



Everyday normal driving?





Electronic Stability Control

Technical Committee
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What is Electronic Stability Control?

ESC constantly monitoring how the vehicle is responding to the driver and road conditions. If a problem starts to develop, it takes whatever measures that are necessary to bring the vehicle under control. The engine power is reduced letting off of the throttle, retarding the timing and simultaneously applying the brake. All these processes coupled together will counter the forces that are causing the vehicle to lose traction or control. This whole process is accomplished without the driver's input.



Vehicle Without ESC





Vehicle With ESC





Here is a partial list of vehicles that use Electronic Stability Controls Systems

- **Audi** **Electronic Stability Program (ESP)**
- **BMW** **Dynamic Stability Control (DSC)**
- **Chrysler** **Electronic Stability Program (ESP)**
- **Ford** **Advance Trac**
- **GM** **Active Handling System**
- **Jaguar** **Dynamic Stability Control (DSC)**
- **Lexus** **Vehicle Stability Control (VSC)**
- **Porsche** **Porsche Stability Management (PSM)**
- **Toyota** **Vehicle Stability Control (VSC)**
- **Subaru** **Vehicle Dynamics Control (VDC)**
- **VW** **Electronic Stability Program (ESP)**
- **Volvo**
(DTSC) **Dynamic Stability Traction Control**



In 2006, stability control was standard equipment on approximately 30 percent of all cars & trucks. With the production of 2010 vehicles, 85% of passenger cars & 100% of SUV's have stability control. Government mandated that all vehicles will have the system installed by the model year 2012

