



LONG-STROKE CHAMBERS & SLACK ADJUSTER MEASUREMENTS

Long stroke spring brake chambers will most likely become very commonplace on the axles of heavy-duty air braked vehicles throughout the United States and Canada in the very near future. They are touted as improving braking performance in all types of heavy-duty vehicles.

A long stroke chamber design has a rated stroke greater than a conventional chamber by a minimum of $1\frac{1}{4}$ " and as much as $\frac{3}{4}$ ". The advantages are that it will provide higher pushrod force at or near the recommended re-adjust position than a conventional chamber as well as a higher stroke margin under the North American Standard Commercial Vehicle Inspection Criteria that truck inspectors use. Most often it delivers a stroke advantage of $\frac{1}{2}$ ", meaning the $2\frac{1}{2}$ " maximum stroke of a typical type 30 brake chamber, very widely used on trailers, now becomes 3".

On a normal vehicle with the short version of a type 30 chamber, with the brakes fully adjusted and a pressure of 100 psi applied, you will impose a $1\frac{1}{2}$ " of stroke with a 2" re-adjustment limit on pushrod travel. All Canadian and United States jurisdictions' mandate leaves almost no tolerance for measuring mistakes, thus causing operators to approach road-side inspections with less than full confidence. With long stroke chambers there is an additional $\frac{1}{2}$ " of pushrod stroke available, which acts as insurance against slight variations in measurement techniques, brake fade and drum expansion.

Operators using long stroke chambers feel much more confident when visiting road-side inspection facilities, because their vehicles have more pushrod stroke, making them less susceptible to costly out-of-service infractions.

Heavy-duty trucks need all the help they can get in terms of improving braking capacity and improving performance when the brakes heat up. This is all the more reason to put more stroke in the brake chambers to handle the increased stroke that inevitably happens when the drum expands.

Long stroke chambers will provide higher pushrod force at or near the recommended re-adjust position compared to conventional chambers. A good example of this is the service side of the MGM TR303OLP3 model chamber that delivers 2,700 pounds of pushrod output force at the $2\frac{1}{2}$ " re-adjust point, which gives the driver the necessary stroke to compensate for system deflection in brake-related components and overheated brakes.

NHTSA ruled on July 11, 1996, that retrofitting long strokes would not require any re-sizing of the braking systems air tanks. The brakes on non-drive axles generally require no modification either when retrofitting long stroke chambers. However on drive axles, brake chamber mounting brackets may need to be re-oriented to insure avoiding clearance problems between the slack adjusters and the axle housing. If you can fit a 36" chamber on your vehicle, you're ok with a type 30 long stroke chamber.

Long stroke chambers are now standard equipment on some truck and trailer models. It is also important to insure that trucks converted are identified by a special sticker posted on the vehicle, in a conspicuous place, to alert inspectors of the information concerning long stroke chambers.