Advanced Manufacturing Process Analysis Software

Improve manufacturing quality, yield, and profitability

SCIEMETRIC®


Quick.
Time to

Introducing QualityWorX®

The speed with which today's manufacturers can address quality issues and improve productivity provides a distinct competitive edge. Sciemetric's proven QualityWorX® software delivers real-time information to enable manufacturing managers to make faster, more informed decisions about their manufacturing processes.

QualityWorX® automates the storage, retrieval, analysis, and reporting of test and assembly result data for discrete manufacturing. Production data, including test operations, status results, feature results and waveforms, are transferred from a Sciemetric test system to QualityWorX®.

Transform raw test and process data into visual, actionable information to help you:

1. Confirm "on spec" quality to management and your customers;
2. Accelerate the launch of new production lines;
3. Maximize yield; and
4. Reduce the impact of quality spills.

react.

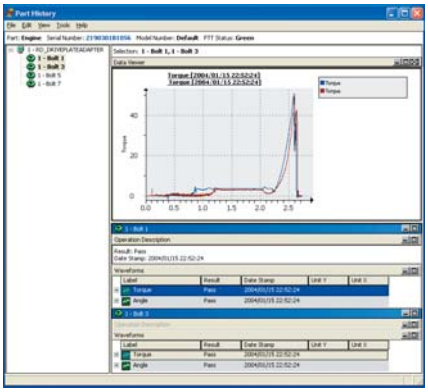
The Benefits of Using QualityWorX

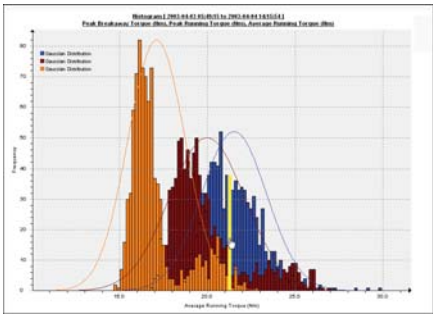
QualityWorX® is the best software to analyze your manufacturing process to reduce costs and improve manufacturing quality and yield.

1 Confirm "On-spec" Quality

There is an ever-increasing need to demonstrate compliance with government regulations, standards adherence and to confirm quality meets customer specifications. QualityWorX reporting turns raw data into actionable graphical information and reduces the time users need to spend retrieving and manipulating raw data. The information is presented in easy-to-understand formats enabling quick, fact-based decision-making.

- Prove "on spec" quality compliance to customers and provide complete test records on demand.
- Display and communicate quality improvement opportunities.
- Demonstrate adherence to QS9000, ISO/TS 16949 and other quality standards.
- Demonstrate compliance with government regulations.
- Validate the ROI and improve management visibility for quality programs such as Six Sigma.





A variety of report options are available to provide the level of detail required. Two examples are part history by serial number reports (screen shot at left) *or a histogram that visually highlights the distribution of defects* (top).

2 Accelerate the Launch of New Production Lines

The advanced analysis and visualization features of QualityWorX can be used to develop tests and set optimal test limits to accurately and repeatedly sort "good" parts from "bad" parts. Unique to QualityWorX, the complete test waveforms can be used to prototype test recipes for new test systems in a minimal amount of time. It also requires fewer parts for test development and production readiness testing. This greatly decreases the amount of time it takes to get a production line to full production readiness.

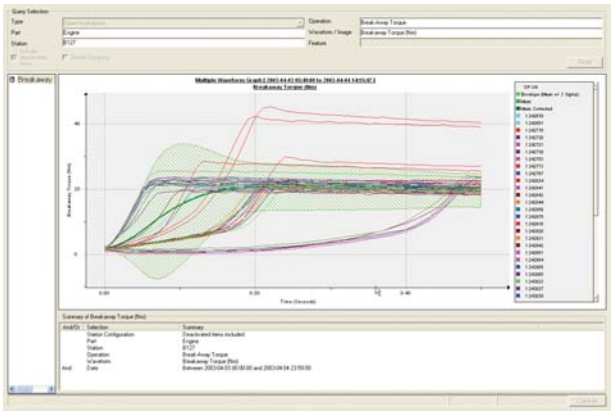
Launch times for one leading automotive manufacturer are now four times faster following the implementation of QualityWorX, enabling them to get to market faster with their new products.

