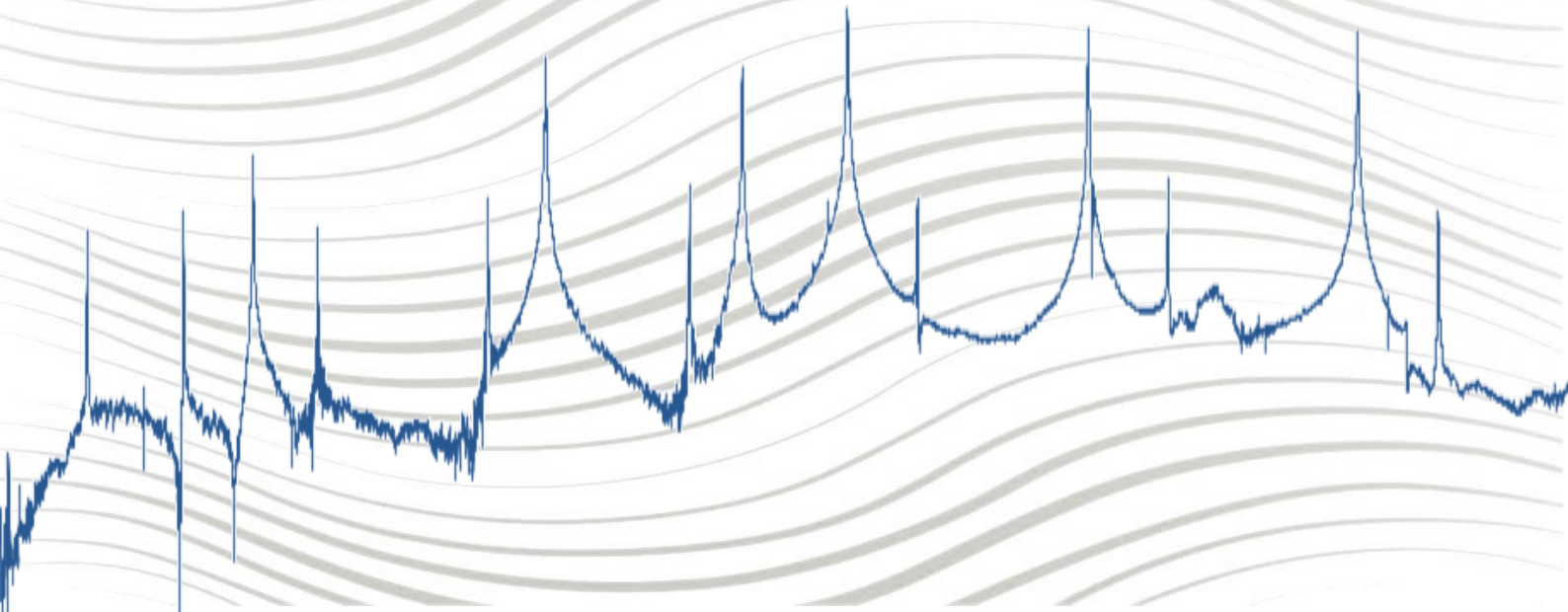
MaGyc
Innovation & Engineering

MG-ST-100

Acoustic Signature Resonant System

Precise, Fast, Effective, Versatile, Simple to Use

how does
your quality
sound?

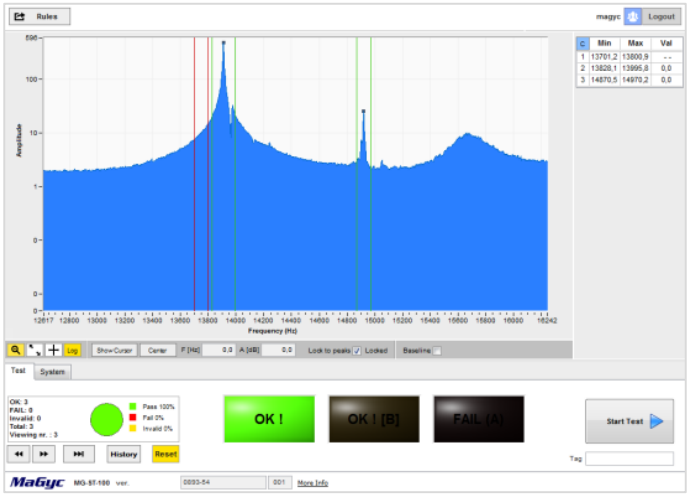


How it works

The fast and cost effective solution for verifying voids, cracks, geometry, density or weight variation on your parts using Acustic Signature

Every part, product or component has its **unique acoustic resonant signature** that reflects its composition, dimensions and stiffness. The resonant frequencies are almost exactly the same from good part to part, however they will change when internal or external changes occur.

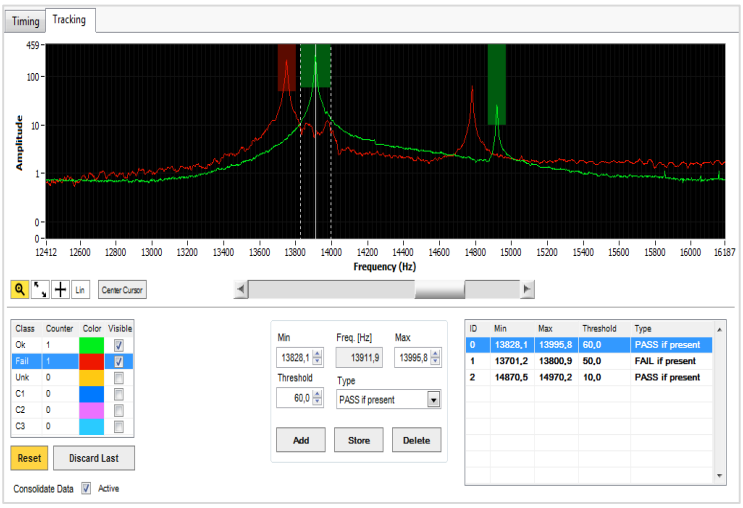
Any deviation from the expected signature indicates a variation of the part characteristics or a change in its manufacturing process

