

# Dual Camera Brake Support (DCBS) and other driving assist systems

The Ignis is equipped with a stereo camera. Like the human eye, the two lenses positioned left and right recognise the distance to and shape of objects ahead. The system can detect pedestrians, vehicles and even lanes based on their size and shape. Three cutting-edge safety features use the camera: Dual Camera Brake Support (DCBS), lane departure warning, and weaving alert.

Models: Ignis



## Dual Camera Brake Support (DCBS)

Dual Camera Brake Support (DCBS) is a collision-mitigating brake system that operates at all speeds between approximately 5km/h and 120km/h. DCBS uses a stereo camera to realise the following four advanced safety functions.

### 1. Warning

When the system detects vehicles or pedestrians ahead and judges that there is a risk of collision, it alerts the driver using an alarm and a lamp in the meter display.

**[Conditions for operation]**

Operates at vehicle speeds of approximately 5km/h or above.



### 2. Automatic Light Brake

If the risk of collision gets even higher, the system further alerts the driver by automatically applying light braking in addition to the alarm and lamp.

**[Conditions for operation]**

Operates at vehicle speeds of approximately 5km/h to 120km/h.



### 3. Brake Assist

When the driver then applies the brake, the brake-assist function increases the braking force, supporting collision avoidance.

**[Conditions for operation]**

Operates at vehicle speeds of approximately 10km/h to 120km/h. The minimum speed differs from other functions because brake assist is controlled by ESP®.



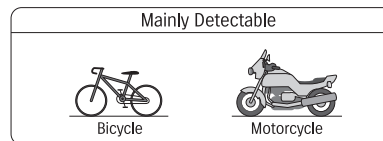
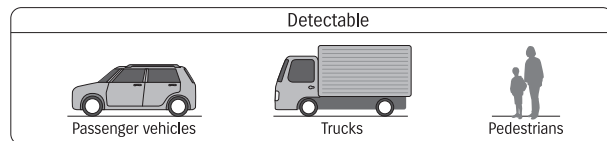
### 4. Automatic Brake

If the system judges that a collision is unavoidable, it applies strong braking automatically to avoid the collision or reduce the damage from it.

Note: Following a vehicle stop by automatic brake, the vehicle moves forward due to the creeping phenomenon. Be sure to apply the brakes.

**[Conditions for operation]**

Operates at vehicle speeds of approximately 5km/h to 120km/h.



Note: Certain situations might prevent detection.

#### Warning

Depending on various factors the stereo camera may be less able or not able to detect certain objects. Collision may be avoided in some cases where the system is activated at speeds between approximately 5km/h and 50km/h (for pedestrians, where the speed is under approximately 30km/h). Depending on the detection and movement of the object, the alarm may sound only, without accompanying automatic brake. The alarm may activate at the same time as automatic braking in other cases.

## Basic Conditions for Operation

Dual Camera Brake Support and ESP are not turned off. The gear position is in neither R nor P.



ON/OFF switch for DCBS (left) and ESP (right)

## Conditions / Situations That Can Affect DCBS Operation

### DCBS will not operate

- When the multi-information display says "FUNCTION DISABLED" or "NOT ACTIVE".



- When the system is setting up (which takes several seconds) immediately after the engine is started.

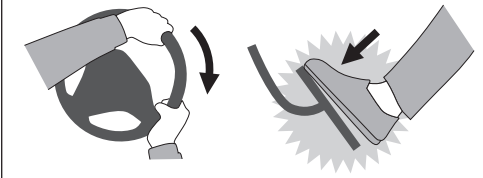


### DCBS might not operate

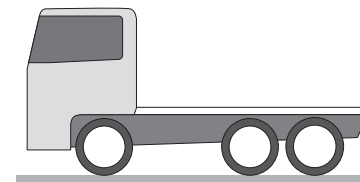
- When weather conditions are extremely bad, such as in strong rain, blizzards and dense fog, and when visibility is insufficient due to water spray and stirred-up snow, sand, etc.



- When the driver has taken evasive action, such as turning the steering wheel or pressing the accelerator.



- When the vehicle in front is in an unusual shape, such as a lorry with a low bed or car carrier trailer.



- When the visibility of the camera is obstructed by snow or an unclean windshield.
- When lighting is dim, such as in the evening or early morning, when subject contours are unclear.
- When the path in front of the vehicle is not visible, such as when entering a sudden upward or downward slope or sudden curve.
- When an extreme change in brightness occurs, such as when entering or exiting a tunnel.

