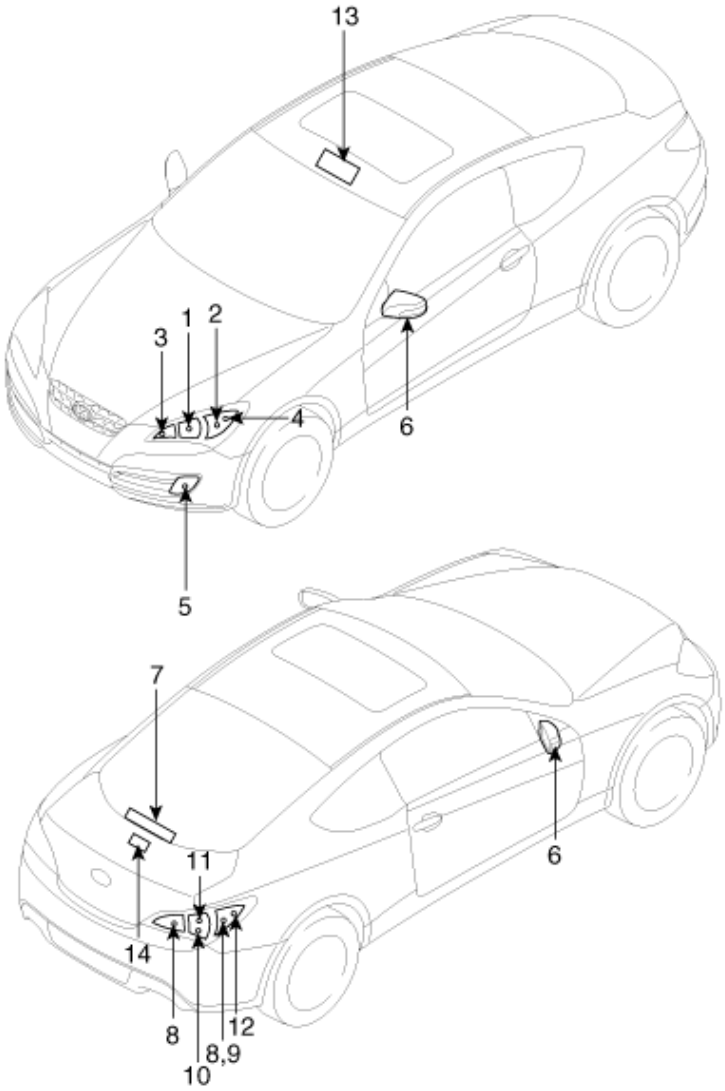
Specification

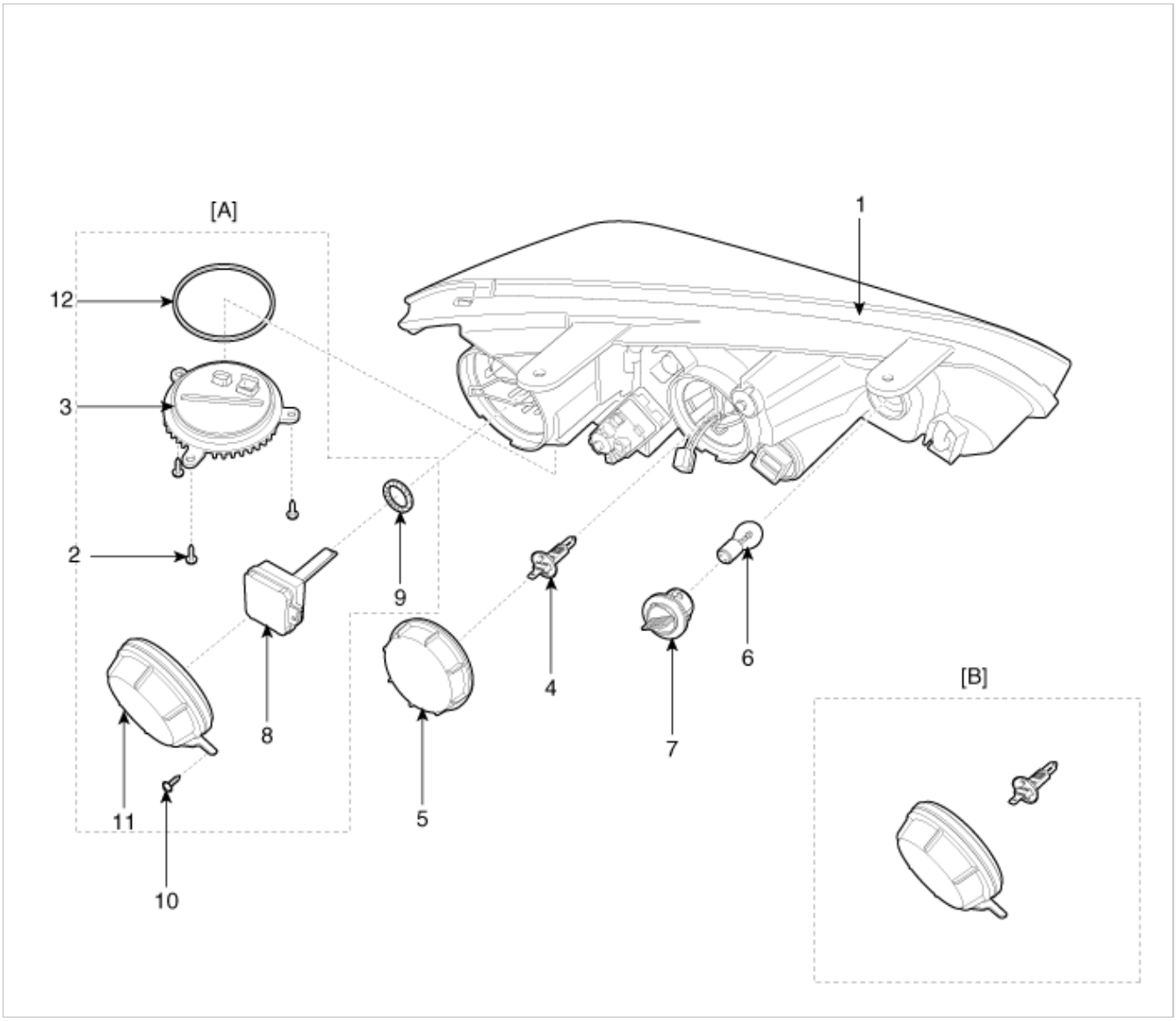
Items	Bulb Watt (W)
Head lamp (High/Low)	55/55
Front turn signal lamp	28
Front position lamp	8
Outside mirror lamp (If equipped)	LED
Front fog lamp	27
Rear tail/stop lamp (Outside)	8/27
Rear tail lamp (Inner) - General	8
Back up lamp	18
Rear turn signal lamp	27
License plate lamp	5
Overhead console lamp	10 x 2
High mounted stop lamp	LED
Luggage lamp	5
Vanity lamp	5
Glove box	5

Component Location



1. Head lamp (High)	8. Tail lamp
2. Head lamp (Low)	9. Stop lamp
3. Front turn signal lamp, Front position lamp	10. Turn signal lamp
4. Front side marker	11. Back up lamp
5. Front fog lamp	12. Rear side marker
6. Side turn signal lamp	13. Overhead console lamp
7. High mounted stop lamp	14. Luggage lamp

Component



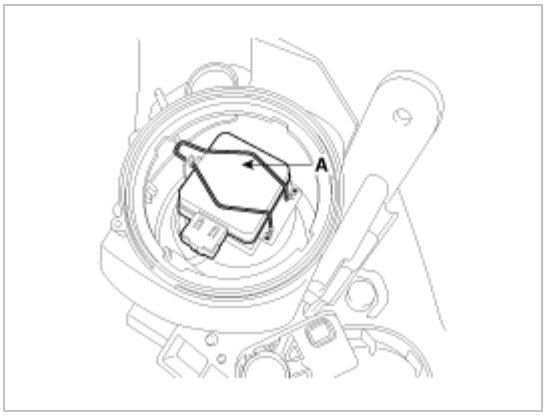
1. Head lamp assembly housing	7. Bulb holder
2. Screw	8. Head lamp (Low) bulb (HID) & Ignitor
3. Ballast	9. Stealing
4. Head lamp (High) bulb	10. Screw
5. Dust cover	11. Dust cover
6. Turn signal / Tail lamp bulb	12. Rubber ring

