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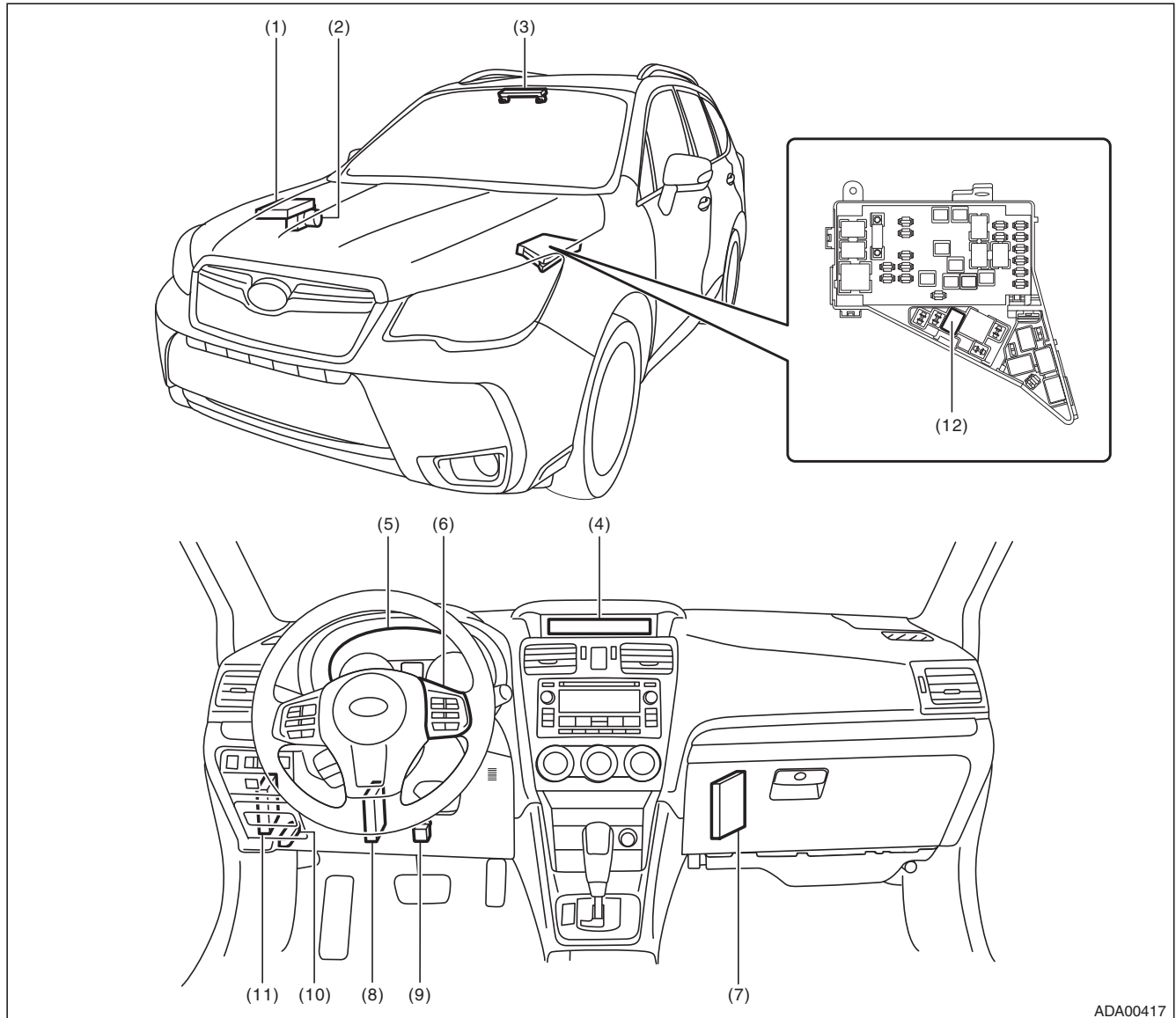
General Description

EyeSight

1. General Description

A: COMPONENT

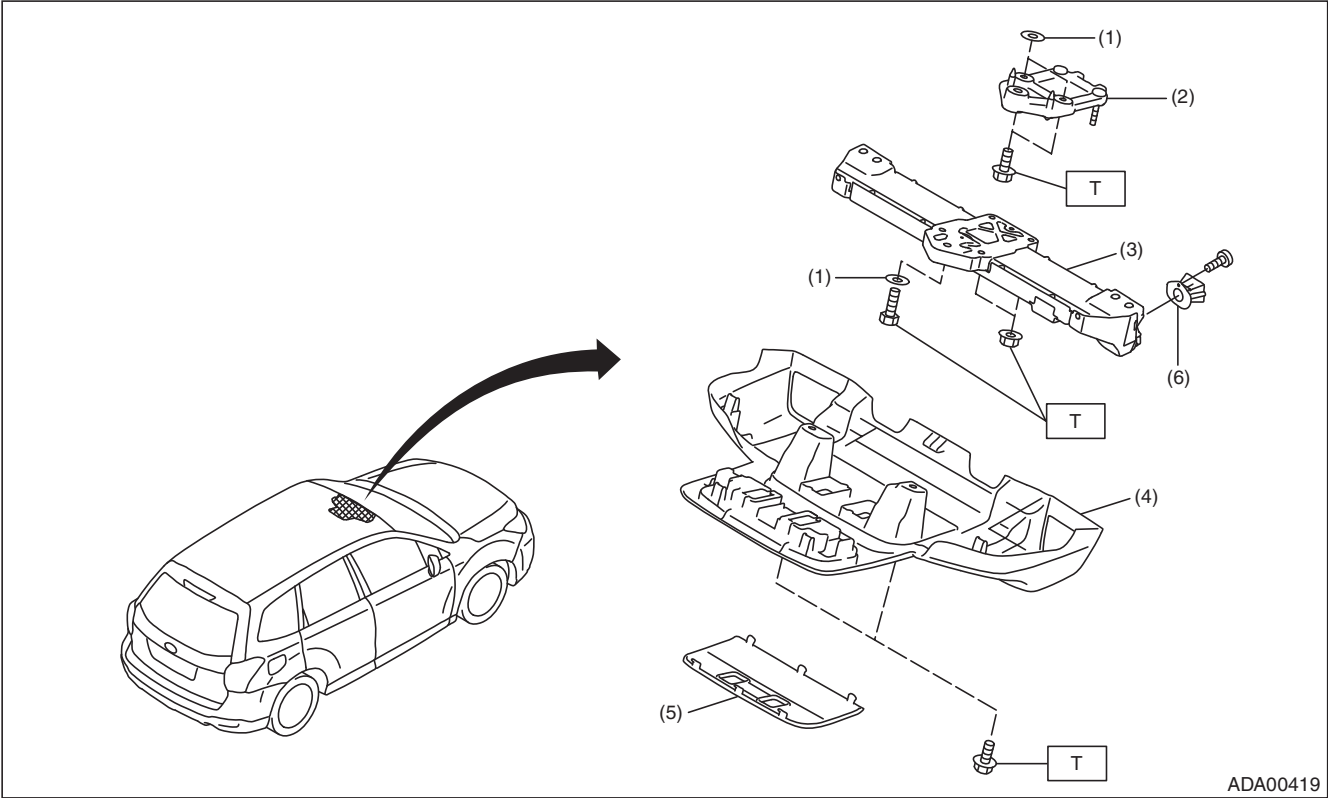
1. EyeSight SYSTEM



ADA00417

- | | | |
|---|---|---------------------------------|
| (1) Engine control module (ECM) (turbo model) | (5) Combination meter | (9) Stop light and brake switch |
| (2) VDC control module (VDCCM) | (6) Cruise control command switch | (10) Data link connector |
| (3) Stereo camera | (7) Engine control module (ECM) (non-turbo model) | (11) Body integrated unit |
| (4) MFD (multi-function display) | (8) Transmission control module (TCM) | (12) Brake light relay |

2. STEREO CAMERA



- | | |
|-------------------|------------------------------|
| (1) Washer | (4) Stereo camera cover ASSY |
| (2) Camera plate | (5) Cap |
| (3) Stereo camera | (6) Lens hood (lens filter) |

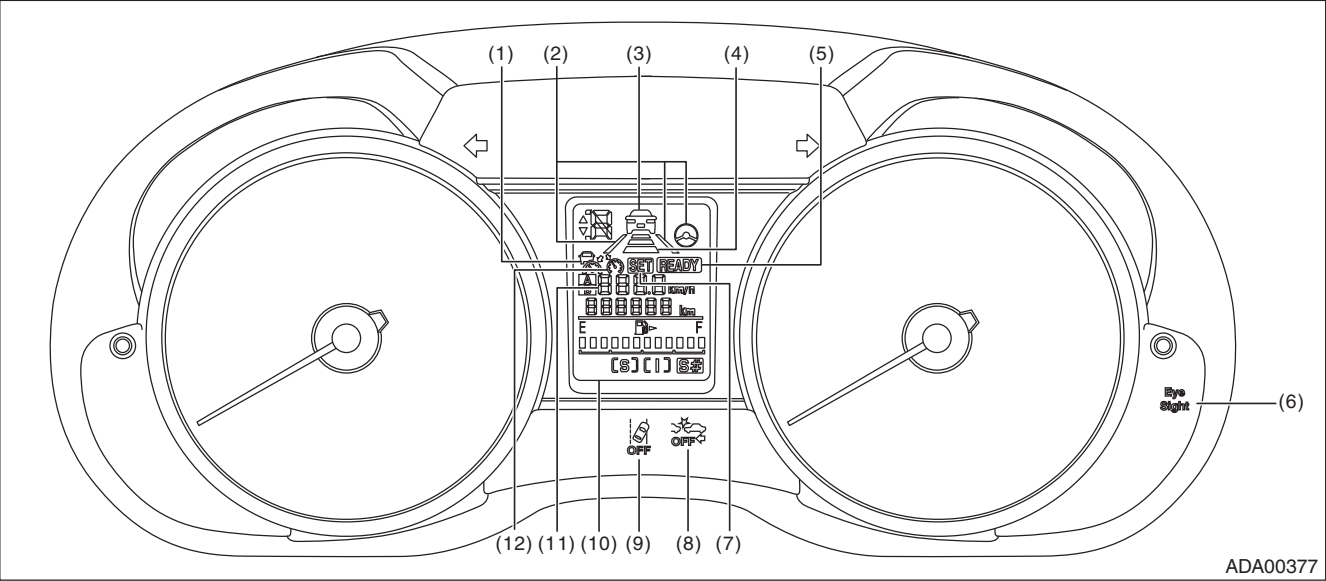
Tightening torque: N-m (kgf-m, ft-lb)
T: 5.5±1.0 (0.56±0.10, 4.1±0.7)

General Description

EyeSight

3. COMBINATION METER

- C0 model

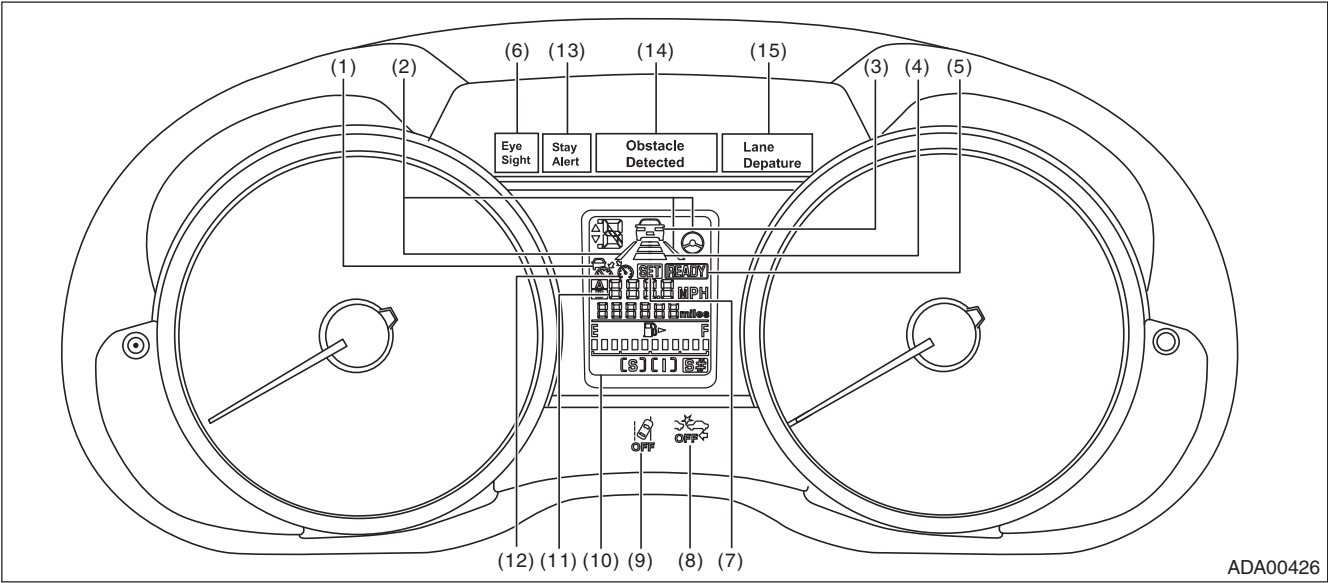


- | | | |
|---|---|--|
| (1) Adaptive cruise display | (5) READY indicator | (9) Lane departure warning OFF indicator light |
| (2) Lane indicator/Steering wheel indicator | (6) EyeSight warning light | (10) Multi-information display |
| (3) Preceding vehicle indicator | (7) SET indicator | (11) Set vehicle speed display |
| (4) Following distance setting indicator | (8) Pre-collision brake OFF indicator light | (12) Constant speed cruise display |

General Description

EyeSight

- Except for C0 model



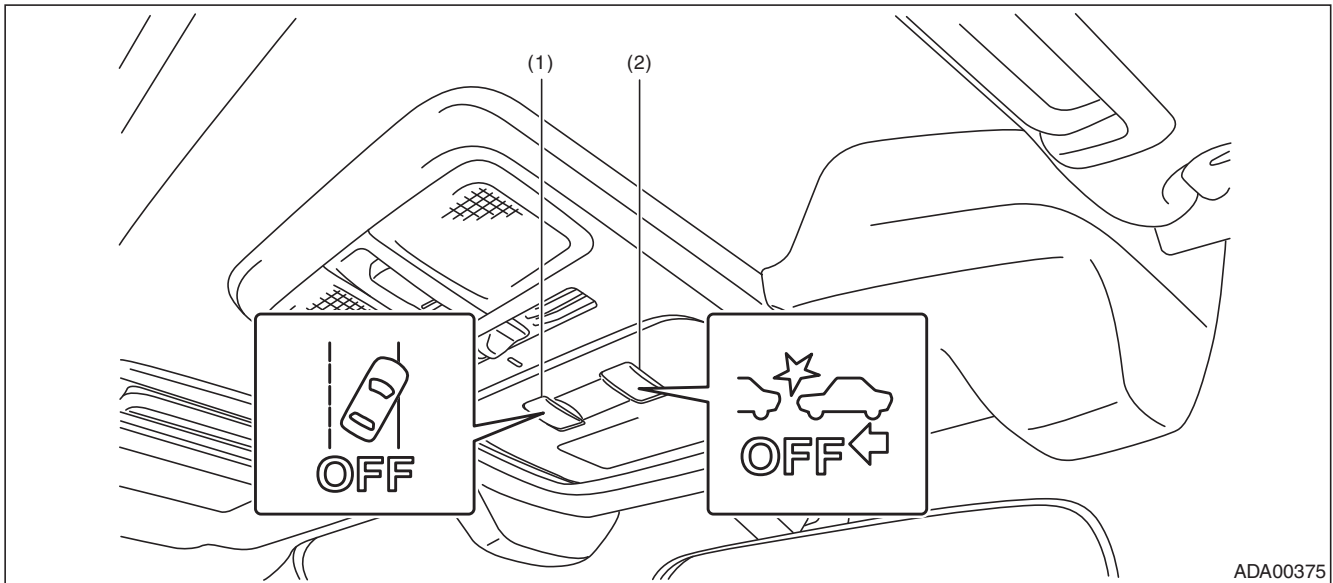
ADA00426

- | | | |
|---|--|------------------------------------|
| (1) Adaptive cruise display | (6) EyeSight warning light | (11) Set vehicle speed display |
| (2) Lane indicator/Steering wheel indicator | (7) SET indicator | (12) Constant speed cruise display |
| (3) Preceding vehicle indicator | (8) Pre-collision brake OFF indicator light | (13) "Stay Alert" indicator |
| (4) Following distance setting indicator | (9) Lane departure warning OFF indicator light | (14) "Obstacle Detected" indicator |
| (5) READY indicator | (10) Multi-information display | (15) "Lane Departure" indicator |

General Description

EyeSight

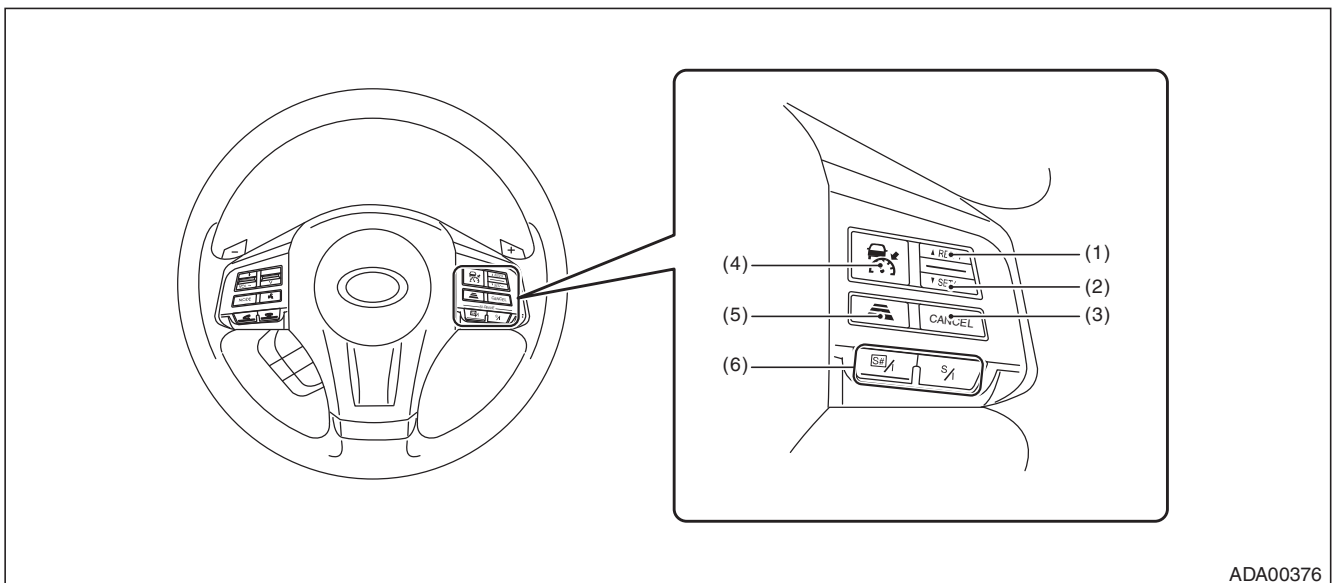
4. SWITCH



ADA00375

(1) Lane departure warning OFF switch

(2) Pre-collision brake OFF switch



ADA00376

(1) RES/+ (Resume/+) switch

(3) CANCEL switch

(5) Following distance setting switch

(2) SET/- (Set/-) switch

(4) CRUISE switch

(6) SI-DRIVE switch

General Description

EyeSight

B: CAUTION

- Before disassembling or reassembling parts, always disconnect the battery ground cable from battery. When replacing the audio, control module and other parts provided with memory functions, record the memory contents before disconnecting the battery ground cable. Otherwise, the memory is cleared.
 - Reassemble the parts in the reverse order of disassembly procedure unless otherwise indicated.
 - Adjust parts to the given specifications.
 - Connect the connectors securely during reassembly.
 - After reassembly, make sure that the functional parts operate normally.
 - Yellow connectors and harnesses with yellow tapes around them are the connectors and harnesses for the airbag system. Using a tester above such circuits may cause malfunction of airbag system. Follow the cautions for the airbag system in this case. <Ref. to AB-9, CAUTION, General Description.>
 - Be careful not to damage the airbag system wiring harness when servicing electrical parts and switches.
 - If the steering wheel and steering angle sensor (steering roll connector) are removed, adjust the steering angle sensor. <Ref. to VDC-23, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDC-CM&H/U).>
 - If the glass is damaged inside the glass repair prohibited area, always perform the glass replacement. <Ref. to ES(diag)-8, WINDSHIELD GLASS AND DASHBOARD, INSPECTION, General Description.>
- Even if a scratch that occurs inside the prohibited area is repaired, this will affect the recognition of the stereo camera, which may cause the EyeSight function not to operate correctly.

C: PREPARATION TOOL

1. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance and voltage.
Steering wheel puller	Used for removing the steering wheel.
Protective tape (masking tape, etc.)	Used for removing and installing stereo camera cover assembly.

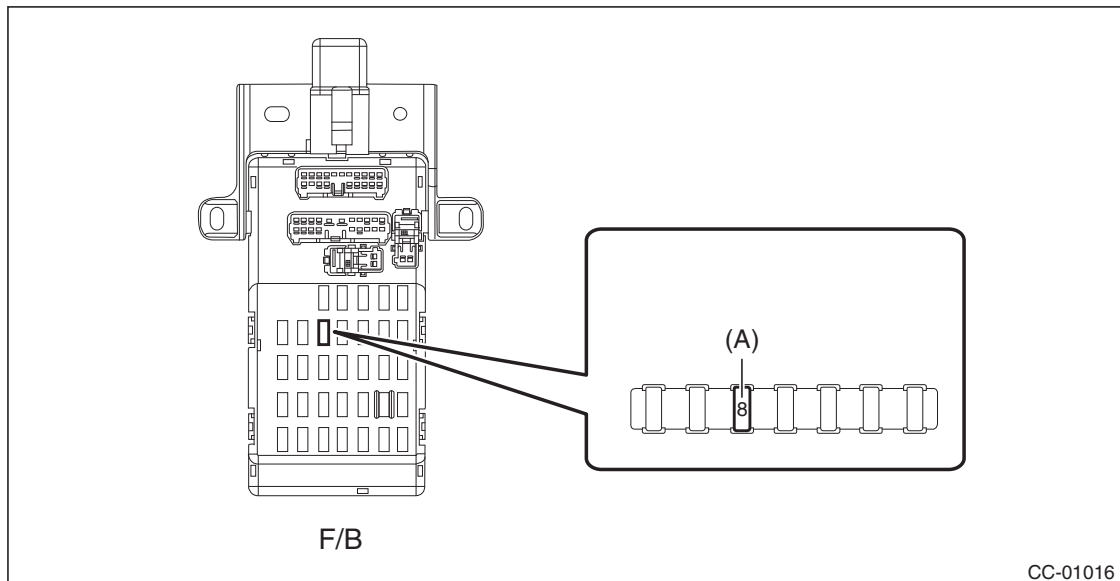


Relay and Fuse

EyeSight

2. Relay and Fuse

A: LOCATION



Relay & fuse box	Fuse 15A (stop light and brake switch, brake light relay)	(A)
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NOTE:

For other related fuses, refer to the wiring diagram. <Ref. to WI-24, Power Supply Circuit.>

B: INSPECTION

1. CHECK FUSE

- 1) Remove the fuse and inspect visually.
- 2) If the fuse is blown out, replace the fuse.

NOTE:

If the fuse is blown again, check the system wiring harness.

3. EyeSight System

A: WIRING DIAGRAM

Refer to “EyeSight System” in the wiring diagram.

- Non-turbo model: <Ref. to WI-238, NON-TURBO MODEL, WIRING DIAGRAM, EyeSight System.>
- Turbo model: <Ref. to WI-244, TURBO MODEL, WIRING DIAGRAM, EyeSight System.>

B: INSPECTION

Refer to “Basic Diagnostic Procedure” of “EyeSight (DIAGNOSTICS)” section. <Ref. to ES(diag)-2, Basic Diagnostic Procedure.>

C: NOTE

For procedure of each component in the EyeSight system, refer to the respective section.

- Control module: <Ref. to ES-10, Control Unit.>
- Stereo camera: <Ref. to ES-11, Stereo Camera.>
- Cruise control command switch: <Ref. to ES-19, Cruise Control Command Switch.>
- Combination meter: <Ref. to ES-24, Combination Meter.>
- Transmission control module (TCM): <Ref. to ES-25, Transmission Control Module (TCM).>
- Stop light and brake switch: <Ref. to ES-26, Stop Light & Brake Switch.>
- VDC control module & hydraulic control unit (VDCCM&H/U): <Ref. to ES-27, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
- Multi-function display (MFD): <Ref. to ES-28, Multi-function Display (MFD).>
- Switches and harness: <Ref. to ES-18, Switches and Harness.>

4. Control Unit

A: NOTE

System control of the EyeSight is performed by the following modules.

- Engine control module (ECM)
- Transmission control module (TCM)
- VDC control module (VDCCM)
- Stereo camera

B: REMOVAL

For removal, refer to the removal procedure of each module.

- Engine control module (ECM)

Non-turbo model: <Ref. to FU(H4DO)-94, REMOVAL, Engine Control Module (ECM).>

Turbo model: <Ref. to FU(H4DOTC)-134, REMOVAL, Engine Control Module (ECM).>

- Transmission control module (TCM)

Non-turbo model: <Ref. to CVT(TR580)-144, REMOVAL, Transmission Control Module (TCM).>

Turbo model: <Ref. to CVT(TR690)-123, REMOVAL, Transmission Control Module (TCM).>

- VDC control module (VDCCM): <Ref. to VDC-10, REMOVAL, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

- Stereo camera: <Ref. to ES-11, REMOVAL, Stereo Camera.>

C: INSTALLATION

For installation, refer to the installation procedure of each module.

- Engine control module (ECM)

Non-turbo model: <Ref. to FU(H4DO)-95, INSTALLATION, Engine Control Module (ECM).>

Turbo model: <Ref. to FU(H4DOTC)-136, INSTALLATION, Engine Control Module (ECM).>

- Transmission control module (TCM)

Non-turbo model: <Ref. to CVT(TR580)-145, INSTALLATION, Transmission Control Module (TCM).>

Turbo model: <Ref. to CVT(TR690)-123, INSTALLATION, Transmission Control Module (TCM).>

- VDC control module (VDCCM): <Ref. to VDC-14, INSTALLATION, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

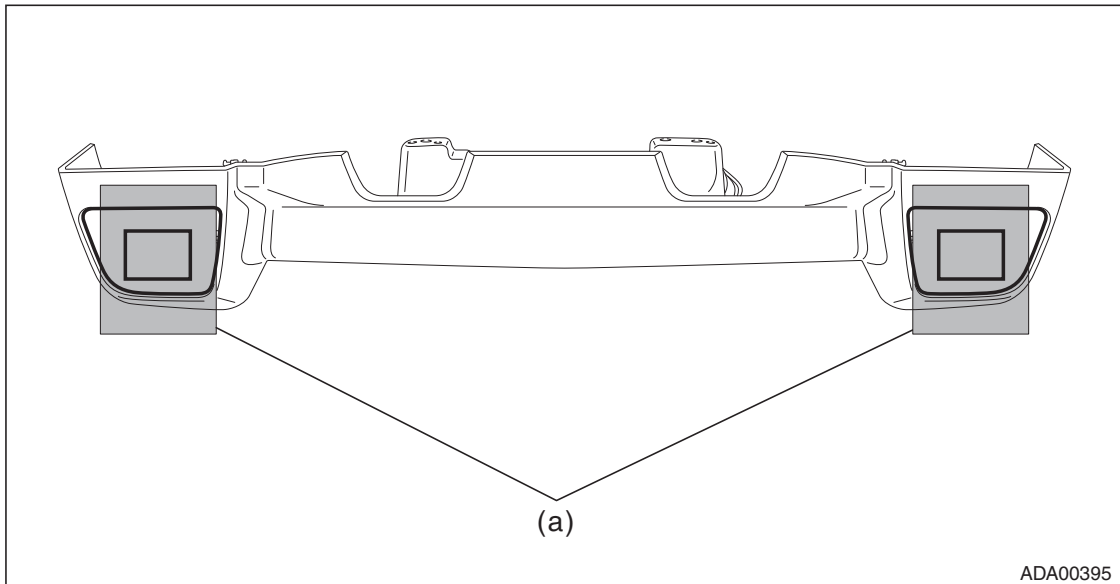
- Stereo camera: <Ref. to ES-15, INSTALLATION, Stereo Camera.>

5. Stereo Camera

A: REMOVAL

CAUTION:

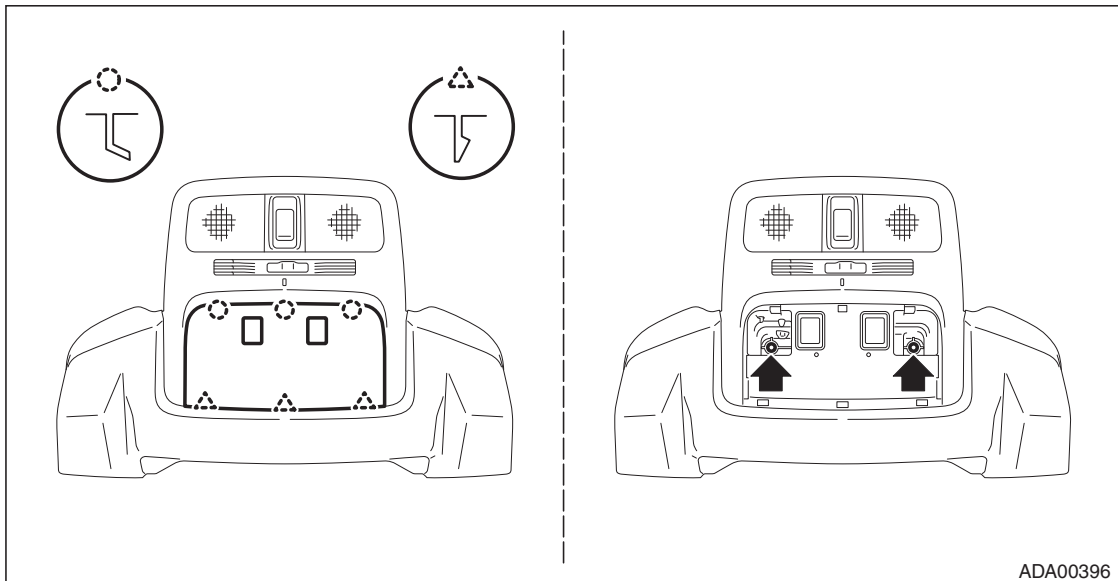
- When the stereo camera or windshield glass has been replaced, removed or installed, always perform the adjustment and inspection of the camera. (When the stereo camera has been replaced with a new part, the camera remains in a failed state until adjustment and inspection are performed.)
 - Since the stereo camera is a precision equipment, install the protective cover before handling it. (New stereo camera is equipped with a protective cover as a service part.)
 - During removal, do not hold at the left and right cameras.
 - Do not apply any impact to the stereo camera. (Even the slightest shock will deviate the optical axis of the camera, resulting in the loss of normal operation of the camera.)
 - Do not disassemble the stereo camera.
 - Attach the protective cover to the replacement part, put it into the box in the same way as the other parts and return it.
 - Do not touch the lens filter on the stereo camera. If touched, replace the lens hood.
 - When removing the stereo camera cover assembly, attach protective tape with a weak adhesive force such as masking tape to avoid interference with the camera lens before performing operation.
- 1) Disconnect the ground cable from battery.
 - 2) Attach the protective tape (a) to the stereo camera cover assembly.



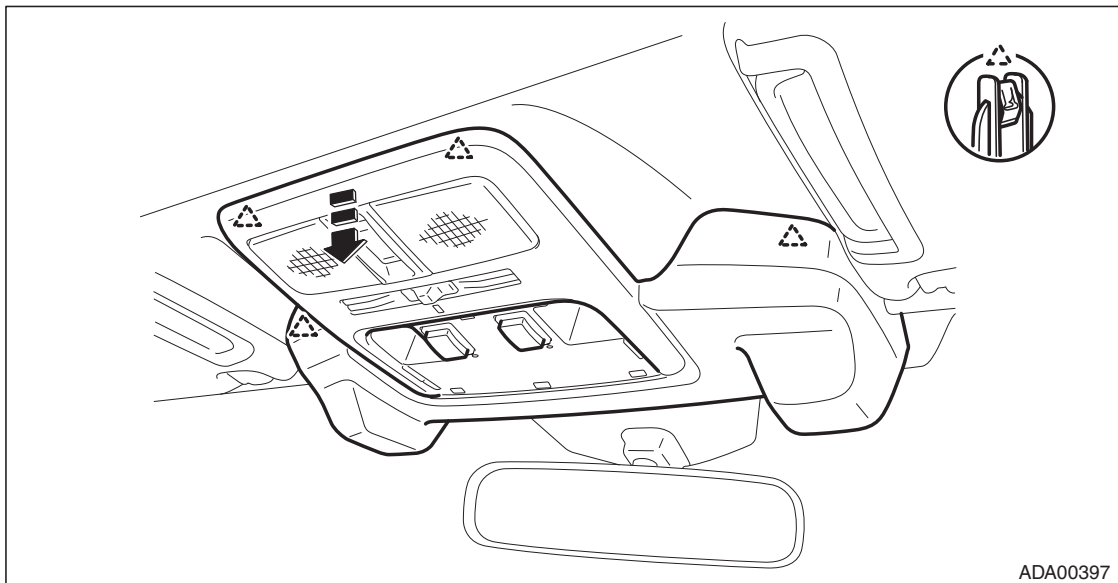
Stereo Camera

EyeSight

- 3) Remove the stereo camera cover.
 - (1) Release the claws and then remove the cap.
 - (2) Remove the mounting bolt of stereo camera cover.



- (3) Pull down the rear of the stereo camera cover, and then release the clips.

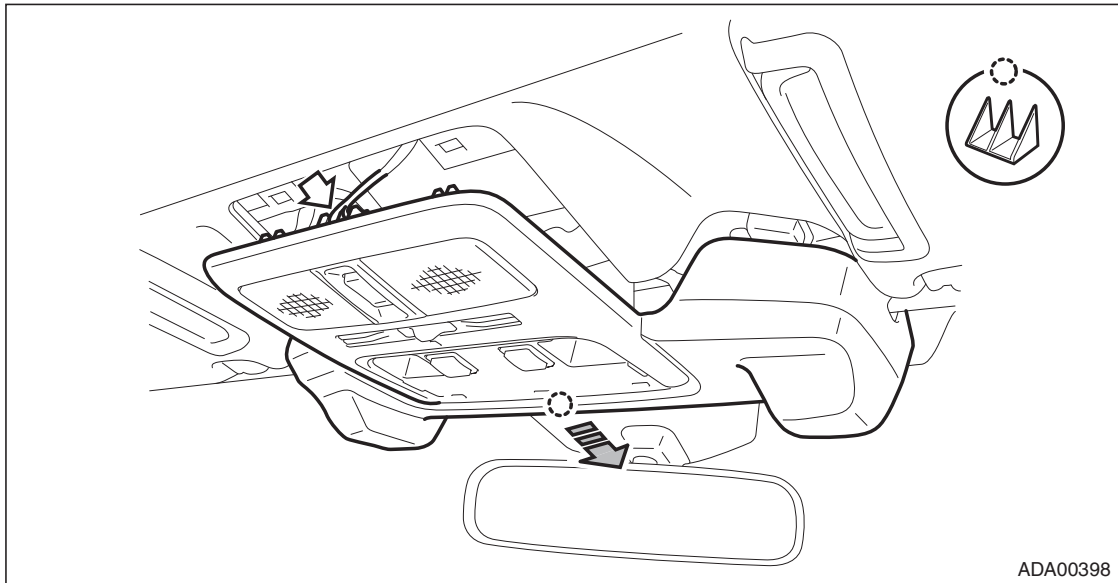


- (4) Disconnect the sunroof switch connector from the gap through the rear of the stereo camera cover.

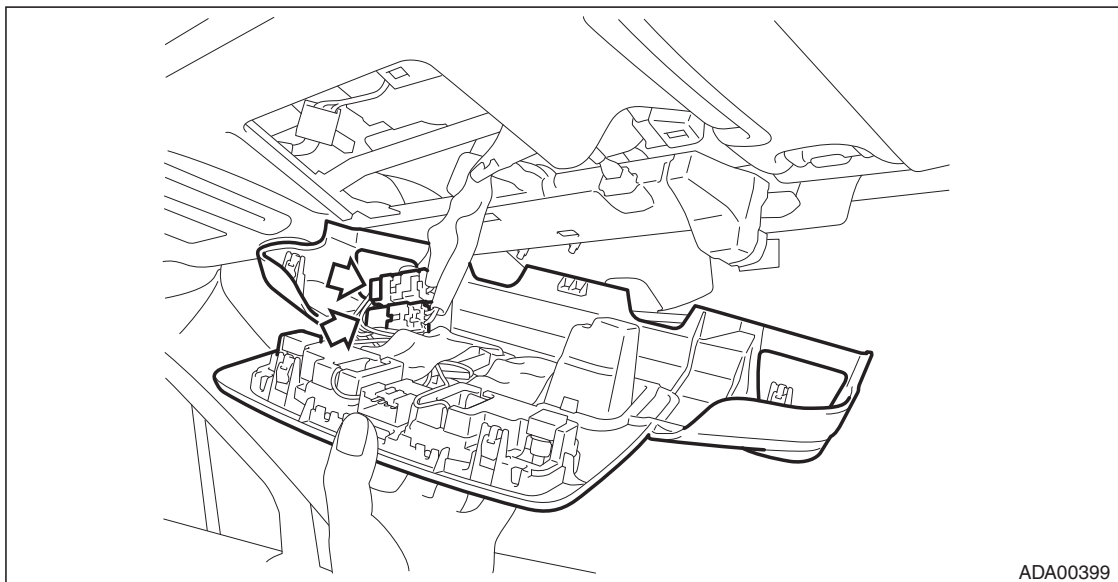
Stereo Camera

EyeSight

- (5) Slide the stereo camera cover toward the windshield glass, and detach the cover hooks.



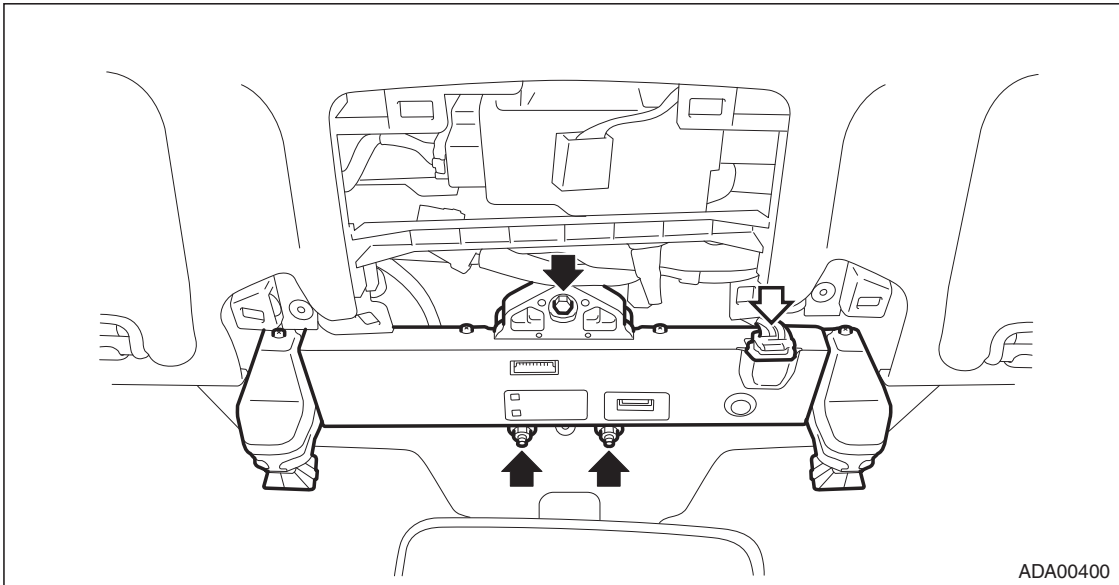
- (6) Disconnect the connectors, and remove the stereo camera cover assembly.



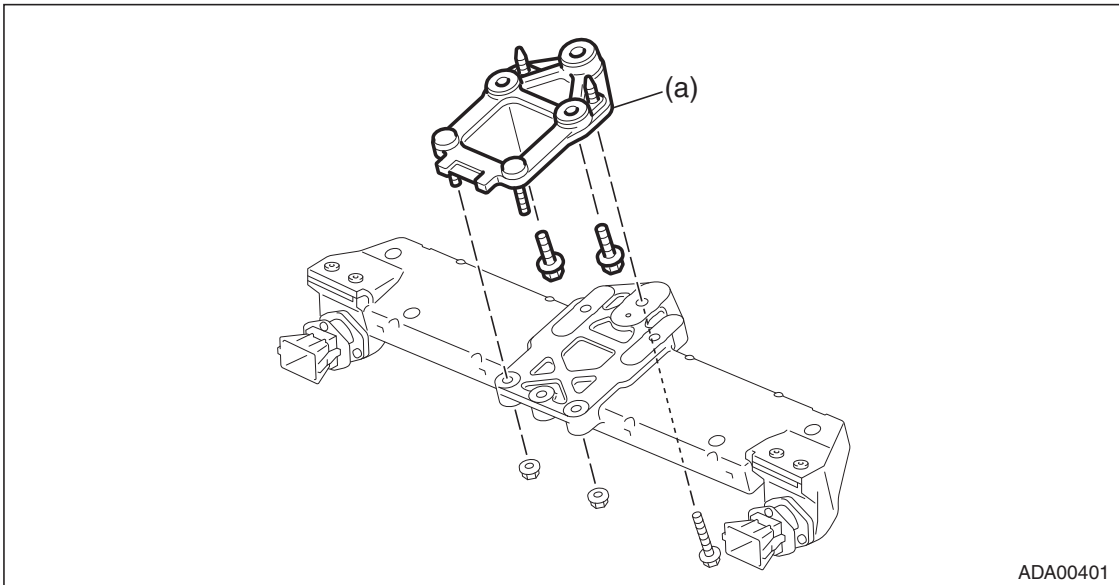
Stereo Camera

EyeSight

- 4) Remove the stereo camera.
 - (1) Disconnect the stereo camera connector.
 - (2) Remove the bolts and nuts and remove the stereo camera.



NOTE:
Remove the camera plate (a) as required.

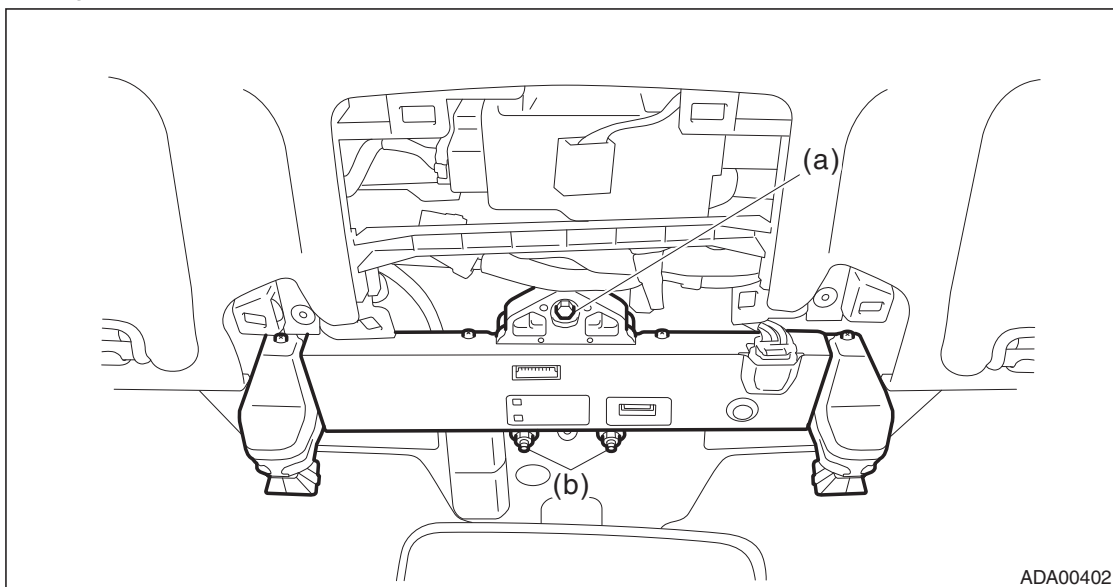


B: INSTALLATION**CAUTION:**

- Do not remove the protective cover until just before installing the stereo camera cover assembly. Using the bolt and nut, install the stereo camera with the protective cover attached, connect the connectors, and then remove the protective cover.
 - Do not apply any impact to the stereo camera. (Even the slightest shock will deviate the optical axis of the camera, resulting in the loss of normal operation of the camera.)
 - During installation, do not hold at the left and right cameras.
 - Do not change the installation position of the stereo camera or do not modify the surrounding structure.
 - Remove the protective cover, install the stereo camera cover assembly, and then perform adjustment and inspection of the stereo camera. <Ref. to ES(diag)-42, Camera Adjustment, Inspection.>
 - Do not touch the lens filter on the stereo camera. If touched, replace the lens hood.
 - When installing the stereo camera cover assembly, attach protective tape with a weak adhesive force such as masking tape to avoid interference with the lens filter before performing operation.
 - When installing the stereo camera cover assembly, take care so that the harness does not interfere with the stereo camera.
 - Do not allow the stereo camera cover assembly to come in contact with the stereo camera. Install the stereo camera cover assembly precisely so that it will not block the visibility of the camera.
 - Because the stereo camera is incompatible, be sure to check the part number before installation.
- Install each part in the reverse order of removal.

NOTE:

When installing the stereo camera to the vehicle, install the bolt (a) first, and then the nut (b).



