

# Burmester 102/101

Derived from the Reference Line and Top Line models, this handsome, plated pair forms the German brand's current entry-level offering. So what's behind the chrome?  
Review: **Steve Harris** Lab: **Paul Miller**

In the hi-fi world, 'chrome' and 'Burmester' are almost synonymous. Many designers have tried to give their products a unique visual identity, but few have succeeded as well as Dieter Burmester, whose company has grown, in its 35-year history, to become one of the most successful German audio brands and the most instantly recognisable of all high-end marques.

Burmester's model numbers might seem confusing until you know that they indicate the year and month that the prototype was originated. So the very first preamplifier, the 777, was started in July 1977, and was then marketed in the year the company was formed, 1978. It was fairly quickly followed by the slim, chrome-fronted 785, from May '78 and on sale in 1979.

## WALL TO WALL CHROME

Essentially, the 101 integrated amplifier and 102 CD player reviewed here form Burmester's current entry-level range, and can be seen as replacements for the old Rondo 991 amp and 992 CD player.

By contrast with Burmester's more massive, top-loading belt-drive players, the £4357 102 is a slim standard-sized unit, which would look conventional if it weren't for that chrome. Behind its shiny metal front, the CD drawer has a plastic tray, but it operates with a solid and reassuring precision when you touch the leftmost button on the fascia. The opening to the right of this contains the infra-red receiver for the remote control, guarded by metal-mesh as if it were the air-intake for a miniature carburettor.

Next to this is a button marked 'Audio', which switches the player's upsampling between 96kHz and 192kHz, and another to switch between coaxial and optical digital inputs. Then comes a row of four that provide all the usual transport functions: forward and reverse Skip, Stop

**RIGHT:** An in-house design, the 102's PCB and daughter boards are beautifully laid out. DAC, upsampling and other key ICs are blackened to prevent identification...

and Play/Pause. Furthest right is a Power button that's really a standby/operate selector, as there is a mains power switch on the rear panel. The LED above glows amber in standby and, unusually, red when ready for operation.

Functional as it is, the display is rather basic, just a single line of green dot-matrix characters. It will tell you 'No Disc' until you load one, and it will flash 'RCA' or 'TORX' (Toslink) if you touch the digital input selector button, which cycles through these options and CD. It won't show sample rate information when playing from the digital inputs, though. When there's a disc to read, it displays the number of tracks and total time. During play, it shows track number and either elapsed or remaining time, a choice that can only be made on the remote.

This is Burmester's slim, metal-bodied 067 system controller [see p37], which will also operate volume and source selection

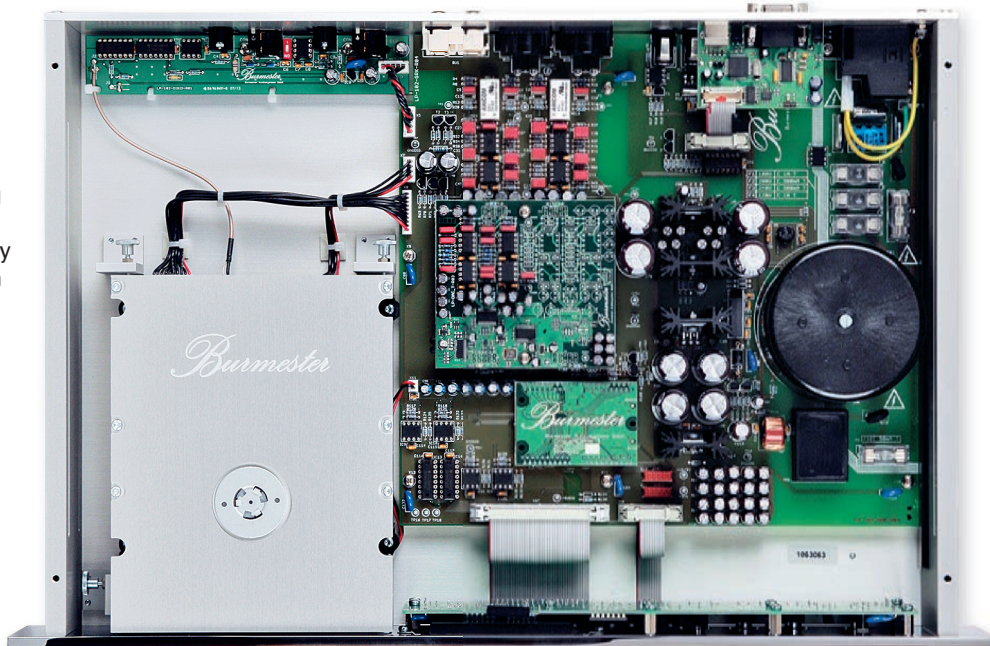
on the 101 amplifier. Other handset-only CD functions include direct track selection and programmed play using the numeric keypad, track or whole-disc repeat, and display dimming (three light levels or off), and fast-forward or reverse search. Select one of these and the player will keep running at the same speed, with reduced

