



## TEST.

# Finite Elemente Pagode Edition MKII

18.03.2020 // WOLFGANG KEMPER

**Finite Elemente has developed a new Pagode equipment stand. It is essentially similar to the well-known Pagode. But, there is serious innovation. The new generation should bring clear advantages in terms of sonic performance. So the manufacturer's offer to compare the proven with the new one was very much tempting.**

First, let me address your attention to the photos in this review: Unfortunately due to obvious reasons, it is currently not possible to have the Pagode transported as planned to carry out our own photo shooting. Therefore you will find images and graphics provided by Finite Elemente. The rack system tested here differs in several aspects from the photos, as you will certainly notice when reading and viewing them.

If you ask the question about a high-quality rack or an equipment support for audio components, then the Finite Elemente Pagode should instantly come to mind for anyone within the audio scene. Like no other, Finite Elemente has established this product line worldwide as a state-of-the-art system. Even way back then, the Pagode was a costly affair. As a used unit, these racks rate among the easiest to sell audio components today. Because they are sought after, getting them affordable even for the less well-off. Anyone who owned a Finite Elemente Pagode did not need to worry about the placement of their equipment – until today. In fact, other fathers too have beautiful daughters, and there are also alternatives that provide a neat sound. But, to locate these and then compare them acoustically is a difficult task to perform. The Finite Elemente is a pleasingly different matter, because Pagode is well positioned in the specialist trade. After Finite Elemente hasn't produced and delivered for a while, they have been happy about their regained market presence for a good two years



*Here you can see a Pagode Edition MKII. The Edition version differs from the Master Reference MK II in the profiling of the wooden frames and the cladding of the two T-beams with wood*

now, as Werner Möhring, one of the co-owners of the Finite Elemente Köpf Möhring GbR told me with some contentment. Luis Fernandes, who once brought Finite Elemente to life, is also in charge of the new company. It is his ideas and experiences, his search for new materials and improvements in detail that are the reason for the change within the Pagode generations. The old Pagode was so good that its basic concept is also to be found in the new, current Pagode MKII.

The Pagode is a lightweight concept, even if the massive looking wooden frames of the component levels would suggest something different. As before, this frame wood still consists of seasoned Canadian maple. Luis Fernandes identified this wood at the time as the one that retains its dimensional stability for decades while



*New on the MK II are the stainless steel cones with integrated floor protection plate*

offering very good acoustic properties. Since this wood grows slowly due to the weather conditions in Canada, it has a high density and strength. It is not too soft and does not over-dampen. Tones are held and swing out for a long time. On the other hand it is not brittle or even prone to cracking. That's why it is often used in modern instrument making, such as electric guitars and electric basses.

Canadian maple is exclusively used in all Finite Element racks, no matter in which version, colour or size a Pagode is ordered. Each Pagode MKII is a handcrafted, custom-made item according to the customer's order. In addition to three different heights and three widths, there are seven standard colour variations for the wood available. Further variables are the finish of the side pillars, alternative Cerabase feet instead of the cones with integrated plate as well as the heavy-duty version with reinforced top level. The new Edition MKII features a large aluminum insert in the base frame carrying the model designation and the clear indication: „Made in Germany“. As this is appreciated especially by international customers, this also contributes a bit to successful sales. Each rack consists of 97 percent individually manufactured parts and only three percent of standard parts such as screws or connecting bolts. All individual parts are custom-made according to prescribed specifications mainly by regional suppliers in the vicinity of the company's headquarters. Even the original Pagode gained its quality through the intelligent design in conjunction with the resonator technology. Thus a Pagode can always be considered as an acoustically tuned unit, as the individual component levels are consolidated to the whole by means of different resonators. The position of each level is thus predetermined. Nevertheless, a level may be positioned differently in height at the specified mounting points if different clearances between the levels are required when changing components. However, it is counterproductive to the sound and it should therefore be avoided to interchange levels. Each level is labelled, so that, even if the unit undergoes a complete dismantling, a perfect rebuild would be possible at any time.

