

LIGHTING SYSTEM

650ND-02

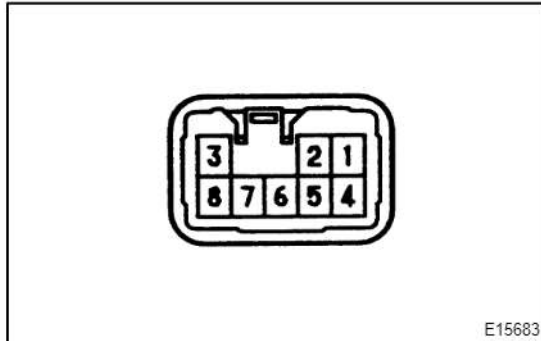
PRECAUTION

1. PRECAUTION OF HEADLIGHT BULB REPLACEMENT

- (a) If the adhered oil is left unremoved from the halogen lamp surface, the lamp service life is shortened as it becomes hot when it is turned on.
- (b) Since the internal pressure of a halogen lamp is high, dropping, hitting or damaging the bulb may cause the glass to scatter. Therefore, handle it with great care.
- (c) When replacing bulbs, do not remove until a new bulb is prepared because if it is left being removed for a long period of time, the lens may be covered with dirt or moisture.
- (d) Be sure to use the bulb of the same watt when replacing bulbs.
- (e) Firmly reinstall the socket after replacing the bulb. Otherwise, cloudy lens or water leakage will be caused.

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ON-VEHICLE INSPECTION



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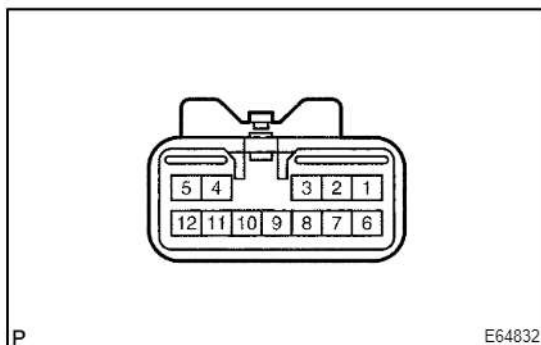
1. INSPECT TURN SIGNAL FLASHER CIRCUIT (w/o: Daytime Running Light)

- (a) Measure voltage between terminals as shown in the chart below.

Tester connection	Condition	Specified condition
1 – Ground	Turn ignition switch ON	Battery positive voltage
1 – Ground	Turn ignition switch OFF	No voltage
4 – Ground	Constant	Battery positive voltage
7 – Ground	Constant	Continuity

- (b) Connect the connector to the turn signal flasher, and turn the ignition switch to ON, and inspect the wire harness side connector from the back side as shown in the chart.

Tester connection	Condition	Specified condition
2 – Ground	Hazard switch OFF → ON	0V → 10 – 14 V (60 to 120 time per minutes)
2 – Ground	Turn signal switch (right turn) OFF → ON	0V → 10 – 14 V (60 to 120 time per minutes)
3 – Ground	Hazard switch OFF → ON	0V → 10 – 14 V (60 to 120 time per minutes)
3 – Ground	Turn signal switch (left turn) OFF → ON	0V → 10 – 14 V (60 to 120 time per minutes)
5 – Ground	Turn signal switch (left turn) OFF → ON	10 – 14 V → 0 V
6 – Ground	Turn signal switch (right turn) OFF → ON	10 – 14 V → 0 V
8 – Ground	Hazard switch OFF → ON	10 – 14 V → 0 V



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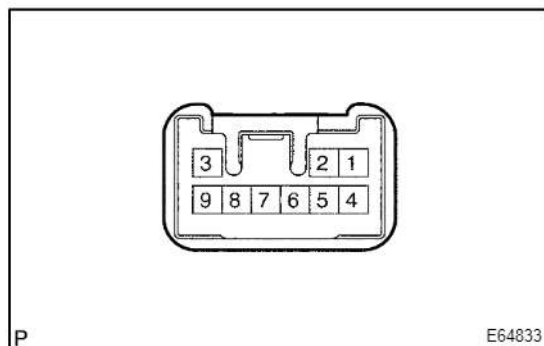
2. INSPECT TURN SIGNAL FLASHER CIRCUIT (w/: Daytime Running Light)

- (a) Measure voltage between terminals as shown in the chart below.

Tester connection	Condition	Specified condition
9 – Ground	Constant	Continuity
1 – Ground	Turn ignition switch ON	Battery positive voltage
1 – Ground	Turn ignition switch OFF	No voltage
6 – Ground	Constant	Battery positive voltage

- (b) Connect the connector to the turn signal flasher and turn the ignition switch to ON, and inspect the wire harness side connector from the back side as shown in the chart.

Tester connection	Condition	Specified condition
2 - Ground	Hazard switch OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
2 - Ground	Turn signal switch (right turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
2 - Ground	Turn signal switch (right turn) ON → OFF	10 - 14 V (60 to 120 time per minutes) → 10 - 14 V
3 - Ground	Hazard switch OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
3 - Ground	Turn signal switch (right turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
4 - Ground	Hazard switch OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
4 - Ground	Turn signal switch (left turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
4 - Ground	Turn signal switch (left turn) ON → OFF	10 - 14 V (60 to 120 time per minutes) → 10 - 14 V
5 - Ground	Hazard switch OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
5 - Ground	Turn signal switch (left turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
7 - Ground	Turn signal switch (left turn) OFF → ON	10 - 14 V → 0 V
8 - Ground	Turn signal switch (right turn) OFF → ON	10 - 14 V → 0 V
10 - Ground	Hazard switch OFF → ON	10 - 14 V → 0 V

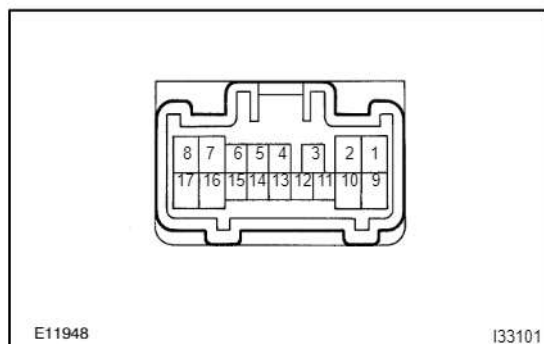


3. INSPECT TOWING CONVERTER RELAY

- (a) Measure voltage between terminals as shown in the chart below.

Tester connection	Condition	Specified condition
1 - Ground	Constant	Battery positive voltage
2 - Ground	Turn signal switch (right turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
2 - Ground	Depress the brake pedal	Battery positive voltage
3 - Ground	Turn signal switch (right turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
4 - Ground	Turn signal switch (left turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)
4 - Ground	Depress the brake pedal	Battery positive voltage
6 - Ground	Constant	Continuity
8 - Ground	Depress the brake pedal	Battery positive voltage
9 - Ground	Turn signal switch (left turn) OFF → ON	0V → 10 - 14 V (60 to 120 time per minutes)

INSPECTION



1. HEADLAMP DIMMER SWITCH ASSY

(a) Inspect the light control switch continuity.