volume level, until you press the button again.

Turning to the back panel, you will see a USB port adjacent to the RS232 – the latter provided for the BurLink connection to enable remote control via PC,

Crestron or AMX systems. But don't be fooled, the USB is *also* for BurLink, and it does not provide a digital signal input. There is a Toslink optical input, but the only electrical digital input is a coaxial (phono) connector, so to use the 102 with computer sources you will need a suitable USB-to-S/PDIF adapter. I used the affordable M2Tech HiFace Two, which costs around £150 from Russ Andrews. Owners of 069,

*'Those chromed fascias reflect with absolutely no visible distortion'*





089 and 061 players can add the plug-in Burmester MMI module, which will do this job and give you Bluetooth too, but there's apparently no provision for this on the 102.

For analogue output, there are Burmester's usual balanced connectors as well as unbalanced (RCA) phonos, plus a second pair of these as a record output.

### BURMESTER'S PREMIERE

Like the matching player, the £5088 101 integrated amp is slim and compact. This is Burmester's first Class D stereo amplifier and it is very powerful. Once again, the fascia is immaculate, the controls clean-looking and straightforward, with all legends engraved rather than silk-screened.

It's no simple matter to produce these plated fascias, so perfectly flat that they reflect with absolutely no visible distortion. Almost as impressive, on the 101, is the superbly-finished volume knob: a 'proper'

old-fashioned rotary control, rather than an endless rotary encoder.

Far right is the power on/off switch, a three-position toggle for Off, Standby and Operate. This means that you can more conveniently switch off mains power from the front, although with the remote you would leave the unit in Standby mode.

Once again, a neat row of control buttons is punctuated by the remote-control IR receiver window, and alongside this is a headphone jack. Connecting headphones automatically cuts off the power to the speakers, and also reduces the volume level. To the left are five line input selection buttons, labelled TV, Aux 1, Aux 2, Tuner and CD, and one final button labelled 'Smooth': a form of subtle loudness compensation which 'ensures a rounded, detailed sound even at low volumes'.

Rear panel connections are straightforward, although some of them

**ABOVE:** The 102 CD player controls include a button to change oversampling and another to select RCA and Toslink digital inputs. There's a classy motorised volume control for remote use

might look unfamiliar. As with the CD player there is an RS232 BurLink connector, but no USB, along with two mini-jacks for DC remote control triggering, which this time are both outputs. Intended to be used in balanced mode as far as possible, the amplifier has pairs of three-pin sockets for the CD, Tuner and Aux 2 inputs, which are standard balanced connectors, although they aren't the usual recessed type. Only the TV and Aux 1 inputs are unbalanced.

