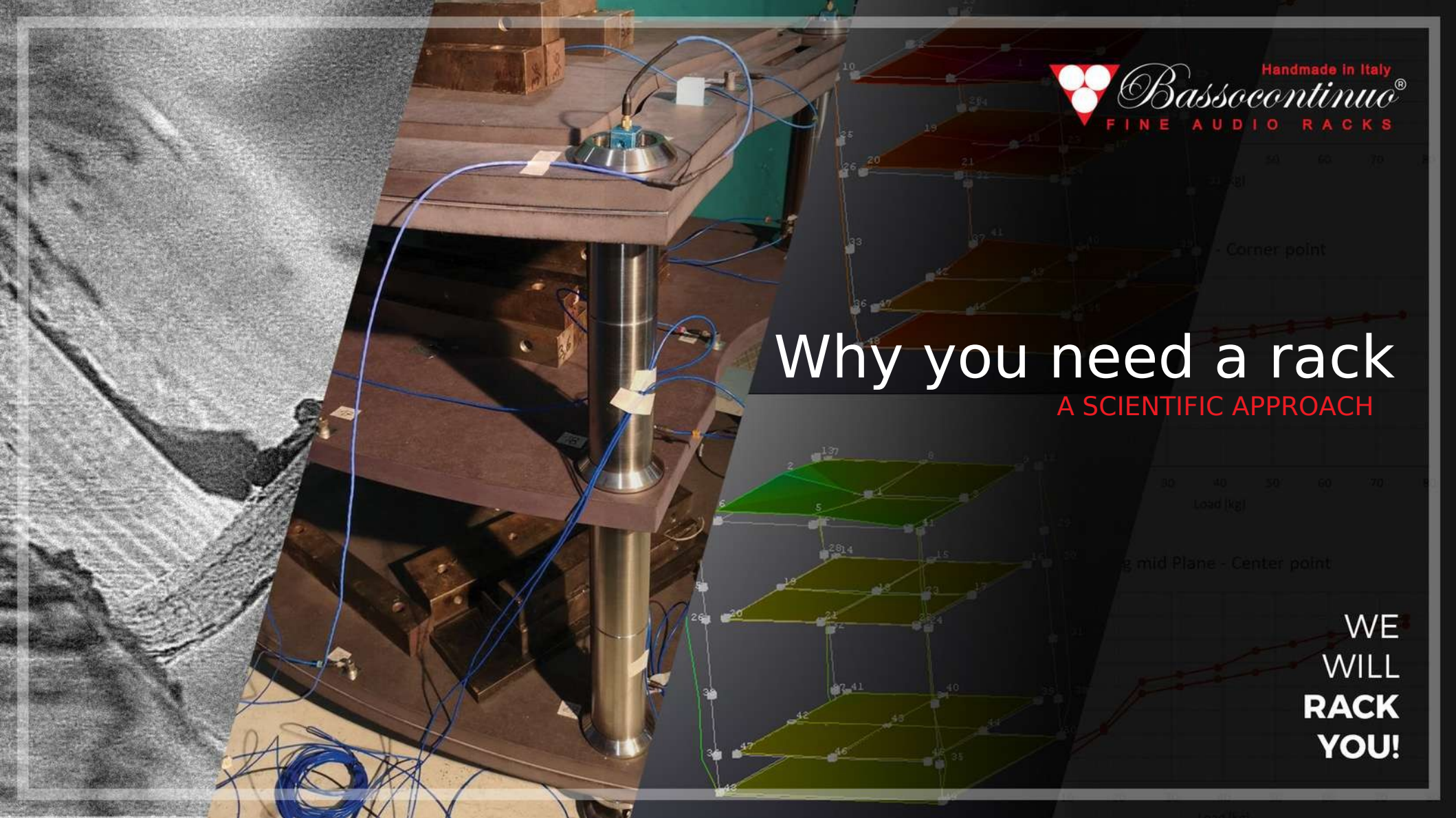
AMIGOS HIFI


Handmade in Italy
Bassocontinuo®
FINE AUDIO RACKS
Why you need a rack
A SCIENTIFIC APPROACH
WE
WILL
RACK
YOU!

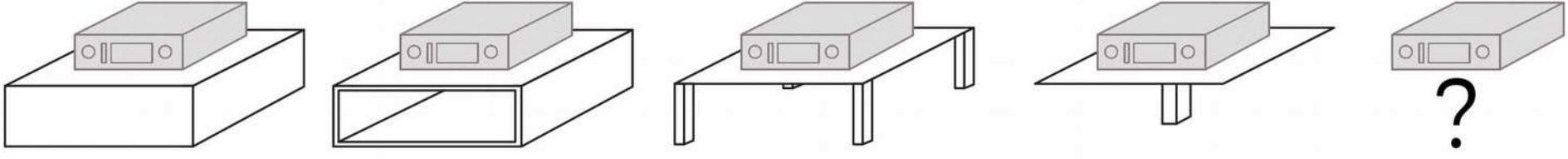
“I need a rack?”

