# Vehicle Attachment 5
# Bendix SN7 Air Disc Brake Service Data

**New York, NY**
**HWY-11-MH-005**

(4 pages)

Bendix Spicer Foundation Brake LLC
A Bendix CVS and Dana Joint Venture

# Service Data

SD-23-7541

## Bendix® ADB 22X™, ADB 225™, SN6™, SN7™, SK7™ Air Disc Brakes

### DESCRIPTION

Bendix® Air Disc Brakes use a floating caliper design to provide foundation braking on all axles of heavy commercial vehicles, buses and trailers. Bendix Air Disc Brakes provide safety and performance, as well as ease of service. Available in models with or without a combination spring brake unit, these brakes may also include optional wear sensors and/or wear diagnostic equipment.

### OPERATION

Bendix Air Disc Brakes convert air pressure into braking force. (See Figure 2.) When the vehicle brakes are applied, air enters the service brake chamber through the supply port, applying pressure within the diaphragm. The pressure expands the diaphragm, applying force to, and moving the pressure plate and pushrod forward. The pushrod acts against a cup in the internal lever which pivots on an eccentric bearing moving the bridge. Moving against a return spring, the bridge transfers the motion to two threaded tubes and tappets, which move the inner brake pad. The inner brake pad (from its normal position of having a running clearance between it and the rotor) moves into contact with the brake rotor. Further movement of the bridge forces the caliper, sliding on two stationary guide pins, away from the rotor, which pulls the outer brake pad into the rotor. The clamping action of the brake pads on the rotor applies braking force to the wheel.

#### Brake Release and Adjustment

When the vehicle brakes are released, the air pressure in the service brake chamber is exhausted and the return springs in the chamber and the bridge return the air disc brake to a neutral, non-braked position. To maintain the running clearance gap between the rotor and the brake pads over time, the non-braked position is mechanically adjusted by a mechanism in the caliper. The adjustment mechanism operates automatically whenever the brakes are activated, to compensate for rotor and brake pad wear and to keep the running clearance constant. During pad or rotor maintenance, the technician manually sets the system's initial non-braked position. The total running clearance (sum of clearances on both sides of the rotor) should be between 0.024 to 0.043 in. (0.6 and 1.1 mm).

