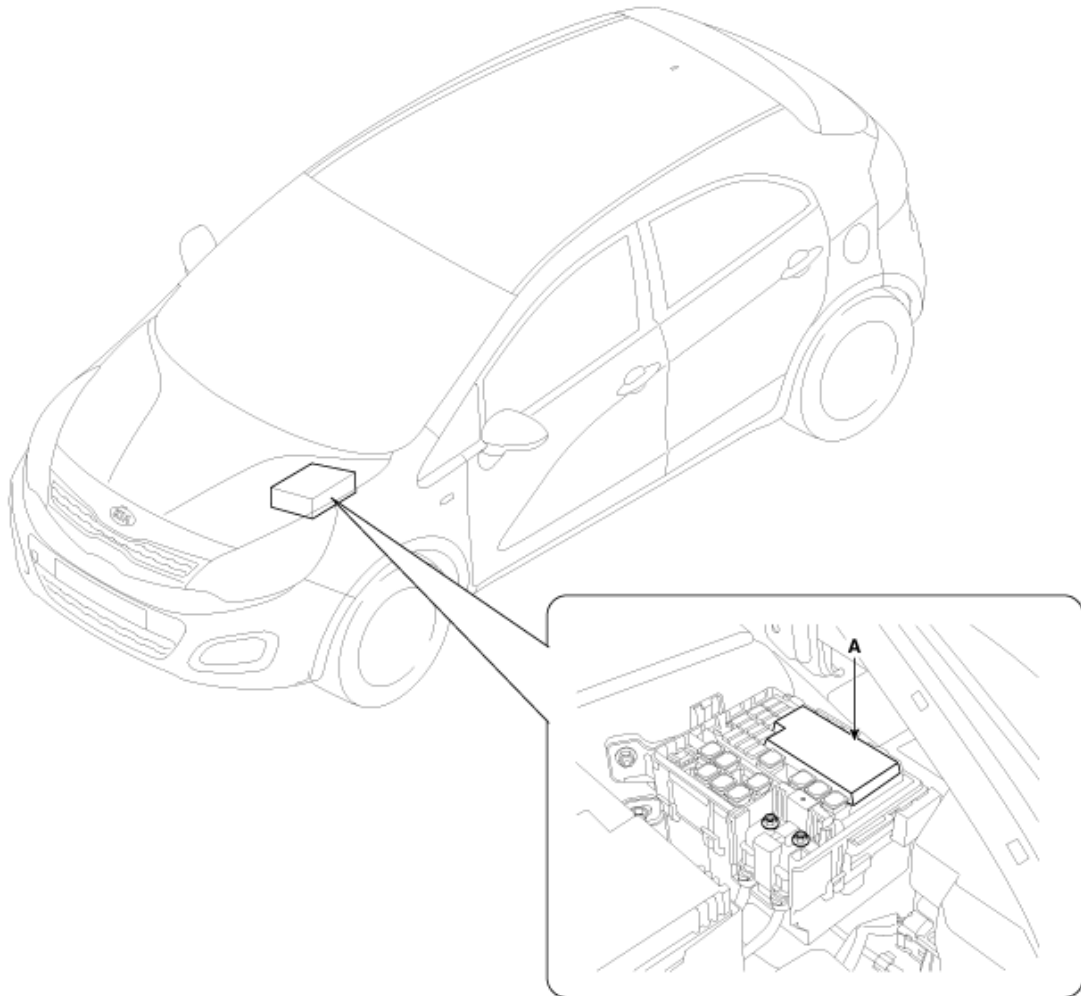


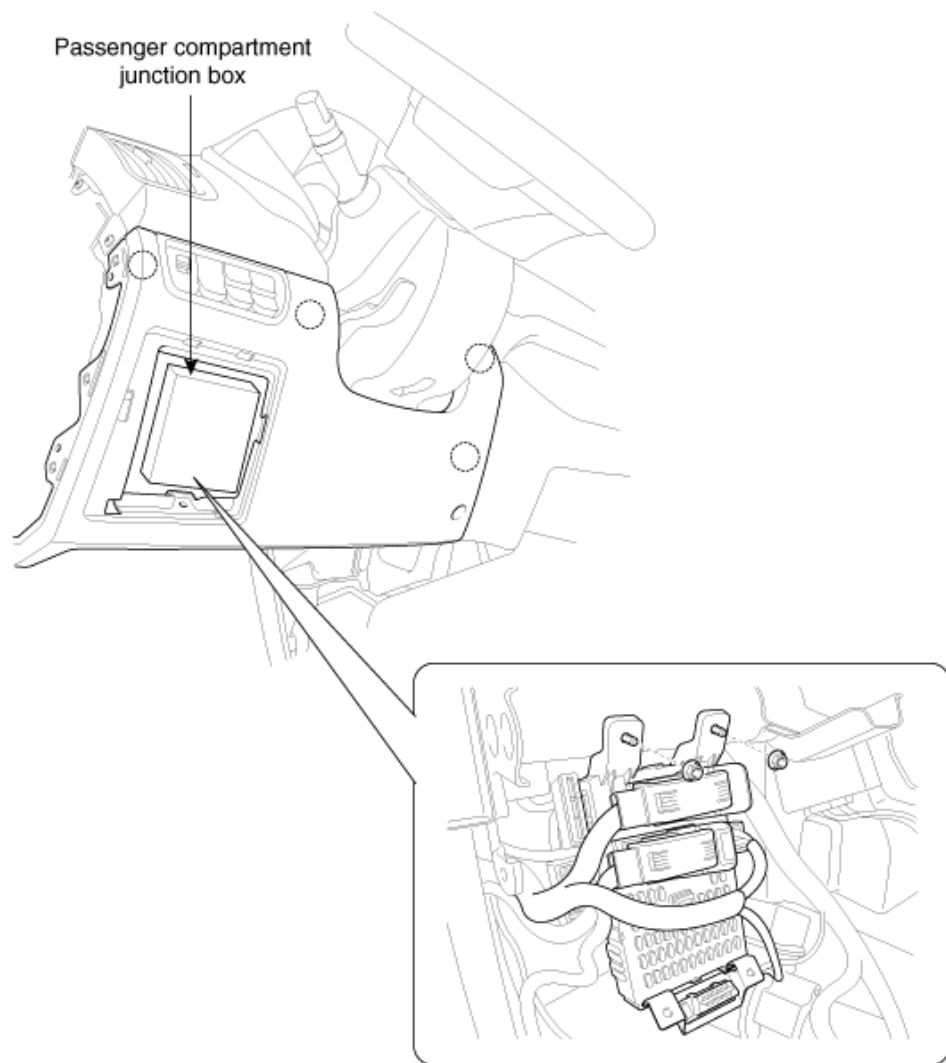
Component Location

[Engine Room Relay Box]



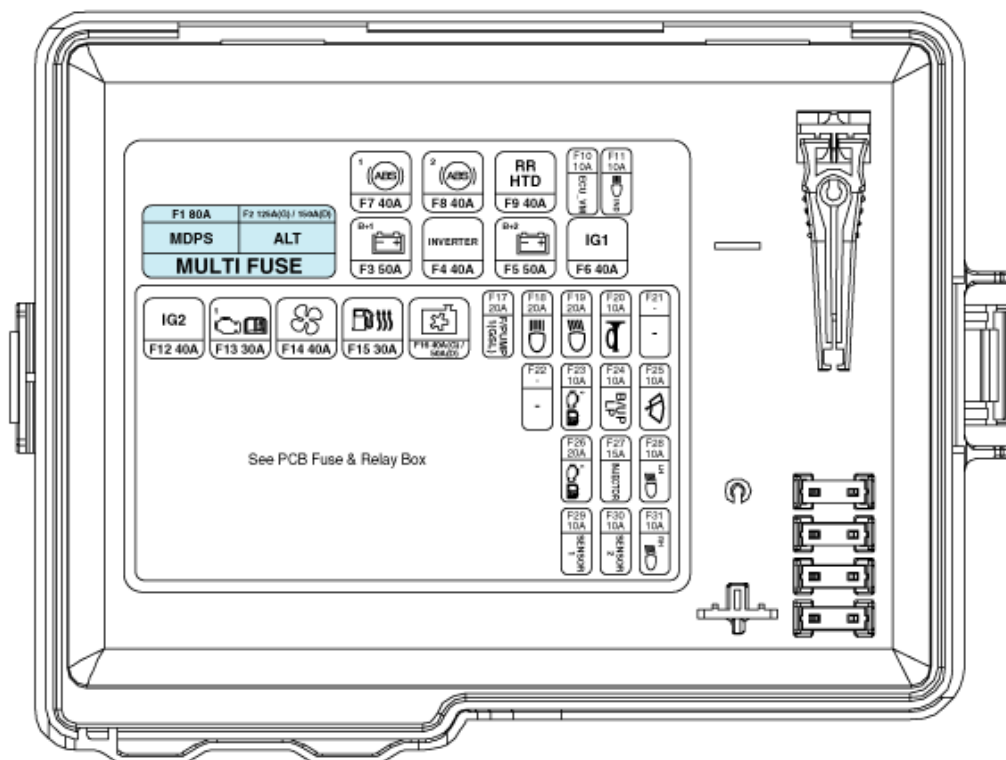
1. PCB fuse & relay box (Head lamp low/ hi, Fuel pump #1, Fuel heater, HAC, Engine control, ESS, Front wiper, Rain sensor, Blower, Cooling fan low/ hi, Horn, Buglar alarm horn, Start relay)