“Why?“

“What does it do?“

“Does it really influence the sound?”

“Do all racks achieve the same result?”



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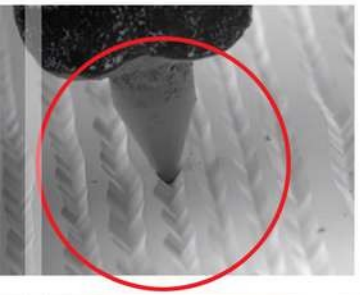
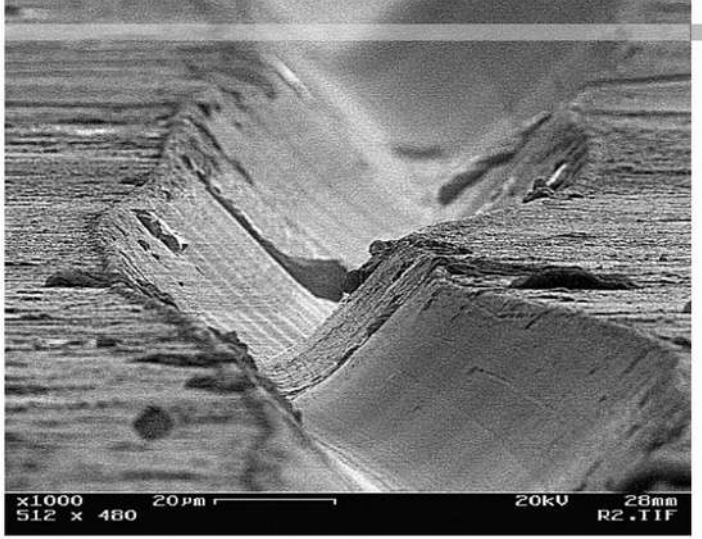
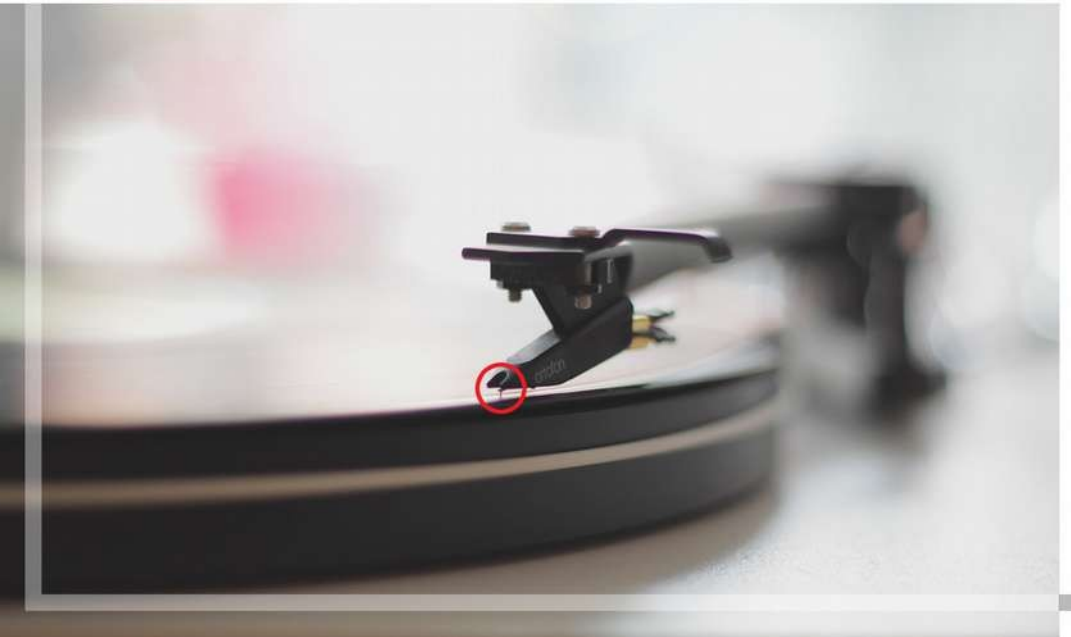
First of all...
What is a rack?

A rack is **a technical instrument to absorb the vibrations** which occur in the floor and walls, while you're playing music at higher listening volumes.

It works as a **support for our electronics**, helping them to operate in the best conditions possible.







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How does your Turntable (or CD player) work?

