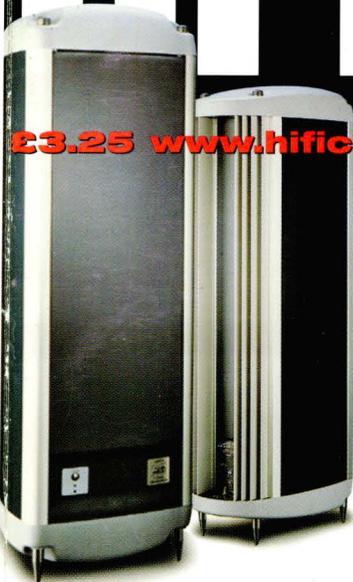


HI-FI CHOICE

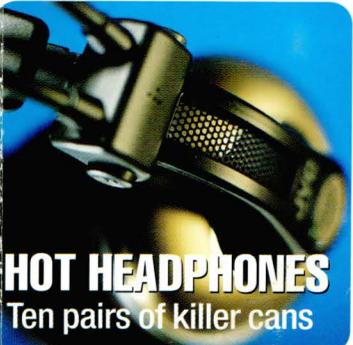
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☎ (020) 7317 2600 Fax (020) 7317 2686

Regrettably we cannot speak with readers or answer queries on the telephone. Please send a letter, fax or e-mail instead.

● **Editor** Jason Kennedy

jason.kennedy@futurenet.co.uk

● **Deputy Editor** Tim Bowers

tim.bowers@futurenet.co.uk

● **Art Editor** Del Gentleman

del.gentleman@futurenet.co.uk

● **Production Editor** David Bailey

david.bailey@futurenet.co.uk

● **Reviews Editor** Nick Gear

nick.gear@futurenet.co.uk

● **Consultant Editor** Paul Messenger • **Technical Editor** Paul Miller

Contributors Richard Black • Alvin Gold • Jimmy Hughes •

Richard Stevenson • Phil Strangman • David Vivian

Photography Chris Foster

ADVERTISING● **Advertising Fax** (020) 7486 5676● **Group Ad Manager** Rob Debenham ☎ (020) 7317 0239

rob.debenham@futurenet.co.uk

● **Ad Manager** Andrew Goldsmith ☎ (020) 7317 0202

andrew.goldsmith@futurenet.co.uk

● **Senior Sales Executive** Debbie Maclaren ☎ (020) 7317 0214

debbie.maclaren@futurenet.co.uk

● **Senior Sales Executive** Fiona Beech ☎ (020) 7317 0217

fiona.beech@futurenet.co.uk

● **Classified Sales Exec** Andrew Maxey ☎ (020) 7317 0202

andrew.maxey@futurenet.co.uk

PRODUCTION

☎ (01225) 442244

● **Production Coordinator** Rebecca Brooks● **Production Manager** Fiona Milne

fiona.milne@futurenet.co.uk

MANAGEMENT● **Publisher** Simon Davies ☎ (020) 7317 2600

simon.davies@futurenet.co.uk

● **Managing Director** Mike Frey

mike.frey@futurenet.co.uk

● **Group Publishing Director** Jon Bickley

jon.bickley@futurenet.co.uk

● **BACK ISSUES – SEE PAGE 137 FOR DETAILS.**

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● **SUBSCRIPTIONS – SEE PAGE 80 FOR DETAILS**To subscribe to *Hi-Fi Choice* call (01458) 271121, lines open 8am-8pm, Monday-Friday.● **NEW PRODUCT INFORMATION**

We welcome information on all new and upgraded products – please send all press releases to the Editor. The magazine is obliged neither to review nor return unsolicited products, and does not accept responsibility for unsolicited copy.

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Hi-Fi Choice is the UK hi-fi magazine representative of the European Imaging & Sound Association (EISA). Every year EISA honours the finest hi-fi and home cinema products throughout Europe.

**EDITOR'S NOTEBOOK***All you copy-cats**might be in for a bit of a surprise – as Jason Kennedy reveals...***T**

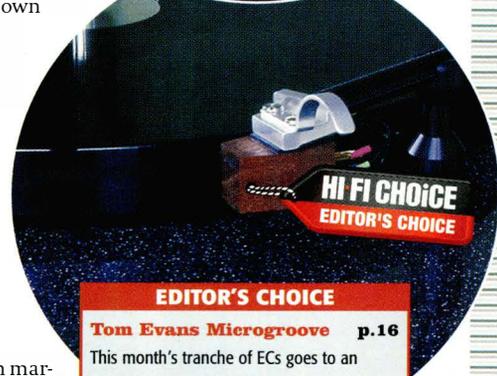
his month, we have finally been able to put together a large scale digital recorder test. It's been a long time coming, what with problems in the Philips camp having knock-on effects with other brands. But Alvin and Paul have been beavering away to find just which are the best recorders on the market. And if nothing else is certain, the supremacy of the CD-R/RW medium is. Some may feel it unfair to pitch MD with its ATRAC compression system against linear PCM direct dubs, but when it comes to domestic recording that is the choice to be made. MD clearly has advantages in terms of flexibility but if absolute sound quality is the goal, then CD-R is very hard to beat. And here at *Choice Towers*, sound quality is where it's at. If you want bells and whistles, look elsewhere.

LOCKED OUT

I came across an article by Barry Fox lately (*HF&RR*, March) in which he described a music software anti-piracy system called AudioLock. This is apparently similar to the Macrovision system used to stop people copying pre-recorded video tapes and DVDs, and is said to be doing the rounds of the music industry this summer. If the system is as effective as Macrovision, it could have quite a dramatic effect on the long term viability of formats like MP3 which depend on the ability to copy software for their existence. Not to mention CD-R. To what extent this system will be taken up by the music industry remains unclear, but its fear of piracy is well known and AudioLock must look like a God-send.

However, speaking to Sony Music's New Media developments Manager, Tony Martin, I found that the company's hardware activity – especially Memory Stick (which relies on the user's ability to 'rip' discs on PC so that they can be downloaded) – is restraining its copy protection activities. But not entirely. Apparently Sony Music has its own proprietary copy protection system which was used on 32,000 copies of a single title released in the German market recently. It included a freephone number on the case to see how many buyers found the protection an issue. So far only 10 calls have been received. Which either means that digital copying is not such a big thing in Germany or that the buyers of the disc have yet to try and 'rip' them.

Should a system such as AudioLock be adopted on a large scale there will, no doubt, be someone who cracks the code – as has occurred with DVD. So computer users will be able to carry on dubbing, likewise large scale piracy operations. It may be that those of us wishing to make compilations for the car or personal stereo are left to pay the price. So if you're building up a wish list of discs to buy, now might just be the time to do it – software that can be copied might be highly prized in the years to come.

**EDITOR'S CHOICE****Tom Evans Microgroove p.16**

This month's tranche of ECs goes to an unashamedly vinyl-oriented pair of products. Tom Evans has been making fine phono stages for quite some time and his latest Microgrooves do nothing but enhance his reputation. If you have a decent record player you'll be shocked at not only the resolution its capable of, but also how quiet LPs can be with a great phono stage.

Well Tempered Reference p.64

The latest incarnation of this radical record player may not appear as extreme as it did when it first appeared but it's nonetheless a striking bit of lateral thinking that seems to work very well. For Paul Messenger to call into question some aspects of his beloved Linn/Naim deck's performance takes a very special player indeed.



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WELL TEMPERED

A classic record player returns in Reference form.



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HEADPHONES

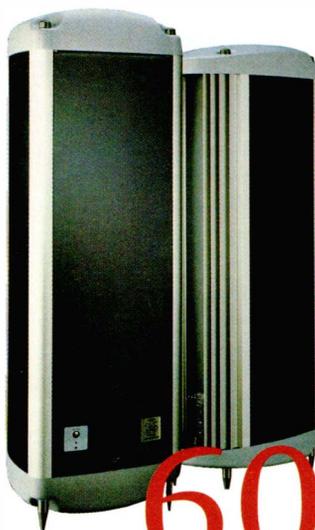
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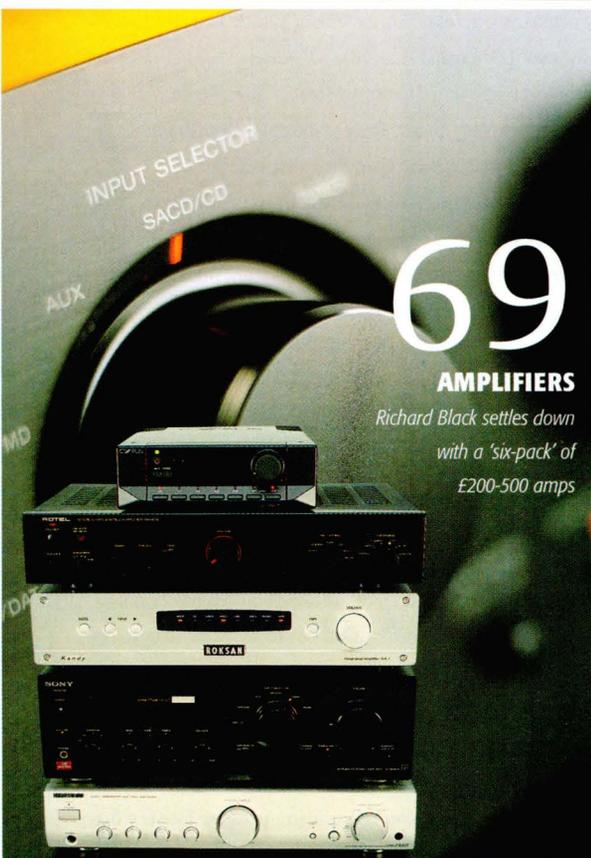
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All the current news and developments in the industry



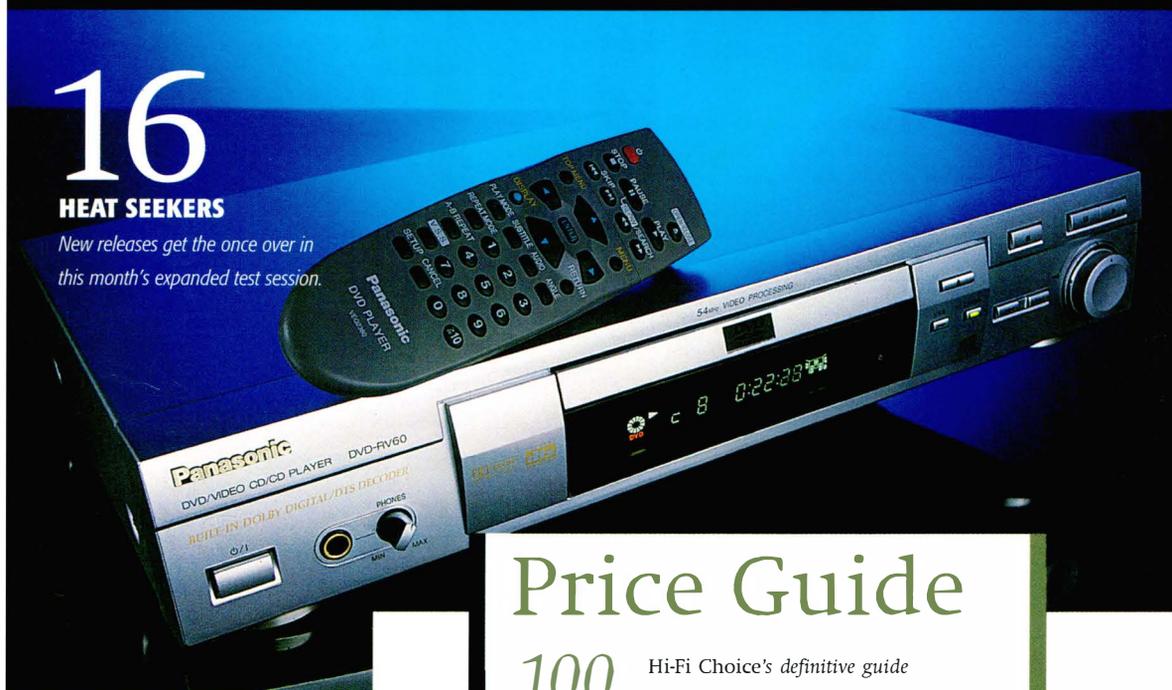
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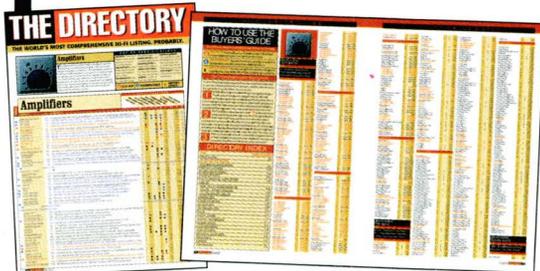


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NEWS & VIEWS

Tim Bown and Nick Gear report the latest developments in the world of hi-fi.

NEWS IN BRIEF



TEAC has unveiled the complete Reference Series DVD home theatre 5.1 system. The LS-5.1U is finished in jet-black, complementing the lifestyle champagne silver AV-H500D amplifier and DV-H500 DVD player, and includes six bipolar speakers and an active subwoofer with variable crossover and gain. The system is £349.95, or £1,099 for the special DVD, amp and speaker package. ☎ (01923) 819630

ALBA'S sub-£150 DVD103 player is the company's first foray into the DVD market. Both DD and dts ready, it has all the essential user-functions such as multi-angle selection, plus coax digital, S-Video and audio outputs. ☎ (020) 8594 5533

HARMAN/ KARDON is offering the three dts, Dolby Digital and Dolby ProLogic AV receivers with built-in tuners. The AVR500 (£600) delivers 2x80 Watts, the AVR300 2x55 Watts and the entry-level AVR200 5x40 Watts. All the models are supplied with a System Link remote system for compatible equipment. ☎ (01908) 317707

ELECTRO-HARMONIX releases the 300B EH tube, matching the Western Electric originals in curves and DC characteristics, suitable for vintage and modern amps. Facets include an eight course directly heated filament, 40-Watt plate dissipation, large shoulder tube glass and is available singly or in matched pairs. ☎ (001) 212 529 0466



TITAN'S Cinemods multi-channel loudspeaker package includes TS surround speakers with 120mm polykevlar sandwich cones with twin voice coils, and an aluminium voice coil, ferro-fluid filled soft dome tweeter. The TC centre speaker mirrors the surrounds with magnetic shielding on both drivers. The Mercury subwoofer facilitates a 75-Watt power amplifier and a 150mm spun aluminium cone. ☎ (01702) 206870

QTS latest incarnation of the original QT Turntable, christened Evolution, retains many of the original techniques, but with refinements to the materials and power supply. In addi-

Fashionable Naims

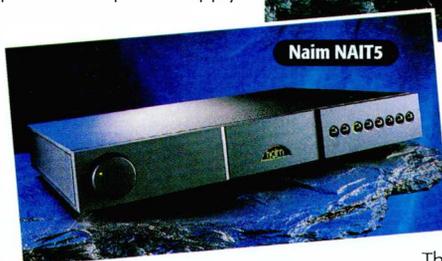
Naim has broken with tradition and introduced a fresh look for its new entry-level components. Both the CD5 CD player and NAIT5 integrated amp feature styling culled from the company's recently released high-end NAP 500 power amp. They are housed in a totally new low-vibration machined aluminium chassis, but their revamped design is more than merely skin deep.

The CD5 costs £1,125 and sports a new power supply with a particularly large dual winding transformer. This powers the analogue and digital circuits separately, the aim being to reduce distortion and improve dynamic range. Philips' VAM 1205 transport mechanism is also employed, coupled to an 18-bit DAC and a central microprocessor running proprietary software.

Much is made of circuit layout, with high quality boards mounted on decoupling pillars to ensure optimum signal transfer. This is something also touted for the NAIT5, a £799 model described by Naim as "the best sounding, most functional integrated amplifier yet". At the core of



Naim CD5



Naim NAIT5

the preamp section is a discrete resistor ladder volume control, a network of hand selected resistors and solid-state switches controlled by a microprocessor, which allegedly adds up to a volume control of rare functionality and sound quality.

The power amp section is based on circuitry developed for the aforementioned heavyweight NAP 500. A new transformer has separate windings for the preamp and power amp circuits and all preamp supplies are double regulated. All functions are controlled by a microprocessor, though digital circuitry is switched off during music replay to curb noise, and facilities include a pre-out socket and programmable gain matching for each input. Both the NAIT5 and CD5 should be in the shops by the time you read this. Naim Audio Ltd ☎ (01722) 332266

Nu NuNeutrons

AVI's NuNeutron speaker has been replaced by a new model – the £499 Neutron III. It takes its design cues from its predecessor, a speaker known for the quality of its midband, but is claimed to be more sensitive, clearer-sounding and easier to drive.

AVI makes much of its crossover network, which it says behaves with the accuracy and predictability of an active unit. It has lowered the crossover frequency to 2.8kHz, as opposed to the NuNeutron's 3.6kHz, asserting that the crossover is inaudible and a lower frequency puts less strain on the main drive unit. Other than that, the picture is similar to the model it replaces – a 265mm high cabinet with a 12.7cm doped paper mid/bass cone and a 28mm soft dome tweeter. Sensitivity is 88dB and impedance is 6 Ohms, existing NuNeutron owners can upgrade for £100.

AVI claims that exceptional small speakers will outperform their larger brothers in most listening rooms. Is that the case here? Look out for a review in *HFC*. AV International Ltd ☎ (01453) 765682



AVI Neutron III



Philips SACD1000

Philips joins SACD

Philips is set to enter the race for new music format supremacy when it unveils its first Super Audio CD (SACD) player in the last quarter of this year. The player in question is the SACD1000, expected to have a price tag of between £1,500 and £2,000. It incorporates a six-channel output for surround sound purposes and is the first SACD player of those firmly announced so far to support DVD-Video discs.

The SACD1000 will follow the launch of a more expensive SACD machine from Philips-owned specialist brand Marantz. As revealed in *HFC* last month, the £5,000 SA-1 will be the most costly player yet when launched this September. We're aiming for an exclusive review next month, so keep 'em peeled. Philips UK Ltd ☎ (0208) 689 2166

Nautilus hits mid-price B&Ws

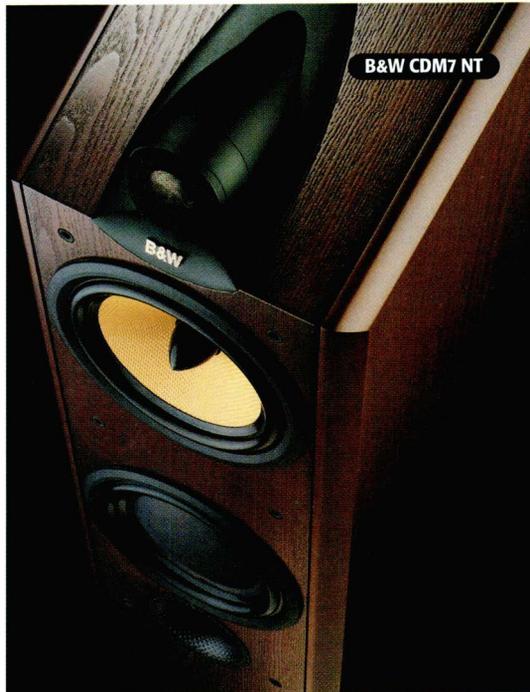


B&W has revamped its CDM range of speakers by filtering down elements of high-end Nautilus technology, as featured in the acclaimed Nautilus 800 series. The new line-up is called CDM NT and includes three models: the standmounting CDM1 NT (£750), the floorstanding CDM7 NT (£1,250) and a centre speaker, the CDM CNT (£395). A purpose-built surround speaker, the CDM SNT, is set for a later launch.

The range combines the sloping tweeter baffle of the original CDM speakers with the Nautilus tube-loaded tweeter assembly – a tapered tube mounted behind the tweeter to absorb acoustic energy and in theory produce more focussed and natural treble. All speakers sport a main driver with a 165mm woven Kevlar cone, while the CDM7 NT includes an additional 165mm bass cone made from a paper and Kevlar mix.

Also common throughout the range is B&W's Flowport technology. This concerns the port's internal and external flares, which are dimpled like a golf ball to improve air-flow. A 'bullet shaped dispersion modifier' (phase plug) is set in the centre of each main drive unit and all models come in a choice of three wood veneers: black ash, cherry, and red stained cherry wood. The CDM1, CDM7 and CDM CNT will be available from mid-August, together with a matching stand for the CDM1, priced at £200.

B&W Loudspeakers ☎ (01903) 750750



Denon joins CD recording frenzy



Joining the CD recording ranks is Denon with its débutante model, the £400 CDR-1000.

Compatible with both CD-R and CD-RW, this model possesses a sampling rate converter to cope with different digital sources and a 24-bit Analog Devices D/A converter.

User features include three 'easy to use' synchronised record modes, variable record levels for digital recording, one button and double speed finalising, and a text writing facility for artist and song titles.

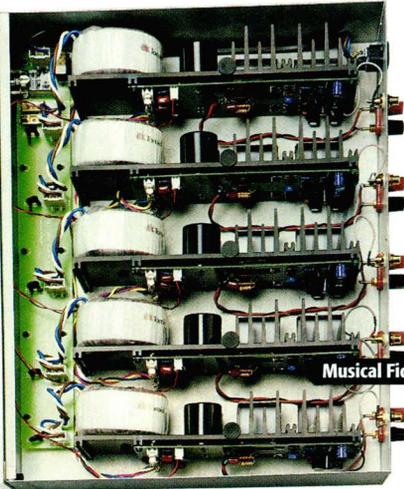
Internally it incorporates selected components in the audio circuits, individual power supplies for analogue and digital circuits and the ability to act as a monitor for sample rate or A/D, D/A conversion. Denon has fitted a host of terminals including an optical and two coaxial

digital inputs, an optical and coaxial digital output plus a set of analogue stereo input/outputs.

Hayden Laboratories Ltd ☎ (01753) 888447



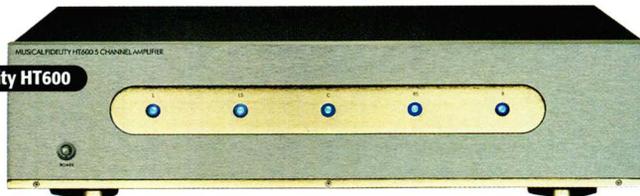
Five channels of Musical Fidelity



Musical Fidelity is set to launch a multi-channel power amp to partner its HTP surround processor, unveiled in last month's *HFC*. The HT600 is priced at £1,999 and features five monoblock amplifiers inside a single case.

Employing the same circuitry as the A3(CR) power amp but without choke regulation, this power amplifier has an output rating of 5x120W. The chassis is fashioned from high quality punched steel with the front panel machined from aluminium and has 24k gold plated fittings. A matching DVD player will be launched in due course.

Musical Fidelity ☎ (0208) 900 2866



NEWS IN BRIEF

tion, the QT Swing Weight, a counter weight for use with Rega tone arms replaces the standard counterweight with a gunmetal weight mounted below the centre line of the arm. The rear stem is also replaced by a stainless steel threaded item.



☎ (01777) 870372

SHARP'S latest range of compact MD systems is headlined by the champagne gold MD-MX30H with beech-effect MDF speakers. Featuring a servo-powered volume control that retracts for a flush finish, this system boasts a high-speed digital recording facility, 25W per channel output, a three-mode graphic equaliser and an RDS EON tuner with 40-presets. The range is to be completed by the arrival of the MD-MX20H and MD-MX10H.

☎ (0800) 262958

IXOS 126AV Mallard Scart cable has been specifically constructed for use with DVD and VCR machines. The cable is made with cast metal plug bodies, high-tensile 24kt hard gold-plated signal pins and a low-loss 110AV cable. The new interconnect is available in a 75cm length.

☎ (01494) 441736

SONY is promoting an MD bundle with the MZ-R70PC. Allowing users to record a combination of Web music, tracks from CD collections and songs off the radio, the package includes a plug and play PCLink USB interface and MD Walkman with 'smart' remote, digital Mega Bass system and 40-second anti-shock memory.

☎ (01932) 816000

HUNGARIAN enthusiasts should note that the Budapest high-end show will run from 10 to 12 November at the Grand Hotel, Margitsziget.

TECHNICS last month confirmed a three-year sponsorship deal with the Mercury Music Prize, an event it has backed for the last two years. The nominated 'Albums of the Year' will be announced on 12 July followed by the award ceremony on 12 September.

TAG MCLAREN AUDIO has added a TAGtronic Programming cable (£69.95 for 2.5m), an S-Video interconnect (£99.95 for 0.5m, £19 for each additional metre) and an Analogue Balanced XLR (£156.95 for 1m, £44 for each additional metre) to its Cable

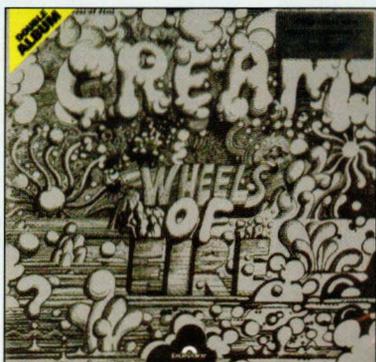
AvantGarde range. TAG has also reduced the price of its 60i amplifier to £499.

☎ (01480) 415600

TOM EVANS and Ted Jordan are providing products, technical background information and a user forum via their ambitiously named website. Visit www.besthifintheworld.com for further details.

PREVIOUSLY UNHEARD

Phil Strongman digs out rare and classic tracks appearing on CD or virgin vinyl for the first time. May the groove be with you.



CREAM *Wheels of Fire*

The last major album by the 60s super-group, and Eric Clapton's discreetly distorted guitar is still strident enough to crack the sound stage in half. Sounds better than the CD version, although perfectionists will no doubt notice a smidgen of hiss and surface noise but as I've said before, if you want to avoid such horrors completely then turn your system off. Highlights include the throb- bly edgy *White Room* and a wild take of Robert Johnson's *Crossroads*, live at the Fillmore. Can blue men sign the whites? Damn right they can. Simply Vinyl 180g DBLE LP.

Music ★★★★★ Sound ★★★★★

CARLY SIMON *The bedroom tapes*

The 70s singer-songwriter returns with 11 choice cuts of Manhattan angst which she recorded herself at home – hence the title – in 1999 with a little help from her industry friends. Full of the crafted songs and casually brilliant phrasing that's obviously influenced the likes of audiophile diva Patricia Barber. Arista CD

Music ★★★★★ Sound ★★★★★

LEFTFIELD *Leftism*

The soulfully dark and moody dance music classic of 1995 gets reissued along with a

seven track CD of remixes from the following year. Pulsingly well produced, by da boys themselves, with plenty of rhythm and synth squeals to fill your music room with.

Hand CD

Music ★★★★★ Sound ★★★★★

KING TUBBYS MEETS LARRY MARSHALL *I Admire You In Dub*

Half the trendy-wendy restaurants in New York have been playing dub over the last year since it usually manages to combine simple but effective tunes, blistering bass and enough mid-band space to allow conversation. *Admire You In Dub* might be 25 years old but it fits the bill handsomely with some marvellous moments being conjured up by the reggae veterans.

Motion CD and 180g LP

Music ★★★★★ Sound ★★★★★

JACQUES LOUSSIER *Play Bach No.1*

Recorded in gay Paris in 1959, this is easy listening of the highest order as the Gallic pianist strolls through the back (or should that be Bach?) catalogue of Johan Sebastian. Preludes covered – with crisp backing from Pieree Michelot's bass and Christian Garros' drums – include Numbers 1, 2, 5 and 8.

Decca-Universal CD

Music ★★★★★ Sound ★★★★★

PATATO *The Legend of Cuban Percussion*

A post-Buena Vista delight with the well-baked Patato giving us 72 minutes of beautifully delivered pieces – and, I hasten to add, with a surplus of melodic gold-dust from younger jazz musos such as Omar Sosa and Ivan 'Melon' Gonzalez. Has more real timing and energy than the current Top 40 in its entirety. Effortlessly pleasing.

Six Degrees CD

Music ★★★★★ Sound ★★★★★

Castle Howard S3



Classic Range

Howard's Return



Featuring a smaller cabinet, the new Howard S3 speaker is actually derived from the shelved

Super Harlech project. Integrating a twin-pipe, it uses two 150mm woven carbon fibre coned bass units, one forward firing, the other vertical, tuned to different frequencies with the pipes vented downwards. Included are 32mm coils and vented T-poles on the bass and mid units whose cone has been specifically created to minimise standing waves, improve linearity and remove response anomalies. The 28mm fabric dome tweeter is specially damped with a high viscosity material. The S3 is available at £1,349.90 in one of Castle's seven veneers or £1,599.90 for rosewood and yew.

Also new is the Keep 2 centre channel speaker for £249.90 in standard veneers or £299.90 for rosewood and yew, plus The Classic Sub subwoofer system for £799.90 or rosewood and yew for £949.90.

Castle ☎ (01756) 795333

Linn Pekin tuner

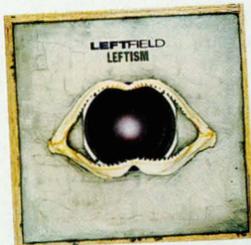


Linn's fine tuning



As digital radio technology gradually gains pace, Linn is hoping to squeeze more out of traditional FM/AM broadcasts with the launch of the two-band Pekin tuner. Priced at £545, it is designed to offer high signal sensitivity and a high-level of performance with even faint signals.

General characteristics include improved user options, two RF signal inputs for aerial or cable feeds, a signal strength meter and adjustable mute/scan threshold controls. Other highlights include 80-presets, two pairs of audio outputs, a software port for future upgrades and an optional RS232-C interface for computer network control. Linn ☎ (0141) 307 7777



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Tasty Danish



Dali's tiny but impressive-sounding Royal Menuet speakers have spawned a larger brother. Despite the new Royal Sceptre's greater dimensions – devised to incorporate a more substantial 127mm mid/bass driver – it remains a smart and compact standmounting speaker, only 30cm high.

The model on which it is based has become widely renowned for producing a well-scaled sound from a minuscule enclosure, and no less a feat is claimed by the Royal Sceptre in relation to size. Its rear-ported cabinet is made from 22mm MDF and finished in polished cherry wood veneer, incorporating a 19mm soft dome tweeter to go with that coated paper-coned mid/bass unit.

Its Danish maker claims linear impedance, which should make it suitable for use with valve amps as well as transistor designs.

The speaker's crossover network is hand-soldered and hard-wired, with each component individually selected on the basis of sound quality. Four gold plated binding posts are provided per speaker for single or bi-wiring.

Audio Club ☎ (01296) 482017



Shearne's new phase



Enter Phase 2, a new integrated amplifier from Shearne Audio which boasts a whole host of improvements over its predecessor, the Reference.

A 10th anniversary special edition, the amplifier includes a power section with a redesigned heat sink for higher power dissipation, together with revisions in the preamp stage. An upgraded transformer has been employed, which uses two smaller modules, configured to create the effect of one transformer, twice the size of each of the individual units used. Consequently, Shearne Audio has been able to maintain the same outer casing as the Phase 2 Reference allowing present owners the option to upgrade to the new standard.

Specified at a respectable 70 Watt per channel, the Phase 2 Anniversary costs £999 and sports five line-level inputs, gold plated knobs with fascia mounting screws and a remote control.

Shearne Audio ☎ (01438) 740953



PAUL MESSENGER

Mr Messenger's feeling flat – and he likes it.

It was in Autumn 1996 that the Verity/Mission Group first released details of the NXT flat panel speaker technology it was developing, based on work originally pioneered by DERA (the MOD's R&D operation). The company's subsequent growth has been as spectacular as any dot.com operation. At the time of writing NXT plc has a market value of £783.5 million, and a roster of some 50 highly qualified employees. Its rapid expansion has already outgrown two premises, so on June 9th you truly, together with many other journalists and associates, were invited to the formal opening of a new headquarters building, three times the size of its predecessor.

NXT is not a manufacturer. Mission is now a completely independent entity, and although NXT retains ownership of the Cyrus specialist hi-fi brand, that operation is now essentially autonomous. NXT's attention is now firmly focused on its core business of establishing, protecting and licensing the intellectual property rights to its flat panel speaker and related technologies.

It's still much too early to predict what impact these speakers will have on the hi-fi scene, especially as their properties seem rather more obviously suited to a whole variety of other sound reproduction applications. Although NXT doesn't manufacture, it does make things. While many of its key personnel are engaged in figuring out theoretical issues (such as how the panels work and how to predict how any given panel type will work, as well as preparing the software so that licensees can make their own predictions), many others are working on the engineering prototypes which are exploring future applications for the technologies.

The typically low cost and weight of NXT panel speakers will be welcomed by car (and aeroplane) manufacturers as a matter of course. Add in the ability to mould the panels into complex curved shapes and you've got a very potent recipe for fulfilling many of the ideal requirements for 'line fit' in-car speaker systems.

SoundVu is a relatively new spin on the NXT theme, using edge-driven transparent panels rather than the normal opaque panels with distributed drive coils. This has two obvious potential applications, and prototypes of both were demonstrated to very good effect. The mobile phone simulation was most impressive. The SoundVu panel here was simply the transparent top half of the phone's front panel, giving plenty of space for a good size display underneath. With the volume up, speech was clearly audible from six feet away; with the volume low, you could hear clearly at the ear. In between, it should be ideal for hand-held internet/video phones.

The other was a PC monitor sound system, using a transparent SoundVu panel across the display screen to reproduce mid and high frequencies, backed by a conventional bass driver. We were also shown a slimline 'monitor style' television set, where the complex ducting normally used to bring the sound forward had been replaced by much simpler (hence cheaper) NXT panels, placed on the sides.

What about the hi-fi side? Due to go into production this September with a predicted price tag of £1,900, the Cyrus Icon is an ambitious attempt to develop a hi-fi speaker using NXT panel technology. Very elegantly styled and finished, it's a hybrid of course, using a low-set box-loaded conventional bass driver up to 400Hz and a tall, slim monopole panel thereafter. The demonstration suggests the Icon is definitely to be taken seriously, with several interesting qualities different from conventional speakers. Moving the crossover point down three octaves might explain the fine voice-band coherence, while there's also no obvious stereo 'sweet spot', nor treble 'hot spot'.

Even more ambitious is a new Elac development – a very large video projection screen which combines three NXT panels alongside six 180mm metal-cone bass drivers. The panels provide midband and treble for the left, centre and right front channels, and actually incorporate the Novalux surface on which the image is projected.

The big seller is likely to be the new Mission FS2, an ingeniously designed 'lifestyle' satellite/subwoofer speaker system that's amazingly discreet and very flexible, with an exceptionally high domestic acceptance index. Available in stereo at £450 and 5-channel surround at £800, with various upgrade paths, the NXT satellites are small 13x29cm affairs primarily intended for mounting across room corners, while the conventionally driven powered subwoofer is similarly equalised for working in a corner.

Time alone will tell whether these or other NXT products hit the commercial jackpot. What is undeniable is that NXT has made dramatic strides with its new speaker technologies in a remarkably short timespan.



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The Missing Link

Alan Sircom untangles the wires behind his hi-fi and slips in Sony's sleek new computer-ready system.

For most people, hi-fi means CD, analogue radio and a recordable medium, increasingly MiniDisc. But none of these are that new. MiniDisc can remember The Happy Mondays before they were a comeback band; CD is old enough to vote and analogue radio is only a refined version of what Marconi used when he got tired of shouting almost 100 years ago.

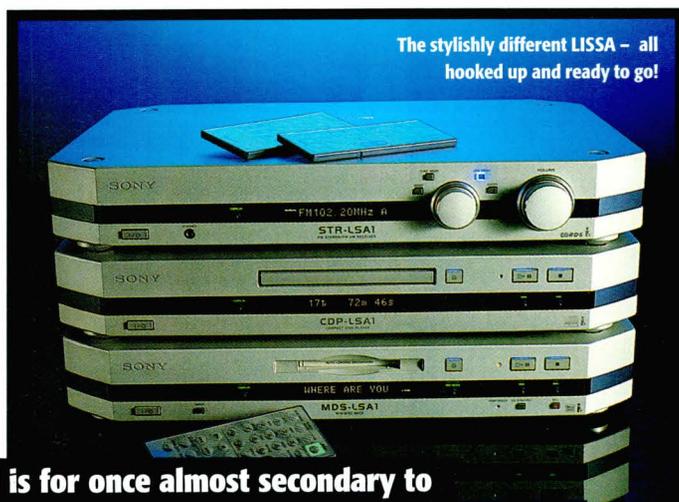
Beneath the surface, though, things are stirring. A plot to bring these central pillars of today's hi-fi reproduction into the e-evolution age. And Sony's £1,000 LISSA system is just one example of this behind-the-scenes development. In essence, it is a three box almost-separates system, like the kit that Denon and Teac do so well. But where these are applying trad hi-fi values in a smaller, cheaper box, the lozenge-shaped LISSA kit breaks a lot of rules. It doesn't look like normal hi-fi and its strange sandwich design is stylish and different. But, in particular, this trio of MD, CD and receiver do without the normal collection of phono plugs or even ribbon cables. Instead, a single I-Link cable hooks up one component to another and the products can be daisy-chained together from CD to MD to receiver.

Data is sent in the digital domain from product to product, with A/D and D/A conversion taking place in the central receiver itself. As such, the way music is passed from component to component is more akin to computer data than music. Signals are spooled into a buffer in the receiver for synchronising the rate of data flow from the source component, using the receiver's master clock to control the source's speed of data transmission. Lastly, because the system works by passing all data through the I-Link chain back to the receiver, individual sources do not need specific inputs or outputs; you simply hook a single I-Link cable into the new device and it automatically recognises it. Computer types will see strong similarities between this system - dubbed HATS (High quality digital Audio Transmission System) - and Plug 'n' Play and Small Computer Serial Interface (SCSI) connections used in the PC world. Running signals from the CD and MD units in the digital domain helps to keep noise low and the way the connection works is suggested to put jitter out of reach. This seems plausible. I-Link is designed to be a high-bandwidth video/data connector, audio signals should be no problems at all, in theory at least.

It is also the first domestically available hi-fi system to be controlled by a PC, if you wish. To eek out the last few performance enhancements, you need a VAIO PC with an I-Link connector and the requisite LISSA software. This allows you to control the three components, edit a MiniDisc and apply more complex parametric equalisation than the simple front panel and wafer-thin remote control would normally allow.

One obvious criticism of LISSA's paradigm shift is that it gives no quarter to virtually every bit of existing hi-fi equipment. If you plan to hook up anything to LISSA that does not have an I-Link connection, you can virtually forget it. There is a single set of 'legacy' phono inputs, but otherwise the choice is extremely limited. Of course, if LISSA takes off, there will be a whole series of products with I-Link connections fitted. MemoryStick, Sony's cool and tidy answer to the raft of MP-3 players on the market, is a logical I-Link candidate, especially via the VAIO link. We could also expect to see DVD players and AV processors with an I-Link connection, along with SACD and other formats, and many will probably be in the LISSA style.

All of this is pointless if sound quality is poor. In fact, performance is moderately better than most integrated systems, but not by a substantial margin. There is a sense of solidity and insight to its CD sound, but with this comes a touch of hardness. Five minutes with a Basement Jaxx CD is likely to be enough for most people, and anything recorded in the Dark Ages of digital recording will sound extremely steely. However, there is a better sense of 3D sound-



The stylishly different LISSA - all hooked up and ready to go!

Sound is for once almost secondary to the groundbreaking technology this system employs. It is a fascinating pointer to the shape of hi-fi to come.



I-LINK, THEREFORE...

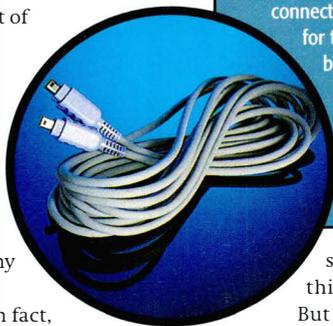
I-Link is a sub-set of the soon to be finalised IEEE 1394 industry standard, which also goes by the name of Firewire. It is a pure digital connection, designed to interconnect both the digital signal and control signal of one product to another. This is a proposed industry standard, and is anticipated to allow amateur and professional, audio, video or computer sources to connect with one another without any upset or interruption in the signal. This is an extremely bold endeavour.

At the moment, Firewire is most commonly seen in digital camcorders, connecting a DV mini-camcorder to an iMac or a PC. It is extremely useful for this, because of that fast and wide bandwidth digital connection and because it is a two-way data link. However, the standard is not yet set in stone, so while I-Link connections will happily speak to all manner of other I-Link connections, the same cannot be guaranteed with other Firewire connections. But hopefully our fears will remain unfounded, and a world of total digital interconnectivity may be just around the corner.

staging with LISSA than a number of integrated systems at this price.

But with this system, sound is for once almost secondary to the groundbreaking technology it employs. It is a fascinating pointer to the the shape of hi-fi systems to come - more and more kit in the future may use I-Link connections, or something similar (see box on this page). Ultimately, technology like I-Link could offer sophisticated multi-room style connectivity at a fraction of the cost.

Sony ☎ (01932) 816000



HEAT SEEKERS

JVC FS-SD9R £299.99

Tim Bownen eyes up a saucy new micro system from JVC and finds it fit.

Style is an individual thing. Some people dress down and play it cool, others go glam and dress to impress. Same with audio. In Paris, Milan, and Tottenham Court Road, sex(y) sells and glammed-up micro models are all the rage. And in that department few companies are better equipped than JVC.

JVC is counting on its new Lumirague range to bring in big bucks. There are three systems in all, each like a miniaturised 'music centre' from the '80s with CD, amp and three-band radio in a single box. The one in our grasp tops the line-up, the FS-SD9R with its rather saucy little cylindrical speakers. They're cherry veneered and sport a single drive unit, reflex loaded with a front-firing port. Their shape may actually have some practical use in reducing the effects of diffraction, though the worth of such a thing at this level is debatable. But my, they sure do look 'priddy'.

The main unit is equally gorgeous, with its top-loading CD section and transparent lid. Press the 'open' button and it glides first back and then up, sparking off a gently-flashing orange landing light in the loading bay. Major controls are conveniently located at the front edge of the uppermost surface, while an informative display glows at the front. Comprehensive functions are handled by the remote and there's an auxiliary in/out, an optical digital output and a subwoofer output round the back. Speaker wires and basic AM/FM antennas are also supplied.

SOUND QUALITY

OK, we're not talking high fidelity here. We're basically looking at a drool-some second system for the bedroom, dining room, kitchen or study, an addendum to the separates system every music lover should (theoretically) possess. It is small, stylish and attractively priced, and as a provider of background music it is a perfectly satisfactory performer. Sound from both CD and radio is really quite substantial, lacking deep bass and real dynamics but avoiding the thin, reedy quality that afflicts many units at this level. There's a fair degree of punch on offer, and though treble can sound thin with driving rock and acoustic instruments lack detail, the presentation as a whole is well-rounded and cohesive. Especially with electronic music – try the *Chilled Euphoria* compilation.

It achieves its aims admirably, but most people will buy this system for the way it looks, not the way it sounds. Indeed, when you see it for the first time there is but one irresistible urge: put on your best Leslie Phillips impression and purr "he-llo!".



JVC ☎ (020) 8450 3282



A touch of class from Castle's new Pembroke speakers.

CASTLE Pembroke £499

Nick Gear uncovers the hidden strengths of Castle's latest floorstander.

Christened Pembroke, this floorstanding loudspeaker is the smallest in Castle's catalogue and is available in nine real wood veneer finishes, including the ever-popular cherry. Great care has clearly been taken in the design stage. The 73x19x21cm cabinet is beautifully crafted, well constructed and pleasing to the eye. Featuring a traditionally inspired design that projects a regal quality, its aesthetics would be at home in any domestic surroundings.

The front baffle houses a 130mm carbon fibre coned bass unit with a shaped 30mm pole, oversized magnet and long throw voice coil. The higher frequencies are controlled by a proprietary low modulus polyamide dome tweeter, as used in the majority of the new Classic Range speakers.

SOUND QUALITY

As found on its new Severn model, Castle's downward firing reflex port technology has been incorporated with the intention of reducing harmonic distortion, which is claimed to be shortcoming of forward firing reflex designs, it also allows greater freedom of placement in the room. Claimed sensitivity is 88dB for a nominal eight Ohm load.

Regardless of music type, this loudspeaker is a capable performer with an effortless and clear bass response, and a spacious, enthusiastic treble. When all this is coupled with the speakers' dynamic mid-range, the end result is a sonic presence of pure quality and class. Its treatment of Jean Michel Jarre's *Oxygen* was uplifting – each element was delivered with heart-warming sincerity and assurance. Tested on bass-heavy tracks such as Prodigy's *Firestarter*, the Pembroke stays in control and shows great maturity for one so young. Again with classical and jazz compositions, the recordings are performed with a newfound freshness.

All in all, this floorstanding loudspeaker would grace any living room. With its elegant design, professionally crafted build quality and all-round audiophile performance, this is a spectacular addition to Castle's range.



Castle Acoustics Ltd ☎ (01756) 795333

Go glam with JVC's new micro system.



AUDION Platinum £1,395.00

Tim Bown investigates Audion's new amplifier. Is it the best of both worlds?

Never a name with the highest of profiles, Audion has nevertheless built a pretty mean reputation among valve aficionados. Several of its tube amps have won acclaim, and the odd dabble with transistors under a different moniker has also proved intriguing (see the AMP pre/power in *HFC* 187). Now enter the Platinum, an attempt to meld valve and solid state technology into a flexible integrated package.

A pretty hefty beast, it weighs in at 18 kilos and sports an aluminium main casing. The face plate is also aluminium but looks rather old-fashioned, an impression not helped by poor fit and finish to the controls. Three buttons nestle beneath the volume knob, two for cycling between inputs and the other for tape monitoring, and all functions are operable via a supplied remote control.

Round the back you get four line-level inputs plus a tape loop, with pre-out and power-in sockets, for additional amps/processors, together with a solid set of gold-plated speaker cable binding posts. Under the lid lies evidence of hybrid credentials, with two '6922' input valves and four transistors in the output stage, each channel delivering a speaker-friendly 40 Watts. An MM/MC phono stage can be fitted for an extra £250.

SOUND QUALITY

First impressions find the Platinum weighing in with fine musical attributes. It maintains much of the character of pure valve designs at a similar sort of price, with an effusive delivery in the midband and gorgeous subtle detail in the upper mid/lower treble region. It is a touch smoothed-over at the highest frequencies, but the over-riding impression with most material is one of musicality, integrity and a fair degree of guts.

Acoustic music fares best of all, with strong timbral detail, dynamics and weight. It proves expressive with classical too – a shot of Brahms' *Second Symphony* found resonant strings and a genuine feeling of 'togetherness', though individual aspects of performance could be sharper.

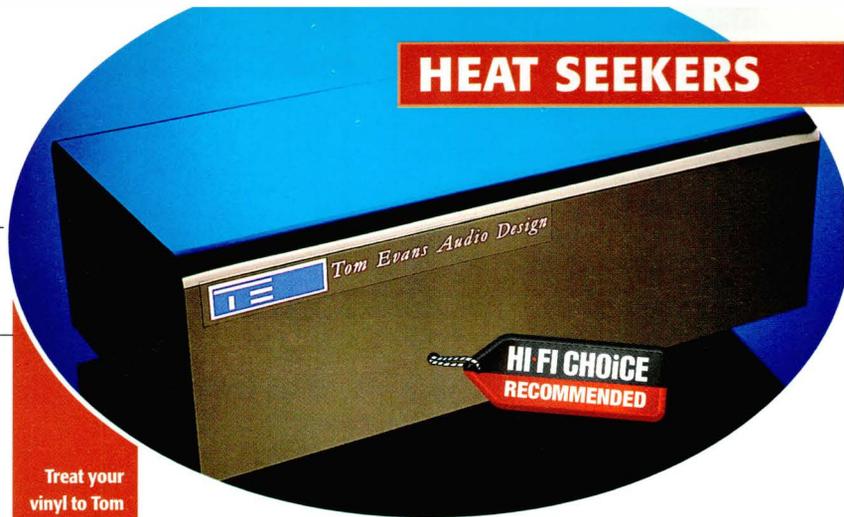
This probably isn't the ideal amp if rock or dance fair makes up a large portion of your listening. Hard-driving music lacks some grip and tension and ends up as something of an amorphous mass; far from the limp, warm cocktail supplied by gutless examples of valve technology but still without the punch or snap to really get things rocking. Stick with more fluid music to hear how ebullient it can be.



Audion ☎ (01903) 750755

Treat your vinyl to Tom Evans' groovy little mover.

Audion's hybrid amp: a "hefty beast".



TOM EVANS AUDIO DESIGN

Microgroove £399.00/£699.00

Tim Bown vivifies his vinyl with the latest phono stages from Tom Evans.

You need a phono stage to listen to vinyl. And if you want to hear what's really in those grooves, it needs to be a good one. So welcome Tom Evans, music fan and technical wizard. This man has an uncanny ability to weave sonic magic from basic electronic building blocks; witness his work for Michell, Pioneer, Trichord and Acoustic Precision down the years. More recently he has been creating products himself, and the last to fall into our hands was The Groove, a phono stage of revelatory resolve. But at £1,500 it isn't exactly cheap, so what can Evans do for those of us with more limited cash reserves? The Microgroove, that's what.

Anyone familiar with Michell's Iso will see the link here. Evans describes it as a modern day version of that respected phono stage, the same basic design but with crucial upgrades to chip sets, power supplies and the like. It is, in effect, a stereo version of The Groove's dual-mono design, amalgamating its twin circuit boards into one and employing less costly components in a few key areas.

Two versions are available, the basic Microgroove at £399 and a more costly version with Lithos voltage regulation at £699. An Intel-style badge distinguishes this from its cheaper counterpart, suggesting a Lithos inside will do for your music collection what a Pentium III does for a PC. Evans claims it speeds 'things' up by a factor of 50.

SOUND QUALITY

The Microgroove is available for use with both moving coil and moving magnet cartridges. I opted for moving coil and listened to both the basic and Lithos-fitted versions to assess the difference.

Before indulging in this review, I must confess I hadn't listened to vinyl for a while. Time spent with my ever-growing CD collection and checking out new formats had put records on the backburner, a situation exacerbated by a recent change of abode. I had not yet found the time to properly set-up my turntable, but then... the Microgroove reminded me what I was missing.

Never has this system dug so much detail from the grooves of my much valued (if recently neglected) record collection as it does with the £699 Lithos-equipped Microgroove. From Hendrix to House of Love, it brings pin-sharp focus to each note and rhythm, with every edge and nuance placed in sharper relief. It is fundamentally honest, so the ride isn't always smooth, but its analytical ability doesn't come at the expense of musicality. It just makes it that much more engrossing.

With the basic £399 version the character is similar, albeit with a less exacting degree of space and resolution. Ultimately, both are exceptionally good for the money. Hello, vinyl. Welcome Back.



Tom Evans ☎ (01443) 833570



PANASONIC DVD-RV60EB £449.99

Nick Gear debates the delights of Panasonic's delectable DVD player.

Panasonic has expanded its current DVD player line-up to include three new models with this, the DVD-RV60, the top-of-the-line option.

However, the Japanese giant seems to have been concentrating on audio and video performance at the expense of appearance. In fact, compared to the company's early DVD outings there seems to have been little stylistic progress.

Finished in silver, the fascia contains all the vital controls in such a way as to make them easy to find. For added versatility a jog shuttle and a headphone socket are also fitted.

Style aside, this machine is a great vehicle for Panasonic's eye for detail and innovation. The picture quality is as you would expect from a highly regarded and accomplished pioneer of DVD; the colours are bright and defined while contrast levels are rich and consistent. Furthermore, the player is equipped with a number of custom options to tailor the picture to your tastes. All the on-screen icons and displays are blissfully simple and organised, as is the practical, user friendly remote control.

SOUND QUALITY

Boasting both a built-in Dolby Digital and DTS decoder, this silver-clad player's audio quality is pretty impressive. There is an abundance of options that allow you to alter and fine-tune the player to suit your system. Among the options are Virtual Surround Sound with three DSP modes that offer a variety of spatialising effects in an attempt to emulate multi-channel set-ups.

Viewing the high-octane scenes from *The Siege*, you are immediately aware of the refined, crisp and clear sound quality of the DVD-RV60. The dynamic and complex audio tracks giving the player little trouble. Used as a standard CD player through a two-channel amplifier, the sound is surprisingly organised and balanced with minimal bass distortion or tonal vagueness.

As you would expect for a top-line model, its rear is packed with a plethora of gold-plated terminals for 5.1 output, video in/out, plus two Scart connectors and, unusually, dedicated stereo outputs.

Compared to the contemporary appearances of Philips and Sony offerings, this is by no means a stunner, but the DVD-RV60 is a great machine that boasts a huge 'audio and video' personality.



Panasonic ☎ (01344) 862444



Mission's chunky (but not so cute) floorstander.

MISSION 783 £999.90

Paul Messenger takes a first look and listen to Mission's new loudspeaker.

Bigbrother to the 782 (HFC 199), Mission's new thousand-pounder follows precisely the same formula as its sibling, but with everything scaled up by around thirty per cent. With nearly twice the internal volume, it stands 14cm taller, and is 4cm wider too, two factors which unfortunately drop its cuteness rating by several dB.

The 783 is three-way design which mounts the bass unit on the side near the floor, the better to keep the front profile slim and provide good stability. It carries a £1,000 price tag, which seems fair enough in the 782's £700 context, but looks a tad expensive compared to Mission's significantly larger £800 775 (reviewed in HFC 204).

That said, it's artfully styled and beautifully finished, with a heavily chamfered front baffle edge, and hefty, well braced cabinetwork and plinth. Chunky 8mm spikes give fine stability, while the use of substantially larger bass and mid drivers than the 782 has led to considerably improved neutrality and smoothness, and a modest increase in sensitivity. However, presumably because of the ceramic Keraform midrange cone, the latter is well down on the 775's rating. Paradoxically (since this is a three-way), twin terminal pairs are fitted.

SOUND QUALITY

Experiments suggested that it's better to leave some sort of gap between the 783 and a wall, and indeed the smoothest overall measured in-room balance was with the speakers a metre out into the room.

Neutrality is its greatest strength. This speaker is beautifully, evenly balanced, so that no part of the spectrum stands out. It's also something of a 'sweet spot' speaker, delivering impressively precise and well focused images free from boxiness. At the same time, however, the speaker seemed somewhat lacking in transparency, and reluctant to generate convincing dynamic drama and tension. Voices too showed a touch of nasality, making me wonder whether perhaps the speaker would benefit from a more running in than our schedule allowed.

Polite and well behaved to a fault, the 783 won't disturb your equanimity with intrusive 'nasties', but neither does it generate the most involving sound around. It's a good looking design, which performs rather better than the 782, but lacks the latter's cute compactness.



Mission Electronics ☎ (01480) 451777

Panasonic's crystal-clear new DVD player.



JAMO E850 £299.99

Tim Bown checks out the latest floorstanders from Danish giant Jamo.

In an effort to raise its profile, Jamo is revamping its image and restructuring its vast range of speakers. Names have changed (the Concert 8 is now the D830) and new products have emerged, like E8: a four-strong line-up comprising a standmounter, two floorstanders, a subwoofer and a centre speaker.

The E850 is the smaller of the two floorstanders, attractively proportioned with dimensions of 17.5x86.2x34.1cm (WxHxD). The cabinet is fashioned from particleboard with an MDF front baffle, and the entire construction is coated in black, beech or cherrywood wrap. Driver configuration is three-way, with a pair of 110mm mineral-reinforced cellulose cones for middle and bass frequencies, and a 25mm soft dome tweeter delivering the treble.

To the eye the cumulative effect is largely pleasing, bar the silver-coloured plastic badge and feet, and attention to detail is impressive: useful protectors are supplied for those who balk at spikes embedded in their parquet flooring and even the instruction book is unusually clear and informative. Twin sets of binding posts are provided for bi-wiring, while a claimed sensitivity of 89dB and 6 Ohm impedance should give most amps little cause for concern.

SOUND QUALITY

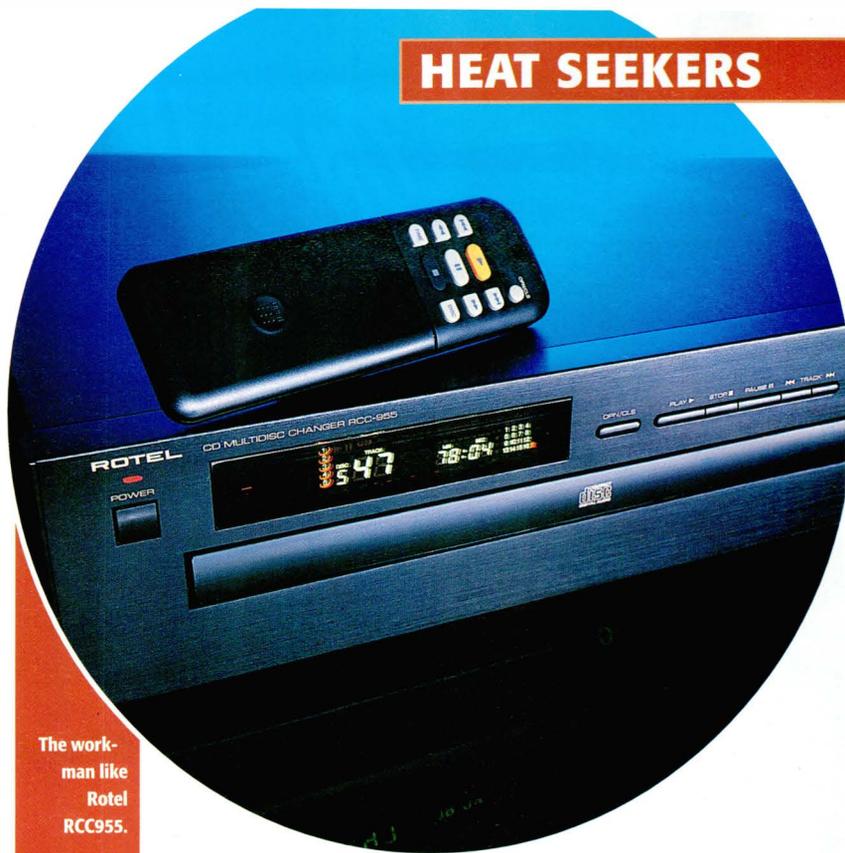
Producing a well-balanced budget speaker has always been tricky, and a well-balanced budget floorstander trickier still. But now designers have to pitch their products at the rapidly expanding home cinema market as well as coping with music applications, which puts even more strain on their expertise as they strive to find a happy medium. This is exactly what Jamo has tried to do here, and sure enough there's plenty of low-down thump to cope with movie bangs and crashes, together with a rather wispy treble exposed by a certain midrange reticence. It isn't all boom 'n' tizz, but there's a lack of coherence overall.

A leaden sound at low listening levels comes to life as you jack up the volume, the soundstage expanding along with the emergence of decent musical tension. But despite the bass thump, presence remains shut-in and vocals turn out thin and shouty – trancey non-vocal dance music and orchestral stuff, oddly enough, turned out best.

This, then, is a not unreasonable stab at producing a high-value floorstander that can handle both music and movies with equal aplomb. But in the end its orientation veers more towards Hollywood than Abbey Road.



Jamo UK ☎ (01327) 301300



The workman like Rotel RCC955.

ROTEL RCC955 £500

Single disc performance from a multi-disc player? Nick Gear checks it out.

In the literature supplied with the £500 RC955 player Rotel asks the question "Can a CD carousel provide the same sound quality as a single-disc player?"

On the evidence provided Rotel seems to have turned the trick, at least as far as some less expensive single disc players are concerned. It may not be the most visually inspired model on the market, but inside its conservative shell beats the heart of a decent player.

Compared to the low-profile construction of the Nakamichi MB-10, the RCC955 features what can only be describe as an '80's black-box' design. Ditching exquisite lines and contemporary colours for workmanlike build quality and functionality.

Rotel has decided to opt for a five-tray transport, which possess a smooth and quiet action. The key buttons are easily located and all the important information is displayed on a large, user-friendly display.

The RC955 boasts a large selection of options including the standard random, repeat and intro modes, and 32-track programming for 5 discs. Operating each function is painless and navigating each disc is extremely easy and trouble free.

Other attractions include a basic, but easy-to-use remote control, plus digital and analogue socketry. Rotel has also incorporated Pacific Microsonics' popular, if no longer so new, HDCD DAC and filter.

SOUND QUALITY

Playing your favourite tracks on the RC955, its qualities are immediately obvious. Put on the rip-roaring sounds of Wagner's *The Ride of The Valkyries*, and it would seem that Rotel has pulled off a fine trick. Played through an Arcam Alpha 7R and B&W 601 S2 speakers, the sound is precise and dynamic, making for an enlightening experience. The lower priced Nakamichi MB-10 reviewed in the July-August issue did however manage to show the Rotel a thing or two when it came to overall resolution and balance.

Rotel's RC955 is a confident CD changer that merits the asking price on build quality grounds. If you are pondering upgrading your single player to a changer, then this machine is a serious contender but not the only one.



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Once Upon A Time...



...Home Theatre systems used to be big, cumbersome and ugly. And, their performance was pretty ordinary too.

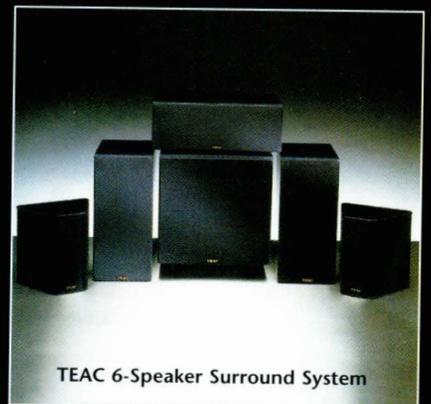
But, all that has now changed. Because TEAC have just introduced a Home Theatre System with stunning looks and a performance way beyond its compact size. It is light years beyond your imagination. It comes complete with a 5x 50W amplifier, Dolby Digital DVD Player and a 6 Speaker package that includes an active sub with variable crossover and gain, matched

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TEAC 6-Speaker Surround System

TEAC

The TEAC DVD Home Theatre System

DAVID VIVIAN

It seems our David is unable to keep his straying hands from fiddling with knobs. You purists may sigh in disgust, but hear him (and the music) out...

Here's a thought to grapple with. Should hi-fi be regarded as absolute or malleable? Is there only one true and righteous path to audio nirvana? Or does having a selection of user-choser options that acknowledges the mythical nature of perfect high fidelity reproduction make it easier to love the music and be less hung-up about the hardware?

It's fashionable, and has been for as long as I can remember, to be absolutist. The psychology is powerful. People buy amplifiers without tone controls because they're told it shortens the signal's path through the amp and therefore protects its purity. But the actual hook is the notion that there can only be one 'right'; any deviation from this is a distortion of the truth. It's a bit like having a television with an RGB output. You feel reassured because you assume the colour balance is spot on. The only way to get a better picture is to buy a better telly. Embrace this logic and it follows that if you want more bass from your system you have to buy a bigger pair of speakers. And if you're going to be really pedantic about the meaning of bass (hard-bitten audiophiles are seldom anything else), it's probably true.

My hunch, however, is that this is a bunch of arse and it cuts against the common sense instincts of most ordinary people. I'd be surprised, for instance, if any given group of viewers' preferred colour settings (imagine they were given plenty of time to fine-tune what, to them, seemed a natural-looking TV picture) would mimic the RGB standard, the settings of other members in the group or, indeed, yours or mine. Moreover, they would occasionally feel the need to tweak the settings to suit the programme material. We all would.

I also suspect that more than a few of us would prefer to turn a knob two notches to the right than shell out for a new pair of speakers. In my book, there's nothing bogus about tailoring sound to suit personal tastes. If tone controls hadn't been stigmatised by the purists throughout the 80s and 90s, we'd now have more top kit with them still intact; and I'm sure they'd work beautifully. The added flexibility would be liberating.

More power, then, to blossoming German manufacturer T+A (it stands for Theory and Application) which not only makes amplifiers with tone controls but a CD player (the £1,185 CD1210R) employing a switchable filter system that effectively gives five different-sounding CD players in one box. When Alvin Gold reviewed it as part of a *Super Test* in HFC 188 he



commented that the filter system "might be seen as a tacit admission of defeat, an acknowledgement that there is no single 'right' setting". But surely that's the point, Alvin? In the real world, there *isn't* a 'right' setting. Unfortunately, T+A rather undermined its case, in the listening panel's estimation, by producing a player that didn't sound exactly great on any filter setting. 'Unsubtle' was the consensus. I was intrigued enough to get one back in, even so.

T+A, founded as a speaker maker in 1978 by one Siegfried Amft, today styles itself as the Audi of hi-fi: stylishly understated, solidly built and – perhaps most importantly – impressively endowed in the *vorsprung durch technik* department. The five-way selectable filter is proprietary T+A technology and was the subject of a Paul Miller analysis in HFC 189. In essence, these filters trade time against frequency distortion – at one end of the scale you can choose maximum (digital) noise rejection and at the other you can

In my book there's nothing bogus about tailoring sound to suit personal tastes.



The "stylishly understated" T+A player, hiding among some discreet cousins.

minimise timing errors. The latter filter setting – referred to as the 'Bezier' technique in T+A's technical paper – gives the crispest performance of all, but at the expense of slight high frequency roll-off and more noise for the amplifier to deal with.

I'd be tempted to christen it 'The Naim Setting': punchy, rhythmically coherent, fast, foot tapping, if lacking a little 'air' and (yes) subtlety. It's the one I'd choose, if I had to forget about the other choices – for no other reason than I listen to more rock, dance and jazz (to which it seems brilliantly well suited) than classical and small ensemble acoustic. But, as the owner of a 1210R, I'd be drawn into playing more classical stuff because, on settings two and three, it breathes and sounds convincingly richly textured.

In the end, it's hard to believe one CD player can encompass so many diverse presentational styles. Perhaps it isn't the master of any of them but the longer you spend with it, the more alluring its versatility becomes. With a little experimentation, I reckon it could sound 'good' for more of the time (given a wide and varied diet of discs) than just about any similarly priced, maybe ultimately more capable, rival. If you're into the music rather than the machines, that's a definite plus.



Five different players in one: T+A's CD1210R.

COMPETITION

WIN SOUND ORGANISATION HI-FI SUPPORTS

Win one of a dozen Sound Organisation equipment and loudspeaker supports.

This month we are offering an amazing 12 prizes courtesy of those super generous and all-round great chaps at Sound Organisation.

Worth a hefty £1,500, the prizes include six of Sound Organisation's silver-finished Z545 (£160) four-tier equipment racks and six of its *Hi-Fi Choice* Best Buy Z522 (£90) speaker stands.

Standing an impressive 70cm tall and measuring 46cm wide by 36cm deep, the Z545 is the ideal stand for those compact hi-fi separates. A stylistic variant of the Best Buy black-livery Z545, the silver-version is identical in all other respects.

Furthermore, all the Z series equipment supports feature adjustable and removable glass shelves, spikes and just two uprights to keep contact with the shelves to a minimum therefore reducing vibration transmission. This is further enhanced by the use of isolating rubber feet between the glass shelf and support frame.

Alternatively, if you prefer a pair of speaker stands to improve the acoustic and stylistic qualities of your system the Z522 is the second prize option. Again based on the black version, this speaker stand was our Best Buy winner back in May 2000. Designed to ensure a "rigid and secure support" for a wide range of loudspeakers, the Z522 is provided with audiophile spikes at the top and bottom. The support is configured with "four tightly" packed rectangular uprights and a solid



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piece of 3mm steel with threaded holes to support the speaker. In our detailed speaker stand Super Test in May, Richard Stevenson described the Z522 as "polite, with a relaxed air that also makes for easy-going entertainment".

For this month, *Hi-Fi Choice* is giving you lucky people the option to choose your goodies. Just write on your entry form or card the prize you want to win and your wish is our command. All you have to do is answer these two easy questions and keep your fingers crossed!

HOW TO ENTER

Answer the questions below by circling the correct answers, then fill in your name, address and daytime telephone number in the spaces given.

Q1. How many shelves does the Z545 feature?

- A 3
- B 4
- C 5

Q2. Both prizes are finished in silver, but what is the chemical symbol for this precious metal?

- A. Au
- B. Ag
- C. S

Post this entry form to:

Hi-Fi Choice Competition (CHFC 0008A)
Kirsty Husband, Database Direct, PO Box 9, Dunoon, Argyll
PA23 8QQ

All entries must arrive by First Post, Wednesday, 30 August 2000. Please remember to tell us whether you are over 18 years of age.

Name _____

Address (inc. postcode) _____

Day-time Telephone Number _____

Please tick here if you are under 18.

Tick here if you do not wish to receive information on other products or services.

Please tick one only of the following:

- Are you a current subscriber? OR
- Are you a regular reader? OR
- Are you an occasional reader?

COMPETITION RULES

- 1) The closing date for the Sound Organisation competition is First Post, Wednesday, 30 August 2000.
- 2) Winners of the Sound Organisation Competition will be judged from all correct entries submitted, and drawn at random after the Closing Date given in 1) above.
- 3) All winners will be notified by post.
- 4) The Editor's decision is final and no correspondence will be entered into.
- 5) The Sound Organisation Competition is not open to employees of Future Publishing Ltd, Sound Organisation, their suppliers, agents or associates.
- 6) We regret this competition is open to UK residents only.
- 7) No cash alternatives will be offered.
- 8) We reserve the right to substitute alternative prizes with equal value to those shown, in the unlikely event of stock being temporarily unavailable.
- 9) By entering the competition, you agree to be bound by the rules.
- 10) No purchase necessary, send the details requested on the left on a postcard to the address given. Please note: only one entry per household.

CHFC 0008A

the metal attraction

THETA Digital was founded a decade ago with a mission to put back the musical emotion many listeners found lacking in Compact Disc player reproduction. Since the Theta has grown a family of outstanding digital products.

Casablanca proved to be the most exciting home entertainment product ever—showing the future of audiophile audio/video. Modular design means Casablanca can be anything you want: an audiophile analogue preamp, a high performance digital preamp, a home cinema processor, a high fidelity video switcher or surround sound processor. Buy just a basic system and later add 'the works'. You won't have to worry about trading in out-of-date home cinema kit, Casablanca lets you add and expand, growing with your needs and new standards. And from Theta you know build quality is



Home Entertainment magazine was sufficiently impressed to award the Editor's Choice and say "turns in the best performance we have yet seen from a DVD player" (Home Entertainment April/May 1999)

Voyager is a Universal DVD/CD/LD transport that will play any digital disc out there and some more when they become available. Its performance was described as: "a definitive lesson in what separates a true high-end product from the mainstream" (Jonathan Valin Fi-Delity January 1999).

Pearl brings Theta quality into a new price range. Pearl features the jitter reduction technology and multiple high quality power supplies that made the early more expensive Theta transports perform so well.

Jade is Theta's new high-end CD transport which draws on technology from the Pearl. To quote one reviewer "it stretches the compact disc medium about as far as it will go and a long way further than many not exposed to this level of ability would credit" (Alvin Gold, Hi-Fi News September 1998).

Miles is Theta's first integrated CD player and is available in both balanced or single ended output forms. Alan Sircom was "entranced with the sheer sophistication of the sound. Every time I played a disc, I had to play another" (Hi-Fi Choice March 1998).

We still feel the Theta Data Basic II and Pro Basic IIIa make a magical combination, providing a true state-of-the art, high value CD player/DAC combination at under £5500.

High-value high-end products from Theta include the Chroma D/A converter available with or without HD/CD offering unbelievable performance under £1000 and TLC 'Timebase Linque Conditioner' is a staggering anti-jitter bargain at just £199. This tiny box relocks the optical output of a CD player or transport for a jitter-free feed to a D/A converter. "The TLC will treat you, regardless of the calibre of your playback system, to a reduction in glare and harshness" (Ken Kessler, Hi-Fi News April 1995).

Attracted? Contact Absolute Sounds for more information about Theta products and for full details of dealers where you can hear Thetal Attraction in action.



exceptional. You pick the processing: Dolby Prologic™, Dolby Digital AC-3™ or DTS Coherent Acoustic. Casablanca can be configured to control up to nine sound channels with balanced or single ended inputs. It can be chosen with remote control and is programmed through either its LEDs or via on-screen display on your TV.

CasaNova borrows the processor heart of Casablanca to produce a AV processor of exceptional performance

"one of the most rewarding AV processors we've heard to date for both music and movies alike and comes with the strongest recommendation" (Home Entertainment April/May 1999). And what better to partner the CasaNova than Theta's new Dreadnought multichannel power amplifier. You start with the channels you need and add later what you want. Dreadnought is Theta's answer to those underpowered and sonically bare acceptable multichannel amps foisted on videophiles. Theta call it an amp that 'truly serves the music'.

DaViD is Theta's DVD/CD transport.



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Voyager

Casablanca

DaViD

Miles

LETTERS

Hi-Fi Choice's very own 'points of view' page, where you, the reader, can express your opinions!

LETTER OF THE MONTH



Jamo D 830 (née Concert 8).

PRAISE YOU

Back in issue 160 Alan Sircom waxed lyrical about the Jamo Concert 8s, and I thought they may make a suitable replacement for my ageing Celestion SL600's. But I thought I'd wait until they were group tested. It didn't happen! But I got a pair nevertheless.

They are simply delightful in the mid-range and the bass. In fact my REL Stadium hasn't been fully employed for a while!

I have managed to put together a fair system over the last few years and all of it is made up of separates recommended at some time or another by the stalwarts from HFC. It makes quite a nice musical sound! So my thanks are therefore overdue to all the reviewers, past and present, who've contributed to HFC and shaped my thinking and helped me to judge equipment meaningfully. Especially the two Pauls, without whom we would have no way of interpreting the 'technoblurb' often resorted to by manufacturers.

Thank you everyone. (Even Jimmy Hughes who worries me sometimes, still, if you think he's OK).

Geoff H, near Maidstone

The Editor replies... Sorry we never got round to group testing the Concert 8, now rebadged D830, but it sounds like it made the grade nonetheless.

CONFUSED MD

I live on the Shetland Islands and generally buy blank MDs by mail order. I have recently discovered a company on the internet which was advertising a wide variety of media including MDs which had 74, 80 and 200+ recording capac-

ity. When I rang the company, the person I spoke to was unable to confirm whether the 200+ minute discs are compatible with ordinary MD recorders. Can you please advise, as a few longer MDs would be very useful.

Andrew McPherson, Shetland Islands

The Editor replies... At present MiniDiscs are available in 74, 80 and 90 minute lengths. The confusion seems to have originated from the manufacturer's product description. Normally a brand will specify the recording time. However, some brands prefer to quote the capacity in MB (megabytes). The worrying fact is the company actually thought a 200 minute MD existed!



THE DAC LASHBACK

After purchasing an external DAC I am amazed at the improvement. Would it be a good idea to do a review of slightly older DACs which due to the fact that they are no longer in fashion are being sold at bargain prices! I just bought an Orelle DA188 for £175 and have since seen an ex-demo model for sale for under £150. It just seems people are missing out on potential bargains. It fits in to my system which consists of Rega Planet, Orelle SA100RX amp, Rega Radio, Yamaha 580 tape deck and Rega Jura speakers. With the DAC I feel have found true synergy!

I have just changed speaker cables from cable talk concert bi-wire to Audioquest Indigo+ bi-wire and wow what a difference. Either the cable talk is very poor or the Audioquest is a revelation.

Mark Owen, Enfield, Middx.

BEG TO DIFFER

Could you please explain to me why you gave an Arcam Alpha 8R

amp a Best Buy award (issue 192), yet in issue 196 you gave the impression that the Alpha 7R was nothing special at all.

Your own Paul Miller said in his lab report that the 7R was a lower power version of the 8R. And if you compare both lab reports they are indeed identical.

Charles Agnew, Liverpool

The Editor replies... Regardless of the differences or otherwise between these two Arcams, the rating each received depended on the standard on offer from their competitors in each group. Quite probably the 7R ended up in a much stronger group than the 8R.

SPLENDID SPENDOR

Being a confirmed fan of Spendor loudspeakers, but frustrated since there is no longer a dealer in Australia, can I ask why we never see reviews of them anymore? Surely if they don't bring out new models, they would be continuing to periodically upgrade classic models like the SP100 and SP2/3 which would render them worthy of a re-visit. Also I never see them in group comparisons. Are they 'persona non grata' these days? Thanks,

Curious Cam, Australia

Editor replies... Spendor has been keeping a low profile in this country for the last few years, concentrating its efforts on the professional market as far as we know. But if anyone from the company is reading, we'd love to review some of your speakers.

