

## Collision Mitigation Braking System™ (CMBS™)

The system can assist you when it determines there is a possibility of your vehicle colliding with a vehicle (including motorcycles\*) ahead from behind, an oncoming vehicle in front, a pedestrian, or someone riding a bicycle (moving bicycle). The CMBS™ is designed to alert you when the potential for a collision is determined, as well as assist in reducing speed, avoiding collisions, and reducing collision severity.

### ⚠ Collision Mitigation Braking System™ (CMBS™)

#### **Important Safety Reminder**

The CMBS™ is designed to reduce the severity of an unavoidable collision. It does not prevent collisions nor stop the vehicle automatically. It is still your responsibility to operate the brake pedal and steering wheel appropriately according to the driving conditions.

The CMBS™ may not activate or may not detect a vehicle in front of your vehicle under certain conditions:

➤ **CMBS™ Conditions and Limitations** P. 518

You can read about handling information for the camera equipped with this system.

➤ **Front Wide View Camera** P. 611

When the CMBS™ is activated, it will continue to operate even if the accelerator pedal is partially depressed. However, it will be canceled if the accelerator pedal is fully depressed.

#### **Manual transmission models**

When the CMBS™ activates, the engine may stop automatically. Start the engine by normal operation if the engine stops.

➤ **Starting the Engine** P. 456

\* Not available on all models

## ■ How the system works

### When to use



A front wide view camera is located behind the rearview mirror.



The system starts monitoring the roadway ahead when your vehicle speed is about 3 mph (5 km/h) or above and will search for a vehicle, pedestrian, or moving bicycle in front of you.

The CMBS™ activates when:

- The speed difference between your vehicle and a vehicle, pedestrian, or moving bicycle detected in front of you becomes about 3 mph (5 km/h) and over with a chance of a collision.
- Your vehicle drives at about 18 mph (30 km/h) or less and there is a chance of in frontal collision with a detected oncoming vehicle when you turn left at an intersection.
- Your vehicle speed is about 62 mph (100 km/h) or less and the system determines there is a chance of a collision with:
  - An oncoming or stationary vehicle detected in front of you.
  - A pedestrian or moving bicycle detected in front of you.

The CMBS™ will be canceled when your vehicle stops or the system determines there no longer is the potential for a collision.

The CMBS™ may also be canceled when a driver operates the steering wheel and the brake or accelerator pedal to avoid a collision.

### ▶▶ How the system works

The camera in the CMBS™ is also designed to detect pedestrians.

However, this pedestrian detection feature may not activate or may not detect a pedestrian in front of your vehicle under certain conditions.

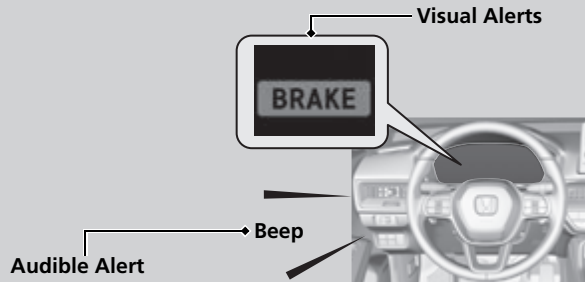
Refer to the ones indicating the pedestrian detection limitations from the list.

▶ **CMBS™ Conditions and Limitations** P. 518

## ■ When the system activates

The system provides visual and audible alerts of a possible collision, and stops if the collision is avoided.

- ▶ Take appropriate action to prevent a collision (apply the brakes, change lanes, etc.)



You can change the distance (**Long/Normal/Short**) between vehicles at which the system's earliest collision alert will come on through the driver information interface\* or audio/information screen\* setting options.

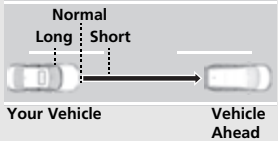
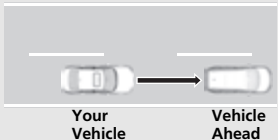
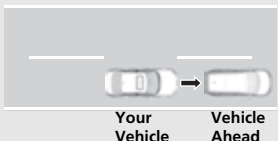
🔧 **Settings**\* P. 135

🔧 **Customized Features** P. 381

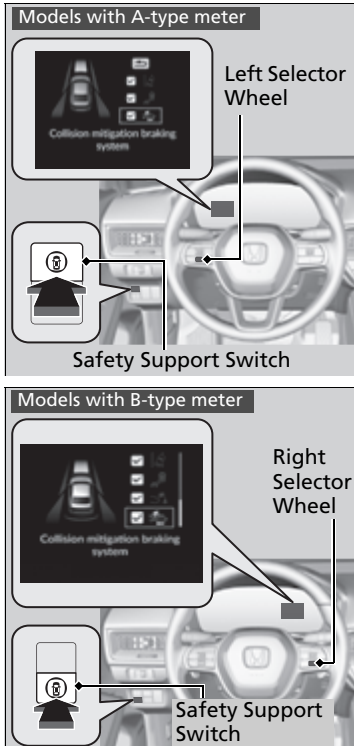
\* Not available on all models

■ Collision Alert Stages

The system has three alert stages for a possible collision. However, depending on circumstances, the CMBS™ may not go through all of the stages before initiating the last stage.

