Electronic stability control (ESC)

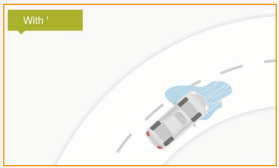
ESC, also known as vehicle stability, is a vehicle safety feature that helps prevent crashes that can occur when the driver loses control of the vehicle. These situations can result in the vehicle skidding, spinning, or rolling over. ESC is designed to correct instances of understeering and oversteering.

- **Understeering** occurs when the vehicle turns less than the driver's steering input (or distance they turn the wheel).
- **Oversteering** occurs when the vehicle continues to turn more than the driver's steering input.

By correcting these situations, ESC helps to stabilize the vehicle and to keep its movement under the driver's control.

How does ESC work?

ESC works by monitoring several parts of the vehicle in order to get an overall picture of the stability of the vehicle.



Images Courtesy of Toyota Canada

The electronic control unit (ECU) at the heart of the ESC system monitors the speed of rotation of each wheel, the driver's steering input, and the yaw of the vehicle (the horizontal, side-to-side movement). These data are interpreted by the ECU to determine if the driver is still in control of the vehicle.

Your brain is your vehicle's most important safety feature.

For example, if the ECU senses significant yaw movement (i.e., sliding) and understeering, this could mean that the vehicle is at risk of rolling over.

If a threat is detected, targeted braking is applied to specific wheels in order to bring the vehicle back under the driver's control. For example, if ESC detects understeering, the brakes are automatically applied to the front and/or rear outside wheels.

When would ESC help me?

There are a variety of driving situations where ESC is helpful. It can help to correct a problem whenever a driver is at risk of losing control of their vehicle, including:

- An unanticipated event (e.g., a large animal on the road) forces the driver to swerve quickly;
- Approaching a curve or turn with too much speed, the driver must steer more aggressively, or;
- One wheel hits a patch of ice or gravel and the vehicle begins to spin as a result.

To learn more about ESC and many other modern vehicle safety features, visit **brainonboard.ca**.

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