HYUNDAI

MATRIX

Electrical Troubleshooting Manual

FOREWORD

This manual is intended for use by service technicians of authorized Hyundai dealers to help them provide efficient and correct service and maintenance on Hyundai vehicle.

To ensure customer satisfaction with Hyundai products, proper service and maintenance by Hyundai technicians is essential. Consequently, it is important that service personnel fully understand the contents of this manual, which should be kept in a handy place for quick and easy reference.

All the contents of this manual, including photographs, drawings, and specifications, are the latest available at the time of printing. As modifications affecting service occur, dealers will be provided technical service bulletins or supplementary volumes. This manual should be kept carefully up-to-date upon receipt of the new information.

Hyundai Motor Company reserves the right to make changes in design or to make additions to or improvements in its products without imposing any obligations upon itself to install them on its products previously manufactured.

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GENERAL INFORMATION

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G

INTRODUCTION E1KB0010

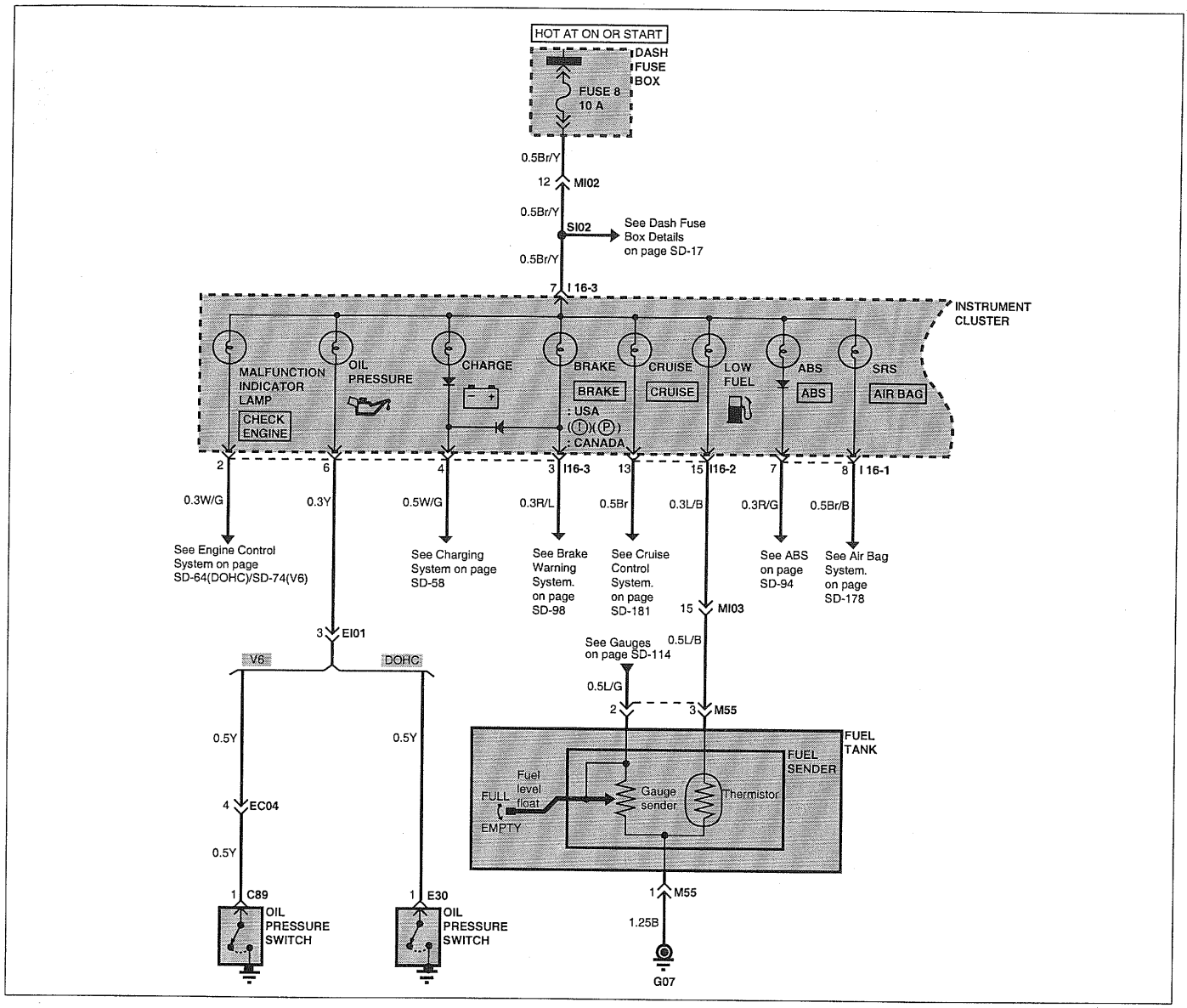
This Manual consists of five major diagnostic sections for electrical problem troubleshooting.

- Schematic diagrams
- Component location indexes
- Component locations
- Connector configurations
- Harness layouts

SCHEMATIC DIAGRAM

The starting point of each system section is the schematic diagram. These diagrams show how all the components work together, such as electrical current paths from power source to ground (via electrical load), switch connections at each position, and other related circuit functions.

It is important to fully understand how a circuit works prior to troubleshooting and diagnosis.



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COMPONENT LOCATION INDEXES

When you want to locate the schematic components on the vehicle, use the Component Location Index which follows each schematic. A Component Location Index lists major components, connectors, grounds, diodes, and their physical location and page reference.

Almost all components, connectors or grounds, and diodes shown on a schematic can be pinpointed visually by using the Component Location Illustrations.

Components		Location Reference Page
I12	Digital clock	CL-15
I16-1	Instrument cluster	CL-15
M55	Fuel sender	CL-19
M56	Fuel pump	CL-19
C34	Engine coolant temperature sender	CL-5, CL-8
Connectors		
MI01/MI02/MI03		CL-21
MC02		CL-21
CC02		CL-8
Grounds		
G04		CL-23
G07		CL-23
Diodes		
Z01		CL-24
Z02		CL-24

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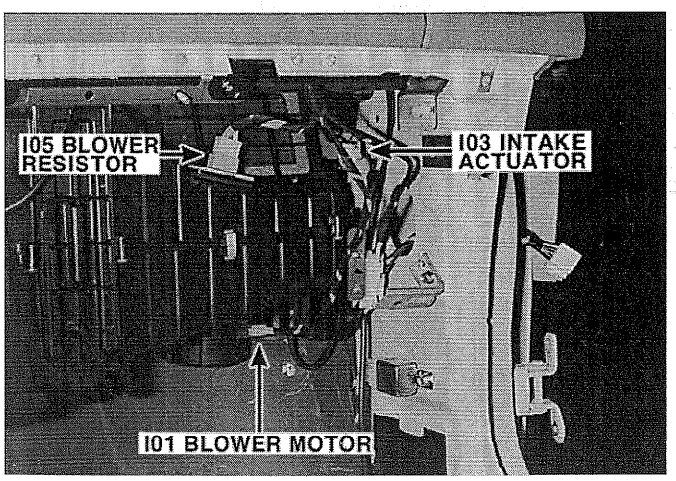
COMPONENT LOCATIONS

Component Locations make it easy to find the schematic components on the vehicle shown in the Component Location Index.



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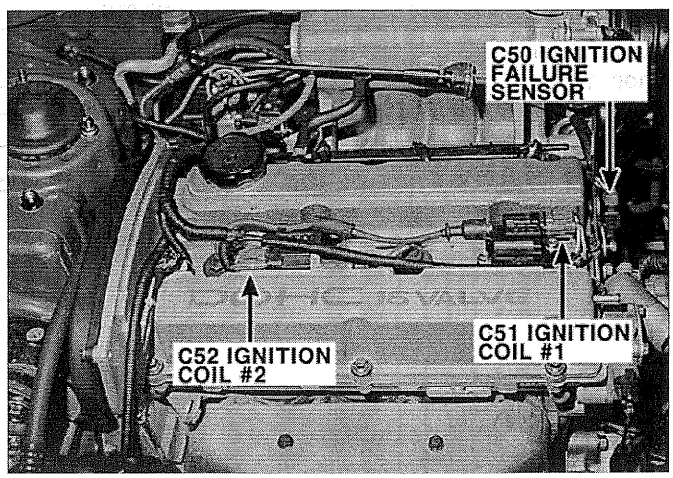

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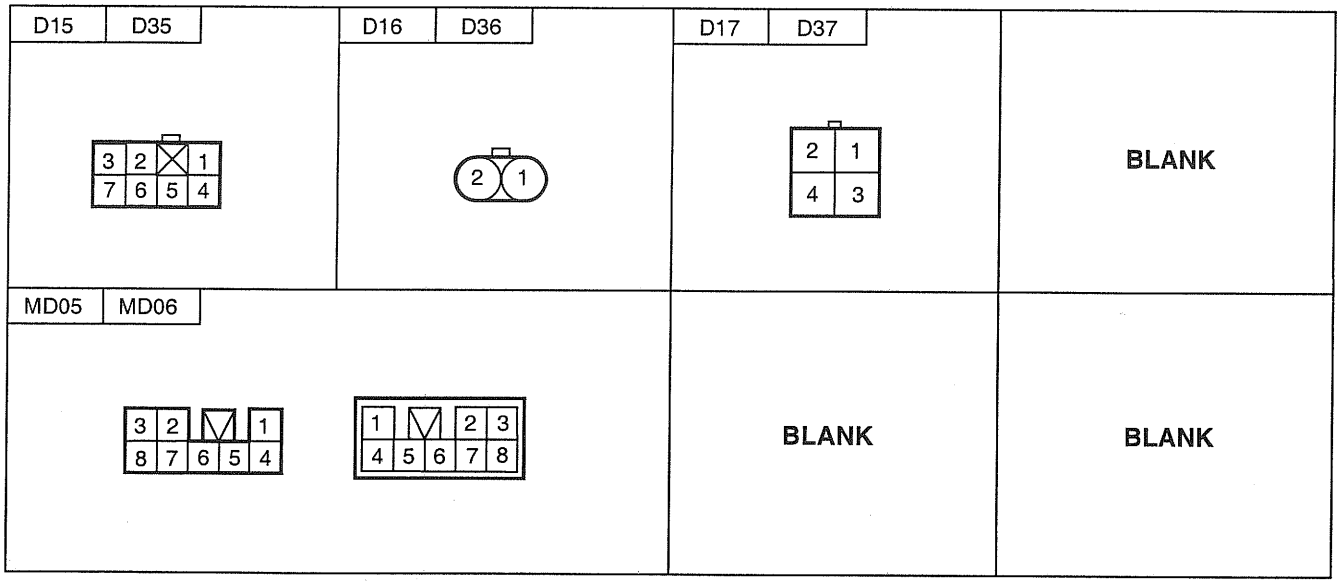
CONNECTOR CONFIGURATIONS

This section shows the cavity or terminal locations in all the multi-pin connectors shown in the schematic diagrams. It will help you to locate check points, together with the wire colors and terminal numbers in the schematic. The configuration drawings show the connector view as seen from a component after the harness connector has been disconnected. When more than one connector is connected to a component, the connectors are all shown together. Both halves of in-line connectors are shown together.



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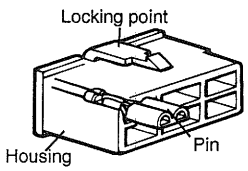
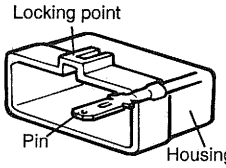
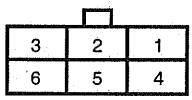
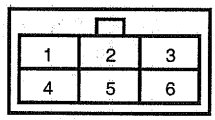
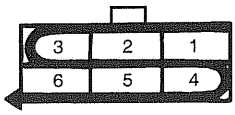
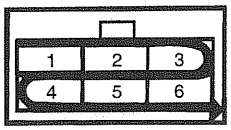
CONNECTOR VIEW AND NUMBERING ORDER

1. CONNECTOR VIEW

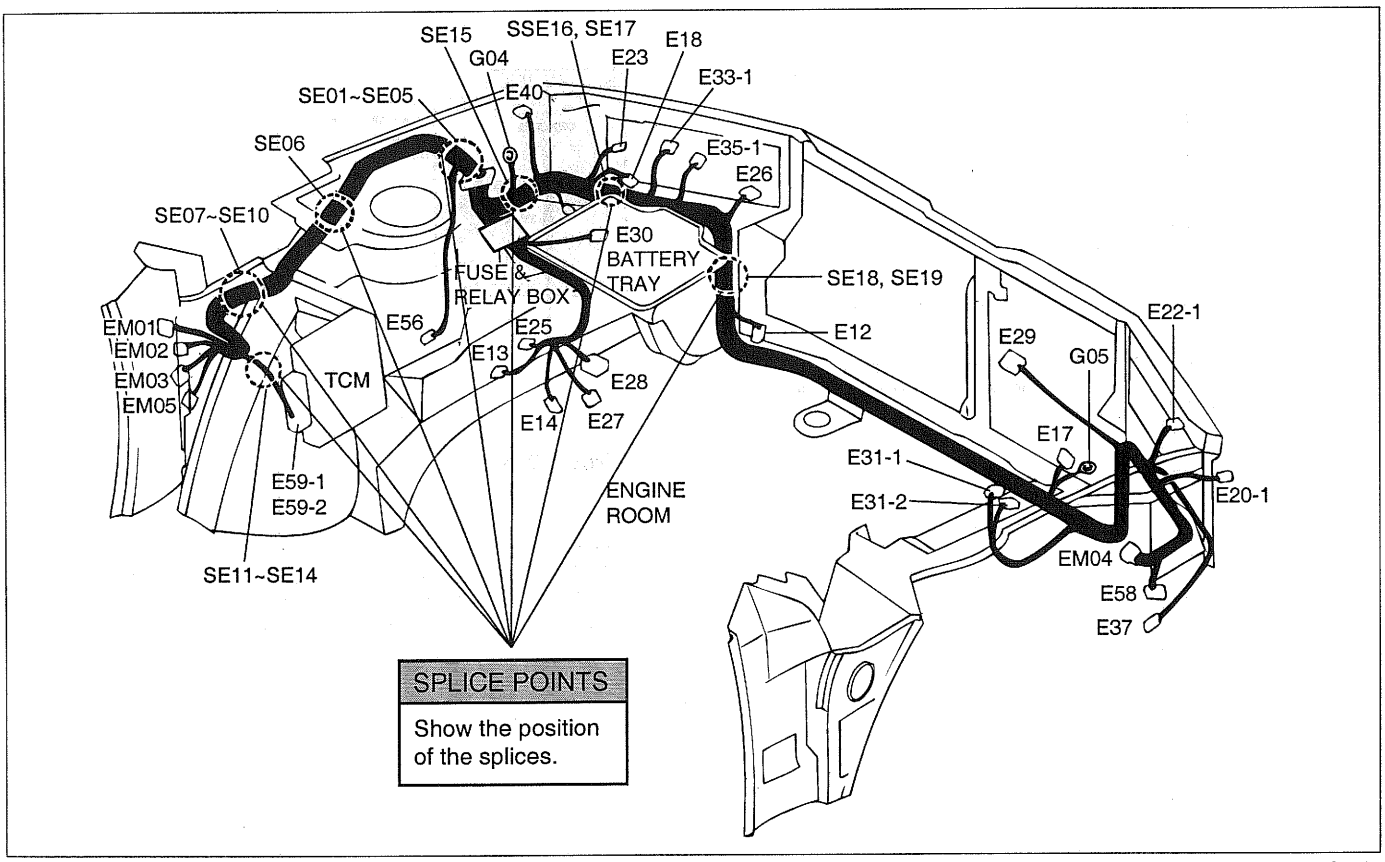
	Female	Male	Remarks
Actual Illustration	 MGI-002A	 MGI-003A	It is not the shape of the connector housing, but the connector pin that distinguishes between male or female connectors. When numbering female and male connectors, refer to the numbering order in the following table. Some connectors may not follow this method of numbering order. For individual detailed numbering, refer to the CONNECTOR CONFIGURATIONS.
Illustration in the Shop manual	 E1AA001B	 E1AA001C	

2. NUMBERING ORDER

	Numbering order	Remarks
Female Connector	 E1AA001D	Numbered in order from upper right to lower left
Male Connector	 E1AA001E	Numbered in order from upper left to lower right

HARNESS LAYOUTS

Harness layouts show the routing of the major wiring harnesses, the in-line connectors and the splices between the major harnesses. These layouts will make electrical troubleshooting easier.



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SYMBOLS E1FC0020

The symbols and abbreviations explained in this section are used throughout the manual.

SYMBOLS IN SCHEMATIC

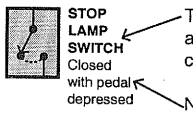
Components



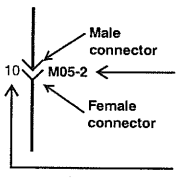
A solid line means the entire component is shown.

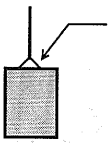


A broken line indicates only part of the component is shown.

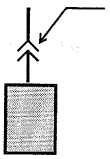


Connectors

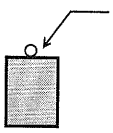




This means the connector connects directly to the component.



This indicates the connector connects to a lead (pigtail), wired directly to the component.



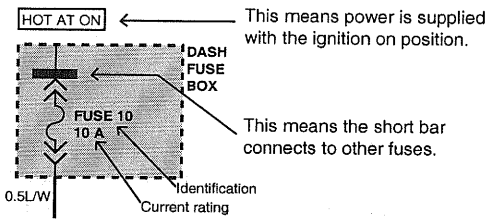
This indicates a screw terminal on the component.

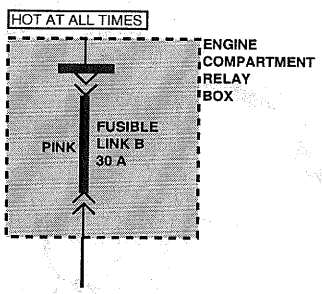
Diode



This diode allows current to flow only in the direction of the arrow.

Fuse and Fusible link





Circuit Breaker



Basically a reusable fuse, a circuit breaker will heat and open if too much current flows through it. Some units automatically reset when cool, others must be manually reset.

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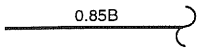
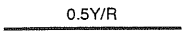
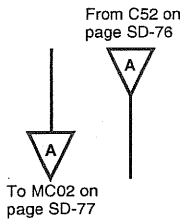
Wires



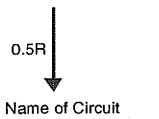
A wavy line means the wire is broken but is to be continued.



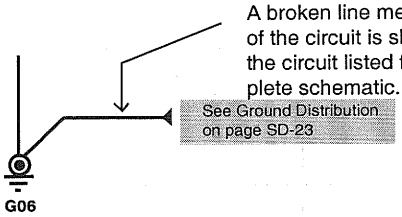
Wire insulation is yellow with a red strip.



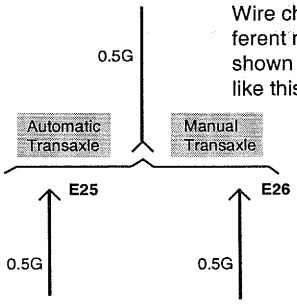
Current path is continued on the same page or another page. The arrow shows the direction of current flow. You should look for the "A" in the marked position.



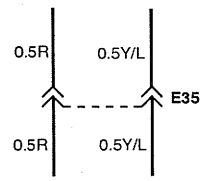
A wire connects to another circuit. The wire is shown again on that circuit which the arrow is pointing.



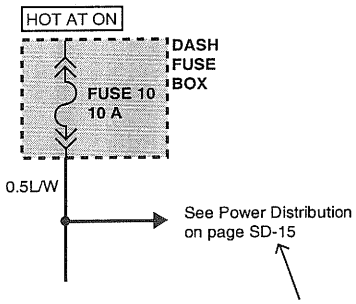
A broken line means only some of the circuit is shown: refer to the circuit listed for the complete schematic.



Wire choices for options or different models are labeled and shown with a "choice" bracket like this.

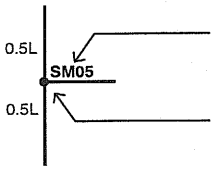


This dashed line means the RED and YELLOW/BLUE wires are both in connector E35.



Where seperate wires join, only the splice is shown: for details on the additional wiring, refer to the circuit listed.

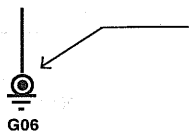
Splices



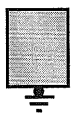
Splice number

Splices are numbered and shown as a dot with circle. The exact location and connection of these splices may vary among vehicles.

Ground - "G"

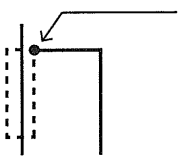


This symbol means the end of the wire is attached to a metal part of the vehicle.



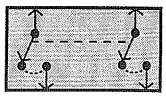
This ground symbol (dot and 3 lines overlapping the component) means the housing of the component is attached to a metal part of the vehicle.

Shield Wire



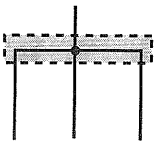
This represents RFI (Radio Frequency Interference) Shielding around a wire. The shielding is always connected to ground.

Switches



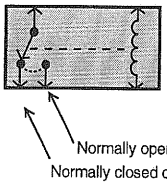
These switches move together: a dashed line shows a mechanical connection between them.

Joint Connectors



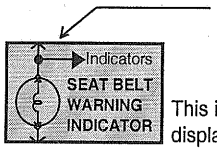
This is a connector showing the joining wires.

Relays



This is a relay shown with no current flowing through its coil. When a current flows through coil, contact will toggle.

Indicator



This indicates seat belt warning indicator continues to other indicators within instrument cluster.

This is an indicator which displays the lighted symbol.

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WIRE COLOR ABBREVIATIONS

The following abbreviations are used to identify wire colors in the circuit schematics :

Symbol	Color of wire	Symbol	Color of wire
B	Black	O	Orange
Br	Brown	P	Pink
G	Green	R	Red
Gr	Gray	W	White
L	Blue	Y	Yellow
Lg	Light green		

HARNESS CLASSIFICATION

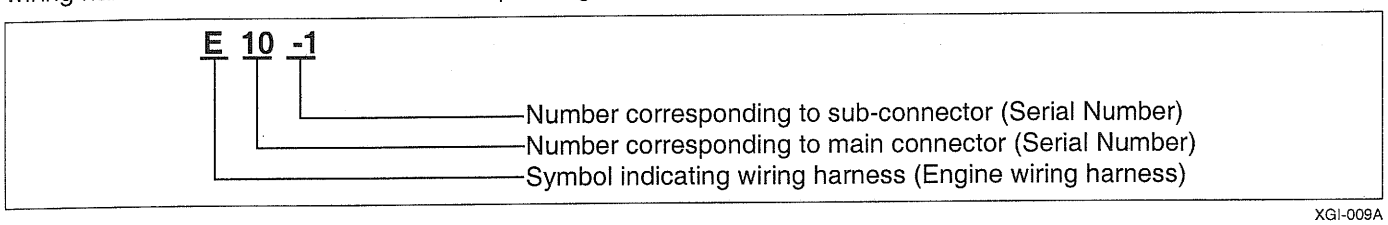
Electrical wiring connectors are classified according to the wiring parts in the Harness Layouts.

Harness name	Location	Symbol
Engine harness	Engine compartment	E
Main, Floor, Roof, Sunroof harness	Passenger compartment	M
Control harness	Engine compartment	C
Rear and Tail gate harness	Rear and Tail gate	R
Air Bag harness	Under crash pad and Floor	I
Door harness	Door	D

CONNECTOR IDENTIFICATION

A connector identification symbol consists of a wiring harness location classification symbol corresponding to a wiring harness location and number corresponding to the connector. These connector locations can be found in the HARNESS LAYOUTS.

For example :



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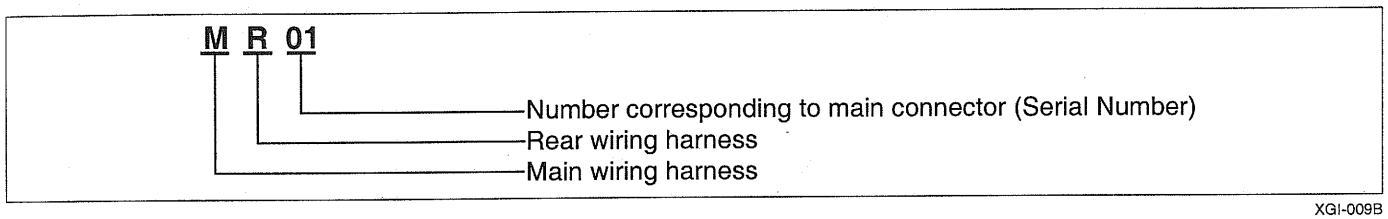
NOTE

Connectors which connect each wiring harness are represented by the following symbols.

For example :



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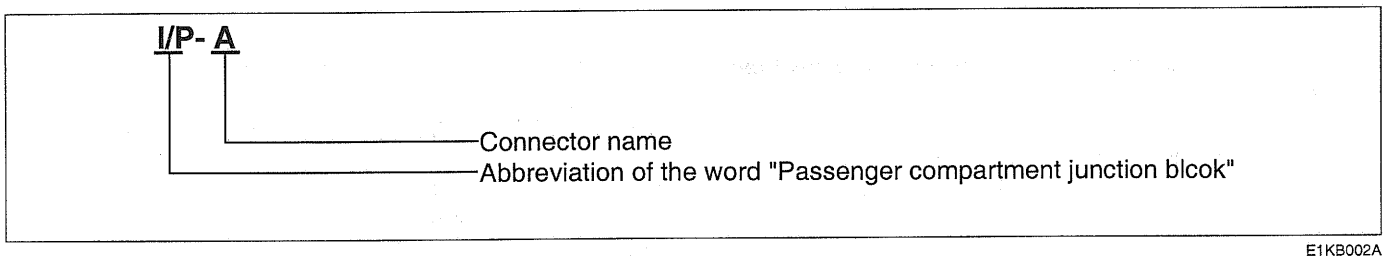
JUNCTION BLOCK IDENTIFICATION

A junction block identification symbol consists of a wiring harness location classification symbol corresponding to a wiring harness location and number corresponding to the connector in the junction block.

For example :



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TROUBLESHOOTING INSTRUCTIONS E1KB0030

TROUBLESHOOTING PROCEDURES

The following five-step troubleshooting procedure is recommended.

1. **Verify the customer's complaints**

   Turn on all the components in the problem circuit to check the accuracy of the customer's complaints. Note the symptoms. Do not begin disassembly or testing until you have narrowed down the probable causes.

2. **Read and analyze the schematic diagram**

   Locate the schematic for the problem circuit. Determine how the circuit is supposed to work by tracing the current paths from the power source through the system components to ground. If you do not understand how the circuit should work, read the circuit operation text. Also check other circuits that share with the problem circuit. The name of circuits that share the same fuse, ground, or switch, for example, are referred to on each diagram. Try to operate any shared circuits you did not check in step 1. If the shared circuit works, the shared wiring is okay, and the cause must be within the wiring used only by the problem circuit. If several circuits fail at the same time, the fuse or ground is a likely cause.

3. **Inspect the circuit/ component with the problem isolated**

   Make a circuit test to check the diagnosis you made in step 2. Remember that a logical, simple procedure is the key to efficient troubleshooting. Narrow down the probable causes using the troubleshooting hints and system diagnosis charts. Test for the most likely cause of failure first. Try to make tests at points that are easily accessible.

4. **Repair the problem**

   Once the problem is found, make the necessary repairs.

5. **Make sure the circuit works**

   Repeat the system check to be sure you have repaired the problem. If the problem was a blown fuse, be sure to test all of the circuits on that fuse.

TROUBLESHOOTING EQUIPMENT

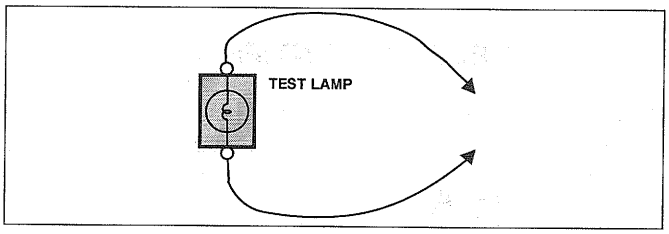
VOLTMETER AND TEST LAMP

Use a test lamp or a voltmeter on circuits without solid-state units and use a test lamp to check for voltage. A test lamp is made up of a 12-volt light 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. When the bulb goes on, there is voltage at the point being tested.

CAUTION

A number of circuits include solid-state modules, such as the Engine Control Module (ECM), used with computer command control injection. Voltage in these circuits should be tested only with a 10-megaohm or higher impedance digital voltmeter. Never use a test lamp on circuits that contain solid-state modules. Damage to the modules may result.

A voltmeter can be used in place of a test lamp. While a test lamp shows whether the voltage is present or not, a voltmeter indicates how much voltage is present.



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SELF-POWERED TEST LAMP AND OHMMETER

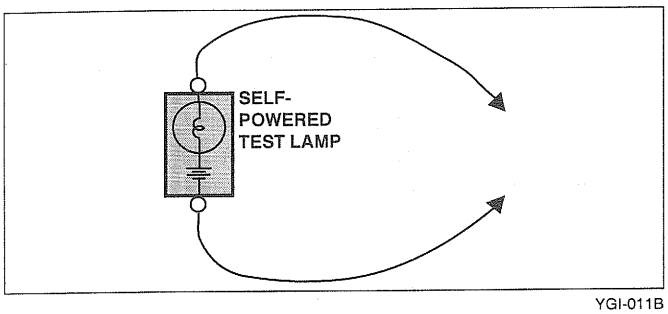
Use a self-powered test lamp or an ohmmeter to check for continuity. A self-powered test lamp is made of a bulb, battery and two leads. That will light a lamp when touched together. Prior to checking the points, first disconnect the battery ground cable or remove the fuse which feeds the circuit you are working on.

CAUTION

Never use a self-powered test lamp on circuits that contain solid state modules. Damage to these modules may result.

An ohmmeter can be used in place of a self-powered test lamp. The ohmmeter shows how much resistance there is between two points along a circuit. Low resistance means good continuity.

Circuits which include any solid-state devices should be tested only with a10-megaohm or higher impedance digital multimeter. When measuring resistance with a digital multimeter, the battery negative terminal should be disconnected. Otherwise, there may incorrect readings. Diodes and solid-state devices in a be 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 different the solid-state device is affecting the measurement.



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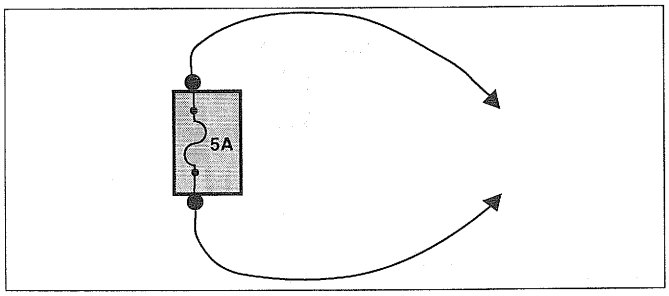
JUMPER WIRE WITH FUSE

Use a jumper wire with a fuse to by-pass an open circuit.

A jumper wire is made up of an in-line fuse holder connected to a set of test leads. This tool is available with small clamp connectors providing adaption to most connectors without damage.

CAUTION

Do not use a fuse with a higher rating than the specified fuse that protects the circuit being tested. Do not use this tool in any situation to substitute an input or output at the solid-state control module, such as ECM, TCM, etc.



YGI-012A

SHORT FINDER

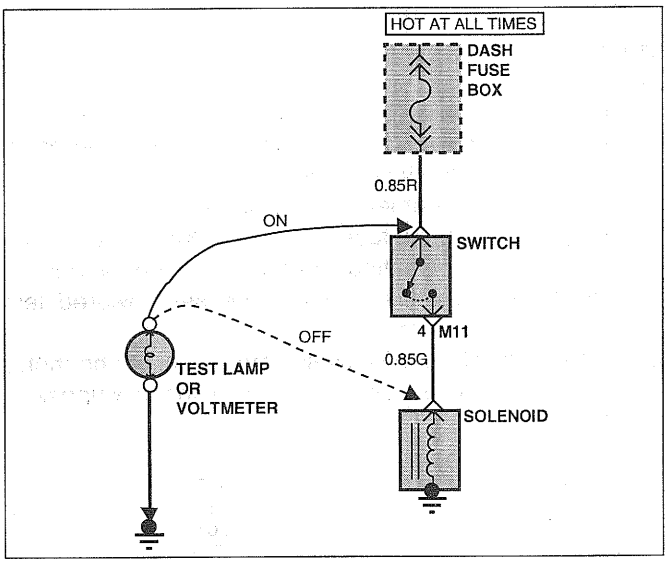
A short finder is available to locate a short to ground. The short finder creates a pulsing magnetic field in the shorted circuit and shows you the location of the short through body trim or sheet metal.

TROUBLESHOOTING TEST

TESTING FOR VOLTAGE

This test measures voltage in a circuit. When testing for voltage at a connector, you do not have to separate the two halves of the connector Instead, probe the connector from the back (badkprobe). Always check both sides of the connector because dirt and corrosion between its contact surfaces can cause electrical problems.

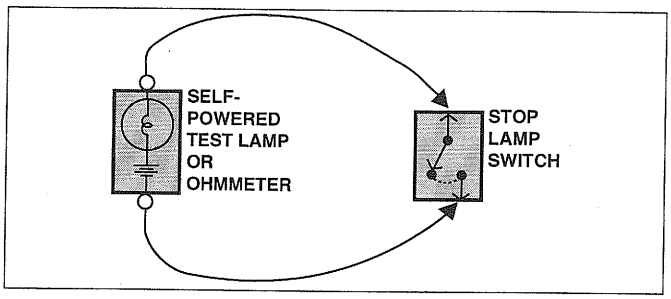
1. Connect one lead of a test lamp or voltmeter to a ground. If you are using a voltmeter, be sure it is the voltmeter's negative test lead you have connected to ground.
2. Connect the other lead of the test lamp or voltmeter to a selected test point (connector or terminal).
3. If the test lamp glows, there is voltage present. If you are using a voltmeter, note the voltage reading. Too close a loss of more than 1 volt from specification indicates a problem.



YGI-013A

TESTING FOR CONTINUITY

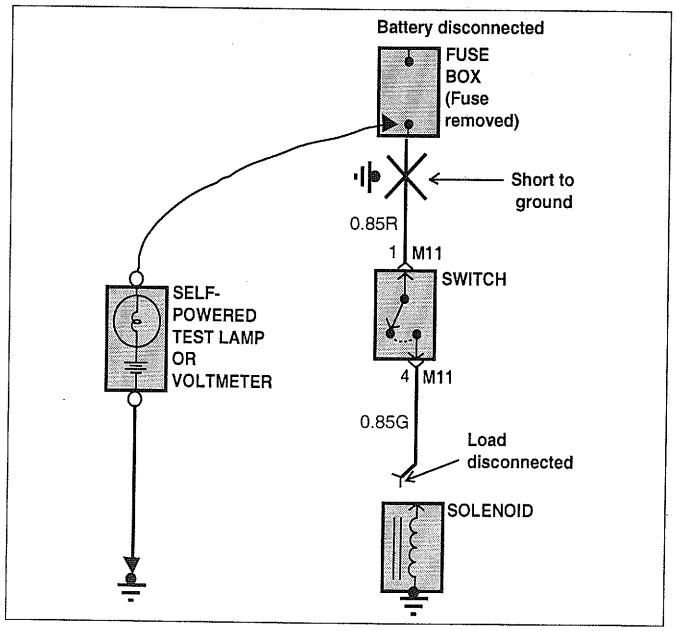
1. Disconnect the battery negative terminal.
2. Connect one lead of a self-powered test lamp or ohmmeter to one end of the part of the circuit you wish to test. If you are using an ohmmeter, hold the leads together and adjust the ohmmeter to read zero ohms.
3. Connect the other lead to the other end.
4. If the self-power test lamp glows, there is continuity. If you are using an ohmmeter, low or zero resistance means good continuity.



YGI-013B

TESTING FOR SHORT TO GROUND

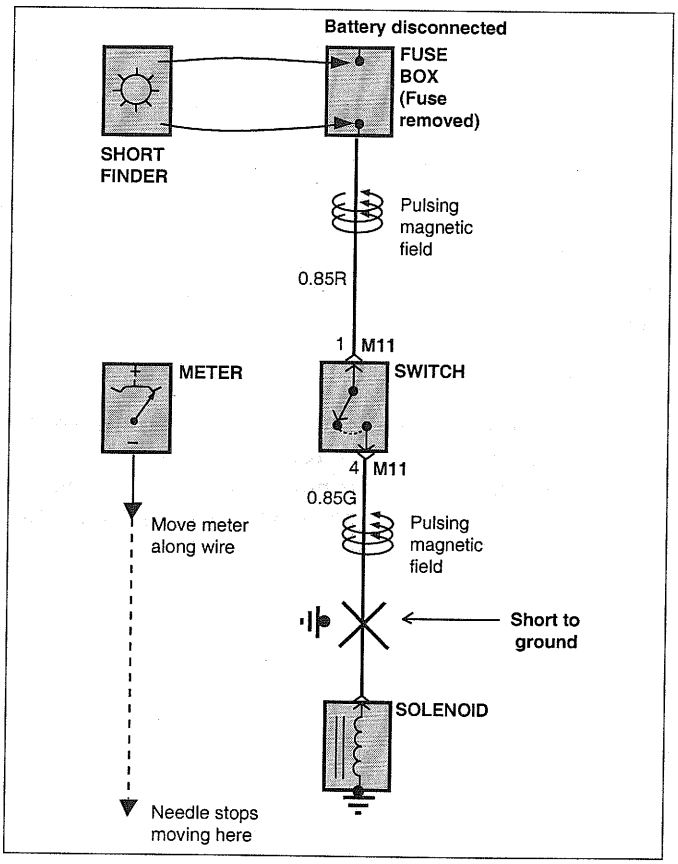
1. Disconnect the battery negative terminal.
2. Connect one lead of a self-powered test lamp or an ohmmeter to the fuse terminal on the load side.
3. Connect the other lead to a ground.
4. Beginning near the fuse block move the harness from side to side. Continue this proceedure (about six inches apart) while watching the self-powered test lamp or ohmmeter.
5. When the self-powered test lamp glows, or ohmmeter registers, there is a short to a ground in the wiring near that point.



YGI-013C

TESTING FOR A SHORT WITH A SHORT FINDER

1. Remove the blown fuse. Leave the battery connected.
2. Connect the short finder across the fuse terminals.
3. Close all switches in series in the circuit that are being testing.
4. Turn on the short circuit locator. It sends pulses of current to the short. This creates a pulsing magnetic field around the wiring between the fuse box and the short.
5. Beginning at the fuse box, slowly move the short finder along the circuit wiring. The meter will show current pulses through sheet metal and body trim. As long as the meter is between the fuse and the short, the needle will move with each current pulse. Once the meter is moved past the point of the short, the needle will stop moving. Check around this area to locate the cause of the short circuit.



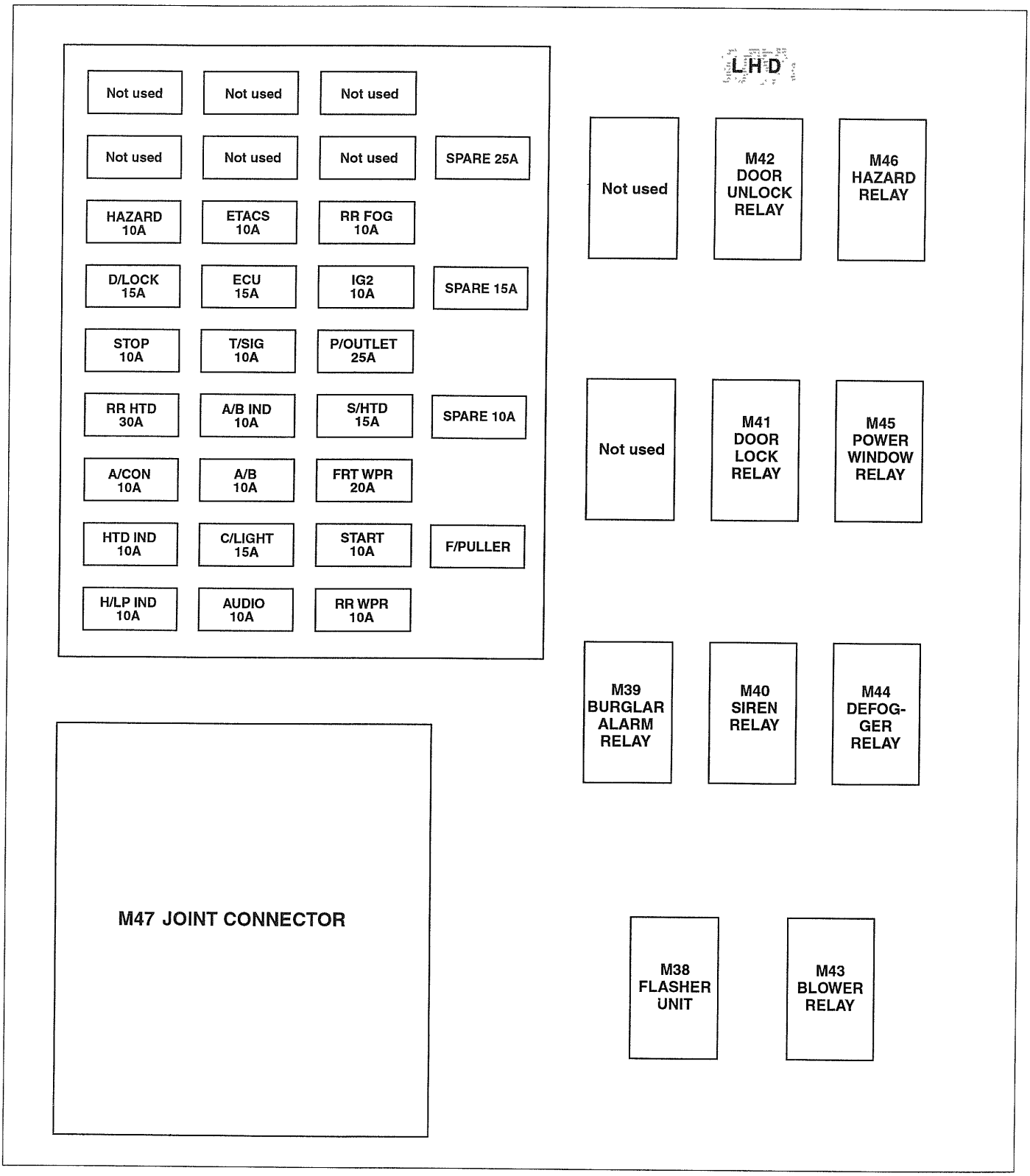
YGI-014A

SCHEMATIC DIAGRAMS

AIR BAG SYSTEM(SRS) SD-174
ANTI-LOCK BRAKE SYSTEM/ TRACTION CONTROL SYSTEM SD-84
AUDIO SYSTEM SD-136
AUTOMATIC TRANSAXLE CONTROL SYSTEM SD-76
BACK-UP LAMPS SD-162
BLOWER & A/C CONTROLS SD-176
CHARGING SYSTEM SD-44
CIGARETTE LIGHTER (POWER OUTLET) SD-88
COOLING SYSTEM SD-46
COURTESY & TAIL GATE LAMPS SD-166
DATA LINK DETAILS SD-34
DAYTIME RUNNING LIGHTS SD-144
ETACS (ELECTRONIC TIME & ALARM CONTROL SYSTEM) SD-90
FRONT FOG LAMP & REAR FOG LAMP SD-154
FRONT WIPER & WASHER SD-96
FUEL FILTER HEATING SYSTEM (DIESEL) SD-74
FUSE AND RELAY INFORMATION SD-2
GROUND DISTRIBUTION SD-24
HEAD LAMP LEVELING DEVICE SD-148
HEAD LAMPS SD-142
HORNS SD-140
ILLUMINATIONS SD-170
INDICATORS & GAUGES SD-102
MFI CONTROL SYSTEM (1.6L) SD-48
MFI CONTROL SYSTEM (1.8L) SD-56
MFI CONTROL SYSTEM (DIESEL) SD-66
PASSENGER COMPARTMENT FUSE DETAILS SD-14
POWER DISTRIBUTION SD-8
POWER DOOR LOCKS SD-110
POWER OUTSIDE MIRRORS SD-118
POWER WINDOWS SD-128
REAR WINDOW & OUTSIDE MIRROR DEFOGGER SYSTEM SD-122
REAR WIPER & WASHER SD-100
SEAT BELT WARNING & CHIME (W/O ETACM) SD-94
SEAT WARMER SD-126
STARTING SYSTEM SD-42
STOP LAMPS SD-164
SUNROOF SD-134
TAIL, PARKING & LICENSE LAMPS SD-158
TURN & HAZARD LAMPS SD-150
VEHICLE SPEED SENSOR SD-38

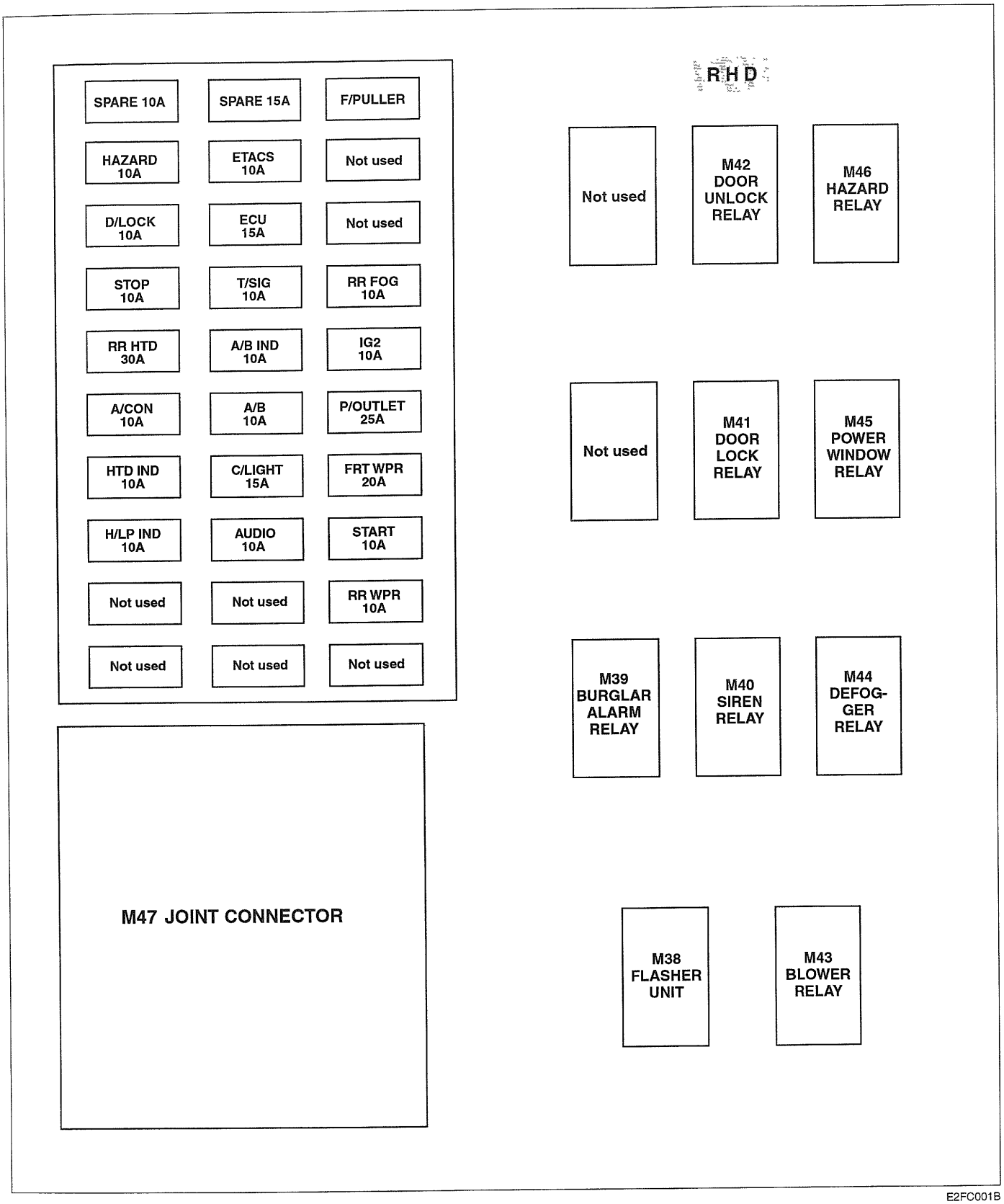
FUSE AND RELAY INFORMATION E2FC0010

I/P-BOX (LHD)



E2FC001A

I/P-BOX (RHD)



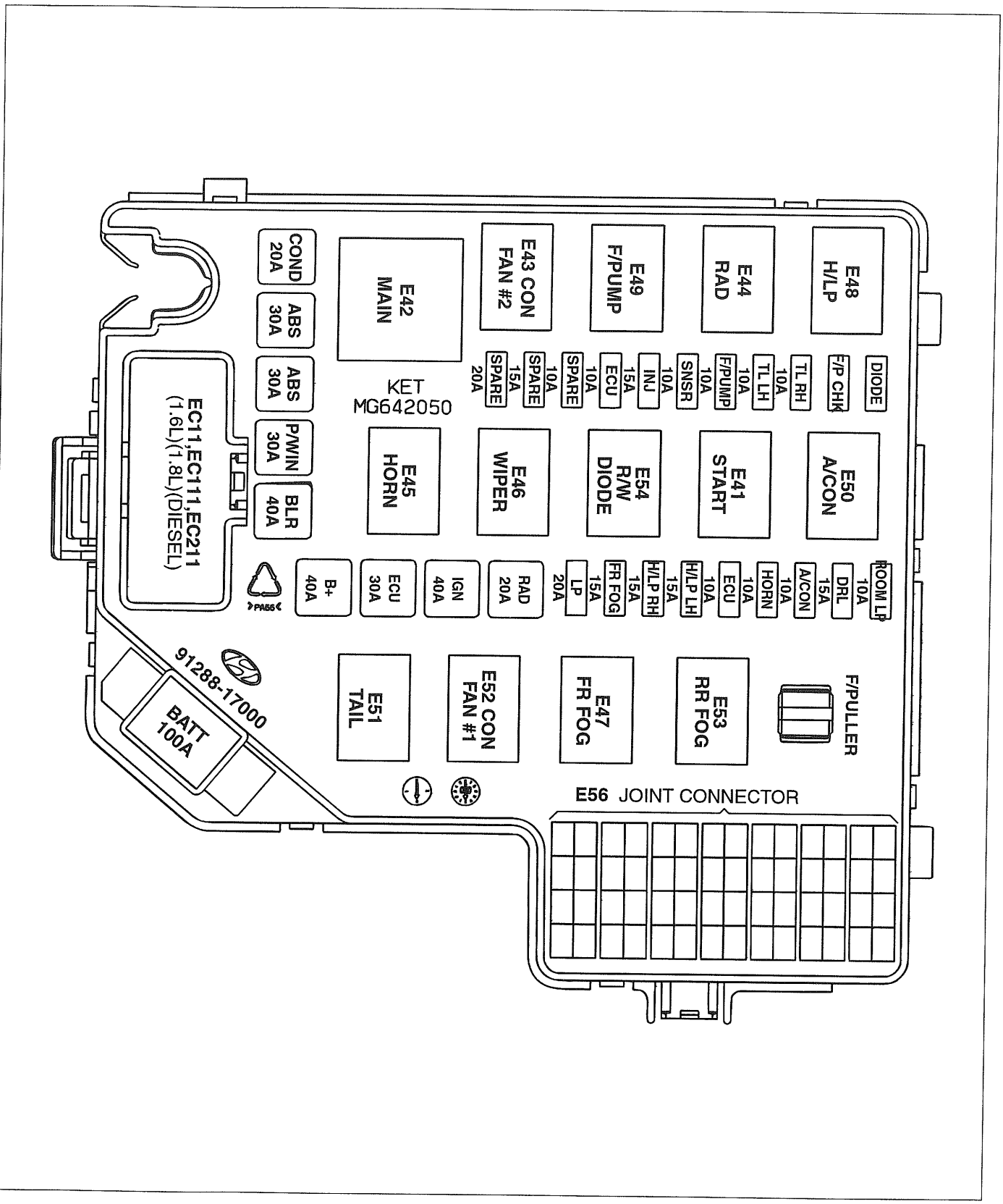
E2FC001B

CIRCUIT

FUSE	Amperages (A)	Circuit Protected
H/LP IND	10A	Head lamp indicator
HTD IND	10A	Defogger relay, Left(Right) outside mirror motor, Rear Window motor
A/CON	10A	A/C Switch
RR HTD	30A	Defogger relay
STOP	10A	Stop lamp switch, Power window relay
D/LOCK	15A	Door lock(unlock) relay, ETACM, Sunroof relay
HAZARD	10A	Burglar alarm relay, Hazard relay
AUDIO	10A	Audio
C/LIGHT	15A	Cigarette lighter
A/B	10A	SRS control module
A/B IND	10A	SRS IND.
T/SIG	10A	Hazard switch, Seat belt timer, Instrument cluster, ABS control module, Pre-excitation resistor, Washer motor
ECU	15A	ECM, Vehicle speed sensor, TCM, Ignition coil
ETACS	10A	ETACM, A/T Shift lever
RR WPR	10A	Rear wiper motor, Rear wiper relay
START	10A	Start relay
FRT WPR	20A	Wiper relay, Washer motor, Wiper & Defogger timer
S/HTD	15A	Left (Right) front seat warmer switch
P/OUTLET	25A	Front (Rear) power outlet
IG2	10A	ETACM, Power window relay, Defogger relay, Sunroof relay Head lamp relay, Blower relay
RR FOG	10A	Outside mirror switch, Rear fog lamp relay

MEMO

E/R-BOX



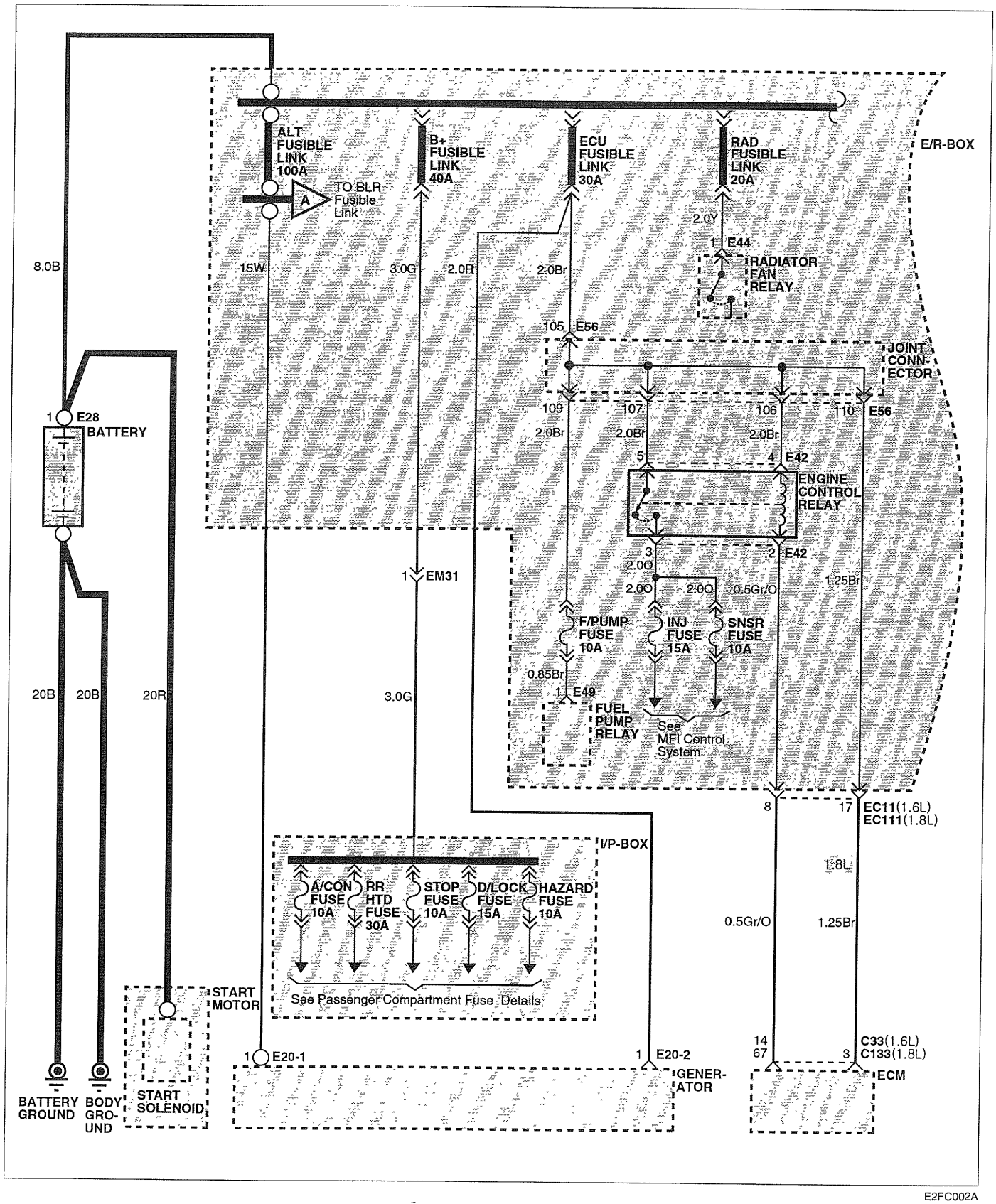
E2FC001C

CIRCUIT

Description		Amperage (A)	Circuit protected
Fusible Link	ALT	100A	Generator
	B+	40A	(A/CON, RR HTD, STOP, D/LOCK, HAZARD) Fuse
	ECU	30A	Generator, Engine control relay, ECM
	RAD	20A	Radiator fan relay
	IGN	40A	Start relay, Ignition switch
	BLR	40A	Blower relay
	P/WIN	30A	Power window relay
	COND	20A	Condenser fan relay #1
	ABS	30A	ABS control module, ABS bleeding connector
	ABS	30A	ABS control module, ABS bleeding connector
Fuse	F/PUMP	10A	Fuel pump relay
	INJ	15A	Injector #1, #2, #3, #4, Ignition coil #1, #2
	SNSR	10A	CMP sensor, Oxygen sensor, CKP sensor, Knock sensor, Throttle position sensor
	ROOM LP	10A	Audio, Room lamp, Overhead console lamp, Instrument cluster
	DRL	15A	DRL control module
	HORN	10A	Horn relay
	A/CON	10A	A/C relay
	FR FOG	15A	Front fog lamp relay
	ECU	10A	ECM, TCM
	LP	20A	Tail lamp relay
	TL LH	10A	Left rear combi lamp, Left position lamp, Left License lamp
	TL RH	10A	Right rear combi lamp, Right position lamp, Right License lamp
	H/LP LH	15A	Left head lamp
	H/LP RH	15A	Right head lamp, (H/LP IND)Fuse

POWER DISTRIBUTION E2FC0020

POWER DISTRIBUTION (1)



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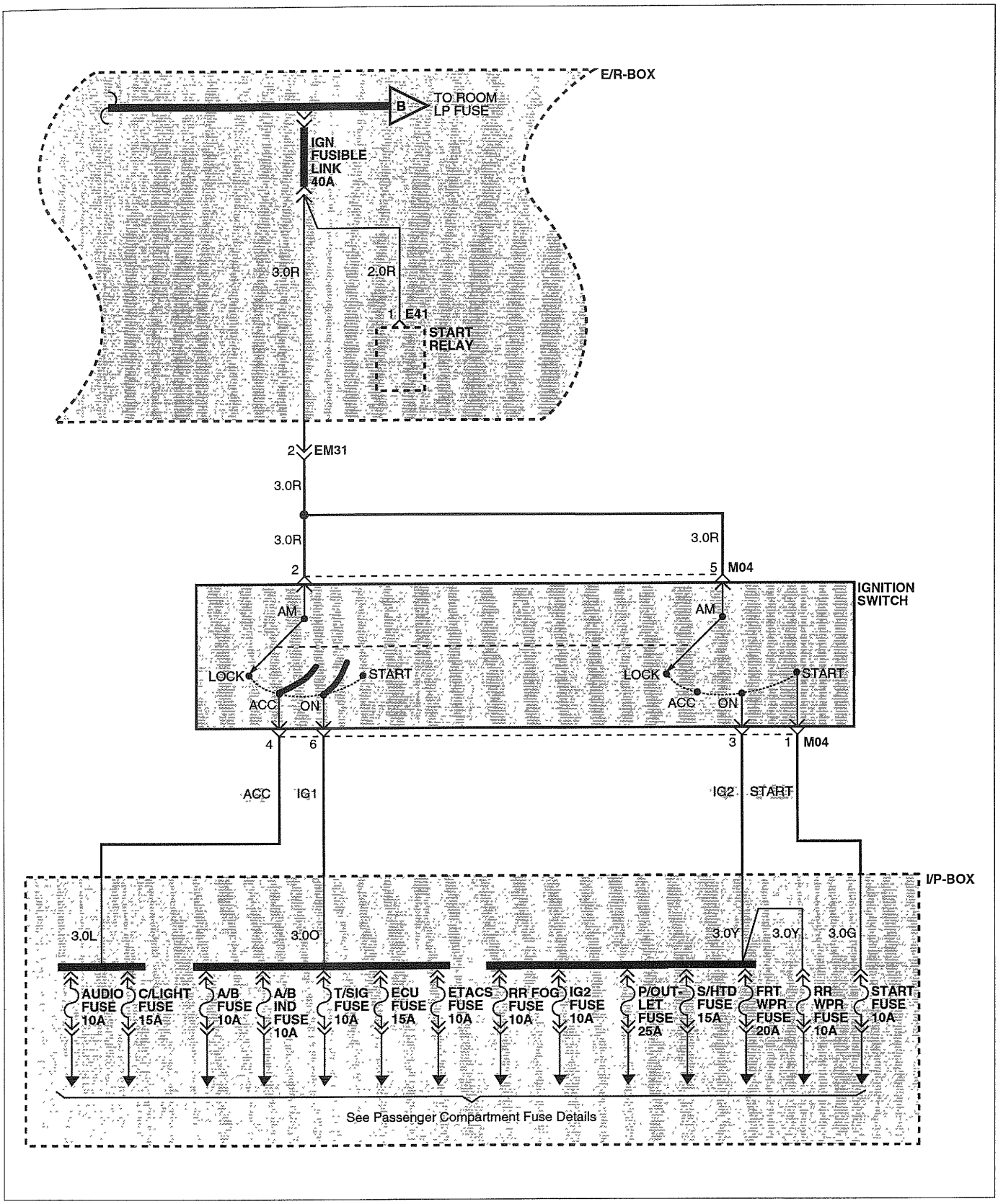

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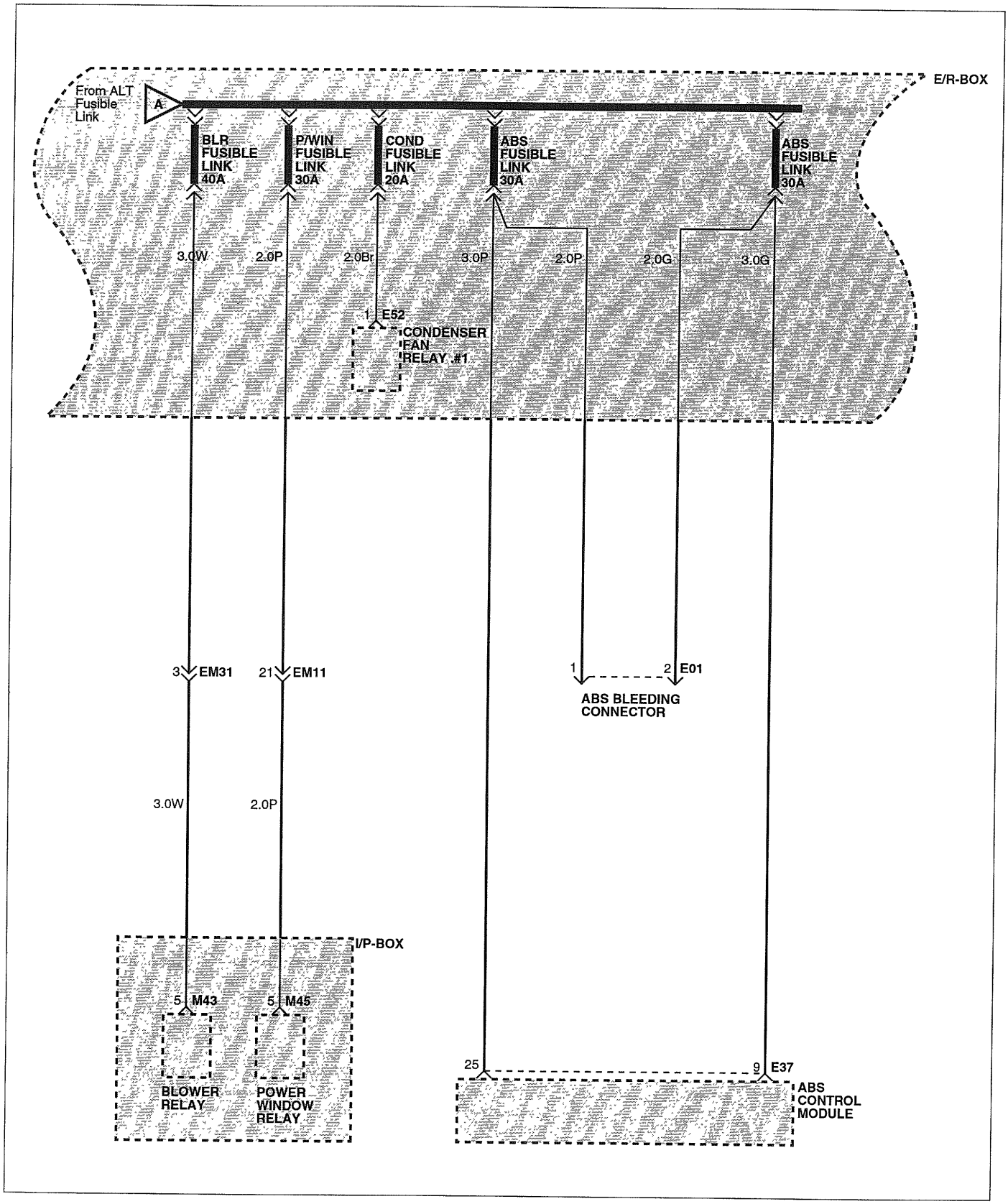

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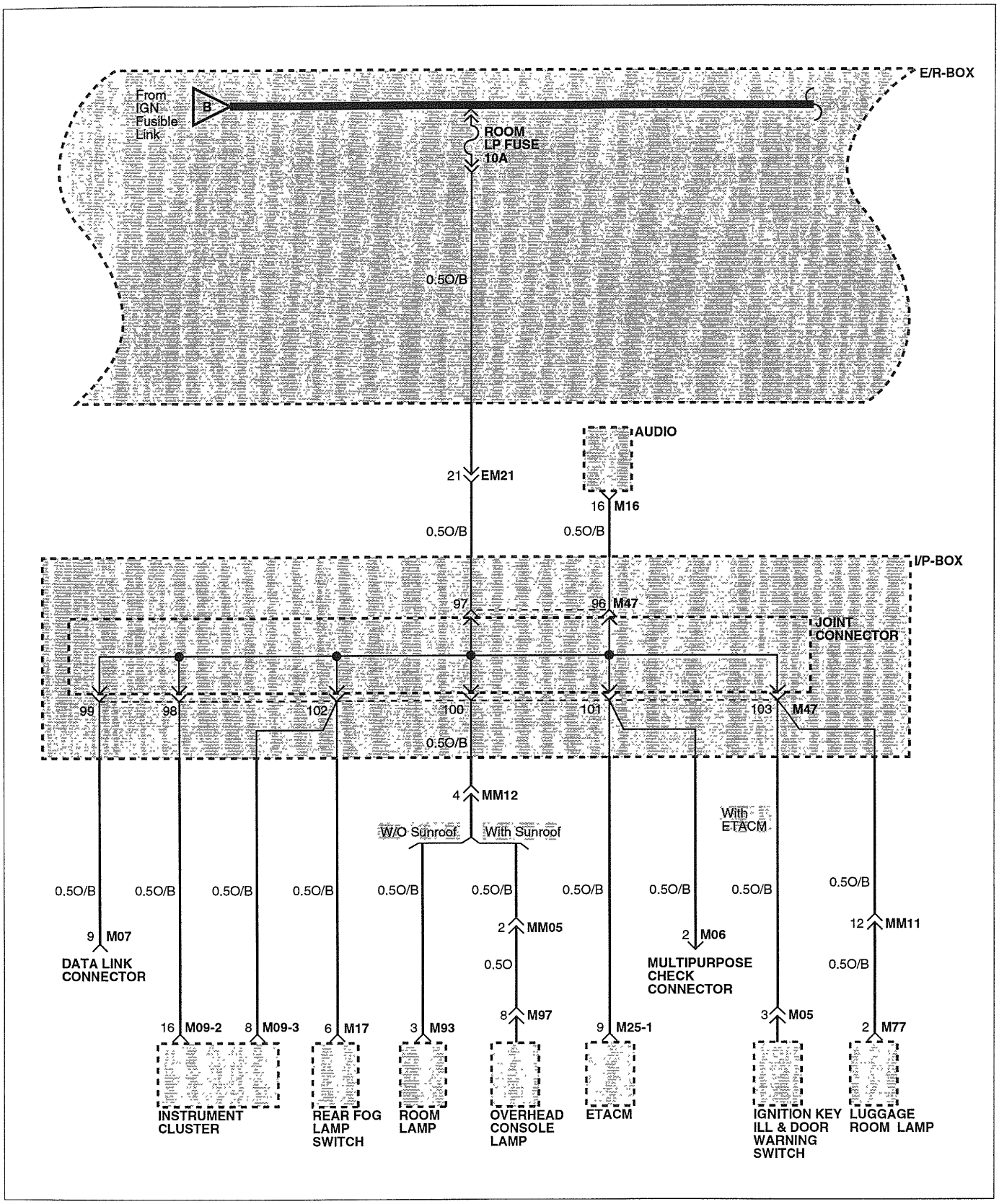

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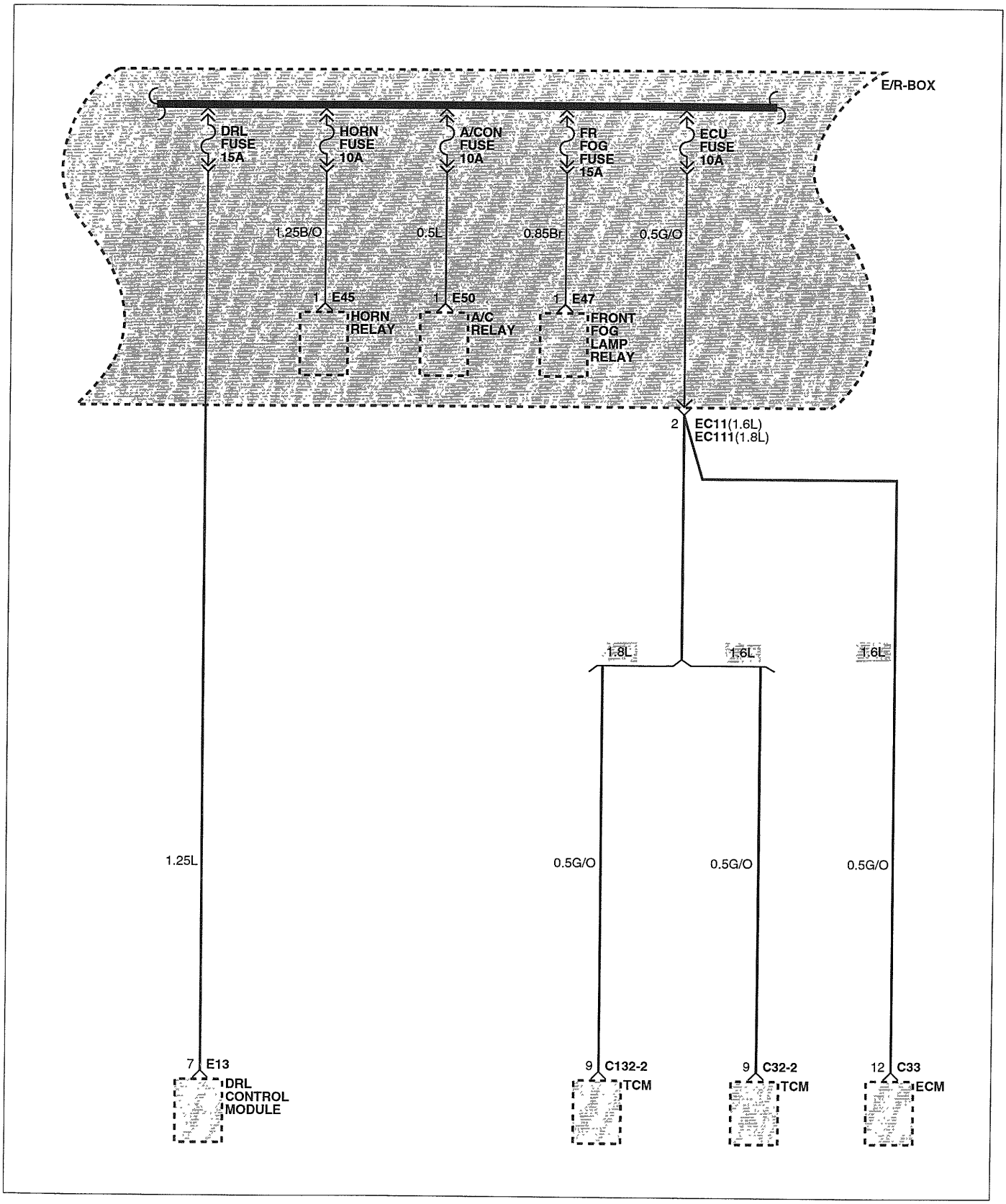

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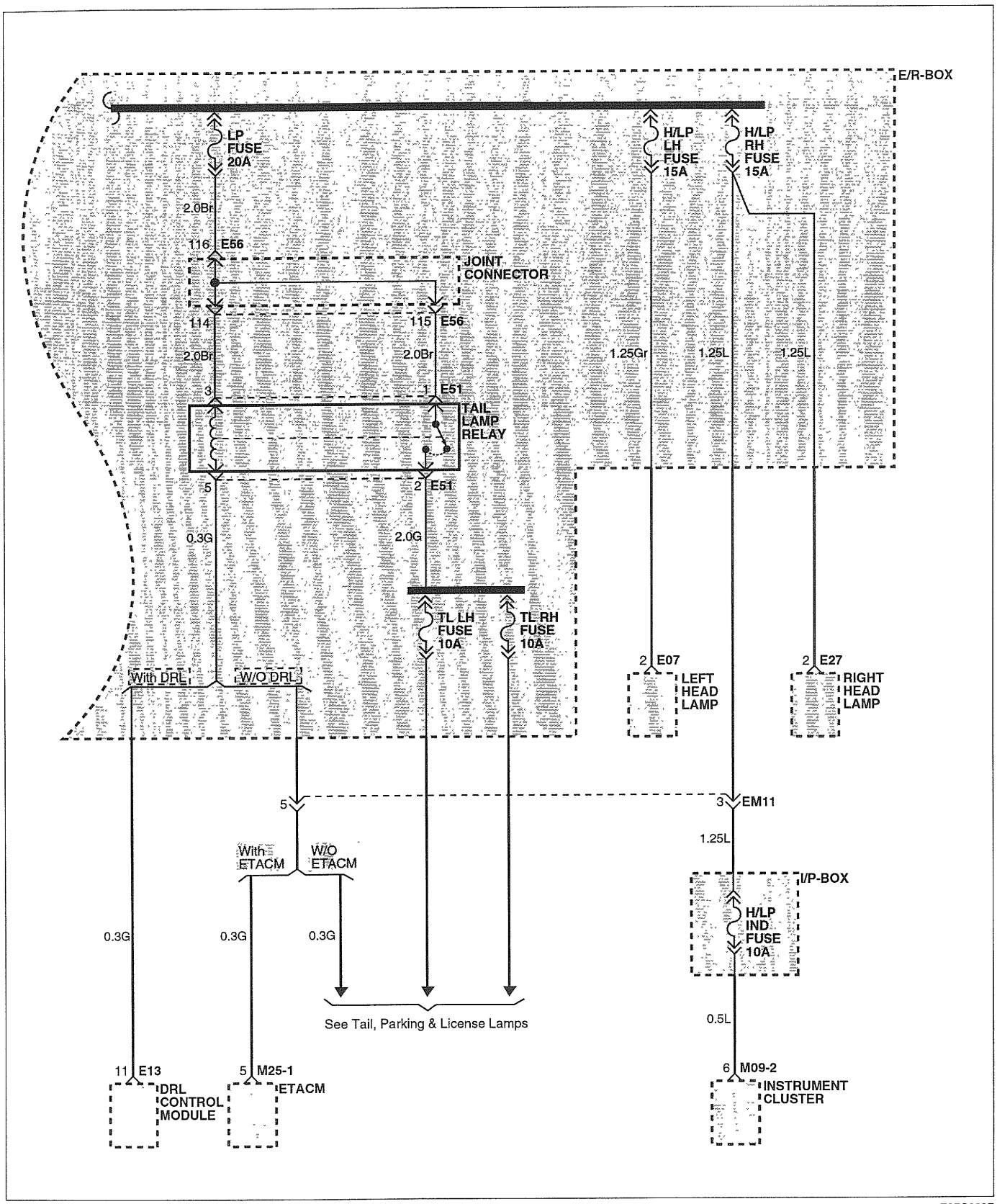
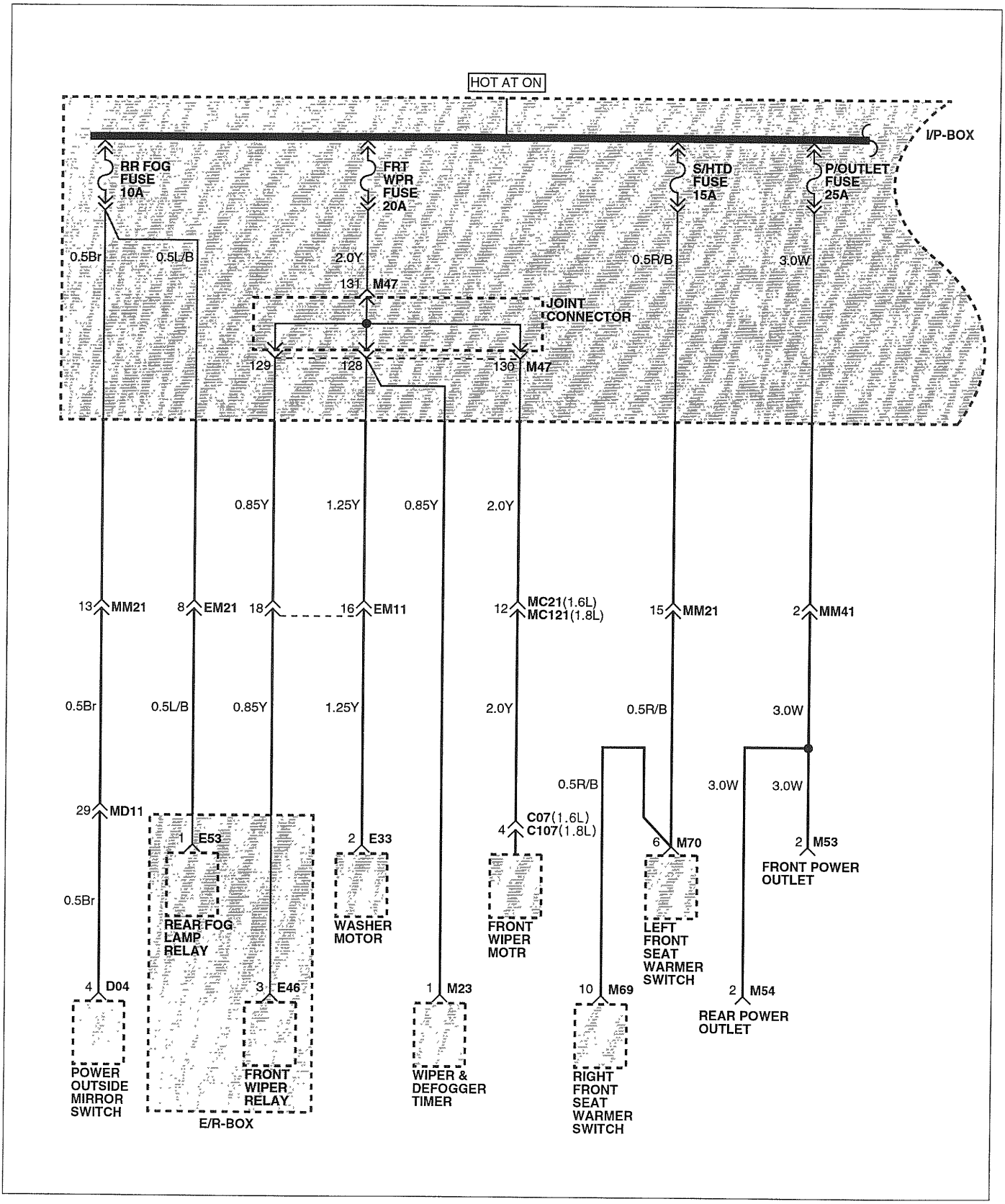


E2FC002F

PASSENGER COMPARTMENT FUSE DETAILS E2FC0030

PASSENGER COMPARTMENT FUSE DETAILS (1)



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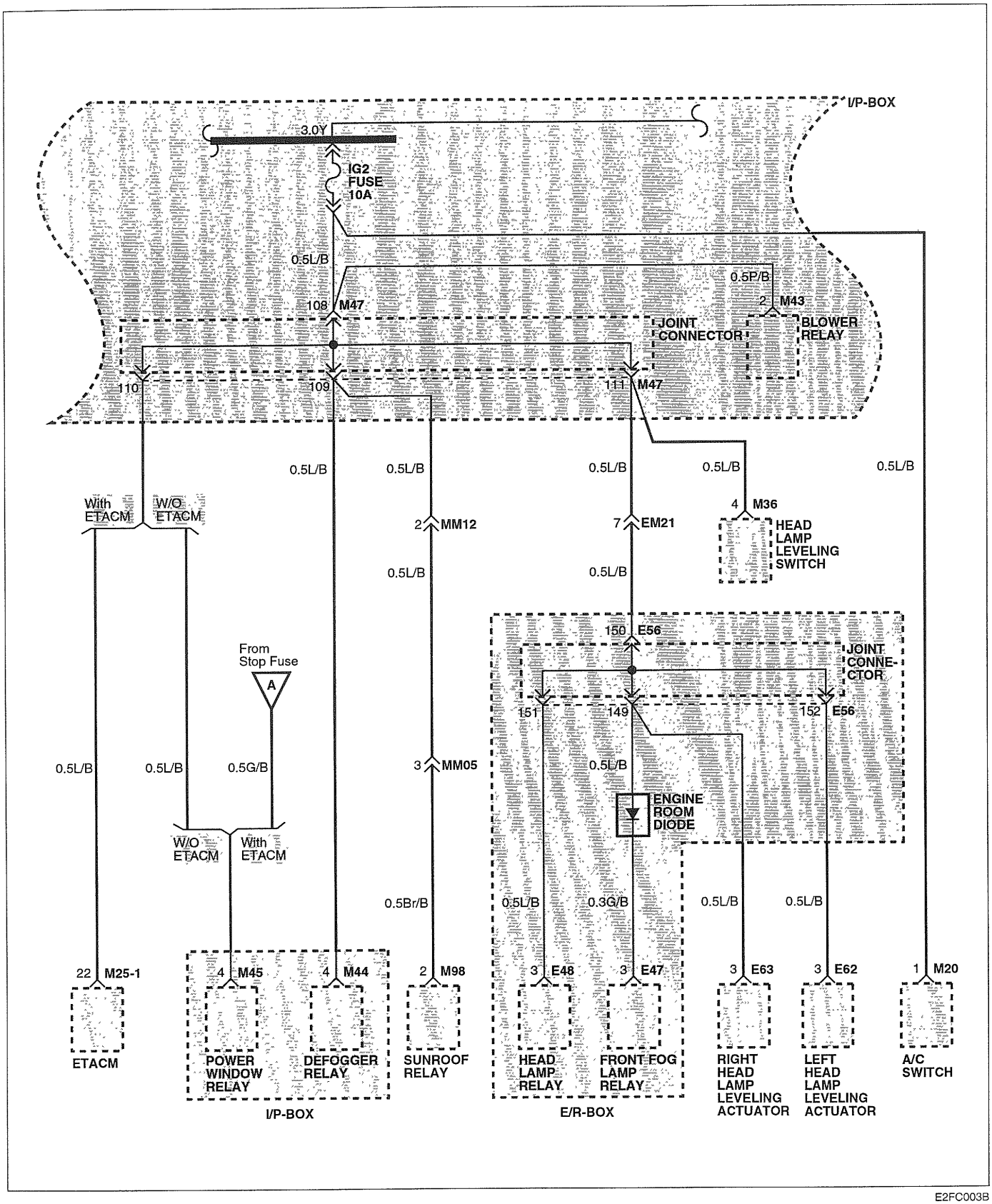

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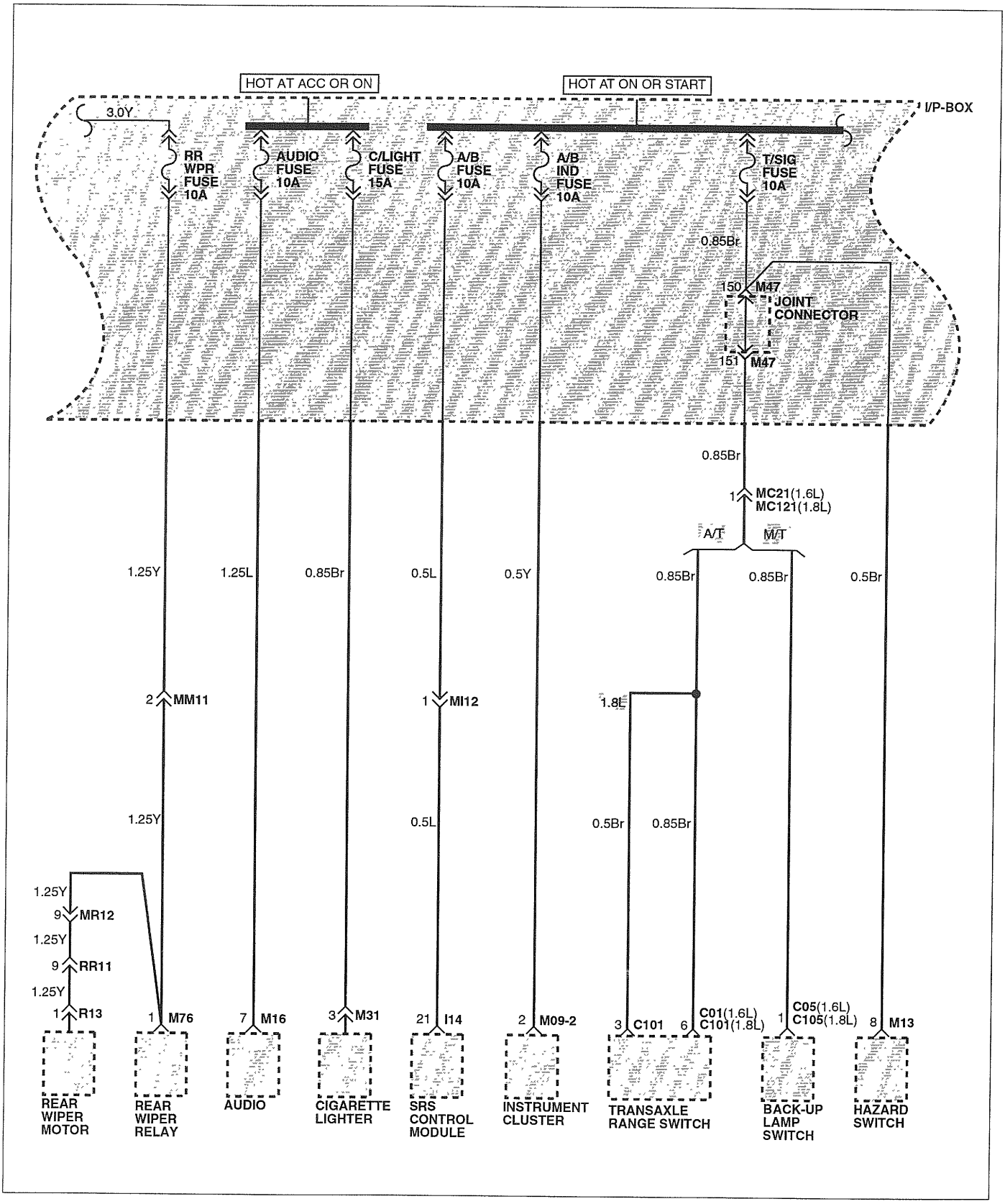

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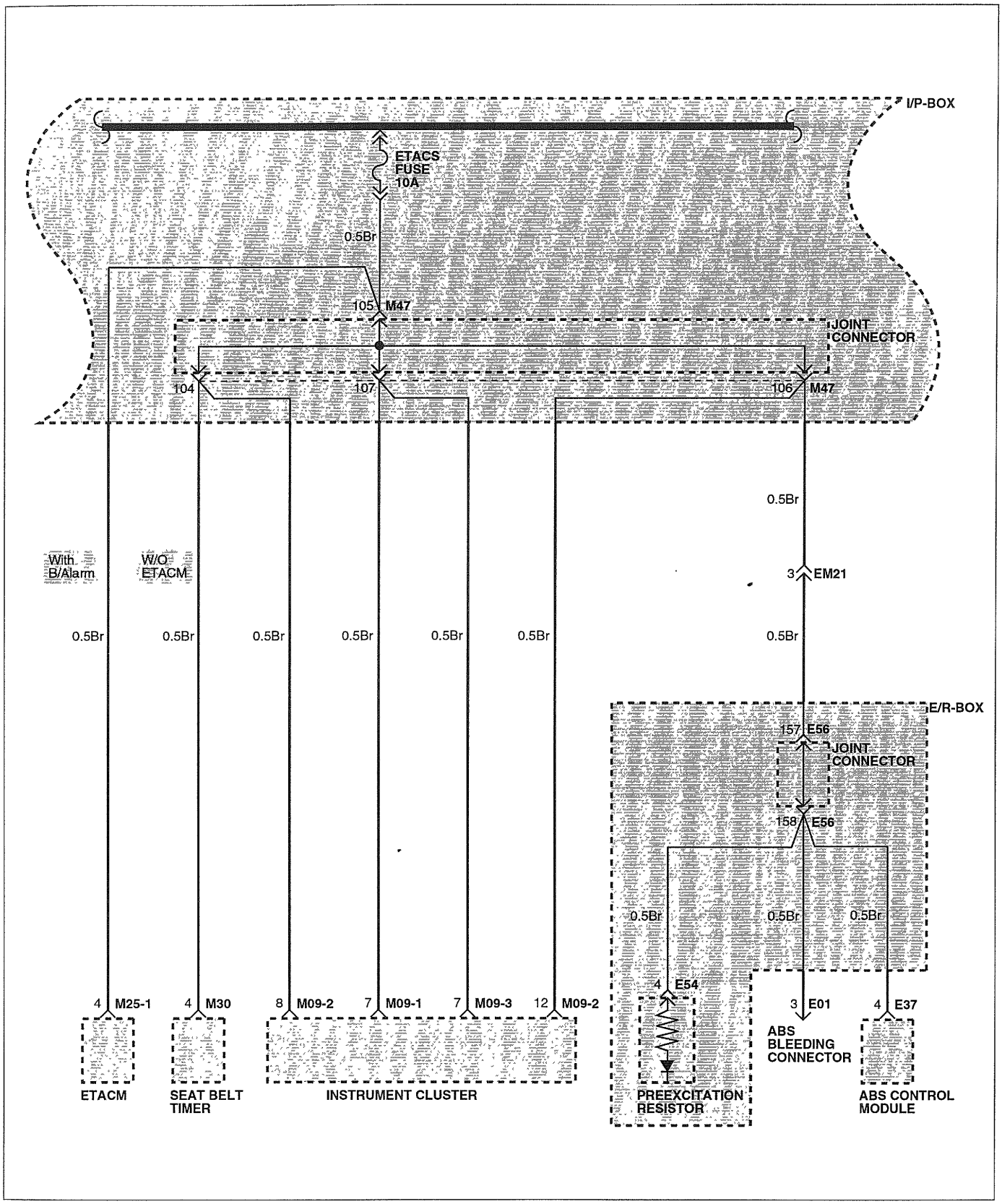

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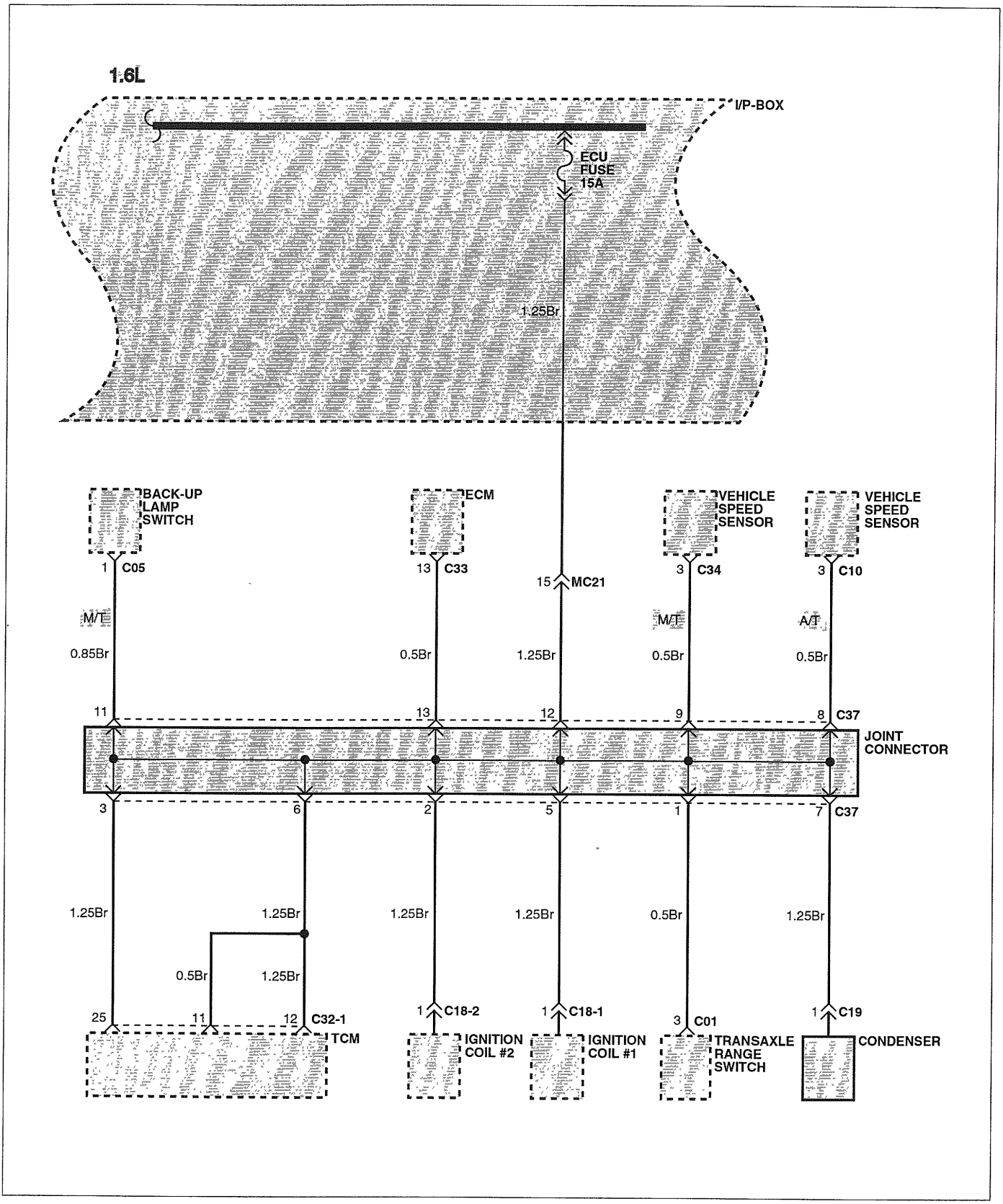

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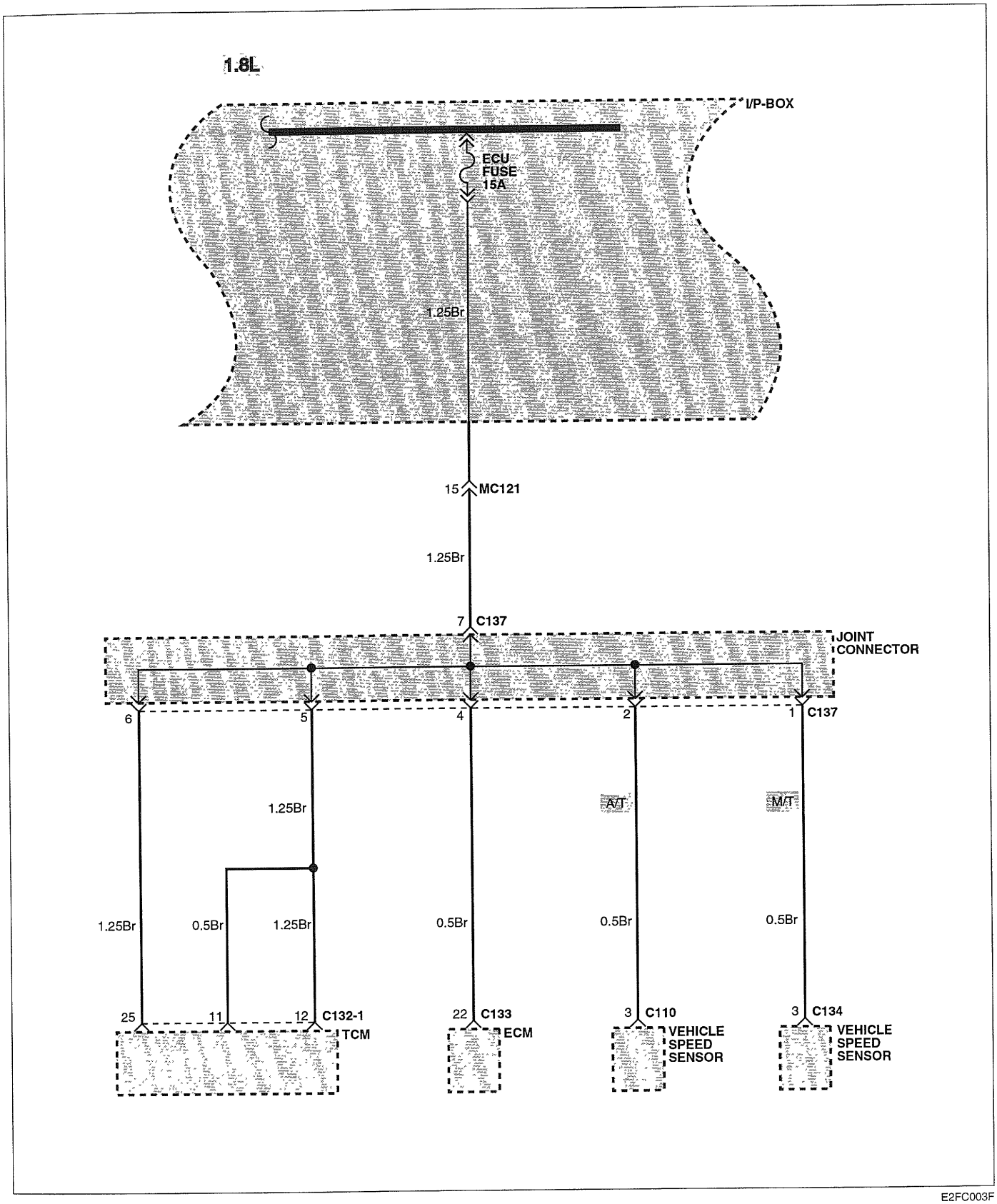

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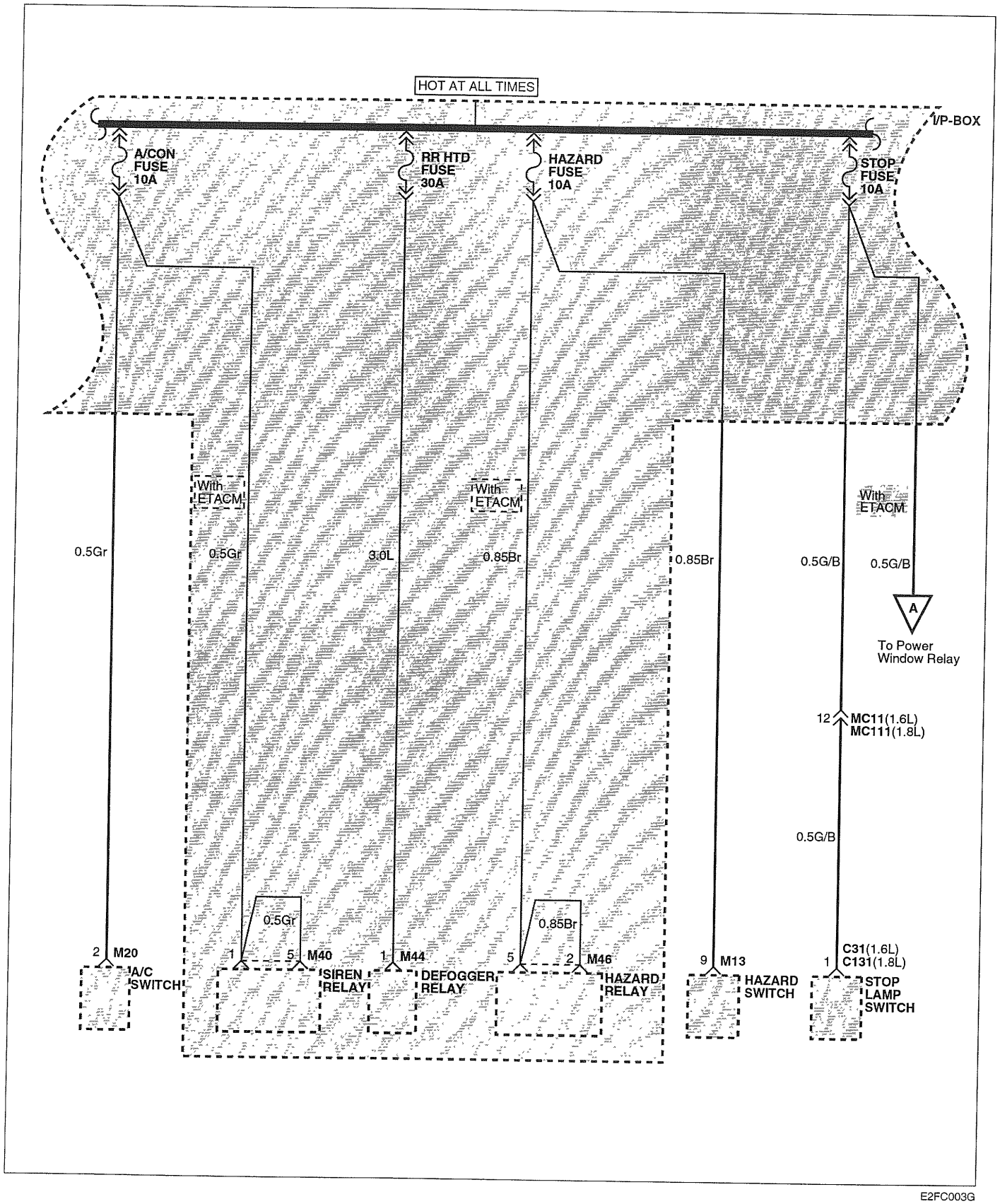