- (1) Check that there is continuity between terminals at each switch position as shown in the chart.

Switch operation	Tester connection	Specified condition
OFF	–	No continuity
TAIL	14 – 16	Continuity
HEAD	13 – 16 – 14	Continuity
AUTO	16 – 12	Continuity

(b) Inspect the headlamp dimmer switch continuity.

- (1) Check that there is continuity between terminals at each switch position as shown in the chart.

Switch operation	Tester connection	Specified condition
FLASH	7 – 8 – 16	Continuity
LOW BEAM	16 – 17	Continuity
HI BEAM	7 – 16	Continuity

(c) Inspect the turn signal switch continuity.

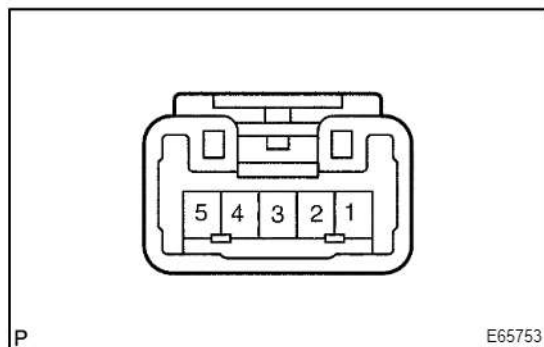
- (1) Check that there is continuity between terminals at each switch position as shown in the chart.

Switch operation	Tester connection	Specified condition
Right turn	2 – 3	Continuity
Neutral	–	No continuity
Left turn	1 – 2	Continuity

(d) Inspect the front fog lamp switch continuity.

- (1) Check that there is continuity between terminals at each switch position as shown in the chart.

Switch operation	Tester connection	Specified condition
OFF	–	No continuity
ON	10 – 11	Continuity



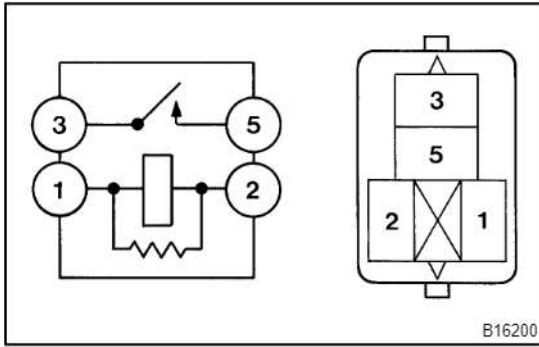
2. HAZARD WARNING SIGNAL SWITCH ASSY

(a) Check that there is continuity between terminals at each switch position as shown in the chart.

Switch operation	Tester connection	Specified condition
OFF	2 – 3	No continuity
ON	2 – 3	Continuity
Illumination circuit	4 – 5	Continuity

(b) Inspect illumination operation.

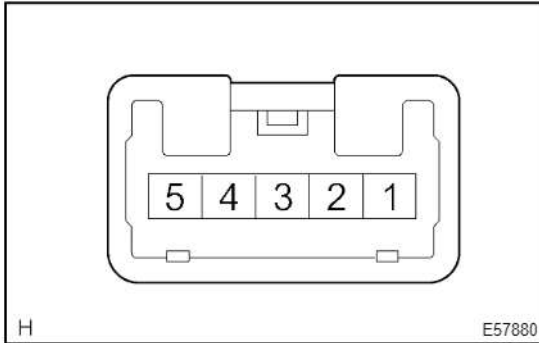
- (1) Connect the battery positive (+) lead to terminal 4 and the battery negative (–) lead to terminal 5, then check that the illumination lights up.



3. FOG LAMP RELAY

(a) Inspect the relay continuity.

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Constant	3 - 5	No continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity



4. ROOF CONSOLE BOX ASSY

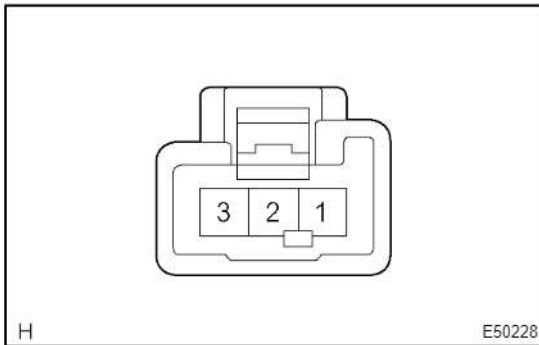
(a) Inspect the map lamp continuity.

- (1) Check that there is continuity between terminal 1 and 5 when the switch is operated.

Standard:

ON: Continuity

OFF: No continuity



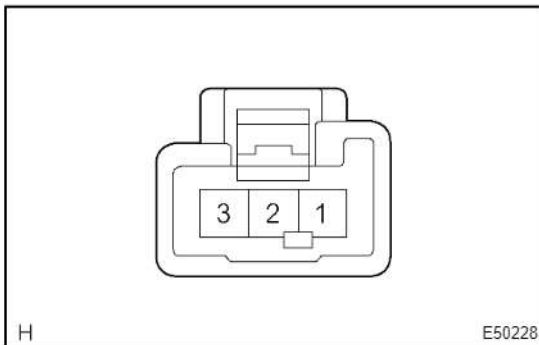
5. ROOM LAMP ASSY NO.1

(a) Inspect the room lamp assy No.1 continuity.

- (1) Check that there is continuity between terminals at each switch position as shown in the chart.

Standard:

Switch operation	Tester connection	Specified condition
OFF	-	No continuity
DOOR	1 - 2	Continuity
ON	1 - 3	Continuity



6. ROOM LAMP ASSY NO.2

(a) Inspect the room lamp assy No.2 continuity.

- (1) Check that there is continuity between terminals at each switch position as shown in the chart.

Standard:

Switch operation	Tester connection	Specified condition
OFF	-	No continuity
DOOR	1 - 2	Continuity
ON	1 - 3	Continuity

7. COURTESY LAMP ASSY

(a) Inspect the courtesy lamp assy continuity.

- (1) Check that there is continuity between terminals when the switch is operated.

Standard:

ON (When shaft is pressed): No continuity

OFF (When shaft is not pressed): Continuity

8. GLOVE BOX LAMP ASSY

- (a) Inspect the glove box lamp assy continuity.

(1) Check that there is continuity between terminals when the switch is operated.

Standard:**ON (When shaft is pressed): No continuity****OFF (When shaft is not pressed): Continuity****9. LH STEP SUB-ASSY**

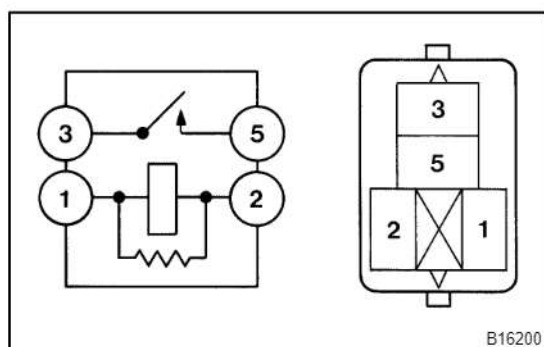
- (a) Inspect the side step lamp assy.

