WWW.HIFICRITIC.COM ISSN 1759-7919

HIFICRITIC

AUDIO REVIEW MAGAZINE £15 Vol8/No2 APR - JUN 2014

REGA'S TOP TURNTABLE
Rega's new low-mass, high-stiffness RP10 record player changes the rules of turntable design

PONO ETCETERA
Which device is likely to give high-resolution audio true mass-market appeal? Andrew Everard speculates

LINN KLIMAX EXAKT 350
Linn's uniquely flexible digital active loudspeaker system and streamer interface is reviewed by Martin Colloms

MUNICH 2014
Jason Kennedy reports on two days' hard labour trying to cover this year's vast Munich show

SPIRAL GROOVE
A radical US high end turntable and tonearm comes under the hificritic microscope

UPGRADING THE SASHA
Martin Colloms assesses the new Series-2 version of Wilson Audio's highly regarded two-box floorstander.

NAIM POWER AMPS
Paul Messenger listens to three generations and 40 years of Naim Audio power amplifiers

U GO WITH HUGO
Hugo is a totally portable DAC and headphone amp. Paul Messenger tries out Chord Electronics' game-changer

REVIEWED THIS ISSUE: REGA RP10, LINN KLIMAX EXAKT 350, LINN KLIMAX EXAKT DSM, SPIRAL GROOVE SG2, SPIRAL GROOVE CENTROID, WILSON SASHA SERIES-2, ADAM F7, NAIM POWER AMPS, MORGAN AUDIO RMS15, CHORD HUGO, KRELL KSA50, SCHIIT AUDIO MODI, SCHIIT AUDIO LOKI, ENKLEIN DAVID, TANGERINE AUDIO KARMEN, HIGHEND NOVUM INITIUM

HIFICRITIC
Vol8 | No2 April | May | June 2014

Editor | Paul Messenger

Writers
Colin Anderson
Chris Bryant
Martin Colloms
Stan Curtis
Barry Diament
Greg Drygala
Andrew Everard
Nigel Finn
Chris Frankland
Jason Kennedy
Paul Messenger
Mark Prendergast
Bob Pyle

Publisher | Martin Colloms

Design | Philippa Steward

Published by
HIFICRITIC
29 Flask Walk
London
NW3 1HH
info@hificritic.com
www.hificritic.com

Printed in the UK by
Premier Print, London

I make no apology for expanding a topic that occupied part of last issue's *Editorial*, but experiencing the latest turntables from Linn, Rega and Vertere has only reinforced my enthusiasm for the vinyl medium, causing me pose the question: how long do you want your music to last?

Some favourites in my personal collection go back more than fifty years, and today they sound better than ever, thanks to many years of hi-fi system improvements. Admittedly my personal memories don't stretch back to the original Buddy Holly LP that I found in a Brighton secondhand market some thirty years ago, but much of the vinyl I bought new during the 1960s and '70s remains treasured and regularly played today. That's not intended primarily as a criticism of current music and recording practices (though that may well be deserved), but it does affirm my delight in the vinyl disc, as a music storage format that continues to give lasting pleasure across a lifetime.

Languishing in the box room, the Compact Cassettes that I accumulated during the '70s and '80s haven't received much attention in the last thirty years. Most of the CDs went into the shed after I'd ripped them to a server a couple of years ago. However, I'll keep them accessible for the nonce, as my faith in computer-based things is all too often threatened by events well beyond my control. (Over the past forty years, a number of other putative formats have flickered briefly into life before quickly fading into obscurity.)

It seems that anything connected to the outside world *via* the internet is vulnerable to cyber attack. I was recently advised to change all my critical passwords (they've got to be kidding!). Possibly just as serious for music lovers might be Microsoft's announcement that it will shortly stop supporting its *Windows XP* operating system, which was first introduced just 13 years ago. I daresay that a new PC and operating system will continue to support existing music files transferred from an older computer, but I for one would resent being forced into it.

I reckon the Compact Cassette format lasted about thirty years. CD has now been around for about the same length of time, though it now seems to be in decline as downloading and streamed services grow. It's far too early to try and predict what the future holds for either CD or computer-based audio, but the rapid obsolescence and regular updating of computers and their operating systems has got to be a worry – or at any rate a confounded nuisance – for anybody building a music collection into a library.

