

## PEDAL FORCE TESTING

INDUSTRIES: AEROSPACE / AUTOMOTIVE AND VEHICLE

### SUMMARY

#### Customer Need / Challenge

To meet certain vehicle safety protocols, pedal force must be measured and recorded. In order to quantify the quality of the braking system, the relationship between pedal force and braking force at the axle must be ascertained, either during an on-road stopping test or in a simulated indoor environment with a dynamometer, where pedal force can be measured.

#### Interface Solution

Using an Interface Model BPL Pedal Load Cell along with the Model Wireless Telemetry System (WTS) provides a solution that measures the force being applied during the use of a brake pedal cycle. Utilizing wireless telemetry with the following Interface components, the valuable data can be displayed and/or recorded in real time using a PC and/or a handheld receiver depending on the requirements and preferences of the customer.

#### Results

The relationship between pedal force and axle braking force is measured and recorded to ensure compliance with required safety regulations. Any necessary calibrations, adjustments, or modifications to the braking system can be assessed by whether the results of the brake testing fall within appropriate ranges of a pre-determined testing protocol.

### MATERIALS

#### Interface Products

- Model BPL Pedal Load Cell (mounting equipment - straps included)
- Model WTS Wireless Modules:
  - Transmitter Module (WTS-AM-1)
  - Handheld Module (WTS-BS-1)
  - Base Station Module (WTS-BS4)

#### Alternative Setup

- Model 9330 High Speed Data Logger
- Portable Display (wired in place of WTS)

#### Additional Materials

- Add mating connector or module to load cell cable
- Setup and scaling of instrument
- Customer PC

### HOW IT WORKS

1. Model BPL Pedal Load Cell Load is installed onto pedal so that the output cable to the transmitter has clearance from any snagging throughout the entire pedal pumping cycle.
2. Mount the transmitter (WTS-AM-1, WTS-AM-2, or WTS-AM-3) in a safe location so that there is enough slack in the cable for a full pedal pumping cycle.
3. Using WTS Wireless System with the receiver (WTS-BS-4), force readings from the load cell can be displayed, logged and graphed directly on a PC. To do so, plug in the USB from the receiver to the PC, install the T24 Toolkit software, and finally pair the transmitter to the receiver as outlined in the documentation with the software.
4. Using WTS Wireless System with the handheld receiver (WTS-BS-1), force readings from the load cell can be displayed on a wireless battery powered receiver.

