

Challenge

A manufacturer was experiencing problems with truck rear brake assembly: very small leaks where brake line fluid would leak out of the line were going undetected, leading to expensive repairs and high warranty costs. The manufacturer required a solution that would test the entire rear brake line assembly process for accuracy and quality while able to determine the root cause of the defects.

Solution

Sciometric resolved the problem by installing Sciometric's Leak Test Monitor to perform an accurate brake leak assembly test on the brake lines of vehicles. The system tests the brake lines, wheel cylinders and will detect leaks as small as three cubic centimeters per minute. The system simplifies the entire testing process with the included enhanced features, such as quick connect fixture to connect to the brake line, and a bar code scanner that scans the vehicle axle code and the brake part code. After the system has scanned the codes, it automatically verifies that they are valid and compatible.

The system periodically performs an automatic on-line self-diagnosis to verify the functionality and accuracy of the entire leak testing unit. Statistical Process Control (SPC) is automatically performed on the leak rates of the axles during run-time, which updates daily averages, Cpk, standard deviation, X bar, range charts and histograms. All of the test data is saved in a central database on a daily basis, which can be accessed at any time for future analysis. The manufacturer can now trace each axle to verify its leak rate, determine root cause, time and date of assembly and any message relating to the axle

LEAK TESTING AND PART CORRELATION KEY FEATURES

- Axle and brake code cross verification
- Tests 100% of assembled parts
- Automatic APC analysis in leak rate
- Bar code scanning for easy identification of axle and part tracking
- Uses signature analysis for most accurate verification
- Complete traceability: data, including signatures, are automatically stored in a central database and cross-referenced by serial number(s)



the science
of quality

Results

By implementing Sciometric's leak test monitoring technology the manufacturer was able to objectively identify previously undetectable brake line defects prior to shipping, identify defect root cause, while providing the ability to demonstrate proof of quality and traceability of the brake line assembly process.

SCIOMETRIC SOLUTIONS

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