ADA00402

Tightening torque:

Camera spacer: $5.5 \pm 1.0 \text{ N}\cdot\text{m}$ ($0.56 \pm 0.10 \text{ kgf}\cdot\text{m}$, $4.1 \pm 0.7 \text{ ft}\cdot\text{lb}$)

Stereo camera: $5.5 \pm 1.0 \text{ N}\cdot\text{m}$ ($0.56 \pm 0.10 \text{ kgf}\cdot\text{m}$, $4.1 \pm 0.7 \text{ ft}\cdot\text{lb}$)

Stereo camera cover: $5.5 \pm 1.0 \text{ N}\cdot\text{m}$ ($0.56 \pm 0.10 \text{ kgf}\cdot\text{m}$, $4.1 \pm 0.7 \text{ ft}\cdot\text{lb}$)

Stereo Camera

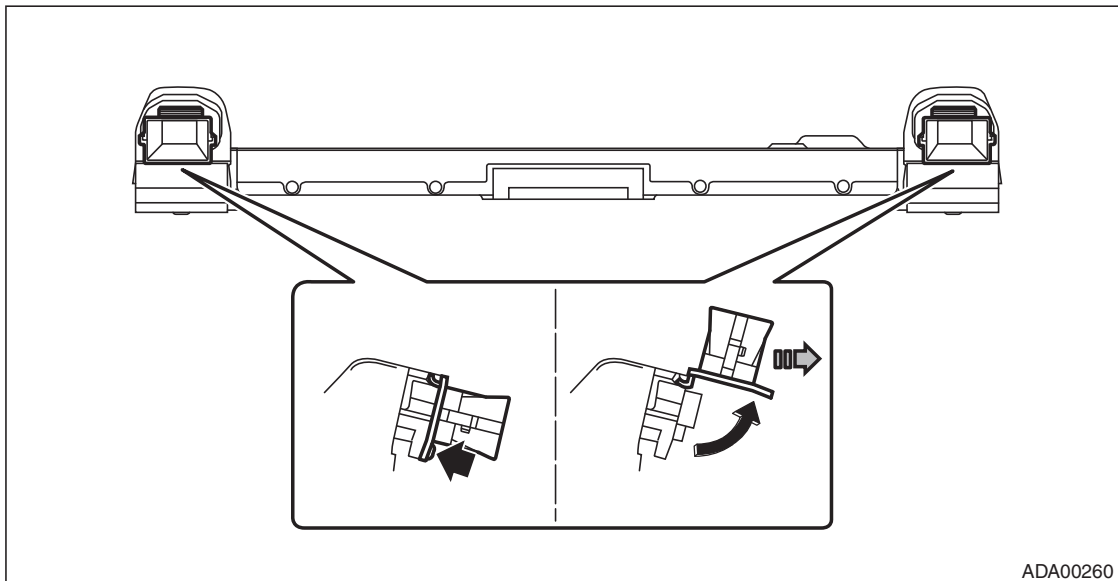
EyeSight

C: REPLACEMENT

1. REPLACEMENT OF LENS HOOD

CAUTION:

- Perform the operation in the room where there are less dust.
 - During replacement, do not hold at the left and right cameras.
 - During replacement, do not touch the terminals and circuit board.
 - Do not apply any impact to the stereo camera. (Even the slightest shock will deviate the optical axis of the camera, resulting in the loss of normal operation of the camera.)
 - Do not allow any tools to come in contact with the lens of the stereo camera and the lens filter on the lens hood.
 - Do not clean the lens of the stereo camera and the lens filter on the lens hood.
 - Replace the left and right lens hoods as a pair because the optical characteristics for both lens hoods must match.
 - Wear clean nylon and vinyl glove. Do not wear cotton work glove to prevent dust or fiber from adhering to the lens hood.
 - Before starting operation, discharge static electricity carried on body or clothes.
 - Do not touch the lens of the stereo camera and the lens filter on the lens hood. If touched, replace the stereo camera and lens hood.
 - After replacing the lens hood, perform adjustment and inspection of the stereo camera.
- 1) Remove the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>
 - 2) Remove the lens hood.
 - (1) Remove the screws.
 - (2) Rotate the lens hood by 90 degrees and pull it out.



3) Install lens hood in the reverse order of removal.

CAUTION:

Do not apply excessive force to the lens hood. The lens filter inside the hood may be tensioned, causing the lens filter to be broken.

NOTE:

If the fingerprint adhesion or damage to the lens filter occurs, the following failures may arise.

- The vehicle may not be able to detect the preceding vehicle or obstacle due to the effects of the headlight of the oncoming vehicle.
- The vehicle may not be able to detect the preceding vehicle or obstacle due to the effects of the brake light operation of the preceding vehicle.
- All the functions of the EyeSight may be suspended by the self-diagnosis function equipped with the camera.
- When the lens filter is broken, the vehicle may not be able to detect the preceding vehicle or obstacle all day and all night.

D: ADJUSTMENT

For adjustment and inspection of the stereo camera, refer to "Camera Adjustment and Inspection" of "EyeSight (DIAGNOSTICS)" section. <Ref. to ES(diag)-42, Camera Adjustment, Inspection.>

Switches and Harness

EyeSight

6. Switches and Harness

A: NOTE

1. P-CR OFF & LANE OFF SWITCH

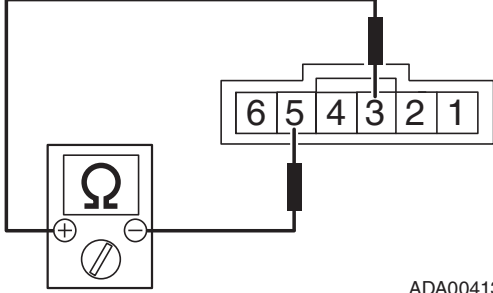
The P-CR OFF & LANE OFF switch is integrated in the stereo camera cover assembly.

If the P-CR OFF & LANE OFF switch is faulty, replace the stereo camera cover assembly. <Ref. to ES-11, Stereo Camera.>

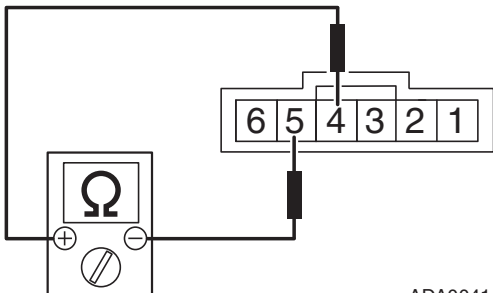
B: INSPECTION

- 1) Remove the stereo camera cover assembly.
- 2) Check the resistance between the terminals of P-CR OFF switch or LANE OFF switch.

• P-CR OFF switch

Terminal No.	Inspection conditions	Standard	Connector sketch
3 — 5	OFF	1 M Ω or more	 ADA00413
	ON	Less than 1 Ω	

• LANE OFF switch

Terminal No.	Inspection conditions	Standard	Connector sketch
4 — 5	OFF	1 M Ω or more	 ADA00414
	ON	Less than 1 Ω	

- 3) If the result of the inspection is not within the standard value, replace the stereo camera cover assembly.

7. Cruise Control Command Switch

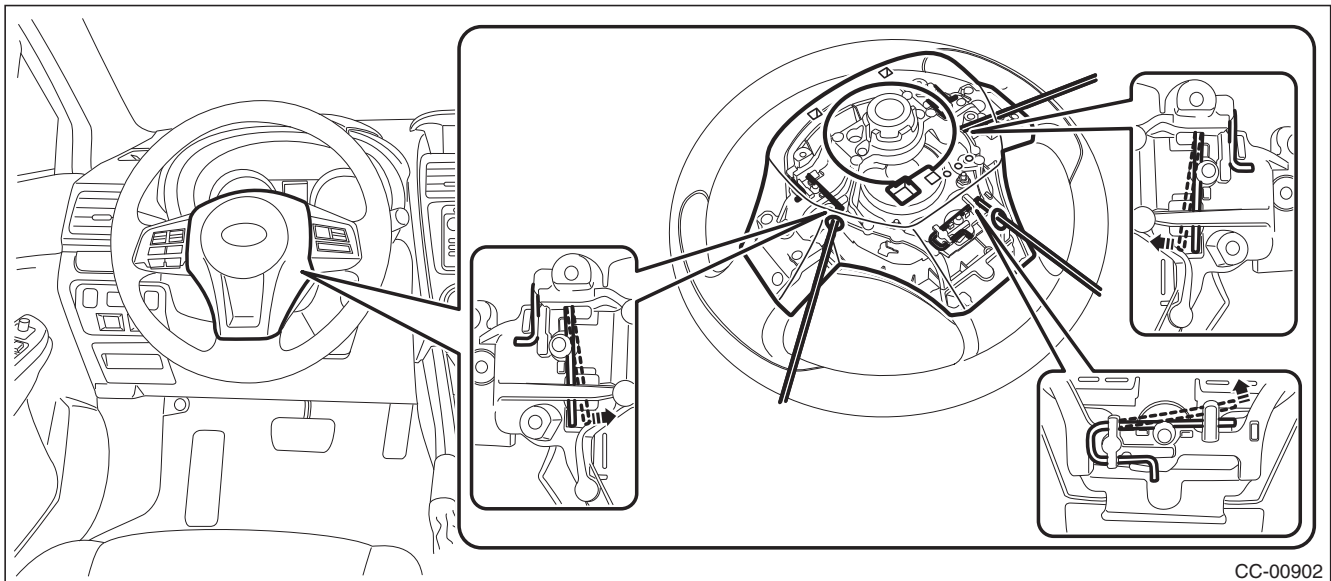
A: REMOVAL

- 1) Position the front wheels straight ahead. (After moving a vehicle 5 m (16 ft) or more with front wheels positioned straight ahead, make sure that the vehicle moves straight ahead.)
- 2) Turn the ignition switch to OFF.
- 3) Disconnect the ground cable from battery and wait for at least 60 seconds before starting work.
- 4) Remove the driver's airbag module.

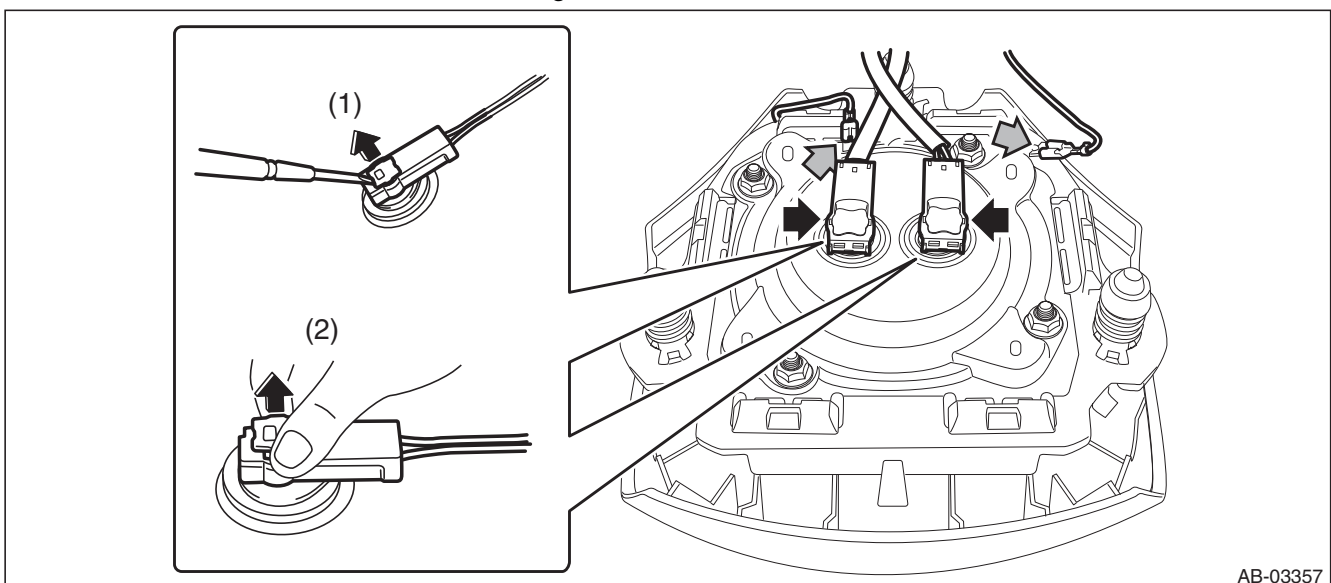
CAUTION:

Before handling the airbag module, refer to "CAUTION" of "General Description" in "AIRBAG SYSTEM". <Ref. to AB-9, CAUTION, General Description.>

- (1) Using a hexagon wrench etc. wrapped by protective tape, insert the snap pins and release the locks (3 locations).



- (2) Disconnect the horn harness and airbag connector, and remove the driver's airbag module. <Ref. to AB-21, DRIVER'S AIRBAG MODULE, KNEE AIRBAG MODULE, CURTAIN AIRBAG MODULE AND PRETENSIONER, PROCEDURE, Airbag Connector.>



Cruise Control Command Switch

EyeSight

5) Remove the steering wheel.

CAUTION:

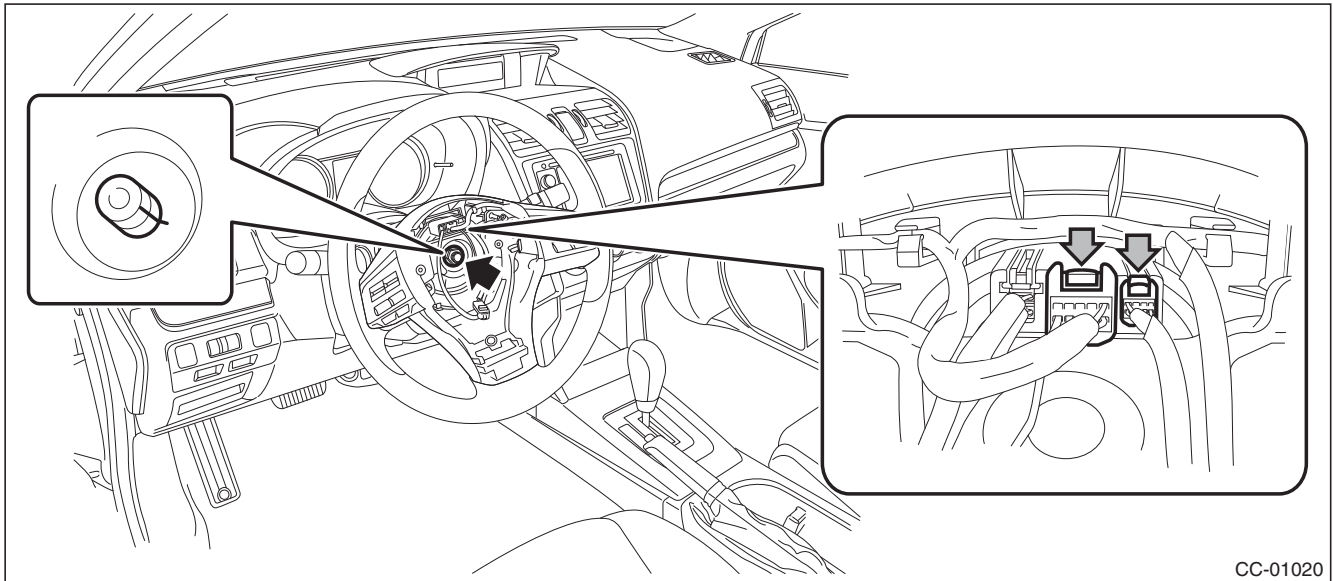
- Always use the steering wheel puller for removal to avoid deforming the steering wheel.
- If the steering wheel has been removed, make sure that the roll connector is not turned from the original position.

(1) Disconnect the connector and remove the nut.

(2) Put alignment marks and remove the steering wheel using a steering puller.

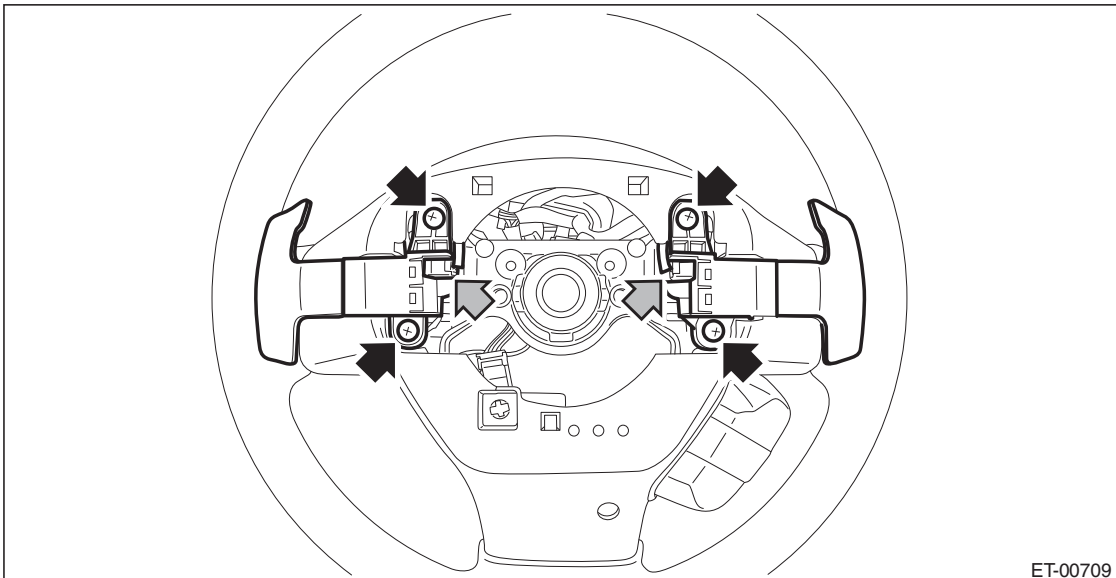
Preparation tool:

Steering wheel puller



6) Remove the cruise control command switch assembly.

(1) Remove the screw, disconnect the connector and remove the paddle shift switch. (Model with paddle shift)

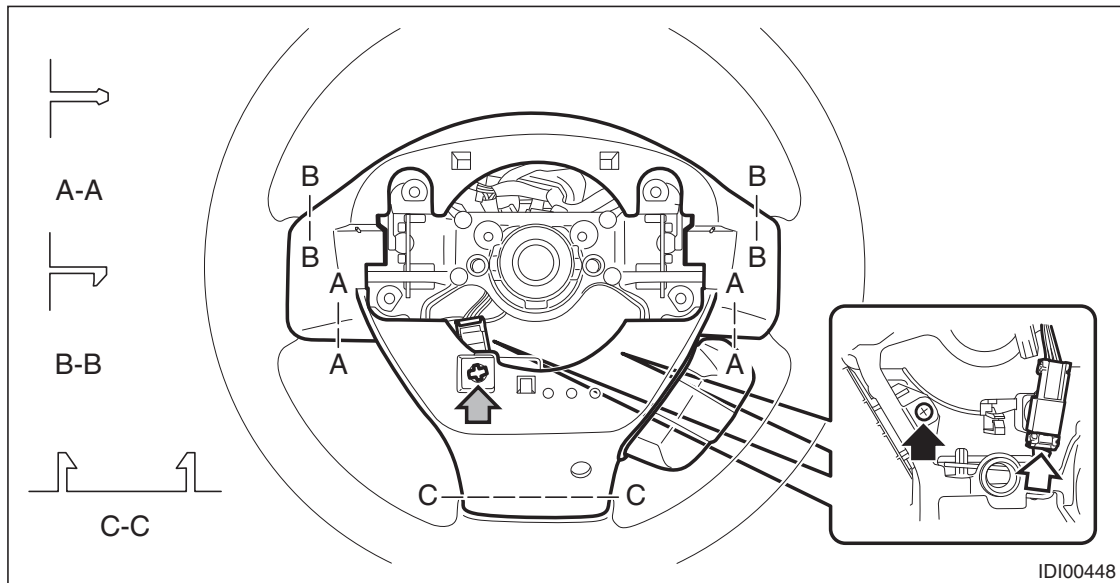


(2) Remove the steering switch connector and screw.

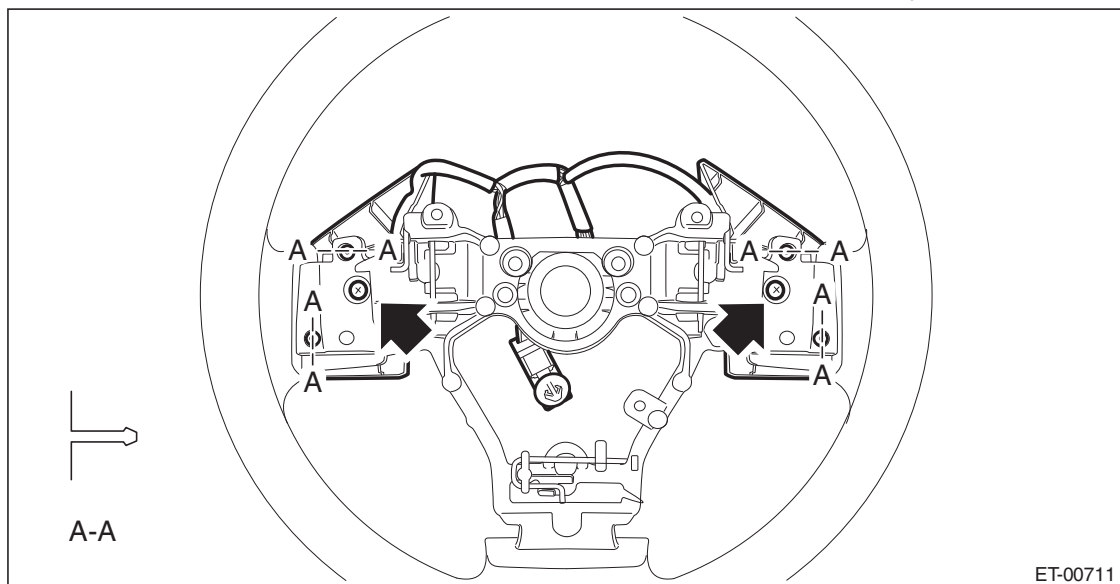
Cruise Control Command Switch

EyeSight

- (3) Release the claws and clips, and remove the lower cover - steering wheel LWR.



- (4) Remove the screw to remove the cruise control command switch assembly.



Cruise Control Command Switch

EyeSight

B: INSTALLATION

CAUTION:

- Before handling the airbag module, refer to “CAUTION” of “General Description” in “AIRBAG SYSTEM”. <Ref. to AB-9, CAUTION, General Description.>
 - Do not allow harness and connectors to interfere or get tangled up with other parts.
 - If the steering wheel and steering angle sensor (steering roll connector) are removed, adjust the steering angle sensor. <Ref. to VDC-23, ADJUSTMENT, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>
- 1) Before installing steering wheel, be sure to adjust the direction of steering roll connector with steering wheel. <Ref. to AB-103, ADJUSTMENT, Roll Connector.>
 - 2) Install each part in the reverse order of removal.

NOTE:

Align the alignment marks on the steering wheel and the column assembly - steering.

Tightening torque:

Steering wheel: 39 N·m (3.98 kgf-m, 28.8 ft-lb)

Clearance:

Between cover assembly - column and steering wheel: 4 — 6 mm (0.16 — 0.24 in)

Cruise Control Command Switch

EyeSight

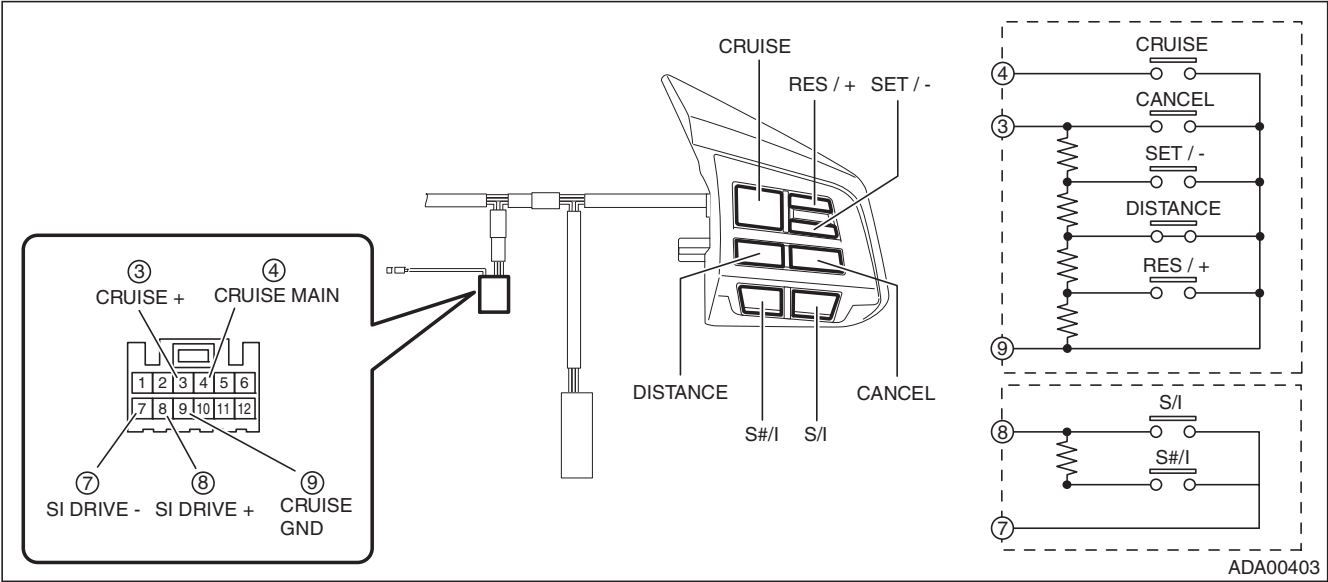
C: INSPECTION

UNIT INSPECTION

Preparation tool:

Circuit tester

1) Check the resistance between switch terminals.



Terminal No.	Inspection conditions		Standard
3 — 9	CANCEL SET/- DISTANCE RES/+	All OFF	Approx. 4020 Ω
3 — 9	CANCEL	ON	Less than 1 Ω
3 — 9	SET/-	ON	Approx. 250 Ω
3 — 9	DISTANCE	ON	Approx. 680 Ω
3 — 9	RES/+	ON	Approx. 1470 Ω
4 — 9	CRUISE (MAIN)	OFF	1 M Ω or more
4 — 9		ON	Less than 1 Ω
8 — 7	S/I S#/I	OFF	1 M Ω or more
8 — 7	S/I	ON	Less than 1 Ω
8 — 7	S#/I	ON	Approx. 1,800 Ω

2) Replace the cruise control command switch assembly if the inspection result is not within the standard.

Combination Meter

EyeSight

8. Combination Meter

A: NOTE

For the combination meter, refer to “INSTRUMENTATION/DRIVER INFO” section. <Ref. to IDI-18, Combination Meter.>

9. Transmission Control Module (TCM)

A: NOTE

For transmission control module (TCM), refer to “CONTINUOUSLY VARIABLE TRANSMISSION” section.

- Non-turbo model: <Ref. to CVT(TR580)-144, Transmission Control Module (TCM).>
- Turbo model: <Ref. to CVT(TR690)-123, Transmission Control Module (TCM).>



Stop Light & Brake Switch

EyeSight

10. Stop Light & Brake Switch

A: NOTE

For stop light and brake switch, refer to “BRAKE” section. <Ref. to BR-74, Stop Light Switch.>

11.VDC Control Module and Hydraulic Control Unit (VDCCM&H/U)

A: NOTE

For VDC control module & hydraulic control module (VDCCM&H/U), refer to “VEHICLE DYNAMICS CONTROL (VDC)” section. <Ref. to VDC-10, VDC Control Module and Hydraulic Control Unit (VDCCM&H/U).>

Multi-function Display (MFD)

EyeSight

12. Multi-function Display (MFD)

A: NOTE

For the multi-function display (MFD), refer to “INSTRUMENTATION/DRIVER INFO” section. <Ref. to IDI-25, Multi-function Display (MFD).>

13. Diagnostics with Phenomenon

A: INSPECTION

Refer to “Diagnostics with Phenomenon” of “EyeSight (DIAGNOSTICS)” section. <Ref. to ES(diag)-62, Diagnostics with Phenomenon.>



EyeSight (DIAGNOSTICS)

ES(diag)

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14. List of Diagnostic Trouble Code (DTC)	78
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16. Diagnostic Procedure with Diagnostic Trouble Code (DTC)	91

Basic Diagnostic Procedure

EyeSight (DIAGNOSTICS)

1. Basic Diagnostic Procedure

A: PROCEDURE

CAUTION:

- Start the diagnosis after the engine has started. (Cruise control main switch does not turn on even if it is pressed before the engine starts.)
- When performing diagnosis, observe the legal speed limit on the road.
- The cancel code will also appear when the cruise control is cancelled by the driver's operation. Do not confuse them.
- Be sure to get an assistant to support the diagnosis while driving, and have him/her operate the select monitor.
- Before clearing the memory, be sure to record the following data. (Obtain the data before inspection because the previous trouble or temporary stop history will be cleared once the memory clear is performed.)

- All Diagnostic Trouble Codes (DTCs)
- Cancel code of stereo camera
- Current data of stereo camera

(To obtain the data concerning camera adjustment information, previous trouble or temporary stop history, all data must be measured for a few seconds after the engine has started.)

- When the temporary stop occurs, the stereo camera may be affected by the dirt that the driver cannot recognize. In this case, cleaning of the windshield glass can reduce the development of this symptom. <Ref. to ES(diag)-8, WINDSHIELD GLASS AND DASHBOARD, INSPECTION, General Description.>

Step	Check	Yes	No
1 PREPARATION BEFORE INSPECTION. Using the Check List for Interview, confirm the condition of the malfunction occurrence from the user. <Ref. to ES(diag)-3, CHECK, Check List for Interview.>	Is there any component that obviously seems to affect the malfunction?	Repair or replace the component that seems to affect the malfunction.	Go to step 2.
2 CHECK DTC. Read the DTC using Subaru Select Monitor. NOTE: When communication with the stereo camera could not be established, check the circuit. <Ref. to ES(diag)-20, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, INSPECTION, Subaru Select Monitor.>	Is DTC displayed on Subaru Select Monitor?	Perform the diagnosis according to the List of Diagnostic Trouble Code (DTC). <Ref. to ES(diag)-78, List of Diagnostic Trouble Code (DTC).> If the diagnostic codes other than the stereo camera are displayed, refer to the diagnosis for the relevant codes.	Go to step 3.
3 CHECK CANCEL CODE. Read the cancel code related to the stereo camera using the Subaru Select Monitor.	Is cancel code related to the stereo camera displayed on the Subaru Select Monitor?	Perform the diagnosis according to the List of Cancel Code. <Ref. to ES(diag)-82, List of Cancel Code.>	Go to step 4.
4 PERFORM DIAGNOSTICS WITH PHENOMENON. Using the diagnostics with phenomenon, perform inspection. <Ref. to ES(diag)-62, Diagnostics with Phenomenon.>	Does the following apply? No phenomenon described in the diagnostics with phenomenon occur / No indicators show sign of malfunction.	Finish the diagnosis.	Perform the diagnosis according to the diagnostics with phenomenon.

Check List for Interview

EyeSight (DIAGNOSTICS)

2. Check List for Interview

A: CHECK

Inspect the following items regarding the vehicle's state.

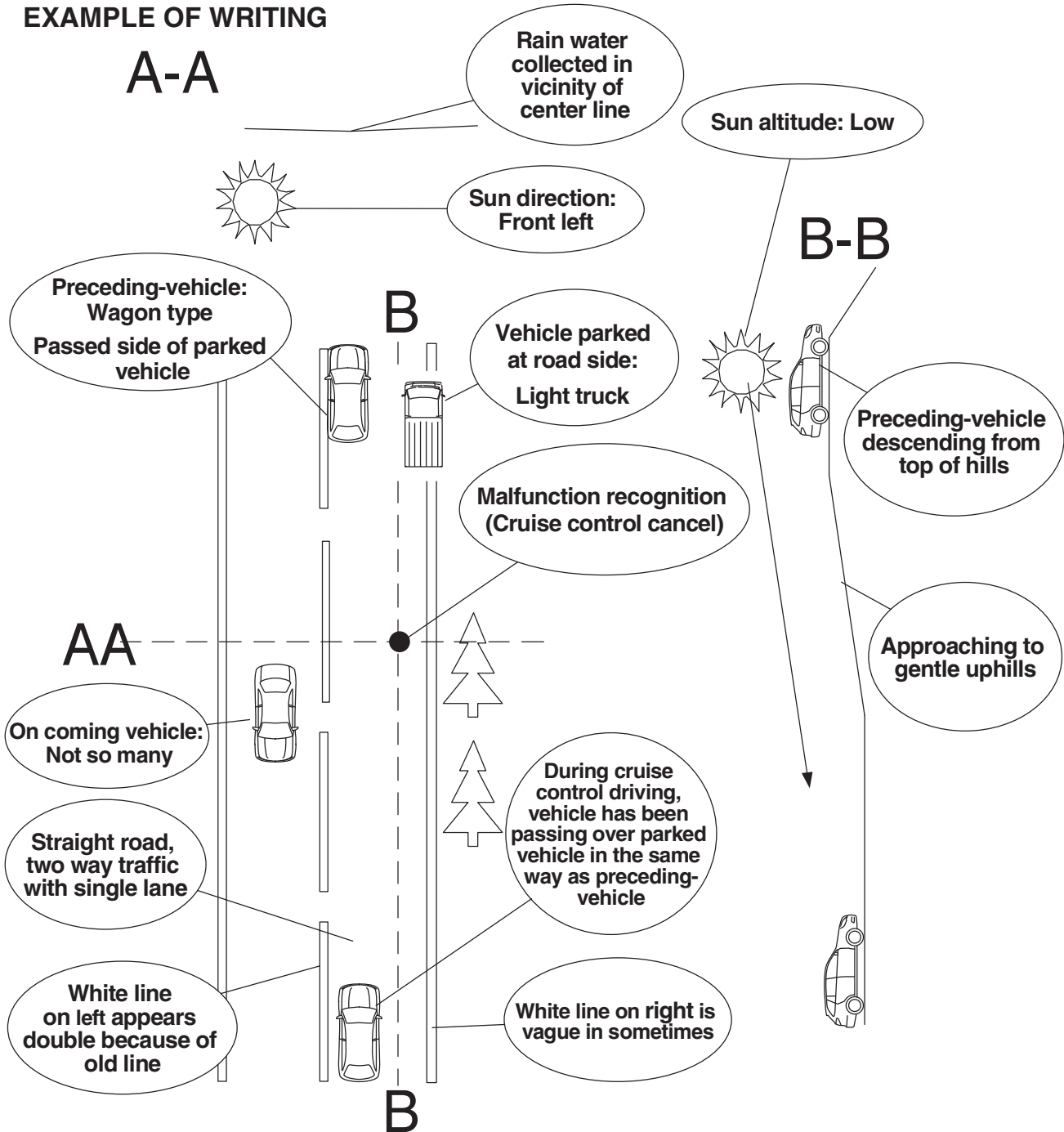
Writer/ Inspector	Writer's name			
	Inspector's Name			
Vehicle information	Car accessory equipment condition	Car accessory is installed to the windshield glass.	No/Yes (Position:)	
		Other	No/Yes (Accessory's name:)	
	Is there any modification for the following items?	Suspension?	Not changed/Changed (Specifically:)	
		Headlight?	Not changed/Changed (Specifically:)	
		Tire size?	Not changed/Changed (Specifically:)	
		Front wiper?	Not changed/Changed (Specifically:)	
	How is the condition around camera?	Is there any scratch or damage on the windshield glass?	No/Yes (Specifically:)	
		Are antennas, etc. attached on the prohibited area?	No/Yes (Specifically:)	
		Is wide mirror or accessory attached?	No/Yes (Specifically:)	
	How is the surface condition of the windshield glass?	Presence of oil film, fogging, dirt and/or glass coating	No/Yes (Specifically:)	
	How is the condition of the dashboard?	Is there anything that can be easily reflected against the windshield glass on the dashboard?	No/Yes (Specifically:)	
	How is the deterioration of the wiper?	Does any streak or uneven wiping area remain in front of the camera?	No/Yes (Specifically:)	
	How is the condition of the tire?	Is there any wear? Is there any excessive wear difference?	No/Yes (Specifically:)	
		Is the air pressure proper?	Proper/Improper (Specifically:)	
How is the condition of the camera lens filter?	Is there finger print adhesion or cracks on the lens filter?	No/Yes (Specifically:)		
Description of malfunction	What kind of malfunction has been detected?	Failure/temporary stop/faulty operation of adaptive cruise control/faulty operation of pre-collision brake/other faulty operations		
	What kind of DTC and/or cancel code is displayed?			
	How is the meter display?	EyeSight warning light	Off/On/Blink	
		Pre-collision brake OFF indicator light	Off/On	
		Lane departure warning OFF indicator light	Off/On	
LCD (E1 — E3)		E1/E2/E3		

Check List for Interview

EyeSight (DIAGNOSTICS)

EXAMPLE OF WRITING

A-A



ADA00311

General Description

EyeSight (DIAGNOSTICS)

3. General Description

A: CAUTION

1. AIRBAG SYSTEM

Airbag system wiring harness is routed near the cruise control command switch.

CAUTION:

- Do not use the electrical test equipment on the airbag system wiring harnesses and connector circuits.
- Be careful not to damage the airbag system wiring harness when servicing the cruise control command switch. Airbag system wiring harness is routed near the cruise control command switch.

2. EyeSight

CAUTION:

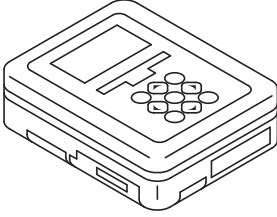
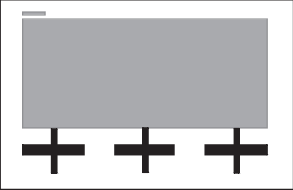
- Do not hold the camera unit of the stereo camera.
- Do not touch the lens on the stereo camera.
- Do not clean the lens of the stereo camera.
- When cleaning the windshield glass, use care so that the glass cleaner, etc. does not come in contact with the lens of the stereo camera.
- Do not make an impact or apply excessive force to the stereo camera.
- Do not disassemble the stereo camera.
- Do not change the installation position of the stereo camera or do not modify the surrounding structure.
- If the stereo camera or windshield glass is removed or replaced, always adjust or check the stereo camera.
- When lifting up the vehicle to rotate the tires, turn off the pre-crash function.
- Stereo camera axis may be displaced even in a minor collision. Even if the EyeSight warning light or etc. is not illuminated, or the E3 is not displayed on the multi information display, adjust the stereo camera.
- When removing the stereo camera cover assembly, cover the camera cover opening with the protective tape with a weak adhesive force such as masking tape, etc. <Ref. to ES-11, REMOVAL, Stereo Camera.>

General Description

EyeSight (DIAGNOSTICS)

B: PREPARATION TOOL

1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.
 ST87599YC001	87599YC001	RANDOM CHART	Used for adjusting stereo camera.

2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.
Measure (5m (16 ft) or more)	Used for adjusting stereo camera.
Leveling line	Used for adjusting stereo camera.
Plumb bob	Used for adjusting stereo camera.
Weight	Used for adjusting stereo camera.
Packing tape	Used for adjusting stereo camera.
Masking tape	Used for removing and installing stereo camera cover assembly.

General Description

EyeSight (DIAGNOSTICS)

C: INSPECTION

1. BATTERY

Measure the battery voltage and specific gravity of electrolyte.

Standard voltage:

12 V or more

Specific gravity:

1.260 or more

2. WINDSHIELD GLASS AND DASHBOARD

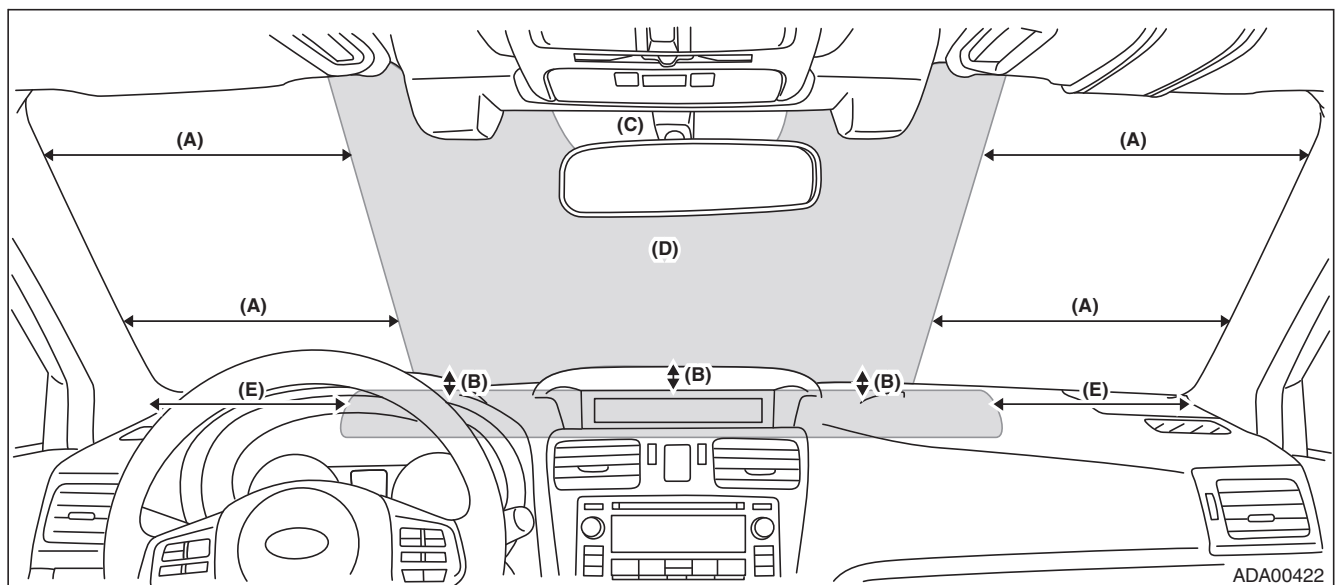
Remove the windshield glass and dashboard in front of the stereo camera.

Standard:

There must be no oil film, dirt, scratch or fogging that obstructs the forward visibility of the stereo camera.

Do not stick or attach the aftermarket parts on the prohibited area (D) shown in the figure below. Even outside the prohibited area, if the abnormal operation occurs due to the reflection of the light or the reflection on the glass, change the adhering position or installation position.

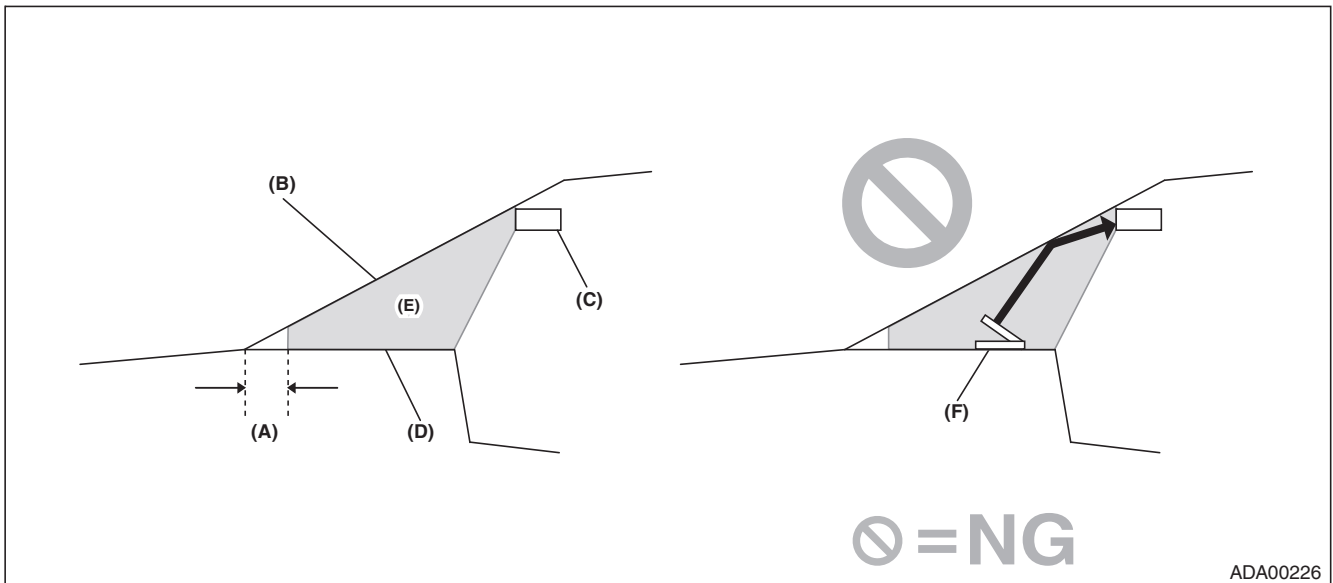
- **Application of stickers or antennas, installation of wide-type mirror**
 - ***This will affect the visibility of the stereo camera, causing the function not to operate correctly.***
- **Placement of navigation unit, ETC or other things on the dashboard**
 - ***These things will be reflected on the windshield glass, affecting the recognition of the stereo camera, thus causing the function not to operate correctly.***
- Front view



General Description

EyeSight (DIAGNOSTICS)

- Side view



ADA00226

- (A) 120 mm (4.7 in)
- (B) Windshield glass

- (C) Stereo camera cover
- (D) Dashboard

- (E) Prohibited area
- (F) External monitor etc.

