Statement

This manual contains five major tools for circuit fault inspection and removal.

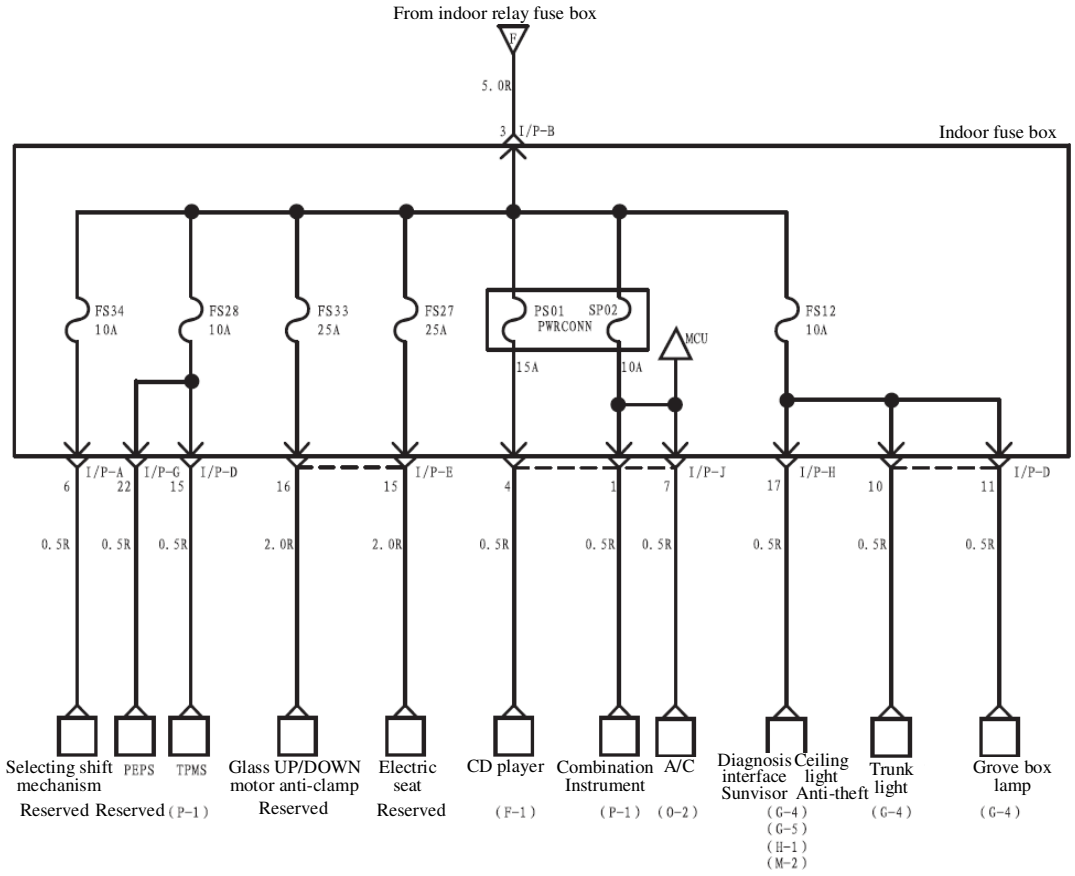
- Circuit diagram
- Component location index
- Component location diagram
- Guide wire connector shape
- wire harness layout

Circuit Diagram

Every system starts from its circuit diagram. The circuit diagrams illustrate all working paths for each component. Such as, power supply and ground wire for electrical load, guide wire connector location as well as fuse and switches constituting the circuits.

To diagnose and remove the faults, it shall firstly know the circuit diagram sufficiently.

Indoor fuse system layout (3) A-8



Notation

This manual uses the following electrical notations, electrical symbols and abbreviated names.

Notation in circuit diagram

Component

The full line means all components are visible

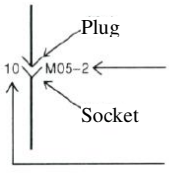
Dotted line means only parts of the components are visible

Switches such as brakes (step on the brake pedal to switch off)

The name is marked on the up right corner of the component

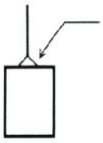
The explanation for the function of the component is followed the name

Connector

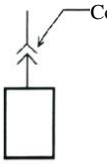


Connector number

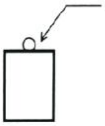
Connector terminal number



Connector directly connects to components



Connect to components via wire

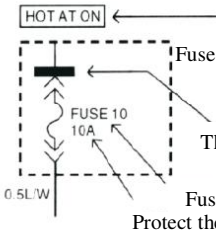


Screw terminal of components

Diode

Diode indicates that the current can only flow according to the direction of the arrow

Fuse and fusible wire



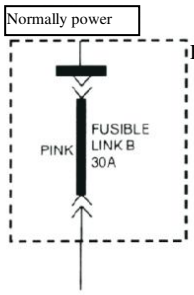
Power is on when in "On"

Fuse box

The short terminal connects to other fuses

Fuse code

Protect the permissible current of the loop



Engine compartment relay box

Fusible plate
B 30A

Cutout

The cutout can be used repeatedly. It will break by heating in case of current overload. Some cutouts can automatically reset after cold cut while some shall be reset manually

Fault checking guide

Fault checking procedures

Check according to the following 5 steps

1. Verify the dissatisfaction of the user

It shall check the faulty circuit components complained by the user and make record for the correct repair and maintenance. It is forbidden to dismantle the vehicle before

2. Circuit diagram interpretation and analysis

Analyze and judge the whole circuit of the faulty component from power supply to ground wire according to the system circuit diagram, and confirm the operating method. If fails to judge the operating method, refer to the circuit working reference. And inspect other public circuits of the faulty circuit. Such as the public system circuits of fuse, ground wire and cutout on the circuit diagram. Inspect the public circuits failed to be checked in the first step. If the public circuits work normally, the problem lies in the circuit itself. If several circuits are problematic in the same time, it may be the problem of fuse or ground wire.

