

SigPOD™ Press

Press Monitoring System

Sciometric's SigPOD™ Press Monitoring System provides the easiest to use, most comprehensive and highest reliability press monitoring available. With the most consistent test results and less false failures, the SigPOD™ Press will help you achieve your yield and quality objectives.

Off-The-Shelf Solution

Sciometric's SigPOD™ Press Monitoring System is a proven off-the-shelf test system that can be quickly setup by the user and automatically configured for your specific requirements.

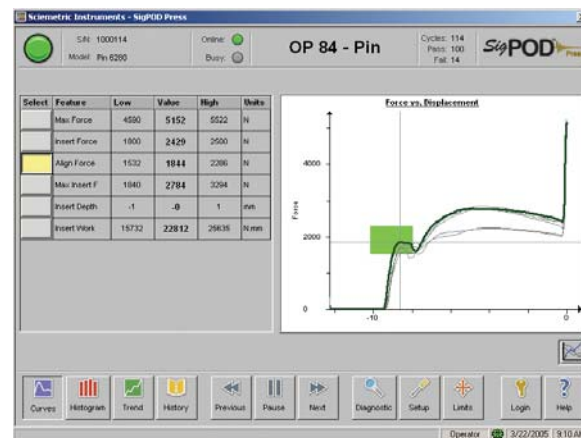
Easy Configurable Setup

The system can be setup without an external computer by using the optional touch screen monitor or with the optional mouse and keyboard. The setup is menu driven by a wizard that guides the user through the setup process. This has the benefits of allowing for fast implementation and low start-up costs. Best of all, the wizard configures the SigPOD™ Press for your specific press monitoring needs in a matter of minutes unlike other press monitoring solutions that require costly on-site installation by a 3rd party.

Press Monitoring Best Practices

The SigPOD™ Press comes out of the box with advanced algorithms designed for the simplest to the most complex press monitoring requirements. Sciometric has embedded press monitoring "best practices" into the system based on decades of experience with press applications. During setup, the SigPOD™ Press gathers information from the wizard and automatically makes modifications to the software to fit the specific customer implementation requirements. The wizard provides the best of both worlds; the deployment simplicity of an off-the-shelf solution coupled with the benefits of a custom solution tailored to your exact press monitoring requirements.

The best practices used by the SigPOD™ Press include Sciometric's advanced signature analysis methodology. Algorithms find specific features on a press waveform and conduct advanced analysis on those key features (e.g. initial contact point, point of bottom out, point of absolute maximum force, etc). The analysis does not rely on the waveform's position on the result grid as the features are identified dynamically and the full feature characteristics are evaluated. This technique yields increased accuracy and better repeatability than conventional methods. Conventional press monitoring systems use basic 'postage stamp', 'box function', 'fitting window' or 'peak detection' to determine quality. These older approaches collect a limited sample of data and verify that the waveform correctly enters and exits static windows on the waveform. These approaches yield unreliable results as they fail to fully analyze each waveform feature.



The SigPOD™ Press uses Sciometric's advanced signature analysis technology to eliminate false accepts and find more defects than other press monitoring systems.



Press Monitoring System

Advanced Limit Management

Auto-Learn

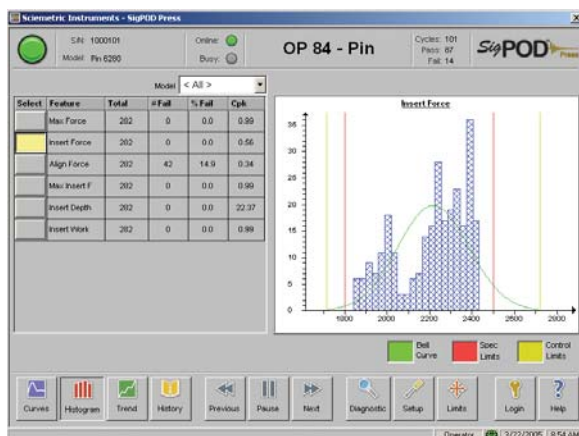
Any manufacturing test system is only as good as the limits that have been set. If limits are set too wide then a manufacturer runs the risk of shipping faulty product. If limits are too stringent then yield is compromised and manufacturing personnel lose confidence in the system. Therefore, SigPOD™ Press includes Sciometric's proprietary Advanced Limit Management System which consists of both auto-learn and maintain functions.

The auto-learn function "suggests" optimal statistically derived limits for the press monitoring system. Known failure rates are estimated BEFORE deployment on the factory floor. As manufacturing processes experience normal process variation, the limits of any press monitoring system will require maintenance to avoid creeping in to a "false fail" or "false pass" scenario. Sciometric's proprietary maintain function is designed to help in this process by using production statistics to continuously calculate optimal test limits and propose new limits that the user has the option of accepting.

The auto-learn and maintain functions have a very significant impact on the integrity of the monitoring system and on its' total cost of ownership.