Furthermore, the sheer complexity of computer audio playback, with numerous different software players and formats, can be quite intimidating (especially for those who find computers boring). Compare the plethora of features on Naim's least ambitious *DAC-V1* D-to-A converter, with the straightforward simplicity of its analogue-stereo-out-only CD players and it's clear that computer audio is very different from all previous hi-fi formats.

Vinyl will never have the modern convenience of spitting the music out of a smartphone or operating a server. But it does combine simplicity, fine quality and hitherto unmatched longevity, all of which would seem to make good sense in my opinion, if music is to last a lifetime.

Paul Messenger
Editor

Contents

Martin Colloms' review of Linn's Klimax Exakt on page 12

Spiral Groove *SG2* Turntable with Spiral Groove Centroid Arm

MARTIN COLLOMS TRIES OUT THE SPIRAL GROOVE SG2 TURNTABLE WITH ITS PARTNERING CENTROID TONEARM

MARTIN COLLOMS

Allen Perkins has a long history in turntables, going back to working with the SOTA brand thirty odd years ago. He subsequently set up Immedia distribution operation, which handles a number of brands including, currently and most notably, Spiral Groove turntables and tonearms, the current range consisting of two turntables and a unipivot arm. Whereas the SOTA is a suspended subchassis design, Allen has preferred to use the rigid constructions he developed during his early Immedia days for the Spiral Groove models, which show increasing mastery of structural vibration control and damping. Prices have increased significantly over the years, commensurate with a driving ambition to increase replay resolution from vinyl, and this review focuses on the £18,000 combination of the *SG2* turntable and *Centroid* tonearm, both of which have benefitted from increased component precision and quality over earlier examples.

This highly developed record player has been in production for several years, giving it plenty of time to settle down, so I neither anticipated nor met any difficulties in set-up or operation. By modern standards it is reasonably compact, and is open in construction with no cover, as is so often the case these days. (A deep, clear acrylic fabrication could perhaps be obtained to drop over the entire assembly when not in use.) Installed covers are often avoided, since they may act as coupled resonators, be energised by the soundfield, and thus detract from sound quality. For example, I detach the cover from my own Linn *LP12* for additional clarity when undertaking critical listening.

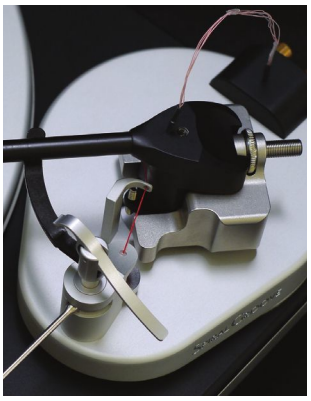
The *SG2* is a heavy assembly that sits on three almost-pointed, multi-part cone feet. These are constructed in complex vibration absorbing layers, albeit free from rubber or similar elastic materials. It is also characteristically – some would say refreshingly – devoid of chromium and gold plated bling, which is often encountered and seems to be deemed necessary for many recent upmarket turntables. In comparison, the *SG2* may be considered a master of understatement.

The graded acceleration 'power up' cycle takes about 14 seconds, after which the quartz referenced synthesised frequency motor supply throttles back to a lower noise 'play' condition. Neat buttons on the front panel set start, stop, and also select 331/3 or 45rpm, and a remote power supply unit is linked by a flexible cable with RS232 terminations. The thick, multi-layer laminated platter has a slightly concave top surface of graphite composite, and a disc is secured and flattened by a notably effective and easy to operate screw-down clamp.

Because this design has neither compliant feet nor any kind of suspended sub-chassis, it will have some mechanical coupling to the structure on which it is placed, and the latter will play a role in the overall voicing of the installation. However, if the support, rack or 'table' is acoustically appropriate, the great potential of this carefully thought out design can be liberated. We not only found that the support of shelf system has an effect, but also any other components placed on it. For example, if an amplifier was on a lower shelf of the same rack, the bass clarity and timing is significantly altered. It was suggested that Stillpoints might improve things on the Finite Elemente *Pagode* frames, but a set wasn't available in time (though we did have footers from Walker and Synergistic for an intermediate shelf).

Great attention has been paid to the rigidity of the platform as a whole in this design, to maintain stylus contact with the groove with maximum precision and stability, in order to achieve transparency and high resolution with an absence of stylus 'flutter' (an unwanted stylus motion which can occur with some subchassis turntables).

