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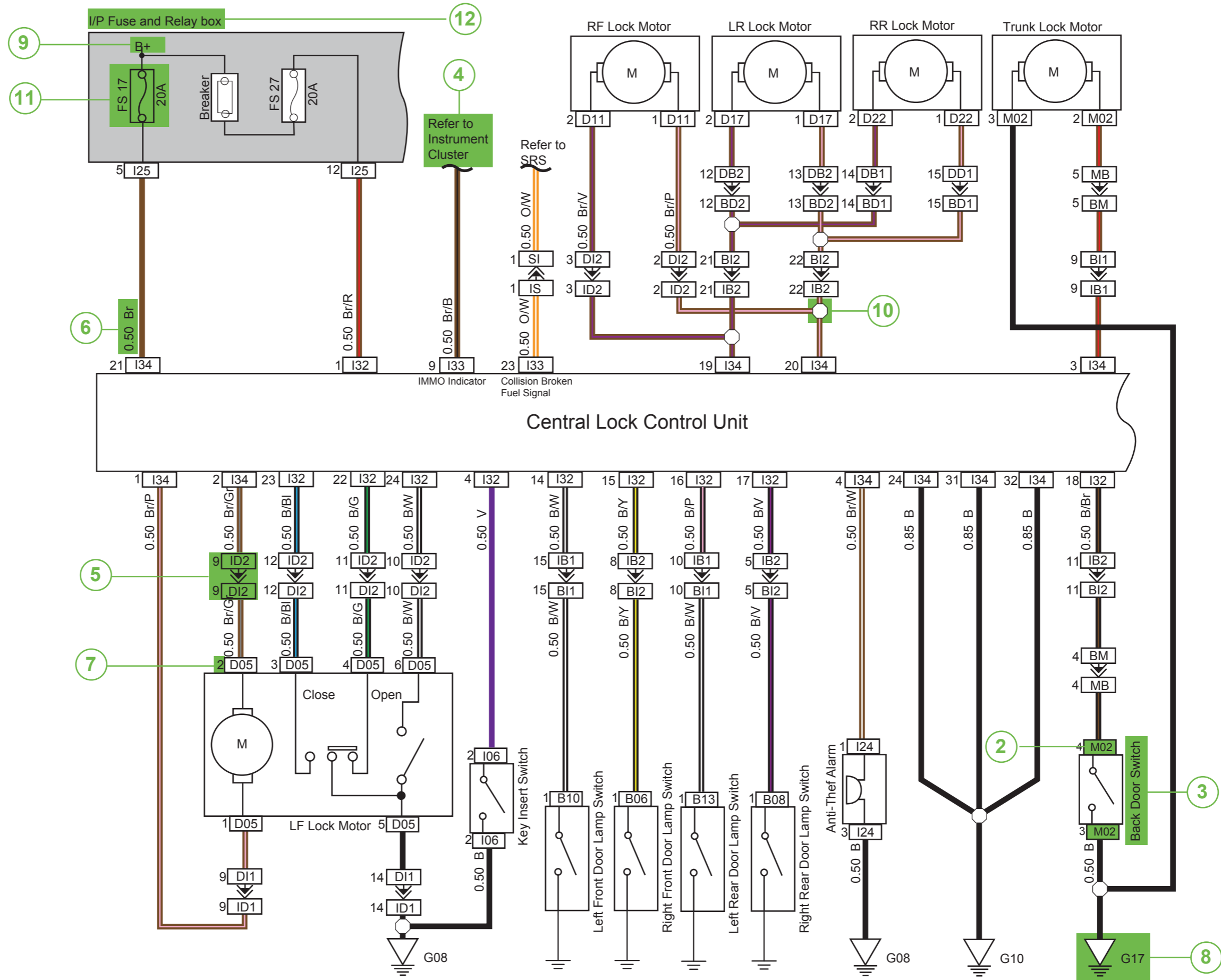
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Introduction

Central Lock and Theft Deterrent System



Circuit Diagnosis

Circuit Diagnostic Procedure

Refer to the following procedure for the circuit diagnosis:

1. Confirm the Fault

To do the proper repair, confirm the fault described by the customer firstly. Inspect the relevant component carefully and make record. DO NOT disassemble the component before confirmation of the fault scope and causes.

2. Read the Wiring Diagram and Analyze the Causes.

Make a complete analysis on the faulty components from power supply to ground according to the sub-system wiring diagram and determine the repair solution. If can not determine the repair solution, please read the system description in the "Description and Operation" in the workshop manual to clear the working principle. And inspect other circuits that has common part with the faulty circuits that has common part with the faulty circuit, for example, the fuse, ground, switch, etc. Inspect the circuit not covered in step 1. If other components on the common circuit work properly, it means the fault exists in its own circuit. Otherwise, the fuse or ground might has faults.

3. Inspect the Circuits and Components.

Always use the wiring diagram together with workshop manual and refer to the diagnostic procedure for the relevant circuits or components in the workshop manual. For the circuit with a control module, fully use diagnostic tools to do the test. Effective diagnosis should be a logical and reasonable operation. Fully use the diagnostic procedures in the workshop manual and start the inspection from the most likely causes and the compents be easiest to inspect.

4. Repair

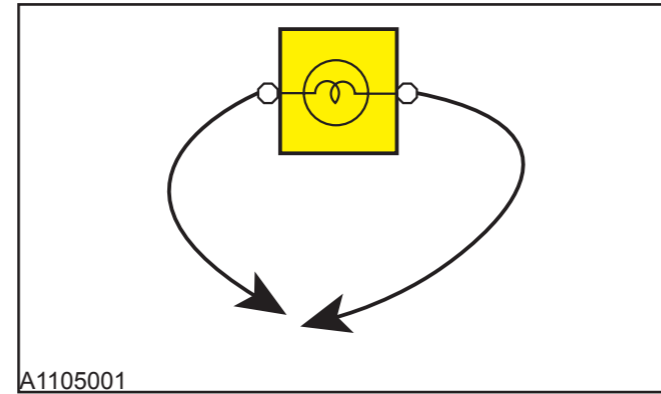
Repair the faulty circuit. Refer to the wiring diagram and workshop manual for fault treatment. For example, the treatment on bad connection to ground and the harness connector.

5. Confirm the Fault Removed.

After repair, confirm the fault removed and all functions work properly. For the fuse blown fault, check all the relevant circuits.

Circuit Diagnostic Device

1. Voltmeter and Test Light



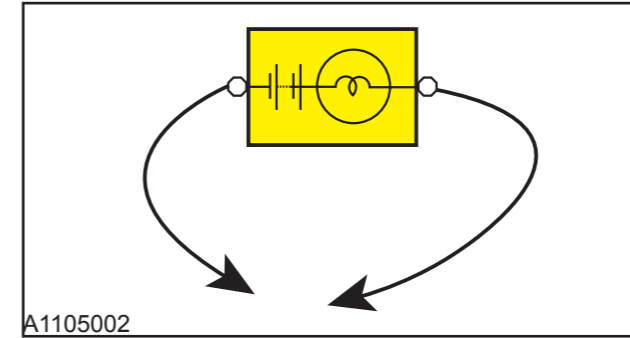
Use test light or voltmeter to check the circuit status.

Test light comprises a pair of wires and a 12V bulb. When inspecting, connect one wire to the ground and the other one to the measurement point. If the bulb is lit, it means the measurement point has power supply.

Warning: DO NOT use test light to test the control module voltage. To do so, it could damage the circuit inside the control module. Please use a voltmeter with 10M Ω or higher internal impedance (e.g. to test the ECM voltage).