Then there is a pair of balanced sockets for Pre Out, allowing the connection of an additional power amp under control of the 101's preamplifier section. If rather than adding a second power amplifier to a system, you just want to use the 101

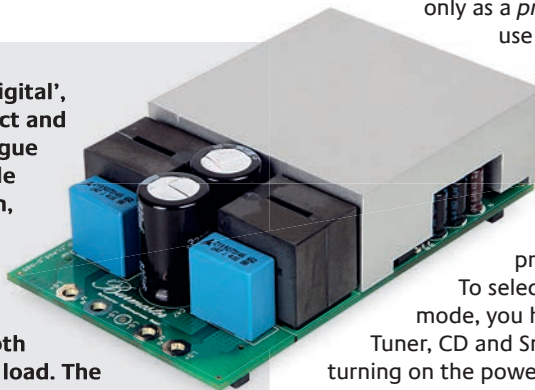
only as a preamplifier, you can use a special operating mode in which the 101's power amplifier section is switched off, which saves energy and is said to give better preamp performance.

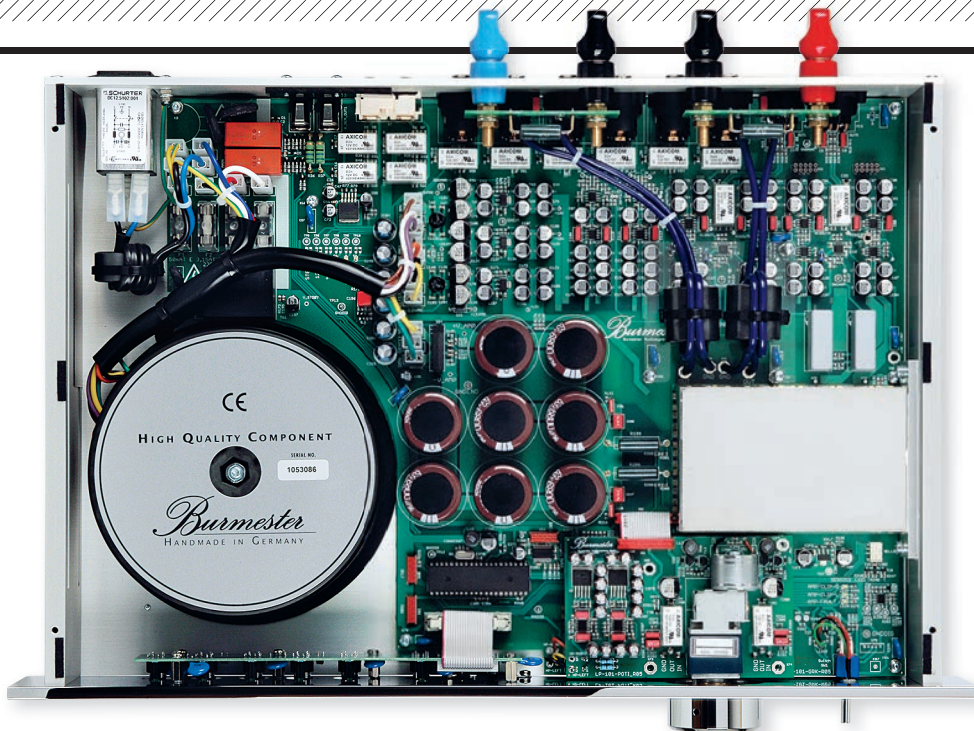
To select this 'Pre-out only' mode, you hold down the Tuner, CD and Smooth buttons while turning on the power switch.