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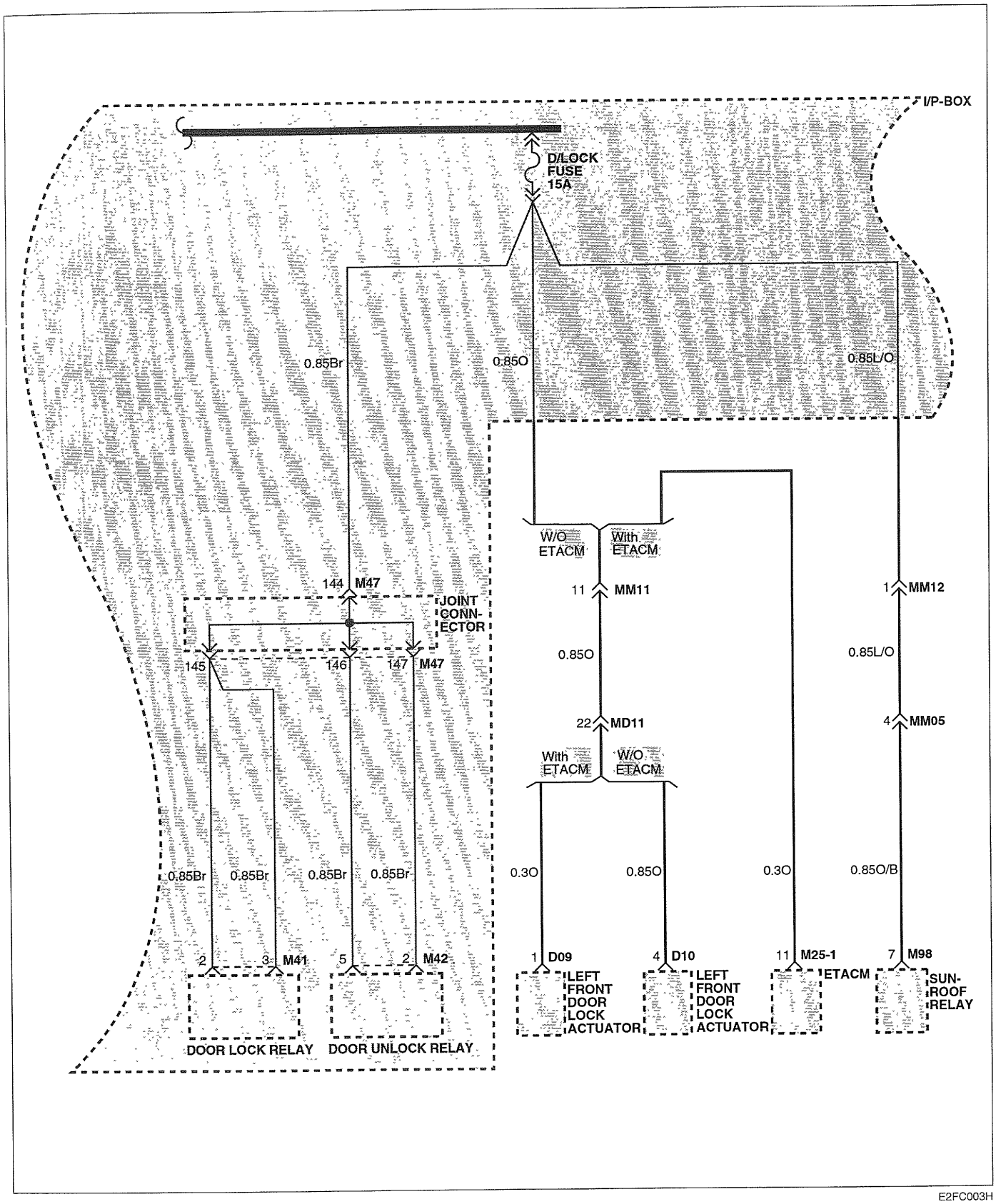

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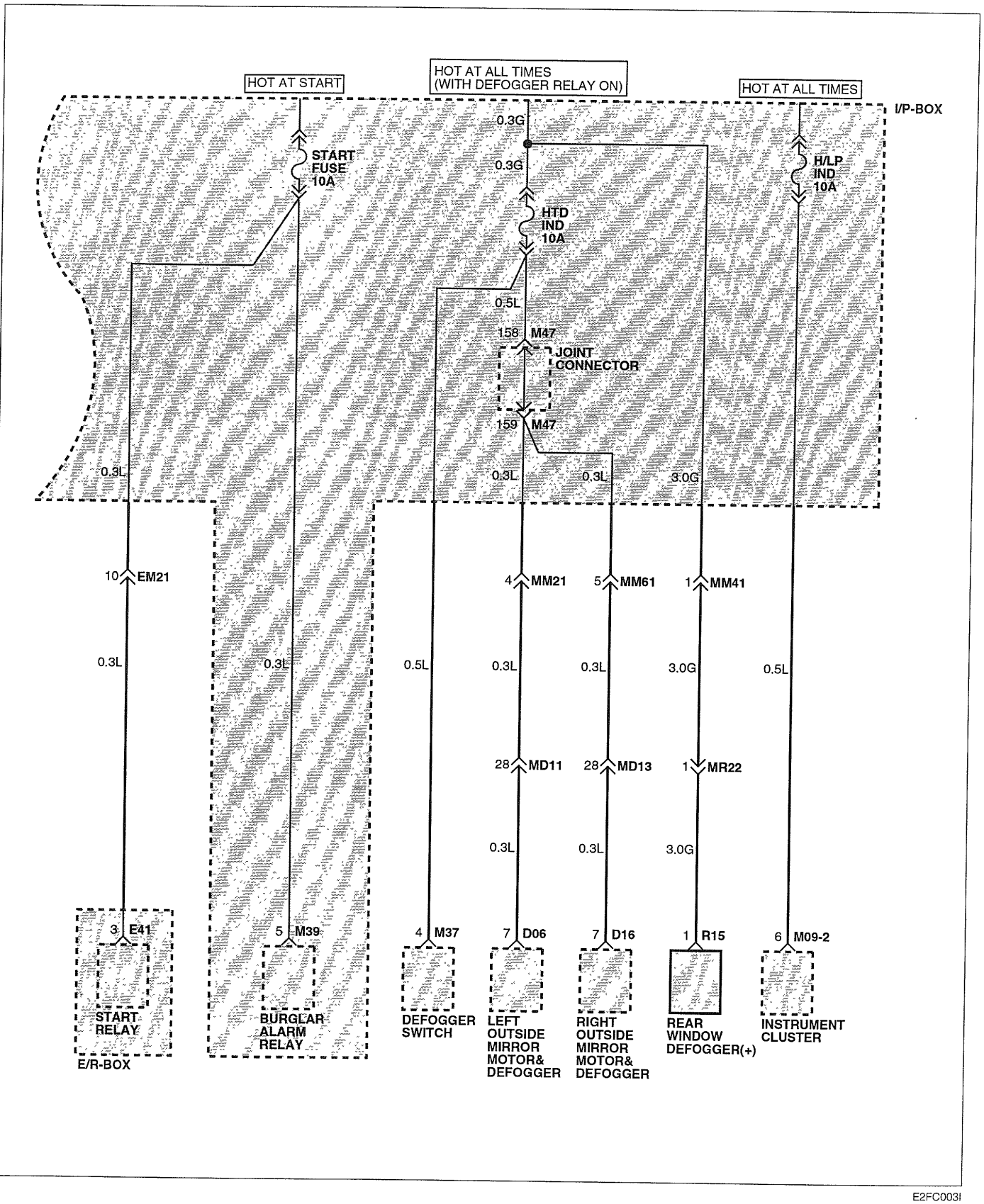
PASSENGER COMPARTMENT FUSE DETAILS (9)



E2FC003I

MEMO

GROUND DISTRIBUTION E2FC0040

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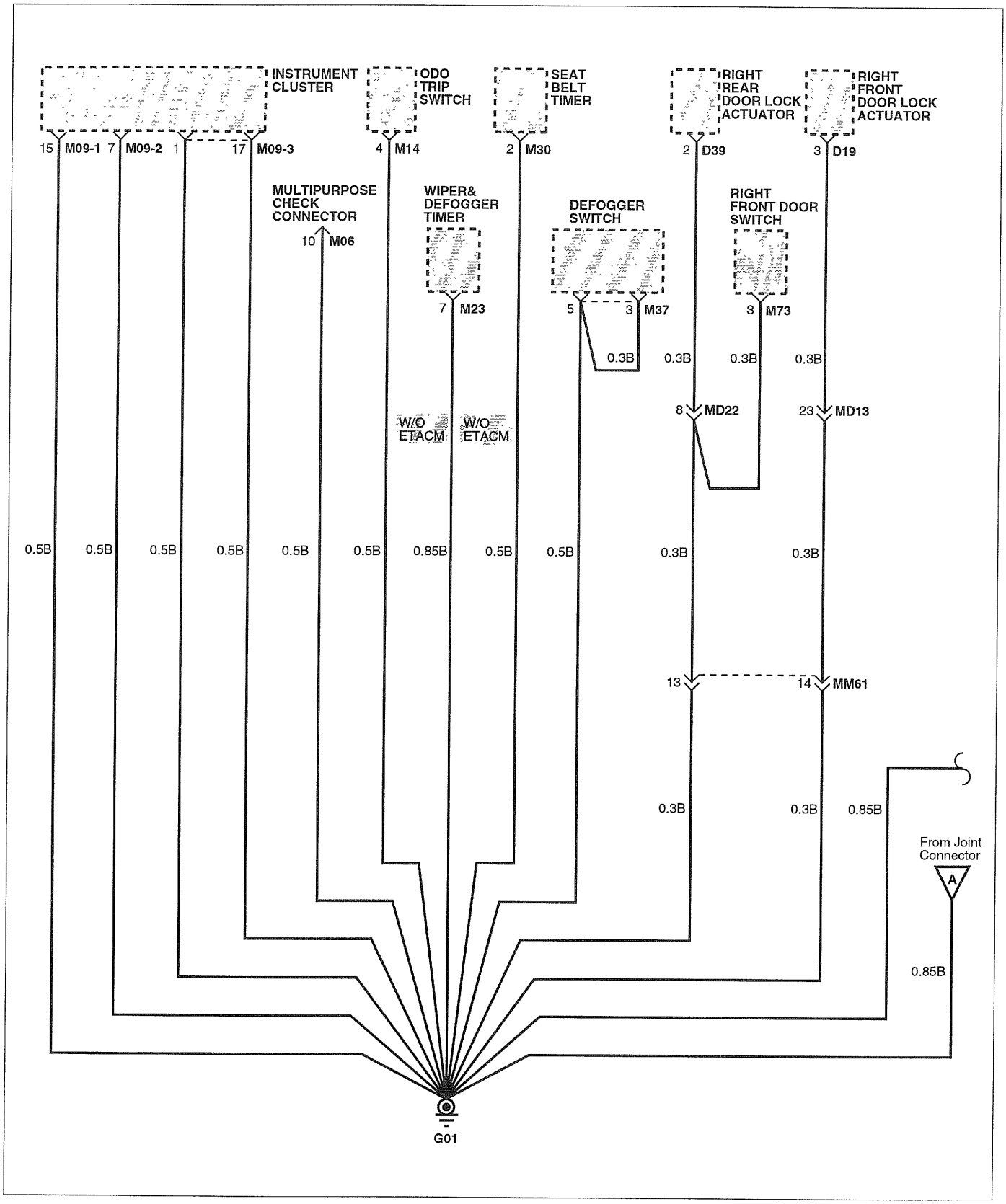

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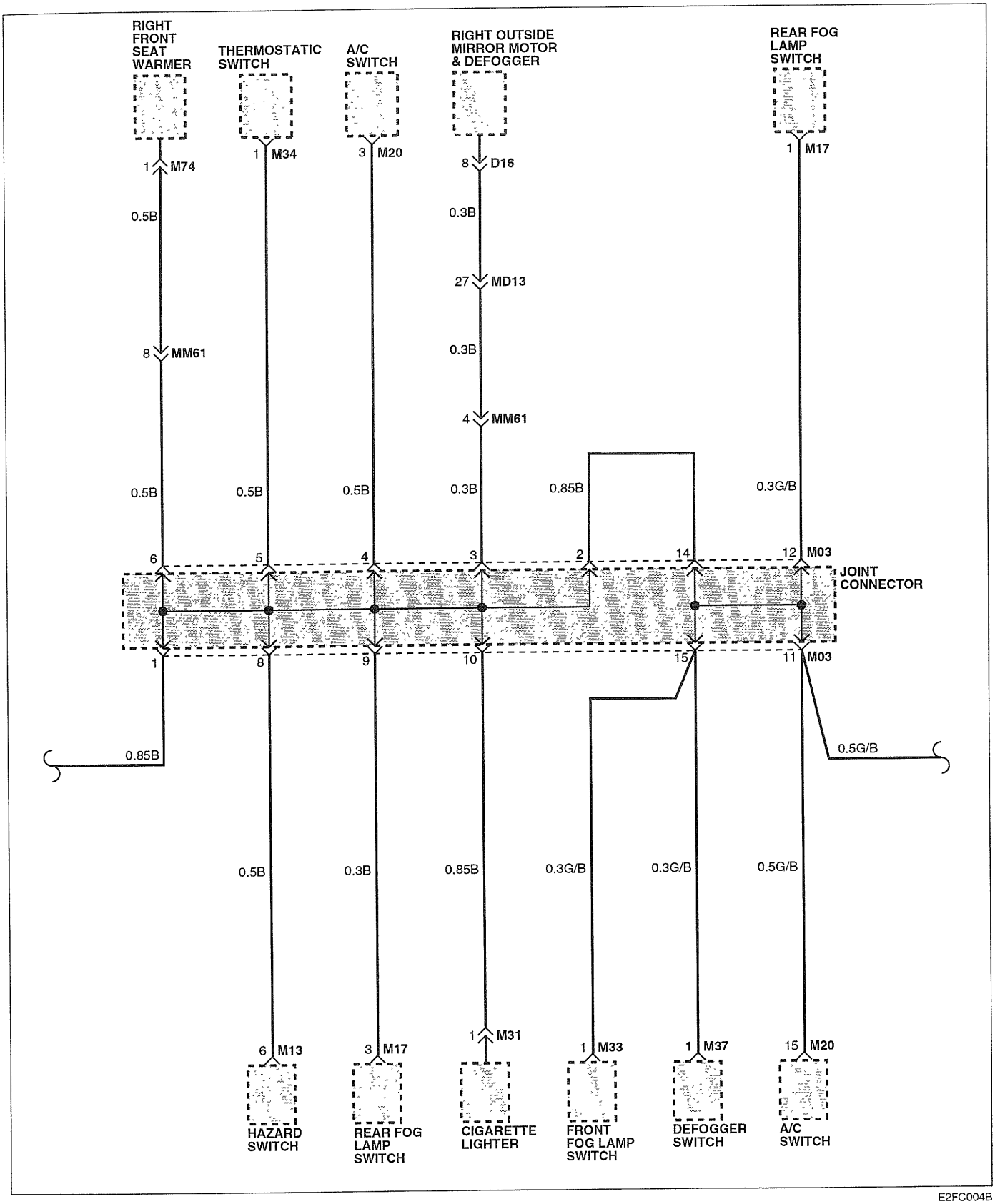

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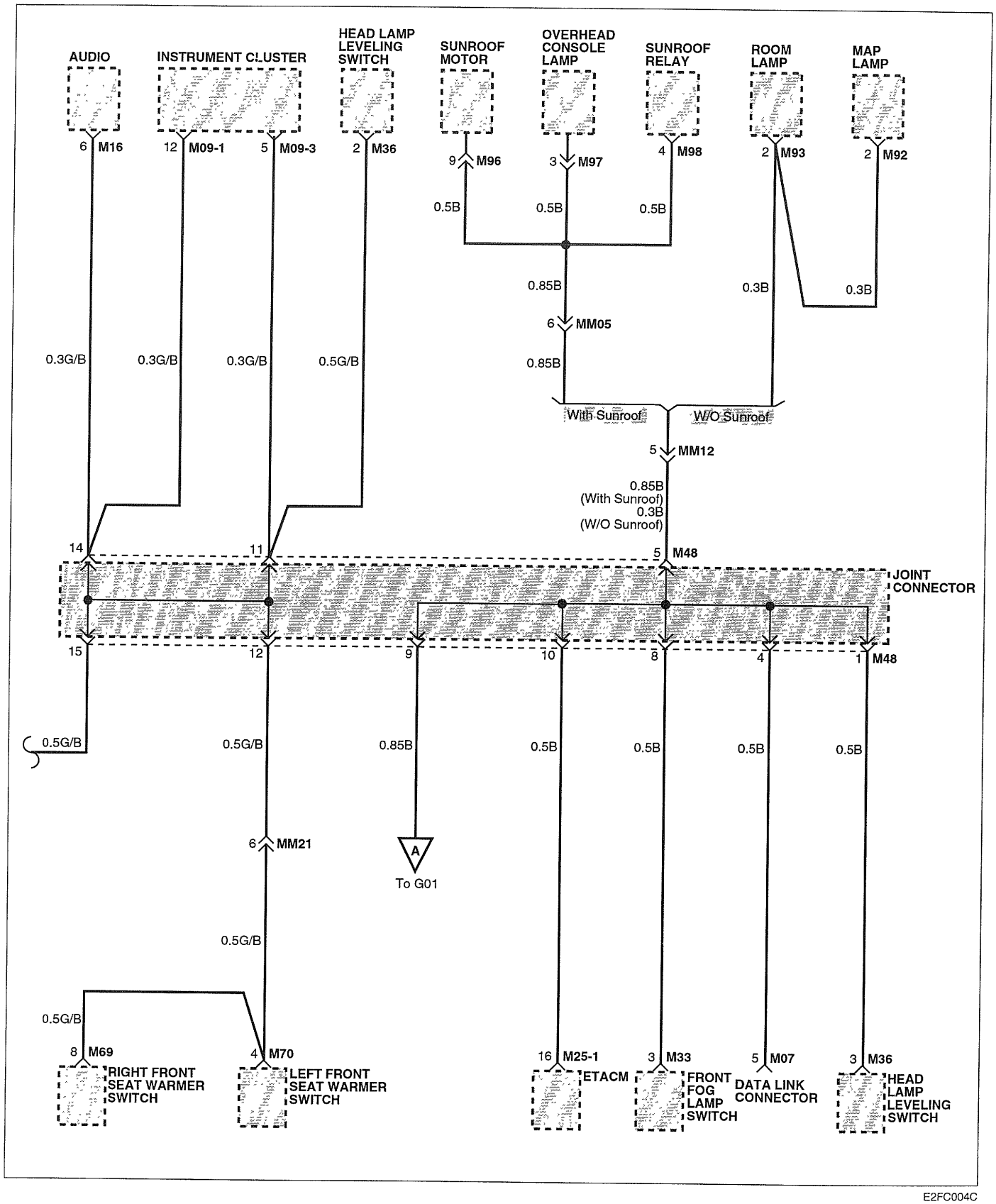

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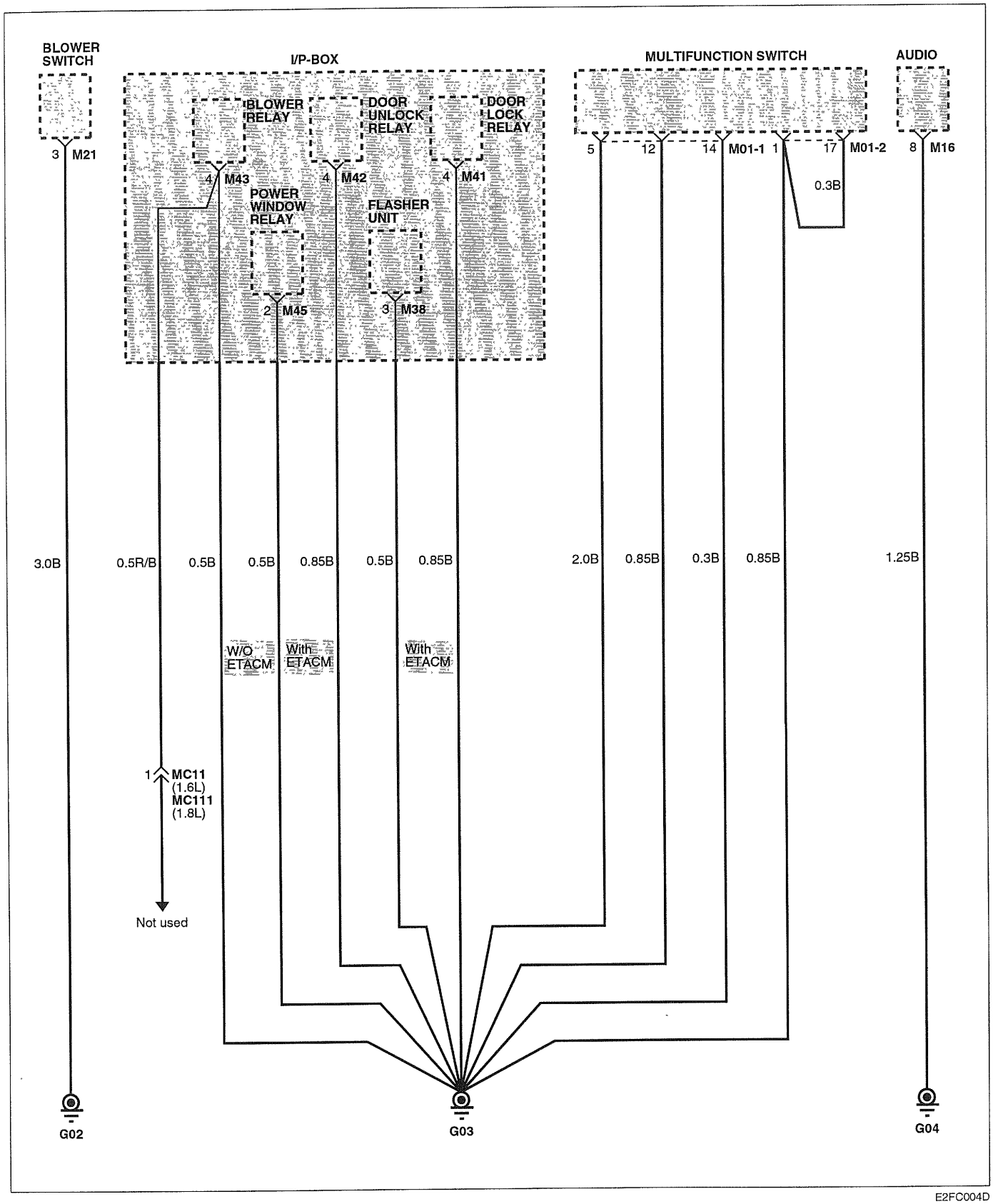

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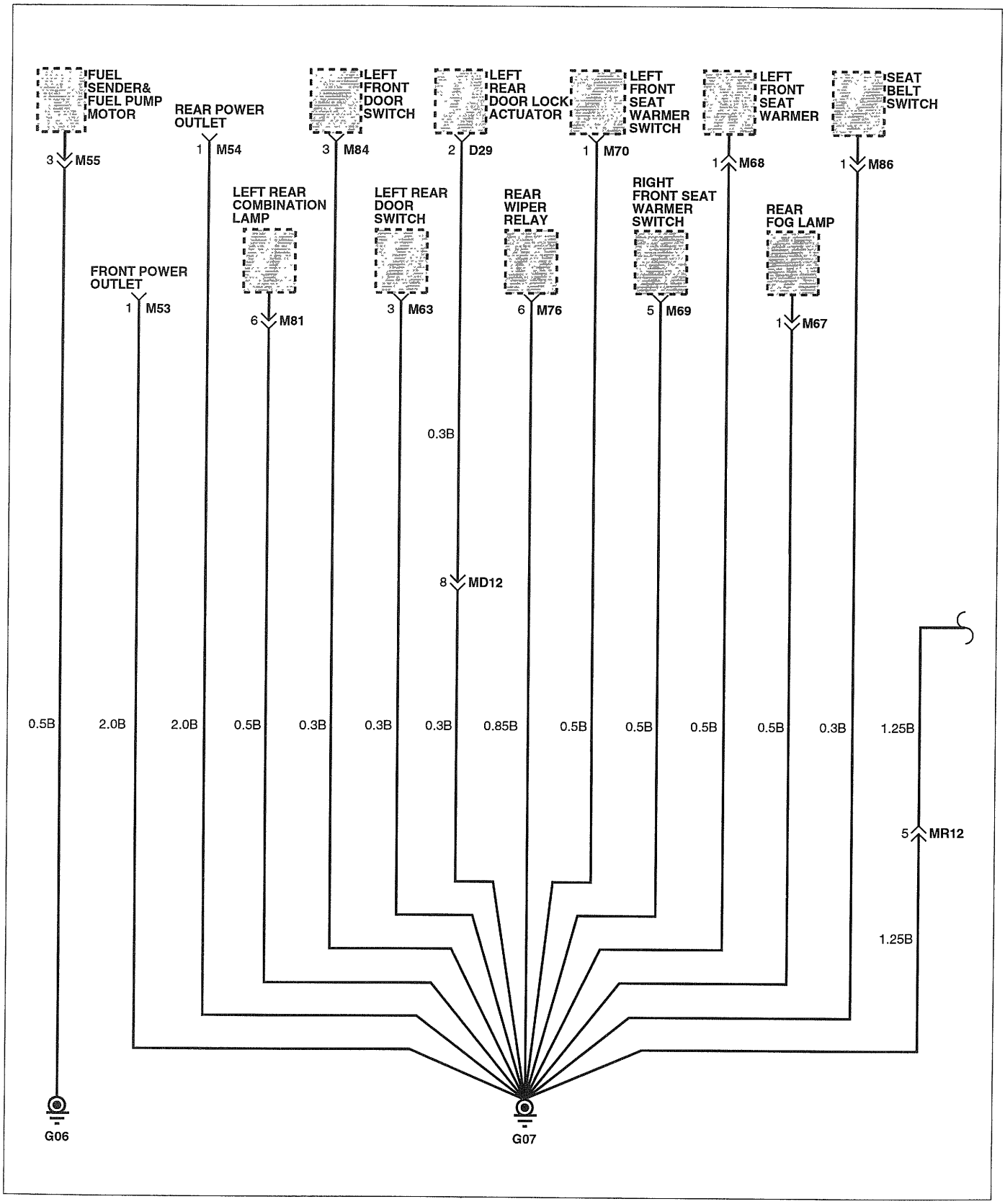

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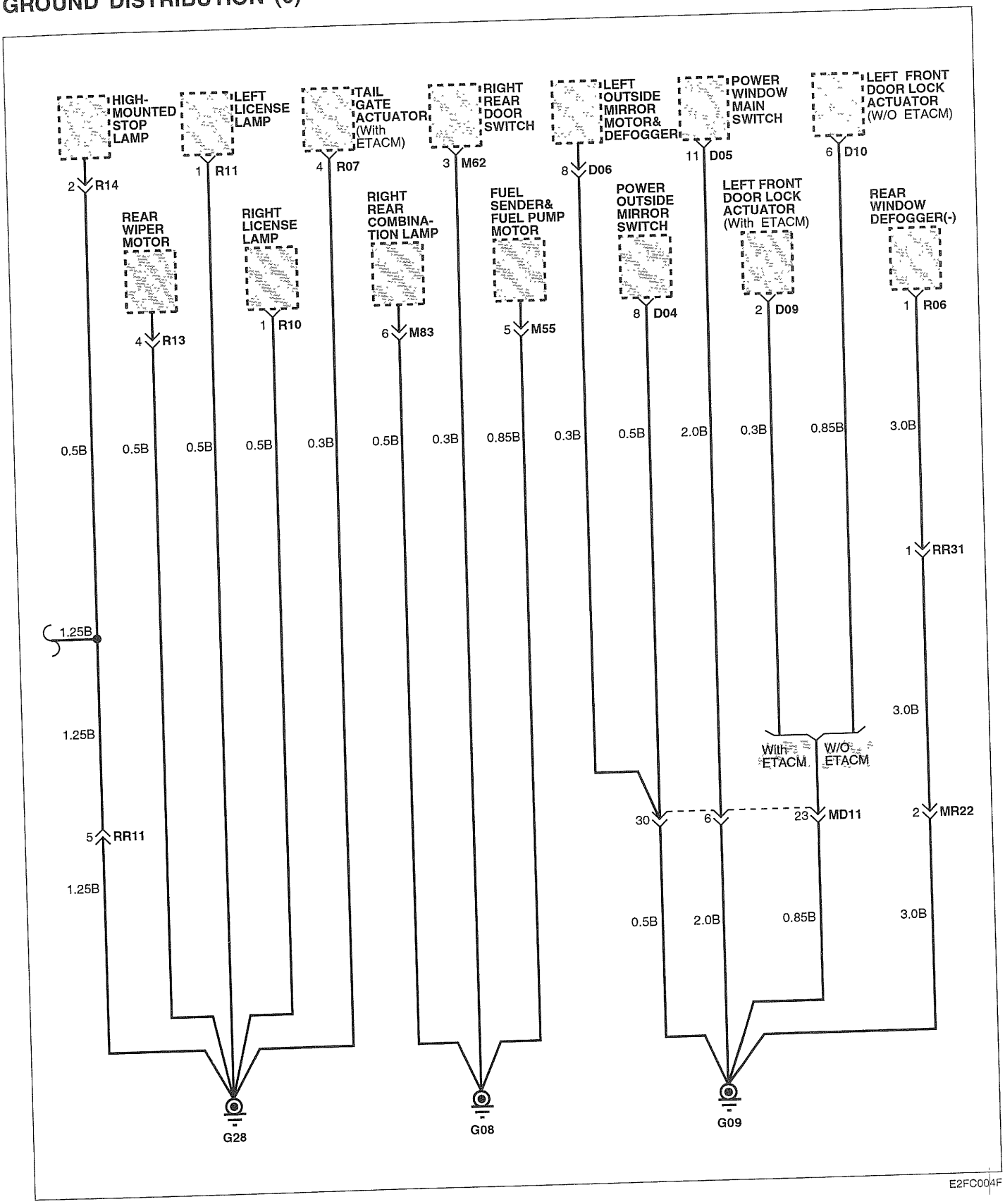

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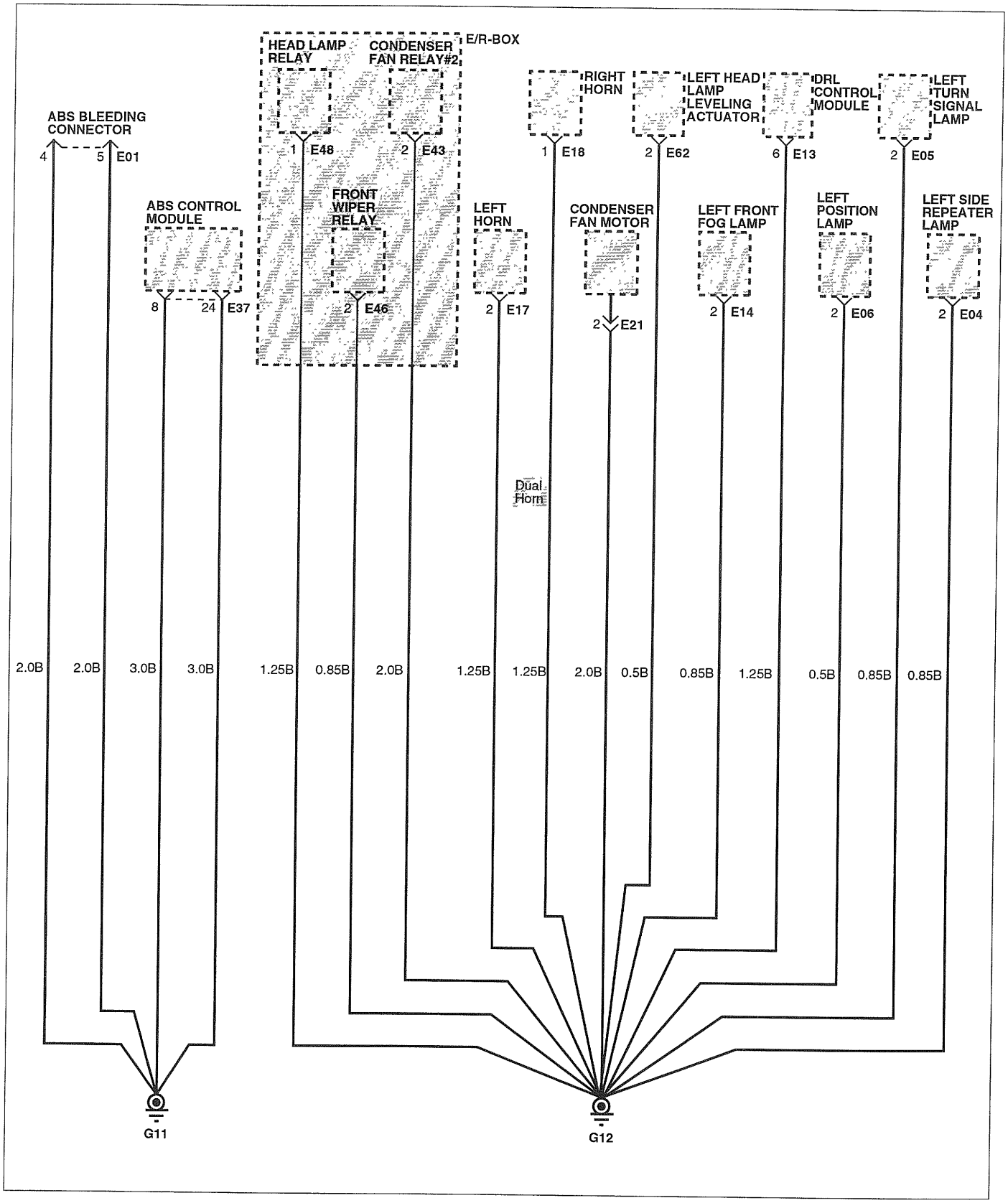

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GROUND DISTRIBUTION

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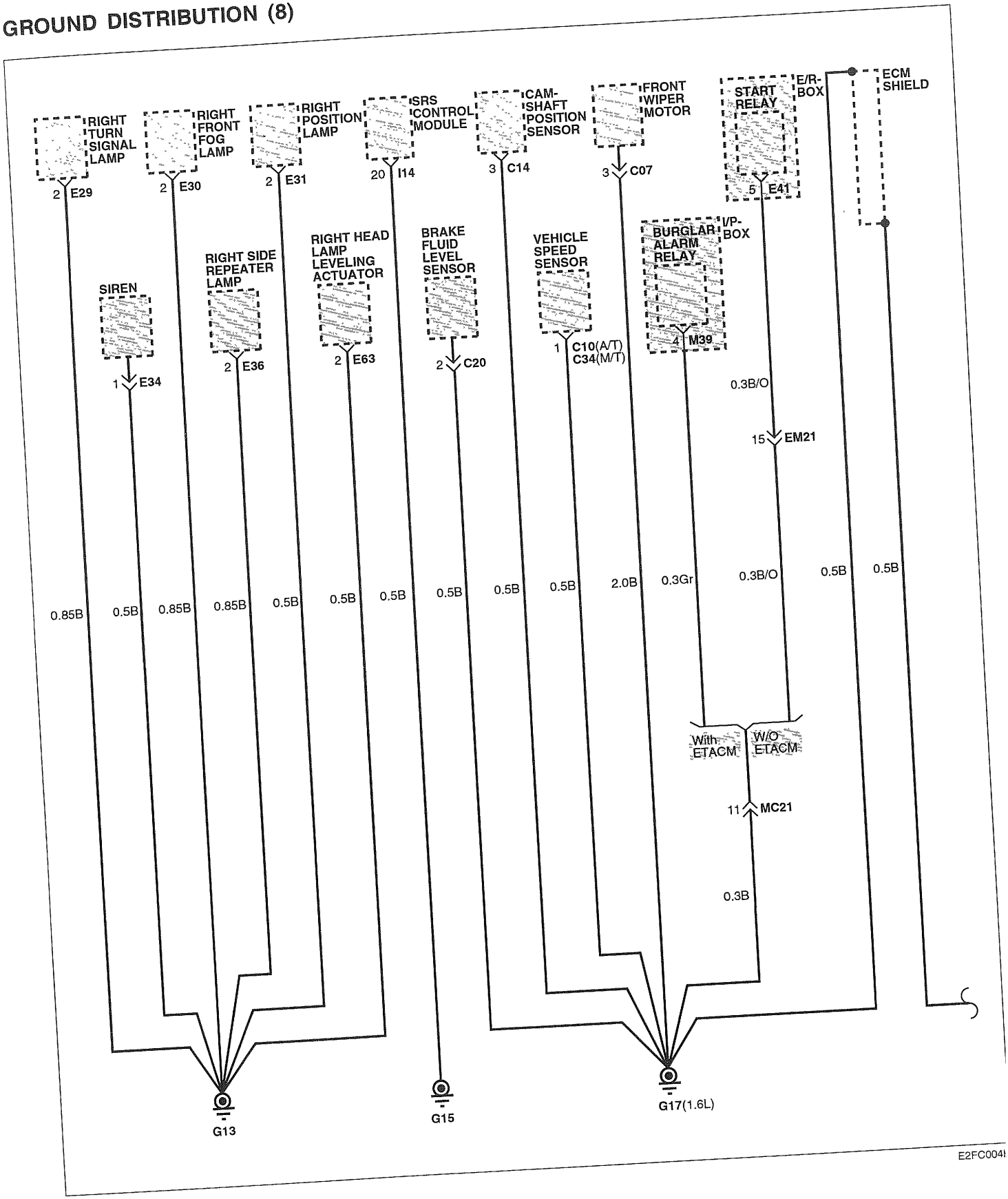

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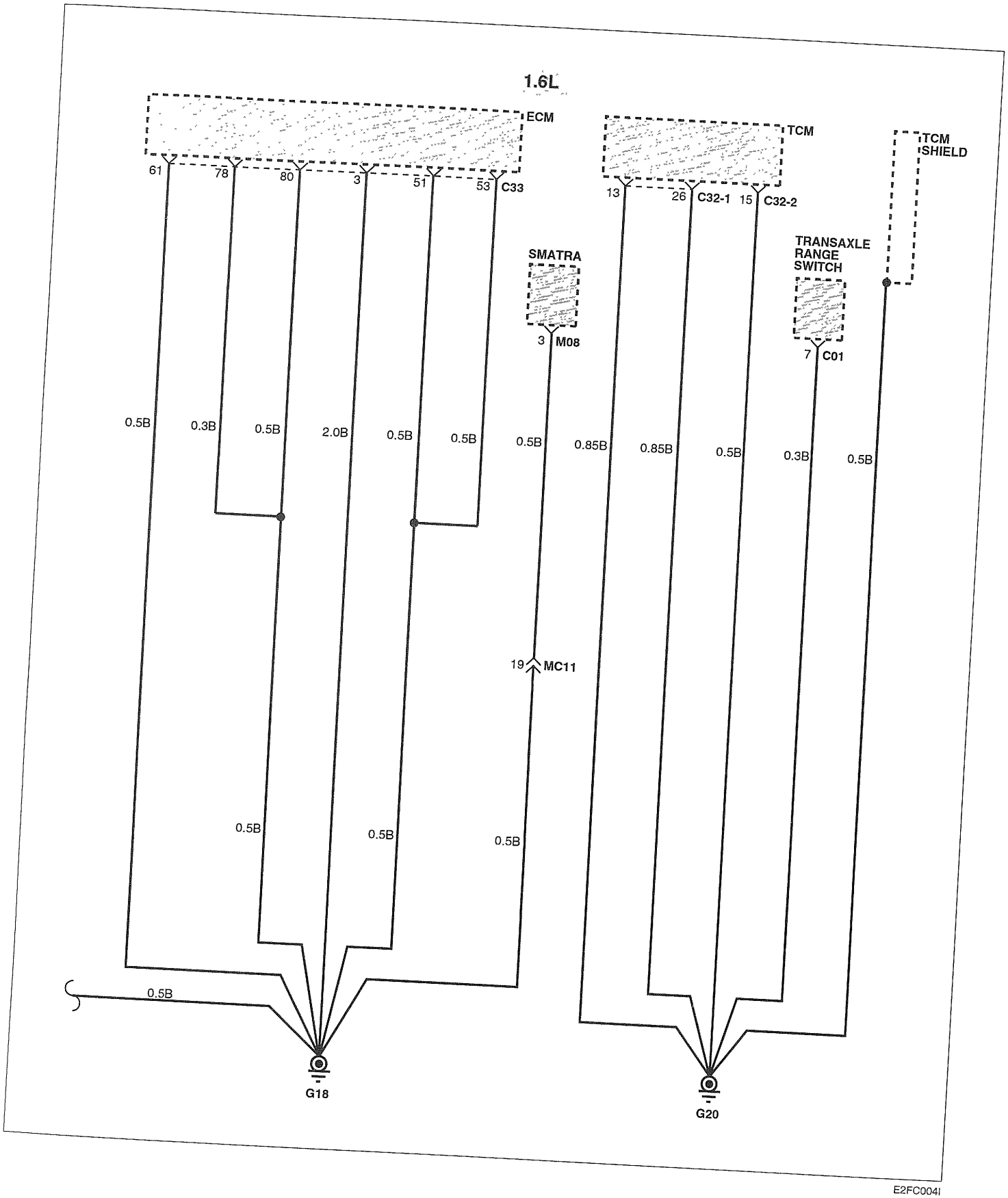

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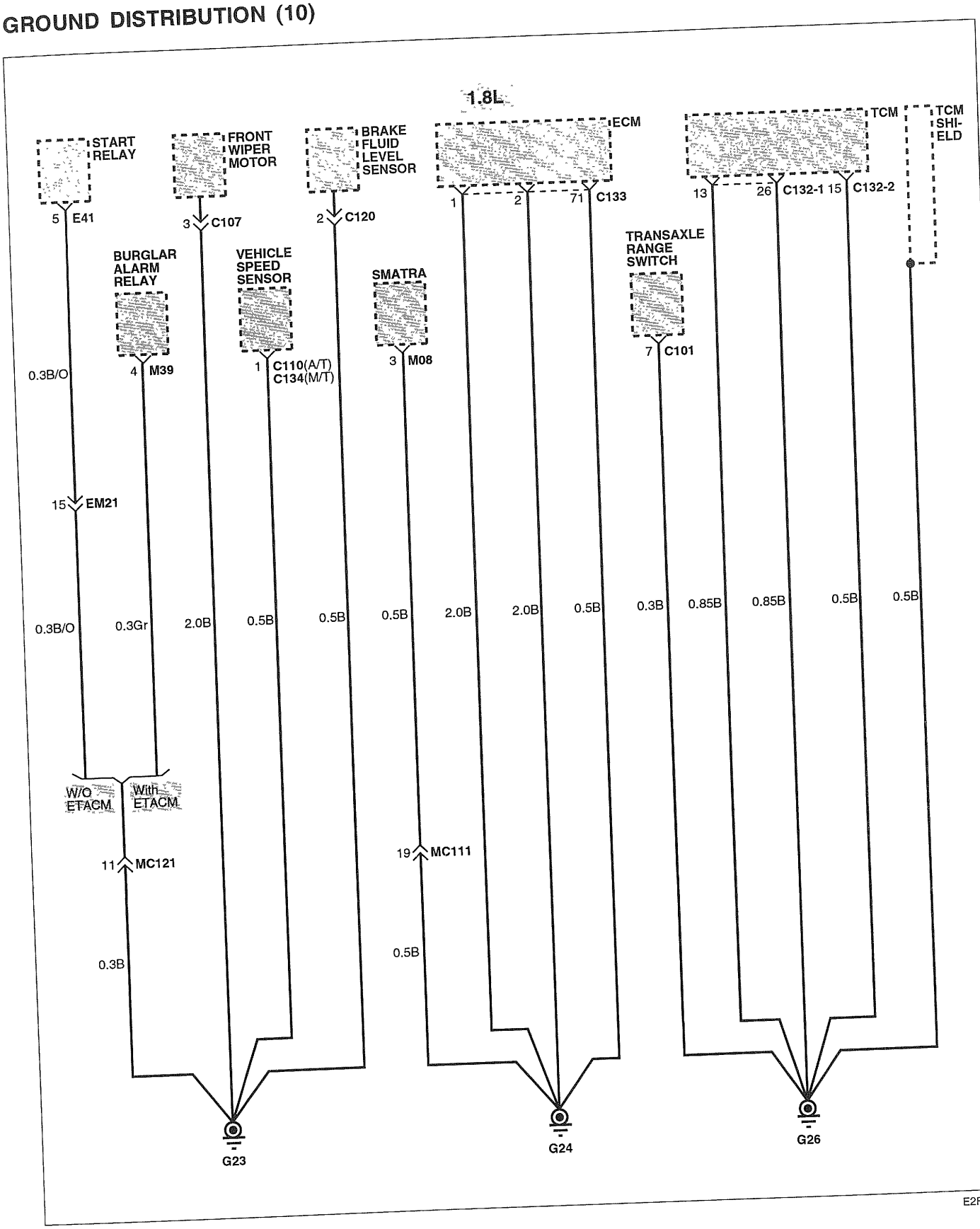

DATA LINK DETAILS E2FC0050

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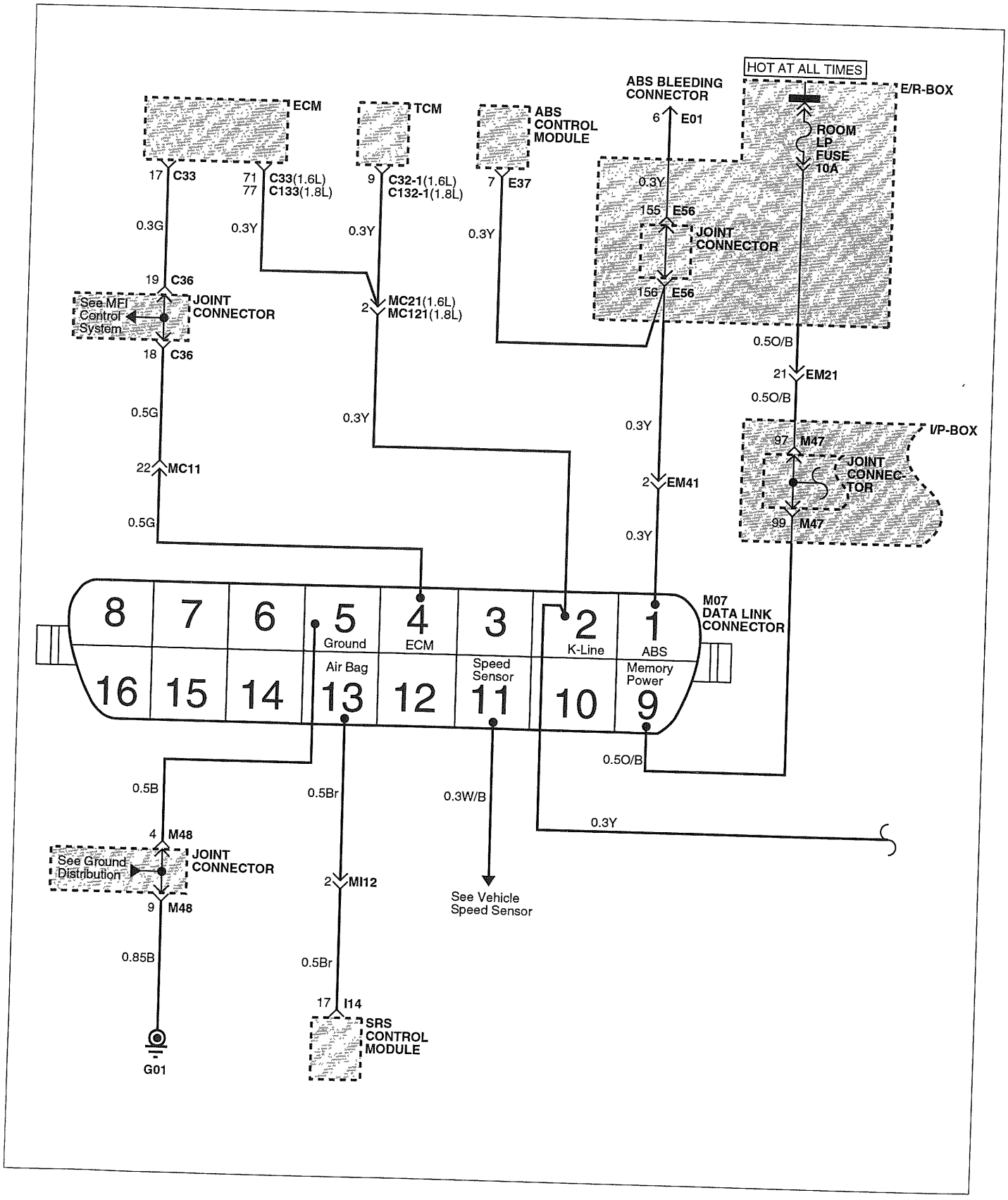

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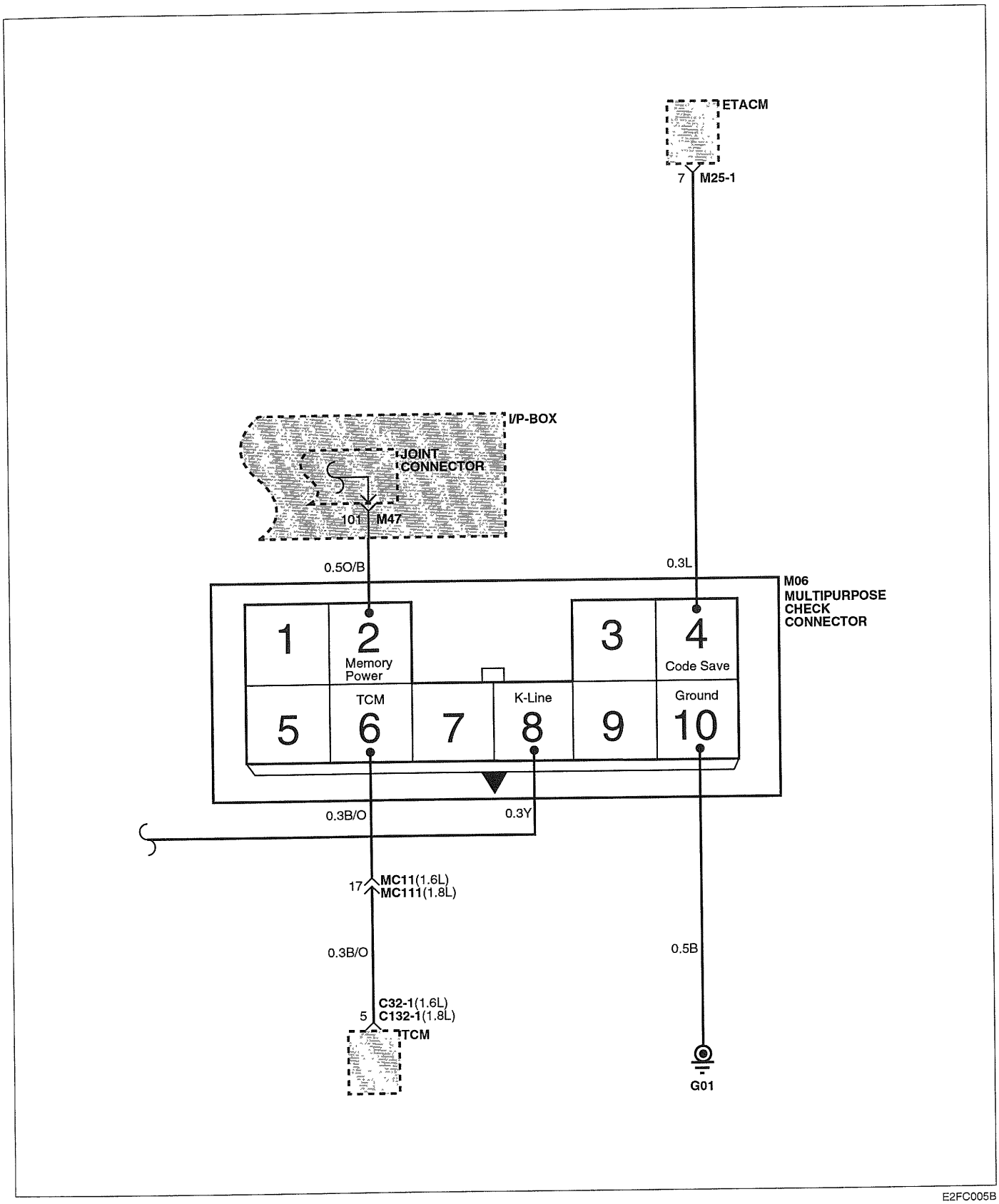


E2FC005B

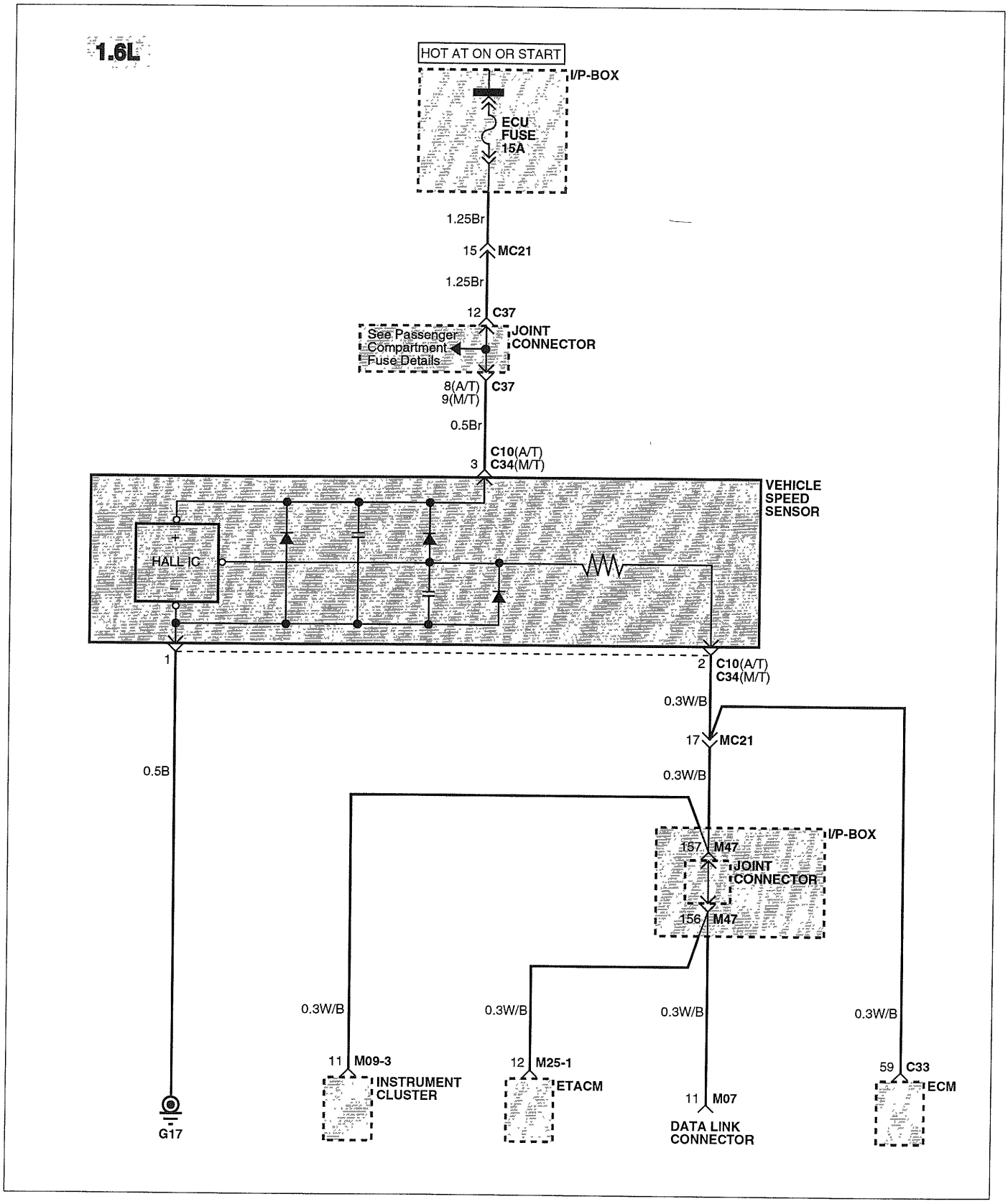
COMPONENT LOCATION INDEX

Components		Location reference-page
C32-1	TCM (1.6L)	CL-18
C33	ECM (1.6L)	CL-18
C36	Joint connector (1.6L)	CL-19
C132-1	TCM (1.8L)	CL-17
C133	ECM (1.8L)	CL-22
E01	ABS bleeding connector	CL-10
E56	Joint connector	CL-13
I14	SRS control module	CL-15
M06	Multipurpose check connector	CL-2
M07	Data link connector	CL-2
M25-1	ETACM	CL-4
M47	Joint connector	CL-5
M48	Joint connector	CL-5
Connectors		
EM21		CL-14
MC11		CL-8
MC21		CL-8
MC111		CL-8
MC121		CL-8
MI12		CL-9
Grounds		
G01		CL-29

MEMO

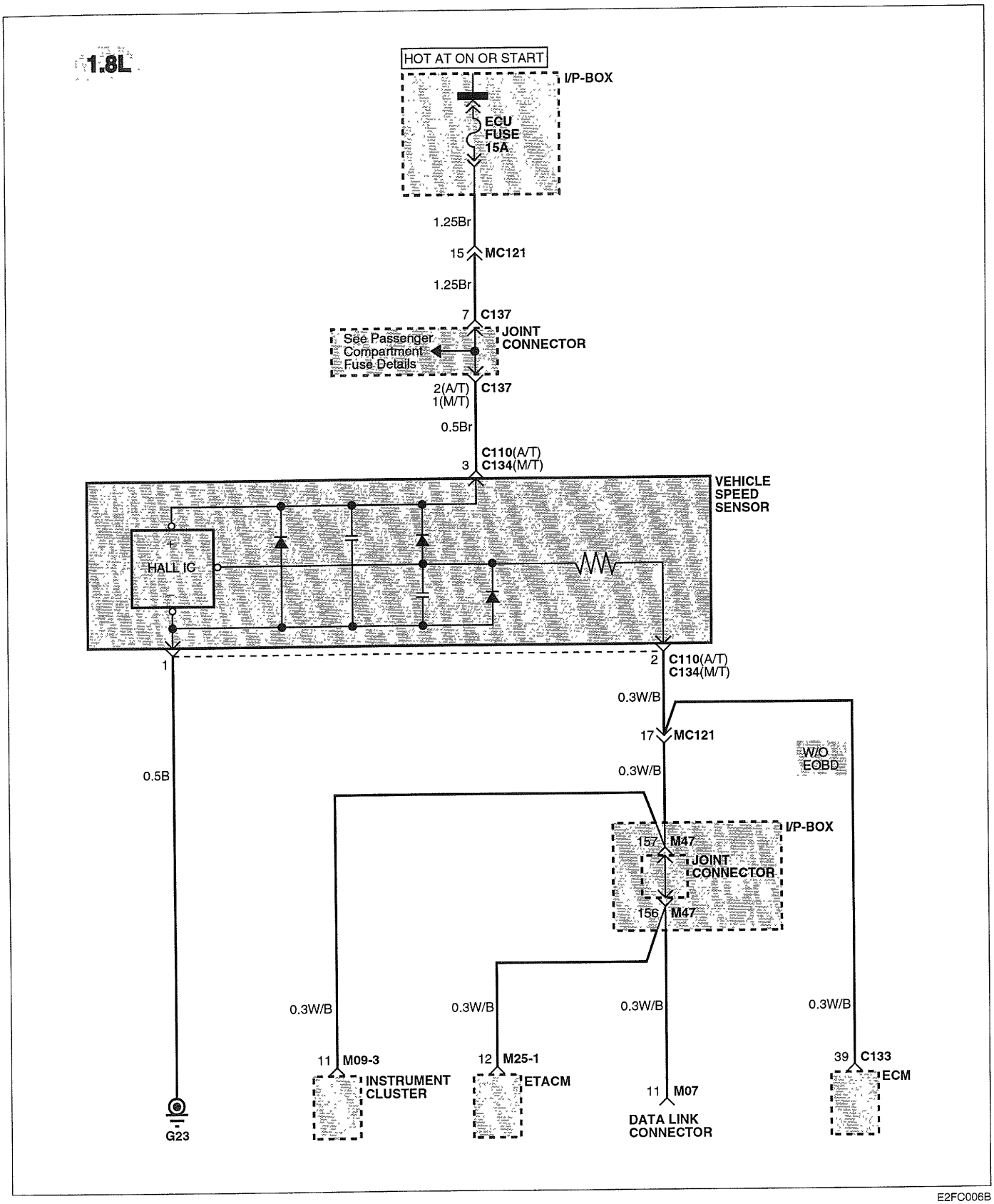
VEHICLE SPEED SENSOR E2FC0060

VEHICLE SPEED SENSOR (1)



E2FC006A

VEHICLE SPEED SENSOR (2)



E2FC006B

COMPONENT LOCATION INDEX

Components		Location reference-page
C10	Vehicle speed sensor (A/T, 1.6L)	CL-17
C33	ECM (1.6L)	CL-18
C34	Vehicle speed sensor (M/T, 1.6L)	CL-19
C37	Joint connector	CL-19
C110	Vehicle speed sensor (A/T, 1.8L)	CL-20
C133	ECM (1.8L)	CL-22
C134	Vehicle speed sensor (M/T, 1.8L)	CL-22
C137	Joint connector	CL-22
M07	Data link connector	CL-2
M09-3	Instrument cluster	CL-2
M25-1	ETACM	CL-4
M47	Joint connector	CL-5
Connectors		
MC21		CL-8
MC121		CL-8
Grounds		
G17		CL-30
G23		CL-31

Circuit Description

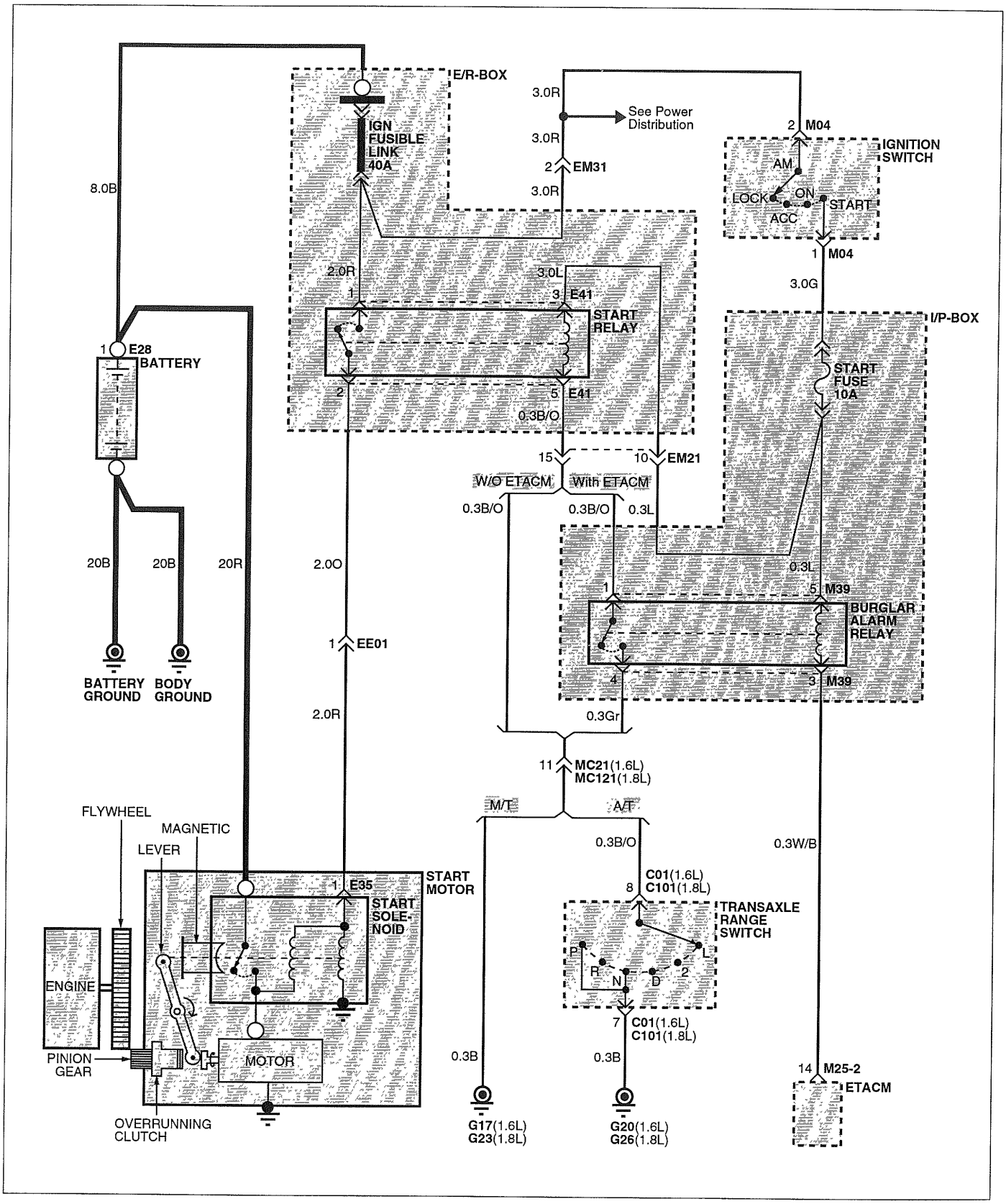
The vehicle speed sensor, located on the speedometer driven gear in the transaxle, generates pulse signals that indicate the vehicle's speed and provides signals to the control modules to calcaulate the vehicle speed.

The vehicle speed sensor (VSS) intermittently grounds the circuits. The number of pulses per minute increase/decrease with the speed of the car.

MEMO

STARTING SYSTEM E2FC0080

STARTING SYSTEM (1)



E2FC008A

COMPONENT LOCATION INDEX

Components		Location reference-page
C01	Transaxle range switch (1.6L)	CL-16
C101	Transaxle range switch (1.8L)	CL-19
E35	Start solenoid	CL-12
E41	Start relay	CL-13
M04	Ignition switch	CL-2
M25-2	ETACM	CL-4
M39	Burglar alarm relay	CL-5
Connector		
EE01		CL-14
EM21		CL-14
EM31		CL-14
MC21		CL-8
MC121		CL-8
Grounds		
G17		CL-30
G20		CL-31
G23		CL-31
G26		CL-31

Circuit Description

A/T

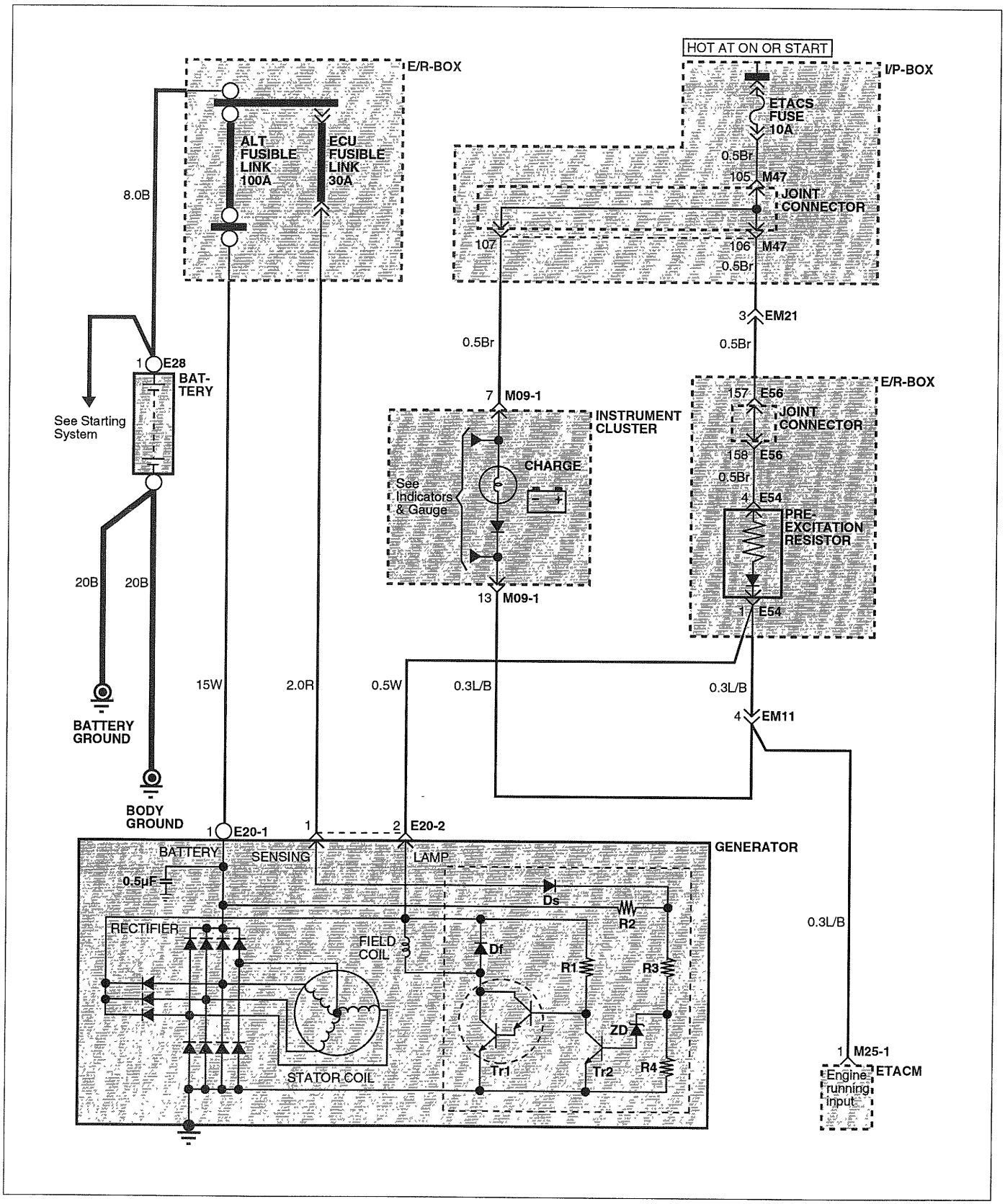
Battery voltage is applied at all times from the positive battery terminal to the ignition switch and the normally open start relay contacts. When the ignition switch is turned to START, transaxle range switch is in the P/N position and the burglar alarm relay contact closed (controlled by ETACM), battery voltage is applied to the starter relay coils. The starter relay coils energize, the start relay contacts close and battery voltage is applied to the starter motor. The motor engages to start the engine.

M/T

Battery voltage is applied at all times from the positive battery terminal to the ignition switch and the normally open start relay contacts. When the ignition switch is turned to START and the burglar alarm relay contact closed (controlled by ETACM), battery voltage is applied to the starter relay coils. The starter relay coils energize, the start relay contacts close, and battery voltage is applied to the starter motor. The motor engages to start the engine.

CHARGING SYSTEM E2FC0090

CHARGING SYSTEM (1)



E2FC009A

COMPONENT LOCTION INDEX

Components		Location reference-page
E20-1	Generator	CL-11
E20-2	Generator	CL-11
E28	Battery (+) terminal	CL-12
E54	Pre-excitation resistor	CL-13
E56	Joint connector	CL-13
M09-1	Instrument cluster	CL-2
M25-1	ETACM	CL-4
M47	Joint connector	CL-5
Connectors		
EM11		CL-14
EM21		CL-14

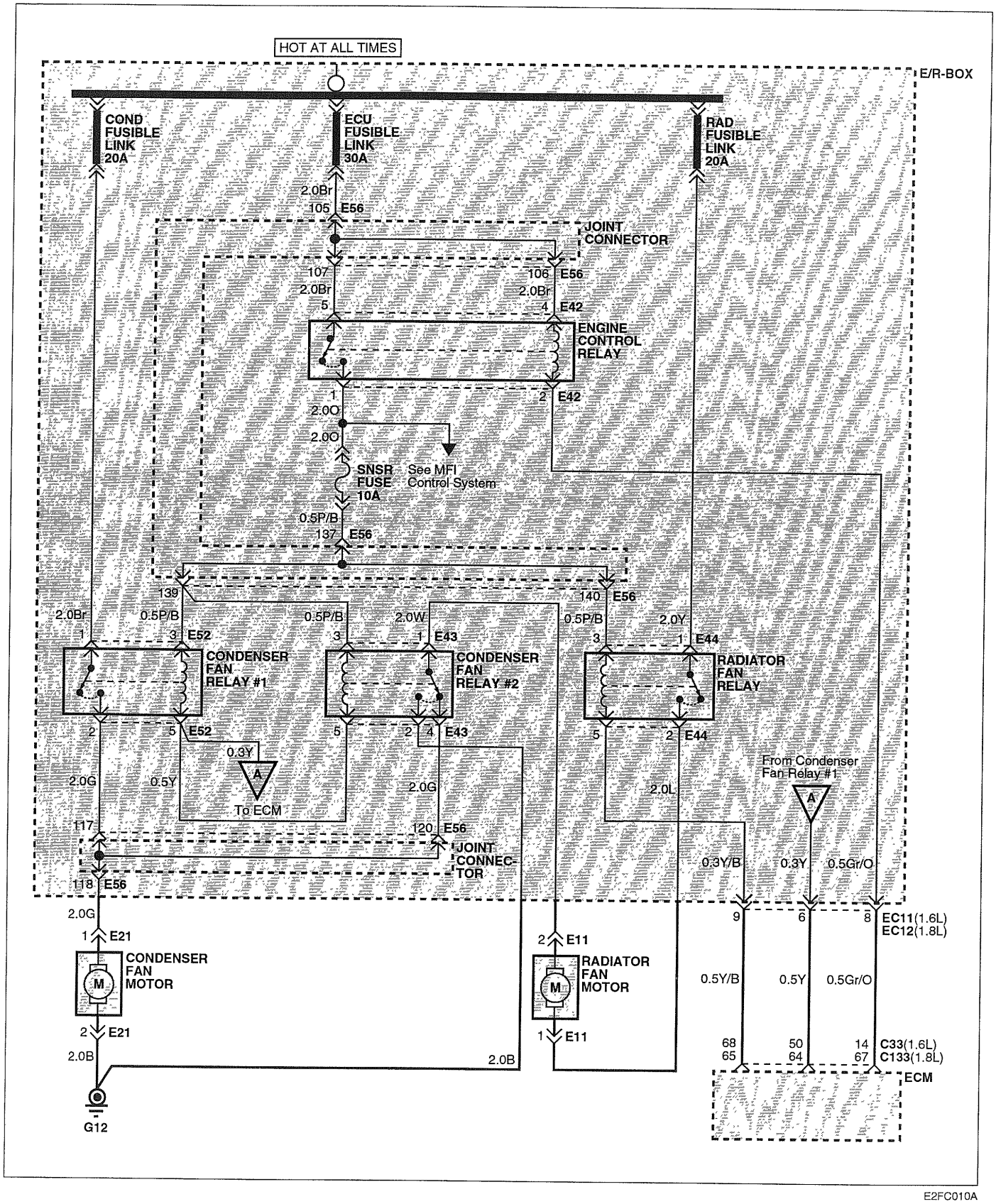
Circuit Description

The generator produces AC voltage in its windings as it is belt-driven by the engine. The rectifier converts this AC voltage into DC voltage.
The voltage regulator, a device built-in to the generator frame, controls the generator's output to meet electrical system requirements, and also controls the charge warning lamp.
ETACS fuse supplies battery voltage to the charge warning indicator. With the engine not running and the ignition switch in ON, terminal L of the regulator is grounded internally and the indicator lights up.

A small amount of current provided by both the charge warning lamp and the pre-excitation resistor is used to "excite" the magnetic field windings to start the charging process. With the engine running and the generator charging, terminal L voltage rises and the indicator goes out. If the generator fails to charge, terminal L remains below battery voltage and the indicator remains lit.

COOLING SYSTEM E2FC0100

COOLING SYSTEM (1)



E2FC010A

COMPONENT LOCATION INDEX

Components		Location reference-page
C33	ECM (1.6L)	CL-18
C133	ECM (1.8L)	CL-22
E11	Radiator fan motor	CL-10
E21	Condenser fan motor	CL-11
E42	Engine control relay	CL-13
E43	Condenser fan relay #2	CL-13
E44	Radiator fan relay	CL-13
E52	Condenser fan relay #1	CL-13
E56	Joint connector	CL-13
Connectors		
EC11		CL-14
Grounds		
G12		CL-30

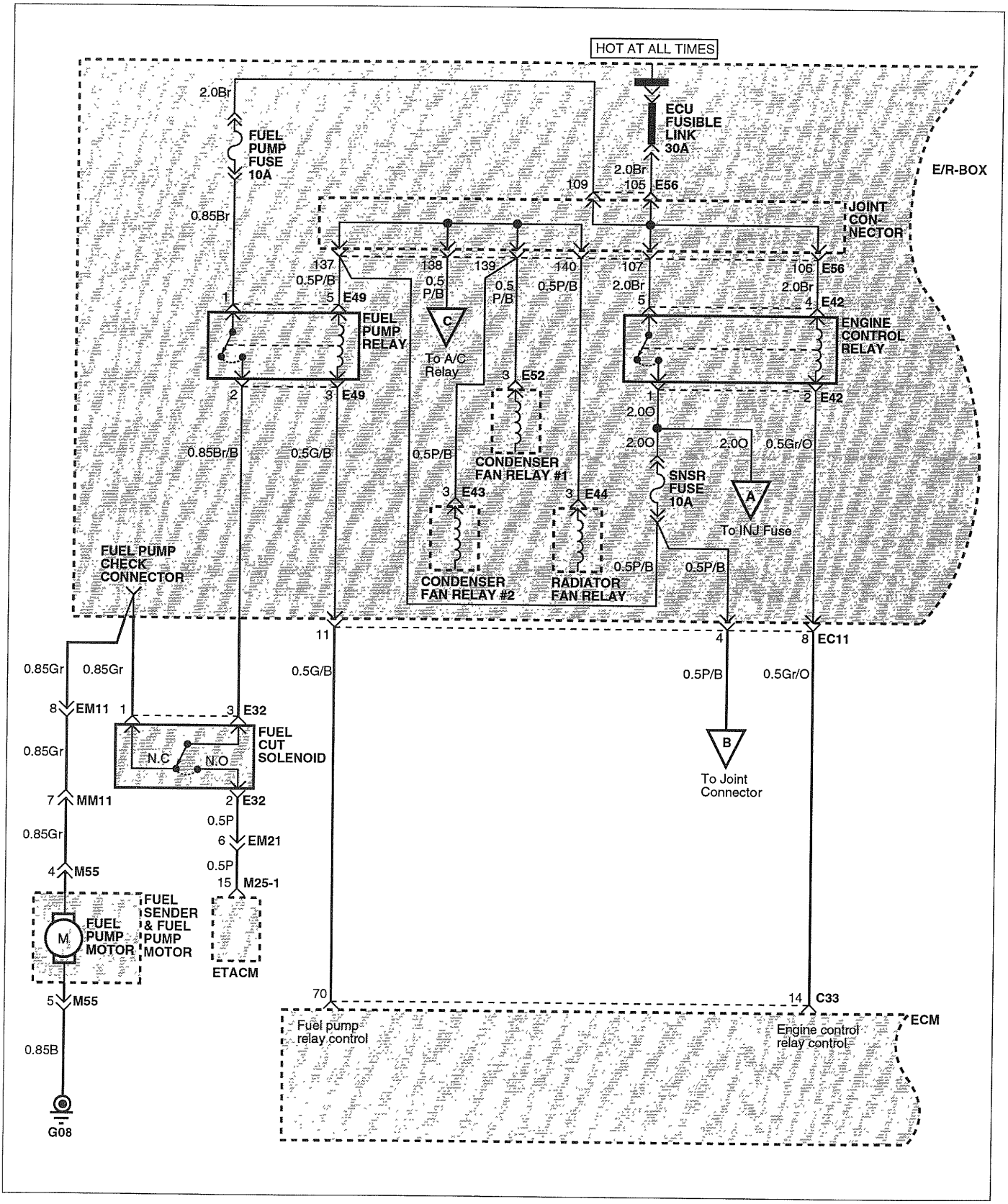
Circuit Description

The ECM (Engine Control Module) controls the operation of the radiator fan motor and the condenser fan motor through relay (radiator fan relay and condenser fan relays) control. The ECM monitors coolant temperature through engine coolant temperature sensor.

The module also monitors A/C operation through the A/C switch ON input and the A/C pressure switch input . Using these input signals, the module controls the coil of the appropriate relays (condenser fan relays and radiator fan relay) to provide optimal cooling fan operation.

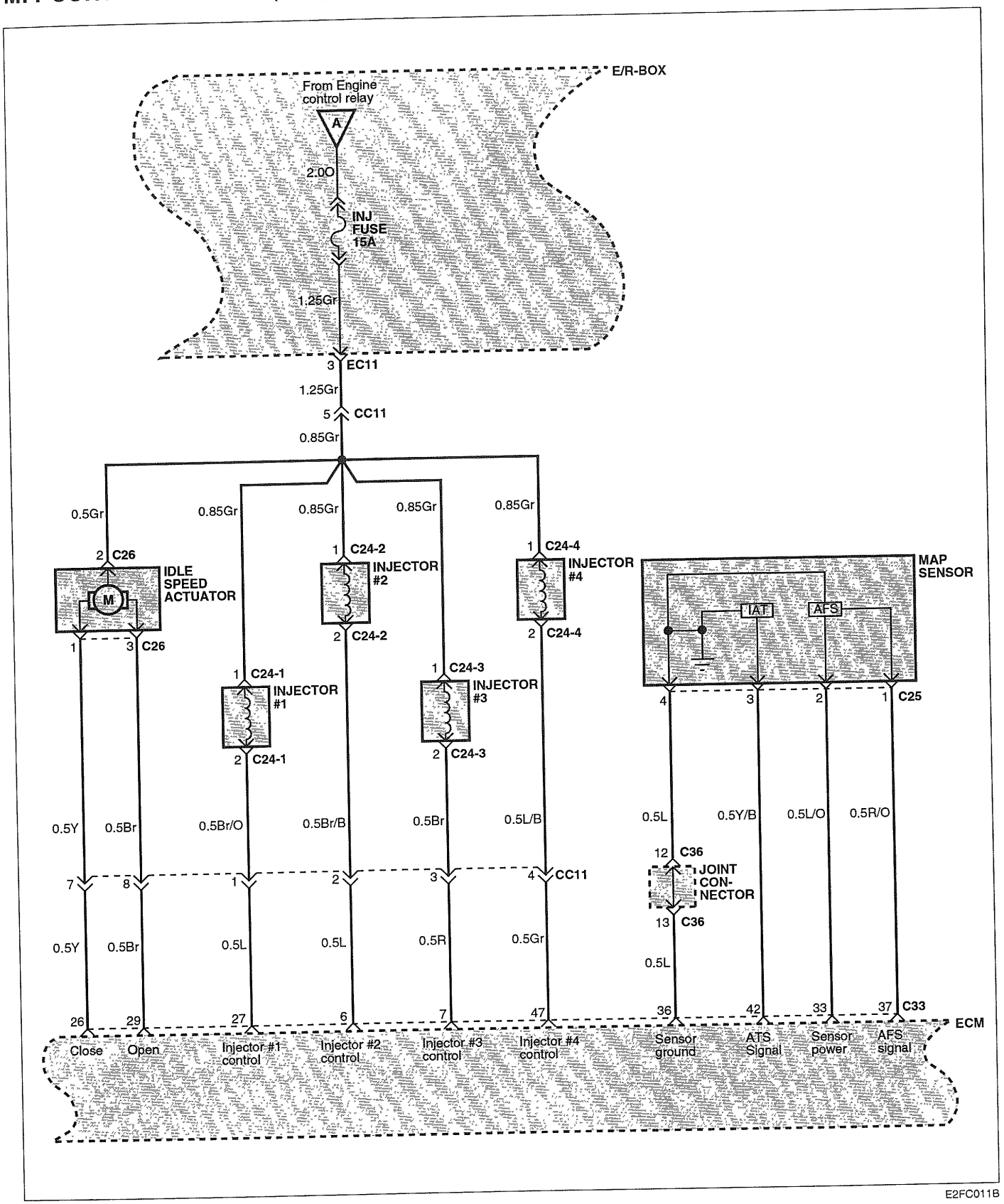
MFI CONTROL SYSTEM (1.6L) E2FC0110

MFI CONTROL SYSTEM (1.6L) (1)



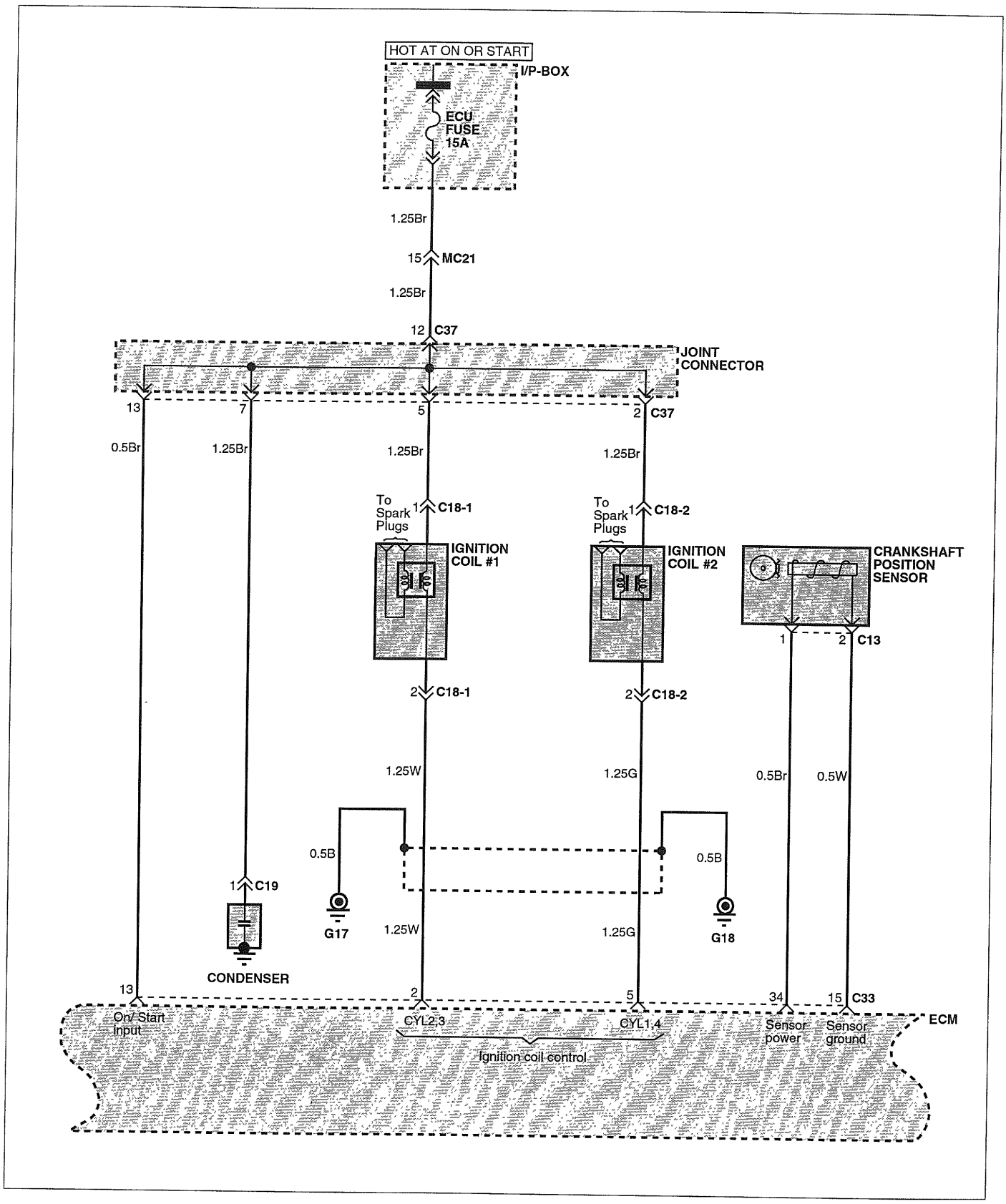
E2FC011A

MFI CONTROL SYSTEM (1.6L) (2)



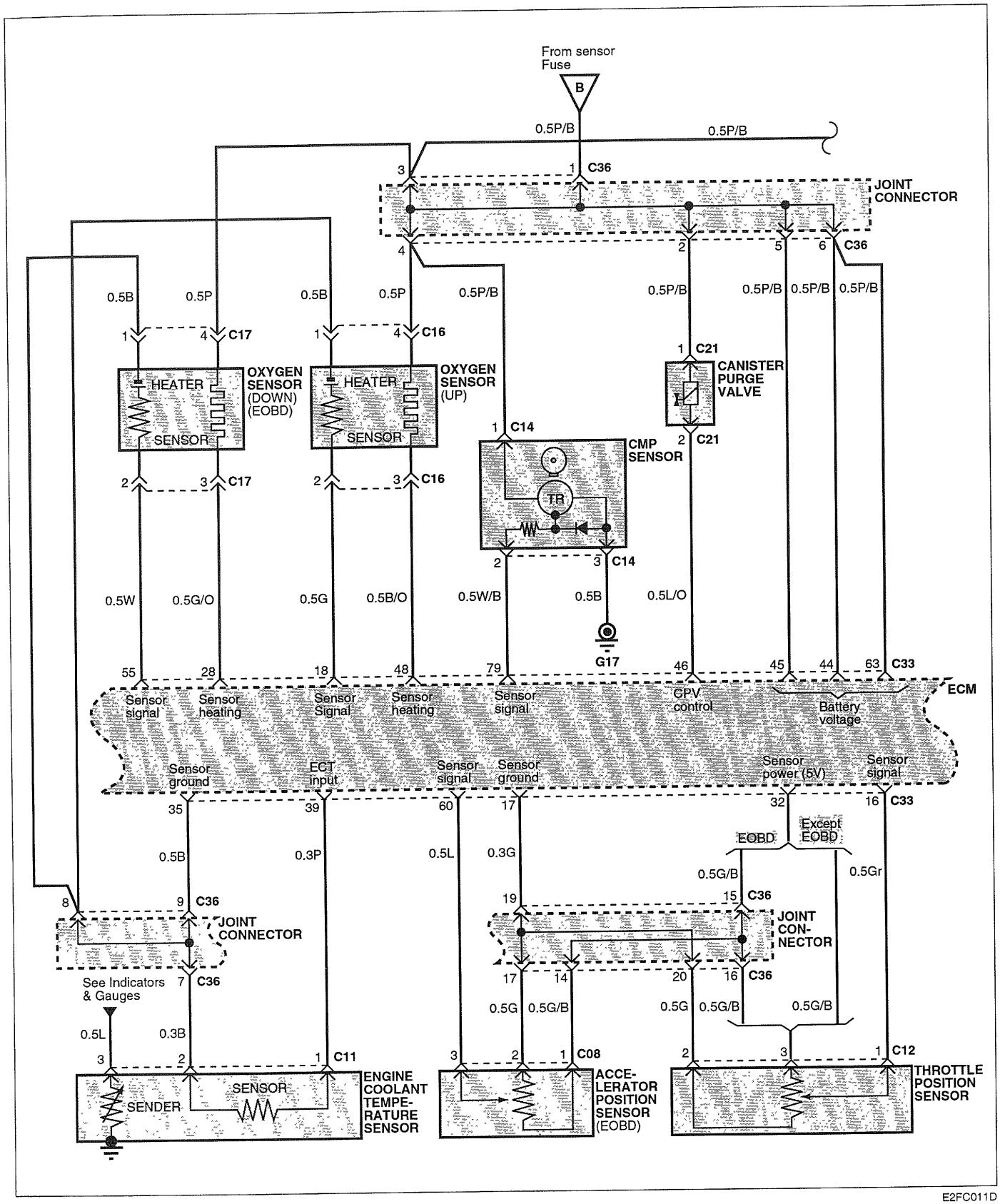
E2FC011B

MFI CONTROL SYSTEM (1.6L) (3)



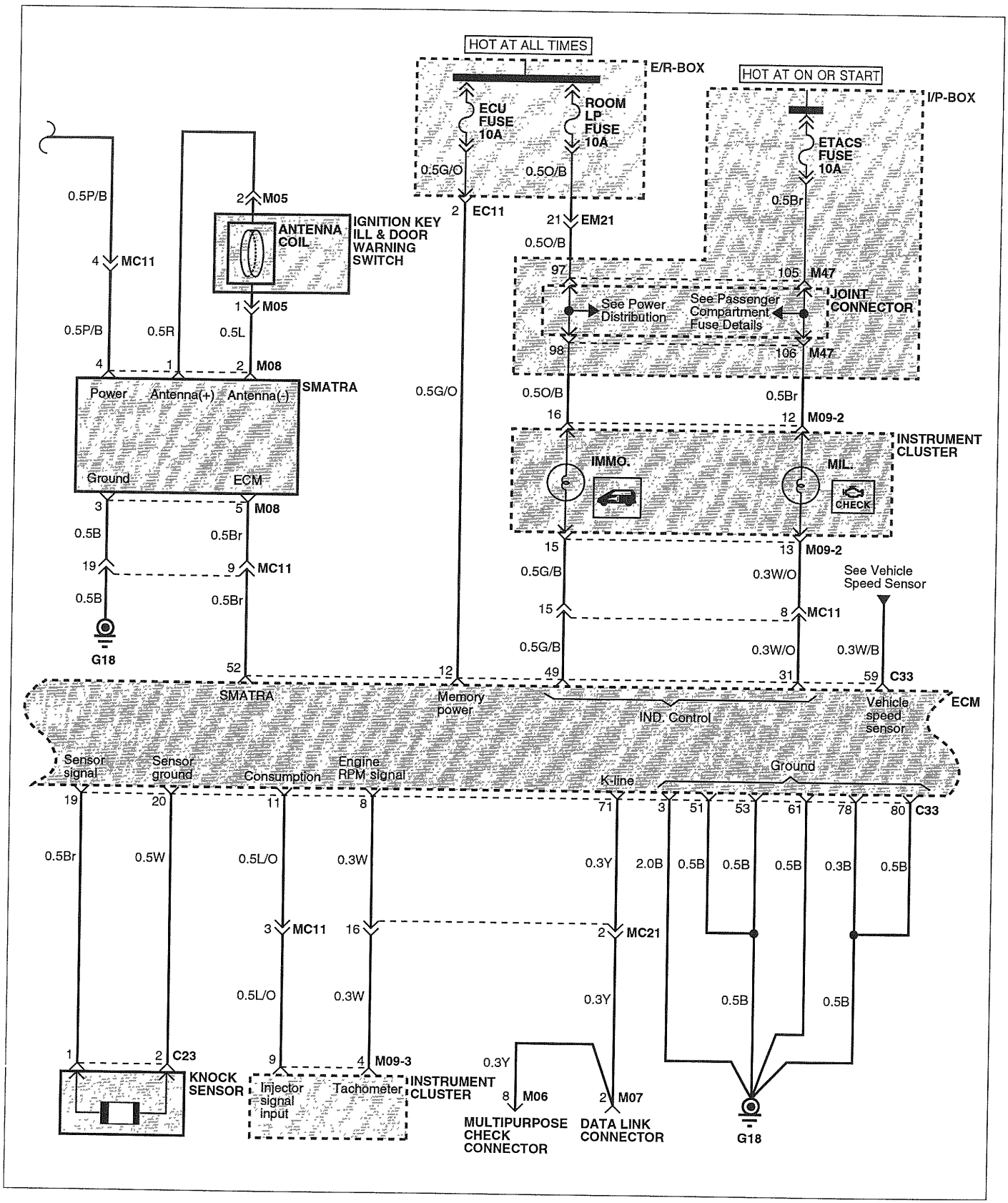
E2FC011C

MFI CONTROL SYSTEM (1.6L) (4)



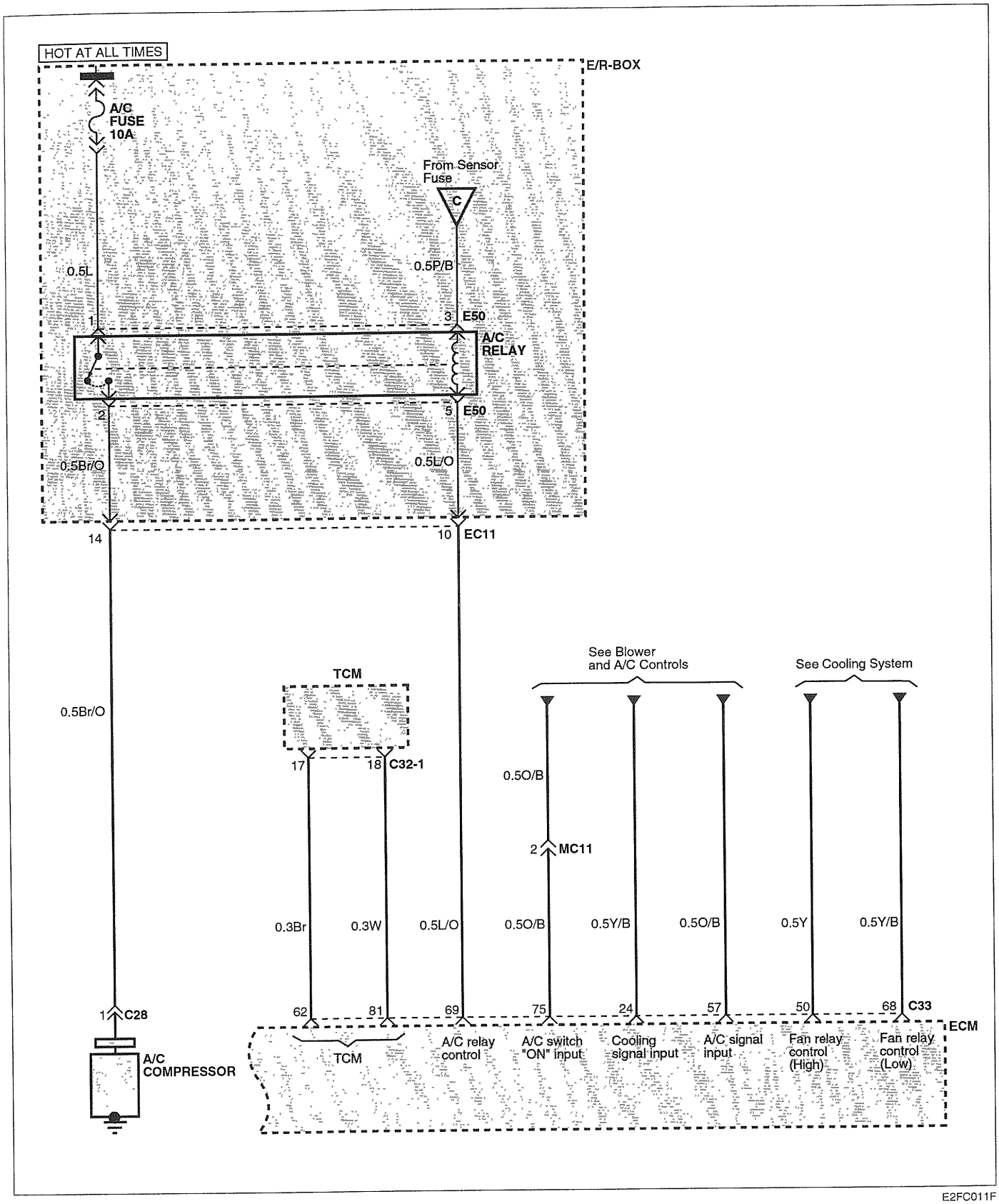
E2FC011D

MFI CONTROL SYSTEM (1.6L) (5)



E2FC011E

MFI CONTROL SYSTEM (1.6L) (6)



E2FC011F

COMPONENT LOCATION INDEX

Components		Location reference-page
C08	Accelerator position sensor	CL-16
C11	Engine coolant temperature sensor & sender	CL-17
C12	Throttle position sensor	CL-17
C13	Crankshaft position sensor	CL-17
C14	Camshaft position sensor	CL-17
C16	Oxygen sensor (up)	CL-17
C18-1	Ignition coil #1	CL-17
C18-2	Ignition coil #2	CL-17
C19	Condenser	CL-17
C21	Canister purge valve	CL-17
C23	Knock sensor	CL-18
C24-1	Injector #1	CL-18
C24-2	Injector #2	CL-18
C24-3	Injector #3	CL-18
C24-4	Injector #4	CL-18
C25	Manifold absolute pressure sensor	CL-18
C26	Idle speed control actuator	CL-18
C28	A/C compressure	CL-18
C32-1	TCM	CL-18
C33	ECM	CL-18
C36	Joint connector	CL-19
C37	Joint connector	CL-19
E32	Fuel cut solenoid	CL-12
E42	Engine control relay	CL-13
E43	Condenser fan relay #2	CL-13
E44	Radiator fan relay	CL-13
E49	Fuel pump relay	CL-13
E50	A/C relay	CL-13
E52	Condenser fan relay #1	CL-13
E56	Joint connector	CL-13
M05	Ignition key ill & door warning switch	CL-2
M06	Multipurpose check connector	CL-2
M07	Data link connector	CL-2
M09-1	Instrument cluster	CL-2
M09-2	Instrument cluster	CL-2
M09-3	Instrument cluster	CL-2
M25-1	ETACM	CL-4
M55	Fuel sender & fuel pump motor	CL-6

COMPONENT LOCATION INDEX

Connectors	Location reference-page
CC11	CL-26
EC11	CL-14
EM11	CL-14
EM21	CL-14
MC11	CL-8
MC21	CL-8
MM11	CL-9
Grounds	
G08	CL-29
G17	CL-30
G18	CL-30

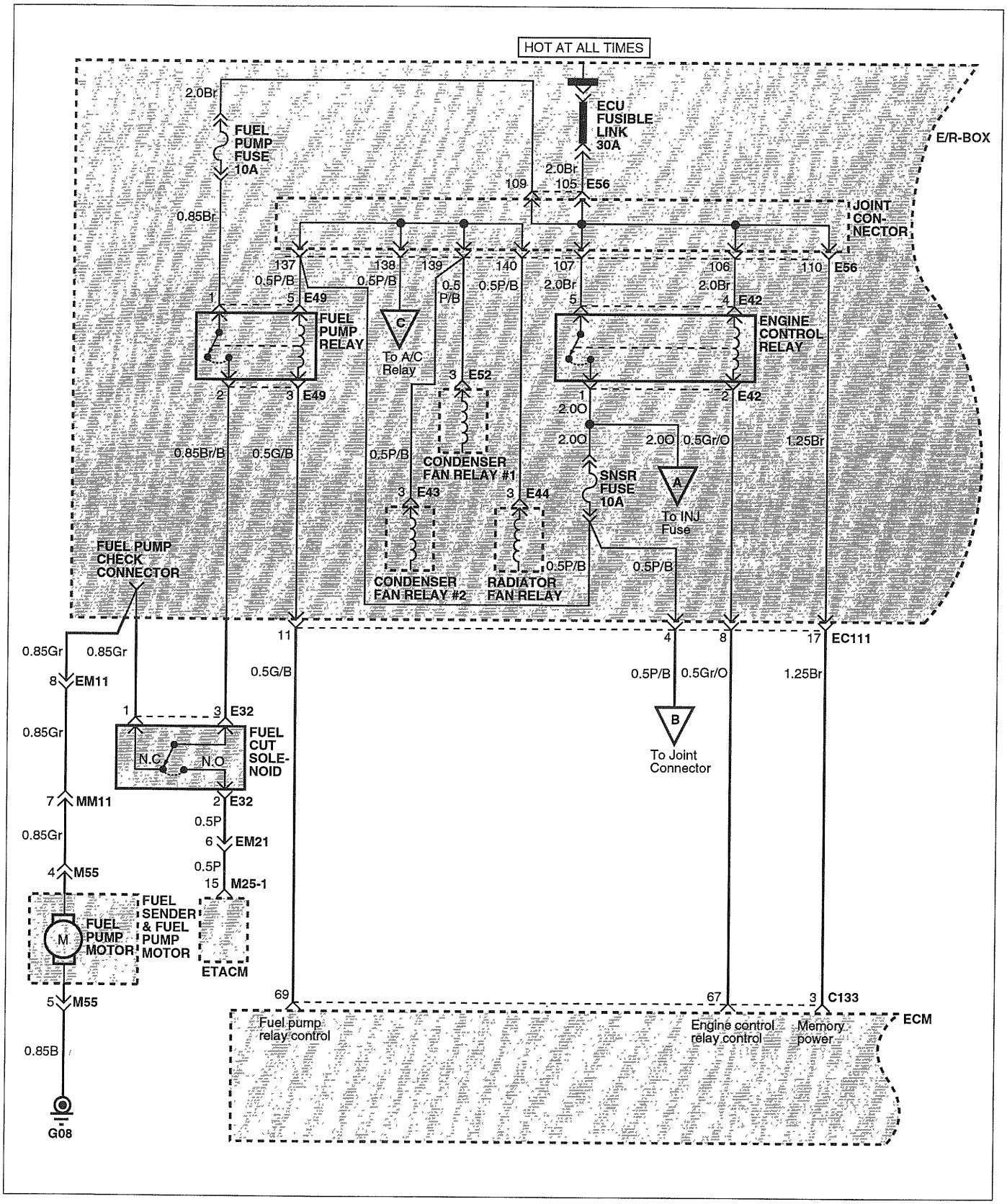
Circuit Description

The Multiport Fuel Injection (MFI) control system is an electronic fuel metering system with fuel injectors near inlet ports of each cylinder. The amount of fuel injection is determined by the ECM according to engine speed and intake air-flow quantity measured by sensors.

