



Start Here

All foundation brakes are designed to convert kinetic energy (energy of motion) into heat and work (to stop the vehicle).

Air disc brakes work the same way and in everyday operation — compared to drum brakes — will produce higher braking temperatures and cool off faster. Also, air disc brakes will often have differences in temperatures at the wheel-ends on the same axle. The actual temperatures reached will depend on the vehicle configuration, vocation and brake usage.

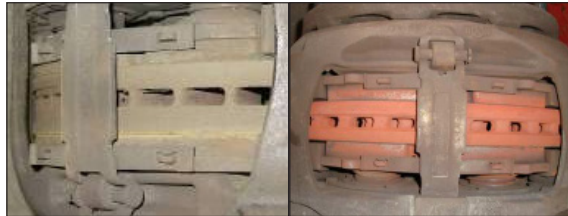
This document is intended to help technicians identify instances where an individual wheel-end has evidence of thermal overload, and check for potential causes.

Bendix® Air Disc Brake Checklist for Identifying Single Wheel-End Thermal Overload

Follow all General Safety Guidelines (see final page.)

SECTION ONE: Inspect the Vehicle

Question One:
Do any of the rotors have bright orange or red colored edges? Check the box(es) on the vehicle diagram to the right for any found.



Normal Evidence of thermal overload

Question Two:
Are any of the calipers coated with a bright orange or red colored dust? Check the box(es) on the vehicle diagram to the right for any found.

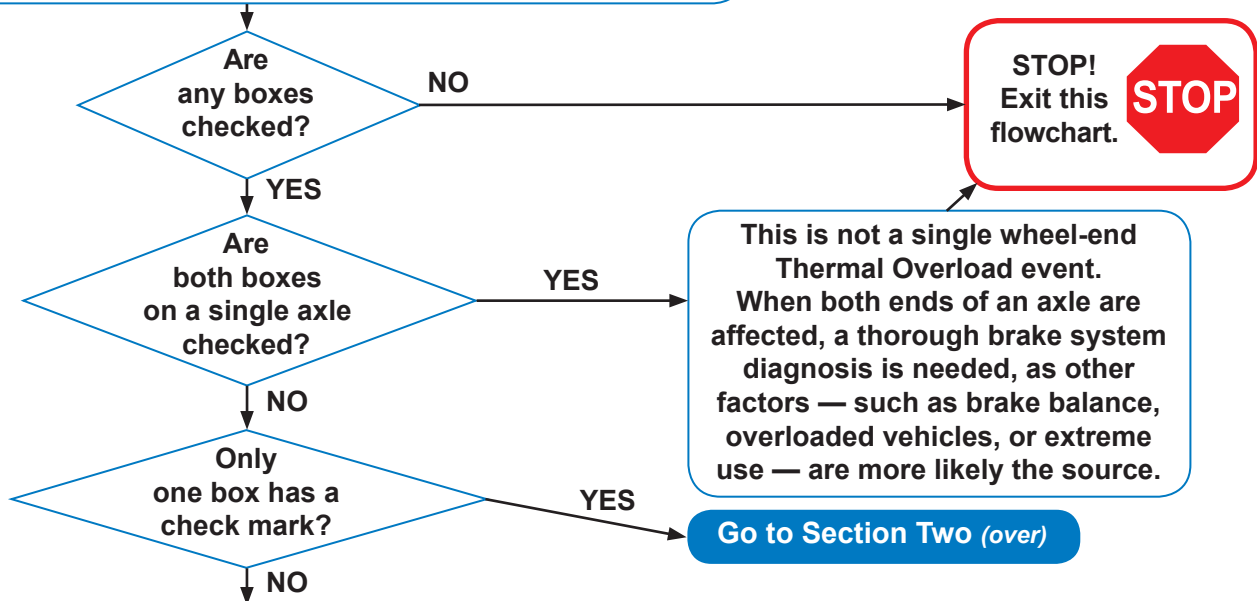
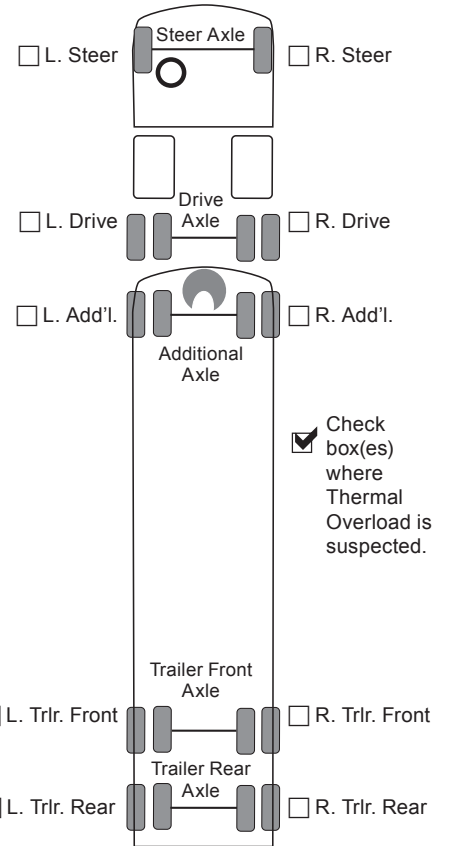


Normal Evidence of thermal overload

Question Three:
Are any tappets and/or guide pin boots heat damaged? Check the box(es) on the vehicle diagram to the right for any found.



