Collision Mitigation Braking System™ (CMBS™)

The system can assist you when it determines there is a possibility of your vehicle colliding with a vehicle or a pedestrian detected in front of your vehicle. The CMBS™ is designed to alert you when the potential for a collision is determined, as well as to reduce your vehicle speed to help minimize collision severity when a collision is deemed unavoidable.

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. 491

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

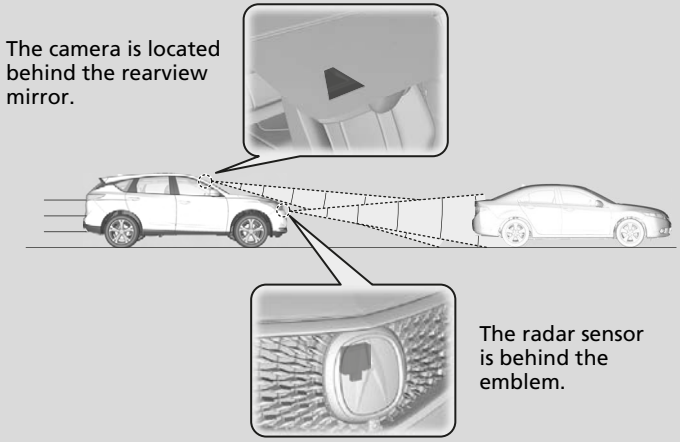
Front Sensor Camera P. 541

For directions on the proper handling of the radar sensor, refer to the following page.

Radar Sensor P. 543

When the CMBS™ activates, it may automatically apply the brake. It will be canceled when your vehicle stops or a potential collision is not determined.

■ How the system works



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 in front of you.

The CMBS™ activates when:

- The speed difference between your vehicle and a vehicle or pedestrian detected in front of you becomes about 3 mph (5 km/h) and over with a chance of a collision.
- Your vehicle speed is about 62 mph (100 km/h) or less and the system determines there is a chance of a collision with:

- Vehicles detected in front of you that are stationary, oncoming, or traveling in your same direction.

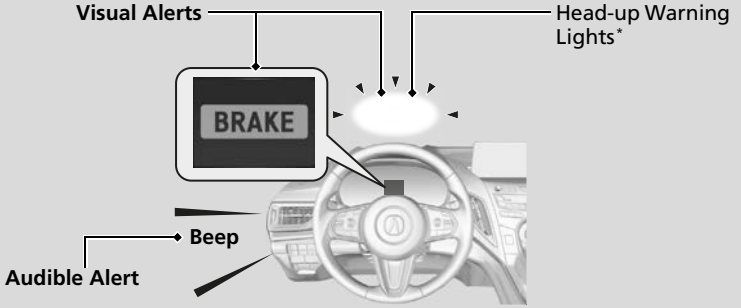
- A pedestrian who is detected in front of you.

- Your vehicle speed is above 62 mph (100 km/h), and the system determines there is a chance of a collision with a vehicle detected in front of you traveling in your same direction.

■ 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 audio/information screen setting options.

Customized Features P. 359

Collision Mitigation Braking System™ (CMBS™)

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.

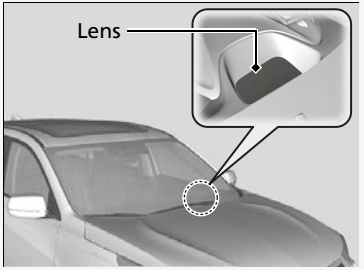
Refer to the ones indicating the pedestrian detection limitations from the list.

CMBS™ Conditions and Limitations P. 491

Models with Head-up display

The head-up warning uses a lens located at the front end of the dashboard.

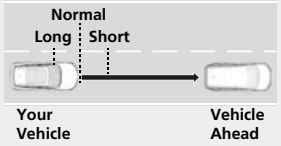
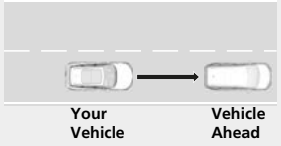
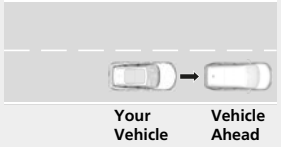
Do not cover the lens or spill any liquid on it.



* 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 radar sensor detects a vehicle	Audible & Visual WARNINGS	Braking
Stage one		There is a risk of a collision with the vehicle ahead of you.	When in **Long**, visual and audible alerts come on at a longer distance from a vehicle ahead than in **Normal** setting, and in **Short**, at a shorter distance than in **Normal**.	—
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.
2. Roll the right selector wheel to the symbol and push it.
   - ▶ The message appears on the multi-information display when the system turns on or off.
   - ▶ A check mark appears in the box and the color of the symbol changes green when the system is on. The check mark disappears and the color of the symbol changes 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™)

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. 491

You can also select safety support content from the multi-information display.

➡ **Multi-Information Display** P. 137

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.

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 Sensor Camera** P. 541
➔ **Radar Sensor** P. 543

Environmental conditions

- Driving in bad weather (rain, fog, snow, etc.).
- Sudden changes between light and dark, such as an entrance or exit of a tunnel.
- There is little contrast between objects and the background.
- Driving into low sunlight (e.g., at dawn or dusk).
- Strong light is reflected onto the roadway.
- Driving in the shadows of trees, buildings, etc.
- Roadway objects or structures are misinterpreted as vehicles and pedestrians.
- Reflections on the interior of the windshield.
- Driving at night or in a dark condition such as a tunnel.