The emission control system includes oxygen sensors and catalytic converters. The MFI's three major functions are air-fuel mixture, idle speed and ignition timing control. Refer to the shop manual, section FL for details.

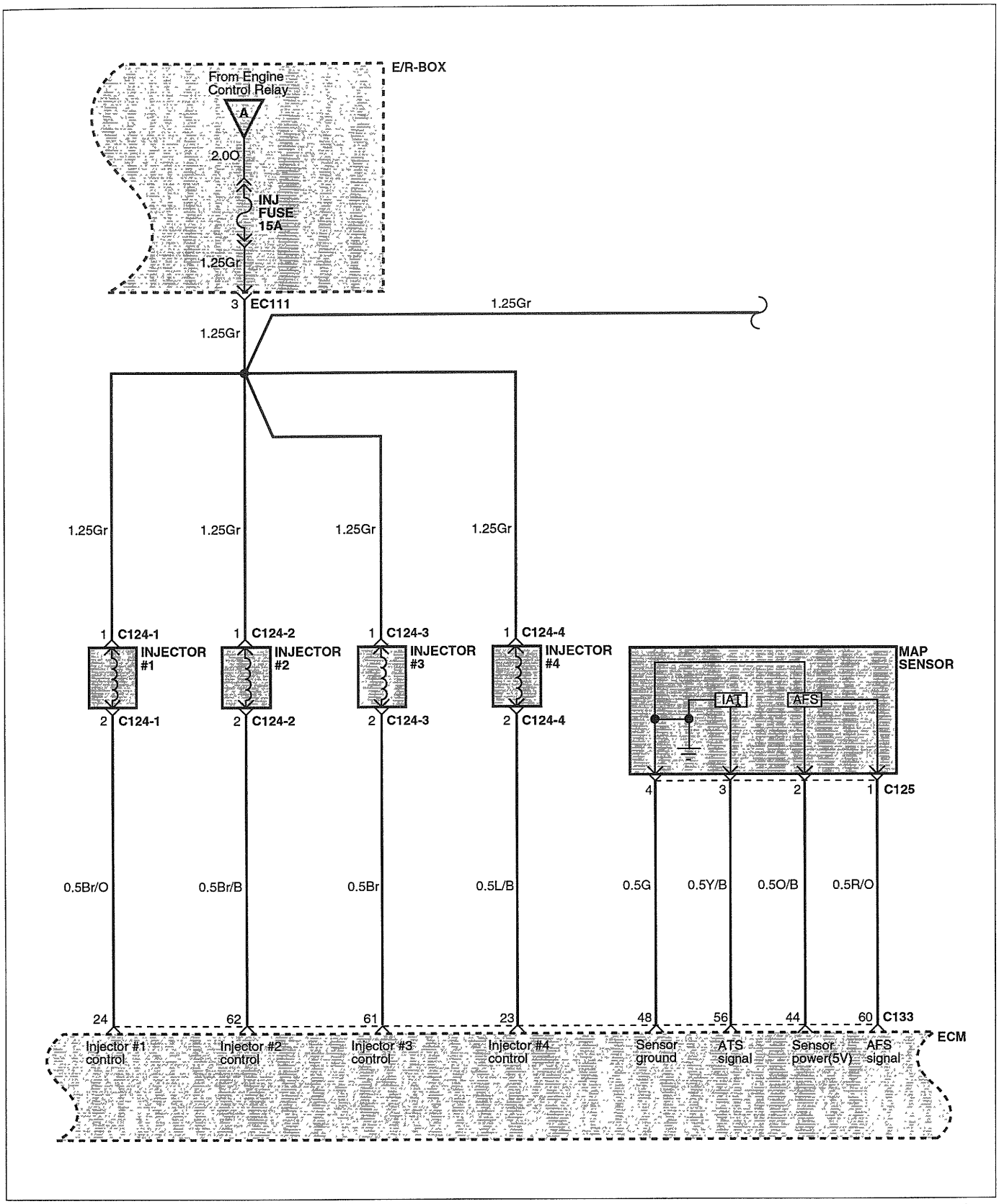
MFI CONTROL SYSTEM (1.8L) E2FC0120

MFI CONTROL SYSTEM (1.8L) (1)



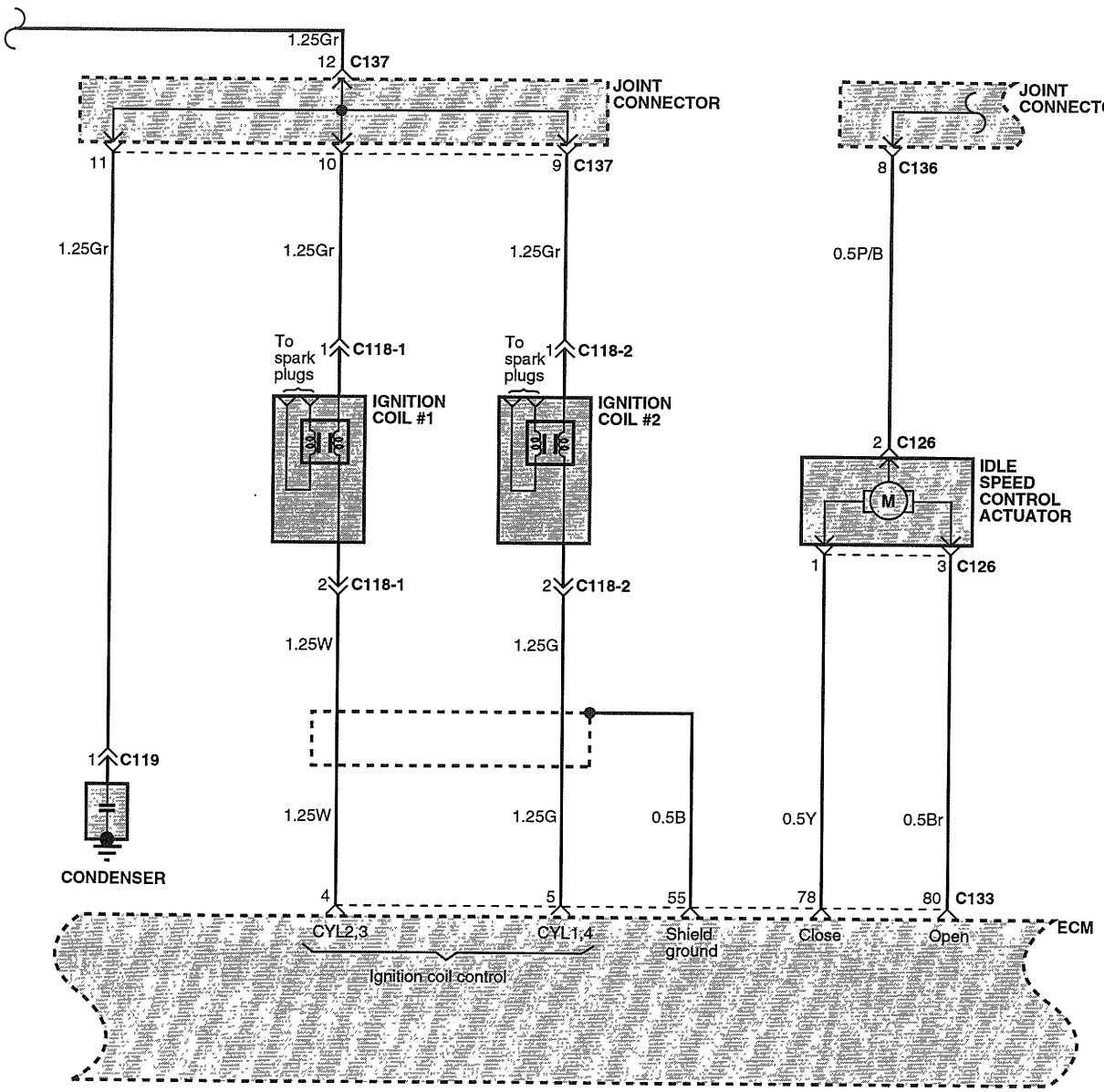
E2FC012A

MFI CONTROL SYSTEM (1.8L) (2)



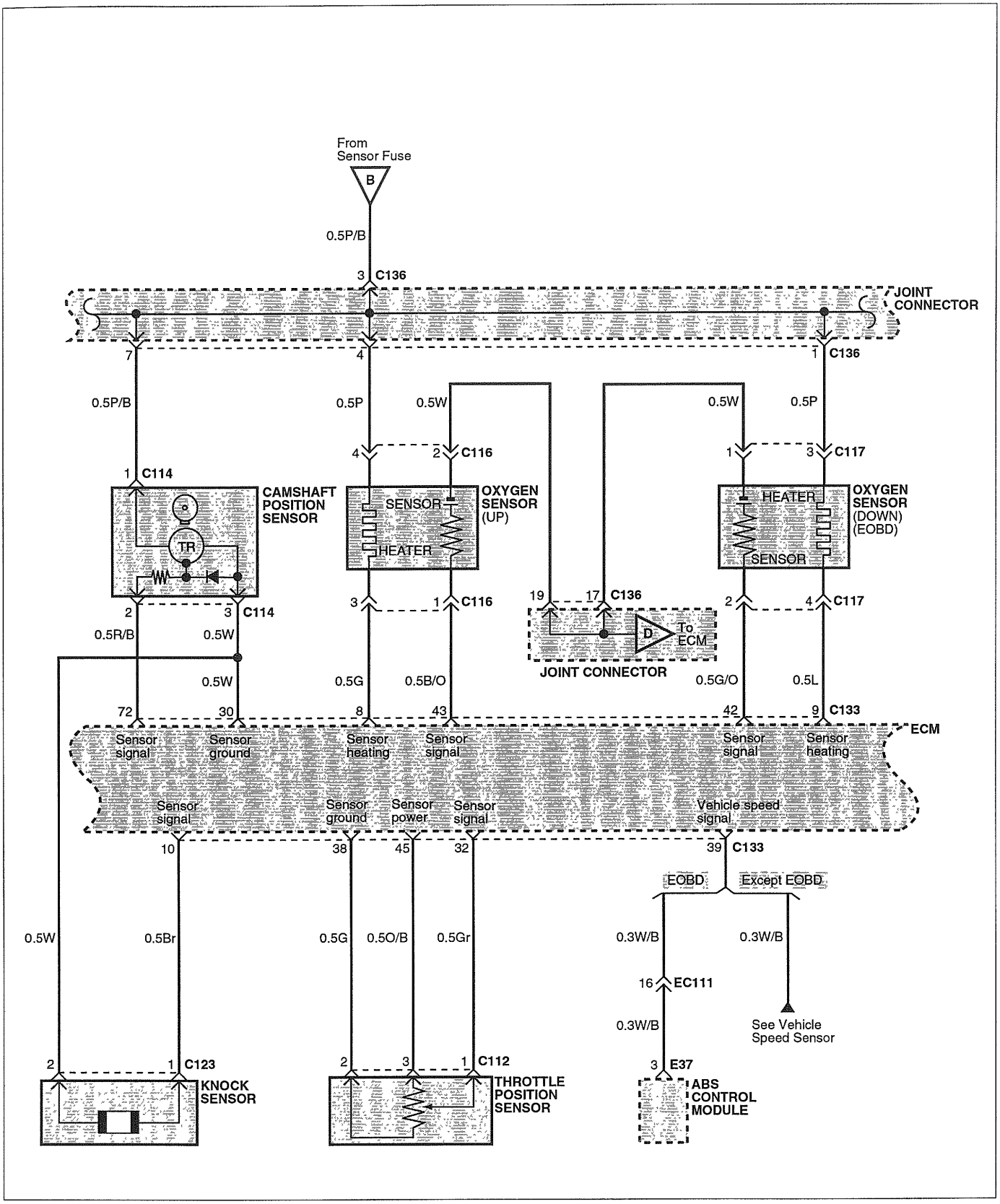
E2FC012B

MFI CONTROL SYSTEM (1.8L) (3)



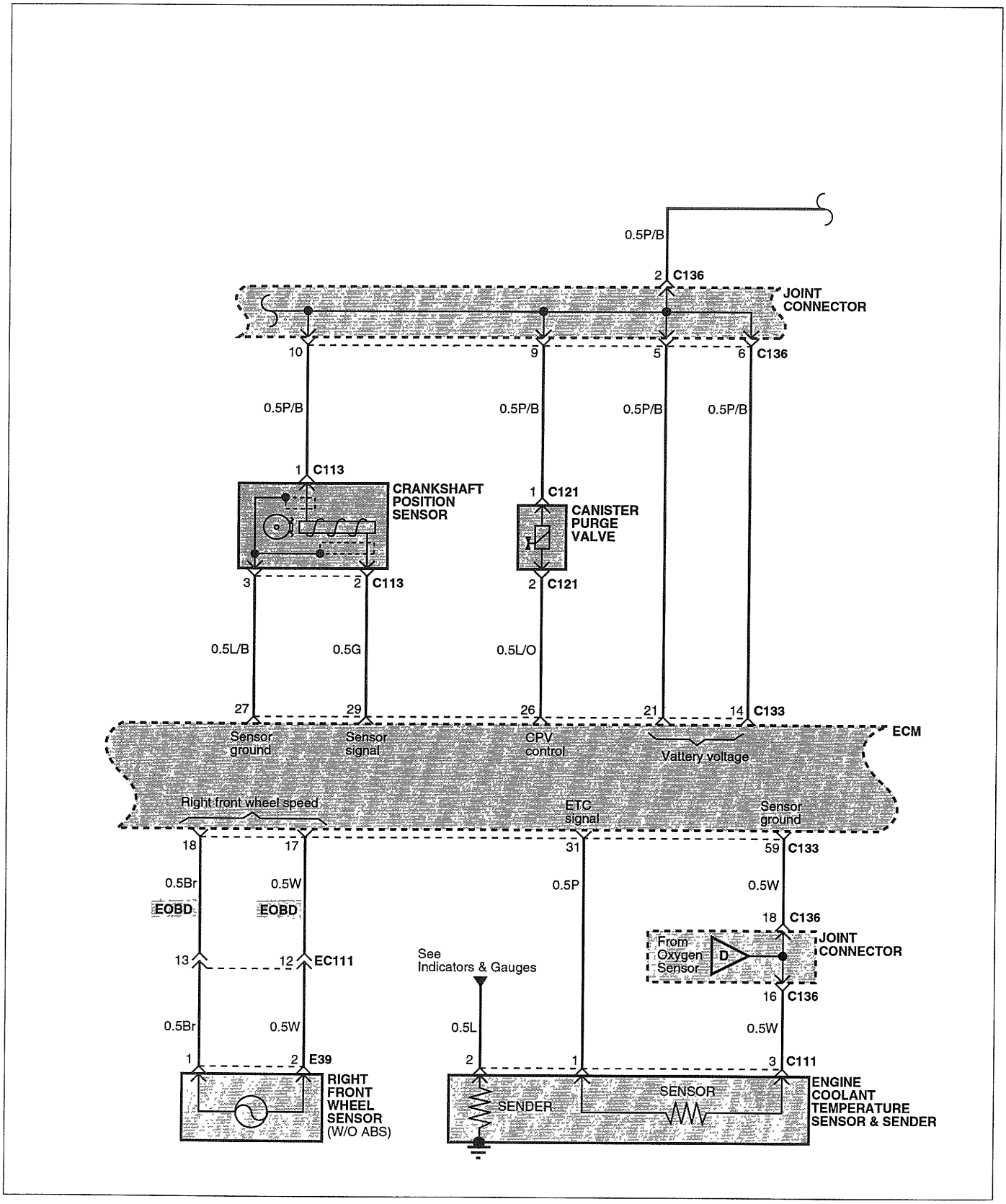
E2FC012C

MFI CONTROL SYSTEM (1.8L) (4)



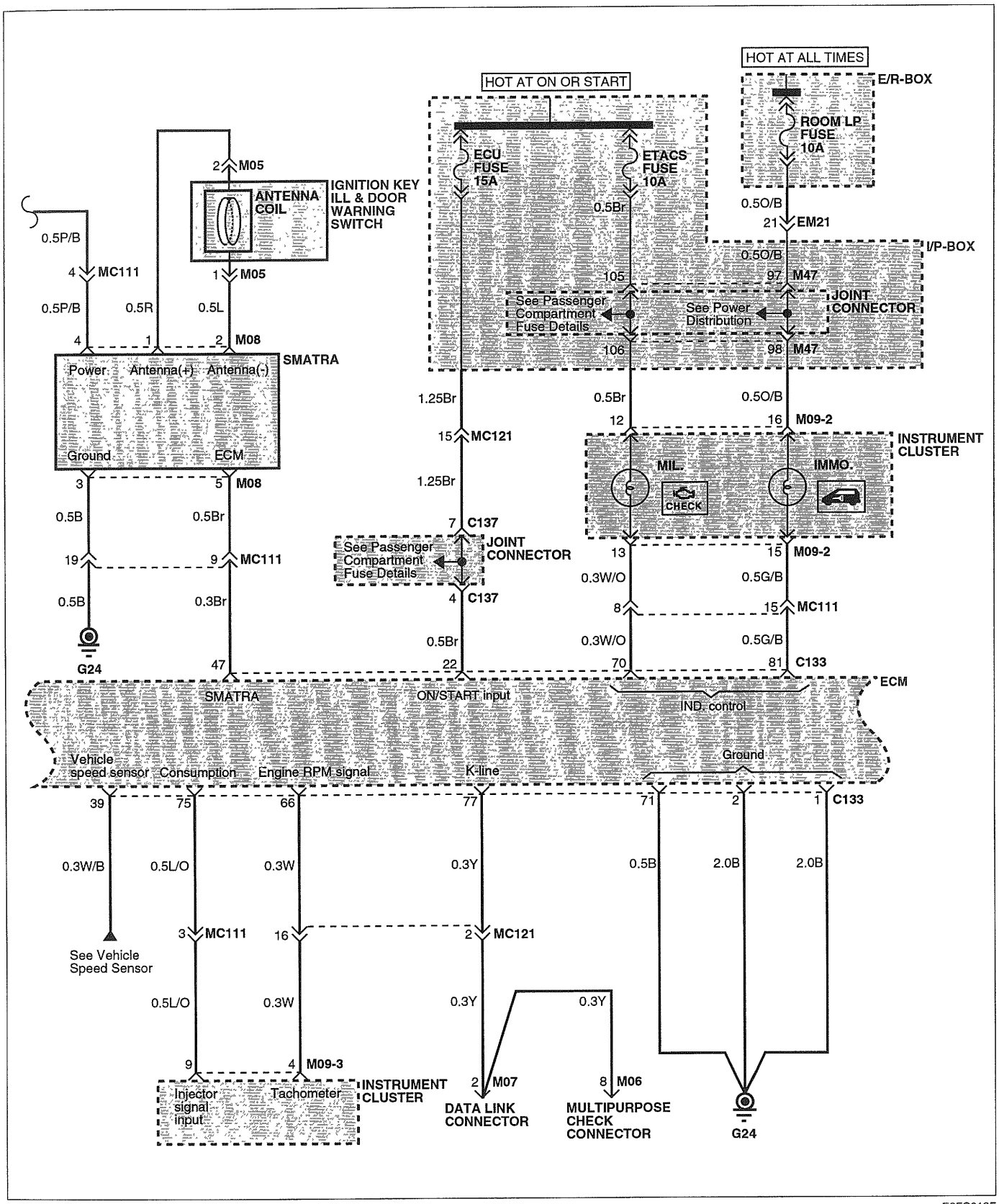
E2FC012D

MFI CONTROL SYSTEM (1.8L) (5)



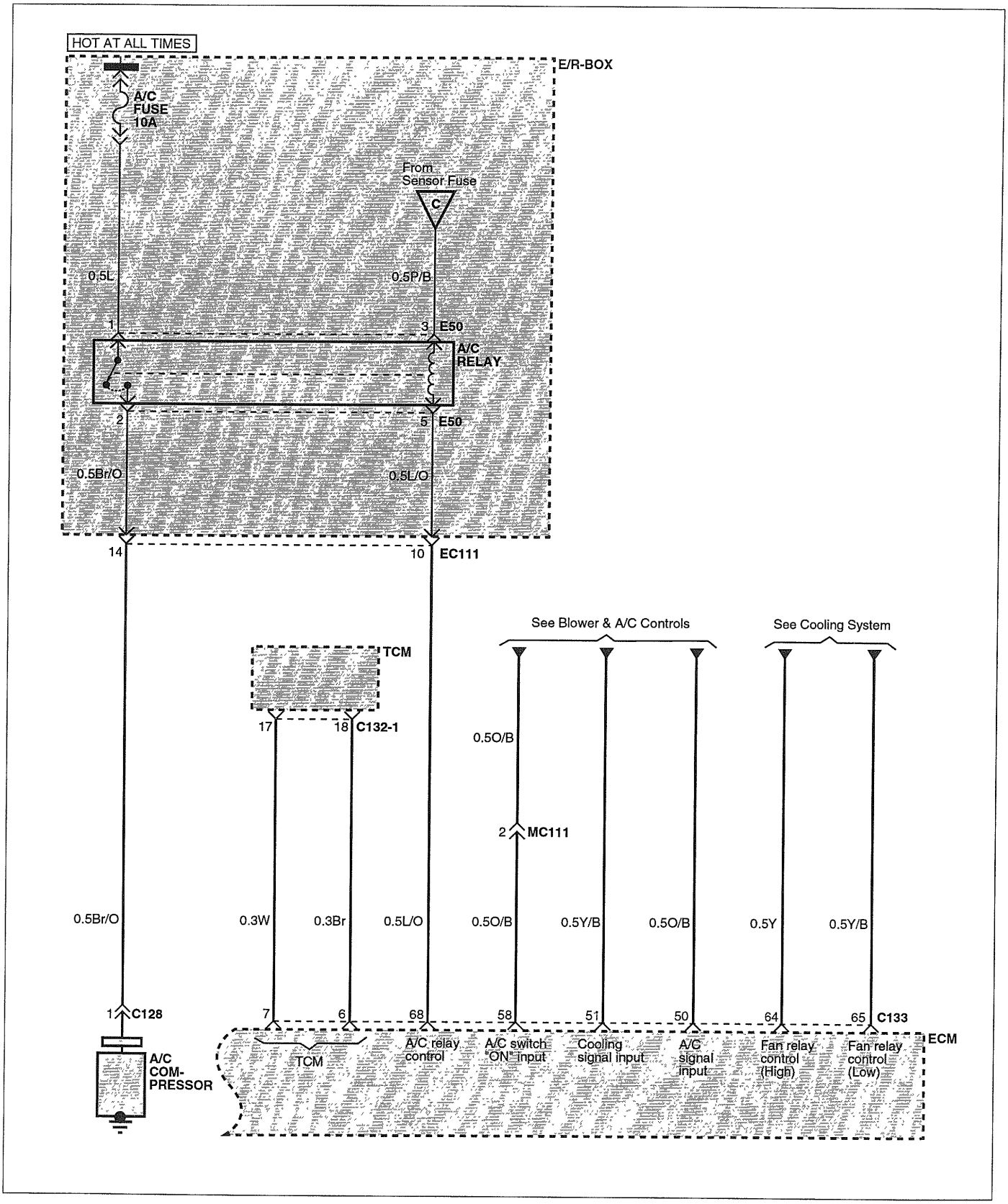
E2FC012E

MFI CONTROL SYSTEM (1.8L) (6)



E2FC012F

MFI CONTROL SYSTEM (1.8L) (7)



E2FC012G

COMPONENT LOCATION INDEX

Components		Location reference-page
C111	Engine coolant temperature sensor & sender	CL-20
C112	Throttle position sensor	CL-20
C113	Crankshaft position sensor	CL-20
C114	Camshaft position sensor	CL-20
C116	Oxygen sensor (up)	CL-20
C118-1	Ignition coil #1	CL-21
C118-2	Ignition coil #2	CL-21
C119	Condenser	CL-21
C121	Canister purge valve	CL-21
C123	Knock sensor	CL-21
C124-1	Injector #1	CL-21
C124-2	Injector #2	CL-21
C124-3	Injector #3	CL-21
C124-4	Injector #4	CL-21
C125	Manifold absolute pressure sensor	CL-21
C126	Idle speed control actuator	CL-21
C128	A/C compressure	CL-21
C132-1	TCM	CL-21
C133	ECM	CL-22
C136	Joint connector	CL-22
C137	Joint connector	CL-22
E32	Fuel cut solenoid	CL-12
E37	ABS control module	CL-13
E39	Right front wheel sensor (W/O ABS)	CL-13
E42	Engine control relay	CL-13
E43	Condenser fan relay #2	CL-13
E44	Radiator fan relay	CL-13
E49	Fuel pump relay	CL-13
E50	A/C relay	CL-13
E52	Condenser fan relay #1	CL-13
E56	Joint connector	CL-13
M07	Data link connector	CL-2
M09-2	Instrument cluster	CL-2
M09-3	Instrument cluster	CL-2
M25-1	ETACM	CL-4
M47	Joint connector	CL-5
M55	Fuel sender & fuel pump motor	CL-6

COMPONDENT LOCATION INDEX

Connectors	Location reference-page
EM11	CL-14
EM21	CL-14
MC111	CL-8
MC121	CL-8
MM11	CL-9
Grounds	
G08	CL-29
G24	CL-31

Circuit Description

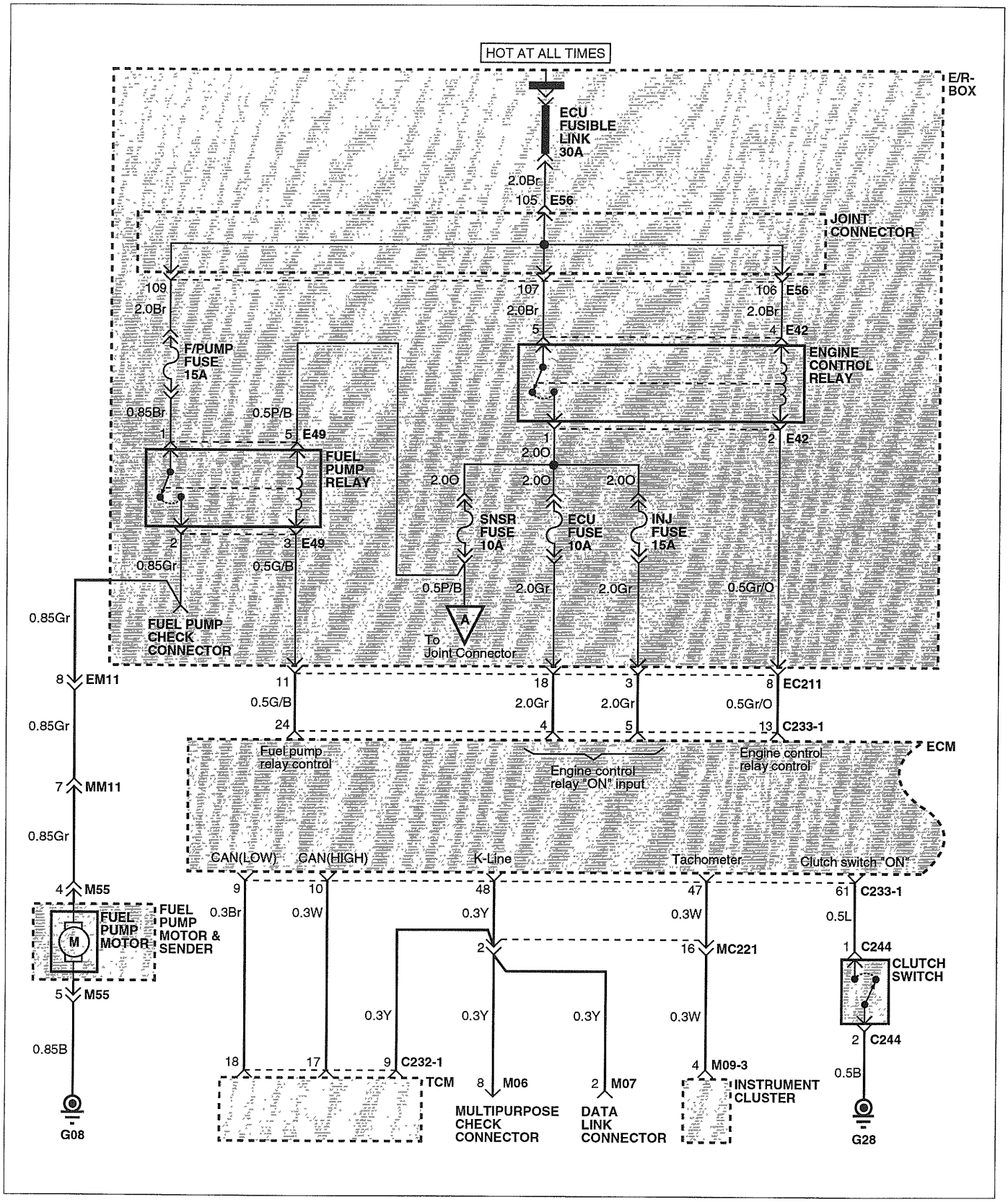
The Multiport Fuel Injection (MFI) control system is an electronic fuel metering system with fuel injectors near inlet ports of each cylinder. The amount of fuel injection is determined by the ECM according to engine speed and intake air-flow quantity measured by sensors.

The emission control system includes oxygen sensors and catalytic converters. The MFI's three major functions are air-fuel mixture, idle speed and ignition timing control. Refer to the shop manual, section FL for details.

MEMO

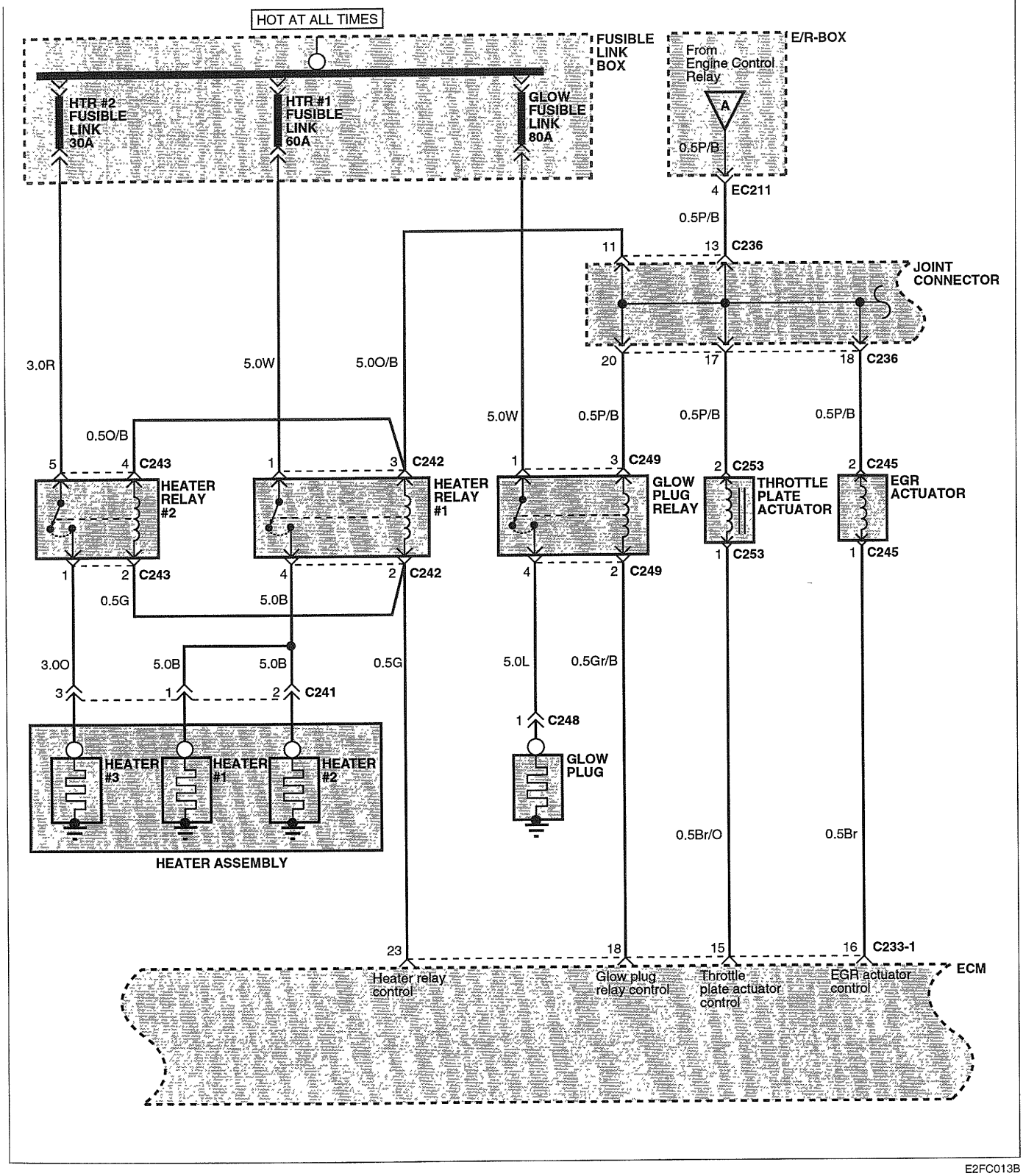
MFI CONTROL SYSTEM (DIESEL) E2FC0130

MFI CONTROL SYSTEM (DIESEL) (1)



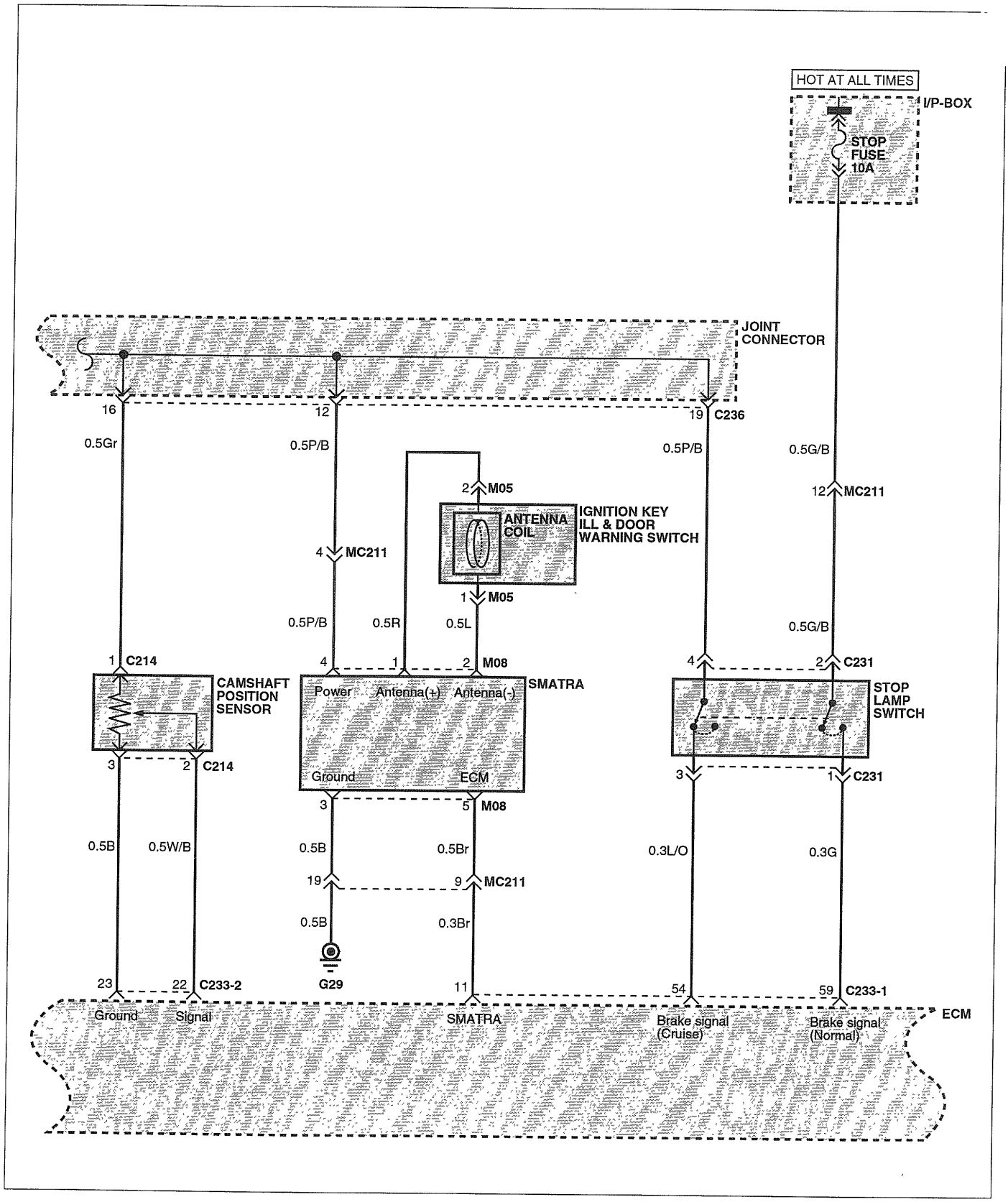
E2FC013A

CONTROL SYSTEM (DIESEL) (2)



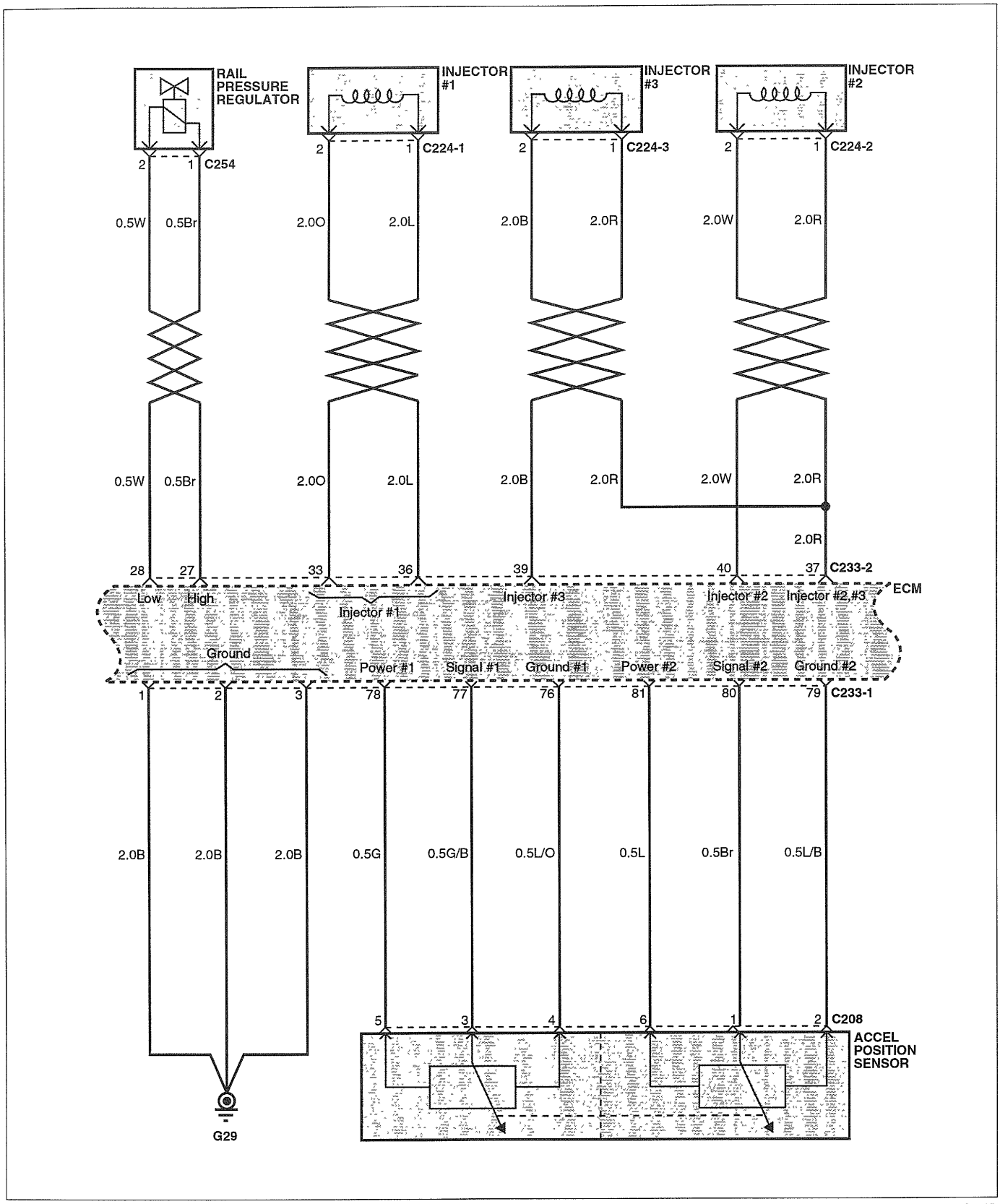
E2FC013B

MFI CONTROL SYSTEM (DIESEL) (3)



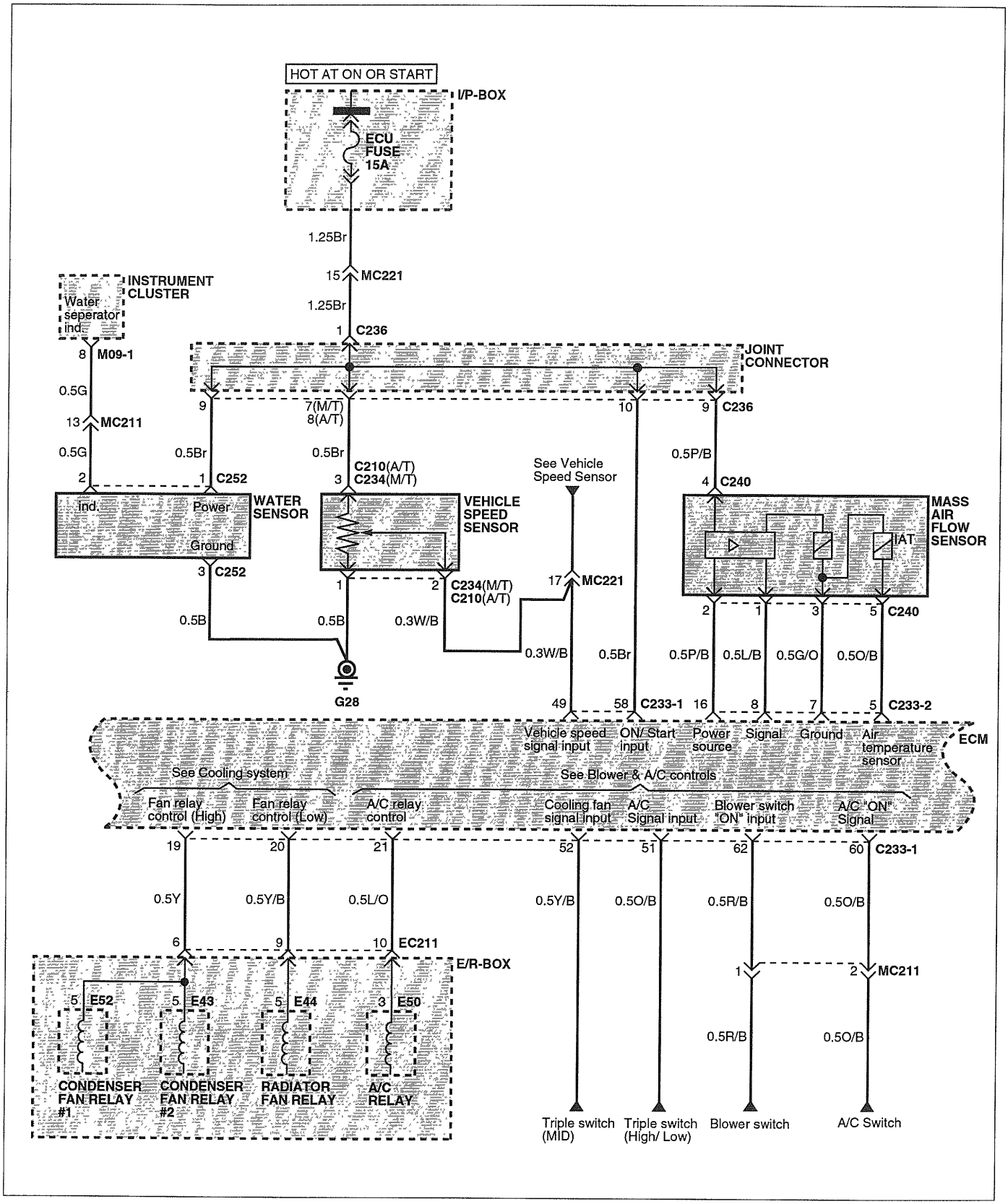
E2FC013C

MFI CONTROL SYSTEM (DIESEL) (4)



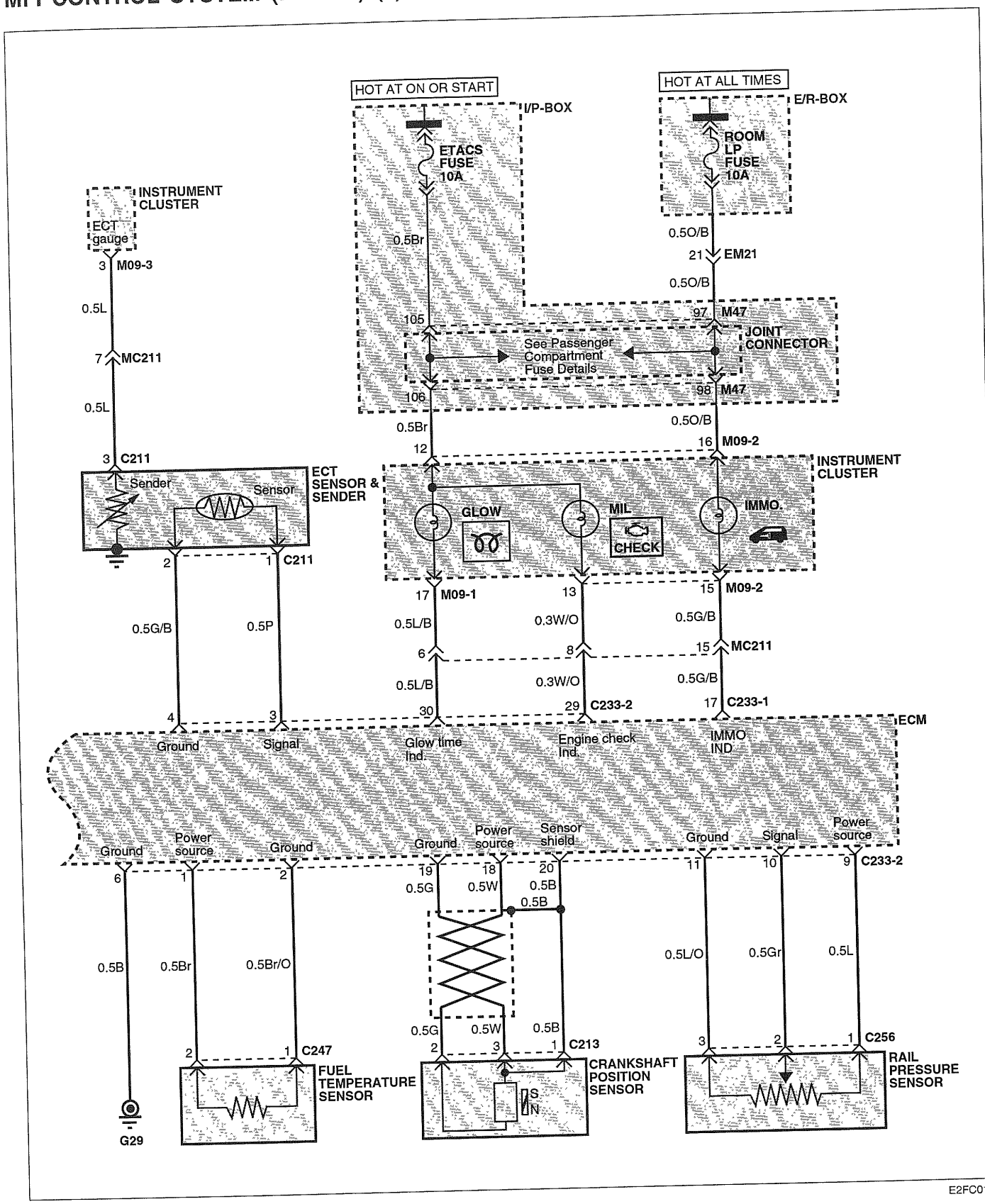
E2FC013D

MFI CONTROL SYSTEM (DIESEL) (5)



E2FC013E

MFI CONTROL SYSTEM (DIESEL) (6)



E2FC013F

COMPONENT LOCATION INDEX

Components

C208	Accelerator position sensor	CL-23
C210	Vehicle speed sensor (A/T)	CL-23
C211	Engine coolant temperature sensor & sender	CL-23
C213	Crankshaft position sensor	CL-23
C214	Camshaft position sensor	CL-23
C224-1	Injector #1	CL-24
C224-2	Injector #2	CL-24
C224-3	Injector #3	CL-24
C231	Stop lamp switch	CL-24
C232-1	TCM	CL-24
C233-1	ECM	CL-24
C234	Vehicle speed sensor (M/T)	CL-24
C236	Joint connector	CL-24
C240	Mass air flow sensor	CL-25
C241	Heater assembly	CL-25
C242	Heater relay #1	CL-25
C243	Heater relay #2	CL-25
C244	Clutch pedal position switch	CL-25
C245	EGR actuator	CL-25
C247	Fuel temperature sensor	CL-25
C248	Glow plug	CL-25
C249	Glow plug relay	CL-25
C252	Water sensor	CL-26
C253	Throttle plate actuator	CL-26
C254	Rail pressure regulator	CL-26
C256	Rail pressure sensor	CL-26
E42	Engine control relay	CL-13
E43	Codenser fan relay #2	CL-13
E44	Radiator fan relay	CL-13
E49	Fuel pump relay	CL-13
E50	A/C relay	CL-13
E52	Condenser fan relay #1	CL-13
E56	Joint connector	CL-13

COMPONDENT LOCATION INDEX

Components

M05	Ignition key ill & door warning switch	CL-2
M06	Multipurpose check connector	CL-2
M07	Data link connector	CL-2
M09–3	Instrument cluster	CL-2
M55	Fuel sender & fuel pump motor	CL-6

Connectors

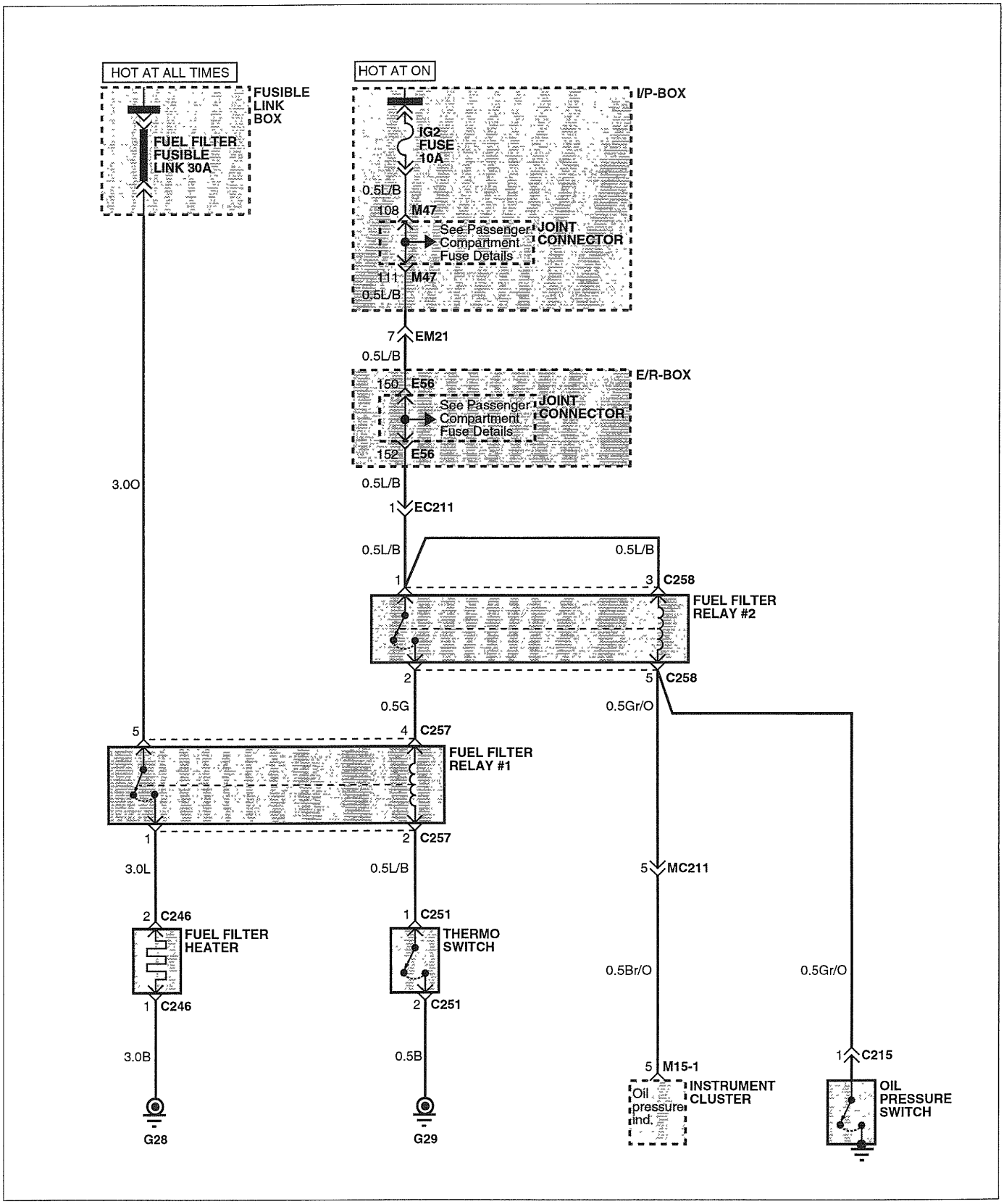
EC211	CL-14
EM11	CL-14
MC221	CL-8
MM11	CL-9

Grounds

G28	CL-31
G29	CL-31

FUEL FILTER HEATING SYSTEM (DIESEL) E2FC0140

FUEL FILTER HEATING SYSTEM (DIESEL) (1)



E2FC014A

LOCATION INDEX

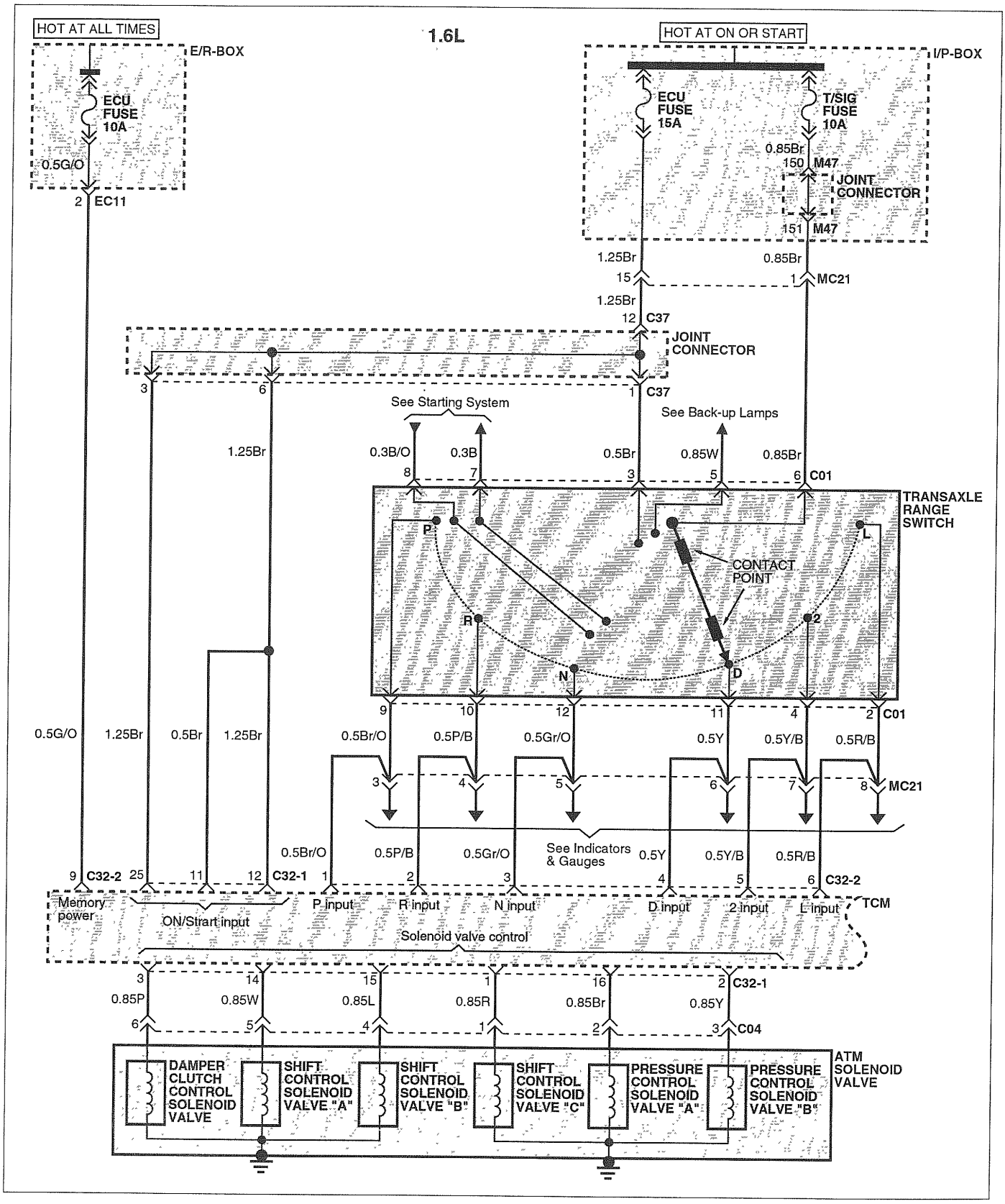
Components		
C215	Oil pressure switch	CL-23
C246	Fuel filter heater	CL-25
C251	Thermo switch	CL-26
C257	Fuel filter relay #1	CL-26
C258	Fuel filter relay #2	CL-26
E56	Joint connector	CL-13
M47	Joint connector	CL-5
Connectors		
EC211		CL-14
EM21		CL-14
Grounds		
G28		CL-31
G29		CL-31

Circuit Description

With the ignition switch ON, the battery voltage is applied to the coil of the fuel filter relay #2 from IG2 fuse and the oil pressure switch is contacted. Then the fuel filter relay #2 is energized and the switch is ON when the thermo switch is closed so that the current flows to G28.
In the same way, the switch of the fuel filter relay #1 is closed and the fuel filter heater works.

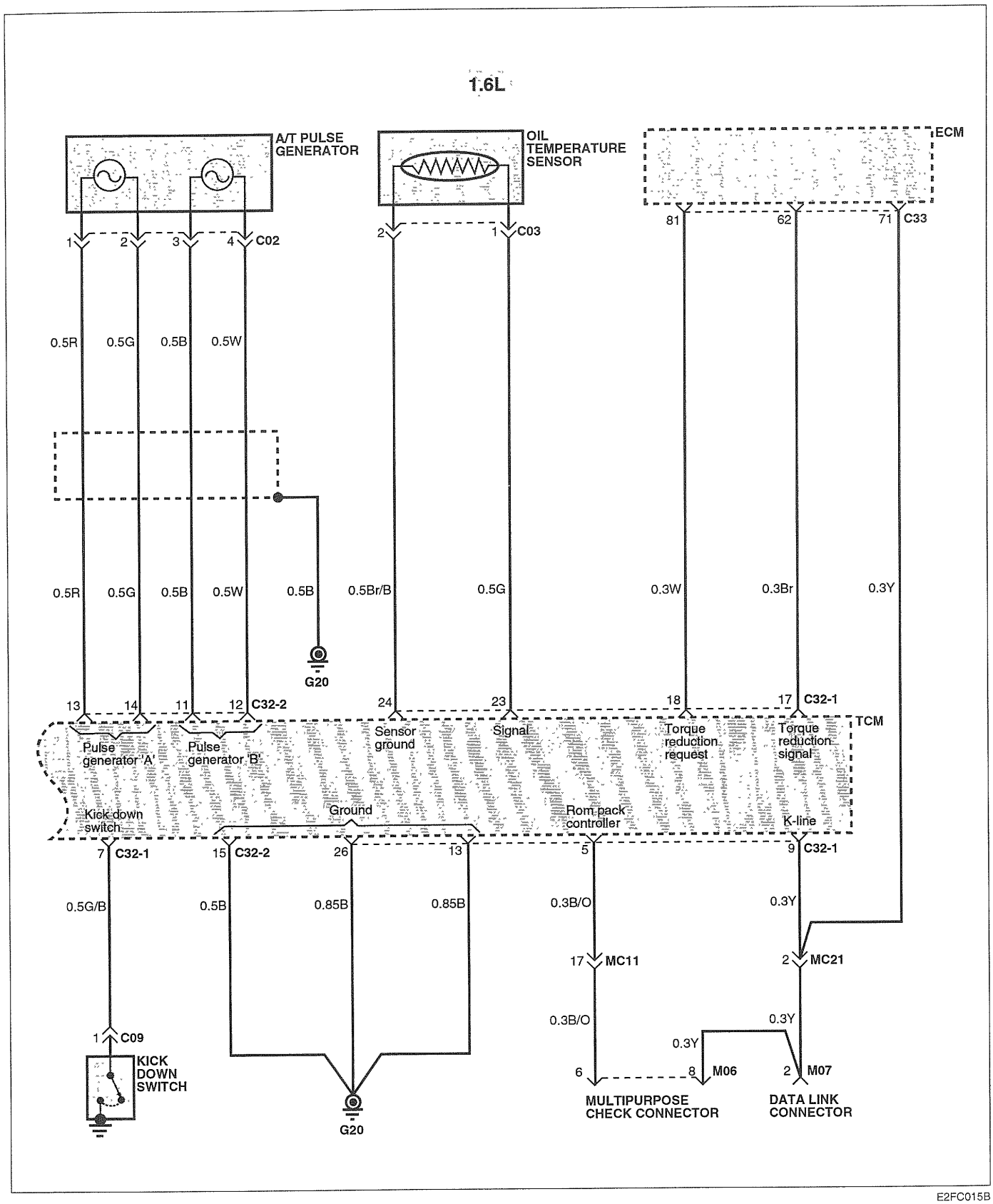
AUTOMATIC TRANSAXLE CONTROL SYSTEM E2FC0150

AUTOMATIC TRANSAXLE CONTROL SYSTEM (1)



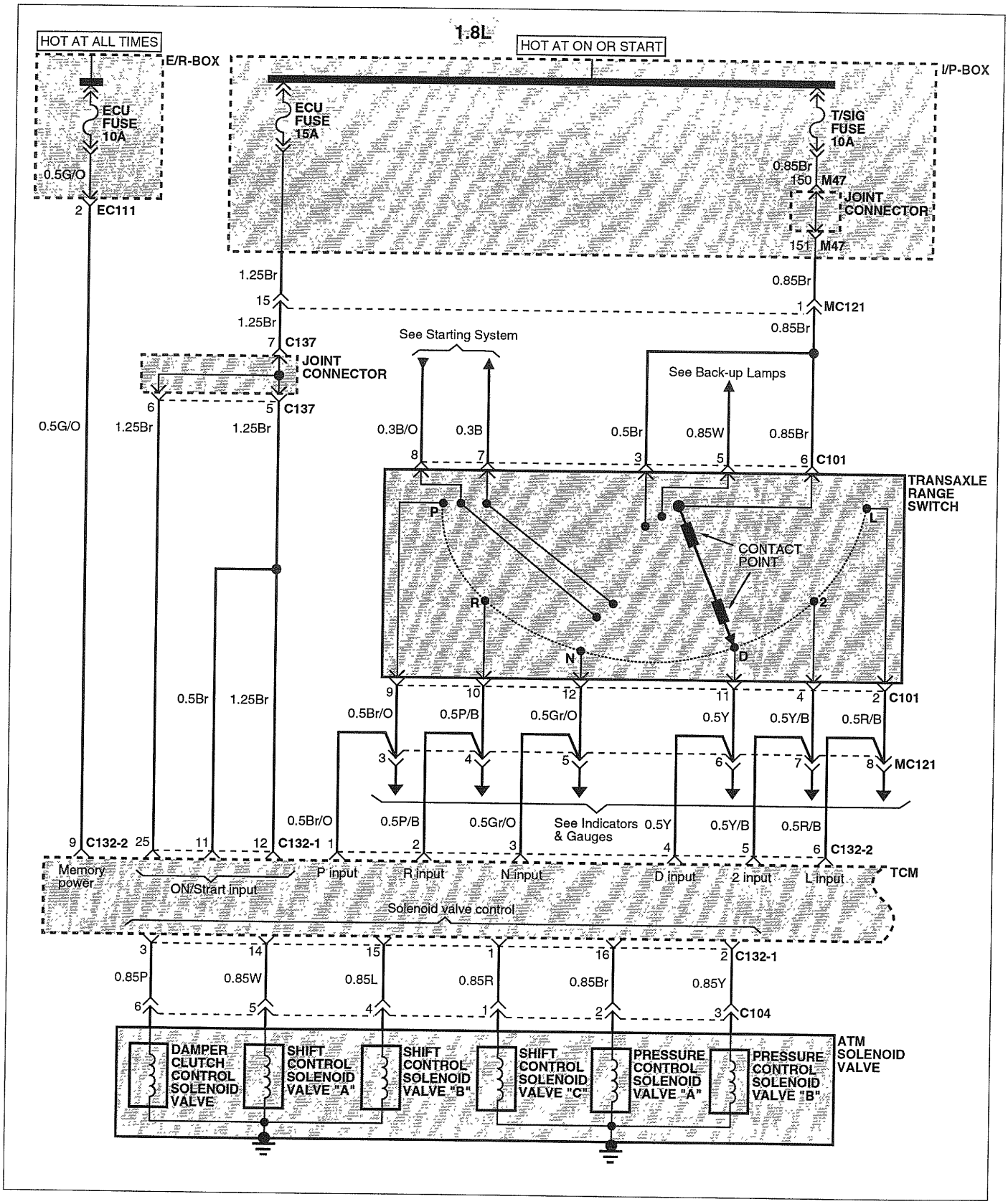
E2FC015A

AUTOMATIC TRANSAXLE CONTROL SYSTEM (2)



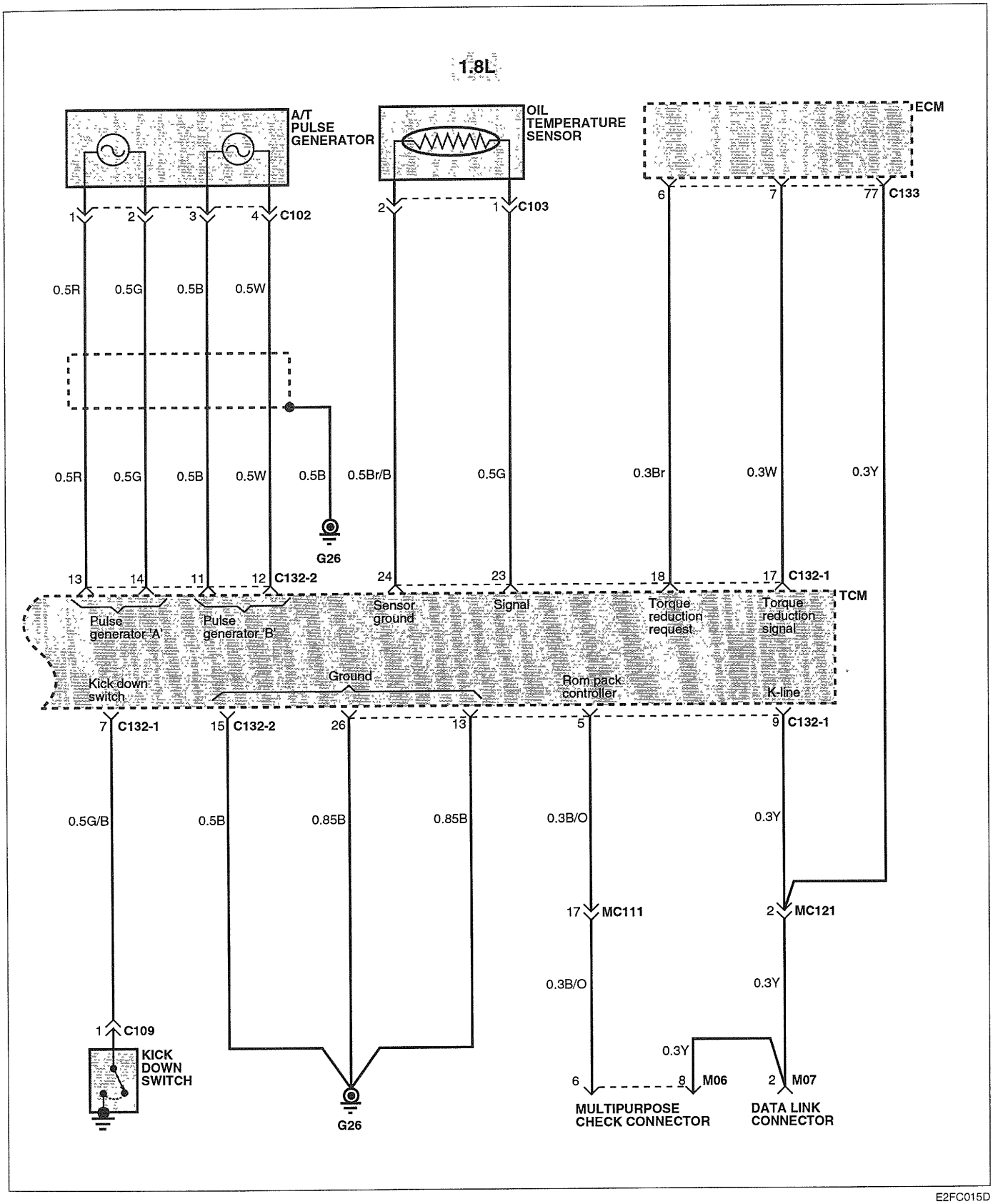
E2FC015B

AUTOMATIC TRANSAXLE CONTROL SYSTEM (3)



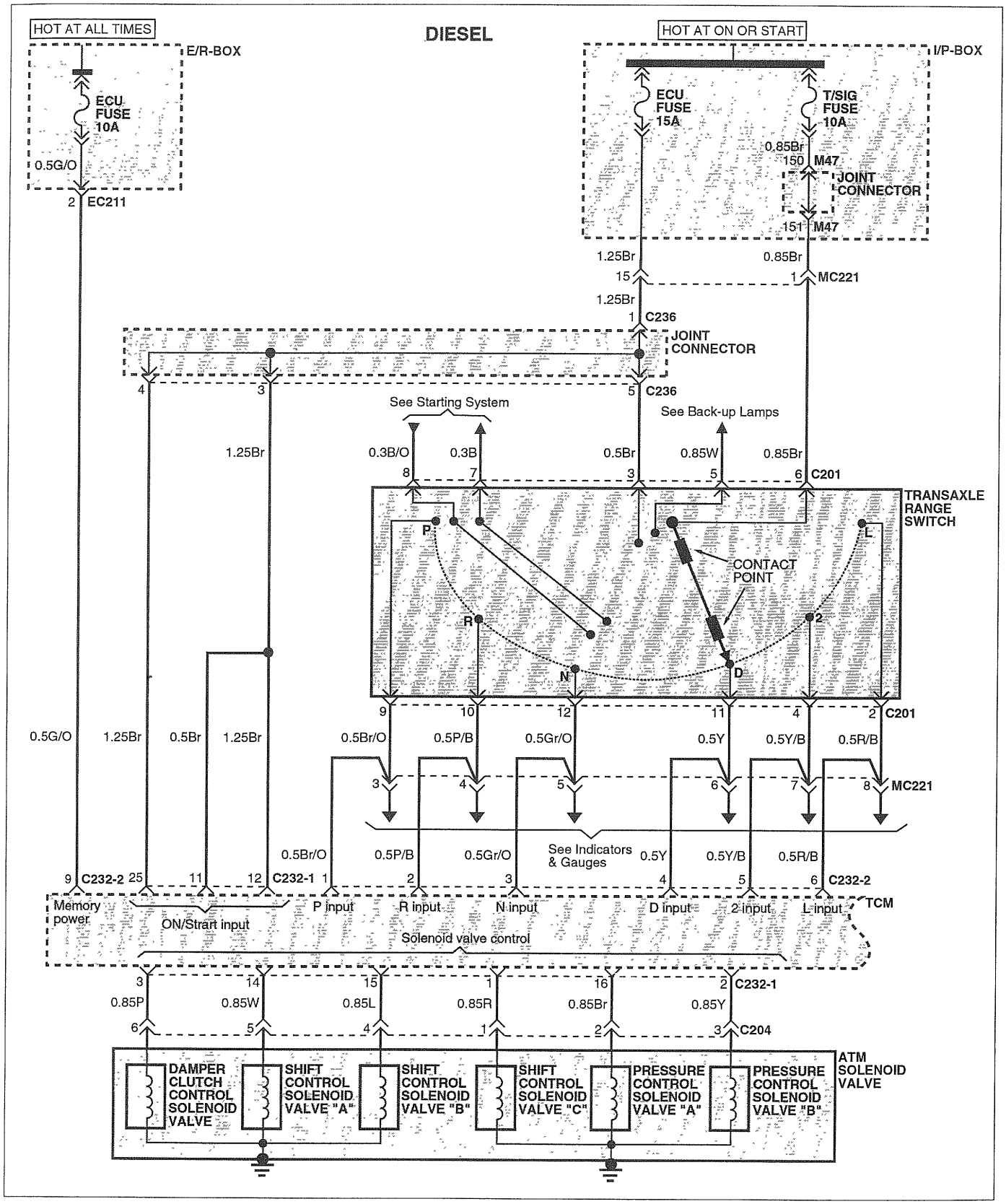
E2FC015C

AUTOMATIC TRANSAXLE CONTROL SYSTEM (4)



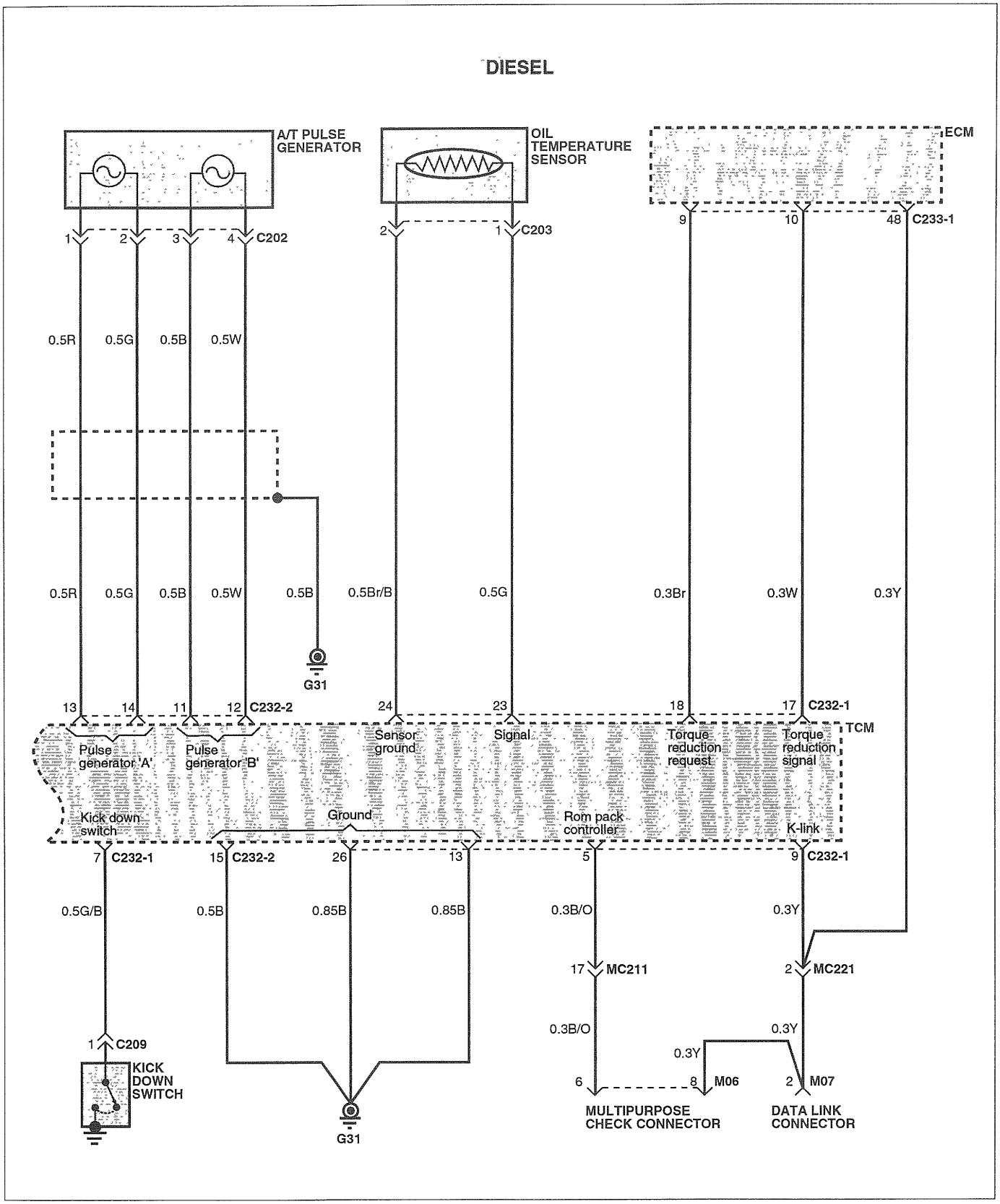
E2FC015D

AUTOMATIC TRANSAXLE CONTROL SYSTEM (5)



E2FC015E

AUTOMATIC TRANSAXLE CONTROL SYSTEM (6)



E2FC015F

COMPONENT LOCATION INDEX

Components

C01	Transaxle range switch (1.6L)	CL-16
C02	Pulse generator (1.6L)	CL-16
C03	Oil temperature sensor (1.6L)	CL-16
C04	A/T solenoid valve (1.6L)	CL-16
C09	Kick down switch (1.6L)	CL-16
C32-1	TCM (1.6L)	CL-18
C32-2	TCM (1.6L)	CL-18
C33	ECM (1.6L)	CL-18
C37	Joint connector (1.6L)	CL-19
C101	Transaxle range switch (1.8L)	CL-19
C102	Pulse generator(1.8L)	CL-19
C103	Oil temperature sensor (1.8L)	CL-19
C104	A/T solenoid valve (1.8L)	CL-19
C109	Kick down switch (1.8L)	CL-20
C132-1	TCM (1.8L)	CL-21
C132-2	TCM (1.8L)	CL-22
C133	ECM (1.8L)	CL-22
C137	Joint connector (1.8L)	CL-22
C201	Transaxle range switch (Diesel)	CL-22
C202	Pulse generator (Diesel)	CL-22
C203	Oil temperature sensor (Diesel)	CL-22
C204	A/T solenoid valve (Diesel)	CL-22
C209	Kick down switch (Diesel)	CL-23
C232–1	TCM (Diesel)	CL-20
C232–2	TCM (Diesel)	CL-20
C233–1	ECM (Diesel)	CL-20
M06	Multipurpose check connector	CL-2
M07	Data link connector	CL-2
M47	Joint connector	CL-5

COMPONENT LOCATION INDEX

Connectors	
	CL-14
EC11	CL-14
EC111	CL-14
EC211	CL-14
MC11	CL-8
MC21	CL-8
MC111	CL-8
MC121	CL-8
MC211	
Grounds	
	CL-31
G20	CL-31
G26	CL-31
G31	

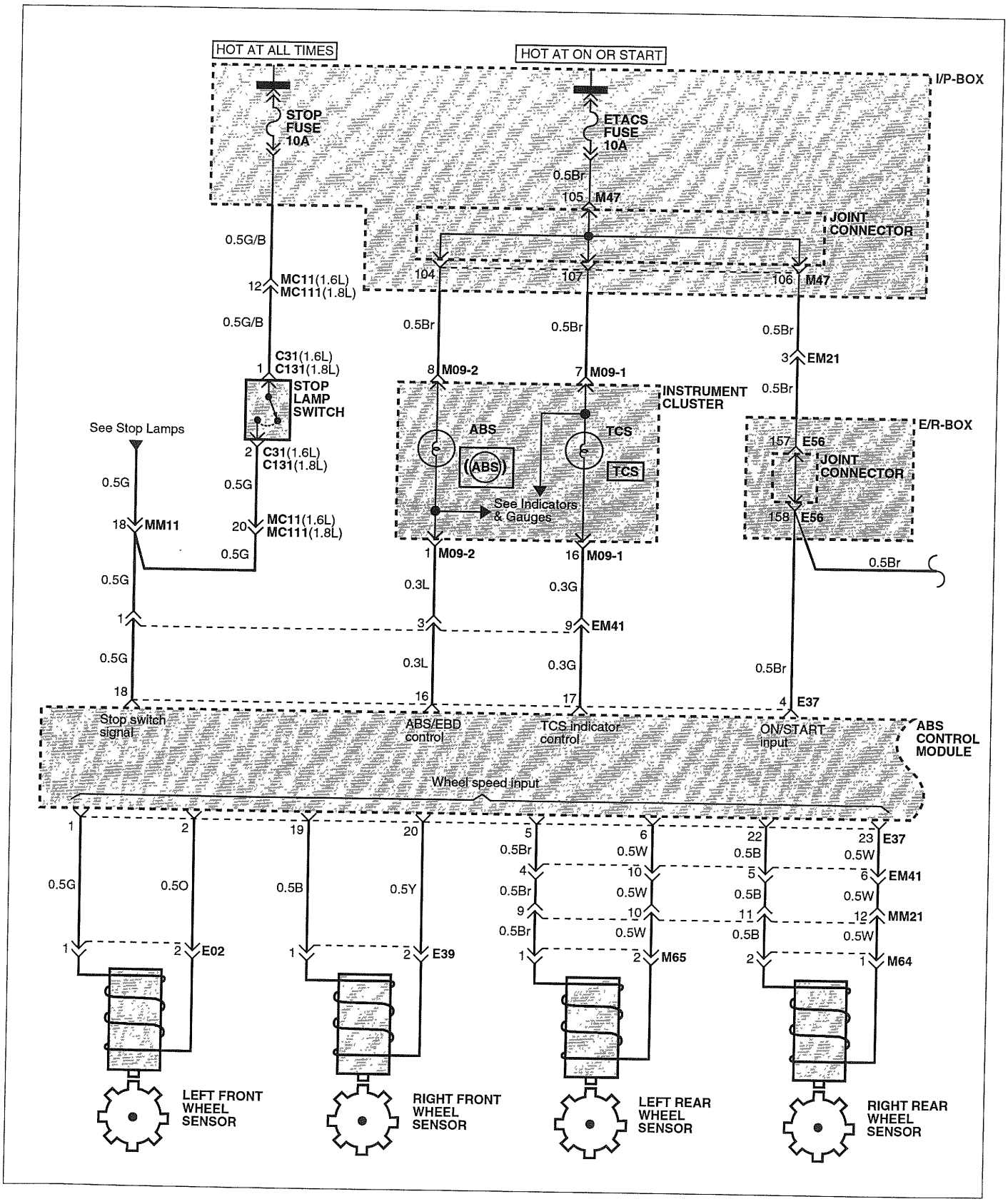
Circuit Description

The transaxle control module provides precise gear shift timing and torque converter lock up by controlling the operation of the automatic transaxle solenoid valves (the Damper clutch control solenoid valve, the shift control solenoid valve A, B and C , and the pressure control solenoid valve A and B).

The transaxle control module operates these solenoid valves based on input signals from various sensors (for instance, pulse generators and oil temperature sensor). The transaxle control module has a built-in self diagnostic feature.
Refer to the shop manual, section ATM, for details.

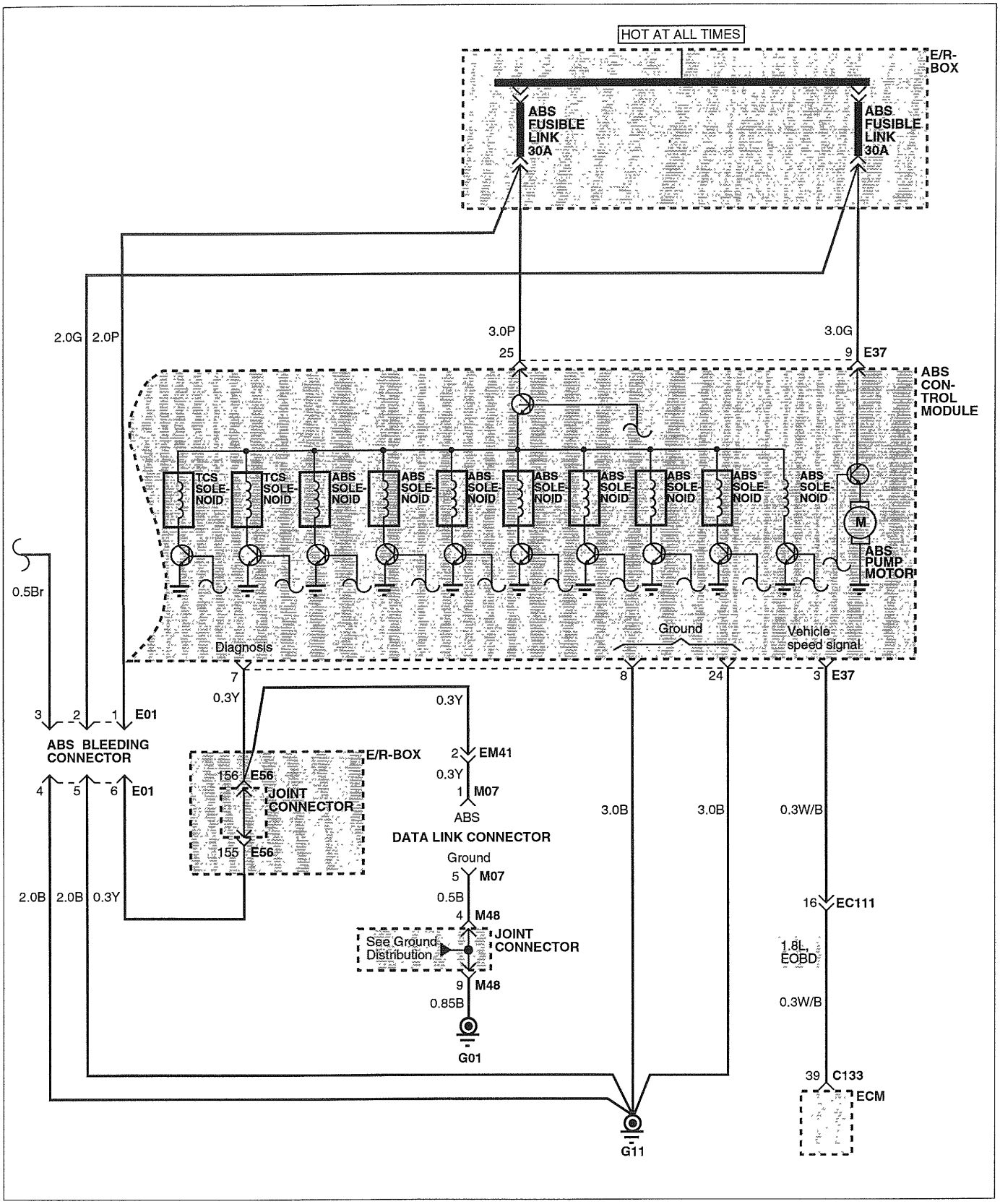
ANTI-LOCK BRAKE SYSTEM/ TRACTION CONTROL SYSTEM E2FC0160

ANTI-LOCK BRAKE SYSTEM/ TRACTION CONTROL SYSTEM (1)



E2FC016A

ANTI-LOCK BRAKE SYSTEM/ TRACTION CONTROL SYSTEM (2)



E2FC016B

COMPONENT LOCATION INDEX

Components		Location reference-page
C31	Stop lamp switch (1.6L)	CL-18
C131	Stop lamp switch (1.8L)	CL-21
E01	ABS bleeding connector	CL-10
E02	Left front wheel sensor	CL-10
E37	ABS control module	CL-13
E56	Joint connector	CL-13
M07	Data link connector	CL-2
M09-1	Instrument cluster	CL-2
M09-2	Instrument cluster	CL-2
M47	Joint connector	CL-5
M48	Joint connector	CL-5
M64	Right rear wheel sensor	CL-6
M65	Left rear wheel sensor	CL-6
Connectors		
EM21		CL-14
EM41		CL-14
MC11		CL-8
MC111		CL-8
MM11		CL-9
MM21		CL-9
Grounds		
G01		CL-29
G11		CL-30

Circuit Description

TCS

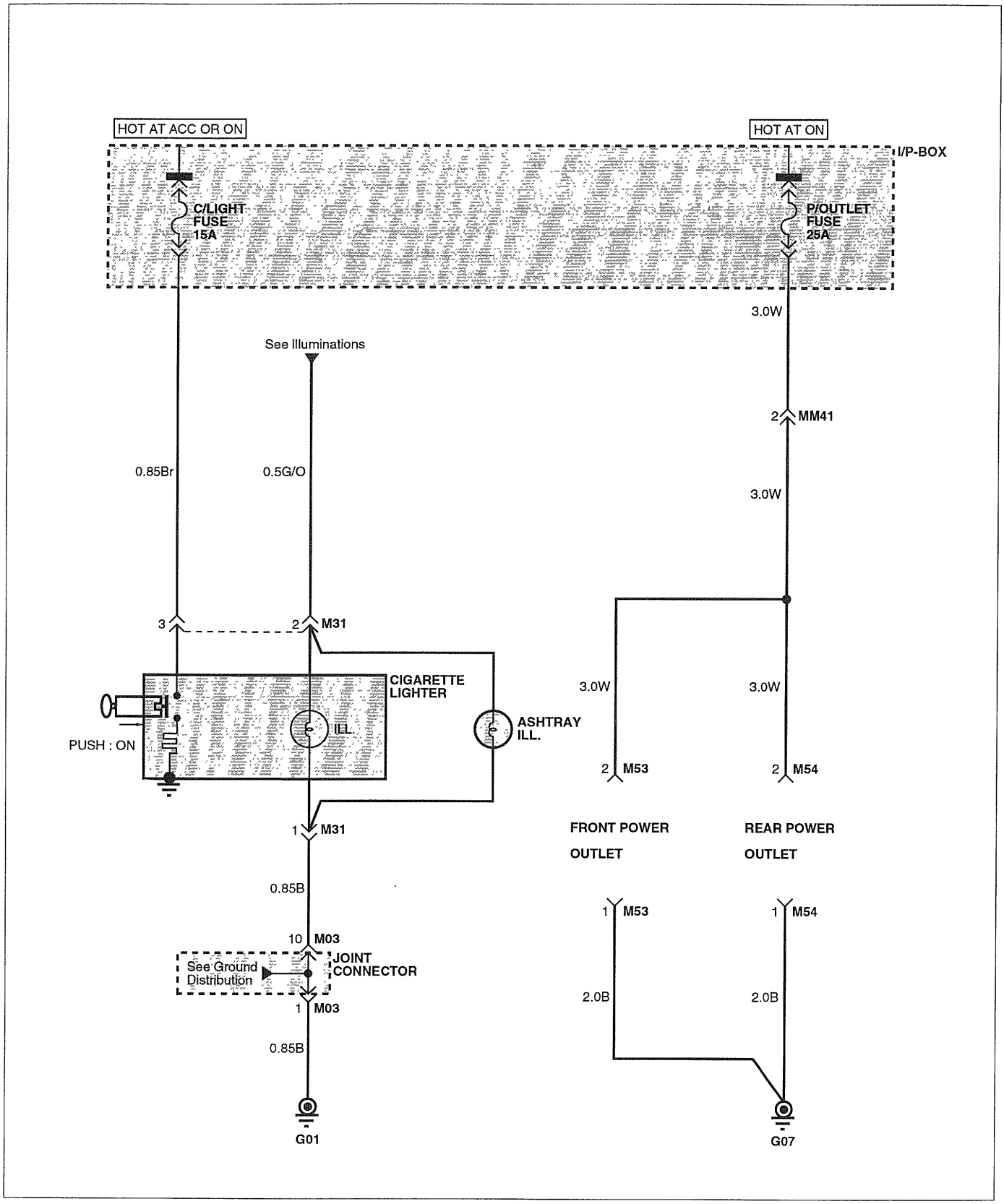
The Traction Control System (TCS)is a variable system designed to enhance traction during acceleration and cornering. It does so by determining the optimum amount of wheel spin for any given driving situation, then suppressing surplus engine power accordingly.
The ABS control module gets signals about the vehicle's speed, direction and road conditions from sensors at the wheels and the steering column.
Based on these signals, the control module will determine the optimum amount of wheel spin. Because the system is variable, the control module may determine, depending on the driving conditions, that some wheel spin is beneficial (thus enhancing straight-line acceleration), or that no wheel spin is beneficial (thus enhancing cornering). For any given driving situation, the control module will determine the amount of wheel spin best suited to the driver's needs. The system is automatically ready whenever the engine is started, but can be manually canceled with the TCS switch.
The TCS provides the following benefits:
(1) When the drive wheel speed exceeds the vehicle speed by a given amount, the ABS control module judges that the drive wheels are slipping and it sends traction control signals to reduce engine power.
(2) Based on the wheel speed sensor signals, the control module detects the condition of the road and then sends signals to improve acceleration efficiency and grip efficiency.

ABS

The Anti-Lock Brake System (ABS) control module controls the hydraulic brake pressure of all four wheels during sudden braking and braking on hazardous road surfaces, preventing the wheels from locking.
The ABS provides the following benefits:
(1) Enables steering around obstacles with a greater degree of certainty during panic braking.
(2) Enables stopping during panic braking while allowing stability and control even on curves.
In case a malfunction occurs in the ABS system, the system will operate as a normal brake system (fail-safe mode).
A diagnosis function and fail-safe system have been included for serviceability.

CIGARETTE LIGHTER (POWER OUTLET) E2FC0180

CIGARETTE LIGHTER (POWER OUTLET) (1)



E2FC018A

COMPONENT LOCATION INDEX

Components		Location reference-page
M03	Joint connector	CL-2
M31	Cigarette lighter	CL-4
M53	Front power outlet	CL-5
M54	Rear power outlet	CL-5
Connectors		
MM41		CL-9
Grounds		
G01		CL-29
G07		CL-29

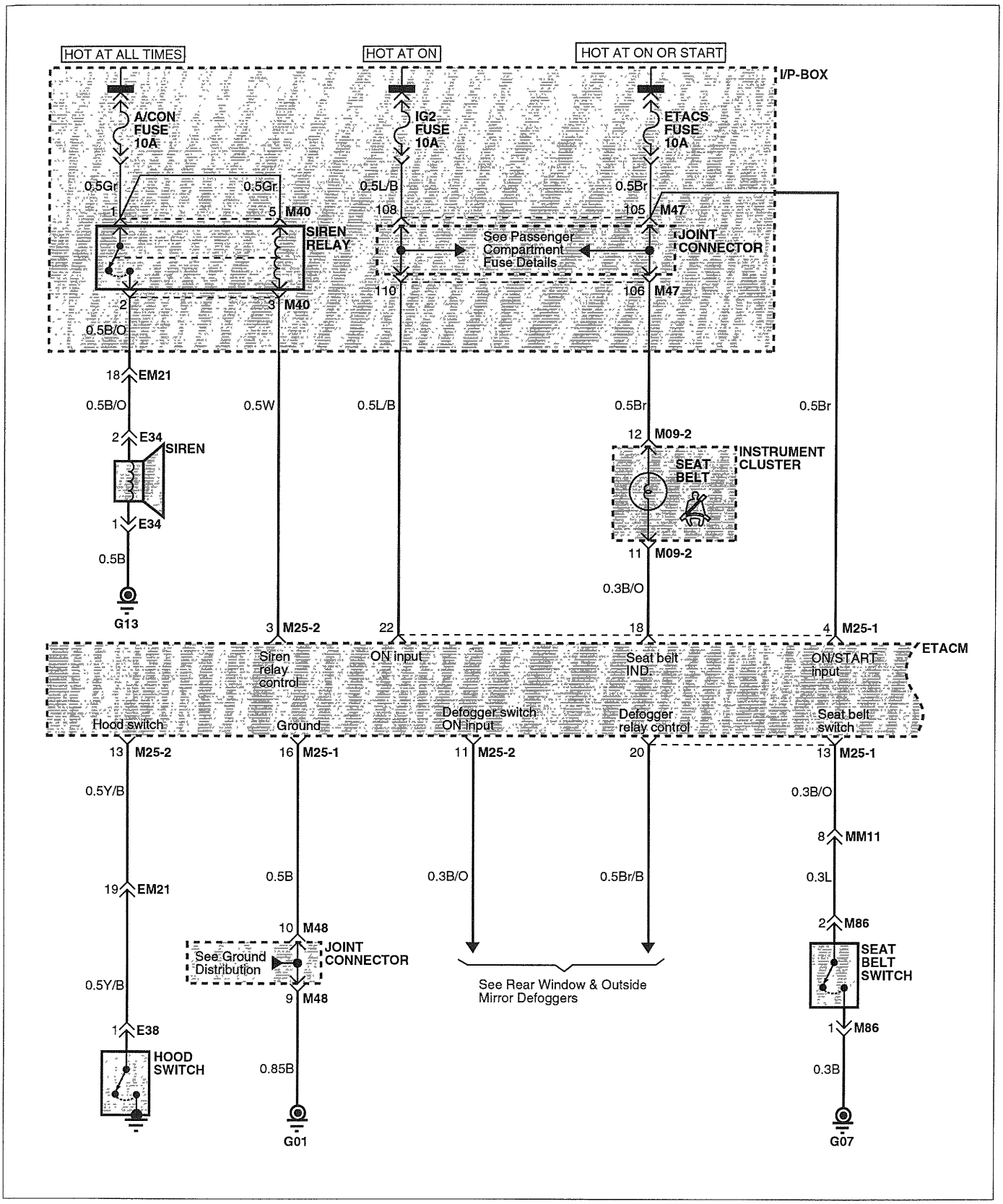
Circuit Description

With the ignition switch in ACC or ON, battery voltage is applied from C/LIGHT fuse to the cigarette lighter. When you depress (push) the lighter, the lighter element completes the circuit to ground.

When the element becomes sufficiently heated, it is spring- released and the circuit opens.