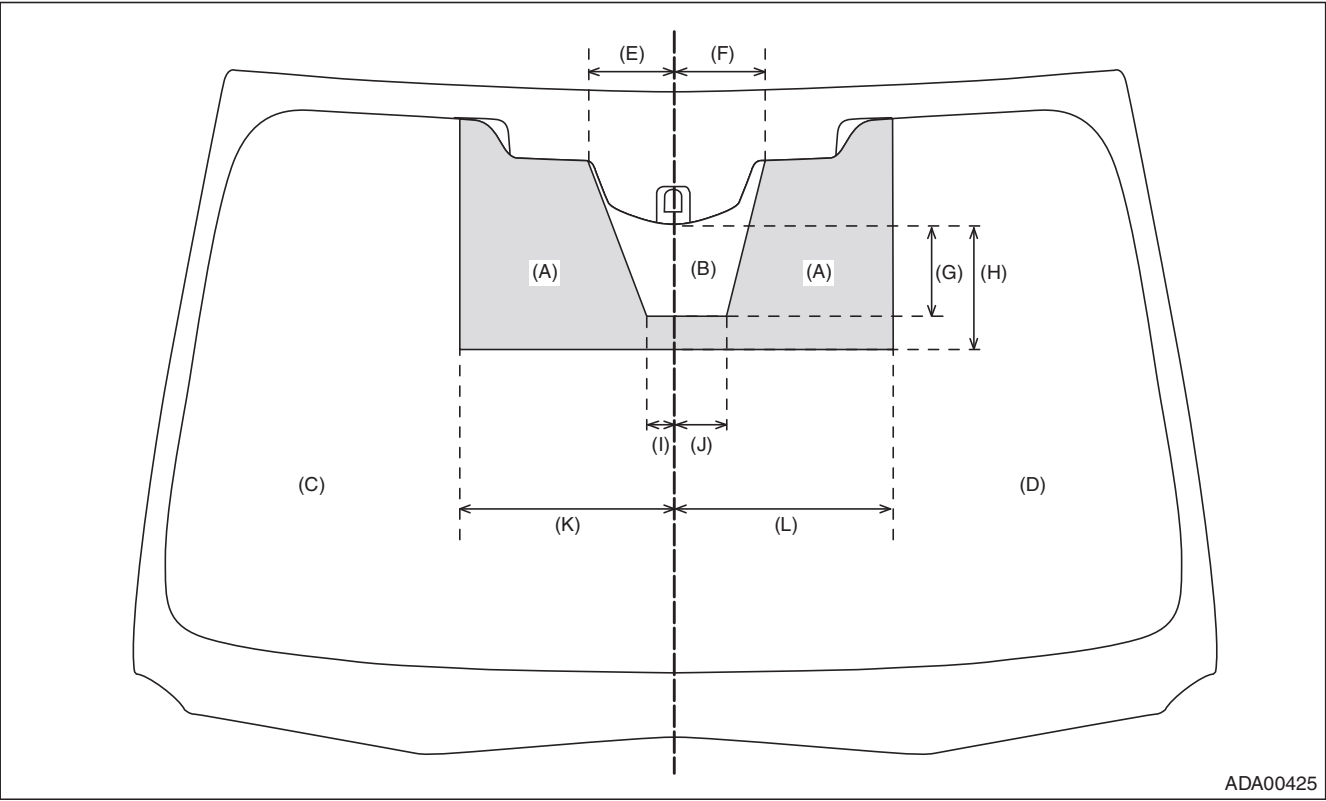
NOTE:

- Clean the windshield glass if dirt or fogging is found on the glass. Repair or replace the glass if damage is found.
 - When cleaning the inner side of the windshield glass, be careful not to touch the lens of the stereo camera. Take care so that the glass cleaner is not applied to the lens. (As with the removal of the stereo camera, cover the camera cover opening with the protective tape with a weak adhesive force such as masking tape, etc before operation. After operation, be sure to remove the tape.) <Ref. to ES-11, REMOVAL, Stereo Camera.>
 - When replacing the windshield glass, be sure to replace the part for the EyeSight.
 - If the glass is removed or replaced, always perform the stereo camera adjustment and inspection.
- Relocate any aftermarket parts out of the prohibited area.
- Do not touch the lens on the stereo camera. Do not clean the lens of the stereo camera. (If the lens surface is touched, the lens hood must be replaced as it is impossible to clean the lens surface for ensuring quality.)

General Description

EyeSight (DIAGNOSTICS)

- If the damage is found in the glass repair prohibited area shown in the figure below, replace the glass.
 - Damage in the prohibited area can affect the recognition of the stereo camera even if it is repaired, and thereby EyeSight function may not operate properly.

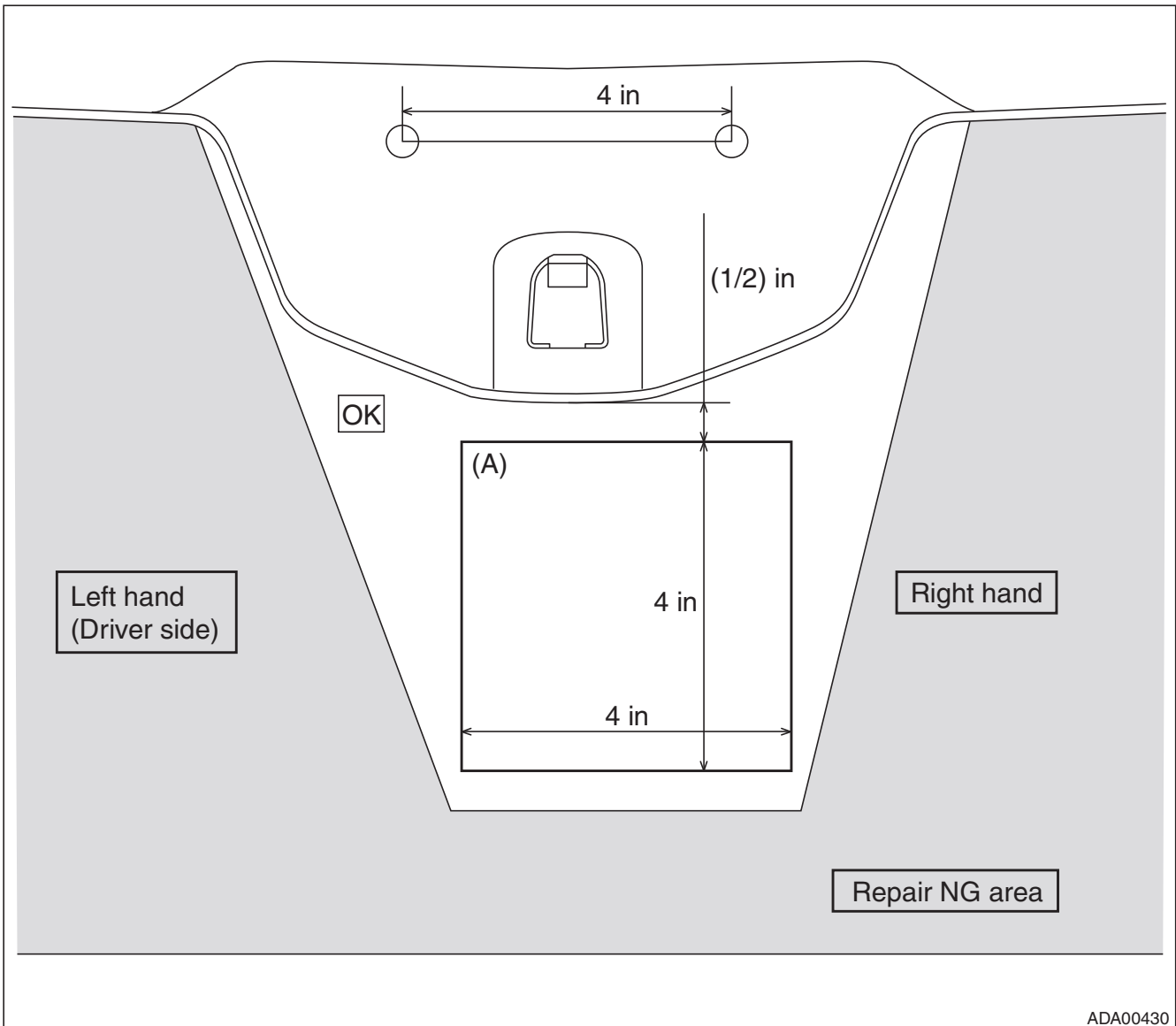


(A)	Glass repair prohibited area	(E)	115 mm (4 1/2 in)	(I)	36 mm (1 1/4 in)
(B)	Glass repairable area	(F)	125 mm (4 3/4 in)	(J)	72 mm (2 3/4 in)
(C)	Glass repairable area (Driver's side)	(G)	127 mm (5 in)	(K)	290 mm (11 1/2 in)
(D)	Glass repairable area (Passenger's side)	(H)	170 mm (6 3/4 in)	(L)	300 mm (11 3/4 in)

General Description

EyeSight (DIAGNOSTICS)

- Install the ETC transponder inside the area (A) shown in the figure below.
- Before installing, attach a full-scale copy of the following figure onto the windshield glass surface to install the parts to correct positions.
- Align the position with respect to the end of the ceramic area.
 - Prepare a full-scale copy in which the reference dimension on the upper part of the figure actually has 4 inches long.
 - Only the transponder with a thickness of 1.5 inches or less can be used.



General Description

EyeSight (DIAGNOSTICS)

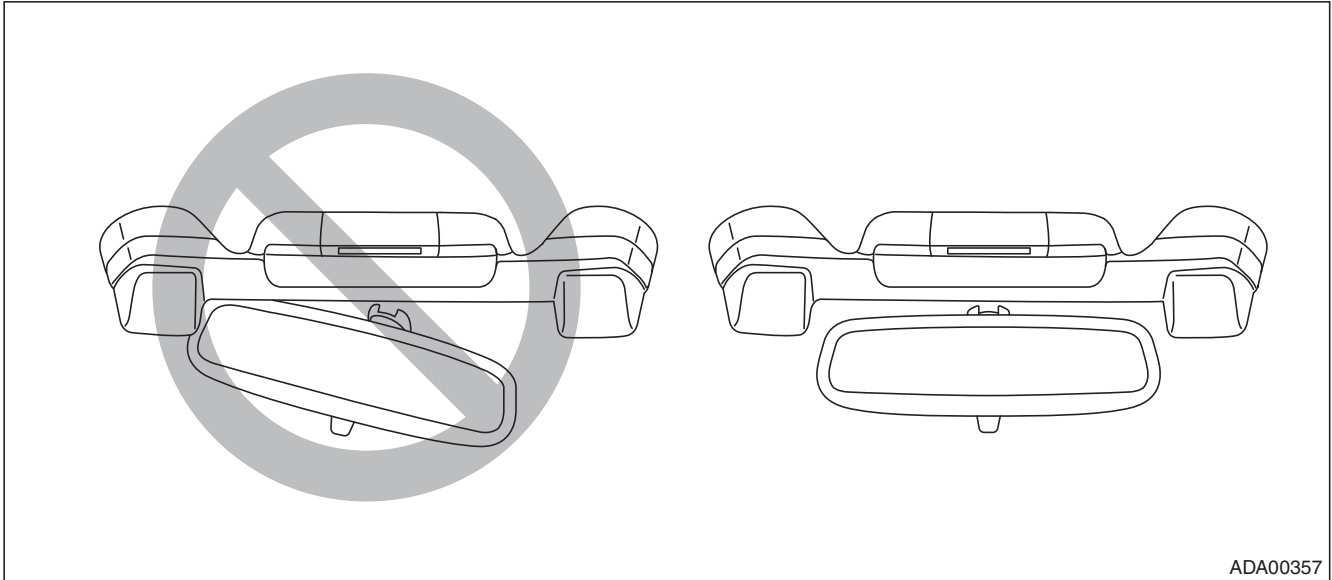
3. REAR VIEW MIRROR

Check the rear view mirror condition.

Standard:

*The rear view mirror other than genuine parts shall not be used. (Wide mirrors shall not be used)
The visibility of the stereo camera shall not be blocked.*

— This will affect the visibility of the stereo camera, causing the system not to operate correctly.



4. FRONT WIPER

Check the wiping condition of windshield glass.

Standard:

Use Subaru genuine part only for wiper blade body and blade rubber.

— Using the part other than genuine part will affect the recognition of the stereo camera, which may cause the function not to operate correctly.

Do not continue using the damaged blade rubber.

— The glass may be damaged. If the wiping performance decreases, or in the distinct streak is found, replace it as soon as possible.

NOTE:

Clean the windshield glass if oil film or dirt is found.

5. TIRE INFLATION PRESSURE

Check the tire air pressure.

Standard:

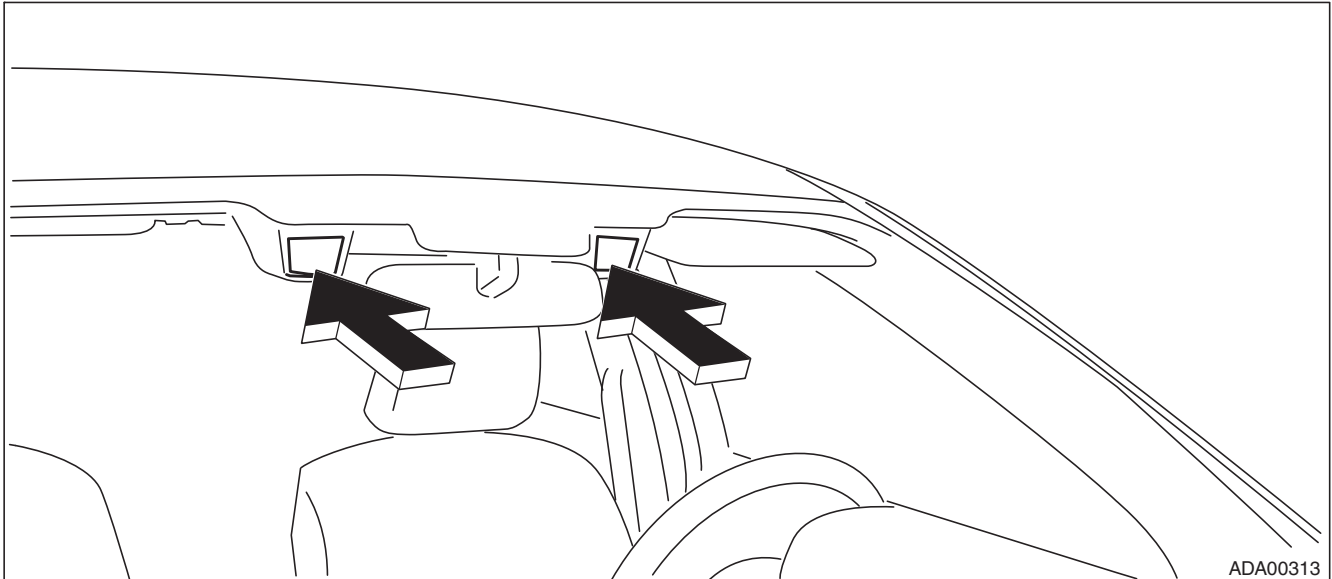
Adjust to the specified air pressure. <Ref. to WT-2, SPECIFICATION, General Description.>

Do not install worn tire or tires with excessive wear difference.

Install tires with specified size.

6. STEREO CAMERA

Check the lens filter on the left and right camera lenses of the stereo camera for fingerprints or lens filter for cracks or etc. through the windshield glass.



NOTE:

- Do not remove the camera or camera cover to check the lens.
- When spider's web or insects are found in the visibility of the camera or lens hood, remove it using the air blow not to touch the lens surface. Do not cover them with hand or cloth.
- Thin and uniform adhesion of dust, dirt or tobacco stains to the lens filter surface resulting from normal use will not be an obstacle. Do not attempt to clean in such cases.
- If oil from such as a fingerprint adheres or an excessive dirt adheres, or if lens filter cracks, the lens hood must be replaced. <Ref. to ES-16, REPLACEMENT OF LENS HOOD, REPLACEMENT, Stereo Camera.>
- If the fingerprint adhesions or cracks occur on the lens filter, the following failures may arise.
 - The vehicle may not be able to detect the preceding vehicle or obstacle because the defects can induce the irregular reflection of the headlight of oncoming vehicle.
 - The vehicle may not be able to detect the preceding vehicle or obstacle because the defects can induce the irregular reflection of the brake light of the preceding vehicle.
 - All the functions of the EyeSight may be suspended by the self-diagnosis function equipped with the camera.
 - When the lens filter is broken, the vehicle may not be able to detect the preceding vehicle or obstacle all day and all night.
- Even if the lens filter is not touched, applying the force to the black hood securing the lens filter may tension the lens filter to crack it.
- Do not clean the lens filter with any cleaner. It is quite difficult to uniformly clean both of the right and left lenses, and such an attempt just ends up spreading dirt and will cause problems as same as those from oil film.

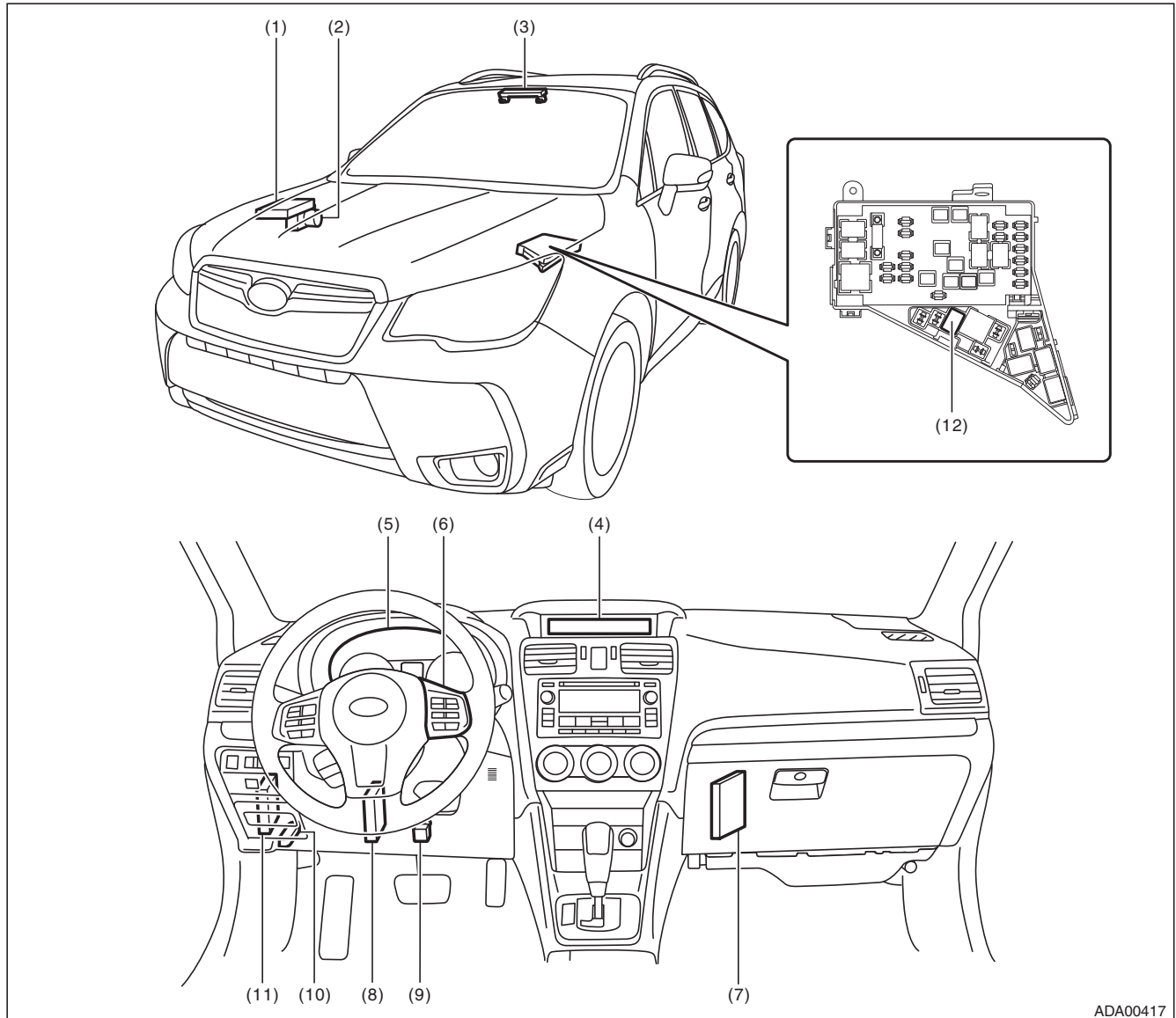
Electrical Component Location

EyeSight (DIAGNOSTICS)

4. Electrical Component Location

A: LOCATION

1. EyeSight SYSTEM



ADA00417

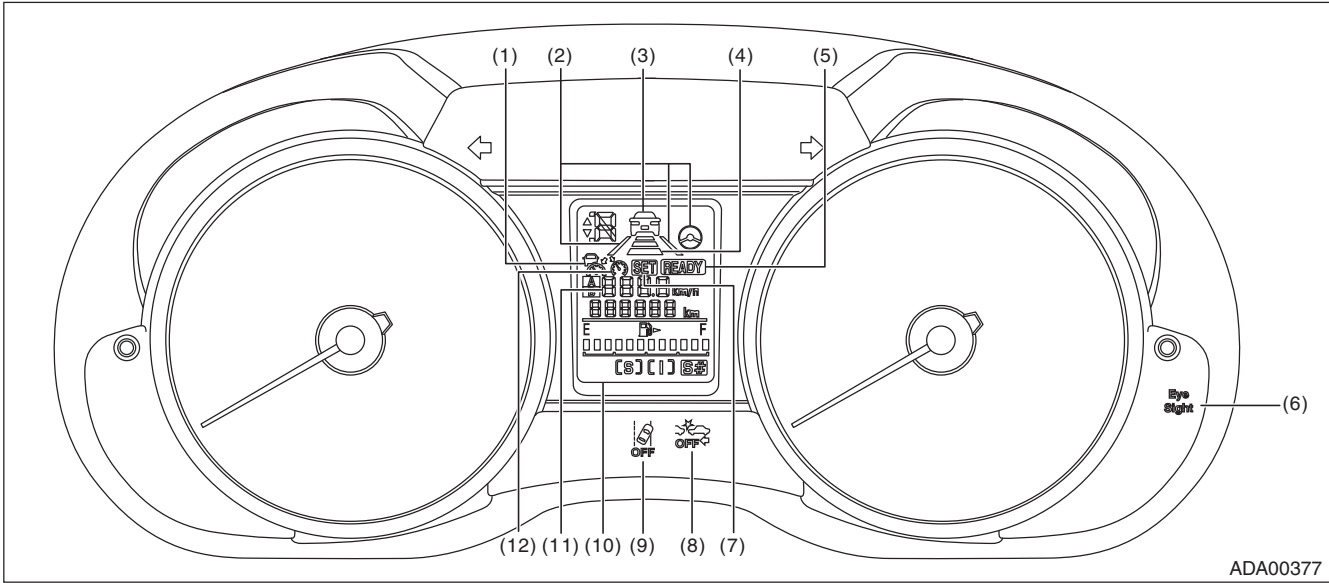
- | | | |
|---|---|---------------------------------|
| (1) Engine control module (ECM) (turbo model) | (5) Combination meter | (9) Stop light and brake switch |
| (2) VDC control module (VDCCM) | (6) Cruise control command switch | (10) Data link connector |
| (3) Stereo camera | (7) Engine control module (ECM) (non-turbo model) | (11) Body integrated unit |
| (4) MFD (Multi-function display) | (8) Transmission control module (TCM) | (12) Brake light relay |

Electrical Component Location

EyeSight (DIAGNOSTICS)

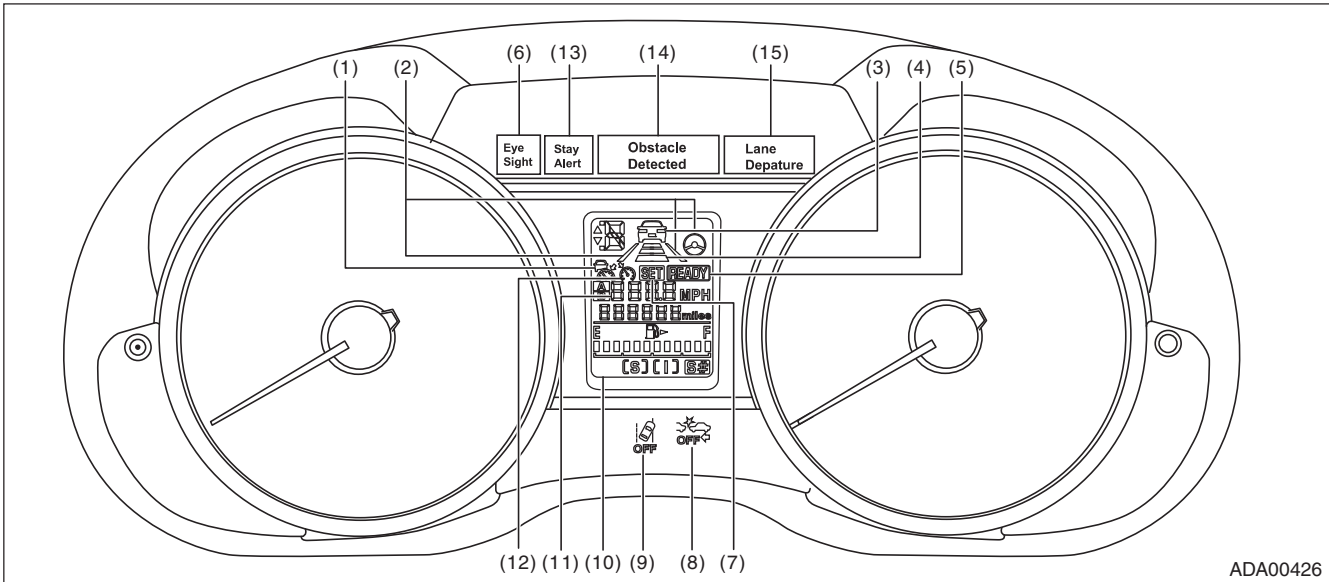
2. COMBINATION METER

- C0 model



- | | | |
|---|---|--|
| (1) Adaptive cruise display | (5) READY indicator | (9) Lane departure warning OFF indicator light |
| (2) Lane indicator/Steering wheel indicator | (6) EyeSight warning light | (10) Multi-information display |
| (3) Preceding vehicle indicator | (7) SET indicator | (11) Set vehicle speed display |
| (4) Following distance setting indicator | (8) Pre-collision brake OFF indicator light | (12) Conventional cruise display |

- Except for C0 model

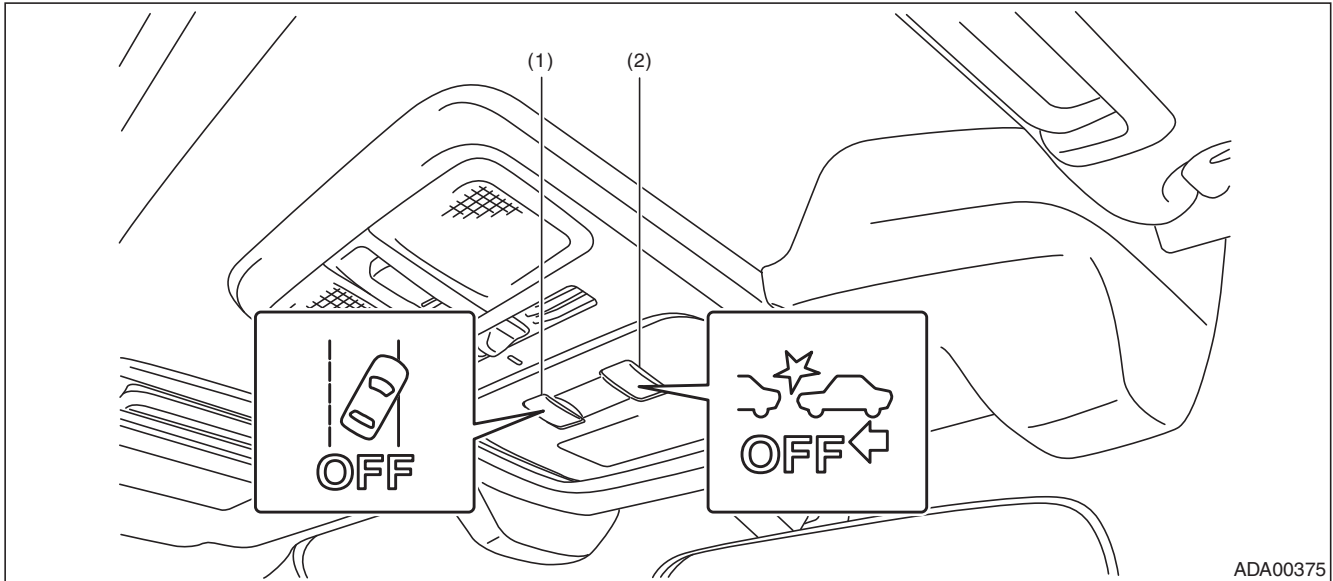


- | | | |
|---|--|------------------------------------|
| (1) Adaptive cruise display | (6) EyeSight warning light | (11) Set vehicle speed display |
| (2) Lane indicator/Steering wheel indicator | (7) SET indicator | (12) Conventional cruise display |
| (3) Preceding vehicle indicator | (8) Pre-collision brake OFF indicator light | (13) "Stay Alert" indicator |
| (4) Following distance setting indicator | (9) Lane departure warning OFF indicator light | (14) "Obstacle Detected" indicator |
| (5) READY indicator | (10) Multi-information display | (15) "Lane Departure" indicator |

Electrical Component Location

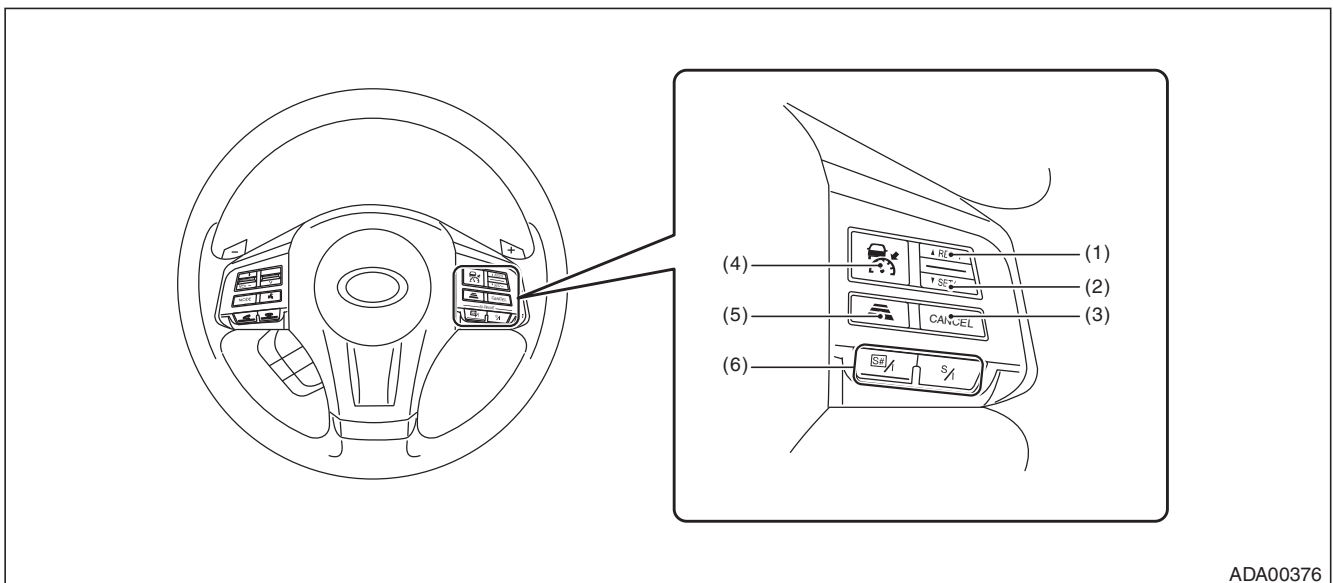
EyeSight (DIAGNOSTICS)

3. SWITCH



ADA00375

- (1) Lane departure warning OFF switch
(2) Pre-collision brake OFF switch



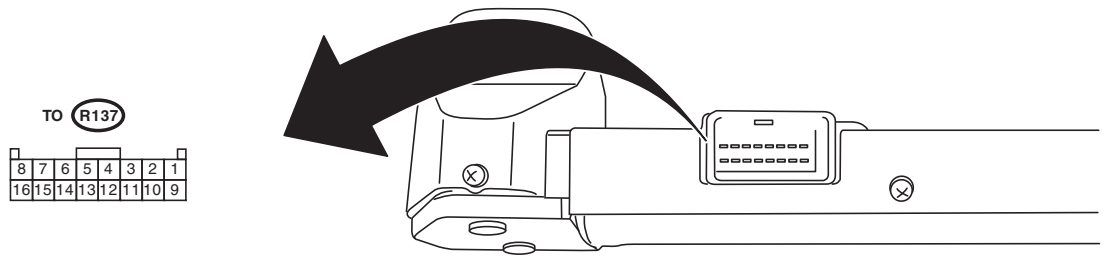
ADA00376

- (1) RES/+ (Resume/+) switch
(2) SET/- (Set/-) switch
(3) CANCEL switch
(4) CRUISE switch
(5) Following distance setting switch
(6) SI-DRIVE switch

5. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION

1. STEREO CAMERA



ADA00104

Signal name and contents	Terminal No.	Measuring conditions and status		Standard
		Key switch	Operation or condition	
Battery power supply	16	OFF	Always	Power supply voltage
Ignition power supply	6	ON	—	Power supply voltage (DC/DC converter output voltage)
Pre-collision brake OFF switch	12 — chassis ground	ON	Switch pressed.	Approx. 0 V
			—	Approx. 12 V
Lane departure warning OFF switch	13 — chassis ground	ON	Switch pressed.	Approx. 0 V
			—	Approx. 12 V
CAN-H	10	—	—	—
CAN-L	9	—	—	—
GND	7	ON	—	Approx. 0 V
	15			

Control Module I/O Signal

EyeSight (DIAGNOSTICS)

2. ENGINE CONTROL MODULE (ECM)

For details on the input/output signals for the engine control module, refer to ENGINE (DIAGNOSTICS). <Ref. to EN(H4DO)(diag)-19, ELECTRICAL SPECIFICATION, Engine Control Module (ECM) I/O Signal.>

3. VDC CONTROL MODULE (VDCM)

For details on the input/output signals for VDC control module, refer to VDC (DIAGNOSTICS). <Ref. to VDC(diag)-12, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

4. TRANSMISSION CONTROL MODULE (TCM)

For details on the input/output signals for the transmission control module, refer to AUTOMATIC TRANSMISSION (DIAGNOSTICS). <Ref. to CVT(diag)-12, Transmission Control Module (TCM) I/O Signal.>

5. BODY INTEGRATED UNIT

Refer to the BODY CONTROL SYSTEM (DIAGNOSTICS) for the I/O Signal of the body integrated unit. <Ref. to BC(diag)-6, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

6. COMBINATION METER

For details on the input/output signals for the combination meter, refer to INSTRUMENTATION/DRIVER INFO (DIAGNOSTICS). <Ref. to IDI(diag)-7, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

7. MFD

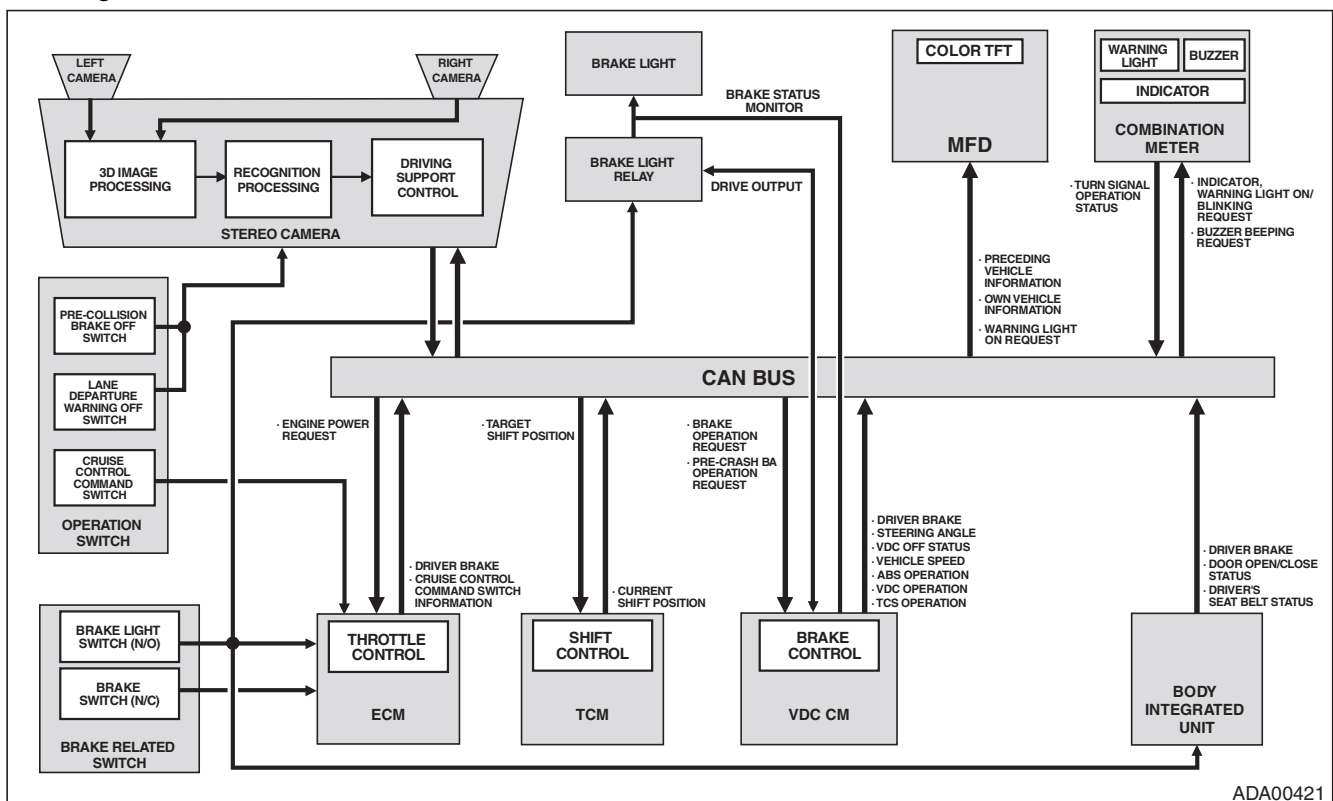
For details on the input/output signals for MFD, refer to INSTRUMENTATION/DRIVER INFO (DIAGNOSTICS). <Ref. to IDI(diag)-7, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

B: WIRING DIAGRAM

<Ref. to WI-238, EyeSight System.>

C: SYSTEM BLOCK DIAGRAM

Main signals used between stereo camera and relevant CM



6. Subaru Select Monitor

A: OPERATION

1. GENERAL DESCRIPTION

For on-board diagnosis function of the EyeSight, use the Subaru Select Monitor.

The on-board diagnosis function operates in three categories, which are used depending on the type of problems;

1) Diagnosis with diagnostic trouble code (DTC):

When the electrical failure occurs in the EyeSight, DTC is detected from the stereo camera. If the DTC is detected, the relevant DTC is displayed by illuminating or blinking the EyeSight warning light. To check the details concerning the DTC, use the Subaru Select Monitor.

2) Diagnosis with cancel code:

(1) This category of diagnosis requires actual vehicle driving in order to determine the cause, as when cruise speed is cancelled during driving although cruise cancel condition is not entered.

(2) Cruise control memory in ECM and stereo camera stores the cancel condition (Code No.) which occurred during driving. When there are multiple cancel conditions (Code No.), they are shown on the Subaru Select Monitor.

CAUTION:

- In the cruise control memory, not only the cruise control “cancel” occurred (although the “cancel” operation is not entered by the driver), but also the “cancel” condition input by the driver is stored.

- The latest memory content (latest code) is cleared when ignition switch is turned to OFF. However, memory contents set by the diagnosis of faulty switches related to the system and cruise control will remain as trouble history (memory code) after the ignition switch is turned to OFF.

3) Real-time Diagnosis:

Real-time diagnosis function is used to determine whether or not the input signal system is in good order, according to signal emitted from switches, sensors, etc.

(1) Vehicle cannot be driven at cruise speed when the problem occurs in the cruise control system or relevant circuits.

(2) Monitor the signal conditions from switches and sensors.

2. BASIC OPERATION

For operation procedures, refer to the “PC application help for Subaru Select Monitor”.

Subaru Select Monitor

EyeSight (DIAGNOSTICS)

B: INSPECTION

1. COMMUNICATION FOR INITIALIZING IMPOSSIBLE

- Communication error with stereo camera

DETECTING CONDITION:

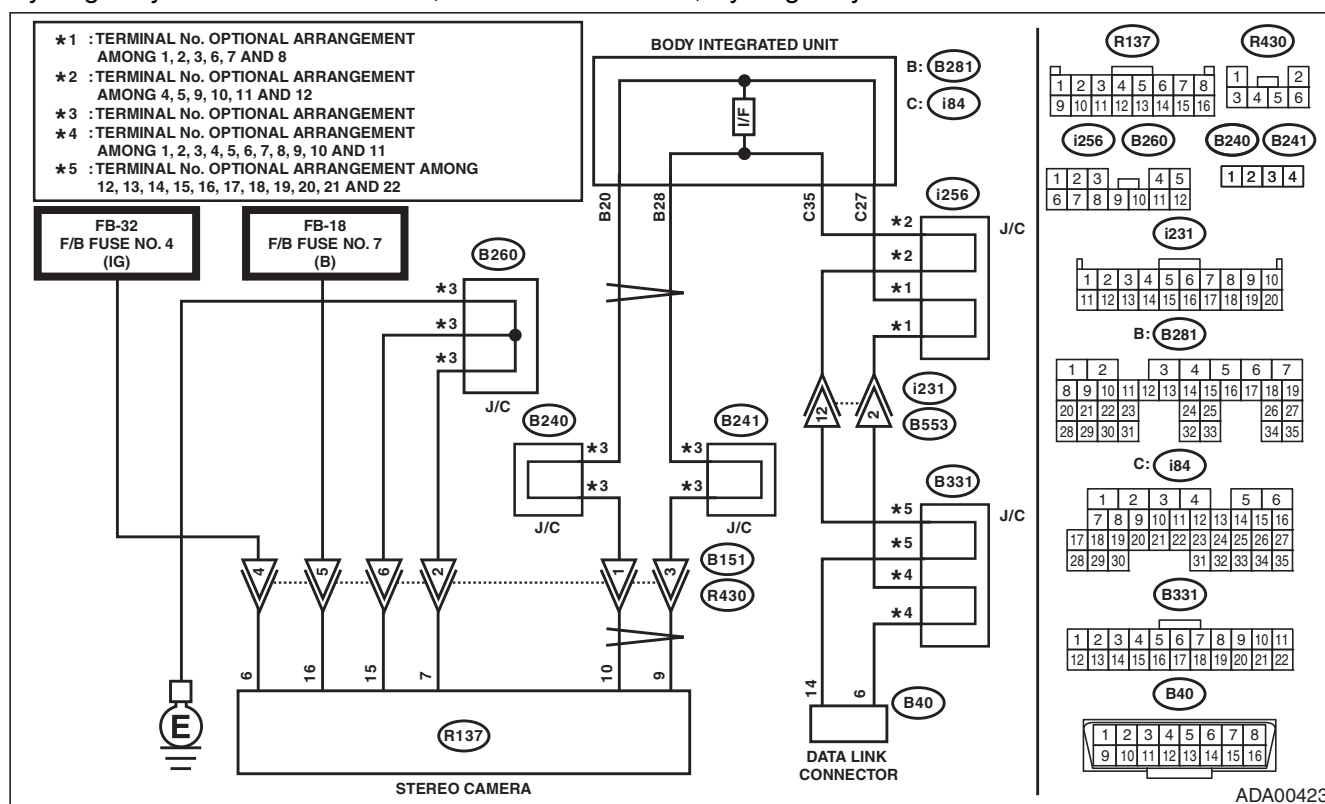
- Defective harness connector
- Power supply circuit malfunction
- Defective stereo camera
- Defective CAN system
- Defective Subaru Select Monitor

TROUBLE SYMPTOM:

- EyeSight warning light blinks.

WIRING DIAGRAM:

EyeSight System <Ref. to WI-238, WIRING DIAGRAM, EyeSight System.>



Step	Check	Yes	No
1	CHECK IGNITION SWITCH.		
1	Is the ignition switch ON?	Go to step 2.	Turn the ignition switch to ON, and select {ADA adaptive cruise control system} using the Subaru Select Monitor.
2	CHECK BATTERY. 1) Turn the ignition switch to OFF. 2) Measure the battery voltage.		
2	Is the voltage 10 V or more?	Go to step 3.	Charge or replace the battery.
3	CHECK BATTERY TERMINAL.		
3	Is the battery terminal contact proper?	Go to step 4.	Connect the battery terminal securely or replace it.

Subaru Select Monitor

EyeSight (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK SUBARU SELECT MONITOR COMMUNICATION. 1) Turn the ignition switch to ON. 2) Using the Subaru Select Monitor, check whether the communication can be executed normally.	Is the communication between Subaru Select Monitor and body integrated unit normal?	Go to step 5.	Check the connection of the Subaru Select Monitor, and perform communication with the body integrated unit again.
5 READ DTC OF BODY INTEGRATED UNIT. Select {Integ. unit mode}, and check DTC.	Is any DTC other than "Lost Communication With EyeSight" detected?	Perform the diagnosis according to DTC.	Go to step 6.
6 CHECK HARNESS CONNECTOR BETWEEN STEREO CAMERA AND DATA LINK CONNECTOR. 1) Turn the ignition switch to OFF. 2) Disconnect the stereo camera connector. 3) Measure the resistance between the stereo camera and the data link connector. Connector & terminal (R137) No. 10 — (B40) No. 6: (R137) No. 9 — (B40) No. 14:	Is the resistance less than 10 Ω?	Go to step 7.	Repair or replace the harness and connectors between the stereo camera and data link connector.
7 CHECK POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to ON. 2) Measure the voltage between stereo camera and chassis ground. Connector & terminal (R137) No. 6 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 8.	Check the power supply circuit.
8 CHECK GROUND CIRCUIT. 1) Turn the ignition switch to OFF, then disconnect the ground cable from battery. 2) Measure the resistance between harness connector of stereo camera and chassis ground. Connector & terminal (R137) No. 7 — Chassis ground: (R137) No. 15 — Chassis ground:	Is the resistance less than 10 Ω?	Go to step 9.	Check the harness from stereo camera to chassis ground.
9 CHECK CONNECTOR.	Is there poor contact of stereo camera connector?	Repair the connector, or replace harness.	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>

Read Current Data

EyeSight (DIAGNOSTICS)

7. Read Current Data

A: OPERATION

1. STEREO CAMERA

- 1) On «Main Menu» display, select {Each System Check}.
- 2) On «System Selection Menu» display, select {ADA adaptive cruise control system}.
- 3) On «ADA adaptive cruise control system» display, select {EyeSight (from 2009MY)}.
- 4) Click the [OK] button after the information of stereo camera has been displayed.
- 5) On «EyeSight (from 2009MY)» display, select {Current Data Display & Save}.
- 6) Using the scroll key, scroll the display screen up or down until the following data is shown.