The Pagode to be reviewed is an 85 centimeter high 600 Edition MKII with four levels. The Canadian maple is stained in walnut colour finished with clear matte varnish. The aluminum pillars, which are clad with the same type of wood for reasons of resonance damping, are high-gloss polished. It comes with solid stainless steel cones as feet, which in the MKII version feature an integrated floor protection plate. This prevents the cone from sinking into the carpet and causing the rack system to lose its horizontal levelling or getting unstable. With the old Pagode the plate had to be placed separately under the more simple looking spikes, and could also lose contact when being moved. If you were unlucky, the spike then most likely scratched the sensitive floor. This risk is now virtually eliminated with the integrated plate.



*As with the original Pagode, the levels of the MK II are tensioned in between the T-shaped pillars with four stainless steel spikes on each side*

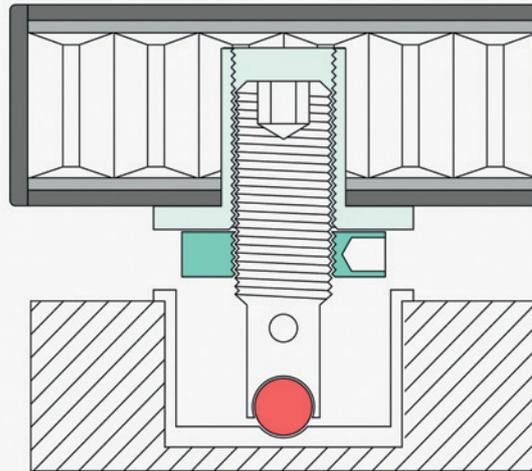
For testing, I got two externally identical looking Pagode stands, namely one from the old series and a new MKII type. The different floor spikes revealed the respective generation, as did the high-polished aluminum parts on the new one. This optical refinement implies a surcharge of 960 euros for the tested MKII. Luis Fernandes showed me a video on his smartphone, on which I was able to witness the polishing process in a specialized workshop. I really admired how much skill and obvious experience the company's staff had in carrying out the polishing process. An enormous amount of aptitude is required to make the aluminum shine flawlessly. Fernandes and Möhring personally delivered the two racks to me, balanced them out via the height-adjustable spikes respectively cones, and were also present during the first extensive listening tests. That was helpful, because we moved the Soul music source and the two Air Tight mono power amps from one rack to the other during the listening process. The power amplifiers are no lightweights, so care was required to avoid scratching the surfaces.



*This is what the new ceramic ball bolts that couple the shelves of the MK II to the frames look like*

Apart from the cones, which are not so much an acoustic improvement as a practical one, there are two significant things that distinguish the MKII from its predecessor. Also with the MKII we find the maple frame of the lowest level firmly connected to the vertical pillars. All levels above are clamped with four spikes per side into the aluminum side beams. Mounting points are provided in the alu profiles for this purpose. This ensures a horizontal alignment as soon as the bottom level of the equipment stand has been balanced out. Each level is therefore firmly and securely connected to the supports with only minimal contact at two by four points. In the maple frames, the actual component shelves rest on the H-shaped internal bracing construction in a point-centred manner. Here we run across difference number one: In the original Pagode, spikes, almost identical to those described for lateral clamping, but somewhat shorter, secured the contact to a stainless steel cup. The spikes were centered in the cups by means of a foam rubber ring. The MKII now no longer uses spikes at these important contact points. Instead there now operates a ceramic ball as contact element. This ball is firmly beaded into a height-adjustable stainless steel bolt, and therefore cannot be lost. The stainless steel bolt with the ceramic ball is centered by a foam rubber ring pressed into the cup. This fits so precisely that a displacement of the component shelf is impossible. In general, the grade of manufacturing precision at all points of a Pagode stand is remarkable. However, this also applied to the previous generation. The acoustic advantage of this new ceramic ball solution results above all in the improved coupling of the component shelf to the frame construction. The important resonators are mounted to the frame, and are carefully selected from a variety of existing lengths and thus frequencies, in order to individually tune the individual levels. Four resonators per level, namely two on the left and two on the right, are located inside the H-shaped bracing, into which the stainless steel cups for holding the ceramic ball bolts are also inserted. This H-beam construction made of Canadian maple is firmly dowelled and glued to the wooden frame, as are all direct wooden connections.