※ A : HID Type Components
B : Halogen Type Components

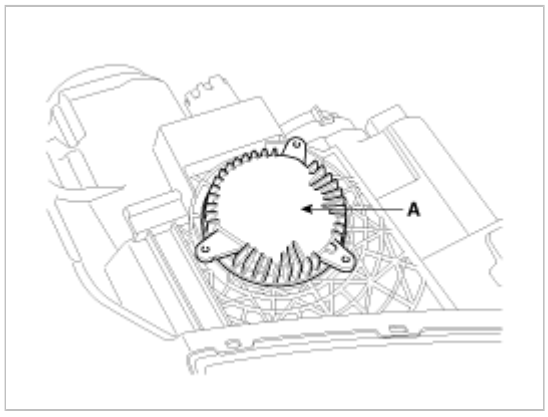
HID Head Lamp

1. Bulb
   (1) Elements
   Xenon gas: Xenon gas activates the initial reaction for rapid illuminating.
   Molybdenum electrode: anode arcing
   Metal halide salts: color composing component
   (2) Lightening principle
   When Xenon gas and metal halide salt will discharge the molybdenum anode in a capsule, it emits light.

2. Ignitor
   Ignitor (A) is an electromagnetic transformer that receives current from ballast and boost voltage to light on the arc light source in any environment.



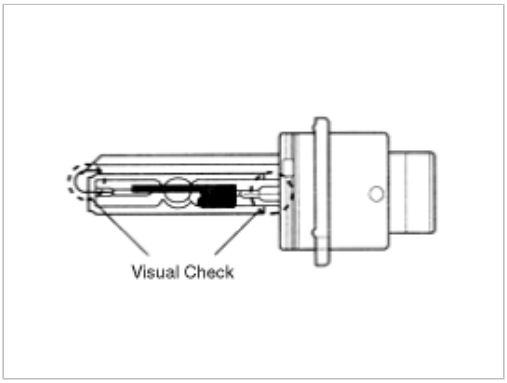
3. Ballast
   (1) Ballast (A) delivers an instant high voltage pulse to the ignitor electrode, to initialize discharge in the source.
   (2) Ballast supplies the stable power to the bulb and the ignitor during initialization and normal state of arc.



4. Stability
   (1) Durable for vibration as there is no filament.
   (2) Does not operate if polarity are changed.
   (3) Doesn't operate if the input voltage is not in the range of 10-16V.
   (4) Doesn't operate if the circuit is short.
   (5) Doesn't operate if the bulb burnt out.

Inspection

1. Check-points upon head lamp failure (HID)
   (1) Check the battery voltage. (Low beam will be on when the battery voltage above 9V.)
   (2) Check the fuse and relay.
   (3) Check the polarity of ballast. (If the polarity are changed, low beam doesn't lighten)
   (4) Check the bulb connector securely.
   (5) Visually bulb checking (no filament): damaged glass, damaged for upper parts and lower parts of glass tube.
   (6) After (1)~(5), replace the ballast and the ignitor. (ballast assembly).



2. Service procedure and warning (HID)

No.	Item	Service procedures	Warning	Remarks
1	Replacement of lamp assembly	1. Disconnect the power connector from the lamp. 2. Remove and replace the lamp assembly. 3. Connect the power connector.	• Disconnect the head lamp power connector to avoid high voltage.	• Other description is the same as the halogen bulbs.
2	Replacement of the Bulb	1. Disconnect the power connector from the lamp. (head lamp, turn signal, head lamp leveling device) 2. Remove the lamp assembly. 3. Remove the ballast and dust cover. 4. Remove the bulb socket and replace the bulb. 5. Installation is the reverse of removal.	• Disconnect the head lamp power connector to avoid high voltage. • Be careful not to damage the bulb and use genuine bulbs only. • Do not apply excessive force and fit it correctly.	
3	Replacement of the Ballast (with built-in ignitor)	1. Disconnect the power connector from the lamp. 2. Remove the lamp and then the ballast and the dust cover. 3. Remove the head lamp leveling device and then the bulb socket. 4. Connect the bulb socket on the replacement ballast and install the leveling device.	• Disconnect the head lamp power connector to avoid high voltage.	• Replace the ballast only and install the used lamp. • Replace the sub assembly except the ballast.

		5. Installation is the reverse of removal.		
4	Others	1. Power supply should be according to the rated capacity. 2. Use the rated fuse and wire. 3. Bulb socket shall be free from moisture or dirt. 4. Do not apply the ballast severe shock, water, or extreme	• All parts should be serviced only at specified service centers.	• HID lamp should not be installed on other cars (Dangerous, fire may occur.)

CAUTION

HID lamp shall not be used on other cars.(Fire may occur.)
Fire may occur when HID lamp initially lights due to the fact that arc-discharge generates high voltage (max. 30,000V) and high current (12-13A), and are different from the halogen lamp specification.

Characteristic

1. Durable for vibration as there is no filament.
2. HID lamp had a more long life than halogen lamp.
3. Does not operate if polarity is changed.
4. Operating input voltage : 9-16V

Head Lamp Aiming Instructions

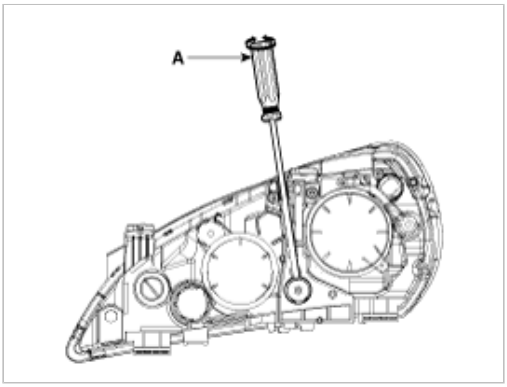
The head lamps should be aimed with the proper beam-setting equipment, and in accordance with the equipment manufacturer's instructions.

NOTE

If there are any regulations pertinent to the aiming of head lamps in the area where the vehicle is to be used, adjust so as to meet those requirements.

Alternately turn the adjusting gear to adjust the head lamp aiming. If beam-setting equipment is not available, proceed as follows:

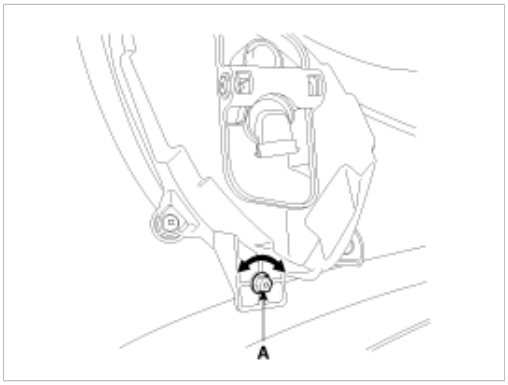
1. Inflate the tires to the specified pressure and remove any loads from the vehicle except the driver, spare tire, and tools.
2. The vehicle should be placed on a flat floor.
3. Draw vertical lines (Vertical lines passing through respective head lamp centers) and a horizontal line (Horizontal line passing through center of head lamps) on the screen.
4. With the head lamp and battery in normal condition, aim the head lamps so the brightest portion falls on the horizontal and vertical lines.
   Make vertical(A) adjustments to the lower beam using the adjusting wheel.



