



SERIES RAM-TEST

# RESONANT ACOUSTIC METHOD TEST SERIES

- Reduce costs
  - Eliminate consumables
  - Avoid quality recall and containment costs
  - Reduce scrap costs associated with false rejects
- Achieve 100% inspection
- No part preparation or fixturing necessary
- Integrated process compensation simplifies lot to lot and normal process variation

## TYPICAL APPLICATIONS

- End-of-Line quality inspection & process monitoring
- Troubleshooting in the field
- Spot checking for quality control
- New product development and engineering

## REPEATABLE NDT RESONANCE INSPECTION

Non-Destructive Testing Resonant Acoustic Method (NDT-RAM) uses sound to detect part defects or flaws. A PASS or FAIL result is indicated in the software system. No human interpretation of results is required.

RAM-TEST Resonant Acoustic Method Test Series Systems are an ideal choice for identifying part resonant frequencies and detecting defects from the R&D lab to the production line. RAM-TEST systems are designed to offer Resonant Inspection for a wide range of parts. Systems are available for automated or operator-driven testing.

Manufacturing processes that benefit from RAM Systems:

- Powdered Metal
  - MIM - Metal Injection Molding
  - PIM - Powder Injection Molding
  - AM - Additive Manufacturing
- Castings
- Ceramics
- Forgings
- and more

As the market leader in Resonant Inspection with over 20 years of industry experience and systems installed worldwide, our family of businesses is dedicated to serving the manufacturing community. We supply both immediate 24-hour worldwide support and long term investment in innovation and standards, bringing you the peace of mind that comes with 100% quality inspection.



SYSTEMS COMPARISON			
	RAM-TEST-SEMI	RAM-TEST-FIXTURE	RAM-TEST-MANUAL
<b>Application</b>			
Integration into New or Existing Production Line	✓	✓	
Operator Assisted Production Testing		✓	✓
R&D Quality Lab Offline Troubleshooting		✓	✓
Portable System for Field Testing			✓
<b>Performance</b>			
Typical Cycle Time <sup>[1]</sup>	Dependent on automation integration – as fast as 0.5 s / part	2-10 s / part	Dependent on setup and test parameters
Pass/Fail Result Returned	Yes	Yes	Yes
Pass/Fail Physical Sorting Automation	Yes	No	No
System Control	4-relay module provides pass/fail signal to PLC or other automation	PLC included with 8 inputs / 6 outputs modular expandable	N/A
<b>Physical Characteristics</b>			
Dimensions (H x W x D)	Hammer Component: 16 x 7 x 4.5 in (40.6 x 17.8 x 11.4 cm)	Complete Test Stand: 24 x 30 x 40 in (61.0 x 76.2 x 101.6 cm)	Case Dimensions: 21.75 x 17 x 8.5 in (55.2 x 43.2 x 21.6 cm)
Industrial Impactor Force	50 – 500 lbf (222 – 2224 N)	50 - 500 lbf (222 - 2224 N)	Manual Impact Hammer <sup>[2]</sup>
Part Detector via Photo Eye Sensors – Adjustable Height	N/A	0 – 4 in (0 – 10.2 mm)	N/A
Adjustable Table Height	N/A	0 – 6.25 in (0 – 158.8 mm)	N/A
Adjustable Table Dimensions	N/A	13.5 x 13.5 in (34.3 x 34.3 cm)	N/A
<b>Included System Components</b>			
Software	NDT-RAM Software	NDT-RAM Software	NDT-RAM Software
Digital Hardware	Industrial PC	Laptop or Industrial PC	Laptop
Analyzer	94 kHz or 20 kHz, USB	94 kHz or 20 kHz, USB	94 kHz or 20 kHz, USB
Impact Hammer	Automated Industrial Impactor	Automated Industrial Impactor	Manual Impact Hammer
Microphone	Microphone	Microphone	Microphone
System Configuration	Ready to be integrated into production line	Adjustable test fixture included	Optional transport and testing case
<b>Optional System Components</b>			
One Touch Part Changeover	Included	Included	Included
Automated Hammer Force Control	Available	Available	N/A

[1] Throughput dependent on part size and system setup

[2] Optional Industrial Impactor available with 50 – 500 lbf (222 -2224 N) range