Location	View
HJ1 (20–S)	behind RH side of fascia	128
HJ2 (20–S)	behind RH side of fascia	129
HJ3 (20–U)	behind RH side of fascia	128
HJ4 (20–S)	behind RH side of fascia	129
HJ5 (20–S)	behind RH side of fascia	128
HJ6 (20–G)	behind RH side of fascia	129
HJ7 (20–U)	behind RH side of fascia	121
HJ8 (20–S)	behind instrument cluster	89
HJ9 (20–S)	behind instrument cluster	89
HJ10 (20–S)	behind RH side of fascia	129



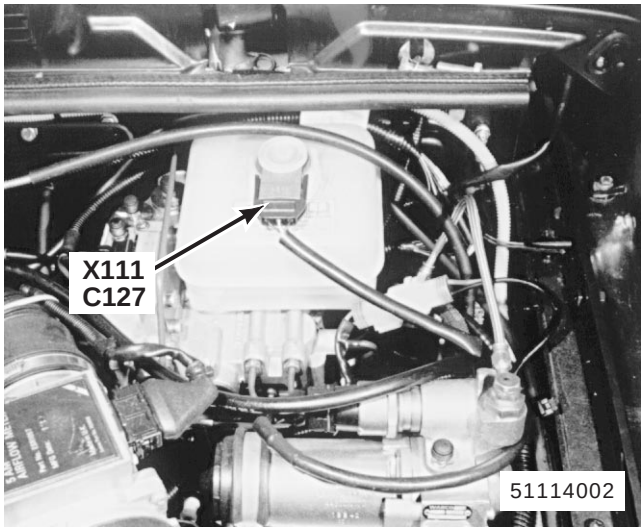
1. lower LH side of windscreen (RH similar)
C121 (2−B) (Right)
C122 (2−B) (Left)



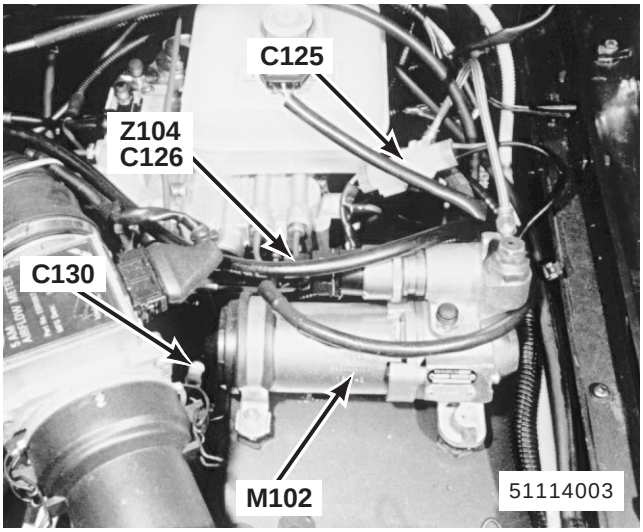
2. LH rear corner of engine compartment
X110 Bonnet Switch



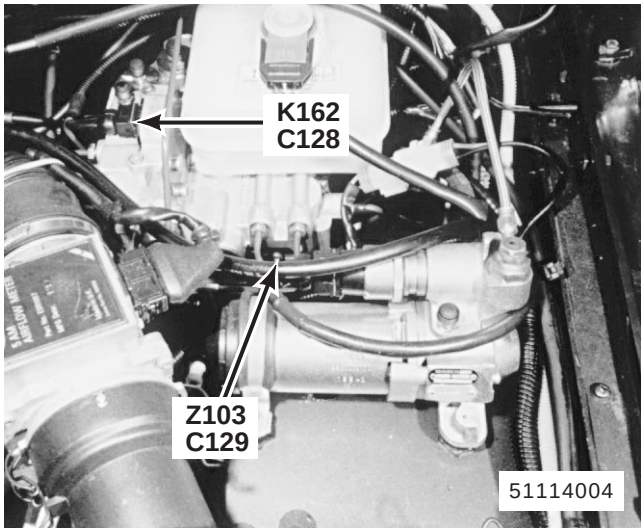
3. LH rear corner of engine compartment
C102 (1−B)
C105 (13−B)
C108 (1−B)
E102



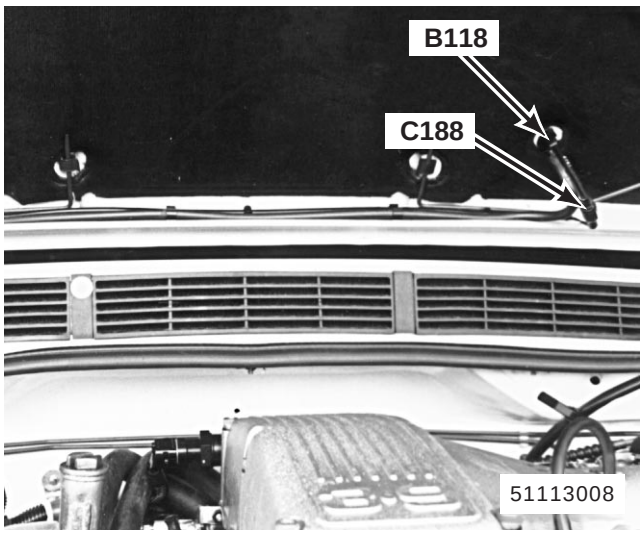
4. LH rear corner of engine compartment
X111 Brake Fluid Level Switch
C127 (3−B)



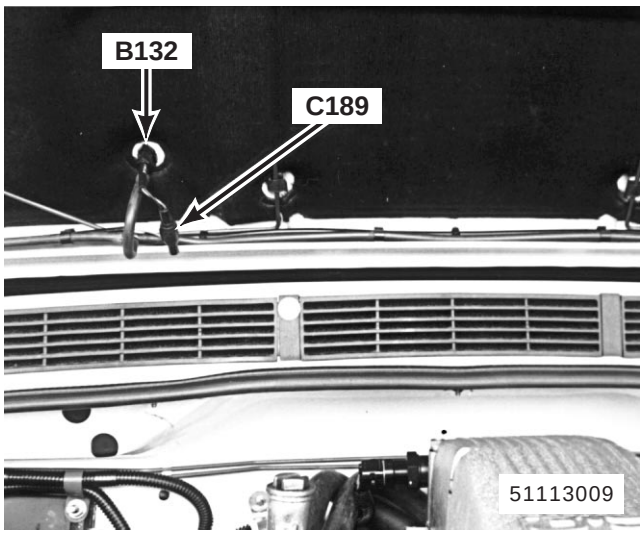
5. LH rear corner of engine compartment
M102 A.B.S. Hydraulic Pump
Z104 A.B.S. Pressure Switch Unit
C125 (2−W)
C126 (5−B)
C130 (2−W)



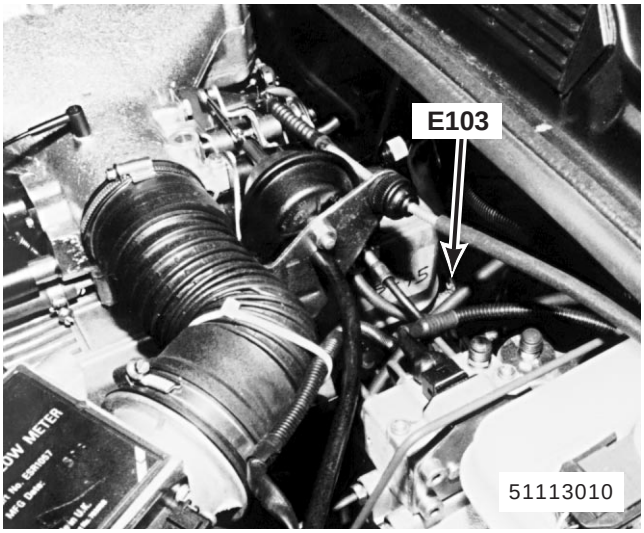
6. LH rear corner of engine compartment
K162 ETC Valve Block
Z103 A.B.S. Booster Unit
C128 (2−B)
C129 (12−B)



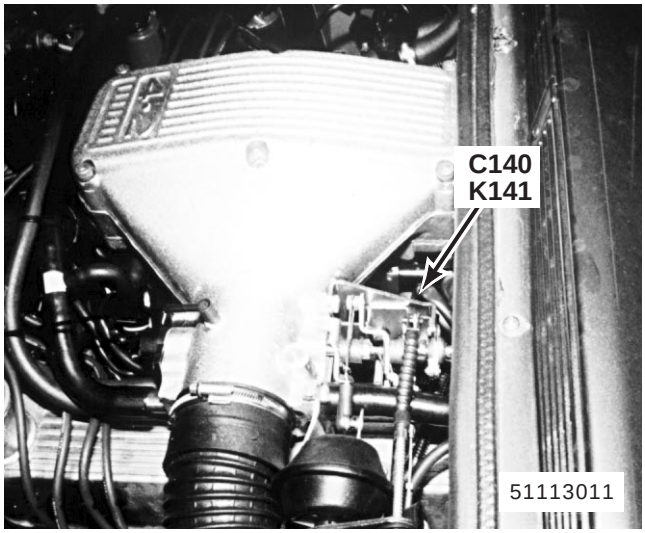
7. rear of engine compartment
B118 Left Heated Washer Jet
C188 (2−W)



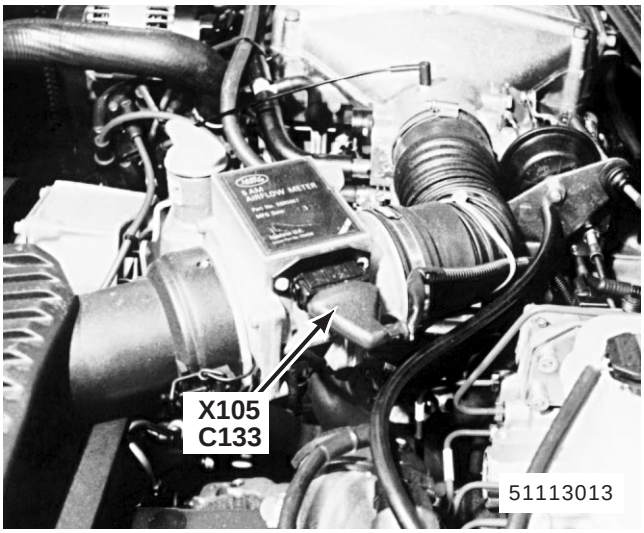
8. rear of engine compartment
B132 Right Heated Washer Jet
C189 (2−W)



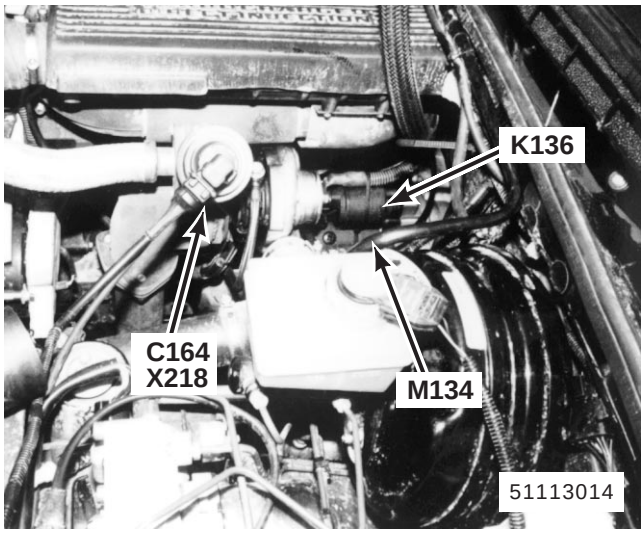
9. LH rear corner of engine Petrol
E103



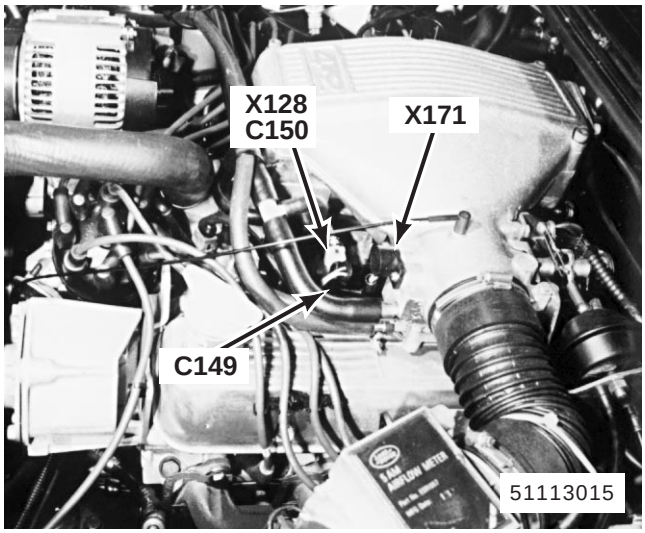
10. LH rear of engine Petrol
K141 Fuel Injectors
C140 (2–B)



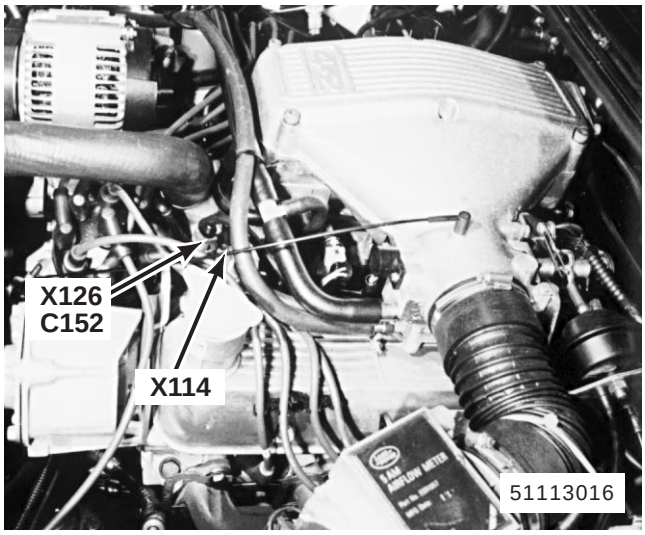
11. LH side of engine Petrol
X105 Mass Air Flow Sensor
C133 (6–B)



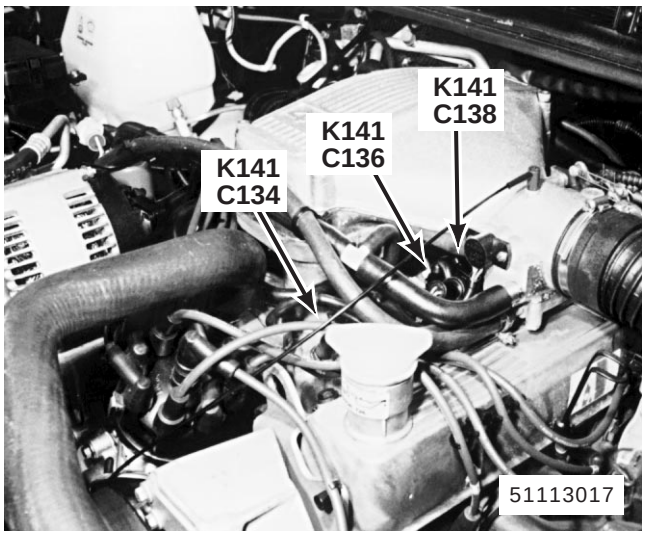
12. lower LH side of engine Diesel
K136 Starter Solenoid
M134 Starter
X218 EGR Valve Position Sensor
C164 (3–B)



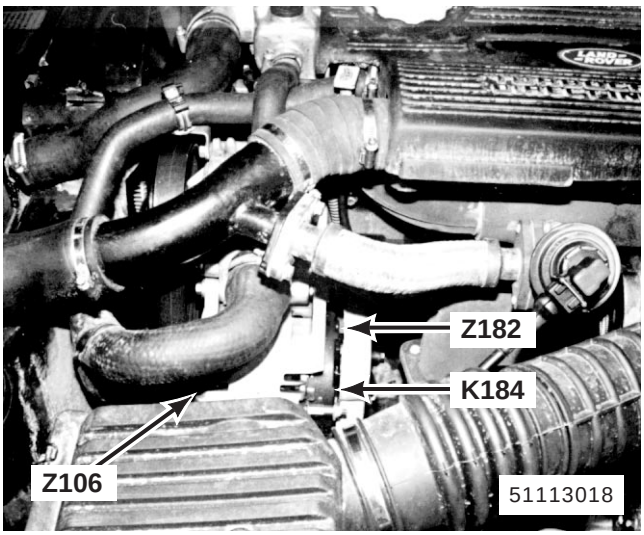
13. LH side of engine Petrol
X128 Engine Fuel Temperature Sensor
X171 Throttle Position Sensor
C149 (3−B)
C150 (2−S)



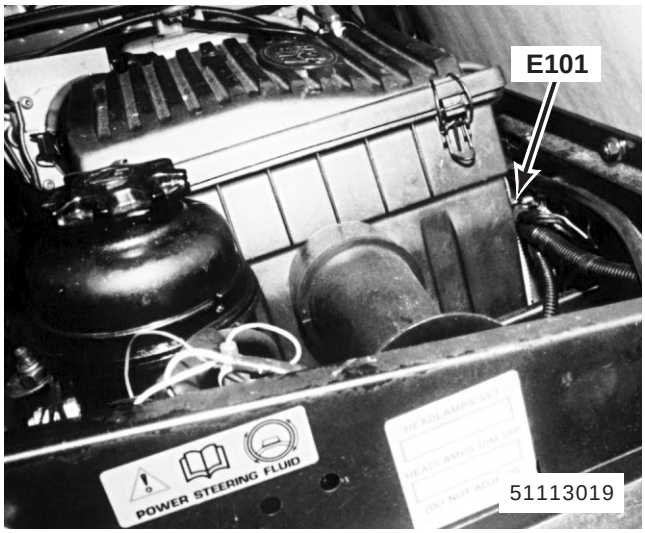
14. LH side of engine Petrol
X114 Engine Coolant Temperature Gauge Sensor
X126 Engine Coolant Temperature Sensor
C152 (2−N)



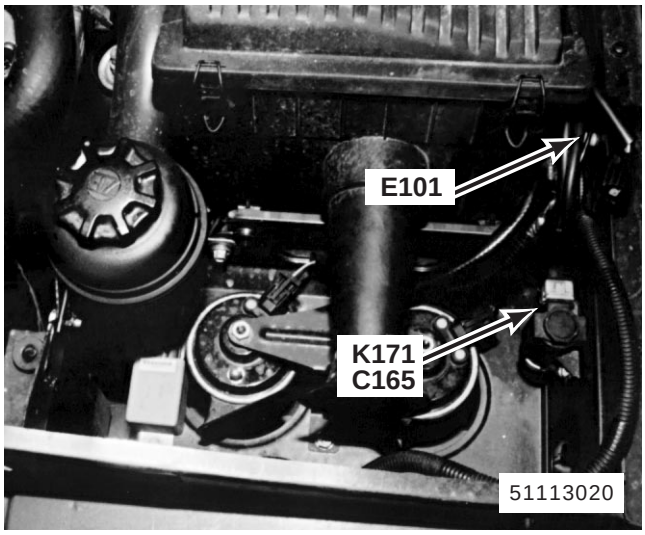
15. LH side of engine Petrol
K141 Fuel Injectors
C134 (2−B)
C136 (2−B)
C138 (2−B)



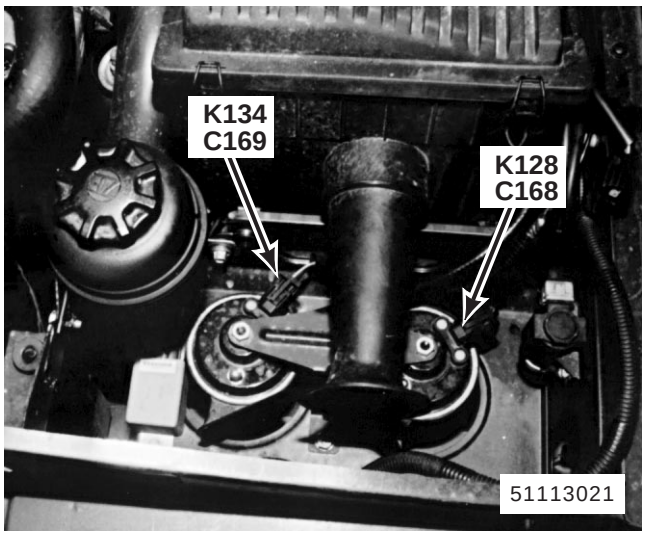
16. lower LH side of engine Diesel
K184 Phase Tap Resistor
Z106 Generator
Z182 Generator Suppression Capacitor



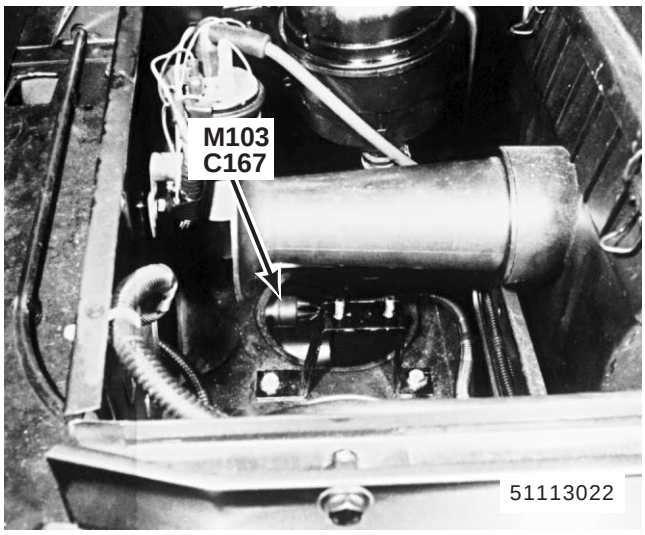
17. LH front corner of engine compartment Petrol
E101



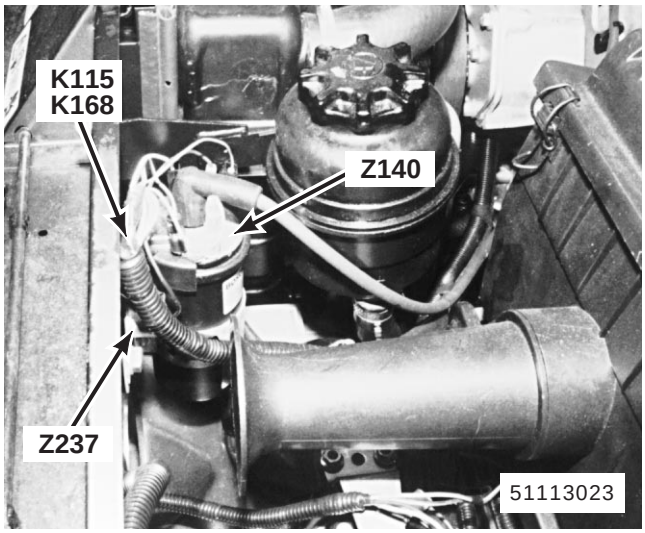
18. LH front corner of engine compartment Diesel
K171 EGR Control Solenoid
C165 (2–S)
E101



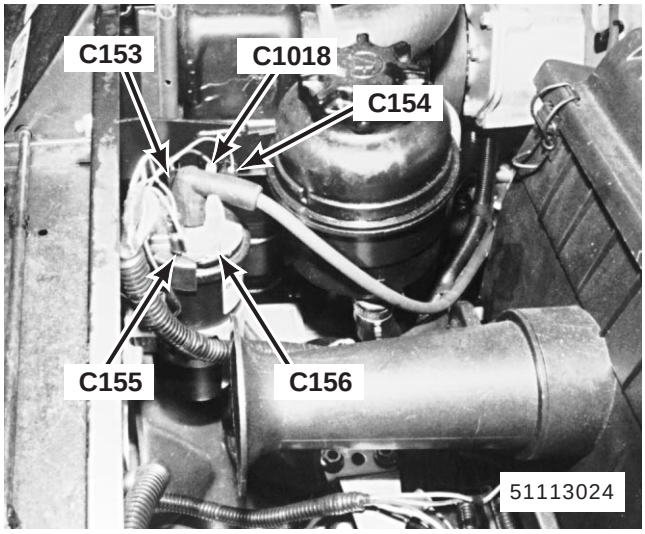
19
LH front corner of engine compartment (Petrol shown; others similar)
K128 Left Horn
K134 Right Horn
C168 (2–B)
C169 (2–B)



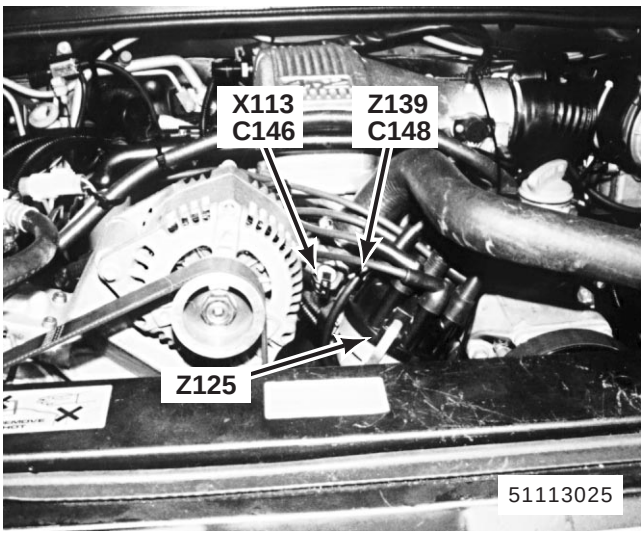
20. LH front corner of engine compartment (Petrol shown; others similar)
M103 Cruise Control Vacuum Pump
C167 (3–B)



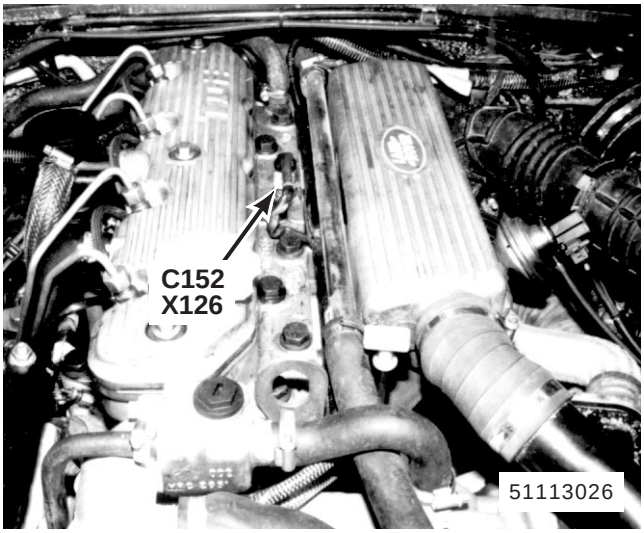
21. LH front of engine compartment Petrol
K115 Multiport Fuel Injection Ignition Resistor 1
K168 Multiport Fuel Injection Ignition Resistor 2
Z140 Ignition Coil
Z237 Ignition Coil Noise Suppressor



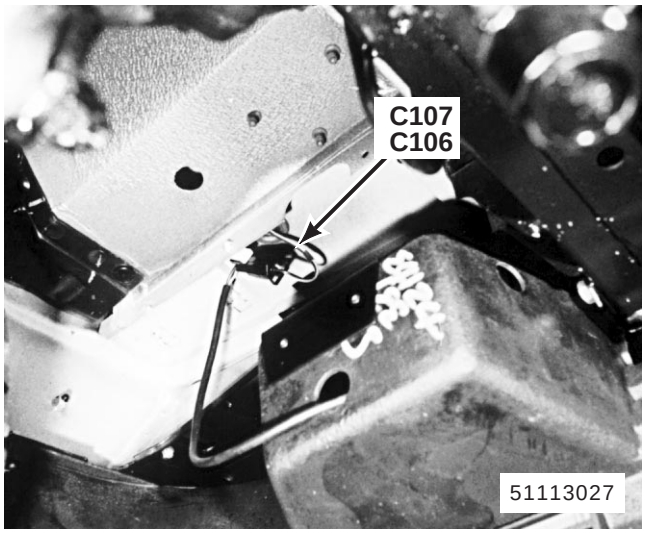
22. LH front of engine compartment Petrol
C153 (1–B)
C154 (1–B)
C155 (1–B)
C156 (1–W)
C1018 (1–W)



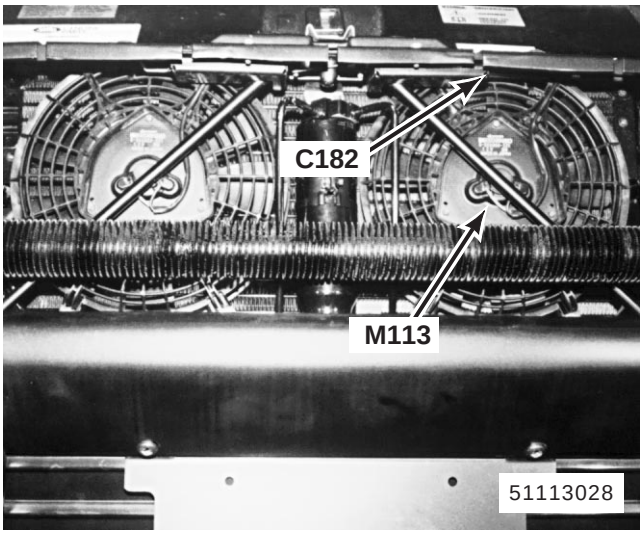
23. top centre front of engine Petrol
X113 Condenser Fan Coolant Temperature Switch
Z125 Distributor
Z139 Ignition Control Module
C146 (2–B)
C148 (3–B)



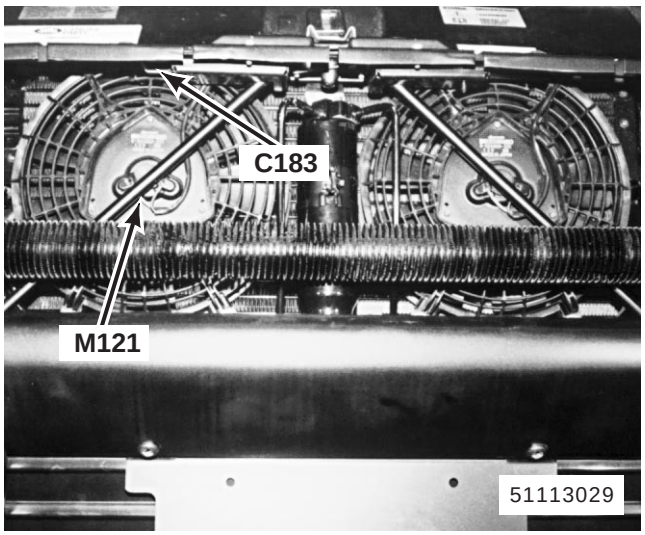
24. top centre front of engine Diesel
X126 Engine Coolant Temperature Sensor
C152 (2–N)



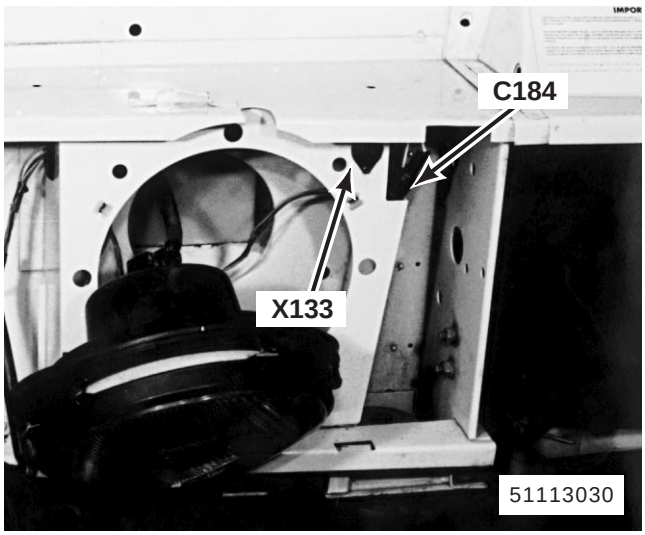
25. behind LH side of front bumper (RH similar)
C106 (2−B) (Right)
C107 (2−B) (Left)



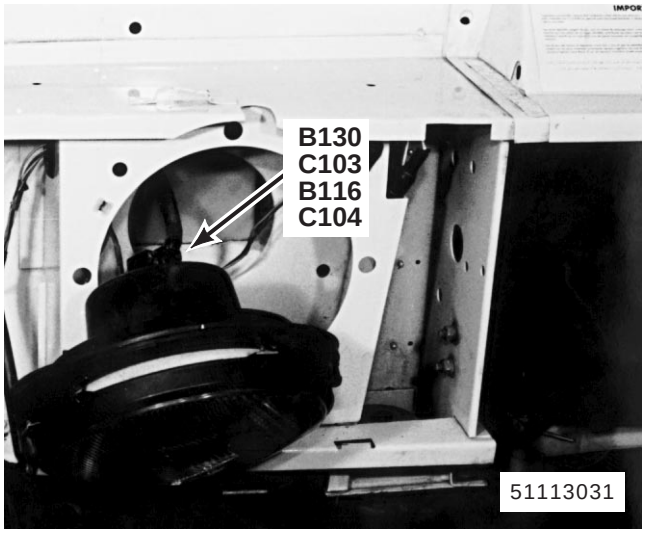
26. behind front grille
M113 Left Condenser Fan Motor
C182 (2−B)



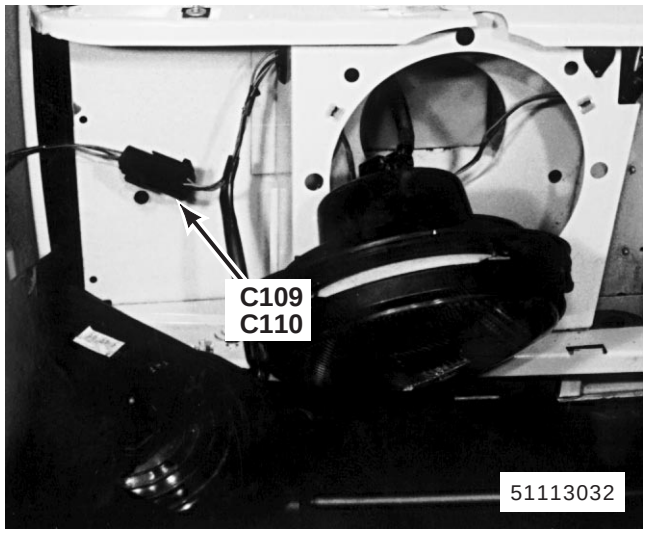
27. behind front grille
M121 Right Condenser Fan Motor
C183 (2−B)



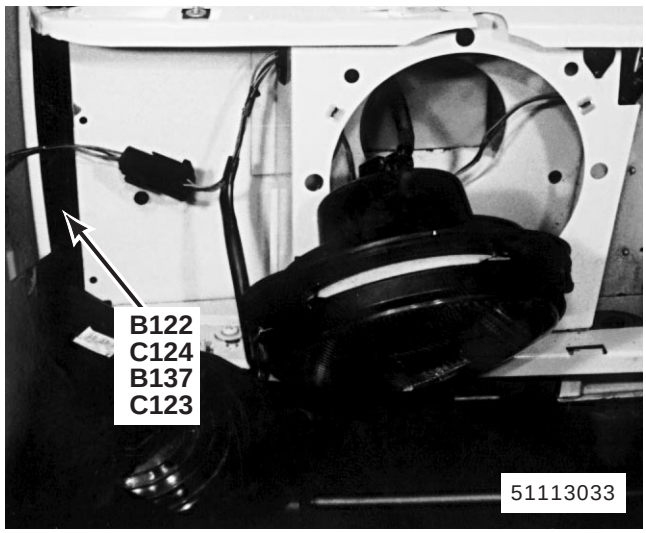
28. RH front of vehicle
X133 Heated Washer Jets Thermoswitch
C184 (2−B)



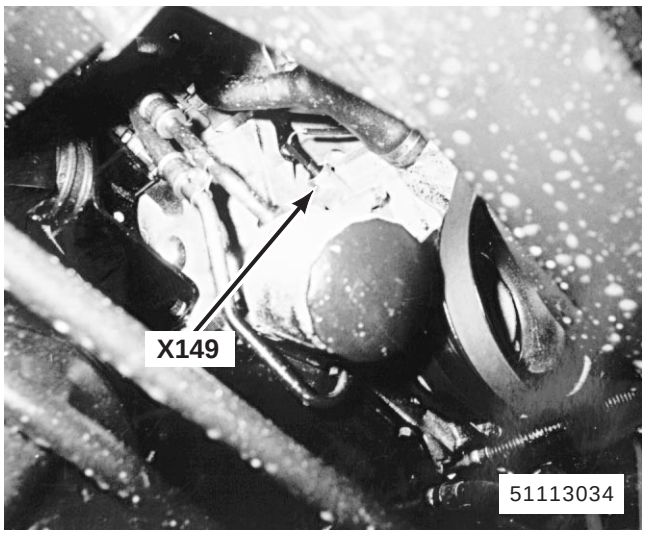
29. RH front of vehicle (LH similar)
B116 Left Headlamp
B130 Right Headlamp
C103 (3−B) (Right)
C104 (3−B) (Left)



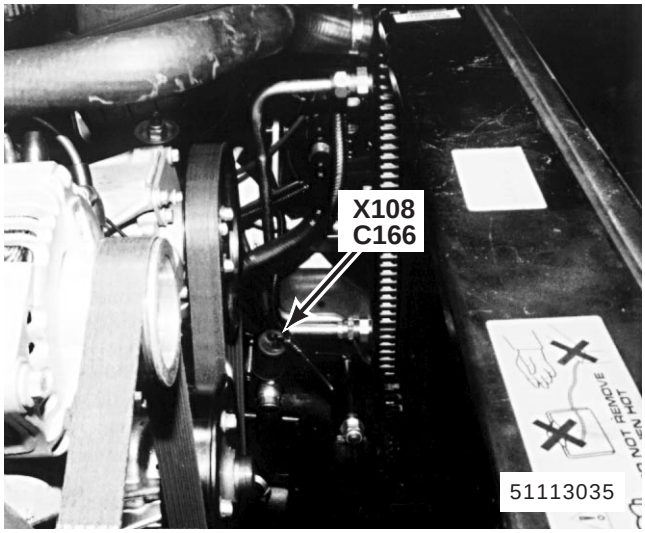
30. RH front of vehicle (LH similar)
C109 (4−B) (Left)
C110 (4−B) (Right)



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



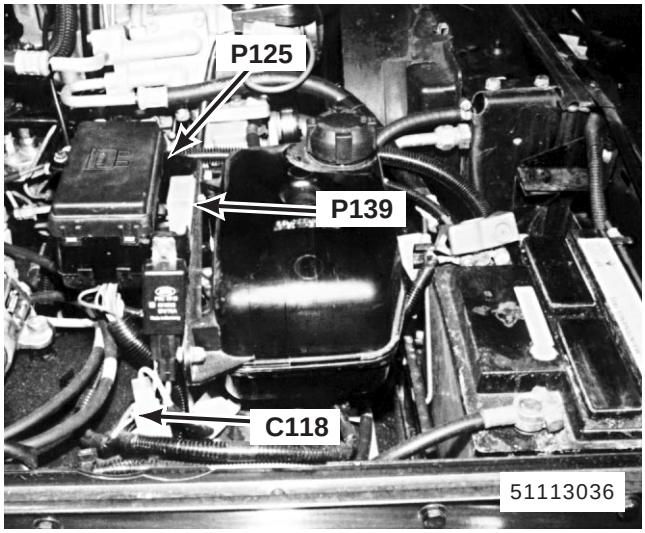
32. lower RH side of engine Petrol
X149 Oil Pressure Switch



33. lower LH front of engine compartment (Petrol shown; others similar)

X108 Automatic Transmission Oil Temperature Switch

C166 (2–B)

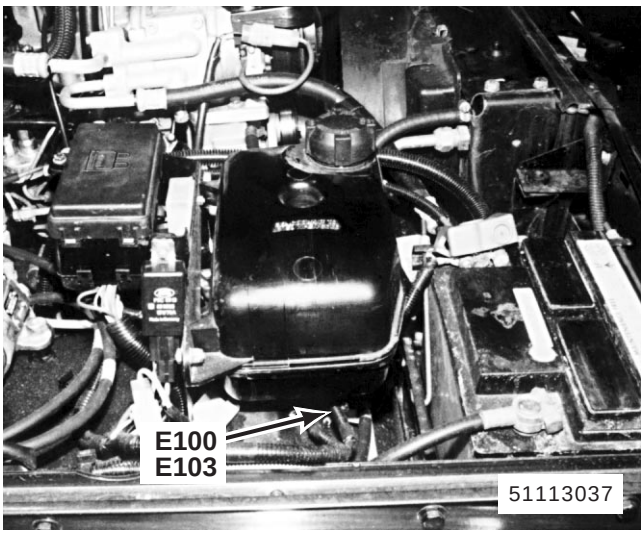


34. RH front of engine compartment

P125 Engine Compartment Fuse Box

P139 Heated Front Screen In–Line Maxi–Fuse

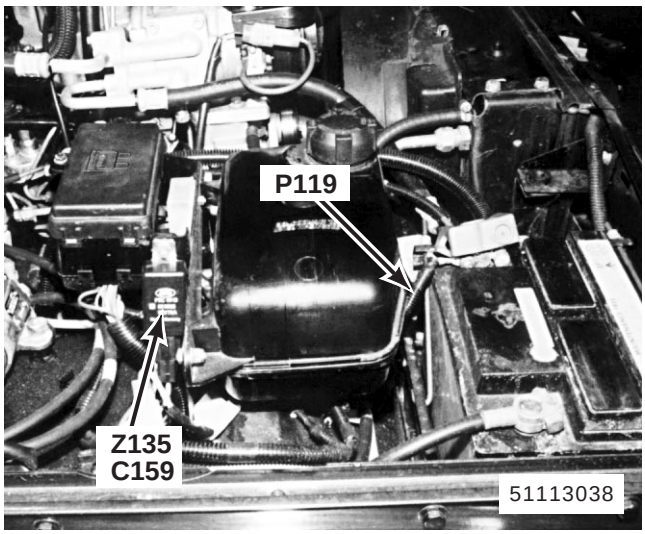
C118 (1–W)



35. RH front of engine compartment

E100 Diesel

E103 Diesel

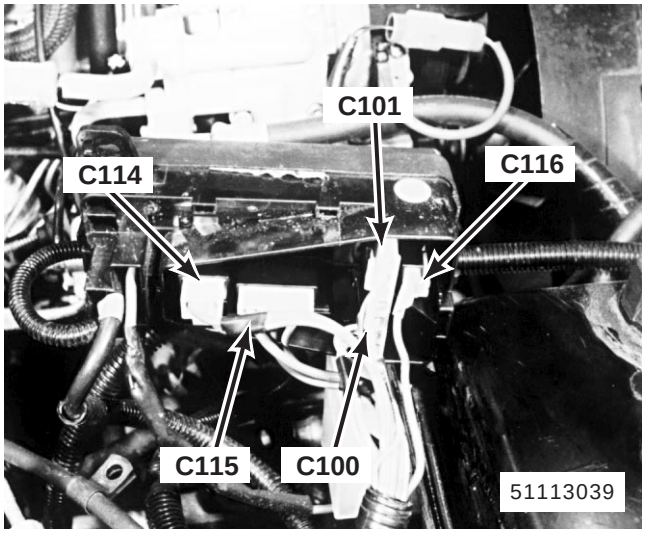


36. RH front of engine compartment

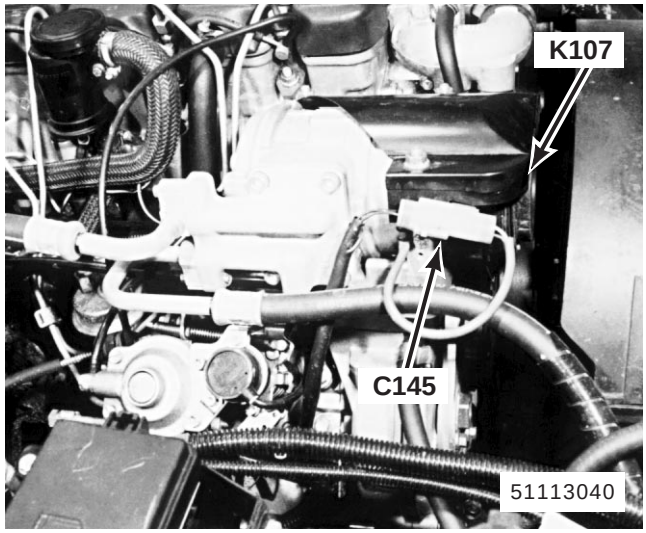
P119 Fusible Link

Z135 Glow Plug Timer Unit

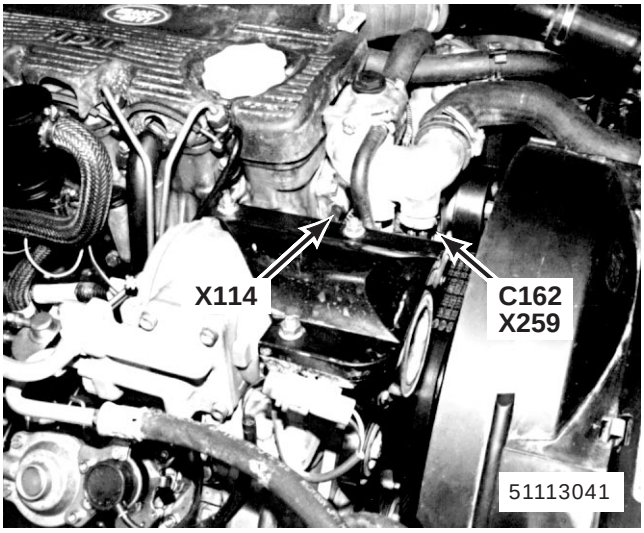
C159 (6–B)



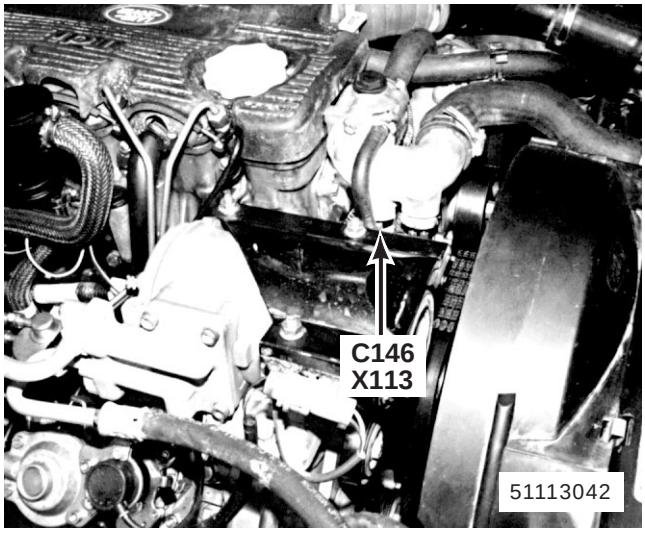
37. RH front of engine compartment
C100 (3–W)
C101 (4–W)
C114 (2–W)
C115 (3–W)
C116 (1–W)