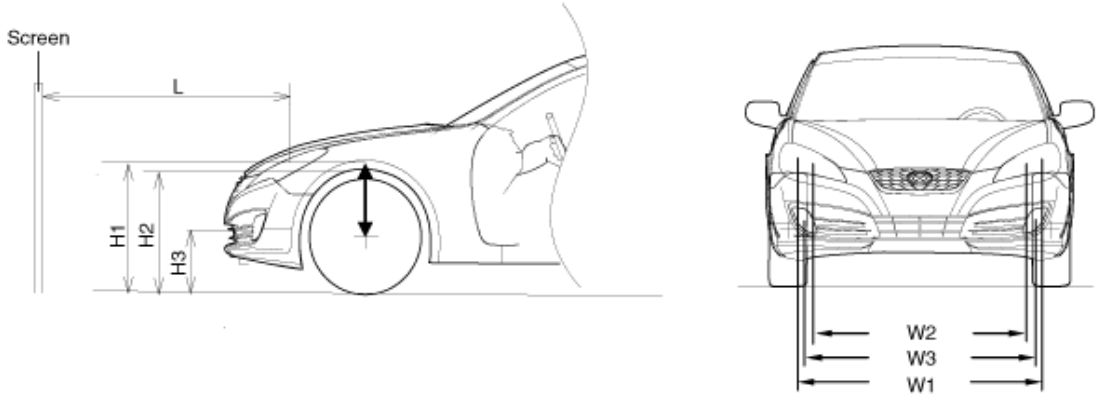
Front Fog Lamp Aiming

The front fog lamps should be aimed as the same manner of the head lamps aiming.

With the front fog lamps and battery normal condition, aim the front fog lamps by turning the adjusting screw(A) with a driver.



Head Lamp And Fog Lamp Aiming Point

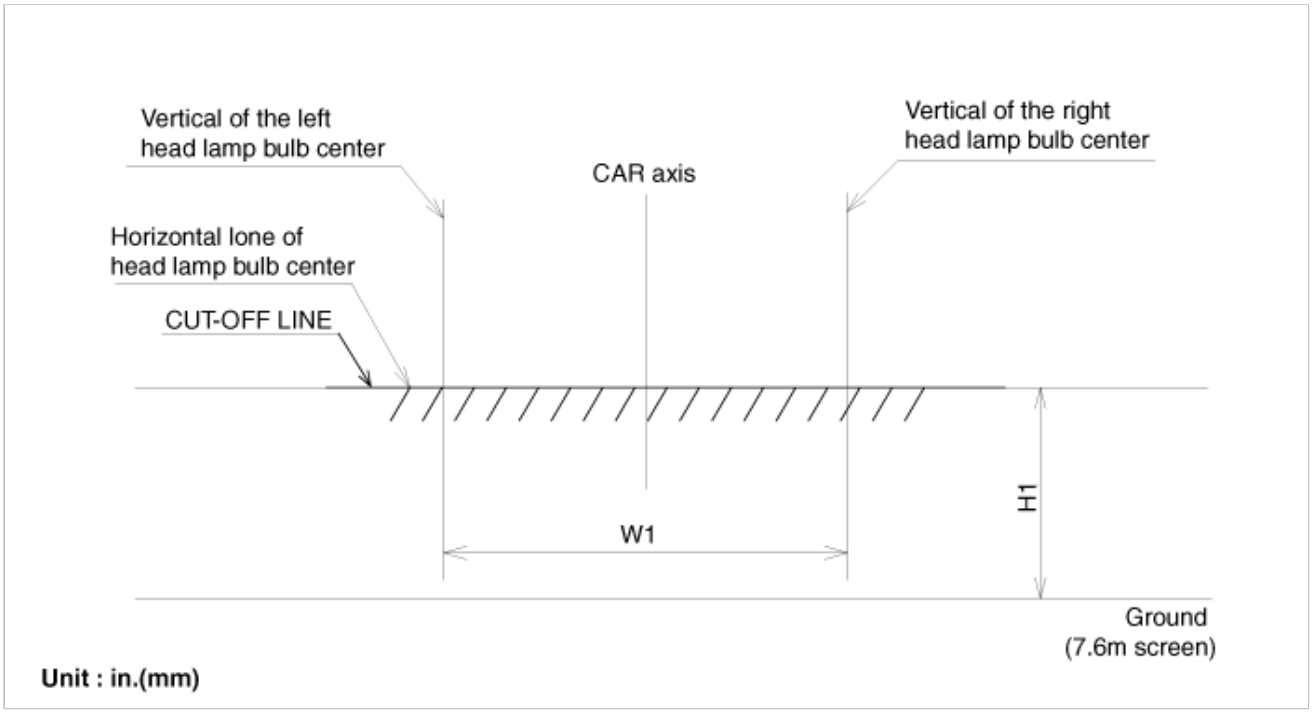


H1 : Height between the head lamp bulb center and ground (Low beam)
H2 : Height between the head lamp bulb center and ground (High beam)
H3 : Height between the fog lamp bulb center and ground
W1 : Distance between the two head lamp bulbs centers (Low beam)
W2 : Distance between the two head lamp bulbs centers (High beam)
W3 : Distance between the two fog lamp bulbs centers
L : Distance between the head lamp bulb center and screen

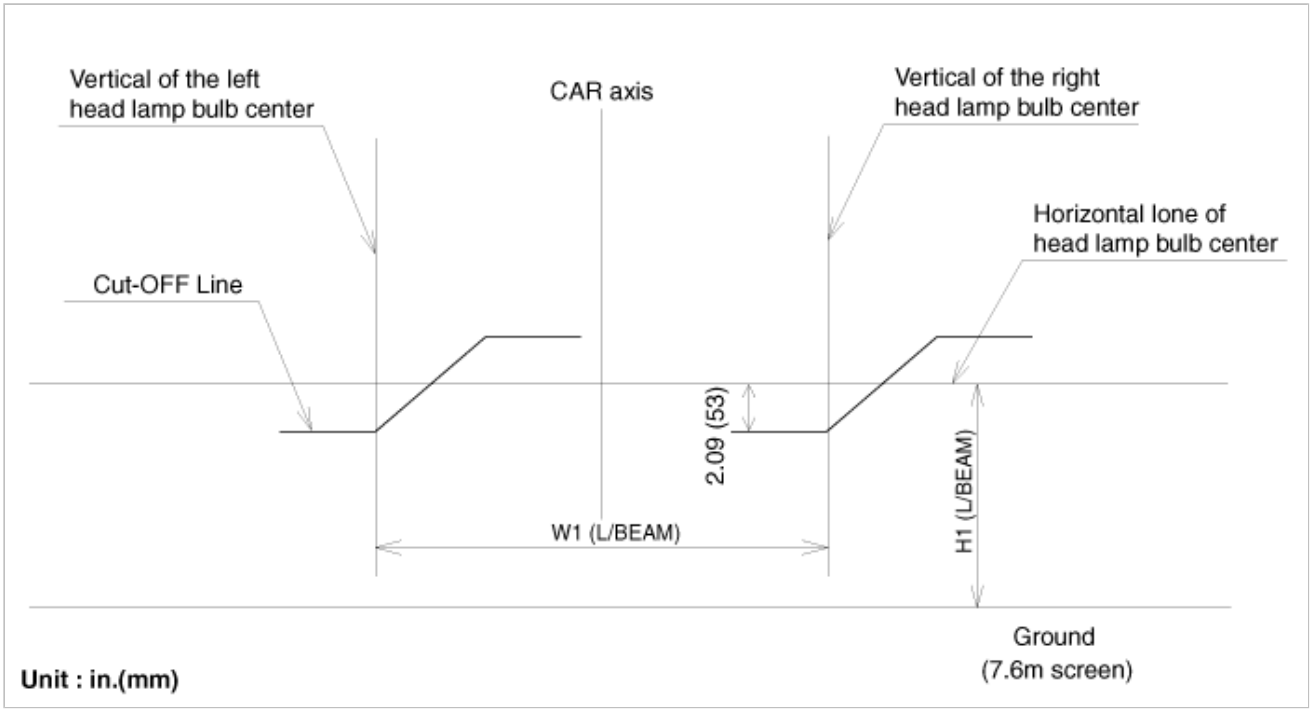
Unit : in(mm)

Vehicle condition	H1	H2	H3	W1	W2	W3	L
Without driver	27.7(704)	26.4(671)	14.4(367)	59.4(1,508)	49.6(1,260)	55.5(1,410)	Refer to aiming condition
With driver	27.5(699)	26.2(666)	14.2(362)				

