



EQUIPMENT REVIEW

Burmester Top Line 100 Phono Preamp

by Alan Sircom

Let's start at the end. The Top Line 100 from Burmester is not so much a hi-fi component as a phono laboratory. It's the vinyl archivist's dream; a method of extracting the signal from a cartridge with unparalleled accuracy and allowing that signal to pass either to an amplifier or a recorder – digital or analogue. In essence, it's a professional transcription product with luxury chrome front panel.

This is an expensive product, but having played with many expensive pieces of audio equipment, this one stands out for its exceptional build quality. There is a tendency in audio to assume that the quality of build is inversely proportional to the elegance of the front panel; a mirrored finish front panel should therefore be hiding a mediocre phono stage and a so-so build quality. Nothing could be further from the truth with the Burmester.

It's hard to express this in print, because you can't physically pick up and feel the weight of a photograph, but the product is built with the sort of solidity that exudes confidence. That means not inconsiderable bulk and some hard edges, but it also means a product built to last. Open the product up and it's like an electronics engineer's fantasy in there, right down to its carbon-fibre resonance-reducing feet. Nothing ostentatious, no components made out of Star Trek materials, just the sort of build that makes you think you could swing the 100 round by its resistors if you were so inclined.

That shiny front panel with toggle switches and LEDs and even a VU meter is what makes this a phono laboratory. The 100 accepts two phono inputs, one MM and one MC, in balanced mode (the output of a cartridge is balanced and Burmester supplies a set of silver SME arm-plug to XLR cables

– which I used with my SME 10 – and a set of phono-XLR adaptors). Toggling through the options, gives you 36 different combination of load and gain for both MM and MC cartridge designs. Amazingly, the different inputs go through their own independent passive RIAA equalisation stages and each has its own by-passable subsonic filter. The selection of phono section follows, passing immediately to an 'auto adjust' control.

This is the innovation that really lifts the 100 into the top league of phono stages. Cartridges are remarkable transducers, but transducers are prone to the sort of inaccuracies that would be unacceptable if you were pulling digits off a shiny disc, especially when it comes to channel imbalances. These might not be large, but ▶

▶ an half-decibel difference between the output of left and right channels are potentially possible and these imbalances are perceptible, if not immediately audible (in fact, when it comes to archiving your recordings, they become all the more noticeable when you replay the digital file afterwards, because we are not used to hearing such channel imbalances through digital audio sources). The auto adjust control determines and – as the name suggests – automatically adjusts the left and right channel to within 0.2dB of each other, even if there's a massive 6dB difference between left and right channels. The volume control can be fixed or variable (if you want to use this as a preamp for a turntable only system), with a VU meter to check levels for either left, right or mono, and a set +6dB pad. Phase reversal is also possible, and these stages output to XLR or phono. Burmester 'commons' the balanced and single-ended outputs thanks to its own X-Amp2 amplifier modules.

Here's another departure for Burmester. The 100 features an analogue-to-digital converter, which can run in 48kHz/24bit, 96kHz/24bit or 192kHz/24bit precision. The first – popular among radio and studio folk alike – suggests that a lot of its clientele are intended to be professional power users. Couple this with the gain control and the VU meter – with its fast-twitch overload LED – and you really do have a museum-grade vinyl archival laboratory. The digital output is delivered in coaxial digital, toslink and USB flavours.

There's an inverted snobbery in audio. The hair-shirt logic goes that the less money spent on the looks, the better the product. So, something that looks like a scaled-up tin of tobacco with a Bakelite chicken-head knob from the 1950s is going to sound a lot better than something with a bit of product

design behind it. So, that shiny front panel must cause some consternation among the sack-cloth and ashes brigade, because it's a product that looks elegant and sounds the part too.