[Interior Junction Box]



Components

E/R JUNCTION BOX



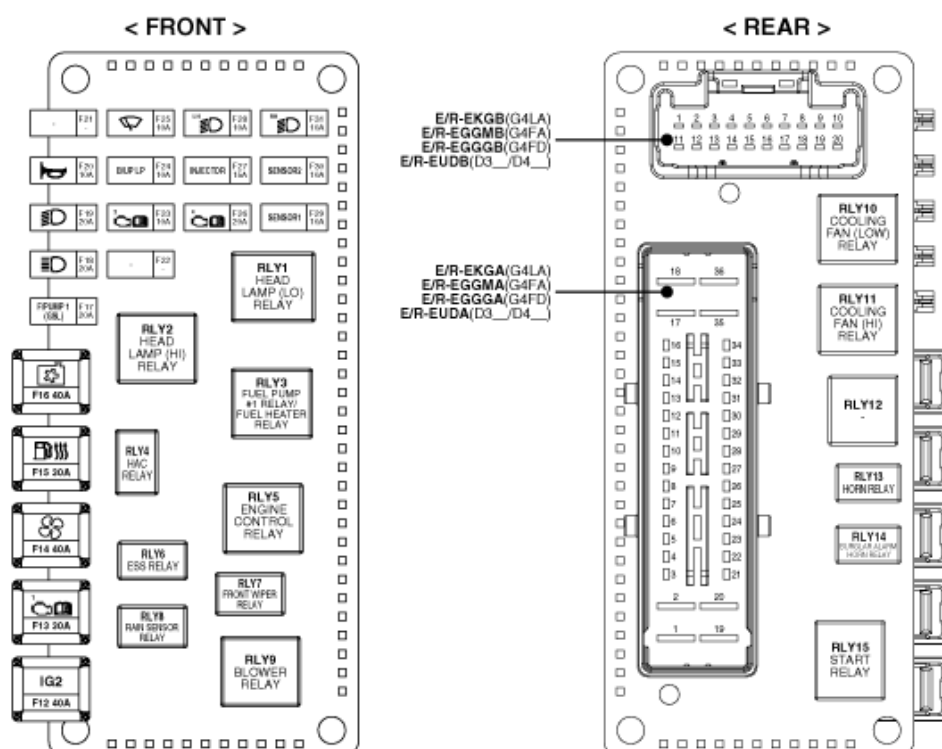
※ USE THE DESIGNATED FUSE & RELAY ONLY

Circuit

Fuse No.	(A)	Symbol	Fuse Name	Circuit Protected
MULTI FUSE	F1 80A	MDPS	MDPS	EPS Control Module
	F2 125A (G) / 150A (D)	ALT	ALT	Alternator
FUSE	F3 50A	B+1	B+1	I/P Junction Box (Power Connector Fuse : F1 10A / F2 20A, Fuse : F24 10A / F25 15A / F26 10A / F27 15A, Tail Lamp Relay)
	F4 40A	INVERTER	INVERTER	Inverter
	F5 50A	B+2	B+2	I/P Junction Box (Fuse : F8 20A / F9 25A / F10 15A / F11 10A / F16 15A / F17 25A / F18 15A, Power Window Relay)
	F6 40A	IG1	IG1	With Smart Key - PDM Relay Box (ESCL (ACC) Relay, ESCL (IG1) Relay) W/O Smart Key - Ignition Switch
	F7 40A	ABS1	ABS1	ABS Control Module, ESP Control Module, Multipurpose Check Connector
	F8 40A	ABS2	ABS2	ABS Control Module, ESP Control Module
	F9 40A	RR HTD	RR DEF	I/P Junction Box (Rear Defogger Relay)
	F10 10A	ECU_VM	ECU_VM	PCM
	F11 10A	H/LP HI IND	H/LP HI IND	Instrument Cluster