(1) Check that there is continuity between terminals when the courtesy lamp switch is operated.

Standard:**ON: Continuity****OFF: No continuity**

- (b) Inspect the rear wheel lamp assy.

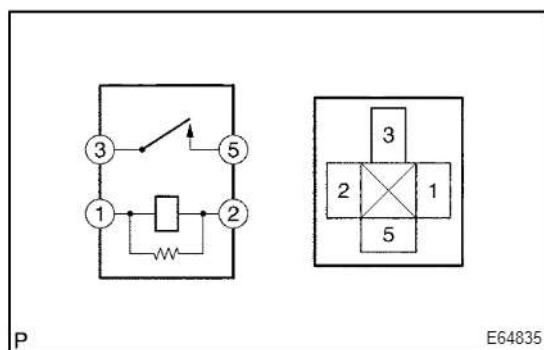
(1) Check that there is continuity between terminals when the courtesy lamp switch is operated.

Standard:**ON: Continuity****OFF: No continuity****10. TAIL LAMP RELAY**

- (a) Inspect relay continuity.

Standard:

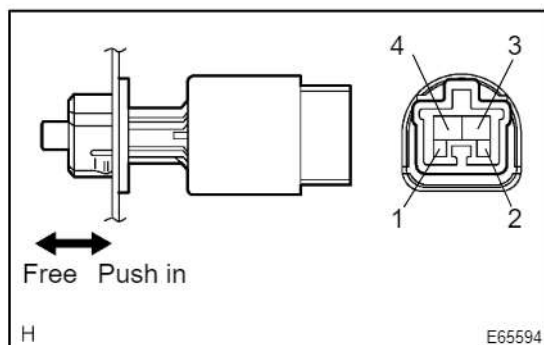
Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Constant	3 - 5	No continuity
Apply B+ between terminal 1 and 2	3 - 5	Continuity

**11. HEADLAMP RELAY**

- (a) Inspect relay continuity.

Standard:

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Constant	3 - 5	No continuity
Apply B+ between terminal 1 and 2	3 - 5	Continuity

**12. STOP LAMP SWITCH ASSY**

- (a) Check that the continuity between terminals at each switch position, as shown in the chart.

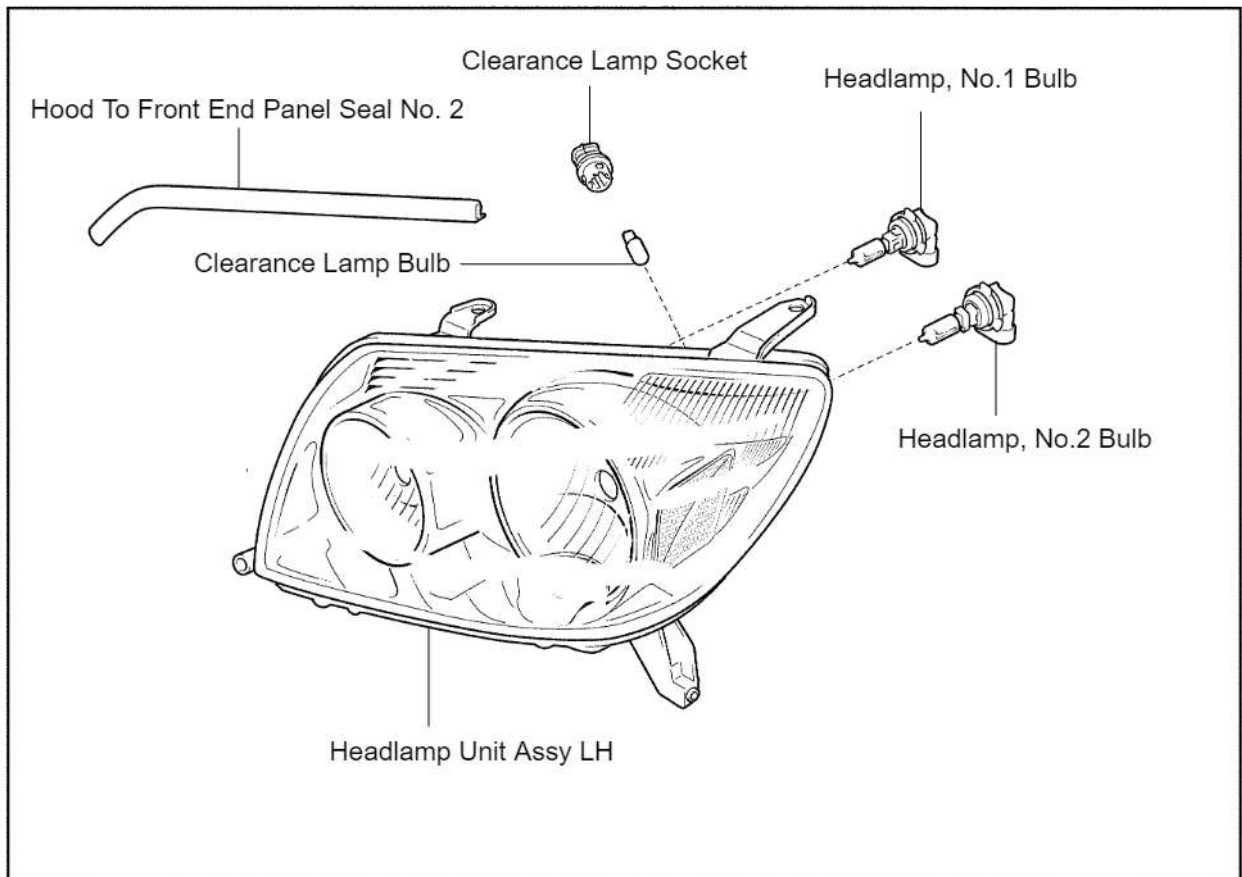
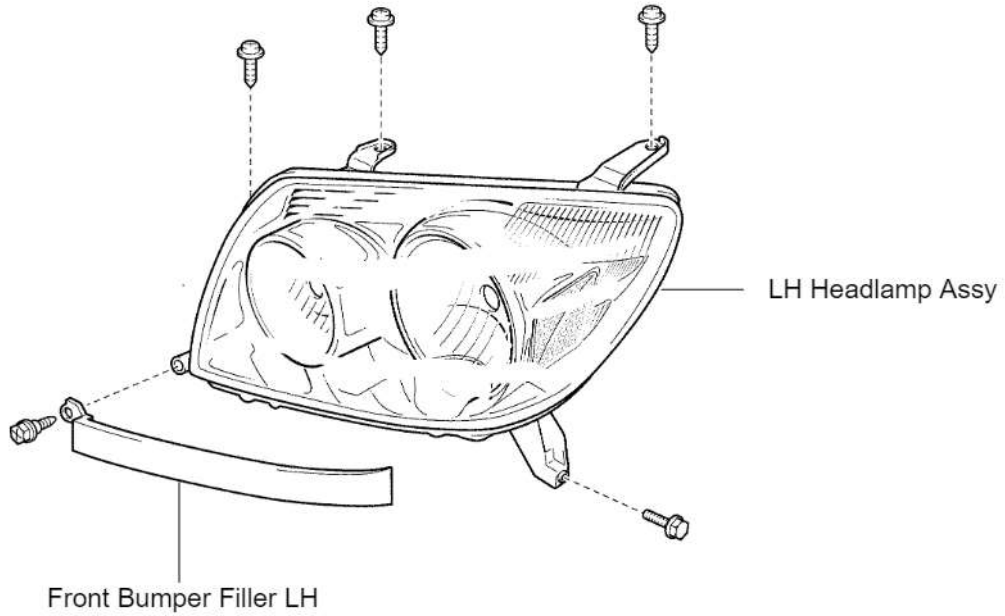
Standard:

