SigPOD™
Test System

SCIEMETRIC®

SigPOD™

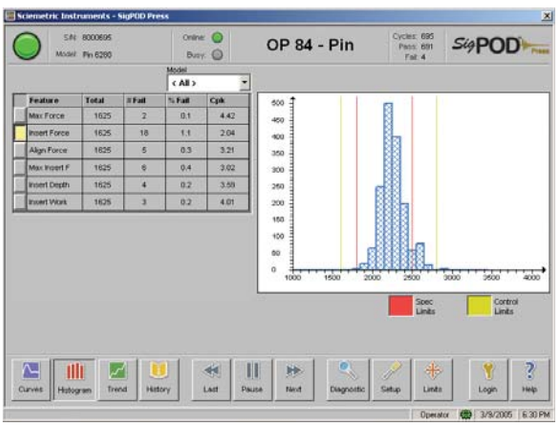
In the face of intense competition manufacturers must adopt technology that supports the demands for improved yield, better product quality and ever increasing downward pressure on costs. The question is how do you increase yield, improve product quality and simultaneously reduce costs? Sciemetric's SigPOD™ test system plays a key role in solving this age old dilemma facing manufacturers. SigPOD™ empowers manufacturers to transition from the conventional test system methodology of simply preventing defects from being shipped to true manufacturing insight where defects can be avoided all together.

The signature analysis technology that is core to the system provides advanced defect detection that prevents defects from being shipped and leads to less false failures and false positives.

The SigPOD™ system is the foundation for many test applications such as press monitoring, leak testing and NVH testing. This test system commonality across your manufacturing environment leads to a lower total cost of ownership through ease of use, lower training costs and lower maintenance costs.

All SigPOD™ test systems across your manufacturing environment can report into a QualityWorX® database. With this common database the QualityWorX® Test System Manager™ software module can be used to analyze the data to make better, quicker and more informed decisions about increasing first time yield. For those situations when a quality spill does occur, the QualityWorX® Warranty Manager™ software module helps isolate the effected products and prevent a costly warranty recall.

Prevent defective products from being shipped, stop defects from being produced and spend less to accomplish this: Sciemetric's SigPOD™ is an essential component in the drive to reduce manufacturing costs and improve yield.



A SigPOD™ Press screen showing how the auto-learn Histogram feature reveals the distribution of insertion force failures. Specified limits can be adjusted by the user and the resulting distribution of failures is displayed prior to deployment of the new limits on the factory floor.

ADVANCED DEFECT DETECTION

The SigPOD™ test system utilizes Sciemetric's advanced signature analysis technology whereby signal data is captured, then analyzed by comparing distinctive features against set limits, and stored as full waveforms. Five aspects of this signature analysis technology enable the SigPOD™ test system to provide best in class defect detection;

1. **Advanced Limit Management** - The SigPOD™ statistically analyzes historical test data, calculates process control limits based on the advanced auto-learn capability, and graphically presents the results to the user. This functionality is interactive and the user can visualize the results of proposed limit changes. The SigPOD™ is capable of predicting the pass/fail rate based on new proposed limits before deploying new limits on the factory floor. This proprietary limit management system leads to better limit setting and fewer false rejects.
2. **High Speed Data Collection** - Fast data sampling enables more accurate feature identification and better signature analysis. Unlike any other test system in its class the SigPOD™ can sample at up to 250KHz aggregate to ensure adequate waveform definition and defect detection.
3. **Full Waveform Capture** - Since SigPOD™ systems measure and analyze entire waveforms, improved process analysis is possible and more defects can be found. The large data set acquired for analysis allows the system to detect even the smallest of defects and this leads to fewer false positives.
4. **Process Variability Compensation™** – All manufacturing facilities are subject to some form of process variability. The SigPOD™ uses Sciemetric's Process Variability Compensation™ which is based on advanced mathematical algorithms that accommodate for inevitable process variability and minimizes false rejects.
5. **Mathematical Algorithms** – The signature analysis software that is core to SigPOD™ systematically decomposes a waveform into identifiable features and provides insight into the root cause of defects. The algorithms also lead to optimal repeatability and reproducibility (R&R) and fewer false rejects.

