

LIGHTING SYSTEM

65091-02

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) For replacement, be sure to use a bulb of the same watt.
- (e) Firmly reinstall the socket after bulb replacement. Otherwise, cloudy lens or invasion by water will be caused.

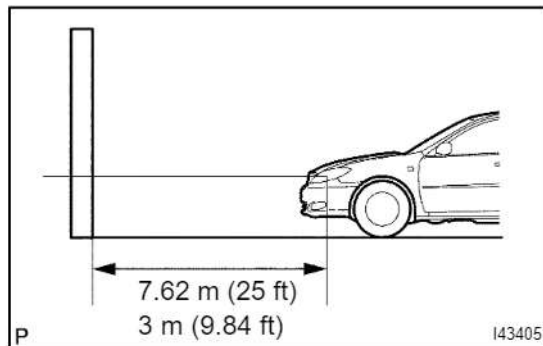
ADJUSTMENT

1. VEHICLE PREPARATION FOR HEADLAMP AIM ADJUSTMENT

- (a) Prepare the vehicle:
- Ensure there is no damage or deformation to the body around the headlamps.
 - Fill the fuel tank.
 - Make sure that the oil is filled to the specified level.
 - Make sure that the coolant is filled to the specified level.
 - Inflate the tires to the appropriate pressure.
 - Place the spare tire, tools, and jack in their original positions.
 - Unload the trunk.
 - Sit a person of average weight (68 kg, 150 lb) in the driver's seat.

2. PREPARATION FOR HEADLAMP AIMING (Using a tester)

- (a) Prepare the vehicle for headlamp aim check.
 (b) Adjust in accordance with headlamp tester instructions.



3. PREPARATION FOR HEADLAMP AIMING (Using a screen)

- (a) Prepare the vehicle according to the following conditions:
- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlamps can be observed and above which it cannot.
 - Place the vehicle at a 90° angle to the wall.
 - Create a 7.62 m (25 ft) distance between the vehicle (headlamp bulb center) and the wall.
 - Place the vehicle on a level surface.
 - Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 7.62 m (25 ft) between the vehicle (headlamp bulb center) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft) for check and adjustment. (The target zone will change with the distance so follow the instructions in the illustration.)

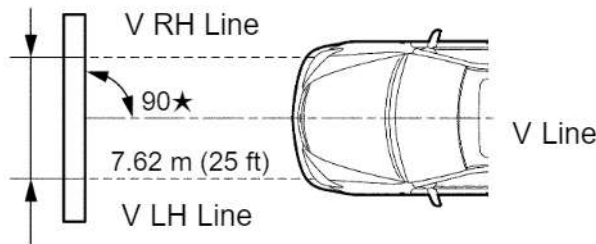
- (b) Prepare a piece of thick white paper (approximately 2 m (6.6 ft) (height) x 4 m (13.1 ft) (width)) to use as a screen.
 (c) Draw a vertical line down the center of screen (V line).

(d) Set the screen as shown in the illustration.

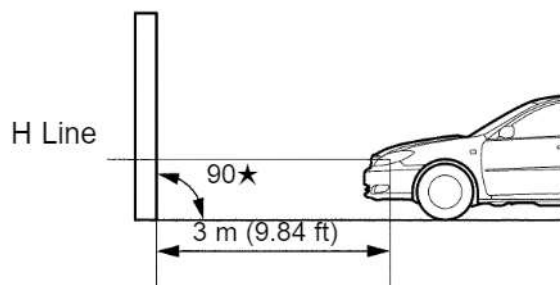
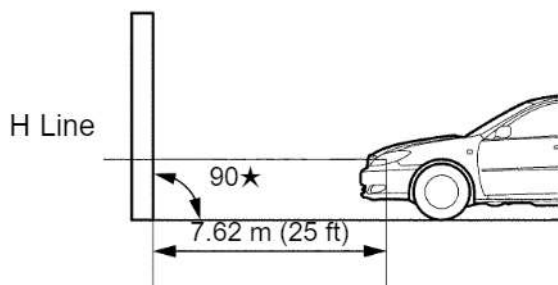
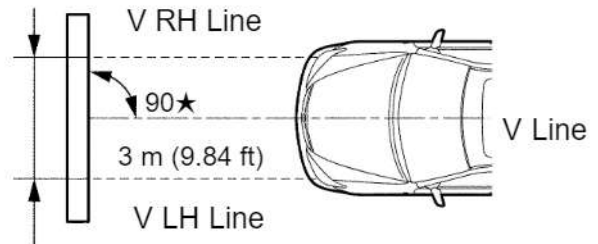
HINT:

- Stand the screen perpendicular to the ground.
- Align the V line on the screen with the center of the vehicle.

Aligning distance is 7.62 m (25 ft):

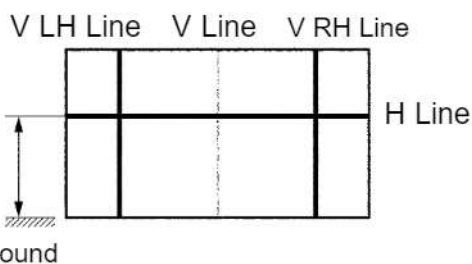


Aligning distance is 3 m (9.84 ft):



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(e) Draw base lines (H line, V LH, V RH lines) on the screen as shown in the illustration.

HINT:

- The base lines differ for "low-beam inspection" and "high-beam inspection".
- Mark the headlamp bulb center marks on the screen. If the center mark cannot be observed on the headlamp, use the center of the headlamp bulb or the manufacturer's name marked on the headlamp as the center mark.

(1) H Line (Headlamp height):

Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the headlamp bulb center marks of the low-beam headlamps.

(2) V LH Line, V RH Line (Center mark position of left-hand (LH) and right-hand (RH) headlamps):

Draw two vertical lines so that they intersect the H line at each center mark (aligned with the center of the low-beam headlamp bulbs).

4. HEADLAMP AIMING INSPECTION

- (a) Cover or disconnect the connector of the headlamp on the opposite side to prevent light from the headlamp not being inspected from affecting headlamp aiming inspection.

NOTICE:

Do not keep the headlamp covered for more than 3 minutes. The headlamp lens is made of synthetic resin, and may easily melt or be damaged due to heat.

HINT:

