News Release

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FOR IMMEDIATE RELEASE
From the Bendix Tech Tips Series

BENDIX TECH TIPS: ADVANCED SAFETY SYSTEMS AND AIR DISC BRAKES

Diagnostic Knowledge and Preventive Maintenance Are Keys to Uptime

ELYRIA, Ohio – Dec. 14, 2016 – Advanced safety systems such as full-stability and collision mitigation technology occupy a growing part of the commercial vehicle landscape: Fleets are adopting them in greater numbers, and electronic stability control (ESC) systems will be required on most new Class 7 and 8 commercial vehicles under National Highway Traffic Safety Administration rules taking effect next year. Air disc brake usage continues to increase as well, with fleets often pairing them with advanced safety systems for optimal performance.

As part of its Bendix Tech Tips series, Bendix Commercial Vehicle Systems LLC and Bendix Spicer Foundation Brake LLC (BSFB) offer maintenance insight on safety packages that include advanced safety systems and air disc brakes.

First Things First

"Our technical support teams find that component replacement is often the first response to an electronics problem within an antilock braking system, or within traction, stability, or collision mitigation technology," said Fred Andersky, Bendix Commercial Vehicle Systems director of customer solutions, Controls. "Many times, though, the issue isn't the component itself, but a problem that's more difficult to detect, but easier – and cheaper – to fix."

Some simple troubleshooting, then, can mean the difference between a costly repair with extended downtime and a quicker, lower-cost solution.

First responses to an electronic component issue should include examining the wiring and input sensors, checking for:

- Frayed wires
- Corroded connectors
- Blown fuses
- Out-of-position wheel speed sensors
- Misaligned radar unit

Other possible causes of issues that don't require component replacement include a radar sensor blocked by snow, ice, or debris; a damaged sensor bracket; or problems with the vehicle's J1939 communications and diagnostics network. Obvious damage, such as a smashed radar unit, would require replacement of the component, since there are no recommended maintenance practices for repairing the sensitive electronics inside.

Physical components of stability and collision mitigation systems generally require maintenance only if changes have been made to certain parts of a vehicle. For example, if you make repairs such as front-end alignments or steering linkage service, you'll need to recalibrate the steering angle sensor of the stability system according to the manufacturer's guidelines. Similarly, any work on the frame rail that involves removing or loosening the yaw-rate/lateral acceleration sensor of the ESC system will mean the sensor needs to be recalibrated after it has been returned to its proper position and secured. And changes in tire size necessitate the use of diagnostic support software to update the new tire values.

The Next Level of Diagnostics

If there doesn't seem to be a visible reason for the problem, it's time to use your system's supporting hardware and software. Pursuing an accurate diagnosis will help save time and money in the long run.

Make sure the proper equipment is in use, and ensure that software is up-to-date. Refer to manufacturers' Service Data Sheets for reference guides and instructions on reading information like diagnostic unit blink codes. Hardware such as Bendix® Remote Diagnostic Units for both tractors and trailers can be used to troubleshoot brake and safety systems, and is available from many aftermarket dealers, and Bendix® ACom® Diagnostic Software is one example of a free downloadable software tool.

Generally, stability or collision mitigation system troubleshooting involves two processes: a system self-test, and driver input.

Active safety systems like Bendix® Wingman® Fusion™ include a built-in Power-Up Self Test. On Fusion, this test is run by powering down the vehicle, turning the key to the "ignition power" position, toggling the cruise control and leaving it in the "on" position, and then starting the vehicle. If the system discovers an issue that will prevent proper functioning, it will generate an audio alert and a Diagnostic Trouble Code, depending on the manufacturer.

Note that while this code may point to a specific component, it may indicate that the component is not getting power due to a faulty connection or damaged wire, so those possibilities should be investigated before the component is replaced.

Driver insight is also valuable and crucial when active safety systems and electronics seem to be malfunctioning. Have the vehicle's driver describe any system behavior that they believe points toward the technology not working properly, and review the manufacturer's list of detailed scenarios and tests. These often include specific questions about the performance of the vehicle's cruise control, dashboard display icons, distance alerts, and system interventions.

Air Disc Brake Matters

"Due to their stopping power and reliability, air disc brakes are often used to complement and maximize the performance of advanced safety systems," notes Keith McComsey, director of marketing and customer solutions, Bendix Spicer Foundation Brake. "And while air disc brakes do offer uptime advantages over drum brakes, they still require regular maintenance in between friction changes."

Regular preventive maintenance of air disc brakes should include ensuring proper running clearances between the rotor and pads, and checking that the caliper slides freely. Other inspection points important to air disc brake upkeep are:

- Checking the mounting hardware of calipers and air chambers
- Monitoring pad wear: Minimum allowable friction material thickness is 2mm
- Measuring rotor thickness and looking for cracks that exceed allowable limits
- Looking for damage or corrosion on tappets and boots

Information in the Bendix Tech Tips series, along with instructional videos and interactive training on foundation drum brakes and friction, can be found at the Bendix On-Line Brake School, www.brake-school.com. For more information on matching friction selection to application, contact the Bendix Tech Team at 1-800-AIR-BRAKE, option 2 (1-800-247-2725, option 2).

About the Bendix Tech Tips Series

Bendix, the North American leader in the development and manufacture of leading-edge active safety 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 the Knorr-Bremse Group, 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 3,000 people, Bendix is driven to deliver 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.

About Bendix Spicer Foundation Brake LLC

Bendix Spicer Foundation Brake LLC combines and expands the complementary wheel-end foundation brake technologies of two global leaders – Bendix Commercial Vehicle Systems LLC and Dana Commercial Vehicle Products, LLC. The joint venture, formed in July 2004, is a single, complete source for OEM brake system design, manufacturing, hardware, and support for all foundation brake components and actuation systems, as well as all-makes coverage of nearly 50,000 medium- and heavy-duty aftermarket parts. Contact us at 1-866-610-9709 or visit foundationbrakes.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

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