Pneumatic Brake Test Instrument

Model PBTI

- Includes brake pedal actuator, force transducer, displacement potentiometer
- Easy to handle package contains nitrogen tank, plumbing, control electronics
- Compatible with FMVSS 135 and NCAP testing
- Very rapid apply rate (<10ms rise time, depending on model and installation)
- Applies "step input" for system response time measurement
- Adjustable apply force; Variable apply rate option available
- May be triggered manually or by external sensor

Description

Designed to be used as a development tool for FMVSS 135 and NCAP Stopping Distance testing, the *Pneumatic Brake Test Instrument (PBTI)* measures brake system response during in-vehicle or lab testing.

The standard brake actuator is optimized for rapid rise times up to a 500 N limit as specified in FMVSS135. Optional actuators can be used for higher forces as might be required for ABS tests, or FMVSS105 tests, or any lab or road test requiring a constant brake apply force. Other options include control over the apply rise time. Note: Options and other modifications can increase the apply rise time.

The operator can fine-tune the actuation force by regulating the pressure of nitrogen delivered to the actuator, allowing repeatable, consistent stops. The *PBTI* can be triggered manually or remotely through an optional photoelectric switch. The *PBTI* will stay activated only while the operator depresses the trigger. Once the trigger is released the actuator returns to its original position.

Analog force and pedal-travel signals are obtained through a strain-gaged transducer (Michigan Scientific Brake Pedal Force Transducer) and a Linear Potentiometer respectively; both of which can be connected directly to a portable data acquisition system

The *PBTI* can be adjusted to accommodate many different foot wells for passenger cars, trucks and SUV's. The Michigan Scientific Brake Pedal Force Transducer can also be adjusted to accommodate many different styles of brake pedals.

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Specifications

PARAMETER	SPECIFICATION
Apply Rise Time	<10 ms depending on system tested
Pedal Force Range	500 N (112lb) Max or 1000 N (225lb) Max
Maximum Rated Transducer Force	2224 N (500 lb)
Force Linearity	0.1% of full scale
Force Hysteresis	0.05% of full scale
Actuator Travel	177.8 mm (7 in)
Actuator Travel Linearity	1% of full scale

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