

Kuzma Stabi Ref 2 with 4Point arm

The turntable in evidence is a clear example of longevity, a characteristic feature of the best audio products. Indeed, it is present in the Slovenian manufacturer's catalog since 2009 and constitutes the most current version, essentially modified in the feeder, of the "historical" Stabi Reference of 1992.

Kuzma Ltd is a Slovenian company which has been operating since 1982. The founder, owner and designer, is Franc Kuzma, a specialized engineer in mechanics and acoustic transducers, which has been pursued since the beginning of the brand a well-defined project idea regarding the turntable theme. This approach is reflected in the name of the product introduced on the market in the same year, the Stabi, for the internal market, whose name highlights as attention principal had been placed on the control stability and resonance. There a later version was produced shortly improved that record player, defined Stabi 2, which arrived on the international markets. Later Kuzma extended the production to the reading arms presenting the Stogi model, which in Slovenian means "Rigid". Internationally, it is the Stabi 2 (known simply as Stabi) that the Stogi arm appeared first in Germany and the United Kingdom, where they obtained favorable reviews from the specialized press; also the turntable Stabi got some awards international that brought him to the attention audiophiles around the world, especially when it was updated with the adoption of a power supply electronic quartz controlled. Since the production of Kuzma was slowly but constantly expanded with various models of different types, among



them the tangential arm Airline is one of themore representative, along with the monumental Stabi XL.

The construction

The Kuzma Stabi Ref 2 consists of two main overlapping elements: the base and the suspended frame; of similar size, they share the same technique constructive: two layers of aluminum black anodized with a thickness of 10 mm, separated by a layer of transparent acrylic, all tightened by non-magnetic steel bolts.

Combining stiffness of aluminum with damping properties a sandwich is obtained from the acrylic non-resonant and stable, two characteristics very important for a record player.

The base rests on three finished feet with conical steel tips. The suspended frame is bound to the base by four large shock absorbers, made up from springs immersed in silicon oil - with damping function - adjustable in height from knobs; the system has a frequency of very low resonance, equal to 2.2 Hz, that is, inside what it is considered the optimal range of 2-3 Hz.

The reason for this is that the suspension it must resonate above the speed rotation of the turntable and below of the resonance frequency of the group arm / head. The first, also for the rotation speed of 45 rpm, corresponds at a frequency of less than 1 cycle / second, that is, if you prefer, lower at 1 Hz (in the specific case 0.75 Hz), while the arm / head resonance is typically in the range of 8 to 12 Hz. Un agreement in the order of 2 Hz allows the dish to resonate in a range that it is not influenced by the engine and does not transmit energy at the resonance of the arm. It also guarantees excellent immunity from the vibrations transmitted by the support structure of the turntable itself. The softness of the spring together to the mass consisting of the frame, the plate, from the arm etc. acts as a low pass filter.

KUZMA STABI REF 2 Belt turntable

Distributore per l'Italia: The Temple Esoterico, Via Vicenza 12 A, 95127 Catania. Tel. 349 5976278 - 328 374621 www.iltempioesoterico.it - www.kuzma.si
Price (VAT included): euro 9,850.00

CHARACTERISTICS DECLARED FROM THE MANUFACTURER

Transmission: rubber belt. Speed: 33.33 and 45 rpm. Plate: aluminum and acrylic, 8 kg. Pin: reverse, with spherical tip in ruby; diameter 16 mm. Motor: 2 24-pole AC motors with power supply external.
Notes: clamp and mounting base for the supplied Kuzma arm; optional base for different arms. Dimensions: 50x20x40 cm. Weight: 40 kg

KUZMA 4POINT Braccio per giradischi

Distributore per l'Italia: Il Tempio Esoterico, Via Vicenza 12 A, 95127 Catania. Tel. 349 5976278 - 328 374621 www.iltempioesoterico.it - www.kuzma.si
Prezzo (IVA compresa): euro 6.500,00

CARATTERISTICHE DICHIARATE DAL COSTRUTTORE

Tipo: imperniato dritto con articolazione a quattro punti. **Lunghezza effettiva:** 11" (280 mm); distanza perno-articolazione 10,3" (264 mm). **Overhang:** 16 mm. **Massa effettiva:** 14 grammi. **Regolazione forza di appoggio:** a contrappeso per testine fino a 35 g. **Antiskating:** a contrappeso. **Portatestina:** estraibile. **Alzabraccio:** idraulico. **Cablaggio:** in argento bi-wiring. **Base di montaggio:** Kuzma. **Peso:** 1,65 kg



Foto 1.