The partnering *Centroid* unipivot tonearm has an effective lock (which lever was at first confused with the arm lift), while an adjacent 'lift' lever operates horizontally *via* a cam, and very effectively too, with a near perfect put-down. There was no subsequent cartridge wobble, which can occur with some other unipivot designs, even without the ubiquitous hydraulic damper. (The latter is also available if the cartridge requires it.)



Review System Components

D'Agostino *Momentum Stereo*, Naim *NAP300* power amps; Audio Research *Reference 5SE,* D'Agostino *Momentum,* Townshend *Allegri* control units; MSB *Diamond Signature IV Select* DAC with *Diamond* supply; Naim *UnitiServe* network server and S/PDIF source; NAIM *NDS/555 PS* streamer/DAC; Wilson Audio *Sophia 3 and Sasha-2*, Linn *Klimax Exact DSM* , Quad *ESL63* speakers; Finite Elemente *Pagode Reference* racks; Cardas *Golden Reference* and Transparent *XLmm2* cables.

Turntable Technology

It seems that the rigidity of the structural design comes first here, in order to measure those minuscule groove modulations with maximum accuracy. That done, sufficient damping for the most neutral result is derived from complex layered construction, rather than the more usual practice of elastic decoupling. Indeed, casual inspection suggests that all may be rigidly connected, but this is not so.

A powerful, very low noise 12V synchronous motor is mounted in a partly decoupled, vibration-absorbing, heavy sub-chassis located below the plinth. It drives a groove in the periphery of the 14in platter *via* a round section polyurethane cord. The good size pulley offers negligible slip, and the cord parameters have been chosen for the right balance of friction, elasticity and inherent damping for the coupled inertial masses of motor, pulley, and the loaded platter itself.

Wow has been reduced to very low levels by this method to produce CD like levels of speed stability. The main bearing is one of the finest I've encountered, with absolutely no play, very low friction and noise. The record centre spindle is itself decoupled to reduce rumble still further. The high mass platter is constructed in layers of composites, some fibre loaded, while the top surface is machined graphite, matched to the record.

The Centroid Tonearm

The short definition of a centroid is given as "*the centre of mass of an object*", while the longer version runs: "*the point in a system of masses each of whose coordinates is a weighted mean of coordinates of the same dimension of points within the system, the weights being determined by the density function of the system*".

This latter version is more appropriate to this Spiral Groove tonearm, as its construction involves an imaginatively contoured and low slung counterweight that's largely located inboard of the bearing, plus a slim arm tube fashioned from carbon fibre over aluminium alloy. To maximise dynamic stability, the centroid for this complex construction is held somewhat below the stylus tip. If it rocks, it does so with control and at a frequency well below the arm and cartridge mass/compliance resonance point.

Installation

We initially tried the review player in logical enough location, on a Finite Elemente *Pagode* three-tier rack that necessarily had a couple of Naim power supplies on the two lower shelves. From the off we weren't happy with the sound, particularly the rather heavy and unfocused bass. Judicious knuckle-rapping with the stylus sitting on a silent groove revealed that the supported mass of those power units on their rubber feet was adversely interacting with the *SG2* on this platform, so we relocated things.

A tonearm cable was not supplied, which I consider a serious omission, while the agent admitted using an extended length of Van den Hul *Integration* back at base. Coincidentally, our own *Integration* cable had sufficient length available to shift the player across to the next platform. This was stacked with much lighter electronics and the bass overhang was essentially solved, as the turntable now came to life. Clearly installation will require particular care and experience. We later checked out that stock vdH cable (now 15years old), and while it had its points, it was clearly not good enough for a near £15,000 disc player fitted with a £2,000 Lyra *Kleos* cartridge. Fortunately we had Transparent *XL* (another inherently low resistance interconnect) in stock, and this did the job handsomely.

Sound Quality

Although several different cartridges were tried, we were primarily listening to the Spiral Groove turntable and tonearm combination, which was inevitably also associated with the Finite Element *Pagode* support platform, we found that the resulting sound quality was remarkable in several aspects. At first hearing there was an unmistakable sense of neutrality, somehow rather closer to the sound of open reel tape masters than the more characteristic sounds of a polished precious stone point running in a stereo music groove, embossed into a circular plate of unplasticised vinyl. The sound was remarkably neutral with a low noise floor and pleasingly quiet backgrounds. Sure, minor blemishes on the disc were still audible, but they seemed muted and detracted little from the performance. Further, surface noise itself seemed quieter and the signal-to-noise ratio seemed improved, with blacker silences and very fine low level detail retrieval, and in some respects it was reminiscent of the vastly more costly Continuum designs.