3 Maximize Yield

Use QualityWorX to *quickly identify the root causes of quality issues* affecting yield. Storing and analyzing all test waveform results from a test system is critical to timely and accurate root cause determination. This information empowers manufacturing personnel to take corrective action and prevent the same defects from reoccurring. Reporting and analysis features such as the Failure and Defect Pareto enable you to clearly identify the top defect priorities to address while Trend Analysis allows you to correlate data from across the line and accurately identify the bottlenecks.

QualityWorX delivers much more advanced analysis to optimize yield:

- Compare specification limits to control limits to ensure the theoretical matches the actual, which will *eliminate false rejects and false passes*.
- Use the SPC to predict the issues that will cause defects.
- Evaluate the impact of test changes before implementing in live production with QualityWorX's sophisticated test modeling functionality.



The powerful What If™ analysis functionality empowers users to determine the effect on yield of proposed test changes, such as limit changes, on real historical test result data before implementing the changes on live production. In this example screen shot, all the waveforms within the green envelope would have passed and all the waveforms outside the envelope would have resulted in failures as a result of a change to the test limits.

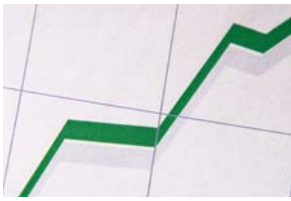
4 Reduce the Impact of Quality Spills

Due to a lack of specific and detailed data, manufacturers sometimes have to undertake expensive and public mass recalls when defects are found post-shipment. Manufacturers using QualityWorX, however, can limit the recall to only the affected units and respond quickly to minimize quarantine time.

First, QualityWorx helps to identify the cause of the defect by analyzing data collected from the production floor, searching for subtle anomalies in the process signature that indicate the fault. Then it pinpoints the specific parts affected through advanced test modeling that compares data for all the potential affected parts to the known problem. *For one manufacturer, it meant reducing a recall of 10,000 suspect parts down to 7.* Plus the insight gained during this process is applied in the test stand to avoid the defect in the future.

Quality Improvements

How QualityWorX Works for You



Test Engineers / Quality Managers

Improve productivity and effectiveness

- QualityWorX allows Test and Quality Engineers to focus on analyzing data instead of gathering it.
- Make informed decisions based on complete and accurate data.
- Use standard reports to enable more intelligent and quicker decision-making.
- Validate quality programs such as QS9000, Six Sigma and ISO/TS 16949.

Improve first time yield

- Discover trends and identify the root cause of failures.
- Determine the impact of specific failures on first time yield.
- Identify test limits that are too stringent.

Improve manufacturing quality

- Model a test algorithm (eg. changed limits, new test) to determine the effectiveness before implementing in production.
- Minimize the risk of defective parts being shipped due to lenient limit definition.
- Ensure processes are under control.

Manufacturing Managers / Plant Managers

Improve plant yield

- Use resources more effectively by focusing on the areas that will have the biggest impact on productivity.
- Reports provide clear metrics to measure performance.

Accelerate new product launches

- Provide proof of production capability and readiness.
- Know what your top barriers to peak productivity are.

Leverage subject matter expertise

- The remote access capability to QualityWorX® data enables time and travel cost savings by sharing plant and corporate expertise.

See how it can work for you: request a demonstration

For a demonstration via a Web conference or in person with a sales representative, contact us at 1-877-931-9200 (see our Web site for International contact information) or email us at inquiries@sciemetric.com.

Case Studies

A

Problem

- Several engine fuel rail leaks were detected at an automotive vehicle plant. This resulted in a quarantine situation of thousands of vehicles and production was slowed.

Action

- QualityWorX was used to examine original fuel rail leak test data for faulty components. It was discovered that all failures were marginal passes. The test limits being used on the test stand were those originally supplied by the part designer and had not been monitored after production startup.
- The QualityWorX What If™ functionality was used on one week of data to determine the impact of using statistically-based limits. QualityWorX' advanced analysis capability determined that tightening the test limits would have caught the faulty fuel rails and yet would have had a very minor impact on throughput.
- The new test limits were applied on the test stand and two months' worth of part data was retested to identify other suspect parts.

Result

- Three additional suspect parts were identified and their serial numbers provided to the final assembly plant. The plant located the suspect parts and production was immediately resumed at full speed since confidence in the parts was restored.
- Instead of a large-scale recall, the manufacturer was able to catch and eliminate a potentially critical safety issue prior to any end-customers receiving their vehicles.

B

Problem

- An engine manufacturer was experiencing a high reject rate at cold test due to faulty electronic throttles.

