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Model Year Start: 2024	**Model:** Grand Highlander	**Prod Date Range:** [06/2023 -]
Title: PARK ASSIST / MONITORING: PANORAMIC VIEW MONITOR SYSTEM: CALIBRATION; 2024 MY Grand Highlander Grand Highlander HV [06/2023 -]		

CALIBRATION

ADJUST PANORAMIC VIEW MONITOR SYSTEM

NOTICE:

- When performing the following operations, it is necessary to perform registration for the panoramic view monitor system.
- Depending on the procedures that were performed, it may be necessary to perform registration of other systems together with the panoramic view monitor system.

  Click here INFO
- If any of the following components are removed and installed, the adjustment procedure may be omitted by performing the simple inspection.
  - Front television camera assembly, radiator grille assembly or front bumper
  - Rear television camera assembly
  - Side television camera assembly RH or outer rear view mirror assembly RH
  - Side television camera assembly LH outer rear view mirror assembly LH

PART NAME	OPERATION	ADJUSTMENT ITEM	PROCEED TO
Parking assist ECU	Replacement	Parking assist ECU initialization	Procedure 2
			Procedure 3
			Procedure 12*1
			Procedure 13*2
			Procedure 14
			Procedure 15
Suspension, tires, etc.	The vehicle height changes because of suspension or tire replacement	Parking assist ECU initialization	Procedure 2
			Procedure 3
			Procedure 12*1
			Procedure 13*2
			Procedure 14
			Procedure 15

*1: At the time of SST (marker tool set) non-use

*2: At the time of use SST (marker tool set)

*3: If the camera assembly has been replaced, it is not possible to perform the simple inspection.

PART NAME	OPERATION	ADJUSTMENT ITEM	PROCEED TO
Rear television camera assembly	• Replacement • Installation angle of the rear television camera changes because of the removal and installation of the rear television camera, etc.	Rear television camera view adjustment	Procedure 1*3 Procedure 2 Procedure 3 Procedure 6*1 Procedure 13*2 Procedure 7 Procedure 15
• Front television camera assembly • Front bumper assembly • Radiator grille assembly	• Replacement • Installation angle of the front television camera changes because of the removal and installation of the front television camera, etc.	Front television camera view adjustment	Procedure 1*3 Procedure 2 Procedure 3 Procedure 4*1 Procedure 13*2 Procedure 5 Procedure 15
• Side television camera assembly LH • Outer rear view mirror assembly LH	• Replacement • Installation angle of the side television camera changes because of the removal and installation of the side television camera, etc.	Side television camera view adjustment	Procedure 1*3 Procedure 2 Procedure 3 Procedure 8*1 Procedure 13*2 Procedure 9 Procedure 15

*1: At the time of SST (marker tool set) non-use

*2: At the time of use SST (marker tool set)

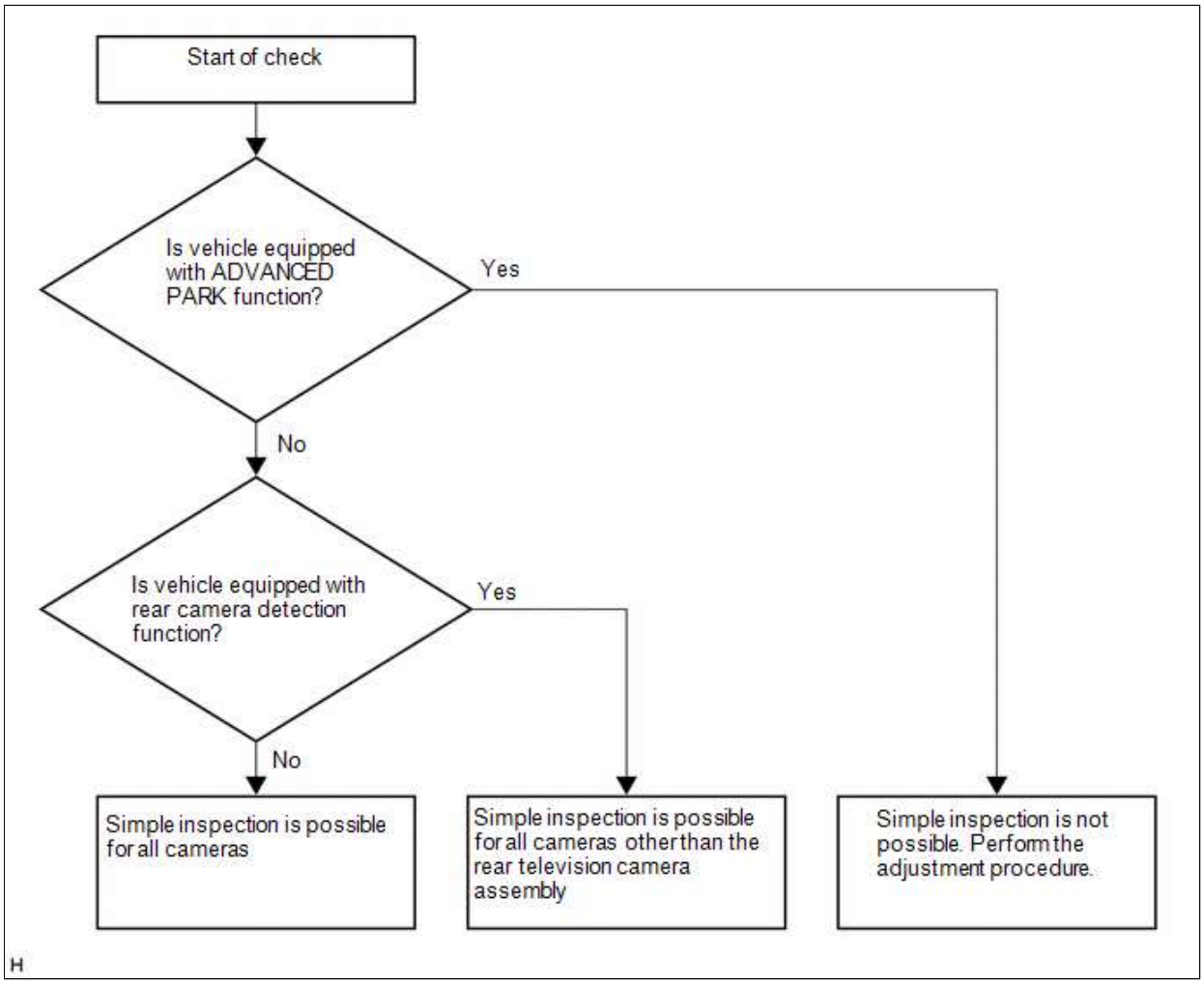
*3: If the camera assembly has been replaced, it is not possible to perform the simple inspection.

PART NAME	OPERATION	ADJUSTMENT ITEM	PROCEED TO
• Side television camera assembly RH • Outer rear view mirror assembly RH	• Replacement • Installation angle of the side television camera changes because of the removal and installation of the side television camera, etc.	Side television camera view adjustment	Procedure 1*3 Procedure 2 Procedure 3 Procedure 10*1 Procedure 13*2 Procedure 11 Procedure 15
• Front television camera assembly, radiator grille assembly or front bumper assembly • Rear television camera assembly • Side television camera assembly LH or outer rear view mirror assembly LH • Side television camera assembly RH or outer rear view mirror assembly RH	Replacement or removal and installation of 2 or more parts	Television camera view adjustment	Procedure 2 Procedure 3 Procedure 12*1 Procedure 13*2 Procedure 14 Procedure 15
*1: At the time of SST (marker tool set) non-use *2: At the time of use SST (marker tool set) *3: If the camera assembly has been replaced, it is not possible to perform the simple inspection.			

PROCEDURE 1: SIMPLE INSPECTION

(a) Pre-check:

(1) Check that the vehicle is compatible with the simple inspection.



NOTICE:

- Perform the inspection at a location with white lines (parking space, etc.) with a width of approximately 100 mm to 150 mm.
- The white lines must be straight, uniform, and without extreme damage. (Do not use dotted lines or lines where the paint is peeling.)

(b) Display the screen adjustment screen in order to perform a screen adjustment.

(1) Start diagnosis

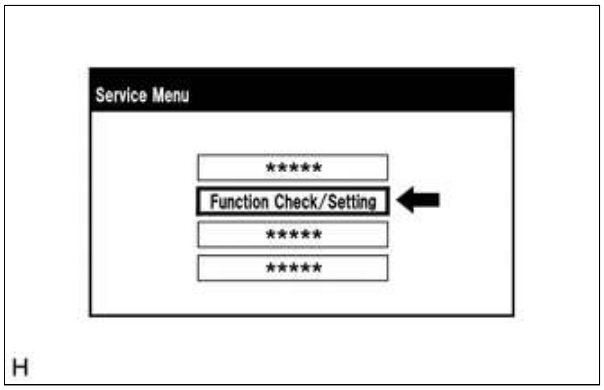
HINT:

Click here INFO

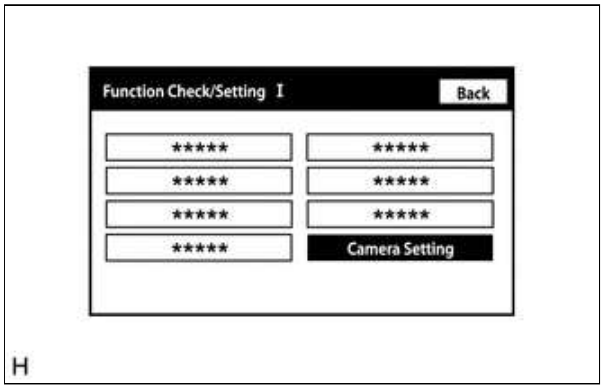
CAUTION:

The adjustment must be performed with the ignition switch ON (READY). Therefore, make sure that the parking brake is engaged, the brake pedal is depressed, the shift lever is in P, and that sufficient precautions are taken to ensure that the vehicle does not start off.

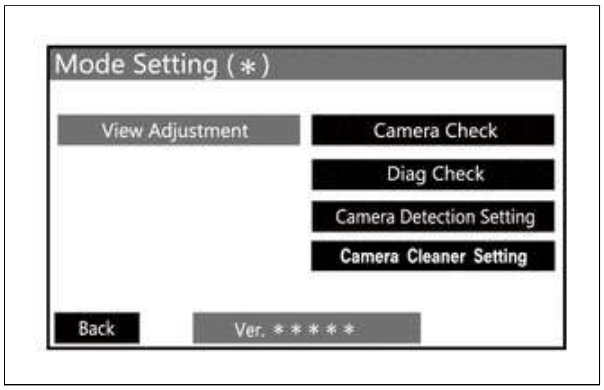
(2) Select "Function Check/Setting" from the "Service Menu" screen.



(3) Select "Camera Setting" of "Function Check/Setting I" screen to display the Mode Setting (*) screen.

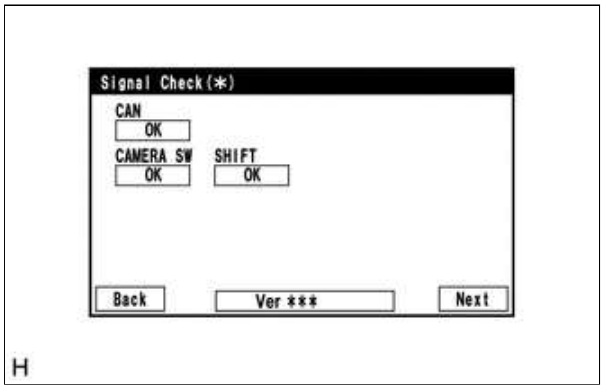


(4) Select "View Adjustment" on the "Mode Setting (*)" screen to display the adjustment screen.



HINT:

To select a grayed out item, select and hold the item for 2 seconds or more.



(5) After checking the screen, press the "Next" button on the "Signal Check (*)" screen.

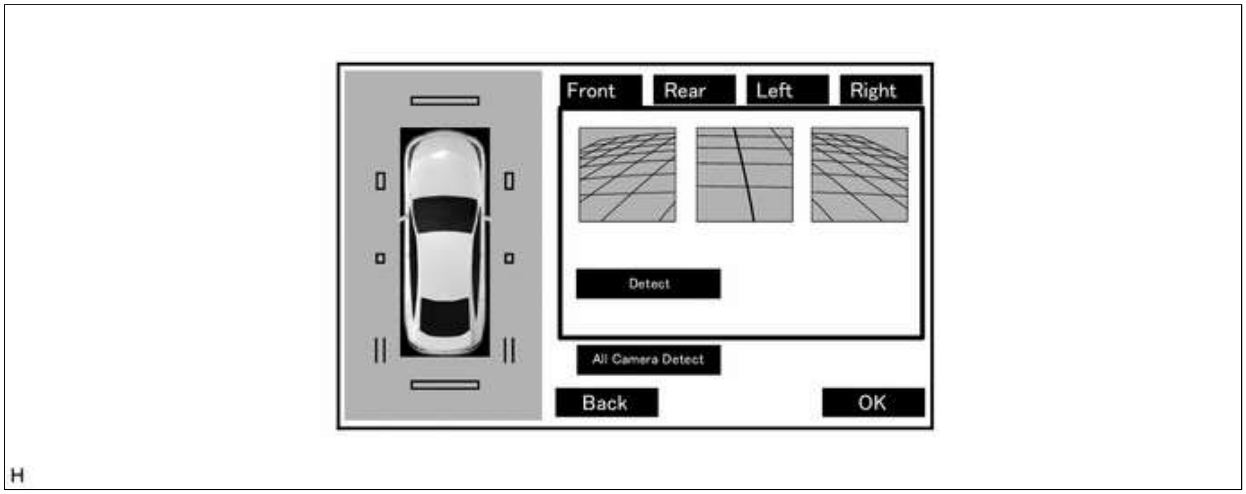
NOTICE:

- If there are items with "CHK" (displayed in red) displayed on the "Signal Check(*)" screen, the system will not proceed to the screen adjustment screen even if the "Next" button is pressed.
- If there are items with "CHK" (displayed in red) displayed on the "Signal Check(*)" screen, perform the "Signal Check(*)" screen inspection.
- The screen is displayed only when the shift signal is received via a direct line.
- It takes approximately 1 second to perform an OK judgement of CAN.

(6) When the adjustment screen is displayed, perform a simple inspection of related systems.

NOTICE:

Do not push "Detect" or "All Camera Detect" on the adjustment screen as this will cause the adjustment procedure to be performed again.



(c) Simple inspection after removal and installation of the front television camera assembly, radiator grille assembly, or front bumper.

NOTICE:

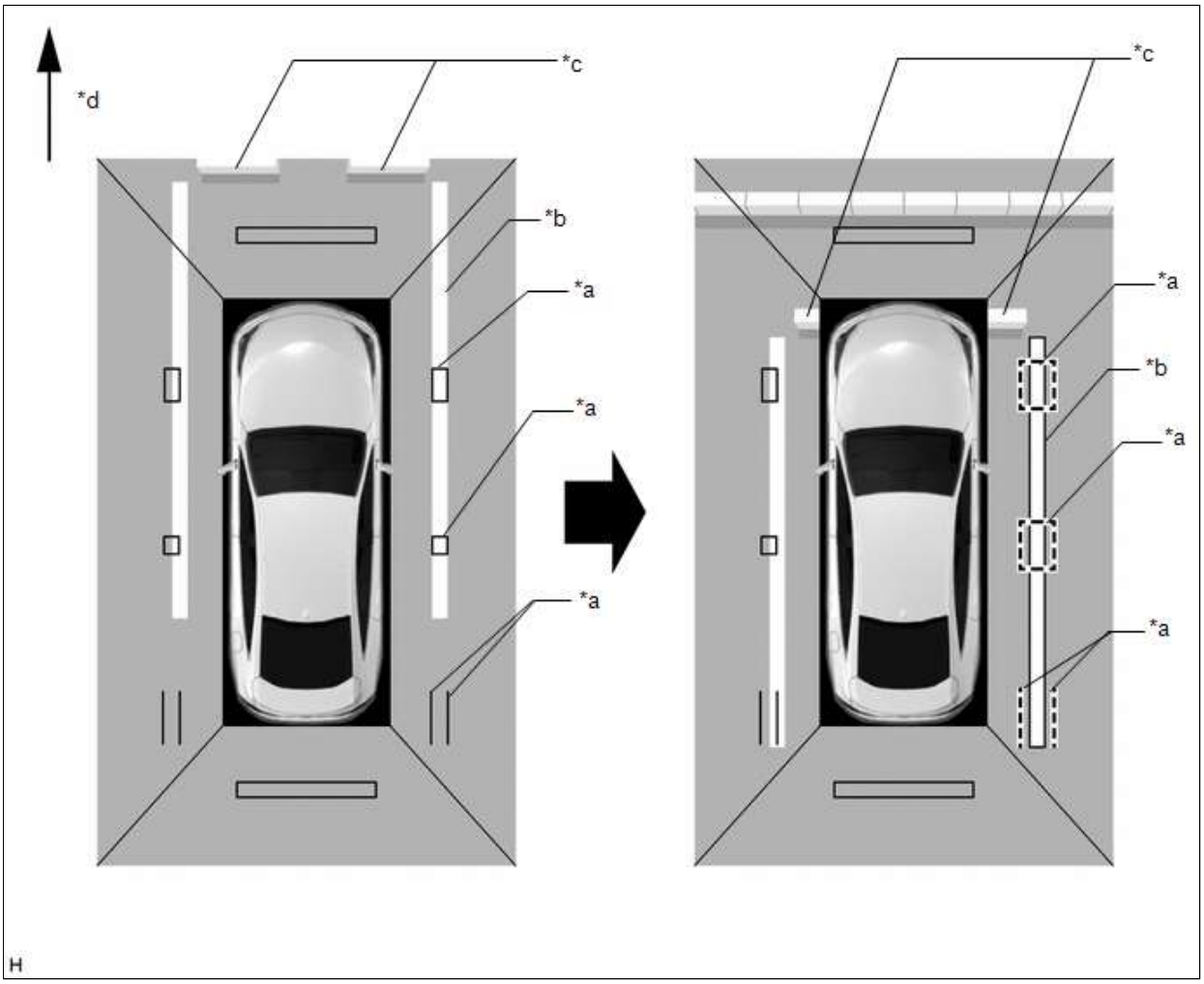
If a camera assembly has been replaced, it is not possible to perform the simple inspection.

HINT:

It is possible to inspect either the side television camera assembly RH or side television camera assembly LH.

(1) As shown in the illustration, move the vehicle forward and longitudinally align all the red frames on the image of the side television camera assembly RH or side television camera assembly LH with the white line (parking space).

Inspection using image of side television camera assembly RH

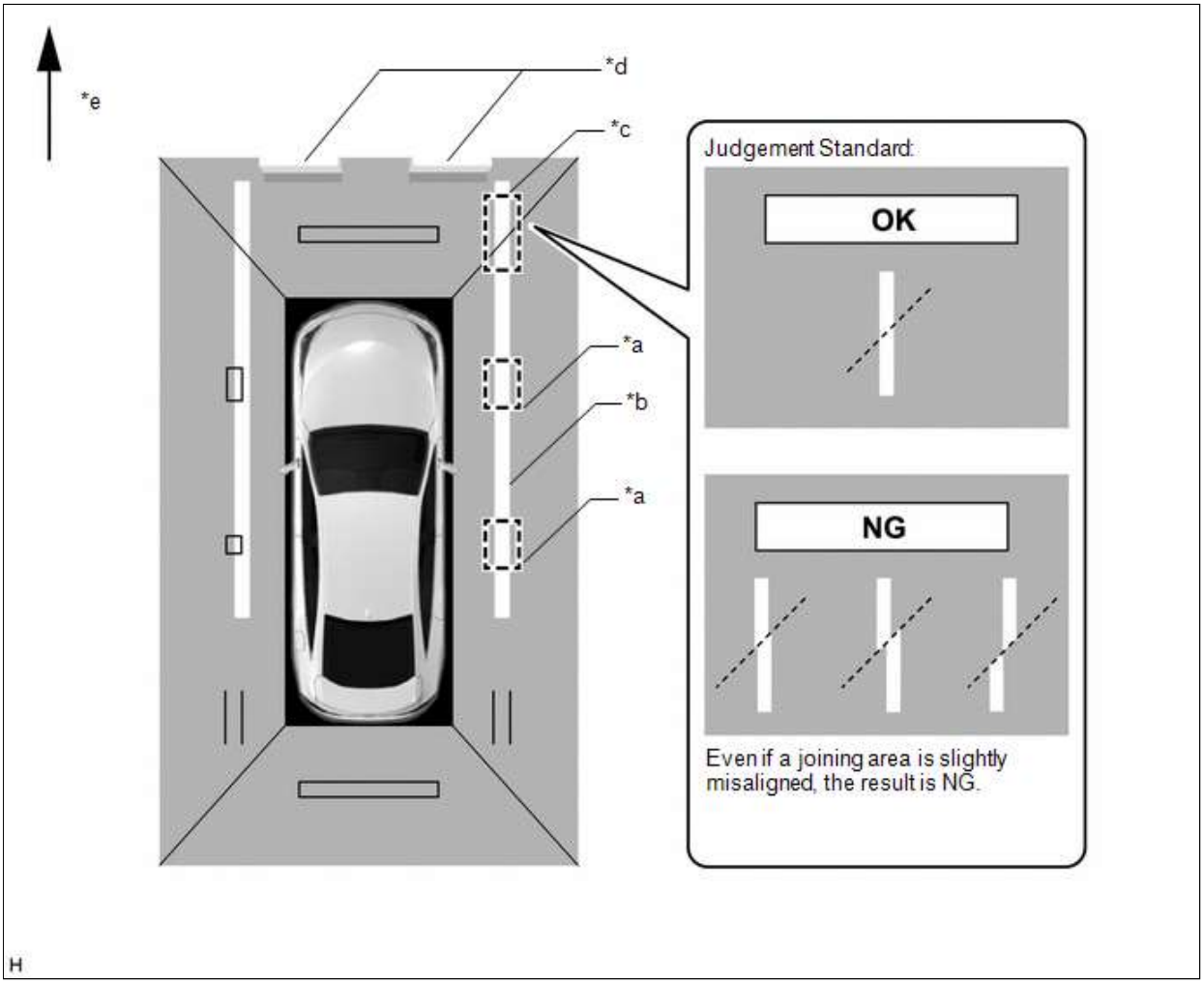


*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Parking Stop	*d	Front of Vehicle

(2) While aligning the two red frames (adjustment screen) with the white line (parking space), move the vehicle rearward and check the white line (parking space) at the joining area (inside the frame) of the front television camera assembly image and side television camera assembly RH image or side television camera assembly LH image.

If the line is aligned straight as shown in the illustration, the result is OK. Otherwise, perform camera adjustment.

Inspection using image of side television camera assembly RH



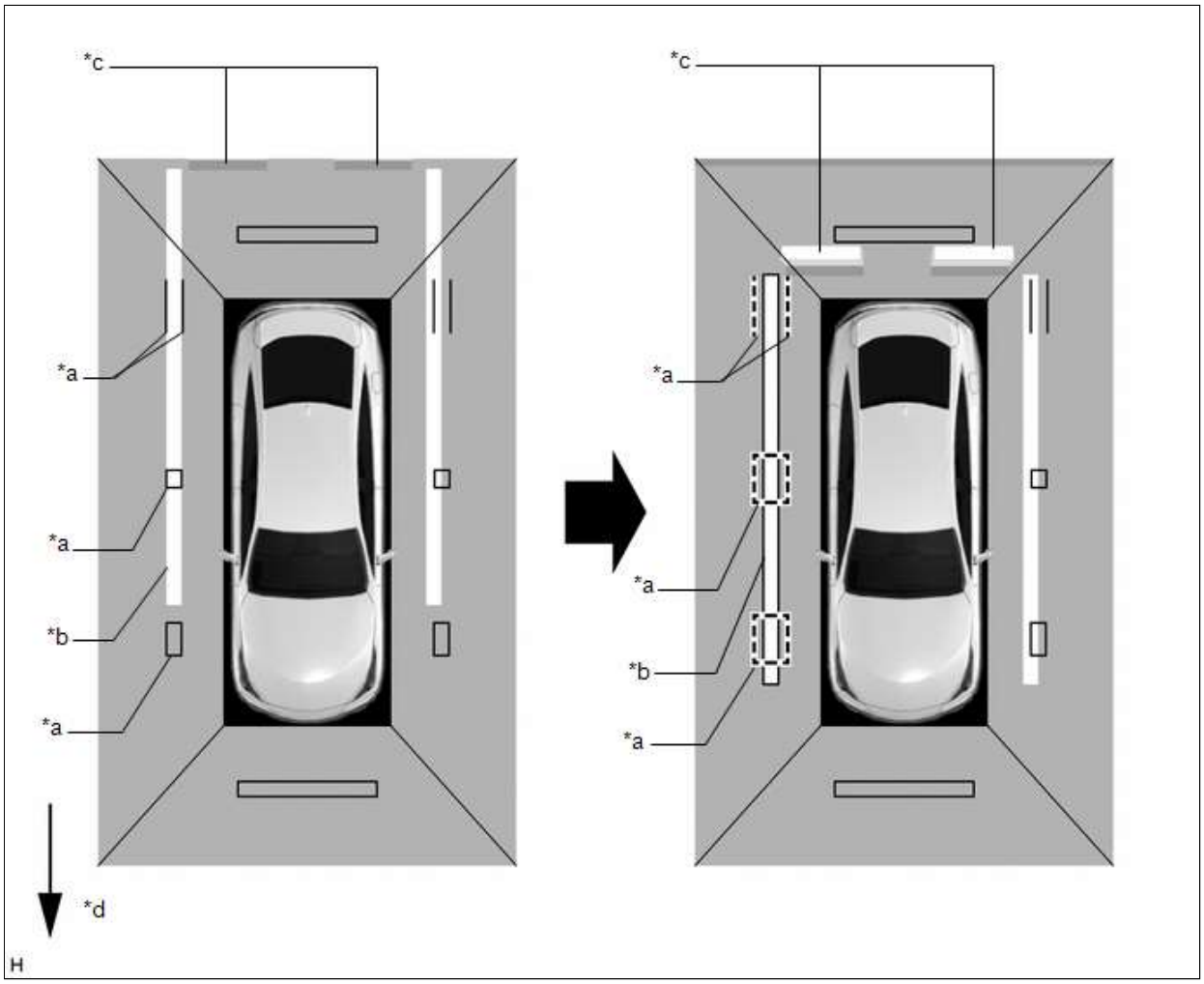
*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Joining Area (Inside the Frame)	*d	Parking Stop
*e	Front of Vehicle	-	-

(d) Simple inspection after removal and installation of the side television camera assembly RH or outer rear view mirror assembly RH.

NOTICE:

If a camera assembly has been replaced, it is not possible to perform the simple inspection.

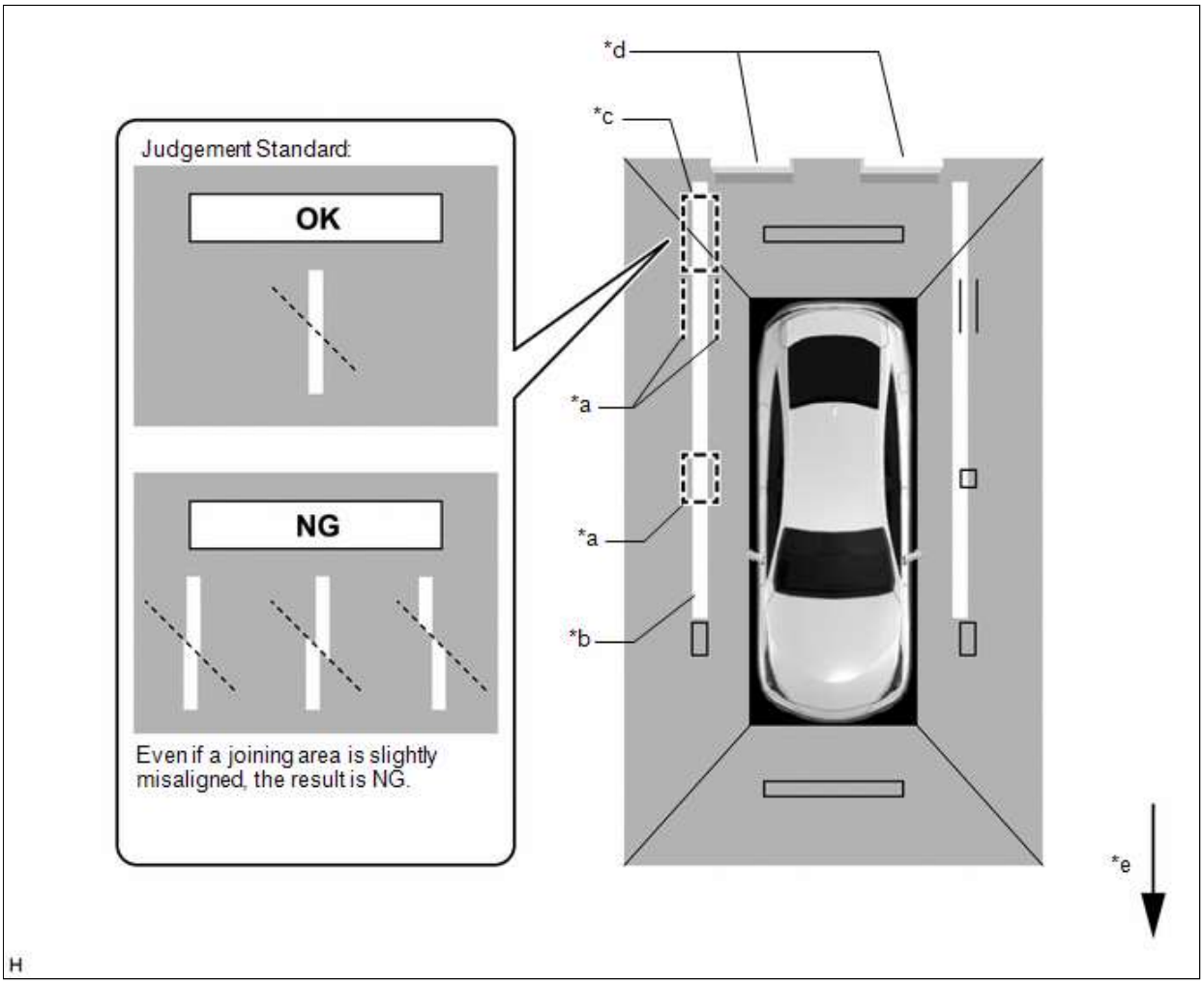
(1) As shown in the illustration, move the vehicle rearward and align all the red frames (adjustment screen) on the image of the side television camera assembly RH with the white line (parking space).



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Parking Stop	*d	Front of Vehicle

(2) While aligning the two red frames (adjustment screen) with the white line (parking space), move the vehicle forward and check the white line at the joining area (inside the frame) of the rear television camera assembly image and side television camera assembly RH image.

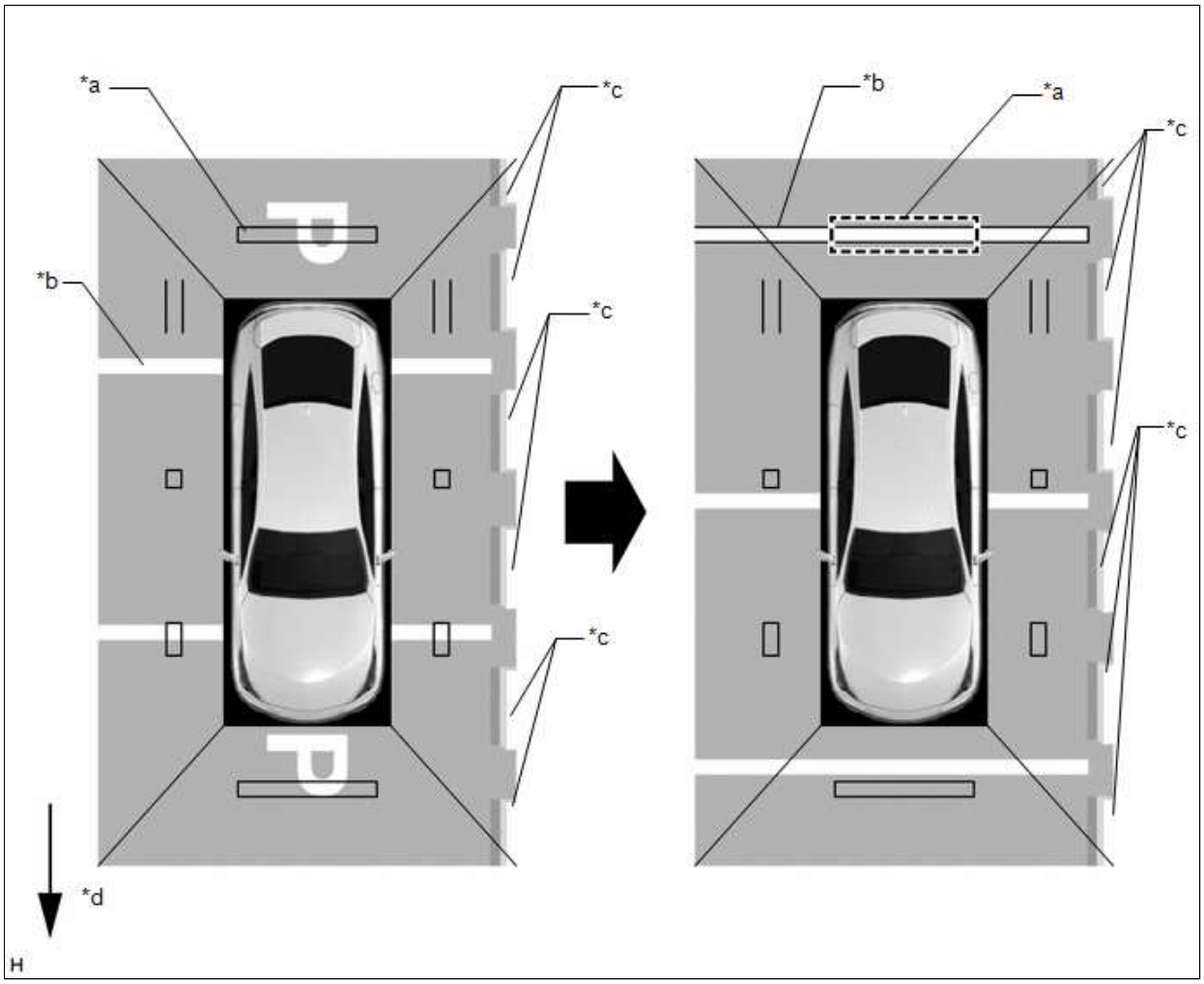
If the line is aligned straight as shown in the illustration, the result is OK. Otherwise, perform camera adjustment.



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Joining Area (Inside the Frame)	*d	Parking Stop
*e	Front of Vehicle	-	-

(3) As shown in the illustration, move the vehicle so that it is 90 degrees to the white lines (parking space) and align the red frame (adjustment screen) on the image of the rear television camera assembly with the white line (parking space).