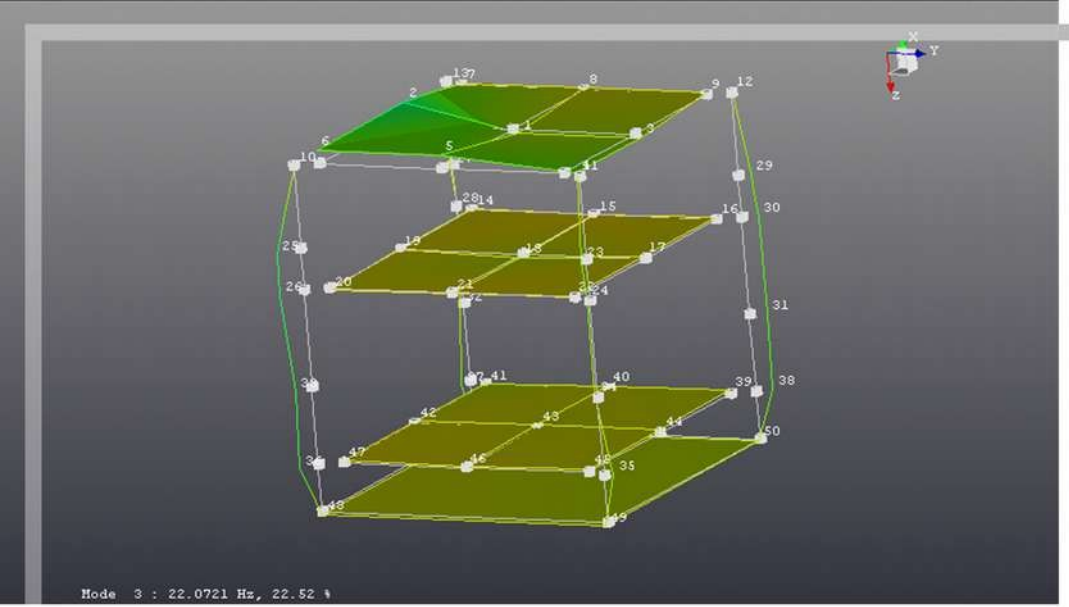
Microscopic pictures of the vinyl grooves show how the stylus has to follow a pre-defined route on the vinyl record.

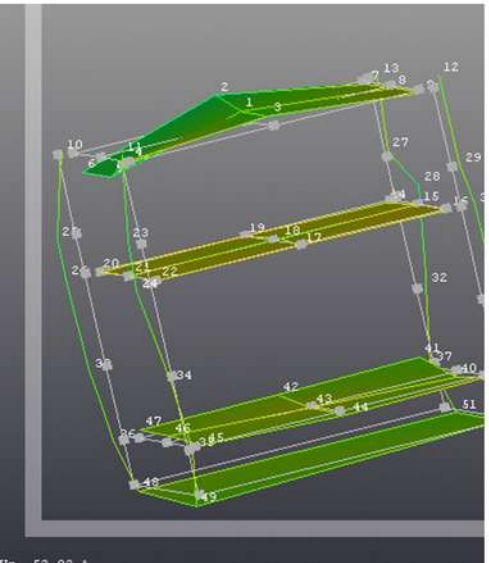
This movement in the grooves makes the stylus vibrate, which creates a magnetic field thanks to the cantilever of the moving coil. This is converted into an electric signal, which contains the sound message we hear.

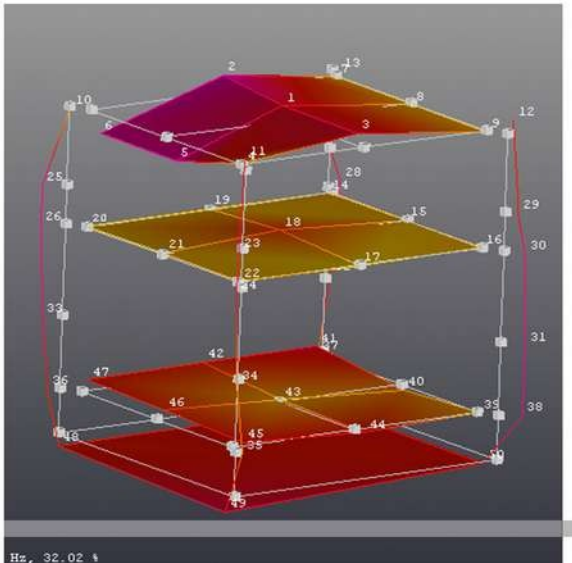
If the stylus moves incorrectly due to additional, unwanted vibrations, then it will transfer false signals to the coil, damaging the original sound message.

It only takes tiny vibrations for this problem to occur.

Of course, the same principle applies to your CD PLAYER, as the CD player's laser reads the digital file contained in the CD.







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What kinds of defect can vibrations make to the sound?

- lack of dynamics at lower frequencies
- loss of environmental (room) details
- loss of tonal balance
- distortion at higher frequencies

How can we avoid these defects?

By choosing a rack **designed** and **tested** to minimize harmful vibrations.

The Bassocontinuo approach:

Scientifically tested products (always!)

Since its beginning, Bassocontinuo has always understood the importance of creating racks that are functional as well as. Beautiful.

For this reason, each line is laboratory-tested before its market launch with:

- **Static tests** to certify the load capacity of each shelf and verify the deformation it supports under different loads.
- **Dynamics tests** to understand the rack's capability to absorb vibrations - how severe and at which frequencies.

