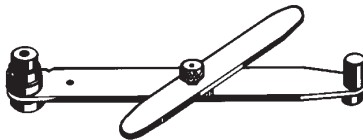


BRAKE SHOE INSPECTION PROCEDURES

- I. **The wear points of a shoe are:**
 - A. Anchor pin area
 - B. Cam roller end
 - C. Arch and table top
- II. **A shoe should be checked for the following at each reline:**
 - A. Excessive anchor pin hole wear - over .025". Both sides should be checked.
 - B. Stretch or twist. Again, both sides should be checked.
 - C. Excessive roller end wear.
 - D. Check to make sure there are no breaks between the web and table top.
 - E. Check the web to make sure channels are parallel.
 - F. Check the table top for excessive rust and pitting, elongated bolt or rivet holes, squareness (more than 1/64 of an inch gap under a straight edge means shoes are not good).
- III. **A shoe will be rejected if any of the following conditions are present:**
 - A. More than .025" of wear on anchor pin hole.
 - B. Stretched or Collapsed Shoes.
 - C. Bent web near anchor pin hole or unparallel channels.
 - D. Cracks in the weld between table top and web.
 - E. Excessive roller end wear.
 - F. Bent table top.
 - G. Excessive rust on the table top .018" or more.
 - H. Three or more elongated bolt or rivet holes.

Any of the above conditions should result in a rejection of the shoe from your reline program. The CS1000, CS1001 and CS1002 tools should be used for shoe inspection.



The CS1001 Stretch Gauge has several improvements over any other stretch gauge on the market:

- This gauge has a built-in tolerance allowance of plus or minus .020", which eliminates any guessing if the gauge is seated down on the core, but still allows for an acceptable amount of deviation from core to core.
- The anchor end of the gauge has three different size steps, 1 1/4", 1 1/16", 1" to allow you to gauge all of the current types of cores.
- The gauge is heat treated and cadmium plated. The cadmium plating provides corrosion resistance, without adding thickness to the gauge surfaces. The heat treatment provides strength and precision.
- Another standard feature is the swing arm for checking wedge shoe stretch, and for identifying Fruehauf shoes.



The CS1000 (1.275") and CS1002 (1.025") ANCHOR PIN GAUGES also provide several features:

- The lead-in taper makes it easy to insert the gauge in the anchor hole.
- At over TWO POUNDS, the gauge is easily centered for accuracy.
- The gauging surface is 1/2" wide, with a line to indicate go-no-go.
- It is durable because of its Rockwell 60C hardness.
- The recommended specification of 1.275" is stamped on gauge CS1000.
- The recommended specification of 1.025" is stamped on gauge CS1002.
- Use CS1000 for 4515, and CS1002 for 4591 and 4536.

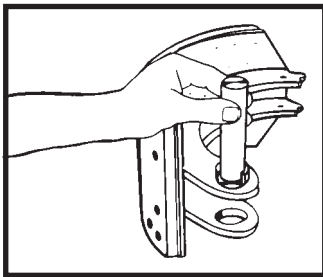
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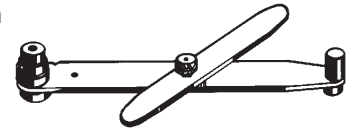
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INSTRUCTIONS FOR GAUGE USAGE



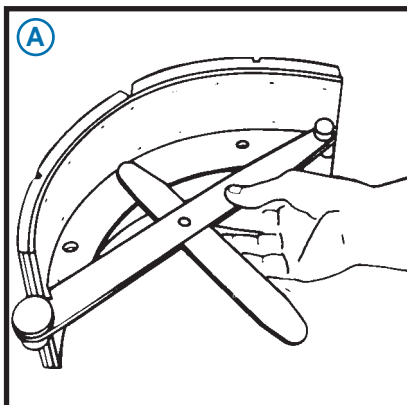
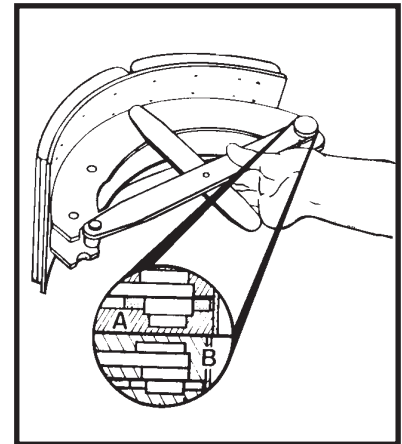
ANCHOR PIN (GO-NO-GO) GAUGE Part Number CS1000 & CS1002

This tool is used for checking the diameter of anchor pin holes measuring 1.250" before relining shoes and provides the user with an absolute (accept-reject) criterion. Insert gauge into anchor pin hole as shown and turn 180 degrees. If gauge drops through hole, discard shoe, the hole is too worn and proper shoe alignment on the brake foundation will not be possible. CS1000 tool is .025" oversize (1.275"). CS1002 tool is .025" oversize (1.025").