※ USE THE DESIGNATED FUSE & RELAY ONLY

PCB FUSE & RELAY BOX



NO.	RELAY NAME	TYPE
1	HEAD LAMP (LO) RELAY	PCB MICRO
2	HEAD LAMP (HI) RELAY	PCB MICRO
3	FUEL PUMP #1 RELAY (GSL) FUEL HEATER RELAY (DSL)	PCB MICRO
4	HAC RELAY	PCB MINI
5	ENGINE CONTROL RELAY	PCB MICRO
6	ESS RELAY	PCB MINI
7	FRONT WIPER RELAY	PCB MINI
8	RAIN SENSOR RELAY	PCB MINI
9	BLOWER RELAY	PCB MICRO
10	COOLING FAN (LOW) RELAY	PCB MICRO
11	COOLING FAN (HI) RELAY	PCB MICRO
12	-	-
13	HORN RELAY	PCB MINI
14	BUGLAR ALARM HORN RELAY	PCB MINI
15	START RELAY	PCB MICRO

※ USE THE DESIGNATED FUSE & RELAY ONLY

PCB FUSE & RELAY BOX (G4LA : KAPPA 1.2L D-CVVT)

Fuse No.	(A)	Symbol	Fuse Name	Circuit Protected
F12	40A		IG2	PCB Fuse & Relay Box (Start Relay), W/O Smart Key - Ignition Switch, With Smart Key - PDM Relay Box (ESCL (IG2) Relay)
F13	30A		ECU1	PCB Fuse & Relay Box (Engine Control Relay)
F14	40A		BLOWER	PCB Fuse & Relay Box (Blower Relay)
F15	-	-	-	-
F16	40A		C/FAN	PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay)
F17	20A		F/PUMP1	PCB Fuse & Relay Box (Fuel Pump #1 Relay)
F18	20A		H/LP HI	PCB Fuse & Relay Box (Head Lamp (Hi) Relay)
F19	20A		H/LP LO	PCB Fuse & Relay Box (Head Lamp (Lo) Relay)
F20	10A		HORN	PCB Fuse & Relay Box (Horn Relay, Burglar Alarm Horn Relay)
F21	-	-	-	-
F22	-	-	-	-
F23	-	-	-	-
F24	-	-	-	-
F25	10A		WIPER FRT	ECM, Rain Sensor
F26	20A		ECU4	ECM, With ISG - PCB Fuse & Relay Box (Start Relay)
F27	15A		INJECTOR	ECM, Injector #1/#2/#3/#4, PCB Fuse & Relay Box (Jumper 1)
F28	10A		H/LP LH	Head Lamp LH
F29	10A		SENSOR1	Camshaft Position Sensor #1/#2, Purge Control Solenoid Valve, Oxygen Sensor (Up/Down), PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay)
F30	10A		SENSOR2	Oil Control Valve #1/#2
F31	10A		H/LP RH	Head Lamp RH

※ USE THE DESIGNATED FUSE & RELAY ONLY

PCB FUSE & RELAY BOX (G4FA : GAMMA 1.4L MPI)

Fuse No.	(A)	Symbol	Fuse Name	Circuit Protected
F12	40A		IG2	PCB Fuse & Relay Box (Start Relay), W/O Smart Key - Ignition Switch, With Smart Key - PDM Relay Box (ESCL (IG2) Relay)
F13	30A		ECU1	PCB Fuse & Relay Box (Engine Control Relay, F23 10A)
F14	40A		BLOWER	PCB Fuse & Relay Box (Blower Relay)
F15	-	-	-	-
F16	40A		C/FAN	PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay)
F17	20A		F/PUMP1	PCB Fuse & Relay Box (Fuel Pump #1 Relay)
F18	20A		H/LP HI	PCB Fuse & Relay Box (Head Lamp (Hi) Relay)
F19	20A		H/LP LO	PCB Fuse & Relay Box (Head Lamp (Lo) Relay)
F20	10A		HORN	PCB Fuse & Relay Box (Horn Relay, Burglar Alarm Horn Relay)
F21	-	-	-	-
F22	-	-	-	-
F23	10A		ECU2	TCM
F24	10A		B/UP LP	A/T - TCM, Transaxle Range Switch
F25	10A		WIPER FRT	Rain Sensor
F26	20A		ECU4	ECM, With ISG - PCB Fuse & Relay Box (Start Relay)
F27	15A		INJECTOR	ECM, Injector #1/#2/#3/#4, PCB Fuse & Relay Box (Jumper 1), A/T - TCM
F28	10A		H/LP LH	Head Lamp LH
F29	10A		SENSOR1	Camshaft Position Sensor, Purge Control Solenoid Valve, Oxygen Sensor (Up/Down), PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay)
F30	10A		SENSOR2	Oil Control Valve
F31	10A		H/LP RH	Head Lamp RH