WRITE TO US

Let it all flow and send us your points of view on all that is hi-fi. The author of the best missive wins a prize for their efforts. Get writing to: The Letters Page, Hi-Fi Choice, Future Publishing, 99 Baker Street, London W1M 1FB, or send your e-mail to: jason.kennedy@futurenet.co.uk



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Digital Recorders

With digital recording taking a hold in many systems, Alvin Gold pits CD-R and MD recorders against each other to find the best format and the best hardware.

Welcome to the big one: the most comprehensive test of digital home recorders ever, in this or any other magazine, here or (as far as we can ascertain) abroad. This is a test whose time has very definitely come. We have assembled no less than 12 recorders, seven CD-R/RWs, and five MiniDisc. There are several digital formats that could have been included – DAT and MP3 to name but two – but we wanted to limit attention to formats that can either make a realistic claim to high fidelity, or which are at least commonly regarded as such.

As this is a first, let's lay the groundwork with a quick look at the two formats. MiniDisc was the first digital disc-based recording system for domestic use, and uses a data reduction (sometimes incorrectly described as data compression) codec that loses about 80 per cent of the data required by compact disc. It uses a perceptual filter which removes the information that is least likely to be audible, based on a real time analysis of the audio spectrum which is split for the purposes into three bands. MiniDiscs consequently need less surface area than CDs, and so are tiny and well protected inside a sealed caddy. MDs are available in two forms, pre-recorded, which are optical discs, and magneto-optical discs, which can be recorded, erased and re-recorded like a cassette tape. From the outset, pre-recorded discs have been available only in very small numbers. In the course of this test, checks with local WHSmith and Our Price branches confirmed that both are selling off their stocks, which will not be replaced. This may not be a general pattern, and of course it doesn't necessarily impact on the popularity of MD as a recording tool.

But there is no doubt that the recent resurgence of interest in CD-R, fuelled by lower prices and the fact that recorded CDs are just that – CDs – has taken the market by storm. CD-R is succeeding even in the central bastions of MD, like Japan, and MD has never had much presence in the USA. But there are clouds on the horizon for CD too. Recordable CD exists in two forms, the non-erasable CD-R, and CD-RW (ReWritable), which are CD compatible except their low reflectivity requires a different laser configuration that is simply not a part of most CD players. A miss is a good as a mile of course, and this is a major breach of the CD standard. Also note that computer data discs cannot be used in domestic recorders. Irritatingly, domestic blanks

THE CAST LIST	
CD-R/RW	
JVC XL-R5000	£450.00
LG ADR-620	£350.00
Marantz DR-17	£1,499.90
Philips CDR951	£380.00
Pioneer PDR-509	£300.00
Pioneer PDR-W739	£400.00
Teac RW-800	£349.95
Minidisc	
JVC XM-448	£220.00
Kenwood DMF-5020	£249.95
Pioneer MJ-D508	£200.00
Sony MDS-JA555E5	£649.99
Teac MD-8	£599.95

carry a recording levy that in the UK is not passed on to the copyright owners, at it is in some foreign countries. Both CD-R/RW and MD uses SCMS copy management, which prevents digital domain recording beyond the first generation.

CD-R/RW recorders

One striking difference between the CD-R and the MD recorders is the sheer variety of configurations available in the CD-R format. There are single disc recorders, dual recorders with a single play and a single record capable mechanism, and finally there are models with a single record mechanism and multiple players. The range of prices also stretches wider than MiniDisc, but only because one model was priced way out on a limb. This of course is the

Marantz DR-17, which is the only CD-R in the test designed to address the high end as a CD player that can also be used to make discs, probably for archiving or use in the car.

Most of the others address a rather different set of requirements. With the multidisc units in particular, it is clear that their principal market is for making CD compilations, and most of the models tested will accept microphones, which can be mixed with the analogue and digital inputs, which suggests a spectrum of uses broadly centred on the idea of a home studio. The LG ADR-620 is an interesting variant on the theme. It is the first domestic CD-R capable of dubbing complete discs played internally at 4x play speed, which means very rapid copies can be run off, though it is worth remembering that most computer CD-R drives can perform the same trick. But no computer drive known to the author can play two separate discs at once in different rooms!

MiniDisc recorders

In stark contrast to the CD-Rs, the MiniDisc recorders are all basically of one type; that is they have similar levels of functionality, the main area of differentiation being related to build and (of course) sound quality. The fact that there are no twin decks is a direct consequence of the fact that the market for recorded MiniDiscs never really took off. It is harder to explain why there are no MD recorders with integral CD players, but this may be partly political. Sony is strictly MD, and Philips is four-square behind CD-R, and merely acknowledging the existence of the other side somehow probably involves some loss of corporate face. Note on this topic that Pioneer is about to reclaim its virginity (see review). And you didn't think it was possible...

How the tests were done

Our 12 recorders were subject to the usual battery of tests, including a close physical examination, unsighted panel based listening tests in a high grade system, hands-on listening, mainly using a more representatively priced range of speakers and amplifiers, and a computerised measurement test programme (by Paul Miller). Each recorder was run in and warmed up prior to being auditioned.

For the panel tests, a standard music programme was recorded onto identical discs, one for each recorder. Panel testing was conducted so that no panel member knew the identity of the player on test, and with levels carefully normalised at the

beginning of each test run. The system used on this occasion included a Krell KPS25sc, used as a CD source and as a preamplifier, a McCormack DNA-125 power amplifier and JM Labs Mezzo Utopia speakers for the unsighted and some of the hands-on tests. Speaker cables and interconnects were from Nordost. Hands-on listening also included a Primare A-10 amplifier, and Castle Severn 2SE speakers.

The listening panel

Once again, our usual thanks go to those who contributed their listening skills and time. This month's batch included the following: Colin Hinkins

(Mirage, Energy), Keith Haddock (REL) and Tony White (Mission). The test programme was broken down into bite size chunks to avoid fatigue, with repeats and replays of the original material from CD.

Test music

Mozart – Flute Quartet *Rondeau* (EMI)
Lorna Hunt – *Long Hard Road from All in One Day* (Classic Records)
Ravel/Boulez/Cleveland Orchestra – *Piano Concerto in G Presto* (DG)
Keb' Mo' – *Dangerous Mood from Just Like You/Okeh* (Epic)



GLOSSARY

CD-R: Recordable compact disc that cannot be erased, though discs that have not been completely filled can have more tracks added later until the disc is finalised.

CD-RW: Recordable/erasable and re-recordable disc, the true successor to the compact cassette, and comparable in its capabilities to recordable MiniDisc. Finalised CD-RW discs must be unfinalised before they can be re-recorded.

FINALISE (CD-R): The process of copying the Table of Contents from its temporary area on CD-R and RW where it is ignored by CD players, to the final position where it is recognised by CD players.

ATRAC (MD): Adaptive Transform Acoustic Coding is the core data reduction algorithm that allows digital data to be represented by about one-quarter the amount of data required by compact disc standard audio.

DAC FUNCTION (CD-R AND MD): The digital to analogue converter of some of the recorders can be used independently of the record function. Some models (the Pioneer MJ-D508 for example) have noise reduction circuits which could be used to de-noise vinyl replay, which can be encoded through the A/D converter prior to de-noising and replay through the D/A, or archival onto disc.

EDITING FEATURES (MD): MiniDisc has extensive editing features, making it the natural choice for creative recording. Tracks can be moved, divided, merged or deleted at will, features which are not matched by CD-RW, still less CD-R.

HINTS & TIPS

Be aware of the length of blank media. If the aggregated track time approaches 74 minutes, for example, use an 80-minute disc instead, and in any case use good quality media. From long experience, different disc brands do sound different. In general avoid using the digital volume control (where fitted), and stick instead to the standard setting, which avoids any translation process, and which inevitably sounds better. Use a CD-R pen if you want to write on a disc label. In dual transport CD-Rs, the recording mechanism usually sounds better for playback. Finally, remember that most CD players won't play CD-RWs, though the situation is changing.

VARIABLE DIGITAL RECORD LEVEL:

Some of the CD-R and MD recorders incorporate digital gain that allows the digital record level to be increased beyond 0dBFS, often as high as +12dBFS in some instances. If your source material never exceeds -12dBFS then the digital gain will optimise the dynamic range of the signal for playback purposes. If, however, the applied digital gain was to cause the incoming digital data to exceed 0dBFS (-5dBFS incoming with +12dB gain gives a notional +7dBFS level), then the record/playback chain would be plunged into instant and massive distortion. Unlike analogue recording, which typically overloads quite gracefully as levels are pushed into the red, digital recordings offer less and less distortion as the digital level reaches its peak at 0dBFS but then crashes into 100% distortion the instant this level is exceeded. Play safe and leave any digital gain control set to '0dB'.

SAMPLE RATE CONVERTERS:

Because the incoming digital signal could, in theory, originate from sources other than a CD player, the sample rate might be 32kHz, 44.1kHz or 48kHz. All CDR/RW and MD machines use some form of sample rate conversion (SRC) to deal with this possibility and ensure the digital data that hits the disc during recording is running at 44.1kHz – the same rate as CD. SRC is also typically necessary when recording at 2x or 4x speed to ensure the finished CDR/RW is compatible with standard CD players.

Obviously, where the incoming digital data originates from a CD source, there's no need to convert the 44.1kHz code back into – er – a 44.1kHz code, nevertheless some machines still perform this 1:1 conversion unnecessarily. The penalty is often extra digital jitter, which can make your copies sound worse than the original. See the Lab Reports to see where SRCs are used and have some impact on performance.

JVC XL-R5000



JVC XL-R5000 Visit Our Website: www.hifichoice.co.uk

The XL-R5000's middle names are (or should be) Flexibility First. The three-disc player-only section uses three separate loading drawers stacked above each other, though they won't play unfinalised CD-Rs or RWs. The CD-R mechanism completes the package, and CD Text is supported.

Because the play and recording mechanism are under the JVC's control, they can be speeded up, allowing normal (real time) or 2x speed recording. Complete CDs can be copied at the press of a single button, but it is little harder to make compilation recordings from a selection of tracks on up to three discs. It is also possible to make recordings from the 6.3mm stereo microphone input, which can be mixed with the other inputs. Fine control of pitch (plus/minus 12 per cent) is possible, and so is timer record operation.

The JVC is equipped with a sample rate converter for 32kHz and 48kHz, but 44.1kHz signals are bypassed to optimise sound quality in this mode, and must remain bypassed if HDCD coding is to be retained on the recorded disc. (Note that the XL-R5000 does not have its

own HDCD decoder.) The recorder can be connected to other JVC systems components for linked operation. About the only trick the engineers have missed is electrical digital socketry, which will make it difficult to use in some systems.

SOUND QUALITY

This model was well received by the panel. There were some criticisms: 'It sounds very slightly restrained,' wrote one in his sum-up notes, and another complained of 'a hint of splashiness', but they were muted comments, and more than offset by the positives. 'This sounds pretty good,' said one in an après-listening discussion. 'The recordings sound similar to the original, there's plenty of detail and it's easy to follow.' He also remarked on what he heard as a lower noise floor than that of the previous player he had listened to. Although he didn't know it, the comparison he was making in this case was with a MiniDisc recorder, which

doesn't have the same subjective dynamic range as CD-R, and does often sound subjectively noisier.

In contrast to the others in this test capable of recording at higher than normal play speed, the JVC ended up making clearly superior recordings at normal speed. High speed dubs lacked resolving ability and the three dimensional imagery in some of the recordings (not the featured titles used in the panel tests) gave signs of a concertina'd depth plane and a loss of 'air'. In addition, there was a clear performance gap between the play-only and the record mechanisms, the advantage as usual going to the latter. Where the JVC scores over some of the alternatives is that its internal electronics are fairly transparent. This is a pleasing player even when used in the company of more costly systems, not because it is unusually detailed, dynamic or involving, but simply because it is smooth, averagely detailed and essentially without vice.

"This is a pleasing player... smooth, averagely detailed, and without vice."

CONCLUSION

The model that comes closest to matching the JVC XL-R5000's abilities head-on is the Pioneer PDR-W739, which offers similar performance, but a wider range of input and output socketry – and a £50 lower price tag (though prices tend to be ephemeral). This rules out a formal recommendation of the JVC, but the XL-R5000 nevertheless remains an extremely powerfully equipped disc spinner which will do anything any reasonable person could ask, and do it well.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£450.00

Flexible, rather rattly build, and attractive sound quality are the stand-out features, but it's a little more expensive than its closest rivals.

ONE YEAR GUARANTEE

JVC UK Ltd, JVC Business Park, Priestley Way, London NW2 7BA
(020) 8450 3282

THE LAB REPORT

When Philips launched its first budget domestic CD-R recorder a couple of years back (see HFC 174), the CDR-870 was flawed by its use of a sample-rate converter (SRC) even when copying at a fixed 44.1kHz. The same fate would have befallen JVC's XL-R5000 if it were not for the fact that its SRC may be bypassed via the set-up menu. Dubbing at 2x speed from the internal multi-play drives forces the SRC on and results in a massive and subjectively undesirable >30,000psec of jitter. Recording at 1x internally or via the optical digital input with the SRC facility turned off results in jitter dropping to just 450psec which, though not

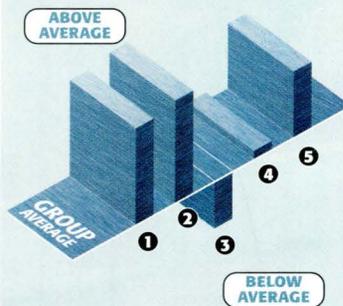


perfect, is a dramatically better outcome. Either way, the best replay performance is achieved via the single CD-R/RW drive and not the multi-play drives, which suffer some 475psec of jitter to the single drive's 262psec. Noise and distortion are also slightly inferior via the multi-play section, leaving the fixed drive to achieve a good mix of very low THD (0.002 per cent, falling to 0.0007 per cent at -10dBfs), an adequate 97dB S/N ratio, very flat response and excellent low-level linearity. Good rejection of ultrasonic noise and digital 'images' are also trademarks of JVC CD players, and the XL-R5000 is no exception. **PMI**

HOW IT COMPARES

Low distortion and good low-level resolution with a 16-bit noise performance by the skin of its teeth. Double-speed performance is poor, however.

- 1 SUPPRESSION OF DIGITAL IMAGE 65%
- 2 JITTER 70%
- 3 PRACTICAL DYNAMIC RANGE -30%
- 4 HARMONIC DISTORTION VS LEVEL 5%
- 5 LINEARITY 45%

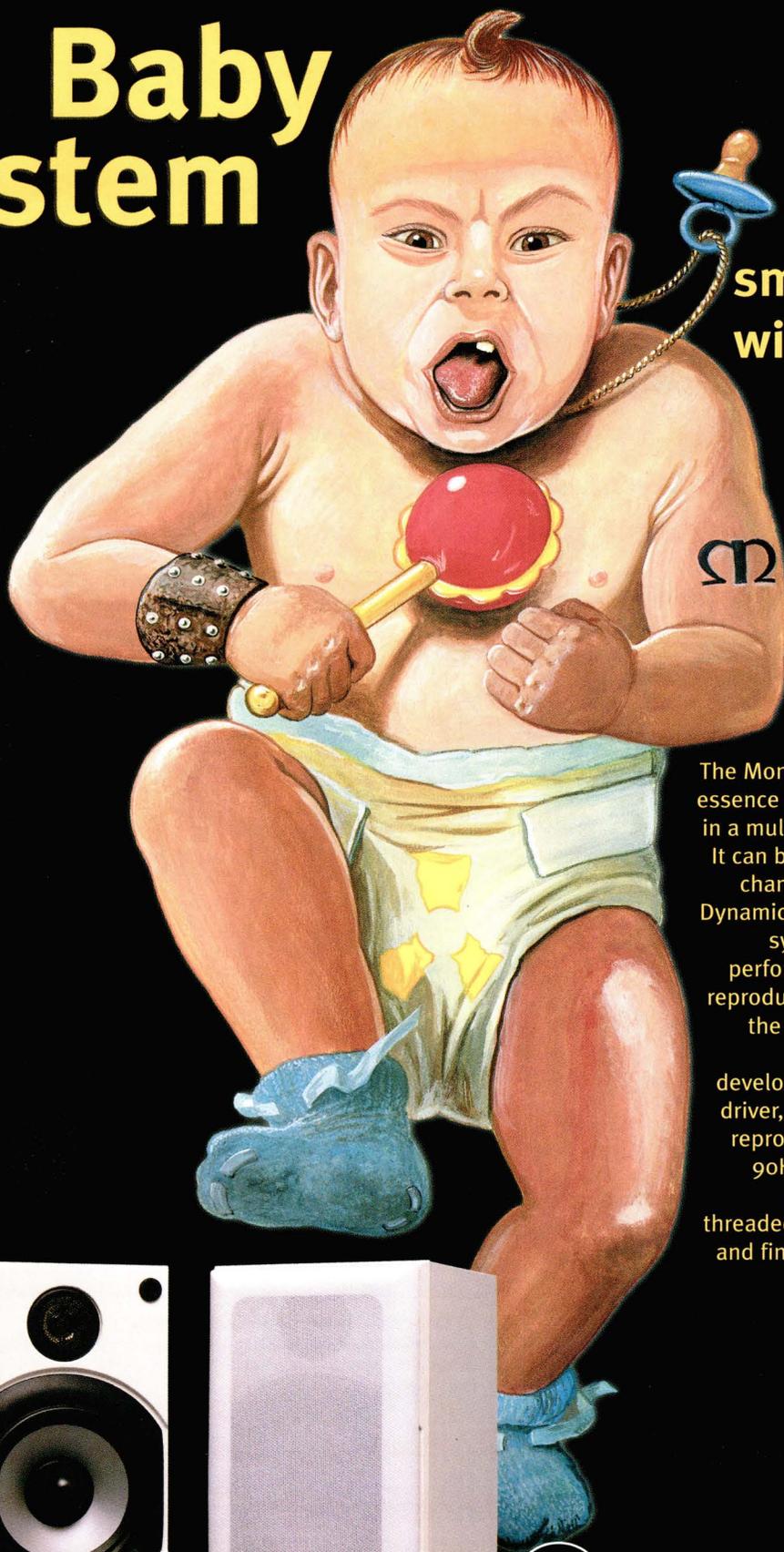


SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
Distortion @ 1kHz/0dBfs	0.004%	0.002%
Maximum output level	2V	2.07V
A-wtd S/N ratio	97dB	96.6dB

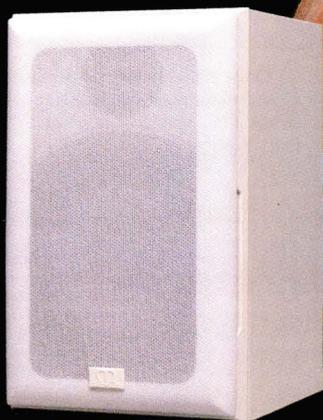
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LG ADR-620



A twin deck unit, the LG (née Lucky Goldstar) has twin mechanisms, one a CD-R/RW recorder, and the other a playback unit, each with its own electrical digital output. The ADR-620 looks and behaves like a latter day simulacrum of a dual cassette deck, and it is easy to load up a CD in one mechanism, a CD-R or RW in the other, hit 'CD sync' and leave it to go about its business – but there are other possibilities. For example, the recorder can be used to dub complete finalised CD-Rs (subject to SCMS copy management restrictions) at normal, 2x or even 4x normal play speed.

One peculiarity with this model is that the two mechanisms can be used independently. There are two sets of outputs, which can be used to play from either mechanism or both, sequentially if two discs are inserted. Alternatively, press the Dual button, and each disc will play through its own output, which has obvious applications in a multi-room set-up. The controls on the remote handset are shared, and must be assigned by selecting CDP or CDR first.

"A player described by the panel as 'strange', 'weird', and 'annoying'."

A full set of optical and digital outputs is available on the back panel, but it also includes a front panel electrical input for easy access from a portable, which avoids rooting through the spaghetti at the back.

The build quality of the model is less impressive. The LG looks businesslike, but control feel is poor, which is reflected in the noisy drawer mechanism, and the remote control buttons are of varying and excessive stiffness.

SOUND QUALITY

There was some spread in the scoring of this model, but this was no surprise for a player described independently by different members of the panel as 'strange', 'weird', and in one case 'annoying'. The substantive comments spoke in terms of a 'billowy' bass (the Ravel especially, but not exclusively), and there were several unusual observations, such as one of a 'lack of upper

midband presence', though there was no shortage of upper frequency detail. Two listeners independently described the LG as tonally 'cool'.

Since the panel was listening to a self-made recording from an external CD source, and replayed on the LG's own CD-R mechanism, this is only part of the story. One of the first points noted in the hands-on testing was that the two mechanisms sounded different. The clock error identified by PM is not always directly audible as a pitch change, but there are other more subliminal effects, and the record mechanism sounded clearer and more three-dimensional. On the plus side, there was very little difference in sound quality between recordings made at normal, twice or even four times speed, but there is a qualification here in that none of them sounded great. The electronics have a distinctive transistor radio-like tinge, which is probably the cause of the panel's

unease, and recordings made on the LG sounded significantly better when played on other CD players.

CONCLUSION

An interesting unit, this twin-mechanism player is rather costly for the musical performance on offer, though it is sold through major chains rather than specialist dealers, and the price quoted may drift quite quickly. There are also some interesting features – high-speed dubbing and the ability to play different discs in different rooms.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £350.00

A powerfully equipped twin-mechanism CD-R that has some useful multi-room capabilities, but sound quality is rough and ready.

ONE YEAR GUARANTEE

✉ LG Electronics UK Ltd, 264 Bath Road, Slough, Berks SL1 4DT.

☎ (01753) 500400

THE LAB REPORT

Good quality 96kHz-compatible hybrid DACs are used here and this is reflected in the ADR-620's very low distortion, flat response, good de-emphasis accuracy, excellent low-level resolution and wide 102dB A-wtd S/N ratio. Some peak-level stress is suggested by a mild increase in THD from 0.001 to 0.002 per cent (-30dBFs to 0dBFs at 1kHz) and from 0.005 to 0.035 per cent (-30dBFs to 0dBFs at 20kHz), but this is related to the op-amp's rather than the recorder's digital 'core'. Good circuit layout is reflected in the wide separation figures of >110dB and >80dB at 1kHz and 20kHz, respectively.



Unfortunately, the replay-only drive is compromised by very poor clock selection and shows a 1135ppm error with 1370psec of widely-distributed jitter. The

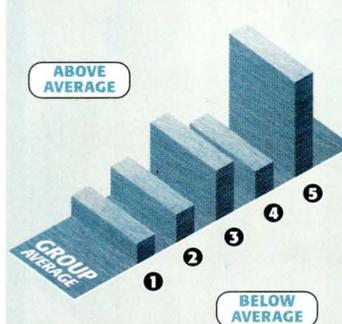
CD-R/RW drive's clock improves to 370ppm but jitter increases to 1440psec, a figure that remains consistent with 1x internal dubs from CD to CD-RW and only increases slightly to 1560psec for x2 and x4 dubbing.

Frankly, you might as well opt directly for the x4 mode as the 'damage' done by 1560psec of jitter will be indistinguishable from 1440psec. The ADR-620's internal SRC only kicks in when incoming rates other than CD's 44.1kHz are detected. **PMI**

HOW IT COMPARES

A choice digital chipset yields low distortion, noise and excellent linearity, but poor clock selection spoils the brew.

- | | | |
|---|-------------------------------|-----|
| 1 | SUPPRESSION OF DIGITAL IMAGES | 15% |
| 2 | JITTER | 20% |
| 3 | PRACTICAL DYNAMIC RANGE | 35% |
| 4 | HARMONIC DISTORTION VS LEVEL | 20% |
| 5 | LINEARITY | 65% |



SPECIFICATIONS

SPECIFICATION	CLAIMED	MEASURED
Distortion @ 1kHz/0dBFs	0.01%	0.002%
Maximum output level	2V	1.95V
A-wtd S/N ratio	105dB	102.4dB

MARANTZ DR-17



The parallel between this and the Sony MDS-JA55ES, by far the best engineered and most sophisticated of the MD recorders on test, is clear. The Marantz weighs more and is much better endowed, inside as well as out, than any of the other CD-R decks. Indeed the DR-17 is intended to be the best possible CD player consistent with budget and Marantz's normal design priorities, but it also happens to be able to make CD-R and CD-RW recordings. Only the discreet addition of a record level control and some apparently minor associated switching distinguishes it from their more upmarket CD players.

Back panel fittings are comprehensive, with good quality socketry used throughout. The DR-17 has digital optical and electrical in and outputs, and using the familiar D-Bus links it can be linked to other Marantz components or systems and controlled from a single handset, which allows for automatic recording starts with Marantz CD players.

Internally the DR-17 features many of the technologies associated with the brand, including a symmetric layout of the audio circuits following the

"A distinctly superior digital recorder and CD player alike."

D/A converter. This is Philips-sourced (of course), and includes a Bitstream ADC and the venerable differential mode 1547 DAC7 DAC, and a high slew rate HDAM output stage. The mechanism (CDM36) is die-cast and quick acting, and the 'finalise' function that prepares discs for replay on CD players is particularly quick acting.

On the recording side, the usual sample rate converter that allows recording from non-44.1kHz sources is bypassed when it is not required. This avoids the inevitable translation errors (essentially noise and distortion) that can arise with some recorders where all signals are fed through the converter, whether necessary or not. When the SRC circuit is off, HDCD data is preserved through the record chain, and in contrast to the other recorders in this month's group, an HDCD decoder is included for appropriately encoded recordings.

SOUND QUALITY

A clearly superior machine on test, the DR-17 lacks the smooth but

rather blowsy bass that characterises a number of their CD players, but it has the familiar vitality and resolution in the midband, which extends also into the treble, though it sometimes stepped over the line and veered towards sounding aggressive.

'I really like this one,' was one quite typical comment from the panel. 'Everything sounds more closely miked than (the last player), and a wealth of detail shines through' – a reference in this case to the excellent Ravel recording. Another described the Marantz as 'a tad upfront, but nonetheless enjoyable' in his concluding notes, while explicitly pointing to the 'strong vocal presence' in the Lorna Hunt, and the 'sense of space' in the Ravel. Like others, though, he also highlighted some edginess on the orchestral strings, which didn't go unnoticed by the rest of the panel either.

Once again, there appears to be a relationship between playback jitter identified by the lab tests and a degree of hardness and grain, but

although recordings could be clearly improved by replay through better external CD players like the test Krell, this remains an excellent sounding player in all modes. It has a much more polished and subtle sound quality, a more potent bass and more three dimensional imagery than was achieved elsewhere in this group.

CONCLUSION

The relatively high jitter takes some toll on performance, but this remains a distinctly superior recorder and CD player alike, which swings the decision its way for Recommendation.

VERDICT

SOUND	★★★★★
BUILD	★★★★★
VALUE	★★★★☆
PRICE	£1,499.99

Recommended, but we think that the jitter problem should be resolved, which would probably improve sound quality significantly.

TWO YEAR GUARANTEE

Marantz Hi-Fi UK Ltd., Kingsbridge House, Padbury Oaks, 575-583 Bath Road, Longford, Middlesex UB7 0EH.

(01753) 680868

THE LAB REPORT

I suspect the naming of the DR-17 was not entirely arbitrary, for though its CD-R/RW drive is bang up to the minute Philips stock, Marantz's choice of DAC (if not filter technology) owes more than a nod to the older CD-17 CD player (see HFC 155). Hence we find the rather unusual combination of Pacific Microsonics' PMD100 HDCD digital filter (in place of NPC's SM5841) with Philips' venerable SAA7350 and TDA1547 chipset which, lest we forget, is the old DAC7 Bit Stream combination.

Marantz's HDAM buffer stage drives the analogue output to 2.2V while the very low distortion of the DAC7 (typically 0.001-0.007 per cent 20Hz-20kHz), good resolution

(errors of +0.0/-0.5dB over a 100dB range) and excellent 105dB stopband rejection go to show that modern '24-bit' DACs offer little practical advantage.

The 99dB S/N ratio is below average, but it's well within CD's 16-bit specification. This leaves the player's inherent ~1000psec of low-rate noise-like jitter to spoil the party, and it is particularly disappointing

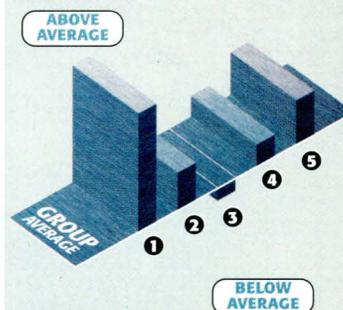
as CD-R/RW recordings made on the DR-17 suffer little or no additional jitter. It's only during replay on the DR-17 that the jitter arises, suggesting the full quality of your CD-R/RW recordings will only be realised when played back in a low-jitter machine. **PMI**



HOW IT COMPARES

Record quality is excellent but, despite being based on proven DAC7 Bit Stream technology, it's the replay chain that lets the side down.

1 SUPPRESSION OF DIGITAL IMAGES	80%
2 JITTER	25%
3 PRACTICAL DYNAMIC RANGE	-5%
4 HARMONIC DISTORTION VS LEVEL	15%
5 LINEARITY	30%



SPECIFICATIONS

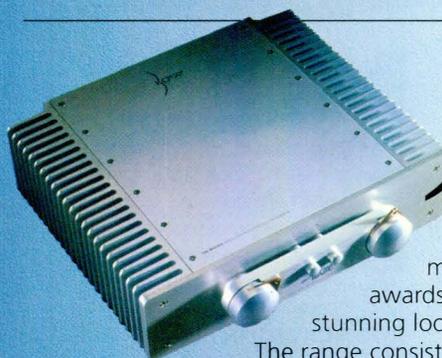
PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBfs	0.003%	0.001%
Maximum output level	2V	2.2V
A-wtd S/N ratio	105dB	99.1dB

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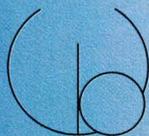


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PHILIPS CDR951



The CDR951 may look pedestrian, but a lot of new thinking has gone into this new model, which has resolved some well recognised shortcomings of its predecessor (one example being the inability to prevent gaps being inserted between tracks, which resulted in some well known recordings being reinvented in ways that were not to everyone's liking). The technical specifications have also been significantly enhanced over previous models.

A key thrust of the new player is the way that ease of use has been enhanced thanks to some much needed feedback in the display area which provide clear guidance through key operating procedures. There are also some thoughtful touches such as the ability to rename inputs to correspond to the particular composition of your system. The quid quo pro here is that the layout of the controls on the front panel looks scrappy, and is put in the shade by the Pioneer models, or (at a much higher price, admittedly) by the Marantz DR-17.

The record level and channel balance can be adjusted when recording digitally, and fades applied.

"A lot of new thinking has gone into this top of the range model."

The recorder will also act as an A/D processor, converting analogue into a 44.1 kHz CD-compatible datastream for use with external equipment even if no recording is being made. Philips has also been generous with rear panel socketry. The CDR951 will accommodate any combination of optical and electrical digital leads, with two electrical digital inputs instead of the usual one, allowing as many as three digital sources to be connected. This is in addition to analogue line and microphone level inputs, the latter though a single 6.3mm stereo jack socket, with the ability to mix different inputs.

HDCD recordings can be dubbed, retaining the HDCD data in the LSB, but there is no onboard HDCD decoder, and no means of dubbing CD Text from encoded discs, though titles can be input manually.

SOUND QUALITY

There were consistent if mild complaints throughout the blind

panel tests of a 'tinselly' and sometimes plain 'aggressive' treble, and in the Mozart, for example, of unwanted 'resonance' or 'coloration' in the woodwind. Every panel member made similar reference to this in one form or another, but these complaints were more than outweighed by praise for the 'good bass definition' of the Lorna Hunt track, the 'credible' piano sound of the Ravel, and the 'strong attacking drums' in the Keb' Mo'. 'It's spot on, and easy to follow,' was one of the final comments, and 'musical and exciting' was another.

There is no gainsaying the occasionally strident balance of this model when used as a player, but equally there was no gainsaying its overall superiority among the less expensive CD-R/RW recorders. The CDR951 sounds more lively and engaged, and in the end this makes it more persuasive. The strong but not in any sense overblown bass, and excellent soundstaging play a key role here, offset only slightly by a slightly

cluttered feel in the mid/high frequency area. Recordings retained the qualities of the original discs from which they were made when played back through the Philips, and sounded very close even through the more analytical Krell test player.

CONCLUSION

There is no magic here, just some diligent design work which has produced a flexible and relatively easy to use recorder that unlike some of the direct competition is also a decent player in its own right. Best Buy.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £380.00

This great improvement on previous Philips CD-R models still looks and feels cheap, but delivers the musical goods in some style.

■ ONE YEAR GUARANTEE

Philips Centre, 420 - 430 London Road, Croydon Surrey CR9 3QR

(020) 8689 4444

THE LAB REPORT

While many other recorders in this test are compromised by high-ish levels of jitter, Philips has seemingly learned from past experience (see the CDR-870, HFC 174) and tackled this key area very firmly. Hence, recordings made onto CD-R typically have a (replayed) jitter level of ~220psec while those on CD-RW are actually fractionally lower at ~200psec. These are the sort of figures normally associated with the very best CD

players, let alone an affordable recorder. Ironically, it's in the conventional CD chain that Philips' foibles emerge. Rather than use all its own parts, Philips' CDR951 is equipped with Analog Devices' AD1877

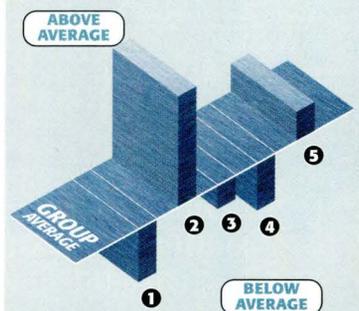
and AD1855 (16-bit ADC and 24-bit DAC, respectively). The latter has errors in low-level resolution approaching 1dB at -90dBFS but typically low (~0.0012 per cent) distortion at its peak 2.05V output. This sample did show a slight inconsistency between right and left channels, however, with THD at 0.006 and 0.003 per cent at -30dBFS and the S/N ratio at 96.4dB and 100dB, respectively. Ultrasonic noise is generally well maintained but the integral digital filter is not wholly effective, so digital 'images' are suppressed by just 38dB. Finally, the record/playback level display is uncalibrated, and so next to useless. **PMI**



HOW IT COMPARES

Painful lessons in the past ensure that this recorder produces very faithful digital copies. CD playback performance is less spectacular.

- 1 SUPPRESSION OF DIGITAL IMAGES -35%
- 2 JITTER 75%
- 3 PRACTICAL DYNAMIC RANGE -15%
- 4 HARMONIC DISTORTION VS LEVEL -30%
- 5 LINEARITY 20%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBFS	0.0017%	0.0012%
■ Maximum output level	2V	2.05V
■ A-wtd S/N ratio	115dB	98dB

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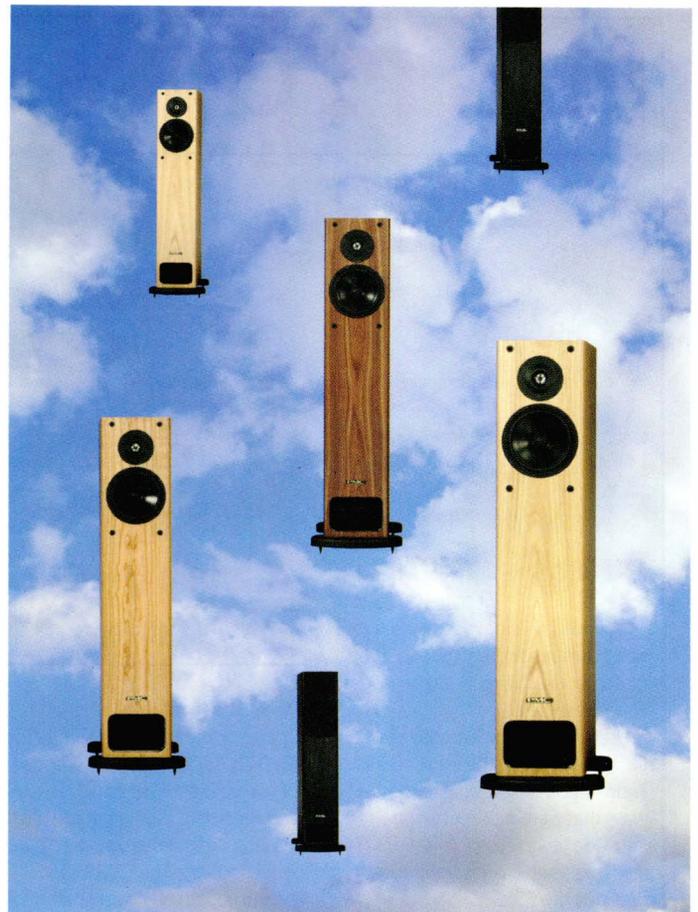
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Milton Keynes	Technosound	01908 604949
Nottingham	Nottingham HiFi	0115 924 8320
Norwich	Basically Sound	01508 570829
Oxford	Audio T	01865 765961
Rayleigh	Rayleigh HiFi	01268 779762
Sheffield	Moorgate Acoustics	0114 275 6048
Southampton	Audio T	023 8025 2827
Southend	Rayleigh HiFi	01702 435255
St Albans	Radlett Audio	01727 855577
Swansea	Audio Excellence	01792 474608
Taunton	Mike Manning	01823 326688
Worthing	Phase 3	01903 245577
Worcester	Seven Oaks HiFi	01905 612929
Yeovil	Mike Manning	01935 479361

PIONEER PDR-509



The PDR-509 is Pioneer's single-disc CD-R recorder. It is a lightly built machine, quite button bound, but with attractive and well weighted controls and a selection of verbose control labels where unintelligible mnemonics are more usual. As a result it probably won't be necessary to do more than skim the instructions, and the absence of Philips CDR951-style prompting by the display is not much of a handicap in practice.

The capabilities of this unit are broadly standard for its type, and there are relatively few unusual extras – or omissions. The usual sample rate converter is included of course, and as in most of the better units it can be bypassed when recording from 44.1kHz sources (CDs or MiniDiscs). In this mode, HDCD coding is preserved, and so is the digital data on d HDCD-encoded audio CDs, though the PDR-509 doesn't have its own HDCD decoder. A full set of optical and electrical digital socketry is available, along with an SR (proprietary) control socket which can be patched through to a compliant Pioneer

"Capable of making copies that are within spitting distance of the original."

system for operation by a single unified remote control handset.

It is also worth noting that this is one of a number of CD-Rs that allow digital record levels to be adjusted, which can be used to normalise the volume level with different recordings. There is a risk of distortion of the inputs if overloaded and, at the other extreme, resolution will drop and noise accumulate if the level is set too low. A fade in/out feature completes the record capabilities.

SOUND QUALITY

The panel was unanimous that the Pioneer is a decent, middle of the road recorder, capable of making CD copies that are within spitting distance of the original discs, but with a hint of safeness in its delivery. 'This one sounds a bit lazy and far,' wrote one. 'It doesn't have the resolution of the original [referring to the CD playthrough of the source compact discs], and it doesn't excite'. Another

described it as 'inoffensive' and 'non-challenging', though he praised the quality of the cymbals in the Keb' Mo', and the detail in the Ravel.

There was a noticeable difference in the quality of CD-R replay from the Pioneer and from other CD players, the advantage resting with the latter. The Pioneer replay electronics (the digital filter perhaps?) appear to impose some loss of presence and detail, which may explain the nature of the comments from the panel, and indeed the hands-on tests. This quality is not inherent in the recordings, which played back through the Krell test player with verve and distinction, sounding very similar though not identical to the original CDs. Used on lesser CD players, the CD-R even appeared to deliver an advantage over the original, perhaps because the pre-formed wobble groove on the CD-R gives the player servo an easier time. In any case, what losses are imposed are sub-

tractive in nature, and the character of the original is hardly affected.

CONCLUSION

The disadvantages of this model are that the loader is grumpy and asthmatic, although it functions satisfactorily, and that its replay electronics sound a tad lazy and soft. But to its credit, the Pioneer is capable of making excellent recordings, and given that the user will already have a CD player that can be used for replay, this model can be welcomed with open arms. Recommended.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £300.00

The straightforward design is easy to use, and it makes excellent recordings that are slightly dulled by the replay chain.

ONE YEAR GUARANTEE

✉ Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough Berks SL2 4QP.

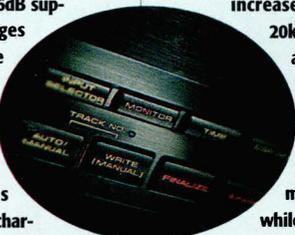
☎ (01753) 789789

THE LAB REPORT

In common with Pioneer's CD players, this CD-R/RW also features a Legato Link digital filter (see *Oasis*, HFC 188, 189 and 203). Its gentle roll-off produces a -2.3dB droop at 20kHz and a minimal 6dB suppression of digital images immediately outside of the audioband, but the 'rippling' effect of the filter is far less violent than occurs with conventional, high-order types. This ensures the player has a characteristic sound but, importantly, because the Legato Link filter is *only* invoked through the playback chain, it's not one that's transferred by digitally recording.

Crucially, recordings suffer little or no extra digital jitter (~210psec, which is com-

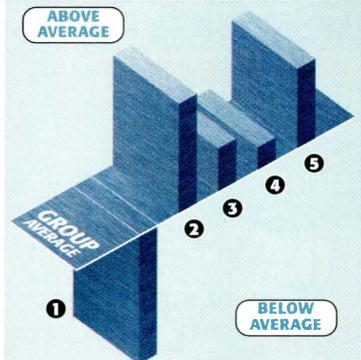
parable with a very good CD player) while the A-wtd S/N ratio is a very respectable 102dB. Distortion is very low at ~0.0015 per cent from 20Hz to 1kHz at peak output but increases to 0.03 per cent at 20kHz. This is not 'high' but, along with the Pioneer PDR-W739, is the highest of the (CD) group. Distortion at low signal levels is well maintained, however, while the errors in low-level resolution of just +0.0/-0.4dB over a 100dB range are certainly better than average. The stereo separation of just 75dB at 20kHz is a little weak (compared with the CDR951 at >100dB) but, otherwise, the PDR-509 remains a solid piece of kit. **PMI**



HOW IT COMPARES

Pioneer's Legato filter influences the playback performance only, while very low levels of jitter ensure that recordings sound as close to the original as possible.

1 SUPPRESSION OF DIGITAL IMAGES	-85%
2 JITTER	75%
3 PRACTICAL DYNAMIC RANGE	30%
4 HARMONIC DISTORTION VS LEVEL	15%
5 LINEARITY	55%



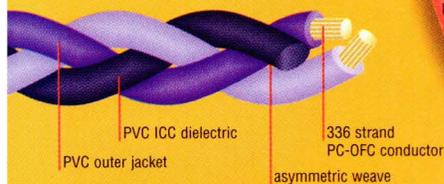
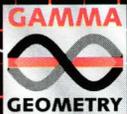
SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBfs	0.0017%	0.001%
■ Maximum output level	2V	2.2V
■ A-wtd S/N ratio	112dB	102.1dB

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PIONEER PDR-W739



The PDR-W739 is comparable to the JVC XL-R5000 in that it is equipped with a CD-R/RW recording mechanism and a three-disc play-only deck. But whereas JVC opts for three separate single disc mechanisms, the Pioneer employs a single drawer which will accept up to three discs, manipulated by complex internal clockwork consisting of a series of winches, pulleys, a couple of wings and a prayer. We admit to some unease about the integrity of the replay mechanisms, which appear to be rather flaky.

The excellent control layout of the JVC model has been broadly followed here, but the extra functionality makes it a little harder to get to grips with. That said, better than average (if verbose) instructions and a quick set-up guide help, and there is little here that will cause confusion for long. The feature set parallels the PDR-509 – readers are referred to the review in this issue – but includes the ability to record complete discs at double speed, and to record a selection of tracks programmed from one, two or three discs.

“An excellent solution for those who want a self-contained recorder that can dub CDs.”

SOUND QUALITY

In the sighted listening tests, this model was all but indistinguishable from the single-disc Pioneer PDR-509 when recording from the same external CD player, and when the discs were replayed on the same player (that is, not the Pioneer). This is the true measure of the PDR-W739 as a recorder, and shows that it is capable of making excellent recordings which are more or less on a par with the best of the group. The Pioneer has limitations, but they lie elsewhere. The basic replay quality of the player is quite similar to the PDR-509, but ultimately a little sharper and more precise. The panel even found replay quality a tad thin. ‘Woodwind quality is different to the others,’ said one in a slightly disapproving tone, commenting on the Ravel, but he was more favourably disposed to Lorna Hunt’s voice, the strong piano sound in the Ravel, and the drum

sound in the Keb’ Mo’. Others pointed towards a slightly overblown quality in what appears to be a variation on the theme that the PDR-509 sounds slightly too smooth and dull.

The PDR-W739 can sound dynamically challenged at times, but it is a smooth performer with retains the essence of the musical argument, especially when recordings are replayed using quality external players. The multi-disc replay mechanism doesn’t sound quite as good as a source or for replay, generally sounding flatter spatially and lacking in ambience and stereo focus, findings often associated with the presence of jitter. The best quality recordings will be those made with a good outboard player through a digital input. The internal mechanism still makes good quality recordings, however, which sound virtually identical whether recorded at normal or double speed. In this respect at least comparisons

with double cassette decks should not be stretched too far.

CONCLUSION

This model is an excellent solution for those who want a self-contained recorder that can dub CDs with little fuss. There are some quibbles over quality, but recordings sound excellent, especially when recording from an external CD player, and they’re more than impressive even when using the internal replay mechanism.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £400.00

Unfeasibly flexible multi-disc player/recorder more or less has it all, including respectable sound quality and competitive pricing.

ONE YEAR GUARANTEE

Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough Berks SL2 4QP.

(01753) 789789

THE LAB REPORT

As this multi-disc recorder shares the same basic Legato Link filter technology as Pioneer’s single-deck PDR-509 recorder, my previous comments regarding its playback performance also hold true here. Comparing the performance of the two is instructive, however, as the PDR-W739 does trade a little in ultimate quality for the ease of multi-disc operation. Its output level is some -0.05V lower than the PDR-509 and distortion just fractionally worse at all frequencies and levels, 0.003 versus 0.0016 per cent at 20Hz and 0.04 versus 0.03 per cent at 20kHz, respectively, for example. Copies on CD-R media replayed through the PDR-W739 have some 280psec of

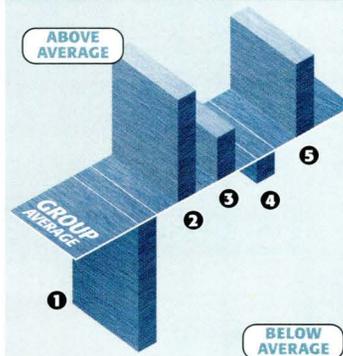
jitter, those from CD-RW a little less at 260psec, much of it related to the shared power supply. Neither figure, I’m bound to say, is especially debilitating. The final 102dB S/N ratio is very good, though lower than Pioneer’s own figure which is determined under idealised but less realistic conditions (as is that for the PDR-509). The presence of spurious idle patterns (low-level tones and whistles) is very well suppressed in both players, incidentally, to the tune of 120dB or more. The common digital hierarchy also ensures the PDR-W739 enjoys the same excellent low-level resolution as the PDR-509. **PMi**



HOW IT COMPARES

Very small increases in digital jitter and harmonic distortion are worthwhile trade-offs for the extra flexibility afforded by this multi-disc recorder.

- 1 SUPPRESSION OF DIGITAL IMAGES -85%
- 2 JITTER 70%
- 3 PRACTICAL DYNAMIC RANGE 30%
- 4 HARMONIC DISTORTION VS LEVEL -15%
- 5 LINEARITY 50%



SPECIFICATIONS

PARAMETER	MANUFACTUR'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBfs	0.003%	0.0016%
■ Maximum output level	2V	2.15V
■ A-wtd S/N ratio	105dB	102dB

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TEAC RW-800



A relatively shallow but crowded fascia that includes extras like a set of microphone inputs with associated level controls puts this model in a powerful position as an uncomplicated way of making live recordings in the home or home studio. The microphone input is automatically mixed with any signal present on the line input, along with an attenuated version of any digital feed. In standard record mode, digital recordings cause the analogue inputs to be muted to avoid adding noise unnecessarily to recordings. Adding to the Teac's home studio credentials, a 'rehearsal' feature allows the start point for synchronised recordings and for automatic track division to be set precisely. A fade in/out feature can be used to package individual tracks, and it is also possible to adjust the record level from digital sources as a means of levelling the track by track volume on compilation discs. The extra circuitry, all of which takes a hit on sound quality, can be bypassed by selecting 'digital direct', which also bypasses the sample rate converter for non-44.1kHz sources.

"Not bad, but some niggling faults preclude a formal Recommendation."

A clock and timer are available for unattended operation, typically from radio. There are no system link connections, but the RW-800 will respond to digital datastreams, releasing 'pause' from 'sync rec' mode when the external source starts.

SOUND QUALITY

For the most part, the Teac does a pretty good job, but with some caveats. 'I enjoyed this one through the whole programme,' one of the panel commented. 'Timing is good; Keb Mo's vocal is realistic, and the bass is powerful and effective.' Another made similar comments, pointing to 'enjoyable' sounding CD-R dubs, and agreeing that the bass was one of the Teac's stronger points, but he did identify some 'coarseness' in the treble, and this set the tone for the final panel member whose remarks pointed to the generally 'sonorous' and 'lifelike' quality of the recorder, again highlighting a less than excellent treble, and also identi-

fying a lack of dynamics, especially in the Mozart and the Keb' Mo' excerpts.

A degree of harshness and loss of fine detail was identified in the hands-on testing with compact discs and CD-R copies alike, though there was no lack of treble presence. Just the opposite in fact, and the whole effect could be rather strident when auditioned with closely miked rock, for example, which was under-represented in the panel test sessions.

The Teac RW-800 was one of several players to make recordings that sounded virtually identical to the original disc from which they were ripped, but where the discs performed significantly better when replayed on other players. Some difference is expected of course when the comparison is with a big hairy model such as the one used for testing, but the character and degree of the difference was consistent with the jitter identified in the lab test – and so was the bright, fierce quality of some early Denon recordings that

were made with pre-emphasis and that were therefore not being replayed correctly due to the lack of a de-emphasis network.

CONCLUSION

Not bad then, but there are some niggling faults that preclude a formal Recommendation. Most notable of these was a rather steely edge to the sound, which was widely, though not universally identified by the panel, and the (accidental?) omission of a de-emphasis network, which is significant for those with collections of discs dating back more than, say, a decade.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£349.95

A flexible and capable recording tool from a company that knows a thing or three about digital recording, but it's a little rough-and-ready as a player.

ONE YEAR GUARANTEE

Teac UK Ltd, 5 Marlin House, The Croxley Centre, Watford, Herts WD1 8YA
 ☎ (01923) 819630

THE LAB REPORT

TEAAC's mechanism uses a Sony-based optical read/writpick-upwith, I'd guess from the quick track access, Sony servos and decoder. Otherwise its performance is rather mixed. On the positive side, distortion at -10dBfs ranks the lowest (along with JVC's CDR) at 0.0006 per cent but climbs very slightly to 0.002 per cent at its 1.8V peak output (re. 1kHz) and to 0.012 per cent at 20kHz. The A-wtd S/N ratio is below average at 97.5dB but still within the 16-bit specification, though errors in low-level resolution are very minor indeed at just +0.3dB/-0.4dB over a full 100dB dynamic range. Oddly, Teac has forgotten to flag-up the player's de-emphasis network, so pre-



emphasised discs suffer a +9dB treble boost while standard CDs are as flat as a pancake.

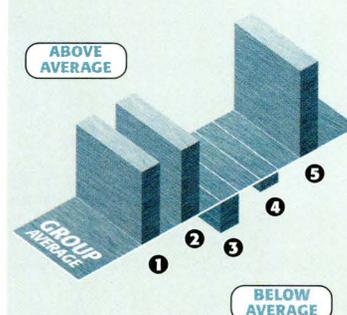
Replay jitter is pretty high at ~750psec and is dominated by unpleasant data-induced phenomena from, I presume, Teac's self-styled 'Converter PCB'. Jitter is unaffected by choice of CD-R or CD-RW media or, indeed, whether the sample rate converter is switched in or out ('Digital Direct' OFF and ON respectively).

This is great news from the encode point of view because discs produced on the RW-800 are of excellent quality. Only, you won't fully realise that quality by playing your work back on the RW-800... **PMi**

HOW IT COMPARES

Record quality is excellent but the machine's potential is compromised by jitter etc. and incorrect de-emphasis in the replay chain.

- 1 SUPPRESSION OF DIGITAL IMAGES 50%
- 2 JITTER 50%
- 3 PRACTICAL DYNAMIC RANGE -20%
- 4 HARMONIC DISTORTION VS LEVEL -5%
- 5 LINEARITY 60%



SPECIFICATIONS

PARAMETER	MANUFACTR'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBfs	<0.004%	0.002%
■ Maximum output level	2V	1.85V
■ A-wtd S/N ratio	>97dB	97.5dB



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MUSICAL FIDELITY

JVC XM-448



Here is a more or less straight MiniDisc recorder, with a broadly standard set of features, with one key exception – which we'll come to later. The player is neatly designed, with a clear, uncluttered fascia. Two optical inputs are provided, selectable on the front panel, but there is no electrical option – this may not matter in JVC systems, but it will be important in some others. On a more positive note, proprietary Compu-Link connections mean that complete JVC branded systems can be used with a single controller, often allowing single key operation of multi-step operations (for example selecting the appropriate input on a partnering amplifier when 'play' is selected). Additional Text Link connections allow text from CD Text or MD players to be displayed on the recorder's display panel, or routed to the MD recorder along with the music that is being recorded.

Standard editing features include dividing, moving, joining and deleting tracks, with auto track numbering when recording digitally, and a choice of auto and manual from analogue sources (for which the

"One word set the tone for the panel's reaction – 'aggressive'."

cramped record level meters looks rather mean). Of course it is also possible to add disc and track titles manually, and this is where the XM-448's *pièce de résistance* is to be found in the form of a flap on the large but otherwise unremarkable looking remote control which opens to reveal an alphanumeric keypad. It's not exactly suitable for touch typing, but it has a QWERTY layout, and is light years ahead of the usual obstructive provision. On this subject, why don't manufacturers (those who don't want to go as far as JVC) provide a computer keyboard socket?

SOUND QUALITY

One word was used on a number of occasions and it set the tone for the panel – 'aggressive'. The Mozart flute piece was described as having 'steely strings', and another agreed, describing the JVC as 'over enthusiastic, with a close balance' and yes, he too found the sound 'aggressive'.

'It has a good stab at reproducing dynamics,' he noted in his sum-up remarks, 'but it has a mechanical quality. It sounds better than some of the other models in the test, but it has a long way to go to catch up with the (CD based) originals.'

A later presentation of the JVC confirmed the basic thrust of the comments, but some of them were more emollient. 'It is quite aggressive, but because of that it is also quite detailed, which makes it quite arresting, even interesting. I could live with the model for a while,' said one. Another wrote that the JVC had a good go at reproducing dynamics, though he too pointed to a 'mechanical' quality.

Hands-on testing confirmed that the JVC was a sharper, more strident sounding recorder than most, and that the organisation of musical ideas was superior to some of the other MiniDisc recorders (but not the Sony). But although superficially

sharp and clear, the loss of subtle background information was obvious, and musically the JVC was at best unengaging.

CONCLUSION

In one respect, the XM-448 sets a pattern that others would do well follow: JVC has provided a QWERTY keyboard which changes disc and track titling from a 'life's too short' activity to a viable proposition. Otherwise, this is an initially bold, but ultimately rather crude sounding recorder that fails to stand out from the crowd.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£220.00

The alphanumeric keyboard hidden in the remote control is a great idea, but musically the JVC can sound rather cool and strident.

ONE YEAR GUARANTEE

JVC UK Ltd, JVC Business Park, Priestley Way, London NW2 7BA
 ☎ (020) 8450 3282

THE LAB REPORT

First and foremost, the XM-448 has a fundamentally lower output level than any other MD or CD player in this survey (1.1V instead of ~2V) and, though this is well within JVC's very honest specification, it does mean that the product will be at a severe disadvantage in quick A/B listening demonstrations. The lower output also compromises the maximum S/N ratio that can be achieved during playback, amounting to a sub-16bit 94dB. Importantly, this does not affect the inherent S/N of digital recordings, so MDs recorded on the XM-448 will still realise a greater range when replayed on competing MD hardware.

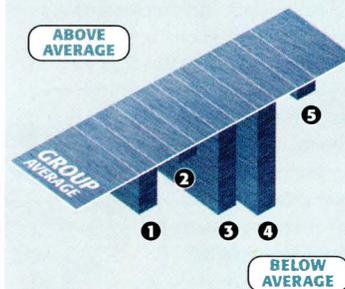


Channel balance is excellent, though crosstalk (separation) is the worst in the test and some de-emphasis inaccuracy amounts to a +1dB boost at 20kHz on replay. Errors in low-level resolution are within +/-0.5dB at 1kHz but increase to +0/-2dB at 20kHz where distortion also increases. THD at peak level is up with the best, however, at 0.003 per cent (1kHz) and 0.002 per cent (20kHz). Record/replay jitter is a little higher than the other conventional (i.e. non-DRIVE) MD players at 2290psec and is purely related to MD's longest 11.6msec encode block rate. By CD standards, however, MD's jitter is uniformly very high indeed. **PMi**

HOW IT COMPARES

Watch out in quick A/B comparisons because the XM-448 has half the output of competing machines. It's also 'noisier', but I'd be surprised if you hear any extra hiss!

- 1 SUPPRESSION OF DIGITAL IMAGE -25%
- 2 JITTER -5%
- 3 PRACTICAL DYNAMIC RANGE -55%
- 4 HARMONIC DISTORTION VS LEVEL -70%
- 5 LINEARITY -5%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBFS	Not given	0.003%
Maximum output level	1.1V	1.06V
A-wtd S/N ratio	93dB	93.9dB

KENWOOD DMF-5020



An attractively wide, low-slung machine, the DMF-5020 is a powerfully equipped MD recorder which has all the usual functions associated with the medium, plus some extras: quick move and quick erase which help speed things up. The well implemented jog wheel aids disc navigation whether searching by track number or title, and is also used when programming titles. Using a rear panel wire link, record starts can be synchronised with the source, and pause engaged when the source ends. As usual with MD recorders, there is a headphone socket which is controlled by a volume control, but this one is a stepped attenuator that also varies the main output, which is a recipe for reducing resolution and increasing distortion if the output is not left set at full.

The remote control is no oil painting, but there has been some attempt at grouping controls by function, and the panel graphics are particularly clear. The player is equipped with optical and digital in and outputs, in addition to the usual line level analogue connections.

"As a serious high fidelity tool, the Kenwood fails to make the grade."

SOUND QUALITY

Following a CD playthrough, the panel was clearly impressed, but for all the wrong reasons. 'This is great,' as one put it. But he wasn't talking about the player. 'I hope the others are similar because it makes my job very easy. This player sounds misty, it lacks the resolution of the original [CD] and, with every music extract, timing seems to be out as well.'

The panel found the Kenwood lacking in resolution (Mozart), and in bass weight and general presence (Lorna Hunt). The Ravel track was 'recessed' and the Keb' Mo' recording 'lacks the fidelity of the original... but it's pleasantly tight', according to one. A second listener described the vocal contribution to this track as 'resolved better than the original', and although this may appear to contradict causality, ATRAC processing sometimes seems to have the effect of underlining foreground events at the expense of other background ones,

making the general thrust of complex recordings clearer while diminishing the subtleties. But there are other effects too. 'There is a certain steeliness and a loss of the integration of the original,' one said of the Mozart recording, while the female vocal in the Lorna Hunt track was written off as 'restricted and hardened'.

The hands-on listening agreed with the panel. Recordings tended to be rhythmically sound, but the hardness was confirmed, and there was an apparent loss of bandwidth at both frequency extremes. The treble lacked air and the bass too failed to breathe naturally, though these findings were not apparent with all recordings, or throughout recordings where the problems were apparent.

CONCLUSION

As a tool for making recordings for casual listening, the benefits of MiniDisc generally (and this certainly extends to the Kenwood) cannot be

gainsaid, but as a serious high fidelity tool, the Kenwood fails to make the grade. The A/D converters allowed the Kenwood to make pretty good recordings, but re-recorded material sounded lifeless and wooden – an all too common finding. Although well equipped (there are many secondary features not discussed here), the Kenwood simply doesn't hit the sonic G-spot. Home brewed analogue recordings sounded relatively poor, and the replay quality of digital recordings was also suspect.

VERDICT

SOUND ★★☆☆☆

BUILD ★★☆☆☆

VALUE ★★☆☆☆

PRICE £249.95

Don't take too much notice of the 24 bit DRIVE II label: it may be high tech, but nothing conceals the rather caricatured sound quality that it delivers.

ONE YEAR GUARANTEE

Kenwood Electronics UK Ltd, Kenwood House, Dwight Road, Watford, Herts WD1 8EB.
(01923) 816444

THE LAB REPORT

Superficially, the DMF-5020 seems to behave itself but, under the surface, its performance is atypical. The low 0.002 per cent distortion at its 2.1V peak output level is just fine, as is the wide 102dB S/N ratio, flat response (with or without emphasis), wide 90dB+ separation from 20Hz-20kHz and tight +4.2ppm master clock selection. These basic tests indicate that it's no different from any other MD recorder, but its reaction to the jitter test suggests otherwise.

Instead of the usual 86Hz sidebands relating to MD's 11.6msec block rate, the DMF-5020 responds with a significant increase in noise (typically 20-30dB) and a series of

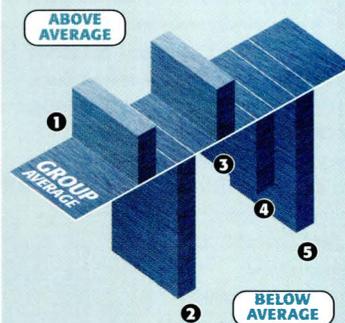
very high-rate sidebands. The vast total in excess of 30,000psec probably contributes to the lack of subtle detail, sharpness and loss of 'musicality' suffered by this machine. Interestingly, this only occurs while recording because the DMF-5020 performs faultlessly with discs recorded on other machines.

As these recorders are all using generic encoders, I would suggest the anomaly is caused by Kenwood's proprietary DRIVE processor, designed to 'enhance' low-level detail in CD players. In this instance, errors in low-level resolution are greatly magnified, to the tune of +4dB/-8dB over a 100dB range. **PMI**

HOW IT COMPARES

Technically and mechanically a robust machine flawed, presumably, by the inappropriate use of DRIVE technology in the MD encode chain.

- 1 SUPPRESSION OF DIGITAL IMAGE 35%
- 2 JITTER -90%
- 3 PRACTICAL DYNAMIC RANGE 35%
- 4 HARMONIC DISTORTION VS LEVEL -50%
- 5 LINEARITY -90%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBfs	>0.007%	0.0016%
Maximum output level	2V	2.1V
A-wtd S/N ratio	105dB	102.4dB

PIONEER MJ-D508



The MJ-D508 has been available since autumn last year, so it hardly qualifies as cutting edge in this fast moving sector of the market, but it is extremely attractively priced, and more than routinely equipped. In common with its predecessor (MJ-D707) – and in contrast to their competitors, almost all of whom source their mechanisms from Sharp or Sony – Pioneer uses home-grown mechanisms. Pioneer also uses its own variant on the ATRAC data reduction codec, the data-compression heart of MiniDisc – Advanced Parameter Processing, which uses DSP to control the distribution of digital bits around the three frequency bands that ATRAC uses to code the input signal. The aim is to provide better psycho-acoustic masking while retaining compatibility with standard ATRAC, Pioneer claims.

The Pioneer jumps through all the usual MD-type hoops, and in addition has an internal memory which allows late starts to recordings without truncating the beginning of the music. There are some other unusual features too, such as the

“Although the player sounds fairly smooth, there is no slam in the bass.”

ability to adjust the record level when making digital recordings (which are normally made bit-for-bit) as a means of normalising volume levels between tracks when making compilations, though this will inevitably involve translation losses and the possibility of clipping high level signals when gain is increased above nominal. It is also possible to use the internal D/A converters separately from the rest of the recorder. The MJ-D508 even includes a replay-only noise reduction circuit, a form of ‘gating’ circuit that reduces steady high frequency noise, though sensibly this feature is user-selectable.

SOUND QUALITY

‘It was not great for me,’ was a concluding comment from one of the panel. ‘The whole effect is disjointed, with a start and stop character, a loss of musical integration.’ And another: ‘Musical detail seems too carefully ironed out, and ultimately it all seems

rather mundane. Fine detail is rounded down, and although the player sounds fairly smooth, there is no slam in the bass.’ These points were developed by another panellist, who concluded that the player has a mechanical, almost clockwork-like quality, as though the musical information has been fed through a sequencer and retimed, giving a too-perfect effect that is ultimately devoid of feel. Another complaint, echoed in tests of the other MD recorders, was of a loss of background information, for example the ‘missing’ Hammond organ from the Keb’ Mo’ track.

Some of these comments may seem contradictory, but in a sense this is the nature of the beast, and most are standard criticisms of all the MiniDisc players, which were not identified separately from the CD-R recorders in the panel tests. The hands-on testing suggested that the Pioneer was bland and uninvolved, and tonally rather dull, though on the

whole it was not unpleasant. As usual, the failings were reinforced when listening to pre-recorded MiniDiscs.

CONCLUSION

Ultimately, the MJ-D508 is bland and lossy, and evokes no real sense of occasion or insight. On the other hand its failings are not different in kind to any other MD recorder, and the Pioneer does at least have the benefit of some useful value-added features, and a sharp selling price, and for this reason is Recommended.

VERDICT

SOUND ★★☆☆☆

BUILD ★★☆☆☆

VALUE ★★☆☆☆

PRICE £200.00

Well equipped but musically sleep-inducing player, recommended on the grounds that you will have to pay a lot more for a materially better performer.

ONE YEAR GUARANTEE

✉ Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough Berks SL2 4QP.

☎ (01753) 789789

THE LAB REPORT

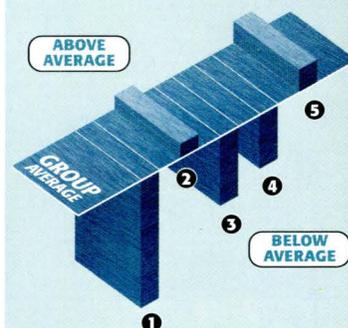
Although the recorded MD response is notionally flat, replaying through the MJ-D508 means the signal travels through Pioneer’s Legato Link filter which imposes a 2dB droop at 20kHz and releases additional out-of-band energy in the form of digital ‘images’ (see Pioneer CD-R recorders, this issue). Otherwise the D508’s performance is very conventional with a 2.1V peak output level (Pioneer’s 0.5V rating seems to be culled from an old tape deck specification), low 0.002 percent distortion at 1kHz and mild +0.0/-0.5dB errors in low-level linearity over a 100dB dynamic range. As far as this sample is concerned, there’s

a higher-than-average channel balance error of 0.3-0.4dB across the audioband with output and S/N higher on the left than right channel (2.14V and 96.6dB versus 2.05V and 94.6dB, respectively). The jitter spectrum is slightly ‘noisier’ than that obtained from the Sony and Teac recorders, but remains far superior to the Kenwood. The 1575psec of discrete jitter is, once again, linked solely to the 11.6msec block rate used by the ATRAC compression algorithm and seems impossible to avoid in practice. Along with the effects of data reduction and compression, I’m convinced it has much to do with the recognisable ‘sound of MD’. **PMI**

HOW IT COMPARES

MDs recorded here will play back in other machines with a ‘flat’ response but will have a rolled-off treble in the D508 thanks to Legato Link filtering.

1	SUPPRESSION OF DIGITAL IMAGE	-85%
2	JITTER	10%
3	PRACTICAL DYNAMIC RANGE	-45%
4	HARMONIC DISTORTION VS LEVEL	-35%
5	LINEARITY	15%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
■ Distortion @ 1kHz/0dBFS	Not given	0.0018%
■ Maximum output level	0.5V	2.1V
■ A-wtd S/N ratio	100dB	95dB

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(December '96)

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THE VERDICT

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▼ Very little to criticise.

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(August '98)

Cable Talk Studio 2
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SONY MDS-JA555ES



Merely unpacking the Sony is enough to show that it is in a quite different league to the other MiniDisc recorders in this test. It weighs about five times as much as most, and its power supply (based on two R-core transformers) is extremely well endowed. In every respect construction quality is in a class of its own.

The key to this flagship model is ATRAC DSP Type R, which as the name suggests uses DSP to refine bit allocation between bands, plus other measures designed to improve the computational accuracy of the coding, along with much enhanced D/A and oversampling filters. The Sony includes a version of the manufacturer's now traditional variable coefficient digital filter with three 'slow' settings and the standard 'brick wall' one, which on the whole gave the most consistently satisfying results, and was used for much of the testing.

The list of user features includes the ability to adjust replay pitch (potentially useful for karaoke applications), and a fade in/out facility. The

"The Sony is in quite a different league to the other MD recorders in this test."

Sony has a digital record level option, and stores six seconds of data allowing late recording starts without missing the beginning of the music. It is also possible to control the Sony by computer, but even when used on its own the control system has the customary clarity and simplicity of the best Sony equipment.

The back panel has a good selection of in and outputs. There are two optical and an electrical inputs, and electrical and optical digital outputs, the result of which is that the Sony will make the most of virtually any system, however complex. System link sockets can be used to integrate the deck into Sony branded systems.

SOUND QUALITY

The panel was in no doubt that the Sony was quantitatively and qualitatively different to the other MD recorders. There was also, however, a measure of consensus that it was not

completely consistent musically, and that its strengths were more in areas associated with tonality and musical expression than in the dynamic properties of music. The flute in the Mozart was mentioned by two of the panel for its subtlety and realism, and the Lorna Hunt vocal was described as 'light and well defined'. One listener noted how he 'warmed' to the Sony, though he still found it disappointing after listening to the same music on compact disc.

But this is a classy machine, and recordings have a feeling of space and ambience that eluded the other MiniDisc recorders, along with an unusual measure of musical consistency that sustains the musical flow, irrespective of dynamic changes in the musical landscape. Compared to others of its type, the bass and the treble both seem more alive, and imagery is more finely resolved around the speakers.

CONCLUSION

It may seem rather brutal to suggest that the talent expended on this player has been applied to a medium that simply doesn't fully repay the effort. Nevertheless, the Sony represents the current state of the art in MiniDisc recording, and its sound is well ahead of the other MD recorders in this test. If you're keen to exploit the benefits of the powerful editing and convenience features of MiniDisc, there is certainly no finer tool for the job. Recommended.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £649.99

Another powerful demonstration of Sony's technical proficiency, the MDS-JA555ES delivers the best that MD has to offer.

ONE YEAR GUARANTEE

☑ Sony UK Ltd., The Heights, Brooklands, Weybridge, Surrey KT13 0XW.

☎ (0990) 111999

THE LAB REPORT

The undoubted star of the MD show also has a high 2.4V output, which will give it a further (but unfair) boost during quick A/B demonstrations. The advanced DAC and switchable 8x oversampling filter technologies yield a vanishingly low 0.0005 per cent distortion at this peak output which gradually increases to just 1.9 per cent at -90dBfs (the JVC MX-488 reaches 28 per cent). Any spurious idle patterns and digital images are suppressed below the level of noise while the dynamic range of the signal is still up with that of a good CD player. In fact its 104dB A-wtd S/N ratio is nearly 2dB better than the best CD-R/RW

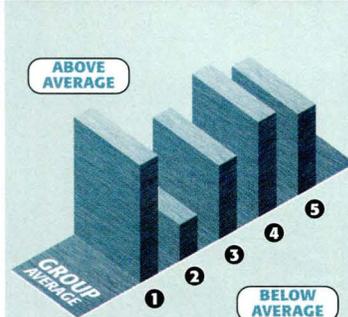


recorders in this survey, while the errors in low-level linearity of just +0.0/-0.4dB over a 100dB range are a match for the top performers. Naturally, even a superior MD recorder of this ilk cannot outperform a linear recording on CD-R or CD-RW because its data is cleverly, but not entirely inaudibly, compressed by a factor of 5:1 via the ATRAC encoder. Hence the 1225psec of jitter, which is primarily based around the 85.9Hz 'repeat' frequency of ATRAC's 11.6msec block length. This figure is state-of-the-art for MD but nearly 10x higher than that expected of a good £200 CD player. **PMI**

HOW IT COMPARES

As far as MiniDisc goes, the MDS-JA555ES is just about as good as it gets. But the best CD-R or CD-RW will always be better.

- 1 SUPPRESSION OF DIGITAL IMAGE 80%
- 2 JITTER 25%
- 3 PRACTICAL DYNAMIC RANGE 50%
- 4 HARMONIC DISTORTION VS LEVEL 65%
- 5 LINEARITY 55%



SPECIFICATIONS

PARAMETER	MANUFACTURER'S SPEC.	ACTUAL SPEC.
Distortion @ 1kHz/0dBfs	Not given	0.0005%
Maximum output level	2V	2.4V
A-wtd S/N ratio	105dB	104dB

Digital Recorders Conclusions

So where is the state of the digital recorder art? If your interest has been piqued by these tests, join *Alvin Gold* as he rounds up the cream of this MiniDisc and compact disc recorder round-up.



MARANTZ DR-17 (CD-R) £1,499.99

The most costly model in the test, the Marantz DR-17 is a discreet high end CD player that is also able to make recordings. Surprisingly, the Marantz is rather more jitter-bound than expected for such a superbly engineered recorder and this appears to have some impact on sound quality. But it does little more than dull the shine on a diamond, and this remains a subtle, three-dimensional and highly sophisticated model, and a thoroughly engaging one too. It also fully supports HDCD, not only by preserving HDCD data when recording, but also because it has its own HDCD decoder for replay.



PHILIPS CDR951 (CD-R) £380.00

Five models from the 12 tested have been singled out for particular commendation, but only one has been awarded the ultimate Best Buy accolade: the Philips CDR951. This is fitting in one way. Philips (with Sony) was the originator of compact disc, and has played a key parenting role in the development of consumer CD-R and its sibling, CD-RW. On the other hand, the last range of Philips CD-R recorders were widely regarded as... Well, let's just say they were not among the best in class.

The CDR951, the flagship of a new range, is a clear improvement. A great deal of work has gone into the general area of usability, which has been neutered to a certain extent by what could be seen as an over-reliance on the jog wheel – an evil which has promulgated like a cancer through the global community of digital recorders – and by the ministrations of the industrial designer (OK then, the village idiot) who was responsible for (dis)ordering the controls and displays on the front panel. But enough evidence of good work remains, and although there are criticisms that can be levelled of the CDR951 as a CD player too, it remains a classy machine that makes classy recordings. It just a pity it doesn't quite look the part.



PIONEER PDR-W739 (CD-R) £400.00

Here is one from the sub-genus of CD-R recorders that are also multi-disc players. The name of the game is flexibility and ease of use. No external player or amplifier is required for CD dubbing, and the internal mechanism, which can deal with three discs, can be used to record multi-disc selections, or to make CD dubs at twice normal play speed. The controls are particularly well labelled, and this is an honest and well specified model that doesn't stretch the performance envelope for CD, but which does sound pleasingly consistent for the most part – and it makes excellent recordings.



MAKE MODEL	JVC XL-R5000	LG ADR-620	MARANTZ DR-17	PHILIPS CDR951	PIONEER PDR-509	PIONEER PDR-W739
PRICE	£450.00	£350.00	£1,499.90	£380.00	£300.00	£400.00
SOUND	★★★★☆	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★☆
BUILD	★★★★☆	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★☆
VALUE	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
GUARANTEE	1yr	1yr	2yrs	1yr	1yr	1yr
DISTORTION @ 1kHz/0dBfs	0.002%	0.002%	0.001%	0.0012%	0.001%	0.0016%
MAXIMUM OUTPUT LEVEL	2.07V	1.95V	2.2V	2.05V	2.2V	2.15V
A-WTD S/N RATIO	96.6dB	102.4dB	99.1dB	98dB	102.1dB	102dB
STATUS			HI FI CHOICE RECOMMENDED	HI FI CHOICE BEST BUY	HI FI CHOICE RECOMMENDED	HI FI CHOICE RECOMMENDED

In the event, this test turned out to have more angles than a suitcase full of set squares, but certain points stood out. The first is that there is no real comparability between MiniDisc and CD-R. Although they are both tailored primarily for making recordings from compact disc, their appeal is different. On the results of this test, there can be no longer be any doubt that MiniDisc cannot mount an effective challenge to compact disc on sound quality grounds, which is an important hurdle. Even the very best MD sounds inconsistent and lossy, and once its trademarks have been learned, which probably won't happen until you've lived with one for a while, the shortcomings are not easy to ignore. But it is equally hard to ignore the strengths of MiniDisc: its packaging, the potential for creative editing, and its relative immunity to movement while playing. On the other hand it was hard to ignore how strikingly awful most pre-recorded MDs sounded on all of the recorders when compared to the equivalent CDs.

