

Anchor brake shoe

Product Bulletin January 2006 Brake Shoe Key Proper Installation

Anchor brake shoe keys designed for Interchange Service are made of spring steel. The force applied by the brake shoe key to retain the brake shoe into the brake head is a function of the spring constant and the location of contact between the key and the brake shoe. In order to properly install the key and provide the retention force required to prevent any vibrations of the brake shoe during use, the keys have to be installed such that the top of the key is in contact with the top of the brake head (Fig. 1).



Figure 1 - X-section of brake shoe installed on brake head with a properly inserted Key.

Notice the position of top of the key, A, with respect to the arc on the key in the middle, B. With the key fully inserted, the arc on the key falls on the center of the brake shoe and provides the force required to prevent any vibrations that lead to accelerated wear of all brake components: brake shoes, keys and brake heads.

Anchor's engineering team has conducted extensive vibration tests, to simulate the movement of a brake shoe against the brake head in the field. With improperly installed keys, when the top of the key is more than an inch from the top of the brake head, all shoes vibrated broke in the center with the steel fracturing at the key window location. The wear patterns observed were identical to the patterns seen on broken shoes collected from the field (Fig. 2).

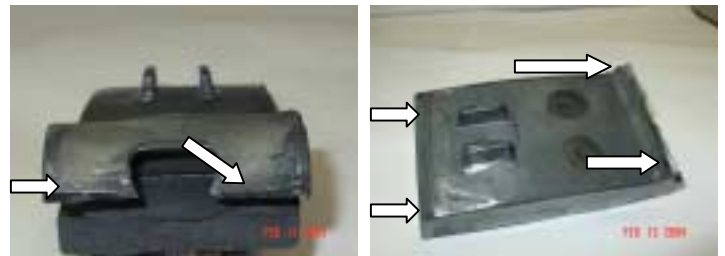



Figure 2 - Broken brake shoes due to improperly installed keys. Wear Pattern  evident on vibrated shoes similar to field samples.

With properly inserted keys no failures or wear marks were evident on the brake shoes, key or brake heads even at extremely high levels of vibration.

A properly inserted key will dramatically increase the life of all brake components: brake shoes, keys and brake heads. This will reduce costs associated with premature removal, and reduce future costly equipment repairs and down time!

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