※ USE THE DESIGNATED FUSE & RELAY ONLY

PCB FUSE & RELAY BOX (G4FD : GAMMA 1.6L GDI)

Fuse No.	(A)	Symbol	Fuse Name	Circuit Protected
F12	40A	IG2	IG2	PCB Fuse & Relay Box (Start Relay), W/O Smart Key - Ignition Switch, With Smart Key - PDM Relay Box (ESCL (IG2) Relay)
F13	30A	ECU1	ECU1	PCB Fuse & Relay Box (Engine Control Relay, F23 10A)
F14	40A	BLOWER	BLOWER	PCB Fuse & Relay Box (Blower Relay)
F15	-	-	-	-
F16	40A	C/FAN	C/FAN	PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay)
F17	20A	F/PUMP	F/PUMP1	PCB Fuse & Relay Box (Fuel Pump #1 Relay)
F18	20A	H/LP HI	H/LP HI	PCB Fuse & Relay Box (Head Lamp (Hi) Relay)
F19	20A	H/LP LO	H/LP LO	PCB Fuse & Relay Box (Head Lamp (Lo) Relay)
F20	10A	HORN	HORN	PCB Fuse & Relay Box (Horn Relay, Burglar Alarm Horn Relay)
F21	-	-	-	-
F22	-	-	-	-
F23	10A	ECU2	ECU2	M/T - ECM, A/T - E/R Junction Box (F10 10A)
F24	10A	B/UP LP	B/UP LP	A/T - PCM, Transaxle Range Switch
F25	10A	WIPER FRT	WIPER FRT	ECM/PCM, Rain Sensor
F26	20A	ECU4	ECU4	ECM/PCM
F27	15A	INJECTOR	INJECTOR	ECM/PCM, PCB Fuse & Relay Box (Jumper 1)
F28	10A	H/LP LH	H/LP LH	Head Lamp LH
F29	10A	SENSOR1	SENSOR1	Purge Control Solenoid Valve, Variable Intake Solenoid Valve, PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay)
F30	10A	SENSOR2	SENSOR2	Oil Control Valve #1/#2, Oxygen Sensor (Up/Down)
F31	10A	H/LP RH	H/LP RH	Head Lamp RH

※ USE THE DESIGNATED FUSE & RELAY ONLY

PCB FUSE & RELAY BOX (D3FA : UII 1.1L WGT / D4FC : UII 1.4L WGT)

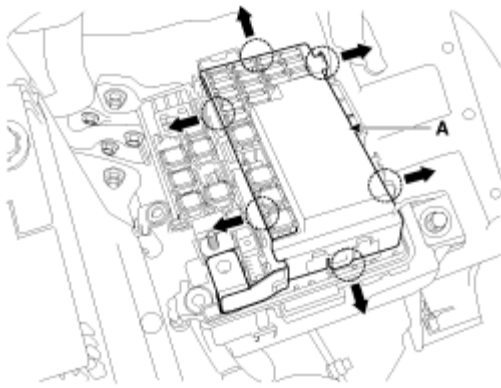
Fuse No.	(A)	Symbol	Fuse Name	Circuit Protected
F12	40A	IG2	IG2	PCB Fuse & Relay Box (Start Relay), W/O Smart Key - Ignition Switch, With Smart Key - PDM Relay Box (ESCL (IG2) Relay)
F13	30A	ECU1	ECU1	PCB Fuse & Relay Box (Engine Control Relay)
F14	40A	BLOWER	BLOWER	PCB Fuse & Relay Box (Blower Relay)
F15	30A	F/HEATER	F/HEATER	PCB Fuse & Relay Box (Fuel Heater Relay)
F16	50A	C/FAN	C/FAN	PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay)
F17	-	-	-	-
F18	20A	H/LP HI	H/LP HI	PCB Fuse & Relay Box (Head Lamp (Hi) Relay)
F19	20A	H/LP LO	H/LP LO	PCB Fuse & Relay Box (Head Lamp (Lo) Relay)
F20	10A	HORN	HORN	PCB Fuse & Relay Box (Horn Relay, Burglar Alarm Horn Relay)
F21	-	-	-	-
F22	-	-	-	-
F23	-	-	-	-
F24	-	-	-	-
F25	10A	WIPER FRT	WIPER FRT	ECM, Rain Sensor
F26	20A	ECU4	ECU4	ECM
F27	15A	INJECTOR	INJECTOR	Fuel Pressure Regulator Valve
F28	10A	H/LP LH	H/LP LH	Head Lamp LH
F29	10A	SENSOR1	SENSOR1	Stop Lamp Switch, PCB Fuse & Relay Box (Cooling Fan (Low) Relay, Cooling Fan (Hi) Relay), Diesel Box (PTC Heater Relay #1, Glow Relay)
F30	10A	SENSOR2	SENSOR2	Electrical EGR Control Valve, WGT Control Solenoid Valve, Camshaft Position Sensor
F31	10A	H/LP RH	H/LP RH	Head Lamp RH