3. Circuit and component inspection

Inspect it for the second step by testers. Effective fault diagnosis shall be logical and simple operating process. It shall confirm the fault causes by fault diagnosis procedures or table. Start from the most possible reason and easiest checking component.

4,Fault maintenance

Repair necessarily in case of any fault.

5. Confirm circuit operation

After finished repairing, it shall recheck to confirm the fault has been removed. In case of fuse burnout, it shall inspect all circuits publicly using this fusible wire

Fault diagnosis devices

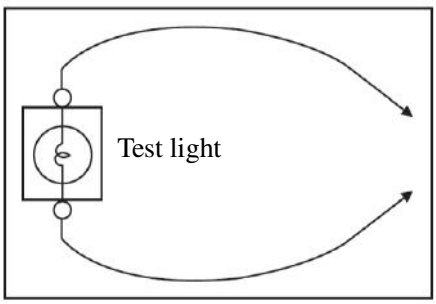
Voltmeter and test lamp

It can use test light or voltmeter to check circuit status and use test light to check whether there is voltage or not. The test light is composed of a pair of guide wire and 12V bulb. In inspection, one piece of guide wire connects to the ground wire while the other connects to certain measuring point. If the light turns on, this point is supplied with power.

Notice

When checking the voltage of electronic control module, such as the engine control module (ECM) of the electronic fuel injection engine, it shall (necessarily) use digital voltmeter with 10M or higher resistance to check. Checking the module circuit by test light may be damage the internal circuit. Therefore, never use test light to check the electrical circuits.

The application methods of voltmeter and test light are basically the same. The difference lies in the test light can only check whether there is voltage while the voltmeter can display the value of voltage.