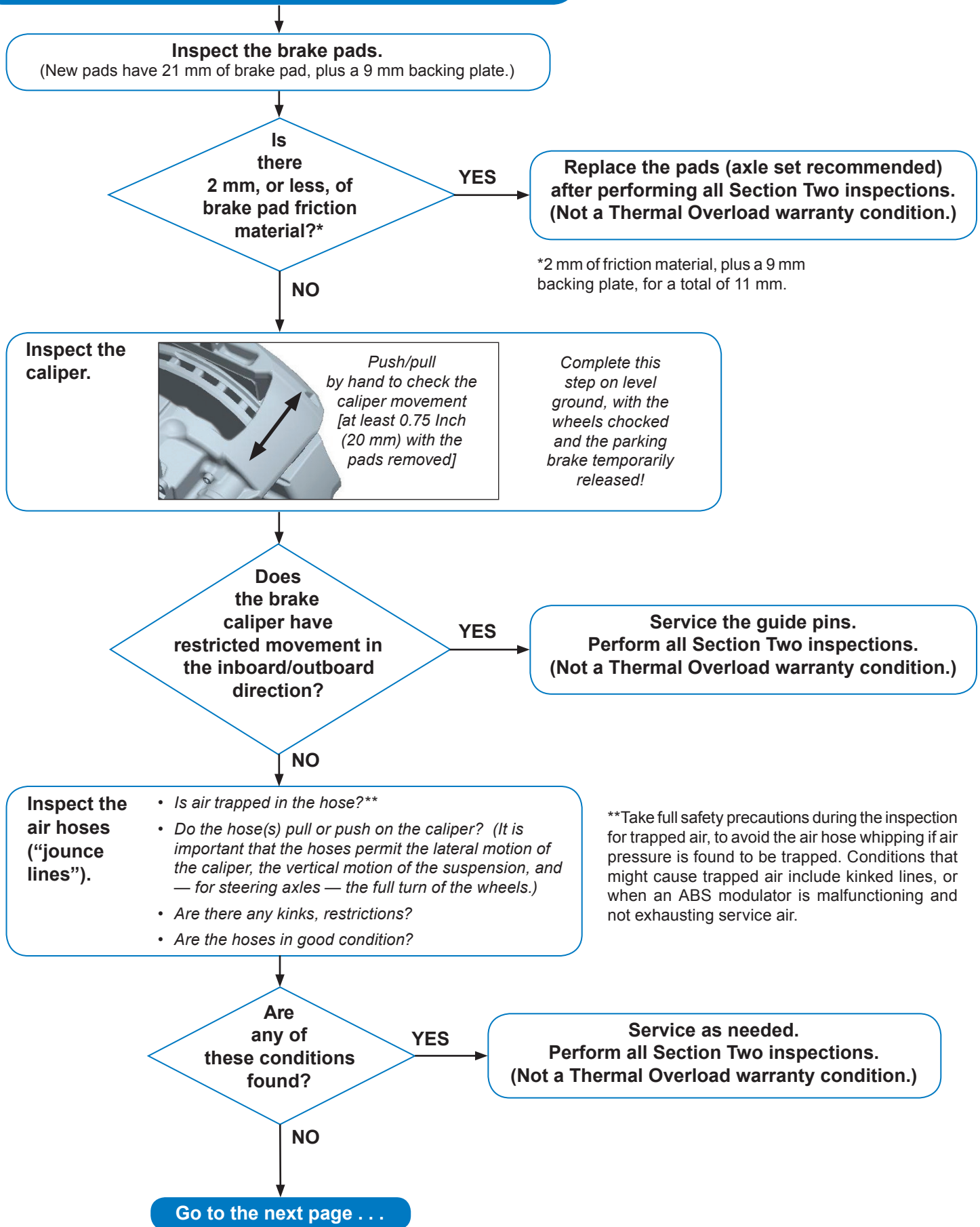
Typical Evidence of thermal overload Evidence of thermal overload



In cases where more than one wheel-end is affected — but on different axles — complete a separate checklist for each brake being examined.

SECTION TWO: Investigate Other Potential External Causes

- Follow all General Safety Guidelines (see final page).



SECTION TWO *Continued*

Inspect the actuator. On level ground, with the wheels chocked, cage the spring brake actuator (if equipped) per the manufacturer's guidelines, remove and inspect the actuator.

- Is there visible damage?
- In the installed position, was the lowest drain plug sealed?
- Is the seal in poor condition/damaged?
- Does the push-rod extend further than 15 mm from the mounting face?

Are any of these conditions found?

