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Technics 'Reference Class' SL-1000R turntable



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Technics SL-1000R

Two years since the rebirth of the iconic SL-1200, Panasonic's high-end brand is back with its flagship direct-drive turntable. It had to be special, and so it proved
 Review: **David Price** Lab: **Paul Miller**

The vinyl market hit rock bottom in 2009, but has been growing ever since,' says Technics' Tetsuya Itani, adding that, 'we foresee this trend will last.' And that, in a nutshell, is why one of the world's most iconic turntables has been relaunched. Panasonic – the brand's parent company – is not in the business of being nostalgic, remembering the glory days of vinyl, flared trousers and disco dancing. Instead, the reappearance of the SP-10 family is all about the here and now.

Two years on from the launch of the superb SL-1200GAE [*HFN* Jun '16], the brand is back with a flagship broadcast-standard turntable worthy of the name. The SP-10R is the motor unit, and when supplied in its bespoke plinth with Technics' new tonearm, the package becomes the 'Reference Class' SL-1000R, and sells for a cool £13,995.

RESPECT THE DECK

Any analogue aficionado will respect the SP-10 line, given that it set the reference standard for professional/broadcast applications for 15 years or so, before Compact Disc arrived [see boxout, p35]. With ten engineers working for two years on the SP-10 project, it's essential to understand that this isn't a simple restyle of the old deck, but a clean sheet design.

At its heart is the new coreless direct-drive motor, developed for the SL-1200G series and further improved here. A twin-rotor design, it employs coils on both sides for a 12-pole, 18-coil drive that delivers massive torque. Indeed, on the highest of its five user-selectable torque settings, you have to apply serious effort to the rim of the platter to slow it down at all.

Technics claims 0.015% wow and flutter [see PM's Lab Report, p39], which is on the limit of measurement. The 7.9kg platter is a laminate of diecast aluminium, a 10mm-

RIGHT: The heavyweight platter comprises a sandwich of brass and cast alloy that's dampened by a thick rubberised internal layer. The SL-1000R is pictured here with its optional arm bases mounted into the plinth

thick brass sheet and a rubber damping material that's applied underneath. Furthermore, a series of 12 tungsten cylinders are precision-fitted into the periphery of the platter, giving a claimed inertial mass of approximately 1 ton/cm.

The control unit offers an OLED digital display of the speed (33.33, 45 and 78rpm), but also the chosen playing speed expressed as a percentage (45.11%, when the pitch is increased, for example), in addition to the actual rpm (*ie.* 33.33). Rotational speed can be set to two decimal places, $\pm 16\%$. Pressing the control unit's up/down speed buttons and the reset button brings you into the torque control menu, where – as per the SL-1200G – you can select the amount of grunt that the motor serves up to spin the platter.