Voltmeter has the same connection method as the test light, but voltmeter can display the voltage value of the circuit. Use a voltmeter with high impedance to test the voltage. If the circuit has poor connection, the voltmeter may show the normal value, but the voltage can not drive the load successfully.

2. Test Light with Self-supply and Ohmmeter

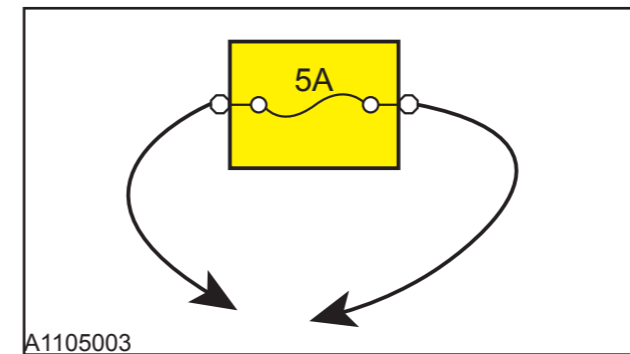


Use test light with own 12V power supply or ohmmeter to test the circuit continuity. Test light comprises a bulb, battery and a pair of wires. The bulb will be lit when the two wires contacted. Before test, disconnect the battery negative and pull out the fuse of the circuit to be tested. To test the circuit continuity, contact two wires to the two measurement points. If the bulb is lit, it means the circuit is continuous.

Warning: DO NOT use test light with self-supply to test the control module. To do so, it could damage the circuit inside the control module. Please use a ohmmeter with 10M Ω or higher internal impedance.

Ohmmeter has the same usage method as voltmeter, but ohmmeter can show the impedance value. The lower impedance, the better continuity.

3. Jumper with Fuse

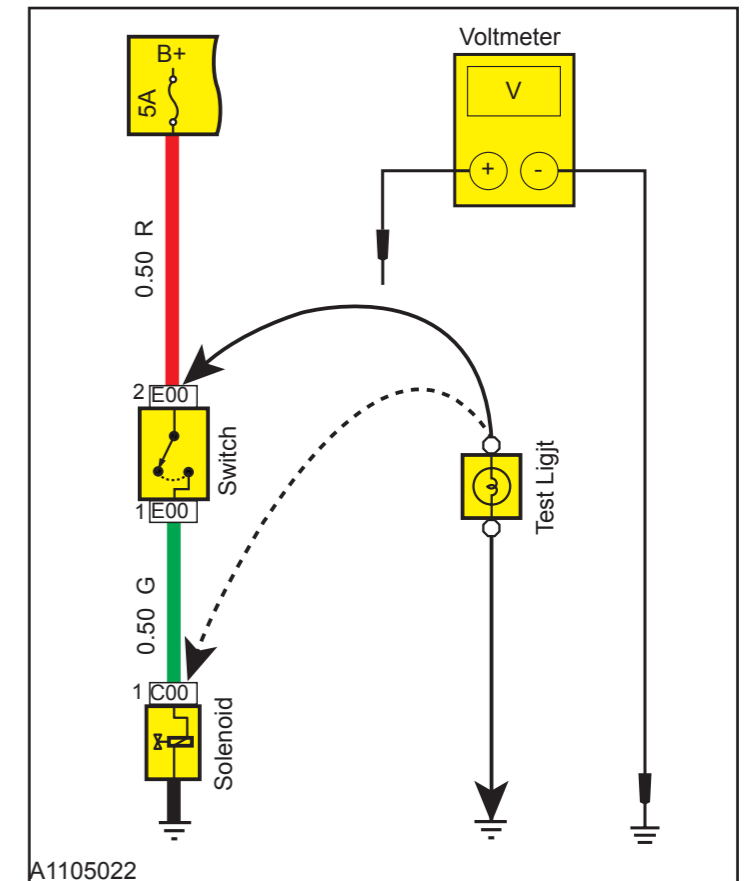


Use jumper to test a broken point for open loop circuit (circuit broken). The jumper should be in tandem with the circuit to be tested.

Warning: To protect the circuit, DO NOT use the fuse with higher rated capacity than the circuit to be tested. DO NOT use the jumper as the input or output signal when a control module like ECM, TCM is in the circuit. To do so, it could damage the circuit inside the control module.

Fault Test

1. Voltage Test

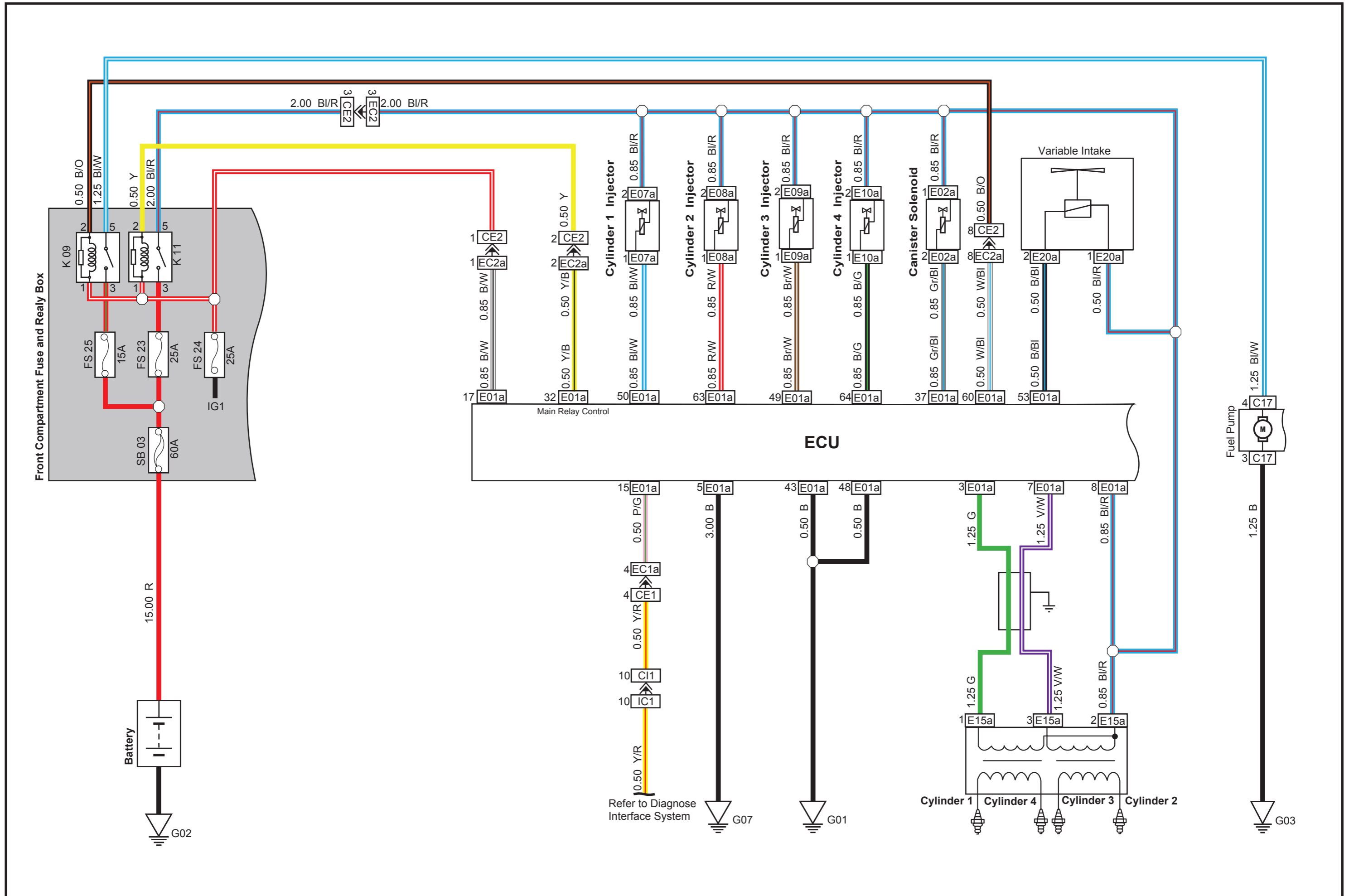


Voltage test process is to test the voltage at a certain point. When testing the connector terminals, insert the positive probe into the wire instead of breaking the harness.