Distance between vehicles		CMBS™		
		The sensors detect a vehicle	Audible & Visual WARNINGS	Braking
Stage one		There is a risk of a collision with the vehicle ahead of you.	When in <b>Long</b> , visual and audible alerts come on at a longer distance from a vehicle ahead than in <b>Normal</b> setting, and in <b>Short</b> , at a shorter distance than in <b>Normal</b> .	—
Stage two		The risk of a collision has increased, time to respond is reduced.	Visual and audible alerts.	Lightly applied
Stage three		The CMBS™ determines that a collision is unavoidable.		Forcefully applied


## CMBS™ On and Off




When you turn the CMBS™ on and off, do the following.

1. Press the safety support switch.



### Models with A-type meter

2. Roll the left selector wheel to the  symbol and push it.

### Models with B-type meter

2. Roll the right selector wheel to the  symbol and push it.

▶ A message appears on the driver information interface when the system turns on or off.

▶ A check mark appears in the box and the color of the  symbol changes to green when the system is on. The check mark disappears and the color of the  symbol changes to gray when the system is off.

The CMBS™ is turned on every time you start the engine, even if you turned it off the last time you drove the vehicle.

## Collision Mitigation Braking System™ (CMBS™)

You cannot turn the CMBS™ off while driving.

The CMBS™ may automatically shut off, and the safety support indicator (amber) will come and stay on under certain conditions:

➤ **CMBS™ Conditions and Limitations** P. 518

The CMBS™ is not activated for about 15 seconds after the engine starts.

You can also select safety support content from the driver information interface.

➤ **Driver Information Interface** P. 117

➤ **Driver Information Interface (Right Side Area)** P. 150

The Vehicle Stability Assist™ (VSA®) system, Vehicle Stability Assist™ (VSA®) **OFF**, Adaptive Cruise Control (ACC) with Low Speed Follow\*/Adaptive Cruise Control (ACC)\*, low tire pressure/TPMS\* and safety support indicators may come on in amber along with a message in the gauge when you set the power mode to ON after reconnecting the battery.

Drive a short distance at more than 12 mph (20 km/h). Each indicator should go off. If any do not, have your vehicle checked by a dealer.

\* Not available on all models

## ■ CMBS™ Conditions and Limitations

The system may automatically shut off and the safety support indicator (amber) will come on under certain conditions. Some examples of these conditions are listed below. Other conditions may reduce some of the CMBS™ functions.

📺 **Front Wide View Camera** P. 611

### ■ Environmental conditions

- Driving in bad weather (rain, fog, snow, etc.).
- Sudden changes between light and dark, such as the entrance or exit of a tunnel or the shadows of trees, buildings, etc.
- Driving into low sunlight (e.g., at dawn or dusk).
- Strong light is reflected onto vehicles, pedestrians, moving bicycles, or road surfaces.
- Water is sprayed by or snow blown from a vehicle ahead.
- Driving at night or in a dark place such as a tunnel (due to low-light conditions, vehicles, pedestrians, or moving bicycles may not be illuminated).

### ■ Roadway conditions

- Driving on curvy, winding, undulating, or sloping roads.
- There is a film of water or puddles on the road surface.
- Driving on rutted roads (snowy or unpaved roads, etc.).
- Your vehicle is strongly shaken on uneven road surfaces.

## 📺 CMBS™ Conditions and Limitations

Have your vehicle checked by a dealer if you find any unusual behavior of the system (e.g., the warning message appears too frequently).

## ■ Vehicle conditions

- The vehicle is tilted due to heavy load in the trunk or rear seats.
- Tire chains\* are installed.
- Driving at night or in a dark place (e.g., a tunnel) with the headlights off.
- The front of the camera is covered by dirt, fog, rain, mud, wet snow, seals, accessories, stickers, or film on the windshield.
- There is residue on the windshield from the windshield wipers.
- When lighting is weak due to dirt covering the headlight lenses, or there is poor visibility in a dark place due to the headlights being improperly adjusted.
- An abnormal tire or wheel condition (incorrect sizes, varied sizes or construction, improperly inflated, compact spare tire\*, etc.).
- The suspension has been modified.

\* Not available on all models

■ **Examples of limitations on the correct detection of the camera due to the condition of the vehicle ahead of you, oncoming vehicles, pedestrians, or moving bicycles**

- The distance between your vehicle and the vehicle ahead of you, oncoming vehicle, pedestrian, or moving bicycle ahead of you is too short.
- The vehicle ahead of you, oncoming vehicle, pedestrian, or moving bicycle suddenly cuts in front of or jumps out in front of you.
- The bicycle is stopped.
- The oncoming vehicle or vehicle ahead of you is sideways.
- When the vehicle ahead of you, oncoming vehicle, pedestrian, or moving bicycle blends in with the background, preventing the system from recognizing them.
- When several pedestrians or bicycles are moving ahead of you in a group.
- When a pedestrian or moving bicycle crosses the road too quickly.
- A pedestrian or moving bicycle approaches from the opposite direction.
- The headlights of the vehicle ahead of you or oncoming vehicle are lit on one side or not lit on either side in a dark place.
- When part of a pedestrian (heads, limbs, etc.) is hidden by load.
- When a pedestrian is bent over or squatting, when their hands are raised, or they are running.
- When the pedestrian is shorter than about 3.3 feet (1 meter) or taller than about 6.6 feet (2 meters) in height.
- When the pedestrian is pushing a stroller or bicycle.