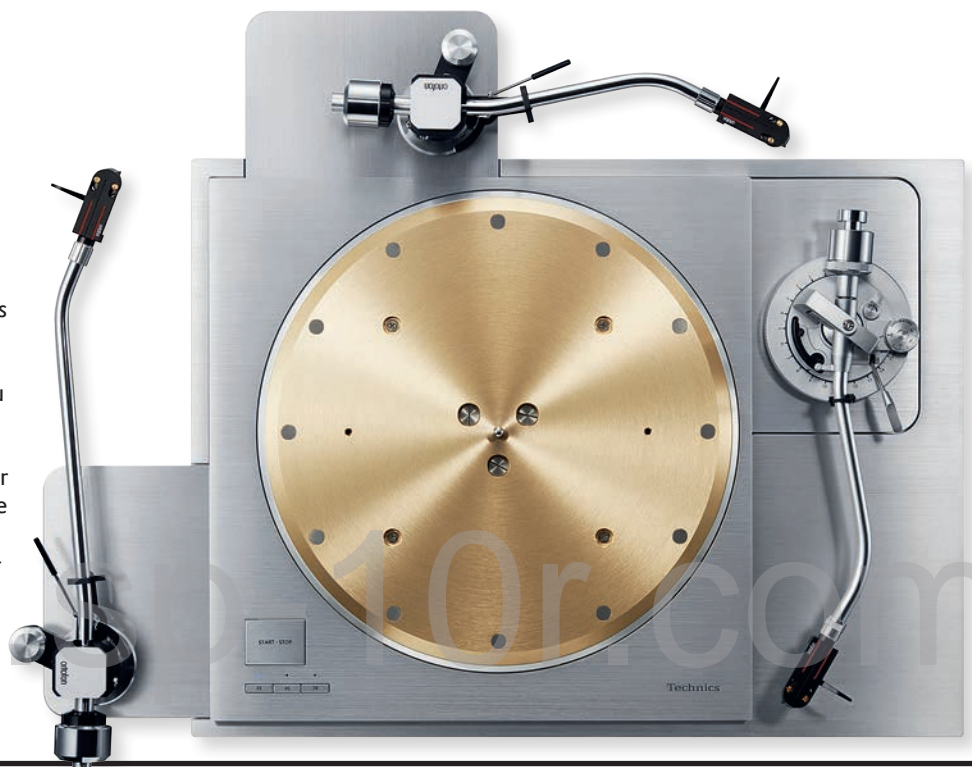
Tetsuya Itani points out that, 'some users appreciate this facility, to tune the sound. It affects this and also the start-up speed, but doesn't affect speed stability.' The control unit also contains the deck's

switchmode power supply, and was designed to be the same size as that of the earlier Technics SP-10s.

STABLE THINKING

Technics says that the new motor unit's chassis is more rigid than in earlier versions, with a better main bearing arrangement. It offers a lower centre of gravity, thanks to two heavy stainless steel weights at the bottom of the chassis, and has a three-tier construction, including a 25mm aluminium top panel, diecast aluminium main section and carcass fashioned from Technics' Bulk Moulding Compound (BMC).

The plinth in which it sits is a two-layer design with a 30mm aluminium top panel and BMC base. The feet have a diecast zinc shell, inside which there is silicone rubber reinforced by cylindrical polymer tubes. Incidentally, the SP-10R's motor unit has also been designed as a direct fit into legacy SP-10MK2 and SP-10MK3 plinth systems, should users of these decks wish





to upgrade. The deck can also take up to two more tonearm bases for a variety of arms and these are fitted via concealed panels in the side of the plinth [see p34].

Although it's not quite the star attraction of this package, the design team has still paid serious attention to the tonearm. It's a longer version of that fitted to the SL-1200G, being a universal S-shape type with 254mm (10in) effective length from the tonearm pivot to the stylus. It sports a beautifully finished lightweight magnesium tube, with gimbal suspension and precision bearings. It's hand-assembled and adjusted, and oxygen-free copper wiring is fitted internally. The knurled, cylindrical base rotates to offer an elegant system for height adjustment (0-15mm), and the counterweight and bias adjusters have a measured, high precision action. Auxiliary balance weights are supplied to support a cartridge/headshell weight range of 15.9 to 31g, no less.

'Music bubbled out of the groove, bristling with detail'

As you would expect, the well-designed packaging is extremely sturdy. I rather like the fact that it is totally plain, the manufacturer having expended no effort trying to 'tart it up' to the elaborate standards of some high-end hi-fi brands – it's just like any other Panasonic consumer electronic product, and none the worse for it. The instruction manual is thorough, and gives concise step-by-step set-up instructions that make it very clear that removing the deck from its packing is a two-man job due to its 40.2kg weight.

The decision to recess the 5-pin arm socket quite deep into the rear of the plinth is annoying however, as it makes access difficult. Oddly, no arm cable or headshell is supplied, and Itanisan suggests this is because customers will already have their own favourite brands of these items. Frankly, I think it wiser to bundle starter versions all the same – you would think that at £13,995, the company could afford it...