※ USE THE DESIGNATED FUSE & RELAY ONLY

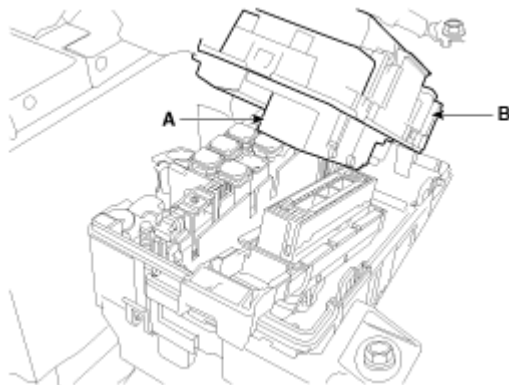
Inspection

Replacement of EMS box

1. Disconnect the negative (-) battery terminal.
2. Push hooks in the engine room relay box out to the arrow direction and put up the EMS box assembly (A).



3. Disconnect the connector (A) and remove the EMS box assembly (B).



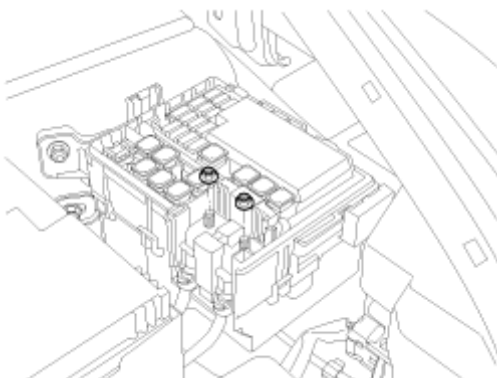
Fuse Inspection

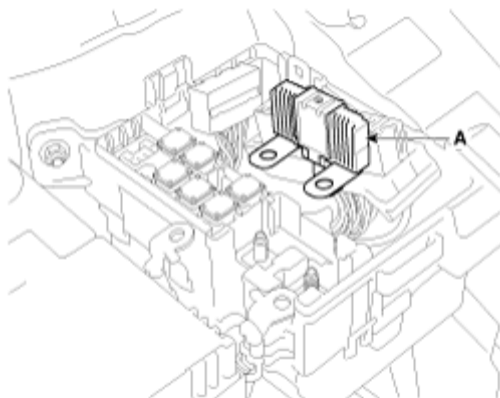
1. Be sure there is no play in the fuse holders, and that the fuses are held securely.
2. Are the fuse capacities for each circuit correct?
3. Are there any blown fuses?

If a fuse is to be replaced, be sure to use a new fuse of the same capacity. Always determine why the fuse blew first and completely eliminate the problem before installing a new fuse.

Multi Fuse

Multi Fuse is for optimizing the engine room package.





