

# Technical Bulletin

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Cancels: N/A

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## Subject: **Bendix® Advanced ABS Systems: Repair and Calibration**

Bendix ABS systems use sensors to monitor the vehicle's motion. For basic ABS braking and/or traction functions, the Electronic Control Unit (ECU) uses the wheel speed sensors to detect wheel-slip conditions and intervenes as needed.

In addition, Bendix advanced ABS ECUs, for example the Bendix® EC-60™ Advanced ABS with ESP® stability, monitor the wheel speed sensors, steering wheel position, brake demand, vehicle load, and yaw rate/lateral acceleration sensors to reduce the risk of rollovers, jackknifing and other loss of control.

### ECU CONFIGURATION

Unlike previous generations of ECUs, Bendix® EC-60™ Advanced ECUs are vehicle-specific and are individually configured. Bendix and the original equipment manufacturer work together to specifically customize the stability system for the individual vehicle configuration and its sensors. As a result, the vehicle's VIN number is required when ordering a replacement ECU to ensure the same configuration is preset. See the Service Data sheet (SD-13-4869) for more information.

### SENSOR CALIBRATION

Since advanced ABS ECUs are individually customized based on expected sensor locations and orientations, an out-of-calibration sensor, or incorrectly positioned sensor, may lead to unwanted and/or unneeded stability interventions, which can result in incidents leading to loss of vehicle control.

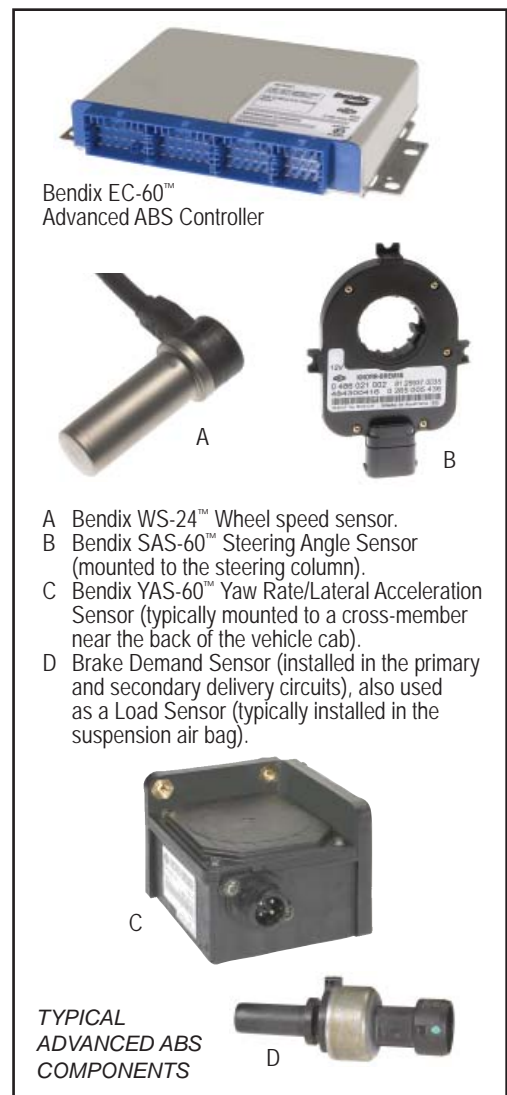
A list of examples below show many vehicle maintenance procedures that need to include Advanced ABS sensor recalibration. Bendix® ACom® PC diagnostic software (version 5.3 or higher) is used to recalibrate the sensors.

#### 1. Steering Angle Sensor Examples.

**The Steering Angle Sensor must be recalibrated as part of:**

- Steering wheel replacement (see Caution below.)
- Steering angle sensor replacement
- Any maintenance that involves opening the connector hub from the steering angle sensor to the column
- Any maintenance or repair work on the steering linkage, steering gear or other related mechanism
- Wheel alignment or wheel track adjustment
- Accident repairs where damage to the steering angle sensor or assembly, or any part of the steering system may have occurred

**CAUTION:** When replacing a steering wheel, use only OEM-approved steering wheels. Take care not to damage the Steering Angle Sensor or interfere with its operation during installation.



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**2. Yaw Rate/Lateral Acceleration Sensor Examples.**

**The Lateral Acceleration Sensor must be recalibrated as part of:**

- Replacement of the sensor
- Repairs after an accident that may have led to damage of the yaw rate/lateral acceleration sensor
- Reinstalling the sensor anytime it is removed from the vehicle

Note: It is important that the small hole at the bottom of the Bendix® YAS-60™ yaw rate/lateral acceleration sensor is always open to the atmosphere. For this reason, do not paint the YAS-60™. If it is necessary to paint near the YAS-60™, remove the sensor from the vehicle. When reinstalling the YAS-60™ to the vehicle after any maintenance or painting work that required its removal, always recalibrate it using Bendix ACom™ PC software (versions 5.3 or higher).

**TRUCK CHASSIS MODIFICATIONS**

If the vehicle’s chassis components are altered (for example, a wheel base extension or reduction, tag axle addition or removal, a major body change such as conversion of a tractor into a truck, or an axle, suspension, or steering system component modification) the basic ABS functionality may continue to be used, but advanced ABS features, such as the Bendix® ESP® system, must be disabled. See the appropriate Service Data sheet for more information.

**Reference Service Data Sheets:**

- EC-60™ ABS/ATC/ESP Controllers (Advanced Models) . . . .SD-13-4869 (BW2429)
- TABS-6™ Trailer ABS Module . . . . .SD-13-4767 (BW2469)
- ACom® Diagnostics PC software. . . . . BW2329  
(Free downloads available on [www.mybendix.com](http://www.mybendix.com))
- ABS Repair and Diagnostics DVD . . . . . BW2538

Visit the Literature Center on [www.bendix.com](http://www.bendix.com) for free downloads of Service Data sheets or to order copies.

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