All the amplifier functions except mains power-off are available on the 067 remote, which comes packed with the 101, as it did with the 102 player, but again it pays to first read the manual. Sources can be

### CLASS D MODULES

It's always worth repeating that Class D does not mean 'digital', though it is possible to have a digital Class D amp – the Tact and Devialet designs being the most famous exponents. Analogue Class D amplifiers all benefit from very high efficiency while the newer single-ended types (the Hypex used by Meridian, B&W and others and UFPD, used by Primare) enjoy a response and distortion that's broadly unaffected by speaker loading. Burmester's proprietary Class D module is closer in performance to the widely-used B&O ICEpower Class D engines whose architecture results in both response and distortion that is dependent on the speaker load. The 101's response peaks at +2.3dB/50kHz (8ohm) but falls to -1.3dB/50kHz (4ohm) and -5.0dB/50kHz (2ohm), all coinciding with the peak in (inductive) output impedance of 7.3ohm/50kHz. Distortion also increases swiftly at HF, from a low 0.004% through the midrange to 0.08% (20kHz) and 0.3% (40kHz). PM





## DIETER BURMESTER

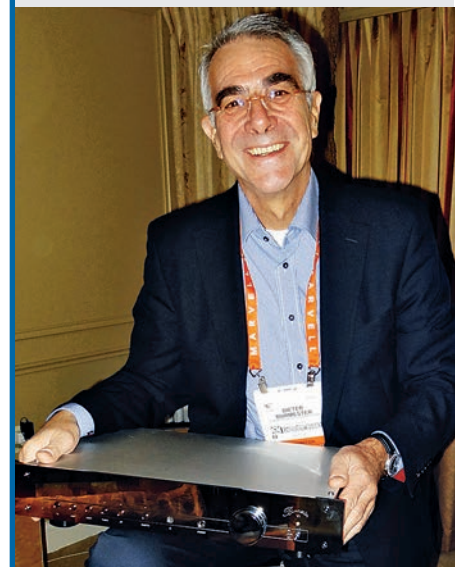
Dieter Burmester served an apprenticeship as a radio and television technician, then studied in Berlin. Burmester's first product when he started his company in 1978 was the 777 preamp.

The 101 is Burmester's first Class D amplifier and, as he explains: 'None of the modules are purchased from other manufacturers; all parts have been developed in-house. We used our experience from the automotive area, where we've been working with digital amplification for quite some time.'

How would he compare the sound quality of Class D here with the linear X-Amp technology used in other Burmester products, like the Rondo 991? 'Both techniques have their advantages – when they are well designed. It took us three years of development work until we were convinced that the 101 sounded warm, with a fine resolution yet full-bodied. Sometimes it even sounds a little bit like a tube amplifier.'

But the 101 has no difficulty in maintaining constant high currents, and is thus able to power even challenging loudspeakers with low impedances and complex loads.'

The 102 has only an S/PDIF digital input. Was there a reason for this? 'The 102 was designed as a high-end source to play audio CDs. As an entry-level product however, it differs from the Reference Line products in terms of features. For customers who desire a USB connection, the 113 DAC is a perfect supplement to the 102.'



**ABOVE:** To the right, the 101's Class D amplifier module is fully screened. No switch-mode power supply here though, Burmester employing a heavy linear PSU and fully discrete preamplification. Note also the motorised volume control and, at the rear, (white) relay-switched input selection

selected by labelled buttons, but on the handset, you use a single Aux button to cycle through TV, Aux 1 and Aux 2. Also, rather obscurely, to activate the Smooth setting, you press the Subt[itle] button. But no guesswork is needed for the motorised volume control, which works very sweetly from the up and down keys.

### SUBTERRANEAN DEPTHS

Once warmed up, the Burmester combination showed its sheer class on every kind of music I tried. Taking a cue from Dieter Burmester's promo video, which opens with him playing bass to a blues track, I plunged into Stevie Ray Vaughan and his Albert King-influenced 'Ain't Gone 'N' Give Up On Love' [from *The Real Deal: Greatest Hits 2*, Epic DD199]. The sound was poised and powerful, with massive bass and punchy drums behind SRV's creamy, purring vocal and stinging guitar.