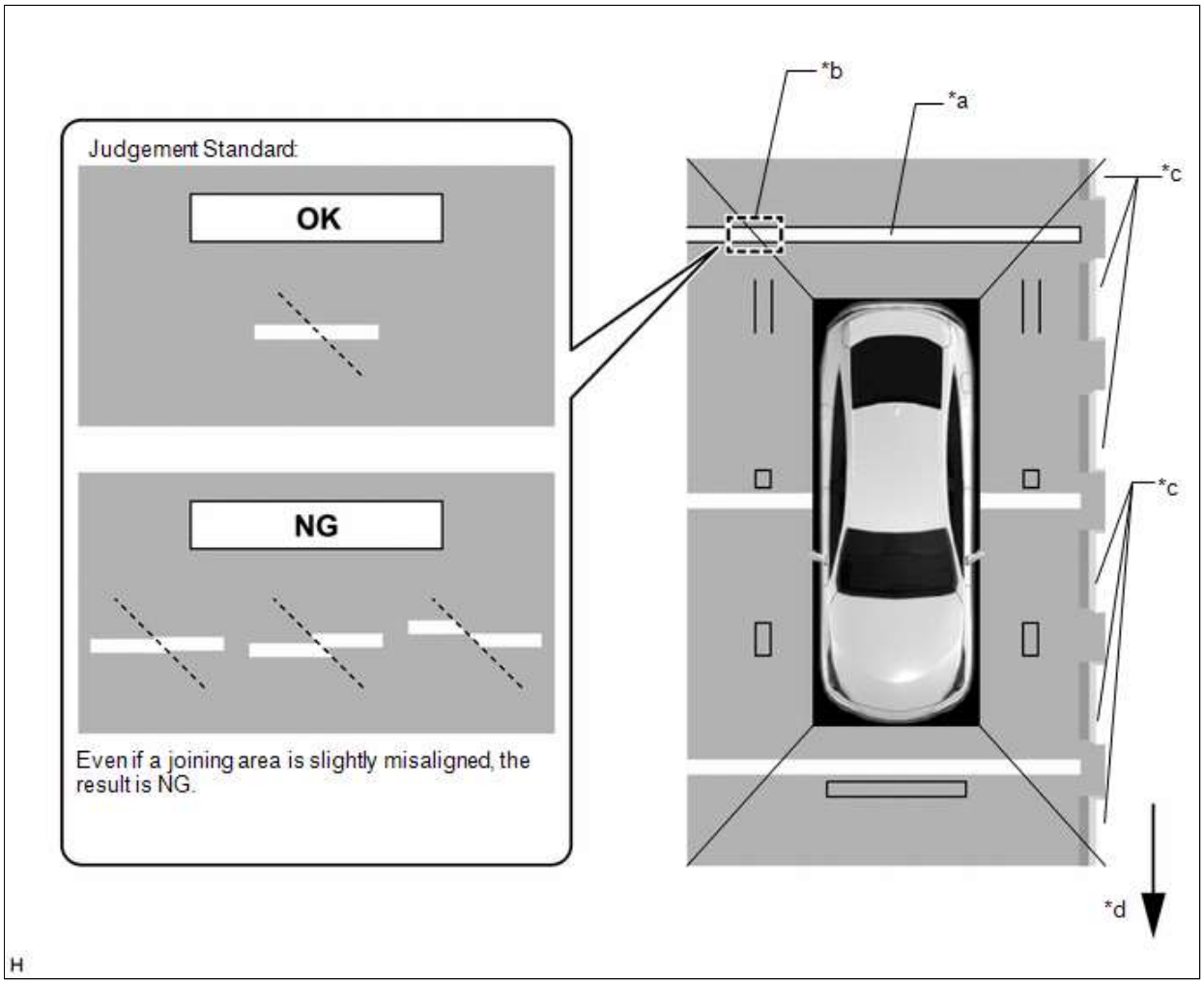
Inspection when moving forward and aligning the red frame (adjustment screen) with the white line (parking space)



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Parking Stop	*d	Front of Vehicle

(4) Check the white line (parking space) at the joining area (inside the frame) of the rear television camera assembly image and side television camera assembly RH image.

If the line is aligned straight as shown in the illustration, the result is OK. Otherwise, perform camera adjustment.



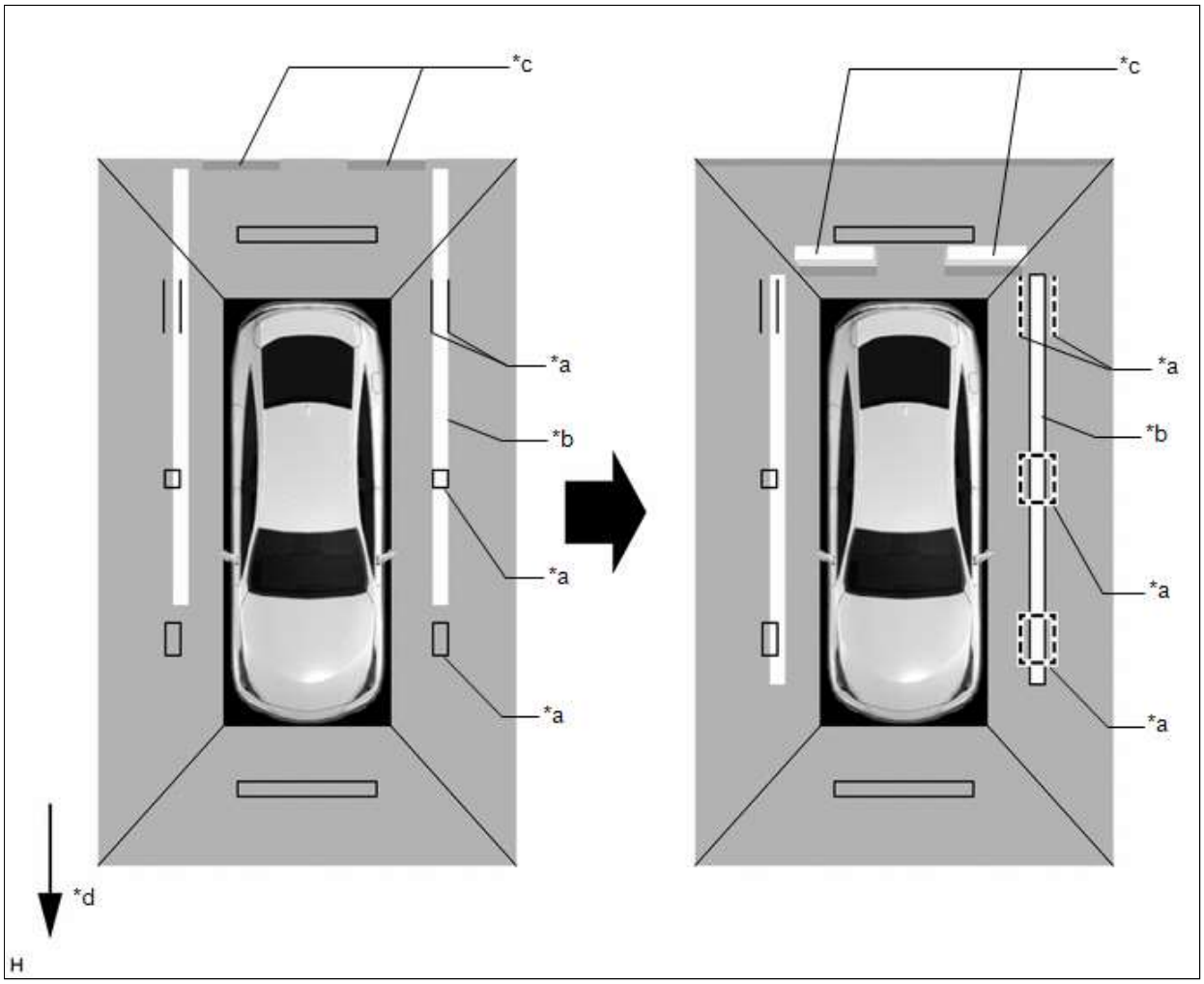
*a	White Line (Parking Space)	*b	Joining Area (Inside the Frame)
*c	Parking Stop	*d	Front of Vehicle

(e) Simple inspection after removal and installation of the side television camera assembly LH or outer rear view mirror assembly LH.

NOTICE:

If a camera assembly has been replaced, it is not possible to perform the simple inspection.

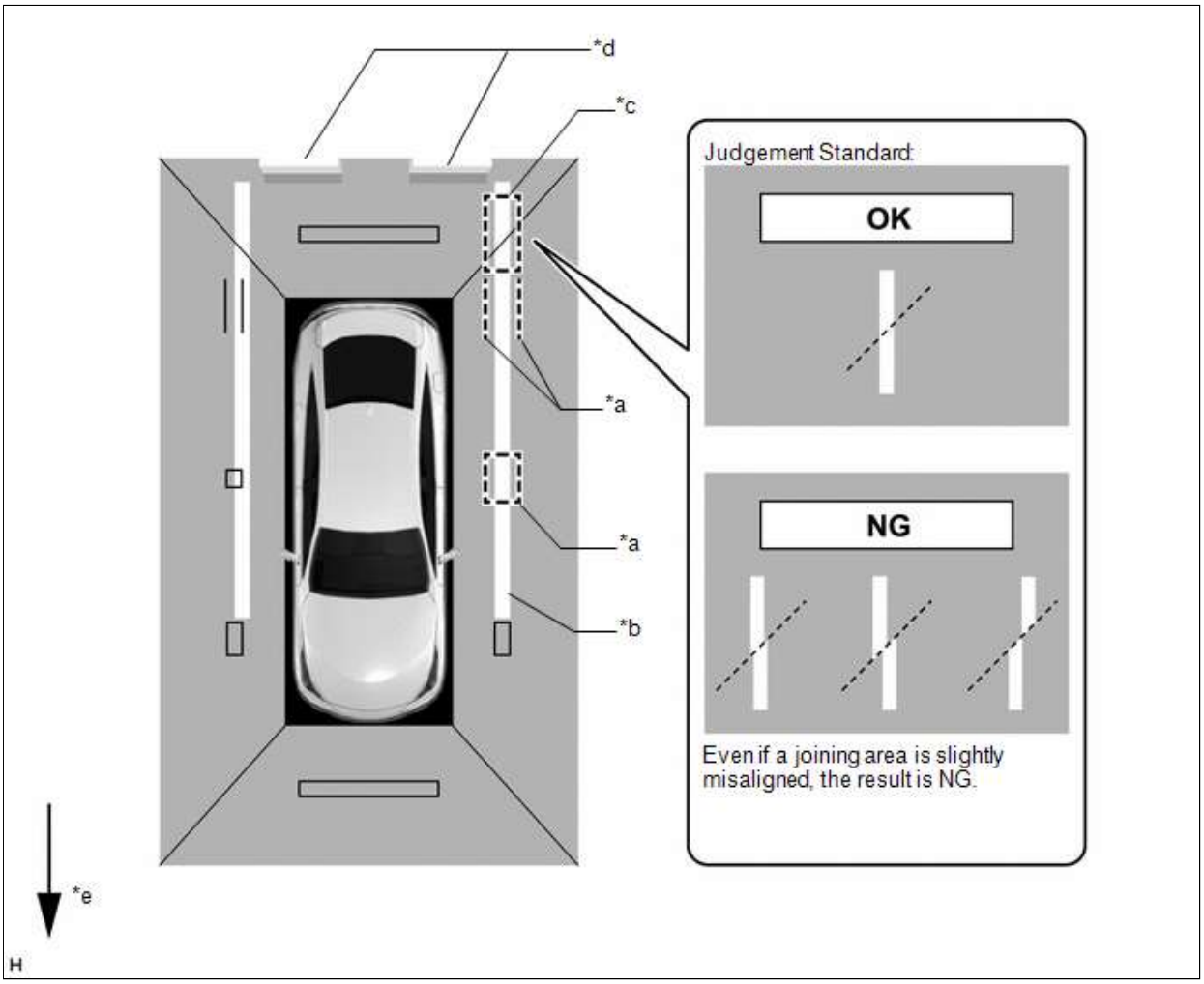
(1) As shown in the illustration, move the vehicle rearward and align all the red frames (adjustment screen) on the image of the side television camera assembly LH with the white line (parking space).



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Parking Stop	*d	Front of Vehicle

(2) While aligning the two red frames (adjustment screen) with the white line (parking space), move the vehicle forward and check the white line at the joining area (inside the frame) of the rear television camera assembly image and side television camera assembly LH image.

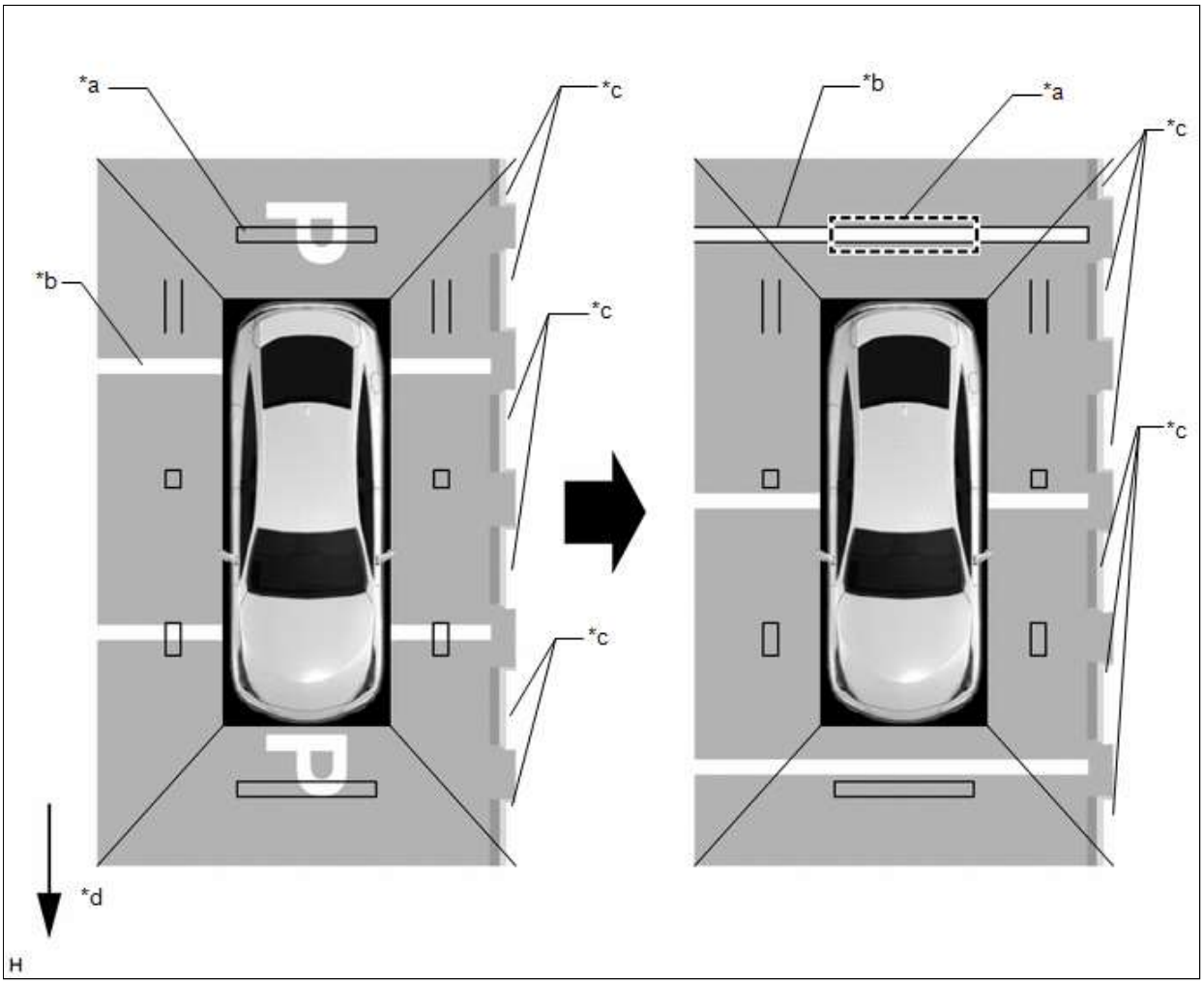
If the line is aligned straight as shown in the illustration, the result is OK. Otherwise, perform camera adjustment.



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Joining Area (Inside the Frame)	*d	Parking Stop
*e	Front of Vehicle	-	-

(3) As shown in the illustration, move the vehicle so that it is 90 degrees to the white lines (parking space) and align the red frame (adjustment screen) on the image of the rear television camera assembly with the white line (parking space).

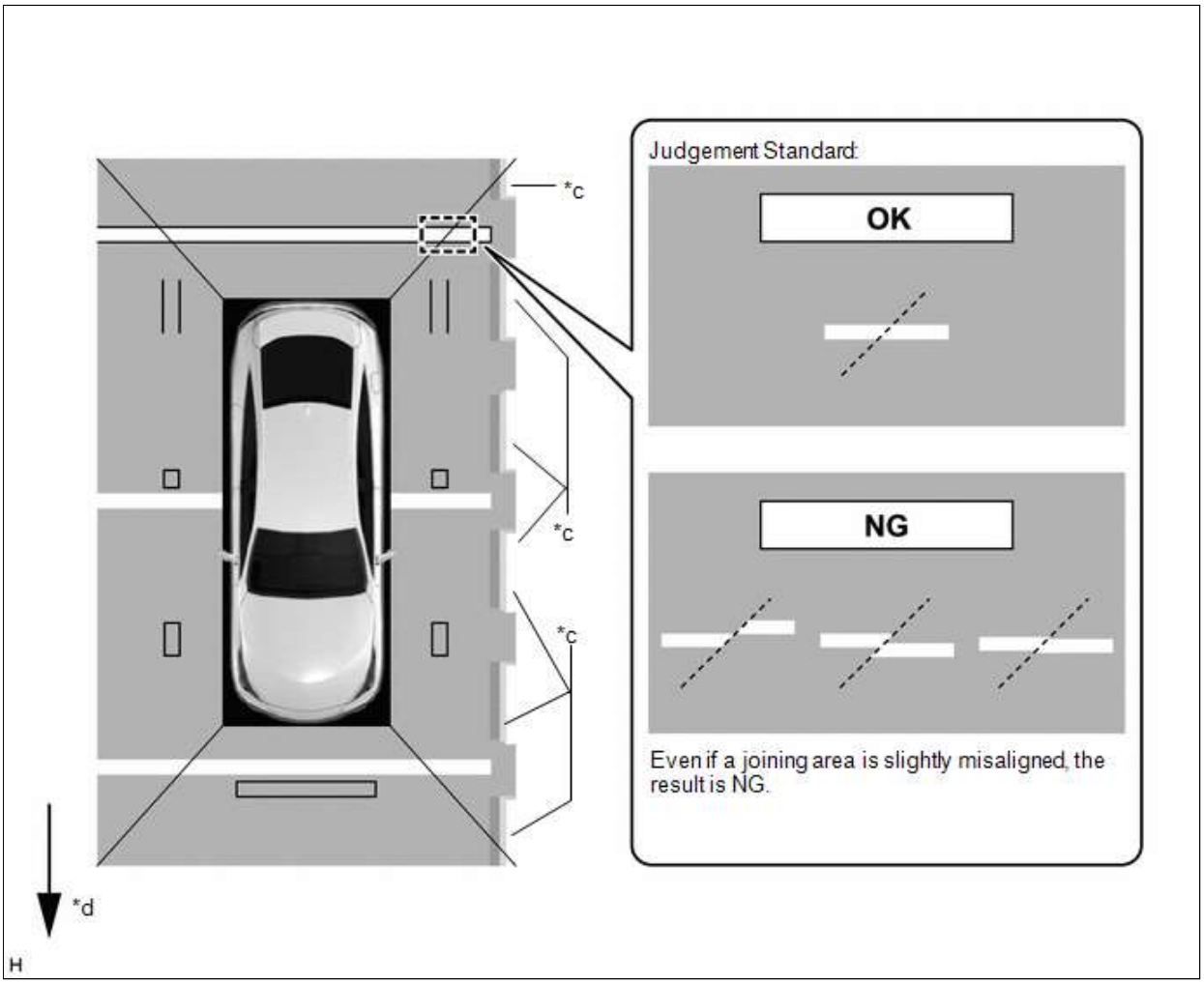
Inspection when moving forward and aligning the red frame (adjustment screen) with the white line (parking space)



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Parking Stop	*d	Front of Vehicle

(4) Check the white line (parking space) at the joining area (inside the frame) of the rear television camera assembly image and side television camera assembly LH image.

If the line is aligned straight as shown in the illustration, the result is OK. Otherwise, perform camera adjustment.



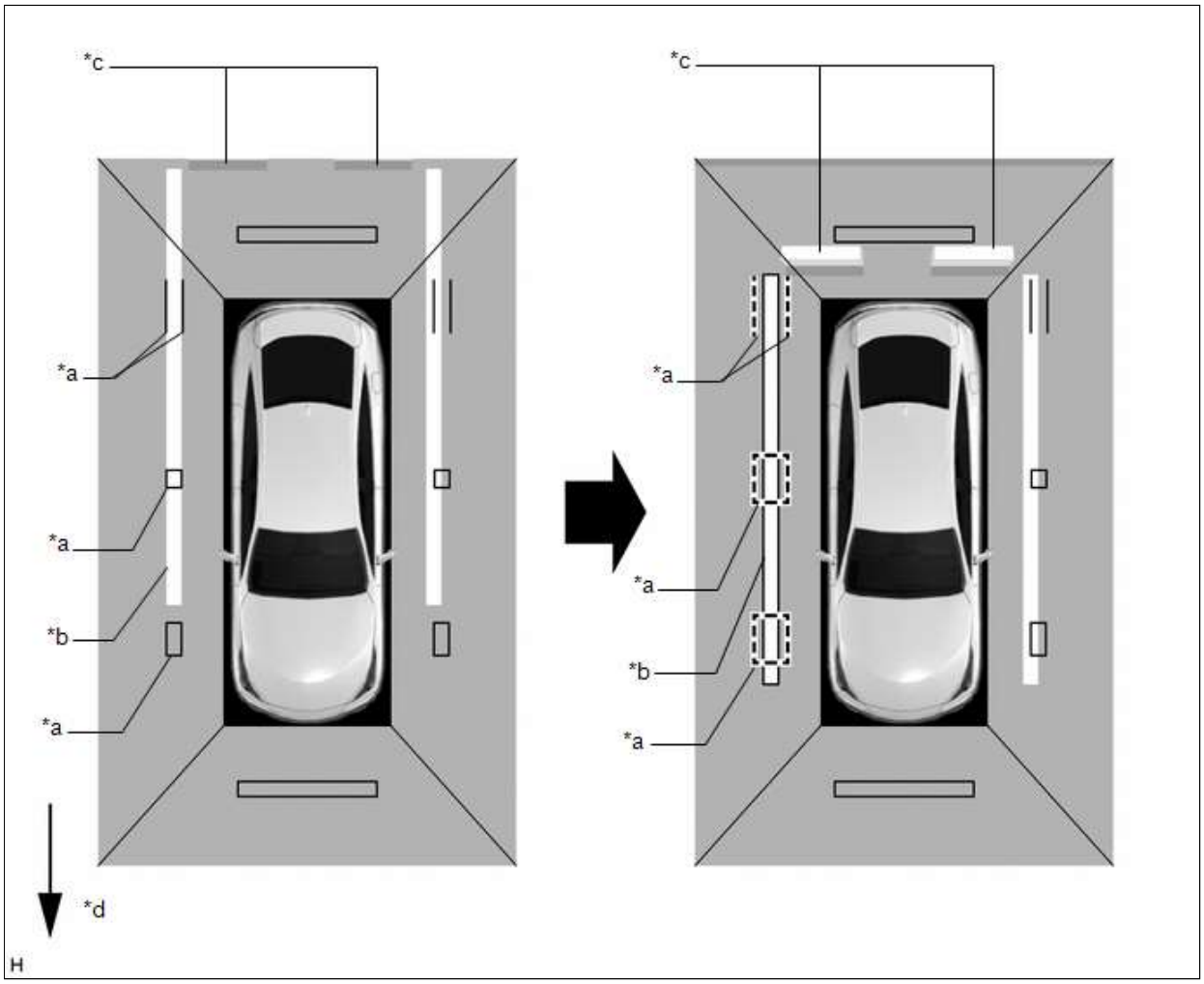
*a	White Line (Parking Space)	*b	Joining Area (Inside the Frame)
*c	Parking Stop	*d	Front of Vehicle

(f) Simple inspection after removal and installation of the rear television camera assembly.

NOTICE:

If a camera assembly has been replaced, it is not possible to perform the simple inspection.

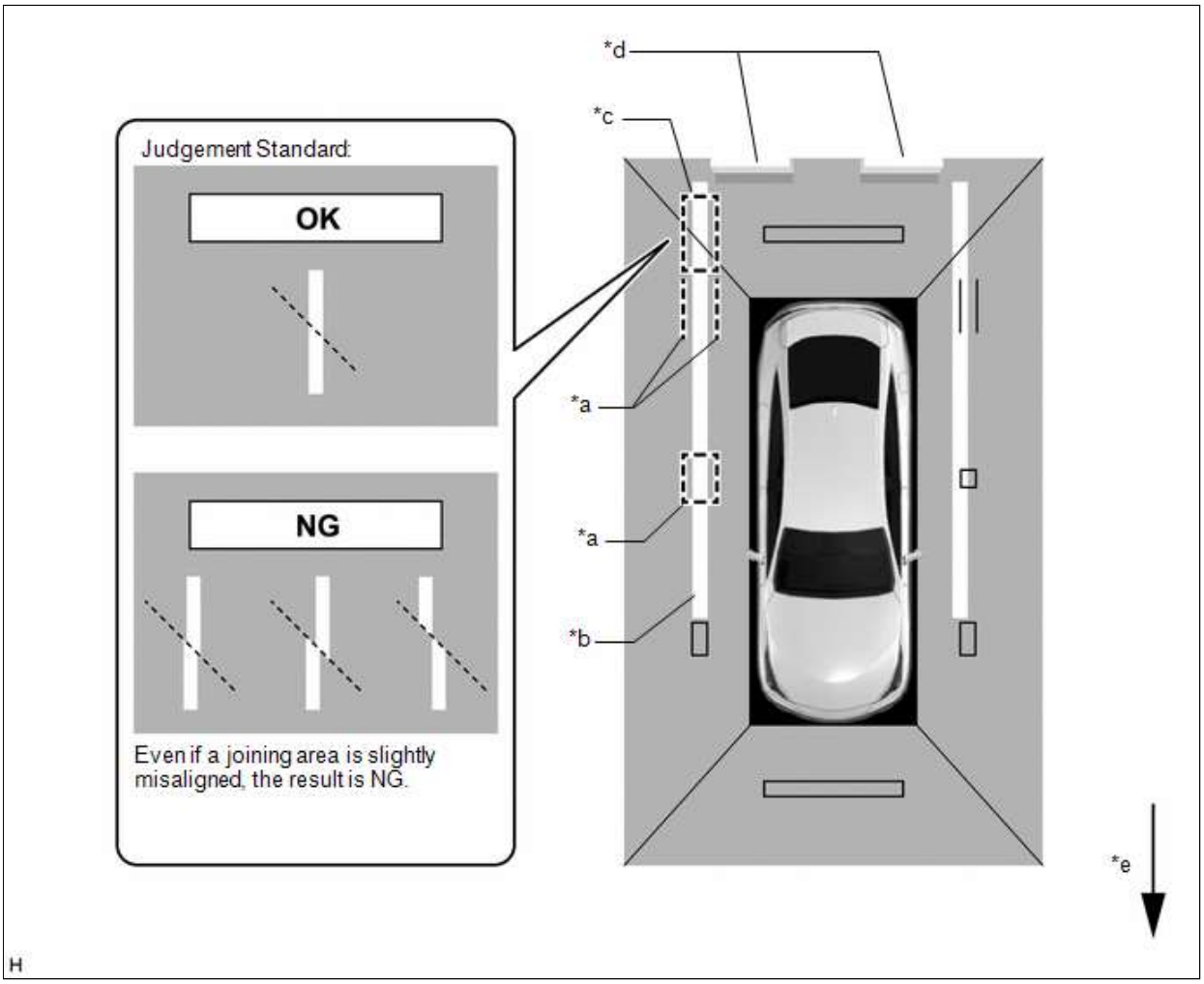
(1) As shown in the illustration, move the vehicle rearward and align all the red frames (adjustment screen) on the image of the side television camera assembly RH with the white line (parking space).



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Parking Stop	*d	Front of Vehicle

(2) While aligning the two red frames (adjustment screen) with the white line (parking space), move the vehicle forward and check the white line at the joining area (inside the frame) of the rear television camera assembly image and side television camera assembly RH image.

If the line is aligned straight as shown in the illustration, the result is OK. Otherwise, perform camera adjustment.



*a	Red Frame (Adjustment Screen)	*b	White Line (Parking Space)
*c	Joining Area (Inside the Frame)	*d	Parking Stop
*e	Front of Vehicle	-	-

PROCEDURE 2: PRE-WORK CHECKS

(a) Preliminary checks

NOTICE:

- Provide shadow to prevent backlight from hitting the camera.
- Use string that does not stretch.
- Apply pieces of adhesive tape to serve as check markers. When placing the markers, make them 100 mm (3.94 in.) wide.
- SST may also be used for the recognition markers and the positioning and check markers used in optical axis adjustment.

(1) Perform the work in a wide, level location (L direction approximately 6.5 m x W direction approximately 3.5 m).

(2) Park the vehicle on a flat surface with the steering wheel centered.

NOTICE:

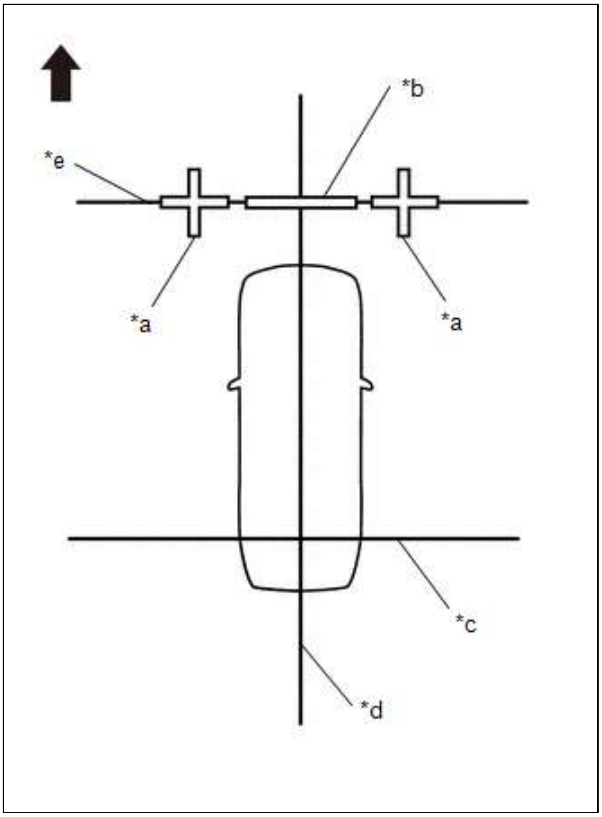
Before stopping the vehicle, move the vehicle backward and forward to ensure that both the steering wheel and the tires point straight ahead.

(3) Adjust the tire pressure to the specified value(s).

(4) Remove all luggage from the vehicle and place the markers before starting work.

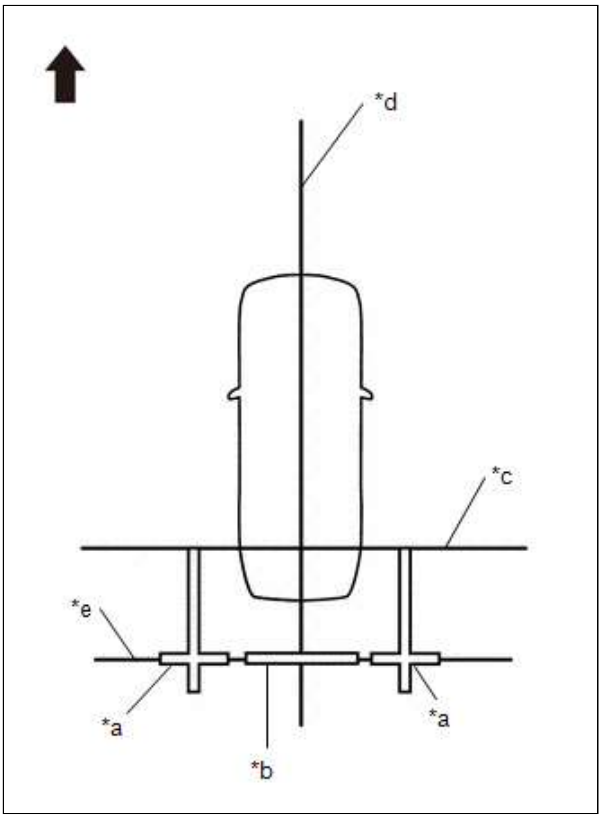
(b) Marker locations (check marker)

(1) Secure the string to the locations required to make the checks and set markers as shown in the illustration.