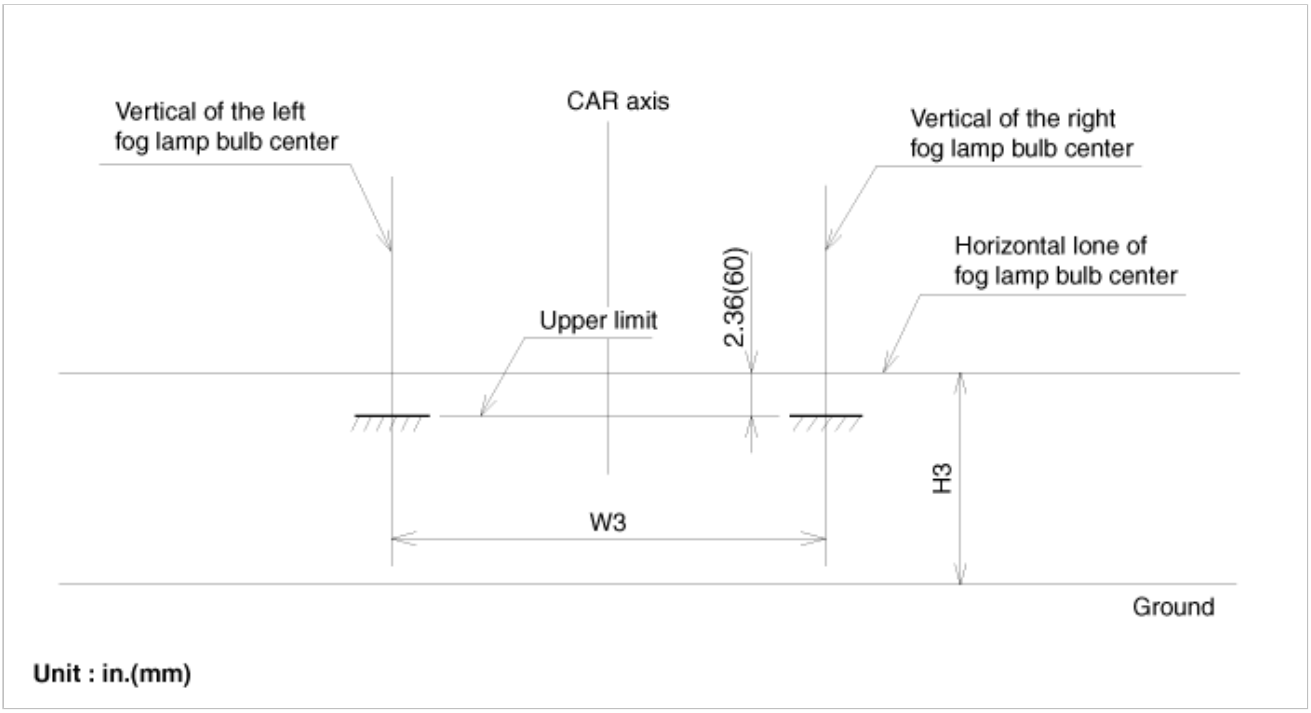
1. General Type (VOR)
   A. Turn the low beam on without driver aboard.
   B. The cut-off line should be projected in the allowable range (shaded region) shown in the picture.
   C. If head lamp leveling device is equipped, adjust the head lamp leveling device switch with 0 positions.



2. HID Type (VOL)
   A. Turn the low beam on without driver aboard.
   B. The cut-off line should be projected in the cut-off line shown in the picture.
   C. If head lamp leveling device is equipped, adjust the head lamp leveling device switch with 0 positions.



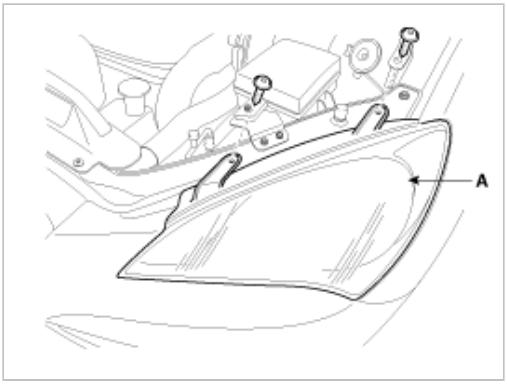
3. Turn the front fog lamp on without the driver aboard.
   The cut-off line should be projected in the allowable range (shaded region)



Unit : in.(mm)

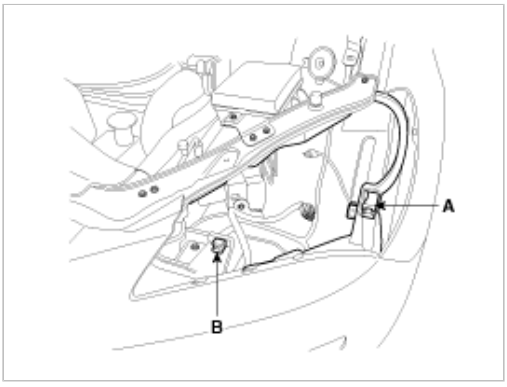
Removal

1. Disconnect the negative (-) battery terminal.
2. Remove the head lamp assembly(A) after loosening the mounting bolt(2EA).

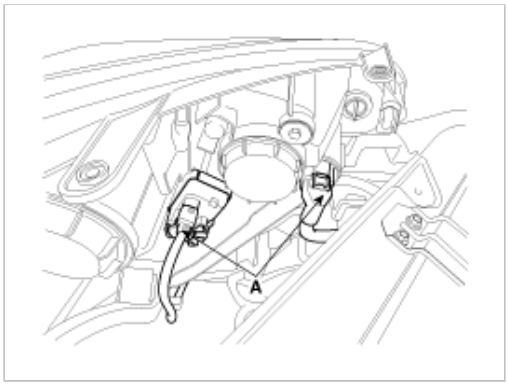


NOTE

Take care that holding clip (A, B) is not to be damaged.



3. Disconnect the head lamp connectors(A).



4. Remove the bulb caps from the head lamp assembly after turning in the counter clock-wise direction.

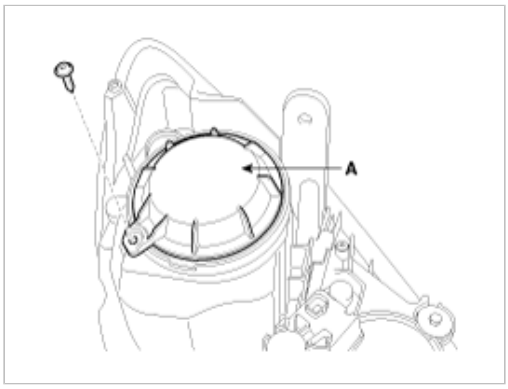
Installation

1. Install the head lamp assembly after connecting the connector.
2. Connect the negative (-) battery terminal.

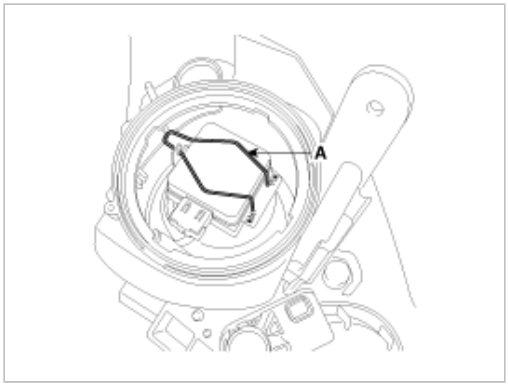
Replacement

Bulb (HID)

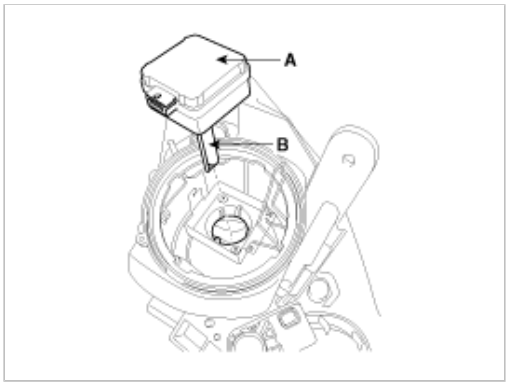
1. Turn the head lamp switch off.
2. Remove the lamp assembly.
3. Disconnect the power connector from the lamp.
4. Remove the dust cover after loosening the screw.



