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Model Year Start: 2024	Model: Land Cruiser	Prod Date Range: [02/2024 -]
Title: LIGHTING (EXT): HEADLIGHT ASSEMBLY (for Single Beam Headlight): ADJUSTMENT; 2024 MY Land Cruiser [02/2024 -]		

ADJUSTMENT

CAUTION / NOTICE / HINT

HINT:

- Use the same procedure for the RH and LH sides.
- The procedure listed below is for the LH side.
- If it is not possible to correctly adjust the headlight aim, check the headlight assembly and headlight unit installation.

PROCEDURE

1. PREPARE VEHICLE FOR HEADLIGHT AIMING ADJUSTMENT

(a) Prepare the vehicle:

- Make sure that there is no damage 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 (75 kg, 165 lb) in the driver seat.
- Bounce the vehicle at the corners up and down to stabilize the suspension.
- Make sure that the vehicle is on a level surface.

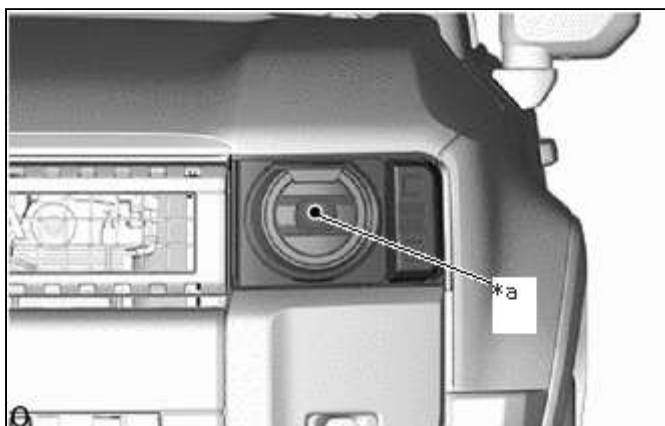
2. PREPARE FOR HEADLIGHT AIMING (Using a headlight aim test machine)

(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 the light from the headlights can be observed and those that cannot be observed.
- Place the vehicle at a 90° angle to the wall.
- Create a 7.62 m (25 ft.) distance between the vehicle (center marks of the headlight) and the wall.

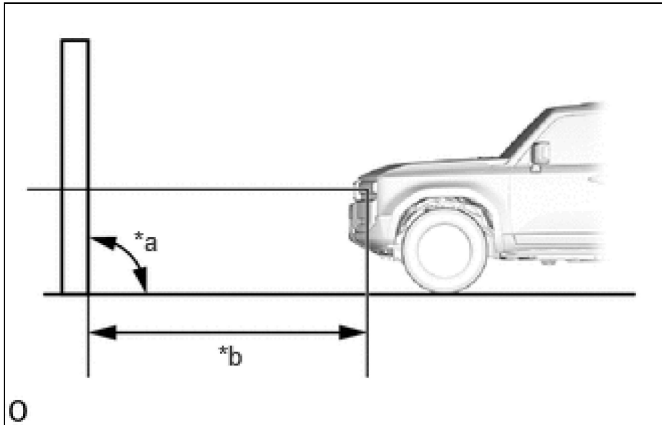


*a	Center Mark
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- Make sure that the vehicle is on a level surface.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

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



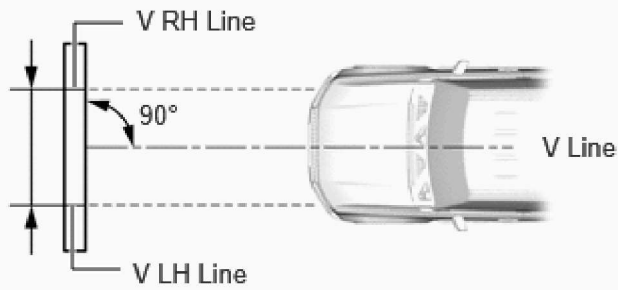
*a	90°
*b	7.62 m or 3 m (25 ft. or 9.84 ft.)

- Prepare a piece of thick white paper approximately 2 m (6.56 ft.) (height) x 4 m (13.1 ft.) (width) to use as a screen.
- Draw a vertical line down the center of the screen (V line).
- Set the screen as shown in the illustration.

