About EyeSight

EyeSight is a driving support system that uses a range of functions to assist the driver in making decisions in order to provide for more safe and comfortable driving and to reduce driver fatigue. EyeSight makes use of original stereo cameras designed by SUBARU. Two CCD (Charge Coupled Device) cameras are used to process stereo images and identify the vehicle in front, obstacles, traffic lanes and other items.

WARNING

Drivers are responsible for driving safely. Strive for safe driving at all times. Always maintain a safe following distance behind the vehicle in front of you, pay attention to your surroundings and the driving conditions, operate the brake pedal and take other action as necessary in order to maintain a safe following distance.

Never attempt to drive relying on EyeSight alone. EyeSight is intended to assist the driver in making decisions in order to reduce the chance of accidents or damage and lessen the burden on the driver. When a warning is activated, pay attention to what is in front of you and to your surroundings, operate the brake pedal and take other action as necessary.

This system is not designed to support driving in poor visibility or in extreme weather conditions, or to protect against careless driving when the driver is not paying complete attention to the road ahead. It also cannot prevent collisions from occurring in all driving conditions. There are limits to the EyeSight recognition performance and control performance. Be sure to read the instructions concerning Adaptive Cruise Control, the Pre-Collision Braking System, Pre-Collision Throttle Management and Conventional Cruise Control before using them and be sure to use them correctly. We are not liable for accidents or other problems resulting from failure to follow the instructions in this manual.

The EyeSight system in your vehicle is designed for use in countries in which traffic operates on the right-hand side of the road. EyeSight for LHD vehicles such as yours is not designed for use in countries in which vehicles are driven on the left-hand side of the road.

- The system may not operate correctly under the conditions listed below. When these conditions occur, turn off the Pre-Collision Braking System. Also, do not use Adaptive Cruise Control.
  - The tire pressure is not correct.*
  - The temporary spare tire is installed on any wheel.*
  - Tires that are worn or have large variations in wear conditions are installed.*
  - Tires other than those of the designated size are installed.*
  - An emergency repair is performed using the flat tire repair kit.
  - The suspension has been modified.
  - Tire chains are installed.
  - The headlights are dirty or the optical axes are not aligned correctly. (Objects are not correctly illuminated and are difficult to detect.)
  - Vehicle operation has become compromised due to an accident or malfunction.
  - The brake warning light is illuminated.
  - The vehicle is tilted due to a heavy cargo load.
  - The maximum number of occupants and/or the gross vehicle weight rating is exceeded.
  - The wheels and tires have functions that are critically important. Be sure to use the correct ones. For details, refer to the Owner’s Manual for your vehicle.
- The system may not operate correctly when towing a trailer or another vehicle. Do not use Adaptive Cruise Control in these situations.
• The characteristics of the stereo cameras are similar to those of human eyes. For this reason, conditions that make it difficult for the driver to see in the forward direction have the same effect on the stereo cameras and make it difficult for the system to detect vehicles, obstacles and traffic lanes.

• Detection by the EyeSight system is limited to objects that are within the range of the stereo cameras’ field of vision. Also, after an object enters the range of the cameras’ field of vision, it may take some time for the system to detect it as a controllable target and warn the driver.

• Under the conditions listed below, it will become more difficult for the system to detect the vehicle in front, motorcycles, bicycles, pedestrians and obstacles on the road and lane markers, and EyeSight may temporarily stop operating. However, the system will resume operation once these conditions have improved and the vehicle is driven for a short period of time.
  - Bad weather (for example heavy rain, a blizzard or thick fog). In particular, the system is more likely to temporarily stop operating when there is an oil film adhering to the windshield, a glass coating has been applied or old wipers are used.)
  - When affected by strong light from the front (sunlight or headlight beams, etc.)
  - The windshield has become fogged, or snow, dirt, dust or frost has adhered to it, reducing the stereo cameras’ field of view.
  - The vehicle is tilted at an extreme angle due to loaded cargo or other factors.
  - When the stereo cameras’ field of view is obstructed (for example by a canoe on the roof of the vehicle)
  - When visibility is poor due to sand, smoke or water vapor in the air, or when the vehicle in front or oncoming traffic causes water, snow, dirt or other substances to obscure the view.