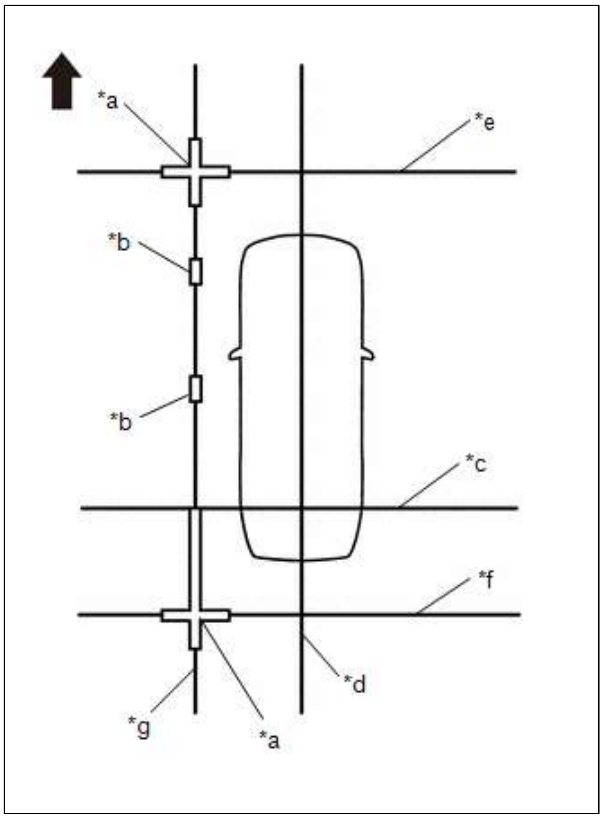
- Front camera adjustment only

*a	Cross Check Marker
*b	Check Marker
*c	String 1
*d	String 2
*e	String 3
	Front of Vehicle



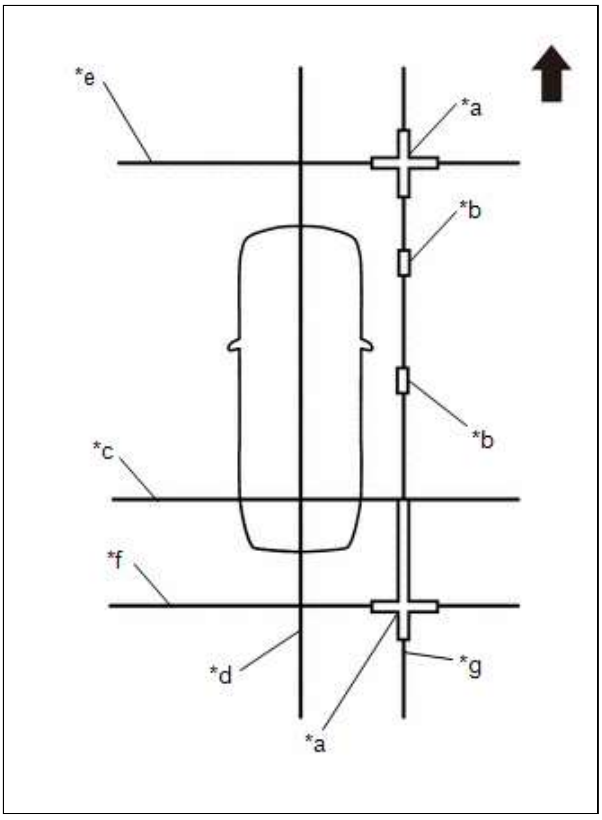
- Rear camera adjustment only

*a	Cross Check Marker
*b	Check Marker
*c	String 1
*d	String 2
*e	String 4
	Front of Vehicle



- Left camera adjustment only

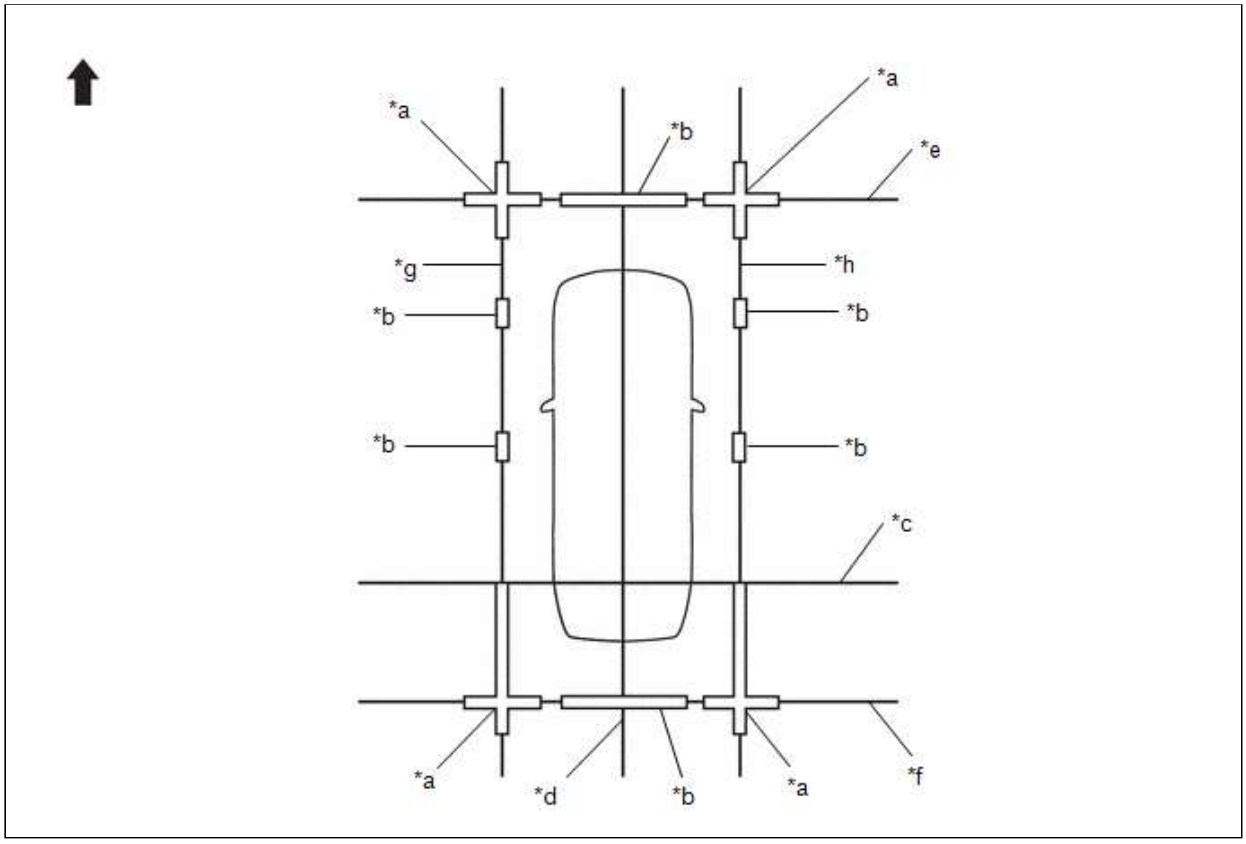
*a	Cross Check Marker
*b	Check Marker
*c	String 1
*d	String 2
*e	String 3
*f	String 4
*g	String 5
	Front of Vehicle



- Right camera adjustment only

*a	Cross Check Marker
*b	Check Marker
*c	String 1
*d	String 2
*e	String 3
*f	String 4
*g	String 6
➡	Front of Vehicle

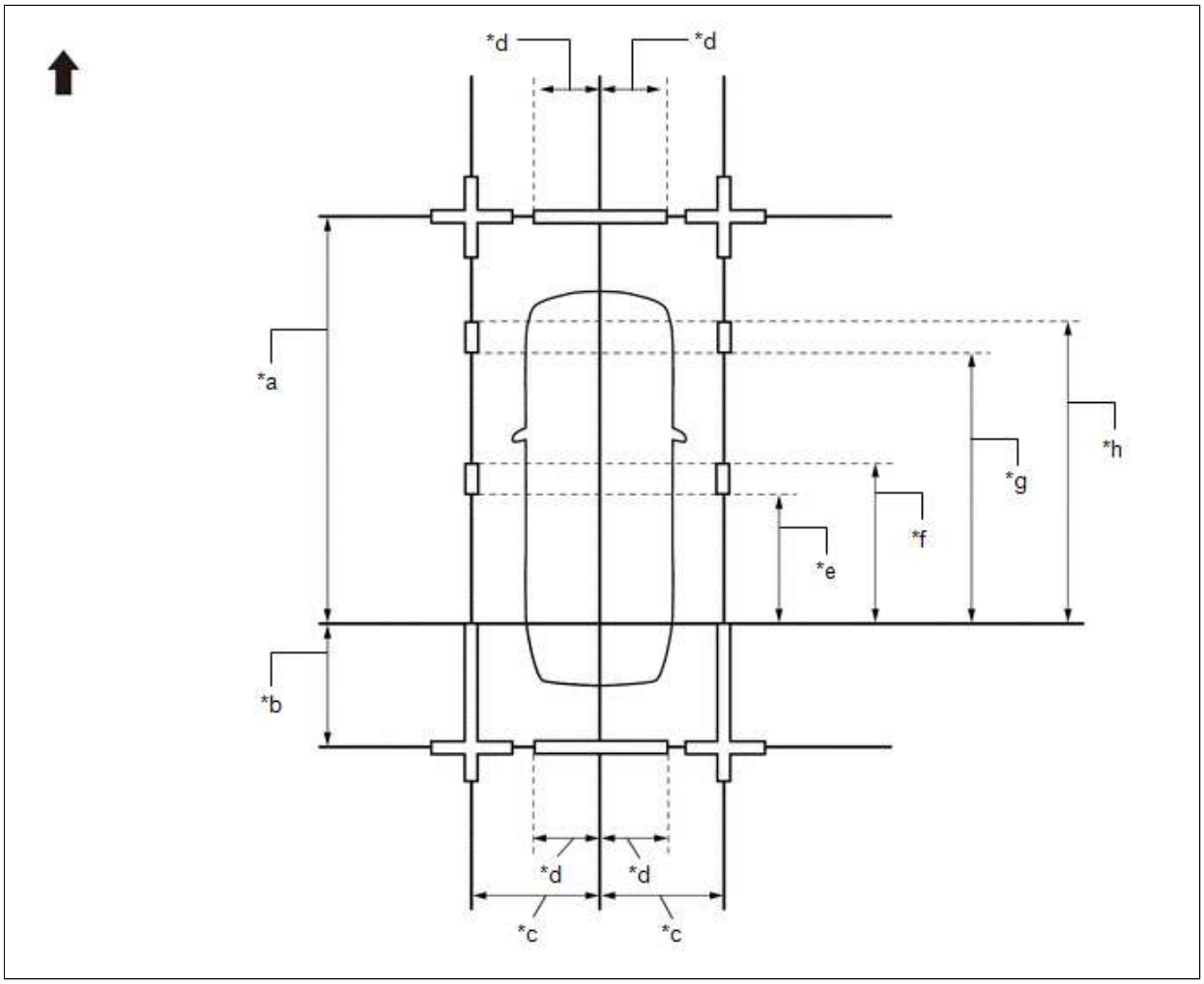
- Adjustment of 4 cameras



*a	Cross Check Marker	*b	Check Marker
*c	String 1	*d	String 2
*e	String 3	*f	String 4
*g	String 5	*h	String 6
➡	Front of Vehicle	-	-

(c) Marker positions

(1) Set the check markers at the positions shown in the illustration.



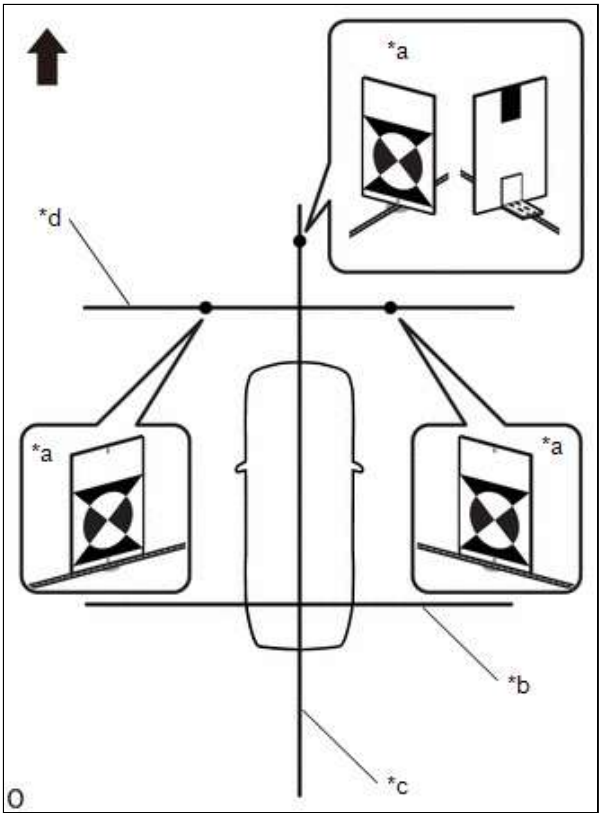
*a	5100 mm (16.73 ft.)	*b	1200 mm (3.94 ft.)
*c	1400 mm (4.59 ft.)	*d	693 mm (2.27 ft.)
*e	1600 mm (5.25 ft.)	*f	1800 mm (5.90 ft.)
*g	3300 mm (10.82 ft.)	*h	3500 mm (11.48 ft.)
➡	Front of Vehicle	-	-

(d) Marker locations (SST)

SST: 09870-52010
SST: 09870-52020

(1) Secure the strings to the location required to make the checks and set SST as shown in the illustration.

- Front camera adjustment only



*a	SST (Except Side Setting)
*b	String 1
*c	String 2
*d	String 3
➡	Front of Vehicle

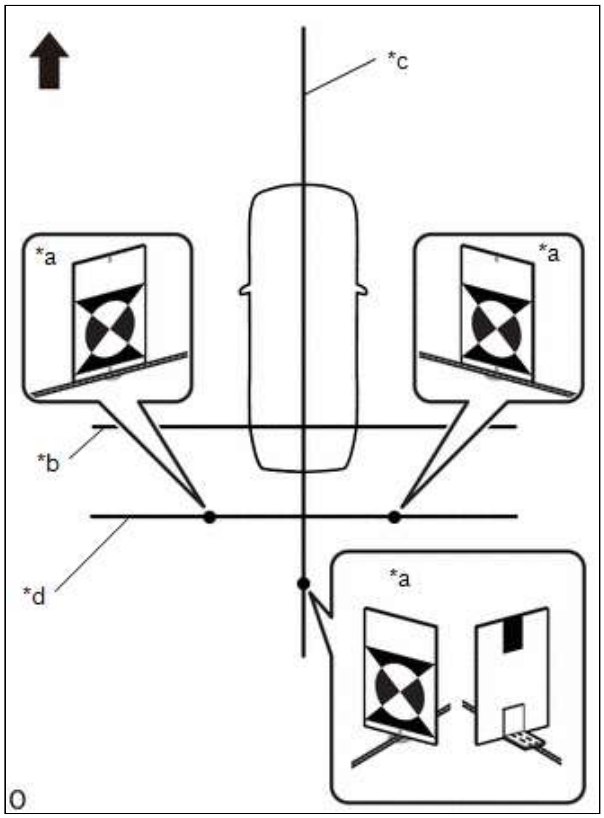
NOTICE:

Set SST (television camera adjustment target) with its marker surface facing toward the vehicle.

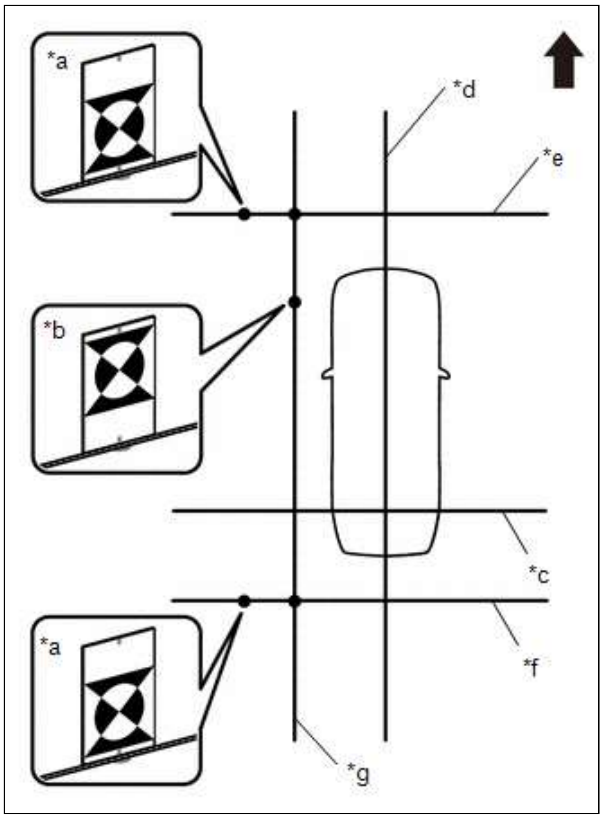
- Rear camera adjustment only

NOTICE:

Set SST (television camera adjustment target) with its marker surface facing toward the vehicle.



*a	SST (Except Side Setting)
*b	String 1
*c	String 2
*d	String 4
➡	Front of Vehicle

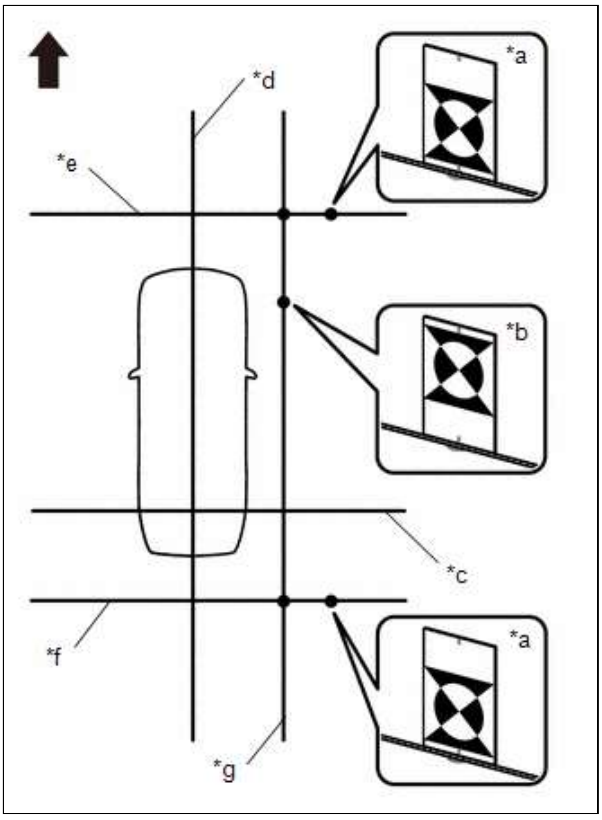


- Left camera adjustment only

*a	SST (Except Side Setting)
*b	SST (Side Setting)
*c	String 1
*d	String 2
*e	String 3
*f	String 4
*g	String 5
	Front of Vehicle

NOTICE:

- Set SST (television camera adjustment target) with its marker surface facing toward the vehicle.
- The vertical direction of SST (television camera adjustment target) differs depending on whether side setting or front, rear and corner setting is used.



- Right camera adjustment only

*a	SST (Except Side Setting)
*b	SST (Side Setting)
*c	String 1
*d	String 2
*e	String 3
*f	String 4
*g	String 6
	Front of Vehicle

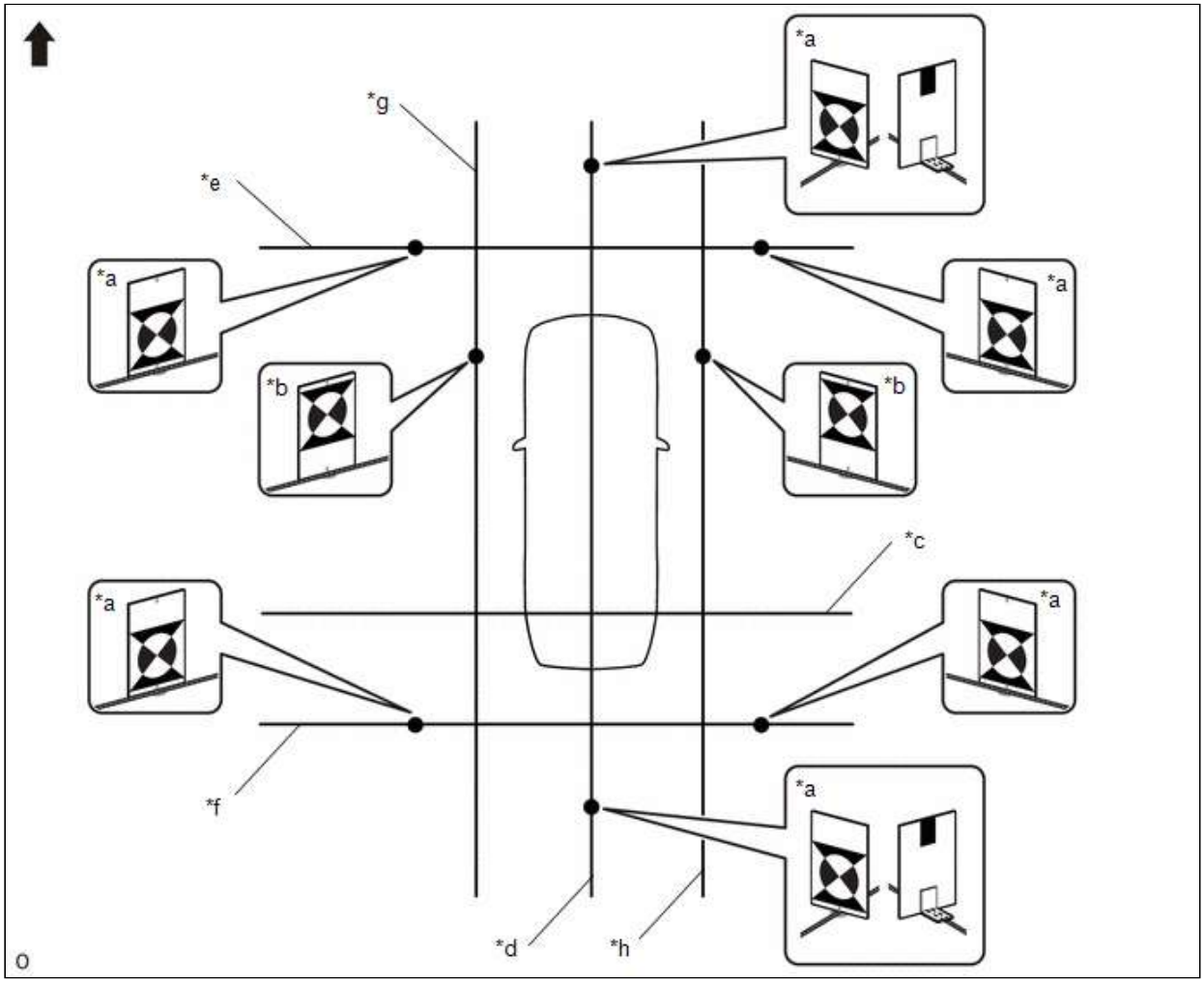
NOTICE:

- Set SST (television camera adjustment target) with its marker surface facing toward the vehicle.
- The vertical direction of SST (television camera adjustment target) differs depending on whether side setting or front, rear and corner setting is used.

- Adjustment of 4 cameras

NOTICE:

- Set SST (television camera adjustment target) with its marker surface facing toward the vehicle.
- The vertical direction of SST (television camera adjustment target) differs depending on whether side setting or front, rear and corner setting is used.



*a	SST (Except Side Setting)	*b	SST (Side Setting)
*c	String 1	*d	String 2
*e	String 3	*f	String 4
*g	String 5	*h	String 6
➡	Front of Vehicle	-	-

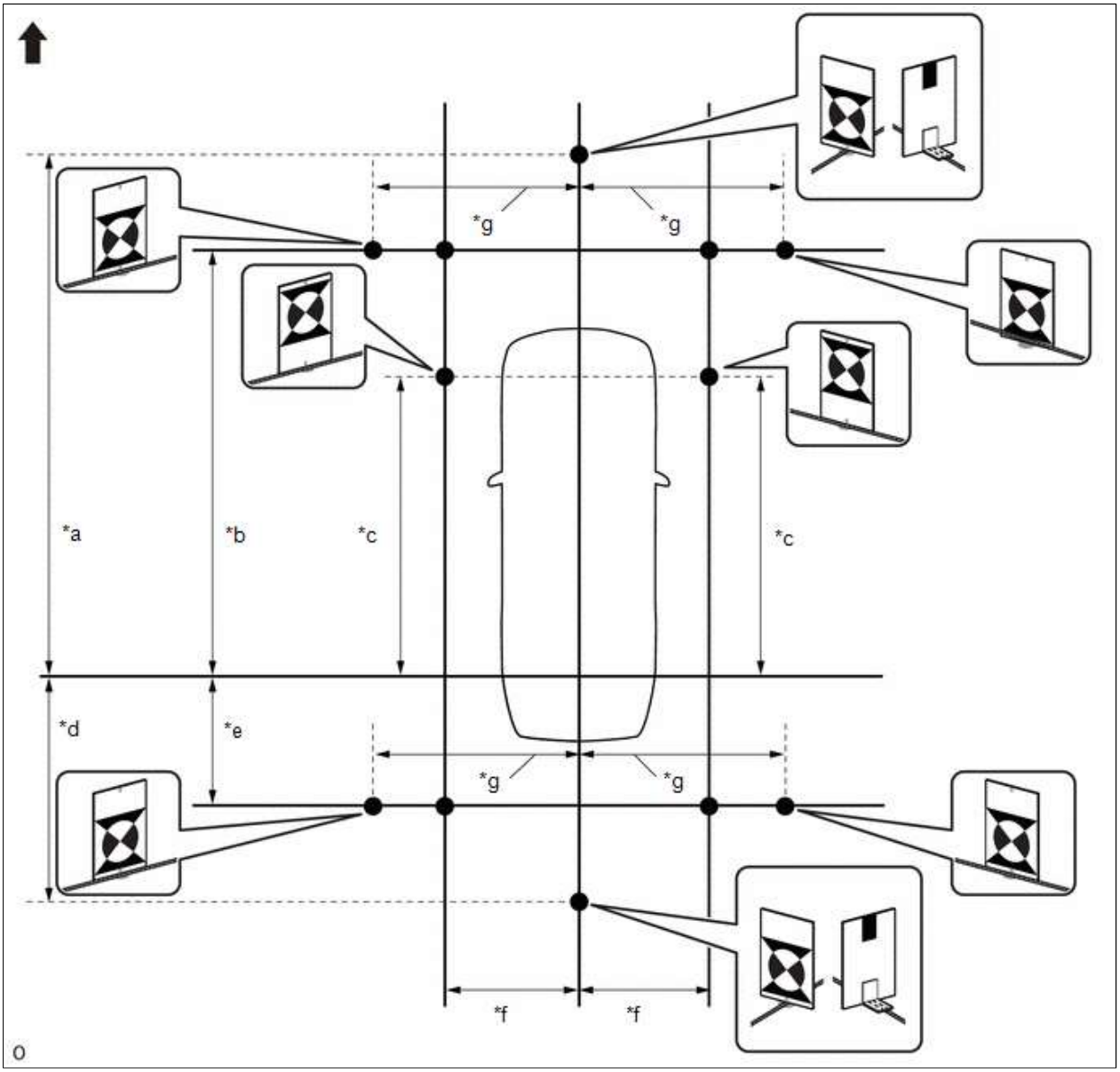
(e) Marker positions (SST)

SST: 09870-52010
SST: 09870-52020

(1) Set SST in the positions shown in the illustration.

NOTICE:

- Set SST (television camera adjustment target) with its marker surface facing toward the vehicle.
- The vertical direction of SST (television camera adjustment target) differs depending on whether side setting or front, rear and corner setting is used.



*a	8150 mm (26.73 ft.)	*b	5150 mm (16.89 ft.)
*c	3100 mm (10.17 ft.)	*d	2450 mm (8.04 ft.)
*e	1250 mm (4.10 ft.)	*f	1450 mm (4.76 ft.)
*g	1650 mm (5.41 ft.)	-	-
➡	Front of Vehicle	-	-

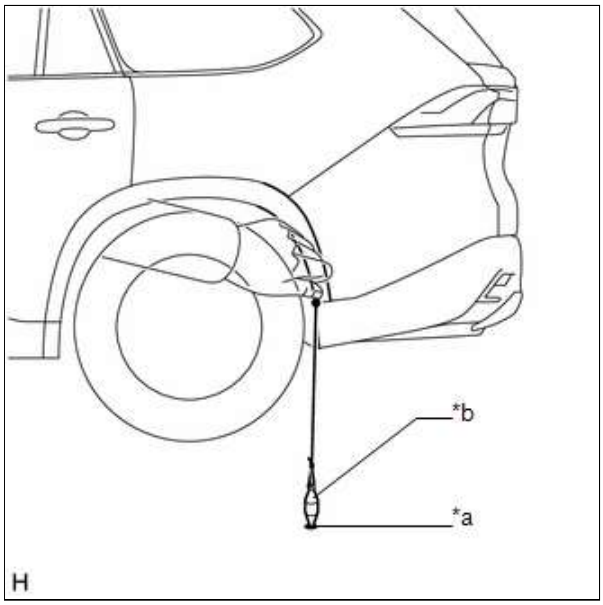
PROCEDURE 3: SET DATUM POINTS

(a) Extend the datum line (string 1).

(1) Hang a weight with a pointed tip and accurately mark the center position on the road surface. (Mark A)

NOTICE:

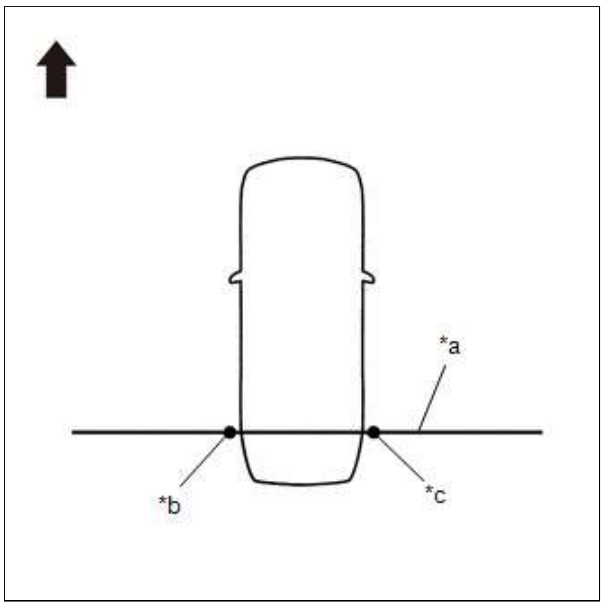
Make sure that the weight hangs straight down from the string.



*a	Mark A
*b	Weight

(2) Repeat the procedure to mark the right side. (Mark B)

(3) Secure string 1 so that it passes through marks A and B on the left and right sides.



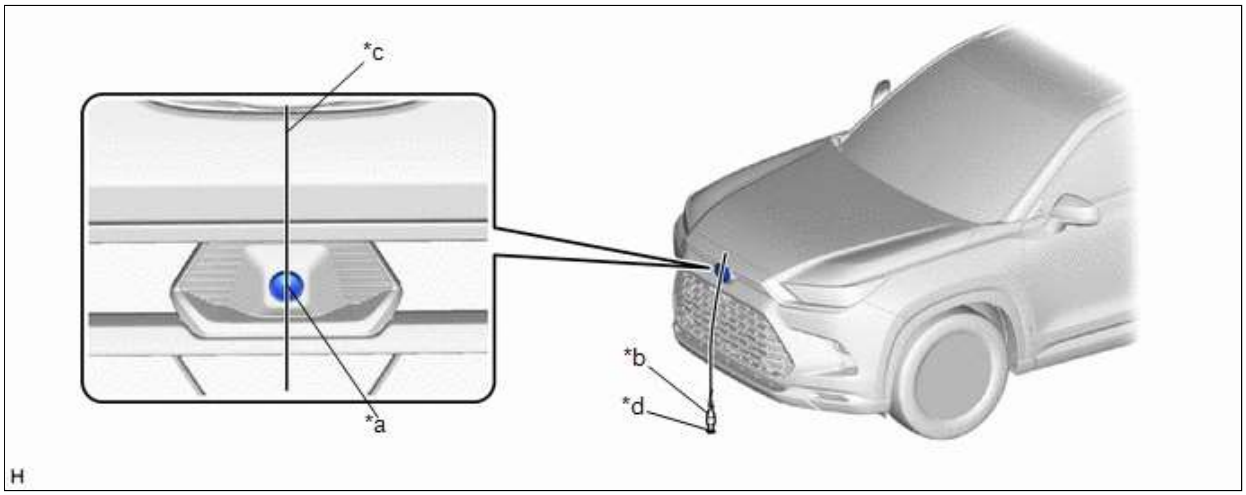
*a	String 1
*b	Mark A
*c	Mark B
➡	Front of Vehicle

NOTICE:

- When securing the string, check that there is no slack and the string is not twisted.
- Extend the line for approximately 0.4 m or more from the left/right side of the vehicle. (w/ Advanced Park or w/ Parking Support Brake System (Rear Pedestrians) Function)

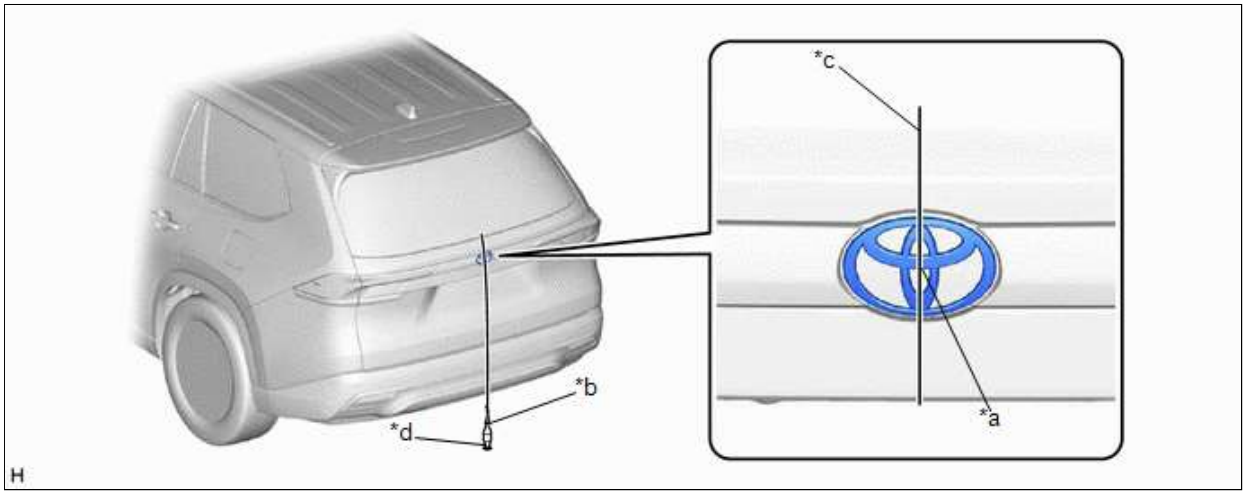
(b) Extend the vehicle center line (string 2).

(1) Hang a weight with a pointed tip such that is passes through the center of the front television camera assembly and accurately mark the center position on the road surface. (Mark C)



*a	Center	*b	Weight
*c	String	*d	Mark C

(2) Hang a weight with a pointed tip from the center of the rear emblem and accurately mark the center position on the road surface. (Mark D)



*a	Center	*b	Weight
*c	String	*d	Mark D

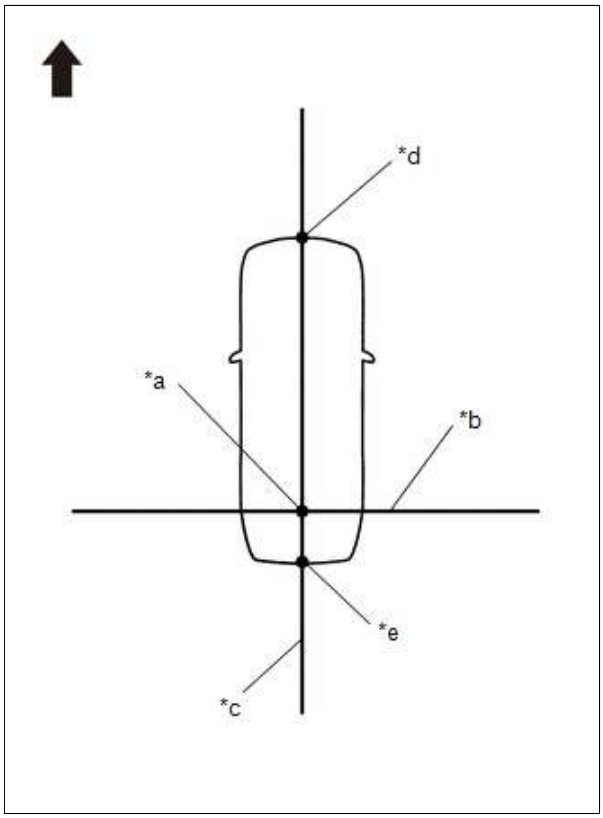
(3) Secure string 2 so that it passes through marks C and D at the front and rear of the vehicle.

NOTICE:

When securing string, check that there is no slack and the string is not twisted.

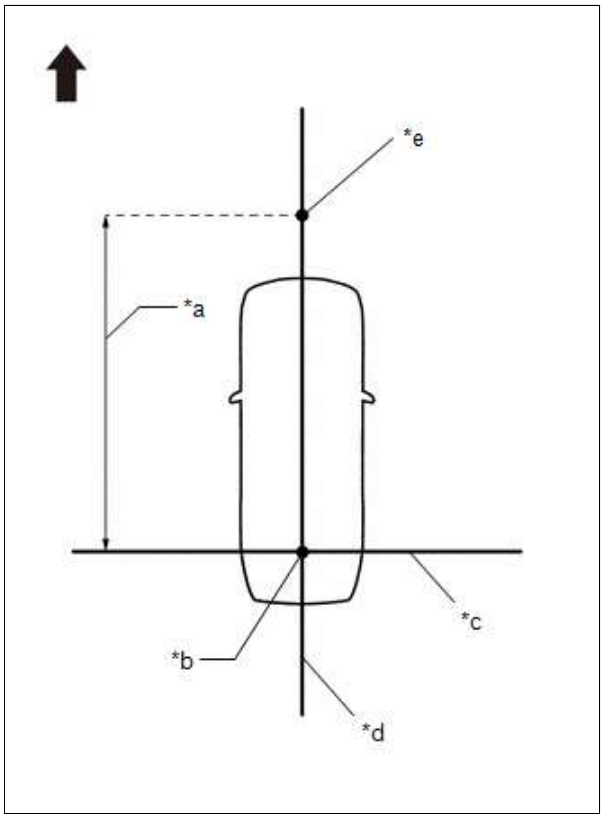
HINT:

Set the point where strings 1 and 2 intersect as the datum point.



*a	Datum Point
*b	String 1
*c	String 2
*d	Mark C
*e	Mark D
➡	Front of Vehicle

PROCEDURE 4: SET MARKERS (FRONT ADJUSTMENT)

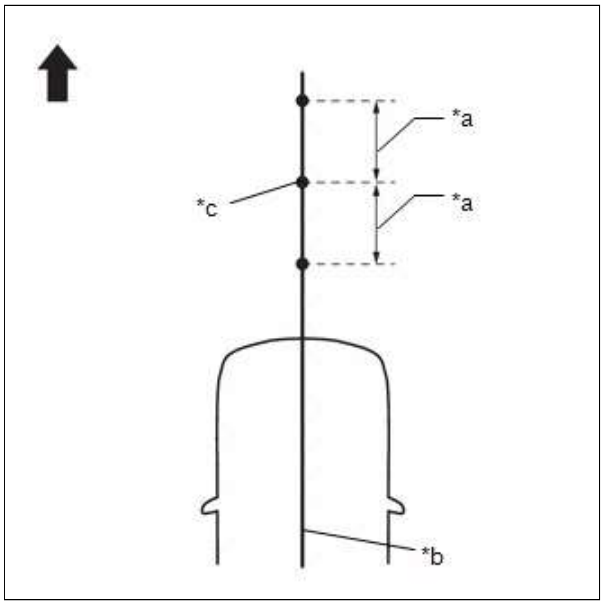


*a	5100 mm (16.73 ft.)
*b	Datum Point
*c	String 1
*d	String 2
*e	Mark E
➡	Front of Vehicle

(a) In front of the vehicle, extend string (3) perpendicular to the vehicle center line (string (2)), and place a marker.