Switch position	Tester connection	Specified condition
Switch pin free	1 - 2	No continuity
Switch pin free	3 - 4	Continuity
Switch pin pushed in	1 - 2	Continuity
Switch pin pushed in	3 - 4	No continuity

HEADLAMP UNIT ASSY LH

COMPONENTS

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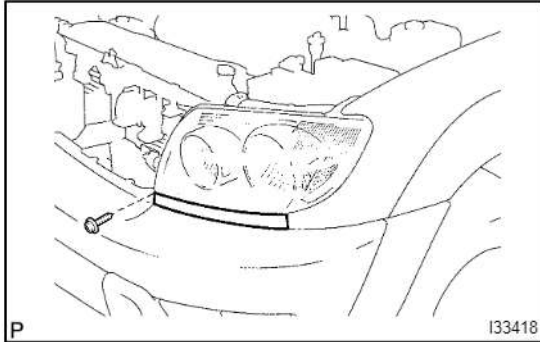
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REPLACEMENT

HINT:

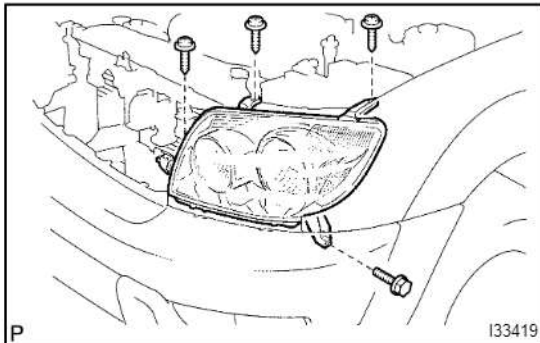
COMPONENTS: See page 65-7

1. REMOVE RADIATOR GRILLE LOWER (See page 76-2)



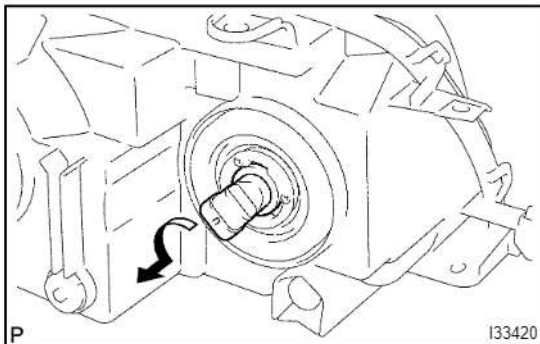
2. REMOVE FRONT BUMPER FILLER LH

- (a) Remove the screw and front bumper filler LH.



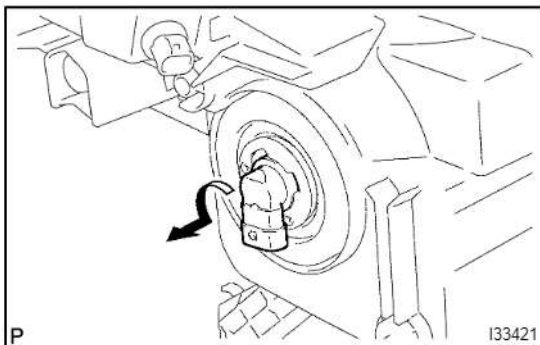
3. REMOVE LH HEADLAMP ASSY

- (a) Disconnect the connector.
(b) Remove the bolt, 3 screws and LH headlamp assy.



4. REMOVE HEADLAMP, NO.1 BULB

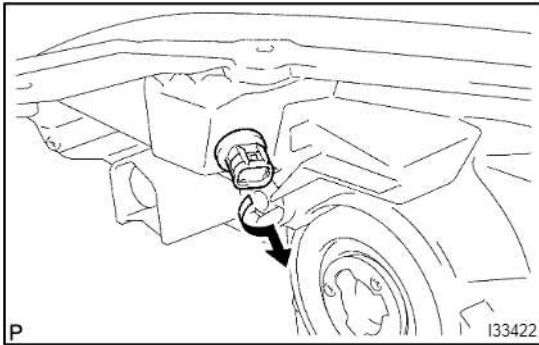
- (a) Remove the headlamp, No.1 bulb as shown in the illustration.



5. REMOVE HEADLAMP, NO.2 BULB

- (a) Remove the headlamp, No.2 bulb as shown in the illustration.

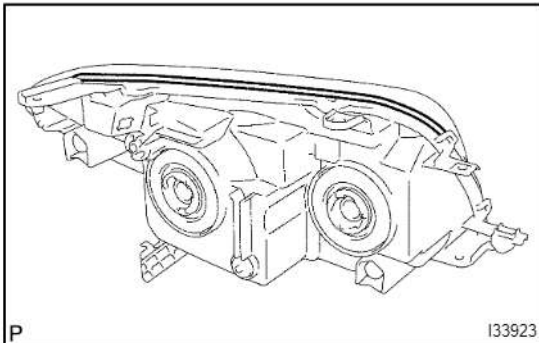
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6. REMOVE CLEARANCE LAMP BULB

- (a) Remove the clearance lamp socket and clearance lamp bulb as shown in the illustration.
- (b) Remove the clearance lamp bulb from the clearance lamp socket.

7. REMOVE CLEARANCE LAMP SOCKET



8. REMOVE HOOD TO FRONT END PANEL SEAL NO.2

- (a) Remove the hood to front end panel seal No.2 from the headlamp unit assy LH.

9. REMOVE HEADLAMP UNIT ASSY LH

10. HEADLIGHT AIM ONLY (See page 65-10)

ADJUSTMENT

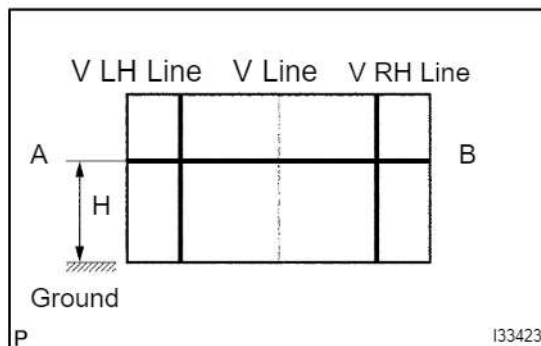
1. HEADLIGHT AIM ONLY

HINT:

- Perform aiming adjustment with Low-beam.
 - Since the Low-beam light and the High-beam light is a unit, if aiming on either side is proper, the other side should also be proper.
- However, check the both beams just to make sure.