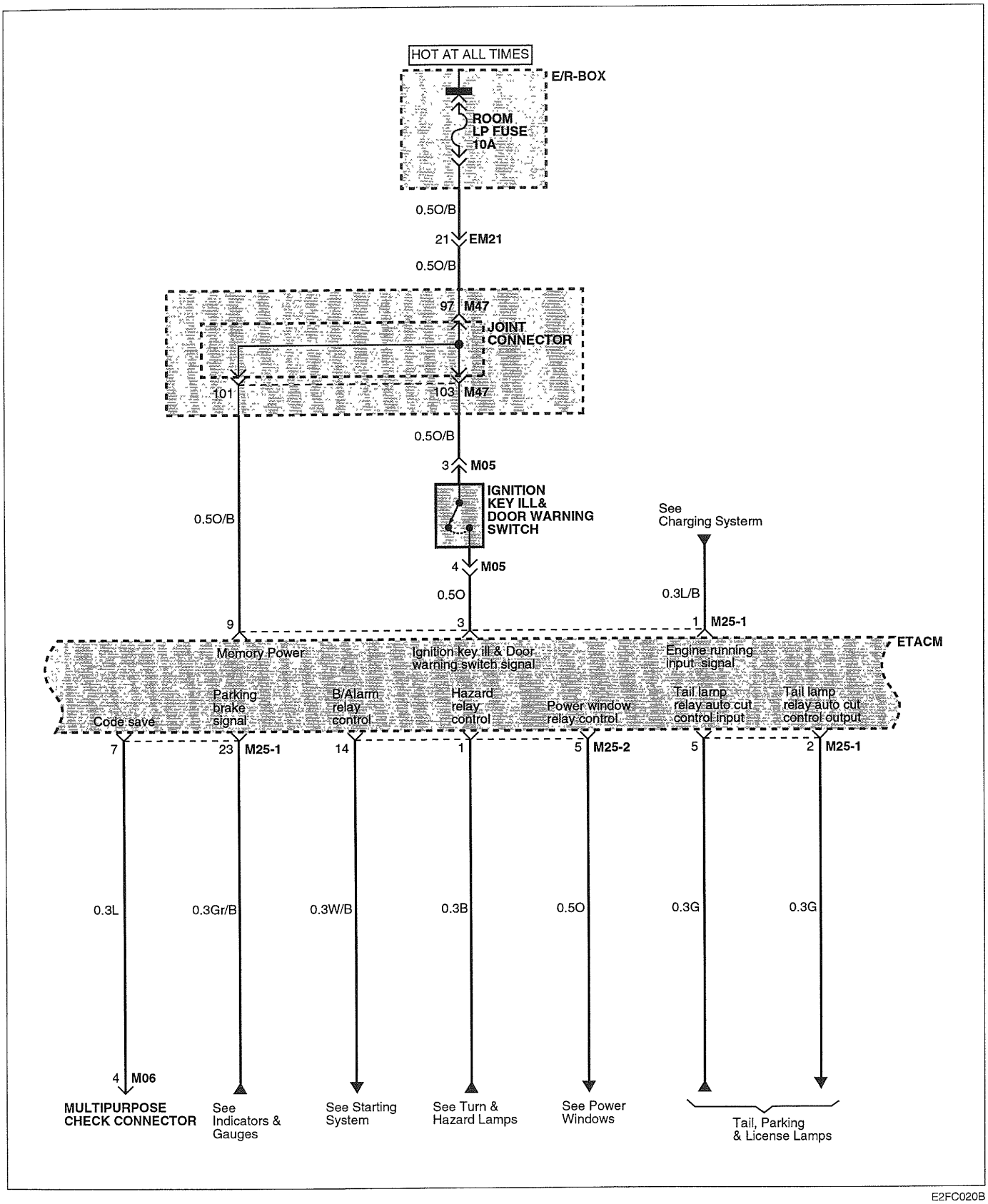
ETACS(ELECTRONIC TIME & ALARM CONTROL SYSTEM) E2FC0200

ETACS(ELECTRONIC TIME & ALARM CONTROL SYSTEM) (1)



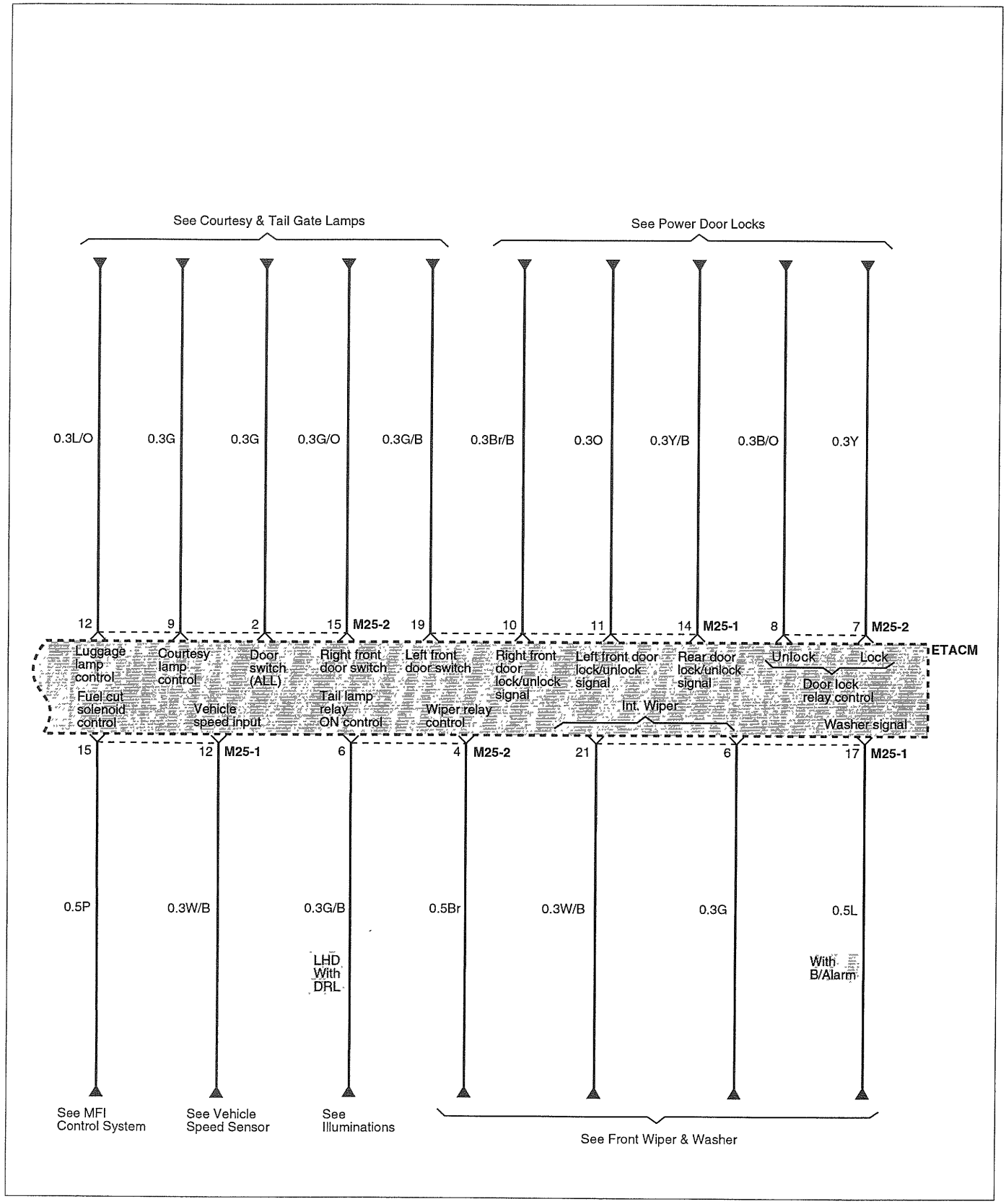
E2FC020A

ETACS(ELECTRONIC TIME & ALARM CONTROL SYSTEM) (2)



E2FC020B

ETACS(ELECTRONIC TIME & ALARM CONTROL SYSTEM) (3)



E2FC020C

COMPONENT LOCATION INDEX

Components		Location reference-page
E34	Siren	CL-12
E38	Hood switch	CL-13
M05	Ignition key ill & Door warning switch	CL-2
M06	Multipurpose check connector	CL-2
M09-2	Instrument cluster	CL-2
M25-1	ETACM	CL-4
M25-2	ETACM	CL-4
M40	Siren relay	CL-5
M47	Joint connector	CL-5
M48	Joint connector	CL-5
M86	Seat belt switch	CL-7
Connectors		
EM21		CL-14
MM41		CL-9
Grounds		
G01		CL-29
G07		CL-29
G13		CL-30

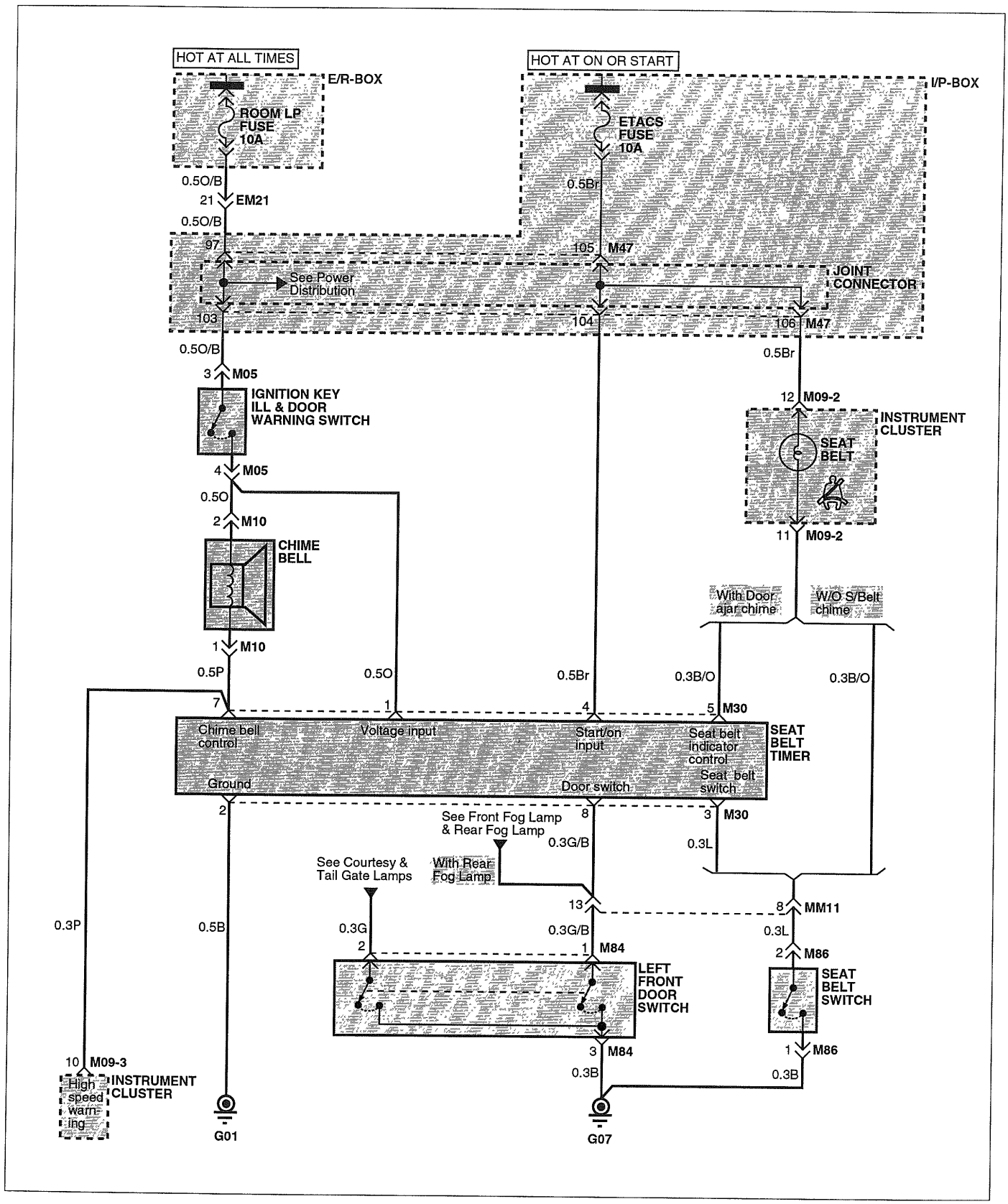
Circuit Description

The Electronic Time and Alarm Control Module (ETACM) controls the front wiper & washer, siren, power door lock, courtesy and luggage room lamps, rear window defogger & outside mirror defogger, B/Alarm, delay out room lamp, door warning, seat belt warning, ignition key hole illumination, door key hole illumination, and so on.

The module receives battery voltage at all times from ROOM LP fuse. IG2 fuse, ETACS fuse supplies battery voltage to the module with the ignition switch in ON, ON or START. For details on the use of the various inputs and outputs, refer to the shop Manual, section BE for details.

SEAT BELT WARNING & CHIME (WITHOUT ETACM) E2FC0210

SEAT BELT WARNING & CHIME (WITHOUT ETACM) (1)

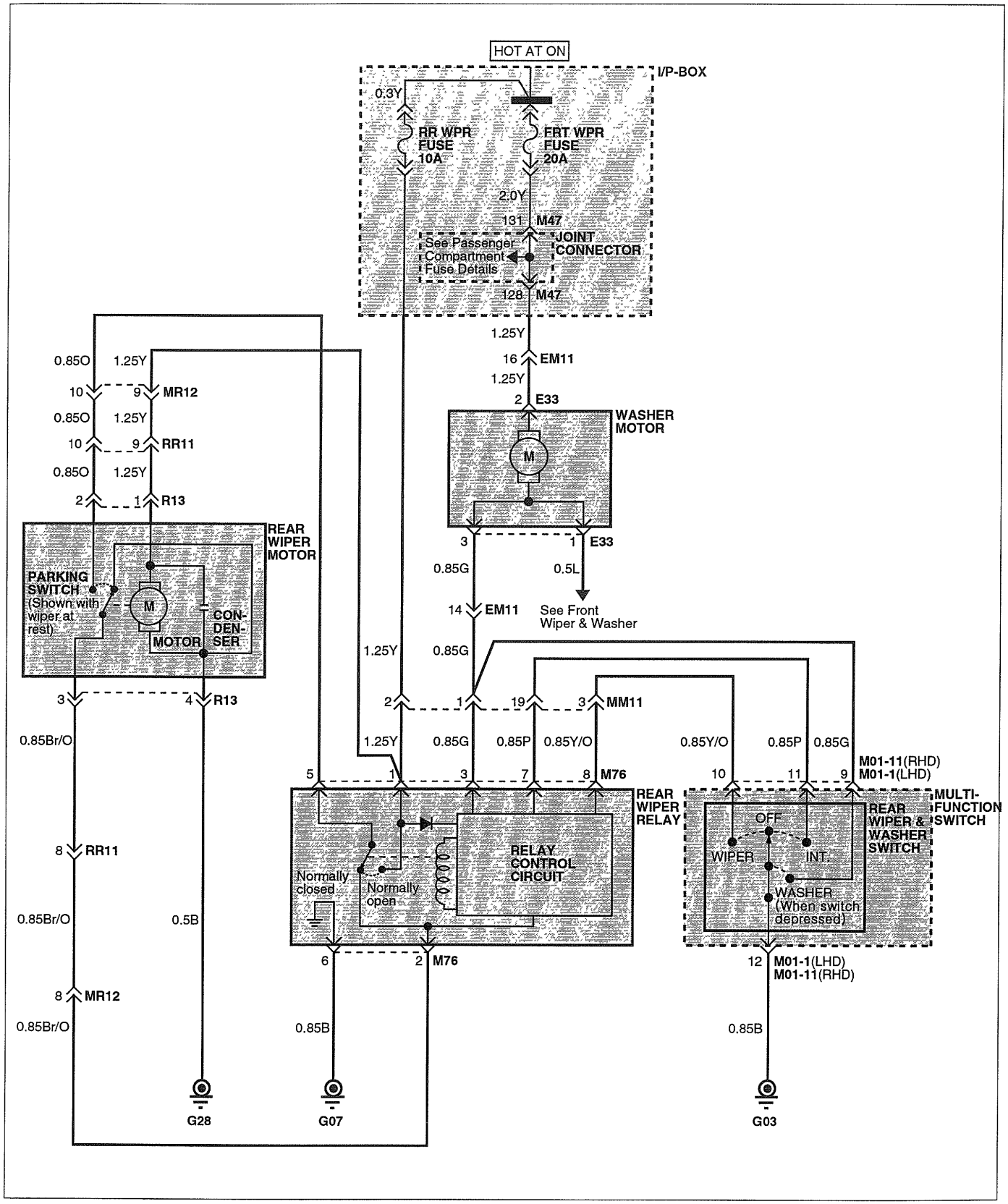


E2FC021A

MEMO

REAR WIPER & WASHER E2FC0230

REAR WIPER & WASHER (1)



E2FC023A

COMPONENT LOCATION INDEX

Components		Location reference-page
E33	Washer motor	CL-12
M01-1	Multifunction switch	CL-2
M47	Joint connector	CL-5
M76	Rear wiper relay	CL-7
R13	Rear wiper motor	CL-28
Connectors		
EM11		CL-14
MM11		CL-9
MR12		CL-9
RR11		CL-28
Grounds		
G03		CL-29
G07		CL-29
G28		CL-31

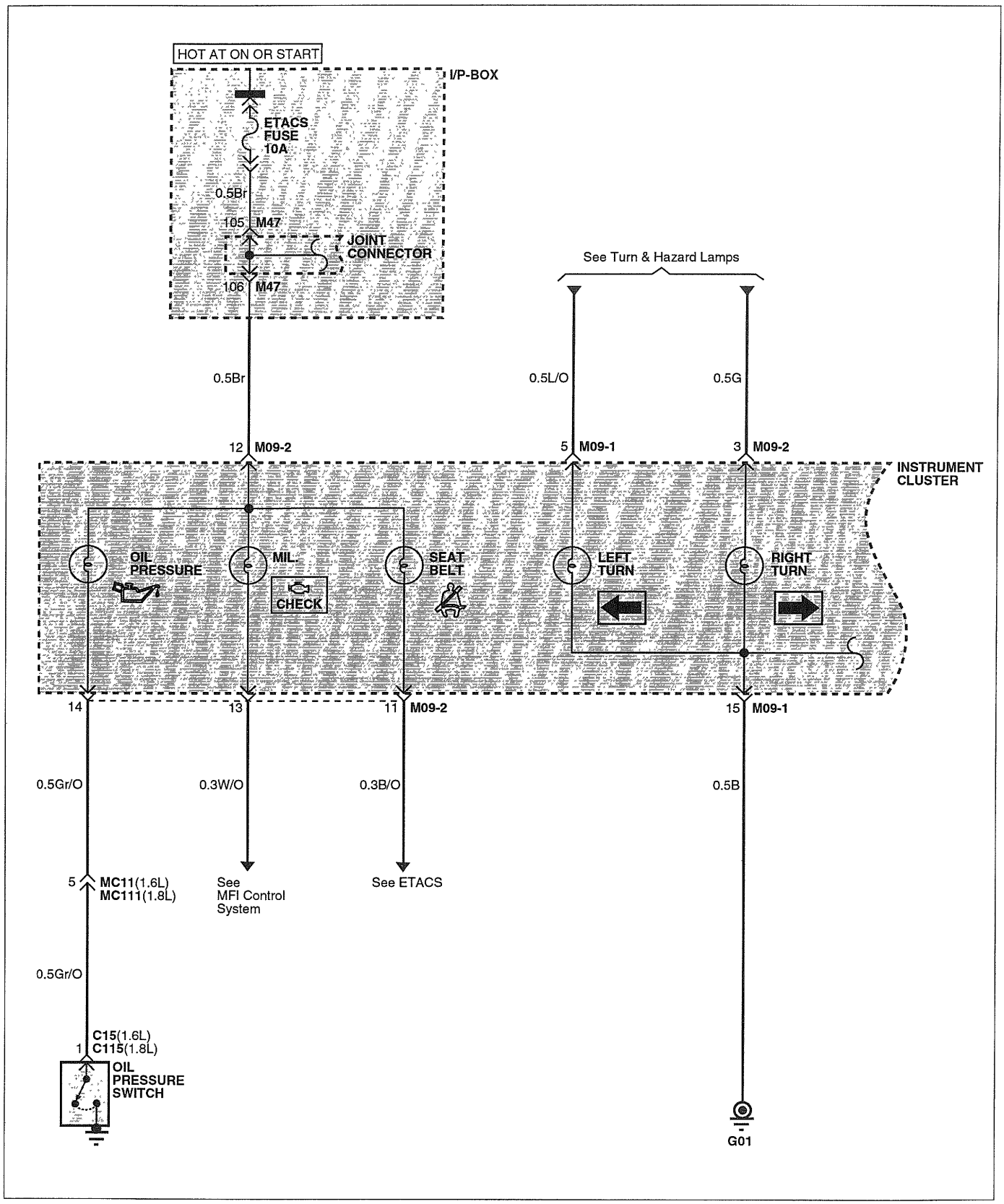
Circuit Description

All functions of the rear wiper/washer circuit are controlled by the position of the rear wiper & washer switch and the rear wiper relay (has it own internal control circuit and controls the relay contracts). The rear window wiper and washer are turned on by depressing the button. Washer fluid is sprayed on the glass as long as the button is depressed.

1. When the "wiper" switch is depressed, the rear window wiper starts to operate continuously.
2. When the "washer" switch is depressed, the rear window wiper wipes the window several times after the washer fluid sprays onto the rear window.

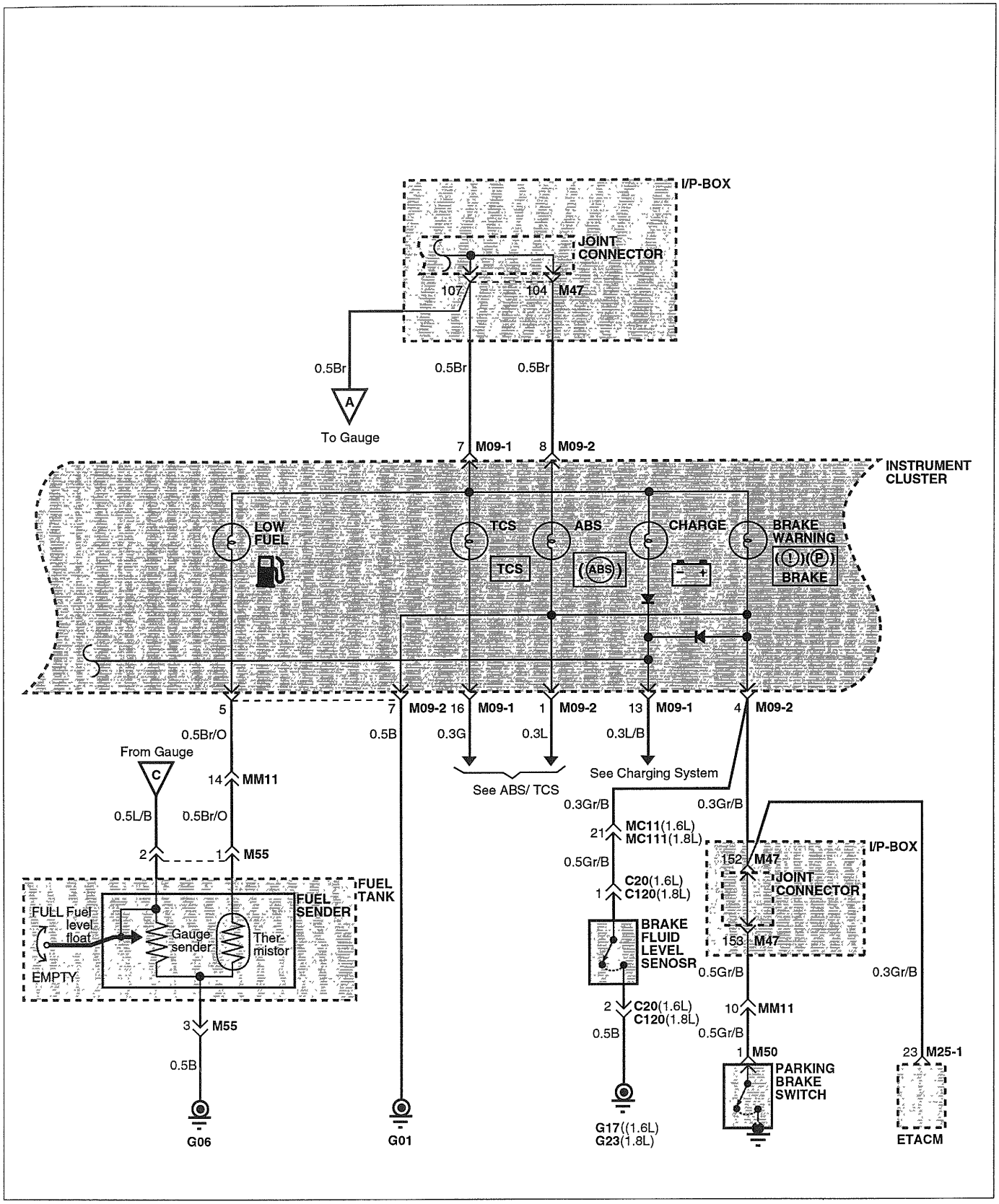
INDICATORS & GAUGES E2FC0250

INDICATORS & GAUGES (1)



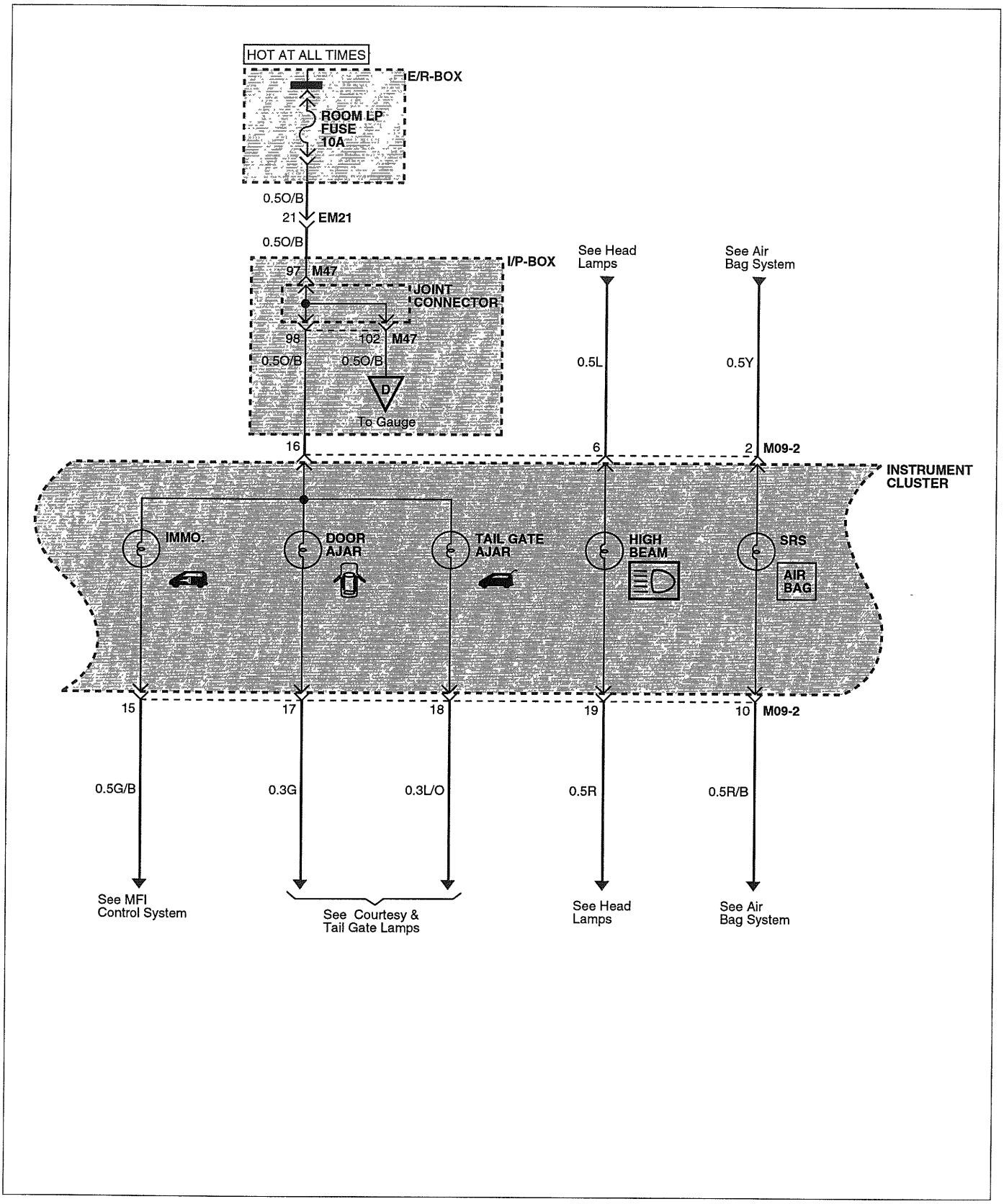
E2FC025A

INDICATORS & GAUGES (2)



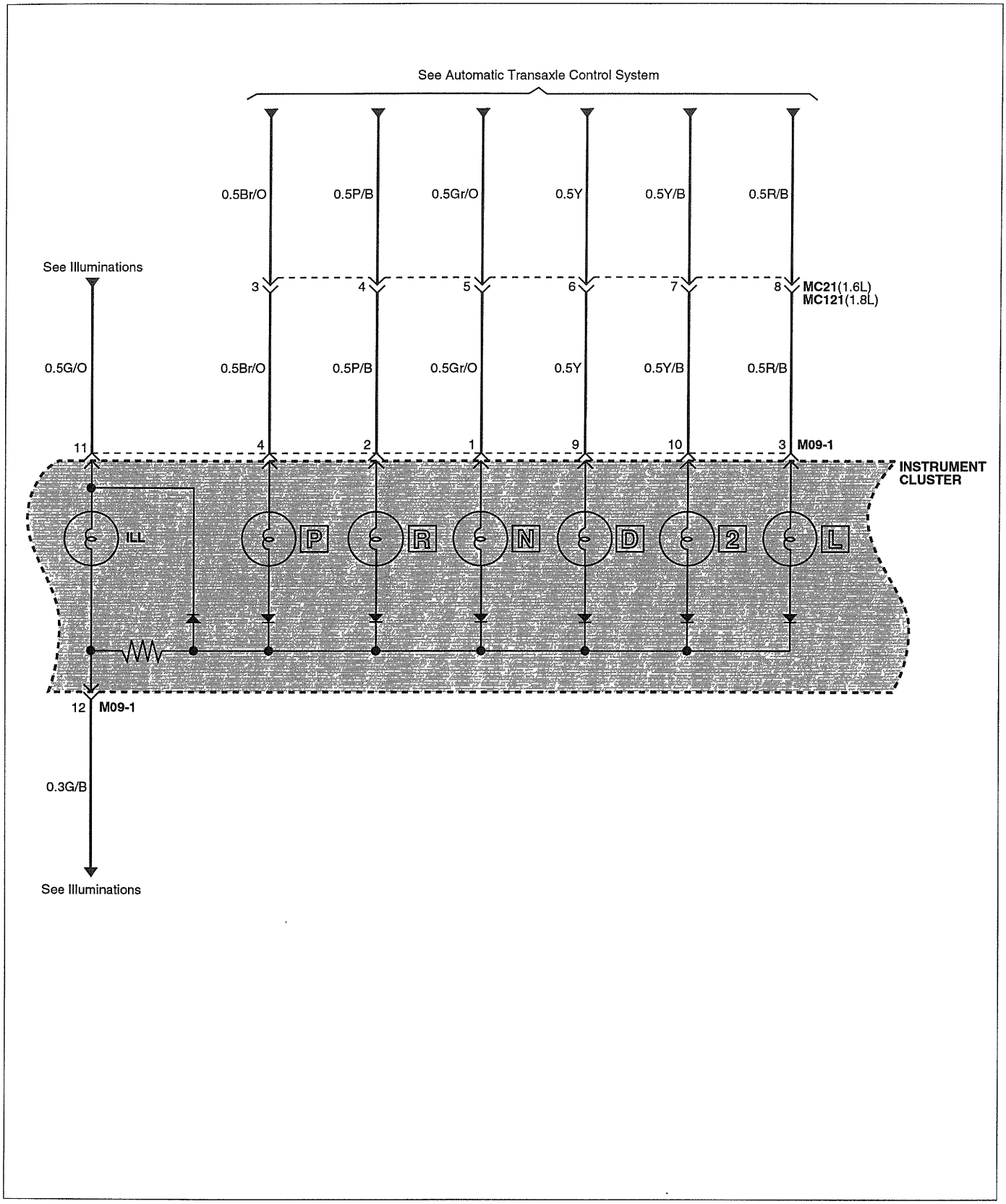
E2FC025B

INDICATORS & GAUGES (3)



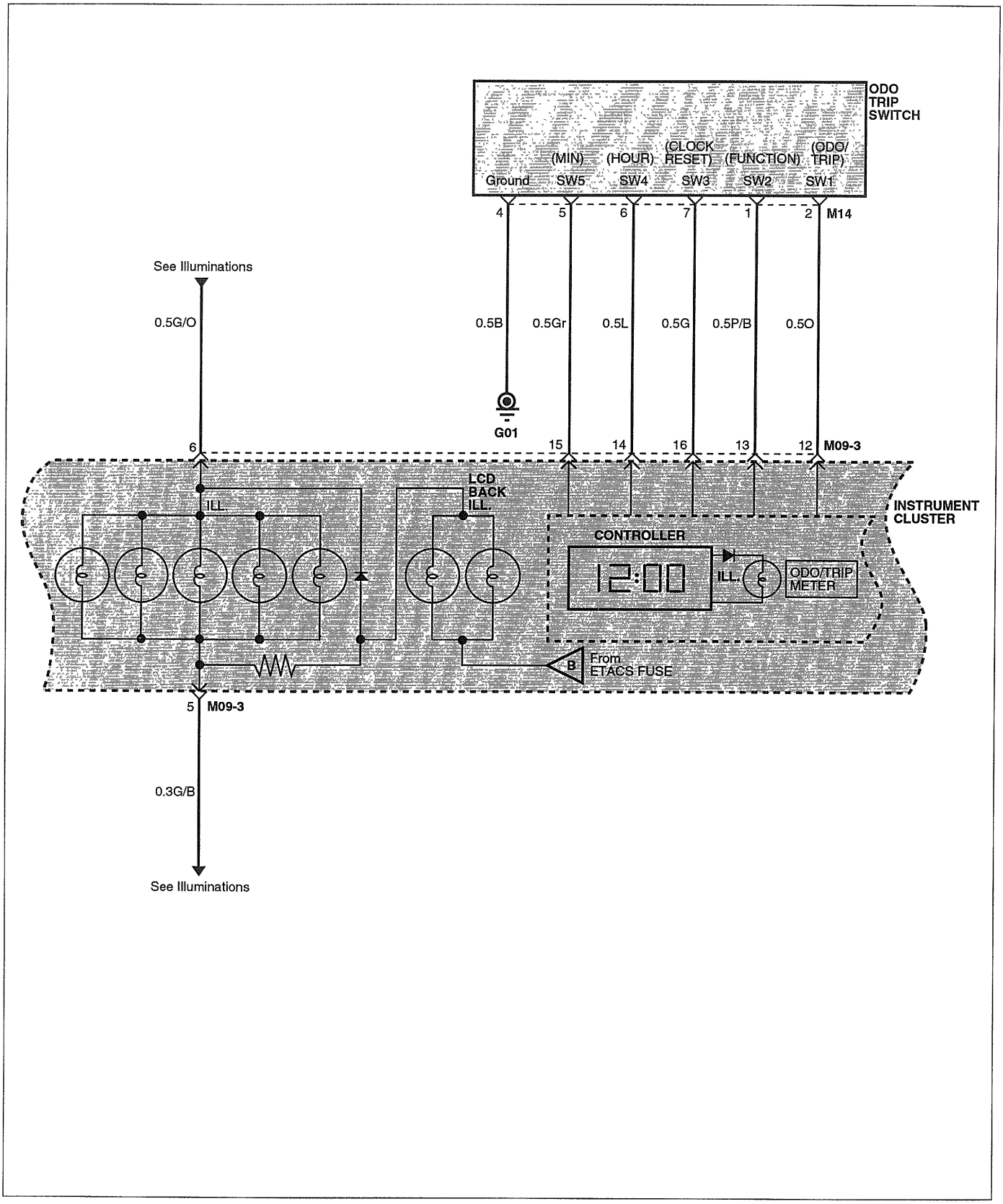
E2FC025C

INDICATORS & GAUGES (4)



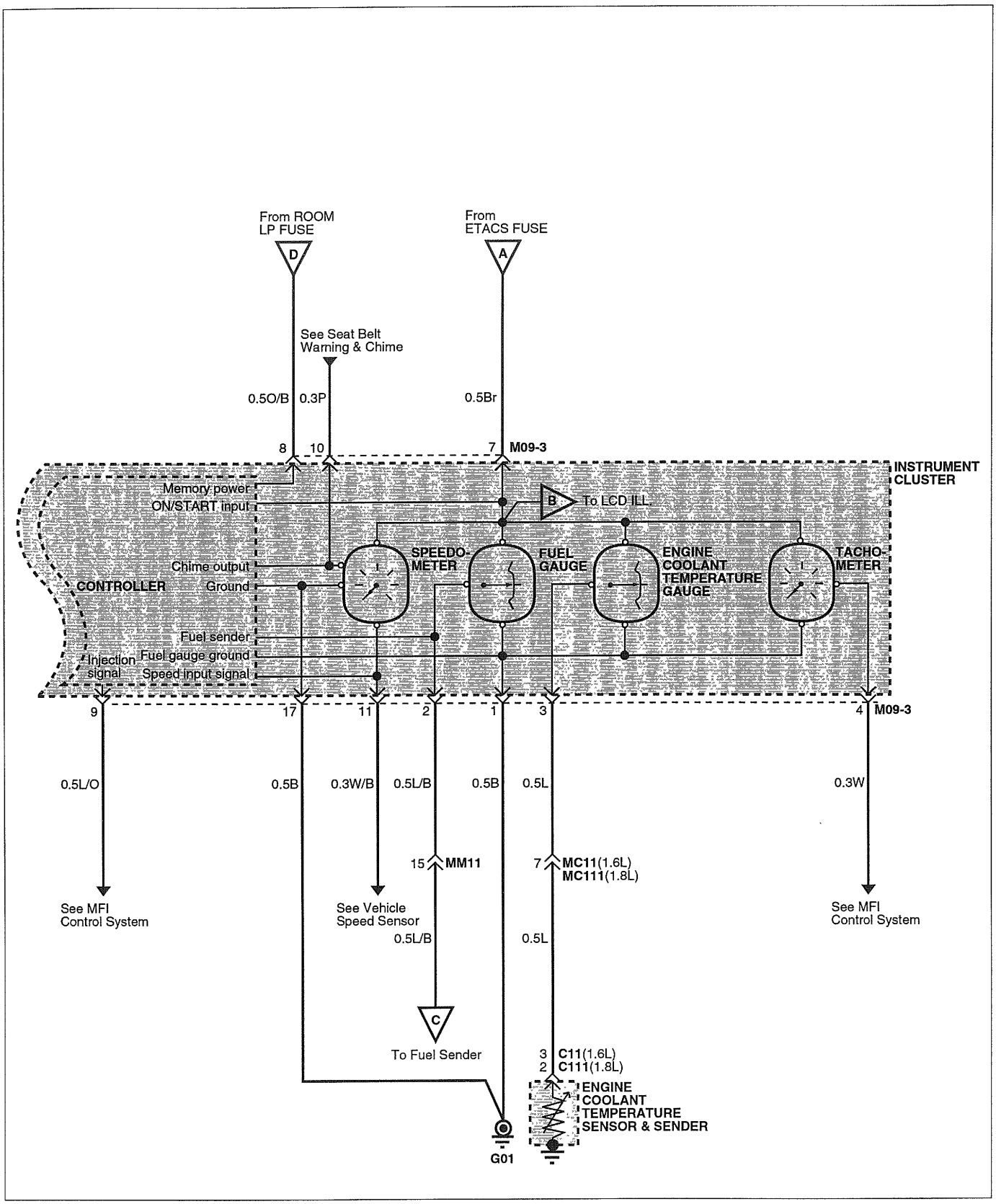
E2FC025D

INDICATORS & GAUGES (5)



E2FC025E

INDICATORS & GAUGES (6)



E2FC025F

COMPONENT LOCATION INDEX

Components		Location reference-page
C11	Engine coolant temperature sensor & sender (1.6L)	CL-17
C15	Oil pressure switch (1.6L)	CL-17
C111	Engine coolant temperature sensor & sender (1.8L)	CL-20
C115	Oil pressure switch (1.8L)	CL-20
M09-1	Instrument cluster	CL-2
M09-2	Instrument cluster	CL-2
M09-3	Instrument cluster	CL-2
M14	ODO trip switch	CL-3
M47	Joint connector	CL-5
M55	Fuel sender & Fuel pump motor	CL-6
Connectors		
EM21		CL-14
MC11		CL-8
MC21		CL-8
MC111		CL-8
MC121		CL-8
MM11		CL-9
Grounds		
G01		CL-29
G06		CL-29

Circuit Description

GAUGES Operation
With the ignition switch in ON or START, battery voltage is applied to the gauges (Speedometer, Tachometer, Fuel Gauge and Engine Coolant Temperature Gauge) from ETACS fuse.

Speedometer
The speedometer drive circuits receive pulses from the Vehicle Speed Sensor (VSS). The pulse rates increase as the car accelerates. The frequency and duration of these input pulses are measured and displayed by the speedometer.

Tachometer
The tachometer displays engine speed in rpm. Voltage pulses are taken from the ignition system and sent to the tachometer. The tachometer responds to the frequency of the voltage pulses which vary according to engine speed. The ECM processes these pulses into a signal that causes the gauge needle to move.

Fuel Gauge
The pointer of the fuel gauge is moved by the magnetic field of two coils. The coils are at right angles to each other. The megnetic field, controlled by the fuel gauge sender, causes the gauge needle to move. As the resistance in the sender varies, current through the gauge coils changes. When the fuel level is below the thermistor, the resistance of thermistor varies, providing a ground for the low fuel indicator bulb.

Engine Coolant Temperature Gauge
The pointer of the engine coolant temperature gauge is moved by the magnetic field of two coils. The coils are at right angles to each other. The magnetic field, controlled by the engine coolant temperature sender, cause the gauge needle to move. As the resistance in the sender varies, current through the gauge coils changes.

INDICATOR Operation
With the ignition switch in ON or START, battery voltage is applied to the indicator bulb from ETACS fuse.

Oil pressure indicator
When the oil pressure is low (oil pressure switch is closed), ground is provided to the oil pressure indicator bulb. The oil pressure does not register when the engine is not running or with ignition ON. In that, case the pressure switch remains closed and the indicator illuminates.

Low fuel indicator
The thermister in the fuel gauge sender is near the bottom of the tank. When the fuel level is below the thermister, the resistance of the thermistor lowers, providing a ground for the indicator.

Check ENGINE indicator
The ground of the indicator is controlled by the ECM. The control module will light the indicator when the engine is not running or when it detects engine problems.

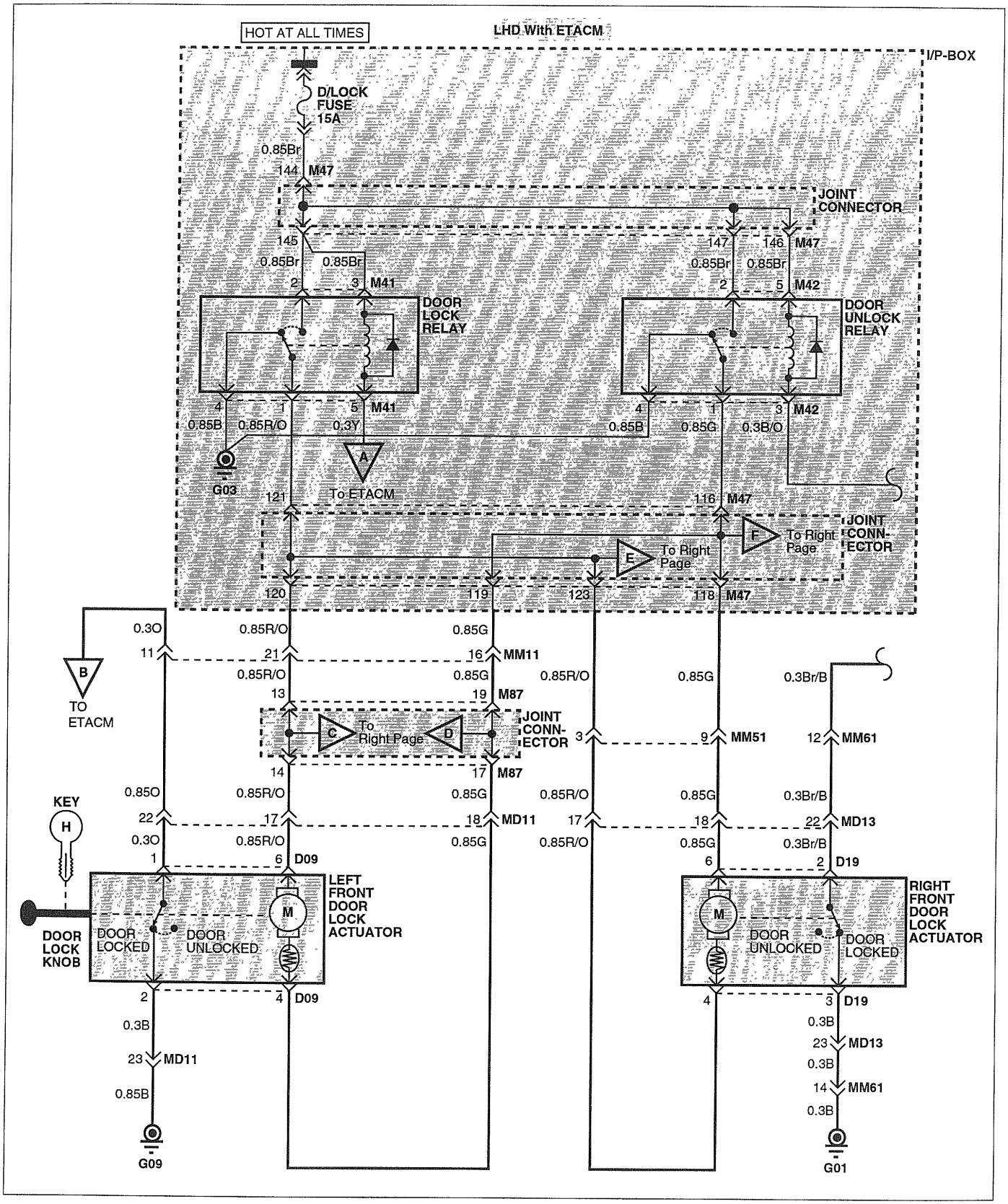
Trip computer
Trip computer receives all the information related to the trip and displays various data for driving on the monitor. The trip data includes the average speed from the ignition-ON till the ignition-OFF, the driving time and the distance to empty with remaining fuel.

Clock
Clock displays the current time on the monitor. Every time pressing "H" switch, the hour will be up-counted and pressing "M" switch, the minute will be up-counted. When the "R" switch is pressed in 30 minutes or less, the minutes will be reset to "oo" and pressed in 30 minutes or more, the hour will be increased and the minutes will be reset to "oo".

ODO/Trip meter
Controller receives the speedo meter input signal and displays the ODO/trip meter.
When pressing the ODO/trip select & reset switch, shifts the mode to ODO, trip A and trip B.

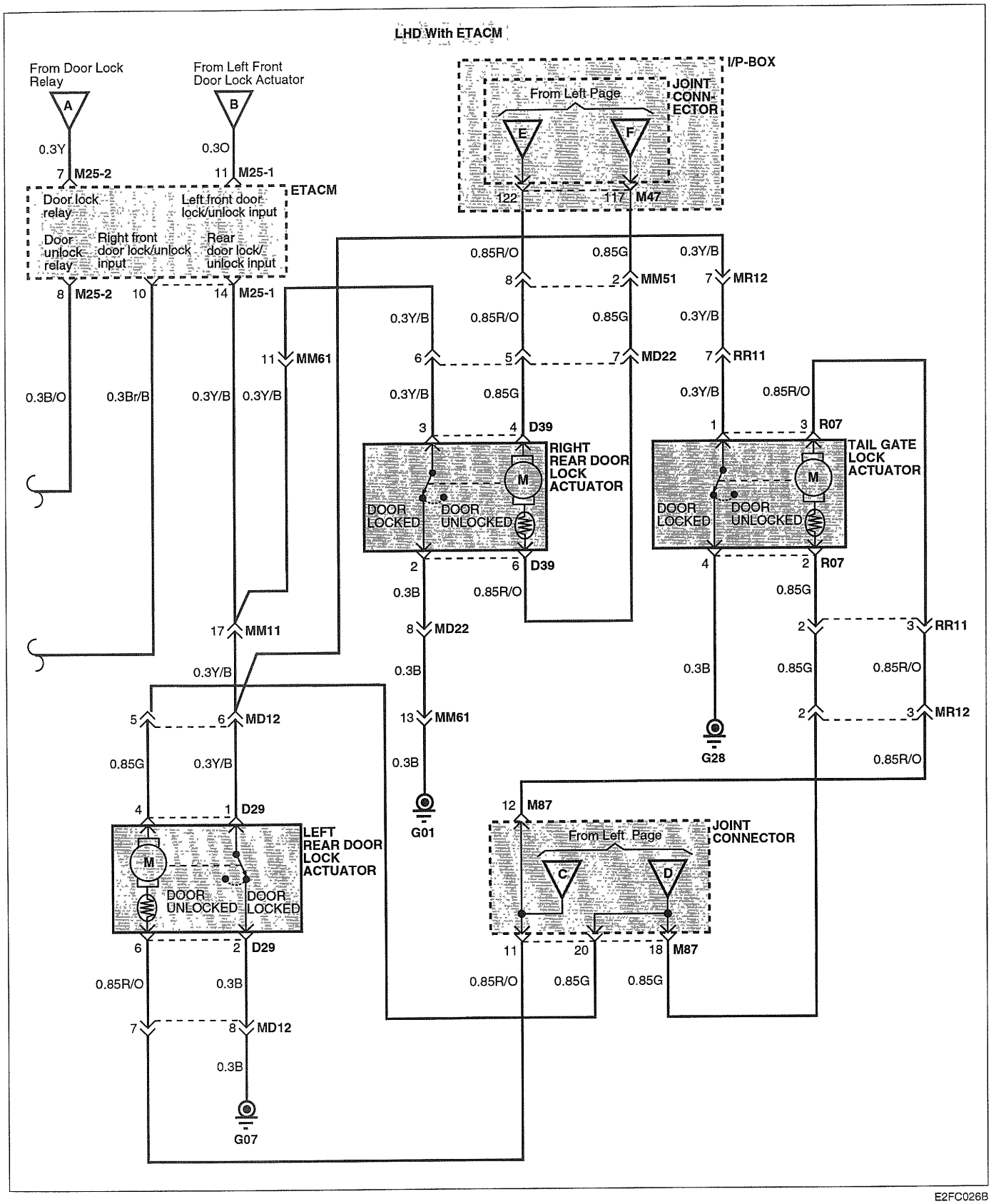
POWER DOOR LOCKS E2FC0260

POWER DOOR LOCKS (1)



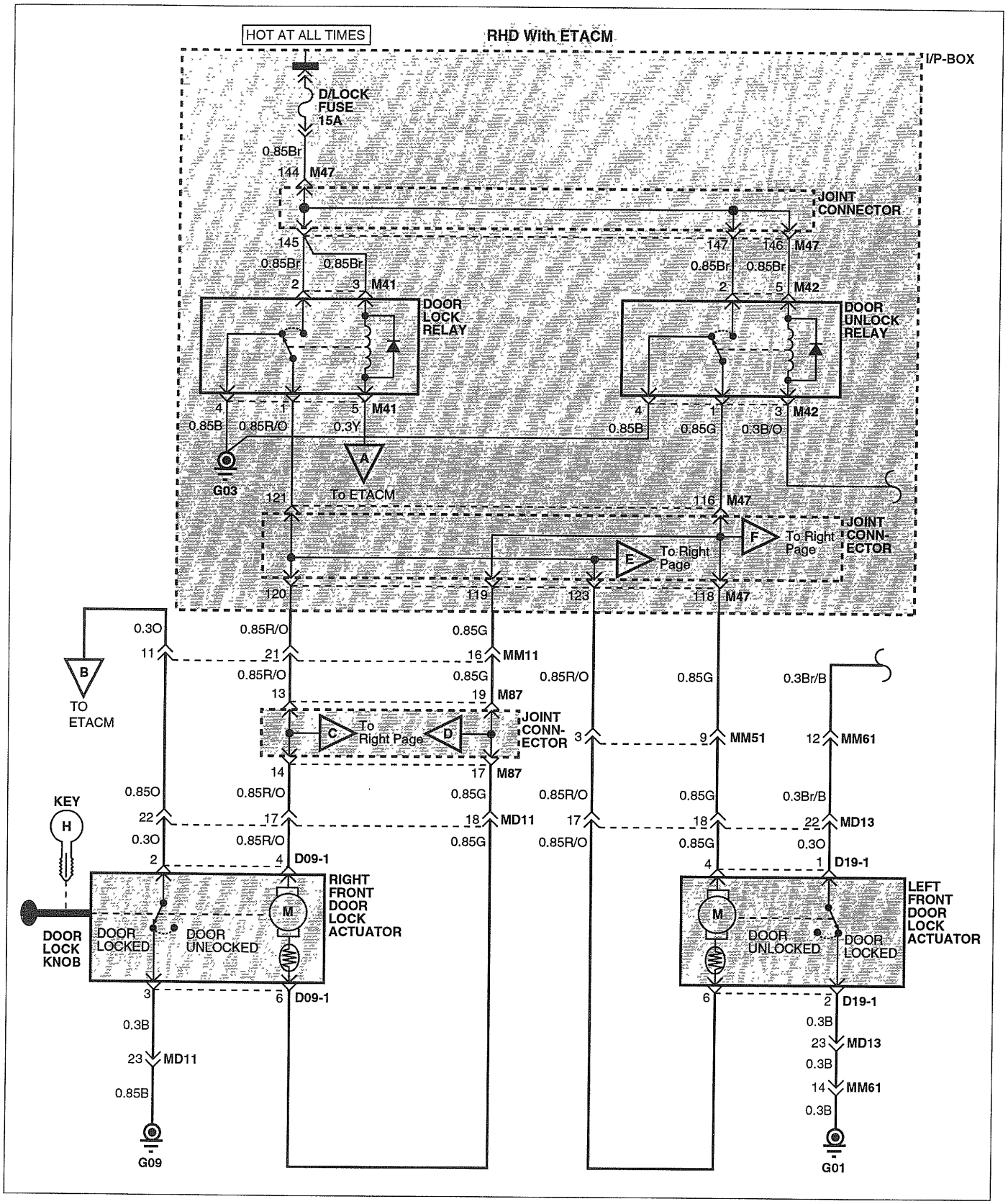
E2FC026A

POWER DOOR LOCKS (2)



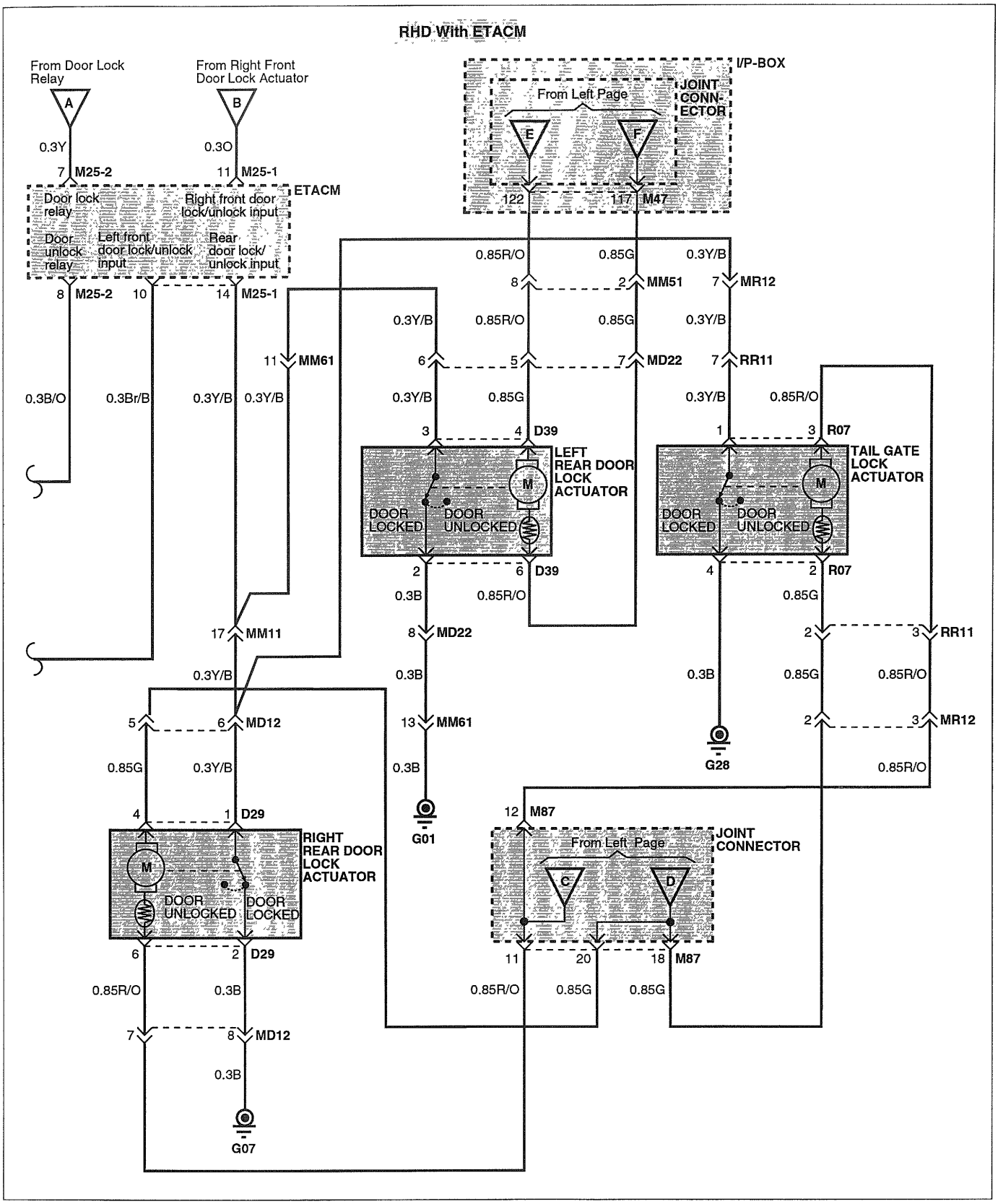
E2FC026B

POWER DOOR LOCKS (3)



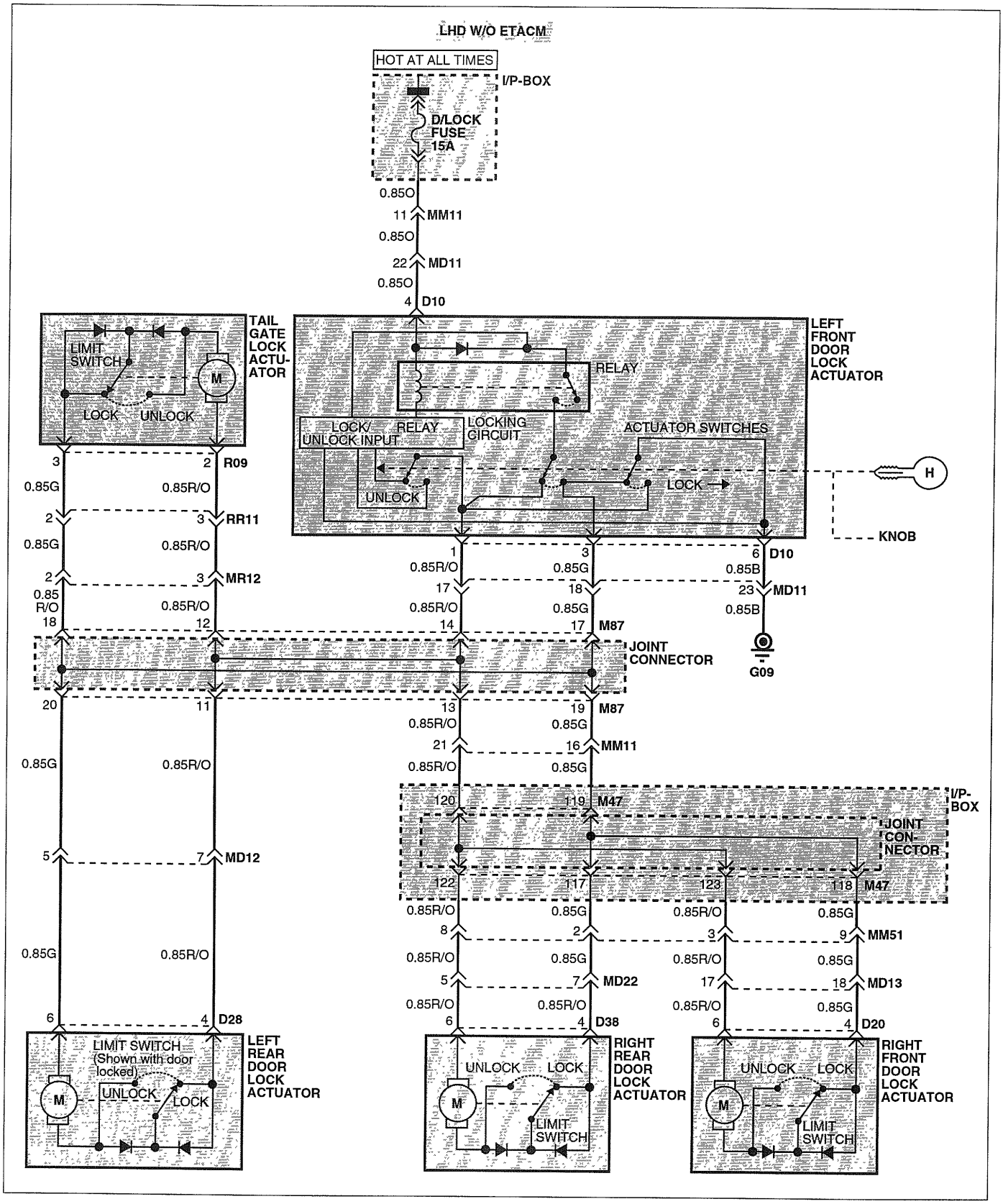
E2FC026C

POWER DOOR LOCKS (4)



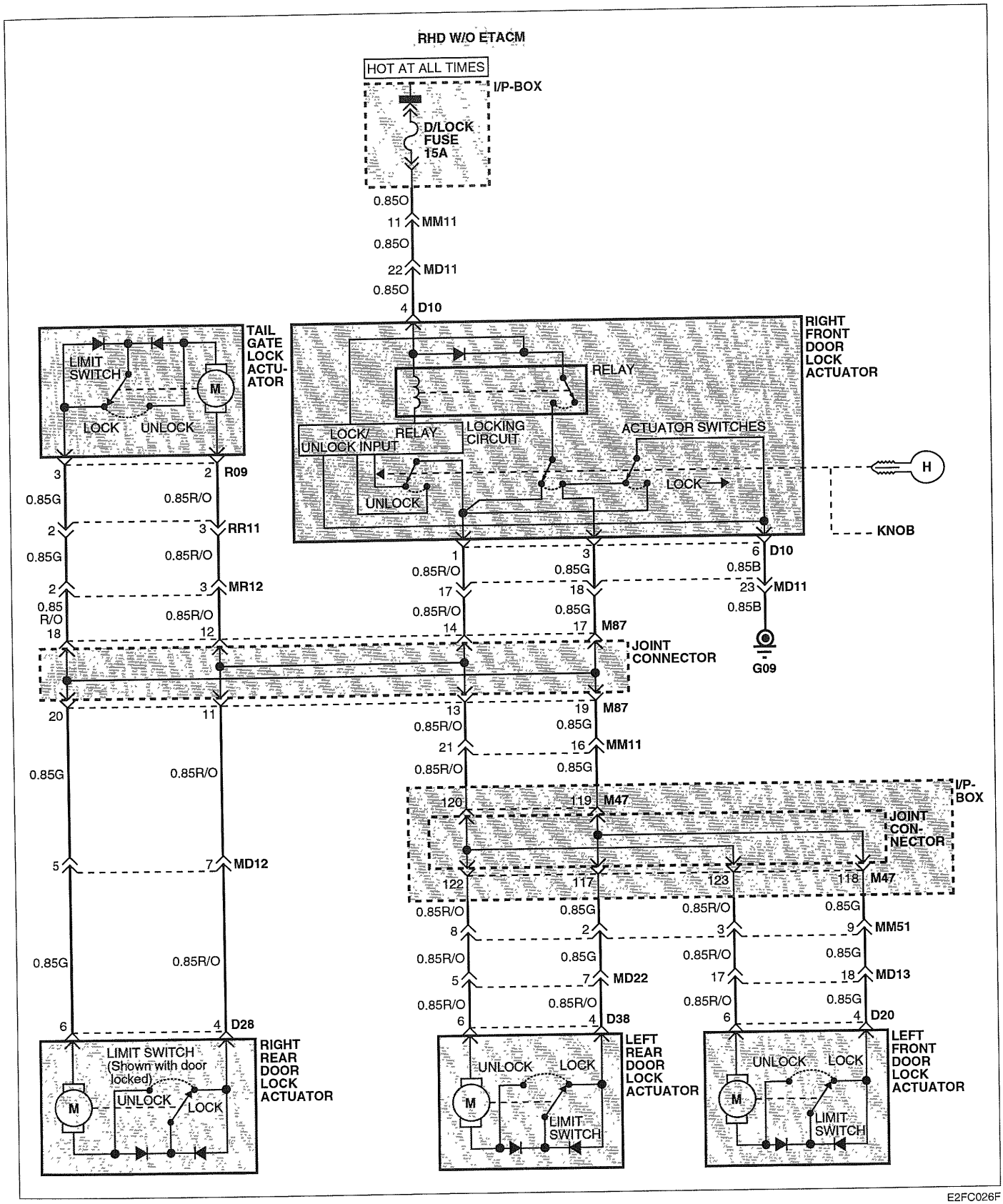
E2FC026D

POWER DOOR LOCKS (5)



E2FC026E

POWER DOOR LOCKS (6)



E2FC026F

COMPONENT LOCATION INDEX

Components		Location reference-page
D09	Left front door lock actuator	CL-27
D19	Right front door lock actuator	CL-27
D20	Left front door lock actuator	CL-27
D28	Left rear door lock actuator	CL-27
D29	Right rear door lock actuator	CL-27
D38	Left rear door lock actuator	CL-27
D39	Right rear door lock actuator	CL-27
M25-1	ETACM	CL-4
M25-2	ETACM	CL-4
M41	Door lock relay	CL-5
M42	Door unlock relay	CL-5
M47	Joint connector	CL-5
M87	Joint connector	CL-7
R07	Tail gate lock actuator(With ETACM)	CL-28
R09	Tail gate lock actuator(W/O ETACM)	CL-28
Connectors		
MD11		CL-8
MD12		CL-8
MD13		CL-8
MD22		CL-8
MM11		CL-9
MM51		CL-9
MM61		CL-9
MR12		CL-9
RR11		CL-28
Grounds		
G01		CL-29
G07		CL-29
G09		CL-29
G28		CL-31

Circuit Description

With ETACS CM

Battery voltage is supplied to the door lock control module at all times from D/LOCK fuse. There is a metal rod that links the left door lock switch and the left door locking actuator. When the left door lock switch is pushed to lock, the metal rod then pushes the actuator switches inside the door lock actuator to the lock position. The ETACM receives the lock input, controls the two door lock relay coils and then battery voltage is supplied to the door lock actuators through D/LOCK fuse and the two door lock relay contacts.

The solid state circuit will de-energize the relay coil when the limit switches in the door lock actuators move to the unlock position. The door locks work similarly when the left door lock switch is pushed to unlock, except that the electrical current goes through each motor in the opposite direction.

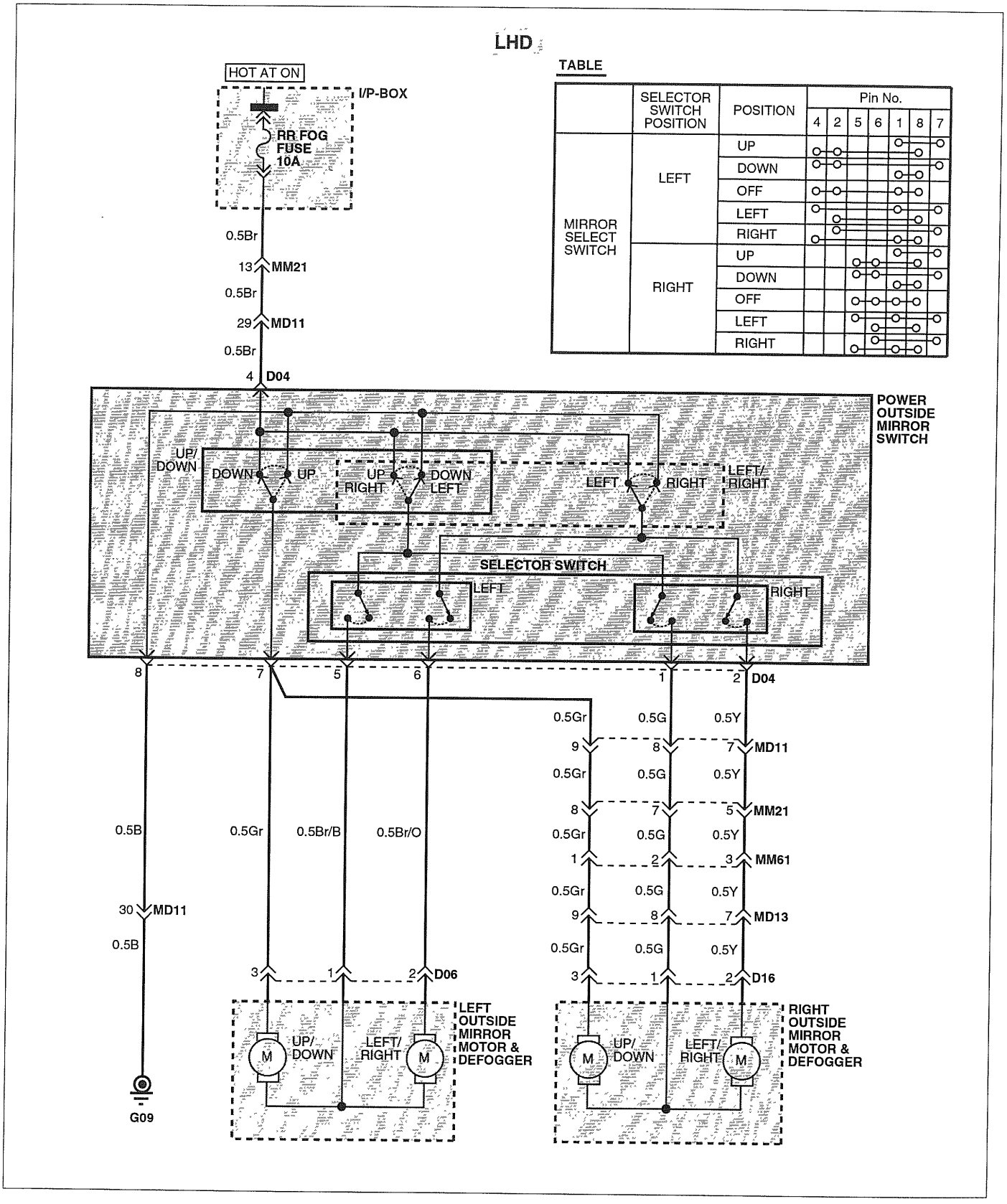
W/O ETACS CM

Battery voltage is supplied to the left door lock actuator at all times from D/LOCK fuse. There is a metal rod that links the left door lock switch and the left door locking actuator. When the left door lock switch is pushed to lock, the metal rod then pushes the actuator switches inside the door lock actuator to the lock position. The solid state circuit receives the lock input and then supplies power to the door lock actuators.

The solid state circuit will de-energize the relay coil when the limit switches in the door lock actuators move to the unlock position. The door locks work similarly when the left door lock switch is pushed to unlock, except that the electrical current goes through each motor in the opposite direction.

POWER OUTSIDE MIRRORS E2FC0270

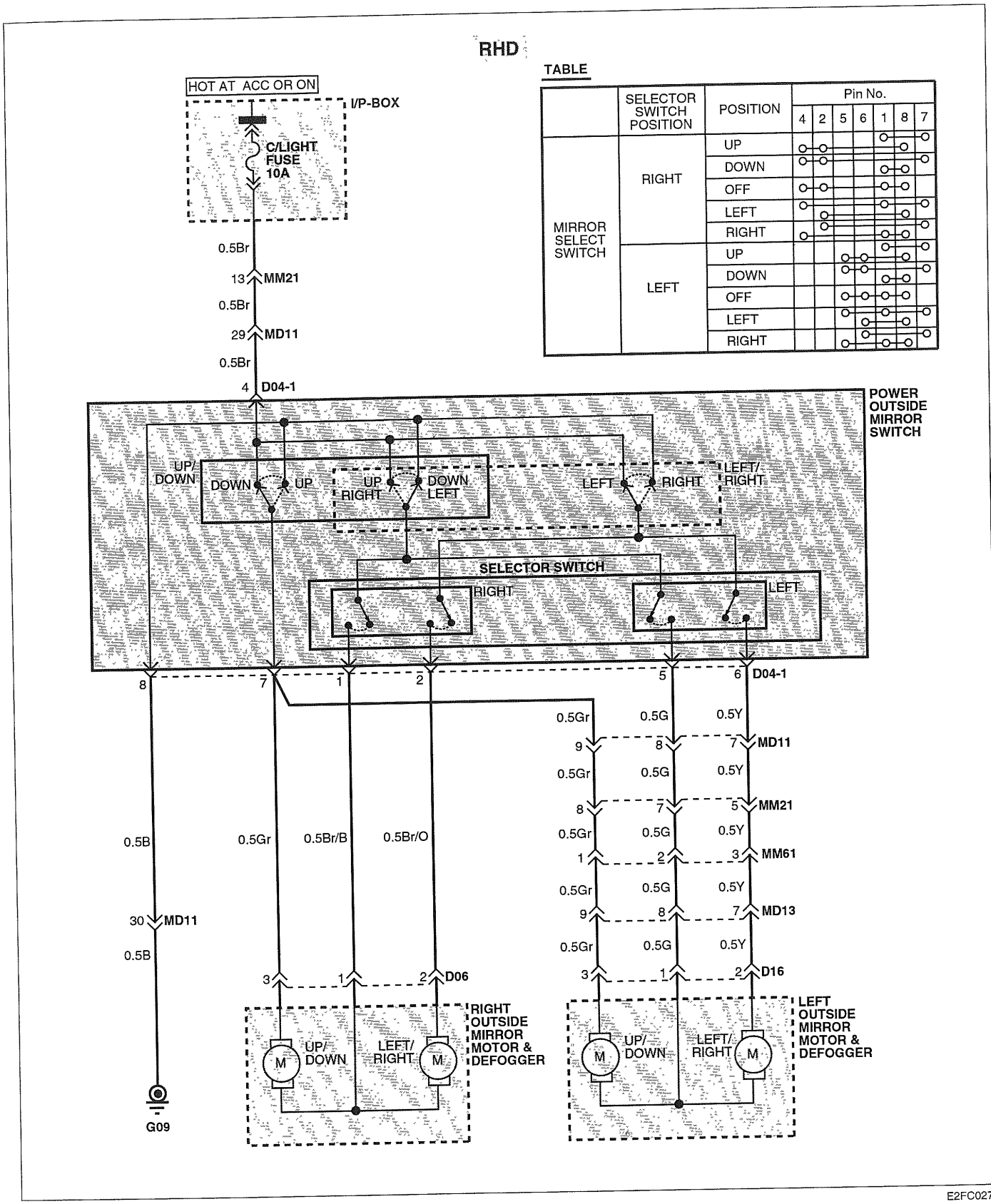
POWER OUTSIDE MIRRORS (1)



	SELECTOR SWITCH POSITION	POSITION	Pin No. 4	2	5	6	1	8	7
MIRROR SELECT SWITCH	LEFT	UP	○	○			○		○
		DOWN	○	○				○	○
		OFF	○	○			○	○	
		LEFT	○		○		○	○	○
		RIGHT	○			○	○	○	○
	RIGHT	UP			○	○	○		○
		DOWN			○	○		○	○
		OFF			○	○	○	○	
		LEFT			○		○	○	○
		RIGHT			○	○	○	○	○

E2FC027A

POWER OUTSIDE MIRRORS (2)



	SELECTOR SWITCH POSITION	POSITION	Pin No. 4	2	5	6	1	8	7
MIRROR SELECT SWITCH	RIGHT	UP	○	○			○		○
		DOWN	○	○				○	○
		OFF	○	○			○	○	
		LEFT	○		○		○		○
		RIGHT	○		○			○	○
	LEFT	UP			○	○	○		○
		DOWN			○	○		○	○
		OFF			○	○	○	○	
		LEFT			○		○		○
		RIGHT			○			○	○

E2FC027B

COMPONENT LOCATION INDEX

Components		Location reference-page
D04	Power outside mirror switch	CL-27
D06	Left outside mirror motor & defogger	CL-27
D16	Right outside mirror motor & defogger	CL-27
Connectors		
MD11		CL-8
MD13		CL-8
MM21		CL-9
MM61		CL-9
Grounds		
G09		CL-29

Circuit Description

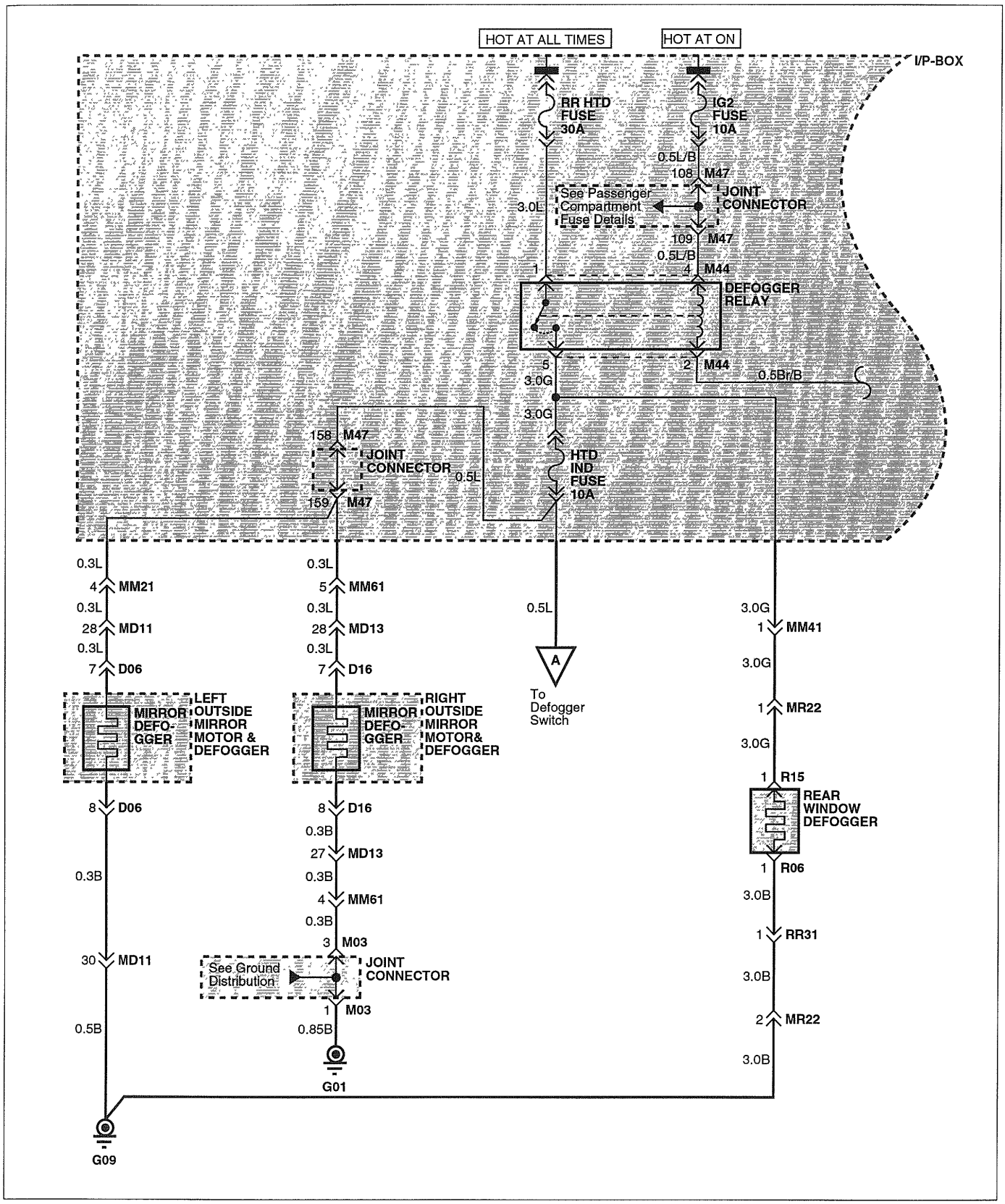
The operation of the two outside mirrors is controlled by the power outside mirror switch. Each mirror has two reversible motors: One motor moves the mirror up and down, the other motor moves the mirror left and right. The master selector switch in the power outside mirror switch controls the direction of the battery voltage to the right or left outside mirror.
With the ignition switch in ON, battery voltage is applied from RR FOG fuse to the power outside mirror switch. With the master selector switch in the LEFT position and the up/down switch in UP, battery voltage is applied to the up contacts of the up/down switch and to the left power mirror up/down motor.

Ground is provided to the up contacts of the up/down switch and the left power mirror up/down motor and the mirror goes up. In the DOWN position, battery voltage and ground are applied to the opposite terminals of the motor. The left/right switch works similarly to the up/down switch. With the master selector switch in the RIGHT position, battery voltage and ground are applied to the right power mirror motors, which then operate in a similarway.

MEMO

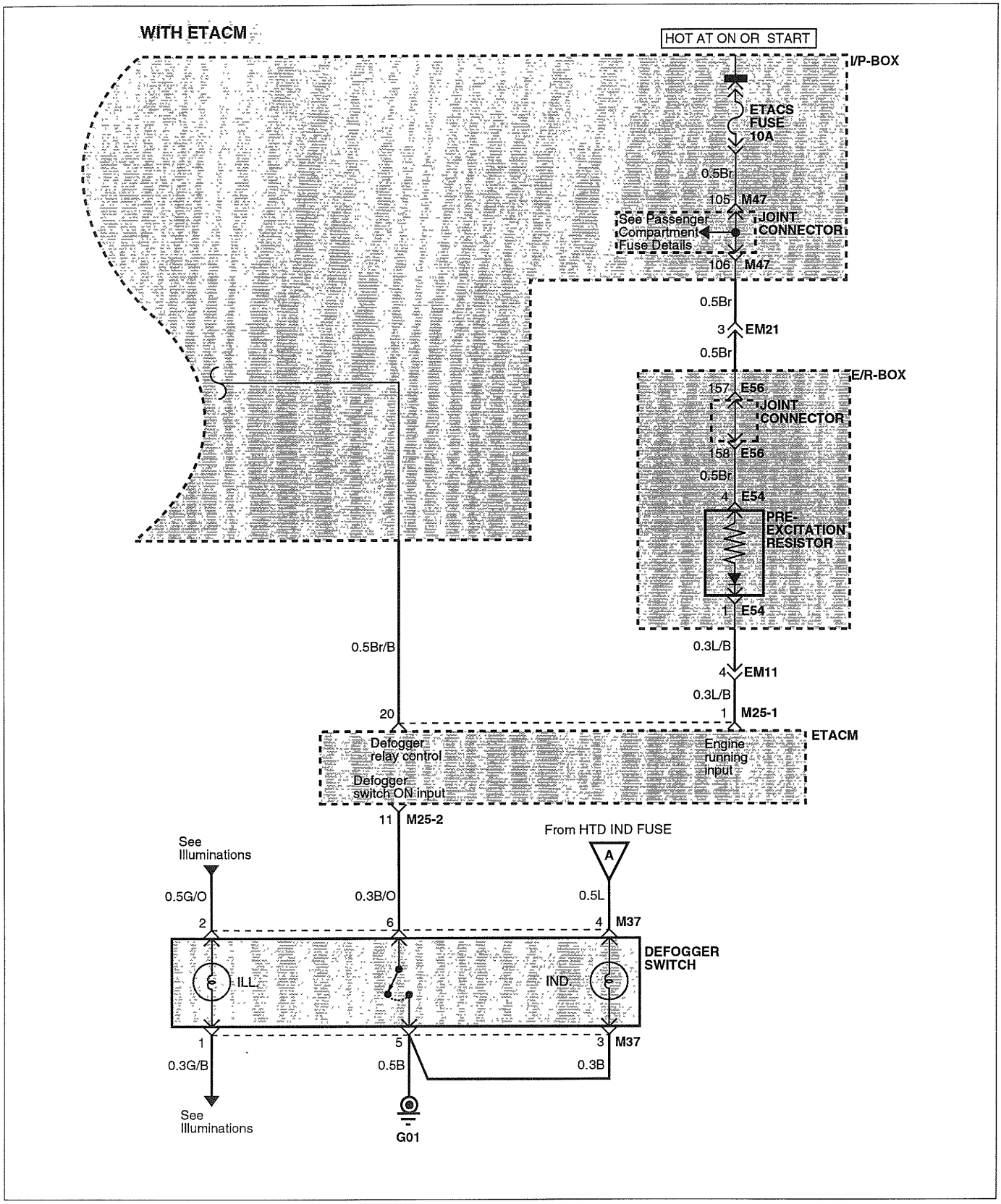
REAR WINDOW & OUTSIDE MIRROR DEFOGGER SYSTEM E2FC0280

REAR WINDOW & OUTSIDE MIRROR DEFOGGER SYSTEM (1)



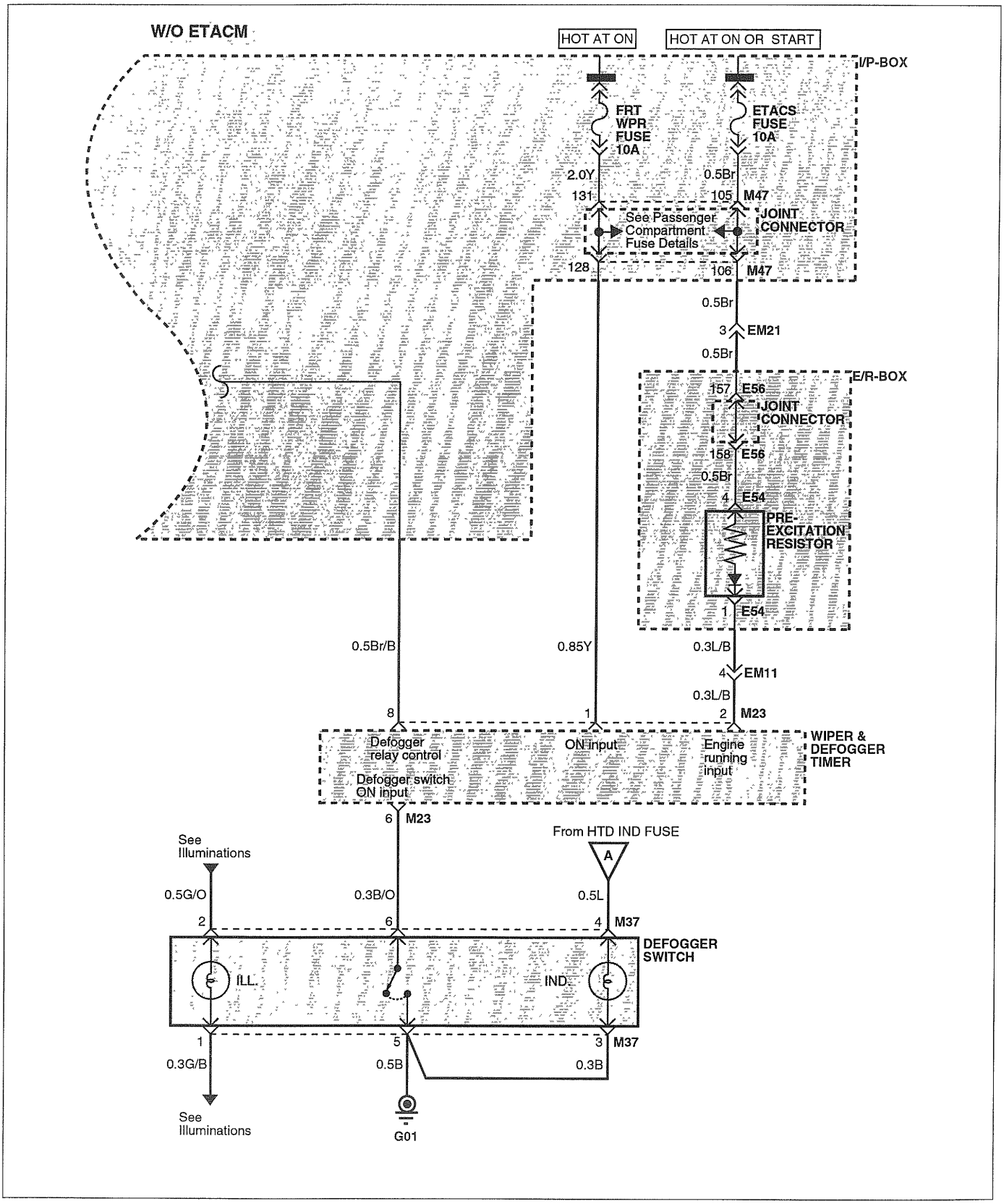
E2FC028A

REAR WINDOW & OUTSIDE MIRROR DEFOGGER SYSTEM (2)



E2FC028B

REAR WINDOW & OUTSIDE MIRROR DEFOGGER SYSTEM (3)



E2FC028C

COMPONENT LOCATION INDEX

Components		Location reference-page
D06	Left outside mirror motor & defogger	CL-27
D16	Right outside mirror motor & defogger	CL-27
E54	Pre-excitation resistor	CL-13
E56	Joint connector	CL-13
M03	Joint connector	CL-2
M25-1	ETACM	CL-4
M37	Defogger switch	CL-5
M44	Defogger relay	CL-5
M47	Joint connector	CL-5
R06	Rear window defogger (-)	CL-28
R15	Rear window defogger (+)	CL-28
Connectors		
EM11		CL-14
EM21		CL-14
MD11		CL-8
MD13		CL-8
MM21		CL-9
MM41		CL-9
MM61		CL-9
MR22		CL-9
RR31		CL-28
Grounds		
G01		CL-29
G09		CL-29

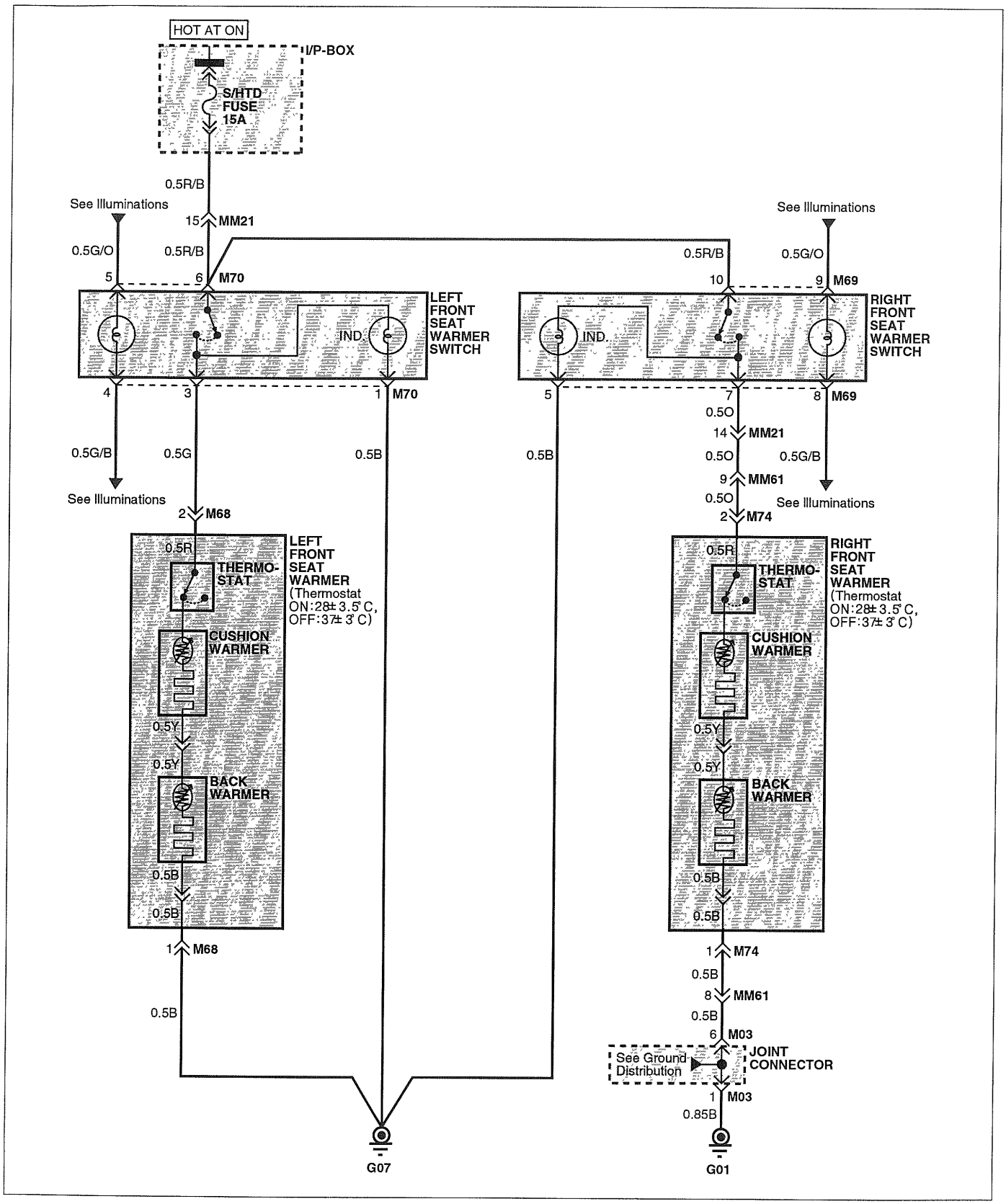
Circuit Description

The ETACM (Electric Time and Alarm Control Module)/Defogger Timer controls the operation of the rear window defogger and outside mirror defogger through defogger relay coil control.

When the defogger switch, is depressed (ON), and the engine is running, the defogger relay coil is energized through the ETACM/Defogger Timer for 20 minutes. Battery voltage is supplied to the rear window defogger and the outside mirror defogger through the closed defogger relay contact.

SEAT WARMER E2FC0290

SEAT WARMER (1)



E2FC029A

COMPONENT LOCATION INDEX

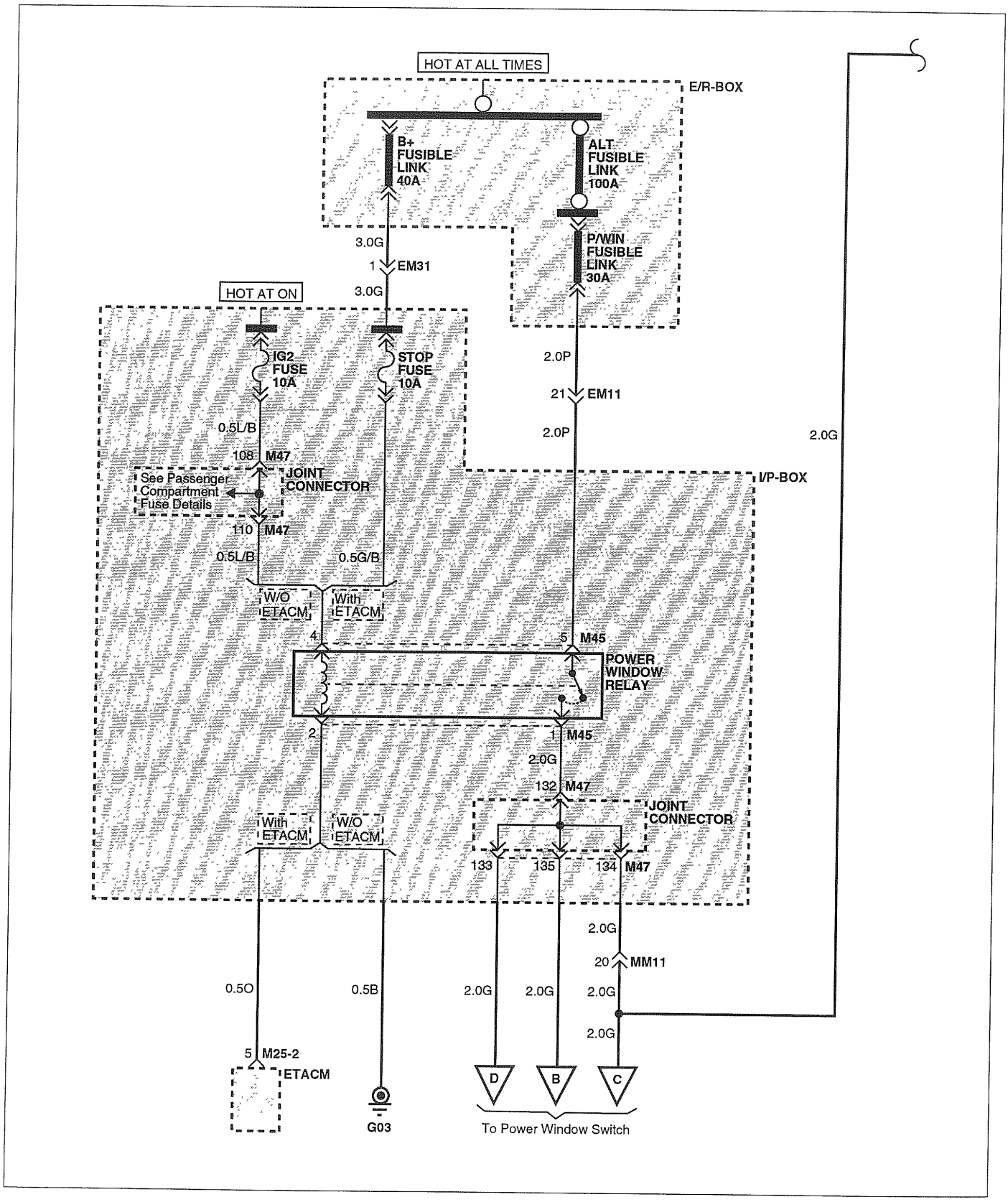
Components		Location reference-page
M03	Joint connector	CL-2
M68	Left front seat warmer	CL-6
M69	Right front seat warmer switch	CL-6
M70	Left front seat warmer switch	CL-6
M74	Right front seat warmer	CL-6
Connectors		
MM21		CL-9
MM61		CL-9
Grounds		
G01		CL-29
G07		CL-29

Circuit Description

S/HTD fuse supplies battery voltage to the Left/Right front seat warmer switch when the ignition switch is in ON for left/right seat warmers operation.
When each seat warmer switch is pushed, battery voltage supplied to the seat warmer and grounded at G01, G07.