Uniquely in the industry, **each test is conducted by an independent laboratory in collaboration with the team from Milan's prestigious Politecnico** that studies vibration in the automotive, aeronautical and aerospace industries.

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Ultimate Line – our best ever rack:
Which tests, why, how?

The more vibrations you absorb, the better your electronics will be able to reproduce sound.

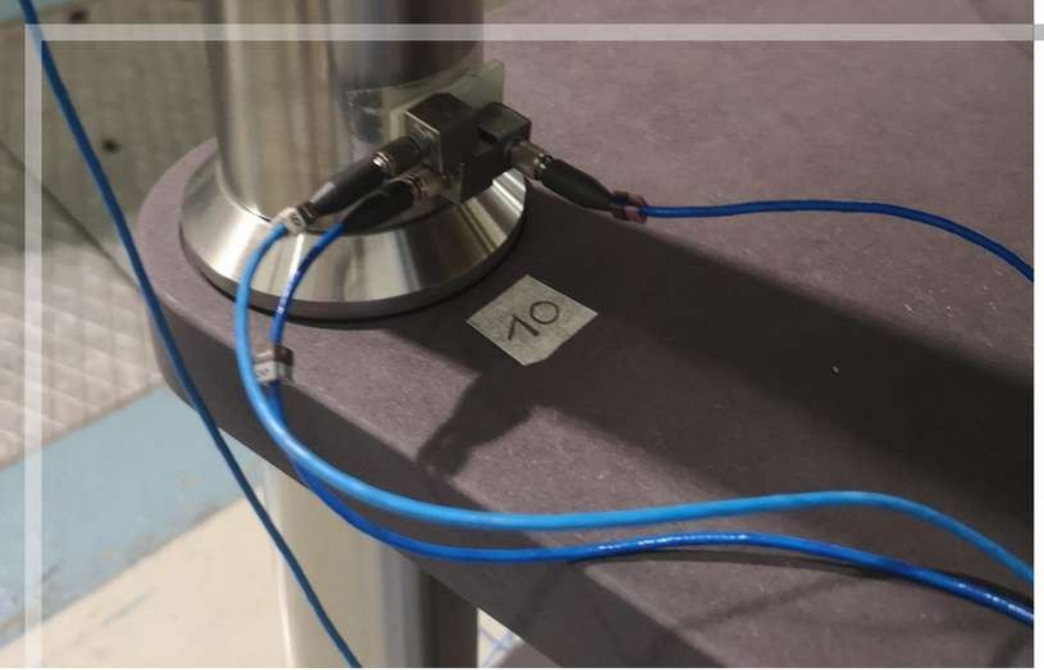
So the most important challenge is to understand how a rack will react when stressed by an outer force.

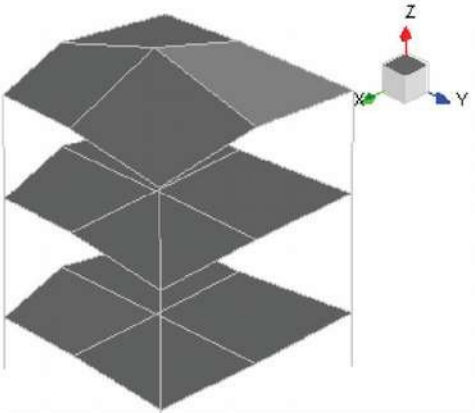
Static and dynamics tests help to understand errors, allowing you to improve efficiency and achieve new technical solutions: when you know exactly how your rack is performing, you have the basis to make improvements and get closer to perfection.

Our Ultimate Line was subjected to extensive testing:

1 – modal analysis
2 – static testing under compression

The purpose of the tests was to understand the rack from both static and dynamic perspectives (from 20hz up to 2000 Hz, measuring its resonant frequencies and its modal shapes)





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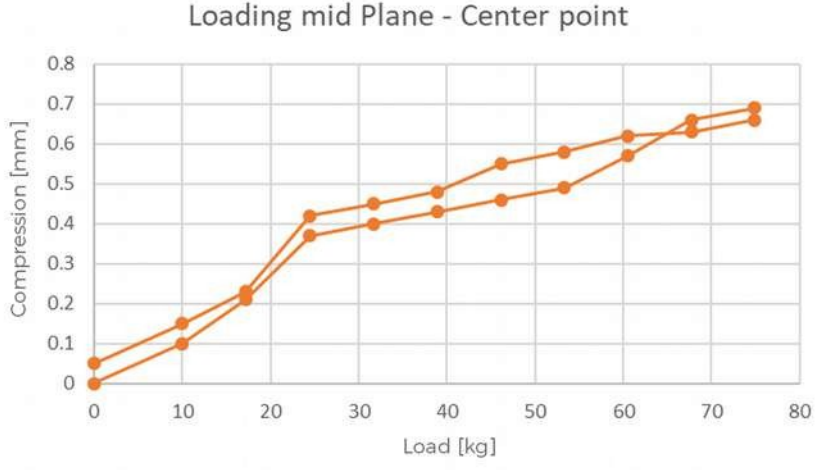
Ultimate Line

Modal analysis

The rack was fitted with 55 unique sensors. Tests were conducted both with an empty rack and one loaded with 75 kg, to simulate normal use.