Of course CD-R sounds better, but CD-RW is an untidy addendum, a bodge that MD doesn't require, and the format would have had a much smoother ride if CD players had been made CD-RW compatible at a much earlier stage. Only now are some manufacturers (notably Philips and Marantz) making their CD players RW compatible, and observers might be forgiven for concluding that it is too late. Except of course that there has been a tremendous recent surge of interest in CD-R generally, which seems to be carving chunks out of MD's market share.

It is tempting to try and conclude that if you pay more, you get more. It's a nice theory, but this is clearly not the whole story. The Sony and Marantz models, both more costly than the rest, do justify their extra cost on the whole, but it certainly doesn't take into account that the names better known for optical media probably enjoy much larger cost savings which they are able to pass on. This may explain the fact that the Pioneer models all did better than average when judged against price, and the Teac models didn't.

BEST BUYS & RECOMMENDATIONS



BEST BUYS: Our famous Best Buy swagtag is awarded to hi-fi equipment which offers an excellent standard of performance at an attractive price. Best Buy winners are superb all-round components.



RECOMMENDED: Recommended products are first-class audiophile propositions, losing out to Best Buy status only because of a higher price or less competitive overall sound quality.



PIONEER PDR-509 (CD-R) £300.00

A thoroughly competent recorder, which is even easier to use than the senior multi-disc models thanks to a thinned out list of features. Of course it lacks some of the ease of use of its multi-disc cousin, but it still offers a DAC function and a noise reduction circuit. And because recordings rely on an external source player, recording quality can be better. In fact, recording quality was quite similar to the PDR-W739, sounding safe and pleasant, but enjoyable on the whole.



PIONEER MJ-D508 (MD) £200.00

Pioneer's MiniDisc recorder employs some surprising sophistication for a model priced at only £200. The MJ-D508 has Pioneer's customary and highly intelligible control system. Recordings are about average in class – it suffers from some of the usual inconsistencies that afflict the medium, but on the whole it works well from one musical genre to the next, favouring commercial pop with its strong rhythmic elements, emphasis on the leading voices and instruments, and narrowed dynamic focus.



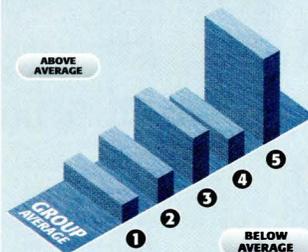
SONY MDS-JA55ES (MD) £649.99
 Superbly built and well endowed under the bonnet, this flagship recorder is capable of results that transcend the other MD players in the group, and go a long way to bridging the gap with CD-R. Musically it's good, but not that good. Dynamics are somehow evasive. It's OK in the foreground with lead instruments, but elusive with background events, although the effect, which is characteristic of MD, is well handled by the Sony. And there's more. A Variable Coefficient Digital Filter allows the sound to be tuned to personal taste, and there are other cool features; pitch blending for example.



UNDERSTANDING OUR BAR GRAPH MEASUREMENTS

Behind *Hi-Fi Choice's* unique bar graphs are some of the most advanced measurements made anywhere on the planet. They are provided by our Technical Editor, Paul Miller, using both GPIB-controlled measurement hardware and his own, award-winning, PC-based Virtual Instrument software. Each bar graph value is derived from a weighted statistic of several key measurements and is displayed relative to a notional zero per cent which represents the group average for that particular category.

THE BAR GRAPHS



- 1 **SUPPRESSION OF DIGITAL IMAGES:** This indicates the effectiveness of the player's digital filter in removing 'aliasing' or 'stopband' distortions immediately outside of the audio band.
- 2 **JITTER:** Any uncertainty in the timing of the digital code produces digital jitter which manifests as an insidious form of distortion during digital-to-analogue conversion. The lower the figure the better.
- 3 **PRACTICAL DYNAMIC RANGE:** This is determined by the player's Signal-to-Noise ratio and to what degree it is compromised by any Noise Modulation occurring under real signal conditions.
- 4 **HARMONIC DISTORTION VS. LEVEL:** This bar chart value is derived from the variation in distortion both with frequency and signal level. The consistency and nature of the distortion also forms part of the equation.
- 5 **LINEARITY:** Linearity is a measure of the player's low-level resolution. If a signal coded at -80dB emerges from the player at -80.5dB then this represents a deviation in its linearity of 0.5dB.

MAKE MODEL	TEAC RW-800	JVC XM-448	KENWOOD DMF-5020	PIONEER MJ-D508	SONY MDS-JA55ES	TEAC MD-8
PRICE	£349.95	£220.00	£249.95	£200.00	£649.99	£599.95
SOUND	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
GUARANTEE	1yr	1yr	1yr	1yr	1yr	1yr
DISTORTION @ 1kHz/0dBfs	0.002%	0.003%	0.0016%	0.0018%	0.0005%	0.003%
MAXIMUM OUTPUT LEVEL	1.85V	1.06V	2.1V	2.1V	2.4V	1.95V
A-WTD S/N RATIO	97.5dB	93.9dB	102.4dB	95dB	104dB	101.7dB



Q My system needs more warmth and emotion. Can you suggest a CD player with 'valve-like' qualities to go with my Musical Fidelity pre/power amp and Celestion A1 speakers?

George M. Vourlides, Greece

A Try the Arcam FMJ CD23 (£1,100) and Tube Technology Fusion II.

They seek it here, they seek it there, that elusive synergistic system. But have no fear Tim Bown knows where it's at.

Ready or not?



My current system is made up of the following: Arcam Alpha 7SE CD Player and Alpha 8R Amp, Eltax Symphony 8 speakers, QED Silver Spiral interconnects and Gale speaker cable. I feel the time is right to upgrade the speakers and I want to buy a pair good enough to cope with SACD and DVD-Audio in the future. I've made a shortlist, but my question actually concerns my amp. I'm not convinced that the Arcam will be able to cope. Would it be worthwhile adding an Alpha 8P or 9P power amp to my 8R, or should I consider buying an 'SACD ready' amp like Sony's TA-FB940R? My music tastes range from Crowded House to Offspring.

A. M. Muthiah, via email

The whole issue of 'SACD ready' or 'DVD-Audio ready' amps is a rather murky one at present. Some manufacturers like Sony are producing models claimed to deliver an extended bandwidth, making them suitable for use with these new high performance music formats. However, wide bandwidth amps are actually nothing new, and whether an amp like the TA-FB940R is funda-



mentally better suited to SACD replay remains to be seen. We'll give this model a full group test rundown in a future issue.

Regarding your specific amp predicament, the Alpha 8P is an effective way to upgrade an 8R integrated amp, and the 9P is even better. As long as the speakers you choose are bi-wirable, bi-amping them in this way will provide better grip and dynamics than your 8R alone. This cost-effective upgrade should be adequate to cope if you decide to add SACD at the front end, and rest assured you should hear the benefits even if your partnering gear isn't touted as 'SACD ready'. In the long term you may wish to upgrade again, perhaps to an audiophile-grade multi-channel amp to cope with future formats.

Kenwood VH-600 system



Separation anxiety



I'm interested in the Kenwood system tested on page 20 of your June issue (HFC 203). You give it a Best Buy, so it must be pretty good – but is it as good as a separates system would be at the same kind of price? I'm more interested in sound than looks.



James Oliver, Swindon



It is indeed a great little system, however, though this kind of system is a viable means to an end, it is not 'hi-fi' as we know it. If sound quality is your goal you would be better off with a separate CD player, amp and speakers, even if your budget is just £450. Try a Sony CDP-XE330 CD player (£100) with an NAD C320 amp (£200) and Tannoy mX2 speakers (£150). Alternatively, toddle over to Richer Sounds and see what kind of package they can put together for you. You might like to try a more upmarket dealer too – who knows, given the right demonstration you may decide to stretch your budget somewhat further.

Is it worth it?



I've heard a lot about things like cables and racks being important to make the most of your system, but do they really make a difference? I own a budget system (Sony CDP-XE530/Arcam Alpha One/KEF Cresta 2), but at the moment it's just sitting on a shelf. I'm using the free cables that came with the CD player and I'm really not sure what the speaker cable is – the dealer threw it in when I bought the system. I once heard a new cable in a friend's system (I think it was a Linn) and I couldn't hear the difference. Is it really worth it?

Gus Appleby, Chester

Yes, but it does depend on the situation. The differences can be fairly small but some people's ears/tastes crave that extra level of detail. To others the contrast may not be worth the cost, so there's no easy answer. The effect also depends on the system used and the room in which it is placed. In general terms, though, the right cable and supports are vital if you want to hear a system at its best, even at budget level. For starters, try getting hold of a pair of Atacama Nexus 6 speaker stands (£50) and go from there.





Creek 4330

Two for the price of one

 I want to upgrade my budget Ariston amp. I was considering the Creek 4330, as so many people rate it highly, but then I discovered the Cambridge C500/P500 pre/power amp. What I need is someone to help make my mind up. I'm attracted by the idea of separate pre and power amps and the Cambridge combo is extremely cheap at £150 for each box. Most pre/powers from other manufacturers start at around £600 or £700, so how come the Cambridge is so cheap? My CD player is a Cambridge C500 and my speakers are Mission 73 1s.

Andy Dillan, via email

By splitting the functions of an amp into two boxes – pre and power – you can isolate sensitive circuitry from potential interference and concentrate on optimising the components for each part. Most manufacturers who make separate pre and power

A confused man writes...

 I have read your words of hi-fi wisdom for some time and have to admit I'm in need of some advice myself. I recently bought a Musical Fidelity X-Ray CD player and X-A1 amp but I'm completely confused as to which speakers I should be short listing for demonstration. I want

to get some floorstanders and was thinking about the Mission 782 or Musical Technology Falcon.

Connor Grindlay, via email

Both the speakers you mention are strong candidates, though they offer quite distinct characteristics. The Musical Technology Falcon (£680) is a smooth and musical-sounding option, easy on the ear without being overly warm. If you like your sounds to soothe while they involve, it would make a great choice. On the other hand, the Mission 782 (£699) is considerably more upfront in nature, engaging from the off with substantial bass, plenty of punch and a glorious midrange. It needs a decent sized room to work at its best, but fans of more upbeat sounds may well find it the more entertaining of the two. And it's an easy load to boot. If you want to add a couple more to your list, Triangle's invigorating Zephyr II (£599) could prove

an intriguing

partner. And if you can bear to consider a stand-mounter, Dynaudio's Audience 50 (£577) makes an exciting partner for the X-A1.

models take the logical view that integrated models should sit at the lower part of the range, while more costly two-box systems make up the upper echelons.

For Cambridge Audio, however, the priority is to provide decent quality at very low prices, rather than optimising components and upping the cost. Its products are made in China, according to the brand's own designs, which keeps costs down and allows some surprisingly good gear to emerge through the Richer Sounds retail chain. We have yet to review the combo you mention, but it is likely its internal components are more or less the same as a cheaper Cambridge integrated model, the A500 perhaps, separated into two parts to give the benefit of increased isolation (and raise perceived value). Without hearing it we cannot pass judgement, though we like the A500. You'll have to listen for yourself, and also consider integrated models like the Rotel RA-971 MkII (£225) and NAD C340 (£270) alongside the attractive-sounding Creek.

Snug fit

 I'm planning on upgrading my CD player and I want to make sure I choose one that is compatible with my existing components. I currently have a Rotel RA-921 amp and B&W601 S2 speakers. My CD shortlist consists of Marantz's CD6000 OSE, NAD's C540 and Arcam's Alpha 7SE. Which would fit best?

Mike Harrison, via email

All three players you mention are strong buys, and the ideal scenario would be to audition them all in tandem with your system. However, if you want some pointers we'd suggest the Marantz CD6000 OSE (£300) or Arcam Alpha 7SE (£350) would make the more engaging partners for your Rotel/B&W combination. Between those two, the Marantz is built to thrill but is probably pipped to the post in the all-round stakes by the eminently likeable Arcam – it should suit your system well.



Mission 782



Marantz CD6000 OSE

HELP

What is the best DVD player you've ever heard?

Martin Thompson, Suffolk

That would be the Theta Carmen DVD/CD transport

(£3,299). It is truly superb with both CD and DVD-Video software, when used with a suitable DAC.

Would the addition of a power cable upgrade improve the sound of my system?

Bram Hillen, Holland

The short answer is yes – Kimber or PHY-HP are a good bet. Check out our next issue for a full roundup of mains cables, blocks and conditioners.



Lovelorn



I have fallen in love with Tannoy's Revolution R2 speaker – a Best Buy in HFC 197 – having heard it in action here in Singapore. I'm keen to buy a pair, but I can't decide which amp to partner it with. Which budget model would suit best, bearing in mind I listen to all kinds of music? Also, would it be possible to use this amp for home theatre at a future time?
Francis, Singapore

If funds are tight Rotel's RA-971 MkII (£250) would do a decent job of driving the Tannoys, but bear in mind they sound substantially better when used with amps of a higher calibre. There are several new models around the £500 mark which would suit very well, not least of which is likely to be the Marantz PM6010 KI (£500). We are awaiting a sample as we go to press, so cannot yet comment on its abilities, but if it is anything like its K1 predecessor the synergy between Marantz and Tannoy should pay sonic dividends. At the same level, you should also look out for the

Hi-fi bad?



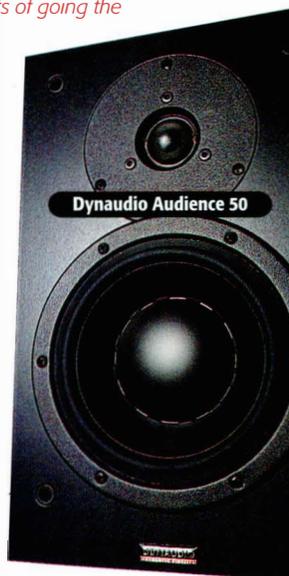
I use a separates system consisting of an Arcam Alpha 9 amp, Trichord Genesis CD player and Castle Severn (Mk. I) speakers. Recently I bought a Denon 6.5 mini system on behalf of my parents-in-law and was impressed with how much better and more listenable it sounded compared to my own system. Is this to do with synergy? I have to admit I bought my speakers on size and looks without auditioning them with the other bits.

Can you recommend any changes to my separates combination to improve its sound, and any particular speakers to audition with the 6.5 system if I decide to go with that system instead. Celestion A1s perhaps?

David Buckley, via email

We won't pretend we're not a little surprised by your comments, Richard, but it does happen sometimes. The Denon is a solid-sounding mini system, but it should be no match for a selection of separates like yours. All three links in the chain are quality products in their own right, but they obviously don't gel when you put them together. It just goes to show how important it is to audition properly if you're to reap the benefits of going the separates route.

On sonic grounds, we wouldn't encourage you to go the Denon system route, and you certainly shouldn't expect it to make the most of speakers like the Celestion A1s you suggest. Better to get the most out of what you already have – make sure you're using good quality cables and supports, then get busy with auditioning. Listen to some speakers in partnership with the Alpha 9 amp, ones that will bring a tighter, cleaner feel to proceedings: Mission, Musical Fidelity and Dynaudio would make good starting points.



Musical Fidelity X-A2 (£499) and Primare A10 (£500), both of which deliver the kind of agility required to really get the Tannoy's moving.

The best way to take you system into multi-channel a little way down the line is to add a good quality off-board processor. These are currently out of fashion at lower price points which is a shame – adding one to a top performing budget amp is the best way to ensure you get a good quality musical performance with musical sources as well as decent home cinema from one system. There's a new model on the way from Yamaha, and that is probably your best bet.



Picking brains



What do you think of Arcam's FMJ range? You list the FMJ A22 amp as a Best Buy in your Directory section, but what do you think of the rest? I want to get the CD player and integrated amp for now, but do you think it would be worth adding the power amp and bi-amping? I'm thinking of partnering them with the PMC FB1 speakers.
Brian Andersen, Cardiff

So far we've tested the A22 amp, which we rated a Best Buy as you rightly state, and the CD23. The latter was a Heat Seeker, which is why it is not yet listed in the back – we only list products once we've given them a thorough group test, so you can be sure the Directory is as reliable as possible. However, you can rest assured it is an excellent product – not just a spruced up Alpha 9, but notably better in terms of performance too. It is also due to feature in a group test in our October issue, so keep 'em peeled.

We haven't yet tried the A22 with the P25 in bi-amp configuration, but you can expect a review soon. On past experience, the improvement is likely to be worthwhile, particularly if you're driving speakers like the PMCs.

Biding time

 At present I'm using a Naim CDX CD player, feeding a Krell KSL/Bryston 9B-ST pre/power combination which drives KEF 105/3 speakers. The Naim replaced an old Meridian 200/203 transport and DAC combo and has improved the sound from being over-refined and a tad laid-back to a more punchy, rhythmic delivery.

Though mostly satisfied with the Naim's sound, the Meridian had some strengths I miss. It delivered a more three-dimensional soundstage and more natural acoustic ambience, something most noticeable with audiences clapping on live recordings. Comparatively, the Naim can sound slightly processed and lacks soundstage depth. I appreciate that the sound I'm after won't come cheap, so I'm considering a further upgrade to the CD player. Could the addition of a Naim XPS power supply deliver this or should I consider a Krell KAV300cd or even the Marantz CD7? One concern I have is that forthcoming SACD/DVD-A universal players might play CDs even better, and consign even these players to a museum. Should I buy or should I wait?

Tom Stuart, Middlesex



Take careful Naim

 My system consists of Meracus Tanto CD player, an Audiolab 8000A amp and Epos ES11s with Epos stands. I just bought the CD recently and the sound is much improved, but it has also revealed that I need to upgrade elsewhere. The system seems to lack the power to control symphony music, so now I need your advice – should I change the amp or the speaker? And if I go for the amp, would Meracus be a good bet?

Wiboon L, Thailand

Some careful auditioning is called for here. With regard to the sonic changes you're after, the little Epos speakers have plenty of grip but may lack power with symphonic stuff. A change to a speaker with deeper bass and a larger scale sound may take things in the right direction for you – something like PMC's FB1 (£1,275). On the other hand, the ES11 is capable of some pretty special tricks when it's treated right. Naim/Epos is a classic match – seek out a Nait 3R (£780) or a Naim pre/power. Creek also tends to match up well if you fancy a slightly smoother, more subtle approach. The P43/A52 (£849) pairing should do a fine job in that respect. As for Meracus, we haven't tested any amps from this brand as they don't seem to exist in the UK, but if you like the CD player it makes sense to give that option a try.



Don't worry about CD players of this calibre becoming obsolete overnight. Dedicated players like these will play CDs considerably better than any first wave 'universal' machine that is likely to emerge, and it is open to debate as to whether such a level of performance will ever be surpassed with standard CDs. It makes sense to get a top-notch CD player now and buy into the new formats when they reach some kind of maturity.

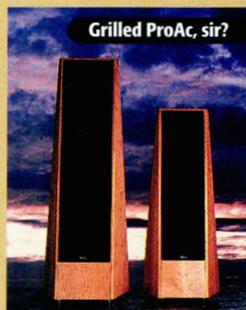
We would recommend you audition three or four top-notch CD players to see if they deliver what you're after. The Krell and the Marantz would make good options – we can particularly recommend the Marantz. Also seek out something from Wadia for an interesting three comparison. As for the addition of a XPS power supply to your existing machine, it would undoubtedly lift the sound up another notch and may prove your most cost-effective option. It should add some ambience, but only an audition will tell you whether it does the trick.

Missed grille

 I notice that you always photograph speakers with the grilles off. Should I listen to them in this way, or can I keep the grilles in place? My speakers are damn ugly without them!

Andrew Wilson, London

Most speaker grilles affect sound to a lesser or greater degree. To ensure you're hearing your speaker at its best, you should take them off while listening – unless your speakers specifically state in the instructions that they are designed to be heard with them on. However, if you were to find the sound of your system a little too bright, keeping them on might help to soften the sound a touch. And if you've got small children, or you simply can't take the looks of naked speakers, you may decide that the small sonic compromise is a cross worth bearing in return for the qualities they provide.



Which speakers under £130 would you partner with a NAD C300 amp for a second-room system?

James Ashford, Surrey

Tannoy's mX1 (£120) would be a top candidate, or Mission's 700 (£130) if you like your sound with plenty of wallop.

SME MODEL 10



The Model 10 is a valuable addition to our range of precision turntables. The designer's aim; to rival more affordably, the performance and engineering excellence of our Models 20/2 & 30/2 has been notably successful. The SME Model 10 mirrors their exacting standards and ease of use. Novel features include polymer isolators contributing to a pleasing detailed sound balance that encourages fresh exploration of any record collection. Untroubled by the most complex material it's firm clean bass makes this a turntable that will set your feet tapping!

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BUYING GUIDE TO CD PLAYERS



While some remain wrapped in the old CD versus vinyl debate, it seems incredible to think that CD has been with us for almost 20 years. "Perfect Sound Forever" was the slogan that launched the ubiquitous silver disc, its comparatively robust nature the major selling point. (Remember the *Tomorrow's World* jam experiment?) Of course, these discs are neither indestructible nor perfect in sound, or we wouldn't need new kids on the block like SACD and DVD-Audio. Yet, despite the anti-digital arguments, the format has matured into an excellent music carrier with an awesome back-catalogue.

Do all CD players sound the same?

In the early years of CD, some less learned quarters decried the opinions of hi-fi magazines and declared that all CD players must sound the same because of the very nature of digital technology. Rubbish. True, many manufacturers bass their creations on the same essential building blocks. For example, there are few proprietary transport mechanisms around and many manufacturers source theirs from either Philips or Sony, the co-inventors of CD. And quite a few players use similar combinations of digital circuitry, particularly at lower price points. But it isn't just a case of what you use, more how you use it – even rudimentary building blocks can sound amazingly good when imaginatively applied.

What's more, digital circuitry is only part of the internal make-up of a CD player. Analogue circuits play a sizeable part, and it is from this that many sonic differences are derived. Good old-fashioned analogue design principles can make a huge difference to CD performance, as can upgraded power supplies, isolating circuit topology, resonance-resisting build, interference screening and so on.

If anything, there is probably a greater differential between low cost CD players and high cost units than ever before. Sure, there are some remarkably good budget models out there, and some less than spectacular costly ones, but generally speaking you get the sound and level of engineering you pay for.

One box or two?

A few years back, it was generally thought a good idea to split a high performance CD player into separate boxes: the transport and the DAC. The theory was much the same as with pre/power amps – isolate sensitive circuitry from elements that may influence sound. A fine theory, but for the emergence of jitter as

a major factor in CD player performance. Jitter is a term used to describe errors in the timing of digital signals, which can lead to muddled detail and defocused imagery. Transferring data from one box to the other was found to exacerbate the problem, which in turn made the two-box option unfashionable. However,



several manufacturers have managed to get around the problem by clock-linking the two boxes and the most expensive players use this approach.

CD versus the new formats

SACD is now with us, and DVD-Audio is imminent at last. The question is, why buy a dedicated CD player when it won't play these new formats? Well, given that you probably already have a large collection of CDs, and CD is set to remain the most prolific music format for years to come, sound quality with CDs is still a crucial issue. And a good quality dedicated CD player is likely to do the job better than any combination player.

Compatibility

When buying a CD player the main factors to consider is how well a new player will work in your system, so wherever possible listen to the player in that context. If that's not possible do your best to combine the proposed player with your amplifier, some players produce ultrasonic noise with which some amps are better able to cope than others. Check out the lab reports on appropriate reviews to see if a shortlisted player falls within this category.

The other potential problem is where a player's output is greater than an amp's line input can cope with, this is not likely to be a problem with recent amplifiers but some older designs (those without a dedicated CD input) may not be suitable. Again check lab reports on amp and player for the specifics.

SIX OF THE BEST

ARCAM Alpha 7SE £350

A dynamic and engaging player, strong enough to slay a number of giants at considerably higher price points. A fine all-round buy.

CAMBRIDGE AUDIO D500 £200

A clean and articulate sounding player – shows how good a budget model can be when designed to the right standard.

MARANTZ CD-7 £3,500

A true heavyweight in every respect, vigorous and precise in equal measure. A splendidly exciting listen.

ROTEL RCD-991 £750

A wonderfully solid and cohesive performer, musical enough to worry some very serious contenders indeed. Features unique user-switchable dither levels.

SONY CDP-XB930E £300

Fine, flexible player, which also has an excellent feature set – including CD text – and good build quality to match. Also offers various filter options.

WADIA 860x £7,450

One of the latest creations from digital masters Wadia. A player with few peers and a magnificent music-maker in every respect.



OASIS OF SANITY

Paul Miller takes a peak (groan) at this month's tested amplifiers to illustrate just how much headroom an amp needs to cope with the ups and downs of real music.

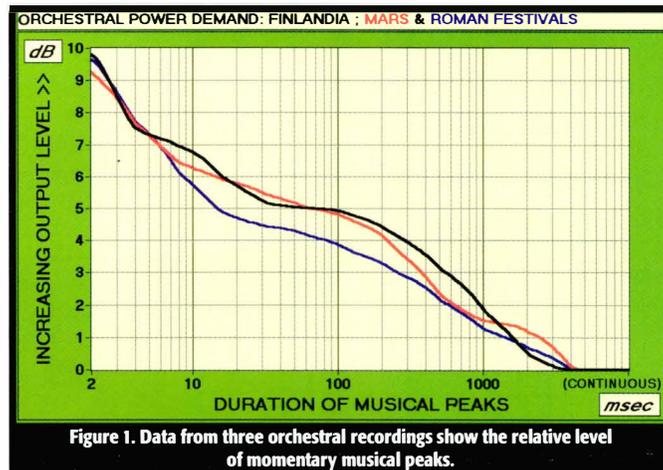
The July 2000 issue of *Hi-Fi News and Record Review* carried an informative article by Keith Howard, entitled 'How much Power?'. Here, Keith successfully demonstrated that momentary, peak levels in modern, recorded music are often significantly higher than the loudest sustained passages might suggest. This, in turn, implies that the momentary demands placed upon the amplifier are substantial indeed. The question is, if you set your amplifier volume so that a continuously loud passage will push it near full output, then just how much short-term power do you need above and beyond this to prevent even the briefest of clipping?

GONNA TAKE YOU HIGHER

Loud passages from three orchestral recordings were sampled by computer and the musical peaks separated according to the brevity of their duration (see Figure 1). Using data supplied by Keith (interpolated in my lab to provide smooth curves), the *Finlandia* excerpt (Decca 417-762-2) depicted by the black trace, shows that musical transients lasting 100msec (0.1 second) are up to +5dB higher in level than the maximum continuous output of the track. A 50W amplifier running near full power would require a dynamic headroom in excess of 150W to accommodate these sorts of peaks. An excerpt from Respighi's *Roman Festivals* (Chesky, CD18) shown by the blue trace, requires less than +4dB for peaks lasting 100msec but demands +7dB of extra power for percussive transients lasting 6msec and a whopping +9.7dB for the sharpest 2msec peaks (or 467W for a 50W amplifier).

Naturally, the briefest high level peaks occur less often than bursts lasting in excess of 100msec. With *fortissimo* classical recordings of this sort, it's estimated that peaks up to +1dB occur about 15 times a second. Peaks up to +2dB appear 12 times per second, those at +3dB at 8 per second, +4dB at 4 per second while the real 'biggies' (+9dB for just 2msec) may only appear once a minute. Subjectively, the impact of a momentary clip and the distortion that results will depend on many factors, not least the 'masking' effect of the underlying music, the nature of the distortion itself and the finite time taken by the amp to recover.

With this in mind, it's not unreasonable to demand a burst of power some four times the amplifier's continuous rating (200W for our 50W amplifier), which is equivalent to a headroom of some +6dB. So, just

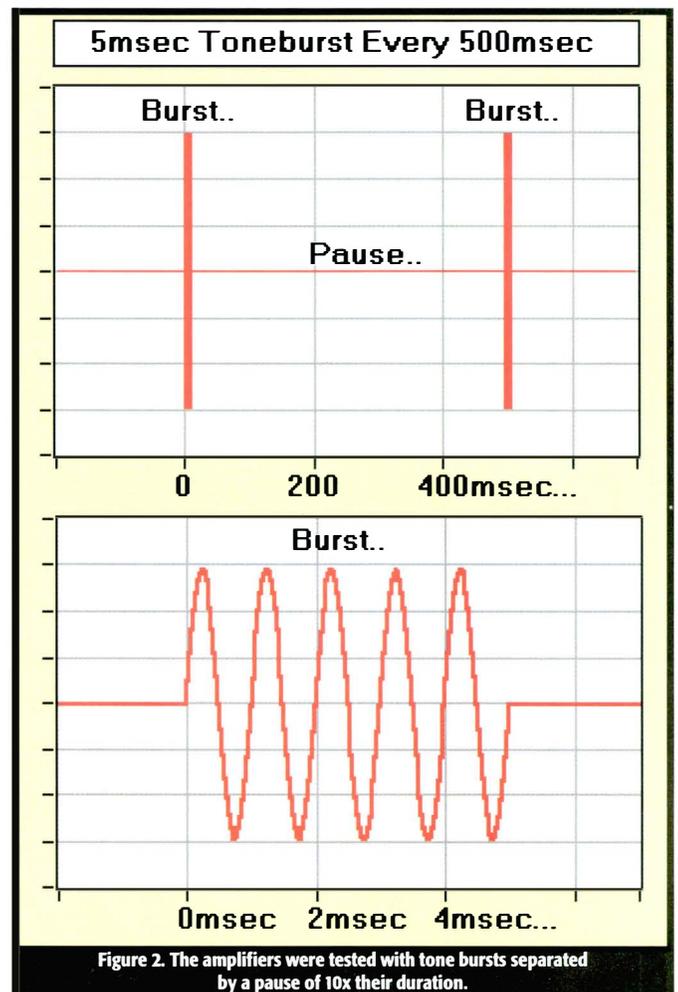


how would the six integrated amplifiers reviewed by Richard elsewhere in this issue fare? And how would they rank against a budget £200 amplifier specifically promoted for its dynamic power output – the Best Buy NAD C320 from HFC 186?

SIZE MATTERS

Regular readers will know that I have published dynamic power measurements for all amplifiers tested in *Choice* over the last 10 years or so and, in the last few years, developed unique software that profiles the dynamic behaviour of amplifiers into low impedance loads (see *Oasis*, HFC 175). Nevertheless, these results are typically limited to tone bursts lasting 20msec, 10msec or, in the case of peak current measurements, 5msec duration. Keith's results, by contrast, suggest that not only must extreme peaks be tackled over minuscule 2msec periods, but that sustained musical bursts lasting up to 500msec must also be accommodated by the amplifier.

Intrigued by these findings, I have modified my software to provide precision tone bursts as long as 1000msec (1 second) and as short as 2msec (just two cycles of a 1kHz sinewave). Viewed on an old-fashioned 'scope, the tone bursts would appear as Figure 2, with each burst separated by a zero-output pause lasting 10 times as long, giving the





amplifier's power supply plenty of time to recover. These bursts are captured from the amplifier, driving a 4 Ohm load, and analysed for distortion over its entire working range (0-145W in the case of the Cyrus Model 5, for example).

ROOM ON TOP

Figure 3 demonstrates the practical performance of our seven ampli-

fiers handling tone bursts from 1000msec through to 2msec and driving a 4 Ohm load. In all cases, the 0dB horizontal axis represents the maximum continuous power output of the amplifier, regardless of its absolute value in Watts. Note also that the vertical scaling is reduced to +4dB as none of the amplifiers comes close to mirroring the

demands of the classical recordings. The table below compares the maximum continuous with maximum 2msec burst power outputs from each amplifier, with the overall dynamic headroom this represents in each case.

POWER OUTPUT TABLE (ONE CHANNEL, 4 OHM), RANKED FOR INCREASING DYNAMIC HEADROOM.

	Sony	Roksan	Rotel	Marantz	Kenwood	Cyrus	NAD
Continuous	105W	203W	177W	215W	110W	82W	10W
2msec Burst	143W	281W	248W	310W	176W	145W	248W
Headroom	1.34dB	1.41dB	1.47dB	1.59dB	2.04dB	2.48dB	3.60dB

The NAD C320 (black trace) is clearly streets ahead of the other amplifiers, not only in its ability to sustain peaks some +3.5dB for 10msec (~240W into 4 Ohm) but, importantly, by offering a good +2.5dB buffer for sustained musical bursts lasting 100msec. It's these medium-term bursts that occur more regularly in real music, so the NAD has a genuine and practical advantage in circumstances where the other amps are offering just +0.35dB to +0.75dB of headroom. Nevertheless, even the NAD falls short of the of headroom indicated by the classical recordings (Figure 1).

It's worth remembering that the C320 has pretty much the same continuous output as both the Sony TA-FB740 and Kenwood KAF-3030R and yet, despite looking similar on paper, has the capacity to generate higher sound levels thanks to this enhanced headroom. Just compare the black (NAD) with the dark blue (Kenwood) and grey (Sony) traces. All else being equal, this is just one reason why one amplifier can sound louder than an ostensibly 'equivalent' model.

DYNAMIC PROFILES

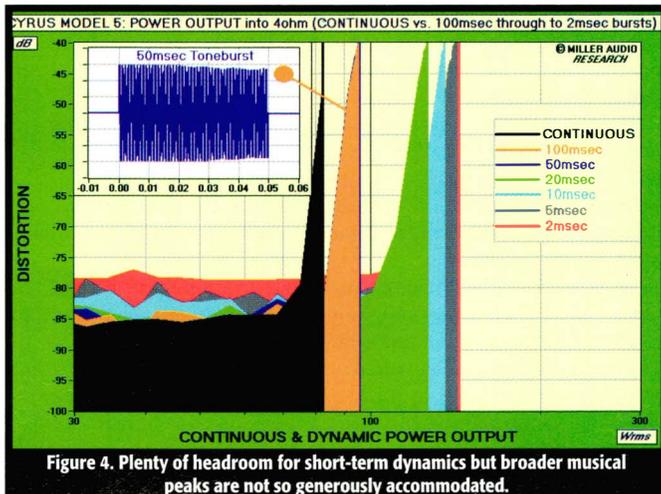
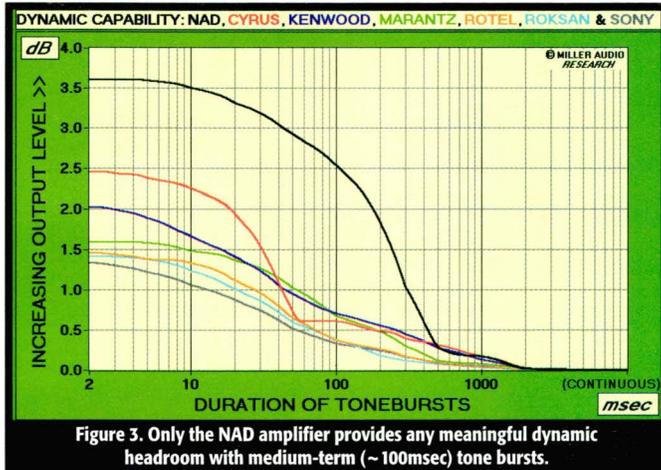
On paper, too, the Cyrus Model 5 comes top of this month's group with a maximum dynamic headroom of +2.5dB. So why did it not sound as open and dynamic as this might suggest? The red trace on Figure 3 hints at why, because the amp's headroom only really exists for musical peaks shorter than 40msec or so. Medium-term musical peaks lasting around 100msec fare no better than they do with any other amp in the test.

This is confirmed by the dynamic profile for the Cyrus 5 (Figure 4) which shows some small (+0.6dB) increase in output over 100msec but little or no further boost for shorter peaks until 40msec or so is reached. The blue, inset 50msec tone burst, recovered from the Cyrus 5 shows an obvious collapse beyond 0.03seconds (30msec), contributing to an early increase in distortion.

Power supply regulation is a key factor because, unless the amplifier is designed to service high dynamic rather than continuous outputs (so-called commutating amplifiers), then increased PSU regulation typically means a reduced dynamic headroom. On the other hand, the amplifier's ability to drive lower impedance loads is typically improved. It's a trade-off that must be juggled by every designer and one of many factors that determines just how loud and how convincing different amplifiers sound in practice.

Of the amps in this month's test, Kenwood's KAF-3030R (dark blue trace, Figure 3) represents about the best compromise between medium and short-term dynamic output, but it's still no match for the C320. And yet, even this amp lacks the reserves to meet our conservative 4x headroom rule (+6dB) suggesting that, whatever make or model you drive, it's likely to be pushed momentarily into the red more easily than you'd think...

Do you have a subject matter for the Oasis? Please contact Paul Miller via E-mail on MILLER_AUDIO_RESEARCH@compuserve.com



GLOSSARY

CLIPPING: An amplifier's output waveform is 'clipped' if the volume is advanced too far and no more 'volts' are available to sustain ever increasing power levels. Distortion increases dramatically at this point.
MASKING EFFECT: The audibility of distortion and/or quieter instruments in a mix depends upon the intensity of the music as whole.
TONE BURST: In this instance, a short, whole number of sinewaves designed to simulate a brief musical peak or transient.

Safe As Houses

Paul Miller takes JVC's new DVD-Audio player for a spin.

With very little fanfare and absolutely no accompanying literature, the first fully-functional – by that I mean production quality – DVD-A player has arrived in the *Choice* office. Not from Technics and not from Pioneer – but from JVC who, assisted by the fast turn-around of production facilities in China, has succeeded in pipping its mass-market competition to the post. And the mass-market is precisely where its £500 XV-D723 DVD player is targeted, for this feature-lead machine is no heavyweight meant just for audiophiles.

A glance at the sleek, champagne gold fascia, the comprehensively-equipped remote control and busy, on-screen display confirm the multiple roles of this one machine: a player compatible with CD (but not CD-R or CD-RW), DVD with DTS, DD and MPEG multichannel encoding, with early 96kHz/24bit DVD music discs and, as the icing on the cake, both two and multichannel DVD-Audio (DVD-A). Naturally, the XV-D723 wouldn't recognise an SACD disc from a hole in the ground.

This is also the first player I've seen to sport the MLP logo. MLP stands for Meridian Lossless Packing, a transparent data compression scheme developed by this Cambridge-based firm to optimise the coding efficiency of DVD-A without resorting to the invasive data reduction techniques used by MD, MP3, Dolby Digital, DTS and the like. In practice, Dolby is handling the licensing for manufacturers wishing to develop the MLP decoder chips that are required and, indeed, are mandatory in all DVD-A players. Producers of DVD software, however, are not obliged to use MLP compression unless the overall flow of data exceeds some 9.6Mbps which it would, say, with a 5.1 channel recording, sampled at 96kHz and quantised to a 24-bit accuracy. Either way, this puts the 128kbps, 284kbps and 290kbps data rates discussed in relation to MP3, DD and MD, respectively, into some perspective (see *Oasis*, HFC 196, 201 and 204).

Back to the machine itself, and should any MLP-compressed DVD be used then a flag to this effect, along with Dolby Digital, DTS, MPEG, is revealed on the fluorescent display. Uncompressed media, such as CD or standard DVD-A, are revealed by an 'LPCM' flag which stands for Linear Pulse Code Modulation, the coding topology used by CD these past 20 years.

Over to the right of the player, you'll see three LEDs indicating which of the 44.1/48kHz, 88.2/96kHz or 176.4/192kHz sample rates is selected. The latter is what marks out the XV-D723 as the first of a new breed among DVD players for, within, JVC has included its latest MN35505 DAC – ostensibly capable of running at a full 192kHz to accommodate the fullest extent of two-channel DVD-Audio. In fact, there are three of these DACs, included on three identical daughter boards which service the front L/R, rear L/R and centre/sub channels, respectively. However, with a nod towards the future potential of DVD-Audio, JVC has equipped the front L/R board with some superior components. Meanwhile, optical and coaxial digital outputs are fitted, along with SCART, S-Type and composite video connections.

I've decided to hold off publishing any graphs demonstrating the XV-D723's engineering prowess until next month's *Oasis*, where I'll run a side-by-side comparison with Sony's SCD-XB940 SACD player (see HFC 204). However, using 96kHz/24bit test DVDs, I can confirm the fine technical performance of this early unit whose response proved flat to 44kHz (-0.2dB) and where distortion was as low as 0.0005 per cent at 20kHz and 0.009 per cent at 1kHz before increasing to 0.016 per cent at 20kHz and 0.05 per cent at 40kHz. With 44.1kHz/16bit data, the overall S/N was good enough at 104dB and jitter pretty low at 308ps.



This 'safe as houses' DVD-A promoted a very light, airy and transparent sound full of effervescent and thoroughly unchallenging strings.

Sound Quality

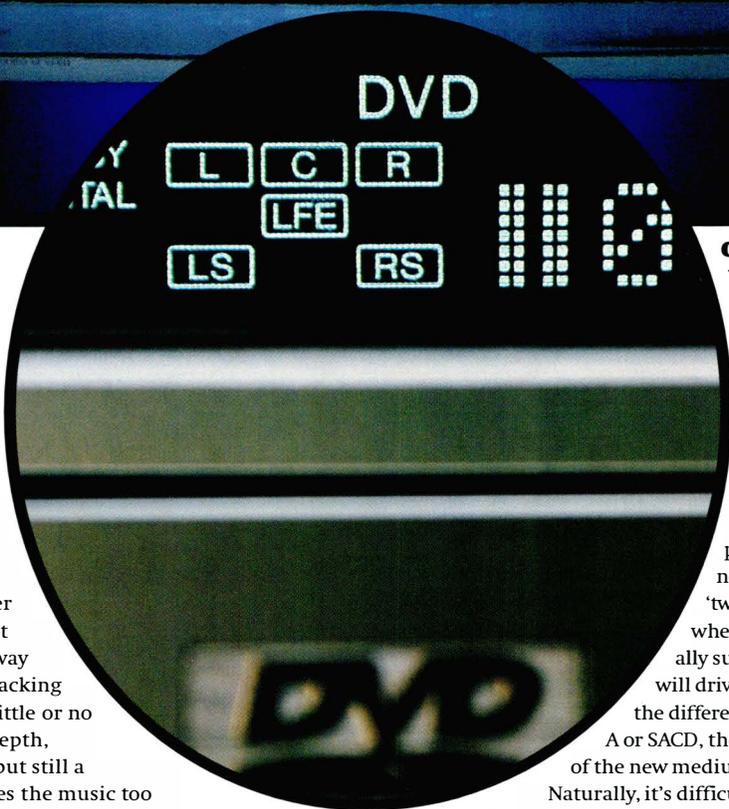
As far as possible, our auditioning of JVC's DVD-A player followed the panel-based, blind listening routine adopted for Sony's SACD player. On this occasion we were able to compare conventional CD software and two-channel 96kHz/24bit DVD with both

two-channel 192kHz/24-bit and 5-channel, 96kHz/20bit DVD-Audio.

Years of blind panel testing have rewarded us with very consistent results from one or two manufacturers, notably JVC. Its highly evolved, PEM-based bitstream CD technology almost always provides a very smooth, utterly inoffensive – but occasionally rather bland – sound. To a large degree, this 'house sound' is carried through to the XV-D723, which provides a very self-effacing view of musical events with CD. Shawn Colvin's *One Cool Remove* sounded both composed, balanced and integrated but lacked the vim and vigour that would transform the sound into a living, breathing event to capture the imagination of our hard-bitten listeners.

Annie Lennox's *Diva* was requested by one of our listeners for its extended low frequency and very open soundstaging. JVC's interpretation of *Why*, in particular, was a little softer than anticipated, lacking some weight and extension. Instead of allowing the midband to flourish, it sounded a little messy and cluttered. By way of confirmation, we span Massive Attack's *Karmacoma* which, instead of rolling along on an unstoppable tide of bass, offered a ripple of its normal intent – clean but lacking both momentum and drive.

After a time, we also became aware of an unpredictable foible, a wavering or modulation of loud percussive sounds, particularly at the introduction of a track. The guitar string that opens *There's a Rugged Road* did not sound consistent, giving the impression of mistracking, though the disc was free of obvious blemish. There was also concern over the track time display, or at least the software driving it, as the digits were obviously not updating at precise one second intervals.



Existing 96kHz/24bit DVD recordings are a stepping stone to the full 196kHz potential of DVD-A, and here the XV-D723 gave a better account of itself even if it did not deliver the “extra dimension” we might have anticipated and, indeed, experienced with SACD. Rebecca Pidgeon sounded sharply focussed, articulate and bold through *MacDougall's Men*, the player displaying a better sense of stereo imagery and lower coloration than heard with CD. It was certainly easier to pick our way through the lyrics, strings and backing pipes, enjoying the music with little or no stress. There's a better sense of depth, percussive attack and crispness but still a pervading 'smoothness' that gives the music too polished a feel, in place of its natural dynamics and expressiveness.

Our one true 196kHz/24bit DVD-A recording (which looks suspiciously like a DVD-AR rather than a 'pressed' silver DVD-A) was described by our panel as “a very nice recording of some undemanding classical music”. It's certainly difficult to judge low bass quality with just a cello on board while upper treble is limited to the harmonics of violins – some brassy percussion or piano would have more useful, methinks. As a 'chaperone' disc to accompany a virgin medium, Tchaikovsky's 'Serenade for Strings in C Major' fitted the bill perfectly. Accordingly, this 'safe as houses' DVD-A promoted a very light, airy and transparent sound full of effervescent and thoroughly unchallenging strings.

Conclusions

While familiar CDs sounded below par in the busy electrical environment of the XV-D723, both 96kHz DVD and 192kHz DVD-A helped rescue the player, bringing it up to an acceptable standard – but not, importantly, vastly better than a good mid-priced CD player. As I suggested in our review of Sony's £550 SCD-XB940 SACD player, it's tempting to think that no manufacturer has an incentive to 'tweak up' the player's CD sound when it's the contrast with its notionally superior DVD-A (or SACD) facility that will drive sales of the product. The bigger the difference between onboard CD and DVD-A or SACD, the greater will seem the advantage of the new medium.

Naturally, it's difficult to judge any medium with such limited software, so it's tempting to blame the hardware and not the future potential of DVD-A which, theoretically, has the march on CD. Nevertheless, listening to this player was not so profound an experience as, say, our first outing with the TACT Millennium digital amplifier (HFC 178) or, indeed, Sony's debut SACD player (HFC 194).

Yet, while we continue to await the launch of DVD-A in an audiophile context – from Meridian, perhaps – with baited breath, this is to miss the point. The XV-D723 is a DVD player for watching movies: the fact that it'll handle DVD-A is a mere bonus, not its *raison d'être*. And in this respect, it represents great value indeed. And it is for this universal appeal that it is awarded eight stars.

★★★★★★★☆☆☆
 £500.00 ☎ (020) 8450 3282

Professional Conduct

ATC brings studio technology to your living room, and *Paul Messenger* likes the sound of that.

Few loudspeaker brands achieve equal recognition and respect from both the professional and domestic sectors of the audio marketplace, but ATC has achieved that distinction over the past quarter century. Respect then, to Billy Woodman, who spent his formative years in Australia prior to joining Goodmans 1970, subsequently leaving to set up ATC in 1974.

The company is at heart a drive unit specialist, making some of the most beautiful and massively engineered drivers on the planet. Moreover, its major contribution to the art has been the three inch midrange dome drive unit, which the company has pioneered since its earliest days, and which has long been a popular choice amongst pro monitor builders.

ATC builds systems as well as drivers, and the larger models such as the SCM50 and SCM100, are primarily large stand-mounted, pro-oriented active designs. They have built-in multiple power amplifiers, and a size, shape and finish which is unlikely to be welcomed in many domestic environments. That hasn't stopped them building up a growing cult following amongst hi-fi enthusiasts, but it has undoubtedly restricted their appeal amongst less committed music lovers.

Enter the SCM70, which re-packages the company's classic three-way active pro monitor into a slimmer floorstanding enclosure, while also introducing some novel techniques to improve the overall performance. This might

be the size and shape of a large domestic floorstander, but the aesthetic treatment – contrasting greys and shiny aluminium with black lacquered side panels – still screams pro.

The whole effect will look wonderful in an appropriately modern hi-tech interior, but did rather clash with my stained Edwardian beams and floorboards.

Aesthetically quite 'busy' with a variety of finishes and embellishments, the front view looms large: the speaker's moulded Corian (a granite/epoxy composite) top stands 125cm off the ground, and it's a hefty 40cm wide too. However, there are no flat surfaces or sharp edges here, so the overall effect is somehow friendlier than traditional box forms.

Although available in active or passive forms, the latter is only made to order, so the former, priced at £10,500, was the only effective option for this review. An active rather than conventional passive drive has profound implications (see boxout). In this instance the power amplifiers and active filter units are all built into the loudspeakers, an arrangement which is very convenient from a packaging point of view, though it does of course remove much of the opportunity to mix 'n' match the system electronics to taste.

Indeed, the SCM70 goes one step further still. Its input sockets are pro-style balanced-line XLR sockets, which are therefore best suited to being driven by a preamplifier similarly equipped with balanced line output sockets. This is the pro way of course, and makes good sense with complex installations and long cable runs. Balanced sockets are also found on some high end hi-fi equipment, and the technique has proved popular in the USA, but rather less so hitherto in Britain. Since my normal (Naim NAC52) preamp lacks balanced outputs, ATC also sent over its SCA2 preamp (£2,699) and appropriate interconnects.

The electronic filtering operates with nominal crossover points of 350Hz (bass to mid), and 3.5kHz (mid to treble), and also incorporates time-delay phase compensation, while the three power amps deliver up to 200W, 100W and 50W respectively to the bass, mid and treble drivers. In a change from previous ATC practice, the electronics are now made using discrete components, and actually contribute some

4.5kg to this speaker's very substantial 72kg total weight (and account for around £2,000 of the price). Individual gain adjustment to the contributions of each driver is, however, only possible by dismantling the loudspeaker – I for one would have welcomed the ability to make fine adjustments here.

The three drive units are the heart of the SCM 70 of course, and ATC sent over a set for my scrutiny (and to forestall me attempting to dismantle a speaker). ATC's bass driver is built on a 235mm (9 inch) cast frame, has a 180mm doped paper cone, and a magnet of similar diameter! It features the company's proprietary 'Super Linear' magnet construction (SLMM), a technique in which the pole-pieces are coated in a near-insulator with high magnetic permeability, in order to reduce hysteresis. The result, according to ATC's white paper, is a dramatic reduction in third harmonic distortion. This woofer also adopts the 'long-gap/short-coil' approach, sacrificing efficiency in the interests of high excursion linearity, which is one factor which explains why the overall sensitivity of the passive version is specified at a very modest 85dB/W.

ATC's midrange dome is similarly over-engineered. The dome is a 75mm fabric hemisphere, edge-driven by a similar diameter voice-coil, and with a phase compensating short horn flare. It's energised by an exceptionally powerful 21,500 Gauss magnetic field, enabled by using Swedish iron metalwork. Having previously favoured Vifa tweeters, ATC went right around the block when developing the SCM 70, eventually ending up with its own variation on a familiar and respected high end SEAS theme.

The 70 litre ported enclosure is

no less interesting. Narrower across the back than the front, and with sides that are convex, it's an excellent shape to spread internal

reflections and standing wave modes. The four vertical edges are substantial aluminium extrusions, nicely radiused at the front, and heavily finned at the rear, where they act as heat sinks for the power amps. Matching moulded Corian ends form the base and top, the latter held under decorative bolts. The base sits on four very hefty blunted spikes, which regrettably offer no height adjustment.

The far-field in-room responses look very well judged indeed, especially through the bass region, which is noteworthy for delivering considerable deep bass output (sub-60Hz), without an over-abundance of mid and upper bass. Indeed, in some rooms I suspect the SCM 70 could be placed quite close to a wall without excessive 'thickening', though free-space siting still looks favourite here. The broad midband decade is impressively flat and smooth, if just a little prominent in the upper octave, while the presence and lower treble are just slightly restrained.

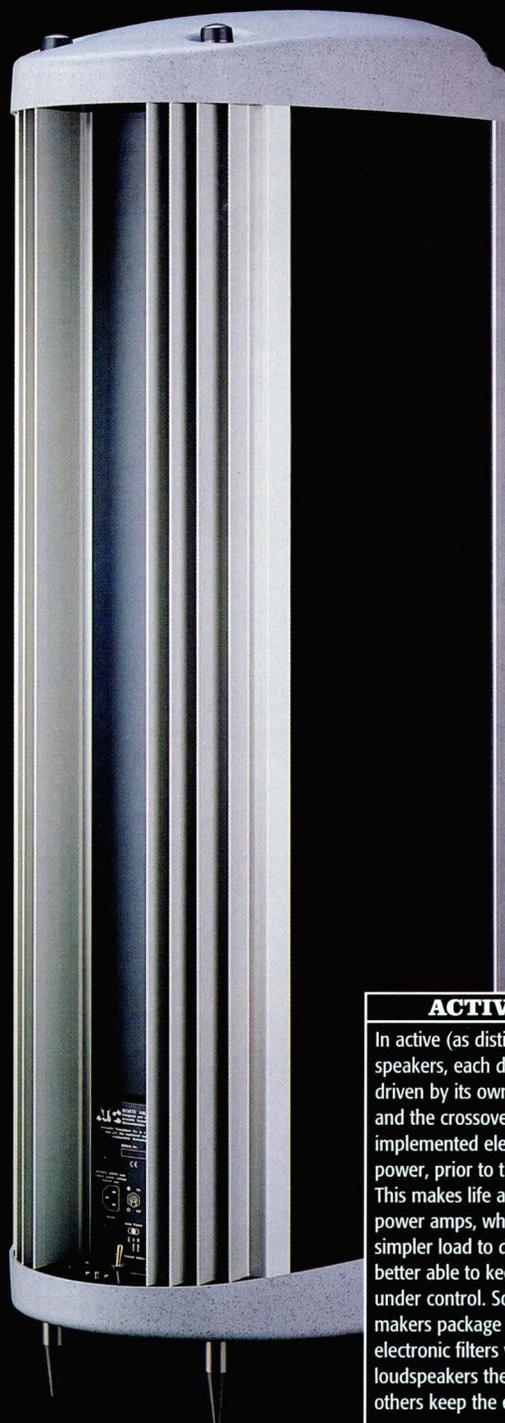
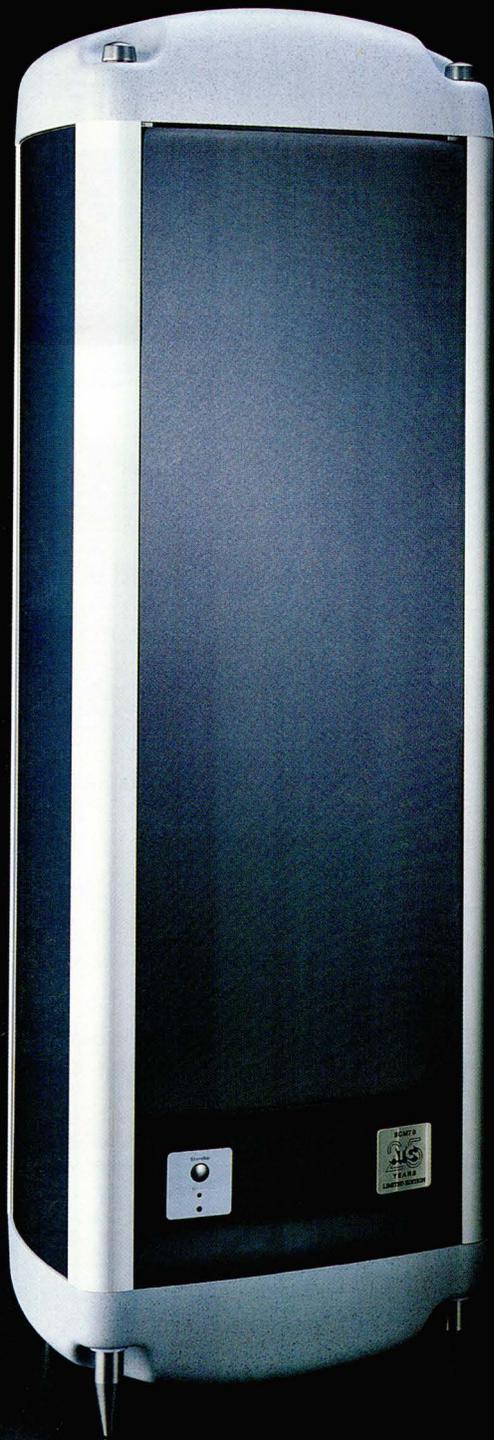
Sound quality

When the SCM70s arrived, I'd just spent two weeks enjoying a pair of single-driver, horn-loaded Beahorn Virtuosos driven from a single-ended triode valve amplifier. The contrast couldn't have been greater. In driving terms it was a bit like jumping out of a dune buggy and into a tank – going from something which is all about manoeuvrability and agility, to something focused firmly on weight and power.

For the first week at least I was a very unhappy bunny, trying to come to terms with such a paradigm shift which included changing the pre and power amps as well as the speakers. There was potential here, no question, as the sound was notably clean and well balanced, but its musical communication skills were woeful.

I had a word with Nigel at The Chord Company, and a few days later a lead arrived which let me connect the (unbalanced) output of my Naim preamp directly to the speakers. Though the NAC52 isn't noted for its suitability to drive necessarily long leads, and seemed to lose a little tautness in the bass, the improvement in speed, openness and

It's lovely to find a speaker which has genuine bass weight without any of the boominess that usually comes with the territory



ACTIVE DRIVE

In active (as distinct from passive) speakers, each drive unit is directly driven by its own power amplifier, and the crossover network is implemented electronically and at low power, prior to those power amps. This makes life a lot easier for the power amps, which have a much simpler load to drive, and are also better able to keep the driver motion under control. Some active speaker makers package the power amps and electronic filters within the loudspeakers themselves, while others keep the electronics separate.

detail at the top end was dramatic. I returned the SCA2 to its carton forthwith, and at last started to get to grips with the potential of these substantial speakers.

The top end is still lacking some sparkle, transparency and 'bite' (which I suspect has as much to do with the electronics as the speaker itself), but in every other respect this is an outstanding loudspeaker, with exceptionally low coloration and wide dynamic range. It's lovely to find a speaker which has genuine bass weight and drive without any of the boominess that usually comes with the territory, even though it takes a little while to adjust the ears to this unusual situation. Perhaps there is a slight lack of bass 'punch' here, but that's far preferable to the thickened textures and thump so often encountered in large speakers.

These monitors dissect the recordings they are fed with matter-of-fact ease. Tonality seems very accurate across all types of music, and the midrange in particular is far superior to my previous experiences of large dome drivers, due in no small part to the active drive approach, I suspect. Essentially smooth and even, it also has dynamic grip, tracking and precision the equal of anything I've heard.

There's no apparent boxiness here, and stereo images are precise and

very well focused. And of course, it goes loud. Very loud, though not stupid loud. With no audible signs of distress, or even significant change in character. The conservatively laid back top end can sound a little shut in, and may not appeal to all tastes, but it does mean the speaker can be driven to high levels without harshness, even with unhelpful recordings.

Conclusion

A genuine monitor which will lay bare your recordings accurately and unambiguously, for good or ill, the SCM70 has the palpable effortlessness of a speaker with massive headroom reserves and exceptional bass extension. The sound is notably clean and clear with very superior dynamic range, especially through the midband, which probably has as much to do with the active drive electronics as the loudspeaker itself – but at the same time I suspect those active electronics might well be responsible for inhibiting the ultimate transparency that many audiophiles seek. I'd also welcome the inclusion of accessible 'trim tabs' (as fitted to ATC's Pro models) to fine-tune the overall balance to system and room.



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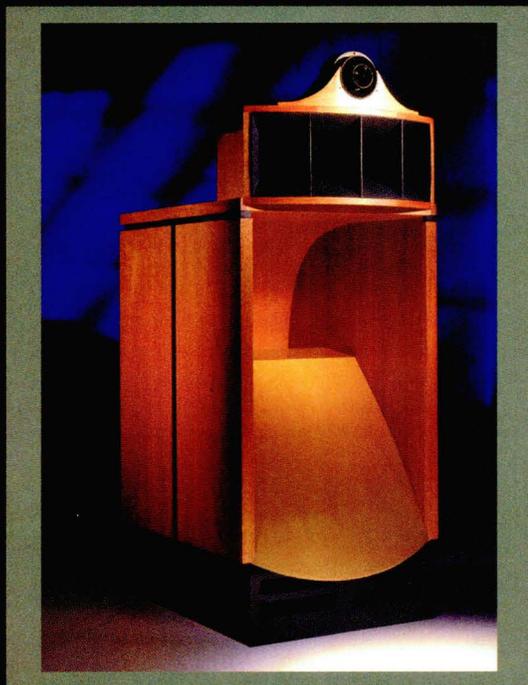


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Two Into Five Does Go

Richard Stevenson considers Sony's entrant in the great Amplifier For All Seasons competition.

Integrated amps have thus far come in two flavours – hi-fi stereo and AV multi-channel – and, in most cases, the twain have been far from an amicable meeting. However, with home-cinema becoming as popular as hi-fi and high quality multi-channel music formats around the corner, it stands to reason that there is a future for amps that handle both well. That was certainly Sony's brief when it came to designing the TA-VA777ES.

This chunky but rather fetching £1,500 integrated design effectively pairs a high-end, wide bandwidth (10Hz-100kHz) analogue preamp design with the very latest word in digital signal processing and five discrete 100 Watt amplifier channels. Inside is a no-compromise mix of top quality components, such as individual DSP chips and dual pellet transistors, and outside is a vibration resistant chassis with a lustrous gold finish and rather trendy motorised flap.

The trick in successfully merging stereo and digital multi-channel performance is in not letting the two sections interfere with each other. As such, the internal design of the TA-VA777ES is about as divorced as it can get without using two separate boxes. There is even an 'analogue direct' button that completely shuts down all of the digital and video processing functions to avoid interference with the hi-fi circuits.

The remote control is the key to this amp's operation, being a two-way, touch-screen LCD device. Not only does it send commands to the VA777ES, it receives info in terms of set-up, volume and state of play. This effectively removes the need to generate an on-screen display for AV operation – a circuit that Sony has long believed to be detrimental to sound quality. It's a sexy remote no question, but quite why it is dull old grey when the amp is champagne gold is a mystery.

Complex does not even begin to describe the AV side of the VA777ES. The digital electronics themselves are a work of art and offer the sort of fine adjustments that would not disgrace an AV mixing studio. The multi-layer menus on the remote control seem to go on forever and every imaginable parameter of the surround sound set-up can be adjusted. Establishing even a rudimentary level installation takes quite a while and to finely tune the system, several hours – if not days – of tweaking is required. On the other hand, for stereo music you can simply switch it on, press the 'analogue direct' button and enjoy. Phew!

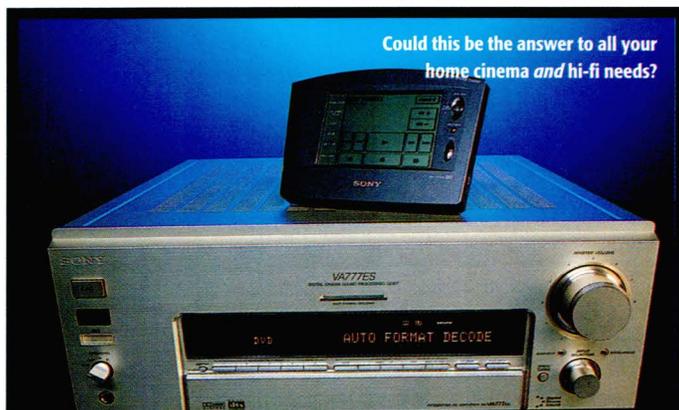
SOUND QUALITY

It takes only a few bars of the first CD to realise the TA-VA777ES is a bit special. In the analogue direct mode there is a presence to music that eludes many dedicated analogue amplifiers and just about all of the integrated AV variety.

With more up-tempo music the bass is tight and detailed making each instrument and each note a distinct entity rather than the over-zealous bottom end blur that many multi-channel amps produce. Even as the volume increases to heroic levels there is a supremely neutral balance across the entire audio spectrum; the soundstage simply getting bigger and better defined.

This polished and analytical presentation could so easily ring the death knell of a multi-channel film soundtrack by robbing it of warmth and fun – but not so. Once the DSP and video circuits are engaged, the TA-VA777ES turns in an equally spectacular surround sound performance. The dynamic scale is something to behold and the detailed, precision placement of effects is really quite eerie. It scared the hell out of me watching *The Sixth Sense*, I can tell you.

If it has sonic flaws, they are minor. It perhaps lacks the grace and relaxed poise of a big pre/power combination and this gives the impression that it is working hard all the time. This is easy enough to forget,



Even as the volume increases to heroic levels there is a supremely neutral balance across the entire audio spectrum.



though, as you become enthralled in the beautiful midrange and almost physical presence.

Conclusion

Sony claims that the TA-VA777ES is its best integrated AV amp to date, and it's difficult to disagree. With normal stereo music, it has all the right ingredients to keep you exploring your CD collection through the night.

Put on a DVD and it's exactly the same story with surround sound – be it subtle drama or explosive home-cinema action.

Every now and then a product comes along that takes your breath away and moves the goal posts, and the TA-VA777ES is just such a product. AV convergence is upon us but, as long as products of this calibre emerge on the scene, the future looks bright for home-cinema and music fans alike.

★★★★★★★★★

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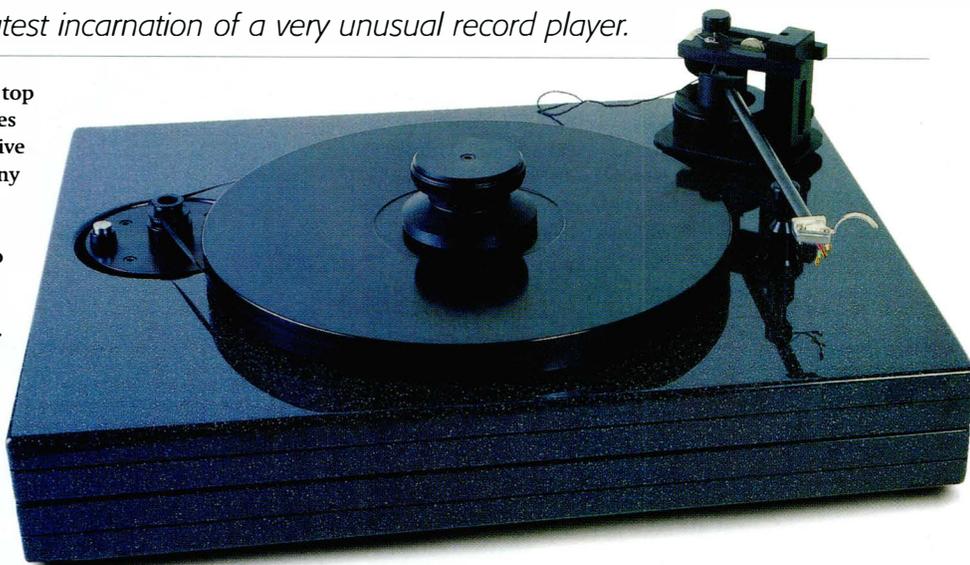
Paul Messenger examines the latest incarnation of a very unusual record player.

A surprising number of top quality vinyl turntables have continued to thrive in this digital age. Many follow well trodden paths, applying high quality engineering to established design stereotypes. A few are more adventurous, but none travels down the trail of unorthodoxy anything like as far as the Well Tempered models.

This is not a new design in concept terms. American enthusiast Bill Firebaugh first put his Well Tempered ideas into practice back in the mid-80s. Plenty of changes have gone on since then, and current production – now carried out by the Transparent cable people – has undergone extensive development for improved refinement and consistency. This particular Well Tempered is the Reference, a relatively recently introduced top-of-the-line which represents the current state of the Well Tempered art, and costs around £5,500. Don't despair or stop reading, though, because there are two less expensive WTs: the £1,995 Record Player and the £3,500 Classic V. (There's a measure of upgradeability in the range too.)

As seems to be the way with American turntables, this is a large and very heavy piece of apparatus, sufficiently so as to discourage me from moving it around once it was planted. Received wisdom is that it works best on a large and massively built wooden support cabinet, and Pear Audio lent just such a unit for the review. The reason for the considerable weight is that the 480x80x350mm plinth is made from granite particles held in an epoxy matrix. It's actually a sandwich construction, made up of four separate slabs, each 20mm thick, with thin layers of damping material providing the 'filling'. The finish is very good, and the polished charcoal grey 'fleck' looks suitably classy.

The plinth acts as the mechanical earth for the platter and arm base, but the motor is a separate standalone unit that remains isolated from the plinth. It sits inside a cut-out in the plinth, so that the drive pulley (and on/off switch) are just outside the platter edge. There's the obvious advantage of avoiding any vibrations from the very substantial motor being fed directly into the plinth (though some may be transmitted via the support shelf, and some also through the belt into the platter). I must admit, however, that I'm



slightly concerned that such an arrangement doesn't precisely define the position of the drive pulley, and hence presumably the belt tension.

The most extraordinary part of this record player must be the tonearm, simply because it doesn't use bearings. The arm tube is actually suspended from a gantry by a couple of filaments (fishing line, I believe), but it isn't simply allowed to hang free. Below the arm tube is a 'paddle' which sits inside a bath of sticky (i.e. high viscosity) silicone fluid. The result is effectively a 'bearing' which is free of play, 'chatter' and (strictly speaking) friction, but which also imposes a very heavy amount of damping to any arm movement.

Fluid damping is effectively frequency-selective friction. Simplistically, the idea is to keep the arm 'stationary' at all audio frequencies (so that the stylus and cantilever trace the groove accurately), and at some subsonic frequencies (to control the fundamental arm/cartridge resonance), while also permitting movement at very low frequencies (i.e. sub-10Hz) so the whole arm/cartridge can follow the inevitable vertical warps and lateral 'swingers' endemic in vinyl pressings, without inducing cantilever motion and hence signal output from these unwanted effects.

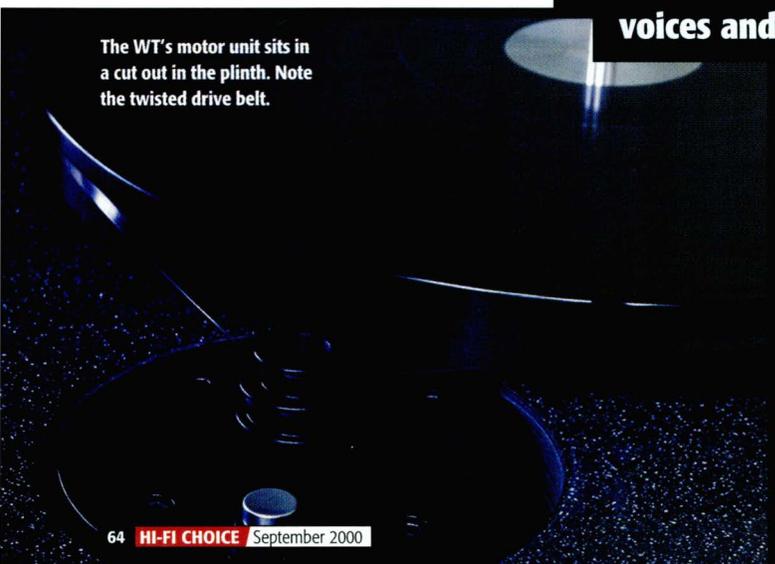
This tonearm looks a little intimidating and complex, but that's really just a function of its considerable flexibility. The ability to adjust all the geometrics (including azimuth), and 'dial in' variable damping should enable maximum performance to be extracted from any given cartridge, given a little patience.

Once set up, it's a delight to use, as the damping provides a positive 'feel' and obviates the need for a separate cue. Just release the arm a little ahead of the spot you want, and it drops gently down, drifting backwards a little due the bias compensating torque thoughtfully provided by a twist between the two filaments. A further bonus of the damping is that the arm is totally immune from external shock. Thump the support table with your fist and you'll get a very slight reaction, but it stays in the groove, no problem.

The turntable bearing is as bizarre as the tonearm's. The shaft attached to the platter runs in a silicon bath, and is located and supported by five Teflon points – one underneath and two pairs set at right angles to each other, in contact with the sides of the shaft. The lower pair are on the opposite side from the motor, the upper pair on the same side. Fit the belt around the platter and drive pulley, and this pulls the shaft into contact with both the opposing pairs. Once again, there's no bearing play or chatter, even though it's a little alarming to

I'm reminded of mastertape reproduction, so clean and finely etched are individual voices and instruments

The WT's motor unit sits in a cut out in the plinth. Note the twisted drive belt.



find the platter apt to 'fall over' while you're changing the record.

Damping is a common theme throughout this record player, and extends into the platter itself. This has a slightly concave plastic surface, and is used with a hefty screw-down clamp, so the disc is damped by close contact with the platter, while the underside of the platter has a captive fluid damping layer. The drive has a twin stepped pulley, providing both 33 and 45rpm, while the belt is given a half-twist between platter and drive belt, apparently to reduce any 'stiction' as the belt peels off the platter edge.

SOUND QUALITY

Pear Audio let me hang on to this turntable for a couple of months, which was long enough to overcome initial unfamiliarity with a qualitatively very different kind of vinyl replay, and – rather to my surprise – sufficient time

to get me firmly addicted to the WT way of doing things. PA also fitted it with the rather wonderful Dynavector XV-1 cartridge, which proved a fine sonic match – much better suited to this record player than the Linn Arkiv B which I use in my Linn/Naim vinyl spinner. (Perhaps the Well Tempered prefers lightly to heavily damped cartridges?)

I was initially rather overwhelmed by this record player. It sounded exceptionally clean and controlled – but maybe a little *too* controlled, as the sound seemed a bit constrained in the extreme bass and treble, and the music a little short of 'bounce' and 'life'. That character persists, but I've come to regard it as at least as much of a strength as a weakness, while I've steadily grown to appreciate other important subtleties in the WT's performance.

It actually makes vinyl sound remarkably unlike vinyl, inasmuch as it seems to 'clean up' the signals from the cartridge to a remarkable degree, right across the audio band. The result is certainly more CD-like in terms of balance and coloration levels, but still retains vinyl's magic. In a very real sense, I'm reminded of mastertape reproduction, so clean and finely etched are individual voices and instruments, so free is this turntable from the usual colorations and 'character' of vinyl replay.

It has a remarkable ability to make 'difficult' voices and lyrics intelligible, and to distinguish between multi-tracked vocal harmonies. More telling still is the way this turntable seems to highlight the contrasts between different recordings. I started going through the back catalogue of several favourite artists, and was amazed at how different each album sounded, and how easy it was to hear the characters of the different studios and equipment. Just compare Captain Beefheart's dreadfully recorded *Spotlight Kid* (1971) with his next release, the marvellous *Clear Spot* (1972) (both on Reprise).

CONCLUSIONS

Although the Well Tempered Reference flies firmly in the face of my preconceptions about record player design, the bottom line is that its superb mechanical stability and sheer unflappability make it a delight to use and a joy to listen to. Measurements confirm that the 'super damping' approach does indeed 'remove' the subsonic arm/cartridge resonance, and this in turn leads to a very distinctive quality of vinyl replay – one which seems every bit as valid as more conventional alternatives. The sound might be a little over-damped for some tastes, but I find it hard to imagine a turntable which gives cleaner reproduction, or which tells you more about how your recordings were made.



£5,500 Pear Audio ☎ (01665) 830862



The WT arm uses a trough full of fluid instead of bearings.

This tonearm looks a little intimidating and complex, but that's really just a function of its considerable flexibility.



Dynavector's new XV-1 cartridge.

DAMPING DILEMMAS

A major inspiration behind the Well Tempered tonearm design came from a very interesting lecture/paper which B&K's Poul Ladegaard delivered to the London AES in 1977 (which, coincidentally, I attended), on the subject of very low frequency intermodulation distortion in record players*.

In the typical turntable/arm/cartridge combo, the latter's cantilever is a spring (compliance) which supports the effective mass (inertia) of the cartridge and arm. All such mass/compliance systems have a natural frequency, known as the fundamental resonance, around which even modest energy input creates considerable mechanical excitation. To minimise this effect, the compliance and masses of quality record players are usually chosen to place this resonance between 10Hz and 15Hz – below the audio band, but above the typical frequency of record warps.

However, Ladegaard's measurements indicated that this fundamental resonance tends to be in a permanent state of excitation even in a well chosen arm/cartridge combination, which in turn has a pernicious influence on signals, blurring their precision right up through the audio band.