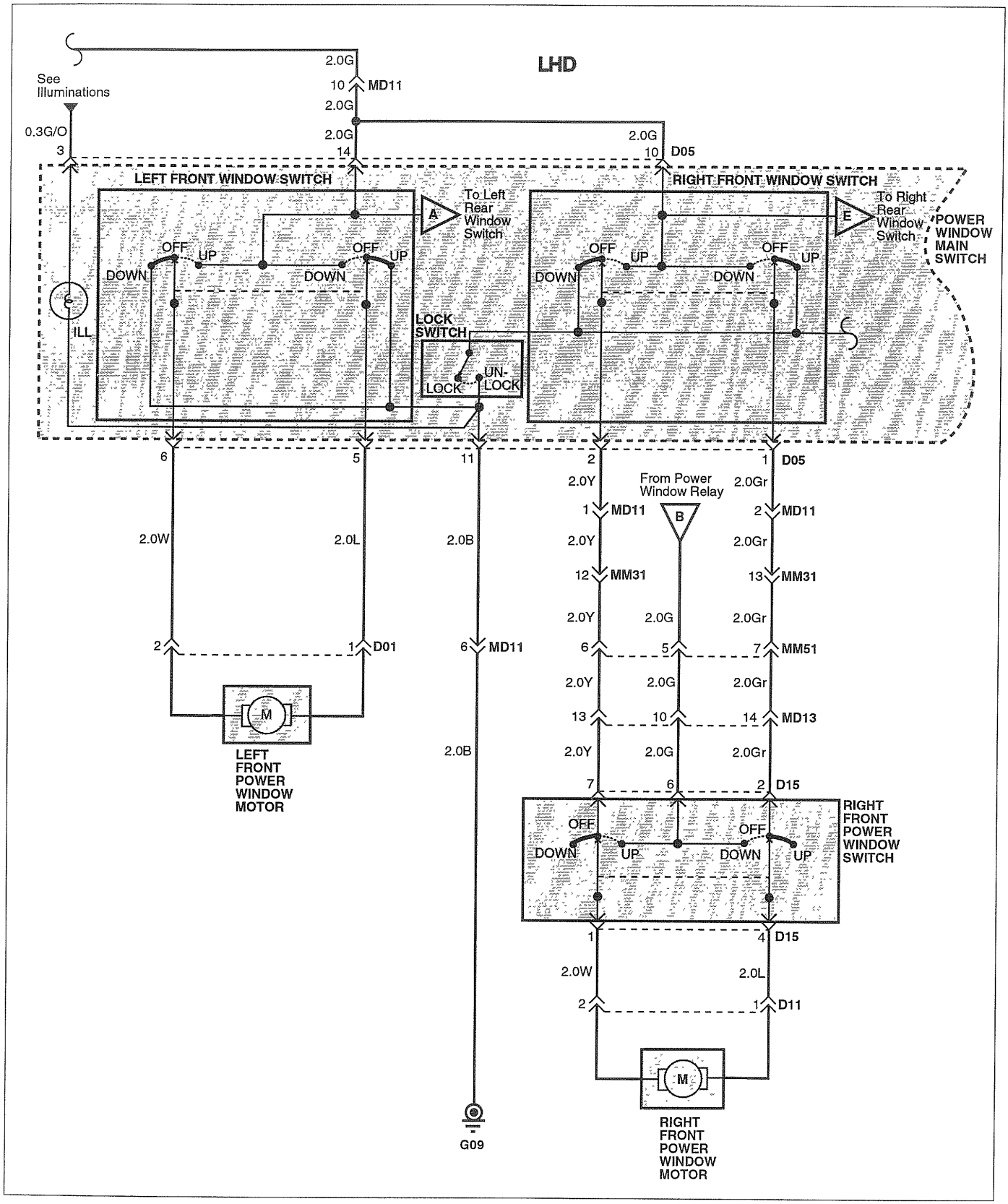
POWER WINDOWS E2FC0310

POWER WINDOWS (1)



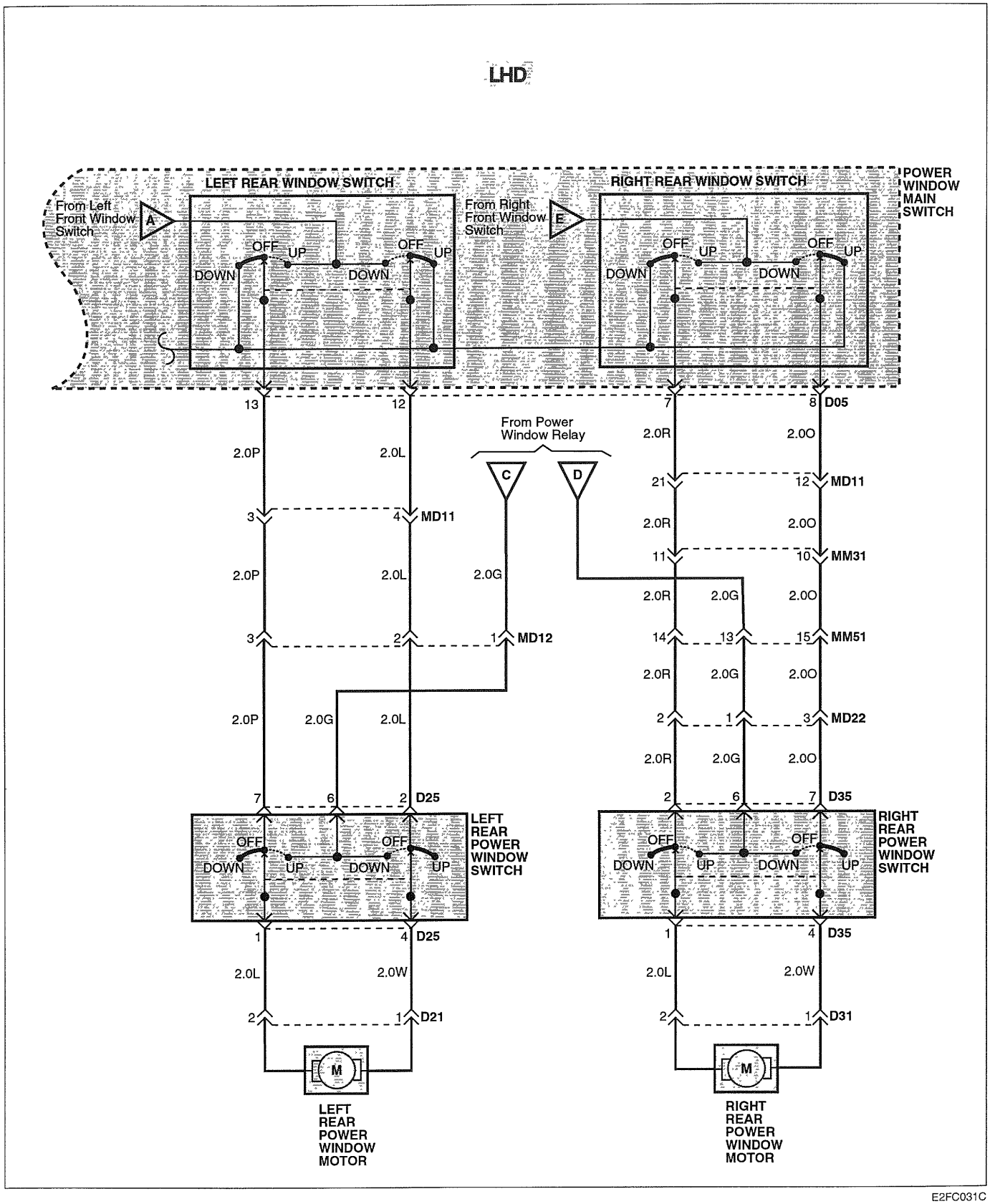
E2FC031A

POWER WINDOWS (2)



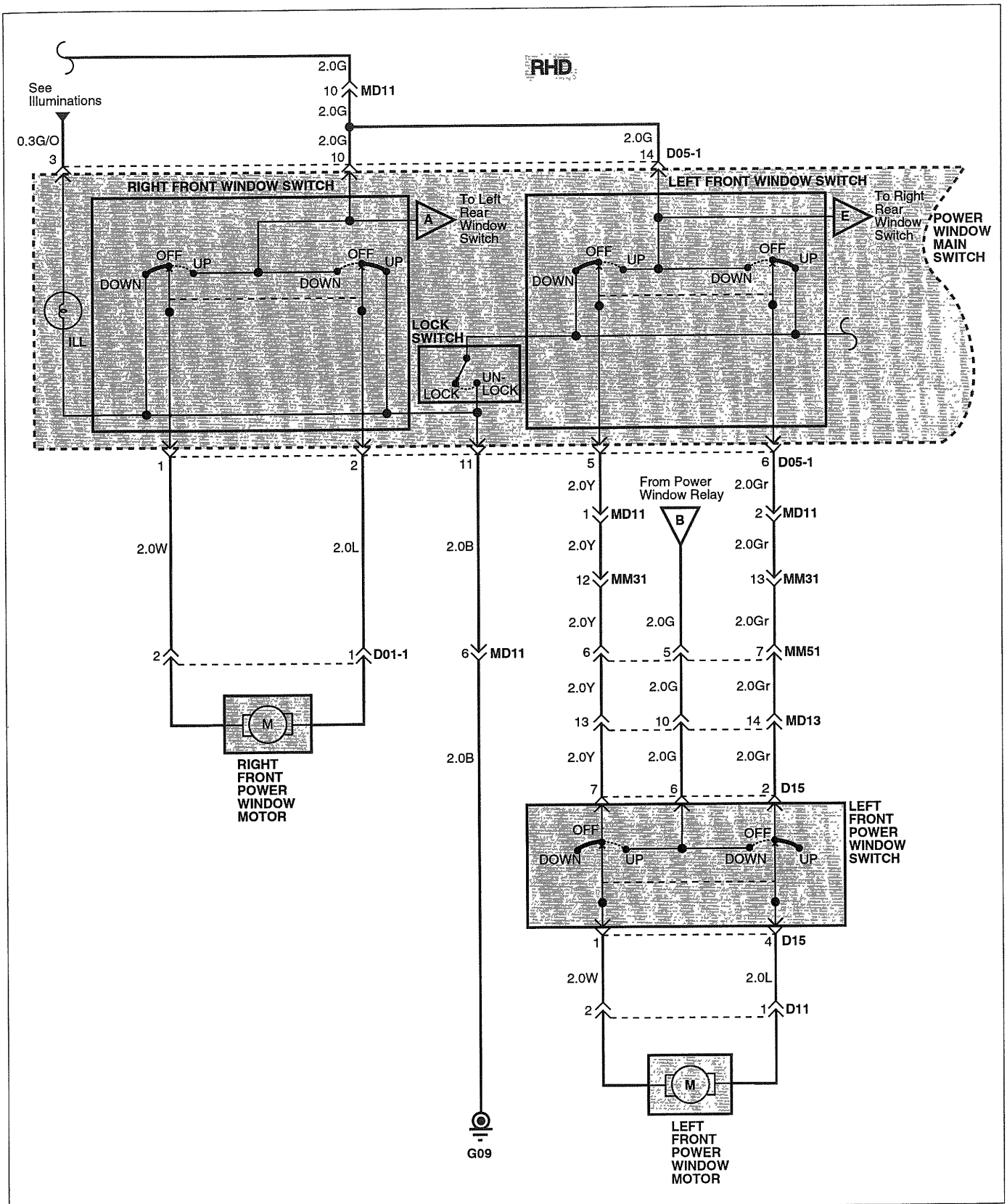
E2FC031B

POWER WINDOWS (3)



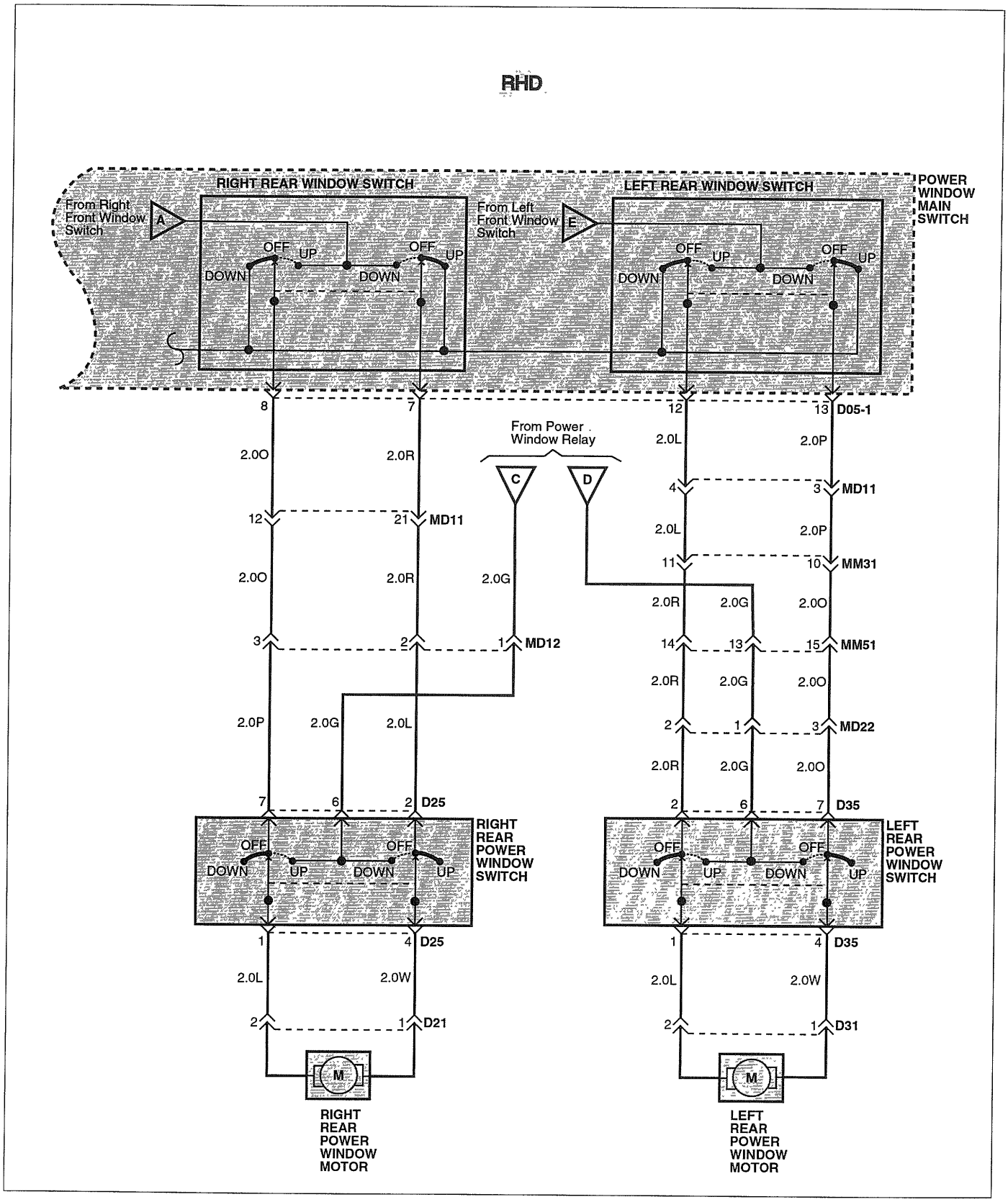
E2FC031C

POWER WINDOWS (4)



E2FC031D

POWER WINDOWS (5)



E2FC031E

COMPONENT LOCATION INDEX

Components		Location reference-page
D01	Left front power window motor	CL-27
D05	Power window main switch	CL-27
D11	Right front power window motor	CL-27
D15	Right front power window switch	CL-27
D21	Left rear power window motor	CL-27
D25	Left rear power window switch	CL-27
D31	Right rear power window motor	CL-27
D35	Right rear power window switch	CL-27
M25-2	ETACM	CL-4
M45	Power window relay	CL-5
M47	Joint connector	CL-5
Connectors		
EM11		CL-14
EM31		CL-14
MD11		CL-8
MD12		CL-8
MD13		CL-8
MD22		CL-8
MM11		CL-9
MM31		CL-9
MM51		CL-9
Grounds		
G09		CL-29

Circuit Description

A permanent magnetic motor operates each of the power windows. Each motor raises or lowers the glass when voltage is supplied to it. The direction the motor turns depends on the polarity of the supply voltage.
The power window main switch controls all the power window motors. Each window switch controls only one of the power window motors. If the lock switch in the power outside mirror switch is depressed, the rear power windows and the right front power window cannot be controlled by their own window switches, however, they can still be controlled by the power window main switch.

Power Window Main Switch Operation

Battery voltage is applied at all times to both the coil and contacts of the power window relay. The coil of the relay is supplied battery voltage through IG2 fuse(without ETACM)/ FUSIBLE LINK(B+)(with ETACM). Battery voltage is then supplied to the power window main switch through the closed relay contacts.

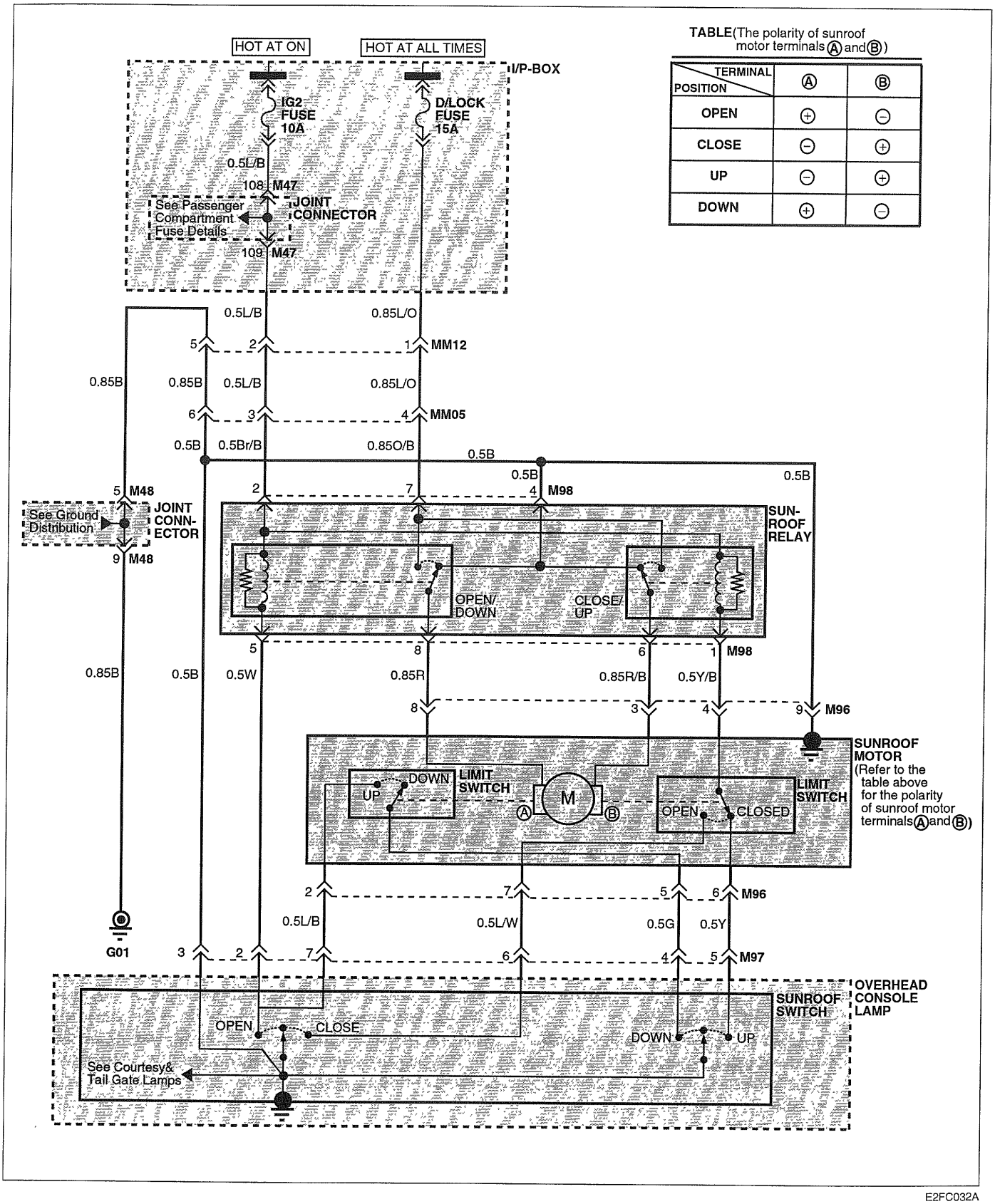
When any of the switches in the power window main switch are operated, battery voltage is applied to the power window motor. The power window motor is grounded through the opposite contact in the power window main switch. The power window motor runs to drive the window.

Window Switch Operation

When the power window relay coil is energized, battery voltage is supplied to the passenger window switches as long as the lock switch in the power window main switch is OFF (not depressed). When the passenger's window switch is operated, battery voltage is applied to one terminal of the power window motor and the other terminal is grounded through the opposite contact in the window switch and the main switch. The power window motor runs to drive the window.

SUNROOF E2FC0320

SUNROOF (1)



TABLE(The polarity of sunroof motor terminals Ⓐ and Ⓑ)

POSITION \ TERMINAL	Ⓐ	Ⓑ
OPEN	⊕	⊖
CLOSE	⊖	⊕
UP	⊖	⊕
DOWN	⊕	⊖

E2FC032A

COMPONENT LOCATION INDEX

Components		Location reference-page
M47	Joint connector	CL-5
M48	Joint connector	CL-5
M96	Sunroof motor	CL-8
M97	Overhead console lamp	CL-8
M98	Sunroof relay	CL-8
Connectors		
MM05		CL-9
MM12		CL-9
Grounds		
G01		CL-29

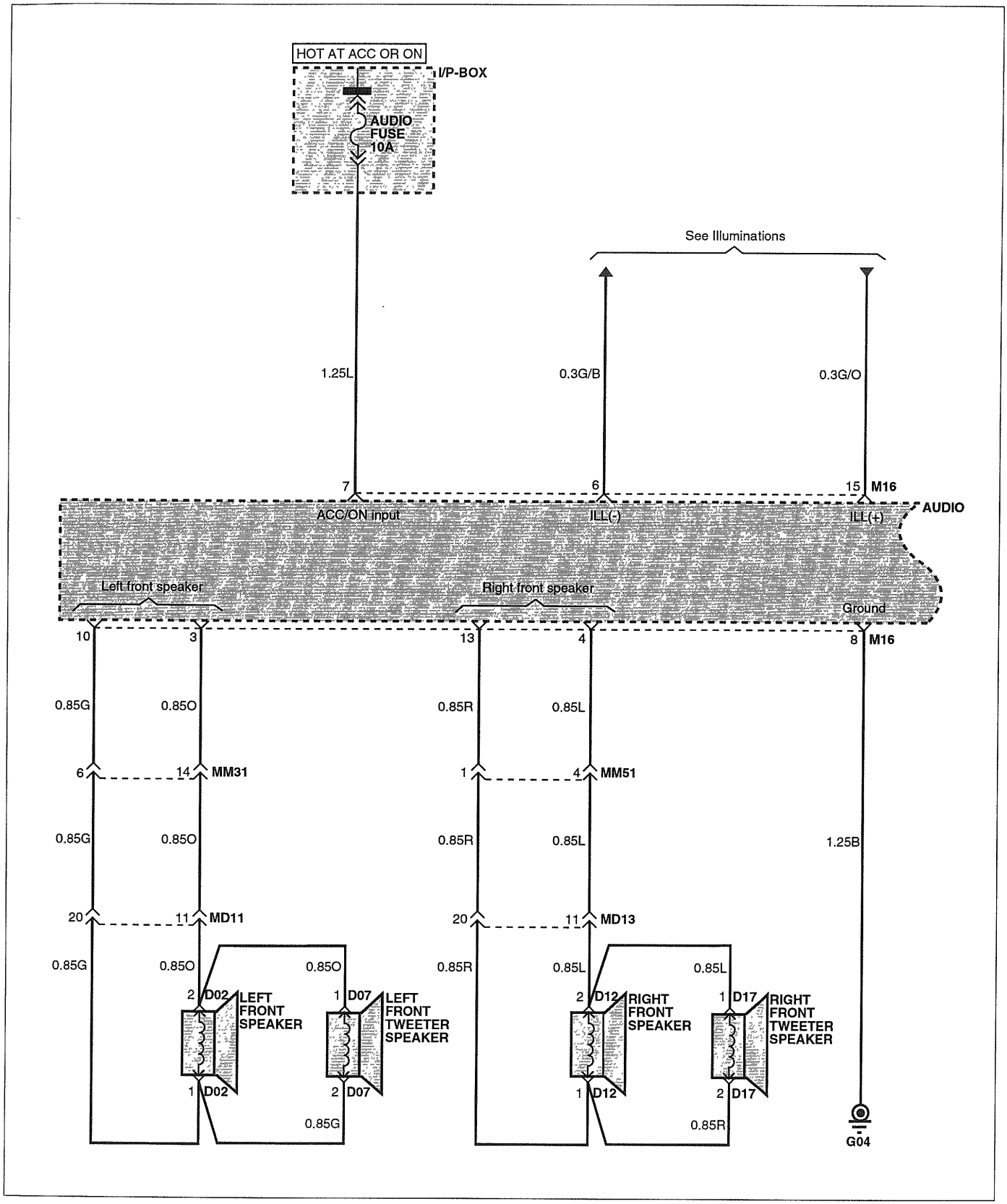
Circuit Description

Battery voltage is supplied at all times to open/tilt down and close/tilt up sunroof relay contacts. Open/tilt down relay and close/tilt up relay coils are also supplied battery voltage when the ignition switch is ON. When the ignition switch is ON, and the open switch is depressed, the open/tilt down relay coil is energized and battery voltage is then supplied to the sunroof motor through the open/tilt down relay contact. The motor is grounded through the close/tilt up relay contact.

When the ignition switch is ON, and the close switch is depressed, the close/tilt up relay coil is energized through the roof open/close limit switch. When the sunroof is open, the roof open/close limit switch always contacts the open position. The tilt up and tilt down switch works similarly to the open switch. The polarity of the voltage applied to the sunroof motor through the sunroof relay contacts changes according to the switch positions.

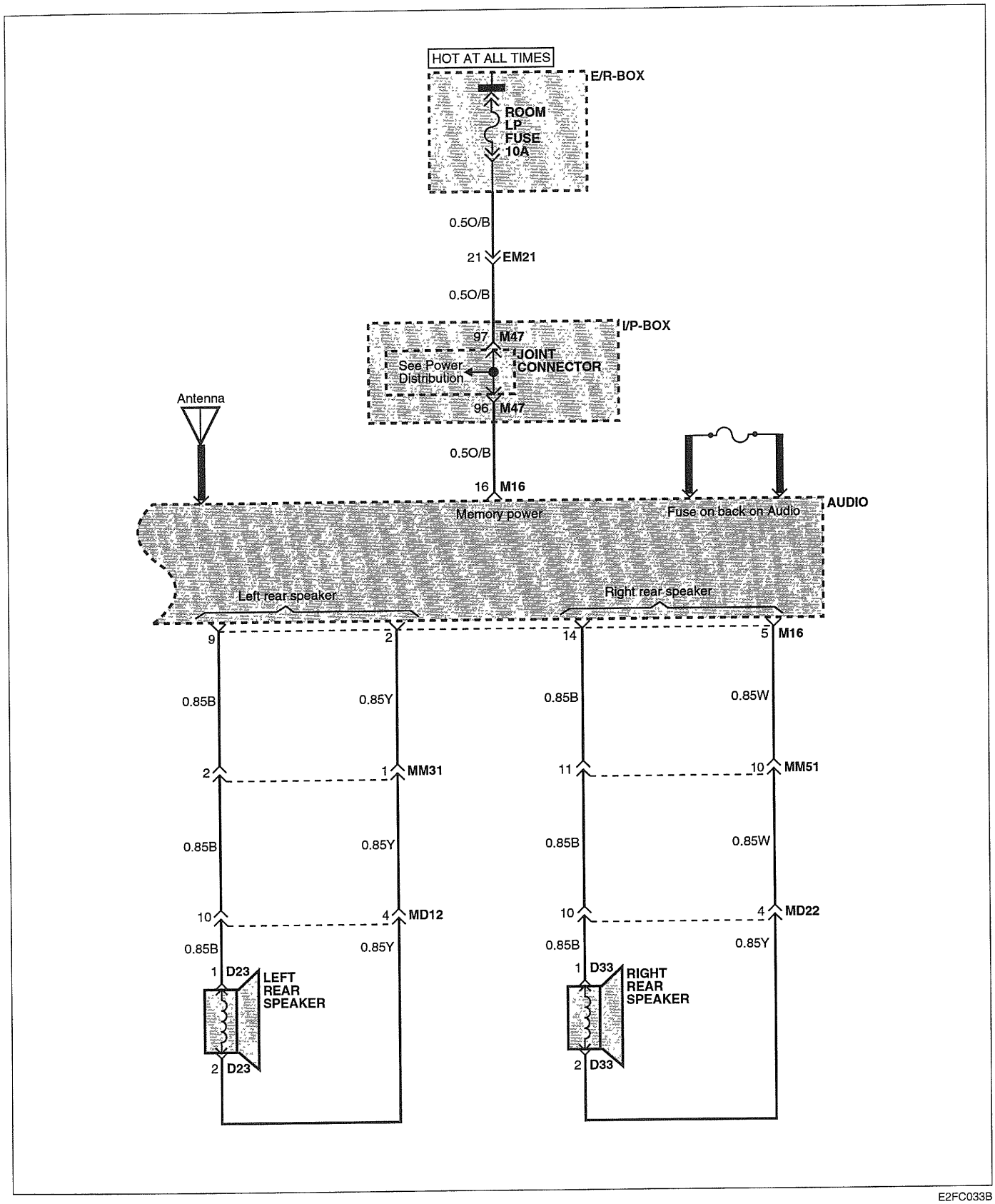
AUDIO E2FC0330

AUDIO (1)



E2FC033A

AUDIO (2)



E2FC033B

COMPONENT LOCATION INDEX

Components		Location reference-page
D02	Left front speaker	CL-27
D07	Left front tweeter speaker	CL-27
D12	Right front speaker	CL-27
D17	Right front tweeter speaker	CL-27
D23	Left rear speaker	CL-27
D33	Right rear speaker	CL-27
M16	Audio	CL-3
M47	Joint connector	CL-5
Connectors		
MD11		CL-8
MD12		CL-8
MD13		CL-8
MD22		CL-8
MM31		CL-9
MM51		CL-9
Grounds		
G04		CL-29

Circuit Description

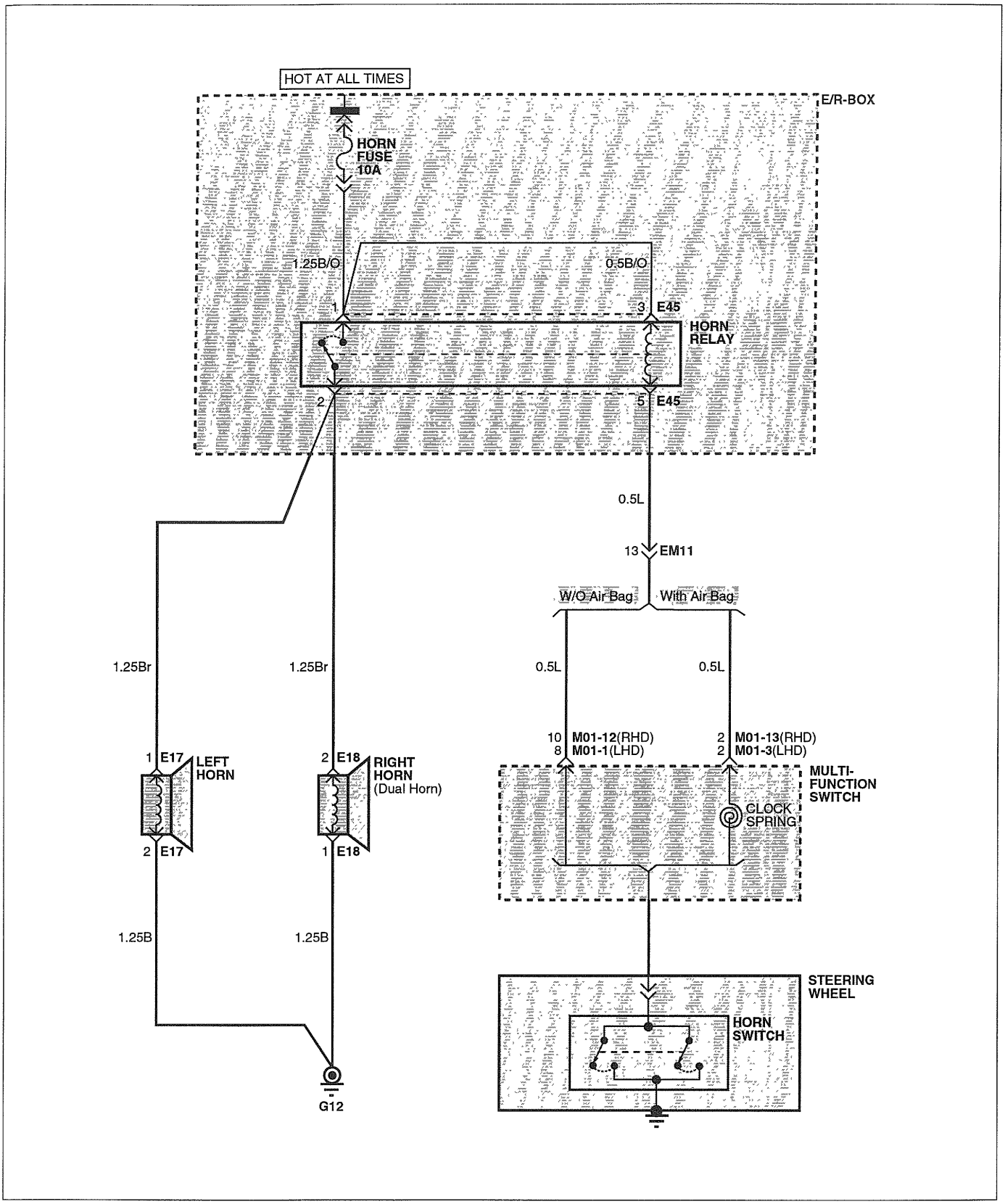
The audio receives battery voltage at all times from ROOM LP fuse to maintain memory function. AUDIO fuse supplies battery voltage to the audio when the ignition switch is in ACC or ON for audio operation and displays.

The audio is grounded at G04 and a noise filter is installed on the rear side of the audio case.

MEMO

HORNS E2FC0340

HORNS (1)



E2FC034A

COMPONENT LOCATION INDEX

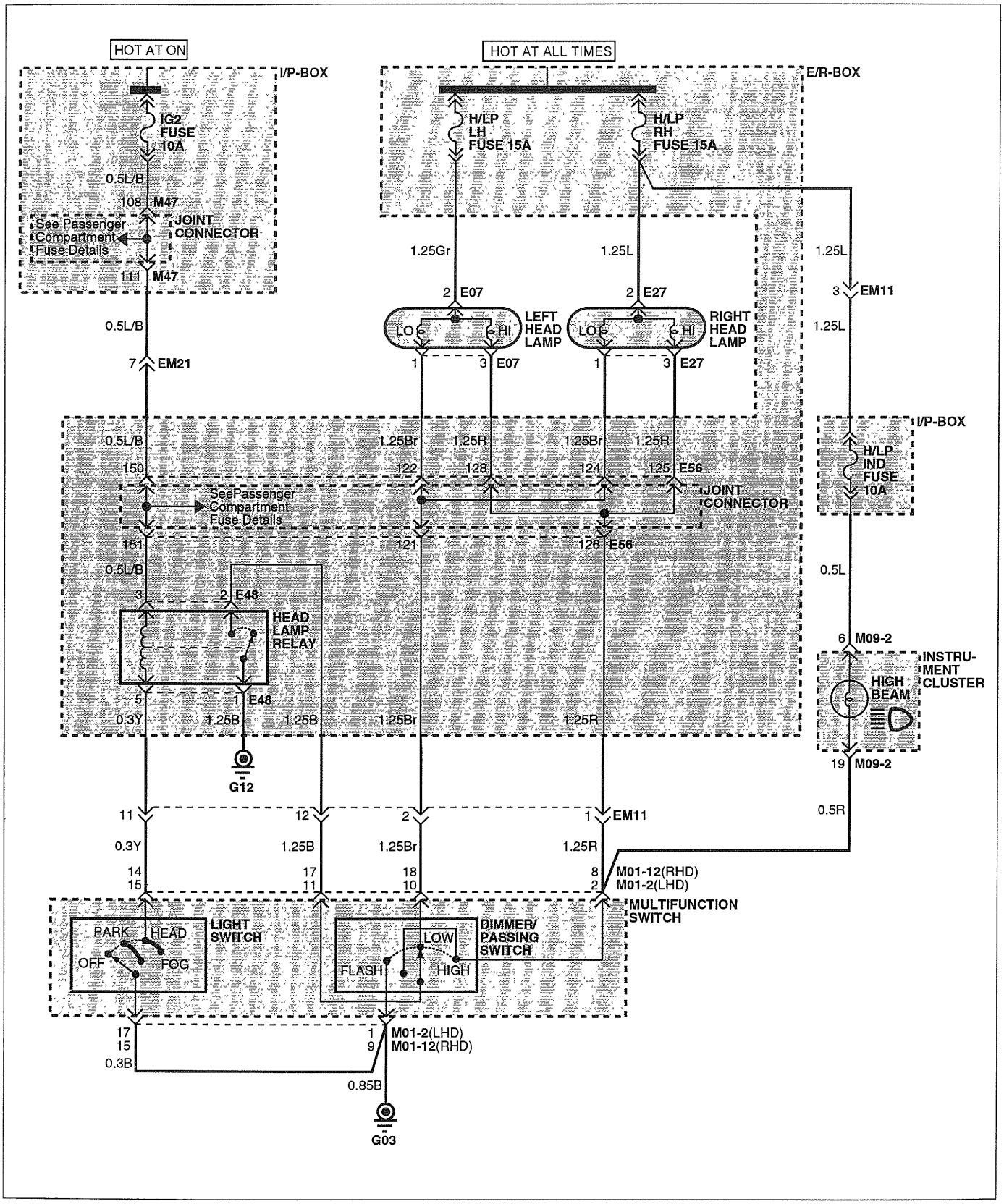
Components		Location reference-page
E17	Left horn	CL-11
E18	Right horn (Dual A/Bag)	CL-11
E45	Horn relay	CL-13
M01-1	Multifunction switch	CL-2
M01-3	Multifunction switch	CL-2
Connectors		
EM11		CL-14
Grounds		
G12		CL-30

Circuit Description

Battery voltage is applied at all times to the coil and the contacts of the horn relay through the horn fuse. With the horn switch depressed, ground is provided to the coil of the horn relay (coil energized) through the horn switch, and then battery voltage is supplied to the horns through the closed relay contacts. The horns sound.

HEAD LAMPS E2FC0360

HEAD LAMPS (1)



E2FC036A

COMPONENT LOCATION INDEX

Components		Location reference-page
E07	Left head lamp	CL-10
E27	Right head lamp	CL-11
E48	Head lamp relay	CL-13
E56	Joint connector	CL-13
M01-2	Multifunction switch	CL-2
M09-2	Instrument cluster	CL-2
M47	Joint connector	CL-5
Connectors		
EM11		CL-14
EM21		CL-14
Grounds		
G03		CL-29
G12		CL-30

Circuit Description

Low Beam Operation

With the ignition switch in ON and the light switch in HEAD position, battery voltage is applied to the coil of the headlamp relay from IG2 fuse and then ground is provided to the coil of the headlamp relay through the light switch. Battery voltage is provided to the Left/Right headlamp through the H/LP LH and RH fuse. The low beam head lamp illuminates when the Dimmer/Passing switch is in low position.

High Beam Operation

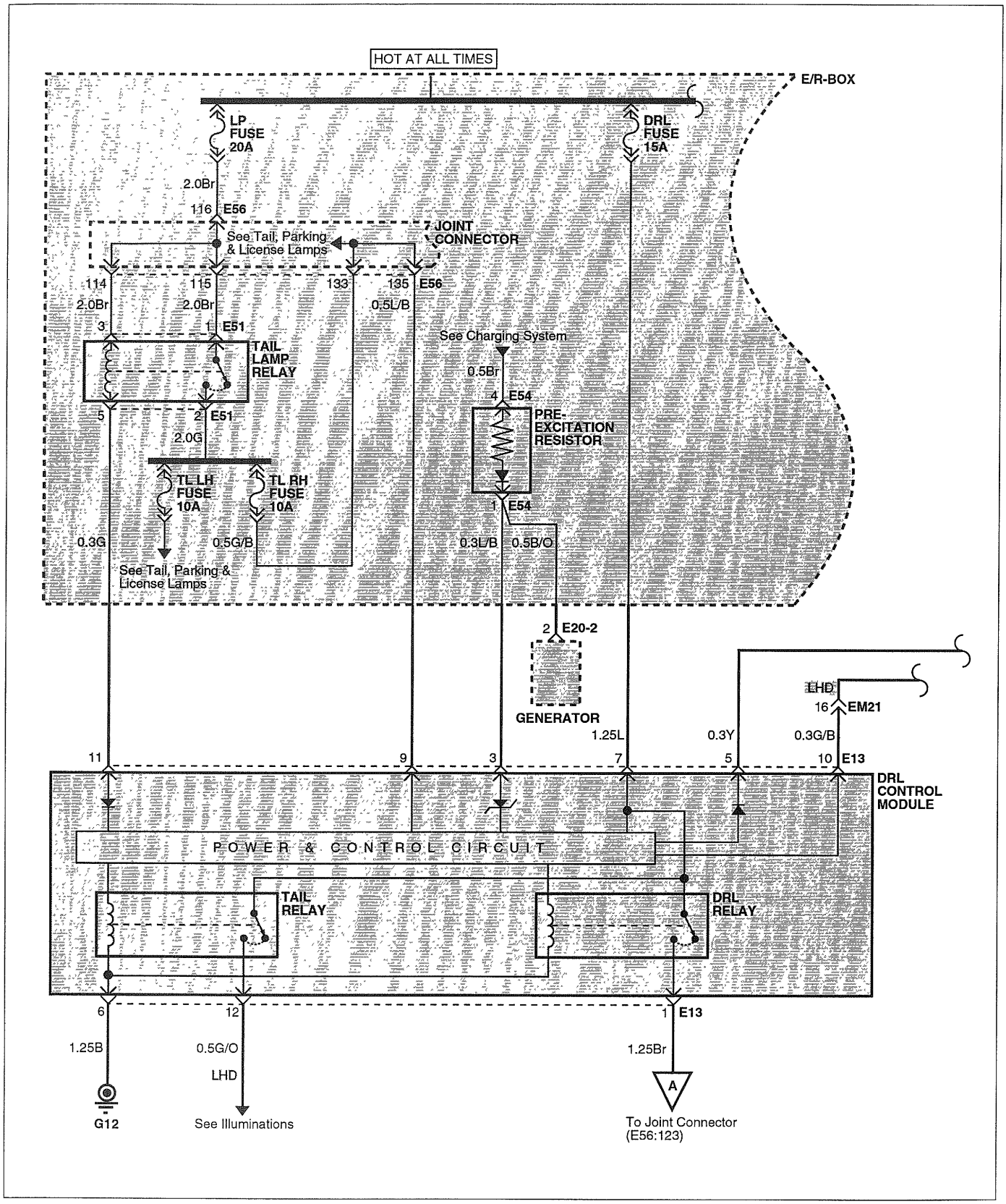
With the light switch in HEAD position and ignition switch in ON, battery voltage is applied to the headlamp relay coil from IG2 fuse. The high beam headlamps illuminates when the Dimmer/Passing switch is in FLASH or HIGH position.

Flash Operation

The flash feature works with the light switch in all positions (OFF, PARK or HEAD). With the light switch in OFF or PARK and the headlamp dimmer switch in FLASH, ground is provided to the high beam headlamps through the headlamp dimmer/passing switch. Battery voltage is applied to the high beam headlamp and the beam indicator, and the high beams and the high beam indicator illuminate as long as the switch is held in the FLASH position.

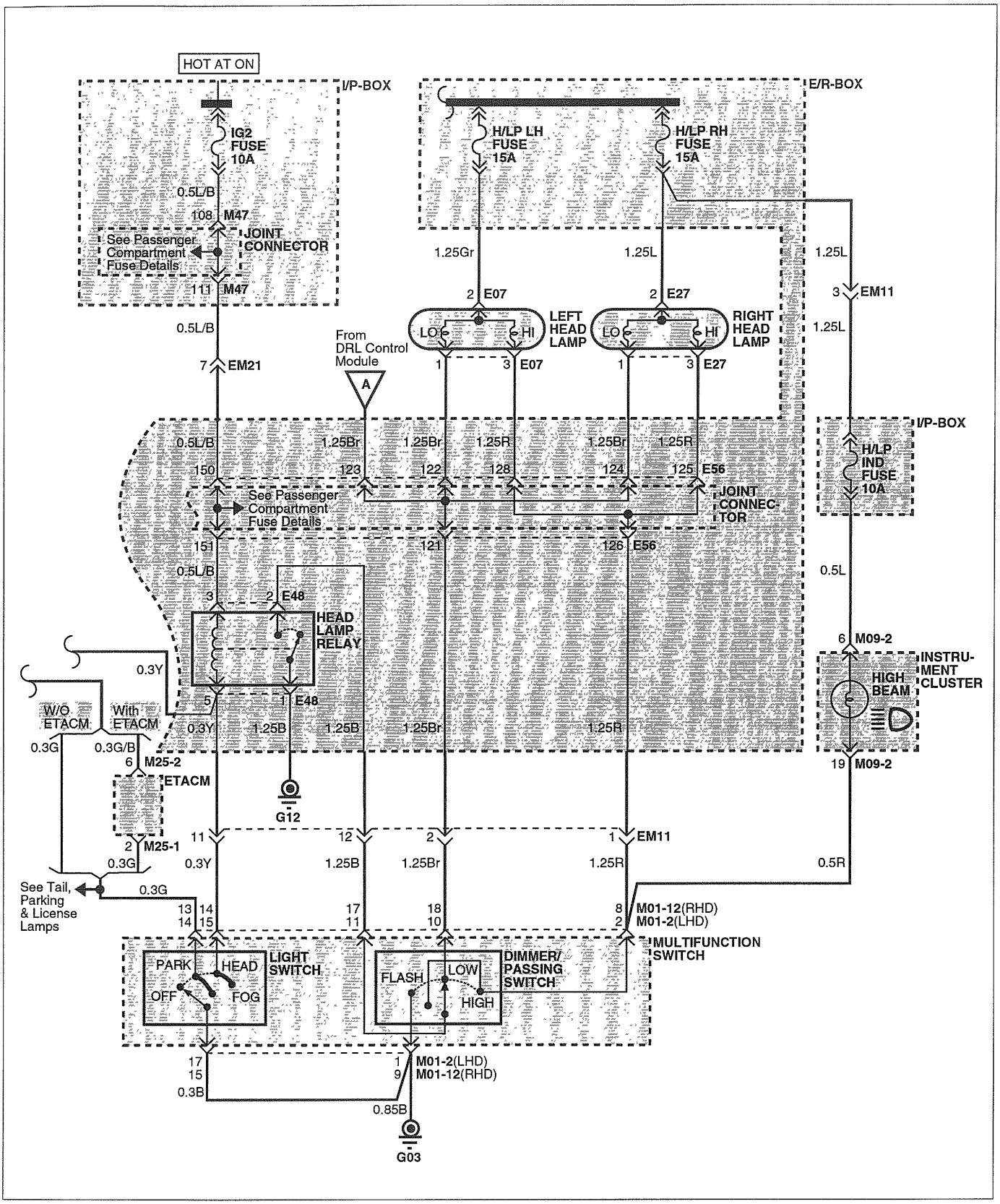
DAYTIME RUNNING LIGHTS E2FC0370

DAYTIME RUNNING LIGHTS (1)



E2FC037A

DAYTIME RUNNING LIGHTS (2)



E2FC037B

COMPONENT LOCATION INDEX

Components		Location reference-page
E07	Left head lamp	CL-10
E13	DRL control module	CL-10
E20-2	Generator	CL-11
E27	Right head lamp	CL-11
E48	Head lamp relay	CL-13
E51	Tail lamp relay	CL-13
E54	Pre-excitation resistor	CL-13
E56	Joint connector	CL-13
M01-2	Multifunction switch	CL-2
M09-2	Instrument cluster	CL-2
M25-1	ETACM	CL-4
M25-2	ETACM	CL-4
M47	Joint connector	CL-5
Connectors		
EM11		CL-14
EM21		CL-14
Grounds		
G03		CL-29
G12		CL-30

Circuit Description

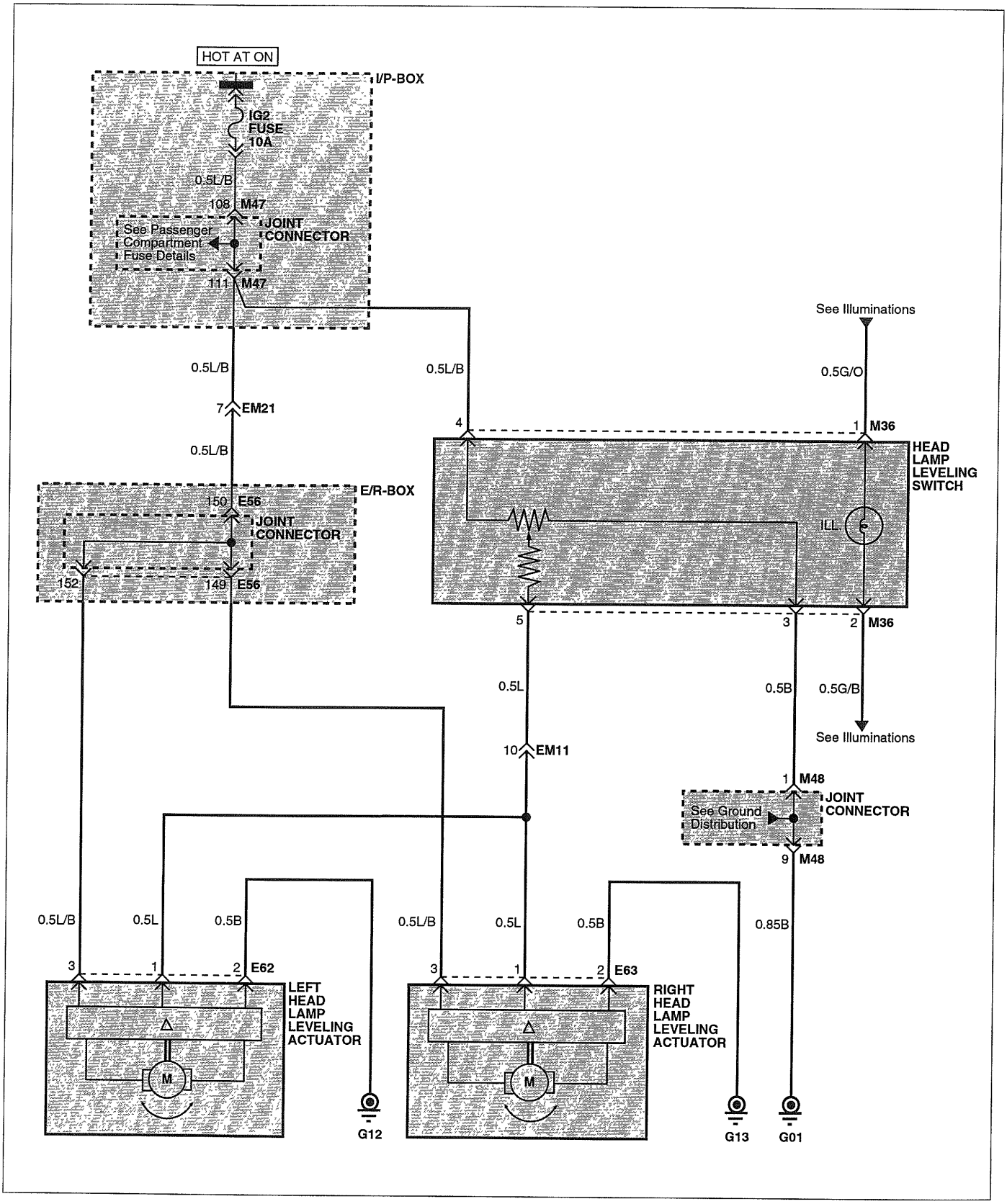
For the visibility of driver, the daytime running lights (head lamp low beam) go on automatically when the engine is running.
With the ignition switch in ON position, battery voltage is applied to the head lamp relay coils and daytime running lights (DRL) control module.

As the DRL control module detects the generator running signals (engine is running), ground is provided to the DRL relay.
battery voltage is then provided to the low beam head lamps and the low beam head lamps light.

MEMO

HEAD LAMP LEVELING DEVICE E2FC0390

HEAD LAMP LEVELING DEVICE (1)



E2FC039A

COMPONENT LOCATION INDEX

Components		Location reference-page
E56	Joint connector	CL-13
E62	Left head lamp leveling actuator	CL-14
E63	Right head lamp leveling actuator	CL-14
M36	Head lamp leveling switch	CL-4
M47	Joint connector	CL-5
M48	Joint connector	CL-5
Connectors		
EM11		CL-14
EM21		CL-14
Grounds		
G01		CL-29
G12		CL-30
G13		CL-30

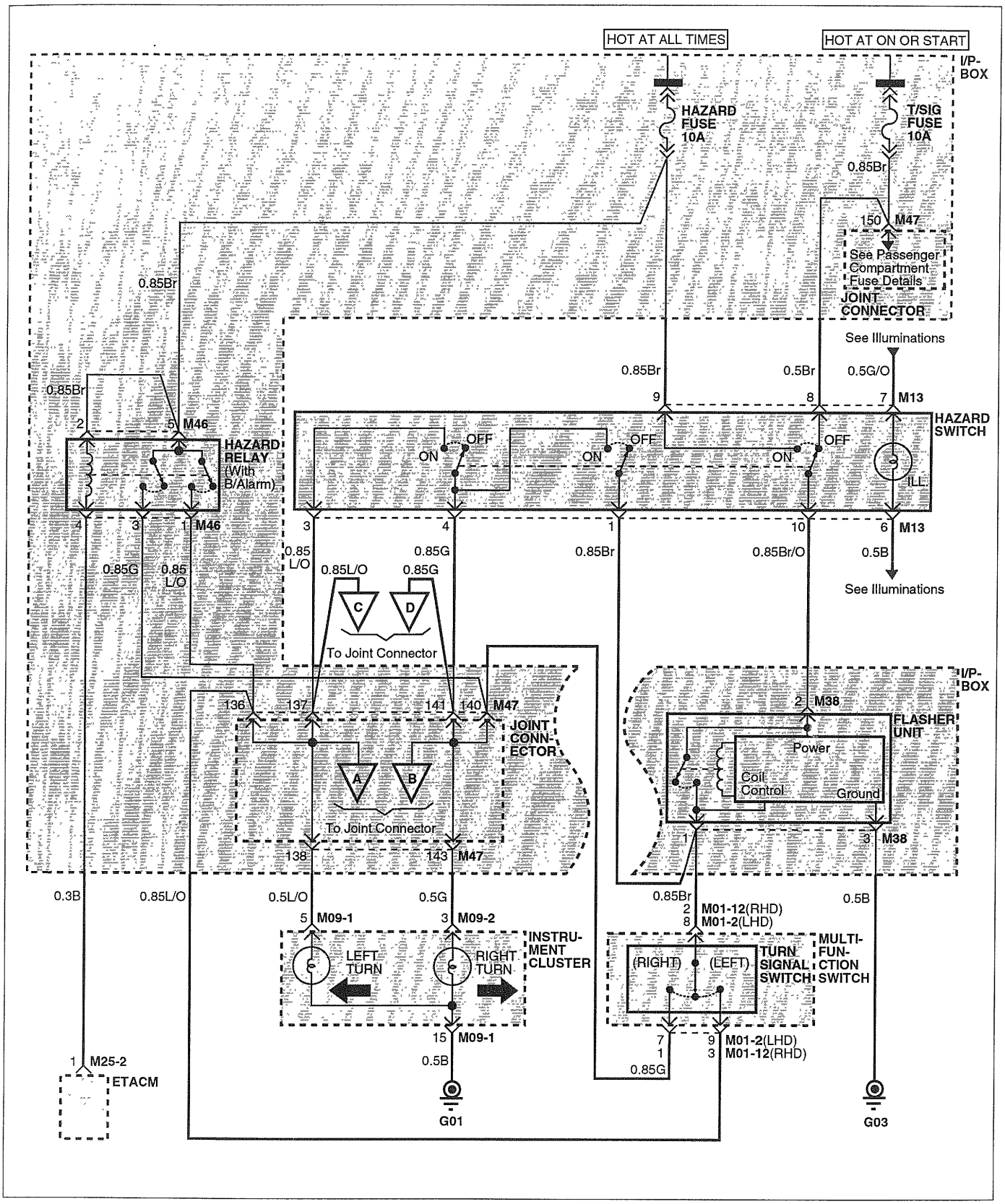
Circuit Description

The head lamps should be aimed properly according to the number of the passengers and the loading weight in the luggage area. To adjust the head lamps beam level, turn the beam leveling switch.

The higher the number of the switch position, the lower the head lamp beam level. Always keep the head lamps beam at the proper leveling position, or head lamp may dazzle other road users.

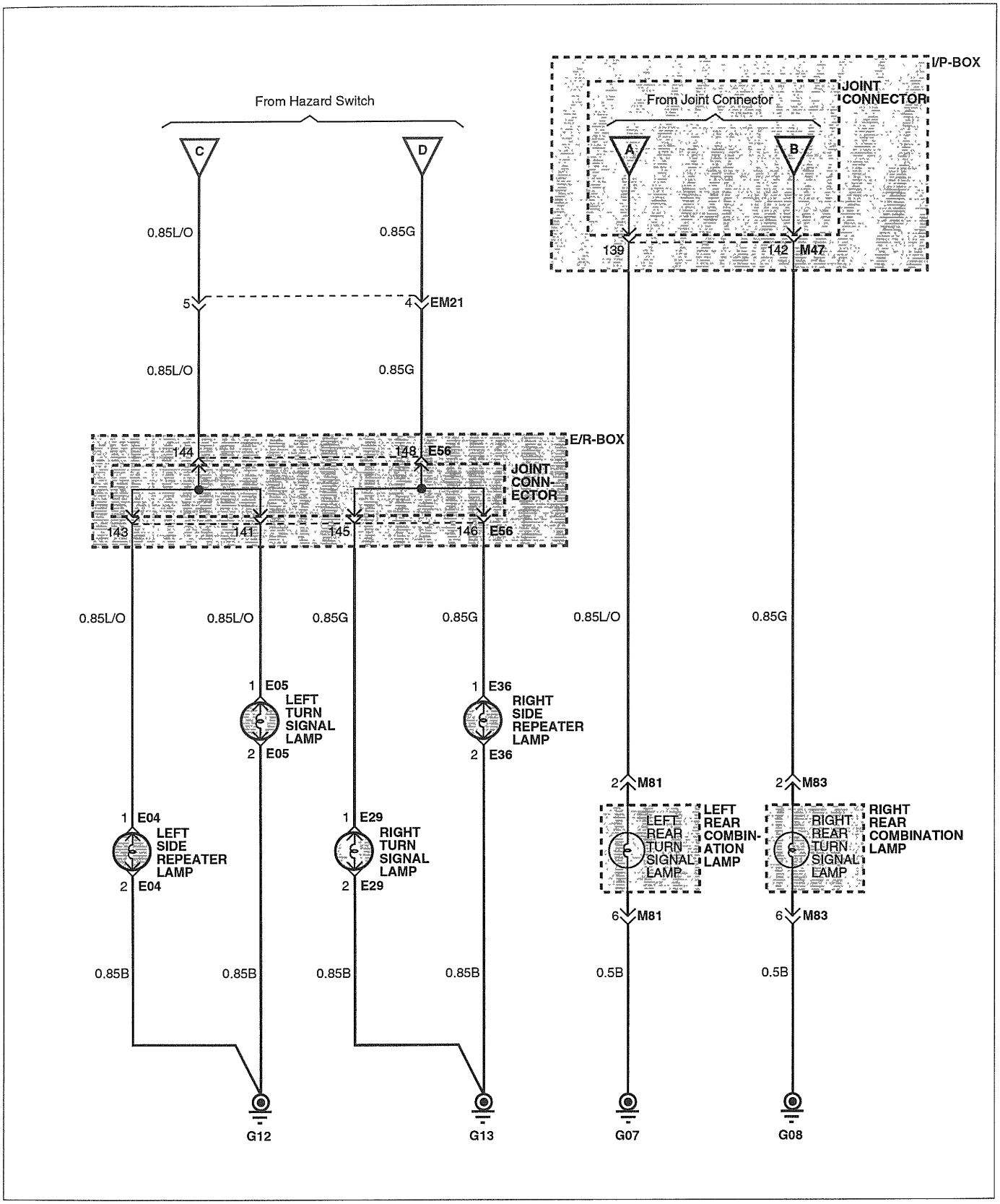
TURN & HAZARD LAMPS E2FC0400

TURN & HAZARD LAMPS (1)



E2FC040A

TURN & HAZARD LAMPS (2)



E2FC040B

COMPONENT LOCATION INDEX

Components		Location reference-page
E04	Left side repeater lamp	CL-10
E05	Left turn signal lamp	CL-10
E29	Right turn signal lamp	CL-12
E36	Right side repeater lamp	CL-13
E56	Joint connector	CL-13
M01-2	Multifunction switch	CL-2
M09-2	Instrument cluster	CL-2
M13	Hazard switch	CL-3
M25-2	ETACM	CL-4
M38	Flasher unit	CL-5
M46	Hazard relay (with B/Alarm)	CL-5
M47	Joint connector	CL-5
M81	Left rear combination lamp	CL-7
M83	Right rear combination lamp	CL-7
Connectors		
EM21		CL-14
Grounds		
G01		CL-29
G03		CL-29
G07		CL-29
G08		CL-29
G12		CL-30
G13		CL-30

Circuit Description

Turn Signal Lamps operation

With the hazard switch in OFF and the ignition switch in ON or START, battery voltage is supplied from T/SIG fuse to the flasher unit. The solid-state in the flasher unit senses the turn signal switch position and controls the relay coil. Battery voltage to the turn signal switch alternately applies on and off. Voltage is applied to the left or right turn signal lamp and indicators dependent upon the turn signal switch position.

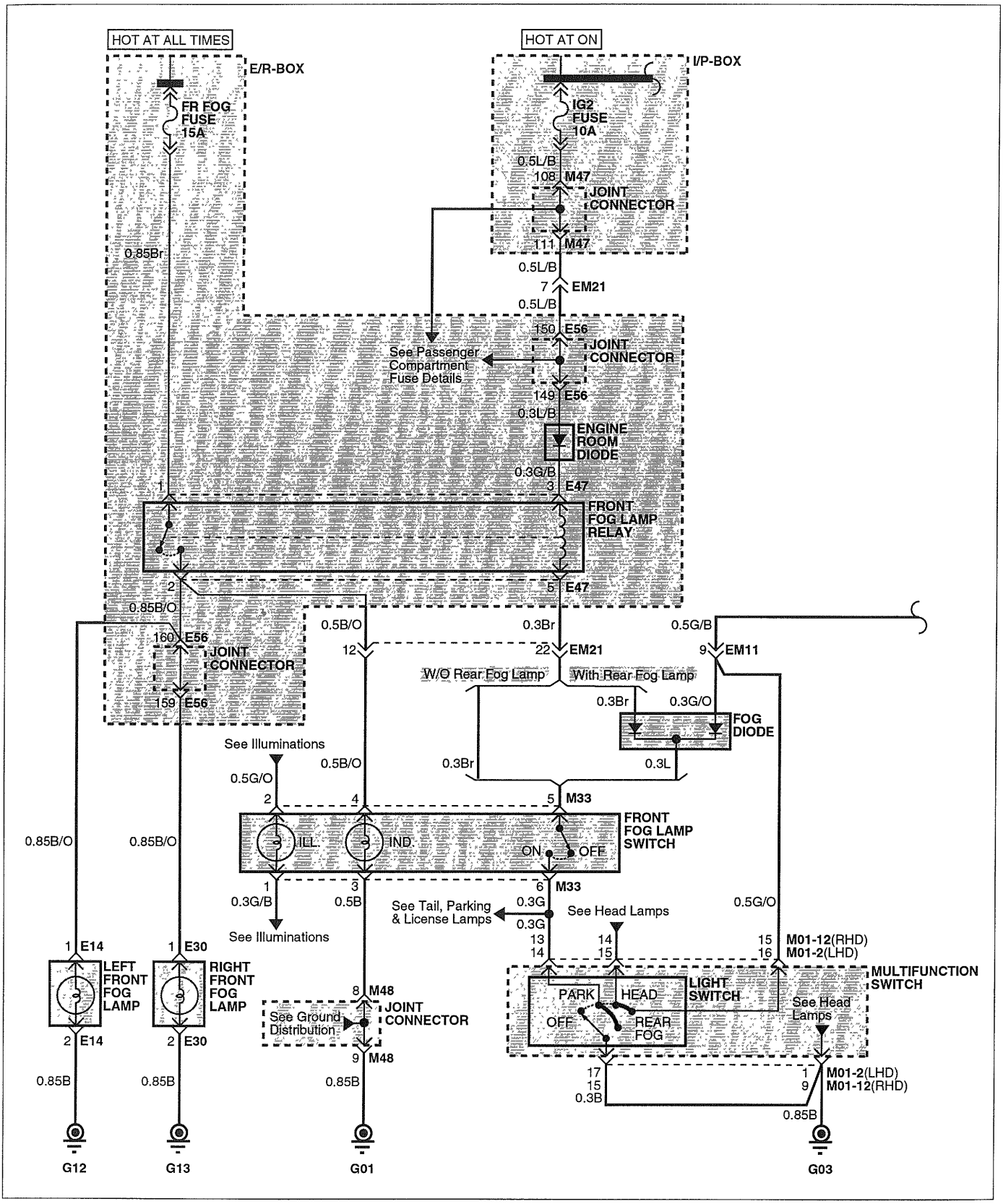
Hazard Lamps operation

With the hazard switch depressed (ON), battery voltage is supplied from HAZARD fuse to the flasher unit. The soild -state in the flasher unit senses the hazard switch ON signal and controls the relay coils, and then alternately applies and removes battery voltage to the left turn and right turn lamps and both indicators at the same time.

MEMO

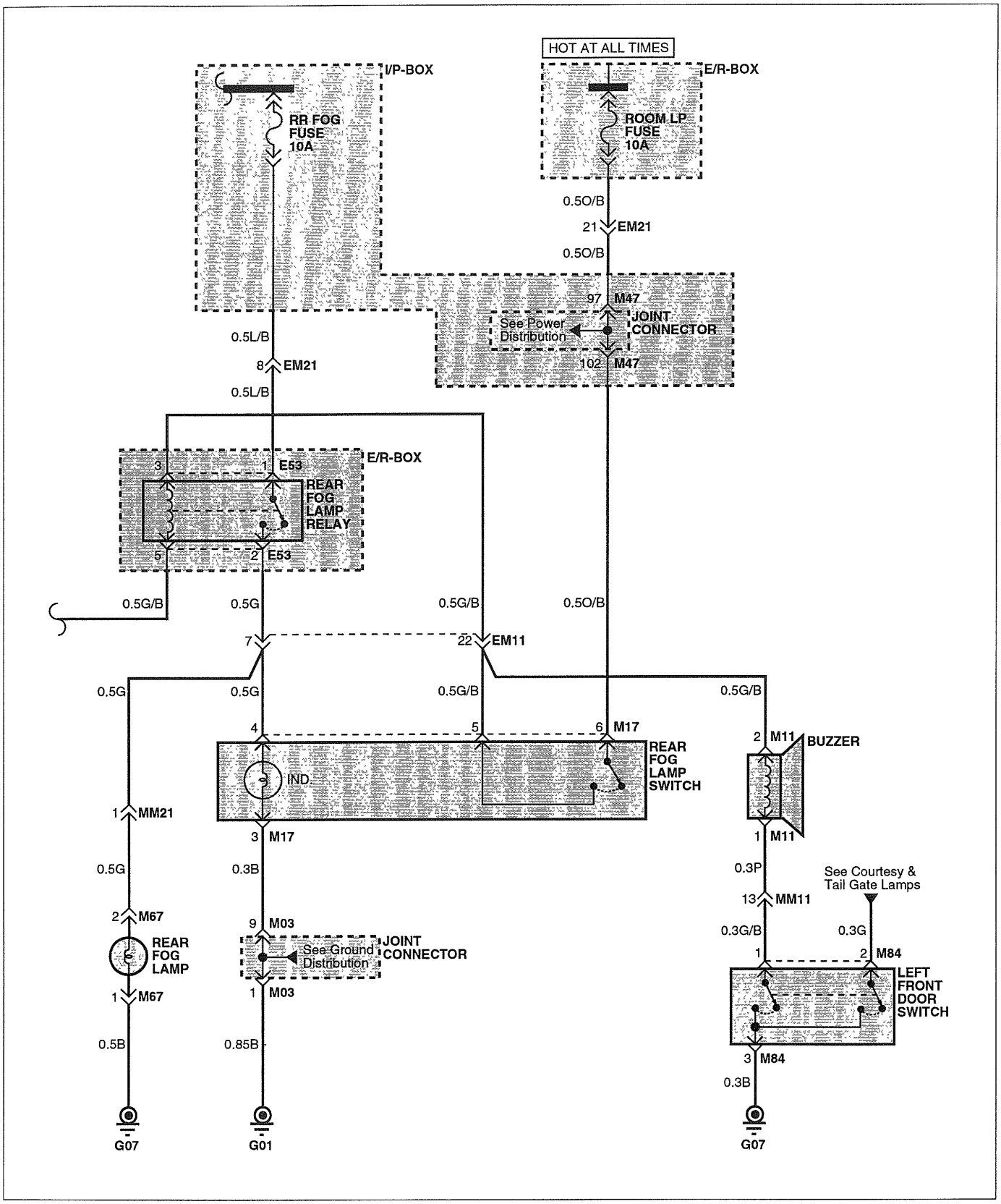
FRONT FOG LAMP & REAR FOG LAMP E2FC0410

FRONT FOG LAMP & REAR FOG LAMP (1)



E2FC041A

FRONT FOG LAMP & REAR FOG LAMP (2)



E2FC041B

COMPONENT LOCATION INDEX

Components		Location reference-page
E14	Left front fog lamp	CL-11
E30	Right front fog lamp	CL-12
E47	Front fog lamp relay	CL-13
E53	Rear fog lamp relay	CL-13
E56	Joint connector	CL-13
M01-2	Multifunction switch	CL-2
M03	Joint connector	CL-2
M11	Buzzer	CL-3
M17	Rear fog lamp switch	CL-3
M33	Front fog lamp switch	CL-4
M47	Joint connector	CL-5
M48	Joint connector	CL-5
M67	Rear fog lamp	CL-6
M84	Left front door switch	CL-6
Connectors		
EM11		CL-14
EM21		CL-14
MM21		CL-9
Grounds		
G01		CL-29
G03		CL-29
G07		CL-29
G12		CL-30
G13		CL-30

Circuit Description

W/O REAR FOG LAMPS

With the Light switch in PARK or HEAD position, battery voltage is applied to the fog lamp relay coils from the IG2 fuse. When the front fog lamp switch is ON, ground is provided to the coil of the fog lamp relay. Battery from the FR FOG fuse is then provided to the Left/Right front fog lamps through the closed contact of the front fog lamp relay. The Left/Right front fog lamps light.

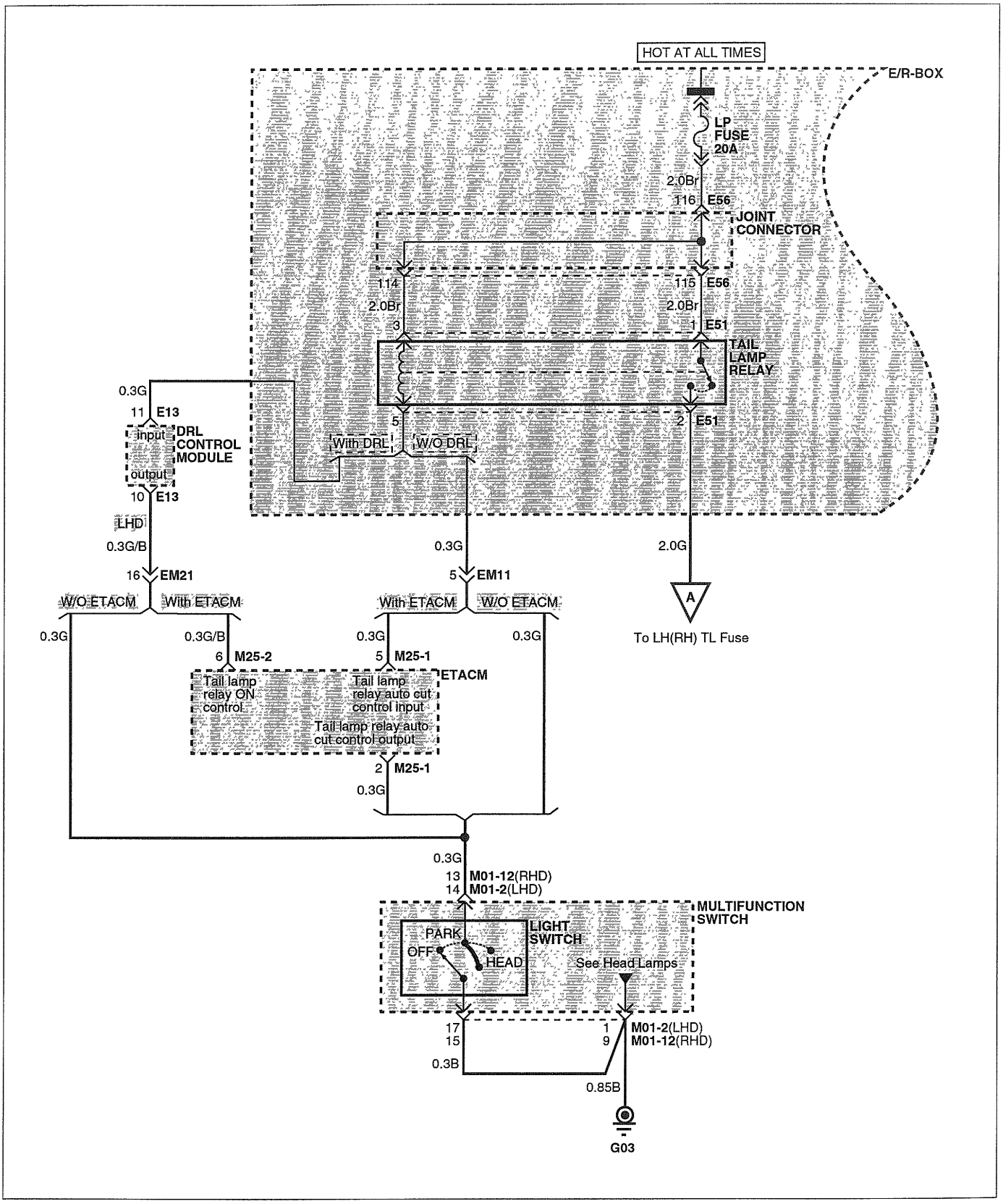
With REAR FOG LAMPS

1. With the light switch in PARK position and front fog lamp switch is ON, the ground (G03) is provided to the rear fog lamp relay coils. When the rear fog lamp switch is ON, the rear fog lamp relay coil is energized and the battery voltage is applied to the rear fog lamps through the closed rear fog lamp relay contacts.
2. With the light switch in HEAD or REAR FOG position, the ground (G03) is provided to the rear fog lamp relay coils. When the rear fog lamp switch is ON, the rear fog lamp relay coil is energized. Battery voltage is supplied to the rear fog lamps through the closed rear fog lamp relay contacts and then the lamps light.

MEMO

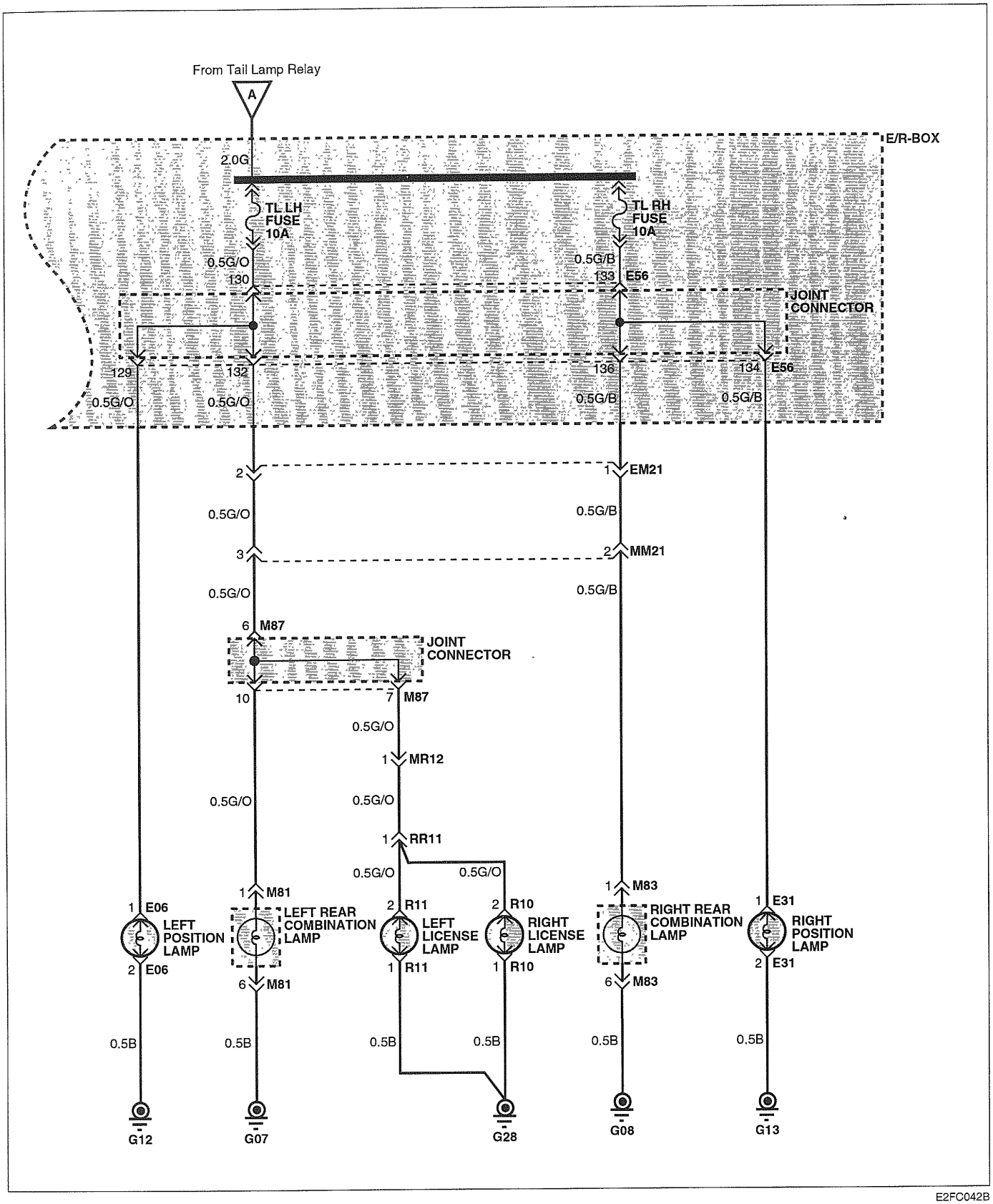
TAIL, PARKING & LICENSE LAMPS E2FC0420

TAIL, PARKING & LICENSE LAMPS (1)



E2FC042A

TAIL, PARKING & LICENSE LAMPS (2)



E2FC042B

COMPONENT LOCATION INDEX

Components		Location reference-page
E06	Left position lamp	CL-10
E31	Right position lamp	CL-12
E51	Tail lamp relay	CL-13
E56	Joint connector	CL-13
M01-2	Multifunction switch	CL-2
M25-1	ETACM	CL-4
M81	Left rear combination lamp	CL-7
M83	Right rear combination lamp	CL-7
M87	Joint connector	CL-7
R10	Right license lamp	CL-28
R11	Left license lamp	CL-28
Connectors		
EM11		CL-14
EM21		CL-14
MM21		CL-9
MR12		CL-9
RR11		CL-28
Grounds		
G03		CL-29
G07		CL-29
G08		CL-29
G12		CL-30
G13		CL-30
G28		CL-31

Circuit Description

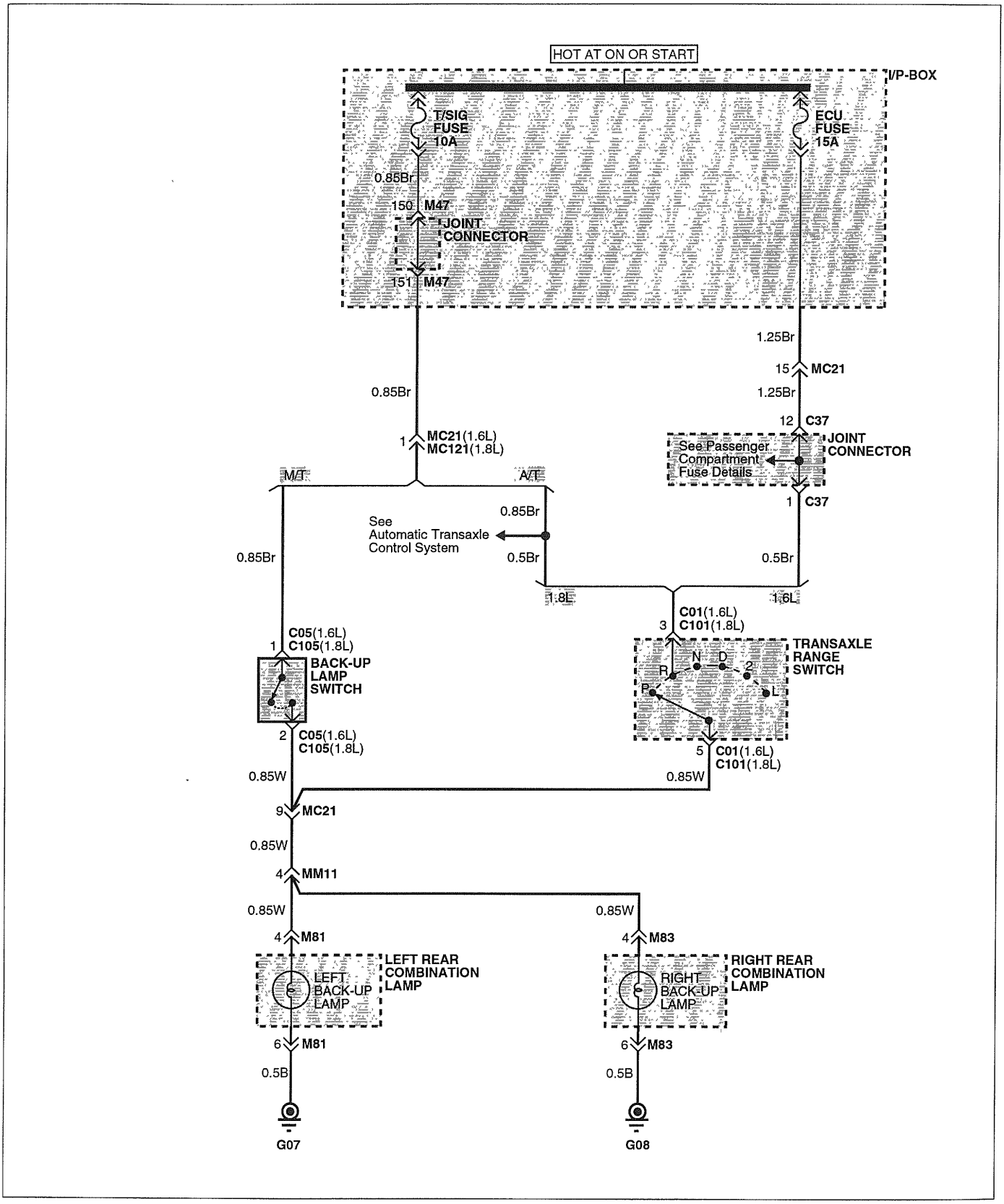
Battery voltage is applied at all times to both the coil and contact of the tail lamp relay from LP fuse. With the light switch in PARK or HEAD, the coil of the tail lamp relay is grounded through the ETACM.

Battery voltage from TL LH and RH fuse is then applied to the Left/Right position lamps, Left/Right rear combination lamps and Left/Right license lamps through the closed tail lamp relay contact and all the lamps go on.

MEMO

BACK-UP LAMPS E2FC0430

BACK-UP LAMPS (1)



E2FC043A

COMPONENT LOCATION INDEX

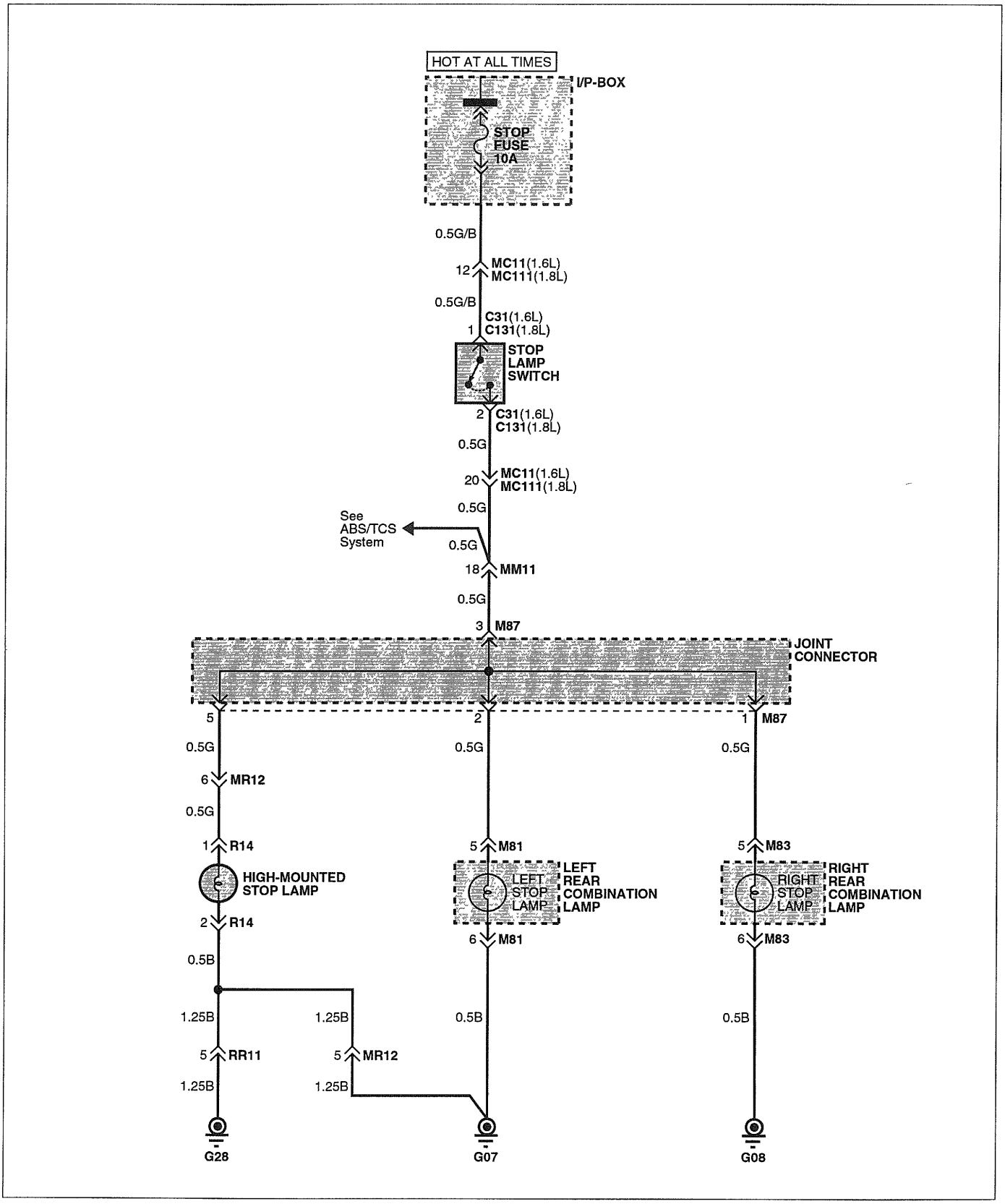
Components		Location reference-page
C01	Transaxle range switch (1.6L)	CL-16
C05	Back-up lamp switch (1.6L)	CL-16
C37	Joint connector	CL-19
C101	Transaxle range switch (1.8L)	CL-19
C105	Back-up lamp switch (1.8L)	CL-19
C137	Joint connector	CL-22
M47	Joint connector	CL-5
M81	Left rear combination lamp	CL-7
M83	Right rear combination lamp	CL-7
Connectors		
MC21		CL-8
MM11		CL-9
Grounds		
G07		CL-29
G08		CL-29

Circuit Description

With the ignition switch in ON or START, battery voltage is supplied applied from ECU fuse(1.6L) or T/SIG fuse(1.8L) to the back-up lamp switch (Manual transaxle) or to the transaxle range switch (Automatic transaxle). When the transaxle is in reverse, battery voltage is applied to the back-up lamps and the back-up lamps go on.

STOP LAMPS E2FC0440

STOP LAMPS (1)



E2FC044A

COMPONENT LOCATION INDEX

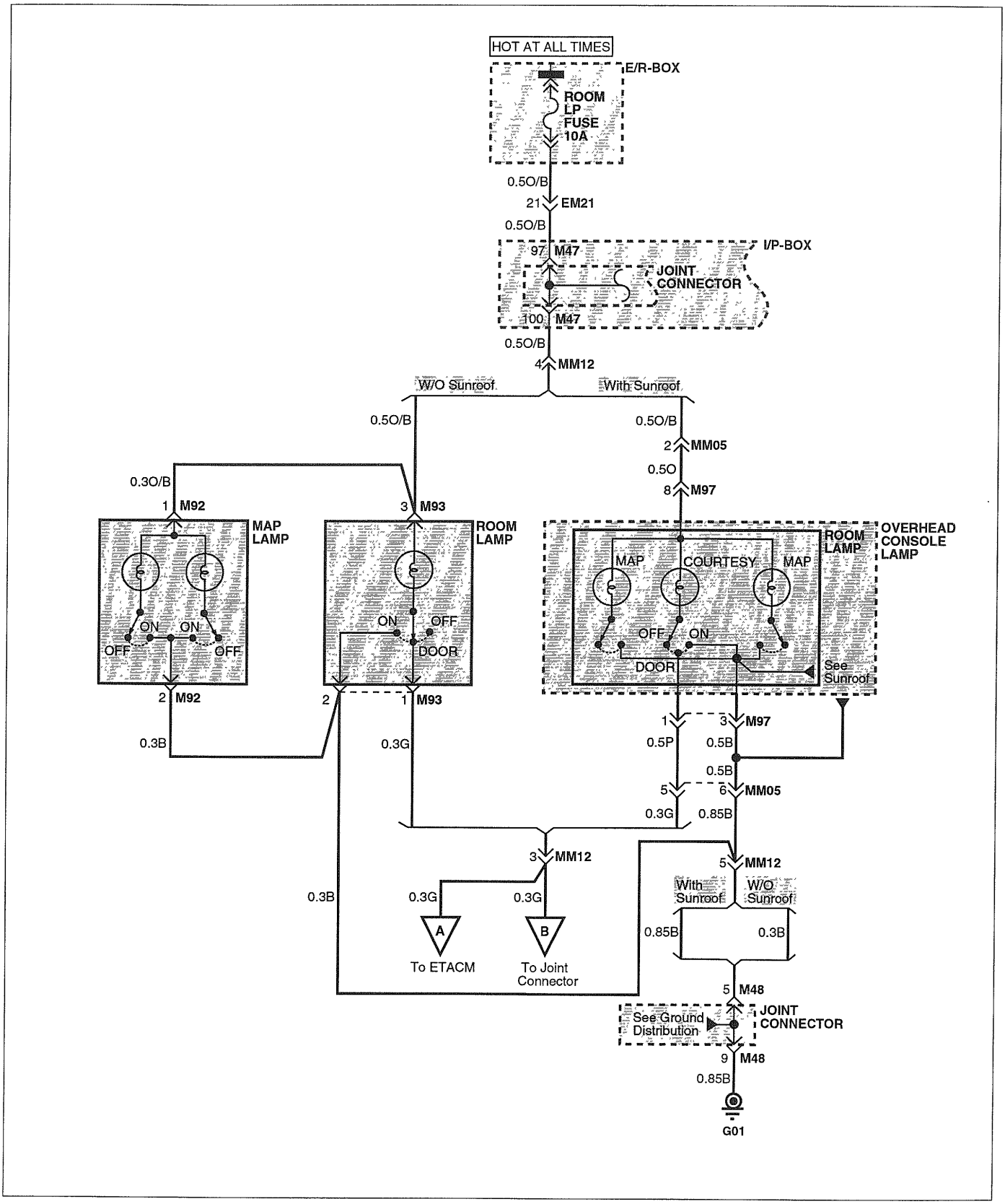
Components		Location reference-page
C31	Stop lamp switch (1.6L)	CL-18
C131	Stop lamp switch (1.8L)	CL-17
M81	Left rear combination lamp	CL-7
M83	Right rear combination lamp	CL-7
M87	Joint connector	CL-7
R14	High-mounted stop lamp	CL-28
Connectors		
MC11		CL-8
MC111		CL-8
MM11		CL-9
MR12		CL-9
RR11		CL-28
Grounds		
G07		CL-29
G08		CL-29
G28		CL-31

Circuit Description

Battery voltage is applied to the stop lamp switch at all times from STOP fuse. With the brake pedal depressed, the stop lamp switch is closed and battery voltage is applied to all the stop lamps (Left/Right stop lamps and high-mounted stop lamp) and lamps go on.

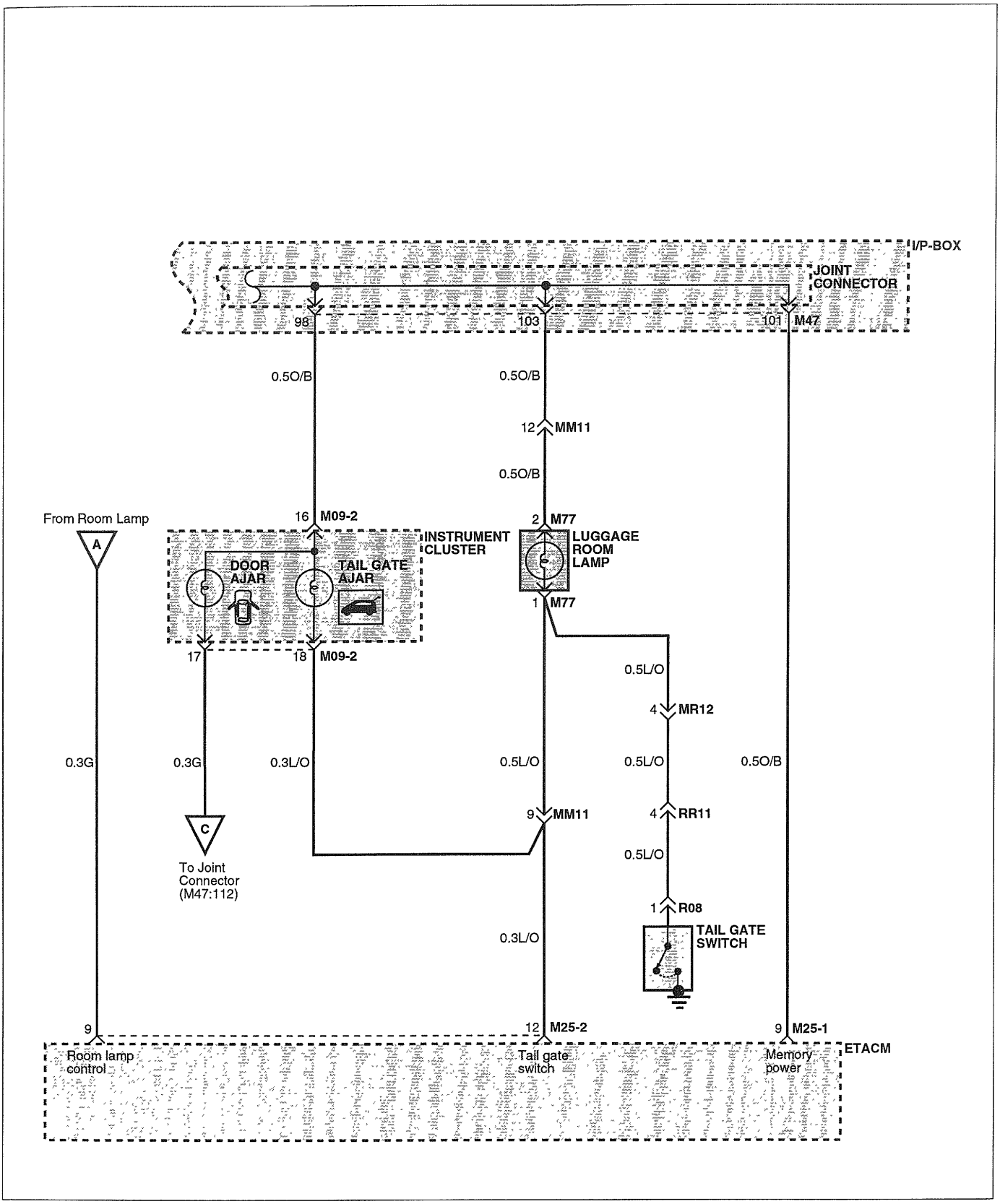
COURTESY & TAIL GATE LAMPS E2FC0450

COURTESY & TAIL GATE LAMPS (1)



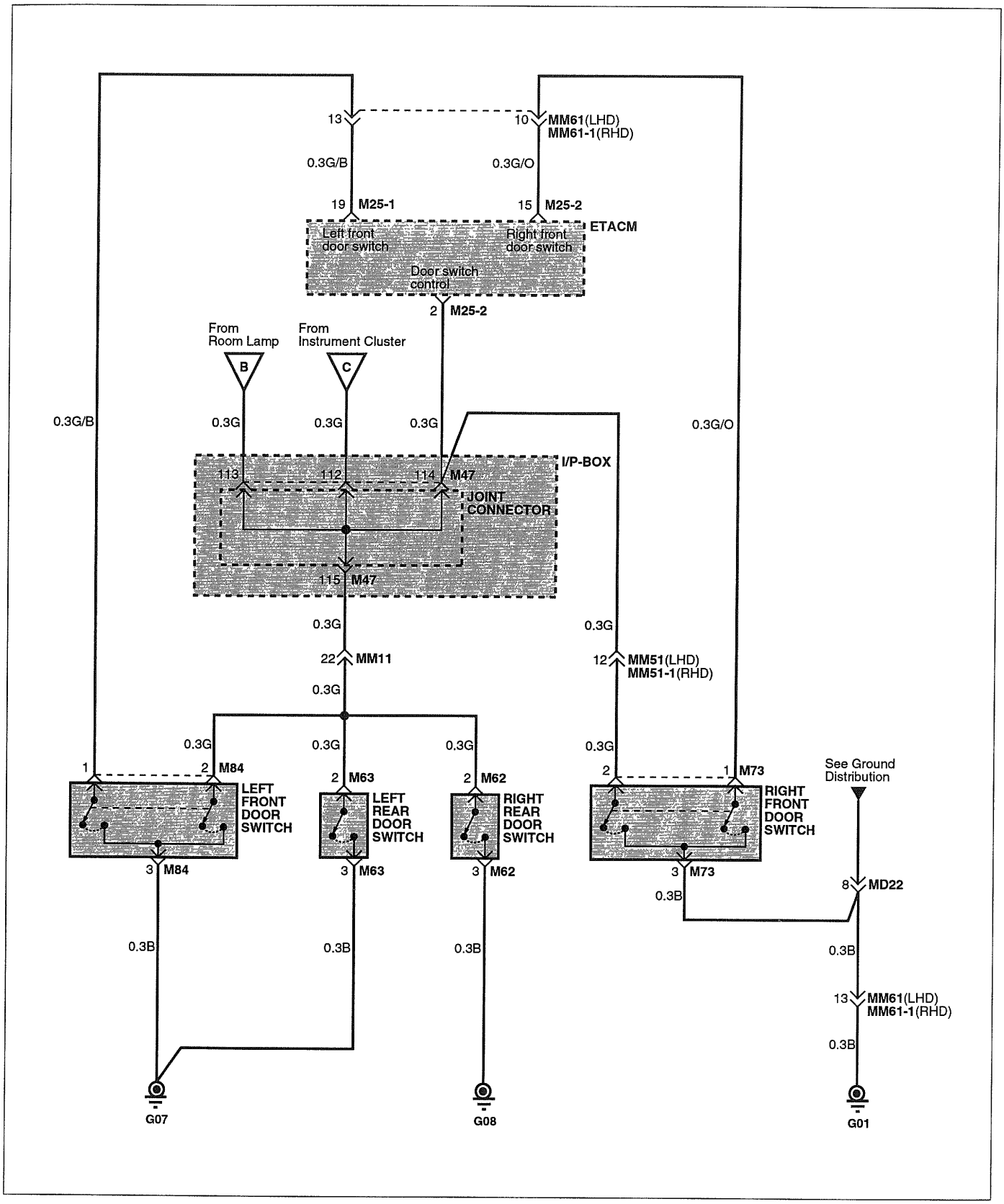
E2FC045A

COURTESY & TAIL GATE LAMPS (2)



E2FC045B

COURTESY & TAIL GATE LAMPS (3)



E2FC045C

COMPONENT LOCATION INDEX

Components		Location reference-page
M25-1	ETACM	CL-4
M25-2	ETACM	CL-4
M47	Joint connector	CL-5
M48	Joint connector	CL-5
M62	Right rear door switch	CL-6
M63	Left rear door switch	CL-6
M73	Right front door switch	CL-6
M77	Luggage room lamp	CL-7
M84	Left front door switch	CL-7
M92	Map lamp (W/O sunroof)	CL-7
M93	Room lamp	CL-8
M97	Overhead console lamp	CL-8
R08	Luggage room lamp switch	CL-28
Connectors		
EM21		CL-14
MM05		CL-9
MM11		CL-9
MM12		CL-9
MM51		CL-9
MM61		CL-9
MR12		CL-9
RR11		CL-28
Grounds		
G01		CL-29
G07		CL-29
G08		CL-29

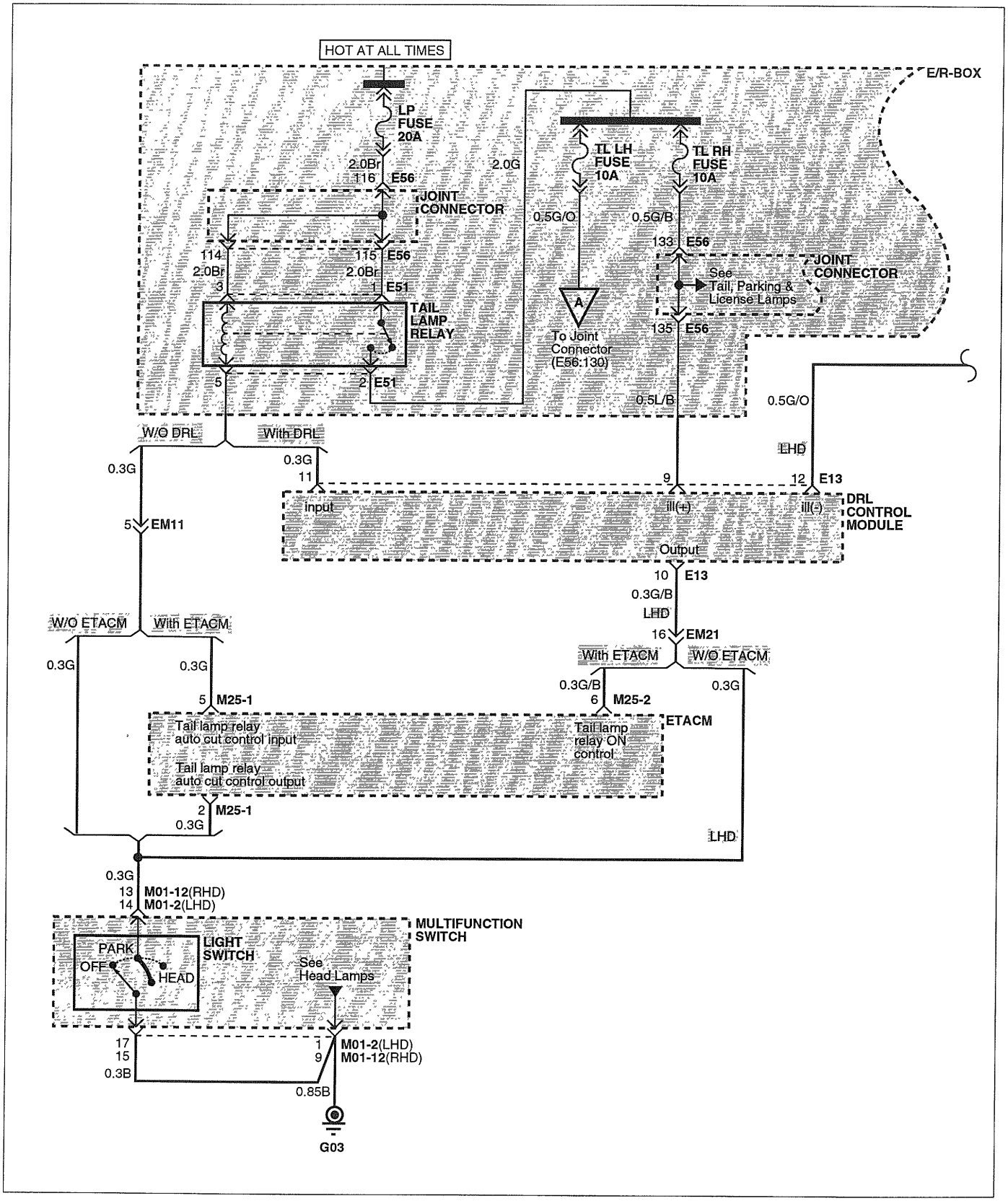
Circuit Description

Battery voltage is applied at all times from ROOM LP fuse to the map lamps, the luggage room lamp the door ajar, the tail gate ajar warning indicators and the room lamp (without sunroof)/overhead console assembly (with sunroof). When the appropriate lamp switch is closed, a ground path is provided to the respective lamps through the ETACM and causing the lamps to go on.

The room lamp/overhead console assembly is controlled not only by a door switch (controlled by ETACM), but also by a room lamp switch in the room lamp/overhead console assembly. They are turned on and off manually. The room lamp can be turned on and off manually, depending on the position of the room lamp switch. The room lamp can also be turned off so it will not come on with the door open.