Action

- QualityWorX® was used to determine the root cause of the failures. The system identified stuck or sluggish throttles and false rejects as the two largest causes of failure.
- Test algorithms and limits on upstream test stations were adjusted accordingly to reduce the number of false rejects. Manufacturing process changes were also undertaken to reduce the number of stuck or sluggish throttles from being produced.

Result

- The failure rate for the electronic throttles reduced dramatically resulting in a significant increase in first time yield to 99.93%. The resulting ROI for the plant was 100 times the original QualityWorX® investment.

A Scaleable Solution

QualityWorX can be used for analyzing a single test stand, a manufacturing line, or an entire enterprise. Sciemetric makes it easy to upgrade from one package to another. All variations provide the same advanced analysis capabilities; see the table below for options and other information.

Express

- Affordable way to collect & analyze data
- From a single test station
- Up to 3 stations
- Customer installable

Standard

- Collect & analyze data from 10 to 20 test stands
- Additional options, such as Web Interface, are available

Enterprise

- Collects both complex test & line-wide assembly data
- Complete part history information
- Comprehensive auditable database of manufacturing history by part and/or process
- Many options including repair bay manager

Choosing the right QualityWorX Solution

	QualityWorX				
	Express		Standard		Enterprise
	Express 1	Express 3	Standard 10	Standard 20	
Maximum Connections (# of Stations)	1	3	10	20	20+
Data Analysis, Visualization	✓	✓	✓	✓	✓
Automatic Data Storage	✓	✓	✓	✓	✓
	Express Host, 4 GB capacity or on customer supplied computer/server		Optional Windows Server or on customer-supplied server		
Access test data from your desktop or any desktop on the corporate network	✓	✓	✓	✓	✓
Access through Web-based interface	Yes – Optional, only if Web Reporter is installed on a separate computer		Yes – Optional		
Support for defect and repair bay logging	x	x	Yes – Optional		
Support single part type variations (models)	✓	✓	✓	✓	✓
Support multiple part types	x	x	x	x	✓

For details on how to integrate QualityWorX into your application and for more information on the available options, please contact your Sciemetric Sales Representative.

Collect + Store

Collect and permanently store all test result data.

Analyze

Analyze test results to identify trends, assist in root cause determination and learn optimal test limits and algorithms.

Report

Use standard reports to visualize the data and make quicker and more informed decisions. Validate quality programs such as QS9000, Six Sigma and ISO/TS 16949.

Act

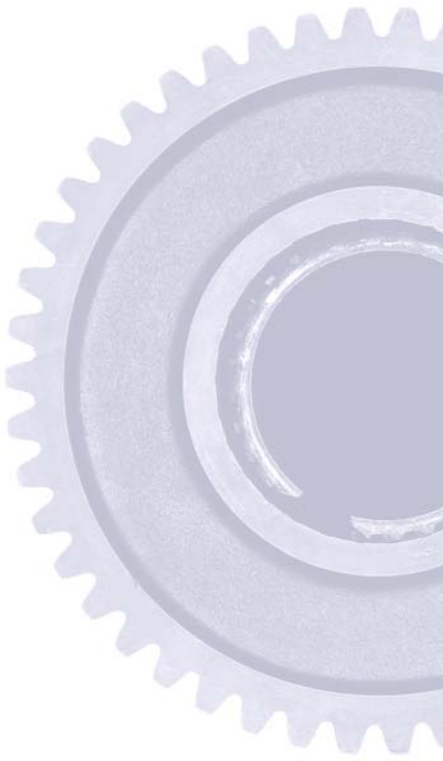
Take corrective actions to eliminate the source of defects.

About Sciemetric

Sciemetric is the premier provider of defect detection, analysis and traceability solutions for manufacturers. We are shaping the future of efficient, high quality manufacturing.

Our solutions deliver the insight manufacturers require to improve quality, increase productivity and decrease costs across the entire production lifecycle.

Sciemetric customers are leading manufacturing companies in the automotive, industrial, medical, electronics and other sectors. Customers who have implemented Sciemetric solutions to help them achieve their quality and productivity objectives include Ford, General Motors, Behr, DaimlerChrysler, BMW, Toyota, Cummins, Delphi, John Deere, Caterpillar, Mazda, Hyundai, Visteon, Holden, International, Hewlett-Packard, Becton Dickinson, Baxter, Medtronic, Boston Scientific and Saturn.



Learn more about QualityWorX:

Contact us to request an on-line demo or more information

Call toll free in North America: 1-877-931-9200
Visit our Web site for international contact information
email: inquiries@sciemetric.com

www.sciemetric.com

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Rev 5 June 2006 Printed in Canada.