

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 Sciometric's 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 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 Sciometric 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

Total=	4 seconds
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3X Faster
From 12 seconds
down to 4




Proven repeatability



In-depth analysis
of data

reinventing
leak testing

Despite doing the total test in a third of the targeted cycle time, the test showed excellent repeatability. 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.

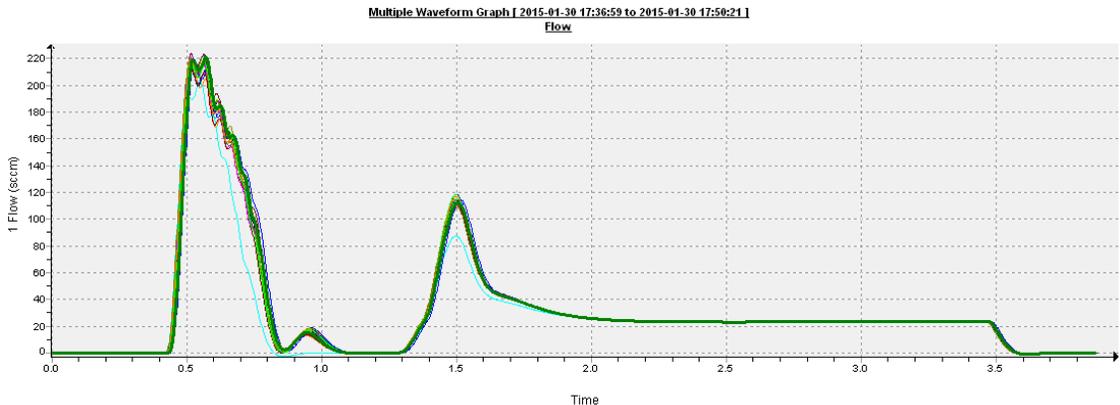


Figure 1: Flow waveforms demonstrate repeatability

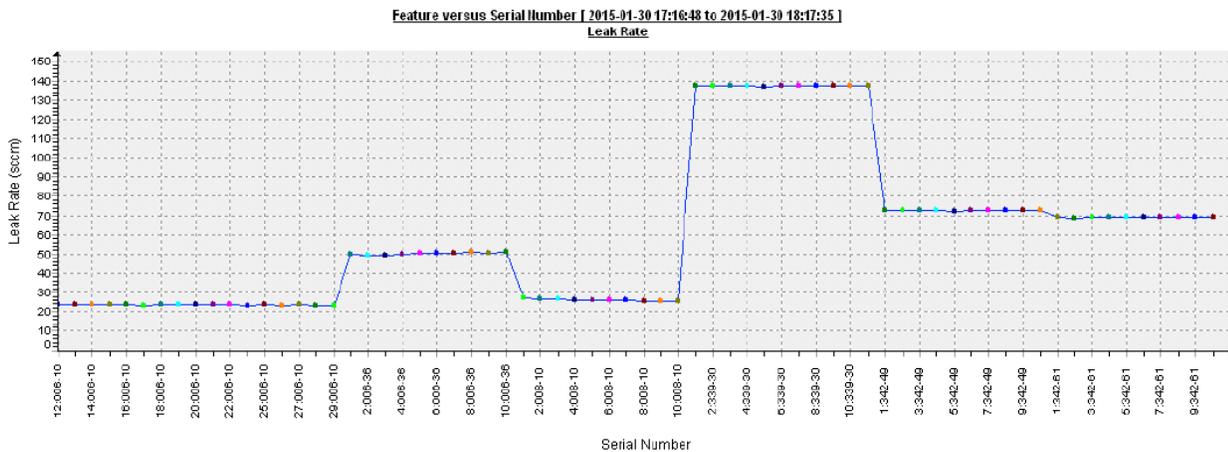


Figure 2 demonstrates the leak rate and clear separation of good and defective wheel hubs.

The manufacturer and integrator chose Sciemetric based not only upon the evidence that the 3520 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.

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

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