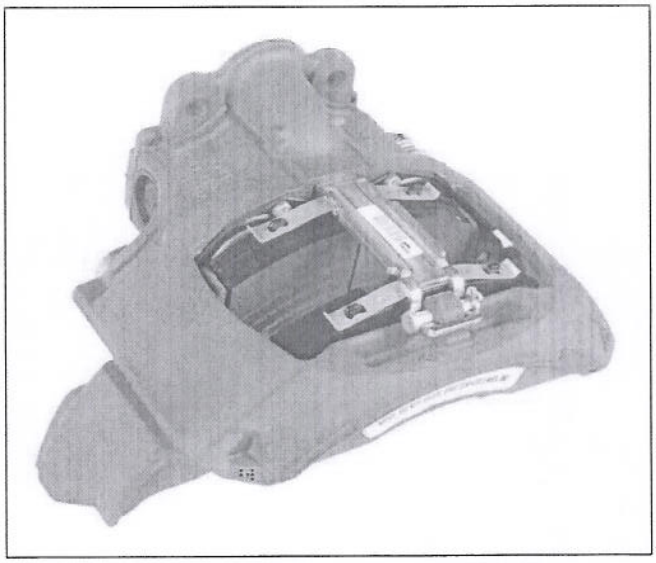


*FIGURE 1 - BENDIX® ADB 22X™ AIR DISC BRAKE*

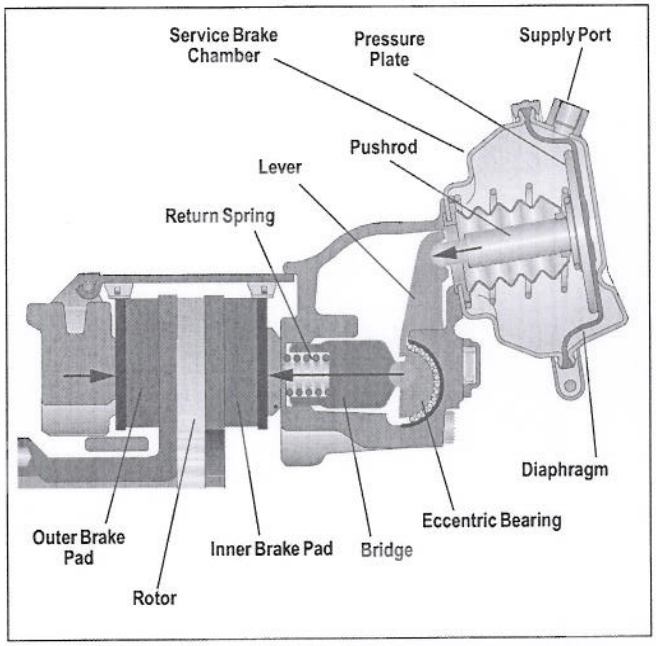



*FIGURE 2 - CROSS-SECTION VIEW SHOWING BRAKE OPERATION*

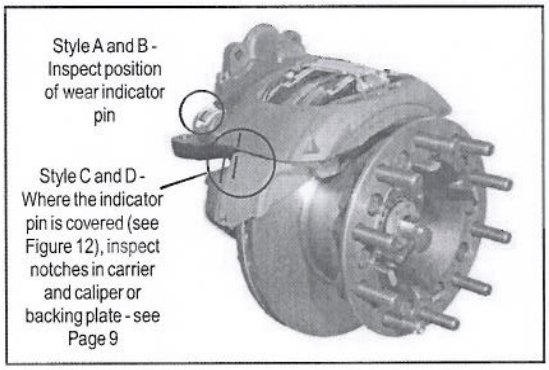
Accident bus was equipped with Style A Wear Indicators

## MECHANICAL BRAKE PAD AND ROTOR WEAR INDICATORS

A preliminary visual check of the condition of the brake pad/rotor wear can be made without removing the wheels. See below for the inspection to make for each of the three guide pin styles in use for Bendix air disc brakes.

**Note:** These inspections provide an indication of when to schedule a full wheel-removed inspection of the brake pads and rotor. The thicknesses of both the pad and rotor will affect the wear indicator position at which maintenance is actually needed.

**These inspections do not constitute "out-of-service" criteria.**




### Style A: Rolling Boot Style Wear Indicator

Inspect the position of the guide pin flexible rubber bushing. See Figure 10. When the guide pin has moved in so that the ribbed section of the flexible rubber bushing reaches the point where it folds back in, it is time to schedule a full wheel-removed inspection of the pads and rotor. Note: This is only an indication that the pads and rotor are ready for inspection, and does not necessarily mean that maintenance is required.