Display	Content	Unit of measure	Reference
Camera ID	Display of serial No. inside the stereo camera	—	Displayed by 12 digits.
Camera battery voltage	Display of input voltage of stereo camera	V	Battery voltage
Camera temperature sensor (present)	Display of present temperature for internal circuit of stereo camera	°C	—
Camera temperature sensor (past MAX value)	Display of stereo camera internal circuit temperature (past MAX value)	°C	—
Camera temperature sensor (past MIN value)	Display of stereo camera internal circuit temperature (past MIN value)	°C	—
Image ON/OFF status	ON/OFF status of present image sensor	—	ON (If the acceptable temperature range of the camera is exceeded or internal camera failure (partial) occurs, the image sensor turns off.)
Initial inspection distance accuracy rate	Factory settings information	%	—
Initial inspection distance	Factory settings information	—	—
Initial optical axis direction (X-axis)	Factory settings information	pix	—
Initial optical axis direction (Y-axis)	Factory settings information	pix	—
Initial optical axis correction value (X-axis)	Factory settings information	pix	—
Initial optical axis correction value 2 (X-axis)	Factory settings information	pix	—
Initial optical axis correction value (Y-axis)	Factory settings information	pix	—
Initial shim type	Factory settings information	—	One of the followings is displayed. • Upward correction • Standard • Downward correction
Initial left image, rotation deviation correction value	Factory settings information	—	—
Initial left image, vertical deviation correction value	Factory settings information	—	—
Initial distance correction value	Factory settings information	—	—
Initial error code	Factory settings information	—	—

Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Initial aiming completion flag	Factory settings information	—	Aiming completed (After factory shipping, when stereo camera is replaced or adjusted, "Aiming not completed" is displayed.)
D C-Ratio	Dealer adjustment/inspection information	%	—
Distance	Dealer adjustment/inspection information	—	—
Optical axis correction value (X-axis)	Dealer adjustment/inspection information	pix	—
Optical axis correction value 2 (X-axis)	Dealer adjustment/inspection information	pix	—
Optical axis correction value (Y-axis)	Dealer adjustment/inspection information	pix	—
Left image, rotation deviation correction value	Dealer adjustment/inspection information	—	—
Left image, vertical deviation correction value	Dealer adjustment/inspection information	—	—
Distance correction value	Dealer adjustment/inspection information	—	—
Error code	Dealer adjustment/inspection information	—	—
Aiming execution history	Dealer adjustment/inspection information	—	—
Aiming completion flag	Dealer adjustment/inspection information	—	Aiming not completed (After factory shipping, when stereo camera is replaced or adjusted, "Aiming completed" is displayed.)
Automatic adjustment status	Index for automatic adjustment operation performed by the driving test after the completion of the optical axis adjustment	—	"1F" is displayed when completed.
Camera adjustment value (pitching)	Present adjustment status	pix	—
Camera adjustment value (yaw)	Present adjustment status	pix	—
Camera adjustment value (yaw 2)	Present adjustment status	pix	—
Pre-crash brake function	ON/OFF status by pre-collision brake OFF switch	—	Switch status is displayed. • ON • OFF
Lane deviation warning function	ON/OFF status by lane departure warning OFF switch	—	Switch status is displayed. • ON • OFF
Headlight SW (LO)	Operation status of headlight LO switch	—	Switch status is displayed. • ON • OFF
Turn SW (Left)	Operation status of left turn switch	—	Switch status is displayed. • ON • OFF
Turn SW (Right)	Operation status of right turn switch	—	Switch status is displayed. • ON • OFF
Wiper SW (Front)	Operation status of front wiper switch	—	Switch status is displayed. • ON • OFF
Distance from leading vehicle	Display of distance from preceding vehicle	m	—



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Lane recognition status	Display of lane recognition status	—	Displayed when 20 m or more of the vehicle lane is recognized. • Right lane recognition: "01" • Left lane recognition: "10" • Lane not recognized: "00"
Model registration information	Display of displacement and vehicle model	—	Vehicle information is displayed.
Ineffective distance data count	Number of data for invalid distance during aiming	—	—
Camera status1	Information of stereo camera	—	—
Camera status2	Information of stereo camera	—	—
Camera status3	Information of stereo camera	—	—
Camera status4	Information of stereo camera	—	—
Camera status5	Information of stereo camera	—	—
Camera status6	Information of stereo camera	—	—
Camera status7	Information of stereo camera	—	—
System software version (4BYTE)	Information of stereo camera	—	—
Recognition software version (4BYTE)	Information of stereo camera	—	—
Camera failure real-time information	Current camera failure information	—	—
Camera failure details, cumulative flag 1	Failure experience cumulative information since the last memory clear	—	—
Camera failure details, cumulative flag 2		—	—
Camera failure details, cumulative flag 3		—	—
Camera failure details, cumulative flag 4		—	—
Camera failure details, cumulative flag 5		—	—
Camera failure details, cumulative flag 6		—	—
Camera failure details, cumulative flag 7		—	—
Camera failure details, cumulative flag 8		—	—
Camera failure details, cumulative flag 9		—	—
Camera failure details, cumulative flag 10		—	—
Camera temporary stop, detail flag 1	Current camera temporary stop information <Ref. to ES(diag)-37, CAMERA TEMPORARY STOP INFORMATION, OPERATION, Read Current Data.>	—	—
Camera temporary stop, detail flag 2		—	—
Camera temporary stop, detail flag 3		—	—
Camera temperature, operation status	Current camera temperature/operation status	—	Temperature and operation status of camera are displayed. • Normal • High temperature • Low temperature
Ignition start number	Total IGN start number	Time	—



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Camera temperature abnormality IGON count 1	IGN time information when camera temperature becomes 85°C or more, or -40°C or less.	Time	When no abnormality in temperature is experienced, "0" is displayed.
Camera temperature abnormality IGON count 2	IGN time information when camera temperature becomes 85°C or more, or -40°C or less.	Time	
Camera temperature abnormality IGON count 3	IGN time information when camera temperature becomes 85°C or more, or -40°C or less.	Time	
Camera temperature abnormality IGON count 4	IGN time information when camera temperature becomes 85°C or more, or -40°C or less.	Time	
Camera temperature abnormality IGON count 5	IGN time information when camera temperature becomes 85°C or more, or -40°C or less.	Time	
Vehicle model registration information (camera inside)	—	—	—
Camera temporary stop details 1	The latest information of the camera temporary stop (Camera temporary stop: 0 count — 23 counts) <Ref. to ES(diag)-37, CAMERA TEMPORARY STOP INFORMATION, OPERATION, Read Current Data.>	—	—
Camera temporary stop details 2		—	—
Camera temporary stop details 3		—	—
Ignition start number when camera temporary stop	Total IGN start number since the latest camera temporary stop NOTE: If the IGN start number is "91" and the IGN start number during camera temporary stop is "85", this indicates that the latest occurrence of camera temporary stop was during the IGN starting of 6 times ago (this number can be obtained by the expression $91 - 85 = 6$).	Time	—
Camera status8	Stereo camera temporary stop information	—	—
Camera status9	Stereo camera temporary stop information	—	—



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Camera temporary stop 0 count	Cumulative number of stereo camera temporary stop occurrence since the last memory clear For occurrence condition of each count, refer to "LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS". <Ref. to ES(diag)-84, LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS, LIST, List of Cancel Code.> The number of occurrence is stored in each field, depending on conditions under which the temporary stop was made at "Temporary stop occurrence of camera recognition system". For details of the camera temporary stop information of current and past latest, check "Camera temporary stop, detail flag" and "Camera temporary stop details". Temporary stop related to other than camera recognition system, such as "temporary stop due to VDC OFF switch", is recorded in the cancel code.	Time	—
Camera temporary stop 1 count			
Camera temporary stop 2 count			
Camera temporary stop 3 count			
Camera temporary stop 4 count			
Camera temporary stop 5 count			
Camera temporary stop 6 count			
Camera temporary stop 7 count			
Camera temporary stop 8 count			
Camera temporary stop 9 count			
Camera temporary stop 10 count			
Camera temporary stop 11 count			
Camera temporary stop 12 count			
Camera temporary stop 13 count			
Camera temporary stop 14 count			
Camera temporary stop 15 count			
Camera temporary stop 16 count			
Camera temporary stop 17 count			
Camera temporary stop 18 count			
Camera temporary stop 19 count			
Camera temporary stop 20 count			
Camera temporary stop 21 count			
Camera temporary stop 22 count			
Camera temporary stop 23 count			

Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
ACC forced cancellation code 1(latest)	ACC forced cancellation occurrence information since the last memory clear For example of codes, refer to "LIST OF ACC FORCED CANCELLATION CODE". <Ref. to ES(diag)-89, LIST OF ACC FORCED CANCELLATION CODE, LIST, List of Cancel Code.> "When the cruise control set is released and the set operation is not accepted", the system records under which condition the ACC forced cancellation code is canceled and records the number of times since the latest occurrence of IGN start. If the cancellation is performed under the same condition, the code is not recorded as a new code, but recorded as the latest code, and the IGN number will be updated.	—	—
IGN-ON count when ACC forced cancellation code 1 recorded		times past	—
ACC forced cancellation code 2		—	—
IGN-ON count when ACC forced cancellation code 2 recorded		times past	—
ACC forced cancellation code 3		—	—
IGN-ON count when ACC forced cancellation code 3 recorded		times past	—
ACC forced cancellation code 4		—	—
IGN-ON count when ACC forced cancellation code 4 recorded		times past	—
ACC forced cancellation code 5		—	—
IGN-ON count when ACC forced cancellation code 5 recorded		times past	—
ACC forced cancellation code 6		—	—
IGN-ON count when ACC forced cancellation code 6 recorded		times past	—
ACC forced cancellation code 7		—	—
IGN-ON count when ACC forced cancellation code 7 recorded		times past	—
ACC forced cancellation code 8		—	—
IGN-ON count when ACC forced cancellation code 8 recorded		times past	—
Message counter (BIU)	Message counter signal for body integrated unit	—	—
Parking Brake Switch Input	Parking brake switch signal status	—	Operation status of parking brake is displayed. • ON • OFF
Brake lamp SW signal	Brake light switch signal status	—	Operation status of the brake pedal is displayed. • ON • OFF
Head lamp : small	Head lamp: small signal status	—	Light status is displayed. • ON • OFF
Head lamp : Low Beam	Head lamp: Low Beam signal status	—	Light status is displayed. • ON • OFF



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Head lamp : High Beam	Head lamp: High Beam signal status	—	Light status is displayed. • ON • OFF
Front wiper ON-OFF status	Front wiper signal status	—	Wiper status is displayed. • Wiper stop position • Other than wiper stop position
WGN/SDN flag	Vehicle type signal	—	• Sedan • Wagon
Door SW : D seat	Door switch signal status	—	Door status is displayed. • Close • Open
Door SW : P seat	Door switch signal status	—	Door status is displayed. • Close • Open
Door SW : rear right	Door switch signal status	—	Door status is displayed. • Close • Open
Door SW : rear left	Door switch signal status	—	Door status is displayed. • Close • Open
Accel opening angle	Acceleration opening angle signal	%	—
Message counter(ECM)	ECM message counter signal	—	—
Engine malfunction information	Engine malfunction signal	—	• Normal • Abnormal
ETC malfunction information	Electronic throttle control malfunction signal	—	• Normal • Abnormal
Engine Speed	Engine speed signal	rpm	—
CAN diagnosis, message transmission stop demand	Transmission stop signal for CAN diagnosis and CAN data	—	• Normal • Stop
Torque reverse pull accelerator degree for Cruise control	Torque reverse pull accelerator degree for Cruise control	%	—
ETC Throttle angle signal	Electronic throttle control opening angle signal	%	—
Idle Switch	Idle switch signal	—	• ON • OFF
Driver's request torque	Torque signal requested by driver	N·m	—
Actual engine torque	Actual engine torque signal	N·m	—
Fuel cut flag	Fuel cut signal	—	• Normal • Cut
X mode display information	X mode signal	—	• ON • OFF
Cruise main switch status	Status of the cruise control main switch (cruise switch)	—	Switch status is displayed. • Other than ON • ON
Cruise command switch status	Status of the cruise control command switch	—	Switch status is displayed. • Cruise switch OFF • CANCEL switch ON • RES/+ switch ON • SET/- switch ON • Vehicle distance SW ON Other statuses are not displayed.



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Target vehicle distance setting status	Setting status of target vehicle distance	—	Settings are displayed. • Distance setting: Long • Distance setting: Medium • Distance setting: Short • Constant speed
Accelerator permission state	Acceleration permission signal	—	• ON • OFF
Resume hold permission state	Resume hold permission signal	—	• ON • OFF
Coast status	Coast status signal of engine	—	• Other than coast • Coast
Resume slowdown side hold permission state	Resume slowdown side hold permission signal	—	• ON • OFF
Fuel type	Fuel type	—	Information of engine equipped is displayed.
Engine displacement	Engine displacement	—	Information of engine equipped is displayed.
Camshaft type	Engine type	—	Information of engine equipped is displayed.
Number of cylinder	Number of cylinder for engine	—	Information of engine equipped is displayed.
Turbo	Presence or absence of turbo	—	Information of engine equipped is displayed.
Cruise main status	Status of the cruise control main switch	—	Switch status is displayed. • ON • OFF
Cruise control SET status	Status of the cruise control set	—	Switch status is displayed. • Not set • Set
Accelerator wide opening judgment status	Signal that judges the accelerator opening angle to be "wide".	—	• Not established • Established
Brake status	Brake switch signal status	—	Brake switch status is displayed. • BRAKE OFF • BRAKE ON
Adaptive cruise control data NG flag	NG signal of stereo camera data	—	• OK • NG
Adaptive cruise control torque down prohibition flag	Torque down prohibition signal of stereo camera	—	• ON • OFF
Fuel cut control permission state	Fuel cut control permission signal	—	• ON • OFF
Transmission Information	Transmission equipped signal	—	Transmission equipped is displayed. • AT or CVT • MT
SI Drive mode (Display)	SI Drive mode (Display)	—	• S# • I • S
CRUISE Indicator ON request	CRUISE indicator ON request signal	—	Indicator illumination status is displayed. • OFF • ON



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
SET Indicator ON request	Request signal for SET indicator illumination	—	Indicator illumination status is displayed. • OFF • ON
Cruise Control Set Speed	Set vehicle speed value for cruise control	km/h	SET value is displayed.
demand torque after filter	Demand torque after filter	Nm	—
EEPROM failure	Failure signal of combination meter	—	• Normal • Abnormal
Message counter(Meter)	Message counter signal of combination meter	—	—
External air temperature indication value	Ambient air temperature signal	°C	—
Driver's seat belt status	Status of driver's seat belt	—	Seat belt status is displayed. • Seat belt released • Seat belt fastened
Turn signal, Left output	Output signal for left turn signal	—	Operation status is displayed. • OFF • Turn signal, Left output
Turn signal, Right output	Output signal for right turn signal	—	Operation status is displayed. • OFF • Turn signal, Right output
Vehicle type information	Vehicle type information signal	—	Vehicle type is displayed. • Impreza series • Forester series • Exiga series
Destination Code	Destination code signal	—	Destination is displayed.
Adaptive cruise control specification flag	Adaptive cruise distinction signal	—	• ACC specification • Otherwise
Eye Sight specification flag	EyeSight distinction signal	—	• Eye Sight specification • Otherwise
Adaptive CC ECM, CAN information no-receive flag	No-receive signal of stereo camera CAN data	—	• Normal • Data no-receive
Auto Start Stop Flag	Auto Start Stop distinction signal	—	Vehicle information is displayed. • Without Auto Start Stop • With Auto Start Stop
Tire diameter information	Tire diameter distinction signal	—	• Standard • Special
Fluid pressure target	Target value of brake fluid pressure	MPa	—
Preview VDC command flag	Preview VDC command signal	—	• Normal VDC • Preview VDC status
Pre-crash BA command flag	Pre-crash brake assist command signal	—	• Not commanded • Commanding
Pre-crash action flag	Pre-crash command signal	—	• Not commanded • Commanding
Brake Lamp light up command flag	Brake lamp light up command signal	—	• Brake Lamp light off • Brake Lamp light up
Adaptive CC ECM malfunction flag for VDC	Failure signal of stereo camera to VDC control module	—	• Normal (ACC/pre-crash control OK) • Malfunction (ACC/Pre-crash control NG)
Brake control actuation permission flag	Brake operation permission signal	—	• Brake control non-actuate • Brake control actuate
Pre-crash BA threshold	Pre-crash brake assist threshold	—	• Normal • Pre-crash BA threshold 1 • Pre-crash BA threshold 2 • Without Request

Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Preview VDC properties flag	Preview VDC properties signal	—	- Invalidity (no characteristic change) - Parameter 1 - Parameter 2
Message counter (Adaptive CC ECM)1	Message counter signal of stereo camera	—	—
Target torque	Target torque command signal	N·m	—
Leading vehicle follow flag	Preceding vehicle follow signal	—	- Not following - Following
LSF Flag	Low speed following mode signal	—	- Other than LSF - LSF
ACC forced cancellation flag	ACC forced cancellation signal	—	- ACC non-forced cancel - ACC forced cancelling
Brake system distinction flag	Brake system distinction signal	—	Vehicle brake system is displayed. - VDC control - Booster control
Brakes control flag (during ACC brakes)	Actuation signal of brake control	—	- Not performed - ACC brake
AT rapid start prevention control flag	AT rapid start prevention control	—	- With AT rapid start prevention control - Without AT rapid start prevention control
Stop hold, before reserve flag	Stop hold, before reserve signal	—	- OFF - ON (stop holding and before reserve)
Target torque command flag	Target torque command signal	—	- Target vehicle speed command - Target torque command
AT rapid start prevention, engine torque down command value	AT rapid start prevention control, engine torque down command value	N·m	—
Pre-crash ON flag	Pre-crash ON signal	—	- ON - OFF
Adaptive Cruise control ECU abnormality flag for CVT,EGI	Failure signal of stereo camera for AT CM and ECM	—	- Normal - Abnormal
Road surface incline estimation value (level ground G deviation)	Road surface incline estimation value (level ground G deviation) signal	G	—
Check sum	Error detection signal of adaptive cruise control	—	—
ACC braking (driver or control) flag (for CVT)	ACC braking (driver or control) signal (for CVT)	—	- OFF - ACC braking
Message counter (Adaptive CC ECM)2	Message counter signal of stereo camera	—	—
Customized flag 2	Setting status of detection beep for preceding vehicle	—	- OFF - ON
Customize flag 3	Setting status of forward vehicle start monitoring function	—	- OFF - ON
P-CR OFF indicator on flag	Pre-collision brake OFF indicator light illumination command signal	—	Operation status of indicator is displayed. - Light off command (Pre-crash ON) - Light on command (Pre-crash OFF)



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
LANE OFF indicator on flag	Lane departure warning OFF indicator light illumination command signal	—	Operation status of indicator is displayed. • Light off command (Lane deviation, stagger ON) • Light on command (Lane deviation, stagger OFF)
Buzzer volume	Buzzer volume setting status	—	Volume setting is displayed. • Small • Middle • Loud • No setting
HALT code	HALT code signal	—	• No HALT • HALT(E1 camera view defectiveness) • HALT(E2 camera temperature range outside) • HALT(E3 and others)
ACC cancellation reason indication or customization	ACC cancellation reason indication or customization signal	—	<When customize request flag is OFF (ACC cancellation reason indication)> • Manual mode, other than D position • Door open (D side, front P side, rear left, rear right) • D seat seat-belt loser • Parking brake operation • VDC SW OFF • X mode • Low vehicle speed • Steering operation • High vehicle speed • ABS operation • VDC operation • Steeply sloping road • Other <When customize request flag is ON> • Departure monitor setting • Preceding vehicle capture / lost sound • Buzzer volume setting
Cruise indicator flag for meter display	CRUISE indicator ON signal	—	Operation status of indicator is displayed. • OFF • ON
Cruise control SET ON flag	SET indicator illumination signal	—	Operation status of indicator is displayed. • CC not set • CC SET
MFD display specification sortation flag	MFD display specification sortation signal	—	• Basic screen, an interrupt screen (other than the United States) • Basic screen, No interrupt screen (United States)
Stop holding flag	Stop judgment status	—	• OFF • Stop holding



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
READY flag	READY indicator illumination signal	—	Operation status of indicator is displayed. • CC not READY • CC READY
Vehicle distance setting	Vehicle distance setting indicator signal	—	Settings are displayed. • Distance setting: Short • Distance setting: Medium • Distance setting: Long • CC constant speed mode
Customize request flag	Customize request signal	—	• Customize non request • Customize requesting
Vehicle speed set for meter display	Setting value for cruise set speed	km/h	—
Warning code	Warning code signal	—	• No alarm • HALT • Increase Brake Pedal Load/ Vehicle distance alarm/Pre-crash brake • ACC automatic cancel • Pre-crash brakes 2 • Lane deviation warning • Stagger warning • Preceding vehicle capture / lost sound • Front vehicle acceleration • AT false start restraint
Adaptive Cruise control ECU abnormality flag for meters	Failure signal of stereo camera for meter	—	• Normal • Abnormal
Message counter (Adaptive Cruise control ECU)3	Message counter signal of stereo camera	—	—
Brake-lamp lighting indication flag	Brake-lamp lighting indication signal	—	Illumination status of the brake light is displayed. • OFF • ON
Lane (solid line) blinking	Lane (solid line) blinking signal	—	Operation status of indicator is displayed. • OFF • Both lanes (solid line) blinking • Both lanes (solid line) alternation blinking
Steering wheel indication	Lane deviation warning light (handle mark) illumination signal	—	Operation status of indicator is displayed. • OFF • ON • Blinking 1 • Blinking 2
Preceding vehicle indication	Preceding vehicle indicator signal	—	Operation status of indicator is displayed. • OFF • ON • Blink
Distance from leading vehicle	Preceding vehicle distance signal	—	Preceding vehicle distance is displayed.
Message counter(TCM)	Message counter signal of TCM	—	—



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
TCM shift control mode	TCM shift control mode signal	—	AT shift mode is displayed. • Range fixation mode • Gear fixation mode (manual) • Range fixation automatic return mode (temporary range fixation) • Gear fixation automatic return mode (temporary manual) • M range automatic shift mode (Sport mode) • D range automatic shift mode • Other than above
Hill down mode flag	Hill down mode signal	—	Hill down mode is displayed. • Hill down cancelling • Hill down
AT turbine speed	AT turbine speed signal	rpm	—
Target gear position	Target gear position signal	—	Target gear position is displayed. • N • 1 • 2 • 3 • 4 • 5 • 6 • Automatic neutral • R • P No items other than above are displayed.
Current gear position	Current gear position signal	—	Current gear position is displayed. • N • 1 • 2 • 3 • 4 • 5 • 6 • Automatic neutral • R • P No items other than above are displayed.
TCM malfunction information	Failure signal of TCM	—	• Abnormal • Normal
CAN diagnosis, message transmission stop demand	Transmission stop judgment for CAN diagnosis and CAN data by TCM	—	• Normal • Stop
Auto Start Stop : Brake Flag	Auto Start Stop brake cooperation signal	—	• Open • Conclusion
Total reduction ratio (current)	Current total reduction ratio signal	—	—
Lock up status	Lock up status	—	Current status is displayed. • Open • Slip • Lock-up
AWD type	Driving method of AWD	—	Vehicle information is displayed.
AT Type	AT type	—	Transmission equipped information is displayed.



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
Steering angle sensor value (Right: +, Left: -)	Steering angle sensor value signal	deg	• Right turn: + • Left turn: -
Yaw Rate value (Right: -, Left: +)	Yaw rate value signal	deg/s	• Right turn: - • Left turn: +
Lateral acceleration (Right: -, Left: +)	Lateral acceleration signal	m/s ²	• Right turn: - • Left turn: +
Longitudinal G sensor value	Longitudinal acceleration	m/s ²	Deceleration: + Acceleration: -
Wheel speed average speed	Wheel speed average speed signal	km/h	—
M/C actual fluid pressure	Brake fluid pressure in master cylinder	MPa	—
Brake lamp state flag	Brake lamp state signal	—	• Lights off state • Lights on state
Wheel speed pulse counter	Wheel speed pulse counter signal	—	—
Right front wheel W/C actual fluid pressure	Right front wheel cylinder fluid pressure	MPa	—
Left front wheel W/C actual fluid pressure	Left front wheel cylinder fluid pressure	MPa	—
Vehicle height information	Vehicle height information	—	Vehicle information is displayed. • Standard • OBK
VDC-OFF Indicator status	VDC-OFF indicator status	—	Operation status of indicator is displayed. • Lamp off • Lamp on
ABS operation flag	Operating status signal of ABS	—	Operation status is displayed. • Not operating • Operating
TCS operation flag	Operating status signal of TCS	—	Operation status is displayed. • Not operating • Operating
VDC oversteer control flag	Operating status signal of VDC	—	Control status is displayed. • Not during control • During control
VDC understeer control flag	Operating status signal of VDC	—	Control status is displayed. • Not during control • During control
Preview VDC standby flag	Preview VDC standby status	—	• Normal VDC • Preview VDC status
BLS Signal status	Brake light illumination status	—	Illumination status is displayed. • OFF • BRAKE ON
BLS failure signal	Brake light switch failure signal	—	• Trouble • Normal
VDC-OFF Flag	VDC OFF signal	—	Switch status is displayed. • System OFF • System ON
VDC sensor abnormal flag	VDC sensor failure signal	—	• Sensor abnormal • Sensor normal
Vehicle speed sensor abnormal flag	Vehicle speed sensor failure signal	—	• Sensor abnormal • Sensor normal
VDC system abnormal flag	VDC system failure signal	—	• Abnormal • Normal



Read Current Data

EyeSight (DIAGNOSTICS)

Display	Content	Unit of measure	Reference
CAN diagnosis, transmissions stop	Transmission stop judgment for CAN diagnosis and CAN data	—	• ON • Diagnosis, send message stop request
TSM operation flag	TSM operation signal	—	• Not during control • During control
RMI operation flag	RMI operation signal	—	• Not during control • During control
Adaptive CC ECM malfunction reception status	Failure signal of stereo camera	—	• Malfunction reception • Malfunction no-receive
Adaptive CC ECM communication error	Communication failure signal of stereo camera	—	• Abnormal • Normal
Adaptive CC ECM deceleration request reception status	Deceleration request reception status signal from stereo camera	—	• Without Request • Request
Pre-crash BA request reception status	Pre-crash brake assist request reception status	—	• Without Request • Request
Pre-crash request reception status	Pre-collision brake request reception status signal	—	• Without Request • Request
Brake control permission flag	Brake control permission signal	—	• No permission • ON
Driver brake detection flag	Driver brake detection signal	—	• OFF • ON
Message counter (VDC)	Message counter signal of VDC	—	—
Front left wheel speed	Front left wheel speed signal	km/h	—
Front right wheel speed	Front right wheel speed signal	km/h	—
Message counter (Auto Start Stop)	Message counter of Auto Start Stop CM	—	—
Restart cranking demand	Restart cranking demand signal	—	• No request • With Request
Under Auto Start Stop control	Under Auto Start Stop control signal	—	• Outside Auto Start Stop control • Under Auto Start Stop control
Main power supply voltage drop state	Main power supply voltage drop state	—	• Other than power supply voltage drop • Power supply voltage drop
Idling stop demand	Idling stop demand signal	—	• No request • With Request
During idling stop	During idling stop signal	—	• Other than during idling stop signal • During idling stop
Auto Start Stop operation permission	Auto Start Stop operation permission signal	—	• Operation prohibit • Operating Permission
Auto Start Stop system failure	Auto Start Stop system failure signal	—	• Normal • Abnormal

NOTE:

- For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
- For details on camera temporary stop count, refer to “LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS”. <Ref. to ES(diag)-84, LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS, LIST, List of Cancel Code.>
- For details on ACC forced cancellation code, refer to “LIST OF ACC FORCED CANCELLATION CODE”. <Ref. to ES(diag)-89, LIST OF ACC FORCED CANCELLATION CODE, LIST, List of Cancel Code.>

Read Current Data

EyeSight (DIAGNOSTICS)

2. CAMERA TEMPORARY STOP INFORMATION

Display	Measurement value	Remarks
Camera temporary stop, detail flag 1 and Camera temporary stop details 1	00	Not applicable to conditions of camera temporary stop count 0 — 7.
	01	Temporary stop has been made under the condition of camera temporary stop count 0.
	02	Temporary stop has been made under the condition of camera temporary stop count 1.
	04	Temporary stop has been made under the condition of camera temporary stop count 2.
	08	Temporary stop has been made under the condition of camera temporary stop count 3.
	10	Temporary stop has been made under the condition of camera temporary stop count 4.
	20	Temporary stop has been made under the condition of camera temporary stop count 5.
	40	Temporary stop has been made under the condition of camera temporary stop count 6.
	80	Temporary stop has been made under the condition of camera temporary stop count 7.
Camera temporary stop, detail flag 2 and Camera temporary stop details 2	00	Not applicable to conditions of camera temporary stop count 8 — 15.
	01	Temporary stop has been made under the condition of camera temporary stop count 8.
	02	Temporary stop has been made under the condition of camera temporary stop count 9.
	04	Temporary stop has been made under the condition of camera temporary stop count 10.
	08	Temporary stop has been made under the condition of camera temporary stop count 11.
	10	Temporary stop has been made under the condition of camera temporary stop count 12.
	20	Temporary stop has been made under the condition of camera temporary stop count 13.
	40	Temporary stop has been made under the condition of camera temporary stop count 14.
	80	Temporary stop has been made under the condition of camera temporary stop count 15.
Camera temporary stop, detail flag 3 and Camera temporary stop details 3	00	Not applicable to conditions of camera temporary stop count 16 — 23.
	01	Temporary stop has been made under the condition of camera temporary stop count 16.
	02	Temporary stop has been made under the condition of camera temporary stop count 17.
	04	Temporary stop has been made under the condition of camera temporary stop count 18.
	08	Temporary stop has been made under the condition of camera temporary stop count 19.
	10	Temporary stop has been made under the condition of camera temporary stop count 20.
	20	Temporary stop has been made under the condition of camera temporary stop count 21.
	40	Temporary stop has been made under the condition of camera temporary stop count 22.
	80	Temporary stop has been made under the condition of camera temporary stop count 23.

NOTE:

For details on camera temporary stop count, refer to "LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS". <Ref. to ES(diag)-84, LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS, LIST, List of Cancel Code.>

3. ENGINE CONTROL MODULE (ECM)

For current data of engine control module, refer to ENGINE (DIAGNOSTICS). <Ref. to EN(H4DO)(diag)-41, DISPLAY OF ENGINE FREEZE FRAME DATA, OPERATION, Subaru Select Monitor.>

4. VDC CONTROL MODULE (VDCCM)

For current data of VDC control module, refer to VDC (DIAGNOSTICS). <Ref. to VDC(diag)-16, READ CURRENT DATA, OPERATION, Subaru Select Monitor.>

5. TRANSMISSION CONTROL MODULE (TCM)

For current data of transmission control module, refer to CVT (DIAGNOSTICS). <Ref. to CVT(diag)-19, READ CURRENT DATA, OPERATION, Subaru Select Monitor.>

6. BODY INTEGRATED UNIT

For current data of body integrated unit, refer to BODY CONTROL (DIAGNOSTICS). <Ref. to BC(diag)-11, LIST, Read Current Data.>

Read Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

8. Read Diagnostic Trouble Code (DTC)

A: OPERATION

For operation procedures, refer to the "PC application help for Subaru Select Monitor".

NOTE:

For details concerning DTC, refer to "List of Diagnostic Trouble Code (DTC)". <Ref. to ES(diag)-78, List of Diagnostic Trouble Code (DTC).>

9. Read Cancel Code

A: OPERATION

1. STEREO CAMERA

For operation procedures, refer to the "PC application help for Subaru Select Monitor".

NOTE:

For details on cancel codes, refer to List of Cancel Code. <Ref. to ES(diag)-82, STEREO CAMERA, LIST, List of Cancel Code.>

2. ENGINE CONTROL MODULE (ECM)

1) On «Main Menu» display, select {Each System Check}.

On «System Selection Menu» display, select {Engine Control System}. Click the [OK] button after the information of engine type has been displayed.

2) Drive vehicle at 40 km/h (25 MPH) or more and set the cruise control.

CAUTION:

- When performing diagnosis, observe the legal speed limit on the road.
- The cancel code will also appear when the cruise control is cancelled by the driver's operation. Do not confuse them.
- Be sure to get an assistant to support the diagnosis while driving, and have him/her operate the select monitor.

3) When the set speed is cancelled by itself (without any cancel operations such as applying brake) or when the cruise control could not be set by performing the setting operation, select the {Cancel Code(s) Display} on the engine malfunction diagnosis screen.

NOTE:

The cancel code has a {Latest Diagnostic Code(s)} and {Memorized Diagnostic Code(s)}. {Latest Diagnostic Code(s)} displays the latest code that occurred in this check drive, and {Memorized Diagnostic Code(s)} displays the code recorded in the previous driving condition. Cancel codes by the diagnosis of faulty switches relating to the system and cruise control are also displayed in the {Memorized Diagnostic Code(s)}.

4) Perform Engine DTC Clear Memory operation. <Ref. to EN(H4DO)(diag)-58, OPERATION, Clear Memory Mode.>

Cancel codes for switches relating to the system and cruise control are deleted by clearing memory on the engine side.

NOTE:

- The latest code will be cleared by turning ignition switch to OFF.
- For detailed operation procedures, refer to "PC application help for Subaru Select Monitor".
- For details on cancel codes, refer to List of Cancel Code. <Ref. to ES(diag)-88, ECM, LIST, List of Cancel Code.>

Real-time Diagnosis

EyeSight (DIAGNOSTICS)

10. Real-time Diagnosis

A: OPERATION

- 1) On «EyeSight (from 2009MY)» display, select {Current Data Display & Save}.
- 2) Check that the display changes and the contents are correct when performing the operations as follows.
 - Depress and release the brake pedal. (Stop light switch and brake switch are turned ON.)
 - Subaru Select Monitor display item “Brake lamp SW signal”, “Brake status”, “BLS Signal status”
 - Turn the main switch to ON.
 - Subaru Select Monitor display item “Cruise main switch status”
 - Turn the “CANCEL” switch to ON.
 - Subaru Select Monitor display item “Cruise command switch status”
 - Turn the “SET/–” switch to ON.
 - Subaru Select Monitor display item “Cruise command switch status”
 - Turn the “RES/+” switch to ON.
 - Subaru Select Monitor display item “Cruise command switch status”
 - Turn the “Vehicle distance” switch to ON.
 - Subaru Select Monitor display item “Cruise command switch status”
 - Operate the shift lever.
 - Subaru Select Monitor display item “Current gear position”
 - Press and hold the pre-collision brake OFF switch.
 - Subaru Select Monitor display item “P-CR OFF indicator on flag”
 - Press and hold the lane departure warning OFF switch.
 - Subaru Select Monitor display item “LANE OFF indicator on flag”

NOTE:

For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

11. Clear Memory Mode

A: OPERATION

For operation procedures, refer to the "PC application help for Subaru Select Monitor".

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

12.Camera Adjustment, Inspection

A: PROCEDURE

CAUTION:

- Perform the camera adjustment and inspection at curb weight without passengers.
- Handle RANDOM CHART (ST: 87599YC001) carefully so as not to break it with the adhesive force of the tape.

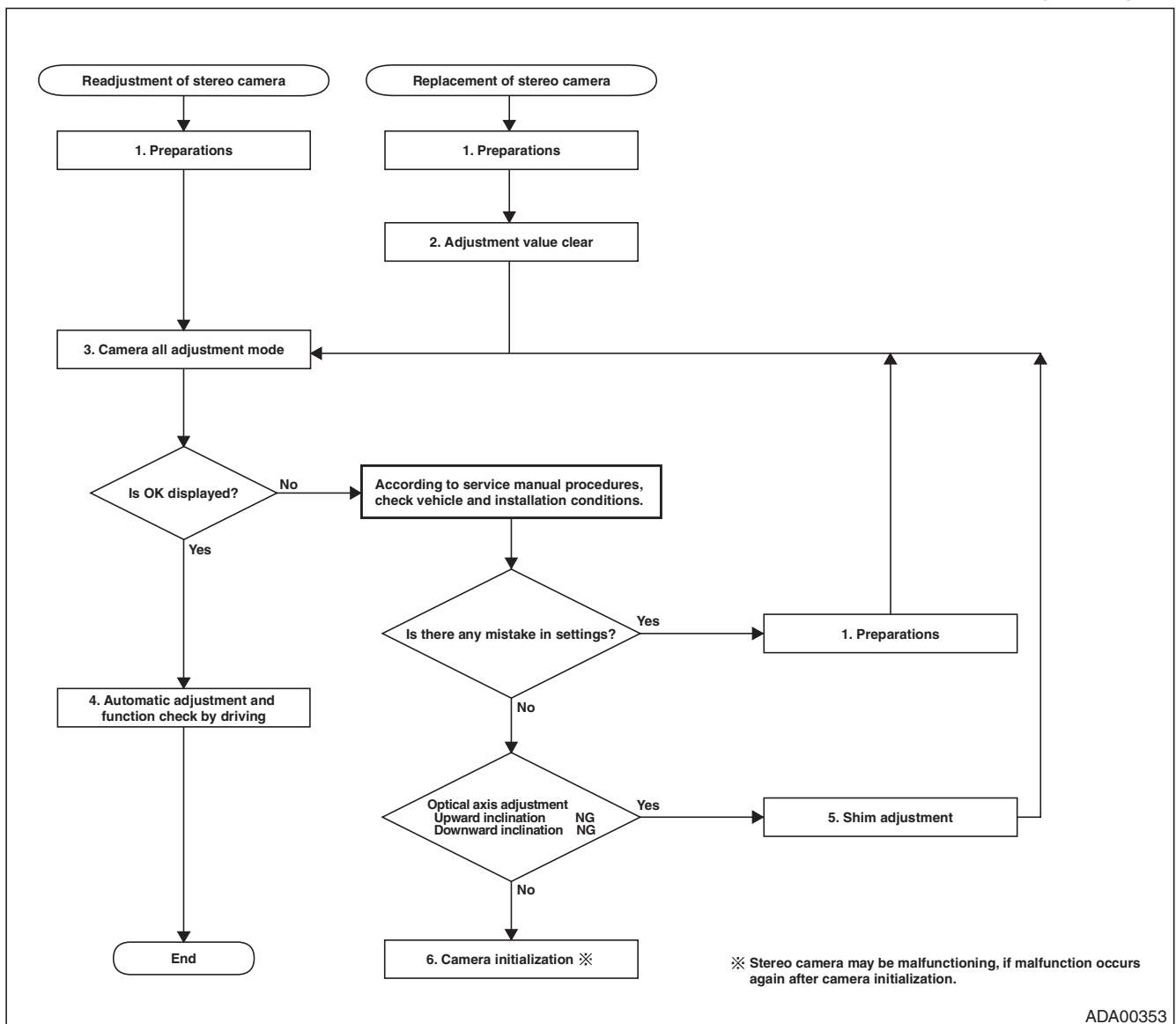
Perform inspection or adjustment according to the following procedures.

- Readjustment of stereo camera

Perform the adjustment in the following order: [1. Preparations] → [3. Camera all adjustment mode (replacement/removal)] → [4. Automatic adjustment and function check by driving].

- Replacement of stereo camera

Perform the replacement in the following order: [1. Preparations] → [2. Clear adjustment value] → [3. Camera all adjustment mode (replacement/removal)] → [4. Automatic adjustment and function check by driving].



Camera Adjustment, Inspection

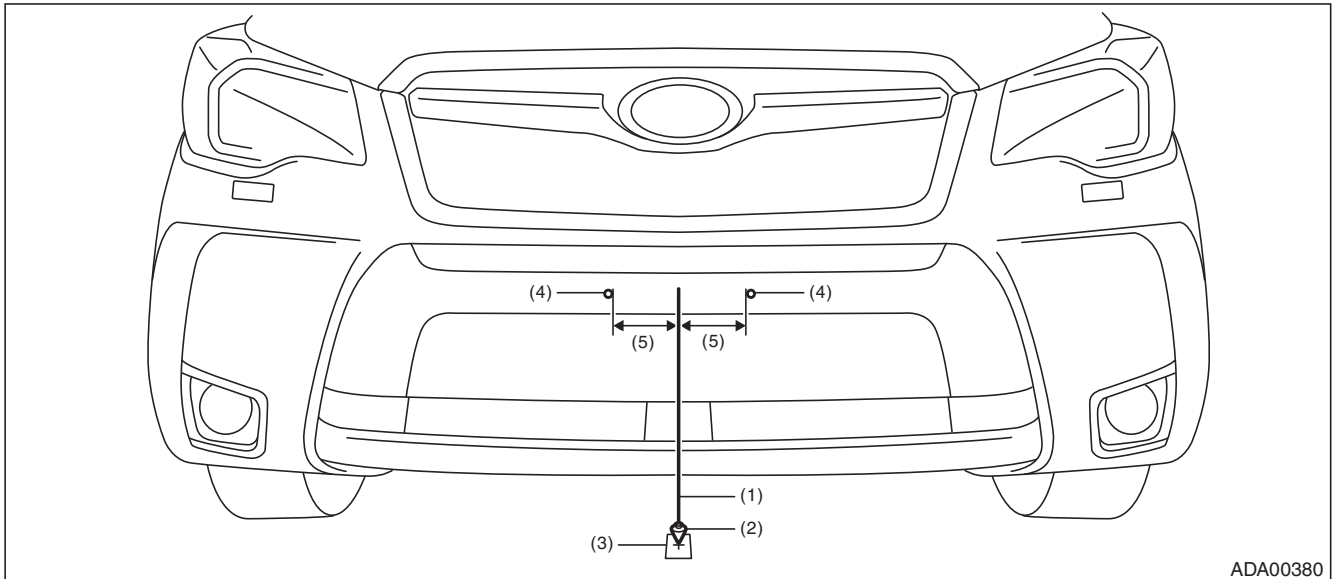
EyeSight (DIAGNOSTICS)

1. PREPARATIONS

Perform the preparation of the adjustment and inspection for the stereo camera.

- When performing adjustment or inspection by affixing **RANDOM CHART** onto partition

- 1) Adjust the tire pressure.
- 2) Prepare the Subaru Select Monitor, measure, plumb bob, weight, leveling line and **RANDOM CHART** (ST: 87599YC001).
- 3) Place the vehicle on a level surface where approximately 5 m (16.4 ft) space can be secured in front of the vehicle.
- 4) Suspend the plumb bob with leveling line from front center position of vehicle (center of license plate base), and mark the position where the plumb bob touches the ground. (Point A)



- (1) Leveling line
(2) Plumb bob

- (3) Point A
(4) License plate base

- (5) Same distance

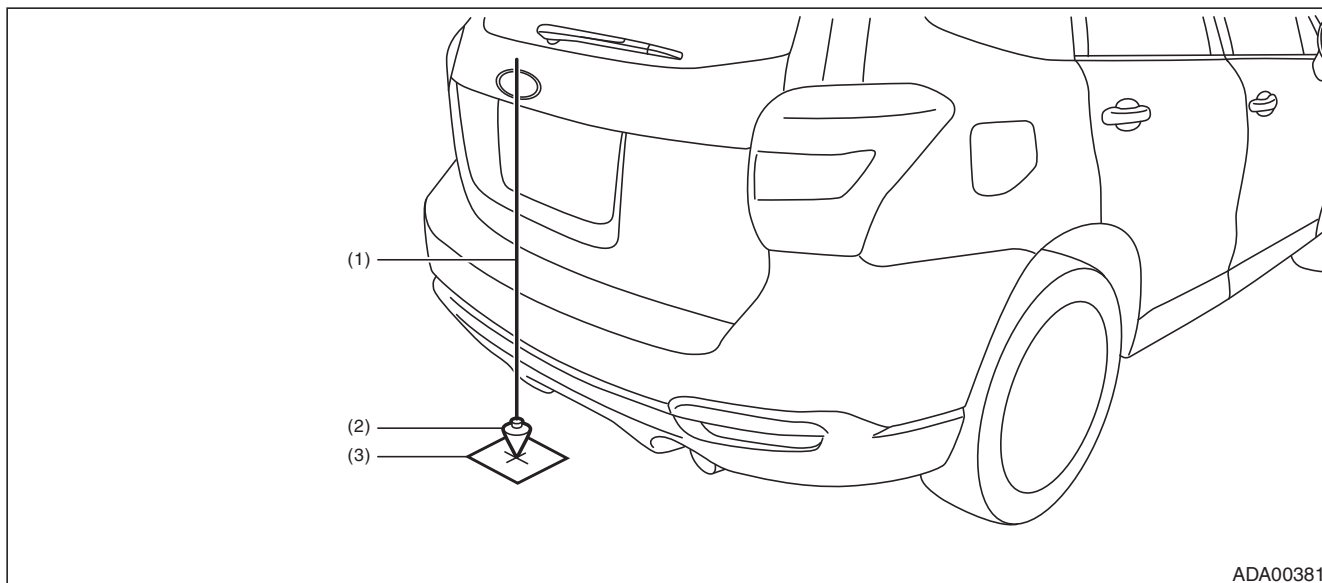
NOTE:

Stick the packing tape etc. on the floor, then make a marking on it.

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

5) Suspend the plumb bob with leveling line from rear center position of vehicle (center of rear ornament), and mark the position where the plumb bob touches the ground. (Point B)



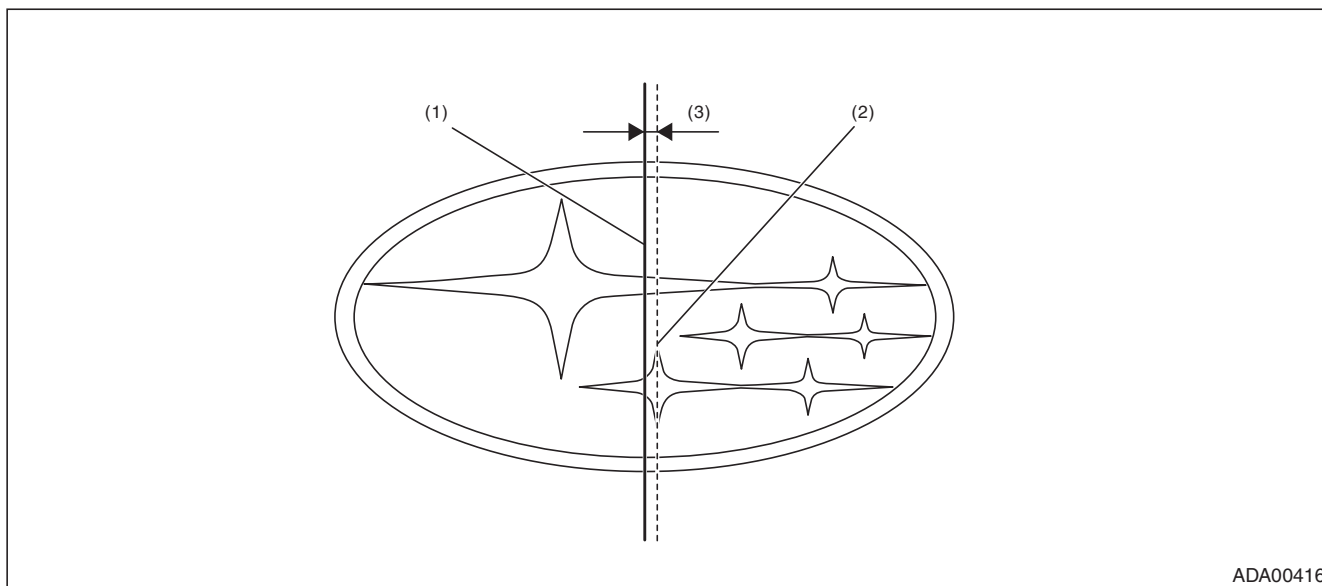
(1) Leveling line

(2) Plumb bob

(3) Point B

NOTE:

The center of the ornament is located 2 mm (0.08 in) to the left from the top of the second left star.