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Continued from previous page

- When passing through the entrance or exit of a tunnel
- When the rear aspect of the vehicle in front is low, small or irregular (for example a low bed trailer, etc.)
- When there is a fence, a wall or a shutter, etc. with a uniform pattern (a striped pattern, brick, etc.) or with no pattern in front
- When there is a wall or door made of glass or a mirror in front
- When water droplets or dirt have not been fully wiped off the windshield
- When driving at night or in a tunnel when there is a vehicle in front that does not have its taillights on
- When passing a banner or flag, low branches on a tree or thick/tall vegetation
- On steep uphill or downhill grades
- When the front of the cameras are obstructed by a hand, etc.
- When it is completely dark and no objects are detected
- When the area around the vehicle has a uniform color (such as when completely covered in snow, etc.)
- When the stereo camera lenses are dirty due to fingerprints, etc.
- When accurate detection is not possible due to reflections in the front windshield
- When the stereo cameras have become misaligned due to a strong impact

• Under the conditions listed below, EyeSight may temporarily stop operating. If this occurs, EyeSight will resume operating when the conditions improve.
  - The temperature inside the vehicle is high, such as after the vehicle was left in bright sunshine, or the temperature inside the vehicle is low, such as after the vehicle was left in an extremely cold environment.
  - Immediately after the engine starts

• When there is a malfunction in the EyeSight system, turn off the Pre-Collision Braking System (refer to page 51) and the Lane Departure Warning (refer to page 60), and stop using the Adaptive Cruise Control. Contact a SUBARU dealer and have the system inspected.
NOTE

EyeSight records and stores the following data when the secondary braking of the Pre-Collision Braking System is operated. It does not record conversations or other audio data.
- Stereo camera image data
- Distance from the vehicle in front
- Vehicle speed
- Steering wheel turning angle
- Lateral movement with regard to the direction of travel
- Accelerator pedal operation status
- Brake pedal operation status
- Select lever position
- Data related to ABS, Vehicle Dynamics Control and Traction Control Function

SUBARU and third parties contracted by SUBARU may acquire and use the recorded data for the purpose of vehicle research and development. SUBARU and third parties contracted by SUBARU will not disclose or provide the acquired data to any other third party except under the following conditions.
- The vehicle owner has given his/her consent.
- The disclosure/provision is based on a court order or other legally enforceable request.
- Data that has been modified so that the user and vehicle cannot be identified is provided to a research institution for statistical processing or similar purposes.
About EyeSight

Handling of the Stereo Cameras

The stereo cameras are installed at the positions of the front map lights.

CAUTION

- A function is included that will automatically detect that the fronts of the stereo cameras are dirty. However it is not 100% effective. Under certain conditions, this function may fail to detect that the fronts of the stereo cameras have become dirty. In addition, this function may not detect that there is snow or ice on the windshield close to the stereo cameras. In such conditions, the system may not maintain a suitable distance between vehicles; therefore, do not use Adaptive Cruise Control and be sure to pay attention to what is ahead of you while driving. Also be sure to keep the windshield clean at all times (indicated by ). When this function detects that the fronts of the stereo cameras are dirty, no EyeSight functions are activated except for Conventional Cruise Control.
- The stereo camera lenses are precision components. Always observe the following precautions when handling them.
  - Never touch the stereo camera lenses, and do not attempt to wipe or clean the lenses. Doing so could cause lens damage or contamination and lead to improper system performance.
  - If you ever touch a lens for any reason, be sure to contact a SUBARU dealer.

• The stereo camera lenses are precision components. Always observe the following precautions when handling them.
  - Never touch the stereo camera lenses, and do not attempt to wipe or clean the lenses. Doing so could cause lens damage or contamination and lead to improper system performance.
  - If you ever touch a lens for any reason, be sure to contact a SUBARU dealer.
- When cleaning the front windshield, cover the camera covers with plastic wrap, such as food wrapping, or something similar to prevent glass cleaner from getting on the camera lenses.
- If having your vehicle washed at a service station, etc., be sure to request that the attendant covers the camera covers before washing the vehicle.

• Do not subject the stereo cameras to a strong impact.
• Do not remove or disassemble the stereo cameras.
• Do not change the positions where the stereo cameras are installed or modify any of the surrounding structures.
• Do not install an interior rearview mirror other than a genuine SUBARU rearview mirror (such as a wide-type mirror). Also, use the rearview mirror so that it does not obstruct the stereo cameras. Failure to do so may affect the stereo cameras’ field of vision and could prevent the EyeSight system from functioning properly.
• Do not affix any stickers or install any accessories on the prohibited areas shown in the illustrations below (grey zones). Doing so may affect the stereo camera’s field of view and could prevent the EyeSight system from functioning properly. If you must affix any stickers, such as automobile inspection certificate stickers, or install accessories, do not cover the front of the cameras. If abnormal EyeSight operation occurs, remove the stickers or accessories.