5. Remove the ignitor clip(A).



6. Disconnect the ignitor connector.
7. Remove the ignitor(A) and bulb(B).

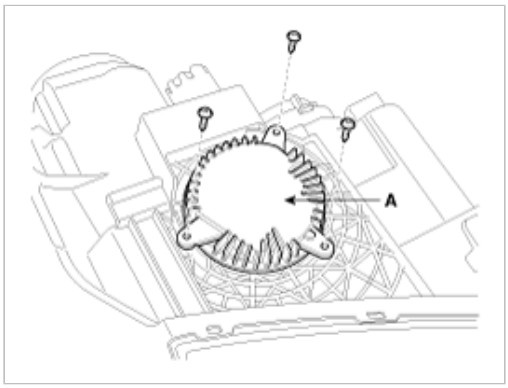


8. Installation is the reverse of removal.

> **CAUTION**
>
> Turn the head lamp switch off to avoid high voltage
> Be careful not to damage the bulb and use genuine bulbs only
> - Do not apply excessive force and fit it correctly.
> - Confirm the bulb locking

Ballast

1. Turn the head lamp switch off.
2. Remove the head lamp assembly.
3. Disconnect the power connector from the lamp.
4. Remove the ballast (A) after loosening the screws (3EA).



> **NOTE**
>
> Be careful not to be damaged when disconnecting the ballast connector.

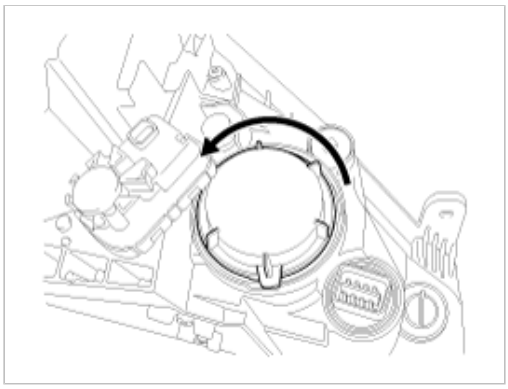
5. Installation is the reverse of removal.

> **NOTE**
>
> - Turn the head lamp switch off to avoid high voltage.

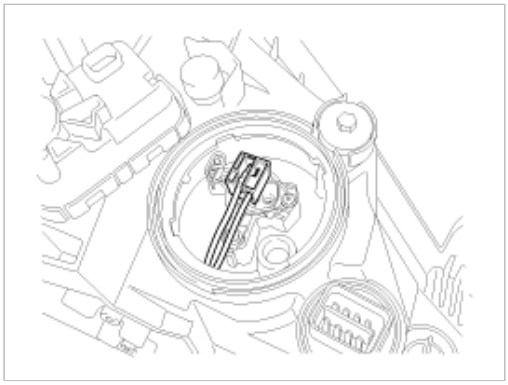
> **CAUTION**
>
> - HID lamp shall not be used on other cars.(Fire may occur.)
> - Fire may occur when HID lamp initially lights due to the fact that arc-discharge generates high voltage (max. 20,000V) and high current (12-13A), and are different from the halogen lamp specification.
> - Install the dust cover after confirming the locking state between bulb and bulb holder.
> - When testing the HID head lamp, turn the power on or off with switch between power supply and lamp because of high voltage.
> - Do not operate the head lamp switch with the bulb not installed, because it generates spark momently.

Head lamp(high) bulb

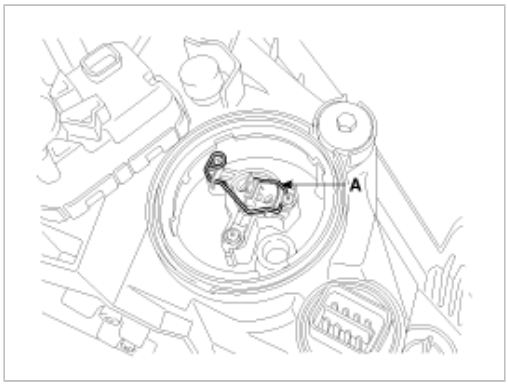
1. Turn the head lamp power off.
2. Remove the head lamp assembly.
3. Disconnect the power connector from the lamp.
4. Remove the dust cap.



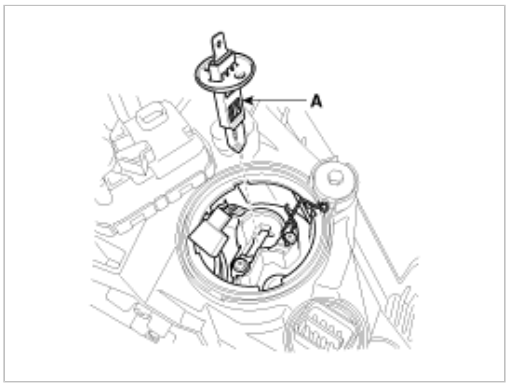
5. Disconnect the connector.



6. Remove the clip(A) from the head lamp (High) bulb.

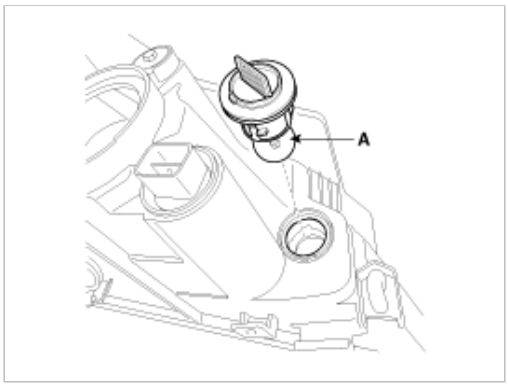


7. Remove the head lamp (High) bulb(A).



Front turn signal lamp

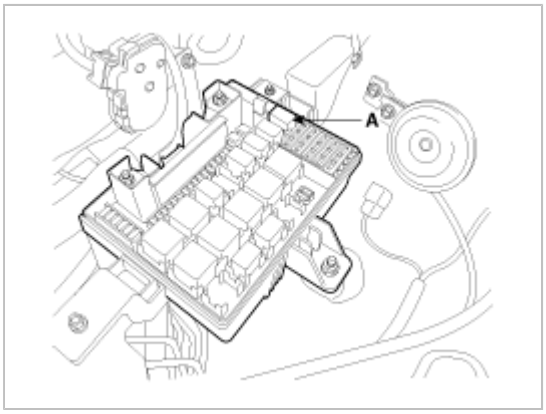
1. Turn the head lamp power off.
2. Remove the lamp assembly.
3. Disconnect the power connector from the lamp.
4. Remove the dust cap and bulb(A).



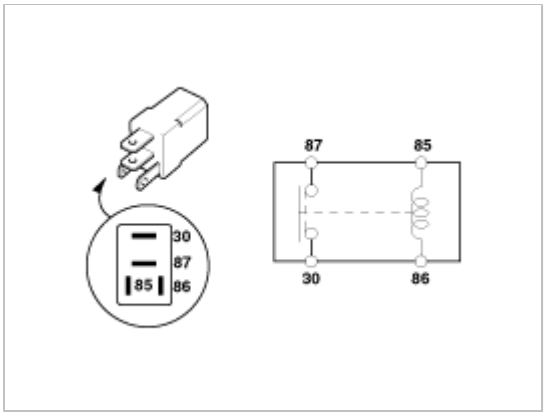
Inspection

Back Up Lamp Relay

1. Disconnect the negative(-) battery terminal.
2. Pull out the back up lamp relay(A) from the engine compartment relay box.



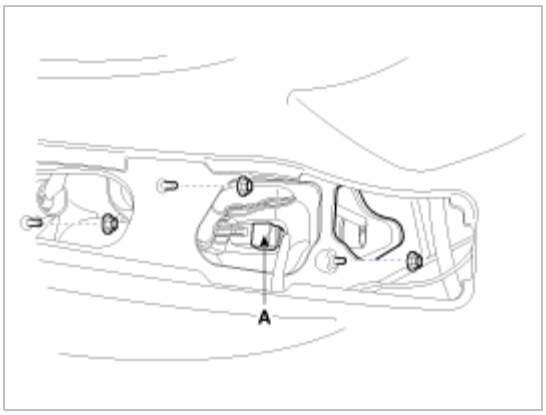
3. Check for continuity between the terminals.