(1) Center of ornament

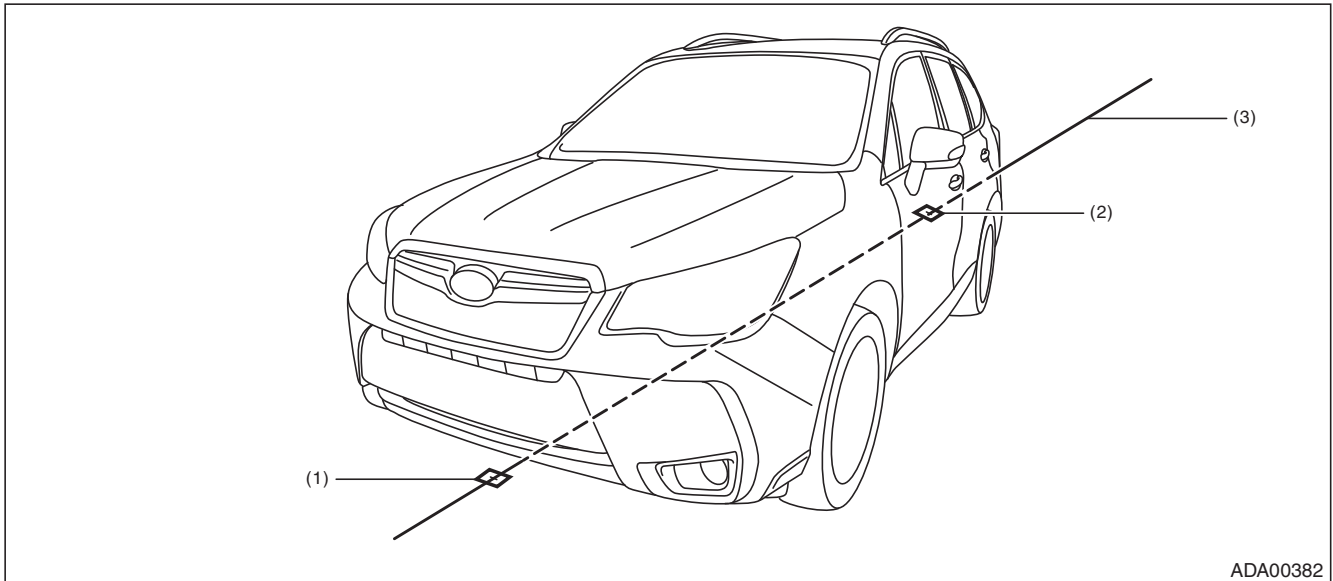
(2) Top of star

(3) 2.0 mm (0.08 in)

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

6) Strain approximately 5 m (16.4 ft) of the leveling line from the marking point B through the marking point A toward the front side of the vehicle, and fix it with packing tape. (A-B line)



ADA00382

(1) Point A

(2) Point B

(3) Leveling line

NOTE:

Confirm that there is no wet condition or unevenness on the floor, to strain the leveling line correctly.

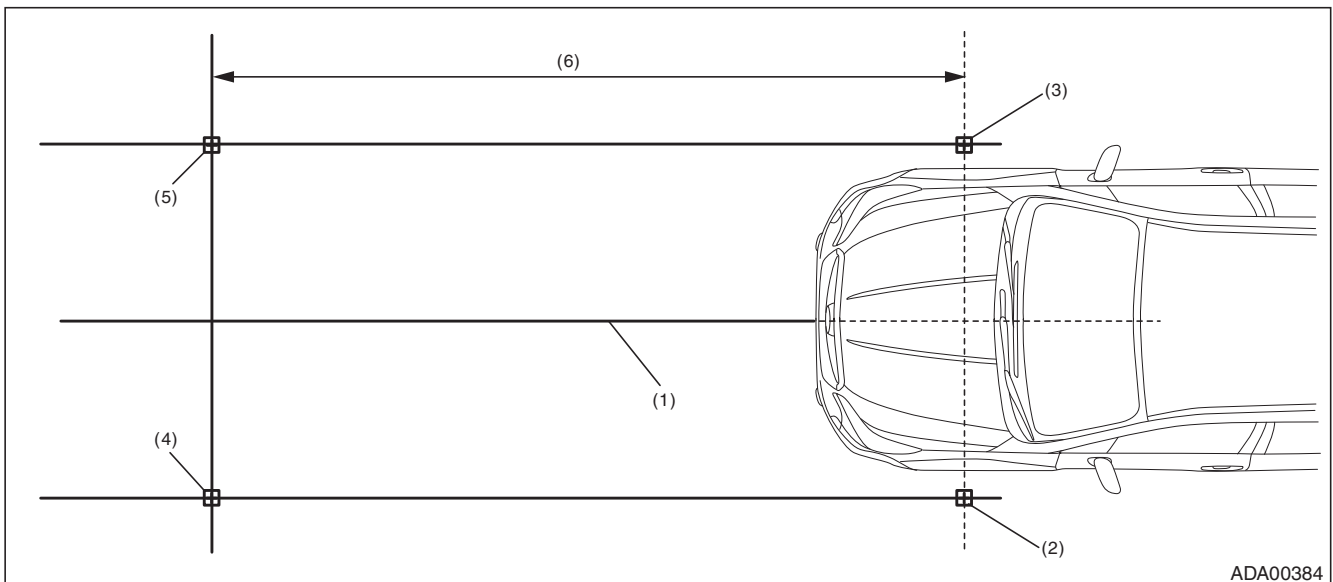
7) Mark the installation position of the partition.

(1) Suspend the plumb bob from the center of the front tire, and mark the point C and point D.

(2) Strain the leveling line from the point C and point D toward the front of vehicle parallel to the vehicle body center line (A-B line), and fix the leveling line with packing tape.

(3) Make a marking on the point 4,070 mm (13.4 ft) ahead of the vehicle from the point C and point D. (Point E and point F)

(4) Strain the leveling line so that it passes through the point E and point F. (E-F line)



ADA00384

(1) Vehicle body center line (A-B line)

(3) Point D

(5) Point F

(2) Point C

(4) Point E

(6) 4070 mm (13.4 ft)

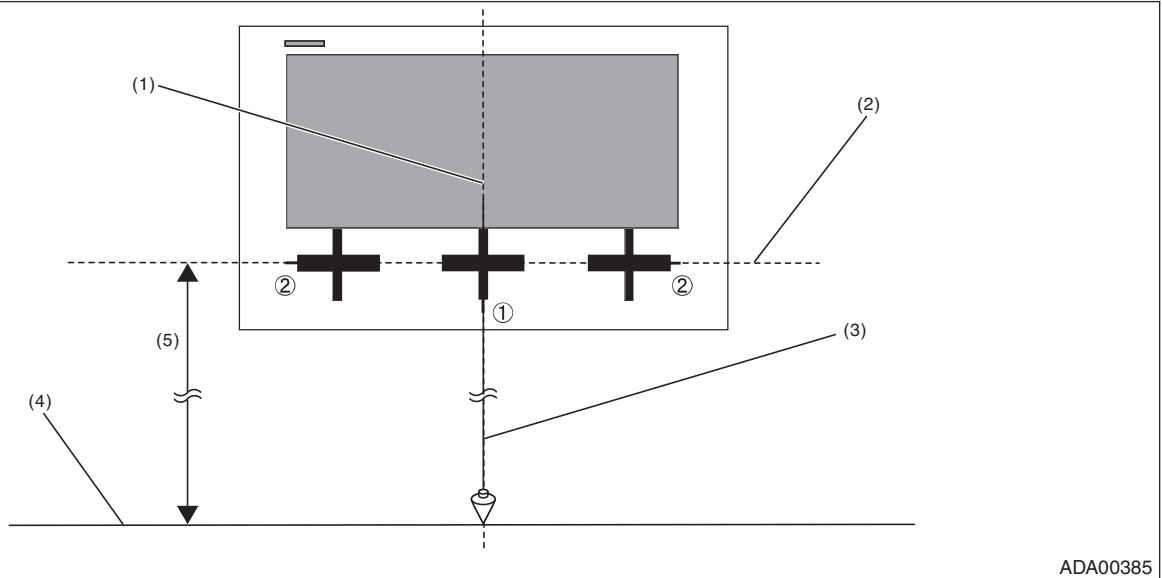
Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

8) Place the partition and RANDOM CHART.

(1) Using the plumb bob, attach the RANDOM CHART on the wall (or partition), so that the height from the floor to the cross mark (left and right) setting reference (horizontal line) is 1,004 mm (3.3 ft) while aligning the RANDOM CHART cross mark (center) setting reference (vertical line) to the vehicle body center line (leveling line).

(2) Adjust the partition so that it is parallel to E-F line.

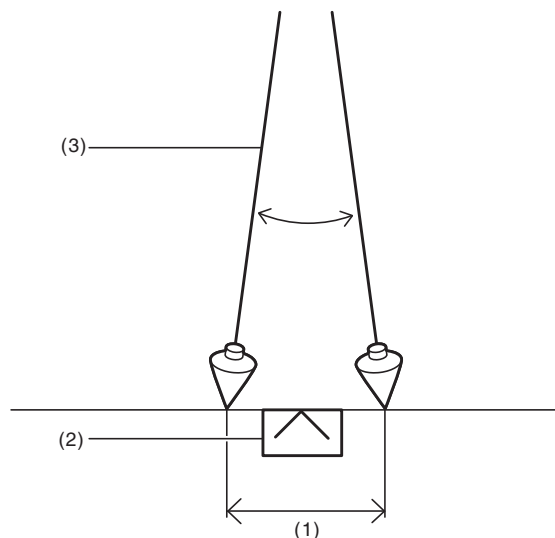


ADA00385

- | | | |
|---|---------------|-----------------------|
| (1) ① = Setting reference (vertical line) and vehicle body center line (A-B line) | (3) Plumb bob | (5) 1,004 mm (3.3 ft) |
| (2) ② = Setting reference (horizontal line) | (4) E-F line | |

CAUTION:

- Centering accuracy of the plumb bob shall be ± 4.0 mm (± 0.16 in) or less.



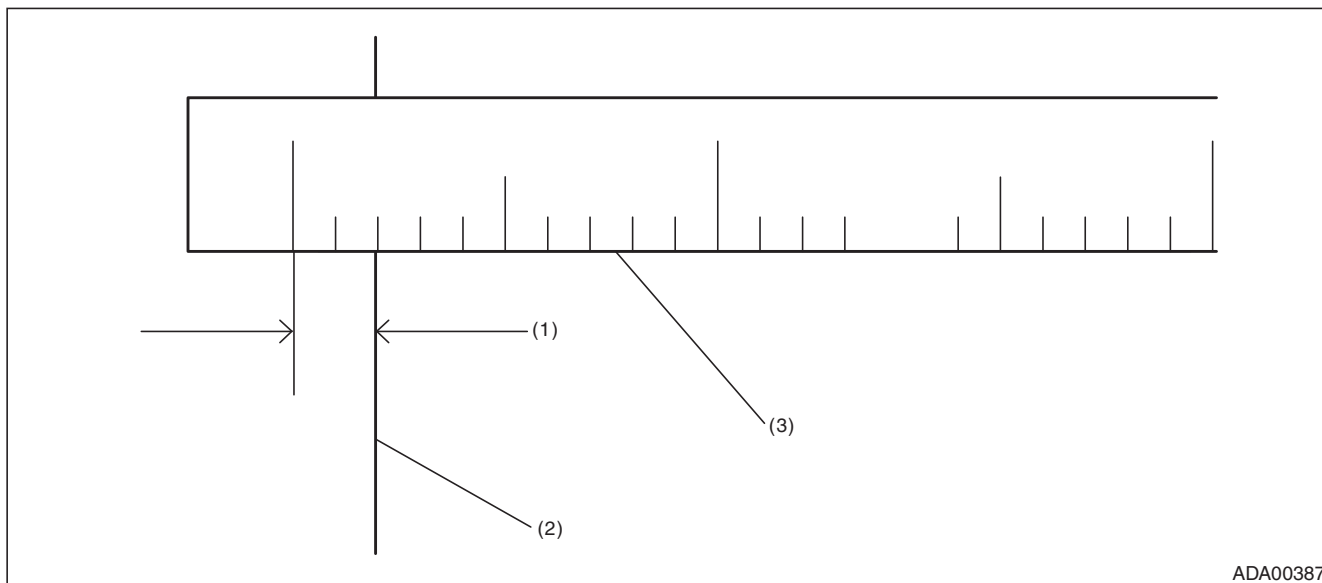
ADA00386

- | | | |
|-----------------------------------|-------------|---------------|
| (1) ± 4.0 mm (± 0.16 in) | (2) Marking | (3) Plumb bob |
|-----------------------------------|-------------|---------------|

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

- Positioning accuracy of the measure shall be ± 2.0 mm (± 0.08 in) or less.

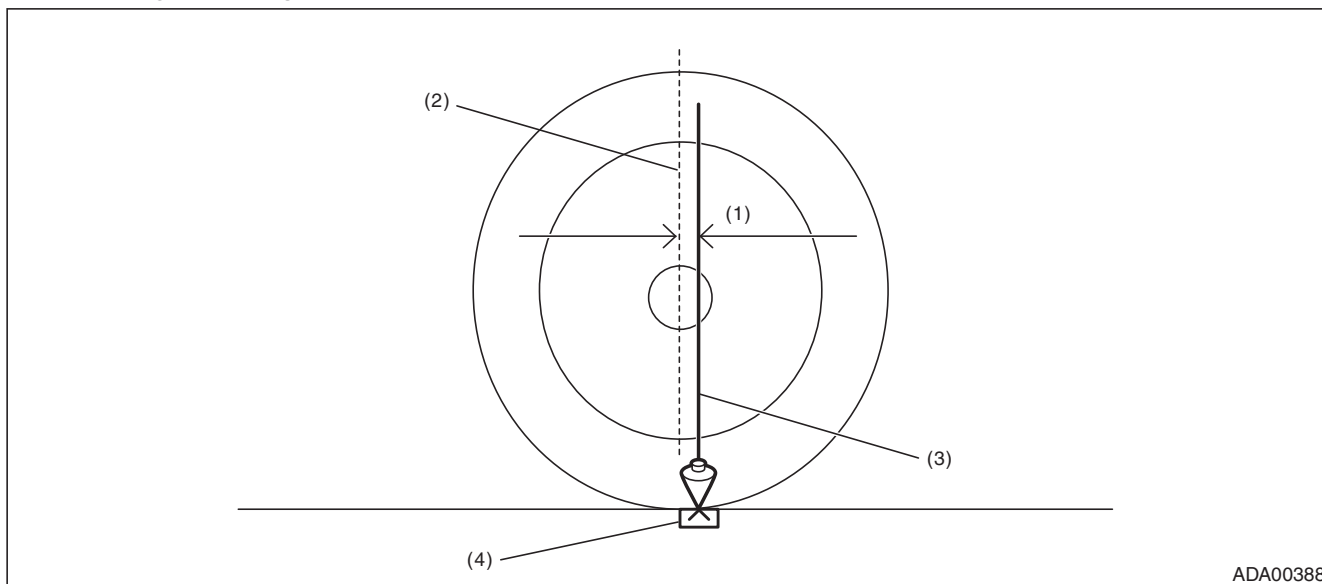


(1) ± 2.0 mm (± 0.08 in)

(2) Marking

(3) Measure

- Centering accuracy of the tire shall be ± 4.0 mm (± 0.16 in) or less.



(1) ± 4.0 mm (± 0.16 in)

(3) Plumb bob

(2) Tire center line

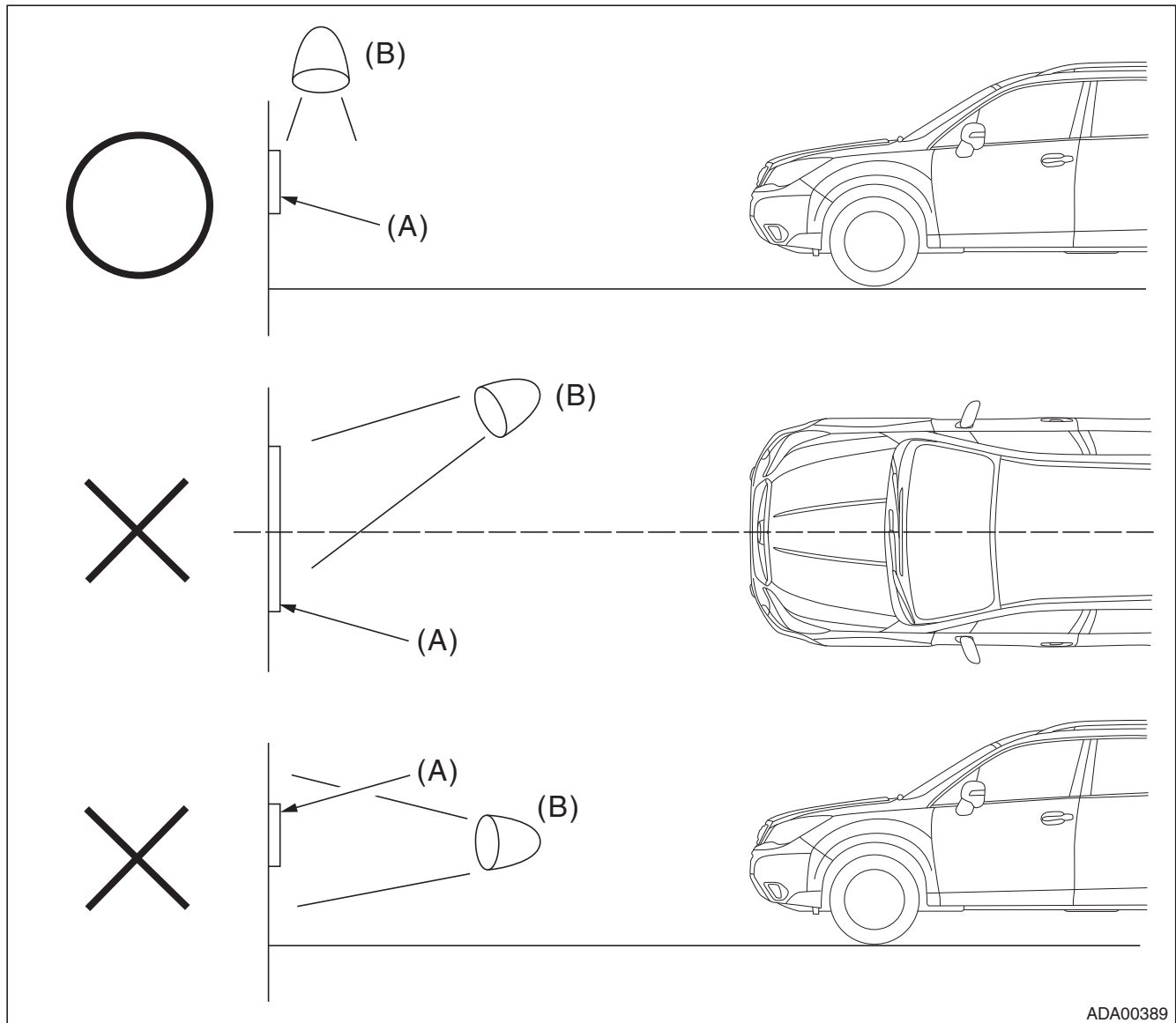
(4) Marking

- Affix the RANDOM CHART onto the vertical partition with flat surface.
- Turn off the headlight.
- Remove the luggage from the vehicle.
- Perform the adjustment work at the level floor.
- Perform the adjustment work at lighted places. If the lighting is not enough, adjustment can not be done, and accuracy rate may not be acquired.

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

- Apply the lighting from the upper side of RANDOM CHART. (If the lighting is applied from the position where light reflects at RANDOM CHART, the adjustment can not be done, because the reflected light enters the camera.)



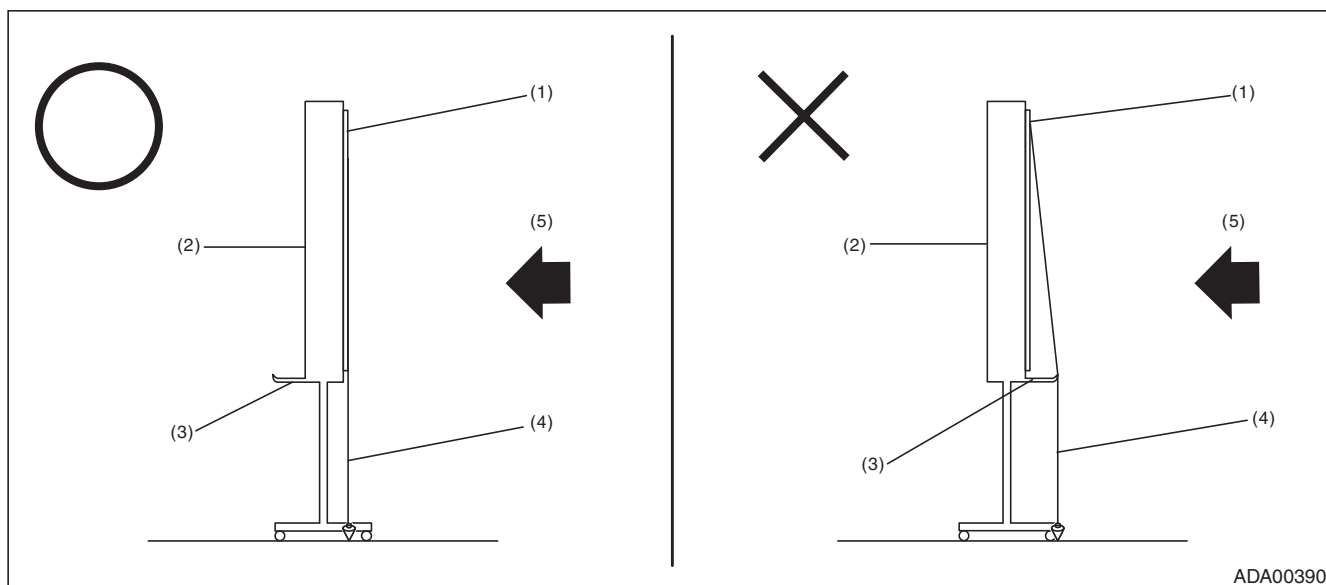
(A) RANDOM CHART

(B) Lighting

- The adjustment in the outdoors cannot be recommended. Note the sun position, when adjusting it in outdoor by necessity. (It is not acceptable when the sunlight comes from front or rear of the vehicle)
- Do not affix RANDOM CHART with lustrous tapes which may reflect the light.
- When the front tires are not directed to the straight ahead position even if the steering wheel is set to the center position, adjust the alignment.
- When using the white board as a partition, affix the RANDOM CHART on the flat surface without protrusion such as penholder. When suspending the plumb bob, suspend it vertically from the RANDOM CHART by avoiding protrusion.

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)



ADA00390

(1) RANDOM CHART

(2) White board

(3) Protrusion (penholder, etc.)

(4) Plumb bob

(5) Vehicle travel direction

9) Turn the ignition switch to OFF.

10) Check the windshield glass and the dashboard. <Ref. to ES(diag)-8, WINDSHIELD GLASS AND DASHBOARD, INSPECTION, General Description.>

CAUTION:

If there are any dirt, object or reflection from dashboard within the visibility of stereo camera, the correct adjustment and inspection can not be performed. Especially, do not put paper etc. on the dashboard.

11) Connect the Subaru Select Monitor.

NOTE:

Use the Subaru Select Monitor equipped with the latest version of the software.

12) Turn the ignition switch to ON.

13) Wait for 10 seconds.

14) On «Main Menu» display, select {Each System Check}.

15) On «System Selection Menu» display, select {ADA adaptive cruise control system}.

16) Select {EyeSight (from 2009MY)} while pressing the camera cover mounted pre-collision brake OFF switch and lane departure warning OFF switch at the same time.

NOTE:

If {EyeSight (from 2009MY)} is selected without pressing two switches at the same time, {Camera adjustment, inspection} is not displayed. (for preventing misoperation)

Also, the message is not displayed, when the camera does not finish the start-up (approx. 10 seconds after ignition switch ON). In that case, repeat from the selection of {EyeSight (from 2009MY)}.

17) On «EyeSight (from 2009MY)» display, select {Camera adjustment, inspection}, to perform the camera adjustment or inspection.

NOTE:

- When performing {Camera adjustment, inspection}, pre-collision brake OFF indicator light, lane departure warning OFF indicator light in the meter will illuminate, and the normal function will be disabled.

- After camera adjustment, the function will be enabled, when the ignition switch is turned to OFF and system is restarted.



Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

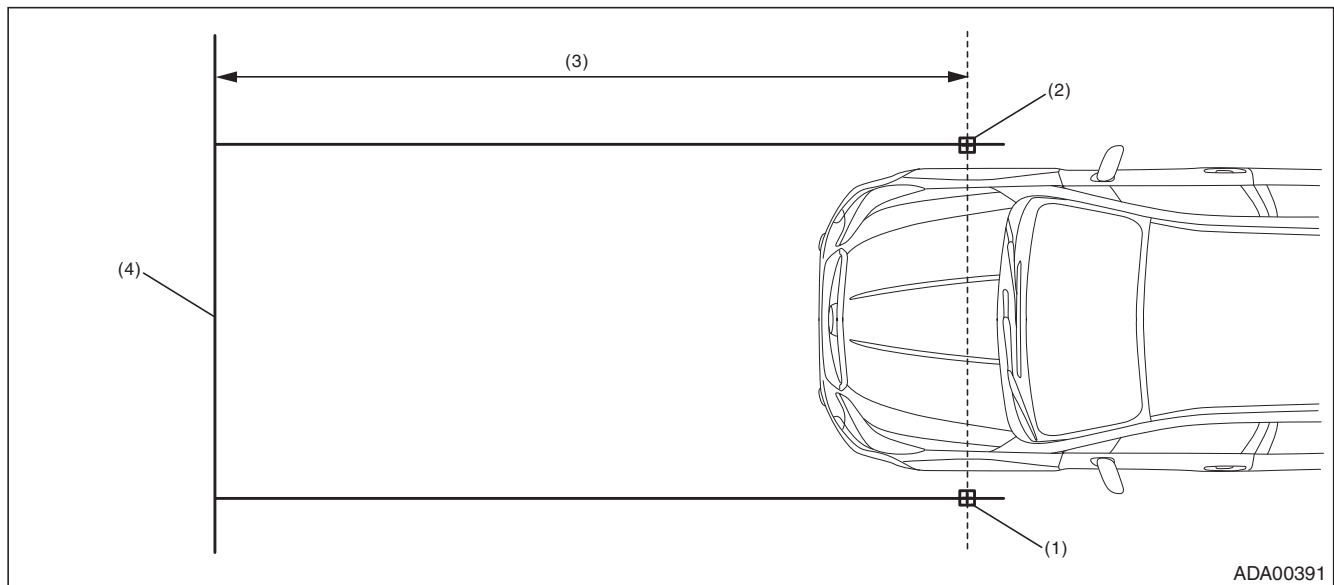
- When performing adjustment or inspection by affixing RANDOM CHART onto wall.

- 1) Adjust the tire pressure.
- 2) Prepare the Subaru Select Monitor, measure, plumb bob, weight, leveling line and RANDOM CHART (ST: 87599YC001).
- 3) Mark the setting position of the vehicle.
 - (1) Strain the leveling line so that it is at right angles to wall on which the RANDOM CHART is affixed, and fix the leveling line with packing tape.
 - (2) Make a marking 4,070 mm (13.4 ft) away from the wall where the leveling line is fixed. (Point A and point B)

NOTE:

Stick the packing tape etc. on the floor, then make a marking on it.

- (3) Strain the leveling line so that it passes through the point A and point B. (A-B line)



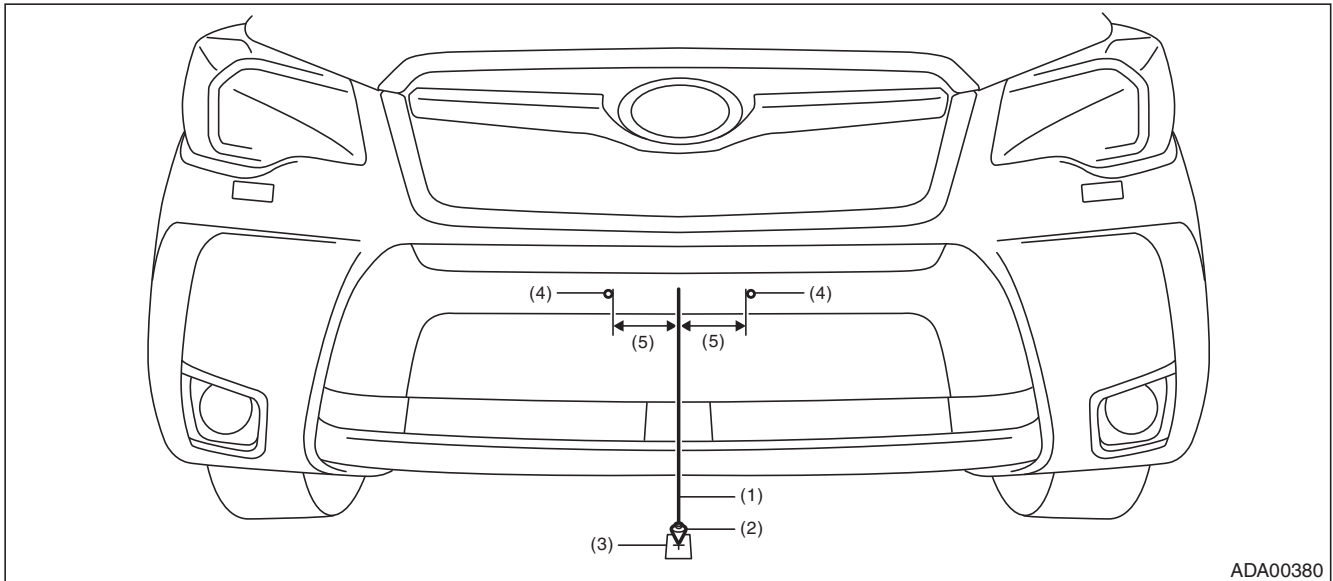
- | | |
|-------------|-----------------------|
| (1) Point A | (3) 4070 mm (13.4 ft) |
| (2) Point B | (4) Wall |

- 4) Suspend the plumb bob from the center of the front tire of the vehicle, and place the vehicle so that it is aligned with the leveling line (A-B line).

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

5) Suspend the plumb bob with leveling line from front center position of vehicle (center of license plate base), and mark the position where the plumb bob touches the ground. (Point C)



(1) Leveling line

(2) Plumb bob

(3) Point C

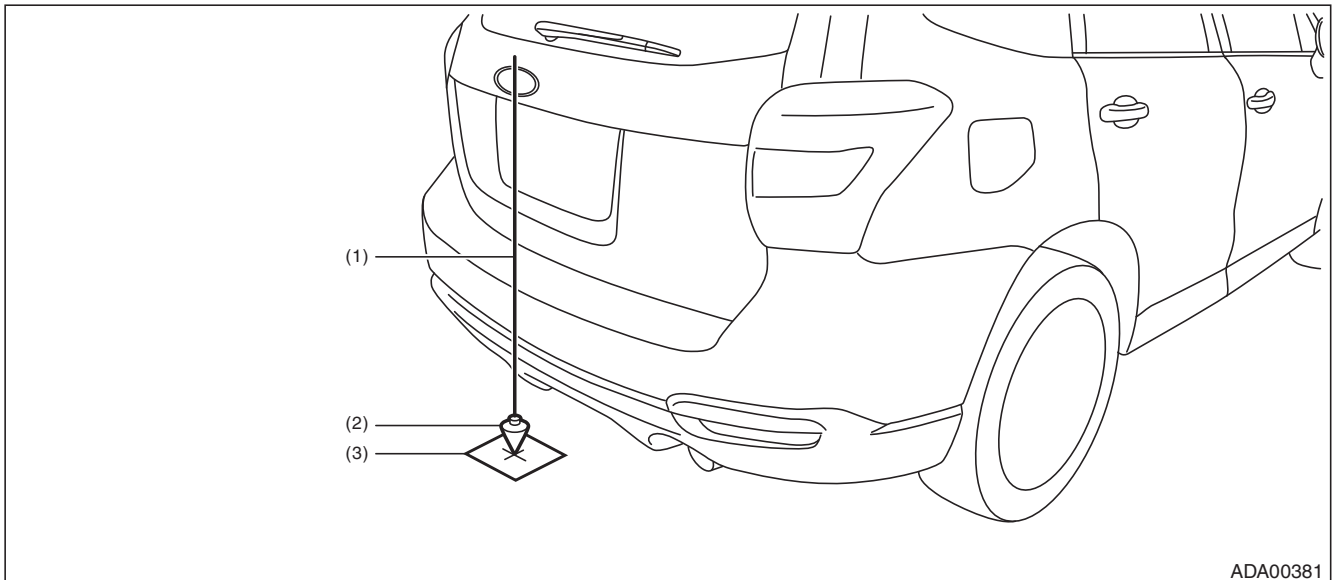
(4) License plate base

(5) Same distance

NOTE:

Stick the packing tape etc. on the floor, then make a marking on it.

6) Suspend the plumb bob with leveling line from rear center position of vehicle (center of rear ornament), and mark the position where the plumb bob touches the ground. (Point D)



(1) Leveling line

(2) Plumb bob

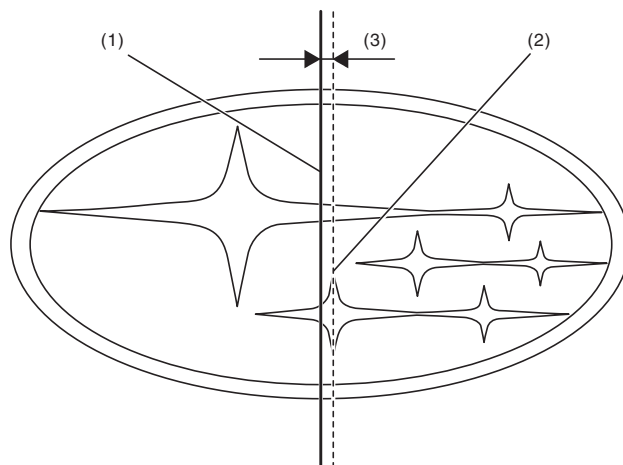
(3) Point D

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

NOTE:

The center of the ornament is located 2 mm (0.08 in) to the left from the top of the second left star.



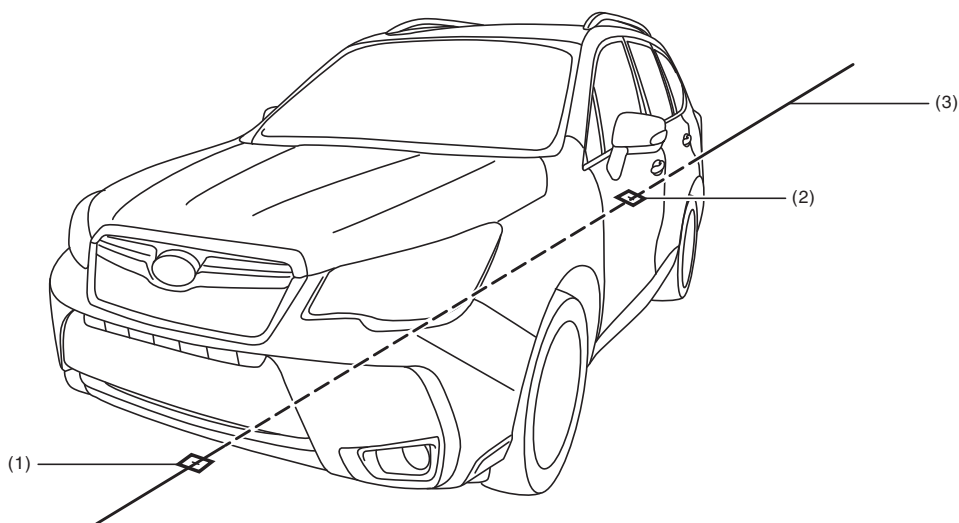
ADA00416

(1) Center of ornament

(2) Top of star

(3) 2.0 mm (0.08 in)

7) Strain the leveling line from the making point D through the marking point C to the wall, and fix it with packing tape. (C-D line)



ADA00382

(1) Point C

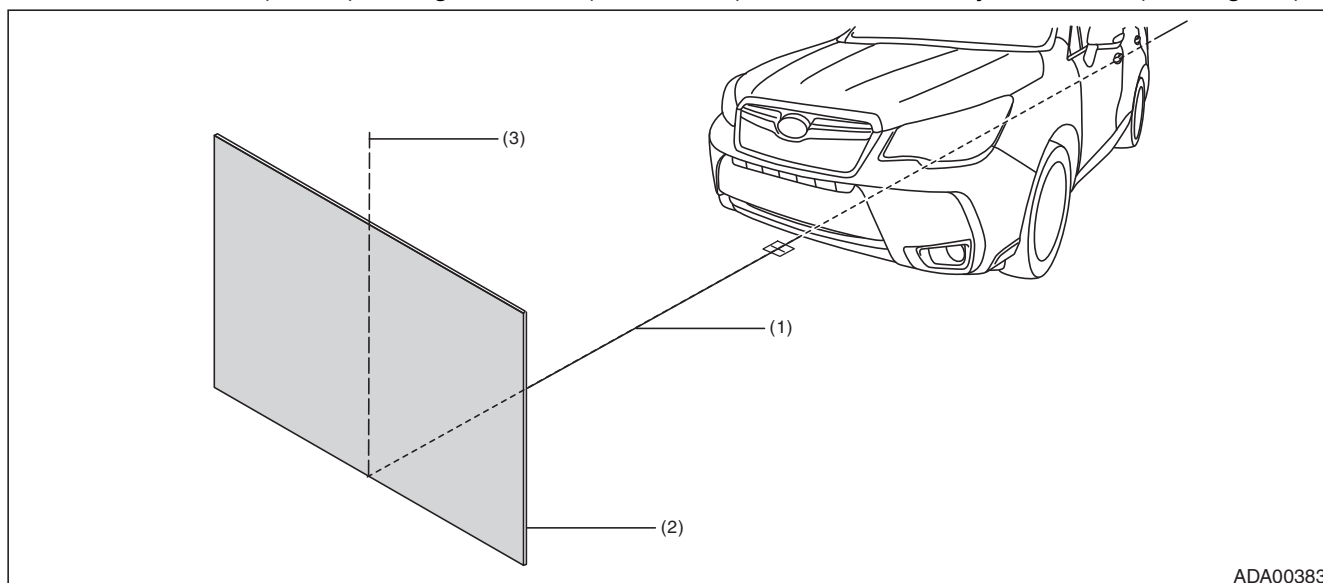
(2) Point D

(3) Leveling line

Camera Adjustment, Inspection

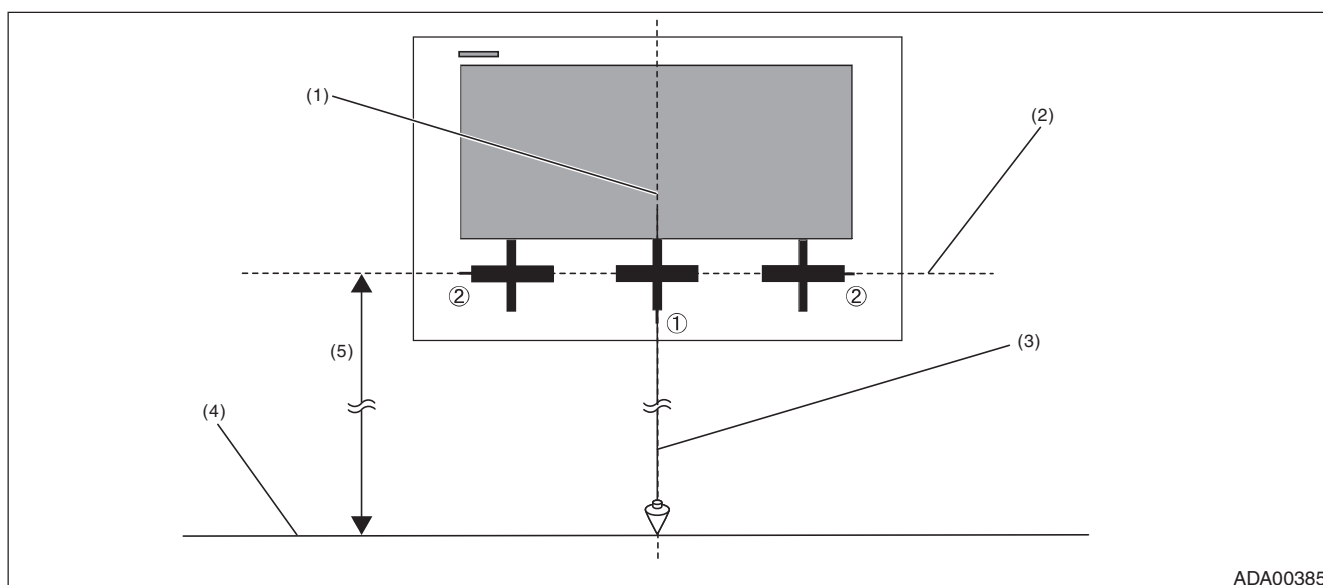
EyeSight (DIAGNOSTICS)

8) Using the plumb bob, attach the RANDOM CHART on the wall, so that the height from the floor to the cross mark (left and right) setting reference (horizontal line) is 1,004 mm (3.3 ft) while aligning the RANDOM CHART cross mark (center) setting reference (vertical line) to the vehicle body center line (leveling line).



ADA00383

- (1) Vehicle body center line (C-D line) (2) Wall (3) Setting reference (vertical line)



ADA00385

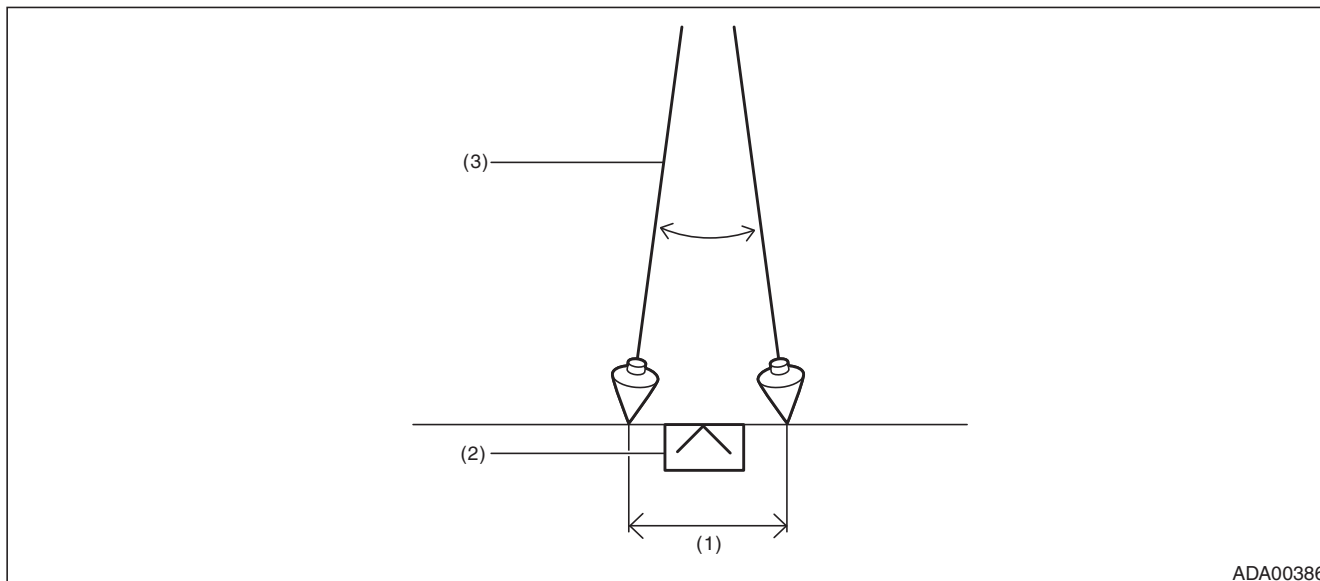
- (1) ① = Setting reference (vertical line) and vehicle body center line (C-D line) (3) Plumb bob (5) 1,004 mm (3.3 ft)
 (2) ② = Setting reference (horizontal line) (4) Floor

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

CAUTION:

- Centering accuracy of the plumb bob shall be ± 4.0 mm (± 0.16 in) or less.



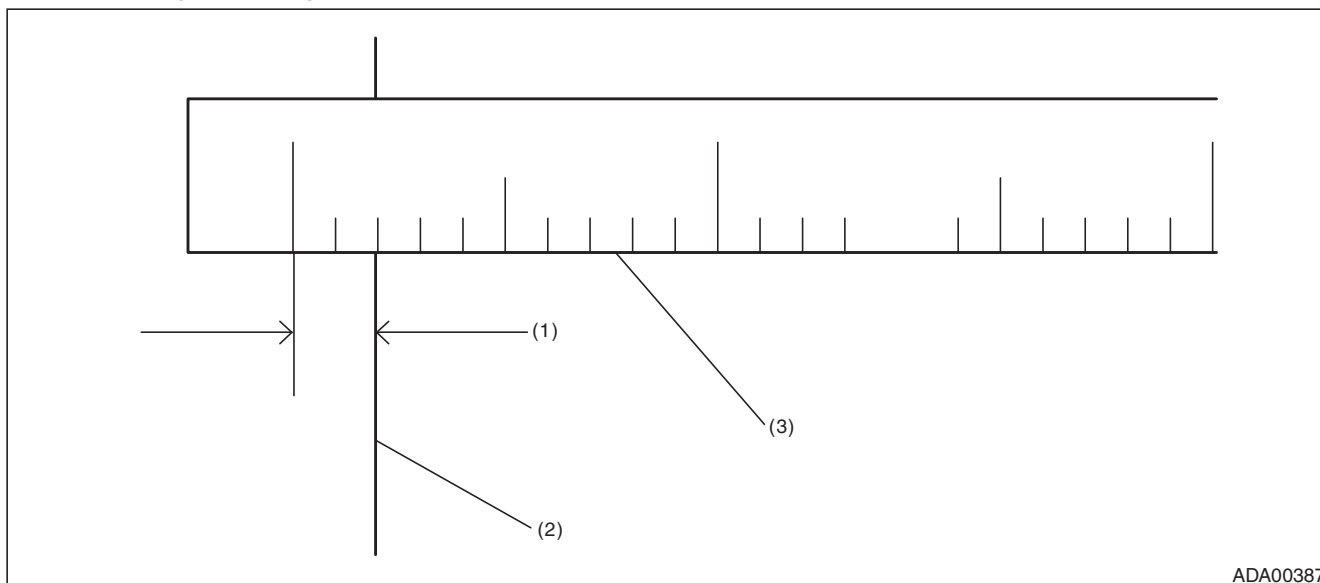
ADA00386

(1) ± 4.0 mm (± 0.16 in)

(2) Marking

(3) Plumb bob

- Positioning accuracy of the measure shall be ± 2.0 mm (± 0.08 in) or less.