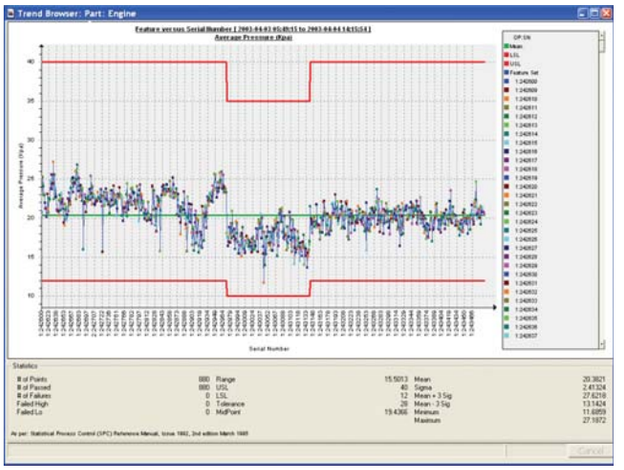
INCREASE FIRST TIME YIELD

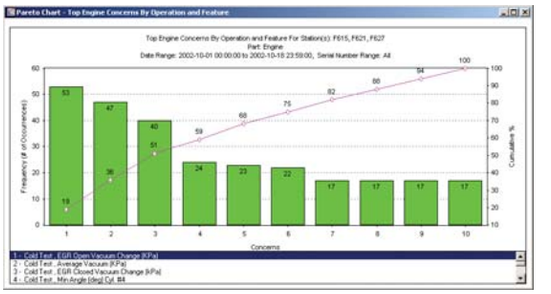
By adding the QualityWorX® Test System Manager™ software module to SigPOD™ deployments, manufacturing and engineering managers can focus on analyzing data instead of gathering it. The QualityWorX® TSM is a tool that enables them to make better, quicker and more informed decisions about improving yield.

The QualityWorX® TSM automates the storage, retrieval, analysis, and reporting of test result data for discrete manufacturing. Test result data including test operations, status results, feature results and waveforms are transferred from a SigPOD™ test system to the QualityWorX® database. Unlike scalar data or simple pass/fail information, the waveform data stored in the QualityWorX® TSM can be used to provide test modelling, trend analysis and assist with root cause determination.

Root Cause Determination. Storing and analyzing all test waveform results from a SigPOD™ test system assists in root cause determination. This information empowers manufacturing personnel to take corrective action and prevent the same defects from being produced on a continuous basis. Without the test data and analysis tools provided in the TSM it is difficult or impossible to determine what defects are causing a part to fail. This results in lower yields and chronic quality issues.

Failure Pareto Analysis. The TSM identifies the top sources of failures allowing manufacturing personnel to focus corrective actions on the areas that will have the largest impact on quality and throughput.

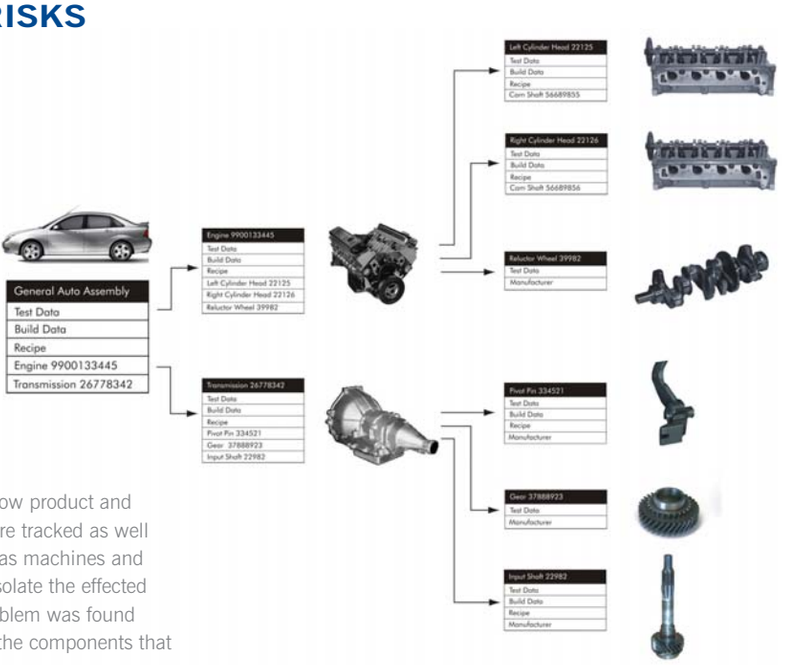




The first screen shot from the QualityWorX® Test System Manager shows a failure Pareto analysis. This identifies the top sources of failures allowing manufacturing personnel to focus corrective actions on the areas that will have the largest impact on quality and throughput. The second screen shot shows a trend analysis of historical test results. The green line represents a proposed new test limit. The expected new pass/fails that would result based on the new limits are represented above and below the green line.

