

Within an Inch of Your Life

A professional driver's guide to checking and adjusting air brakes.



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The most common cause of brake failure is poor brake adjustment. The popular type 30 air chamber has 2¹/₂ inches (6.35 cm) of available stroke. A correctly adjusted brake has only 1/2 inch (1.27 cm) of slack, leaving 2 inches (5.08 cm) of reserve chamber stroke. When slack reaches 1 inch (2.54 cm) the brakes **must** be adjusted. *This is the most important inch of your life.*

It's the Law

Provincial regulations require drivers to check manual and automatic slack adjusters daily, during the pre-trip inspection. It's up to you, the professional driver, to ensure your vehicle has safe, properly adjusted brakes.

You're also required by law to check your brakes before driving down steep grades that are posted with regulatory signs.



A brake check regulatory sign.

Simple Physics

When you brake lightly, even poorly adjusted brakes seem to work. But under moderate to heavy braking, you could find yourself in a runaway truck. Some sobering facts:

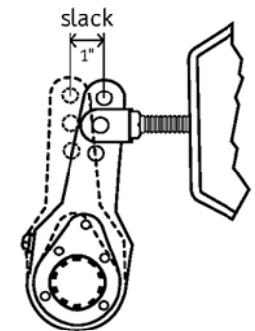
- At an 80 PSI application, a brake chamber with 1 inch of slack (2.54 cm) strokes 1³/₄ inches (4.45 cm) because of component stretch. This reduces reserve chamber stroke to 3/4 inch (1.91 cm).
- Cast iron expands when heated. On a hot brake drum, this can cause the push rod to stroke a further 1/2 inch (1.27 cm), reducing reserve stroke to 1/4 inch (.64 cm).
- Brake lining wears rapidly at high temperatures. If the lining wears down just the thickness of three sheets of paper, the push rod strokes a further 1/4 inch (.64 cm). This could cause the chamber to bottom out and your brakes to fail.

Don't Overestimate — Check the Slack!

Manual Slack Adjusters

Checking Manual Adjusters

1. Pull the push rod out to its limit using your hands or a short pry bar.
2. Measure the distance the push rod travels (the "slack"). If the slack is 1 inch (2.54 cm) or more, you **must** adjust the brakes.



A manual slack adjuster.

Adjusting Manual Adjusters

1. Turn the adjusting bolt until you feel solid resistance.

NOTE: Some adjusting bolts turn clockwise and some turn counterclockwise. If you're turning the bolt the right way, the cam will turn in the same direction as it does when you apply the brakes. Watch the chamber push rod and slack adjuster arm. If you detect outward movement, you're turning the bolt the wrong way.

2. Back off the bolt one-quarter to one-half a turn to restore running clearance.
3. Recheck push rod travel.