ABOVE: The chassis is a substantial mix of machined alloy plates and alloy die castings set into a dense, inert plinth of Bulk Moulding Compound (BMC). The adjustable feet are damped internally with a silicone rubber

In use, the deck is a pure joy, its large, sturdy plinth making hand cueing a pleasure. The tonearm feels silky and the motor unit is beautiful to see in action, but the control box can be fiddly to operate if you want to get to sub-menus like the torque setting, for example. There is no denying that this behemoth feels extremely solid, but I was surprised to find that the base is not totally silent when rapped by the knuckles in some positions.

OPEN SESAME

Any great turntable gives you a certain frisson when you hear it. It's that old 'shivers down the spine' feeling, a sense of being let into a world to which you had previously not been privy. Auditioned with a Lyra Etna SL MC [HFN May '18] and a pristine Technics EPC205CMK3 MM [the star of our Vintage Review next month], the SL-1000R does exactly this, giving a wide-open window on the recording and stepping back to let listeners hear for themselves precisely what's going on.

Every turntable I've ever heard has a character of some sort, but the better they get the more self-effacing they become. The SL-1000R is one of the most invisible and *least* intrusive sounding decks out there, underpinned by an almost supernatural speed stability from which everything else follows...

My dog-eared old copy of Rush's *Archives* [Mercury 7649 103] showed this to great effect. 'Fly By Night' is a short slice of early '70s rock delivered at a frenetic pace, with lashings of electric guitars, drum rolls and fills between the crashing cymbals. This particular 40-year-old vinyl 

THE LEGENDARY SP-10

When the Panasonic Corporation wanted a bespoke high-end audio brand in 1965, it launched Technics. The brand name first surfaced on loudspeakers but by 1970 it graced a turntable motor unit invented by Shuichi Obata. The 'Technics by Panasonic' SP-10 was the first direct-drive seriously aimed at the pro market, and was rapidly adopted in broadcast studios worldwide. Supplied with the SH-10B2 plinth and Technics tonearm, it was called the SL-1000. The deck could reach speed within half a rotation of the platter and had two speeds with a variable pitch of $\pm 2\%$. In 1975 the SP-10Mk2 followed, now with an onboard power supply unit (the SH-10E), fixed-pitch quartz-lock speed control and even greater motor torque for faster start-ups [see *Vintage Review*, HFN Nov '10]. For the package option, a new SH-10B3 Obsidian Base was offered, made from volcanic glass. In 1981 the SP-10Mk3 arrived, with a copper/aluminium alloy platter, and a restyled speed control unit with adjustable pitch of $\pm 9\%$. With Compact Disc just around the corner, sales faltered, but 30 years on the tide is clearly turning back the other way.



TETSUYA ITANI

Tetsuya (Tony) Itani, Technics' Chief Technical Officer, is a happy man. 'I think that we can show the sonic direction of the new generation of direct drive turntables – one which is very different from the sound from belt drives,' he says.

'With the SL-1000R I wanted to demonstrate the improved sound of a deck that has as little resonance as possible. That's why I used the smallest possible plinth – made from aluminium and BMC – rather than the old SL-1000's bulky wooden type.' He adds that the sound achieved is 'very precise but warm, with a high signal-to-noise ratio.' Itani-san adds, 'in my opinion, no belt drive turntable can deliver this...' It's an opinion largely corroborated by Editor PM's Lab Tests [see p39].

He says the SL-1000R's plinth is his ideal solution, but is amenable to third-party designs. 'For the sort of sound I have outlined, there is no room to improve the plinth, but for those wanting a different flavour, a wooden plinth may work.'

He also notes that although the arm looks conventional, all the materials are carefully chosen. 'We designed it with a magnesium pipe for lower resonance but the S-shape was dictated by the world market, where RCA-type detachable headshells are widely accepted.' Itani san concludes, 'record players are very important for our business, and we are expanding our lineup.'

However, fans of Technics' iconic 1980s cartridges will be disappointed to hear that, currently, no new models are being developed.



specimen is particularly distressed, yet it was as if the SL-1000R had beamed back in time to when it was young and fresh.

MICRO DETAILING

The music bubbled out of the groove, giving a wonderfully zesty sound that bristled with detail. There was a translucence here that I'd not previously heard, realised in the vast, wide open spaces between each beat of the music. I could both zero-in on microscopic details, and sit back and hear the whole song flow in a delightfully lucid way.