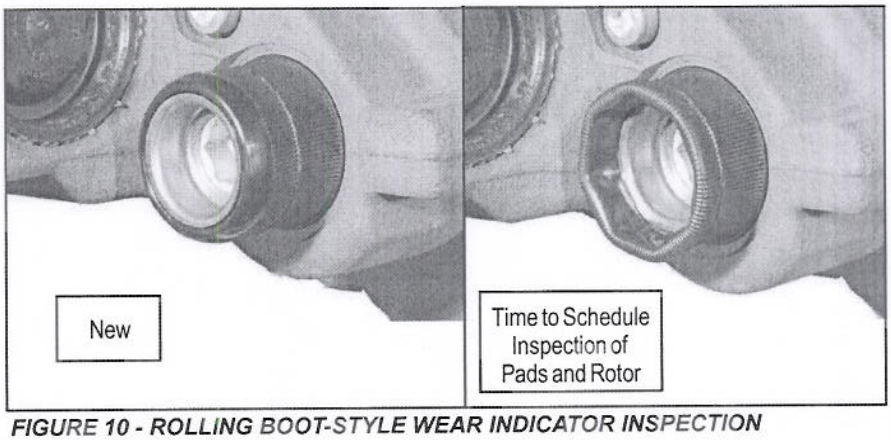



*FIGURE 10 - ROLLING BOOT-STYLE WEAR INDICATOR INSPECTION*

### Style B: Solid Rubber Bushing Style Wear Indicator

Inspect the position of the guide pin compared to the solid rubber bushing. See Figure 11. When the guide pin is aligned with the bushing, it is time to schedule a full wheel-removed inspection of the pads and rotor. Note: This is only an indication that the pads and rotor are ready for inspection, and does not necessarily mean that maintenance is required.

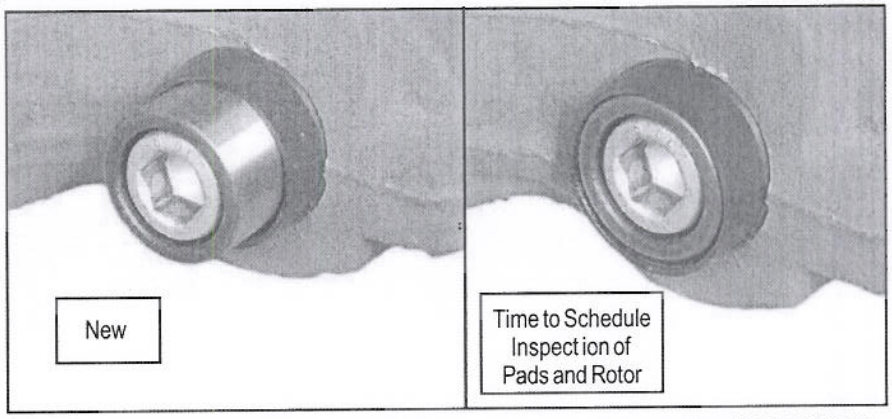



*FIGURE 11 - SOLID RUBBER BUSHING-STYLE WEAR INDICATOR INSPECTION*

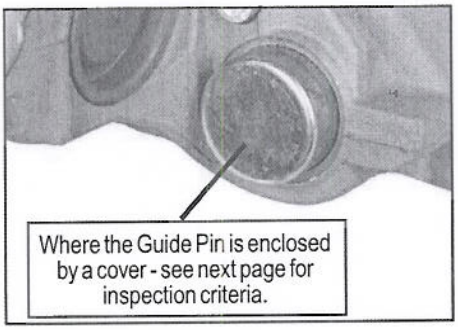
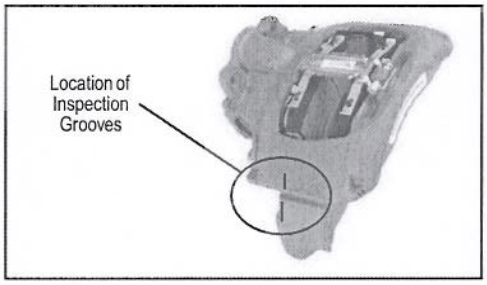



*FIGURE 12 - PIN COVER*

### Style C: Where Both the Carrier and Caliper Have an Indicator Notch

Compare the relative position of two notches cast into the Carrier and Caliper. See Figure 13. When the two notches align, it is time to schedule a full wheel-removed inspection of the pads and rotor. Note: This is only an indication that the pads and rotor are ready for inspection, and does not necessarily mean that maintenance is required.



