



News Release

For more information, contact:

Barbara Gould
Bendix Commercial Vehicle Systems LLC
(440) 329-9609
barbara.gould@bendix.com

or

Ken Kesegich
Marcus Thomas LLC
(888) 482-4455
kkesegich@mtllc.com

FOR IMMEDIATE RELEASE
From the Bendix Tech Tips Series

BENDIX TECH TIPS: ANTILOCK BRAKING SYSTEM (ABS) **TROUBLESHOOTING AND REPAIR**

Insight on Addressing ABS Warning Lamps

AVON, Ohio – March 30, 2023 – The upcoming Commercial Vehicle Safety Alliance’s (CVSA) International Roadcheck inspection program, May 16-18, will include a focus on violations involving antilock braking systems (ABS). While ABS violations – indicated by warning lights in the cab or on the trailer – aren’t typically categorized as out-of-service infractions, the technology plays an important role in driver and vehicle safety. This installment of the Bendix Tech Tips series discusses what to do if you discover an illuminated ABS warning lamp.

The Basics of ABS

Antilock braking systems use wheel speed sensors that indicate to the ABS electronic control unit (ECU) if wheel slip is happening. The ABS system often works with the vehicle’s electronic stability control (ESC) full-stability system, if equipped, to help prevent a tractor or trailer’s wheels from locking up and causing skids on surfaces like ice, wet roads, or loose gravel. ABS is a proven technology, mandatory on most air-braked commercial vehicles manufactured in North America for more than 20 years. A properly functioning ABS helps the driver maintain control of the vehicle while braking and serves as a foundation for more advanced safety systems like full stability and collision mitigation.

“Checking your ABS lamps for proper functioning should be part of your typical pre- and post-trip inspection,” said Ryan Hurley, vehicle systems engineer at Bendix. “It’s important to

note, though, that if your ABS warning lamp does come on while you're driving, it's not going to affect standard service brake application: Your truck's service brakes will still work. ABS, ESC, and collision mitigation technologies, however, may not be fully functional. Keep driving to the next safe stop and check out the situation there. While an ABS warning lamp doesn't require a roadside fix, it's important – given the other systems on the truck that work with ABS – to get it addressed by a technician as soon as possible.”

ABS Roadside Inspection: What to Expect

Because ABS activates only under specific conditions, it can be difficult for drivers to tell if the system is in good operating condition – that's why the CVSA focuses its inspections on the yellow or amber malfunction indicator light (MIL). In-cab, they're easily spotted on the dashboard – they are standard lights and look the same on all vehicles. Trailer ABS malfunction indicator lamps are located on the exterior near the red rear side marker lamp on the driver's side; converter dollies also need to have the lamp located on the driver's side. And they need to be clearly identified with the letters “ABS.”

“During a CVSA roadside inspection, the inspector's going to first check to see whether ABS is required on your vehicle,” Hurley said. “If it is, they'll ensure the lamps cycle on and off during the diagnostic check. If any of the lamps remain on, they'll take that as a sign of a malfunction. Again: Not an out-of-service violation, but it is recordable, and you can be ticketed for it, so the best thing to do is address an illuminated lamp as soon as possible.”

Diagnostic Tools for Technicians

Brake manufacturers and OEMs provide diagnostic software designed specifically for the braking or vehicle systems they manufacture or include on their vehicles. The software is key to diagnosing and troubleshooting ABS faults on ABS systems since it provides specific information about what may be wrong with the system, as well as procedures on how to diagnose and repair it.

An example is Bendix® ACom® PRO™ Diagnostics Software, Bendix's PC-based diagnostic tool that supports all of Bendix's ECUs. For technicians not familiar with the tool, Bendix offers more than 20 training videos at the Bendix On-Line Brake School (www.brake-school.com), in-person three-day brake schools around the country, and the 1-800-AIR BRAKE line to get direct help on ACom PRO and brake system faults.