The SL-P1000R is one of very few high-end turntables I've heard that can perform this trick. Listening to its music is like jumping on a train – there's only one direction of travel as you sit there and watch the scenery fly by, yet you can still relish all sorts of weird and wonderful details as you speed along.

This brilliant rhythmic ability makes for an electrifying listen, ensuring the sound of Neil Peart's famously busy drumming was a joy. Everything was so secure and so well proportioned that the music might as well have been bolted deep into the earth's crust. The listening room becomes a sort of time capsule where you jaunt from one recording venue to the next, depending on which LP you choose to play.

Kate Bush's *Hounds Of Love* [EMI KAB1] was a dramatic transformation. Suddenly, editor PM and I were in a mid '80s recording studio with Fairlight CMI samplers instead of cranked-up Rickenbacker guitars, and Kate's icily perfect voice was now the virtuoso lead instrument. As the album's title track

ABOVE: This overhead view of the SL-1000R, sans platter, reveals the three lugs to which the 7.9kg rotating mass is bolted. Start-up torque is a massive 0.39 N/m (4.0 kg/cm)

began, I found myself mesmerised by the intricately sequenced, sampled percussion, hearing it with a precision I'd never quite discerned before. Not only were the metronomic beats entrancing, but I discovered subtle accenting where almost all other turntables deliver a flat, opaque, woolly thump to the bass drum sound.

The percussive backing framed the soundstage, so when the vocal line came

'Like a time capsule – you jump from one venue to the next'

in I wasn't prepared for the size and expanse of the singer's voice. Most turntables drop Kate's vocals far further back in the mix, but the SL-1000R had them way forward, giving her an eerie, ghostly sound that

was unexpectedly intimate.

Indeed, it was almost as if the vocal mike was in the diaphragm of her chest, so direct did it sound. I could hear every last inflection of her voice, including her breathing, as clear as if she were standing in front of me. I could also hear that what, on lesser turntables, sounds like a single vocal line was actually pieced together from different studio takes. Such soundstaging was breathtaking to behold.

LOUD AND CLEAR

No-one could justifiably describe the SL-1000R as 'another of those analytical Japanese direct drives'. In practice, it bristles with enthusiasm whatever it is asked to play. So much so that its combination of clarity, timing and

TURNTABLE/ARM



ABOVE: Two screw-in 'hoists' are supplied to lift/lower the heavy platter! High-quality 5-pin DIN (SME style) socket, with integral ground, is fitted under the rear of the chassis while the umbilical to the power supply/speed controller is captive

dynamics is enough to make you question the rhythmic security of high-end digital audio. The way this vinyl-spinner can extract both subtle accenting and dramatic dynamic contrasts from middling LP pressings never ceased to amaze me.

Steve Jansen and Yukihiro Takahashi's 'Stay Close' [Rime Records RIME 1] is a beautiful mid '80s pop song but is compressed up to the eyeballs, and the dense layers of keyboards and synths set over a busy percussive backing mean it's a tough challenge for any turntable. Via this flagship Technics deck, it was if I'd just put on the remix!

THE DIGITAL DECK

The dynamic light and shade was profound, especially on the frenetic drum machine work. At the same time, the hi-hat cymbal – pretty much inaudible on most record players – eased out of the dense mix with utter insouciance. I duly sat transfixed as all the track's complex tiers of production unwrapped themselves before my ears. Despite the intensity of the sound, the strands effortlessly unravelled, with the clarinet solo towards the end of the song being far less strident than

usual, yet possessed of a tangibility that I'd not previously experienced.

The deck's handling of frequency extremes is also exceptional. Those who have grown up with warmer, softer-sounding belt-drive turntables might initially think the SL-1000R sounds a little 'digital' at the bottom end. (If 'digital' means it has the ability to begin and end bass notes with the speed of an LED pulsing on and off.) So 4hero's 'Planetaria' [from *Earth Pioneers*; Talkin' Loud TLDJ 24], is dramatic to behold.

