

Anti-Lock Brakes

Federal Motor Vehicle Safety Standard (FMVSS) 121 passed in 1975 covering what is supposed to be on the truck regarding air brakes. In 1975 ABS was required but the solid-state circuitry would get contaminated and would not work properly. In 1978 Feds gave an extra 30 feet to meet the Federal standard and no longer required ABS to meet the stopping requirement. New technology and electronics led to new requirements. March 1, 1999, all *straight trucks* required to have ABS. Dash indicating light required.

Currents systems sense brake pressure at 18- 20% before lockup and modulate the pressure at 3-5 times per second. By law, ABS checks are stored in memory in the ECM. They *can* be erased. The sensor is a magnet with a coil wire mounted against an "exciter ring". The ring has teeth similar to that of a gear. Each tooth passes by the sensor that sends an impulse to the ECM. Dirt, corrosion, and adjustment are some of the things that can go wrong. An ohmmeter will check continuity (980-2250 ohms). If ABS is not working, first check the electrical connection. Unplug and visualize for:

- * Dirt, corrosion, adjustment.
- * Red wire – stoplights.
- * Blue wire – constant power.
- * Other – ground wire.

Should I pump the brake pedal when stopping in slippery conditions?

You absolutely should not pump the brake pedal in a car with ABS. Pumping the brakes is a technique that is sometimes used in slippery conditions to allow the wheels to unlock so that the vehicle stays somewhat straight during a stop. In a car with ABS the wheels should never lock in the first place, so pumping the brakes will just make you take longer to stop. In an emergency stop in a car with ABS, you should apply the brake pedal firmly and hold it while the ABS does all the work. You will feel a pulsing in the pedal that may be quite violent, but this is normal so don't let off the brake.

Do anti-lock brakes really work?

Anti-lock brakes really do help you stop better. They prevent wheels from locking up and provide the shortest stopping distance on slippery surfaces. But do they really prevent accidents? This is the true measure of the effectiveness of ABS systems.