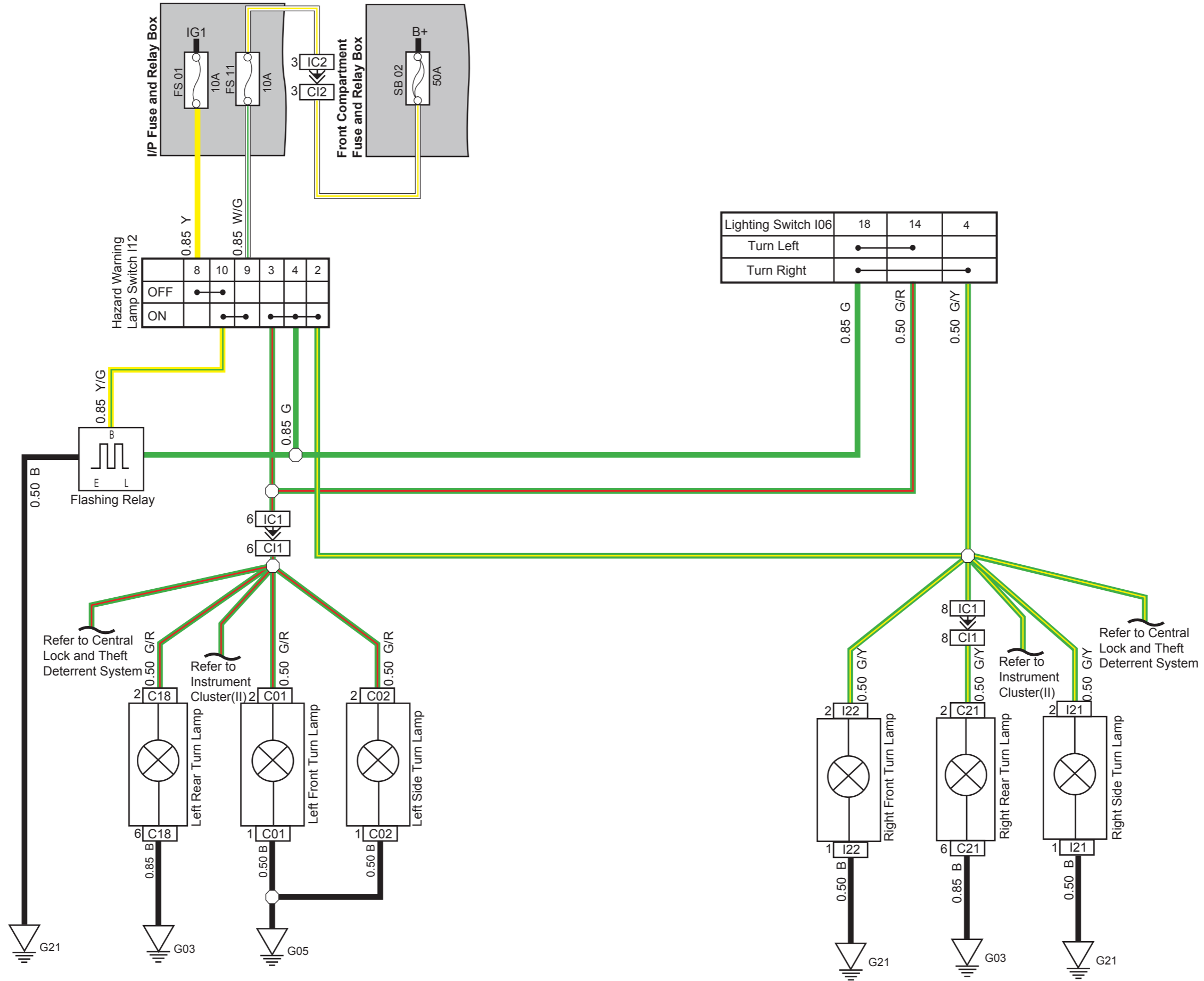
1. When testing the voltage with test light or voltmeter, connect the negative wire of the test light or the negative probe of the voltmeter to the ground.

2. Connect the other wire of the test light or the positive probe of the voltmeter to the place to be tested.

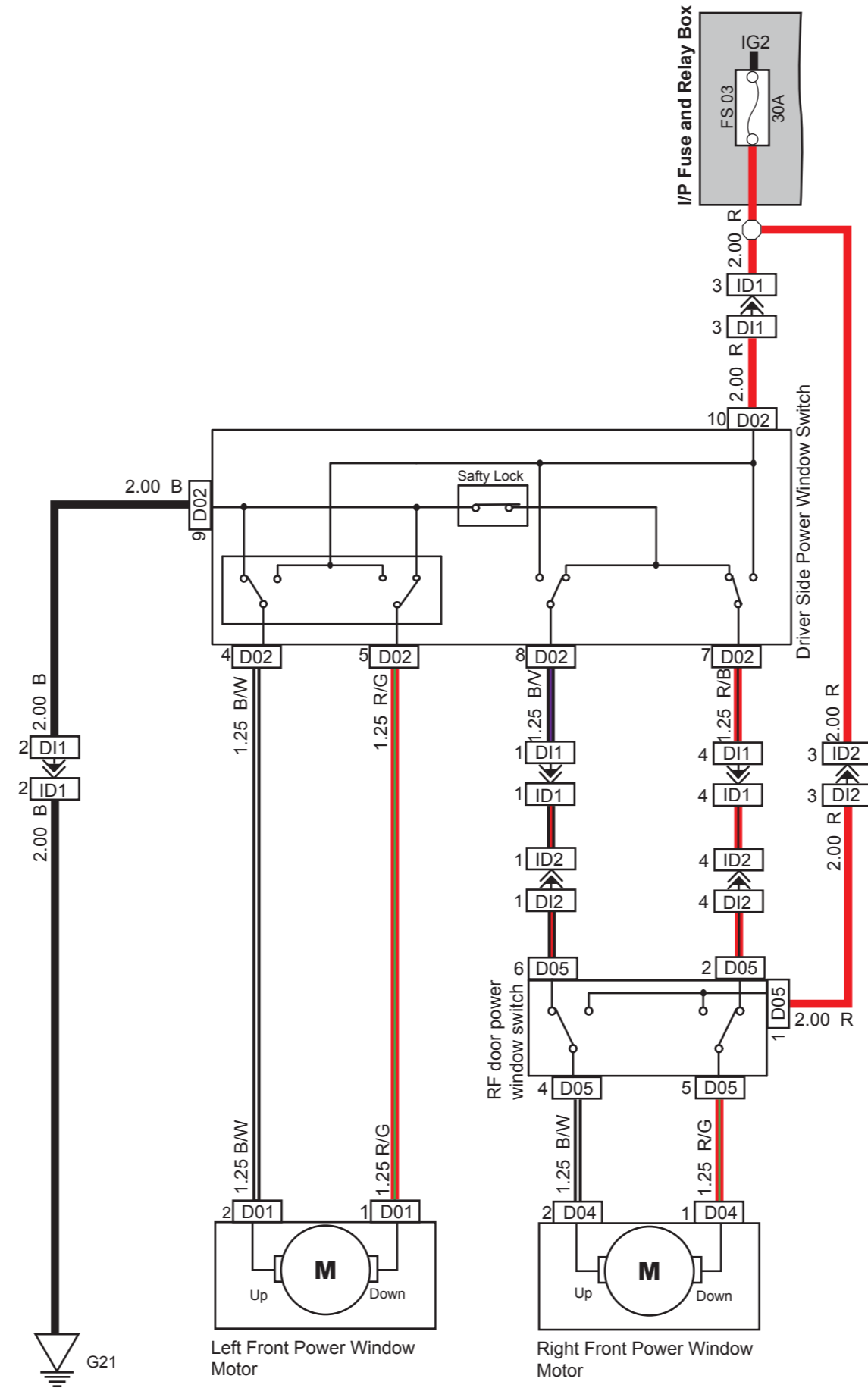
Ignition System / Fuel System(LF470Q-h)



