

# Leak test of wheel hub assembly

A search for fast cycle time *and* repeatability.

An automation integrator working with a manufacturer of automotive wheel hubs was looking for the best leak tester for a new production line. The test was needed to find any parts with out of spec dimensions that would cause leaks around the inner channel of the wheel hub. A cycle time of 12 seconds for the test and demonstration of the leak tester's repeatability were key requirements in their search.

To prove that Sentinel 3520 was the right leak tester for the job, a trial was conducted for a flow-based test using air as the medium. The IP65-rated 3520 module was connected via Ethernet cable to the Sciometric sigPOD to enable the tester to be close to the part under test, reducing hose length to minimize system volume, and placing the controller in a convenient position for the operator.

Test pressure was set at 14.5 psi. Sciometric's PSV software, installed on a standard computer located in an operator-friendly location, was used as the controller for the test and to provide pass/fail determinations.

The leak specialist optimized the fill, stabilize and test times resulting in a total cycle time of 4 seconds.

Fill	1.3 seconds
Stabilize	1.2 seconds
Test	1.0 second
Exhaust	0.5 second
<b>Total</b>	<b>4 seconds</b>

Despite doing the total test in a third of the targeted cycle time, the test showed excellent repeatability, as is shown in the figures on the next page.

The manufacturer and integrator chose the Sentinel 3520 not only due to the evidence that it would meet the cycle time requirements for productivity on the assembly line but also because of their confidence that they could rely upon it for accurate testing.



3x faster – from 12 seconds down to 4

- Proven repeatability
- In-depth analysis of data

# Sentinel 3520 Application Note

Figure 1 shows the tight cluster of flow waveforms for each tested part while figure 2 provides a visual representation of the difference between good and defective wheel hubs.

*All of the data and waveform graphs shown were created from Sciometric's QualityWorX data management and reporting system.*

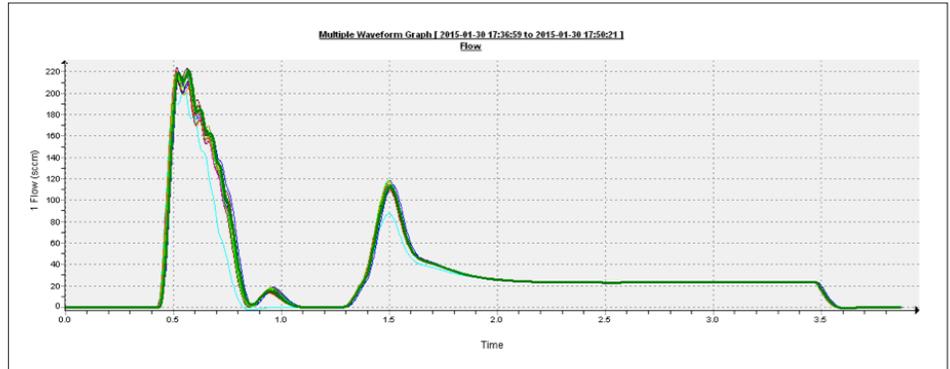


Figure 1: Flow waveforms demonstrate repeatability.

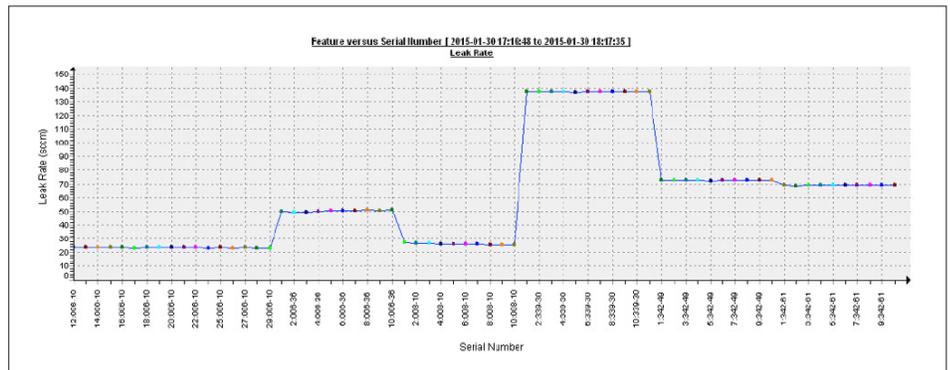


Figure 2: Demonstrates the leak rate and clear separation of good and defective wheel hubs.

