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# VPI Prime 21+

A 2021 refresh of VPI's most popular turntable also sees a 'plus' option with bespoke moving-coil from Audio-Technica and RCA tonearm cable sourced from Nordost  
 Review: **Adam Smith Lab: Paul Miller**

**B**y no means a newcomer to the audiophile LP-spinning scene – the brand is some 40 years young – VPI's recent range expansion has doubtless been further fuelled by the worldwide 'vinyl revival'. In addition to its diverse collection of tonearms, and innovative turntables including the direct-drive HW-40 Anniversary [HFN Apr '19], there are now two additions to VPI's 'Prime' series in the form of the Prime 21 and Prime 21+, priced at £4500 and £6500.

Both decks are now fitted with a gimbal-bearing tonearm, in place of the uni-pivot we saw in the original Prime [HFN Jun '15], while the '+' variant also includes an A-T built MC pick-up and custom RCA tonearm lead created for VPI by Nordost. More on these luxurious extras later, after we loop around the backstory...

VPI was founded by Harry and Sheila Weisfeld in Cliffwood, New Jersey, where it remains headquartered to this day, making all its products in the USA and sourcing materials from as close to home as possible. When Harry retired in 2013, his son Mat took over as president, and the original Prime turntable was his first design in this new role. The aim was to create a deck that remained true to the company's heritage but which would also benefit from Mat's fresh thinking.

## PRIME NUMBERS

So these new models are the latest to carry the Prime name – the '21' suffix denoting the year they were formally launched, even though both decks were first unveiled in 2020. On first acquaintance they don't look hugely different from the existing Prime turntable, but there are a number of key mods to be found under the skin. The main chassis is still made

of MDF, but where the original had a steel plate attached to its underside, the Prime 21 and Prime 21+ feature a 3mm-thick aluminium plate bonded to the top for greater strength and, it is claimed, better control of resonances.

Meanwhile, a walnut finish is now available for the base in addition to the original black, and the feet used are the same as those found on the company's aforementioned HW-40 Anniversary model. These contain integral elastomer pads for isolation and are adjustable to assist in levelling the deck.

As in the original Prime, a single belt drives a 9kg aluminium platter, which is topped with a thick felt mat. Speed change from 33.3rpm to 45rpm is achieved by swapping the belt between steps on the motor pulley, while the belt itself sits in grooves around the platter's edge, eliminating any tendency

for it to ride up and down. The motor pod has also been beefed up to further dampen unwanted vibrations, and this weighs in at 2.4kg, its shiny aluminium outer shell hiding improved internal motor circuitry.

## DELIGHT TO USE

The pod sits to the left of the new design, although with no placement jig from VPI, it's left to the user to experiment and discover the location that offers optimum belt tension and speed stability [see PM's Lab Report, p49].

The base for the new 10.5in arm is pre-fitted for ease of set-up. The arm itself makes use of the company's tried-and-trusted 3D printing technology for its tube [see PM's boxout, p47], the uni-pivot bearing traded for a more conventional

*'It'll dig out the merest hint of gold in those LP grooves'*



**RIGHT:** Freestanding AC motor (with new internal PCB) drives the 9kg alloy/steel platter with a rubber belt around its periphery. MDF chassis is now braced with a painted, 3mm-thick alloy top-plate





gimbal in response to feedback from customers. Nevertheless, this 'user-friendly' arm still features the same on-the-fly VTA adjustment found on its stablemates. It's a delight to use, even if some extra cue damping would help – the cueing lever can drop the stylus into the groove a tad abruptly if you're not careful!

A fine lead-out wire loops over to a connection box on the rear of the arm base, and although VPI suggests this can be twisted to fine-tune the anti-skating force this is hardly necessary as the arm also includes a perfectly serviceable – and adjustable – thread-and-lever bias mechanism. In addition to all of the above, the Prime 21+ also comes with a VPI Weisline interconnect cable made by Nordost, and a VPI Shyla cartridge (which is named after Mat's daughter).

The Shyla is built by Audio-Technica to VPI's specification and boasts a few specific modifications over the ART-9 series upon which it is based. VPI was keen to re-voice

the MC's midrange, and this is realised in tweaks to the coils, the cantilever suspension and internal damping. The stylus is a line contact type, mounted on a 0.26mm-diameter boron cantilever.

VPI claims its deck can be set up in under 20 minutes but once you factor-in the time to fine-tune VTA and bias – not to mention experimenting with motor placement – well, it took me nearly an hour. Still, this also reflects the deck's great flexibility! I should also mention that the supplied metal tonearm-alignment jig puts the typical paper/plastic efforts to shame, while the screw-on steel/Delrin record clamp is a precision-built accessory.



