



# Sentinel® 3520

LEAK AND FLOW TEST INSTRUMENT FOR  
CHALLENGING LEAK TEST REQUIREMENTS



# Sentinel 3520: Your Solution for Challenging Requirements in Leak Test

When you're struggling to balance accuracy, cycle time and Gage R for a complex leak test, the Sentinel 3520 is up to the challenge. The Sentinel 3520 can test parts with volumes of less than 1 cc and up to 1,000,000 cc, variable volume parts, and parts requiring temperature compensation—all while delivering the speed, accuracy and repeatability manufacturers require. This leak test instrument also offers advanced configurability to meet your requirements using Sciometric's Process Signature Verification (PSV™) software, accessible at the station using the sigPOD controller.



## A Flexible Solution for Many Applications

The Sentinel 3520 solves leak test problems commonly experienced in the following applications:



### Automotive & Off-Highway

- Engine assemblies including blocks, cylinder heads, valves
- Transmission including casting, seal integrity, cavity to cavity integrity
- Drivetrain including gearboxes, axle assemblies
- Components like HVAC, fuel tank and related components, brake calipers
- Electric vehicle batteries (assembly, packs, etc.)



### Industrial

- Tanks and large vessels
- Cylinder and valve assemblies
- Hydraulic assemblies



### Medical

- Sterile medical device packaging
- Pressure cuffs/compressible limb sleeves
- Medical components with very small internal volume including pacemakers, syringes and catheters



### Consumer Goods

- Printer ink cartridges
- Consumer electronics
- Other consumer goods with very small internal volume

## Test Types

Depending on your test needs, the Sentinel 3520 can be configured to meet your requirements for pressure range, flow meter range and flow configuration. The Sentinel 3520 supports the following test types:

- Pressure/Vacuum Decay: Leak Standard
- Pressure/Vacuum Decay:  $\Delta P$
- Pressure/Vacuum Decay:  $\Delta P/\Delta T$
- Occlusion: Pressure or Vacuum
- Ramp to Proof: Pressure (Burst Test)
- Pressure Verify
- Customizable Pressure/Flow Sequencing
- Mass Flow (Flow Models)
- Test Volume Verification (Flow Models)

Performs in the  
most challenging  
leak test situations

TESTING LARGE  
PARTS, UP TO 1000L



TESTING VARIABLE  
VOLUME PARTS WITH  
MULTIPLE CAVITIES



COMPENSATING FOR  
TEMPERATURE  
FLUCTUATIONS  
AFFECTING TEST



ACHIEVING BALANCED  
ACCURACY, CYCLE  
TIME, AND GAGE R



## MEET THE DEMANDS OF YOUR PRODUCTION LINE

The Sentinel 3520 was designed to help manufacturers meet their goals for production line performance, such as improving cycle time, repeatability, traceability and supporting effective defect detection and continuous improvement.

The instrument is controlled by the sigPOD (4 leak channels per controller), offering visibility into each test at the station. The sigPOD runs PSV software which measures thousands of datapoints during each test for more accurate pass/fail decisions. This software also makes it easy to visually analyze test data right at the station.

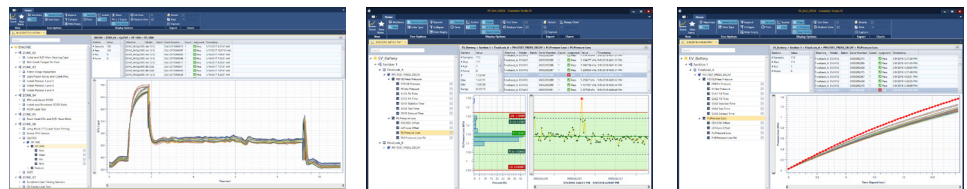
The Sentinel 3520 is ideal for challenging leak test scenarios where manufacturers often experience problems, such as large volume leak test, small volume leak test, variable volume parts, and more.

### Powerful performance driven by unique features

- Pressure control resolution down to  $\pm 0.000,01$  psi
- High flow fast fill up to 300 SLPM
- Flow measurement down to  $\pm 0.2$  % of full scale
- Test parts from 1 cc to 1,000,000 cc in volume
- Separate pneumatics from controller, enabling placement of system close to the device under test, reducing hose length and minimizing other factors that affect accuracy
- sigPOD controller equipped with PSV software, using digital process signatures for advanced test analysis
- Use the sigPOD controller to conduct an additional in-process test such as press-fit, weld or dispense monitoring

### Improve your leak test—and your line—with data-driven insight

When dealing with challenging test scenarios, data allows you to move past guesswork and make informed adjustments to ensure an effective and accurate test. The Sentinel 3520's data solutions are designed to work for you, enabling you to resolve issues faster and proactively manage production. They are scalable, from quick visualized insights at the test stand using PSV software, to deeper analytical capability to collect, store and analyze data across stations or the plant with QualityWorX and Sciometric Studio.



Data visualization and analysis with Sciometric Studio

This advanced capability has allowed manufacturers across the globe to make the following improvements on the line—typically delivering ROI in 4-6 months:

- Achieve reliable limit setting using data to visualize impact of adjustments
- Hit targets for Gage R and cycle time requirements
- Identify the anomalies affecting product quality
- Compare stations and enable continuous improvement
- Access full traceability and ensure quality assurance



## Key Specifications

<b>Test pressure accuracy</b>	$\pm 0.25$ % of full scale, best-fit straight line
<b>Test pressure resolution</b>	Down to $\pm 0.000,01$ psi
<b>Flow accuracy</b>	$\pm 1$ % of reading when value is $>20$ % of full scale $\pm 0.2$ % of full scale when value is $<20$ % of full scale
<b>Pressure ranges (psig)</b>	12 psig vacuum to 95 psig
<b>Flow ranges</b>	0 to 30 SLPM
<b>Volume ranges</b>	1 cc to 1,000,000 cc
<b>Fill rate</b>	20 SLPM (low volume manifold) to 300 SLPM (high volume manifold)



Please see the Sentinel 3520 datasheet.

## Turnkey and custom stations

The Sentinel 3520 can also be deployed as part of an all-in-one turnkey setup for your production line. The Model 3675 is a turnkey leak station that comes with everything you need to perform your leak test, with optional accessories available to configure the station to meet your needs. Full custom solutions are also available; discuss with your sales associate for more information.



For more information on the Sentinel 3520, please visit  
[www.cincinnati-test.com/sentinel-3520](http://www.cincinnati-test.com/sentinel-3520)