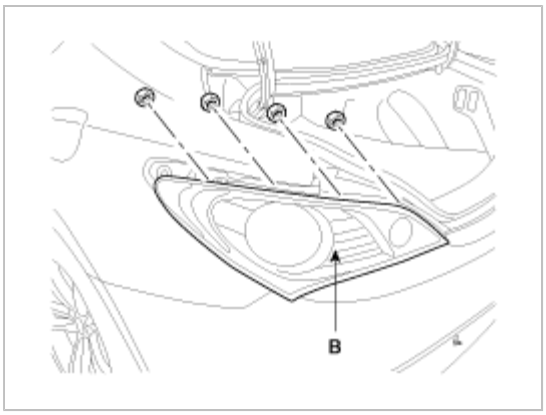


Terminal / Position	86	85	87	30
Disconnected	○	○		
Connected	⊖	⊕	○	○

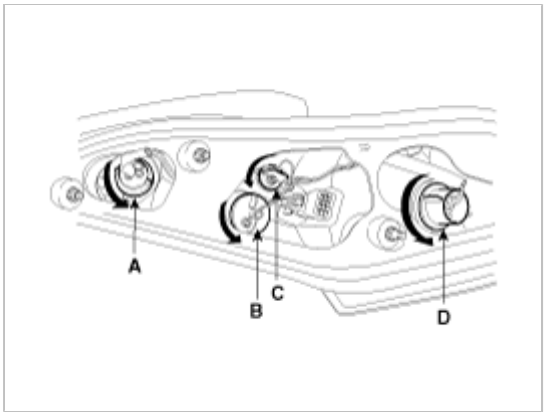
Removal

1. Disconnect the negative (-) battery terminal.
2. Loosen the rear combination lamp mounting nuts(4EA) and disconnect the connector(A) then remove the rear combination lamp assembly(B).





3. If necessary to replace the bulb, replace the bulb turning the cap in the counter clock-wise direction without removal of rear combination lamp assembly.
   A : Stop lamp, B : Turn signal lamp
   C : Back up lamp, D : Tail lamp

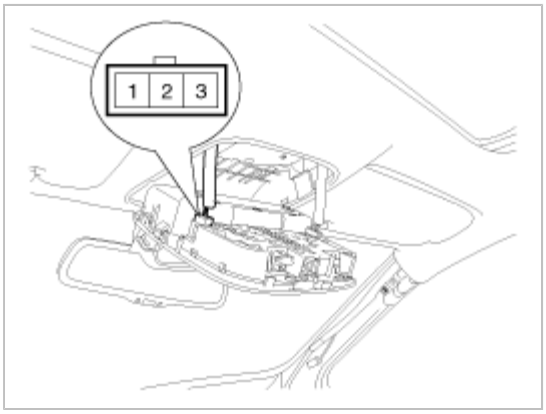


Installation

1. Install the rear combination lamp assembly after replacing the bulbs.

Inspection

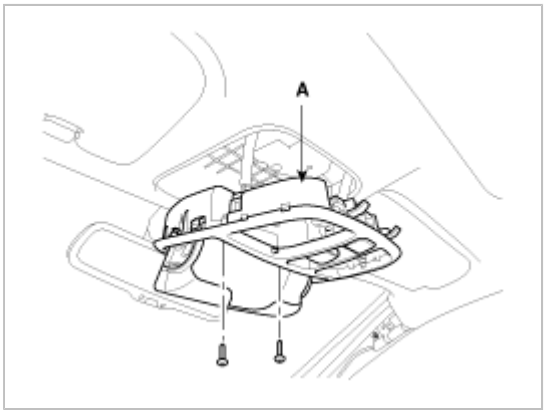
Remove the overhead console lamp assembly then check for continuity between terminals. If the continuity is not as specified, replace the map lamp switch.



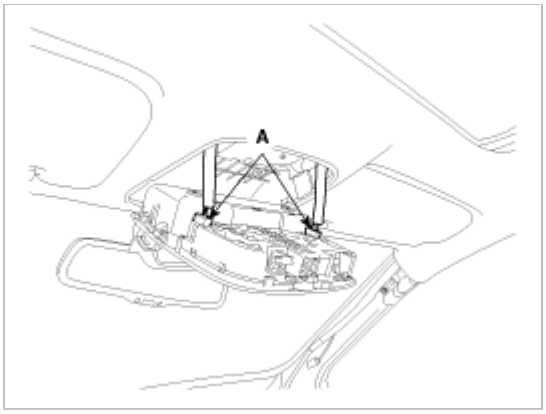
Terminal / Position	1	3	2
ON	○	○	○
DOOR		○	○
OFF			

Removal

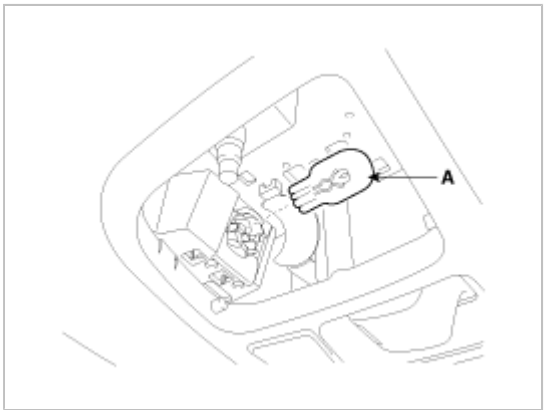
1. Disconnect the negative (-) battery terminal.
2. Loosen 2 screws holding the overhead console(A).



3. Disconnect the connectors(A) of sunroof switch then remove the overhead console lamp assembly.



4. If necessary to replace the bulb(A), replace the bulb after opening the overhead console lens.



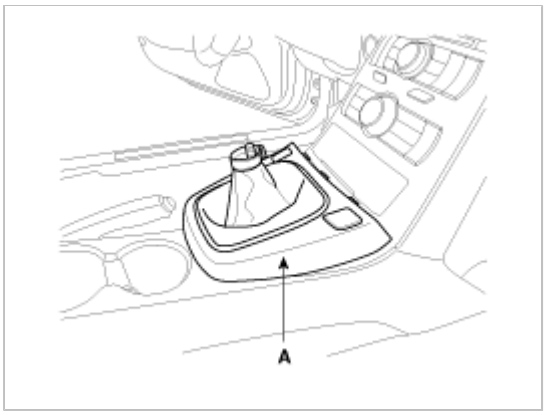
Installation

1. Install the overhead console lamp after connecting the sunroof switch connector and lamp connector.
2. Install the lens after tightening 2 screws.

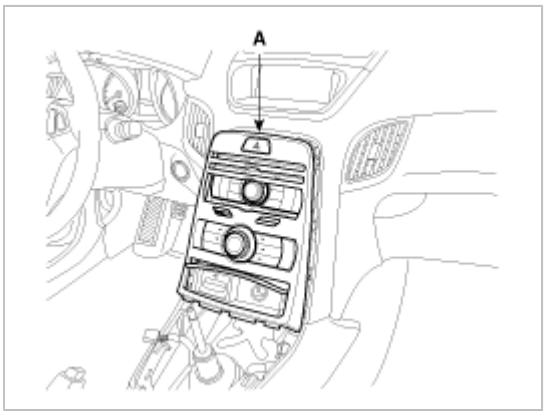
Inspection

Hazard Lamp Switch

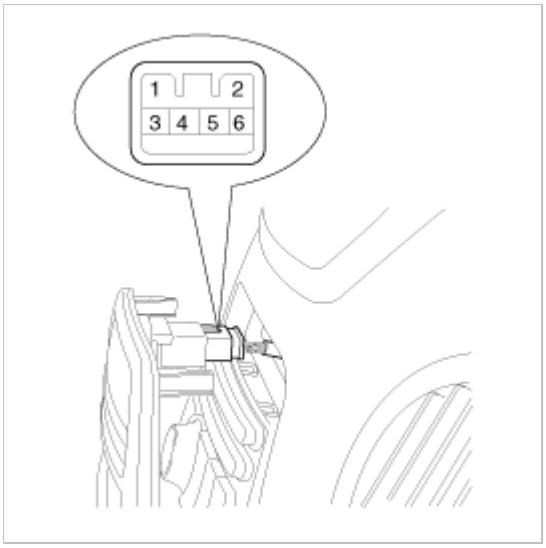
1. Disconnect the negative (-) battery terminal.
2. Remove the console upper cover(A).
   (Refer to Body group - "Console")