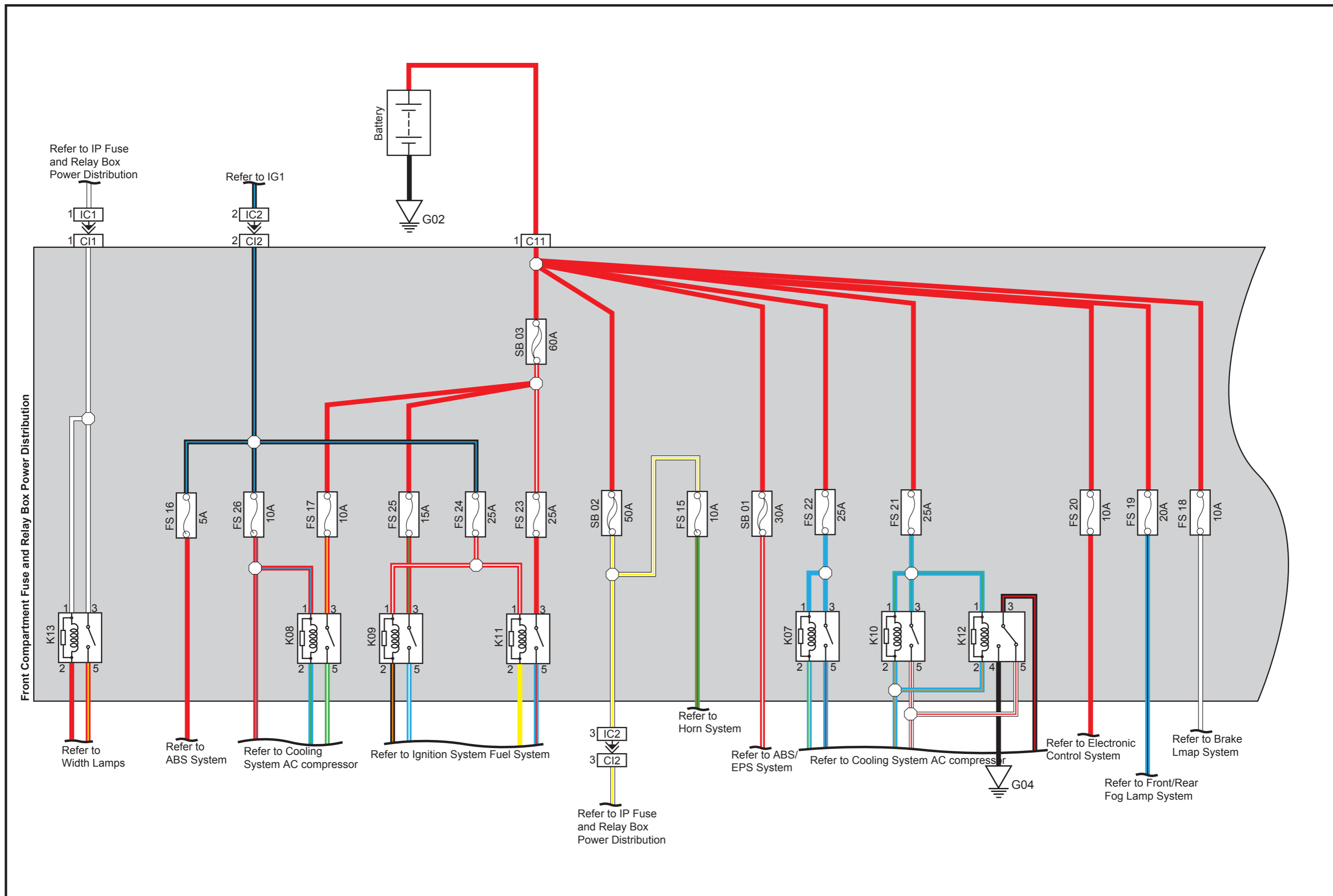
Left / Right Turn Lamp / Hazard Warning Lamp