This is a superb late '90s analogue recording, with powerful double-bass played over metronomic snare drums and rim shots and intertwined with lush strings and soft backing synthesizers. The former sounded lightning-fast and highly expressive, giving a firm push to the song. At the opposite end of the scale, the timbre of the hi-hats was exquisite, shimmering like stars glinting out of the night sky. Between these two extremes, the strings possessed a richness and lustre that was frankly uncanny. ☺

HI-FI NEWS VERDICT

A remarkable turntable package, and arguably the apex of vinyl playback. It's difficult to see how the SP-10R motor unit can be improved upon, and the matching plinth and tonearm are of very high calibre – even if audiophiles will surely experiment with other combinations. Technics' SL-1000R is a definitive statement of engineering prowess, and marks the return of direct drive to the top tier of turntables.

Sound Quality: 90%

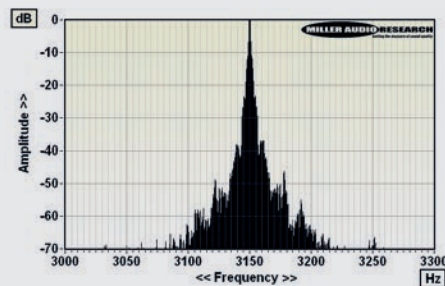


ABOVE: Dedicated outboard PSU delivers a synthesised feed for 33.33, 45 and 78rpm (with ±16% of adjustment). Speed is selected on the deck itself

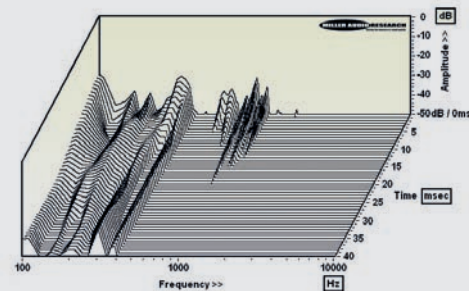
TECHNICS SL-1000R

Two years ago Technics' SL-1200GAE turntable set the standard for rumble and speed accuracy – benchmarks that are inched forward again by this flagship 'Reference Class' SL-1000R. Speed accuracy is, quite frankly, beyond the limits of accuracy using any test record because there are finite speed and W&F errors built into every disc. So the SL-1000R returned the same absolute speed accuracy of 0.006% (albeit -0.006% here in place of the SL-1200GAE's +0.006%) but with a further 'sharpening' of W&F down to a peak 0.02% – 0.01% for wow and for flutter [see Graph 1, below]. What this graph also reveals is the reduction in noise off the LP, with a through-groove figure of -75dB (DIN-B wtd). This is a full 5-6dB (or half the noise) obtained from some other high-end decks we've tested, so there's clearly merit not only in 21st century direct drive but also 20th century rubber mats...

In common with Technics' first S-shaped tonearm, this latest iteration is remarkably free of debilitating resonances despite its detachable headshell and ostensibly complex arm lift and rest, spring-tension bias adjust, double-axis gimbal bearing and adjustable height control. In practice the cold-drawn magnesium tube looks to have a diffuse bending mode around 95Hz with higher-Q harmonics deferred to 200Hz and 300Hz, all of which are at significantly lower amplitude than competing designs. The scatter of resonances between 1-2kHz might come from the headshell collar and lift lever but they are very short-term [see Graph 2, below]. The custom gimbal bearing proved both free of play and measurable friction (<5mg, both planes) while the downforce calibration was accurate to within <±5%. In every respect, this is the ultimate plug-and-play vinyl solution! 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	33.33rpm (-0.006%)
Time to audible stabilisation	<1sec
Peak Wow/Flutter	0.01% / 0.01%
Rumble (silent groove, DIN B wtd)	-74.9dB
Rumble (through bearing, DIN B wtd)	-74.1dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-59.9dB
Power Consumption	6W (<1W idle)
Dimensions (WHD) / Weight	531x188x399mm / 40.2kg