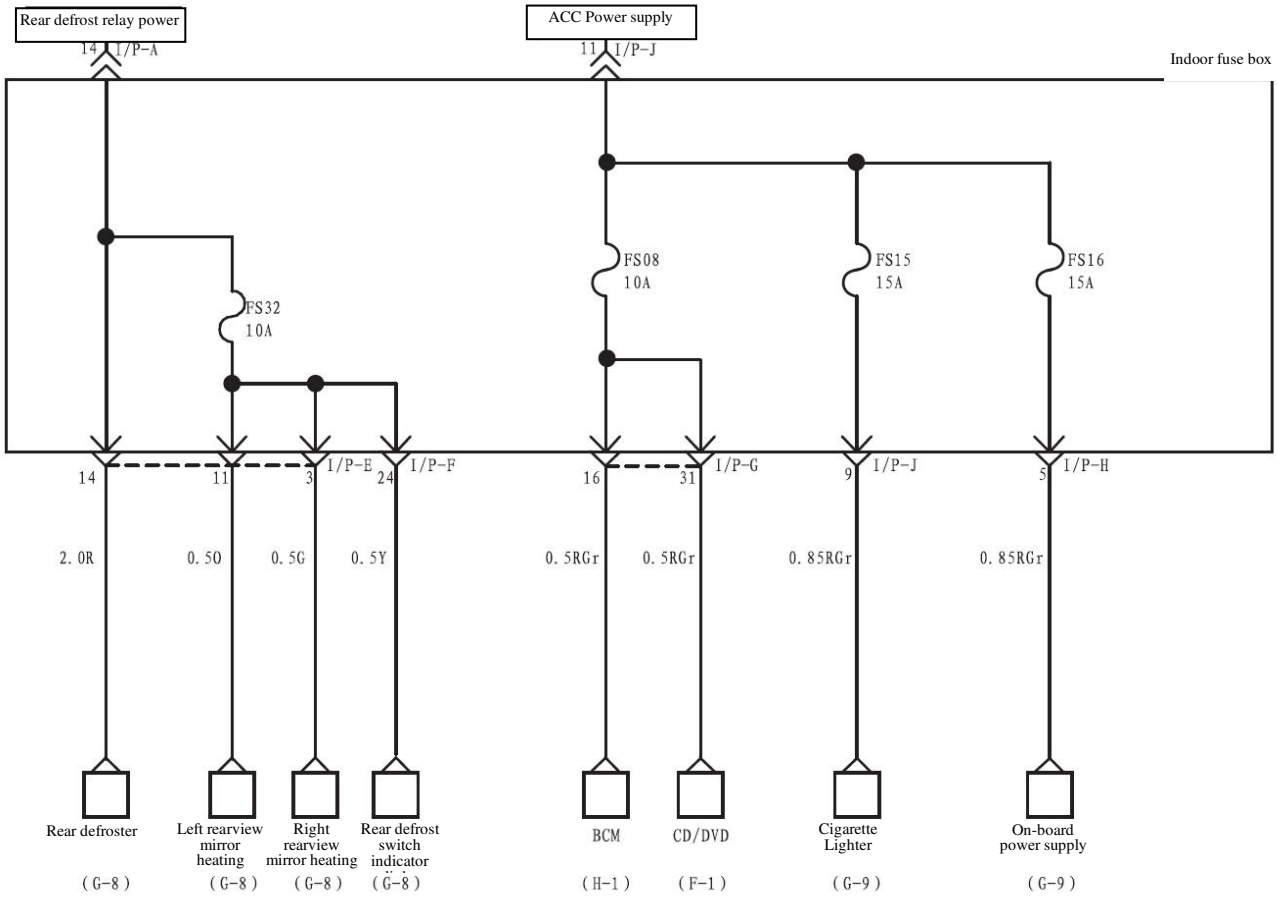


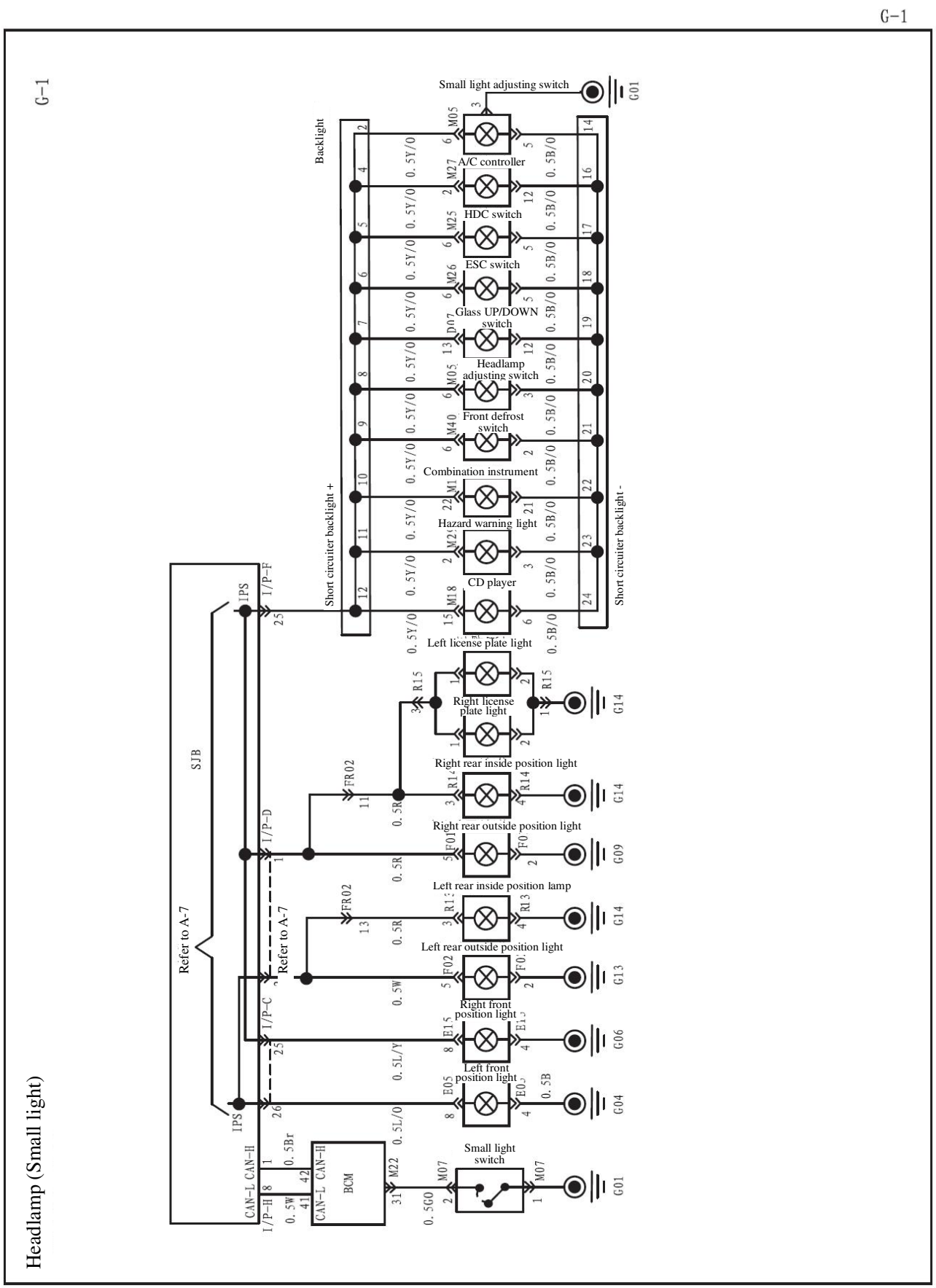
Test light and resistance meter with self contained power