The aim of the Well Tempered arm is to critically damp, and hence effectively remove, the effects of this fundamental resonance. The Townshend Rock with its headshell-damping trough is an alternative approach to achieving a similar end, but the arguments about the best way to apply tonearm damping – and indeed whether one should rely instead on internal cartridge damping – are much too long and complex for further examination here.

*Poul Ladegaard: *The Audible Effects of Mechanical Resonances in Turntables*, AES 1977

Five Stars

Paul Messenger explains why you should visit an independent

Why use a specialist hi-fi dealer? The short answer is because he knows one hell of a lot more about hi-fi than you do. And if you've gone to the trouble of picking up a specialist magazine on the subject, you're obviously interested in something rather more than a mini system from the nearest electrical superstore.

You've probably bought this magazine for one of two reasons. You're looking for advice (presumably unbiased and good) on choosing and using your hi-fi system, and/or you're checking out the ads to decide where to go and buy it.

The independent specialist dealer doesn't know everything, and he doesn't know much about you, but if music's an important part of your life, he's the only guy around who's able (and hopefully willing) to help you choose the equipment which will give you the best long term satisfaction.

Power of the Press

Dealers sometimes moan to me about the power of the press, and the disproportionate influence of its 'Best Buy' and multi-star ratings. Well, I've been in the press for twentysomething years, and still feel more ignorant than powerful.

The more I mess around with hi-fi gear, the more I become aware of our lack of real understanding of the subtleties involved, and the more I appreciate the importance of the dealer's skills and experience, in bringing together components so that the whole is greater than the sum of its parts.

We hacks get paid to write words, often about components in isolation, because individual product reviews are still the staple diet of the press. They can sometimes provide a useful guide to the way a product performs, but only under the particular circumstances in which the review was conducted.

The hi-fi reviewer attempts, with varying degrees of success, to evaluate a particular component, and find something interesting (and

hopefully positive) to say about it. That's about the end of it, and it's on to the next product.

The magazine prints the review, and that very process magically confers a measure of authority. Experienced hi-fi enthusiasts, who read reviews over a period of years and try out various products themselves, soon start to realise the limitations of that approach. Some reviews are better than others, but none can get to grips with the real heart of the problem - whether a given product will improve your musical satisfaction, in your system and your room.

The Role of the Dealer

The dealer's role is very different, and potentially much more valuable. He has the chance to talk one-on-one. If he's good at his job, he'll use that opportunity to find out what you as an individual are looking (or listening) for.

His motivation is very different too. Sure he wants to make a sale. That's the lifeblood of any shop. But he also knows that if something he sells really does deliver long term satisfaction, there's a very good chance you'll come back again to see if he can repeat the trick some time in the future.

If you go into a shop and demand a particular CD player, on the basis that it got seven stars (out of five) in last month's magazines, the shop will probably simply take the line of least resistance and sell it to you. (Or switch-sell you to a similar price alternative, if he's fresh out of stock of that particular flavour-of-the-month.)

If you go in and say you're looking for a CD player, and want his advice on what to choose, things are liable to become more interesting. The



for Value

specialist dealer if you are searching for real hi-fi satisfaction

onus is now on the dealer to show what he can do. His first task is to ask the right questions to try and get some idea of what you might be after.

Asking the questions is the easy bit. The real skill comes in using the information to come up with a shortlist of likely contenders, and then conducting a demonstration so that you have a real chance to play a central role in the decision making process.

Putting together a successful hi-fi system might not be as difficult as it was twenty or thirty years ago, but it's just as easy to make a mess of things. Put the 'wrong' combination of components together and it'll still sound a lot better than any cute little mini system package. It might even

"If music is an essential ingredient in your daily diet, you owe it to yourself to become a member of the discriminating minority."

rate a five star review. But it won't match the potential of a carefully balanced and properly installed system, and it certainly won't cater for your own particular preferences and personality.

We British are notoriously indiscriminating consumers, at a mass market level at least. The majority of the population don't even bother to drive a car they're thinking of buying, never mind take the trouble to listen to hi-fi equipment.

The majority will therefore end up with hyperstore mediocrity, and hi-fi that's about as tasty as supermarket bread. But if music is an essential ingredient in your daily diet, you owe it to yourself to become a member of the discriminating minority.

You know full well that your music collection is as individual as your wardrobe, and just as precious too, so it's worth taking the time and trouble to search out the dealer and equipment

that will make that collection come alive, and give you a new buzz every time you play your favourite discs.

The independent specialist may not beat the chain store on price, but he continues to thrive in a hostile environment because real hi-fi is so much more than a matter of price. The people who work in these shops are themselves enthusiasts, often with many years of experience in meeting customer's needs, and the very necessary expertise to ensure that the whole thing is properly set up to deliver the best results.

The better the hi-fi, the more important it is to get the fine details right at the installation end of things, but even the least expensive equipment can be made to sound a whole lot better if good care is taken over the fine details - the support furniture, the cabling, the positioning of speakers and so on.

Without expert assistance even high class hi-fi can give mediocre results. With it you'll stand a very good chance of ending up with something rather more than a consumer durable - something which will be a source of considerable pleasure and genuine emotional satisfaction for decades to come.

I agreed to write this signed piece, irrespective of the specific sponsors, because I believe the independent specialist dealer plays a vital role in giving customers long term hi-fi satisfaction. The views and opinions expressed here are my own and not necessarily those of Hi-fi Choice.

Paul Messenger

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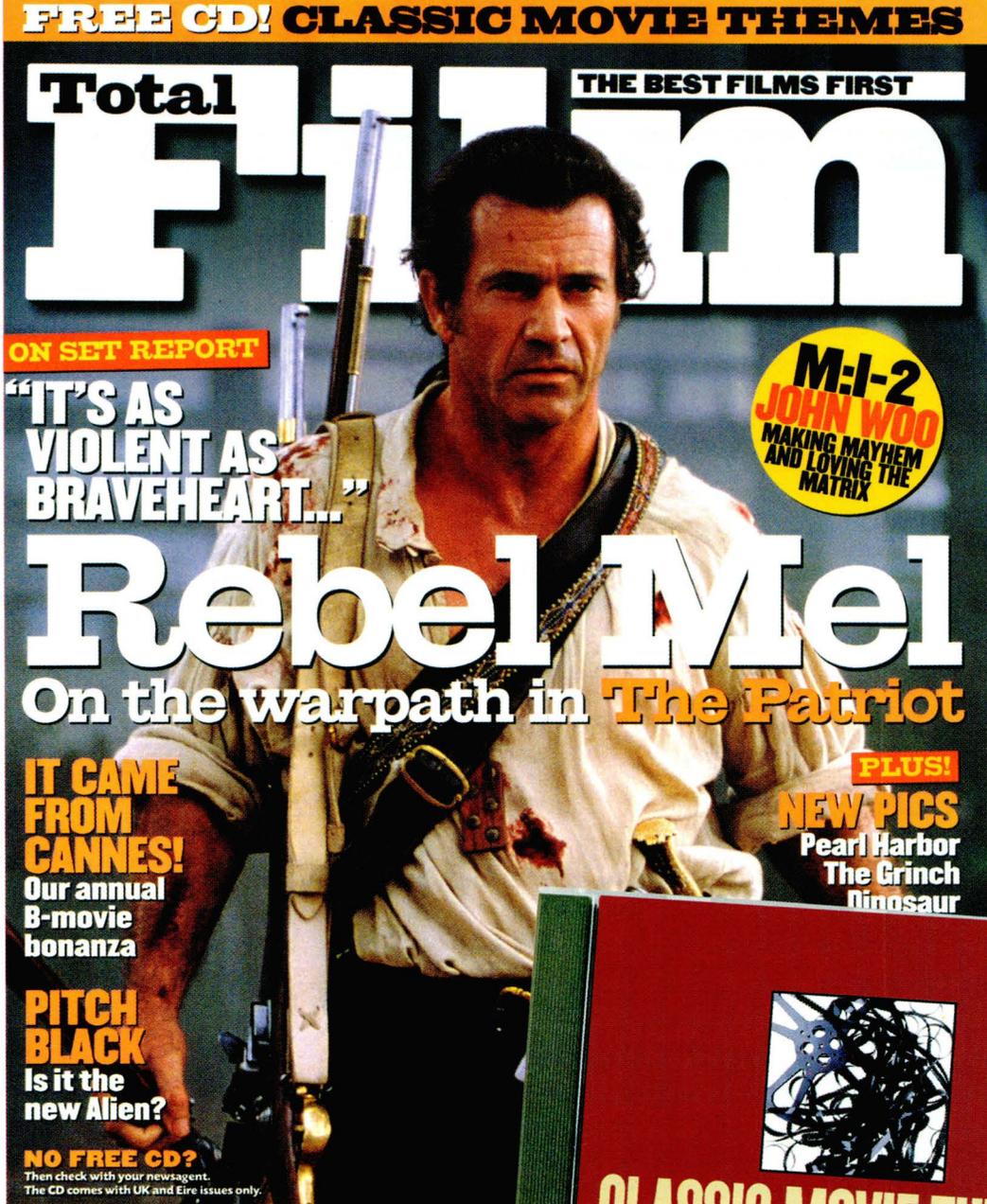
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Amps

Richard Black considers the factors that are really important when you want to find a great budget integrated amplifier.

There not much of the hi-fi market that isn't hotly contested at the moment, but no area is quite as tough as budget amps. 'Budget' means different things to different people, of course, but on the whole I think it can fairly apply to the amps presented in this review, which range from £200 to £500. A mere six of them is a small sample, but it's one that covers many bases and (not wishing to give away too much of the plot in advance!) includes no duffers and plenty of talent to admire.

One of the aspects of amplifiers that often confuses hi-fi newcomers is the way the number of features decreases as price rises. If you get tone and balance controls, switching of two sets of speakers, built-in phono stage etc, in a £200 amp, why on earth not in a dearer one? What's more, the rated power may be about the same and in all probability any other published specifications will be pretty similar too. How do they justify that?

The simple answer is that the published specs of an amplifier are only a very sketchy outline of its performance – a bit like specifying a car in terms of its length and number of doors only, on which basis a Porsche 911 would look less impressive than a budget Daewoo. But it remains true that the essential differences between amplifiers are rather more intangible than those between cars or other common consumer appliances.

Although it is possible to get a pretty fair impression of how an amp will sound from measurements, you would need a large list of those measurements to be able to compare them in detail – and in context with a set of references which only experience can provide. Which is why, in essence, comparing amplifiers by listening is generally the quickest and most reliable way of assessing them – whether you're a hi-fi nerd like me with a laboratory in the spare bedroom, or simply a music-lover saving up for a first 'real' hi-fi.

And the lack of features on the more expensive models? That's largely because people realised a few years ago that on balance things like tone controls do more harm than good – more bits of electronics in the way of the signal, which in practice many folks hardly ever use. A few of the fancier amps do offer them and they don't really cost all that much to include, but they're often perceived as an active turn-off.

As for the listening itself, the real difference between a good amplifier and a bad one – since even the bad ones these days handle the absolute basics like frequency response perfectly well – is that the good one will allow you to hear more of the music with less effort. Any dealer should be able to demonstrate the improvements brought about by better amplification, and I suggest that by far the most important is the ability to lose oneself in a performance – or indeed, the fact that one can't help but be drawn in.

Hints and tips

Even with modestly priced amps, it's well worth scraping together a couple of tenners for some decent interconnects, if only for your main source. Likewise speaker cable.

Most integrated amps don't run very hot at idle, but it's still not wise to leave ventilation holes covered up. And don't push an amp too hard against a rear wall – phono plugs and sockets won't take much abuse. Amplifiers are typically the least microphonic components in a system, but it's still worth keeping them reasonably clear of speakers: don't make them share a shelf if you can help it. They do tend to generate some stray hum field, so keep them away from sensitive components like LP decks and cassette decks.

How the tests were done

According to my usual practice, I gave each amp a fairly long session on its own (a couple of hours at least) before performing some informal random comparisons. There was also a rather more formal rapid-fire session with only a couple of minutes per amp, changing over as fast as possi-

ble. Partnering equipment included ATC SCM20 speakers (principally) and also Quad electrostatics and JBL LX20s, plus Rotel RCD971 CD player, Pink Triangle/SME/Highphonic LP deck and Revox FM tuner. I tend to stick with quite a small selection of very familiar recordings most of the time.

THE CAST LIST

Cyrus Integrated 5	£500.00
Kenwood KAF-3030	£250.00
Marantz PM7000	£299.90
Roksan KA-1	£475.00
Rotel RA-972	£450.00
Sony TA-FB740R	£200.00

GLOSSARY

CLASS A: Operation of an amplifying stage or device in which current always flows, as opposed to Class B, where some of the devices are effectively turned off some of the time. Class A tends to give lower distortion. Most practical amps operate in Class AB: Class A for the first fraction of a watt and Class B thereafter.

LINE-LEVEL: practically every modern source component (except phono cartridges) give an output in the region of 1-2V, commonly referred to as 'line level'. It follows that all inputs labelled 'CD', 'tuner', 'aux' or 'tape' are usually interchangeable.

Watts (per channel): the watt is the unit of electrical power and, honestly quoted (which it usually is these days), the WPC rating is the maximum average undistorted power that an amp can deliver to a typical speaker. However, differences in speaker sensitivity between models can more than make up for differences in amplifier output in many cases.

TRANSISTOR/MOSFET: the two main types of power semiconductor used in amplifier output stages. Differences are subtle and much argued over!

MUSIC USED

Philadelphia Orch./Sawallisch – *Nature's Realm* (Water Lily)

Donald Byrd – *A New Perspective* (Blue Note)

José Antonio Guzmán – *Ambrosio* (Sonora)

Ibrahim Ferrer: *Buena Vista Social Club presents*

Ibrahim Ferrer (World Circuit)

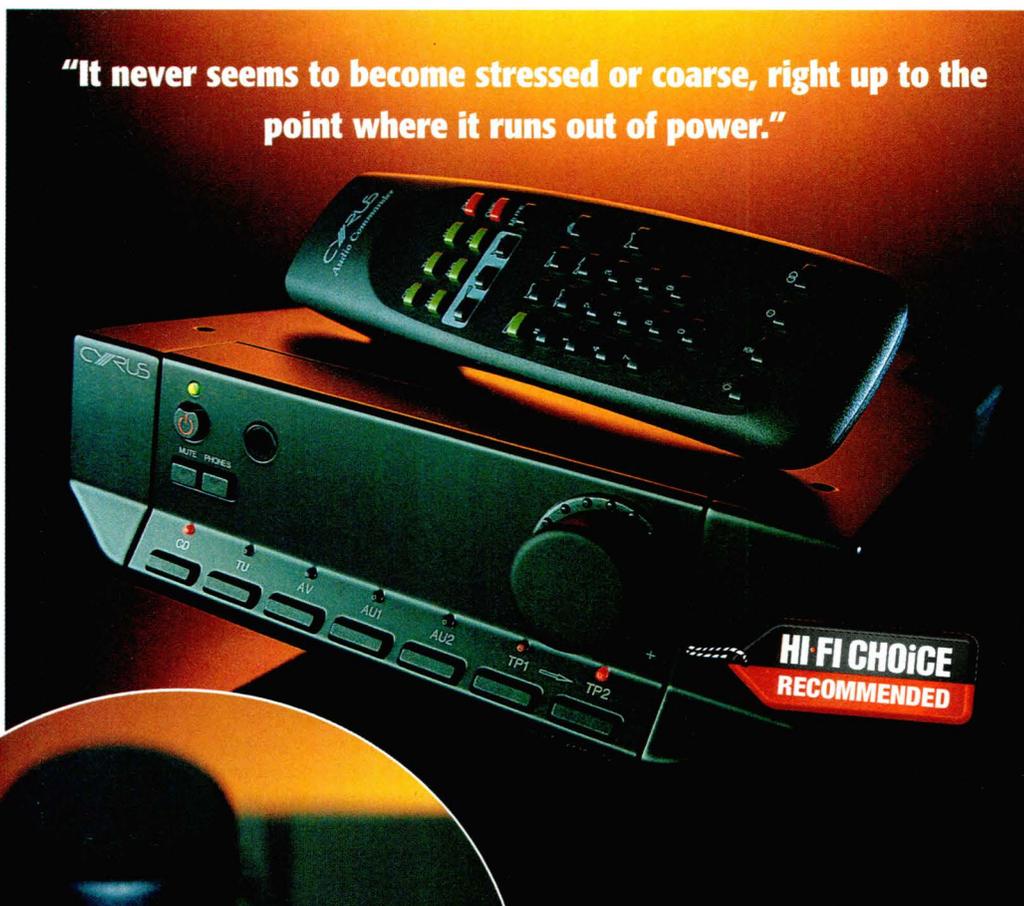
CYRUS 5

Cyrus has made good use of its trademark casework design, and quite rightly. It's an ingenious 'one size fits all' metal casting, incorporating various internal fixing points and the heatsinks, and it's about as small as is plausibly possible for the job in hand. So small is it that the back panel layout has arguably suffered somewhat in terms of accessibility – ten sets of phono sockets and biwiring speaker terminals on a panel not quite eight inches wide makes for tiny labelling and awkward cable removal. But it's a small price to pay for the elegance of the unit.

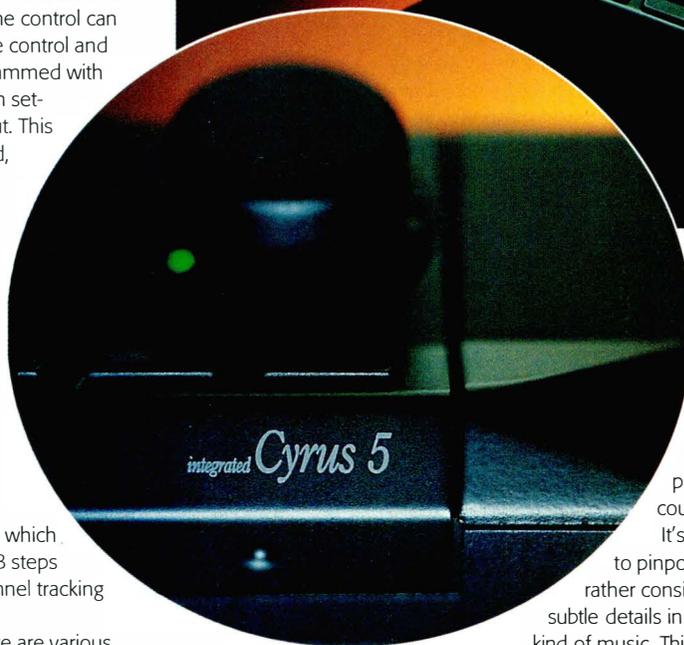
Despite the small size and light weight of this unit, rated output power is a useful 40 Watts per channel (more than adequately met in practice). Basic features already look quite attractive, with seven line inputs and tape and preamp out, but there's more... With the aid of the remote, the volume control can become a balance control and can also be programmed with different basic gain settings for each input. This is useful if you find, for example, that your CD player blasts you away when you switch over from a perfectly acceptable level on the tuner without adjusting the volume control. All that is possible thanks to the electronic volume control employed, which gives accurate 1 dB steps and excellent channel tracking at all levels.

In addition, there are various upgrade paths available, including bi-amping and having the 5 upgraded to a Cyrus 7 at the factory, for little more than the initial difference in cost between the two units. After that you can add a PSX-R external power supply. The possibilities are nearly endless.

Construction and attention to detail are up to Cyrus' usual high standards. The electronic volume control limits input level handling, but it's high enough, at 4.5V, not to be a real problem. Much of the electronics is composed of surface-mount components and thus that's all pretty compact, and there's next to no loose signal wiring. Quite intelligent protection circuits shut the unit down if overloads or other fault conditions are detected. Speaker



"It never seems to become stressed or coarse, right up to the point where it runs out of power."



outputs are on the new 'BFA' connectors: a set of suitable plugs is supplied with the amp.

SOUND QUALITY

There are certainly aspects to admire in this amp's performance, but overall it never quite managed to produce a completely transparent window on a musical performance. The good points include a neutral tonal balance with a very comfortable bass, which doesn't obtrude but confidently underpins the music when required, and sweet, undistorted treble. Those characteristics suit light music well – a bit of Mantovani or Tony Bennett in the background. But they can't quite offset the slightly thick and opaque

character to the sound when the amp is dealing with highly detailed, densely textured music such as a Mahler symphony or well-produced rock or country.

It's quite a hard thing to pinpoint, but there is a rather consistent veiling of subtle details in pretty much any kind of music. This has various knock-on effects, including somewhat limited stereo image depth and climaxes which are a bit flat dynamically. It's not enough of an effect to make detail completely unrecoverable, but one has to listen that little bit harder to be sure exactly what instruments are playing or what the lyrics to a song might be, and that can be tiring.

Then again, if you're not such a detail freak all this might matter a good deal less. In that case, the amp's impeccable manners will please – it never seems to become stressed or coarse, right up to the point where it runs out of power. It does that quite abruptly, but at least you know where you stand and 40-odd clean watts translates to quite vigorous performance even into the

relatively inefficient ATC speakers used for most of the auditioning.

CONCLUSION

There's no denying that this amp, especially as part of a complete Cyrus system, is in many ways a most appealing proposition. Its sonic flaws are likely to be something of a matter of opinion and it's worth giving it a spin. Taking the excellent flexibility and good construction into account, it just achieves Recommendation.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £500.00

Although detail is not outstanding, there's a quiet assurance and unflappability that makes this amp very listenable.

TWO YEAR GUARANTEE

Cyrus Audio, Stonehill, Huntingdon, Cambs, PE18 6ED.
(01480) 451777

SPECIFICATIONS

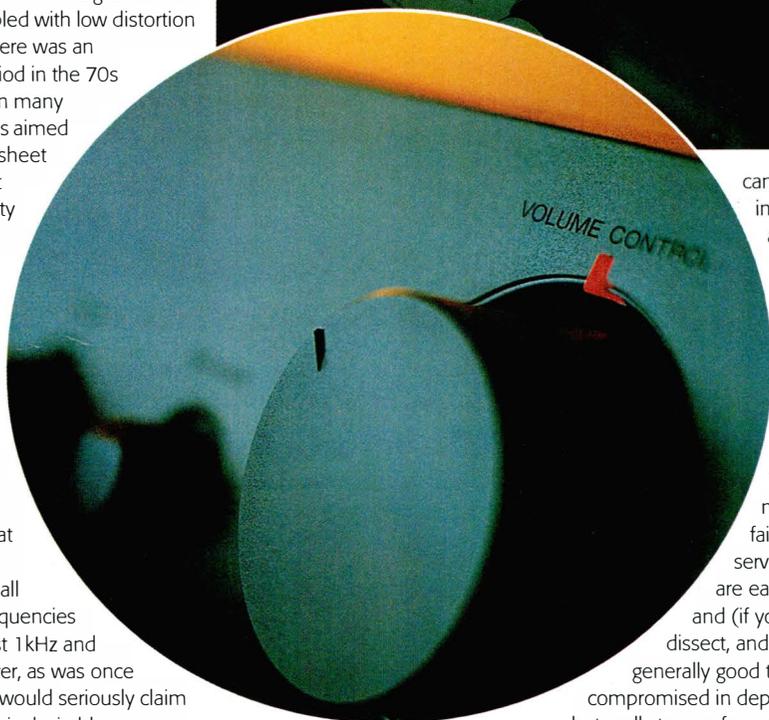
- Inputs: 7 line-level
- Outputs: Preamp, 1 tape, 2 speakers (biwire), headphones
- Power into 8 Ohms: 45W

KENWOOD KAF-3030R

In HFC 203, Paul Miller waxed more than a little lyrical about this amp, and he's a hard man to please. So, what's the deal? The only remarkable bit of technology that Kenwood advertises here is 'TRAIT' – Thermally Reactive Advanced Instantaneous Transistor – a syntax-defying mouthful that actually refers to a neat trick that should have been done years ago. Instead of using the usual output transistors and associated biasing circuits, Kenwood has produced its own devices which integrate thermal and current sensing elements into the same package as the output transistor proper. This ties up both circuitry and performance and is clearly 'A Good Thing'.

That apart, this amp follows the current trend (as also exemplified by the Rotel and Sony amps in this survey) for enhanced bandwidth to complement the new digital audio formats, coupled with low distortion and noise. There was an infamous period in the 70s and 80s when many manufacturers aimed for low 'spec-sheet distortion' but achieved pretty nasty sound. It's important to realise that current thinking is a good deal more sophisticated, regarding distortion as something that should be minimised at all levels and frequencies other than just 1kHz and full rated power, as was once the way. Few would seriously claim that distortion is desirable, so intelligent steps to reduce it should be welcomed.

The construction of this amp is absolutely typical in its class – decent enough components, but nothing tweeky. Most of the audio circuitry uses discrete transistors, though there are a few ICs in evidence including, apparently, the source selector. Such devices can have drawbacks including limited input headroom, but the inputs here will handle more volts than I've ever seen from any domestic source component. If you're really worried you can use the 'Advanced DA/CD' input and hit the 'Direct' switch, which as well as bypassing the tone



controls also bypasses the selector IC. For other inputs, the 'Source Direct' button merely avoids the tone and balance controls. At the rear are two tape outputs and system remote control connectors. The unit is optionally available in black.

SOUND QUALITY

Let's get the bad news out of the way first: the phono stage is grainy and lacking detail and could seriously justify some upgrading for anyone intending to listen to vinyl a lot. Otherwise this amp is really rather lovely. Its best feature must be its clarity, which is about as good as I

can recall hearing in an amp around this price. In every sense of the word, performance is very fine indeed. The tonal character of instruments is faithfully preserved, textures are easy to follow and (if you want to) dissect, and imaging is generally good too (a little compromised in depth, perhaps, but really top performance in that department is generally the preserve of the high end).

Just occasionally there's a suspicion of some slight tonal coloration in the upper bass, which subtly warms up sounds like male vocals or cellos, but it's slight and hardly likely to be a problem. The treble, however, is really very sweet and open at any level. At low playback levels one can still hear the inflections in a singer's voice, while at high levels there's little or no crunching or loss of precision in an orchestral tutti or a bit of rabid rock 'n' roll drumming.

In ultimate terms, resolution of detail is still good and, as a result, long term listening is stress-free and

relaxed. The only area where it seems to fall down slightly is with complex, high-frequency-rich sounds such as orchestral violins, which develop just a touch of artificial sheen, robbing them of some immediacy. Even so, that's a very common failing and one that you'll probably not avoid completely in any direct competitor to this amp.

CONCLUSION

Full marks to Kenwood for this particularly well judged amp. It's got an excellent spread of virtues and a very small collection of vices – all of them minor – and should suit many listeners in many situations very well. Best Buy.

VERDICT

SOUND	★★★★★
BUILD	★★★★☆
VALUE	★★★★★
PRICE	£249.95

Highly capable amp with particularly good treble, good bass and fine detail.

TWO YEAR GUARANTEE

Kenwood Electronics UK Ltd, Kenwood House, Dwight Road, Watford, Herts, WD1 8EB.
(01923) 816444

SPECIFICATIONS

- Inputs: 5 line-level, phono (MM)
- Outputs: 2 tape, 2 speakers (switched), headphones
- Power into 8 Ohms: 65W

MARANTZ PM7000

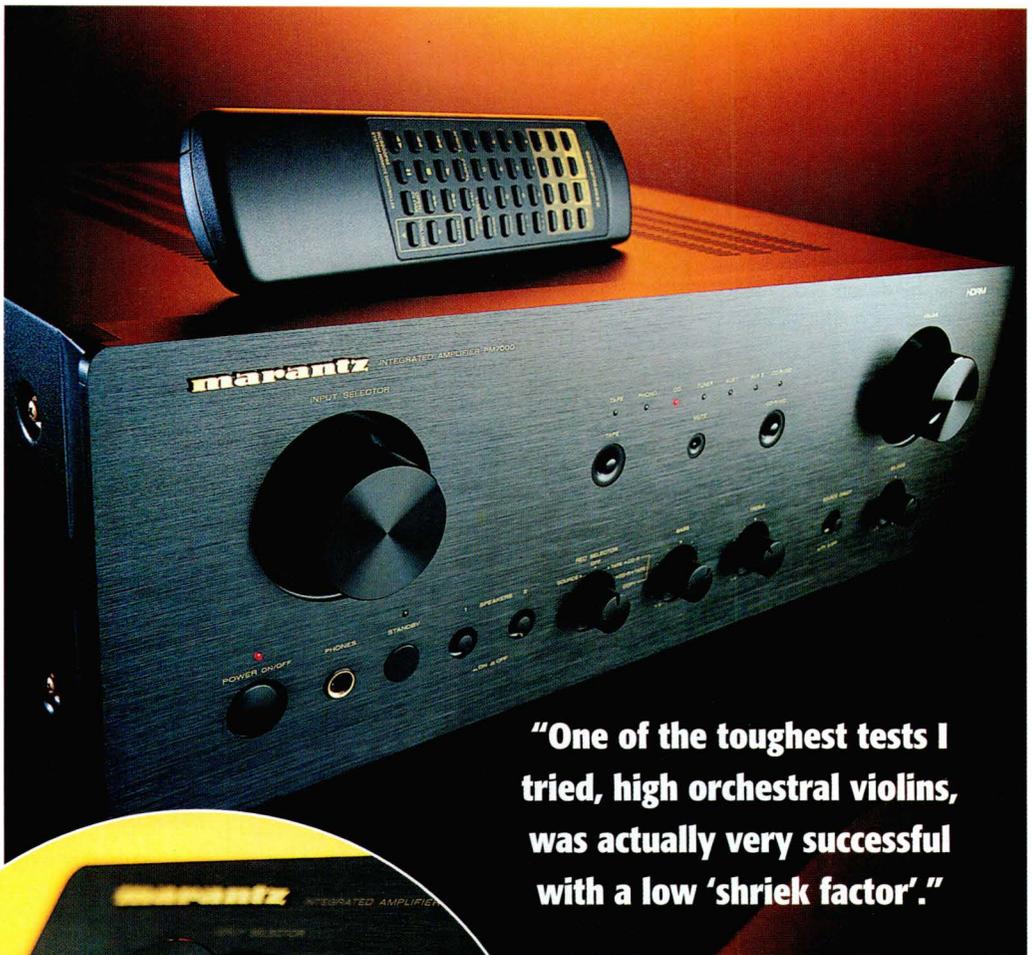
Big integrated amps never went away, although they were admittedly in decline for a while. The rise of home cinema has brought them back, though, and companies like Marantz have obviously taken courage and reintroduced them in straight stereo form – like this beast. I suspect few would describe it as beautiful (and I'd personally prefer the alternative gold finish) but it's at least tasteful and well laid out for easy use. Facilities are sensibly pitched: six line-level inputs plus MM phono, two tape/CD-R outputs and a 'processor' loop. Tone and balance controls can be bypassed with the 'source direct' button, which rather confusingly also disables the tape outputs.

Principally driven, no doubt, by the need to make everything remotely controllable, all switching is done by relays, which at least means internal signal paths are reasonably straightforward. The volume control uses a motorised potentiometer. Audio circuitry looks typical of the breed, though some critical bits are enclosed in shielding cans which also keep out a reviewer's prying eyes. Two pairs of output transistors per channel, mounted on large internal heatsinks, allow safe operation to well in excess of the rated 95 Watts per channel: I obtained more like 115.

SOUND QUALITY

115 Watts is a fair chunk of power for the money, and headbangers will be pleased to hear that the PM7000 positively delights in delivering all of 'em. No, it hasn't the sophistication that you'd expect from a product at three times the price, but it can get down and dance with abandon. Anything that's more to do with visceral energy than subtle shades of musical colour is fair game, and I had equal fun with Pink Floyd, The Mavericks and some of Shostakovich's more ebullient creations. Of course there are other amps around that are even more powerful, but this one just seems to ask to be played loud.

Part of the reason for that, you may have guessed, is that it's not so convincing at lower levels. In fact it seems to sound less loud than other amps when the meter suggests it should be at the same level. And



"One of the toughest tests I tried, high orchestral violins, was actually very successful with a low 'shriek factor'."



that in turn is largely due to the way it slightly muffles detail, making you want to turn it up to hear what's going on. I'll try a visual analogy: some amps seem to smudge detail, like a deliberately soft focus photo, but this one is more like a very grainy print, with a harder texture but the same end result – you can't quite discern everything, however hard you squint.

That sounds a bit damning, but the effect isn't so very great and I've certainly heard worse at higher prices. It's also offset, some of the time, by a small degree of upper-

bass coloration which warms things up a bit at best and at worst does little to distract. Ultimate bass extension is not vast but pretty much adequate, and the treble is usually neutral with some occasional mild 'presence' boost on bright instruments like trumpet. In fact after a few minutes of listening the balance issues tend to disappear from the picture – a clear sign that they're not serious.

For the rest, imaging is quite clear (if a little ping-pong) laterally but less good in the depth direction, and the ambience on naturalistic recordings tends to die a little fast. Solo voices, particularly operatic ones, can be a bit inexpressive: but one of the toughest tests I tried, high orchestral violins, was actually very successful with a low 'shriek factor'.

The phono stage, which appears to be pretty much typical of its kind, does a typical job – fairly quiet and tonally neutral, but more than a

touch dull dynamically.

CONCLUSION

This amp may well appeal to some simply for raw power at a price, but I'd argue that Marantz has been a bit over ambitious on that front and other models – perhaps even Marantz's own – can offer generally better sound, with just a little less grunt, at a similar price.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £299.90

☛ Lots of power for a very modest price, but detail and subtlety seem to have been sacrificed.

■ TWO YEAR GUARANTEE

☒ Marantz Hi-Fi UK Ltd, Kingsbridge House, Padbury Oaks, 575-583 Bath Road, Longford, Middx, UB7 0EH.

☎ (01753) 680868

SPECIFICATIONS

■ Inputs: 6 line-level, phono (MM), processor loop

■ Outputs: 2 tape, 2 speaker (switched), headphones

■ Power into 8 Ohms: 115W

ROKSAN Kandy KA-1

Part of a matching range of Kandy separates, this modest-looking amp is actually something of a powerhouse, with 110 Watts on tap according to the book (even more in practice). Fit and finish are excellent, as is Roksan's custom, but the construction is basically quite modest and simple: money has evidently been spent on the important bits. Most obvious on opening the case is a monster toroidal transformer, a clear sign that some serious power delivery is intended. That's backed up by the twin pairs of MOSFET output devices per channel, mounted on large internal heatsinks.

The circuitry actually looks fairly straightforward and uncomplicated, with discrete transistors in the power amp section and a few op-amps elsewhere. Input switching is all handled by relays and the volume control is motorised. Thoughtfully, Roksan has provided a 'mute' function which, rather than killing the sound altogether, simply cuts the level by 20dB so that one can easily answer the phone or whatever without forgetting that the music is still playing.

Of the seven inputs available, one is switchable to work as either line or phono (MM), which is a neat compromise. There's also a buffered output (before the volume control, strangely) which is normally linked to a 'pre-amp input'. The manual doesn't make the purpose of this arrangement very clear. However, operation is convenient and the protection works nicely – it saved my bacon once in what might have been a nasty lab accident! The review sample had some parasitic oscillation at the 'pre amp input', which I cured with a couple of external components before reauditioning the amp: it didn't seem to make any vast difference to the sound, but Roksan is looking into it.

SOUND QUALITY

To be realistic, one doesn't expect an amplifier at this price to be completely unblemished. The key is to make the blemishes relatively insignificant to a majority of listeners,

"With all that power on tap it's good to find that the sound stays clean and even up to the peak of a climax."



and I suspect Roksan has been quite successful in this. The blemishes in fact consist largely of a slight lack of bass extension and a small degree of 'dryness' in the sound. The former is in any case offset by the KA-1's very good control of bass, which with many speakers on the market will probably make for a good end result. Judicious choice of speaker cables may help too.

As for the dryness, it manifests principally as a lack of resonance on acoustic instruments both high and low in pitch, making plucked double bass sound slightly damped and speeding the decay of small percussion instruments. It has just

the smallest effect on solo vocals, reducing the immediacy of the emotion by a barely perceptible shade.

On the plus side, though, there is good detail available across the board and particularly admirable stereo imaging, with creditable depth – always a tricky area. Dynamics are natural and free-flowing, and with all that power on tap it's good to find that the sound stays clean and even up to the peak of a climax: just occasionally I thought I detected some hardening of the tone in full-blooded opera choruses and similar material. Orchestral violins sound as sweet as with any of the amps here, and at the other end of the musical spectrum there's plenty of energy available for a bit of techno or rock 'n' roll. The power is always delivered with refinement, though, and the amp's also perfectly happy playing string quartets at low levels.

The phono stage fared slightly less well: it lacks the detail and insight of the rest of the amp but then Roksan (which after all started as a turntable manufacturer) at least

offers the higher quality Artaxerxes add-on phono stage.

CONCLUSION

The technical performance of this amp is interesting, with distortion which hovers around a low but not vanishing level over a wide range of frequency and output level.

Output impedance is slightly higher than average at high frequencies, which might lead to just-noticeable dullness with a few speakers. None of that is worrying, though, and the overall sonic performance certainly seems to warrant Recommendation.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£475.00

■ **Something of an iron fist in a velvet glove: power with control, barely compromised by a small degree of dryness.**

■ TWO YEAR GUARANTEE

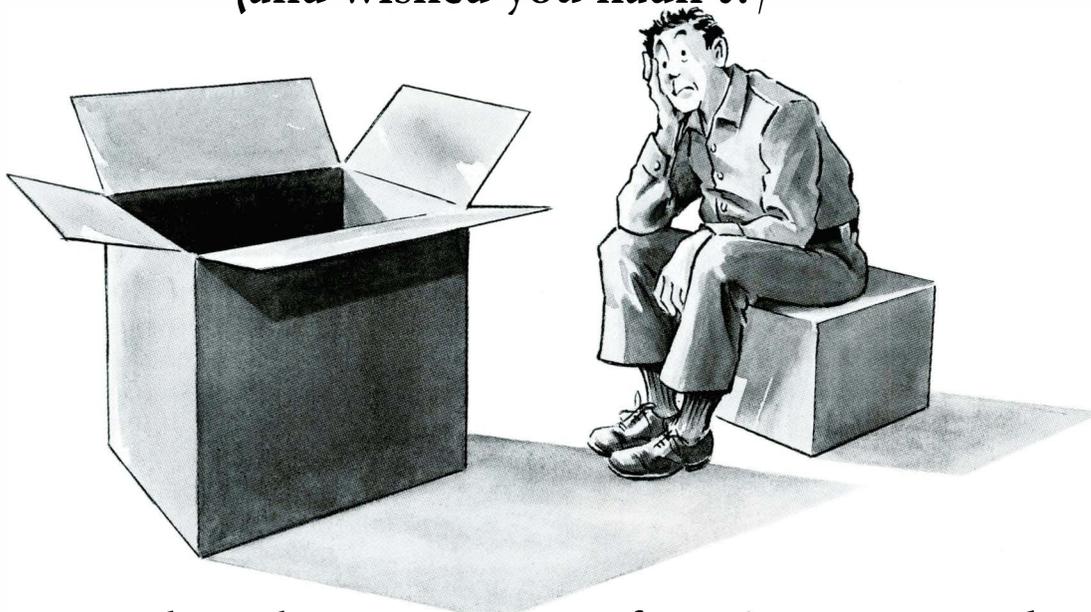
☒ Roksan Audio Ltd, Unit 6, Northfield Industrial Estate, Beresford Avenue, Alperton, Middlesex, HA0 1NW.

SPECIFICATIONS

- Inputs: 6 line-level, one line-level/phono (MM)
- Outputs: 1 speaker, headphones
- Power into 8 Ohms: 120W

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ROTEL RA-972

It's a matter of taste, of course, but I think Rotel has one of the neatest family looks of any of the big brands. The controls on the 972 are all big enough to use comfortably but not garishly huge and it's altogether a pretty svelte affair.

I wish I could report that the insides are similarly tidy, but actually it's a bit of a rat's nest in there. One of the reasons for that, though, is that Rotel appears to be attempting a simplified version of Kenwood's 'TRAIT' output devices, mounting driver transistors directly on top of the output devices on the heatsink so as to achieve good thermal tracking. Further concern with thermal stability is shown by the use of some small-signal transistors sandwiched in pairs with thermal paste: this kind of attention to detail helps ensure that performance is minimally affected by warming up or by recent 'history' of the signal a few seconds or minutes ago.

Specifications are very much par for the course – six line inputs and no phono. Output is very conservatively rated at 60W, though the heatsink is a little on the small side for continuous flat-out use (no real problem in practice). The large toroidal transformer, twin pairs of output transistors and fairly generous power supply capacitors bode well for tolerance of awkward speaker loads. There's a preamp output for biamping duty. As with the other amps here, input selection is switched on the circuit board, electronically – in this case using relays near the input sockets. That's great, but since the record selector is a conventional switch there are print-board traces carrying signal from rear to front of the unit anyway to service that. Incidentally, this amp has one of the widest bandwidths I've ever seen and sufficient HF output power to act as a repeater for Radio 4 on Long Wave (with a suitable aerial) with a range of several miles!

SOUND QUALITY

Despite high expectations born of



"The sound (is) in a way reminiscent of much more powerful and high-flown amps."



past Rotel successes, this amp somehow failed to make a very strong impression. There's no denying that in many ways it's perfectly competent, but somehow it just seems to lack the involvement that some of the other amps here (including cheaper ones) achieved.

For a start, it has a distinct character, which in itself will of course provoke both friendly and adverse reactions. The balance is noticeably on the warm side of neutral, with a little less edge but more lower midrange bloom than most other amps. How this coloration affects

the sound depends on the music one is playing, and on one of my favourite tests, plucked double bass, it was really quite pleasant, warming and rounding the sound in a way reminiscent of much more powerful and high-flown amps. The

drawback, though, is that this is inconsistent across the range and sounds like trumpet are distinctly on the laid-back side, too much so for my tastes – if a sound is supposed to be bright and arresting, an amplifier should be able to keep it that way.

In addition, although low sounds may be fine tonally, the detail in that region is not outstanding and textures can tend towards woolliness. In fact that's probably the biggest contributing factor in making this amp rather uninvolved over extended listening periods.

Despite the slight dullness, detail at higher frequencies is quite good and this leads to good ambience and stereo imaging. Dynamics are handled in a reasonably confident

manner, with little compression of peaks, but the bass thins out a bit as the music gets really loud and this can lead to some sense of harshness. Nevertheless, the amp can sound quite exciting at sustained high levels, though it's perhaps not the most rhythmically powerful in the world.

CONCLUSION

A slightly mixed performance which is likely to appeal to some tastes a good deal more than others. It's probably worth a try as it's quite individual, but the '972's achievements are too uneven for a formal recommendation.

VERDICT

SOUND	★★★★☆
BUILD	★★★★☆
VALUE	★★★★☆
PRICE	£450.00

Better in the treble than the bass, which is a little too rounded and woolly.

TWO YEAR GUARANTEE

Gamepath Ltd, 28 Heathfield, Stacey Bushes, Milton Keynes, MK12 6HR.

(01908) 317707

SPECIFICATIONS

- Inputs: 6 line-level
- Outputs: 2 tape, 2 speaker (switched), headphones
- Power into 8 Ohms: 90W

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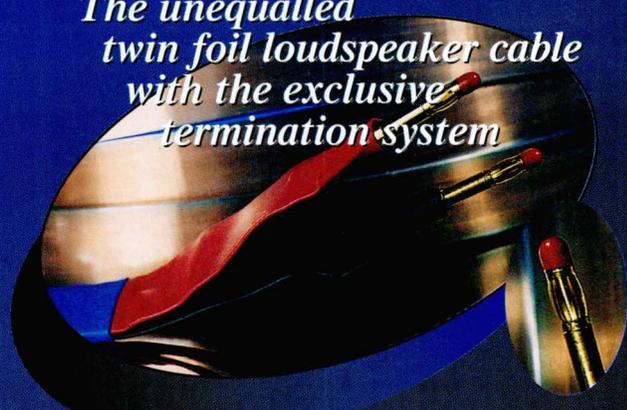


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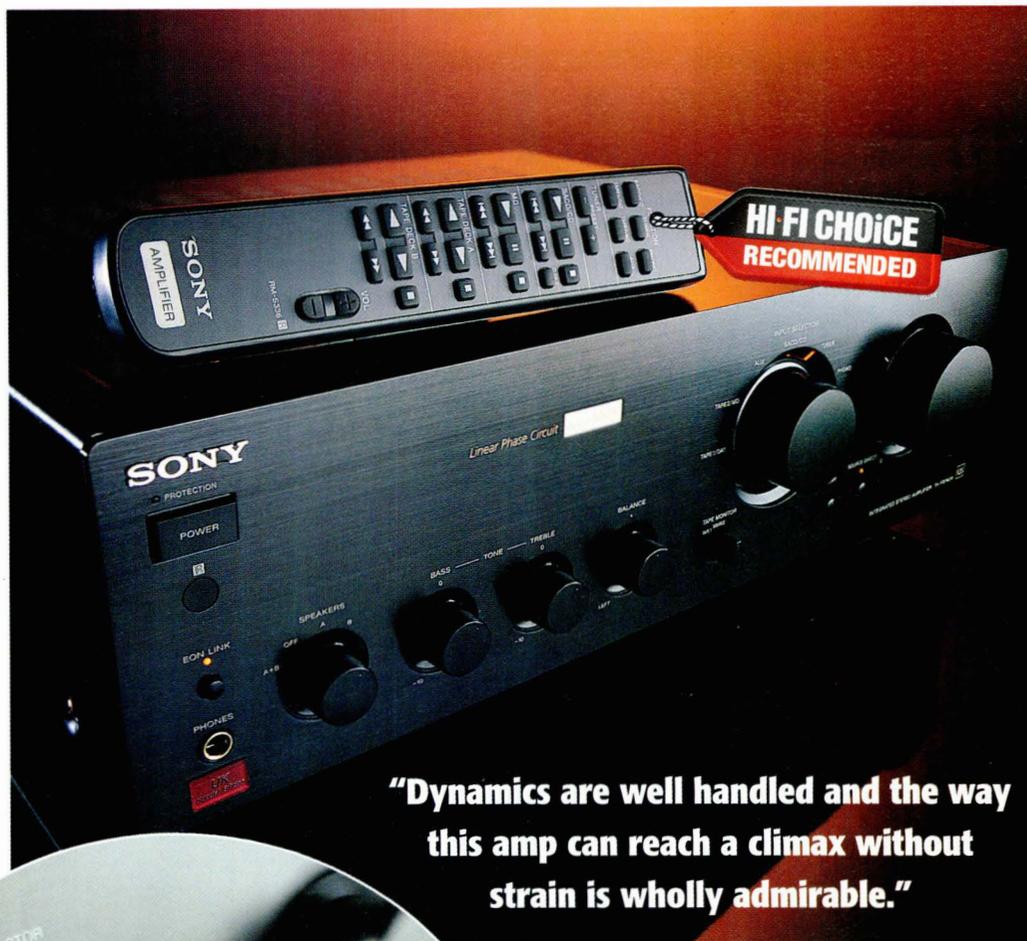
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SONY TA-FB740R

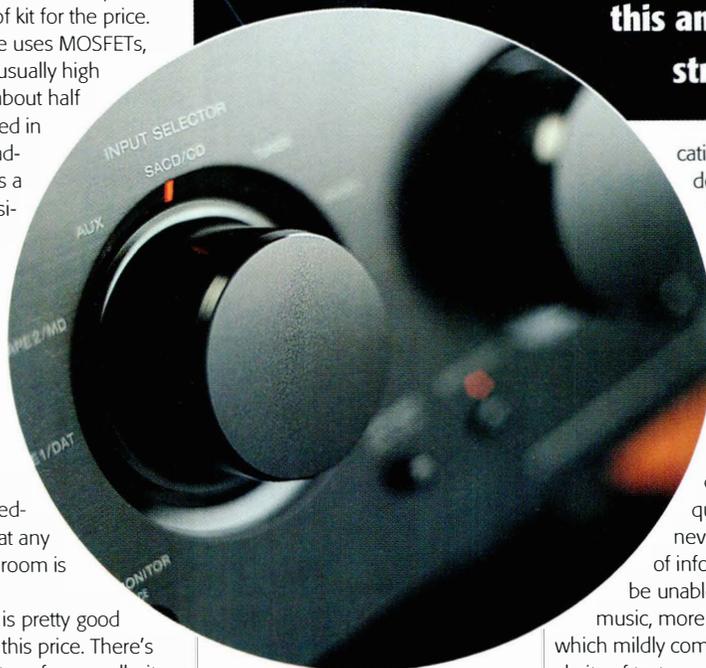
Sony proudly trumpets this amp as one of a new breed expressly designed to make the most of SACD and the ultra-wide bandwidth that the medium offers (around 100kHz). Hence the 740's 'Linear Phase Circuit' which achieves, according to the blurb, a bandwidth of 300kHz. Actually that's more than a little dependent on volume control setting (70kHz worst case!) but it's a sign that the basic power amp section has been quite cleverly designed and the claim of linear phase is certainly justified. And even if you haven't got SACD yet (who has?), it's no bad thing to have some extra bandwidth: in fact it's more useful in an amp than in a digital recording system, because of the different ways in which the two systems roll off.

Apart from the frequency response, Sony makes various technical claims for the amp of more or less relevance – the 'optical bias circuit' (an LED, as far as I can see) is not in itself the least bit responsible for 'stable sound localisation' – but all the same it's an unusually complex piece of kit for the price. The output stage uses MOSFETs, biased to an unusually high current so that about half a Watt is delivered in Class A: the disadvantage of this is a static power dissipation in excess of 30 Watts, so don't block ventilation holes! Input switching for tape and SACD uses relays, but the rest appear to be selected with an integrated-circuit switch – at any rate, input headroom is fine.

Construction is pretty good for a product at this price. There's even a toroidal transformer, albeit the scruffiest one I've ever seen (tidy winding keeps stray hum fields low). The phono stage has its own circuit board. The only oddity seems to be the tone controls, which don't work with the volume control at maximum and have rather variable effect at lower settings: what's more they are not absolutely disabled by the 'source direct' switch, although their effect is much reduced. Apart from that everything seems in order. Features are as seen on the front panel: there are two tape outputs and a dedicated SACD/CD input.



"Dynamics are well handled and the way this amp can reach a climax without strain is wholly admirable."



SOUND QUALITY

On the whole, not half bad. This amp's biggest problem – not actually a fault in itself – is its lack of wow! factor. It's not particularly likely to blow anyone away; but then most budget amps that do blow people away either have some fairly serious counterbalancing flaws or indeed rely on some more or less subtle flaw to impress. No, the theme here is more one of quiet competence and as such there's little to complain about.

Well, one might, with some justifi-

cation, point out that detail is not at an all-time high and this slightly flattens the sound, but judging the amp by the standards of its peers (and bearing in mind that it is the cheapest here) its losses in that department are quite minor. It's never a sufficient loss of information for one to be unable to follow the music, more a very slight veiling which mildly compromises the clarity of textures and makes stereo positioning a little less precise than some. Similarly, there's a touch of the all-too-common dryness on many sounds, particularly those of a more percussive nature.

On the other hand, dynamics are well handled and the way this amp can reach a climax without strain is wholly admirable. That's equally of benefit in music which is just plain loud, and you can have a lot of fun headbanging with it too, the sound staying very clean right up to overload. And tonal evenness is excellent: there are more variables at

work in determining this than just wide bandwidth, but high treble is certainly very smooth and even, while bass extends to a good depth with decent weight. Even the phono stage seems unusually capable for an amp of this class.

CONCLUSION

This would appear to be one of Sony's best of late – and the average standard has been good too. A highly competent all-rounder and a very safe Recommendation.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

VALUE ★★★★★

PRICE £199.99

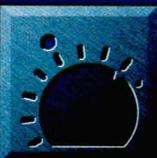
Very open and clear sound, comfortable with a wide range of musical styles.

ONE YEAR GUARANTEE

Sony UK Ltd, The Heights, Brooklands, Weybridge, Surrey, KT13 0XW
(0990) 111999

SPECIFICATIONS

- Inputs: 5 line-level, phono (MM)
- Outputs: 2 tape, 2 speaker (switched), headphones
- Power into 8 Ohms: 60W



CONCLUSIONS

AMPLIFIERS

As I said earlier, it's a hard-fought battle between amps in this price range, but it's probably fair to say that none of the present contestants emerges disgraced or defeated. Coming back to my point in the introduction about hearing more of the music, any of these should offer distinct benefits over most of the even cheaper models around – some of which in turn are nothing to sniff at. It's one of those little ironies of hi-fi that the difference is in the overall big picture but that picture is made up of a lot of little details...

Probably the least successful amp here was the Marantz, and it's precisely because of its little details – or lack thereof – that it loses out to the others. It's not a bad amplifier, it's well specified and decently made and powerful, but ultimately it doesn't seem to offer either the refinement of most of the others here, or any strong alternative suits of its own that might win it a gong.

Rotel's RA972 was a harder

one to reject, especially since its overall performance seemed in the end to be quite close to that of the Cyrus, which is dearer and less powerful. They don't sound the same, but in many ways it's a case of six of one and half a dozen of the other. However, listening over longish periods finally convinced me that the

Cyrus just has the edge in the all-important listenability. It also has a very attractive specification, not just in terms of existing features but in upgrade potential, a useful factor to bear in mind.

Between the Sony and the Kenwood there was a similar stand-off, and at one time I nearly reversed their respective

positions. Again, it was a longer listening period that finally tipped the balance in favour of the Kenwood: it seemed to offer more musical detail and less of itself. It was a close thing, though, and Sony can take a bitter consolation from the fact that the TA-FB740 would probably have come out with a Best Buy had the Kenwood not been in the scheme of things. As it is, the Sony will be a very strong contender for those who simply can't make the extra £50.

That brings us to the Roksan, which although it doesn't quite make Best Buy status is a strong Recommendation. For a start, its specification is very good indeed for the price. Its sound is good all round, and if Roksan could perhaps find a way to ameliorate the dryness I noted, it could be a stunner. As it is, it faces some strong competition – not least from Musical Fidelity and Arcam – but I dare say few music lovers would kick it out of their system for eating crisps!



BEST BUYS AND RECOMMENDED



CYRUS Integrated 5 £500.00
Although this is not the most detailed amp in the group it is Recommended for what it does well, particularly its impeccable manners and tonal neutrality, and for its upgrade potential.



KENWOOD KAF-3030 £249.95
An elegant looking unit that produces what one might call an elegant sound, with very little to detract from musical pleasure. Particularly well balanced and very detailed sound for the price.



ROKSAN KA-1 £475.00
Something of a powerhouse but still capable of plenty of subtlety. Its only real drawback is some slight dryness: apart from that it is neutral and confident. Also available in various colours!



SONY TA-FB740R £200.00
Hailed by its maker as the new wave in amplifiers, and doing a lot to justify the pride too, this unit offers sweet and detailed sound and should give pleasure with a wide range of music.

AMPLIFIER COMPARISON TABLE

MAKE	CYRUS	KENWOOD	MARANTZ	ROKSAN	ROTEL	SONY
MODEL	INTEGRATED 5	KAF-3030	PM7000	KA-1	RA-972	TA-FB740R
PRICE	£500.00	£249.95	£299.90	£475.00	£450.00	£200.00
SOUND	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆
BUILD	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
VALUE	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆
GUARANTEE	2yrs	2yrs	2yrs	2yrs	2yrs	1yr
POWER OUTPUT, 8 OHMS	45W	65W	115W	120W	90W	60W
DISTORTION 20HZ-20KHZ, 1W/8 OHMS	0.002-0.09%	0.001-0.01%	0.001-0.008%	0.02-0.07%	0.001-0.12%	0.001-0.035%
SIGNAL-TO-NOISE RATIO	80.4dB	84.9dB	84.3dB	84.8dB	82.5dB	80dB

Getting Personal

Let's Get Personal. Danish based loudspeaker company Jamo has recently sharpened its entire philosophy. The idea is to 'get personal'! Don't worry – Jamo won't be asking for your phone number or e-mail address. It just wants to know what you expect from a loudspeaker. Your loudspeakers to be more precise. What makes 'perfect' sound quality in an individual's listening environment is a highly personal thing. So, in order to 'get personal' the loudspeaker giant is now providing the tools that might just revolutionise the market.

With an annual production of over one million loudspeakers, Jamo – established more than 30 years ago in Denmark – is the largest loudspeaker manufacturer in Europe. Lots of exciting new things have been happening at Jamo recently. No stone has been left unturned in creating a true loudspeaker company of the future. There is a new logo, a new product name structure and new production methods. But the cornerstone of the of the new concept is the Jamo SoundGuide, a tool that has been developed to give the consumer an overview, and to help him or her choose the best personal solution. A solution that fits whatever he or she wants. Not what the loudspeaker manufacturer thinks they want!

The Jamo SoundGuide is structured on the primary parameters for choosing a loudspeaker. Together with your dealer's help – or on your own if you prefer – you can use this innovative tool to quickly determine which loudspeaker is best for you on the basis of a short set of simple questions. The SoundGuide is closely integrated with the Jamo SoundCatalogue. This new catalogue is also organised according to consumer needs, instead of just presenting a baffling series of models. This is where the consumer can go in depth and concentrate on the details of the loudspeakers that are relevant to him or her. And this is where the consumer can make personal decisions on power handling, materials, finish or colours – without any biased advice!

With the new way of addressing a customer's needs using the Jamo SoundGuide there is also a new range of products.

First of the 'New Jamo' loudspeakers is the E8 Series, created to form a complete line of easy to place – "slim line" – speakers with contemporary Scandinavian design to fit perfectly into modern interiors. Additionally, Jamo has incorporated technology from the larger and more expensive Jamo models, particularly speaker and crossover techniques from the highly acclaimed D8 series. A neat entrant is the E800 bookshelf loudspeaker, which will retail for just £199.99 in the UK.

The E800 is a Two-way bass reflex loudspeaker which uses a newly developed 5" woofer and a 1" soft dome tweeter. Features include the new Jamo Convex Tapered Vent, a high flow design which ensures less turbulence and allows 5dB higher SPL before port noise occurs. The Bookshelf or stand-mounted E800 has bi-wiring terminals and is compatible with the "large" setting on 5.1 decoders. Its long/short term power handling is 100/140W.

Then there is the all-new D8 Home Cinema System, a series of audio-visual loudspeakers designed to achieve ultimate sound quality for all sight and sound media. The D8 System comprises the Jamo D8 CEN, high-end centre channel loudspeaker, (£549.00 each); Jamo D8 SUR, high-end surround loudspeaker, (£550.00 per pair) and the stunning Jamo D8 SUB, electronic "closed box" subwoofer at £950.00 each.

There's plenty to choose from within the Jamo range. A loudspeaker to suit everyone. And with the Jamo SoundGuide available to make it that much more easier to select what's best for you, it's time you took a listen to Jamo – a loudspeaker company that's prepared to listen to you before you listen to them.

For further information, or to receive the Jamo SoundGuide, call Jamo UK on 01788 556 777 or visit your local Jamo dealer. Tell Jamo what you want – and they will listen.

Let's Get Personal.

www.jamospeakers.com



With an annual production of over one million loudspeakers, Jamo is the largest loudspeaker manufacturer in Europe.



Top: Jamo E800 bookshelf loudspeaker. Below: the E870, top floorstanding model from Jamo's E8 series.

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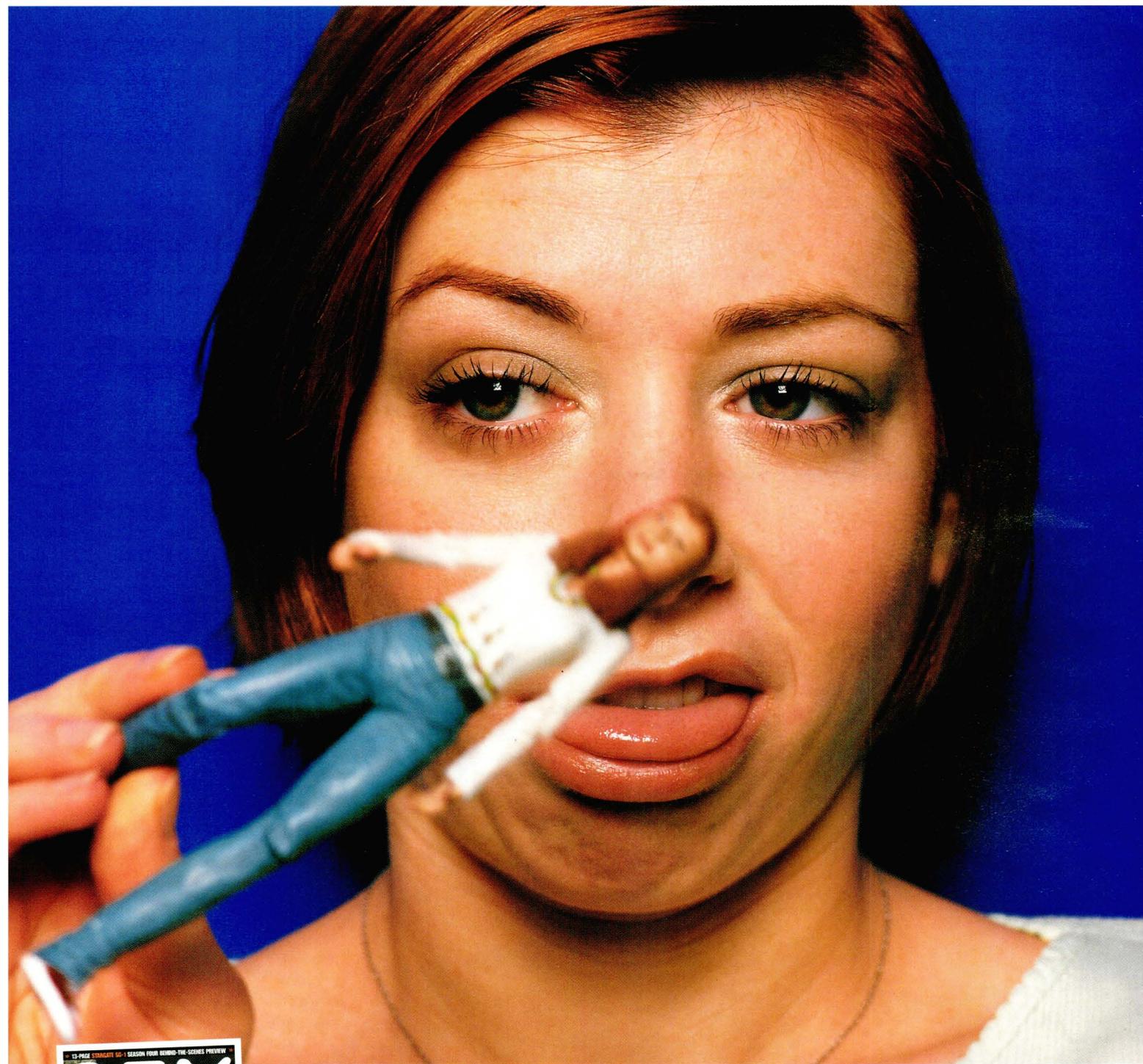


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Headphones

Say what you like about *Nick Gear*, he can't hear you.
He's listening to his headphones...

In a world where everything is shrinking and small is cool, it is refreshing to find a realm in which big is better. As personal audio listening re-defines the term compact, the traditional, full size headphone still rules the roost in the household.

Forget constant battles with neighbours screaming over the loudness of your tunes or family members moaning about missing Friends, for the full-size headphone offers a completely individual and isolated escape from such distractions.

Just imagine a world where you can forget the woes of life and relax in perfect harmony with your music; a place where time is irrelevant and insignificant.

For true audiophiles, the idea of plugging a set of cans into their prized equipment would be considered blasphemous. Why compile the best quality loudspeakers and amplifier only to use a trivial accessory like a headphone?

The intimate characteristic of a headphone makes it an essential element in the equipment catalogue. A set of high-quality cans can elevate your adored albums and tracks to new and exciting heights. If bought wisely, a fine headphone can pick out the all the nuances that have previously been hidden.

There is also the added bonus of music on the move. The majority of headphones now come fitted with a personal stereo oriented 3.5mm jack (inside a 6mm converter) so you can plug into MD, CD or even DVD players. You may look unusual with your those buns strapped to your head on the train, but who cares? The level of enjoyment negates the embarrassment. In one simple move you have full enclosure, with only yourself for company. Eliminate those boring conversations or the constant rumble of the tracks.

This *Super Test* picks out 10 serious contenders ranging in price from the affordable at £30 to an extravagant £400. One of the key considerations is the distinction between open and closed back design. Open back boasts a far more spacious and ethereal sensation, but does allow sound to escape. This is adequate for home listening but if you are thinking of the portable aspect then be careful because this will annoy Joe Public.

The closed back design produces virtual isolation from external sources and is great for noisy scenarios. The design generally lends itself to a heavier bass response, but can limit the sense of stereo space.

There are a number of other pointers that must be investigated in the decision process. Comfort is an intrinsic component with extended listening. There is nothing worse than having fantastic acoustics if you cannot wear the 'phones for more than 10 minutes before the head-in-a-vice effect sets in.

Finally, earphone padding design falls into two camps: circum-aural has the ear-piece fully enclosing the lobe while supra-aural consists of a flat pad that sits on the ear.

Hints and Tips

Listening to headphones at high volumes for prolonged periods is bad for your hearing. If you are serious about cans it pays to fork out for a dedicated headphone amplifier, as most amplifiers and CD players have rather basic built in amps.

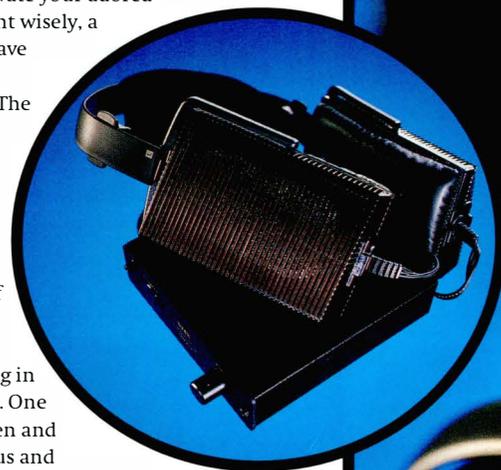
How the tests were done

The 10 products in this test were subjected to both quick-fire sessions and a period of extended listening. Each model was reviewed using a Denon DVD-655 CD player through an Arcam Alpha 7R amplifier and Musical Fidelity X-Can headphone amp. The range of musical

material used included: Prince – *Dance On*, Mascagni – *Intermezzo* from *Cavalleria Rusticana*, Mozart's *Requiem*, Miles Davis – *A Kind of Blue*, Cypress Hill – *Black Sunday* and *Tequila Sunrise*, and The Beatles – *Blue Album* (1967-70).

THE CAST LIST

AKG K100	£35.95
Beyer DT531	£105.00
Grado SR325	£300.00
JVC HA-DX3	£200.00
Sennheiser HD590	£159.95
Sony MDR-CD2000	£200.00
Stax System II	£400.00
Technics RP-F800	£49.99
Vivanco SR222	£30.00



GLOSSARY

OPEN BACK: These 'phones have a grill-type back which offers an open sound but also lets in noise.

CLOSED BACK: Useful in noisy environments, these have solid ear-pieces and keep out external sound.

SUPRA-AURAL: This is a style of headphone where the ear-pieces consist of a flat pad that sits on the ear.

CIRCUM-AURAL: Here, the style of padding is of the variety that encloses the ear.

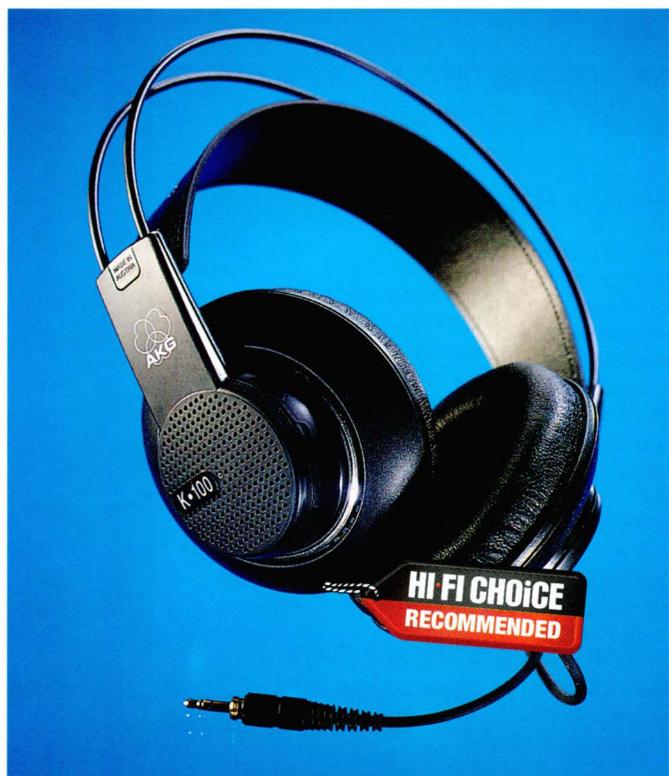
AKG K100

While the majority of manufacturers prefer to issue their headphones with a wrap of cloth on the pads, it is a pleasure to see AKG still adopting 70s style faux leather. Employing speaker diaphragms of a reasonable size, these headphones have something of the Jaguar feel about them. The K100 is an open-back design. The leatherette cushions are extremely comfortable, but on those hot summer days, they can get humid and sweaty with extended use.

The cord length is a healthy three metres, so hopefully you will avoid strangling yourself. The lead is fitted with a 3.5m jack with a 6.3mm adapter supplied for use with full size jack sockets.

SOUND QUALITY

The K100's made an excellent first impression, their sound is a joy to experience: the mid-range and treble are balanced and precise, while the bass is crisp and beguiling. The sonic environment created is a positive and uplifting experience. The various test tracks sounded wonderfully rich with a strong attack and timing. The classic Miles Davis,



Beatles and Prince songs were perfectly delivered. The timbre of each instrument was captured with admirably clear detail and without

any muddiness.

The bass-heavy Cyprus Hill track, *Tequila Sunrise*, was presented with a fantastic sense of aplomb and

structure. Fast, rhythmic dance tracks also fared just as well. For a model that is in the under-£40 bracket, the K100 is an all-round mature performer. AKG appears to have learnt its lesson from the under-powered K301 we tested in the last round-up: what it has in the K100 is a product that is certainly no pretender. It looks cool in its leatherette rags, and it sounds great too.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE **£35.95**

Leather-clad groover with bags of power and clarity, for a respectable asking price.

ONE YEAR GUARANTEE

Arbiter Group PLC
Wilberforce Rd, London, NW9 6AX
(020) 8202 1199

SPECIFICATIONS

Weight:	190g
Length of cord:	3m
Type:	Open-backed

BEYERDYNAMIC DT531

Beyer has been manufacturing headphones since 1924 and its latest DT531 reverts back to the basics it founded the company on. An open back design, the headphone is claimed to offer "maximum wearing comfort, superb performance and gives a magical quality to even the most intricate of musical passages".

Unfortunately, as with a lot of manufacturers' waffle, these claims are not entirely accurate. The general build is satisfactory, solid and sturdy and the single headband is typically simple and practical. But the cable is criminally flimsy and way too short for unlimited and unrestricted free movement. The circum-aural cushions sit neatly around the ears, but they feel heavier than the claimed 245g. The padding and fit feel good initially, but you soon realise the extra padding has a detrimental affect on the internal temperature. After only 10 minutes of use the heat inside the cavities had risen to a discomforting level.

SOUND QUALITY

What strikes you first is the absence of punch and clarity. The treble and



mid-range are respectable but the bass is rather lifeless and flat. Despite this the DT531 is an amiable performer of jazz, blues and classical. The headphone brings a

warm and inviting ambience to Mozart's *Requiem* and Davis' *Flamenco Sketches*. Pop and dance tracks were less impressive, the DT531 exhibiting an apathy towards

the bass, vocals and percussion. At times, the treble came across as forced and abrasive making listening uncomfortable.

The DT531 is a rather uninspired entry from an established player. For phones' that cost over £100, Beyer's latest cans are a disappointment. But if you prefer classical and jazz or other acoustic music they could well be worth a listen.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE **£105.00**

Average performer from an established player. Lacks punch and bite.

ONE YEAR GUARANTEE

Veda Products, 5 Birchanger Industrial Estate, Stansted Road, Bishops Stortford, Herts, CM23 2TH.
(01279) 501111

SPECIFICATIONS

Weight:	245g
Cord:	2.5m
Type:	Open-back

GRADO SR325

Removing the SR325 from its box, you are immediately struck with a feeling of nostalgia. Featuring a retro design and minimalist styling, the SR325 is reminiscent of the headset used by Phones in Gerry Anderson's *Stingray*. Purported to be "truly the world's finest", the SR325's greatest assets are its robust build and sound quality rather than its functionality. Although the style is practical, the drawback is its lack of 'wearability'.

The SR325 is fantastically conceived with solid metal ear-pieces and a simple, manually adjustable single headband – but I found the ear-pieces distinctly uncomfortable. But comfort is a very subjective thing and previous reviews have been more positive in this respect. My key concern is the size of both the pads and the speaker diaphragms. Maybe it is the shape and size of my lobes, but the Grado earpieces compact and slight nature meant the tips of my ears were pinched through use.

SOUND QUALITY

However, all the discomfort is easily forgotten when you listen to this model in action. The sound is bass



strong, energetic and delivered with great balance and clarity. Although the headphone has a tendency towards the bass, the general effect

is articulate and lacks coloration. It may not look the most hi-tech and ergonomic, but the SR325 is a truly wonderful headphone. Transparent

and effortless, the Grado uncovered the complex and intricate detail of Miles Davis' *Flamenco Sketches* and Mozart's *Requiem* with ease. The bass has a great sense of attack, allowing dance and pop tracks to be portrayed well.

Costing upward of £300, the SR325 represents a serious audiophile alternative. But its lack of basic comfort makes the price tag appear over inflated.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £300.00

📄 **Elegant sound with intense response across the entire frequency spectrum. Let down by idiosyncratic ear-piece design.**

■ TWO YEAR GUARANTEE

✉ Goldring Products, 8 Greyfriars Road, Bury St Edmunds, IP32 7DX.

☎ (01284) 701101

SPECIFICATIONS

■ Weight:	200g
■ Cord:	2m
■ Type:	Open-back

JVC HA-DX3

The HA-DX3 is the one member of this group that is guaranteed to make its wearer stand out from the crowd. Guaranteed only because it is produced with shiny copper ear pieces that, when worn, look like a couple of small saucepan lids strapped to your head.

Described as Digital Reference (whatever that means), these 'phones are a joy to wear and listen to. The cans are ergonomically styled to snuggle perfectly around the ears, and with its super-soft cloth pads the experience is satisfying for long and short periods.

Its weight of 340g makes it the heaviest in the group, but the double headband sufficiently reduces the pressure on the head and lobes to belittle the heft. The end result is near-perfect luxurious comfort. The cable is detachable for easy replacement, and it's the longest in the test at 4 metres.

SOUND QUALITY

Not only great to wear, the HA-DX3 is a lively and enthusiastic performer with a wide soundstage that exudes confidence, precision and clarity. The



sound delivery is unlike any of the other candidates in this test. JVC has widened the source projection within the cans. This results in an ethereal listening experience, which

simulates a much larger acoustic arena than usual.

From jazz to pop, this headphone breezed through the test. The treble and mid-range are managed with

care and attention and although the bass can border on the uncomfortable, even the stinging bass of Cyprus Hill's *Tequila Sunrise* was treated with respect.

It is difficult to fault the HA-DX3 on all counts. It is responsive, beautifully balanced and most importantly, a set of headphones you could wear all day. The only negative point is its £200 price tag.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £200.00

📄 **Great headphone with a rich bass, careful mid-range and very comfy to wear.**

■ TWO YEAR GUARANTEE

✉ JVC, JVC Business Park, Priestley Way, London, NW2 7BA.

☎ (020) 8450 3282

SPECIFICATIONS

■ Weight:	340g
■ Cord:	4m
■ Type:	Closed-back

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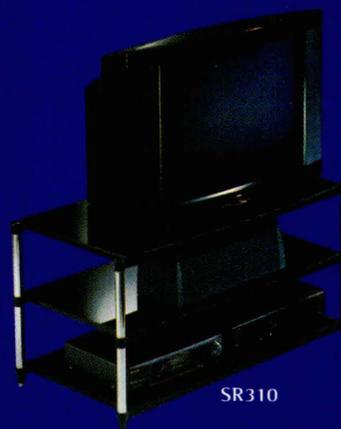
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PHILIPS HD910

If design is any indication, Philips is directly targeting the affluent, style-conscious buyer with the HD910. Configured with an emphasis on dance music in all its various forms, this model is aesthetically innovative with its open back design, aluminium-finish, soft-padded cans and cool blue headband.