Although the 102 CD player allows you to switch its upsampling on the fly, it proves to be an extremely subtle difference on CD material. Burmester recommends sticking with 96kHz for best sound. But after repeated trials with 'Kalerka' from Rebecca Pidgeon's *The Raven* [Chesky SACD 329] I felt that the 192kHz setting was giving just a little more luminosity to the vocal, as if the slight but crucially

supportive studio reverb was being reproduced with slightly more clarity. It seemed a little easier to follow the rather buried rhythm guitar pattern, for example.

But before settling down with a pile of CDs, I put the 102 through its paces as a DAC, listening to a variety of files ripped from CD as well as hi-res material. On David Chesky's *The New York Rags* the Burmester really conveyed the drive and dynamics of these virtuosic piano pieces, and the way they conjure up the bustle of the big city.

On some of Tony Faulkner's orchestral recordings, especially a recent Rachmaninov *Symphonic Dances*, I was impressed by the Burmester's ability to provide flawless deep bass, conjuring up

almost subterranean sounds from a truly black and hash-free background.

Making amplifier comparisons with the 102 player as a source, I found that the Classé CAP-2100, which is my regular yardstick, could give a sound that was subjectively a little softer and somehow more all-enveloping. The stereo image could sound almost washy or vague after the Burmester, as the German amplifier's remarkable precision and focus was traded off for a somewhat more relaxed quality. Nor did the Classé deliver the ear-opening power and downward extension that was possible with the Burmester 101. ↻

'The 192kHz setting gave vocals just a little more luminosity'

## BURMESTER 102/101

Both the 102's XLR outs and 101's XLR ins are wired in anti-phase – worth remembering if used with other components. The top 15dB of the 102 CD/DAC's performance is heavily influenced by its analogue output stage with distortion increasing to 0.0015%, albeit impressively consistent with frequency from 20Hz-20kHz. Below –15dBFS distortion falls to a minimum of 0.0006% before climbing again at lower levels, as we'd expect with reducing digital resolution [see Graph 1, below]. The player's maximum output is a substantial 3.8V and the A-wtd S/N ratio a full 113dB via CD and S/PDIF inputs. The CD response and other parameters are largely unaffected by choice of 96kHz/192kHz upsampling with jitter held to the 16-bit limit of 116psec. Jitter via the S/PDIF input is state-of-the-art at just 10psec and 7psec (re. 24-bit/48kHz and 96kHz). Responses are –0.1dB/20kHz (44.1/48kFs), –1.5dB/45kHz (96kFs) and –7.8dB/90kHz (192kFs).

Burmester's 101 amplifier is hugely under-spec'd and 'reviews' that simply quote the user manual/press release at '2x120W/4ohm' will be quite wrong. In practice it delivers 2x140W/8ohm and 2x245W/4ohm – double its rated spec. Unlike many Class D amps there's a further increase under dynamic conditions to 170W and 330W [8/4ohm, see Graph 2] but like other balanced Class D types its response and distortion does vary with speaker load [see boxout, p33]. The A-wtd S/N is also about 10dB below 'average' at 74dB (re. 0dBW) but this is white noise, not hum. Readers may view comprehensive QC Suite test reports for Burmester's 102 CD player/DAC and 101 amplifier by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



**ABOVE:** Although the 102 player has optical and S/PDIF coaxial digital inputs, the USB connector, top left, is for system control connection only. Balanced outputs match the CD inputs on the 101 amp, one of its three balanced-only line inputs

Listening to the redoubtable Eddy Louiss and 'Blues For Klook' from *Sang Melé* [Nocturne NTCD 101], the conventional amp did a good job in bringing out the human spirit behind the electronic keyboards, but when those really low notes came, the Burmester 101 was breathtakingly powerful and solid.

### HYPNOTIC JUNGLE SOUNDS

I found that the Burmester 102/101 combination could really give convincing weight and scale to a concert grand piano, and I really enjoyed Patrick O'Byrne playing Ravel's *Miroirs* and *Gaspard de la Nuit* [from Stockfisch Records SFR 357 4049-2].