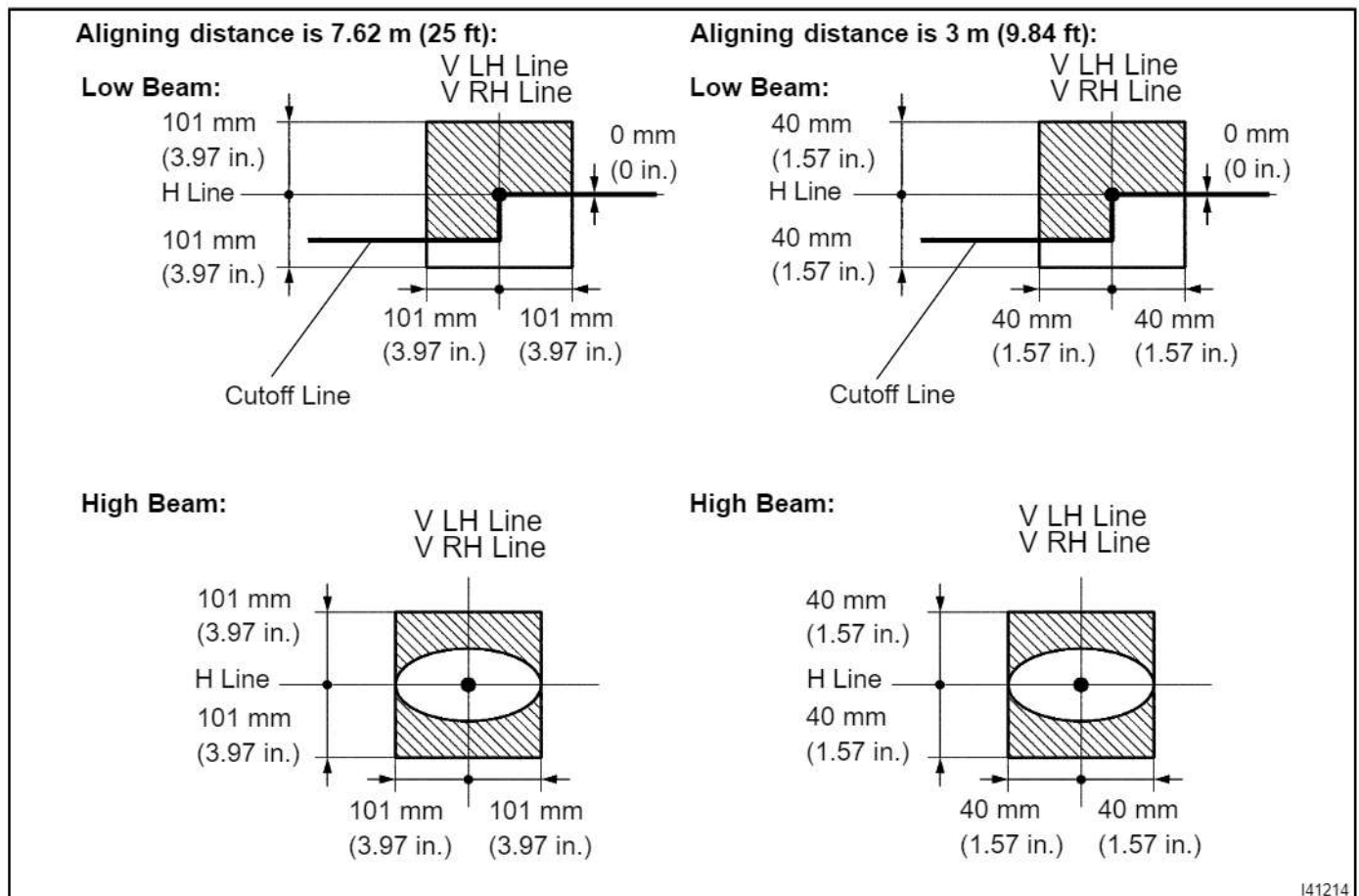
When checking the aim of the high-beam, cover the low-beam or disconnect the connector.

- (b) Start the engine.

NOTICE:

Engine rpm must be 1,500 or more.

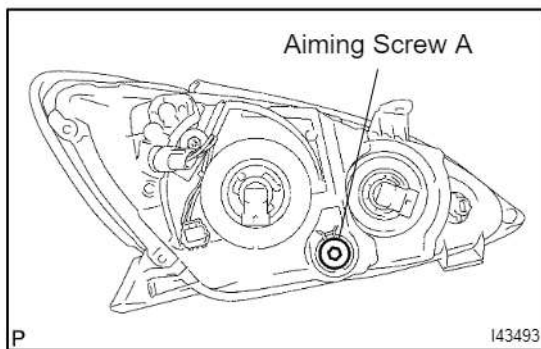
- (c) Turn on the headlamp and make sure that the cutoff line falls within the specified area, as shown in the illustration.



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HINT:

- Since the low-beam light and the high-beam light are a unit, if the aim on one is correct, the other should also be correct. However, check both beams just to make sure.
- Alignment distance is 7.62 m (25 ft):
The cutoff line is 101 mm (3.97 in.) above and below the H line as well as left and right of the V line with low-beam (SAE J599).
- Alignment distance is 3 m (9.84 ft):
The cutoff line is 40 mm (1.57 in.) above and below the H line as well as left and right of the V line with low-beam (SAE J599).
- Alignment distance is 7.62 m (25 ft):
The cutoff line is 101 mm (3.97 in.) above and below the H line as well as left and right of the V line with high-beam (SAE J599).
- Alignment distance is 3 m (9.84 ft):
The cutoff line is 40 mm (1.57 in.) above and below the H line as well as left and right of the V line with high-beam (SAE J599).
- Alignment distance is 7.62 m (25 ft):
The cutoff line is 53 mm (2.08 in.) below the H line with low-beam.
- Alignment distance is 3 m (9.84 ft):
The cutoff line is 21 mm (0.82 in.) below the H line with low-beam.

**5. HEADLAMP AIMING ADJUSTMENT**

- (a) Adjust the aim vertically:

Adjust the headlamp aim into the specified range by turning aiming screw A with a screwdriver.

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

HINT:

- Perform low-beam aim adjustment.
- The headlamp aim moves up when turning the aiming screw clockwise, and moves down when turning the aiming screw counterclockwise.

REPAIR

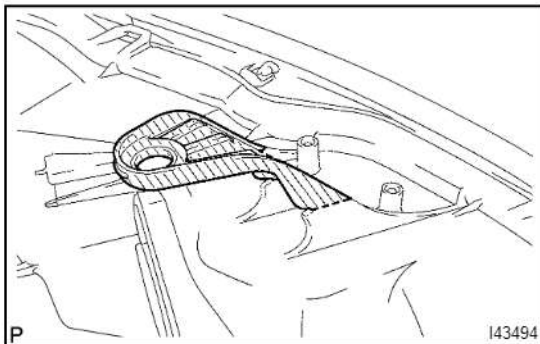
HINT:

- COMPONENTS: SEE PAGE 65-7.
 - Use the same procedures for the RH side and LH side.
 - The procedures listed below are for the LH side.
 - If the area where the headlamp unit LH is installed is broken, the repairs listed below can be performed inexpensively through the use of a repair use bracket. This may only be done if the headlamp assy LH itself is not damaged.
1. **REMOVE FRONT BUMPER ASSY (SEE PAGE 76-2)**
 2. **REMOVE HEADLAMP ASSY LH (SEE PAGE 65-8)**

3. INSTALL HEADLAMP PROTECTOR RETAINER UPPER LH

HINT:

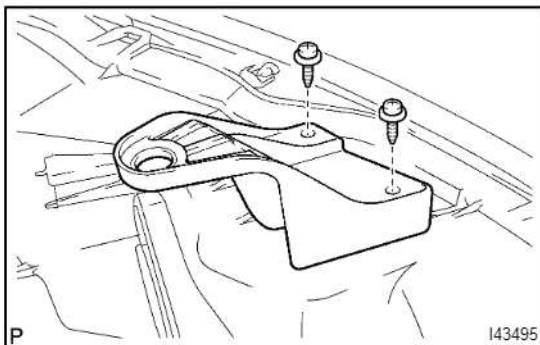
- If the installation area of the headlamp assy LH is damaged, use the supply bracket for low-cost repair.
- Ensure that the headlamp assy LH is not damaged.



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

NOTICE:

After cutting off the part, place the headlamp protector retainer UPPER LH against the bosses and gradually file away until installation is possible.