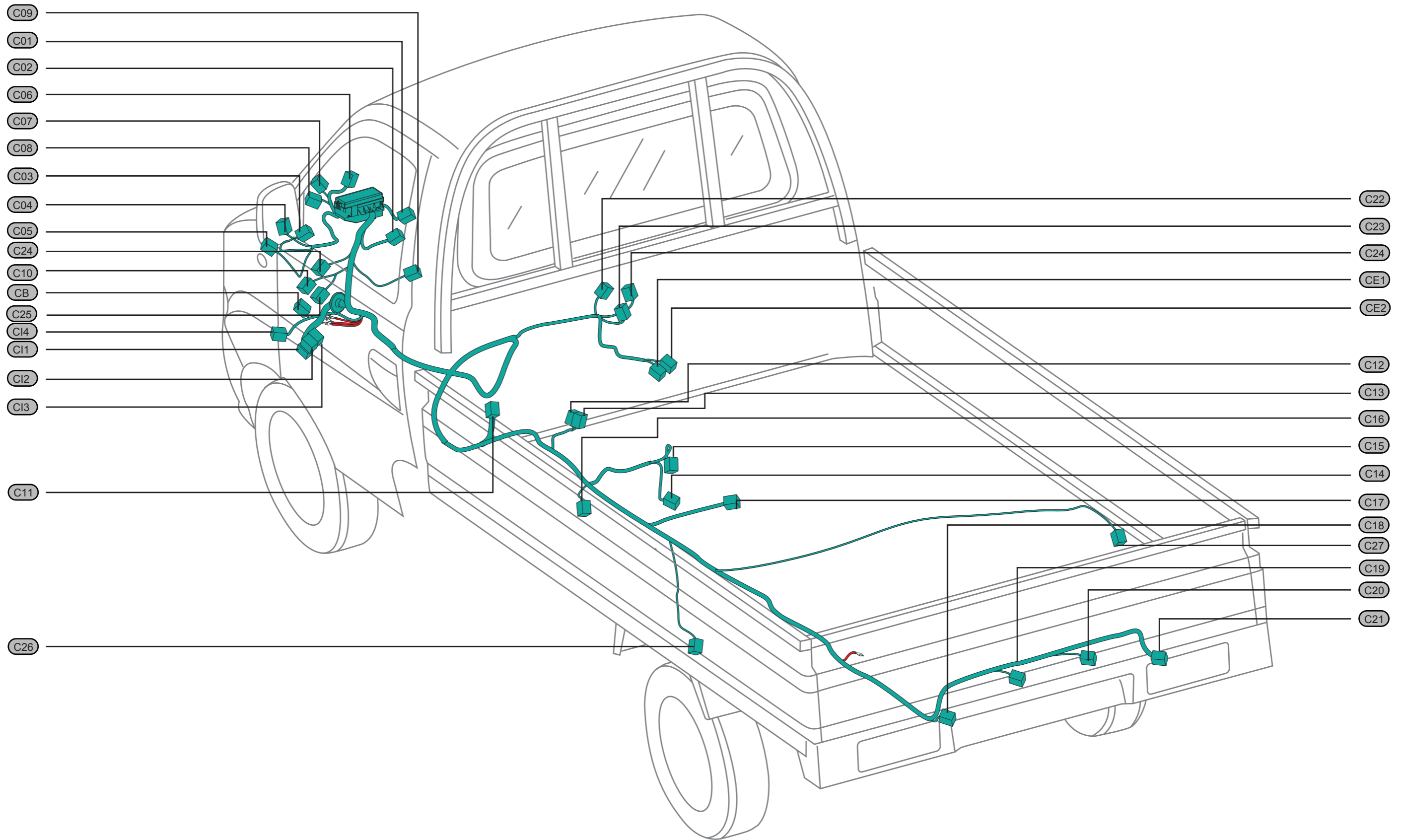
Power Window



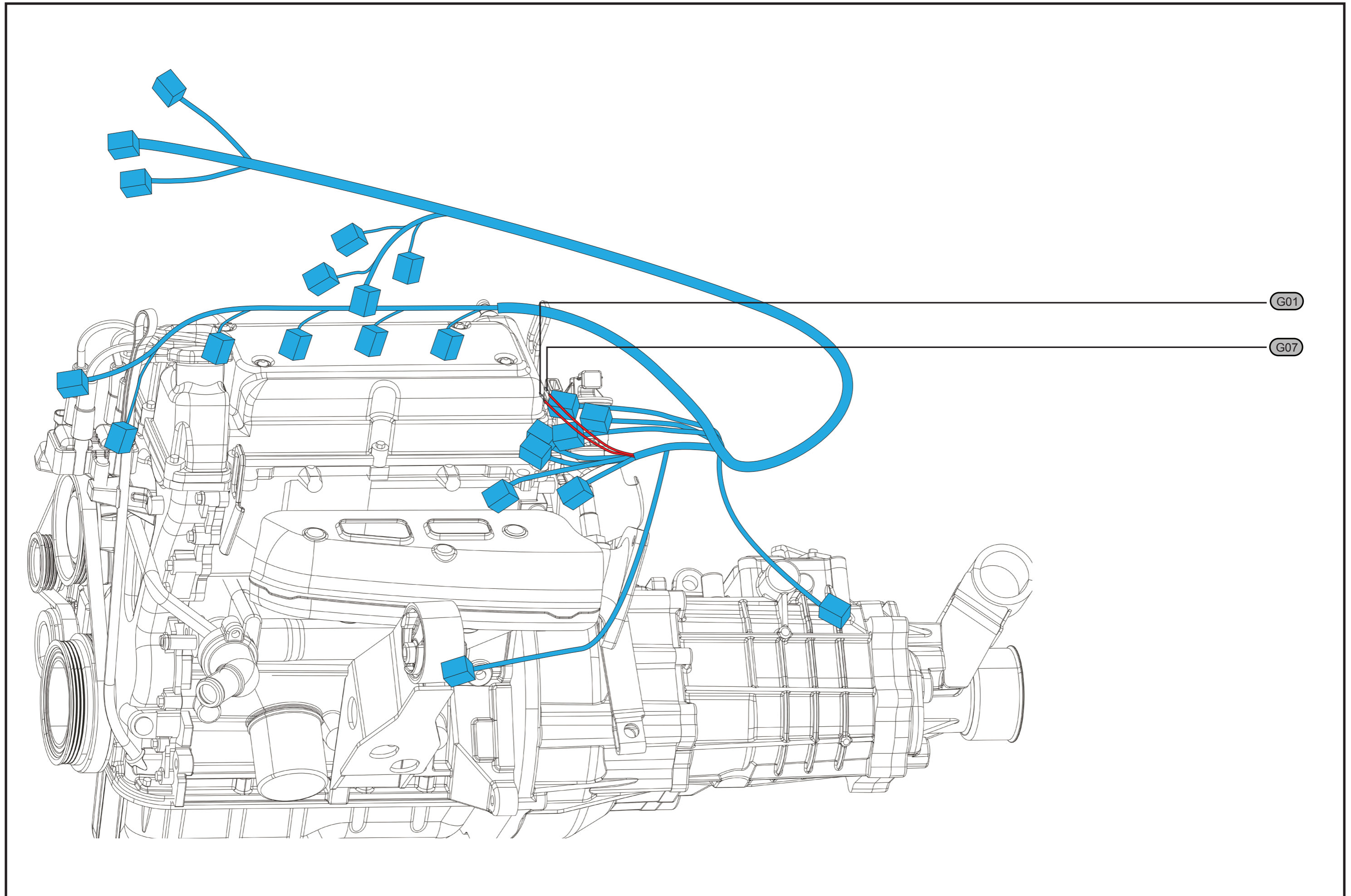
Front Compartment Fuse and Relay Box Power Distribution



Chassis Harness Connector Location View



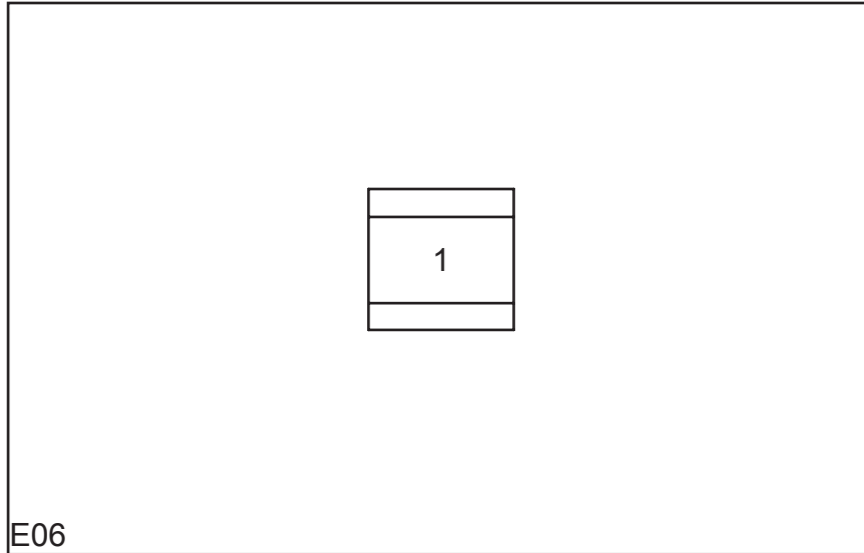
Ground Point Location View-G01-G07(LF470Q-h)



Harness Connector View

Engine Harness Connector (E--)

