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<b>Model Year:</b> 2010	<b>Model:</b> Prius	<b>Doc ID:</b> RM0000011MI03JX
<b>Title:</b> LIGHTING (EXT): HEADLIGHT ASSEMBLY: ADJUSTMENT (2010 Prius)		

## **ADJUSTMENT**

### **HINT:**

**It is possible that a bulb is incorrectly installed, affecting headlight aim. Bulb installation should be considered prior to performing the adjustment procedure.**

### **1. PREPARE VEHICLE FOR HEADLIGHT AIM ADJUSTMENT**

(a) Prepare the vehicle:

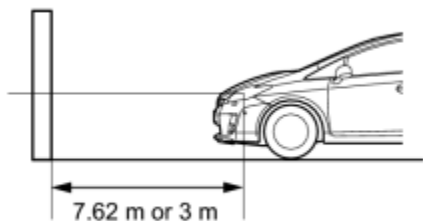
- Ensure there is no damage or deformation to the body around the headlights.
- Fill the fuel tank.
- Make sure that the oil is filled to the specified level.
- Make sure that the coolant is filled to the specified level.
- Inflate the tires to the appropriate pressure.
- Unload the trunk and vehicle,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

### **2. PREPARE FOR HEADLIGHT AIMING (Using a headlight aim test machine)**

(a) Adjust the headlight aim in accordance with the headlight aim test machine instructions.

### **3. PREPARE FOR HEADLIGHT AIMING (Using a screen)**

(a) Prepare the vehicle:



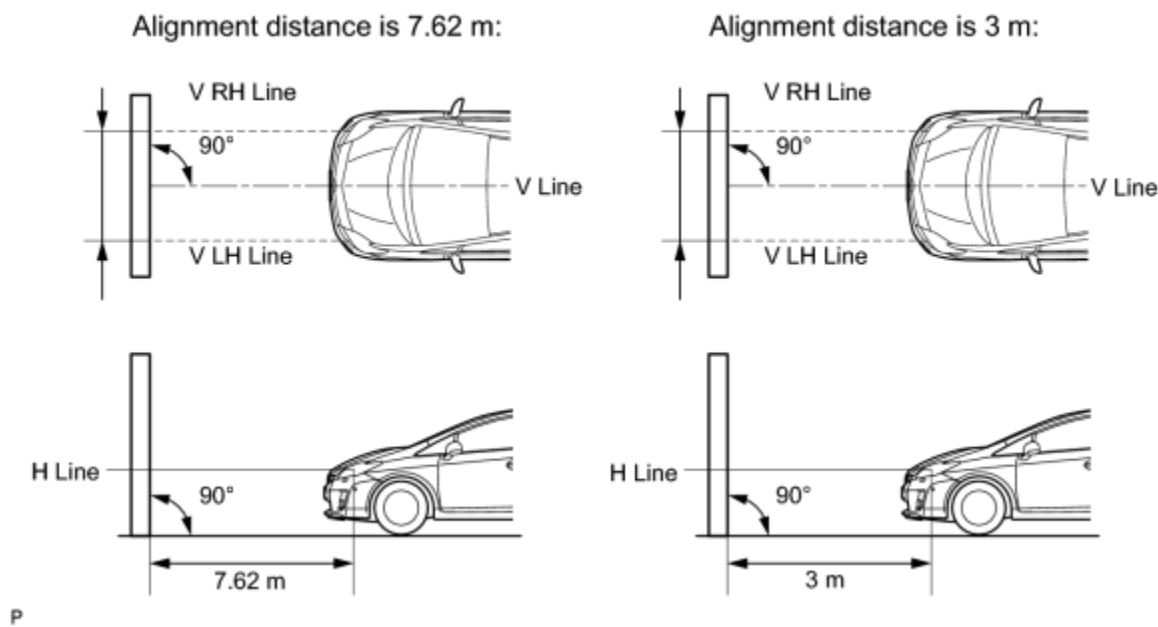
- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 7.62 m (25 ft.) distance between the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

### **NOTICE:**

**A distance of 7.62 m (25 ft.) between the**

vehicle (headlight bulb center) and the wall is necessary for proper aim adjustment. If sufficient space is not available, secure a distance of exactly 3 m (9.84 ft.) to allow for checking and adjustment of headlight aim. (The size of 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 the screen (V line).
- (d) Set the screen as shown in the illustration.



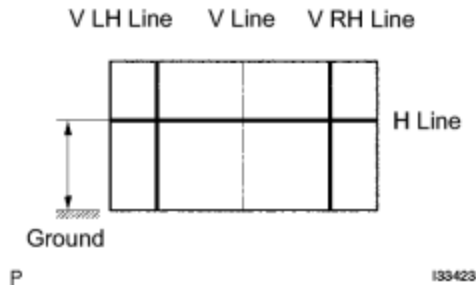
**HINT:**

- 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, V LH, and 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 headlight bulb center marks on the screen. If the center mark cannot be observed on the



headlight, use the center of the headlight bulb or the manufacturer's name marked on the headlight as the center mark.

(1) H Line (Headlight 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 headlight bulb center marks of the low beam headlights.

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

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

#### 4. INSPECT HEADLIGHT AIMING

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

**NOTICE:**

**Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.**

**HINT:**

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

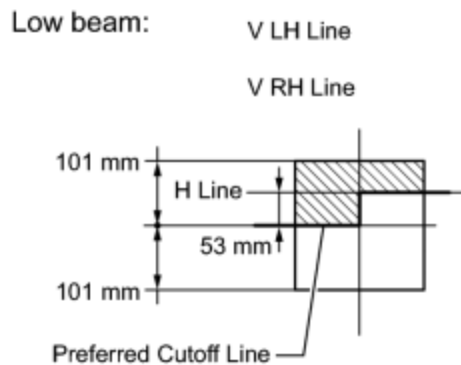
- (b) Start the engine.
- (c) Turn on the headlights and check the aiming of each beam.