3. Remove the center fascia lower panel(A).



4. Disconnect the hazard lamp switch connector.

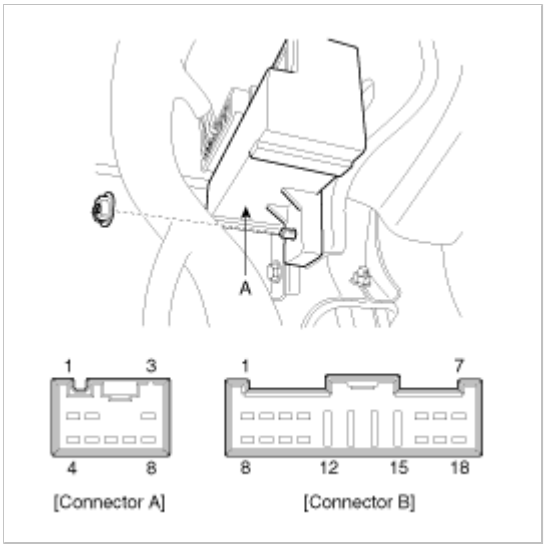


5. Operate the switch and check for continuity between terminals with an ohmmeter.

Terminal / Position	ON (Push)	OFF	Remark
3	○		
4	○		
2	○—~~—⊗		ILL (+)
5	○—		ILL (-)

Hazard Lamp Relay

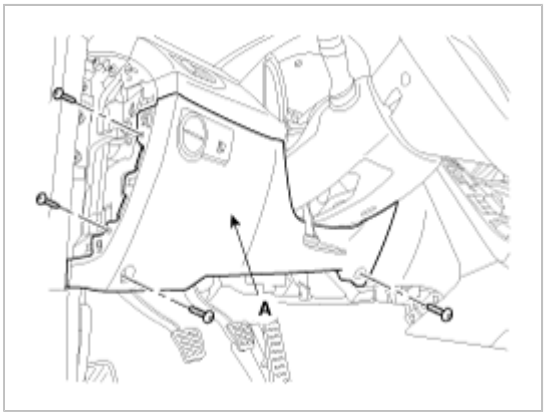
1. Disconnect the negative (-) battery terminal.
2. Disconnect the ICM relay box connector.
3. Check for continuity between terminals.
   There should be continuity between the No.12 and No.13 of ICM-B terminals when power and ground are connected to the No.13 and No.3 of ICM-B terminals.
4. There should be no continuity between the No.12 and No.13 of ICM-B terminals when power is disconnected to the No.13 and No.3 of ICM-B terminals.



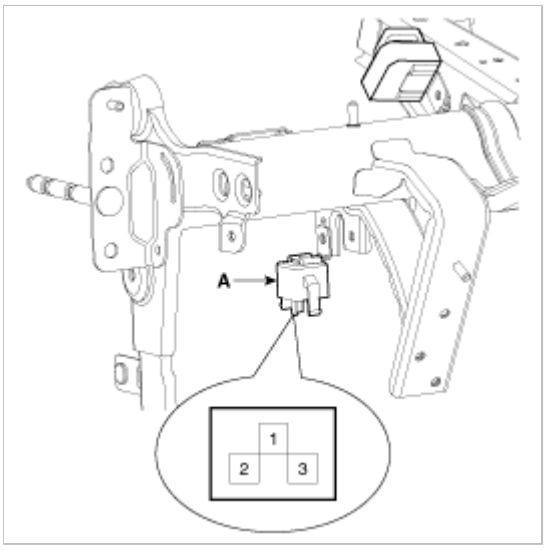
Terminal / Position	ICM-B (12)	ICM-B (13)	ICM-B (13)	ICM-B (3)
Power off			○——	——○
Power on	○——	——○	⊖——	——⊕

Inspection

1. Disconnect the negative (-) battery terminal.
2. Remove the driver crash pad lower panel (A).



3. Remove the flasher unit (A) after loosening the bolt and disconnecting the connector.

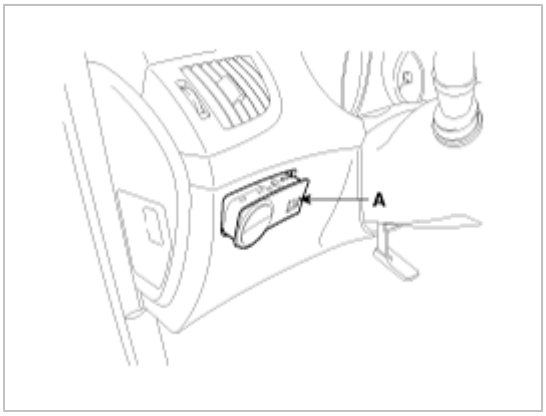


4. Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 3.
5. Connect the two turn signal lamps in parallel to terminals 1 and 3. Check that the bulbs turn on and off.

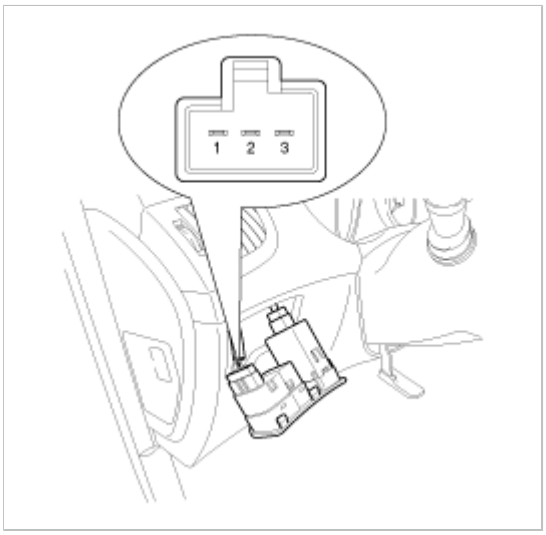
> NOTE
>
> The turn signal lamps should flash 60 to 120 times per minute. If one of the front or rear turn signal lamps has an open circuit, the number of flashes will be more than 120 per minute. If operation is not as specified, replace the flash unit.

Inspection

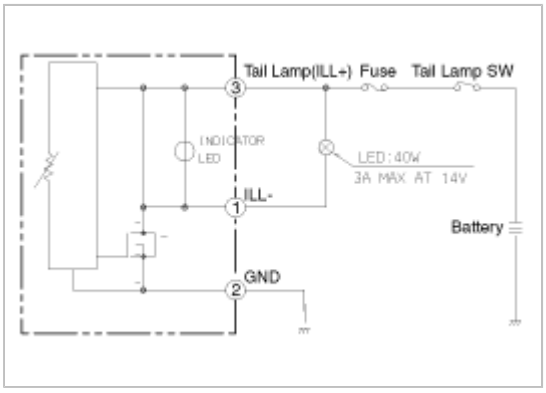
1. Disconnect the negative (-) battery terminal.
2. Remove the lower crash pad switch (A) from the side crash pad cover by using the scraper.



