



# HAND HELD WHEEL END TESTER

## About the Client

The client is a manufacturer of braking systems for rail and commercial vehicles. The client is also involved in research and manufacturing aspects of products that offer outstanding safety, quality, reliability, customer benefits and resource-efficiency.

## Summary

To improve its manufacturing quality, company wanted to develop a portable, rugged equipment for industrial use, with longer battery life; Wheel End Tester (WET) which is an equipment that measures quality of the Anti-lock Braking System (ABS) at the end line of manufacturing.

## The Challenge

The test device has to be lightweight, portable with long battery life and easy to use.

Device has to run different types of test and display the test result and Visual indication (LED) for Failure or Success of test.

Device should also have in-built printer which can instantly print test results.

Device has to be rugged for industrial environment.

Device should have the ability to store the test data in pen drive, once connected.

## Our Solution

A hand held device which takes input from ABS sensor and analyze that data to detect broken teeth of the toothed wheel and axial alignment of the toothed wheel and generates a message on LCD screen, it also can be printed with an inbuilt thermal printer. It also has LED indication for each of the test or defect detection and input buttons for initial calibration.

## INDUSTRY

Automotive

## KEY CHALLENGES

- Acquire Sensor Data
- Sensor Data Analysis
- Remote Configuration

## SOLUTION

- Rugged Hand held Device
- Report Generation
- Printable Test Report
- Report accessibility through Network

## Benefits

- Portable
- Lightweight
- Long Lasting Battery Life
- LCD display





Hand held test device consists of test configuration utility, where user can create different configuration for each model of the toothed wheel using GUI based software from remote computer directly connected using Ethernet. Device includes features of storing configuration details and load the configuration at each reboot.

Device can run below mentioned tests:

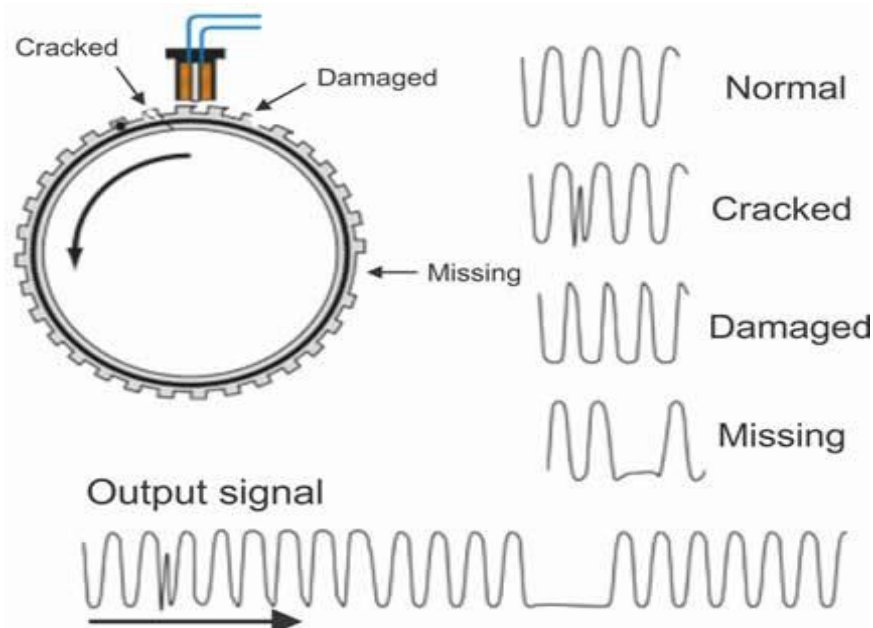
Damaged teeth detection and axial run out tests.



Damaged teeth detection test ensures Device Under Test (DUT) will not have any broken teeth so that ABS System can work precisely and secondly axial run out test ensures axial alignment of the wheel.

Before running above two tests, device needs to ensure Sensor's connection. To ensure that, device tests for Resistance and Air gap.

Resistance test ensures sensor is properly installed and Air gap test ensures acceptable distance between DUT and Sensor so that ABS Systems' quality test will have accurate results.





- Low cost and time saving solution.
- Significantly reduces human efforts during testing.
- User configurable test parameters.
- Test report can be transferred to remote computer.
- Instant printing of test report.
- Portable, Lightweight and 2 Days battery life.
- Automated and Manual testing mode.
- LED indication for test success or failure.

OSPL

## Configuration Setup

Number of Teeth

Number of Rotations

Resistance Lower

Resistance Upper

Wheel Diameter

## Benefits Against Alternatives

- Portable design so user can easily carry test device to any Remote location for testing.
- Auto Test mode which runs required tests automatically.
- All necessary features are included for Test Automation.
- LCD enabled device for better control and view.

## Our Value Addition

Optimized Solutions has developed a stand alone, battery operated hand held device which can not only test ABS systems according to different DUT configurations but also has a GUI based software enabled real time report generation.