

Part Quality Inspection Application: Automated Resonant Inspection System

NDT-AUTO™

The automated Non-Destructive Test (NDT) Resonant Inspection System Model NDT-AUTO is perfect for applying efficient and reliable QC testing to high volume production lines of powdered metal parts, castings, and similar components. System throughput with 100% part inspection can be as fast as 60 parts per minute, 3,600 parts per hour, and 28,800 parts in an eight-hour shift. An industrial electric impact hammer strikes parts traveling along a conveyor with a known and repeatable force, and a microphone measures the acoustic response from the part. Input force and response spectra are measured by the controller, which digitizes the signal, and performs FFT analysis. NDT application software compares results against reference criteria limits and either rejects or accepts the part accordingly. The system report generation feature allows for full statistical analysis of your parts and manufacturing process.



After the pass/fail criteria is loaded, parts can be installed with online continuous inspection operating in less than an hour. This easy to use NDT system quickly becomes a critical and valued part of your quality inspection process. The NDT-AUTO system can detect imperfections or flaws such as variances in overall geometry, weight, cracks, and density of parts. It can also detect if processes have been missed, such as a machining or heat treating operation.

TYPICAL APPLICATIONS:

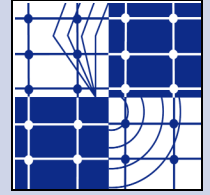
- Production - End-of-Line Inspection
- Field Service - Troubleshooting
- Quality Control - Spot Checking
- Engineering - Development

TYPICAL INDUSTRIES:

- Powdered Metal
- Aluminum Foundry
- Iron Castings
- Ductile Metal
- Forced Metal
- Ceramic
- Composites

BENEFITS:

- Program automatically adjusts to speed of the conveyor
- No part preparation, elaborate fixturing or magnetizing required
- Parts are fully inspected as fast as 2 per second
- Eliminates or reduces false failures
- Generates production report, including statistical analysis
- Industrial packaging allows reliable factory floor operation
- Easy to learn & use application software
- Provides three access levels of security
- Tests many different parts
- Ensures the confidence of knowing that every part is tested and approved parts are defect free.



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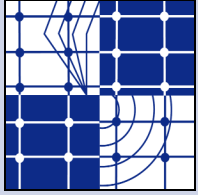
“YOUR ONE STOP SOUND AND VIBRATION SHOP”

Helping you test,
model, and modify
the behavior of
structures and processes.

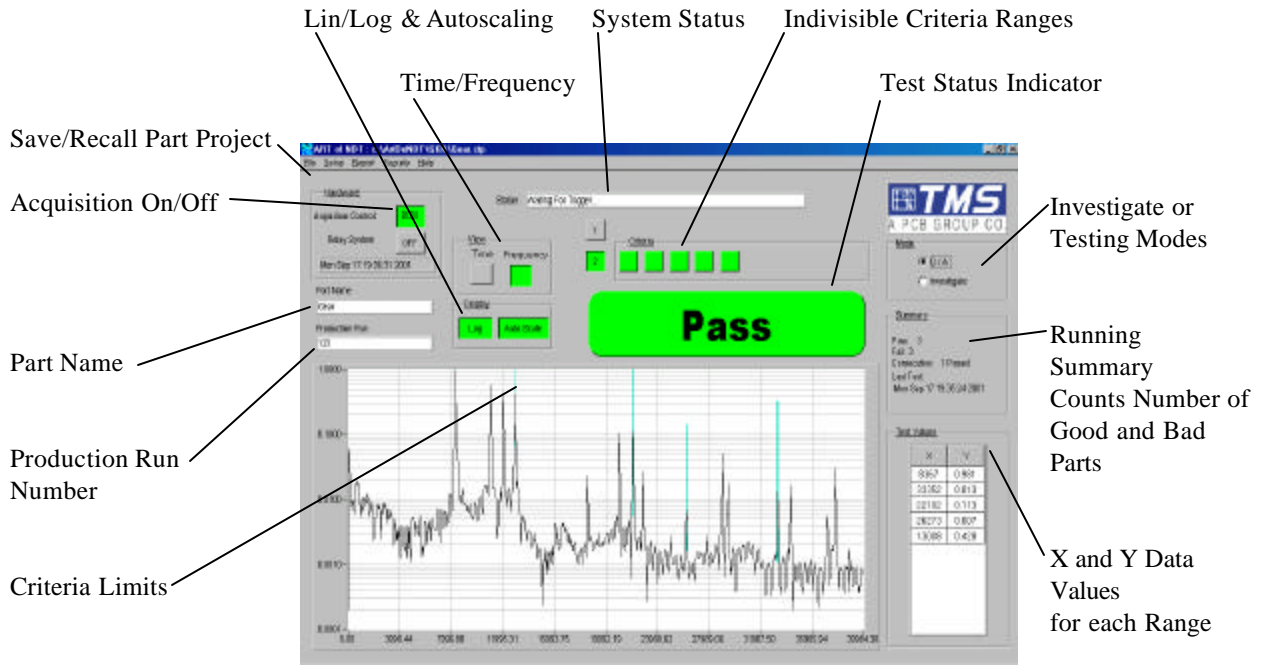
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NDT-AUTO's Graphical User Interface



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The NDT-AUTO System is fully automated, requiring no user intervention during testing, for efficient and cost effective 100% part testing. Integrating a rack mount industrial computer, flat panel color display, 8 ft long conveyor, NEMA 4 photo eyes, PLC, acoustic tunnel, encoder, 2-channel smart digital controller, industrial electric impact hammer, and a microphone, this turnkey system is designed to withstand continuous operation in plant floor environments. An optional status light tower is available providing prominent visual indication of good or bad parts, indicating a system fault, or alarming that a preset number of parts have failed. Also a part marker or stamper can be integrated into the system, providing the ability to label or date the part.

Part Throughput

Belt rate control.....Adjustable to your feedrate
System throughput.....Approximately 1 part per second

Pass/Fail

User selectable criteria.....Up to 10 frequency bands
Rejection mechanics.....End run off to lockbox
Approval mechanics.....Pneumatic eject on positive

Conveyor Type

Length.....8 feet (customizable)
Width.....8 inches (customizable)
Belt environment.....Up to 230 degree F (optional 400 degree F)

Part Synchronization

Encoder.....100 PPR
Detection.....2 pair NEMA 4 package photo eye
Part location mechanics.....Adjustable mechanical guide

Acoustic Measurement

Response sensing.....Prepolarized microphone - TMS130 series
Acoustic tunnel noise reduction.....Greater than 40 dB
Frequency range.....Up to 50 kHz

System Control

PLC.....10 inputs / 10 outputs modular expandable
Display.....15 inch industrial TFT flat panel (optional touch screen)

Helping you test, model, and modify the behavior of structures and processes.

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