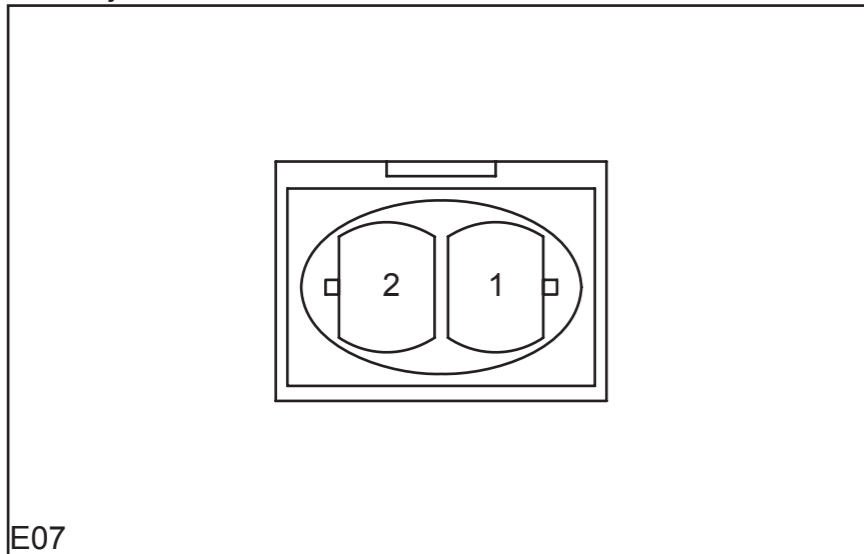
Oil Pressure Alarming Connector



E06 Pin Definition

Pin Number	Wire Width / Color	Function
1	0.50 G/BI	Oil pressor indicator signal

No.1 Injector Connector Connector

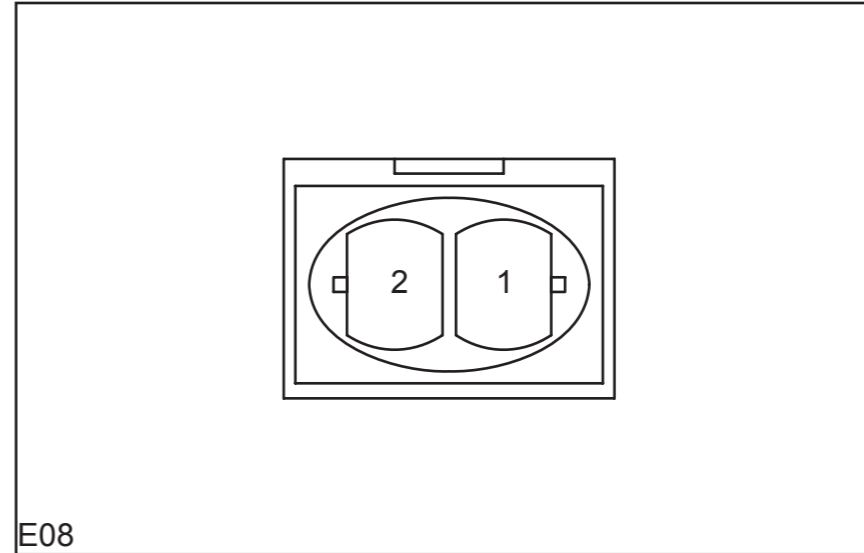


E07 Pin Definition

Pin Number	Wire Width / Color	Function
1	0.85 O/B	Signal
2	0.85 BI/R	Power

Engine Harness Connector (E--)

No.2 Injector Connector Connector



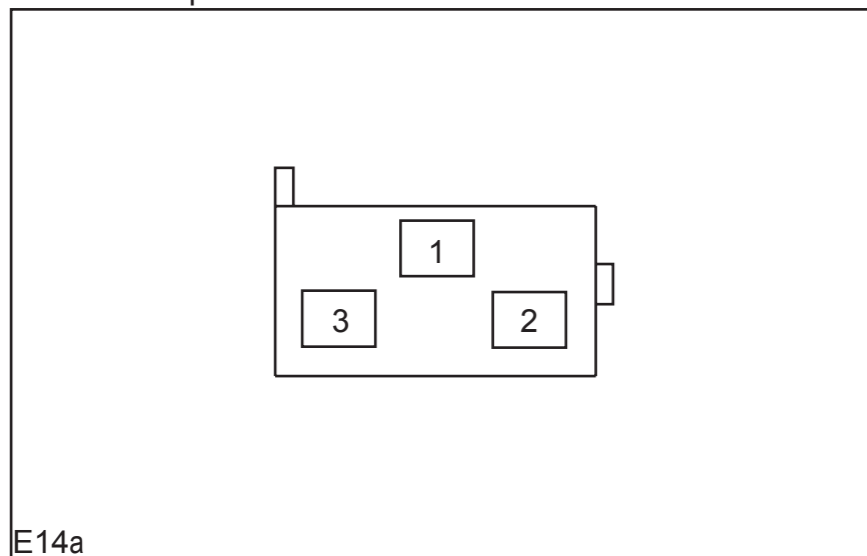
E08 Pin Definition

Pin Number	Wire Width / Color	Function
1	0.85 Y/R	Signal
2	0.85 BI/R	Power

Harness Connector View

Engine Harness Connector (E--)

Coolant Temperature Sensor Connector

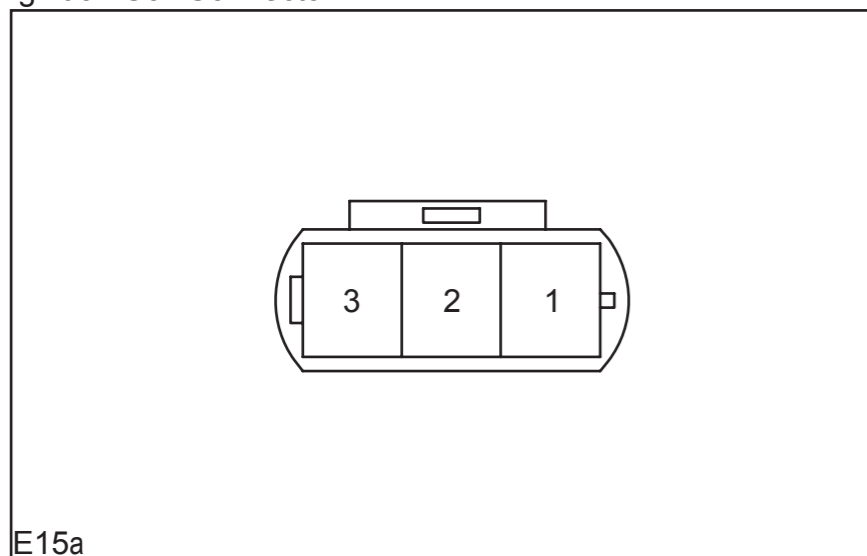


E14a

E14a Pin Definition

Pin Number	Wire Width / Color	Function
1	0.50 G/B	Coolant temperature sensor indicator signal
2	0.50 B/BI	Coolant temperature sensor signal
3	0.50 BI/W	Ground

Ignition Coil Connector



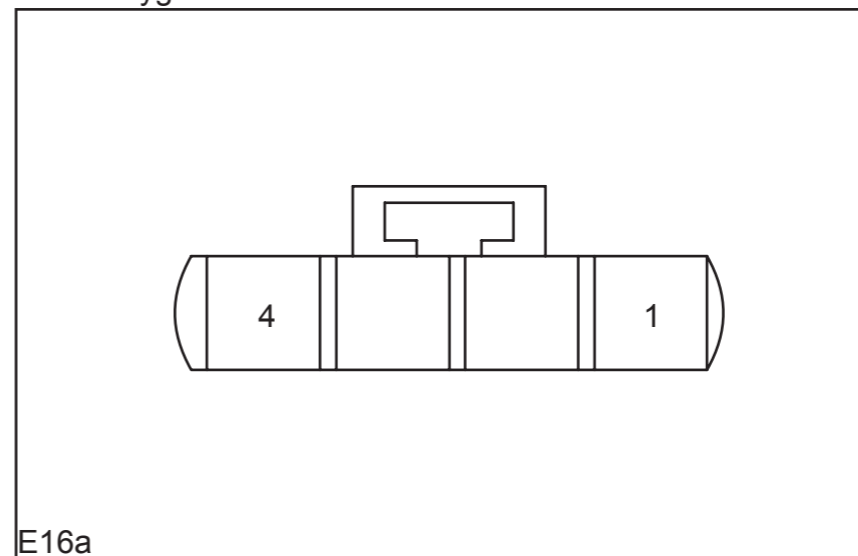
E15a

E15a Pin Definition

Pin Number	Wire Width / Color	Function
1	1.25 G	1 and 4 ignition coil
2	0.85 BI/R	Ignition switch power
3	1.25 V/W	2 and 3 ignition coil