### SOMETHING SPECIAL

Connected to my Anatek MC-1 phono stage, Naim Supernait amplifier [*HFN* Oct '07] and PMC Twenty5.24 loudspeakers [*HFN* May '17] it took barely a half-side of an LP for me to realise this turntable really is something quite special. The Prime 21+

**ABOVE:** Seen here with black vinyl finish, the Prime 21 is also available in walnut. The 21+ features superior adjustable feet from the HW40, a new 10.5in arm and AT-ART9 MC with revised coils and suspension damping

instantly announces itself as a big and confident performer, but one never hurried or likely to be flustered in its music-making. Neither is it heavy-footed in its unaffected sense of ease and solidity, no matter what kind of material you throw at it.

This presentation is part-and-parcel of the deck's confident-sounding bass, which is typically deep, solid and rich. The Prime 21+ is more than able to rattle ornaments when required, but feed it an intricate bass line and it rises to the challenge magnificently, resolving fine low-end details with precision even with challenging – read over-complex – recordings.

The big bass notes on 'Roulette' from Night Flight's eponymous debut LP [CRC Records CRC07V] were warm and fulsome, while the introductory piano had a fine sense of realism. Samuel Holmes' vocals sounded as compelling as I could have wished for as the Prime 21+ set him up in his own space within a realistic acoustic.

### RICH PICKINGS

As the track builds to a peak just prior to the guitar solo, the soundstage is nothing if not crowded, and I have heard more than one turntable throw in the towel at this point, failing to maintain the earlier ease and spaciousness. Not so here as the Prime 21+ maintained the prevailing atmosphere while also reminding me of the recording's limited audiophile potential...

More generally, I'll admit to having a slight nagging feeling that the Prime 21+ sounded a little richer than I'm used to. There's a subtle upper-bass bloom that seemed to persist whether I used the ↻

## PRINTING HI-FI

While digital audio has progressed at a pace thanks to improved silicon and the increased sophistication and elegance of proprietary software, the advancement of hi-fi hardware continues to rely as much on new materials and manufacturing. For tonearms, the biggest leap in design was heralded by the introduction of SME's one-piece diecast magnesium Series V tonearm [*HFN* Jun '86] and Rega's more affordable RB300 in 1983 [Audio Milestones, *HFN* Nov '12]. But while it took two years to develop the diecasting for Rega's silicon alloy tube and bearing housing, back in 2013 VPI's Mat Weisfeld was able to swiftly prototype and produce a variant on the 'jointless' tonearm using a 3D printer. The latter technology has evolved to build solid models of modestly complex shapes and is perfect for rapid prototyping before committing to full-scale production. Because 3D printing extrudes the material outwardly – here using a high-temperature laser to build layers of a non-crystalline epoxy resin – VPI's headshell, tonearm tube and counterweight extension can be created as a single arm wand. Ironically, the process is still quite time-consuming so expect to see VPI quietly dropping the '3D' appellation as its polymer tonearm tubes are produced more efficiently, and in greater volume, in the future by injection moulding. PM

## TURNTABLE



**ABOVE:** Exposed arm wire loop plugs into a junction box via a LEMO connector while the adjustable tower allows for arm height and VTA to be optimised on-the-fly. The Prime 21+ comes with a Nordost/Weisline RCA tonearm cable

clamp, or not, or whether I swapped out the mat for alternatives. This is a suggestion of 'character' rather than an unwelcome imposition, and never intruded on the musical performances that captured my attention over weeks of listening.

Otherwise, the ability of the Prime 21+ to find the best in less than stellar recordings is a great strength – if there's just the merest hint of a gold nugget deep in your record's grooves, it will dig it out. And when you feed the deck a truly fine recording, it comes fully to life.

### STRONG AND STABLE

'Your Heart Is As Black As Night' from Melody Gardot's *My One And Only Thrill* [Verve 1796787] was electrifying, Ms Gardot's vocals sounding both husky and intimate. Equally, the backing double-bass enjoyed a firmness and resonance that evoked the sense of a real, palpable instrument in the room. This impression was reinforced by a strong and stable central image and deep – very deep – soundstage that flooded out between and behind my PMC floorstanders. So while the Prime 21+ might not throw the sound forward of the speakers with any degree of exaggeration, the atmosphere it creates between and behind them is cavernous.

