

MAGYC MG-ST-100/MG-ST-200

Industrial FRF testing system

THE PRODUCT

MAGYC MG-ST-100/200 is the fast and cost effective solutions for verifying voids, cracks, geometry, density or weight variation on your parts using FRF (frequency response function) technology

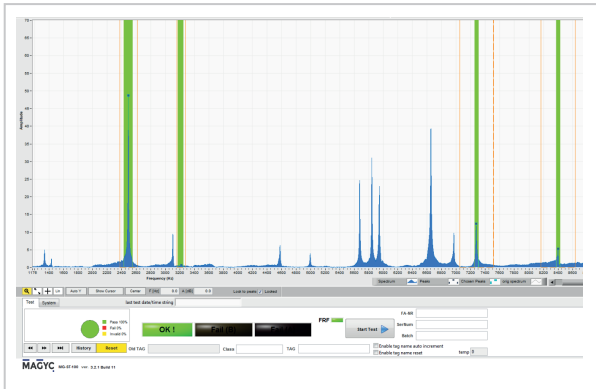
Every part, product or component has its unique acoustic resonant signature that reflects its composition, dimensions and stiffness. The resonant frequencies are almost exactly the same from good part to part, however they will change when internal or external changes occur.

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 simply by verifying the resonant signature. Excellent results have been obtained on Iron Castings, Forgings, Powder Metals (sintered, MIM's), 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
- **SIMPLE TO USE:** Extremely intuitive user interface; wizard based procedures



APPLICATIONS

MATERIALS

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



COMPONENTS & DEFECTS

Nuts and bolts

Presence of flaws, often not visible

Valve seats

Presence of flaws and cracks

Milling tools

Presence of flaws and cracks

Clutch plates

Presence of flaws at the end of the production line

Sintered parts

Density distribution, inclusions or improper granularity

Brake components

Presence of voids, nodularity, etc

Brake drums

Presence of flaws

Ceramics / Clay

Presence of cracks, voids and manufacturing process deviation in tiles, also not fired.

INDUSTRIES

- Automotive
- Medical e surgery
- Aerospace
- Ceramics
- Powder Metal (sintering)
- Iron ware
- Milling machine
- Others



MG-ST-100/MG-ST-200

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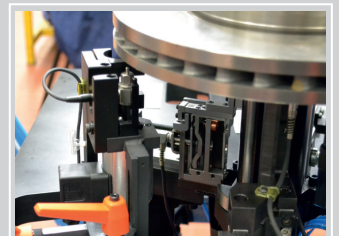
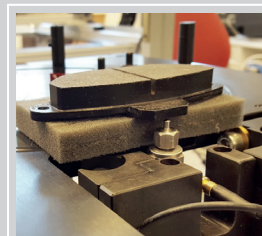
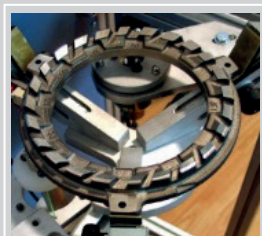
SYSTEM SPECIFICATIONS

	MG-ST-100 HARDWARE	MG-ST-200 HARDWARE
Channels	1	2
Maximum Analysis Range	100 kHz	
Minimum Analysis Range	100 Hz	
Frequency Resolution	2 Hz with acquisition time 0,4 sec / 0,125 Hz with acquisition time 4 sec.	
Sampling Rate	1-216 kHz	
Input microphone Channel	1 (XLR or IEPE)	2 (XLR or IEPE)
Input Load Cell Channel	1 (0..10 V or IEPE)	
Digital Input	1 for external start trigger	2 for external start trigger
Digital Output	3 (Hammer/Test Result/Status)	4 (Hammer/Test Result 1&2/Status)
Resolution	24 bit A/D converter (each channel)	
Signal to Noise Ratio	125 dB (typical)	
PC Connection	USB 2.0	
Power Supply	110-220 Vac	

	MG-ST-100 SOFTWARE	MG-ST-200 SOFTWARE
Signal analysis	FFT, FRF	
Sync signal	Automatic: Load Cell as Trigger. Cell to Microphone delay: 50ns typical	
Filter definition	Based on simple Wizard for testing rules definition. Frequency response overlay for simple Class comparison. User-defined frequency band, peaks level and band type: Pass or Reject configuration	
Rules management	Rule Creation / Archive / Restore / Modify / Rename / Versioning. No limitation on Rules and Versions number.	
Cycle time	APPROX 300 msec	
Data Storage	All testing parameters and signals are stored in a SQL database, activity Log File.	
Data Analysis	Full statistic tools analysis with the filtering by model, date, operator, result etc...	
User Management	3 Levels	
Others	Scalable software architecture for easy customization	
Double test on same part	N.A.	APPLICABLE
Usable on two separate machines	N.A.	APPLICABLE

MECHANICAL SPECIFICATIONS

- MG-ST-100 Hardware
- High quality Cardioid Microphone
 - Standard range: 20Hz - 20kHz
 - Extended range: 4Hz - 100kHz
- Load Cell (type and resolution depends on application)
- Instrumented Hammer from 3 to 20N



ANALYSIS & FILTERING TOOLS

- Full FRF (Frequency Response Function)
- Q-Factor
- Neural Network (upon request)
- Temperature compensation
- Aging compensation
- Weight compensation
- Voids, cracks and debonding
- Manufacturing process deviation