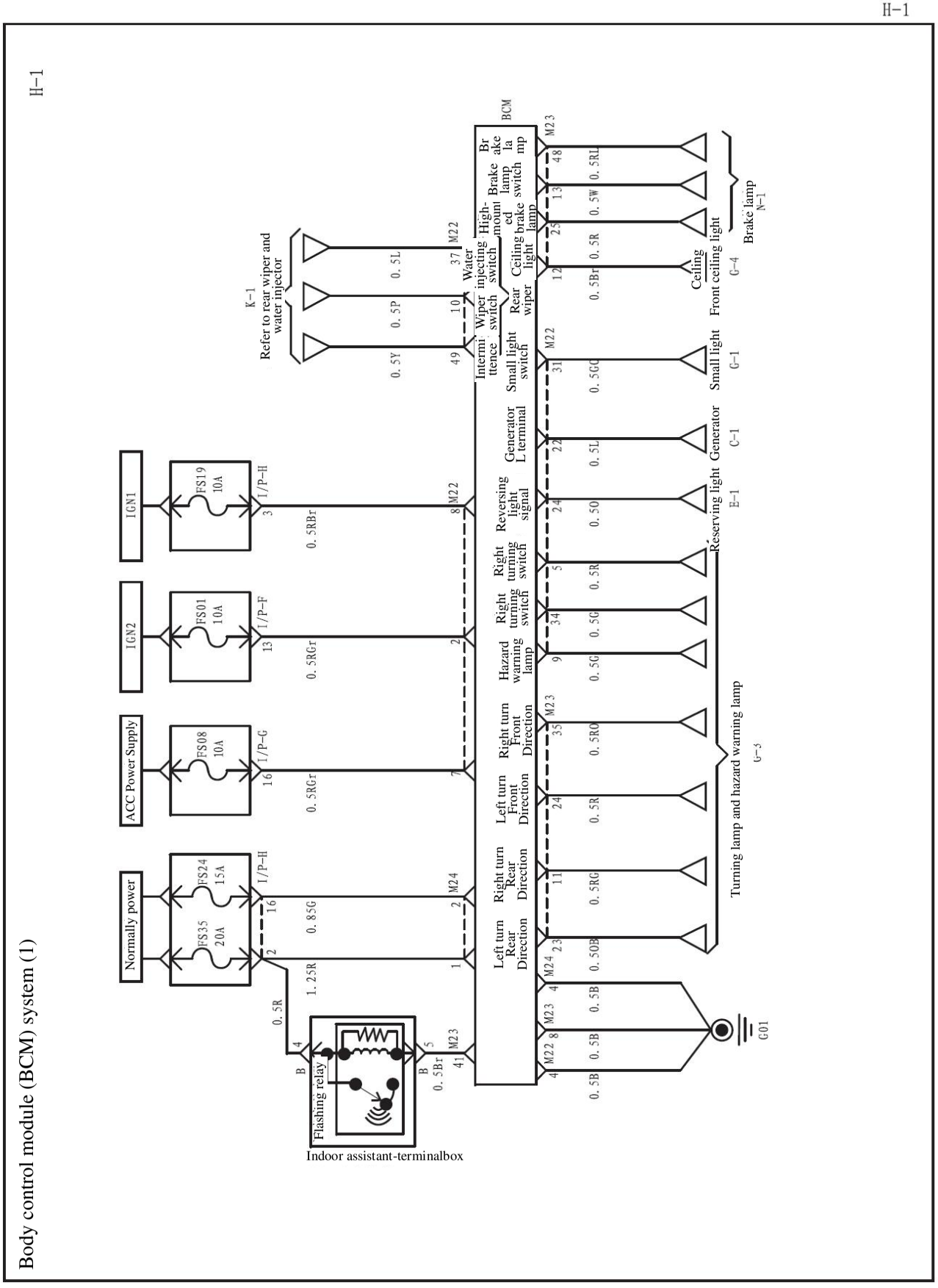
Check whether the circuit is accessible by the test light and resistance meter with self contained power. The test light with self contained power supply is composed of bulb, battery and two pieces of guide wire. The bulb turns on if the two pieces of guide wire connect. Before inspection, it shall dismantle battery negative guide wire and pull out the fuse of this circuit.

Indoor fuse system layout (4)