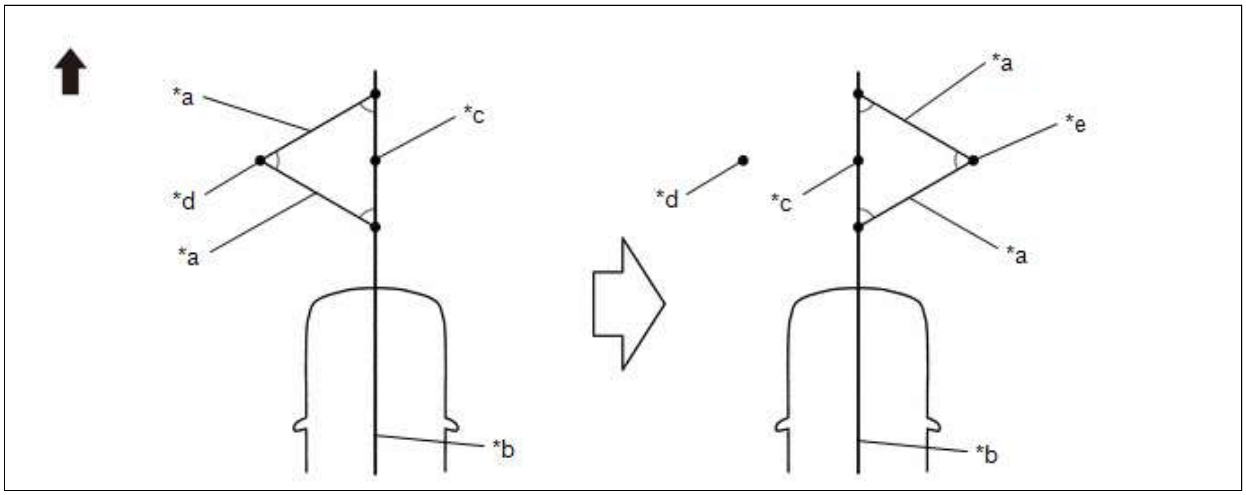
(1) Mark the position on string 2 in front of the vehicle, 5100 mm (16.73 ft.) from the datum point. (Mark E)

(2) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.



*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
	Front of Vehicle

(3) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)

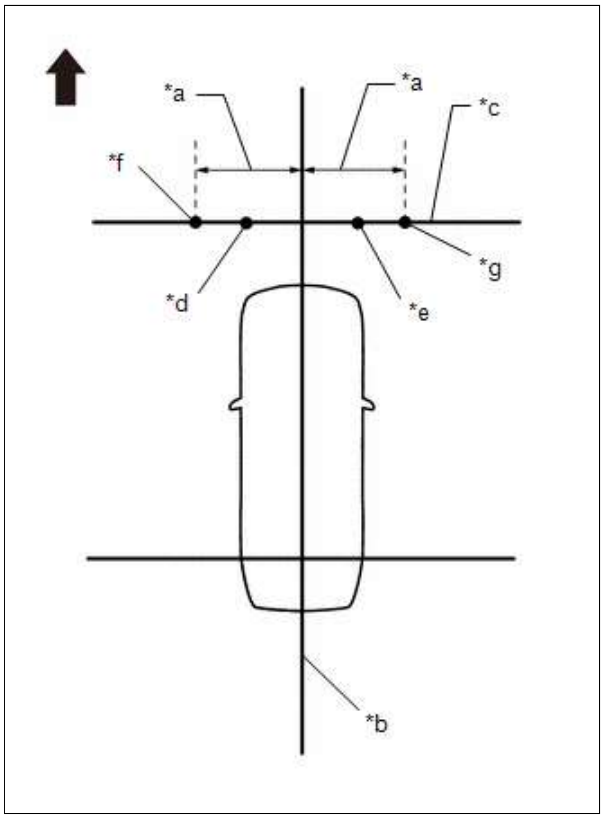


*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
	Front of Vehicle	-	-

(4) Secure string (3) so that it passes through marks F and G as shown in the illustration.

NOTICE:

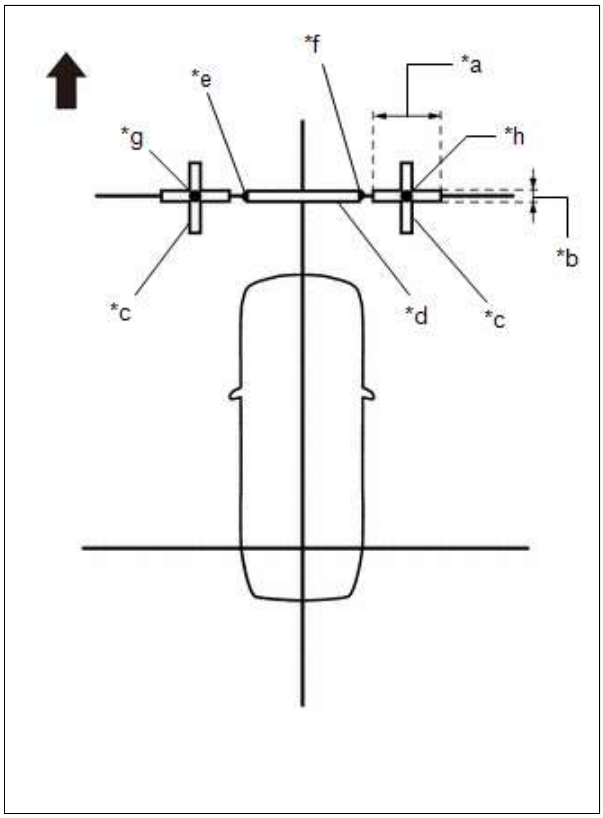
When securing the string, check that there is no slack and the string is not twisted.



*a	1400 mm (4.59 ft.)
*b	String 2
*c	String 3
*d	Mark F
*e	Mark G
*f	Mark H
*g	Mark I
	Front of Vehicle

(5) Mark positions on string (3), 1400 mm (4.59 ft.) to the left and right of the vehicle center line (string 2). (Marks H and I).

(6) Place and secure the cross check markers, centered on marks H and I.



*a	800 mm (2.62 ft.)
*b	100 mm (0.33 ft.)
*c	Cross Check Marker
*d	Check Marker
*e	Mark F
*f	Mark G
*g	Mark H
*h	Mark I
➡	Front of Vehicle

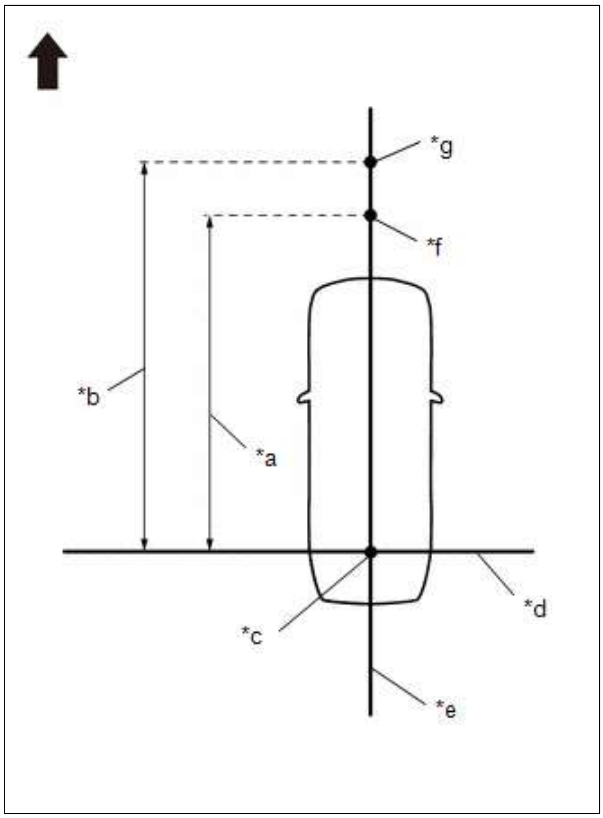
NOTICE:

- Align the cross check markers perpendicular to the string.
- Make each arm of the cross check markers 800 mm (2.62 ft.) long and 100 mm (0.33 ft.) wide.

(7) Place the check marker between marks F and G.

(8) Perform the set SST (front adjustment) (procedure 5).

PROCEDURE 5: SET SST (FRONT ADJUSTMENT)



*a	5150 mm (16.89 ft.)
*b	8150 mm (26.73 ft.)
*c	Datum Point
*d	String 1
*e	String 2
*f	Mark E
*g	Mark W
➡	Front of Vehicle

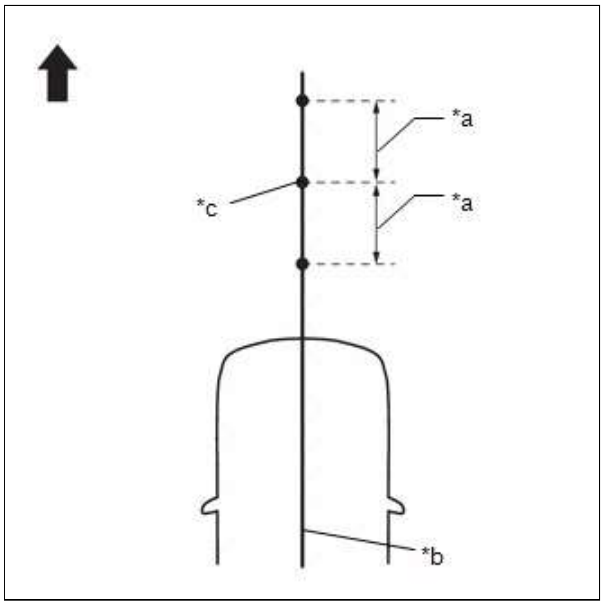
(a) In front of the vehicle, extend string (3) perpendicular to the vehicle center line (string (2)), and place SST.

SST: 09870-52010
SST: 09870-52020

(1) Mark the position on string (2) in front of the vehicle, 5150 mm (16.89 ft.) from the datum point. (Mark E)

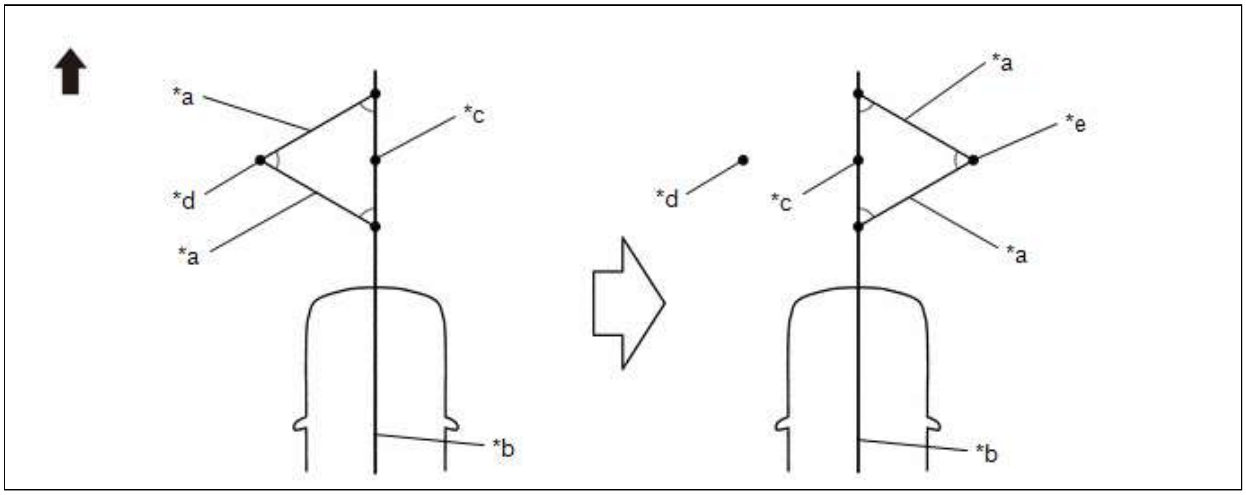
(2) Mark the position on string (2) in front of the vehicle, 8150 mm (26.73 ft.) from the datum point. (Mark W)

(3) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.



*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
➡	Front of Vehicle

(4) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)

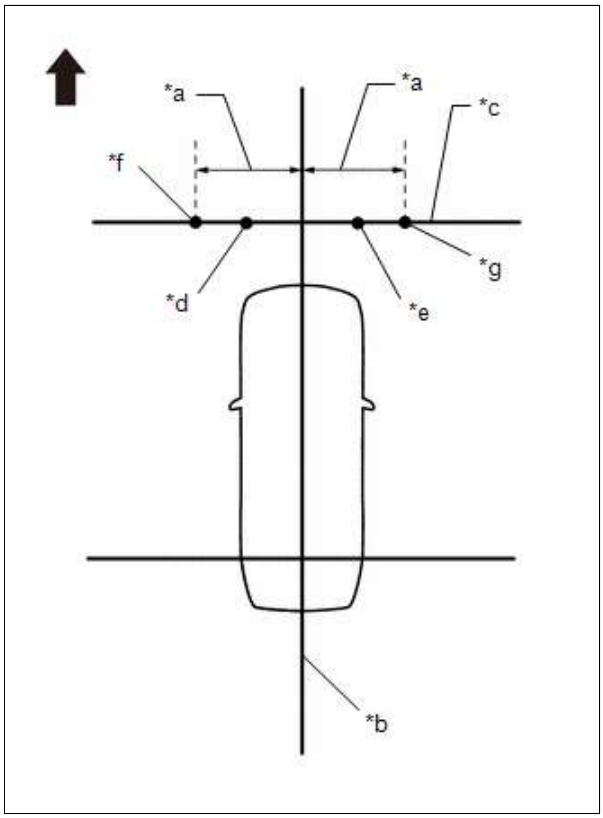


*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
➡	Front of Vehicle	-	-

(5) Secure string (3) so that it passes through marks F and G as shown in the illustration.

NOTICE:

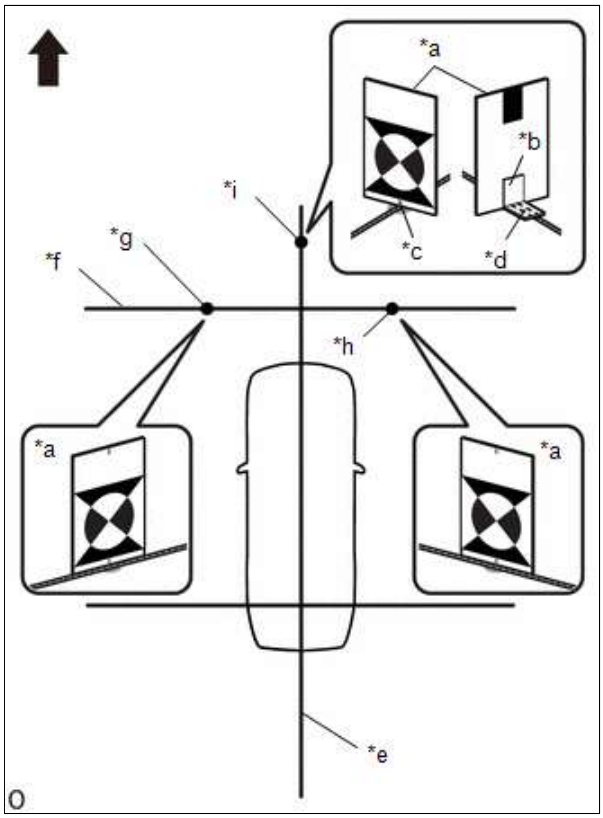
When securing the string, check that there is no slack and the string is not twisted.



*a	1650 mm (5.41 ft.)
*b	String 2
*c	String 3
*d	Mark F
*e	Mark G
*f	Mark AA
*g	Mark AB
➡	Front of Vehicle

(6) Mark positions on string (3), 1650 mm (5.41 ft.) to the left and right of the vehicle center line (string (2)). (Marks AA and AB).

(7) While the center line of SST (television camera adjustment target) is aligned with mark W, place string (2) so that it overlaps the center line of SST (L type stand) as shown in the illustration.



*a	SST (Television Camera Adjustment Target)
*b	SST (L Type Stand)
*c	SST (Television Camera Adjustment Target) Center Line
*d	SST (L Type Stand) Center Line
*e	String 2
*f	String 3
*g	Mark AA
*h	Mark AB
*i	Mark W
➡	Front of Vehicle

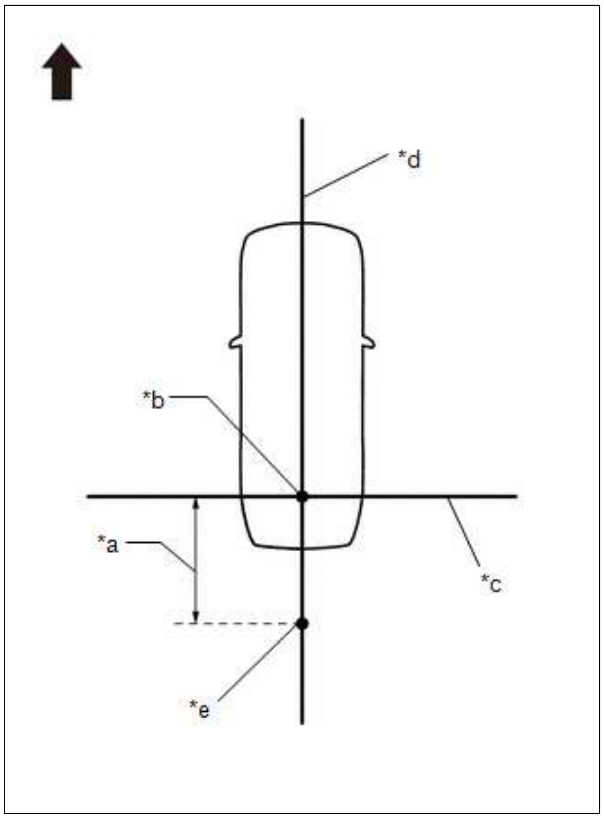
(8) Align the center line of SST (television camera adjustment target) with marks AA and AB and place it parallel with string (3) as shown in the illustration.

(9) Perform the screen adjustment procedure (procedure 15).

PROCEDURE 6: SET MARKERS (REAR ADJUSTMENT)

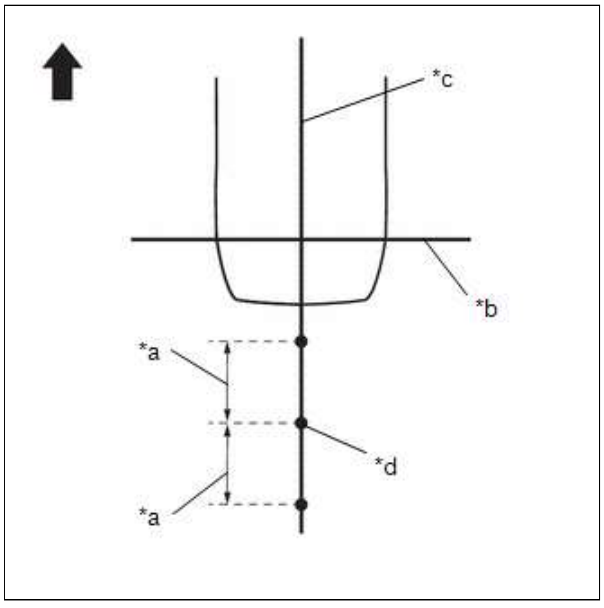
(a) To the rear of the vehicle, extend string (4) perpendicular to the vehicle center line (string (2)), and place a check marker.

(1) Mark a position on string 2 to the rear of the vehicle, 1200 mm (3.94 ft.) from the datum point. (Mark J)



*a	1200 mm (3.94 ft.)
*b	Datum Point
*c	String 1
*d	String 2
*e	Mark J
➡	Front of Vehicle

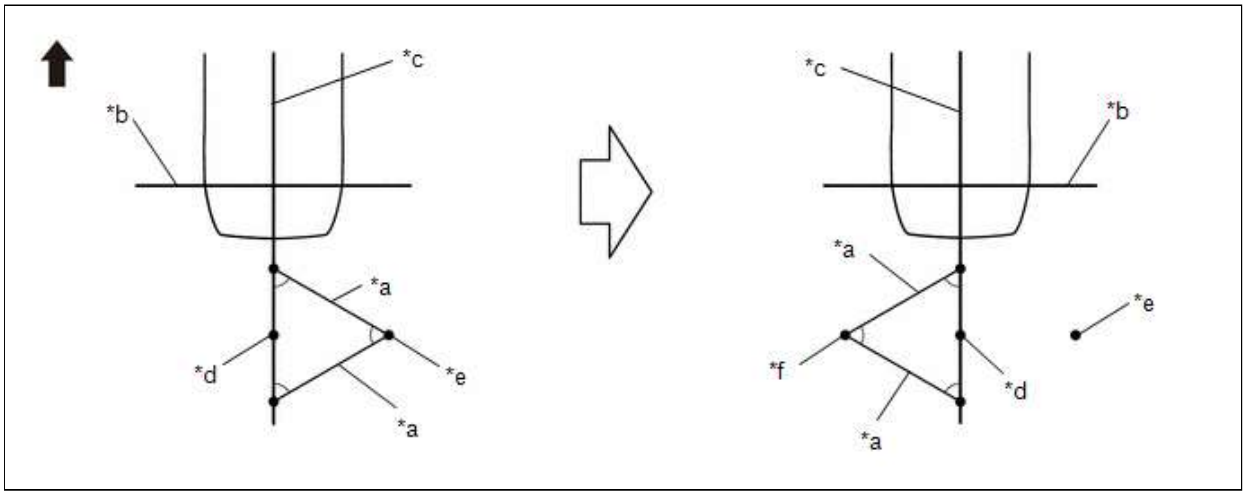
(2) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.



*a	400 mm (1.31 ft.)
*b	String 1

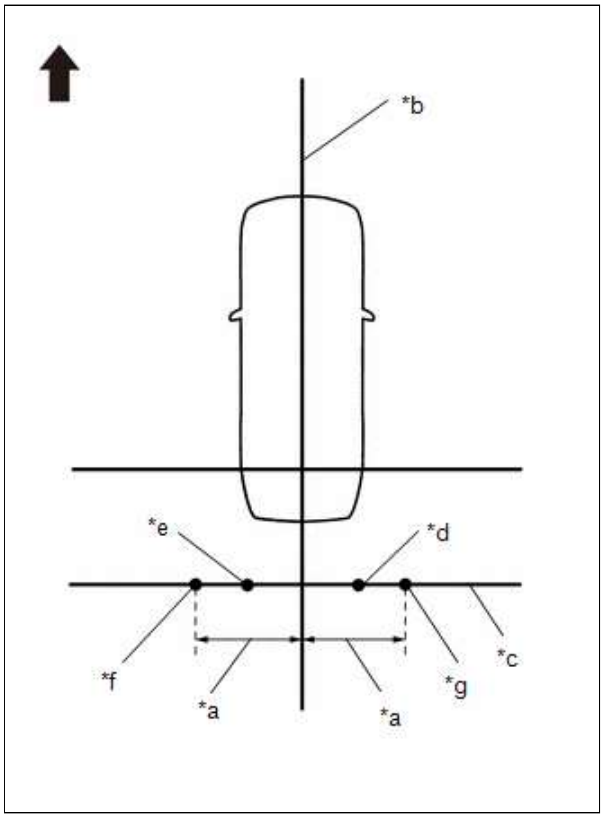
*c	String 2
*d	Mark J
➡	Front of Vehicle

(3) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)



*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(4) Secure string (4) so that it passes through marks K and L as shown in the illustration.



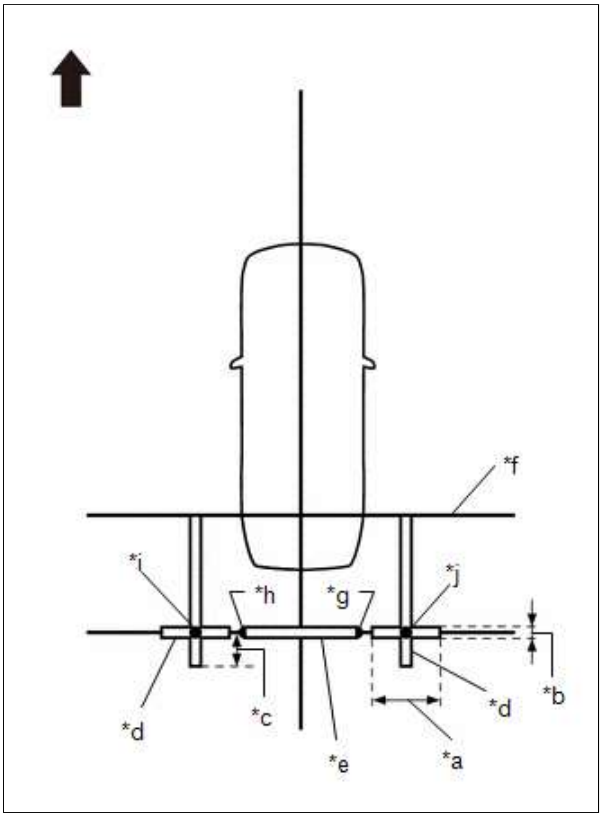
*a	1400 mm (4.59 ft.)
*b	String 2
*c	String 4
*d	Mark K
*e	Mark L
*f	Mark M
*g	Mark N
	Front of Vehicle

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.

(5) Mark positions on string (4), 1400 mm (4.59 ft.) to the left and right of the vehicle center line (string 2). (Marks M and N)

(6) Place and secure the cross check markers, centered on marks M and N.



*a	800 mm (2.62 ft.)
*b	100 mm (0.33 ft.)
*c	400 mm (1.31 ft.)
*d	Cross Check Marker
*e	Check Marker
*f	String 1
*g	Mark K
*h	Mark L
*i	Mark M
*j	Mark N

➡	Front of Vehicle

NOTICE:

- Align the cross check markers perpendicular to the string.
- Make each arm of the cross check markers 800 mm (2.62 ft.) long and 100 mm (0.33 ft.) wide.
- Extend the rear cross check markers to string 1.

(7) Place the check marker between marks K and L.

(8) Perform the set SST (rear adjustment) (procedure 7).

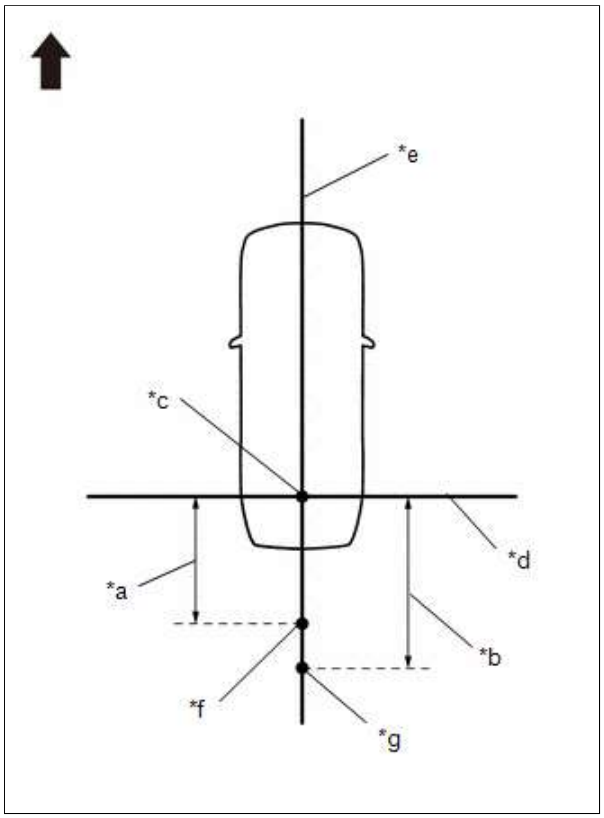
PROCEDURE 7: SET SST (REAR ADJUSTMENT)

(a) To the rear of the vehicle, extend string (4) perpendicular to the vehicle center line (string (2)), and place SST.

SST: 09870-52010

SST: 09870-52020

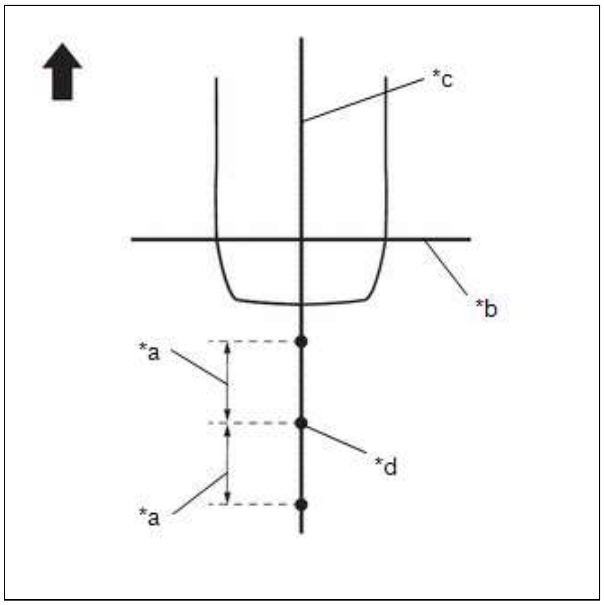
(1) Mark a position on string (2) to the rear of the vehicle, 1250 mm (4.10 ft.) from the datum point. (Mark J)



*a	1250 mm (4.10 ft.)
*b	2450 mm (8.04 ft.)
*c	Datum Point
*d	String 1
*e	String 2
*f	Mark J
*g	Mark X
➡	Front of Vehicle

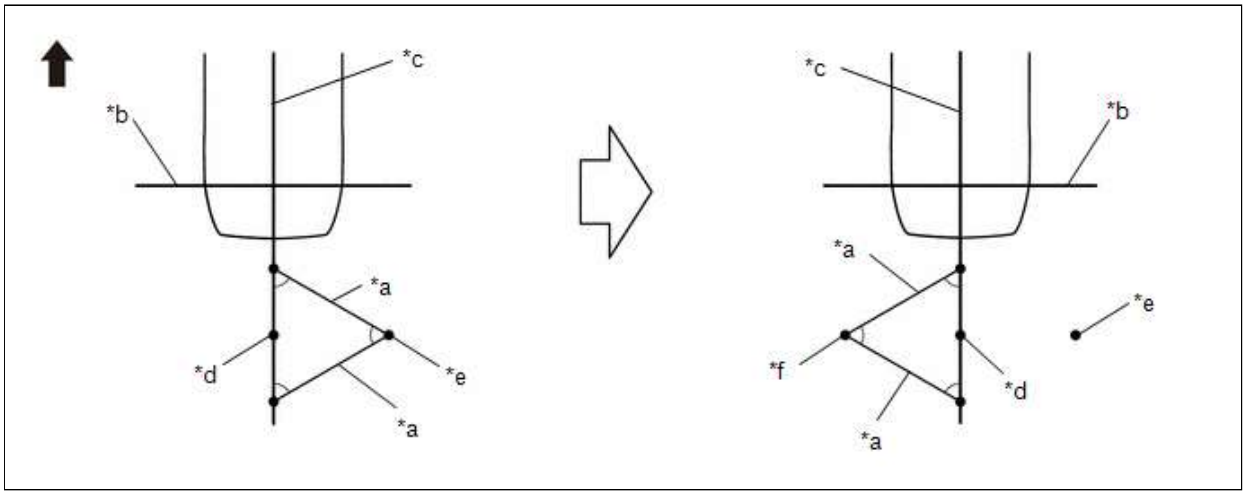
(2) Mark a position on string (2) to the rear of the vehicle, 2450 mm (8.04 ft.) from the datum point. (Mark X)

(3) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.



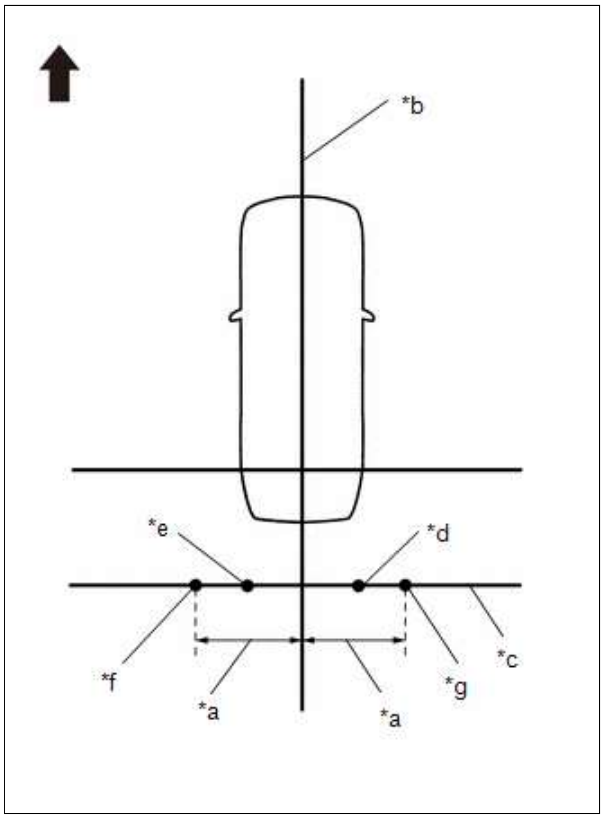
*a	400 mm (1.31 ft.)
*b	String 1
*c	String 2
*d	Mark J
➡	Front of Vehicle

(4) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)



*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(5) Secure string (4) so that it passes through marks K and L as shown in the illustration.



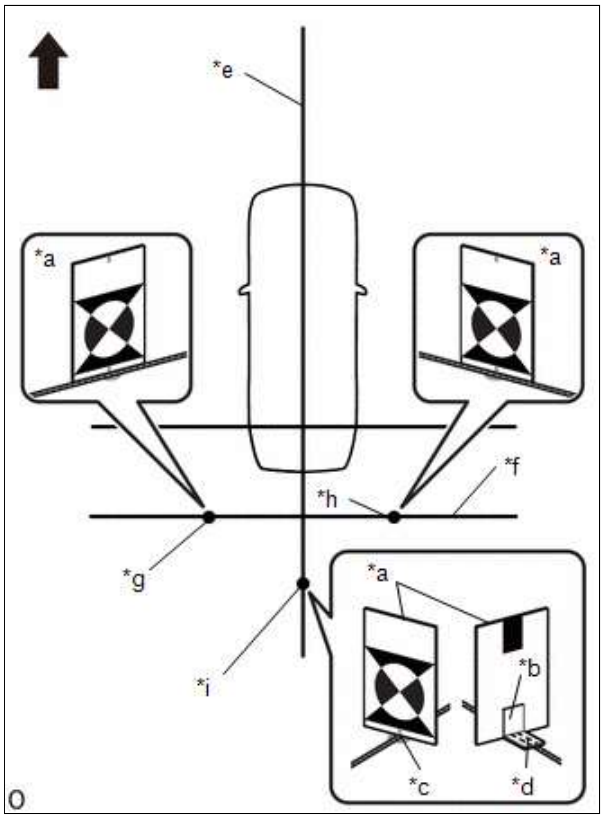
*a	1650 mm (5.41 ft.)
*b	String 2
*c	String 4
*d	Mark K
*e	Mark L
*f	Mark AC
*g	Mark AD
➡	Front of Vehicle

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.

(6) Mark positions on string (4), 1650 mm (5.41 ft.) to the left and right of the vehicle center line (string (2)). (Marks AC and AD)

(7) While the center line of SST (television camera adjustment target) is aligned with mark X, place string (2) so that it overlaps the center line of SST (L type stand) as shown in the illustration.



*a	SST (Television Camera Adjustment Target)
*b	SST (L Type Stand)
*c	SST (Television Camera Adjustment Target) Center Line
*d	SST (L Type Stand) Center Line
*e	String 2
*f	String 4
*g	Mark AC
*h	Mark AD
*i	Mark X
➡	Front of Vehicle

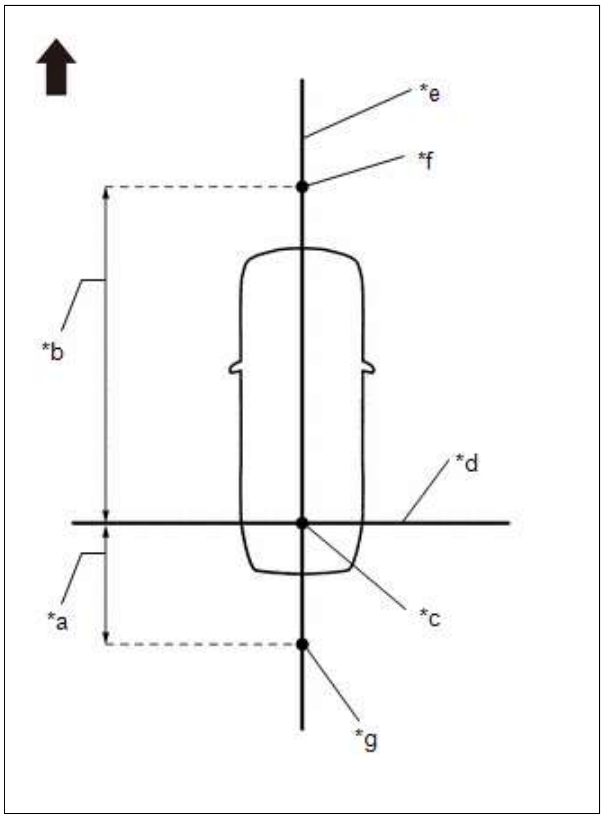
(8) Align the center line of SST (television camera adjustment target) with marks AC and AD and place it parallel with string (4) as shown in the illustration

(9) Perform the screen adjustment procedure (procedure 15).