ADA00387

(1) ± 2.0 mm (± 0.08 in)

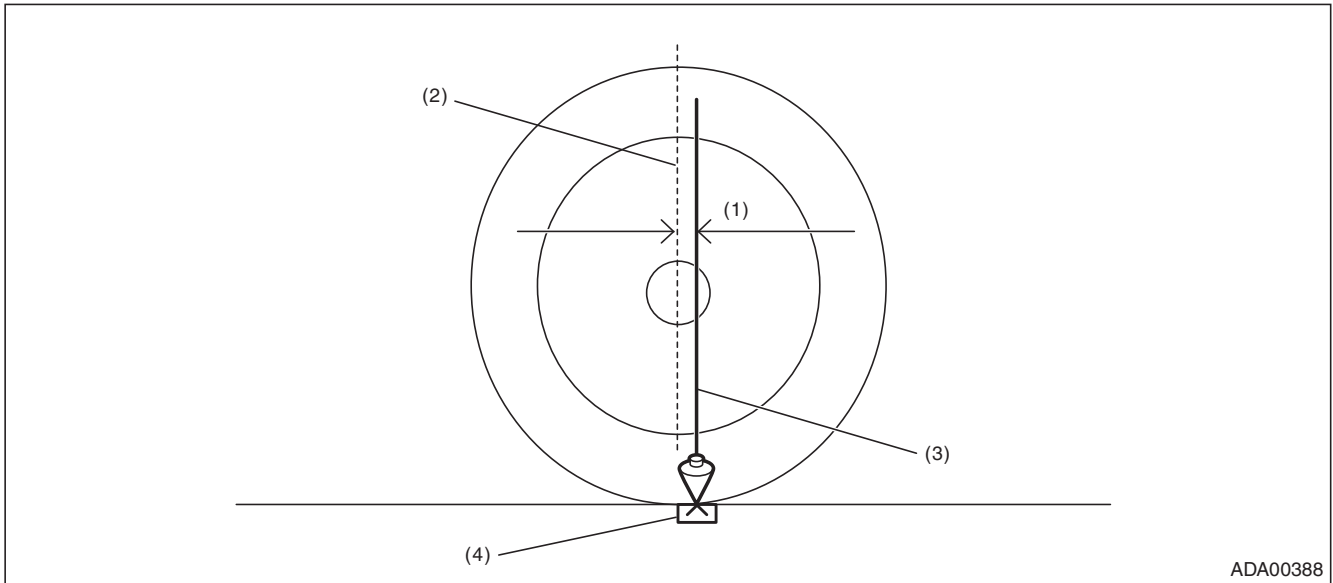
(2) Marking

(3) Measure

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

- Centering accuracy of the tire shall be ± 4.0 mm (± 0.16 in) or less.



ADA00388

- | | |
|-----------------------------------|---------------|
| (1) ± 4.0 mm (± 0.16 in) | (3) Plumb bob |
| (2) Tire center line | (4) Marking |

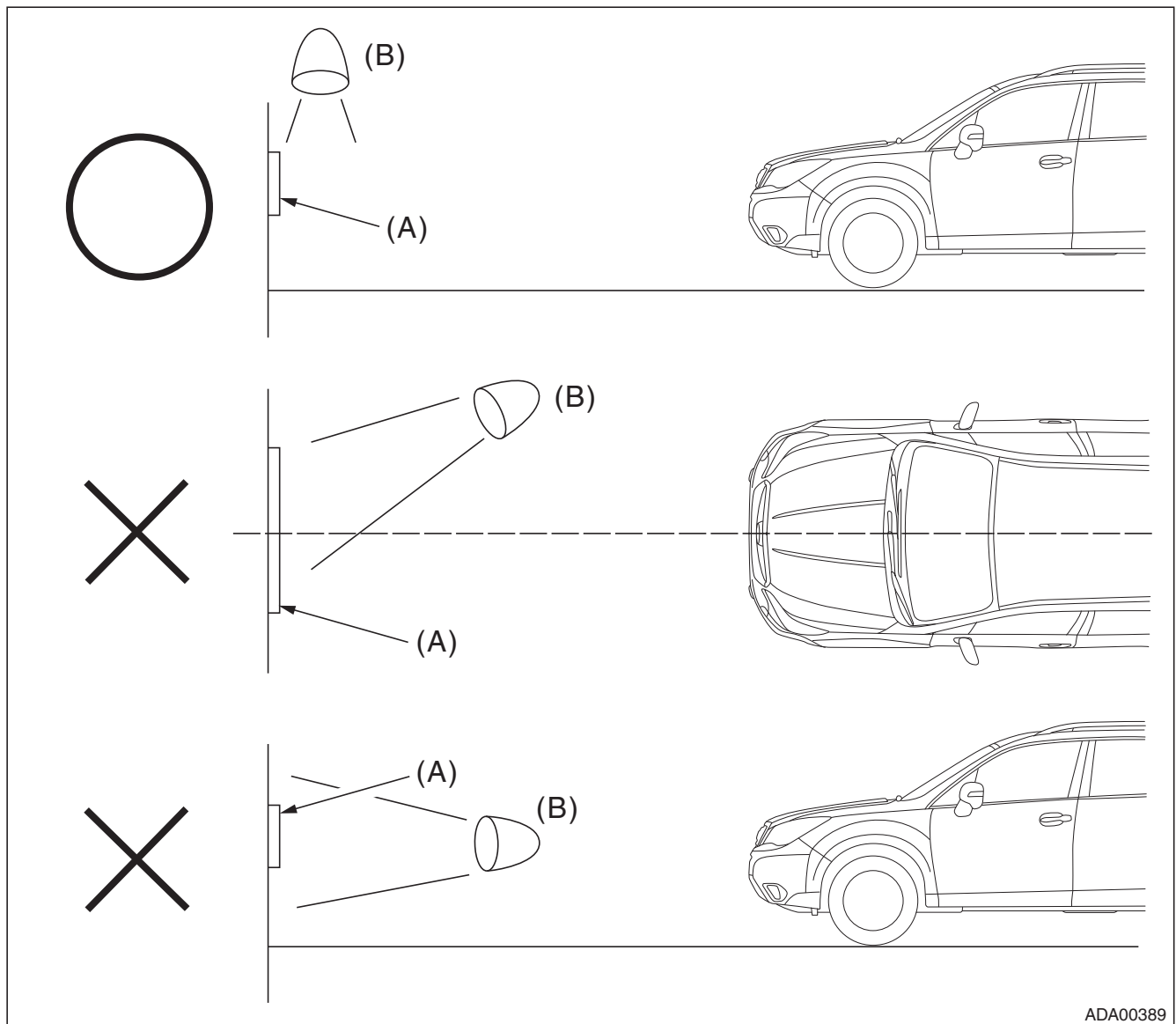
- Affix the RANDOM CHART onto the vertical wall with flat surface.
- Turn off the headlight.
- Remove the luggage from the vehicle.
- Perform the adjustment work at the level floor.
- Perform the adjustment work at lighted places. If the lighting is not enough, adjustment can not be done, and accuracy rate may not be acquired.



Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

- Apply the lighting from the upper side of RANDOM CHART. (If the lighting is applied from the position where light reflects at RANDOM CHART, the adjustment can not be done, because the reflected light enters the camera.)



ADA00389

(A) RANDOM CHART

(B) Lighting

- The adjustment in the outdoors cannot be recommended. Note the sun position, when adjusting it in outdoor by necessity. (It is not acceptable when the sunlight comes from front or rear of the vehicle)
- Do not affix RANDOM CHART with lustrous tapes which may reflect the light.
- When the front tires are not directed to the straight ahead position even if the steering wheel is set to the center position, adjust the alignment.

9) Turn the ignition switch to OFF.

10) Check the windshield glass and the dashboard. <Ref. to ES(diag)-8, WINDSHIELD GLASS AND DASHBOARD, INSPECTION, General Description.>

CAUTION:

If there are any dirt, object or reflection from dashboard within the visibility of stereo camera, or if the inner mirror is excessively moved and the object enters the visibility of the camera, the correct adjustment and inspection can not be performed. Especially, do not put paper etc. on the dashboard.

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

11) Connect the Subaru Select Monitor.

NOTE:

Use the Subaru Select Monitor equipped with the latest version of the software.

12) Turn the ignition switch to ON.

13) Wait for 10 seconds.

14) On «Main Menu» display, select {Each System Check}.

15) On «System Selection Menu» display, select {ADA adaptive cruise control system}.

16) Select {EyeSight (from 2009MY)} while pressing the camera cover mounted pre-collision brake OFF switch and lane departure warning OFF switch at the same time.

NOTE:

If {EyeSight (from 2009MY)} is selected without pressing two switches at the same time, {Camera adjustment, inspection} is not displayed. (for preventing misoperation)

Also, the message is not displayed, when the camera does not finish the start-up (approx. 10 seconds after ignition switch ON). In that case, repeat from the selection of {EyeSight (from 2009MY)}.

17) On «EyeSight (from 2009MY)» display, select {Camera adjustment, inspection}, to perform the camera adjustment or inspection.

NOTE:

- When performing {Camera adjustment, inspection}, pre-collision brake OFF indicator light, lane departure warning OFF indicator light in the meter will illuminate, and the normal function will be disabled.
- After camera adjustment, the function will be enabled, when the ignition switch is turned to OFF and system is restarted.

2. ADJUSTMENT VALUE CLEAR

Perform when replacing stereo camera. (Do not perform when performing stereo camera re-adjustment and inspection)

1) On «Camera adjustment, inspection» display, select {Camera individual adjustment mode}.

2) On «Camera individual adjustment mode» display, select {Clear adjustment value}.

3) When «Perform camera adjustment/inspection. Press OK when the preparations have been made.» is displayed, if preparation is ready, select {OK}.

4) When «Clear the adjustment value.» is displayed, select {OK}.

5) When «Clearing adjustment value...» is displayed, wait until process finishes.

6) When the adjustment value clear is finished correctly, and «Adjustment value cleared OK!» is displayed, select {OK} to finish.

7) Turn the ignition switch to OFF and wait for approx. 5 seconds or more.

CAUTION:

If the ignition switch OFF period is short, the adjustment value clear can not be performed correctly.

8) Next, perform the camera all adjustment mode (replacement/removal). <Ref. to ES(diag)-58, CAMERA ALL ADJUSTMENT MODE (REPLACEMENT/REMOVAL), PROCEDURE, Camera Adjustment, Inspection.>

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

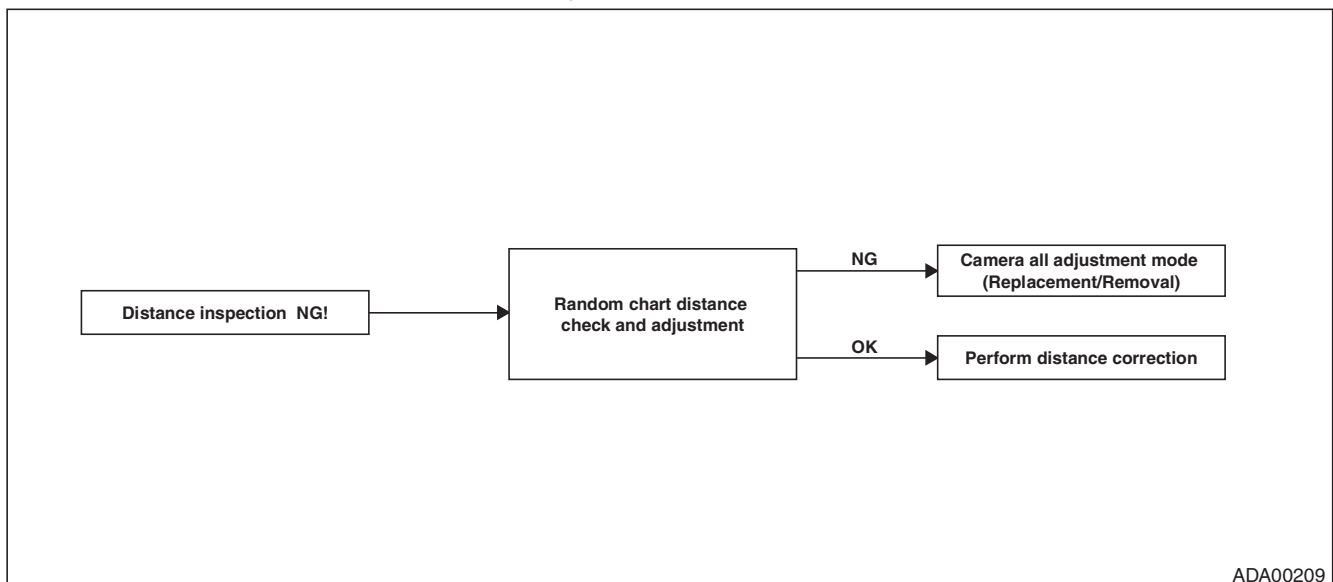
3. CAMERA ALL ADJUSTMENT MODE (REPLACEMENT/REMOVAL)

Perform this procedure when the stereo camera is replaced or re-adjustment is necessary (when stereo camera malfunctioning, when stereo camera reinstalled, when windshield glass replaced).

CAUTION:

- When the stereo camera is replaced, be sure to perform the {Clear adjustment value} first. When {Clear adjustment value} was skipped, restart the procedure from {Clear adjustment value} again. <Ref. to ES(diag)-57, ADJUSTMENT VALUE CLEAR, PROCEDURE, Camera Adjustment, Inspection.>
- Perform the camera adjustment and inspection at curb weight without passengers.
- When the camera all adjustment mode is performed, if the procedures are not completed correctly to the end, the warning light may illuminate, when the vehicle moves.

- 1) On «Camera adjustment, inspection» display, select {Camera all adjustment mode (replacement/removal)}.
- 2) «Perform camera adjustment/inspection. Press OK when the preparations have been made.» will be displayed, if preparation is ready, select {OK}.
- 3) When «In process...» is displayed, wait until inspection finishes.
- 4) When the accuracy rate inspection is finished correctly, and «Accuracy rate ○○% OK!» is displayed, select {OK} to go to step 9).
- 5) When «Distance inspection NG!» is displayed, refer to the NOTE below.



NOTE:

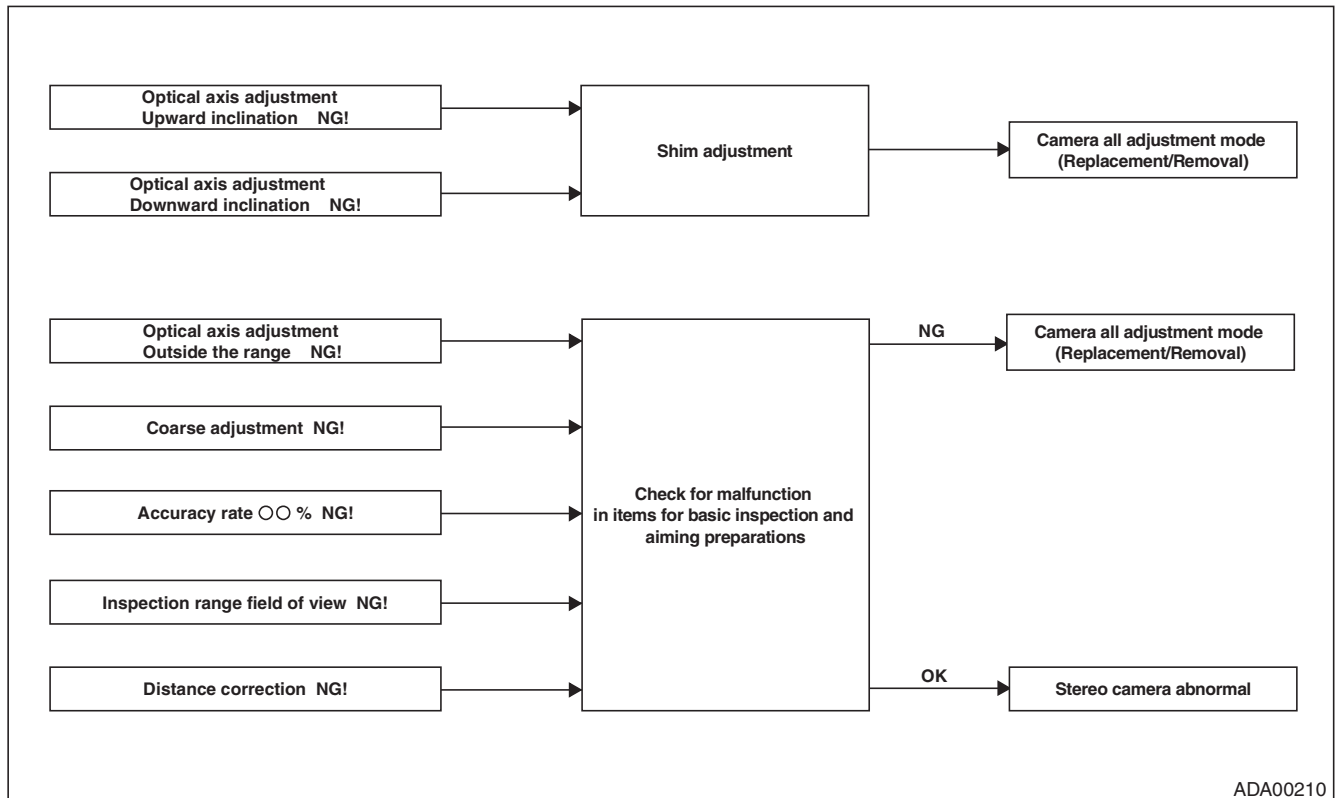
Distance check and adjustment of RANDOM CHART <Ref. to ES(diag)-43, PREPARATIONS, PROCEDURE, Camera Adjustment, Inspection.>

- 6) When «Perform distance correction.» is displayed, select {OK}. When the distance correction is finished correctly, and «Distance correction OK!» is displayed, select {OK} and go to the accuracy rate inspection.
- 7) When «Perform accuracy rate inspection.» is displayed, select {OK}. When the accuracy rate inspection is finished correctly, and «Accuracy rate ○○% OK!» is displayed, select {OK} to go to the next step.

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

8) When «○○ NG!» is displayed during adjustment, refer to the NOTE below.



NOTE:

- Shim adjustment <Ref. to ES(diag)-60, SHIM ADJUSTMENT, PROCEDURE, Camera Adjustment, Inspection.>
- Basic inspection items <Ref. to ES(diag)-8, INSPECTION, General Description.>
- Aiming preparation items <Ref. to ES(diag)-43, PREPARATIONS, PROCEDURE, Camera Adjustment, Inspection.>

9) Turn the ignition switch to OFF and wait for 5 seconds. (time necessary to save adjustment and inspection result)

CAUTION:

If the ignition switch OFF period after adjustment and inspection finished is short, the adjustment and inspection result can not be saved correctly. The warning light may illuminate, when the vehicle moves.

10) Turn the ignition switch to ON, and confirm that [Aiming completion flag] of “Current Data Display & Save” is [Aiming completed] using the Subaru Select Monitor. (Note that it is different from [Initial aiming completion flag]) Or confirm that the [Model registration information] corresponds to the vehicle.

11) Perform the {Clear Memory}, and turn the ignition switch to OFF.

NOTE:

Even if [Aiming completion flag] is [Aiming completed], when no record is registered in [Model registration information], turn the ignition switch to off again, and wait for five seconds.

Camera Adjustment, Inspection

EyeSight (DIAGNOSTICS)

12) Next, perform the automatic adjustment and function check by driving. <Ref. to ES(diag)-60, AUTOMATIC ADJUSTMENT AND FUNCTION CHECK BY DRIVING, PROCEDURE, Camera Adjustment, Inspection.>

4. AUTOMATIC ADJUSTMENT AND FUNCTION CHECK BY DRIVING

NOTE:

- Perform the automatic adjustment and function check by driving to improve the recognition accuracy of stereo camera, when the stereo camera is replaced or re-adjusted, or the EyeSight function does not operate correctly.
- The automatic adjustment and function check by driving adjust the stereo camera more in detail, based on the stereo camera adjustment using RANDOM CHART.
 - 1) Perform this procedure after finishing stereo camera adjustment and inspection.
 - 2) On «ADA adaptive cruise control system» display, select {EyeSight (from 2009MY)}.
 - 3) On «EyeSight (from 2009MY)» display, select {Current Data Display & Save}.
 - 4) On «Current Data Display & Save» display, display the {Automatic adjustment status}. <Ref. to ES(diag)-22, OPERATION, Read Current Data.>
 - 5) Drive the vehicle until [Automatic adjustment status] displays {1F}.Drive the vehicle so that the distance from the preceding vehicle is 40 m or more.

Display	Content	Unit of measure	Note (at idling)
Automatic adjustment status	Index for automatic adjustment operation performed by the driving test after the completion of the optical axis adjustment	—	{1F} is displayed when completed.

NOTE:

- The time required until {1F} is displayed may be longer depending on the road condition etc.
- For new vehicles, {00} may be displayed. It is not necessary to drive the vehicle before delivery because high-accuracy aiming has been performed at vehicle shipment.
- 6) On {Current Data Display & Save} display, display [Lane recognition status] to check if any of the following appears.
 - Right lane is recognized: 01
 - Left lane is recognized: 10
 - Right and left lane are recognized: 11

Display	Content	Unit of measure	Note (at idling)
Lane recognition status	Display of lane recognition status	—	Recognized when vehicle lane can be seen by 20 m or more.

7) On {Current Data Display & Save} display, display [Distance from leading vehicle] to check if the distance from the preceding vehicle is approximately the same.

5. SHIM ADJUSTMENT

- 1) Turn the ignition switch to OFF.
- 2) Detach the stereo camera cover, and remove the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>
- 3) Remove the stereo camera spacer, and insert the shim into the body and camera spacer.

NOTE:

- Inserting the shim (031105000) into the vehicle front side makes camera downward.
 - Inserting the shim (031105000) into the vehicle rear side makes camera upward.
 - There is a case that the shim may be inserted at the production line, but it is not abnormal.
- 4) Install the stereo camera spacer.

Tightening torque:

$5.5 \pm 1.0 \text{ N}\cdot\text{m}$ ($0.56 \pm 0.10 \text{ kgf}\cdot\text{m}$, $4.1 \pm 0.7 \text{ ft}\cdot\text{lb}$)

- 5) Install the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>
- 6) Perform the camera all adjustment mode (replacement/removal). <Ref. to ES(diag)-58, CAMERA ALL ADJUSTMENT MODE (REPLACEMENT/REMOVAL), PROCEDURE, Camera Adjustment, Inspection.>

ES(diag)-60

6. CAMERA INITIALIZATION

This is a recovery measures prepared for the data failure caused by the low battery voltage during data storage to inside the stereo camera.

CAUTION:

Do not usually perform camera initialization because it will clear the aiming data and/or DTCs.

Perform the camera initialization only when the aiming result is NG even if the vehicle is placed correctly in the flowchart described in "A: Procedure".

- 1) Turn the ignition switch to ON.
- 2) Wait for 10 seconds.
- 3) On Main Menu display, select {Each System Check}.
- 4) On «System Selection Menu», select {ADA adaptive cruise control system}.
- 5) Select «EyeSight (from 2009MY)».
- 6) Select {Clear Memory} while pressing the camera cover mounted pre-collision brake OFF switch and lane departure warning OFF switch at the same time.
- 7) Turn the ignition switch to OFF.
- 8) Wait for 5 seconds.
- 9) Next, perform the clear adjustment value. <Ref. to ES(diag)-57, ADJUSTMENT VALUE CLEAR, PROCEDURE, Camera Adjustment, Inspection.>



Diagnostics with Phenomenon

EyeSight (DIAGNOSTICS)

13. Diagnostics with Phenomenon

A: DIAGNOSTIC PROCEDURE WITH PHENOMENON

1. ADAPTIVE CRUISE CONTROL, CONVENTIONAL CRUISE CONTROL

Phenomenon	Check Item	Reference
1 Cruise control main switch is not turned to ON. (CRUISE indicator light does not illuminate.) Or cruise control is cancelled without operating the cruise control command switch.	(1) Read the cancel code of the ECM.	Perform the diagnosis according to displayed cancel code. <Ref. to ES(diag)-88, ECM, LIST, List of Cancel Code.> If not displayed, go to (2).
	(2) Perform the real-time diagnosis. Check the input signal of cruise control system.	<Ref. to ES(diag)-40, Real-time Diagnosis.> When normal, go to (4). When abnormal, go to (3).
	(3) Check the cruise control command switch.	<Ref. to ES(diag)-76, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
	(4) Check the CRUISE indicator.	<Ref. to ES(diag)-75, CHECK ADAPTIVE CRUISE CONTROL INDICATOR LIGHT/CONSTANT SPEED CRUISE CONTROL INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT, Diagnostics with Phenomenon.>
2 Cruise control cannot be set. Or cruise control is cancelled without releasing operation. NOTE: • Do not turn the ignition switch to OFF after the cruise control is deactivated. • Do not operate the cruise control command switch after the cruise control is deactivated. If the above is performed, the cancel code the ECM will be cleared.	(1) Read the cancel code of the ECM.	Perform the diagnosis according to displayed cancel code. <Ref. to ES(diag)-82, List of Cancel Code.> If not displayed, go to (2).
	(2) Perform the real-time diagnosis. Check the input signal of cruise control system.	<Ref. to ES(diag)-40, Real-time Diagnosis.> When normal, go to (6). When abnormal, go to the relevant items for (3), (4), (5).
	(3) Check the cruise control command switch.	<Ref. to ES(diag)-76, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
	(4) Check stop light switch and brake switch.	<Ref. to BR-69, Brake Pedal.> <Ref. to CC(diag)-17, 12, Diagnostic Procedure with Cancel Code.>
	(5) Check the neutral position switch.	<Ref. to CC(diag)-21, 14, Diagnostic Procedure with Cancel Code.> <Ref. to CC(diag)-26, 62, Diagnostic Procedure with Cancel Code.>
	(6) Check vehicle speed sensor.	<Ref. to CC(diag)-25, 22, Diagnostic Procedure with Cancel Code.>
3 SET indicator does not illuminate.	Check the SET indicator.	<Ref. to ES(diag)-75, CHECK ADAPTIVE CRUISE CONTROL INDICATOR LIGHT/CONSTANT SPEED CRUISE CONTROL INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT, Diagnostics with Phenomenon.>
4 Vehicle speed is not held within set speed ± 3 km/h (± 2 MPH) on a level road.	Check the vehicle speed sensor.	<Ref. to CC(diag)-25, 22, Diagnostic Procedure with Cancel Code.>
5 Vehicle speed does not increase or does not return to set speed after RES/+ switch has been pressed.	(1) Perform the real-time diagnosis. Check the input signal of cruise control system.	<Ref. to ES(diag)-40, Real-time Diagnosis.> When abnormal, go to (2).
	(2) Check the RES/+ switch.	<Ref. to ES(diag)-76, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
6 Vehicle speed does not decrease after SET/- switch has been pressed.	(1) Perform the real-time diagnosis. Check the input signal of cruise control system.	<Ref. to ES(diag)-40, Real-time Diagnosis.> When abnormal, go to (2).
	(2) Check the SET/- switch.	<Ref. to ES(diag)-76, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>

Diagnostics with Phenomenon

EyeSight (DIAGNOSTICS)

Phenomenon		Check Item	Reference
7	Cruise control is not released after CANCEL switch has been pressed.	(1) Perform the real-time diagnosis. Check the input signal of cruise control system.	<Ref. to ES(diag)-40, Real-time Diagnosis.> When abnormal, go to (2).
		(2) Check the CANCEL switch.	<Ref. to ES(diag)-76, CHECK CRUISE CONTROL COMMAND SWITCH, Diagnostics with Phenomenon.>
8	Cruise control is not released after brake pedal has been depressed.	(1) Perform the real-time diagnosis. Check the input signal of cruise control system.	<Ref. to ES(diag)-40, Real-time Diagnosis.> When abnormal, go to (2).
		(2) Check stop light switch and brake switch.	<Ref. to CC(diag)-17, 12, Diagnostic Procedure with Cancel Code.> <Ref. to BR-76, INSTALLATION, Stop Light Switch.>
9	Cruise control is not released after shifting to the neutral position.	(1) Perform the real-time diagnosis. Check the input signal of cruise control system.	<Ref. to ES(diag)-40, Real-time Diagnosis.> When abnormal, go to (2).
		(2) Check the neutral position switch.	<Ref. to CC(diag)-21, 14, Diagnostic Procedure with Cancel Code.>
10	Acceleration or deceleration does not occur according to the preceding vehicle. The preceding vehicle is difficult to be detected. Braking force is weaker than usual. Alarm for requiring more brake pedal force does not sound.	(1) Using check list (adaptive cruise control), check the condition and respond to it. 1) Is this applied to the condition that the use of adaptive cruise control is not desired? 2) Is this applied to the object or condition that is hard to be recognized by the stereo camera? 3) Is this applied to the driving condition that the preceding vehicle cannot be recognized or the vehicle on the next lane or the object on the roadside may be recognized by mistake? 4) Is this applied to the condition that brake force may become poor? 5) Is this applied to the condition that the alarm for requiring more brake pedal force does not sound even in a short vehicle distance?	<Ref. to ES(diag)-68, CHECK LIST (ADAPTIVE CRUISE CONTROL), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, go to (2).
		(2) Check the windshield glass and dashboard.	<Ref. to ES(diag)-8, WINDSHIELD GLASS AND DASHBOARD, INSPECTION, General Description.> When normal, go to (3).
		(3) Check the front wiper.	<Ref. to ES(diag)-12, FRONT WIPER, INSPECTION, General Description.> When normal, go to (4).
		(4) Check the stereo camera.	<Ref. to ES(diag)-13, STEREO CAMERA, INSPECTION, General Description.> When normal, go to (5).
		(5) Bleed air from brake system.	<Ref. to BR-63, BRAKE LINE, PROCEDURE, Air Bleeding.> Go to (6).
		(6) Check the optical axis of the stereo camera.	Adjust the optical axis of the stereo camera. <Ref. to ES(diag)-42, PROCEDURE, Camera Adjustment, Inspection.>



Diagnostics with Phenomenon

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2. PRE-COLLISION BRAKE, AT RAPID START PREVENTION CONTROL

Phenomenon		Check Item	Reference
1	Pre-collision brake does not operate. Or the pre-collision brake operates, but the vehicle cannot stop safely before collision. Or the pre-collision brake is released automatically. Or the pre-collision brake assist does not operate.	(1) Check that the pre-collision brake OFF indicator light goes off.	If this indicator light illuminates, the operation is not performed.
		(2) Using check list (pre-collision brake), check the following and respond to it. 1) Is this applied to the condition that the pre-collision brake does not operate, or there is a high possibility that the vehicle cannot stop safely before collision with the pre-collision brake? 2) Is this applied to the condition that there is a high possibility that the pre-collision brake does not operate due to the recognition status of the stereo camera? 3) Is this applied to the condition that the system does not operate correctly and the turning OFF of the pre-collision brake is desired? 4) Is this applied to the condition that the pre-collision brake OFF indicator light illuminates?	<Ref. to ES(diag)-70, CHECK LIST (PRE-COLLISION BRAKE), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
2	Pre-collision brake operates improperly. Or the pre-collision brake is not released. Or the pre-collision brake assist operates improperly.	(1) Using check list (pre-collision brake), check the following and respond to it. 1) Is this applied to the condition that the turning OFF of the pre-collision brake is desired? 2) Is this applied to the condition that the pre-collision brake may operate?	<Ref. to ES(diag)-70, CHECK LIST (PRE-COLLISION BRAKE), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
3	Pre-collision brake OFF indicator light does not go off. Or the pre-collision brake OFF indicator light illuminates automatically.	(1) Check that this failure occurs during engine start.	Light illumination for a while after the engine start is a normal.
		(2) Using the SSM, check that the system is not in the HALT condition with the cancel code.	If the cancel code is displayed, check the diagnosis contents from the List of Cancel Code, and perform the corresponding operations. <Ref. to ES(diag)-82, List of Cancel Code.> If the cancel code is not displayed, go to (3).
		(3) Check the pre-collision brake OFF switch.	<Ref. to ES(diag)-108, DTC B28B0 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
4	Pre-collision brake OFF indicator light does not illuminate. Or the pre-collision brake OFF indicator light goes off automatically.	(1) Check that this failure occurs during engine start.	Even if the pre-collision brake is turned off, it is turned on again when the engine switch is turned off and the engine has restarted.
		(2) Check the pre-collision brake OFF switch.	<Ref. to ES(diag)-108, DTC B28B0 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



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Phenomenon		Check Item	Reference
5	AT rapid start prevention control does not operate. Or the AT rapid start prevention control is released automatically.	(1) Check that the pre-collision brake OFF indicator light goes off.	If this indicator light illuminates, the operation is not performed.
		(2) Using check list (at rapid start prevention control), check the following and respond to it. 1) Is this applied to the condition that the AT rapid start prevention control may not operate? 2) Is this applied to the condition that the pre-collision brake OFF indicator light illuminates?	<Ref. to ES(diag)-72, CHECK LIST (AT RAPID START PREVENTION CONTROL), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
6	AT rapid start prevention control operates improperly. Or the AT rapid start prevention control is not released.	(1) Using check list (at rapid start prevention control), check the following and respond to it. 1) Is this applied to the condition that the turning OFF of the AT rapid start prevention control is desired? 2) Is this applied to the condition that the AT rapid start prevention control may operate?	<Ref. to ES(diag)-72, CHECK LIST (AT RAPID START PREVENTION CONTROL), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.



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3. LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION

Phenomenon		Check Item	Reference
1	Lane departure warning does not operate. Or the lane departure warning is released automatically.	(1) Check that the lane departure warning OFF indicator light goes off.	If this indicator light illuminates, the operation is not performed.
		(2) Using check list (lane departure warning, sway warning, forward vehicle's start monitoring function), check the following and respond to it. 1) Is this applied to the condition that the lane departure warning does not operate or is difficult to operate? 2) Is this applied to the condition that the lane departure warning OFF indicator light illuminates?	<Ref. to ES(diag)-73, CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
2	Lane departure warning operates improperly. Or the lane departure warning is not released.	(1) Using check list (lane departure warning, sway warning, forward vehicle's start monitoring function), check the following and respond to it. 1) Is this applied to the condition that the vehicle lane is recognized erroneously and the lane departure warning may operate?	<Ref. to ES(diag)-73, CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
3	Lane departure warning OFF indicator light does not go off. Or the lane departure warning OFF indicator light illuminates automatically.	(1) Check that this failure occurs during engine start.	Light illumination for a while after the engine start is a normal. Even if the engine switch is turned off and the engine is restarted, the status before the engine switch off is maintained.
		(2) Using the SSM, check that the system is not in the HALT condition with the cancel code.	If the cancel code is displayed, check the diagnosis contents from the List of Cancel Code, and perform the corresponding operations. <Ref. to ES(diag)-82, List of Cancel Code.> If the cancel code is not displayed, go to (3).
		(3) Check the lane departure warning OFF indicator light.	<Ref. to ES(diag)-108, DTC B28B0 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
4	Lane departure warning OFF indicator light does not illuminate. Or the lane departure warning OFF indicator light goes off automatically.	(1) Check the lane departure warning OFF indicator light.	<Ref. to ES(diag)-108, DTC B28B0 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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Phenomenon		Check Item	Reference
5	Sway warning does not operate. Or the sway warning is released automatically.	(1) Check that the lane departure warning OFF indicator light goes off.	If this indicator light illuminates, the operation is not performed.
		(2) Using CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), check the following and respond to it. 1) Is this applied to the condition that the sway warning may not operate? 2) Is this applied to the condition that the lane departure warning OFF indicator light illuminates?	<Ref. to ES(diag)-73, CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
6	Sway warning operates improperly. Or the sway warning is not released.	(1) Using CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), check the following and respond to it. 1) Is this applied to the condition that the sway warning may operate improperly?	<Ref. to ES(diag)-73, CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
7	Forward vehicle's start monitoring function does not operate. Or the forward vehicle's start monitoring function is released automatically.	(1) Using CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), check the following and respond to it. 1) Is this applied to the condition that the forward vehicle's start monitoring function does not operate even when the preceding vehicle has already started?	<Ref. to ES(diag)-73, CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.
8	Forward vehicle's start monitoring function operates improperly. Or the forward vehicle's start monitoring function is not released.	(1) Using CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), check the following and respond to it. 1) Is this applied to the condition that the forward vehicle's start monitoring function operates even when the preceding vehicle has not yet started?	<Ref. to ES(diag)-73, CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION), DIAGNOSTIC PROCEDURE WITH PHENOMENON, Diagnostics with Phenomenon.> When there is a relevant item in the check list, it can be the cause of malfunction. Eliminate the cause, and check that the malfunction has been improved. If not solved, the stereo camera may be malfunctioning.



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EyeSight (DIAGNOSTICS)

4. CHECK LIST (ADAPTIVE CRUISE CONTROL)

Item Name		Yes/No	
[1]: When the vehicle does not accelerate or decelerate according to the preceding vehicle, or when it is difficult to detect the preceding vehicle.			
1	Check that the following are applied to the condition that the use of adaptive cruise control is not desired.		
1	Tire pressure is not correct.	Yes	No
2	The vehicle is equipped with the temporary spare tire.	Yes	No
3	The vehicle is equipped with worn tire or tires with excessive wear difference.	Yes	No
4	The vehicle is equipped with the tires out of specification.	Yes	No
5	The suspension has been modified.	Yes	No
6	The vehicle is equipped with the tire chain.	Yes	No
7	Headlight is dirty or the optical axis is deviated. (The vehicle cannot correctly emit the headlight beam against the object and recognize it.)	Yes	No
8	The driving of own vehicle is unstable due to an accident or failure.	Yes	No
9	The brake warning light illuminates.	Yes	No
10	Vehicle is tilted by the heavy load.	Yes	No
11	Passenger capacity is exceeded.	Yes	No
12	The vehicle is towing the trailer or other vehicle.	Yes	No
13	The vehicle drives on the general road (other than limited highway). (Depending on the road environment (complicated roads etc.), the vehicle may not be able to drive according to the traffic condition, which may lead to the traffic accident.)	Yes	No
14	The vehicle drives on the sharp bend.	Yes	No
15	The vehicle drives on the slippery roads such as icy road or snow-covered road. (Tires can spin, losing the vehicle control.)	Yes	No
16	The vehicle drives under the traffic condition that the certain vehicle distance is difficult to be maintained due to frequent acceleration and deceleration. (The vehicle may not be able to drive according to the traffic condition.)	Yes	No
17	There is a steep downhill. (The vehicle may drive at higher speed than the set vehicle speed.)	Yes	No
18	The vehicle performs adaptive driving while recognizing the preceding vehicle on the steep downhills. (Brake can be overheated.)	Yes	No
19	The vehicle drives on the road with repeated steep uphill and downhills or crossover. (The vehicle may not be able to recognize the preceding vehicle or may recognize the road surface, and appropriate control may not be performed.)	Yes	No
20	The vehicle is entering the interchange, service area, parking area, junction or tollgate. (The vehicle may not be able to recognize the preceding vehicle.)	Yes	No
21	When the surrounding brightness (such as inlet and outlet of a tunnel) suddenly changes.	Yes	No
22	There are water, snow or sandy dust raised by the preceding vehicle or oncoming vehicle, or sand or smoke blown in the wind, or moisture in front of own vehicle. (The vehicle may not be able to recognize the preceding vehicle or may recognize the water, and appropriate control may not be performed.)	Yes	No
23	The windshield glass is covered with fog, snow, dirt, frost or sandy dust.	Yes	No
24	The raindrops, water drops or dirt on the windshield glass are not wiped off sufficiently. (The vehicle may not be able to recognize the preceding vehicle, and appropriate control may not be performed.)	Yes	No
25	Canoes etc. loaded on the roof block the visibility of the stereo camera.	Yes	No

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Item Name		Yes/No	
2	Check that the following are applied to the object or condition that is hard to be recognized by the stereo camera.		
1	That was a vehicle with large speed difference (low-speed driving vehicle, stopping vehicle, oncoming vehicle).	Yes	No
2	That was a cutting-in vehicle.	Yes	No
3	That was a motorcycle, bicycle, pedestrian or animal, etc.	Yes	No
4	It was dim in the evening or in the morning.	Yes	No
5	The headlight did not illuminate during nighttime hours or inside the tunnel.	Yes	No
6	The tail light of the preceding vehicle did not illuminate during nighttime hours or inside the tunnel.	Yes	No
7	The vehicle was exposed to the intense light (backlight such as sunlight or headlight high-beam light) from the front of the vehicle.	Yes	No
8	The rearmost surface of the preceding vehicle was small, low or uneven. That was a truck equipped with an unloaded platform without gate, a vehicle that the luggage was protruding from the rear end of the vehicle, a vehicle of special shape (carrier car, side car, etc.) or a vehicle with low vehicle height.	Yes	No
9	There was an object extremely close to the bumper of the own vehicle.	Yes	No
3	Check that the following are applied to the driving condition that the preceding vehicle cannot be recognized or the vehicle on the next lane or the object on the roadside may be recognized by mistake.		
1	The vehicle began adaptive cruise control from the condition that the vehicle distance was short immediately after the preceding vehicle was cut in.	Yes	No
2	The vehicle drives on the curve, outlet and inlet of the curve, or the road with many curves in succession. (Recognition may not be performed properly, because the preceding vehicle is out of recognition area.)	Yes	No
3	The position against the preceding vehicle deviated laterally.	Yes	No
4	There were some objects just near the road side.	Yes	No
5	The speed difference against the preceding vehicle was large.	Yes	No
6	Other vehicle cut ahead of the own vehicle.	Yes	No
7	The vehicle distance was extremely short.	Yes	No
8	The own vehicle swayed in the vehicle lane.	Yes	No
9	The road surface was uneven due to roll or unpaved track.	Yes	No
10	The vehicle drove on the narrow lane because of the lane closure or construction work.	Yes	No
11	The driving of own vehicle was unstable due to an accident or failure.	Yes	No
12	The own vehicle was loaded with the extremely heavy load in the luggage compartment or on the rear seat.	Yes	No
[2]: When braking force is weaker than usual.			
1	Check that the following are applied to the condition that brake force may become poor.		
1	The vehicle status (loading amount, passenger, etc.) was inappropriate.	Yes	No
2	The road surface was very steep, slippery, sharp turn, or uneven.	Yes	No
3	The service maintenance condition of the vehicle (brake system, tire wear, tire pressure, spare tire, etc.) was inappropriate.	Yes	No
4	The brake was cold at low ambient temperature or immediately after the driving had started.	Yes	No
5	The symptom occurred between immediately after engine started and after a while the vehicle started driving (Completion of warming up operation can be used as an indication.).	Yes	No
6	The brake force becomes poor due to the overheating of the brake on the downhills.	Yes	No
7	The brake force becomes poor because of the wet brake after driving onto the puddle or washing the vehicle.	Yes	No
[3]: When the alarm for requiring more brake pedal force does not sound.			
1	Check that the following are applied to the condition that the alarm for requiring more brake pedal force does not sound even in a short vehicle distance.		
1	The speed difference between own vehicle and preceding vehicle (when the vehicle speed of the own vehicle was approximately the same as that of the preceding vehicle) was small.	Yes	No
2	The vehicle speed of the preceding vehicle was faster than that of the own vehicle (when the vehicle distance was getting longer).	Yes	No
3	Other vehicle cut in extremely close to the own vehicle.	Yes	No
4	The preceding vehicle decelerated abruptly.	Yes	No
5	There are many continuous uphill and downhills.	Yes	No

Diagnostics with Phenomenon

EyeSight (DIAGNOSTICS)

5. CHECK LIST (PRE-COLLISION BRAKE)

Item Name		Yes/No	
[1]: When pre-collision brake did not operate, or when vehicle could not stop safely before collision in spite of pre-collision brake operation.			
1	Check that the following are applied to the condition that the pre-collision brake does not operate, or there is a high possibility that the vehicle cannot stop safely before collision in spite of pre-collision brake operation.		
1	The following conditions occurred. Vehicle speed difference in the preceding was small. Vehicle distance was long. Lateral deviation was large (offset amount).	Yes	No
2	The vehicle status (loading amount, number of passenger, etc.) was inappropriate.	Yes	No
3	The road surface was very steep, slippery, sharp turn, or uneven.	Yes	No
4	There was problem for the frontal visibility (rain, snow, fog, smoke, etc.).	Yes	No
5	The objects were livestock, animals, guardrail, telephone pole, tree, fence, wall, etc.	Yes	No
6	The object was motorcycle, bicycle, or pedestrian. However, the system could not recognize the object due to surrounding brightness, motion, posture, and/or angle.	Yes	No
7	Crash avoidance operation (accelerator pedal, brake pedal, steering wheel, etc.) was performed.	Yes	No
8	The service maintenance condition of the vehicle (brake system, tire wear, tire pressure, spare tire, etc.) was inappropriate.	Yes	No
9	The vehicle is towing the trailer or other vehicle.	Yes	No
10	The brake was cold at low ambient temperature or immediately after the driving had started.	Yes	No
11	The brake force becomes poor due to the overheating of the brake on the downhills.	Yes	No
12	The brake force becomes poor because of the wet brake after driving onto the puddle or washing the vehicle.	Yes	No
2	Check that the following are applied to the condition that there is a high possibility that the pre-collision brake does not operate depending on the recognition status of the stereo camera.		
1	It was bad weather (heavy rain, snowstorm, dense fog).	Yes	No
2	The field of view was insufficient due to water, snow or sandy dust raised by the preceding vehicle or oncoming vehicle, or the moisture, sand or smoke blown in the wind.	Yes	No
3	The headlight did not illuminate during nighttime hours or inside the tunnel.	Yes	No
4	The tail light of the preceding vehicle did not illuminate during nighttime hours or inside the tunnel.	Yes	No
5	The vehicle approached the motorcycle, bicycle or pedestrian in the night.	Yes	No
6	It was dark in the evening or in the morning.	Yes	No
7	The rearmost surface of the preceding vehicle was small, low or uneven. That was a truck equipped with an unloaded platform without gate, a vehicle that the luggage was protruding from the rear end of the vehicle, a vehicle of special shape (carrier car, side car, etc.) or a vehicle with low vehicle height.	Yes	No
8	There was a wall in front of the stopping vehicle.	Yes	No
9	There was an object close to the vehicle.	Yes	No
10	That was a vehicle stopped sideways.	Yes	No
11	That was a vehicle which was oncoming or driving in reverse.	Yes	No
12	The object was small seen from the stereo camera. (small animals, infants, person squatting down or lying down)	Yes	No
13	The preceding vehicle made a sharp turn, or performed abrupt acceleration or deceleration.	Yes	No
14	Other vehicle, motorcycle, bicycle or pedestrian existed extremely close to the bumper of the own vehicle.	Yes	No
15	The speed difference was 5 km/h (3.1 MPH) or less. (The control is performed in close distance. Depending on the objects shape and size, the rear end surface may be outside the camera visibility area.)	Yes	No
16	Other vehicle, motorcycle, bicycle or pedestrian cut in from the side or jumped in front of the own vehicle.	Yes	No
17	The own vehicle changed the vehicle lane, and followed the preceding vehicle right behind.	Yes	No
18	The vehicle was exposed to the intense light (backlight such as sunlight or headlight high-beam light) from the front of the vehicle.	Yes	No
19	The windshield glass was covered with fog, snow, dirt, frost or sandy dust.	Yes	No
20	The windshield glass has not yet been wiped off sufficiently during or after the use of the window washer.	Yes	No
21	The recognition of the object was imperfect due to the raindrop or droplet of the window washer or the wiper blade blocking the visibility of the stereo camera.	Yes	No

