



Traceability and Manufacturing Analytics

BRINGING INDUSTRY 4.0 TO THE SMART
FACTORY WITH QUALITYWORX



The promise of Industry 4.0 is top of mind for all competitive manufacturers today – a connected factory in which data collected from tests and processes around the plant is accessible, organized, stored, archived and able to be visualized and analyzed. Problems are solved when they occur, not at end of line. Root cause identification and process optimization happen in hours – not days or weeks.

QualityWorX makes that promise a reality. From providing complete traceability data and proof of compliance in an easy to access format to enabling continuous optimization and quick response to issues affecting testing, QualityWorX brings Industry 4.0 to all the in-process tests on your production line.

QualityWorX is used by manufacturers worldwide to harness their industrial data for fast, reliable decision-making.

PUT YOUR DATA TO WORK FOR YOU



Find answers
to the causes
of defects



Optimize tests
to meet your
quality and yield
objectives



Gain visibility
into tests for
continuous
improvement



Respond quickly
to the need of
the hour

Introducing the QualityWorX CTS DataHub

Start using your leak test data now!

The QualityWorX CTS DataHub is your first step to an Industry 4.0-driven environment. It's a turnkey solution that includes a host PC and all the required software. It collects data from multiple CTS leak test instruments and stores it on an industrial computer. The same PC provides advanced analytics with Sciometric Studio to make use of the data to provide visibility into the leak test.

KEY FEATURES



Connect multiple leak test instruments

- Instruments can be part of the same station, or in different sections of the manufacturing process



Easy setup: Start collecting and analyzing data in minutes!

- No complicated database
- No software to install
- Full turnkey package includes PC



All test and part data, including digital process signatures

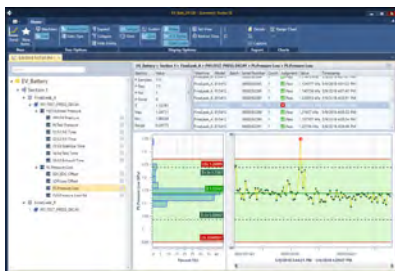
- Provides full traceability
- Depth of data enables optimization of the test



Data and trend analysis with advanced analytics software

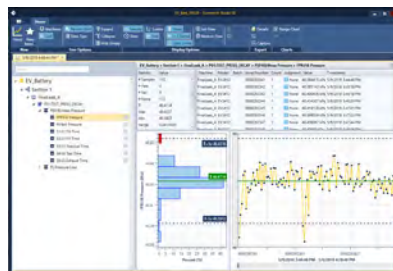
- Visualize data: digital process signatures (waveforms)
- Look for trends, compare data and get answers

Sample leak test applications for the QualityWorX CTS DataHub



Data-derived test limits

Analyze data to visualize the right test limits. Find opportunities for reducing cycle time without affecting quality.



Report on the health of test, results

Demonstrate repeatability, improve Gage R.



Traceability

Provide traceability and demonstrate proof of compliance by part.

From leak test to any test

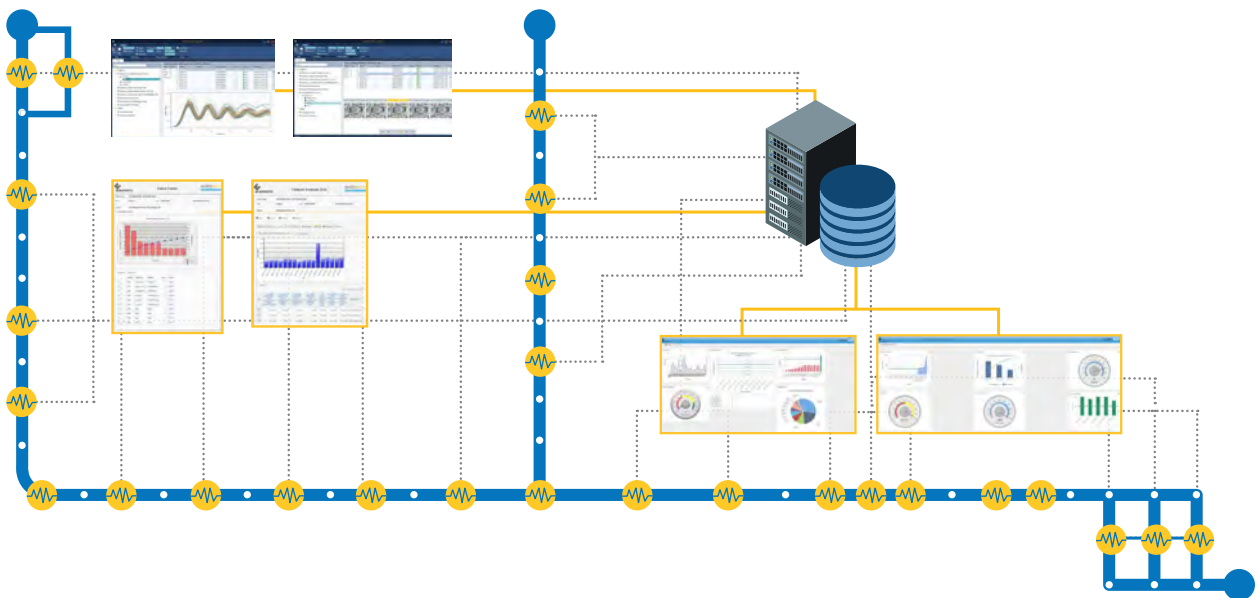
Expand the potential with a QualityWorX Enterprise solution

Today's plants can contain hundreds of in-process test stations, from nut runners and machine vision to welding and dispensing. When it comes to analyzing data for improved production and quality, why stop at leak test?