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

4. **VEHICLE PREPARATION FOR HEADLAMP AIM ADJUSTMENT (SEE PAGE 65-10)**
5. **PREPARATION FOR HEADLAMP AIMING (Using a screen) (SEE PAGE 65-10)**
6. **HEADLAMP AIMING INSPECTION (SEE PAGE 65-10)**
7. **HEADLAMP AIMING ADJUSTMENT (SEE PAGE 65-10)**
8. **VEHICLE PREPARATION FOR FOG LAMP AIM ADJUSTMENT (SEE PAGE 65-17)**

- 9. PREPARATION FOR FOG LAMP AIMING (SEE PAGE [65-17](#))
- 10. FOG LAMP AIMING INSPECTION (SEE PAGE [65-17](#))
- 11. FOG LAMP AIMING ADJUSTMENT (SEE PAGE [65-17](#))

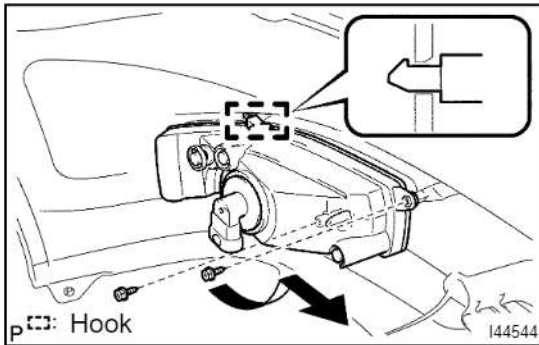
FOG LAMP ASSY LH OVERHAUL

651AP-01

HINT:

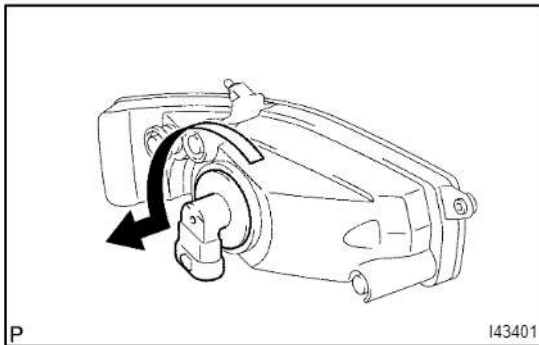
- Use the same procedures for the RH side and LH side.
- The procedures listed below are for the LH side.
- Installation is in the reverse order of removal.

1. REMOVE FRONT BUMPER ASSY (SEE PAGE 76-2)



2. REMOVE FOG LAMP ASSY LH

- (a) Remove the 2 screws.
- (b) Move the fog lamp assy LH in the direction indicated by the arrow, disengage the hook, and remove the fog lamp assy LH.



3. REMOVE FOG LAMP BULB

- (a) Turn the fog lamp bulb in the direction as shown in the illustration and remove the fog lamp bulb.

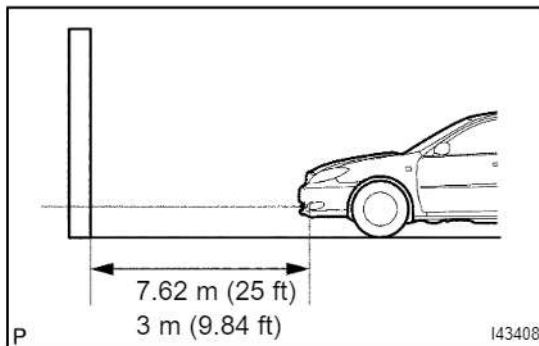
4. VEHICLE PREPARATION FOR FOG LAMP AIM ADJUSTMENT (SEE PAGE 65-17)
5. PREPARATION FOR FOG LAMP AIMING (SEE PAGE 65-17)
6. FOG LAMP AIMING INSPECTION (SEE PAGE 65-17)
7. FOG LAMP AIMING ADJUSTMENT (SEE PAGE 65-17)

ADJUSTMENT

1. VEHICLE PREPARATION FOR FOG LAMP AIM ADJUSTMENT

(a) Prepare the vehicle:

- Ensure there is no damage or deformation to the body around the fog lamps.
- Fill the fuel tank.
- Make sure that the oil is filled to the specified level.
- Make sure that the coolant is filled to the specified level.
- Inflate the tires to the appropriate pressure.
- Place the spare tire, tools, and jack in their original positions.
- Unload the trunk.
- Sit a person of average weight (68 kg, 150 lb) in the driver's seat.



2. PREPARATION FOR FOG LAMP AIMING

(a) Prepare the vehicle according to the following conditions:

- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the fog lamps can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 7.62 m (25 ft) distance between the vehicle (fog lamp bulb center) and the wall.
- Place the vehicle on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

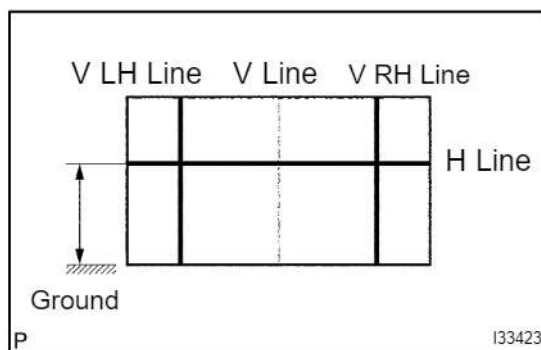
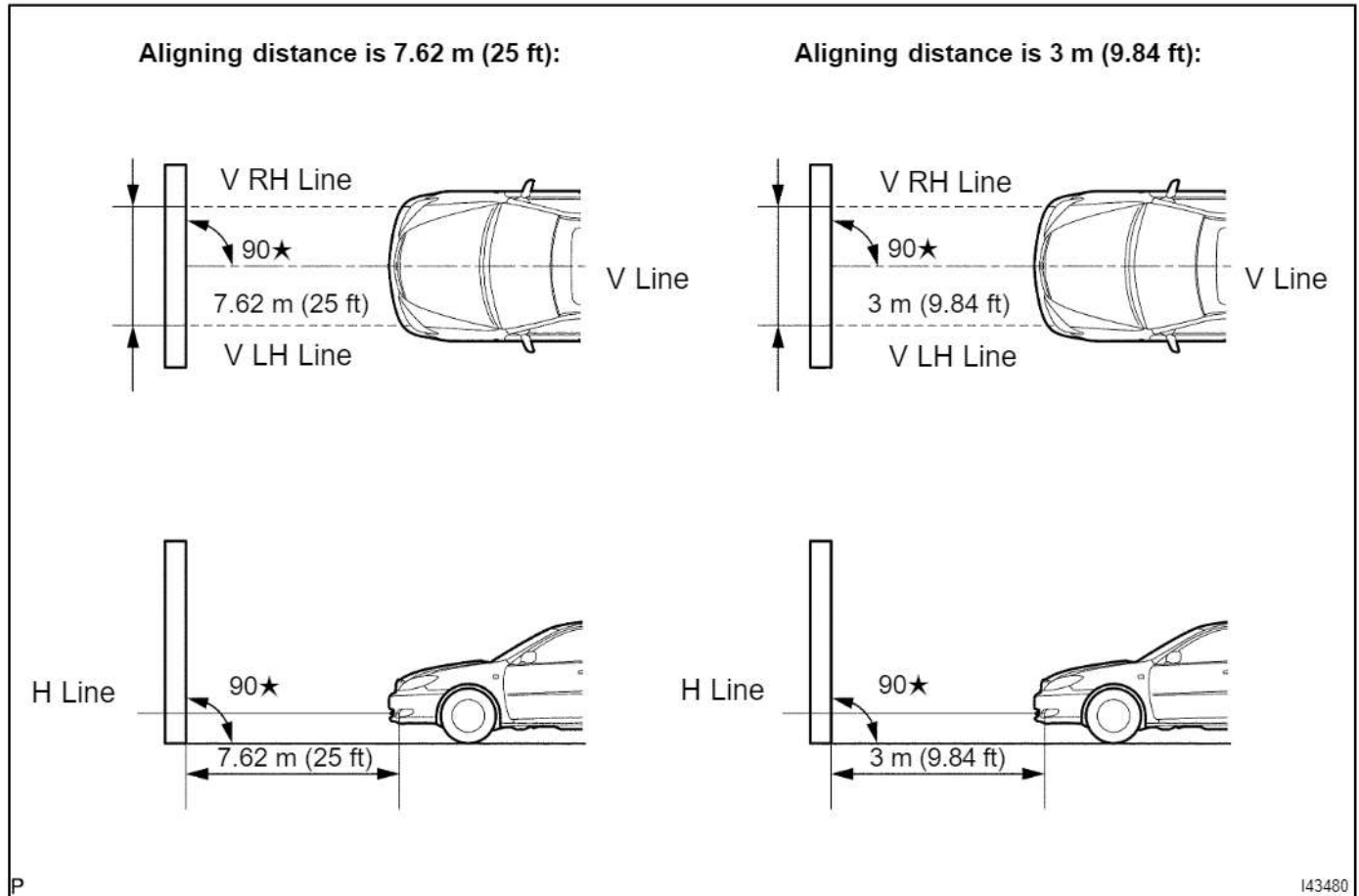
A distance of 7.62 m (25 ft) between the vehicle (fog lamp bulb center) and the wall is necessary for proper aim adjustment. If unavailable, secure a distance of exactly 3 m (9.84 ft) for check and adjustment. (The target zone will change with the distance, so follow the instructions in the illustration.)