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EyeSight (DIAGNOSTICS)

Item Name			Yes/No	
2	22	Canoes etc. loaded on the roof blocked the visibility of the stereo camera.	Yes	No
	23	Other vehicle, motorcycle, bicycle or pedestrian existed out of the illuminating area of the headlight.	Yes	No
	24	The vehicle drove on the sharp turn, steep uphill or steep downhill.	Yes	No
	25	The road surface was uneven due to roll or unpaved track.	Yes	No
	26	The vehicle passed through the outlet or inlet of a tunnel.	Yes	No
	27	The object was fence or wall.	Yes	No
	28	The object was a plate of glass, mirror wall or door.	Yes	No
3	Check that the following are applied to the condition that the system does not operate correctly and the turning OFF of the pre-collision brake is desired.			
	1	Tire pressure is not correct.	Yes	No
	2	The vehicle is equipped with the temporary spare tire.	Yes	No
	3	The vehicle is equipped with worn tire or tires with excessive wear difference.	Yes	No
	4	The vehicle is equipped with the tires out of specification.	Yes	No
	5	The suspension has been modified.	Yes	No
	6	The vehicle is equipped with the tire chain.	Yes	No
	7	Headlight is dirty or the optical axis is deviated. (The vehicle cannot correctly emit the headlight beam against the object and recognize it.)	Yes	No
	8	The driving status of own vehicle is unstable due to an accident or failure.	Yes	No
	9	The brake warning light illuminates.	Yes	No
	10	Vehicle is tilted by the heavy load. Or, passenger capacity is exceeded.	Yes	No
4	Check that the following are applied to the condition that the pre-collision brake OFF indicator light illuminates. (When the pre-collision brake OFF indicator light illuminates, the pre-collision brake does not operate.)			
	1	The pre-collision brake is turned off, using the pre-collision brake OFF switch.	Yes	No
	2	The VDC operation is stopped by pressing the VDC OFF switch.	Yes	No
	3	Approximately for 7 seconds after the engine has started.	Yes	No
	4	EyeSight is malfunctioning.	Yes	No
	5	EyeSight is stopped temporarily.	Yes	No
[2]: When pre-collision brake operated improperly.				
1	Check that the following are applied to the condition that the turning OFF of the pre-collision brake is desired.			
	1	The vehicle is towed.	Yes	No
	2	The vehicle is loaded on the carrier car.	Yes	No
	3	The chassis dynamometer or free roller is used.	Yes	No
	4	The vehicle is lifted up, engine is started and the tire is spun.	Yes	No
	5	The vehicle passes through the banners, flags, drooping branches or grass while making contact with them.	Yes	No
	6	The vehicle performs sporty driving on the circuit.	Yes	No
	7	When the vehicle uses the movable type car wash machine.	Yes	No
2	Check that the following are applied to the condition that the pre-collision brake may operate.			
	1	The vehicle passes through the ETC gate at a speed exceeding the specification.	Yes	No
	2	The vehicle drives close to the preceding vehicle.	Yes	No
	3	The vehicle drives on the place where the road surface gradient changed suddenly.	Yes	No
	4	The vehicle passes through the moisture or mass of smoke.	Yes	No
	5	When the exhaust gas emitted from the preceding vehicle is visible clearly at cold weather.	Yes	No
	6	There is an obstacle on the curve or crossing.	Yes	No
	7	The vehicle passes through close to other vehicle or obstacle.	Yes	No
	8	The vehicle parks close to the wall in front or to other vehicle.	Yes	No



Diagnostics with Phenomenon

EyeSight (DIAGNOSTICS)

6. CHECK LIST (AT RAPID START PREVENTION CONTROL)

Item Name		Yes/No	
[1]: When AT rapid start prevention control did not operate.			
1	Check that the following are applied to the condition that the AT rapid start prevention control may not operate.		
1	Did the following conditions occur? 1: Distance from the front object is long. 2: Vehicle speed difference is small. 3: Lateral deviation is large (offset amount).	Yes	No
2	It was bad weather (heavy rain, snowstorm, dense fog).	Yes	No
3	The visibility was insufficient due to sand or smoke blown in the air.	Yes	No
4	The vehicle approached the object in the evening, in the morning or in the night.	Yes	No
5	The vehicle approached the object in the dark place (e.g. closed-in parking lot).	Yes	No
6	The height of the object was low. (low wall, low guardrail, vehicle with low height etc.)	Yes	No
7	The object was small seen from the stereo camera. (small animals, infants, person squatting down or lying down)	Yes	No
8	The object or rearmost area of the preceding vehicle (trailer, etc.) was small. Or the vehicle approached them too close. (The system triggers the operation by recognizing the area other than the rearmost section, resulting in insufficient control.)	Yes	No
9	The object such as other vehicle, motorcycle, bicycle or pedestrian cut in from the side or jumped in front of the own vehicle.	Yes	No
10	The own vehicle changed the vehicle lane when it started, and approached right behind the object.	Yes	No
11	The vehicle was exposed to the intense light (backlight such as sunlight or headlight high-beam light) from the front of the vehicle.	Yes	No
12	The windshield glass was covered with fog, snow, dirt, frost or sandy dust.	Yes	No
13	The windshield glass has not yet been wiped off sufficiently during or after the use of the window washer.	Yes	No
14	The recognition of the object was imperfect due to the raindrop or droplet of the window washer or the wiper blade blocking the visibility of the stereo camera.	Yes	No
15	Canoes etc. loaded on the roof blocked the visibility of the stereo camera.	Yes	No
16	The object existed out of the illuminating area of the headlight.	Yes	No
17	The vehicle drove on the sharp turn, steep uphill or steep downhill.	Yes	No
18	The object was a fence or wall with even pattern (striped pattern or bricks) or unpatterned surface.	Yes	No
19	The object was a plate of glass, mirror wall or door.	Yes	No
20	Crash avoidance operation (accelerator pedal, brake pedal, steering wheel, etc.) was performed.	Yes	No
2	Check that the following are applied to the condition that the pre-collision brake OFF indicator light illuminates. (When the pre-collision brake OFF indicator light illuminates, the AT rapid start prevention control does not operate.)		
1	The pre-collision brake was turned off, using the pre-collision brake OFF switch.	Yes	No
2	The VDC operation is stopped by pressing the VDC OFF switch.	Yes	No
3	Approximately for 7 seconds after the engine has started.	Yes	No
4	EyeSight is malfunctioning.	Yes	No
5	EyeSight is stopped temporarily.	Yes	No
[2]: When AT rapid start prevention control operated improperly.			
1	Check that the following are applied to the condition that the releasing of the AT rapid start prevention control is desired.		
1	The vehicle is towed.	Yes	No
2	The vehicle is loaded on the carrier car.	Yes	No
3	The chassis dynamometer or free roller is used.	Yes	No
4	The vehicle is lifted up, engine is started and the tire is spun.	Yes	No
5	The vehicle passes through the banners, flags, drooping branches or grass while making contact with them.	Yes	No
6	The vehicle performs sporty driving on the circuit.	Yes	No

Diagnostics with Phenomenon

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Item Name			Yes/No	
2	Check that the following are applied to the condition that the AT rapid start prevention control may operate.			
	1	The vehicle passes through the ETC gate at a speed exceeding the specification.	Yes	No
	2	The vehicle drives close to the preceding vehicle.	Yes	No
	3	The vehicle drives on the place where the road surface gradient changed suddenly.	Yes	No
	4	The vehicle passes through the moisture or mass of smoke.	Yes	No
	5	There is an obstacle on the curve or crossing.	Yes	No
	6	The vehicle passes through close to other vehicle or obstacle.	Yes	No
	7	The vehicle parks close to the wall in front or to other vehicle.	Yes	No

7. CHECK LIST (LANE DEPARTURE WARNING, SWAY WARNING, FORWARD VEHICLE'S START MONITORING FUNCTION)

Item Name		Yes/No	
[1]: When lane departure warning did not operate.			
1	Check that the following are applied to the condition that the lane departure warning does not operate or is difficult to operate.		
1	The lane departure warning is turned off.	Yes	No
2	The vehicle speed of the own vehicle is approximately less than 50 km/h (31 MPH).	Yes	No
3	That was approximately 7 seconds period after the lane departure warning had occurred once.	Yes	No
4	The steering wheel was turned fully or rapidly.	Yes	No
5	The brake pedal is depressed.	Yes	No
6	The vehicle is accelerated by depressing the accelerator pedal.	Yes	No
7	The vehicle distance from the preceding vehicle is short.	Yes	No
8	That was approximately 7 seconds period while the turn signal indicator was operating or after the lever was returned.	Yes	No
9	The vehicle has not returned inside the vehicle lane after the operation of the lane departure warning.	Yes	No
10	The width of the vehicle lane is narrow.	Yes	No
11	The vehicle lane is difficult to be recognized seen from the stereo camera. (Partition line (white line, etc.) does not exist or is disappearing. Or the color of the partition line is very similar to that of the road surface, and difficult to be seen. Or the width of the partition line is very thin.)	Yes	No
12	The preceding vehicle performed crash avoidance action to avoid the obstacle, and the own vehicle performed steering operation after the preceding vehicle.	Yes	No
2	Check that the following are applied to the condition that the lane departure warning OFF indicator light illuminates. (When the lane departure warning OFF indicator light illuminates, the lane departure warning does not operate.)		
1	The lane departure warning is turned off, using the lane departure warning OFF switch.	Yes	No
2	The VDC operation is stopped by pressing the VDC OFF switch.	Yes	No
3	Approximately for 7 seconds after the engine has started.	Yes	No
4	EyeSight is malfunctioning.	Yes	No
5	EyeSight is stopped temporarily.	Yes	No
[2]: When lane departure warning operated improperly.			
1	Check that the following are applied to the condition that the vehicle lane is recognized erroneously and the lane departure warning may operate.		
1	There was the tire track on the wet road or snow-covered road.	Yes	No
2	There was the boundary line between snow-covered area and asphalt or on the trace of road repair.	Yes	No
3	There was the double vehicle lane.	Yes	No
4	The shadow of the guardrail was detected by mistake.	Yes	No

Diagnostics with Phenomenon

EyeSight (DIAGNOSTICS)

Item Name			Yes/No	
[3]: When sway warning did not operate.				
1	Check that the following are applied to the condition that the sway warning may not operate.			
1	The vehicle drove on the road with many curves in succession.	Yes	No	
2	The vehicle speed changed greatly.	Yes	No	
3	That was immediately after the vehicle lane had changed.	Yes	No	
4	The vehicle lane was difficult to be recognized seen from the stereo camera. (Partition line (white line, etc.) does not exist or is disappearing. Or the color of the partition line is very similar to that of the road surface, and difficult to be seen. Or the width of the partition line is very thin.)	Yes	No	
5	That was immediately after the sway had begun.	Yes	No	
2	Check that the following are applied to the condition that the lane departure warning OFF indicator light illuminates. (When the lane departure warning OFF indicator light illuminates, the sway warning does not operate.)			
1	The lane departure warning is turned off, using the lane departure warning OFF switch.	Yes	No	
2	The VDC operation is stopped by pressing the VDC OFF switch.	Yes	No	
3	Approximately for 7 seconds after the engine has started.	Yes	No	
4	EyeSight is malfunctioning.	Yes	No	
5	EyeSight is stopped temporarily.	Yes	No	
[4]: When sway warning operated improperly.				
1	Check that the following are applied to the condition that the sway warning may operate.			
1	That was after the sway had stopped.	Yes	No	
2	The driver lost concentration on driving the vehicle due to fatigue or looking away.	Yes	No	
[5]: When forward vehicle's start monitoring function did not operate or when it operated improperly.				
1	Check that the following are applied to the condition that the forward vehicle's start monitoring function does not operate even when the preceding vehicle has already started, or the forward vehicle's start monitoring function operates even when the preceding vehicle has not yet started.			
1	The motorcycle cut in the space between the own vehicle and the stopped preceding vehicle.	Yes	No	
2	The vehicle could not recognize the preceding vehicle properly due to the weather condition or road shape.	Yes	No	
3	The stereo camera lost sight of the preceding vehicle.	Yes	No	
4	The driver did not depress the brake pedal with select lever in D, M or N range. (At this time, forward vehicle's start monitoring function does not operate.)	Yes	No	

B: CHECK ADAPTIVE CRUISE CONTROL INDICATOR LIGHT/CONSTANT SPEED CRUISE CONTROL INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT

TROUBLE SYMPTOM:

Adaptive cruise control or conventional cruise control can be set, but adaptive cruise control indicator light/constant speed cruise control indicator light and cruise SET indicator light do not illuminate.

Step	Check	Yes	No
1	CHECK ADAPTIVE CRUISE CONTROL INDICATOR LIGHT/CONSTANT SPEED CRUISE CONTROL INDICATOR LIGHT AND CRUISE SET INDICATOR LIGHT. Check the combination meter. <Ref. to IDI(diag)-18, OPERATION, System Operation Check Mode.>	Go to step 2.	Replace the meter case assembly. <Ref. to IDI-18, Combination Meter.>
2	CHECK LAN SYSTEM. Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Is a DTC of the LAN system detected? Perform the diagnosis according to DTC for LAN system.	Replace the ECM. <Ref. to FU(H4DO)-94, REMOVAL, Engine Control Module (ECM).>

EyeSight (DIAGNOSTICS)

C: CHECK CRUISE CONTROL COMMAND SWITCH

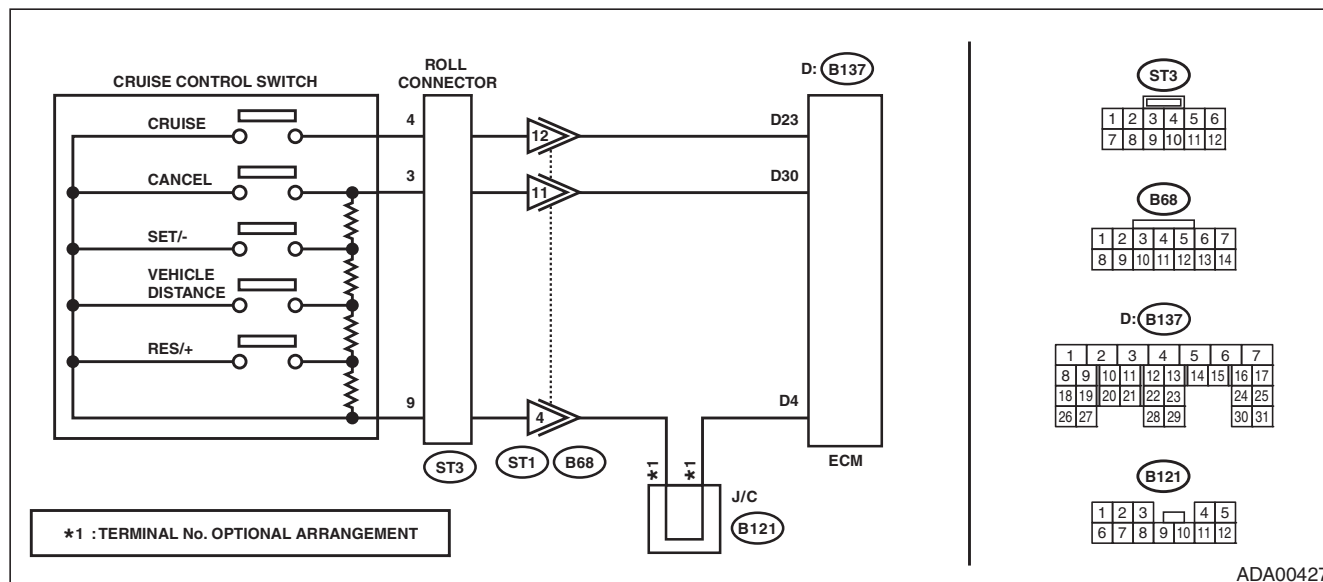
TROUBLE SYMPTOM:

- Cruise control cannot be set. (Cancelled immediately.)
- Cruise control cannot be released.

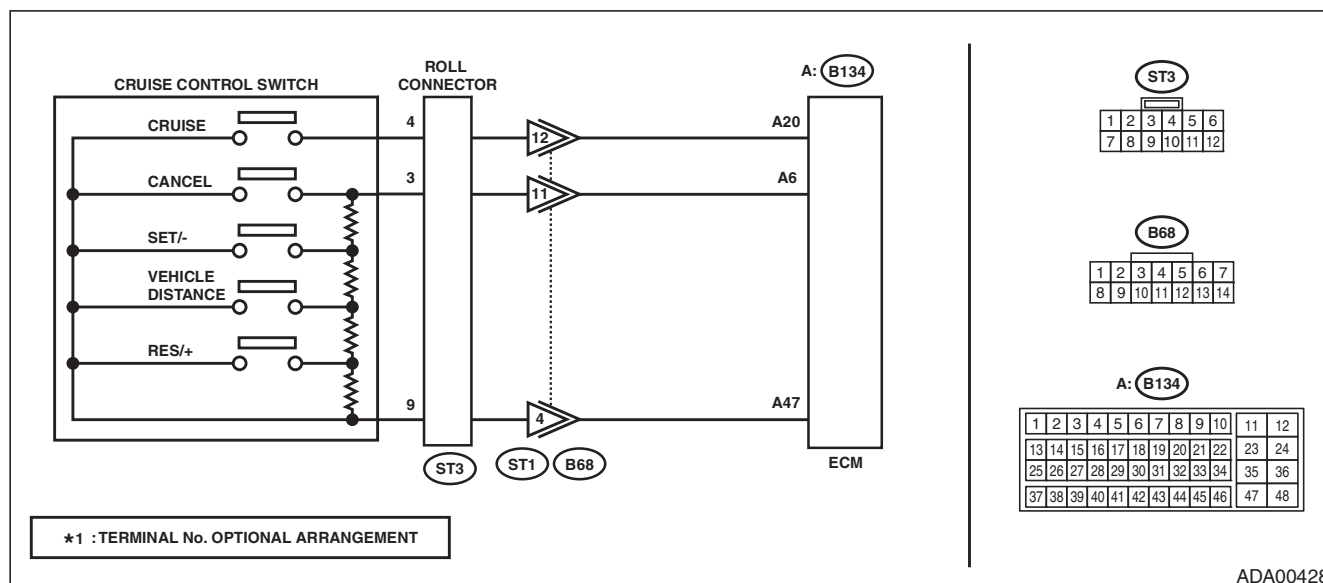
WIRING DIAGRAM:

EyeSight System <Ref. to WI-238, WIRING DIAGRAM, EyeSight System.>

- Non-turbo model



- Turbo model



Diagnostics with Phenomenon

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Step	Check	Yes	No
1 CHECK CRUISE CONTROL COMMAND SWITCH CIRCUIT. 1) Remove the driver's airbag module. <Ref. to AB-37, REMOVAL, Driver's Airbag Module.> 2) Disconnect the harness connector of cruise control command switch. 3) Turn the ignition switch to ON. 4) Measure the voltage between harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(ST3) No. 4 (+) — Chassis ground (-):</i> <i>(ST3) No. 3 (+) — Chassis ground (-):</i>	Is the voltage 5 V or more?	Go to step 2.	Check the harness between cruise control command switch and ECM, and the steering roll connector for open or short circuit, or for poor contact.
2 CHECK CRUISE CONTROL COMMAND SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Remove the cruise control command switch. <Ref. to CC-7, REMOVAL, Cruise Control Command Switch.> 3) Measure the resistance between harness connector terminal and chassis ground. <i>Connector & terminal</i> <i>(ST3) No. 9 — Chassis ground:</i>	Is the resistance less than 10 Ω ?	Go to step 3.	Check for open circuit between cruise control command switch and chassis ground.
3 CHECK CRUISE CONTROL COMMAND SWITCH. Check the cruise control command switch.	Is the cruise control command switch normal?	Replace the ECM. <Ref. to FU(H4DO)-94, REMOVAL, Engine Control Module (ECM).>	Replace the cruise control command switch.



List of Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

14. List of Diagnostic Trouble Code (DTC)

A: LIST

DTC	Subaru Select Monitor display items	Contents of diagnosis	Reference
U0073	Control Module Communication Bus "A" Off	Detected when bus off status (the stereo camera detects the failure and is disconnected from CAN line) occurs.	<Ref. to ES(diag)-91, DTC U0073 CONTROL MODULE COMMUNICATION BUS "A" OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0100	Lost Communication With ECM/PCM "A"	Detected when CAN data from ECM is not transmitted to stereo camera.	<Ref. to ES(diag)-91, DTC U0100 LOST COMMUNICATION WITH ECM/PCM "A", Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0101	Lost Communication With TCM	Detected when CAN data from TCM is not transmitted to stereo camera.	<Ref. to ES(diag)-91, DTC U0101 LOST COMMUNICATION WITH TCM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0122	Lost Communication With Vehicle Dynamics Control Module	Detected when CAN data from VDC is not transmitted to stereo camera.	<Ref. to ES(diag)-91, DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0140	Lost Communication With Body Control Module	Detected when CAN data from body integrated unit is not transmitted to stereo camera.	<Ref. to ES(diag)-91, DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	Detected when CAN data from combination meter is not transmitted to stereo camera.	<Ref. to ES(diag)-91, DTC U0155 LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER (IPC) CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0401	Invalid Data Received From ECM/PCM "A"	Failure counter diagnosis of engine control module (ECM)	<Ref. to ES(diag)-91, DTC U0401 INVALID DATA RECEIVED FROM ECM/PCM "A", Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0402	Invalid Data Received From TCM	Failure counter diagnosis of automatic transmission control module (TCM)	<Ref. to ES(diag)-91, DTC U0402 INVALID DATA RECEIVED FROM TCM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0416	Invalid Data Received From Vehicle Dynamics Control Module	Failure counter diagnosis of VDC control module (VDC CM)	<Ref. to ES(diag)-91, DTC U0416 INVALID DATA RECEIVED FROM VEHICLE DYNAMICS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0422	Invalid Data Received From Body Control Module	Failure counter diagnosis of body integrated unit	<Ref. to ES(diag)-92, DTC U0422 INVALID DATA RECEIVED FROM BODY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0423	Invalid Data Received From Instrument Panel Cluster Control Module	Failure counter diagnosis of combination meter	<Ref. to ES(diag)-92, DTC U0423 INVALID DATA RECEIVED FROM INSTRUMENT PANEL CLUSTER CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1001	CAN-HS Abnormal	Detected when error occurs in the high speed CAN communication circuit.	<Ref. to ES(diag)-92, DTC U1001 CAN-HS ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



List of Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

DTC	Subaru Select Monitor display items	Contents of diagnosis	Reference
B2801	TCM Abnormal	Detected when error occurs in the automatic transmission.	<Ref. to ES(diag)-92, DTC B2801 TCM ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2802	ETC Abnormal	Detected when error occurs in the electronic throttle control.	<Ref. to ES(diag)-92, DTC B2802 ETC ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2805	BIU Abnormal	Detected when error occurs in the body integrated unit.	<Ref. to ES(diag)-92, DTC B2805 BIU ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2806	ECM Abnormal	Detected when error occurs in the engine control module (ECM).	<Ref. to ES(diag)-92, DTC B2806 ECM ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2807		Detected when cruise indicator illumination request from ECM and ON/OFF information of cruise function do not match.	<Ref. to ES(diag)-92, DTC B2807 ECM ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2809	VDC Abnormal	Detected when error occurs in the VDC.	<Ref. to ES(diag)-92, DTC B2809 VDC ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B280A		- VDC brake control malfunction 1 - When the compulsory drive of brake light relay for VDC, ABS sequence control, or VDC sequence control is performed, the EyeSight warning light illuminates, and this DTC may be detected. At that time, clear the memory.	<Ref. to ES(diag)-93, DTC B280A VDC ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B280B		VDC brake control malfunction 2	<Ref. to ES(diag)-93, DTC B280B VDC ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B280C		VDC fluid pressure control is prohibited.	<Ref. to ES(diag)-93, DTC B280C VDC ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B280D		Pre-collision brake assist is prohibited.	<Ref. to ES(diag)-93, DTC B280D VDC ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B280E		VDC wrong variant	<Ref. to ES(diag)-93, DTC B280E VDC ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B280F	Meter Abnormal	Detected when error occurs in the CAN communication with combination meter.	<Ref. to ES(diag)-93, DTC B280F METER ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2810		Detected when different (undesigned) type of combination meter is installed.	<Ref. to ES(diag)-93, DTC B2810 METER ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2813	Brake Switch Abnormal	Detected when error occurs in the brake switch system.	<Ref. to ES(diag)-94, DTC B2813 BRAKE SWITCH ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2814	Power Supply Volt Error	Detected when battery voltage is below specified value or when the +B harness of the stereo camera is broken.	<Ref. to ES(diag)-97, DTC B2814 POWER SUPPLY VOLT ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2815		Detected when battery voltage exceeds the specified value.	<Ref. to ES(diag)-99, DTC B2815 POWER SUPPLY VOLT ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



List of Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

DTC	Subaru Select Monitor display items	Contents of diagnosis	Reference
B2816	Brake Control Error	- Detected when the large differences occur between left and right wheels in brake fluid pressure. - When the ABS sequence control of VDC, VDC sequence control, or air bleeding from brake system with engine running is performed, the EyeSight warning light illuminates, and this DTC may be detected. At that time, clear the memory.	<Ref. to ES(diag)-99, DTC B2816 BRAKE CONTROL ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B2817	Brake Lamp Error	- Detected when error occurs in the brake light illumination circuit. - When the compulsory drive of brake light relay for VDC is performed, the EyeSight warning light illuminates, and this DTC may be detected. At that time, clear the memory.	<Ref. to ES(diag)-99, DTC B2817 BRAKE LAMP ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A0	Vehicle Model Judgment Abnormal	Detected when the model code stored in EEPROM and the model code used for CAN data are different, or when +B harness of the stereo camera is broken at aiming completion.	<Ref. to ES(diag)-100, DTC B28A0 VEHICLE MODEL JUDGMENT ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A1	Adaptive CC ECM Communication Data Error	Abnormal judgment for stereo camera by ECM Or detected when the stereo camera or ECM is assembled incorrectly.	<Ref. to ES(diag)-102, DTC B28A1 ADAPTIVE CC ECM COMMUNICATION DATA ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A2		Abnormal judgment for stereo camera data by VDC	<Ref. to ES(diag)-103, DTC B28A2 ADAPTIVE CC ECM COMMUNICATION DATA ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A3		Abnormal judgment for stereo camera data by combination meter	<Ref. to ES(diag)-104, DTC B28A3 ADAPTIVE CC ECM COMMUNICATION DATA ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A5		Detected when error occurs in the transmission data from stereo camera to ECM.	<Ref. to ES(diag)-105, DTC B28A5 ADAPTIVE CC ECM COMMUNICATION DATA ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A6		Detected when error occurs in the communication between stereo camera and CPU.	<Ref. to ES(diag)-105, DTC B28A6 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A7	Stereo Camera Abnormal	Detected when error occurs in the communication data inside the control module due to external factors such as noises.	<Ref. to ES(diag)-106, DTC B28A7 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A8			<Ref. to ES(diag)-106, DTC B28A8 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28A9			<Ref. to ES(diag)-106, DTC B28A9 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28AA		Detected when error occurs in the communication with microcomputer 1 system inside the stereo camera.	<Ref. to ES(diag)-106, DTC B28AA STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



List of Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

DTC	Subaru Select Monitor display items	Contents of diagnosis	Reference
B28AB	Stereo Camera Abnormal	Detected when error occurs in the communication with microcomputer 2 system inside the stereo camera.	<Ref. to ES(diag)-106, DTC B28AB STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28AC		Detected when error occurs in the ASIC system inside the stereo camera.	<Ref. to ES(diag)-106, DTC B28AC STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28AD		Detected when error occurs in the stereo camera image system.	<Ref. to ES(diag)-107, DTC B28AD STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28AE		Detected when error occurs in the internal power supply system of stereo camera.	<Ref. to ES(diag)-107, DTC B28AE STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28AF		Detected when adjustment/inspection of camera has not been completed normally.	<Ref. to ES(diag)-107, DTC B28AF STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28B0		Detected when error occurs in pre-collision brake/lane departure warning OFF switch or harness, or also detected when the switch is held for 45 seconds or more.	<Ref. to ES(diag)-108, DTC B28B0 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28B1		Detected when the optical axis of stereo camera is deviated in lateral direction or when the fluctuation range of automatic adjustment value has been enlarged.	<Ref. to ES(diag)-109, DTC B28B1 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28B2		Detected when the temperature of the stereo camera excessively increases. (When this DTC is detected, the camera will not return to the normal state after performing adjustment or inspection. In this case, always replace the stereo camera.)	<Ref. to ES(diag)-109, DTC B28B2 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
B28B3		Detected when the temperature of the stereo camera excessively decreases. (When this DTC is detected, the camera will not return to the normal state after performing adjustment or inspection. In this case, always replace the stereo camera.)	<Ref. to ES(diag)-109, DTC B28B3 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>



List of Cancel Code

EyeSight (DIAGNOSTICS)

15. List of Cancel Code

A: LIST

1. STEREO CAMERA

If the following cancel codes are detected from the stereo camera, all the functions of the EyeSight excluding the conventional cruise control stop temporarily and cannot be used. When the failure is resolved, the function starts operating.

NOTE:

- Temporary stop is not released even if the lane departure warning OFF switch or pre-collision brake OFF switch is pressed.
- Depending on the situation, temporary stop may not be released even if the ignition switch is turned off.

Cancel code	Subaru Select Monitor display items	Contents of diagnosis	Reference
25-33H	Camera temporary stop	Detected when engine speed is 300 rpm or less. (During CRUISE MAIN ON, "E3" is displayed in the multi information display. "System halted temporarily because operating condition is not met" is displayed in the multi-function display.)	Detected when the engine speed drops below 300 rpm after the engine has started once.
60-A0H	CAN diagnosis prohibited	The voltage dropped below 10 V immediately after IGN ON. (During CRUISE MAIN ON, "E3" is displayed in the multi information display. "System halted temporarily because operating condition is not met" is displayed in the multi-function display.)	This code may be displayed when the engine is not started for a while with the ignition switch ON and when the engine has started after that. This is a normal operation. If this is not the case, the supply voltage may be malfunctioning. <Ref. to ES(diag)-97, DTC B2814 POWER SUPPLY VOLT ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
61-A1H	ECM reprogramming	Because the control module (CM) is being reprogrammed, temporary stop is performed. (During CRUISE MAIN ON, "E3" is displayed in the multi information display. "System halted temporarily because operating condition is not met" is displayed in the multi-function display.)	After the completion of the reprogramming operation, turn the ignition to OFF and restart. If the operation returns from the temporary stop status, it is normal.
65-C0H	Pre-crash hard brake operation	Because the pre-collision secondary brake operated three times between engine starting and stopping, the temporary stop is performed. (This is not a normal operation, or the system failure may occur.) (During CRUISE MAIN ON, "E3" is displayed in the multi information display. "System halted temporarily because operating condition is not met" is displayed in the multi-function display.)	This code may be displayed when the pre-collision brake is operated intentionally. Turn the ignition switch to OFF, and restart after a while. If the operation returns from the temporary stop status, it is normal. When temporary stop status continues with the code other than 65-C0H after restart, perform diagnosis according to the code. When temporary stop status continues with the code of 65-C0H after restart, the stereo camera may be malfunctioning. In this case, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>

List of Cancel Code

EyeSight (DIAGNOSTICS)

Cancel code	Subaru Select Monitor display items	Contents of diagnosis	Reference
72-CCH 72-CDH	Camera temporary stop	Temporary stop was performed due to the bad weather, backlight, fogged window or dirty window interfering with the recognition function of the stereo camera. And also when the front of the camera is blocked by the hand or when it is very dark around the vehicle or when the vehicle is surrounded by the blanket of snow and nothing can be seen from the stereo camera, this code may be displayed even after the temperature becomes extremely high or low. (During CRUISE MAIN ON, "E1" is displayed in the multi information display. "System halted temporarily because stereo camera has poor visibility" is displayed in the multi-function display.)	Investigate the following items No. 1 and No. 2, and check that the possible cause of the temporary stop is applied either to No. 1 or No. 2. 1. Using the "CHECK LIST (CAMERA TEMPORARY STOP)", investigate the cause of the temporary stop. <Ref. to ES(diag)-87, CHECK LIST (CAMERA TEMPORARY STOP), LIST, List of Cancel Code.> When there is a relevant item in the check list, it can be the cause of malfunction. 2. Read the temporary stop count stored in the temporary stop count of current data, and check the cause of the temporary stop occurred in the past from "LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS". <Ref. to ES(diag)-84, LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS, LIST, List of Cancel Code.> When the causes of the temporary stop for No. 1 and No. 2 correspond, drive the vehicle for a while after the cause of the temporary stop has been eliminated. If the operation returns from the temporary stop status, it is normal. (However, when the occurrence and cancellation of the temporary stop take place repeatedly, the temporary stop status is held to prevent the irritation, delaying the return of the operation.) When this is not the case, check the stereo camera and its periphery. <Ref. to ES(diag)-8, WINDSHIELD GLASS AND DASHBOARD, INSPECTION, General Description.> <Ref. to ES(diag)-12, FRONT WIPER, INSPECTION, General Description.> <Ref. to ES(diag)-13, STEREO CAMERA, INSPECTION, General Description.>
72-CEH		The temperature of the stereo camera became excessively high or low, and the operation stopped temporarily. (During CRUISE MAIN ON, "E2" is displayed in the multi information display. "System halted temporarily because acceptable temperature range of camera is exceeded" is displayed in the multi-function display.)	Perform inspection concerning the item for 72-CEH of the "CHECK LIST (CAMERA TEMPORARY STOP)". <Ref. to ES(diag)-87, CHECK LIST (CAMERA TEMPORARY STOP), LIST, List of Cancel Code.> When the failure is resolved, and the operation returns from the temporary stop status, it is normal. When the operation does not return from the temporary status even if driving the vehicle for a while after the failure has been resolved, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>
72-E5H		The operation stopped temporarily due to vertical deviation of the optical axis of the stereo camera. (During CRUISE MAIN ON, "E3" is displayed in the multi information display. "System halted temporarily because operating condition is not met" is displayed in the multi-function display.)	Perform inspection concerning the item for 72-E5H of the "CHECK LIST (CAMERA TEMPORARY STOP)". <Ref. to ES(diag)-87, CHECK LIST (CAMERA TEMPORARY STOP), LIST, List of Cancel Code.> This code may be displayed when the rear of the vehicle is lowered by the overload. When the failure is resolved, and the operation returns from the temporary stop status after driving for a while, it is normal. If this item is displayed in an ordinary use under which the vehicle is not tilted, readjust the stereo camera. <Ref. to ES(diag)-42, PROCEDURE, Camera Adjustment, Inspection.> If the same cancel code is still detected after readjustment, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>



List of Cancel Code

EyeSight (DIAGNOSTICS)

2. LIST OF CONTENTS FOR CAMERA TEMPORARY STOP: 0 — 23 COUNTS

Read the camera temporary stop count from Current Data Display & Save of Subaru Select Monitor, estimate the possible cause of the temporary stop according to the chart below. (After clearing the memory, the number of occurrence for each temporary stop is accumulated.)

Subaru Select Monitor display items	Main causes	Possible conditions for temporary stop (including events occurring less frequently)	Cancel code/DTC	Meter display
Camera temporary stop 0 count	Backlight of the sunlight	Backlight, dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, deteriorated wiper, front of the camera is blocked by hand, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm, dense fog), unpatterned wall, fence, wall with vertical stripe, water drop raised by preceding vehicle, steep slope, banner, grass, preceding vehicle with large uneven surface (trailer, etc.), preceding vehicle driving in the night without illuminating the tail light	72-CC	E1
Camera temporary stop 1 count Camera temporary stop 2 count	Dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm), water drop raised by preceding vehicle			
Camera temporary stop 3 count	Fogged window glass, frost on the window glass	Backlight, dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, deteriorated wiper, front of the camera is blocked by hand, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm, dense fog), water drop raised by preceding vehicle, very dark and no obstacle around the vehicle, unpatterned wall, blanket of snow around the vehicle and no obstacle is found		
Camera temporary stop 4 count	Front of the camera is blocked by hand.	Backlight, dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, deteriorated wiper, front of the camera is blocked by hand, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm, dense fog), banner, grass, etc.		
Camera temporary stop 5 count	Heavy snowfall in the night	Heavy snowfall in the night, wall with vertical stripe, fence, etc.		
Camera temporary stop 6 count	Dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm), water drop raised by preceding vehicle	Backlight, dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, deteriorated wiper, front of the camera is blocked by hand, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm, dense fog), water drop raised by preceding vehicle, preceding vehicle driving in the night without illuminating the tail light, preceding vehicle with large uneven surface (trailer, etc.), etc.		
Camera temporary stop 7 count	Not used			

List of Cancel Code

EyeSight (DIAGNOSTICS)

Subaru Select Monitor display items	Main causes	Possible conditions for temporary stop (including events occurring less frequently)	Cancel code/DTC	Meter display
Camera temporary stop 8 count	Malfunction of electronic circuit	This temporary stop occurs when there is an object blocking the visibility of the camera at IGN ON or when the camera was exposed to the backlight during startup. This temporary stop occurs immediately after IGN ON. Unless the ignition switch is turned to OFF, the temporary stop is not canceled.	72-CD	E1
Camera temporary stop 9 count	Malfunction of electronic circuit	This item may be displayed when the condition that there is no object around the vehicle continues for a long time.		
Camera temporary stop 10 count	Malfunction of electronic circuit	This item is displayed when the cause of the temporary stop has not been eliminated for several hours. When the vehicle is driven with a piece of paper applied in front of the camera or with the object placed on the dashboard reflected against the windshield glass, the temporary stop status continues for a long time.		
Camera temporary stop 11 count	Backlight	Backlight		
Camera temporary stop 12 count	Malfunction of electronic circuit	This item is displayed by the snowfall in the night, wall with vertical stripe or fence, etc.		
Camera temporary stop 13 count	The number of surrounding objects is larger than expected.	When the number of surrounding objects is larger than expected, etc.		
Camera temporary stop 14 count	Dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm)	Backlight, dirty window glass, fogged window glass, frost on the window glass, oil film on the window glass, raindrop adhering to the window glass, fingerprint adhering to the lens, deteriorated wiper, front of the camera is blocked by hand, object on the dashboard reflected against the windshield glass, bad weather (heavy rain, snowstorm, dense fog), water drop raised by preceding vehicle, banner, grass, preceding vehicle with large uneven surface (trailer, etc.), etc.	72-E5	E3
Camera temporary stop 15 count	Not used			
Camera temporary stop 16 count	When the vehicle is tilted excessively by the heavy load	- The vehicle is tilted excessively by the heavy load. - The vehicle drives on the steep uphill or steep downhill. - The stereo camera was subject to impact, and the displacement or distortion occurred.		



List of Cancel Code

EyeSight (DIAGNOSTICS)

Subaru Select Monitor display items	Main causes	Possible conditions for temporary stop (including events occurring less frequently)	Cancel code/DTC	Meter display
Camera temporary stop 17 count	Malfunction of electronic circuit	This item is displayed by the reflection of the object on the dashboard.	B28B1	EyeSight warning light illuminates.
Camera temporary stop 18 count	Camera has been deformed by hitting it.	Camera has been deformed by hitting it.		
Camera temporary stop 19 count				
Camera temporary stop 20 count				
Camera temporary stop 21 count				
Camera temporary stop 22 count	Not used			
Camera temporary stop 23 count	High temperature (Camera portion: approx. 70°C or more), low temperature (Camera portion: approx. - 10°C or less)	High temperature (Camera portion: approx. 70°C or more), low temperature (Camera portion: approx. –10°C or less)	72-CE	E2



List of Cancel Code

EyeSight (DIAGNOSTICS)

3. CHECK LIST (CAMERA TEMPORARY STOP)

Even when the set status of the adaptive cruise control is canceled or temporary stop status occurs, the cancel codes will not be retained for the following.

- When the VDC operation is stopped by pressing the VDC OFF switch
- When the pre-collision brake operation is stopped by pressing the pre-collision brake OFF switch
- When the lane departure warning is stopped by pressing the lane departure warning OFF switch
- Immediately after the engine start

If not applicable to the cases described above, and the cancel code is displayed, perform the inspection according to the following items.

Item Name		Yes/No		
[1]: Cancel code [72-CCH, 72-CDH] (At this time, “E1” is displayed in the multi information display. “System halted temporarily because stereo camera has poor visibility” is displayed in the multi-function display.)				
1	Check that the following are applied to the conditions that are difficult to be recognized by the stereo camera.			
1	It was bad weather (heavy rain, snowstorm, dense fog; especially when the oil film adheres to the windshield glass, the glass coating agent is used, or when the old wiper is used).	Yes	No	
2	The vehicle was exposed to the intense light (backlight such as sunlight or headlight high-beam light) from the front of the vehicle.	Yes	No	
3	The raindrops, water drops or dirt on the windshield glass are not wiped off sufficiently.	Yes	No	
4	The windshield glass is covered with fog, snow, dirt, frost or sandy dust, and either of them blocks the visibility of the stereo camera.	Yes	No	
5	The vehicle was tilted excessively by the heavy load.	Yes	No	
6	Canoes etc. loaded on the roof blocked the visibility of the stereo camera.	Yes	No	
7	The field of view was insufficient due to water or snow raised by the preceding vehicle or oncoming vehicle, or the moisture, sand, smoke or sandy dust blown in the wind.	Yes	No	
8	The vehicle passed through the outlet or inlet of a tunnel.	Yes	No	
9	The rearmost area of preceding vehicle was small (trailer, etc.), low or uneven.	Yes	No	
10	The object was a fence or wall with even pattern (striped pattern or bricks) or unpatterned surface.	Yes	No	
11	The object was a plate of glass, mirror wall or door.	Yes	No	
12	The tail light of the preceding vehicle did not illuminate during nighttime hours or inside the tunnel.	Yes	No	
13	The vehicle passed through the banners, flags, drooping branches or grass.	Yes	No	
14	The vehicle drove on the steep uphill or steep downhill.	Yes	No	
15	Front of the camera was blocked by the hand.	Yes	No	
16	It was very dark and there was no obstacle around the vehicle.	Yes	No	
17	The surrounding surface was similarly colored. (There is snow as far as the eye can see.)	Yes	No	
18	Dirt such as fingerprint adhered to the lens portion of the stereo camera.	Yes	No	
19	Stable recognition was difficult because of reflection to the windshield glass.	Yes	No	
20	The stereo camera was subject to impact, and the displacement or distortion occurred.	Yes	No	
[2]: Cancel code [72-CEH] (At this time, “E2” is displayed in the multi information display. “System halted temporarily because acceptable temperature range of camera is exceeded” is displayed in the multi-function display.)				
1	Check that the following is applied to the condition that the temperature of the stereo camera becomes excessively high or low.			
1	The compartment temperature was high. (For example: The vehicle was left under the scorching sun.) Or the compartment temperature was low. (For example: The vehicle was left under the frigid environment.)	Yes	No	
[3]: Cancel code [72-E5H] (At this time, “E3” is displayed in the multi information display. “System halted temporarily because operating condition is not met” is displayed in the multi-function display.)				
1	Check that the following are applied to the condition that the vertical deviation of the optical axis of stereo camera occurs.			
1	The vehicle was tilted excessively by the heavy load.	Yes	No	
2	The vehicle drove on the steep uphill or steep downhill.	Yes	No	
3	The stereo camera was subject to impact, and the displacement or distortion occurred.	Yes	No	
[4]: Cancel code [25-33H] (At this time, “E3” is displayed in the multi information display. “System halted temporarily because operating condition is not met” is displayed in the multi-function display.)				
1	Check that the following are applied to the condition that the engine speed drops below 300 rpm.		Yes	No

List of Cancel Code

EyeSight (DIAGNOSTICS)

4. ECM

When the cruise control is cancelled, the ECM outputs the following cancel codes.