The resultant product is an extremely comfortable experience even on those longer sessions. The ergonomic design makes the headphone lightweight to wear while creating a spacious and roomy sound. For a product clearly aimed at budding bedroom DJs, it is a disappointment that the speakers cannot be flipped. The cable is fitted with a 3.5mm jack plug while its length is an adequate three metres.

SOUND QUALITY

Its strengths are simple. On hard-edged works such as Cyprus Hill's *Insane In The Membrane* and Prince's *U Got The Look*, it certainly enjoyed itself, rolling its sleeves up and diving headfirst into the melée. The sound is spacious, combining pure, assured bass and a respectable mid-range.



There is a downside: the treble is the annoyingly weak, even on those dance tracks. Flimsy and harsh, the higher frequencies are handled with-

out any great refinement. Its treatment of *So What* by Miles Davis and Mascagni's *Intermezzo* from *Cavalleria Rusticana* can only be

described as machiavellian, portrayed as a cacophony of screeching horns and harsh strings, and handled with little finesse.

If your musical taste is towards the faster rhythms of acts such as Moby and the Chemical Brothers, rather than the lilting strains of Mozart, then the Philips is worth considering. It is comfortable to use, has clear sonic strengths and is built to a high standard.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £80.00

■ Ergonomically refined but ultimately suffers from a muffled mid-range and treble. Ideal for dance, though.

■ ONE YEAR GUARANTEE

✉ Philips Consumer Electronics, 420 London Road, Croydon, CR9 3QR.

☎ (020) 8665 6350

SPECIFICATIONS

■ Weight: N/A
 ■ Cord: 3m
 ■ Type: Open-back

SENNHEISER HD590

Sennheiser is synonymous with top quality, professional headphones that compromise on neither performance nor build quality. The Prestige 590 is yet another fine specimen with a build and comfort that reach the high standards normally associated with the brand.

Using an open-back design to create a spacious stereo atmosphere, the ear-pieces are relatively plain and conservative. Finished in black, its aesthetically pleasing structure makes for a balanced and surprisingly lightweight performance – despite weighing 270g. This flagship model uses a single adjustable headband and large, soft cloth pads to ensure a degree of comfort which is refreshingly inviting for both short and extended listening.

Furthermore, the longevity of the HD590 is assured with a detachable cable fitted with a mini-jack, and replaceable components.

SOUND QUALITY

The HD590 offers a 'careful' bass response and a crisp mid-range. For its excellent reproduction of mid and lower frequencies, though, the



headphone has rather obvious treble performance. This may be Sennheiser's style, but the overriding effect is not very sympathetic with modern material. The delivery of the Beatles' *Long And Winding Road* was lively enough with the string

sections handled with great gusto, but the treble was inexplicably sharp and intrusive.

Where the HD590 wins its merit points is in its treatment of classical and jazz tracks. Mozart's *Requiem* was performed with zest and

energy while Miles Davis' *So What* came across with subtlety and clear distinction.

The HD590 offers unrivalled comfort but at a price. The Prestige is best suited to gentler, softer musical genres, but at £159.95 it is rather expensive for a design that seems to only sound impressive with acoustic music. But if that's what you like it's worth a try.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £159.95

■ Assured and confident player that has ample clear mid-range and bass response, but rather insistent treble.

■ TWO YEAR GUARANTEE

✉ Sennheiser UK, 3 Century Point, Halffax Road, High Wickham, Bucks, HP12 3SL.

☎ (01494) 551551

SPECIFICATIONS

■ Weight: 270g
 ■ Cord: 3m
 ■ Type: Open-back

SONY CD2000

When you first try on these headphones, you may be forgiven for thinking you've slipped a pair of your favourite slippers on your head. A closed-back design, the fundamental concern with the luxurious cloth pads (the largest of all the test models) is the amount of heat that is generated. On those few and far-between days when this country's temperature soars, prolonged wearing is uncomfortable.

Weighing 300g, the phones are too heavy to make them ideal, but they are comfortable enough to wear over short periods. Longer stints will make your head feel constricted and eventually leads to a head-in-a-vice sensation.

Reversible ear-pieces lend it to DJ-style one-ear listening, and the CD2000 can be folded up to fit nicely into a wicked little leather carrying pouch. A removable coiled cable gives up to three meters of unrestricted movement, and the standard 3.5mm jack plug is supplied with a 6.3mm adapter.

SOUND QUALITY

Sony has taken strictly neutral approach to the sound balance of



the CD2000. These headphones are balanced and refined with the emphasis on the mid-range and treble. Listening to Mascagni's *Intermezzo* from *Cavalleria Rusticana*

was sheer bliss, with every aspect of the composition clear. There was no hint of background interference as each instrument was delivered with subtle precision and assurance.

Disappointingly, for enthusiasts of less bass-driven genres, the sound is fine but could be significantly improved. The bass performance being slightly hollow. For a set of phones that are priced around the £200 mark, the CD2000 is a frustrating under-achiever. A lot of good work has gone into creating a wonderfully clean, detailed and rich mid and treble at the expense of a lack of solidity in the bass.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £200.00

Large ear-pieces and pads make for rather cosy listening on warm days. Pure mid-tones but weightless bass.

ONE YEAR GUARANTEE

Sony, The Heights, Brooklands, Weybridge, Surrey, KT13 0XW.

(0990) 111999

SPECIFICATIONS

Weight:	300g
Cord:	3.5m
Type:	Closed-back

STAX System II

Costing upwards of £400, you might expect the Stax System II to conquer all and (if it did have hands) with one hand tied behind its back. The most expensive model in the test, it is supplied with its own headphone amplifier and power supply.

The reason for the high price and separate driving amp is that this is one of those rare beasts, an electrostatic headphone. This is Stax's speciality, it's so called earspeaker designs having garnered acclaim for their transparency around the globe. The argument for the high price being that, you'd have to pay considerably more for loudspeakers of a similar quality.

Stax has focused on getting both the acoustics and the comfort right. Initially the System II does feel awkward and ungainly, but after some use those negative issues can be easily offset against the sound. In fact, the comfort level is remarkably good considering you are essentially wearing a pair of loudspeakers fixed to a headband! No doubt the lack of pressure has a bearing. My only gripe for a product of such expense is the short length of cable supplied.



SOUND QUALITY

The sound delivery is the best I have had the pleasure of experiencing. The piano on Miles Davis' *Flamenco Sketches* never sounded so deli-

cately pure and defined. Each musical note, instrument and inflection in the recording could be instantly plucked from the performance and enjoyed separately. Even on the

faster dance and pop rhythms, it still had no difficulty in combining its rich and dynamic bass, mid-range and treble to produce a truly enlightening experience.

An exceptional gem, this neutral performer confirms the old adage that simple is best. Once again Stax has managed to produce a highly transparent earspeaker system that warrants the finest ancillaries.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £400.00

Maybe the most expensive in the test, but the delivery of sound is five star all the way

TWO YEAR GUARANTEE

Path Group, Unit 2, Desborough Industrial Park, High Wickham, Bucks, HP12 3BG.

(01494) 441736

SPECIFICATIONS

Weight:	295g
Cord:	2m
Type:	Open

TECHNICS RF-F800

Positioned in the competitive sub-£50 category, the Technics RF-F800 is the smallest headphone in this group. But don't let this fool you. It may be the compact but this little firecracker boasts a powerful punch to ward off potential bullies.

Built to the usual Technics standard, this model features a single bar headband, which can be manually positioned. Adorned in a sleek black livery, the ear-pieces are dressed in a tough cloth and integrate 40mm drive units.

Mixing balance and poise, the design is joyfully traditional and functional. For both long- and short-term usage, the RF-F800 is great to wear. The experience is pleasant, with the only shortcoming being the lack of full ear enclosure from the relatively small capsules. It includes a three metre lead, a 3.5mm jack plug and 6.3mm adapter.

SOUND QUALITY

Stunning, was my reaction when first hearing the F800's first performance. No matter what your musical preferences, the RF-F800 is a consummate gentlemen with them all. Bass, treble and mid-range work



effortlessly together to generate a rich and sensational listening experience. The soundstage

and environment created is second to none. From jazz to hip-hop, the results were surprisingly positive

with the phones passing the examination with full colours. Particularly impressive was its treatment of bass-driven material such as Cyprus Hill's *Insane In The Membrane*.

Technics is to be congratulated for this tasty design – not only has it a sound to die for, but it also has a commendable tariff to boot. In fact, when I originally saw the price tag, I thought they'd made a mistake.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £49.99

Comfortable budget priced headphone that sounds sublime and seems at home with all musical genres.

ONE YEAR GUARANTEE

Panasonic UK Ltd, Panasonic House, Willoughby Road, Bracknell, Berks, RG12 8FP
(0990) 357357

SPECIFICATIONS

Weight:	160g
Cord:	3m
Type:	Closed-back

VIVANCO SR222

Incorporating what Vivanco calls an Airspace stereo system, the SR222 combines a futuristic design with earphones that are described as half-open and have both pads and speaker in contact with the ear.

The result is a headphone that possesses remarkably clear sound quality, but is defeated by clumsy ergonomic design. From the moment you put the 'phones on, you notice the awkward positioning of the pads, headband and speakers. It makes you wonder whose head they used as a guide..

Vivanco has obviously compromised comfort for performance. At £30, they may be the cheapest of all the models in the group, but the wearability is proved poor for me. The pads are too hard, the speaker units rub and the double headband does little to ease the pressure for prolonged periods. The cable length is sufficient at 2.7m, but could do with being a little longer.

SOUND QUALITY

The SR222 is a good performer with a gentle, natural and bright response with the majority of musical types. In



particular, jazz, classical and blues are portrayed with a dynamic verve surprising for such a budget priced model. Not surprising for a budget

headphone is the reduction in bass depth and attack. Listening to Prince's *Dance On*, the SR222's Achilles heel is evident. The lower

frequencies are smothered and uninspired with those heavy bass lines.

Considering the potential value for money it offers in sound alone, surely it would be easy to forgive the wayward design? But user comfort is an integral ingredient in the enjoyment factor and this, like Chris Waddle, misses the target by a mile.

VERDICT

SOUND ★★★★★

BUILD ★★★★★

COMFORT ★★★★★

VALUE ★★★★★

PRICE £30.00

Not very comfortable, but redeems itself with a surprisingly substantial sound.

ONE YEAR GUARANTEE

Vivanco UK Ltd, Macted Court, Macted Road, Hemel Hempstead, HP2 7BY.
(01442) 403020

SPECIFICATIONS

Weight:	248g
Cord:	2.7m
Type:	Semi-open



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CONCLUSIONS

HEADPHONES



After spending many an hour enveloped inside this selection of headphones, the results should be conclusive and there should be clear winners. But sometimes, theory and practice are miles apart – as in this case. Hours of listening have made me realise just how intimate the headphone experience can truly be and how complex the decision making process is.

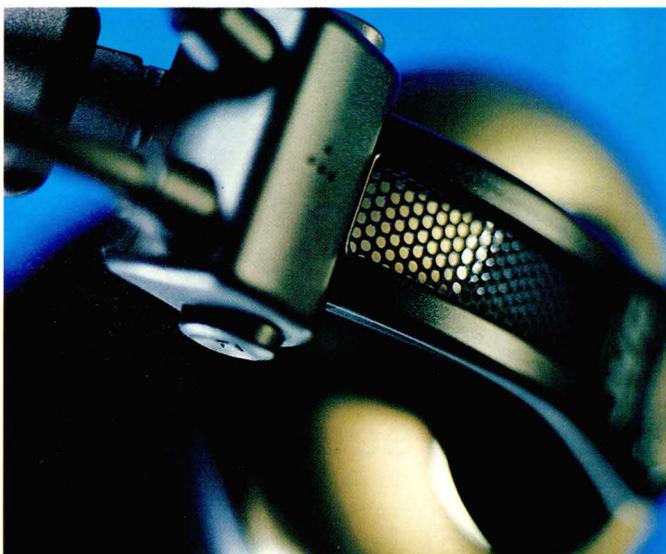
Forget about expensive loudspeakers, if you want to really explore the workings of your favourite tracks in fine detail then a great set of cans is the only way. Songs that you have enjoyed for years can seem reborn when revisited through a pair of high quality headphones. Similarly, a sub-standard model can reduce your music to a depressing mish-mash of notes and noises.

Making the right choice is never easy with the plethora of models available. And in this test, we have

targeted corded products only, but the world of wireless is just another piece in the puzzle.

Choosing the right model for you is a matter of taste – both sonic and ergonomic. Musical preferences will be the main factor in selecting the right headphones. Whether you prefer dance or classical, it is vitally important to purchase a product that is versatile with all musical forms. There are many questions and dilemmas to torment the soul: price, design, comfort and performance are major considerations. The best strategy, as always, is to test drive the products before you buy.

Each product in the group is worthy of note but, as they say, there has to be a winner. In fact there are four winners. These champions have been awarded their grades because they exhibit all the ingredients I have talked about with assurance, efficiency and style.



BEST BUYS & RECOMMENDED



TECHNICS RF-F800 £49.99
The smallest on offer, these Technics headphones are an engaging listening experience for a remarkable price. It offers a clean and surprising bass response coupled with lively mid and treble ranges.



AKG K100 £35.95
An all-round, assured headphone that is extremely comfortable to wear and has a very respectable price tag attached. Dynamic mid-range and treble and slamming bass are its major strengths.



JVC HA-DX3 £200.00
The surprise package of the test, these JVC headphones are dynamic and competent performers of great clarity and assurance. Great to wear, it copes admirably with everything you can throw at it.



STAX System II £400.00
Looks ungainly, but this is the Rolls Royce of the test. An extravagant model that is worthy of its price tag due to its delivery of electrostatic loudspeaker sound quality in the confines of a headphone.

HEADPHONES COMPARISON TABLE

MAKE	AKG	BEYERDYNAMIC	GRADO	JVC	PHILIPS	SENNHEISER	SONY	STAX	TECHNICS	VIVANCO
MODEL	K100	DT531	SR325	HA-DX3	HD910	HD590	CD2000	SYSTEM II	RF-F800	SR222
PRICE	£35.95	£105.00	£300.00	£200.00	£80.00	£159.95	£200.00	£400.00	£49.99	£30.00
SOUND	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○
BUILD	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○
COMFORT	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○
VALUE	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○	○○○○○
GUARANTEE	1yr	1yr	2yr	2yr	1yr	2yr	1yr	2yr	1yr	1yr
WEIGHT	190g	245g	200g	340g	247g	270g	300g	295g	160g	248g
CORD LENGTH	3m	2.5m	2m	4m	3m	3m	3.5m	2m	3m	2.7m
TYPE	Open	Open	Open	Closed	Open	Open	Closed	Open	Closed	Open

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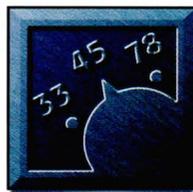
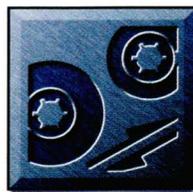
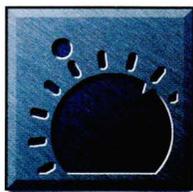
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● Audiolab 8000 CD/Q/2xm, £1,800. B&W P4 (Cherry), £250. Audioquest Midnight plus 2x5m pairs, £300. Quartz 3 interconnects x2, £100. Call Simon (01442) 392004.

● Linn Classic (white), sealed box, £850. AudioNote CD2, sealed box, £550. B&W CDM7SE Speaker, red ash, as new, £675. Call (01952) 502097 (Telford).

● Linn Karik 3, Numerik, Kairn (phono), Klout, tri-wired Kabers, all cables, interconnects, remote, etc. Soundstyle table, mint, £3,500. Will not split. Call (01279) 718072.

● Arcam alpha 5 CD player, upgraded to 6 spec by Arcam, excellent condition, £175. Call (01323) 486216 (eve).

● Monitor Audio Studio 20SEC Cherry, as new with plinths and manual, boxed, £1,900 new, will accept £1,400. Call (07720) 061885.

● Rotel RB981 power amps x2, stereo or bridged. Latest model, £720 new, will accept £390. Would split. Audiolab 8000T, boxed, (£800) £350. Call (01904) 708382 or (0403) 656458.

● TEAC VRDS 10, CD player, excellent condition, complete with original box, remote control and manual, £280. Call (07801) 948015.

● Castle Winchester speakers, excellent condition, £400 (£1,200). Call (01704) 550247.

● Castle Howard S2 speakers, oak, immaculate condition. Demonstration available. Originally £1,200, exceptional sound quality for £600 o.n.o. Call (01843) 298538.

● Castle Severn II speakers, rosewood, 1yr old. £200. Pioneer A407R amp, £50. All excellent condition. Call (01795) 479303.

● Kenwood tape deck KX3060, £50. Kenwood tuner KT2060L, £30. Both excellent condition. Call (01795) 479303.

● Arcam Alpha7 CD player, Rotel RC-970BX pre-amp, Rotel RB-970BX power amp, Mission 734 speakers, Van den Hul interconnects, £650 o.n.o. Call (07973) 422841.

● Pair of Townshend Seismic Sinks. Since bought Soundstyle racks, can't accommodate platforms also - hence reluctant sale. Mint. Sensible offers. Call Darren (020) 7473 4095.

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● Sound Organisation 2 shelf hi-fi stand, £25. Motion Electronics TV tuner, £25. Luxman CO2 pre-amp, MO2 power amp, £600. No offers. Call (01708) 457691.

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● Audiolab 8000s, 1.5 years old, boxed as new, inc Chameleon2 interconnect (£80 new) plus Sony Dolby S cassette recorder (£300 new), £500 o.n.o. Call (0790) 9913322.

● B&W P5 floorstanding speakers, astounding sound and looks, 1.5 years old, boxed as new, will include two 3m Linn bi-wire cables (£100+ new), £600 o.n.o. Call (0790) 9913322.

● Epos ES22 floorstanding speakers, cherry finish, excellent condition (£1,350 new), £500. Call John (01202) 516289 evenings, or (01425) 489196 daytime.

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● Tannoy 638 Profile speakers, must be good condition. Call Mark (020) 8429 3664 or (07887) 720868.



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Audio Alchemy DDE1.1V D/A Converter.....179
Audio Note CD2 (New & boxed) Valve CD.....650
Audiolab 8000 DAX D/A Converter 24 Bit.....549
DPA Enlightenment DX32.....350
Densen Beat 400 CD Player (New & boxed) HDCD.....999
Helios 2 CD Player.....595
Midiman 24 Bit A to D Converter Flying Cow.....250
Monrio Privilege 20 Bit CD Player.....699
Monrio Bit Match Transport.....599
Monrio 18B2 DAC.....499
Nakamichi DV10 DVD DTS/5.1.....549
Theta TLC.....125

Turntables Tonearms & Cartridges

Ariston RD40/RB250/Blue Point.....249
Decca London Gold (J. Wright Re-Built / Podded).....250
EMT HSD15 Special MC Phono Cartridge (NEW).....650
Garrard 401/Loricraft Plinth/SME 3009/2.....499
Garrard 401/Aphelion/SME 3009/V15.....499
Garrard 401/Aphelion/RB300 (As new).....599
Linn Archiv (Low hours).....399
Linn Ittok LVII Silver.....325
Linn LP12 Lingo Cirkus/Ekos Troika Black (90).....1599
Linn LP12 Valhalla Black (89).....399
Linn LP12 Valhalla Afromosia (95).....425
Linn Troika (no cantilever).....150
Lyra Parmassius 600 hrs.....599
Michell Gryo/RB300 Lastest style (99).....850
Michell Iso/Hera MC Phono Stage.....350
Michell QC Gyropower.....350
Naim Armageddon.....475
Naim Aro Tonearm.....750
Ortofon MC 30 Supreme (150 hrs).....299
Rega Planar 25 Ash Turntable (99).....449
Roksan Radius 3 Tabriz/DSU (98).....499
Roksan Shiraz (Latest Black Version).....699
Roksan TMS Piano Lacquer Turntable (97).....1995
Roksan Xerxes Black/ XPS1/ Rega Cut.....498
Roksan Xerxes Piano Lacquer Cog/XPS 3/DSU.....850
Roksan Xerxes X Black/Tabriz/Corus (N & B).....1200
Tubaphon TU2 (Stereophile Class B) 50 hrs.....425
Wilson Benesch Act 2 Tonearm.....999

Preamplifiers

Alchemist Forsetti Preamplifier.....499
Alchemist Kraken Preamplifier.....199
Audio Analogue Bellini Preamplifier.....329
Audio Note M2 Line Preamplifier.....750
Audio Research LS2 Hybrid Preamplifier.....1299
Audio Research LS9 Remote Solid State.....1399
DPA Enlightenment (New style).....499
Gate Audio Line Valve Preamplifier.....650
Linn Kairn / Brilliant PSU Preamplifier.....649
Mod Squad Line Drive AGT.....299
Sony Reference Preamplifier Esoteric TA 1ES.....2399

Amplifiers

Audion Sterling Integrated Line.....449
Beard M1000 125W Monoblock 6550 Triode.....1999
Graaf 50/50 Push Pull Power amplifier (N & B).....1795
Graaf GM20 OTL Ex-Demo Re-Valved.....2395
Laverdin IT Integrated.....2195
MP211A monos 2X 211 SE Valves (Chinese).....995
Meridian 551 Integrated (Phono Fitted).....549
Meridian 555 Power Amplifier.....450
Pathos Model One Hybrid Integrated (6 months).....750
Quad 33/303 Amplifiers (New caps fitted).....199
Roksan Caspian Integrated.....549
Sirius D200 Power Amplifier 2 X200W.....1995
Unison Research Pent 35 Valve Integ (4xEL34).....995

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Hi Fi Choice
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Classified

HOW TO USE THE BUYERS' GUIDE

Best Buys, Recommendations & Editor's Choices

B BEST BUYS: Awarded to group-tested products which display an unbeatable blend of performance and value for money.

R RECOMMENDED: Top performers in group tests; perhaps not the cheapest but possibly more sophisticated than Best Buys.

E EDITOR'S CHOICE: Components which have outstanding sound quality but do not qualify for BB or R because of non group testing.

Our Three Step Guide to Buying Hi-Fi

The *Hi-Fi Choice Price Guide and Directory* are extremely simple to use, but contain all the information you need to select and buy the perfect hi-fi system. Here's how it works.

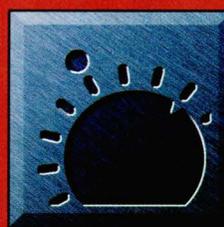
STEP 1 DISCOVER which products fall within your budget by using our Price Guide, which starts on this page. The product listing is updated using manufacturers' data every other month, and aims to include every hi-fi component currently available in the UK. (But please fax us on (020) 7317 2686 with any omissions!) It is an alphabetical listing divided into different types of hi-fi component, and also into price bands.

STEP 2 PRODUCTS whose names are printed in **RED** are those we have reviewed, which you can read about in the Directory (starts after the Price Guide). Here you will learn which items have been singled out for our famous Best Buy, Recommended or Editor's Choice awards, denoting products of exceptional quality and value. The Directory is sorted by product type and listed alphabetically, and the beginning of each section provides essential information about each kind of hi-fi component.

STEP 3 FIND your nearest hi-fi store in our Dealer Directory (at the end of the Directory) to book a demonstration of the hi-fi equipment you want to hear. Remember to take your own software!

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AMPLIFIERS INTEGRATED

KEY

Ⓢ - Number of line-level inputs.

'20W' - Rated RMS output power per channel into a nominal 8 Ohm load.

UP TO £250

Arcam Alpha One	Ⓢ	35W	230
Ariston AX910	Ⓢ	30W	60
Cambridge A1 Mk III	Ⓢ	30W	100
Cambridge A1 Mk3 SE	Ⓢ	30W	120
Cambridge A100	Ⓢ	40W	140
Cambridge A300	Ⓢ	40W	150
Cambridge A3i	Ⓢ	60W	200
Cambridge A500RC	Ⓢ	50W	200
Denon PMA-2505E	Ⓢ	30W	140
Denon PMA-3505E	Ⓢ	50W	180
Denon PMA-535R	Ⓢ	50W	230
Denon PMA-100M	Ⓢ	80W	240
H/K HK630	Ⓢ	40W	200
H/K HK3270	Ⓢ	65W	250
JVC AX-A372BK	Ⓢ	40W	200
JVC AX-R5BK	Ⓢ	45W	200
Kenwood KA-1080	Ⓢ	60W	140
Kenwood KA-3080R	Ⓢ	40W	170
Kenwood KAF-3010R	Ⓢ	40W	180
Marantz PM-48	Ⓢ	50W	150
Marantz PM-57	Ⓢ	50W	200
Marantz SR-47	Ⓢ	40W	200
Marantz PM6010 OSE	Ⓢ	50W	230
Marantz PM-66SE	Ⓢ	50W	230
Musical Fidelity E1	Ⓢ	30W	199
NAD 310	Ⓢ	20W	100
NAD C300	Ⓢ	25W	146
NAD C320	Ⓢ	40W	200
NAD 312	Ⓢ	25W	200
Pioneer A-105	Ⓢ	30W	130
Pioneer A-204R	Ⓢ	25W	160
Pioneer A-300R	Ⓢ	50W	200
Pioneer A-305R	Ⓢ	50W	200
Pioneer A-407R	Ⓢ	45W	230
Pioneer A-405R	Ⓢ	45W	250
Rotel RA921	Ⓢ	25W	125
Rotel RA931	Ⓢ	35W	175
Rotel RA971 Mk II	Ⓢ	60W	250
Sansui AUX-410R	Ⓢ	50W	150
Sansui AUX-510R	Ⓢ	70W	230
Sherwood AX 4050R	Ⓢ	50W	150
Sherwood AX-7030R	Ⓢ	95W	230
Sony TA-FE230	Ⓢ	40W	100
Sony TA-FE330R	Ⓢ	60W	130
Sony TA-FB730R	Ⓢ	40W	200
Teac A-E2000	Ⓢ	50W	180
Teac A-R600	Ⓢ	90W	200
Technics SU-V300	Ⓢ	25W	130
Technics SU-V500	Ⓢ	30W	160
Technics SU-A600 Mk3	Ⓢ	37W	200
Technics SU-V620	Ⓢ	70W	230
Technics SU-A707	Ⓢ	70W	250
Technics SU-A700 Mk3	Ⓢ	45W	250
Yamaha AX-396	Ⓢ	60W	170
Yamaha AX-496	Ⓢ	85W	230

£251 TO £500

Arcam Alpha 7R	Ⓢ	45W	300
Arcam Alpha 8R	Ⓢ	50W	380
Arcam Alpha 9	Ⓢ	70W	500
Audio Analogue Puccini	Ⓢ	40W	475
Audioagram MB1	Ⓢ	40W	493
Creek 4330	Ⓢ	40W	279
Creek 4330R	Ⓢ	40W	355
Creek 5250	Ⓢ	50W	450
Cymbal CA1	Ⓢ	40W	499
Cyrus 5	Ⓢ	40W	500
Denon PMA-735R	Ⓢ	65W	300
Denon PMA-1500R	Ⓢ	70W	500
Edmund Audio ES110	Ⓢ	85W	400
EMF Audio Sequel	Ⓢ	50W	450
H/K HK650	Ⓢ	60W	330
Kenwood KA-5090R	Ⓢ	65W	300
Magnum IA120	Ⓢ	65W	265
Magnum IA170	Ⓢ	96W	330
Magnum IA170SE	Ⓢ	90W	430
Marantz PM-68	Ⓢ	90W	300
Marantz PM-66 K1 Sig.	Ⓢ	50W	400
Marantz SR5000	Ⓢ	105W	500
Monno Asty	Ⓢ	55W	400
Musical Fidelity E11	Ⓢ	60W	300

Musical Fidelity X-A1	Ⓢ	50W	480
Musical Fidelity A2	Ⓢ	25W	500
Myriad T-40	Ⓢ	50W	400
NAD 314	Ⓢ	35W	260
NAD C340	Ⓢ	50W	270
NAD 317	Ⓢ	80W	400
Onkyo A9210	Ⓢ	40W	260
Onkyo A921	Ⓢ	50W	350
Onkyo A922	Ⓢ	70W	400
Pioneer A-607R	Ⓢ	60W	300
Pioneer A-400X	Ⓢ	50W	300
Pioneer A-605R	Ⓢ	80W	400
Pioneer A-300R Precision	Ⓢ	35W	400
R-20 A10	Ⓢ	50W	500
Rega Big Brio	Ⓢ	35W	298
Rega Luna	Ⓢ	40W	375
Rega Mira	Ⓢ	60W	475
Roksan Kandy	Ⓢ	475	
Rotel RA-972	Ⓢ	70W	450
Shearpe 2.5	Ⓢ	35W	499
Sony TA-FB920R	Ⓢ	65W	300
Sony TA-F430ES	Ⓢ	70W	400
Sony TA-F3000ES	Ⓢ	40W	500
TAG McLaren 60i	Ⓢ	60W	500
Talk Electronics Storm 1	Ⓢ	50W	500
Teac AH-500	Ⓢ	50W	280
Technics SU-A808	Ⓢ	55W	300
Technics SU-A909	Ⓢ	100W	400
Token K50	Ⓢ	55W	350

£501 TO £700

Alchemist Kraken APD6A	Ⓢ	55W	600
Alchemist Nemesis	Ⓢ	80W	700
Audio Analogue Puccini Remote	Ⓢ	50W	575
Audio Note Kanji Line SE	Ⓢ	9W	699
Audio Note First integrated	Ⓢ	40W	699
Audio Refinement Complete	Ⓢ	50W	899
Audiogram MB2	Ⓢ	60W	599
AVC EL34	Ⓢ	40W	650
CR Dev CR324se	Ⓢ	150W	569
CR Dev Kalypso	Ⓢ	15W	599
CR Dev CR325	Ⓢ	175W	699
Creek 5250SE	Ⓢ	60W	665
Cyrus 7	Ⓢ	60W	700
Densen Beat B-100 MkII	Ⓢ	60W	700
Gamma Gemini	Ⓢ	12W	699
H/K HK690	Ⓢ	60W	530
Hi Q Sound MCI	Ⓢ	30W	565
LFD Integrated 0	Ⓢ	50W	549
Linn Majik (Line)	Ⓢ	33W	650
Lynwood Opal	Ⓢ	80W	685
Magnum IA200	Ⓢ	100W	599
Magnum Class A	Ⓢ	85W	690
Musical Fidelity A220	Ⓢ	50W	700
Myriad Cameo	Ⓢ	60W	530
Myriad MI 120	Ⓢ	60W	700
Naim Nait 3	Ⓢ	30W	590
R-20 A20 Mk II	Ⓢ	70W	600
Rose Scion	Ⓢ	65W	615
Shearpe Phase 2	Ⓢ	50W	689
Sugden Audition T	Ⓢ	65W	549
Talk Electronics Cyclone 1	Ⓢ	60W	550
Talk Electronics Storm 2	Ⓢ	50W	650
Teac AB-X7R	Ⓢ	50W	700
YBA Complete Integre	Ⓢ	50W	699

£701 TO £1000

Alchemist Nexus	Ⓢ	799	
Alchemist Forseti Integrated	Ⓢ	100W	1,000
Arcam Alpha 10	Ⓢ	100W	800
Arcam FMJ A22	Ⓢ	100W	1,000
Aria S2	Ⓢ	12W	1,000
Audio Analogue Puccini SE Remote	Ⓢ	60W	795
Audio Note Oto Line PP	Ⓢ	12W	950
AVI S2000MI	Ⓢ	100W	989
Copland CSA8	Ⓢ	60W	899
Credo IMP702	Ⓢ	70W	850
Credo IMP705	Ⓢ	70W	1,000
Denon AVR-3300	Ⓢ	75W	800
Electrocompaniet ECI-2	Ⓢ	40W	995
Electrocompaniet ECI-3	Ⓢ	75W	1,000
Exposure XX Super	Ⓢ	60W	800
Exposure XV Super	Ⓢ	60W	900
Exposure RCOXV	Ⓢ	60W	1,000
LFD 0 LE Integrated	Ⓢ	60W	799
Linn Majik (Phono)	Ⓢ	33W	800
Magnum Class A SE	Ⓢ	80W	795
Marantz PM-17	Ⓢ	60W	900
Meridian 551	Ⓢ	55W	795
Musical Fidelity A3	Ⓢ	85W	849
Musical Fidelity X-A100R	Ⓢ	75W	999
MVL A2	Ⓢ	100W	970
NAD T770	Ⓢ	90W	1,000
Naim Nait 3 R	Ⓢ	30W	780
Nakamichi AV-10	Ⓢ	140W	1,000
Pathos Classic One	Ⓢ	95W	995
Pioneer A-07	Ⓢ	80W	999
Pioneer VSX-908RDS	Ⓢ	80W	1,000
Plinius 2100i	Ⓢ	995	
Roksan Caspian	Ⓢ	70W	795
Shearpe Phase 2 Reference	Ⓢ	50W	799
Sonneteer Alabaster	Ⓢ	50W	900
Sugden A21a Int	Ⓢ	25W	799
Sugden Audition C	Ⓢ	60W	799
TAG McLaren 60iRV	Ⓢ	60W	999

H I - F I P R I C E G U I D E

£1001 TO £2000

Aria SR-1	6	80W	1,250
Aria S6	6	35W	1,600
ATC S1A2-150	6	150W	1,999
Audio Analogue Maestro	6	150W	1,995
Audio Note Soro Line PP	6	20W	1,200
Audio Note Oto Line SE	4	12W	1,200
Audio Note Oto Phono SE	6	12W	1,500
Audio Note Soro Line SE	6	18W	1,699
Audio Valve Assistant-S 20	1	20W	1,250
Beam-Echo SA-50	6	50W	1,950
Beard 30-60 Mk II	6	30W	1,495
Bow Technologies Wazoo	6	50W	1,795
Bryston B-60	6	60W	1,281
Canary Audio CA-608	4	24W	1,495
Copland CSA14	6	60W	1,199
Copland CSA28	6	60W	1,249
Copland CTA402	6	35W	1,599
CR Dev Romulus V3	6	35W	1,198
CR Dev Athena	4	38W	1,499
CR Dev Remus V3	6	60W	1,989
Credo LIM 702	6	60W	1,191
Credo LIM 703	6	60W	1,249
Densen DM-10	6	75W	1,450
EAR 859	6	13W	1,999
EAR 834	6	40W	1,999
Golden Tube Audio SI-50 MkII	6	50W	1,100
Graaf Venticinque	6	25W	1,790
Jadis Orchestra	6	40W	1,345
LFD Integrated 1	6	65W	1,099
Lundahl Mag Amp	6	23W	1,735
Marantz PM-17K1 Sig	6	60W	1,300
Meracur Intrae	6	60W	1,095
NAD S300	6	100W	1,900
Papworth MH-200	6	200W	1,200
Papworth MVH-200	6	200W	1,200
Plinius 8150	6	100W	1,895
Praceca Sonoro	6	100W	1,800
R-20 A30.1	6	100W	1,500
Restek Fantasy 2	6	100W	1,499
Roksan Caspian DSP	4	100W	1,295
Sonic Frontiers Anthem Integrated	6	25W	1,299
T+A R1200R	6	90W	1,750
Woodside ISA230 Line	6	30W	1,099
Woodside ISA230 Disc	4	30W	1,249
YBA a Integre Line	6	50W	1,095
YBA a Integre DT Line	6	50W	1,395

OVER £2000

Adyton Opera	4	50W	2,595
AMP Flux System 2	6	50W	3,000
Arcam Alpha 10 DAVE	7	100W	2,500
Arcam FMJ A22 DAVE	7	100W	2,850
Aria S8	6	24W	2,950
Art Audio Integra	6	25W	2,400
Audio Note Meishu Line	6	9W	2,750
Audio Note Ongaku	6	25W	56,000
Audio Research CA50	6	45W	3,399
Belcanto SET40	6	40W	4,450
Belcanto Orfeo 30SI	6	35W	5,450
Cary CAD-300SEI	4	15W	3,395
Conrad-Johnson CAV-50	6	50W	2,495
EAR V20	6	24W	2,495
Electrocompaniet EC-1	6	100W	2,195
Gamma Rhythm	6	18W	2,499
Gamma Rhythm Ref	4	20W	3,499
Gamma Moment	6	40W	19,999
Jadis DA30	6	30W	2,690
Jadis DA60	6	60W	4,483
Krell KAV300i	6	150W	2,495
Krell KAV300r	4	150W	3,333
Krell KAV500i	6	250W	5,000
McIntosh MA6400E	6	100W	3,999
McIntosh MA6800E	6	150W	5,999
Meracur Onesta	4	75W	2,595
Musical Fidelity A1001	6	200W	2,500
Pathos Twin Towers	6	35W	3,250
Pioneer A-09	6	45W	4,000
Rotel RSP-985/RPB-985	6	130W	2,225
Rowland Concentra	6	100W	5,500
Sonus Faber Musica	6	50W	2,295
Sony TA-E9000ES	6	110W	2,500
T+A R1500R	6	135W	2,015
Tube Tech Unisis Sig. Int.	6	30W	2,300
Tube Tech Synergy PPS	6	150W	6,900
Wavac MD811	6	15W	2,995
Wavac MD300B-ST	6	10W	5,575
Wavac MD300B WE	6	10W	6,750

AMPLIFIERS PREAMPS

KEY

Ⓢ (etc) - Number of line-level inputs.
Ph - Phono input fitted as standard
(may be an option on some other models).

UP TO £500

Arcam Alpha 9C	6	Ph	400
Aria Simply Phono	6	Ph	500
Audio Analogue Bellini	6	Ph	495
Audio Note M Zero	6	Ph	299
Beam-Echo PP-21	6	Ph	499
Bryston BP1	6	Ph	438

CR Dev Themis	Ph	349
Creek OBH-9	6	360
Creek P43/R	6	350
Creek P52	6	499
Crimson CS610D	6	475
Cyrus aEQ7	Ph	498
Densen DP-Drive/DP-02	6	500
DPA Enl'ment phono	Ph	275
EAR 834P	Ph	349
EAR 834L	6	449
EAR 834P/MC	Ph	499
Electrocompaniet ECP-1	Ph	495
Henley HMC50	6	150
Henley HMC100	6	350
Hi Q Sound LCP2	6	149
LFD Mistral Linestage	6	449
LFD LSO Linestage	6	499
Lumley PP70	6	345
Lumley PP1	6	345
Magnum MP120	6	330
Magnum MP660	6	500
Magnum MP330	6	500
Monrio Asty L	6	500
Moth 30 Passive	6	349
Moth 30 Phono	Ph	249
Moth 30 Line stage	6	349
Musical Fidelity X10-D	6	120
Musical Fidelity X-LP	Ph	130
Musical Fidelity X-PRE	6	200
Musical Fidelity E20	Ph	400
NAD PP-1	Ph	40
NAD 114	Ph	270
NAD 116	Ph	430
Naim Prefix	Ph	360
Naim NAC92	Ph	485
Parasound P/HP-100	Ph	130
Parasound P/HP-850	Ph	400
Plinius Jarrah	Ph	450
Pro-Ject Phono Box	Ph	40
QED Discaver DS-1	Ph	35
R-20 R-20	Ph	490
Rega EOS	Ph	398
Rega Cursa	Ph	475
Roksan Artaxenes 10	Ph	445
Rose RV-23	Ph	450
Rotel RQ970BX	Ph	150
Rotel RC971	6	135
Rotel RC972	6	250
Rothwell Indus	6	499
Sunfire Phono	Ph	430
Talk Electronics Hurricane 1	Ph	500
Technics SU-C1010	Ph	300
Tom Evans Groovelette	6	399
Trilogy 905	Ph	375
Trilogy 904	Ph	375
Trilogy 900	Ph	499

£501 TO £2000

Adyton Chorus	6	1,995
Alchemist Kraken Pre	6	548
Alchemist Forseti Pre	6	999
Alchemist Signature Pre	6	1,499
Aria Feather One	6	795
Aria Mystery Two	6	1,750
Aria Mystery One	6	1,750
Art Audio Vinyl One MM	Ph	916
Art Audio VPS Line	6	963
Art Audio Vinyl One MM/MC	Ph	1,307
Art Audio VPS Phono	Ph	1,460
Art Audio Conductor Phono MC	Ph	2,000
Audio Note M1 Line	6	550
Audio Note M1 RIAA	Ph	550
Audio Note M2 Line	6	999
Audio Note Discovery	6	999
Audio Note M2/RIAA	Ph	1,099
Audio Prism Mantissa	6	1,995
Audio Research LS8 MkII	6	1,449
Audio Research PH3	Ph	1,490
Audio Synthesis Pro Passion	6	595
Audio Synthesis ADQ Disc Stage	6	995
Audio Synthesis Passion Ultimate	6	995
Audio Valve Eklipse	6	1,650
AVI S2000MP	6	949
AVI S2000MP+P	Ph	1,199
Beam-Echo SP-21	6	1,116
Bryston BP20	6	1,126
Bryston BP-25	6	1,326
Bryston BP-25P	Ph	1,592
Canary Audio CA-606	6	1,295
Canary Audio CA-601	6	1,595
Cary SLP-50 Mk II	6	1,198
Cary PH-301	Ph	1,695
Chord Phono	Ph	1,898
Clearaudio Symphono	6	740
Concordant Exhilarant	6	900
Concordant Exquisite	6	1,950
Conrad-Johnson PV-10AL	6	995
Conrad-Johnson PV-10A	Ph	1,295
Conrad-Johnson PV-12AL	6	1,990
Conrad-Johnson EF-1	Ph	1,990
Conrad-Johnson PF-2	Ph	1,990
Copland CSA303	Ph	1,099
Copland CTA301 MkII	Ph	1,249
CR Dev Carmenta	6	659
CR Dev Argento	6	699
Credo CMP004	Ph	1,246

Credo CMP005	6	1,876
Cyrus aCA7	6	800
Cyrus aEQ7/PSX-R	6	826
Densen Beat B-200	6	1,000
Densen DM-20	6	1,380
DNM 3 Start	6	1,000
DNM 3A Start	6	1,300
DPA Enlightenment pre	6	795
Dynavector L200	6	995
Dynavector P100	Ph	1,495
Dynavector L100	6	1,995
ECA Vista S	6	760
ECA Vista HD	6	880
ECA Prisma	Ph	880
Electrocompaniet EC-4.5	6	1,195
Electrocompaniet EC-4.6	6	1,750
Exposure XIII	6	800
Exposure XIX	6	800
Exposure XVII	Ph	850
Exposure RC XXII	6	1,000
Gate PR101P	6	1,195
Golden Tube Audio SEP-2	6	990
Golden Tube Audio SEP-3	6	1,995
Graaf WFB Two	Ph	1,390
Graaf WFB One	Ph	1,750
Henley HMC200	6	600
Hi Q Sound MCB2	Ph	545
Hi Q Sound MCL2	6	645
Jadis DPL2	6	1,590
Krell KAV250p	6	1,999
LFD MC1 Phono stage	6	949
LFD LS1 Linestage	6	999
LFD MC2 Phono stage	Ph	1,499
LFD LS2 Linestage	6	1,599
LFD LS3 Linestage	6	1,999
Linn Wakonda	6	750
Linn Linto	6	850
Linn Kairn	6	1,400
Lumley LV1.5	6	895
Lumley LV1	6	1,150
Lumley PV1.5	Ph	1,700
Lumley PV1	Ph	1,700
McIntosh C712	Ph	1,999
Meracur Ingredi	6	925
Mendian 501	6	695
Meridian 562	6	765
Mendian 562V	6	995
Meridian 502	6	1,295
Michell Delphini	Ph	895
Michell Orca	6	1,650
Muse Model 3	6	1,990
Musical Fidelity X-LP2/X-PSU	Ph	628
Musical Fidelity X-P100	Ph	800
Musical Fidelity F25	Ph	1,500
Myriad MP100	6	600
NAD S100	6	600
NAD 118	6	1,000
Naim NAC92R	6	650
Naim NAC72	6	745
Naim NAC102	6	1,000
Quad 99 Pre	6	750
Rega Hal	Ph	998
Roksan ROK-L2.5	6	1,250
Rose RV-23S	6	525
Rotel RC995	Ph	525
Shearman Phase 6 Pre	6	999
Shearman Phase 1 Pre Ref	6	1,499
Siemmel MC20	Ph	650
Siemmel MM20	Ph	650
Siemmel TU10	6	1,599
Siemmel TR20	6	1,599
Sonic Frontiers Anthem Pre 1P	Ph	899
Sonic Frontiers Phono 1	Ph	1,999
Sonographe SC26	6	995
Sugden Audition Pre	6	549
Sugden Masterclass Pre	6	1,995
Sumo Athena IIB/II LS	6	987
Sumo Athena III	6	987
Sumo Artemis u	6	1,595
Sunfire The Classic	6	1,630
T+A P1200R	6	965
TAG McLaren PA10	Ph	849
TAG McLaren PPA20	Ph	1,499
TAG McLaren PA20R	6	1,499
TAG McLaren DPA32R	6	1,695
Talk Electronics Hurricane 2	6	650
Talk Electronics Hurricane 3	6	900
Talk Electronics Hurricane 4	6	1,550
Talk Electronics Hurricane 5	6	1,900
Thorens TTP-2000F	Ph	699
Tom Evans The Groove	6	1,500
Trilogy 901	6	750
Trilogy 906	6	995
Trilogy 902	6	1,595
Tube Tech Seer Line	6	935
Tube Tech Mac Phono	Ph	1,150
Tube Tech Prophet	6	1,970
van den Hul Pre-amp	6	1,800
Woodside SC27 Line	6	949
Woodside SC26 Line	6	1,557
XTC PRE-1	6	1,350
YBA 3a Line	6	995
YBA 2a Line	6	1,450

OVER £2000

Adyton Temper	6	2,495
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Adyton Modus	6	2,695
Art Audio VPS Dual Mono Line	6	2,350
ATC SCA2	6	2,999
Atma-Sphere MP-3	6	3,795
Atma-Sphere MP-1	Ph	7,600
Audio Note M3Line	6	7,650
Audio Prism Avanti	6	2,995
Audio Research LS25	6	4,999
Audio Research Ref 1	6	8,495
Audio Valve Fanfare	4	4,995
Audiolabor 511	4	6,775
Balanced VK-50	6	3,995
Boulder L3AE	6	2,100
Boulder LS4E	6	3,400
Boulder L5M	6	3,800
Boulder 2010	6	22,000
Canary Audio CA-801	6	2,350
Cary SLP-98L	4	3,795
Chord CPA 1800	6	2,220
Chord CPA 2200	6	2,740
Chord CPA 3200E	6	4,041
Chord CPA 4000E	6	6,675
Conrad-Johnson PF-R	6	2,490
Conrad-Johnson PV-12A	6	2,990
Conrad-Johnson Premier 15	Ph	3,595
Conrad-Johnson Premier 14	6	4,495
Conrad-Johnson Premier 16LS	6	7,995
Conrad-Johnson Art	6	14,995
CAT SL1 Ultimate	Ph	5,750
CR Dev Kastor	6	2,995
Credo LPR 001	6	2,815
DNM 3C Primus	6	2,100
DNM 3C Twin	Ph	3,100
DNM 3C Six	Ph	4,100
EAR 802MC	Ph	2,599
EAR C88	Ph	9,999
EAR P52	Ph	15,999
Gamma Era Ref	6	7,999
Graaf GM13.5B II	6	3,950
Jadis DPL	6	2,900
Jadis DPMC	6	2,900
Jadis JPL	6	4,200
Jadis JPP200	6	4,290
Jadis JPP30MC	6	5,290
Jadis JPS2	6	6,690
Jadis JP80MC	6	10,166
Jadis JP200MC	6	15,900
Klyne 6LE	6	2,650
Klyne 6PE	6	2,850
Klyne 7LX SE	6	3,750
Klyne		

Cyrus Power	50W	500
Earmax Headphone	0.1W	375
Earmax Headphone Pro	0.1W	425
LFD Mistral Power	60W	449
LFD PAO Powerstage	50W	499
Magnum MF120	85W	365
Marantz MA-500	125W	250
Marantz MA-700	200W	400
Moth 3D Stereo	30W	249
Moth Phones-01	0.1W	299
Moth 30 Mono/40	40W	469
Musical Fidelity X-CANS	0.1W	130
Musical Fidelity E30	100W	500
Musical Fidelity X-A50	50W	500
Myriad T-60	50W	300
Myriad MA 120	60W	500
NAD 912	30W	200
NAD 214	80 W	370
NAD 216THX	125W	470
Naim NAP90/3	30W	460
Parasound HCA-750A	75W	450
Rega Maia	85W	475
Rotel RB971 Mk II	70W	225
Rotel RB981	130W	355
Shearpe 3.5	35W	489
Talk Electronics Tornado 1	50W	450
Technics SE-A1010	100W	350

€501 TO €2000

Alchemist Kraken Pwr	55W	549
Alchemist Forseti Pwr	150W	1,399
Alchemist Signature Power	100W	1,999
Arcam Alpha 10P	100W	600
Aria Power 35	35W	1,500
Art Audio Quartet	15W	1,753
Art Audio Concerto	25W	1,960
Audio Analogue Donizetti	60W	595
Audio Note The P	40W	550
Audio Note P Zero	8W	599
Audio Note P1	12W	750
Audio Note P1SE	12W	999
Audio Note P2	20W	1,000
Audio Note P2SE	18W	1,499
Audio Note Conqueror	8W	1,599
Audio Prism Antares	35W	1,695
Audio Research D130	130W	1,890
Audio Research VT60	35W	1,999
Audio Valve RKV	0.1W	595
Audio Valve PPP25	25W	1,095
Audio Valve PPP45	45W	1,395
AVI S2000MM	150W	1,399
Beauhorn Obligato	7W	1,695
Bryston 2B-LP	75W	750
Bryston 3B-ST PRO	150W	1,160
Bryston 3B-ST	150W	1,160
Bryston THX3B	150W	1,262
Bryston 4B-ST PRO	300W	1,756
Bryston 7B-ST	500W	1,815
Bryston 7B-ST PRO	500W	1,815
Bryston THX4B	300W	1,850
Bryston THX7B	500W	1,886
Canary Audio CA-706	40W	1,695
Canary Audio CA-708	50W	1,950
Chord SPM 400	100W	1,565
Conrad-Johnson MV-55	50W	1,995
Copland CSA515	150W	1,299
Copland CTA505	67W	1,899
CR Dev Amphion	12W	1,949
Credo PMP 804		1,876
Creek AS2SE	100W	599
Crimson CS630D	100W	850
Crimson CS640D	200W	1,300
Cyrus aPA7	150W	1,900
Densen B-300	100W	800
Densen DM-30	100W	1,280
DNM PA Start	45W	1,000
DNM PA1 Start	45W	1,300
DNM PA3	50W	1,900
DPA Enlightenment pwr	100W	995
Dynavector HX75	75W	1,995
ECA Lectern S	50W	880
ECA Lectern HD	50W	1,480
Electrocompaniet AW60FTT	60W	1,095
Exposure XVIII Super	75W	900
Exposure XVIII Mono	60W	1,800
Golden Tube Audio SE-40	40W	1,100
Golden Tube Audio SE-300B MkII	8W	1,790
Graaf Venticinque P	25W	1,395
Graaf 5050	50W	1,995
Hi Q Sound MCM	70W	715
Jadis DA5	40W	1,749
Krell KAV150a	150W	1,990
Lexicon 212	120W	1,850
LFD PA1 Powerstage	60W	999
LFD PA2 Powerstage	75W	1,599
LFD PA2M Powerstage	90W	1,999
Linn LK100	50W	650
Linn LK240	120W	750
Linn AV5105	100W	1,200
Lynwood Ruby	120W	985
Magnum MF330	150W	685
Magnum MF660	125W	825
Magnum A500SE	200W	1,485
Magnum A505E	200W	1,595
McIntosh MC7100	100W	1,999
Meracur Ciere	60W	1,095

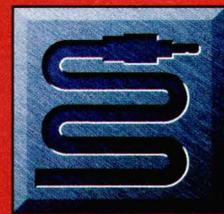
Meridian 555	60W	750
Meridian 556	100W	895
Meridian 557	200W	1,400
Meridian 505	160W	1,590
Michell Alecto Stereo	50W	1,150
Michell Alecto Mono	100W	1,950
Monrio Asty P	100W	950
Moth Stereo 60	60W	599
Moth 30 Mono/100	100W	879
Muse Model 100	100W	1,490
Musical Fidelity X-A200	200W	1,000
Myriad MA240	120W	1,000
NAD 218THX	200W	850
NAD S200	200W	1,400
Naim NAP140	45W	770
Naim NAP180	60W	1,112
Naim NAP135	75W	1,705
Naim NAP250	100W	1,705
Papworth TVAS50	100W	1,425
Parasound HCA-1000A	125W	600
Parasound HCA-1500A	205W	1,000
Quad 99 Stereo Power	85W	550
Quad 909	140W	900
Quad 99 Monoblock	150W	1,300
Rega Exon	125W	598
Roksan Caspian Power	70W	595
Roksan ROK-S1.5	70W	1,495
Rose RP-190 (Dual Mode)	75W	550
Rotel RB991	200W	600
Rotel RB-1090	380W	1,575
Rothwell Rubicon	10W	949
Shearpe Phase 3	50W	639
Shearpe Phase 3 Reference	50W	749
Shearpe Phase 5 Mono	100W	1,598
Sonic Frontiers Anthem Amp 1	40W	1,299
Sonographe SA250	125W	1,195
Sonographe SA400	220W	1,695
Sugden Audition Power		549
Sugden A21a Power	25W	649
T+A A1210	90W	875
T+A PA1220R	100W	1,445
T+A A1500	140W	1,535
T+A PA1500R	135W	1,665
TAG McLaren 60P	60W	849
TAG McLaren 100P	100W	1,099
Talk Electronics Tornado 2	65W	600
Talk Electronics Tornado 3	100W	750
Talk Electronics Tornado 4	110W	1,100
Thorens TTA-2000	30W	599
Trilogy 948	50W	1,895
Trilogy 948T	22W	1,895
Tube Tech Unisis Sig. Pwr	30W	1,900
Woodside SA240	40W	1,199
Woodside MA100	100W	1,735
Woodside STA50	50W	1,880
XTC POW-2	150W	1,600
YBA 3a DT Stereo	45W	1,455

OVER €2000

Adyton Cordis 1.6	120W	3,495
Adyton Cordis 3B	280W	12,995
Aria Smart 845	24W	3,500
Aria Smart 300B	24W	4,250
Art Audio Symphony	7W	2,500
Art Audio Tempo	30W	2,714
Art Audio Maestro	60W	3,884
Art Audio Diavolo	13W	4,000
Art Audio Jota	18W	6,000
Art Audio Ellesse	100W	8,500
Art Audio Chiara	25W	10,000
ATC SPA2-200PRO	200W	2,056
ATC SPA2-150	200W	2,699
Atma-Sphere S-30 Mk II	30W	2,450
Atma-Sphere M-60 Mk II	60W	4,195
Atma-Sphere MA-1 Mk II	150W	7,995
Audio Note P3	9W	2,150
Audio Note Quest	9W	2,750
Audio Note Yubi	18W	3,850
Audio Note Conquest	18W	4,450
Audio Note Tomei	7W	8,300
Audio Note Neiro	30W	11,360
Audio Note Ankoru	60W	14,500
Audio Prism Debut Mk II	35W	2,495
Audio Prism Mana	100W	12,995
Audio Research VT50	50W	2,950
Audio Research 100.2	100W	3,395
Audio Research VT100 MkII	100W	4,950
Audio Research VT200	200W	8,790
Audio Synthesis Desire Decade	200W	2,495
Audio Valve Avalon	60W	2,195
Audio Valve Challenger 115	115W	2,995
Audio Valve Challenger 140	140W	3,495
Audio Valve Challenger 300	300W	7,995
Audio Valve Baldr 200 Plus	149W	8,995
Audiolabor 500	200W	5,998
Beam-Echo DL7-35	30W	3,525
Belcanto SET40	40W	3,450
Belcanto Orfeo 30S	35W	4,750
Belcanto SET80	80W	6,750
Border Patrol 300B SE	9W	3,995
Border Patrol 300B SE (WE)	10W	4,495
Boulder 102AE	100W	2,800
Boulder 102M	100W	3,100
Boulder 500AE	150W	4,995
Boulder 500M	150W	5,500
Boulder 2060	600W	25,000

Boulder 2050	999W	43,500
Bryston THX8B	150W	2,385
Canary Audio CA-304	40W	2,695
Canary Audio CA-301	22W	2,995
Canary Audio CA-303	24W	5,495
Cary CAD-572SE	20W	2,250
Cary CAD-2A3 SE	5W	3,150
Cary CAD-300SE	20W	4,495
Cary CAD-805C	50W	7,995
Chord SPM 600	130W	2,040
Chord SPM 1000B	200W	2,920
Chord SPM 1200B	250W	3,790
Chord SPM 1200C	350W	4,210
Chord SPM 1400E mono	500W	5,650
Chord SPM 5000	580W	14,500
Conrad-Johnson MF2250	130W	2,295
Conrad-Johnson MF-2500	250W	3,495
Conrad-Johnson Premier 11A	70W	3,500
Conrad-Johnson Premier 12	140W	6,900
Conrad-Johnson Premier 8X	150W	17,000
Conrad-Johnson Premier 8A	275W	17,000
CAT J1	100W	17,550
CR Dev Artemis	4,995	4,995
Credo LPO 804	2,456	2,456
Credo PMP 155	2,676	2,676
Credo LPO 455	4,975	4,975
Credo LPO 155	6,983	6,983
DNM PA3S	23W	2,900
Dynavector HX1.2	130W	3,995
EAR 861	32W	3,599
EAR 509 Mk II	100W	3,999
EAR 519	100W	4,699
EAR 549	200W	6,499
Electrocompaniet AW120DMB	120W	2,695
Electrocompaniet AW250R	250W	3,995
Electrocompaniet AW180MB	180W	4,595
Exposure IV	90W	2,199
Exposure XVI	125W	4,000
Gamma Aeon	20W	4,999
Gamma Space Ref	18W	7,999
Gamma Aeon Ref	70W	49,999
Gate TR201A	22W	3,335
Golden Tube Audio SE-100	100W	2,495
Graaf GM20	60W	2,950
Graaf GM100	100W	4,450
Jadis DA8	80W	2,990
Jadis DA7	100W	4,790
Jadis JA30	30W	5,180
Jadis SE300B	10W	7,980
Jadis JA80	60W	9,580
Jadis JA100	100W	10,298
Jadis JA200	160W	13,980
Jadis JA500	400W	19,990
Krell KAV250a	250W	3,145
Krell KAV500/2	100W	3,195
Krell FPB200	200W	5,998
Krell FPB250m	250W	8,994
Krell FPB300	300W	9,500
Krell FPB600	600W	12,900
Krell FPB350m	350W	15,994
Krell FPB650m	650W	23,800
Lexicon 225	250W	2,500
Lexicon 501	500W	5,000
Linn Klout	80W	2,400
Linn Klimax 500	500W	11,200
Lumley M125	120W	3,750
Lumley M250	250W	7,500
Magnum Class A mono	180W	2,450
Magnum A200SE	275W	3,750
Mana Stealth	300W	4,800
Levinson 334	125W	5,495
Levinson 335	250W	7,495
Levinson 336	350W	8,995
Levinson 33H	150W	19,395
McIntosh MC150	150W	3,499
McIntosh MC300	300W	3,999
McIntosh MC500	500W	8,999
McIntosh MC1000	999W	14,999
Meracur Tentare	75W	2,245
Meracur Cantare	-W	8,995
Muse Model 160 Ser. II	160W	2,290
Muse Model 150	125W	2,690
Muse Model 175 Ser. II	175W	3,490
Muse Model 300 Ser. II	300W	3,990
Musical Fidelity F16	200W	2,500
Musical Fidelity NuVista 300	350W	3,300
Musical Fidelity F19	300W	4,000
Papworth M100	100W	2,645
Papworth M200	200W	3,825
Plinius SA50/3	2,750	2,750
Plinius SA100/3	3,450	3,450
Plinius SA250/3	5,850	5,850
Roksan ROK-M1.5	160W	2,250
Rowland Model 2	75W	4,999
Rowland Model 6	150W	10,999
Rowland Model 8T	250W	12,499
Rowland Model 9T	350W	27,999
Sharp SM-SX1000	165W	10,000
Shearpe Phase 1 Pwr Ref	100W	2,399
Sieml TA20	50W	2,350
Sonic Frontiers Power 1	55W	2,499
Sonic Frontiers Power 2	110W	4,999
Sonic Frontiers Power 3	220W	8,599
Sony TA-N1	200W	4,500
Sugden Masterclass Power	75W	2,995
Sunfire Load Invariant	300W	2,280
Sunfire Signature	600W	2,600

T+A A3000	190W	2,850
TACT Millennium II	150W	7,000
TAG McLaren 125M	125W	2,399
Talk Electronics Tornado 5	200W	2,100
Trilogy 958T	45W	3,395
Trilogy 958	100W	3,395
Tron Type PX25	5W	6,150
Tron Type WE300B	8W	6,550
Tron Type PX25 Mono	5W	12,300
Tron Type WE300B Mono	15W	13,100
Tube Tech Genesis Sig.	100W	4,700
Tube Tech Synergy DMA	150W	6,400
van den Hul Power amp	65W	2,500
Wavac MD572	50W	6,250
Wavac EC300B	10W	16,500
Wavac EC838	35W	21,750
Wavac HE 4304	15W	24,750
Wavac HE 803	100W	27,500
Wavac HE 805	45W	27,500
XTC POW-1	200W	2,500
YBA 2a HC Stereo	70W	2,350
YBA 3a Mono	45W	2,425
YBA 2a HCDT Stereo	70W	3,050
YBA 1a HC Stereo	85W	4,400
YBA 2a HCDT Mono	70W	5,000
YBA 1a HC Mono	85W	6,650
YBA Sig. Stereo	100W	6,995
YBA Passion Mono	250W	8,775
YBA Sig. Mono	100W	9,995
YBA Sig. HC Mono	100W	16,650



CABLES Analogue

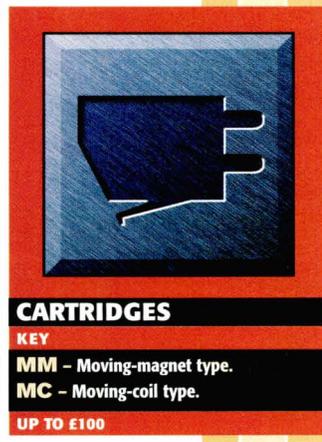


Let our experts help with your hi-fi problems. Send your query to 'Help' at the usual address.

Cable Talk Talk 3.1	⊗	2.50
Cable Talk Flat 1 Biwire	⊗	4.00
Cable Talk Talk 4.1	⊗	4.50
Cable Talk Talk 3.1 Biwire	⊗	5.00
Cable Talk Flat 2	⊗	5.00
Cable Talk Concert 2.1	⊗	8.00
Cable Talk Talk 4.1 Biwire	⊗	9.00
Cable Talk Flat 2 Biwire	⊗	10.00
Cable Talk Symphony 3	⊗	14.00
Cable Talk Concert 2.1 Biwire	⊗	16.00
Cardas Audio 300B-Microtwin SC	⊗	35.00
Cardas Audio Quadlink-Five SC	⊗	59.00
Cardas Audio Cross SC	⊗	99.00
Cardas Audio Hexlink-Five SC	⊗	109.00
Cardas Audio Hexlink Golden5 SC	⊗	175.00
Cardas Audio Golden Cross SC	⊗	789.00
ChordCo Carnival	⊗	3.00
ChordCo Myth	⊗	6.00
ChordCo Legend	⊗	15.00
ChordCo Odyssey	⊗	17.00
DNM-Reson LSC	⊗	6.95
DNM-Reson LSCB	⊗	13.95
Ecosse Ref FS2.16	⊗	1.75
Ecosse Ref CS2.2	⊗	2.50
Ecosse Ref CS2.3	⊗	3.75
Ecosse Ref CS2.15	⊗	5.75
Ecosse Ref MS2.2	⊗	15.00
Ecosse Ref MS2.3	⊗	20.00
Ecosse Ref MS2.15	⊗	30.00
Ecosse Ref US2	⊗	450.00
Electrofluidics Monolith 2020	⊗	45.00
Gale XL105	⊗	1.00
Gale XL189	⊗	1.00
Gale XL315	⊗	2.00
Gale XL160-2	⊗	2.50
Gale XL315-2	⊗	3.99
Gamma Wonder Line	⊗	99.00
Goertz M1	⊗	16.00
Goertz M2	⊗	32.00
Goertz Big Boy	⊗	64.00
Harmonix Harmonic-Strings	⊗	30.00
Harmonix HS-10T-1	⊗	56.00
Harmonix HS-1015C	⊗	88.00
Ixos 607	⊗	2.00
Ixos 6004	⊗	3.00
Ixos Gamma 6003	⊗	3.00
Ixos 605	⊗	3.00
Ixos Gamma 6006	⊗	5.00
Kimber 4PR	⊗	5.00
Kimber 4VS	⊗	9.00
Kimber 4TC	⊗	19.60
Kimber 8TC	⊗	32.70
Kimber 4AG	⊗	394.00
Kimber 8AG	⊗	656.00
LAT International SS 800	⊗	16.00
LAT International BIWIRE	⊗	23.00
LAT International SS 1000	⊗	36.00
Lieder Pad	⊗	133.00
Lieder Bel Canto	⊗	188.00
Lieder Spoor	⊗	253.00
Lieder Straat	⊗	463.00
Lieder Weg	⊗	663.00
Linn K20	⊗	4.00
Linn K400	⊗	10.00
Linn K600	⊗	15.00
Lumley Silver 12/2	⊗	35.00
Lumley Silver 14/4	⊗	40.00
Monster XP Clear	⊗	2.20
Monster XP Navajo	⊗	2.40
Monster Superflat Mini	⊗	2.75
Monster XP HP	⊗	3.70
Monster Original	⊗	4.40
Monster New Monster	⊗	5.50
Naim NAC AS	⊗	5.70
Nordost Octava	⊗	3.00
Nordost 4-Flat	⊗	9.95
Nordost Solar Wind Bi-wire	⊗	2795
Nordost Blue Heaven Spkr	⊗	58.95
Nordost Red Dawn	⊗	110.00
Nordost SPM	⊗	325.00
Ortofon SPK100	⊗	3.00
Ortofon SPK200	⊗	5.00
Ortofon SPK300	⊗	8.00
PHY-HP Speaker	⊗	40.00
Precious Metals SL32	⊗	7.50
Precious Metals SL102	⊗	10.00
Precious Metals SL34	⊗	15.00
Precious Metals SL104	⊗	20.00
Precious Metals SL106	⊗	30.00
Precious Metals SL108	⊗	40.00

Profigold Silverflex LC8258	⊗	4.00
Prowire Out of Sight	⊗	1.99
Puresonic OFC 7892	⊗	1.20
Puresonic OFC 7844	⊗	1.65
Puresonic OFC 7845	⊗	1.95
Puresonic OFC 7891	⊗	2.85
Puresonic OFC 7816	⊗	3.75
Puresonic OFC 7832	⊗	3.75
Puresonic OFC 7812	⊗	3.75
Puresonic OFC 7825	⊗	6.95
Puresonic PSOCC 7801	⊗	9.50
Puresonic PSOCC 7802	⊗	18.00
Puresonic PSOCC 7803	⊗	27.00
QED QED Micro	⊗	1.50
QED QED Micro Bi-wire	⊗	3.00
QED QED Mk II Bi-wire	⊗	4.85
QED QED Silver Annv.	⊗	5.00
QED Profile 4x4	⊗	9.00
QED Profile Silver 12	⊗	15.00
QED Genesis S'r Spiral	⊗	30.00
QED G's S'r Spiral B/W	⊗	60.00
Rega Speaker	⊗	1.58
Rega SC42	⊗	19.98
Roksan HDC-015	⊗	6.00
Shinpy Red Star 2	⊗	235.00
Shinpy Black Star 2	⊗	375.00
Shinpy Pulsar 2	⊗	625.00
Shinpy Quasar 2	⊗	1,245
Shinpy Big Bang 2	⊗	4,250
Siltech LS2-45	⊗	109.00
Siltech FT-12 MkI	⊗	240.00
Siltech LS4-120	⊗	549.00
Silver Sounds 12 Gauge	⊗	15.00
Silver Sounds 10 Gauge	⊗	35.00
Silver Sounds 8 Gauge	⊗	75.00
Silver Tone Silver-Sonic	⊗	10.00
Silver Tone Silver-Sonic HC	⊗	15.00
Silver Tone Silver-Voice	⊗	55.00
Silver Tone Silver-Voice Ultra	⊗	85.00
SonicLink AST60	⊗	2.50
SonicLink AST75	⊗	2.95
SonicLink AST200	⊗	5.95
SonicLink AST200x2	⊗	9.95
SonicLink S300	⊗	18.00
SonicLink S130x2	⊗	20.00
SonicLink S300x2	⊗	40.00
SonicLink S900	⊗	60.00
SonicLink S600x2	⊗	80.00
SonicLink Black Rhodium 4	⊗	1,000
Straight Wire Duo	⊗	3.00
Straight Wire Rhythm	⊗	6.00
Straight Wire Quartet	⊗	8.00
Supra Classic 2.5	⊗	2.49
Supra Linc 2.5 Flex	⊗	3.49
Supra Classic 4.0	⊗	3.95
Supra Rondo 4x2.5	⊗	4.95
Supra Classic 6	⊗	4.95
Supra Ply 2.0	⊗	4.95
Supra Linc 4.0 Flex	⊗	4.95
Supra Ply 3.4	⊗	6.95
Supra Ply 3.4/S	⊗	7.95
Supra Quattro 4x4	⊗	8.95
Taperwire 418	⊗	7.00
Taperwire 212	⊗	16.00
Tara Klara	⊗	2.95
Tara Prism 2+2	⊗	7.95
Tara Prism Nexa	⊗	9.95
Tara Prism Bi-Wire	⊗	18.00
Tara RSC Prime 500	⊗	36.00
Tara RSC Prime 1000	⊗	73.00
Tara RSC Ref Gery/2	⊗	118.00
Tara RSC Prime 1800	⊗	150.00
Tara RSC Digital 75	⊗	230.00
Tara RSC Air 2	⊗	291.00
Tara RSC Air 1	⊗	466.00
Tara ISM The Two	⊗	708.00
Tara ISM The One	⊗	941.00
TCI Python	⊗	7.99
Tech + Link SPC 79	⊗	1.20
Townshend Isolda	⊗	50.00
Transparent Cable Musichord	⊗	11.00
Transparent Cable The Wave	⊗	23.00
Transparent Cable Music Wave	⊗	25.00
Vampire Wire SC-384	⊗	11.00
Vampire Wire SC-554	⊗	15.00
Vampire Wire ST-I	⊗	30.00
Vampire Wire SC-1108	⊗	30.00
Vampire Wire ST-II	⊗	48.00
Vampire Wire ST-III	⊗	73.00
van den Hul Skyline HB	⊗	3.99
van den Hul Snowline	⊗	5.49
van den Hul Skytrack HB	⊗	5.99
van den Hul Clearwater	⊗	7.99
van den Hul Snowtrack	⊗	10.99
van den Hul Royal Jade	⊗	10.99
van den Hul CS122 HB	⊗	13.49
van den Hul Cleartrack	⊗	14.99
van den Hul D352 HB	⊗	21.00
van den Hul Teatrac HB	⊗	23.99
van den Hul SCS12	⊗	36.00
van den Hul Magnum HB	⊗	40.00
van den Hul The Wind HB	⊗	44.00
van den Hul Revolution HB	⊗	80.00
van den Hul Revelation HB	⊗	120.00
van den Hul The Third	⊗	1,000
XLO CDA 16/2	⊗	4.45
XLO CDA ER-14 THX	⊗	5.81

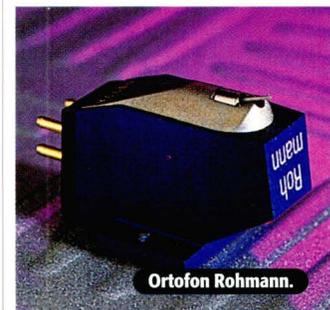
XLO CDA 16/4	⊗	8.60
XLO CDA ER-11 THX	⊗	11.62
XLO Pro 600	⊗	16.60
XLO CDA ER-12 THX	⊗	23.24
XLO Pro 1200	⊗	33.20
XLO Ultra 6	⊗	41.50
XLO Ultra 12	⊗	83.00
XLO Ref 2	⊗	216.00
XLO Sig 5.1	⊗	398.00
XLO Limited Ed'n	⊗	1,660



Audio Note IO1	MM	99
Audio Technica AT-91	MM	15
Audio Technica AT-95E	MM	20
Audio Technica AT-110E	MM	28
Audio Technica AT450E	MM	70
Audio Technica AT440ML	MM	90
Benz-Micro MC20EII	MC	70
Denon DL110	MC	70
Denon DL160	MC	90
Denon DL103	MC	100
Goldring Elan	MM	20
Goldring Elektra	MM	30
Goldring 1006	MM	65
Goldring 1012GX	MM	85
Grado Prestige Black	MM	49
Grado Prestige Green	MM	59
Grado Prestige Blue	MM	69
Grado Prestige Red	MM	98
N'ham Tracer I	MM	99
N'ham Tracer II	MM	99
Ortofon OM 3E	MM	16
Ortofon OM 5E	MM	20
Ortofon OM 10	MM	30
Ortofon 510	MM	40
Ortofon OM DJ	MM	50
Ortofon OM 20	MM	70
Ortofon 520	MM	70
Ortofon MC1 Turbo	MC	75
Ortofon Concorde DJ	MM	80
Ortofon OM 30	MM	90
Ortofon 530	MM	100
Pickering TE-15	MM	20
Pickering VE-15	MM	25
Pickering T-E	MM	25
Pickering V15-DJ	MM	28
Pickering TL-E	MM	35
Pickering TL-2E	MM	45
Pickering XV15-625E	MM	50
Pickering XV15-150-DJ	MM	50
Pickering TL-2-S	MM	55
Pickering XV15-7575	MM	60
Pickering XV15-625DJ	MM	60
Pickering XV15-1800S	MM	70
Pickering TL3S	MM	80
Pickering XEV-3001E	MM	95
Pickering XLZ-3500	MM	100
Pickering TL-4-S	MM	100
Rega Bias	MM	42
Rega RB78	MM	42
Rega Super Bias	MM	64
Rega Elys	MM	89
Shure SC35C	MM	36
Shure M44G Pro	MM	45
Shure M447 Pro	MM	53
Stanton 500AL II	MM	35
Stanton 500EL	MM	44
Stanton 680AL/X	MM	59
Stanton 680EL/X	MM	74
Sumiko Oyster	MM	30
Sumiko Black Pearl	MM	50
Sumiko Pearl	MM	70
Sumiko Blue Point	MC	100

Allaerts MC1 Eco	MC	850
Allaerts MC1 B	MC	1,295
Allaerts MC1 B MkII	MC	1,995
Allaerts MC2 Finish	MC	2,995
Audio Note IO2	MM	139
Audio Note Soara	MC	795
Audio Note IO1V	MC	1,095

Audio Note IO1td	MC	4,500
Audio Technica AT-OC9ML	MC	330
Audio Technica AT-33PTG	MC	489
Benz-Micro The Glider	MC	600
Benz-Micro Reference	MC	1,100
Benz-Micro Reference Ruby	MC	1,500
Benz-Micro Ruby Open Air	MC	1,600
Clearaudio Alpha Mk 2	MM	135
Clearaudio Beta Mk 2	MM	190
Clearaudio Beta-S Mk 2	MM	250
Clearaudio Virtuoso	MM	295
Clearaudio Sigma	MM	590
Clearaudio Gamma-5	MC	810
Clearaudio Victory	MC	960
Clearaudio Signature	MC	1,540
Clearaudio Accurate	MC	2,515
Clearaudio Insider	MC	5,165
Clearaudio Insider Ref.	MC	6,810
Denon DL304	MC	300
Dynavector 10X4II	MC	189
Dynavector DV20XH	MC	299
Dynavector DV-20XL	MC	299
Dynavector DV20XL	MC	299
Dynavector 17D2	MC	450
Dynavector XX-1L	MC	998
Dynavector XX-1	MC	998
Dynavector Te-Katora	MC	1,698
Goldring 1022GX	MM	105
Goldring Eroica LX	MC	120
Goldring Eroica	MC	120
Goldring 1042	MM	130
Goldring Elite	MC	235
Grado Prestige Silver	MM	119
Grado Prestige Gold	MM	149
Koetsu Red T	MC	1,359
Koetsu Red K Sig	MC	1,899
Koetsu Urushi	MC	1,999
Koetsu Signature	MC	2,999
Koetsu Gold PR	MC	5,498
Linn K9	MM	125
Linn Klyde	MC	500
Linn Arkiv	MC	1,000
London Decca Maroon	MM	299
London Decca Gold	MM	359
London Decca Maroon Dp	MM	379
London Decca S Gold	MM	439
London Decca Gold Dp	MM	439
London Decca S Gold Dp	MM	519
London Decca Jubilee	MM	999
Lyra Lydian Beta	MC	599
Lyra Clavis Da Capo	MC	995
Lyra Parnassus DCT	MC	1,895
N'ham Tracer II	MM	310
N'ham Tracer III	MM	410
N'ham Tracer IV	MM	660
Ortofon MC15 Super II	MM	140
Ortofon 540	MM	140
Ortofon MC3 Turbo	MC	150
Ortofon MC25E	MC	200
Ortofon MC25FL	MC	250
Ortofon MC10 Supreme	MC	300
Ortofon MC20 Supreme	MC	450
Ortofon MC30 Supreme	MC	550
Ortofon MC2000II	MC	800
Ortofon MC Rohmann	MC	1,000
Ortofon MC3000 II	MC	1,200
Ortofon MC Jubilee	MC	1,250
Ortofon MC7500	MC	2,000
Pickering TL-3003	MM	145
Pickering XLZ-4500	MM	150
Pickering TL-4004	MM	175
Pickering XSV-5000U	MM	200
Pickering XLZ-7500	MM	200
Pickering TLZ-7500-S	MM	200
Rega Super Elys	MM	150
Rega Exact	MM	275
Reson Mica	MM	275
Reson Recca	MM	190
Reson Aciore	MC	330
Reson Etile	MC	485
Reson Lexe	MC	1,300
Roksan Corus Black	MM	145
Roksan Shiraz	MC	995
Shure V15XMR	MM	295
Stanton 890AL/X	MM	120
Sumiko Blue Point Special	MC	250
Transfiguration Esprit	MC	950
Transfiguration Spirit	MC	950
Transfiguration Temper Supreme	MC	2,250



van den Hul DDT-II	MC	600
van den Hul MC-10	MC	750
van den Hul MC-One	MC	900
van den Hul MC-ONE Super	MC	1,050
van den Hul MC-Two	MC	1,200
van den Hul The Frog Low o/p	MC	1,500
van den Hul The Frog HO	MC	1,700
van den Hul Grasshopper IIISLN	MC	2,000
van den Hul Grasshopper IIISLA	MC	2,000
van den Hul Grasshopper IIICHN	MC	2,500
van den Hul White Beauty HO	MC	2,500
van den Hul Grasshopper IIICLN	MC	2,800
van den Hul Grasshopper IIIGLA	MC	2,800
van den Hul Grasshopper IIICMN	MC	2,800
van den Hul Grasshopper IIICHN	MC	2,900
van den Hul Grasshopper IVGLA	MC	3,000
van den Hul Black Beauty	MC	3,000
Wilson Benesch Matrix	MC	786
Wilson Benesch Analog	MC	1,572
Wilson Benesch Carbon	MC	1,573



CASSETTE DECKS

KEY
 ↔ - Autoreverse - no need to remove and turn around the tape.
 3-H - 3 heads, i.e. separate record and replay heads.