Process Variability Compensation™

All production facilities are subject to normal variations in operation. These variances may be the result of slight differences in pallet



The advanced limit management capability of the SigPOD™ Press allows for easier limit management and optimal limits to be set.

dimensions, sub-components or fixtures. To maximize productivity it is imperative that a test system be capable of identifying and addressing normal process variability, while alerting operators of abnormal or harmful variability. The SigPOD™ Press uses Process Variability Compensation™ to accommodate for inevitable process variability and minimize false rejects.

Most press monitoring systems are triggered by an absolute start. The starting point could be a PLC trigger or when the press starts. The SigPOD™ Press analyses test results based on the initial point of contact between the ram and the part. Over time the amount of displacement required to press a part will vary.

This variability would confuse other press monitoring systems into believing that less or more displacement was required depending on the pallet dimensions. Press monitoring systems that rely on an absolute start require constant calibration. These conventional press monitoring systems tend to generate numerous false failures and manufacturing personnel lose confidence in them.

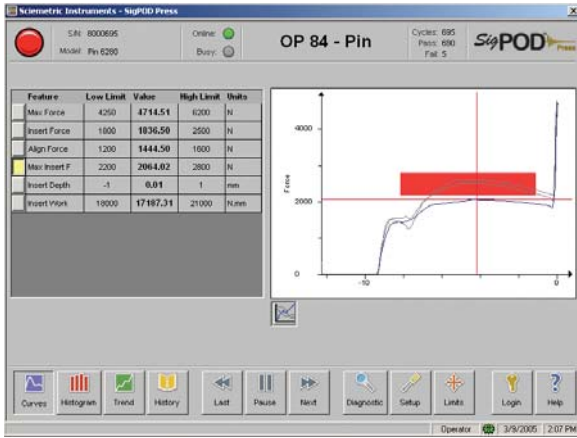


Scaleable and Flexible

The SigPOD™ Press system is flexible and able to scale according to your specific requirements.

Multi-RAM Monitoring Capability*

The system scales to support from one to four rams on a single test system, providing flexibility based on your production requirements. Many competitive press monitoring systems can only monitor one or two rams. For multi-ram monitoring



and analysis for up to 4 rams. This leads to improved cycle time. Immediately after the press operation is complete for a given ram, the data is analyzed and the pass/fail result is transmitted without having to wait for all rams to complete their cycle.

* Available on select models only. Please consult specifications.

Production Ready

The SigPOD™ Press is ideally suited for continuous operation in production. To ensure maximum reliability and up-time the controller is designed to NEMA 12 (IP52) standards to withstand the demands of the harshest manufacturing environments.

The SigPOD™ test systems can be seamlessly integrated into your manufacturing process. The system supports numerous communication and network options including direct Ethernet and most major fieldbus interfaces such as Interbus, Profibus and DeviceNet.



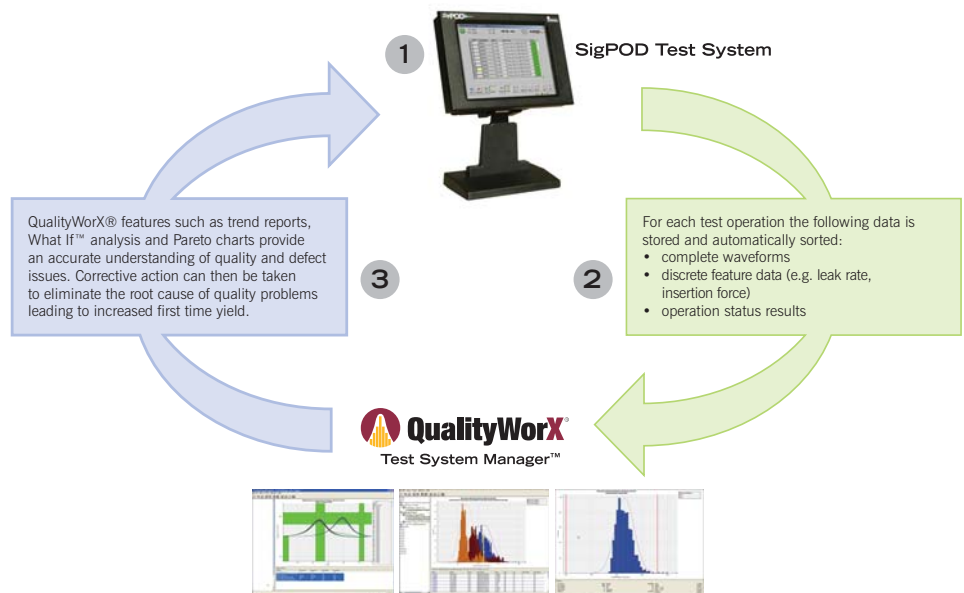
requirements you would need to buy multiple test systems from the competition whereas you can accomplish this with one SigPOD™ Press, resulting in a lower initial capital expenditure and lower deployment costs.