Engine Harness Connector (E--)

Front Oxygen Sensor Connector

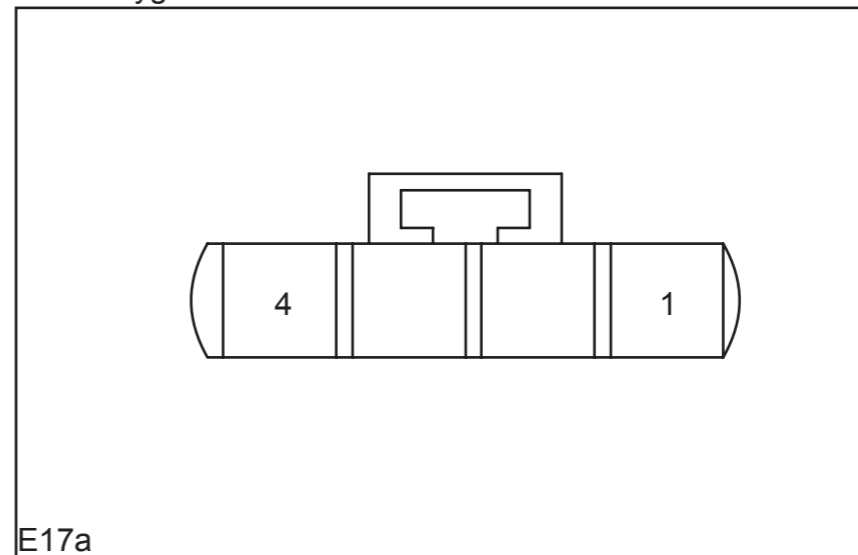


E16a

E16a Pin Definition

Pin Number	Wire Width / Color	Function
1	1.25 BI/R	Power
2	1.25 G/R	Oxygen sensor heating signal
3	0.50 O/Y	Signal
4	0.50 Br/P	GND

Rear Oxygen Sensor Connector



E17a

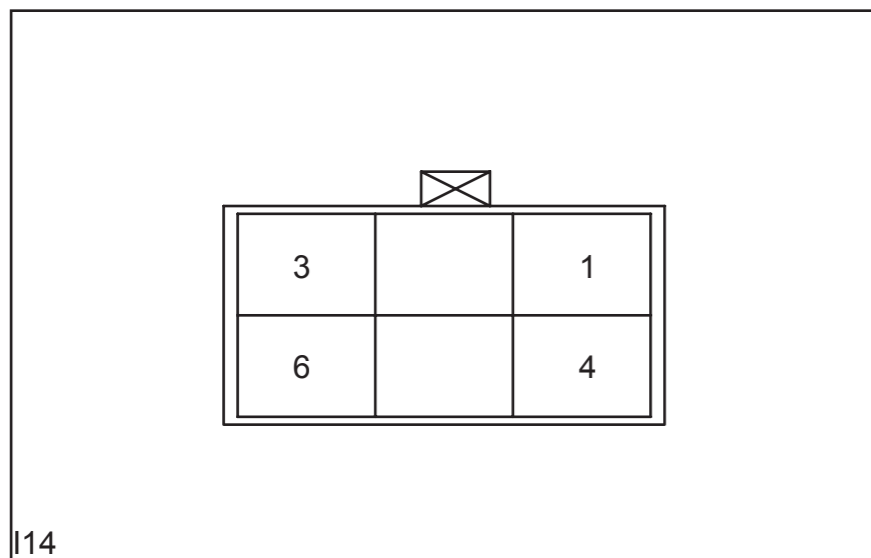
E17a Pin Definition

Pin Number	Wire Width / Color	Function
1	1.25 BI/R	Power
2	1.25 B	Oxygen sensor heating signal
3	0.50 Gr	Heating control
4	0.50 Br/B	GND

Harness Connector View

Instrument Harness Connector (I--)

A/C Control Panel A Connector

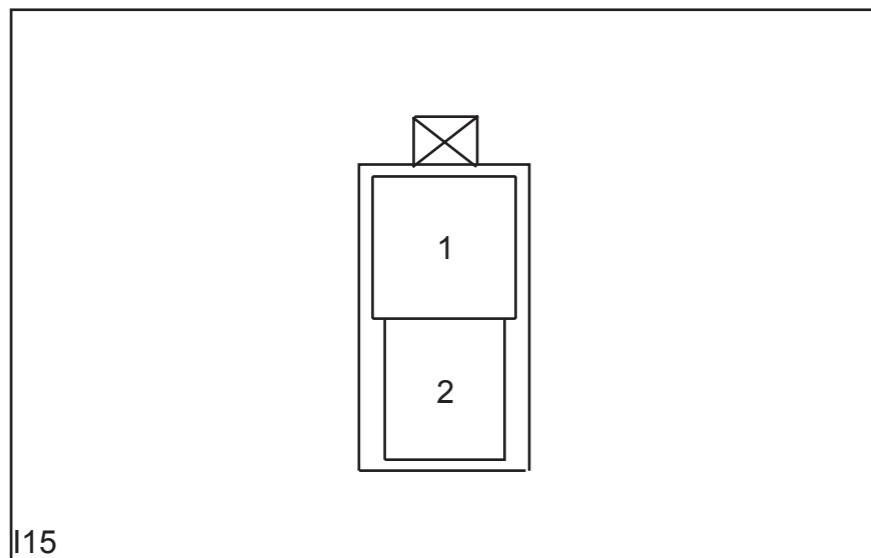


I14

I14 Pin Definition

Pin Number	Wire Width / Color	Function
1	1.25 P/BI	Blower adjust speed power
2	1.25 P/B	Ground
3	2.00 P/G	Power
4	1.25 P	Blower adjust speed power
5	0.50 B/R	A/C switch power
6	0.50 P/G	Blower adjust speed power

A/C Control Panel B Connector



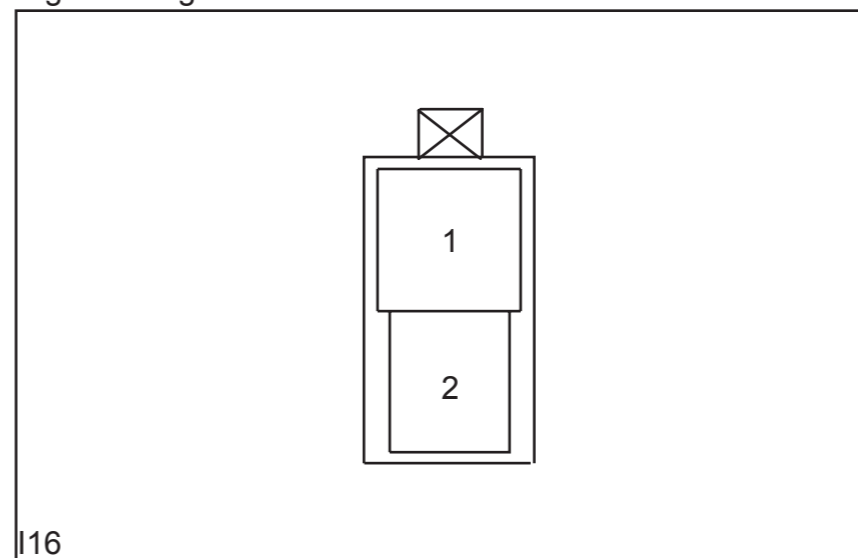
I15

I15 Pin Definition

Pin Number	Wire Width / Color	Function
1	0.50 R/Y	Width lamp power
2	0.50 B	Ground