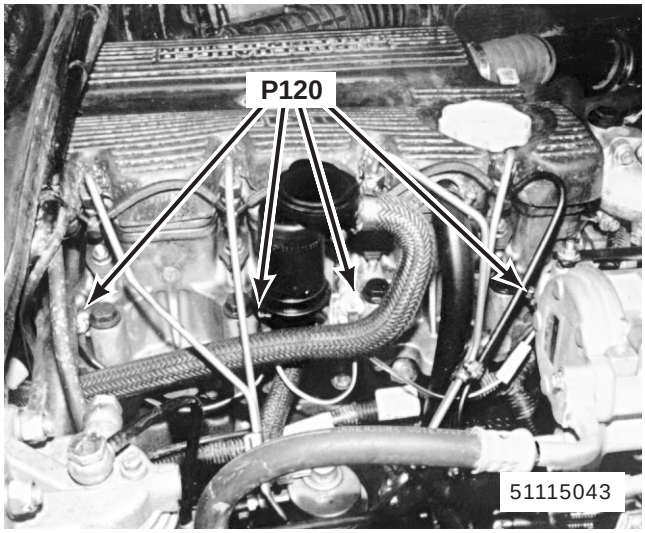
38. RH side of engine Diesel
K107 Compressor Clutch
C145 (2–W)



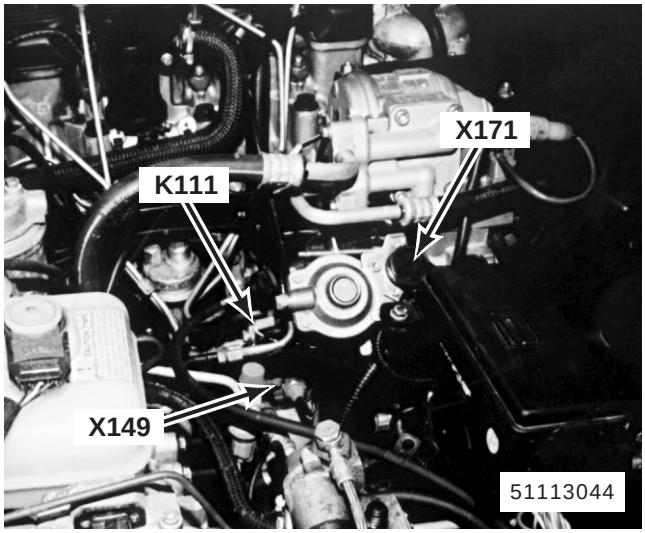
39. RH front of engine Diesel
X114 Engine Coolant Temperature Gauge Sensor
X259 Compressor Clutch Cut–out Switch
C162 (2–B)



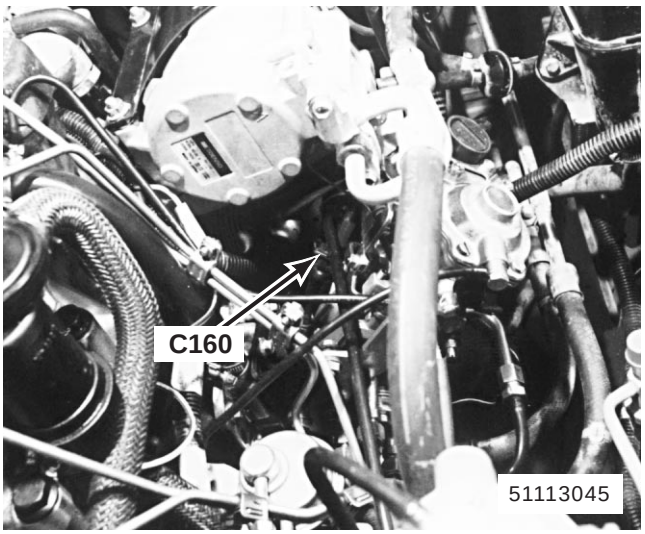
40. RH front of engine Diesel
X113 Condenser Fan Coolant Temperature Switch
C146 (2–B)



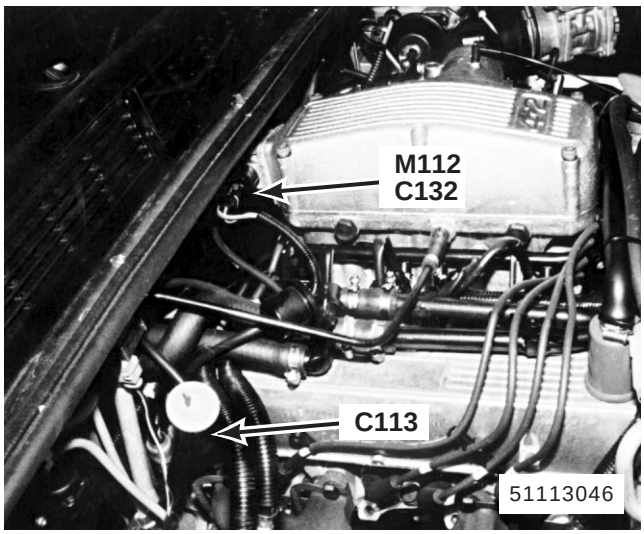
41. RH side of engine Diesel
P120 Glow Plugs



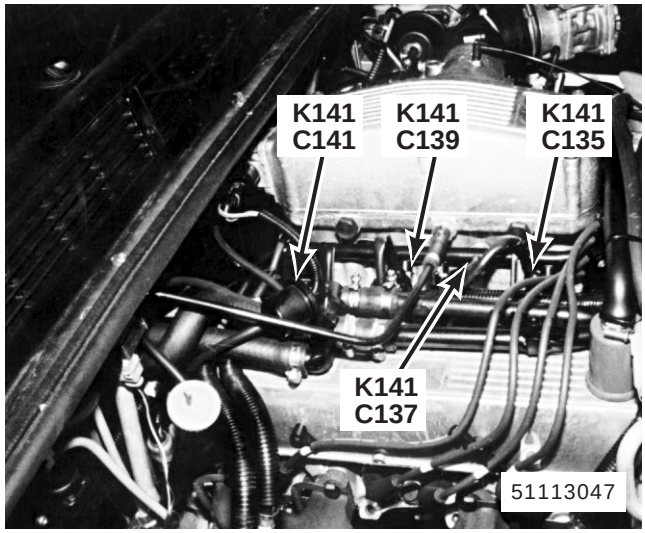
42. RH side of engine Diesel
K111 Fuel Shut−Off Solenoid
X149 Oil Pressure Switch
X171 Throttle Position Sensor



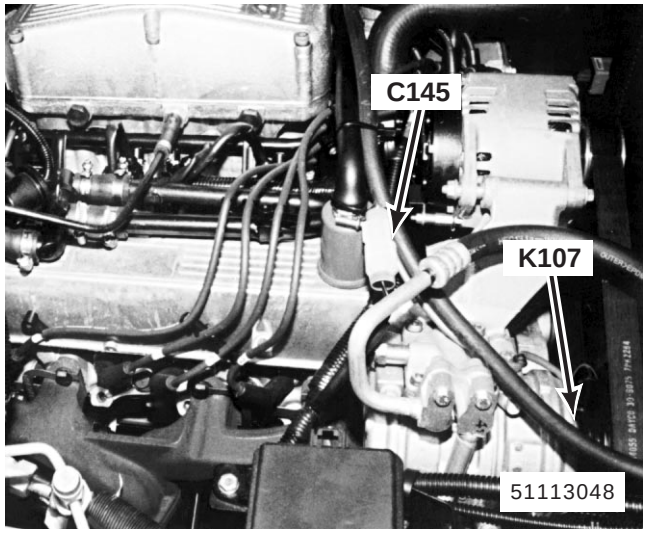
43. RH side of engine Diesel
C160 (3−B)



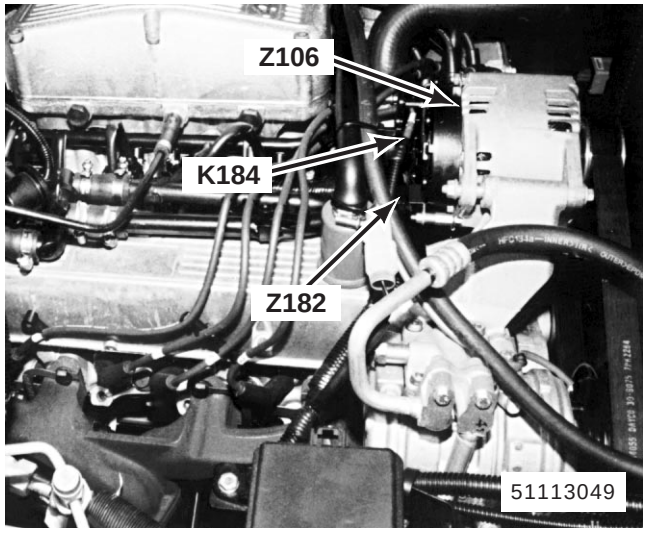
44. RH side of engine Petrol
M112 Idle Air Control Valve
C113 (3−W)
C132 (4−B)



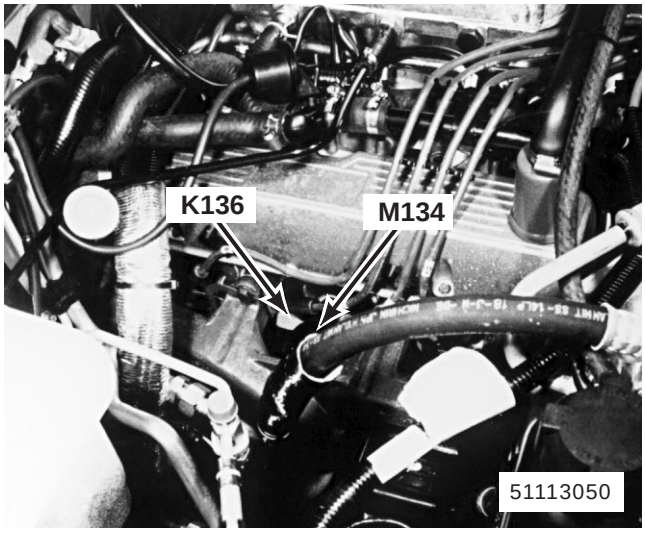
45. RH side of engine Petrol
K141 Fuel Injectors
C135 (2−B)
C137 (2−B)
C139 (2−B)
C141 (2−B)



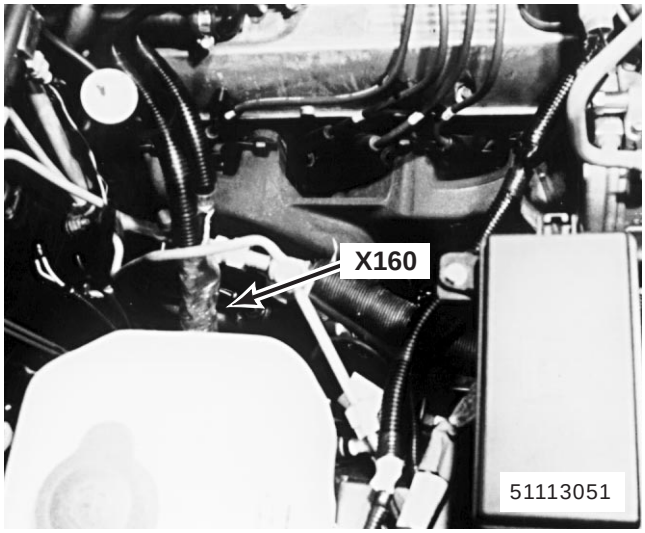
46. RH side of engine Petrol
K107 Compressor Clutch
C145 (2−W)



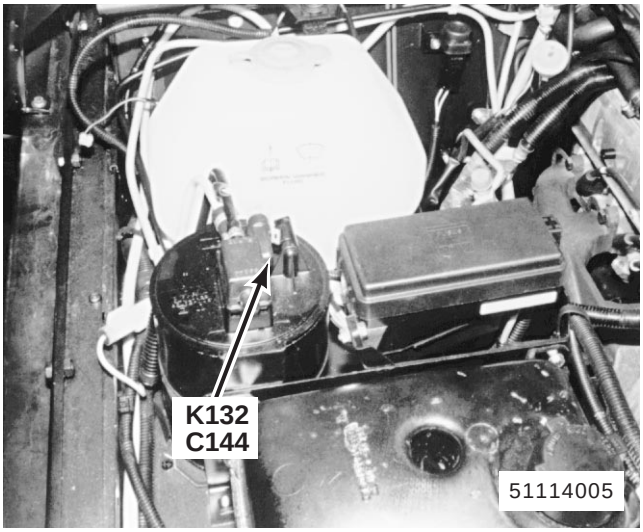
47. RH side of engine Petrol
K184 Phase Tap Resistor
Z106 Generator
Z182 Generator Suppression Capacitor



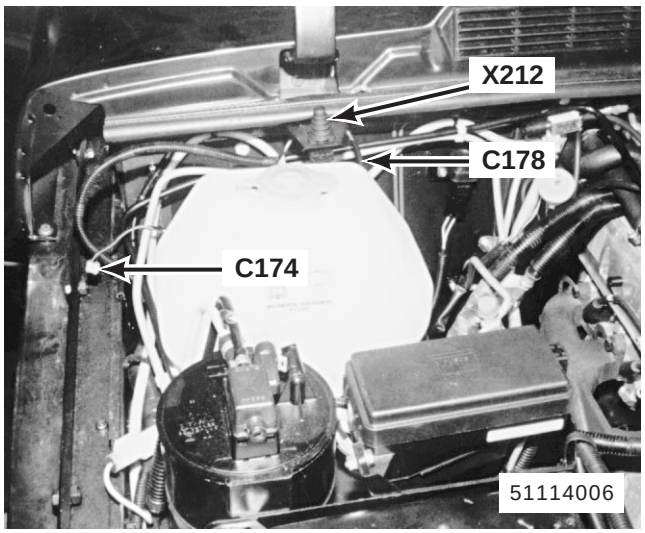
48. lower RH side of engine Petrol
K136 Starter Solenoid
M134 Starter



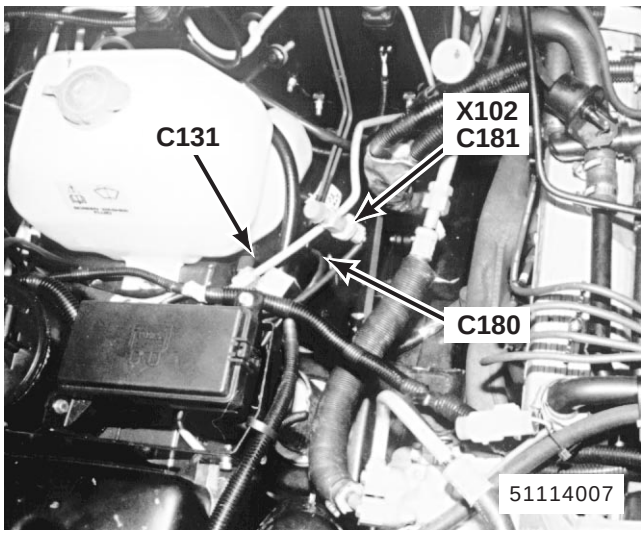
49. lower RH side of engine Petrol
X160 Right Heated Oxygen Sensor



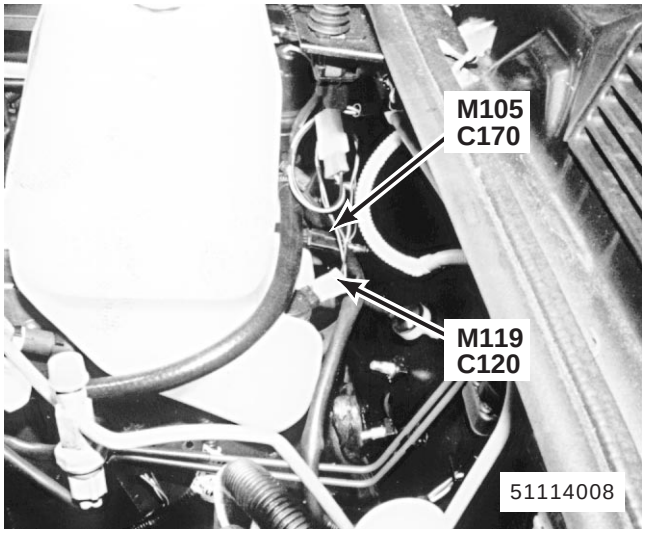
50. RH rear corner of engine compartment
K132 Evaporative Emission Canister Purge Valve
C144 (2–RU)



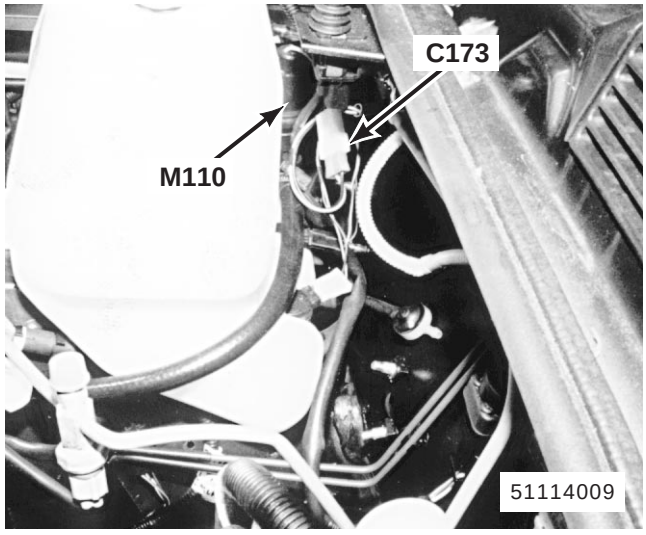
51. RH rear corner of engine compartment
X212 Alarm Bonnet Switch
C174 (2–W)
C178 (2–B)



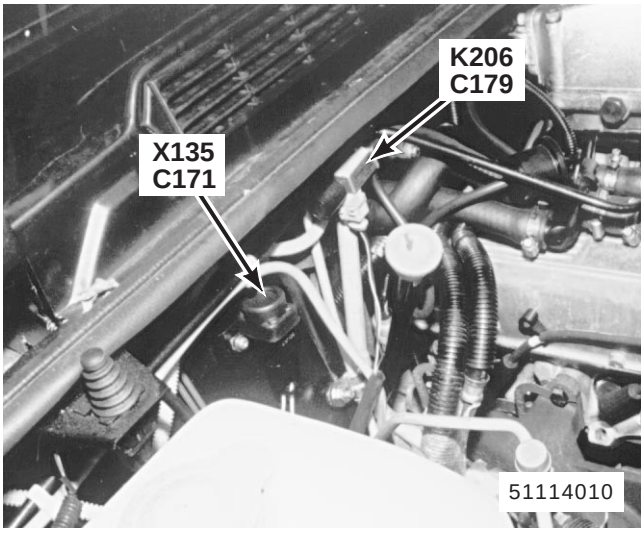
52. RH rear corner of engine compartment
X102 A/C Dual Pressure Switch
C131 (2–W)
C180 (3–B)
C181 (2–S)



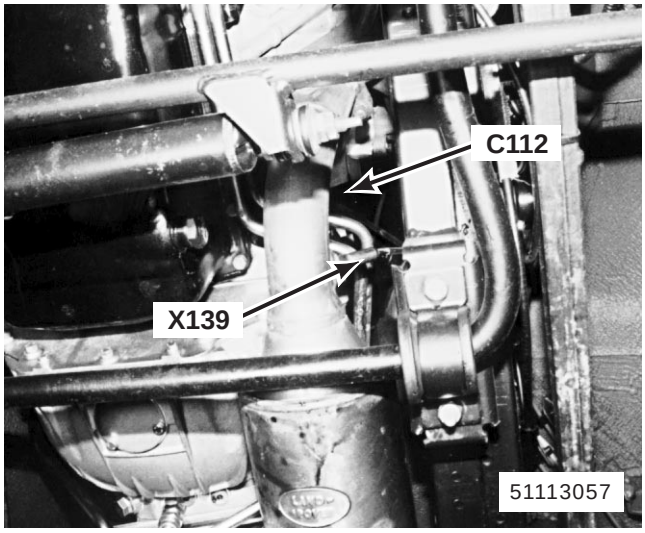
53. RH rear corner of engine compartment
M105 Front Screen Wash Pump
M119 Rear Screen Wash Pump
C120 (2–W)
C170 (2–B)



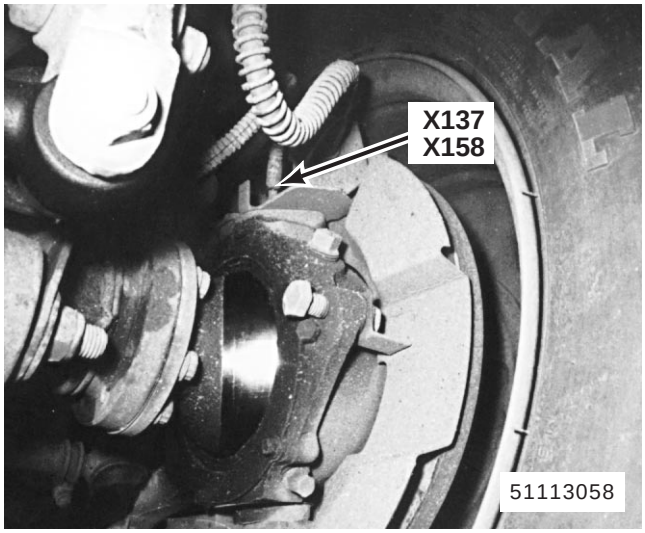
54. RH rear corner of engine compartment
M110 Headlamp Wash Pump
C173 (2–WR)



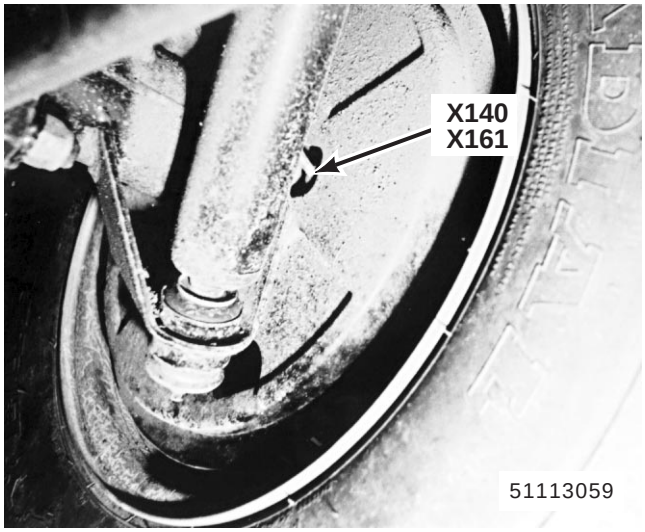
55. RH rear corner of engine compartment
K206 Water Valve
X135 Inertia Fuel Shut–Off Switch
C171 (3–B)
C179 (2–U)



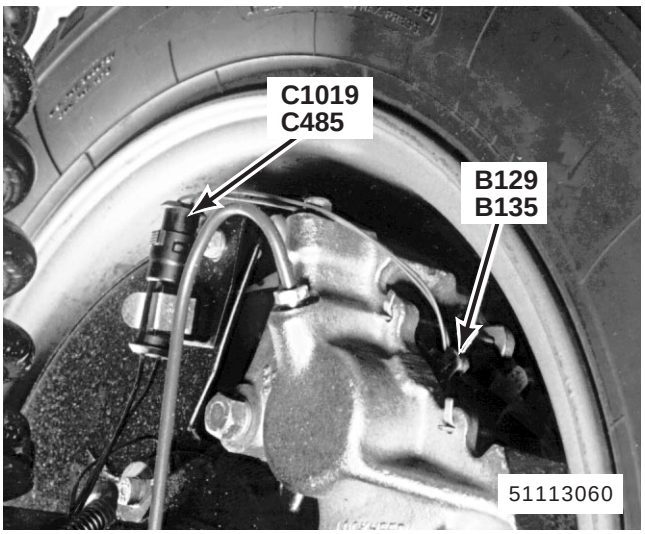
56. lower LH side of engine compartment Petrol
X139 Left Heated Oxygen Sensor
C112 (3–W)



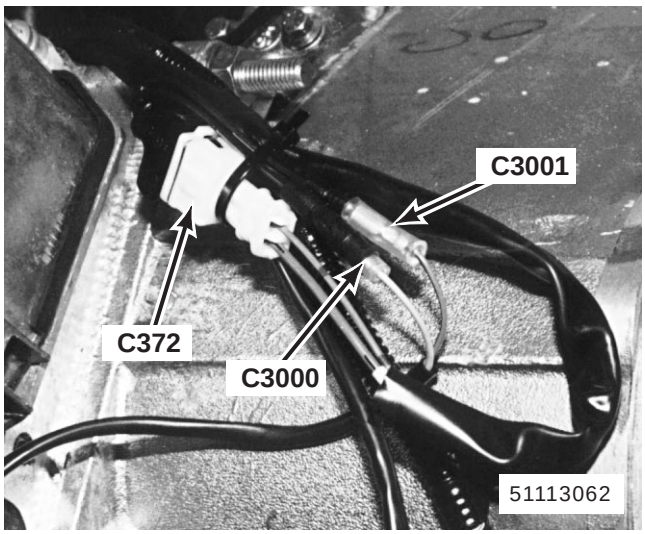
57. behind LH front wheel (RH front wheel similar)
X137 Left Front Wheel Speed Sensor
X158 Right Front Wheel Speed Sensor



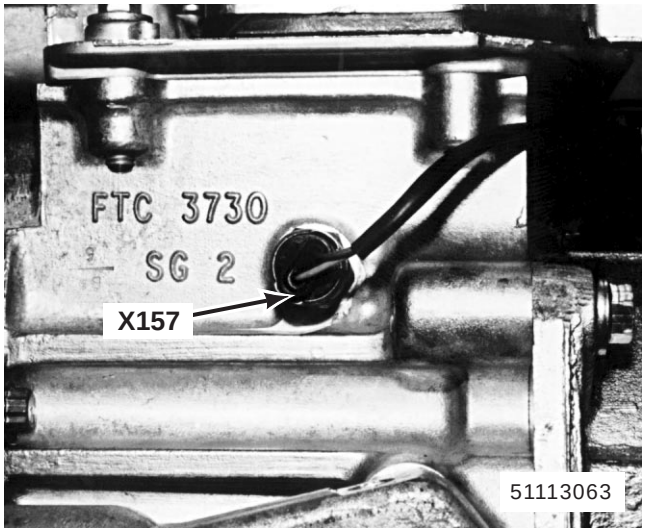
58. behind LH rear wheel (RH rear wheel similar)
X140 Left Rear Wheel Speed Sensor
X161 Right Rear Wheel Speed Sensor



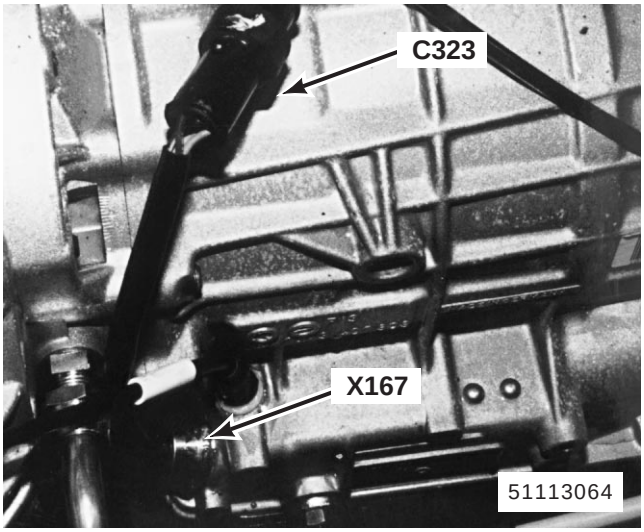
59. behind RH rear wheel (RH front wheel similar)
B129 Right Front Inboard Brake Pad
B135 Right Rear Inboard Brake Pad
C1019 (2−B) Front
C485 (2−B) Rear



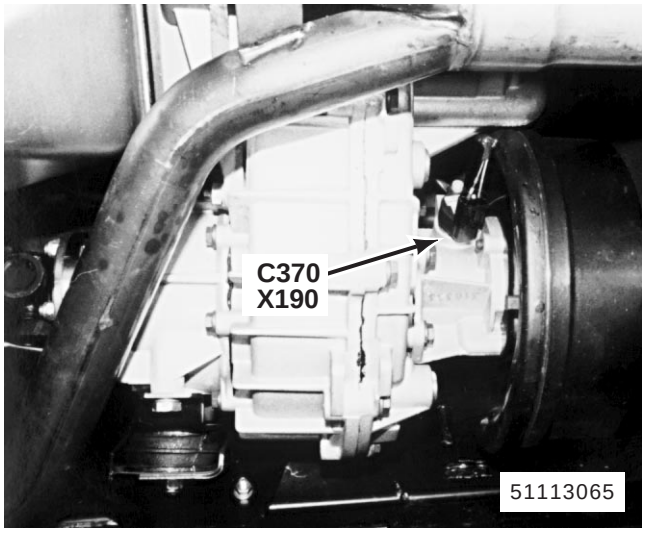
60. LH side of transmission
C372 (2−W)
C3000 (1−B)
C3001 (1−B)



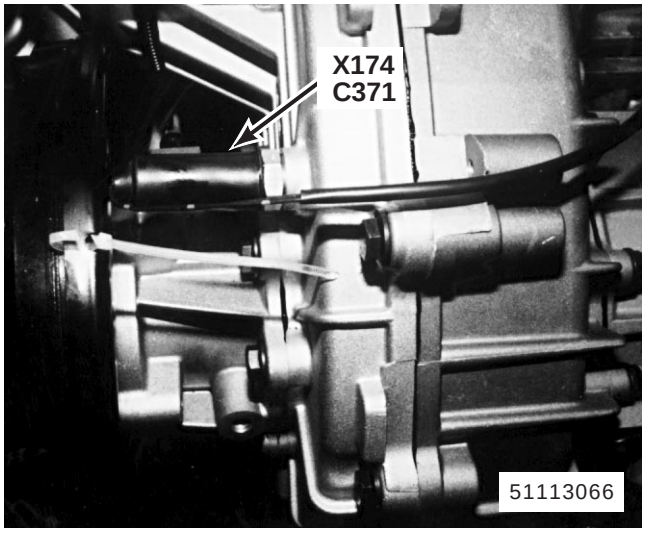
61. LH side of transmission
X157 Reverse Switch



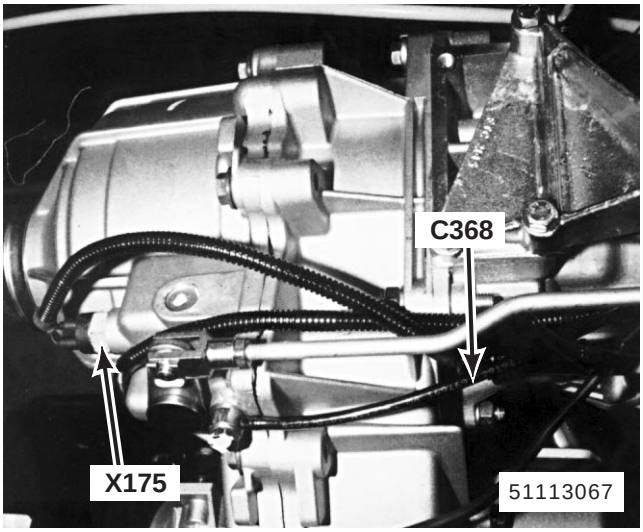
62. LH side of transmission
X167 Park/Neutral Position Switch
C323 (5–B)



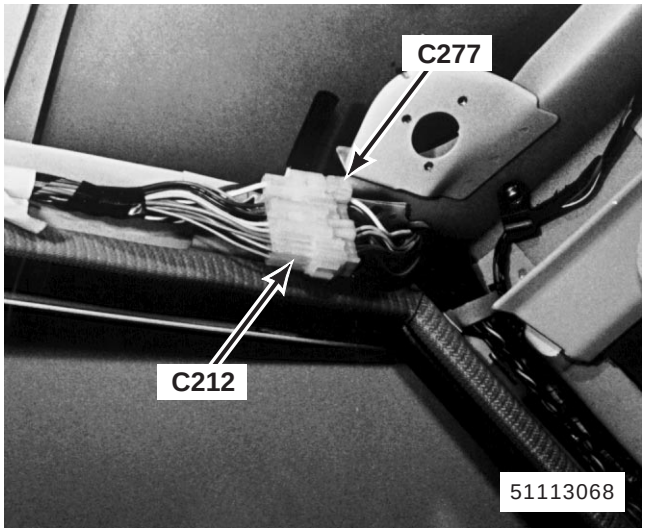
63. beneath centre of vehicle
X190 Vehicle Speed Sensor
C370 (3–B)



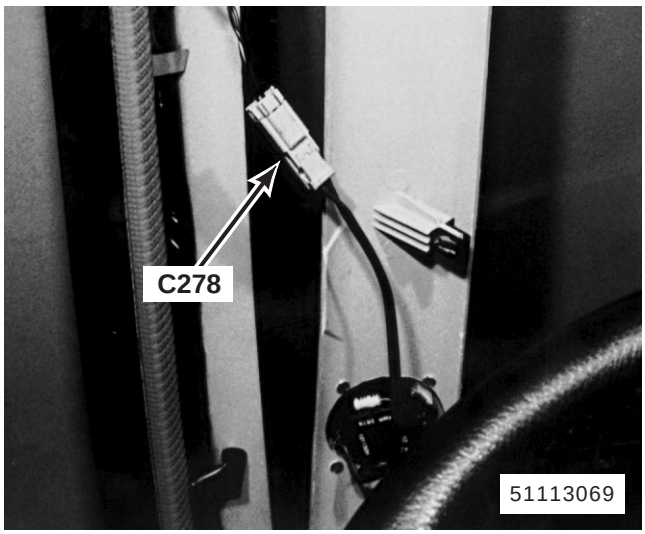
64. top RH side of transfer box
X174 Transfer Box Oil Temperature Switch
C371 (2–B)



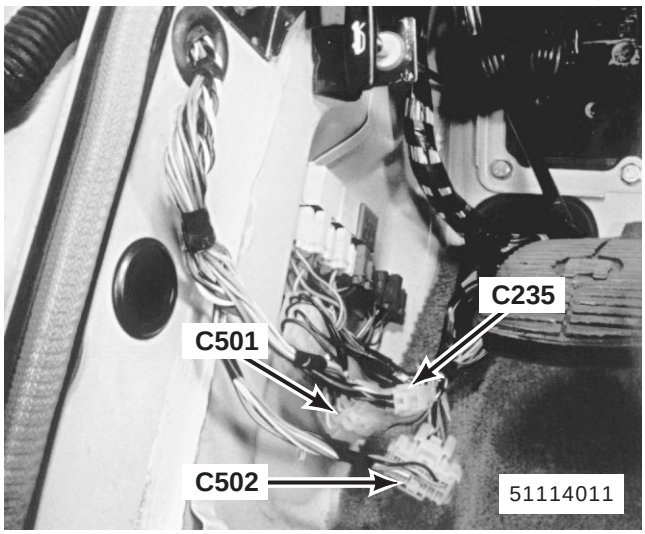
65. top RH side of transfer box
X175 Transfer Box Position Switch
C368 (3−B)



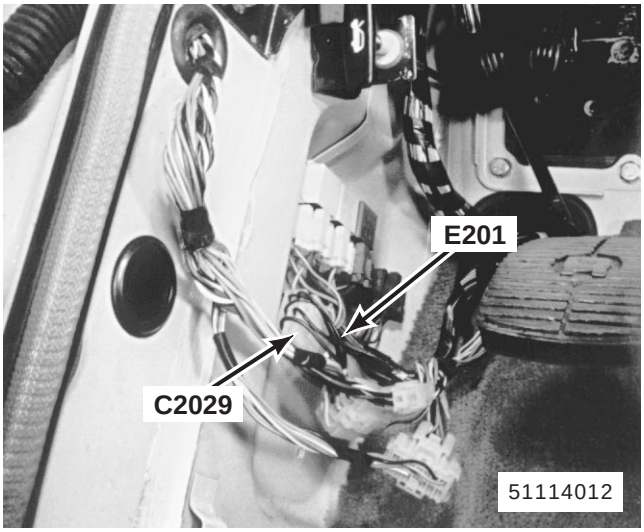
66. LH A−post
C212 (14−W)
C277 (2−W)



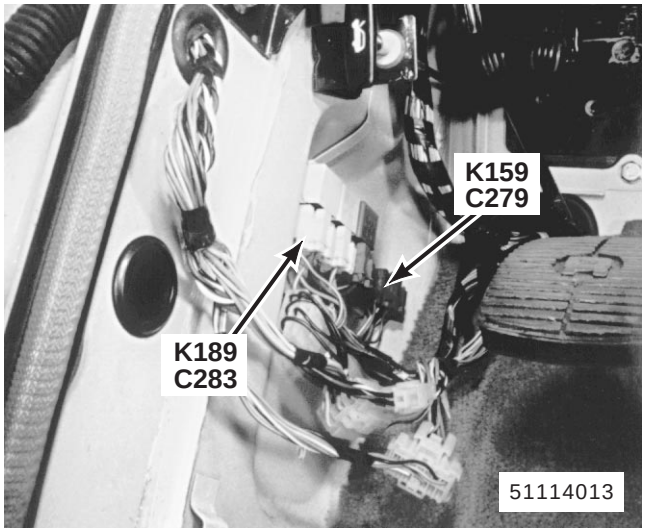
67. LH A−post
C278 (2−S)



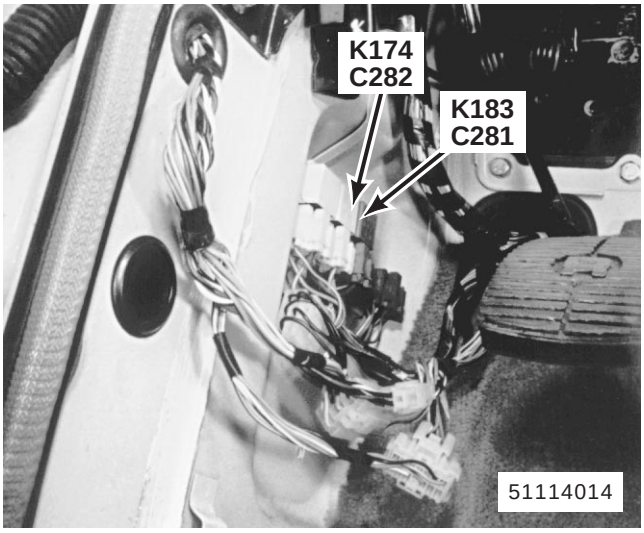
68. behind LH footwell trim panel
C501 (8−W)
C502 (13−W)
C235 (4−W)



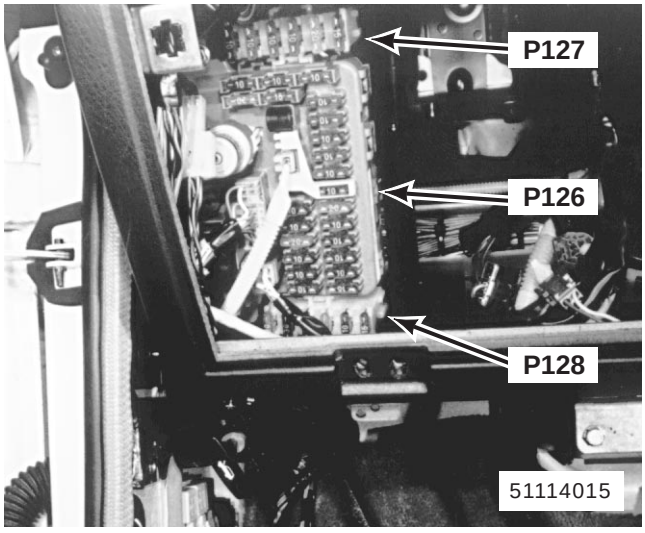
69. behind LH footwell trim panel
C2029 (6–W)
E201



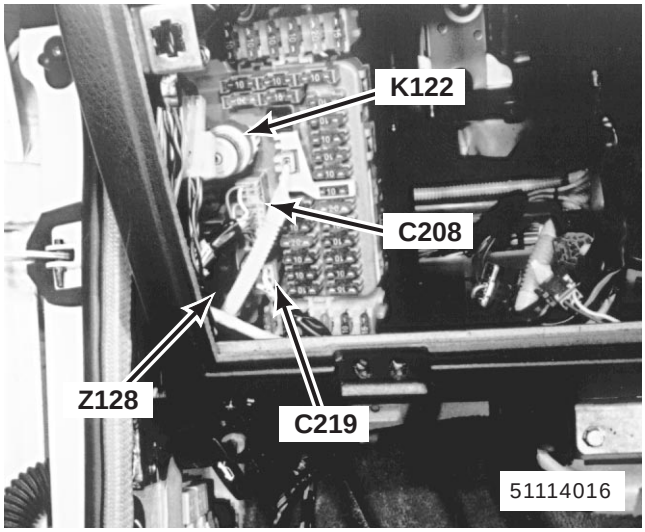
70. behind LH footwell trim panel
K159 Theft Alarm Relay
K189 Horn Relay
C279 (5–N)
C283 (5–Y)



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



72. behind LH side of fascia left of steering column
P126 Fascia Fuse Box
P127 Satellite Fuse Box 1
P128 Satellite Fuse Box 2



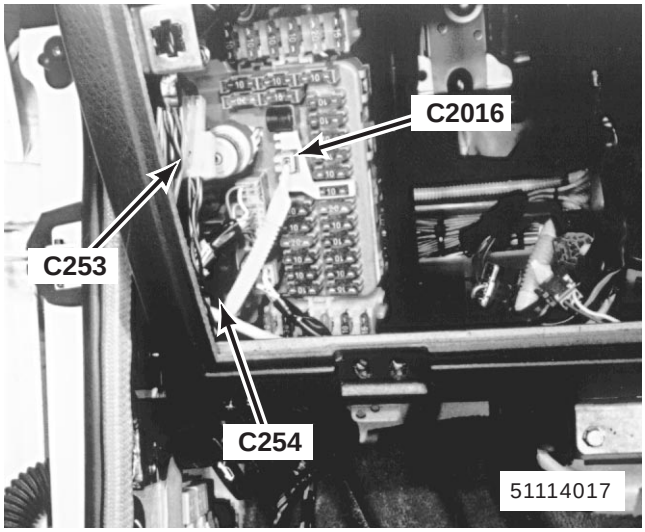
73. behind LH side of fascia left of steering column

K122 Heated Rear Screen Relay

Z128 Flasher Unit

C208 (18–W)

C219 (4–W)

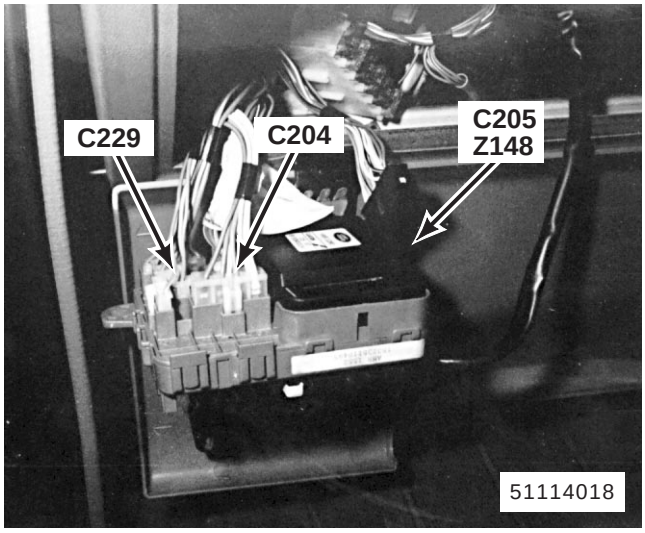


74. behind LH side of fascia left of steering column

C253 (4–W)

C254 (1–W)

C2016 (1–W)



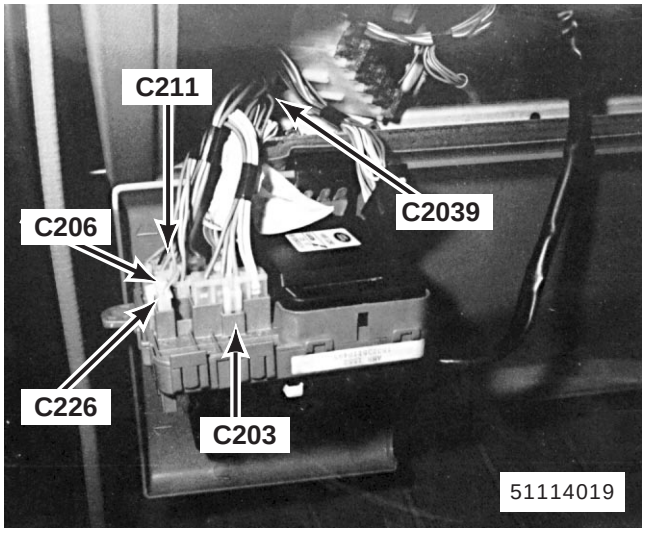
75. behind LH side of fascia rear of Fascia Fuse Box

Z148 Multi–Function Unit (MFU)

C204 (24–W)

C205 (24–B)

C229 (1–W)



76. behind LH side of fascia rear of Fascia Fuse Box

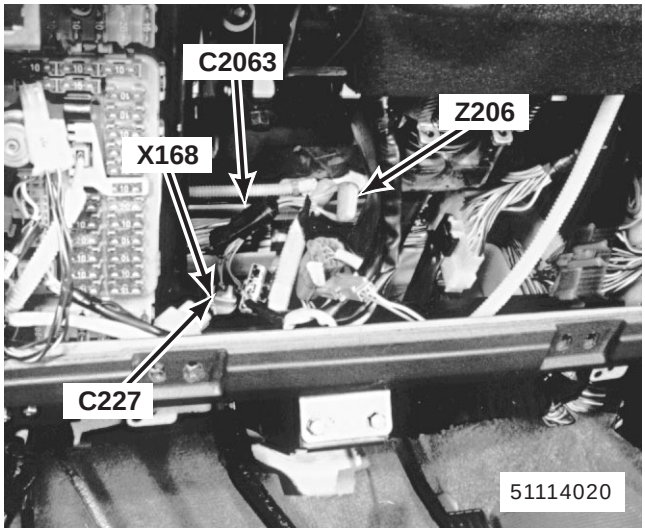
C203 (7–W)

C206 (4–W)

C211 (10–W)

C226 (3–W)

C2039 (4–B)