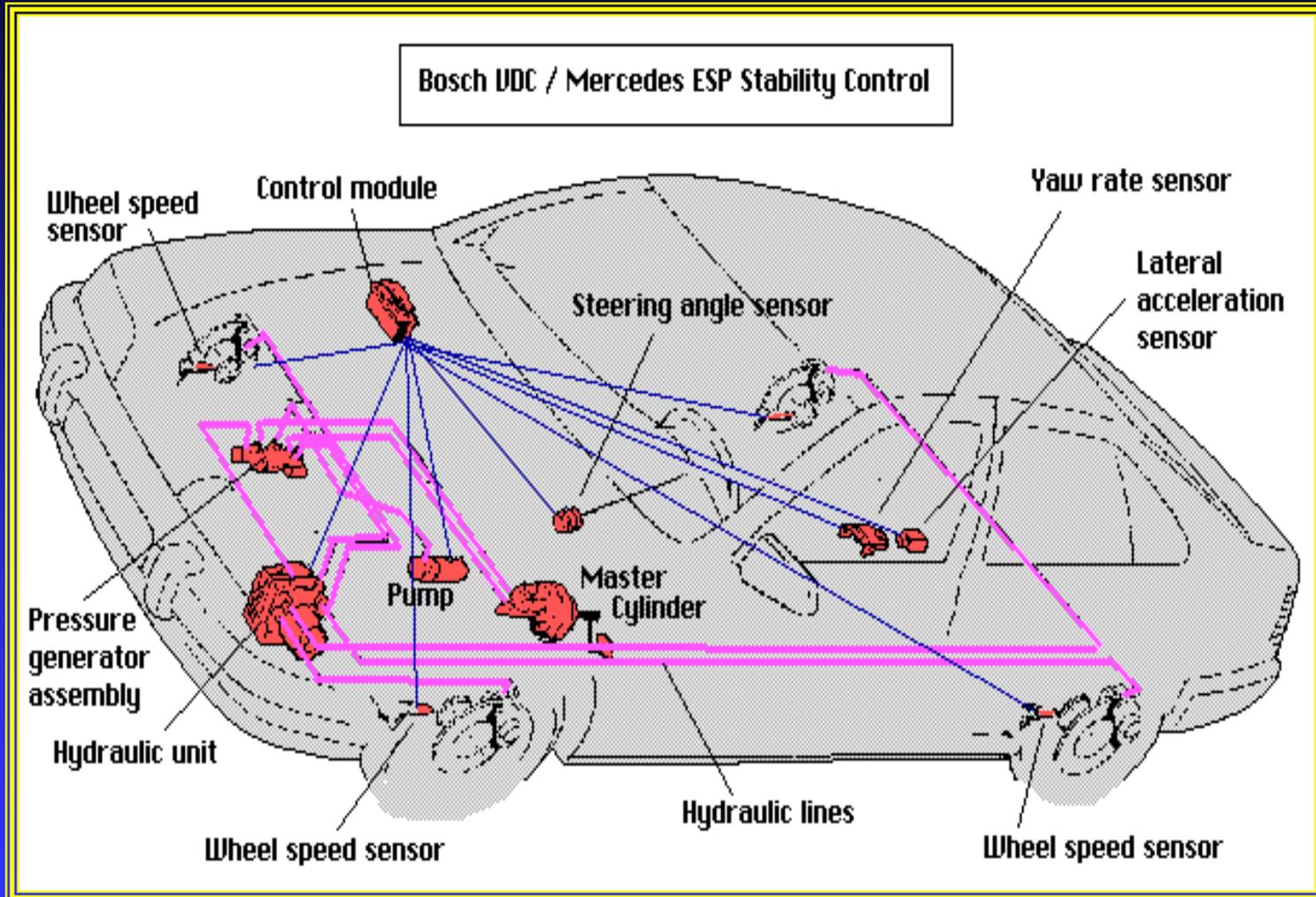
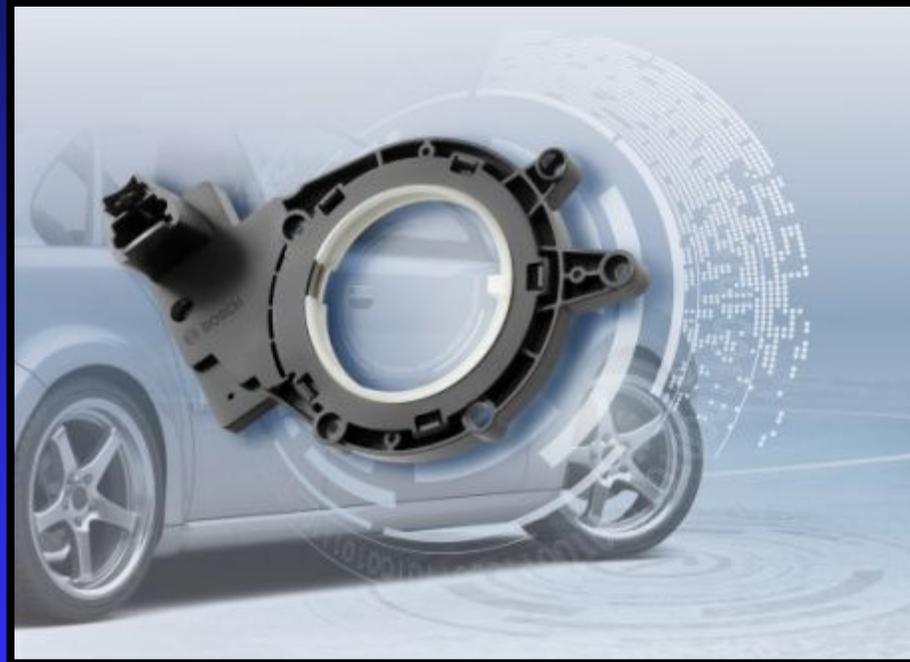