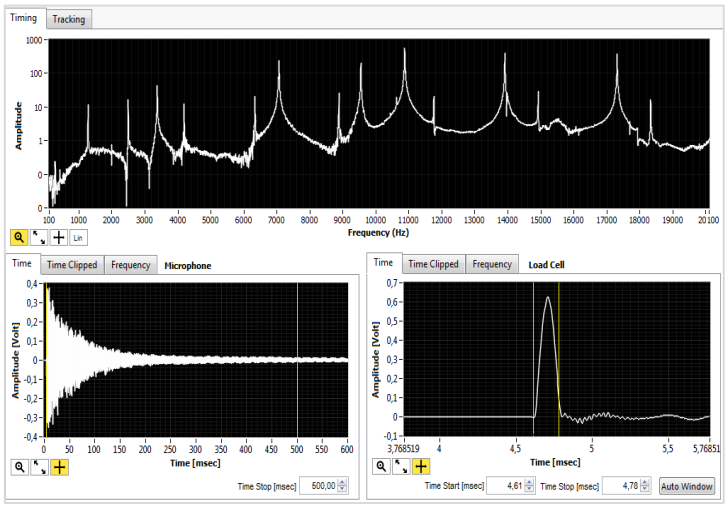


Voids, cracks, debondings, geometry or density variations, different material properties or manufacturing process deviations can be detected immediately.

Excellent results have been obtained on Iron Castings, Forgings, Powder Metals, Metal Stampings, Aluminum Foundry, Ceramics, Composites, Clay and others.

Precise:	High quality acquisition chain and advanced algorithms
Fast:	From sound to result in 0,5 seconds
Effective:	The best quality result in short time at a competitive price
Versatile:	Fit easily on many different materials and parts – Industry ready
Simple to Use:	Extremely intuitive user interface; wizard based learning procedure





Applications

Nuts and bolts
Presence of flaws in nuts and bolts is not always visible. We can test many parts per second.


Valve seats
Detect the presence of flaws and cracks in valve seats

Sintered parts
Density distribution, inclusions or improper granularity can be detected even in pre-sintering state (green state)


Brake components
An innovative and competitive approach for NVH parameters detection and quality assurance (voids, nodularity, etc)







Milling tools
Detection of flaws or cracks

Clutch plates
100% detection of flaws in clutch plates at the end of the production line

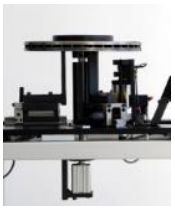
Brake drums
Presence of flaws in brake drums may cause serious damage.
MG-ST-100 can operate integrated in the milling machine

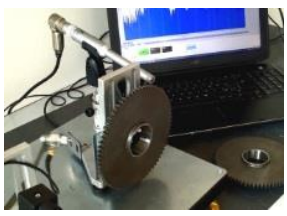
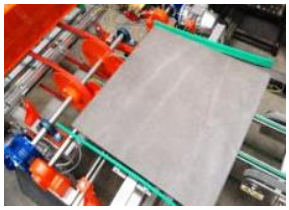
Ceramics \ Clay
Detection of cracks, voids and manufacturing process deviation in tiles, also not fired.

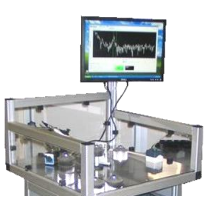
Type of Materials

- **Iron Casting, Forgings, Stampings, Moldings**
- **Aluminium Molding**
- **Sintered parts**
- **Metal Injection Molding (MIM)**
- **Precious Metals**
- **Clay \ Ceramics**
- **Composites**
- **Metal Bonding**

Industrial Applications





Technical Details

MG-ST-100 Test Box

Analog

Input Channel	2 Analog Inputs (simultaneous acquisition)
Resolution	24bit A\D converter (each channel)
Sampling	1KHz to 216KHz
IEPE Support	Yes (Integrated Electronics Piezoelectric)
Input Range	±10V with software selectable gain x1 \ x10
Signal\Noise	123dB typical

Digital

Input	1 for External Start Trigger
Output	Hammer Control \ Test Result \ Status

General

PC Connection	USB 2.0
Power Supply	110-220Vac

MG-ST-100 Software

Signal Analysis	FFT, FRF
Freq. Resolution	2Hz with sampling time 0,4 sec - 0,125Hz with sampling time 4 sec
Sync Signals	Automatic: Load Cell as Trigger. Cell to Microphone delay: 50ns typical
Learning Method	Based on simple Wizard for Testing Rules creation Precise adjustment of signal timings and synchronization Classification Based. Frequency response overlay for simple Class comparison User-defined frequency band, peaks level and band type: Pass or Reject
Test Rule Management	Rule Creation \ Archive \ Restore \ Modify \ Rename \ Versioning No limit on Rule and Version number
Others	Statistics \ Simple User Interface \ Clear report of Test Result \ Results Database \ Activity Log \ User Management (3 levels) \ Scalable Software Architecture for easy customization \ Remote control via ActiveX Server

System Components

PC running MG-ST-100 Software
MG-ST-100 Instrument
High quality Cardioid Microphone

- Normal 20 – 20000Hz
- Special 10 – 80000Hz

Load Cell (type and resolution depends on application)
Electronic Hammer from 3 to 120N force (according to application)

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