PROCEDURE 8: SET MARKERS (LEFT-SIDE ADJUSTMENT)

(a) At the left side of the vehicle, extend string (5) parallel to the vehicle center line (string (2)), and place a marker

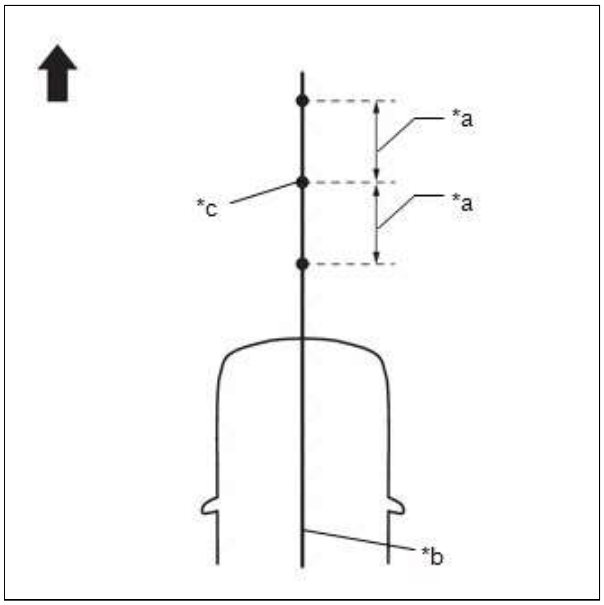
(1) Mark the position on string (2) in front of the vehicle, 5100 mm (16.73 ft.) from the datum point. (Mark E)



*a	1200 mm (3.94 ft.)
*b	5100 mm (16.73 ft.)
*c	Datum Point
*d	String 1
*e	String 2
*f	Mark E
*g	Mark J
➡	Front of Vehicle

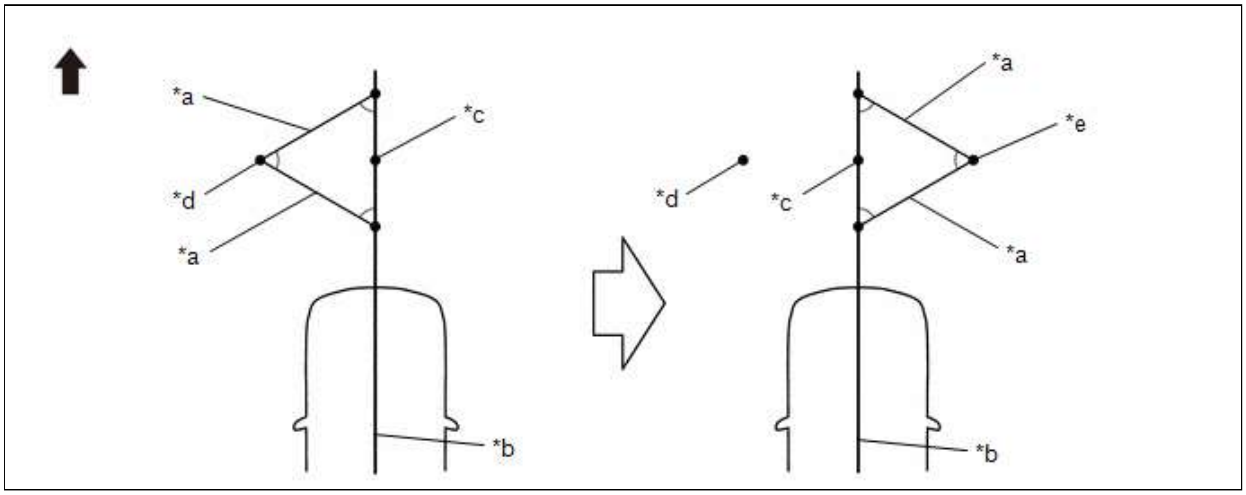
(2) Mark the position on string (2) to the rear of the vehicle, 1200 mm (3.94 ft.) from the datum point. (Mark J)

(3) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.



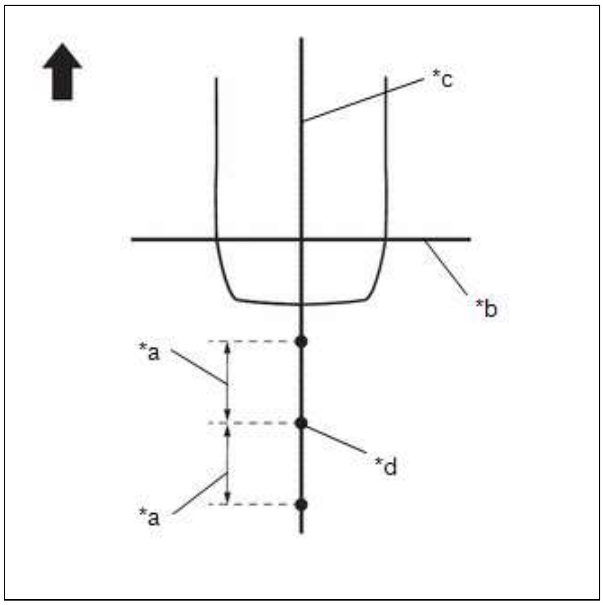
*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
➡	Front of Vehicle

(4) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)



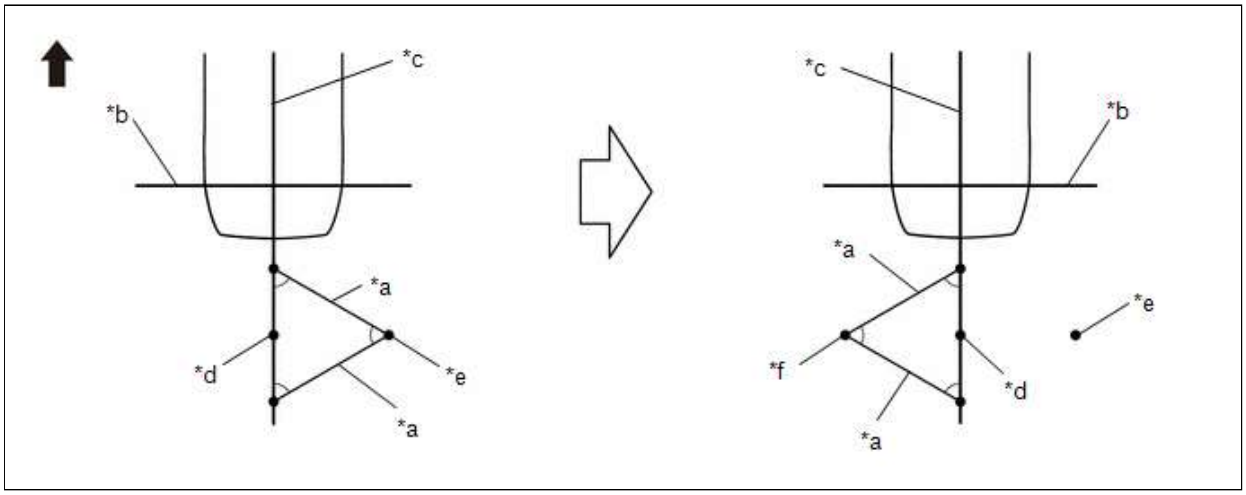
*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
➡	Front of Vehicle	-	-

(5) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.



*a	400 mm (1.31 ft.)
*b	String 1
*c	String 2
*d	Mark J
➡	Front of Vehicle

(6) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)

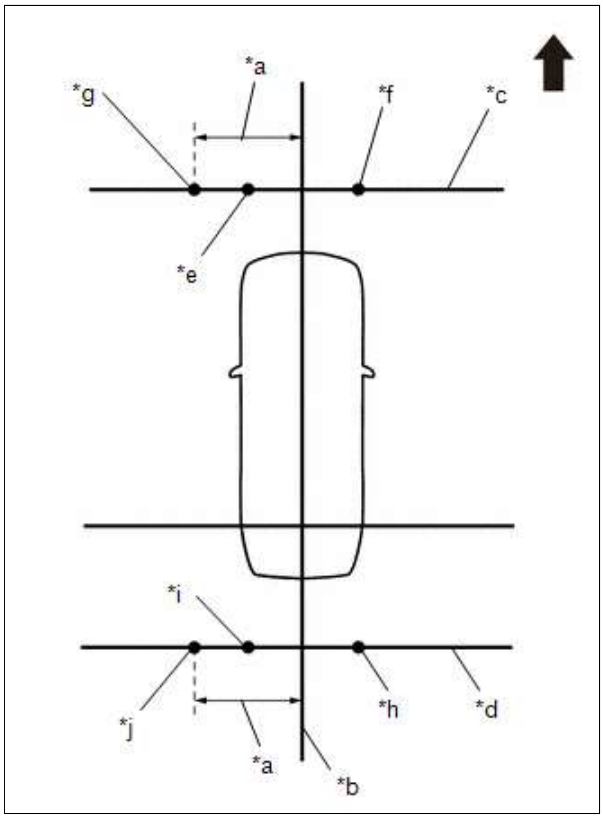


*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(7) Secure strings (3) and (4) so that they pass through marks F and G, marks K and L as shown in the illustration.

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



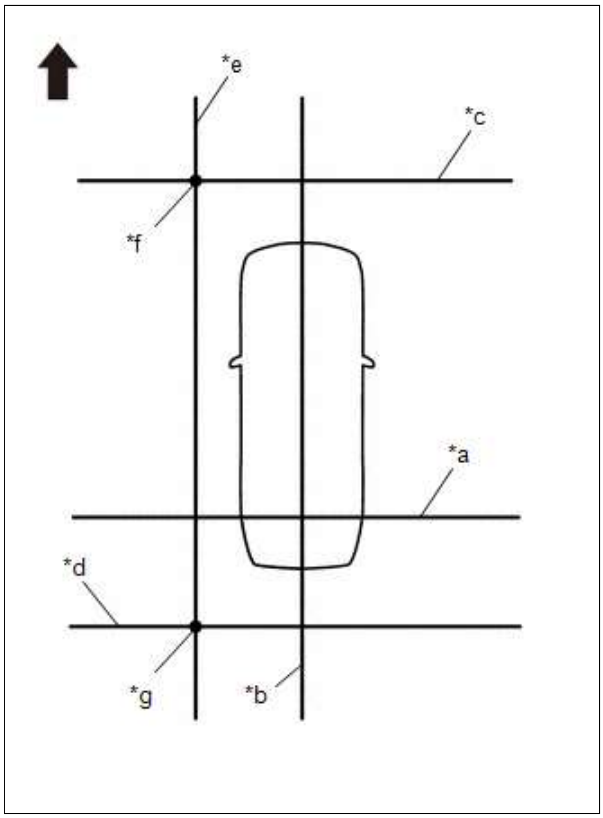
*a	1400 mm (4.59 ft.)
*b	String 2
*c	String 3
*d	String 4
*e	Mark F
*f	Mark G
*g	Mark H
*h	Mark K
*i	Mark L
*j	Mark M
➡	Front of Vehicle

(8) Mark strings (3) and (4), 1400 mm (4.59 ft.) to the left of the vehicle center line (string 2). (Marks H and M)

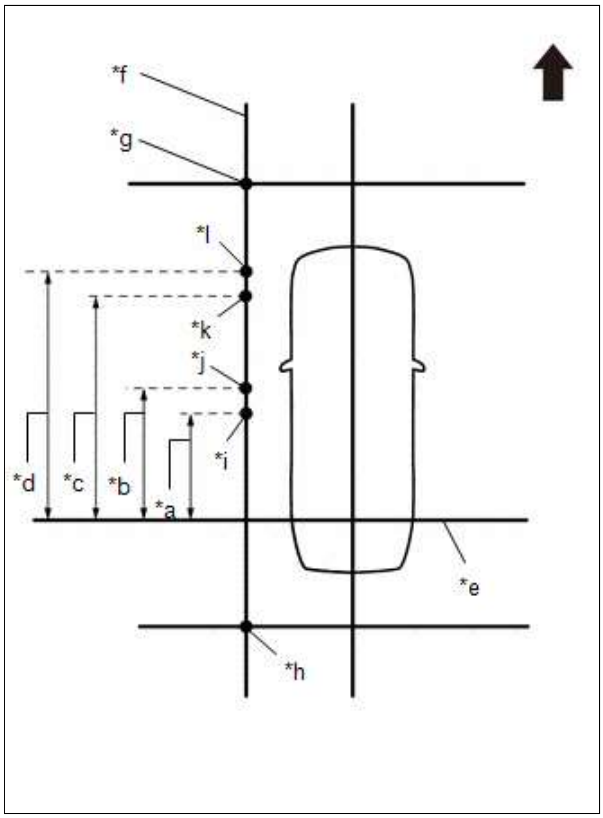
(9) Secure string (5) so that it passes through marks H and M as shown in the illustration.

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



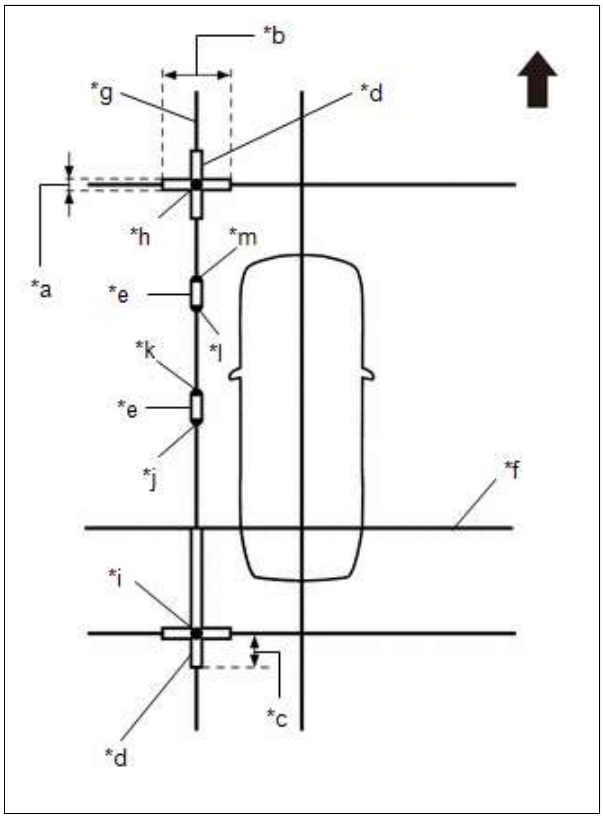
*a	String 1
*b	String 2
*c	String 3
*d	String 4
*e	String 5
*f	Mark H
*g	Mark M
➡	Front of Vehicle



*a	1600 mm (5.25 ft.)
*b	1800 mm (5.90 ft.)
*c	3300 mm (10.82 ft.)
*d	3500 mm (11.48 ft.)
*e	String 1
*f	String 5
*g	Mark H
*h	Mark M
*i	Mark O
*j	Mark P
*k	Mark Q
*l	Mark R
	Front of Vehicle

(10) Make marks on string (5) that are 1600 mm (5.25 ft.), 1800 mm (5.90 ft.), 3300 mm (10.82 ft.) and 3500 mm (11.48 ft.) from the datum line (string 1) as shown in the illustration. (Marks O, P, Q and R)

(11) Place and secure the cross check markers, centered on marks H and M.



*a	100 mm (0.33 ft.)
*b	800 mm (2.62 ft.)
*c	400 mm (1.31 ft.)
*d	Cross Check Marker
*e	Check Marker
*f	String 1
*g	String 5
*h	Mark H
*i	Mark M
*j	Mark O
*k	Mark P
*l	Mark Q
*m	Mark R
➡	Front of Vehicle

NOTICE:

- Align the cross check markers perpendicular to the string.
- Make each arm of the cross check markers 800 mm (2.62 ft.) long and 100 mm (0.33 ft.) wide.
- Extend the rear cross check markers to string 1.

(12) Place check markers between marks O and P, and marks Q and R.

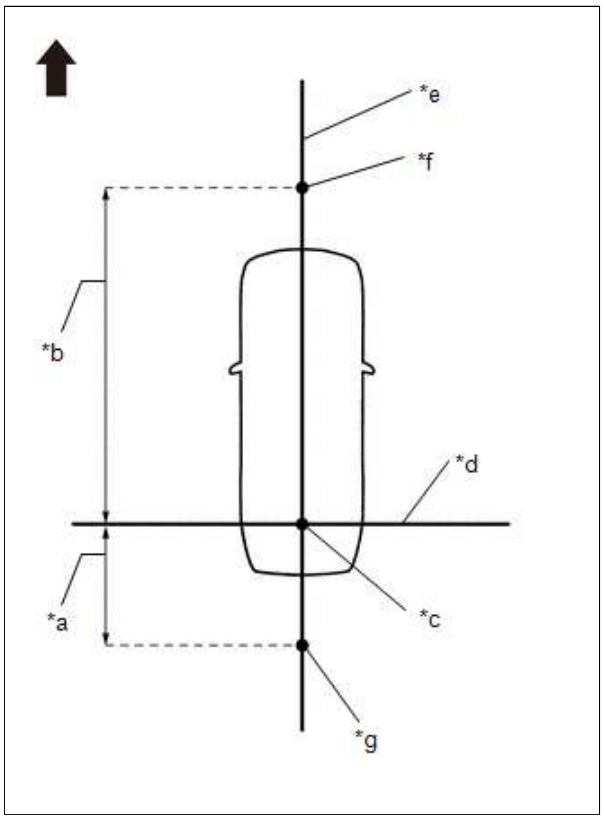
(13) Perform the set SST (left-side adjustment) (procedure 9).

PROCEDURE 9: SET SST (LEFT-SIDE ADJUSTMENT)

(a) At the left side of the vehicle, extend string (5) parallel to the vehicle center line (string (2)), and place SST.

SST: 09870-52010
SST: 09870-52020

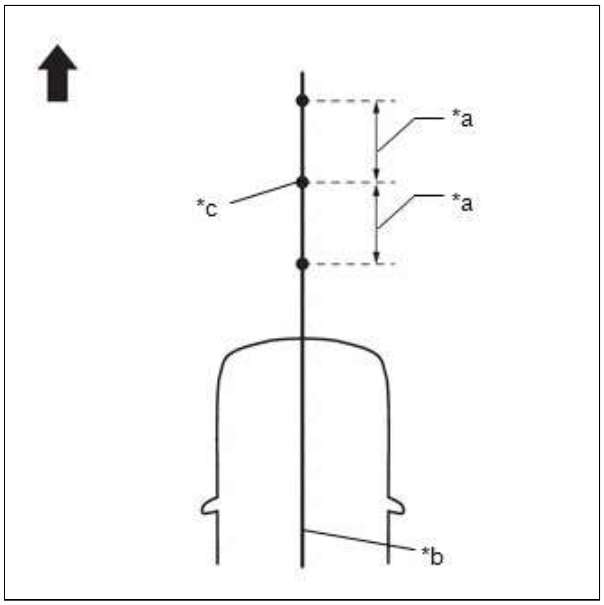
(1) Mark the position on string (2) in front of the vehicle, 5150 mm (16.89 ft.) from the datum point. (Mark E)



*a	1250 mm (4.10 ft.)
*b	5150 mm (16.89 ft.)
*c	Datum Point
*d	String 1
*e	String 2
*f	Mark E
*g	Mark J
➡	Front of Vehicle

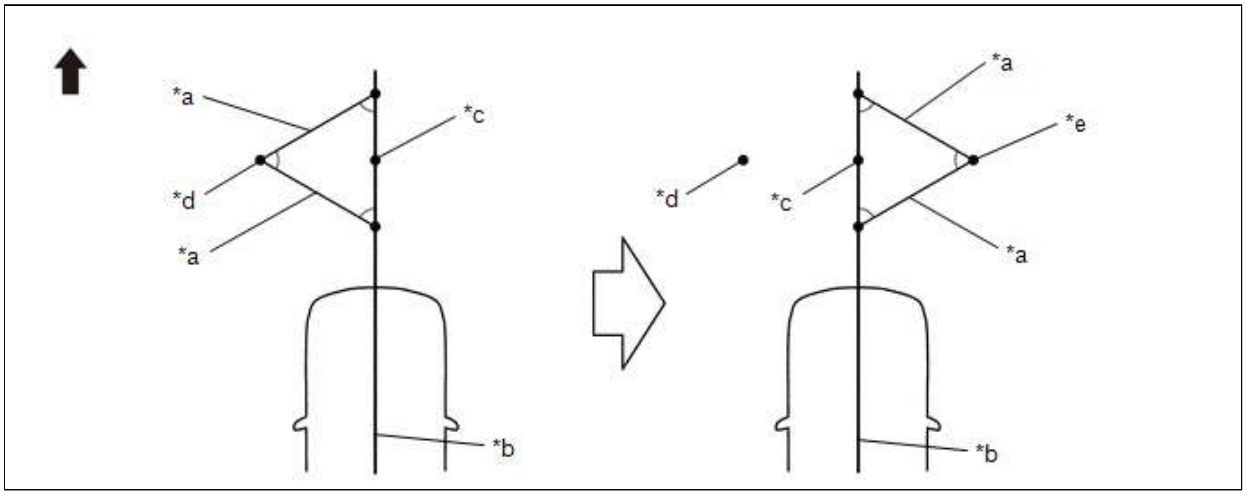
(2) Mark the position on string (2) to the rear of the vehicle, 1250 mm (4.10 ft.) from the datum point. (Mark J)

(3) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.



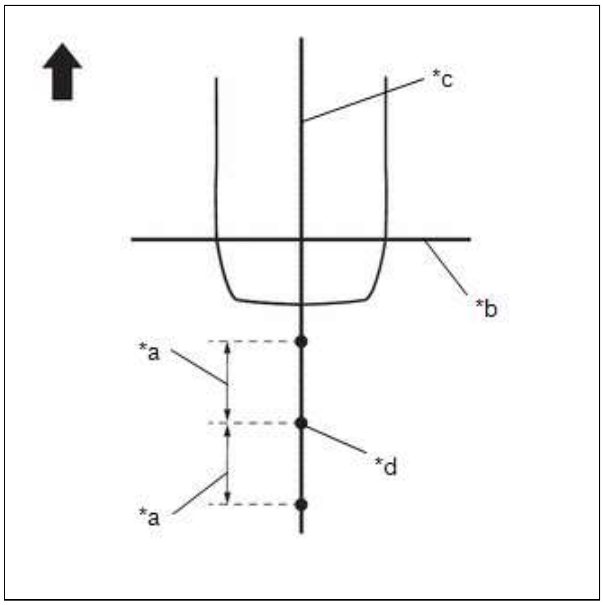
*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
➡	Front of Vehicle

(4) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)



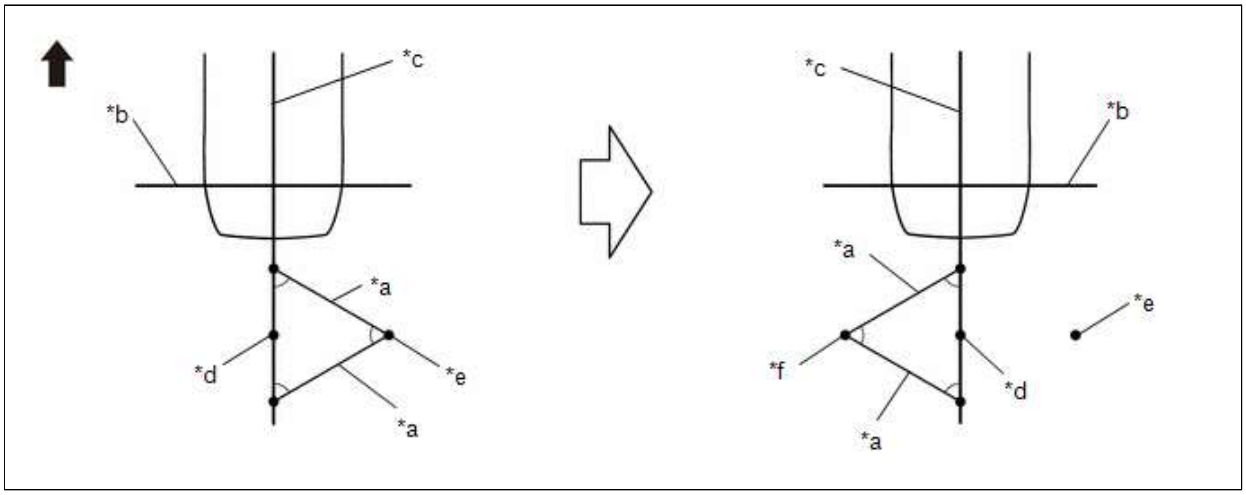
*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
➡	Front of Vehicle	-	-

(5) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.



*a	400 mm (1.31 ft.)
*b	String 1
*c	String 2
*d	Mark J
➡	Front of Vehicle

(6) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)

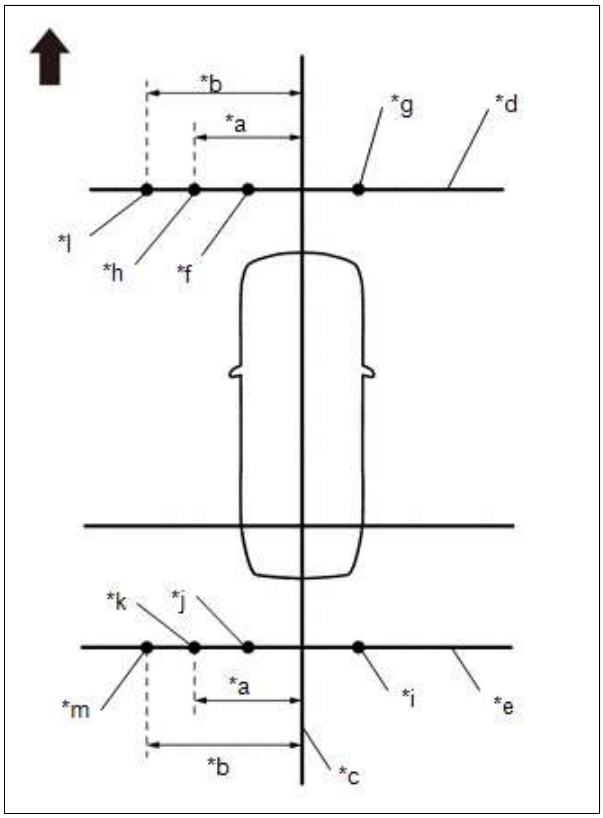


*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(7) Secure strings (3) and (4) so that they pass through marks F and G, marks K and L as shown in the illustration.

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



*a	1450 mm (4.76 ft.)
*b	1650 mm (5.41 ft.)
*c	String 2
*d	String 3
*e	String 4
*f	Mark F
*g	Mark G
*h	Mark H
*i	Mark K
*j	Mark L
*k	Mark M
*l	Mark AA
*m	Mark AC
➡	Front of Vehicle

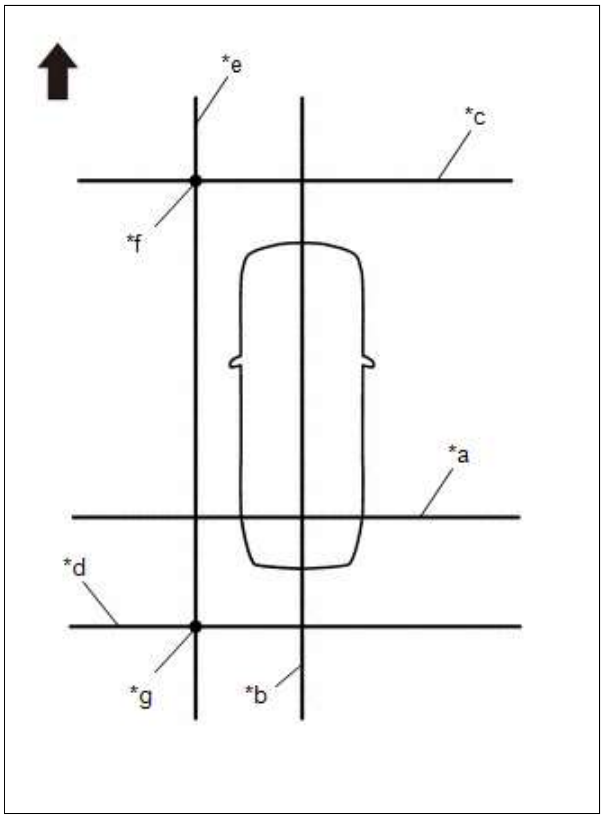
(8) Mark strings (3) and (4), 1450 mm (4.76 ft.) to the left of the vehicle center line (string 2). (Marks H and M)

(9) Mark strings (3) and (4), 1650 mm (5.41 ft.) to the left of the vehicle center line (string 2). (Marks AA and AC)

(10) Secure string (5) so that it passes through marks H and M as shown in the illustration.

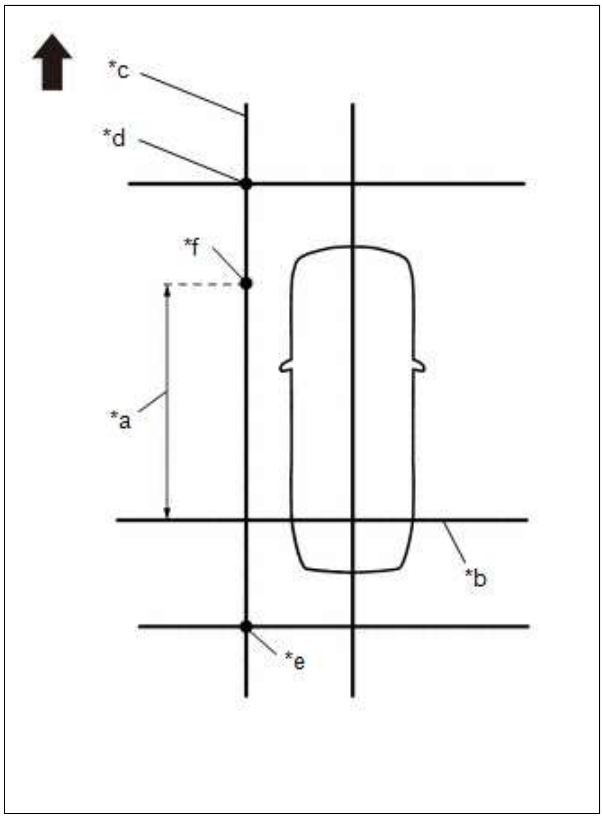
NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



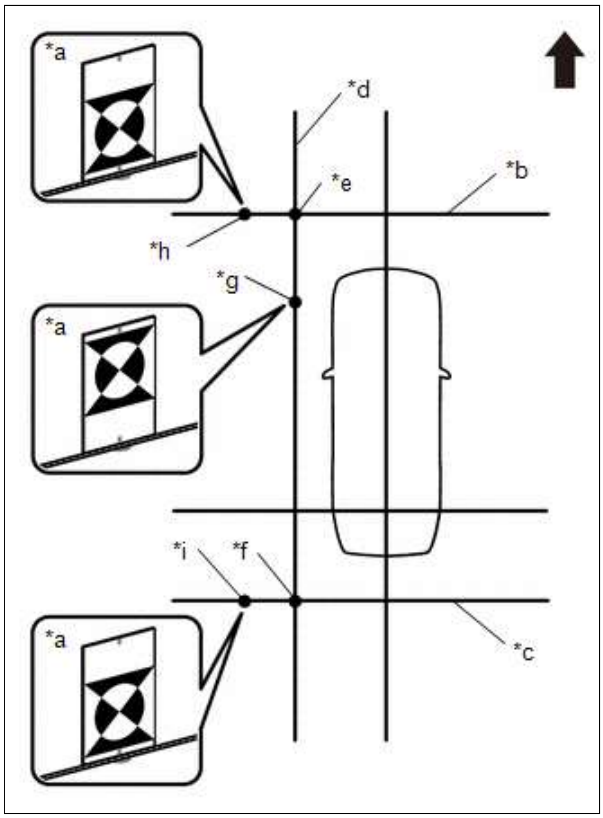
*a	String 1
*b	String 2
*c	String 3
*d	String 4
*e	String 5
*f	Mark H
*g	Mark M
➡	Front of Vehicle

(11) Make a mark on string (5) that is 3100 mm (10.17 ft.) from the reference line (string (1)) as shown in the illustration. (Mark Y)



*a	3100 mm (10.17 ft.)
*b	String 1
*c	String 5
*d	Mark H
*e	Mark M
*f	Mark Y
➡	Front of Vehicle

(12) Align the center line of SST (television camera adjustment target) with mark AA and place it parallel with string (3) as shown in the illustration.



*a	SST (Television Camera Adjustment Target)
*b	String 3
*c	String 4
*d	String 5
*e	Mark H
*f	Mark M
*g	Mark Y
*h	Mark AA
*i	Mark AC
➡	Front of Vehicle

(13) Align the center line of SST (television camera adjustment target) with mark AC and place it parallel with string (4) as shown in the illustration.

(14) Align the center line of SST (television camera adjustment target) with mark Y and place it parallel with string (5) as shown in the illustration.

NOTICE:

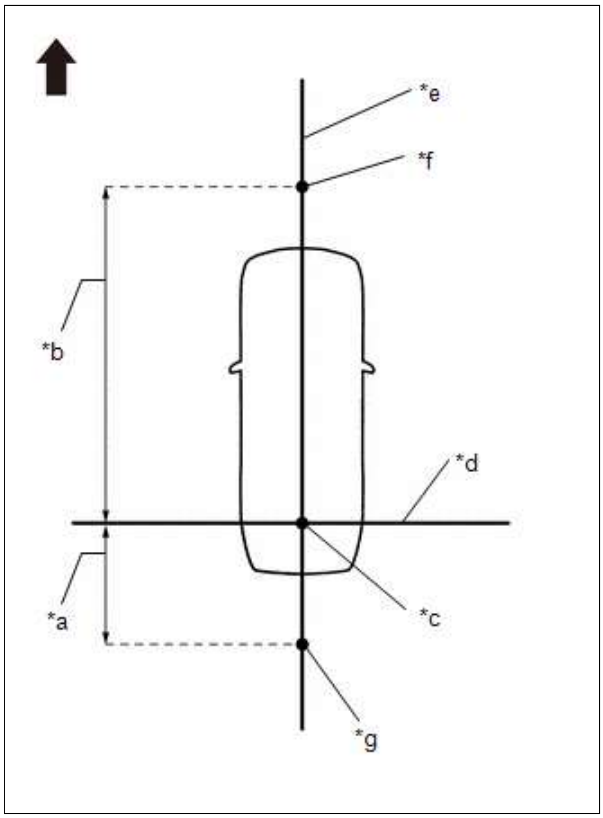
The vertical direction of SST (television camera adjustment target) differs depending on whether corner setting or side setting is used.

(15) Perform the screen adjustment procedure (procedure 15).

PROCEDURE 10: SET MARKERS (RIGHT-SIDE ADJUSTMENT)

(a) At the right side of the vehicle, extend string (6) parallel to the vehicle center line (string (2)), and place a marker.

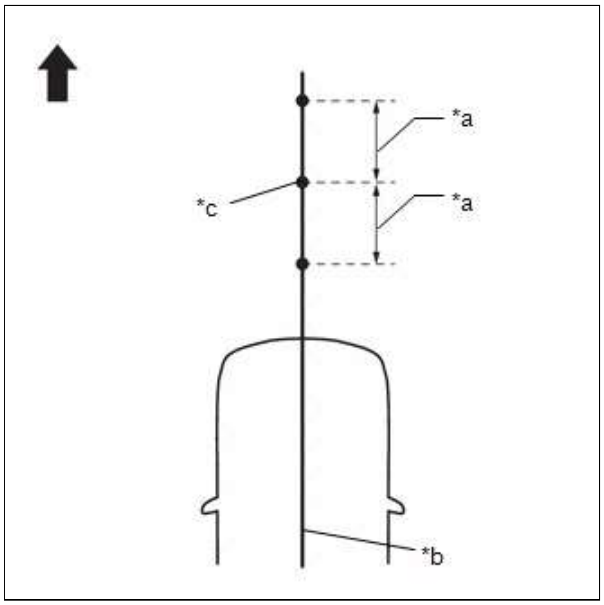
(1) Mark the position on string (2) in front of the vehicle, 5100 mm (16.73 ft.) from the datum point. (Mark E)



*a	1200 mm (3.94 ft.)
*b	5100 mm (16.73 ft.)
*c	Datum Point
*d	String 1
*e	String 2
*f	Mark E
*g	Mark J
➡	Front of Vehicle

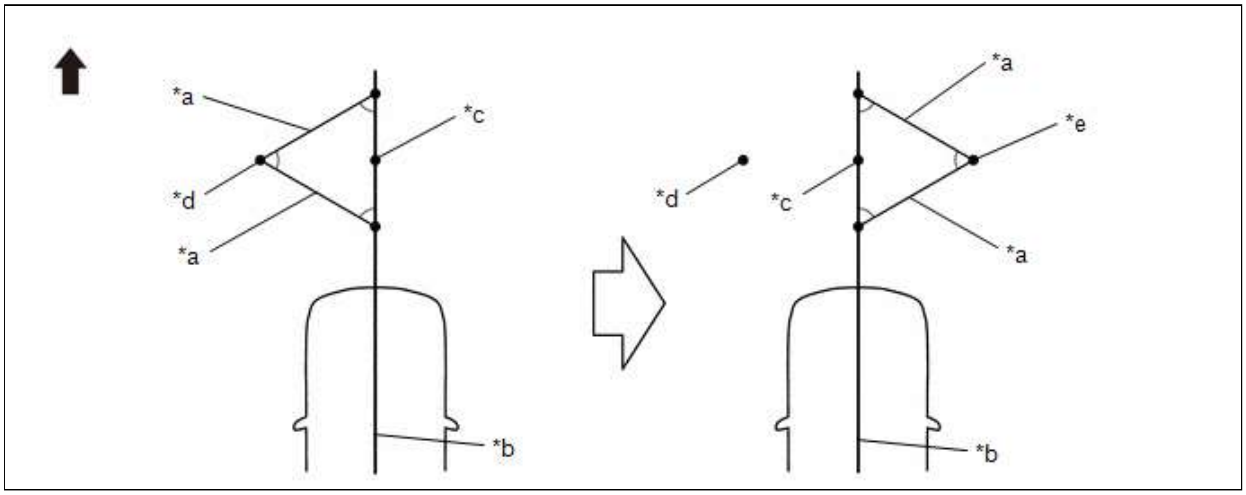
(2) Mark the position on string (2) to the rear of the vehicle, 1200 mm (3.94 ft.) from the datum point. (Mark J)

(3) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.