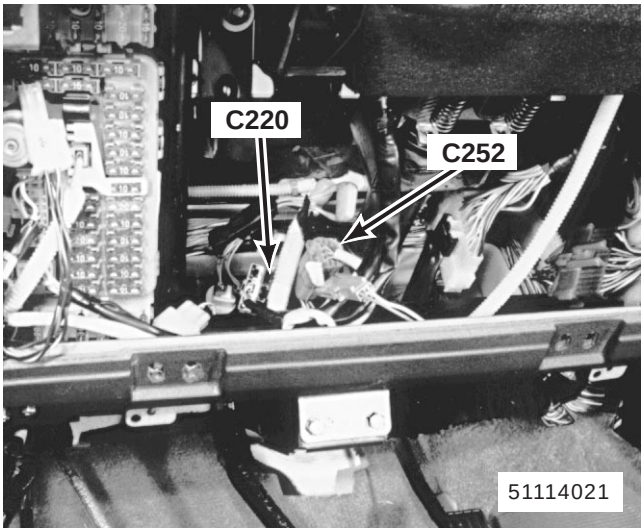
77. behind LH side of fascia left of steering column

X168 Stop Lamp Switch

Z206 Stop Lamp Switch Suppressor

C227 (4−B)

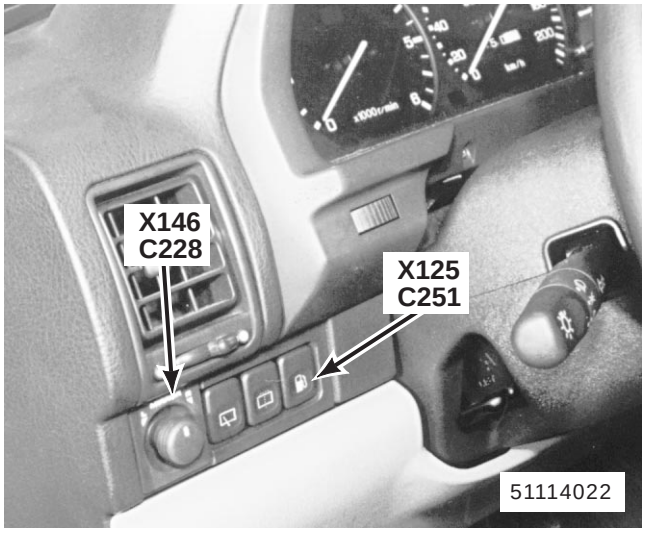
C2063 (2−B)



78. behind LH side of fascia left of steering column

C220 (3−N)

C252 (6−R)



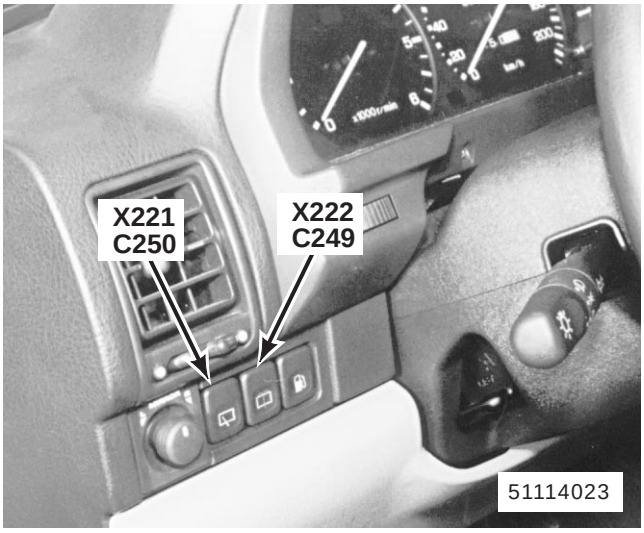
79. top LH side of fascia

X125 Fuel Flap Release Switch

X146 Mirror Adjustment Switch

C228 (8−W)

C251 (5−U)



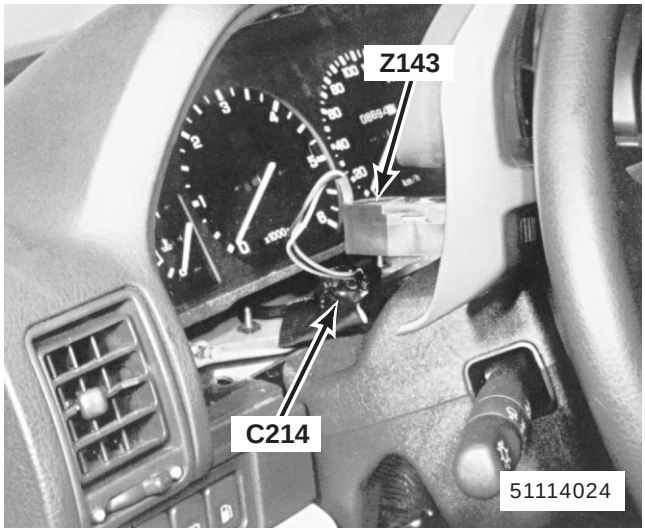
80. top LH side of fascia

X221 Rear Screen Wipe Switch

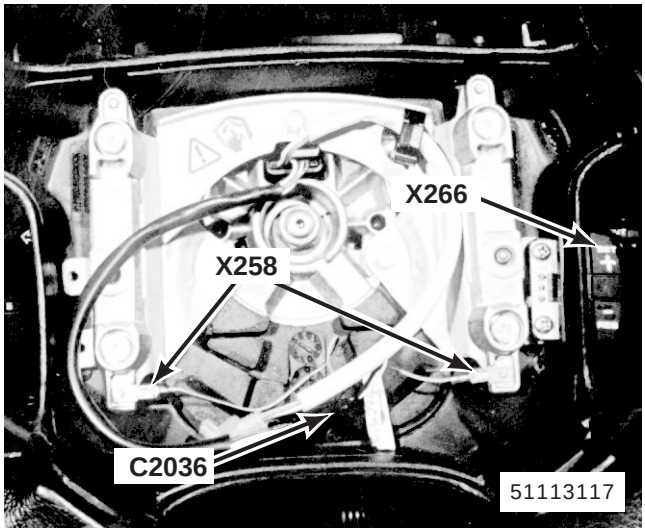
X222 Rear Screen Wash Switch

C249 (5−G)

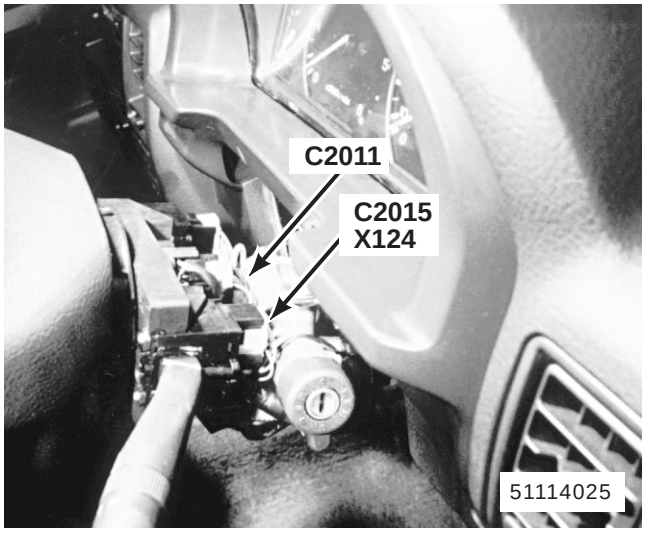
C250 (5−W)



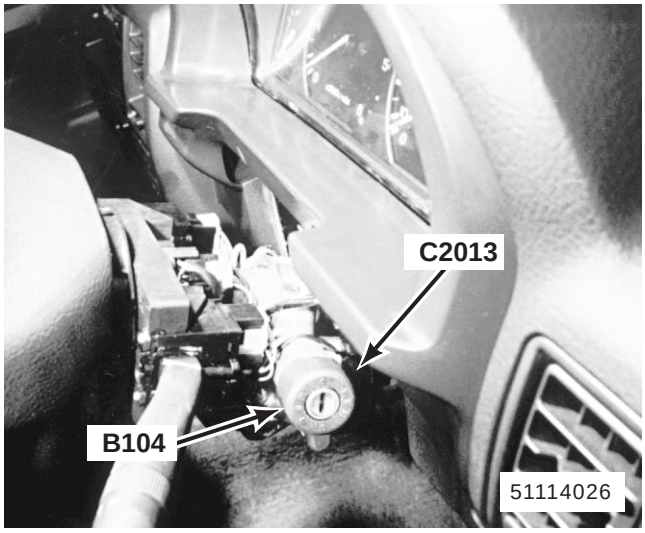
81. top LH side of fascia
Z143 Instrument Illumination Rheostat
C214 (3−B)



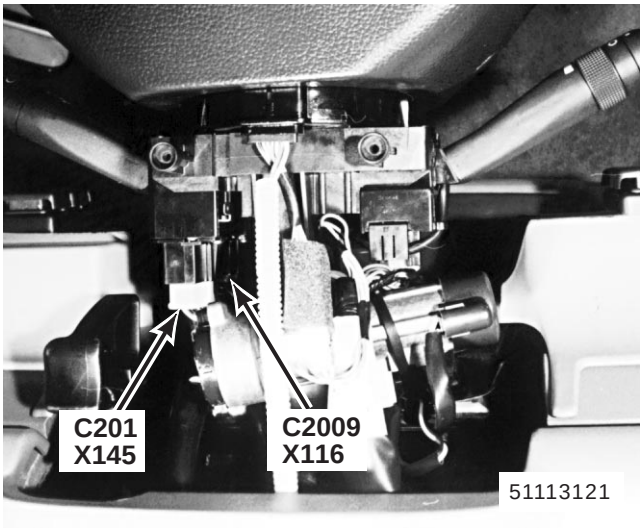
82. in steering wheel
X258 Horn Switches
X266 Steering Wheel Cruise Switches
C2036 (7−B)



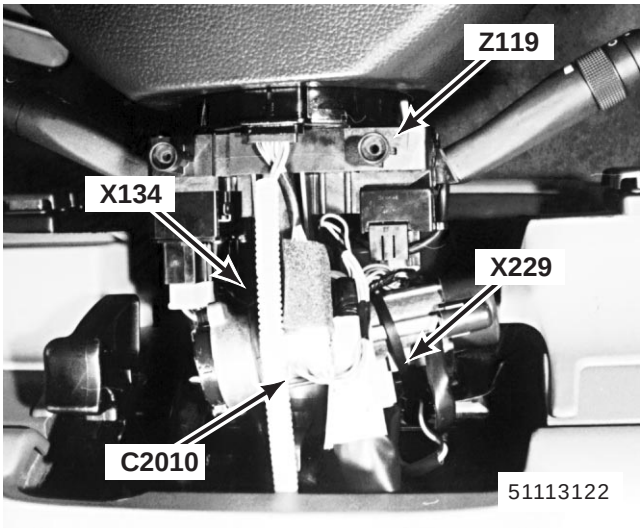
83. top of steering column
X124 Front Wipe/Wash Switch
C2011 (6−W)
C2015 (8−W)



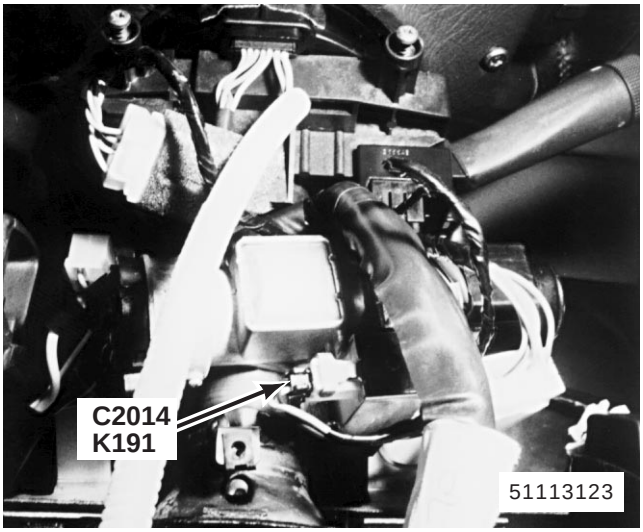
84. top of steering column
B104 Column Switch Illumination
C2013 (4−W)



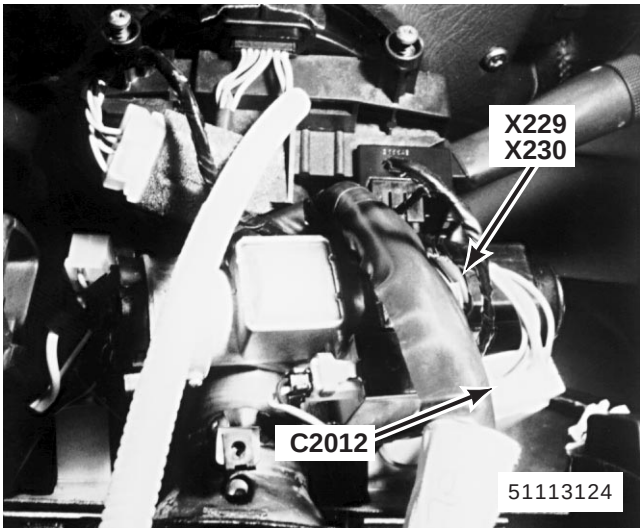
85. underside of steering column
X116 Direction Indicator Switch
X145 Main Lighting Switch
C201 (7–W)
C2009 (4–W)



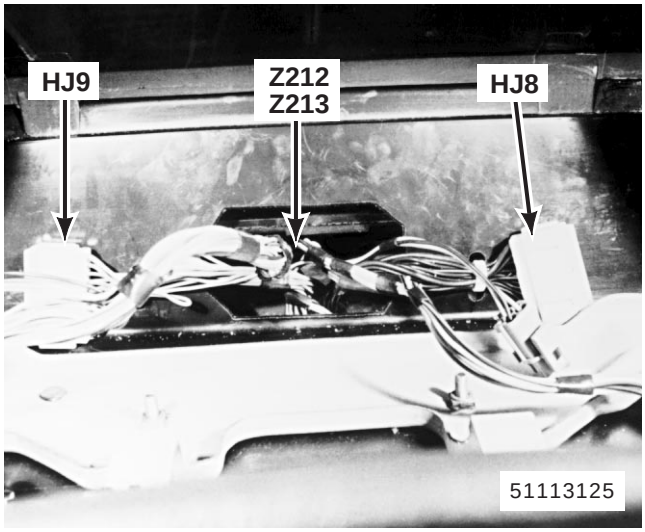
86. underside of steering column
X229 Key–In Switch
X134 Ignition Switch
Z119 Rotary Coupler
C2010 (6–W)



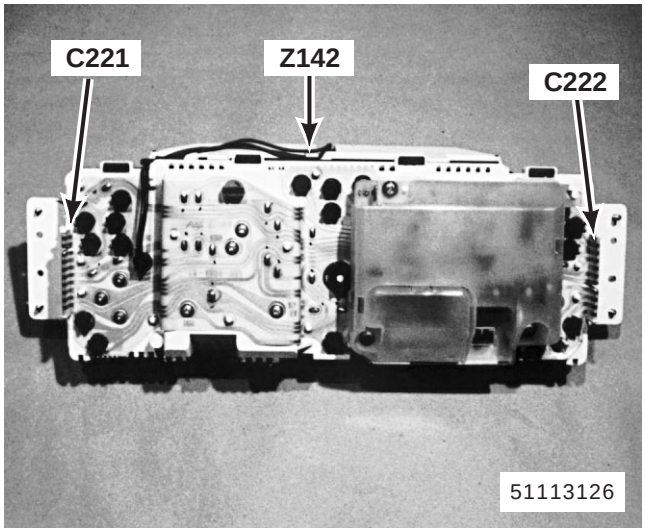
87. underside of steering column
K191 Ignition Key Lock Solenoid
C2014 (2–B)



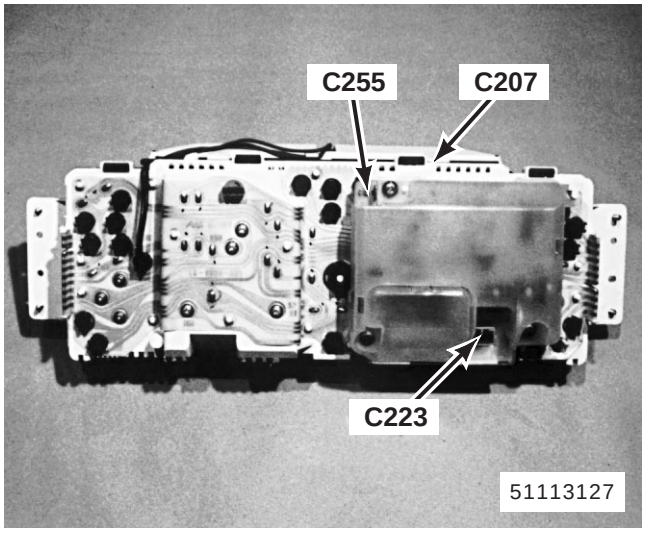
88. underside of steering column
X229 Key–In Switch
X230 Key–Barrel Switch
C2012 (8–W)



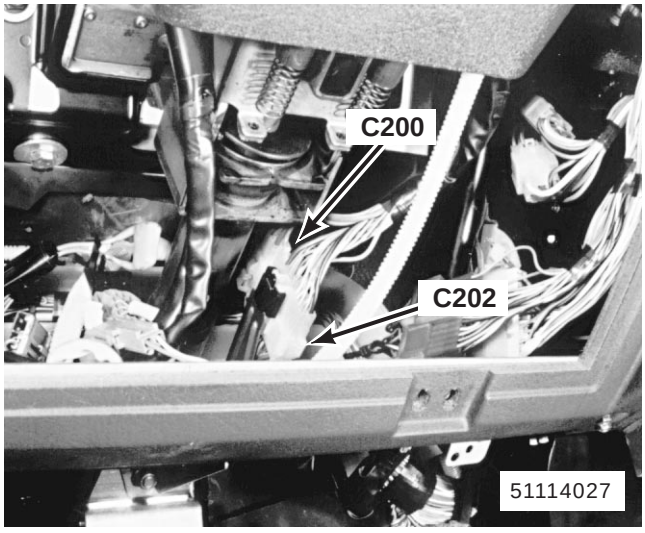
89. behind instrument cluster
Z212 Direction Indicator Diode 1
Z213 Direction Indicator Diode 2
HJ8 (20−S)
HJ9 (20−S)



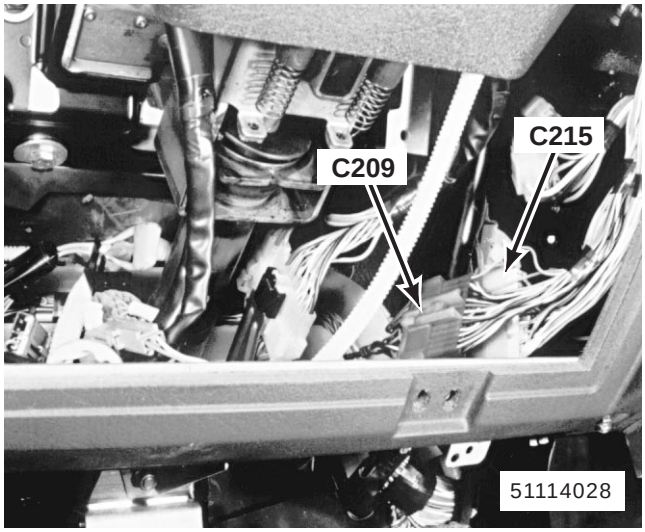
90. rear of Instrument Cluster
Z142 Instrument Cluster
C221 (10−W)
C222 (10−W)



91. rear of Instrument Cluster
C207 (10−B)
C223 (5−U)
C255 (1−B)



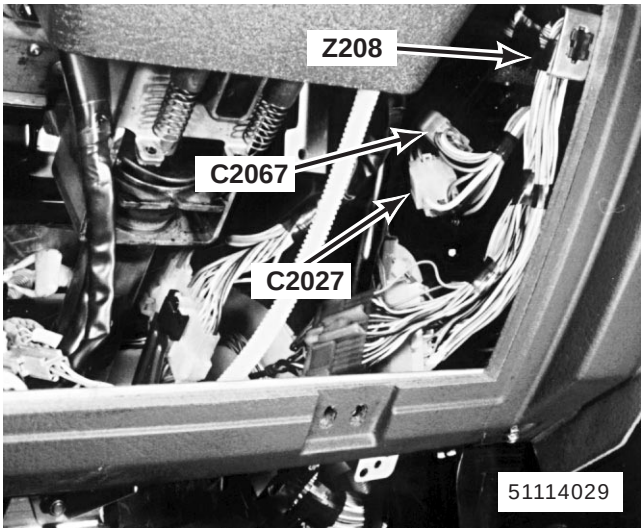
92. behind LH side of fascia right of steering column
C200 (4−W)
C202 (24−W)



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

C209 (24−G)

C215 (24−Y)

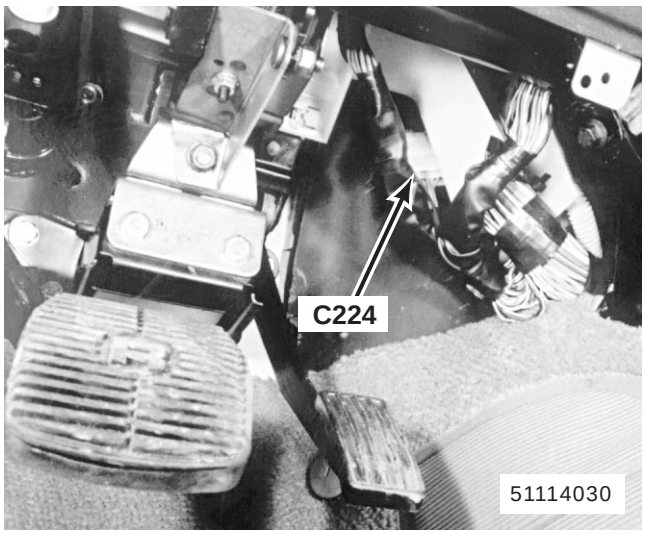


94. behind LH side of fascia LH side of heater evaporator unit

Z208 Air Supply Selector Diode

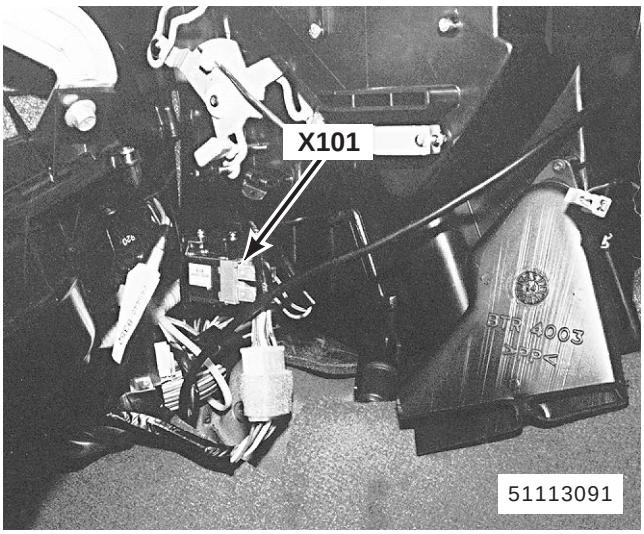
C2027 (5−W)

C2067 (10−W)



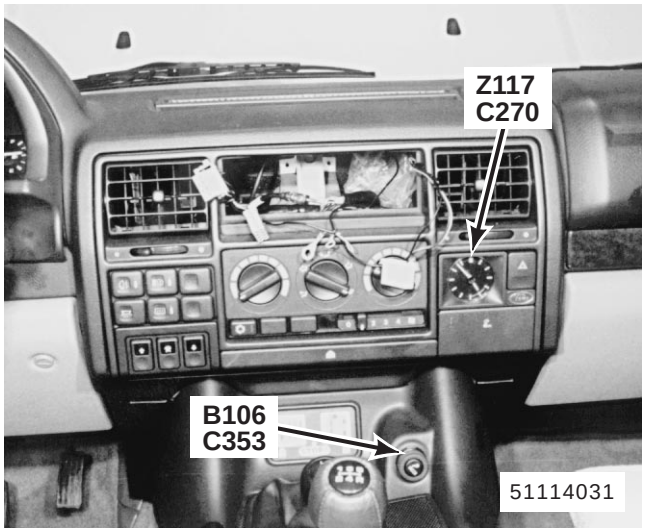
95. behind LH side of fascia

C224 (6−W)

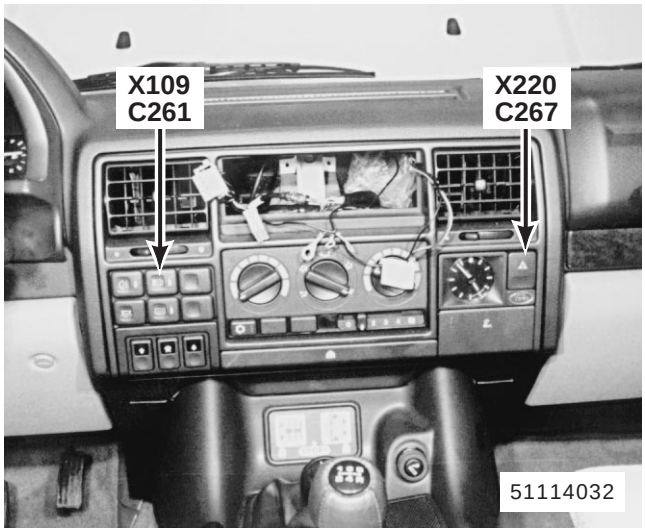


96. LH side of heater evaporator unit

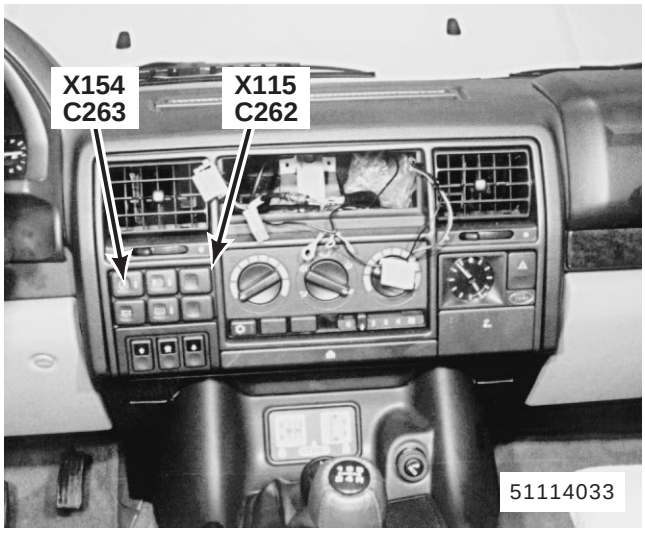
X101 Front A/C Evaporator Temperature Switch



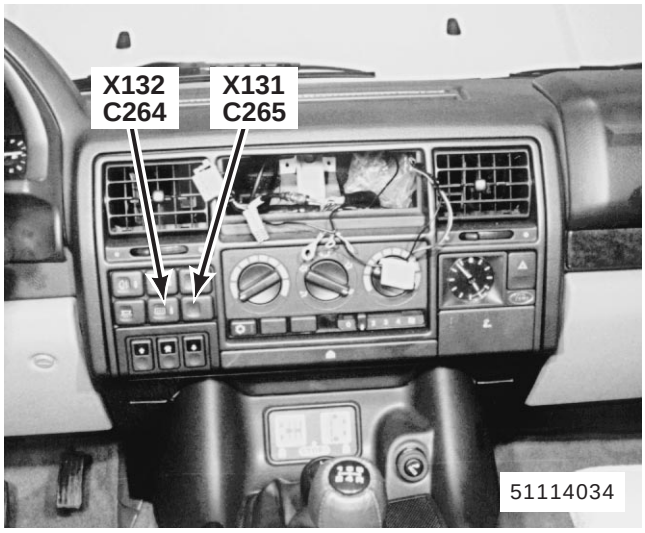
97. centre of fascia
B106 Fascia Cigar Lighter
Z117 Clock
C270 (2–W)
C353 (2–W)



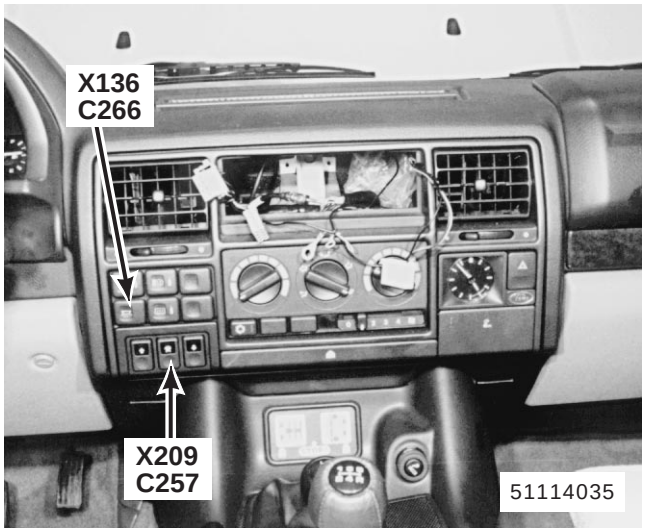
98. centre of fascia
X109 Auxiliary Lamps Switch
X220 Hazard Switch
C261 (5–W)
C267 (10–W)



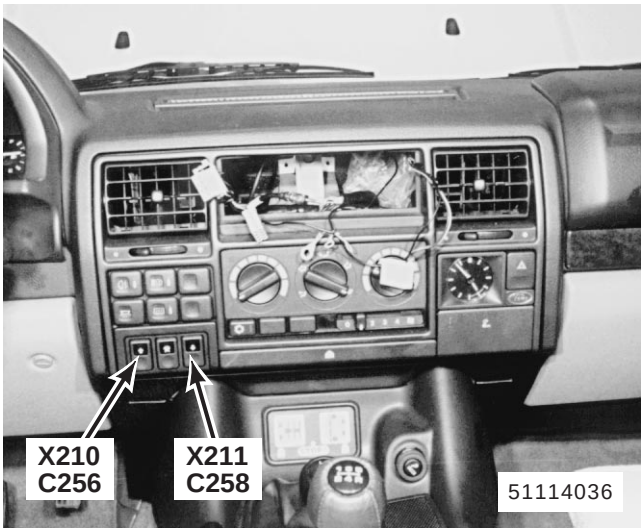
99. centre of fascia
X115 Cruise Control Switch
X154 Rear Fog Guard Lamps Switch
C262 (5–U)
C263 (5–U)



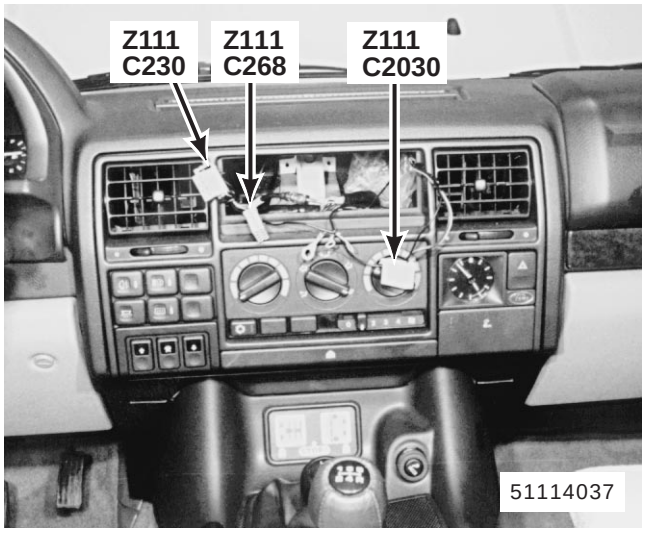
100. centre of fascia
X131 Heated Front Screen Switch
X132 Heated Rear Screen Switch
C264 (5–U)
C265 (5–U)



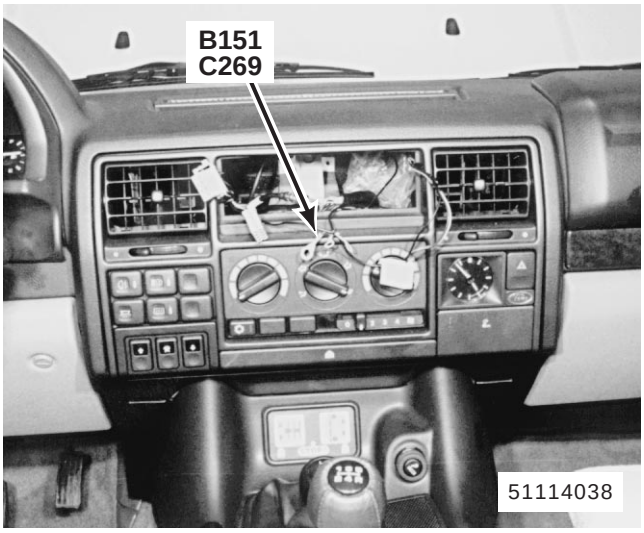
101. centre of fascia
X136 Interior Lamps Switch
X209 Air Suspension Inhibit Switch
C257 (6−W)
C266 (5−W)



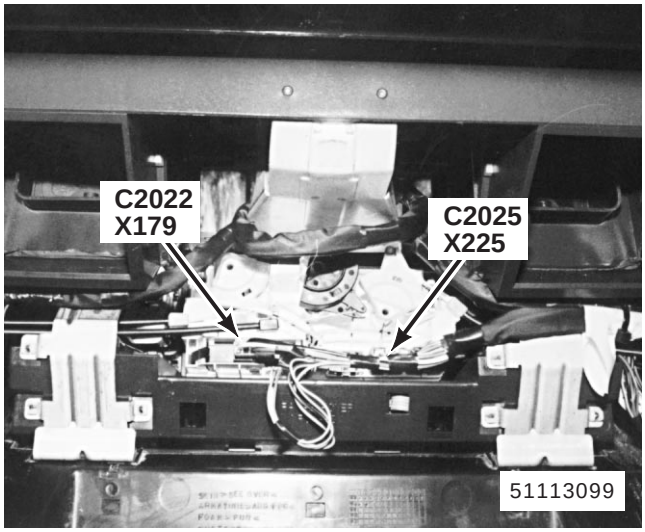
102. centre of fascia
X210 Air Suspension Up Switch
X211 Air Suspension Down Switch
C256 (6−R)
C258 (6−G)



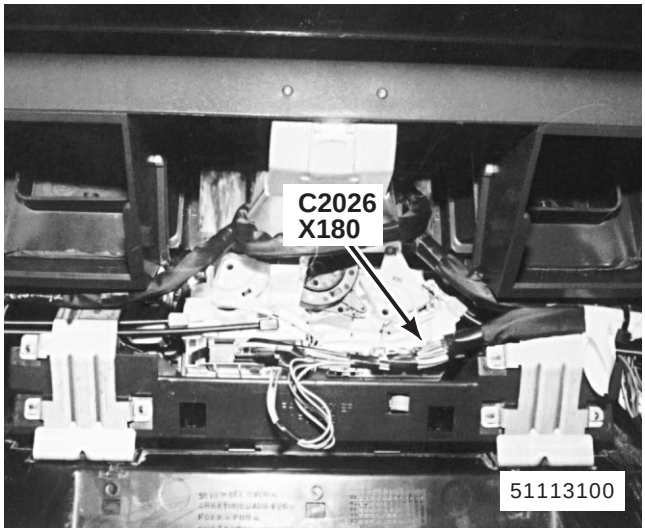
103. centre of fascia
Z111 Radio
C230 (8−S)
C268 (8−N)
C2030 (10−K)



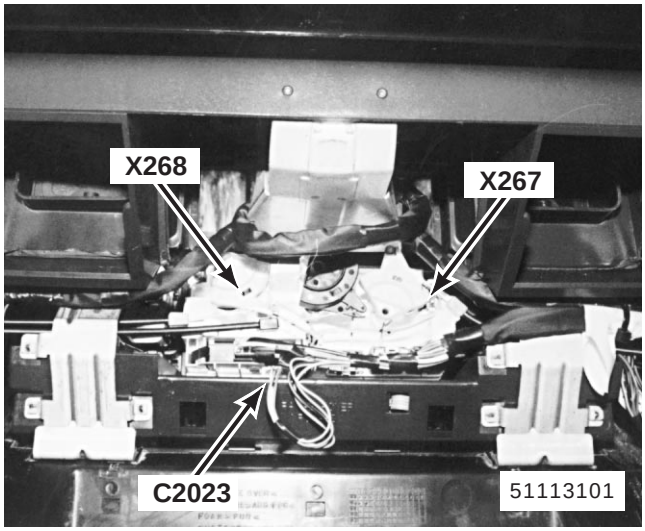
104. centre of fascia
B151 Theft Alarm LED
C269 (2−B)



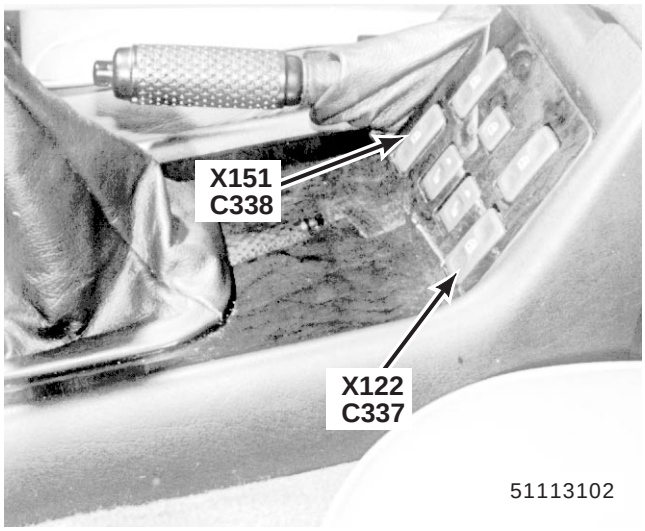
105. behind heater and A/C control panel
X179 Fan Speed Switch
X225 Front A/C Switch
C2022 (5–W)
C2025 (5–W)



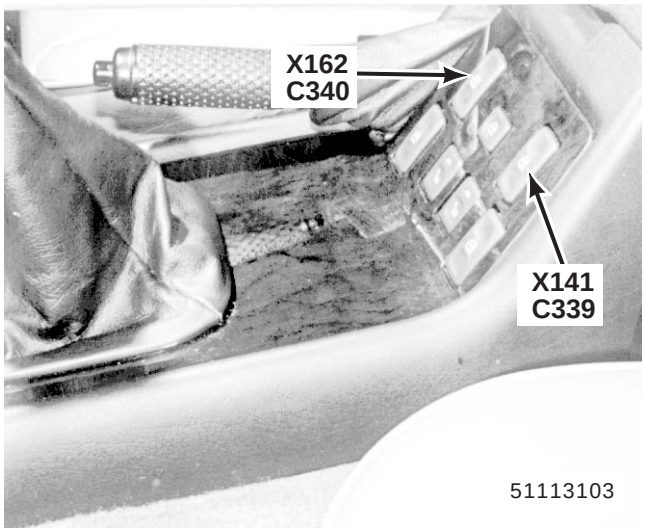
106. behind heater and A/C control panel
X180 Air Supply Selector Switch
C2026 (5–B)



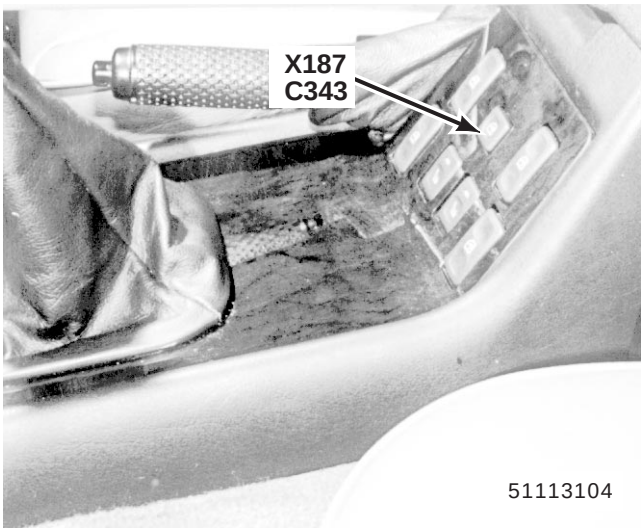
107. behind heater and A/C control panel
X267 Left Maximum Cool Switch
X268 Right Maximum Cool Switch
C2023 (4–W)



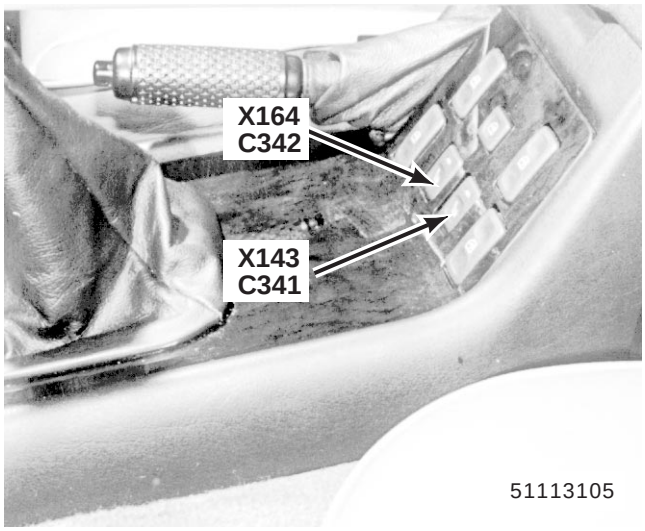
108. in rear of centre console
X122 Left Front Window Switch
X151 Right Front Window Switch
C337 (7–G)
C338 (7–W)



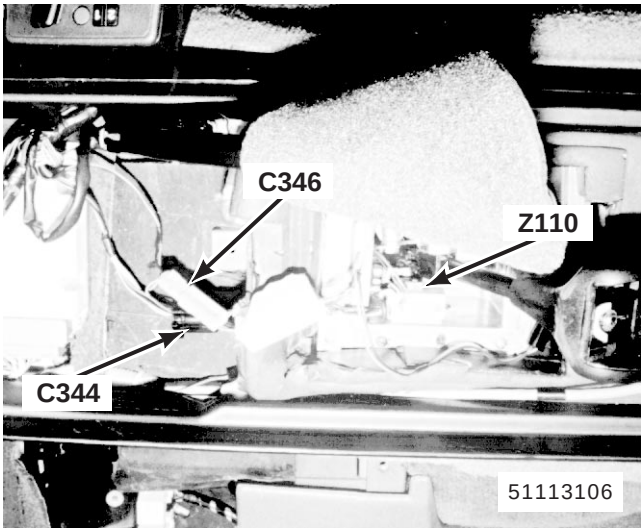
109. in rear of centre console
X141 Left Rear Window Console Switch
X162 Right Rear Window Console Switch
C339 (7−Y)
C340 (7−R)



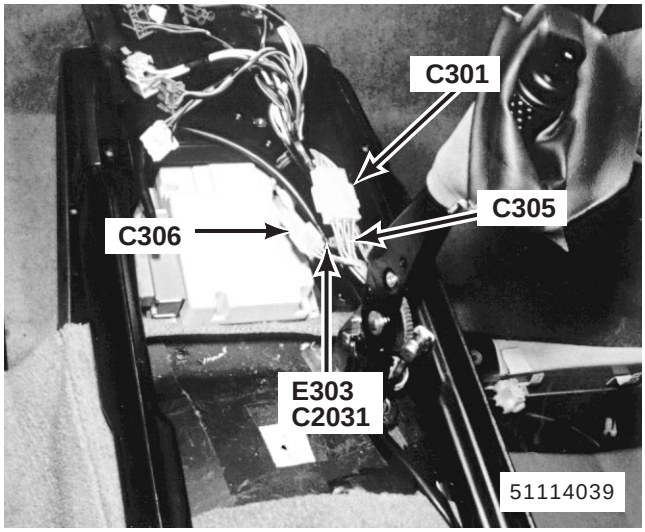
110. in rear of centre console
X187 Rear Window Isolation Switch
C343 (7−N)



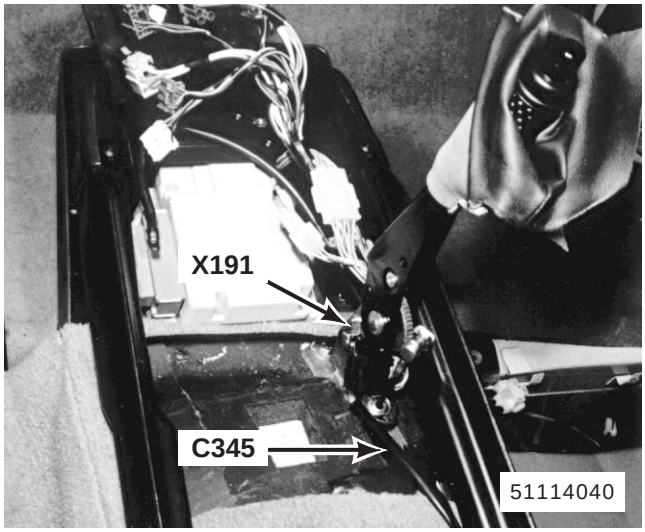
111. in rear of centre console
X143 Left Seat Heat Switch
X164 Right Seat Heat Switch
C341 (5−W)
C342 (5−G)



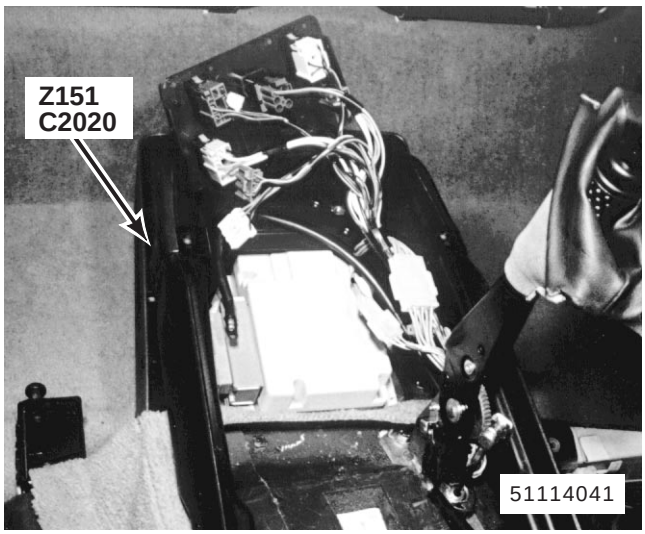
112. beneath centre console
Z110 Transmission Range Selector Switch
C344 (6−B)
C346 (2−U)



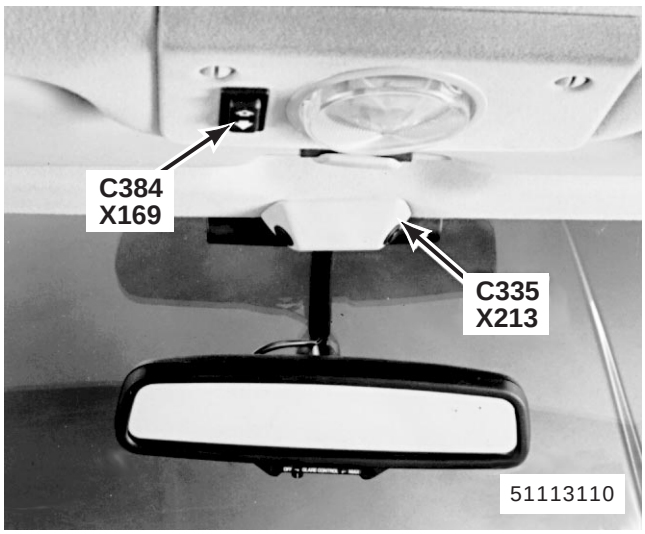
113. beneath centre console
C2031 (6−W)
C301 (6−W)
C305 (2−W)
C306 (3−W)
E303