Cancel code	Subaru Select Monitor display items	Contents of diagnosis	Reference
11	Main switch	Main switch of cruise control command switch is turned to OFF, and then the cruise control is released.	This DTC is displayed without operating the main switch. <Ref. to CC(diag)-15, 11, Diagnostic Procedure with Cancel Code.>
12	Stop & Brake switch	Stop light switch or brake switch is turned to ON, and then the cruise control is released.	This DTC is displayed without depressing the brake pedal. <Ref. to CC(diag)-17, 12, Diagnostic Procedure with Cancel Code.>
14	Neutral switch	Neutral position switch is turned to ON, and then the cruise control is released.	This DTC is displayed without shifting to neutral position. <Ref. to CC(diag)-21, 14, Diagnostic Procedure with Cancel Code.>
15	Cancel switch	Cancel switch is turned to ON, and then the cruise control is released.	This DTC is displayed without operating the cancel switch. <Ref. to CC(diag)-22, 15, Diagnostic Procedure with Cancel Code.>
16	Ignition switch	Ignition switch is turned to OFF, and then the cruise control is released.	This DTC is displayed without operating the ignition switch. <Ref. to CC(diag)-23, 16, Diagnostic Procedure with Cancel Code.>
21	Abnormality of switches when Ignition switch on	When the ignition switch is turned to ON, each switch of cruise control command switch is already turned to ON.	This DTC is displayed when turning ignition switch to ON without operating the cruise control switch. <Ref. to CC(diag)-24, 21, Diagnostic Procedure with Cancel Code.>
22	Abnormality of change in vehicle speed	Malfunction of vehicle speed signal variation is detected.	<Ref. to CC(diag)-25, 22, Diagnostic Procedure with Cancel Code.>
24	Abnormality of switches related to cruise control	Open circuit of cruise control switch is detected during cruise driving. (The system is judged as model without cruise control.)	This DTC is displayed with normal operation. <Ref. to CC(diag)-25, 24, Diagnostic Procedure with Cancel Code.>
31	Engine Speed	- Abnormal increase of engine speed is detected. - Gear is placed in Neutral, 1st or Reverse position.	Cruise in 2nd shift position or more. <Ref. to CC(diag)-25, 31, Diagnostic Procedure with Cancel Code.>
32	Cruise Control out of Range	- Vehicle speed exceeds the controllable range during cruising. - Set operation was performed at vehicle speed unavailable for setting. - RESUME operation was performed without memorized vehicle speed. - System entered X MODE.	This DTC is displayed, though the vehicle speed is increased to the speed available for cruise set and set operation was performed again. <Ref. to CC(diag)-25, 32, Diagnostic Procedure with Cancel Code.>
34	Prohibition of cruise control at continuing big Accel. angle	The vehicle has been driven at higher speed than set vehicle speed for an abnormally long time (approximately 10 minutes) during cruise driving.	<Ref. to CC(diag)-25, 34, Diagnostic Procedure with Cancel Code.>
35	Prohibition of cruise control at vehicle speed F/B malfunction	Set vehicle speed cannot be kept because of some reasons (steep uphill, parking brake, abnormal decrease of engine output, etc.) during cruise driving.	<Ref. to CC(diag)-26, 35, Diagnostic Procedure with Cancel Code.>
41	VDC/TCS/EPB Operating	Vehicle dynamics control (VDC), TCS or EPB is operated during cruise driving or cruise setting.	<Ref. to CC(diag)-26, 41, Diagnostic Procedure with Cancel Code.>
43	ABS/VDC Failure	When CRUISE switch is ON, ABS or vehicle dynamics control (VDC) system malfunction is detected.	<Ref. to CC(diag)-26, 43, Diagnostic Procedure with Cancel Code.>

List of Cancel Code

EyeSight (DIAGNOSTICS)

Cancel code	Subaru Select Monitor display items	Contents of diagnosis	Reference
44	Body Integrated unit Failure	When CRUISE switch is ON, body integrated unit system malfunction is detected.	<Ref. to CC(diag)-26, 44, Diagnostic Procedure with Cancel Code.>
45	Meter Failure	When CRUISE switch is ON, combination meter malfunction is detected.	<Ref. to CC(diag)-26, 45, Diagnostic Procedure with Cancel Code.>
47	Adaptive CC ECM malfunction	When CRUISE switch is ON, stereo camera malfunction is detected.	Check the DTCs related to stereo camera.
49	TCM Failure	Transmission control module (TCM) malfunction is detected during cruise driving or cruise setting.	<Ref. to CC(diag)-26, 49, Diagnostic Procedure with Cancel Code.>
53	Adaptive cruise control compulsory cancellation	Stereo camera detects the release command of the cruise control during cruise driving or cruise setting operation.	Check the stereo camera. Confirm the display contents of the current data "ACC forced cancellation code 1 — 8", and perform inspection. <Ref. to ES(diag)-89, LIST OF ACC FORCED CANCELLATION CODE, LIST, List of Cancel Code.>
54	Release SW	Brake control module detects the brake pedal operation by the driver during cruise driving or cruise setting operation.	If this code is detected when the brake pedal is not depressed intentionally, check the release switch.
55	Adaptive cruise control reception data abnormal	When CRUISE switch is ON, malfunction is detected in the reception data from the stereo camera.	Check the cancel code of stereo camera.
61	Brake Switch Failure	Malfunction in the stop light & brake switch is detected.	<Ref. to CC(diag)-26, 61, Diagnostic Procedure with Cancel Code.>
62	Neutral Switch Failure	Neutral position switch malfunction is detected.	<Ref. to CC(diag)-26, 62, Diagnostic Procedure with Cancel Code.>
63	Abnormality 1 of change in vehicle speed	Malfunction of vehicle speed signal variation is detected.	<Ref. to CC(diag)-27, 63, Diagnostic Procedure with Cancel Code.>
64	Engine Sensor Failure 1	Malfunction related to engine is detected.	<Ref. to CC(diag)-27, 64, Diagnostic Procedure with Cancel Code.>
65	Abnormality 1 of switches related to cruise control	Cruise control command switch malfunction is detected. (When the switch is pressed ON for a long time (approximately two minutes), stuck ON condition is detected.)	<Ref. to CC(diag)-27, 65, Diagnostic Procedure with Cancel Code.>
66	Cruise Control Calculation Error	Cruise control calculation (microcomputer) malfunction is detected.	<Ref. to CC(diag)-27, 66, Diagnostic Procedure with Cancel Code.>

5. LIST OF ACC FORCED CANCELLATION CODE

When the following forced cancellation codes are detected from the stereo camera, the cruise control will be cancelled.

The following chart is the list of contents displayed in "ACC forced cancellation code 1 — 8" of "Current Data Display & Save".

For 1 through 8, 1 is the latest record, and the maximum of 8 experienced forced cancellation codes are displayed. The same code stores the last IG number.

Subaru Select Monitor display items	Description
No cancel code	Displayed when the cancel code of the cruise control is not stored.
Adaptive mode: Low speed, no leading vehicle	During driving in the adaptive cruise mode, this item is displayed when the own vehicle speed becomes 30 km/h (19 MPH) or less, and the detection status of the preceding vehicle changes from Present → Not present, and the cruise control is canceled.
Adaptive mode: Camera temporary stop	During driving in the adaptive cruise mode, this item is displayed when the cruise control is canceled by temporarily stopping the EyeSight.
Adaptive mode: Leading vehicle no acceleration	During driving in the adaptive cruise mode, this item is displayed when the driver attempted to set the cruise control, however it was impossible because the preceding vehicle had not yet started.

List of Cancel Code

EyeSight (DIAGNOSTICS)

Subaru Select Monitor display items	Description
Constant speed mode: Low speed	During driving in the constant speed mode, this item is displayed when the own vehicle speed becomes approximately 30 km/h or less and the cruise control is canceled.
Common: Wheel speed sensor abnormal	This item is displayed when the cruise control is canceled because of the wheel speed sensor malfunctions.
Common: Brake operation	This item is displayed when the cruise control is canceled by the brake operation of the driver.
Common: Pre-crash brake	This item is displayed when the cruise control is canceled by the operation of the pre-collision brake.
Common: AT manual mode	This item is displayed when the cruise control is canceled because the AT is shifted into manual mode or paddle operation is performed.
Common: VDC switch OFF	This item is displayed when the VDC function is turned off by the VDC OFF switch and the cruise control is canceled.
Common: Door open	This item is displayed when the cruise control is canceled by opening the driver's door, passenger's door or rear doors.
Common: Driver's seat belt released	This item is displayed when the cruise control is canceled by unfastening the driver's seat belt.
Common: High speed	This item is displayed when the own vehicle speed becomes approximately 160 km/h (99 MPH) or more and the cruise control is canceled.
Common: AT gear range	This item is displayed when the following occurs. Since the driver desired to drive the vehicle in the adaptive cruise mode or in the constant speed mode, he or she performed SET or RES operation. However, the operation was not accepted because it was done immediately after D-range shifting.
Common: Road surface incline	This item is displayed when the road surface gradient was judged to be steep and the cruise control is canceled.
Common: ABS operation	This item is displayed when the cruise control is canceled by the operation of the ABS.
Common: Large steering operation	This item is displayed when the steering wheel is fully turned and the cruise control is canceled.
Adaptive mode: Stop judgment	This item is displayed when the cruise control is cancelled after the own vehicle stops followed by the preceding vehicle in the adaptive cruise control mode.
Common: Parking brakes pull	This item is displayed when the cruise control is cancelled by the parking brake application.
Adaptive mode: Stop forced cancellation	This item is displayed when the cruise control is cancelled by the following operation. In adaptive cruise control mode, the own vehicle stops after the preceding vehicle stops. Then, the driver repeats SET or RES operation, and automatic brake control continues for 120 seconds.
common:X mode	This item is displayed when the cruise control is cancelled by switching SI Drive mode to X mode.
TSM actuation	This item is displayed when the cruise control is cancelled by the operation of TSM commanded by VDC.
VDC actuation	This item is displayed when the cruise control is cancelled by the understeer control, oversteer control, or operation of TCS commanded by VDC.

NOTE:

- ACC: Adaptive Cruise Control
- "Adaptive cruise mode": Adaptive cruise control
- "Constant speed mode": Conventional cruise control
- "Common": Adaptive cruise control and conventional cruise control

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

16. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC U0073 CONTROL MODULE COMMUNICATION BUS "A" OFF

Detected when error occurs in the CAN line. (Bus off)

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

B: DTC U0100 LOST COMMUNICATION WITH ECM/PCM "A"

Detected when CAN data from engine control module (ECM) is not transmitted to stereo camera.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

C: DTC U0101 LOST COMMUNICATION WITH TCM

Detected when CAN data from TCM is not transmitted to stereo camera.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

D: DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE

Detected when CAN data from VDC is not transmitted to stereo camera.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

E: DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE

Detected when CAN data from body integrated unit is not transmitted to stereo camera.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

F: DTC U0155 LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER (IPC) CONTROL MODULE

Detected when CAN data from meter is not transmitted to stereo camera.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

G: DTC U0401 INVALID DATA RECEIVED FROM ECM/PCM "A"

Failure counter diagnosis of engine control module (ECM)

NOTE:

Perform check of the ECM. <Ref. to EN(H4DO)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

H: DTC U0402 INVALID DATA RECEIVED FROM TCM

Failure counter diagnosis of automatic transmission control module (TCM)

NOTE:

Check the automatic transmission. <Ref. to CVT(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

I: DTC U0416 INVALID DATA RECEIVED FROM VEHICLE DYNAMICS CONTROL MODULE

Failure counter diagnosis of VDC control module (VDC CM)

NOTE:

Check the VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

J: DTC U0422 INVALID DATA RECEIVED FROM BODY CONTROL MODULE

Failure counter diagnosis of body integrated unit

NOTE:

Inspect the body integrated unit. <Ref. to BC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

K: DTC U0423 INVALID DATA RECEIVED FROM INSTRUMENT PANEL CLUSTER CONTROL MODULE

Failure counter diagnosis of combination meter

NOTE:

Check the combination meter. <Ref. to IDI-11, INSPECTION, Combination Meter System.>

L: DTC U1001 CAN-HS ABNORMAL

Detected when error occurs in the high speed CAN communication circuit.

NOTE:

Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

M: DTC B2801 TCM ABNORMAL

Detected when error occurs in the automatic transmission.

NOTE:

Check the automatic transmission. <Ref. to CVT(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

N: DTC B2802 ETC ABNORMAL

Detected when error occurs in the electronic throttle control.

NOTE:

Check the electronic throttle control. <Ref. to EN(H4DO)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

O: DTC B2805 BIU ABNORMAL

Detected when error occurs in the body integrated unit.

NOTE:

Inspect the body integrated unit. <Ref. to BC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

P: DTC B2806 ECM ABNORMAL

Detected when error occurs in the engine control module (ECM).

NOTE:

Perform check of the ECM. <Ref. to EN(H4DO)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

Q: DTC B2807 ECM ABNORMAL

Detected when cruise indicator illumination request from ECM and ON/OFF information of cruise function do not match.

NOTE:

Perform check of the ECM. <Ref. to EN(H4DO)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

R: DTC B2809 VDC ABNORMAL

Detected when error occurs in the VDC. (VDC failure)

NOTE:

Check the VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

S: DTC B280A VDC ABNORMAL

Detected when error occurs in the VDC. (VDC brake control malfunction 1)

NOTE:

Check the VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

When the DTC is detected by the compulsory drive of brake light relay for VDC, ABS sequence control, or VDC sequence control, the system malfunction does not exist. So, clear the memory.

T: DTC B280B VDC ABNORMAL

Detected when error occurs in the VDC. (VDC brake control malfunction 2)

NOTE:

Check the VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

U: DTC B280C VDC ABNORMAL

Detected when error occurs in the VDC. (VDC fluid pressure control prohibited)

NOTE:

Check the VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

V: DTC B280D VDC ABNORMAL

Detected when error occurs in the VDC. (Pre-collision BA prohibited)

NOTE:

Check the VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

W: DTC B280E VDC ABNORMAL

Detected when error occurs in the VDC. (VDC wrong variant)

NOTE:

Check the VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

X: DTC B280F METER ABNORMAL

Malfunction is detected in the combination meter.

DTC DETECTING CONDITION:

Defective combination meter

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light blinks or illuminates.
- Combination meter does not illuminate.

NOTE:

Check the combination meter. <Ref. to IDI-11, INSPECTION, Combination Meter System.>

Y: DTC B2810 METER ABNORMAL

Detected when the combination meter, which is not designed exclusively for EyeSight is installed.

DTC DETECTING CONDITION:

Incorrect specifications of combination meter

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

NOTE:

Replace the combination meter with the one designed for EyeSight.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

Z: DTC B2813 BRAKE SWITCH ABNORMAL

Detected when the error related to brake switch occurs.

DTC DETECTING CONDITION:

- Defective brake switch
- Defective brake light switch

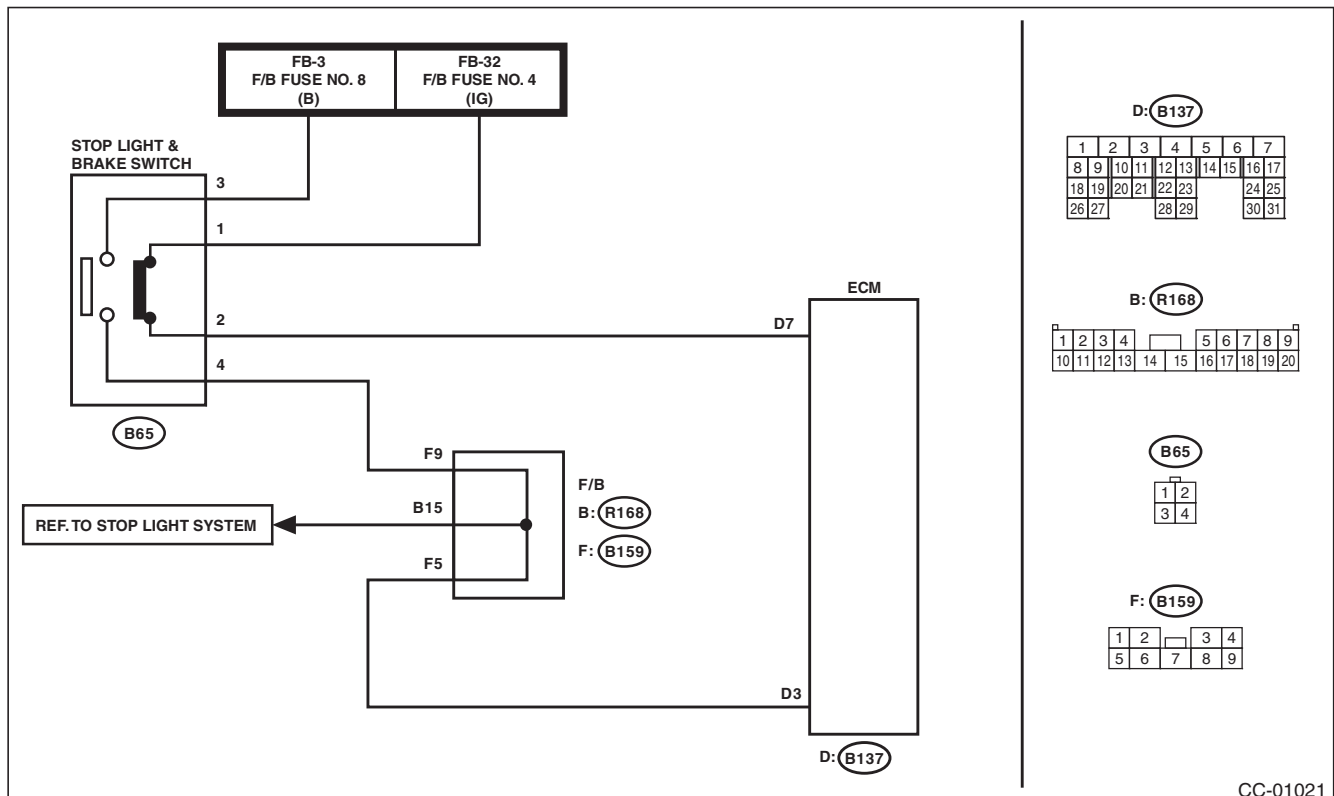
TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.
- Malfunction indicator light illuminates.

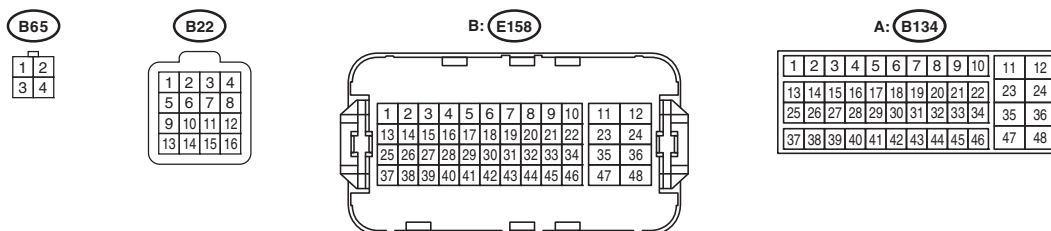
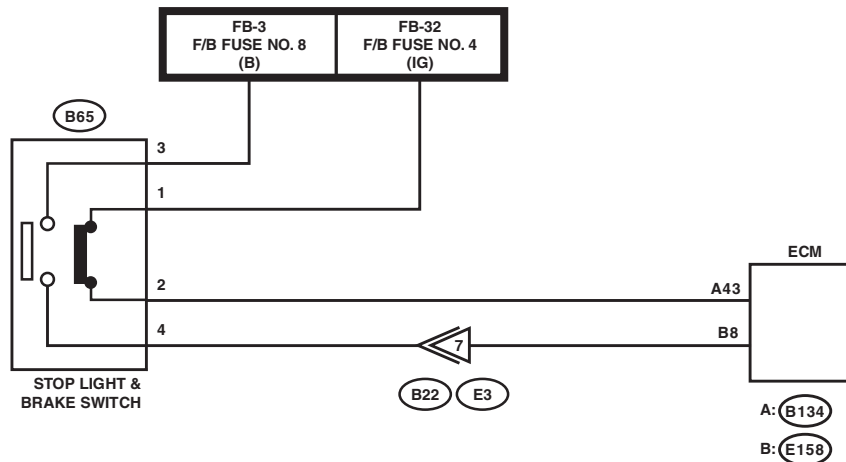
WIRING DIAGRAM:

EyeSight System <Ref. to WI-238, WIRING DIAGRAM, EyeSight System.>

- Non-turbo model



- Turbo model



CC-00992

	Step	Check	Yes	No
1	CHECK BRAKE SWITCH SIGNAL (ECM). 1) Turn the ignition switch to ON. 2) Confirm the current data of stereo camera using Subaru Select Monitor. 3) Display the data of brake switch to check it.	Is ON $\longleftrightarrow$ OFF displayed on the display when the brake pedal is depressed or released?	Go to step 2.	Go to step 3.
2	CHECK BRAKE SWITCH SIGNAL (BODY INTEGRATED UNIT). 1) Turn the ignition switch to ON. 2) Connect the Subaru Select Monitor. 3) Select {Integ. unit mode} from main menu. 4) Select {Current Data Display & Save}, check the brake switch output.	Is ON $\longleftrightarrow$ OFF displayed on the display when the brake pedal is depressed or released?	Go to step 6.	Go to step 3.
3	CHECK STOP LIGHT & BRAKE SWITCH. Check the stop light & brake switch. <Ref. to BR-78, INSPECTION, Stop Light Switch.>	Is the stop light & brake switch OK?	Go to step 4.	Replace the stop light & brake switch. <Ref. to BR-74, REMOVAL, Stop Light Switch.>
4	CHECK BRAKE SWITCH CIRCUIT (BATTERY POWER SUPPLY CIRCUIT). 1) Turn the ignition switch to OFF. 2) Disconnect the harness connector from stop light & brake switch. 3) Turn the ignition switch to ON. 4) Measure the voltage between stop light & brake switch harness connector terminal and chassis ground. Connector & terminal (B65) No. 1 (+) — Chassis ground (-): (B65) No. 3 (+) — Chassis ground (-):	Is the voltage approx. 10 V or more?	Go to step 5.	Check the power supply system circuit, and if any fault is found, repair or replace the defective parts.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK BRAKE SWITCH CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the ECM connector. 3) Measure the resistance between ECM harness connector terminal and stop light & brake switch. Connector & terminal Non-turbo model (B137) No. 3 — (B65) No. 4: (B137) No. 7 — (B65) No. 2: Turbo model (E158) No. 8 — (B65) No. 4: (B134) No. 43 — (B65) No. 2:	Is the resistance less than 10 Ω ?	Go to step 6.	Repair or replace the harness.
6 CHECK STEREO CAMERA. 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) Connect the Subaru Select Monitor. 4) Read the DTC.	Is another DTC (other than DTC B2813) displayed?	Perform the diagnosis according to DTC.	Go to step 7.
7 CHECK CONNECTOR. Check the connectors of stop light & brake switch, ECM and stereo camera.	Is the connector normal?	Go to step 8.	Repair or replace the connector.
8 CHECK LAN SYSTEM. Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Is a DTC of the LAN system detected?	Perform the diagnosis according to DTC for LAN system.	Go to step 9.
9 CHECK STEREO CAMERA. 1) Clear the memory. 2) Read the DTC.	Is the same DTC (DTC B2813) displayed?	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>	Temporary poor contact occurs.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AA:DTC B2814 POWER SUPPLY VOLT ERROR

Detected when the status of 7.9 V or less continues approximately for 5 seconds and is judged to be low-voltage malfunction, or when the +B harness of the stereo camera is broken.

DTC DETECTING CONDITION:

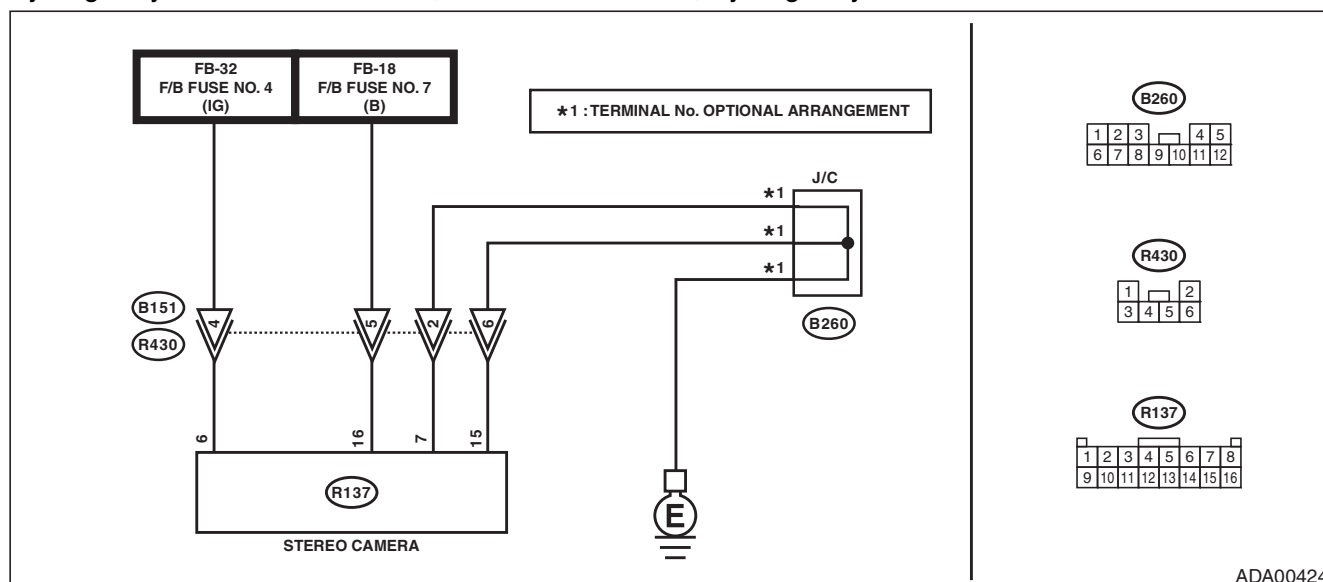
- Input voltage to stereo camera is out of specifications.
- Defective stereo camera control harness (open circuit in +B harness)
- Defective stereo camera

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light blinks or illuminates.
- CRUISE indicator light blinks.
- Malfunction indicator light illuminates.
- VDC warning light illuminates.
- ATF temperature warning light illuminates.

WIRING DIAGRAM:

EyeSight System <Ref. to WI-238, WIRING DIAGRAM, EyeSight System.>



	Step	Check	Yes	No
1	CHECK GENERATOR. 1) Start the engine and idle for a while. 2) Measure the voltage between generator terminal B and chassis ground. Connector & terminal Generator terminal B (+) — Chassis ground (–):	Is the voltage 10 V or more?	Go to step 2.	Check the generator.
2	CHECK BATTERY TERMINAL. Turn the ignition switch to OFF.	Is the battery terminal connected securely?	Go to step 3.	Tighten the battery terminal securely.
3	CHECK FUSE. Check the fuse.	Is the fuse OK?	Go to step 4.	Replace the faulty fuse. If the newly replaced fuse is blown instantly, check the short circuit in harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK HARNESS (POWER SUPPLY CIRCUIT). 1) Disconnect the stereo camera. 2) Turn the ignition switch to ON. 3) Measure the voltage between harness connector of stereo camera and chassis ground. Connector & terminal (R137) No. 6 (+) — Chassis ground (-): (R137) No. 16 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 5.	Check the power supply system circuit, and if any fault is found, repair the defective parts or replace the harness.
5 CHECK HARNESS (GROUND CIRCUIT). 1) Turn the ignition switch to OFF. 2) Disconnect the ground cable from battery. 3) Measure the resistance between stereo camera and chassis ground. Connector & terminal (R137) No. 7 — Chassis ground: (R137) No. 15 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 6.	Check the ground system circuit, and if any fault is found, repair the defective parts or replace the harness.
6 CHECK POOR CONTACT OF CONNECTORS. Check stereo camera connector.	Is there poor contact of the connector?	Repair the connector.	Go to step 7.
7 CHECK STEREO CAMERA. 1) Connect all connectors and battery terminals securely. 2) Start the engine, drive the vehicle at 40 km/h (24.9 MPH) or more, stop the vehicle and then stop the engine. 3) After 3 seconds or more have elapsed, restart the engine. 4) Clear the memory. 5) Read the DTC.	Is the same DTC (DTC B2814 or B2815) displayed?	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>	Temporary poor contact occurs.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AB:DTC B2815 POWER SUPPLY VOLT ERROR

Detected when the status for the battery voltage of 16 V or more continues approximately for 5 seconds and is judged to be abnormally high voltage.

Refer to DTC B2814 for DTC detecting condition, trouble symptom and diagnostic procedure. <Ref. to ES(diag)-97, DTC B2814 POWER SUPPLY VOLT ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AC:DTC B2816 BRAKE CONTROL ERROR

DTC DETECTING CONDITION:

- Defective VDC
- Defective CAN system

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.

NOTE:

When this DTC is detected, check VDC system. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

When the DTC is detected by the ABS sequence control for VDC, VDC sequence control, or air bleeding from brake system with engine running, the system malfunction does not exist. So, clear the memory.

AD:DTC B2817 BRAKE LAMP ERROR

DTC DETECTING CONDITION:

- Defective brake light relay
- Defective brake light switch
- Defective VDC

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.
- Brake light does not go off or illuminate.

NOTE:

When this DTC is detected, check VDC system. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

When the DTC is detected by the compulsory drive of brake light relay for VDC, the system malfunction does not exist. So, clear the memory.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AE:DTC B28A0 VEHICLE MODEL JUDGMENT ABNORMAL

Detected when the model code for stereo camera and the model code used for CAN data are different.

DTC DETECTING CONDITION:

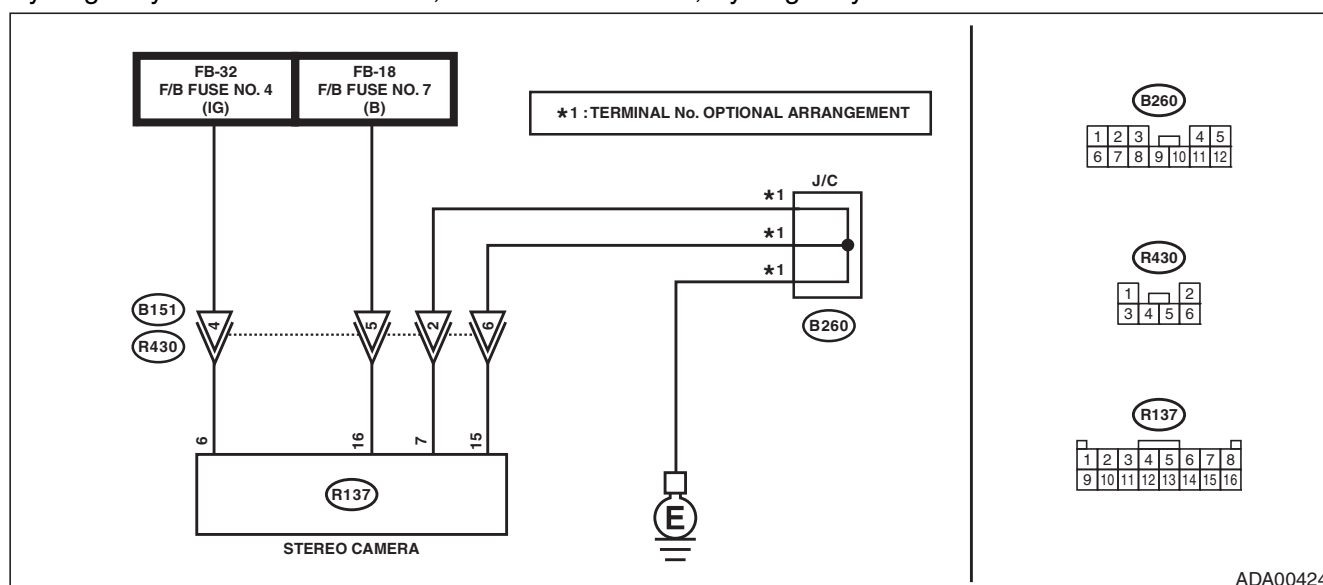
- Defective CAN system
- Defective stereo camera
- In the aiming operation, there is an open circuit in the +B harness of the stereo camera.
- In the completion of the aiming operation, the switching from IGN OFF to IGN ON takes place too early, and the recording of the model information has not yet been finished.

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.

WIRING DIAGRAM:

EyeSight System <Ref. to WI-238, WIRING DIAGRAM, EyeSight System.>



Step	Check	Yes	No
1 CHECK RELATED CM. Check the part number of the ECM, TCM, VDC CM and combination meter.	Is each CM a genuine part?	Go to step 2.	Replace the non-genuine CM with a genuine one.
2 CHECK STEREO CAMERA. 1) Remove the camera cover. 2) Check the part number of the stereo camera.	Is the stereo camera genuine?	Go to step 3.	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>
3 CHECK LAN SYSTEM. Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 4.
4 CHECK MODEL REGISTRATION INFORMATION. Check the model registration information from the current data of stereo camera.	Does vehicle and data correspond?	Perform the adjustment or inspection of the camera. <Ref. to ES(diag)-42, Camera Adjustment, Inspection.>	Go to step 5.
5 CHECK FUSE. Check the fuse.	Is the fuse OK?	Go to step 6.	Replace the faulty fuse. If the newly replaced fuse is blown instantly, check the short circuit in harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

Step	Check	Yes	No
6 CHECK HARNESS (POWER SUPPLY CIRCUIT). 1) Disconnect the stereo camera. 2) Turn the ignition switch to ON. 3) Measure the voltage between harness connector of stereo camera and chassis ground. Connector & terminal (R137) No. 6 (+) — Chassis ground (–): (R137) No. 16 (+) — Chassis ground (–):	Is the voltage 10 V or more?	Go to step 7.	Check the power supply system circuit, and if any fault is found, repair the defective parts or replace the harness.
7 CHECK HARNESS (GROUND CIRCUIT). 1) Turn the ignition switch to OFF. 2) Disconnect the ground cable from battery. 3) Measure the resistance between stereo camera and chassis ground. Connector & terminal (R137) No. 7 — Chassis ground: (R137) No. 15 — Chassis ground:	Is the resistance less than 10 Ω ?	Go to step 8.	Check the ground system circuit, and if any fault is found, repair the defective parts or replace the harness.
8 CHECK POOR CONTACT OF CONNECTORS. Check stereo camera connector.	Is there poor contact of the connector?	Repair the connector.	Go to step 9.
9 CHECK STEREO CAMERA. 1) Connect all connectors and battery terminals securely. 2) Clear the memory. 3) Read the DTC.	Is the same DTC (DTC B28A0) displayed?	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>	Temporary poor contact occurs.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AF:DTC B28A1 ADAPTIVE CC ECM COMMUNICATION DATA ERROR

Detected when the engine control module (ECM) detects the malfunction of stereo camera, or when the stereo camera or ECM is assembled incorrectly.

DTC DETECTING CONDITION:

- Defective CAN system
- Defective engine control module (ECM)
- Defective stereo camera
- Incorrect assembly of stereo camera (When the stereo camera designed for C-type vehicle is installed to the B-type vehicle, etc.)
- Incorrect assembly of ECM (When the ECM designed for B-type vehicle is installed to the C-type vehicle, etc.)

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.

	Step	Check	Yes	No
1	CHECK ECM. Check the part number of the ECM.	Is the ECM genuine?	Go to step 2.	Replace the ECM.
2	CHECK STEREO CAMERA. 1) Remove the camera cover. 2) Check the part number of the stereo camera.	Is the stereo camera genuine?	Go to step 3.	Replace the stereo camera.
3	CHECK LAN SYSTEM. Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 4.
4	CHECK ECM. Perform the diagnosis for the engine. <Ref. to EN(H4DO)(diag)-2, Basic Diagnostic Procedure.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 5.
5	CHECK CONNECTOR. Check the ECM connector and the stereo camera connector.	Is the connector OK?	Go to step 6.	Repair or replace the connector.
6	CHECK STEREO CAMERA. Read the DTC.	Is another DTC displayed?	Perform the diagnosis according to DTC.	Go to step 7.
7	CHECK STEREO CAMERA. 1) Clear the memory. 2) Read the DTC.	Is the same DTC displayed?	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>	Temporary poor contact.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AG:DTC B28A2 ADAPTIVE CC ECM COMMUNICATION DATA ERROR

Detected when the VDC control module (VDCCM) detects the malfunction of stereo camera.

DTC DETECTING CONDITION:

- Defective CAN system
- Defective VDC control module (VDCCM)
- Defective stereo camera

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.

Step	Check	Yes	No
1	CHECK LAN SYSTEM. Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is DTC displayed?	Perform the diagnosis according to DTC.
2	CHECK VDC. Perform the diagnosis for VDC. <Ref. to VDC(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is DTC displayed?	Perform the diagnosis according to DTC.
3	CHECK CONNECTOR. Check the VDC connector and the stereo camera connector.	Is the connector OK?	Go to step 4.
4	CHECK STEREO CAMERA. Read the DTC.	Is another DTC displayed?	Perform the diagnosis according to DTC.
5	CHECK STEREO CAMERA. 1) Clear the memory. 2) Read the DTC.	Is the same DTC displayed?	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AH:DTC B28A3 ADAPTIVE CC ECM COMMUNICATION DATA ERROR

Detected when the combination meter detects the malfunction of stereo camera.

DTC DETECTING CONDITION:

- Defective CAN system
- Defective combination meter
- Defective stereo camera

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.

	Step	Check	Yes	No
1	CHECK LAN SYSTEM. Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>	Is the DTC displayed in the LAN system?	Perform the diagnosis according to DTC.	Go to step 2.
2	CHECK COMBINATION METER. Check the combination meter.	Is combination meter OK?	Go to step 3.	Perform the diagnosis for combination meter.
3	CHECK CONNECTOR. Check the combination meter connector and the stereo camera connector.	Is the connector OK?	Go to step 4.	Repair or replace the connector.
4	CHECK STEREO CAMERA. Read the DTC.	Is another DTC displayed?	Perform the diagnosis according to DTC.	Go to step 5.
5	CHECK STEREO CAMERA. 1) Clear the memory. 2) Read the DTC.	Is the same DTC displayed?	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>	Temporary poor contact.



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AI: DTC B28A5 ADAPTIVE CC ECM COMMUNICATION DATA ERROR

Detected when abnormal data is transmitted from stereo camera to engine control module (ECM) and the engine control module (ECM) prohibits the AT rapid start prevention control, or when the engine control module (ECM) prohibits the AT rapid start prevention control.

DTC DETECTING CONDITION:

- Defective CAN system
- Defective engine control module (ECM)
- Defective stereo camera

TROUBLE SYMPTOM:

- All functions of EyeSight system do not operate.
- EyeSight warning light illuminates.

	Step	Check	Yes	No
1	CHECK LAN SYSTEM. Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2	CHECK ECM. Perform the diagnosis for the engine. <Ref. to EN(H4DO)(diag)-2, Basic Diagnostic Procedure.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 3.
3	CHECK CONNECTOR. Check the ECM connector and the stereo camera connector.	Is the connector OK?	Go to step 4.	Repair or replace the connector.
4	CHECK STEREO CAMERA. Read the DTC.	Is another DTC displayed?	Perform the diagnosis according to DTC.	Go to step 5.
5	CHECK STEREO CAMERA. 1) Clear the memory. 2) Read the DTC again.	Is the same DTC displayed?	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>	Temporary poor contact.

AJ:DTC B28A6 STEREO CAMERA ABNORMAL

Detected when communication error occurs inside the stereo camera.

DTC DETECTING CONDITION:

Communication error occurs inside the stereo camera.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

Step	Check	Yes	No
1 CHECK RESTARTING. 1) Turn the ignition switch to OFF. 2) Start the engine. 3) Read the DTC related to the stereo camera using the Subaru Select Monitor.	Is DTC displayed after restarting the engine? ^{*1}	Replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>	Clear the memory, in which temporary communication failure occurs and complete the step.

^{*1}: When malfunction is detected after restarting the engine, 0 is registered in IG counter. Other values can be regarded as DTCs detected in the past.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AK:DTC B28A7 STEREO CAMERA ABNORMAL

Detected when error occurs in the communication data inside the control module caused by external factors such as noises.

NOTE:

If the same DTC is still detected after the engine has restarted, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>

AL:DTC B28A8 STEREO CAMERA ABNORMAL

Detected when error occurs in the communication data inside the control module caused by external factors such as noises.

NOTE:

If the same DTC is still detected after the engine has restarted, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>

AM:DTC B28A9 STEREO CAMERA ABNORMAL

Detected when error occurs in the communication data inside the control module caused by external factors such as noises.

NOTE:

If the same DTC is still detected after the engine has restarted, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>

AN:DTC B28AA STEREO CAMERA ABNORMAL

Detected when communication error occurs due to malfunction of microcomputer inside the stereo camera.

DTC DETECTING CONDITION:

Communication error occurs due to malfunction of microcomputer inside the stereo camera.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

For diagnostic procedure, refer to "DTC B28A6 STEREO CAMERA ABNORMAL". <Ref. to ES(diag)-105, DTC B28A6 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AO:DTC B28AB STEREO CAMERA ABNORMAL

Detected when communication error occurs due to malfunction of microcomputer inside the stereo camera.

DTC DETECTING CONDITION:

Communication error occurs due to malfunction of microcomputer inside the stereo camera.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

For diagnostic procedure, refer to "DTC B28A6 STEREO CAMERA ABNORMAL". <Ref. to ES(diag)-105, DTC B28A6 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AP:DTC B28AC STEREO CAMERA ABNORMAL

Detected when communication error occurs due to malfunction of ASIC.

DTC DETECTING CONDITION:

Communication error occurs due to malfunction of ASIC.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

For diagnostic procedure, refer to "DTC B28A6 STEREO CAMERA ABNORMAL". <Ref. to ES(diag)-105, DTC B28A6 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AQ:DTC B28AD STEREO CAMERA ABNORMAL

Detected when improper image recognition occurs in the microcomputer inside the stereo camera.

DTC DETECTING CONDITION:

Improper image recognition occurs in the microcomputer inside the stereo camera.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

For diagnostic procedure, refer to "DTC B28A6 STEREO CAMERA ABNORMAL". <Ref. to ES(diag)-105, DTC B28A6 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AR:DTC B28AE STEREO CAMERA ABNORMAL

Detected when improper power supply inside the stereo camera occurs.

DTC DETECTING CONDITION:

Improper power supply inside the stereo camera occurs.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

For diagnostic procedure, refer to "DTC B28A6 STEREO CAMERA ABNORMAL". <Ref. to ES(diag)-105, DTC B28A6 STEREO CAMERA ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AS:DTC B28AF STEREO CAMERA ABNORMAL

Detected when adjustment or inspection of stereo camera has not been completed normally.

DTC DETECTING CONDITION:

- Operation is aborted during adjustment or inspection of the stereo camera.
- After the replacement of the stereo camera, adjustment or inspection of camera has not yet been performed.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

For diagnostic procedure, perform adjustment/inspection of camera. When the adjustment or inspection of camera is performed, and if it is not completed successfully, replace the camera.



EyeSight (DIAGNOSTICS)

AT:DTC B28B0 STEREO CAMERA ABNORMAL

Detected when pre-collision brake OFF switch or lane departure warning OFF switch circuit is shorted.

DTC DETECTING CONDITION:

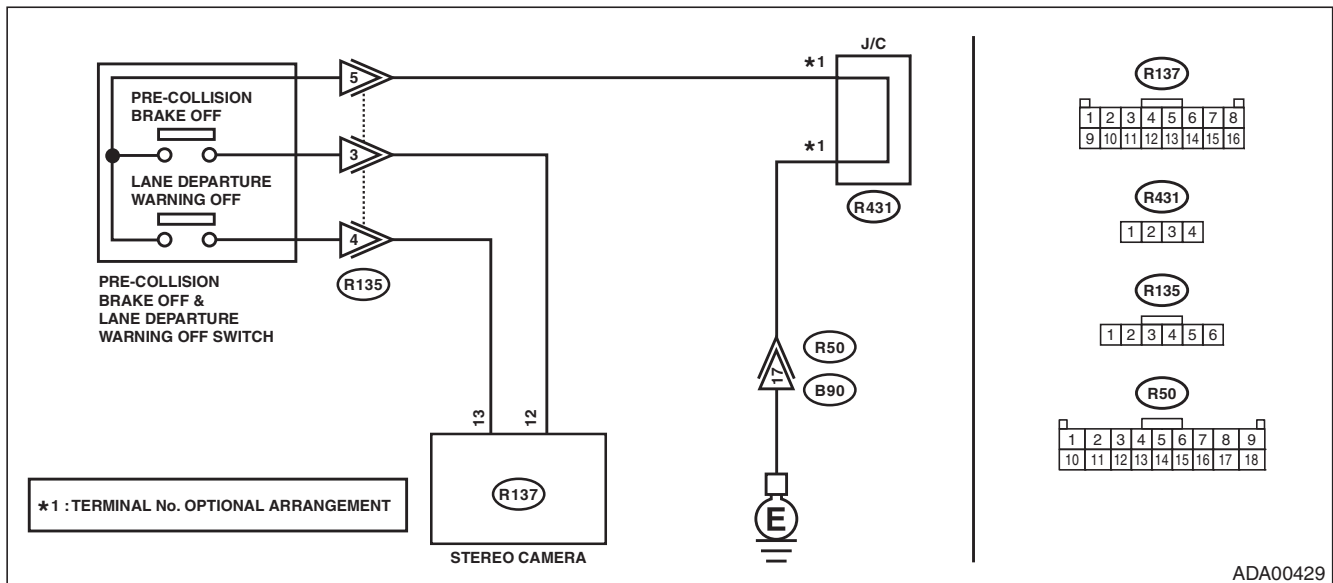
Pre-collision brake OFF switch or lane departure warning OFF switch circuit stays ON for 45 seconds or more.

TROUBLE SYMPTOM:

All functions of EyeSight system do not operate.

WIRING DIAGRAM:

EyeSight System <Ref. to WI-238, WIRING DIAGRAM, EyeSight System.>



	Step	Check	Yes	No
1	CHECK SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the stereo camera connector. 3) Using the tester, measure the resistance between terminals. Connector & terminal (R137) No. 12 — Chassis ground: (R137) No. 13 — Chassis ground:	Is the resistance 10 Ω or less?	Go to step 2.	If the code is still detected after restoring, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>
2	CHECK HARNESS. 1) Disconnect the switch connector for the stereo camera cover. 2) Using the tester, measure the resistance between terminals. Connector & terminal (R137) No. 12 — Chassis ground: (R137) No. 13 — Chassis ground:	Is the resistance 10 Ω or less?	Repair or replace the harness.	Go to step 3.
3	CHECK SWITCH. Using the tester, measure the resistance of the switch. Connector & terminal (R135) No. 3 — No. 5: (R135) No. 4 — No. 5:	Does the resistance change when the switch is operated?	Repair or replace the harness.	Replace the switch.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)

AU:DTC B28B1 STEREO CAMERA ABNORMAL

Detected when the optical axis of stereo camera is deviated in lateral direction or when the fluctuation range of automatic adjustment value has expanded.

NOTE:

Readjust the stereo camera. <Ref. to ES(diag)-42, PROCEDURE, Camera Adjustment, Inspection.>

If the same DTC is still detected after readjustment, replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>

AV:DTC B28B2 STEREO CAMERA ABNORMAL

Detected when the temperature of the stereo camera excessively increases.

NOTE:

When this DTC is detected, performing adjustment or inspection of the camera will not return to the normal state. In this case, always replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>

AW:DTC B28B3 STEREO CAMERA ABNORMAL

Detected when the temperature of the stereo camera excessively decreases.

NOTE:

When this DTC is detected, performing adjustment or inspection of the camera will not return to the normal state. In this case, always replace the stereo camera. <Ref. to ES-11, REMOVAL, Stereo Camera.>



Diagnostic Procedure with Diagnostic Trouble Code (DTC)

EyeSight (DIAGNOSTICS)