• If the top of the instrument panel is polished with chemicals or other substances, the stereo cameras may not be able to detect objects accurately and the EyeSight system may not operate properly due to reflections in the front windshield.

• Do not place any objects on top of the instrument panel and do not coat the surface above the instrument panel with chemical liquid. The stereo cameras may not be able to detect objects accurately and the EyeSight system may not function properly due to reflections in the front windshield. For details, contact a SUBARU dealer.

• Do not install any wiper blades other than genuine SUBARU wiper blades. Doing so may affect the stereo cameras’ field of vision and could prevent the EyeSight system from functioning properly.

• Replace damaged wiper blades as soon as possible. The stereo cameras may not be able to detect objects accurately and the EyeSight system may not function properly due to liquid remaining on the windshield.

• Keep the windshield (outside and inside) clean at all times.

• Never mount any device to the center air vent, as any air flow change may impact EyeSight performance.

• Do not place any stickers or accessories on the windshield (outside or inside). If you have to do so (for example, legally required), avoid the area in front of the camera. Doing so may adversely affect the field of vision of the stereo camera and can cause improper operation of the system.
• Do not use any glass coating agents or similar substances on the windshield. Doing so may prevent the system from operating correctly.
• If there are scratches or cracks on the front windshield, contact a SUBARU dealer.
• To have the front windshield replaced or repaired, contact a SUBARU dealer. Do not install a front windshield other than a genuine SUBARU front windshield. The stereo cameras may not be able to detect objects accurately and the EyeSight system may not operate properly.
About EyeSight

EyeSight Functions

EyeSight includes the following seven functions.

■ Adaptive Cruise Control

This function maintains the set vehicle speed and when there is a vehicle in front in the same traffic lane, it tracks the speed of the vehicle in front up to the maximum of the set vehicle speed.

* Refer to page 21.

■ Pre-Collision Braking System

This function uses a following distance warning feature to warn the driver to take evasive action when there is the possibility of a collision with a vehicle or obstacle in front of the driver’s vehicle. If the driver still does not take evasive action, the brakes are quickly applied automatically just before the collision in order to reduce the collision damage or, if possible, prevent the collision.

* Refer to page 43.

■ Pre-Collision Throttle Management

This function reduces accidental forward movement caused by the selector lever being placed in the wrong position or the accelerator pedal being accidently depressed, or depressed too strongly.

* Refer to page 52.

■ Lane Departure Warning

This function warns the driver when the vehicle is about to depart the traffic lane during driving.

* Refer to page 58.

■ Lane Sway Warning

This system detects vehicle drifting caused by driver fatigue, failure to concentrate on the road, inattention, strong crosswinds or other factors, and warns the driver.

* Refer to page 61.

■ Lead Vehicle Start Alert

This function notifies the driver when the vehicle in front has started moving but the driver’s vehicle has not.

* Refer to page 64.
**Conventional Cruise Control**

In this mode, the system maintains a constant vehicle speed. Tracking of the vehicle in front does not occur. This function can be used even when the stereo cameras have temporarily stopped operating. (Refer to page 77.) (This function is used by switching from Adaptive Cruise Control to Conventional Cruise Control.)

* Refer to page 65.

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**NOTE**

EyeSight does not operate when the engine is not running.
About EyeSight

Instrument panel display layout

■ Combination meter

<Meter display (U.S. models)>

Lane indicator (Left)
Selector indicator / shift position indicator
Conventional Cruise Control indicator
Adaptive Cruise Control indicator
Lead vehicle indicator
Following distance setting indicator
Lane indicator (Right)
Steering wheel indicator
SET indicator
READY indicator
Set vehicle speed display
Customization display
EyeSight temporary stop indicator
SI-DRIVE indicator lights

X-mode indicator light

EyeSight warning light

Lane Departure Warning OFF indicator light

Pre-Collision Braking System OFF indicator light
<Meter display (Canada models)>

- Lane indicator (Left)
- Lead vehicle indicator
- Following distance setting indicator
- Lane indicator (Right)
- Steering wheel indicator
- SET indicator
- READY indicator
- Set vehicle speed display
- Customization display
- EyeSight temporary stop indicator
- SI-DRIVE indicator lights
- X-mode indicator light
- Selector indicator / shift position indicator
- Conventional Cruise Control indicator
- Adaptive Cruise Control indicator
- Lane Departure Warning OFF indicator light
- EyeSight warning light
- Pre-Collision Braking System OFF indicator light
● CRUISE indicator
These indicators are displayed when the main cruise control is pushed.