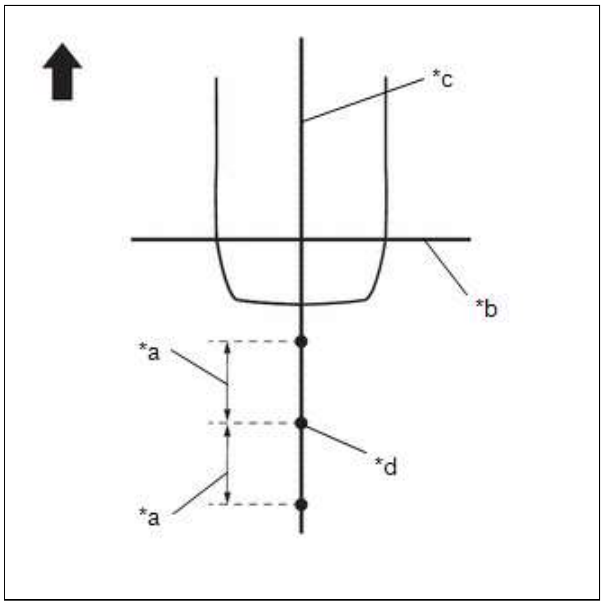
*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
➡	Front of Vehicle

(4) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)



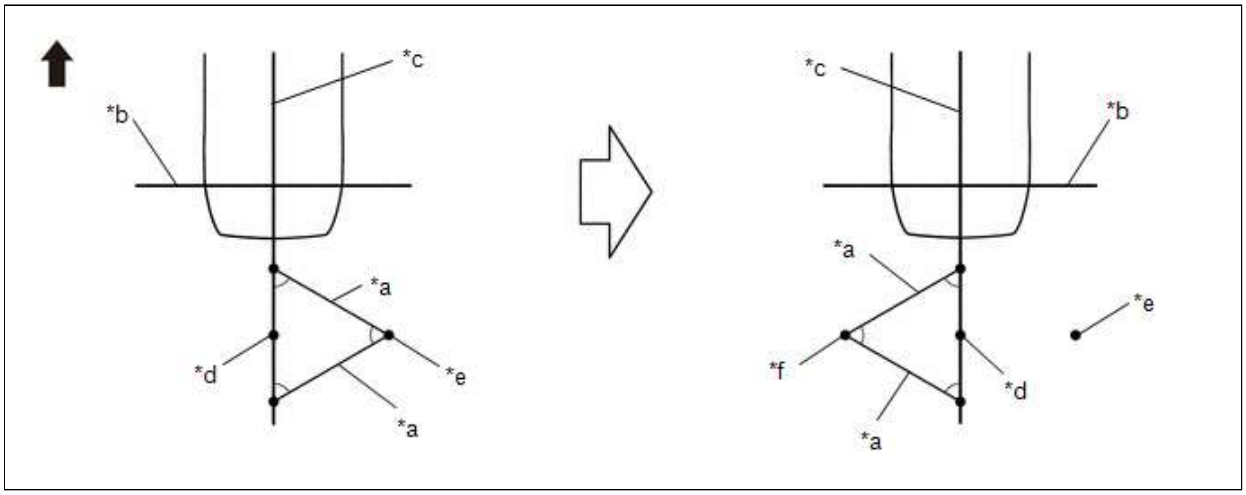
*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
➡	Front of Vehicle	-	-

(5) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.



*a	400 mm (1.31 ft.)
*b	String 1
*c	String 2
*d	Mark J
➡	Front of Vehicle

(6) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)

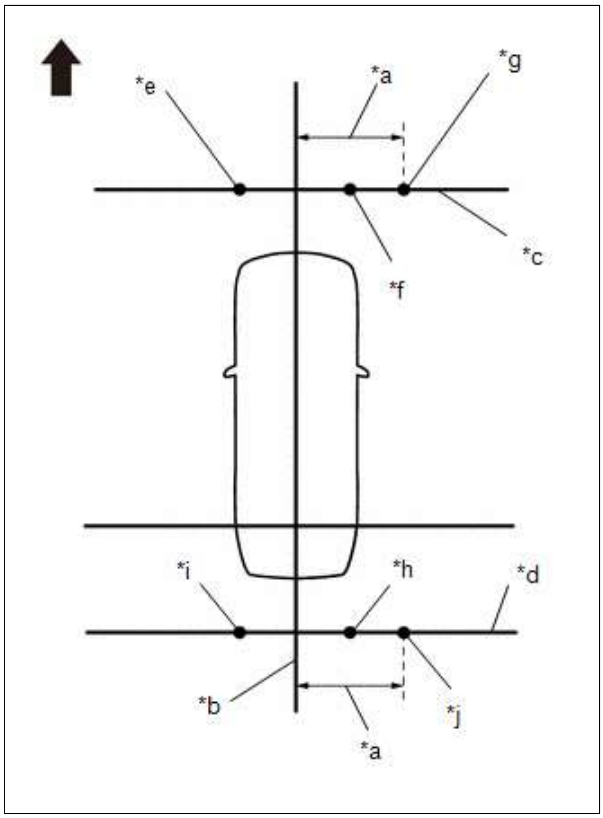


*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(7) Secure strings (3) and (4) so that they pass through marks F and G and marks K and L as shown in the illustration.

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



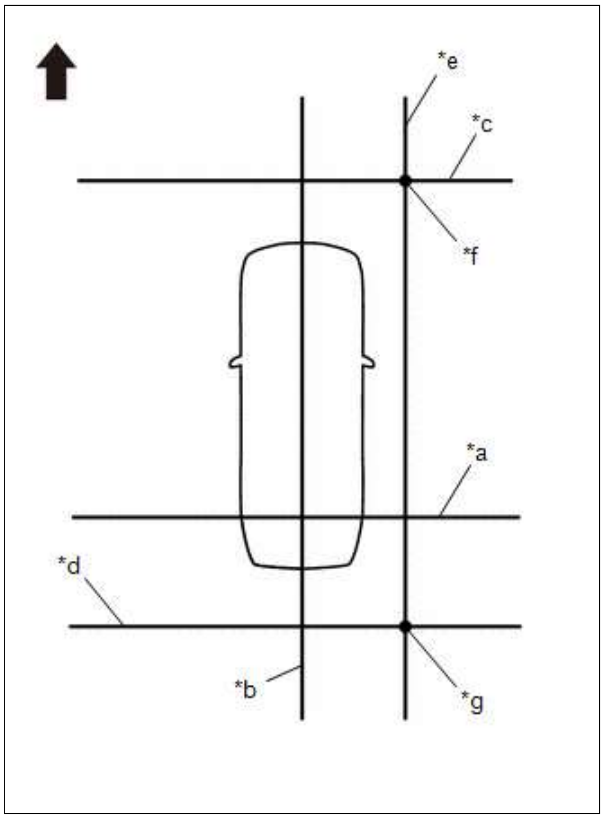
*a	1400 mm (4.59 ft.)
*b	String 2
*c	String 3
*d	String 4
*e	Mark F
*f	Mark G
*g	Mark I
*h	Mark K
*i	Mark L
*j	Mark N
➡	Front of Vehicle

(8) Mark strings (3) and (4), 1400 mm (4.59 ft.) to the right of the vehicle center line (string 2). (Marks I and N)

(9) Secure string (6) so that it passes through marks I and N as shown in the illustration.

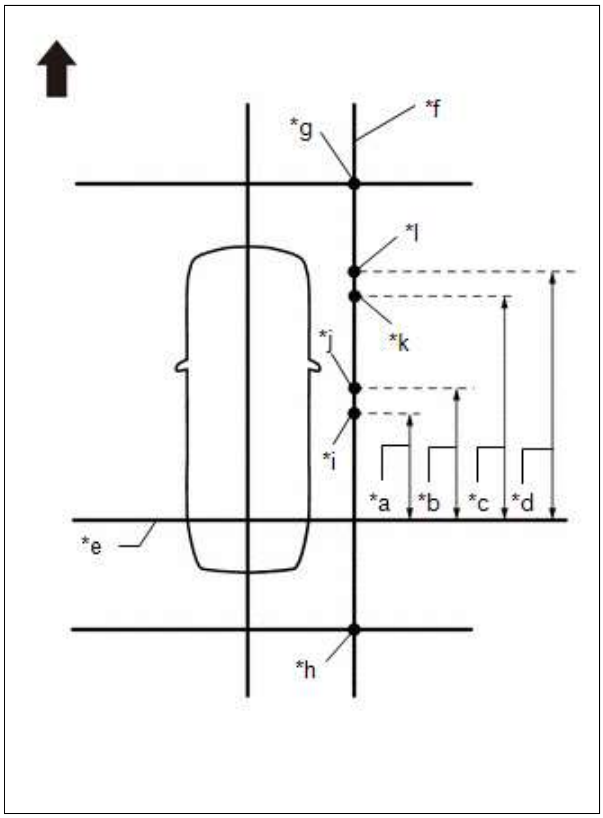
NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



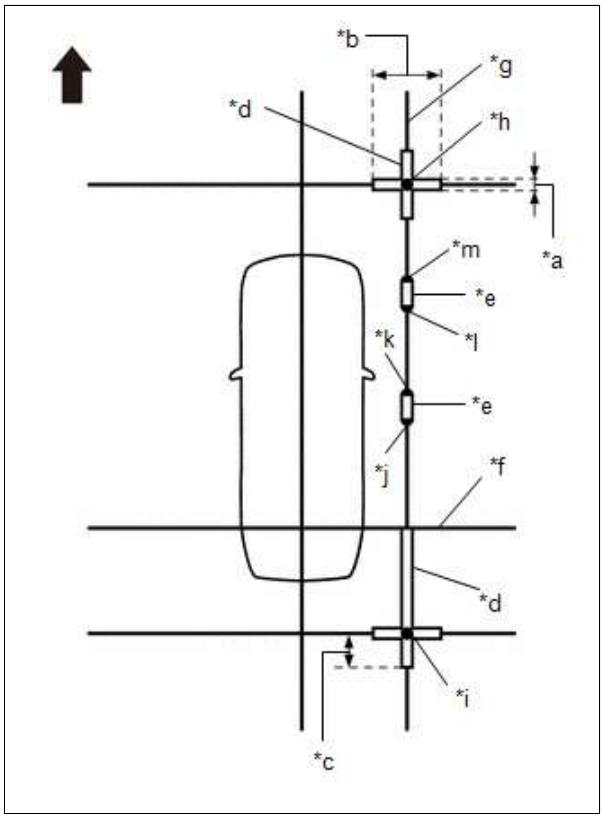
*a	String 1
*b	String 2
*c	String 3
*d	String 4
*e	String 6
*f	Mark I
*g	Mark N
➡	Front of Vehicle

(10) Make marks on string (6) that are 1600 mm (5.25 ft.), 1800 mm (5.90 ft.), 3300 mm (10.82 ft.) and 3500 mm (11.48 ft.) from the datum line (string 1) as shown in the illustration. (Marks S, T, U and V)



*a	1600 mm (5.25 ft.)
*b	1800 mm (5.90 ft.)
*c	3300 mm (10.82 ft.)
*d	3500 mm (11.48 ft.)
*e	String 1
*f	String 6
*g	Mark I
*h	Mark N
*i	Mark S
*j	Mark T
*k	Mark U
*l	Mark V
➡	Front of Vehicle

(11) Place and secure the cross check markers, centered on marks I and N.



*a	100 mm (0.33 ft.)
*b	800 mm (2.62 ft.)
*c	400 mm (1.31 ft.)
*d	Cross Check Marker
*e	Check Marker
*f	String 1
*g	String 6
*h	Mark I
*i	Mark N
*j	Mark S
*k	Mark T
*l	Mark U
*m	Mark V
➡	Front of Vehicle

NOTICE:

- Align the cross check markers perpendicular to the string.
- Make each arm of the cross check markers 800 mm (2.62 ft.) long and 100 mm (0.33 ft.) wide.
- Extend the rear cross check markers to string 1.

(12) Place check markers between marks S and T, and marks U and V.

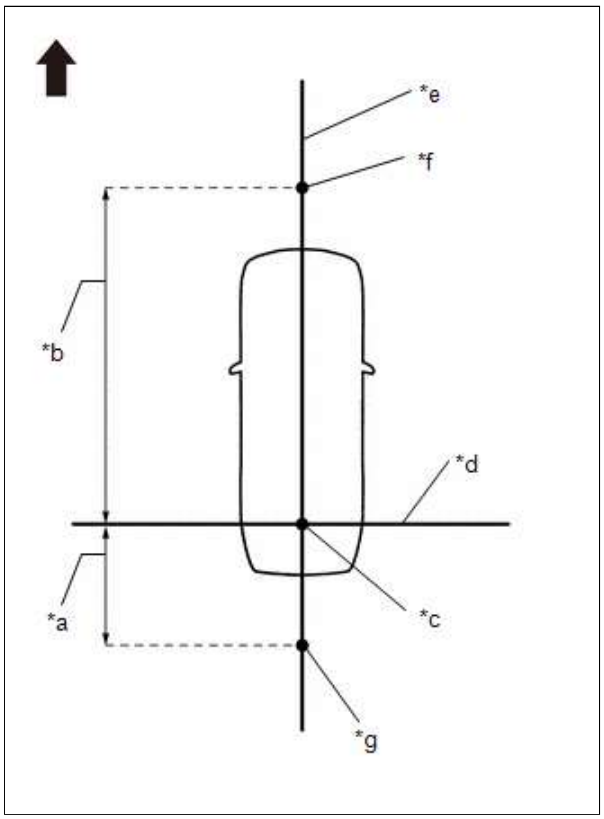
(13) Perform the set SST (right-side adjustment) (procedure 11).

PROCEDURE 11: SET SST (RIGHT-SIDE ADJUSTMENT)

(a) At the right side of the vehicle, extend string (6) parallel to the vehicle center line (string (2)), and place SST.

SST: 09870-52010
SST: 09870-52020

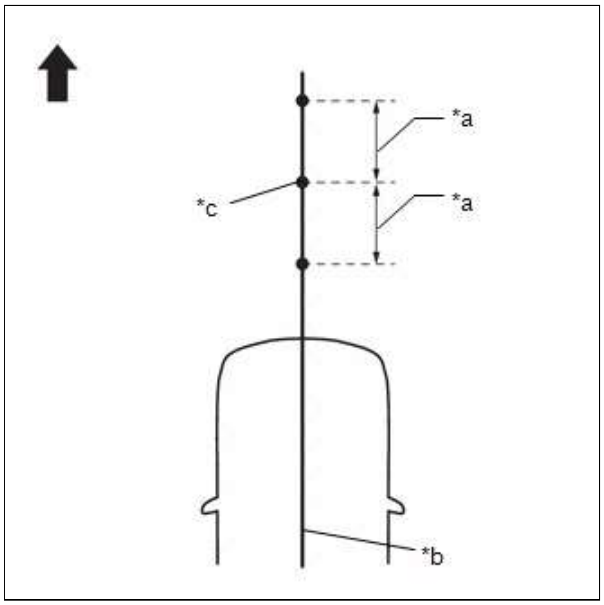
(1) Mark the position on string (2) in front of the vehicle, 5150 mm (16.89 ft.) from the datum point. (Mark E)



*a	1250 mm (4.10 ft.)
*b	5150 mm (16.89 ft.)
*c	Datum Point
*d	String 1
*e	String 2
*f	Mark E
*g	Mark J
➡	Front of Vehicle

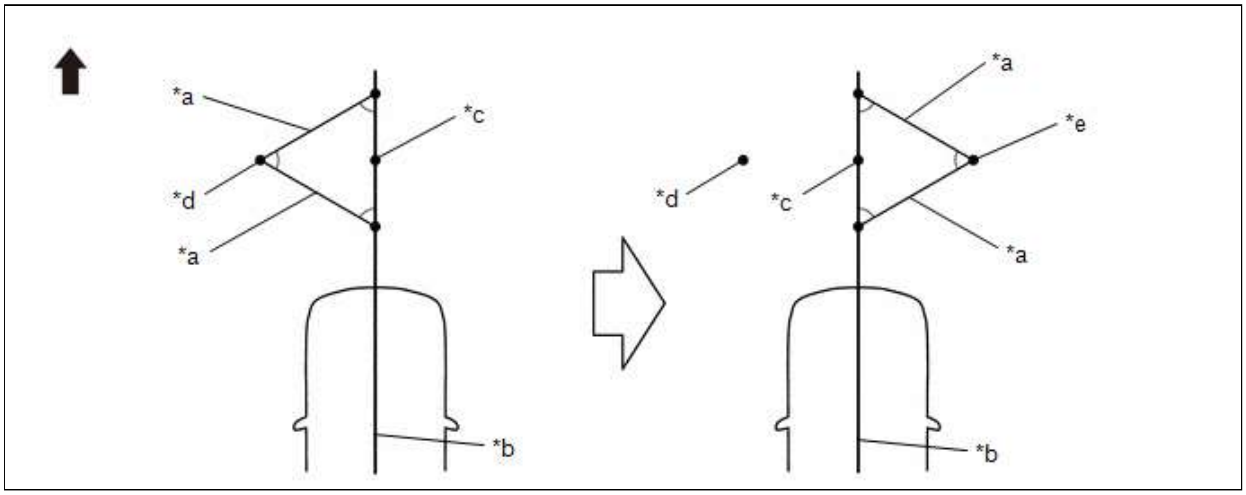
(2) Mark the position on string (2) to the rear of the vehicle, 1250 mm (4.10 ft.) from the datum point. (Mark J)

(3) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.



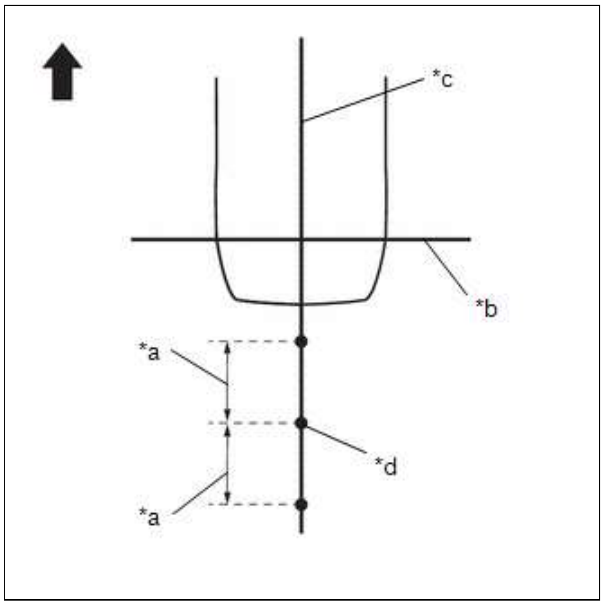
*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
➡	Front of Vehicle

(4) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)



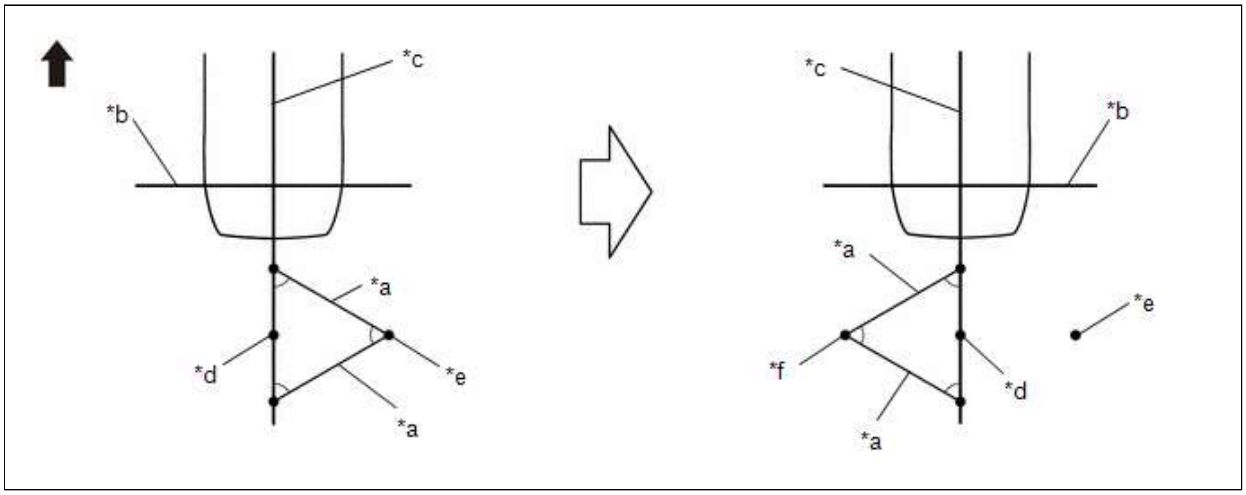
*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
➡	Front of Vehicle	-	-

(5) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.



*a	400 mm (1.31 ft.)
*b	String 1
*c	String 2
*d	Mark J
➡	Front of Vehicle

(6) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)

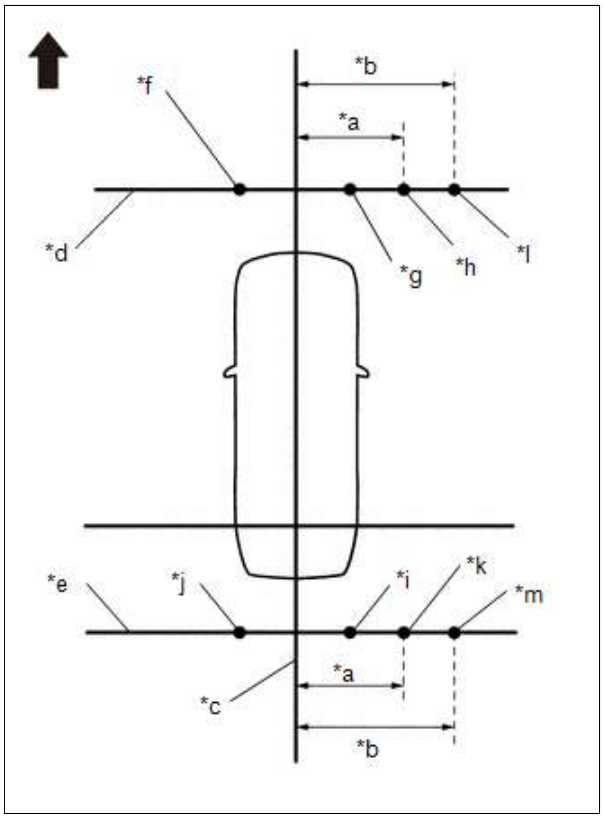


*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(7) Secure strings (3) and (4) so that they pass through marks F and G and marks K and L as shown in the illustration.

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



*a	1450 mm (4.76 ft.)
*b	1650 mm (5.41 ft.)
*c	String 2
*d	String 3
*e	String 4
*f	Mark F
*g	Mark G
*h	Mark I
*i	Mark K
*j	Mark L
*k	Mark N
*l	Mark AB
*m	Mark AD
	Front of Vehicle

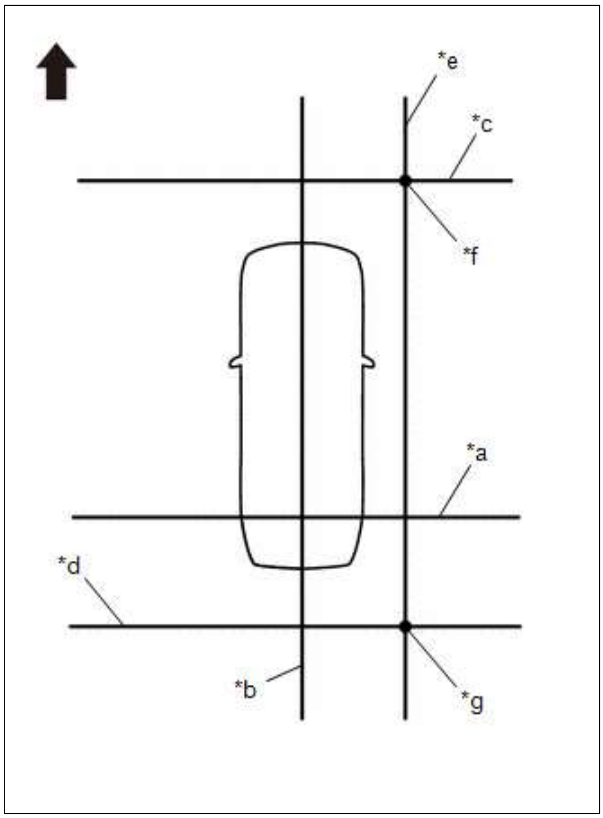
(8) Mark strings (3) and (4), 1450 mm (4.76 ft.) to the right of the vehicle center line (string 2). (Marks I and N)

(9) Mark strings (3) and (4), 1650 mm (5.41 ft.) to the right of the vehicle center line (string 2). (Marks AB and AD)

(10) Secure string (6) so that it passes through marks I and N as shown in the illustration.

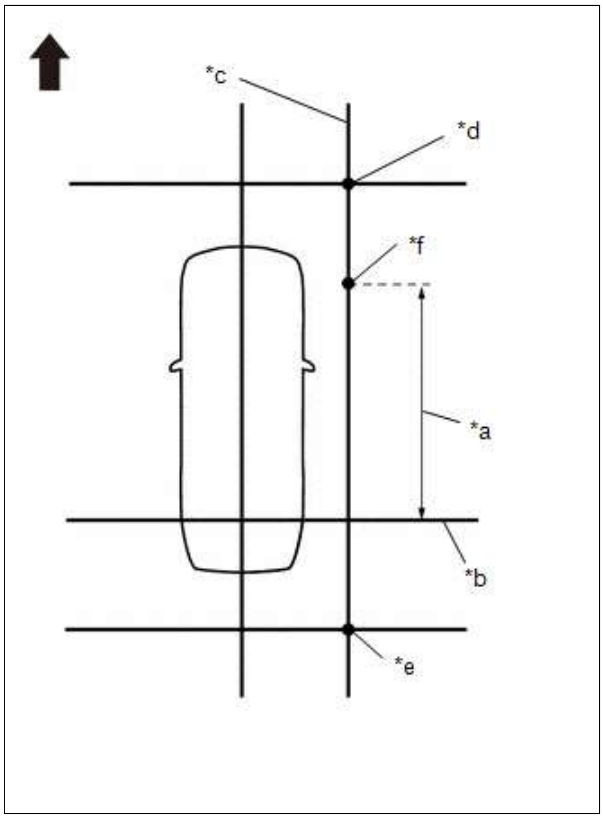
NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



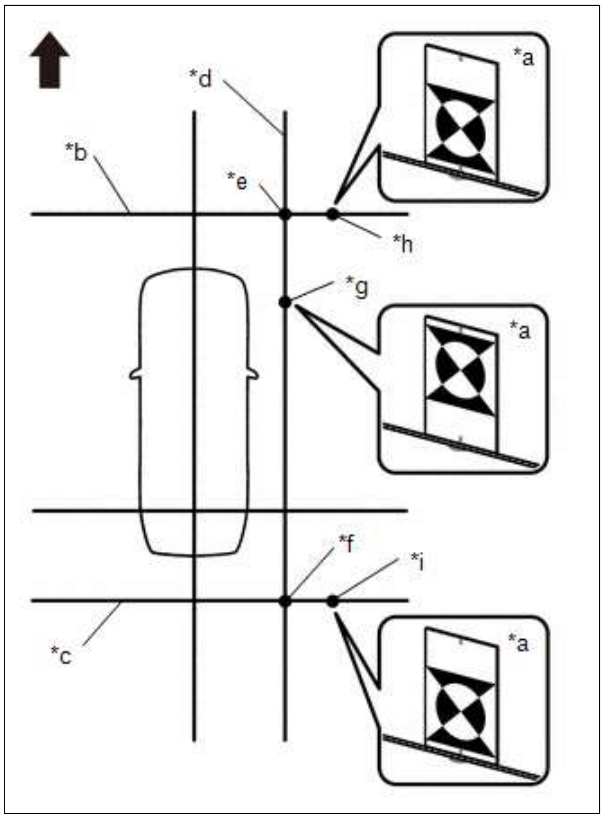
*a	String 1
*b	String 2
*c	String 3
*d	String 4
*e	String 6
*f	Mark I
*g	Mark N
➡	Front of Vehicle

(11) Make a mark on string (6) that is 3100 mm (10.17 ft.) from the reference line (string (1)) as shown in the illustration. (Mark Z)



*a	3100 mm (10.17 ft.)
*b	String 1
*c	String 6
*d	Mark I
*e	Mark N
*f	Mark Z
➡	Front of Vehicle

(12) Align the center line of SST (television camera adjustment target) with mark AB and place it parallel with string (3) as shown in the illustration.



*a	SST (Television Camera Adjustment Target)
*b	String 3
*c	String 4
*d	String 6
*e	Mark I
*f	Mark N
*g	Mark Z
*h	Mark AB
*i	Mark AD
➡	Front of Vehicle

(13) Align the center line of SST (television camera adjustment target) with mark AD and place it parallel with string (4) as shown in the illustration.

(14) Align the center line of SST (television camera adjustment target) with mark Z and place it parallel with string (6) as shown in the illustration.

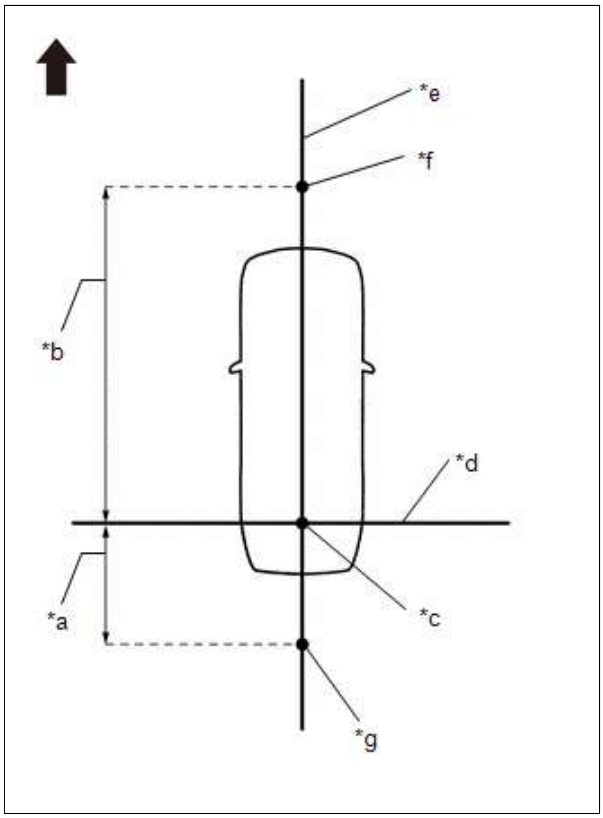
NOTICE:

The vertical direction of SST (television camera adjustment target) differs depending on whether corner setting or side setting is used

(15) Perform the screen adjustment procedure (procedure 15).

PROCEDURE 12: SET MARKERS (ADJUSTMENT OF ALL CAMERAS)

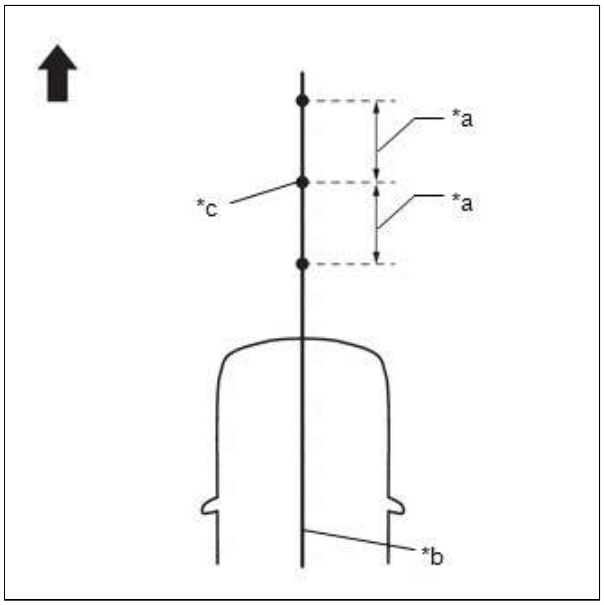
(a) At the right and left sides of the vehicle, extend strings (5) and (6) parallel to the vehicle center line (string 2), and place markers.



*a	1200 mm (3.94 ft.)
*b	5100 mm (16.73 ft.)
*c	Datum Point
*d	String 1
*e	String 2
*f	Mark E
*g	Mark J
➡	Front of Vehicle

(1) Mark the position on string (2) in front of the vehicle, 5100 mm (16.73 ft.) from the datum point. (Mark E)

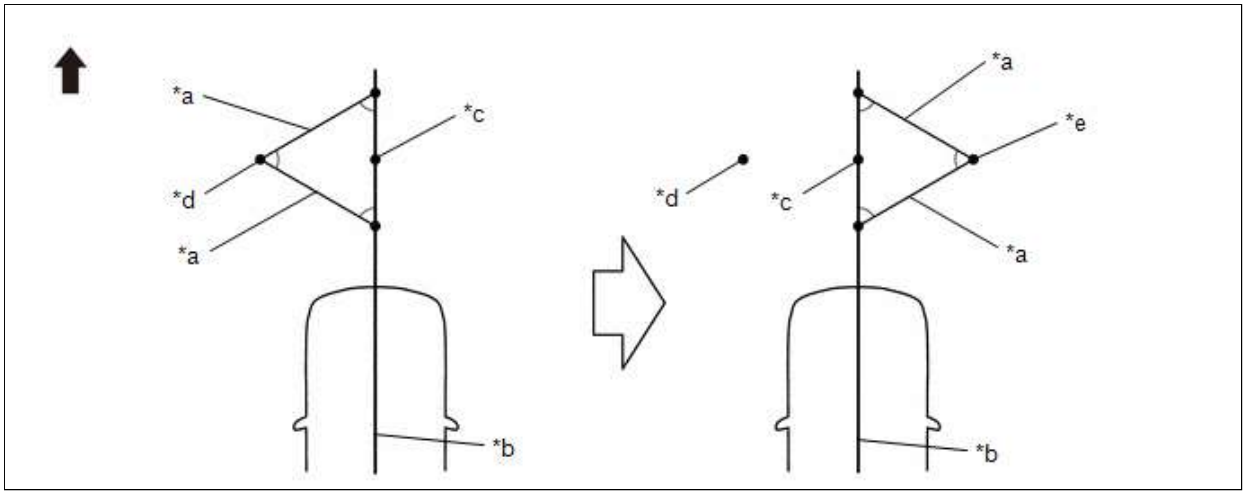
(2) Mark the position on string (2) to the rear of the vehicle, 1200 mm (3.94 ft.) from the datum point. (Mark J)



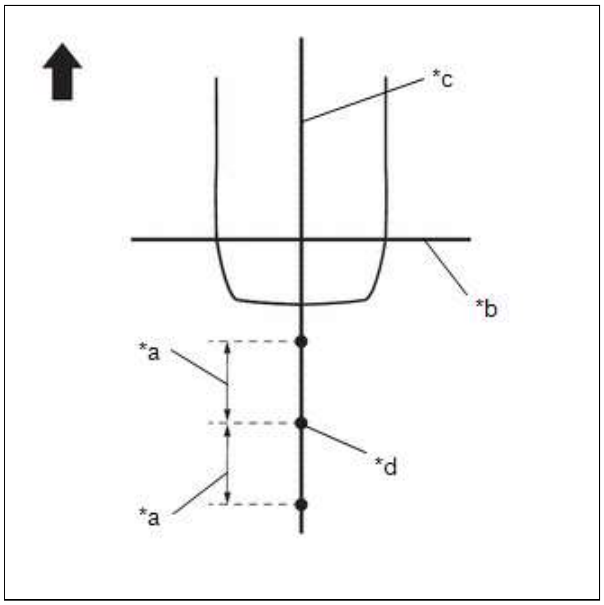
*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
➡	Front of Vehicle

(3) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.