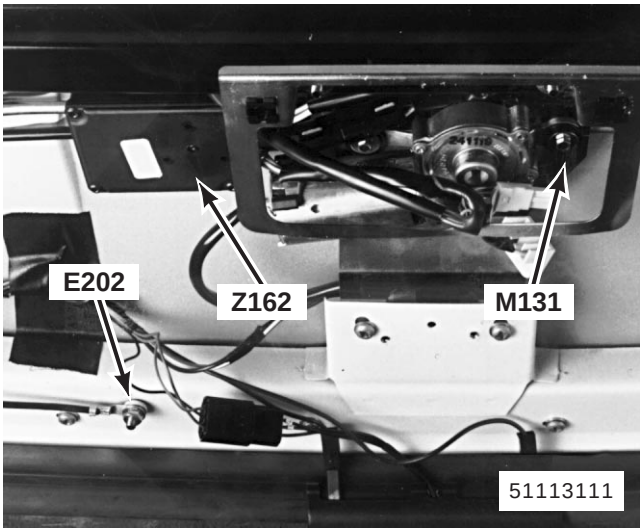
114. beneath centre console
X191 Handbrake Switch
C345 (2−B)



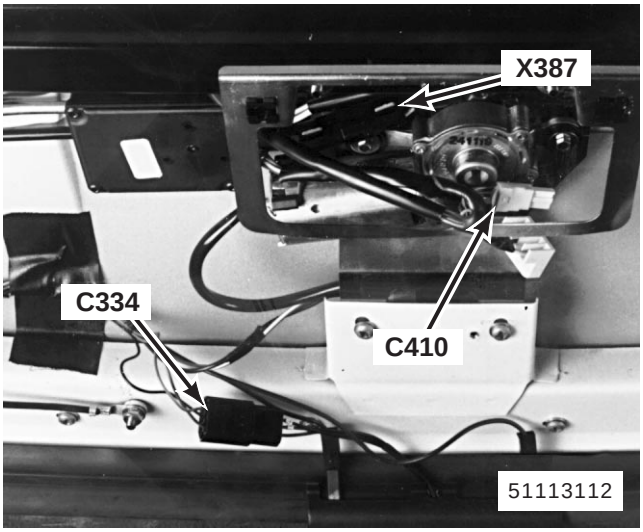
115. beneath centre console
Z151 Air Bag Diagnostic Control Module
C2020 (29−R)



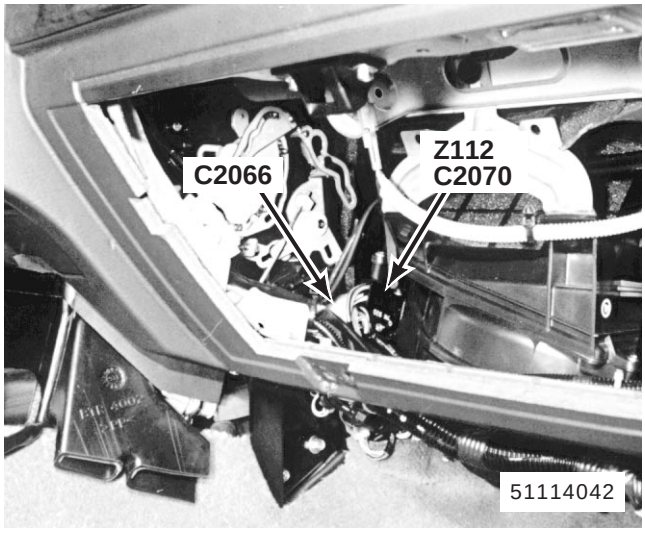
116. front centre of roof
X169 Sunroof Switch
X213 Alarm Sensor
C335 (4−B)
C384 (5−W)



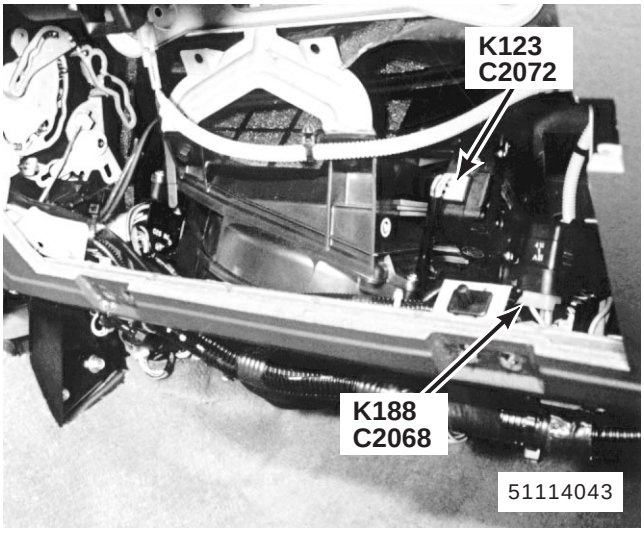
117. front centre of roof
M131 Sunroof Motor
Z162 Sunroof Control Unit
E202



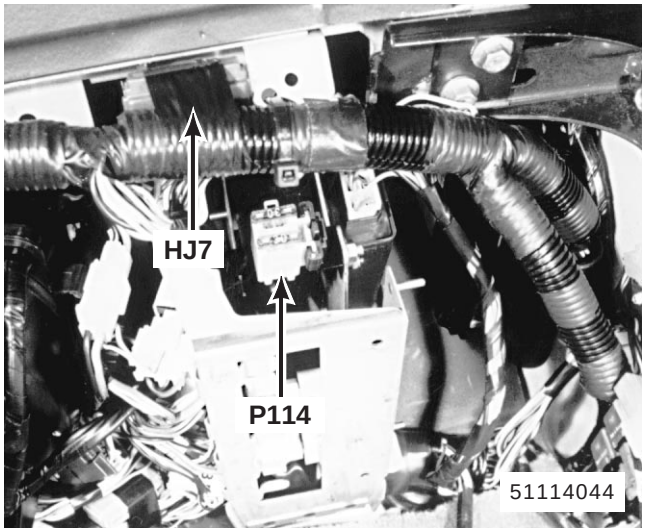
118. front centre of roof
C334 (3–B)
C387 (3–B)
C410 (2–W)



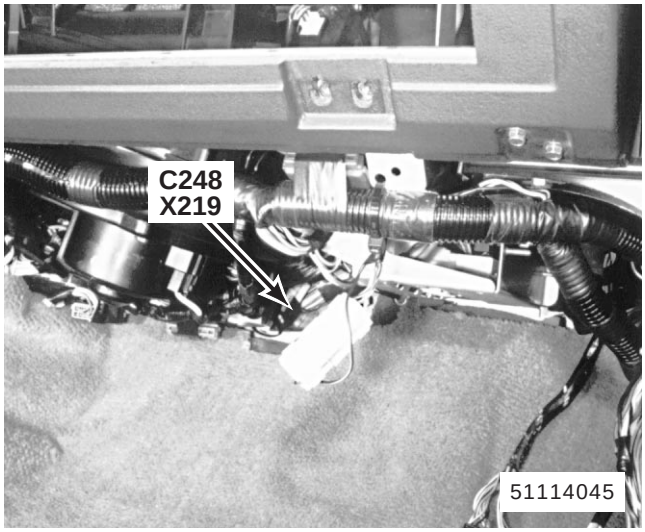
119. behind RH side of fascia right of heater evaporator unit
Z112 Blower Resistor Unit
C2066 (8–W)
C2070 (4–B)



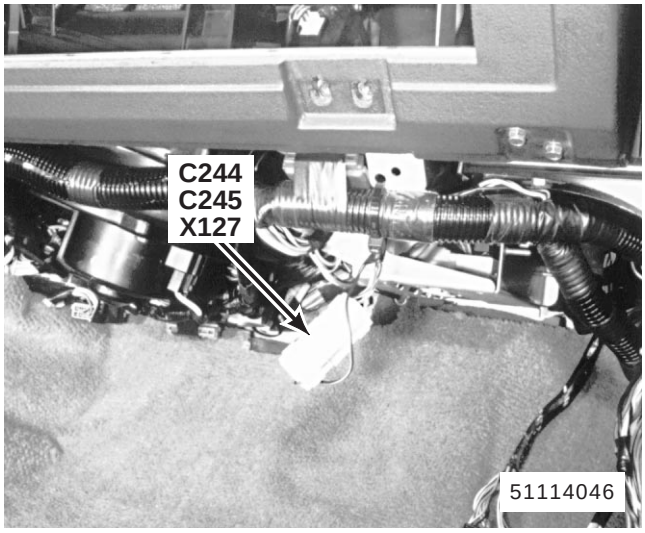
120. behind RH side of fascia
K123 Air Recirculation Solenoid
K188 Blower Motor Relay
C2068 (5–B)
C2072 (4–Y)



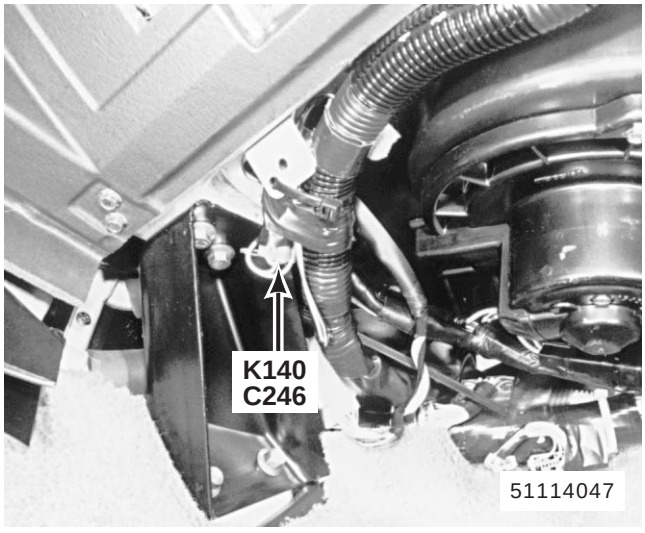
121. behind RH side of fascia
P114 Heated Front Screen Fuse Block
HJ7 (20−U)



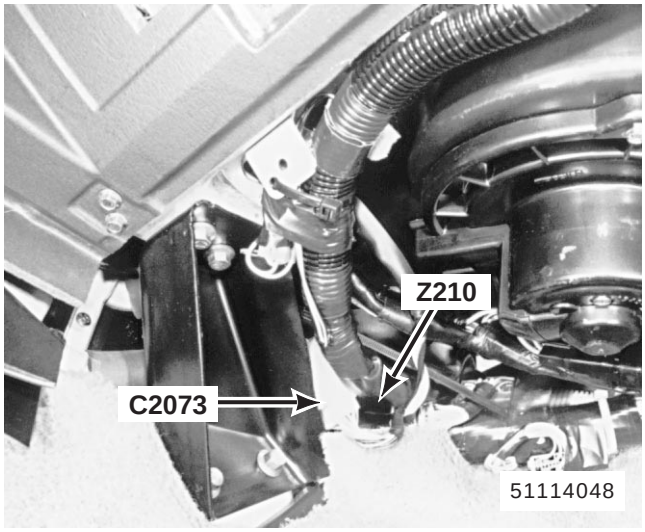
122. behind RH side of fascia Diesel
X219 Data Link Connector (EGR)
C248 (3−W)



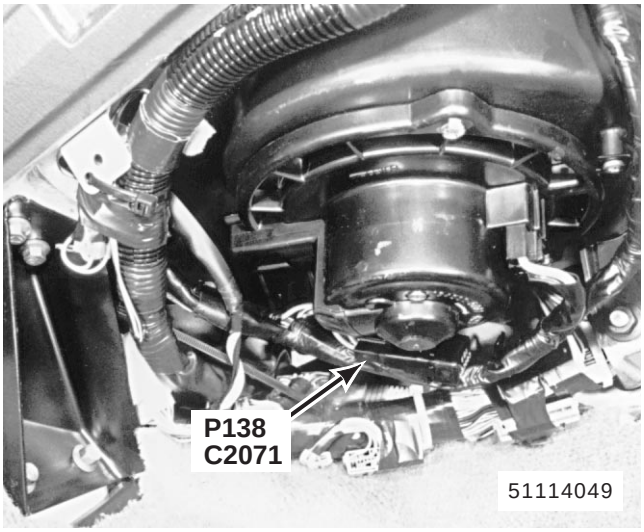
123. behind RH side of fascia Petrol
X127 Data Link Connectors
C244 (5−W)
C245 (5−W)



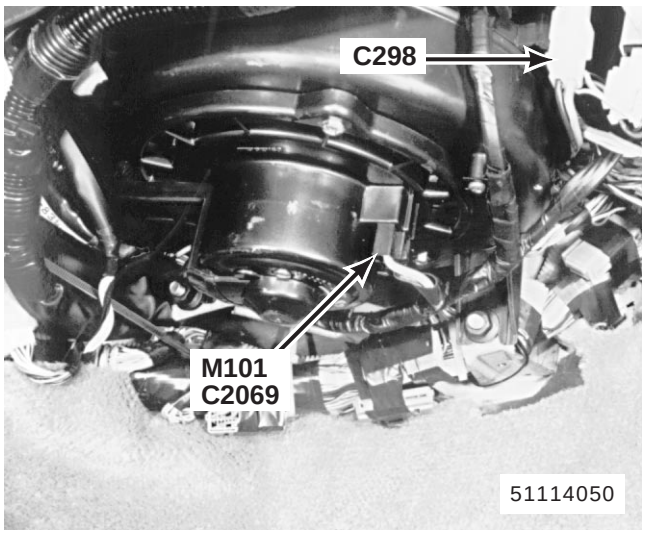
124. behind RH side of fascia
K140 Tune Select Resistor
C246 (2−U)



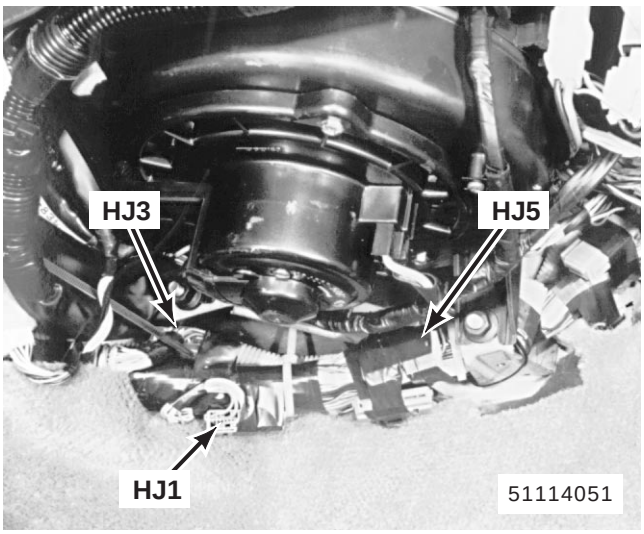
125. behind RH side of fascia
Z210 Condenser Fan Control Diode 2
C2073 (10–W)



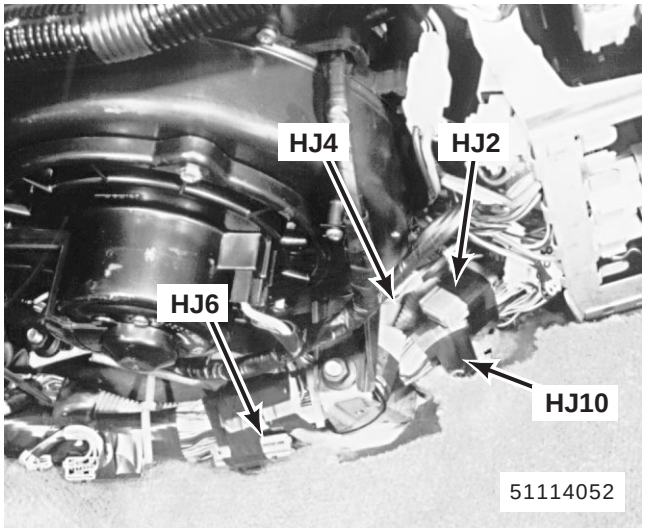
126. behind RH side of fascia
P138 Air Recirculation Solenoid In–Line Fuse
C2071 (2–B)



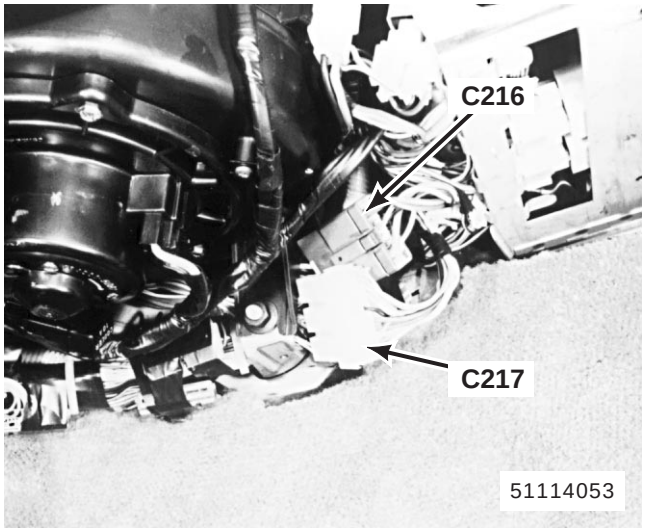
127. behind RH side of fascia
M101 Front Blower Motor
C298 (3–W)
C2069 (2–B)



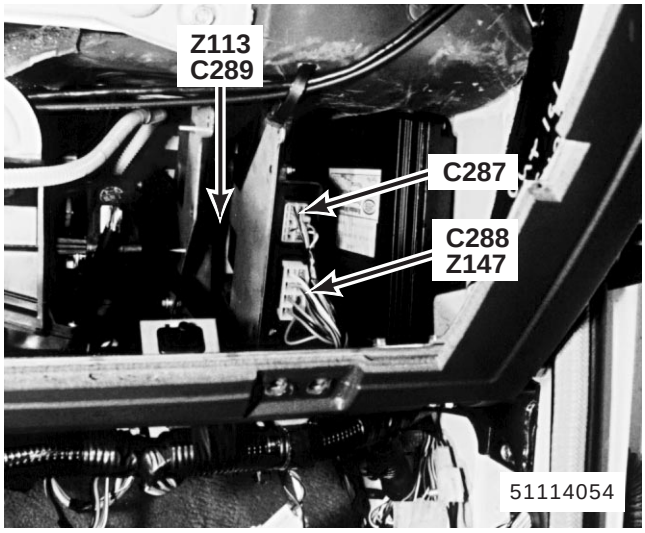
128. behind RH side of fascia
HJ1 (20–S)
HJ3 (20–U)
HJ5 (20–S)



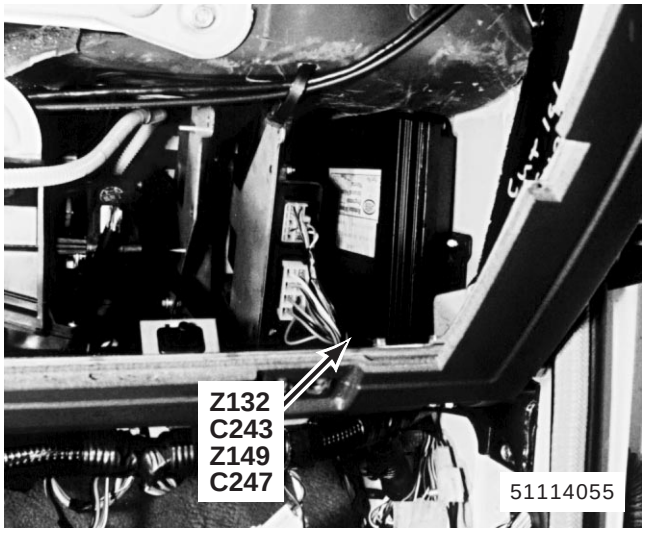
129. behind RH side of fascia
HJ2 (20–S)
HJ4 (20–S)
HJ6 (20–G)
HJ10 (20–S)



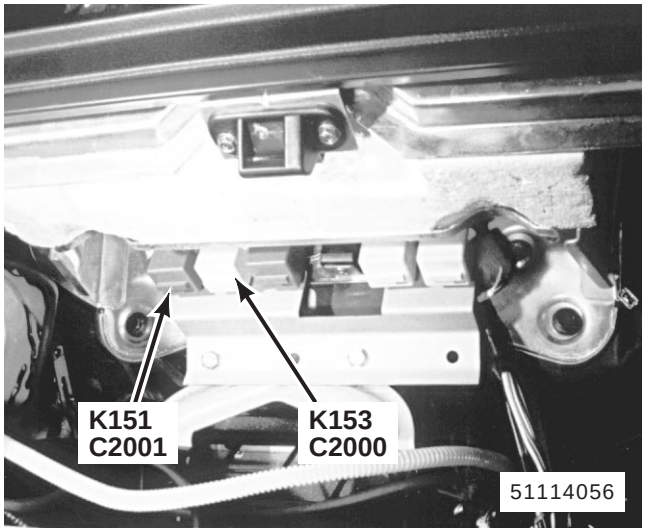
130. behind RH side of fascia
C216 (7–N)
C217 (20–W)



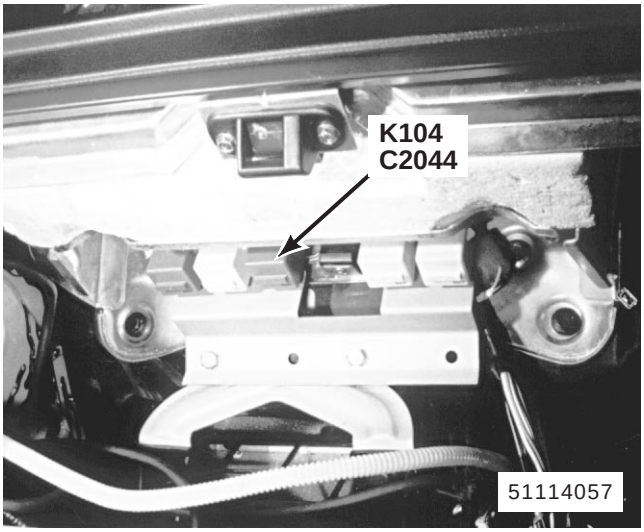
131. behind RH side of fascia
Z113 Central Locking Control Unit
Z147 Window Lift ECU
C287 (10–W)
C288 (8–W)
C289 (12–B)



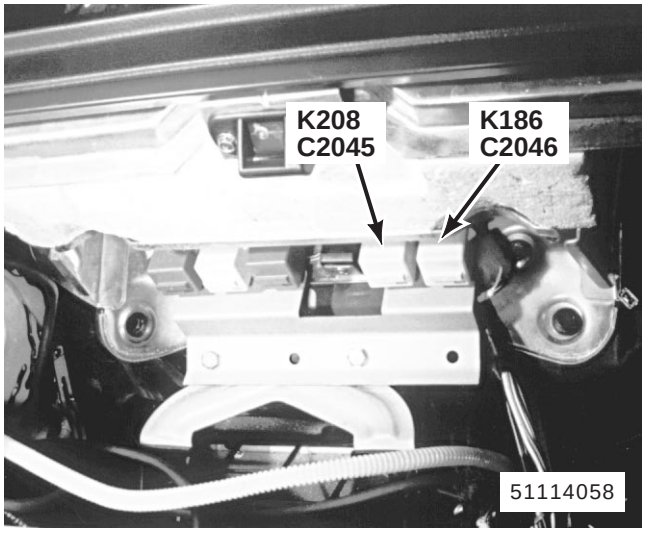
132. behind RH side of fascia
Z132 Engine Control Module (ECM)
Z149 EGR Valve Control Module
C243 (40–B)
C247 (16–B)



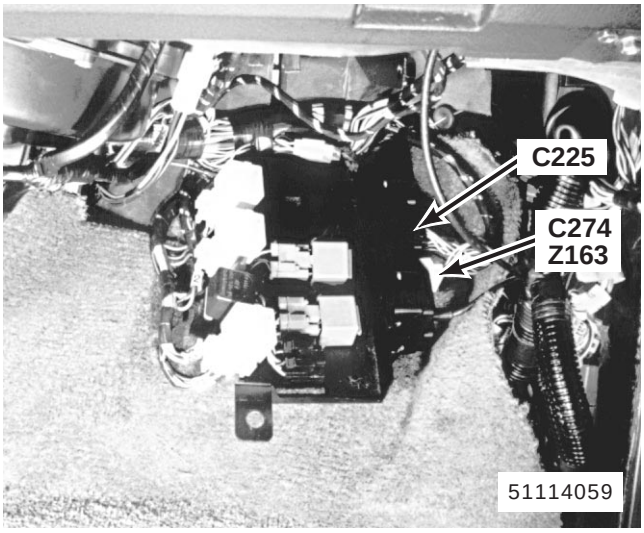
133. behind RH side of fascia
K151 Interlock Relay 2
K153 Interlock Relay 1
C2000 (5−G)
C2001 (5−Y)



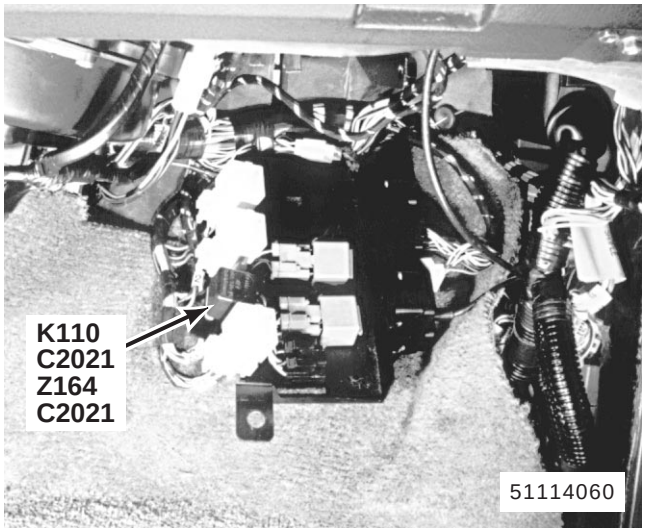
134. behind RH side of fascia
K104 Transmission Range Selector Illumination Relay
C2044 (5−G)



135. behind RH side of fascia
K186 Transfer Box Warning Relay
K208 NAS Alarm Relay
C2045 (5−Y)
C2046 (5−G)



136. behind RH side of fascia
Z163 Theft Alarm Unit
C225 (16−B)
C274 (6−W)

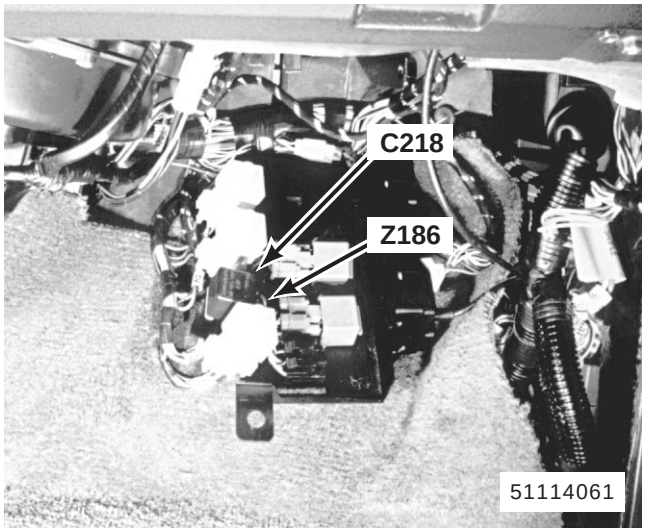


137. behind RH side of fascia

K110 Cruise Control Lockout Relay Automatic Transmission

Z164 Speed Trip Module Manual Transmission

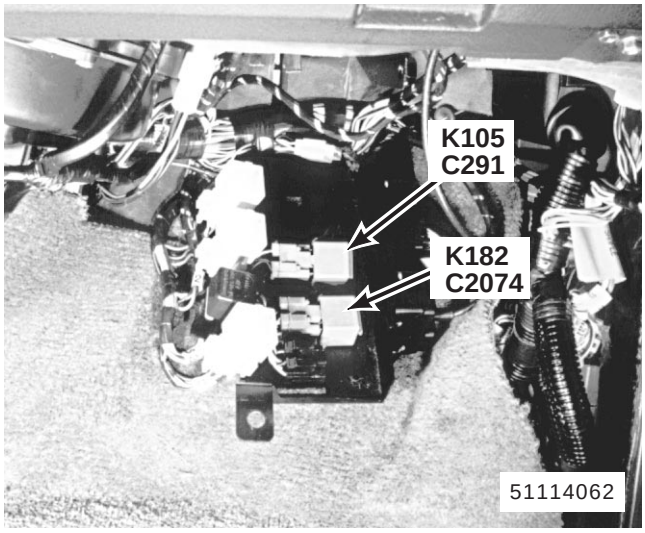
C2021 (5–B)



138. behind RH side of fascia

Z186 Cruise Control Diode

C218 (8–W)



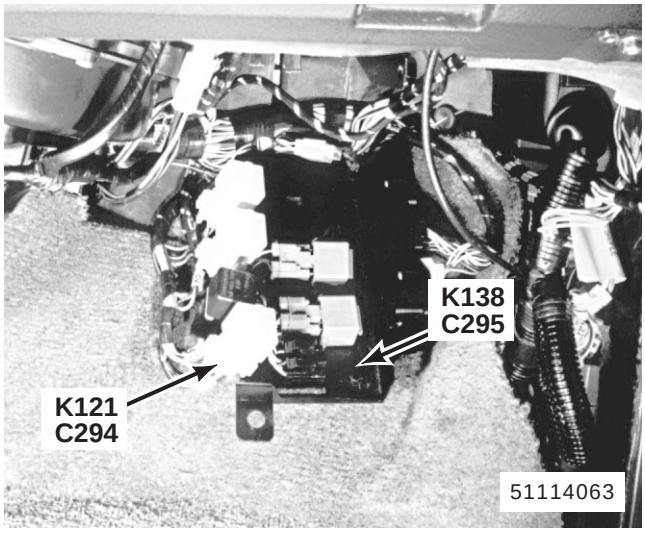
139. behind RH side of fascia

K105 Auxiliary Lamps Relay

K182 Power Wash Relay

C291 (5–Y)

C2074 (5–Y)



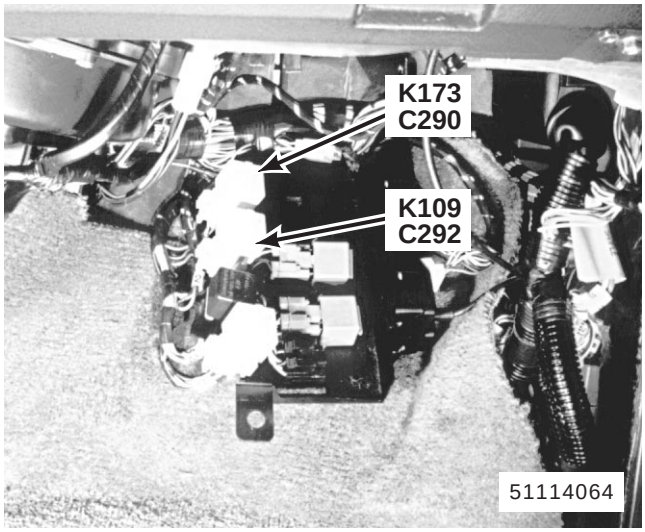
140. behind RH side of fascia

K121 Heated Front Screen Relay

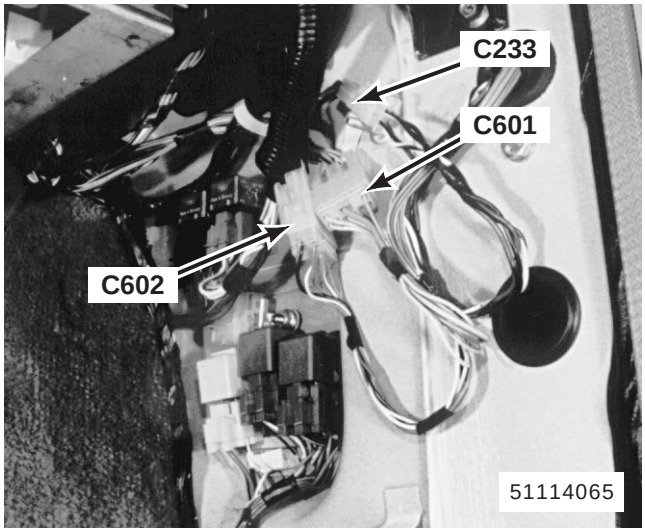
K138 Sunroof Load Relay

C294 (5–B)

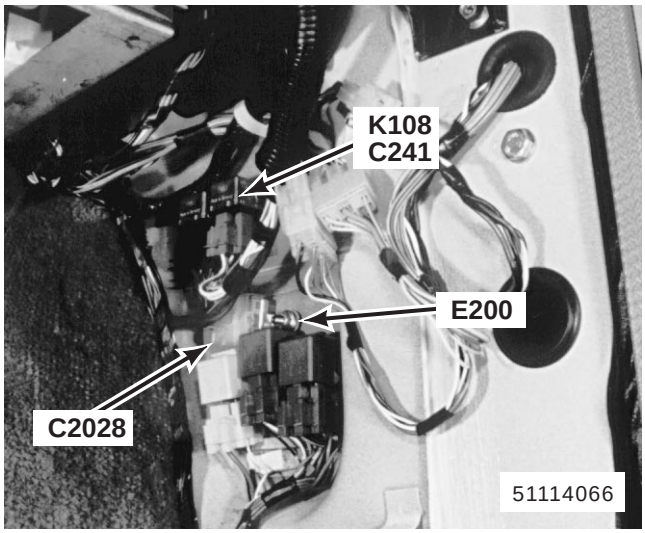
C295 (5–Y)



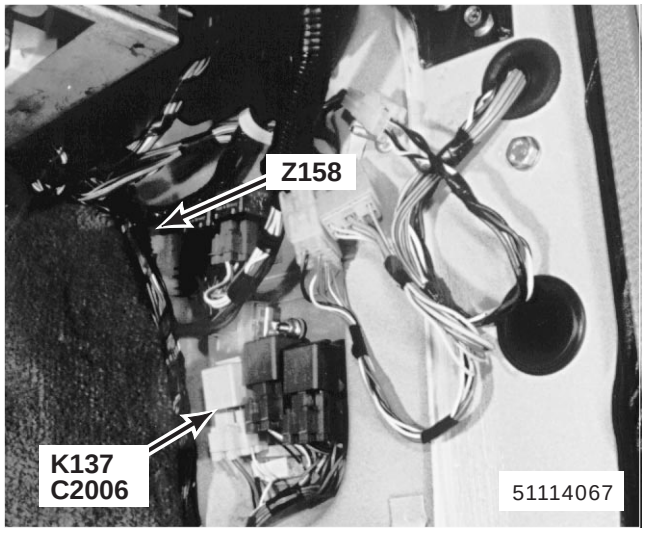
141. behind RH side of fascia
K109 Condenser Fan Relay
K173 Bulb Check Relay
C290 (5−Y)
C292 (5−Y)



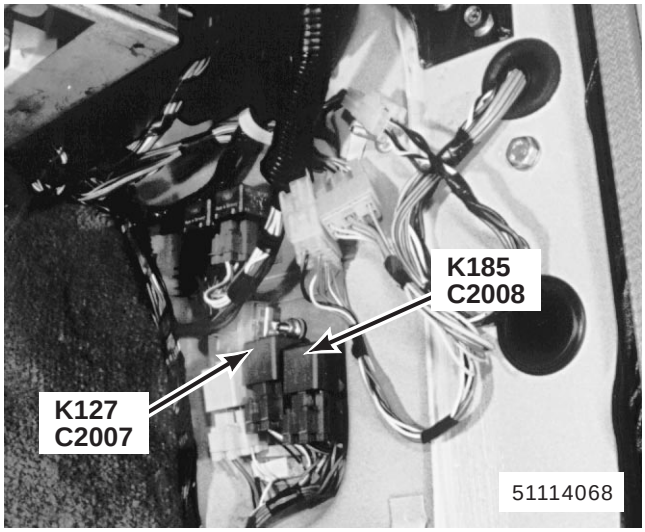
142. behind RH footwell trim panel
C233 (4−W)
C601 (8−W)
C602 (13−W)



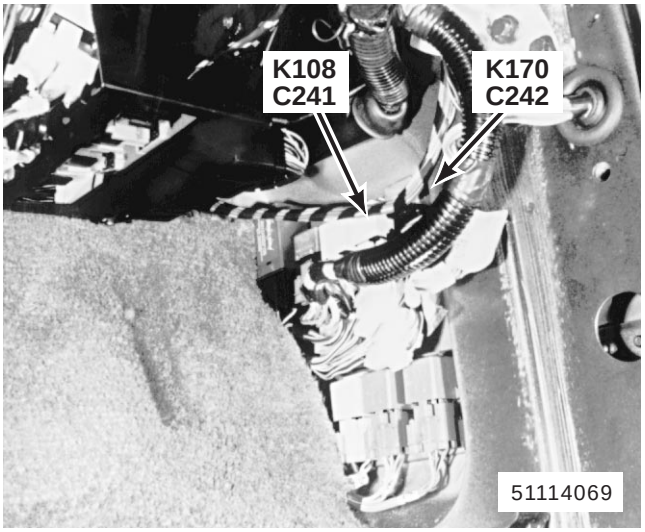
143. behind RH footwell trim panel
K108 Compressor Clutch Relay
C241 (5−Y)
C2028 (6−W)
E200



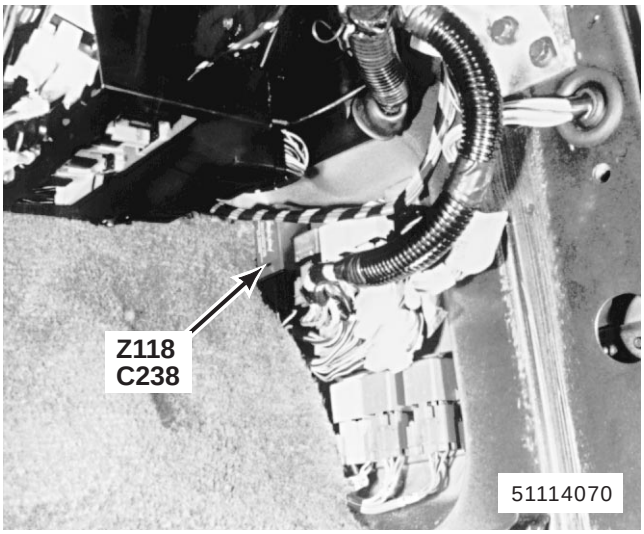
144. behind RH footwell trim panel
K137 Starter Solenoid Relay
Z158 Starter Relay Diode
C2006 (5−Y)



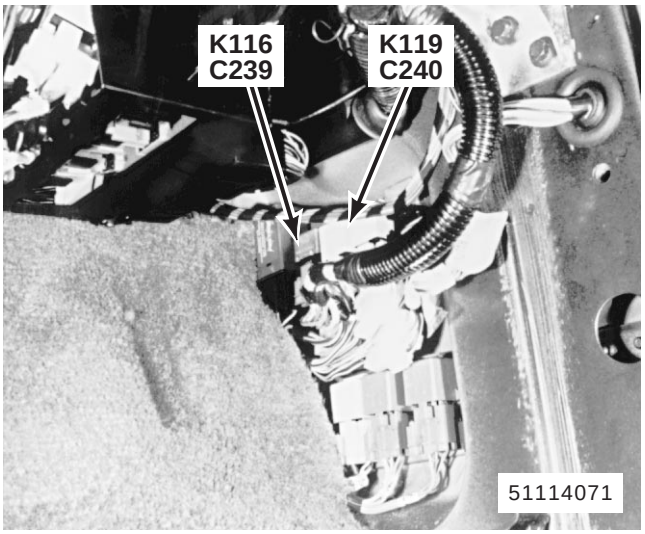
145. behind RH footwell trim panel
K127 Ignition Load Relay
K185 Front Wiper Relay
C2007 (5–G)
C2008 (5–G)



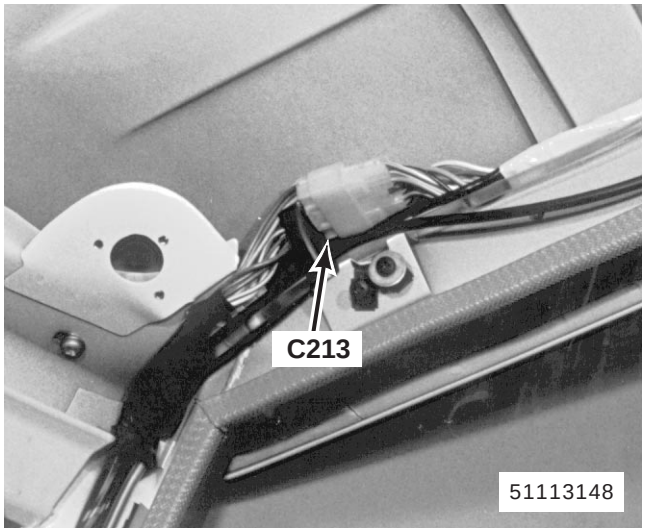
146. behind RH footwell trim panel
K108 Compressor Clutch Relay
K170 A/C Logic Relay
C241 (5–Y)
C242 (5–Y)



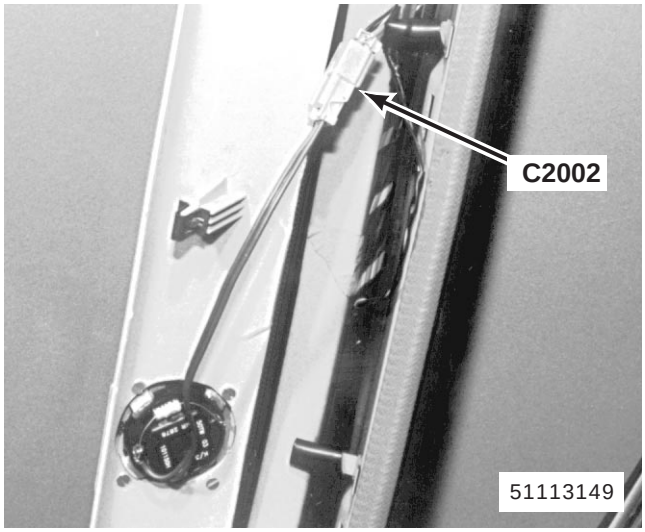
147. behind RH footwell trim panel
Z118 Fan Control Module
C238 (9–B)



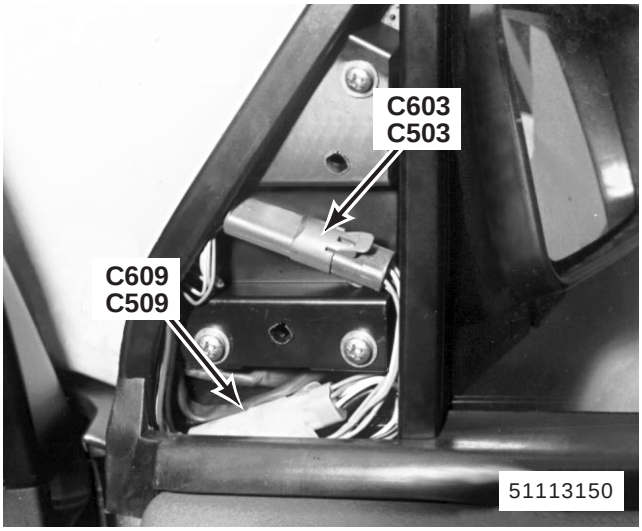
148. behind RH footwell trim panel
K116 Engine Control Load Relay
K119 Fuel Pump Relay
C239 (5–B)
C240 (5–U)



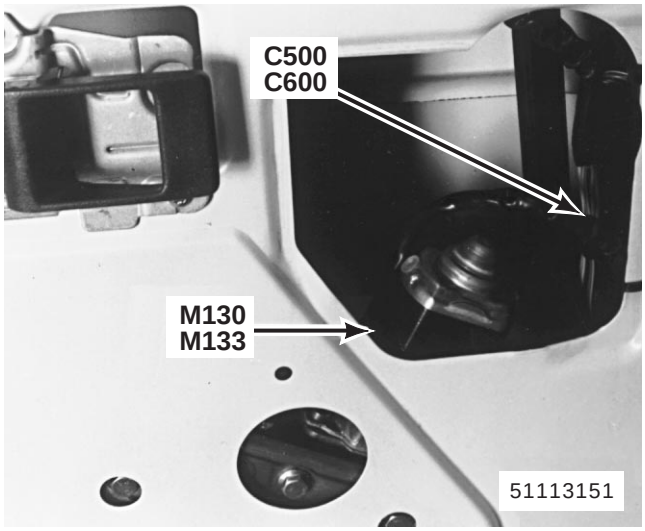
149. RH A–post
C213 (14–W)



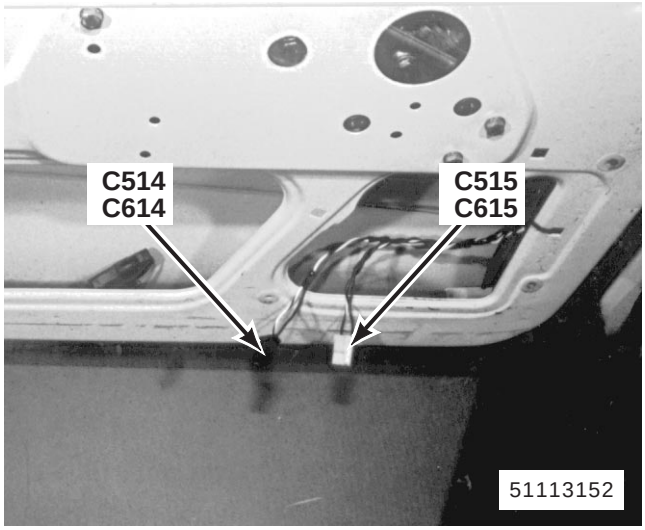
150. RH A–post
C2002 (2–S)



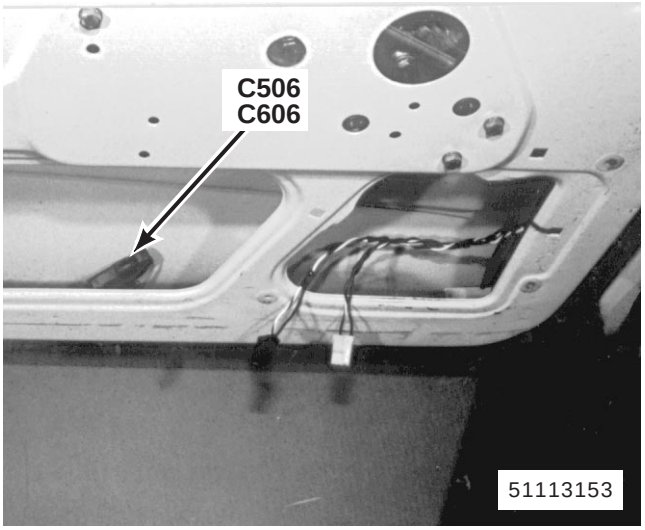
151. top front of RH front door (LH similar)
C503 (5–W) (Left)
C509 (5–U) (Left)
C603 (5–W) (Right)
C609 (5–U) (Right)