- (b) Prepare a piece of thick white paper (approximately 2 m (6.6 ft) (height) x 4 m (13.1 ft) (width)) to use as a screen.
- (c) Draw a vertical line down the center of screen (V line).

(d) Set the screen as shown in the illustration.

HINT:

- Stand the screen perpendicular to the ground.
- Align the V line on the screen with the center of the vehicle.



(e) Draw base lines (H line, V LH, V RH lines) on the screen as shown in the illustration.

HINT:

Mark the fog lamp bulb center marks on the screen. If the center mark cannot be observed on the fog lamp, use the center of the fog lamp bulb or the manufacturer's name marked on the fog lamp as the center mark.

(1) H Line (Fog lamp height):

Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the fog lamp bulb center marks of the low-beam fog lamps.

(2) V LH Line, V RH Line (Center mark position of left-hand (LH) and right-hand (RH) fog lamps):

Draw two vertical lines so that they intersect the H line at each center mark.

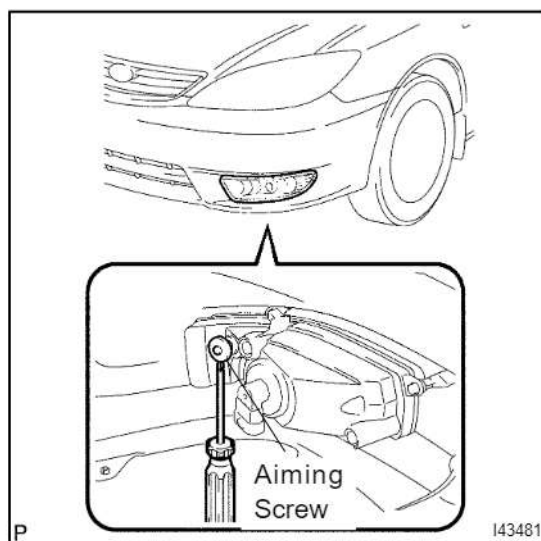
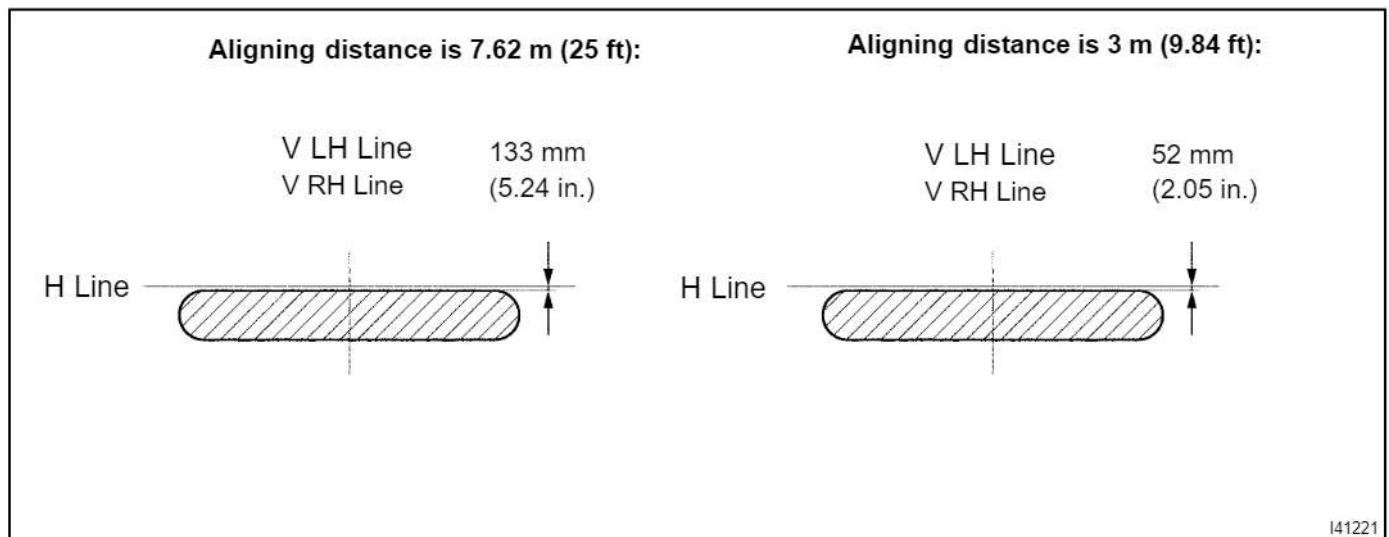
3. FOG LAMP AIMING INSPECTION

- (a) Cover or disconnect the connector of the fog lamp on the opposite side to prevent light from the fog lamp not being inspected from affecting fog lamp aiming inspection.
- (b) Start the engine.

NOTICE:

Engine rpm must be 1,500 or more.

- (c) Turn on the fog lamp and make sure that the cutoff line falls within the specified area, as shown in the illustration.



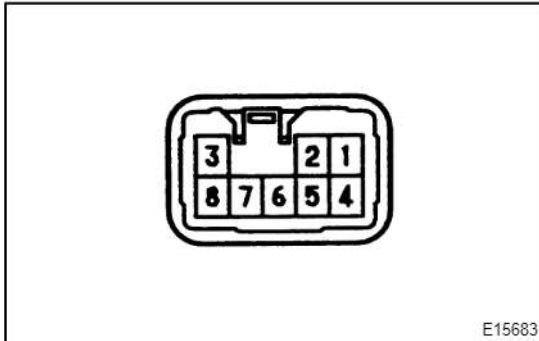
4. FOG LAMP AIMING ADJUSTMENT

- (a) Adjust the fog lamp aim into the specified range by turning aiming screw with a screwdriver.