(4) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)



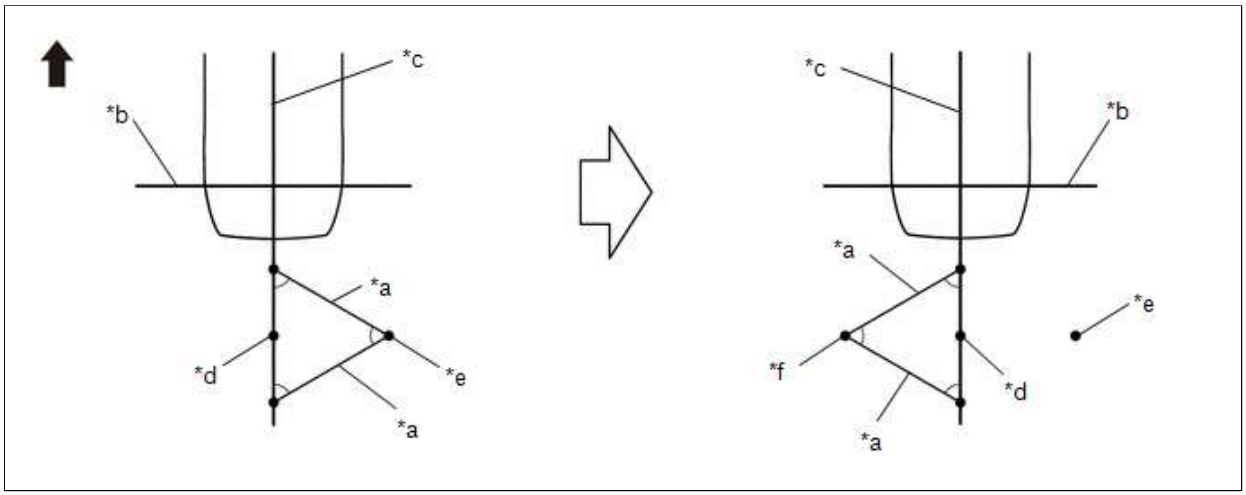
*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
➡	Front of Vehicle	-	-



*a	400 mm (1.31 ft.)
*b	String 1
*c	String 2
*d	Mark J
➡	Front of Vehicle

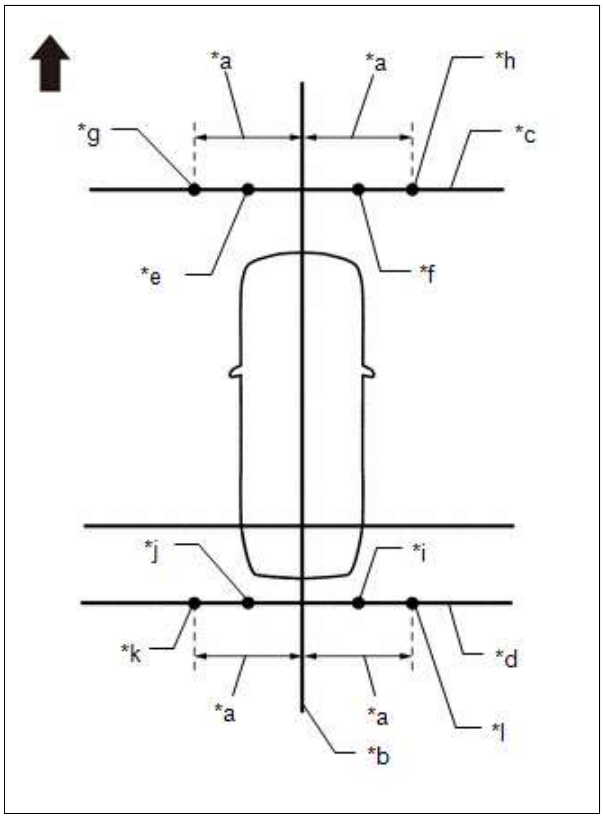
(5) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.

(6) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)



*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(7) Secure strings (3) and (4) so that they pass through marks F, G, K and L as shown in the illustration.



*a	1400 mm (4.59 ft.)
*b	String 2
*c	String 3
*d	String 4
*e	Mark F
*f	Mark G
*g	Mark H
*h	Mark I
*i	Mark K
*j	Mark L
*k	Mark M
*l	Mark N
➡	Front of Vehicle

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.

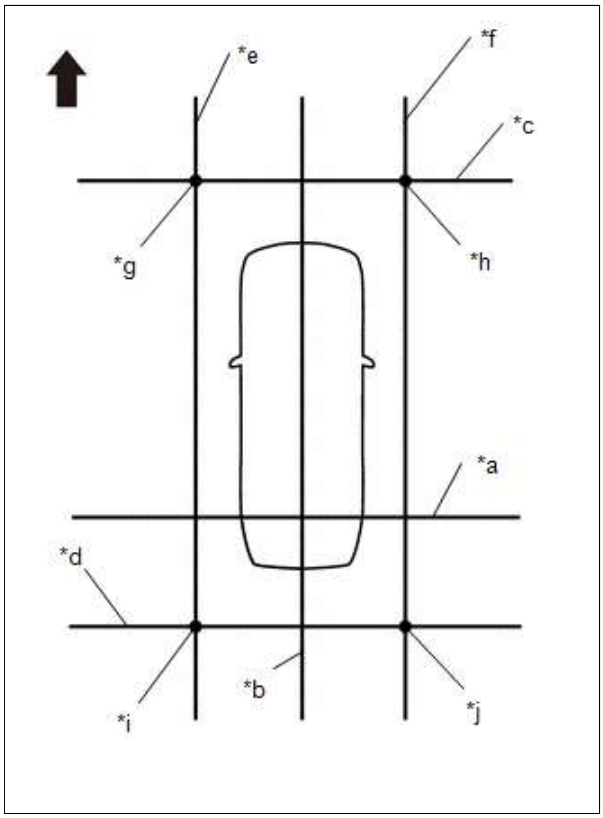
(8) Mark string (3), 1400 mm (4.59 ft.) to the left and right of the vehicle center line (string 2). (Marks H and I)

(9) Mark string (4), 1400 mm (4.59 ft.) to the left and right of the vehicle center line (string 2). (Marks M and N)

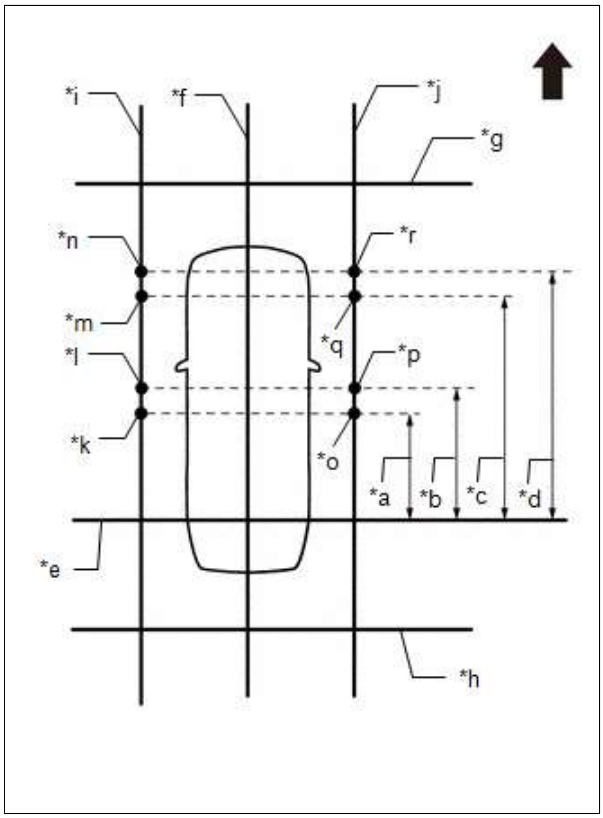
(10) Secure strings (5) and (6) so that they pass through marks H, M, I and N as shown in the illustration.

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



*a	String 1
*b	String 2
*c	String 3
*d	String 4
*e	String 5
*f	String 6
*g	Mark H
*h	Mark I
*i	Mark M
*j	Mark N
➡	Front of Vehicle



*a	1600 mm (5.25 ft.)
*b	1800 mm (5.90 ft.)
*c	3300 mm (10.82 ft.)
*d	3500 mm (11.48 ft.)
*e	String 1
*f	String 2
*g	String 3
*h	String 4
*i	String 5
*j	String 6
*k	Mark O
*l	Mark P
*m	Mark Q
*n	Mark R
*o	Mark S
*p	Mark T
*q	Mark U
*r	Mark V
➡	Front of Vehicle

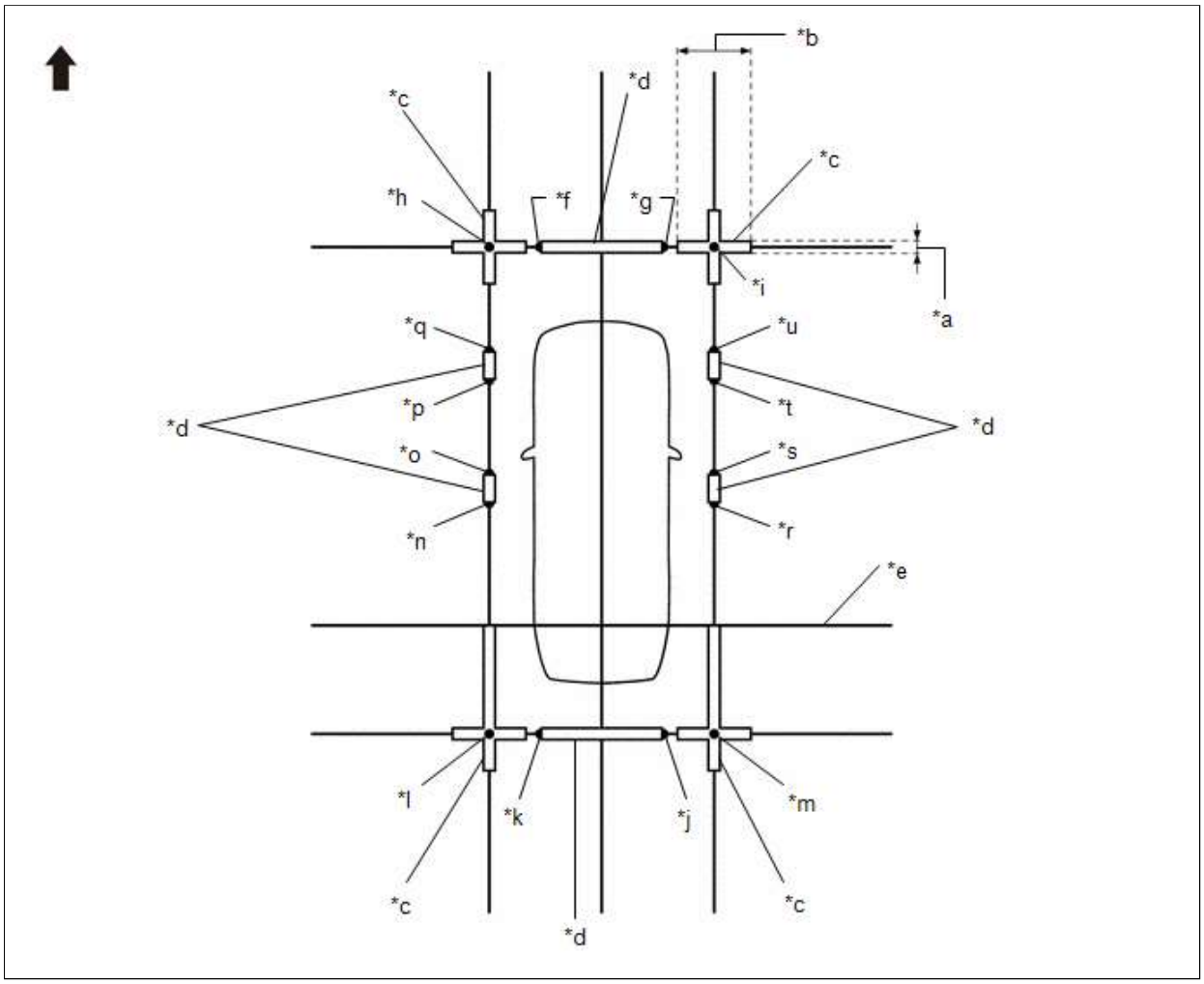
(11) Make marks on string (5) that are 1600 mm (5.25 ft.), 1800 mm (5.90 ft.), 3300 mm (10.82 ft.) and 3500 mm (11.48 ft.) from the datum line (string 1) as shown in the illustration. (Marks O, P, Q and R)

(12) Make marks on string (6) that are 1600 mm (5.25 ft.), 1800 mm (5.90 ft.), 3300 mm (10.82 ft.) and 3500 mm (11.48 ft.) from the datum line (string 1) as shown in the illustration. (Marks S, T, U and V)

(13) Place and secure the cross check markers, centered on marks H, I, M and N.

NOTICE:

- Align the cross check markers perpendicular to the string.
- Make each arm of the cross check markers 800 mm (2.62 ft.) long and 100 mm (0.33 ft.) wide.
- Extend the rear cross check markers to string 1.



*a	100 mm (0.33 ft.)	*b	800 mm (2.62 ft.)
*c	Cross Check Marker	*d	Check Marker
*e	String 1	*f	Mark F
*g	Mark G	*h	Mark H
*i	Mark I	*j	Mark K
*k	Mark L	*l	Mark M
*m	Mark N	*n	Mark O
*o	Mark P	*p	Mark Q
*q	Mark R	*r	Mark S
*s	Mark T	*t	Mark U
*u	Mark V	-	-
➡	Front of Vehicle	-	-

(14) Place check markers between marks F and G, marks K and L, marks O and P, marks Q and R, marks S and T, and marks U and V.

(15) Perform the set SST (adjustment of all cameras) (procedure 14).

PROCEDURE 13: SET MARKERS (SST ADJUSTMENT)

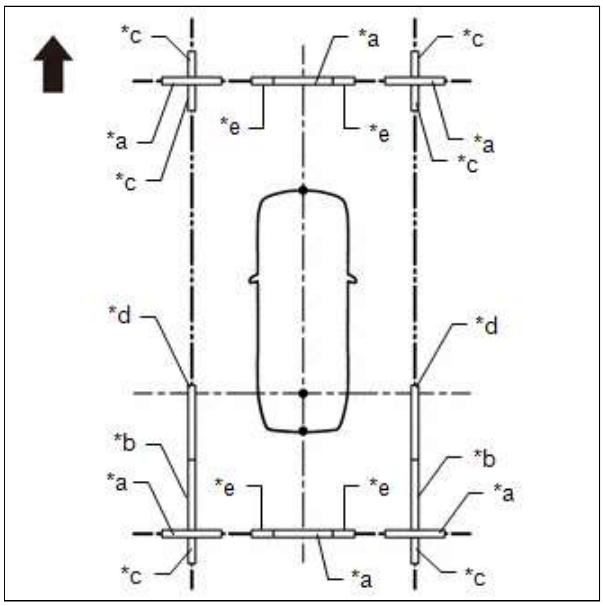
(a) Using SST (marker tool set), place the markers.

SST: 09870-30010

Markers and Spacers Used

PART NAME	COLOR	LENGTH	QTY
Marker A	White	800 mm (31.5 in.)	6
Marker B	White	950 mm (37.4 in.)	2
Marker E	White	350 mm (13.8 in.)	6
Marker F	White	1000 mm (39.4 in.)	2
Marker G	White	293 mm (11.5 in.)	4
Marker H	White	200 mm (7.87 in.)	4
Spacer J	Black	1000 mm (39.4 in.)	6
Spacer K	Black	500 mm (19.7 in.)	2
Spacer N	Black	200 mm (7.87 in.)	4
Spacer M	Black	307 mm (12.1 in.)	4

(1) Set the marker A, marker B, marker E, marker F and marker G so as to surround the vehicle as shown in the illustration.

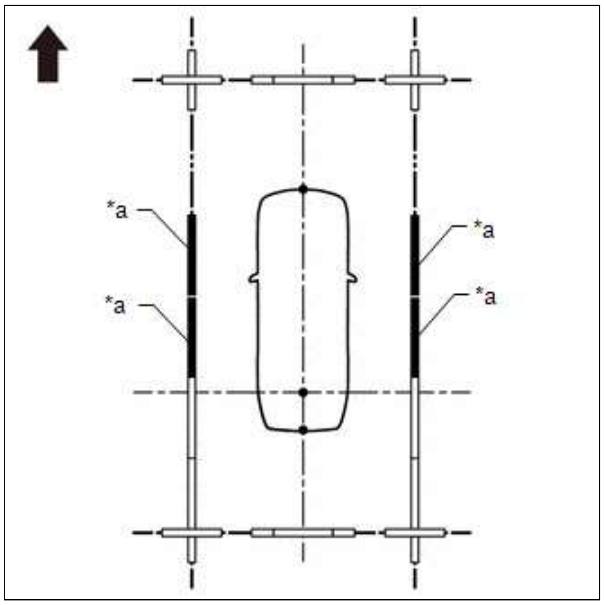


*a	Marker A
*b	Marker B
*c	Marker E
*d	Marker F
*e	Marker G
➡	Front of Vehicle

PART NAME	COLOR	LENGTH	QTY
Marker A	White	800 mm (31.5 in.)	6
Marker B	White	950 mm (37.4 in.)	2

PART NAME	COLOR	LENGTH	QTY
Marker E	White	350 mm (13.8 in.)	6
Marker F	White	1000 mm (39.4 in.)	2
Marker G	White	293 mm (11.5 in.)	4

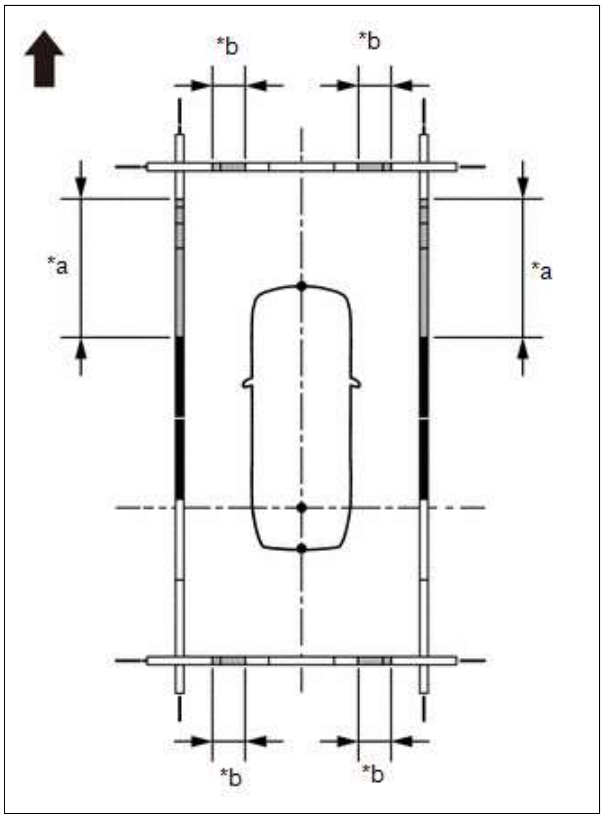
(2) Set the spacer J as shown in the illustration.



*a	Spacer J
➡	Front of Vehicle

PART NAME	COLOR	LENGTH	QTY
Spacer J	Black	1000 mm (39.4 in.)	4

(3) Combine with spacers and set at positions A and B to assemble the marker tool set.



*a	A
*b	B
➡	Front of Vehicle

A

PART NAME	COLOR	LENGTH	QTY
Spacer J	Black	1000 mm (39.4 in.)	1
Spacer N	Black	200 mm (7.87 in.)	2
Spacer K	Black	500 mm (19.7 in.)	1

HINT:

Create 2 sets and combine together.

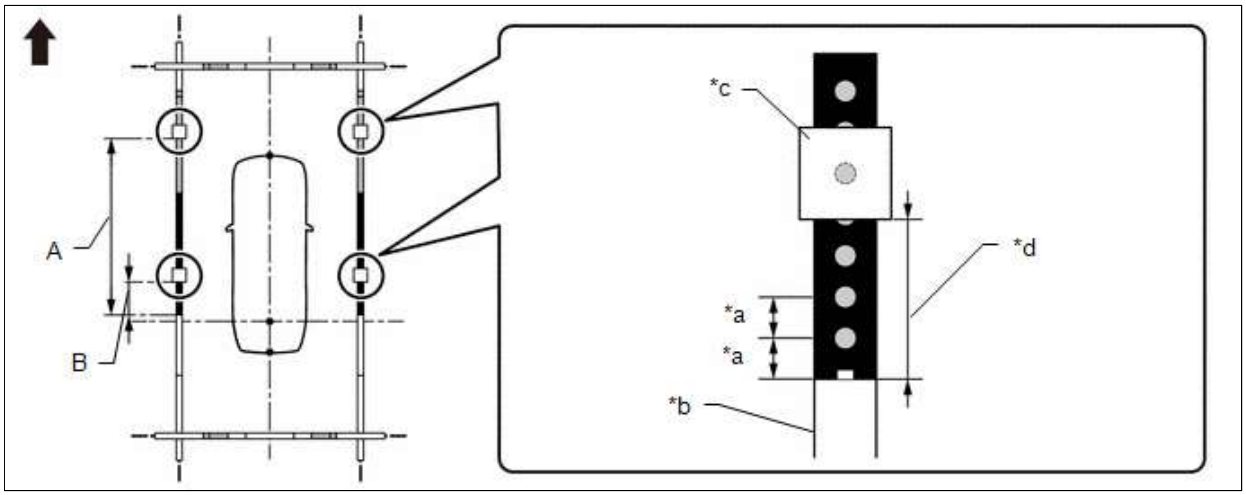
B

PART NAME	COLOR	LENGTH	QTY
Spacer M	Black	307 mm (12.1 in.)	1

HINT:

Create 4 sets and combine together.

(4) Set the marker H.



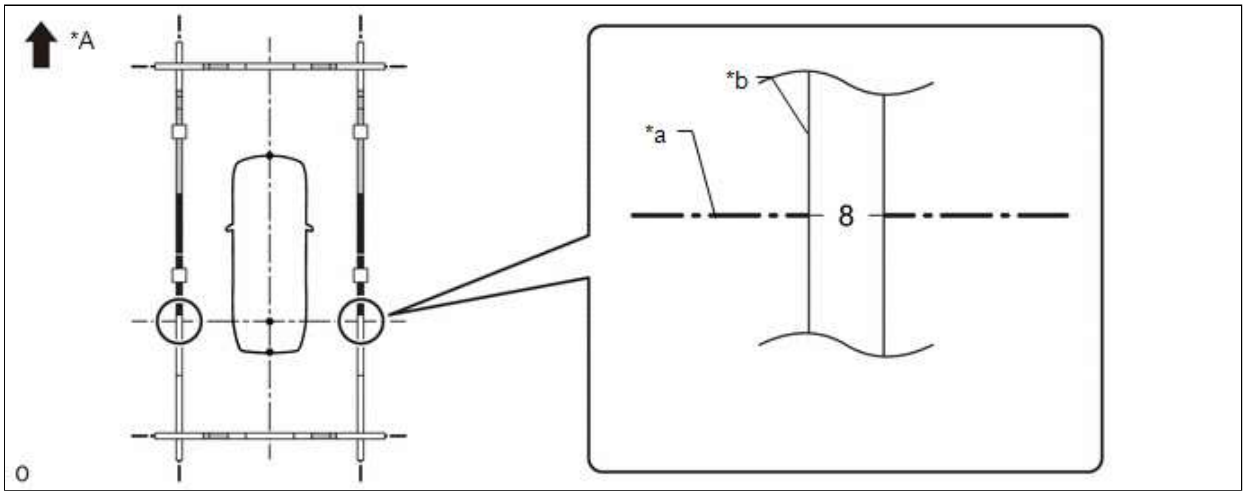
*a	100 mm (3.94 in.)	*b	Marker F
*c	Marker H	*d	Distance from the front end of the marker F to the rear end of the marker H
➡	Front of Vehicle	-	-

MARKER H SETTING POSITIONS	DISTANCE FROM THE FRONT END OF THE MARKER F TO THE REAR END OF THE MARKER H
A	2300 mm (7.54 ft.)
B	800 mm (2.62 ft.)

(5) Align the position number on the marker F with the datum line as shown in the illustration.

NOTICE:

When aligning the marker F with the datum line, check that the string used for the datum line is not twisted or bent.



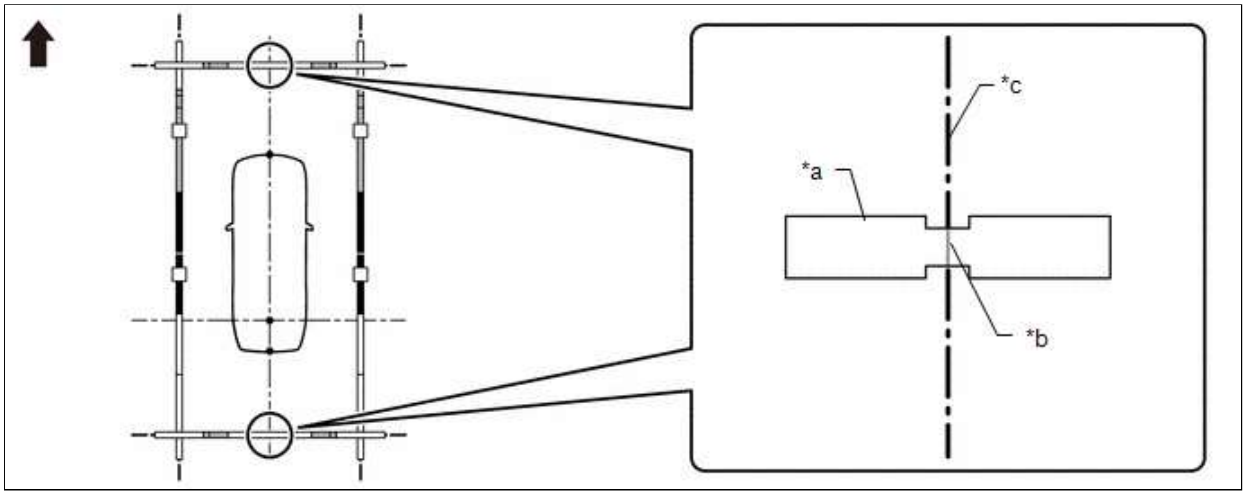
*A	Example	-	-
*a	Datum line	*b	Marker F
➡	Front of Vehicle	-	-

MARKER F POSITION
8

(6) Align the mark-off line of the marker A set at the front and back with the vehicle center line as shown in the illustration.

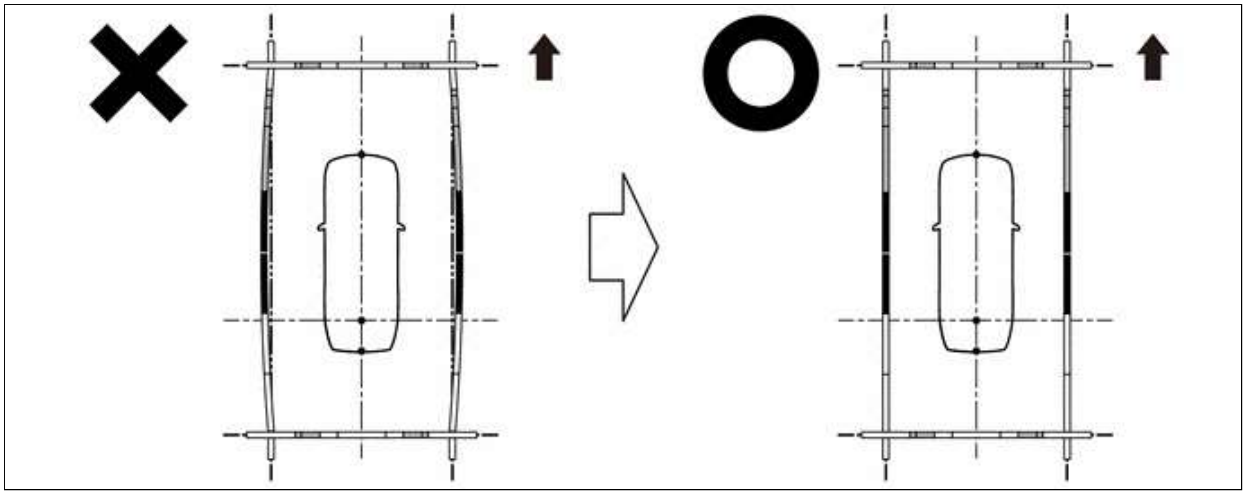
NOTICE:

When aligning the marker A with the vehicle center line, check that the string used for the vehicle center line is not twisted or bent.



*a	Marker A	*b	Mark-off line
*c	Vehicle center line	-	-
➡	Front of Vehicle	-	-

(7) Check that the entire marker tool set is not distorted after the setting is completed. If there is any distortion, perform corrections so that it is straightened.



➡	Front of Vehicle	-	-

(8) Perform the set SST.

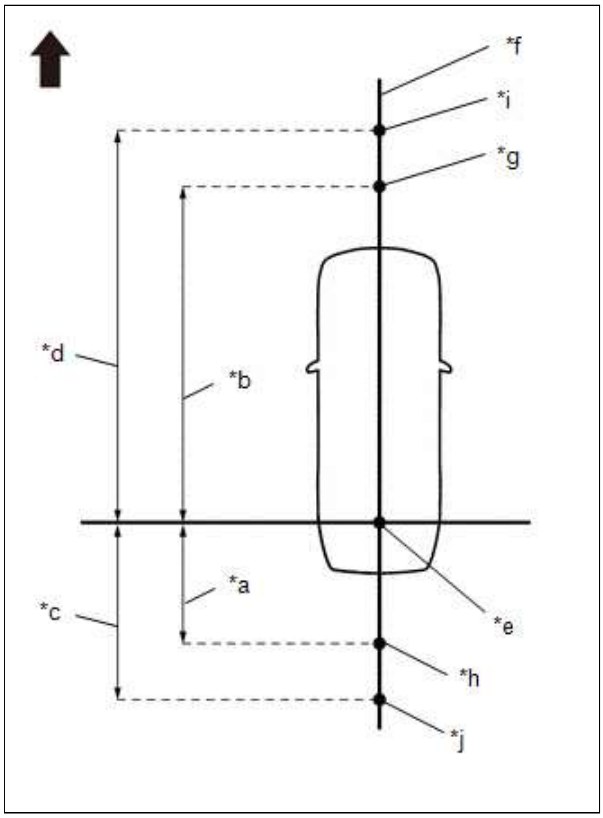
ADJUSTMENT POINT	PROCEED TO
Front camera adjustment only	Set SST (front adjustment) (procedure 5)

ADJUSTMENT POINT	PROCEED TO
Rear camera adjustment only	Set SST (rear adjustment) (procedure 7)
Left camera adjustment only	Set SST (left-side adjustment) (procedure 9)
Right camera adjustment only	Set SST (right-side adjustment) (procedure 11)
Adjustment of 4 cameras	Set SST (adjustment of cameras) (procedure 14)

PROCEDURE 14: SET SST (ADJUSTMENT OF ALL CAMERA)

(a) At the right and left sides of the vehicle, extend strings (5) and (6) parallel to the vehicle center line (string (2)), and place SST.

SST: 09870-52010
SST: 09870-52020



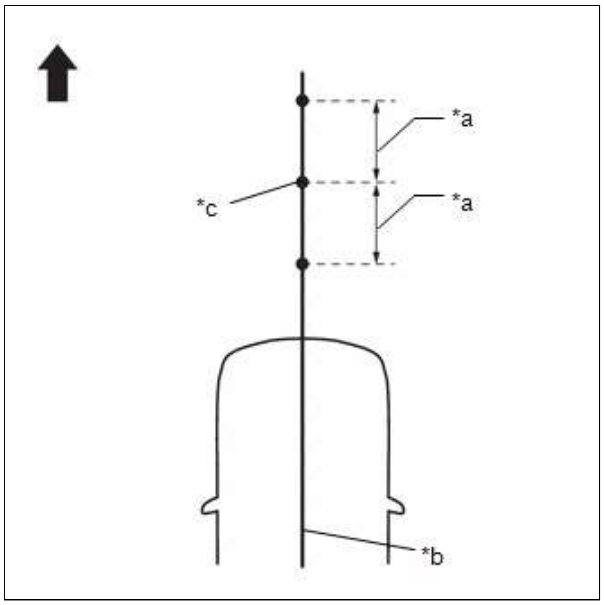
*a	1250 mm (4.10 ft.)
*b	5150 mm (16.89 ft.)
*c	2450 mm (8.04 ft.)
*d	8150 mm (26.73 ft.)
*e	Datum Point
*f	String 2
*g	Mark E
*h	Mark J
*i	Mark W
*j	Mark X
➡	Front of Vehicle

(1) Mark the position on string (2) in front of the vehicle, 5150 mm (16.89 ft.) from the datum point. (Mark E)

(2) Mark the position on string (2) in front of the vehicle, 8150 mm (26.73 ft.) from the datum point. (Mark W)

(3) Mark the position on string (2) to the rear of the vehicle, 1250 mm (4.10 ft.) from the datum point. (Mark J)

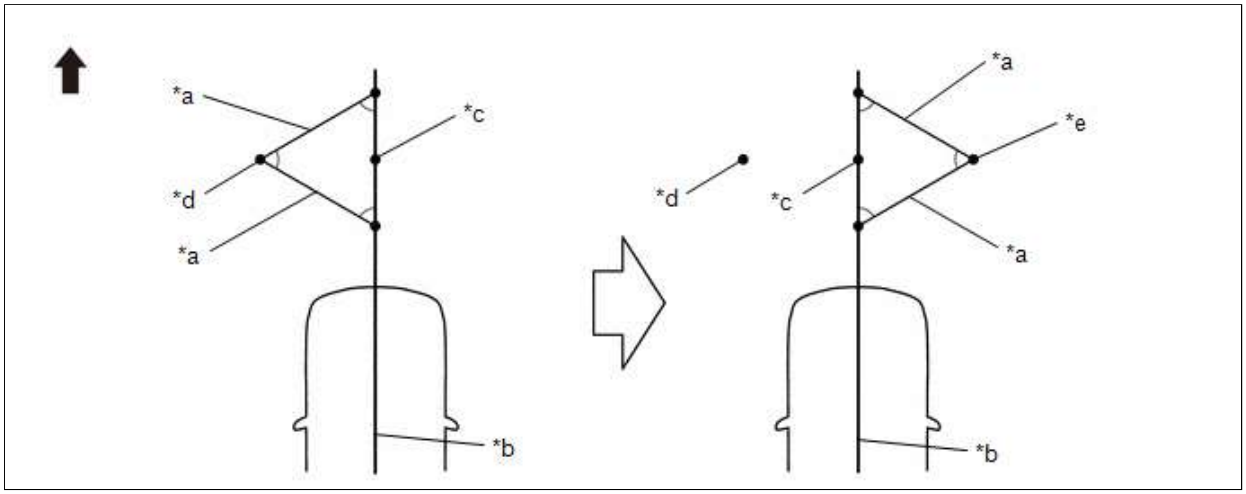
(4) Mark the position on string (2) to the rear of the vehicle, 2450 mm (8.04 ft.) from the datum point. (Mark X)



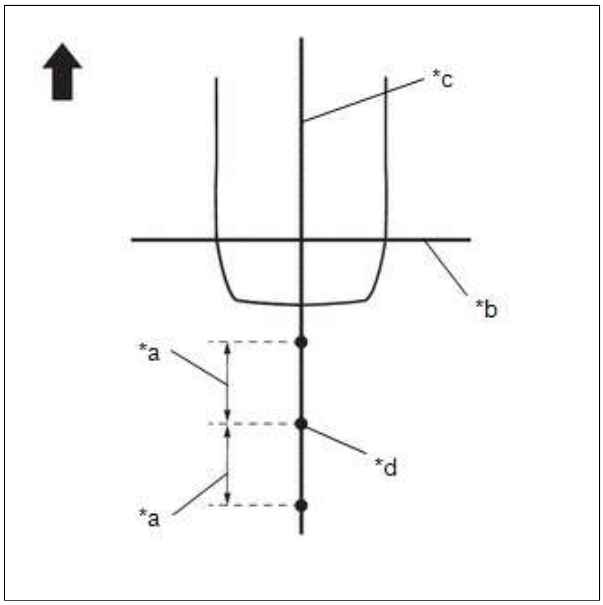
*a	400 mm (1.31 ft.)
*b	String 2
*c	Mark E
➡	Front of Vehicle

(5) Fix the ends of 2 strings (800 mm [2.62 ft.] long) at 2 positions 400 mm (1.31 ft.) from mark E as shown in the illustration.