## Honeycomb core shelf with ceramic ball coupling



*Shown here is a schematic diagram of the threaded bolt and the new component shelf structure with the honeycomb layer between the MDF layers*

The four resonators are embedded horizontally in a cavity in order to be able to vibrate freely without causing audible radiation themselves. The more pronounced the excitation by sound of the rack system, the greater the compensating vibration amplitude of the resonators. This is a major distinguishing feature compared to competitor designs. This is because the Pagode and its resonators behave dynamically depending on the grade of mechanical excitation. Because the resonators are precisely tuned to the position of the levels within the overarching acoustic unit of each Pagode, the levels must not be interchanged, as already mentioned. According to Luis Fernandes, the effective range of the resonators in the four-level version is 200 to 400 Hertz for the top level, 400 to 600 Hertz for the intermediate levels and 600 to 900 Hertz for the bottom level. However, a bandwidth tolerance of plus/minus ten percent of the oscillation frequency of each resonator, which was deliberately included in the design, allows the mounting height of a level to be changed to a practical extent. The resonators are matched to loaded component levels and their oscillation frequency is not dependent on the resonance properties of the audio components placed on them. However, due to their weight, they do have an influence on the amplitude of the vibration frequency. The greater the physical mass of a component, the lower the amplitude. This is why the component shelves slightly resonate when they are not loaded. To avoid this happening, five to seven GEO magazines were placed on the unused levels of the total of eight levels of both racks during the listening test.

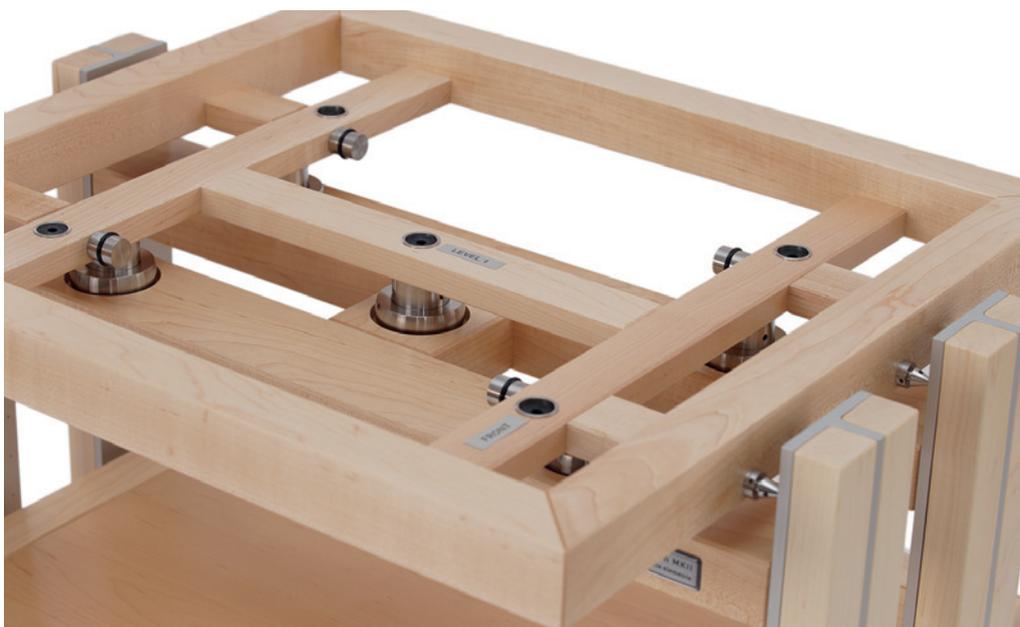
Luis Fernandes spent a lot of time to find out whether the material he used for the old Pagode shelves is still the best possible option or another material would do a better job by offering acoustic advantages. It became apparent that the component shelves offered potential for optimisation, and that to a considerable extent. The shelves of the old Pagode featured a sandwich design with two eight millimetre thick MDF layers, between which a silicone layer, enclosed by two thin layers of paper, took care of the damping. All round the shelf had a glued edging. These shelves were comparatively heavy and caused a high grade of damping. The sandwich construction of the MKII shelves has now been improved to such an extent that an ultra-light polymer honeycomb core between two thin layers of MDF assume the absorbing task. This results in an improved resonance behaviour and leads to less damping thanks to reduced energy storage. Compared with silicone, the new material features a very good absorption capability, but avoids its softness correlating with a certain degree of marshyness. With regard to sound, the new honeycomb sandwich leads to less musically relevant energy dissipation, and therefore to more dynamics. I learned this not only from the technical explanations of Luis Fernandes, but when comparing the two stands I could easily perceive considerably increased fine dynamics and other positive acoustic effects without knowing the technical background, i.e. the new material mix, at the time