- Adaptive Cruise Control (Adaptive Cruise Control indicator)
- Conventional Cruise Control (Conventional Cruise Control indicator)

* Refer to page 28.

● SET indicator [Adaptive Cruise Control/Conventional Cruise Control]
SET is displayed when cruise control is set. When the vehicle stops, the indicator will blink until the cruise control is cancelled.

* Refer to page 29.

● READY indicator
READY is displayed when Adaptive Cruise Control can be set.

* Refer to page 28.

● Lead vehicle indicator
- When Adaptive Cruise Control is set, this indicator will be displayed when a vehicle in front has been detected.
- This indicator and the following distance setting indicator will blink in the following cases.
  - The Lead Vehicle Start Alert is active.
  - The Pre-Collision Braking System is active.
  - The "brake more" warning is active.
  - Pre-Collision Throttle Management is active.
- These indicators also flash if, after Adaptive Cruise Control is set, it is automatically canceled because a vehicle in front of your vehicle is now out of the detectable range of the EyeSight cameras.

* Refer to page 30.

● Following distance setting indicator
(Following distance setting) Indicates the following distance setting that was set with the following distance setting switch.
This indicator blinks in the following cases.
- The "brake more" warning is active.
- The Pre-Collision Braking System is active.
- Pre-Collision Throttle Management is active.

* Refer to page 36.

● Set vehicle speed display
Displays the set vehicle speed.

* Refer to page 28.

● SI-DRIVE* mode indicator
Indicates the current SI-DRIVE mode.

*SI-DRIVE refers to SUBARU Intelligent Drive.

* Refer to page 19.
● Selector indicator/shift position indicator
  • Displays the selector lever position or the selected gear position.
  • For turbo models, when the Adaptive Cruise Control / Conventional Cruise Control is set while S# (Sports Sharp mode) of Si-DRIVE is selected, the display switches from the gear position to the D position.

● Lane indicator
  • When the Lane Departure Warning is activated, both the left and right indicators flash simultaneously.
  • When the Lane Sway Warning is activated, the left and right indicators flash alternately.
  * Refer to pages 58 and 61.

● Steering wheel indicator
  Flashes when the Lane Departure Warning or Lane Sway Warning is active.
  * Refer to pages 58 and 61.

● EyeSight temporary stop indicator
  • If a malfunction occurs in the EyeSight system, the Pre-Collision Braking System OFF indicator light and the Lane Departure Warning OFF indicator light illuminate and a symbol from “E1” to “E3” will be displayed on the meter display. However, when the main cruise control is in the OFF position, the symbol will not be displayed.
  • When it is displayed, none of the EyeSight functions can be used except for Conventional Cruise Control.
  * Refer to page 77.

● Customization display
  The settings of the alarm volume, the lead vehicle acquisition sound and the lead vehicle start alert function can be customized when all of the following conditions are met: the engine is running, the main cruise control is in the OFF position and the selector lever is in the P position.
  * Refer to page 79.

● EyeSight warning light
  • This indicator illuminates or flashes when a malfunction occurs in the EyeSight system.
  • It also illuminates when the ignition switch is turned to the ON position and then it turns off approximately 5 seconds after the engine starts.
  • When it is illuminated or flashing, none of the EyeSight functions can be used (including Adaptive Cruise Control and the Pre-Collision Braking System, etc.).
  * Refer to page 76.
About EyeSight

● Lane Departure Warning OFF indicator light
  • This indicator illuminates when the Lane Departure Warning and Lane Sway Warning are off.
  • It also illuminates when the ignition switch is turned to the ON position, and then turns off approximately 7 seconds after the engine starts.
   * Refer to page 60.

● Pre-Collision Braking System OFF indicator light
  • Illuminates when the Pre-Collision Braking System and Pre-Collision Throttle Management are off.
  • It also illuminates when the ignition switch is turned to the ON position, and then turns off approximately 7 seconds after the engine starts.
   * Refer to pages 51 and 57.

■ Multi function display

● Your own vehicle speed indicator
  Indicates your own vehicle speed with a red indicator.