This means that the system filters out vibrations at a higher frequency than the resonance of the system, preventing it to reach the frame. However, the vibrational energy in the interval below the resonance of the system can pass. At the resonant frequency, the vibratory movement is maximum so it is necessary to provide a damping to check it; hence the need to use the silicone oil bath that dampens the vibrations of the springs. When the suspended frame is removed, for example in case of transport, the tanks they contain the silicone liquid come automatically sealed.

The motion is given by two engines 24-pin synchronous (Philips Airpax) integral at the base, placed in diametric position opposite to the pin. Their pair is transferred to a counter-party in aluminum through a flat belt (**Photo 1**) conducted by the two engines; solution whose advantage consists in the cancellation of asymmetric stress on the pin, as usually happens in the case of use of a single engine.

From **Photo 2**, showing the upper plate constituting the suspended frame, it is possible to note how it is equipped with cavities that allow the passage of the two engine pulleys; moreover it hosts the group of the overturned bearing with a ruby sphere. Both the sphere and the sliding ring they work in oil bath for lubrication and to facilitate the damping of any vibration, it may arise inside the bearing (**Photo 3**).



Foto 3.

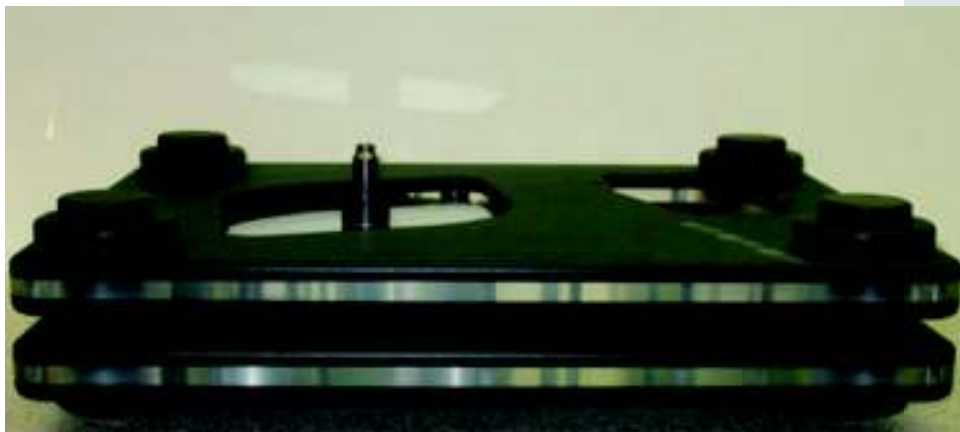


Foto 2.

At the the plate is mounted above the counter-plate true: it too is realized with the sandwich technique and, with its 8 kg, it is definitely heavy. The upper part of the plate is covered by a mat made of fabric soaked in resin rubbery. The pin is threaded at the end superior and on it is possible to screw a press-brake (clamp), made also with the sandwich technique aluminum / acrylic. In the middle of the flat, at the pin, we find a small recess on which a disk can be placed in red anodized metal - more often for normal and thinner vinyl discs from 180 g - which works in conjunction with clamp to promote the adherence of the disc to the damping surface of the mat, in order to avoid the occurrence of vibrations and resonances between the two surfaces. The sandwich construction technique was also adopted for the base of the arm, available in various formats (SME, Kuzma, Ikeda, Triplanar, Ortofon, Graham, etc.).

The engines are powered by alternating current from an external unit called Kuzma PS Ref II (**Photo 4**), with electronic quartz control and two amplifiers 20 W. The buttons on the front panel allow you to start and stop the plate, to select the rotation speed between 33 or 45 rpm (indicated by a small green LED display) and to perform fine speed adjustment.

The frontal encumbrance of this power supply is rather limited but on the other hand it is very deep, having the same depth as the turntable. The connection between turntable and power supply takes place by means of a long shielded cable terminated with a DIN connector, which allows the unit to be positioned on as far as possible from the turntable, in the perpendicular from the head and phono preamplifier.