‘Perfection’ is achieved as the resonant frequency approaches zero Hz, because the energy needed to excite a structure at such low frequencies would have to be extremely high (and therefore the rack would be very unlikely to suffer unwanted vibrations).

Analysis made with triaxial accelerometers demonstrated how the **resonance frequency peak was 23 Hz, very close to the lower audible sound limit, an exceptional result indeed!**



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Ultimate Line

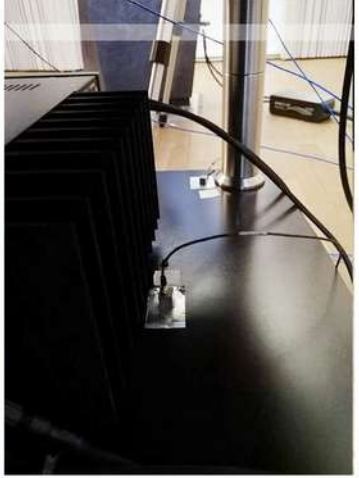
Static test under compression

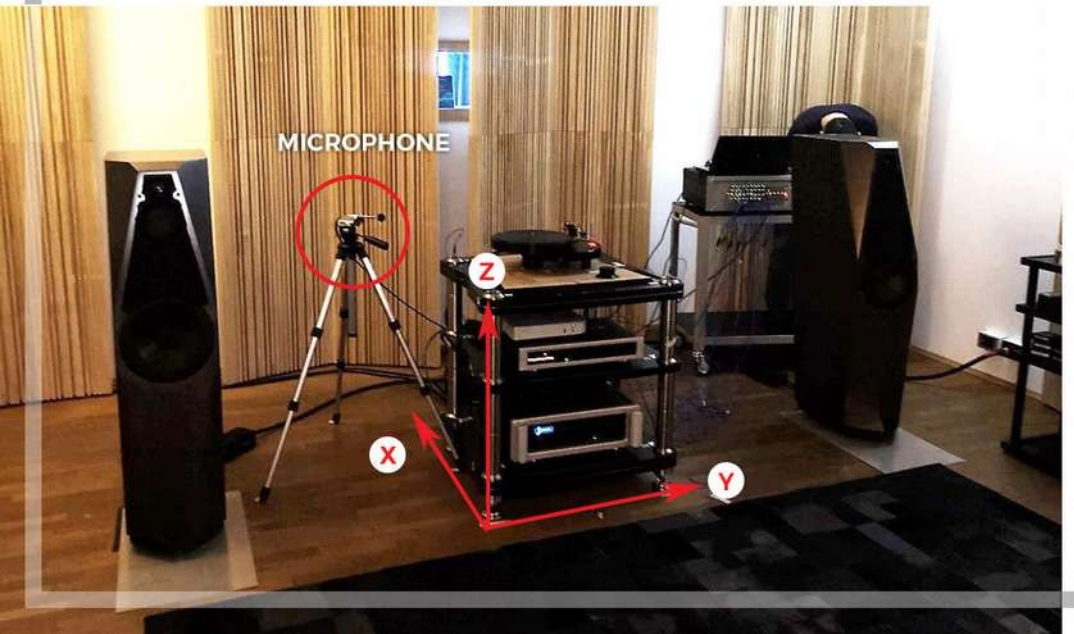
The laboratory made two tests, loading the top and mid shelves. Both were made with calibrated mass, gradually incresing the load from 0 kg to 75 kg.

Using a sandwich structure of Valchromat-aluminum-Valchromat dramatically increased the bend resistance.

The breaking point of the structure was close to one ton per square meter.

The compression measurements were made using laser instruments. Overall compression due to both a bending effect and also the compression effect of the rubber-like, decoupling materials under the rack, between the structure’s legs and each shelf, is expressed in mm.





