



TECHNICAL BULLETIN

JUNE 2022

IR Temperature Measurement

With the advent of non-contact infra-red (IR) heat measurement technology IR Temperature Guns are now an affordable technology that can help you determine if your vehicle has any potential braking issues.

The IR Heat gun is a useful tool for diagnosing brake issues quickly without the need for brake tear down.

Before we discuss brakes, there are a couple of measurement topics:

IR Temperature Gun

Most commercial units are calibrated and operate with a simple point and click temperature measurement. Ensure the unit is capable of measuring in the range of 0-500°C, this will cover most automotive applications.

Temperature Measurement

Confirm the distance from the item you are measuring is within the range of the device and keep this consistent if measuring multiple items for comparative purposes, ie. brake assemblies.

As a guide 15-20cm is ideal – confirm with the manual for your unit.



Brake Check Techniques

The most important part about brakes in commercial vehicles is distributing the brake load evenly across all axles within the combination, this allows each of the brake assemblies to “do their share of work” and prevent overloading of the other brakes which can lead to excessive heat, brake wear and excess mechanical stress.

A general guide to checking your combination is operating at its optimal condition:

Drive the vehicle (preferably loaded) and perform approximately 10 stops from 80-60 km/h to warm up the brakes.

Stop the vehicle and measure and record the brake temperature at the brake drum/disc, usually the center of the drum or disc face ensuring the same location for all brakes.

Compare the temperatures across the brakes, if the temperature between brake varies > approx. 50°C then inspect the brake operation, adjustment wear etc.

Tips for Measurement

When “heating the brakes” the ideal temperature is 100-200°C this will clearly show any differences in operating performance.

Measure the brake temperatures on one side of the vehicle at a time, brakes by nature cool quickly by measuring brakes close to each will give best results.

Note – it is not the absolute temperature we are interested in but the difference between brakes.

Measurement example:

Axle	LHS °C	RHS °C
Axle 1	125	110
Axle 2	70	95
Axle 3	115	89

Analysis

In this example a tri-axle trailer, measurements were taken on each side, so we need to compare each wheel side, ie. LHS Axle 1,2,3.

RHS

Temperatures show some variation, can be attributed to mechanical variation and measurement technique, no action required.

LHS

Axle 2, 70°C is significantly lower than Axles 1 and 3 (125°C, 115°C), further investigation is needed on this brake.

BENDIX INFRARED THERMOMETER

Measure the temperature of hot, hazardous or hard-to-reach objects without contact safely and quickly.

For further details please contact the Bendix Brake Advice Centre on 1800 819 666, 8am to 5pm, Monday to Friday, or your local Bendix representative.

FEATURES

- Temperature range: -50~500°C (-58~1022°F)
- Repeatability: 1% of reading or 1°C
- Response time: 500 mSec, 95% response
- Emissivity: 0.10~1.00 Adjustable (0.95 Preset)
- Distance to Spot size: 12:1
- Typical battery life: 12 hours
- Accuracy: 0~500°C: ±1.5°C, -50~0°C: ±3°C



FOR MORE INFORMATION

Freecall the Bendix Brake Advice Centre on 1800 819 666 (8am-5pm Monday to Friday EST) or +61 3 5327 0211 from overseas.
 brakeadvicecentre@bendix.com.au
 bendix.com.au or bendix.co.nz



*Bendix brake components are appropriate for the purpose intended and if installed by qualified staff, to the vehicle manufacturer's specifications, can be used in logbook servicing.