▣ Collision Mitigation Braking System™ (CMBS™)

Make sure that all the tires are of the same specified size, type and brand, and that they are evenly worn. If you use tires of different sizes, types, brands, or degree of wear, the system may not work properly.

Do not modify the suspension. Altering the height of the vehicle may prevent the system from working properly.



## ■ Examples of other limitations on detection or system operation

- When the vehicle ahead of you is a motorcycle, wheelchair, or other specially shaped vehicle.
- When a vehicle is lower in the rear than the front such as trucks that are not carrying a load, or a narrow vehicle.
- When the vehicle ahead of you, oncoming vehicle, pedestrian or moving bicycle is not in front of the vehicle.
- The speed difference between your vehicle and the vehicle ahead of you, oncoming vehicle, pedestrian or moving bicycle is significantly large.
- When the vehicle or moving bicycle in front of you slows suddenly.
- When the driver operates the brake pedal and steering wheel to avoid a collision.
- When you approach the vehicle ahead of you, oncoming vehicle, pedestrians or moving bicycles while accelerating rapidly or operating the steering wheel (except when turning left at an intersection etc.)\*<sup>1</sup>
- When the moving bicycle is a child-sized bicycle, folding bicycle, three-wheeler or other bicycle with small tires, or a long bicycle like a tandem bicycle.
- When the camera cannot correctly identify the shape of the vehicle ahead of you, oncoming vehicle, pedestrian, or moving bicycle.
- When the minimum ground clearance of a vehicle ahead of you is extremely high.

\*1: When there is a possibility of a frontal collision with the oncoming vehicle while turning left, the CMBS™ is activated. However, it may not be activated if you suddenly turn the steering wheel.

### ■ Automatic shutoff

The CMBS™ may automatically shut itself off and the safety support indicator (amber) comes and stays on when:

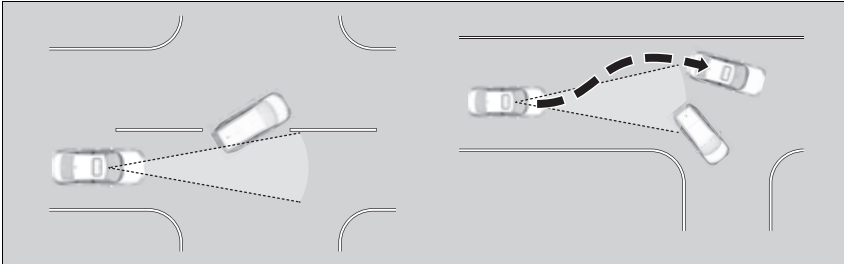
- You drive off-road or on a mountain road, or curved and winding road for an extended period.
- Driving in bad weather (rain, fog, snow, etc.).
- Driving with the parking brake applied.
- The camera temperature gets too high.
- The front of the camera is covered by dirt, fog, rain, mud, wet snow, seals, accessories, stickers, or film on the windshield.
- An abnormal tire condition is detected (incorrect tire size, flat tire, etc.).

Once the conditions that caused the CMBS™ to shut off improve or are addressed (e.g., cleaning), the system comes back on.

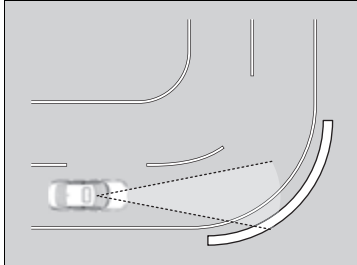
## ■ With Little Chance of a Collision

Even if there is little chance of a collision, the CMBS™ may activate under the following conditions:

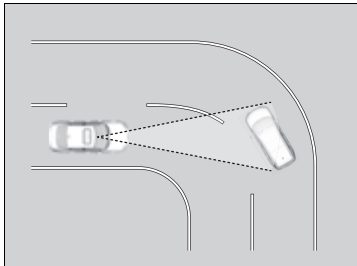
- Your vehicle approaches or passes another vehicle that is making a left or right turn.
- Your vehicle approaches another vehicle ahead of you and you change lanes to pass.
- Your vehicle approaches another vehicle at an intersection, etc.



- When passing through a low or narrow gate at a speed well over the speed limit.
- When there are traffic signs or structures such as guard rails are beside the road along a curve.



- When driving through curves, your vehicle comes to a point where the oncoming vehicle is right in front of you.



- When approaching stationary vehicles or walls, such as when parking.