It would seem that the self-generated noises from the machinery, bearings and motor are quite small. This would seem to confirm the claim that the design and build has been optimised to avoid any degree of structural resonance in the midrange, which might magnify the inevitable noise and conducted vibration that occurs when a turntable is operated in a soundfield. Empirical tests indicated that the plinth, platter, main bearing, motor subchassis, support cones and tonearm are amongst the most resonance free components I have yet encountered, and complement each other well, and the well designed screw-on disc clamp incorporated damping and helped correct for disc warps.

Belt drive players can suffer from wow: slow (if mild) pitch variations, which may be due to a number of factors depending on design specifics. Non subchassis players can deliver very low wow and other low frequency speed variations because the lack of suspension springs means that the motor pulley benefits from an accurate mechanical registration to the drive line on the platter. We found that the Spiral Groove drive was perfectly judged, with a respectably accurate speed lock to the crystal oscillator in the power supply. It also showed firm, resonance-free coupling between the large motor pulley and the platter drive groove (the latter avoiding the cord wandering over the drive surface), and not least, ample power so that any suggestion of dynamic wow is avoided (where variations in stylus drag caused by disc modulations can affect speed stability).

The firm pitch stability and essentially low noise backgrounds inspired confidence in the overall performance. It was also unquestionably transparent, and its inherently sharp image focus also resolved recorded image depth very well. Coloration was clearly very low, but it did seem to favour classical and folk over more rhythmic rock material. The latter was certainly crisp and powerful, and timing was quite good, if a little down-beat, with the rougher sounding excesses somewhat tamed. Classical material was very natural with excellent stereo staging and substantial detail recovery. However, a very faint steady low midrange background 'drone' was occasionally audible on the quietest records, later identified as coming from the motor (see lab results). Very late in the project we tried an alternative Naim *Fraim* support, and found that the bass precision and timing was much improved, ensuring the high sound quality rating that was ultimately awarded.

Easy on the ear, we found that the overall sound drew listeners in and they remained impressed by the great solidity, neutrality, transparency and high resolution. The tonearm is manifestly excellent, its impressive mechanical stability and neutral timbre allowing the cartridge to track steadily and with fine security. This player does not seek to impress in any way; rather a listener develops increasing confidence in its almost understated musical ability.

Lab Results

To minimise belt wear, the player takes nearly 20 seconds to reach speed, at which point the motor power steps down to reduce noise. That noise is certainly low but not quite inaudible when playing, and at 120Hz it's heard as a nearly subliminal second harmonic of the 60Hz US power line frequency. I measured the system background noise, stylus down and with a band pass filter at this frequency: in this

comparative measurement the noise floor lifted by 15dB when the motor was running. In practice this breakthrough is usually below the typical, audible disc noise floor, but not quite so for the very quietest surfaces replayed at high system sound levels. Bearing rumble alone was so low that I could not measure it reliably, while platter friction was also very low with this superb close-toleranced bearing.

Minimal decoupling *via* the feet means that results will depend markedly on the chosen support. The disc clamp proved to be effective in maintaining contact between disc and platter. Wow and flutter was first rate, the spectrum showing a notably pure centre frequency, reading just 0.05% IEC weighted wow and flutter, though running 0.667% slow (but easily reset with the top controls). The flutter sidebands at -50dB were a minuscule 40Hz away from the reference frequency, confirming the excellent speed stability engendered by the stable drive and the massive flywheel effect of this heavy platter.

The self-righting unipivot tonearm was singularly clean in structural resonances, and also proved very stable with vanishingly low friction (well below 15mg); what friction remained from the well executed bias mechanism was very low. Once planted in the groove this tonearm seemed almost as stable as a rigid bearing example. I'm looking forward to trying a factory chosen lead-out cable with a proper auxiliary ground connection at some point in the future.

Conclusions

Vinyl enthusiasts familiar with Linn or Roksan turntables might find this clean sounding design a touch laid back and mildly distanced from the beat, though this quality will depend very significantly on the support furniture used for the Silent Groove player. The fine build quality is reflected in quiet backgrounds with stable well-focused stereo images that demonstrate impressive transparency and image depth. Coloration is very low overall while cartridge tracking was notably secure, thanks to the high performance *Centroid* arm.