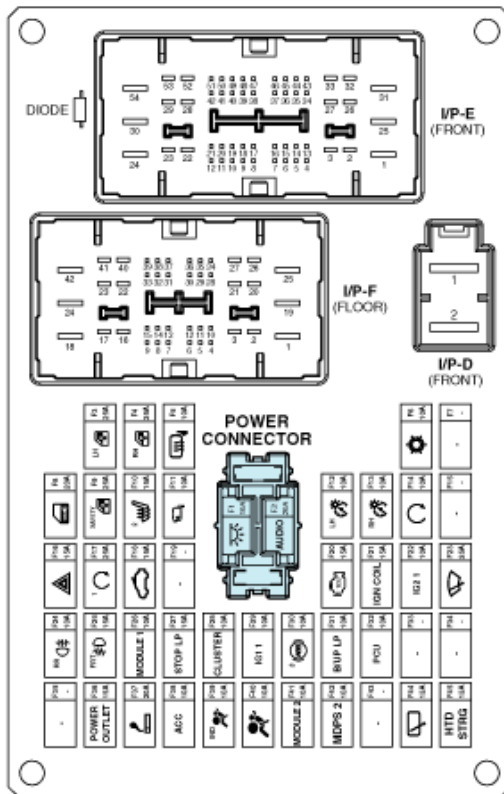
NOTICE

- Multi fuse (A) is needed to replace entirely when there is damage to only one fuse.
- When replace the multi fuse, refer to the "Engine compartment - component location" diagram exactly.
- Use the multi fuse capacities for each circuit correctly.

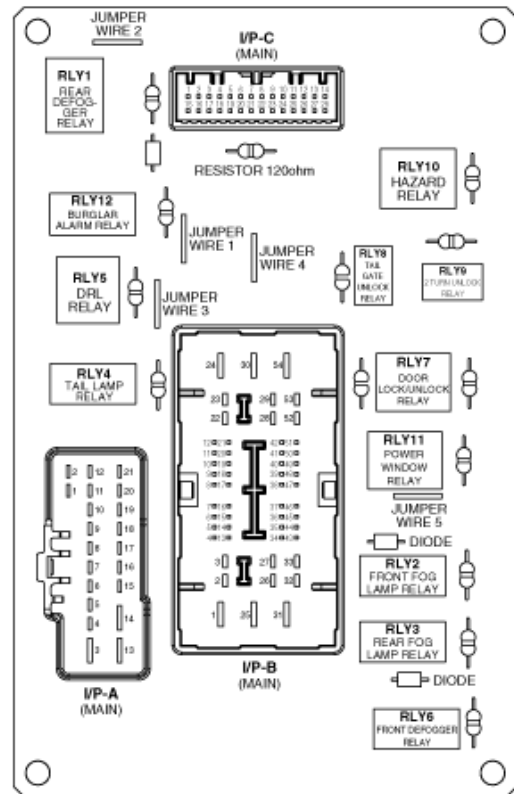
Components

I/P JUNCTION BOX

< FRONT >



< REAR >



RELAY TYPE

NO.	RELAY NAME	TYPE
1	REAR DEFOGGER RELAY	PCB MINI
2	FRONT FOG LAMP RELAY	PCB MICRO
3	REAR FOG LAMP RELAY	-
4	TAIL LAMP RELAY	PCB MICRO
5	DRL RELAY	-
6	FRONT DEFOGGER RELAY	-
7	DOOR LOCK/UNLOCK RELAY	TWIN PCB MICRO
8	TAILGATE UNLOCK RELAY	PCB MICRO
9	2 TURN UNLOCK RELAY	-
10	HAZARD RELAY	PCB MICRO
11	POWER WINDOW RELAY	PCB MINI
12	BUGLAR ALARM HORN RELAY	-