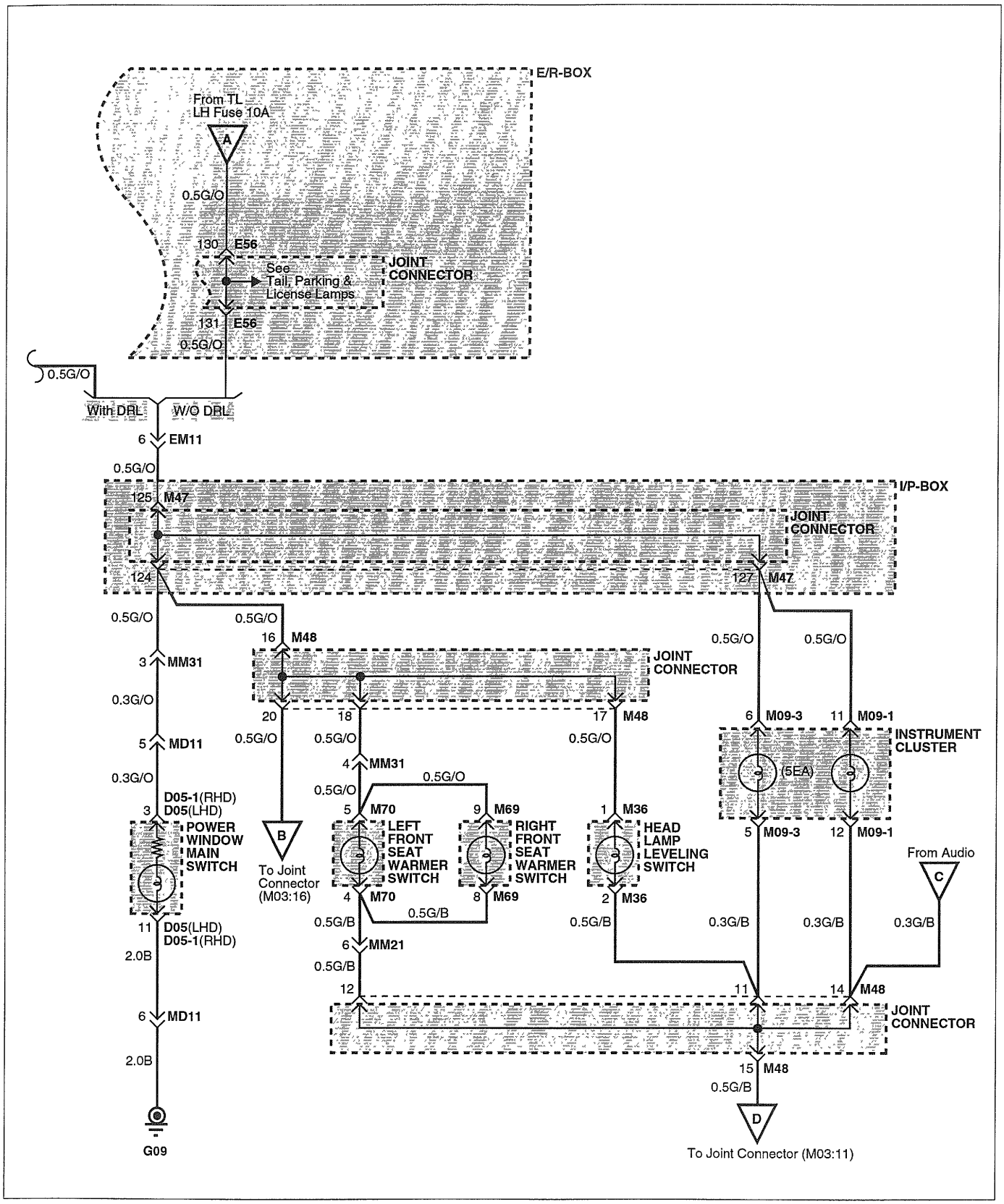
ILLUMINATIONS E2FC0460

ILLUMINATIONS (1)



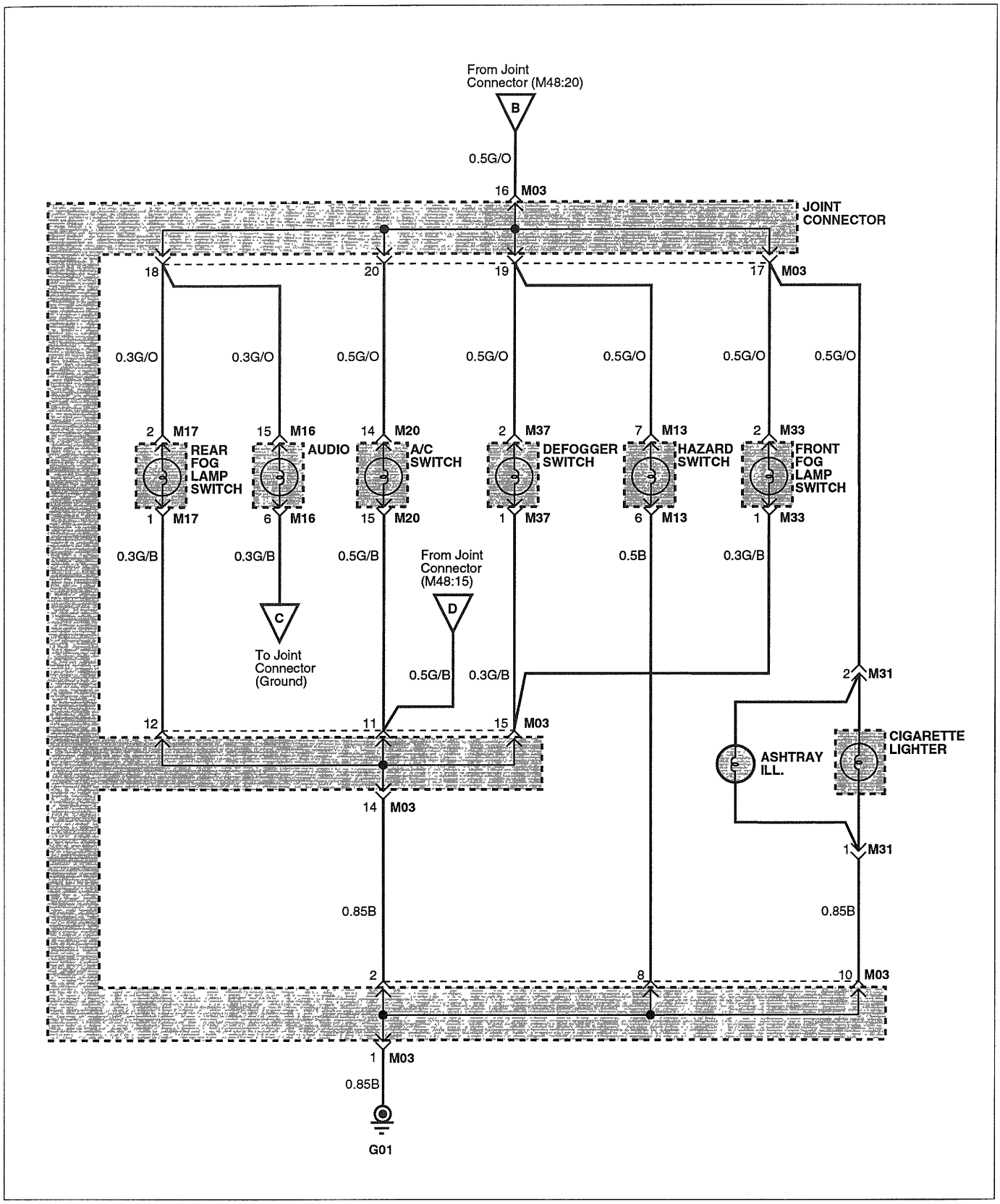
E2FC046A

ILLUMINATIONS (2)



E2FC046B

ILLUMINATIONS (3)



E2FC046C

COMPONENT LOCATION INDEX

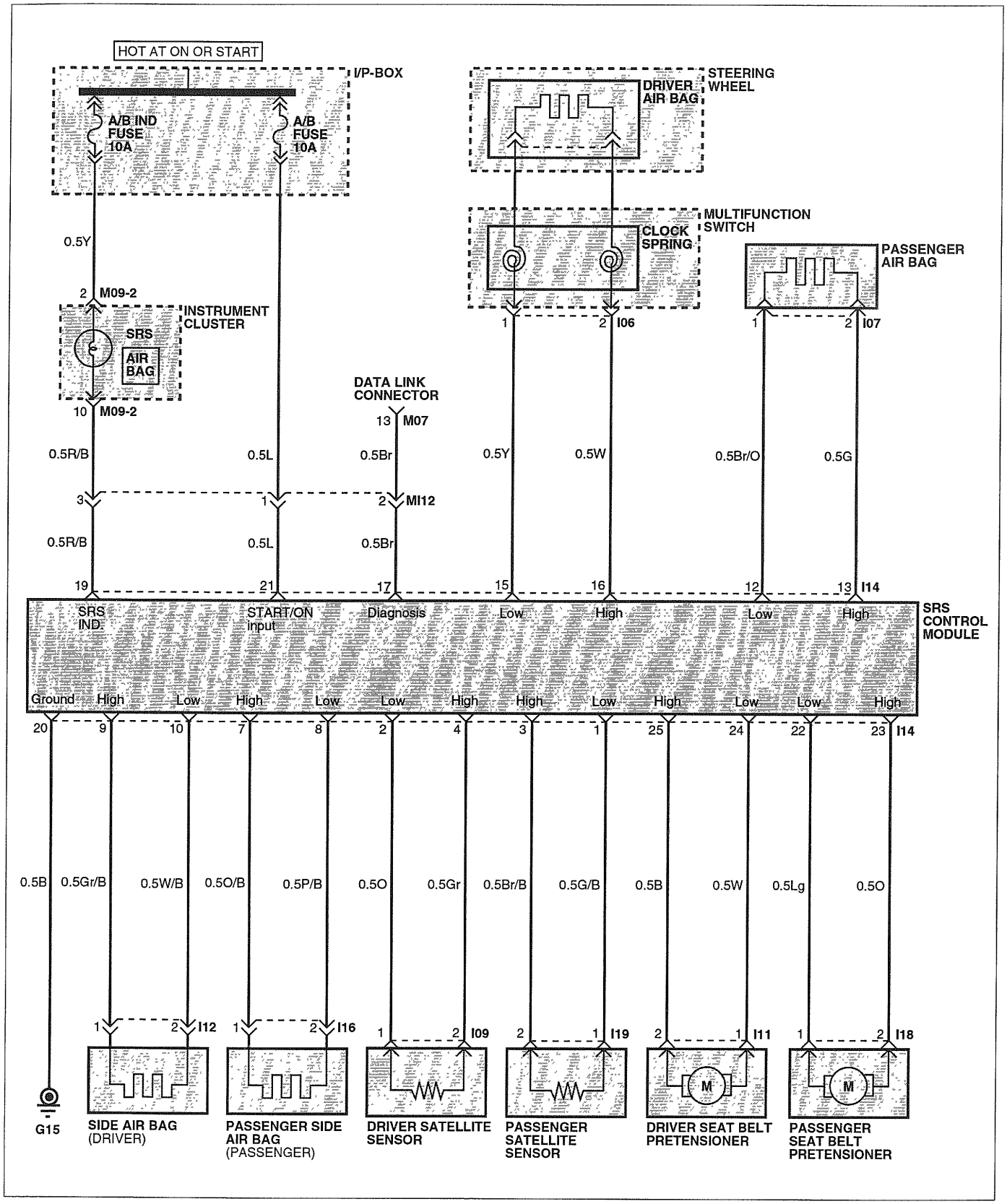
Components		Location reference-page
D05	Left front power window switch	CL-27
E51	Tail lamp relay	CL-13
E56	Joint connector	CL-13
M01–2	Multifunction switch	CL-2
M03	Joint connector	CL-2
M09-1	Instrument cluster	CL-2
M09-3	Instrument cluster	CL-2
M13	Hazard switch	CL-3
M16	Audio	CL-3
M17	Rear fog lamp switch	CL-3
M20	A/C switch	CL-4
M25-1	ETACM	CL-4
M31	Cigarette lighter	CL-4
M33	Front fog lamp switch	CL-4
M37	Defogger switch	CL-5
M47	Joint connector	CL-5
M48	Joint connector	CL-5
M69	Right front seat warmer switch	CL-6
M70	Left front seat warmer switch	CL-6
M87	Joint connector	CL-7
Connectors		
EM11		CL-14
EM21		CL-14
MD11		CL-8
MM21		CL-9
MM31		CL-9
Grounds		
G01		CL-29
G03		CL-29
G09		CL-29

Circuit Description

Battery voltage is applied to the coil and contact of the tail lamp relay from LP fuse. With the light switch in PARK or HEAD, ground is provided to the tail lamp relay coil through the ETACM. Battery voltage from TL LH and RH fuse is then provided to the illumination lamps through the closed contact of the tail lamp relay.

AIR BAG SYSTEM (SRS) E2FC0470

AIR BAG SYSTEM (SRS) (1)



E2FC047A

COMPONENT LOCATION INDEX

Components		Location reference-page
I06	Driver air bag	CL-15
I07	Passenger air bag	CL-15
I09	Driver satellite sensor	CL-15
I11	Driver seat belt pretensioner	CL-15
I12	Side air bag (Driver)	CL-15
I14	SRS control module	CL-15
I16	Side air bag (Passenger)	CL-15
I18	Passenger seat belt pretensioner	CL-15
I19	Passenger satellite sensor	CL-15
M07	Data link connector	CL-2
M09-2	Instrument cluster	CL-2
Connectors		
MI12		CL-9
Grounds		
G15		CL-30

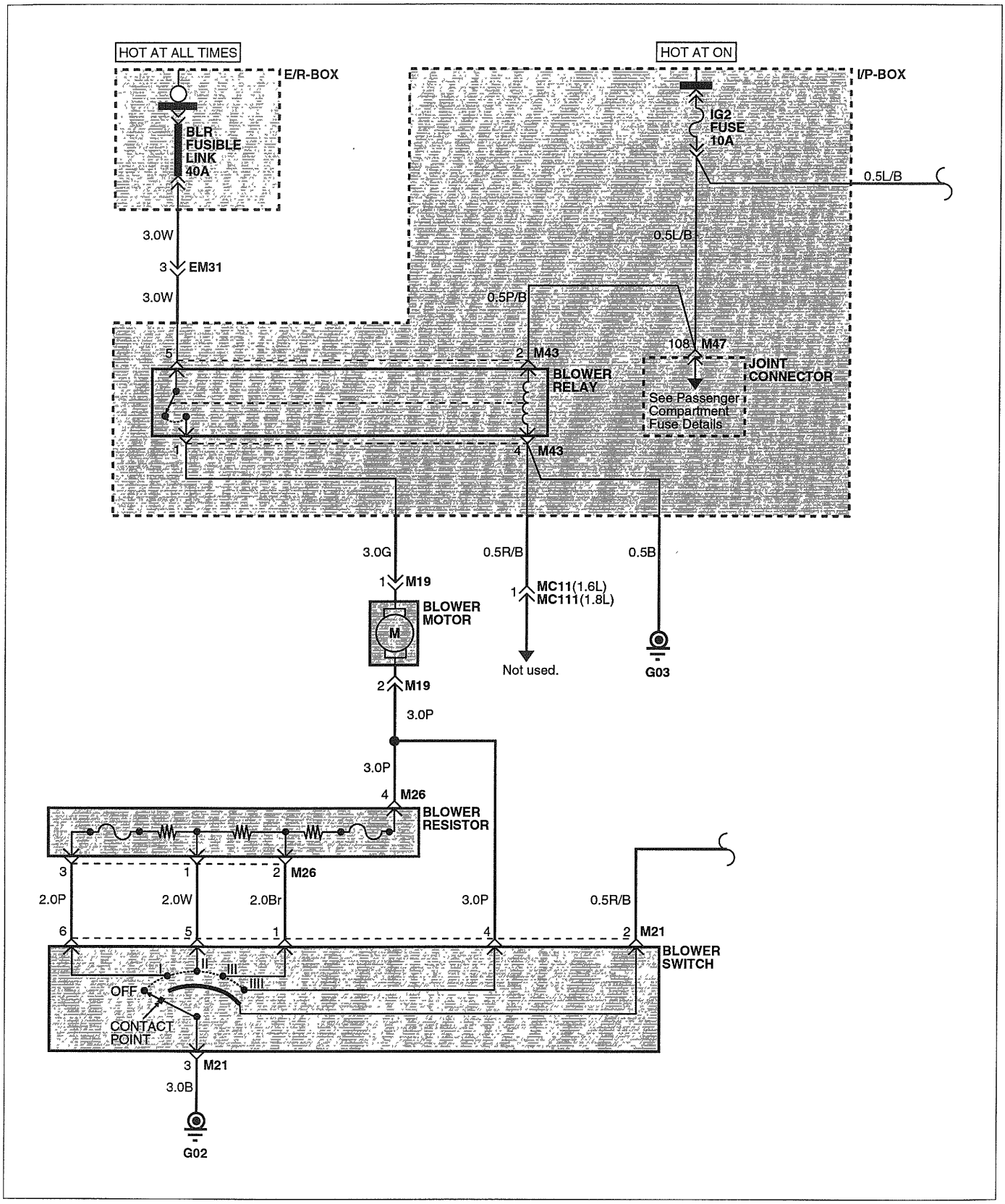
Circuit Description

Only authorized service personnel should do work on or around the Supplemental Restraint System (SRS) components. Service personnel should read the SRS section of the service manual carefully before starting work on the Supplemental Restraint System (SRS). The Supplemental Restraint System (SRS) is a safety device, which, when used in conjunction with the seat belts, is designed to protect the driver and front seat passenger by deploying air bags when the car receives a frontal impact exceeding a certain set limit.

With the ignition switch in ON or START, battery voltage is applied to the SRS control module from fuse 3 and to the SRS indicator in the instrument cluster from fuse 12. When the ignition switch is turned to the ON position, the SRS indicator in the instrument cluster will flash six times. If the SRS indicator does not flash six times, stays on, or comes on while driving, the SRS is not working properly. Refer to the Shop Manual, section RT, for details.

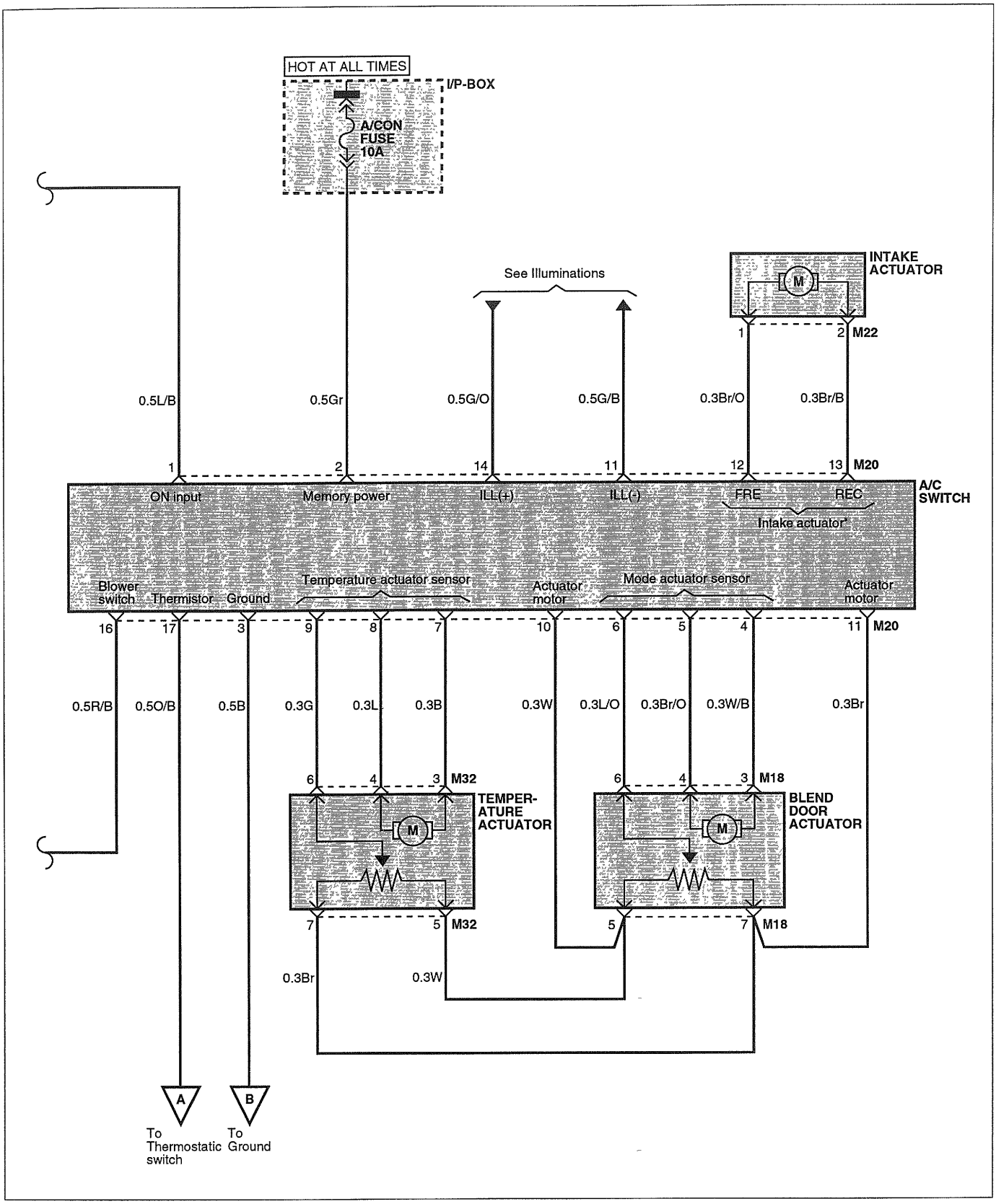
BLOWER & A/C CONTROLS E2FC0490

BLOWER & A/C CONTROLS (1)



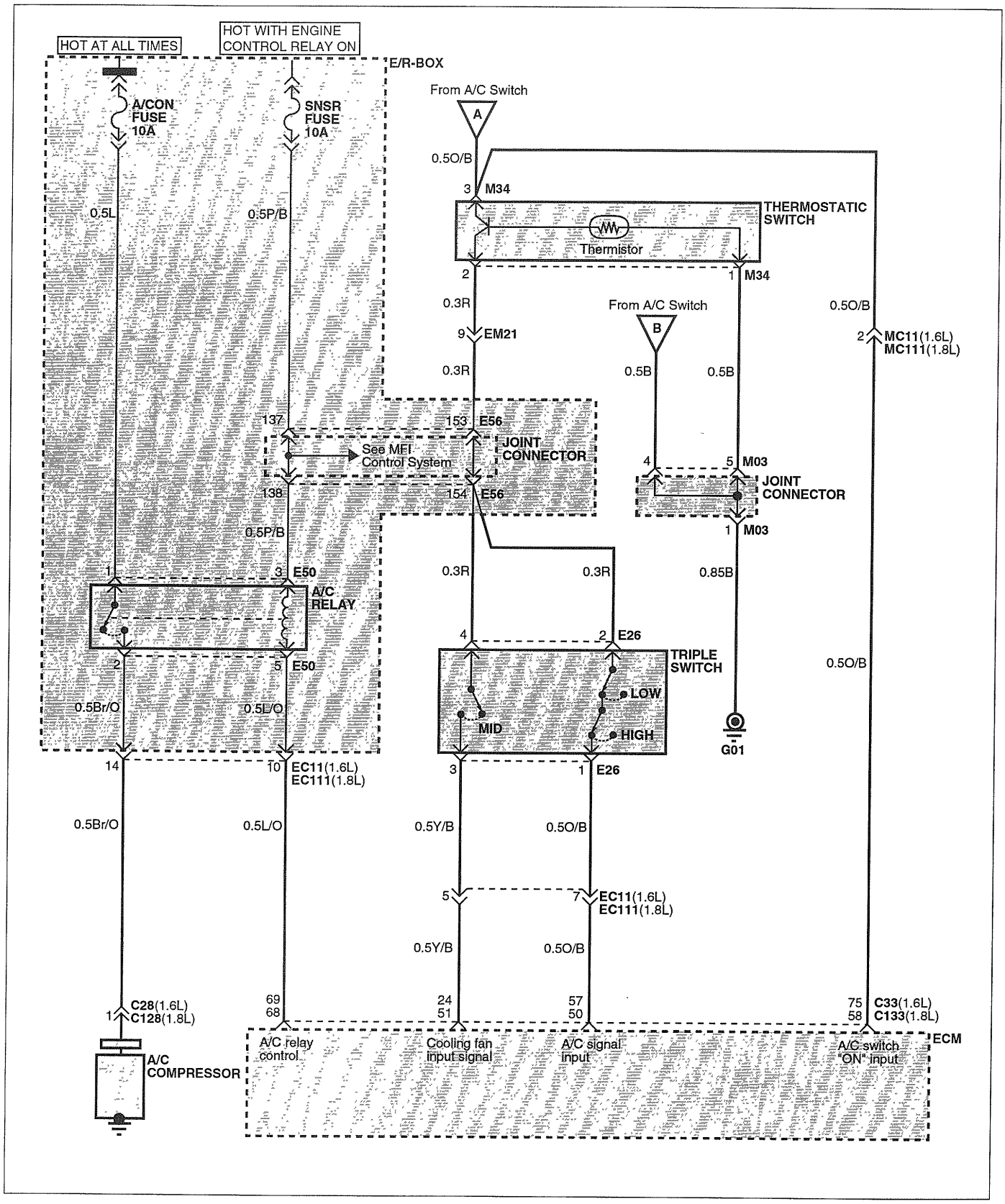
E2FC049A

BLOWER & A/C CONTROLS (2)



E2FC049B

BLOWER & A/C CONTROLS (3)



E2FC049C

COMPONENT LOCATION INDEX

Components		Location reference-page
C28	A/C compressor	CL-18
C33	ECM (1.6L)	CL-18
C133	ECM (1.8L)	CL-22
E26	Triple switch	CL-11
E50	A/C relay	CL-13
E56	Joint connector	CL-13
M03	Joint connector	CL-2
M18	Blend door actuator	CL-3
M19	Blower motor	CL-4
M20	A/C switch	CL-4
M21	Blower switch	CL-4
M22	Intake actuator	CL-4
M26	Blower resistor	CL-4
M32	Temperature actuator	CL-4
M34	Thermostatic switch	CL-4
M43	Blower relay	CL-5
M47	Joint connector	CL-5
Connectors		
EC11		CL-14
EM21		CL-14
EM31		CL-14
MC11		CL-8
MC111		CL-8
Grounds		
G01		CL-29
G02		CL-29
G03		CL-29

Circuit Description

Blower control

With the ignition switch in ON and the blower switch in any position except OFF, the blower relay coil energizes and the blower relay contact closes. Battery voltage is then applied to the blower motor through the closed contacts of the blower relay and then ground is provided to the blower motor through the blower resistor and the blower switch. As the blower switch is moved from OFF to HI, resistance of the resistors (built in to the blower resistor) will decrease and battery voltage applied to the blower motor will increase. This will increase the blower motor speed. When the blower switch is in HI, all of the resistors are bypassed and the maximum voltage is now applied to the blower motor so that it runs at the highest speed.

A/C control

With the ignition switch in ON and the blower switch in any position except OFF, the blower relay coil energizes and the blower relay contact closes. Battery voltage is then applied to the blower motor through the closed contacts of the blower relay and then ground is provided to the blower motor through the blower resistor and the blower switch. Battery voltage is applied to A/C switch through the IG2 fuse. With the A/C switch in ON, the Engine Control Module (ECM) will ground the coil of the A/C control relay after a short delay to adjust idle speed. Battery voltage will then be applied to the compressor magnetic clutch from the A/C fuse through the closed contacts of the A/C relay. The A/C compressor runs.

COMPONENT LOCATIONS

AIR BAG HARNESS CL-15

CONTROL HARNESS CL-16

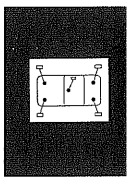
DOOR HARNESS CL-27

ENGINE HARNESS CL-10

GROUNDS CL-29

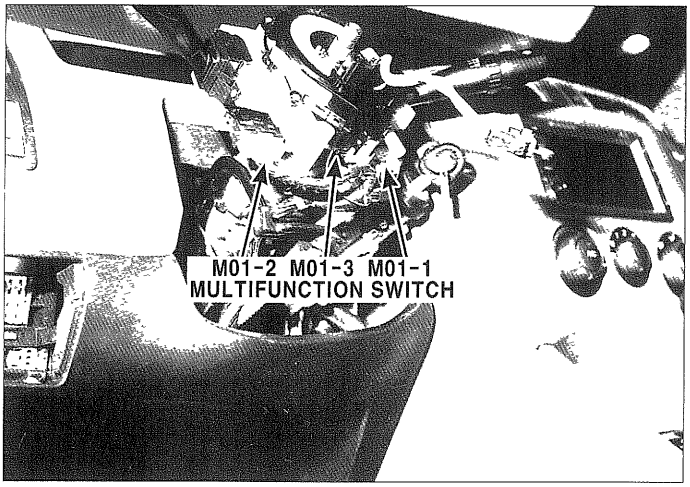
MAIN HARNESS CL-2

TAIL GATE HARNESS CL-28

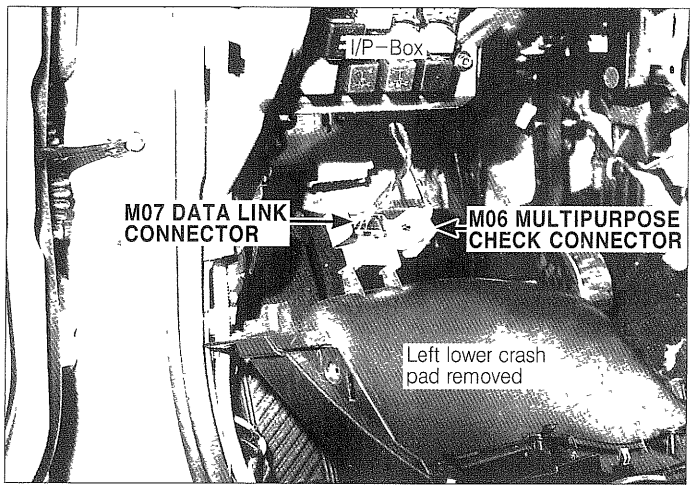


MAIN HARNESS

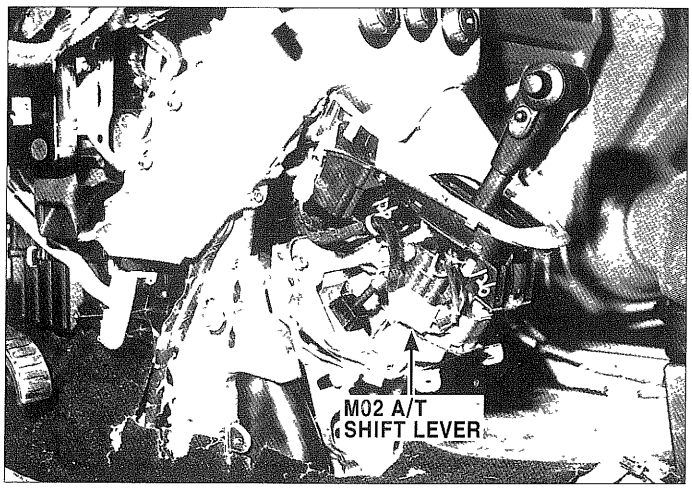
MAIN HARNESS(1)



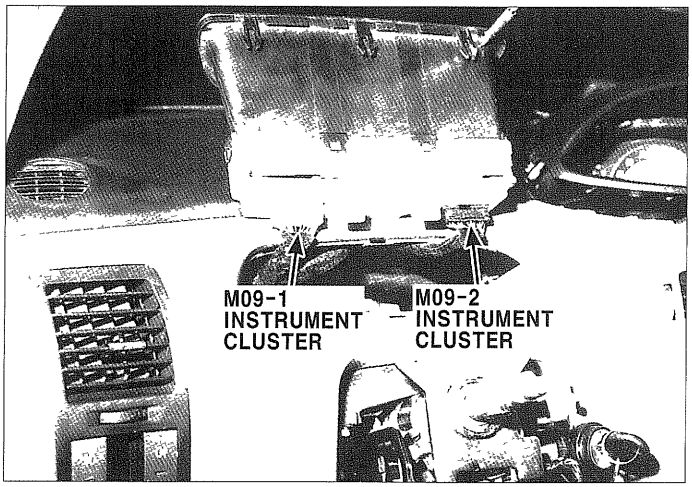
M01-1,M01-2,M01-3 E3FC001A



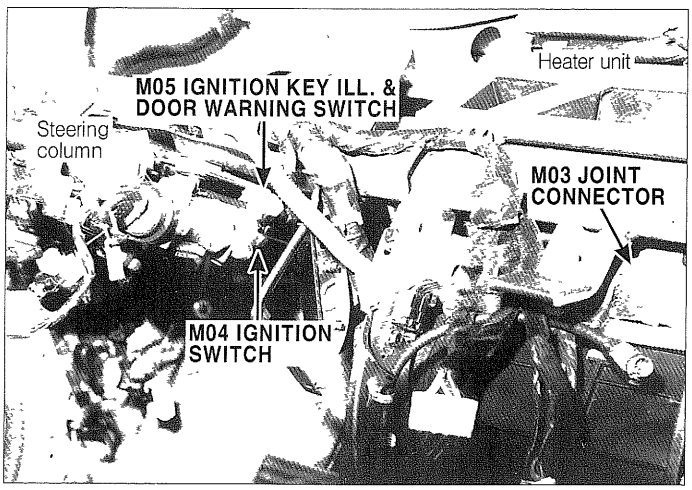
M06,M07 E3FC001D



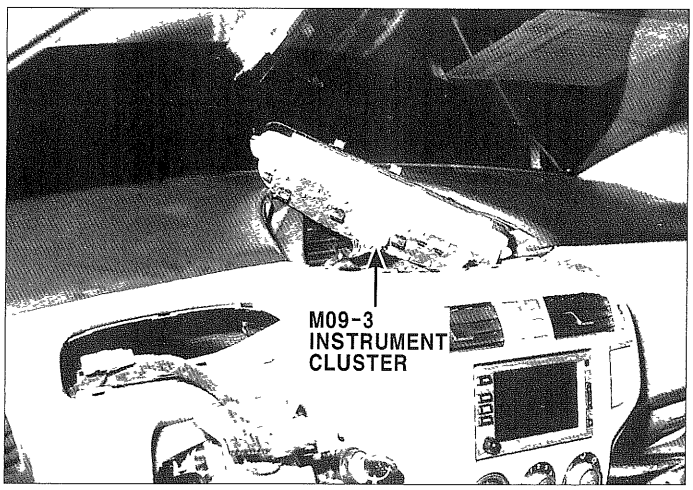
M02 E3FC001B



M09-1,M09-2 E3FC001E

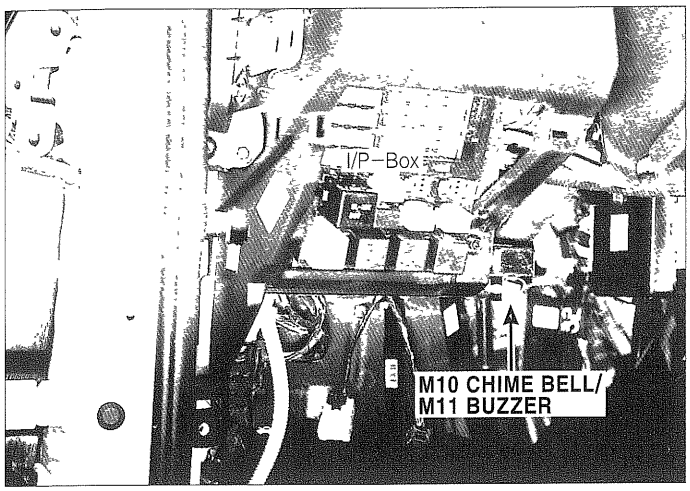


M03,M04,M05 E3FC001C

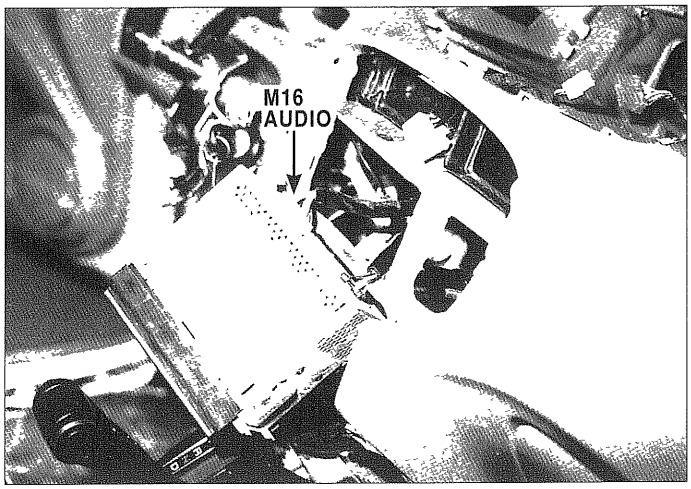


M09-3 E3FC001F

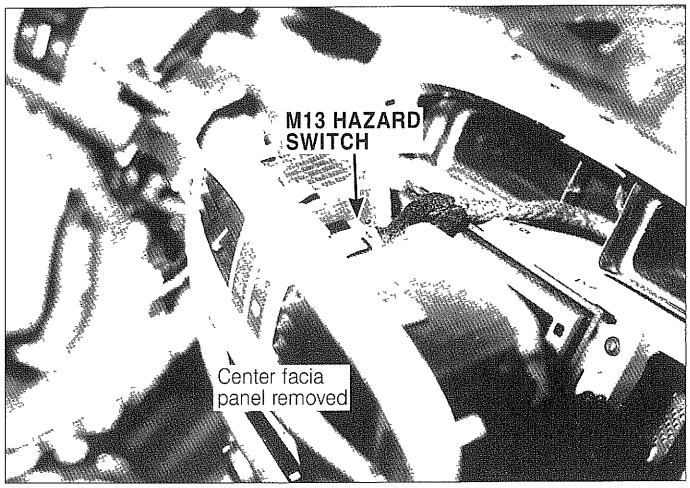
MAIN HARNESS(2)



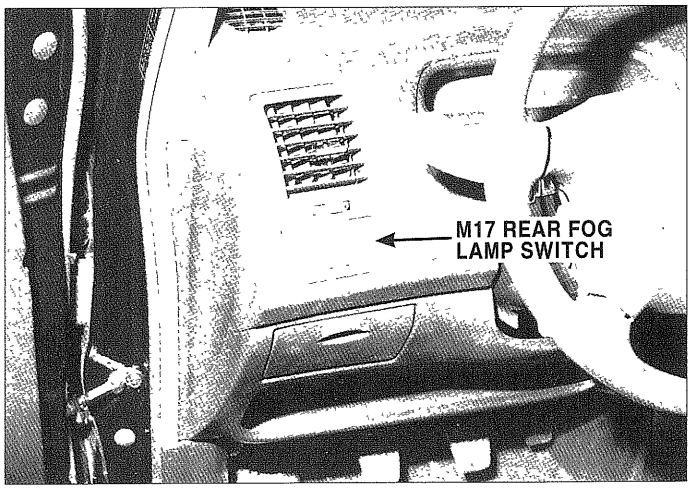
M10,M11 E3FC001G



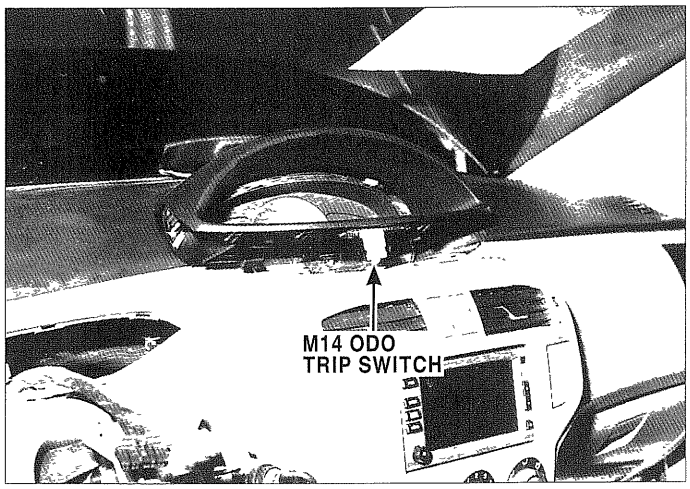
M16 E3FC001K



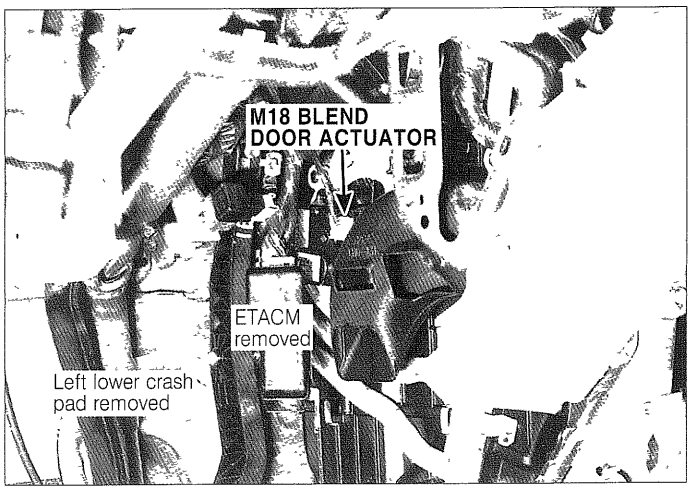
M13 E3FC001H



M17 E3FC001L

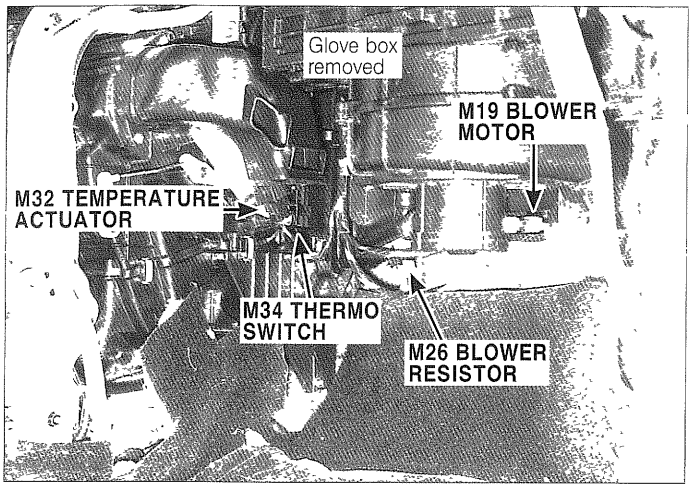


M14 E3FC001J

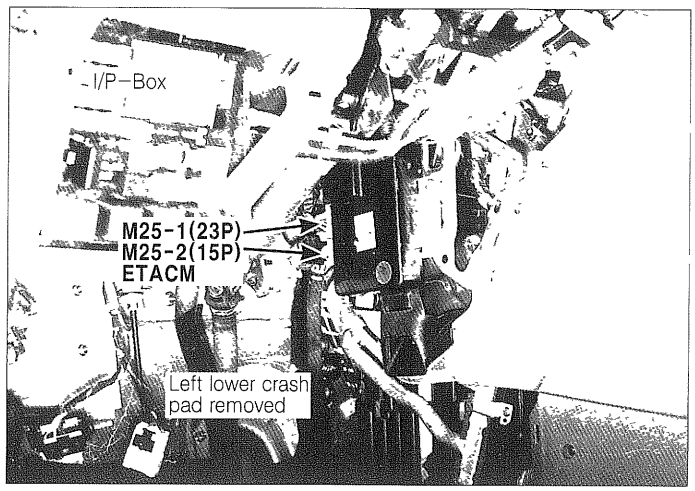


M18 E3FC001M

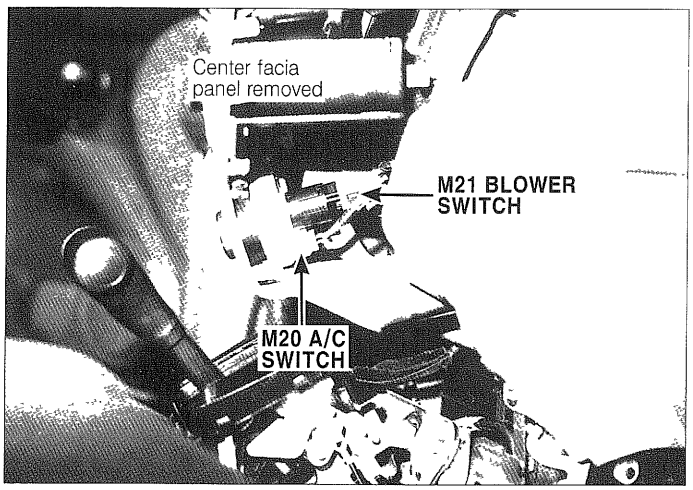
MAIN HARNESS(3)



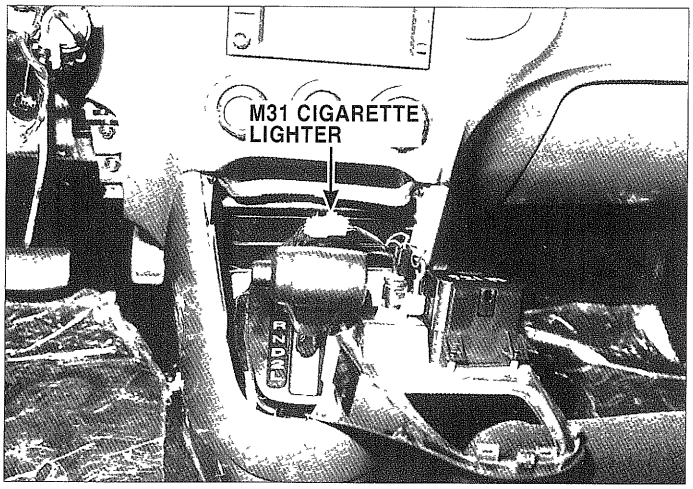
M19,M26,M32,M34 E3FC001N



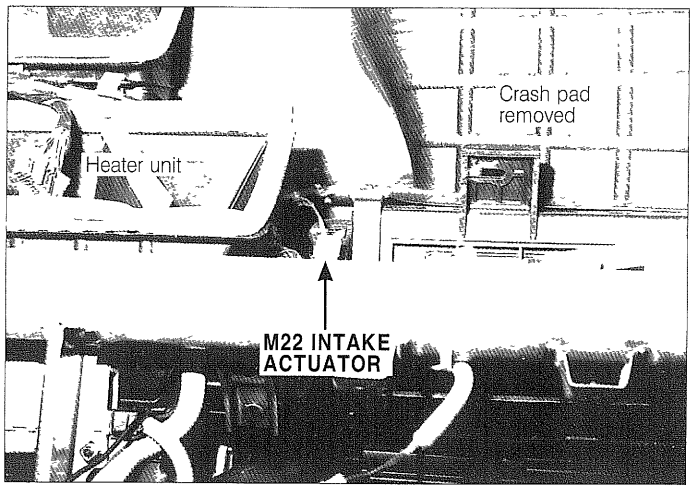
M25-1,M25-2 E3FC001R



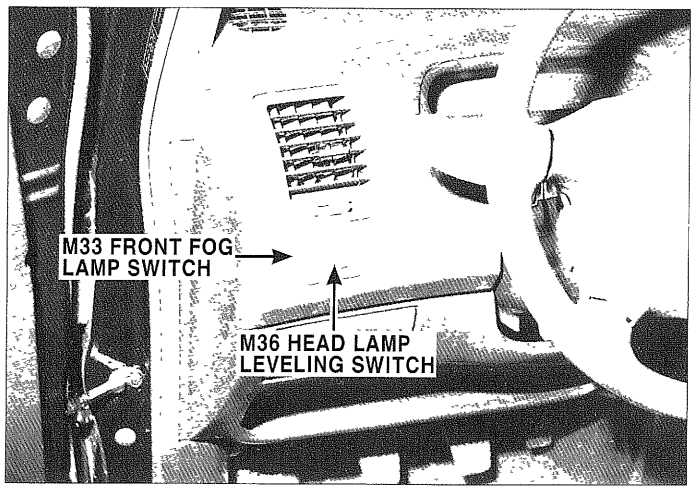
M20,M21 E3FC001P



M31 E3FC001S

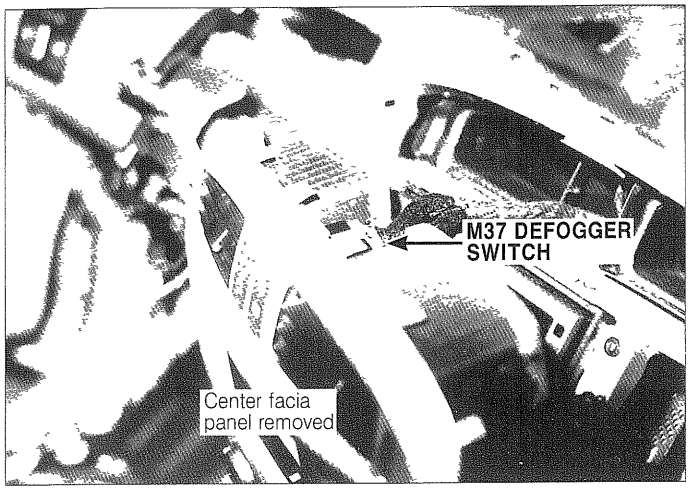


M22 E3FC001Q

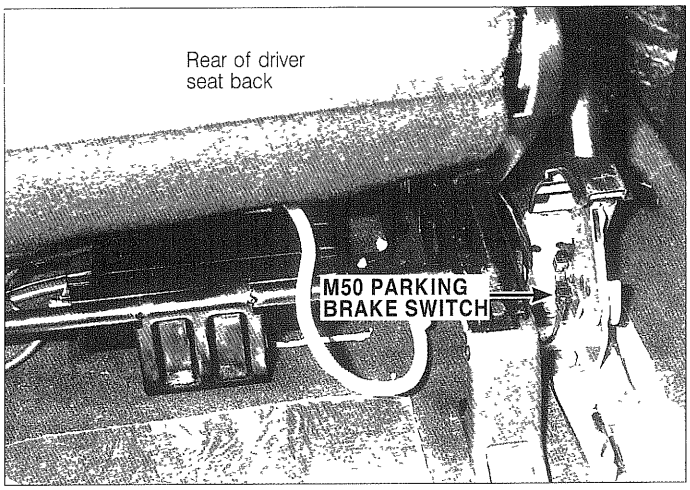


M33,M36 E3FC001T

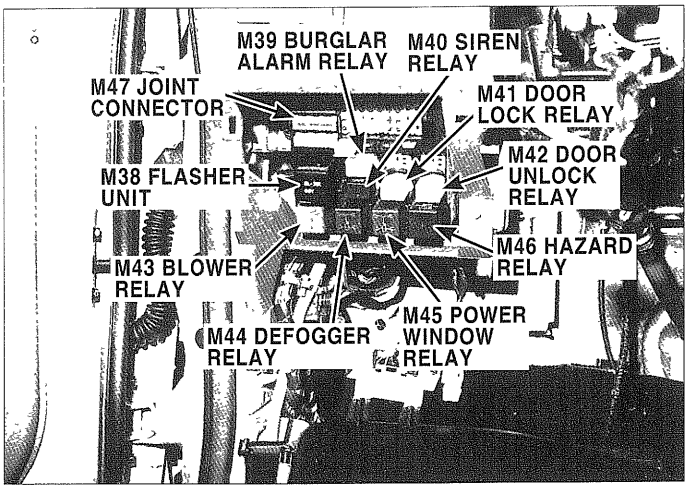
MAIN HARNESS(4)



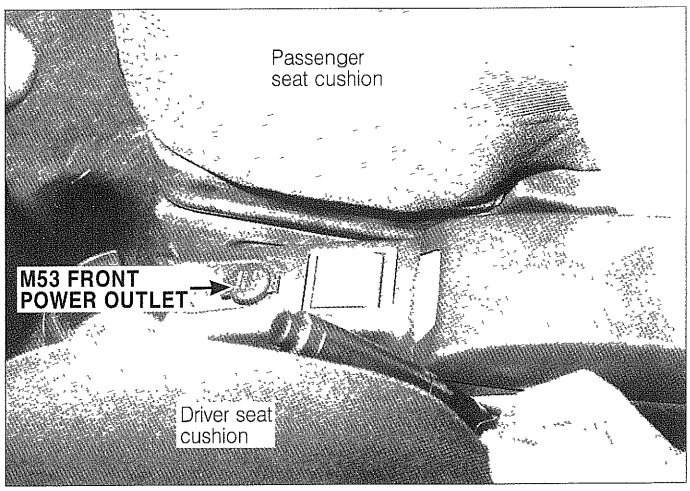
M37 E3FC001U



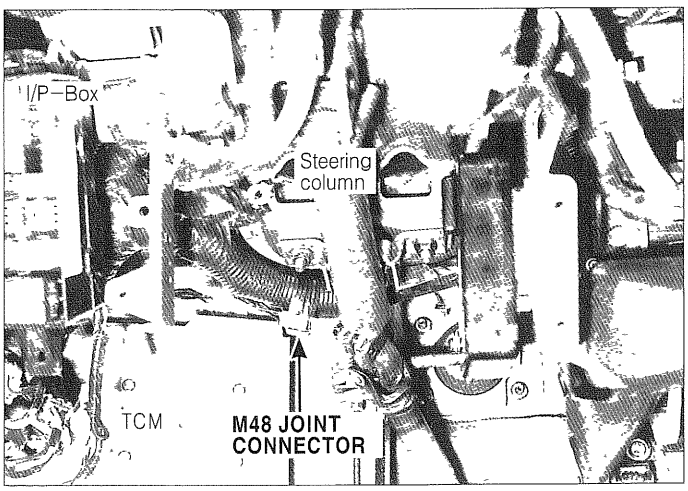
M50 E3FC001X



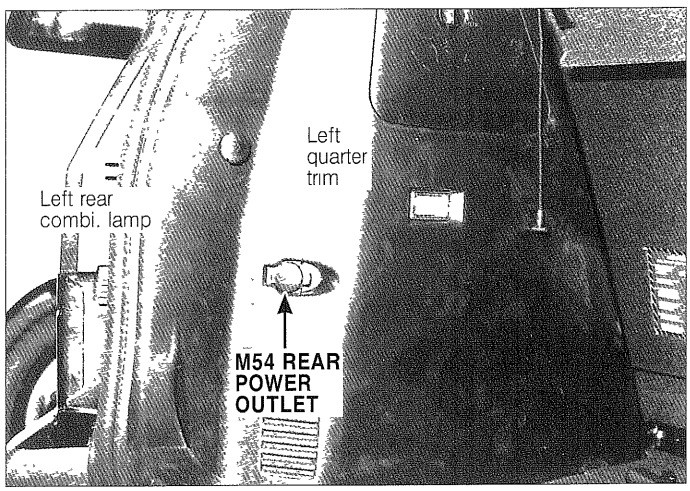
M38,M39,M40,M41,M42
M43,M44,M45,M46,M47 E3FC001V



M53 E3FC001Y

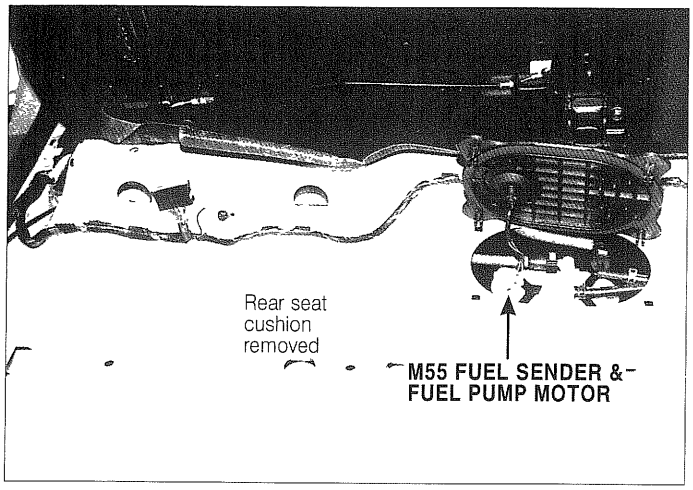


M48 E3FC001W

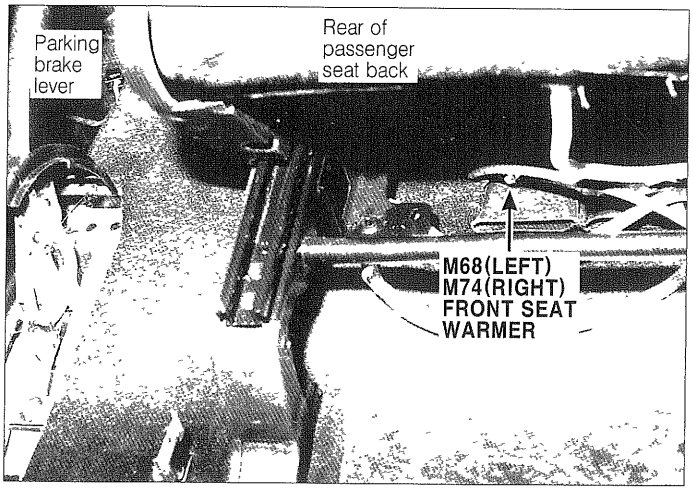


M54 E3FC001Z

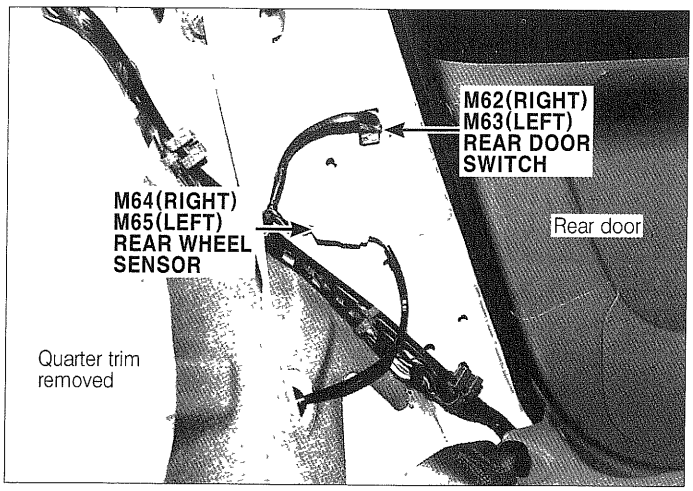
MAIN HARNESS(5)



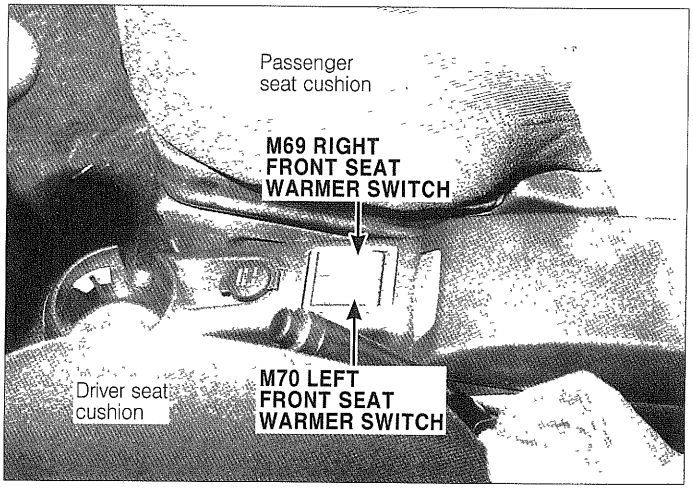
M55 E3FC0A1A



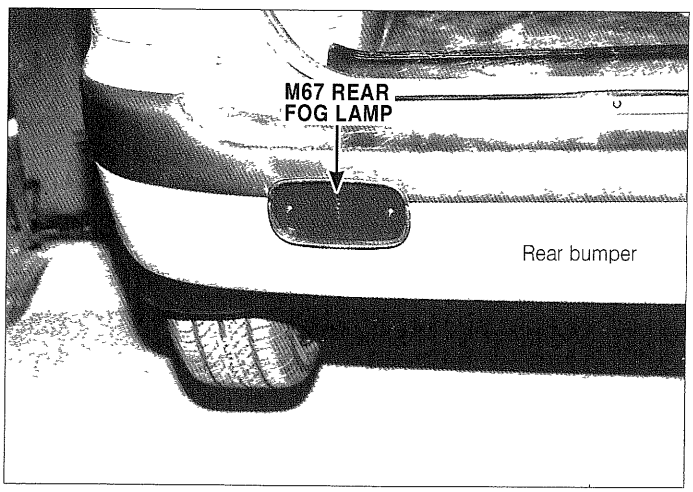
M68,M74 E3FC0A1D



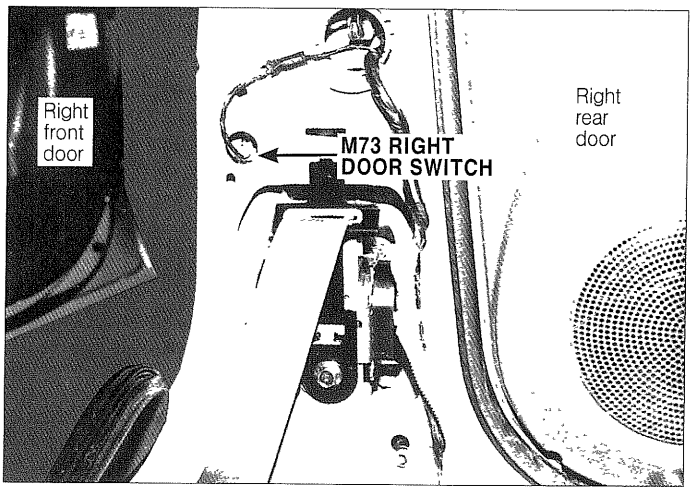
M62,M63,M64,M65 E3FC0A1B



M69,M70 E3FC0A1E

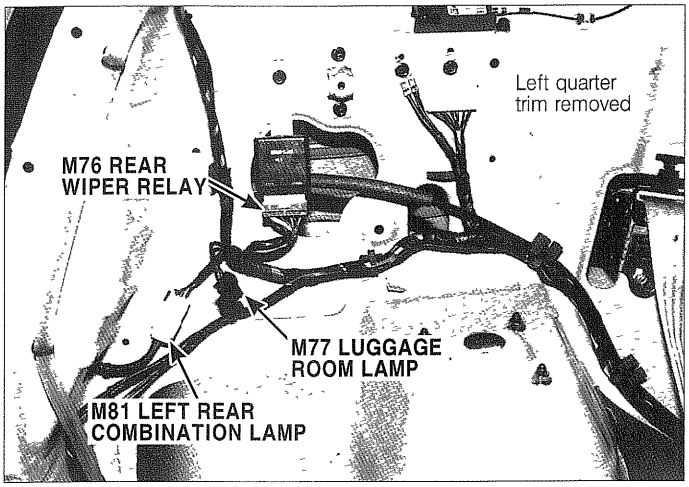


M67 E3FC0A1C

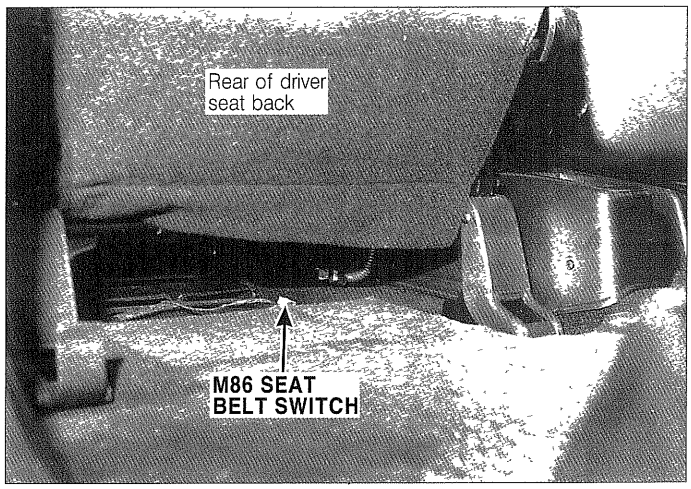


M73 E3FC0A1F

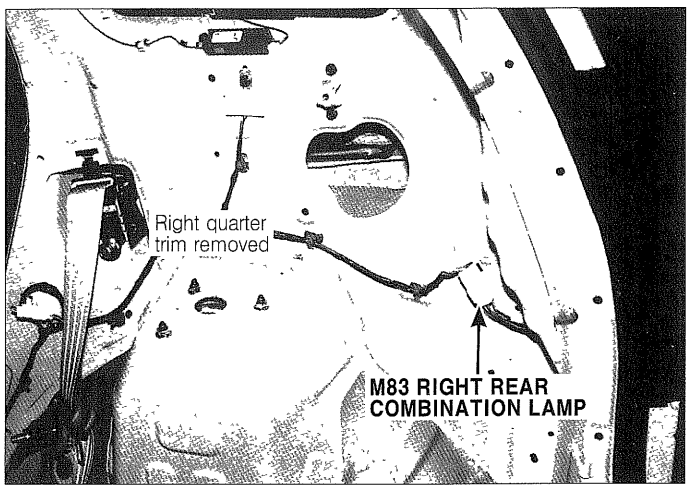
MAIN HARNESS(6)



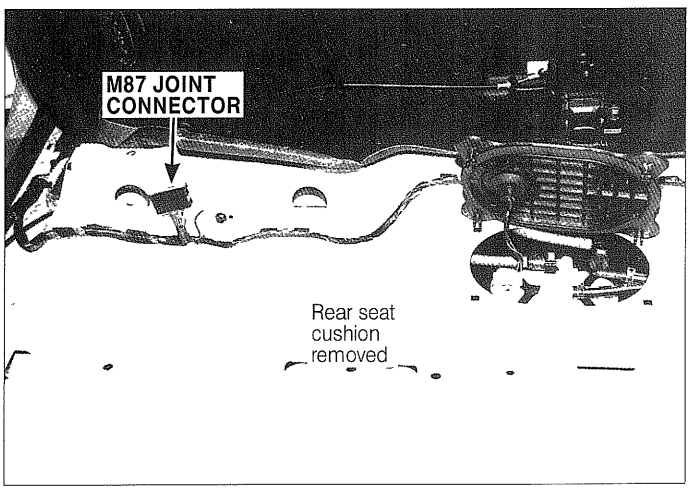
M76,M77,M81 E3FC0A1G



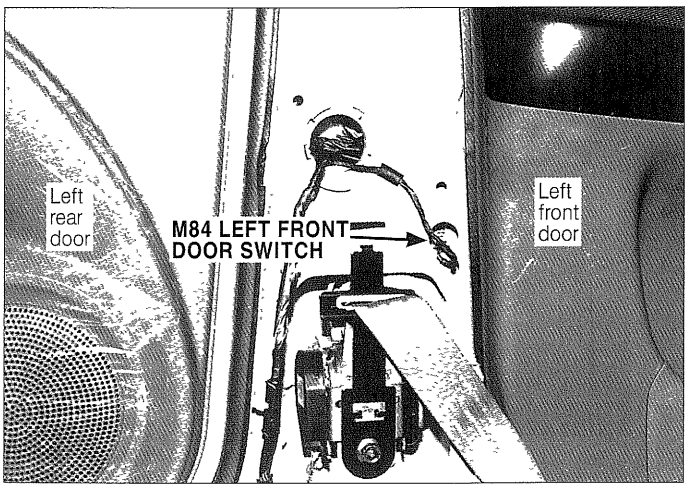
M86 E3FC0A1K



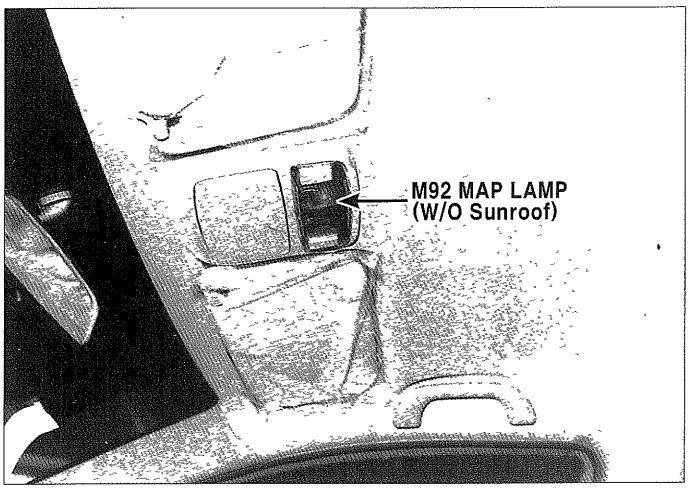
M83 E3FC0A1H



M87 E3FC0A1L

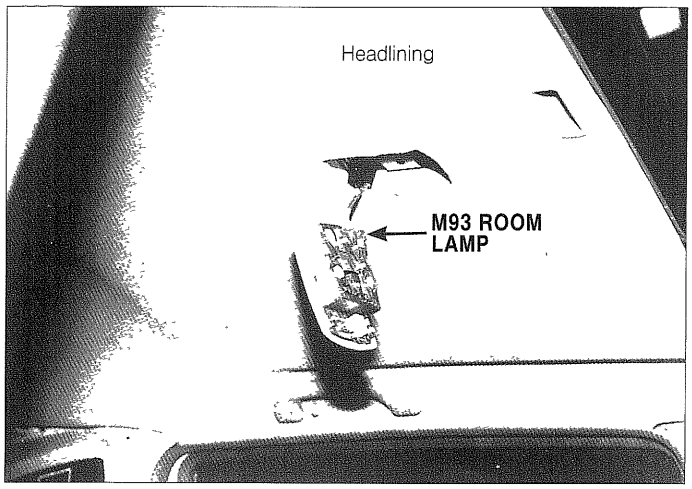


M84 E3FC0A1J

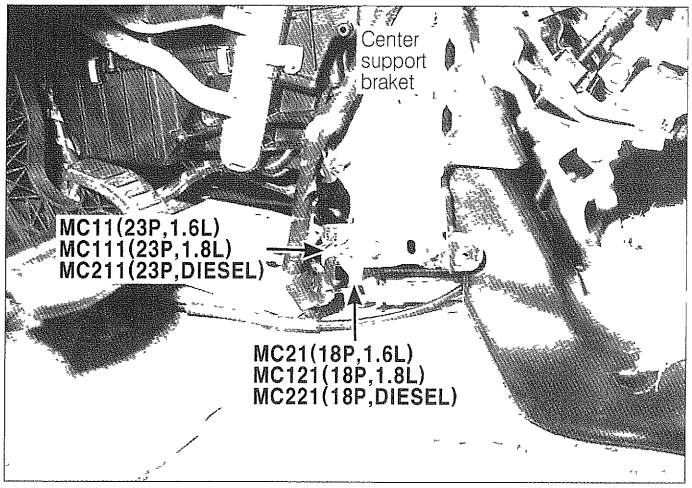


M92 E3FC0A1M

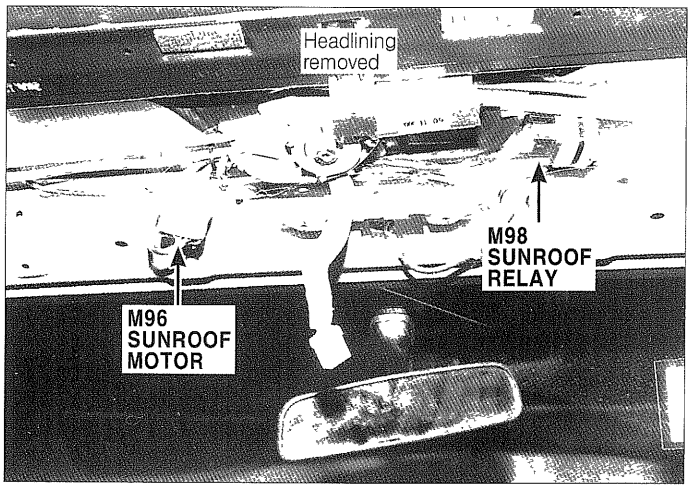
MAIN HARNESS(7)



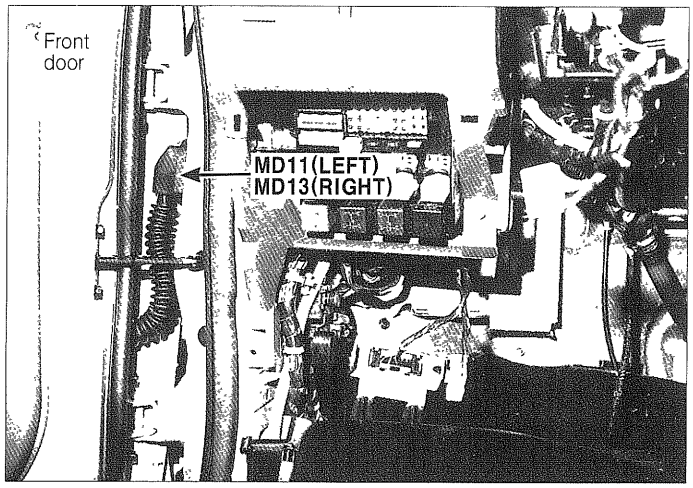
M93 E3FC0A1N



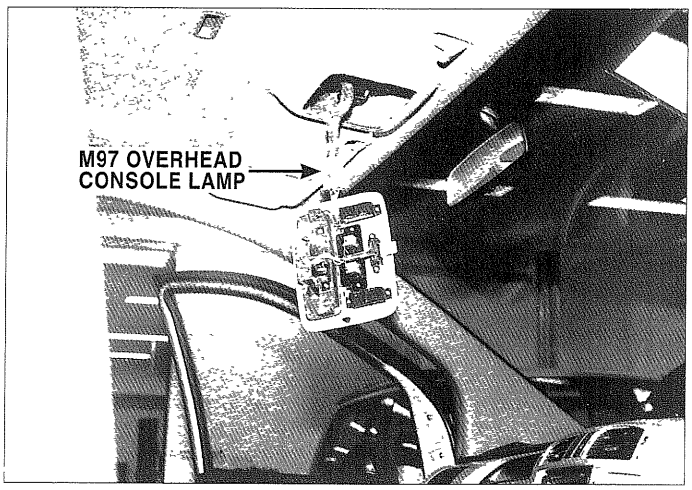
MC11,MC21,MC111,MC121 MC211,MC221 E3FC0A1R



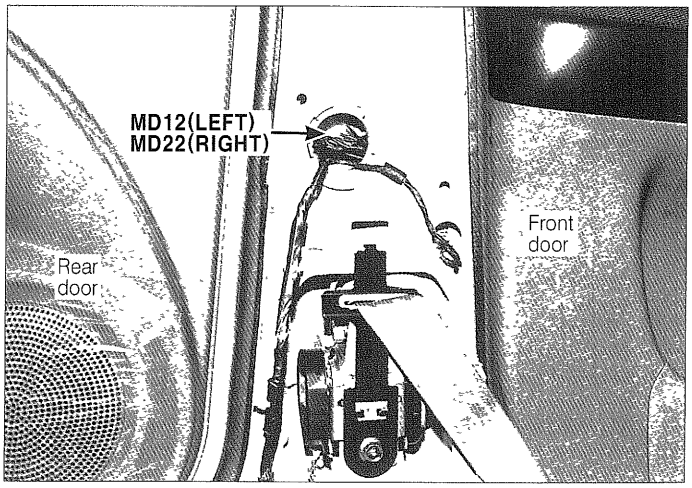
M96,M98 E3FC0A1P



MD11,MD13 E3FC0A1S

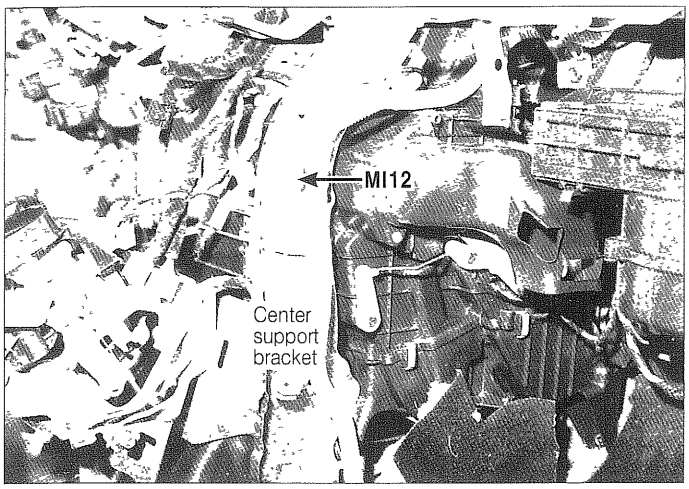


M97 E3FC0A1Q

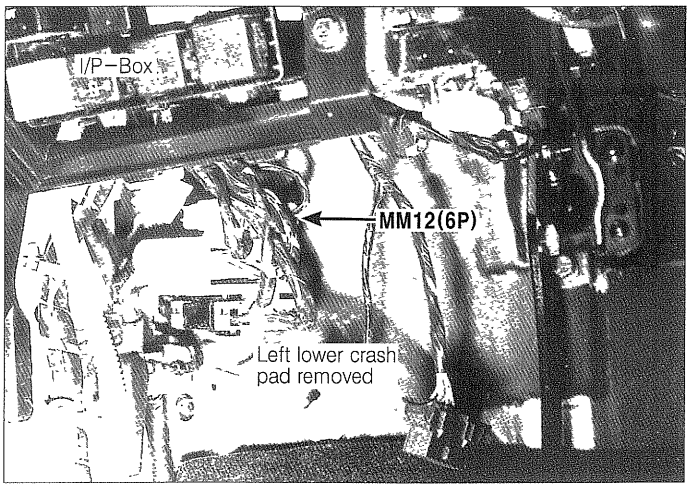


MD12,MD22 E3FC0A1T

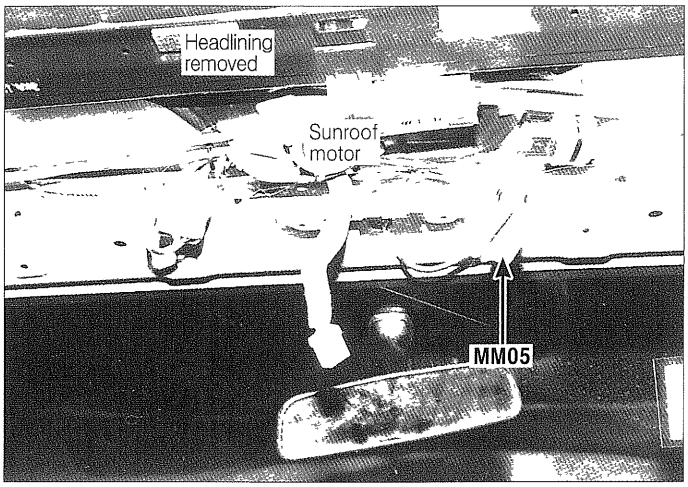
MAIN HARNESS(8)



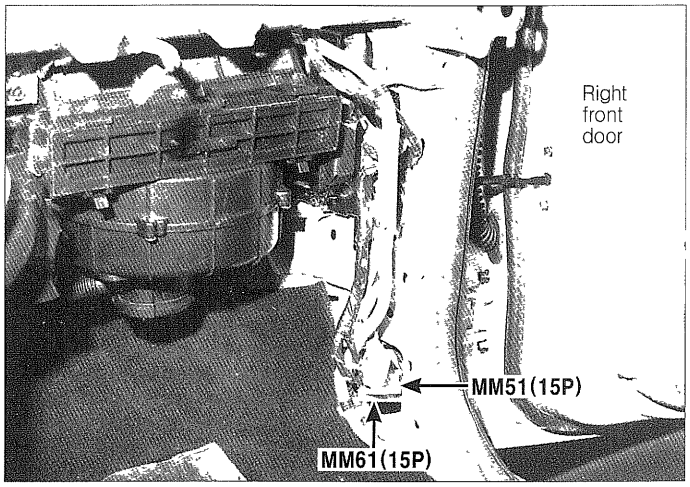
MI12 E3FC0A1U



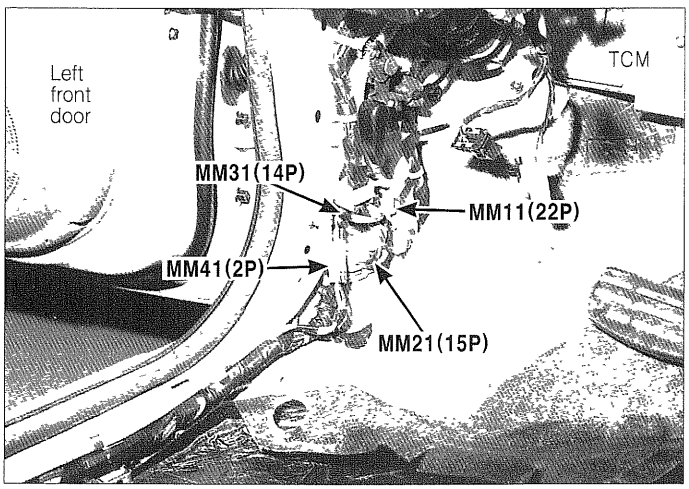
MM12 E3FC0A1X



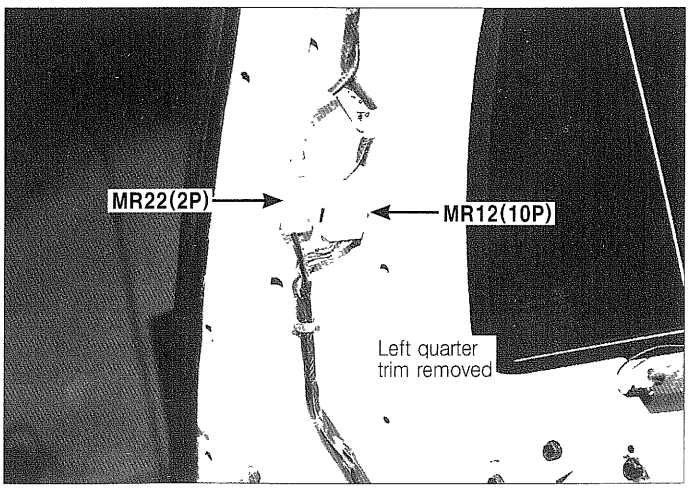
MM05 E3FC0A1V



MM51,MM61 E3FC0A1Y



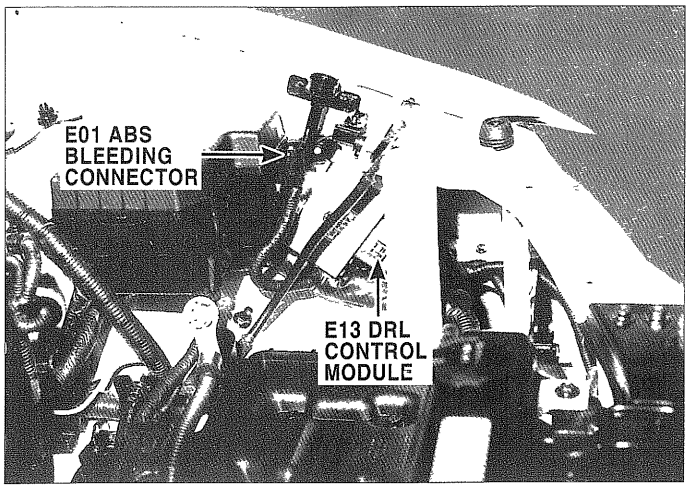
MM11,MM21,MM31,MM41 E3FC0A1W



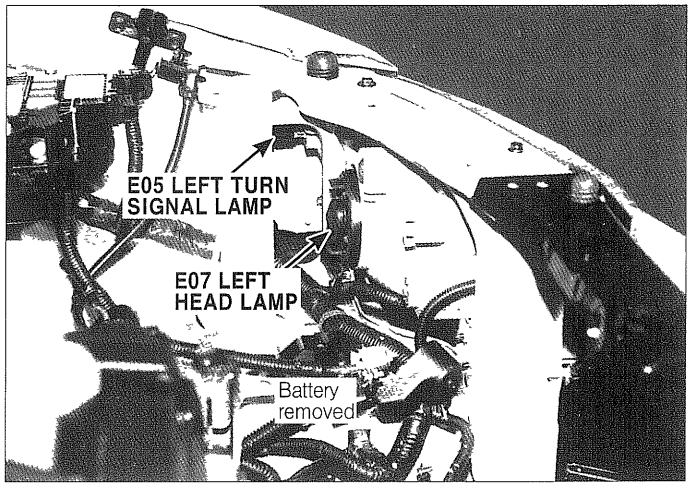
MR12,MR22 E3FC0A1Z

ENGINE HARNESS

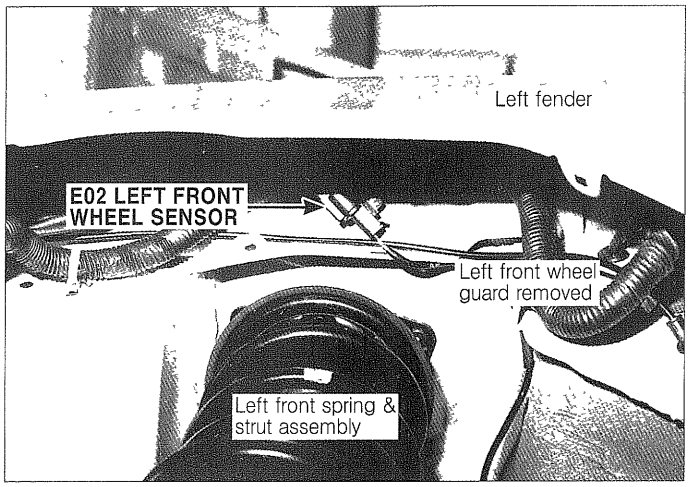
ENGINE HARNESS(1)



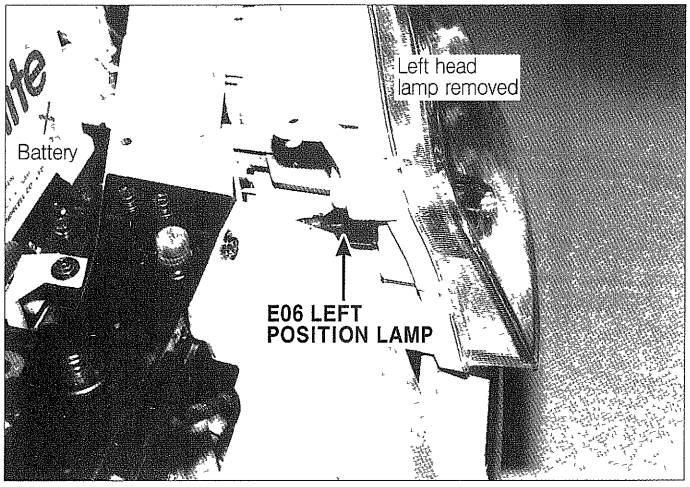
E01,E13 E3FC002A



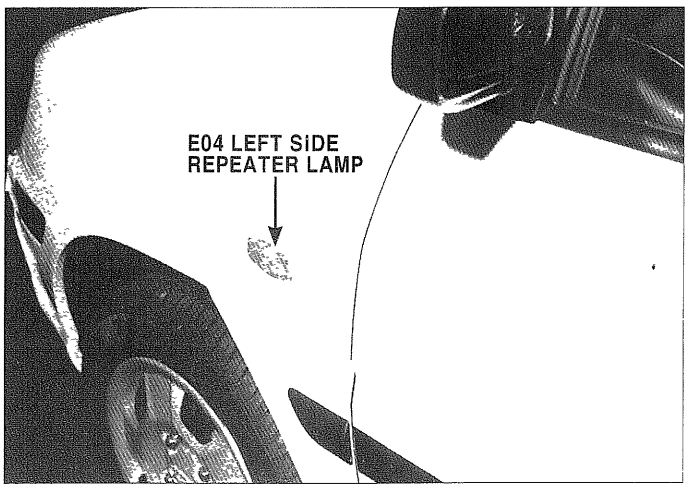
E05,E07 E3FC002D



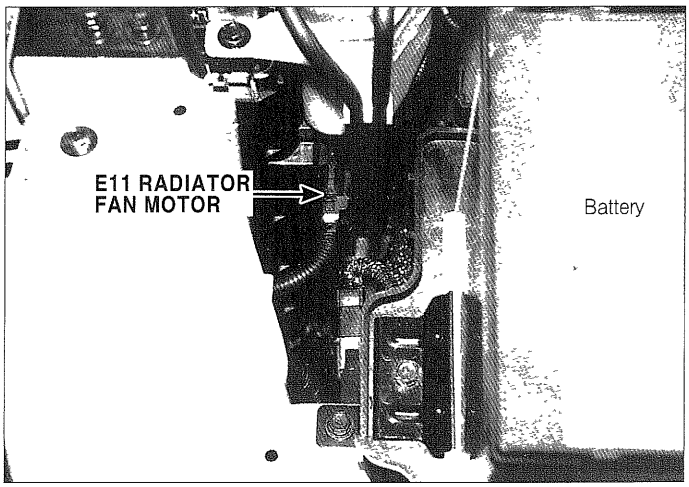
E02 E3FC002B



E06 E3FC002E

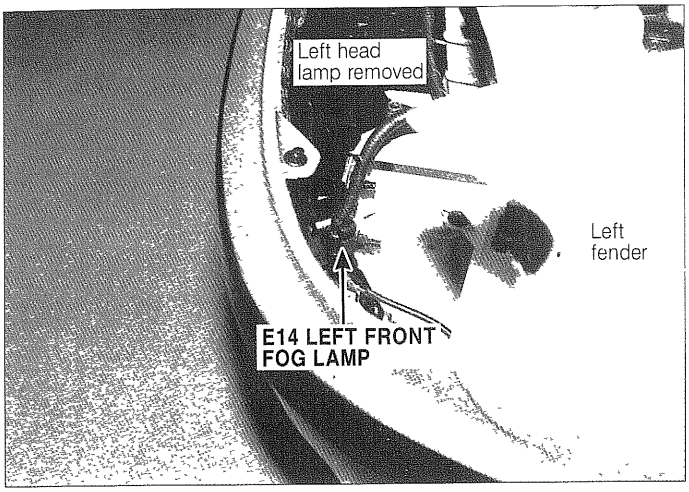


E04 E3FC002C

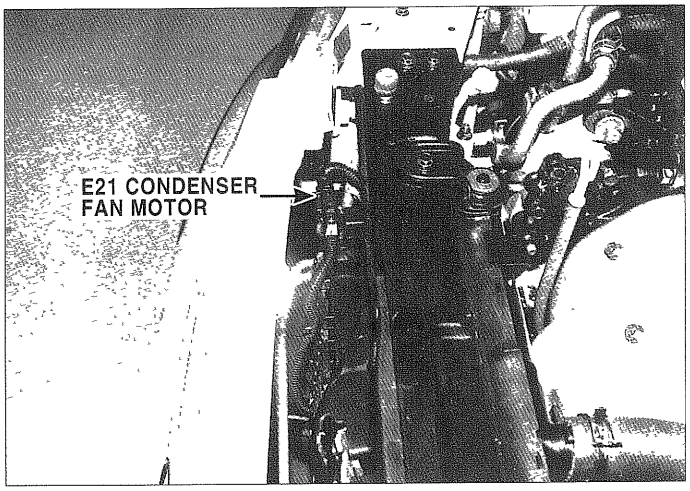


E11 E3FC002F

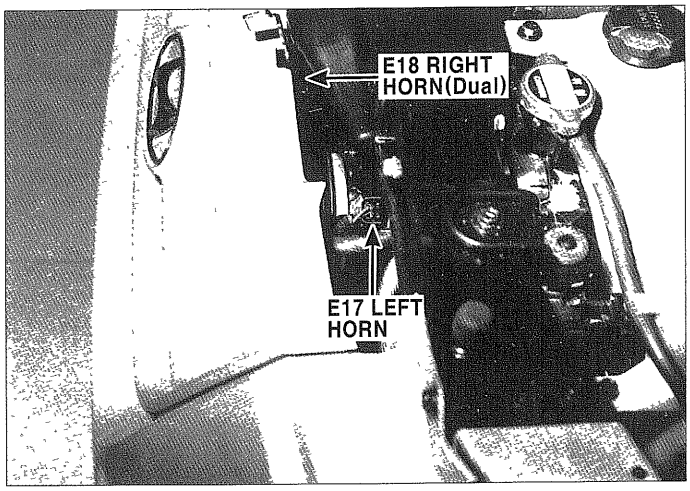
ENGINE HARNESS(2)



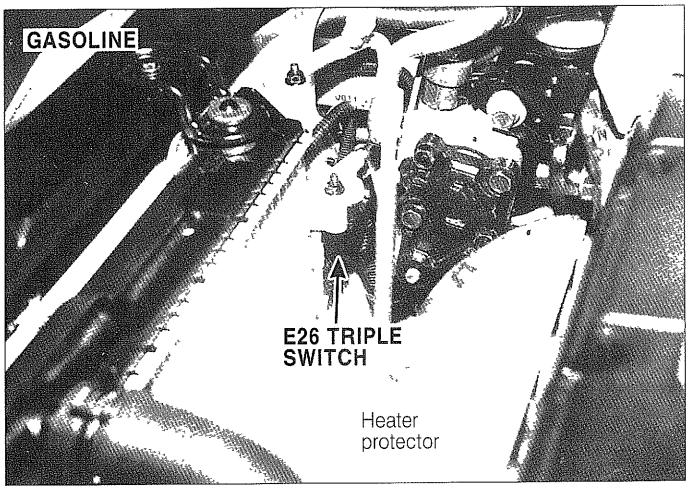
E14 E3FC002G



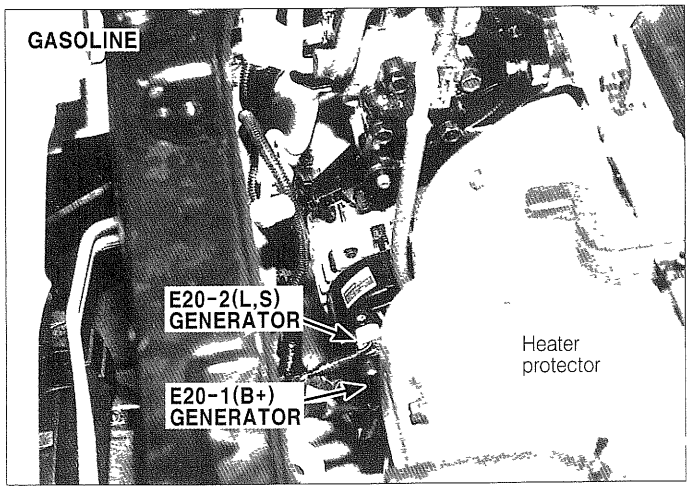
E21 E3FC002K



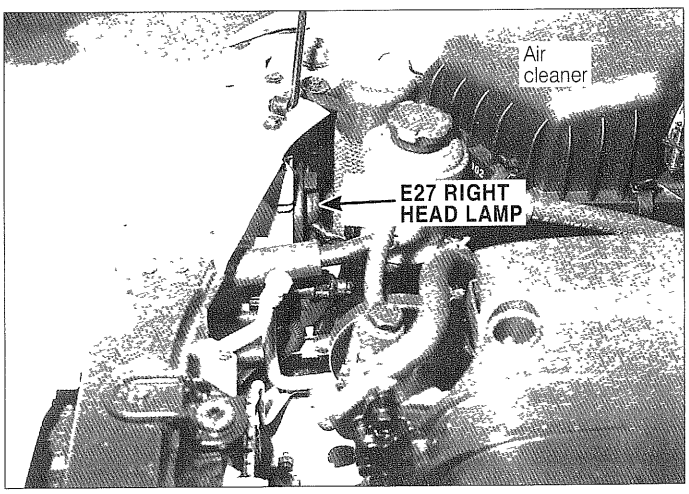
E17,E18 E3FC002H



E26 E3FC002L

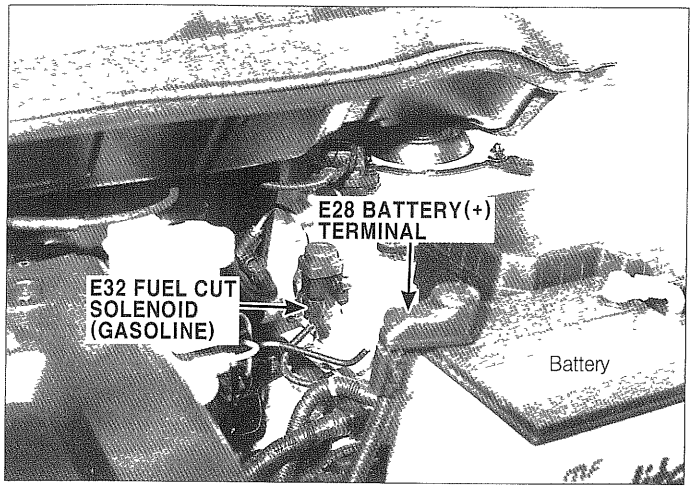


E20-1,E20-2 E3FC002J

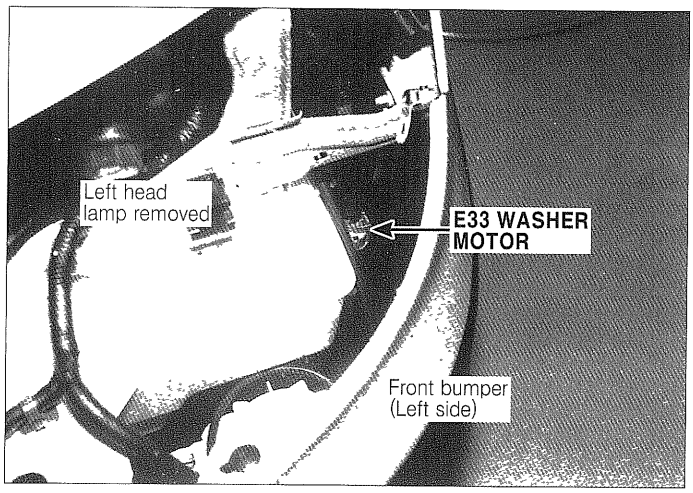


E27 E3FC002M

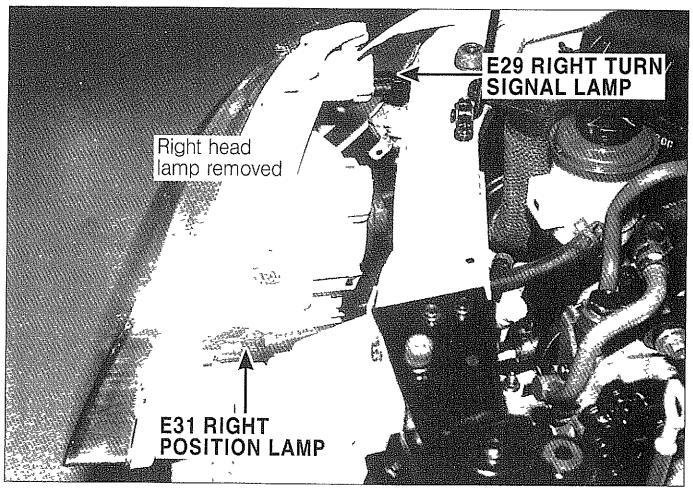
ENGINE HARNESS(3)



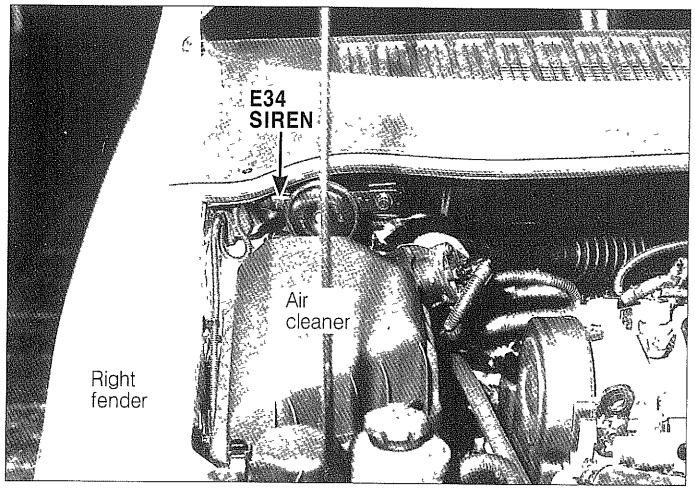
E28,E32 E3FC002N



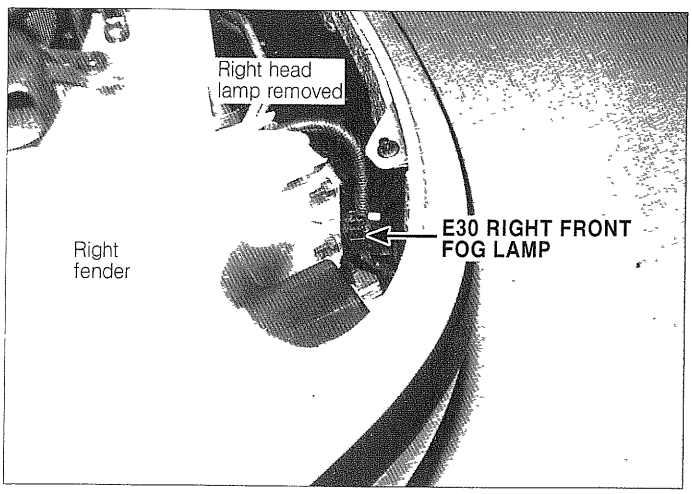
E33 E3FC002R



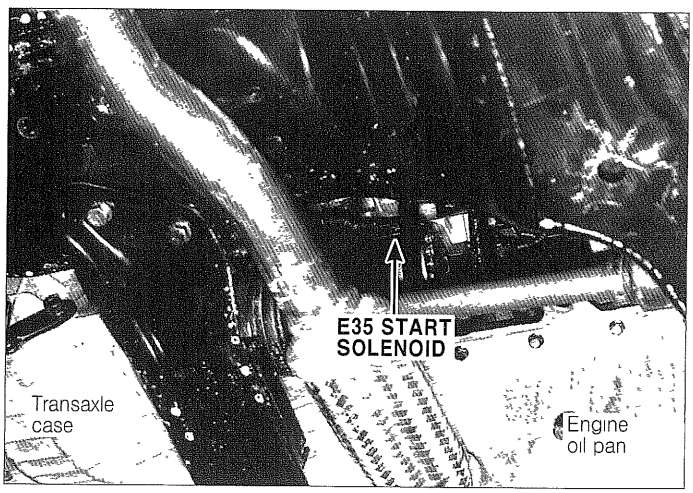
E29,E31 E3FC002P



E34 E3FC002S

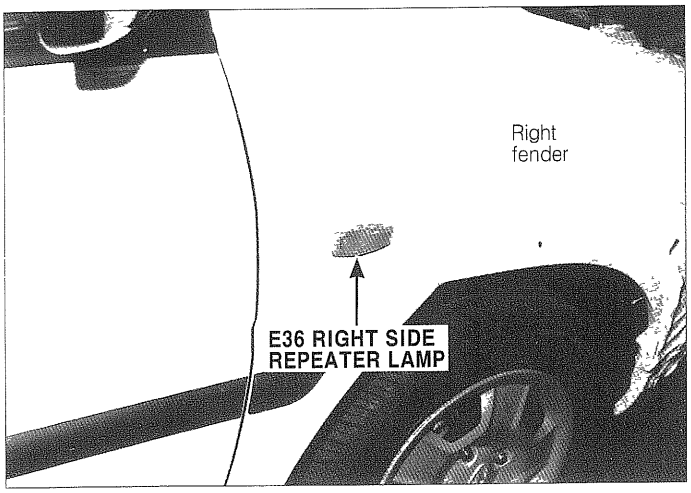


E30 E3FC002Q

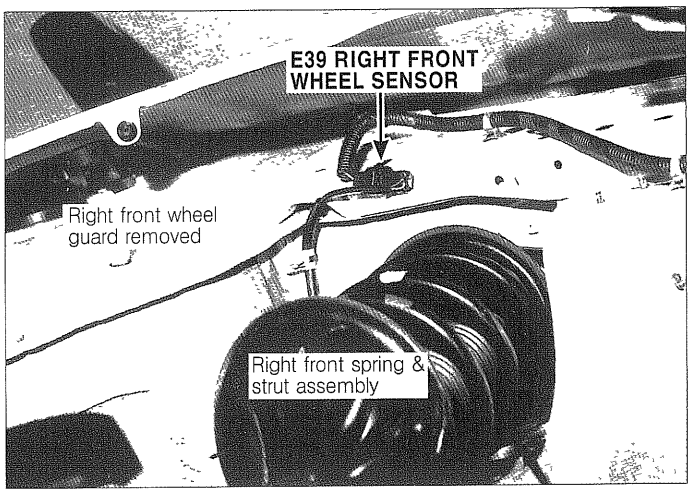


E35 E3FC002T

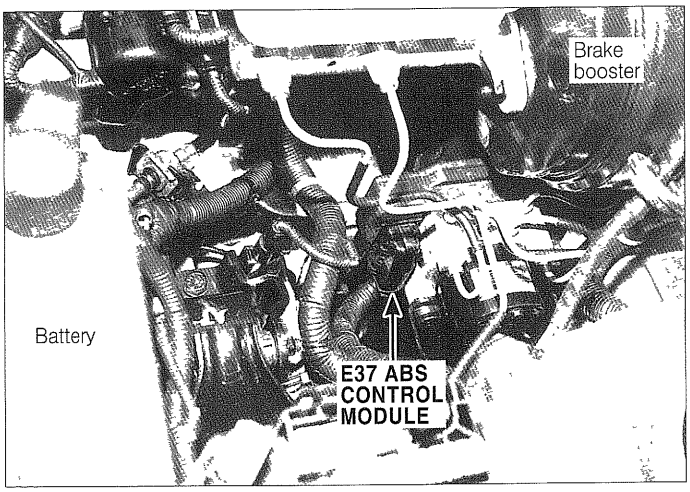
ENGINE HARNESS(4)