UP TO £200

Ariston WX-510		70
Denon DRM-555		150
Denon DRW-585		200
H/K DC520		200
JVC TD-X372BK		170
JVC TD-R472BK		160
Kenwood KX-W4080		200
Kenwood KX-3080		160
Kenwood KX-W6080		200
Kenwood KX-5080S		200
Marantz SD-455		170
Marantz SD-57		199
Onkyo K 185		200
Pioneer CT-S250		150
Pioneer CT-W205R		160
Pioneer CT-W505R		180
Pioneer CT-S450S		200
Pioneer CT-W606DR		200
Sony TC-WE435		130
Sony TC-KE230		130
Sony TC-WE635		150
Sony TC-KB820S		180
Sony TC-WE835		200
Teac W-416		100
Teac V-615		130
Teac RH-300		160
Teac W-790R		170
Teac V-1050		180
Teac RH-500		200
Technics RS-BX501		170
Technics RS-TR373		180
Technics RS-TR474		200
Technics RS-A26		200
Yamaha KX-393		130
Yamaha KX-W521		170
Yamaha KX-493		180

OVER £200

Denon DRM-740	3-H	270
H/K TD420		250
JVC TD-V662BK	3-H	270
JVC TD-W718BK		300
NAD 613		230
NAD 614		270
NAD 616		300
Nakamichi DR-10	3-H	800
Onkyo TA 6210		230
Onkyo TARW 211		270
Onkyo TARW 311		320
Onkyo TA 6310		330
Onkyo KR 609		350
Onkyo KW 606		370
Onkyo TARW 411		370
Onkyo K 611	3-H	460
Pioneer CT-S550S	3-H	250
Pioneer CT-W806DR		300
Pioneer CT-S550S Precision	3-H	340
Pioneer CT-S830S	3-H	500

Pioneer CT-95		1,000
Rotel RC960BX		250
Sony TC-KA6ES	3-H	600
T+A CC1200R	3-H	1,180
Teac W-860R		230
Teac W-6000R		450
Teac V-6030S	3-H	550
Teac V-8030S	3-H	650
Technics RS-AZ7	3-H	270
Technics RS-TR575		280
Yamaha KX-S80SE		250



CD PLAYERS

KEY
 ≡ - Multiplayer: can be loaded with more than one disc.
 1010 - Electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

UP TO £250

Ariston CDX700		50
Ariston CDX710		70
Ariston CDX720		80
Cambridge CD5		100
Cambridge D100		120
Cambridge CD4	1010	150
Cambridge CD4SE	1010	200
Cambridge D500	1010	200
Denon DCD-435		130
Denon DCD-655		180
Denon DCD-735		230
Eclipse CD101a		40
H/K FL8550	1010	200
H/K HD720	1010	230
JVC XL-V120BK		110
JVC XL-V130BK		120
JVC XL-V230BK		140
JVC XL-F116BK		180
JVC XL-F216BK		200
JVC XL-Z574BK		250
Kenwood DP-1080		110
Kenwood DP-2080		130
Kenwood DP-R3090		140
Kenwood DP-R4090		160
Kenwood DP-3080		170
Kenwood DPF-3010		180
Kenwood DP-R6090		200
Kenwood DP-4090	1010	250
Marantz CD-38		130
Marantz CD5000	1010	150
Marantz CD-38		200
Marantz CD-48	1010	200
Marantz CD-57	1010	230
Marantz CD-67II	1010	250
NAD C520		170
NAD 522		170
NAD 510		200
NAD 524	1010	250
NAD 523		250
NAD 512	1010	250
Onkyo DX-7222		170
Pioneer PD-106		130
Pioneer PD-206		150
Pioneer PD-5507		190
Pioneer PD-F606		200
Pioneer PD-M603		200
Pioneer PD-F706		250
Sansui CD220		120
Sherwood CD-4030R		180
Sherwood CDC6050R	1010	180
Sherwood CDCE680	1010	180
Sony CDP-XE220		90
Sony CDP-XE330		100
Sony CDP-M305		120
Sony CDP-XE530		130
Sony CDP-CE335		160
Sony CDP-XB720E	1010	200
Sony CDP-CX57		250
Synergy CDJ1210		120
Teac CDP-1120		100
Teac CD-P1820		130
Teac CD-P1440		200
Teac CD-P3450SE		200
Teac PD-D2400		200
Teac PD-H500i	1010	240
Technics SL-PG390A	1010	90

Technics SL-PG490A	1010	100
Technics SL-PG590A	1010	120
Technics SL-PD6	1010	140
Technics SL-PD8	1010	160
Technics SL-P5670D	1010	200
Technics SL-P5770D	1010	250
Yamaha CDX-596	1010	130
Yamaha CDC-575	1010	180
Yamaha CDX-496	1010	180
Yamaha CDC-675	1010	230
Yamaha CDX-596	1010	230

£251 TO £500

Arcam Alpha MCD	1010	330
Arcam Alpha 7 SE	1010	350
Arcam Alpha 8SE	1010	500
Cambridge CD6	1010	300
Cyrus dAD1.5	1010	400
Denon DCD-835	1010	280
Denon DCM-260		300
Denon DCD-1550AR	1010	350
H/K HD740	1010	300
H/K FL8550	1010	300
H/K HD760	1010	500
JVC XL-Z674BK	1010	300
Kenwood DP-R7080	1010	300
Kenwood DP-990	1010	300
Kenwood DP-5090	1010	300
Kenwood DP-7090	1010	400
Marantz CD-67SE MkII	1010	300
Marantz CD6000 OSE	1010	300
Marantz CC-870	1010	400
Marantz CD-631KI	1010	400
Musical Fidelity E60	1010	300
Musical Fidelity A2 CD	1010	500
Musical Fidelity E624	1010	500
Mynyad T-10	1010	400
NAD 513		290
NAD C540	1010	329
NAD 515	1010	350
NAD 514	1010	370
NAD 517	1010	400
Nakamichi MB10	1010	399
Onkyo DX 7210	1010	260
Onkyo C721	1010	290
Onkyo DXC 320	1010	380
Onkyo DX 7510	1010	400
Onkyo CM 716	1010	450
Parasound C/DP-1000	1010	499
Philips DVD750	1010	400
Pioneer PD-S707	1010	300
Pioneer PD-F805	1010	300
Pioneer PD-S705	1010	300
Pioneer PD-F906	1010	350
Pioneer PD-S904	1010	400
Pioneer PD-S505 Precision	1010	460
Rega Planet		475
Roksan Kandy	1010	475
Rotel RCD-951	1010	350
Rotel RCD-971	1010	450
Rotel RCC-955	1010	500
Sony CDP-XB930E	1010	300
Sony CDP-CX350	1010	350
Sony CDP-XA20ES	1010	450
Sony CDP-X3000ES	1010	500
Sony CDP-CX260	1010	500
Synergy CDJ2010	1010	300
Technics SL-MC7	1010	300

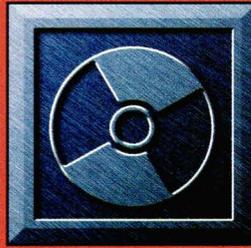
£501 TO £1000

Acurus ACD11	1010	899
Alchemist Nexus	1010	600
Arcam Alpha 9	1010	800
Audio Analogue Paganini	1010	750
Audio Note CD1	1010	599
Audio Note AN-CD2	1010	999
Audiomeca Obsession	1010	999
AWI S2000MC 24 Ref	1010	999
Creek CD43	1010	599
Cyrus dAD3		600
Cyrus dAD3 Q24		900
Denon DCD-1650AR	1010	700
DPA Renaissance int CD	1010	950
Helios Model 3	1010	700
Helios Model 2	1010	950
Linn Mimir	1010	875
Linn Genki		995
Magnum CD2020	1010	595
Marantz CD-17	1010	800
Musical Fidelity X-RAY	1010	799
Musical Fidelity A3 CD	1010	800
Mynyad Cameo	1010	580
Mynyad T-20	1010	600
Mynyad MC100	1010	800
Pioneer PDS-06	1010	550
Quad 99		650
R-20 D20	1010	700
Roksan Caspian	1010	895
Rotel RCD-991	1010	750
Synergy CDP-XA555ES	1010	1,000
Sugden Audition		649
Talk Electronics Thunder 1		550
Talk Electronics Thunder 2		700
Talk Electronics Thunder 3		1,000
Teac VRDS-8	1010	600
Teac VRDS-9	1010	700

Teac VRDS-25X	1010	1,000
Trichord Genesis	1010	569
Trichord Digital Jukebox 25	1010	619
Trichord Digital Jukebox 50	1010	669
Trichord Digital J'box 100	1010	719
Trichord Revelation	1010	819
YBA Complete	1010	649
YBA Special	1010	695

OVER £1000

Acoustic Precision Ekos	1010	1,850
Advantage CD15	1010	3,995
Alchemist Kraken CD		1,249
Alchemist Forseti Int.		1,249
Alchemist Forseti	1010	1,995
Arcam FMI CD23	1010	1,100
Audio Analogue Maestro	1010	1,100
Audio Research CD2	1010	3,399
Audiomeca Keeps	1010	1,500
Audiomeca Talisman	1010	2,150
Audiomeca Talisman SE	1010	2,300
Balanced VK-DS	1010	3,995
Cary CD-301	1010	2,350
Classe CDP-3	1010	1,395
Conrad-Johnson DF-2	1010	1,695
Conrad-Johnson DV-2b	1010	2,495
Copland CDA-266	1010	1,199
Copland CDA277	1010	1,649
Copland CDA289	1010	1,898
Copland CDA288	1010	1,999
Symbol CDP12	1010	1,299
Densen B-400	1010	1,280
Exposure CD Player	1010	1,050
Helios Model 1	1010	1,250
Helios Stargate	1010	2,250
Jadis Orchestra	1010	1,345
Krell KAV250cd	1010	2,490
Krell KAV300cd	1010	3,599
Krell KPS25s	1010	19,995
Linn Ikemi		1,950
Linn Sondek CD12	1010	12,000
Marantz CD-17KIS	1010	1,100
Marantz CD-7	1010	3,500
Levinson 39	1010	4,995
McIntosh MCD7009	1010	3,699
Meracus Tanto	1010	1,395
Meracus Imago Player	1010	4,495
Mendian 506	1010	1,100
Mendian 508	1010	1,995
Mynyad MCD500	1010	1,300
NAD S500	1010	1,100
Naim CD3.5	1010	1,050
Naim CDX	1010	2,200
Naim NACDSII/XPS		5,625
Oracle CD Player	1010	9,499
Pink Triangle Numeral	1010	1,049
Pink Triangle Ltaural	1010	2,200
Proceed CDP	1010	3,395
R-20 D302	1010	1,500
Resolution CD50	1010	2,995
Roksan Attessa-DP3P	1010	1,495
Shearpe Phase 7	1010	1,499
Shenwood CD1	1010	1,100
Sonic Frontiers Anthem CD1	1010	1,699
Sonic Frontiers SFC-D1	1010	3,799
Sony SCD-1	1010	2,700
T+A CD1210R	1010	1,185
T+A CD1220R	1010	1,540
TAG McLaren CD20R	1010	1,250
Theta Miles SE	1010	2,390
Tube Tech Fusion	1010	1,350
Tube Tech Fulcrum	1010	1,850
Wadia 860x	1010	7,495
XTC CDP-1	1010	1,350
YBA Integre a	1010	1,095
YBA CD3a	1010	1,850
YBA CD2a	1010	2,950
YBA CD1a	1010	3,895



CD TRANSPORTS

KEY
 1010 - Electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

Alchemist Forseti Drive	1010	1,100
Altis CDT III	1010	4,995
Audio Note CDT Zero	1010	399



Audio Synthesis Transcend Decade	1010	3,995
Audiomeca Damnation	1010	999
Audiomeca Damnation SE	1010	1,100
Audiomeca Talisman	1010	1,850
Audiomeca Talisman SE	1010	1,999
Audiomeca Talisman DOB	1010	2,250
Conrad-Johnson DR-1	1010	1,795
DPA Enlightenment Dv	1010	775
Jadis JD3	1010	1,999
Jadis JDI	1010	9,190
Linn Kank	1010	1,850
Levinson 37	1010	3,995
Levinson 31.5	1010	9,295
Meracur Imago	1010	3,995
Muse Model 5	1010	1,800
Muse Model 8	1010	3,500
Oracle CD Drive	1010	7,399
Pink Triangle Cardinal II	1010	909
Rega Jupiter	1010	598
Resolution VT960	1010	3,500
Roksan Attesa-DP3	1010	1,295
Sonic Frontiers Transport 3	1010	5,999
T+A CM1200R	1010	875
TAG McLaren CDT20R-T2L	1010	1,499
Teac VRDS-T1	1010	550
Teac P-30	1010	2,500
Theta Pearl	1010	1,349
Theta Jade	1010	2,650
Thorens TCD-2000	1010	999
Trichord Digital Turntable	1010	719
Wadia 8	1010	3,195
Wadia 20	1010	4,370

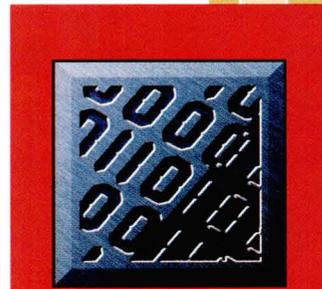
Muse Model 2	3	2,190
Muse Model 2 Plus	3	2,500
Muse Model 2/96	3	3,000
Musical Fidelity X-ACT	3	200
Musical Fidelity X-24K	3	300
Musical Fidelity X-DAC	3	300
Onkyo DX 7310	3	330
Rega Io	3	475
Resolution D92	3	1,500
Roksan Attesa-DA2	3	595
Sonic Frontiers Processor 3	3	5,999
Sumo Theorem II B	3	1,155
Teac D-T1	3	500
Theta Chroma 396 Std	3	799
Theta Pro Geny	3	1,099
Theta Pro Prime IIa	3	1,699
Theta Pro Basic IIIa	3	2,990
Theta Casablanca LS	3	6,158
Thorens TDA-2000	3	700
Trichord Pulsar Ser One	3	1,395
Tube Tech Fulcrum Xport	3	950
Wadia 12	3	1,530
Wadia 15	3	3,790
Wadia 64.4	3	4,750
Wadia 16	3	7,395
Wadia 7	3	9,995
Wadia 9	3	12,790
Woodside DVAC-18	3	1,499



DIGITAL TO ANALOGUE CONVERTERS (DACs)

KEY
④ - Number of digital inputs.

Alchemist TS-D-1	3	300
Alchemist Forseti DAC	3	1,100
Altis Reference	3	4,995
Audio Note DAC Zero	3	369
Audio Note DAC1	3	675
Audio Note DAC2	3	1,099
Audio Note DAC3	3	1,750
Audio Research DAC5	3	2,335
Audio Research DAC3 MkII	3	3,999
Audio Synthesis DAX Decade	3	2,995
Audiolabor 531	3	7,550
Audiomeca Elixir	3	799
Audiomeca Ambrosia	3	1,850
Boulder 2020	3	21,000
Cary CD-305	3	2,695
Chord DSC900E	3	2,040
Chord DSC1100E	3	2,815
Chord DSC1500E	3	4,895
Conrad-Johnson D/A-3	3	1,195
Conrad-Johnson D/A-2b	3	1,990
dCS Elgar	3	8,500
DPA Little Bit 3	3	325
DPA Renaissance DAC	3	595
DPA Enlightenment DAC	3	850
DPA SX128	3	2,000
DPA SX256	3	4,000
DPA SX512	3	8,000
Harmonix Reimyo DAP-77	3	2,799
Jadis J52	3	2,499
Jadis J51	3	6,990
LFD DAC2	3	1,950
LFD DAC3	3	3,000
Linn Numerik	3	1,500
Levinson 360	3	4,395
Levinson 360S	3	6,895
Levinson 30.6	3	16,495
Meracur Auriga	3	1,295
Meracur Flagrate	3	2,495
Meridian 566	3	1,095



DIGITAL RECORDERS

KEY
MD - MiniDisc
DAT - Digital Audio Tape
② - Portable

Denon DMD-1000	MD	500
Denon DMD-1600AL	MD	600
Kenwood DMF-9020	MD	499
Kenwood DM-7090	MD	500
Kenwood DM-9090	MD	550
Marantz CM635	MD	500
Marantz DR700	MD	600
Onkyo MD-121	MD	450
Onkyo MD 122	MD	700
Philips CDR770	MD	1
Philips CDR775	MD	1
Philips CDR570	MD	1
Philips CDR951	MD	1
Pioneer MJ-D707	MD	199
Pioneer PDR-509	MD	300
Pioneer PDR-W739	MD	399
Pioneer PDR-555RW	MD	480
Pioneer PDR-04	MD	700
Pioneer D-05	DAT	900
Pioneer PDR-05	DAT	1,000
Pioneer D-C88	DAT	2,000
Sharp MD-R1 MKII	MD	180
Sharp MD-R3H	MD	300
Sharp MD-R2	MD	300
Sharp MD-MS200H	MD	350
Sharp MDXV300H	MD	1,000
Sony MZ-R55	MD	1
Sony MDS-540	MD	1
Sony MZ-R37	MD	1
Sony MZ-R5ST	MD	1
Sony MDS-JE530	MD	200
Sony MDS-JB930	MD	300
Sony MDS-JA20ES	MD	500
Sony MDS-JA55ES	MD	650
Teac MDH300	MD	300
Teac MD-H500i	MD	350
Teac MD-8	MD	600
Teac MD-5	MD	600
Teac MD-10	MD	900
Traxdata Traxaudio 900	MD	399
Yamaha MDX-595	MD	230
Yamaha CDR-S1000	MD	400



HEADPHONES

KEY
‘D’ - Dynamic type, compatible with virtually all normal headphone outputs.
‘E’ - Electrostatic type; generally includes a separate power supply.
② - Open-back construction.
③ - Closed-back construction.

UP TO £40

AKG Rox	D	30
Aural Envelope DX200	D	20
Aural Envelope DX220	D	30
Beyer DT131	D	29
Beyer DT131TV	D	32
Beyer DT75	D	34
Beyer DT231	D	40
Hama SL273	D	20
Hama SL275	D	25
JVC HA-CD88	D	18
JVC HA-D525	D	20
JVC HA-F65	D	20
JVC HA-D626	D	25
Kenwood KPM-310	D	18
Kenwood KPM-410	D	25
Maxell HP-2000	D	20
Pioneer SE-A40	D	20
Pioneer SE-A20V	D	23
Pioneer SE-M250	D	25
Pioneer SE-M350	D	30
Sennheiser HD56	D	18
Sennheiser HD433	D	20
Sennheiser HD400	D	25
Sennheiser HD470	D	35
Sennheiser HD60TV	D	40
Sony MDR-250V	D	18
Sony MDR-A34L	D	18
Sony MDR-ED228LP	D	18
Sony MDR-G52LP	D	20
Sony MDR-E848LP/MP	D	20
Sony MDR-ED238ML	D	22
Sony MDR-G56V	D	25
Sony MDR-G62LP	D	25
Sony MDR-G59G	D	30
Sony MDR-G72LP	D	30
Sony MDR-V300	D	30
Sony MDR-IF130K	D	30
Sony MDR-EX70LP	D	35
Sony MDR-ED268LP	D	35
Stanton ST Pro	D	25
Technics RP-F200	D	25
Technics RP-F400	D	30
Technics RP-F500	D	40
Vivanco SR250	D	20
Vivanco FMH 3000	D	30
Vivanco IR5800	D	30

OVER £41

AKG K301	D	70
AKG K240DF	D	100
AKG K222IR	D	100
AKG K401	D	120
AKG K501	D	150
AKG K333R	D	150
AKG K444R	D	180
AKG K290S	D	250
AKG K1000	D	700
Audio Technica ATH910PRO	D	80
Audio Technica ATHD40FS	D	100
Audio Technica ATH-M40	D	120
Audio Technica ATH911	D	120
Beyer DT331	D	70
Beyer DT431	D	80
Beyer DT433/863	D	100
Beyer DT531	D	110
Beyer DT831	D	135
Beyer DT100	D	160
Beyer DT931	D	180
Denon AH-D210	D	45
Denon AH-D650	D	95
Denon AH-D750	D	130
Grado SR60	D	79
Grado SR80	D	100
Grado SR125	D	150
Grado SR225	D	200
Grado SR325	D	300
Grado RS2	D	495
Grado RS1	D	695
Hama SL276	D	50

Hama IR Cordless	D	60
Jecklin Float Model 1	D	79
Jecklin Float Model 2	D	99
Jecklin Float ELS	E	399
JVC HA-D727	D	43
JVC HA-D50	D	45
JVC HA-W60	D	49
JVC HA-D910	D	65
JVC HA-W200RF	D	75
JVC HA-DX1	D	200
JVC HA-DX3	D	250
JVC HA-D1000	D	250
JVC HA-F25	D	699
Koss TD/80	D	50
Koss R/100	D	100
Pioneer SE-M550	D	50
Pioneer SE-M750	D	60
Precide Ergo Model 1	D	120
Precide Ergo Model 2	D	140
Sennheiser HD200	D	50
Sennheiser IS 380	D	50
Sennheiser HD490	D	50
Sennheiser HD495	D	60
Sennheiser HD500	D	70
Sennheiser RS30	D	70
Sennheiser RS40	D	80
Sennheiser HD270	D	80
Sennheiser HD25 SP	D	90
Sennheiser HD570 Symphony	D	90
Sennheiser RS60	D	120
Sennheiser HD265 Linear	D	125
Sennheiser HDC 451-1	D	130
Sennheiser HD250II	D	150
Sennheiser HD25-13	D	160
Sennheiser HD590	D	160
Sennheiser RS80	D	160
Sennheiser HD25	D	160
Sennheiser HD 580 P'cision	D	200
Sennheiser HD600	D	250
Sennheiser HE60/HEV70	E	998
Sennheiser Orpheus	E	9,652
Sony MDR-V500DJ	D	50
Sony MDR-RF830RK	D	60
Sony MDR-V700DJ	D	100
Sony MDR-D77	D	130
Sony MDR-F1	D	200
Sony MDR-CD1700	D	200
Sony MDR-DS5000	D	400
Stanton DJ Pro 101/HB	D	65
Stanton DJ Pro 1000	D	95
Stanton DJ Pro 1001	D	150
Stax SR-001	E	280
Stax SR-Lambda Nova C	E	370
Stax Lambda Nova Basic	E	449
Stax SR-Lambda Nova S	E	450
Stax Omega	E	1,896
Technics RP-F800	D	50
Technics RP-HC100	D	55
Vivanco SR650	D	45
Vivanco SR750	D	50
Vivanco SR850	D	50
Vivanco FMH7980	D	60
Vivanco SR950	D	80



EQUIPMENT SUPPORTS Hi-Fi Tables

KEY
4 - Number of shelves.

Avak Furniture A4	4	350
Alphason SM17	4	49
Alphason VSM17	1	85
Alphason GSM17	1	85
Alphason GMV1P	1	110
Alphason R17/17	3	120
Alphason GMH1P	1	150
Alphason VR17/17	3	190
Alphason GR17/17-AS	4	275
Apollo Soprano	4	275
Arcici Air Head 1	1	275
Arcici Air Head 2	1	425
Arcici Air Head TNT	1	725
Arcici Suspense 4	4	1,695
Arcici Suspense 5	4	1,895
Atacama Europa	5	240
Audiophile Base 01	1	79
Audiophile S4T120	4	280
Audiophile S4T120P	4	560
Audiophile Furniture Base	4	815
Avid Isoshelf	5	1,100

BCD Model 1006/8	1	795
BCD Model 1000	3	1,250
Custom Design Aspect 650	4	250
Custom Design Aspect 850	5	280
Custom Design e'Lite E5	5	280
Custom Design Aspect 500AV	5	290
Custom Design e'Lite XE5	5	300
Custom Design e'Lite AVE	8	350
Deadrock 701	1	60
Deadrock 802	2	90
Deadrock 703	3	130
Deadrock 705	5	230
Deadrock 704	4	250
Elemental Isotube X1	1	169
Elemental Isotube B5	1	199
Elemental Isotube TS	1	209
Elemental Isotube IS	1	209
Elemental Reference B1	1	329
Elemental Isotube X2	2	379
Elemental Isotube X3	3	489
Elemental Reference B5	1	499
Elemental Reference X1	1	499
Elemental Reference TS	1	549
Elemental Reference IS	1	549
Elemental Reference X2	2	799
Elemental Isotube X4	4	849
Elemental Isotube X4/Ref	4	1,199
Elemental Reference X3	3	1,199
Elemental Isotube X4R5e	4	1,349
Elemental Reference X4	4	1,599
Fi-Rax R4	4	599
Finite Elemente A03 pagode	4	479
Finite Elemente E03 pagode	4	649
Finite Elemente HD03	4	1,995
Frameworks H175	1	139
Frameworks FS1	1	150
Frameworks H500	2	265
Frameworks FT2	3	285
Frameworks FT3	3	350
Frameworks H700	3	355
Frameworks H900	3	389
Impulse Iso-plate	4	190
JPW 3 Tier	3	80
JPW 5 Tier	5	100
Linn K3000	5	85
Mana Sound Frame	1	125
Mana Mini Table	1	150
Mana Power supply table	1	150
Mana Reference flat top	1	150
Mana Sound Shelf	1	175
Mana Sound Stage	2	200
Mana Sound Table	2	235
Mana Ref Shelf	3	325
Mana Reference Table	3	350
Mana 2 Tier Stand	3	375
Mana 3 Tier Stand	4	450
Mana 4 Tier Stand	5	500
Mana 5 Tier Stand	6	600
Mana 6 Tier Stand	7	700
Mana 7 Tier Stand	7	800
Mana 8 Tier Stand	8	900
Mission Stance	8	100
Optimum OPT 3406	3	149
Optimum G5	5	180
Optimum OPT 4906	4	199
Optimum G5P	6	200
Optimum OPT 3000	3	200
Optimum OPT 6606	5	249
Optimum OPT 340	3	249
Optimum AV200	2	270
Optimum OPT 5000	5	280
Optimum OPT 490	4	299
Optimum AV30	3	299
Optimum OPT 440	4	299
Optimum OPT 10206	6	299
Optimum OPT 660	4	349
Optimum AV 300	3	349
Optimum OPT 7000	7	359
Optimum OPT 1020	6	399
Optimum OPT 8000	8	400
Optimum OPT 11900	7	450
Optimum AV400	4	450
Projekt A3	3	145
Projekt A4	4	215
Projekt A5	5	235
Projekt B3	5	255
Projekt A6	6	280
Projekt B3i	6	300
Projekt B4	8	340
Projekt B Multi	8	345
Projekt B3ii	7	345
Projekt C3	9	375
Projekt D3	12	420
Projekt C3i	8	420
Projekt B5	10	425
Projekt C3iii	11	465
Projekt C3ii	10	465
Projekt D3i	12	500
Projekt C4	12	500
Projekt C3iv	10	510
Projekt D3ii	14	545
Projekt C Multi	9	555
Projekt D4	16	560
Quadraspire Q4S mini shelf	1	65
Quadraspire Q4S shelf	1	65
Quadraspire QKS Cabinet shelf	1	80
Quadraspire QAV shelf	1	130

795	4	250
1,250	4	250
250	4	320
280	3	350
280	3	400
290	4	450
300	1	195
350	1	195
60	4	495
90	1	141
130	1	152
230	4	220
250	4	310
169	5	372
199	5	517
209	4	140
209	5	160
329	4	160
379	3	170
489	2	200
499	4	230
499	4	240
549	4	245
549	5	250
799	3	250
849	4	250
1,199	3	260
1,199	4	260
1,349	5	265
1,599	4	275
599	5	280
479	5	290
649	5	295
1,995	5	300
139	3	300
150	3	360
265	4	190
285	1	55
350	4	260
355	5	299
389	4	329
190	4	329
80	5	389
100	1	560
85	10	720
125	6	840
150	5	175
150	110	110
150	400	400
175	999	999
200	4	1,245
235	1	1,895
325	1	3,600
350	1	130
375	1	265
450	4	590
500	4	720
600	1	990
700	1	990
800	1	990
900	1	990
100	1	990
149	3	149
180	5	180
199	4	199
200	6	200
200	3	200
249	5	249
249	3	249
270	2	270
280	5	280
299	4	299
299	3	299
299	4	299
349	6	349
349	3	349
359	7	359
399	6	399
400	8	400
450	7	450
450	4	450
145	3	145
215	4	215
235	5	235
255	5	255
280	6	280
300	6	300
340	8	340
345	8	345
345	8	345
375	9	375
420	12	420
420	8	420
425	10	425
465	11	465
465	10	465
500	12	500
500	12	500
510	12	510
545	10	545
555	14	555
560	16	560
65	1	65
65	1	65
80	1	80
130	1	130

Quadraspire Q4M mini table	4	250
Quadraspire Q4 table	4	250
Quadraspire Q4SP Table	4	320
Quadraspire QAV table	3	350
Quadraspire QAVSP Table	3	400
Quadraspire QK Cabinet	4	450
Reson DOMOPS	1	195
Reson DOMOWS	1	195
Roksan Glass stand	4	495
Solid Steel Model B	1	141
Solid Steel Model A	1	152
Solid Steel Series 3	4	220
Solid Steel Series 5	4	310
Solid Steel H.3	5	372
Solid Steel H.5	5	517
Sound Org Z540	4	140
Sound Org Z560	5	160
Sound Org Z545	4	160
Sound Org Z530	3	170
Soundstyle Radius SR210	2	200
Soundstyle X053	4	230
Soundstyle X100	4	240
Soundstyle Finewoods W100	4	245
Soundstyle X058	5	250
Soundstyle Radius SR310	3	250
Soundstyle Radius SR100	4	250
Soundstyle X310	3	260
Soundstyle X6053	4	260
Soundstyle X105	5	265
Soundstyle X6100	4	275
Soundstyle Radius SR105	5	280
Soundstyle X6058	5	290
Soundstyle Finewoods W105	5	295
Soundstyle X6105	5	300
Soundstyle X6310	3	300
Soundstyle Finewoods W310	3	360
Standesign Design 4	4	190
Stands Unique Isolation Platform	1	55
Stands Unique Sound Support	4	260
Stands Unique Sound Tower	5	299
Stands Unique Compact Sound Support	4	329
Stands Unique Sound Support 10	4	329
Stands Unique Sound Twr. Cabinet	5	389
Stands Unique Ref Wall Support	1	560
Stands Unique Ultimate Tower	10	720
Stands Unique Ref Floor Support	6	840
Target B5	5	175
Townshend Seismic Sink 1-CD	110	110
Townshend Seismic Sink 1-3D	400	400
Townshend S/Sink Stand 1-4	999	999
Townshend Seismic Sink Stand 4	4	1,245
Vibraplane Passive	1	1,895
Vibraplane Active	1	3,600
Wilson Benesch Standard Shelf	1	130
Wilson Benesch Mono Block	1	265
Wilson Benesch Asside Basic	4	590
Wilson Benesch Asside	4	720
Wilson Benesch Triptych	1	990



**EQUIPMENT SUPPORTS
Speaker Stands**

KEY
60 – Height of stand in cm.

Acoustic Solutions Platform Eight	49	220
Aliante Base	425	425
Aliante Vela	750	750
Alphason NCI	60	47
Alphason Akros I	60	49
Alphason RS1	120	49
Alphason Akros II	60	65
Alphason NCI	60	84
Alphason HDS	60	85
Alphason Titan S	60	125
Apollo Olympus	60	75
Apollo AZ6	66	80
Apollo A4/6	51	82
Atacama Nexus 6	60	50
Atacama BD21	56	55
Atacama BD17	55	55
Atacama BD25	60	60
Atacama SE16	65	65
Atacama SE12	65	65
Atacama SXS00	67	67
Atacama F2	70	70
Atacama F1	70	70
Atacama SX600	70	70
Atacama SL200	70	70
Atacama SE24	61	70

Atacama SE20	70	70
Atacama SX700	73	73
Atacama SL300	73	73
Atacama TP600	75	75
Atacama TP500	75	75
Atacama SE615	75	75
Atacama SE515	75	75
Atacama SE415	75	75
Atacama SL400	76	76
Atacama SE1000S	80	80
Atacama R724	60	150
AVF P6171BP	100	30
AVF Tower P6144BP	60	35
BCD Model 1010	60	595
Black Box Speaker Stand	100	797
Credo STD 001	284	284
Custom Design M Range	56	85
Custom Design R/S 300 Mk II	61	100
Custom Design Ref. stands	60	200
Deadrock 903	60	60
Deadrock 902	47	60
Deadrock 901	39	60
Elemental Reference SB1	8	399
Elemental Isotube SZ	49	499
Elemental Isotube SZse	61	599
Elemental Isotube SCZ	49	699
Elemental Isotube SCZse	49	799
Elemental Reference SZ	52	999
Elemental Reference SZc	52	1,499
Heybrook Stand-56	63	69
JPW MS2	45	45
JPW MS3	61	55
JPW MS1	46	80
JPW HS1	61	120
JPW HS2	45	120
Mana Sound Base	8	175
Opera WS1/E	60	235
Opera S1	60	295
Opera S2	60	345
Partington A-4	60	119
Partington Dreadnought Ultima	63	299
Pioneer CP-7	40	50
Pioneer CP-8	80	80
Projekt Signature	55	80
Royd Royd	55	99
Russ Andrews Torlyte	61	599
Silverado Silverado 1 Stand	60	350
Solid Steel SL	63	186
Solid Steel SS	63	333
Solid Steel SS801	25	366
Sonus Faber Ironwood	475	475
Sonus Faber Stonewood	497	497
Sonus Systems Excel	65	99
Sound Org Z522	59	89
Soundstyle Finewoods W122	57	95
Soundstyle X122	57	95
Soundstyle Select	59	95
Soundstyle Radius S122	57	110
Stands Unique Speaker support	59	165
Stands Unique Tuned Spkr Support	59	230
Stands Unique Tuned Carbon Fibre	59	299
Stands Unique Vivas Cf Spkr Supp	60	349
Target TR60	60	68
Target HM60	55	106
Target R1	53	280
Townshend Seismic Sink L/S	4	499



LOUDSPEAKERS

KEY
 ⚡ – Floorstander; larger models requiring no separate stand.
 📏 – Stand mount; smaller models designed to be raised above the floor.
 📐 – Wall mount; designed to be sited on or near the wall.
 📦 – Box type, including infinite baffle, reflex and transmission line types.
 📣 – Horn type; mostly large and very efficient.
 📄 – Panel type, including electrostatic and planar magnetic types.

UP TO £130

Acoustic Energy Aegis Compact	55
Allison Micro Monitors	95
Allison Mini References	120

AR Status S10	130
Ariston MSX 03	30
Ariston MSX 05	50
Celestion 12i	119
Denon SC-M2	80
Denon SC-E313SE	130
Eltax Liberty 1+	99
Eltax Monitor III Mk II	129
Gale Mini Monitors	70
Gale Gold Monitors	90
Gale 2i	130
Genexa GX300	80
Genexa GX330	80
GLL Arena	90
GLL Imagio IC208	100
Iteraudio XL1000	130
Jamo Artina	120
Jamo 28	125
Jamo Cornet 145	130
JBL CM40	90
JBL MX300	90
JBL Control 1X	100
JBL CM42	130
JPW ML110i	90
JPW ML210i	100
JPW ML310i	120
JPW ML410i	130
JVC SX-SC1VBK	60
JVC SP-V50	80
JVC SP-X220TBK	100
JVC SP-X550BK	130
KEF Coda 7	129
Kenwood LS-90UK	130
Mission 700	130
Monitor Audio Bronze 1	130
NAD 801	100
Paradigm Micro v2	100
Paradigm Atom v2	120
Pioneer CS-3030	120
Polk AB410	100
Realistic Minimus 26	56
Realistic Minimus Pro-77	100
Sony SS-86E	100
Tangent Monitor 3	60
Tangent Monitor 5	80
Tannoy Mercury M1	120
Tannoy mX1	120
TDL Nucleus 1	

Mission 77DS	199
Mission 771e	200
Mission 702e	180
Monitor Audio Bronze 2	200
Monitor Audio Monitor 1	200
Mordaunt-Short MS206	200
Paradigm Mini Monitor	170
Pioneer CS-5030	180
Polk M2	200
Polk RT3	200
Polk AB610	155
Royd A7X	199
Sequence 200	150
Sony SS-126EB	200
Sony SS-176E	150
Tangent Monitor 9	180
Tannoy Monitor 11	140
Tannoy Mercury M2	200
Tannoy Saturn 56C	200
Tannoy Revolution R1	200
TDL Nucleus 3	150
Technics SB-CS95	200
Technics SB-M20	159
TLC Maestro 705	150
W'dale Diamond 7.2 Ann'y	150
W'dale Valdis 300	200
W'dale Modus Music Two	200
W'dale Valdis 400	180
Yamaha NS-90	200
Yamaha NS-45E	200
Yamaha NS-100	200

£201 TO £300

Acoustic Energy AE100i SE	230
Acoustic Energy Aegis Two	249
ALR/Jordan Entry 2	249
AR 15	275
Arcaydis Baby 1	299
Audio Gem Opal	230
B&W DM602 Ser II	300
B&W 602 S2	300
Blueroom Minipod	250
Bose 151	220
Bose 301 IV	300
Boston 361	219
Boston CR8	239
Boston 381	259
Boston CR9	279
Boston Voyager	299
Castle Richmond	249
Castle Keep	250
Celestion C1	299
Celestion 25i	299
Cerwin-Vega VS-8	250
Cerwin-Vega CT-330	300
Chario Syntar 100	249
Chario Ref 100	299
Chano Hiper 1000	300
Dali 102B	260
Dali 150	300
Eltax Linear Resp. 4.5	249
Eltax Liberty 7+	249
GLL Imagio IC238TL	250
Heybrook Heylios	269
Heybrook HB3/2000	300
Interaudio XL3000	230
Interaudio XL4000	260
Jamo Cornet 175	230
Jamo Classic 4	250
Jamo Art	300
Jamo D265	300
JBL CM62	250
JM Lab Tantal 507	299
JPW ML710i	250
JPW ML810i	300
JVC SX-SW10	300
KEF Coda 9	299
KEF Model 70S	299
Linn Kan	295
Mission 750	248
Mission 772	250
Mission 780	299
Mission 703	300
Monitor Audio Monitor 2	250
Monitor Audio Bronze 3	270
Monitor Audio Silver 3i	300
NAD 802	280
Paradigm Monitor 5	250
Paradigm Monitor 7	300
Pioneer CS-7030	230
Pioneer CS-9030	280
Pioneer S-LC1	300
Polk AB505	220
Polk M3 II	220
Polk RT5	250
Polk RT7	300
Polk M5	300
Promenade SP1	299
Rega Ara	255
Royd The Envoy	249
Royd Minstrel	275
Ruark Epilogue	239
Sequence 300	249
Sony SS-176EB	250
Tannoy mX3	229
Tannoy Mercury M3	230

TDL Nucleus 4	300
TLC Maestro 130S	289
TLC Voyager 350	289
W'dale Modus Music Four	230
W'dale Valdis 500	300
Yamaha NS-120	250
Yamaha NS-200	300
ZYP A1	229
ZYP A2S	299

£301 TO £500

Acoustic Energy AE105SE	350
Acoustic Energy Aegis Three	350
Acoustic Energy AE109 SE	450
Acoustic Energy Energy AE120SE	500
Allison Model 2A	420
Arcaydis Baby 2	399
Arcaydis ASC	399
Audiovector C1	350
AVI Neutron	499
AVI NuNeutron	500
B&O Beovox CX50	325
B&O Beovox CX100	425
B&W LCR6	349
B&W DM305	350
B&W CDM25E	400
Bandor Pictures	352
Boston Micro 90 Sat	369
Boston Micro 80 Sys	369
Boston VR20	380
Castle Inversion 15	425
Celestion 25i	399
Celestion 30i	449
Celestion 35i	499
Cerwin-Vega VS-10	350
Chario Syntar 100T	399
Chario Ref 1000	499
Dali 104B	370
Dali Royal Menuet MkII	400
Dali 606	400
Dali Royal	500
Def Tech Celsius	395
Dynaudio Audience 40	399
Dynaudio LR/C120	439
ELAC CL82 MkII	399
Eltax Linear Resp. 6.5	349
Eltax Chroma Front	349
Eltax Linear Resp. 8.5	449
Energy e:XL25	399
Epos ES12	489
GLL Imagio IC248TL	350
GLL Imagio IC258TL	450
GLL Imagio IC348TL	500
Heybrook Heylo	359
Heybrook HB4/2000	500
Indigo One	330
Indigo Three	500
Jamo Classic 6	330
Jamo Cornet 195	350
Jamo 98	350
Jamo D365	400
Jamo Classic 8	400
Jamo Graphic	400
Jamo 128	450
Jamo Atmosphere	500
JBL LX60	350
JBL Ti 200	400
JM Lab Tantal 515	499
Jordan Watts JHFLG	380
Jordan Watts JHP6B	420
JPW ML910i	350
JPW ML1010i	450
KEF Q35.2	350
KEF RDM One	499
KEF Q55.2	500
Linn Sekrit	395
Magnat Vector 55	349
Magnat Vintage 320	350
Magnat Vector 77	449
Mission 751f	348
Mission 733	399
Mission 773e	400
Mission 704	450
Mission 774	500
Mission 705	500
Monitor Audio Monitor 3	350
Monitor Audio Silver 5i	450
Monitor Audio Studio 2SE	500
Mordaunt-Short MS207	400
Mordaunt-Short MS208	500
Mordaunt-Short MS817	500
Mus Tec Kestrel Evolution	315
Mus Tec Harner	400
Mus Tec PM15	475
NAD 804	400
Neat Critique	445
Opera Mini	325
Opera Duetto	395
Opera Prima	495
Origin Live OL-1AS	499
Origin Live Monarch	499
Paradigm Studio/20	350
Paradigm Monitor 9	400
Pioneer S-LC2	450
Polk AB705	330
Polk RT8	400

Polk RT10	500
Polk AB805	500
PMC TB15	470
Promenade SP2	399
Promenade SP3	499
Rega Alya	365
Rega Jura	475
Rega ELA	498
Roksan ROKone 1	400
Royd The Squire	350
Royd Minstrel SE	399
Royd Doublet	485
Ruark Icon	495
Sequence 400	329
Sony SS-X7	400
S Coast Odette	325
Spendor S3/5	499
System 1130	500
Tannoy Revolution R2	350
Tannoy Saturn S6LCR	400
Tannoy Saturn S6	500
TDL G20	380
TDL Chiltern CF100	450
TDL G30	500
Technics SB-M300	350
Technics SB-M500	450
TLC Altus 300	366
Triangle Cometes	359
W'dale Modus Music Six	330
W'dale Modus Music Eight	430
W'dale Modus Music 1/6	500
Yamaha NS-300	400

£501 TO £800

Acoustic Precision Eikos FR1	800
Aliante Stile	580
Aliante Voce	600
Allison Model 3A	525
Arcaydis AK3	599
Arcaydis AS2	699
Arcaydis AK4	699
Audio Gem Emerald	540
Audio Note AN-K/D	620
Audio Note AN-J/B	799
Audiovector M1 Improved	650
Audiovector C2	700
AVI Biggatron	599
B&O Beolab 2500	750
B&W 603 S2	550
B&W CDM1 SE	608
Bose 501	600
Bose A'mass AM3	650
Boston VR30	600
Castle Severn 2SE	699
Celestion A Compact	599
Celestion 45i	599
Celestion C2	699
Cerwin-Vega VS-12	550
Cerwin-Vega VS-15	700
Chario Constellation Lynx	549
Chario Ref 100T	599
Chario Hiper 1000T	699
Cura CA-10	699
Dali 107	600
Dali 350	600
Dali 450	700
Dali 109	800
Def Tech BP2X	595
Def Tech CLR2002	595
Def Tech BP6B	750
Diapason Micra II	750
Dynaudio Audience 50	577
Dynaudio Audience 60	729
ELAC CL102 MkII	599
ELAC CL130i JET	800
Eltax Linear Resp. 10.5	549
Energy e:XL26	600
Epos ES14	675
Harbeth BBC LS3/5A	699
Harbeth HL-P3ES	799
Heybrook Duet	799
Indigo Four	750
Infinity Kappa 60	595
Infinity Kappa 70	795
Jamo Classic 10	600
Jamo X3M8	600
Jamo X3M10	750
JBL LX80	550
JBL Ti 400	550
JBL SVA1500	658
JBL Ti 600	650
JM Lab Cobalt 807	599
JM Lab Tantal 520	599
JM Lab Cobalt 810	799
Jordan Watts JH400	515
KEF LS3/5a	649
KEF RDM Two	699
KEF Q65.2	700
Kelly KT2	700
Linn Tukan Passive	550
Linn Keilidh Passive	750
Magnat Vintage 710	799
Meridian A500	750
M&K S-85	700
Mission 752f	578
Mission 782	699

Mission 753f	798
Monitor Audio Silver 7i	600
Mus Tec Falcon	680
Naim Intro	680
Neat Mystique 2	575
Neat Petite II	745
NHT Super Two	550
Opera Seconda	595
Opera Pavarotti	695
Opera Platea	795
Opera Operetta	795
Origin Live Resolution	752
Paradigm Studio/60	650
Paradigm Studio/80	750
Polk RT12	600
Polk RT16	799
Polk LSS0	800
ProAc Tablette 2000	649
ProAc Studio 100	749
PMC TB15M	517
PMC TB1	529
PMC TB1M	576
PMC XB1	640
Promenade SP4	650
Roksan Qjan 3	795
Royd The Sorcerer	595
Royd Abbot	695
Ruark Templar II	559
Ruark Sceptre	599
Ruark Talsman II	799
Ruark Prologue One	799
Shinpy Polarys	595
Silverado Raider	695
Snell K5	795
Soliloquy 5.0	795
Sonus Faber Concertino	599
S Coast Lancelot	575
S Coast Hades	695
S Coast Merlin Monitor	795
Spendor S1	549
System 1150	750
T+A TB 100	700
Tannoy Revolution R3	550
Tannoy Definition D100	689
TDL Cotswold CF200	650
Titan Orbital	598
Titan Logic T/2B	600
Titan Logic T/2	699
TLC Classic 2	535
TLC Classic 1	800
Totem Mite	599
Totem Rokk	765
Triangle Zephyr II	599

£801 TO £1500

Acoustic Energy AE1	845
Acoustic Energy AE2-II	1,245
Acoustic Solutions Eight	1,375
Aliante Moda	1,200
Arcaydis AK5	1,399
ATC SCM10	1,000
Audio Note AN-J/D	930
Audio Note AN-K/SPx	1,060
Audio Note AN-E/B	1,299
Audio Note AN-I/SPx	1,415
Audio Physic Step	1,299
Audiovector M1 Super Impr.	880
Audiovector M1 Sig Improved	1,180
Audiovector M3	1,200
AVI Positron	899
B&O Beolab 4000	1,100
B&W DM604 Ser II	849
B&W CDM75E	1,000
B&W Nautilus 805	1,500
Bandor Trident	846
BKS Audio Hybrid 107	1,500
Bose A'mass AM5	900
Bose 701	1,000
Boston VR40	1,000
Carlsson OA-52.2	1,500
Castle Inversion 50	875
Castle Harlech	899
Celestion A1	899
Celestion C3	999
Celestion A2	1,499
Cerwin-Vega AL-1000	1,100
Cerwin-Vega 1515	1,300
Chario Ref 1000T	999
Chario Academy 1	1,299
Cura CA-20	1,199
Dali 850	1,100
Def Tech BP8B	1,000
Def Tech BP10B	1,500
Diapason Prelude II	875
Diapason Karis	995
Diapason Nux	1,395
Dynaudio Contour 1.1	879
Dynaudio Audience 70	1,100
Dynaudio Contour 1.3	1,198
Dynaudio Audience 80	1,460
Electrocompaniet EC-M1	995
Electrocompaniet EC-Qube	1,195
Electrocompaniet EC-Qube SE	1,495
Epos ES15	890
Epos ES22	1,185
Final 0.3	1,495



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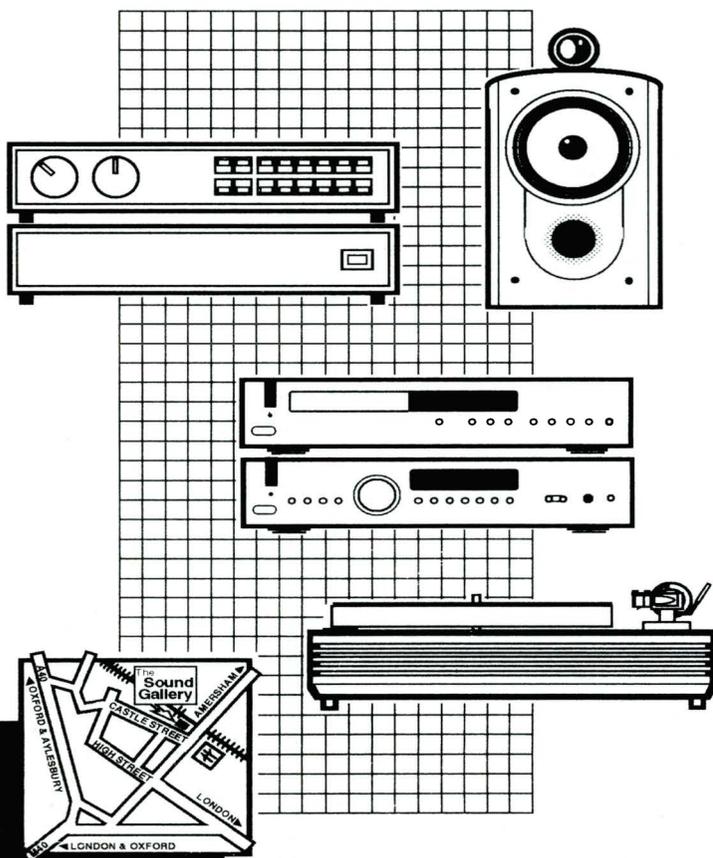
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- Loewe TV ●
- Linn hifi ●
- Linn knekt ●
- Miller & kreisel ●
- Naim audio ●
- Nakamichi ●
- Proceed ●
- Rega ●
- Sennheiser ●
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Eltax Atomic A-10	179
Eltax Atomic A-15	299
GLL Le Bass	350
Infinity HPS-250	550
Jamo SW1008	250
Jamo SW410e	300
Jamo SW708	THX 300
Jamo SW-2010	400
Jamo Sub One	400
JBL Control Sub 6	200
JBL Control Sub 10	300
JM Lab Tantal SW20	349
JM Lab Cobalt SW27A	599
JM Lab Electra SW33A	899
JM Lab Sub Utopia	2,200
JPW Subwoofer	130
JPW SW40	240
JPW SW60	350
JPW SW-120	500
KEF Model 20B	349
KEF Model 50B	499
KEF Model AV1	THX 2,499
Kenwood SW500	250
Kenwood SW501	349
Linn AV5150	2,850
L Voice RW24	11,500
Magnat Vector Sub 30P	149
Magnat Vector Sub 30A	299
Magnat Omega 300	429
Meridian M2500	1,595
M&K VX-7MKII	450
M&K V-75 MKII	650
M&K VX-100	750
M&K V-125	800
M&K V-125 (THX)	THX 800
M&K MX-700	900
M&K MX-700	1,495
M&K MX-150 (THX)	THX 1,500
M&K MX-200	1,800
M&K MX-350THX	THX 1,995
M&K MX-5000 (THX)	THX 2,900
Mission 75as	548
Monitor Audio ASW100	300
Monitor Audio ASW110	500
Monitor Audio ASW120	700
Mus Tec PMS 45	500
Mus Tec Tercel	700
Muse Model 22	1,890
Muse Model 18	3,790
Neat Gravitas	1,095
Paradigm PDR10	250
Paradigm Servo 15A	800
Polk PSW50	350
Polk PSW150	500
Polk PSW300	750
REL Q50	375
REL Q-100E	495
REL Strata III	600
REL Q200E	600
REL Q201E	700
REL Storm III	800
REL Q400E	1,000
REL Stadium III	1,500
REL Stentor II	1,800
REL Studio II	4,000
Revel Sub-15	2,195
Roksan Ojan 3S	795
Ruark Log-Rhythm	750
Sequence FW120	249
Soliloquy S10	THX 1,050
Sony SA-W305	130
Spendor Sub3	695
Sunfire Sub Junior	1,099
Sunfire True Sub	1,499
Sunfire Trus Sub Sig.	1,699
Tannoy mSUB 10	250
TDL Nucleus SBR	200
Titan Mercury	350
Titan Mars	450
Titan Jupiter	799
Tsunami TS300	300
Tsunami TS210	350
W'dale Topaz SW-12	400
Wilson Audio Puppy 5.1	8,450
Wilson Audio Whow II	10,999
Wilson Audio XS	17,000
Yamaha YST-SW45	140
Yamaha YST-SW90	180
Yamaha YST-SW160	280
Yamaha YST-SW300	350



TONEARMS

KEY
 ⊙ - Pivoted.
 # - Parallel tracking.

Air Tangent IC	#	4,600
Air Tangent 10B	#	8,600
Air Tangent Reference	#	14,000
Audio Note AN-ARM 1	⊙	169
Audio Note AN-0s	⊙	795
Audio Note AN-1s	⊙	995
Audiomeca SL5	#	2,500
Clearaudio Souther TQ-1	#	1,670
Clearaudio Master TQ-1	#	3,620
Dynavector 507	⊙	1,995
Graham Mk 2.0 Basic	⊙	1,810
Graham Mk 2.0 Deluxe	⊙	2,650
Helius Orion 4 Copper	⊙	549
Helius Cyalene 2	⊙	1,495
Kuzma Stogi S	⊙	399
Kuzma Stogi	⊙	750
Kuzma Stogi Ref	⊙	1,250
Linn Akito	⊙	500
Linn Ekos	⊙	1,500
Moth Mk I	⊙	109
Moth MKIII Stainless	⊙	146
Moth Mk III Tungsten	⊙	598
Moth Moth 900	⊙	1,070
Naim AR0	⊙	3,070
N'ham Interspace Arm	⊙	1,370
N'ham Space	⊙	450
N'ham Mentor	⊙	800
N'ham Foot	⊙	1,100
N'ham Anna Log Arm	⊙	1,500
Pro-Ject 9	⊙	350
Rega RB250	⊙	124
Rega RB300	⊙	188
Rega RB600	⊙	358
Rega RB900	⊙	648
Rockport Series 7000	#	6,000
Roksan Tabriz	⊙	345
Roksan Tabriz Zi	⊙	445
Roksan Artemiz	⊙	895
SME 3009 Ser II Imp	⊙	309
SME 3009 S2 Ser II Imp	⊙	338
SME Series II 3009-R	⊙	514
SME Series II 3010-R	⊙	526
SME Series II 3012-R	⊙	565
SME 309	⊙	689
SME 310	⊙	705
SME 312	⊙	802
SME Series IV	⊙	983
SME Series V	⊙	1,461
Triplanar V1A	⊙	3,500
Triplanar V1B	⊙	3,750
Wilson Benesch Act 0.5	⊙	795
Wilson Benesch ACT2	⊙	1,350
Zeta AS	⊙	469
Zeta VDH	⊙	549

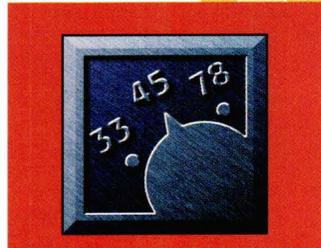


TUNERS

KEY
 'P20' (etc.) - Number of presets.
RDS - Radio Data System;
 receives text information on station,
 programme type etc.

Arcam Alpha 7	P24	230
Arcam Alpha 8	P24	280
Arcam FMJ T21	P24	400
Arcam Alpha 10 DRT	P07	800
Arcam FMJ DT26	P07	1,000
Ariston TX-510	P20	50
AVI S2000MT2	P99	1,890
Cambridge T500	P64	899
Creek T43	P64	399
Cymbol C-DAB1	P08	999
Cyrus FM7.5	P29	400

Davidson-Roth FM Ref Classic		5,590
Denon TU-260L MKII	P40	130
Denon TU-425RD	P40	200
Denon TU-1500RD	P40	250
Fanfare FT1	P08	1,395
H/K TU930	P30	150
H/K TU950	P30	200
Kenwood KT-2080	P20	130
Kenwood KT-3080	P30	180
Linn Kudos	P50	775
Linn Kremlin	P80	2,600
Magnum Dynalab FT11		499
Magnum Dynalab FT-101A		795
Magnum Dynalab Etude		1,250
Magnum Dynalab MD108		4,990
Marantz ST-48	P60	120
Marantz ST-17	RDS	600
McIntosh MR7084	P50	2,499
McIntosh MX118	P50	4,999
McIntosh MX130	P50	6,999
Meridian 504	P30	695
Musical Fidelity E50	P20	300
Myryad T-30	P29	400
Myryad Cameo	RDS	490
Myryad MT100	P29	600
NAD 412	P24	190
NAD C440	RDS	200
NAD 414RDS	RDS	250
NAD 710	P24	270
NAD 712	P24	330
Naim NAT03		615
Naim NAT02		1,130
Naim NAT01		1,780
Onkyo T 421 ORDS	P30	180
Onkyo T 409	P30	230
Onkyo T 411 RDS	RDS	260
Pioneer F-204RDS	RDS	140
Pioneer F-504RDS	RDS	250
Pioneer F-504RDS Precision	RDS	300
Quad 99	P25	700
Rega Radio R	P24	350
Roksan Kandy	RDS	375
Roksan Caspian	P50	695
Rotel RT940AX	P20	225
Rotel RT-955	P30	350
Sony ST-SE200	P30	100
Sony ST-SE300	RDS	110
Sony ST-SE500	RDS	140
Sony ST-SB920	P30	180
Sony ST-SA3ES	RDS	250
Sony ST-S3000	RDS	250
T+A T1200R	P60	790
TAG McLaren T32R	P99	1,400
TAG McLaren T32R DAB	P99	2,295
Teac T-R400	P40	100
Teac T-R460	RDS	120
Teac T-H500	RDS	170
Technics ST-GT350L	P30	150
Technics ST-GT550L	RDS	180
Technics ST-GT650L	RDS	230
Technics ST-GT1000	RDS	500
Thorens TRT-2000	P99	499
Yamaha TX-396L	P40	100
Yamaha TX-492RDS	RDS	130
Yamaha TX-59 2RDS	P40	180
Yamaha RX-396RDS	RDS	250
YBA Complete	P14	490



TURNTABLES

KEY
 ⊙ - Arm included.
 ⊕ - Cartridge included.

Audio Note AN-TT 1		349
Dual CS435-1	⊙	140
Dual CS 455-1	⊙	220
Dual 505-4 UK	⊙	220
Dual CS-750-1	⊙	330
Genexa Lab-710	⊙	60
Genexa Lab-810	⊙	70
Kenwood KD-492F	⊙	100
Michell Mycro	⊙	455
Moth Alamo	⊙	199
Moth Kanoot Mkl Arm	⊙	279
Moth Kanoot Mk3 Arm	⊙	329
NAD 533	⊙	220
N'ham Interspace	⊙	500
Pioneer PL-J2500-C	⊙	80
Pioneer PL-990	⊙	130
Pro-Ject 0.5/OM10	⊙	170

Pro-Ject 1/510	⊙	200
Pro-Ject 2/510	⊙	250
Pro-Ject Classic/510	⊙	360
Pro-Ject 6/510	⊙	400
Pro-Ject Classic Cherry	⊙	450
Pro-Ject 6.9	⊙	500
Rega Planar 78	⊙	224
Rega Planar 2	⊙	274
Rega P3	⊙	298
Sherwood PM8550	⊙	160
Sony PS-LX1 50H	⊙	90
Sony PS-LX300H	⊙	150
Technics SL-J110D	⊙	120
Technics SL-BD20	⊙	160
Technics SL-BD22	⊙	180
Technics SL-1210MKII	⊙	400
Technics SL-1200MKII	⊙	400
Thorens TD-180 AT91	⊙	210
Thorens TD-280 IV/UK	⊙	230
Thorens TD166 VI AT95E	⊙	370
Thorens TD-166 V/UK/RB	⊙	400

OVER £500

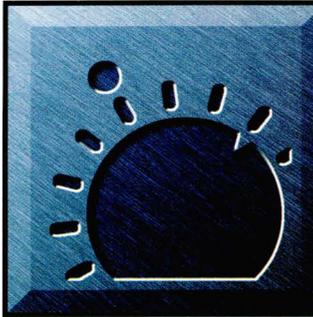
Audio Note AN-TT 2		995
Audio Note AN-TT 3		1,995
Audiomeca Romance	⊙	1,895
Audiomeca J1		3,500
Avid Volvere		1,399
Avid Acutus		3,995
Basis 2000		1,995
Basis 2001		2,995
Basis Ovation II		5,400
Basis 2500		5,495
Basis 2800		7,495
Basis Debut Gold Std III	⊙	8,200
Basis Debut Gold Vacuum		10,300
Chantry QT Level 2		705
Clearaudio Solution		925
Clearaudio Evolution		1,095
Clearaudio Revolution		2,500
Clearaudio Reference		3,835
Clearaudio Master Ref.		8,510
DNM-Reson Rota 1	⊙	3,100
DNM-Reson Rota 2	⊙	4,100
Garrard 501		5,278
Impulse Moskito	⊙	695
Kuzma Stabi S		695
Kuzma Stabi		1,950
Kuzma Stabi Reference		3,750
Linn LP12 Basic		1,100
Linn LP12 Lingo		1,750
Michell Gyro Spider Ed'n		775
Michell Gyrodek		875
Michell Orbe SE		1,725
Michell Orbe		1,995
N'ham Spacedeck		750
N'ham HyperSpacedeck		1,700
N'ham Mentor		2,600
N'ham Anna Log		5,500
Oracle Delphi		3,370
Oracle Delphi 15th Anniv		3,800
Pink Triangle Tarantella II		850
Pro-Ject Perspective	⊙	750
Rega P25	⊙	619
Rega Planar 9	⊙	1,698
Reson RS1M	⊙	695
Reson Rota 1	⊙	3,100
Rockport Capella II		7,500
Rockport Sirius III	⊙	90,000
Roksan Xerxes 10		1,295
Roksan TMS		2,745
SME Model 10A	⊙	3,333
SME Model 20/2		3,403
SME Model 20/2A	⊙	4,863
SME Model 30/2		10,675
SME Model 30/2A	⊙	12,135
SOTA Comet	⊙	995
SOTA Millenia		5,750
Stratosphere ST1		6,500
Technics SL-1200LTD		700
Thorens TD-146 VI TP50	⊙	550
Thorens TD-2001 TP90	⊙	700
Thorens TD-520 SME	⊙	1,050
Verdier Nouvelle Platine		1,995
Verdier Platine Verdier		3,995
VPI HW19 Junior	⊙	650
Well Tempered Record Player	⊙	1,995
Well Tempered Classic V	⊙	3,500
Well Tempered Reference	⊙	5,500
Wilson Benesch Circle		795
Wilson Benesch Full Circle	⊙	1,995

PRODUCTS TESTED & RATED

Turn over for a full round-up of all reviewed products!

THE DIRECTORY

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Amplifiers

The amplifier is at the heart of any hi-fi system, accepting the outputs from various music sources, increasing the amplitude of their signal and then driving the loudspeakers to produce sound. One-box 'integrated' amps rule the roost at low-to-middle price points, but if you pay more, the low-level and high-level signal processes are separated into preamp and power amp boxes, and even separate 'outboard' power supplies come into play. Another luxury is a separate amp for each stereo channel: such devices are known as monoblocks. Finally, output power and sound quality are not necessarily related. Some of the finest amplifiers outputs only 12 Watts, but will yield loudness aplenty when partnered with high-efficiency loudspeakers.