Photo Courtesy of AA1CAR.com



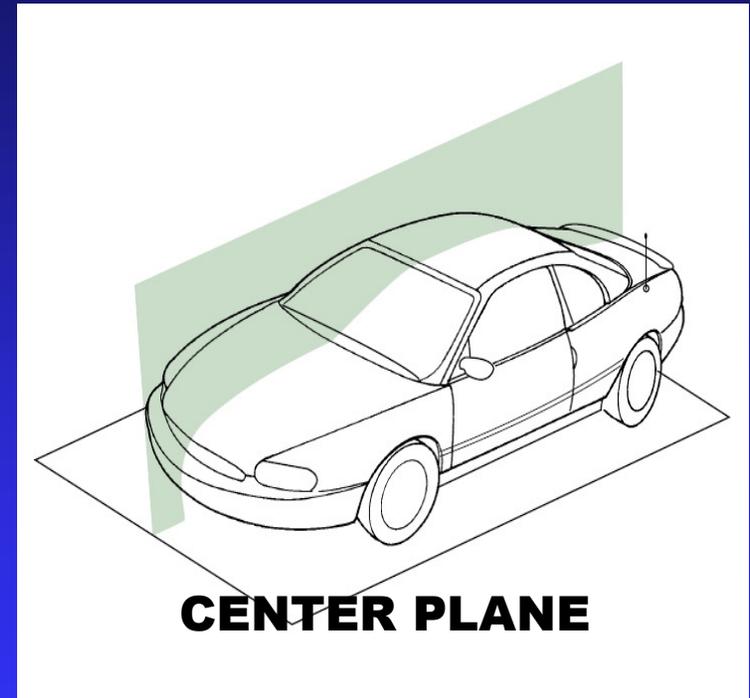
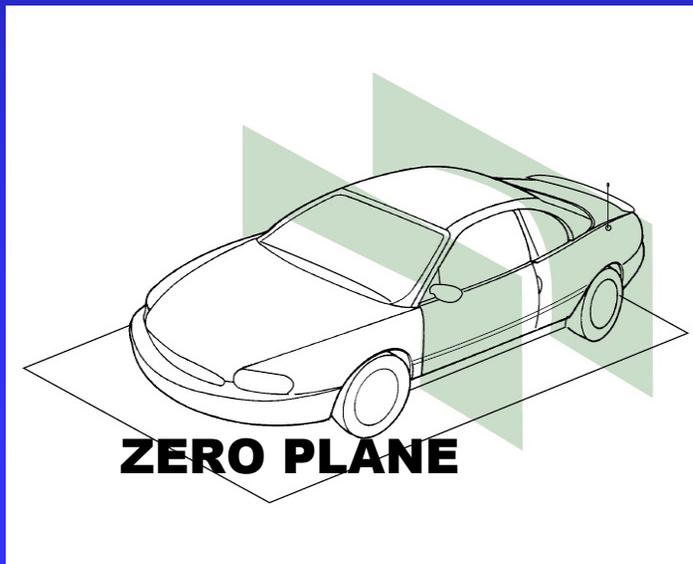
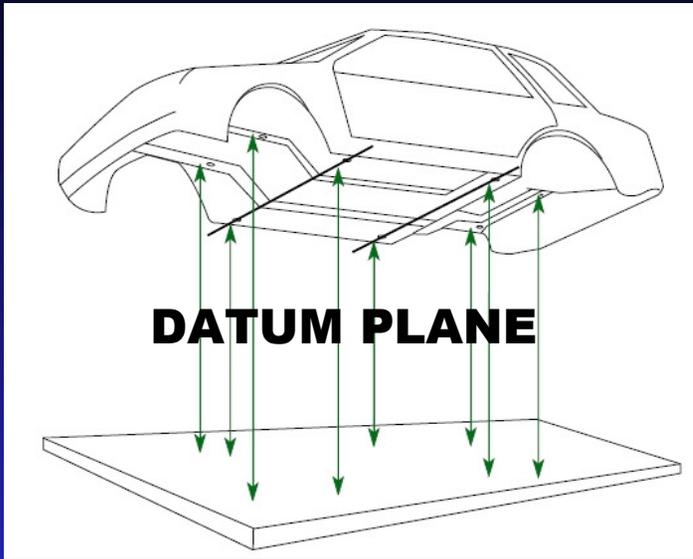
What is this part?