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Comparative test

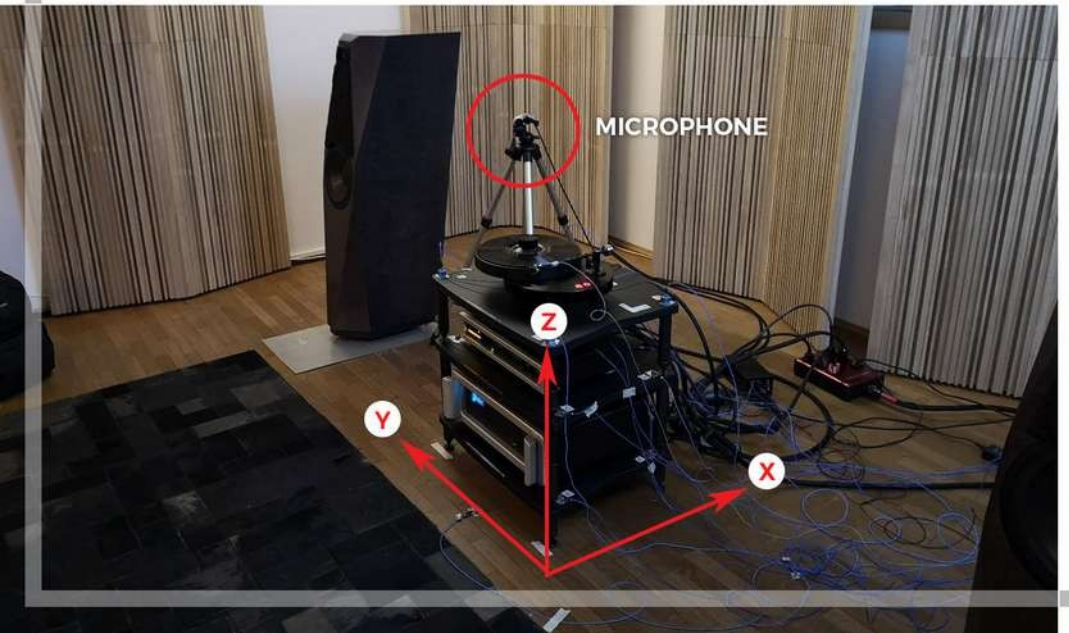
Our final challenge: to understand what happens when you play music with a turntable or a cd player and you're not using a rack.

To reproduce normal conditions, **we decided to make the test in a living room** instead of a laboratory. Our reference high-end system was made up of:

- AMG Giro turntable with 9W2 arm and Lyra cartridge
- Pre-phono Boulder 508
- Spectral DMC 30 SV Preamplifier
- Spectral DMA 300 SV Turbo Power Amplifier
- Avalon/Spectral Aurora Speakers
- MIT Spectral power cables and interconnects

ULTIMATE LINE

CLASSIC LINE



Comparative test

The test was conducted with one song (**Pink Floyd – The Wall**) for 300 seconds, with two output levels: 60% and 80% of maximum power.

In the first session we used our flagship **GOLIA** (Ultimate Line).

In the second, we used our entry-level model, **LYRA XL4 2.0**.

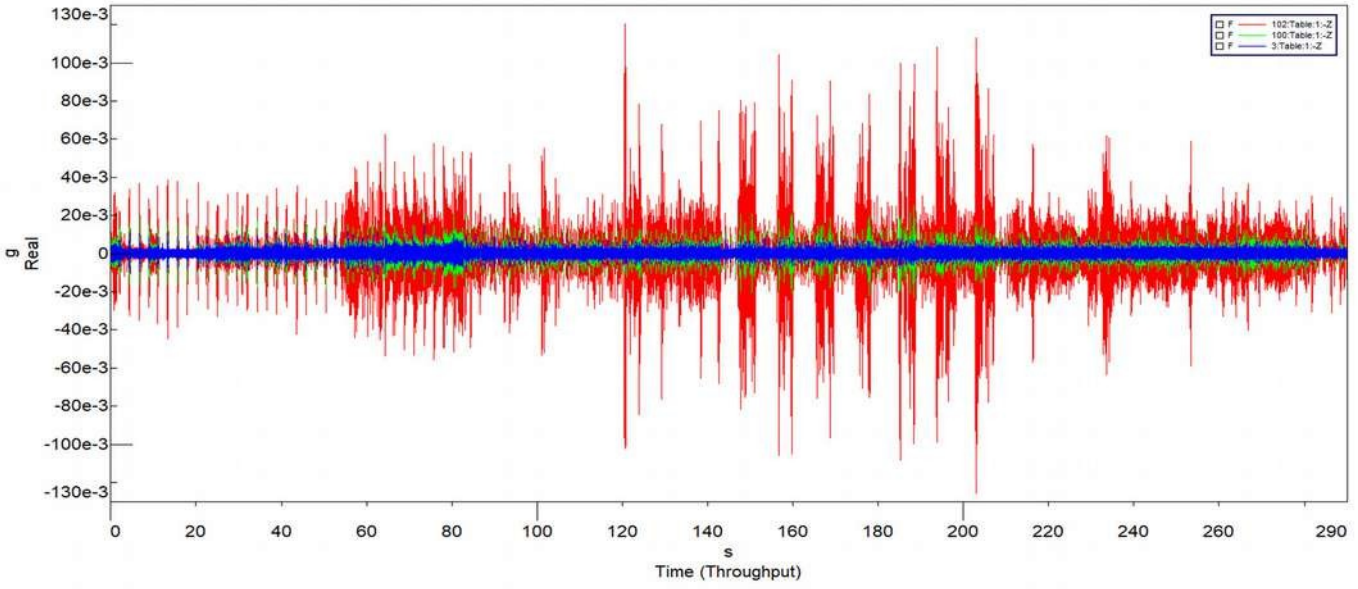
In our final session, we simulated a regular, living room table without any technical features and not designed for Hi-Fi use, by moving the entire audio system to a table made of aluminum and glass, which we call a “**standard table**”.