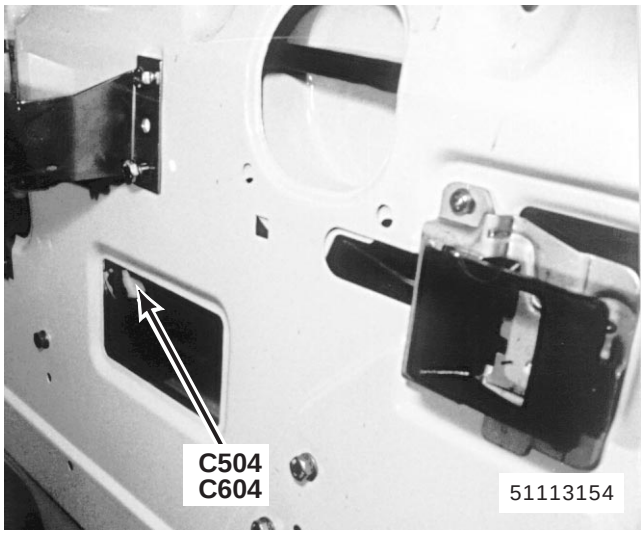
152. in front of LH front door (RH similar)
M130 Left Front Window Motor
M133 Right Front Window Motor
C500 (3–B) (Left)
C600 (3–B) (Right)



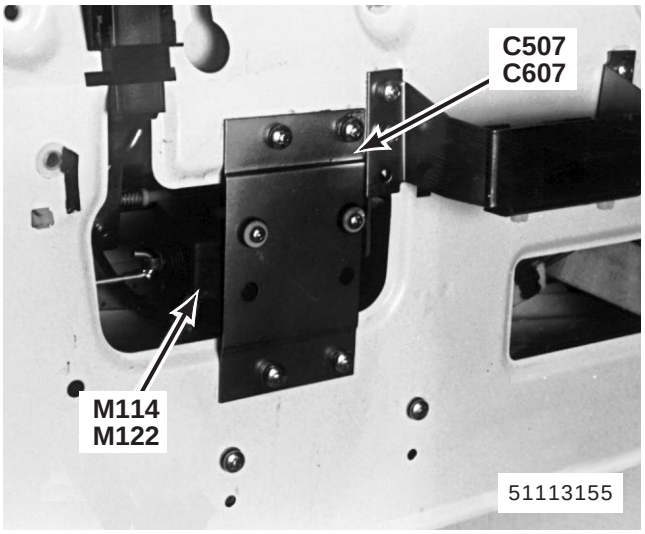
153. in front of LH front door (RH similar)
C514 (2−B) (Left)
C515 (2−W) (Left)
C614 (2−B) (Right)
C615 (2−W) (Right)



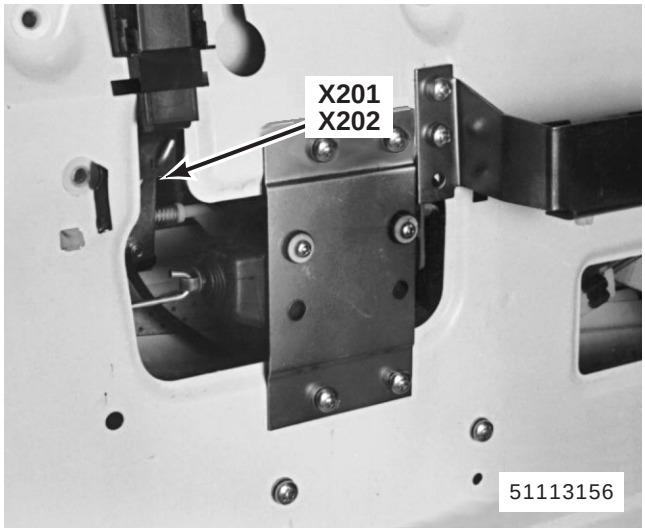
154. in front of LH front door (RH similar)
C506 (5−B) (Left)
C606 (5−B) (Right)



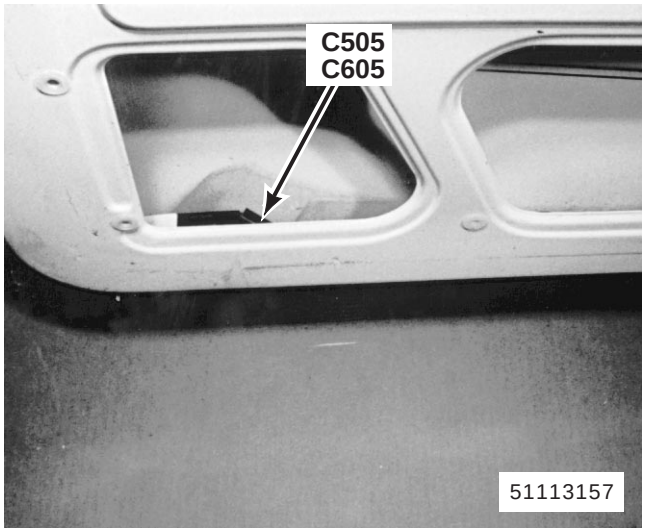
155. in top rear of LH front door (RH similar)
C504 (4−W) (Left)
C604 (4−W) (Right)



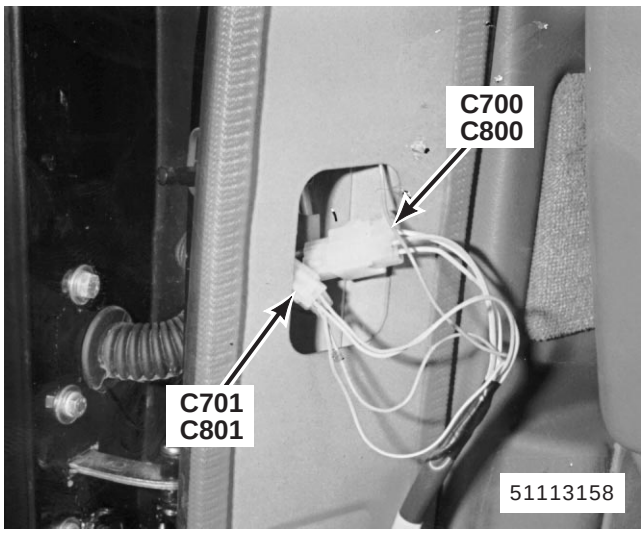
156. in top rear of LH front door (RH similar)
M114 Left Front Door Lock Actuator
M122 Right Front Door Lock Actuator
C507 (6−W) (Left) Behind
C607 (6−W) (Right) Behind



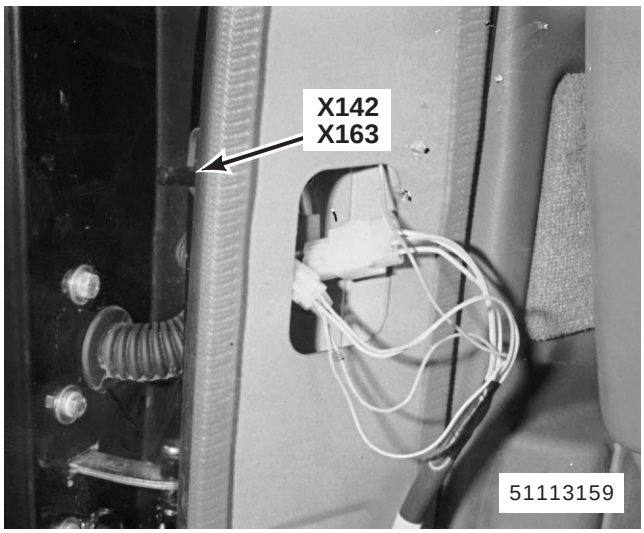
157. in top rear of LH front door (RH similar)
X201 Left Front Door Key Switch
X202 Right Front Door Key Switch



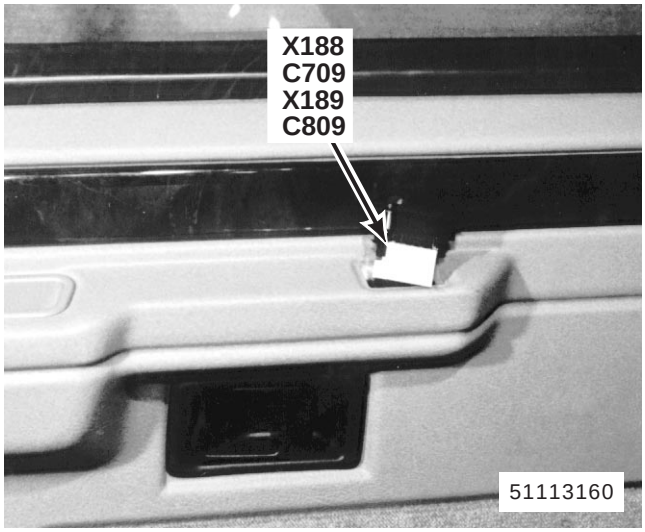
158. in rear of LH front door (RH similar)
C505 (5−B) (Left)
C605 (5−B) (Right)



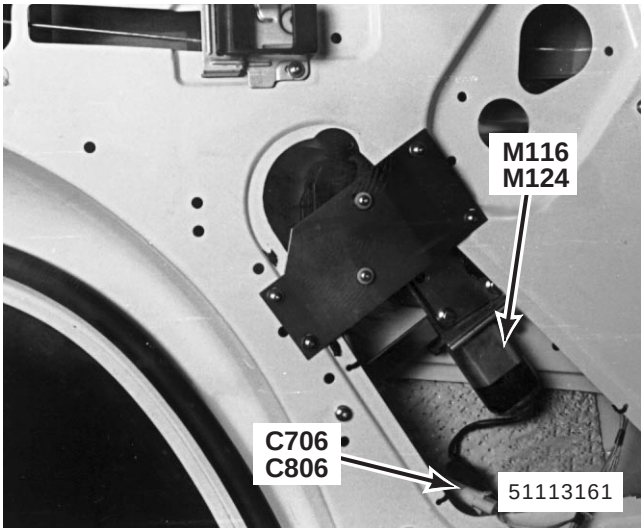
159. in lower part of LH B−post (RH similar)
C700 (3−W) (Left)
C701 (2−W) (Left) SWB
C701 (4−W) (Left) LWB
C800 (3−W) (Right)
C801 (2−W) (Right) SWB
C801 (4−W) (Right) LWB



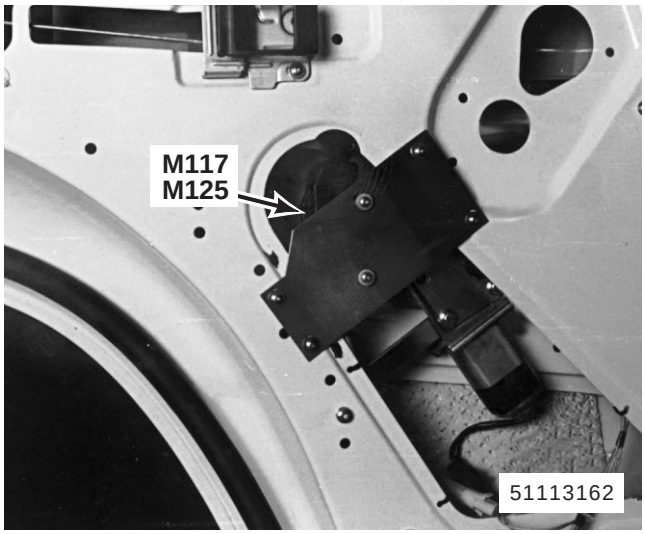
160. in lower part of LH B−post (RH similar)
X142 Left Rear Door Switch
X163 Right Rear Door Switch



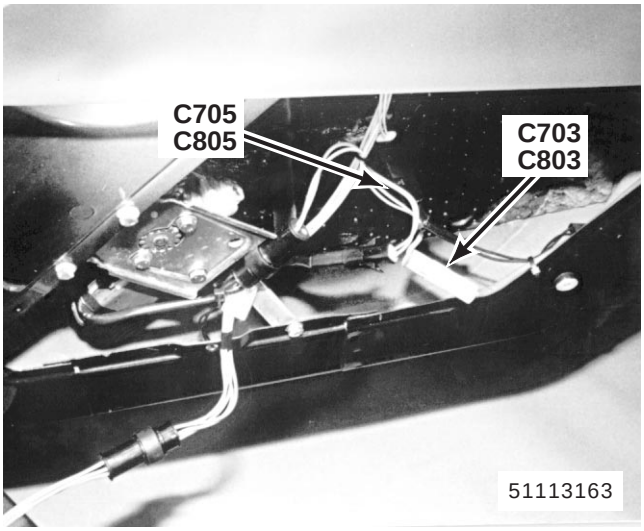
161. in top of LH rear door (RH similar)
X188 Left Rear Window Door Switch
X189 Right Rear Window Door Switch
C709 (5−W) (Left)
C809 (5−W) (Right)



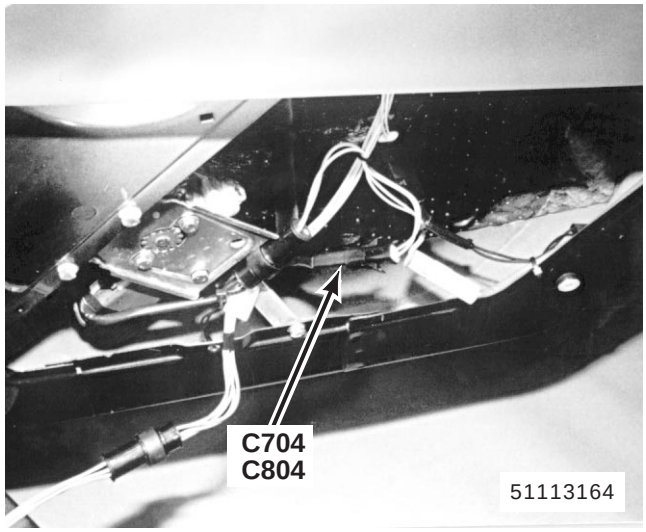
162. inside front of LH rear door (RH similar)
M116 Left Rear Window Motor
M124 Right Rear Window Motor
C706 (2−W) (Left)
C806 (2−W) (Right)



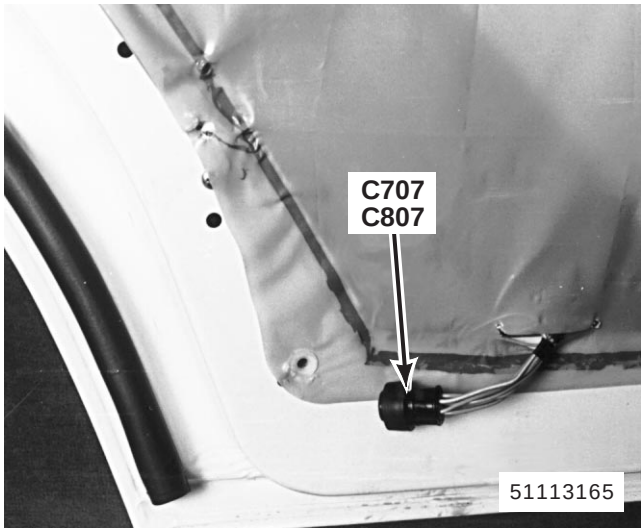
163. inside front of LH rear door (RH similar)
M117 Left Rear Door Lock Actuator
M125 Right Rear Door Lock Actuator



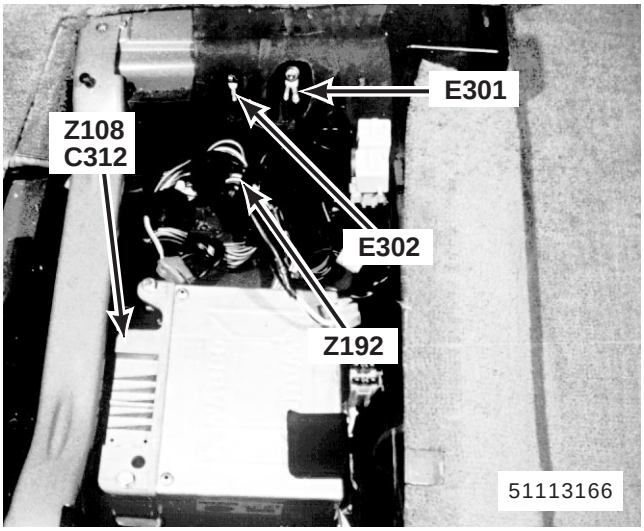
164. in lower portion of LH rear door (RH similar)
C703 (3−W) (Left)
C705 (5−B) (Left)
C803 (3−W) (Right)
C805 (5−B) (Right)



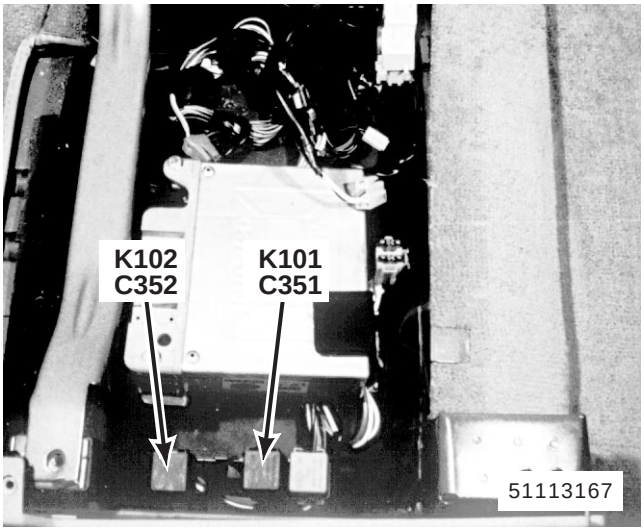
165. in lower portion of LH rear door (RH similar)
C704 (5–B) (Left)
C804 (5–B) (Right)



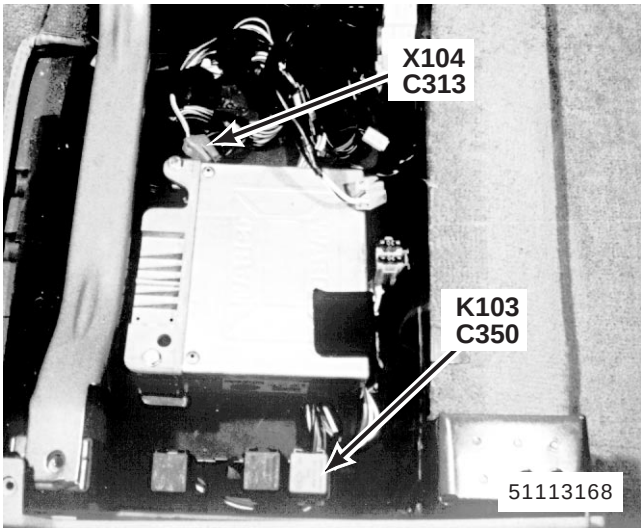
166. inside front of LH rear door (RH similar)
C707 (5–B) (Left)
C807 (5–B) (Right)



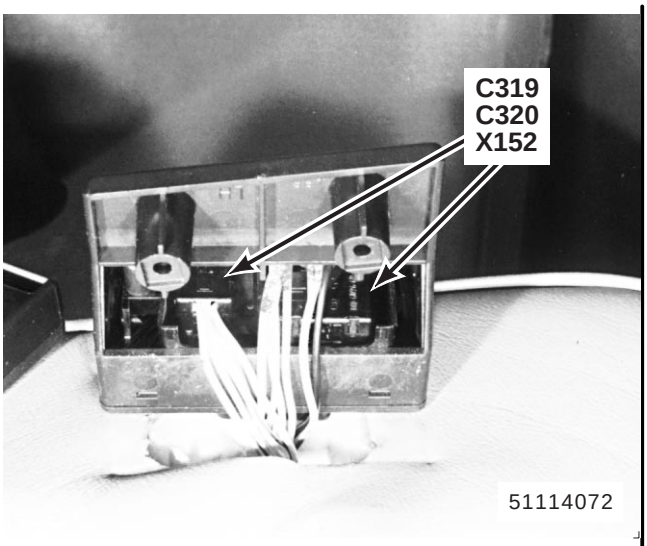
167. beneath LH front seat
Z108 Anti–Lock Brake System ECU
Z192 A.B.S. Diode
C312 (35–B)
E301
E302



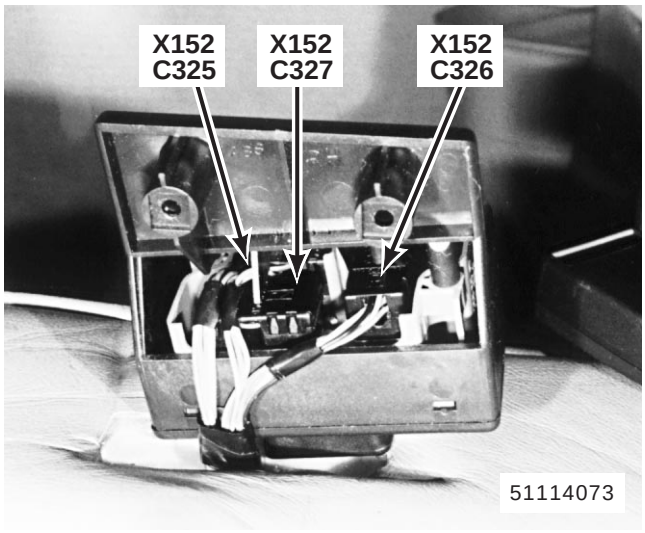
168. beneath LH front seat
K101 A.B.S. Load Relay
K102 A.B.S. Pump Relay
C351 (5–B)
C352 (5–B)



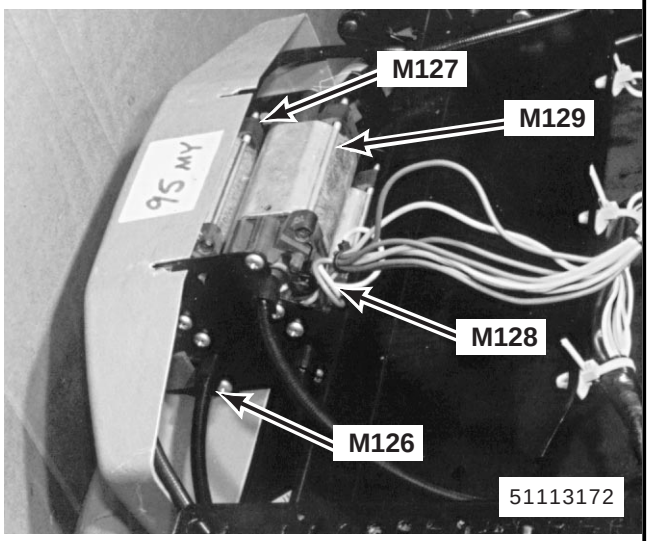
169. beneath LH front seat
K103 A.B.S. Warning Relay
X104 A.B.S. Diagnostic Connector
C313 (5–U)
C350 (5–U)



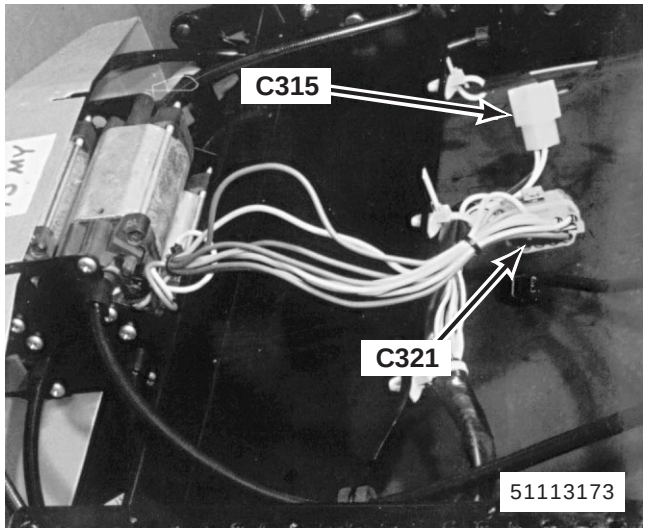
170. RH side of LH front seat Without Memory
X152 Left Front Seat Control Switch
C319 (6–B)
C320 (6–B)



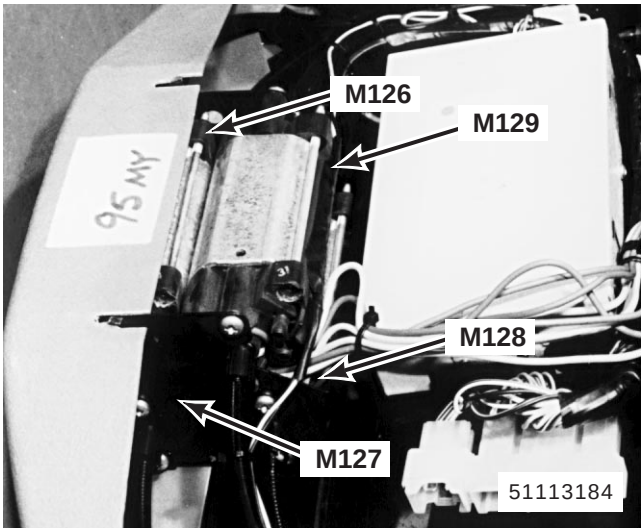
171. RH side of LH front seat With Memory
X152 Left Front Seat Control Switch
C325 (6–B)
C326 (6–B)
C327 (3–B)



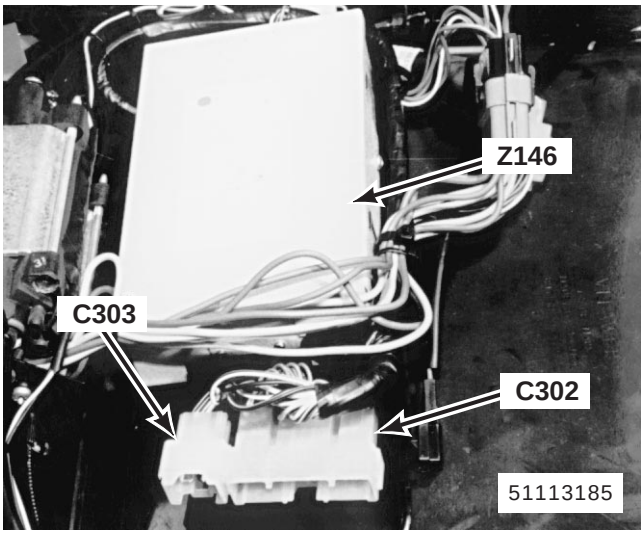
172. underside of LH front seat Without Memory
M126 Seat Base Motor
M127 Seat Height (Front) Motor
M128 Seat Height (Rear) Motor
M129 Seat Recline Motor



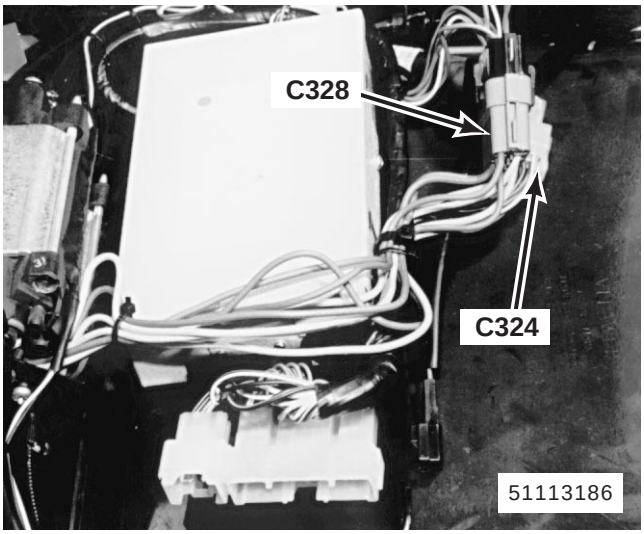
173. underside of LH front seat Without Memory
C315 (3–W)
C321 (9–U)



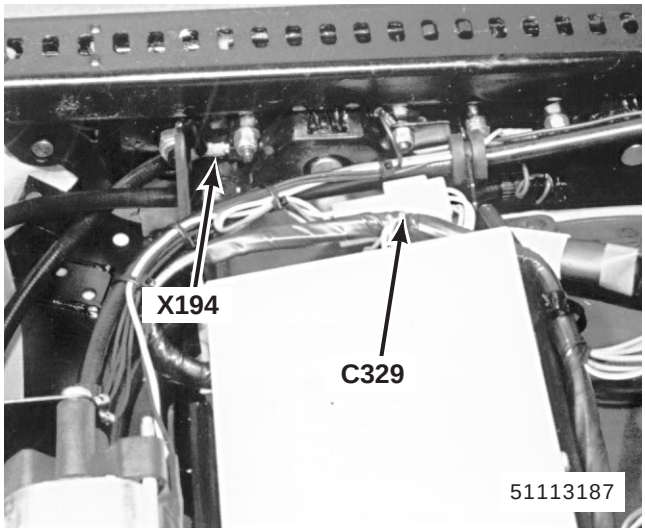
174. underside of LH front seat With Memory
M126 Seat Base Motor
M127 Seat Height (Front) Motor
M128 Seat Height (Rear) Motor
M129 Seat Recline Motor



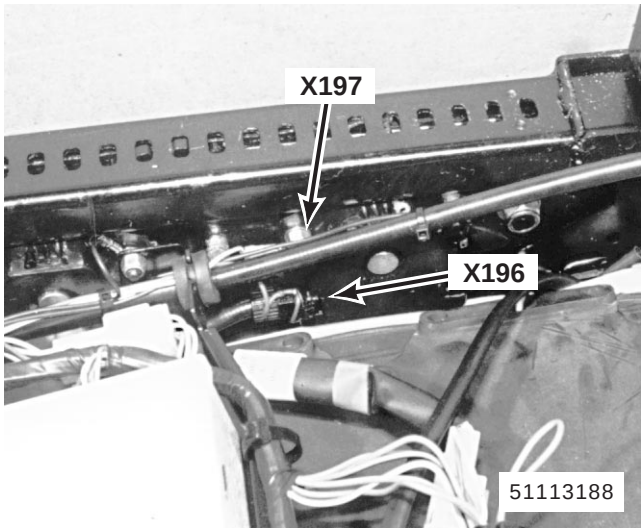
175. underside of LH front seat With Memory
Z146 Memory Seat ECU
C302 (24–W)
C303 (4–W)



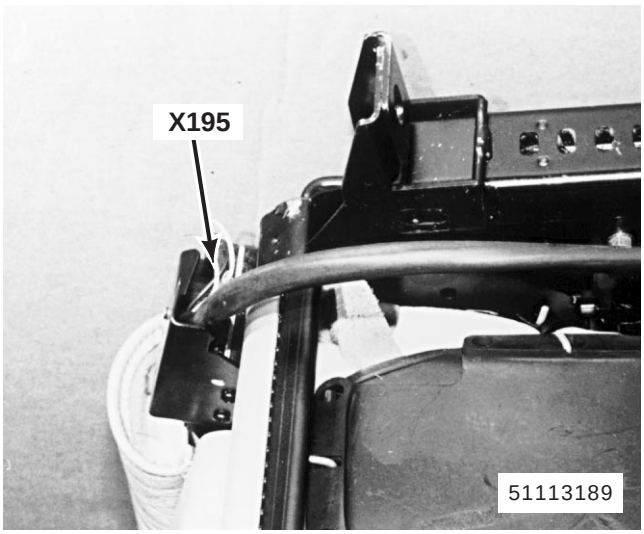
176. underside of LH front seat With Memory
C324 (10–W)
C328 (9–UB)



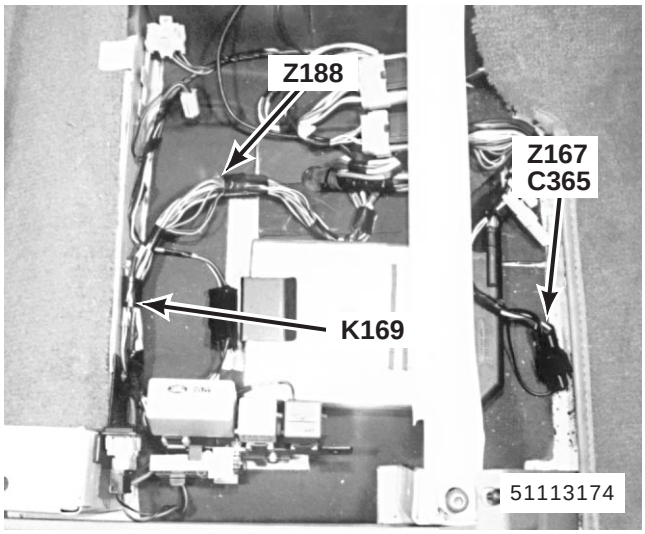
177. underside of LH front seat With Memory
X194 Front Height Sensor
C329 (6–W)



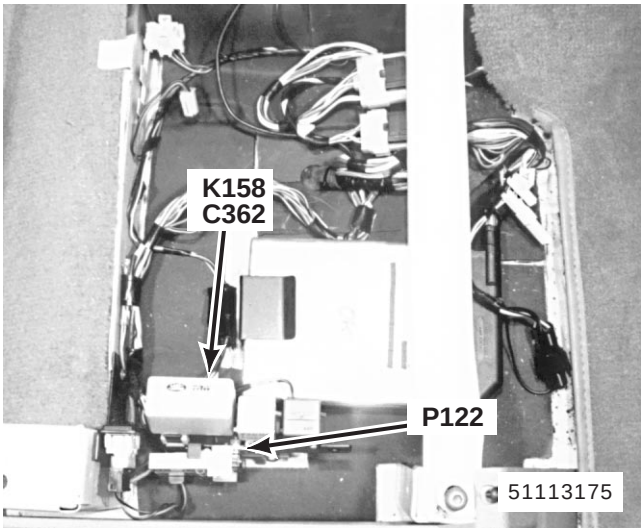
178. underside of LH front seat With Memory
X196 Fore–Aft Sensor
X197 Recline Sensor



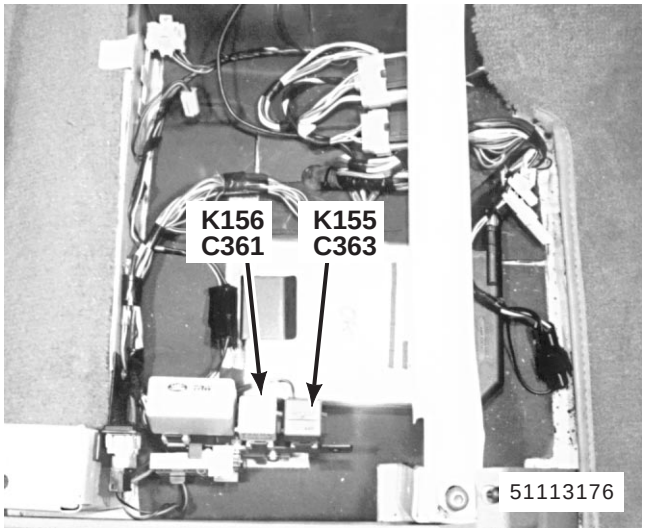
179. underside of LH front seat With Memory
X195 Rear Height Sensor



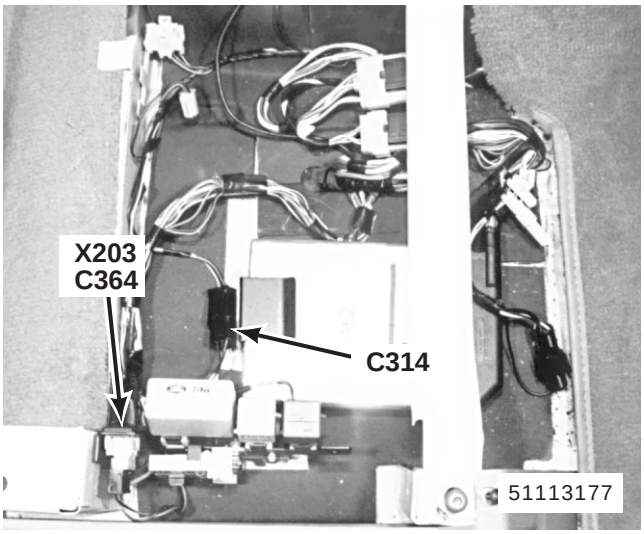
180. beneath RH front seat
K169 Reservoir Pressure Resistor
Z167 Air Suspension Diagnostic Connector
Z188 Air Suspension Indicator Diode
C365 (5–B)



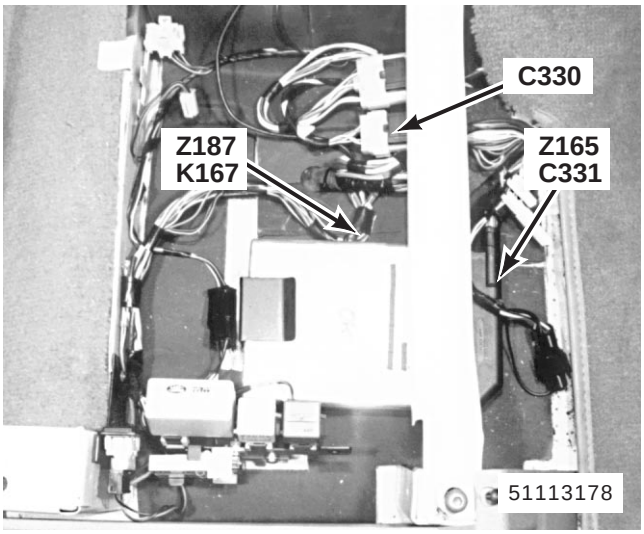
181. beneath RH front seat
K158 Air Suspension Delay Relay
P122 Air Suspension In−Line Maxi−Fuse
C362 (5−W)



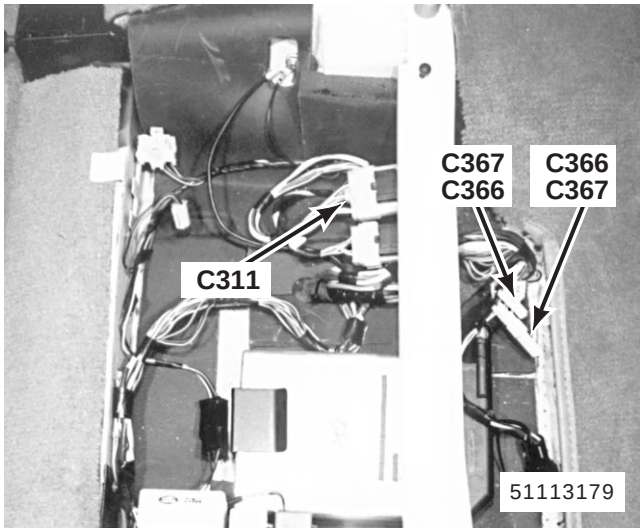
182. beneath RH front seat
K155 Warning Lamp Relay
K156 Air Suspension Compressor Relay
C361 (5−Y)
C363 (5−G)



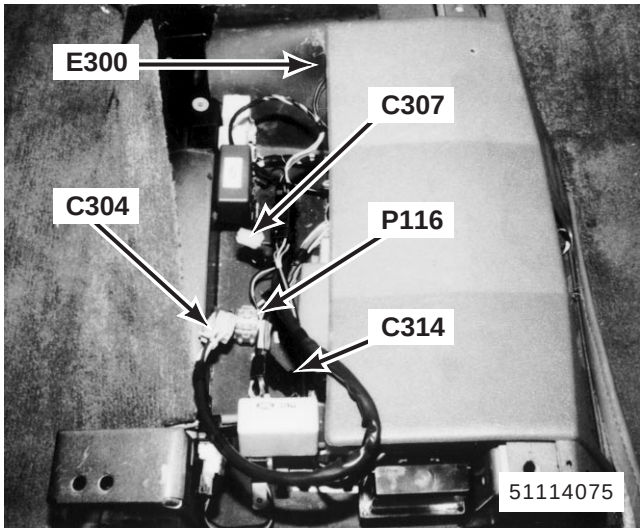
183. beneath RH front seat
X203 Disable Switch
C314 (3−B)
C364 (5−B)



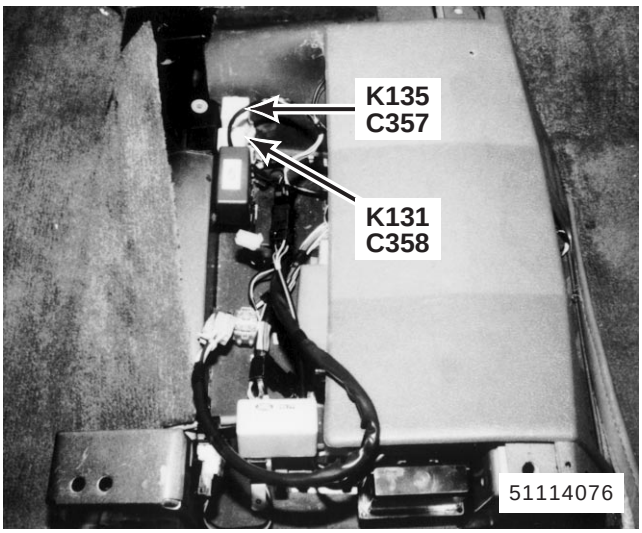
184. beneath RH front seat
K167 Air Suspension Resistor
Z165 Air Suspension ECU
Z187 Air Suspension Disable Diode
C330 (13−W)
C331 (35−B)



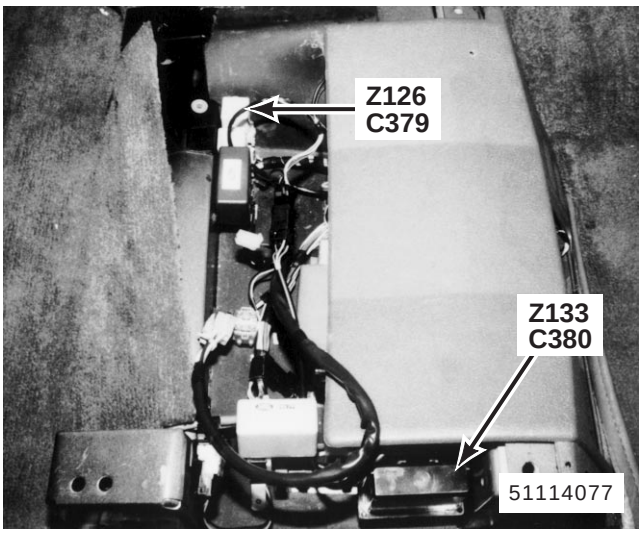
185. beneath RH front seat
C311 (14–W)
C366 (1–W)
C367 (1–W)



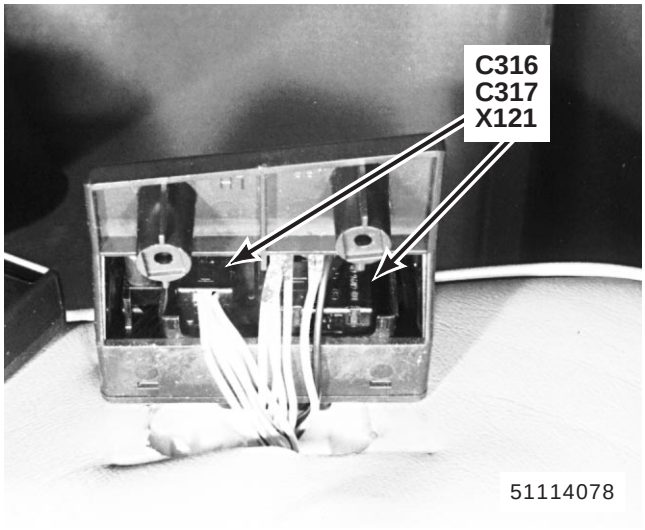
186. beneath RH front seat
P116 Passenger's Underseat Fuse Box
C304 (3–W)
C307 (2–W)
C314 (3–B)
E300



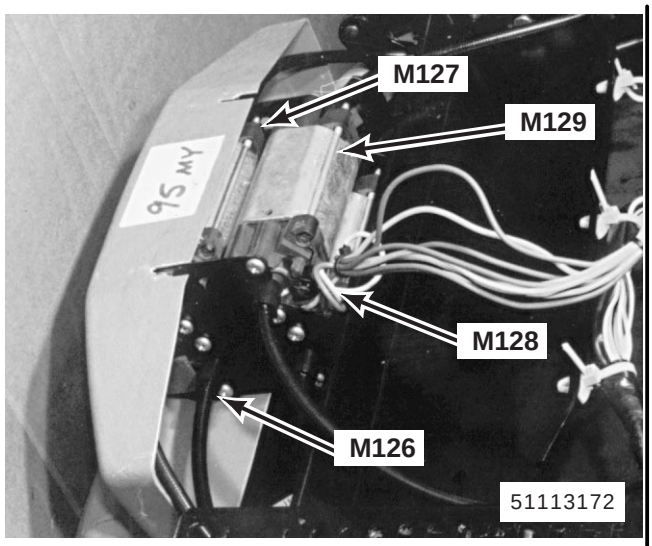
187. beneath RH front seat
K131 Right Seat Power Relay
K135 Right Seat Heat Relay
C357 (5–W)
C358 (5–Y)



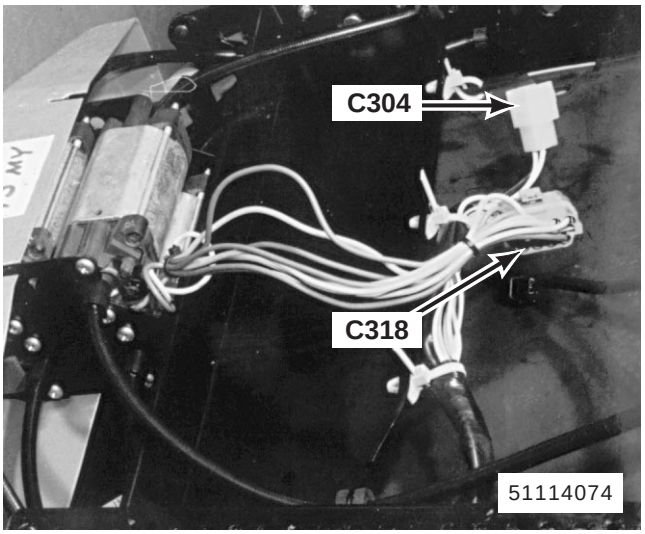
188. beneath RH front seat
Z126 Service Reminder Unit
Z133 Multiport Fuel Injection Fault Display Unit
C379 (5–N)
C380 (5–B)