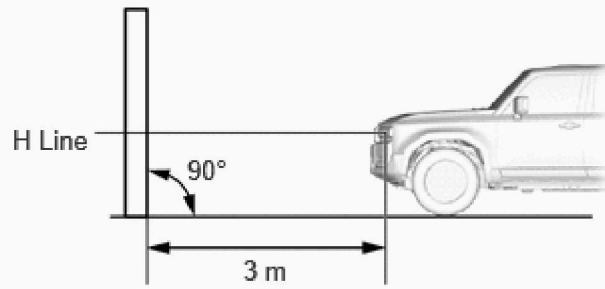
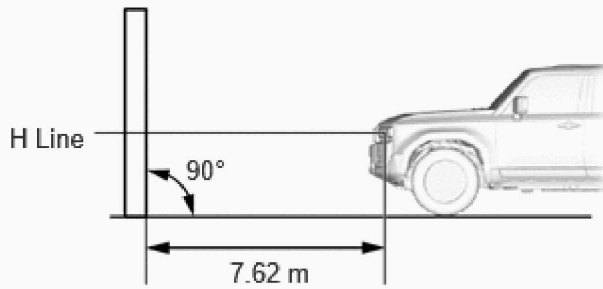
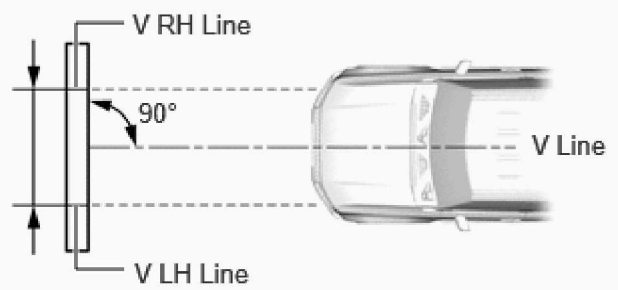
HINT:

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

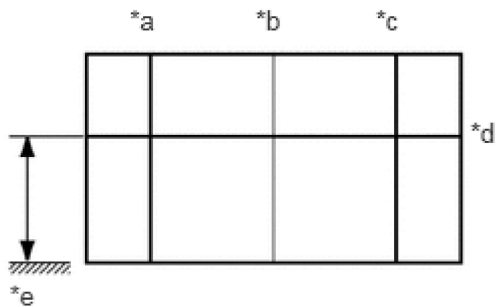
Alignment distance is 7.62 m:



Alignment distance is 3 m:



O



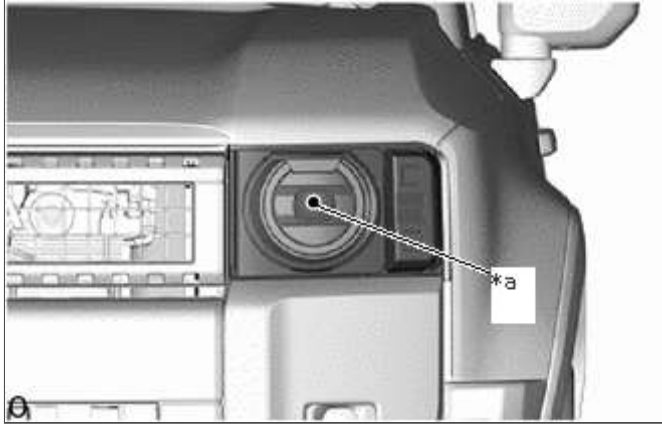
H

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground

(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".



*a	Center Mark
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- Mark the headlight assembly center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight unit 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 center marks.

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

Draw 2 vertical lines so that they intersect the H line at each center mark (aligned with the center mark of the headlight).

4. INSPECT HEADLIGHT AIMING

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

NOTICE:

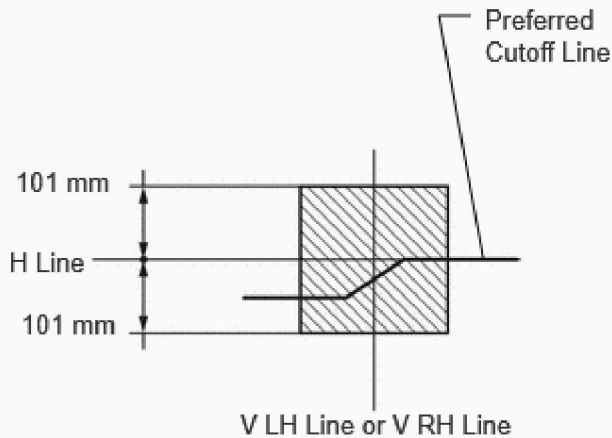
Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

