Anti-Lock Brake System (ABS) and Stability Control

ABS With AdvanceTrac®

The ABS with AdvanceTrac® consists of the following components:

- ABS module — attached to the Hydraulic Control Unit (HCU) , but can be serviced separately.
- Front wheel speed sensors — one sensor is located in each front wheel knuckle. The sensors are serviced separately from the knuckle.
- Front wheel speed sensor tone rings — one tone ring is located on each front wheel hub and is serviced separately from the wheel hub.
- HCU — which contains several valves (inlet, outlet, isolation and dump) and the hydraulic pump motor. It is mounted in the LF corner of the engine compartment and can be serviced separately.
- Rear wheel speed sensors — one sensor is located on each end of the rear axle housing. The sensors are serviced separately from the axle housing.
- Rear wheel speed sensor tone rings — one tone ring is located on each axle shaft and is serviced separately from the axle shaft.
- Restraints Control Module (RCM) — located under the rear of the front floor console and contains the yaw rate and lateral accelerometer sensors.
- Power Steering Control Module (PSCM) located in the steering gear, sends steering angle and rotation information to the ABS module.
- Stability/traction control switch — is part of the hazard flasher switch assembly.

Electronic Brake Distribution (EBD)

The ABS module and HCU incorporate a strategy called EBD . The EBD strategy uses the HCU as an electronic proportioning valve to create a balanced braking condition between the front and rear wheels and minimize the chance of rear wheel lockup during hard braking.

Anti-Lock Braking

The ABS aids in the prevention of wheel lock-up during braking events, allowing the driver to maintain steering control and stop in the shortest distance possible under most conditions.

AdvanceTrac® System

The traction control function and the ESC function comprise the AdvanceTrac® system. Some vehicles also offer a launch control function and additional functionality through the use of the stability/traction control switch.

Traction Control System

The traction control system aids in the prevention of excessive wheel spin allowing the vehicle to maintain traction during acceleration.

Electronic Stability Control (ESC) System

The ESC system constantly monitors the direction of travel relative to the driver's intended course, except when the vehicle is traveling in reverse, and aids in keeping the vehicle traveling along that course.

Stability/Traction Control Switch

The stability/traction control switch provides the driver the ability to select one of 4 modes for the AdvanceTrac® system.

Stability/Traction Control Indicators

There are 2 separate stability/traction control indicators, the stability/traction control indicator and the stability/traction control OFF indicator. Both indicators are located in the IPC message center. The stability/traction control indicator is used to alert the driver that a stability/traction event is taking place (flashes twice per second) and to alert the driver of potential concerns in the AdvanceTrac® system (illuminates continuously). The stability/traction control OFF indicator is used to alert the driver that some or all the AdvanceTrac® system features have been disabled by the driver. This indicator only illuminates continuously and does not flash.

One or both of the stability/traction control indicators may illuminate as a result of momentary sensor disturbances due to environmental or driving conditions (including severe vehicle maneuvers or extreme off road usage). Once Illuminated, the indicator remains illuminated until the environmental or driving condition is no longer present and the ignition is cycled from ON to OFF and then back to ON again. If there are no other customer concerns, symptoms, indicators or DTCs , the stability/traction control indicator may have been illuminated due to these environmental or driving conditions.

Hill Start Assist

Hill start assist supports the driver during drive-off situations on upward gradients. When the driver releases the vehicle brake, hill start assist prevents the vehicle from rolling back in the opposite direction.

Launch Control

The launch control system works in conjunction with the AdvanceTrac® system and PCM to maximize traction from a standing start acceleration in a straight line. Launch control enables a unique "drag start" traction control calibration designed for high grip surfaces. The system allows the driver to set and hold a desired launch RPM depending on tire temperature, surface condition or weather. Unlike the AdvanceTrac® system, the launch control system does not reset to OFF when the ignition is cycled. For information on setting the launch control system, refer to the Owner's Literature.