(a) Prepare vehicle in the following conditions.

- Any damages or deformation do not exist around the headlight.
- Fuel is full.
- The tire inflation pressure is on the specified level.
- Vehicle is parked at the level surface.
- A person with standard weight sits on the driver seat.
- Vehicle is bounced up and down to stabilize the suspension to the normal position.



(b) Prepare a thick white paper (Draw a based line).

HINT:

- Use to stand the paper perpendicular.
- The based line differs in "Low-beam inspection" and "High-beam inspection".

(1) H line (Headlight height)

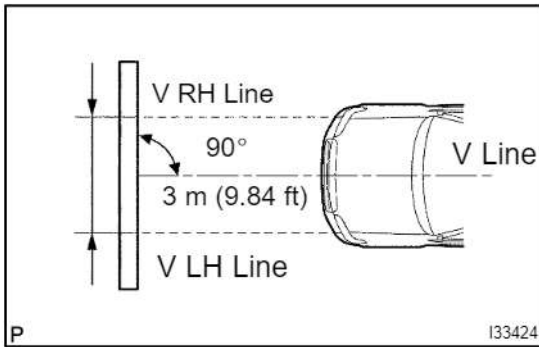
For the vehicle, when checking the height from the ground to the center mark of Low-beam (or High-beam), draw a horizontal line A-B at the height of Low-beam (or High-beam).

(2) V LH line, V RH line (Center mark position of right and left head lamp)

Draw vertical lines V LH and V RH at the positions of the center mark of the right and left Low-beam (when checking Hi-beam, draw vertical lines V LH and V RH at the positions of the center mark of the right and left Hi-beam).

(3) V line (Vehicle Center position)

At the middle of the V LH line and V RH line, draw a V line to align the center of the paper with the center of the vehicle.



(c) Check the headlight aiming.

(1) Align the paper with the vehicle position.

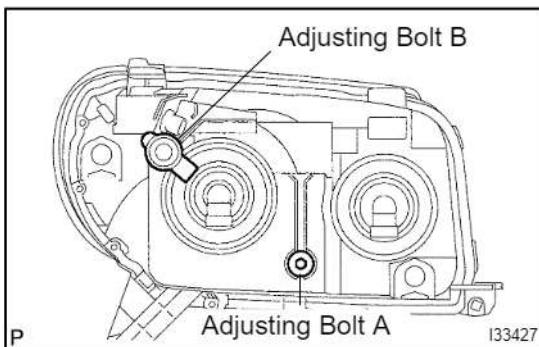
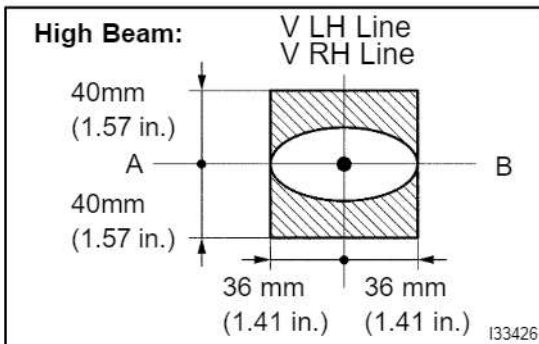
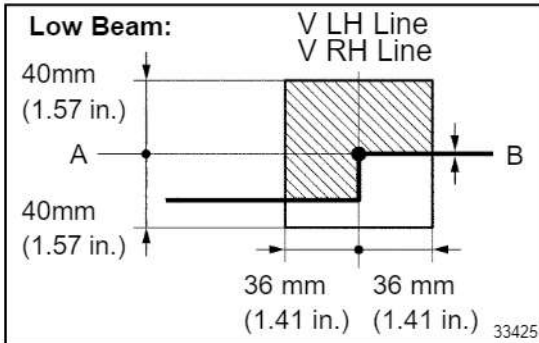
- Make the distance of 3 m (9.84 ft) between the head lamp and the paper, and put the paper on the wall with the H line being at the height of the center mark.
- Align the center line of the vehicle with the V line on the paper, and make the center line of the vehicle and the paper 90 degrees.

(2) Start the engine.

(3) Turn on the headlight and check that the aiming is between the specified values valve shown in the illustration.

HINT:

When checking the aiming of the High-beam, shut off the Low-beam or disconnect the Low-beam head lamp connector so that the Low-beam does not interrupt.



(d) When adjusting the aiming in the vertical direction.

(1) Using adjusting bolt A, adjust the headlight aim to the specified range.

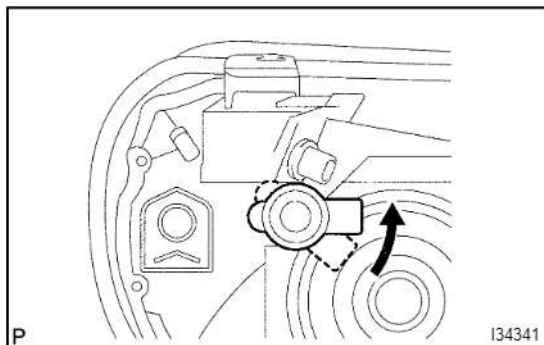
HINT:

The optical axis aim moves downward when turning a screwdriver clockwise and moves upward when turning a screwdriver counterclockwise.

(e) Only when replacing the headlight:

When adjusting the aiming in the horizontal direction.

(1) Using adjusting bolt B, adjust the headlight aim to the specified range.



- (f) Only when replacing the headlight:
Lock the headlight aiming cap as shown in the illustration.

NOTICE:

- After adjusting the headlight aim by using the adjusting bolt B, turn the adjusting bolt cover to lock the bolt.
- If the bolt cannot be locked by turning the cover, it means that the headlight aim is not adjusted correctly.

HEADLAMP PROTECTOR RETAINER UPPER LH

REPLACEMENT

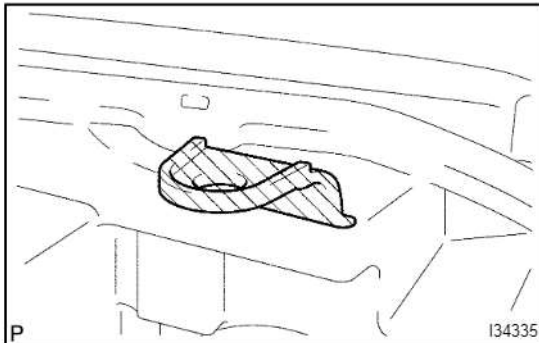
650MB-02

1. REMOVE RADIATOR GRILLE LOWER (See page 76-2)
2. REMOVE FRONT BUMPER FILLER LH (See page 65-8)
3. REMOVE LH HEADLAMP ASSY (See page 65-8)

4. INSTALL HEADLAMP PROTECTOR RETAINER UPPER LH

HINT:

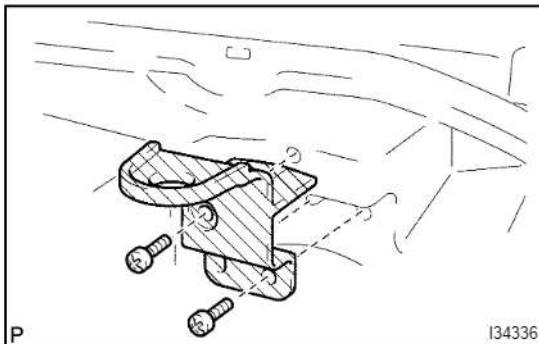
When only the installation part of the headlamp unit assy LH is damaged, it can be repaired inexpensively by using a headlamp protector retainer upper LH. In this case, however, the headlamp unit assy LH itself should not be damaged.