Or rather, it doesn't. It doesn't have a sound, that is; it simply transcribes the sound of the replay system with uncanny accuracy. There's nary a cartridge that will trip up the 100 – even the torture-load that is the Ortofon MC7500 and the twitchy-but-excellent Benz SLR Gullwing were given the best possible

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run for their money. Surprisingly though, the biggest change came when playing the CartridgeMan hyper-modified version of a Grado moving iron design. Typically, the relatively high output of a moving iron means it fits snugly into a moving magnet design with no difficulties (nominally 47kΩ and 5mV output), but a quick pass through the MM-options meant the cartridge suddenly sprang out of its shell with a 120pF load (below this, treble began to get fierce and anything over 220pF and the cartridge started to sound 'puffy' and almost muffled) and a 46dB gain gave it the right balance between low noise ▶





▶ and pushing the peaks into distortion. Two things emerged from this; how great a difference these two parameters make in helping to define the audio performance of the cartridge and how close moving iron can get to even really good moving coils when fed through a really good phono stage.

What this brings is a complete absence of background noise, save for that on the record itself. When that record is the 180g pressing of *Heartworm Highways*, that means almost no background noise whatsoever aside from tape hiss. Instead, what you get instead is that sort of spaciousness and unforced, unedited, unprocessed detail that the disc is famous for. However, give the 100 a more complex album like the latest *Band of Horses* album and the phono stage raises its game and copes with dense tracks like 'Compliments' with no problems. And when it comes to digitising the signal into a PC, the ADC is clean and transparent... and happiest at 96kHz sampling.

The 100 is unforgiving, but in a good way. I'm more your 'fit and forget' vinyl guy, rather than the sort who wants to adjust VTA on every record, but the 100 could make me more anal about such things. It's definitely the kind of phono stage that highlights the rewards adjusting VTA on a per-disc basis brings. In fairness, I can see why this clarity and detail might leave some people comparing the vinyl to a top-notch CD player and there's none of that valvey-sweetness or heads-down boogie injection found in some phono stages. But if you want accuracy, the 100 does it right.

So there's a downside, but one that only really shows up when comparing the 100 to a select few phono stages. It's a RIAA-only stage, with no provision for other equalisation curves; so no Columbia, Decca FFSS, CCIR 56 or IEC-RIAA, and no DMM. These are not trivial limitations at this level, because there are rivals (AMR, Audio Research, Zanden... even Graham Slee) that do this. It's also not a trivial limitation because it's ultimately what prevents it from being legitimately museum-grade. Outside of the polished marble halls of the museum, it's probably not a deal-breaker, but it's a shame that a device that is such a world-class archival product in all other categories should fall down on this requirement.

Burmester has done a good phono stage before. In the 1980s its 838 phono preamp was near-universally praised for its fine engineering and even finer sound. The 100 echoes that success in both cases, but this time it adds a digitising element for those seeking to archive their vinyl without compromise.

The model 100 joins a very select crowd of phono stages that represent the best there is today. There is a small, but select group of people who suggest the most important part of the phono replay chain is the phono stage (assuming, of course, that deck, arm and cartridge are of sufficiently good stock not to get in the way). The rationale for this is that the phono stage can bring the best out of what goes before it. It's a minority viewpoint, but – having spent some time with the Burmester 100 – one that I can seriously relate to. +

TECHNICAL SPECIFICATIONS

Inputs 2 x balanced Modules (MM or MC) (fully equipped)

Max. input voltage MM: 78 mV
MC: 8.5 mV

Input amplification MM: 37dB, 40dB, 43dB, 46dB, 49dB, 52dB
MC: 57dB, 60dB, 63dB, 66dB, 69dB, 72dB

Input impedance MC 33Ω, 75Ω, 220Ω, 390Ω, 1kΩ, 47 kΩ

Input capacitance MM 68 pF, 120 pF, 180 pF, 220 pF, 300 pF, 400 pF

Outputs analogue 1 x balanced, 1 x unbalanced

Outputs digital 1 x RCA, 1 x Toslink, 1 x USB

SNR MC/MM MM: -84dB (dBA = -88dB)
MC: -74dB (dBA = -79dB)

Dimensions (WxHxD): 48.2x9.5x34.5cm
Weight: 10kg

Price: 10,000€-14,000€ (depending on optional modules)

Manufactured by Burmester

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