It is easy enough to recommend the *SG2* turntable (noting the significant role its support furniture can make), but pride of place must go to the remarkable *Centroid* tonearm, which delivers a top class sound with exceptional tracking stability.

HIFICRITIC TEST RESULTS

Make	Spiral Groove
Country	USA
Model	SG2 turntable Centroid tonearm
Price	£13,200 + £4, 950
Size (WxHxD)	48x20x44cms
Weight (tt)	24kg (approx.)
Type	Rigid construction, quartz locked, belt drive; 331/3, 45 rpm
Tonearm	250mm gravity stabilised, composite tube, unipivot
Wow and flutter	0.05% IEC, excellent
Speed accuracy	-0.667% (but is adjustable)
Start up time	20sec
Placement	Turntable grade support advised

HIFICRITIC AUDIO EXCELLENCE

Spiral Groove Centroid Tonearm

HIFICRITIC AUDIO EXCELLENCE

Spiral Groove SG2 turntable

Contact:
Kog Audio
www.kogaudio.com
Tel: 024 7722 0650

Subjective Sounds

PAUL MESSENGER

Over the past few months I've listened at some length to three new record players that have been at least the equal of (and possibly rather better than) my own. Linn's *40th Anniversary LP12* [reviewed in *hificritic Vol8 No1* (Jan-Mar 2014)] had an overall consistency and top-to-bottom coherence that I've never quite matched with my own turntable, while the Touraj Moghaddam's Vertere *SG-1* record player with the less costly 'unipivot' *SG-1 TPA* tonearm and Roksan *Shiraz* cartridge is no less impressive, especially in its dynamics and bass 'speed'.

Both those record players are very costly items, well beyond my limited means, but that's much less true of the Rega *RP10*, reviewed in much greater detail elsewhere (pp6-8). This is the first Rega I've encountered that can seriously rival a Linn, and the fact that it's also much less costly is a major bonus. (Whether I should even have contemplated using a £3,000 turntable upstream of a $20,000 EnKlein *David* interconnect [see p50] is of course a matter for debate!)

However, while vinyl replay is certainly a function of the components themselves, to what extent does it also come down to the ancillaries? We know for certain that the support furniture underneath a turntable has a significant effect on its performance. MC struggled to get good results with the Spiral Groove turntable (pp21-23) until he moved it to a different platform, whereupon his overall judgements were significantly improved. One could say something similar about the various computer problems he encountered in dealing with the Linn *Klimax Exakt* system (see pp12-17), but everything was working very well indeed by the end.

I have to hand it to Martin, for his skill and persistence at fighting these variables, and wonder whether I'd have had the patience to go as far. The reviewer is in a difficult position for a number of reasons. Access to the media and an appreciation of the acoustic behaviour of the room he's working in are naturally substantial advantages, but there are also a number of unavoidable constraints, again to some extent imposed by a listening room.

In any given room, the dimensions and shape, the sources of heat and the seating arrangements, will all tend to take priority over the location of both the hi-fi system and the loudspeakers. Indeed, the position of listening zone will largely determine the location of the loudspeakers in the overwhelming majority of cases. (Perhaps the only exception is something like the clever Linn *Klimax Exakt* system, which is capable of some optimisation of the stereo sound even when the loudspeakers have to be located away from their ideal sites.)

And one shouldn't overlook the effects that the building materials and construction techniques have on the bass reproduction in particular. It's long been apparent that when a range of, say, five models is introduced, the largest – usually with at least two bass drivers – will almost certainly sound bass heavy in my solid-walled 4.3x2.6x5.5m room. However, that's probably because it's primarily intended for the US market, where rooms tend to be larger and walls less solid, using stud-and plasterboard that tends to absorb more bass energy than brick.

My reviewing activities are therefore inevitably limited by my room conditions, and I do sometimes envy the dealer, for both his experience in dealing with a wide variety of different rooms, and especially his resources. Peter Swain of Leicester-based dealership Cymbiosis recently told me that his shop had no fewer than 12 different Linn-based record players available for demonstration, so that customers could compare all the possible alternatives. The excellent hard wood Harban plinths that Cymbiosis imports from the US doubtless account for several, but that's still an awesome commitment, and certainly enough to make this reviewer very jealous.