Answer—It is a steering angle sensor

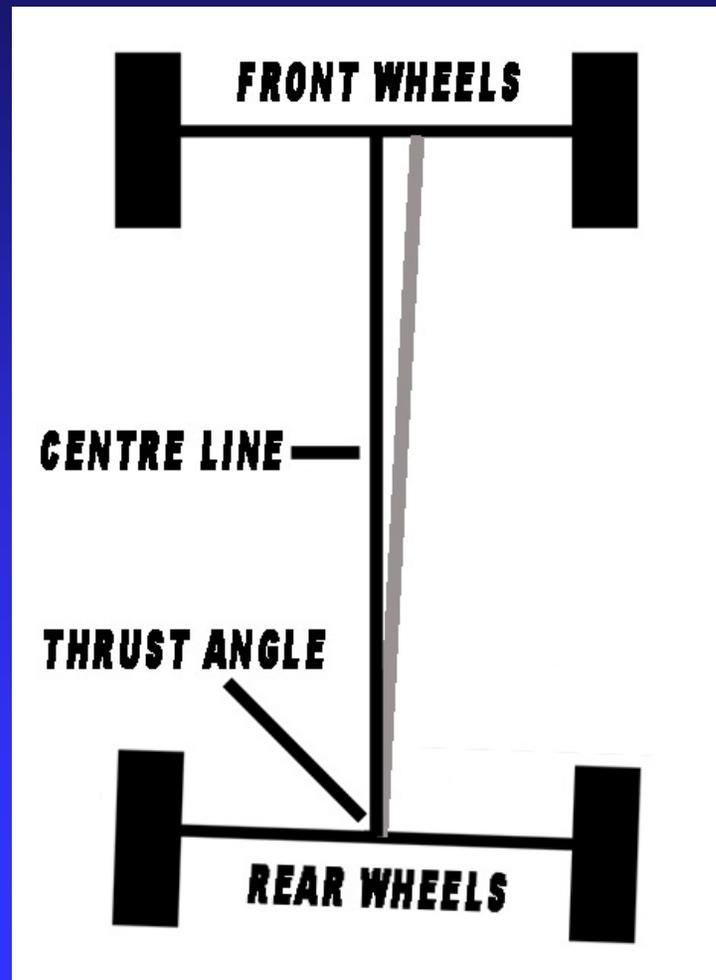


As the steering wheel moves in either direction, the speed and number of Revolutions are transmitted to the vehicle's computer.





Wheel Alignment Basics





Wheel Alignment Types

Two wheel geometric centerline alignment: Toe on each front wheel is measured and adjusted using the vehicle's geometric centerline as reference. This will provide a satisfactory alignment only if the rear wheels are positioned squarely with the geometric centerline. rear wheels "direct" the vehicle..