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

ON-VEHICLE INSPECTION



1. INSPECT TURN SIGNAL FLASHER CIRCUIT

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

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

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

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

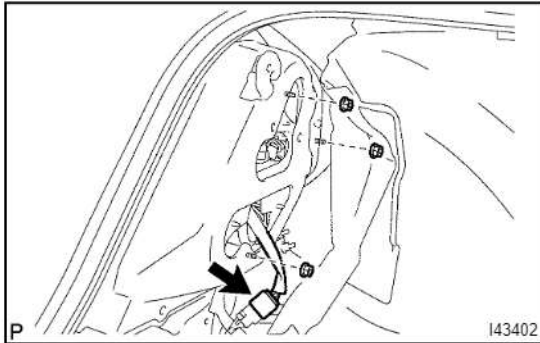
REAR COMBINATION LAMP ASSY LH

OVERHAUL

651AR-01

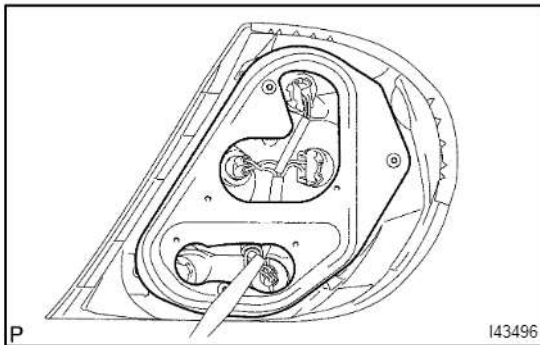
HINT:

- Use the same procedures for the RH side and LH side.
 - The procedures listed below are for the LH side.
 - Installation is in the reverse order of removal.
1. **REMOVE LUGGAGE COMPARTMENT TRIM HOOK NO.1 (SEE PAGE 76-8)**
 2. **REMOVE REAR FLOOR FINISH PLATE (SEE PAGE 76-8)**

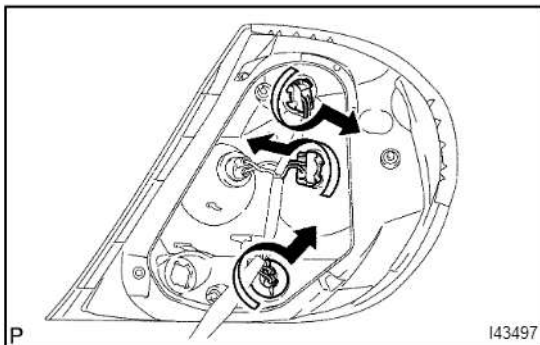


3. REMOVE REAR COMBINATION LAMP ASSY LH

- (a) Disconnect the connector.
- (b) Remove the 3 nuts and the rear combination lamp assy LH.

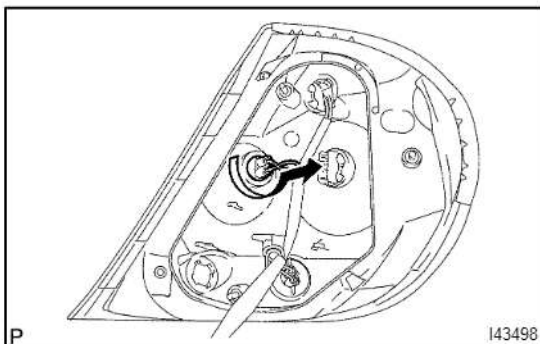


- (c) Remove the rear combination lamp gasket RH.



4. REMOVE REAR COMBINATION LAMP BULB

- (a) Turn in the direction indicated by the arrow and remove the 3 rear combination lamp socket & wire sub-assy RHs and the 3 rear combination lamp bulbs as a unit.
- (b) Remove the 3 rear combination lamp bulbs from the 3 rear combination lamp socket & wire sub-assy RHs.



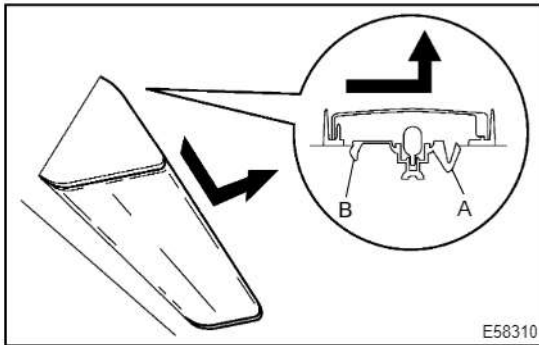
5. REMOVE REAR COMBINATION LAMP BULB

- (a) Turn in the direction indicated by the arrow and remove the rear combination lamp socket & wire sub-assy RH and the rear combination lamp bulb as a unit.
- (b) Remove the rear combination lamp bulb from the rear combination lamp socket & wire sub-assy RH.

LICENSE PLATE LAMP ASSY REPLACEMENT

650BR-02

1. REMOVE LUGGAGE COMPARTMENT DOOR COVER (See Page 76-18)
2. REMOVE LUGGAGE COMPARTMENT DOOR GARNISH SUB-ASSY OUTSIDE
(See Page 76-18)

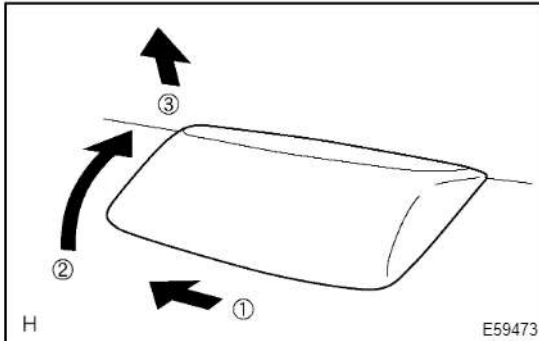


3. REMOVE LICENSE PLATE LAMP ASSY

- (a) Pull the license plate light assy to the side of vehicle as shown in the illustration and release the claw, then disconnect the connector.

CENTER STOP LAMP ASSY REPLACEMENT

65085-02

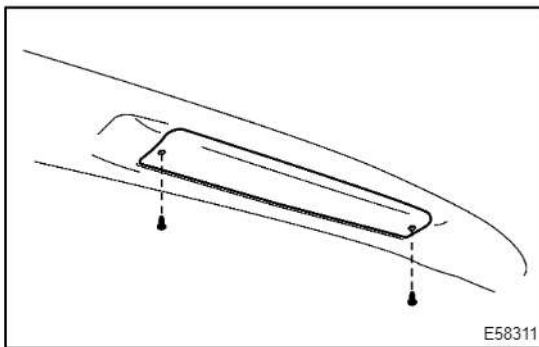


1. REMOVE CENTER STOP LAMP ASSY (W/O REAR SPOILER LED)

- (a) Pull out the center stop light assy shown in the illustration.
- (b) Disconnect connector.

2. REMOVE LUGGAGE COMPARTMENT DOOR COVER (W/ REAR SPOILER LED) (See Page 76-9)

3. REMOVE REAR SPOILER SUB-ASSY (W/ REAR SPOILER LED) (See Page 76-9)



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

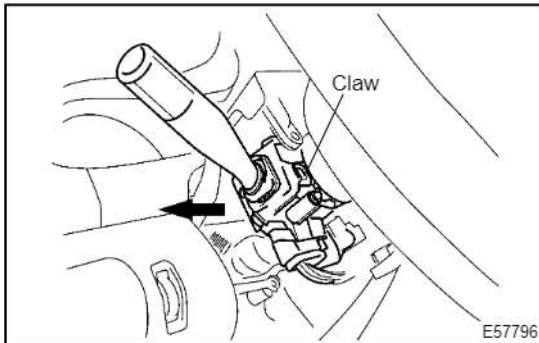
- (a) Remove the 2 screws and center stop light assy.

