

# Particle Impact Noise Detector

-Vibration, Shock and Acoustic means are used to ensure the reliability of electronic components –



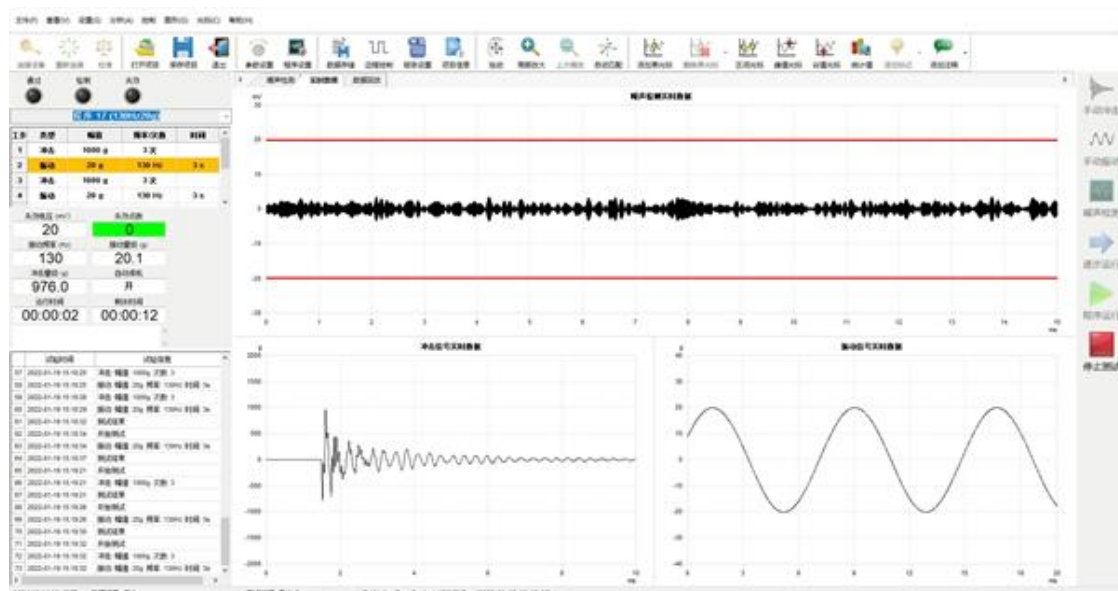
PIND refers to particle impact noise detection, which detects loose particles in packaged components such as integrated circuits through shock and vibration generated by shaker. PIND products of

Chengdu PIND Instrument Co., Ltd. will give users simple, reliable, and inexpensive tools to perform Particle Impact Noise Detection (PIND) testing.

The application of our product greatly improves the reliability of electronic components.

## P.I.N.D.--Particle Impact Noise Detection

Vibration, Shock and Acoustic means are used to ensure the reliability of electronic components

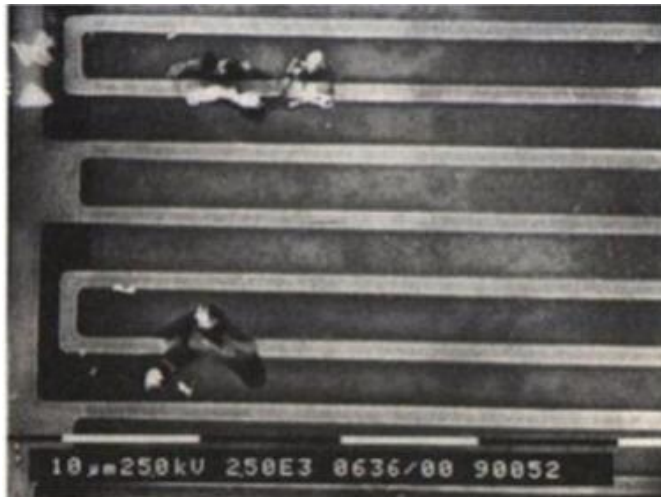


PD SERIES USER INTERFACE

In the past 10 years, Chengdu PIND Instrument Co., Ltd. has been committed to providing users with simple operation, reliable performance and cost-effective

particle impact noise detection equipment and related technical services, the application of this equipment has greatly improved the reliability of electronic components products.

Our PD series particle impact noise detector can detect loose particles moving freely in the cavities of electronic components including relays, transistors, hybrid circuits, integrated circuits and switches. These particles are often the potential cause of short circuits and serious system operation failures.



A small metal flake as shown above can cause serious malfunction in electronic components

The shaker is used to excite loose particles in the cavity of the component. The energy of the particles striking the cavity housing is converted into a wide-band pressure wave, which passes through the housing and is detected by a sensitive ultrasonic sensor mounted on the test equipment. In order to ensure that the particles can make accurate impact motion, we use sensors to provide feedback vibration signals to the controller, and through the controller to control the closed-loop shaking table work.

## PD series Particle Impact Noise Detector

### ADVANCED TECHNOLOGY THAT'S EASY TO USE

Our PD series features packaging and is **the most advanced system available today**. Combining sensors that monitor and display the shaker motion with computer control to correct for any changes in test conditions, Our PIND test system generates accurate and repeatable test conditions. Its ultra-sensitive, ultrasonic (155 kHz) sensor with multiple crystals can detect particles as smaller than 15 microns in diameter impacting the package cavity.