(6) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks F and G)



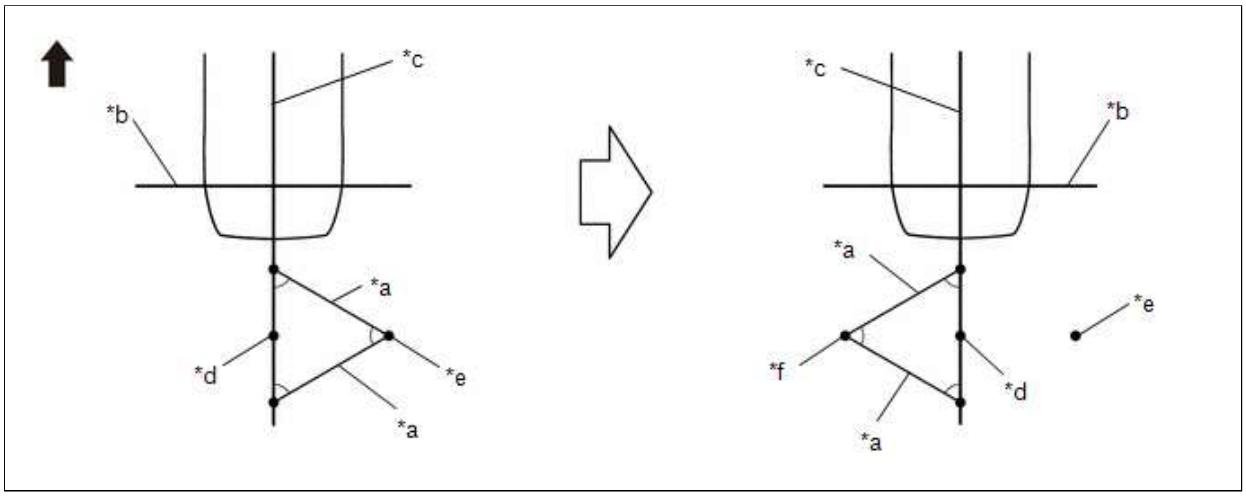
*a	800 mm (2.62 ft.) String	*b	String 2
*c	Mark E	*d	Mark F
*e	Mark G	-	-
➡	Front of Vehicle	-	-



*a	400 mm (1.31 ft.)
*b	String 1
*c	String 2
*d	Mark J
➡	Front of Vehicle

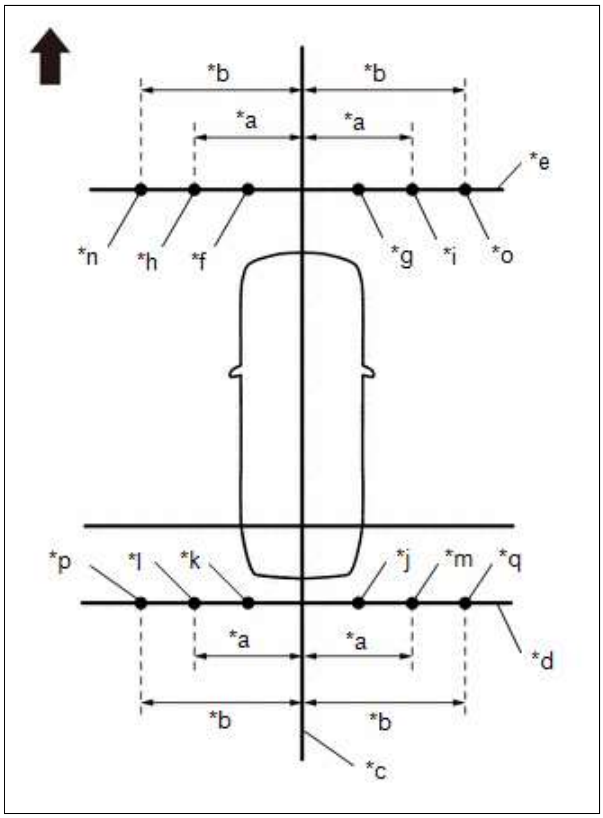
(7) Fix the ends of 2 strings (800 mm [2.62 ft.]) at 2 positions 400 mm (1.31 ft.) from mark J as shown in the illustration.

(8) Move the free ends of the 2 strings and mark the point where the ends meet. (Marks K and L)



*a	800 mm (2.62 ft.) String	*b	String 1
*c	String 2	*d	Mark J
*e	Mark K	*f	Mark L
➡	Front of Vehicle	-	-

(9) Secure strings (3) and (4) so that they pass through marks F, G, K and L as shown in the illustration.



*a	1450 mm (4.76 ft.)
*b	1650 mm (5.41 ft.)
*c	String 2
*d	String 3
*e	String 4
*f	Mark F
*g	Mark G
*h	Mark H
*i	Mark I
*j	Mark K
*k	Mark L
*l	Mark M
*m	Mark N
*n	Mark AA
*o	Mark AB
*p	Mark AC
*q	Mark AD
➡	Front of Vehicle

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.

(10) Mark string (3), 1450 mm (4.76 ft.) to the left and right of the vehicle center line (string 2). (Marks H and I)

(11) Mark string (3), 1650 mm (5.41 ft.) to the left and right of the vehicle center line (string 2). (Marks AA and AB)

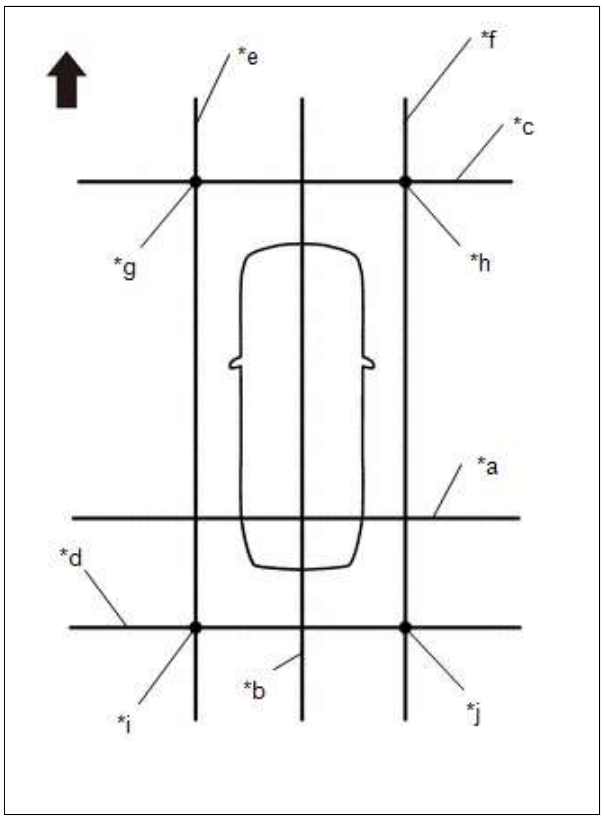
(12) Mark string (4), 1450 mm (4.76 ft.) to the left and right of the vehicle center line (string 2). (Marks M and N)

(13) Mark string (4), 1650 mm (5.41 ft.) to the left and right of the vehicle center line (string 2). (Marks AC and AD)

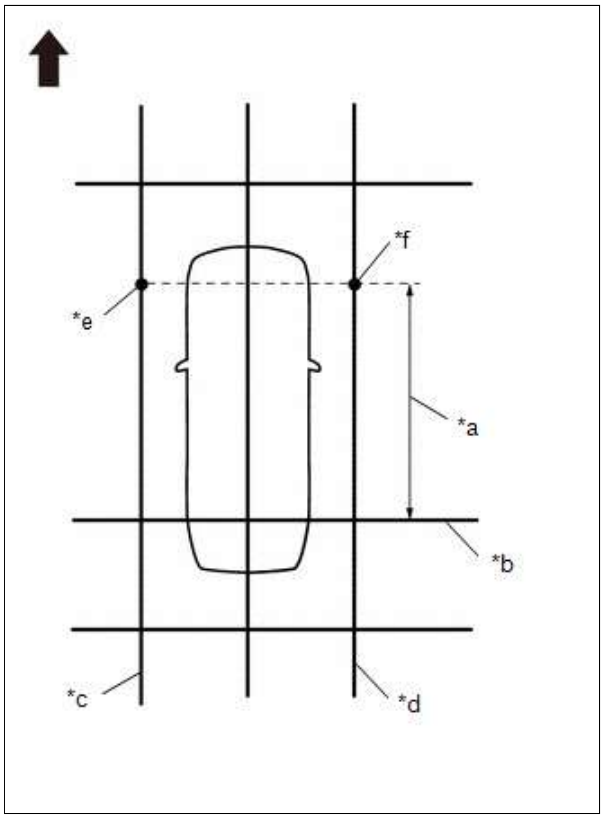
(14) Secure strings (5) and (6) so that they pass through marks H, M, I and N as shown in the illustration.

NOTICE:

When securing the string, check that there is no slack and the string is not twisted.



*a	String 1
*b	String 2
*c	String 3
*d	String 4
*e	String 5
*f	String 6
*g	Mark H
*h	Mark I
*i	Mark M
*j	Mark N
➡	Front of Vehicle



*a	3100 mm (10.17 ft.)
*b	String 1
*c	String 5
*d	String 6
*e	Mark Y
*f	Mark Z
➡	Front of Vehicle

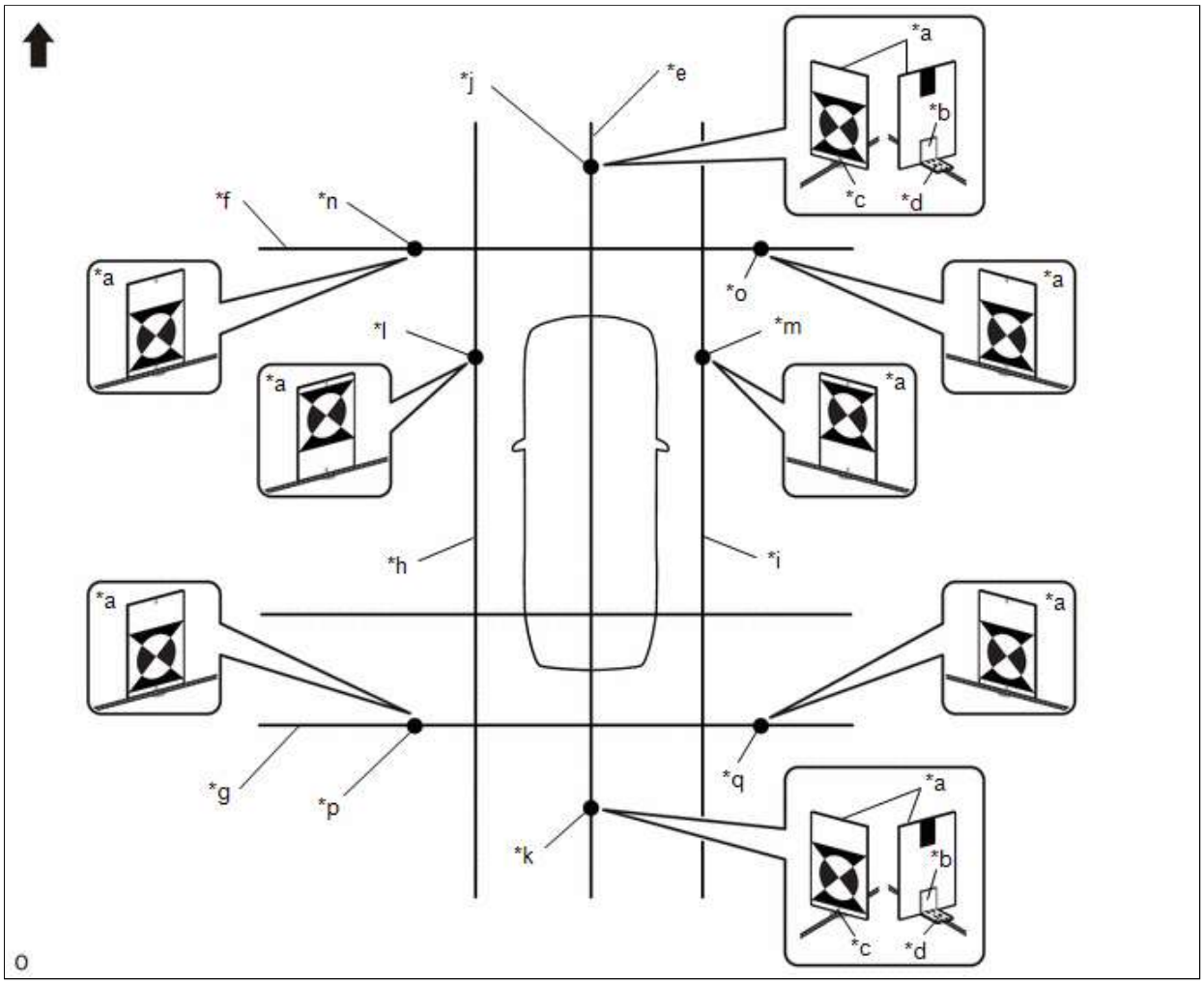
(15) Make a mark on string (5) that is 3100 mm (10.17 ft.) from the reference line (string (1)) as shown in the illustration. (Mark Y)

(16) Make a mark on string (6) that is 3100 mm (10.17 ft.) from the reference line (string (1)) as shown in the illustration. (Mark Z)

(17) Align the center line of SST (television camera adjustment target) with marks AA and AB and place it parallel with string (3) as shown in the illustration.

NOTICE:

The vertical direction of SST (television camera adjustment target) differs depending on whether side setting or front, rear and corner setting is used.



*a	SST (Television Camera Adjustment Target)	*b	SST (L Type Stand)
*c	SST (Television Camera Adjustment Target) Center Line	*d	SST (L Type Stand) Center Line
*e	String 2	*f	String 3
*g	String 4	*h	String 5
*i	String 6	*j	Mark W
*k	Mark X	*l	Mark Y
*m	Mark Z	*n	Mark AA
*o	Mark AB	*p	Mark AC
*q	Mark AD	-	-
➡	Front of Vehicle	-	-

(18) Align the center line of SST (television camera adjustment target) with marks AC and AD and place it parallel with string (4) as shown in the illustration.

(19) While the center line of SST (television camera adjustment target) is aligned with mark W and mark X, place string (2) so that it overlaps the center line of SST (L type stand) as shown in the illustration.

(20) Align the center line of SST (television camera adjustment target) with mark Y and place it parallel with string (5) as shown in the illustration.

(21) Align the center line of SST (television camera adjustment target) with mark Z and place it parallel with string (6) as shown in the illustration.

(22) Perform the screen adjustment procedure (procedure 15).

PROCEDURE 15: CAMERA VIEW ADJUSTMENT (CALIBRATION)

(a) Enter diagnostic mode.

HINT:

Click here INFO

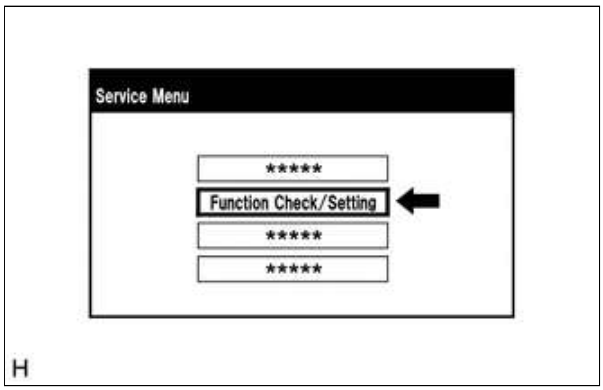
CAUTION:

The check must be performed with the READY ON*2 or ignition switch ON*1. Therefore, apply the parking brake, depress the brake pedal and move the shift position to P to ensure that the vehicle does not begin moving unexpectedly.

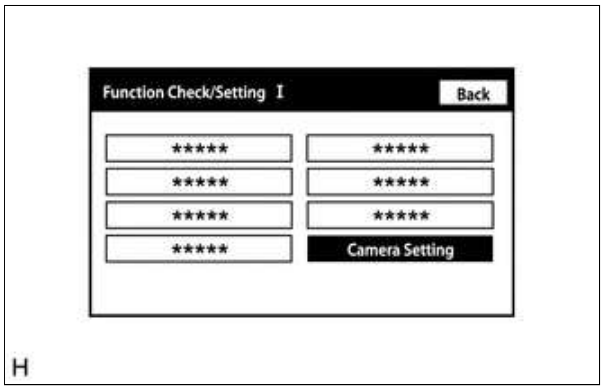
*1: for Gasoline Models

*2: except Gasoline Models

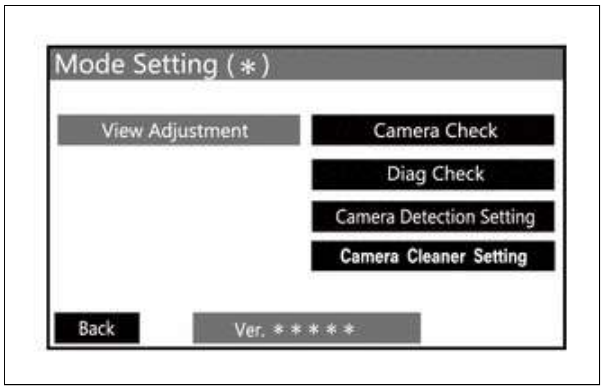
(b) Select "Function Check/Setting" from the "Service Menu" screen.



(c) Select "Camera Setting" of "Function Check/Setting I" screen to display the Mode Setting (*) screen.



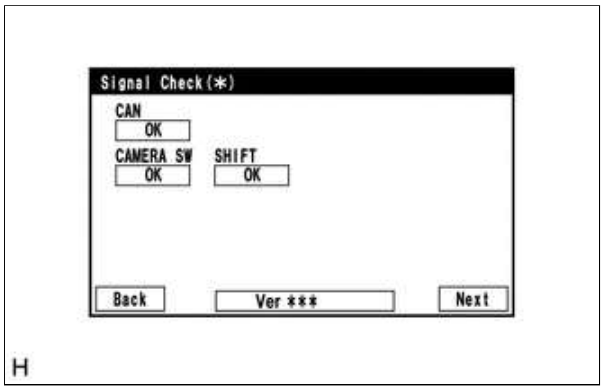
(d) Select "View Adjustment" on the "Mode Setting (*)" screen to display the adjustment screen.



HINT:

To select a grayed out item, select and hold the item for 2 seconds or more.

(e) After checking the screen, press the "Next" button on the "Signal Check (*)" screen.

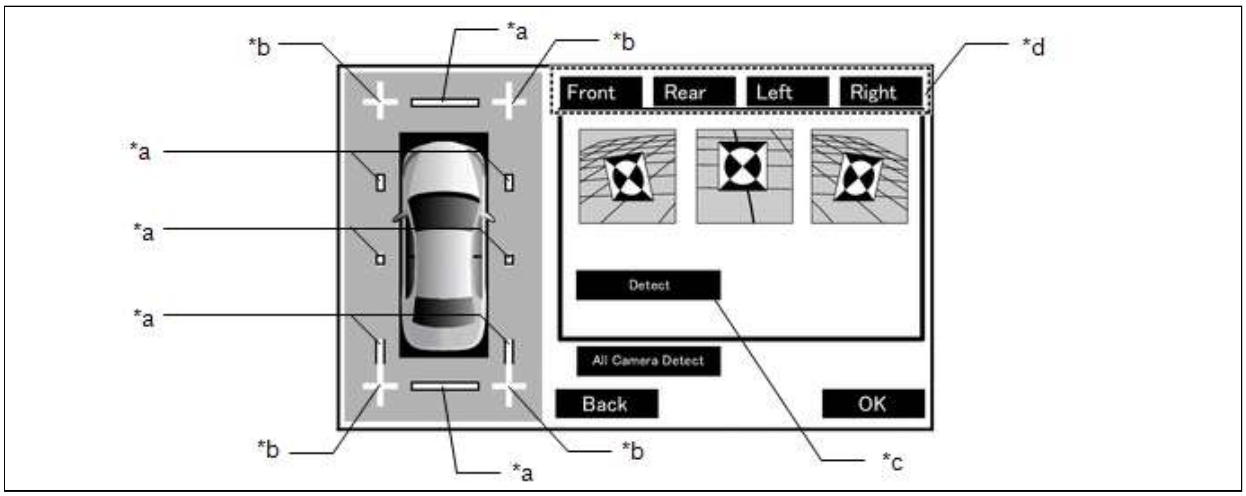


NOTICE:

- If there are items with "CHK" (displayed in red) displayed on the "Signal Check(*)" screen, the system will not proceed to the screen adjustment screen even if the "Next" button is pressed.
- If there are items with "CHK" (displayed in red) displayed on the "Signal Check(*)" screen, perform the "Signal Check(*)" screen inspection.
- The screen is displayed only when the shift signal is received via a direct line.
- It takes approximately 1 second to perform an OK judgement of CAN.

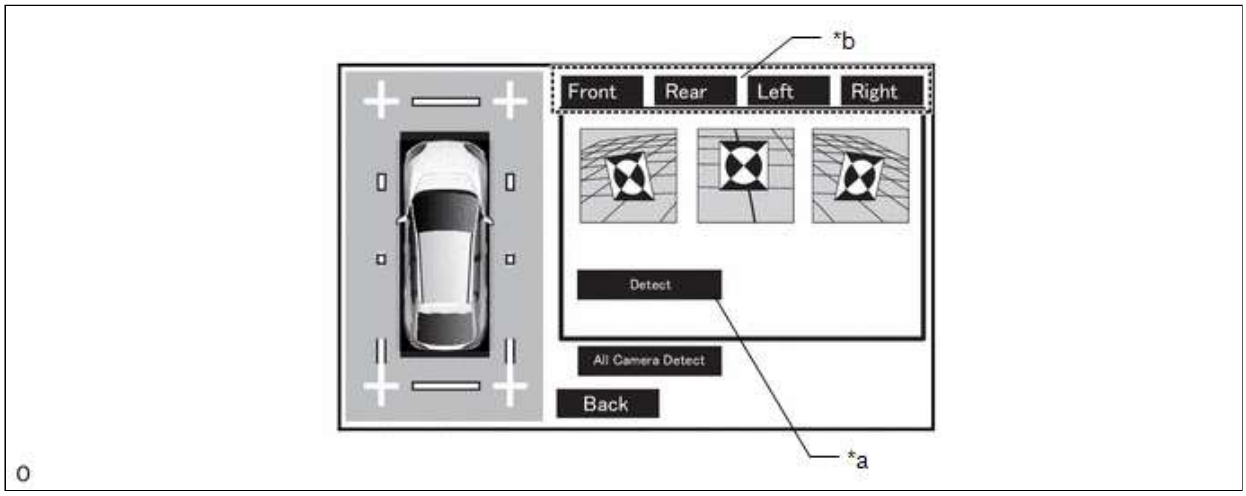
(f) Perform the view adjustment.

Description of Adjustment Screen Display Items



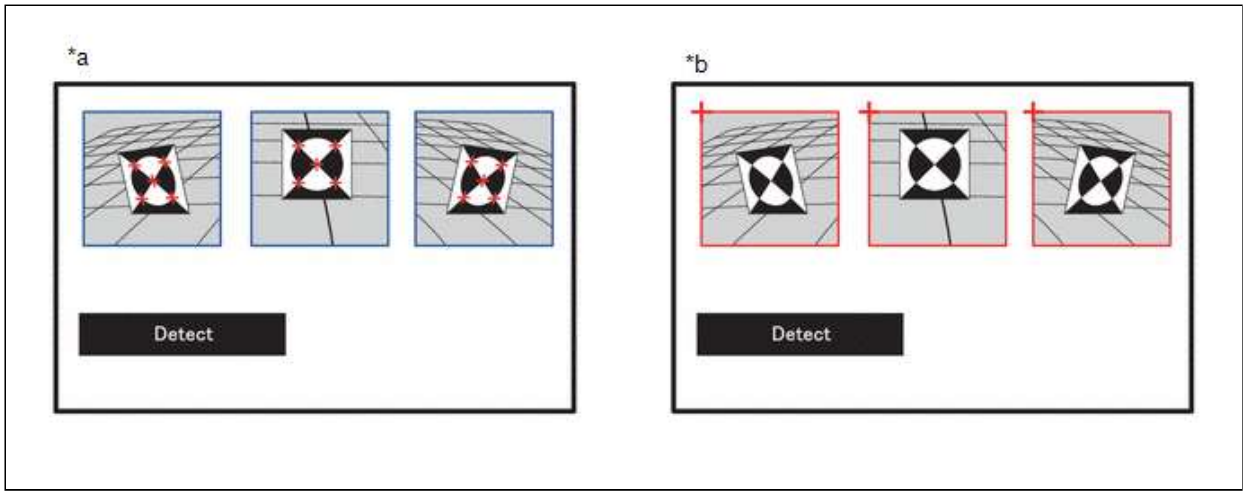
*a	Red Frame (For Red Frame Judgment)	*b	Cross Check Marker (For Connection Judgment)
*c	Detect Marker Button	*d	Camera Select Buttons

1. Select the camera select button for the camera that needs to be adjusted (front, rear, left side, or right side).



*a	Detect Marker Button	*b	Camera Select Buttons

2. Press the Detect marker button.
3. Check that marker detection has completed.

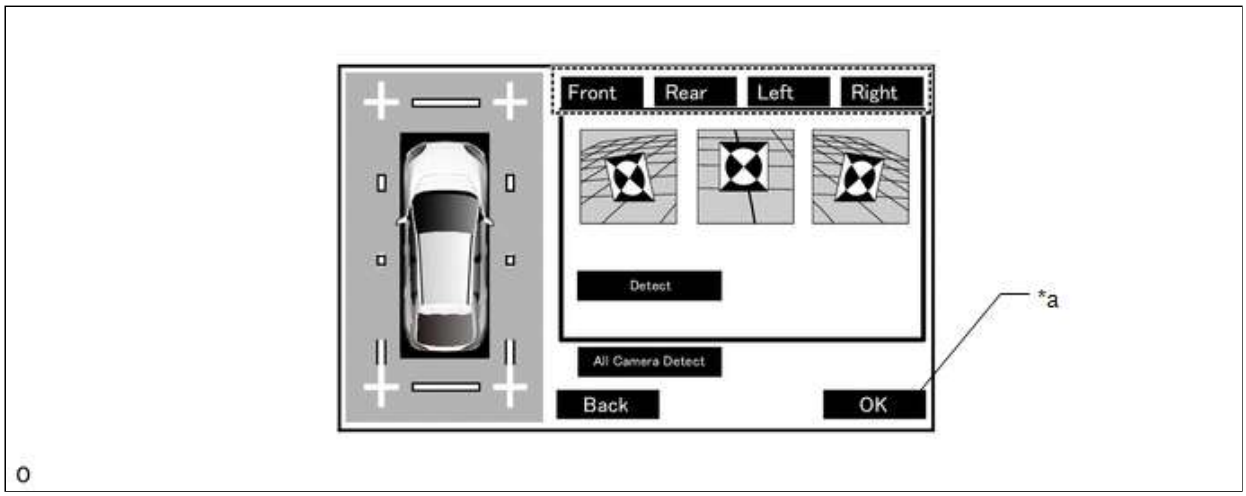


*a	Detection Complete (Frame becomes blue when detection is complete)	*b	Detection Incomplete (Frame becomes red when detection is incomplete)

NOTICE:

When marker detection cannot be completed, perform the procedure again from Set SST.

4. The OK button is displayed on the screen.



*a	OK Button	-	-

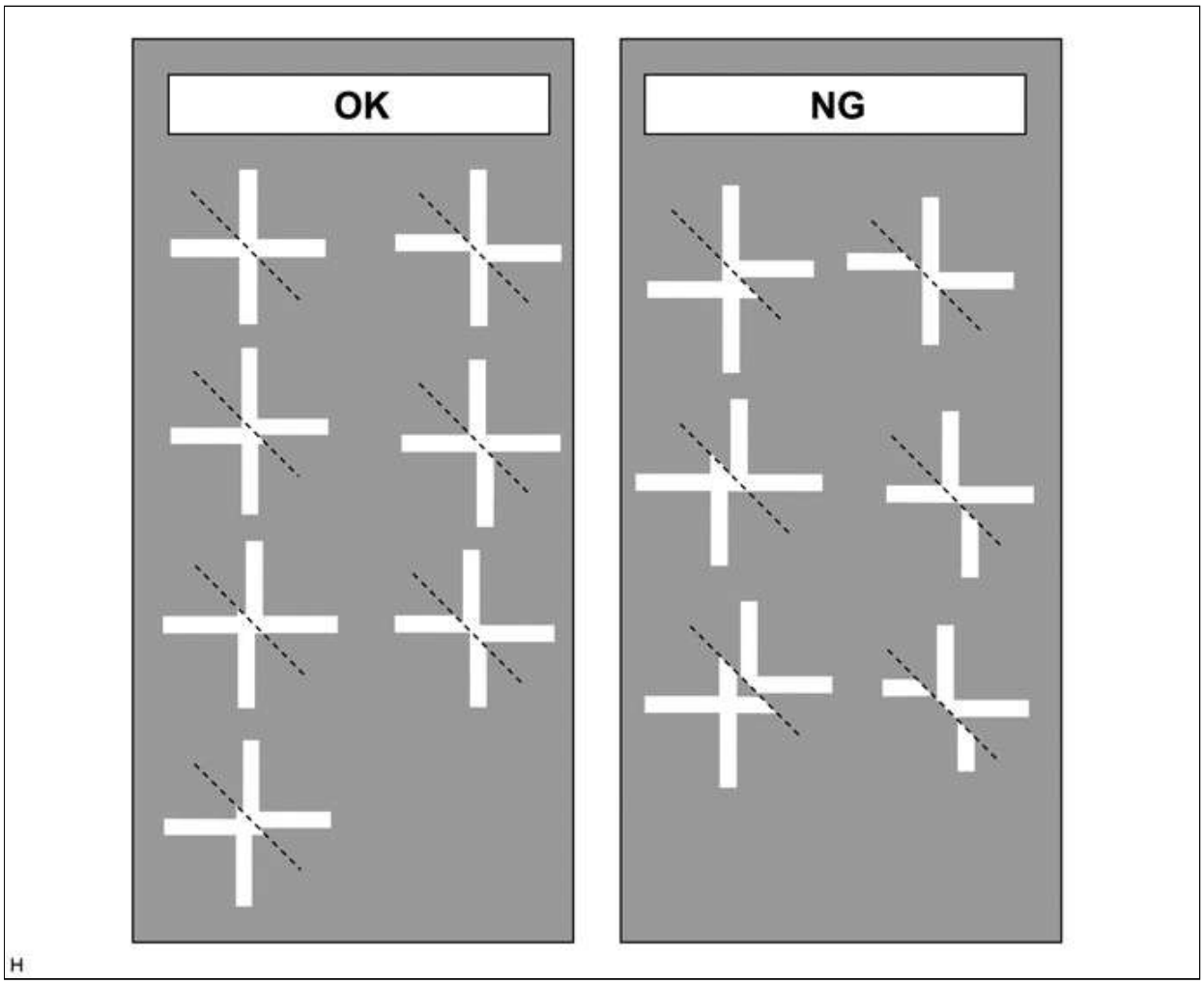
NOTICE:

The status before the operation can be restored by returning with the Back button and then entering this adjustment screen again.

HINT:

When you change all cameras, you may use All Camera Detect button.

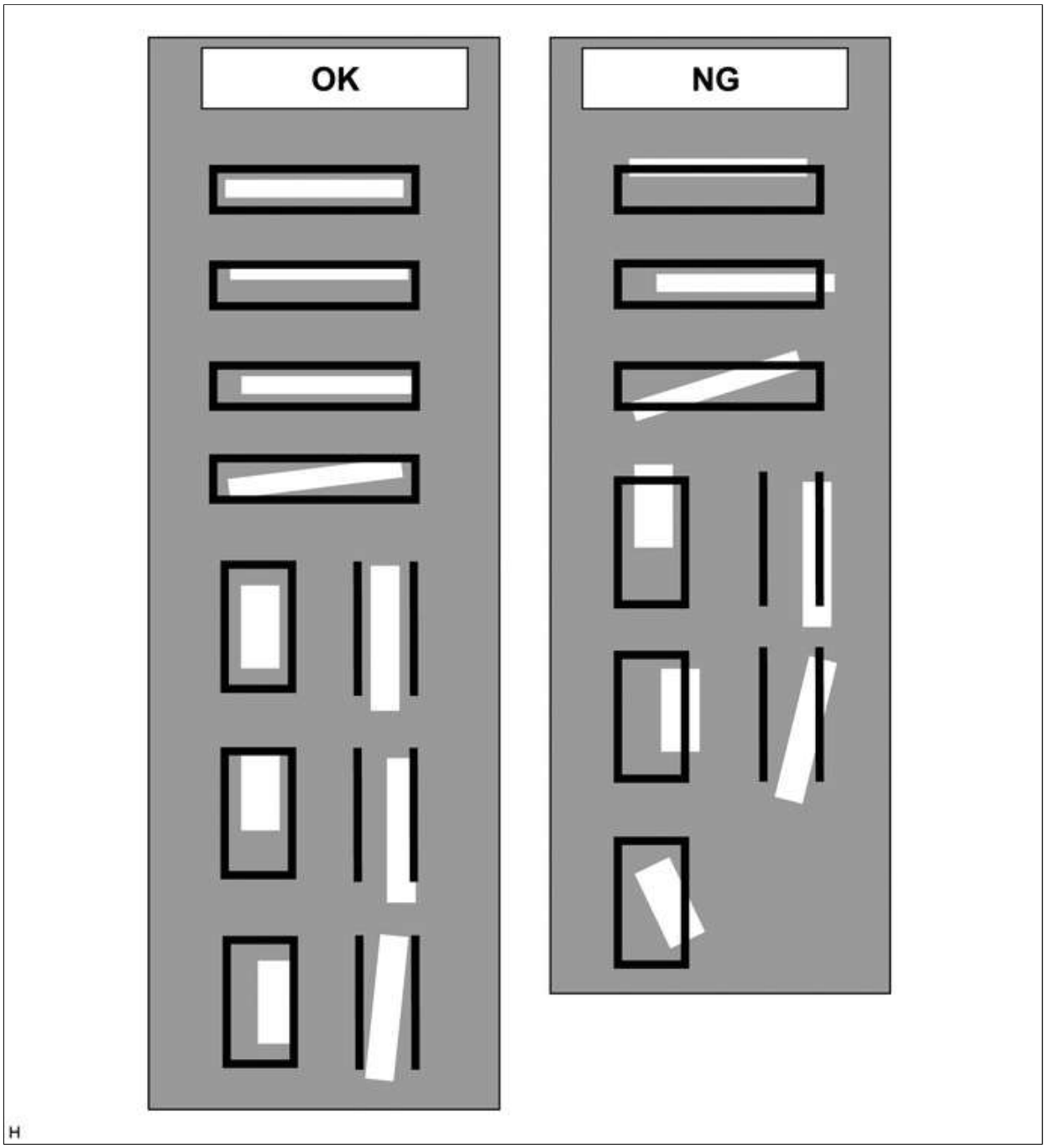
(1) Check that the cross check markers displayed on the adjustment screen appear connected.



NOTICE:

Before checking the markers on the adjustment screen, ensure that the cross target bars have been placed correctly.

(2) Check that the target bars do not protrude outside the red frames displayed on the adjustment screen.



NOTICE:

Before checking the Adjustment screen, ensure that the check markers have been placed correctly.

(g) When all adjustments are completed, press "OK".

(h) If data writing ends normally, "The view data writing was completed." is displayed.

(i) Press "OK".

(j) Finish diagnostic mode.

HINT:

Click here INFO