KEY TO SPECIFICATIONS

LINE INPUTS: Number of input sockets for line-level (non-vinyl) sources such as CD players, tuners and cassette decks.
MM PHONO INPUT: An input specially designed for moving magnet (high output) phono pickup cartridges.
MC PHONO INPUT: An input for moving coil (low output) phono pickup cartridges.
REMOTE CONTROL: An infrared handset to adjust volume etc.
HEADPHONE SOCKET: An integral output for headphones.
POWER OUTPUT (Watts): Our measurement of an amp's RMS power output into 8 Ohms.
RECEIVER: An amplifier with built-in radio receiver (tuner).
FACTSBACK REFERENCE: The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback advert on the penultimate page of the mag.
ISSUE NUMBER: The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Amplifiers

SPECIFICATIONS

STATUS	PRODUCT	(£)	COMMENTS	SPECIFICATIONS							ISSUE NUMBER	RECEIVER
				LINE INPUTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)			
	Affordable Valve Co. EL34	650	A real bargain on the face of it, but the sound is oh so soft, warm and old-valve. Too much of a good thing	4						40		202
	Alchemist Kraken APD6A	599	Compact, with Darth Vader styling, yet sound quality is meek and mild, despite strong midband dynamics	5	●					55		175
R	AMC 3025a	140	Surprisingly potent and easy on the ear, if not especially analytical – classic bargain-basement material, in fact	4	●	●	●	●	●	30		171
R	AMC 3050a	170	Tremendous value for money, and a full, big, if rather uninformative sound	4	●	●	●	●	●	45		167
R	Arcam Alpha One	230	Rather like an Alpha 7 but without the remote control and what appears to be better sound quality still	6						35		186
	Arcam Alpha 7R	300	Decent, if slightly system fussy amplifier that no longer pulls all the right strings	5	●					45		196
R	Arcam Alpha 8R	380	The Alpha 8R sets a high level of resolution and stability, and has some useful features for home cinema users	5	●					50		192
R	Arcam Alpha 9	500	Not quite a match for the Alpha 9/9P combo, the solo integrated is nevertheless colourful and explicitly detailed	7						70		168
R	Arcam Alpha 10	800	Although not the best sounding in its class, the Alpha 10's modular nature demands it be taken seriously	5						100		181
R	Arcam FMJ A22	1,000	Powerful, articulate, and expandable into a home cinema or multiroom amp/controller	7						100		201
E	ATC SIA2-150	1,984	An impressive sounding integrated amp with a dynamic, open and detailed sound	4						150		192
	Aria S2	1,000	Glamorously packaged valve amp produces a real eyes closed, feet up kind of sound	4						12		190
R	Audio Analogue Puccini	450	Superbly finished, the entry-level Audio Analogue performs way out of its class	5	●	●				40		175
	Audio Analogue Puccini SE	595	Upgraded, more powerful Puccini is disappointingly sluggish and curiously lacking in musical vitality	5	●	●				40		181
R	AVI S2000MI	999	Fine, detailed amplifier with excellent timing and strong control of a wide range of loudspeaker loads	5						100		175
	Bryston B60R	1,249	Great build, but the lazy bass and opaque treble bracket an articulate midband. Comes with 20 year guarantee	5						60		175
R	Cambridge Audio A500RC	200	Solid value, decent build and a surfeit of watts make this an attractive proposition, but it can sound slightly loose	6						50		196
R	Canary Audio CA-608	1,495	If you value the grand scheme of things and appreciate a bit of dynamic vigour this could be the amp for you	4						24		202
R	Copland CSA8	945	Sophisticated yet transparent, this is one of those amplifiers that sounds good even when the gloss has worn off	5						60		168
R	Copland CSA 28	1,249	Elegant Scandinavian cool, abundantly detailed if somewhat system dependent	5	●					60		189
	Copland CTA 402	1,698	A unusually flexible valve amp with an attractive and textured sound	5	●					35		193
	CR Developments CR324	569	Solid and capable on paper, this is a bit of a blunt instrument when let loose on the music	5						150		181
R	Symbol CA1	499	Lacklustre amplifier tends to underperform with complex material. Best with straightforward compact loudspeakers	6						40		178
	Creek 4330	279	Diminutive but classy amp will drive anything, and can be specified in various configurations	4	●					40		192
	Cyrus IIIi	598	Beautifully presented, but mid-dominated balance was not liked. Upgradeable using PSX PSU unit	5	●					50		162
R	Cyrus 7	700	Welcome return to form for the Cyrus stable: this is the best sounding audio brick around	6						60		196
R	Denon PMA-250SE	140	This amp can sound rough when extended, but within its limits it is open, detailed and likeable	5						30		171
R	Denon PMA-350SE	180	Reinvented in the minimalist tradition, this SE model is a control freak, but can sound wonderful	5						50		162
	Denon PMA-535R	230	The kind of amp they made in the 70s, dressed to the nines, and nowhere to go	5	●					50		192
	Denon PMA-725R	350	Warm, bold, up-front presentation, but musically unexciting	5	●	●				97		157
R	Denon PMA-1500R	500	Recommended for its outrageous power, especially with problem speakers	5	●	●	●	●	●	70		181
R	Densen Beat B-100 MkII	650	High 'air guitar' factor, and can punch above its weight, but check it will complement your system	5						60		175
	Densen DM-10	1,375	Big, bold and expressive amplifier, but sometimes rough around the edges, and not as powerful as it appears	6						75		189
	Edmund Audio ESI10	400	Honest but unexciting straight line amp from REL associate company	6						85		192
	Electrocompaniet EC1-3	1,000	Basically good, but too many rough edges to warrant recommendation	6						75		201
	Graef Venticinque	1,790	Smart and practical, but it just never seems to shine sonically	6						25		202
R	Harman/Kardon HK630	200	Sharp, clean but sometimes slightly raw-sounding budget amp	4	●					40		192
	Harman/Kardon HK690	530	Bold, dynamic amplifier with plenty of balls, but not the most sophisticated sound on earth	6	●					100		196
	Holfi Audis Signature	750	A 'no-feedback' circuit giving outstanding resolution, but significant load dependency	4	●					65		181
	JoLida 202	695	Well-built and technically accomplished, affordable valve integrated with subtle refined, if not quite gripping sound	4						40		168
	JVC AX-R5	200	Versatile, and lots of even-handed, articulate detail; but let down by superficiality	5	●					45		149
	Kenwood KAF-3010R	180	Plenty of twiddly bits yet weak on inputs, and basically good, but somewhat uneven sound quality	4	●					70		186
	Kenwood KA-5090R	300	Large, well equipped and high tech integrated, but TRAITR output still gives a harsh, unsubtle performance	5	●	●				65		171
	Krell KAV-500i	5,000	More at home in background listening/home cinema applications than out-and-out audio maniac set-ups	5						250		192
	Lundahl Mag Amp	1,735	Unusual valve/magnetic amp hybrid with relaxed balance and good timbre	5						23		196
R	Magnum IA120	265	Mirror finish amplifier with bold, colourful delivery, but needs careful system matching to avoid loss of clarity	6						65		171
R	Magnum IA170	330	Gives a realistic sense of instruments playing within a very believable acoustic, preserves colour and dynamics	6						96		142
R	Magnum IA200	599	Sweet, valve-flavoured solid state amplifier which flatters where it doesn't cast light	7						160		162
	Magnum Class A SE	795	A MOSFET amplifier drawing inspiration from the world of valves, this is an erratically refined, detailed amplifier	5	●					80		175
	Marantz PM-6010SE	229	Good starter amplifier, with characteristic smooth, low key delivery	5	●					50		196
R	Marantz PM66 KI-Signature	400	It knows how to rock and roll with holographic detail and stereo, but prefers small/medium scale acoustic material	5	●					50		168
	Marantz PM-17	900	Probably worth it for the WBT terminals and other build features alone, but this model doesn't sing as it should	6	●	●				60		181
	Marantz PM-17 KI-Signature	1,300	Full feature audiophile amp where the end results don't quite justify the fantastic ingredients	6	●	●				60		189
	Monrio Asty	400	Engaging, but ill-disciplined, even OTT amplifier with unpredictable system compatibility	5						55		178

CONTINUED

Amplifiers

SPECIFICATIONS

MM PHONO INPUTS MC PHONO INPUTS HEADPHONE CONTROL REMOTE CONTROL POWER OUTPUT (W) RECEIVER ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	MM PHONO INPUTS	MC PHONO INPUTS	HEADPHONE CONTROL	REMOTE CONTROL	POWER OUTPUT (W)	RECEIVER	ISSUE NUMBER
Musical Fidelity E1	199	Richly flavoured tone and realistically-scaled imagery distinguish this entry-level Richer Sounds special	6				30		171
Musical Fidelity E11	299	Well built minimalist amp with a five year guarantee, but can sound congested when extended	6				60		178
Musical Fidelity X-A1	479	Idiosyncratic visuals just another plus for an amp that is powerful, well built, and serves the music superbly	6				50		181
Musical Fidelity A3	849	Similar to the XA-100R internally, and a little too relaxed for some	5	●	●		85		196
Musical Fidelity X-A100R	999	Sings like a thoroughbred, but better with Mozart than Mötörhead	6			●	75		189
MVL A2	970	Curiously designed, and curious sounding amplifier with Sound Sentinel circuits to address perceived weaknesses	9	●			100	●	201
Myryad T-40	400	The T-40 is a well built and sensible, but needs more dynamics and finesse	6	●			50	●	192
Myryad M1120	600	Well styled, well built: a good, even tempered amplifier, although it can sound rather brittle	6				60	●	175
NAD 310	100	Fleet and sure of foot, it seems likely to set all appendages tapping with its blend of enthusiasm and artfulness	5				20		149
NAD C320	200	Excellent budget amp from the maker of the seminal 3020 offers better clarity and neutrality and good build	6				40	●	186
NAD C340	270	A classic NAD amplifier copes with any speaker, delivers plenty of power, and does so with calm decorum	6	●			50	●	192
NAD 317	470	Build quality aside, the current improved version is a real powerhouse, but smooth and detailed too	6				80	●	196
NAD S300	1,900	Substantial integrated with loads of power and no shortage of finesse, slightly bass-strong	5				100	●	189
Naim Nait 3	575	Distinctive and highly musical sounding integrated amp. Perhaps too distinctive for some tastes	5				30		154
Naim Nait 3R	780	Remote control variant of the basic Nait has a similarly dynamic credible sound but ultimately lacks power	5			●	30		189
Opera Aida	795	Low power (in practice) minimalist integrated amp, but the mahogany wings don't help it to fly	5	●	●		60		201
Pathos Classic One	995	Unusual looks and even more unusual electronic design, but compromised musical potential	5			●	55		202
Pioneer A-300R	200	Its bright and breezy sound is a natural tonic to those of us worn down by the ongoing stress of life	5	●			50	●	1149
Pioneer A-407R	230	Clean, consistent, finely detailed sound, good finish and (mainly) good build	5	●			45	●	186
Pioneer A-607R	300	Lively, articulate amp with plenty of drive and a hint of brightness	5	●			60	●	192
Pioneer A-300R Precision	400	Sophisticated variant of the A-300R. Not an obvious winner, but it slowly plys you with its subtle charms	5	●	●	●	35	●	162
Pioneer A07	999	Curious blend of high-end attributes and inconsistent, though undeniably detailed sound	5	●			80		175
Præcis Acustica Sonoro	1,800	It is not often that transistor amplifiers are made to sound so palpably valve-like	5				100	●	189
Primare A10	500	Sharp, clean and agile sound quality, class leading build and an excellent control system – what more can you ask?	6				50	●	201
Primare A20 MkII	799	Everything except packaging has changed in Mk II version: but ballsier model has lost none of its refinement	5			●	70	●	181
Primare A30.1	1,499	Superb build and aesthetics, and undemonstrably musical down to its smallest screw	6				100	●	189
Rega Elex	398	Minimalist amplifier, derived from Elicit, is a little uninspiring, although at least it is well behaved	4	●			50		162
Restek Fantasy II	1499	Muscular, but ultimately rather strident amplifier which needs careful system matching	6			●	100		189
Roksan Caspian	795	Mainstream Roksan line level amp works well under most circumstances	6			●	70		201
Rose Scion	615	Unique two-box integrated gives real subtlety and low level resolution, but the sound lacks scale and weight	5	●	●		65		168
Rotel RA-931	150	Rather dry and unforgiving sound from this internally well specified and attractively priced amplifier	4	●			35	●	171
Rotel RA-971 MkII	225	Improved AR971 is a chip off the old block: bags of power, but with added precision and clarity	6				60	●	196
Sharp SM-SX100	10,000	The world's first stable, 1-bit digital amplifier is a technological milestone that should go from strength to strength	n/a				110		200
Sony TA-FB730R	200	Brilliantly sharp and realistic sound is offset by some obvious sonic flaws – and maxi feature set doesn't help	5	●		●	40	●	196
Sony TA-F448BE	250	Minimalist interface is matched to carefully considered circuit with satisfactory effect – but keep the volume in check	5	●			55	●	171
Sony TA-F3000ES	500	Champagne 'shoobox amp' may lack power reserves, but is quick and articulate. In every sense a knockout	5	●	●	●	35	●	178
T+A PA-1220R	1,445	Unique presentation and feature set, but sometimes rather relentless sound quality	7				100	●	189
Tact Millennium Mk II	7,000	This digital class D amplifier represents a bold declaration on the future expansion of digital audio in the home	n/a				150	●	194
TAG McLaren 60i	800	Clean, slightly antiseptic sound from this beautifully turned out entry level Audiolab 8000LX replacement	6				60	●	189
TAG McLaren 60iRv	999	Looks, feels and sounds better than the Audiolab it supersedes. Smooth, open, refined but lacks body and drive	6			●	60	●	184
Talk Electronics Storm 1	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model	6				50	●	162
Talk Electronics Cyclone 1	550	Much improved build quality and silver finish, but the sound lacks physicality and can sound strained	6			●	65		196
Talk Electronics Storm 2	650	Crisp, clean, well defined sound, arguably lacking warmth, but a good midrange purchase overall	6			●	50	●	175
Teac A-E2000	180	Has the potential to cause significant damage in the budget amp sector once the wrinkles are ironed out	6				50	●	195
Technics SU-A660 Mk 3	200	Plenty of wellie for the price, but the sound can be a tad coarse and lacking in fine detail	5	●			37	●	186
Technics SU-A808	300	Intriguing amplifier, with abundant detail but dynamically rather flat	6	●			55	●	196
Technics SU-A800D Mk 2	300	Two-box amplifier looks great, has plenty of gadgets, and makes good, if slightly overexuberant, music	5	●		●	55	●	178
Technics SU-A900D Mk 2	400	Looks like a pre/power amplifier, but in effect it's an integrated, with a rather soft-centred sound to match	5	●			70	●	175
Token Audio K50	350	Stainless steel finish, others available. Sound is warm and attractive, though a little undynamic	5				50		186
Tube Technology Unisis Sig	2,400	A very attractive product which combines many classic valve attributes to good effect	5	●			30		202
Yamaha AX-392	170	Standard budget fare, and it's easy to pick holes, but in undemanding surroundings it works creditably	6	●			60	●	192
Yamaha AX-492	220	Powerful, well equipped amplifier at an attractive price, offers powerful and engaging music-making	5	●			85	●	178
Yamaha AX-592	280	Fine, middle ranking amplifier, with a detailed midband but performance declines at frequency extremes	5	●	●		100	●	171
PREAMPLIFIERS									
Amp Flux System 2	3,000	Three-box affair with a clean, spacious sound and plenty of slam. A touch steely, but undeniably potent	5				50	●	187
Alchemist Kraken APD7A MkII	549	Unusual looks and unusual sound too, rather rough and lacking detail	6						187
Arcam Alpha 9C	400	Well specified and flexible preamp with sound only just lacking in greatness	6			●			187
Audio Note M Zero	299	Neat shoe box-size preamp. Able to impart music with real life and soul when partnered with P Zero power amps	5						191
Copland CTA-301MkII	1,249	Sweet sounding, but never gets bogged down in audio treacle	4	●					151



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Amplifiers

SPECIFICATIONS

MM PHONO INPUTS
MC PHONO INPUTS
REMOTE CONTROL
HEADPHONE INPUTS
POWER OUTPUT (W)
RECEIVER
ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE INPUTS	POWER OUTPUT (W)	RECEIVER	ISSUE NUMBER		
C Creek P43R	350	Excellent sound, remote control operation and upgrade options from this fine value preamp	6				•	•	187		
C Crimson CS610	450	Good, clear sound, including a decent phono stage, but flexibility is limited	3	•	•				187		
Cyrus aCA7	798	A decent enough unit at the price but not as good as the Cyrus aPA7 power amp it was tested with	5				•	•	190		
Densen Beat B-200	1,000	A versatile preamp with a high 'air-guitar' factor and Densen's characteristic styling	6	•	•				191		
F Levinson 380	3,995	True high end preamplifier combines precision and warmth with unusual configurability	6				•		195		
LFD Mistral Linestage	449	Strong ergonomics, generally decent sound, but a little lacking in detail	6						165		
Meridian 501	695	Tight, positive sound, but dispassionate; intense at high levels. (Tested with 555 power amp)	5	•				•	145		
Meridian 502	1,295	Extremely sophisticated analogue controller with tremendous flexibility and a fast and tidy presentation	7				•		162		
Michell Orca	1,650	Line-level design with a gorgeous remote and focused, spacious sound. (Tested with Alecto power amps)	6				•		187		
Moth 30 Active Line Stage	349	Excellent-sounding ultra-simple miniature preamp	4						165		
Muse Model Three	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp	5				•		166		
F Musical Fidelity X-PRE	200	Cleverly configured preamp with many upgrade options, and open, lively and engaging sound	4						175		
F Musical Fidelity X-P100	800	Good long-term listening prospects; detailed and a little fruitiness (tested with X-A200 power amp)	6	•					200		
F NAD 114	270	Beer-budget preamp which sounds focused, detailed and consistent	6	•	•			•	165		
F NAD Silverline S100	600	Beautifully built kit that sounds as good as it looks (tested with S200 power amp)	7			•			200		
Naim NAC92R	630	Upgradeable preamp uses proprietary socketry. (Tested with NAP90 power amp)	5				•		165		
Naim NAC102	1,000	More of a 'character act' than a neutral reproduction system, majors on excitement at the expense of subtlety	6				•		200		
F Rega Hal	998	Passive line stages dedicated to Exon power amps	6	•	•	•			165		
Rotel RC-971	150	Low price is offset by rather coarse sound quality with certain types of music. (Tested with RB-971 power amp)	5					•	178		
Rotel RC-995	525	Highly capable, though less astonishing value than matching RB-991 power amp (tested as pair)	6	•	•	•			200		
Samuel Johnson pca100	1,800	Stylish wood and metal fascia - precise, clean sound with an emphasis on leading edges	6				•	•	201		
TAG McLaren PA20R	1,500	Refinement of Audiolab original with clean, detailed sound but limited thrill power. (T/w 125M monoblocks)	6				•	•	184		
Talk Hurricane 2L	649	Design of integrity which gets to the heart, if not the soul, of the music	6						165		
Technics SU-C3000	2,997	Price includes SE-A3000. Supremely clean and even sounding combo, though it could be more musically involving	5	•					188		
Technics SU-C1010	300	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	6	•		•			200		
POWER AMPLIFIERS											
Alch. Kraken APD8A Mk II	549	Unusual looks and unusual sound too, rather rough and lacking detail	1						55	187	
B Arcam Alpha 9P	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1						60	165	
F Arcam Alpha 10P	600	Well made and flexible: upgradeable to 3 channels. Good sound lacking the last degree of detail	1						100	187	
Audio Note P Zero	599	Neat shoe box size valve monoblocks, priced per pair. Impart music with life and soul. (Tested with P Zero preamp)	1						8	191	
F Border Patrol 300B SE	3,995	Single ended valve power amp with passion, grace and fire, and plenty of grunt to boot	1						8.5	186	
Cary CAD 2A3SE	1,575	Monoblock valve power amp. Low power but gives delightful speed, coherence and transparency	1						5	196	
Copland CTA-505	2,099	Grown-up amplifier with a refined, yet never over-civilised air	1						67	151	
Chord SPM-4000	8,500	Sound is as stylish as its appearance is bold. Probably one of the best amps you are likely to hear	1						410	202	
B Creek A52SE	599	Well designed and built amplifier with plenty of power, detail and refinement	6						100	187	
B Crimson CS630	800	Space-saving slimline monoblocks with both grunt and finesse	1						100	187	
Crimson 620C	875	Not entirely satisfactory power amp which has dynamic strengths, but underachieves when the volume is raised	1						50	181	
Cyrus Power	498	Detail and midband clarity and stand-out qualities. Smooth and refined with most types of music but bass-soft	1						50	183	
Cyrus aPA7	1,896	Low feedback design that's a positive departure from the transistorised norm. (Tested with Cyrus aCA7 pre)	1						150	190	
F Densen B-300	800	Expensive but highly musical. Colourful and warm sound with strong timing and listener involvement	1						100	183	
B ECA Lectern	880	Tested with Vista. Wind up the volume and blow a breath of fresh music into your system	1						50	145	
F Gamut D200	2,995	Single MOSFET pair per side gives tremendous resolution and timing (balanced only). Formerly Sirius	1						200	183	
F Levinson 334	5,495	A mailed fist in a velvet glove; refined, authoritative and transparent	1						125	195	
LFD Mistral Power	449	Infectious upper band vitality, but LF dynamics lacking - likewise 'grip' and transparency	1						60	165	
F Mana Stealth MA-1	4,800	A monoblock with an uncanny ability to drag you into the music, and spend half the night sitting up listening	2						200	199	
Meridian 555	750	By providing an open window on the music, this amp is wide open to RF and low level IM distortions	1						60	145	
Michell Alecto Monoblocks	1,950	Hefty beasts offering real power and striking imaging. Not the last word in timing. (Tested with Orca preamp)	1						100	187	
Moth 60 Watt Stereo	599	Miniature power amp lacks control and finesse - not comfortable with difficult speaker loads	1						60	165	
B Moth 30 Series Monoblocks	879	Tested with Active Preamp. Demonstrated solid balance and proved adept at delivering vital musical qualities	1						100	155	
F Musical Fidelity X-A50	500	Cleverly configured and attractively packaged, open, lively and engaging sound. Reviewed with X-PRE	1						50	175	
F Musical Fidelity X-A200	1,000	Good long-term listening prospects; detailed and a little fruity (tested with X-P100 preamp)	1						200	200	
Musical Fidelity NuVista 300	3,300	Powerful smooth sound with tremendous bass extension. Capacity to fulfil the demands of the most dynamic material	1						350	199	
Myyriad MA120	450	Based on M1120 integrated - see latter for comments, but sounds significantly better when bi-amped with M1120	1						60	165	
F NAD 214	370	A little lightweight, but detailed, consistent sound quality, and excellent value for money	1						80	165	
F NAD Silverline S200	1,400	Beautifully built kit that sounds as good as it looks with heaps of power (tested with S100 preamp)	1						200	200	
Naim NAP90	450	Power amp from a Nait integrated with some improvements	1						30	165	
Naim NAP180	1,122	More of a 'character act' than a truly neutral reproduction system, majors on excitement at the expense of subtlety	1						60	200	
Samuel Johnson ppa100	2,200	Stylish wood and metal fascia - nimble, high resolution and highly coherent sound	1						50	201	
Technics SE-A1010	350	Although the sound's basically all there, it's arguable that a good integrated offers more, for less	1						•	90	200
Technics SE-A3000	2,997	Price includes SU-C3000. Supremely clean and even sounding combo, though it could be more musically involving	1						•	100	188
Thule Spirit PA100	600	More successful than matching preamp: sound is gutsy and lively, and generally clean	1						100	187	
F Rega Exon	1,196	Monoblock, priced each, dedicated for Hal preamp. Bold, outgoing, in-command kind of sound	1						125	165	
B Roksan Caspian Power	595	Excels musically and in conventional hi-fi terms. A power amp for people with long-term satisfaction in mind	1						70	183	
Rotel RB-971	200	Somewhat better than the accompanying preamp - clean, mean and bridgeable. (Tested with RC-971)	1						70	178	
B Rotel RB-991	600	Top stuff and stunning value: rather outshone the matching RC-995 preamp (tested as pair)	1						200	200	
Rotel RB-980BX	450	Tames enthusiastically recorded material with a laid-back and occasionally smeared sound	1						120	155	
TAG McLaren 125M	2,400	Refined Audiolab replacement monoblocks with clean sound but limited thrill power. (T/w PA20R preamp)	1						145	184	
Talk Tornado 2	600	Good, but slightly retiring sound which lacks the authority to stand out in a crowd	1						65	165	
PHONO STAGES											
Clearaudio Symphono	740	Slightly inconsistent balance mars the performance of this lively performer	0							201	
F Creek OBH-9	160	A neat little unit with an essentially neutral and listenable character	0						•	189	
Cyrus aEQ7/PSX-R	826	Very hi-tech product which tends too much towards smoothness except at climaxes, which can be rough	0				•			189	
Densen DP-Drive/DP-02	350	Quite unusual design in many ways: sound is mostly good but never quite shakes off a 'synthetic' quality	0							189	
F Electrocompaniet ECP-1	495	An excellent phono amp that combines well-rounded balance with detail and low noise	0				•			189	
B Moth 30 Series Phono	249	Fine sound all round, in any kind of music, from this bargain phono stage	0				•	•		189	
Musical Fidelity X-LP2/X-PSU	628	An enjoyable listening experience in its way, but a bit short on inner details	0				•	•		201	
NAD PP-1	40	A basic phono stage that does its job rather coarsely: a bit bass-shy too	0				•			189	
F Pass Labs XOno	2,995	Not absolutely neutral, but the overall result is so beguiling it's hard to resist	0				•	•		201	
F Primare R-20	500	Fights a little shy of densely scored music, but generally an enjoyable and neutral performer	0				•	•		201	
F Pro-Ject Phono Box	40	Moving-coil compatibility is a dubious extra in a way, but MM performance is acceptable at this giveaway price	0				•	•		201	
F QED Discsaver DS-1	35	It's cheap, it's cheerful, it's OK - perfectly adequate for use with a phono-less integrated, though not very refined	0				•	•		189	
Roksan Artaxerxes X/DS1.5	1,150	Delicate and well balanced, slightly congested at climaxes. Power supply expensive, but runs two Roksan components	0				•	•		189	

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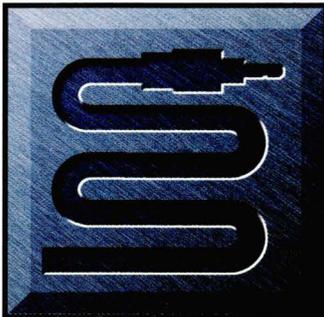
Amplifiers

STATUS

SPECIFICATIONS

MM PHONO INPUTS
MC PHONO INPUTS
REMOTE CONTROL
HEADPHONE SOCKET
POWER OUTPUT (W)
RECEIVER
ISSUE NUMBER

PRODUCT	(£)	COMMENTS	MM PHONO INPUTS	MC PHONO INPUTS	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT (W)	RECEIVER	ISSUE NUMBER
TAG McLaren PPA20	1,549	One of the best-equipped phono stages available. Resolution is excellent, but timing is marginally behind the best	0	●	●				187
Tom Evans The Groove	1,500	Plenty of detail, excellent imaging and almost flawlessly neutral: a good choice for information retrieval off any LP	0		●				201
MULTI-CHANNEL AMPLIFIERS									
Arcam Alpha 10 DAVE/10P	2,500	Packed with a diversity of electronics that against engineering odds sounds extremely good	5			●	●	110	198
Cyrus AV5	1,000	Few processors are as adept with music. An effective multi-channel solution for music fans	4			●	N/A	201	
Denon AVR-3300	800	Not as powerful as Denon daims, but nonetheless capable of impressive high-fidelity multi-channel sound	4			●	●	75	198
Marantz SR5000	500	Something of a rough diamond, but a powerful and entertaining package	5			●	●	105	198
NAD T770	1,000	Lacks both transparency and subtlety while the omission of dts will be a drawback for some at this price	5			●	●	90	198
Nakamichi AV-10	1,000	A very powerful AV receiver that's easy to install and set-up with a civilised and subtle performance	4			●	●	140	198
Pioneer VSX-908RDS	1,000	A flexible heavyweight AV receiver whose sound is just a little too stodgy and lacking in crispness	4			●	●	80	198
Roksan Caspian DSP	2,290	A potent combination offering the bare essentials of DD and dts decoding	4			●	●	130	198
Rotel RSP-985/RPB-985 MkII	2,225	The hugely versatile processor is the weaker subjective link in this otherwise impressive combo	3			●	●	130	198
Sony TA-E9000ES/N9000ES	2,300	Big, gold, powerful and remarkably versatile but fails to cut the sonic mustard	5			●	●	110	198



Cables

Cables are an integral part of a hi-fi system, required to connect source components to amplifiers, and the latter to speakers.

- Analogue Interconnects connect source components and amplifiers, and run between pre and power amps. They are priced for one-metre terminated pairs.
- Digital interconnects connect CD transports to DACs or digital recorders. They come in optical and electrical varieties, the former being made of plastic or glass. The prices shown are for a terminated linear metre.
- Speaker cables are used between the amplifier and speaker. Our prices are per unterminated metre. Termination (plugs and soldering) costs vary.

KEY TO SPECIFICATIONS

- SYMMETRICAL: A twisted pair of conductors.
- COAXIAL: A central 'hot' conductor and a shield that carries the negative signal.
- STRANDED: Multiple strands with no intervening insulation.
- SOLID CORE: Single or multiple, individually insulated strands.
- COPPER: Material used for conductor.
- SILVER: Material used for conductor.
- DIG CABLE TYPE: O - optical digital, E - electrical digital for CD Players, DACS and digital recorders.
- FACTSBACK REFERENCE: The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback ad on the penultimate page of the mag.
- ISSUE NUMBER: The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

STATUS

Cables

SPECIFICATIONS

SYMMETRICAL
COAXIAL
STRANDED
SOLID CORE
COPPER
SILVER
DIG CABLE TYPE
ISSUE NUMBER

PRODUCT	(£)	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
ANALOGUE INTERCONNECTS (PRICES PER TERMINATED METRE PAIR)										
Acoustic Precision Eikos	89	Not entirely neutral: probably best suited to upbeat music. Very stiff construction			●	●		●		188
Audio Note AN-A	18	Not especially impressive: warm but well-rounded balance that restricts 'air' but is quite clear			●		●	●		108
Audio Note AN-C	35	Neutral but lacking in subtle texture and unable to distinguish fine detail					●	●		131
Audio Note AN-S	99	Up-beat and enthusiastic sound with satisfyingly deep and grumbly bass			●		●		●	131
Audio Note AN-V	179	15 individually insulated silver strands make up this very clean and dynamically unchallenged cable			●	●			●	131
Audioquest Topaz X2	60	Well made but let down by a pervading sense of muddle and congestion in the sound			●		●	●		188
Audioquest Coral	99	Slightly forward imaging hardly detracts from its excellent tonal qualities and detail			●		●	●		200
CableTalk Advanced 2	35	Slight roughness in loud music barely detracts from a well-balanced performance with good imaging					●	●		176
Cable Talk Studio 2	65	A first-class performer from tonal, dynamic and rhythmic standpoints			●		●	●		160
Cambridge Pacific	30	Lacks subtlety and bass impact but is otherwise quite serviceable for the price				●	●			176
Cambridge Audio Studio Ref	40	Dynamic cable with strong soundstaging and only a slight lack of detail				●	●	●		160
Cambridge Silver Spirit 60	100	Good bass but a lack of detail and differentiation of instruments			●		●	●		188
Chord Cobra 2	50	Good, strong sound with full-bodied music, less happy with smaller forces					●	●		176
Chord Chameleon 2	90	Deep bass is fine but despite that the sound can be a bit hard and lacking body and resonance			●		●	●		188
Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare			●		●	●		160
DNM Reson	40	Seemed a little harsh in the test system, but can work well and should be tried			●			●		200
Goertz M1 Interconnect	145	Soft sound lacking in bite, with excessive and plummy bass (NB sample used in review was only 0.5m)			●		●	●		176
Insert Audio IC100 MkII	47	Mostly good sound is let down by pervasive dryness					●	●		176
Insert Audio Image 5.1	85	Very good detail and imaging: perhaps a touch bass-light				●	●	●		200
Ixos 104	20	Open and detailed presentation, full bass and silky if overly smooth treble				●	●	●		131
Ixos Gamma 1002	39	Lumpy bass, grainy treble, and poor integration. Nice colour, though			●		●	●		176
Ixos 103	45	Even-handed and generous sound, bass has a well-rounded, bouncy quality				●	●	●		131
Ixos 102	60	A bit bright and undynamic, this cable is nevertheless a good all-rounder, whose faults are largely subtractive				●	●	●		160
Ixos 1000	90	Nothing badly wrong, just a little bit bland and outshone by others at the price			●		●	●		200
Ixos 101	100	A cable with personality: its veiled and shut in quality bring an earthiness to vocals and rhythm guitar alike				●	●	●	●	131
Kimber PBJ	68	Assured sound, solid and natural bass and clear treble – excellent performance all round					●	●	●	188
Kimber Hero	110	Slight roughness detracts from some music; seems well suited to rock and jazz. Lively and detailed			●		●	●		176
Moth Ley Line Black	100	Offers a full sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy			●		●	●	●	108
Moth Ley Line Grey	200	Detailed, but there's a sense of distance between music and listener: vocals are coarse rather than liquid			●		●	●	●	108
Nordost Black Knight	60	Flat black cable that is distinctive but slightly coloured – but not in a wholly negative manner					●	●		160
Nordost Solar Wind	85	Good tone and dynamics, with just occasionally a touch of bass-lightness in busy music			●		●	●		188
Nordost Blue Heaven	145	Very good bass and only slightly grainy treble add up to a well integrated, natural-sounding cable			●		●	●		176
Precious Metals SS35	50	Extended bass, but dry character suits electronic music better than acoustic				●	●	●		188
Prowire Silver	60	A good cable in every way, with just the occasional hint of coloration and coarseness					●	●	●	176
QED Qnect 2	30	Very well balanced, refined and detailed, this is everything a good cable should be, and excellent value					●	●	●	176
QED Qnect 4S	70	Some coloration and roughness in the midrange and treble, but bass is gratifyingly solid			●		●	●		188
QED Qnex Silver Spiral	90	A great cable for lovers of big sounds			●		●	●		200
Reference CS1	75	A moderate performer, with a little coloration and a tendency to lose bass at climaxes			●		●	●		188
Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight					●	●		160
SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. We're unsure about the flesh-coloured finish, though...			●		●	●		160

CONTINUED

Cables

SPECIFICATIONS

SYMMETRICAL COAXIAL STRANDED SOLID CORE COPPER SILVER DIG CABLE TYPE ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG	CABLE TYPE	ISSUE NUMBER
R SonicLink Black	49	Nickel-plated copper with a slight dryness in the bass and a hint of treble roll-off don't compromise integration	●	●	●	●	●	●	●		176
SonicLink Lilac	65	Some dryness can affect transient sounds, though tone is generally good, especially in the bass	●	●	●	●	●	●	●		188
SonicLink Violet	85	Better bass than treble – a little dry in the upper octaves	●	●	●	●	●	●	●		200
R Straight Wire Chorus	40	A very confident cable with good bass, though perhaps a shade of treble loss	●	●	●	●	●	●	●		176
R Straight Wire Sonata	80	Tonal balance favours lower frequencies but despite this it's a very listenable cable	●	●	●	●	●	●	●		188
Straight Wire Encore II	100	Slightly variable bass performance is a weakness in this otherwise capable cable	●	●	●	●	●	●	●		200
B Supra EFF-ISL	80	Excellent sound in all areas – nothing to criticise	●	●	●	●	●	●	●		188
R Tara Labs Prism 22	64	Mild tendency to plumminess offsets some hardness in complex music with mixed results	●	●	●	●	●	●	●		188
R Tara Labs Prism 55-i	195	Good with laid-back music, but seems lazy with more exciting material	●	●	●	●	●	●	●		200
B TCI Viper	55	Fine performance in all areas: just the smallest hint of sibilance. Very good value	●	●	●	●	●	●	●		200
B van den Hul PBS	50	A highly neutral cable with fine dynamic and rhythmic performance too – excellent	●	●	●	●	●	●	●		188
R van den Hul Source HB	65	Price for 0.8m. Hybrid carbon-fibre/copper cable that is a paragon of naturalness	●	●	●	●	●	●	●		160
R van den Hul D102 MkIII HB	80	A fine cable, but the competition has crept up and it no longer leads the pack	●	●	●	●	●	●	●		200
R van den Hul The Second	275	Wonderfully open and relaxing but also intimately detailed, slightly softens percussive dynamics	●	●	●	●	●	●	●		131
DIGITAL INTERCONNECTS (PRICES PER TERMINATED LINEAR METRE)											
Audioquest Digital Pro	100	A silver cable with all the drive of Video Z but lacking its clear-cut transparency	●	●	●	●	●	●	●	E	108
Chord Codac	36	A connection with a stranded inner core and a sound that lacks integration	●	●	●	●	●	●	●	E	108
R Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz	●	●	●	●	●	●	●	E	131
R Ixos 105	25	Extended but soft-edged treble that's mercifully free of fatiguing colorations; plenty of weight, smooth	●	●	●	●	●	●	●	E	131
R Kimber Kable Opti-link	50	Appears to be a bog-standard PMNA fibre, yet sounds a little brighter and livelier than most	●	●	●	●	●	●	●	O	108
Moth Leyline Datalink	140	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive	●	●	●	●	●	●	●	E	108
B QED Digiflex	20	A top performance, low-loss 75 Ohm coax with a very open, almost liquid quality	●	●	●	●	●	●	●	E	108
Siltech HF-6	145	Sounds detailed, very clean and extended, but bass is less well resolved – a treat for high-end systems	●	●	●	●	●	●	●	E	131
R SonicLink Green	60	Spacious, positive and engaging if a bit over-crisp at times – very compelling, however	●	●	●	●	●	●	●	E	131
B van den Hul The First	140	Exceptionally natural albeit slightly cautious compared to some. Plenty of subtle information and integration	●	●	●	●	●	●	●	E	131
LOUDSPEAKER CABLES (PRICES PER METRE LENGTH)											
ALR Jordan QMM	5	Generally neutral, if sometimes bass-shy, but not very communicative	●	●	●	●	●	●	●		183
Audio Note AN-D	4.50	Supplied in linear, non-polarised lengths that are twisted into stereo pairs. Sounds rather grippy and forward	●	●	●	●	●	●	●		109
R Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical	●	●	●	●	●	●	●		133
R Audio Note AN-L	29.50	Fruity bass and expressive vocal rendition was appreciated by the panel, which was happy to accept its foibles	●	●	●	●	●	●	●		133
R Audio Note AN-SP	150	A calm and civilised presentation, very quiet in the way it reveals subtle low level detail. Great poise and clarity	●	●	●	●	●	●	●		109
R Audioquest F-14	2.2	Ideal for laying under carpets. F-14 encourages a slightly warm and vibrant sound	●	●	●	●	●	●	●		109
Audioquest F-18	3.60	Slightly lumpy bass and lack of midrange detail: can also be a bit dry	●	●	●	●	●	●	●		192
Audioquest Type 4	5	Four 18-gauge OFHC copper conductors wound in a Litz-type fashion increases capacitance but restrains 'bite'	●	●	●	●	●	●	●		109
Audioquest Type 6	9	A very inflexible cable in which the sonic ends don't quite justify the means	●	●	●	●	●	●	●		183
R Audioquest Slate	15	Capable across the board, with just the smallest degree of dryness, but very listenable	●	●	●	●	●	●	●		203
R Bandridge LC7409	4	Detailed and up-beat cable. A bit too steely for classical strings	●	●	●	●	●	●	●		157
R Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music	●	●	●	●	●	●	●		168
Cable Talk Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained	●	●	●	●	●	●	●		157
Cable Talk Flat 2	5	Rather unexciting sound, with variable bass and dry voices	●	●	●	●	●	●	●		203
Cable Talk Concert 2.1	8	Can make stereo images recede, and favours the upper bass	●	●	●	●	●	●	●		192
DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension	●	●	●	●	●	●	●		168
R Chord Company Odyssey	17	Relatively vice-free cable with good detail throughout the range and generally neutral bass	●	●	●	●	●	●	●		192
- Chord Company Rumour 2	10	Performance is listenable enough but fails to excel in any area	●	●	●	●	●	●	●		203
B DNM LSCB500	12	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire	●	●	●	●	●	●	●		133
R Electrofluidics Monolith 2020	45	Excellent bass extension and very fine performance elsewhere - one of the best cables available all round	●	●	●	●	●	●	●		203
B Gale XL189	1	Slightly bright and not too subtle, but a perfectly acceptable cable for any starter system	●	●	●	●	●	●	●		168
B Gale XL315	2	A little lacking in detail but plenty of life and excellent value	●	●	●	●	●	●	●		157
R Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative	●	●	●	●	●	●	●		157
R Goertz M2	32	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility	●	●	●	●	●	●	●		168
R Hitachi LC-OFc	7	Very crisp, very clear and very confident. In the right system would be very expensive to better	●	●	●	●	●	●	●		109
B Ixos Gamma 6003	2.99	A little midrange dryness, but bass is among the best at this price, strong and consistent	●	●	●	●	●	●	●		203
R Ixos Gamma 6006	5	Bass is better than treble, which can become spitty and sibilant – though only slightly	●	●	●	●	●	●	●		192
B Kimber 4PR	4.90	Considering the price, this cable's very slight dryness is forgivable when everything else is so right	●	●	●	●	●	●	●		192
R Kimber 4VS	8.50	A good mix of virtues including particularly fine bass	●	●	●	●	●	●	●		183
R Kimber 4TC	18.80	A well-balanced cable with good performance in all areas	●	●	●	●	●	●	●		168
R Kimber 8TC	348	Very capable in all areas, particularly good at imaging and with firm bass. Price for 5m terminated pair	●	●	●	●	●	●	●		203
Linn K20	4	Seems to work best with lively, unobtrusive music – can be dry and edgy	●	●	●	●	●	●	●		183
Naim NAC A5	5.5	A 'dinosaur of a cable', this stiff wire rod doesn't belong outside Naim systems, where it works a treat	●	●	●	●	●	●	●		109
Nordost Octava	3	Fair bass but confused treble and some coloration	●	●	●	●	●	●	●		168
Nordost Flatline Gold II	9.50	Exciting sound but a bit too 'in-her-face', and bass is not always even	●	●	●	●	●	●	●		92
Ortofon SPK100	3	Grey-sounding – strips instruments of their natural richness and resonance. A bit bass-shy, too	●	●	●	●	●	●	●		133
R Ortofon SPK200	4.99	Good strong bass and fair detail, only slightly marred by a little dryness	●	●	●	●	●	●	●		183
R Ortofon SPK300	8	Tremendously open and atmospheric, with robust, full-blooded bass – if slightly bright at times	●	●	●	●	●	●	●		133
Precious Metals SL102	10	Unusual construction gives rather strained sound, only really cheering up with simple musical textures	●	●	●	●	●	●	●		183
Profigold Silverflex LC8258	4	A pretty-looking cable that does little to offend but is let down by some congestion	●	●	●	●	●	●	●		203
Prowire Out of Sight	1.99	Special-purpose cable for laying under carpets etc. Fair sound across the board	●	●	●	●	●	●	●		203
Puresonic 7845	1.95	Big, weighty sound – but too messy and bloated for its own good	●	●	●	●	●	●	●		183
Puresonic 7891	2.85	Chunky cable design; shame about the sound quality	●	●	●	●	●	●	●		157
QED Qudos	2.25	Despite high-tech design and excellent Air-Loc plugs, its music-making failed to gel	●	●	●	●	●	●	●		57
B QED Qudos Silver	5	A few minor flaws but overall performance is very assured for this price	●	●	●	●	●	●	●		192
QED Profile 4x4	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding	●	●	●	●	●	●	●		168
QED Genesis Silver Spiral	30	Commendable bass, with a little dryness and mildly compromised imaging: good, but not the best at its price	●	●	●	●	●	●	●		203

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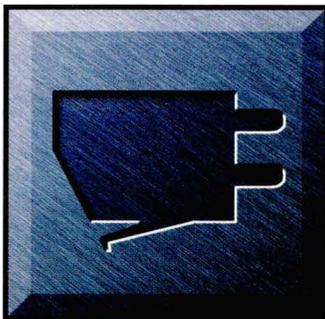
Cables

STATUS

SPECIFICATIONS

SYMMETRICAL COAXIAL STRANDED SOLID CORE COPPER SILVER DIG CABLE TYPE ISSUE NUMBER

PRODUCT	(£)	COMMENTS	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	DIG CABLE TYPE	ISSUE NUMBER
SonicLink S300	18	Happiest with simple music; tends to smudge detail in complex pieces	●							168
SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced					●			157
SonicLink AST75	2.95	Unusual materials and rather unusual performance too, strong on excitement and with plenty of bass	●				●			203
SonicLink AST150	3.95	Slightly plummy bass and a useful way of holding musical strands together					●			157
SonicLink AST200x2	5.95	At its best with exciting music, this cable seems shy of subtler details	●				●			192
Straight Wire Duo	3	Not so subtle and lacking some detail, but sound is consistent with level and musical style					●			203
Straight Wire Rhythm	6	Its major flaw seems to be woolly and indistinct bass, which pervades most types of music	●				●			192
Straight Wire Quartet	8	A good all-rounder with full tone, clear detail and natural ambience	●				●			183
Supra Ply 3.4/S	6.95	Clean sound which stays together well at high levels, with full bass – perhaps a touch of treble restriction	●				●			183
Tara Labs Klara	2.95	A good budget cable with an even spread of virtues – and very minor vices – across the board	●				●			183
Tara Labs RSC Prime 500	36	More suited to melodious music than anything with bite and drive, with only moderate detail	●				●			203
TCI Python	7.99	No single major sin, but detail is not outstanding and rhythm isn't always completely solid	●				●			203
Townshend Isolda	50	Superb sound all round, and amplifier compatibility enhanced by included stabilising inductor	●				●			203
van den Hul The Clearwater	7.99	Despite its evocative title, the Clearwater turns out to be a disappointingly murky-sounding cable					●		●	109
van den Hul Royal Jade	10.99	Lots of technology, but sound suffers from dryness and woolly bass	●				●			203
van den Hul CS122 HB	13.99	Good dynamics can make for exciting sound, but fine detail suffers and the treble is often dry	●				●			192
van den Hul The Magnum	40	Touted as vdH's most prestigious twin-lead cable, The Magnum sounds soft and old-fashioned					●		●	109
van den Hul The Wind	44	'The Wind' kicks up a storm with its lush midrange and bone-crunching bass					●		●	109
van den Hul Revolution	80	Silver-plated OFC combined with carbon fibre prompts a sombre character with an easy and relaxed treble					●		●	133



Cartridges

Cartridges fall into two groups: high output MM (moving magnet) models, capable of working directly into most phono inputs; and generally more expensive low- and very-low-output MC (moving coil) models. MC cartridges usually have better mechanical integrity, tighter tolerances and give better performance. Many amplifiers are no longer equipped with the necessary phono input for a cartridge, and a separate phono stage is necessary. Phono-input-equipped valve amps need a transformer to cope with MC cartridges.

■ Even basic high-output MM cartridge designs will benefit from a customised amplifier input load. Consult your dealer for further details on this topic.

KEY TO SPECIFICATIONS

- **MM:** Moving-magnet cartridge with a normal output, suitable for all amplifier phono inputs.
- **MC:** Moving-coil cartridge with a low output, only suitable for high-sensitivity MC amplifier phono inputs.
- **REPLACEABLE STYLUS:** Most MM cartridges have a stylus (needle) that can be removed and replaced when worn out.
- **OUTPUT (mV):** Cartridge output in millivolts.
- **MASS (g):** The mass of your chosen cartridge

affects the choice of partnering tonearm. Consult dealers or manufacturers to establish which arms and pickups work well together.

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Cartridges

STATUS

SPECIFICATIONS

MM MC REPLACEABLE STYLUS OUTPUT (mV) MASS (g) ISSUE NUMBER

PRODUCT	(£)	COMMENTS	MM	MC	REPLACEABLE STYLUS	OUTPUT (mV)	MASS (g)	ISSUE NUMBER
Allaerts MC1B	1,295	Highly capable and entertaining Belgian cartridge that warrants the finest turntable and phono stage you can afford		●	●	0.5		203
Audio Technica AT-95E	20	Clear and dynamic, though richly balanced	●		●	2.8		48
Audio Technica AT-OC9ML	330	A well-finished cartridge with a sound that's smoothly detailed, but also rather unexciting		●		0.4	8	192
Clearaudio Signature	1,495	A great all-round performer with fine dynamic vitality and a seductive midband intimacy		●	●	0.55	11.5	175
Denon DL110	70	A fine all-rounder, this high output MC model is likely to perform well		●	●	1.0	6	48
Denon DL160	90	Although listeners just preferred the 110, its brother here survived lab tests and is still 'thoroughly competent'		●		0.1	6	43
Denon DL103	100	Good performance in bass and good 'life'. Is seriously let down by its spherical stylus which kills subtle detail		●		0.1	6	103
Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether, and a bargain at the price		●	●			103
Dynavector DV-20X L	299	Articulate-sounding, with impressive treble resolve, though lightweight at times. Needs a high quality turntable and arm		●	●	0.25	8.6	192
Dynavector Karat 17D2 mk2	450	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent		●		0.15	5.3	158
Dynavector Te-Kaitora	1,698	A real smoothie, but pricey. Worth checking out for its delicate laid-back transparency and low needle-talk		●	●	0.25	8.5	175
Dynavector XX-1L	998	Very clear, very detailed; a response lift around 20kHz seems to do no harm		●	●	0.25	12	84
Dynavector XX-1	998	Good, but not immensely competitive at the price, and not helped by comparison with the low output version		●		2.0	12	84
Goldring Elan	19	A lightweight and frisky-sounding MM apparently based on Nagaoka MM4 body	●		●	5.0	7	67
Goldring 1012GX	79	Slightly harsh but plenty of life and detail. Some high frequency coloration apparent	●		●	6.5	7	85
Goldring 1022GX	99	As with 1012, a touch harsh; detail and transient purity improved	●		●	6.5	7	85
Goldring Eroica LX	110	Not the most subtle cartridge in the world: can sound edgy at times, but lively and informative	●		●	0.5	8	84
Goldring 1042	120	Not terribly subtle, and not such good value alongside 1012 and 1022. Quite lively, though	●		●	6.5	6	91
Goldring Elite	220	The basics are right, and it will cheerfully tackle any source material, but its sound is not the cleanest	●		●	0.5	8	103
Goldring Excel VX	525	Good bass drive but dull and imprecise higher up. An old-fashioned sound that falls short of the true high end	●		●	0.45	8	175
Grado Prestige Gold	149	Rich sounding with an unusually refined top-end for a moving magnet-type cartridge	●		●	4	6	158
Grado Reference	995	Loads of tracking headroom but treble is limited. A prospect for mid-oriented valve amp users	●		●	1.7	6.5	175
Linn K9	125	Linn improved this model by beefing up the Basik's bodywork and adding a super stylus	●		●	4.5	5	Col
London Decca Maroon	259	Now manufactured under the London brand name, this Decca cartridge is as iconoclastic as ever	●		●	5.0	6	67
London Decca S Gold	399	Immediate and detailed, but coloured and nonlinear, with a questionable effect on records	●		●	5.0	6	84
Lyra Lydian Beta	599	A thoroughly enjoyable cartridge – smooth, agile and dynamic in character		●	●	0.5	8	192
Lyra Lydian	649	Superbly capable all-round musical performer that improves markedly when its body cover is removed		●	●	0.3	7	158
Lyra Clavis Da Capo	995	A stable tracker, and one of the finest cartridges we've heard		●	●	0.1	7	143
Lyra Pamassus D.C.t	1,895	A real little jewel of a cartridge, with many good qualities, but handicapped by a rather too obvious treble peak		●	●	0.22	10.5	175
Ortofon 510/P	38	For the price, a good blend of virtues – weight, clarity and neutrality	●		●	3.0	5	85
Ortofon 520/P	65	Sensitive to load capacitance, but the 520/P has a lively, effervescent sound	●		●	3.0	5	67

CONTINUED

Cartridges

SPECIFICATIONS

STATUS

PRODUCT	(£)	COMMENTS	SPECIFICATIONS				
			REPLACEABLE STYLUS	OUTPUT (mV)	MASS (g)	ISSUE NUMBER	
R Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but unsubtle – take it as it comes	●	●	3.3	4	103
B Ortofon MC15 Super II	130	A good all-rounder, with outstanding resolution, if slightly bright and close up	●	●	0.35	7	103
Ortofon MC25E	180	An excellent upgrade for a mid-price turntable	●	●	0.5	11	139
Ortofon MC25FL	250	A bit too stark and honest, but faithful to what's on the LP	●	●	0.5	11	139
B Ortofon MC 10 Supreme	300	A full and cultured-sounding cartridge, with collective attributes far outweighing its shortcomings	●	●	0.5	10.7	192
Ortofon MC30 Supreme	525	Highly detailed and even-sounding cartridge that has a special affinity with female vocal recordings	●	●	0.5	10.7	158
B Ortofon Rohmann	1,000	A class act in nearly every respect, with fine groove security and a very smooth and even-handed sound	●	●	0.25	8.5	175
R Ortofon MC3000II	1,100	A real ear-opener. Nothing to criticise anywhere – one of the very best	●	●	0.12	10	84
Ortofon MC5000	1,500	Limited tracking ability, bright and forward sound, but good stereo	●	●	0.12	10	91
Rega Bias	39	Difficult to mount in some arms due to its shallow body, but the Bias offers a gentle, refined sound	●	●	5	4	67
R Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing	●	●	5.0	5	67
Reson Reqa	250	If you're after a high quality moving magnet cartridge, they don't get much better than this	●	●	6.5	6.3	192
R Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	●	●	6.5	5	91
B Sumiko Blue Point Special	250	A no-nonsense performer with engaging musical properties – one of the best around for less than £300	●	●	2.5	9	192
R van den Hul MM-1	250	If woody midrange could be tamed, imaging and security would pull it through	●	●	5.5	6	103
van den Hul DDT-II	600	Outstanding stereo imaging and neutral balance are appealing, but rhythmically the DDT-II is a bit lazy	●	●	0.35	7.6	158
R van den Hul MC-10	750	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass	●	●	0.4	6	60
R van den Hul MC-One	900	This extends all the positive qualities of the 10, but adds greater authority and scale – worth all the extra money	●	●	0.4	6	60
R van den Hul MC-Two	1,200	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal	●	●	0.4	6	72
R van den Hul Frog	1,500	Seems to control/suppress surface noise better than its rivals. This delicate and subtle performer has great charm	●	●	0.65	7	175
R van den Hul G' hopper III GLA	2,800	Undoubtedly one of the finest cartridges available. It has tremendous bandwidth, energy and finesse	●	●	0.4	6	122
R Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive	●	●	0.58	6	158
R Wilson benesch Carbon	1,573	Carbon fibre body contributes to a delightfully clean and open midrange, and a quick, lively and coherent sound	●	●	0.45	7	175



Cassette Decks

The compact cassette is still the world's most versatile and ubiquitous music storage medium. Cassette decks hook up to the 'tape loop' inputs and outputs offered by most modern amplifiers. It's worth taking care to choose the best tapes for a specific machine. For example, expensive metal tapes will be a wasted investment for a cheap deck. Many better-specified decks have manual or automatic bias adjustment to get the best from specific samples of tape. Twin decks offer the possibility of copying from tape to tape, playing two cassettes sequentially or recording onto two tapes at once. Autoreverse is a useful feature, but uni-directional mechanisms promise better sound. Dolby S is the ultimate noise reduction system, and three-head decks permit record monitoring off-tape.

KEY TO SPECIFICATIONS

- **DOLBY B/C:** The first and second Dolby his-killers.
- **DOLBY S:** A desirable derivative of Dolby SR professional noise-reduction.
- **DOLBY HX-PRO:** Extends headroom for cassette recording.
- **3-HEAD:** Permits monitoring off-tape while you're recording.
- **TWIN DECK:** Contains two decks for dubbing and continuous play.
- **AUTOREVERSE:** Automatically plays both sides of the cassette.
- **AUTO CALIBRATION:** The deck will automatically set up bias and EQ for any tape.
- **ADJUSTABLE BIAS:** Permits manual optimisation of tape.

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Cassette Decks

SPECIFICATIONS

STATUS

PRODUCT	(£)	COMMENTS	SPECIFICATIONS								
			DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	TWIN DECK	AUTO REVERSE	AUTO CALIBRATION	ADJUSTABLE BIAS	ISSUE NUMBER
B Aiwa AD-F450	120	Basic but well-designed deck. Astonishing value; only the poor metering gives the game away	●	●	●	●	●	●	●	●	136
B Aiwa AD-WX727	170	High-class twin for those who want bells, whistles – and music	●	●	●	●	●	●	●	●	146
B Denon DRM-550	160	There are some technical limitations, but this remains a fine-sounding deck, and excellent value	●	●	●	●	●	●	●	●	158
Denon DRW-580	200	Twin deck: OK for casual use, but will quickly pall with more quality critical applications	●	●	●	●	●	●	●	●	171
B Denon DRS-640	200	Draw-loading deck, with simple facilities and smooth, well-adjusted sound	●	●	●	●	●	●	●	●	140
R Denon DRM-650S	230	An improvement on predecessors, it offers a wide-ranging, sound. Dolby S is not the best feature	●	●	●	●	●	●	●	●	164
Denon DRM-740	270	Breathed-on DRM-710, with good external treatment, offers good, if somewhat detached sonics	●	●	●	●	●	●	●	●	136
Denon DRS-810	310	Draw-loading deck, carefully designed yet lacking in subtlety on audition	●	●	●	●	●	●	●	●	127
Harman/Kardon TD420	250	Minor inconsistencies detract from a well-conceived, minimum features design	●	●	●	●	●	●	●	●	140
Harman/Kardon TD450	350	Draw loader with poor tape navigation features; good midband but shallow bass	●	●	●	●	●	●	●	●	164
B JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●	●	●	●	●	●	●	●	158
B JVC TD-V662BK	270	Assured, clean and agile-sounding recorder, if not quite the most refined in its class	●	●	●	●	●	●	●	●	146
JVC TD-W718	300	Twin deck. Good for creative live recording, but no timer standby. Respectable performance	●	●	●	●	●	●	●	●	171
R Kenwood KX-W6080	200	Modestly decent-sounding twin deck, with some transport instability and ragged bass	●	●	●	●	●	●	●	●	171
Marantz SD455	170	Works well as a single deck, especially on replay, but dubbing at high/low speed compromises sound	●	●	●	●	●	●	●	●	184
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	●	●	●	●	●	●	●	●	158
NAD 616	300	Twin deck with basic features. No Dolby setting memory, transport is too unstable for audiophile use	●	●	●	●	●	●	●	●	171
Nakamichi DR-10	800	An ergonomic oddity, but one of the last of the great cassette decks. Worth considering against MD	●	●	●	●	●	●	●	●	195
R Onkyo K-611	460	Cute drawer-loading mini-size component with 3 heads and dual capstan transport	●	●	●	●	●	●	●	●	146
R Pioneer CT-S550S	250	Great features, good with cheap low bias tapes, but slightly synthetic sound quality	●	●	●	●	●	●	●	●	164
Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this sophisticated twin would have been Recommended	●	●	●	●	●	●	●	●	171
R Pioneer CT-S830S	500	High-class mechanism, if lacking in battleship externals, and superb sound	●	●	●	●	●	●	●	●	146
R Sony TC-KE600S	300	Mild setting-up problems notwithstanding, this UK-tweaked design has a smooth, open sound	●	●	●	●	●	●	●	●	158
Teac V-1050	180	One of the cheapest 3-head machines around, but it shows in very 'thick' sound	●	●	●	●	●	●	●	●	184
B Technics RS-AZ6	200	For those who can't afford the RS-AZ7; clarity over the widest bandwidth thanks to AZ thin-film head	●	●	●	●	●	●	●	●	164
R Technics RS-AZ7	270	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in state-of-the-art	●	●	●	●	●	●	●	●	158
R Yamaha KX-490	200	Electrifyingly transparent and capable deck whose only flaw is a trace of audible wow and flutter	●	●	●	●	●	●	●	●	158
R Yamaha KX-580SE	250	Subtle, engaging and transparent deck, with a lightweight tonality, but stability and strong detail	●	●	●	●	●	●	●	●	171



CD/DVD Players

All CD players offer a basic selection of facilities, and some can keep you entertained for hours as you programme in disc names and track orders. All but the excessively inexpensive feature remote control. Most CD players can be upgraded by adding an outboard DAC (see p129). To do this the player needs a digital output of either electrical or optical type. The former is preferable for the ultimate sound. A CD player can be split into two basic components: the disc drive or transport, and a device which converts the disc's digital bitstream into an analogue audio signal. This is called a digital to analogue converter, or DAC. Although most players are contained within a single box, expensive players are usually two-box affairs. The first new DVD players have not excelled with CD software.

KEY TO SPECIFICATIONS

- **ELECTRICAL DIGITAL OUTPUT:** For electrical connection to an outboard DAC.
- **AES/EBU ELEC DIG OUTPUT:** Balanced digital output to be used with similarly equipped DACs.
- **OPTICAL DIGITAL OUTPUT:** For optical connection to an outboard DAC.
- **ST OPT DIG OUTPUT:** High-speed optical output to be used with similarly equipped DACs.
- **BAL ANALOGUE OUTPUT:** Balanced analogue output for amplifiers equipped with balanced inputs.
- **HEADPHONE SOCKET:** For 'can' users.
- **VARIABLE OUTPUT:** Remotely adjustable output level (usually non-audiophile).
- **MULTI-DISC:** Equipped with a carousel or multi-tray system for continuous play of multiple discs.
- **DAC TYPE:** BS – Philips Bitstream; MB – multi-bit; Hyb – hybrid of multi-bit and bitstream technologies; 1bit – single bit types eg MASH, bitstream, PWM, etc; CC – constant calibration.
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CD/DVD Players

SPECIFICATIONS

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PRODUCT	(£)	COMMENTS	ELEC DIG OUT	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DAC TYPE	ISSUE NUMBER
B Acurus ACD11	899	First-rate if costly player, which combines a delightful transparency with an uncontrived naturalness	●									1bit 166
Acoustic Precision Eikos	1,850	Seriously customised Pioneer with extraordinary resolution and world beating imaging and bass	●									1bit 165
Advantage CD1S	3,995	A CD player of some stature – what it lacks in dynamics it makes up for in subtlety and flow	●									20bit 193
Alchemist Kraken	1,249	Distinctive looking player likely to suit a Alchemist system, but will result in variable results elsewhere				●						24bit 190
R Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation	●									Hyb 169
AMC CD8A	150	Has balanced output, but is otherwise rather grey and unremarkable										BS 172
B AMC CD9/DAC8	200	Beer-budget two-box system (player plus DAC) is smooth, attractive and easy on the ear	●									CC 179
Anthem CD1	1,595	Unusual combination of high-end player, complete with HDCD, and changer. Good, but noisy	●			●						MB 178
R Arcam Alpha 7SE	350	Revamped starter model is a clear improvement on very likeable predecessor	●									MB 195
R Arcam Alpha MCD	450	Excellent bass and natural midband, but just a touch of treble dryness, from this very listenable changer	●									MB 178
R Arcam Alpha 8	520	Refined, intricately detailed but a little cautious. Should be broadly compatible with a variety of amps	●									BS 163
B Arcam Alpha 8SE	600	Excellent (and very reasonably priced) HDCD-compatible player is a strong all-rounder	●									1bit 176
R Arcam Alpha 9	800	Refined, articulate player which employs new DAC technology to great effect	●									Ring 188
Audio Analogue Paganini	750	Basically good, but sometimes heavy-handed player										24bit 191
Audio Research CD1	3,290	Suspends disbelief with a real yet obviously coloured sound. A rare proposition among CD players	●			●						BS 163
Audio Note AN-CD1	600	Easy on the ear, and for a valve player, easy on the pocket, but a bit Radio 2-flavoured	●									Hyb 188
Audio Note AN-CD2	999	High output impedance makes performance unduly system fussy	●									MB 195
AVI S2000MC2	899	A chip off the old block. This model's in-ner-face balance obstructs an otherwise finely detailed sound	●									MB 176
R AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us. A fine performer in a sympathetic system	●									MB 169
Balanced Audio Tech VK-D5	3,995	A valve-infused player with a big and engaging sound. Lacks a little subtlety	●									18bit 194
Cambridge Audio D100	120	Hard, clanky and coloured sounding, and with suspect control logic	●									DS 200
B Cambridge Audio D500	200	Clean and highly articulate player wears well in extended use	●									DS 202
R Cambridge Audio CD6	250	A sharp, articulate player, a real thoroughbred in fact, perhaps too sharp and lively for some systems	●									BS 159
R Copland CDA-266	1,199	Simple yet elegant design is unexpectedly sophisticated under the skin, and effective in execution	●									MB 176
Copland CDA 289	1,898	Beautifully built and musically enjoyable. Lacks some precision, but still among the best below £2,000	●									20bit 194
Copland CDA-288	2,199	A gentle giant of a player that errs in favour of pastel shades rather than bold daubs of colour	●									MB 163
R Cymbol CDP12	1,299	Clean, detailed and airy HDCD-equipped player with minimalist trappings	●									Hyb 176
R Cyrus dAD1.5	395	Improved dAD1 variant has improved digital filter for a more natural, easy on the ear quality	●									Hyb 191
R Cyrus dAD3	598	A relaxed style of delivery that convinces with guile and subtlety rather than orchestral ordnance	●									BS 163
R Cyrus dAD3 Q24	900	Bold, lean and lively player demands sympathetic system matching	●									DS 200
R Denon DCD-435	130	Good low cost player, and a step up from the DCD-425, its predecessor	●									DS 191
R Denon DCD-655	180	Fine, slightly soft-edged budget player, and a good ameliorative for aggressive, edgy systems	●									MB 200
Denon DCD-835	280	Refined version of Denon's multi-bit technology is a bit of a star	●									MB 184
Denon DCD-1550AR	350	Disappointing bland and ploddy sound from an immaculately constructed, high-tech player	●									MB 179
Denon DCD-1650AR	700	Powerful, authoritative, and well equipped too, but this player sometimes lacks subtlety	●									MB 195
Harman/Kardon HK720	230	Sometimes aggressive and ill-disciplined player, but at least it's well built	●									1-bit 202
R Harman/Kardon HD740	300	Powerful but subtle and involving player: welcome back, Harman/Kardon	●									DS 191
R Harman/Kardon FL8300	300	Generally capable changer with relaxed sound and firm bass. Just a hint of roughness on occasion	●									MB 178
Harman/Kardon HD760	500	Sophisticated internally, but mildly disappointing when treading the boards in anger	●									MB 195
JVC XL-Z574	250	Strong resolving power, good midband and dynamics, but slightly raw and thin	●									1bit 159
B Kenwood DP-3080	170	Bold, dynamic and outgoing sound, although somewhat aggressive. Poor build quality and finish	●									1bit 159
Kenwood DPF-3010	180	Grey, somewhat mechanical sounding player	●									Hyb 191
R Kenwood DPF-R6030	180	Inexpensive and adequately specified, with decent mid/treble and slightly anaemic bass	●									1 bit 204
B Kenwood DP-4090	250	Focuses a clear, wide aperture lens on the music – and has CD Text too	●									1bit 172
Kenwood DP-5090	300	Disappointing senior brother to the excellent DP-4090, but surface interface is good	●									1bit 179
B Kenwood DP-7090	400	A lively and compelling performer with an even-handed and coherent disposition	●									MB 163
Linn Mimik	875	Useful multi-room features matched to strong bass, but poor imagery and transparency	●									Hyb 155
Marantz CD5000	150	Well equipped budget player sounds thin and rough at times	●									1 bit 202
Marantz CC3000	150	Ragged sounding player, but it is cheap and well equipped	●									CC 204
B Marantz CD6000 OSE	300	Superbly constructed, slightly emasculated sounding, but smooth and articulate	●									1bit 200
R Marantz CD-63 MkII KI Sig	400	It's the quintessential sound of Marantz – warm, open, and smooth almost to a fault	●									Hyb 169
R Marantz CD-17	800	Fabulous packaging and an excellent all round performer: smooth, detailed and consistent	●									BS 155
R Marantz CD-17KI Sig	1,100	Minor QC problems aside, this is a superbly turned-out machine, but ultimately a little bland	●									BS 176
R Marantz CD-7	3,500	A superbly designed CD player, both inside and out. Precise and dramatic in equal measure	●									16bit 194
R Meracus Tanto	1,395	Believable tonal colours and textures, refinement takes preference over dynamics – but it's not cheap	●									DS 169
B Meridian 506	1,100	Revised 506 includes MSR remote and a new D/A chip, which makes it livelier and more detailed	●									1bit 176
Monrio Asty	695	Well built player has solid, propulsive sound quality that deteriorates towards HF	●									DS 200
Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	●									MB 166
Musical Fidelity X-RAY	799	Brilliantly packaged and clean but slightly antiseptic sounding player	●									MB 184
B Musical Fidelity A3 CD	800	Excellent player has few faults apart from a slight loss of EHF detail	●									DS 200

CONTINUED

CD/DVD Players

SPECIFICATIONS

AES/EBU ELEC DIG OUT
 OPTICAL DIG OUT
 ST OPT DIG OUT
 BAL ANALOGUE OUT
 HEADPHONE SOCKET
 VARIABLE OUTPUT
 MULTI-DISC
 DAC TYPE
 ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DAC TYPE	ISSUE NUMBER
Myryad T-10	400	Rather ordinary player fails to shine with good music recordings	●	●							DS 184
Myryad T-20	600	Matter of fact styling and sound quality, a tad bright for some systems	●	●							DS 195
Myryad MC100	700	A little extra get-up-and-go wouldn't go amiss, but its sheer maturity and composure ensure listenability	●	●							BS 163
Myryad MCD500	1,300	Well-built, attractive player, showing much promise, but can be a little heavy-going on audition	●	●							1bit 176
NAD C520	170	Significantly improved entry level NAD is smooth and dynamic, if slightly dull	●	●							DS 202
NAD 524	250	Clean, clear and essentially musical player in the NAD mould	●	●							MB 191
NAD 523	250	Lacklustre musical presentation was disappointing on test, so was the absence of a digital output								●	DS 204
NAD C540	330	Not cheap, and disc handling is pedestrian at best, but the C540 is smooth & elegant with just a hint of aggression	●	●							DS 200
NAD Silverline S500	1,100	It sounds as good as it looks, which is notably refined and easy on the ear	●	●		●	●				MB 195
Naim Audio CD3.5	1,000	Forward and explicit sound needs careful system matching									Hyb 188
Naim Audio CD2	2,000	Provides bags of detail with a solid stereo focus but not all the romanticism we know to be possible									MB 163
Nakamichi MB-10	400	Jewel of a multi-disc player, with crisp sound and superb fuss-free compact packaging	●	●							DS 204
Naim NACDSII/XPS	5,625	Brings you the Naim sound, but for once doesn't have to rely on Naim ancillaries to get the results									MB 188
Onkyo DX-7222	150	Competitive following recent price cut, and on the whole a strong performer musically				●					BS 200
Parasound C/DP-1000	499	Comes on like a high end player, but ultimately sounds a bit weak and soft-centred	●	●							Hyb 184
Philips CD-721	130	Surprisingly well-sorted, articulate if slightly glossy and attractively presented sound. Captive signal lead									1bit 159
Philips CD751	150	Inconsistent and occasionally opaque and scrawny sounding cheapie	●	●						●	1bit 172
Pioneer PD-S507	200	Low cost Legato Link implementation sounds gentle but slightly muddled				●					DS 191
Pioneer PD-S707	300	Idiosyncratic Legato Link dominated sound, but always subtle and interesting	●	●							MB 184
Pioneer PD-F906	350	Incredible appearance and concept, but this changer's sound is lacklustre and ergonomics frustrating	●	●		●	●			●	1bit 178
Pioneer PDS-06	550	Technologically sophisticated. Pioneer's first multi-bit player for years is polished and capable	●	●							MB 176
Pioneer PD-S505 Precision	460	Assured, fluid-sounding player, with great spatial coherence	●	●							1bit 166
Primare D20	799	Well presented player doesn't quite cut the mustard, though it performs promisingly	●	●							BS 188
Revox Exception E426	2,250	Very stylish with a light, agile sound that extends superbly and has fine timing	●	●				●			BS 182
Roksan Kandy	475	Slightly old-fashioned sound quality player available in various colour schemes	●	●							DS 200
Roksan DP3P	1,495	Dramatic and compelling. Classical listeners should be ready to 'air conduct' when auditioning	●	●							BS 163
Roksan Caspian	895	Solid, articulate, and fundamentally well-engineered player, but with some subtle low-level limitations	●	●							Hyb 169
Rotel RCD-951	300	Disappointing chopped-down RCD-971 - buy the original	●	●							MB 191
Rotel RCD-971	450	Odd disc handling logic, but bold, detailed and refined sound make this a must	●	●							MB 184
Rotel RCD-991	750	Confirms Rotel's status as must watch brand: great stuff	●	●							MB 195
Sherwood CD-4030R	180	Easy on the ear, smooth-sounding player, with limits set by the slightly soft, compressed quality	●	●							BS 159
Sherwood CD1	1,100	A very neutral, even handed sounding player with a rather flat, lifeless sound. Beautiful construction	●	●							BS 163
Sony CDP-XE330	100	Unrefined, but lively, detailed and highly affordable	●	●							Pulse 202
Sony CDP-XE530	140	Well equipped, but raw, scrappy sounding player lacks depth and weight	●	●							Pulse 200
Sony CDP-XE510	180	Souped up CDP-XE500 which tells a rather bland and unengaging story	●	●							1bit 172
Sony CDP-XB720E	200	Good basic performance and a number of filter settings make this an interesting player for tweaks	●	●							Low bit 184
Sony CDP-XB930E	300	Yet another first rate UK optimised player with all the bells and whistles	●	●							Pulse 195
Sony CDP-XA20ES	450	High-tech, with a long list of gadgets, oddly configured player that ultimately sounds less than compelling	●	●							1bit 176
Sony CDP-X3000ES	500	Shoebag format player, looks to die for, switchable digital filters to tweak the already excellent sound	●	●							BS 169
Sony SCD-777ES	1,700	Beautifully built SACD player that looks like a bit of a CD player bargain	●	●							BS 198
Sony SCD-1	2,500	The first SACD player sounds fabulous but there's not much competition and limited software as yet	●	●							BS 194
T+A CD1210R	1,185	Intriguing player with rather pushy basic sound, but has switchable digital filters	●	●							DS 188
Talk Electronics Thunder 1	550	Entry level upgradeable Talk Electronics player sounds slightly muted	●	●							DS 200
Talk Electronics Thunder 2	699	Fine player, slightly lacking in dynamics, but readily, if expensively upgradable in various ways	●	●							1-bit 191
Talk Electronics Thunder 3	1,000	Clean, fast, and availability of a complete upgrade path make this a good long term proposition	●	●							DS 195
TAG McLaren CD20R	1,249	Dry and unatmospheric, but plenty of presence - recommended with caution	●	●							BS 188
Teac CDP-3450SE	200	For once a budget player where gadgets take second place to respectable, budget amp-friendly sonics	●	●							1bit 166
Teac VRDS-8	600	Superb build quality is matched to good, but not exceptional sound quality	●	●							MB 184
Teac VRDS-9	700	Well-presented. This Teac is crisp, yet shallow, and inconsistent in sound quality and partnering skills	●	●							1bit 176
Teac VRDS-25x	1,000	Excellent, individualistic player with bold, colourful sound, but test sample had iffy CD-R compatibility	●	●							MB 195
Technics SL-PG390	90	It's very cheap. Very, very cheap	●	●							MASH 202
Technics SL-PG480A	130	Full driving sound, but somewhat uneven in balance with a unobtrusive, slightly harsh top end	●	●							1bit 159
Technics SL-PS670D	200	Fine, middle ranking player which sounds solid, sometimes even a little stolid	●	●							1bit 179
Technics SL-PS770D	250	High tech and well built technology battleship which smooths the rough edges off the music	●	●							BS 172
Technics SL-MC410	250	If you fancy a CD player that holds 111 discs, this one's cheap, pretty capable, and easy to use	●	●							Hyb 178
Technics SL-MC7	300	Maximum storage capacity for a minimum price, and presentable sound too	●	●							MASH 204
Thule Spirit CD100	600	Definitely a try before you buy machine, but the bass and mid are excellent	●	●							DS 188
Trichord Genesis	549	Breathed-on Pioneer is warm and mellifluous, but ultimately lacks drive and authority	●	●							Hyb 169
Trichord Revelation	799	Well-ordered and clean sound that may be a little too refined for some, images well	●	●							1bit 166
Tube Technology Fusion	1,100	Our early test sample was primitive and flawed, but showed signs of greatness	●	●							PA 195
Tube Technology Fulcrum	2,800	An imaginative two-box player with a smooth sound that lacks some lustre	●	●							24bit 194
Wadia 830	3,000	Envelope busting dynamics, power and imaging in a rather unexciting box (digital volume control)	●	●							MB 183
Wadia 860x	7,450	If you want to discover what CDs are really capable of, this has few peers	●	●							MB 199
Yamaha CDX-493	180	Open and lively, but this player is also messy and lacking resolving power	●	●							Hyb 191
Yamaha CD-X993	400	A bit of a lush, though the sound is singularly free of grain, and equipment levels are strong	●	●							BS 184
YBA Spécial	695	There is nothing here to justify the pricing or the high-end parentage. Avoid	●	●							MB 195
YBA CD1α	3,895	A remarkably fluid and graceful sound - one of the best we've heard below £5,000	●	●							18bit 194
TRANSPORTS											
Audio Note CDT Zero	399	Neat shoe box size transport sounds smooth and fluid in the right system. (Tested with DAC Zero)	●	●							191
Linn Karik	1,850	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing	●	●							144
Roksan Attessa ATT-DP3	1,295	Not the most detailed or refined but capable of sounding exciting with the right material	●	●							1bit 162
Teac VRDS-T1	550	Superb quality engineering is mated to tidy and composed sound. (Tested with D-T1)	●	●							144
Theta Carmen	3,299	A well equipped and extremely upgradable CD/DVD transport. Right now, the finest of its type	●	●							203
Theta Data Basic II	2,397	Uses a Philips CDM9 Pro mechanism and works a treat with more lively DACs	●	●							130
Thorens TCD2000	999	Lively presentation not helped by rather loose bass and splashy treble. (Tested with TDA 2000 DAC)	●	●							162
Trichord Digital Turntable	699	Very detailed, precise, controlled yet involving; a first-rank performer	●	●							162

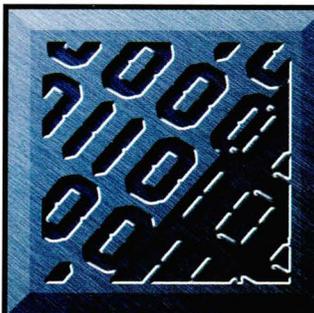
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CD/DVD Players

SPECIFICATIONS
 AES/EBU ELEC DIG OUT
 OPTICAL DIG OUT
 ST OPT DIG OUT
 BAL ANALOGUE OUT
 HEADPHONE SOCKET
 VARIABLE OUTPUT
 MULTI-DISC
 DAC TYPE
 ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	ST OPT DIG OUT	BAL ANALOGUE OUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	DAC TYPE	ISSUE NUMBER
DACS											
Alchemist TS-D-1	300	24/96-equipped DAC sounds tidy but a little shut-in with both 16-bit CDs and 24-bit/96kHz DVDs									BS 187
Audio Note DAC Zero	369	Neat valve-equipped DAC sounds smooth and fluid in the right system. (Tested with CDT Zero transport)									Hyb 191
Audionote DAC 5	18,500	Astonishingly natural and realistic in the right system, the only problem being the extravagant price									Hyb 203
Linn Numerik	1,500	A new 20-bit DAC and revised Kark transport have cleaned up; but sounds a bit dry and humourless									MB 144
E Musical Fidelity X-24K	300	24/96 ready with a warm, natural sound and good soundstaging (tested with Pioneer DV-717)									MB 187
Roksan Attessa ATT-DA2/DS5	1,145	Not the most detailed or refined but capable of good excitement with the right material									1bit 162
Teac D-T1	500	Teamed with VRDS-T1 for test, this superb quality unit is tidy and composed									BS 144
Thorens TDA2000	700	Lively and up-front presentation not helped by rather loose bass and splashy treble									BS 162
R Trichord Pulsar Series One	1,395	Very detailed, precise, controlled yet involving; a first-rank performer. Switchable phase, dither etc.									Hyb 162
DVD PLAYERS											
Denon DVD-2500	500	Good picture, but nondescript sound, except when using the digital output at full 24/96 throttle									DS 198
B Denon DVD-3000	700	Enjoyable rather than analytical, includes 24/96 and AC-3/MPEG-2 Audio									BS 180
R Denon DVM-3700	1000	One of the first multi-DVD players, and a fine all rounder, with average to good pictures, and better sound									DS 204
E Denon DVD-5000	1,600	The first DVD-V player that ain't bad as a CD player. A fine musical device									BS 187
JVC XV-D701	500	Good video player, but rather undeveloped musically - CD Text is neat, though									DS 198
JVC XV-S15SD	300	Musically soft as a baby's bottom, and as surprising as yesterday's news									202
R Kenwood DVF-9010	1000	DVD player with brilliant picture and clean, lively sound									24/96 190
NAD T-550	500	Soft-centred but likeable player in the classic NAD mould									DS 202
Nakamichi DVD-10	800	Not the most compelling model in the resurrected Nakamichi line-up									DS 198
Panasonic DVD-A150	400	Simple, mid-market DVD player is vice-free but limited for the audiophile									24/96 190
Panasonic DVD-A360E	580	Powerful equipment, and unthrottled digital output notwithstanding, sound quality is modest at best									DS 198
E Philips DVD750	400	Clever DVD with CD-R/CD-RW compatibility and surprisingly keen sound									DS 198
B Pioneer DV-525	399	Lean, clean and lively sound quality. CD-R and 24/96 compatible, too									MB 202
B Pioneer DV-626D	450	Superbly equipped, and more than respectable sound quality									DS 198
B Pioneer DV-717	550	Superb DVD player with good picture quality and which really knows how to play 24/96 discs									MB 190
Samsung DVD-907	500	DVD player with below average picture, and lacklustre sound quality									24/96 190
Sony DVP-CX850D	600	Lacklustre sound quality is a disappointment, but the price is appealing for a 200-disc DVD player									DS 204
R Sony DVP-S7700	950	Powerfully endowed player offers articulate and believable sound									DS 198
R Sony DVP-S325	330	Bare bones DVD with workmanlike sound, although it can sound 'loud'									202
Sharp DV-760	500	Reasonable picture, but sonically brings new meaning to the term rough and ready.									DS 202
Teac DV-1000	400	Blowsy, and occasionally astringent sounding, but otherwise straightforward and reasonably priced									DS 198
Theta DaVID	4,650	A top-notch CD transport, that also plays DVD-Video discs well. Pricy for a DVD transport, but worth it									24/96 191
Thomson DTH2000	380	This DVD player's main attributes are reasonable pricing and fair to good all round performance									24/96 190
Toshiba SD-3109	380	Defocused and soft-edged, this is more attractive for its picture than its sound quality.									N/A 202
Toshiba SD9000	800	Costly, high tech player with stunning pictures and crisp, slightly lightweight sound									DS 198
Yamaha DVD-S795	529	Fare price, and an unconstrained digital output, but otherwise unexciting									DS 198



Digital Recorders

Domestic digital recording has been possible since the launch of digital audio tape (DAT) in the '80s. Since then DAT has remained expensive and largely esoteric, favoured only by well-heeled or professional users. Digital Compact Cassette and MiniDisc (MD) were launched in the early '90s but only MD has stayed the course. A little later came domestic CD-Recorders using CD-R discs, while the latest twist is the arrival of re-recordable CDs known as CD-RW discs. The recording quality hierarchy is as follows: DAT, CD-R/CD-RW, MD. MD is probably the most convenient to use, and offers sophisticated editing facilities, while CD-R is ideal for making digital 'dones' of prerecorded CDs. DAT is the medium of choice for high-quality location recording.

