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BRAKE SAFETY WEEK: BENDIX SHARES TIPS ON HOW TO PREPARE AND WHAT TO EXPECT

or

Get Ready for the Upcoming Weeklong CVSA Inspection Program

AVON, Ohio – Aug. 15, 2022 – In trucking as in life, there's no substitute for being prepared – whether it's the next load, storm, or inspection. And inspections are top of mind right now in the North American commercial vehicle industry, as one of the biggest touchpoints on the calendar is approaching: Brake Safety Week, happening August 21-27. The annual weeklong event run by the Commercial Vehicle Safety Alliance (CVSA) examines vehicles across the United States, Canada, and Mexico. The team at Bendix Commercial Vehicle Systems LLC (Bendix) offers suggestions on getting ready.

"During last year's CVSA Brake Safety Week, 12% of the 35,764 vehicles inspected were placed out of service for brake-related issues," said Fred Andersky, Bendix director – demos, sales, and service training. "So many aspects of safe vehicle operation are directly impacted by what goes on at the wheel-ends and in the braking system that you really can't overstate the importance of keeping up with maintenance and inspection of those areas. From stopping power to the performance of higher-level technologies like collision mitigation, everything is linked to how well the brakes and wheel-ends perform when they're needed. That's why these inspections matter so much, and why Bendix puts the word out with practical tips for being prepared and staying safe."

Brake Safety Week is part of CVSA's Operation Airbrake initiative, an outreach and enforcement campaign that aims to reduce the number of highway crashes caused by faulty

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brake systems on commercial motor vehicles. The event involves local, state, provincial, territorial, and federal motor carrier safety officials in the United States, Canada, and Mexico inspecting large trucks and buses, focusing on brake system violations.

What to Expect

Brake Safety Week roadside inspectors conduct North American Standard Inspections, which cover a range of driver qualifications, documentation, and vehicle equipment conditions. They'll be checking for:

- Missing, nonfunctioning, loose, contaminated, or cracked parts
- Holes caused by rust and through rubbing or friction
- Broken springs in the spring brake housing section of the parking brake
- Air leaks around brake components and lines
- Air pressure in the target range of 90-100 psi
- Slack adjusters not at the same length
- Mismatched air chamber sizes across axles
- Warning device functionality (such as antilock braking system indicator lights)

Inspectors will also look for brake hose and tubing chafing violations – the focus of this year's Brake Safety Week.

How to Get Ready

"Pre-, post-trip, and regular inspections can go a long way toward catching some obvious violations, including loose hoses or damaged components like air chambers or pushrods," said Mark Holley, Bendix director of marketing and customer solutions, Wheel-End. He recommends the following:

Every day:

- Check for damaged or loose-hanging air chambers, pushrods, or slack adjusters.
- Make sure slack adjusters on each axle are extended out to the same angle.
 Different angles can indicate an out-of-adjustment brake or a broken spring brake power spring.
- Examine tubing and hose condition, positioning, and connections.

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Every week:

- Perform a 90- to 100-psi brake application with the wheels chocked and the parking brakes released, and listen for leaks.
- Check air disc brake rotors for cracks.
- Inspect drum brake linings for wear and cracks.

Every month:

• Check for moisture in the air system to prevent contamination that leads to component deterioration and system leaks.

"It's also worth greasing the S-cam brake tubes and automatic slack adjusters any time you've got a vehicle in the shop," Holley said. "This quick process helps prevent rust and corrosion, and helps keep the slack functioning properly."

Regarding brake hose and tubing chafing, the focus of Brake Safety Week this year, Bendix recommends watching for two typical causes. First is improper routing and clipping, which can cause hoses to rub together while the vehicle is operating. Preventive measures include periodic inspections to ensure tie straps, clips, and any brackets are not damaged or broken. The second typical cause is improper hose length – an overly long replacement hose is susceptible to chafing. Damaged hoses should be replaced.

"In addition, from the larger perspective, never underestimate the significance of communication between drivers and technicians," Andersky said. "A driver out on the road may be the first one to notice an issue with the truck. Being able to tell the technician what happened, where, and other details such as weather conditions is important – as is the technician asking questions to get a clearer understanding of the situation."

Andersky continued, "This is all part of the holistic approach to upkeep, which is critical when considering the complex interconnectivity of the entire brake system and more advanced safety technologies. Any sign of something out of compliance can indicate wider maintenance issues. Meaning that, taken individually, things like an active full-stability light on the dash or a kink in an air hose – and everything else inspectors are looking for – are of consequence."

How Drums and Discs Differ

Where Brake Safety Week is concerned, air disc brakes and drum brakes have a few differing maintenance needs.

"Key among the differences is the measurement of brake stroke," Holley said. "Because air disc brakes include an internal adjustment mechanism, their brake stroke is not measured externally, as is the case with drum brakes. The internal adjustment mechanism significantly lowers the risk of out-of-adjustment violations."

