

**Bulletin BPI 03-13**

**Subject:** Infrared Thermometer used to evaluate brake system efficiency.

**Vehicle Involved:** All Vehicles

**Condition:** Brake temperature test is a great method for locating dragging, inoperative brakes, pulling problems and evaluating front to rear brake balance.

**Repair Procedure:** Braking efficiency is dependent upon heat. Heat is not the enemy. In fact as heat increases, it absorbs the Kinetic energy of the vehicle. Braking principals define that once in motion an object tends to stay in motion. In a vehicle this motion is aided by the engine, weight and velocity of the vehicle. This is called Kinetic Energy. Kinetic energy must be changed into heat energy. Friction materials do this by causing heat. In essence, Braking is a controlled way of applying friction.

The flip sides to heat are the problems associated with braking systems. Heat is necessary for friction materials to do their job. With time, miles, environment and driver habits heat eventually degrades the rubber seals and components that are utilized within the braking system.

Infrared thermometers can be an excellent method for determining brake related problems. Temperatures are measured and recorded at each wheel. Technicians use this information to evaluate temperature variation from side to side and front to rear. A brake temperature test is invaluable for locating dragging, grinding, or inoperative brakes. The most obvious symptom is poor front pad life. A temperature comparison front to rear identifies this condition every time. (Rear brakes not contributing)

Additionally tire temperatures can be evaluated. Alignment / camber issues, and weight distribution can be determined through temperature readings. These issues often times are not evaluated, and the braking system receives the blame for the pull.