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

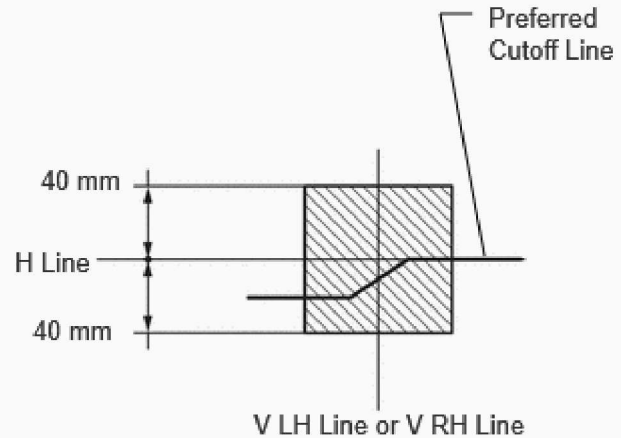
Alignment distance is 7.62 m:

Alignment distance is 3 m:

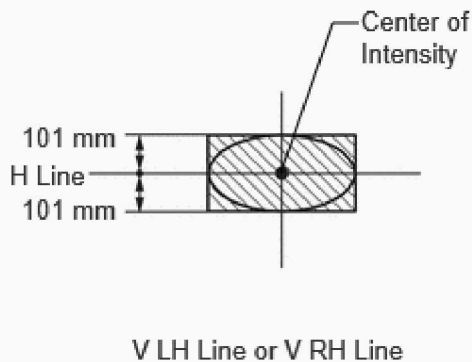
Low beam:



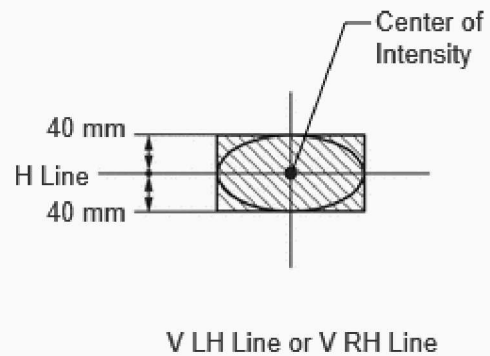
Low beam:



High beam:



High beam:



HINT:

- Since the low beam headlight and the high beam headlight 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 low beam cutoff line should be between 101 mm (3.98 in.) above or below the H line (SAE J599).

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

The low beam cutoff line should be between 40 mm (1.57 in.) above or 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 (3.98 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 40 mm (1.57 in.) above or below the H line (SAE J599).

5. ADJUST HEADLIGHT AIMING

(a) Adjust the aim vertically:

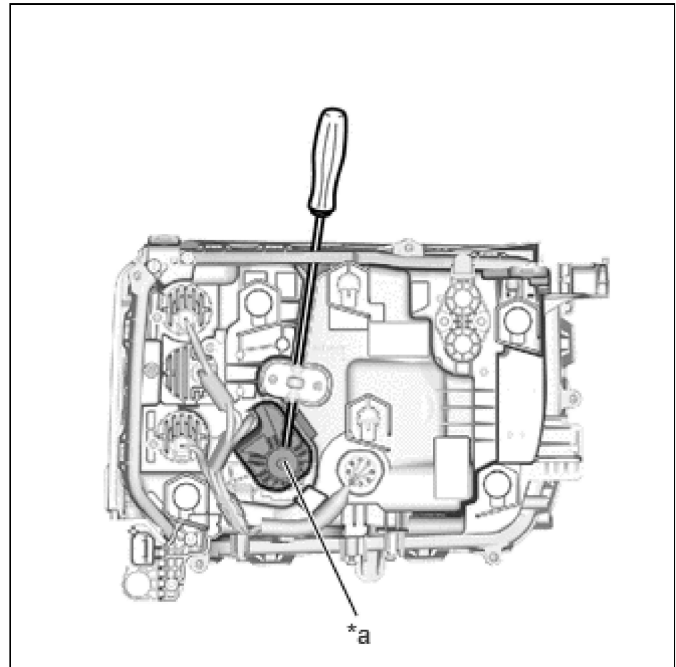
- (1) Adjust the aim of each headlight to the specified range by turning each aiming screw with a screwdriver.

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 headlight and the high beam headlight 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 the headlight unit and headlight unit lens installation.
- 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.



*a	Aiming Screw
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