A-9

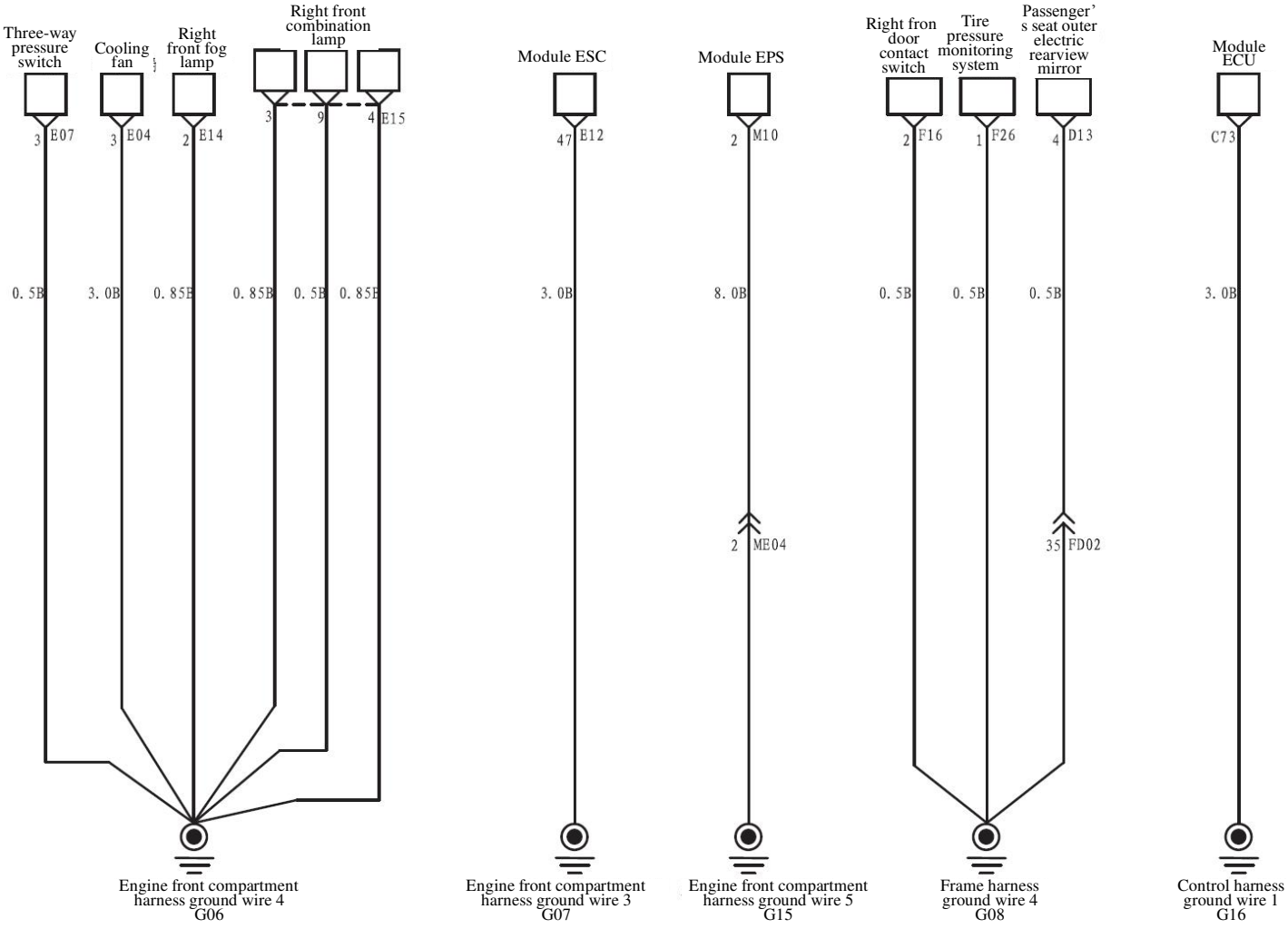



G-1
G-1
Headlamp (Small light)
Small light adjusting switch
G01
Backlight
A/C controller
HDC switch
ESC switch
Glass UP/DOWN switch
Headlamp adjusting switch
Front defrost switch
Combination instrument
Hazard warning light
CD player
Left license plate light
Right license plate light
Right rear inside position light
Right rear outside position light
Left rear inside position lamp
Left rear outside position light
Right front position light
Left front position light
Small light switch
Short circuiter backlight +
Short circuiter backlight -
SJB
IPS
I/P-F
I/P-D
I/P-C
I/P-H
CAN-L CAN-H
BCM
Refer to A-7
Refer to A-7
0.5Y/O
0.5B/O
0.5R
0.5W
0.5L/Y
0.5L/O
0.5Br
0.5G
0.5B


H-1
H-1
Body control module (BCM) system (1)
Normally power
ACC Power Supply
IGN2
IGN1
FS35 20A
FS24 15A
FS08 10A
FS01 10A
FS19 10A
I/P-H
I/P-G
I/P-F
I/P-H
0.5R
1.25R
0.85G
0.5RGr
0.5RGr
0.5RBr
Flashing relay
Indoor assistant-terminalbox
0.5Br
0.5B
0.5B
0.5B
G01
BCM
Left turn Rear Direction
Right turn Rear Direction
Left turn Front Direction
Right turn Front Direction
Hazard warning lamp
Right turning switch
Right turning switch
Reversing light signal
Generator L terminal
Small light switch
Intermittence
Wiper switch
Rear wiper
Water injecting switch
High-mounted brake lamp
Brake lamp switch
Brake lamp
0.5B
0.5GB
0.5R
0.5RG
0.5R
0.5RO
0.5G
0.5G
0.5R
0.5O
0.5L
0.5GC
0.5Y
0.5P
0.5L
0.5Br
0.5R
0.5W
0.5RL
K-1
Refer to rear wiper and water injector
Turning lamp and hazard warning lamp
G-3
Reserving light
E-1
Generator
C-1
Small light
G-1
Ceiling
Front ceiling light
G-4
Brake lamp
N-1

Ground wire layout (3)

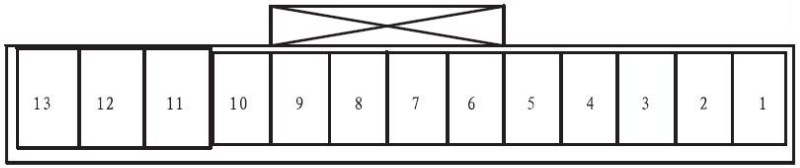
T-3



Main wire harness (11)

M07 Combination Switch 1

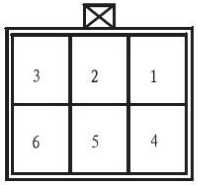
– 13 Female/White



1. B	Lighting switch grounding
2. GO	Small Lamp
3. YW	Auto-sensing
4. G	Headlamp switch
5. B	Front rear fog switch ground wire
6. WO	Front fog lamp switch
7. PB	Rear fog lamp switch
8. --	—
9. G	High beam light
10. P	Small lamp switch
11. RO	Left turn
12. B	Turning light switch
13. R	Rriht turn

M03 Ignition Switch

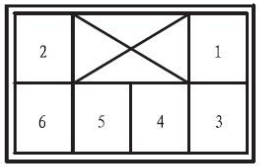
– 6 Female/natural color



1. R	B+	4. W	IG1
2. RB	IG2	5. R	B+
3. L	ST	6. O	ACC

M13 Key insert switch

– 6 Female/White

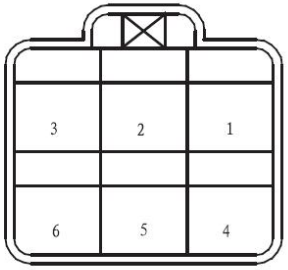


1. --	--	4. P	Key insert switch +
2. --	—	5. B	Lighting ring -
3. L	Key insert switch -	6. Gr	Lighting ring +