※ USE THE DESIGNATED FUSE & RELAY ONLY

V/P JUNCTION BOX

No.	(A)	Symbol	Fuse Name	Circuit Protected	No.	(A)	Symbol	Fuse Name	Circuit Protected
F1	10A		ROOM LP	Tire Pressure Monitoring Module, Instrument Cluster, Digital Clock, A/C Control Module, Luggage Lamp, BCM, Door Warning Switch	F22	10A		IGN2 1	IGN2
F2	20A		AUDIO	With ISG : Low DC-DC Converter W/O ISG : Audio, A/V & Navigation Head Unit	F23	25A		F/WPR	Multifunction Switch, Front Wiper Motor, PCB Fuse & Relay Box (Rain Sensor Relay, Front Wiper Relay)
F3	25A		P/WDW LH	Power Window Main Switch, Rear Power Window Switch LH, Driver Safety Power Window Module	F24	10A		R/FOG	Rear Fog Lamp Relay
F4	25A		P/WDW RH	Power Window Main Switch, Rear Power Window Switch RH, Passenger Power Window Switch	F25	15A		F/FOG	Front Fog Lamp Relay
F5	10A		HTD MIRR	ECM/PCM, A/C Control Module	F26	10A		MODULE 1	MODULE
F6	10A		A/CON	A/C Control Module	F27	15A		STOP LP	STOP LP2
F7	-	-	-	-	F28	10A		CLUSTER	CLUSTER
F8	20A		DOOR LOCK	Door Lock/Unlock Relay, Tail Gate Unlock Relay, Dead Lock Relay	F29	10A		IGN1_2	Rear Parking Assist Sensor (SIDE/CENTER) LH/RH, Multipurpose Check Connector, With ISG : Crash Pad Switch, Low DC-DC Converter
F9	25A		SAFETY P/WDW	Driver Safety Power Window Module	F30	10A		ABS 3	Crash Pad Switch, ABS/ESP Control Module, PCB Fuse & Relay Box (HAC Relay, ESS Relay)
F10	15A		SEATER 2	Seat Warmer Switch, Driver/Passenger Seat Warmer	F31	10A		B/UP LP	Back-Up Lamp Switch, Transaxle Range Switch
F11	10A		FOLD'G MIRR	Power Outside Mirror Switch	F32	10A		PCU	Pulse Generator 'A/B', Vehicle Speed Sensor, Oil Level Sensor, Stop Lamp Switch, Inverter, A/C Control Module
F12	10A		TAIL LH	Jumper Wire 3, Head Lamp LH, License Lamp, Rear Combination Lamp (IN/OUT) LH	F33	-	-	-	-
F13	10A		TAIL RH	Head Lamp RH, License Lamp, ILL. (+), Rear Combination Lamp (IN/OUT) RH	F34	-	-	-	-
F14	10A		START	With Burglar Alarm : Burglar Alarm Relay W/O Burglar Alarm : Transaxle Range Switch (A/T), Smart Key Control Module (M/T), ECM (M/T), Ignition Lock Switch (M/T), PCB Fuse & Relay Box (Start Relay) (M/T)	F35	-	-	-	-
F15	-	-	-	-	F36	15A		POWER OUTLET	Power Outlet
F16	15A		HAZARD	Hazard Relay, Hazard Switch, BCM	F37	20A		C/LIGHT	Cigarette Lighter
F17	25A		PDM_1	Smart Key Control Module	F38	10A		ACC	ACC
F18	15A		S/ROOF	Sunroof Motor	F39	10A		A/BAG IND	A/BAG IND
F19	10A		PDM_2	Immobilizer Module, Start/Stop Button Switch, Smart Key Control Module	F40	10A		A/BAG	SBR PAB Indicator, SRS Control Module
F20	15A		TCU	Smart Key Control Module, Immobilizer Module, DSL : PCB Fuse & Relay Box (Start Relay), ECM, Mass Air Flow Sensor	F41	10A		MODULE 2	MODULE 2
F21	15A		IGN COIL	IGN COIL, Condenser	F42	10A		MDPS 2	MDPS 2
					F43	-	-	-	-
					F44	15A		R/WPR	Multifunction Switch, Rear Wiper Relay, Rear Wiper Motor
					F45	15A		HTD STRG	HTD STRG

✖ USE THE DESIGNATED FUSE & RELAY ONLY

: POWER CONNECTOR

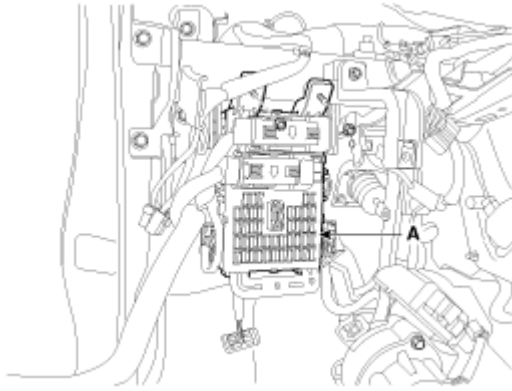
Fuse Inspection

1. Be sure there is no play in the fuse holders, and that the fuses are held securely.
2. Are the fuse capacities for each circuit correct?
3. Are there any blown fuses?
If a fuse is to be replaced, be sure to use a new fuse of the same capacity. Always determine why the fuse blew first and completely eliminate the problem before installing a new fuse.

Removal

Passenger Compartment Junction Box

1. Disconnect the negative(-) battery terminal.
2. Remove the crash pad lower panel.
(Refer to the BD group - "Crash pad")
3. Disconnect the connectors from the fuse side of the interior junction box.
4. Remove the interior junction box(A) after loosening the mounting nuts (2EA).



5. Disconnect the connectors from the back side of the smart junction box.

Installation

1. Install the interior junction box.
2. Install the crash pad lower panel.
3. Check that all system operates normally.