Roadway conditions

- Driving on a snowy or wet roadway (obscured lane marking, vehicle tracks, reflected lights, road spray, high contrast).
- Driving on curvy, winding, or undulating roads.
- The road is hilly or the vehicle is approaching the crest of a hill.

Collision Mitigation Braking System™ (CMBS™)

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

- Headlight lenses are dirty or the headlights are not properly adjusted.
- The outside of the windshield is blocked by dirt, mud, leaves, wet snow, etc.
- The inside of the windshield is fogged.
- An abnormal tire or wheel condition (incorrect sizes, varied sizes or construction, improperly inflated, compact spare tire*, etc.).
- When tire chains are installed.
- The vehicle is tilted due to a heavy load or suspension modifications.
- The camera temperature gets too high.
- Driving with the parking brake applied.
- When the radar sensor behind the emblem gets dirty.
- The vehicle is towing a trailer.

* Not available on all models

■ **Detection limitations**

- A vehicle or pedestrian suddenly crosses in front of you.
- The distance between your vehicle and the vehicle or pedestrian ahead of you is too short.
- A vehicle cuts in front of you at a slow speed, and it brakes suddenly.
- When you accelerate rapidly and approach the vehicle or pedestrian ahead of you at high speed.
- The vehicle ahead of you is a motorcycle, bicycle, mobility scooter or other small vehicle.
- When there are animals in front of your vehicle.
- When you drive on a curved, winding or undulating road that makes it difficult for the sensor to properly detect a vehicle in front of you.
- The speed difference between your vehicle and a vehicle or pedestrian in front of you is significantly large.
- An oncoming vehicle suddenly comes in front of you.
- Another vehicle suddenly comes in front of you at an intersection, etc.
- Your vehicle abruptly crosses over in front of an oncoming vehicle.
- When driving through a narrow iron bridge.
- When the lead vehicle suddenly slows down.

Limitations applicable to pedestrian detection only

- When there is a group of people in front of your vehicle walking together side by side.
- Surrounding conditions or belongings of the pedestrian alter the pedestrian's shape, preventing the system from recognizing that the person is a pedestrian.
- When the pedestrian is shorter than about 3.3 feet (1 meter) or taller than about 6.6 feet (2 meters) in height.
- When a pedestrian blends in with the background.
- When a pedestrian is bent over or squatting, or when their hands are raised or they are running.
- When several pedestrians are walking ahead in a group.
- When the camera cannot correctly identify that a pedestrian is present due to an unusual shape (holding luggage, body position, size).

■ Automatic shutoff

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

- The temperature inside the system is high.
- You drive off-road or on a mountain road, or curved and winding road for an extended period.
- An abnormal tire condition is detected (wrong tire size, flat tire, etc.).
- The camera behind the rearview mirror, or the area around the camera, including the windshield, gets dirty.

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

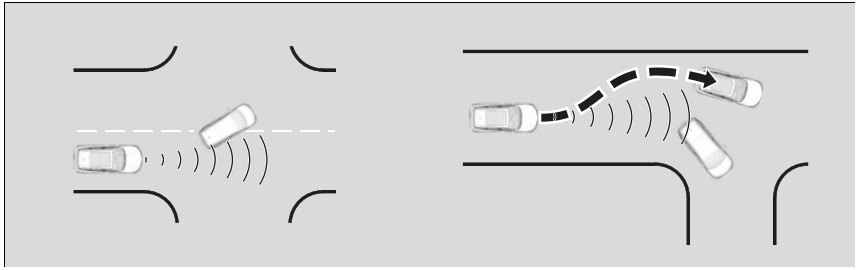
The CMBS™ may activate even when you are aware of a vehicle ahead of you, or when there is no vehicle ahead. Some examples of this are:

When Passing

Your vehicle approaches another vehicle ahead of you and you change lanes to pass.

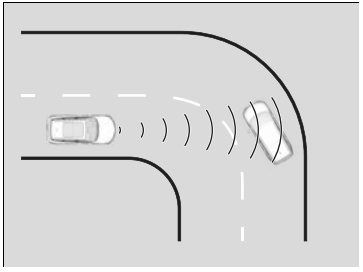
At an intersection

Your vehicle approaches or passes another vehicle that is making a left or right turn.



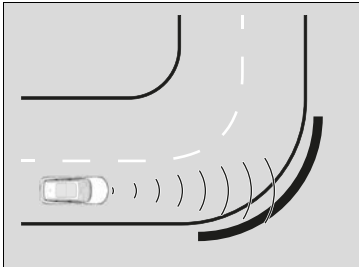
■ On a curve

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



■ Through a low bridge at high speed

You drive under a low or narrow bridge at high speed.

■ Speed bumps, road work sites, train tracks, roadside objects, etc.

You drive over speed bumps, steel road plates, etc., or your vehicle approaches train tracks or roadside objects (such as a traffic sign and guard rail) on a curve or, when parking, stationary vehicles and walls.