Instrument Harness Connector (I--)

Cigarette Lighter Connector

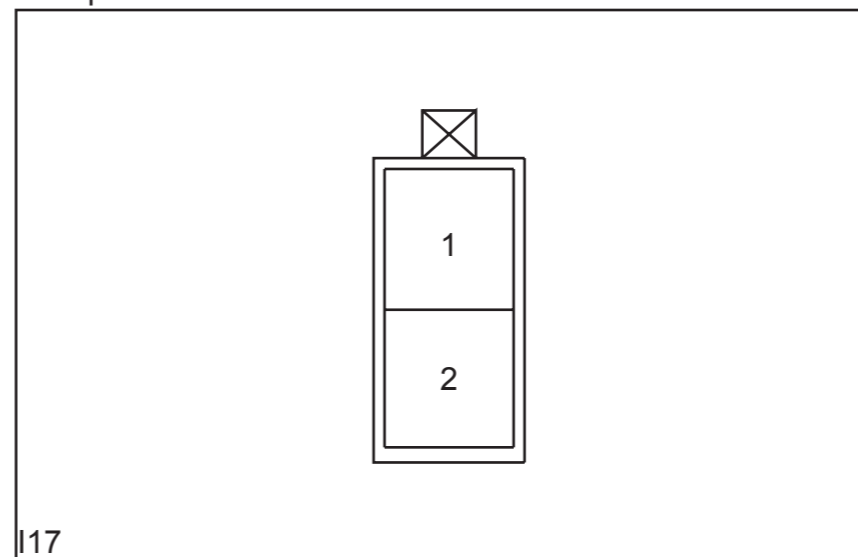


I16

I16 Pin Definition

Pin Number	Wire Width / Color	Function
1	1.25 B	Power
2	1.25 BI	Ground

RF Speaker Connector



I17

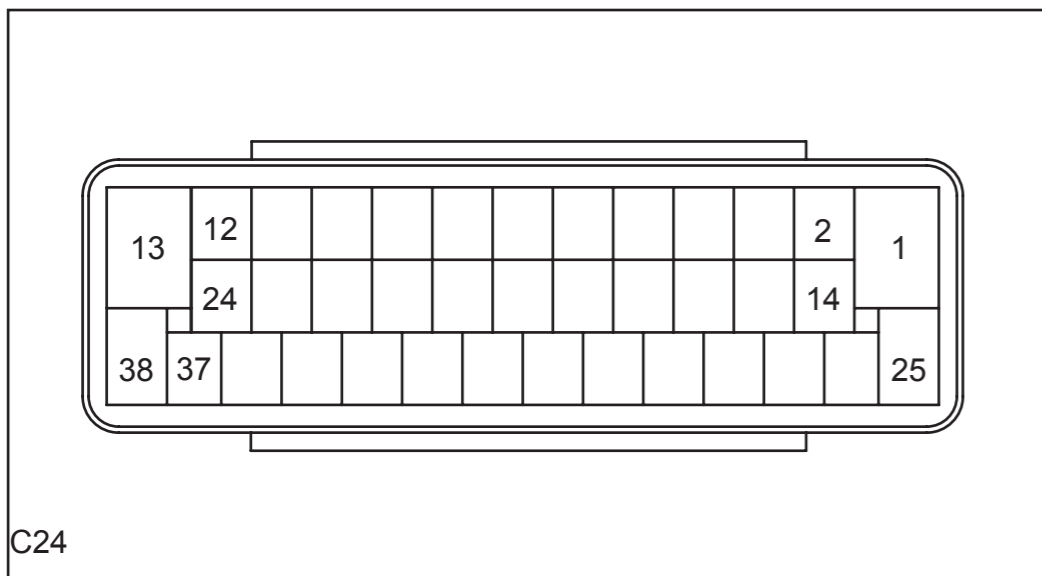
I17 Pin Definition

Pin Number	Wire Width / Color	Function
1	0.50 R/B	Right front speaker power +
2	0.50 R	Right front speaker power -

Harness Connector View

Chassis Harness Connector (C--)

ABS HCU Connector



C24 Pin Definition

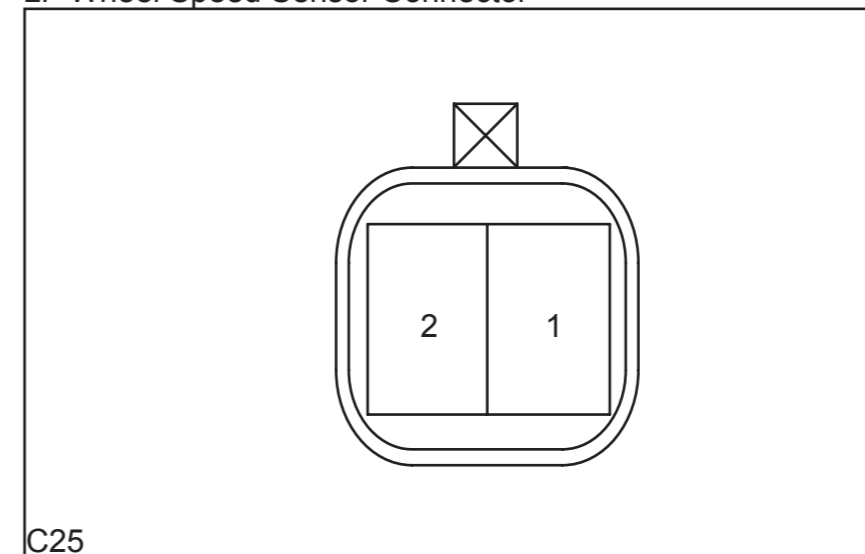
Pin Number	Wire Width / Color	Function
1	5.00 W	Power
2		NC
3		NC
4	0.50 Br/B	RF wheel speed sensor signal
5		NC
6	0.50 Y/R	K-line
7		NC
8	0.50 Br/Y	LF wheel speed sensor signal
9		NC
10		NC
11		NC
12		NC
13	5.00 B	Ground
14		NC
15	0.50 Br/P	RR wheel speed sensor signal
16	0.50 Br/O	RF wheel speed sensor signal
17		NC
18	0.50 Br/BI	LR wheel speed sensor signal
19	0.50 Br/W	LF wheel speed sensor signal
20		NC
21	0.50 Y/B	Brake system fault indicator signal
22		NC
23		NC
24		NC
25	3.00 W/R	Power
26		NC
27		NC
28	0.50 R	Power

Chassis Harness Connector (C--)

C24 Pin Definition

Pin Number	Wire Width / Color	Function
29	0.50 Br/G	RR wheel speed sensor signal
30		NC
31	0.50 Br/Gr	LR wheel speed sensor signal
32		NC
33	0.50 Br	ABS fault indicator signal
34	0.50 G/W	Brake lamp switch power
35		NC
36		NC
37		NC
38	3.00 B	Ground

LF Wheel Speed Sensor Connector



C25

C25 Pin Definition

Pin Number	Wire Width / Color	Function
1	0.50 Br/Y	Signal
2	0.50 Br/W	Signal