A critical note regards the embossed surfaces of the turntable, including the plate, which make it easy to prey on the dust, given that Ref 2 has no protection; it would therefore be advisable to consider providing it with a hood, perhaps in transparent Plexiglas.

The Arm

Now we come to the 4Point arm which, from the first visual contact, provides an impression of extreme robustness, complexity and impeccable realization. It is these three aspects, detected every time I came across a product from the Slovenian house, which pushed me to deepen my knowledge. Beyond the massive appearance, what is striking about this arm is the adoption of some brilliant solutions that facilitate assembly, commissioning point and daily use. I would start by saying that it is a 280 mm arm of effective length, which corresponds to 11 inches, and an effective mass of 13 grams. From Photo 5 you can see how the regulation tower of the VTA (corner of vertical tracing), whose axis passes the center of the attachment point of the arm, is out of axis with respect to the center of rotation of the arm itself which is therefore moved sideways and set back.



Foto 4.



Foto 5.



Foto 6.

This means that the adjustment of the VTA can also be carried out during the operation of the turntable, intervening on the graduated screw register, with a precision of 0.01 mm and total absence of play. Such a solution can be really ideal for the most attentive listeners who wish to adjust the azimuth according to the different thickness of the discs they listen to or even for each individual disc. Let's now analyze the articulation system: the aim of this project was to combine the advantages of the unipivot typology with the robustness and ease of installation typical of the articulated arms; this has given rise to the development of an articulation that adopts a bearing 4 points - hence the name of the arm -. Two points of contact (similar to a unipivot articulation) allow the control of the movements of the arm on the vertical plane, while the other two points control the horizontal (lateral) movements of the arm. All four bearing points have minimal friction e the total absence of play on all floors of movement, thus ensuring that the head can follow the grooves of the disk with low friction and minimal vibrations.

The straight and tapered barrel is made from an aluminum bar and presents, in the vicinity of the joint, the azimuth adjustment mechanism, on which it acts with considerable precision, simply by loosening two screws, inserting an Allen wrench into a hole and rotating it. The reference lines, impressed on both sides of the tube, allow to return without uncertainty to the 0° position. Equally ingenious is the counterweight system equipped with two threaded pins, the largest of which is placed below the vertical pivot point, and serves for the maximum balance of the arm through the wide assortment of plastic weights and spacers provided in the package;

the second counterweight, smaller and mounted on the upper shaft, is used to set the actual reading weight with extreme

precision (**Photo 6**).

Now, we all know how important this parameter is in order to obtain the best performance possible; I assure you that being able to operate with the level of precision allowed by this solution is a real pleasure. Moreover, this apparent complication makes it possible to obtain an interesting result: to place the majority of the counterweight mass as close as possible to the point of rotation. The angled headshell holder (**Photo 7**) is an object of great beauty that deserves a deepening: also made of metal with reinforcing ribs extensively pierced to lighten it, it is removable thanks to a short hexagonal plug which is inserted into a cavity located at the end of the barrel of the arm where it is firmly blocked by a screw. Rather particular is the choice of wiring where we find the wires and the clips of the head protrude from a slit of the barrel just behind the headshell connector. Also in this case we can see a precise design intent: to make the exchange of heads a fast and relatively inexpensive operation, since there is only need of an extra headshell (there are already two of them) and the hassle of having to reset the reading weight, the antiskating and of course the head wiring. Certainly it is an ingenious solution and less demanding than that seen on the Graham arm, I recently tried, which provides for the change of the entire barrel. Each clip is connected to two wires that lead to two different termination points: one consists of a pair of RCA connectors Eichmann Bullet Plug placed at the end of a 1.4 m long silver cable, the other is a metal box equipped with a pair of RCA Cardas sockets. You can therefore choose to use the direct output or via the signal cable that you prefer.

While appreciating the idea of the continuity of the wiring from the head to the entrance of the phono preamp, I did not appreciate the second option, finding the



Foto 7.

presence of the box an unnecessary redundancy. The antiskating is made using the classic nylon wire mechanism, cam and sliding weight, integral with the platform that holds the arm, in turn connected to the base joint. As you can clearly see from **Photo 8**, Franc Kuzma has equipped the 4Point arm of a system wseparate damping on the vertical and horizontal plane, adjustable using the blades immersed in a container filled with silicon fluid.