5. INSTALL REAR SPOILER SUB-ASSY (W/ REAR SPOILER LED) (See Page 76-9)

HEADLAMP DIMMER SWITCH ASSY REPLACEMENT

650BT-02

1. REMOVE STEERING COLUMN COVER
(See Page 50-9)



2. REMOVE HEADLAMP DIMMER SWITCH ASSY

- (a) Disconnect the connector.
- (b) Using a screwdriver, release the claw and pull out the headlight dimmer switch Assy.

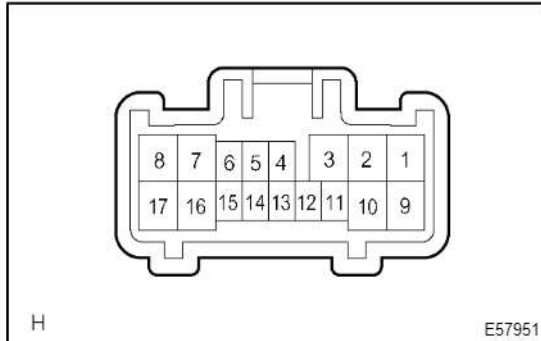
NOTICE:

Pressing the claw hard breaks the claw.

HINT:

Tape the screwdriver tip before use.

INSPECTION



1. HEADLAMP DIMMER SWITCH ASSY

(a) Inspect 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

(b) Inspect 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 turn signal switch continuity.

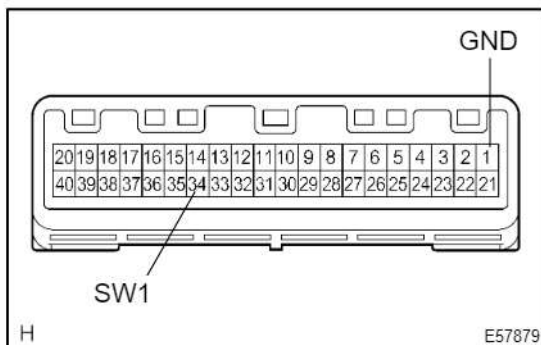
- (1) Check that there is continuity between terminals at each switch position as shown in the chart.

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

(d) Inspect front fog light 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

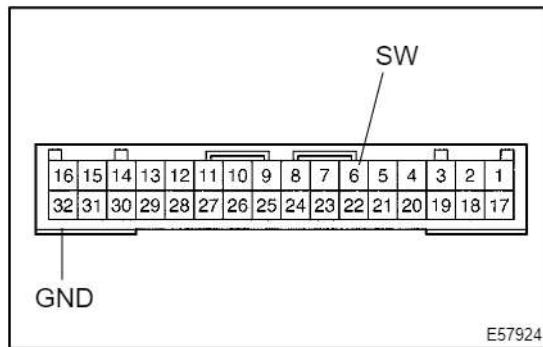


2. HEATER CONTROL HOUSING SUB-ASSY

(a) Auto A/C:

Inspect hazard warning signal switch.

Switch operation	Tester connection	Specified condition
OFF	1 - 34	No continuity
ON	1 - 34	Continuity

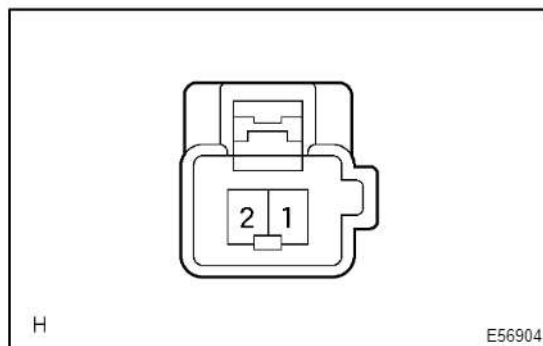


- (b) Manual A/C:
Inspect hazard warning signal switch.

Switch operation	Tester connection	Specified condition
OFF	6 - 32	No continuity
ON	6 - 32	Continuity

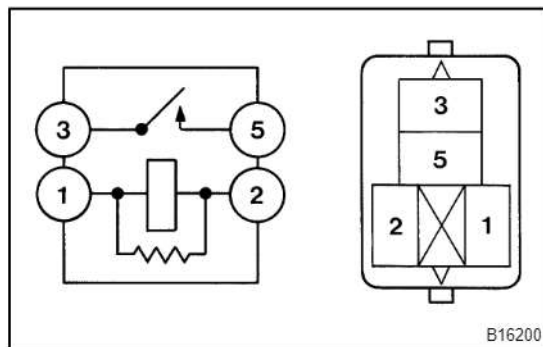
3. BACK UP LAMP SWITCH ASSY

- (a) Inspect back-up lamp switch continuity.
(1) Check that there is continuity between terminals upon switch operation.
Standard:
OFF (When ball is not pressed): No continuity
ON (When ball is pressed): Continuity



4. LUGGAGE COMPARTMENT DOOR LOCK ASSY

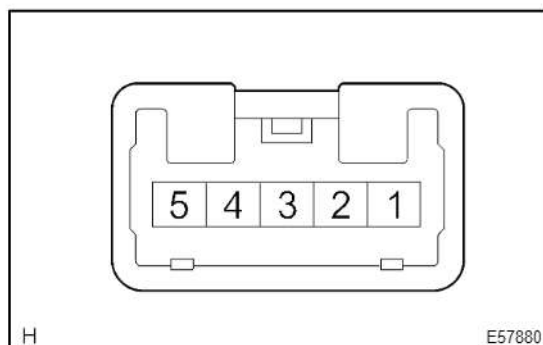
- (a) Inspect luggage compartment door courtesy lamp switch continuity.
(1) Check that there is continuity between terminal 2 and body ground when switch is operated.
Standard:
ON (When shaft is pressed): No continuity
OFF (When shaft is not pressed): Continuity



5. FOG LAMP RELAY

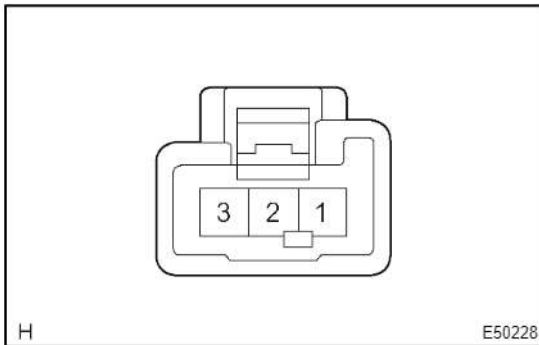
- (a) Inspect relay continuity.

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminals 1 and 2.	3 - 5	Continuity



6. ROOF CONSOLE BOX ASSY

- (a) Inspect map lamp continuity.
(1) Check that there is continuity between terminal 1 and 5 when switch is operated.
Standard:
ON: Continuity
OFF: No continuity



7. ROOM LAMP ASSY NO.1

- (a) Inspect 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
*1 ON	2 - 3	Continuity
*2 ON	1 - 3	Continuity

*1: TMMK Made

*2: TMC Made

8. GLOVE BOX LAMP ASSY

- (a) Inspect glove box lamp assy continuity.
 (1) Check that there is continuity between terminals when switch is operated.