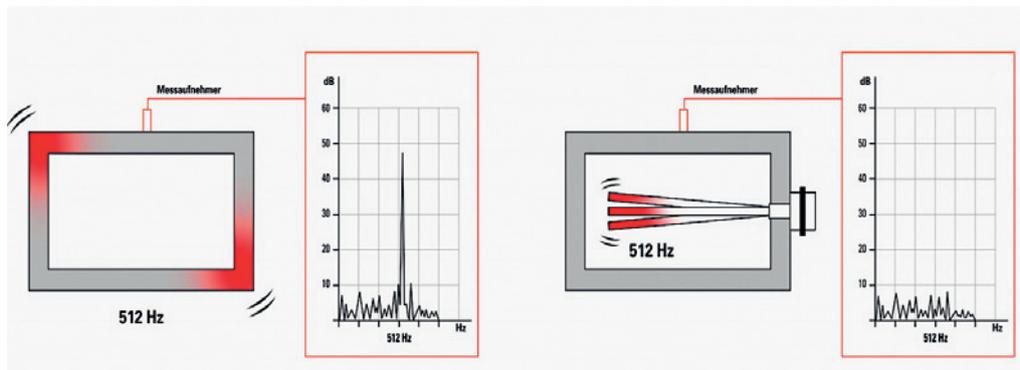
*Here you can see the underside of an MK II component shelf featuring the new ceramic ball bolts. Exactly opposite there are the four stainless steel cups located in the H-beam, insulated with foam rubber on the inside. This photo shows the heavy-duty version of the Pagode, recognizable by the stainless steel supporting elements below the H-beam situated above*

of listening. For owners of an old Pagode, as I am one of them, the obvious way to go would be to replace the old component shelves with the new ones. However, this thought can be well dropped, as the whole resonance damping system of the old Pagode wouldn't any longer work.

For the listening test, the Soul music server preamp was placed on the upper of the four levels of the old Pagode rack, while each of the two lower ones accommodated for my Air Tight mono tube power amplifiers respectively. In the compartment above, i.e. below the Soul, the Soul E power amplifier awaited its later use.



*The four individually tuned resonators are embedded horizontally in the H-bracing of each level. Their stainless steel retainers are visible on the frame's inside*



*This graph shows the effect of a resonator tuned to 512 Hertz – without it on the left, with it on the right*

We started our listening journey with the track Sotho Blue by Abdullah Ibrahim & Ekaya, which, like all the other musical material, originated from the Soul's internal hard drive. In the first step we only moved the Soul to the new Pagode MKII, while the Air Tights remained in place. The gain in detail resolution and spatial imaging was striking. The snare drum and also the cymbals sounded more nuanced, colourful and sculptural. All the more I was struck by the unmistakable gain in dynamics. So the attacking entry of the wind instruments with their saxophones and the trombone, which were so appealingly captured on this album, manifested themselves much more ardently in their lush timbres. And when the mono power amps switched their location onto the same levels in the new Pagode stand, this brought a distinct qualitative leap as well, and this time particularly in terms of coherence. Although the acoustic image now presented itself more closed in a positive sense, the extra bit of detail resolution could not be ignored. This especially proved true for the powerful, low registers of the bass, whose strings now intoned with even more contour and grip.

The differences between the two Pagode stands were of similar nature when it came to Luigi Boccherini's "Sonata for Violoncello in G major", played by Bruno Cocset and Les Basses Réunies, although this piece of music appeared to be much calmer and more solemn than the jazz piece. With the new Pagode, the finely detailed lower registered string instruments not only became more dynamic, slender and orderly, but also depicted a pleasantly coherent atmospheric picture throughout the fundamental range, much more adequate to the instrumentation in play. No doubt, this was musically convincing, and above all it was more exciting to listen and immerse oneself in the music. When we transferred the Soul music server together with the Soul E power



*Its unique concept, great craftsmanship and outstanding sound characteristics honour the Pagode MK II*

amp instead of the Air Tights from the old onto the new Pagode in the same way, the improvement was exactly identical, but in some aspects a little less pronounced. Actually, the Soul E retails at about a sixth of the Air Tights, or let's put it this way: The Soul and Soul E combo costs less than the tested Pagode MKII. But, to draw the conclusion from this aspect that such an investment in an equipment support is somewhat disproportionate may prove fatally deceptive. Because the advantages heard were not small and should increase the musical enjoyment in the long run, as simply more incidents happen within the music. This quickly became even more obvious as soon as we swapped the Soul and Soul E back onto the old Pagode. The backfall was even more brute than I expected. As sad as it might be: The music always seemed tedious and tired. And so did the suspense and pithiness of the vocals in the Ween song "Buenas Tardes Amigo", which the MKII had just mapped out in a captivating and poignant way, get lost as well.