Talk to us about how you can scale up to a QualityWorX Enterprise solution to collect and analyze data from more instruments and other stations across the production line. We offer connectors for a range of manufacturing tool and software providers including:

- Popular PLCs
- Test systems from CTS, Sciometric and other vendors
- Leading brands of rundown tools
- Other tools, such as welders
- Machine vision systems
- End-of-line tests (hot test, leak test, cold test)
- Data acquisition products

Using QualityWorX and any connectors your production architecture requires, you'll be able to create a full part history while correlating data from across the plant to learn why issues are occurring.



CTS and Sciemetric

Helping manufacturers turn data into insight

Production lines today are Big Data generators. Dozens of databases are filled with terabytes of information collected every second of every day. So how do you know when you have the right data and that you'll be able to use it quickly when the need of the hour arises?

QualityWorX is a suite of data management and manufacturing analytics software that enables you to consolidate data from across your plant – or even your entire enterprise – in a centralized location for access by anyone who needs part data to make decisions. It includes advanced analytics tools that allow you to visualize all types of data, including digital process signatures, scalar datapoints, and images from machine vision systems. You can look for trends and compare data, and you can drill down to an individual part's history to trace its trip through multiple stations. The root cause of an issue – formerly a needle in a haystack – becomes much easier to pinpoint and therefore, to resolve. Best of all, you'll be doing this in production real-time, so you can minimize the impact on productivity.

The QualityWorX suite includes these elements:

1

QualityWorX Database

A fast, efficient Microsoft® SQL Server® database stores complete, detailed information on virtually all manufacturing data on a part-by-part basis, organized by serial number. That means, when it's time for analysis, you can see every stage a part went through on the production line, giving you faster root cause assessment and issue resolution and full traceability.

2

QualityWorX Dashboard

This is the complete reporting interface for QualityWorX. Anyone who needs to make quick decisions about production or resolve quality or performance issues can create highly visual displays of key performance indicators and drill down to part by part detail to isolate problem parts and identify root cause.

3

Sciemetric Studio

This advanced manufacturing analytics software lets you easily visualize, review, report on, compare and analyze part data to improve quality and yield on the production line. With a range of features and capabilities, Sciemetric Studio was designed to provide a quick path from analysis to answer.

qualityworx

See what leading manufacturers are achieving with QualityWorX

INCREASING FIRST TIME YIELD



WHO

International agricultural machinery manufacturer.

PROBLEM

Generated plenty of part data, but couldn't put it to practical use, to solve problems and increase FTY.

SOLUTION

1. Convert all data into a common format.
2. Eliminate data silos and consolidate into one database.
3. Capture digital process signatures for complete view of a process.

RESULT

Manufacturer is resolving quality issues in hours instead of days or weeks.

BALANCING PRODUCTIVITY AND QUALITY



WHO

One of world's largest automotive parts supplier.

PROBLEM

Wanted to reduce cycle time but achieve a specific Gage R of 10%.

SOLUTION

1. Use historical data to assess potential changes without impacting production.
2. Determine optimum leak test time within 10% Gage R – with no guesswork.
3. Consider tradeoff between cycle time and repeatability to arrive at a data-driven decision.

RESULT

Cycle time has been reduced by half with the same Gage R of 10%.

NARROWING DOWN TO SELECTIVE RECALLS



WHO

A major automotive manufacturer.

PROBLEM

Faced a costly mass recall when an engine oil problem was discovered in a customer vehicle.

SOLUTION

1. Compare digital process signatures from bad engine vs suspect parts using manufacturing analytics.
2. Adjust the process and tests to avoid the problem in the future.

RESULT

Manufacturer found only 7 other engines that fit the profile and identified the root cause in hours. Recall costs of over \$5M were avoided.

DRAMATICALLY SPEEDING UP LINE LAUNCH



WHO

A global manufacturer.

PROBLEM

Needed to lever working production lines to get new lines launched faster on a global scale.

SOLUTION

1. Use data to make correlations between stations and lines for consistency and faster time to market.
2. Conduct experiments offline to create tests that will catch defects.
3. Apply data-driven insight to make reliable decisions in a worldwide enterprise.

RESULT

Manufacturer is launching lines four times faster and achieving \$4M savings per line in capital costs alone.



BETTER TOGETHER

CTS, CTS-Schreiner and Sciometric are subsidiaries of the TASI Group. In November 2017, the three companies came together within TASI's Product Integrity Group. We are unified by the fact that we are "Better Together". Together, we deliver the broadest leak test portfolio in the industry. Together, we serve our customers through a global network of offices and partners. Together, we will harness the power of the Industrial Internet of Things and bring all of its potential to industrial companies worldwide.



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