BRAKE SHOE IDENTIFICATION

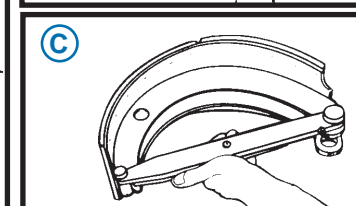
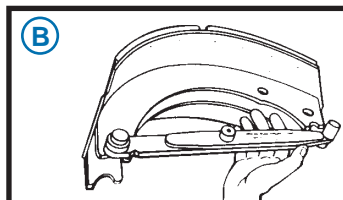
1. Differentiating Rockwell "P" and Fruehauf 16 1/2" drum diameter brake shoes is accomplished as follows: Loosen thumb screw and swing shoe table check arm marked "16 1/2" S-Cam" to a 90 degree position. Tighten screw to lock gauge in position. Turn gauge so thumb screw and decal face away from you. Insert large or deep step button into anchor pin end (as shown at right). Then swing tool toward the shoe table so the small button at the opposite end of the gauge fits into the arc at the cam end of the shoe. If the 16 1/2" S-Cam shoe table arm touches the bottom of the shoe table, the shoe is a Rockwell "P" shoe. If the swing arm touches the shoe table and does not allow the small button end of the gauge to fit into the arc at the cam end of the shoe, it's a Fruehauf 16 1/2" shoe.
2. To tell the difference between a Rockwell "Q" and a Fruehauf "XEM" 16 1/2" drum diameter brake shoe: Loosen thumb screw and swing the 16 1/2" S-Cam arm to a 90 degree position. Lock as in "1", turn gauge so thumb screw and decals are away from you, insert small step of large button into anchor end of shoe. Swing gauge toward shoe table so small end of gauge fits into arc at the cam end of the shoe. If the swing arm touches the bottom of the shoe table it is a Rockwell "Q" shoe. If the swing arm touches the bottom of the shoe table and will allow the small end of the gauge to fit into the arc at the cam end of the shoe causing the gauge to stand away, it is a Fruehauf "XEM" shoe.
3. The Stretch Gauge can also be used to differentiate a 4625A from a 4625B 16 1/2" drum diameter shoe. Following the same procedure outlined in "1", the 4625A shoe will measure the same as the Rockwell "P" shoe while the 4625B will measure the same as the Fruehauf 16 1/2" shoe. To distinguish a 4625B from a Fruehauf shoe check the drill pattern in the shoe for positive identification. This gauge has been designed to measure various shoe table widths in 15" and 16 1/2" drum diameter shoes. It will cover FMSI core identities of S-Cam Shoe 4515, 4514, 4524, 4549, 4551, 4552, 4570, 4223, 4317, 4311 and 4674; and Wedge Type Shoe 4602, 4605, 4610 and 4615.



BRAKE SHOE ALIGNMENT

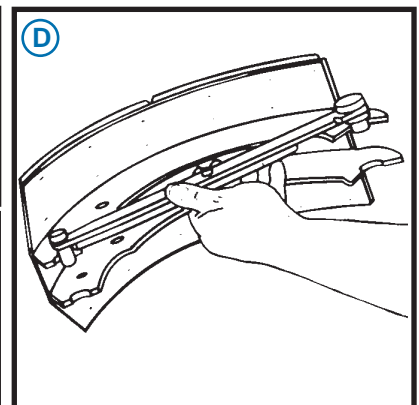
- A** 15" Wedge Brake Shoe: Loosen thumb screw and swing the shoe table check arm marked 15" wedge shoe to a right angle position so the notch in the cross bar and the swing arm are both facing in the same direction.

Place the notch on one end of the shoe table. Move the gauge so the swing arm touches the bottom of the brake shoe table. The other end of the shoe should lay on the outside edge of the small button on the opposite end of the gauge. All three checkpoints should touch, if they do not, the shoe should be rejected.



- B** Eaton 16 1/2" Drum Diameter Shoe: Without opening the swing arm, position the gauge so that the decals and thumb screw are facing you. Insert the large button into the anchor pin hole. Swing the tool toward the brake shoe table, if the shoe is not distorted, the small button on the opposite end of the gauge will fit into the arc at the cam end of the shoe. If it does not, reject the shoe.

- C** Rockwell "P" and Fruehauf 16 1/2" Drum Diameter Shoes: Without opening the swing arm, turn the gauge so that the decal and thumb screw are away from you. Insert the gauge into the anchor pin end of the shoe so the large button or deep step button fits into anchor pin end. (See **C** above.) Then swing the tool toward the



shoe table so that the small button on the opposite end of the gauge fits into the arc at the cam end of the shoe. If the small button does not fit in the arc reject the shoe.

- D** Rockwell "Q" and Fruehauf "XEM" 16 1/2" drum diameter shoes are checked as follows: Without opening swing arm, turn gauge so thumb screw and decal are away from you. Insert the small step of the large button into the anchor pin end of the shoe (See **D** above). Swing the gauge toward the shoe table, if the button can be set into the arc at the cam end of the shoe, the shoe is not stretched or distorted. If the button cannot be set into the arc, reject the shoe.