ACom PRO support is based on Service Data Sheets, which are the primary source of technical information for the technician on any given Bendix system – including ABS. They

detail all of the important aspects of diagnosing and troubleshooting Bendix systems. Information such as SPNs/FMIs, blink codes, service action codes, wiring diagrams, connector pin-outs, and other key information is documented. All Service Data Sheets can be found at [B2Bendix.com](https://www.bendix.com/B2Bendix.com).

“Some trailers have the ability to provide diagnostic blink codes, which can help technicians who don’t have access to ACom® PRO™,” said Brian Screeton, Bendix manager of technical training. “To display active diagnostic troubleshooting codes (DTCs), turn on ignition power to the trailer; press and release the brake pedal three times, waiting 1 second between brake pedal applications within the first 15 seconds of turning on the ignition. After a 5-second pause, the ABS electronic control unit will start flashing the active DTCs with the ABS light – for example, two flashes followed by one flash would indicate a fault code of 21. For this, the technician would perform the specified troubleshooting and resolution steps indicated in the appropriate Bendix Service Data Sheet.”

If troubleshooting indicates that the basic ABS components – wheel speed sensors and modulators, for example – are not malfunctioning, then it could be chassis wiring or other complex issues that would require in-depth troubleshooting to get to the root cause.

“Blink codes can be useful for trailer ABS diagnostics, but they are limited,” Screeton said. “Considering the Bendix stability ECUs on trailers now, blink codes will only go so far in helping to diagnose ABS issues and are best supplemented with diagnostic software.”

What Drivers Can Do

“As a driver, if you notice an ABS light illuminated on the dash or another indication the ABS system is not performing correctly, we recommend you follow fleet procedures to have a qualified technician look at the vehicle,” Screeton said. “If the driver is the technician, then the best initial step in troubleshooting is to consult the appropriate diagnostic software and, as available, the applicable service documentation to diagnose the vehicle. It is the same process we recommend for a dedicated technician.”

According to Screeton, drivers on the road with an illuminated ABS light should plan to increase following distance behind vehicles, reduce speed, and avoid panic braking, which can lead to a potential loss of control. Also, it’s important to remember that, as noted earlier, if ABS is out, then stability control and collision mitigation technologies may also be inoperative. Already-safe driving practices should be modified to even safer driving practices.

You can find more information from the Bendix Tech Tips series in the Bendix multimedia center at knowledge-dock.com. Additional instructional videos and interactive

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education on wheel-ends, air systems, and electronics are also available at the Bendix On-Line Brake School, www.brake-school.com, and at B2Bendix.com. You can reach the Bendix Tech Team at 1-800-AIR-BRAKE, option 2. And as always, complete maintenance and troubleshooting information can be found in the library of Service Data Sheets and Technical Bulletins located at B2Bendix.com and bendix.com.

About the Bendix Tech Tips Series

Bendix, the North American leader in the development and manufacture of leading-edge active safety, air management, and braking system technologies, is committed to helping keep commercial vehicles on the road and in good working condition. The Bendix Tech Tips series addresses common commercial vehicle maintenance questions and issues concerning the total range of components found within foundation and air brake systems, as well as advanced safety systems.

About Bendix Commercial Vehicle Systems LLC

Bendix Commercial Vehicle Systems, a member of Knorr-Bremse, develops and supplies leading-edge active safety technologies, energy management solutions, and air brake charging and control systems and components under the Bendix® brand name for medium- and heavy-duty trucks, tractors, trailers, buses, and other commercial vehicles throughout North America. An industry pioneer, employing more than 4,400 people, Bendix – and its wholly owned subsidiary, R.H. Sheppard Co., Inc. – is driven to deliver the best solutions for improved vehicle safety, performance, and overall operating cost. Contact us at 1-800-AIR-BRAKE (1-800-247-2725) or visit bendix.com. Stay connected and informed through Bendix expert podcasts, blog posts, videos, and other resources at knowledge-dock.com. Follow Bendix on Twitter at twitter.com/Bendix_CVS. Log on and learn from the Bendix experts at brake-school.com. And to learn more about career opportunities at Bendix, visit bendix.com/careers.

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