Measuring a drum brake's chamber stroke is a matter of checking the distance from the air chamber to the clevis pin with the brakes released, and then again after a fully charged brake application. The difference between these is the brake stroke, and its maximum length depends upon the brake chamber type and size.

Improperly adjusted brakes can also drag – impacting fuel efficiency and speeding up pad wear – or experience decreased stopping power. Bendix has developed an infographic (included below and attached) to note the differing maintenance needs of air disc and drum brakes.

Select the Right Parts

If you notice it's time for new brake friction, make sure to keep things up to spec: Not all friction that is marketed as "acceptable" under current reduced stopping distance (RSD) regulations will actually perform to that standard. Whether you're replacing air disc brake pads or drum brake shoes, select components that will ensure the original equipment manufacturer (OEM) requirements are met, so that the vehicle remains compliant.

"The aftermarket is more crowded than ever, particularly when it comes to brake friction," Holley said. "The wrong choice can harm your system and undermine vehicle safety. Complications arising from improper friction selection can include cracks, degradation of braking performance, or damage to other wheel-end components. Remember, these are things that a roadside inspector will note and penalize you for."

When it comes to remanufactured drum brake shoes, ask your supplier whether they have been coined back to their OEM-engineered shape, and not simply relined with new friction, Holley noted. Shoes become misshapen under the stress of regular use, and relining one of these without returning it to its original geometry can impact stopping power and friction life.

You'll also want to protect the air supply against corrosive oil aerosols that lead to leaks and potential violations. Bendix recommends using an oil-coalescing air dryer cartridge like the Bendix[®] PuraGuard[®]. Oil-coalescing cartridges can be used to replace standard cartridges, but the reverse is not the case: You shouldn't downgrade from an oil-coalescing cartridge to a standard.

Stay Sharp

Technicians equipped with the latest knowledge and tools are instrumental in keeping vehicles on the road and in good operating condition. Bendix offers a variety of resources that provide the most current and in-depth training and information, including:

- The <u>Bendix Document Library</u> Find service data sheets, operating manuals, technical bulletins, and a host of other documents offering detailed information – including maintenance and troubleshooting.
- The Bendix Brake Training School Long-running hands-on training programs are conducted in person across the United States, with a few virtual options available. Here's the 2022 schedule.
- The Bendix On-Line Brake School <u>www.brake-school.com</u>. You'll find more than 90 courses covering the full spectrum of braking and active vehicle safety product topics. Registration is free, and the site serves more than 130,000 registered users.
- "Truck Talk with Bendix" This podcast is available via Google Play, Apple Podcasts®, and Stitcher.
- Bendix's Knowledge Dock[™] www.knowledge-dock.com. This site includes an
 archive of the Bendix "Tech Tips" series, as well as videos, white papers, and
 other insights.

The Bendix team of field-tested sales and service professionals, along with its veteran field technical support team and the Bendix Tech Team at 1-800-AIR-BRAKE, also provide expert technical support such as service advice, brake system troubleshooting, and product training.

Maintenance tips from Bendix to help your fleet avoid CVSA inspection issues.

Air Disc Brakes



Inspect the

- Caliper & air chamber mounting hardware
- Pad for abnormal (tapered) wear and cracks
- Tappets & boots, for visible damage (wheels off)
- Rotor for cracks (verify against allowable limits)



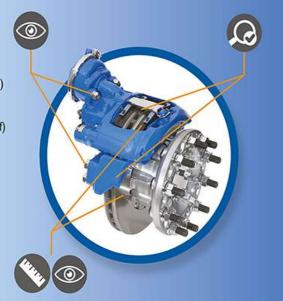
Measure the

- Rotor thickness (verify against allowable limits)
- Pad thickness (verify greater than 2mm)



Verify the

- · Caliper slides freely
- Proper pad-to-rotor running clearances



Drum Brakes



Inspect the

· Friction for cracks & abnormal wear



Measure the

- Brake free play –
 (between 3/8" and 5/8")
 If outside this range, inspect for damage / out-of-spec conditions
- Wheel-end brake stroke (compare to chamber specification)



ubricate the

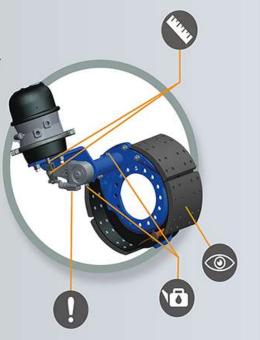
- · Slack adjusters regularly
- S-cam



Avoid

 Manual adjustment of automatic slack adjuster to correct out-of-adjustment brakes

(A consistent out of adjustment condition indicates another problem and requires investigation)





A quick check of your brake system can save you time and money in the long run.

Although brakes shown are Bendix[®] brand, these inspection tips may be applied to any air disc or drum brake.

Refer to OE Manufacturer's recommended service practices.

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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.