REDUCE WARRANTY COSTS AND RISKS

For the ultimate in manufacturing traceability, the optional QualityWorX® Warranty Manager™ software module provides permanent archiving of test operations and test results that are traceable to a specific product or component. By permanently storing test results and operations all assembly, test, defect and repair operations can be re-analyzed long after the manufacturing process is complete. In the event of a quality spill this gives manufacturers the ability to identify specific products for recall without having to issue a costly and damaging general recall.



The diagram above provides an automotive manufacturing example of how product and process traceability functions. The serial numbers for each component are tracked as well as the test results from each SigPODTM test system. Process data such as machines and shifts used is also stored. In the event of a quality spill it is possible to isolate the effected automobiles without having to issue a mass recall. For example, if a problem was found with a stamping press, it would be possible to locate what automobiles the components that passed through this station are in.

LOWER TOTAL COST OF OWNERSHIP

Test System Commonality

The SigPOD™ system is used as the foundation for many test applications. So that the SigPOD™ Press, SigPOD™ Leak, SigPOD™ NVH and other test applications built on the system have a common look and feel. The benefits of test system commonality for manufacturers include a much shorter learning curve for operators and engineers to transition from one type of SigPOD™ test system to another. Standardizing on one test system also leads to significant cost savings through streamlined maintenance procedures and reduced spare parts holdings.

Ultimately each SigPOD™ works together as part of a test suite. PLC communications are the same for each SigPOD™ test system so there is no need to tinker with the PLC handshaking quarks of test systems from different vendors.

Test data is also stored in a common format across the entire SigPOD™ suite so your test systems aren't isolated islands of data. Test result data is transferred from SigPOD™ test systems to the QualityWorX® database where it can be analyzed and acted upon to increase first time yield, simplify compliance reporting and improve quality.

Scaleable and Flexible

One of the core strengths of the SigPOD™ system is the flexibility and ability to scale according to your specific requirements.

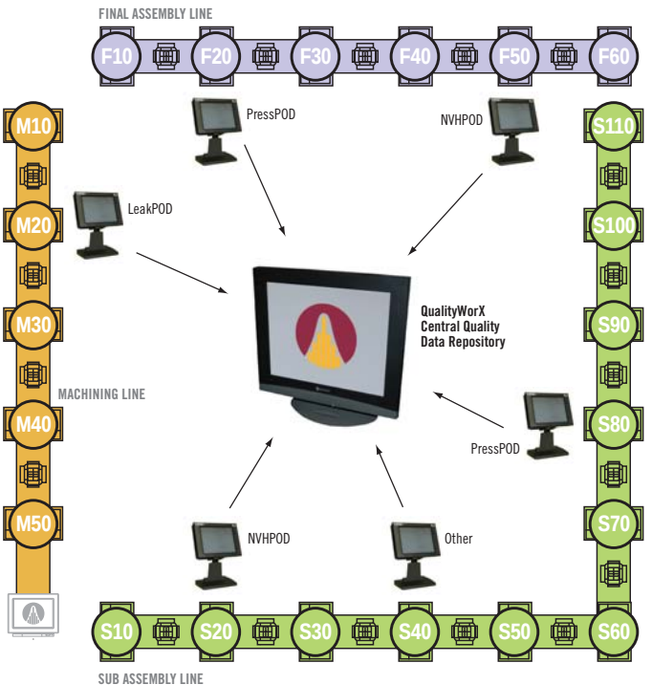
Hardware Scaleability and Flexibility

The SigPOD™ is based on a modular architecture. The controller, display and storage are separate to allow you to choose the best overall solution to meet your specific needs. You can choose an integrated touch screen display, a standard VGA monitor or connect the SigPOD™ to an existing display you already have in use on the production floor. For storage you can choose an optional 20GB hard drive or stay with the standard 512MB Compact flash card.

SigPOD™ test systems have numerous mounting options including DIN rail mounting, desktop, machine, panel and arm mounting.

MANUFACTURING IMPROVEMENT

The ultimate deployment is to have multiple SigPOD™ test systems all feeding into a common QualityWorX® database. In this type of deployment you can move from simply preventing defects from being shipped to customers to true manufacturing insight where defects can be avoided all together through defect root cause identification.



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. A few 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, Saturn, Hewlett-Packard, Becton Dickinson, Baxter, Medtronic and Boston Scientific.

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