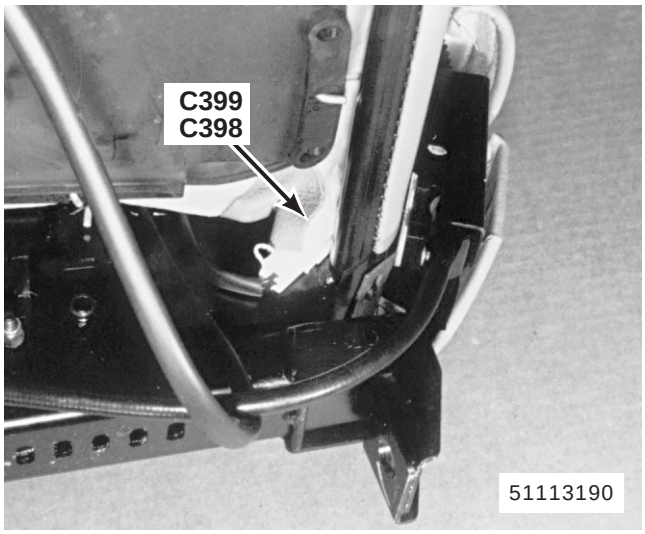
189. LH side of RH front seat
X121 Right Front Seat Control Switch
C316 (6−B)
C317 (6−B)



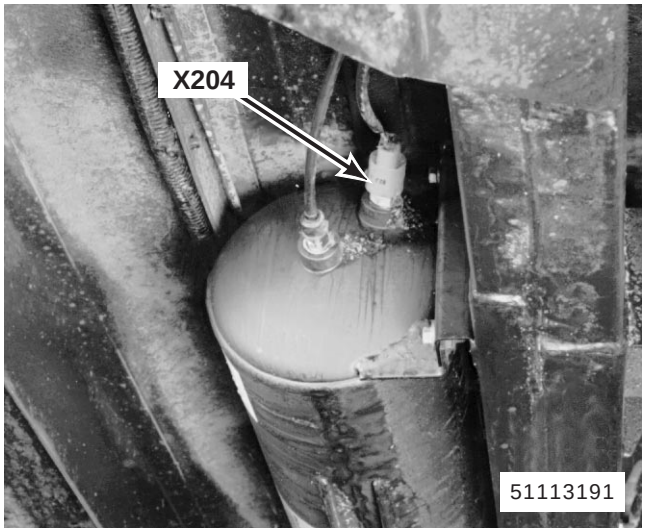
190. underside of RH front seat
M126 Seat Base Motor
M127 Seat Height (Front) Motor
M128 Seat Height (Rear) Motor
M129 Seat Recline Motor



191. underside of RH front seat
C304 (3−W)
C318 (9−U)

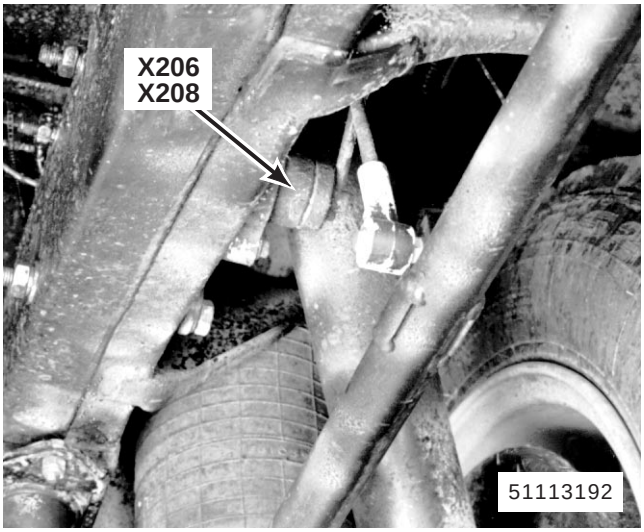


192. underside of LH front seat (RH similar)
C398 (2−W) (Left)
C399 (2−W) (Right)



193. beneath LH side of vehicle

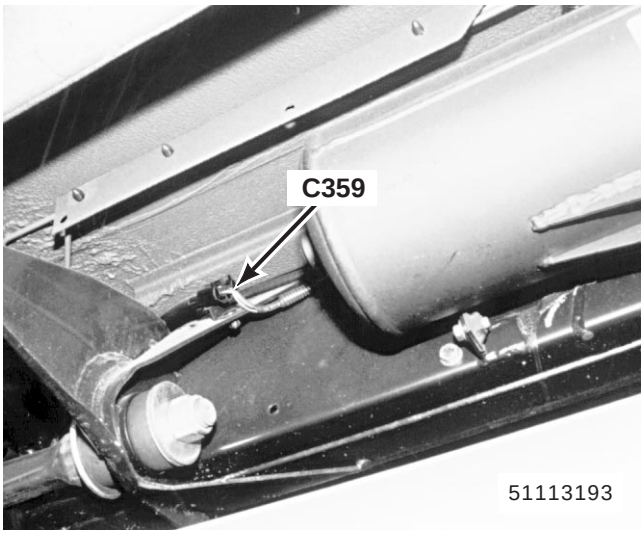
X204 Reservoir Pressure Switch



194. behind LH rear wheel (RH similar)

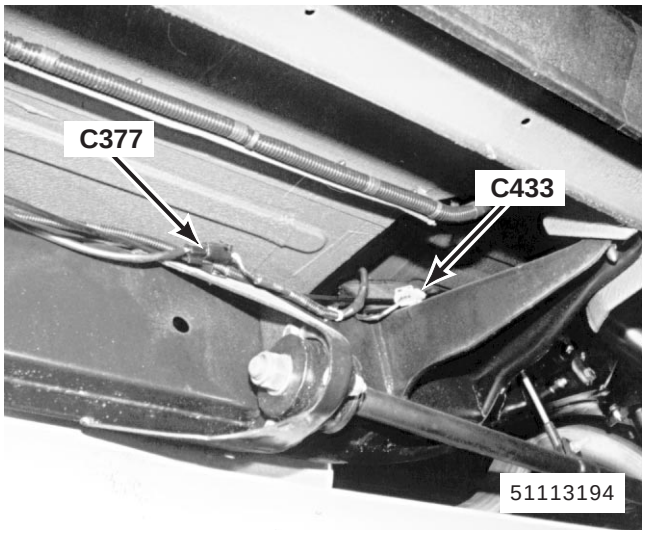
X206 Left Rear Height Sensor

X208 Right Rear Height Sensor



195. beneath LH side of vehicle behind LH front wheel

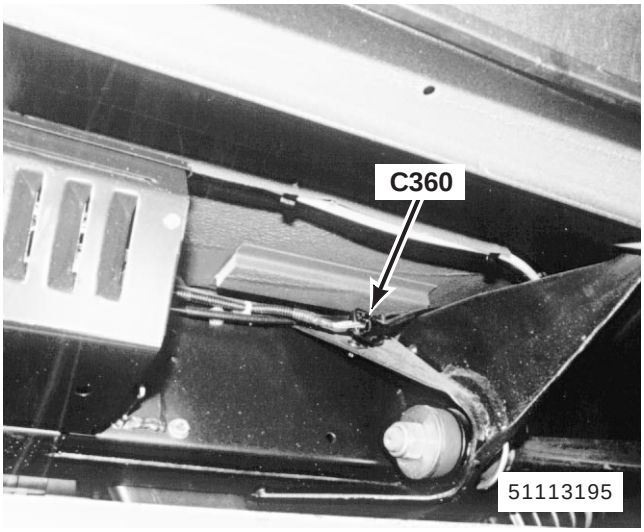
C359 (3−B)



196. beneath LH side of vehicle forward of LH rear wheel

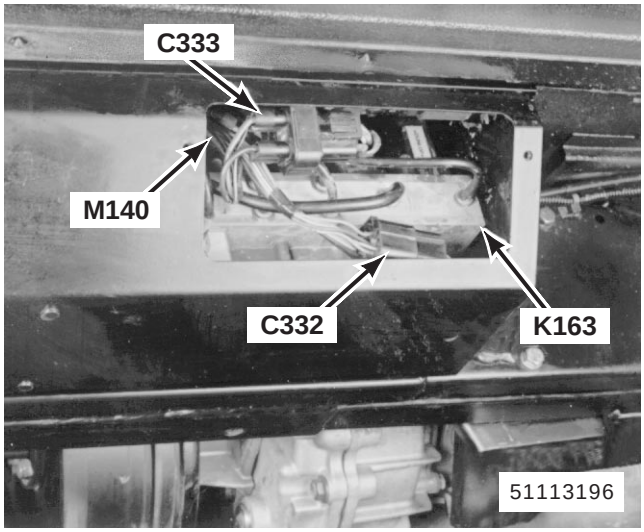
C377 (2−B)

C433 (3−W)



197. beneath RH side of vehicle behind RH front wheel

C360 (3–B)



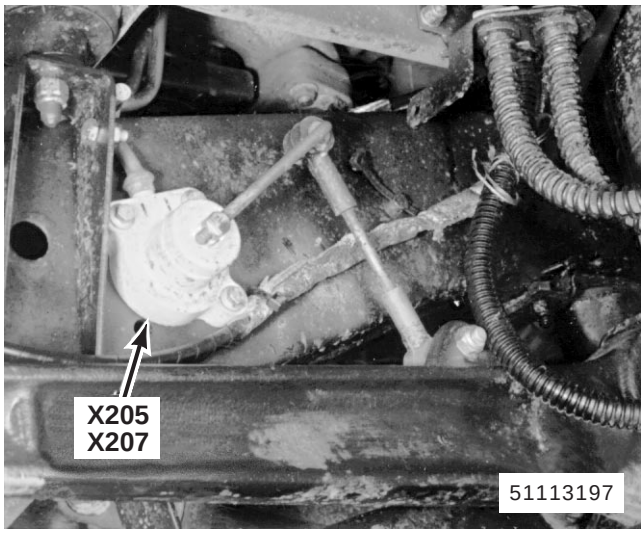
198. beneath RH side of vehicle

K163 Air Valve Block

M140 Air Suspension Compressor

C332 (13–B)

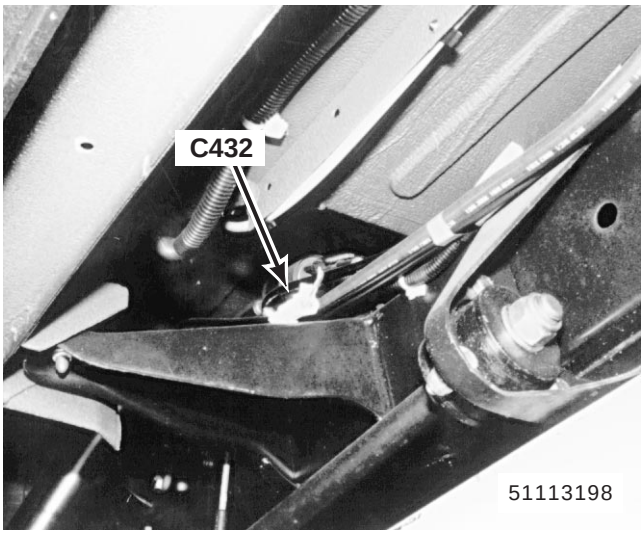
C333 (4–B)



199. behind RH front wheel (LH similar)

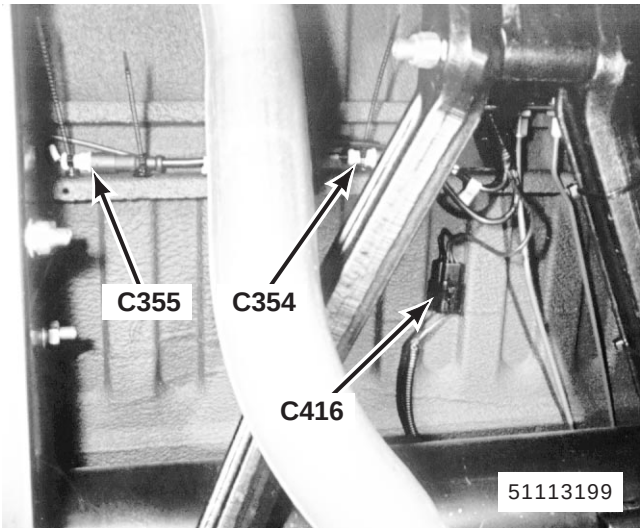
X205 Left Front Height Sensor

X207 Right Front Height Sensor

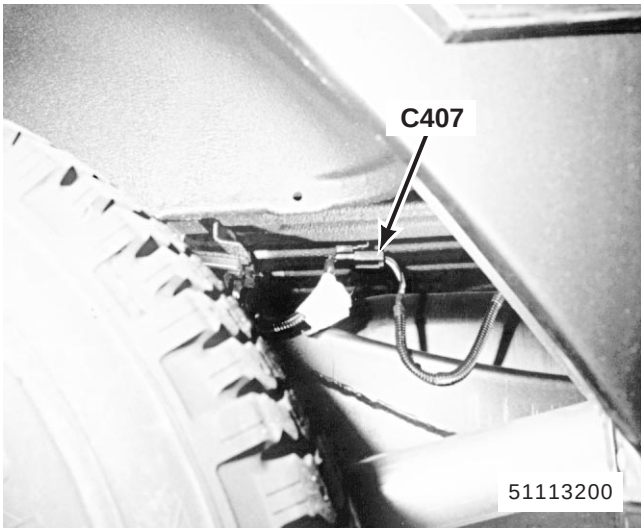


200. beneath RH side of vehicle forward of RH rear wheel

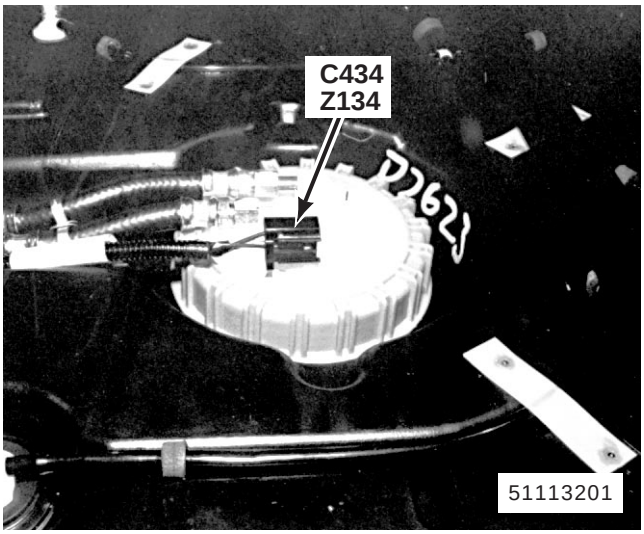
C432 (3–W)



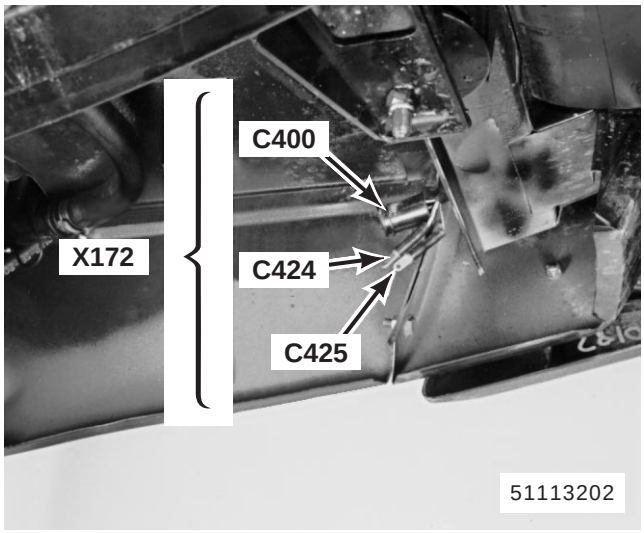
201. beneath centre rear of vehicle
C354 (2−W)
C355 (2−W)
C416 (3−B)



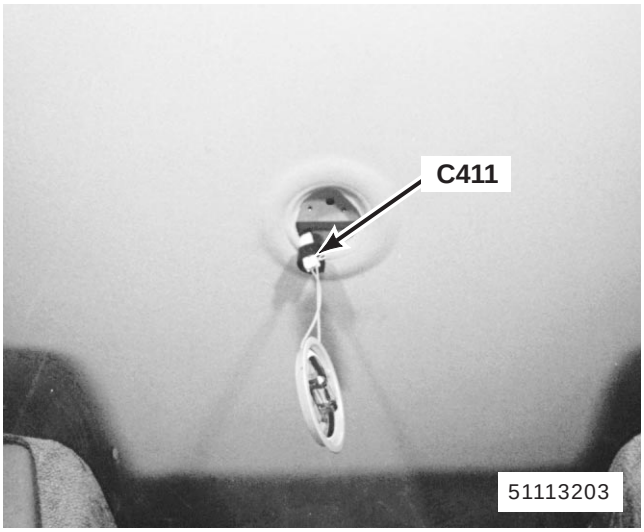
202. beneath LH rear of vehicle near fuel tank
C407 (3−B)



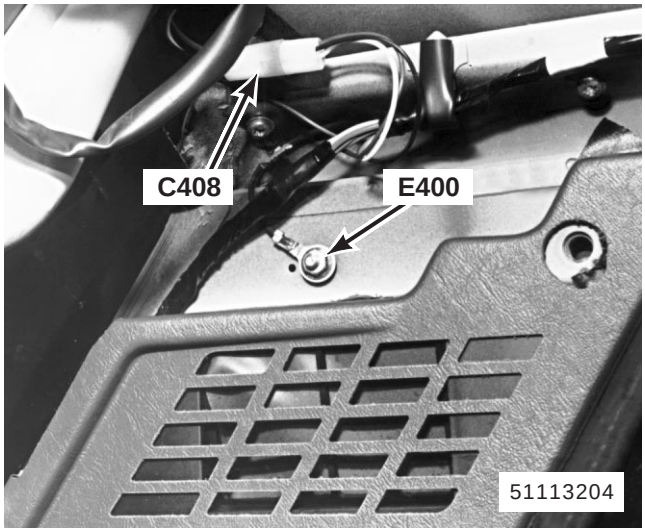
203. top of fuel tank
Z134 Fuel Pump Module
C434 (4−B)



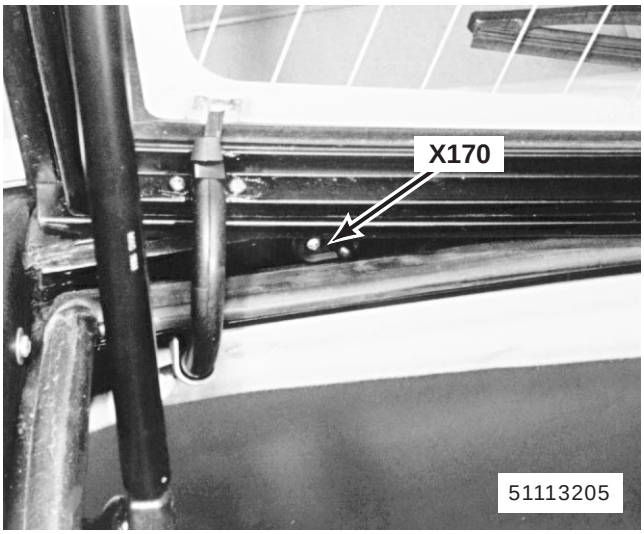
204. behind RH side of rear bumper
X172 Trailer Auxiliary Socket
C400 (7−B)
C424 (1−B)
C425 (1−B)



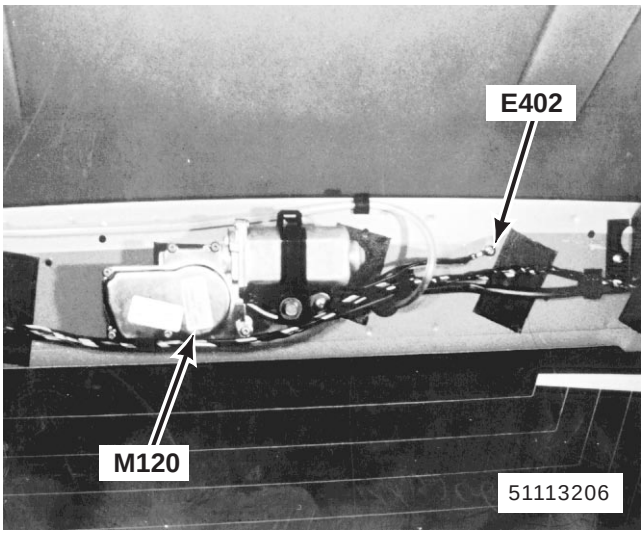
205. centre of roof
C411 (2−W)



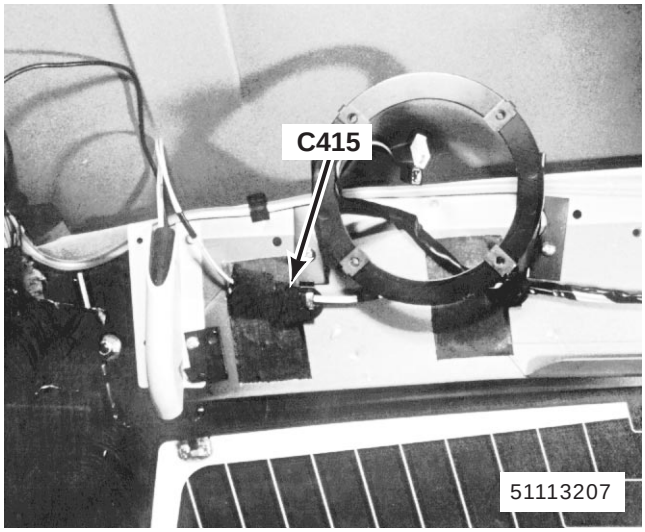
206. LH rear corner of roof
C408 (4−W)
E400



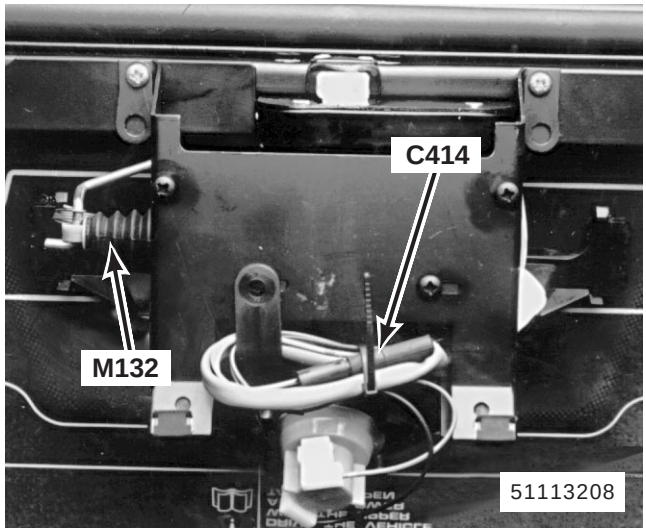
207. top LH side of rear screen opening
X170 Tailgate Switch



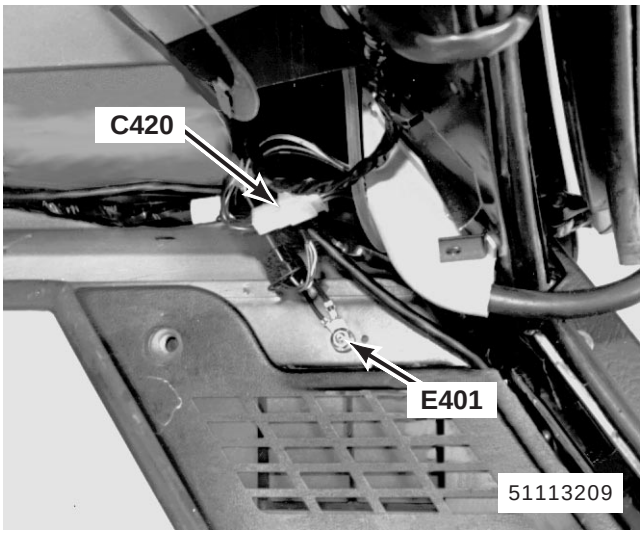
208. centre rear of roof
M120 Rear Wiper Motor
E402



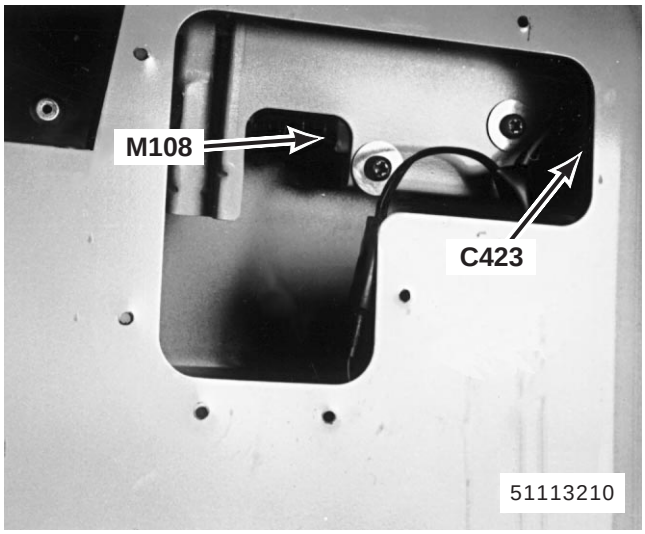
209. RH rear of roof
C415 (4−B)



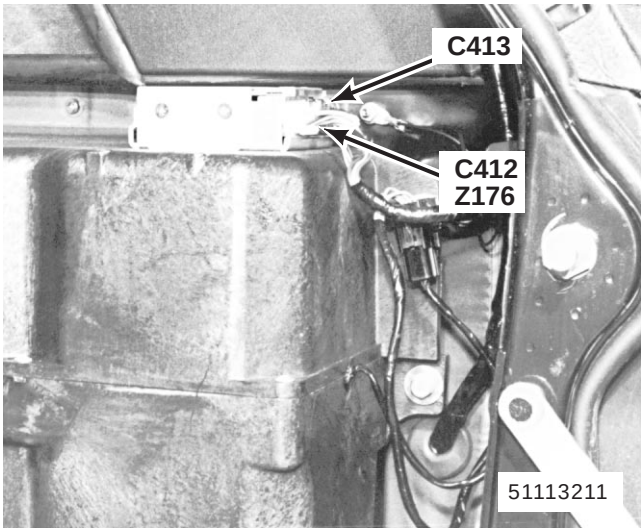
210. lower centre of rear screen (cover removed)
M132 Tailgate Lock Actuator
C414 (2−W)



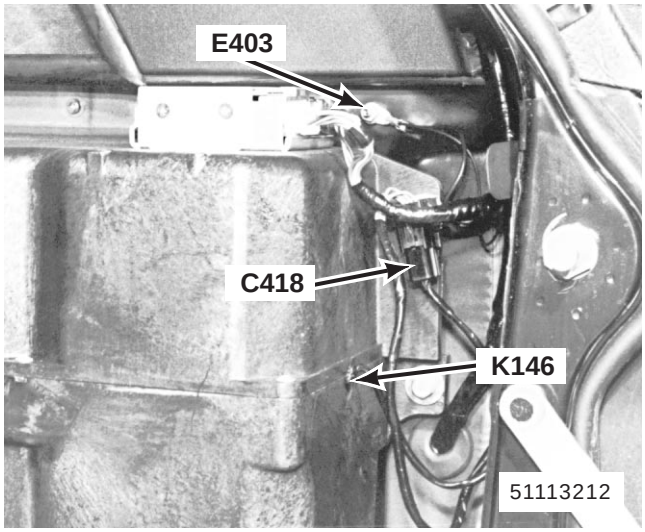
211. RH rear corner of roof
C420 (8−W)
E401



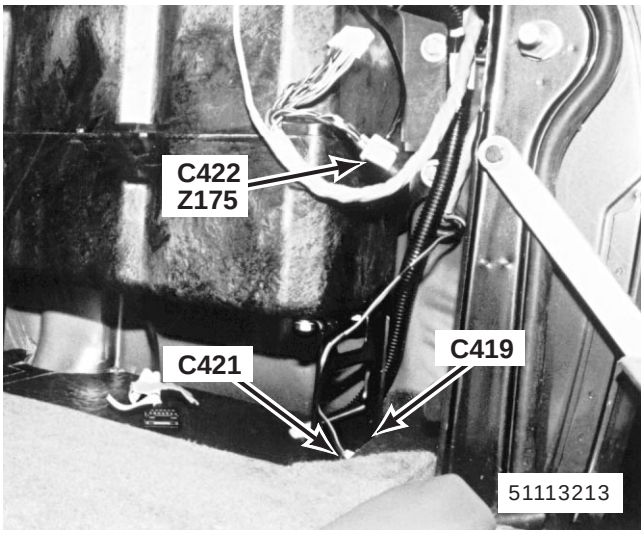
212. RH rear of luggage compartment
M108 Fuel Flap Actuator
C423 (2−N)



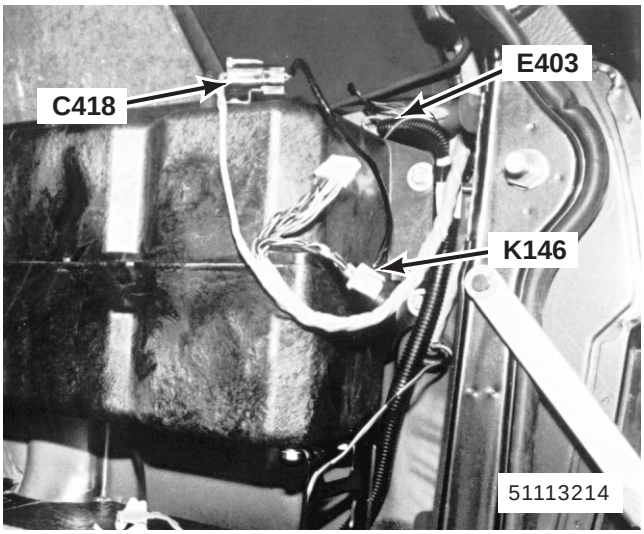
213. RH rear of luggage compartment Except NAS
Z176 Subwoofer Amplifier
C412 (8−W)
C413 (8−B)



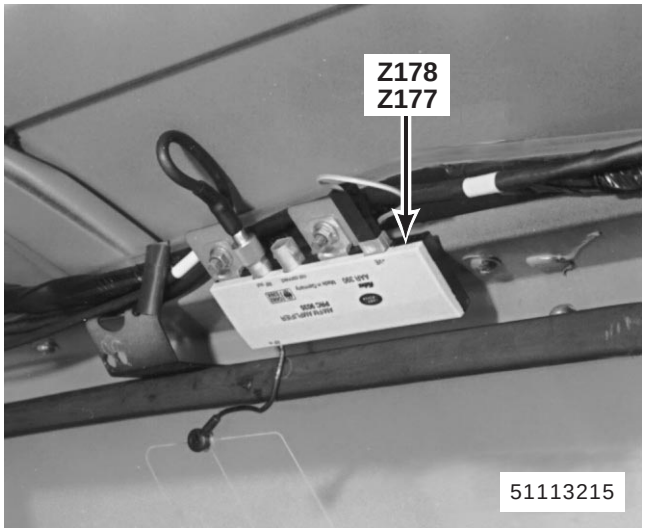
214. RH rear of luggage compartment Except NAS
K146 Subwoofer
C418 (4−B)
E403



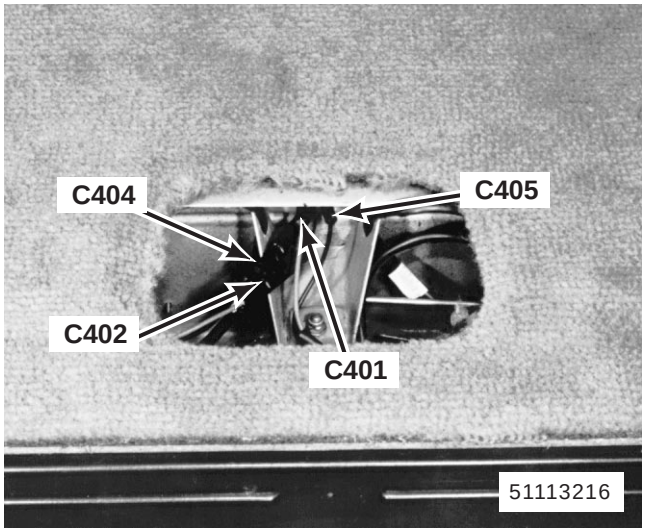
215. RH rear of luggage compartment NAS
Z175 Radio Amplifier
C419 (1−B)
C421 (3−W)
C422 (18−W)



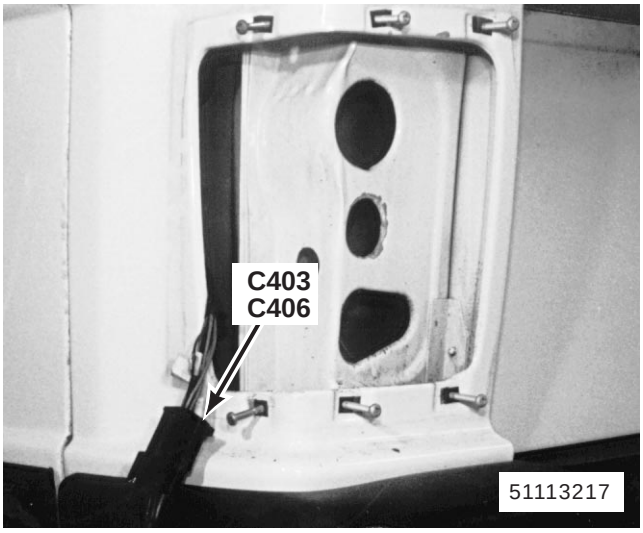
216. RH rear of luggage compartment NAS
K146 Subwoofer
C418 (4−B)
E403



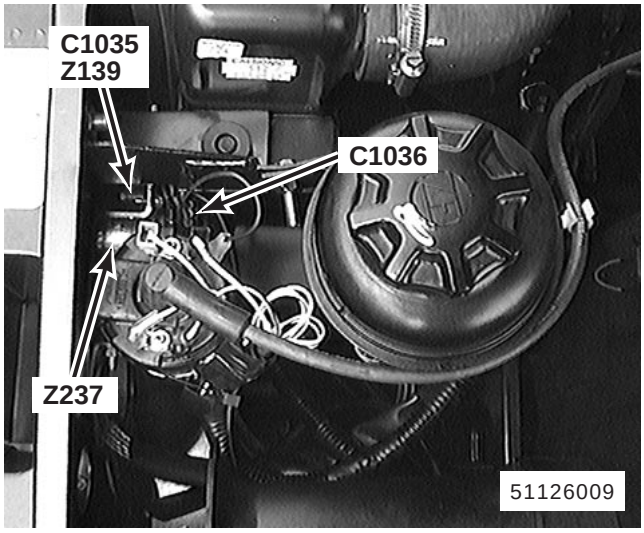
217. RH rear of roof (LH similar)
Z177 Left Antenna Amplifier
Z178 Right Antenna Amplifier



218. centre of tailgate
C401 (1–B)
C402 (1–B)
C404 (1–B)
C405 (1–B)



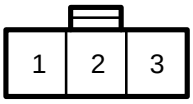
219. LH side of rear bumper (RH similar)
C403 (6–B) (Left)
C406 (6–B) (Right)



220. LH rear corner of engine compartment MFI–V8
Z237 Ignition Coil Noise Suppressor
Z139 Ignition Control Module
C1035 (3–B)
C1036 (3–B)

R030016

C100

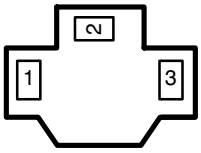


1	OK
2	PW
3	NLG

LC00100A

R030005

C103

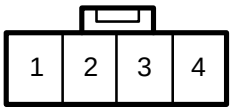


1	UO
2	UB
3	B

LC00103A

R040005

C101

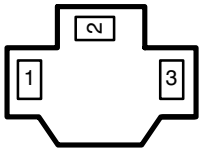


1	OS	3	–
2	NG	4	PN

LC00101A

R030005

C104

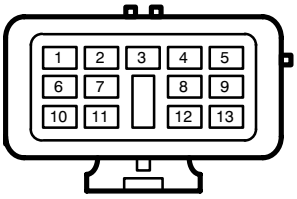


1	US
2	UK
3	B

LC00104A

R130001

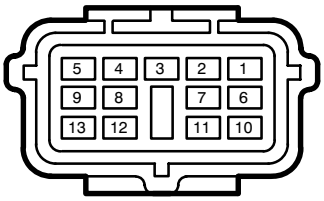
C105



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

LC00105B

R130002



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

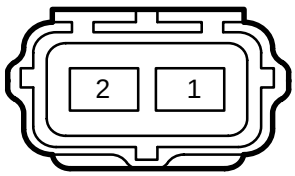
LC00105B

Z6 ETM

1995 RANGE ROVER

R020037

C106

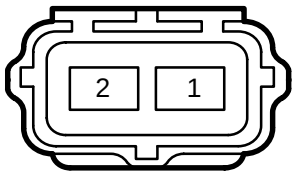


1	UP
2	B

LC00106B

R020037

C107

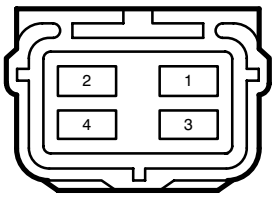


1	UP
2	B

LC00107B

R040001

C109

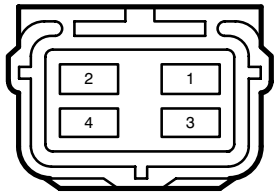


1	RB	3	B
2	GR	4	–

LC00109B

R040001

C110

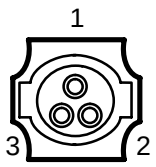


1	RO	3	B
2	GW	4	–

LC00110B

R030025

C112

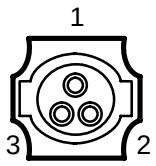


1	WO
2	CORE
3	B

LC00112B

R030025

C113

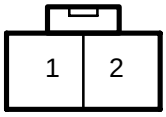


1	WO
2	CORE
3	B

LC00113A

R020023

C114

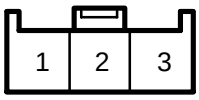


1	NK
2	NW

LC00114A

R030019

C115

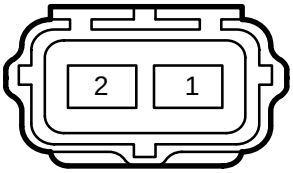


1	NP
2	NY
3	NS

LC00115B

R020037

C120

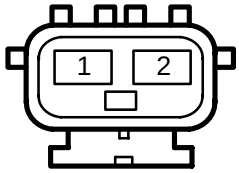


1	B
2	LGS

LC00120A

R020044

C121

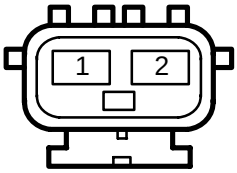


1	PK
2	B

LC00121B

R020044

C122

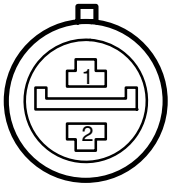


1	PS
2	B

LC00122B

R020011

C125



1	NR
2	B

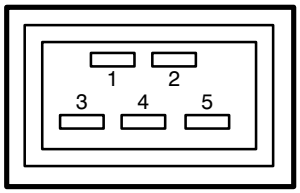
LC00125B

Z6 ETM

1995 RANGE ROVER

R050004

C126

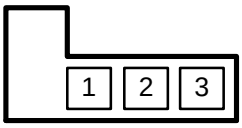


1	–	4	BY
2	WO	5	B
3	WB		

LC00126B

R030012

C127

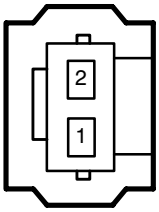


1	B
2	K
3	BG

LC00127B

R020038

C128

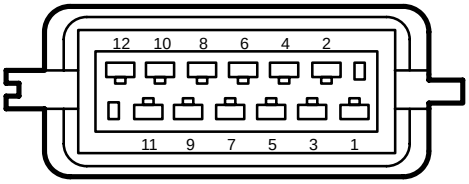


1	RY
2	RW

LC00128B

R120002

C129

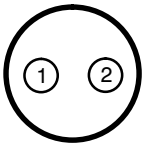


1	SY	5	SB	9	SU
2	–	6	SP	10	SK
3	SW	7	SO	11	SR
4	SG	8	SN	12	–

LC00129B

R020007

C130

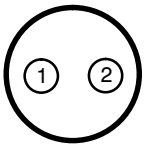


1	G
2	G

LC00130A

R020007

C131

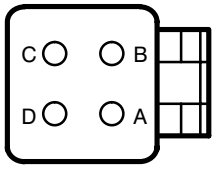


1	G
2	G

LC00131A

R040019

C132

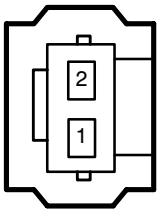


A	O	C	GW
B	US	D	RG

LC00132B

R020038

C135

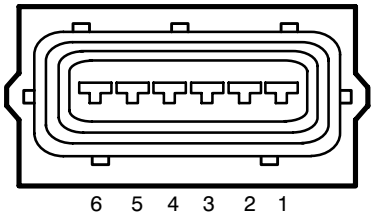


1	NO
2	YW

LC00135B

R060004

C133

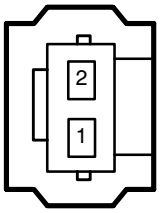


1	–	4	–
2	RB	5	NO
3	UG	6	UR

LC00133B

R020038

C136

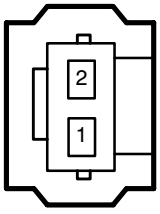


1	NO
2	YU

LC00136B

R020038

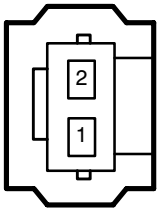
C134



1	NO
2	YU

LC00134B

C137



1	YW
2	NO

LC00137B

Z6 ETM

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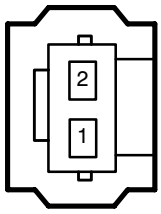
R020038

C138

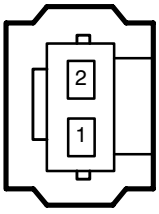


1	YU
2	NO

LC00138B

R020038

C139

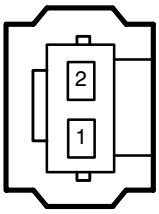


1	YW
2	NO

LC00139B

R020038

C140

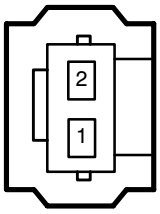


1	YU
2	NO

LC00140A

R020038

C141

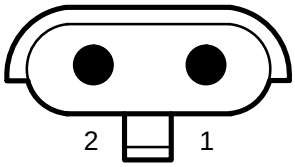


1	YW
2	NO

LC00141A

R020009

C144

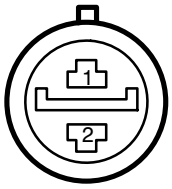


1	WP
2	SY

LC00144B

R020011

C145

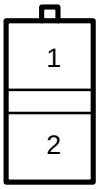


1	BG
2	B

LC00145A

R020020

C146

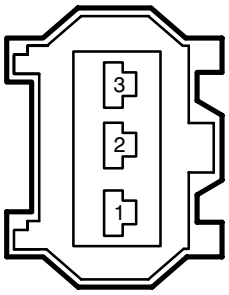


1	BP
2	B

LC00146A

R030002

C148

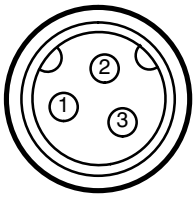


1	U
2	–
3	R

LC00148A

R030022

C149

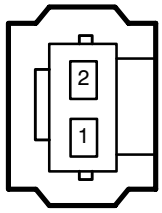


1	RB
2	R
3	Y

LC00149B

R020038

C150

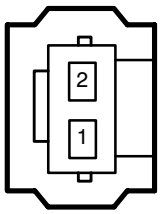


1	RB
2	SW

LC00150B

R020038

C152

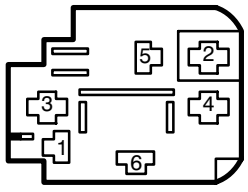


1	RB/GU
2	GU/KB

LC00152B

R060018

C159



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

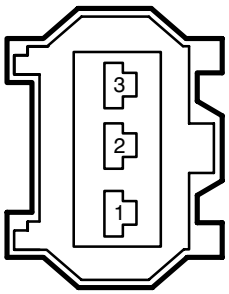
LC00159A

Z6 ETM

1995 RANGE ROVER

R030002

C160

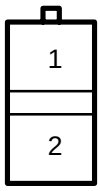


1	KB
2	R
3	RB

LC00160B

R020020

C162

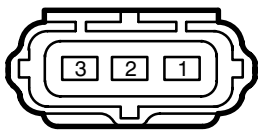


1	YB
2	G

LC00162B

R030002

C164

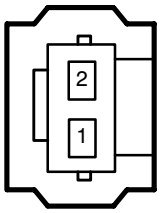


1	RB
2	KB
3	RU

LC00164B

R020038

C165

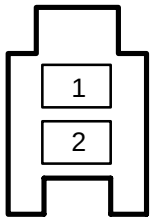


1	WG
2	BO

LC00165A

R020019

C166



1	B
2	BLG

LC00166B

R030023

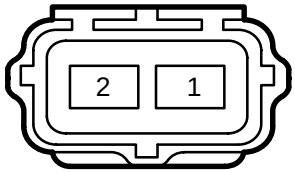
C167

81	BY
81A	BR
82A	WU

LC00167A

R020037

C168

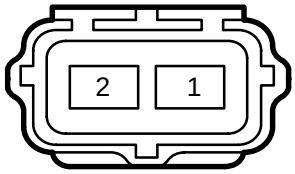


1	B
2	PG

LC00168A

R020037

C169

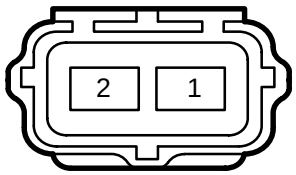


1	B
2	PG

LC00169A

R020037

C170

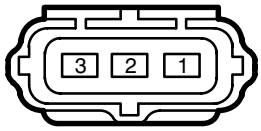


1	B
2	LGB

LC00170A

R030003

C171

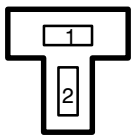


1	WP
2	–
3	WP

LC00171A

R020015

C173



1	LGR
2	B

LC00173A

Z6 ETM

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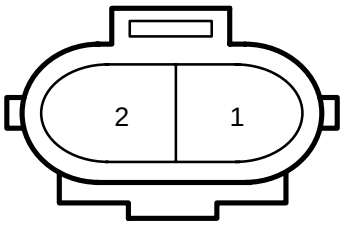
R020043