Installation and tuning

The installation of this turntable is not particularly complicated; as always in these cases it is necessary to study scrupulously the instruction manual that shows all the information necessary for the correct assembly of the parts.

I would like to underline the absolute necessity of carrying out the assembly work in two persons, given the extreme heaviness of the parts that could slip out of hand with catastrophic consequences.

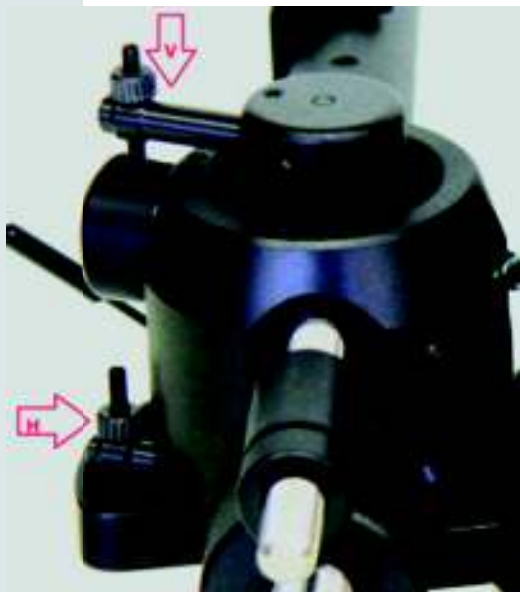


Foto 8.

From a constructive point of view this turntable is a real show and during the setup it will be able to give moments of real pleasure to the enthusiast of analog technology who will appreciate the absolute perfection of the workings, the precision of the grafts between the various parts and the great rationality and care placed in every detail, which translates in easy execution of the complex phases of the set point. For what concerns me I installed on the arm 4Point my usual Koetsu Rosewood Signature, just disassembled from the Graham Phantom Elite used with the TechDAS Air Force V during the test published on AudioGallery # 14; a system that, in the end, involuntarily constituted the benchmark for the Slovenian turntable, since I still had its splendid sounds in my ears. Also in this case, during the set up, I availed myself of the precious help provided by the Analog-Magik hardware / software, presented in the issue last of AUDIOREVIEW, which gave me the guarantee of having done the job better. To make this more complete we felt it was right to publish some screenshots "captured" during the setup, in particular the one related to the resonance frequency of the system - which falls to about 8 Hz, as it is right -, that relative to the wow & flutter measurement and total vibration measurement (Photo 9, 10, 11).

Listening

The Kuzma Ref 2 + 4Point system was included in my system consisting of the Allnic H-1201 phono preamp, pre Lamm L2 Reference, Lamm M1.2 monophonic end devices; the speakers used were first B & W 803 D3, followed by Vivid Audio Kaya 90; the signal wiring Neutral Cable Reference and Audioquest Aspen power.