GOLIA RACK

LYRA RACK

STANDARD TABLE

Comparative Test 1



Comparative graphic of the accelerations experienced by the turntable during the test.

As our test song was played, for the Golia rack you can see on the graph an almost constant (i.e. perfect) blue line, some small peaks (corresponding to lower frequencies) on the green line of the Lyra XL4 2.0, and a huge number of large peaks on the red line of the standard table (till twelve times worse than our entry level Lyra XL4 2.0)Each peak is caused by an extrern «acceleration». This means that on each peak the stylus is badly influenced by an unwanted vibration. The direct consequence of each peak is that we experience a decay in sound quality and a loss of high fidelity.

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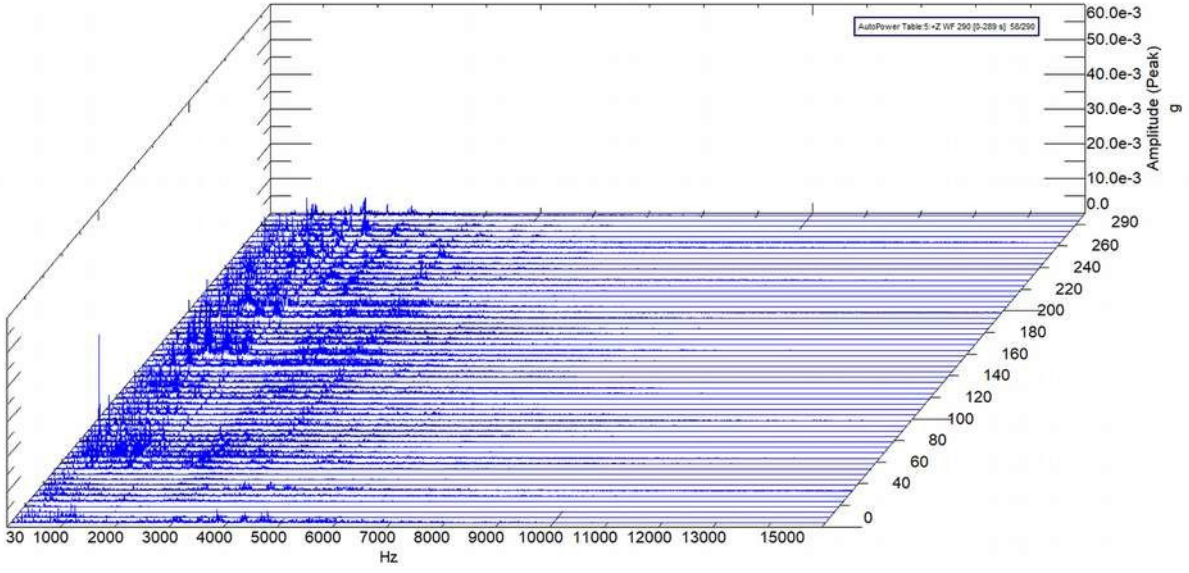
Comparative Test 2 – Golia Rack

GOLIA RACK

LYRA RACK

STANDARD TABLE



Acceleration peaks in relation to the frequencies reproduced by turntable on **Golia**.

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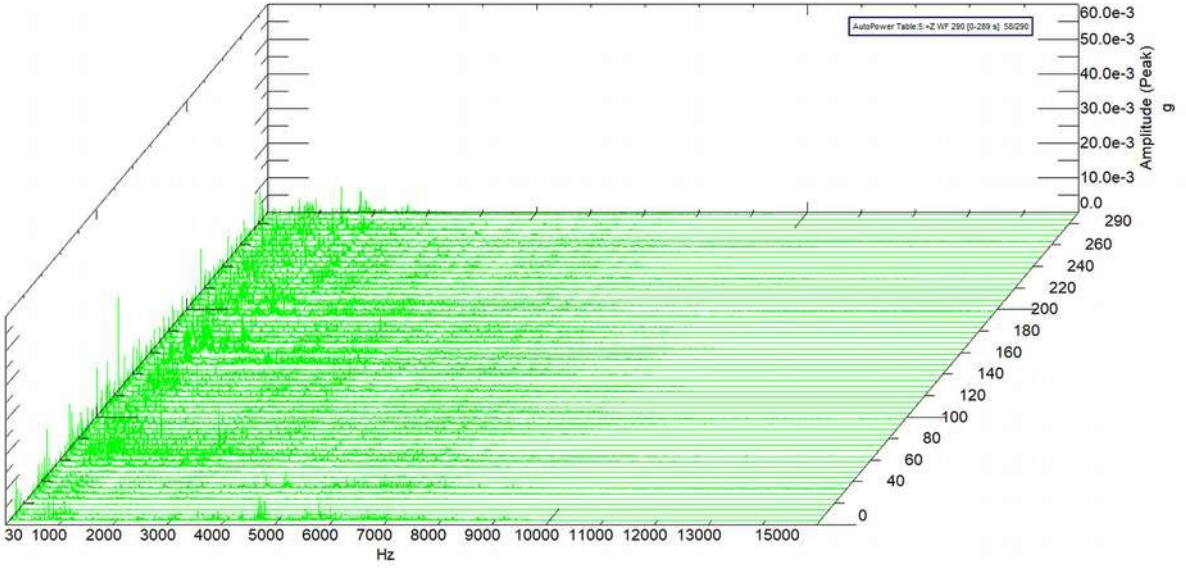
GOLIA RACK