- (a) Cut off the part shaded in the illustration and sand smooth with sandpaper.

NOTICE:

After cutting off the part roughly, place the headlamp protector retainer upper LH against the bosses and gradually file any interfering part until the proper condition for installation is made.



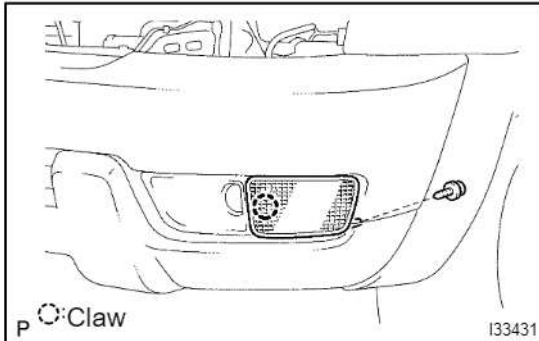
- (b) Install the headlamp protector retainer upper LH with the 2 screws.

5. HEADLIGHT AIM ONLY (See page 65-10)

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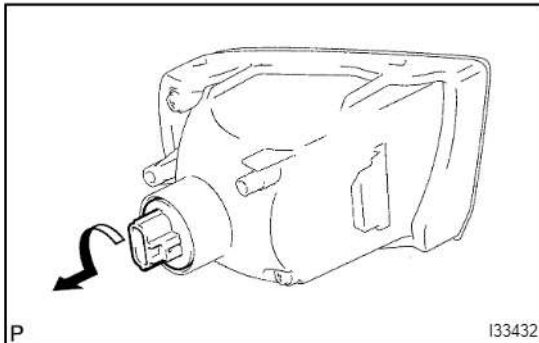
FRONT TURN SIGNAL LAMP LENS LH REPLACEMENT

650MC-02



1. REMOVE FRONT TURN SIGNAL LAMP LH

- Disconnect the connector.
- Remove the screw.
- Release the claw fitting, remove the front turn signal lamp assy LH.



2. REMOVE FRONT TURN SIGNAL LAMP BULB

- Remove the front turn signal lamp plug assy and front turn signal lamp bulb as shown in the illustration.
- Remove the front turn signal lamp bulb from the front turn signal lamp plug assy.

3. REMOVE FRONT TURN SIGNAL LAMP PLUG ASSY

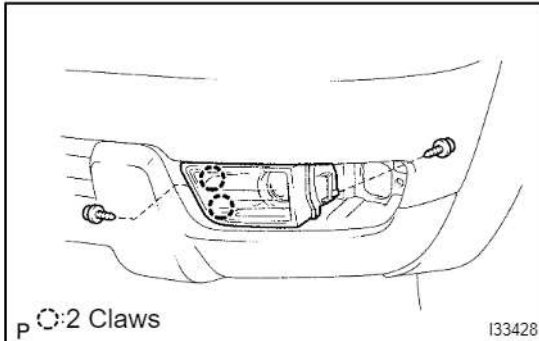
4. REMOVE FRONT TURN SIGNAL LAMP LENS LH

FOG LAMP LAMP UNIT LH

REPLACEMENT

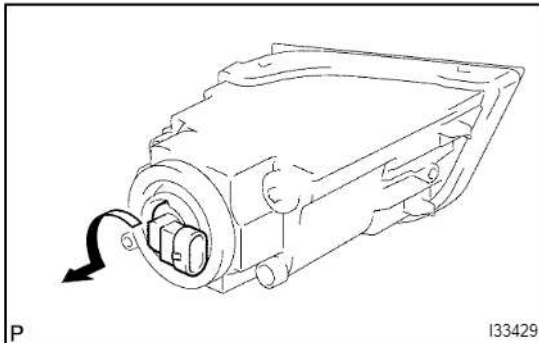
650MK-02

1. REMOVE FRONT TURN SIGNAL LAMP LH (See page 65-14)



2. REMOVE FRONT FOG LAMP ASSY LH

- Disconnect the connector.
- Remove the 2 screws.
- Release the 2 claw fittings, then remove the fog lamp assy LH.



3. REMOVE FOG LAMP BULB

- Remove the fog lamp bulb as shown in the illustration.

4. REMOVE FOG LAMP LAMP UNIT LH

5. PUT VEHICLE THESE CONDITIONS (See page 65-16)

6. ADJUST FOG LIGHT AIM (See page 65-16)

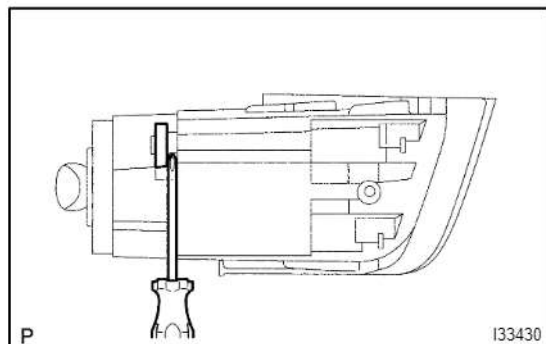
7. CHECK FOG LIGHT AIM (See page 65-16)

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ADJUSTMENT

1. PUT VEHICLE THESE CONDITIONS

- (a) Tire inflation pressure is in the specified value. (See page 28-1)
- (b) Start the engine.



2. ADJUST FOG LIGHT AIM

- (a) The fog light aim can be adjusted by turning the aiming screw in the vertical direction.

HINT:

The optical aim moves upward when turning a screwdriver clockwise, while it moves downward when turning a screwdriver counterclockwise.

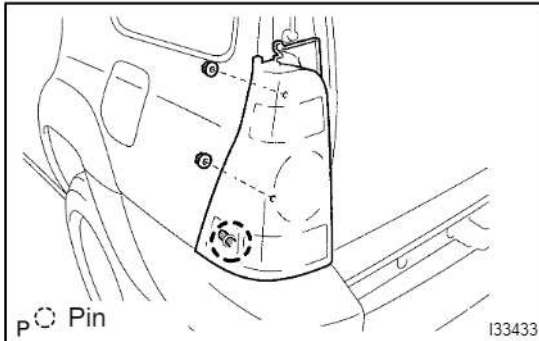
3. CHECK FOG LIGHT AIM

REAR COMBINATION LAMP LENS LH

REPLACEMENT

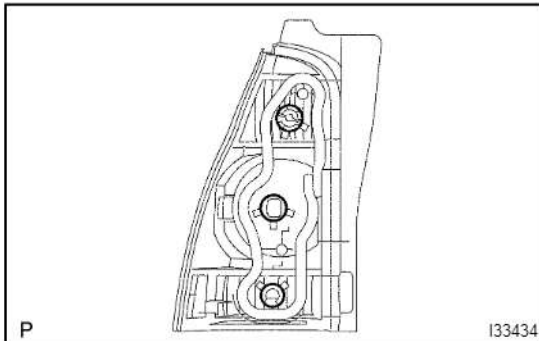
650MD-02

1. REMOVE REAR COMBINATION LAMP SERVICE COVER LH



2. REMOVE REAR COMBINATION LAMP ASSY LH

- (a) Disconnect the connector.
- (b) Remove the 2 nuts and rear combination lamp assy LH.