Asynchronous Testing*

The SigPOD™ Press Monitoring System has advanced data collection capabilities and supports completely independent collection of analog data from multiple rams. The system supports independent triggering and asynchronous collection

Increase First Time Yield

The QualityWorX® Test System Manager collects all test data including waveform results from a SigPOD™ Press test system and permanently stores them on the QualityWorX server. Advanced analysis tools are used to analyze and automatically sort through enormous amounts of test data and transform the raw data into actionable information. The QualityWorX® TSM provides insight into the test data, enabling an accurate understanding of defect and quality issues. Corrective action can then be taken to eliminate the root cause of quality problems leading to increased first time yield.



System

- Intel® Celeron Processor 650 MHz
- Microsoft® Windows® XP® operating system
- Optional 10.4" touch screen
- Solid state disk technology for operating system and data
- Optional HD for high capacity data storage
- DIN rail, Desk, Machine, Panel and Arm mount
- Online User's Manual

Processor

| | |
|-----------------------------|----------------|
| Processor | Intel®* |
| Optional Hard Disk for Data | 40 GB* |
| Operating System Memory | 512 MB RAM* |
| Data Memory | 512 MB |
| Ethernet | 10/100 Base-TX |
| USB | 2 Ports |
| RS232 Serial Port | 1 |
| External Monitor | SVGA Connector |

General

| | |
|-----------------------|--|
| Chassis Dimensions | |
| SigPOD only | 7 x 7.74 x 4 in (178 x 197 x 101 mm), H x W x D |
| SigPOD w Screen | 8.3 x 11.5 x 5.8 in (211 x 292 x 147 mm), H x W x D |
| Chassis Weight | |
| SigPOD only | 5 lbs (2.3 kg) |
| SigPOD w Screen | 11 lbs (5 kg) |
| SigPOD Desk Mount | 17 lbs (7.7 kg) |
| Operating Humidity | 8 to 90% relative, non-condensing |
| Operating Temperature | 5 to 45 °C |
| Environmental | NEMA 12 (IP52) with NEMA Hood |
| Warm Up Time | 60 minutes for stated accuracy |
| Paint Finish | Black baked powder |

Power

| | |
|-------------------|----------------------------|
| Supply Voltage | 18 to 36 VDC |
| Power Consumption | 48 W maximum, 30 W typical |

* The exact processor type and speed, memory supplied, hard disk capacity and other technical specifications are subject to change.

** Depends on system configuration.

Analog Inputs

| | |
|--------------------------|---|
| Number of Channels | Up to 4 depending on model |
| Input Ranges | ±10 V, ±2 V, ±100 mV, ±33 mV |
| Input Accuracy | 0.01 % of full scale |
| Resolution | 16 bit A/D, ±32,768 counts |
| Maximum A/D Sample Rate | 250 kHz |
| Input Impedance | 10 MΩ |
| Input filter | 20 kHz 6 pole and 1 kHz 4 pole selectable |
| Input Bandwidth | 20 kHz maximum 3 dB down |
| Internal Calibration | Auto-zero |
| Overload Protection | 28 V without damage |
| Shunt Calibration | Relay contacts per channel |
| Excitation Voltage | 10 VDC |
| Maximum Current | 150 mA per channel |
| Line and load regulation | 0.01 % |
| Noise | 100 μV max |
| Short Circuit Protection | Continuous |
| Excitation remote sense | Separate input per channel |

Encoder Input

| | |
|--------------------|---|
| Number of Channels | Up to 4 depending on model |
| Sensors | Rotary encoders and linear scales |
| Signal Type | Quadrature input or single phase pulses |
| Index input | Can optionally zero the counter |
| Frequency | 5 MHz maximum pulse rate TTL 50 kHz maximum pulse rate open collector (internal pull-up) |
| Counter | 32-bit (±2 x 109 counts) |
| Input Protection | ±28 V without damage |
| Sensor Power | +5V DC @ 250 mA, current limited |

Digital Inputs

| | |
|----------------------|------------------------------------|
| Number of Channels | 8 with common return line |
| Polarity | Bidirectional |
| Isolation Voltage | 240 VAC or DC (Optically isolated) |
| Input Current | 2.5 mA maximum |
| Input for low state | 8 VDC maximum |
| Input for high state | 16 VDC minimum |

Digital Outputs

| | |
|----------------------|------------------------------------|
| Number of Channels | 8 with common return line |
| Polarity | Bidirectional |
| Isolation Voltage | 240 VAC or DC (Optically isolated) |
| Switching Capability | ±1 A @ ±60 VAC peak or DC |
| Contact Resistance | >100 MΩ off; <0.15 Ω, on |

Solutions for Manufacturing. Defect Detection. Analysis. Traceability.

TECHNICAL SUPPORT

1-877-581-0112

For more information contact
your local Sciometric Representative.

Sciometric Instruments Inc.

Tel: (613) 254-7054

www.sciometric.com

e-mail: inquiries@sciometric.com