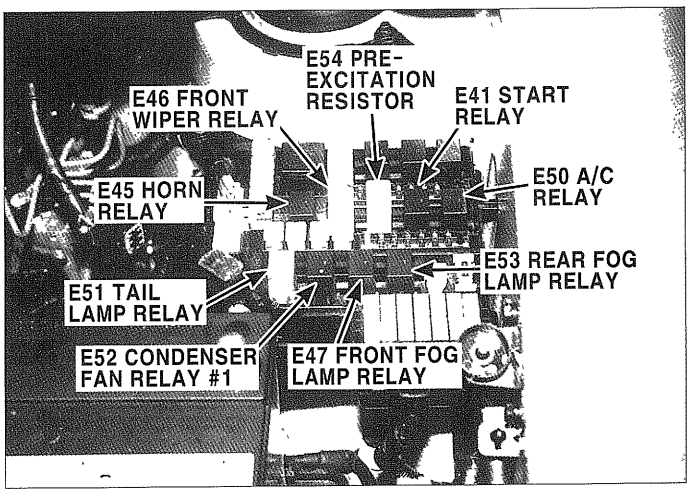
E36 E3FC002U



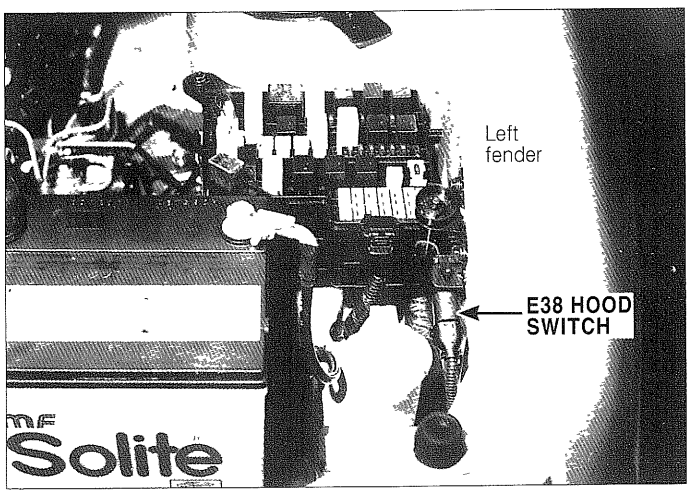
E39 E3FC002X



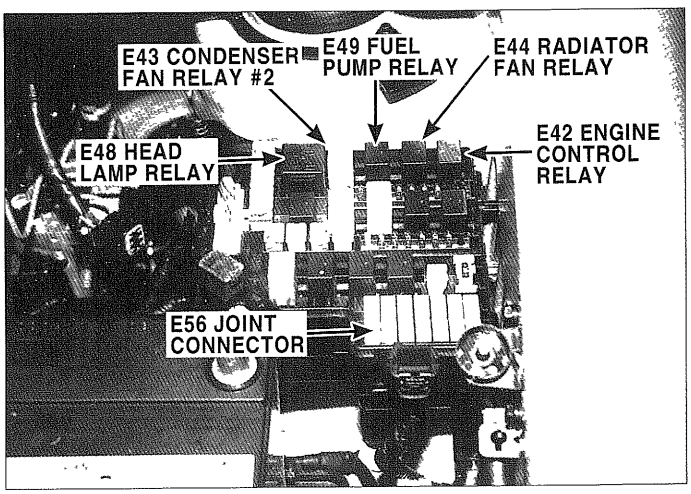
E37 E3FC002V



E41,E45,E46,E47,E50
E51,E52,E53,E54 E3FC002Y

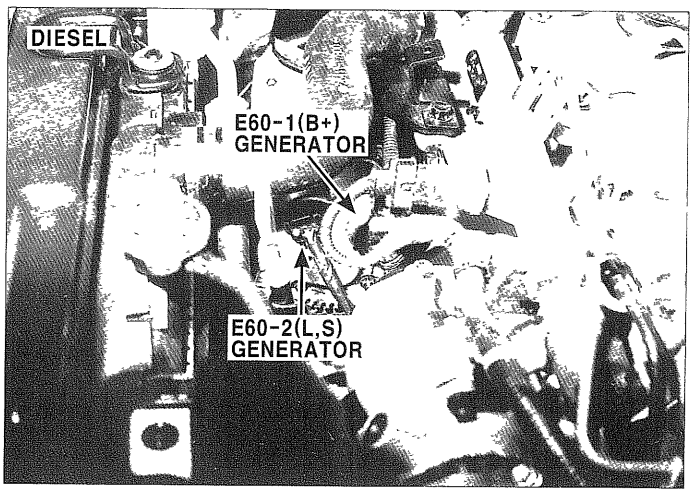


E38 E3FC002W

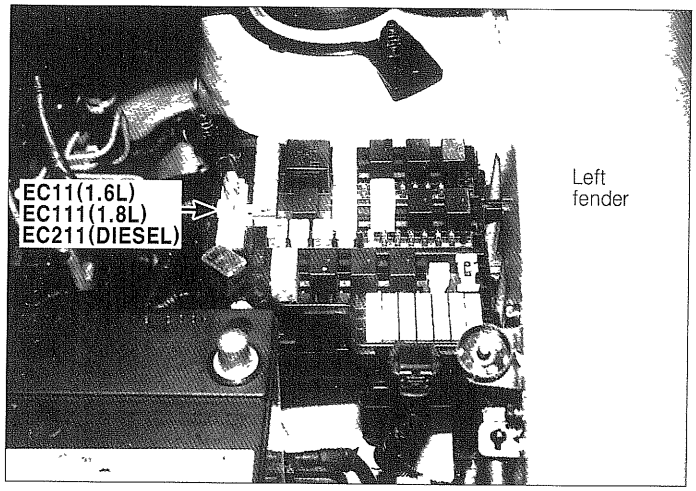


E42,E43,E44,E48,E49,E56 E3FC002Z

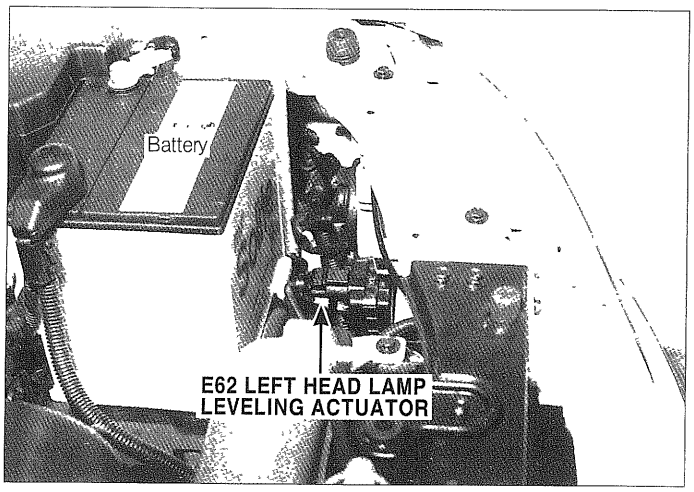
ENGINE HARNESS(5)



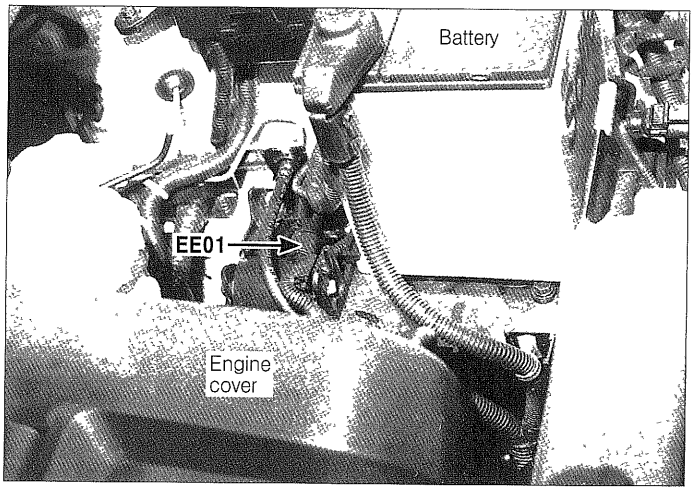
E60-1,E60-2 E3FC0A2A



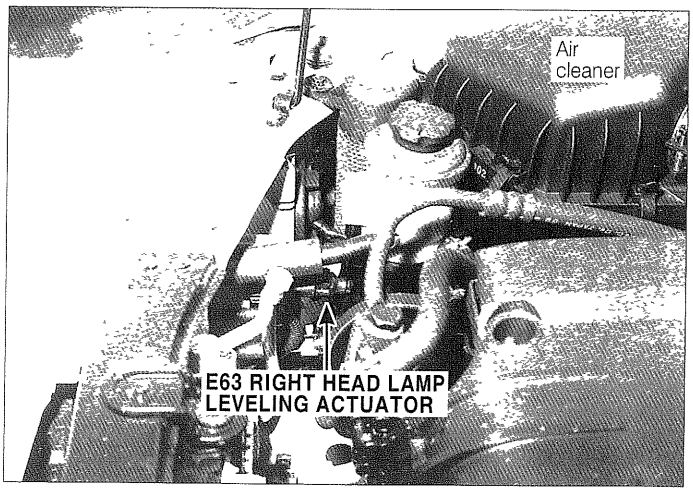
EC11,EC111,EC211 E3FC0A2D



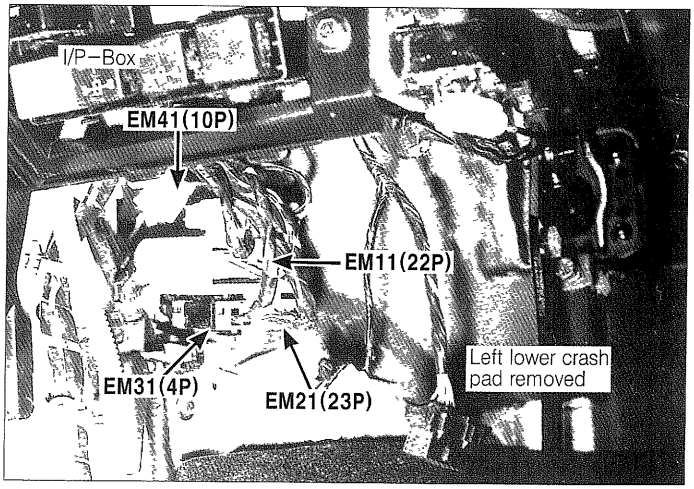
E62 E3FC0A2B



EE01 E3FC0A2E



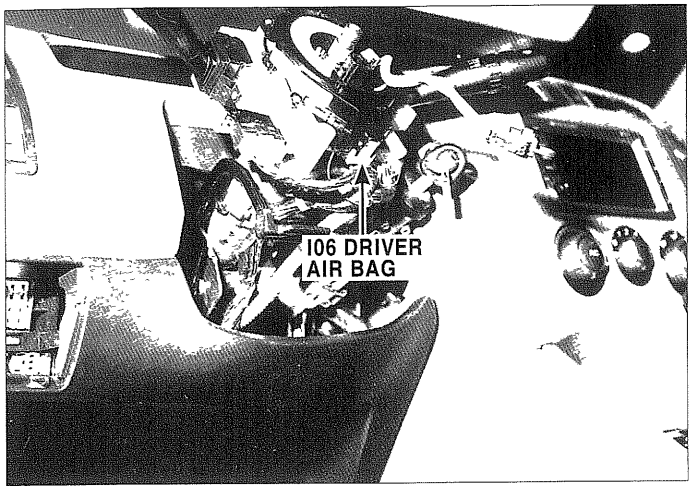
E63 E3FC0A2C



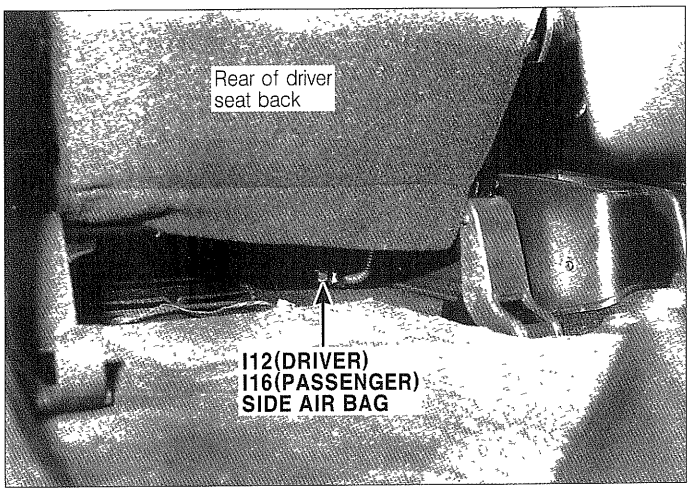
EM11,EM21,EM31,EM41 E3FC0A2F

AIR BAG HARNESS

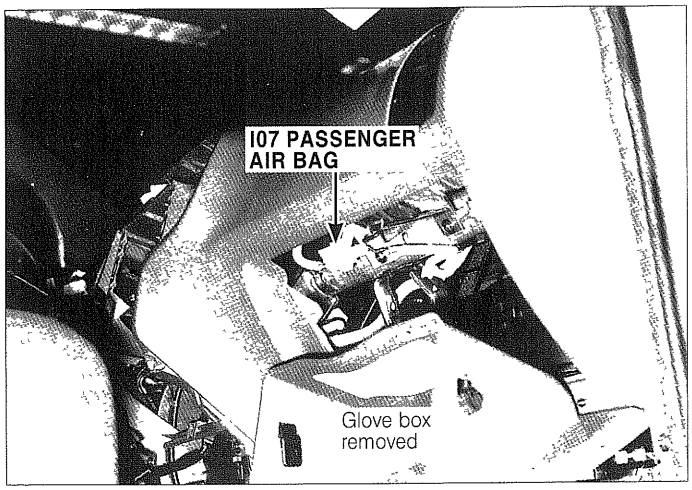
AIR BAG HARNESS(1)



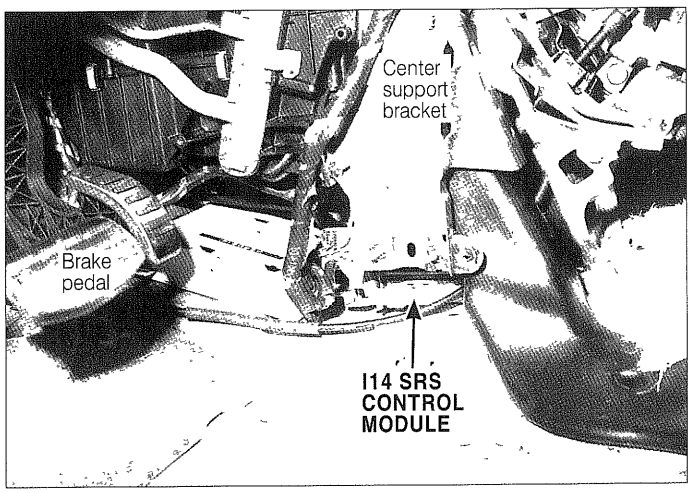
I06 E3FC003A



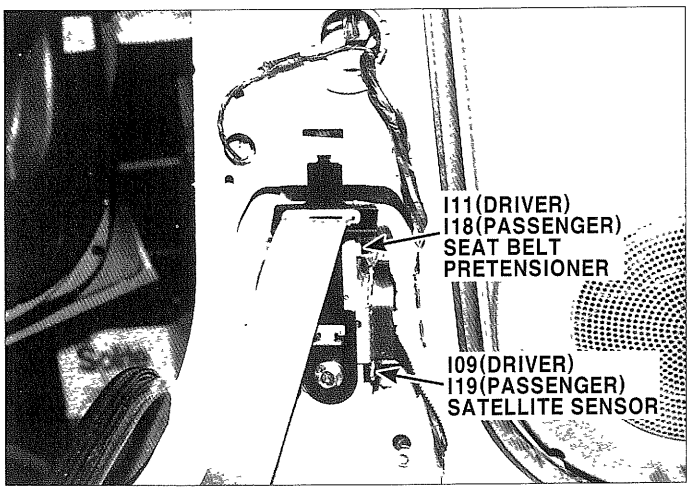
I12,I16 E3FC003D



I07 E3FC003B



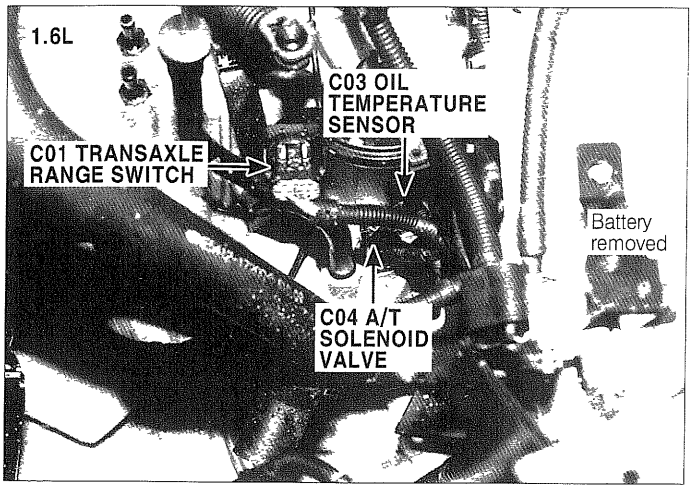
I14 E3FC003E



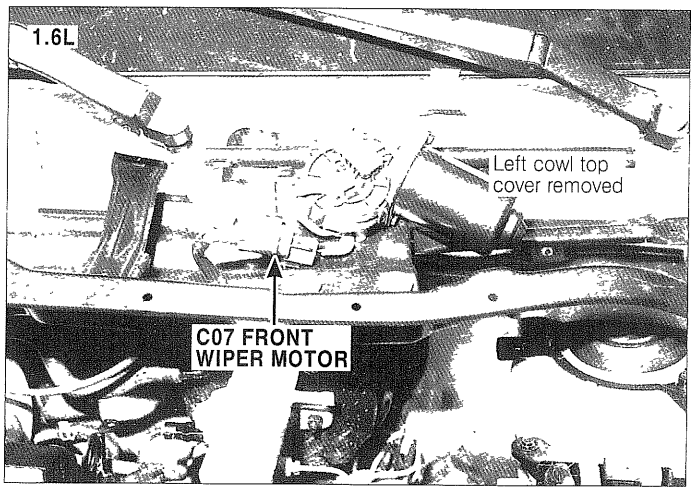
I09,I11,I18,I19 E3FC003C

CONTROL HARNESS

CONTROL HARNESS(1)



C01,C03,C04 E3FC004A



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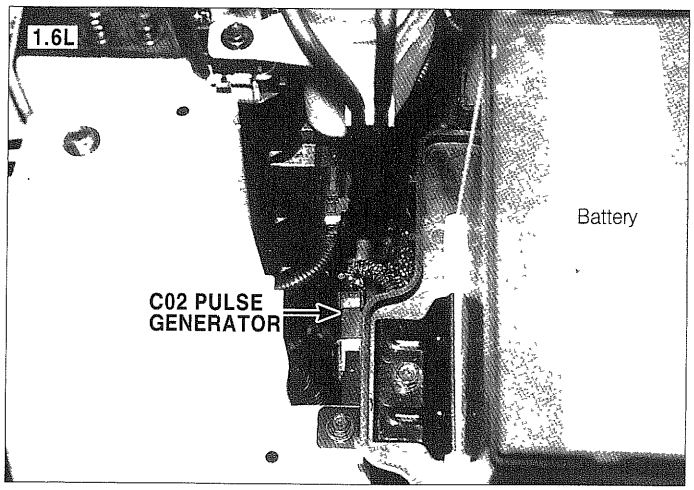
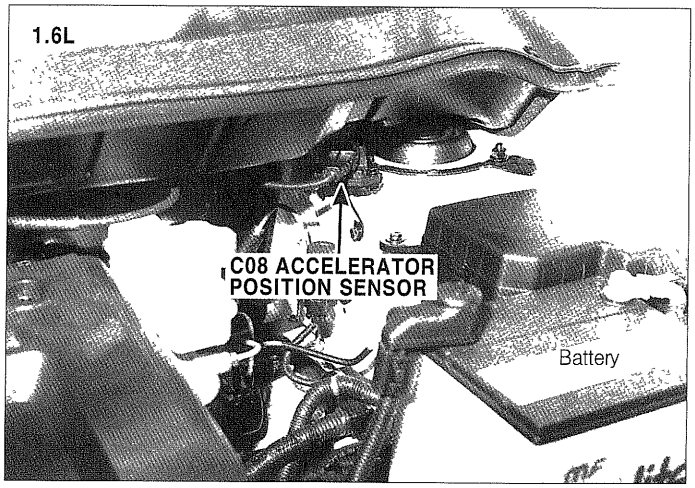
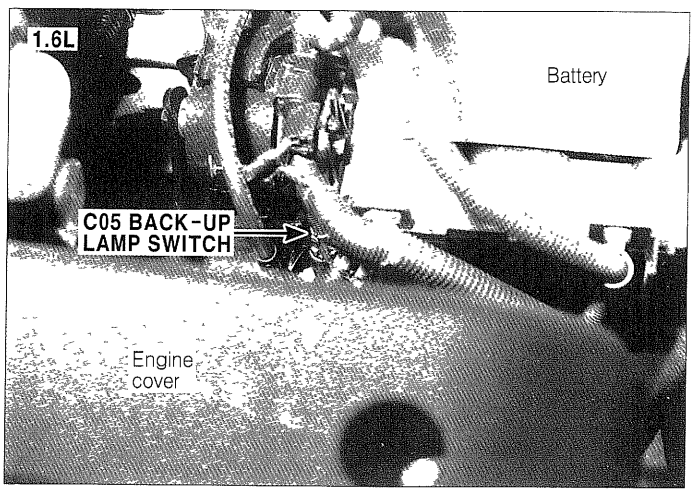


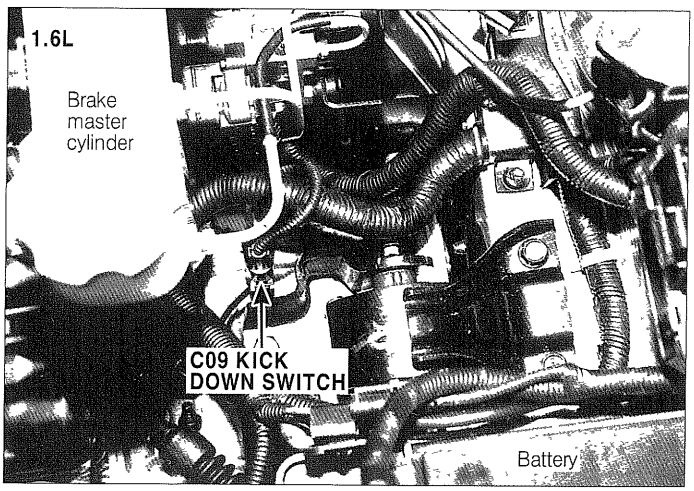
C02 E3FC004B



C08 E3FC004E



C05 E3FC004C



C09 E3FC004F

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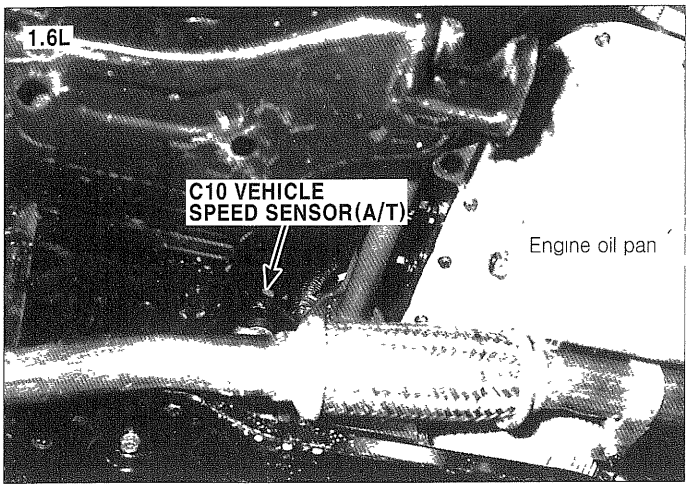
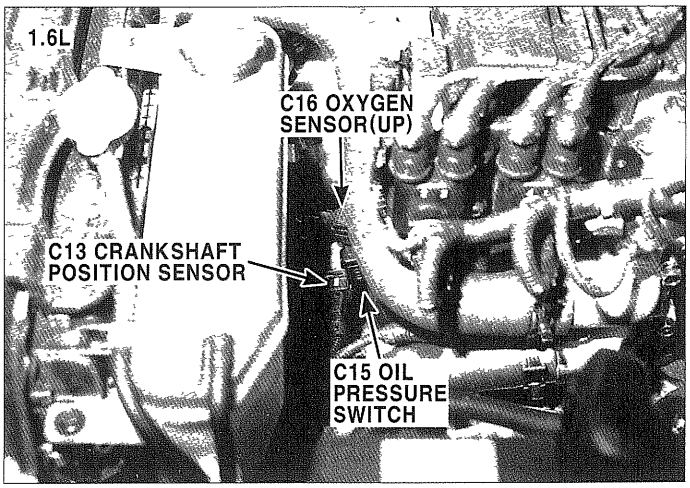
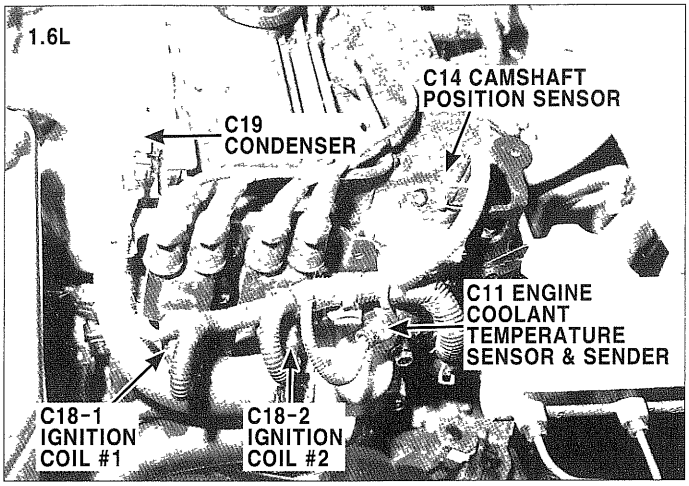


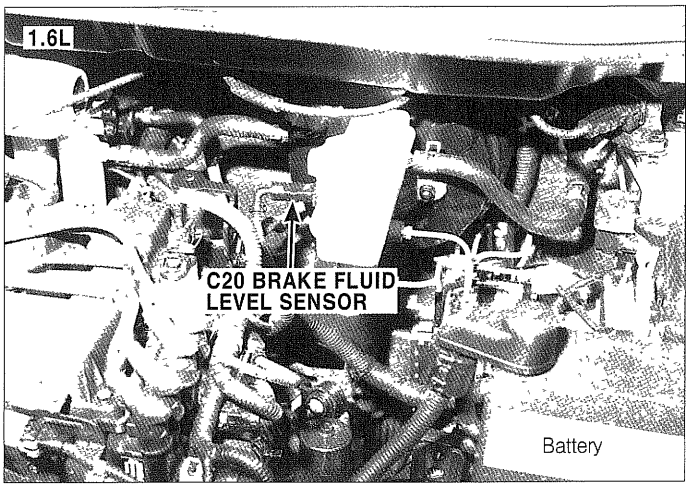
C10 E3FC004G



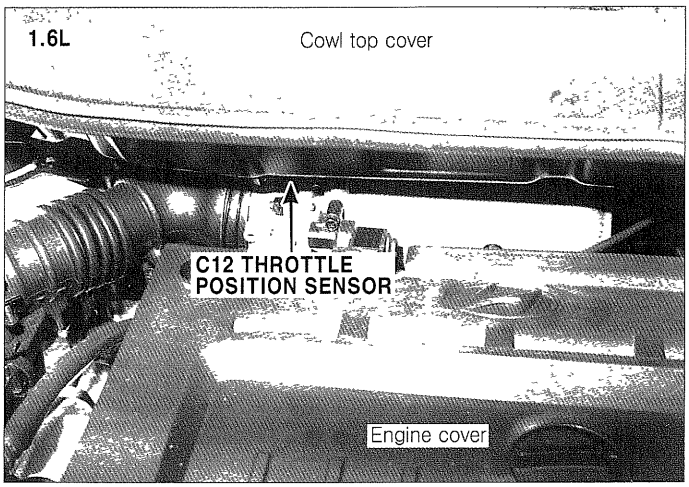
C13,C15,C16 E3FC004K



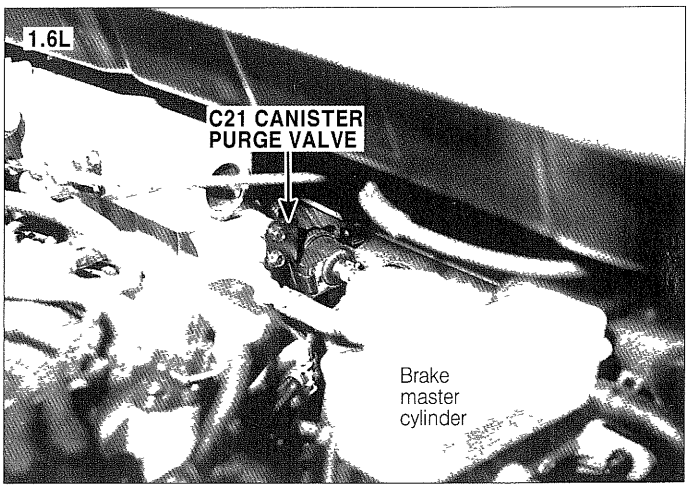
C11,C14,C18-1,C18-2,C19 E3FC004H



C20 E3FC004L

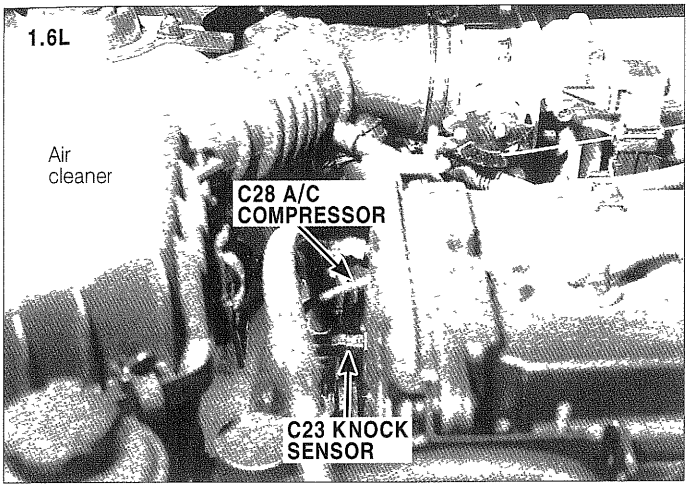


C12 E3FC004J

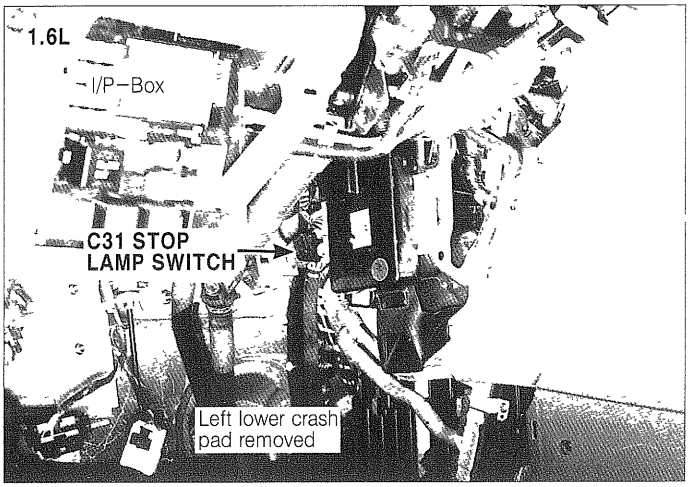


C21 E3FC004M

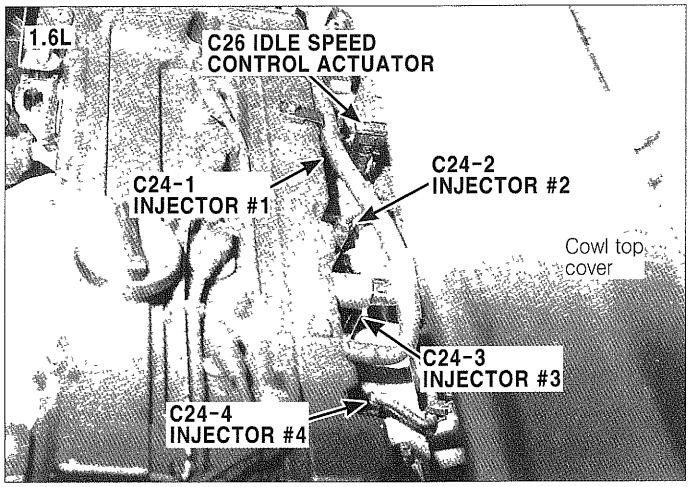
CONTROL HARNESS(3)



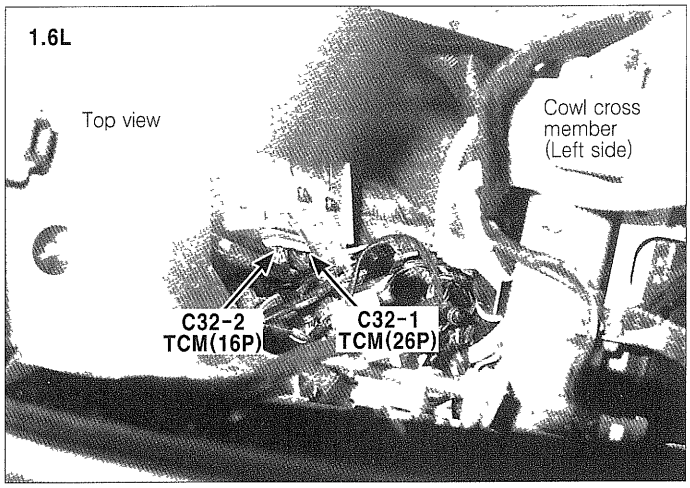
C23,C28 E3FC004N



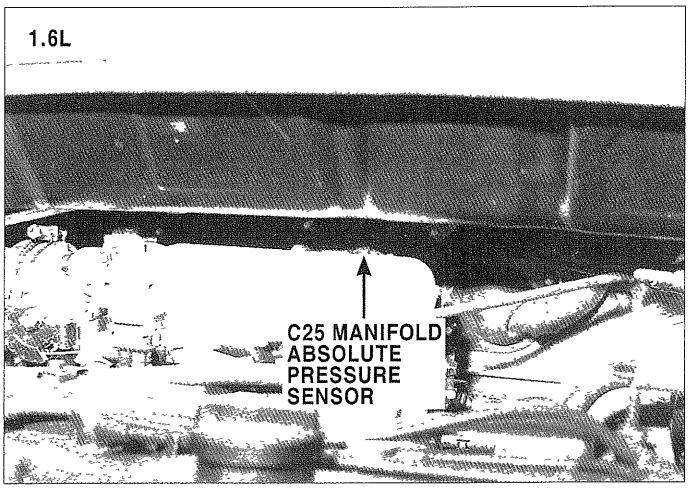
C31 E3FC004R



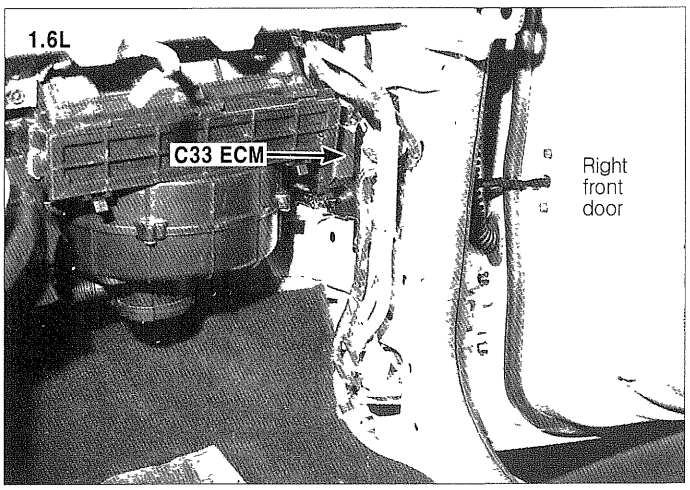
C24-1,C24-2,C24-3,C24-4,C26 E3FC004P



C32-1,C32-2 E3FC004S

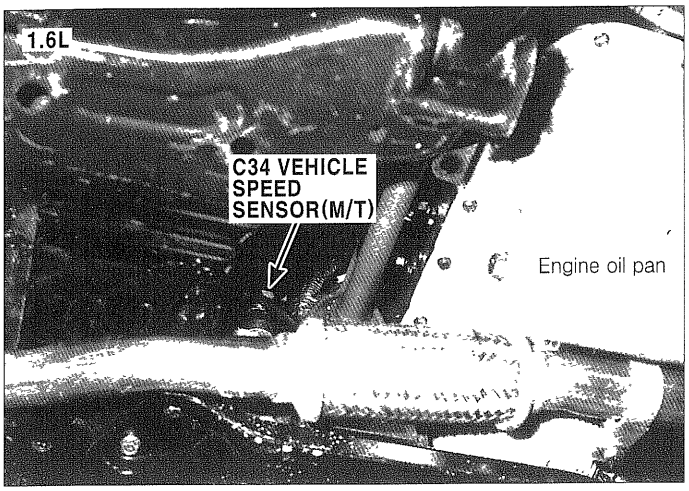


C25 E3FC004Q

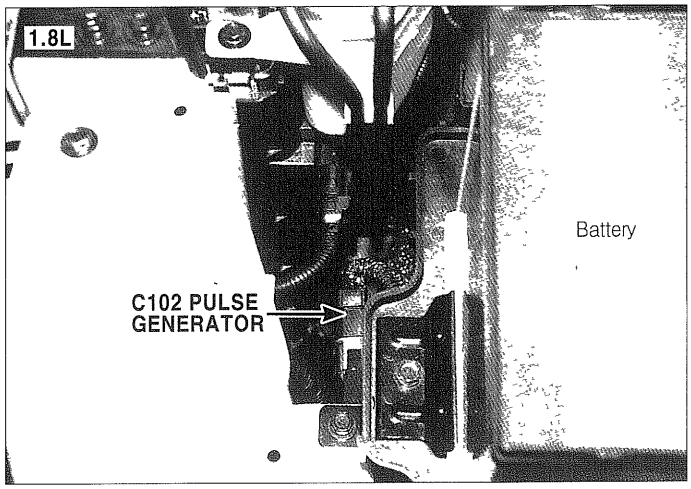


C33 E3FC004T

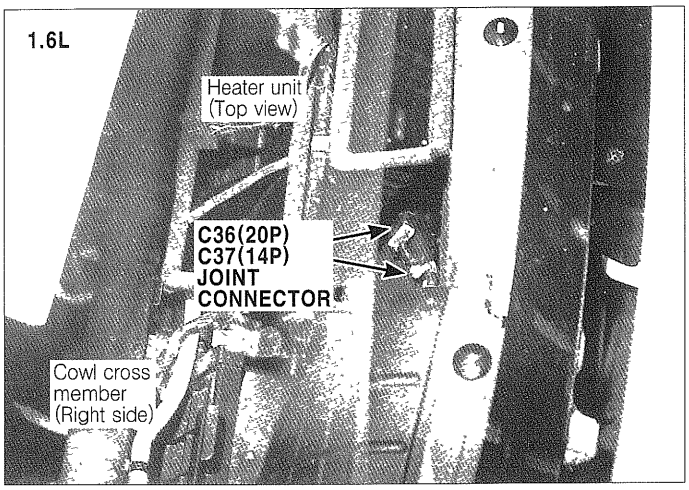
CONTROL HARNESS(4)



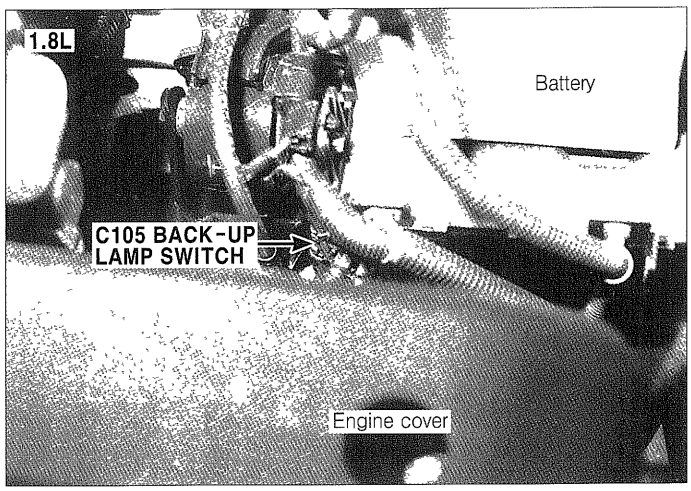
C34 E3FC004U



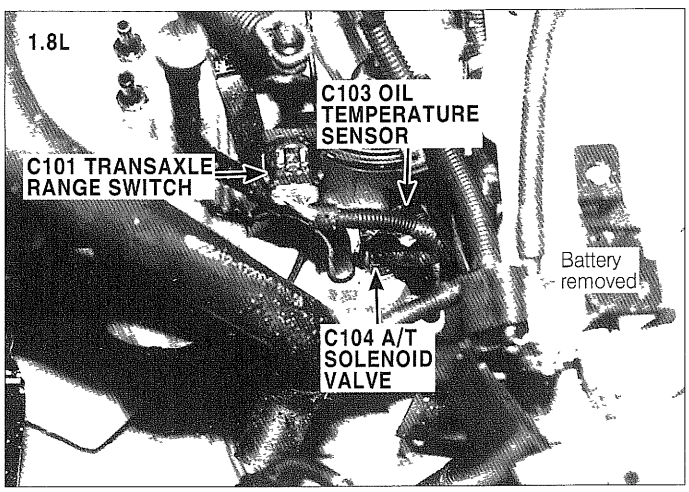
C102 E3FC004X



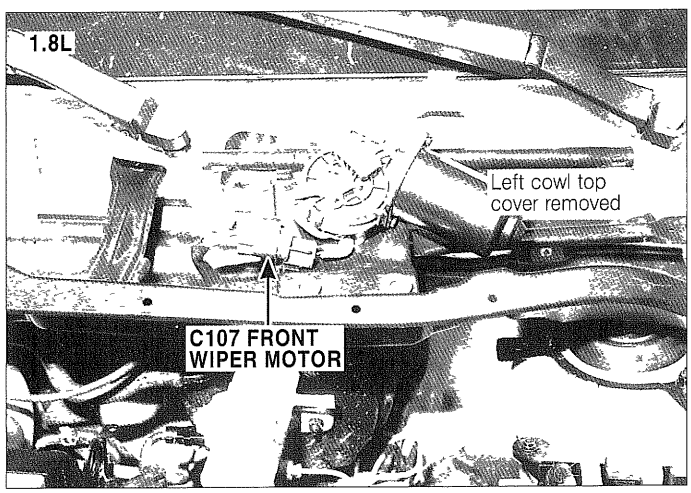
C36,C37 E3FC004V



C105 E3FC004Y



C101,C103,C104 E3FC004W



C107 E3FC004Z

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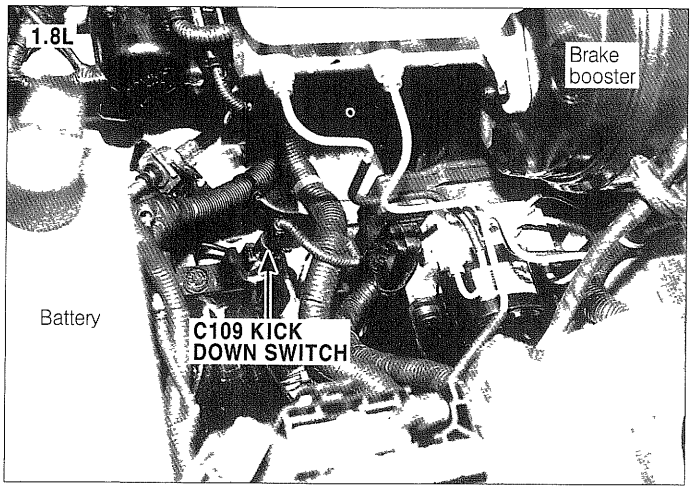
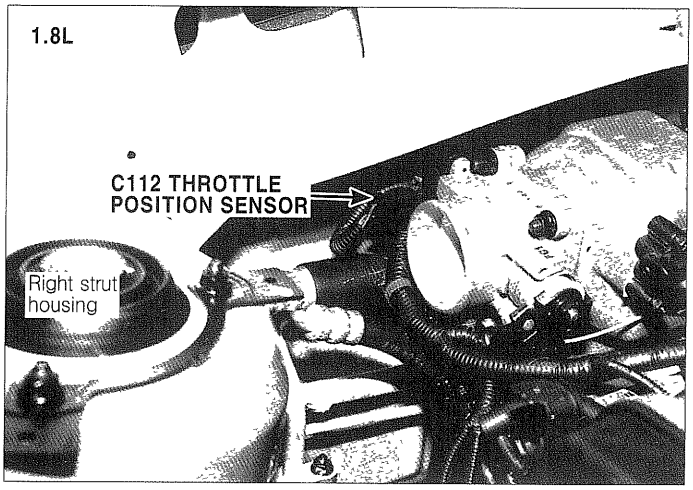
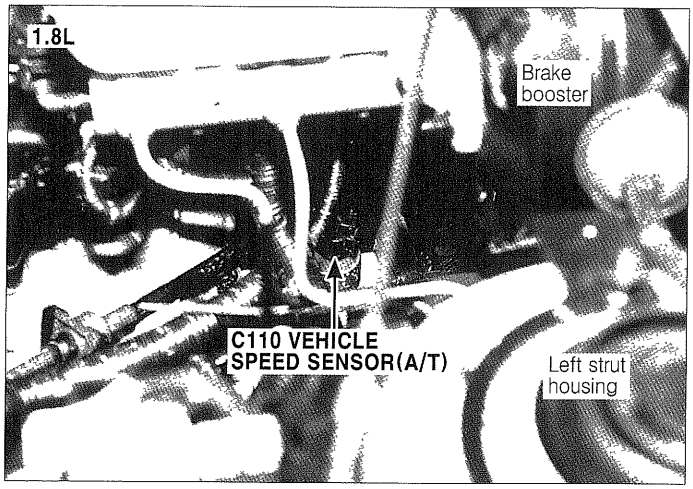


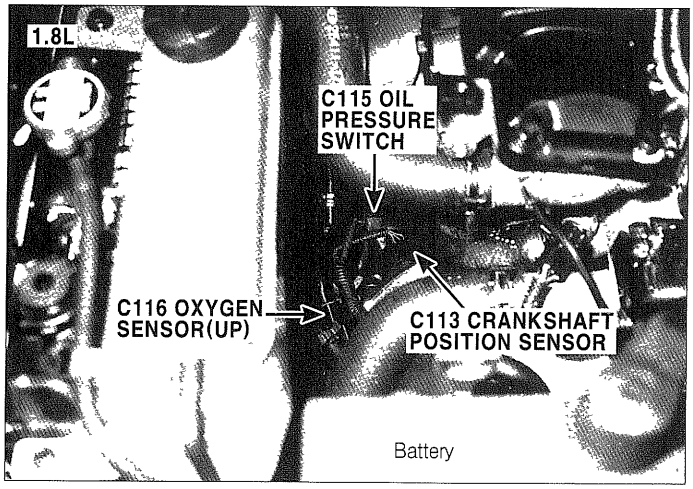
C109 E3FC0A4A



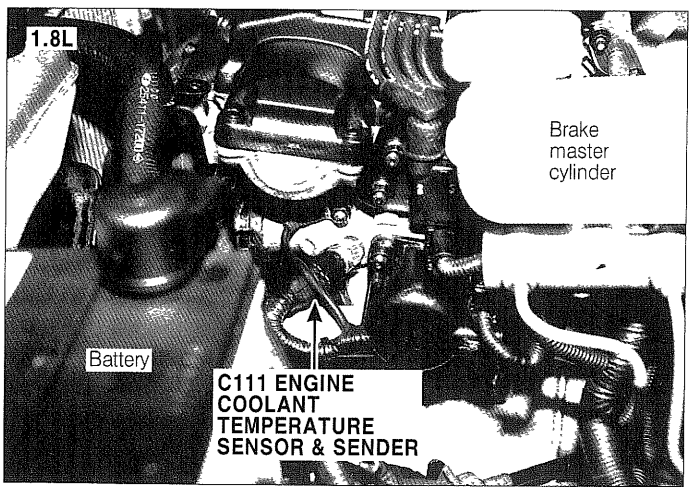
C112 E3FC0A4D



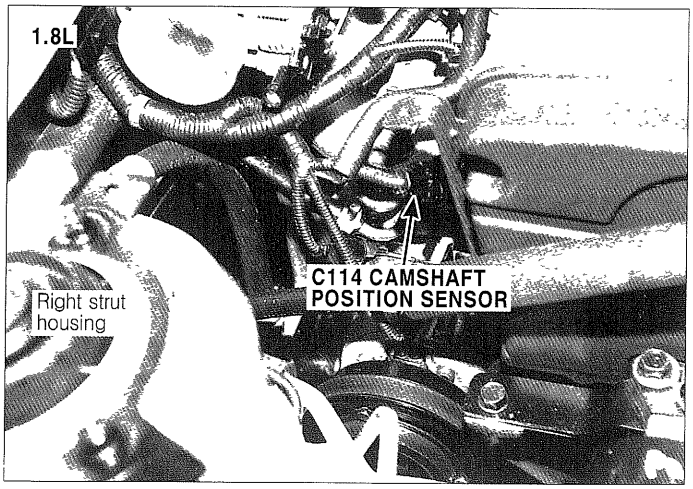
C110 E3FC0A4B



C113,C115,C116 E3FC0A4E

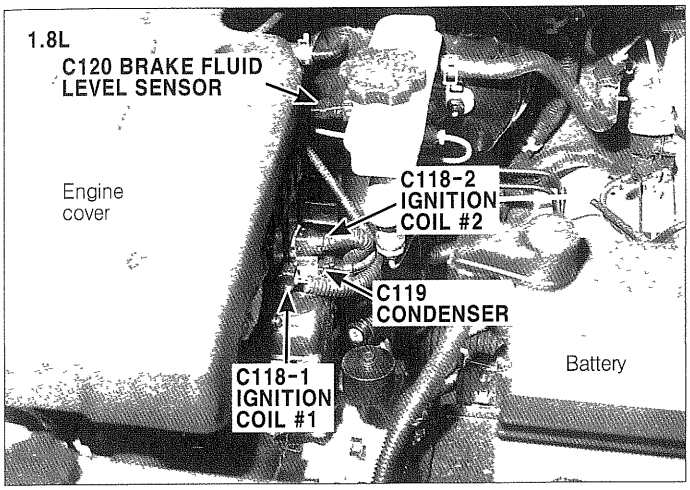


C111 E3FC0A4C

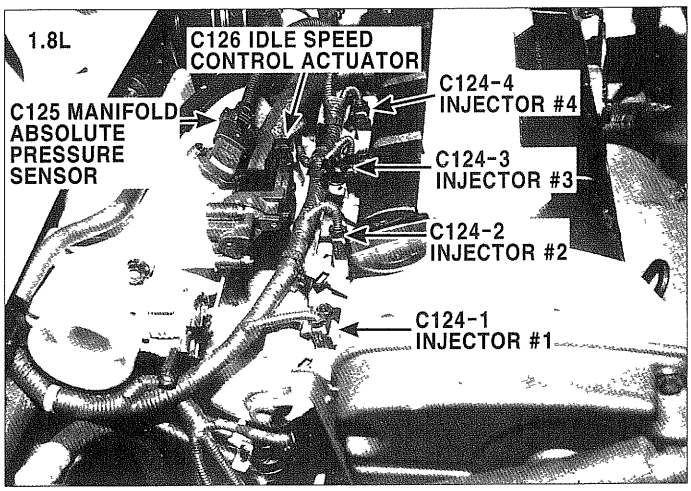


C114 E3FC0A4F

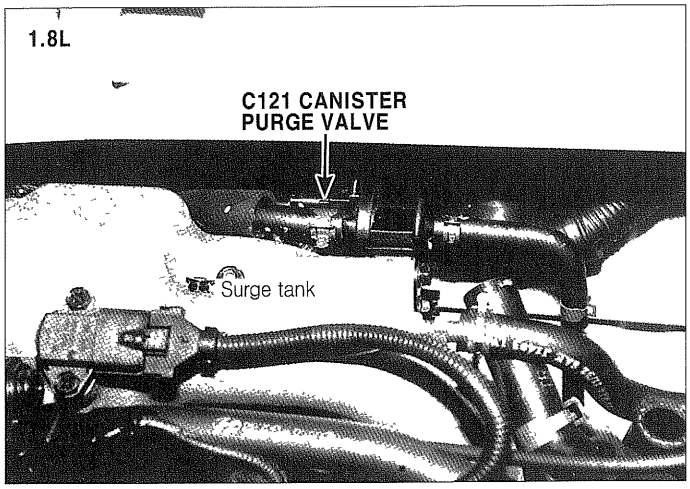
CONTROL HARNESS(6)



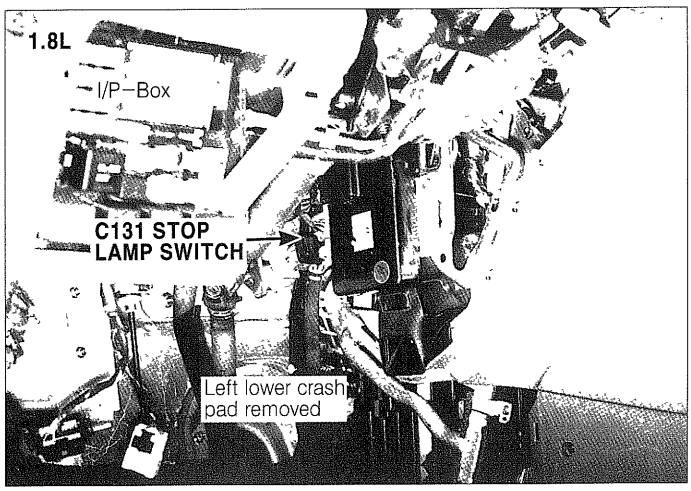
C118-1,C118-2,C119,C120 E3FC0A4G



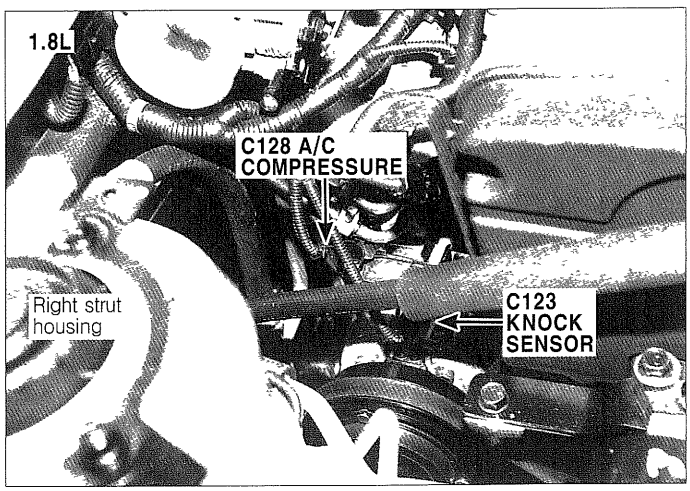
C124-1,C124-2,C124-3 C124-4,C125,C126 E3FC0A4K



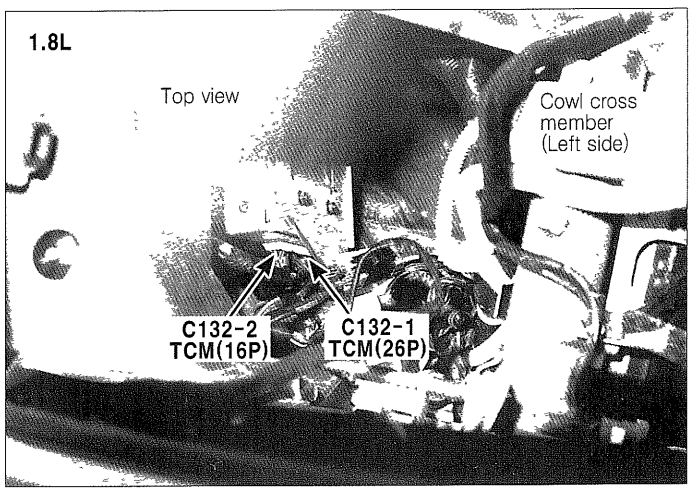
C121 E3FC0A4H



C131 E3FC0A4L

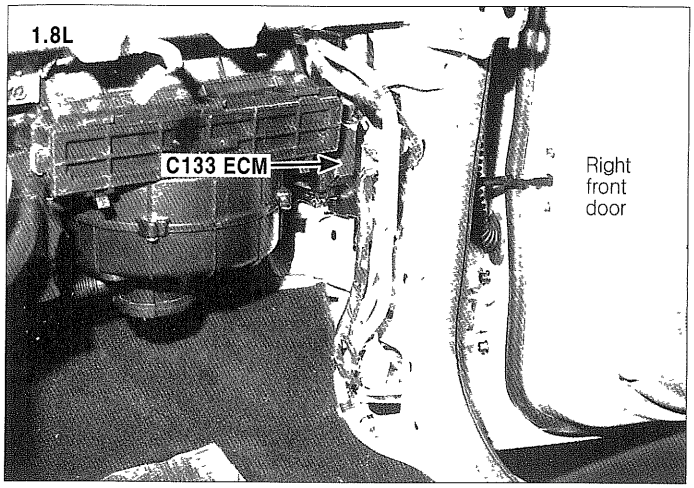


C123,C128 E3FC0A4J

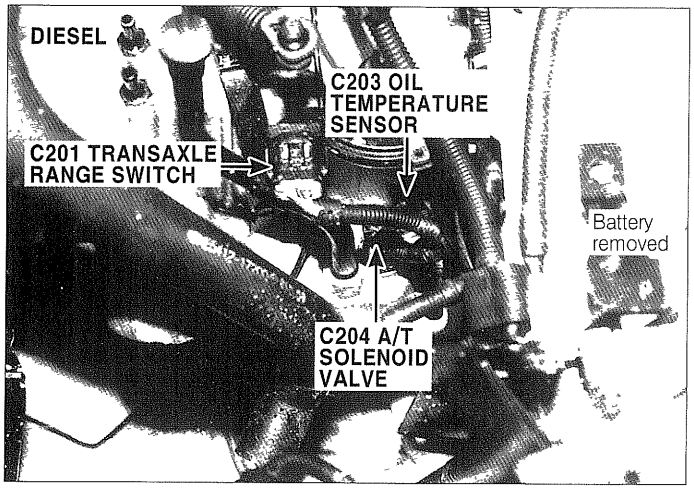


C132-1,C132-2 E3FC0A4M

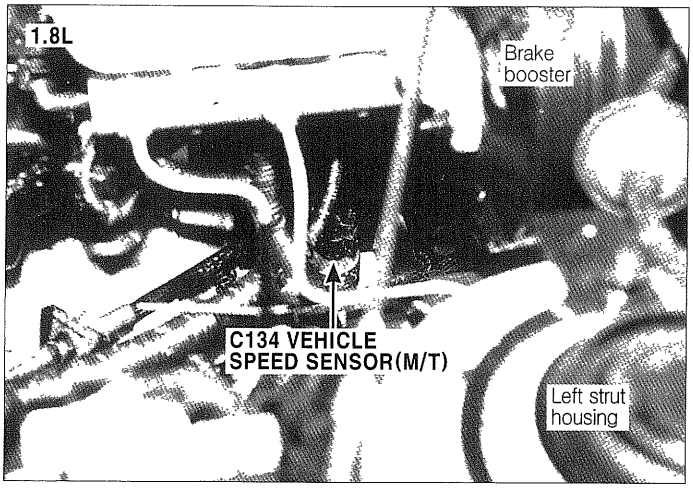
CONTROL HARNESS(7)



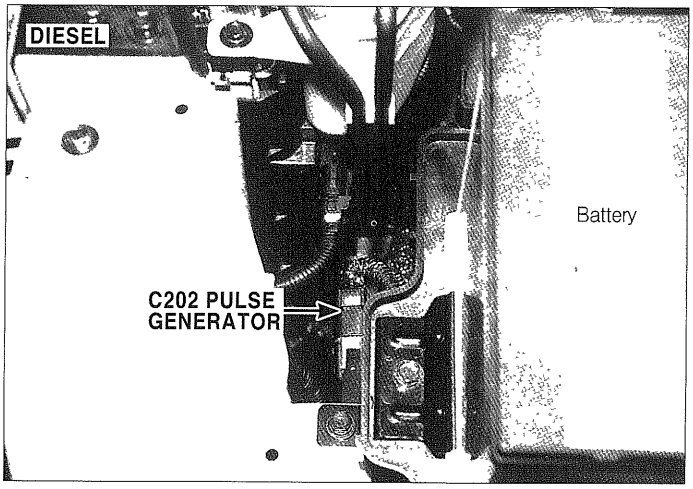
C133 E3FC0A4N



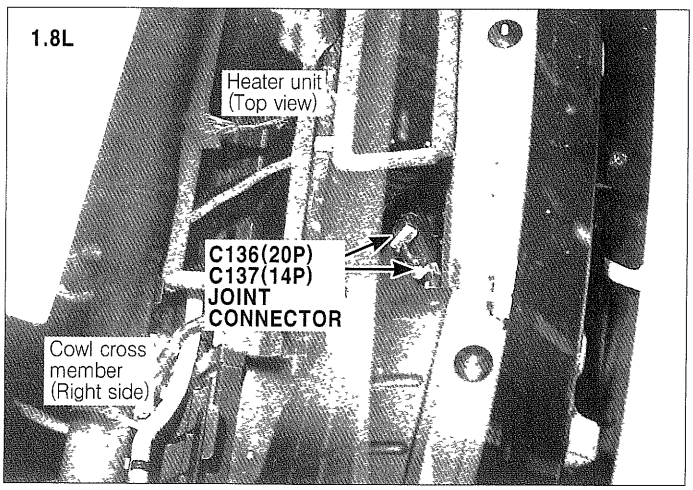
C201,C203,C204 E3FC0A4R



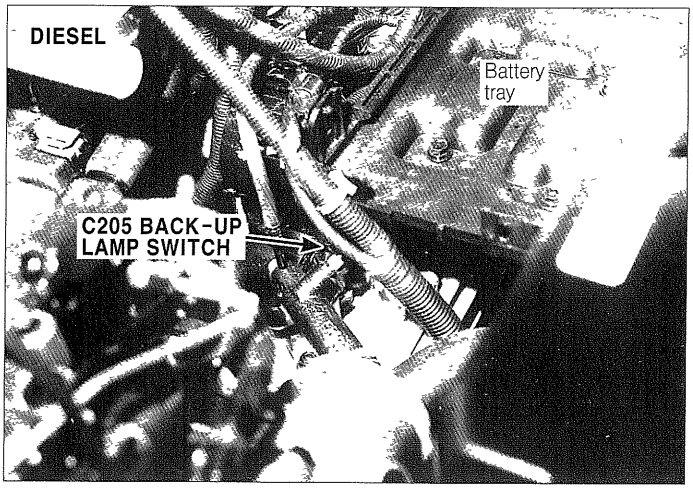
C134 E3FC0A4P



C202 E3FC0A4S

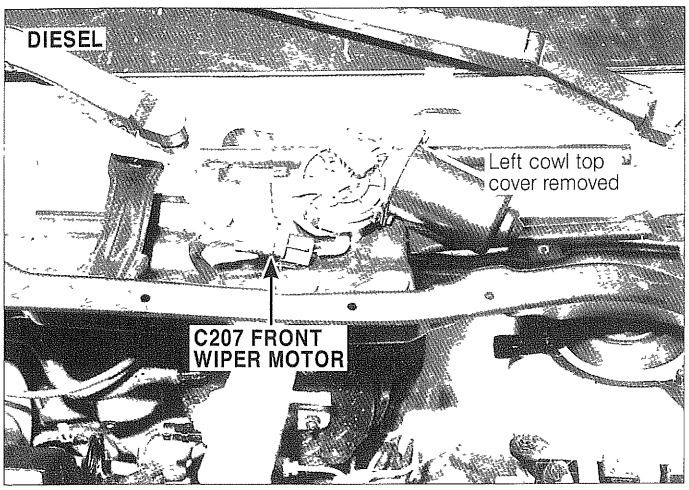


C136,C137 E3FC0A4Q

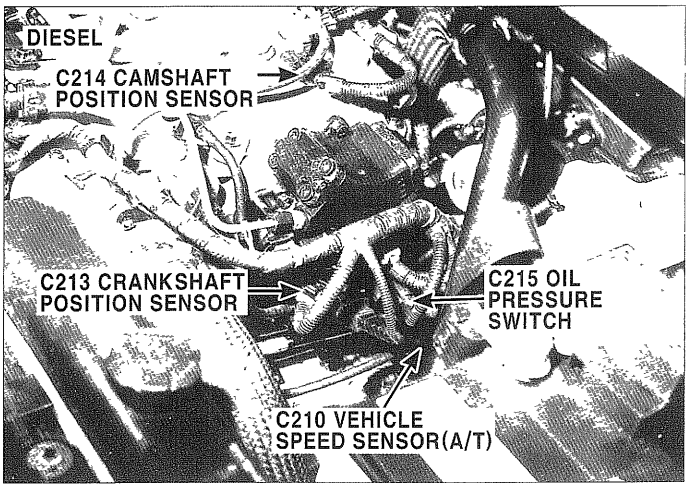


C205 E3FC0A4T

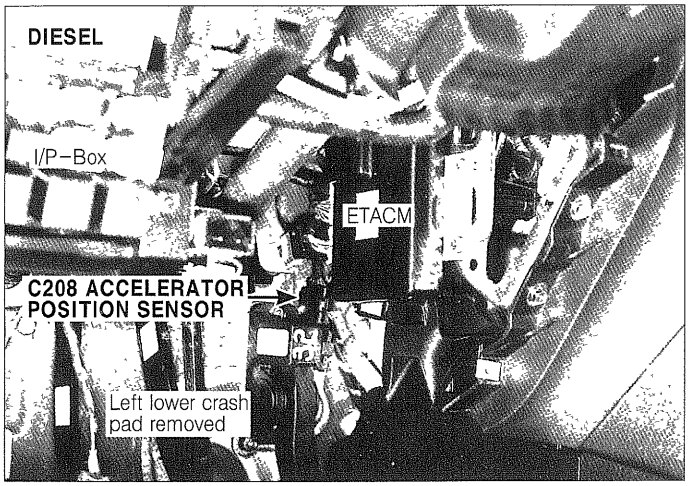
CONTROL HARNESS(8)



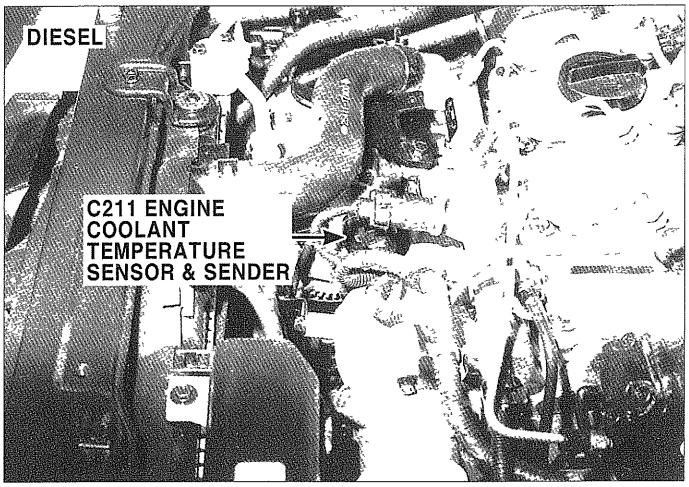
C207 E3FC0A4U



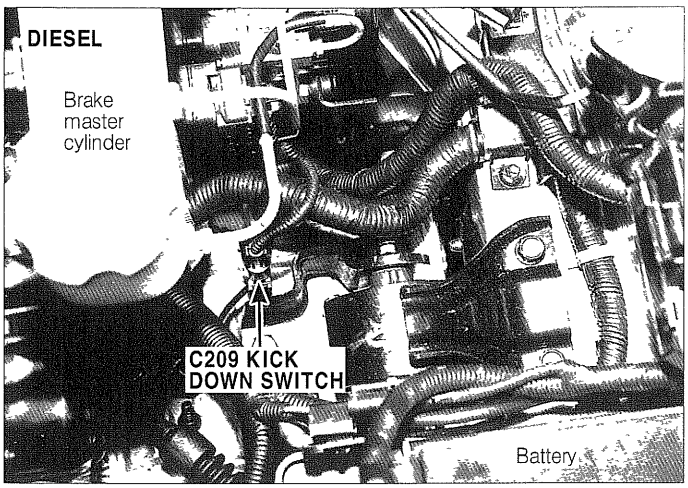
C210,C213,C214,C215 E3FC0A4X



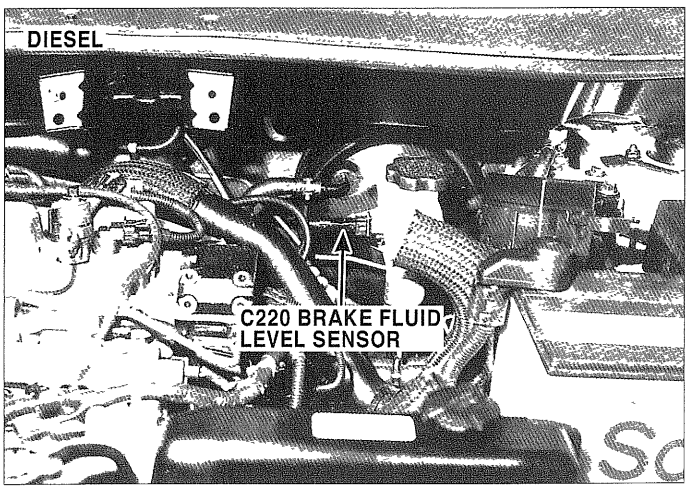
C208 E3FC0A4V



C211 E3FC0A4Y

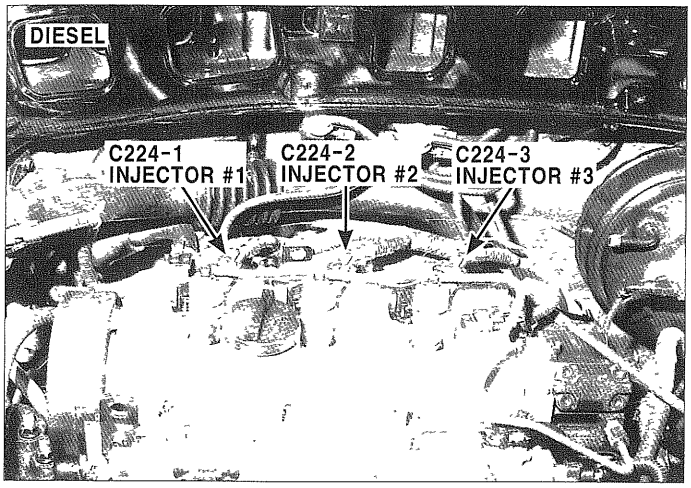


C209 E3FC0A4W

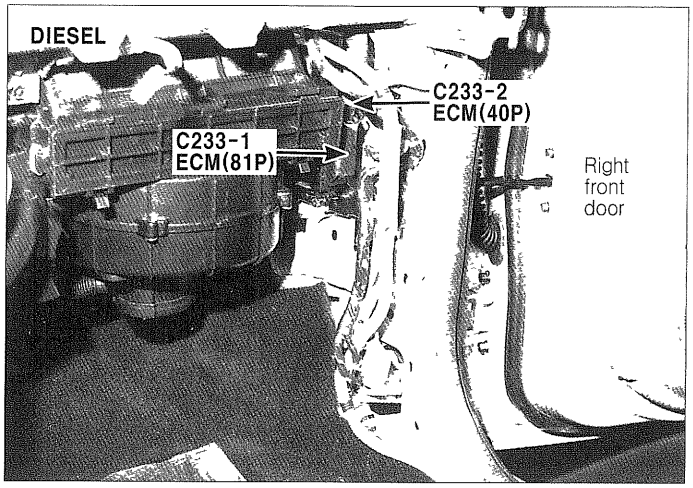


C220 E3FC0A4Z

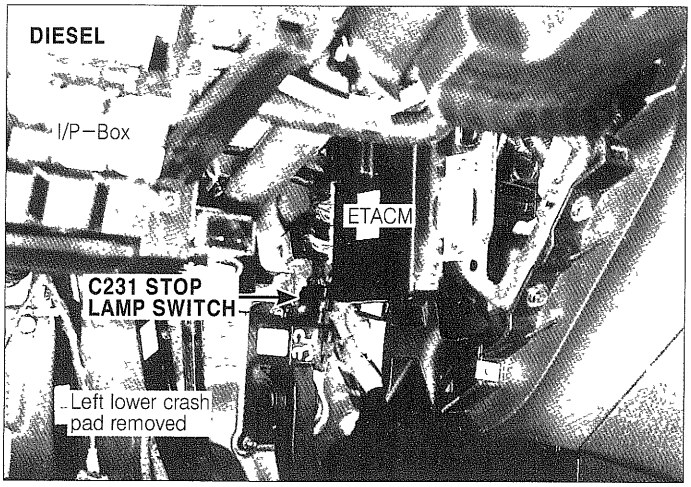
CONTROL HARNESS(9)



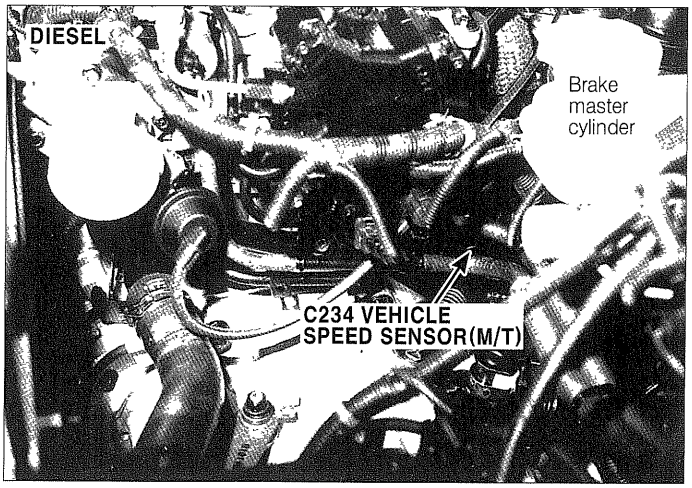
C224-1,C224-2,C224-3 E3FC0B4A



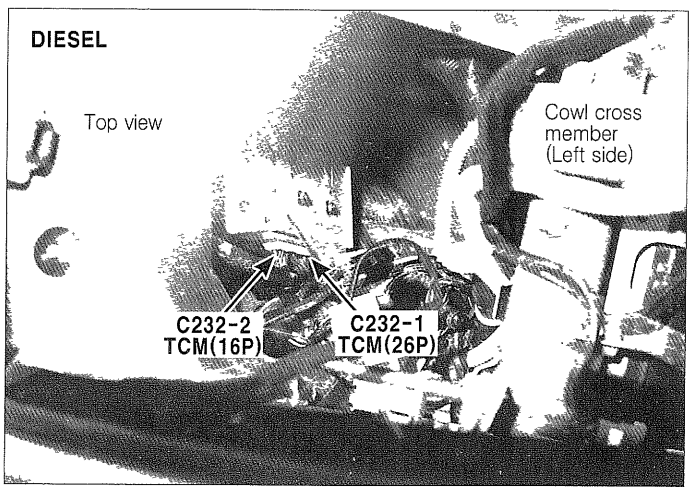
C233-1,C233-2 E3FC0B4D



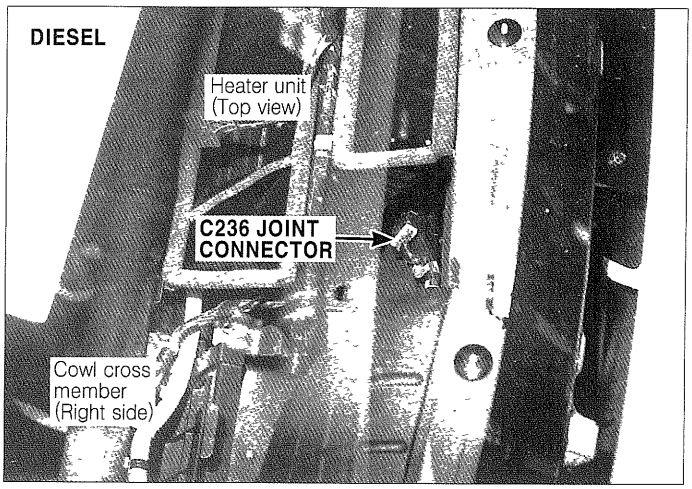
C231 E3FC0B4B



C234 E3FC0B4E

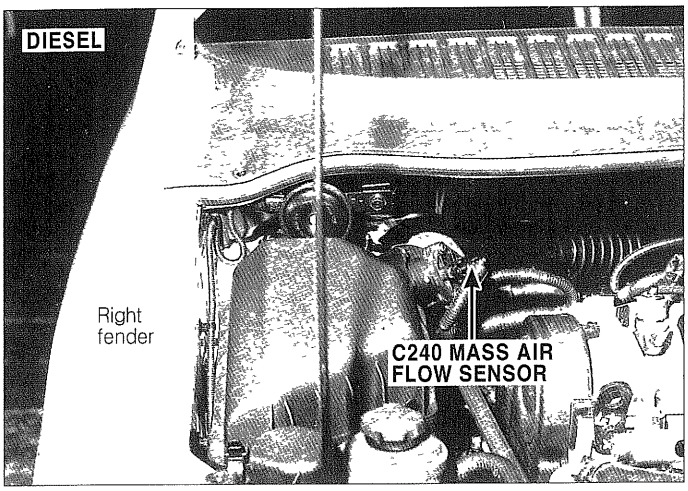


C232-1,C232-2 E3FC0B4C

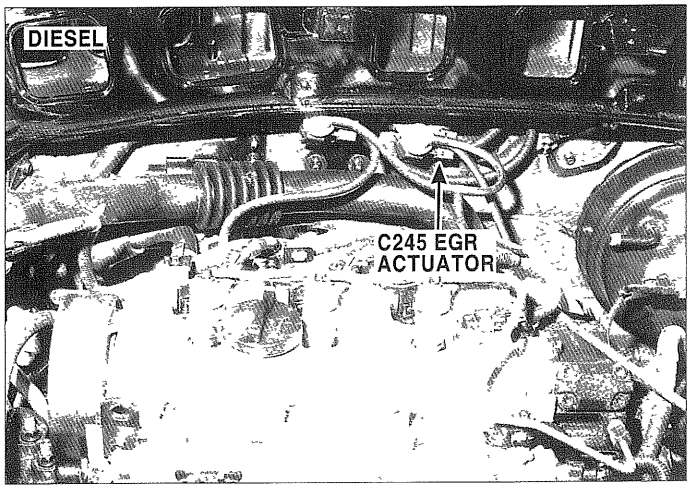


C236 E3FC0B4F

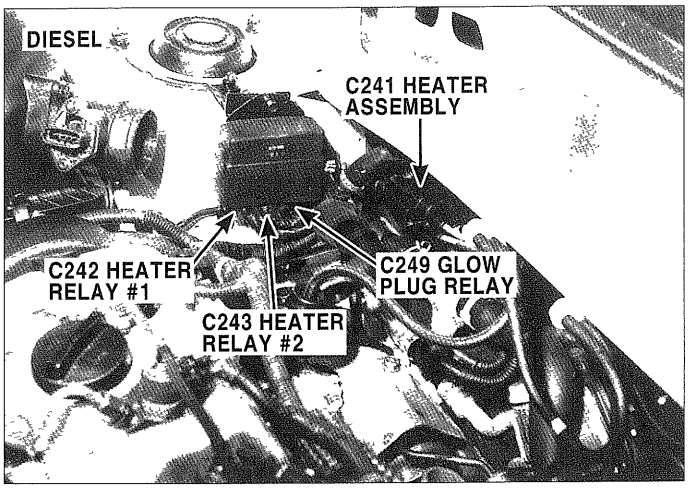
CONTROL HARNESS(10)



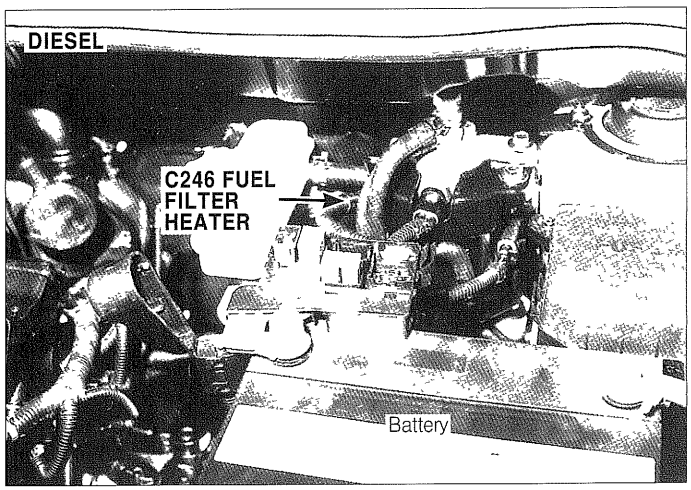
C240 E3FC0B4G



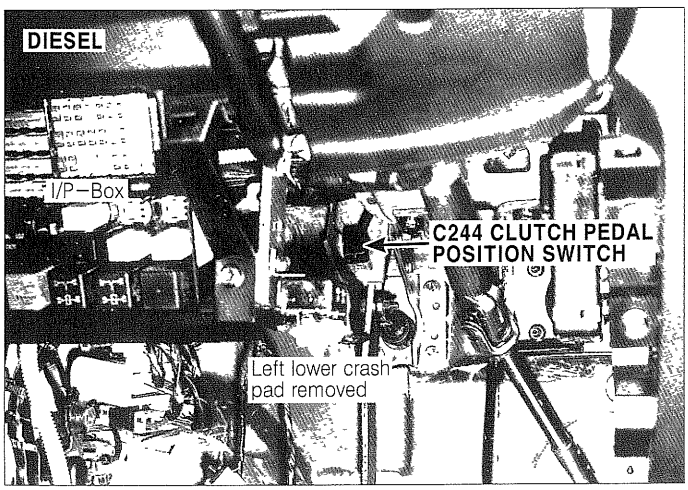
C245 E3FC0B4K



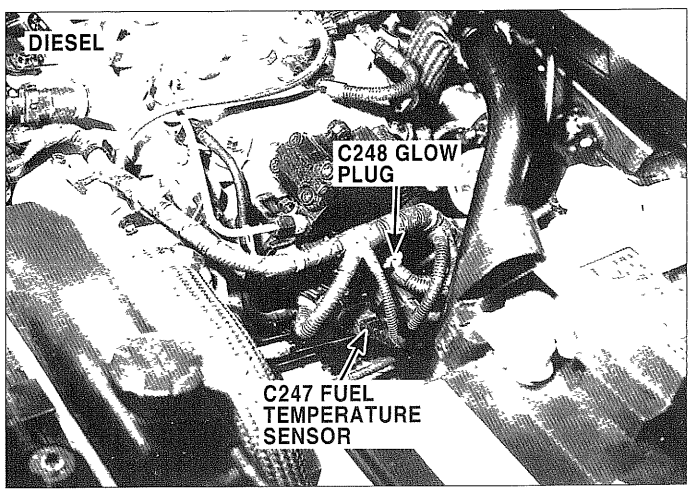
C241,C242,C243,C249 E3FC0B4H



C246 E3FC0B4L

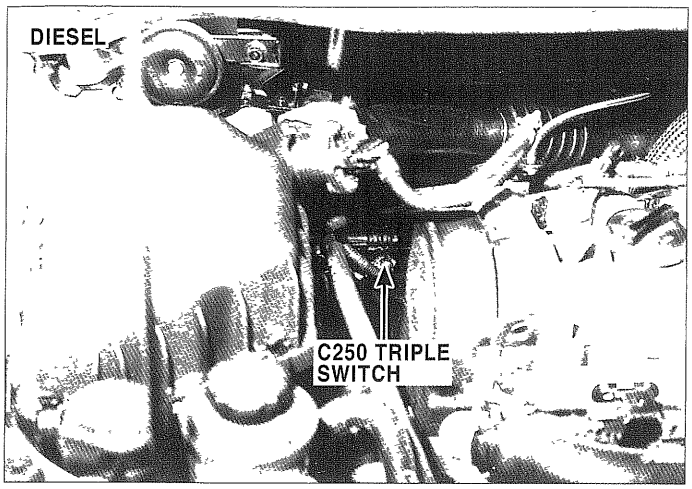


C244 E3FC0B4J

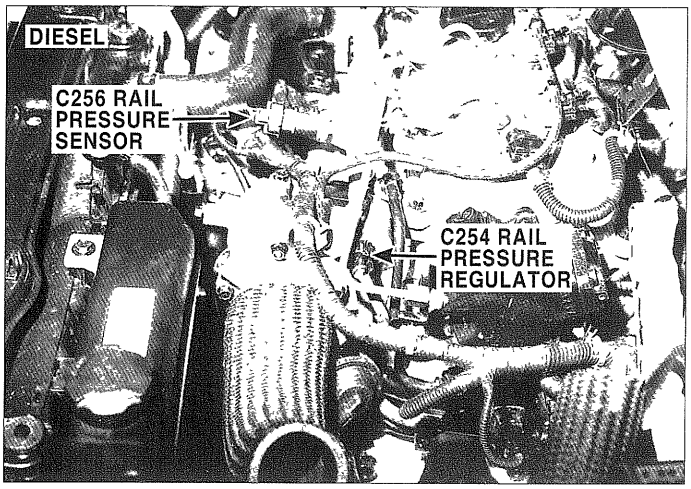


C247,C248 E3FC0B4M

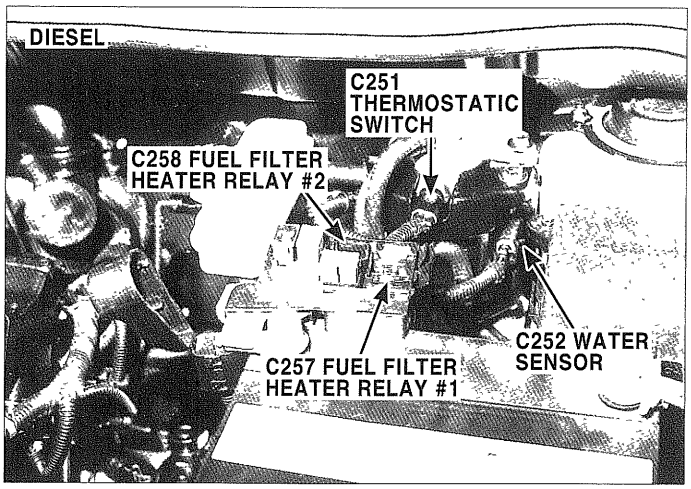
CONTROL HARNESS(11)



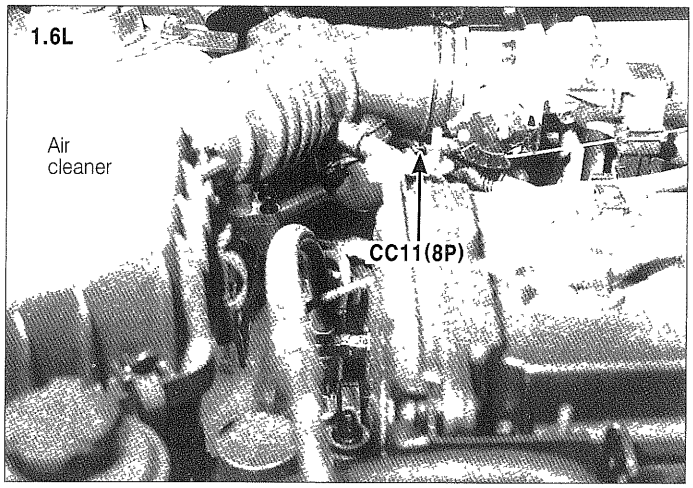
C250 E3FC0B4N



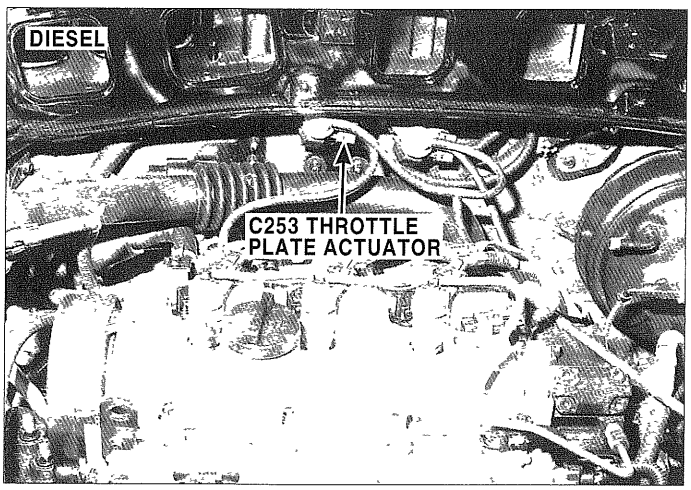
C254,C256 E3FC0B4R



C251,C252,C257,C258 E3FC0B4P



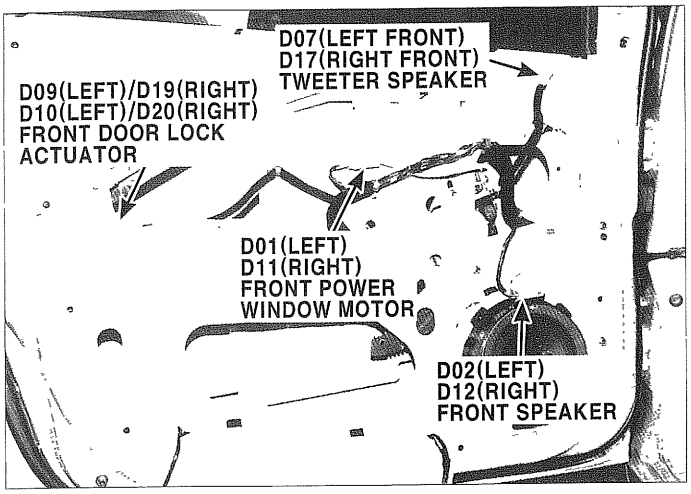
CC11 E3FC0B4S



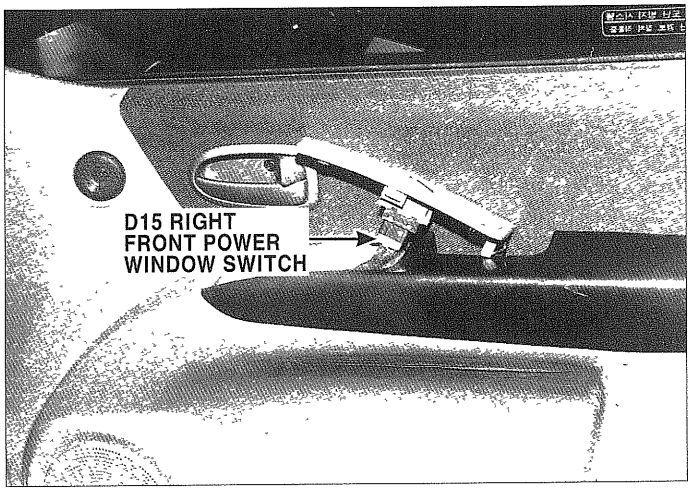
C253 E3FC0B4Q

DOOR HARNESS

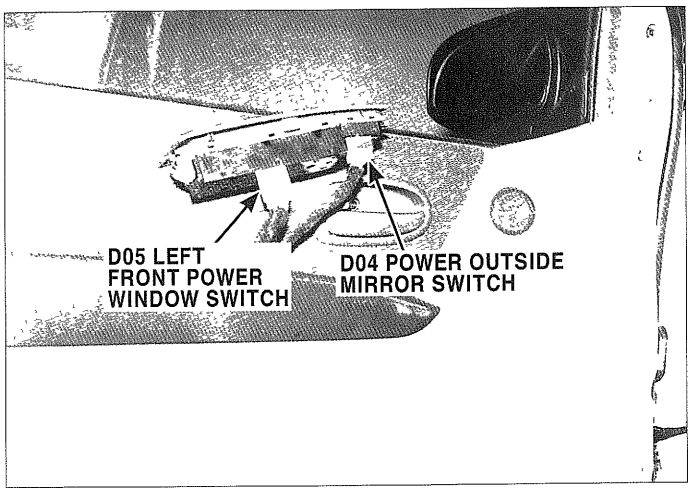
DOOR HARNESS(1)



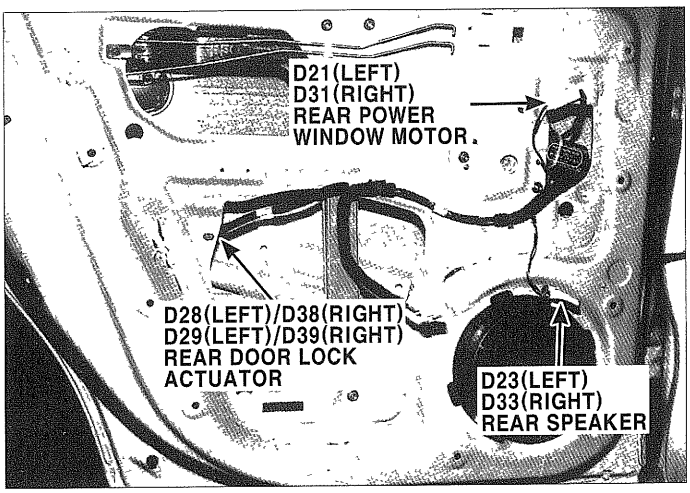
D01,D02,D07,D09,D10
D11,D12,D17,D19,D20 E3FC005A



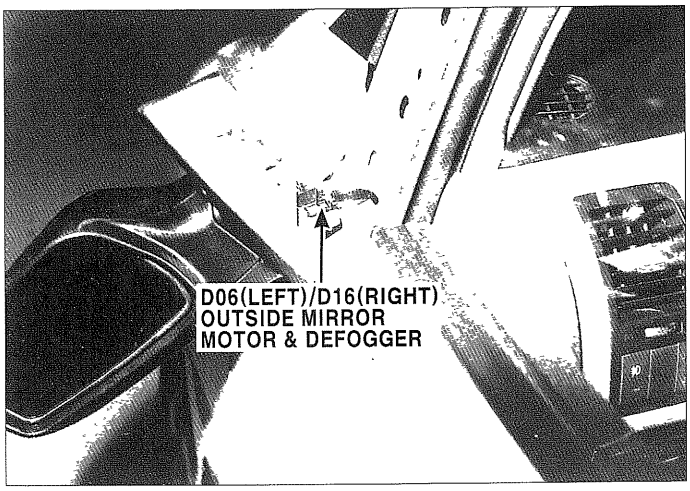
D15 E3FC005D



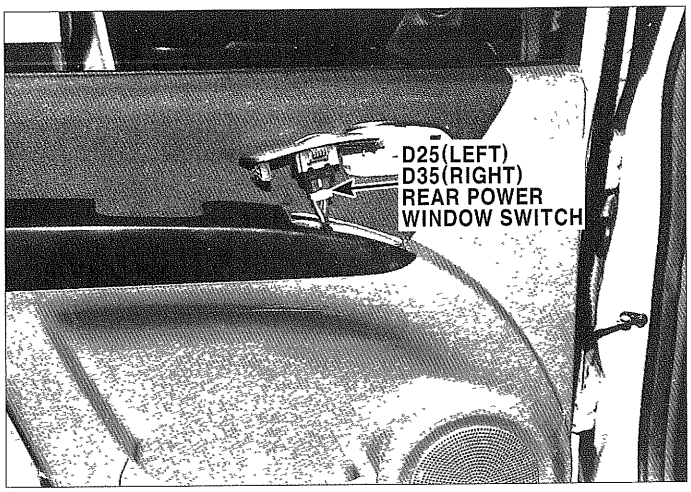
D04,D05 E3FC005B



D21,D23,D28,D29
D31,D33,D38,D39 E3FC005E



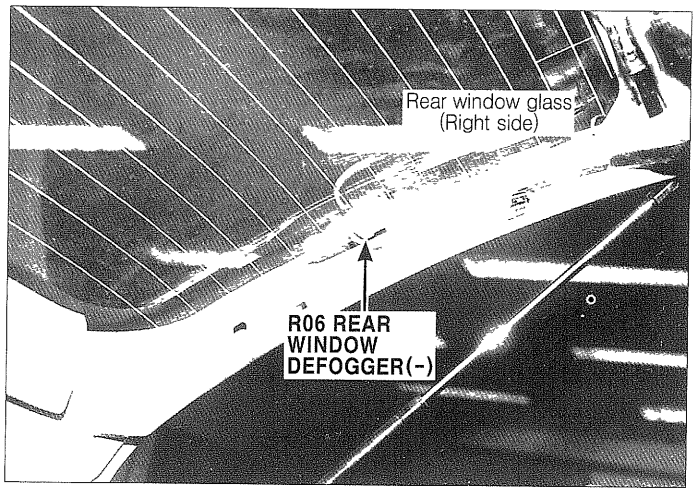
D06,D16 E3FC005C



D25,D35 E3FC005F

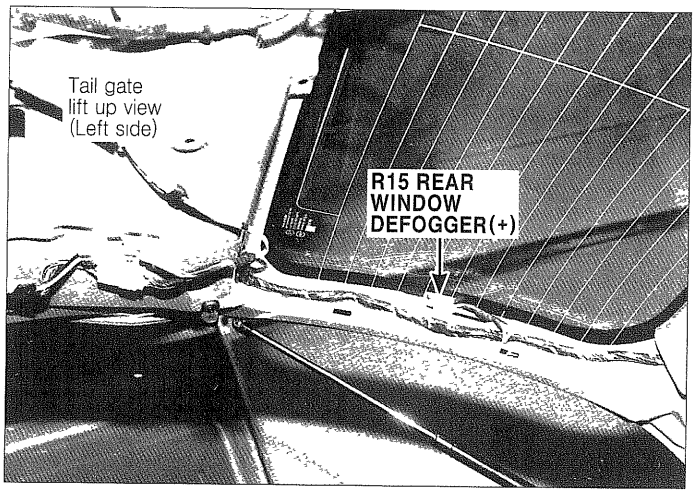
TAIL GATE HARNESS

TAIL GATE HARNESS(1)



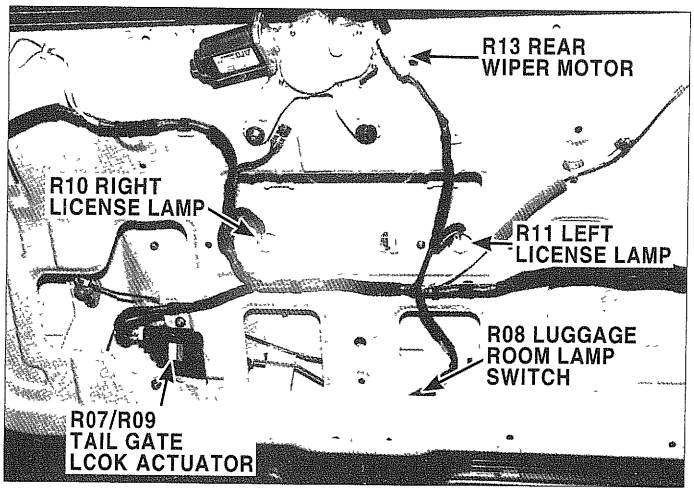
R06

E3FC006A



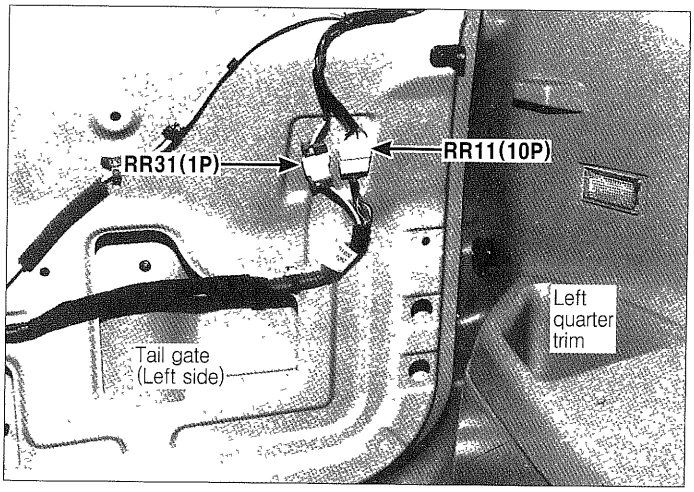
R15

E3FC006D



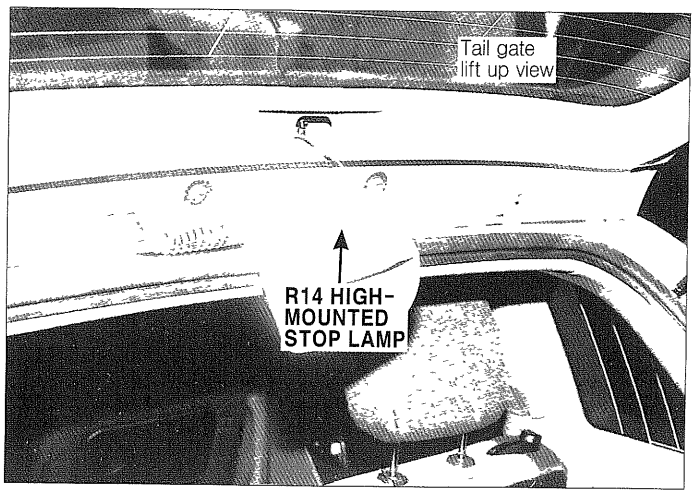
R07,R08,R09,R10,R11,R13

E3FC006B



RR11,RR31

E3FC006E

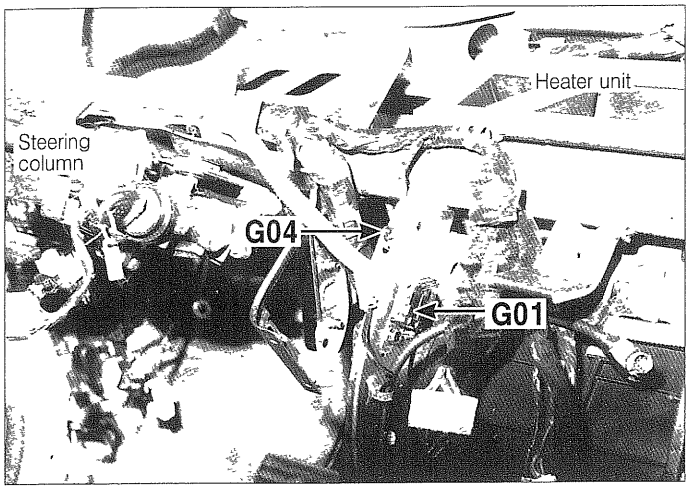


R14

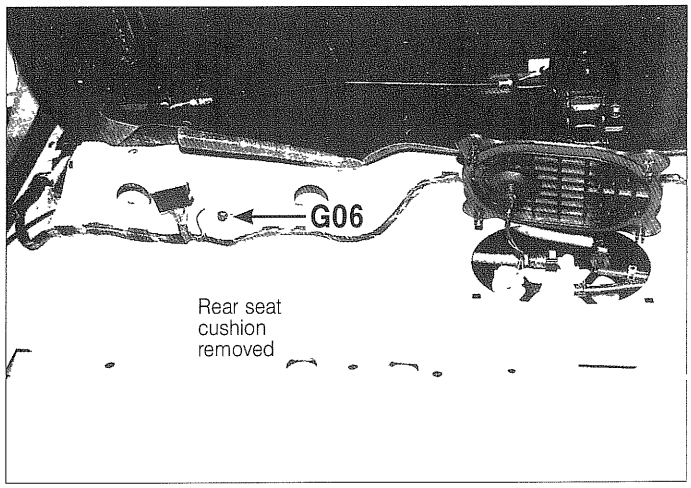
E3FC006C

GROUNDS

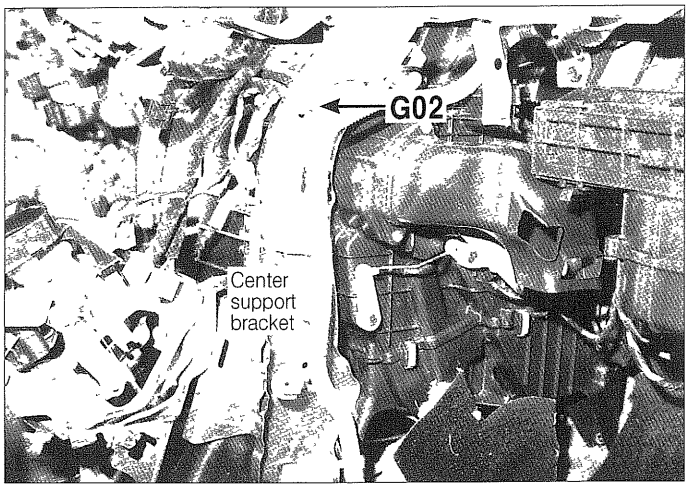
GROUNDS(1)