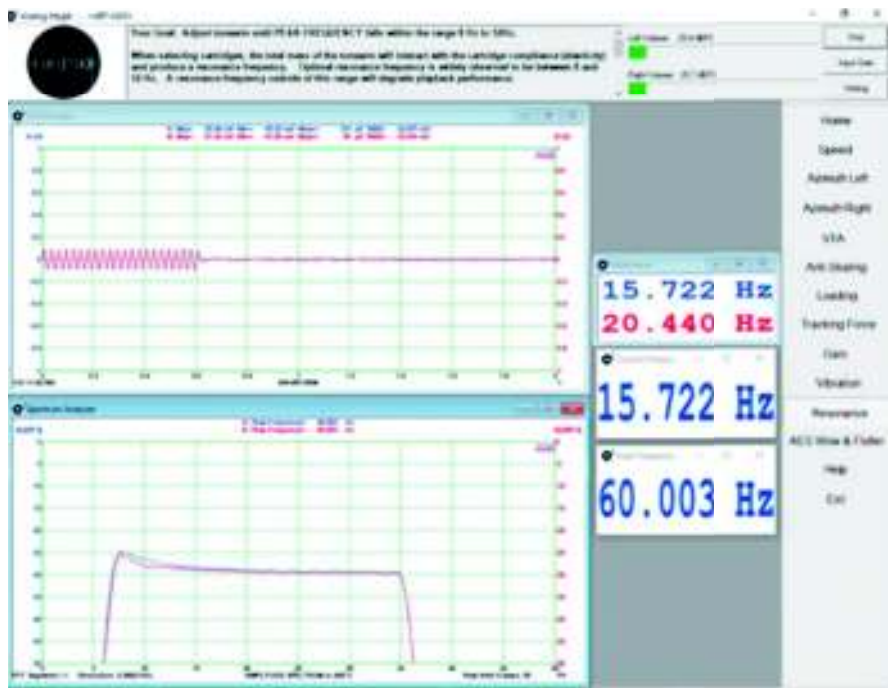


Foto 9.

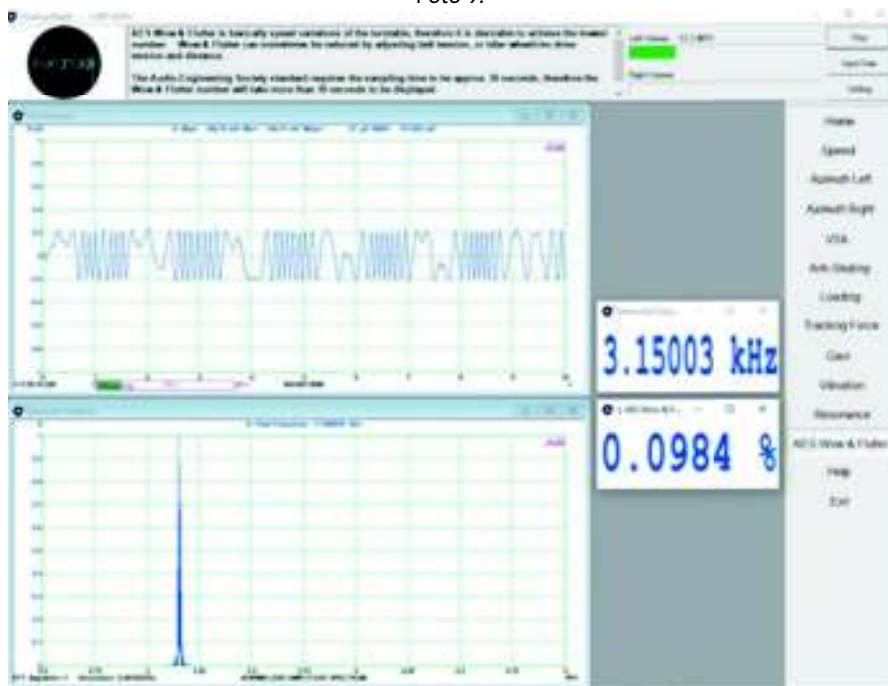


Foto 10.

The analog never ceases to amaze me and this time I have confirmed it: how it can be achieved results so different, with the same head and all the rest of the system, simply replacing the turntable and the arm is something that, even today, it seems prodigious. Mind you: I used the term "different" and not "better"; already, because differences are not uniquely for the benefit of the Kuzma or the Air Force V going a bit further back in time, the AVID Acutus previously tested for AudioGallery. They are all splendid turntables, although they do not represent the top of the pro

duction of their respective catalogs; the fact is that the sound that these devices can produce is different. In what? Having to resort to the reviewer's lexical armament, I would certainly mention the timbre, the ability to extract details, the spatiality of the acoustic scene, the sense of rhythm. However, I must say that ALL thesepowers come together, giving rise to that immediate impression, feeling or call it what you want, in short, it is the personality of the turntable you are listening to. Well, the Kuzma combination has a well-defined and distinct personality.