Reversing radar wire harness (1)

R16 Left rear fog lamp

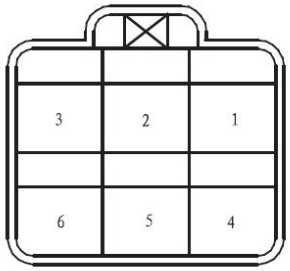
– 6 Female/black



1.	RW	Reversing light +
2.	— —	
3.	B	Reversing light -
4.	R	Fog lamp +
5.	— —	
6.	B	Fog lamp -

R17 Right rear fog lamp

– 6 Female/black

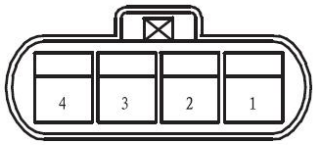


1.	RW	Reversing light +
2.	— —	
3.	B	Reversing light -
4.	R	Fog lamp +
5.	— —	
6.	B	Fog lamp -

Positive power aupply wire harness (1)

B1 Generator (LS)

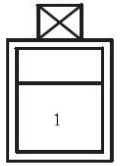
－4 Female/grey



1. —— ——
2. R Generator S terminal
3. W Generator L terminal
4. —— ——

B3 Oil pressure switch

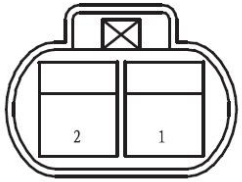
－1 Female



1. G Oil pressure switch

B2 Reversing switch

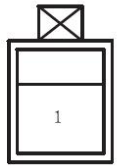
－2 Female



1. B GND
2. R Reversing switch power

B4 Starter solenoid valve

－1 Female



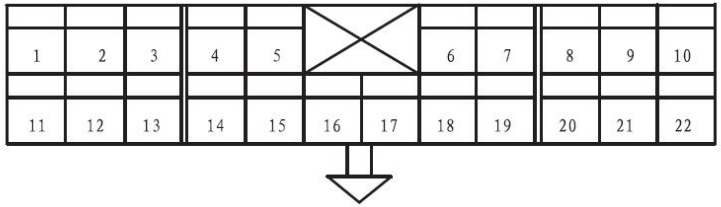
1. Y Starter solenoid valve

Wire harness connection (11)

MR01 Main wire harness connect with ceiling wireharness

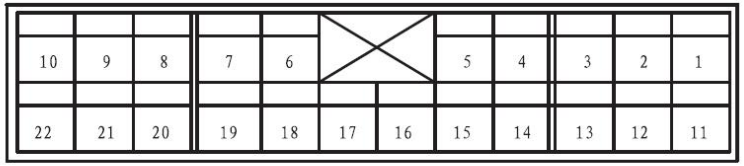
– 22 Male

– Main wire harness



– 22 Female

– Ceiling wire harness



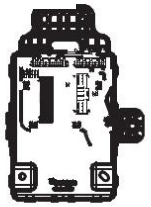
Ceiling wire harness side pin definition:

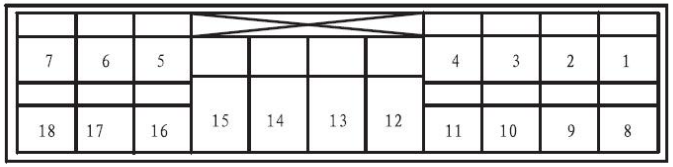
1. — —		9. Br	Ceiling light center control	17. — —	
2. — —		10. RGr	Sunroof controller power supply IG2	18. — —	
3. — —		11. — —		19. — —	
4. RGr	Interior rearview mirror power	12. — —		20. — —	
5. O	Reversing signal	13. — —		21. — —	
6. B	GND	14. — —		22. — —	
7. R	Sunroof controller power supply B+	15. — —			
8. R	Ceiling light, sunvisor power	16. — —			

Indoor terminal box (7)