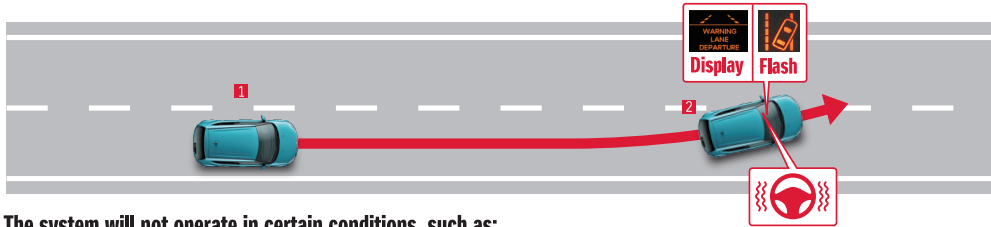


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## ■ Lane departure warning

The system detects the lane markings at each side of the vehicle and predicts the vehicle's path. If the system judges that the vehicle is likely to depart from the lane, such as from driver inattention, it alerts the driver using a lamp in the meter display and vibration from the steering wheel.

**[Conditions for operation]** Operates at vehicle speeds of over approximately 60km/h.

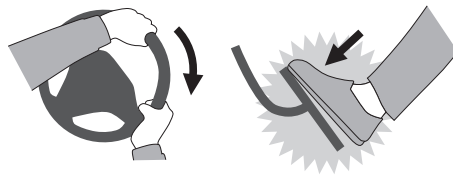


**The system will not operate in certain conditions, such as:**

- When the lane departure warning system is turned off.
- When the ESP system is turned off.
- When the system is setting up (which takes several seconds) immediately after the engine is started.

**The system might not operate in certain conditions, such as:**

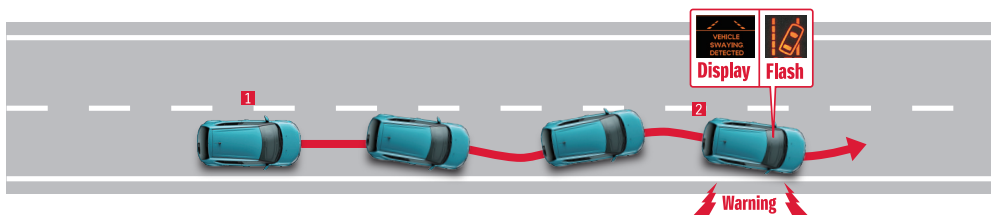
- When the steering wheel is turned by a wide angle or quickly.
- When the brake pedal is depressed or the accelerator pedal is strongly depressed.
- When driving through sudden curves.
- When the distance from the vehicle directly in front is short.
- When lane markings are unclear.



## ■ Weaving alert

The system detects the lane markings at each side of the vehicle and monitors the vehicle's path. If the system judges that the vehicle is wandering due to driver drowsiness, etc.

**[Conditions for operation]** Operates at vehicle speeds of over approximately 60km/h.



**The system will not operate in certain conditions, such as:**

- When the lane departure warning system is turned off.
- When the ESP system is turned off.
- When the system is setting up (which takes several seconds) immediately after the engine is started.

**The system might not operate in certain conditions, such as:**

- When vehicle speed drastically changes.
- When driving on roads with continuous curves.
- When a lane change has just been executed.
- When lane markings are unclear.

**Q. Does the stereo camera require regular maintenance?**

**A.** The stereo camera is maintenance-free, but degraded windshield wiper blades should be replaced to keep the windshield clean for better and continuous recognition performance.

**Q. Can vehicle interior humidity fog the camera lenses and prevent the system from functioning?**

**A.** Fogged lenses or a fogged windshield could result in the system temporarily not functioning.

**Q. Are there any points of caution when cleaning the area around the stereo camera?**

**A.** Wiping or otherwise touching the stereo camera lenses could result in a need to replace the stereo camera. When cleaning the area around the stereo camera, cover the stereo camera by taping paper around it, etc.

**Q. Does Dual Camera Brake Support system operate on slopes?**

**A.** Dual Camera Brake Support also operates on slopes. However, braking distance may be longer when driving downhill or depending on road conditions.

**Q. Can we adjust the volume of the buzzer?**

**A.** The volume of the buzzer cannot be adjusted, nor can the buzzer be turned off.

**Q. Does the Dual Camera Brake Support system respond to vehicles suddenly cutting in?**

**A.** Dual Camera Brake Support does not respond to another vehicle cutting in from outside the detection range.