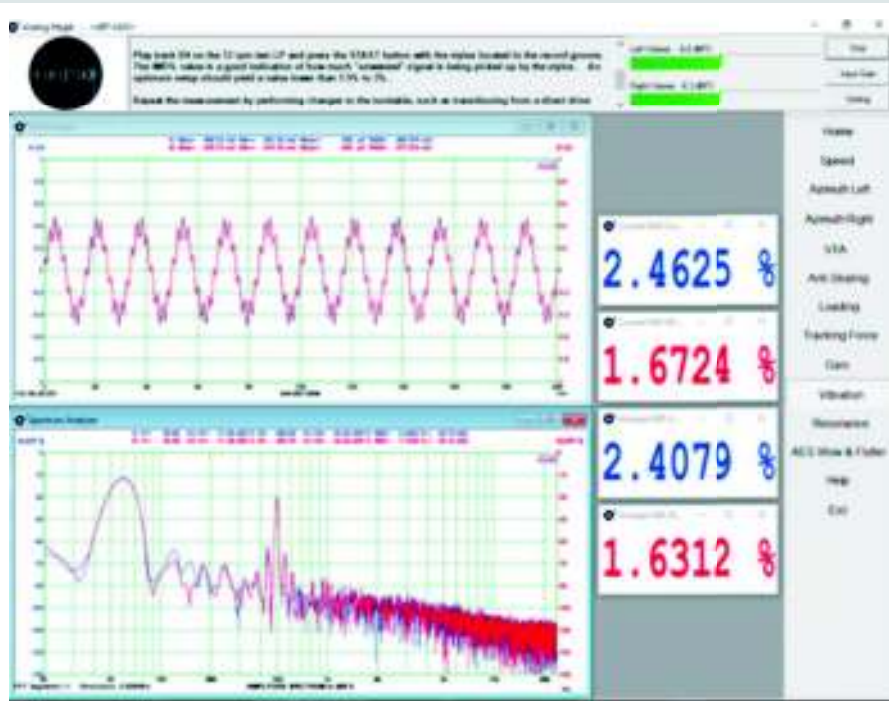


Foto 11.

I do not pretend that these very personal listening notes are taken for gold, but simply as an attempt to share with my readers the useful feelings, I hope, to make the object under test. It happened that, in one of the recent events dedicated to the audio that took place in the fall, I was able to listen to a system whose source was constituted by a tape recorder; I do not remember which with precision. What I remember well, is that since first notes there was a particular sound, which is the one that has always struck me in listening experiences - few unfortunately - of the ribbons; I can not say that this is a characteristic in particular, but rather a set of factors that makes that kind of listening unmistakable. Dynamic? Background noise? Detail? Timbral balancing? Articulation in low range? Of course all these aspects are there, but they are present at the same time in a way that makes you say: "Ok, I'm listening to a tape". And of this there realizes in an instant, as if you were clashing - I use this term not by chance, because this is the effect that I feel - with a wall of sound (and I'm not referring to the wall of sound of Spectoriana memory), whose distinctive trait would summarize with the term density.

Here, the Kuzma sounds a little like this: with a deep bass, articulated and flickering, but above all with a completely different density than the two references mentioned a few lines ago. Seen in this perspective the comparison with the Air Force V / Graham Phantom Elite, probably superior for refinement and timbric coherence, it becomes the comparison between an aesthetic approach and a much more concrete one.

Where the Japanese-American combo dispenses grace and beauty even where perhaps there is not so much, the second presents the data extracted from the furrow, in its completeness and disarming truthfulness, beautiful or ugly, but with elegance given by strength and concreteness. Two different approaches that should be taken as such and that, all in all, would make a hypothetical one a very simple choice, where one would be guided by one's own taste and aesthetic sense. Now, I obviously run the obligation to specify that I am not talking about a choice between two models of turntables, but between the two sonic philosophies that these turntables play.

Conclusions

I was displaced by the Slovenian combination of Kuzma Ref. 2 and 4Point; displaced because I had resigned myself to the idea that for to move a decisive step towards the peaks of analogue audio reproduction on vinyl, it was necessary to spend figures of all prohibitive. Instead I discover that for years there is a machine on the market, solid, ingenious, well crafted that costs yes so much - because we are talking about list prices of the order of many thousands of euro for each component, turntable and arm - but it is still a fraction compared to other analog systems considered as reference. This system it is not an example of absolute performance level, but I think that in the field of turntables of the highest quality construction and sound is to be considered a champion of the quality / price ratio. In case you were looking for a turntable with these qualities, I think it's certainly worth giving it a chance.

Giulio Salvioni



Lep pozdrav!