I/P-H Indoor terminal box

– 18 Female

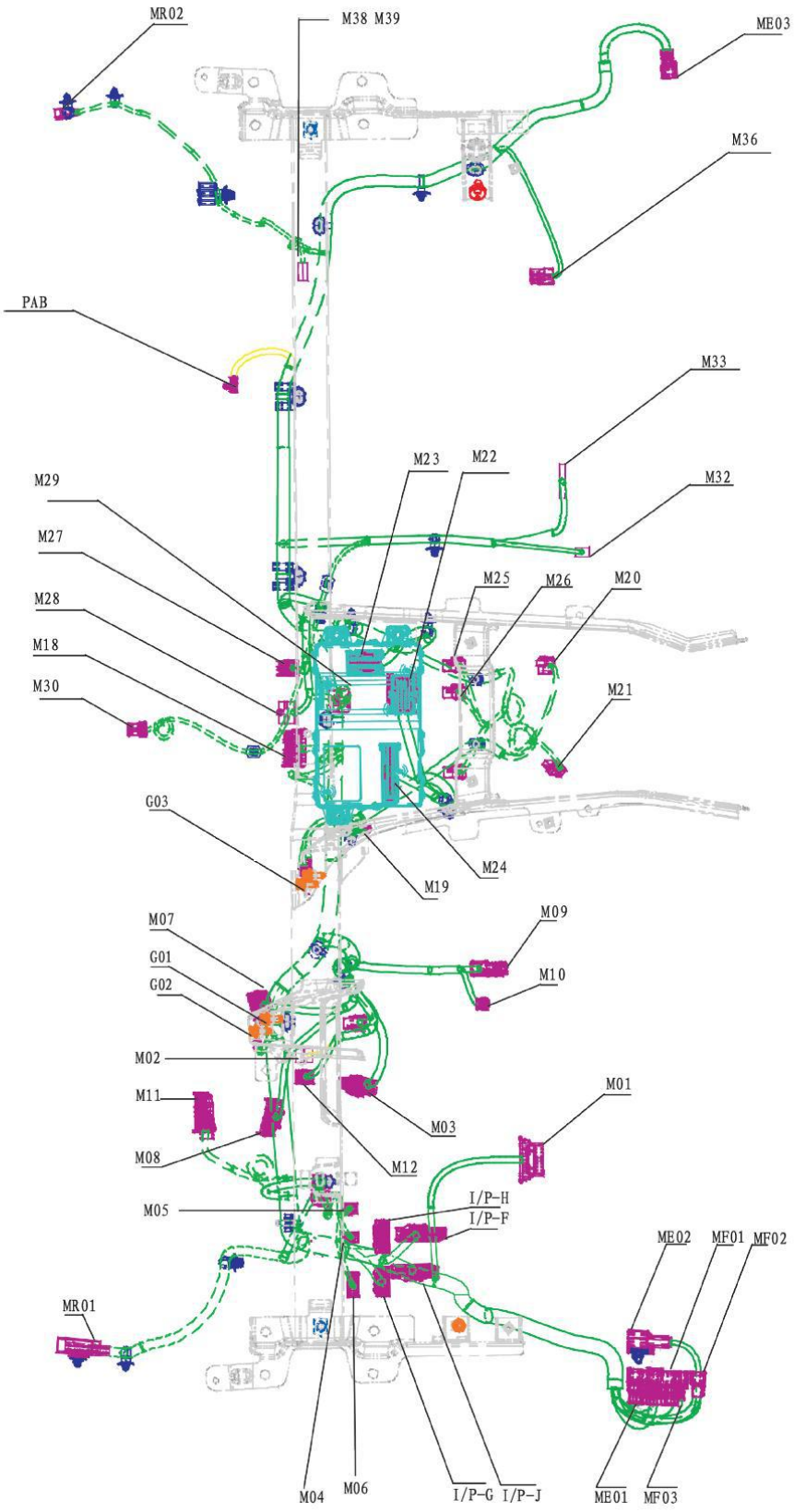




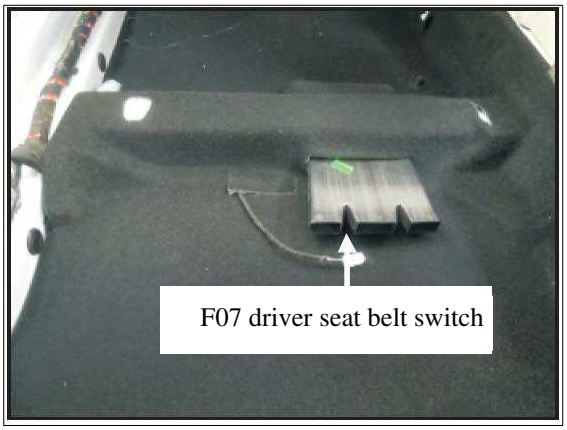
1. Br	CAN-H	11. — —	
2. R	BCM power B+	12. — —	
3. RBr	BCM power IG1	13. — —	
4. — —		14. W	Ignition switch IG1 power
5. RGr	On-board power-supply system+	15. — —	
6. — —		16. G	BCM power B+
7. R	Rear fog lamp power	17. R	Diagnosis interface, Ceiling power
8. W	CAN-L	18. RGr	Interior rearview mirror power IG2
9. — —			
10. B	GND		

Main Wire Harness

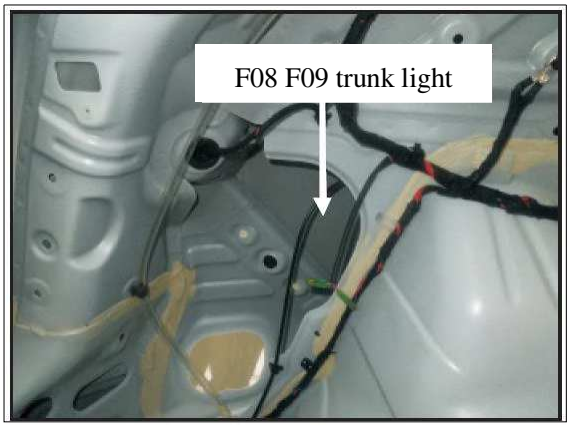
Main Wire Harness (1)



Frame Wire Harness (2)