**HINT:**

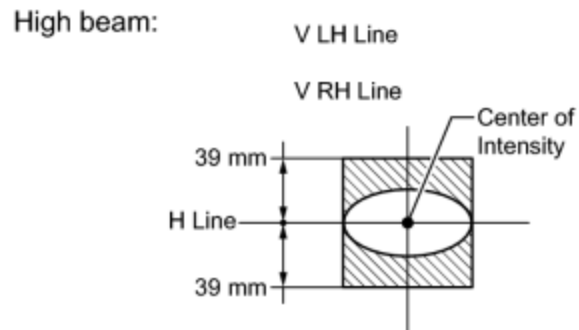
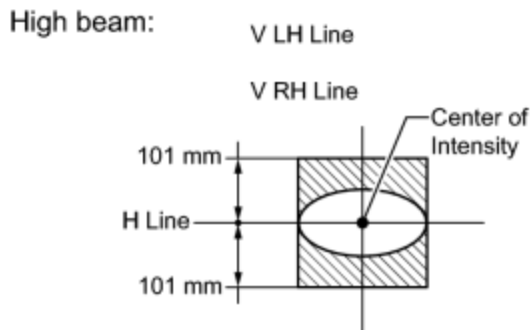
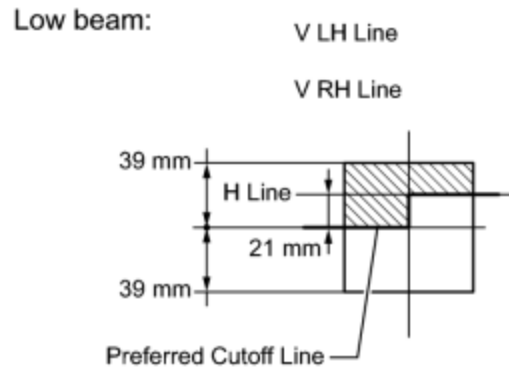
**Preferred position for the low beam: Matches preferred cutoff line shown in the illustration**

**Preferred position for the high beam: Matches center of intensity shown in the illustration**

Alignment distance is 7.62 m:



Alignment distance is 3 m:



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### HINT:

- Since the low beam light and the high beam light are a unit, if the aim on the low beam is correct, the high beam should also be correct. However, check both beams just to make sure.
- If the alignment distance is 7.62 m (25 ft.):

The left half of the low beam cutoff line should be within 101 mm (3.97 in.) above or below a line drawn 53 mm (2.09 in.) below the H line (SAE J599).

- If the alignment distance is 3 m (9.84 ft.):

The left half of the low beam cutoff line should be within 39 mm (1.56 in.) above or below a line drawn 21 mm (0.825 in.) below the H line (SAE J599).

- If the alignment distance is 7.62 m (25 ft.):

The high beam center of intensity should be within 101 mm (3.97 in.) above or below the H line (SAE J599).

- If the alignment distance is 3 m (9.84 ft.):

The high beam center of intensity should be within 39 mm (1.56 in.) above or below the H line (SAE J599).

- If the alignment distance is 7.62 m (25 ft.):

The left half of the low beam cutoff line should be 53 mm (2.09 in.) below the H line (preferred cutoff line target).

- If the alignment distance is 3 m (9.84 ft.):

The left half of the low beam cutoff line should be 21 mm (0.825 in.) below the H line (preferred cutoff line target).

- If the alignment distance is 7.62 m (25 ft.):

The high beam center of intensity should be on the H line (preferred center of intensity).

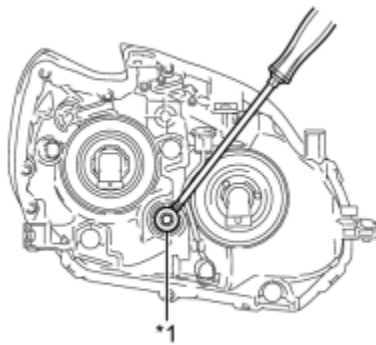
- If the alignment distance is 3 m (9.84 ft.):

The high beam center of intensity should be on the H line (preferred center of intensity).

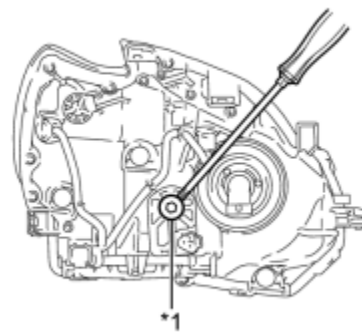
## 5. ADJUST HEADLIGHT AIMING

(a) Adjust the aim vertically:

for Halogen Headlight:



for LED Headlight:



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### Text in Illustration

*1	Aiming Screw	-	-
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Adjust the aim of each headlight to the specified range by turning each 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.**

**HINT:**

- Since the low beam light and the high beam light are a unit, if the aim on the low beam is correct, the high beam should also be correct. However, check both beams just to make sure.
- If it is not possible to correctly adjust headlight aim, check bulb, headlight unit and headlight unit reflector installation.
- The headlight aim moves down when turning the aiming screw clockwise, and moves up when turning the aiming screw counterclockwise.
- Confirm the direction of rotation of the aiming screw by observing it while it is being adjusted. Due to the position of the screwdriver, the direction of rotation of the adjusting screw can be different than the direction of rotation of the screwdriver being used to adjust it.