Even though the old Pagode really doesn't sound bad, while still being one of the very good equipment supports, it remains to be only second-class. If one has been given the chance to experience the difference in a direct comparison, the only obstacle standing in the way is the handsome acquisition price. So, if you can afford it, the investment is worthwhile right from the start, even with lower-priced, good sounding components like the two Soul units. The Finite Elemente MKII brings more music into the listening room and, in my opinion, is one or, let alone, the perfect basis for a high-quality audio system, which may well continue to grow and improve on the Pagode MKII over many years to come. What convinced me about the Finite Elemente Pagode – even in regard to the old system – was the effectiveness of the Resonator system. It is effective, no matter whether you listen at low or high volumes. The new mixture of materials allows this grade of quality to be experienced in an even more intensive way.

## STATEMENT

*With the Pagode MKII, Finite Elemente has significantly enhanced the sound quality of its acclaimed rack system. The MKII sets new standards, particularly in terms of dynamics, resolution and homogeneity.*

## LISTENED WITH

Music server	Soul
CD transport	Primare DVD-30
D/A converter	Soul, Antelope Zodiac plus
Pre amp	Soul, Antelope Zodiac plus
Power amp	AirTight ATM-3, Soul E
Loudspeakers	Analysis-Audio Epsilon
Accessories	Audioquest Diamond USB, In-akustik Black&White NF-1302, Audio-gd NF Cinch and XLR, QED Genesis Silver Spiral LS with Enacom LS, MudraAkustik Max power socket und power cable, Audioquest Hurricane HC and Source power cable, AHP pure copper fuses, Room absorber by mbakustik and Browne Akustik

**MANUFACTURER SPECIFICATION**

## Finite Elemente HD03 Pagode MKII (Test sample)

Wood finish	Canadian maple stained to Walnut colour
Metal finish	Aluminum high-gloss polished (at extra cost)
Height	85 cm
Number of levels	4
Shelf clearances (from top)	Level 2: 155 mm, Level 3: 195 mm, Level 4: 240 mm (Standard configuration, adjustable in steps of 30 mm)
Useable component area	515 x 465 mm (WxD)
Load capacity	Level 1-3: 60 kg each, level 4 (bottom): 120 kg
Features MKII	Inserted shelves in three-layer lightweight design with honeycomb core middle layer and MDF outer layers, coupled to the frames with height-adjustable ceramic ball bolts, Floor feet: height-adjustable cones with integrated protection plate
Dimensions	850 x 750 x 590 mm (HxWxD) (Height incl. conical feet 890 mm)
Price of test sample	10,450 euros (basic price w/ silvergrey anodized aluminum) 960 euros (extra cost for aluminum high-gloss polished)
Model variants	Two identical model ranges: pagode° Master Reference and pagode° Edition Available in three widths and three heights, separate amplifier platforms MR MKII and Edition MKII also available
Colour variants	Available in seven standard colours: Natural Canadian maple plus staining colours: Walnut, Makassar, Palisander, Cherry, as well as RAL colours: Pearlstructure White or Black (other staining or RAL colours available at extra cost)
Prices	Master Reference MKII series as from 5,480 euros (60 cm high – 2 levels) as from 8,950 euros (85 cm high – 4 levels) as from 9,795 euros (110 cm high – 4 levels) Edition MKII series as from 6,680 euros (60 cm high – 2 levels) as from 10,450 euros (85 cm high – 4 levels) as from 11,295 euros (110 cm high – 4 levels)
Options (MR MKII and Edition MKII)	Heavy-Duty (top level only, 120 kg load capacity) – as from 1,590 euros, Carbofibre° Carbon shelves – as from 690 euros (per shelf), Aluminum high-gloss polished – as from 720 euros (all prices are additional costs to the basic rack price)

**MANUFACTURER**

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