



### **BRAKE DIAGNOSIS RECOMMENDATIONS**

Heavy-duty air brake systems are very important to proper operation of transportation vehicles worldwide. Closer inspection and adherence to guidelines are necessary to prevent failures in the field. Reducing the failures in the field starts with inspection and determination of needed services. Here are some recommendations for insuring that good methods are used for that inspection.

### **BASIC DIAGNOSIS OF TOTAL SYSTEM**

Before inspection, during a PM, the brakes should be diagnosed using a temperature-sensing device that will allow the technician to determine if the proper timing and balance are present. By measuring the brake temperatures, it can be determined which brakes are working the most and least. This specification is essential to any brake diagnosis. If this step is not performed, then brake life and safety can be overlooked, and proper maintenance cannot be performed. It is the basis for all other required parts replacement determinations. It is imperative to know this information before hand.

### **AIR SYSTEM DIAGNOSIS**

Air system diagnosis is essential to determine the safety and practical information on brake system timing and response when the brakes are being used in the field. Determining the amount of moisture in the air system along with any oil contamination is essential. Oil in an air brake system causes many problems, and improper braking is one of the most serious. Oil present in the air system will cause slow valve operation and in turn cause braking imbalance. Oil is also a common problem in most vehicles in determining when air dryer service should be performed. Moisture is often found before oil contamination is present. When there is more than four ounces of moisture in the wet tank, it is an indication that oil is on its way. Oil can be avoided if each vehicle system is watched carefully for moisture content. When it is found to have too much moisture, 2 ounces if drained each day, then it can be considered to be a candidate for dryer service to prevent the oil from advancing.

### **WHEEL END INSPECTION**

Wheel end inspection is usually a cursory inspection of the thickness of the lining remaining at each brake shoe table. This is as far as it goes during brake inspection. When the vehicle is brought in for friction material service, all of the other components must be checked and certified to be within specifications.

### **BRAKE LININGS**

The new brake linings must be of the type and specification designed for use on the axle rating or better. Rating systems such as EE, FF, or GG are not definite rating systems. It is recommended to determine the ability of a lining to provide safe and effective stopping that is the same on each brake application with the least amount of swell and shrinkage over the lifetime of its operation. When the technician looks at the old, removed lining, it tells a story regarding contact, overheating and spider alignment. Careful training of all technicians should be done so that each can read the conditions found and determine a course of action to be taken during re-line. After the brake relines, new linings must also be checked, to determine if the maximum amount of lining is touching the brake drum during brake application. Lining that has an inadequate amount of contact will create more heat in a concentrated area and thus shorten the lining's life.