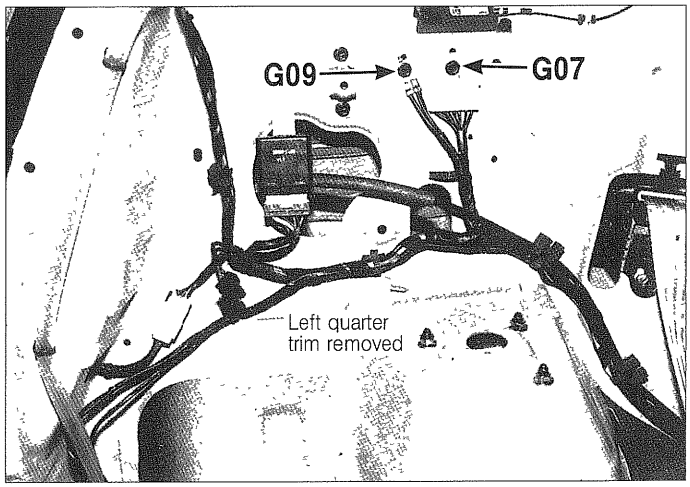
G01,G04 E3FC007A



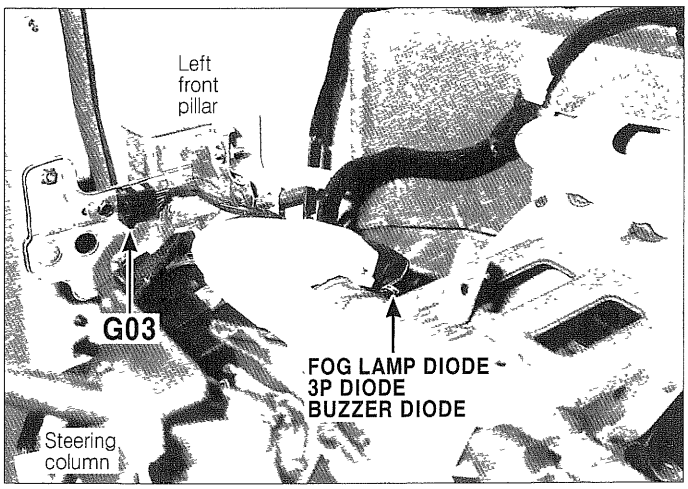
G06 E3FC007D



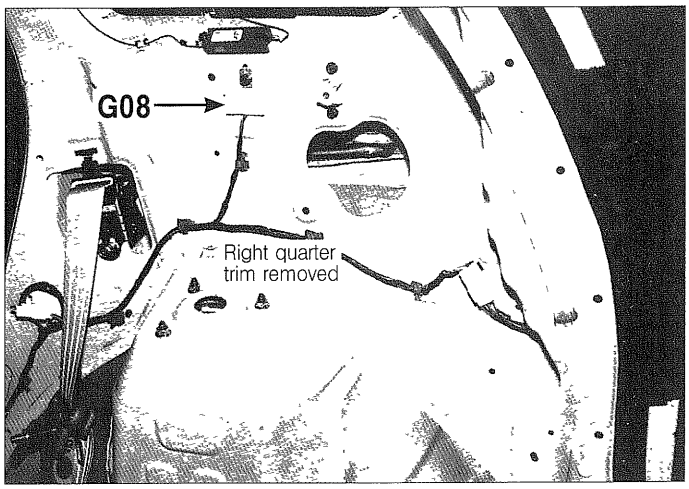
G02 E3FC007B



G07,G09 E3FC007E

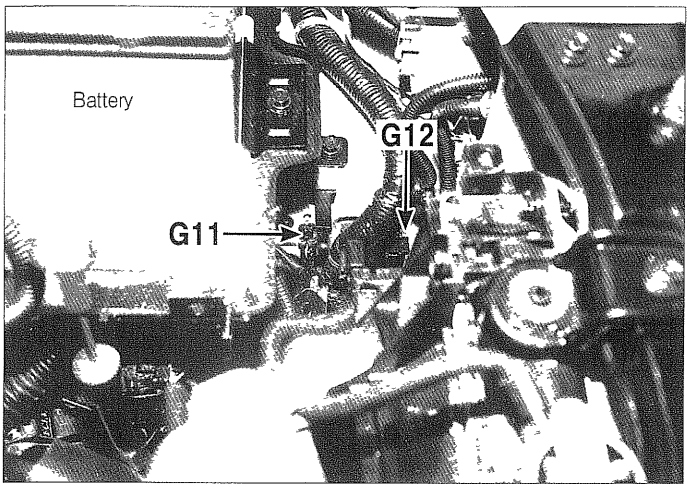


G03,DIODES E3FC007C

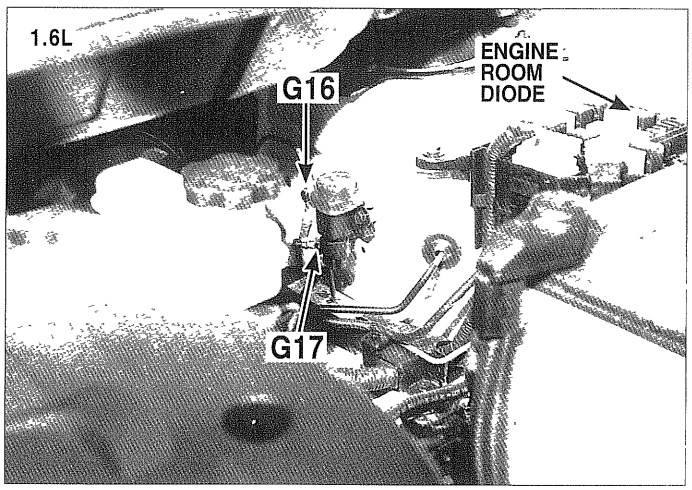


G08 E3FC007F

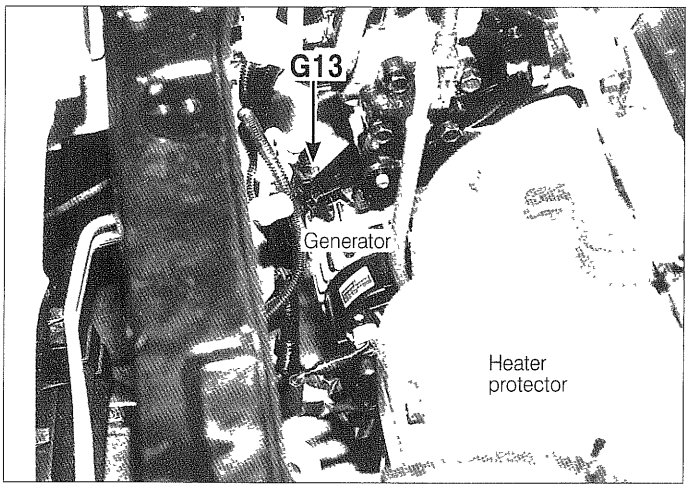
GROUNDS(2)



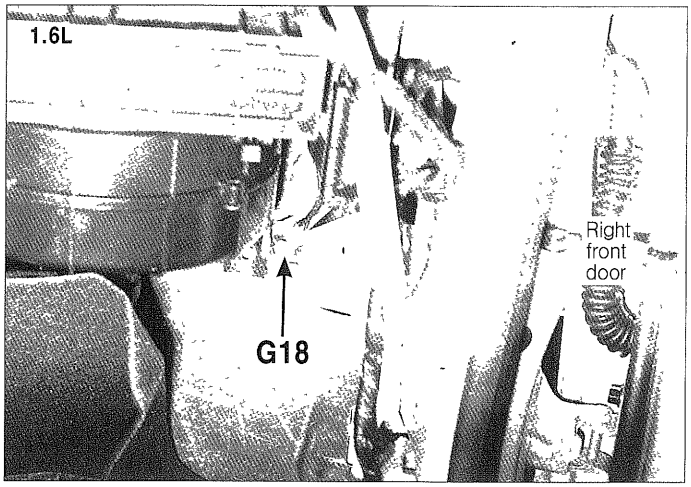
G11,G12 E3FC007G



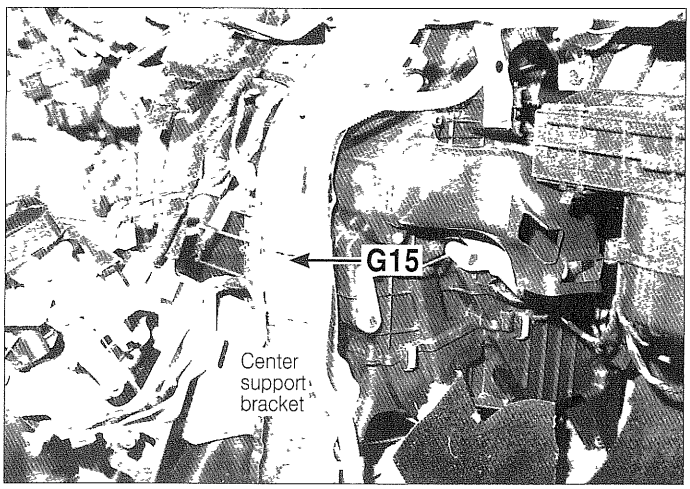
G16,G17,ENGINE ROOM DIODE E3FC007K



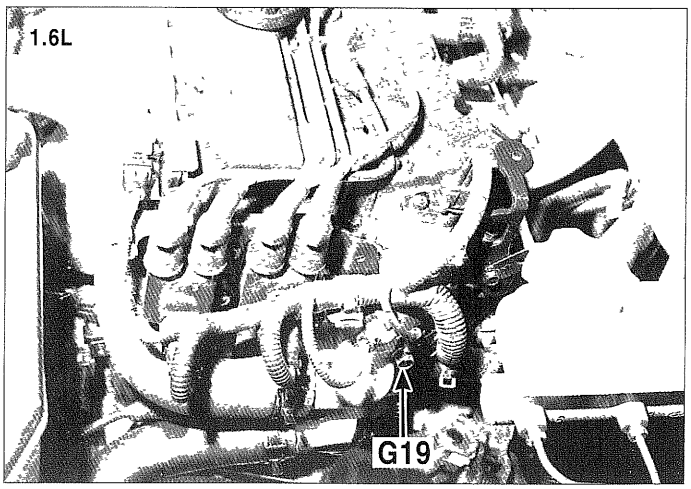
G13 E3FC007H



G18 E3FC007L

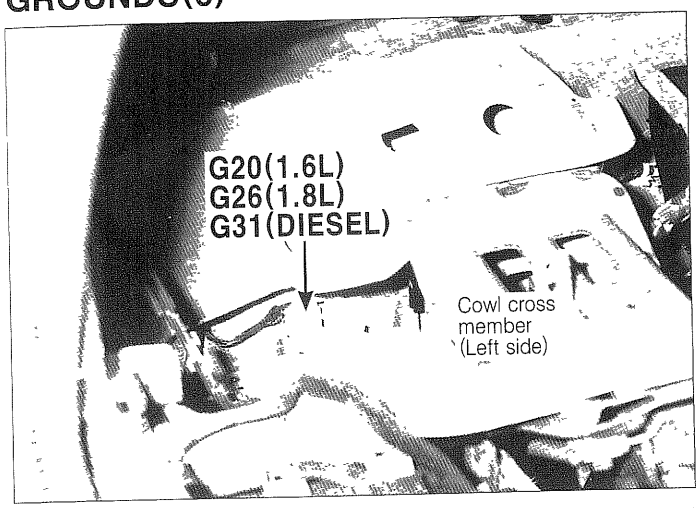


G15 E3FC007J

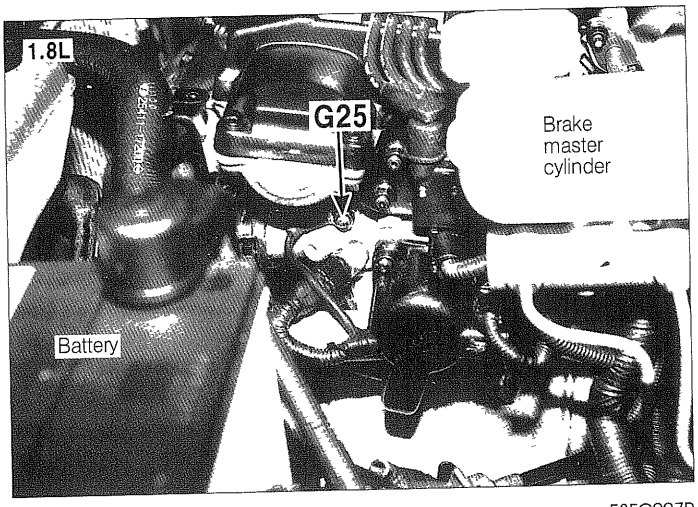


G19 E3FC007M

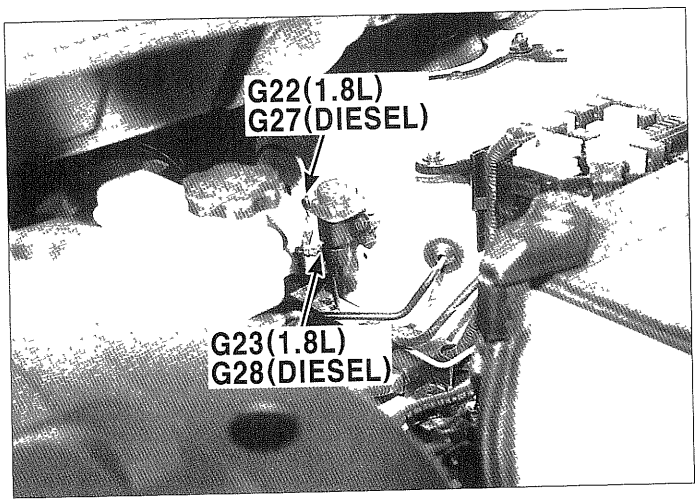
GROUNDS(3)



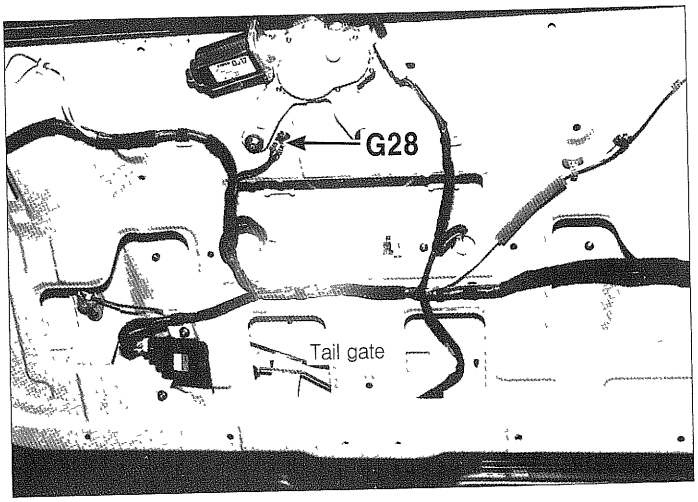
G20,G26,G31 E3FC007N



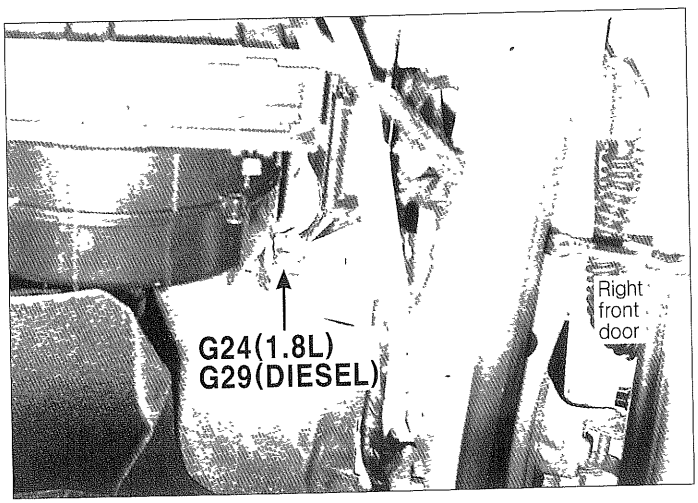
G25 E3FC007R



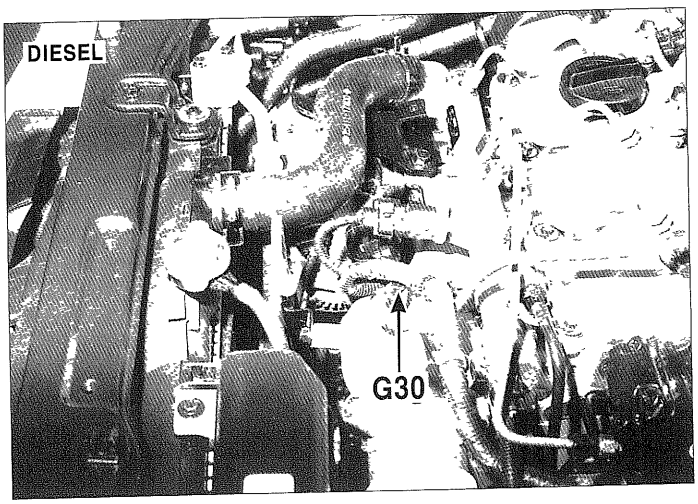
G22,G23,G27,G28 E3FC007P



G28 E3FC007S



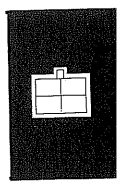
G24,G29 E3FC007Q



G30 E3FC007T

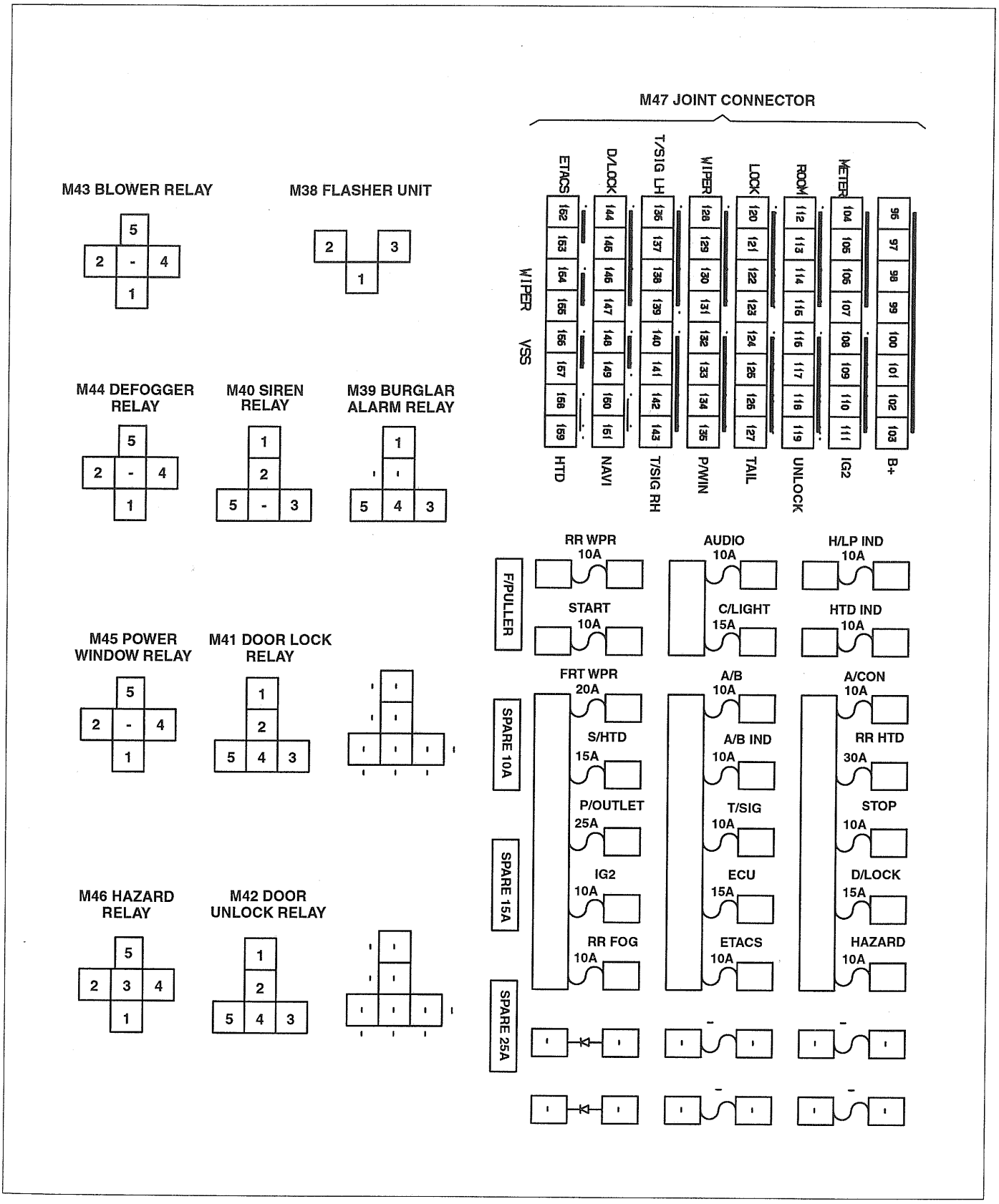
CONNECTOR CONFIGURATIONS

ADDITIONAL PARTS (RHD) CC-21
AIR BAG HARNESS CC-13
CONTROL HARNESS CC-14
DOOR HARNESS CC-18
ENGINE HARNESS CC-10
MAIN HARNESS CC-2
TAIL GATE HARNESS CC-20



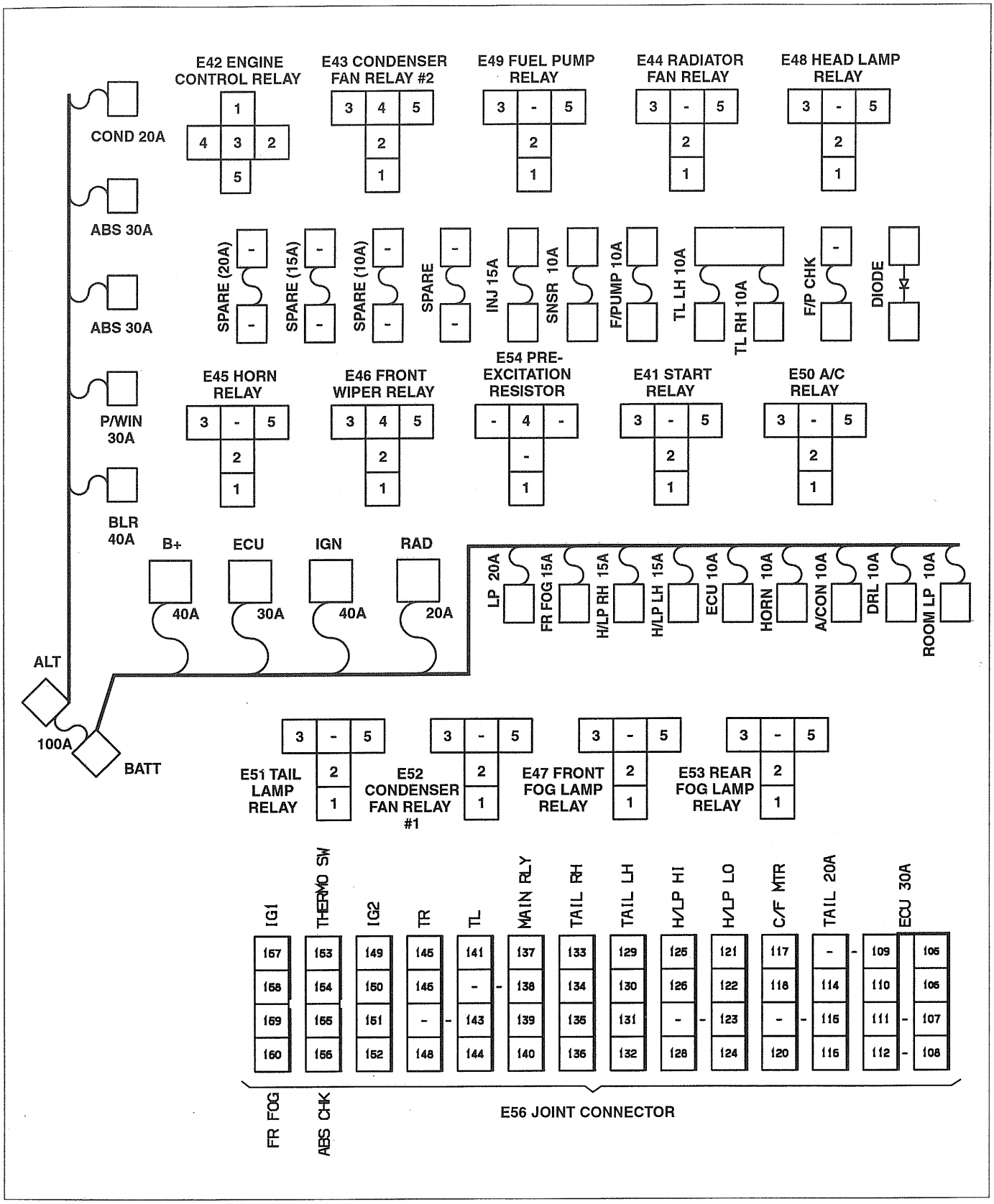
FUSE & RELAY BOX E4FC0010

I/P-BOX



E4FC001A

E/R-BOX

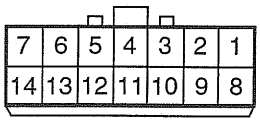


E4FC001B

MAIN HARNESS E4FC0020

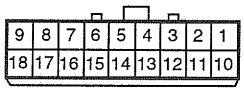
MAIN HARNESS (1)

M01–1



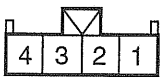
CR14F010

M01–2



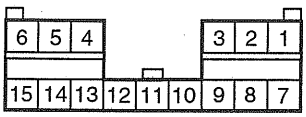
CR18F004

M01–3



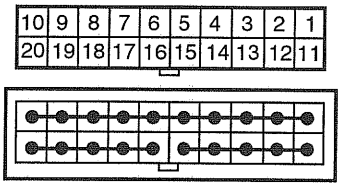
CR04F032

M02



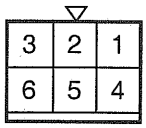
CR15F001

M03



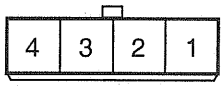
CR20F045

M04



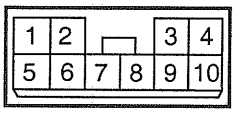
CR06F037

M05



CR04F062

M06



CR10M003

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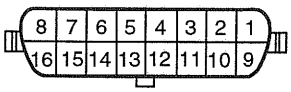
M07



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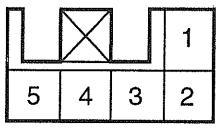
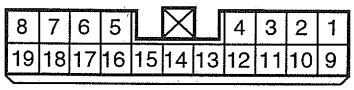
M08



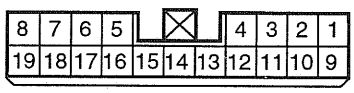
CR05F013

M09–1



CR19F002

M09–2



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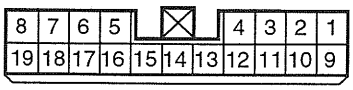
M09–3



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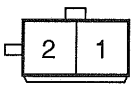
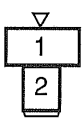


CR02F046

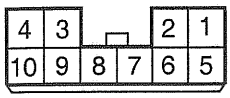
M11



CR02F039

MAIN HARNESS (2)

M13



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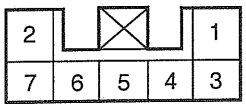
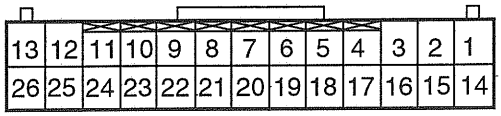
M14



CR07F005

M15–1



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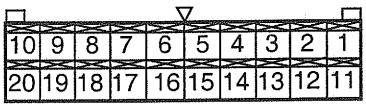
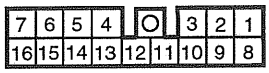


CR20F014

M16



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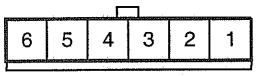

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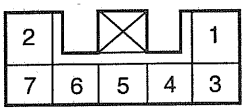
M18



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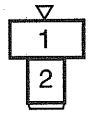

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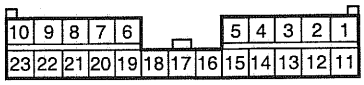
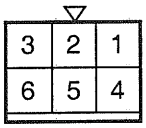


CR23F002

M21



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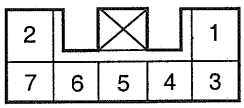

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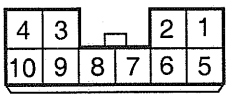

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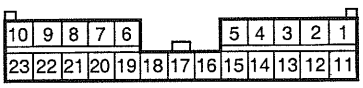

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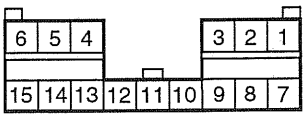
M25–2



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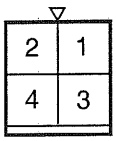

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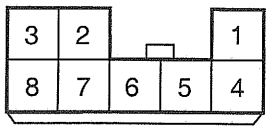

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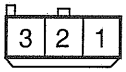

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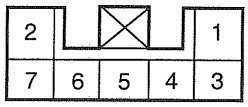

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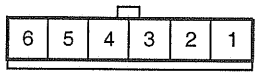
M33



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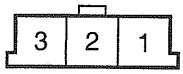

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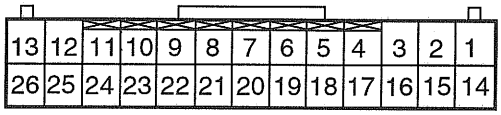

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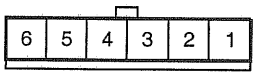

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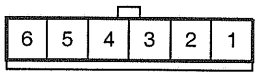

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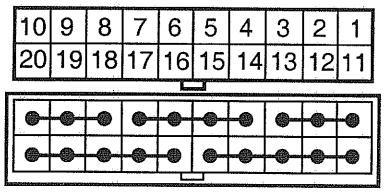

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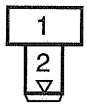
M50



CR01F040

M53



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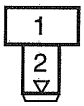

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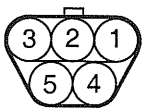

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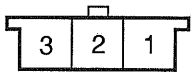

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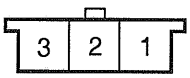

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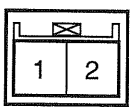

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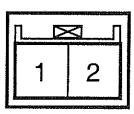
M65



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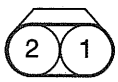
M67



CR02F006

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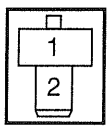

CR02M006

MAIN HARNESS (4)

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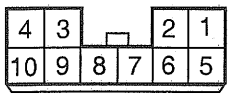
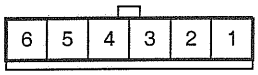


CR10F014

M70



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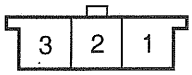

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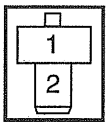

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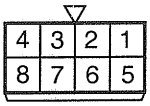

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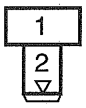

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M81



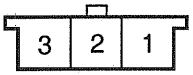
CR06F005

M83



CR06F005

M84



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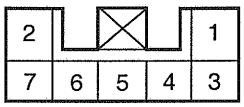

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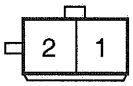

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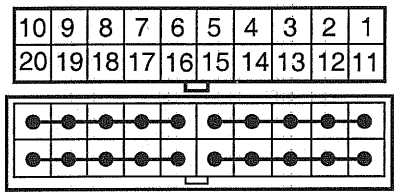
M87



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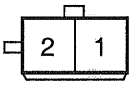
M92



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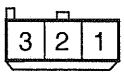
M93



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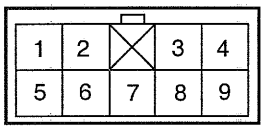
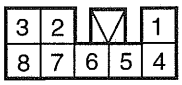
M96



CR09M001

M97



CR08F004

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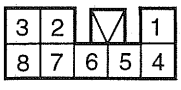

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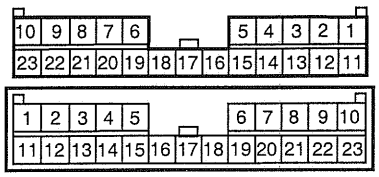

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MAIN HARNESS (5)

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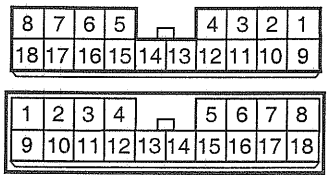
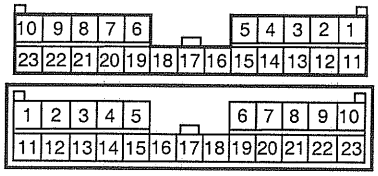


CR18B005

MC111



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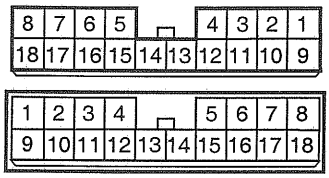

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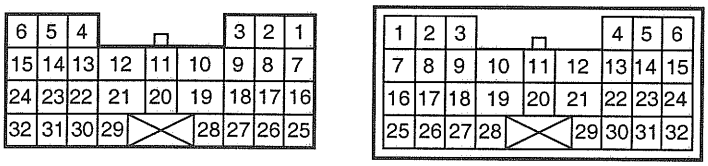

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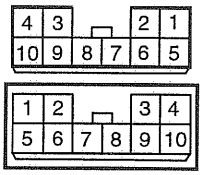

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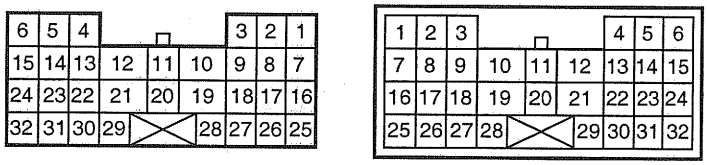

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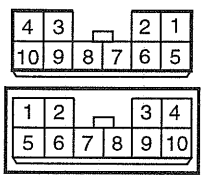

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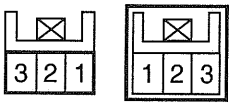

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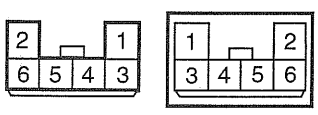

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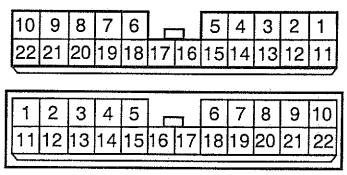

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MAIN HARNESS (6)

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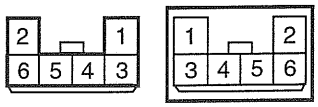

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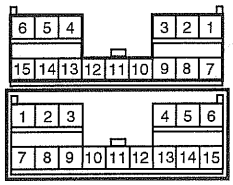

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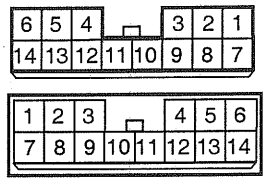

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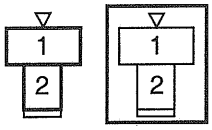

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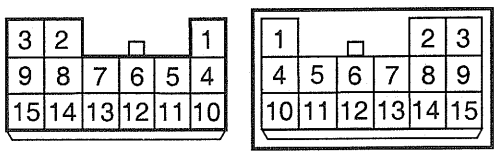

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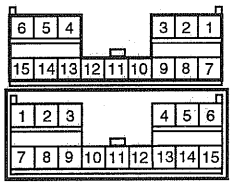

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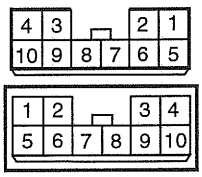

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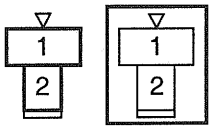

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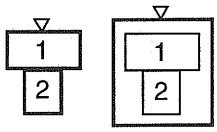

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ENGINE HARNESS E4FC0030

ENGINE HARNESS (1)

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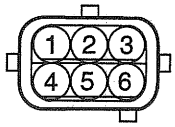

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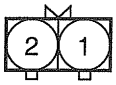

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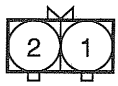

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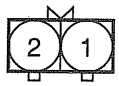

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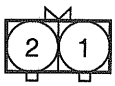

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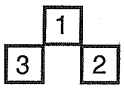

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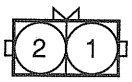

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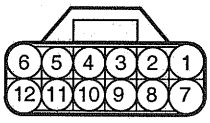

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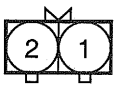

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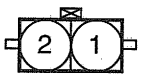

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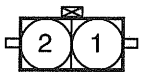

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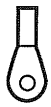

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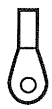

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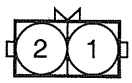

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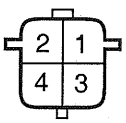

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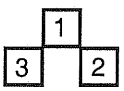

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CR01F002

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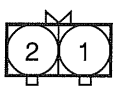

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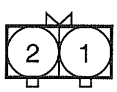

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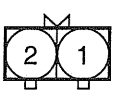

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ENGINE HARNESS (2)

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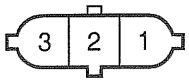

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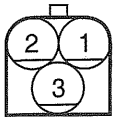

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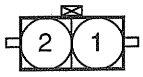

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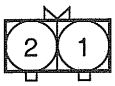

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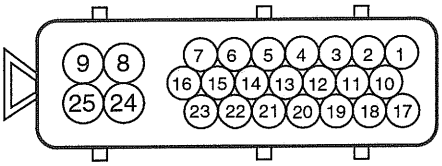

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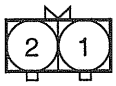

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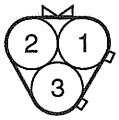

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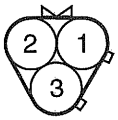

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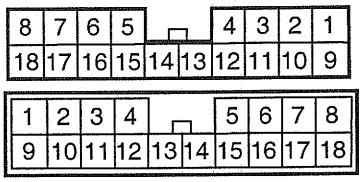

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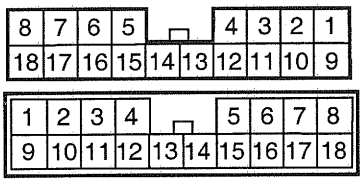

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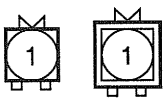

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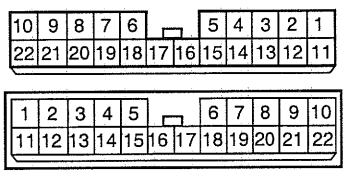

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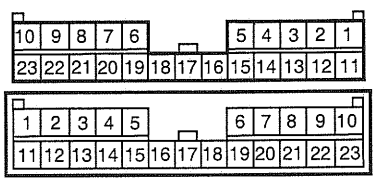

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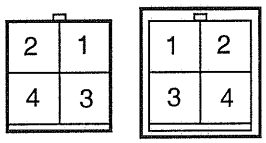

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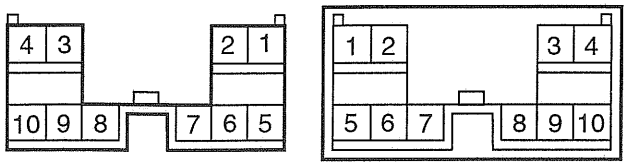
EM41  CR10B009	BLANK	BLANK

AIR BAG HARNESS E4FC0040

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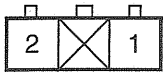

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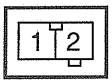

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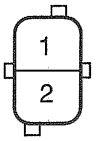

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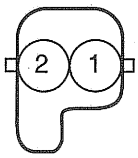

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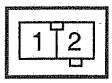

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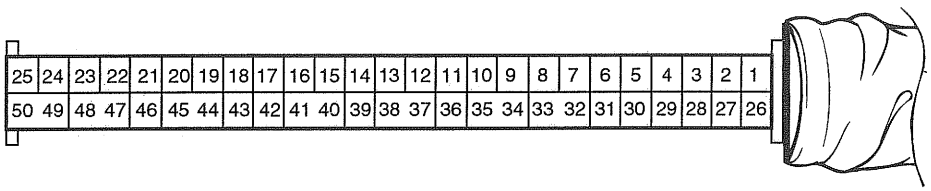

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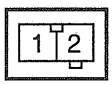

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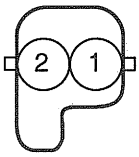

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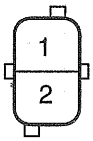

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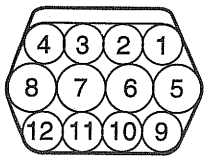
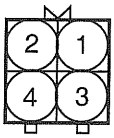
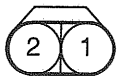
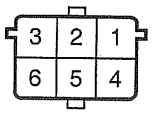
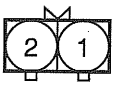
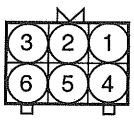
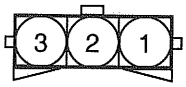
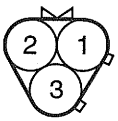
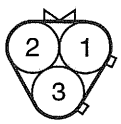
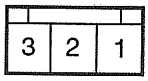
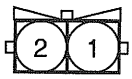
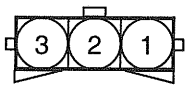
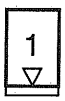
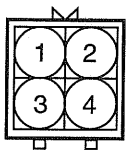
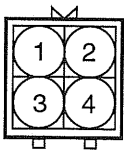
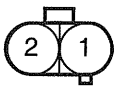
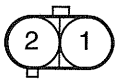
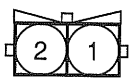
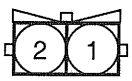
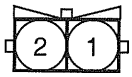
CONTROL HARNESS E4FC0050

CONTROL HARNESS (1)

C01  CR12F005	**C02**  CR04F027	**C03**  CR02F033	**C04**  CR06F043
C05  CR02F040	**BLANK**	**C07**  CR06F016	**C08**  CR03F029
C09  CR01F020	**C10**  CR03F020	**C11**  CR03F020	**C12**  CR03F087
C13  CR02F041	**C14**  CR03F029	**C15**  CR01F040	**C16**  CR04M011
C17  CR04M011	**C18–1**  CR02F060	**C18–2**  CR02F043	**C19**  CR01F042
C20  CR02F041	**C21**  CR02F041	**BLANK**	**C23**  CR02F041

CONTROL HARNESS (2)

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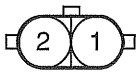
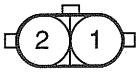


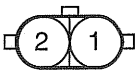
CR02F118

C24–2



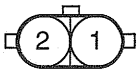
CR02F118

C24–3



CR02F118

C24–4



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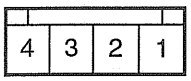
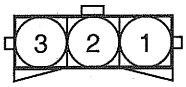
C25



CR04F056

C26



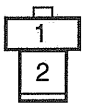
CR03F029

C28



CR01F020

C31



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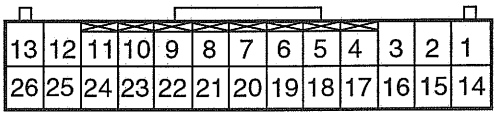
C32–1



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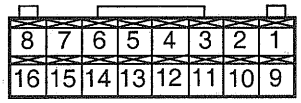
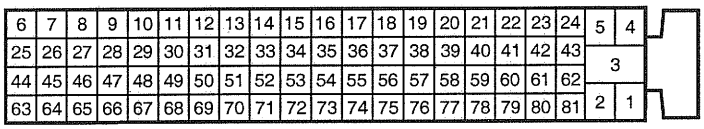
C32–2



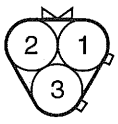
CR16F008

C33



CR81F003

C34



CR03F020

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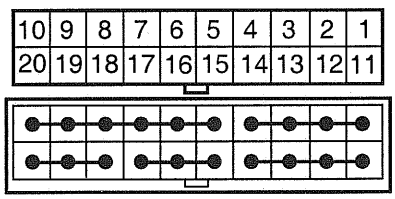
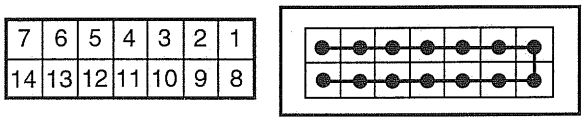
C36



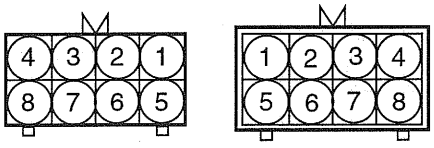
CR20F024

C37



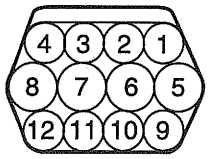
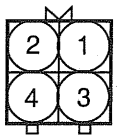
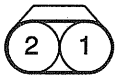
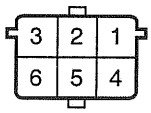
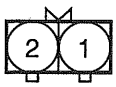
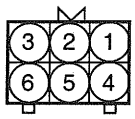
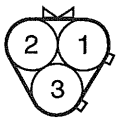
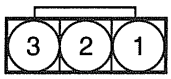
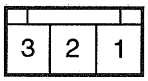
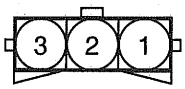
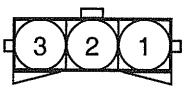
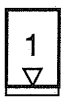
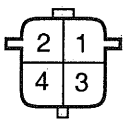
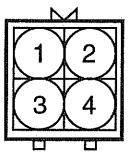
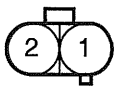
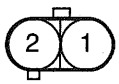
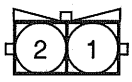
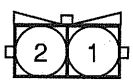
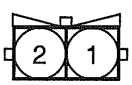
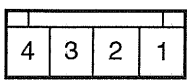
CR14F022

CC11



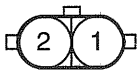
CR08B005

CONTROL HARNESS (3)

C101  CR12F005	**C102**  CR04F027	**C103**  CR02F006	**C104**  CR06F043
C105  CR02F040	**BLANK**	**C107**  CR06F016	**C109**  CR01F020
C110  CR03F020	**C111**  CR03F071	**C112**  CR03F087	**C113**  CR03F029
C114  CR03F029	**C115**  CR01F040	**C116**  CR04F026	**C117**  CR04M011
C118–1  CR02F060	**C118–2**  CR02F043	**C119**  CR01F042	**C120**  CR02F041
C121  CR02F041	**BLANK**	**C123**  CR02F041	**C125**  CR04F056

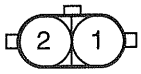
CONTROL HARNESS (4)

C124–1



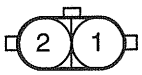
CR02F118

C124–2



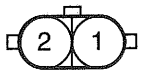
CR02F118

C124–3



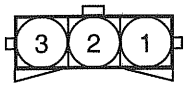
CR02F118

C124–4



CR02F118

C126



CR03F029

C128



CR01F020

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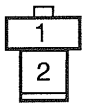
C131



CR02F051

C132–1

13	12	11	10	9	8	7	6	5	4	3	2	1
26	25	24	23	22	21	20	19	18	17	16	15	14

CR26F005

C132–2

8	7	6	5	4	3	2	1
16	15	14	13	12	11	10	9

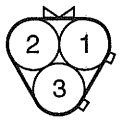
CR16F016

C133

6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	5	4
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	3	
44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62		
63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	2	1

CR81F003

C134



CR03F020

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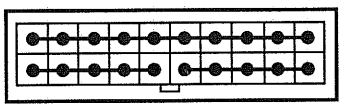
C136

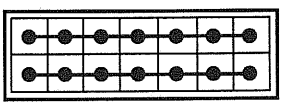
10	9	8	7	6	5	4	3	2	1
20	19	18	17	16	15	14	13	12	11



CR20F045

C137

7	6	5	4	3	2	1
14	13	12	11	10	9	8



CR14F017

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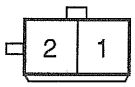
DOOR HARNESS E4FC0060

DOOR HARNESS (1)

D01



CR02F046

D02



CR02F128

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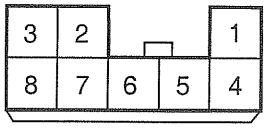
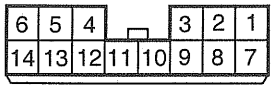
D04



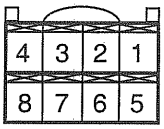
CR08F010

D05



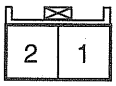
CR14F005

D06



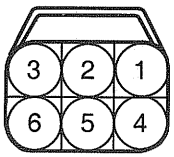
CR08F032

D07



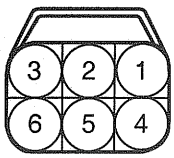
CR02F047

D09



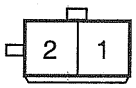
CR06F040

D10



CR06F040

D11



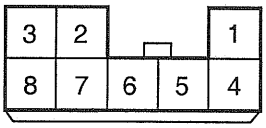
CR02F046

D12



CR02F128

D15



CR08F010

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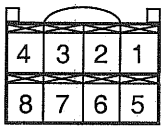
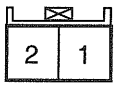
D16



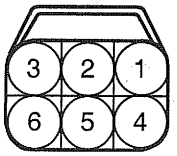
CR08F032

D17



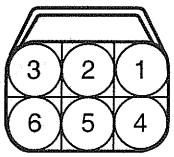
CR02F047

D19



CR06F040

D20



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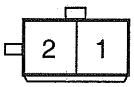
D21



CR02F046

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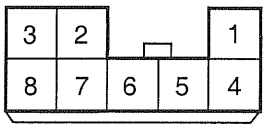
D23



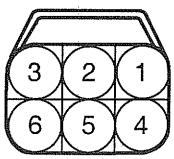
CR02F128

D25



CR08F010

D28



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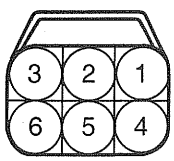
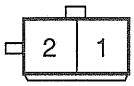
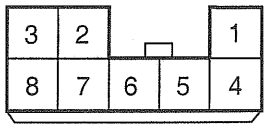
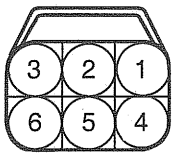
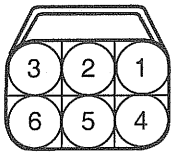
D29



CR06F040

DOOR HARNESS (2)

D31  CR02F046	**D33**  CR02F128	**BLANK**	**D35**  CR08F010
D38  CR06F040	**D39**  CR06F040	**BLANK**	**BLANK**

TAIL GATE HARNESS E4FC0070

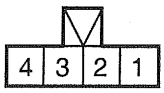
TAIL GATE HARNESS (1)

R06



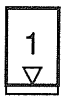
CR01F025

R07



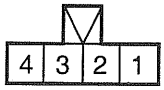
CR04F010

R08



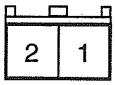
CR01F040

R09



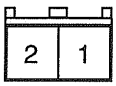
CR04F010

R10



CR02F129

R11



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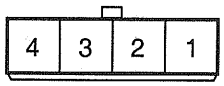
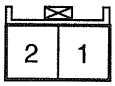
R13



CR04F062

R14



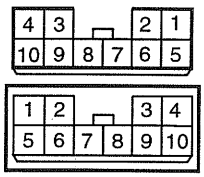
CR02F047

R15



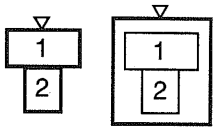
CR01F025

RR11



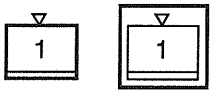
CR10B006

RR21



CR02B010

RR31



CR01B013

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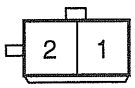
ADDITIONAL PARTS (RHD) E4FC0080

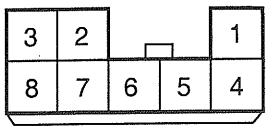
ADDITIONAL PARTS (RHD) (1)

D01–1



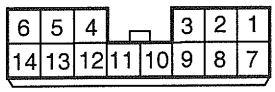
CR02F046

D04–1



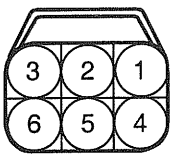
CR08F010

D05–1



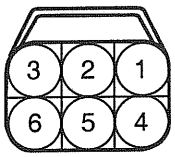
CR14F005

D09–1



CR06F040

D19–1



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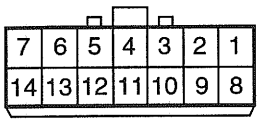
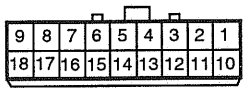


CR14F010

M01–12



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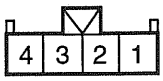
M01–13



CR04F032

HARNESS LAYOUTS

AIR BAG HARNESS HL-8

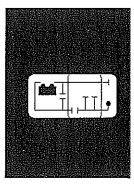
CONTROL HARNESS HL-10

DOOR HARNESS HL-16

ENGINE HARNESS HL-6

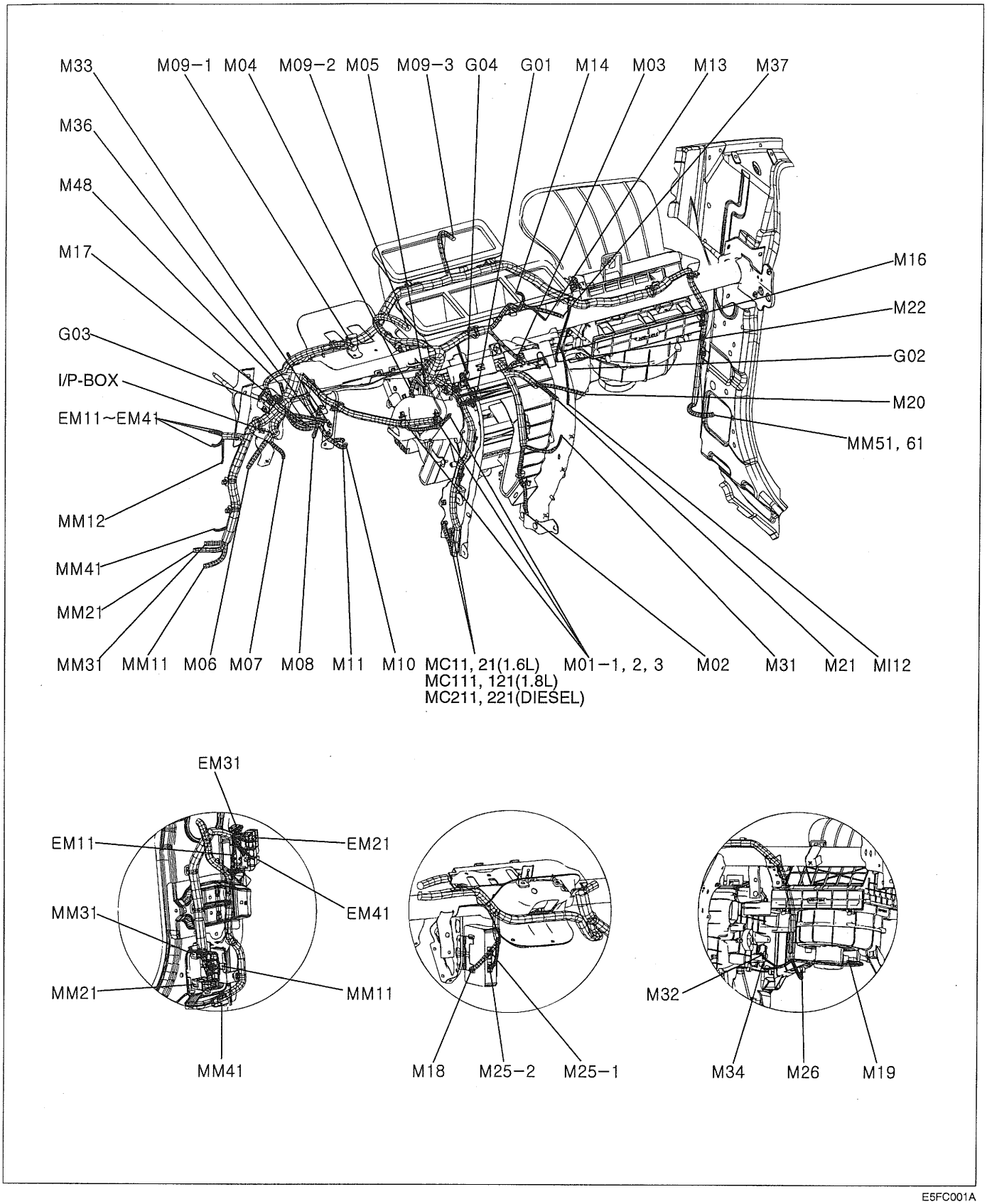
MAIN HARNESS HL-2

TAIL GATE HARNESS HL-18



MAIN HARNESS E5FC0010

MAIN HARNESS (1)

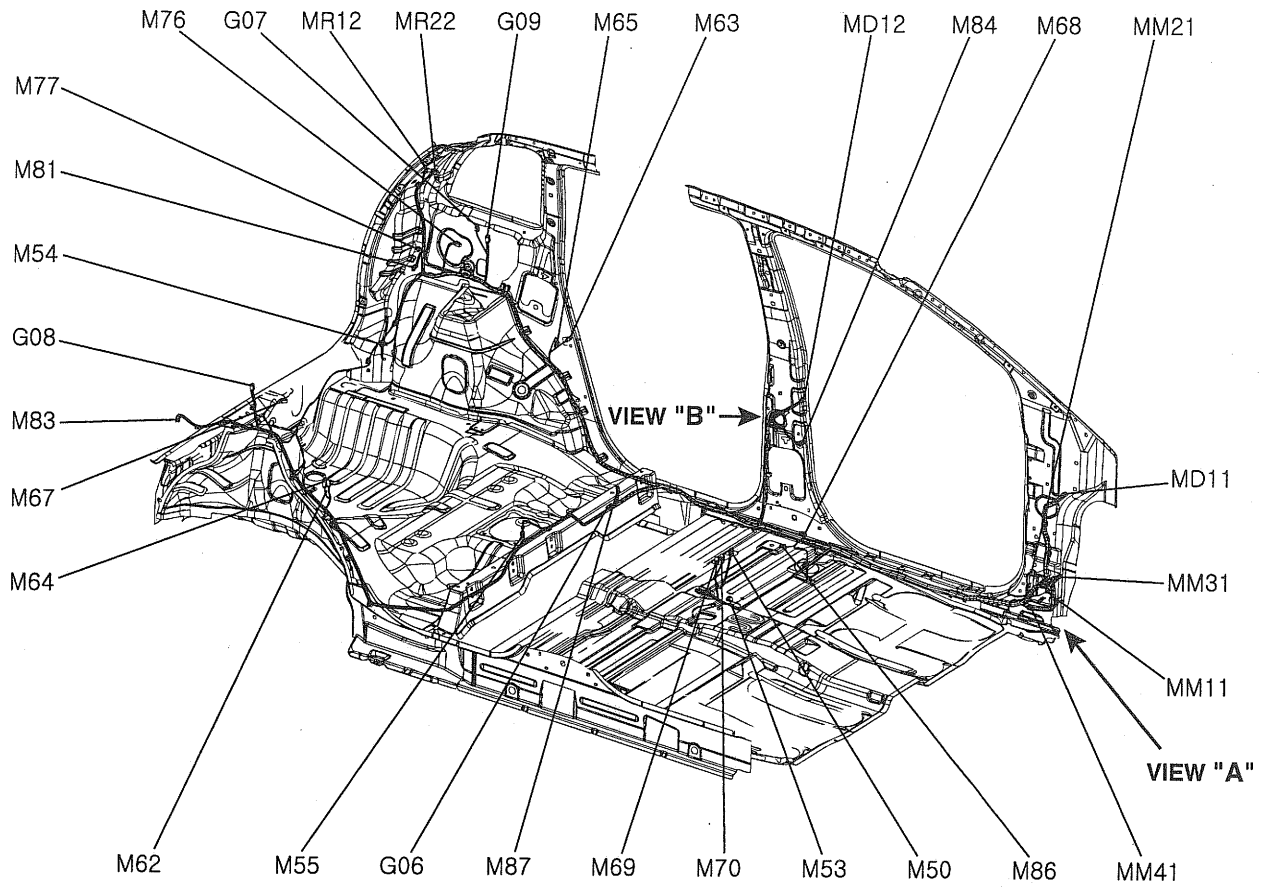


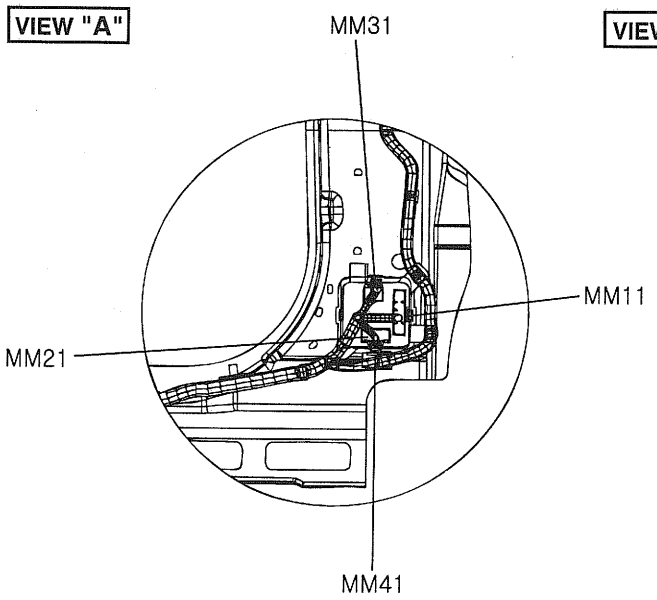
E5FC001A

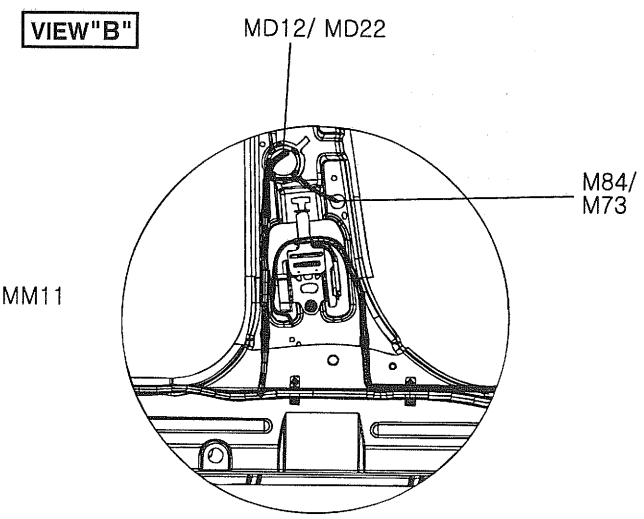
MAIN HARNESS

M01–1	Multifunction switch
M01–2	Multifunction switch (With A/Bag)
M01–3	Multifunction switch (With A/Bag)
M02	A/T shift lever
M03	Joint connector
M04	Ignition switch
M05	Ignition key ill & Door warning switch
M06	Multipurpose check connector
M07	Data link connector
M08	SMATRA
M09-1	Instrument cluster
M09-2	Instrument cluster
M09-3	Instrument cluster
M10	Chime bell
M11	Buzzer
M13	Hazard switch
M14	ODO trip switch
M16	Audio
M17	Rear fog lamp switch
M18	Blend door actuator
M19	Blower motor
M20	A/C switch
M21	Blower switch
M22	Intake actuator
M23	Wiper & Defogger timer
M25-1	ETACM
M25-2	ETACM
M26	Blower resistor
M30	Seat belt timer
M31	Cigarette lighter
M32	Temperature actuator
M33	Front fog lamp switch
M34	Thermostatic switch
M36	Head lamp leveling switch
M37	Defogger switch
M38	Flasher unit
M39	Burglar alarm relay
M40	Siren relay
M41	Door lock relay
M42	Door unlock relay
M43	Blower relay
M44	Defogger relay
M45	Power window relay
M46	Hazard relay
M47	Joint connector
M48	Joint connector
EM11	Connection with ENGINE harness
EM21	Connection with ENGINE harness
EM31	Connection with ENGINE harness
EM41	Connection with ENGINE harness
MC11	Connection with CONTROL harness (1.6L)
MC21	Connection with CONTROL harness (1.6L)
MC111	Connection with CONTROL harness (1.8L)
MC121	Connection with CONTROL harness (1.8L)
MC211	Connection with CONTROL harness (Diesel)
MC221	Connection with CONTROL harness (Diesel)
MI12	Connection with A/BAG harness
MM11	Connection with FLOOR harness
MM12	Connection with ROOF harness
MM21	Connection with FLOOR harness
MM31	Connection with FLOOR harness
MM41	Connection with FLOOR harness
MM51	Connection with FLOOR harness
MM61	Connection with FLOOR harness
G01	Ground
G02	Ground
G03	Ground (Driver)
G04	Ground (Audio)

MAIN HARNESS (FLOOR)







E5FC001B

MAIN HARNESS (FLOOR)

M50	Parking brake switch
M53	Front power outlet
M54	Rear power outlet
M55	Fuel sender & Fuel pump motor
M62	Right rear door switch
M63	Left rear door switch
M64	Right rear wheel sensor
M65	Left rear wheel sensor
M67	Rear fog lamp
M68	Left front seat warmer
M69	Right front seat warmer switch
M70	Left front seat warmer switch
M73	Right front door switch
M74	Right front seat warmer
M76	Rear wiper relay
M77	Luggage room lamp
M81	Left rear combination lamp
M83	Right rear combination lamp
M84	Left front door switch
M86	Seat belt switch
M87	Joint connector
MD11	Connection with LEFT FRONT DOOR harness
MD12	Connection with LEFT REAR DOOR harness
MD13	Connection with RIGHT FRONT DOOR harness
MD22	Connection with RIGHT REAR DOOR harness
MM11	Connection with MAIN harness
MM21	Connection with MAIN harness
MM31	Connection with MAIN harness
MM41	Connection with MAIN harness
MM51	Connection with MAIN harness
MM61	Connection with MAIN harness
MR12	Connection with TAIL GATE harness
MR22	Connection with TAIL GATE harness
G06	Ground (Fuel tank)
G07	Ground (Left rear)
G08	Ground (Right rear)
G09	Ground (Rear heater)

ROOF HARNESS

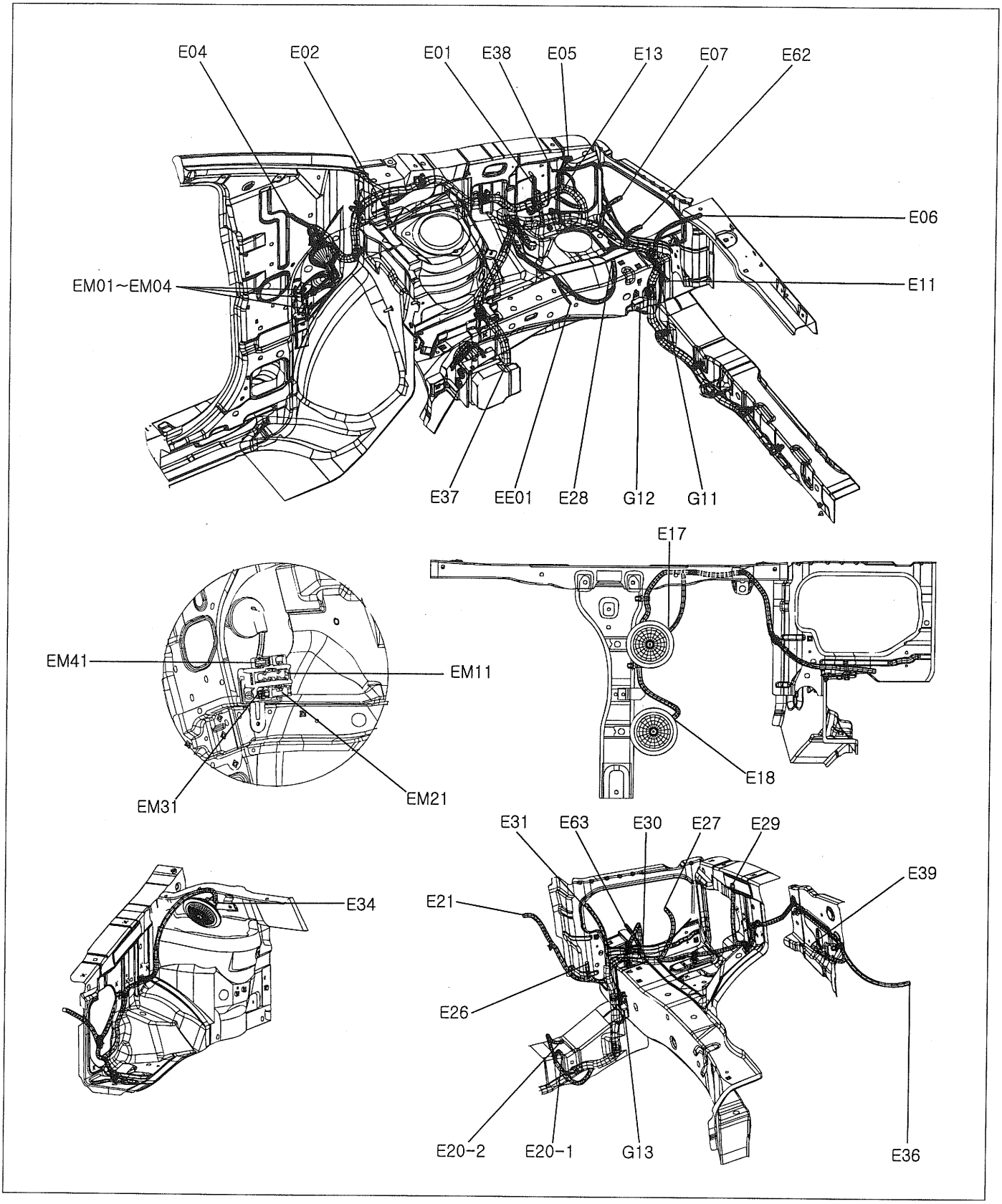
M92	Map lamp (W/O Sunroof)
M93	Room lamp
MM05	Connection with SUNROOF harness
MM12	Connection with MAIN harness

SUNROOF HARNESS

M96	Sunroof motor
M97	Overhead console lamp
M98	Sunroof relay
MM05	Connection with ROOF harness

ENGINE HARNESS E5FC0020

ENGINE HARNESS (1)



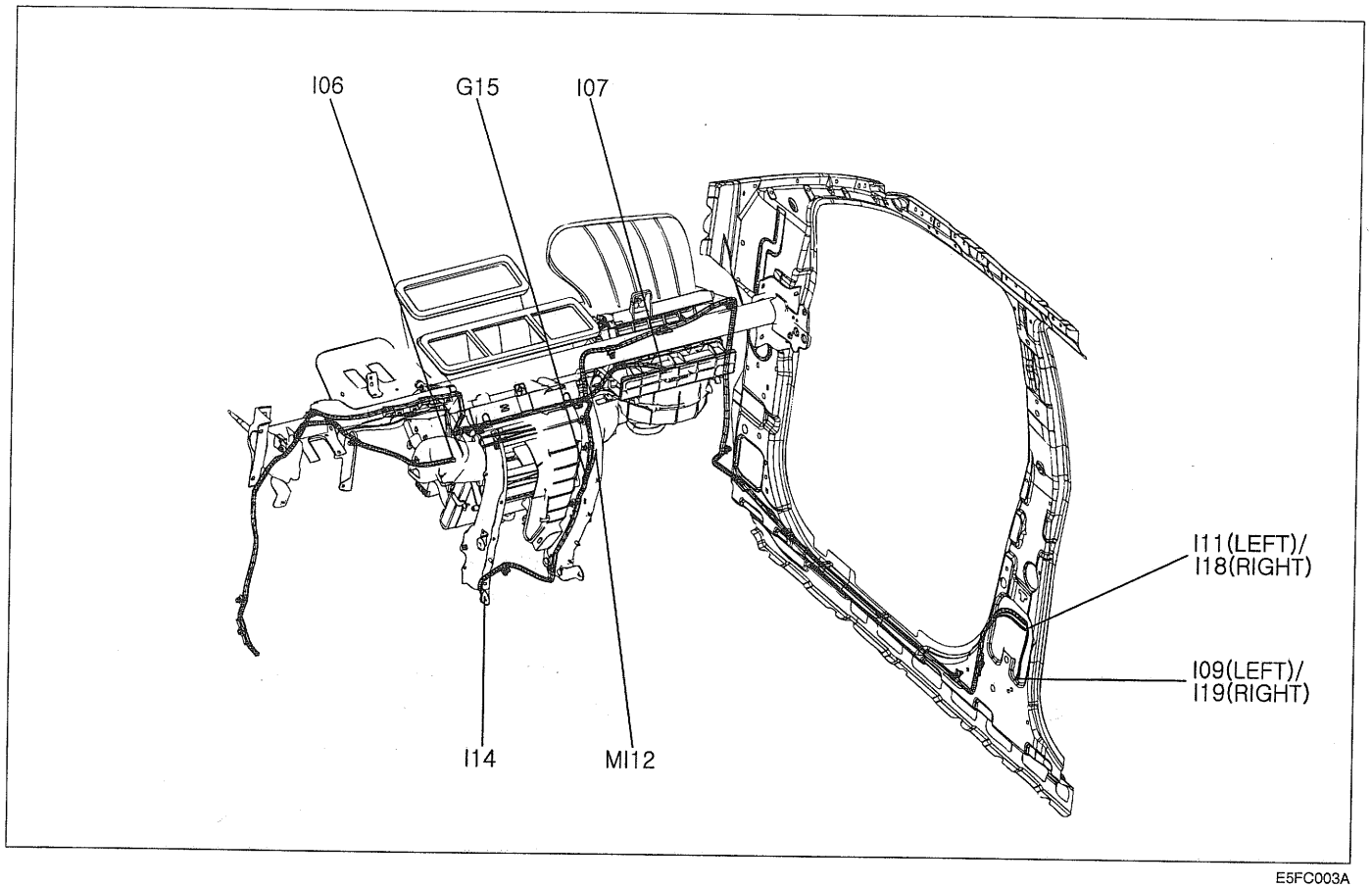
E5FC002A

ENGINE HARNESS

E01	ABS bleeding connector'
E02	Left front wheel sensor
E04	Left side repeater lamp
E05	Left turn signal lamp
E06	Left position lamp
E07	Left head lamp
E11	Radiator fan motor
E13	DRL control module
E14	Left front fog lamp
E17	Left horn
E18	Right horn (Dual)
E20-1	Generator (B+)
E20-2	Generator (L,S)
E21	Condenser fan motor
E26	Triple switch (Gasoline)
E27	Right head lamp
E28	Battery (+) terminal
E29	Right turn signal lamp
E30	Right front fog lamp
E31	Right position lamp
E32	Fuel cut solenoid (Gasoline)
E33	Washer motor
E34	Siren
E35	Start solenoid
E36	Right side repeater lamp
E37	ABS control module
E38	Hood switch
E39	Right front wheel sensor
E41	Start relay
E42	Engine control relay
E43	Condenser fan relay #2
E44	Radiator fan relay
E45	Horn relay
E46	Front wiper relay
E47	Front fog lamp relay
E48	Head lamp relay
E49	Fuel pump relay
E50	A/C relay
E51	Tail lamp relay
E52	Condenser fan relay #1
E53	Rear fog lamp relay
E54	Pre-excitation resistor
E56	Joint connector
E60–1	Generator (B+)
E60–2	Generator (L,S)
E61	A/C compressor
E62	Left head lamp leveling actuator
E63	Right head lamp leveling actuator
EC11	Connection with CONTROL harness (1.6L)
EC111	Connection with CONTROL harnesss (1.8L)
EC211	Connection with CONTROL harness (Diesel)
EE01	Connection with BATTERY CABLE harness
EM11	Connection with MAIN harness
EM21	Connection with MAIN harness
EM31	Connection with MAIN harness
EM41	Connection with MAIN harness
G11	Ground (ABS)
G12	Ground (Left Engine Room)
G13	Ground (Right Engine Room)

AIR BAG HARNESS E5FC0030

AIR BAG HARNESS (1)



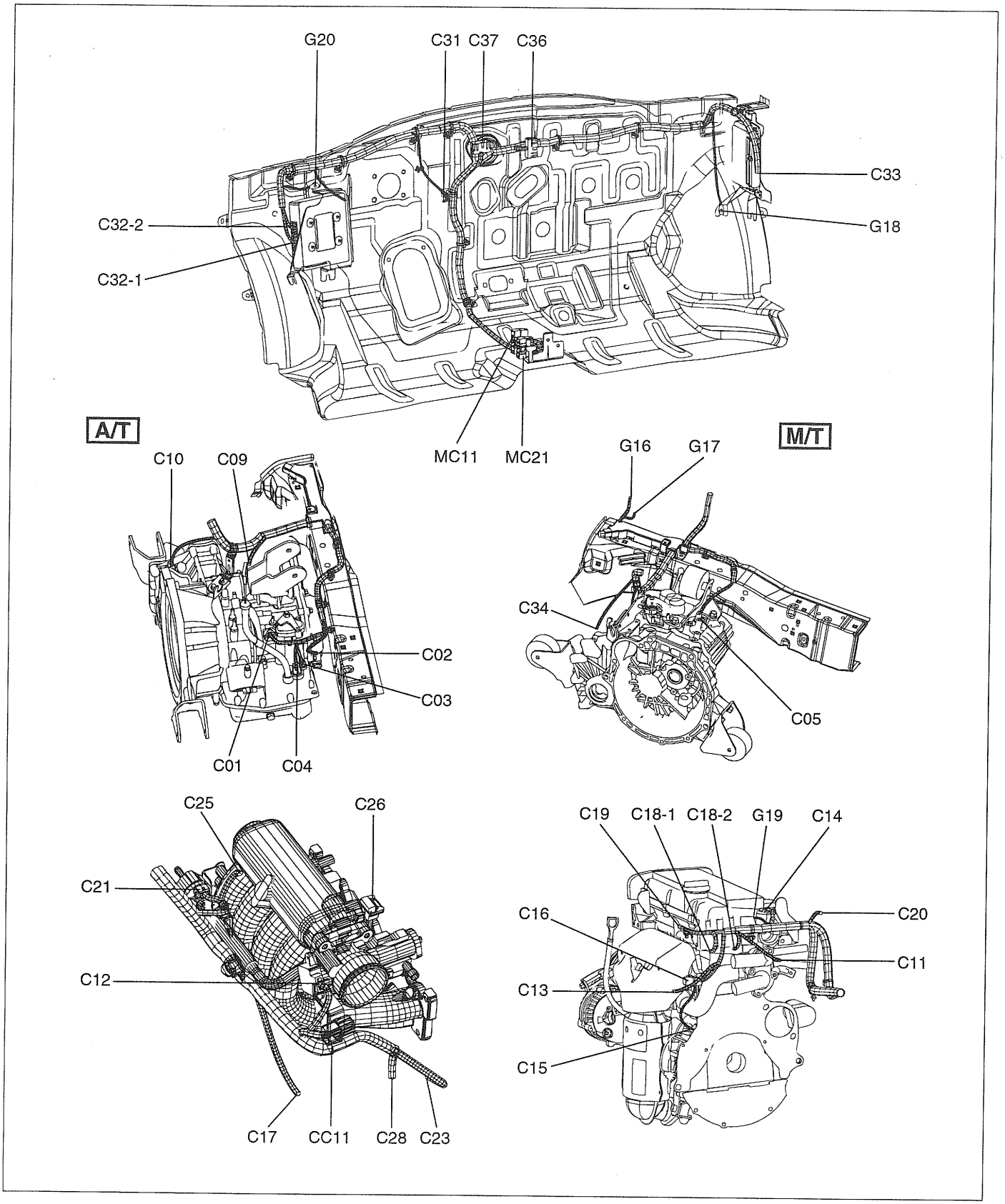
E5FC003A

I06	Driver air bag	I16	Side air bag (Passenger)
I07	Passenger air bag	I18	Passenger seat belt pretensioner
I09	Driver satellite sensor	I19	Passenger satellite sensor
I11	Driver seat belt pretensioner	MI12	Connection with MAIN harness
I12	Driver side air bag	G15	Ground (A/Bag)
I14	SRS control module		

MEMO

CONTROL HARNESS E5FC0040

CONTROL HARNESS (1.6L) (1)



E5FC004A

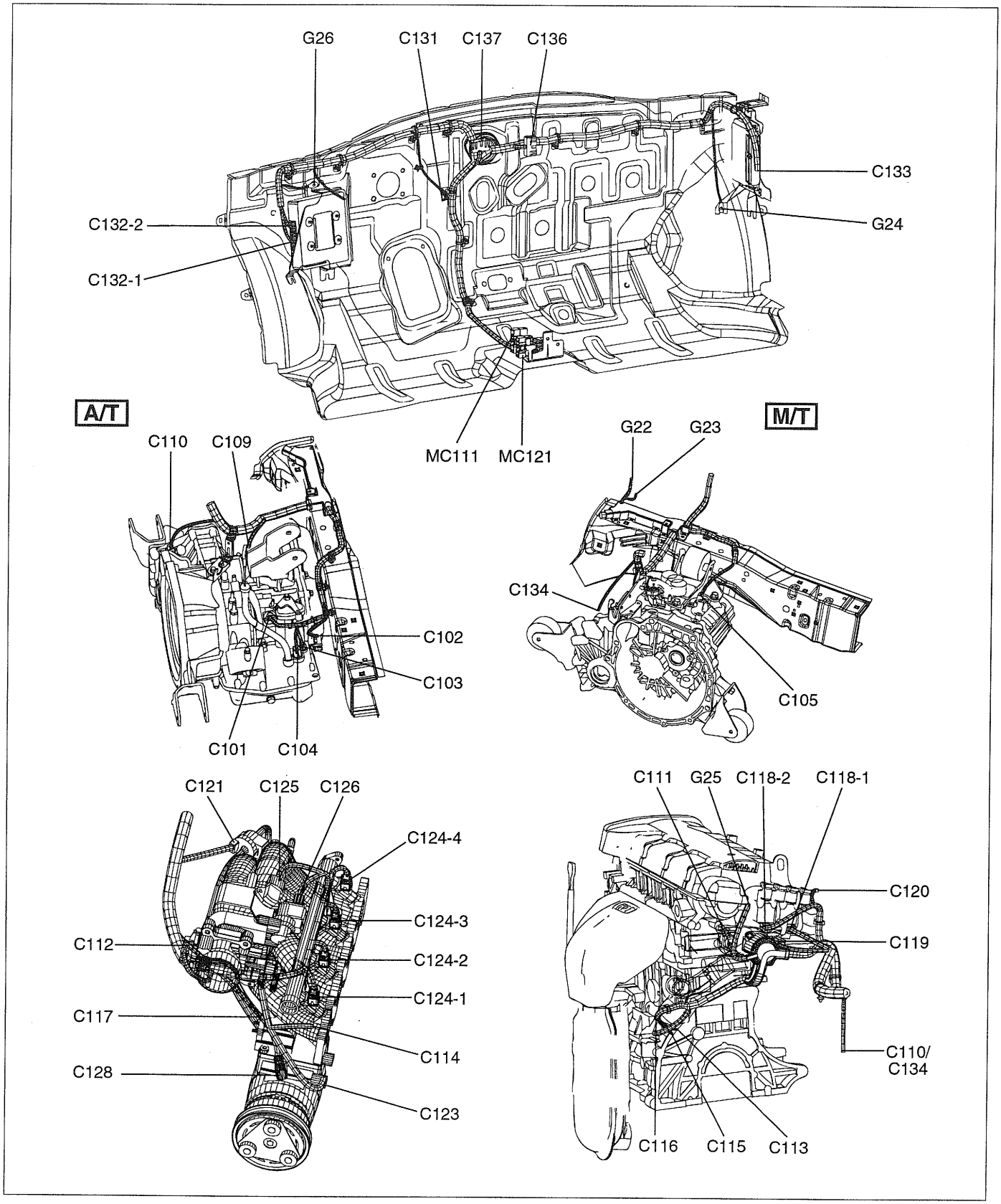
CONTROL HARNESS (1.6L)

C01	Transaxle range switch
C02	Pulse generator
C03	Oil temperature sensor
C04	A/T solenoid valve
C05	Back-up lamp switch
C07	Front wiper motor
C08	Accelerator position sensor
C09	Kick down switch
C10	Vehicle speed sensor (A/T)
C11	Engine coolant temperature sensor & sender
C12	Throttle position sensor
C13	Crankshaft position sensor
C14	Camshaft position sensor
C15	Oil pressure switch
C16	Oxygen sensor (Up)
C17	Oxygen sensor (Down)
C18-1	Ignition coil #1
C18-2	Ignition coil #2
C19	Condenser
C20	Brake fluid level sensor
C21	Canister purge valve
C23	Knock sensor
C25	Manifold absolute pressure sensor
C28	A/C compressor
C31	Stop lamp switch
C32-1	TCM
C32-2	TCM
C33	ECM
C34	Vehicle speed sensor (M/T)
C36	Joint connector
C37	Joint connector
CC11	Connection with INJECTOR harness
EC11	Connection with ENGINE harness
MC11	Connection with MAIN harness
MC21	Connection with MAIN harness
G16	Ground (Body)
G17	Ground (Control)
G18	Ground (ECM)
G19	Ground (Engine)
G20	Ground (TCM)

INJECTOR HARNESS

C24-1	Injector #1
C24-2	Injector #2
C24-3	Injector #3
C24-4	Injector #4
C26	Idle speed control actuator
CC11	Connection with CONTROL harness

CONTROL HARNESS (1.8L)

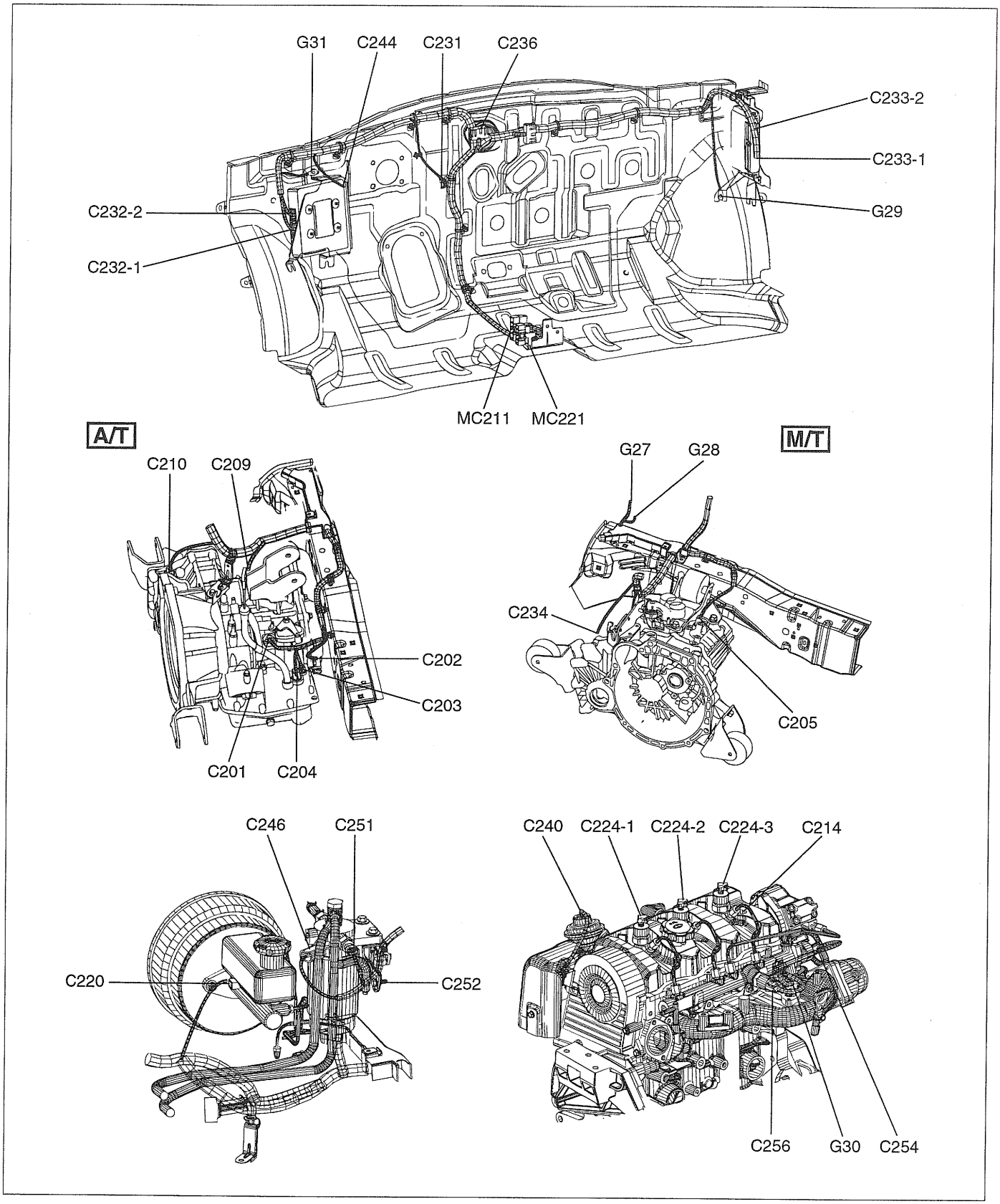


E5FC004B

CONTROL HARNESS (1.8L)

C101	Transaxle range switch
C102	Pulse generator
C103	Oil temperature sensor
C104	A/T solenoid valve
C105	Back-up lamp switch
C107	Front wiper motor
C109	Kick down switch
C110	Vehicle speed sensor (A/T)
C111	Engine coolant temperature sensor & sender
C112	Throttle position sensor
C113	Crankshaft position sensor
C114	Camshaft position sensor
C115	Oil pressure switch
C116	Oxygen sensor(Up)
C117	Oxygen sensor(Down)
C118–1	Ignition coil #1
C118–2	Ignition coil #2
C119	Condenser
C120	Brake fluid level sensor
C121	Canister purge valve
C123	Knock sensor
C124–1	Injector #1
C124–2	Injector #2
C124–3	Injector #3
C124–4	Injector #4
C125	Manifold absolute pressure sensor
C126	Idle speed control actuator
C128	A/C compressure
C131	Stop lamp switch
C132–1	TCM
C132–2	TCM
C133	ECM
C134	Vehicle speed sensor(M/T)
C136	Joint connector
C137	Joint connector
EC111	Connection with ENGINE harness
MC111	Connection with MAIN harness
MC121	Connection with MAIN harness
G22	Ground (Body)
G23	Ground (Control)
G24	Ground (ECM)
G25	Ground (Engine)
G26	Ground (TCM)

CONTROL HARNESS (DIESEL)



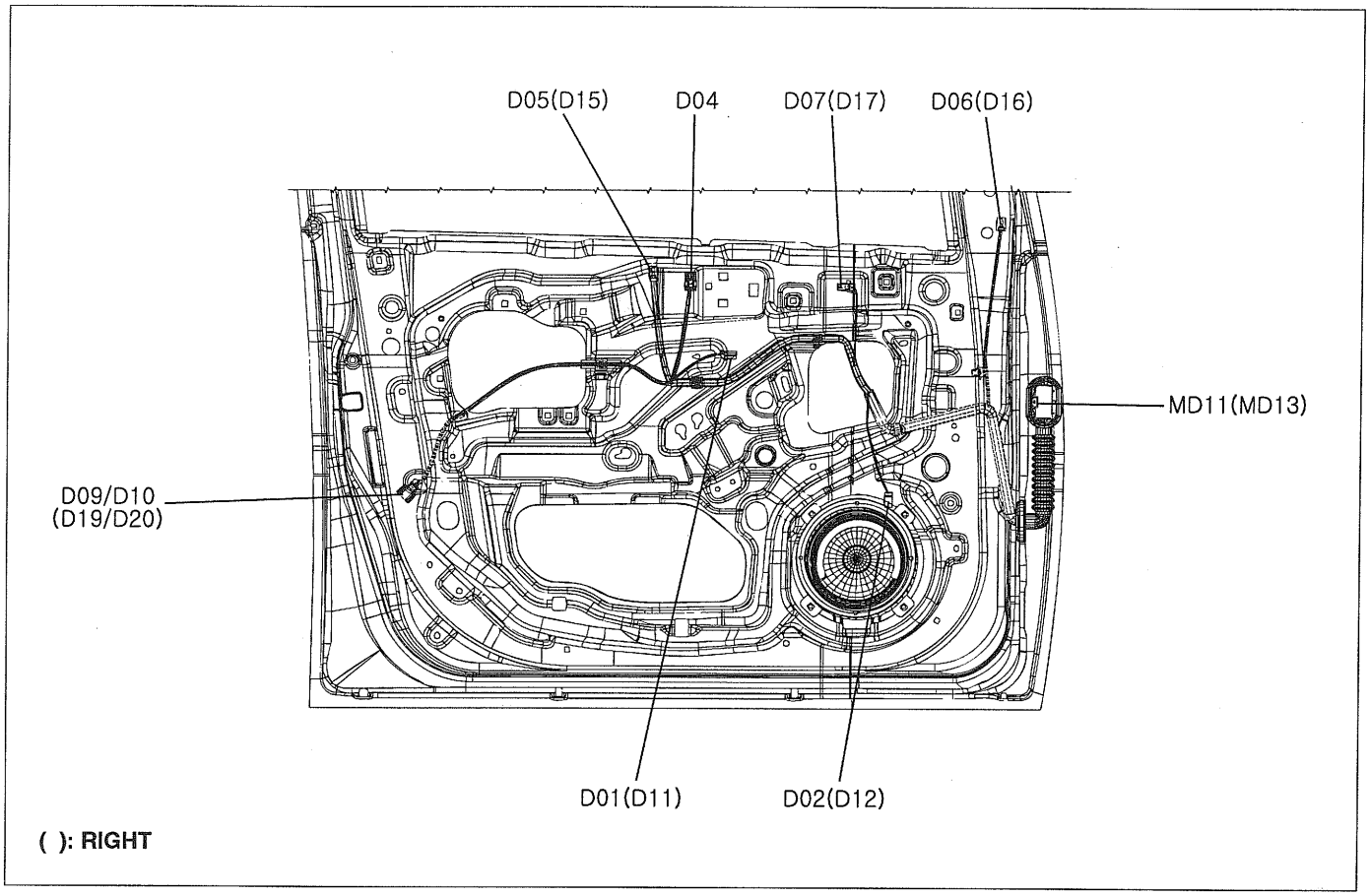
E5FC004C

CONTROL HARNESS (DIESEL)

C201	Transaxle range switch
C202	Pulse generator
C203	Oil temperature sensor
C204	A/T solenoid valve
C205	Back-up lamp switch
C207	Front wiper motor
C208	Accelerator position sensor
C209	Kick down switch
C210	Vehicle speed sensor (A/T)
C211	Engine coolant temperature sensor & sender
C213	Crankshaft position sensor
C214	Camshaft position sensor
C215	Oil pressure switch
C220	Brake fluid level sensor
C224–1	Injector #1
C224–2	Injector #2
C224–3	Injector #3
C231	Stop lamp switch
C232–1	TCM
C232–2	TCM
C233–1	ECM
C233–2	ECM
C234	Vehicle speed sensor (M/T)
C236	Joint connector
C240	Mass air flow sensor
C241	Heater assembly
C242	Heater relay #1
C243	Heater relay #2
C244	Clutch pedal position switch
C245	EGR actuator
C246	Fuel filter heater
C247	Fuel temperature sensor
C248	Glow plug
C249	Glow plug relay
C250	Triple switch
C251	Thermo switch
C252	Water sensor
C253	Throttle plate actuator
C254	Rail pressure regulator
C256	Rail pressure sensor
C257	Fuel filter heater relay #1
C258	Fuel filter heater relay #2
EC211	Connection with ENGINE harness
MC211	Connection with MAIN harness
MC221	Connection with MAIN harness
G27	Ground (Body)
G28	Ground (Control)
G30	Ground (Engine)
G31	Ground (TCM)
G32	Ground (ECM)

DOOR HARNESS E5FC0050

DOOR HARNESS (1)



E5FC005A

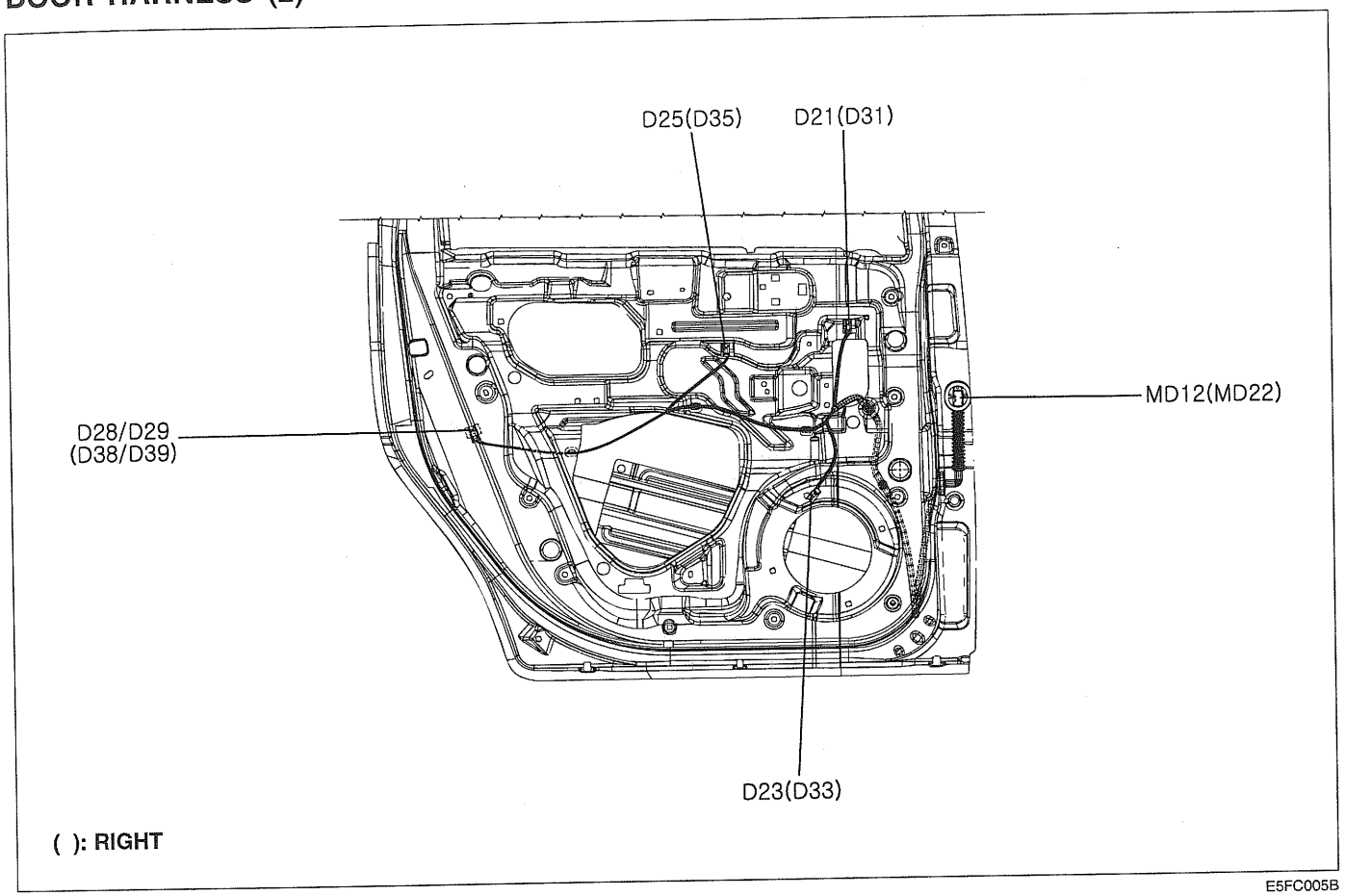
LEFT FRONT DOOR HARNESS

D01	Left front power window motor
D02	Left front speaker
D04	Power outside mirror switch
D05	Left front power window switch
D06	Left outside mirror motor & Defogger
D07	Left front tweeter speaker
D09	Left front door lock actuator (With ETACM)
D10	Left front door lock actuator (W/O ETACM)
MD11	Connection with FLOOR harness

RIGHT FRONT DOOR HARNESS

D11	Right front power window motor
D12	Right front speaker
D15	Right front power window switch
D16	Right outside mirror motor & Defogger
D17	Right front tweeter speaker
D19	Right front door lock actuator (With ETACM)
D20	Right front door lock actuator (W/O ETACM)
MD13	Connection with FLOOR harness

DOOR HARNESS (2)



LEFT REAR DOOR HARNESS

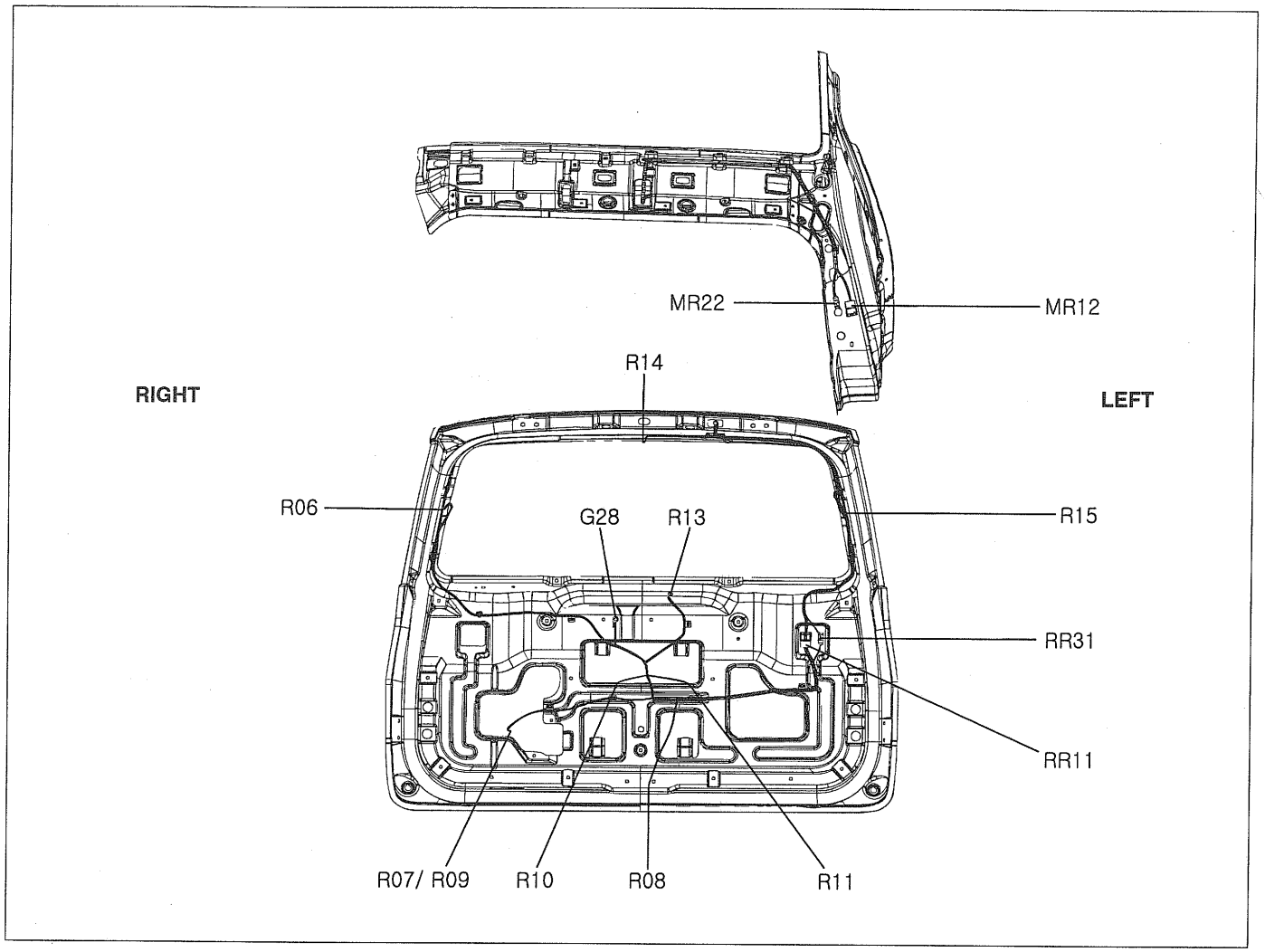
D21	Left rear power window motor
D23	Left rear speaker
D25	Left rear power window switch
D28	Left rear door lock actuator (W/O ETACM)
D29	Left rear door lock actuator (With ETACM)
MD12	Connection with FLOOR harness

RIGHT REAR DOOR HARNESS

D31	Right rear power window motor
D33	Right rear speaker
D35	Right rear power window switch
D38	Right rear door lock actuator (W/O ETACM)
D39	Right rear door lock actuator (With ETACM)
MD22	Connection with FLOOR harness

TAIL GATE HARNESS E5FC0060

TAIL GATE HARNESS(1)



E5FC006A

TAIL GATE HARNESS

R06	Rear window defogger (-)
R07	Tail gate lock actuator (With ETACM)
R08	Luggage room lamp switch
R09	Tail gate lock actuator (W/O ETACM)
R10	Right license lamp
R11	Left license lamp
R13	Rear wiper motor
RR11	Connection with TAIL GATE EXT. harness
RR31	Connection with TAIL GATE EXT. harness
G28	Ground (Tail gate)

TAIL GATE EXT. HARNESS

R14	High-mounted stop lamp
R15	Rear window defogger (+)
MR12	Connection with FLOOR harness
MR22	Connection with FLOOR harness
RR11	Connection with TAIL GATE harness
RR31	Connection with TAIL GATE harness