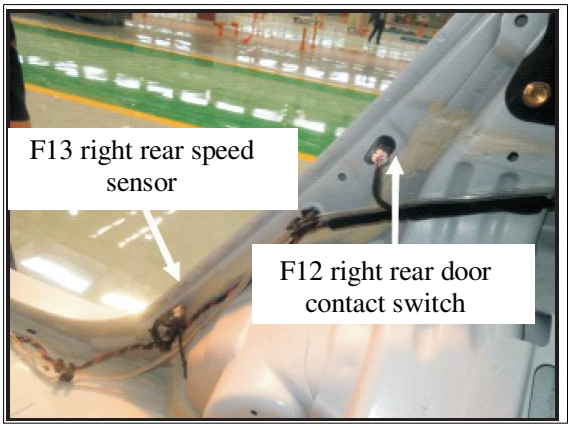
F07



F08 F09

F10

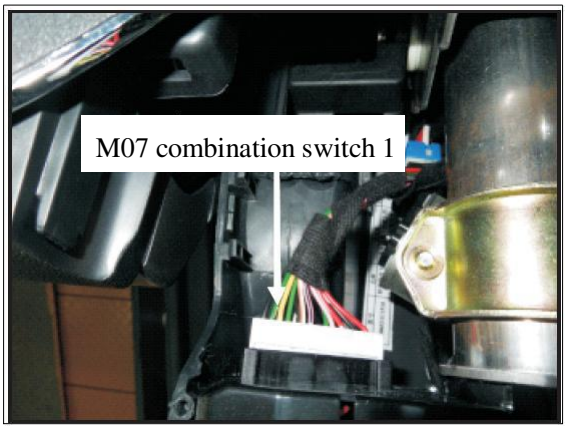
F11



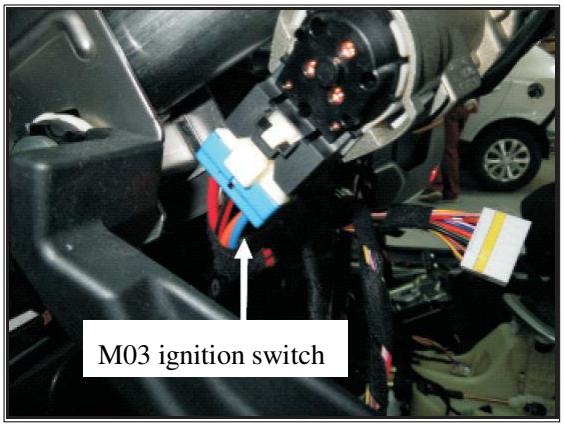
F12 F13

F14

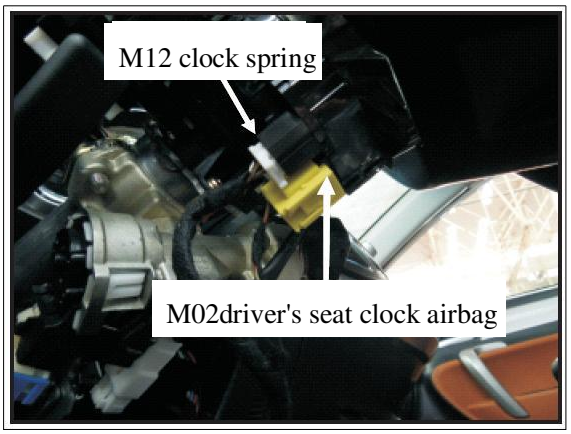
Main Wire Harness (4)



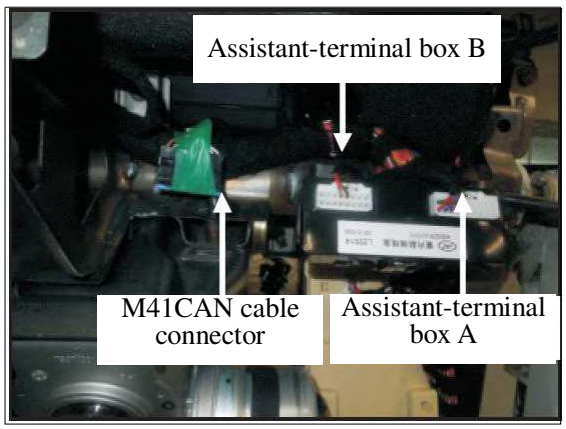
M07



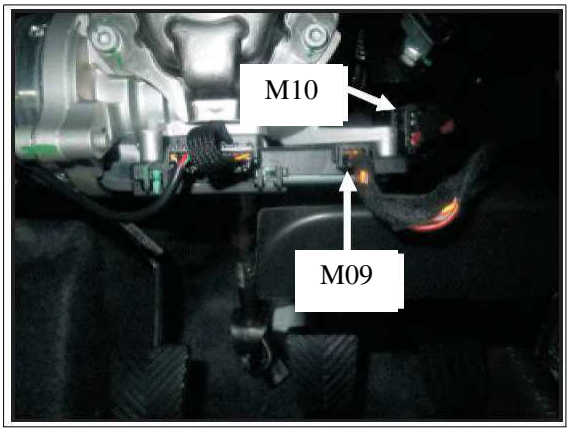
M03



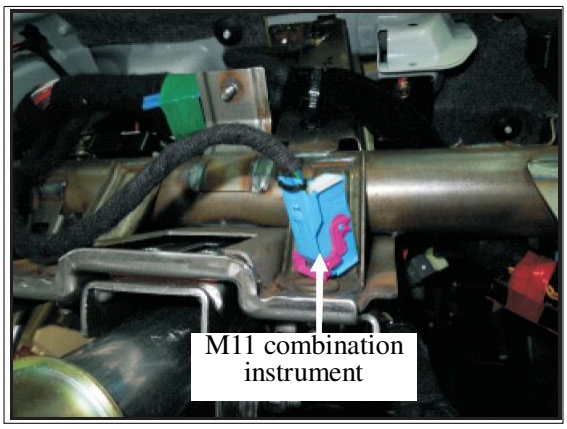
M02



M12



M09 M10



M11