Gerry Rafferty's 'On A Night Like This' from *North And South* [London Records LONLP55] had me grinning from ear to ear. Rafferty's voice was strong and focused, but best of all was the backing percussion. This bounds around behind the main instruments like an excited puppy. Bongos on the

right? Check. Kick-drum slightly left of centre? Absolutely. The Prime 21+ captured these elements with ease and highlighted them, albeit with subtlety, making it a delight to follow their appearance as the track unfolded. The bass line also had a pleasing presence, underpinning the song in a fluid and easy manner.

Finally, I swapped the Shyla cartridge for my regular Clearaudio MC Essence [HFN Aug '17]. The Clearaudio pick-up's excellent bass tightened up the lower registers very slightly, even though it didn't disguise the deck's signature upper-bass warmth. It also revealed a little more treble sparkle than the Shyla, at the expense of the latter's rich midband quality and its more general sense of cohesion. Clearly, VPI has voiced its cartridge well – the Prime 21/tonearm/Shyla trio making for a compelling one-stop vinyl-playing solution for the enthusiast on the upgrade trail. ⚡

### HI-FI NEWS VERDICT

While its assembly and set-up might not be as brisk as VPI would imply, and there are a few quirks to be encountered along the way, once up and running the Prime 21+ is a magnificent-sounding turntable package. It brings out the best from less-than-perfect recordings while also ensuring your well-produced LPs will shine. What's more, the custom-made Shyla cartridge complements it superbly.

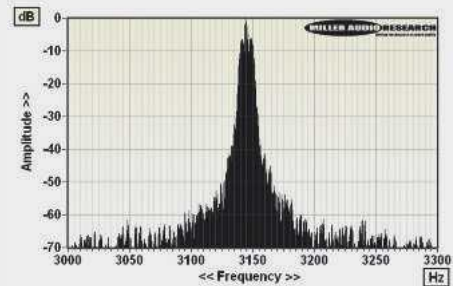
Sound Quality: 85%



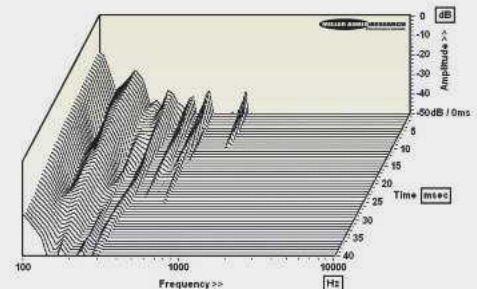
### VPI PRIME 21+

While the Prime 21/21+ features a reinforced alloy/MDF chassis, its 9kg alloy platter, 24-pole AC-synchronous motor and inverted bearing (with hardened stainless shaft, chrome ball/PEEK thrust pad and phosphor bronze bushing) are familiar VPI staples derived from the original Prime model [HFN Jun '15]. As a result there are no particular surprises when it comes to wow and flutter or rumble. The former is a moderate 0.07% (peak-weighted) with a slightly higher 0.04% low-rate wow than we measured with the Prime [Graph 1, below] – a figure highly influenced by the motor position and belt tension. Absolute speed accuracy was –0.18% (centre pulley groove) while rumble, measured through its bearing, was substantially improved over the Prime with DIN-B wtd figures of –70.4dB (through-groove) and –69.6dB (through-bearing).

The partnering 10.5in arm features a '3D printed' tube and integral headshell mounted into a robust gimbal bearing assembly that combines a very low <10mg friction, in both planes, with no detectable play. The lightweight polymer tube material contributes to a low/medium 11g effective mass but it does not confer quite the same rigidity we saw with the variable cross-section geometry of the longer '3D printed' 12in JMW Fatboy tonearm [HFN Apr '19]. The 130Hz primary bending mode measured for that arm is reduced to a lower 85Hz here [off the X-axis, Graph 2] with harmonic and twisting modes at 170Hz and 300Hz, and more rapidly dissipated modes at 400Hz, 500Hz and 890Hz. The main 85Hz mode is very strong but the other resonances are generally better damped in this polymer/resin tube than, for example, most carbon-fibre types. PM



**ABOVE:** Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division)



**ABOVE:** Cumulative tonearm resonant decay spectrum, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec

### HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.27rpm (–0.18%)
Time to audible stabilisation	3-4sec
Peak Wow/Flutter (Peak wtd)	0.04% / 0.03%
Rumble (silent groove, DIN B wtd)	–70.5dB (–70.4dB with clamp)
Rumble (through bearing, DIN B wtd)	–69.6dB
Hum & Noise (unwtd, rel. to 5cm/sec)	–56.1dB
Power Consumption	6W (1W standby)
Dimensions (WHD) / Weight	535x190x400mm / 17.5kg