Standard:

ON (When shaft is pressed): No continuity

OFF (When shaft is not pressed): Continuity

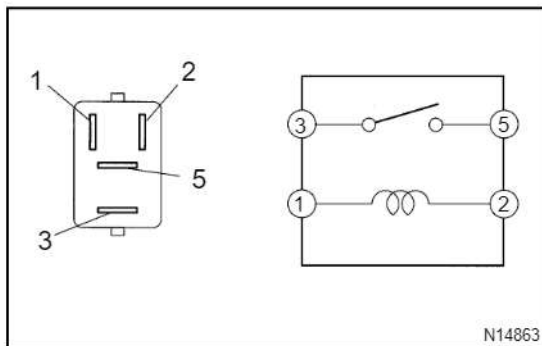
9. LUGGAGE COMPARTMENT LAMP ASSY NO.1

- (a) Inspect luggage compartment lamp assy No. 1.
 (b) Check that there is continuity between terminals when switch is operated.

Standard:

ON: Continuity

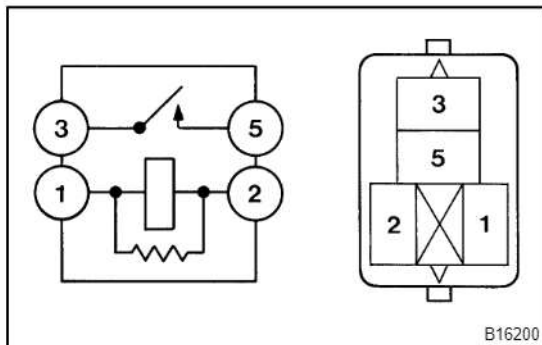
OFF No continuity



10. TAIL LAMP RELAY

- (a) Inspect relay continuity.

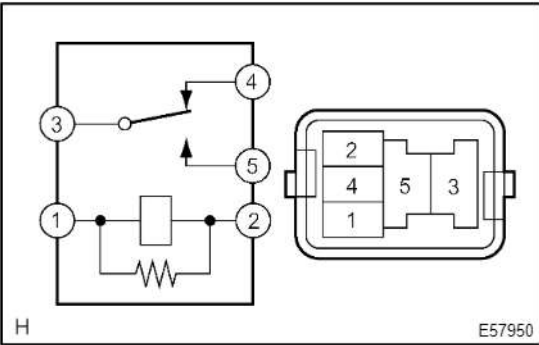
Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminal 1 and 2	3 - 5	Continuity



11. DAY TIME RUNNING LIGHT RELAY NO.2

- (a) Inspect relay continuity.

Condition	Tester connection	Specified condition
Constant	1 - 2	Continuity
Apply B+ between terminal 1 and 2	3 - 5	Continuity



12. RUNNING LIGHT RELAY

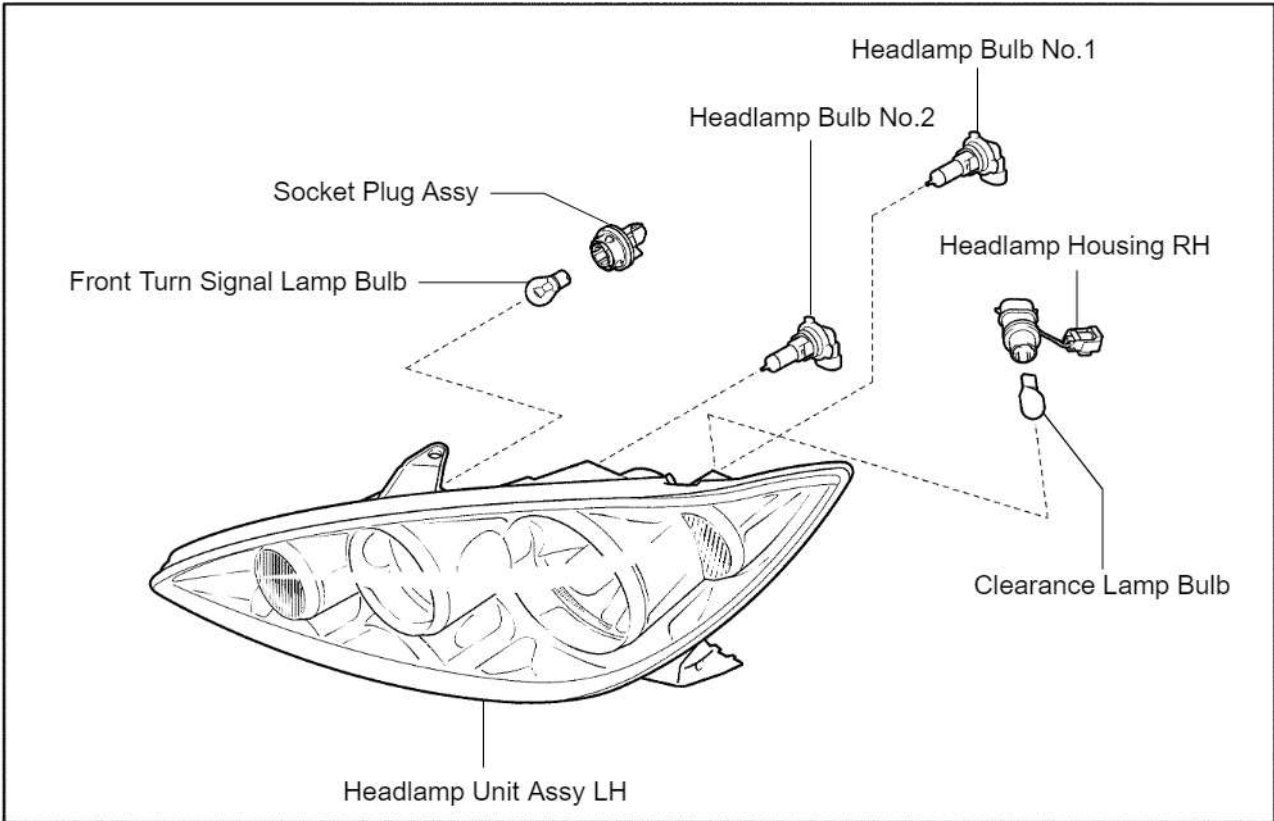
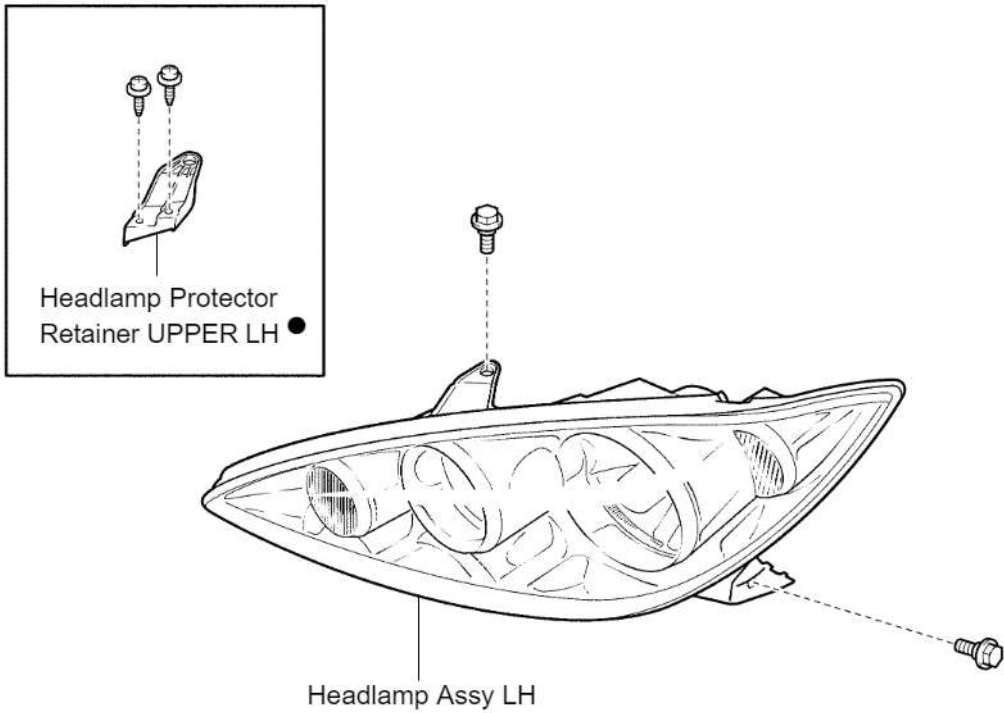
(a) Inspect relay continuity.