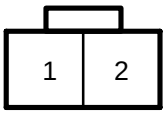
C174



1	B
2	G

LC00174B

R020027

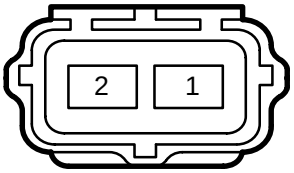


1	LGW
2	RS

LC00174B

R020037

C178

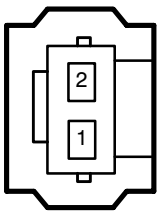


1	B
2	PO

LC00178A

R020038

C179

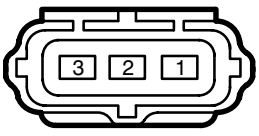


1	YR
2	B

LC00179B

R030003

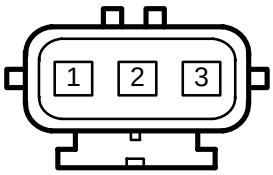
C180



1	B
2	BK
3	BW

LC00180B

R030001

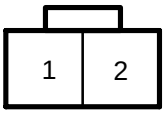


1	–
2	BW
3	BW

LC00180B

R020027

C181

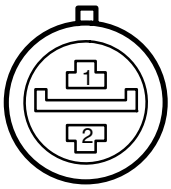


1	YB
2	NO

LC00181B

R020011

C182

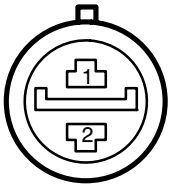


1	BN
2	B

LC00182A

R020011

C183

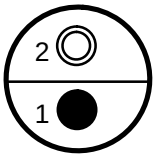


1	BN
2	B

LC00183A

R020006

C184

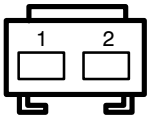


1	RS
2	B

LC00184B

R020035

C187

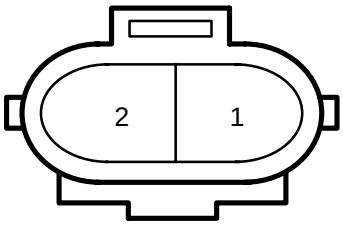


1	OS
2	N

LC00187B

R020043

C188



1	B
2	G

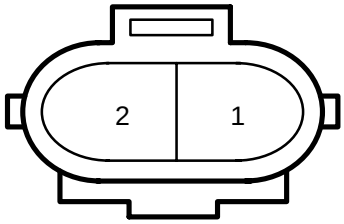
LC00188B

Z6 ETM

1995 RANGE ROVER

R020043

C189

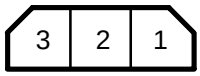


1	B
2	G

LC00189B

R030011

C190

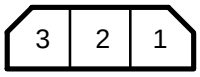


1	UN
2	B
3	UB

LC00190D

R030011

C191

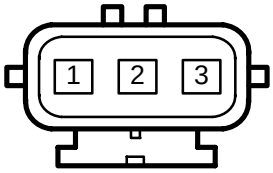


1	UN
2	B
3	UB

LC00191D

R030001

C194

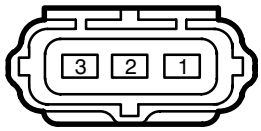


1	UB
2	B
3	UN

LC00194D

R030003

C194

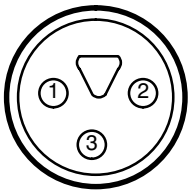


1	UK
2	B
3	UY

LC00194D

R030030

C1019

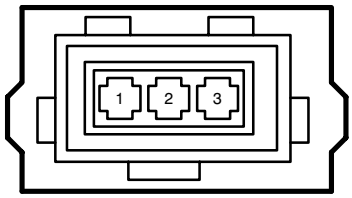


1	–
2	BW
3	BW

LC010019B

R030041

C1035

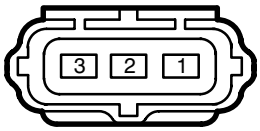


1	WB
2	–
3	W

R040018

R030003

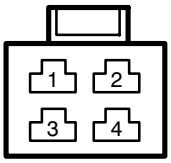
C1036



1	U
2	B
3	R

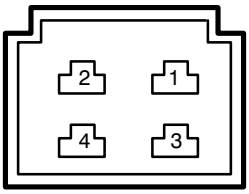
R040015

C200



1	NY	3	R
2	U	4	–

LC00200B

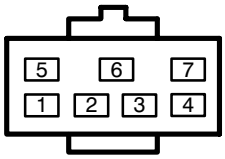


1	NP	3	R
2	U	4	–

LC00200B

R070011

C201

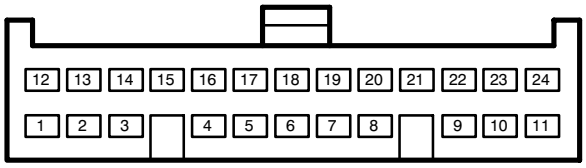


1	R	5	UW
2	NG	6	NP
3	UR	7	PO
4	U		

LC00201A

R240004

C202

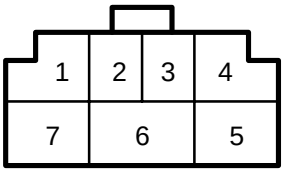


1	B	7	WLG	13	GR	19	PN
2	UR	8	LGP	14	WP	20	PU
3	GS	9	LGN	15	GW	21	PO
4	LGG	10	ULG	16	WY	22	NG
5	–	11	LGB	17	RW	23	BR
6	UW	12	RLG	18	UW	24	P

LC00202D

R070005

C203

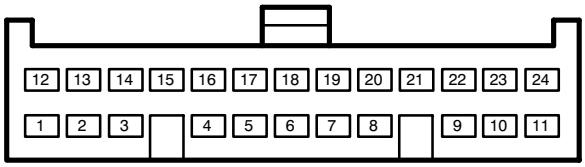


1	UR	5	LGW
2	U	6	W
3	R	7	NP
4	W		

LC00203A

R240004

C204

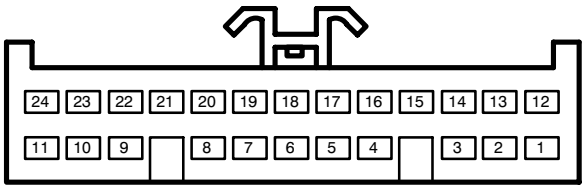


1	LGP	7	GY	13	WY	19	GR
2	LGN	8	RB	14	GW	20	WR
3	WN	9	GLG	15	–	21	GO
4	P	10	GS	16	GR	22	UO
5	LGP	11	US	17	–	23	RD
6	–	12	UB	18	–	24	UK

LC00204B

R240001

C202

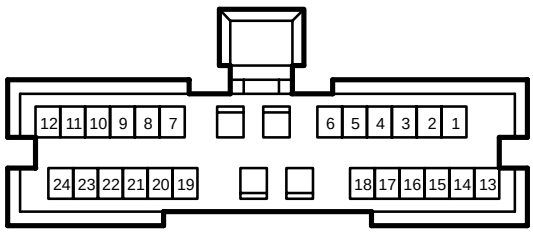


1	B	7	WLG	13	GR	19	PN
2	UR	8	LGP	14	WP	20	PW
3	GS	9	LGN	15	GW	21	PO
4	LGG	10	ULG	16	WY	22	NG
5	–	11	LGB	17	RW	23	BR
6	UW	12	RLG	18	UW	24	P

LC00202D

R240003

C205

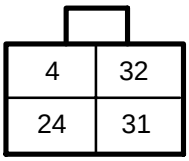


1	PU	7	RW	13	LGB	19	BP
2	G	8	WLG	14	Y	20	PB/PO
3	BG	9	LGG	15	OU	21	WP
4	PU	10	BK	16	LGS	22	NS
5	PW	11	–	17	UB	23	NO
6	B	12	WR	18	PG	24	PY

LC00205D

R040014

C206

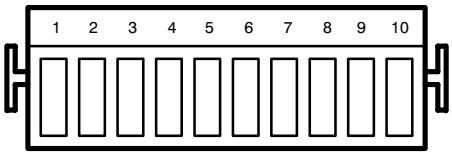


4	R	31	B
24	UW	32	OS

LC00206A

R100007

C207



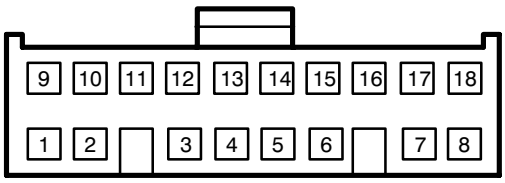
1	LG	4	G	6	LGU	8	B
2	SG	5	WS	7	LG	9	LGG
3	UO					10	BLG

LC00207B

R240004

R180001

C208

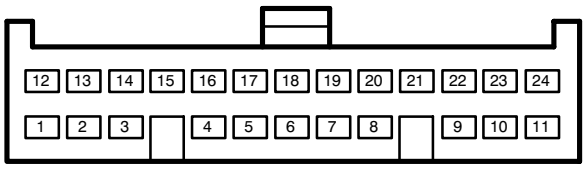


1	G	6	GLG	11	–	16	–
2	–	7	GR	12	UO	17	B
3	PY	8	GW	13	UR	18	BO
4	RO	9	W	14	WN		
5	LG	10	–	15	–		

LC00208B

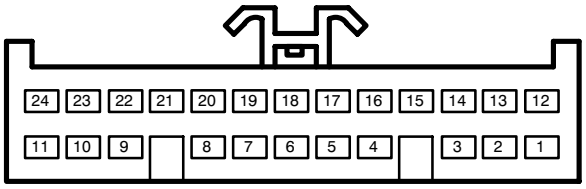
R240001

C209



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

LC00209B

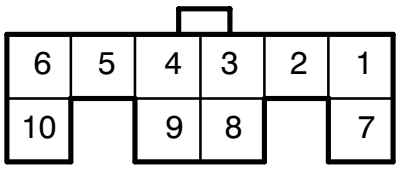


1	BK	7	SG	13	RB	19	BU
2	BR	8	LGO	14	SN	20	BK
3	BW	9	US	15	RW	21	BN
4	BN	10	G	16	BR	22	BP
5	UP	11	YK	17	PO	23	WY
6	SU	12	RN	18	SW	24	PU

LC00209B

R100010

C211

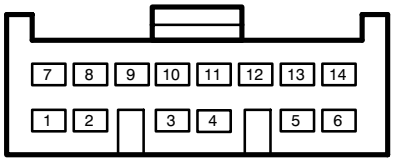


1	WY	4	GR	6	GW	8	–
2	–	5	PY	7	RO	9	NP
3	–					10	–

LC00211D

R140006

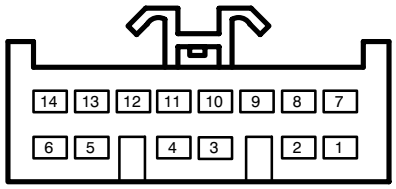
C212



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

LC00212B

R140001

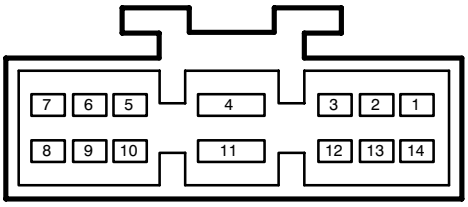


1	LGO	6	PN	11	O
2	PB	7	NG	12	GP
3	RY	8	NR	13	PU
4	GB	9	RB	14	GR
5	GN	10	K		

LC00212B

R140003

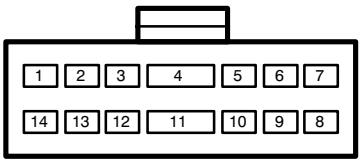
C213



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

LC00213B

R140005

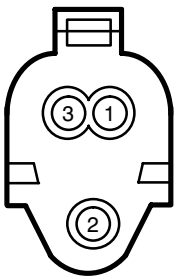


1	GW	6	RY	11	P
2	RB	7	GN	12	LGO
3	RO	8	GR	13	–
4	–	9	GP	14	–
5	YP	10	PY		

LC00213B

R030026

C214



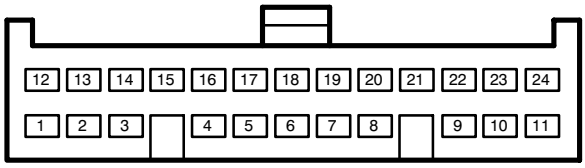
1	RN
2	RO
3	B

LC00214A

R240004

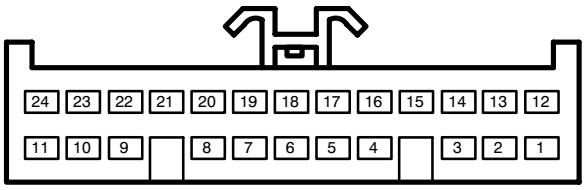
R240001

C215



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

LC00215D



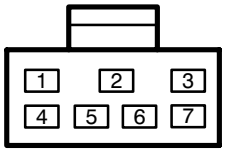
1	OU	7	LGN	13	WS	19	UY
2	GU	8	–	14	G	20	PS
3	BY	9	PN	15	YO	21	WR
4	LGS	10	BP	16	LGP	22	RY
5	YP	11	NY	17	GB	23	NP
6	BLG	12	PN	18	UK	24	K

LC00215D

R070010

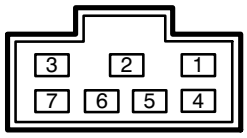
R070004

C216



1	NLG	5	BN
2	WP	6	–
3	PW	7	WG
4	NR		

LC00216B



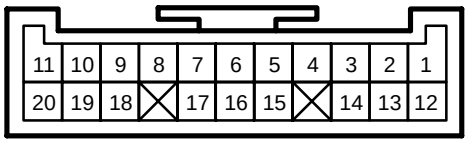
1	NLG	5	BR
2	WP	6	BG
3	PW	7	WG
4	NR		

LC00216B

R200002

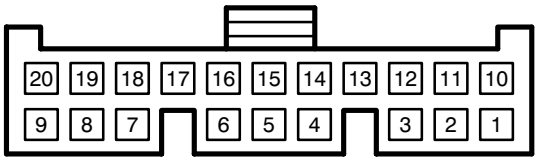
R200006

C217



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

LC00217D



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

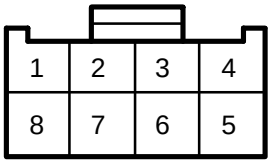
LC00217D

Z6 ETM

1995 RANGE ROVER

R080012

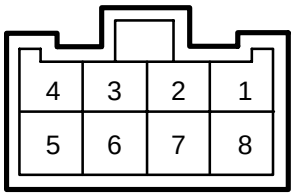
C218



1	WU	5	–
2	BY	6	B
3	PW	7	P
4	WY	8	PY

LC00218B

R080011

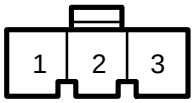


1	–	5	–
2	BY	6	–
3	–	7	–
4	WY	8	PY

LC00218B

R030017

C220

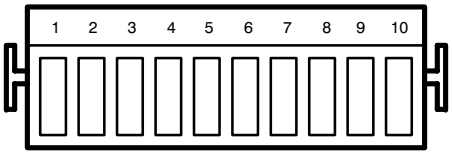


1	NW
2	LG
3	–

LC00220A

R100007

C221

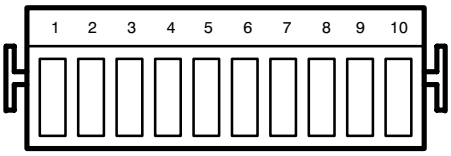


1	B	4	YK	6	–	8	LG
2	BR	5	NY	7	PO	9	WR
3	GB					10	RB

LC00221B

R100007

C222

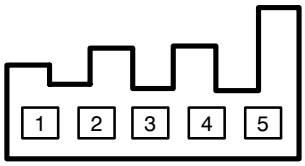


1	BY	4	–	6	Y	8	GU
2	LG	5	WN	7	RN	9	RN
3	K					10	B

LC00222B

R050005

C223

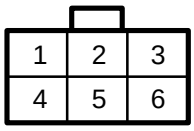


1	G	4	–
2	–	5	S
3	P		

LC00223A

R060008

C224

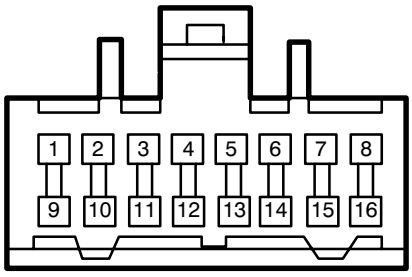


1	B	4	GS
2	NLG	5	RLG
3	ULG	6	–

LC00224A

R160002

C225

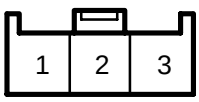


1	PO	5	–	9	–	13	–
2	OY	6	YO	10	GK	14	RW
3	YB	7	BY	11	BK	15	BN
4	–	8	WB	12	PU	16	PB

LC00225B

R030019

C226

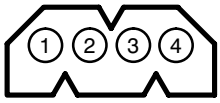


1	–
2	WY
3	LGW

LC00226A

R040007

C227

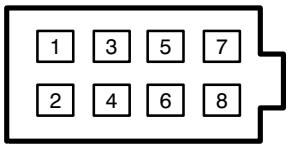


1	GP	3	LGK
2	GO	4	WS

LC00227B

R080015

C228

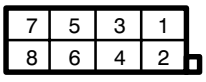


1	BK	5	BP
2	BN	6	SU
3	SW	7	BU
4	SN	8	–

LC00228B

R080017

C230



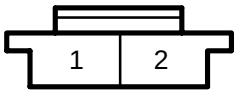
1	–	5	PY
2	–	6	RN
3	–	7	LGO
4	PN	8	B

LC00230B

Z6 ETM

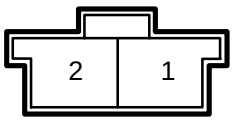
1995 RANGE ROVER

R020029



R020013

C231



1	RB
2	KB

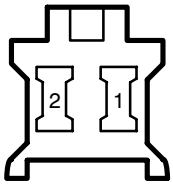
LC00231B

1	RB
2	KB

LC00231B

R020040

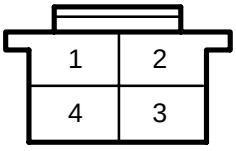
C232



1	UB
2	RB

LC00232B

R040011

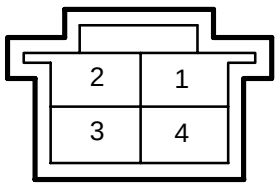


1	BN	3	WB
2	BW	4	NB

LC00233D

R040017

C233

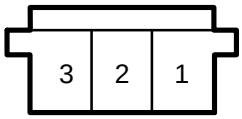


1	BR/BK	3	KB
2	BK/BR	4	RB

LC00233D

R030009

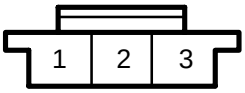
C234



1	B
2	RY
3	BS

LC00234B

R030010

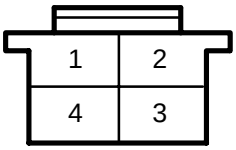


1	B
2	RY
3	BS

LC00234B

R040011

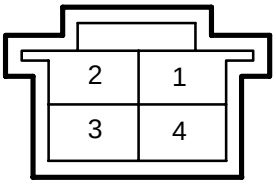
C235



1	BN	3	WB
2	BW	4	NB

LC00235D

R040017

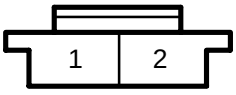


1	BN/BW	3	WB
2	BW/BN	4	NB

LC00235D

R020029

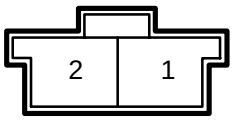
C236



1	NB
2	WB

LC00236B

R020013



1	NB
2	KB

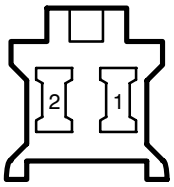
LC00236B

Z6 ETM

1995 RANGE ROVER

R020040

C237

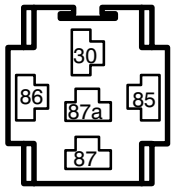


1	WB
2	NB

LC00237B

R050001

C240

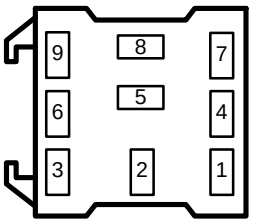


30	PW	87	WP
85	UP	87A	WO
86	WG		

LC00240A

R090002

C238

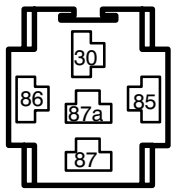


1	–	4	BR	7	–
2	NO	5	BG	8	GW
3	–	6	B	9	PB

LC00238B

R050001

C241

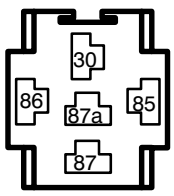


30	NG	87	BG
85	BS/WG	87A	–
86	WG/G		

LC00241B

R050001

C239

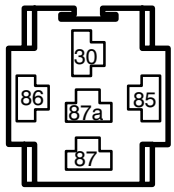


30	NLG	87	NO
85	UR	87A	NO
86	NO		

LC00239B

R050001

C242

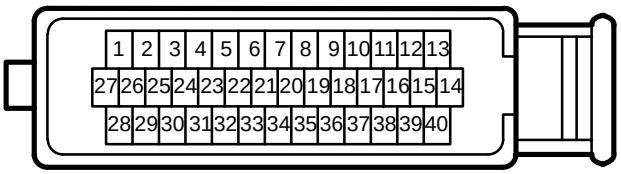


30	WG	87	GY
85	WG	87A	–
86	YB		

LC00242B

R400001

C243



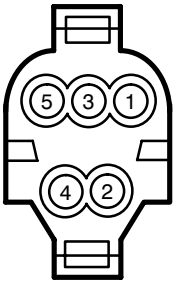
1	RG	7	GU	13	YU	19	WG	25	RB	31	BS	37	–
2	NO	8	PY	14	B	20	R	26	GW	32	SW	38	NK
3	Y	9	WLG	15	NO	21	GY	27	BS	33	BS	39	WU
4	B	10	RS	16	UP	22	UR	28	US	34	OB	40	B
5	SB	11	YW	17	SY	23	LORE	29	O	35	UG		
6	YK	12	WR	18	WK	24	LORE	30	K	36	BG		

LC00243B

R050012

R020033

C244

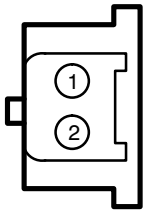


1	BS	4	–
2	–	5	–
3	–		

LC00244A

R050013

C246

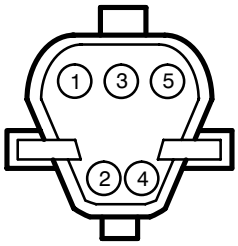


1	BS
2	SB

LC00246A

R160003

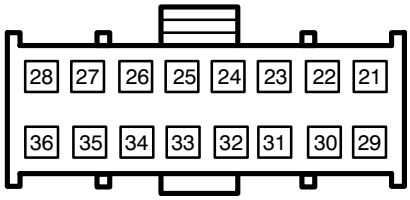
C245



1	WK	4	WLG
2	–	5	BS
3	–		

LC00245B

C247



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

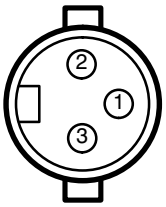
LC00247A

Z6 ETM

1995 RANGE ROVER

R030024

C248



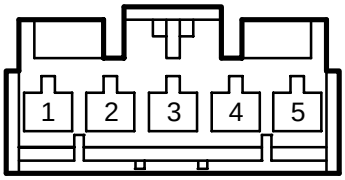
1	KB
2	WLG
3	WK

LC00248A

R050002.03

R050002.00

C250

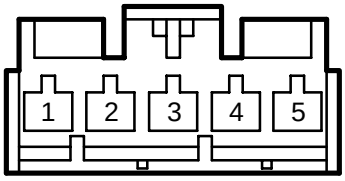


1	GLG	4	OU
2	RN	5	B
3	–		

LC00250A

R050002.00

C249

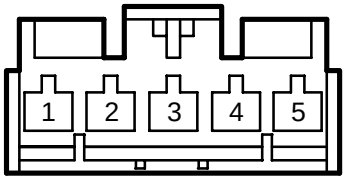


1	GLG	4	LGS
2	RN	5	B
3	–		

LC00249A

R060017

C251

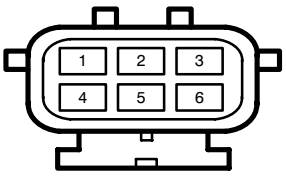


1	YO	4	YR
2	RN	5	B
3	–		

LC00251B

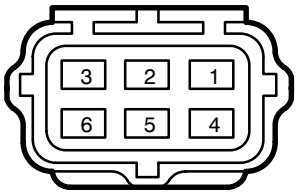
R060016

C252



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

LC00252B

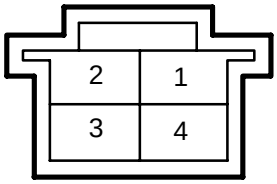


1	P	4	B
2	LG	5	G
3	S	6	G

LC00252B

R040017

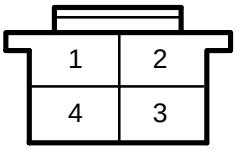
C253



1	BG	3	BO
2	BU	4	BY

LC00253B

R040011

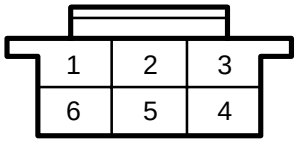


1	BG	3	BO
2	BU	4	BY

LC00253B

R060009

C256

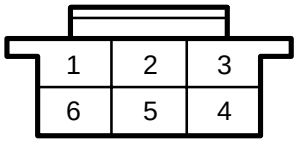


1	RN	4	YU
2	B	5	YN
3	YR	6	LG

LC00256B

R060009

C258

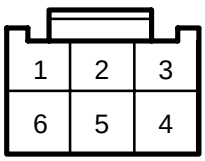


1	RN	4	YU
2	B	5	YO
3	YW	6	LG

LC00258B

R060022

C257

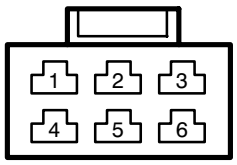


1	YS	4	–
2	YU	5	S
3	B	6	RN

LC00257B

R060007

C259

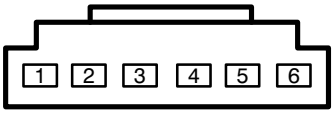


1	B	4	RN
2	UK	5	UY
3	–	6	–

LC00259B

R060002

C260



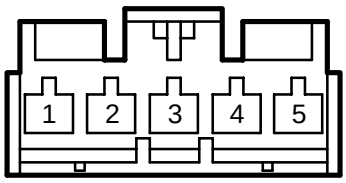
1	PN	4	–
2	B	5	RS
3	B	6	RY

LC00260B

R050002.00

R050002.01

C263

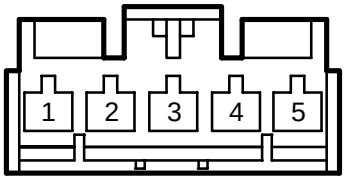


1	UR	4	RY
2	RN	5	B
3	–		

LC00263A

R050002.00

C261

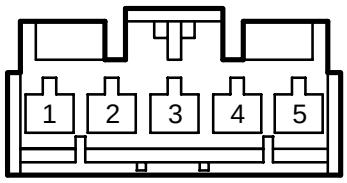


1	US	4	UP
2	RN	5	B
3	–		

LC00261B

R050002.02

C264

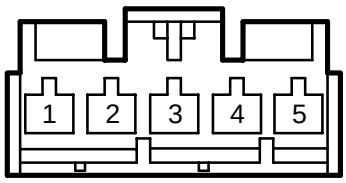


1	BO	4	B
2	RN	5	NR
3	–		

LC00264B

R050002.00

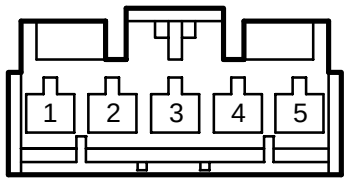
C262



1	GLG	4	WY
2	RN	5	B
3	–		

LC00262A

C265

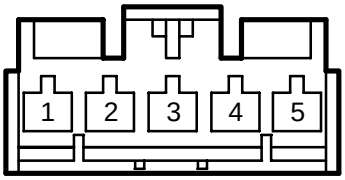


1	BO	4	B
2	RN	5	NR
3	–		

LC00265B

R050002.00

C266

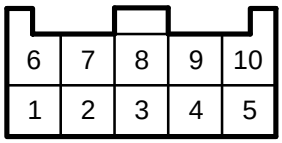


1	B	4	PU
2	RN	5	B
3	–		

LC00266B

R100008

C267



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

LC00267B

R080016

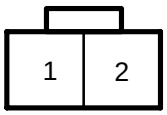
C268

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

LC00268B

R020027

C269

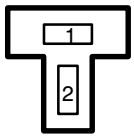


1	PN
2	RW

LC00269B

R020015

C270

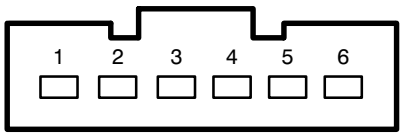


1	PN
2	B

LC00270B

R060001

C274

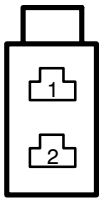


1	BO	4	O
2	B	5	K
3	PO	6	P

LC00274B

R020016

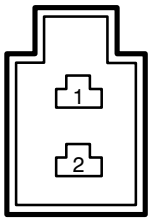
C277



1	WP
2	NP

LC00277B

R020017

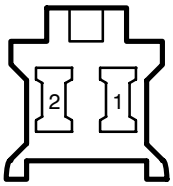


1	WP
2	NP

LC00277B

R020040

C278

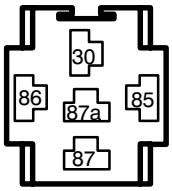


1	BN
2	BW

LC00278B

R050001

C281

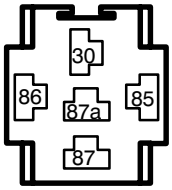


30	NG	86	GLG
85	NO	87	NR
87A	B		

LC00281B

R050001

C279

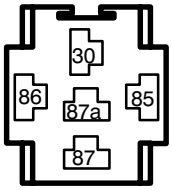


30	PU	86	PU
85	BK	87	GR
87A	GW		

LC00279A

R050001

C282

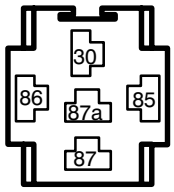


30	NW	86	LG
85	B	87	LGW
87A	–		

LC00282A

R050001

C283

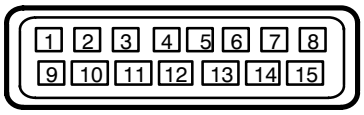


30	PN	86	PO
85	PN	87	PG
87A	–		

LC00283A

R150001

C284

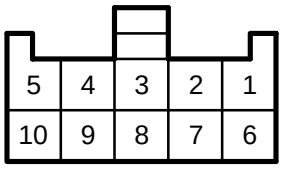


1	WU	6	BY	11	YK
2	–	7	BR	12	–
3	RW	8	B	13	–
4	UW	9	PG	14	–
5	GP	10	WY	15	–

LC00284A

R100005

C287

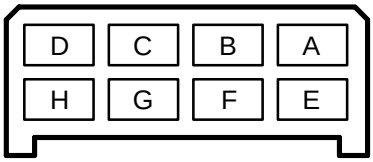


1	BK	4	WG	6	BR	8	–
2	–	5	BU	7	PG	9	BS
3	LGP					10	–

LC00287B

R080003

C288

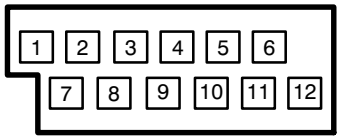


A	PN	E	WK
B	SB	F	SR
C	B	G	SK
D	PS	H	SU

LC00288A

R120003

C289

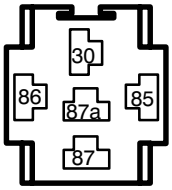


1	KR	5	–	9	P
2	RK	6	YO	10	–
3	GK	7	O	11	B
4	OY	8	K	12	–

LC00289B

R050001

C290



30	BLG	86	B
85	WR	87	PG
87A	–		

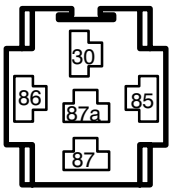
LC00290B

Z6 ETM

1995 RANGE ROVER

R050001

C291

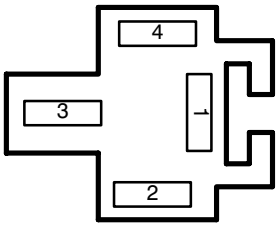


30	NG	86	UP
85	B	87	UP
87A	–		

LC00291B

R040025

C294

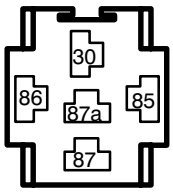


1	PO	3	OS
2	PY	4	LGP

LC00294B

R050001

C292

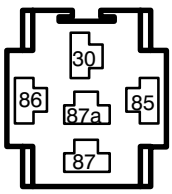


30	NG	86	BP
85	GW	87	BN
87A	–		

LC00292A

R050001

C295

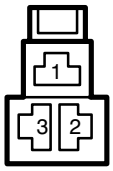


30	NR	86	B
85	WG	87	NO
87A	–		

LC00295B

R030007

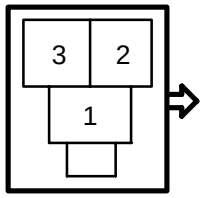
C298



1	–
2	B
3	R

LC00298A

R030004

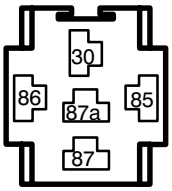


1	–
2	WB
3	R

LC00298A

R050001

C2000

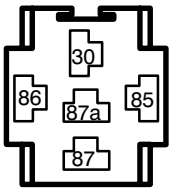


30	WP	86	WP
85	BK	87	RB
87A	–		

LC02000A

R050001

C2001

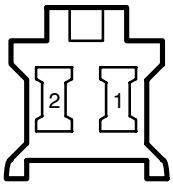


30	WY	86	BR
85	YB	87	SB
87A	–		

LC02001A

R020040

C2002

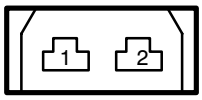


1	BR
2	BK

LC02002B

R020032

C2005

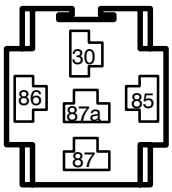


1	PY
2	PG

LC02005A

R050001

C2006

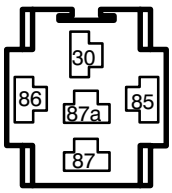


30	NW	86	BO
85	WR	87	NR
87A	–		

LC02006A

R050001

C2007



30	NG	86	B
85	LGP	87	WG
87A	YO		

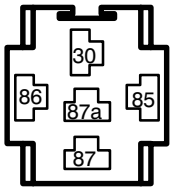
LC02007B

Z6 ETM

1995 RANGE ROVER

R050001

C2008

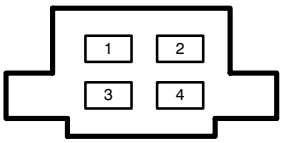


30	LGP	86	NS
85	GS	87	GS
87A	NLG		

LC02008A

R040012

C2009

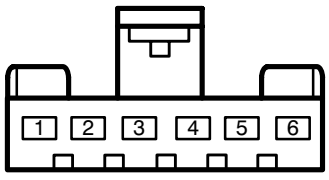


1	–	3	LGN
2	GW	4	GR

LC02009A

R060005

C2010

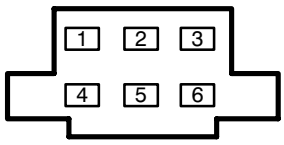


1	WY	4	RW
2	–	5	PO
3	UW	6	–

LC02010A

R060013

C2011

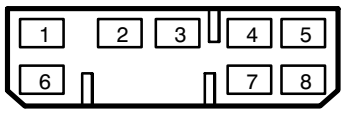


1	WLG	4	–
2	–	5	–
3	B	6	–

LC02011A

R080006

C2012

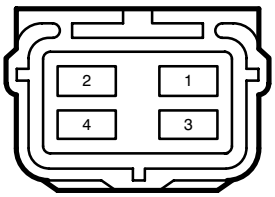


1	PW	5	PN
2	P	6	OW
3	WP	7	–
4	BR	8	–

LC02012A

R040001

C2013

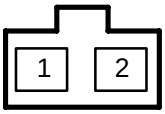


1	PN	3	B
2	PW	4	WP

LC02013A

R020022

C2014

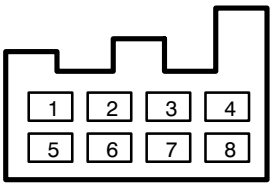


1	OW
2	B

LC02014A

R080009

C2015

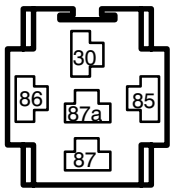


1	GS	5	LGB
2	LGG	6	LGB
3	ULG	7	–
4	RLG	8	GS

LC02015A

R050001

C2021

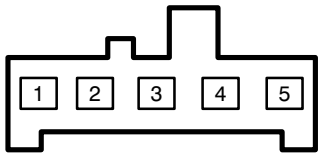


30	WS/WU	86	WS
85	BY/B	87	PW
87A	PY		

LC02021A

R050006

C2022

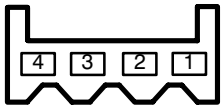


1	WB	4	PU
2	BO	5	N
3	G		

LC02022A

R040004

C2023

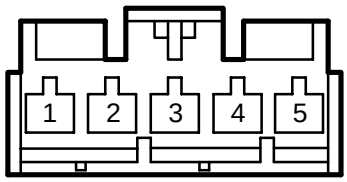


1	S	3	WB
2	UR	4	LG

LC02023A

R050002.02

C2025

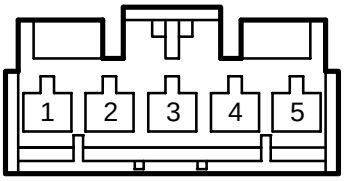


1	N	4	NW
2	LG	5	UR
3	WB		

LC02025A

R050002.00

C2026

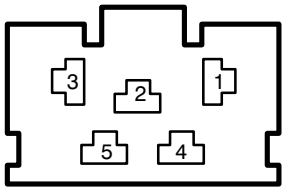


1	WB	4	RG
2	LG	5	UR
3	UB		

LC02026A

R050003

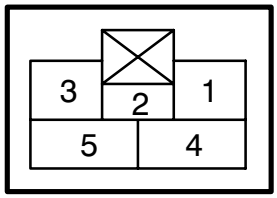
C2027



1	WB	4	G
2	N	5	BO
3	PU		

LC02027A

R050018

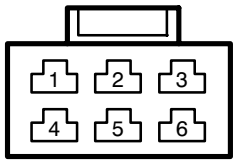


1	WB	4	G
2	N	5	BO
3	PU		

LC02027A

R060007

C2028

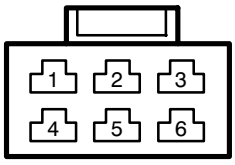


1	B	4	B
2	B	5	B
3	B	6	B

LC02028A

R060007

C2029

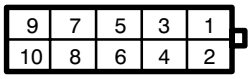


1	B	4	B
2	B	5	B
3	B	6	B

LC02029A

R100011

C2030

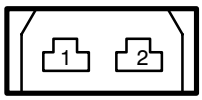


1	–	4	–	6	–	8	–
2	–	5	–	7	–	9	RY
3	–					10	B

LC02030B

R020032

C2035

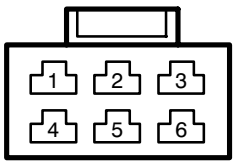


1	PW
2	P

LC02035A

R060007

C2031

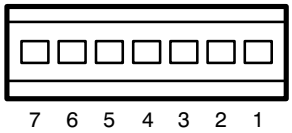


1	B	4	B
2	B	5	B
3	B	6	B

LC02031B

R070001

C2036

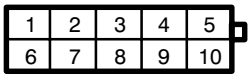


1	PB	5	YB
2	W	6	PB
3	R	7	PB
4	GR		

LC02036A

R100014

C2032

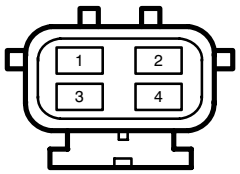


1	–	4	R	6	–	8	B
2	Y	5	LG	7	B	9	B
3	U					10	B

LC02032B

R040002

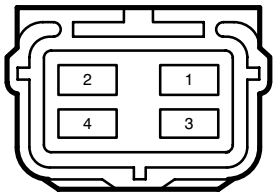
C2039



1	B	3	B
2	B	4	B

LC02039D

R040001

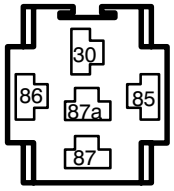


1	BS	3	Y
2	B	4	YK

LC02039D

R050001

C2044

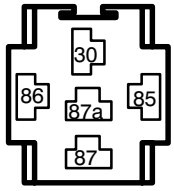


30	RG	86	B
85	RB	87	RN
87A	WY		

LC02044D

R050001

C2046

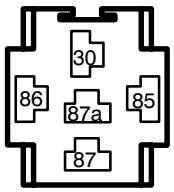


30	B	86	WY
85	BK	87	–
87A	BG		

LC02046B

R050001

C2045

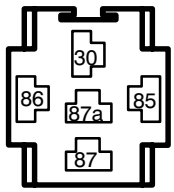


30	BP	86	B
85	K	87	BK
87A	–		

LC02045D

R050001

C2047

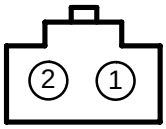


30	UW	86	UB
85	WY	87	B
87A	NG		

LC02047D

R020026

C2063



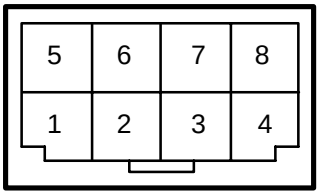
1	GP
2	GO

LC02063B

R080001

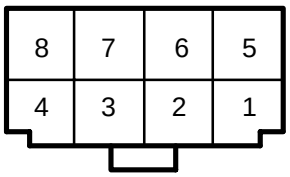
R080002

C2066



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

LC02066A



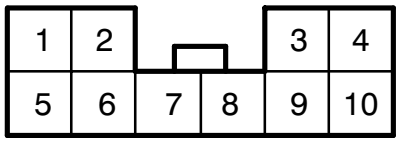
1	BO	5	UR
2	G	6	UB
3	PU	7	WB
4	N	8	RG

LC02066A

R100003

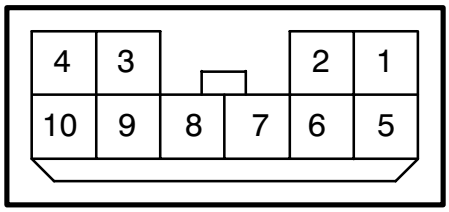
R100001

C2067



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

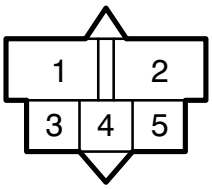
LC02067A

Z6 ETM

1995 RANGE ROVER

R050016

C2068

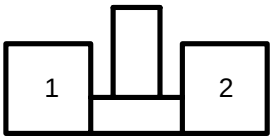


1	R	4	WB
2	WR	5	UR
3	N		

LC02068A

R020049

C2069

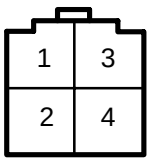


1	BO
2	WR

LC02069A

R040022

C2070

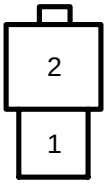


1	BO	3	PU
2	G	4	WB

LC02070A

R020046

C2071

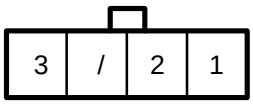


1	YB
2	UR

LC02071A

R030015

C2072



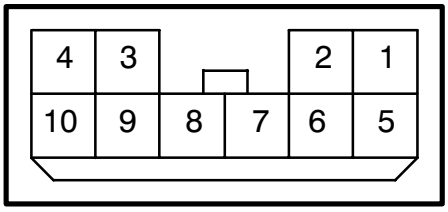
1	YB
2	UB
3	RG

LC02072A

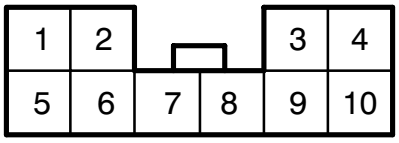
R100001

R100003

C2073



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



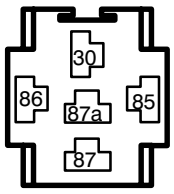
1	–	4	PB	6	–	8	NO
2	RN	5	–	7	WG	9	YB
3	B					10	YR

LC02073B

LC02073B

R050001

C2074



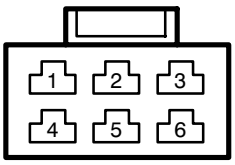
30	PU	86	BK
85	PU	87	LGR
87A	–		

LC02074A

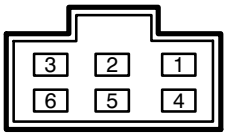
R060007

R060006

C301



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



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

LC00301A

LC00301A

Z6 ETM

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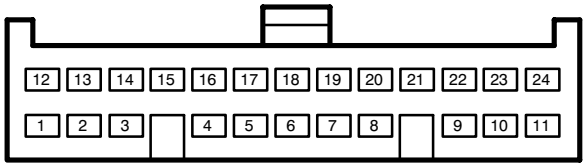
R240004

C302



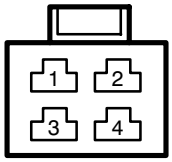
1	BK	7	YK	13	ON	19	OP
2	SW	8		14	YG	20	PB
3	BN	9	WS	15	PN	21	OW
4	BU	10		16	OU	22	WK
5	BP	11	RY	17	PG	23	OK
6	SN	12	PK	18	WG	24	BU

LC00302B

R030008

R040018

C303

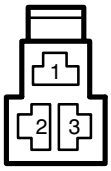


1	WY	3	WR
2	B	4	B

LC00303B

R030006

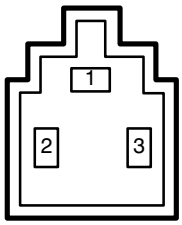
C304



1	BP
2	WO
3	WU

LC00304D

R020029

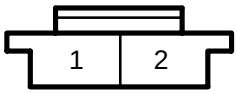


1	B
2	WO
3	WU

LC00304D

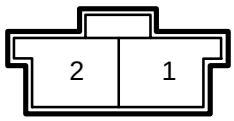
R020013

C305



1	PN
2	PU

LC00305B



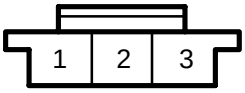
1	PN
2	PU

LC00305B

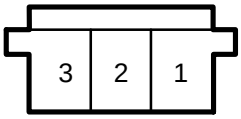
R030010

R030009

C306



1	PW
2	O
3	K



1	PW
2	O
3	K

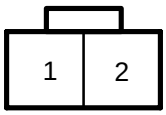
LC00306A

R020027

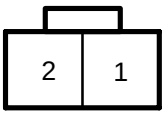
LC00306A

R020027

C307



1	GN
2	B



1	GN
2	B

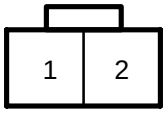
LC00307B

R020027

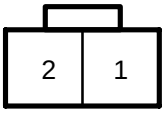
LC00307B

R020027

C309



1	GR
2	B



1	GR
2	B

LC00309B

LC00309B

Z6 ETM

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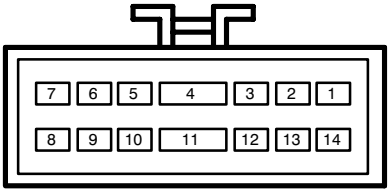
R140004