3. REMOVE REAR COMBINATION LAMP BULB

- (a) Remove the 3 rear combination lamp socket and wire sub-assy LH and 3 rear combination lamp bulbs as shown in the illustration.
- (b) Remove the 3 rear combination lamp bulbs from the 3 rear combination lamp socket and wire sub-assy LH.

4. REMOVE REAR COMBINATION LAMP SOCKET AND WIRE SUB-ASSY LH

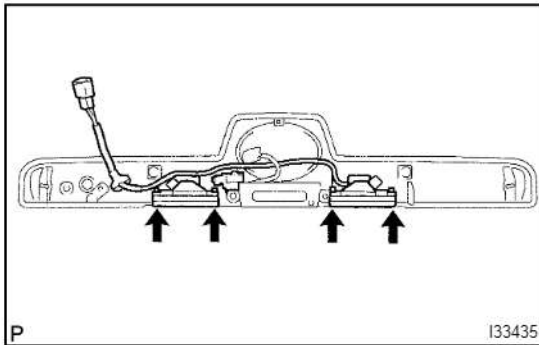
5. REMOVE REAR COMBINATION LAMP LENS LH

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LICENSE PLATE LAMP BODY REPLACEMENT

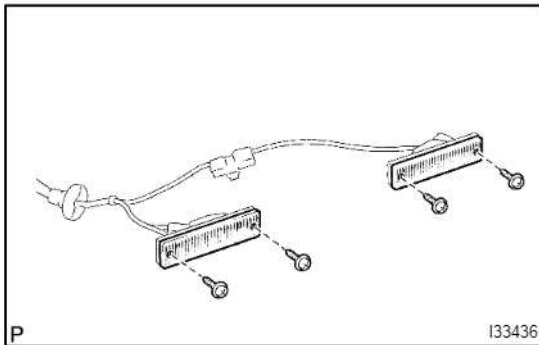
650ME-02

1. REMOVE ASSIST STRAP HOLE COVER (See page 75-38)
2. REMOVE ASSIST STRAP ASSY (See page 75-38)
3. REMOVE BACK DOOR TRIM COVER (See page 75-38)
4. REMOVE BACK DOOR TRIM BOARD (See page 75-38)
5. REMOVE BACK DOOR GARNISH SUB-ASSY OUTSIDE (See page 76-38)



6. REMOVE LICENSE PLATE LAMP ASSY

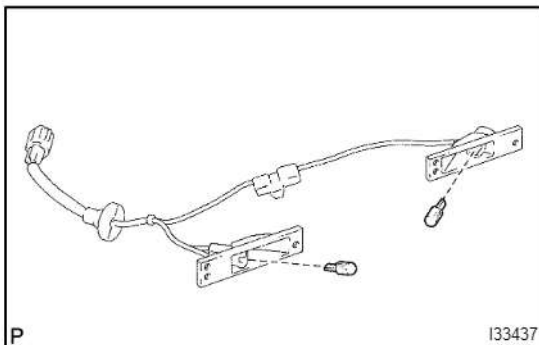
- (a) Loosen the 4 screws and remove the licence plate lamp assy.



7. REMOVE LICENSE PLATE LAMP LENS

- (a) Remove the 4 screws and 2 license plate lamp lenses.

8. REMOVE LICENSE PLATE LAMP LENS GASKET



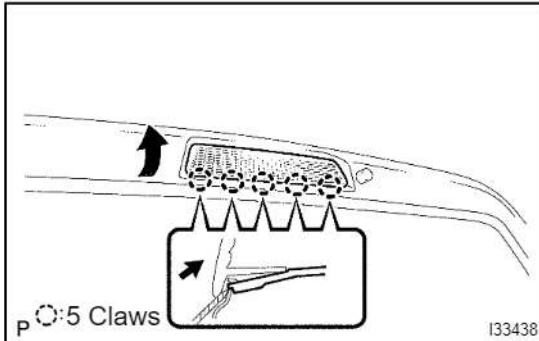
9. REMOVE LICENSE PLATE LAMP BULB

- (a) Remove the 2 license plate lamp bulbs as shown in the illustration.

10. REMOVE LICENSE PLATE LAMP BODY

CENTER STOP LAMP ASSY REPLACEMENT

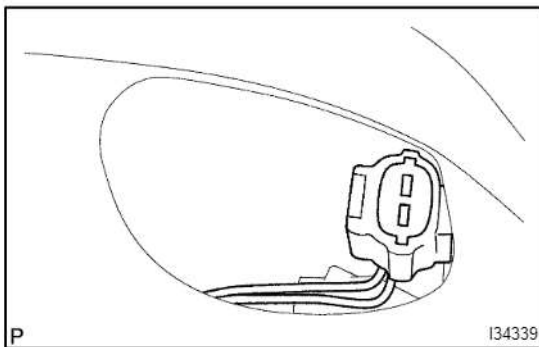
650MF-02



1. REMOVE CENTER STOP LAMP ASSY (W/O REAR SPOILER)

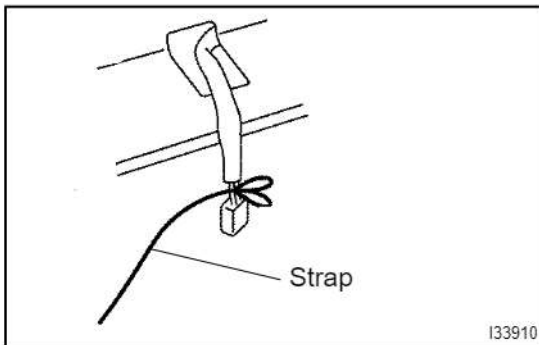
- Release the 5 fitting claws as shown in the illustration.
- Disconnect the connector and remove the center stop lamp assy.

2. REMOVE REAR SPOILER SUB-ASSY (W/ REAR SPOILER) (See page 76-9)

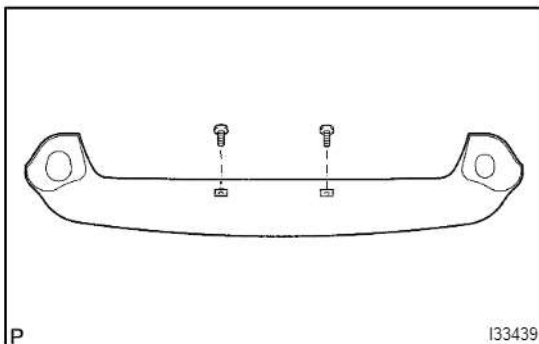


3. REMOVE CENTER STOP LAMP ASSY (W/ REAR SPOILER)

- Disconnect the connector.