LYRA RACK

STANDARD TABLE

Comparative Test 2 – Lyra Rack



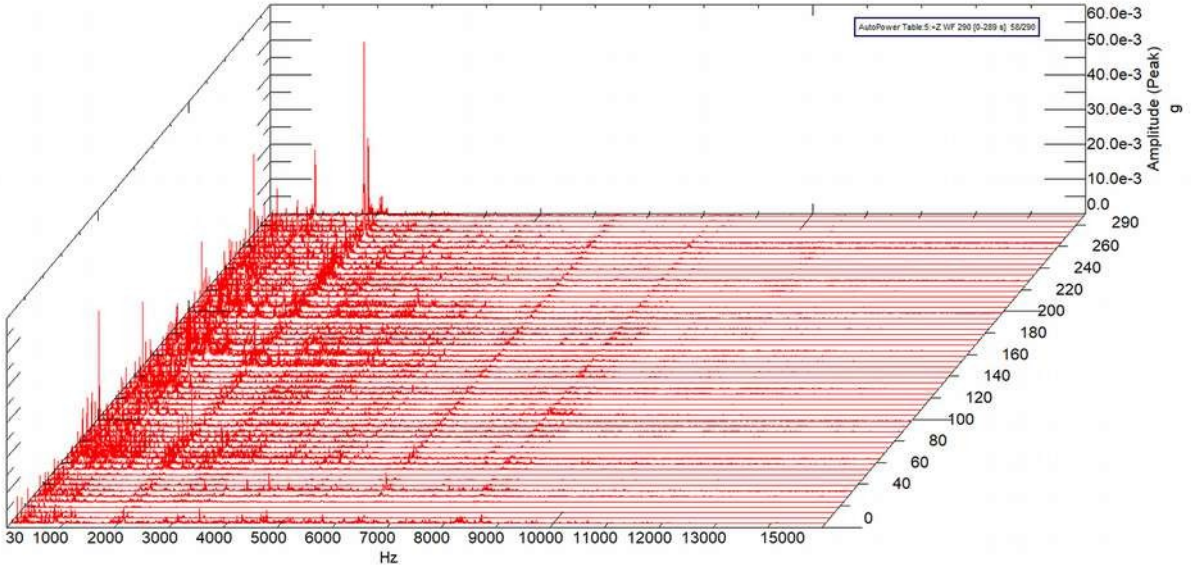
Acceleration peaks in relation to the frequencies reproduced by turntable on **Lyra XL4 2.0.**

GOLIA RACK

LYRA RACK

STANDARD TABLE

Comparative Test 2 – Standard Table



Acceleration peaks in relation to the frequencies reproduced by turntable on **standard table**.

If you compare RED graphic with the others, you can immediately notice higher concentration of peaks at each frequency. On the highest peak, the sound have surely had a quality decay. At lower frequencies (till 1000 Hz) RED lines are five times more than GREEN and ten/twelve times more than BLUE.

Final results

These tests were never about saying you should choose this brand or that brand of hi-fi racks. The correct conclusion to draw from these tests is the importance of using a rack for high fidelity reproduction of sound, and the strongly negative consequence for sound if you use normal furniture instead.

As you can easily see from the comparative graphic, the more refined the rack, the better will be the performance at absorbing/preventing vibrations.

Even with a small investment, as for our entry-level Lyra XL4 2.0 (the green lines), most of the negative peaks are still damped, demonstrating a good technical design and a well-made rack. Please note: not all the racks on the market are correctly designed!

The worst result is clearly demonstrated by the red lines of the ‘standard table’, and in fact the performance is so weak that it has the effect of **amplifying** the vibrations instead of absorbing them. Sometimes this could happens with a rack as well: our suggestion is to choose **always** a rack made by a manufacture able to prove these tests.

Of course, for high-end audio systems, capable of communicating even the tiniest of musical details, the sensitivity of each electronic component to vibrations is extremely high. Therefore, for these systems it is strongly recommended to invest in a very high-level rack such as Golia (Ultimate Line), which is designed to achieve the best possible performance, and as you can see from the blue lines, is **proven** to achieve spectaular damping performance throughout the test and across all frequencies**.**