The multiple computer technology not only controls the motion but also allows the user to program the motion including both shock and vibration at the precise amplitude and timing to simulate the whole range of testing requirements. The operator simply needs to input the desired impact amplitude and duration, or the vibration frequency, and the PIND system automatically calculates the appropriate frequency and drives the shaker to produce the appropriate motion. You will be surprised by the quick and easy way of programming and operation of PD series PIND equipment. The system functions can fully meet the requirements of relevant PIND test specifications.

## **PROGRAMMABLE SOFTWARE FOR MORE VERSATILITY**

Using our software developed entirely based on engineering applications, PIND's operating system is customized to meet your specific testing requirements. Through Windows programming, greatly facilitate the use of operators.

System with a low-pass filtering feature will automatically reduce the vibration amplitude to perform low-frequency tests up to 25 Hz. Such test objects mainly include relays, hybrid circuits and components that need to be carefully tested. If other testing requirements, you can modify the parameter Settings to reality.

## **UNIQUE FEATURES OFFER CONVENIENCE AND FLEXIBILITY**

Whether you're testing electronic components for cardiac pacemakers, manned spacecraft or undersea cables, you'll enjoy the convenience and flexibility of the special features which set our system apart from any other PIND test system.

Based on years of after-sales maintenance experience of mainstream PIND products, our technical developers ensure that the detection sensitivity of PD series particle collision noise detector is consistent with the current domestic mainstream PIND equipment standards, so as to ensure **the reference and traceability** of customer test results to the maximum extent!

- The PD series system easily exceeds the requirements of all military standards for PIND testing(QJ 2863、QJ 789A、GJB65B、GJB128A、GJB548B、GJB360B、GJB2888A).
- Imbedded sensors that monitor and display the actual shaker motion with computer control to correct for any changes in test conditions, the PD series system generates accurate and repeatable test conditions.
- The unique PD series PIND shaker creates accurate "Active Shocks" with adjustable shock levels by controlling the velocity of the shaker head and correcting for device differences prior to impact.
- The PD series system offers a low profile, low stray magnetic field design that eliminates any need for an expensive special test bench, required for conventional shakers with external shock fixtures.
- The PD series system is an all-DIGITAL system with no knobs or screws to adjust. It is fully programmable to your own specifications or as required by military standard. Since everything is generated by the computer, the user can create different amplitudes, frequencies, and durations. There is future expansion to more complex motion environments including Random Vibration and advanced Shock conditions.

## Key Feature

- Based on Windows software graphical interface display
- Real-time display of noise, shock and vibration time domain signals, maximum reduction of **Real Waveforms**, convenient observation and judgment
- Supports mainstream Windows operating systems
- Real-time storage of data and waveform, test process playback
- Reports can be generated automatically in Word, Excel and PDF formats. The data is saved in Excel for subsequent analysis
- Standard Quick Start and Stop physical button is to enhance equipment security
- Optional foot pedal, quick button board and other auxiliary accessories for easy operation
- Calibration output value can be adjusted according to the quality of the product to be tested
- Software built-in 19 standard procedures, other programs can be programmed and saved

- Through special interfaces and protocols, PD series PIND can be integrated with automatic equipment such as mechanical arm to achieve PIND detection automation

## Key Index

- **VIBRATION SPECIFICATIONS:**  
Frequency Range: **25 to 400 Hz**, Sinusoidal  
Amplitude: **5.0.to 25.0 'G'** Peak, Display on Screen
- **SHOCK SPECIFICATIONS:**  
Amplitude: Programmable **200 to 3000'G'**

## Which model meets your needs best?

All four models of PIND include: controller, shaker, sensor, STU kit, computer, cable, consumables and related documentation.

- The basic PD50 system, with a loading mass of 400g, is equipped with a universal shaker and sensor with a mounting area of 50mm diameter. The waveform is displayed by computer and can be upgraded to a larger system with a larger shaker.
- The intermediate version of the PD100 comes with a heavy-load shaker, a 100mm diameter sensor and a variety of options. Options include: reinforced laptop, pedal, quick button board, etc.
- Relay models PD50R and PD100R are equipped with wide pulse shaker and special testing software, specially used for testing relay components.



REGISTERED TRADEMARK VIOLATOR MUST BE PROSECUTED

## **Technical services and parts replacement**

Options include: calibration kit, hardened laptop, pedal, quick button panel, etc. All performance of the equipment is controlled by software, so it can be customized to meet your test needs, including customized shock and vibration characteristics. The software and hardware of the system are independently developed and produced by our company, so we can provide customized PIND testing equipment for customers.

## **Regular maintenance saves time and cost**

To ensure that your PIND system is always running well, we have developed a complete maintenance program, including complete system failure detection, repair and parts replacement. The accuracy of all systems measured and certified by third parties can be traced. However, for long-term cost considerations, we still recommend calibrating the system every 12 months.

## **Training to meet your needs**

We offer a complete training program for operators of all levels of experience. During the two-day comprehensive training course, we will explain in detail system operation, testing methods, particle movement laws, calibration processes, failure analysis, repair and maintenance processes and the latest military standard specifications.

**Chengdu PIND Instrument Co.,Ltd.**

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