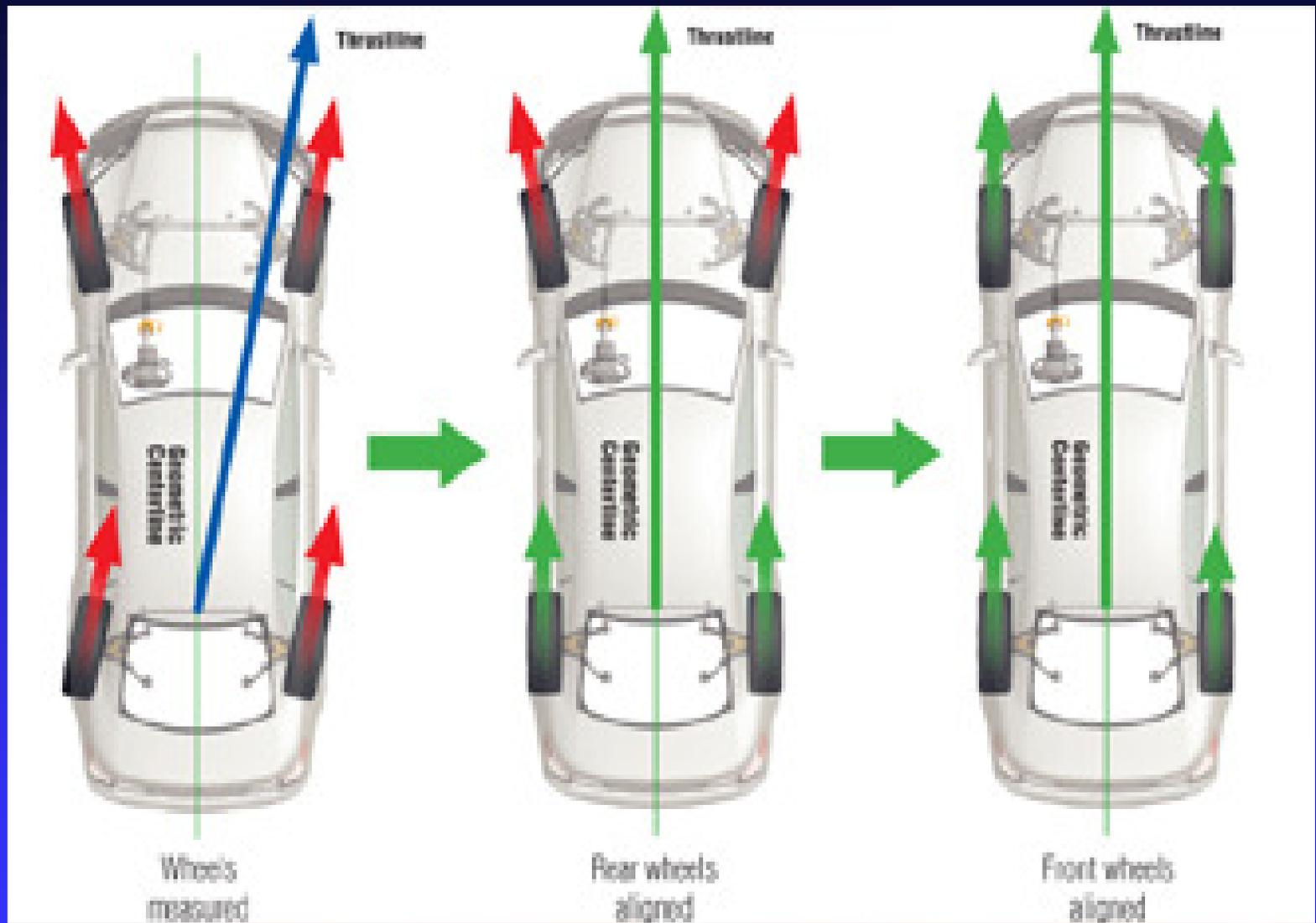


Four-wheel thrust line alignment: Rear individual toe is measured to determine the thrust line. The front wheels are then aligned relative to the thrust line. This sets all wheels parallel and centers the steering wheel.

Complete four-wheel thrust line alignment: Individual rear wheel angles are measured, then adjusted so the thrust line coincides with the geometric centerline. The front wheels are then aligned to the geometric centerline/thrust line. This sets all wheels straight ahead and parallel, and centers the steering wheel



Your front wheels "steer" the vehicle, but your rear wheels "direct" the vehicle. Say your rear wheels are tilted to the right. Even if your steering wheel is pointed straight, your vehicle will travel left. Four-wheel alignment solves this problem by referencing all four wheels to a common centerline.





Finally, 2 wheel alignment is an obsolete operation in most instances involving today's automobiles. A complete Four Wheel alignment should be the only operation considered on collision repaired vehicles, But we are not finished with the process. One more step is needed to complete the operation.



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