YES → **Service the actuator. (Not a Thermal Overload warranty condition.)**


With the actuator removed, inspect the internal caliper surfaces through the actuator push rod opening.

- Is there visible damage, rust, water?
- With the pads removed, use a screw driver to depress the lever. Does the lever have a restricted range of motion? (The lever must touch the caliper body when fully retracted.)

Are any of these conditions found?

YES → **Replace the caliper. Inspect the rotor. (Not a Thermal Overload warranty condition.)**

No Section Two external causes found? Replace the caliper. Where applicable, process a thermal overload warranty claim.

Where other external causes were found, perform service and exit this flowchart. 

Actions When Replacing a Caliper

Replacement:

- Replace the caliper on the affected wheel-end and all the pads at both ends of the axle.
- Inspect the rotor according to the guidelines in Service Data sheet SD-23-7541.

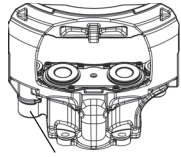
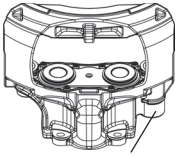
If the brake assembly is still under warranty coverage:

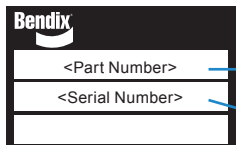
- File a claim. Clearly state the claim is for a single axle thermally overloaded brake. The claim must include photographs of the rotor from both ends of the affected axle.
- Return the caliper from the affected wheel-end, and label the caliper with the claim number.
- Return the pads from both sides of the affected axle (LH and RH set of pads). Please clearly label the parts with the wheel position and claim number.
- Please include this completed checklist, the photographs of the rotors, and a copy of the warranty claim with the returned parts.

VIN #: _____ Claim #: _____

Vehicle Make: _____ Vehicle Model: _____

Mileage: _____

Bendix® ADB22X™ Air Disc Brake Replacement Part Numbers		
Caliper/Carrier		
Axial Bolt 12 degree	Right Fixed Pin	K081142
	Left Fixed Pin	K081143
Vertical Bolt 12 degree	Right Fixed Pin	K081256
	Left Fixed Pin	K081257
 		
		<p>Left Fixed Pin</p> <p>Right Fixed Pin</p>
<p>Please note that replacement caliper/carrier bolts (available from the vehicle manufacturer) are recommended.</p>		
Caliper Only		
12 degree	Right Fixed Pin	K081258
	Left Fixed Pin	K081259



Caliper Part Number: _____

Caliper Serial Number: _____

(Air Disc Brake Label)

Bendix TechTeam Help Line: 1-800-AIR-BRAKE, (1-800-247-2725), option 2-1. Mon. - Fri., 8 a.m. - 6 p.m.
Reference Document:
 Service Data: SD-23-7541 Bendix® ADB22X™, ADB22X-V™ Air Disc Brakes. Go to the document library at www.bendix.com for free downloads of Service Data Sheets and warranty policies.



GENERAL SAFETY GUIDELINES

WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS

TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following guidelines should be observed **AT ALL TIMES**:

- ▲ Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically-charged components.
- ▲ Do not attempt to install, remove, disassemble or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning **ANY** work on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, or a Bendix® AD-9si® air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests **USING A DYNAMOMETER** are conducted on a vehicle equipped with a Bendix® Wingman® system.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.



WARNING: Not all wheels and valve stems are compatible with Bendix Air Disc Brakes. Use only wheels and valve stems approved by the vehicle manufacturer to avoid the risk of valve stem shear and other compatibility issues.



WARNING: AVOID CREATING DUST. POSSIBLE CANCER AND LUNG DISEASE HAZARD.

While Bendix Spicer Foundation Brake LLC does not offer asbestos brake linings, the long-term effects of some non-asbestos fibers have not been determined. Current OSHA Regulations cover exposure levels to some components of non-asbestos linings, but not all. The following precautions must be used when handling these materials.

- Avoid creating dust. Compressed air or dry brushing must never be used for cleaning brake assemblies or the work area.
- Bendix recommends that workers doing brake work must take steps to minimize exposure to airborne brake lining particles. Proper procedures to reduce exposure include working in a well-ventilated area, segregation of areas where brake work is done, use of local filtered ventilation systems or use of enclosed cells with filtered vacuums. Respirators approved by the Mine Safety and Health Administration (MSHA) or National Institute for Occupational Safety and Health (NIOSH) should be worn at all times during brake servicing.
- Workers must wash before eating, drinking or smoking; shower after working, and should not wear work clothes home. Work clothes should be vacuumed and laundered separately without shaking.
- OSHA Regulations regarding testing, disposal of waste and methods of reducing exposure for asbestos are set forth in 29 Code of Federal Regulations §1910.001. These Regulations provide valuable information which can be utilized to reduce exposure to airborne particles.
- Material Safety Data Sheets on this product, as required by OSHA, are available from Bendix. Call 1-800-247-2725 and speak to the Tech Team or email techteam@bendix.com.