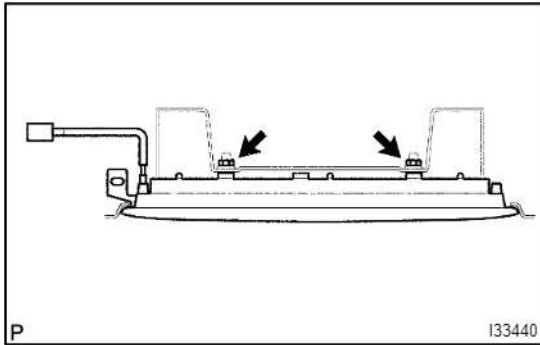
- Install the strap on the connector of center stop lamp assy.



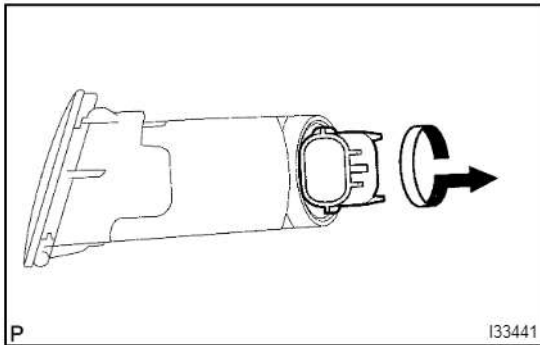
- Remove the 2 screws.
- Pass the connector through the inside the rear spoiler sub-assy and remove the center stop lamp assy w/ bracket.

HINT:

Leave the strap inside the rear spoiler sub-assy.



- (e) Remove the 2 nuts and center stop lamp assy.



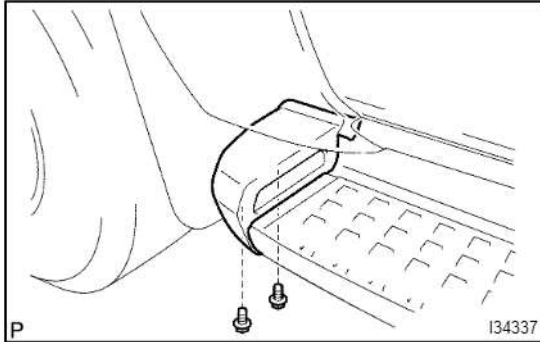
4. REMOVE CENTER STOP LAMP BULB (W/O REAR SPOILER)

- (a) Remove the center stop lamp socket and center stop lamp bulb as shown in the illustration.
(b) Remove the center stop lamp bulb from the center stop lamp socket.

5. INSTALL SPOILER, RR (W/ REAR SPOILER) (See page 76-9)

SIDE STEP LAMP ASSY REPLACEMENT

650M11-02



1. REMOVE SIDE STEP LAMP ASSY

- (a) Disconnect the connector.
- (b) Remove the 2 screws and side step lamp assy.

2. REMOVE STEP LAMP BULB

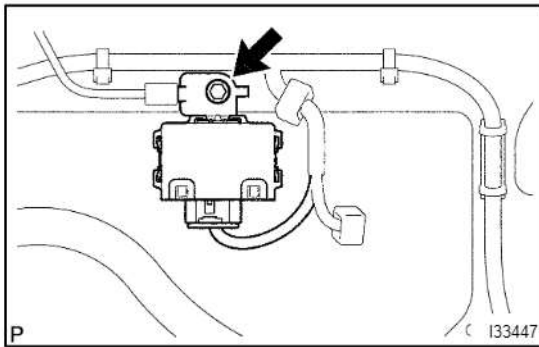
TOWING CONVERTER RELAY REPLACEMENT

650MJ-03

HINT:

COMPONENTS: See page 76-43

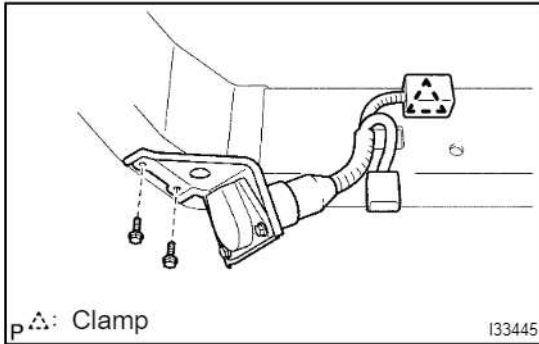
1. REMOVE TONNEAU COVER RETRACTOR SUB-ASSY (See page 76-43)
2. REMOVE BACK DOOR WEATHERSTRIP (See page 76-43)
3. REMOVE REAR FLOOR MAT SUPPORT PLATE REAR (See page 76-43)
4. REMOVE DECK BOARD SUB-ASSY (See page 76-43)
5. REMOVE DECK BOARD ASSY (See page 76-43)
6. REMOVE DECK FLOOR BOX RH (See page 76-43)
7. REMOVE DECK FLOOR BOX LH (See page 76-43)
8. REMOVE DECK TRIM COVER REAR (See page 76-43)
9. REMOVE DECK TRIM SIDE BOARD UPR LH (See page 76-43)
10. REMOVE DECK TRIM SIDE PANEL ASSY LH (See page 76-43)
11. REMOVE ROOF SIDE GARNISH ASSY INNER LH (See page 76-43)



12. REMOVE TOWING CONVERTER RELAY
 - (a) Disconnect the connector.
 - (b) Remove the bolt and towing converter relay.

NO.3 WIRE FRAME REPLACEMENT

65CM-03



1. REMOVE NO.3 WIRE FRAME

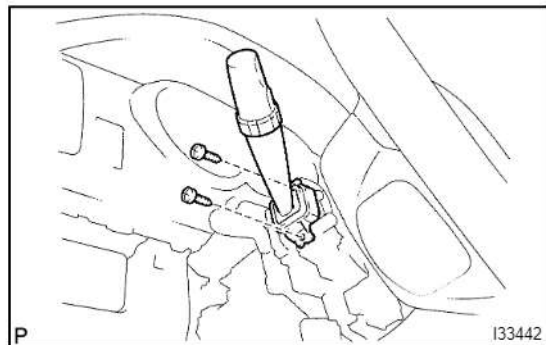
- (a) Disconnect the connector.
- (b) Release the clamp and remove the 2 bolts and No.3 wire frame.

HEADLAMP DIMMER SWITCH ASSY

650MG-02

REPLACEMENT

1. REMOVE COVER, STEERING COLUMN, LWR (See page 50-8)
2. REMOVE COVER, STEERING COLUMN, UPR (See page 50-8)



3. REMOVE HEADLAMP DIMMER SWITCH ASSY
 - (a) Disconnect the connector.
 - (b) Remove the 2 screws and headlamp dimmer switch assy.

4. INSTALL COVER, STEERING COLUMN, UPR (See page 50-8)
5. INSTALL COVER, STEERING COLUMN, LWR (See page 50-8)