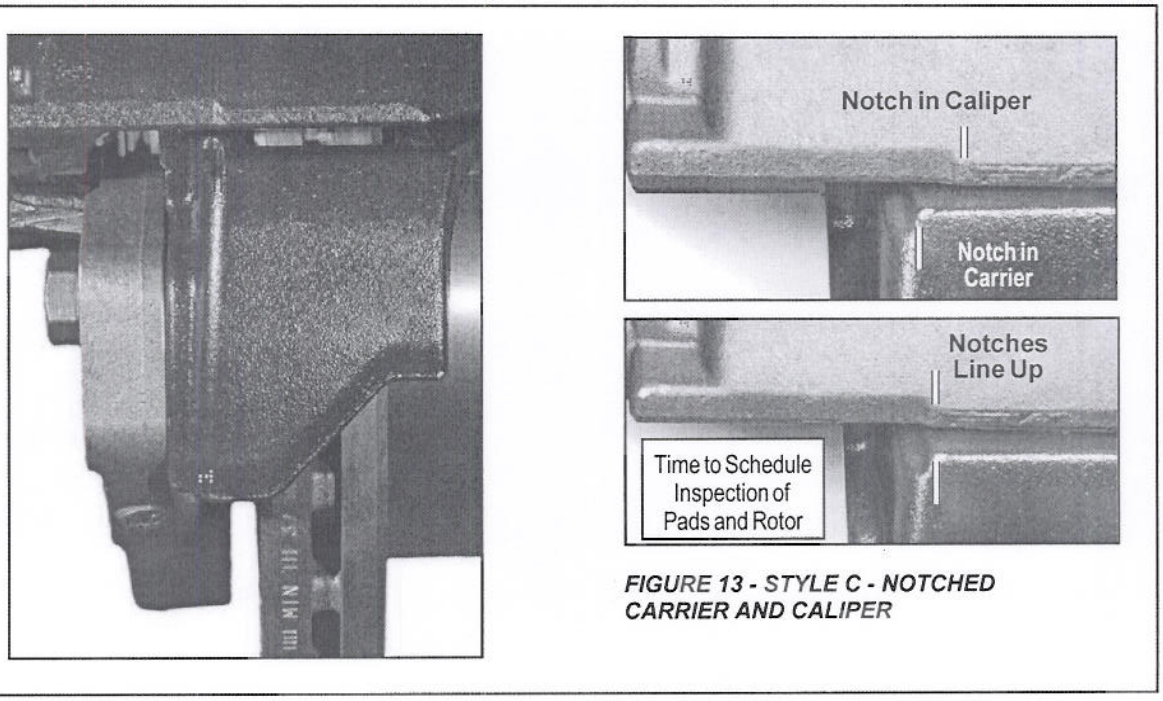




*FIGURE 13 - STYLE C - NOTCHED CARRIER AND CALIPER*

### Style D: Where Only the Caliper has an Indicator Notch

When the notch in the Carrier aligns with the front edge of the torque plate, it is time to schedule a full wheel-removed inspection of the pads and rotor. Note: This is only an indication that the pads and rotor are ready for inspection, and does not necessarily mean that maintenance is required.

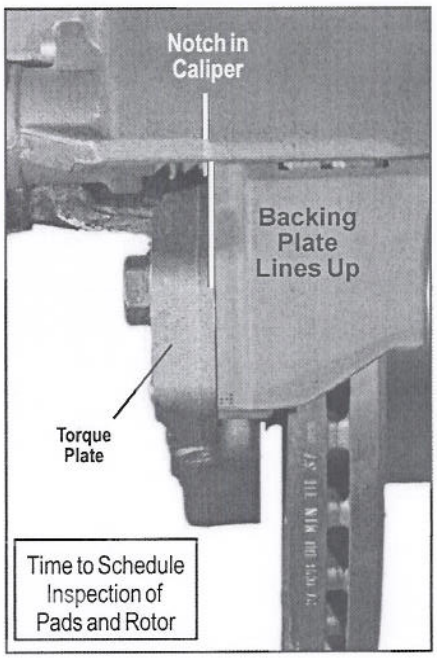



*FIGURE 14 - CARRIER WEAR INDICATOR NOTCH AND BACKING PLATE ALIGNMENT*