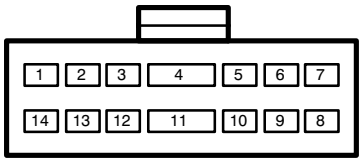
C311



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

LC00311B

R140005

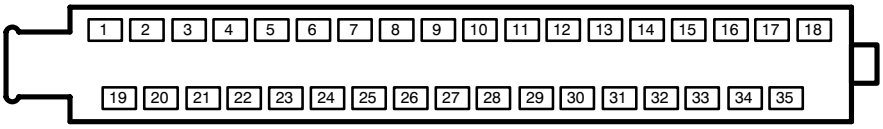


1	–	6	BU	11	NK
2	WY	7	–	12	GP
3	B	8	–	13	YK
4	OW	9	BR	14	–
5	WS	10	PU		

LC00311B

R350002

C312

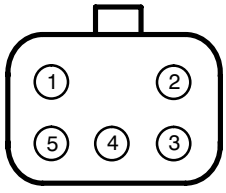


1	NK	6	SR	11	SO	16	W	21	SG	26	SG	31	BY
2	RY	7	SU	12	SB	17	G	22	SP	27	B	32	G
3	RB	8	BG	13	WK	18	W	23	SK	28	–	33	W
4	SY	9	LGK	14	BK	19	NK	24	SN	29	–	34	G
5	SW	10	WS	15	G	20	RW	25	GP	30	WB	35	W

LC00312B

R050014

C313

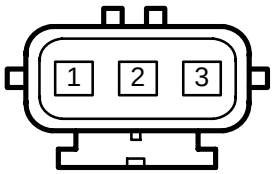


1	WK	4	–
2	BK	5	B
3	LGK		

LC00313B

R030001

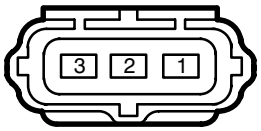
C314



1	BW
2	B
3	BY

LC00314B

R030003

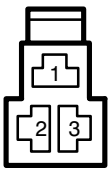


1	BW
2	B
3	K

LC00314B

R030008

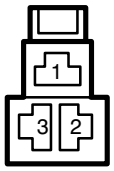
C315



1	B
2	WR
3	WY

LC00315D

R030007

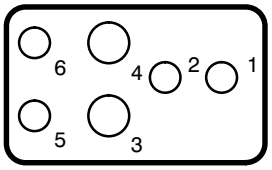


1	B
2	WR
3	WY

LC00315D

R060014

C316

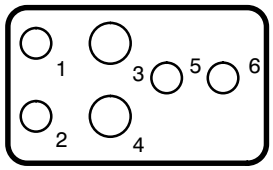


1	SU	4	–
2	SN	5	SR
3	WU	6	SP

LC00316D

R060015

C317



1	SG	4	WO
2	SB	5	SW
3	B	6	SY

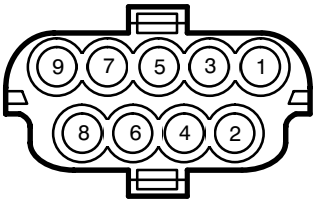
LC00317D

Z6 ETM

1995 RANGE ROVER

R090001

C318

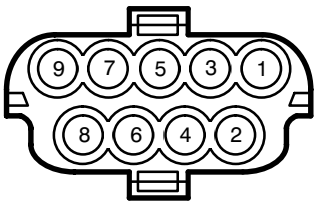


1	SB	4	SR	7	SY
2	SG	5	SN	8	SW
3	SP	6	SU	9	–

LC00318B

R090001

C321

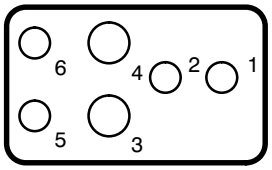


1	WS	4	WP	7	WK
2	WLG	5	WN	8	WB
3	WO	6	WU	9	–

LC00321B

R060014

C319

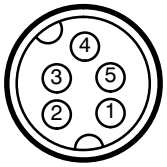


1	WU	4	WY
2	WN	5	WO
3	–	6	WP

LC00319B

R050009

C323

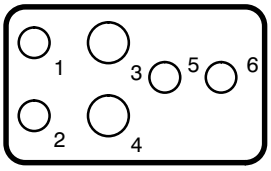


1	–	4	BO
2	GY	5	BY
3	GN		

LC00323A

R060015

C320

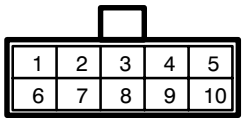


1	WS	4	B
2	WLG	5	WB
3	WR	6	WK

LC00320B

R100013

C324

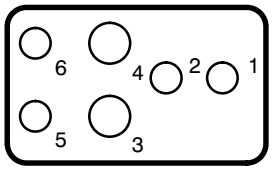


1	S	4	P	6	O	8	R
2	SG	5	BY	7	B	9	G
3	SP					10	Y

LC00324B

R060014

C325

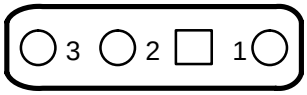


1	P	4	–
2	O	5	Y
3	BY	6	R

LC00325B

R030013

C327

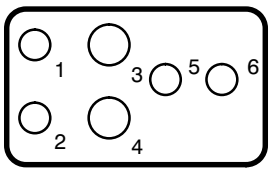


1	S
2	SP
3	SG

LC00327B

R060015

C326

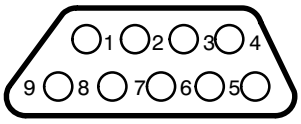


1	Y	4	B
2	R	5	O
3	G	6	P

LC00326B

R090003

C328

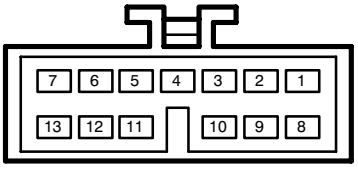


1	G	4	G	7	Y
2	Y	5	–	8	G
3	G	6	Y	9	Y

LC00328B

R130003

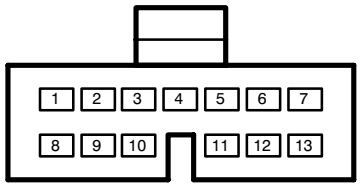
C330



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

LC00330B

R130008

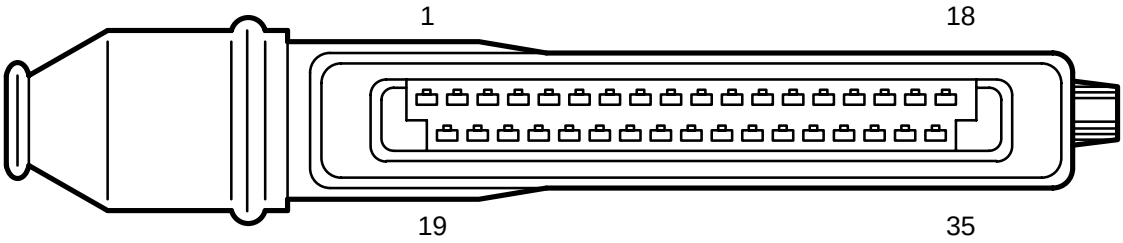


1	–	6	YR	11	YW
2	Y	7	–	12	YO
3	–	8	–	13	–
4	–	9	YN		
5	YU	10	YS		

LC00330B

R350001

C331



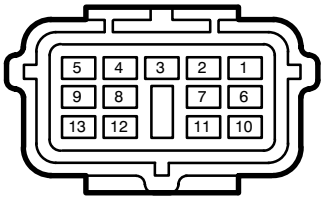
1	SR	6	BY	11	GW	16	BO	21	OK	26	GS	31	GP
2	OU	7	YW	12	WS	17	WK	22	RY	27	GK	32	YN
3	OB	8	SY	13	SU	18	B	23	RK	28	GY	33	YO
4	RU	9	GO	14	PR	19	S	24	BS	29	YU	34	PS
5	RB	10	GN	15	YS	20	OY	25	YR	30	YK	35	WLG

LC00331B

R130002

R030003

C332

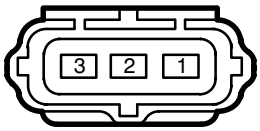


1	GW	6	GO	11	B
2	GY	7	–	12	SR
3	GN	8	NLG	13	SR
4	GK	9	–		
5	GS	10	B		

LC00332B

R040003

C334

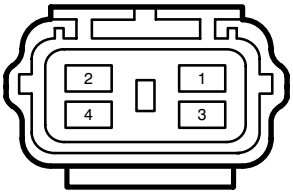


1	LGO
2	B
3	GN

LC00334B

R040006

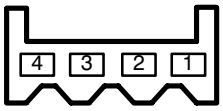
C333



1	–	3	B
2	BO	4	NLG

LC00333B

C335

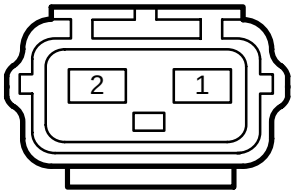


1	BN	3	WB
2	B	4	–

LC00335B

R020042

C336

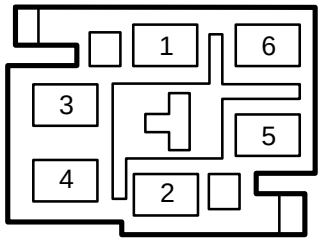


1	NO
2	B

LC00336B

R070008

C337

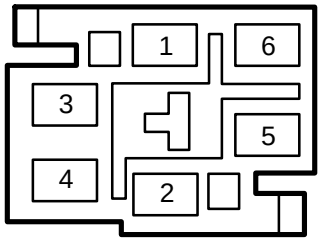


1	BS	5	–
2	BR	6	RN
3	–	7	–
4	B		

LC00337A

R070008

C338

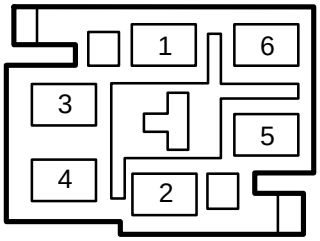


1	BU	5	–
2	BK	6	RN
3	–	7	–
4	B		

LC00338A

R070008

C339

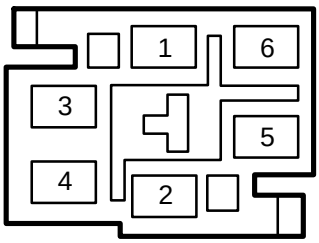


1	SO	5	WK
2	SW	6	RN
3	WK	7	–
4	B		

LC00339B

R070008

C340

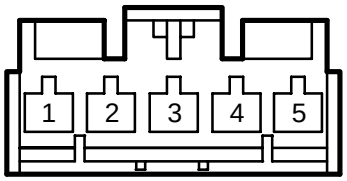


1	SN	5	WK
2	S	6	RN
3	WK	7	–
4	B		

LC00340B

R050002.00

C341



1	LGP	4	US
2	RN	5	B
3	–		

LC00341B

Z6 ETM

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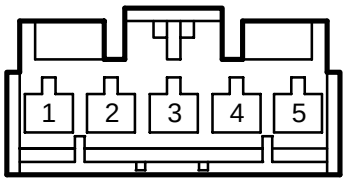
R050002.00

C342

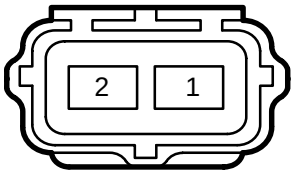


1	LGP	4	UK
2	RN	5	B
3	–		

LC00342B

R020037

C345

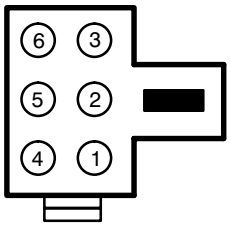


1	P
2	GR

LC00345B

R060019

C343

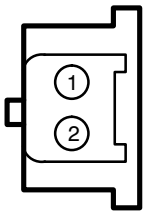


1	B	4	SG
2	–	5	–
3	–	6	–

LC00343A

R020033

C346

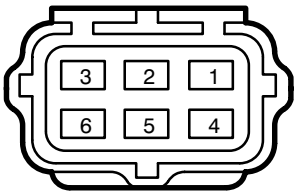


1	RG/CLG
2	B

LC00346B

R060016

C344

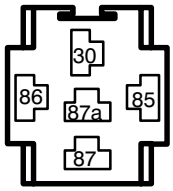


1	P	4	BR
2	GP	5	KS
3	B	6	KS

LC00344A

R050001

C348

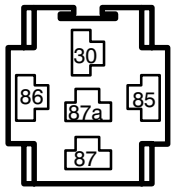


30	NP	86	NP
85	PU	87	WN
87A	–		

LC00348D

R050001

C349

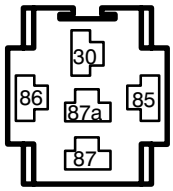


30	LGW	86	US
85	B	87	GR
87A	–		

LC00349B

R050001

C350

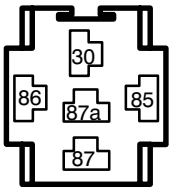


30	SG	86	B
85	NK	87	–
87A	B		

LC00350B

R050001

C351

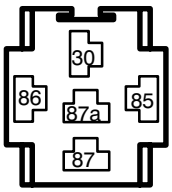


30	OK	86	B
85	BG	87	NK
87A	–		

LC00351B

R050001

C352

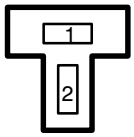


30	NS	86	WR
85	WO	87	NR
87A	–		

LC00352B

R020015

C353

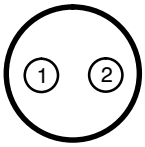


1	B
2	LGW

LC00353A

R020007

C354



1	W
2	W

LC00354A

Z6 ETM

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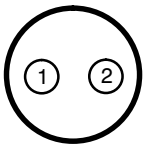
R020007

C355



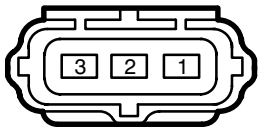
1	W
2	W

LC00355A

R050001

R030003

C359

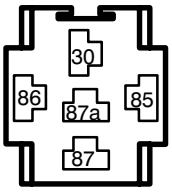


1	OB
2	RB
3	BS

LC00359B

R030003

C357

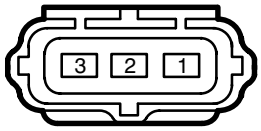


30	LGW	86	UK
85	B	87	GN
87A	–		

LC00357B

R050001

C360

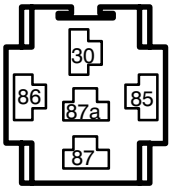


1	OK
2	RK
3	BS

LC00360B

R050001

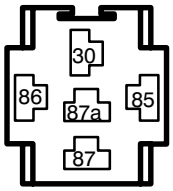
C358



30	B	86	LGW
85	B	87	BP
87A	–		

LC00358D

C361

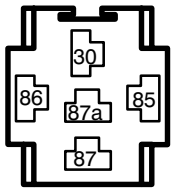


30	PO	86	SY
85	B	87	NLG
87A	–		

LC00361B

R050001

C362

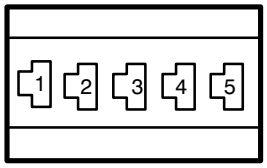


30	OW	86	WY
85	BK	87	SR
87A	PU		

LC00362B

R050008

C364

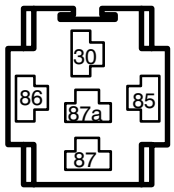


1	B	4	–
2	–	5	B
3	PS		

LC00364B

R050001

C363

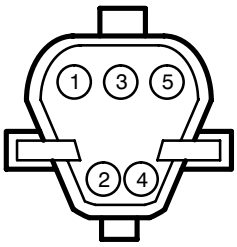


30	Y	86	S
85	BY	87	–
87A	B		

LC00363B

R050013

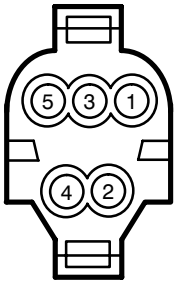
C365



1	WK	4	WLG
2	–	5	B
3	BK		

LC00365B

R050012



1	–	4	–
2	–	5	–
3	B		

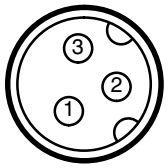
LC00365B

Z6 ETM

1995 RANGE ROVER

R030021

C368

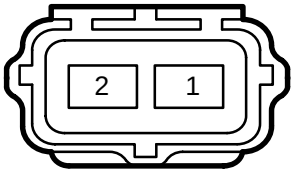


1	–
2	B
3	BK

LC00368A

R020037

C369

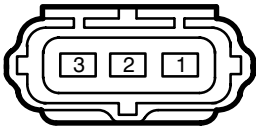


1	SB
2	B

LC00369A

R030003

C370

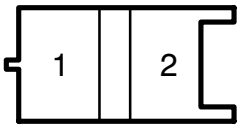


1	GY
2	–
3	BR

LC00370A

R020003

C371

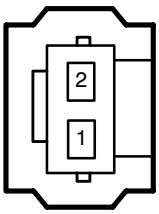


1	BLG
2	B

LC00371A

R020038

C372

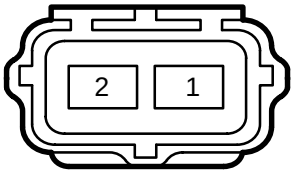


1	GN
2	GY

LC00372A

R020037

C377

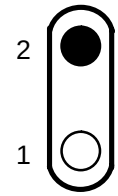


1	SG
2	SU

LC00377B

R020004

C378

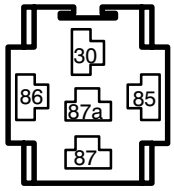


1	RW
2	B

LC00378D

R050001

C379

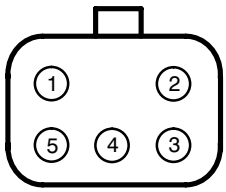


30	B	87	YK
85	P	87A	WY
86	PO		

LC00379D

R050014

C380

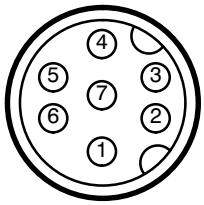


1	NO	4	
2	B	5	NK
3	K		

LC00380D

R070003

C400

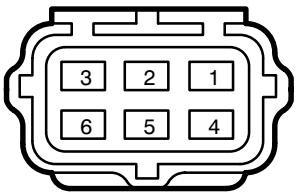


1	RO	5	B
2	GP	6	RY
3	GW	7	RB
4	GR		

LC00400A

R060016

C403

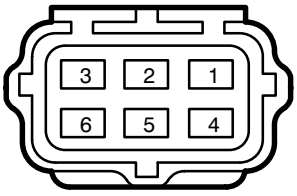


1	B	4	GN
2	RY	5	GP
3	RB	6	GR

LC00403B

R060016

C406



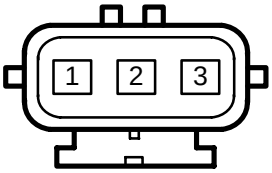
1	B	4	GN
2	RY	5	GP
3	RO	6	GW

LC00406B

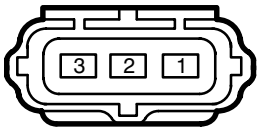
R030001

R030003

C407



1	WP
2	GB
3	B



1	WP
2	GB
3	B

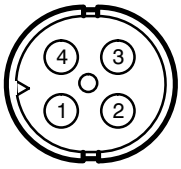
LC00407A

LC00407A

R040009

R020033

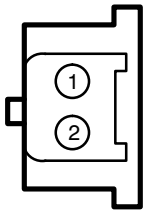
C408



1	–	3	NG
2	–	4	NR

LC00408B

C411



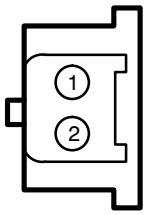
1	PU
2	PN

LC00411B

R020033

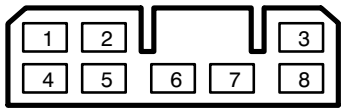
R080004

C410



1	PU
2	PN

C412



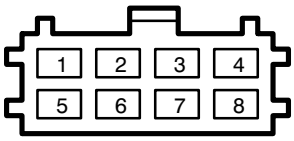
1	R	5	Y
2	G	6	
3	LGO	7	
4	U	8	B

LC00410B

LC0041B

R080005

C413



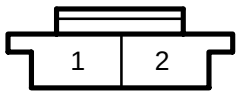
1	RY	5	B
2	PY	6	–
3	–	7	–
4	–	8	–

LC00413B

R040002

R020029

C414

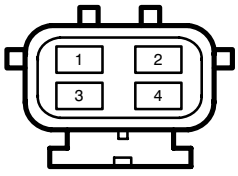


1	K
2	O

LC00414B

R040001

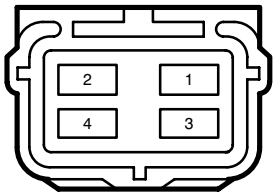
C415



1	O	3	GP
2	K	4	B

LC00415B

R030003

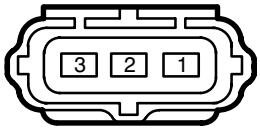


1	O	3	GP
2	K	4	B

LC00415B

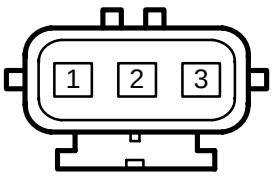
R030001

C416



1	B
2	BW
3	BY

LC00416B

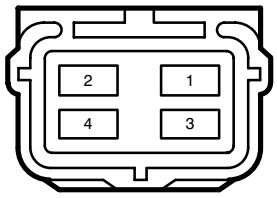


1	–
2	BW
3	BW

LC00416B

R040001

C418

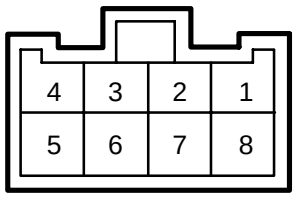


1	Y/R	3	R/U
2	G	4	U/Y

LC00418D

R080011

C420

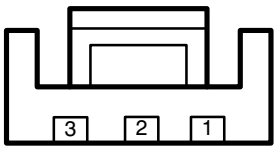


1	BW	5	WB
2	BN	6	NB
3	BG	7	BO
4	BU	8	BY

LC00420B

R030018

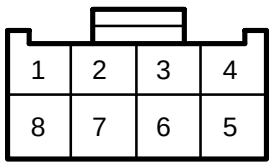
C421



1	B
2	–
3	PN

LC00421B

R080012

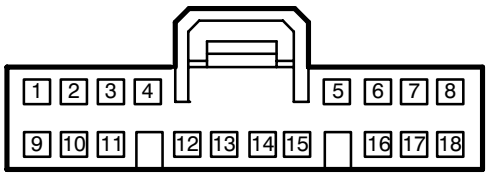


1	BW	5	WB
2	BN	6	NB
3	BG	7	BO
4	BK	8	BY

LC00420B

R180003

C422

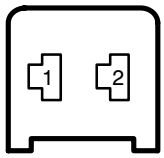


1	PY	6	KB	11	BG	16	RB
2	BO	7	G	12	BW	17	Y
3	BU	8	U	13	BR	18	R
4	BN	9	–	14	BK		
5	WB	10	BY	15	NB		

LC00422B

R020039

C423

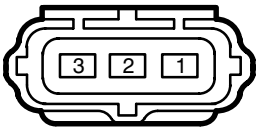


1	B
2	YP

LC00423B

R030003

C432

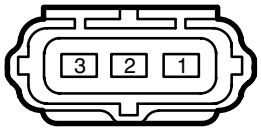


1	OY
2	RY
3	BS

LC00432B

R030003

C433

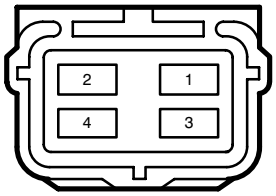


1	OU
2	RU
3	BS

LC00433B

R040001

C434

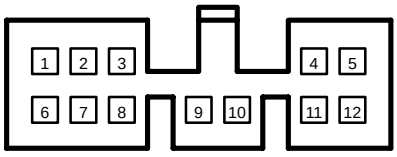


1	GB	3	B
2	B	4	WP

LC00434A

R120001

C436

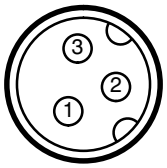


1	LG	5	P	9	RY
2	R	6	Y	10	BS
3	BP	7	U	11	B
4	B	8	B	12	P

LC00436B

R030021

C500

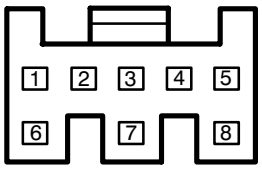


1	–
2	SK
3	SU

LC00500B

R080010

C501

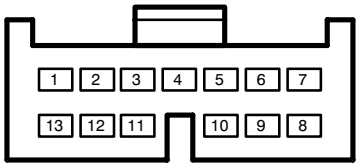


1	Y	5	NP
2	–	6	K
3	SK	7	SU
4	RK	8	O

LC00501D

R130007

C502

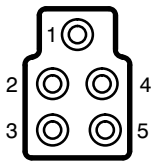


1	P	6	YO	11	PR
2	B	7	PN	12	OK
3	PS	8	PU	13	–
4	ON	9	OW		
5	YG	10	WP		

LC00502D

R050010

C503

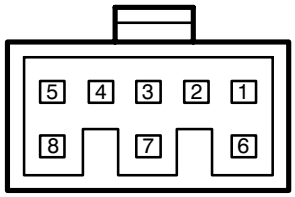


1	B	4	PR
2	WP	5	PU
3	NP		

LC00503B

R080007

C501

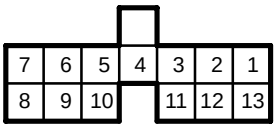


1	BY	5	NP
2	–	6	K
3	SK	7	SU
4	RK	8	O

LC00501D

R130005

C502

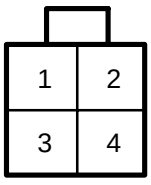


1	PU	6	YO	11	SW/WR
2	B	7	PN	12	–
3	PN	8	BU/PK	13	–
4	ON	9	OW		
5	YG	10	BK/WP		

LC00502D

R040016

C504

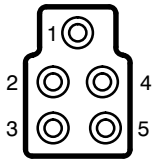


1	Y	3	PN
2	B	4	B

LC00504B

R050010

C505

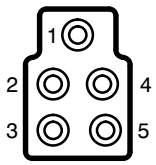


1	–	4	–
2	PN	5	–
3	P		

LC00505B

R050010

C506

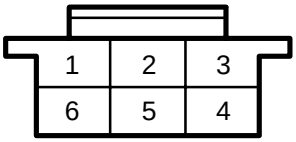


1	–	4	–
2	PN	5	–
3	P		

LC00506B

R060009

C507

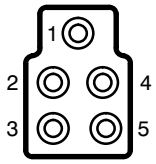


1	O	4	RK
2	K	5	YO
3	B	6	–

LC00507B

R050010

C509

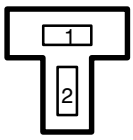


1	OK	4	OW
2	PS	5	ON
3	YG		

LC00509B

R020015

C514

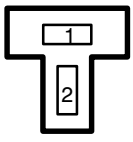


1	NB
2	WB

LC00514B

R020015

C515



1	BN
2	BW

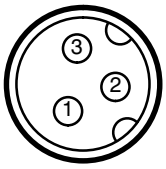
LC00515B

Z6 ETM

1995 RANGE ROVER

R030021

C600



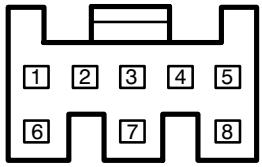
1	–
2	SK
3	SU

LC00600B

R080010

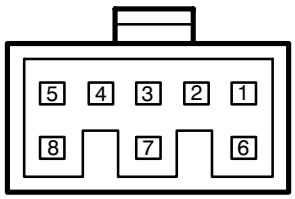
R080007

C601



1	Y	5	NP
2	–	6	K
3	SK	7	SU
4	RK	8	O

LC00601D



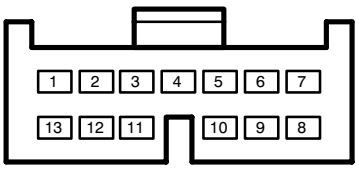
1	BY	5	NP
2	–	6	K
3	SR	7	SB
4	KR	8	O

LC00601D

R130007

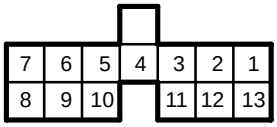
R130005

C602



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

LC00602B

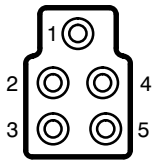


1	PU	6	YO	11	SW
2	B	7	PN	12	OP
3	PB	8	PG/BP	13	–
4	ON	9	OU		
5	YG	10	WP/BN		

LC00602B

R050010

C603

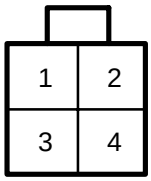


1	B	4	PR
2	WP	5	PU
3	NP		

LC00603B

R040016

C604

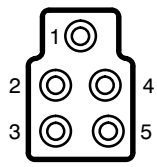


1	Y	3	PN
2	B	4	B

LC00604B

R050010

C605

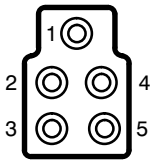


1	–	4	–
2	PN	5	–
3	P		

LC00605B

R050010

C606

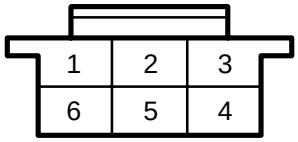


1	–	4	–
2	PN	5	–
3	P		

LC00606B

R060009

C607

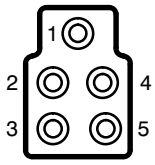


1	O	4	RK
2	K	5	YO
3	B	6	–

LC00607B

R050010

C609



1	OK	4	OW
2	PS	5	ON
3	YG		

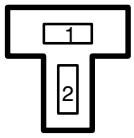
LC00609B

Z6 ETM

1995 RANGE ROVER

R020015

C614

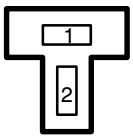


1	NB
2	WB

LC00614B

R020015

C615

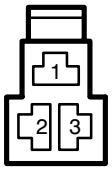


1	BN
2	BW

LC00615B

R030008

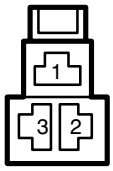
C700



1	SG
2	SN
3	S

LC00700B

R030007

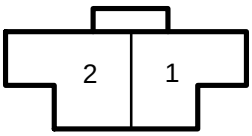


1	SG
2	SW
3	SO

LC00700B

R020028.01

C701

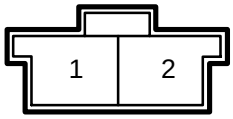


1	O
2	K

LC00701B

R020013

C701

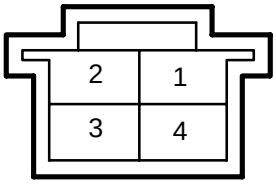


1	K
2	O

LC00701B

R040017

C701

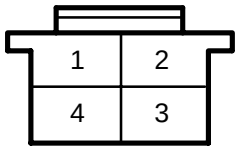


1	O	3	PN
2	K	4	PU

LC00701B

R040011

C701

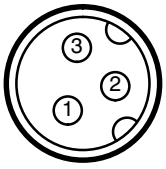


1	O	3	PN
2	K	4	PU

LC00701B

R030021

C703

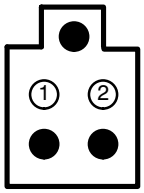


1	–
2	SW
3	SO

LC00703B

R050011

C704



1	PU	4	–
2	PN	5	–
3	–		

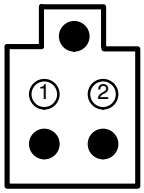
LC00704B

Z6 ETM

1995 RANGE ROVER

R050011

C705



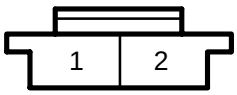
1	PU	4	–
2	PN	5	–
3	–		

LC00705B

R050009

R020029

C706

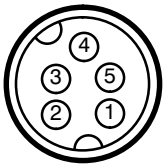


1	O
2	K

LC00706B

R050021

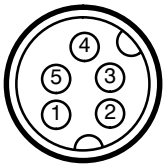
C707



1	SW	4	S
2	SN	5	SO
3	SG		

LC00707B

R030008

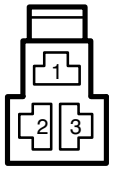


1	SW	4	S
2	SN	5	SO
3	SG		

LC00707B

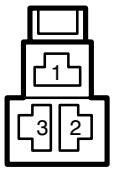
R030007

C800



1	SG
2	SN
3	S

LC00800B

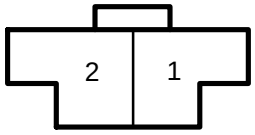


1	SG
2	SN
3	S

LC00800B

R020028.00

C801

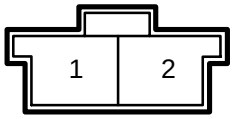


1	O
2	K

LC00801B

R020013

C801

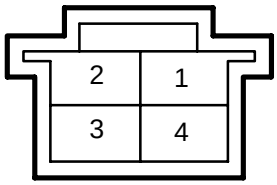


1	K
2	O

LC00801B

R040017

C801

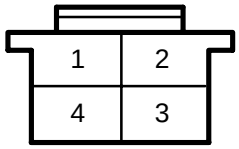


1	O	3	PN
2	K	4	PU

LC00801B

R040011

C801

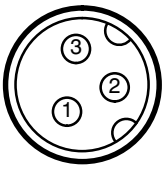


1	O	3	PN
2	K	4	PU

LC00801B

R030021

C803

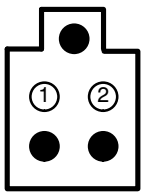


1	–
2	SW
3	SO

LC00803B

R050011

C804

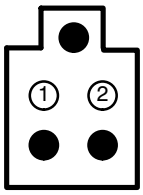


1	PU	4	–
2	PN	5	–
3	–		

LC00804B

R050011

C805



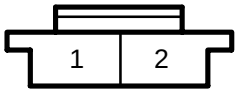
1	PU	4	–
2	PN	5	–
3	–		

LC00805B

R050009

R020029

C806

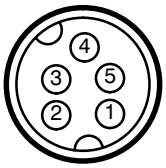


1	O
2	K

LC00806B

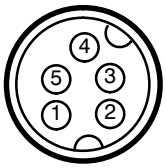
R050021

C807



1	SW	4	S
2	SN	5	SO
3	SG		

LC00807B

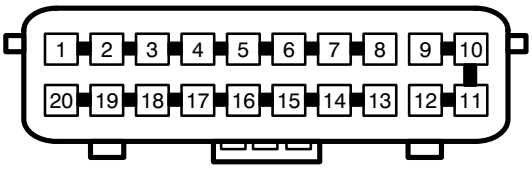


1	SW	4	S
2	SN	5	SO
3	SG		

LC00807B

R200001

HJ1



S2058

1	–
2	WY
3	WY
4	–
5	WY
6	WY
7	–
8	–

S2021

9	P
10	P
11	P
12	P

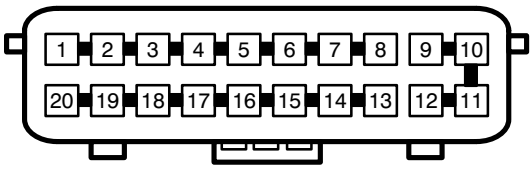
S2002

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

LC00HJ1D

R200001

HJ2



S2004

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

S2005

9	BY
10	BY
11	BY
12	BY

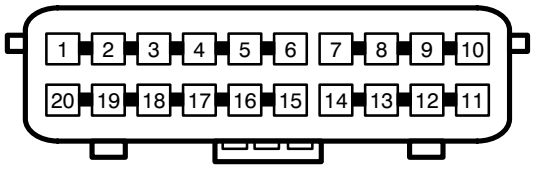
S2006

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

LC00HJ2D

R200008

HJ3



S2009

1	O
2	O
3	O
4	O
5	O
6	O

S285

7	PU
8	PU
9	PU
10	PG

S2013

11	PG
12	PG
13	PG
14	PG

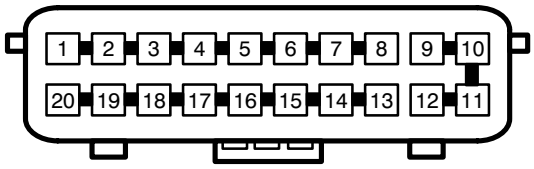
S2007

15	K
16	K
17	K
18	K
19	K
20	K

LC00HJ3D

R200001

HJ4



S2011

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

S209

9	BLG
10	BLG
11	BLG
12	BLG

S2003

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

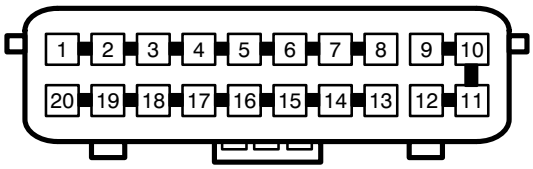
LC00HJ4D

Z6 ETM

1995 RANGE ROVER

R200001

HJ5



S2016

1	B
2	B
3	B
4	B
5	B
6	–
7	B
8	B

S2000

9	GLG
10	GLG
11	GLG
12	GLG

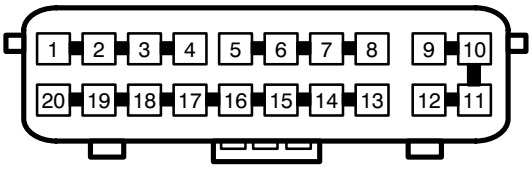
S2015

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

LC00HJ5D

R200009

HJ6



S2019

1	GW
2	GW
3	GW
4	GW

S2020

5	GR
6	GR
7	GR
8	GR

S2008

9	LGW
10	LGW
11	LGW
12	–

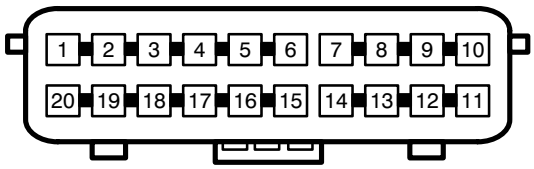
S2028

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

LC00HJ6D

R200008

HJ7



S290

1	BS
2	BS
3	BS
4	BS
5	–
6	BS

S291

7	NO
8	NO
9	NO
10	NO

S292

11	WG
12	WG
13	WG
14	WG

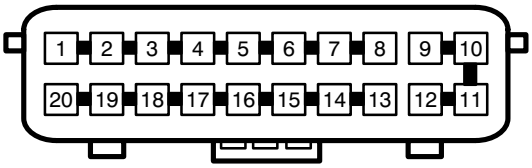
S293

15	RB
16	RB
17	RB
18	RB
19	RB
20	–

LC00HJ7B

R200001

HJ8



S253

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

S254

9	–
10	–
11	–
12	–

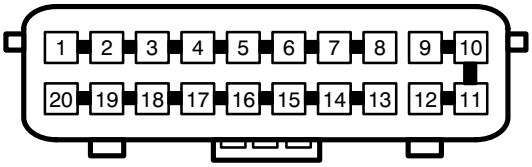
S255

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

LC00HJ8B

R200001

HJ9



S256

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

S257

9	LG
10	LG
11	LG
12	LG

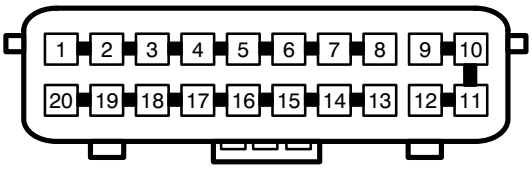
S255

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

LC00HJ9B

R200001

HJ10



S204

1	B
2	B
3	–
4	–
5	B
6	B
7	B
8	B

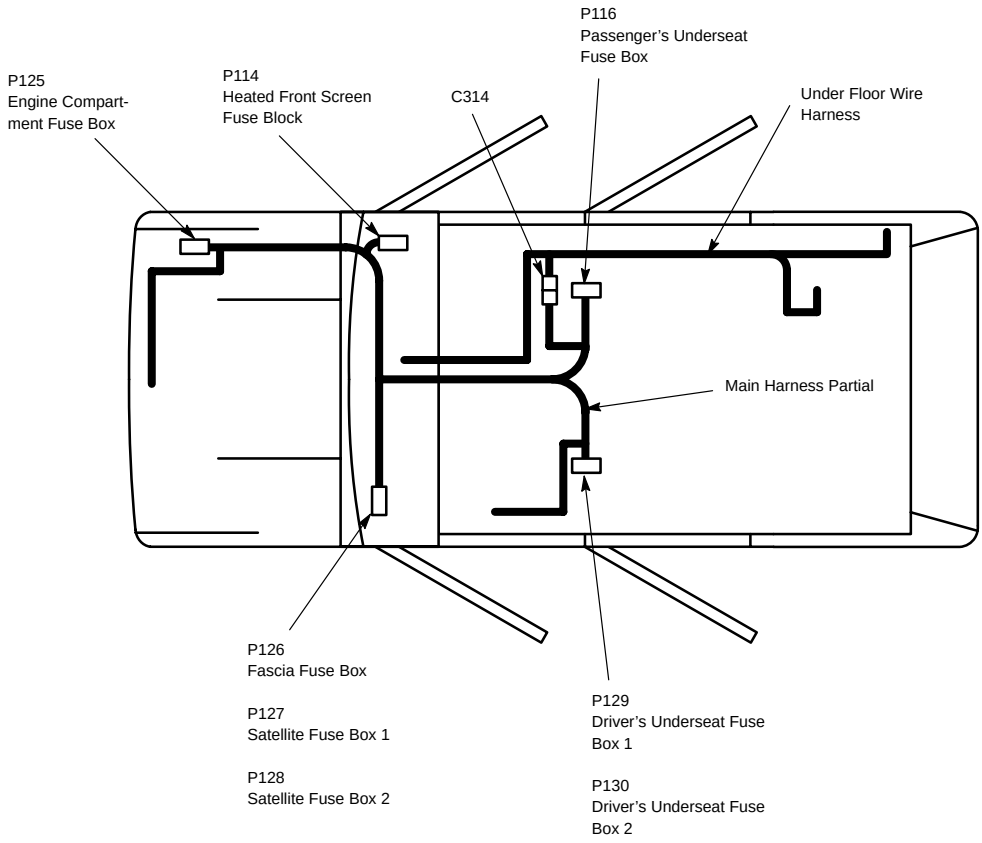
S2017

9	GK
10	GK
11	GK
12	–

S238

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

LC0HJ10B


P125
Engine Compart-
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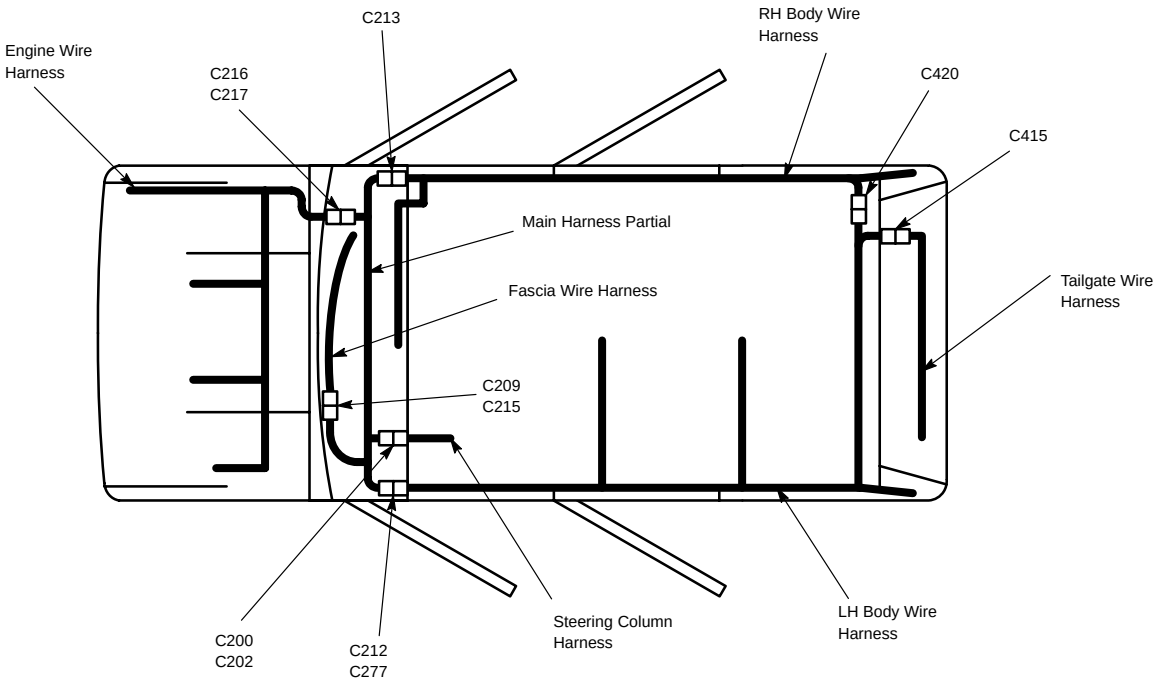
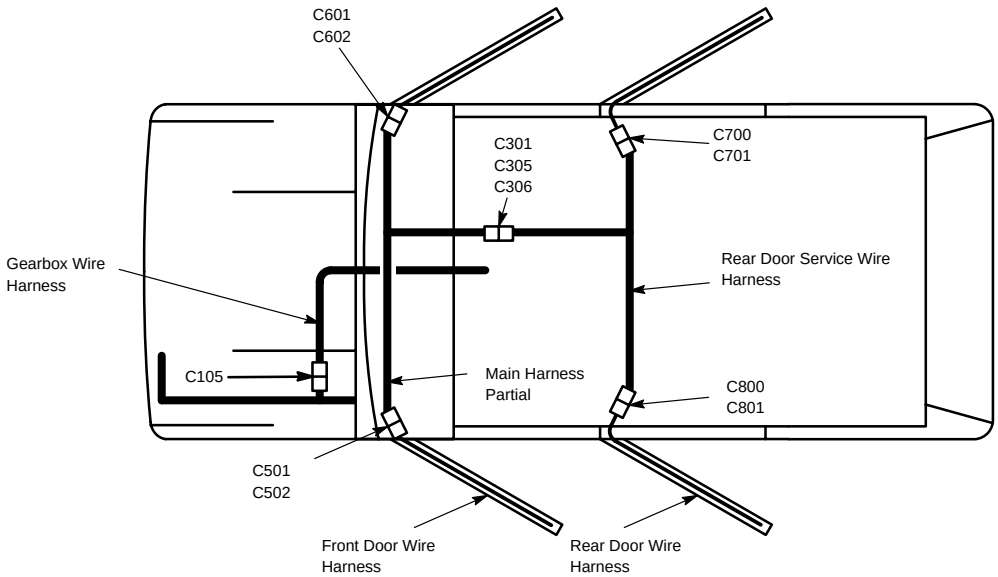
P114
Heated Front Screen
Fuse Block
C314
P116
Passenger's Underseat
Fuse Box
Under Floor Wire
Harness
Main Harness Partial
P126
Fascia Fuse Box
P127
Satellite Fuse Box 1
P128
Satellite Fuse Box 2
P129
Driver's Underseat Fuse
Box 1
P130
Driver's Underseat Fuse
Box 2

Z8 ETM

1995 RANGE ROVER





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F6 . . . . . Y2–26
F7 . . . . . Y2–27
F8 . . . . . Y2–28
F9 . . . . . Y2–29
F10 . . . . . Y2–29
F11 . . . . . Y2–29
F12 . . . . . Y2–31
F13 . . . . . Y2–32
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F3 . . . . . Y2–8
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