It was easy to get carried away by O'Byrne's rich and rhythmic interpretation of the well-known 'Alborada del Gracioso', while the contrasting final piece, 'La Vallée des Cloches', showed off the bottom-end of the piano to great effect, the lowest notes, the most distant and solemn clock bells perhaps, sounding full of substance.

Moving on to *Gaspard* and 'Ondine', it was lovely to hear the way that at first just a single quiet note looms up from the depths through the glittering, rippling treble waters, presaging the major upheavals that follow.

On a good live recording, the Burmester combination could really give you the space and ease of a concert venue, and a fine illustration of this was *Quercus*, by the group of the same name made up of June Tabor, Iain Bellamy and

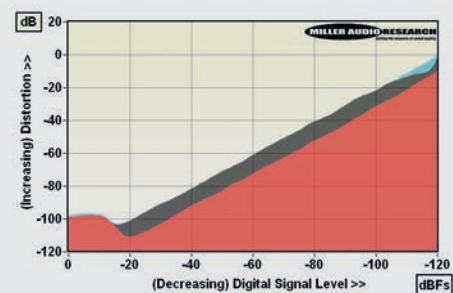
Huw Warren [ECM 372 4555]. This album was recorded live but seemingly without an audience at The Anvil, Basingstoke, and rather artfully mixed. Tabor's voice is heard enveloped by the acoustic of the large hall, but there's a closer view of Huw Warren at the piano and the sonority of its low notes was really well presented here, especially on 'Near But Far Away'.

These products were good at opening out the soundstage on spacey-sounding studio recordings too. With Bebel Gilberto's dreamy 2001 album *Tanto Tempo* [East West 0927-47407-2], it really painted a picture of the luxuriant Brazilian musical landscape, where all kinds of electronic sounds ease their way into the mix. On 'August Day Song' the Burmester combination clearly conveyed the subtlety of distant jungle sounds that move across the soundstage while the singer duets with herself from the left and right channels. With music like this it was hypnotic, even addictive. ⚡

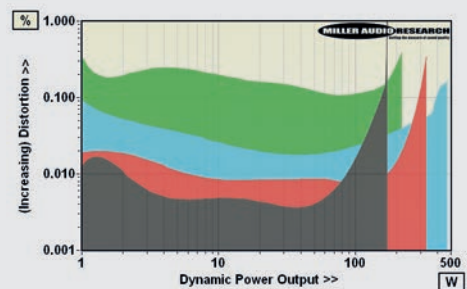
### HI-FI NEWS VERDICT

Burmester is a brand that has spectacularly ploughed its own furrow, but will you go along with the concept of 'art for the ear'? Well, this is a powerful and smooth-sounding combination, strong on precision but not lacking warmth, and subjectively more musical than, perhaps, you might expect. Also, in terms of material content and engineering quality, it offers better value than many a competitor.

Sound Quality: 85%



**ABOVE:** THD vs. decreasing digital level via S/PDIF (24-bit/1kHz, red) and CD (1kHz, black; 20kHz, blue)



**ABOVE:** Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Current limit is 15.5A

### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	140W / 245W
Dynamic power (<1% THD, 8/4/2/1ohm)	170W / 330W / 480W / 220W
Output imp. (20Hz-20kHz, CD/Amp)	64ohm / 0.001-0.45ohm
Freq. resp. (20Hz-20kHz, CD/Amp)	+0.0 to -0.13dB / -0.25 to +0.71dB
A-wtd S/N ratio (CD/Amp)	113.1dB (0dBFS) / 74.0dB (0dBW)
Distortion (20Hz-20kHz, CD/Amp)	0.0014-0.015% / 0.0041-0.082%
Digital jitter (CD / S/PDIF)	116psec / 10psec
Power consumption (CD/Amp)	12W/290W (22W idle)
Dimensions (WHD, CD/Amp)	482x95x320mm/482x93x350mm