Condition	Tester connection	Specified condition
Constant	1 - 3, 2 - 4	Continuity
Apply B+ between terminal 1 and 3	4 - 5	Continuity

HEADLAMP ASSY LH

COMPONENTS

651AL-01



P ●: Supply Parts for Low - Cost Repair

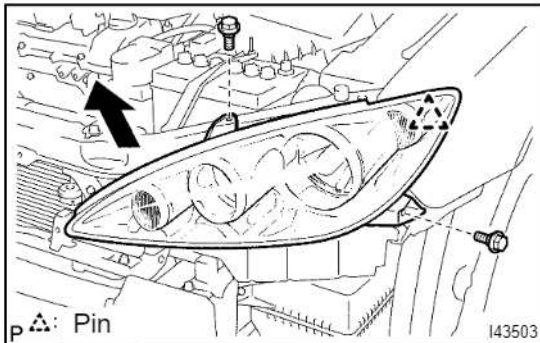
143490

OVERHAUL

HINT:

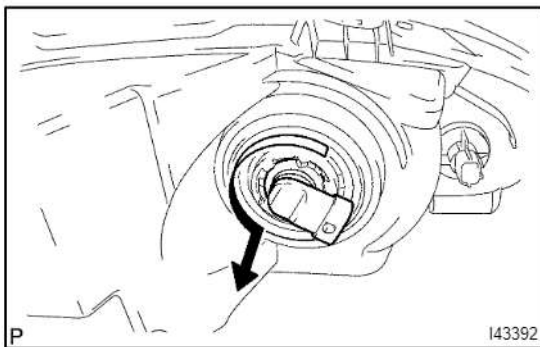
- COMPONENTS: SEE PAGE 65-7.
- Use the same procedures for the RH side and LH side.
- The procedures listed below are for the LH side.
- Installation is in the reverse order of removal.

1. REMOVE FRONT BUMPER ASSY (SEE PAGE 76-2)



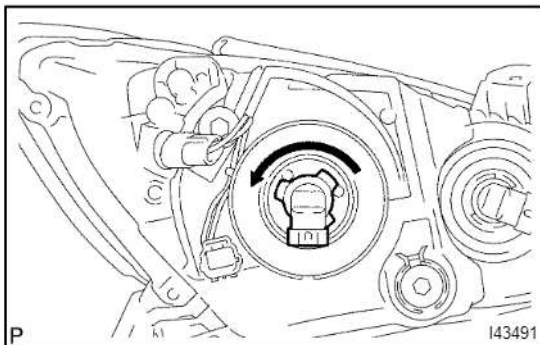
2. REMOVE HEADLAMP ASSY LH

- (a) Remove the 2 bolts and disengage the pin.
- (b) Pull the headlamp assy LH in the direction indicated by the arrow and remove the headlamp assy LH.



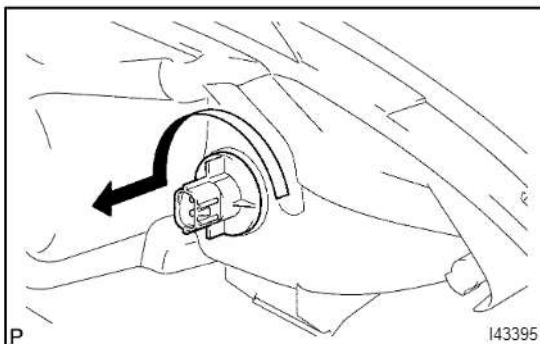
3. REMOVE HEADLAMP, NO.2 BULB

- (a) Turn in the direction indicated by the arrow and remove the headlamp, No.2 bulb.



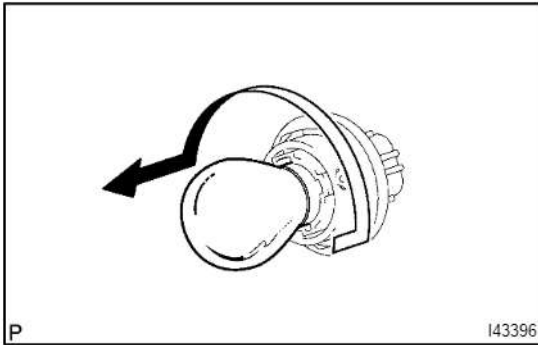
4. REMOVE HEADLAMP, NO.1 BULB

- (a) Turn in the direction indicated by the arrow and remove the headlamp, No.1 bulb.

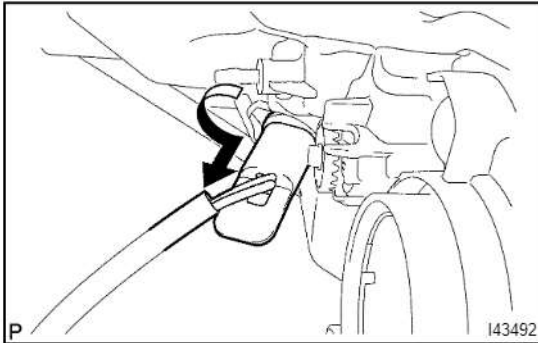


5. REMOVE FRONT TURN SIGNAL LAMP BULB

- (a) Turn in the direction indicated by the arrow and remove the socket plug assy and the front turn signal lamp bulb as a unit.



- (b) Turn in the direction indicated by the arrow and remove the front turn signal lamp bulb.
- (c) Remove the socket plug Assy.



6. REMOVE CLEARANCE LAMP BULB

- (a) Turn in the direction indicated by the arrow and remove the headlamp housing RH and the clearance lamp bulb as a unit.
- (b) Remove the clearance lamp bulb from the headlamp housing RH.

- 7. VEHICLE PREPARATION FOR HEADLAMP AIM ADJUSTMENT (SEE PAGE 65-10)
- 8. PREPARATION FOR HEADLAMP AIMING (Using a screen) (SEE PAGE 65-10)
- 9. HEADLAMP AIMING INSPECTION (SEE PAGE 65-10)
- 10. HEADLAMP AIMING ADJUSTMENT (SEE PAGE 65-10)
- 11. VEHICLE PREPARATION FOR FOG LAMP AIM ADJUSTMENT (SEE PAGE 65-17)
- 12. PREPARATION FOR FOG LAMP AIMING (SEE PAGE 65-17)
- 13. FOG LAMP AIMING INSPECTION (SEE PAGE 65-17)
- 14. FOG LAMP AIMING ADJUSTMENT (SEE PAGE 65-17)