KEY TO SPECIFICATIONS

- FORMAT:** Type of recorder - see left for descriptions.
- DAC TYPE:** Digital to analogue converter: BS - Philips Bitstream; MB - multibit; Hyb - hybrid of multibit and bitstream; 1bit - single bit types such as MASH, bitstream, PWM etc.
- ADC TYPE:** The analogue to digital converter (ADC) converts sound into digits during live recording. Types of ADC are as per DACs (qv).
- PORTABLE:** Battery operable, but not necessarily personal-stereo-sized.
- OPTICAL IN/OUTPUTS:** Digital sockets for optical cable.
- ELEC IN/OUTPUTS:** Digital sockets for electrical cable.
- FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback section of our Archive page.
- ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

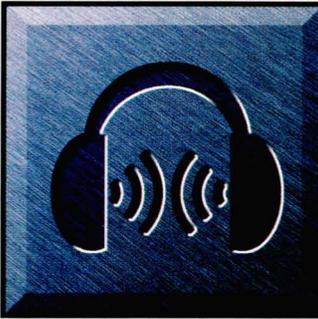
B BEST BUY **R RECOMMENDED** **E EDITOR'S CHOICE**

STATUS

Digital Recorders

SPECIFICATIONS
 OPTICAL IN/OUTPUTS
 ELEC IN/OUTPUTS
 PORTABLE
 ADC TYPE
 DAC TYPE
 FORMAT
 ISSUE NUMBER

PRODUCT	(£)	COMMENTS	FORMAT	DAC TYPE	ADC TYPE	PORTABLE	OPTICAL IN/OUTPUTS	ELEC IN/OUTPUTS	ISSUE NUMBER
MINIDISCS									
Denon DMD-1000	300	A good machine, but it still doesn't manage to shake off the MiniDisc plague of losing the listener's interest							184
Denon DMD-1300	500	Sound sometimes lacks integration but tonal balance is good and it handles loud music with panache							177
R Kenwood DMF-9020	500	One of the best MD decks yet for sound quality, and the first to make titling a practical proposition							191
R Kenwood DM-9090	550	Slight sibilance and image vagueness do not detract from excellent balance and solid bass							177
Marantz CM635	500	CD player and MD recorder in one box: a practical idea but sound and features don't really match the asking price							191
Onkyo MD-121	450	Mid-sized deck that sounds slightly coloured at times, though immediate and lively							177
R Pioneer MJ-D707	250	A handy set of features for the price, though sound is not outstanding							191
R Sharp MD-R1 MkII	200	It's cheap: sound is not outrageously bettered by rather pricier competition. A bit thin on features though							191
Sharp MDR3H	300	Nifty machine combining a 3-disc CD changer with a MD recorder. Sound on both is rather below par, though							184
B Sharp MD-R2	300	Budget recorder that loses little or nothing in comparisons with much more expensive models - highly capable							177
R Sony MDS-JB920	300	One of the better MD decks, its sound is neutral and dynamic. European Audio Recorder of the Year '98-'99							184
B Sony MDS-JA20ES	500	Sound quality about as good as it gets with MD to date, and a very comprehensive features set too							191
E Sony MDS-JA55ES	650	Probably the best MD deck to date, with consistently less quality loss over a wide range of programme. Lots of features							194
Yamaha MDX-793	300	Nice machine to use and has some useful features, but sound quality a little wanting							191
CD RECORDERS									
Marantz DR700	600	Dearer than Philips and Traxdata equivalents, with apparently only a smarter front panel to show for it	CD-R	BS	BS				191
R Philips CDR-880	499	Capable of making perfect copies of CD digital, and very acceptable copies of anything analogue too	BS	BS	N				184
R Pioneer PDR-555RW	480	Competitor to Philips' CDR-880; can't make perfect copies but has the edge in replay and analogue record sound	BS	BS	N				184
Pioneer PDR-04	700	Scaled down version of the PDR-05 with auto level setting but all the socketry and features you need to make CDs	CD-R	BS	BS				171
Pioneer PDR-05	1,000	The first domestic CD-R deck - excellent sound quality	CD-R	BS	BS				152
R Traxdata Traxaudio 900	499	Identical to Philips and Marantz models: it makes bit-perfect copies of CDs and has perfectly acceptable replay	CD-R	BS	BS				191



Headphones

There are several different ways of making a headphone. The most expensive models employ electrostatically-driven diaphragms within an open-backed earcup. Most mid-price designs feature dynamic, moving-coil-driven diaphragms in open, semi-open or closed-back designs. An open-backed headphone can sound remarkably transparent, but also permits the ingress of external noise. Closed-back designs keep out unwanted sound, but may be less comfortable to wear and more coloured. The latest development is the cordless headphone using either infrared light or, more recently, radio waves. Quality is improving, but has yet to match the best corded designs.

KEY TO SPECIFICATIONS

- **TYPE:** Operating principle: D - dynamic; E - electrostatic
- **SUPRA-AURAL:** Where a flat pad presses on the outer ear.
- **CIRCUM-AURAL:** Where the earcup encloses the ear.
- **OPEN BACK:** Offers an open sound but lets in noise.
- **CLOSED BACK:** Keeps out external noise.
- **MASS (g):** Mass in grams
- **IMPEDANCE (Ω):** Load offered to the headphone amplifier. Many headphones offer a significantly higher value than loudspeakers, for example, but this does not mean they will be incompatible with the majority of amplifiers.
- **3.5MM JACK ADAPTOR:** Compatible with mini-jacked components, eg personal stereos.
- **FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback section of our Archive page.
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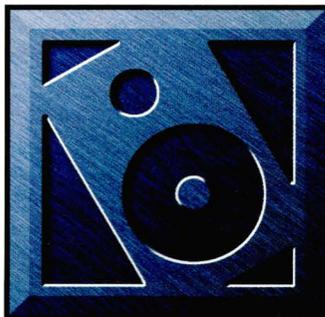
B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Headphones

SPECIFICATIONS

STATUS

PRODUCT	(E)	COMMENTS	D	E	SUPRA-AURAL	CIRCUM-AURAL	OPEN BACK	CLOSED BACK	MASS (g)	IMPEDANCE (Ω)	3.5mm JACK ADAPTOR	ISSUE NUMBER	
AKG 301	70	Big 'phones with even and detailed sound but lacks sufficient bass weight	D							230	100	●	194
AKG K 240 DF	100	Inoffensive 'phones that are very laid back, if lacking in grunt	D							240	600	●	186
R AKG K1000	700	One of the best dynamics on the market, hooks directly into speaker outputs	D							270	120	●	99
R Audio Technica ATH910PRO	80	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found	D							280	40	●	55
R Audio Technica ATH-D40fs	100	Detailed and involving sound with a professional 'sudio' quality appeal	D							250	66	●	194
R Audio Technica ATH-M40	120	Incredible detail and honesty from these classically designed studio 'phone	D							250	60	●	186
Beyer DT311	50	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone	D							124	40	●	133
Beyer DT411	63	A reasonable but not very thrilling headphone that doesn't really offer enough at the price	D							120	250	●	111
Beyer DT331	65	Clear and extremely detailed sound with rather thin bass	D							210	40	●	194
Beyer DT431	81	Nice looking 'phones that may not be the best players on the field, but will always give 100 per cent	D							210	40	●	186
R Beyer DT511	106	Superb midband clarity and speed slightly at odds with soft bass. Even so, high tingle factor	D							200	250	●	172
R Beyer DT531	135	A good buy for serious, heavy-duty music making	D							245	250	●	144
R Beyer DT831	140	These provide silky, smooth textures in abundance and we're not just talking about the velvet ear pads	D					1/2		295	250	●	186
Beyer DT100	160	Rugged, modular professional design, but bass is woolly and treble lacks detail	D							350	600	●	157
R Beyer DT911	170	Probably too revealing for many headphone amps: these are very subtle and fine, if expensive cans	D							275	250	●	111
Denon AH-D550	80	A competent 'phone with integrity, but little panache or charisma. Hard headband causes brain strain	D							200	35	●	157
Denon AH-D750	130	Loud and gutsy, meaty bass, good with rock and dance. Can sound thick and clumsy	D							250	30	●	172
Grado SR-40	45	Cheap and nasty appearance largely redeemed by cheerful, up-beat sound. Very comfortable	D							120	32	●	172
R Grado SR60	79	For sheer musical enjoyment these are hard to beat. Retro styling may not be to everyone's taste	D							200	32	●	194
Grado SR-80	100	Open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes	D							60	8	●	157
R Grado SR125	150	What these 'phones lack in style they make up for ten-fold in musical quality	D							200	32	●	186
R Grado SR-225	200	Warm, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music	D							200	32	●	163
R Jeklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness	D							400	200	●	55
JVC HA-D50	45	Detailed but with a characteristic mid-band all of their own and a modest amount of lower bass	D							290	56	●	194
JVC HA-W60	49	Remarkable lack of interference and hiss ameliorates adequate sound of this cordless design	D							165	I/R	●	172
JVC HA-D910	65	Broadly acceptable if unexciting design with low level losses and some colorations	D							220	32	●	121
R JVC HA-W200RF	75	Distinct lack of hiss from these FM cordless 'phones ensures that detail and depth are easily heard	D							280	20,000	●	186
Koss TD/80	50	Oodles of bass but with a recessed midband; tiresome on the head with prolonged wearing	D							250	60	●	194
Koss R/100	100	Rather cheap looking 'phones that supply good detail but are severely lacking in midrange excitement	D							215	60	●	186
Precide Ergo Model 2	140	Still has much of the spaciousness of the Float from which it is derived, but coarse mid/top	D							380	100	●	163
R Philips SBC 3396	70	Remarkably airy for closed-back designs. Fine tonal balance, punchy delivery. Amazing value for money	D							255	32	●	172
Philips SBC HP900	90	Sharper, snappier midrange than 3396: initially impressive but blows it on balance and listenability	D							200	32	●	172
Sennheiser IS 380	55	As close as you'll get to real hi-fi with infra-red phones at this price. Inevitable hiss spoils the illusion	D							192	I/R	●	172
R Sennheiser HD 455	55	Inoffensive, if nondescript sound; modular, but can become dislodged from head	D							185	60	●	157
Sennheiser HD 500	70	A disappointing pair that offer good stereo-imaging, but little else	D							210	32	●	186
Sennheiser HD 475	80	Elegant, uncluttered sound and very comfortable but lean bass saps satisfaction	D							120	60	●	172
Sennheiser RS 400	80	FM cordless 'phones that are very wearable, but slightly woolly sounding with interference problems	D							160	N/A	●	186
R Sennheiser HD 570 Symph	90	Comfortable, light-weight 'phones with a detailed and open sound but lacks bass depth on weightier music	D							210	64	●	194
R Sennheiser HD 545	125	Fine all-rounder that takes all styles of music in its stride. Ear-clamping headband	D							255	150	●	172
R Sennheiser HD 565 Ovation	150	Wide bandwidth design which is refined, expressive and extremely comfortable	D							255	150	●	157
Sennheiser HE 60/HEV70/UK	998	Very nearly a superb electrostatic, with a pure midband, but top end is sibilant and edgy	E							260	N/A	●	163
Sony MDR-605LP	50	Funky looking headphones that have a very bold, but tiring sound, with coloured bass	D							145	40	●	186
Sony MDR-CD770	100	Neutrality and comfort make the Sony easy to live with. Correct-sounding too, yet musically unrewarding	D									●	157
Sony MDR-V700DJ	100	Great looking fold-away 'phones with exceptional build quality. Kickin' bass	D							300	24	●	194
R Sony MDR-CD1700	200	Astonishingly detailed, uncoloured and free of the usual artefacts from a sealed back headphone	D							325	32	●	163
Sony MDR-F1	100	Natural, easy-going sound teamed with great looks and comfort. Shame about the lightweight bass	D							300	12	●	172
Technics RP-DJ1200	130	Functional design with head-pulping bass and muggy tonal balance. Good job they're sweat-proof	D							230	32	●	172
R Stax Lambda Nova Basic	449	Refined, articulate, yet with real presence - and a notable bargain by electrostatic standards	E							347	N/A	●	163
Vivanco Cyberwave FMH3000	40	The only cordless 'phone to offer genuine walkabout freedom, but sounds like a cheap FM tuner	D							210	FM	●	172
Vivanco IR5800	50	Consistently musical infra-red design. Doesn't reach for sonic heights so hiss can be forgiven	D					1/2		226	I/R	●	172
R Vivanco SR650	50	Unusually comfortable 'phone with excellent detail resolution but aggressive	D							175		●	157
R Vivanco SR750	60	Cossetting physical design, attractive sound, though suffers overhang and lacks ultimate dynamics	D							188		●	157
R Vivanco SR 950	80	Cuddly feel and sound make these an enjoyable pair of 'phones	D							252	32	●	194
Vivanco FM7980	80	A fair amount of whine and crackle detracts from 'phones which are otherwise very listenable	D							280	9,000	●	186
Vivanco FM8180	99	Well thought-out features and a better than average sound are, at times, marred by intrusive hiss	D							240	9,000	●	186



Loudspeakers

As the last link in the hi-fi chain, loudspeakers are at the mercy of incoming signals. Nevertheless, distortions introduced by loudspeakers tend to be the most obvious. Inside the average loudspeaker is a simple electrical circuit (the crossover) which splits the incoming, full-frequency-range signal for the specific drive units to handle: highs to the 'tweeter', lows to the 'woofer'. For any speaker, designers must balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against bass extension (how low it goes). Subwoofers augment bass and are either passive (unamplified) or, preferably, active (self-amplified). Our 'bass from' figures are based on measurements in a particular room therefore results will vary in different environments.

KEY TO SPECIFICATIONS

- **SIZE WxHxD (cm):** Width by height by depth in centimetres.
- **FLOORSTANDER:** Requires no stand support.
- **SENSITIVITY (dB/W):** How much sound results for a given electrical input — the higher the figure, the louder the speaker. An 'A' indicates active operation.
- **IMPEDANCE (Ω):** Impedance, measured in Ohms, indicates how much resistance the speaker presents to an amplifier. As impedance decreases, demands on an amplifier increase.
- **BASS FROM (Hz):** The lowest frequency that a speaker can reproduce effectively.
- **FREE SPACE:** Speakers which should not sit close to walls.
- **CLOSE TO WALL:** Speakers which should sit between 3 and 12cm from the rear wall.
- **FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faced review reprint service. For fullinfo, see the Factsback section of our Archive page.
- **ISSUE NUMBER:** The issue of *HI-FI CHOICE* in which an original review appeared.

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Loudspeakers

SPECIFICATIONS

- SIZE WxHxD (CM) FLOORSTANDER SENSITIVITY (dB/W) IMPEDANCE (Ω) BASS FROM (HZ) FREE SPACE CLOSE TO WALL ISSUE NUMBER

STATUS

PRODUCT	(E)	COMMENTS	PRICE	SIZE WxHxD (CM)	FLOORSTANDER	SENSITIVITY (dB/W)	IMPEDANCE (Ω)	BASS FROM (HZ)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
Acoustic Energy Aegis Centre	140	Good value centre-front speaker but a tad shut in and with a slightly obvious top end (price per speaker)	46,17,20			89	5	50	●	●	198
Acoustic Energy Aegis One	150	At a new low price, this has a very natural and transparent midband, erring a little on the dull side	19,36,5,24			87	6	40	●	●	187
Acoustic Energy Aegis Two	250	Floorstanding variation on the Aegis One theme, with a neutral, even and detailed if slightly shiny sound	19,87,24			89	8	40	●	●	201
Acoustic Energy Aegis Three	350	High value floorstander has deep and even bass and a smooth neutrality thereafter	19,90,25			90	5	22	●	●	198
Acoustic Energy AE120SE	500	Attractive styling and good sonic headroom, but a heavy, uneven overall balance, and a difficult amp load	18,97,28			89.5	10	25	●	●	199
Acoustic Energy AE520	1,000	Could be more neutral, but high-class build is reflected in a high-class sound. Very elegant too	21,98,30			91	3	25	●	●	190
ALR Entry 2	250	Metal cone stand-mount has a generous performance envelope, but sound quality was controversial	20,33,29			90	4	22	●	●	201
ALR Jordan Note 7	2,500	A beguiling Anglo-German collaboration delivers metal-cone precision with fine dynamic range	25,107,32			92	4	25	●	●	196
AR 15	275	Neat and chunky wall/stand-mount certainly knows how to rock and roll, less convincing on the delicate stuff	22,37,22			90	4	45	●	●	201
ATC SCM10	1,000	A compact speaker with good transparency but lightweight bass	18,38,25.5			80	8	65	●	●	192
Audio Gem Emerald	540	Pretty, compact floorstander with lively if lightweight sound	18,94,21			87	6	40	●	●	164
Audio Note AN-E/D	1520	This classic large stand-mount might have throwback aesthetics, but it delivers an exceptional allround sound	36,79,28			92	4	20	●	●	204
Audio Physic Tempo	1,999	Tall and unusually-styled floorstander has stunning stereo but suspect bass tuning	22,107,47			88	8	28	●	●	143
Audiovector C2	799	Elegant two-and-a-half-way has a big, full bandwidth sound, but midband seemed a little underdeveloped	19,106,27			90	4	20	●	●	190
Audiovector M2	1,399	High-class, smooth and slightly laid-back performer has driving bass. It's upgradable, too	20,102,30			89	4	22	●	●	180
AVI NuNeutron	500	A smooth and subtle though pricey sub-miniature, albeit with the inevitable limitations of the breed	14,27,23			86	4	50	●	●	190
AVI Positron	899	This 'mini-floorstander' is capable of great precision and delicacy, but in a rather small-scale way	17,5,74,24.5			85	6	40	●	●	174
B&W DM302	150	Highly competent and neutral all rounder; clever Prism enclosure	19,32,22			88	4	45	●	●	156
B&W 602 S2	300	Large stand-mount has fine dynamic literacy and good communication skills at a very competitive price	23,5,49,29			90	5	28	●	●	201
B&W DM305	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31			89	4	40	●	●	164
B&W LCR6	349	Large, gutsy standmount intended for all-round AV use delivers fine performance as a stereo pair too	20,5,55,32			90	5	20	●	●	198
B&W CDM2SE	400	Beautifully styled and finished, respectable midband. Lacks definition towards frequency extremes	22,32,25			87	6	40	●	●	183
B&W 603 S2	550	Capable of being driven seriously loud, but the cautious balance seems less happy playing at low levels	23,5,87,29			91	4	22	●	●	193
B&W CDM1SE	600	A great looking standmount with one of the best midbands around, and a subtle blend of other qualities	22,37,29			88	5	40	●	●	177
B&W CDM7	1,000	A combination of serious welly and physical elegance; but a basic lack of midband smoothness	22,97,29			90	4	22	●	●	174
B&W Nautilus 805	1,400	A small-sounding loudspeaker dynamically, but very stylish, clean and 'unboxy', delivering loads of detail	24,42,31			89	12	28	●	●	199
B&W Nautilus 804	2,500	The prettiest Nautilus has tremendous clarity and imaging but lacks the welly of bigger models	24,101,5,24.5			89	8	38	●	●	200
B&W Nautilus 802	6,000	Outstanding example of the high-tech speaker builder's art, needs real power but gives real sound	39,111,55			91	8	34	●	●	183
B&W Nautilus 801	8,500	The 801 is a magnificent loudspeaker in nearly every respect, but it is one that likes to play loud	52,111,69			91	8	34	●	●	186
Blueround Minipod	249	The Minipod can show its competitors a thing or two about freedom from boxiness and looks fab	18,34,17			91	4	50	●	●	193
BC Acoustique Araxe	1,300	Neat compact floorstander is a very lively communicator, if a little short of deep bass grunt	21,92,21-30			94	3	40	●	●	204
Cabasse Farella 400	950	Exciting but very upfront-and-in-her-face sound. High sensitivity, fine build and good dynamic drive	26,92,32			92	5	28	●	●	180
Carlsson OA52.2	1,500	Ultra-discreet design integrates cleverly with the listening room. Impressively unboxy, but sounds a bit thin	41,54,37			90	8	20	●	●	195
Castle Keep	250	Substantial centre-front speaker based on Harlech drivers but with rather brighter voicing	48,17,27-29			88	8	45	●	●	198
Castle Richmond	250	Tiny real-wood miniature has a lightweight but very coherent sound, a bit in-her-face but plenty of fun	17,33,20			90	5	50	●	●	201
Castle Inversion 15	425	This striking looking standmount is a good all-rounder, commendably free from boxiness	19-22,42,25			91	4	30	●	●	193
Castle Kendal	500	A beautifully finished compact floorstander with a decidedly forward but communicative sound	17,76,20			86	6	45	●	●	177
Castle Severn 2SE	700	Pretty little floorstander is lively and communicative, if a little coloured in the voice band	21,84,24			88	6	28	●	●	204
Castle Harlech	880	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33			88	8	28	●	●	160
Castle Inversion 100	1,975	Large semi-omni design with gorgeous Art Deco styling, sounds open but bass alignment is ill-tuned	26,5,111,45			91	8	20	●	●	195
Celestion 12i	119	Not without virtue, but the relentless enthusiasm and mid-band colorations can become wearing	19,31,21			88	6	45	●	●	179
Celestion 23i	300	Cosmetically flawed, but the bottom end has fine get-up-and-go, and works well with dance tracks	24,86,27			89	6	30	●	●	177
Celestion A Compact	600	Provided the room isn't too large and your tastes not too heavy, this is a charming little number	17,24,21			90	3	45	●	●	193
Celestion A1	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35			88	6	25	●	●	164
Celestion A2	1,500	Full-scale, big sound from ultra-elegant floorstander. Smooth and slightly laid back presentation	24,93,39			89	6	22	●	●	180
Chario Syntar 100	249	Pretty with a pleasantly easygoing balance, but not the most communicative or exciting sound around	18,52,27			87	6	45	●	●	170
Chario Hiper 1000	300	Classy looking standmount has a sweet, easygoing sound with fine midband voicing	18,35,28			87	4	45	●	●	187
Chario Constellation Lynx	550	Beautiful near-miniature is let down by a midband too laid back for its own good	20,36,26			87	3	40	●	●	190
Chario Academy Millennium 2	2,100	Price includes stands. A showy speaker that lives up to its own hype	22,53,35			90	4	55	●	●	190
Dali 606	400	A big bruiser at a tempting price. Sounds refined and polite, but also packs some punch	22,97,32			91	4	25	●	●	174
Dali Royal Menuet MkII	400	Classy sub-miniature with a beautiful box and fine ingredients, but a little lacking in subtlety and excitement	16,26,18			87	3	50	●	●	190
Dali Evidence 870	1,300	A real heavyweight, sonically and physically, and good for movies as well as music	24,5,106,36			93	2.5	20	●	●	204
Definitive Technology CLR2002	595	Pricey, but undoubtedly one of the better centre-front speakers around, with fine timing and open voicing	55,5,175,31			90	4	40	●	●	198
Definitive Technology BP2X	595	Pricey but effective bi-polar surround speaker, with unusually high sensitivity	23,37,15			94	4	120	●	●	198
Definitive Technology BP2004	1,700	Pricey bi-polar floorstander has a fine midband, let down by its built-in powered subwoofer	19,104,31			91	5	28	●	●	198
Dynaudio Audience 5	400	Follows the Dynaudio tradition for fine midband transparency, but the overall timbre is a bit thin	20,31,26			85	4	40	●	●	177
Dynaudio Audience 40	400	Classy engineering content creates a winning combination of neutrality, dynamic range and involvement	17,28,25			87	4	40	●	●	190
Dynaudio LR/C 120	439	Slim centre and front standmount, has an evenhanded but rather laid back balance but lacks drive	16,5,57,31			89	5	25	●	●	198
Dynaudio Audience 50	577	Understated in looks and finish, this compact stand-mount can mix it with floorstanders at more than twice the price	20,33,25			88	4	30	●	●	204
Dynaudio Audience 70	1,100	A highly competent and neutral speaker, but pricey for vinyl finish, and doesn't quite drag you into the music	20,5,93,25			88	6	20	●	●	199
Dynaudio Contour 1.8 MkII	1,842	Wonderful voice-band delicacy and loads of deep bass from a very elegant and compact box	21,95,29			85	4	20	●	●	167
Elac CL102 II	599	Chunky floorstander with classy drivers has a neutral, slightly 'shiny' character, and could have more punch	20,95,28			88	9	23	●	●	199
Elac CL 3101 Jet	800	It's pricey, and you can buy better performance for the money. Small speaker, good sound	12,3,20,8,28.2			86	4	42	●	●	191
Eltax Liberty 3+	150	Bright, bassy, laid back and attractively evenhanded, but dynamically challenged. Big box for your dosh	20,5,38,34			86	4	25	●	●	187
Eltax Linear Response	249	A curiously dumpy shape, but smooth, laid-back performer is easy on the ears, with fine tonal accuracy	25,35,32			85	4	40	●	●	177

CONTINUED

Loudspeakers

SPECIFICATIONS

SIZE WxHxD (CM) SENSITIVITY (db/W) IMPEDANCE (Ω) BASS FROM (Hz) FREE SPACE CLOSE TO WALL ISSUE NUMBER

STATUS

PRODUCT	(€)	COMMENTS	PRICE	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
Eltax Chroma Front	300	Gorgeous shiny styling package at an ultra-competitive price, suffers from an excess of rather flabby bass	19,98,28	87	4	25	●	●	201
Energy eXL 25	400	Neat slimline design delivers a fine all round performance for the price, but could sound smoother	15,87,31	90	4	25	●	●	201
Epos ES12	499	High quality luxury standmount has great midband and stereo imaging	20,38,25	85	8	45	●	●	160
Epos ES25	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35	88	6	22	●	●	143
Gale 2i	140	Unspectacular sound and appearance fail to help this solid little miniature stand out from the crowd	22,40,27	88	7	40	●	●	170
Heybrook Prima 2	159	Great openness, speed and timing. Sounds fresh and vital, though sometimes lacks scale and weight	20,29,18	87	6	50	●	●	179
Heybrook Heylette	200	Attractive traditional-style near-miniature with classy main driver now has fine overall balance to match	19,5,30,22	88	4	45	●	●	187
Heybrook Optima	259	A dumpy ugly duckling with a heart of gold. Deserves a better tweeter, but communicates well	22,88,29	94	4	30	●	●	193
Heybrook Heylios	269	Classically styled stand-mount has a fine balance of smoothness and dynamics, plus real wood veneer	23,5,36,27	89	6	25	●	●	201
Heybrook Ultima	649	Has the bass wallop to justify its dual hi-fi/home cinema roles, but doesn't excite	22,97,29	89	6	45	●	●	174
Heybrook Duet	750	Looks slightly old-fashioned, sounds a bit coloured but its fine timing and liveliness serve music well	23,43,30	88	11	27	●	●	199
Heybrook Octet	1,800	Good-looking but pricey floorstander with novel drivers and a fine ceramic-enclosure midband	24,97,31	90	6	25	●	●	180
Indigo Three	500	Cute 'n' chunky standmount is an entertaining communicator. Great fun, despite some sonic weirdness	23,30,5,32	86	17	24	●	●	199
Infinity Delta 60	700	Striking and massive floorstander, lots of speaker for the price, but seems a victim of its own complexity	16-29,115,41	90	4	25	●	●	183
Infinity Kappa 70	795	Fine material value. Sonically big, smooth and even, but lacking in coherence and dynamics	16-26,96,27	87	4	25	●	●	204
Jamo BX100A	350	Offering a cracking output for their size, these rock boxes can be a bit bright but have decent bass	31,5,54,28	91	8	40	●	●	155
Jamo Classic 8	400	A lot of speaker for the money; good when playing quietly, but boom'n'tizz character sounded crude	22,90,29	90	4	28	●	●	152
Jamo Comet 195	350	Loads of bass, should have plenty of yooof-appeal – it looks the business, and is priced attractively	20,5,91,31	90	3	26	●	●	183
Jamo 477A	500	Very prettily styled, but build and sound quality are disappointing at the price	19,77,28	88	4	40	●	●	138
Jamo 507A	700	Imaginative styling keeps the front view super slim yet still it packs a punch. Glass top is a nice touch	22,94,37	88	3	40	●	●	174
JBL LX2	250	Invigorating, if a touch crude, this good-hearted speaker reproduces music with enthusiasm	22,40,27	87	8	40	●	●	170
JBL Ti200	400	Very substantial standmount knows how to rock and roll, but can sound uncouth on more delicate material	21,41,30	92	5	40	●	●	193
JBL L20	700	Pricey, heavy and a bit laid-back, but this is a fine rock'n'roller which is dynamic and communicative	26,42,28	86	8	30	●	●	138
JBL SVA1500	700	A distinctive Pro-style bi-radial horn tweeter, with a fun sound, enlivened by a juicy bass thump	17,5,51,31	86	8	40	●	●	174
JBL L40	1,000	Classic, large, three-way standmount is full of vim and vigour, with a superb sense of balance	30,65,31	88	4	23	●	●	167
JBL 4312 II	1,000	Crude but startlingly effective dynamics. The original party animal knows just how to rock'n'roll	36,60,30	94	4	25	●	●	190
JBL SVA 2100	1,250	Monstrously large and brutish styling, goes very loud as well as deep. Fine focus but some boxiness	37,114,52	91	8	<20	●	●	180
JBL L90	1,500	A classic monitor which communicates with gusto and enthusiasm, though it can sound a bit crude	24,94,35	91	6	23	●	●	143
JBL LX70	550	Bassmeister supreme, shame the rest doesn't match up. Fine sensitivity but an itchy, scratchy treble	26,5,94,30	91	4	33	●	●	183
JMLab Tantal 507	295	Competent all-rounder, this compact standmount has a good heart and sweet treble, but sounds a bit small	21,38,27	93	4	40	●	●	193
JMLab Tantal 515	495	Lively and open if bright. Sound is entertaining and informative, but presentation is nondescript	20,94,26	92	5	32	●	●	183
JMLab Cobalt 815	999	Hefty real-wood floorstander has a slight 'boom'n'tizz' character but delivers big speaker grip and dynamics	22,100,31	90.5	9.5	22	●	●	199
JMLab Electra 905	1,200	Compact but massively engineered, delivers a very classy sound with exceptional dynamic range	23,5,47,28	90	4	40	●	●	204
JMLab Spectral 909.1	1,375	Multi-driver array in a large and very substantial enclosure. Good scale but lacks delicacy and sweetness	27,107,35	90	4	20	●	●	180
JMLab Electra 915	1,795	Fine headroom and bass, and classy engineering too, but also a tricky amp load which lacks delicacy	26,5,106,36	92	4	20	●	●	195
JMLab Mezzo Utopia	7,250	Looks good and sounds even better. A genuinely big speaker with fantastic coherence	35,115,47	92	4	30	●	●	186
JPW Mini Monitor	60	Ultra-cheap miniature works well in a limited way	18,27,17,5	86	8	50	●	●	156
JPW Gold Monitor	80	More informative than Mini Monitor – but fiercer, too	18,27,17,5	86	8	50	●	●	156
JPW ML510	130	Lot of good quality speaker for the price, but not an ideal match for cheap budget components	20,34,22	88	5	50	●	●	169
JPW ML910	330	Loads of speaker for the money, plenty of headroom and loudness capability, but sounds dull	23,104,30	91	4	43	●	●	183
JPW ML1010	400	A seriously substantial speaker for the price, and an obvious choice for those who like their music loud	22,5,115,40	91	6	25	●	●	170
JPW Ruby 1	400	Very pretty but pricey luxury metal-cone miniature has good if slightly edgy balance	19,32,21	87	6	55	●	●	139
JPW Ruby 4	1,000	Twin metal-cone main drivers improve the dynamic performance and bass extension, with little sacrifice	22,94,26	88	8	25	●	●	174
KEF Coda 7	129	Lovely open voice reproduction, but bass could be more taut and build tougher	18,30,23	88	6	50	●	●	195
KEF Cresta 2	149	A good looking/value package but sonically disappointing, and no match for the Q15	20,5,37,24	91	4	40	●	●	156
KEF Coda 8	189	Outstandingly well-balanced, bass is deep but a little vague	20,32,5,29	86	6	28	●	●	156
KEF Q15	200	Beautifully balanced and voiced standmount, but a potentially tricky amplifier load at high frequencies	20,5,31,27	90	2.5	30	●	●	187
KEF Coda 9	299	Uneven budget three-way floorstander with poor bass definition	20,86,28	89	6	30	●	●	156
KEF RDM One	499	Cute and tiny, nice midband but lack of bass warmth and weight	23,30,24	88	6	70	●	●	164
KEF Q65	799	Dumpy-looking three-way has loads of bass and a laid-back midband; goes loud but lacks poise and impact	23,95,31	92	2.5	25	●	●	190
KEF RDM Three	1,500	Definitely a speaker aimed at long-term satisfaction rather than immediate impressiveness. Nice	24,100,27	90	4	40	●	●	189
KEF Reference Model 2	1,599	Classy, large floorstander that has massive headroom and clean mid-to-treble, but limited deep bass	23,103,34	89	4	30	●	●	167
Keswick Audio Aria II	379	Confident and dynamic sound, if a little crude and shut in	21,42,24	89	8	20	●	●	148
Keswick Audio Torino	999	Good value, lively contender with distinctive styling. Goes loud and deep but could be smoother	18-26, 93,28	90	4	20	●	●	167
Linn Kan	295	Great bass discrimination from size, ensuring a very informative, if slightly shut-in experience	19,31,19	86	4	45	●	●	187
Linn Keilidh Passive	750	Stunning timing and coherence, awesome bass drive	20,83,28	87	4	22	●	●	138
Living Voice Auditorium	1,500	Pretty, compact floorstander has wonderful coherence, high sensitivity and fine dynamic integrity	21,5,98,29	91	4	25	●	●	180
Living Voice Avatar OBX-R	4,000	Discreet but extremely fine design with external crossover and an affinity with valves	21,5,104,27	89	8	45	●	●	196
Magnat Vintage 320	350	Loads of speaker for your money, but the sound is thick, heavy and lacking in presence and authority	25,102,30	90	4	20	●	●	201
Magnat Vector 77	450	Tall, dark and a lot of speaker for the money. Beautiful balance, but lacking in subtlety and transparency	22,115,29	89	5	30	●	●	183
Magnat Vintage 720	1,200	Slightly crude in some respects but lots of heart, fine scale, decent dynamic coherence and integrity	29,113,32	88	4	20	●	●	180
Martin-Logan Prodigy	8,967	Combines the finesse of an electrostatic with the grunt of cleverly engineered cone bass to good effect	42,179,71	91	4	28	●	●	204
Mirage FRX7	550	Neat slim floorstander has a heavy, laid back balance, probably better suited to movie than music reproduction	17,5,95,32	90	4	25	●	●	204
Mission 700	130	A lot of speaker for the money. Good bass weight and extension and goes loud with ease	18,34,26	87	8	40	●	●	179
Mission 771	170	Beautiful standmount miniature has a delightfully well balanced and voiced sound, and real wood finish	17,31,22	86	7	45	●	●	187
Mission 77C	199	A good centre-front match for 77-series, the triple tweeter might be a curiosity, but voicing is very good	42,17,21	91	4	100	●	●	198
Mission 77DS	199	Neat flush-mount surround speaker has no bass but a smooth midband and nicely restrained treble	34,26,12	92	4	120	●	●	198
Mission 780	299	Gorgeous miniature has a fine midband and clean, bright treble, slightly odd bottom end	16,5,28,27	86	6	40	●	●	201
Mission 773e	400	Beautifully designed slim floorstander could be more neutral but still delivers an all-round entertaining sound	17,5,88,26	92	4	30	●	●	193
Mission 774	500	Gorgeous floorstander is an entertaining communicator, despite some balance oddities (bright treble)	18,95,31	90	4	40	●	●	183
Mission 782	699	Ultra-compact floorstander has a glorious midband and slightly odd bass. Good communication skills	16,5,82,28	86	9.5	25	85	●	199
Mission 775e	800	Lots of speaker for the money, and musically involving too, if a little short of serious weight and authority	23,115,30	93	3	25	●	●	204
Monitor Audio 702PMC	700	A good all-round standmount with intimate midband focus	20,40,25	87	8	30	●	●	174
Monitor Audio MA703PMC	800	Lovely but pricey floorstander has upfront, coherent, 'shiny' sound	20,89,27	88	8	50	●	●	160
Musical Tech Kestrel Evolution	315	Cutely styled, cleverly compact and a smooth, subtle and coherent performer, best suited to smaller rooms	20,85,19	86	4	40	●	●	201
Musical Technology Harrier	400	Very pretty package, good measured performance and even sound. Sensitivity is low, and dynamics limp	25,80,23	86	8	25	●	●	182
Musical Technology PM15	450	A subtle, understated but very involving example of the 'classic' luxury-finish compact standmount	20,41,27	88	5	38	●	●	153
Musical Technology Falcon	680	Big speaker has a big but also surprisingly smooth and civilised sound. Fine material value too	35,117,30	89	4	22	●	●	190
Musical Technology Condor	1,000	Lots of clever ideas in a floorstander, which places transparency and smoothness ahead of dynamic drama	25,91,23	85	4	28	●	●	174

CONTINUED

Loudspeakers

SPECIFICATIONS

SIZE WxHxD (CM) FLOORSTANDER SENSITIVITY (db/W) IMPEDANCE (Ω) BASS FROM (Hz) FREE SPACE CLOSE TO WALL ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS							
Naim Intro	660	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	●	89	6	30	●	164
Naim Credo	1,060	Involving sound, but rather forward and cold. Good clarity, but some coloration and a lack of richness	24,89,30	●	88	8	28	●	180
Naim SBL Passive	1,970	Lively and punchy – smoother but more upfront than before	27,89,27	●	88	6	25	●	143
Naim NBL	6,648	Elegant, large floorstander is exceptionally informative with an awesome dynamic range and dry, forward balance	29,116,47	●	89	4	20	●	200
Neat Critique 2	445	Contemporary standmount has a clean, crisp sound with lovely natural midband voicing	22,32,24	●	86	6	50	●	183
Neat Mystique Mk2	575	This elegant package delivers a fine overall sound quality; some might find the top end too insistent	20,86,18	●	85	6	23	●	177
Neat Elite	1,195	A highly entertaining all-rounder, has a planar tweeter that sounds sweet, if not particularly smooth	20,88,18	●	88.5	6	25	●	195
Neat Petite II/Gravitas	2,000	Beautifully presented miniature/subwoofer combo with ribbon tweeter gives smooth, laid-back sound	23,105,40	●	85	6	25	●	167
NHT Super One	250	A fine compromise between size and performance, sensitivity and hence loudness capability is modest	18,5,29,5,23	●	85	8	30	●	170
NHT 1.5	400	This compact standmount sounds much bigger than it has any right to. Good timing and communication skills	18,42,19-26	●	85	6	40	●	177
NHT Super Two	550	Black and shiny compact three-way floorstander has marvellously even balance and good coherence	18,5,100,26	●	87	8.5	25	●	199
Opera Prima	495	Good-looking hardwood enclosure, plus fine mid and treble, but less satisfactory bass	19,34,31	●	90	4	40	●	190
Origin Live Conqueror	1,650	Chunky floorstanding three-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	●	88	8	30	●	167
Orelle Swing	1,200	A superb example of what an essentially small loudspeaker can do, with bags of brio and enthusiasm	18,101,28	●	87	8	45	●	195
PMC TB15	430	Pro-audio version of TB1, cheaper because of black paint finish	20,41,30	●	87	6	40	●	177
PMC TB1	482	A classy, laid-back performer that likes going loud and loves the bass guitar	20,40,31	●	87	8	45	●	160
PMC LB1	999	Still fully competitive eight years after our original review, this genuine compact monitor is now a modern classic	17,5,53,26	●	87	6.5	40	●	199
PMC FB1	1,275	Handsome floorstander has the lively coherence of a simple two-way alongside impressive bass weight and extension	20,105,31	●	88	6	20	●	204
Polk L550	800	No enthusiast tweaks here, but powerful and beautiful balance	27,83,29	●	89	8	25	●	138
Polk RT16	799	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	●	91	4	22	●	160
Polk CS 1000p	999	Monstrously large and heavy centre-front speaker, presumably for those with monstrous intentions	87,22,35	●	92	4	25	●	198
Polk RTE 1000p	1,300	Tall elegant tower with built-in powered bass 'subwoofer' that needs using with discretion. Bright but engaging	20,110,35	●	91	4	25	●	198
ProAc Response 2.5	2,700	For aspirant high-enders looking for seriously good boxes, this speaker should be first port of call	22,107,25	●	86	8	30	●	149
ProAc Tablette 2000 Sig.	899	Beautifully veneered compact stand-mount is classically balanced, if a little on the bright side of neutral	19,36,26	●	87	6	30	●	204
ProAc Studio 125	1,000	Pretty if pricey compact floorstander with a beautifully natural and neutral midband, and some bass thump	20,94,28	●	87	8	28	●	192
QLN Signature	1,000	Attractive pyramidal standmount with heavy, laid-back balance but remarkably unboxy sound	27,37,36	●	83	4	25	●	167
Rega Jura	450	Beefy sounding, chunky floorstander sounds very 'direct coupled' to the music, if a touch 'boom'n'tizz'	22,5,92,5,26	●	90	5	25	●	193
Rega ELA Mk II	498	Pretty and smooth, the latest incarnation has a superb midband and excellent communicative skills	30,80,20	●	87	8	40	●	139
Rega XEL	1,040	Looks and sounds great: balance bright but even, with delightful coherence and timing	20,82,30	●	89	6	40	●	132
Rehdeko RK 115a	1,700	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic coherence	34,42,27	●	95	8	55	●	167
RMS Revelation Series 1	1,299	Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance	20,99,24	●	81	8	22	●	167
Roksan ROKone	595	Large standmount is musically very communicative, if a little coloured	21,45,33	●	89	6	30	●	160
Roksan Ojan 3 Black	795	Squat, stylish and black, great bass extension and somewhat uneven balance	28,76,46	●	88	8	20	●	132
Roksan OJ3X Black	995	Innovative low-line, two-way floorstander with decoupled tweeter; great bass and fine dynamic range	28,79,46	●	84	8	20	●	167
Royd Minstrel	275	Not much welly or loudness, but fine coherence and timing; a bit bright	18,69,12	●	86	8	30	●	135
Royd Doublet	485	Great value compact floorstander. Lively and very informative, if a little uneven	18,93,19	●	90	4	28	●	160
Royd The Sorcerer	595	Extremely musical and communicative speaker that's fun to listen to. Aesthetics could be better, though	20,31,18	●	86	8	35	●	139
Ruark Epilogue	269	Beautifully finished miniature with a lively balance and plenty of charm; best suited to smaller rooms	17,29,23	●	87	8	47	●	183
Ruark Sceptre	599	'Traditional' cabinetwork with classy veneer and shiny gilt fixings, hampered by rather wayward sound balance	21,38,31	●	87	8	40	●	174
Ruark Prologue One R	949	Strikingly contemporary compact floorstander is well voiced but a little lean in overall balance	17,5,93,28	●	88	5	25	●	204
Ruark Crusader	1,599	Elegant luxury three-way with wonderfully even-handed, if rather laid-back balance	24,94,31	●	85	6	22	●	167
Ruark Equinox	1,849	The primary strength of this speaker is its ability to vanish behind the music	25,88,34	●	88	6	45	●	140
Ruark Excalibur	7,000	A big, handsome speaker with a big, laid-back but open sound, rocking bass and loads of headroom	30,125,53	●	90	4	30	●	186
Sequence 400	329	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	●	86	8	45	●	164
Silverado Raider	695	Beautifully built audiophile compact: neutral if bright, tough work for amps	20,40,25	●	83	3	30	●	164
Snell K.5	795	Classy AV-ready stand mount is very solidly engineered. Sound is neutral but lacks excitement	22,46,30	●	87	6	25	●	190
Snell XA75ps	4,500	Active bass floorstander with marvellous mid coherence, slightly suspect bass integration	28,117,50	●	91	6	25	●	194
Soliloquy SM 2A3	1,095	Fine match in balance, coherence, transparency and speed. Intended for use with Cary CAD 2A3SE	35,5,19,30	●	91	8	45	●	196
Sonus Faber Concertino	599	A beautifully neutral loudspeaker in a beautiful Italian suit of clothes. Classy, if quite pricey	21,32,29	●	87	5	30	●	193
South Coast Speakers Lancelot	895	Pretty compact standmount has nice ribbon tweeter but sounds a bit soft and lacks dynamic vigour	19,36,26	●	84	8	45	●	199
Spendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	●	87	8	30	●	160
System Audio 1130	499	Super-slim, super-smooth, involving experience, but not ideal if you like your bass deep and loud	3,100,21	●	89	4	43	●	183
System Audio 1150	749	Pricey but persuasive, sonic subtleties sneak up to confound a dodgy first impression. Super-slim	16,105,26	●	90	4	30	●	190
TAG McLaren F1	15,000	Oddball aesthetics with accurate, unflappable, controlled and a consistent sonic neutrality	40,127,48	●	87.5	8	25	●	202
Tannoy Mercury M1	120	Sounds much bigger and expensive than it is. Solid, tuneful bass, wide open soundstage, excellent imaging	17,30,20	●	87	8	50	●	179
Tannoy Mercury M2	140	A fine all-rounder with big box and deep bass for the price; could be sweeter and tighter	20,5,38,28	●	87	8	25	●	169
Tannoy R1	200	Pretty little mini-monitor is smooth, well mannered and polite to a fault, lacks dynamic expression	17,30,22	●	86	4	30	●	187
Tannoy Saturn S6C	200	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	38,21,29	●	89	6	25	●	198
Tannoy Mercury M3	230	Good-looking floorstander; very neutral and even-handed, with fine midband but weak dynamics and drive	20,5,87,28	●	87	7	20	●	170
Tannoy m3	300	A great all-round compromise at a very modest price, combining good looks with fine midband voicing	18,5,87,26	●	90	5	40	●	201
Tannoy Revolution R2	350	Bargain price real wood floorstander is beautifully voiced and very even-handed, if a tad laid back	17,94,24	●	90	4	20	●	193
Tannoy Saturn S6LCR	400	A punchy compact standmount based on a serious cast-frame, pro-style dual-concentric driver	21,38,29	●	89	6	25	●	198
Tannoy Saturn S6	500	Fine value vinyl floorstander offers plenty of genuine grunt and real dynamic tension	21,89,29	●	91	4	20	●	198
Tannoy Revolution R3	550	Handsome real-wood floorstander does a decent job, but lacks the evenness of its smaller R2 brother	18,5,103,28	●	89	8.5	28	●	199
Tannoy D300	999	Gorgeous-looking compact floorstander. And a fine all-round performer, too	16,24,85,23	●	87	6	26	●	167
Tannoy D500	1,999	Plenty of muscle and stereo, but short of poise and delicacy. Hard work for amps	31,93,34	●	91	6	20	●	143
Tannoy Westminster TW	6,600	These awesome horn-loaded speakers are remarkably controlled and impressive	large	●	99	8	38	●	C93
Technics SB-M20	200	Well-balanced with natural perspectives and fine midband coherence, but bass is a bit boxy and uneven	20,32,23	●	70	8	50	●	148
Technics SB-M500	450	This model offers a clean, open sound, offset by midbass, heavy balance and low sensitivity	25,78,37	●	85	8	25	●	152
Triangle Cometes	359	Communicative standmount has great midband dynamics, but the very bright top end might be intrusive	22,40,29	●	91	4	42	●	193
Triangle Zephyr II	599	Loads of fun. Dramatic dynamics and righteous timing will give any hi-fi system a wake-up call	22,94,29	●	91	4	25	●	190
Totem Model One	1,195	Utterly delightful but exasperatingly expensive luxury miniature sets the benchmark for its size	17,31,23	●	87	4	28	●	122
Veritas H3	6,000	Loads of fun with wonderful dynamic and temporal integrity from horn-loaded Lowther drivers	30,110,47	●	104	4	50	●	191
Vienna Acoustics Mozart	1,500	Gorgeous slimline floorstander sounds very laid-back but very charming, and musically literate	17,97,30	●	88	7.5	25	●	199
Wilson benesch Bishop	20,000	Deep and even bass sets new standards for cleanliness and clarity; lovely open midband too	23,161,561	●	89	4	S20	●	189
Wharfedale Diamond 7.2	140	A good-hearted, lively and up-front performer that's a little lacking in subtlety and smoothness	19,29,5,23	●	88	4	45	●	169
Wdale Diamond 7.2 Anniversary	200	Lively and exuberant, but a tad untidy with it; can sound a bit cold and hard	19,29,5,24	●	88	4	40	●	187
Wharfedale Valdus 400	200	Very loud with a minimum of amplification, but the sound is thick and uneven, with a heavy upper bass	25,80,26	●	91	8	30	●	148
Wharfedale Valdus 500	300	These rock boxes can move plenty of air, albeit not as subtly as alternatives	25,108,26,5	●	91	4	40	●	155

CONTINUED

Loudspeakers

SPECIFICATIONS

SIZE WxHxD (CM) FLOORSTANDER SENSITIVITY (db/W) IMPEDANCE (Ω) BASS FROM (Hz) FREE SPACE CLOSE TO WALL ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	SIZE WxHxD (CM)	FLOORSTANDER	SENSITIVITY (db/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	ISSUE NUMBER
Zingali Overture 2S	1,975	Gorgeous, pricey, imposing standmount has a horn tweeter of great delicacy. Impressively weighty	30,57,38				90	8	25	195
SUBWOOFERS										
Acoustic Energy AE108S	299	Lots of loud subwoofer for your money, though ultimately more film than music oriented	50,42,43						20	179
B&W ASW1000	499	(Active) Very competently engineered all round, and goes (unnecessarily) very loud	54,47,48			A			20	179
JB&W SW1000	499	Bulky heavyweight is a high quality item, able to generate more bass output than music is likely to need	54,47,50			A			A20	198
JPW SW60	349	A real heavyweight, sounds clean and transparent, if perhaps a little understated. Usefully flexible	55,47,39						20	179
KEF Model 30B	499	(Active) Commendably discreet with good sense of timing but limited extension	38,5,37,43			A			45	154
M&K MX70	900	(Active) Justifies cost and belies its diminutive size, with an agility that makes sense of the toughest material	25,5,46,35			A			25	179
Mission 7AS2	399	Ugly if very effective at supplying very low bass, but filter could do with more flexibility higher up	56,30,31						<20	198
REL Q50	375	(Active) Genuinely deep, clean bass from an attractively compact and cost-effective package	40,41,42			A			20	179
Solloquy S10	1,050	(Active) Pretty subwoofer, cosmetically matching SM 2A3 speakers, pricey and mid-bass a bit strong	51,30,5,46			A			25	196



Stands & Supports

Hi-fi supports are more important than you might imagine – they can have very subtle effects on the sound of your system! There are two kinds of support: those for equipment and those (stands) for loudspeakers. Equipment supports keep vibrations and resonances from affecting electronic components, while speaker stands hold enclosures stock-still and ensure they are at the correct height for your ears. Equipment supports may be rigid affairs fabricated from steel or more exotic materials; or they may have a form of suspension. Speaker stands come in a variety of sizes and styles to suit different models, and vary between open-frame and solid-pillar types. Always check with speaker and electronics manufacturers to see which supports they recommend.

KEY TO SPECIFICATIONS

- **HEIGHT (cm):** How tall is your support?
- **TOP PLATE SIZE (cm):** Dimensions of top surface on stand or equipment support.
- **FILLABLE:** Some speaker stands can be mass-loaded with sand or lead-shot to improve sound.
- **WELDED:** The better stands and supports are welded together rather than just bolted.
- **NUMBER OF SHELVES:** The number of tiers on an equipment rack or support.
- **SHELF TYPE:** The material from which shelves are made. Wood generally means Medium Density Fibreboard (MDF).
- **FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our faxed review reprint service. For full info, see the Factsback section of our Archive page.
- **ISSUE NUMBER:** The issue of Hi-Fi Choice in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

Stands & Supports

SPECIFICATIONS

HEIGHT TOP PLATE SIZE (cm) FILLABLE WELDED NUMBER OF SHELVES SHELF TYPE ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	HEIGHT	TOP PLATE SIZE (cm)	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
EQUIPMENT SUPPORTS									
Avik Furniture A4	350	Good sound and stylish Scandinavian looks at an affordable price	80.5	47			4	Wood	193
Alphason GR 17/17-AS	275	Great looks but sound can be bettered for the money	36	60,39			4	Glass	181
Apollo Soprano	275	Uninspiring looks and sonic performance that can be beaten at this price	68.5	45.5			4	Glass	193
Atacama Europa	240	Stylish, expandable modular design with agreeable full-bodied sound – great value	67	48.6			4	Wood	193
Audiophile Furniture Base	615	Price is justified by its earth-shattering sonic abilities – a worthy upgrade	82	43			4	MDF	193
Avid Isoschelf	1,100	An enthusiasts equipment support stand free from coloration if a little fiddly to set up	87.5	48			5	MDF	193
Elemental Isotube x 4/Ref	1,199	Blockbusting size and build. Super sound quality	92	45,49			4	Marb	181
Elemental Audio Isotube X4	849	A hefty stand that demonstrates just how much difference a good support can make	90	49			4	Glass	193
Fi-Rax R4	399	Lively, exuberant sound, slightly weak bass					5	Glass	151
Frameworks H500/H175	404	Two-shelf stand and isolation platform combo in tubular steel – made a spectacular impression on audition	70	52,34			3	Glass	166
Ixos Deadrock 704	250	Looks unassuming but sound is full and inviting		46,39			4	Resin	181
Mana Acoustics Ref. Table	350	King of its type: angle iron, chipboard and glass combine to make a significant difference to sound quality	56	49,39			1	Glass	147
Mana 5 Tier Sound Table	600	Infinitely upgradeable. Persuasive and thrilling glass and angle-iron design that adds speed and bandwidth	91	49, 39			5	MDF	151
Optimum Int 2000 OPT490	299	25kg stand with shelves between variable-height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40			4	Glass	166
Optimum Int 2000 OPT660	349	Clitzy style isn't reflected in sound, which is wholesome	82	60,52			5	Glass	181
Projekt Furniture A4	215	An elegant support stand that blends in to any home environment with a laid-back sound	56	48			4	Wood	193
Quadraspire Q4	250	Easy to live with, tonally neutral	54	40,49			4	MDF	151
Sound Organisation Z560	160	Welded and bolted members give structural integrity. While performance is not up with the best, it's great value	90	46,36			5	Wood	166
Sound Organisation Z545	160	Budget price and great looks make this a great value stand	73	46			4	Glass	193
Soundstyle X100	230	Looks lovely, sounds lively but slightly bright	64	49,28			4	Glass	181
Soundstyle Radius SR100	280	Stylish looks and a smooth sound	63.5	49.5			4	Glass	193
Soundstyle Select 6105	290	Respectable sonics: structurally solid and smart	78	43,36			5	Glass	151
Soundstyle Finewoods W105	320	Veneered shelves clamped between tubular uprights. Delivers with classical material	82	48,27			4	Wood	166
Stands Unique Sound Tower	289	Wooden uprights combine with glass shelves to provide a fresh, forward sound, but bass could be quicker	81	72,42			5	Glass	151
Standesign Design 4	190	An all-in-one support at a budget price with good sonic performance	88.5	50,8			4	Glass	193
Target B5	175	Free of colorations, fine grip and good value	81	49,36			5	Wood	151
Townshend Seismic Stand	1,245	It's big, it wobbles and it's pricey. But this is the ultimate equipment support	72	58,45			3	Wood	181
Wilson benesch Asside	590	Sounds even better than it looks. And it looks wonderful	72	37,50			4	Wood	181
SPEAKER STANDS									
Alphason Akros II	65	A well-specified budget stand but the sound is as subtle as a house party	60,45	16.5					202
Alphason HDS	85	A reasonable stand with a smooth but rather bland sound balance. Good finish options	45-60	15.5,15.5					189
Apollo Olympus	75	A popular stand and a decent performer, but unremarkable by today's standards	40-60	15,12.5					189
Apollo A26	80	Fine engineering value, but sound is unexceptional and top-plate small	66	15,13					159
Apollo A4/6	82	A pretty and robust design that sonically fails to stand out from the crowd	51,40,51	18					202
Atacama Nexus 6	50	An excellent all round performer and a genuine hi-fi bargain	60,50	14,5,18					202
Atacama BD21	55	Good looking and good value, but doesn't match the SE24's sound quality	56	15,17					159
Atacama R724	150	Atacama uses its market strength to deliver a superbly appointed product at a very reasonable price	60	15,17					189
Atacama SE24	70	Stands out from the budget crowd because of the consistency and overall quality of its performance	61	19,5,17					146
Custom Design R/S300 MkII	100	A solid stand improving on the original with better focus and detail	61,56,51	16,5,18					202
Elemental Isotube SZse	599	Stands of distinction, able to free the speaker's sound from its box in a way budget stands simply can't	61	23,27					189
JPW HS1	120	A purposeful stand, a touch dry-sounding but particularly strong with bass. Great for rock and dance music	61	19,21					189
Mana Sound Base	175	The Sound Base plinth simply improves the sound of every speaker placed on it	8	29,32					202
Mission Stance	100	Detailed and open but needs a firm foundation to give its best	60	19,15					202
Partington A-4	119	An oddball stand with a sound that's sheer class. More open and focused than almost anything below £150	50-100	19,22					189
Partington Dreadnought Ult.	299	Super heavyweight stand that is an open window to the speaker placed on it	63	20.5,23.5					202
RMS/Stands Unique Vivus	349	Pricey carbon fibres give ultra-clean sound with exceptional voices	50	N/A					159
Russ Andrews Torlyte	599	Subtle and musical-sounding stands, though a touch more 'pizzazz' is need for Recommendation at this price	61	33,5,24					189
Sonus Systems Excel	110	Strong performance when filled with sand but design flaws let it down	65,45	20,22.5					202
Sound Organisation Z524	69	A coherent-sounding stand with particular strengths in the midband, though quality drops at the frequency extremes	61	16,17					189
Sound Organisation Z522	89	Easy going and likeable performer straight out of the box	59	16,17					202

CONTINUED

Stands & Supports

SPECIFICATIONS

TOP PLATE SIZE HEIGHT FILLABLE WELDED NUMBER OF SHELVES SHELF TYPE ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	TOP PLATE SIZE HEIGHT	FILLABLE	WELDED	NUMBER OF SHELVES	SHELF TYPE	ISSUE NUMBER
Sound Style Select	95	OK but not as good as its cheaper brother the Z522	59	16,17	●			202
Stands Unique HP	220	Real wood disguises high-performance tuned technology	59	22,23				159
Target HM60	106	A solid and well-built stand laid-back to the point of coma	40-70	16,5,19	●			202
Target R1	280	Truly high-mass four-pillar design with superb weight and speed, giving music delicious attack	53	15,21	●	●		146
Target TR60	68	Lively, dynamic midrange and detailed treble from a less-than-audiophile-oriented, twin-column design	60	15,15	●			146
Townshend Seismic Sink	499	Unique inflatable plinth that works well with decent floorstanders as well as standmounted speakers	4	38,48				202



Tonearms

Less expensive turntables are usually supplied with a matching tonearm (and often a 'starter' cartridge, too). However, hard-core vinyl fans should invest in a more expensive separate motor unit with specialist tone-arm – the only way to make the most of vinyl LPs. It is essential to achieve operational synergy between such components, so this is one area of hi-fi where the skills of a knowledgeable dealer are invaluable. The quality of a tonearm's construction and design affect sound quality significantly. There are three basic arm designs listed in the key, and each has strengths, but pivoted designs are the most popular, being usually the most practical and affordable.

KEY TO SPECIFICATIONS

- **EFFECTIVE MASS:** This relates to cartridge compliance. Generally high mass arms are suitable for low compliance cartridges and vice versa.
- **PARALLEL TRACKING:** An arm which allows the cartridge to track the disc in a linear fashion.
- **PIVOTED:** Arms which allow the cartridge to describe an arc as they traverse the record.
- **UNI-PIVOT:** Pivoted arms with a bearing that allows movement in two planes.
- **EFFECTIVE LENGTH (CM):** Length of the arm from bearing to cartridge mounting.
- **ADJUSTABLE HEIGHT:** Important for accurate cartridge set-up.
- **FACTSBACK REFERENCE:** The Factsback Reference number permits direct access to our latest review reprint service. For full info, see the Factsback section of our Archive page.
- **ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which an original review appeared.

B BEST BUY **R** RECOMMENDED **E** EDITOR'S CHOICE

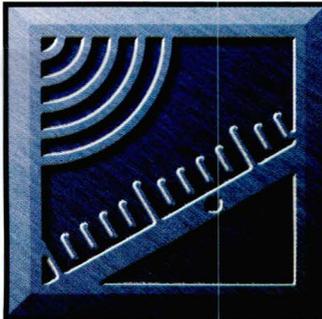
Tonearms

SPECIFICATIONS

PARALLEL TRACKING PIVOTED UNI-PIVOT EFFECTIVE LENGTH (CM) ADJUSTABLE HEIGHT ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	PARALLEL TRACKING	PIVOTED	UNI-PIVOT	EFFECTIVE LENGTH (CM)	ADJUSTABLE HEIGHT	ISSUE NUMBER
Kuzma Stogi Ref	1,250	Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness			●	High		79
Linn Ekos	1,500	Superb, state-of-the-art design which builds significantly on predecessor's strengths			●	Medium		229
Mothy/RB250	109	The ultimate budget arm? Refined, sweet, detailed and natural	●			Low		237
Rega RB300	174	Despite its modest price it sets exceptional standards and could be used on many high-end turntables	●			Low		237
Roksan Tabriz Basic	350	Targeted at the Xerxes, this is a good alternative to the Rega arm in many cases – a touch bright though	●			Low		240
SME Series IV	983	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	●			Low		233
SME Series V	1,461	Excellent in all respects, this arm arguably sets the standards for pivoted arms, regardless of price	●			Low		233



Tuners

TV has stolen radio's status as the foremost broadcast entertainment medium, but with its Radio Four plays and Radio Three music, the BBC still makes a potent case for audiophile reception equipment. For how much longer, under the cost-conscious Birtist régime, remains to be seen. Another new imponderable is the arrival of digital radio broadcasting, though reception apparatus is currently non-existent outside of the in-car market. These days tuners play second fiddle to hi-fi sources like CD, but in many ways they are a greater engineering challenge than digital equipment, and thus higher price-tags clearly equate to superior performance. High-quality, roof-mounted antennae are essential for audiophile listening, so factor them into your budget.

KEY TO SPECIFICATIONS

- **WAVEBANDS:** FM – (VHF), M – MW, L – LW
- **PRESETS:** Number of station frequencies that can be stored.
- **RDS:** (Radio Data System) was originally designed for in-car applications. RDS tuners can identify and display the name of the radio station being received, traffic news and other information about broadcasts.
- **REMOTE CONTROL:** Infra-red control handset supplied.
- **SIGNAL STRENGTH METER:** Indicates strength of signal from aerial – useful for aligning your 'twig' during installation.
- **ROTARY TUNING KNOB:** Experience has shown that this analogue throwback is ergonomically far superior to the button-based approach.
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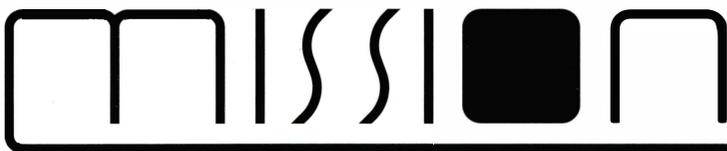
Tuners

SPECIFICATIONS

WAVEBANDS PRESETS RDS SIG. STRENGTH METER REMOTE CONTROL ROT. TUNING KNOB ISSUE NUMBER

STATUS

PRODUCT	(£)	COMMENTS	WAVEBANDS	PRESETS	RDS	SIG. STRENGTH METER	REMOTE CONTROL	ROT. TUNING KNOB	ISSUE NUMBER
AMC T7	130	Performance adequate but price is sharp, especially with remote control. Some hum	FM, M	30		●			166
Arcam Alpha 7	230	Indifferent RF performance but a touch of audiophile sound quality with clean, strong signals	FM,M,L	24					166
Arcam Alpha 10 DRT	800	The first DAB tuner and arguably still the best, but the system's still not perfect	DAB	7	●	●	●	●	199
Cambridge T500	180	Very capable tuner suited to good and less good reception conditions	FM,M,L	64		●	●	●	193
Creek T43	399	Quality UK-made tuner offering classy sound in all areas at a very fair price	FM,M,L	64		●	●	●	193
Cymbol C-DAB 1	1,000	The first 'high-end' DAB tuner, although format is the ultimate limitation. Gorgeous finish	DAB	8	●				199
Denon TU-260L II	130	The return of the all-time favourite, now enhanced with RDS and sounding as fine as ever	FM,M,L	40				●	193
Denon TU-425RD	200	A fine all-rounder with advanced RDS, good RF performance and decent sound. Remote extra	FM, M	40	●				166
Denon TU-1500RD	250	A well balanced and clean sound with good bass and treble extension	FM,M	40		●			184
Magnum Dynalab FT11	499	All-analogue tuner: receives weak or tightly packed stations but loses out on noise and sonic neutrality	FM	3			●	●	184
Harman/Kardon TU950	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM,M,L	30	●			●	166
Linn Kremlin	2,600	Controversially good sound at a very high price	FM	80		●	●		142
Marantz ST-48	120	A classic budget model which manages a performance only just behind much more expensive models	FM,M	60	●				184
Myryad T-30	400	Attractive product that produces attractive sounds too: capable of very musical performance with a good aerial	FM	29		●	●		193
Myryad T-10	530	A very smart unit which works well and offers good rhythmic drive and vitality, albeit at a price	FM	20			●	●	184
NAD C440	200	Rather polite sound, a little vague at times, that seldom offends but never excites	FM,M	30		●			193
Naim NAT01	1,730	There may be better sounding tuners in the world, but we have yet to hear one	FM						142
Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance; slightly disappointing sound	FM,M	40		●	●	●	166
Pioneer F-504RDS Precision	300	Lots of features, plus a sound that's low on noise and high on communication, adds up to a good value package	FM,M	40		●	●	●	184
Roksan Caspian	595	Neat fascia with great ergonomics, but sound is not really any better than models at half the price	FM	50		●		●	184
Sony ST-SE500	140	A lot of features for the money, but sound lacks detail and has some coloration	FM,M,L	30		●	●	●	193
Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM,M	20					166
Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM,M,L	30	●		●	●	157



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CONTINUED

Tuners

STATUS

SPECIFICATIONS

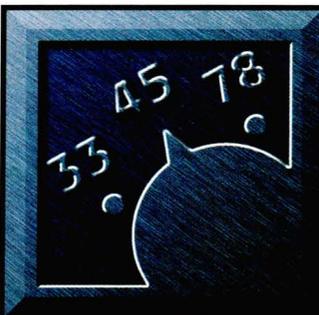
WAVEBANDS PRESETS REMOTE CONTROL SIG. STRENGTH METER ROT. TUNING KNOB ISSUE NUMBER

PRODUCT	(£)	COMMENTS	FM,M,L	30				184
Sony STS-B920S	180	A little hiss and image compression don't detract from the clean performance of this feature-packed tuner	FM,M,L	30	●	●	●	184
Technics SF-CT1000	500	Handy tuner that combines DAB, FM and AM in one unit and substantially lowers the price bar for DAB entry	DAB,FM,M	97	●	●	●	199
Thorens TRT2000	499	Not exactly neutral sounding, but nonetheless makes listening fun	FM,M	59	●	●	●	157

Turntables

KEY TO SPECIFICATIONS

- **MANUAL:** You do all the work.
- **AUTO:** The record player does all the work.
- **SEMI-AUTO:** You put the needle on, the turntable lifts it off at the end of the record.
- **SPEEDS:** In RPM to correspond with long-playing records or seven/12-inch singles.
- **SUSPENDED SUBCHASSIS:** Spring suspension to minimise structural interference.
- **EXTERNAL PSU:** Outboard power supply, generally indicative of higher-quality performance.
- **SUPPLIED WITH ARM:** Many turntables do not come with a tonearm fitted, but if this category is checked, the deck is already thus equipped.
- **SUPPLIED WITH CARTRIDGE:** If a turntable comes complete with arm and cartridge.
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Specialist turntables are at the heart of high-fidelity sound. CD players may offer ultra-low noise and a flat frequency response, but they can't match the dynamics and superlative rhythmical timing taken for granted by serious turntable users. Less expensive turntables are usually supplied with a matching tonearm (and often a 'starter' cartridge, too). Still better quality is found at higher prices among the separate motor units and tonearms. Because turntables are mechanical devices, designed to retrieve micron-small modulations engraved into vinyl, engineering quality is of paramount importance. This is also the reason why turntables cost as much as they do, and require the finest equipment support systems.

B BEST BUY **R RECOMMENDED** **E EDITOR'S CHOICE**

Turntables

SPECIFICATIONS

MANUAL AUTO SEMI-AUTO SPEEDS SUSP. SUBCHASSIS SUPPLIED WITH PSU SUPPLIED WITH ARM ISSUE NO.

STATUS

PRODUCT	(£)	COMMENTS	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSP. SUBCHASSIS	SUPPLIED WITH PSU	SUPPLIED WITH ARM	ISSUE NO.
Audio Note TT1/ARM1	594	Simple and unpretentious, it delivers a real taste of true high end performance at an affordable price	●	●	●	●	●	●	●	203
Avid Acutus	4,995	Extremely capable design with no apparent shortcomings, don't sell your vinyl 'til you've heard it on this!	●	●	●	●	●	●	●	194
Clearaudio Reference	3,990	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail, but can sound bold	●	●	●	●	●	●	●	144
DNM Rota 2	5,600	Tonally slightly bleached, but extracts detail like few others. Works well on its own table	●	●	●	●	●	●	●	144
Dual CS 455.1	220	Neat record player with automatic convenience (and 78rpm), but doesn't match simpler manual rivals sonically	●	●	●	●	●	●	●	203
Dual 505-4 UK	250	Consistent sounding and well isolated turntable. It is slightly lacking in oomph	●	●	●	●	●	●	●	103
Kuzma Stabi/PS	1,950	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	●	●	●	●	●	●	●	91
Linn LP12 Basik	1,100	Trails the full LP12 significantly, but pace, rhythm, timing etc. still top rank	●	●	●	●	●	●	●	103
Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●	●	●	●	●	●	●	91
Michell Gyrodec	875	Sweet and natural-sounding player, well matched to Rega RB300 arm	●	●	●	●	●	●	●	55
Michell Gyro SE	775	A stunningly desirable combination of looks, solidity and sound make this a tempting turntable	●	●	●	●	●	●	●	190
Michell Orbe 'SE'	1,725	A superb turntable, able to mix it with the best at virtually any price	●	●	●	●	●	●	●	192
Moth Kanoot	329	Rather coarse-sounding deck that requires decent isolation and comes with a Rega RB300 arm	●	●	●	●	●	●	●	164
NAD 533	220	Sonically a little crude, but musically satisfying results at a very modest price	●	●	●	●	●	●	●	203
Notts Analogue Spacedeck/Arm	750	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	●	●	●	●	●	●	●	159
Pink Triangle Tarantella II	850	A turntable that looks unlike any other, with rare ability too. Quirky, but sound is immensely likeable	●	●	●	●	●	●	●	192
Pro-ject 2	300	Remarkably effective at the price, with decent timing and a generally well defined sound	●	●	●	●	●	●	●	164
Pro-ject Classic Cherry	450	A great looking turntable with a generous and dynamic sound, but lacks something in overall coherence	●	●	●	●	●	●	●	203
Pro-ject Perspective	750	Flexible facilities and competitive package, but performance of turntable alone is behind the best	●	●	●	●	●	●	●	192
Pro-ject 6/Sumiko	850	Don't think of this as a deck with a good arm, but as a scaled-down Orade Delphi — it's that good	●	●	●	●	●	●	●	138
Rega Planar 2	214	A remarkable product at the price, surprisingly articulate and confident	●	●	●	●	●	●	●	48
Rega Planar 3	274	Sounds musical in a balanced manner, needs decent isolation and suffers a little pitch instability	●	●	●	●	●	●	●	164
Rega Planar 25	619	Great looking turntable has a silky smooth sound with exceptional midband coherence	●	●	●	●	●	●	●	203
Reson RS1	600	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	●	●	●	●	●	●	●	159
Roksan Radius 3/Tabriz zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	●	●	●	●	●	●	●	159
SME Model 10A	3,333	Elegant and extremely capable design with Series V/309 hybrid arm, superbly built	●	●	●	●	●	●	●	195
SME Model 20.2A	4,863	Beautifully built, extremely neutral damped and suspended deck with superb sound. Inc V arm	●	●	●	●	●	●	●	186
Thorens TD166 W/UK/RB	400	Refined, solid sound with well-focused imagery; suitable for use with good MM/MC budget cartridges	●	●	●	●	●	●	●	103
Thorens TD146 VI	550	Tonearm not quite up to turntable's potential; this semi-auto is much pricier than manual TD166	●	●	●	●	●	●	●	203
Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled	●	●	●	●	●	●	●	159
VPI HW19 Junior	650	A notably large and handsome turntable with good sound quality and considerable upgrade potential	●	●	●	●	●	●	●	203
Well Tempered Record Player	850	Intriguing and challenging. Musically not ideal, but its limpid quality and lack of artificiality set standards	●	●	●	●	●	●	●	136
Wilson benesch The Circle	795	A beautiful turntable with a sumptuous sound, all at a very reasonable price — a clear Best Buy	●	●	●	●	●	●	●	192

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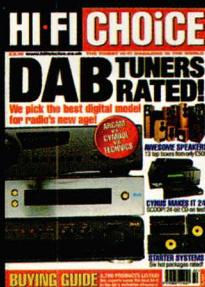
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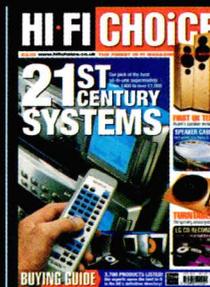
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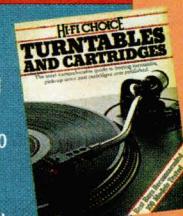
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JIMMY HUGHES

Taking a trip down memory lane, Jimmy finds that a

seminal classic by 70s multi-track masters Supertramp proves the old adage that Crime pays...

Supertramp's 1974 masterpiece *Crime of the Century* is out again in a new 180g vinyl reissue from Speakers Corner, and re-hearing it rekindled the thrill I experienced over 25 years ago when I first heard the record. And it still sounds great. Catchy songs, imaginative production, superb engineering – what more could you ask for?

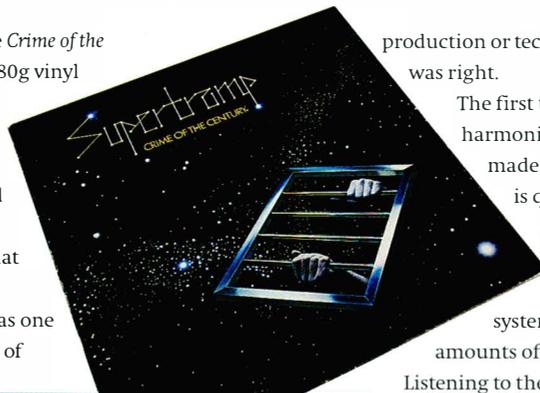
Produced and engineered by Ken Scott, *Crime* was one of the first rock albums that really made the most of emerging multi-track technology, and the recording abounds with clever exploitation of stereo soundstaging. Tape hiss is low, and the sound is clean with plenty of body and presence. At a time when most rock albums were quite crudely produced, *Crime* impressed with its sophistication.

True, there's a slight tonal thinness at times, and maybe the bass could be a shade firmer and more dynamic. But that's being hypercritical: compared to most of its contemporaries, *Crime* was in a sonic class of its own back in 1974.

Back then, very few rock albums were produced with such care. Most sounded 'multi-mono' rather than true stereo, with mono voices and instruments pan-potted into place in the mix to create 'stereo'. However good left/right separation might have been, the subtle interplay of ambience and acoustic was missing. Naturally there were exceptions. I class King Crimson's 1970 album *Lizard* (probably recorded on eight track) as an incredibly skilful forward-looking production, with all the creative advantages of multi-track recording and none of the sonic drawbacks. By the early 70s, 16 track recording was possible, extending creative possibilities still further. But it was limited nonetheless.

Come the end of that decade, studios were synchronising two 24 track machines together to give 46 usable tracks. The idea was to use tracks in pairs for true stereo reproduction, giving breadth and space to the sound. I think *Crime* was done on 16 track. And though there's still a bit of that multi-mono effect referred to earlier, the production is unusually sophisticated for the time.

The new reissue sounds very full-blooded and powerful, with a strong bass line. Cutting levels are high, and the sound is very vivid. It had been years since I last played the album, and I wondered if the sound would disappoint. I needn't have worried. Rather than highlighting



Catchy songs, imaginative production, superb engineering – what more could you ask for?

production or technical faults, I could only hear what was right.

The first track, *School*, opens with a wailing harmonica, set against a backdrop of sounds made by children in a playground. The effect is quite surreal, and the first of many imaginative details is the way a girl's scream leads into the second verse.

For those with surround sound systems, tracks like *Dreamer* have surprising amounts of out-of-phase ambient information.

Listening to the album again made for a wonderfully nostalgic evening. There it might have ended, but a

couple of weeks later, a friend invited me over to hear his new horn speakers – the £5,000 Model One from Taylor-

Hyde. Without prompting, the first thing he played was *Crime of the Century* on CD, and it sounded

incredible. My own Impulse H-1 horn speakers sound vivid enough, but the way I place them gives a broad generalised soundstage rather than one that's pin-point precise. Not so with my friend's system! The detail was fantastic – like listening on headphones, but with the breadth and depth you only get from speakers. The Model Ones use a fabulous new Focal titanium dome tweeter, the Audiom TLR, and this coupled with a superb mid-range horn ensures outstanding presence and detail.

I remember stereo sounding thrillingly vivid back in the early 70s, but few modern systems at any price seem to replicate the pin-point clarity and immediacy one seemed to get then. However, through the Model Ones that glorious evening, I heard vivid soundstaging the like of which I'd rarely experienced.

Playing the track *Rudy*, it was possible to detect the reverberation on the station announcer's voice tailing off – something I'd never heard before. It was very noticeable that the introductory piano was true stereo, whereas a little later on (during the big climax) it went back to mono. Clearly, Ken Scott and Supertramp had run out of spare tracks!

Of course, listeners today may not find *Crime of the Century* that incredible. It is, after all, over 25 years old and music has changed much in that time. But it was a groundbreaking album in its day and still impresses now, both musically and technically. Especially when heard on a really good system!

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