● Set vehicle speed indicator
  Indicates the set vehicle speed.
   * Refer to page 29.
● Your own vehicle indicator
  When the brake pedal is depressed or the brake control function is active, the brake light on
  the indicator illuminates in red.

● Lead vehicle indicator
  While the Adaptive Cruise Control is set to on, this indicator is displayed when a vehicle is
detected in front.
  * Refer to page 30.

● Lead vehicle distance indicator
  While the Adaptive Cruise Control is set to on, the distance to the vehicle in front is visually
displayed when following the vehicle in front.

**NOTE**

For Canada models, if an EyeSight warning or malfunction is detected, a
 corresponding message will be displayed on the multi function display.
 However for USA models, only a malfunction message will be displayed.
  * Refer to page 81.
About EyeSight

Switch layout

Steering wheel switches

- **(CRUISE) switch**
  - Switches cruise control on/off.
  - Refer to page 28.
  - When this switch is pressed and “ON” or “OFF” appears on the instrument panel, the main cruise control is on.

- **Set/- switch**
  - Can be used to set cruise control.
  - Can be used to reduce the set vehicle speed (when cruise control is currently set).

- **Res/+ switch**
  - After cruise control is canceled, this switch can be used to resume the cruise control function at the vehicle speed that was previously set.
  - Can be used to increase set vehicle speed (when cruise control is currently set).

Adaptive Cruise Control and Conventional Cruise Control
● CANCEL switch
  Cancels cruise control*.
  * Adaptive Cruise Control and Conventional Cruise Control
  * Refer to pages 37 and 71.

● (Following distance setting) switch
  • Can be used to switch the set following distance in 3 stages: Far, Medium and Close (only when Adaptive Cruise Control is set).
  * Refer to page 36.
  • When the (CRUISE) switch is on, press and hold this switch for approximately 2 seconds or longer to select Adaptive Cruise Control or Conventional Cruise Control.

● SI-DRIVE* switch
  Selects the tracking characteristics linked with the SI-DRIVE (only when adaptive cruise control is set).
  * SI-DRIVE refers to SUBARU Intelligent Drive.

▼ Turbo model
- S/I switch
  • Switches between I (Intelligent mode) and S (Sports mode) every time it's pressed.
  • While S# (Sports Sharp mode) is selected, press the switch to change to S (Sports mode).

- S#/I switch
  • Press the switch to change to S# (Sports Sharp mode).
  • While S# (Sports Sharp mode) is selected, press the switch will change to I (Intelligent mode).

▼ Except for turbo model
- S switch
  • Press this switch to change to S (Sports mode).

- I switch
  • Press this switch to change to I (Intelligent mode).

● SI-DRIVE cooperative control
  The characteristics of adaptive cruise control will vary depending on the SI-DRIVE mode selection.

<table>
<thead>
<tr>
<th>SI-DRIVE mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (Intelligent mode)</td>
<td>Tracks the vehicle in front speed with smooth motions.</td>
</tr>
<tr>
<td>S (Sports mode)</td>
<td>Vehicle in front tracking performance is given priority, resulting in tracking with frequent changes in speed.</td>
</tr>
<tr>
<td>S# (Sports Sharp mode)</td>
<td>The same vehicle in front tracking as S (Sports mode) is performed. The S# (Sports Sharp) response is provided when the driver operates the accelerator pedal.</td>
</tr>
</tbody>
</table>
About EyeSight

- switch/ ▼ switch
  The screen displayed on the multi function display can be switched.

- (Info)/SET switch
  The pop up screen displayed on the multi function display can be displayed again.
  * Refer to page 81.

■ Pre-Collision Braking System OFF switch

Press and hold this switch for approximately 2 seconds or longer to turn off the Pre-Collision Braking System and Pre-Collision Throttle Management.

When these functions are off, the Pre-Collision Braking System OFF indicator light on the instrument panel illuminates.

Press and hold the switch again to turn on the Pre-Collision Braking System and Pre-Collision Throttle Management. This turns off the Pre-Collision Braking System OFF indicator light.

* Refer to page 51.

■ Lane Departure Warning OFF switch

Press and hold this switch for approximately 2 seconds or longer to turn off the Lane Departure Warning and Lane Sway Warning functions.

When these functions are off, the Lane Departure Warning OFF indicator light on the instrument panel illuminates.

Press and hold the switch again to turn on the Lane Departure Warning and Lane Sway Warning functions. This turns off the Lane Departure Warning OFF indicator light.

* Refer to page 60.