3. Disconnect the rheostat connector from lower crash pad switch.

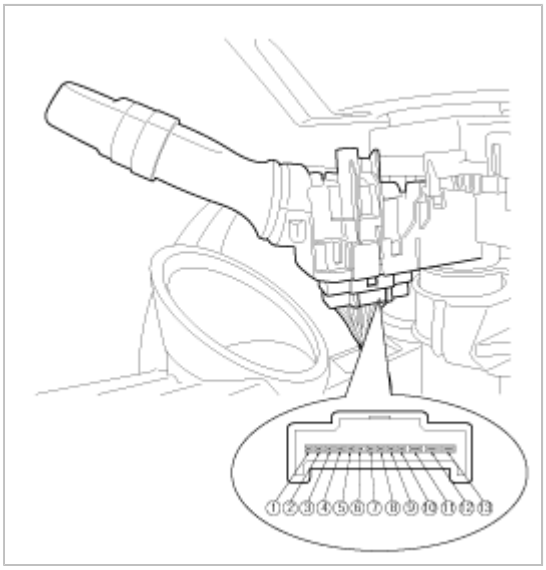


4. Check for intensity. If the light intensity of the lamps changes smoothly without any flickering when the rheostat is turned, it can be assumed that the rheostat is normal.



Inspection

1. Disconnect the negative(-) battery terminal.
2. Remove the lighting switch of the multi-function switch.(Refer to the multi-function switch)
3. With the front fog lamp switch, make sure that continuity exists between the terminals below. If continuity is not as specified, replace the multi-function switch.

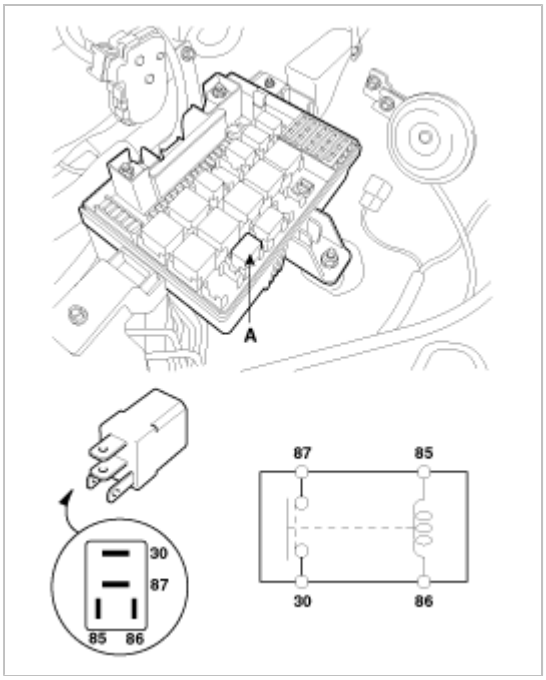


Front Fog Lamp

Terminal / Position	5	6
OFF		
ON	○	○

Front Fog Lamp Relay

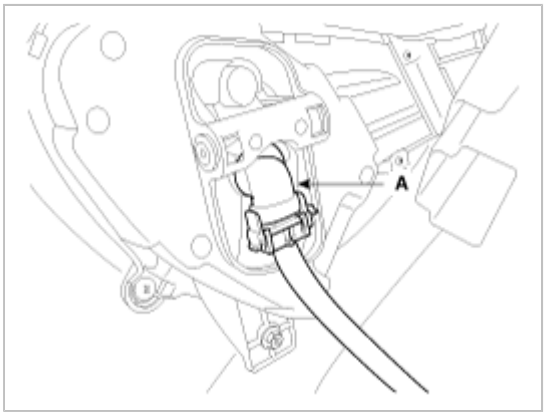
1. Disconnect the negative(-) battery terminal.
2. Pull out the front fog lamp relay(A) from the engine compartment relay box.
3. Check for continuity between terminals.There should be continuity between the No.2 and No.3 terminals when power and ground are connected to the No.5 and No.1 terminals.
4. There should be no continuity between the No.2 and No.3 terminals when power is disconnected.



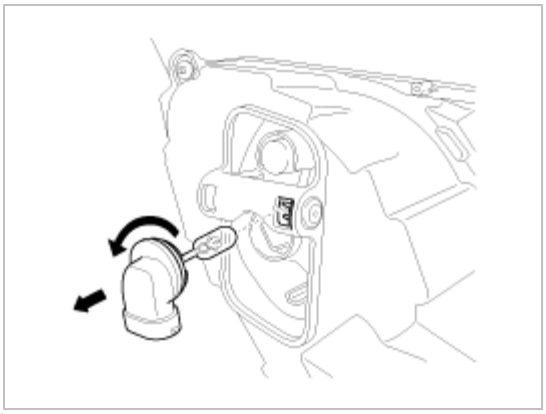
Terminal / Power	30	87	85	86
Disconnected			○	○
Connected	○	○	⊖	⊕

Removal

1. Disconnect the negative (-) battery terminal.
2. Remove the front bumper.
   (Refer to the body group - front bumper)
3. Disconnect the front fog lamp connector(A).



4. Replace the front fog bulb turning it in the counter clockwise direction.

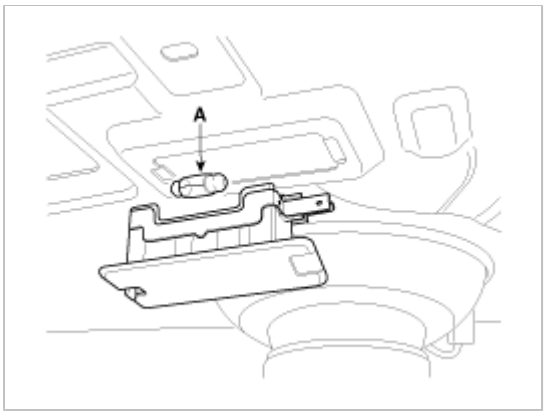


Installation

1. Install the front fog bulb.
2. Reconnect the lamp connector.
3. Install the front bumper.

Removal

1. Disconnect the negative (-) battery terminal.
2. Remove the luggage room lamp with a flat-tip screwdriver and disconnect the 2P connector.
3. Remove the bulb(A).



Installation

1. Install the bulb.
2. Install the luggage lamp lens.

Troubleshooting

Symptom	Possible cause	Remedy
One lamp does not light (all exterior)	Bulb burned out	Replace bulb
	Socket, wiring or ground faulty	Repair if necessary
Head lamps do not light	Bulb burned out	Replace bulb
	Ignition fuse (LOW:15A, HIGH:15A) blown	Check for short and replace fuse
	Head lamp fuse (15A) blown	Check for short and replace fuse
	Head lamp relay faulty	Check relay
	Lighting switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Tail lamps and license plate lamps do not light	Bulb burned out	Replace bulb
	Tail lamp fuse (20A) blown	Check for short and replace fuse
	Tail lamp relay faulty	Check relay
	Lighting switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Stop lamps do not light	Bulb burned out	Replace bulb
	Stop lamp fuse (15A) blown	Check for short and replace fuse
	Stop lamp switch faulty	Adjust or replace switch
	Wiring or ground faulty	Repair if necessary
Stop lamps do not turn off	Stop lamp switch faulty	Repair or replace switch
Instrument lamps do not light (Tail lamps light)	Rheostat faulty	Check rheostat
	Wiring or ground faulty	Repair if necessary
Turn signal lamp does not flash on one side	Bulb burned out	Replace bulb
	Turn signal switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Turn signal lamps do not light	Bulb burned out	Replace bulb
	Turn signal lamp fuse (10A) blown	Check for short and replace fuse
	Flasher unit faulty	Check flasher unit
	Turn signal switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Hazard warning lamps do not light	Bulb burned out	Replace bulb
	Hazard warning lamp fuse (15A) blown	Check for short and replace fuse
	Flasher unit faulty	Check flasher unit
	Hazard switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Back up lamps do not light	Bulb burned out	Replace bulb

	Back up lamp fuse (10A) blown	Check for short and replace fuse
	Back up lamp switch (M/T) faulty	Check switch
	Transaxle range switch (A/T) faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Front fog lamps do not light	Bulb burned out	Replace bulb
	Front fog lamp fuse (15A) blown	Check for short and replace fuse
	Front fog lamp relay faulty	Check relay
	Front fog lamp switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Map lamp does not light	Bulb burned out	Replace bulb
	Room lamp fuse (10A) blown	Check for short and replace fuse
	Map lamp switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary
Luggage room lamp does not light	Bulb burned out	Replace bulb
	Room lamp fuse (10A) blown	Check for short and replace fuse
	Luggage room lamp switch faulty	Check switch
	Wiring or ground faulty	Repair if necessary